Operations Update

The 2016 September quarter was again injury-free. A continued focus on strict adherence to isolation procedures and well thought out Job Safety Analyses continued to yield positive results.

The focus on training programmes continued with structured Graduate, Apprentice and Intern courses progressing in earnest. A new Frontline Management programme commenced in order to equip selected trainee and permanent supervisors with the tools required for successful supervisory and management performance.

Mining returned to lower grade perimeter zones during the September quarter and trials commenced with a new hydraulic mining technique. This involves mining and transporting ore with high pressure water rather than bulldozers. If successful from both an economic and water utilisation perspective, this will become a permanent facet of the Kwale operation and supplement dozer mining.

Tailings storage facility wall building proceeded on schedule and slimes deposition is on track. Routine wall monitoring indicates a high level of stability and the annual independent engineer’s inspection was completed in July 2016 giving the facility a clean bill of health. The Mukurumudzi Dam volume dropped from 6.8GL to 5.8GL

“In 2013, Base operated during a very difficult commodity price environment. I am delighted to be able to say that Base has weathered the storm and emerged into an improving market in sound shape and well positioned to capitalise on opportunities. That we have consistently risen to and met the challenge is testament to the experience, quality, dedication and resilience of our entire team.”

Tim Carstens, Managing Director
during the period. Only 114mm of rain was received during the quarter, 45% of the long-term average. Since January, only 44% of the long-term average has been received.

Mineral Separation Plant feed rates continued to increase with 92tph achieved during September. Rutile production for the quarter was slightly higher at 21.7kt on the back of higher throughput. Recoveries were slightly lower at 94.5%. Ilmenite production increased to 122kt (119kt last quarter) due to higher throughput and average recoveries for the quarter were 100%. Zircon production was 9,050t (9,458t last quarter).

The following production and consumption figures were achieved in Quarter 3 of 2016:

<table>
<thead>
<tr>
<th></th>
<th>tonnes</th>
<th>m³</th>
<th>MWh</th>
<th>m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ore Tonnes Mined</td>
<td>2,255,139</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ilmenite Production</td>
<td>121,821</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rutile Production</td>
<td>21,886</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zircon Production</td>
<td>9,050</td>
<td>1,259</td>
<td>13,918</td>
<td>1,616,282</td>
</tr>
</tbody>
</table>

Base visited a couple of active hydraulic mining sites in South Africa and were so impressed with the operations that it was decided to employ the technology here at the Kwale Mine. The hydraulic mining operation has now been commissioned.

Whilst dozer mining activity will always remain our primary form of mining, the now operational hydraulic mining will augment production. The first phase with which we are now busy, is to be considered a trial as it is important to achieve a good understanding of the effectiveness of the concept in our Kwale environment. Power usage and water consumption are critical in the final assessment.

The mining philosophy is based on effectively liquefying in-situ ore and allowing it to gravitate down to a collecting sump and be pumped onwards to feed into our active DMU sump and join the slurry feed from there.

A group of Kenyan employees is now being trained in the art of hydraulic mining. Their enthusiasm is tangible and it will not be long before they will be able to consider themselves as "Hydraulic Miners".

Generally the early consensus is one of optimism, and by December of this year a final decision will be made as to the future of hydraulic mining at the Kwale Mine.

Hydraulic Mining

The concept of hydraulic mining goes back to the turn of the 20th century when the early miners in Russia and Canada determined that together with high pressure water and gravity, the liquefying and transport of an ore body was an economic method of mining. Today with high pressure pumps and conveniently designed monitor guns the methodology has been refined.
Dozer mining operations in front of the process plant

Commissioning of the hydraulic mining operations

Hydraulic mining operations

Rehabilitation trials being undertaken

Establishment of a biodiversity corridor through continuous planting

Base receives a Special Award at the 2016 TOTAL Ecochallenge Awards

The Principal Secretary for Ministry of Mining speaking at the Kenya Mining Forum

CS Mining engages with representatives from Base at the Kenya Mining Forum

The Base Titanium display at the inaugural Kenya Mining Forum, Nairobi, September 2016
Groundwater Risk Management

Base is a key partner in the Gro for GooD project, an international research project undertaken to inform groundwater management in Kwale County and beyond.

Launched in 2015, the project — Groundwater Risk Management for Growth and Development — is led by Oxford University and funded by the UK Research Council and UK Department for International Development. Alongside Base, partners include the Kwale County Government, the Water Resources Management Authority, KISCOL, Rural Focus Limited as well as researchers from the Jomo Kenyatta University of Agriculture and Technology, the University of Nairobi and the Polytechnic University of Barcelona in Spain.

By sharing cutting edge science with local decision-makers, the Gro for GooD project will help ensure improved community access to water resources and that groundwater use by the mining, sugar and tourism sectors is sustainably managed for decades to come. It will also inform the Groundwater Risk Management Tool, enabling institutional responses to deliver sustainable water supplies through hi-tech, low-cost hand pump solutions.

As part of the project, Base is pleased to be sponsoring Jacob Katuva, a young Kenyan scientist from Kwale County, to undertake research towards his DPhil at the University of Oxford. Jacob’s research focuses on the use of groundwater by local people and the impacts of mining and irrigation on livelihoods and the environment.

Mombasa International Show

The Mombasa International Show ("MIS") was established in 1903 at the show ground situated at Mkomani on the north coast of Mombasa. In 2002 MIS was elevated to international status to attract investors and players in the agriculture, trade and tourism sectors. Now known as the Mombasa Agricultural Show, run by the Agricultural Society of Kenya, the 2016 show theme was "Enhancing Technology in Agriculture and Industry for Food Security and National Growth".

Base participated alongside over 160 other exhibitors in this year’s event between 31st August and 4th September, showcasing elements of its Agricultural Livelihood Programmes.

The display featured samples of produce from the various agricultural programmes being undertaken alongside Kwale farmers with cotton, soybean, sorghum, cowpea and potatoes showcased. In addition, Base partnered with Syngenta, Kenya Seed Company, and the Agriculture and Food Authority and planted small demonstration plots of cotton and sorghum at the show ground. Cotton On also supplied garments for the display to showcase some of the cotton end products.

Over 1,200 people visited Base’s display stand and crop demonstration plots and were very impressed with the programmes being undertaken to help promote sustainable development through working with neighbouring communities to improve living standards and create livelihood opportunities.
International Coastal Clean-Up Day

Every year, around the world, International Coastal Clean-Up Day is held on 17th September. This is the largest global volunteer effort working to protect our oceans and waterways. Nearly 800,000 volunteers worldwide collected more than 8 million kilogrammes of plastic during the 2015 International Coastal Clean-Up. In the last few years, Kenyans have started participating in this global effort and last year 2,500 volunteers collected 8,500kgs of plastic waste along 35km of our beaches. For the 2016 event Base joined with the communities of Msambweni and Wasini Island, the Ocean Sole Foundation (a local organisation that advocates “Cleaning Beaches, Creating Masterpieces” through the recycling of flip-flops by transforming them into colourful works of art) and KWS to participate in the clean-up event. With our contribution, an estimated 14,000kgs of waste was collected by 4,000 volunteers from Kenyan beaches as part of the global effort.

Started 30 years ago, this global event is organised by Ocean Conservancy, an organisation working to protect the oceans from today’s pollution challenges. Its vision is to maintain a healthy ocean ecosystem critical to sustaining life on our planet. Ocean trash is considered to be one of the most serious pollution problems of our time. Discarded fishing gear and plastic waste are the most significant contributors to ocean waste. A recent study by Ocean Conservancy on the ecological impacts on sea turtles, seabirds and marine mammals by the most commonly found items collected during the International Coastal Clean-Up found that discarded fishing gear poses the greatest threat to marine wildlife, primarily through entanglement. Plastic waste, from plastic bags that are often mistaken for food by animals such as sea turtles to plastics debris (including plastic microbeads and plastic fibres) that were found in 25% of fish purchased from fish markets in Indonesia and the United States, is becoming increasingly concerning. Ocean Conservancy advocates that unless steps are taken to properly manage waste by 2025 the ocean could contain 1 tonne of plastic for every 3 tonnes of finfish.
MITC Apprentices

Base is committed to providing a practical learning environment that ensures rapid transfer of skills to Kenyans, to build capacity in its employees and to assist in developing skills for the broader mining sector in Kenya. Structured skills transfer and training programmes are offered not only to our own employees, but also to external groups including graduates, interns, apprentices, high school students and local community groups.

Our technical training apprenticeships are designed to run concurrently with theoretical trade studies offered by a polytechnic or equivalent. While the institution undertakes classroom teaching, Base provides the practical training. Performance assessments are conducted by both Base and the institution to test competence before trade certificates are issued.

The second group enrolled in the apprenticeship programme completed its first year on 21st September 2016. This group of ten young Kenyans were selected to participate in the two-year hands-on training programme in Automotive (Light Vehicle) Maintenance. As part of the programme the apprentices were enrolled for a Craft Certificate in Motor Vehicle Mechanics at the Mombasa Industrial Training Centre ("MITC"), part of the National Industrial Training Authority ("NITA"). The two-year intensive course (which was customised by Base and NITA and compressed from three to two years) consists of two 4-month classroom training sessions and two 8-month hands-on training attachments at Base’s vehicle maintenance unit. This ensures that the apprentices are given specific industrial skills exposure enabling them to become work-ready graduates.

Following the four months of academic training, each of the students is issued with a Certificate of Proficiency by NITA and a progress report by MITC illustrating his/her performance in the course.

In of the last academic training period from January to April 2016, all ten apprentices performed exceptionally well and passed with good grades achieving an overall average of 77%, three of whom – Said Bakari Katumu, Paul Kaula Munywoki and Margaret Muthoni Maina – achieved First Class passes. Congratulations and well done to all the apprentices!
Supporting Community

The Kenya Mining Forum – Showcasing Base

On 28th and 29th September, the inaugural Kenya Mining Forum was held in Nairobi. As the country’s flagship mining operator, Base sponsored and participated prominently in the Forum which brought together all the major stakeholders of Kenya’s mining industry including investors, government, civil society and service providers.

The Forum presented a great opportunity for Base to highlight what is possible to achieve in Kenya’s mining sector. During the Cabinet Secretary for Mining, Hon. Dan Kazungu’s presentation, he highlighted the excellent work Base is doing through its community livelihood and extensive training programmes. The Base display was a focal point for media and senior government officials interested to learn more about its operations.

The Forum came three weeks after the annual Africa Down Under conference held in Perth in which Base hosted and participated in a number of promotional events with the Cabinet Secretary and ministry officials. The two events have generated significant interest in Kenya’s mining industry from international investors, which in turn has created a lot of interest in Base and the success it has achieved.

Total Ecochallenge 2016 – An Award for Base

On the 23rd September 2016 Base’s conservation efforts were once again recognised at the Total Ecochallenge Gala Awards hosted by Total Kenya.

Every year, the awards honour tree planting champions of the past year who have greatly contributed towards the attainment of the Ecochallenge objectives. These include individuals, farmers, community groups, schools, societies, clubs, institutions, organisations, businesses and industry.

Started in 2003, with the aim of inspiring and helping all Kenyans to plant trees in every possible place, the Total Ecochallenge now incorporates more than 5,000 projects through which over one billion trees have now been planted.

At the 2016 Gala Awards event, televised live on NTV, Base was presented with a trophy in the Business Category in recognition of its outstanding achievement in leading the way in species biodiversity conservation.

Over 38,600 trees have been planted to date in the Biodiversity Corridor that lies within the mining lease. Notably this figure includes 1,082 critically endangered and 3,403 endangered trees across 250 species.