



# Australian Securities Exchange Notice

ILUKA

29 January 2018

ASX:ILU

## QUARTERLY REVIEW 31 DECEMBER 2017

### KEY FEATURES

- 2017 full year zircon/rutile/synthetic rutile (Z/R/SR) production volumes were 22% higher than the 2016 full year at 825 thousand tonnes mainly attributable to the inclusion of Sierra Rutile post acquisition in December 2016, which contributed 171 thousand tonnes of Z/R production (2016: 9 thousand tonnes).
- Group Z/R/SR production for Q4 of 169 thousand tonnes was 17% lower than Q3 primarily due to the conclusion of processing heavy mineral concentrate in the Murray Basin.
- Market conditions have remained robust across mineral sands in the fourth quarter and the outlook continues to be positive:
  - 2017 full year group Z/R/SR sales volumes up 27% to 889 thousand tonnes including Sierra Rutile (up 11% excluding Sierra Rutile);
  - weighted average zircon standard and premium price received of US\$1,128 per tonne in the fourth quarter, an increase of 40% from the start of the year; and
  - weighted average rutile price received of US\$825 per tonne in the second half of 2017, an increase of 13% over the start of the year.
- Net debt has reduced to \$183 million (31 December 2016: \$506 million), reflecting strong free cash flow in 2017 and a strengthening in the Australian dollar revaluing US dollar denominated debt.

### PRODUCTION AND SALES DATA

	Dec-16 Quarter	Dec-17 Quarter	2016 Full Year	2017 Full Year	2017 vs 2016 Full Year
<b>Production</b>	kt	kt	kt	kt	%
Zircon	65.3	59.2	347.1	312.3	(10.0)
Rutile	31.9	56.3	117.6	302.1	156.9
Synthetic Rutile	52.0	53.1	210.9	210.8	(0.0)
<b>Total Z/R/SR production</b>	<b>149.2</b>	<b>168.6</b>	<b>675.6</b>	<b>825.2</b>	<b>22.1</b>
Ilmenite	68.3	129.7	329.4	448.1	36.0
<b>Total mineral sands production</b>	<b>217.5</b>	<b>298.3</b>	<b>1,005.0</b>	<b>1,273.3</b>	<b>26.7</b>

	H1 2017	H2 2017	2016 Full Year	2017 Full Year	2017 vs 2016 Full Year
<b>Sales</b>	kt	kt	kt	kt	%
Zircon	197.4	183.0	338.8	380.4	12.3
Rutile	118.4	145.9	172.1	264.3	53.6
Synthetic Rutile	138.0	106.4	186.8	244.4	30.8
<b>Total Z/R/SR sales</b>	<b>453.8</b>	<b>435.3</b>	<b>697.7</b>	<b>889.1</b>	<b>27.4</b>
Ilmenite	95.1	107.6	17.7	202.7	1,045.2
<b>Total mineral sands sales</b>	<b>548.9</b>	<b>542.9</b>	<b>715.4</b>	<b>1,091.8</b>	<b>52.6</b>

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## REVENUE AND CASH COST DATA

	Dec-16 Quarter	Dec-17 Quarter	2016 Full Year	2017 Full Year	2017 vs 2016 Full Year
<i>A\$ million</i>					%
Z/R/SR revenue	244.1	227.4	696.8	959.0	37.6
Ilmenite and other revenue <sup>1</sup>	9.6	18.0	29.5	58.5	98.3
<b>Mineral sands revenue</b>	<b>253.7</b>	<b>245.4</b>	<b>726.3</b>	<b>1,017.5</b>	<b>40.1</b>
<i>A\$ million</i>					
Production cash costs Z/R/SR			252.3	362.1	43.5
Ilmenite concentrate & by-product costs			8.3	10.3	24.1
<b>Total cash cost of production</b>			<b>260.6</b>	<b>372.4</b>	<b>43.0</b>
<i>A\$ per tonne</i>					
<b>Unit cash production cost per tonne of Z/R/SR produced<sup>2</sup></b>			<b>373</b>	<b>439</b>	<b>17.7</b>
<b>Unit cost of goods sold per tonne of Z/R/SR sold<sup>3</sup></b>			<b>700</b>	<b>743</b>	<b>6.1</b>
<b>Revenue per tonne of Z/R/SR sold</b>	<b>992</b>	<b>1,172</b>	<b>999</b>	<b>1,079</b>	<b>8.0</b>
Average AUD:USD cents	75.1	76.9	74.4	76.7	3.1

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. Cash production costs of ilmenite and by-products per tonne of Z/R/SR were \$14 and \$12 in Dec-16 YTD and Dec-17 YTD, respectively.
3. Refer to Iluka Briefing Paper Key Physical and Financial Parameters 2017, January 2017 for information on modelling inventory and cost of goods sold (COGS) through the profit and loss account.

## MINERAL SANDS MARKETS

Mineral sands market conditions have improved significantly throughout 2017, with positive indicators in both the zircon and high grade titanium dioxide markets. This momentum has continued throughout the fourth quarter and Iluka anticipates, in the absence of a deterioration in global economic conditions, favourable market conditions to continue through 2018.

### Zircon

Iluka's full year zircon sales volumes of 380 thousand tonnes represents growth of 12% from full year 2016. Declining valuable heavy mineral grades and general assemblage decline across the industry has constrained product availability and, although first evident in 2016, the supply/demand imbalance has grown over 2017 to what appears now to be a structural deficit. Unlike 2016 when there was significant re-stocking, the imbalance has been made more acute in 2017 by underlying demand growth in most geographies; in particular Europe, India, the Americas and East Asia. China remains the exception where environmental controls forced many plants to shut, resulting in what Iluka believes to be temporary reductions in demand as consumers of zircon upgrade and/or relocate facilities.

Demand remained strong in the fourth quarter with inbound enquiries exceeding what Iluka was prepared to supply given impending production constraints; hence the small decrease in volumes half-on-half. In what is now a very tight market, Iluka's approach has been to continue to prioritise supply to its long standing customers. The Zircon Reference Price<sup>4</sup> was increased to US\$1,230 per tonne effective from 1 October for a six month period and this has been well accepted by the market.

<sup>4</sup> Zircon Reference Price relates to a 2 tonne bag of Zircon Premium delivered into China.

It is understood that some competitors have increased prices by ~US\$125 per tonne in the first quarter 2018; Iluka's next pricing review will be effective from 1 April 2018.

### High Grade Titanium Feedstocks

China remains a key influence on the titanium dioxide industry and the increased environmental controls that have occurred over the last 12 months cast supply uncertainty over the titanium dioxide industry, both from a feedstock and pigment market perspective.

In the high grade chloride feedstock market, Iluka has experienced increased demand year-on-year for both rutile and synthetic rutile products. Excluding the contribution of Sierra Rutile volumes, sales volumes of high grade feedstock (rutile and synthetic rutile) are up 10% to 375 thousand tonnes. The inclusion of Sierra Rutile has contributed 133 thousand tonnes of rutile sales (2016: 18 thousand tonnes), with group high grade feedstock sales up 42% to 509 thousand tonnes.

Titanium dioxide pigment is the main end market for high grade feedstocks. In 2017, solid underlying demand growth coupled with supply issues resulted in pigment price improvement during the year. Pigment inventories remain below seasonal norms as the combined impacts of European plant outages and environmental enforcement actions in China dampened supply. Iluka estimates that the closure of Chinese pigment facilities resulted in a reduction of 250 to 300 thousand tonnes of sulphate pigment capacity. Capacity utilisation rates across other plants in the industry, many of which are Iluka's customers, have increased in response to these circumstances and pigment producers utilise high grade feedstocks to improve plant yields and maximise production in the short term. This has provided support for rutile and synthetic rutile demand in 2017.

The second half weighted average rutile price of US\$825 per tonne is 9% higher than the first half of 2017 and up 13% compared to full year 2016. As noted previously, 40% of Sierra Rutile's 2017 rutile production volumes (~60 thousand tonnes) were contracted at fixed prices for the whole of 2017 prior to Iluka gaining control.

Iluka has advised customers of an 8%, or US\$70 per tonne, increase in the rutile price effective from 1 January 2018 to 30 June 2018, with contracts now in place for 60% of first half 2018 rutile production. In addition, similar to zircon, Iluka has received enquiries exceeding supply for rutile and will be allocating the remaining production on a spot basis over the course of the year.

### Iluka Mineral Sands Weighted Average Received Prices

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

	2016 Full Year	H1 2017	H2 2017	2017 Full Year
<b>Weighted Average Price US\$/tonne FOB</b>				
Zircon Premium and Standard	810	871	1,053	958
Zircon (all products including zircon in concentrate) <sup>1</sup>	773	850	1,037	940
Rutile (excluding HYTI) <sup>2</sup>	731	756	825	790
Synthetic rutile	Refer Note 3	Refer Note 3	Refer Note 3	Refer Note 3

Note 1: Zircon prices reflect the weighted average price for zircon premium and zircon standard, also with a weighted average price for all zircon materials, including zircon-in-concentrate and zircon tailings. The prices for each product vary considerably, as does the mix of such products sold period to period. In 2017 the split of premium, standard and concentrate by zircon sand-equivalent was approximately: 56%;32%;12% (2016 full year: 47%;33%;20%).

Note 2: Excluded from rutile sales prices is a lower value titanium dioxide product, HYTI 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%.

Note 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.

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## CORPORATE

### Hedging

Iluka extended its foreign currency risk management activities in the quarter by entering into foreign exchange collar hedges covering US\$271 million of expected USD revenue over the period 2018 to 2022. Over this 5 year period, the collars comprise US\$271 million worth of purchased AUD call options with a weighted average strike price of 80.2 cents, which have been largely paid for by selling US\$271 million of AUD put options at a strike price of 70c. The net cost of these collars was US\$2.3 million, which was paid up front in December 2017. This 5 year period corresponds with long term sales contracts entered into in 2017 including those in support of the Cataby development. However, the hedged USD revenues do not represent the full value of expected sales under these contracts over this period.

At 31 December 2017, Iluka had the following hedging in place:

		2018	2019	2020	2021	2022
<b>Forwards</b>						
Forward rate	AUD:USD	0.80	-	-	-	-
Forward volume	US\$m	95.0	-	-	-	-
<b>Collars</b>						
Bought call options						
- Call strike price	AUD:USD	0.80	0.805	0.80	0.80	0.80
- Call volume	US\$m	24.0	117.8	63.1	32.4	33.6
Sold put options						
- Put strike price	AUD:USD	0.700	0.700	0.700	0.700	0.700
- Put volume	US\$m	24.0	117.8	63.1	32.4	33.6

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## GROUP MINERAL SANDS PRODUCTION

	Dec-16 Quarter	Sep-17 Quarter	Dec-17 Quarter	2016 Full Year	2017 Full Year	Dec-17 Qtr vs Sep 17 Qtr	2017 vs 2016 Full Year
	kt	kt	kt	kt	kt	%	%
<b>Zircon<sup>1</sup></b>							
Eucla/Perth Basin (SA/WA)	56.8	24.2	47.9	307.7	236.5	97.9	(23.1)
Murray Basin (VIC)	8.4	25.1	2.6	39.3	57.2	(89.6)	45.5
<b>Australia</b>	<b>65.2</b>	<b>49.3</b>	<b>50.5</b>	<b>347.0</b>	<b>293.7</b>	<b>2.4</b>	<b>(15.4)</b>
<b>Sierra Leone</b>	<b>0.1</b>	<b>0.1</b>	<b>-</b>	<b>0.1</b>	<b>3.0</b>	<b>n/a</b>	<b>29.9</b>
<b>Virginia (USA)</b>	<b>-</b>	<b>-</b>	<b>8.7</b>	<b>-</b>	<b>15.6</b>	<b>n/a</b>	<b>n/a</b>
<b>Total Zircon production</b>	<b>65.3</b>	<b>49.4</b>	<b>59.2</b>	<b>347.1</b>	<b>312.3</b>	<b>19.8</b>	<b>(10.0)</b>
<b>Rutile</b>							
Eucla/Perth Basin (SA/WA)	10.6	4.3	11.0	46.5	41.8	115.8	(10.1)
Murray Basin (VIC)	12.5	44.5	3.9	62.3	92.7	(91.2)	48.8
<b>Australia</b>	<b>23.1</b>	<b>48.8</b>	<b>14.9</b>	<b>108.8</b>	<b>134.5</b>	<b>(69.5)</b>	<b>23.6</b>
<b>Sierra Leone</b>	<b>8.8</b>	<b>47.2</b>	<b>41.4</b>	<b>8.8</b>	<b>167.6</b>	<b>(12.3)</b>	<b>n/a</b>
<b>Total Rutile production</b>	<b>31.9</b>	<b>96.0</b>	<b>56.3</b>	<b>117.6</b>	<b>302.1</b>	<b>(41.4)</b>	<b>156.9</b>
<b>Synthetic Rutile (WA)</b>	<b>52.0</b>	<b>58.1</b>	<b>53.1</b>	<b>210.9</b>	<b>210.8</b>	<b>(8.6)</b>	<b>(0.0)</b>
<b>TOTAL Z/R/SR PRODUCTION</b>	<b>149.2</b>	<b>203.5</b>	<b>168.6</b>	<b>675.6</b>	<b>825.2</b>	<b>(17.1)</b>	<b>22.1</b>
<b>Ilmenite</b>							
Eucla/Perth Basin (SA/WA)	57.5	51.8	73.0	288.4	271.1	40.9	(6.0)
Murray Basin (VIC)	7.6	21.9	42.3	37.8	119.4	93.2	215.9
<b>Australia</b>	<b>65.1</b>	<b>73.7</b>	<b>115.3</b>	<b>326.2</b>	<b>390.5</b>	<b>56.4</b>	<b>19.7</b>
<b>Sierra Leone</b>	<b>3.2</b>	<b>16.6</b>	<b>14.4</b>	<b>3.2</b>	<b>57.6</b>	<b>(13.3)</b>	<b>n/a</b>
<b>Total Ilmenite</b>	<b>68.3</b>	<b>90.3</b>	<b>129.7</b>	<b>329.4</b>	<b>448.1</b>	<b>43.6</b>	<b>36.0</b>
<b>TOTAL MINERAL SANDS PRODUCTION</b>	<b>217.5</b>	<b>293.8</b>	<b>298.3</b>	<b>1,005.0</b>	<b>1,273.3</b>	<b>1.5</b>	<b>26.7</b>

<sup>1</sup> Iluka's zircon production figures include volumes of zircon processed under external arrangements.

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 at the Narngulu mineral separation plant, Western Australia and in Sierra Leone. Iluka also has a mineral separation plant at Hamilton, Murray Basin (idled October 2017) and Virginia, United States (now closed). Appendix 1 provides details of the physical flows from mining operations to mineral processing facilities.

### Production Commentary

Zircon/rutile/synthetic rutile (Z/R/SR) for the full year 2017 was 825 thousand tonnes, 22% higher than 2016, reflecting production from Sierra Rutile following Iluka's acquisition of the operation in December 2016. This result was slightly higher than full year guidance of 795 thousand tonnes of Z/R/SR, largely due to the operational efficiencies achieved at Sierra Rutile. December quarter Z/R/SR production was 169 thousand tonnes, down 17% from September quarter 2017, largely reflecting the cessation of operations at the Hamilton mineral separation plant. Rutile production was also lower in the quarter at Sierra Rutile, with details provided separately below.

Across Iluka's Australian operations, the Tutunup South mine continued to operate and supply ilmenite feedstock to the synthetic rutile kiln 2 at Capel, South-West Western Australia. Mining at Tutunup South is expected to be completed in the first quarter of 2018.

Operations at Jacinth-Ambrosia, South Australia, were restarted in December with a small amount of heavy mineral concentrate produced in the month. These operations were idled in April 2016 in response to market conditions, allowing a draw down of heavy mineral concentrate and finished product inventories.

As noted in the September Quarterly Review, Iluka's Hamilton mineral separation plant was idled as planned on 7 October. This follows the completion of processing of the heavy mineral concentrate (HMC) inventories held at Hamilton. Capacity at the Narngulu mineral separation plant in Geraldton, Western Australia, is considered sufficient for processing all expected Australian production going forward.

The Narngulu plant reopened in October following planned maintenance work in August and September. This work allowed further draw down of finished product inventories and is anticipated to reduce future maintenance outages.

The synthetic rutile kiln operation continued at full capacity in the quarter.

## SIERRA RUTILE OPERATIONS UPDATE

Full year rutile production was 168 thousand tonnes, a 13% improvement on the operation's 2016 total production (Iluka acquired Sierra Rutile in December 2016) and 12% ahead of Iluka's original guidance provided in January 2017.

Fourth quarter rutile production was 41 thousand tonnes and reflected the following:

- mining of lower grade ore sections as expected per the mine plan;
- lower spiral plant feed due to lower ore treatment rates, resulting from higher oversize and clay content in the ore;
- continuation of higher ore grade associated with the Gangama dry mining operation;
- ongoing assessment of operational settings at wet concentrator and mineral separation plants, resulting in further improvements to recoveries of valuable heavy mineral and higher HMC grades and higher HMC recoveries; and
- continued maintenance investment at Lanti to sustain the dredge and floating wet concentrator operation for the full year in 2018.

### Sierra Rutile Key Operating Parameters

	Mar-17 Quarter	Jun-17 Quarter	Sept-17 Quarter	Dec-17 Quarter	2017 Full Year
	kt	kt	kt	kt	kt
<b>Mining and Concentrating</b>					
Spiral Plant Feed <sup>1</sup>	1,422	1,532	1,666	1,365	5,985
Heavy Mineral Concentrate (HMC) Produced	91	85	97	80	353
Valuable Heavy Mineral (VHM) in HMC Produced	55	61	80	60	256
<b>Final Product<sup>2</sup></b>					
Zircon <sup>3</sup>	2.1	0.8	0.1	-	3.0
Rutile	35.7	43.3	47.2	41.4	167.6
Ilmenite	11.6	15.0	16.6	14.4	57.6

1. Ore mined less oversize and slimes (clay)

2. Finished product includes reprocessed material from heavy mineral concentrate (HMC) initially processed in prior periods.

3. Zircon production will now be processed under external arrangements.

## Sierra Rutile Major Projects Update

### Project Overview

### Update

#### *Mobile mining unit*

The Lanti wet concentrator plant was commissioned in 2013 with a nameplate capacity of 500 tonnes per hour of ore (not yet achieved on a consistent basis). While the plant has been running closer to capacity in 2017, further improvement is expected.

A revised mining method involving a new mobile mining unit (comprising of an in-pit mineral sizer and ex-pit scrubber) is being implemented to debottleneck the ore feed process and reduce unit costs of production.

Construction was completed in December 2017 and commissioning has commenced. Full production through the current feed preparation system continues while commissioning of the sizer and scrubber is in process.

#### *Lanti dry and Gangama mine expansions*

As outlined previously, Iluka plans to double the capacity of both the Gangama and Lanti dry operations from 500-600 tonne per hour to 1,000-1,200 tonne per hour.

Capital expenditure for these expansions received Board approval in December and procurement activities are advancing as scheduled.

#### *Mineral separation plant upgrade*

Mineral separation plant equipment and general site upgrades are required to meet the additional capacity that will be generated by the planned mine expansions. The upgrade will also assist in improving safety, operational and metallurgical efficiencies.

Assessment of the upgrade options and scope is continuing. The first stage of upgrades is anticipated to commence in 2018.

#### *Sembehun dry mine*

The Sembehun group of deposits are situated 20 to 30 kilometres north-west of the existing Sierra Rutile operations. Iluka plans to develop a new 1,000-1,200 tonne per hour mine at these deposits.

The pre-feasibility engineering study is complete and environmental baseline studies continue as planned. Planning for definitive feasibility and early works has commenced. Early works including bridge and road construction to these deposits is expected to commence in 2018, subject to Board approval.

## PLANNED NEW PRODUCTION

### Cataby, Western Australia

Cataby is a large, chloride ilmenite-rich deposit 150 kilometres north of Perth. The mine development was approved in December 2017 with ilmenite from the mine to underpin the continued production of synthetic rutile at Capel, South-West Western Australia. The approval follows completion of the definitive feasibility study in 2016 and securing offtake agreements for 85% of synthetic rutile production for a minimum of four years, negotiated over the course of 2017 to underpin returns from the project.

The estimated capital cost is \$250-275 million and construction is expected to take around 18 months. First production is planned for 2019 with the mine producing approximately 200 thousand tonnes of synthetic rutile (from ilmenite feedstock), 50 thousand tonnes of zircon and 30 thousand tonnes of rutile on average over an 8.5 year mine life. Access to additional ore reserve could extend the mine life for a further four years.

The mine is a conventional mineral sands development utilising dozer push and truck and excavator mining to feed two in-pit mining units. Iluka's Newman concentrator will be relocated to site from Eneabba with other mining equipment also being redeployed from Murray Basin, Victoria. An onsite Wet High Intensity Magnetic Separation (WHIMS) plant will separate the magnetic (ilmenite) and non-magnetic product streams (zircon and rutile). Ilmenite will be transported to Capel for synthetic rutile production and the non-magnetic stream to Iluka's Narngulu mineral separation plant in Geraldton for final processing. Associated infrastructure at the Cataby site includes upgrades to power facilities, camps and public roads.

In 2017, pre-execute activities included major environmental approvals, detailed engineering, establishment of an integrated project team, procurement of long lead items and the awarding of critical contracts for the camps, site power supply, and dewatering bores.

Following approval of the project in December 2017, contracts have been awarded for the bulk earthworks, high voltage power distribution, and the refurbishment of switchrooms. Tenders have also been called for the mining contract, the relocation of the wet concentrator plant and associated works. A construction site office has been established and site works have commenced for the camps, dewatering bores and power supply. All site works are progressing on schedule.

### Balranald, Murray Basin, New South Wales

Balranald and Nepean are two rutile-rich mineral sands deposits in the northern Murray Basin, New South Wales.

Work on the unconventional mining development at Balranald will continue in 2018. Work on testing an improved mining head to assess suitability has been successfully completed. Planning for a final field trial in 2018 is underway.

### Puttalam (PQ), Sri Lanka

The potential for the development of the mineral sands deposit known as the Puttalam Quarry (PQ) is currently being assessed. The PQ deposit is a large sulphate ilmenite deposit, located approximately 30 kilometres north of the town of Puttalam in the North Western Province of Sri Lanka, approximately 170 kilometres from the capital Colombo. PQ project work is focussed on legal and investment terms for the development and includes securing surface access rights, ministerial and other governmental approvals for any subsequent mining licence, reaching agreement with the Sri Lanka Government regarding the extent of in-country upgrading and Iluka's ultimate percentage holding in subsequent mining operations.

A pre-feasibility study is being undertaken on a limited number of work packages relating to pre-mining or baseline conditions of the PQ deposit.

Refer Iluka's website ([www.iluka.com](http://www.iluka.com)) – Section: Company Overview, Projects, for more detail on these projects.



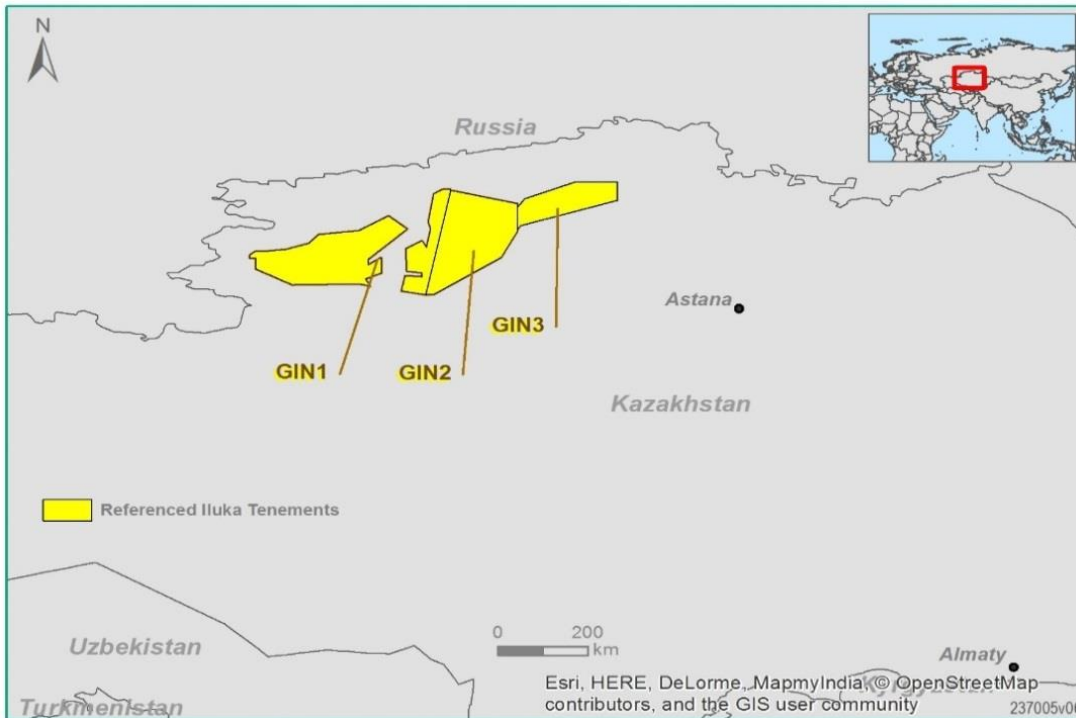
## EXPLORATION

Expenditure on exploration and evaluation charged to the profit and loss account for the full year was \$13 million (of which \$4 million was spent in the fourth quarter), compared with \$24 million for the full year 2016.

### Kazakhstan

The regional air-core drill program for 2017 was completed largely as planned on GIN1<sup>1</sup>, GIN2 and GIN3 with 33 holes completed over 1,068 metres in the quarter. At the completion of the annual field work programme, a total of 307 holes over 9,109 meters were drilled. The targeted marine sand geological formation is widely present, at various depths, across the project area. A total of 1,389 samples were shipped for laboratory analysis in Australia. Once the assay results are received a full technical assessment will follow in February 2018.

Figure 2 Northern Kazakhstan

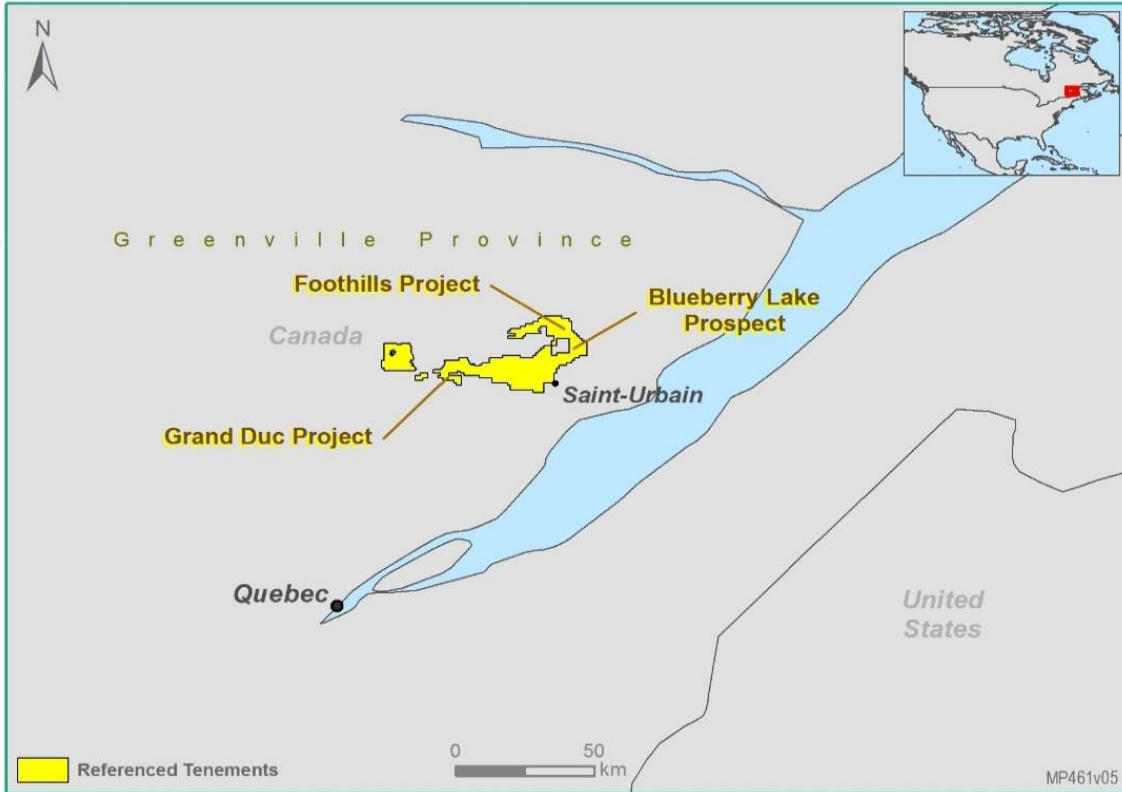


### Canada

Iluka continued to fund field based exploration for high-grade rutile/ilmenite deposits in the Foothills and Grand Duc Project areas of Quebec. Field teams completed a ground gravity survey and four stratigraphic diamond drill holes before the onset of winter. Diamond drilling tested coincident gravity-magnetic targets prioritised by earlier surveys with one hole intersecting semi-massive ilmenite in anorthosite at the Blueberry Lake Prospect in the Foothills area.

<sup>1</sup> In Kazakhstan, a GIN is a geological investigation licence. Iluka has the exclusive rights (in conjunction with Kazgeology) to explore for titanium minerals, zircon and tin within these licences

Figure 3 Grand Duc & Foothills Projects, Quebec, Canada



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**APPENDIX 1 - OPERATING MINES – PHYSICAL DATA**  
**12 Months to 31 December 2017**

	Jacinth-Ambrosia	Murray Basin	Western Australia	Australia Total	Virginia	Sierra Leone	Group Total 2017	Group Total 2016
<b>Mining</b>								
Overburden Moved kbcm	816	-	210	1,026	-	11	<b>1,037</b>	819
Ore Mined kt	620	-	1,635	2,255	-	11,126	<b>13,381</b>	4,894
Ore Grade HM %	4.6	-	12.0	10.0	-		<b>n/a</b>	n/a
VHM Grade %	4.1	-	11.7	9.6	-		<b>n/a</b>	n/a
<b>Concentrating</b>								
HMC Produced kt	11	-	248	259	-	353	<b>612</b>	395
VHM Produced kt	10	-	219	229	-	256	<b>485</b>	335
VHM in HMC Assemblage %	90.7	-	88.0	88.1	-	72.6	<b>79.2</b>	84.8
Zircon	65.9	-	15.7	17.9	-	3.6	<b>9.7</b>	29.5
Rutile	6.1	-	5.6	5.6	-	50.3	<b>31.4</b>	7.9
Ilmenite	18.7	-	66.7	64.6	-	18.6	<b>38.1</b>	47.4
HMC Processed kt	437	225	270	932	-	348	<b>1,280</b>	967
<b>Finished Product<sup>1</sup> kt</b>								
Zircon	213.5	57.2	23.0	293.7	15.6	3.0	<b>312.3</b>	347.1
Rutile	34.7	92.7	7.1	134.5	-	167.6	<b>302.1</b>	117.6
Ilmenite (saleable/upgradeable/WHIMS)	117.6	119.4	153.5	390.5	-	57.6	<b>448.1</b>	329.4
Synthetic rutile produced kt			210.8	210.8		-	<b>210.8</b>	210.9

**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 one of the company's two Australian mineral processing plants, or the Virginia 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.

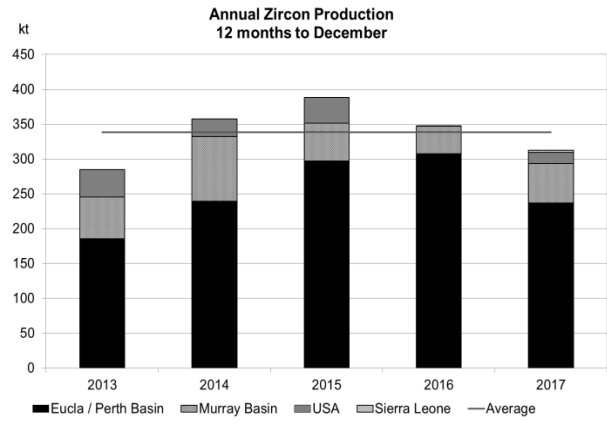
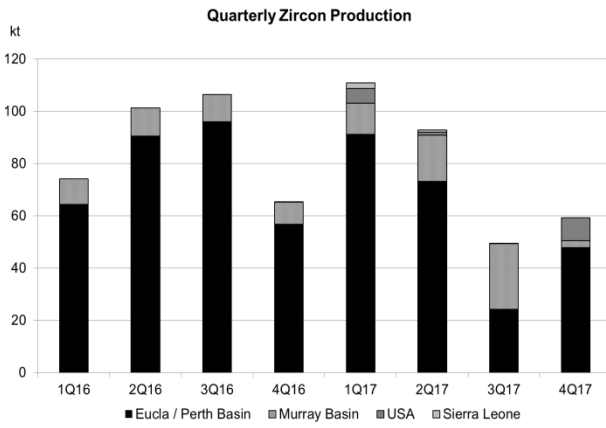
Typically, 1 tonne of upgradeable ilmenite will produce between 0.56 to 0.60 tonnes of SR. Iluka also purchases external ilmenite for its synthetic rutile production process.

Refer Iluka's website [www.iluka.com](http://www.iluka.com) – Mineral Sands Technical Information for more detailed information on the mineral sands mining and production process.

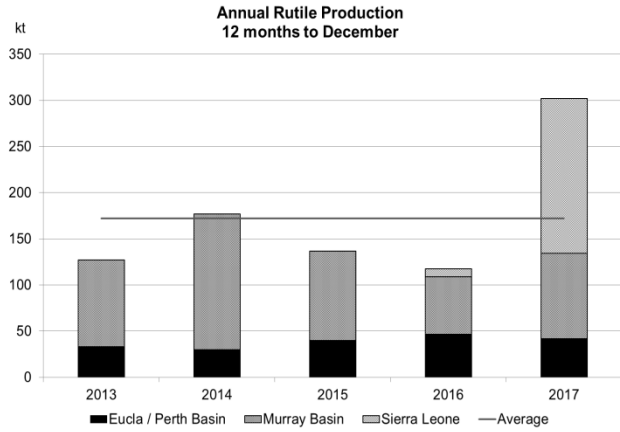
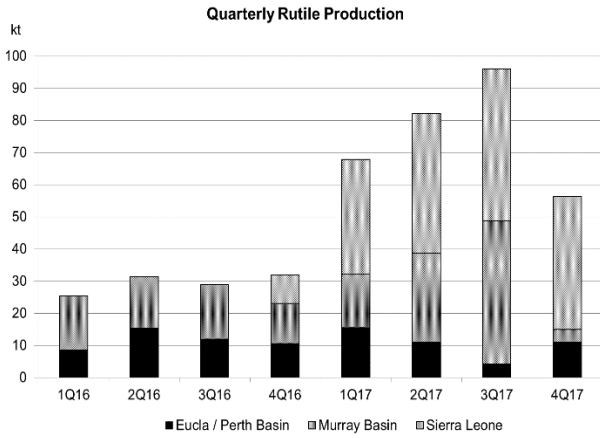
<sup>1</sup> Finished product includes material from heavy mineral concentrate (HMC) initially processed in prior periods.

## APPENDIX 2 – PRODUCTION SUMMARIES

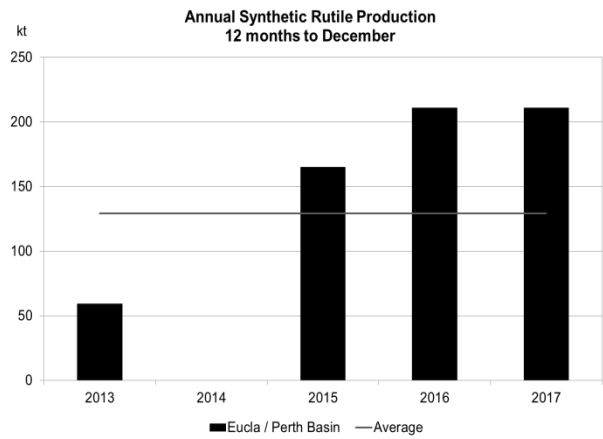
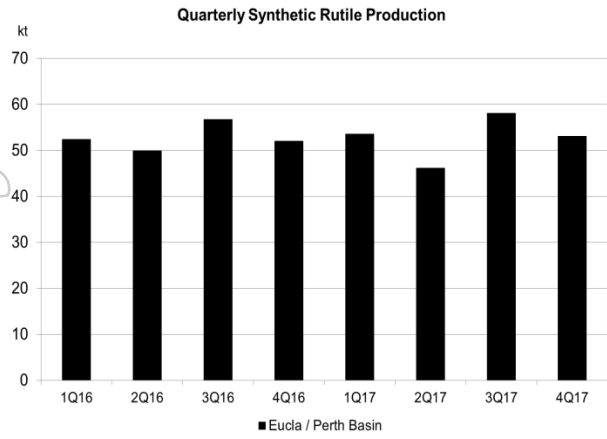
### Zircon



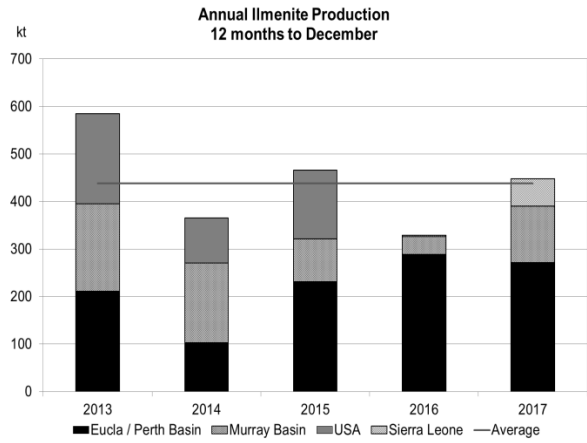
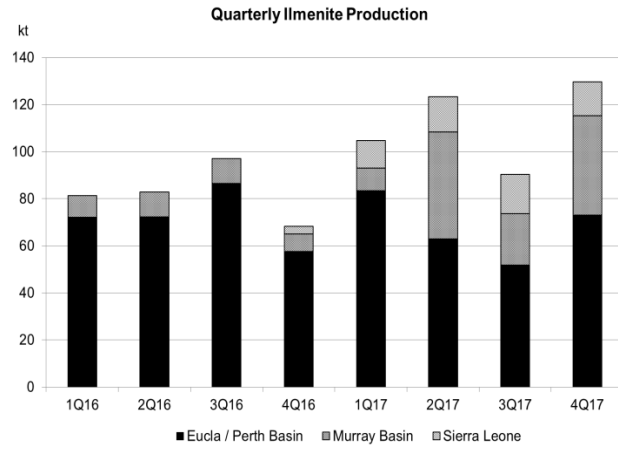
### Rutile



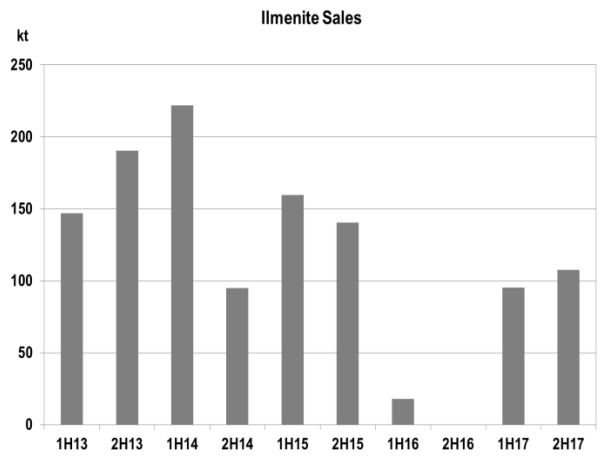
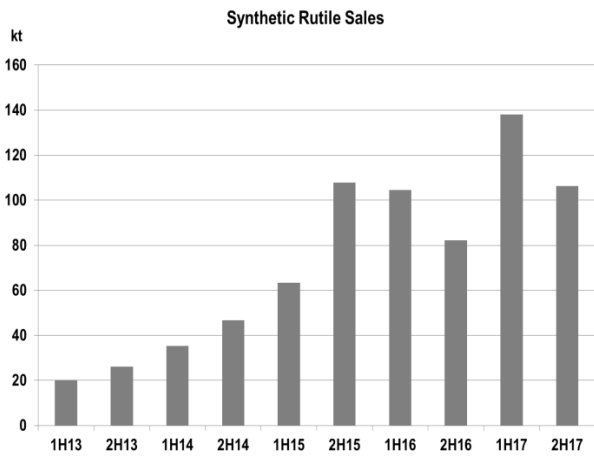
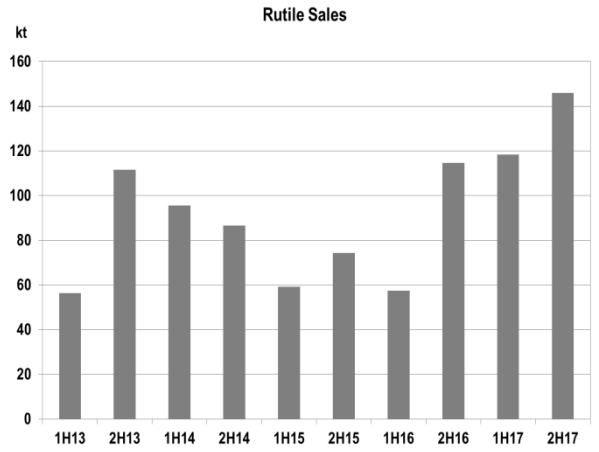
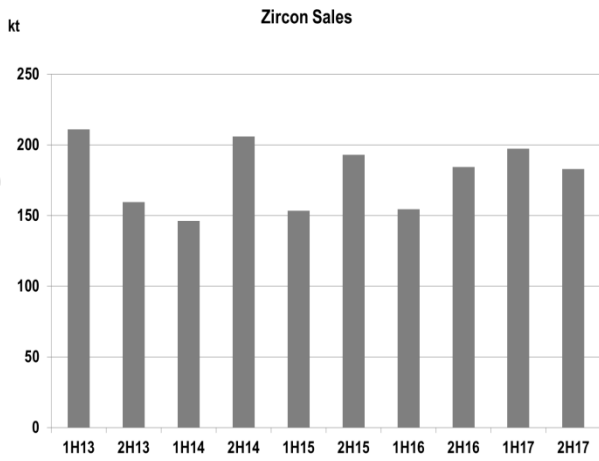
## Synthetic Rutile



## Ilmenite

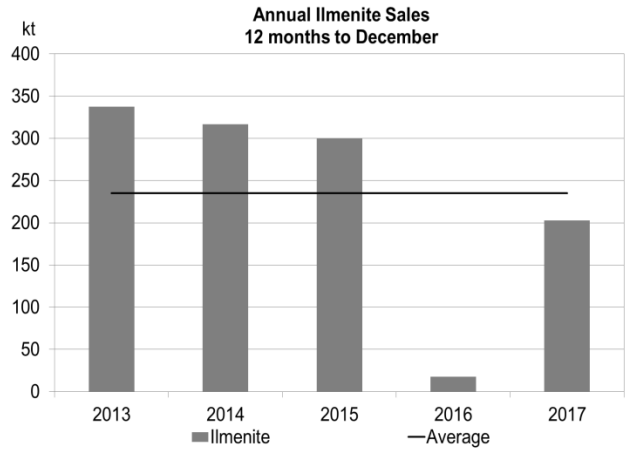
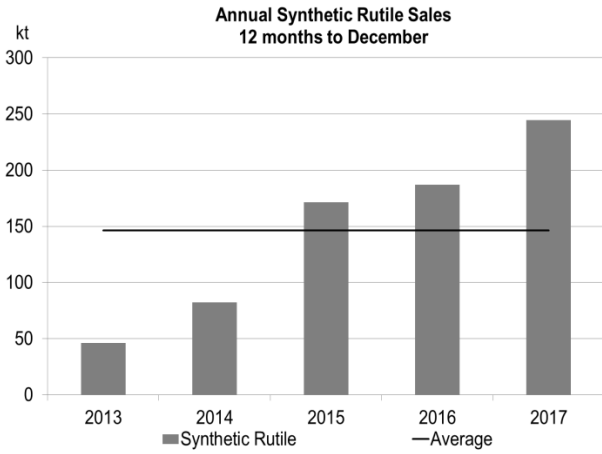
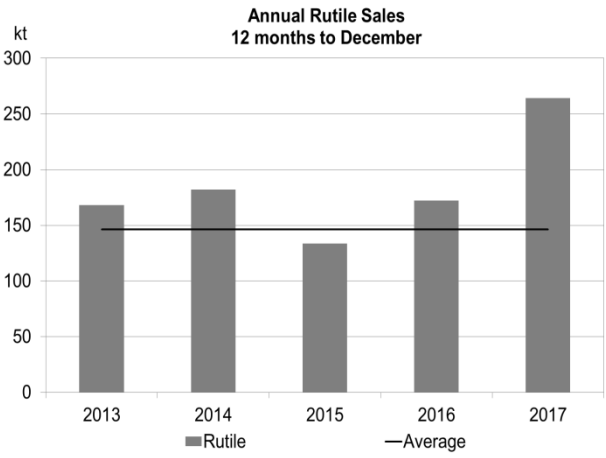
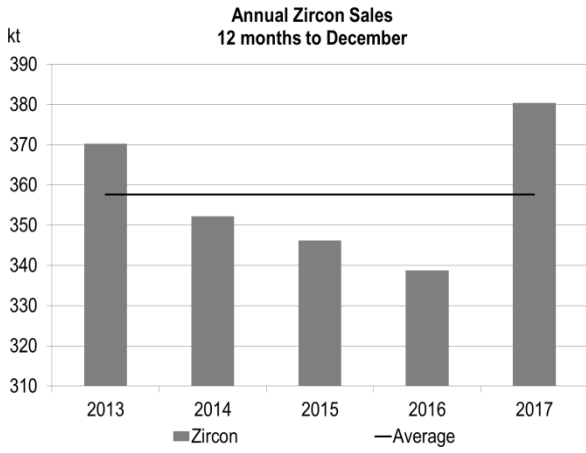


**APPENDIX 3 – HALF YEARLY SALES SUMMARIES**



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**APPENDIX 4 – ANNUAL SALES SUMMARIES**



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