Combined Annual Exploration Report – Year 3

Exploration Licence EL 10229 & EL 25976

11th May 2009 to 10th May 2010

Holder: DeBeers Australia Pty Ltd
Operator: North Australian Diamonds Limited
Reporting Period: 10th May 2009 to 9th May 2010
Sheet Reference: Milingimbi (SD 53-02) 1:250,000
Due Date: 10th June 2010

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SUMMARY

This report details exploration activity carried out by North Australian Diamonds Limited (NADL) and Top End Uranium Limited over Exploration Licences EL 10229 and EL 25976 for the period 10th May 2009 to 9th May 2010. This period represents Year 3 of the licence. The target for exploration within the licences is diamond and uranium. The licences are on Aborigonal Land and are subject to ALRA (1974) access conditions. The licences were transferred from De Beers Australia Exploration Pty Ltd (DBAE) to NADL in early 2009.

EL 10229 is located on the Milingimbi (SD53-02) 1:250,000 geological mapsheet and the Cadell (5772) 1:100,000 topographic map sheets. EL 25976 is located on the Milingimbi (SD53-02) 1:250,000 geological mapsheet and the Cadell (5772) and Blyth River (5872) 1:100,000 topographic map sheets. The licences have an irregular shape resulting from ‘no-go areas’ defined by Traditional Owners during the anthropological surveys.

During the reporting period a total of 23 reconnaissance stream samples were collected by NADL. Processing of these samples returned 14 negative and 9 positive results.
1.0 INTRODUCTION

This report details exploration activity carried out by North Australian Diamonds Limited (NADL) and Top End Uranium Limited (TEU) over Exploration Licences EL 10229 and EL 25976 for the period 10th May 2009 to 9th May 2010. This period represents Year 3 of the licence. The target for exploration within the licences is diamond and uranium.

2.0 LICENCE HISTORY

EL 10229 was first applied for by De Beers Australia Exploration Pty Ltd (DBAE) on 11th November 1998. The Minister gave consent to negotiate with the NLC for grant on 3rd August 1999. The negotiation period was extended several times and on 17th July 2001 the Traditional Owners gave their approval for exploration and mining. Following anthropological surveys and the resulting areas of consent the licence application was split into two parts. A new Exploration Licence number was allocated and on 11th May 2007 Exploration Licences 10229 and 25976 were granted for a period of six years.

During the above period NADL (then Striker Resources NL) reached an agreement with DBAE in early 2004 whereby NADL has become the operator of the licences and has acquired the rights to explore for all minerals within the licences. In early 2009 DBAE sold all rights and title to the tenement to NADL.

In 2007, TEU entered into a farmin agreement with NADL to earn the right to all non diamond minerals. These rights were purchased from NADL in early 2009.

3.0 LICENCE DETAILS

EL 10229 is located on the Milingimbi (SD53-02) 1:250,000 geological mapsheet and the Cadell (5772) 1:100,000 topographic map sheets. EL 25976 is located on the Milingimbi (SD53-02) 1:250,000 geological mapsheet and the Cadell (5772) and Blyth River (5872) 1:100,000 topographic map sheets. The licences have an irregular shape resulting from ‘no-go areas’ defined by Traditional Owners during the anthropological surveys. The licenses were reduced in size during April of 2010 following a partial surrender of 12 blocks (EL10229) and 48 blocks (EL 25976). The licence details are included in Table 1 below and a location map is shown as Figure 1.
Table 1: Licence Details

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Licence No</th>
<th>Application Date</th>
<th>Grant Date</th>
<th>Expiry Date</th>
<th>Blocks Original</th>
<th>Blocks Current</th>
<th>Area (km²)</th>
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<tbody>
<tr>
<td>Arnhem Land</td>
<td>EL 25976</td>
<td>11/11/1998</td>
<td>11/05/2007</td>
<td>11/05/2013</td>
<td>94</td>
<td>46</td>
<td>146.9</td>
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</tbody>
</table>

4.0 PHYSIOGRAPHIC DESCRIPTION

4.1 Geomorphology

Two major physiographic subdivisions occur within the project area, the Arnhem Land Plateau, which is dominated by sub-horizontal Palaeoproterozoic sandstone and volcanics, and the Arafura Fall, which comprises gently undulating country covered by Cainozoic sands and ferricrete. The Arnhem Land Plateau merges gradually with the Arafura Fall from approximately 170m above sea level to approximately 50m above sea level within the licences.

Both licences contain plateaux that are drained by tributaries to Imimbar Creek, which itself is located within EL 25976.

4.2 Geology

The licences are located predominantly within the North Australian Craton on the tectonically stable Arnhem Shelf, that part of the northwestern McArthur Basin characterised by comparatively mild deformation. The northern parts of the licences host sediments of the Arafura Basin, which is post-McArthur Basin.

The geology is shown on Figure 2. The oldest rock unit is the Palaeoproterozoic Gumarrirnbang Sandstone of the Kombolgie Subgroup of the Katherine River Group. Northeast-trending linear dunes with wavelengths up to 60m and crests up to 3.5m have developed within the Gumarrirnbang Sandstone. The Marlgowa Sandstone (of Kombolgie Subgroup) overlies the Gumarrirnbang Sandstone to the south in EL 25976 and does not crop out in EL 10229. A northeast-northwest conjugate joint set has developed on the above sandstone units and vertical to sub-vertical dolerite dykes of undetermined age intrude the sediments and volcanics of the Katherine River Group and occur generally as infill to north-east trending faults and joints. The dykes are evident on the aeromagnetic image. The Gilruth Volcanic Member occurs as an interpreted topographic bench in EL...
25976 conformably separating the underlying Gumarrirnbang Sandstone from the overlying Marlgowa Sandstone. It is not observed in outcrop but is evident in the uranium channel on the radiometric image. It is described as a 5m thick band of tuffaceous siltstone, tuff, banded jasper and amygdaloidal and vesicular basalt.

The Oenpelli Dolerite occurs as an intrusion to the Marlgowa Sandstone in the southern parts of the EL 25976 and is described as continental tholeiitic magma.

In the northern parts of the licence younger sediments of the Arafura Basin crop out including the Neoproterozoic Buckingham Bay Sandstone and overlying Raiwalla Shale. The unconformity between the Arnhem Shelf units and the Arafura Basin units is covered by Cainozoic sands and soils and does not crop out within the licences.

The youngest sediments include Quaternary sands, silts and gravels that occur within recent drainage channels.

### 4.3 Geophysics

Airborne regional data was acquired in the early 1990’s during surveys contracted to the NTGS and include the ‘Milingimbi’ survey. Magnetic and gamma-ray spectrometry datasets were collected along east-west flight lines 500m apart 100m above the ground. Magnetic data clearly highlights prominent features such as faults and several mapped dolerite dykes. The radiometric data, in particular the uranium channel highlights the Gilruth Volcanic Member as discussed above.

In addition, regional gravity surveys were conducted by Australian Geological Survey Organization (AGSO). The gravity measurements are at 11 km station spacing and therefore do not provide useful information for near surface geological interpretation and in particular detection of kimberlite pipes.

No company geophysical surveys have been completed over the licences other than several lines of airborne spectrometry acquired by DBAE during 1971 in their search for uranium. The data acquired was total radiometric count collected on flight lines 2 miles apart at a height of 300 feet. No anomalies were identified.

DBAE have completed aeromagnetic surveys over adjoining licences (historic) that identified numerous kimberlite targets, however no kimberlites were discovered.
5.0 PREVIOUS EXPLORATION

In addition to the spectrometry data discussed above DBAE collected approximately six stream gravel samples in Imimbar Creek during 1971 that returned negative results. The stream samples were only approximately 50 pounds (22kg) of -1/4” (6mm) gravel and may be considered too small to provide a meaningful result. It is NADL practice to collect approximately 40kg of -1mm gravel.

Stream sampling and airborne geophysical surveys by DBAE in adjoining licences (historic) has recovered kimberlitic chrome diopside and identified numerous kimberlite targets.

Since the early 1970’s no exploration has been undertaken due to access restrictions. The sampling undertaken by DBAE is not considered to be exhaustive and the licence remains prospective for diamondiferous kimberlites.

A reconnaissance stream sampling program was undertaken on the tenements during 2008-2009 with a total of 16 40kg samples collected. These samples were taken where vehicle access allowed. The samples were dispatched to NADL’s heavy mineral laboratory in Perth for processing and recovery of indicator minerals and microdiamonds.

6.0 EXPLORATION COMPLETED DURING CURRENT REPORTING PERIOD

Exploration during the reporting period was as follows;

EL 10229

Work during the reporting period comprised the taking of 3 stream samples. The samples were taken as a combined sampling program on EL 10229 and EL 25976. The samples were submitted to the company’s wholly owned mineral processing laboratory in Perth. Results returned were negative. The results are outlined in table 2.

EL 25976

Work during the reporting period comprised the taking of 20 stream samples. The samples were taken as a combined sampling program on EL 10229 and EL 25976. The samples were submitted to the company’s wholly owned mineral processing laboratory in Perth. The results returned were mixed with 8 samples returning positive results and 11 negative.
Traces of chromatic kimberlite and Xenotime were found in 4 of the nine samples. Chromite and Xenotime traces proved interesting as they are often found as trace elements in uranium. Follow up sampling may prove useful for determining if the area is likely to contain any such uranium. The results are outlined in table 2 below. The amount of chromite found in each of the positive samples is outlined in figure 3.

Table 2: 09-020 (001-023) Sample Results EL 10229 and EL 25976.

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### 7.0 EXPLORATION EXPENDITURE

**EL 10229**

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**EL 25975**

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### 8.0 PROPOSED PROGRAMME FOR 2010-2011

Further reconnaissance and follow-up stream sampling is planned in areas that were found to contain samples with high traces of chromatic kimberlite and Xenotime. This is outlined in figure 3.
References


