

### Botswana

#### • New drill rig commissioned

Tsodilo Resources Ltd completed the onsite commissioning of the company's newly acquired Atlas Copco CT 14 diamond core drill rig. The extensive 2006 drilling programme has started and the company confirmed two more kimberlite at targets anomalies A41 and C15.

The booming commodities markets have resulted in greatly increased exploration activity in southern Africa which, in turn, has created a scarcity of drilling contractors. Against this background Tsodilo's Botswana subsidiary, Newdico Ltd, decided to purchase its own drill equipment which arrived on site on July 23, 2006. After much research of available equipment, a new Atlas Copco CT 14 diamond core rig was ordered and subsequently mounted on an Iveco 420 Trakker 6x6 truck at Atlas Copco's facility in Sweden. An additional three 6x6 Iveco 420 Trakker trucks were purchased to supply water, diesel and drilling supplies to the rig. The Iveco 420 Trakker truck was specifically designed with the African market in mind and the company's vehicles are among the first units to be delivered on the continent.

The acquisition of drilling capability will allow Tsodilo to markedly increase the flow of new drill results to the market as well as allow a substantial reduction in costs as drill contract rates have escalated dramatically due to increased demand for drilling services.

Commissioning of the drill rig began on July 24 when the rig was moved onto the site of

the A41 airborne magnetic anomaly. Drilling started on July 26 with rotary mud drilling through the loose Upper Kalahari aeolian sands and was completed with HQ diamond core drilling.

#### Kimberlite A41

Ground gravity and magnetic surveys carried out over A41 suggest that the kimberlite is slightly elongate, measuring about 400 m north-south and 400 - 500 m east-west. Kimberlite A41 is located some 21 km due east of the Botswana/Namibia border and is located in the southern part of a group of 23 kimberlites previously discovered in the Nxau Nxau region of the Ngamiland project area.

After rotary drilling through the overlying 19 m of aeolian sand, hard calcrete was intersected at the base of the Upper Kalahari sequence and casing was installed. Diamond core drilling started and fine grained, weathered tuffisitic claystones were intersected from 44 m depth. These fine grained kimberlitic crater sediments persisted to 66 m when a sequence of coarse, grain and matrix supported pebble conglomerates were intersected. The pebble conglomerates consist of rounded to angular fragments of dolomite, tuffisitic claystone and quartzite set in a quartz and tuff groundmass. At a depth of 80 m, the hole passed out of these kimberlite crater sediments and intersected highly fractured basement dolomitic marbles which continued to the end of the hole at a depth of 102 m.

Drilling has demonstrated that the A41 target has a restricted (44 m) cover of Kalahari sediments. The upper sections of the kimberlite are dominated by fine grained tuffs with coarser sediments prominent at deeper levels. The ubiquitous presence of ilmenite suggests that these rocks represent the upper sections of a kimberlite crater sequence.

#### Kimberlite C15

After rotary drilling through 9 m of aeolian sand, hard calcrete was intersected to the base of the Upper Kalahari sequence at 36 m when very weathered reddish-brown tuffisitic claystone was intersected. At 58 m this tuff layer was followed by a tuffisitic kimberlite breccia in which kimberlitic pyrope garnets, chrome diopside and ilmenite grains were identified in hand specimen. The tuffisitic kimberlite breccia continued to a depth of 88,5 m where highly fractured and hydrothermally altered dolomitic marble was intersected.

This is interpreted as being very close to the kimberlite vent with the fractured and altered dolomite forming the base of the crater.

Drilling has demonstrated that the C15 target has many similarities to the A15 kimberlite evaluated in 2005. A range of pink to deep purple peridotitic pyrope garnets, as well as orange-colored eclogitic pyrope garnets, has been identified from hand specimens. This abundance of garnet differentiates C15 and A15 from the

*James Bruchs looked rather pleased when Tsodilo's brand new Atlas Copco drill arrived in Gaborone from Walvois Bay.*



Willem Smuts



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predominantly ilmenite-rich kimberlites in the Nxau Nxau field and may represent a different generation of kimberlite intrusion.

A more detailed petrological examination and determination of the indicator mineral chemistry by micro-probe analysis will be carried out to determine the diamond bearing capacity of the A41 and C15 kimberlites before further drilling to locate the centre of the pipes and to collect further kimberlite samples for micro-diamond analysis is done.

"C15 is the type of kimberlite we are looking for and its discovery confirms our exploration methodology. The secondary kimberlitic indicator minerals (KIM) anomalies to the west of us at Tsumkwe and Omatako are rich in garnet.

"When we discovered A15, we suspected that we had a different type or generation of kimberlite than those previously discovered in our license block. The kimberlites previously discovered in the Nxau Nxau field proved to be diamondiferous but not economic; in addition, they were ilmenite rich and garnet poor. The discovery of C15 confirms that we do indeed have a different type or generation of kimberlite in our Nxau Nxau field. We are encouraged by the news from the field and believe we are on track to find the source or sources of the secondary KIM anomalies down slope to the west of us," states James Bruchs, president and CEO of Tsodilo.

Tsodilo's exploration strategy of geophysical survey and surface sampling followed by drill evaluation has been successful in locating 24 kimberlites among the mafic Karoo dykes in northwest Botswana. The Nxau Nxau kimberlite field is located over the southern portion of the Angola/Congo craton and represents an excellent target for exploration in a region of southern Africa that is known to host major economic diamond deposits. The Nxau Nxau kimberlite field is thought to host an economic diamond-bearing kimberlite that provided the macro-diamonds found down slope to the west in Kalahari alluvial deposits located at Tsumkwe and Omatako. The drill-confirmed discovery of 24 kimberlites in the Nxau Nxau field, with at least four of these being diamondiferous, confirms the ability of the exploration strategy to pinpoint kimberlite of very deep-seated origin in an extensional region with a suitably low geothermal heat flow.

The exploration team will drill some 22 targets in the Nxau Nxau area during the current programme which is expected to be complete by the end of 2006. Airborne magnetic anomaly C15 and a group of three circular anomalies along a dyke-like feature connecting anomalies A36 and 1821 C16, as well as the large 2021 A7 target in the company's southern licence block, are just some of the priority targets to be drilled in the next few months.

In addition to the target anomalies selected for drill testing, two section lines to locate and evaluate Kalahari paleo drainage channels will also be drilled late in the 2006 season and hopefully aid in locating the source area of the secondary G10 and diamond deposits at Tsumkwe and Omatako.



Williem Smuts



Tsodilo

Above: Getting down to business on target A41.

Above left: Veteran diamond explorationist, Peter Walker, is responsible for the design and execution of Tsodilo's exploration programme in Botswana.

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