

## Updated Kwale South Dune Mineral Resources and Ore Reserves estimates

### Key Points

- The South Dune Ore Reserves estimate has been updated to incorporate existing estimated Mineral Resources located within the proposed expanded Kwale Special Mining Lease 23, increasing ore by 19Mt and contained heavy mineral by 0.6Mt and taking Kwale mine life to December 2023 following such expansion.
- South Dune Mineral Resources and Ore Reserves estimates were reduced by mining depletion in the year to 30 June 2021.
- The combined effect is that:
  - estimated South Dune Mineral Resources have reduced by 22Mt containing 0.7Mt of in situ heavy mineral; and
  - estimated South Dune Ore Reserves remain the same at 40Mt of ore but contained heavy mineral has reduced by 0.1Mt.

African mineral sands producer, Base Resources Limited (ASX / AIM: BSE) (**Base Resources**) announces an update to the estimated Kwale South Dune Mineral Resources (**2021 Kwale South Dune Mineral Resources**) and Ore Reserves (**2021 Kwale South Dune Ore Reserves**) at its 100% owned and operated **Kwale Operations** in Kenya.

The 2021 Kwale South Dune Mineral Resources are estimated at 30 June 2021 to be 54 million tonnes (**Mt**) at an average heavy mineral (**HM**) grade of 3.2% for 1.7Mt of contained HM, at a 1% HM cut-off grade. The 2021 Kwale South Dune Mineral Resources estimate represents a decrease of 22Mt of material and 0.7Mt (or 26%) of contained HM compared with the previously announced Kwale South Dune Mineral Resources estimate as at 30 June 2020 due to mining depletion, inclusive of sterilisation of sub-economic low-grade material (see Figure 1).

**Table 1:** 2021 Kwale South Dune Mineral Resources and Ore Reserves estimates compared with the 2020 estimates.

Category	2021 as at 30 June 2021								2020 as at 30 June 2020							
	Tonnes (Mt)	HM (Mt)	HM (%)	SL (%)	OS (%)	HM Assemblage			Tonnes (Mt)	HM (Mt)	HM (%)	SL (%)	OS (%)	HM Assemblage		
						ILM (%)	RUT (%)	ZIR (%)						ILM (%)	RUT (%)	ZIR (%)
<b>Kwale South Dune Mineral Resources</b>																
Measured	38	1.2	3.3	24	1.0	59	14	5.6	55	1.8	3.2	24	1	58	14	6
Indicated	16	0.5	3.0	25	5.9	54	13	5.7	20	0.6	2.9	26	7	52	12	6
<b>Total</b>	<b>54</b>	<b>1.7</b>	<b>3.2</b>	<b>24</b>	<b>2.4</b>	<b>57</b>	<b>14</b>	<b>5.6</b>	<b>76</b>	<b>2.3</b>	<b>3.1</b>	<b>25</b>	<b>3</b>	<b>57</b>	<b>13</b>	<b>6</b>
<b>Kwale South Dune Ore Reserves</b>																
Proved	30	1.0	3.4	24	0.9	59	14	5.6	35	1.2	3.5	26	0.8	58	14	6
Probable	11	0.4	3.3	24	5.5	56	13	5.7	5	0.2	2.9	27	7	51	12	5
<b>Total</b>	<b>40</b>	<b>1.3</b>	<b>3.3</b>	<b>24</b>	<b>2.1</b>	<b>58</b>	<b>14</b>	<b>5.7</b>	<b>40</b>	<b>1.4</b>	<b>3.4</b>	<b>26</b>	<b>1.7</b>	<b>57</b>	<b>13</b>	<b>6</b>

Table subject to rounding differences, Mineral Resources estimated at a 1% HM cut-off grade and are inclusive of Kwale South Dune Ore Reserves.

The 2021 Kwale South Dune Ore Reserves are estimated at 30 June 2021 to be 40Mt at an average HM grade of 3.3% for 1.3Mt of contained HM. While ore tonnage did not change, the updated Ore Reserves estimate represents an overall decrease of 2% in contained HM tonnes from the previously reported 2020 Kwale South Dune Ore Reserves estimate due to:

- depletion due to mining of 19Mt of ore and 0.7Mt of contained HM, inclusive of unmined material caused by an elevated basement floor in some areas compared to that predicted in the underlying model; and
- an additional 19Mt of ore and 0.6Mt of contained HM being included as a result of incorporation of additional Kwale South Dune Mineral Resources located within the proposed expanded SML 23.

The effect of these changes is shown in plan view in Figure 2.

The 2020 Kwale South Dune Ore Reserves estimate was constrained within the current SML 23 boundary and did not include any additional estimated Mineral Resources within the much larger Prospecting licence 2018/0119 (**PL119**). Following the Cabinet Secretary for the Ministry of Petroleum and Mining's previously disclosed public statements that the proposed extension to SML 23 had been approved and the licence will be issued soon, the Company has greater certainty as to the timing for finalising the necessary mining tenure arrangements with the Kenyan Ministry of Petroleum and Mining. As a consequence, Base Resources has incorporated the portion of the Mineral Resources estimate within the proposed expanded SML 23 into the 2021 Kwale South Dune Ore Reserves estimate.

On the basis of the 2021 Kwale South Dune Ore Reserves estimate, following the expansion of SML 23, mining is scheduled to continue on the Kwale South Dune until December 2023.

The 2021 Kwale South Dune Mineral Resources and Ore Reserve estimates are reported in accordance with the JORC Code. Further information about both estimates is set out in the sections below and includes the information prescribed by the ASX Listing Rules. For both the 2021 Kwale South Dune Mineral Resources and Ore Reserve estimates, the information provided should be read in conjunction with the explanatory information provided for the purposes of Sections 1 to 3 of Table 1 of the JORC Code, included as Appendix 1 to this announcement. For the 2021 Kwale South Dune Ore Reserves estimate, the information provided should also be read in conjunction with the explanatory information provided for the purposes of Section 4 of Table 1 of the JORC Code.

A glossary of key terms used in this announcement is contained on pages 35 to 36.

### Further information about the 2021 Kwale South Dune Mineral Resources estimate

Kwale Operations is located on SML 23, which lies within PL119. The Prospecting Licence has an area of 88.7 km<sup>2</sup> and is located approximately 50 kilometres south of Mombasa and approximately 10 kilometres inland from the Kenyan coast (see Figure 3).

The Kwale Project initially comprised three areas that contained concentrations of heavy minerals. They were the South Dune, Central Dune (now totally depleted by mining and currently the repository for sand tailings from the South Dune) and the North Dune deposits, with the Bumamani deposit being discovered subsequently (see Figure 4).

The project was initially owned by Tiomin Resources Inc. (**Tiomin**) which conducted drilling in 1997 and then by Base Titanium Limited (a wholly owned subsidiary of Base Resources) (**Base Titanium**) which purchased the project late in 2010 and commenced confirmatory drilling of the Central, South and North Dune deposits.

Mineral Resources estimation work previously carried out on the Kwale deposits is as follows:

- 2006 by Tiomin;
- 2010 by Base Resources via a consulting company, Creative Mined Pty Ltd, and under the direction of Base Resources Competent Person, Scott Carruthers;
- 2014 by GNJ Consulting, and under the direction of the Competent Person, Greg Jones;
- 2016 by Base Resources Competent Person, Scott Carruthers;
- 2017 by Base Resources Competent Person, Richard Stockwell; and
- 2020 by Base Resources Competent Person, Scott Carruthers.

The rocks of the area are of sedimentary origin and range in age from Upper Carboniferous to Recent. Three divisions are recognised: the Cainozoic rocks, the Upper Mesozoic rocks (not exposed on the area) and the Duruma Sandstone Series giving rise to the dominant topographical feature of the area: the Shimba Hills. The Shimba grits and Mazeras sandstone are of Upper Triassic age and form the Upper Duruma Sandstone.

The Margarini sands form a belt of low hills running parallel to the coast. They rest with slight unconformity on the Shimba grits and Mazeras sandstone. This formation was deposited during Pliocene times and consists of unconsolidated fluvial sediments derived from the Duruma Sandstone Series.

The Kwale deposits are an aeolian subset of the Margarini sands and are generally poorly stratified and contain a fraction of silt/clay of around 25 per cent. Heavy minerals, mainly ilmenite, rutile and zircon, are locally concentrated and are abundant in some places, giving rise to deposits such as the Central, South and North Dunes.

The geological interpretations for each deposit considered the data in the drill logs, HM assay results, microscopic logging of HM sinks, detailed mineralogy, knowledge gained from mining the Central Dune deposit and the results of pilot plant-scale test work conducted on trial mining pits at the South Dune deposit. Two mineralised geological domains were identified at the South Dune deposit. These were used and honoured during the geological modelling. Mining of the South Dune deposit commenced in June 2019 and this has not altered the geological interpretation.

The right to mine the Kwale South Dune deposit was granted to the previous owner of Kwale Operations by the Government of Kenya under SML 23 on 6 July 2004. SML 23 was assigned to Base Titanium (a wholly owned subsidiary of Base Resources) in July 2010, with consent from the Commissioner of Mines and Geology of the Government of Kenya.

SML 23 has a term of 21 years from 6 July 2004 and provides the right to carry out mining operations for the production of ilmenite, rutile and zircon. Prior to expiry of SML 23, Base Titanium may apply for a new mining lease on a priority basis pursuant to the Mining Act 2016. The original prospecting licence, SPL173, which was granted under the previous Mining Act, was replaced by PL119, which was granted on 26 May 2018 under the 2016 Mining Act, for a three-year term. A renewal application for a further three-year term was lodged in February 2021 and is awaiting approval.

The environment and land use in Kwale County is defined as humid and intensive subsistence agriculture/mixed farming/forestry. The approximate population of Kwale County is 860,000.

Tiomin conducted drilling in 1997 at Kwale using an open-hole, rotary mud drilling technique. Subsequent resource drilling by Base Titanium was completed using the reverse circulation air core (RCAC) method. Aircore drilling has been conducted in three campaigns: October to November 2010, January to February 2013 and November 2016 to March 2017 (see Figure 5). Drilling within SML 23 comprises predominantly pre 2016 holes at, generally, 100 x 100 metre spacing. Drilling from 2016 onwards is at 100 x 50 metre spacing.

Predominantly 3m sample intervals in previous RCAC drilling was replaced by sampling at 1.5m intervals from November 2016 to provide greater control on geological boundaries. Sample size averaged close to 3kg at this sample interval when collecting 25% of the rotary splitter cycle. Samples were dried, weighed, and screened for material less than 45µm (slimes) and +1mm (oversize).

Approximately 100 grams of the screened sample was subjected to a HM float/sink technique using the heavy liquid, Lithium polytungstate (LST with an SG of 2.85gcm<sup>-3</sup>). The resulting HM concentrate was dried and weighed as were the other separated constituent size fractions (the minus 45µm material being calculated by difference).

Mineral assemblage analyses were conducted by Base Titanium in order to characterise the mineralogical and chemical characteristics of specific mineral species and magnetic fractions. These mineral assemblage samples were subjected to magnetic separation using a Mineral Technologies, Reading, induced-roll magnetic separator, which captured magnetic (**mag**), middling (**mid**) and non-magnetic (**non-mag**) fractions. The mid and mag fractions were combined and, with the non-mag fraction, subjected to XRF analysis using a Bruker, S8 Tiger XRF. Data from the mag and non-mag XRF analyses were processed through Base's proprietary mineralogy system, Minmod, that ran approximately 100,000 iterations in assigning key chemical species to a calculated mineralogy determination.

Drill hole collar and geology data were captured by industry-specific, field logging software with on-board validation. Field and assay data were managed in an MS Access database and subsequently migrated to a more secure, SQL database. Population of the SQL database was completed in July 2017 and was the final stage of data validation for the 2021 Kwale South Dune Mineral Resource estimate.

Standard samples were generated and certified for use in the field and laboratory. Accuracy of HM and slimes (SL) analysis was verified by standards and monitored using control charts. Standard error greater than three standard deviations from the mean prompted batch re-assay. A standard precision analysis was conducted on the key assay fields: HM, SL and Oversize (OS) for both laboratory and field duplicate samples. Normal scatter and QQ plots were prepared for HM, SL and OS for laboratory and field duplicates.

A twin drilling program was introduced to quantify short-range variability in geological character and grade intersections. A water injection versus dry drilling assessment was included in the twin drilling analysis. Field and laboratory duplicate, standard and twin drilling analysis show adequate level of accuracy and precision to support resource classifications as stated. Analysis of the twin drilling, length of geological zones and grade distributions led to the decision to exclude the Tiomin data from the Mineral Resource estimate.

A topographic DTM was prepared by Base Resources in Geovia (Surpac) software format which was based on a LIDAR survey.

Construction of the geological grade model was based on coding model cells below open wireframe surfaces, comprising topography, geology (Ore Zones 1 & 4) and basement (see Figure 6). Model cell dimensions of 50m x 50m x 1.5m in the XYZ orientations was applied to the 2021 Kwale South Dune Mineral Resources estimate.

Interpolation was undertaken using various sized search ellipses to populate the model with primary grade fields (HM, SL, OS, and mineralogy), and index fields (hardness, Induration percent, Composite ID). Inverse distance weighting to a power of three was used for primary assay fields whilst nearest neighbour was used to interpolate index fields.

The bulk density applied to the Kwale South Dune model was a component-based algorithm, validated by Troxler density measurements taken in the active Kwale Central Dune mine. The character of the Kwale South Dune is sufficiently similar to that of the Kwale Central Dune to validate this approach. This bulk density algorithm was used for the 2017 Kwale South Dune Mineral Resources estimate. However, from mine reconciliation calculations following the commencement of mining at the South Dune, this was found to be overestimating bulk density. This prompted a bulk density algorithm that reduced bulk density by 5% compared to the 2017 algorithm to be used for the 2020 Kwale South Dune Mineral Resources estimate. No further changes to bulk density have been made for the 2021 Kwale South Dune Mineral Resources estimate.

The criteria used for classification was primarily the drill spacing and sample interval, with consideration also given to the continuity of mineral assemblage information and confidence in post-depositional modification of mineralisation (e.g. induration in Ore Zone 4). Generally, 100 x 100 was considered sufficient for Measured Resources and 200 x 100 for Indicated Resources. A reduced level of confidence was applied to the Ore Zone 4 material at Kwale South Dune due to the unpredictable ironstone induration and lower density of mineralogical information.

Modifying factors were considered during the Ore Reserves estimation process; they were not considered during the Mineral Resources estimation process. The mining method is hydraulic mining.

The 2021 Kwale South Dune Mineral Resources estimate is reported using a 1% HM bottom cut as that is close to the economic cut-off and allows for comparison to the previous Mineral Resource estimates.

### **Further information about the 2021 Kwale South Dune Ore Reserves estimate**

The feasibility study that led to the final investment decision for the Kwale Project was completed in 2011 and is no longer relevant given production commenced in late 2013. Accordingly, data derived from actual production statistics and financial reports were used to form the assumptions underpinning the 2021 Kwale South Dune Ore Reserves estimate. The operating cost, recovery and other material assumptions are detailed in Tables 2 to 5 below and were used to create a value model to determine economic pit limits. After this, a two-stage pit limit selection process was followed to determine the optimum raw pit shell. This was then subject to detailed mine planning and scheduling, with the outputs used to perform detailed financial analysis to demonstrate the technical and economic viability of the extraction of the Ore Reserves.

The reference point for the 2021 Kwale South Dune Ore Reserve estimate is 30 June 2021.

**Table 2:** Assumed mineral recoveries

Description	Units	Value
Concentrate grade	%	90
HM recovery – wet concentrator plant	%	83.5
Ilmenite recovery – wet concentrator plant	%	94
Rutile recovery - wet concentrator plant	%	90
Zircon recovery - wet concentrator plant	%	94.5
Ilmenite recovery – mineral separation plant	%	100
Rutile recovery - mineral separation plant	%	99
Zircon recovery - mineral separation plant	%	77

**Table 3:** Assumed operating costs

Description	Units	Value
Waste mining	USD / T (Waste)	2.7
Ore mining - fuel	USD / T (Ore)	0.102
Ore mining – pumping power	USD / kWhr	0.14
Slime - flocculant	USD / T (Slime)	0.36
HMC dryer - fuel	USD / T (HMC)	4.46
Rutile circuit reheater - fuel	USD / T (HMC – Ilmenite T)	1.77
Zircon circuit dryer - fuel	USD / T (HMC – Ilmenite T – Rutile T)	0.892
Process plant - power	kWhr / HMC T	14
Ilmenite product haulage and port costs	USD / T (Ilmenite Product)	6.85
Rutile product haulage and port costs	USD / T (Rutile Product)	9.87
Zircon product haulage and port costs	USD / T (Zircon Product)	31.05
Fixed – power	kWhr / Operating Hour	9,662
Fixed - other	USD / Annum	37,989,651

**Table 4:** Process throughput rates (used to limit assumed feed rate during optimisation)

Description	Units	Rate
Maximum HMU throughput	T/Hr (Ore)	2,400
Maximum process rougher feed throughput	T/Hr (RHF)	1,850
Maximum process tails throughput	T/Hr (Tails)	1,706
Maximum process thickener throughput	T/Hr (Slimes)	774
Maximum process HMC throughput	T/Hr (HMC)	120
Availability	%	90

**Table 5:** Product prices (FOB)

Description	Units	Price*
Ilmenite revenue	USD / T	180
Rutile revenue	USD / T	1,100
Zircon revenue	USD / T	1,800

\*Assumed average prices over the life of Ore Reserves at time of optimisation.

The criteria used for classification of the Ore Reserves followed that used for the Mineral Resources classification, so Proven Ore Reserves comprise Measured Resources and Probable Ore Reserves comprise Indicated Resources.

The mining method is hydraulic mining, which Base Titanium has used successfully since 2017. It is non-selective, with hydraulic mining units (**HMU**) using high pressure water jets to sluice the entire ore face, which flows as a slurry to a sump and is then pumped, ultimately, to the concentration plant.

Due to the geometry of the deposit and the non-selective mining method, there is no ore/waste discrimination (other than topsoil stripping) and it is not considered appropriate to add additional dilution factors. A 0.2m allowance for topsoil has been incorporated into the model and this material is excluded from Ore Reserves reporting as non-recoverable.

The wet concentrator plant is typical of a mineral sands operation, using screens, spirals and cyclones to separate the heavy minerals from the quartz sand and clay.

Heavy mineral concentrate is fed to a mineral separation plant which uses magnetic and electrostatic separators, classifiers, spirals and wet tables to produce ilmenite, rutile and zircon products. Recovery factors are reported in Table 2.

Pit optimisation was undertaken using CAE NPV Scheduler software (**NPVS**). A Value model was first prepared in DATAMINE Studio 5DP Mine Planning software and revenue and cost adjustment attributes subsequently imported into NPVS for Lerch-Grossman optimisation. Because a value model was used to determine the pit limits, cut-off grades were not used.

The estimation methodology comprised developing nested pit limits (as described above) by reducing the revenue in 1 per cent decrements, selection of the most appropriate pit shell by comparison of several factors (including NPV, life of mine, revenue to cost ratios, incremental cash flow etc.), mine planning and scheduling of the selected pit shell and finally confirmation of positive economics by feeding the scheduled tonnes into the project financial model.

The material modifying factors impacting the deposit economics are disclosed in the tables above. As stated above, for Base Titanium to have the right to mine the whole of the 2021 Kwale South Dune Ore Reserves estimate, its existing mining tenure, SML 23, needs to be expanded and the necessary environmental licencing (an EIA Licence) issued. As previously disclosed, the Cabinet Secretary for the Ministry of Petroleum and Mining has stated publicly that the proposed SML 23 extension has been approved and Base Titanium is working with the Government to finalise the form of Deed of Variation that will give effect to the proposed extension. In parallel, Base Titanium is also working with the Kenyan National Environmental Management Authority with respect to its application for the necessary EIA Licence, which Base Titanium anticipates receiving in the near term. As an operating mine, the other modifying factors, being infrastructure (power, water, roads etc.), regulatory approvals, social considerations etc. are all in place.

There is only limited potential to add to the 2021 Kwale South Dune Ore Reserves estimate.

## Competent Persons' Statements

### 2021 Kwale South Dune Mineral Resources

The information in this announcement that relates to the 2021 Kwale South Dune Mineral Resources estimate is based on, and fairly represents, information and supporting documentation prepared by Mr. Scott Carruthers. Mr. Carruthers is a Member of The Australasian Institute of Mining and Metallurgy. Mr. Carruthers is employed by Base Resources, he holds equity securities in Base Resources, and is entitled to participate in Base Resources' long-term incentive plan and receive equity securities under that plan. Details about that plan are included in Base Resources' 2020 Annual Report. Mr. Carruthers has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code and is considered a Qualified Person for the purposes of the AIM Rules for Companies. Mr. Carruthers has reviewed this announcement and consents to the inclusion in this announcement of the 2021 Kwale South Dune Mineral Resources estimate and supporting information in the form and context in which the relevant information appears.

### 2021 Kwale South Dune Ore Reserves

The information in this announcement that relates to the 2021 Kwale South Dune Ore Reserves estimate is based on, and fairly represents, information and supporting documentation prepared by Mr. Per Scrimshaw and Mr. Scott Carruthers. Mr. Scrimshaw and Mr. Carruthers are Members of The Australasian Institute of Mining and Metallurgy. Mr. Scrimshaw is employed by Entech, a mining consultancy engaged by Base Resources. Mr. Carruthers is employed by Base Resources, he holds equity securities in Base Resources, and is entitled to participate in Base Resources' long-term incentive plan and receive equity securities under that plan. Details about that plan are included in Base Resources' 2020 Annual Report. Mr. Scrimshaw and Mr. Carruthers each have sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity which they are each undertaking to qualify as Competent Persons as defined in the JORC Code and both are considered a Qualified Person for the purposes of the AIM Rules for Companies. Mr. Scrimshaw and Mr. Carruthers have each reviewed this announcement and consent to the inclusion in this announcement of the 2021 Kwale South Dune Ore Reserves estimate and supporting information in the form and context in which the relevant information appears.

## Forward Looking Statements

Certain statements in or in connection with this announcement contain or comprise forward looking statements.

By their nature, forward looking statements involve risk and uncertainty because they relate to events and depend on circumstances that will occur in the future and may be outside Base Resources' control. Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, success of business and operating initiatives, changes in the regulatory environment and other government actions, fluctuations in product prices and exchange rates and business and operational risk management. Subject to any continuing obligations under applicable law or relevant stock exchange listing rules, Base Resources undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this announcement or to reflect the occurrence of unanticipated events.

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**Figure 1:** Plan showing the 2021 Kwale South Dune Mineral Resources estimate including depletion by mining and sterilisation of sub-economic low-grade ore.

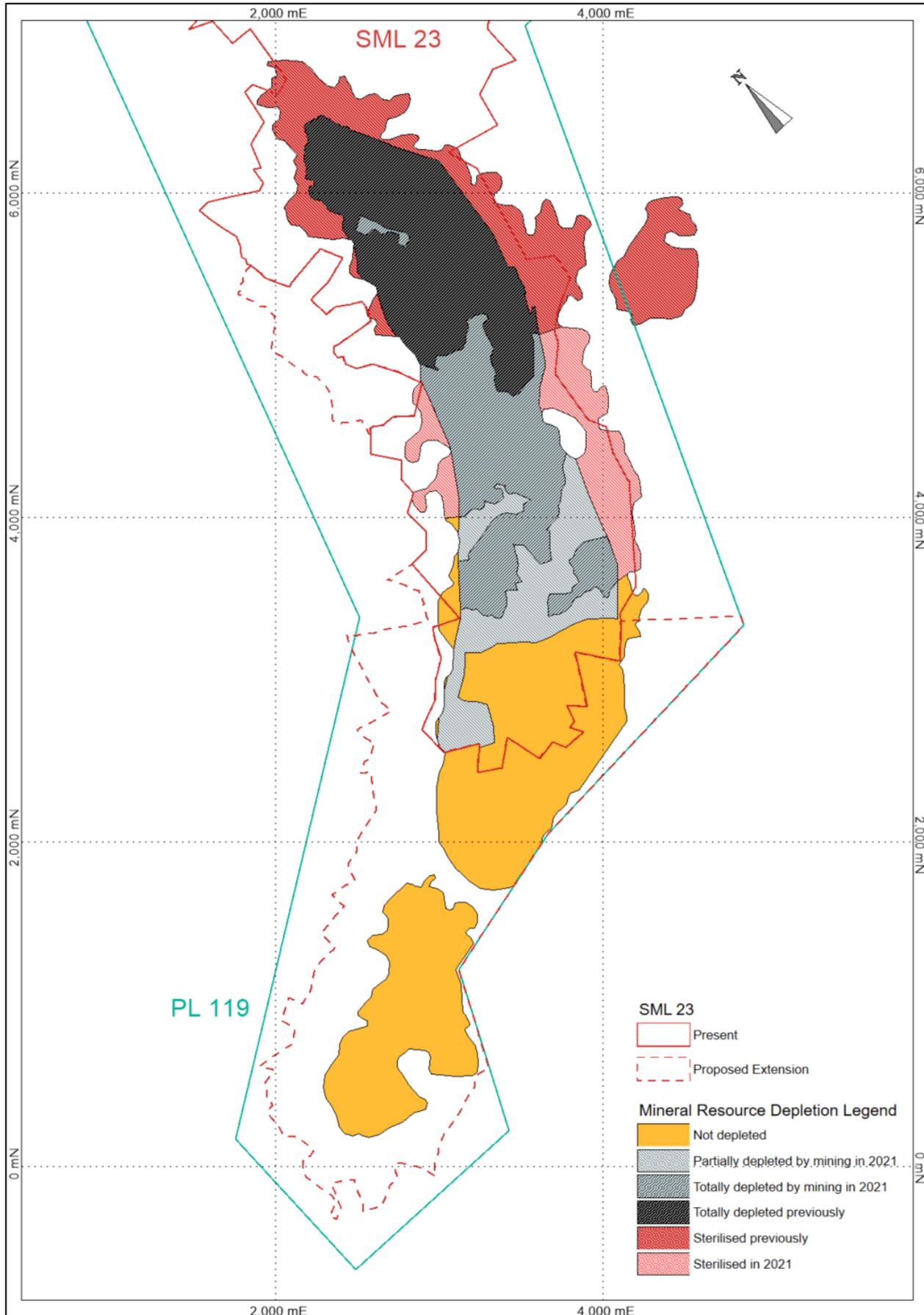


Figure 2: Plan showing the 2021 Kwale South Dune Ore Reserves estimate including depletion by mining.

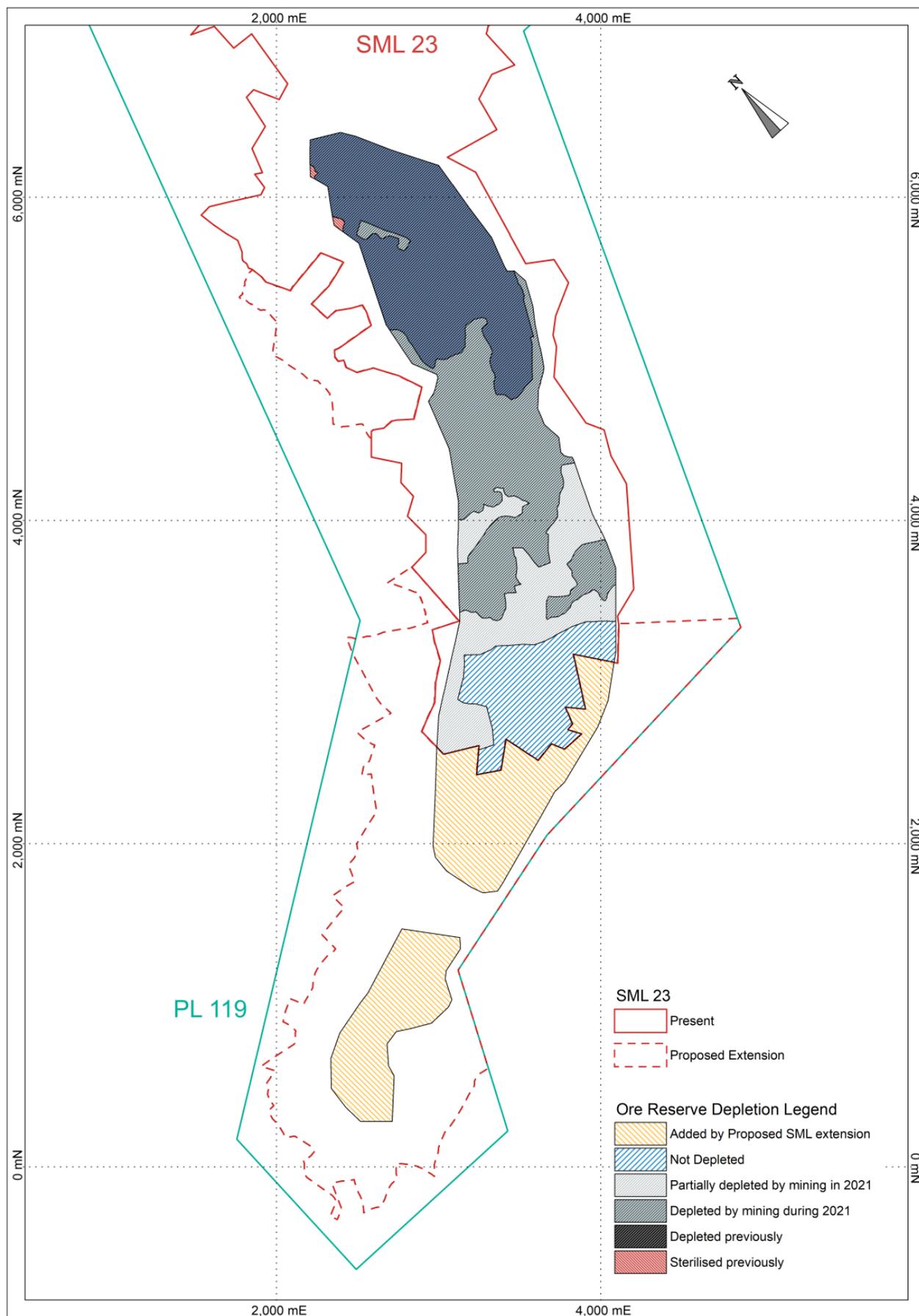


Figure 3: Plan showing location of Kwale Operations tenure.



Figure 4: Plan showing concentrations of heavy minerals at Kwale Operations.

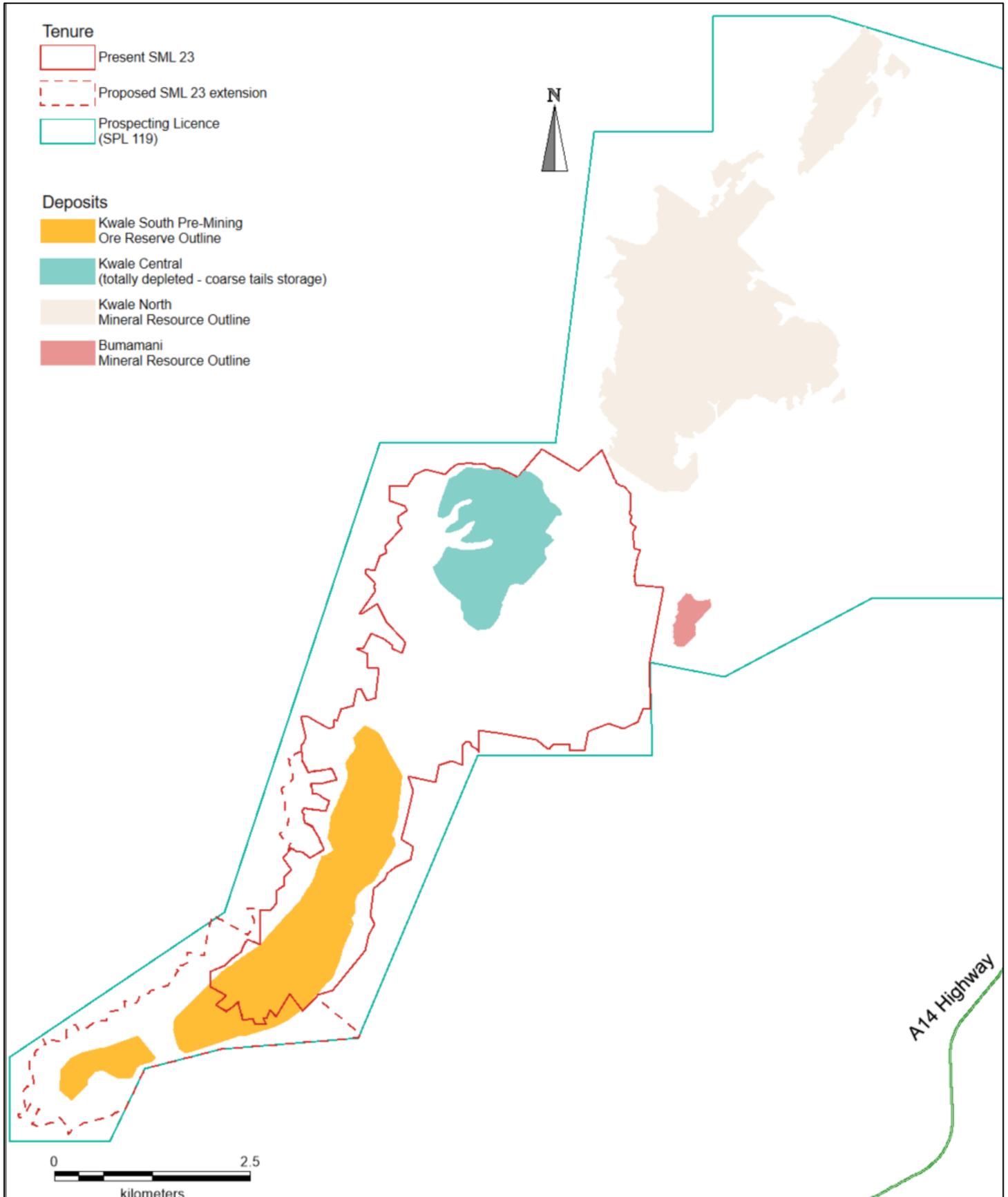
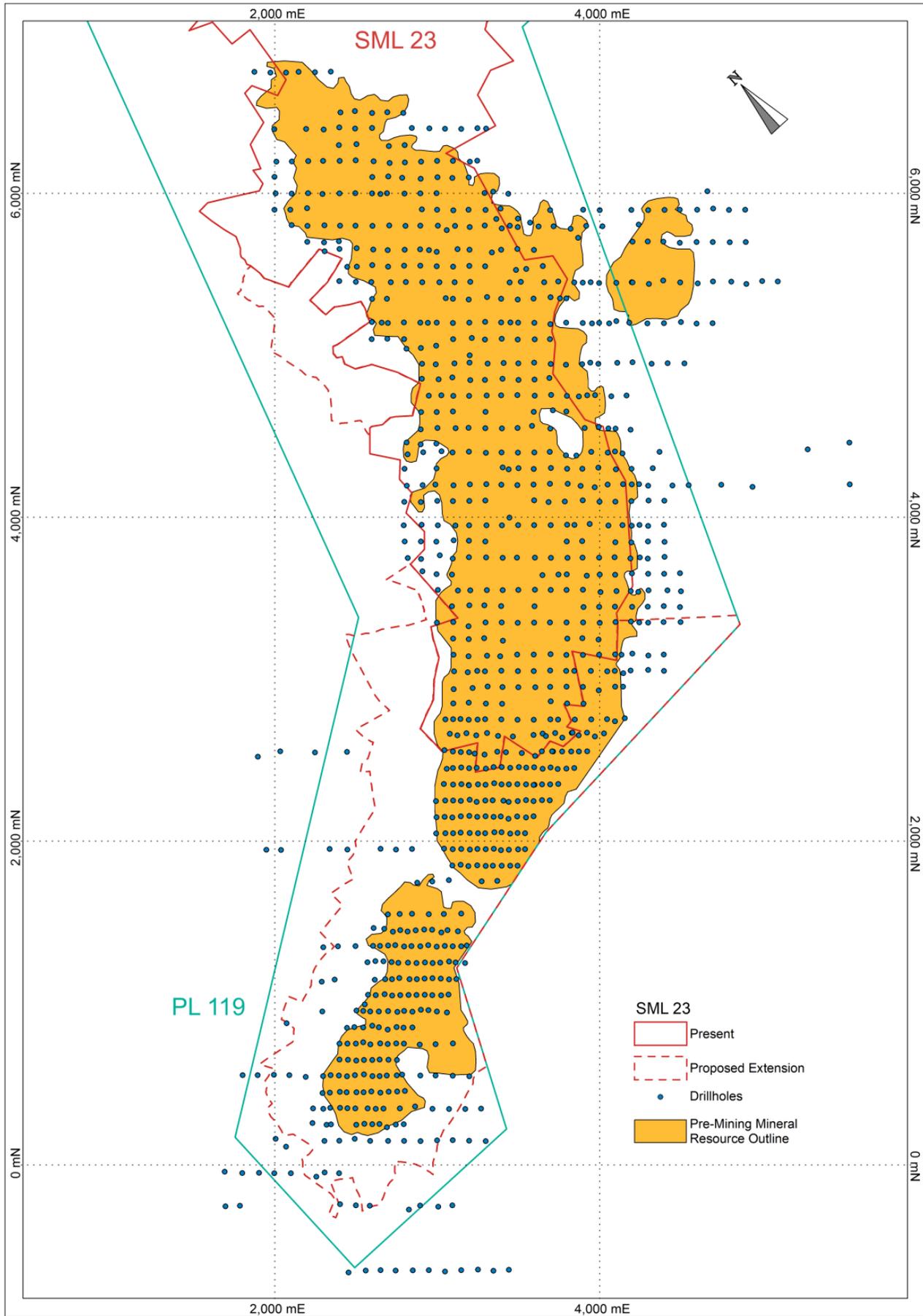
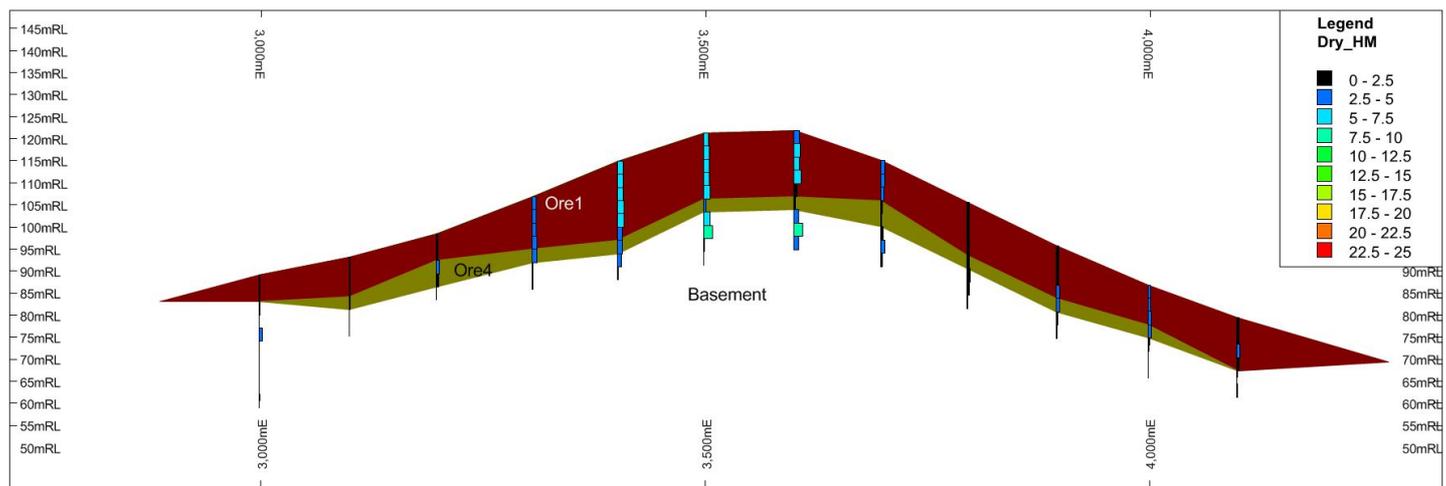


Figure 5: Plan showing Kwale South Dune deposit and location of drill holes.



**Figure 6** – Schematic cross-section of the Kwale South Dune deposit showing geology and HM grade relationships between geological domains (1:5 vertical exaggeration).



## Appendix 1

JORC Code, 2012 Edition

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	Explanation	Comment
Sampling techniques	<p><i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i></p> <p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</i></p>	<p>The 2021 Kwale South Dune Mineral Resources estimate drill data were collected using the RCAC method.</p> <p>Duplicate field and laboratory samples were taken at accepted industry standard ratios of approximately 1 in 20 to 1 in 40. Field and laboratory standard samples were inserted every 40 samples. Twin drilling analysis was completed during the 2016-17 Kwale drill program at the South Dune, which included a wet vs. dry drilling analysis.</p> <p>RCAC drilling was used to obtain 1 to 3 m samples from which approximately 1.2-2.5 kg was collected using a rotary splitter, mounted beneath a cyclone. Drilling completed in the 2016-17 Kwale drill program was sampled at a 1.5m interval, which produced an average 3kg sample from a 25% split of the rotary splitter cycle.</p> <p>The samples were dried, de-slimed (material less than 45µm removed) and then oversize (material +1mm) removed.</p> <p>Approximately 100g of the resultant sample was then subjected to a HM float/sink technique using tetra-bromo-ethane (TBE: SG=2.92-2.96 g/cm<sup>3</sup>). Assay of the 2016-17 Kwale drill program samples was completed at Kwale site using lithium polytungstate (LST) with an SG of 2.85g/cm<sup>3</sup>.</p> <p>The resulting HM concentrate was then dried and weighed.</p>
Drilling techniques	<p><i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i></p>	<p>RCAC drilling utilising 71 mm diameter air-core tooling accounts for all drill sample data applied to the 2021 Kwale South Dune Mineral Resources estimate. All holes were drilled vertically with no downhole surveying to confirm hole direction.</p> <p>All Tiomin, open-hole drill data were excluded from the 2021 Kwale South Dune Mineral Resources estimate.</p>

Criteria	Explanation	Comment
<i>Drill sample recovery</i>	<p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p> <p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p> <p><i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></p>	<p>Ground conditions vary and, as such, Base Resources logged sample quality/condition at the rig as either good, moderate or poor, with 'good' meaning not contaminated and of an appropriate sample size (recovery), 'moderate' meaning not contaminated, but sample over or undersized, and 'poor' meaning contaminated or grossly over/undersized.</p> <p>For the 2016-17 Kwale drill program, the use of water injection was also logged in the sample quality field for every sample interval (dry, moist, injected or wet). Minor sample loss was observed, and the splitter rectified during the first week of drilling. No further sample loss has been recorded. The configuration of drilling and nature of sediments encountered resulted in negligible loss.</p> <p>Drill penetration was halted at the end of each sample interval to allow time for the sample to return to surface and be collected. Drilling proceeded once sample delivery ceases.</p> <p>Sampling on the drill rig was observed to ensure that rotary splitter remained clean. Water flush and manual cleaning of the cyclone occurred at regular intervals to ensure contamination was minimised.</p> <p>No relationship is believed to exist between grade and sample recovery. The high percentage of clay and low hydraulic inflow of groundwater resulted in a sample size that is well within the expected size range.</p> <p>Negligible fines losses were identified during twin drilling analysis of the 2016-17 Kwale drill program.</p>
<i>Logging</i>	<p><i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></p> <p><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></p> <p><i>The total length and percentage of the relevant intersections logged.</i></p>	<p>Base Resources collected detailed qualitative logging of geological characteristics to allow a comprehensive geological interpretation to be carried out.</p> <p>Logging of HM sinks with a microscope was also used to inform the geological interpretation.</p> <p>Logging of RCAC samples recorded sample condition, estimated slimes, washability, colour, lithology, dominant grainsize, coarsest grainsize, sorting, induration type, hardness, estimated rock and estimated HM.</p> <p>All drill holes were logged in full and all samples with observed HM (and designated for assay) were assayed. All drill holes were logged in full and all samples were assayed and used in the resource estimation exercise.</p>
<i>Sub-sampling techniques</i>	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	All samples were unconsolidated and comprised sand, silt, clay and rock fragments.

Criteria	Explanation	Comment
<p><i>and sample preparation</i></p>	<p><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></p> <p><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></p> <p><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></p> <p><i>Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.</i></p> <p><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></p>	<p>Base Resources rotary split the samples on the drill rig as they were delivered from drilling (wet, moist, injected or dry). Low groundwater pressure and rotary splitting delivered a representative sample for logging. The 25% split delivered approximately 3kg of sample for analysis during the 2016-17 Kwale drill program.</p> <p>Drill samples were dried then riffle split to produce a ~300g sample for de-sliming and oversize removal. The resultant sand fraction was then delivered to the laboratory for heavy liquid (LST) separation.</p> <p>Sample preparation is consistent with industry best practice. For the 2016-17 Kwale drill program, a formal procedure and flow sheet was developed with detailed QA/QC protocols applied.</p> <p>QA/QC in the form of laboratory and rig duplicates were used to monitor laboratory performance. Laboratory and rig duplicates were submitted at the rate of approximately 1 in 20 each for a combined submission rate of one in 10.</p> <p>Two standard samples were created for the commencement of the 2016-17 Kwale drill program. Bulk samples of Kwale Central Dune ore were mixed, rotary split and sent for certification analysis. Standards were inserted at a rate of 1 in 40 in the field and another prior to HM assay to test sample preparation and assay accuracy.</p> <p>Twin drilling analysis was introduced for the 2016-17 Kwale drill program, which included water injected vs. dry drilling analysis.</p> <p>Analysis of sample duplicates and twin drilling data were undertaken by standard geostatistical methodologies to test for bias and to ensure that sample splitting was representative.</p> <p>Given that the grain size of the material being sampled is sand and approximately 70 to 300 µm, an average sample size of 1.2 - 3 kg is more than adequate.</p>

Criteria	Explanation	Comment
<p><i>Quality of assay data and laboratory tests</i></p>	<p><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></p> <p><i>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></p> <p><i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></p>	<p>The Base Resources laboratory flow sheet comprises a sample preparation stage (completed by Base personnel) and an HM assay stage completed by contracted laboratories. Assay was completed by Western Geolabs (Perth) for previous resource drilling using a TBE heavy liquid separation. The Kwale site lab, managed by SGS, was used for the 2016-17 Kwale drill program samples. A LST heavy liquid separation medium was used by SGS.</p> <p>The sample analysis process produced the following assays:</p> <ul style="list-style-type: none"> <li>• HM &gt; 45 µm, &lt; 1 mm, &gt; 2.85 SG</li> <li>• slime (SL) &lt; 45 µm</li> <li>• oversize (OS) &gt; 1 mm</li> </ul> <p>Sample preparation involved de-sliming the sample prior to oven drying to prevent clay minerals being baked onto the HM grains. A separate sample was split and dried to determine moisture content, which was then back calculated to correct the assayed grades.</p> <p>Quality control protocols include two duplicate assaying procedures. A duplicate sample was generated at the drill rig and another at the sample preparation stage. Both duplicates were included at a 1:20 ratio and were subjected to the remainder of the sample preparation and assay process.</p> <p>A field and a laboratory standard were introduced for the 2016-17 Kwale drill program. One was inserted in the field and the other, prior to HM assay at a 1:40 ratio.</p> <p>Mineralogical analysis was performed by back-calculation of XRF results to an in-ground mineral assemblage, verified by quantitative analysis (SEM-EDX and QEMSCAN). Both individual sample interval XRF and composite sample XRF data were included in resource estimates.</p> <p>Assay technique and quality assurance protocols are considered industry best practice.</p> <p>No geophysical, portable XRF etc. instruments were used.</p> <p>Field duplicates, sample preparation duplicates and laboratory replicates were submitted for precision and bias analysis. Excepting significant sample size bias as a result of poor splitter gate construction on the RCAC drill rig observed in recent drilling, assay results show acceptable correlation and no bias.</p> <p>Audit samples were sent to alternative laboratories (Diamantina and Independent Diamond Laboratories) to verify results from Western Geolabs for previous resource drill samples. No blanks or standards were submitted by Base Resources during this period. Results returned within acceptable limits.</p> <p>Standard samples were introduced for the 2016-17 Kwale drill program. Standards were monitored by control charts and re-assay completed when results fell outside control chart limits (mean + 3SD). Re-assay was completed for standards failures and all data are now corrected.</p>

Criteria	Explanation	Comment
<p><i>Verification of sampling and assaying</i></p>	<p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p> <p><i>The use of twinned holes.</i></p> <p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p> <p><i>Discuss any adjustment to assay data.</i></p>	<p>The deposit type and consistency of mineralization leaves little room for unexplained variance. Verification of intersections was limited to checking for variance between logged estimates of grade and the assayed grades. Where there was unexplained variance, samples were re-submitted for assay.</p> <p>Twinned holes were completed during the 2016-17 Kwale drill program. These were used for statistical analysis of short-range geological and assay field variability for the resource estimation. Assay fields showed acceptable correlation and an absence of bias.</p> <p>A comparison of dry vs. water injection was included in the twin drilling analysis. Negligible Slimes losses were established by the practice of dry drilling for the 2016-17 Kwale drill program.</p> <p>Data collected by Base Resources was entered digitally in the field and uploaded to Microsoft Access prior to being migrated to a more secure SQL database, hosted on the Kwale site server. The SQL database is subject to regular back-up and access is limited to the Exploration Superintendent and business applications administrator.</p> <p>Assay data adjustments were made to convert laboratory collected weights to assay field percentages and to account for moisture.</p>
<p><i>Location of data points</i></p>	<p><i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resources estimation.</i></p> <p><i>Specification of the grid system used.</i></p> <p><i>Quality and adequacy of topographic control.</i></p>	<p>Base Resources used a RTK GPS to survey drill sites.</p> <p>The grid system used was the Arc1960 (zone 37 South). Modelling was conducted in a rotated local mine grid.</p> <p>LIDAR surveys flown in 2013 and 2015 were joined to cover the resource areas. Drill holes were projected to this surface prior to resource estimation. Stated accuracy of the LIDAR survey is 0.015m.</p>

Criteria	Explanation	Comment
<i>Data spacing and distribution</i>	<p><i>Data spacing for reporting of Exploration Results.</i></p> <p><i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resources and Ore Reserves estimation procedure(s) and classifications applied.</i></p> <p><i>Whether sample compositing has been applied.</i></p>	<p>The drill data spacing is nominally 100m North, 50m East, and 1.5m down hole for the 2016-17 Kwale drill program. Previous drilling is nominally spaced at 200m North, 100m East and has a 3m down-hole sample interval. Variations occur when lower-density drilling was applied to exploration areas or from line-clearing difficulties prior to drilling and drill site survey.</p> <p>Based on the experience of the competent person, the data spacing and distribution through the drill hole programs is considered adequate for the assigned Mineral Resources classifications. HM grade continuity was verified using variography of the discrete geological domains.</p> <p>No sample compositing or de-compositing has been applied to previous resource estimates. The majority of previous sampling was taken on 3 m intervals with some 1 m intervals drilled for geological boundary definition on a vertical basis. Sample length weighting was used during the interpolation process.</p> <p>For the 2021 Kwale South Dune Mineral Resources estimate, all historic 3m sample intervals were de-composited to 1.5m for the interpolation. Samples for mineralogical analysis were composited, generally on-section, on a like-for-like basis with reference to HM sink logs and conforming to the geological interpretation.</p>
<i>Orientation of data in relation to geological structure</i>	<p><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></p> <p><i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i></p>	<p>Sample orientation is vertical and approximately perpendicular to the dip and strike of the mineralisation resulting in true thickness estimates. Drilling and sampling were carried out on a regular rectangular grid that is broadly aligned and in a ratio consistent with the anisotropy of the mineralisation.</p> <p>There is no apparent bias arising from the orientation of the drill holes with respect to the strike and dip of the deposit.</p>
<i>Sample security</i>	<i>The measures taken to ensure sample security.</i>	All samples were numbered, with samples split and residues stored securely at the Kwale site, along with HM sinks.

Criteria	Explanation	Comment
<i>Audits or reviews</i>	<i>The results of any audits or reviews of sampling techniques and data.</i>	<p>GNJ Consulting Pty Ltd and IHC Robbins conducted reviews of previous Mineral Resources estimates completed by Base Resources.</p> <p>Hornet Drilling and Geological Services Pty Ltd conducted three site visits during preparation and data collection stages relating to the 2016-17 Kwale drill program. These were made to establish and review drilling, sample preparation and geological interpretation procedures and monitor adherence. Minor recommended changes were made on each occasion.</p> <p>No audit of the 2021 Mineral Resource estimate was undertaken because it is unchanged from the 2020 Mineral Resource apart from depletion by mining or sterilisation.</p>

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Explanation	Comment
<i>Mineral tenement and land tenure status</i>	<p><i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></p> <p><i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i></p>	<p>The 2021 Kwale South Dune Mineral Resource lies within PL119. Mining is currently taking place on the Kwale South Dune deposit within SML 23.</p> <p>Ad valorem royalties of 2% are paid to private royalty holders on products mined from SML 23 as it existed in 2010 when the Kwale Project was acquired. A royalty of 2.5% is currently payable to the Government of Kenya, with a further 2.5% accrued. Discussions with the Government of Kenya on the royalty regime in line with the terms of SML 23 are ongoing.</p> <p>There are no known impediments to the security of tenure for the Kwale Operations deposits.</p>
<i>Exploration done by other parties</i>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	The previous owners of the project (Tiomin Kenya Ltd) undertook exploration over the Kwale Project prior to purchase by Base Resources. Analysis of twinned holes, grade distributions and geological zone thickness has led to Tiomin's data being excluded from this Mineral Resource estimation.
<i>Geology</i>	<i>Deposit type, geological setting and style of mineralisation.</i>	The Kwale South Dune deposit is an aeolian detrital heavy mineral sand deposit.
<i>Drill hole Information</i>	<p><i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i></p> <ul style="list-style-type: none"> <li><i>- easting and northing of the drill hole collar</i></li> <li><i>- elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li><i>- dip and azimuth of the hole</i></li> <li><i>- down hole length and interception depth</i></li> <li><i>- hole length.</i></li> </ul> <p><i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i></p>	There are no particular drill hole results that are considered material to the understanding of the exploration and resource drill out. Identification of the wide and thick zone of mineralisation is made via multiple intersections of drill holes and to list them all would not give the reader any further clarification of the distribution of mineralisation throughout the deposit.

Criteria	Explanation	Comment
<i>Data aggregation methods</i>	<p><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</i></p> <p><i>Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></p> <p><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></p>	<p>No grade cutting was undertaken, nor compositing or aggregation of grades made prior or post the grade interpolation into the block model. Selection of the bottom basal contacts of the mineralised domains were made based on discrete logging and grade information collected and assayed by Base Resources and Tiomin.</p> <p>No data aggregation has been performed.</p> <p>No metal equivalents were used for reporting of Mineral Resources.</p>
<i>Relationship between mineralisation widths and intercept lengths</i>	<p><i>These relationships are particularly important in the reporting of Exploration Results.</i></p> <p><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></p> <p><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</i></p>	<p>All drill holes are vertical and perpendicular to the dip and strike of mineralisation and therefore all interceptions are approximately true thickness.</p>
<i>Diagrams</i>	<p><i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></p>	<p>Refer to main body of this announcement.</p>
<i>Balanced reporting</i>	<p><i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i></p>	<p>Reporting of results is restricted to Mineral Resources and Ore Reserves estimates generated from geological and grade block modelling.</p>

Criteria	Explanation	Comment
<i>Other substantive exploration data</i>	<i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i>	Bulk density is derived from algorithm.
<i>Further work</i>	<p><i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p> <p><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></p>	No further work is planned at this stage.

### Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	Explanation	Comment
<i>Database integrity</i>	<p><i>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resources estimation purposes.</i></p> <p><i>Data validation procedures used.</i></p>	<p>The surveying, logging and assay data were stored in a Microsoft Access database prior to being imported into a more secure SQL database format.</p> <p>The drill logs were recorded electronically at the rig for the Base Resources drilling program, and the hole locations recorded by hand-held GPS at the time of drilling. The hand-held GPS locations were used by the RTK operator to locate the holes.</p> <p>Each field of the drill log database was verified against allowable entries and any keying errors corrected.</p> <p>Heavy mineral sing logs were completed against a strict set of codes and captured digitally.</p> <p>Look-up tables are employed at data capture stage on industry-leading software equipped with on-board validation and quarantine capability. Cross-validation between related tables is also systematically performed by field logging software. Data were loaded into a secure SQL database where a second validation was performed.</p> <p>Visual comparison was undertaken in cross-section using Mapinfo software. Sanity checks of sample preparation fields were undertaken to ensure correct procedure was followed (e.g. sample weight pre v post-oven drying). Calculation of assay fields were checked to ensure correct moisture adjustment and weight to percentage adjustment.</p> <p>Statistical, out-of-range, distribution, error and missing data validation was completed on data sets before being compiled for resource estimation.</p>
<i>Site visits</i>	<p><i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></p> <p><i>If no site visits have been undertaken indicate why this is the case.</i></p>	<p>Industry-leading procedures for data capture and storage were established for the 2016-17 Kwale drill program. Three site visits were completed by Mr Richard Stockwell during data capture stages and recommendations were made where improvements were required. There were no issues observed that might be considered material to the Mineral Resource under consideration.</p>
<i>Geological interpretation</i>	<p><i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</i></p> <p><i>Nature of the data used and of any assumptions made.</i></p> <p><i>The effect, if any, of alternative interpretations on Mineral Resources estimation.</i></p> <p><i>The use of geology in guiding and controlling Mineral Resources estimation.</i></p>	<p>The geological interpretation was compiled from field geological observations during drill sample logging, microscope investigation of heavy mineral sinks and interpretation of sample assay data. A strong correlation between these three sources of information was observed and a high degree of confidence results.</p> <p>The interpreted zones were used to control the wireframed zones in the resource model. Primary data generated by Base Titanium was used exclusively for the resource estimation. No assumptions were made.</p> <p>The weight of mutually supportive data weakens the case for alternate geological interpretation.</p>

Criteria	Explanation	Comment
	<i>The factors affecting continuity both of grade and geology.</i>	<p>The Mineral Resources estimate was controlled by the geological / mineralised surfaces and beneath the topographic surface.</p> <p>Kwale Operations' deposits sit on top of an erosional high which is dissected by streams. The extent of geological and mineralised zones is constrained by the erosional surface surrounding the basement high.</p> <p>Heavy mineral grade and geology is consistent within mineralised horizons, typical of aeolian deposits. Grade and geological continuity in the lower mineralised horizon (Ore Zone 4) is compromised by variable induration.</p>
<i>Dimensions</i>	<i>The extent and variability of the Mineral Resources expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resources.</i>	The Kwale South Dune deposit is approximately 6.5km long, 300-1,000m wide and approximately 12-20 m thick on average. Mineralisation is present from surface over the majority of the deposit.
<i>Estimation and modelling techniques</i>	<p><i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</i></p> <p><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resources estimate takes appropriate account of such data.</i></p> <p><i>The assumptions made regarding recovery of by-products.</i></p> <p><i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i></p> <p><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></p> <p><i>Any assumptions behind modelling of selective mining units.</i></p> <p><i>Any assumptions about correlation between variables.</i></p> <p><i>Description of how the geological interpretation was used to control the resource estimates.</i></p> <p><i>Discussion of basis for using or not using grade cutting or capping.</i></p> <p><i>The process of validation, the checking process used, the</i></p>	<p>Geovia Surpac software was used to estimate the Mineral Resource. Inverse distance weighting techniques were used to interpolate assay grades from drill hole samples into the block model and nearest neighbour techniques were used to interpolate index values into the block model. The regular dimensions of the drill grid and the anisotropy of the drilling and sampling grid allowed for the use of inverse distance methodologies as no de-clustering of samples was required.</p> <p>Appropriate and industry standard search ellipses were used to search for data for the interpolation and suitable limitations on the number of samples and the impact of those samples was maintained. An inverse distance weighting of three was used so as not to over smooth the grade interpolations.</p> <p>Hard domain boundaries were used and these were defined by the geological surfaces that were interpreted.</p> <p>The resource estimate was checked against previous resource estimates and these are detailed in the report. The 2021 Kwale South Dune Mineral Resource estimate accurately reflects additional resource discovery in addition to the previously reported resource estimate.</p> <p>No assumptions were made during the resource estimation as to the recovery of by-products.</p> <p>All potentially deleterious elements were included as part of the mineral composite analysis and were included in the modelling report. There is no significant sulphide mineralisation.</p> <p>The average parent cell size used for the 2021 Kwale South Dune Mineral Resources estimate is approximately half that for the average drill hole spacing over the bulk of the deposit (100m*100m) and equal to the dominant sample spacing down-hole employed by the 2016-17 Kwale drill program (1.5m). This resulted in a parent cell size of 50m*50m*1.5m for the volume model.</p> <p>No assumptions were made regarding the modelling of selective mining units however hydraulic mining is being utilised and the cell size and the sub cell splitting allowed for an appropriate ore reserve to be</p>

Criteria	Explanation	Comment
	<i>comparison of model data to drill hole data, and use of reconciliation data if available.</i>	<p>prepared.</p> <p>No assumptions were made about correlation between variables.</p> <p>Interpolation was constrained by hard boundaries (domains) that result from the geological interpretation.</p> <p>Grade cutting or capping was not used during the interpolation because of the regular nature of sample spacing and the fact that samples were not clustered nor wide spaced to an extent where elevated samples could have a deleterious impact on the resource estimation.</p> <p>Sample distributions were reviewed and no extreme outliers were identified either high or low that necessitated any grade cutting or capping.</p> <p>Validation of grade interpolations were done visually In Surpac by loading model and drill hole files and annotating and colouring and using filtering to check for the appropriateness of interpolations. Statistical distributions were prepared for model zones from both drill holes and the model to compare the effectiveness of the interpolation. Along strike distributions of section line averages (swath plots) for drill holes and models were also prepared for comparison purposes.</p>
<i>Moisture</i>	<i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i>	Tonnages were estimated on a dry basis. This is based on test work carried out on the bulk density which was determined on a dry weight basis.
<i>Cut-off parameters</i>	<i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i>	A 1% HM bottom cut has been applied to the Mineral Resources estimate. This cut-off is used on a sub-economic basis in consideration of the valuable heavy mineral content indicated by mineral assemblage analysis.
<i>Mining factors or assumptions</i>	<i>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</i>	<p>The mining method is high pressure hydraulic mining, which blends the ore from top of the face to the bottom.</p> <p>Hydraulic mining is not selective, which suits the generally thick and homogenous depositional style of the mineralisation.</p> <p>Given the thickness of the Kwale South deposit and proposed mining method, dilution is not considered to be an issue.</p>
<i>Metallurgical factors or assumptions</i>	<i>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic</i>	The metallurgical recovery and separability factors are similar to other mineral sand operations. There are no fine grained lower shoreface sediments. The level of kyanite is greater than at other deposits, and the mineral separation plant has been designed to cater for this.

Criteria	Explanation	Comment
	<p><i>extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</i></p>	<p>Metallurgical recoveries have not been considered at the Mineral Resource estimation stage, and reported tonnes and grade are therefore in situ. Metallurgical recoveries were applied during the Ore Reserves estimation process.</p>
<p><i>Environmental factors or assumptions</i></p>	<p><i>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</i></p>	<p>Thickened clay tailings are being disposed inside a tailing storage facility that was constructed from sand tailings. The construction of the facility was completed in 2018. Since then, sand tailing has taken place in the Kwale Central mined void. Mineral separation plant tailing is disposed with the sand tails.</p>
<p><i>Bulk density</i></p>	<p><i>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</i></p> <p><i>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.</i></p> <p><i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></p>	<p>An extensive program of test work was designed by GNJ Consulting and implemented by Base Resources utilising a procedure to collect Troxler nuclear density meter measurements and HM and SL assays. These were used in the development of an algorithm to estimate the bulk density of in situ material within the deposit based on variable HM and clay (SL).</p> <p>This sampling was undertaken within the mineralised ore zones of the Kwale Central Dune deposit during mining operations and representative sampling was undertaken for those domains.</p> <p>The style of mining has since changed from bulldozers to hydraulic mining, making it impossible to collect similar troxler data from the floor of the pit. It was considered appropriate to utilise the new bulk density algorithm for the Kwale South Dune deposit given that the geological units are closely related and part of the same sequence (given the close local proximity this was also a reasonable assumption).</p> <p>Assumptions were made regarding packing factor of sand, bulk density of HM, sand and clay in the development of the bulk density algorithm. The algorithm was refined using nuclear density meter measurement of the soil profile being sampled.</p> <p>The use of a bulk density algorithm is considered industry standard practice for the estimation of mineral sands Mineral Resources. However, the algorithm derived for Kwale Central has been found by monthly mine reconciliations in 2019 to be exaggerating the bulk density by approximately 5%. Therefore, the decision was made to cut the algorithm derived bulk densities by 5% and re-estimate the resource in 2020. The 2021 Mineral Resources estimate is unchanged from the 2020 estimate, apart from depletion</p>

Criteria	Explanation	Comment
		by mining or sterilisation.
<i>Classification</i>	<p><i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></p> <p><i>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i></p> <p><i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></p>	<p>The classification for the 2021 Kwale South Dune Mineral Resources estimate was based on the following criteria: drill hole spacing; experimental semi-variograms; the quality of QA/QC processes; post-depositional modification and the distribution of mineral assemblage samples.</p> <p>The classification of the Measured and Indicated Mineral Resources for the 2021 Kwale South Dune Mineral Resources estimate were supported by all of the criteria as noted above.</p> <p>The Competent Person considers that the result appropriately reflects a reasonable view of the deposit categorisation.</p>
<i>Audits or reviews.</i>	<i>The results of any audits or reviews of Mineral Resources estimate.</i>	SRK undertook an audit of the resource estimate and found it to be suitable for reserve optimisation.
<i>Discussion of relative accuracy/confidence</i>	<p><i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resources estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i></p> <p><i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></p> <p><i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></p>	<p>Variography was completed for the 2021 Kwale South Dune Mineral Resources estimate. Results of variography, qualitative assessment of the Mineral Resource estimate and comparison with previous resource estimates indicates the robustness of this particular resource estimation exercise.</p> <p>The estimates are global.</p> <p>Trial mining and pilot plant-scale mineral processing of Kwale South Dune ore has shown it to be similar to the Kwale Central Dune Ore Zone 1 material currently being mined and fed to the MSP. No alteration to the MSP was made for treatment of the South Dune ore.</p>

## Section 4 Estimation and Reporting of Ore Reserves

Criteria	Explanation	Comment
<i>Mineral Resource estimate for conversion to Ore Reserves</i>	<p><i>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</i></p> <p><i>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</i></p>	<p>The 2021 Kwale South Dune Mineral Resources estimate by Base Resources, reported at 30 June 2021, was used as the basis for this Ore Reserve.</p> <p>This Mineral Resource estimate was based on that disclosed to the market on 4 October 2017 but with adjustment to bulk density, adjustments for boundary change to PL119 and adjustments for mining depletion to 30 June 2021.</p> <p>Mineral Resources are reported inclusive of the Ore Reserves.</p>
<i>Site visits</i>	<p><i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></p> <p><i>If no site visits have been undertaken indicate why this is the case.</i></p>	<p>One of the competent persons visits frequently during the operational phase.</p>
<i>Study status</i>	<p><i>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</i></p> <p><i>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</i></p>	<p>The most recent study prior to operations commencing was a detailed feasibility study (DFS).</p> <p>The project is now operational and study inputs are based on operational costs, design, and mine plan.</p> <p>Mining operations has used HMU's exclusively since July 2018.</p>
<i>Cut-off parameters</i>	<p><i>The basis of the cut-off grade(s) or quality parameters applied.</i></p>	<p>Cut-off is economic by maximum cash flow method. A value model is constructed that assigns costs and revenue after application of appropriate process recoveries.</p> <p>There is no ore/waste delineation within the pit design due to the mining method employed (non-selective) and dunal mineralization.</p>
<i>Mining factors or assumptions</i>	<p><i>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</i></p> <p><i>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</i></p>	<p>Mineral Resources were converted to Ore Reserves by pit optimisation as a guide for detailed design and scheduling. Potential pit shells were created by decreasing the revenue by 1% intervals and scheduled at a high level. These were short listed by analysis of various factors including NPV, IRR, revenue:cost ratio, marginal cashflow, product output production rates etc. The schedules for the short-listed shells were input to the project financial model and the ultimate shell for detailed mine planning and scheduling selected.</p> <p>Schedule physicals have then been incorporated into the Kwale operating financial model and assessed against up-to-date inputs.</p>

Criteria	Explanation	Comment
	<p><i>The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.</i></p> <p><i>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</i></p> <p><i>The mining dilution factors used.</i></p> <p><i>The mining recovery factors used.</i></p> <p><i>Any minimum mining widths used.</i></p> <p><i>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</i></p> <p><i>The infrastructure requirements of the selected mining methods.</i></p>	<p>Mining of the Kwale South dune is undertaken solely by HMU methods. The HMU mining method has achieved all design throughput rates since commencement of operations at Kwale South.</p> <p>The Mineral Resources model used throughout the study mine planning work was kwsth_171001.mdl.</p> <p>The pit slopes are currently about 50 degrees in Ore 1 and Ore 4 at the South Dune. The pit optimisation used a more conservative slope angles of 35 degrees for South Dune.</p> <p>The ore is scheduled to be mined in a radial extraction centred on proposed HMU sump locations. Sump locations have been estimated by considering low points in the economic mineralisation, constrained to larger mining blocks defined by watershed analysis of the lower ore surface. These larger blocks vary in dimension due to the surface undulation, however the smallest of those remaining to be mined is 31Ha in plan area. The size of these blocks is not considered to represent any concerns with respect to minimum mining width and the proposed HMU method demonstrates the selectivity required to mine to the pit extents, even at the boundaries of the dune mineralisation where the depth of pit is low.</p> <p>No inferred material is included in the Ore Reserve estimate.</p> <p>There is no ore/waste discrimination and sub-economic material that cannot be selectively mined is included as planned dilution in the ore feed.</p> <p>Mining recovery of hardness &gt; 2 material is largely discounted by raising pit floor to exclude from design. Small amounts of this material (representing less than 1% of the pit inventory) report fully inside the pit design on a localised basis, however these have been excluded from the process feed and Ore Reserve estimate as being unrecoverable using a HMU mining method.</p> <p>Mining recovery makes provision for a 0.2 m topsoil profile which is excluded from reported ore material.</p> <p>All infrastructure is in place and operational.</p>
<p><i>Metallurgical factors or assumptions</i></p>	<p><i>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</i></p> <p><i>Whether the metallurgical process is well-tested technology or novel in nature.</i></p> <p><i>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</i></p> <p><i>Any assumptions or allowances made for deleterious elements.</i></p>	<p>The ore is processed via screens, thickeners, and spirals, as in almost every other mineral sands operation to produce a concentrate. Concentrate is processed using magnetic and conductor separators to produce ilmenite and rutile products. The remaining material is further processed using classifiers, wet tables and cleaned with conductor separators to produce zircon and recover additional rutile. This is not an unusual process for mineral sands but has been tailored to suit the higher-than-normal proportion of kyanite, which has similar physical properties to zircon.</p> <p>The plant design was based on the results of metallurgical test work conducted as part of the definitive feasibility study. Test work on site is ongoing to find ways to improve zircon and rutile recovery.</p> <p>Wet Plant Recovery used is 94%, 90%, and 94.5% for Ilmenite, Rutile and Zircon respectively.</p> <p>Dry Plant Recovery used is 100%, 99%, and 77% for Ilmenite, Rutile and Zircon respectively.</p>

Criteria	Explanation	Comment
	<p><i>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</i></p> <p><i>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</i></p>	<p>Plant recoveries used are supported by actual operating recoveries currently achieved by the operation, with wet plant recoveries discounted due to projected reduced feed HM grade associated with the lower grade South Dune Mineral Resources. Actual MSP mineral recoveries are currently higher than the pit optimisation inputs as separation efficiency has improved since feeding the Kwale South ore.</p>
<i>Environmental</i>	<p><i>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</i></p>	<p>All environmental approvals are in place and appropriate monitoring and reporting processes implemented. There is no waste material. There are two tailings streams: sand and clay. The sand tails are clean sand having been washed in concentrator. The clay tails are flocculated and thickened prior to pumping. There is an approved tailing storage facility, which is a dam with walls constructed from sand tails to contain the clay tails.</p>
<i>Infrastructure</i>	<p><i>The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.</i></p>	<p>The Kwale Operations processing plant has been in operation since 2013. All infrastructure required to service processing plant is in existence, including a 132kV power line, an 8GI dam on the Mukurumudzi River and supplementary bore field for all water requirements, a camp to house operational shift workers, an 8km bitumen access road from the highway for finished product transportation to the Likoni port and a dedicated ship loading facility.</p>
<i>Costs</i>	<p><i>The derivation of, or assumptions made, regarding projected capital costs in the study.</i></p> <p><i>The methodology used to estimate operating costs.</i></p> <p><i>Allowances made for the content of deleterious elements.</i></p> <p><i>The source of exchange rates used in the study.</i></p> <p><i>Derivation of transportation charges.</i></p> <p><i>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</i></p> <p><i>The allowances made for royalties payable, both Government and private.</i></p>	<p>Capital has been expended and is sunk.</p> <p>Operating costs were collated and supplied by the site operations team.</p> <p>Deleterious minerals kyanite and monazite are present. A large section of the plant is devoted to separating kyanite from zircon. Monazite is present in small amounts and it is mixed with the slime tails and disposed of.</p> <p>All Revenue and Costs inputs are in USD.</p> <p>The cost of transportation from the plant to the port is in accordance with the transport contract.</p> <p>Ad valorem royalties of 2% are paid to private royalty holders on products mined from SML 23 as it existed in 2010 when the Kwale Project was acquired. A royalty of 5% has been assumed to be payable to the Government of Kenya. Discussions with the Government of Kenya on the royalty regime in line with the terms of SML 23 are ongoing.</p>
<i>Revenue factors</i>	<p><i>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange</i></p>	<p>Product price forecasts were based on the Company's internal price assumptions over the period for which Kwale South Dune Ore Reserves are projected to be mined.</p>

Criteria	Explanation	Comment
	<p><i>rates, transportation and treatment charges, penalties, net smelter returns, etc.</i></p> <p><i>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</i></p>	<p>Straight line product prices were used for mine planning studies (optimization, value modelling) and a variable price deck used for final economic modelling.</p>
<p><i>Market assessment</i></p>	<p><i>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</i></p> <p><i>A customer and competitor analysis along with the identification of likely market windows for the product.</i></p> <p><i>Price and volume forecasts and the basis for these forecasts.</i></p> <p><i>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</i></p>	<p>Ilmenite and rutile are primarily used as feedstock to produce titanium dioxide (TiO<sub>2</sub>) pigment, with a small percentage also used in the production of titanium metal and fluxes for welding rods and wire. TiO<sub>2</sub> is the most widely used white pigment because of its non-toxicity, brightness, and very high refractive index. It is an essential component of consumer products such as paint, plastics, and paper. Pigment demand is therefore the major driver of ilmenite and rutile pricing.</p> <p>Demand for mineral sands products has generally been closely linked to growth in global GDP. Historically demand has grown on average at 3% per annum. This became more volatile in recent years due to very large swings in re-stocking and de-stocking events throughout the supply chains during and following the global financial crisis. Demand had begun re-aligning with GDP in recent years but a short-term departure of the relationship with GDP is likely to re-occur to some extent during the economic volatility caused by Covid-19.</p> <p>Base Resources performs its own internal assessment of the market and also subscribes to the various market outlook and commentaries provided by TZMI and other independent sources. The latest consensus indicates prices for rutile and zircon strengthening over the period to 2023, while ilmenite is expected to weaken slightly in the same period.</p>
<p><i>Economic</i></p>	<p><i>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</i></p> <p><i>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</i></p>	<p>As an operating mine with sunk construction cost, optimisation inputs are based on actual operating costs, design and mine plan, together with Base Resources' internal price forecasts. Economic analysis has been conducted by incorporating these inputs into the Kwale Operations life of mine financial model.</p> <p>Economic analysis is based on discounted operating cash flows (at 10% discount rate) and sensitivities +/- 30% have been conducted on individual product Revenues and operating costs. The project returns a positive operating NPV under the range of sensitivity factors assessed.</p> <p>A 'stressed' low product price deck has also been considered in the schedule model economic analysis (reflecting total revenue at 60% of study base case assumptions) and the project remains operationally cash positive under this scenario.</p>
<p><i>Social</i></p>	<p><i>The status of agreements with key stakeholders and matters leading to social licence to operate.</i></p>	<p>Base Resources has all agreements in place to allow ongoing mining and processing. The company operates a comprehensive Stakeholder Engagement Plan in concert with a Community Development Plan. Close liaison with stakeholders is maintained through the operation of series of liaison committees representing those affected by the mine's presence.</p>

Criteria	Explanation	Comment
<i>Other</i>	<p><i>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</i></p> <p><i>Any identified material naturally occurring risks.</i></p> <p><i>The status of material legal agreements and marketing arrangements.</i></p> <p><i>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</i></p>	<p>The material legal agreements relating to the Kwale Operation are SML 23 and Investment Agreement with the Government of Kenya. Both legal instruments remain valid, legally binding, and enforceable as warranted by the Government most recently in September 2012 in a direct agreement with Base Resources and its lenders.</p> <p>A portion of the estimated Ore Reserves are presently outside the boundary of SML23. The Company is working through mining tenure arrangements with the Kenyan Ministry of Petroleum and Mining to extend the SML 23 boundary to incorporate those estimated Ore Reserves. As previously disclosed, the Cabinet Secretary for the Ministry of Petroleum and Mining has stated publicly that the proposed SML 23 extension has been approved and Base Titanium is working with the Government to finalise the form of Deed of Variation that will give effect to the proposed extension.</p> <p>The Company is also working with the Kenyan National Environmental Management Authority with respect to its application for the necessary environmental permitting (an EIA Licence) to mine the estimated Ore Reserves that fall outside the current boundary of SML 23. The Company anticipates receiving the necessary EIA Licence in the near term.</p>
<i>Classification</i>	<p><i>The basis for the classification of the Ore Reserves into varying confidence categories.</i></p> <p><i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></p> <p><i>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</i></p>	<p>Based on the geological resource estimation categories: Measured = Proved, Indicated = Probable, Inferred = excluded from Ore Reserves estimation.</p> <p>The classification appropriately reflects the Competent Person's view of the deposit.</p> <p>No Probable Ore Reserves have been derived from Measured Mineral Resources.</p>
<i>Audits or reviews</i>	<p><i>The results of any audits or reviews of Ore Reserve estimates.</i></p>	<p>No audit or review of this Ore Reserves estimate has been undertaken.</p>
<i>Discussion of relative accuracy/ confidence</i>	<p><i>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</i></p> <p><i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should</i></p>	<p>There are no assumptions used in this Ore Reserves estimate that differ from current operating practice and hence subject to a greater degree of uncertainty.</p> <p>The statement refers to global estimates.</p> <p>Mining rates for the financial year to 30 June 2021 exceeded budget.</p> <p>For the financial year to 30 June 2021 actual ore tonnes mined was 92.5% of the total depletion of the Ore Reserve model.</p> <p>For the same period, concentrator recovery of valuable HM was 3.3% below budget and mineral separation plant recoveries were between 0.4 and 1.4% greater than budget.</p>

Criteria	Explanation	Comment
	<p><i>be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></p> <p><i>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</i></p> <p><i>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></p>	

## Glossary

Assemblage	The relative proportion of valuable heavy mineral components of ilmenite, rutile, zircon and, where applicable, leucoxene.
Competent Person	The JORC Code requires that a Competent Person be a Member or Fellow of The Australasian Institute of Mining and Metallurgy, of the Australian Institute of Geoscientists, or of a 'Recognised Professional Organisation'. A Competent Person must have a minimum of five years' experience working with the style of mineralisation or type of deposit under consideration and relevant to the activity which that person is undertaking.
Cut-off grade	The lowest grade of mineralised material that is thought to be economically mineable and available. Typically used by Base Resources to define which material is reported in a Mineral Resource estimate.
DTM	Digital Terrain Model.
Grade	A physical or chemical measurement of the characteristics of the material of interest. In this context, the grade is always a percentage and the characteristics are heavy mineral, oversize, slime and the various product minerals (ilmenite, rutile etc).
Heavy mineral	In mineral sands, minerals with a specific gravity greater than 2.85 t/m <sup>3</sup> .
ILM	Ilmenite, a valuable heavy mineral.
Indicated Resource or Indicated	An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.
Inferred Resource or Inferred	An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.
Inverse distance weighting	A statistical interpolation method whereby the influence of data points within a defined neighbourhood around an interpolated point decreases as a function of distance.
JORC Code	The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 Edition, as published by the Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia.
LIDAR survey	LIDAR is a remote sensing technology that measures distance by illuminating a target with a laser and analysing the reflected light to produce a DTM.
Measured Resources or Measured	A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.
Mineral Resources	Mineral Resources are a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.
Minmod	A company developed mineralogy modelling technique, it comprises an XRF analysis of the magnetic and non-magnetic fractions of each composite or sample, the results from which are then back-calculated to determine in-ground mineralogy.
Ore Reserves	Ore Reserves are the economically mineable part of Measured and/or Indicated Mineral Resources.
OS	Oversize material.
Probable Reserve or Probable	A Probable Ore Reserve is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Ore Reserve is lower than that applying to a Proved Ore Reserve.

Proved Reserve or Proved	A Proved Ore Reserve is the economically mineable part of a Measured Mineral Resource. A Proved Ore Reserve implies a high degree of confidence in the Modifying Factors.
QEMSCAN	Is an acronym for Quantitative Evaluation of Materials by Scanning Electron Microscopy, an integrated automated mineralogy and petrography solution providing quantitative analysis of minerals and rocks.
QQ plot	Quantile quantile plot. Used to graphically compare data distributions.
RL	The term Reduced Level is denoted shortly by 'RL'. National survey departments of each country determine RL's of significantly important locations or points. RL is used to describe the relative vertical position of drill collars.
RTK	Real time kinematic DGPS uses a base station GPS at a known point that communicates via radio with a roving unit so that the random position error introduced by the satellite owners may be corrected in real time.
RUT	Rutile, a valuable heavy mineral.
SEM, SEM EDX	A Scanning Electron Microscope is a type of electron microscope that produces images of a sample or minerals by scanning the surface with a focused beam of electrons. EDX is short for energy dispersive X-ray and is commonly used in conjunction with SEM.
SL	Slimes, being a waste product from the processing of mineral sands.
Sterilisation	Material or Ore that is depleted from Mineral Resources or Ore Reserves, but which was not mined. This material still remains in ground but mining has passed by and, in the competent person's opinion, it has no reasonable prospects for eventual economic extraction.
Variography	A geostatistical method that investigates the spatial variability and dependence of grade within a deposit. This may also include a directional analysis.
XRF analysis	A spectroscopic method used to determine the chemical composition of a material through analysis of secondary X-ray emissions, generated by excitation of a sample with primary X-rays that are characteristic of a particular element.
ZIR	Zircon, a valuable heavy mineral.

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This release has been authorised by Base Resources' Disclosure Committee.

**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 [www.baseresources.com.au](http://www.baseresources.com.au).