

Quarterly Activities Report – March 2019

Highlights

- Toliara Project PFS released, confirming the Company's view that the Toliara Project is a world class mineral sands project.
- Transition of mining to the South Dune is on schedule for June 2019.
- Strengthening of rutile and ilmenite prices while zircon prices moderate.
- Production guidance for FY20 released.
- No lost time or medical treatment injuries.
- Drilling commences within the Vanga prospecting licence in Kenya.
- Toliara Project DFS commences, due for completion in the December 2019 quarter.

African mineral sands producer, **Base Resources Limited** (ASX & AIM: BSE) (**Base Resources** or the **Company**) is pleased to provide a quarterly operational, development and corporate update.

Kwale Mineral Sands Operations (**Kwale Operations**) in Kenya continued to focus on maximising mineral recoveries under a high tonnage, low grade regime, together with progressing preparations for relocating mining operations to the South Dune orebody in June 2019. In pursuit of further mine life extension, drilling of the Vanga exploration license also commenced on 1 April 2019.

Base Resources released the pre-feasibility study (**PFS**) for its Toliara mineral sands project (**Toliara Project**) in the south-west of Madagascar, which confirmed the Company's view that the Toliara Project is a world class mineral sands project¹. The Toliara Project continued to progress with all workstreams on schedule to complete the definitive feasibility study (**DFS**) in the December 2019 quarter.

KWALE OPERATIONS

Production & Sales	Mar 2018	June 2018	018 Sept 2018	Dec 2018	Mar 2019	
Troduction & Sales	Quarter	Quarter	Quarter	Quarter	Quarter	
Production (tonnes)						
Ilmenite	111,630	114,773	118,265	108,465	87,179	
Rutile	21,634	24,451	25,125	24,505	20,171	
Zircon	9,166	9,286	9,683	8,252	6,943	
Zircon low grade ²	-	-	-	-	172	
Sales (tonnes)						
Ilmenite	140,665	107,170	107,632	106,788	81,339	
Rutile	25,526	25,635	23,580	24,008	14,593	
Zircon	9,884	9,007	8,507	8,063	7,260	
Zircon low grade ²	-	-	-	-	115	

Mining continued in the Central Dune orebody with mined ore grades lower than previous quarters, as expected. All mining is located on the western and southern fringes of the orebody ahead of planned completion of Central Dune mining in the June 2019 quarter. Mined volumes were adjusted for the lower ore densities associated with mining the fringes of the Central Dune orebody resulting in lower reported mined tonnes of 4.35Mt compared to the previous quarter. In addition, lower water pressure associated with mining

² Reported as tonnes of zircon contained in concentrate, equivalent to approximately 70-80% of the value of primary zircon.



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¹ For further information about the Toliara Project PFS outcomes refer to Base Resources' market announcement on 21 March 2019 "Toliara Project PFS confirms

status as a world-class mineral sands development" available at https://www.baseresources.com.au/investor-centre/asx-releases/.

further away from the WCP is also impacting hydro mining throughputs which will be rectified during the June 2019 quarter when additional water pumping capacity will be brought on line.

Mining & WCP Performance	Mar 2018 Quarter	June 2018 Quarter	Sept 2018 Quarter	Dec 2018 Quarter	Mar 2019 Quarter
Ore mined (tonnes)	1,883,159	3,543,430	4,791,969	5,036,211	4,349,984
HM %	6.88	6.36	4.78	3.60	3.59
HMC produced (tonnes)	125,298	192,559	199,079	148,937	154,001

Wet concentrator plant (**WCP**) production of heavy mineral concentrate (**HMC**) increased to 154kt (last quarter: 149kt) as a result of improved recoveries. HMC stockpiles increased to 49kt (last quarter: 46kt) due to reduced MSP feed rates. With the Tailings Storage Facility (**TSF**) outer wall complete, all sand tails were deposited into the mined-out area of the Central Dune, representing the first stage of rehabilitation in this section. Rehabilitation of the TSF outer wall continued.

MSP Performance	Mar 2018 Quarter	June 2018 Quarter	Sept 2018 Quarter	Dec 2018 Quarter	Mar 2019 Quarter
MSP Feed (tonnes of HMC)	180,128	192,376	194,311	191,633	155,373
MSP feed rate (tph)	92	90	91	90	78
MSP recovery %					
Ilmenite	101	100	101	102	104
Rutile	99	101	99	99	102
Zircon	78	79	79	73	78

As previously announced, the MSP feed rate was reduced to 71tph from February to ensure sufficient HMC stocks are available to allow continuous feed to the MSP during the transition to the South Dune orebody. Consequently, production of all final products was reduced in the quarter:

- Rutile production fell to 20.2kt (last quarter: 24.5kt) and recoveries were 102% (last quarter: 99%).
- Ilmenite production fell to 87.2kt (last quarter: 108.5kt) and recoveries were 104% (last quarter: 102%).
- Zircon production fell to 6.9kt (last quarter: 8.3kt) and recoveries (inclusive of low-grade zircon) were 78% (last quarter: 73%). Production of a low-grade zircon product commenced in February from a previously rejected MSP tailings stream with a contained 172t produced during the quarter.

Bulk loading operations at the Company's Likoni Port facility continued to run smoothly, dispatching more than 90kt of ilmenite and rutile during the quarter (last quarter: 126kt). Containerised shipments of rutile and zircon through the Mombasa Port proceeded to plan.

Summary of unit costs & Revenue per tonne (US\$)	Mar 2018 Quarter	June 2018 Quarter	Sept 2018 Quarter	Dec 2018 Quarter	Mar 2019 Quarter
Unit operating costs per tonne produced	\$98	\$102	\$103	\$115	\$138
Unit cost of goods sold per tonne sold	\$114	\$143	\$124	\$146	\$151
Unit revenue per tonne of product sold	\$314	\$376	\$354	\$377	\$368
Revenue: Cost of goods sold ratio	2.8	2.6	2.8	2.6	2.4

Total operating costs were marginally lower than the previous quarter due to lower mining and production volumes, but the lower production resulted in a higher unit operating cost of US\$138 per tonne produced (rutile, ilmenite and zircon) (last quarter: US\$115 per tonne). Unit operating costs are higher than the same period last year (March 2018 quarter: US\$98 per tonne) due to higher operating costs associated with a 131% increase in mining and WCP volumes following implementation of the Kwale Phase 2 mine optimisation project.

Unit cost of goods sold is influenced by both the underlying operating costs and product sales mix. Operating costs are allocated to each product based on revenue contribution, which sees the higher value rutile and zircon products attracting a higher cost per tonne



than the lower value ilmenite. Therefore, the greater the sales volume of rutile and zircon relative to ilmenite in a quarter, the higher both unit revenue per tonne and unit cost of goods sold will be.

Ilmenite and the majority of rutile is sold in bulk, with typical shipment sizes of 50-54kt for ilmenite and 10-12kt for rutile, which means any given quarter will usually contain either one or two rutile and ilmenite sales. Zircon is sold in smaller parcels and sales generally align with production volume. Product sales mix will therefore vary depending on the number of bulk shipments of ilmenite and rutile in each quarter.

Cost of goods sold of US\$151 per tonne sold (operating costs, adjusted for stockpile movements, and royalties) was higher (last quarter: US\$146) due to higher unit operating costs, offset in part by the product sales mix containing a lower proportion of rutile and zircon than the prior quarter.

The lower proportion of zircon and rutile sold in the quarter contributed to the fall in average revenue per tonne decreasing to US\$368 per tonne (last quarter: US\$377 per tonne).

Mining transition to the South Dune orebody

The transition of mining to the South Dune orebody in June 2019 remains on schedule and will result in a two-week shutdown of the WCP that month followed by a two-week ramp up on restart. The transition primarily involves the supply and installation of 7,400m of slurry and water piping, an 8,500m 11kV power line, a pipe bridge across the Mukurumudzi Dam spillway, a 1.25MW slurry booster pump and a 1MW process water booster pump. Engineering and procurement work is complete and construction, clearing and earthworks were largely complete by the end of the quarter. The total cost of works for the transition are forecast to be US\$12.3 million and will be incurred over financial year 2019 (**FY19**). Total expenditure on the transition to the South Dune orebody to date is US\$10.1 million (last quarter: US\$5.1 million).

Production Guidance	FY19 Guidance Range (tonnes)	FY20 Guidance Range (tonnes)	
Rutile	88,000 to 94,000	64,000 to 70,000	
Ilmenite	385,000 to 415,000	315,000 to 350,000	
Zircon	31,000 to 34,000	25,000 to 28,000	

The Company released production guidance on 10 April 2019 for FY20³. The FY20 production guidance is lower than that for FY19 as a consequence of the lower HM grade of the South Dune orebody, depletion of stockpiled HMC during the transition of mining operations to the South Dune orebody and normal uncertainties associated with mining a new orebody.

FY19 production guidance shown above was not changed, although some of the underlying assumptions were updated to reflect actual production to 31 March 2019 and forecast remaining production over FY19. FY20 production guidance is consistent with internal assumptions underpinning forecast Kwale Operations cash flows for the purposes of the Company's Toliara Project pre-feasibility study when assessing project funding requirements⁴.

The above production guidance is based on the following assumptions:

- Mining of 18.0Mt in FY20 (FY19 guidance 17.8Mt) at an average HM grade of 3.58% (FY19 guidance 3.87%), with the remaining FY19 volume and all FY20 volume coming from Ore Reserves⁵.
- MSP feed rate at an average of 75tph in FY20, lower than FY19 guidance of 84tph due to the lower HMC production and depleted HMC stocks.
- MSP product recoveries of 100% for ilmenite in FY20 (FY19 guidance 102%), 99% for rutile in FY20 (FY19 guidance 99%) and 77% for zircon in FY20 (FY19 guidance 76%).

⁵. The Ore Reserves estimates underpinning the above production targets were prepared by Competent Persons in accordance with the JORC Code (2012 edition). The above production targets are the result of detailed studies based on the actual performance of the Kwale mine and processing plant. These studies include the assessment of mining, metallurgical, ore processing, environmental and economic factors.



³ For further information refer to Base Resources" market announcement on 10 April 2019 "Production Guidance for FY20" available at https://www.baseresources.com.au/investor-centre/asx-releases/.

⁴. For further detailed information on the Toliara Project Pre-Feasibility Study, refer to Base Resources' market announcements of 21 March 2019 "Toliara PFS confirms a world-class mineral sands development" available at https://www.baseresources.com.au/investor-centre/asx-releases/.

MARKETING

Constraints on the global supply of sulphate ilmenite and high-grade chloride feedstocks (including rutile) have continued into the quarter. In particular, supply of ilmenite from two of the major ilmenite producing countries, India and Vietnam, has declined sharply. In India, a recent blanket ban on private mining of mineral sands by the national government has added to existing bans on mining and exports by state governments in the major producing states of Tamil Nadu and Andrah Pradesh. In Vietnam, export quotas for ilmenite need to be renewed for some producers and the relatively high cost of production, together with the uncertainty of obtaining future export quotas, is restricting mining activity.

Chinese pigment experienced a strong increase in demand following Chinese New Year and pigment producers were able to secure price increases for their pigment through the quarter. The improved conditions have resulted in increased pigment production activity which has maintained a high demand for ilmenite. These conditions have continued into the start of the seasonally strong June quarter.

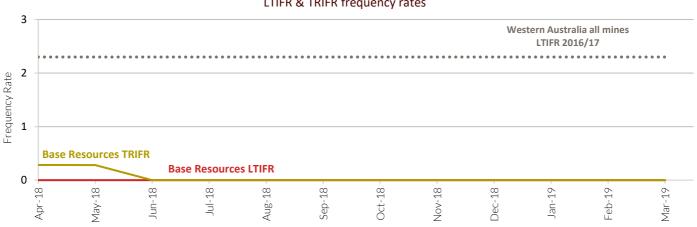
The emerging ilmenite deficit being created by strong demand and supply restrictions has resulted in a strengthening ilmenite price through the end of the quarter and into the June quarter. Demand for Base Resources ilmenite from existing customers exceeded the Company's ability to supply and there has been a significant increase in enquiries from new customers globally.

Some western pigment producers have reported that the pigment de-stocking from their customers, which took place through the latter part of calendar 2018, continued into the early part of calendar 2019, but the rate of such de-stocking has slowed. The consensus is that this de-stocking will be completed during the June quarter with pigment demand expected to bounce back by the middle of calendar 2019. Chloride ilmenite pigment production remains strong and the constraints on high grade feedstock supply has continued to support price improvement for rutile. Rutile prices continued to strengthen in the quarter and further improvement is expected in coming quarters.

Zircon demand continued to moderate through the seasonally slow March quarter as a result of global trade tensions and softer economic conditions across most markets. After a period of significant gains, zircon prices stabilised through the December and March quarters but retreated slightly in the early part of the June quarter. The extent of a rebound in zircon demand during the seasonally strong June quarter will largely depend on the general economic performance in China and other major zircon markets.

SAFETY

With no lost time or medical treatment injuries occurring during the quarter, or in the past year, Kwale Operations' lost time injury frequency rate (LTIFR) and total recordable injury frequency rate (TRIFR) are both zero. No injuries were recorded in the quarter for the Toliara Project and the total number of injuries of any type since project commencement remains at zero. This is an exceptional performance reflective of the ongoing focus and importance placed on safety by management. Base Resources' employees and contractors have now worked 15.9 million man-hours LTI free, with the last LTI recorded in early 2014. Further, 6.2 million man-hours have been worked without a medical treatment injury.



LTIFR & TRIFR frequency rates

COMMUNITY AND ENVIRONMENT

Agricultural livelihood programs at Kwale, run in conjunction with partners Business for Development, DEG, FMO, Australia's DFAT, Kenya Red Cross and the Cooperative Bank of Kenya, continue to develop with encouraging support from both national and county



Kenyan governments. These programs have expanded again this season with more smallholder farmers and community groups in Kwale, Mombasa and Lamu counties.

Preparations for the next planting season are underway to ensure that everything is ready for the commencement of rains in late-April. Capacity has been established at the PAVI Co-operative Business Park to enable preparation of poultry feeds produced from this year's harvest. This aspect, together with support for the purchase of the cotton harvest through funding mechanisms from the Co-operative Bank of Kenya, is vital to the multi-faceted livelihood improvement approach being implemented. The PAVI Co-operative has also been bolstered with increased marketing capacity to assist with sales of agricultural produce, poultry and honey which continues to grow in popularity and positive income generating outcomes.

Rehabilitation of the tailings storage facility outer sand wall continues with installation of erosion controls and laying top soil in preparation for the upcoming rains. Local women's and youth groups have proven to be strong partners in the rehabilitation program, supplying grass seed and manufacturing erosion control materials and training to undertake seeding and specialised grass planting for when the rains begin.

At the Toliara Project, three community water supply boreholes have been drilled with construction of tank stands and installation of solar pumping equipment to be completed in the June quarter. Land planning in conjunction with local communities and regional authorities has commenced in relation to construction of school and health facilities in three project-affected communes. Several local improvement projects continue in each of the five affected local communes including flood protection, irrigation channels and preparations for the upcoming planting season. Environmental baseline work in and around the planned mine site commenced with ecological studies and water monitoring.

BUSINESS DEVELOPMENT

Toliara Project development - Madagascar

Base Resources completed the PFS and released the outcomes in the quarter. The PFS confirms the Company's view that the Toliara Project is a world class mineral sands project, with estimated⁶:

- post-tax/pre-debt (real) NPV10 of US\$671 million;
- a sector leading average revenue to cost ratio of 3.06 over the 33-year initial mine life; and
- Stage 1 CAPEX of US\$439 million.

The DFS commenced in the quarter and is on target for completion by the end of 2019, ahead of a planned decision to proceed to construction in the March 2020 quarter. If a decision to proceed is approved at that time, the project timetable is still expected to have the Toliara Project in production by the end of the December 2021 quarter.

Key activities during the quarter included:

- Completion of the PFS and commencement of the DFS.
- Continuation of the mineral separation plant test work and flowsheet verification, using the heavy mineral concentrate produced by the wet concentrator plant test work.
- Progressing processing plant, camp and infrastructure design.
- Completion of recruitment and pre-screening of local staff for early capacity building and training.
- Progressing baseline studies in accordance with environmental approvals.
- Progressing the land acquisition process and completion of the final list of beneficiaries for road and port facility land acquisition.

Continuing the DFS activities will be the focus in the coming quarter, including:

⁶ For further information about the Toliara Project PFS outcomes refer to Base Resources' market announcement on 21 March 2019 "Toliara Project PFS confirms status as a world-class mineral sands development" available at https://www.baseresources.com.au/investor-centre/asx-releases/. This announcement contains details of the material assumptions underpinning this forecast financial and production information, including material assumptions with respect to forecast production profile, product pricing, capital expenditure and operating costs. The Company confirms that all material assumptions underpinning the forecast financial and production information continue to apply and have not materially changed.



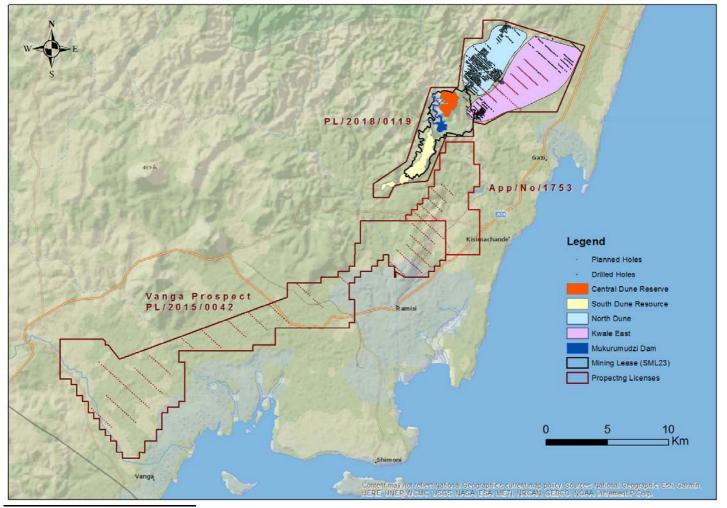
- Preparing the application for certification under the Large Mining Investment Code (LGIM).
- Continuing the drill program, targeting an increase in measured, indicated and inferred resources, completion of the Ranobe deposit mineralogy and an update to the Mineral Resources estimate.
- Generating an Ore Reserve estimate for DFS financial modelling based on the Ranobe Deposit Mineral Resource estimate⁷.
- Producing rutile and zircon market samples.
- Continuing baseline studies and land acquisition programs.
- Continuing training of local staff ahead of planned construction.
- Conducting geotechnical investigations and continuing infrastructure design.
- Progressing the detailed design and tendering for the camp facilities, ahead of early works construction expected to start in the second half of 2019.
- Shortlisting EPC contractors for the marine facility and issuing the request for tender.
- Shortlisting independent power producers and issuing the request for tender for the planned hybrid power plant.

Total expenditure on the Toliara Project for the quarter was US\$5.0 million (last quarter: US\$3.8 million).

Extensional exploration - Kenya

Mining tenure arrangements continue to progress with the Kenyan Ministry of Petroleum and Mining as a precursor to an anticipated updated Ore Reserve based on the expanded 2017 Kwale South Dune Mineral Resource as announced on 4th October 2017⁸.

A Mineral Resource estimate for the Kwale North Dune deposit is expected to be issued shortly.



⁷ For further information refer to Base Resources market announcement on 23 January 2019 "Updated Ranobe Deposit Mineral Resources (corrected)" available at https://www.baseresources.com.au/investor-centre/asx-releases/.

⁸ Refer to Base Resources market announcement "Mineral Resource Increase for Kwale South Dune" released on 4 October 2017, which is available at <u>http://www.baseresources.com.au/investor-centre/asx-releases.</u>



Completion of the remaining drilling program (4,200 metres) in the North-East Sector (Kwale East) of PL 2018/0119 remains suspended pending resolution of community access issues. Drill assay results to date have shown potential for some limited extensional economic resource close to the Central Dune (Bumamani), but this remains subject to more detailed evaluation.

Drilling commenced in the Company's Vanga Prospecting Licence (**PL/2015/0042**) on 1 April 2019. Community engagement in the area is ongoing and a north eastern extension of the Prospecting Licence (**App No/1753**) has been applied for to cover further prospective ground which has since become available. Expenditure on exploration activities in Kenya during the quarter was US\$0.2 million (last quarter: US\$0.4 million).

CORPORATE

Kenyan VAT receivable

As previously announced, Base Resources has refund claims for VAT paid in Kenya, relating to both construction of the Kwale Project and the period since operations commenced, totalling approximately US\$26.3 million at 31 March 2019. These claims are proceeding through the Kenya Revenue Authority process, although no refunds were received during the quarter (last quarter: nil). Base Resources is continuing to engage with the Kenyan Treasury and the Kenya Revenue Authority, seeking to expedite the refunds.

March 2019 quarterly cash flow

The increase in net cash of US\$800k in the March quarter was a product of the following:

- Group operational cashflow of US\$16.0 million.
- Less refundable Kenyan VAT paid of US\$2.0 million.
- Less total capital expenditure of US\$13.2 million.

In summary, at 31 March 2019:

- Net cash of US\$1.8 million, consisting of:
 - o Cash and cash equivalents of US\$31.8 million.
 - o Revolving Credit Facility debt of US\$30.0 million.
- 1,166,623,040 fully paid ordinary shares on issue.
- 48,586,062 performance rights issued pursuant to the terms of the Base Resources Long Term Incentive Plan.

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About Base Resources

Base Resources is an Australian based, African focused, mineral sands producer and developer with a track record of project delivery and operational performance. The Company operates the established Kwale Operations in Kenya and is developing the Toliara Project in Madagascar. Base Resources is an ASX and AIM listed company. Further details about Base Resources are available at <u>www.baseresources.com.au</u>.



Disclaimer and Important Notices

Information included in this report that relates to the outcomes of the Pre-Feasibility Study for the Toliara Project (i) is, by its nature, preliminary information and conclusions presented should be viewed in this light, and (ii) represent the reasonable judgments of Base Resources within the time and budget context of preparation of the Pre-Feasibility Study using the information available at the time of its preparation.

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