Deep Yellow Limited

OFFICER/SOLITAIRE PROJECT
COMBINED ANNUAL REPORT
GR290-13

19 March 2012 to 18 March 2013

Holder/Operator: Deep Yellow Limited
Tenement Manager: Deep Yellow Limited
Author: G Gee
Commodity: Uranium
Report Date: April 2013
Datum/Zone: GDA94/Zone 53
250,000 Mapsheet: The Granites (SF53-03); Mount Solitaire (SF53-04) and Highland Rocks (SF53-07)
Contact: gmcbain@deepyellow.com.au

Distribution:
- DME – Digital
- Central Land Council - Digital
- Deep Yellow Ltd
## CONTENTS

### SUMMARY

1. **INTRODUCTION**
   1.1 Tenure
   1.2 Location and Access

2. **GEOLOGY (Sinclair et al, 2003)**

3. **PREVIOUS EXPLORATION**

4. **EXPLORATION COMPLETED**

5. **CONCLUSIONS AND RECOMMENDATIONS**

6. **BIBLIOGRAPHY**

### Tables

Table 1 Officer/Solitaire Project Tenement Details

### Figures

- **Figure 1** Tenement Location Plan
- **Figure 2** Officer/Solitaire Project Geology
ACKNOWLEDGEMENT AND WARRANTY

1. Subject to 2, the tenure holder acknowledges that this Report, including the material, information and data incorporated in it, has been made under the direction or control of the Northern Territory (NT) within the meaning of section 176 of the Copyright Act 1968 (Cwth).

2. To the extent that copyright in any material included in this Report is not owned by the NT, the tenure holder warrants that it has the full legal right and authority to grant, and hereby does grant, to the NT, subject to any confidentiality obligation undertaken by the NT, the right to do (including to authorise any other person to do) any act in the copyright, including to:

   • use;
   • reproduce;
   • publish; and
   • communicate in electronic form to the public, such material, including any data and information included in the material.

3. Without limiting the scope of 1 and 2 above, the tenure holder warrants that all relevant authorisations and consents have been obtained for all acts referred to in 1 and 2 above, to ensure that the doing of any of the acts is not unauthorised within the meaning of section 29(6) of the Copyright Act (Cwth).
SUMMARY

The Officer/Solitaire project comprising eight Exploration Licences is located approximately 520 kilometres north-west of Alice Springs in the Northern Territory.

This report covers the exploration activities conducted during the first year of tenure of Exploration Licences 25097, 25155, 25177, 25212, 27140, 27141 and 27334 together with the eleventh year of term in respect of Exploration Licence 10223.

The Officer/Solitaire tenements are located over metamorphic and igneous rocks of the Tanami-Arunta Province; some of which may be enriched in uranium. DYL is exploring the trunk paleodrainage pattern for both palaeochannel and calcrete-style uranium mineralisation.

All of the tenements are in their first year of tenure excepting EL 10223. Clearances for drilling have been sought and granted on parts of ELs 25177, 10223, 27141 and 25097. The other tenements are cleared for work of a non-ground-disturbing nature. Initial work on EL 10223 has demonstrated that surface uranium mineralisation exists and warrants follow up.
1. INTRODUCTION

The Officer/Solitaire project comprises eight Exploration Licences located approximately 520 kilometres northwest of Alice Springs in the Northern Territory.

This report covers exploration activities conducted from 19 March 2012 to 18 March 2013 in respect of Exploration Licences 25097, 25155, 25177, 25212, 27140, 27141 and 27334 together with the eleventh year of term in respect of EL 10223 (22 May 2012 to 18 March 2013).

The Officer/Solitaire project tenements are being explored for palaeochannel (roll front) and calcrete-hosted styles of uranium mineralisation by Deep Yellow Ltd (DYL)

1.1 Tenure

Exploration Licence 10223 was granted to AngloGold Australia Limited (AngloGold) on 22 May 2002 over an area of 439 blocks. Tanami Exploration NL (TENL) acquired the tenement pursuant to a Sale and Purchase Agreement with AngloGold dated 23 June 2005.

DYL acquired EL 10223 from TENL under the terms of a Heads of Agreement between DYL and TENL with DYL’s interest being registered effective 19 July 2010.

Following four reductions in area pursuant to the requirements of section 26 of the NT Mining Act, the current area of EL 10223 is 76 blocks.

Exploration Licences 25097, 25155, 25177, 25212, 27140, 27141 and 27334 were granted effective 19 March 2012 following execution of the Officer/Solitaire Deed for Exploration by the Central Land Council in December 2011.

Details of the Office/Solitaire project tenements are shown in Table 1.

Table 1: Officer/Solitaire Project Tenement Details

<table>
<thead>
<tr>
<th>Tenement No.</th>
<th>Name</th>
<th>Blocks</th>
<th>Grant Date</th>
<th>Expiry Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL 10223</td>
<td>Cornelius</td>
<td>76</td>
<td>22 May 2002</td>
<td>21 May 2014</td>
</tr>
<tr>
<td>EL 25097</td>
<td>Billabong North</td>
<td>72</td>
<td>19 Mar 2012</td>
<td>18 Mar 2018</td>
</tr>
<tr>
<td>EL 25155</td>
<td>Muriel Range</td>
<td>111</td>
<td>19 Mar 2012</td>
<td>18 Mar 2018</td>
</tr>
<tr>
<td>EL 25177</td>
<td>Fiddlers Lake</td>
<td>209</td>
<td>19 Mar 2012</td>
<td>18 Mar 2018</td>
</tr>
<tr>
<td>EL 25212</td>
<td>Mt Davidson</td>
<td>96</td>
<td>19 Mar 2012</td>
<td>18 Mar 2018</td>
</tr>
<tr>
<td>EL 27140</td>
<td>Cornelius North</td>
<td>40</td>
<td>19 Mar 2012</td>
<td>18 Mar 2018</td>
</tr>
<tr>
<td>EL 27141</td>
<td>Cornelius South</td>
<td>60</td>
<td>19 Mar 2012</td>
<td>18 Mar 2018</td>
</tr>
<tr>
<td>EL 27334</td>
<td>Green Swamp Hill</td>
<td>19</td>
<td>19 Mar 2012</td>
<td>18 Mar 2018</td>
</tr>
</tbody>
</table>
1.2 Location and Access

The location of the eight project tenements is approximately 520 kilometres north-west of Alice Springs (see Figure 1). The underlying ownership comprises Aboriginal Freehold Title. This area is covered by the Highland Rocks, Mt. Solitaire and The Granites 1:250,000 map sheets. The project is accessed via the Tanami Road and informal tracks of ex-pastoral or previous mineral exploration origin.
Figure 1  Tenement Location Plan
2. GEOLOGY (Sinclair et al, 2003)

The project area lies within the Granites - Tanami Block that forms the basement to the surrounding Birrindudu Basin (Blake et al. 1979). To the west are the Halls Creek Mobile Zone and the Canning Basin; whilst to the east and south are the Wiso Basin and the Arunta Block (which is possibly of similar age and stratigraphic equivalence to the Granites - Tanami Block). (Newer terminology now refers this region to the Tanami-Arunta Province or the Aileron Province). The Granites - Tanami Block contains the Tanami Complex, which hosts the mineralisation at the Tanami and Granites gold mines. The Tanami Complex is of Early Proterozoic age and comprises meta-sediments and meta-volcanics, which are steeply dipping with a bedding parallel cleavage. Poor exposure and structural complexity have precluded a full understanding of the stratigraphy.

The NTGS has remapped the eastern portion of the inlier and erected a stratigraphy, which broadly correlates with the Pine Creek and Hall's Creek inliers. Economic gold mineralisation is found in a variety of host rocks, and appears to be related at least partly to geochemical properties of those rocks, rather than a particular stratigraphic age. At Dead Bullock Soak, the Callie deposit gold is hosted in a weakly carbonaceous siltstone sequence, the Dead Bullock Formation. At the Tanami Mine, gold is hosted by rocks deposited in a younger basin. These comprise a series of pillow basalts and greywackes of the Mount Charles Formation. In the western Tanami, mineralisation is hosted by a sequence of weakly carbonaceous shales, siltstones, micaceous greywackes and sandstones, which have been tentatively assigned to the Killi Killi Formation by AngloGold. The Killi Killi Formation is slightly younger than the Dead Bullock Formation but is part of the same basin fill sequence. The Killi Killi Formation is thought to represent late stage, passive margin basin fill sedimentation. Late Proterozoic and early Carpentarian granites intrude the Tanami Complex. Most of the known gold mineralisation is spatially related to these granites, although a genetic relationship has not yet been proven.

Cainozoic surficial overburden comprises laterite, calcrete and vein quartz rubble. In addition there is a thin veneer of Quaternary aeolian and alluvial sand. Palaeodrainage channels are well developed in the western Tanami, filled by lacustrine clays and sheetwash sedimentation. Silcrete is locally developed. Where tested by drilling they have a maximum depth of around 40m, but may be locally deeper elsewhere. These commonly follow major structural lineaments in the underlying bedrock and for that reason tend to inhibit exploration.

The trunk drainages represent the major uranium exploration play, as they may host shallow carnotite mineralisation in calcrete or tabular sand bodies, or redox traps at depth in reduced sediment. Regional airborne radiometric surveys are effective in locating surface mineralisation along these trunk drainages, though aeolian sand is effective in masking this response.

Structurally the Block is very complex with multiple phases of deformation and faulting. Two main types of folding have been identified in the Killi Killi Beds. Broad northerly-plunging anticlines and synclines are recognised and east-southeast-trending zones of smaller chevron folds with steep limbs. The chevron folds cut across the broad folds indicating at least two phases of deformation. Both phases have been disrupted by the intrusion of granite. D1 and D2 involve progressive deformation about NWSE to E-W trending axes. Dextral strike slip reactivation of the Trans Tanami fault during D3 or late D2 resulted in rotation and re-folding of previously folded units to a N-S orientation.

NW-WNW trending strike slip/dip-slip faults (D3) are very prominent and are commonly associated with intense shearing and quartz veining. The structures are possibly related to deep-seated structures in the metamorphic-granitoid Archaean basement, which to the NW define the margin of the Canning Basin on the Lennard Shelf. NE to ENE and N-trending faults are also common and can be related to phases of basin extension and compression during regional tectonism.
The NTGS has identified seven stages of deformation, with the gold mineralisation relatively late and related to a D6 event. Recent dating by AGSO/NTGS of mineralisation also indicates late stage mineralisation. AngloGold has erected a simpler, but broadly similar structural model, with three major deformation events, with mineralisation related to late D2 deformation. Much of the dextral faulting on NW-WNW Trans-Tanami Faults is thought to post-date mineralisation.
Figure 2  Officer/Solitaire Project Geology
3. Previous Exploration

Previous exploration of the Tanami-Arunta Province has been almost exclusively for gold. The first concerted effort at regional uranium exploration was conducted by PNC Exploration (Australia) Pty Ltd during the late 1980s, though these efforts did not extend into the current project area. The period of modern gold exploration began in the 1990s and extends to the present. Of the eight tenements comprising DYL’s Officer-Solitaire project, all except ELs 27334 and 25155 have had some drilling conducted upon them. Previous explorers include AngloGold Australia Ltd, Newmont Asia Pacific, Sons of Gwalia Ltd and Tanami Gold NL; employing mostly shallow vacuum, aircore, RAB or slim-hole RC drilling. Past drilling has been targeted at geochemically anomalous outcrop or geophysical targets masked by cover. These past efforts have provided little in the way of assistance for DYL’s uranium targeting. Indeed, the historic gold targeting avoided the very trunk drainages which are the focus of DYL’s proposed programmes.

4. Exploration Completed

There was no on-ground exploration conducted during the reporting period.

During the previous reporting period, DYL completed an initial reconnaissance of EL 10223 (Cornelius), just before the wet season curtailed access. (Bridgewater 2012). This reconnaissance produced some encouraging results. Uranium (carnotite) mineralisation was located at surface. A ground radiometric survey confirmed the airborne anomalism and revealed widespread, subtle radiometric anomalism (around 2x background). Two geochemical samples showed a pronounced positive radiometric disequilibrium; indicating more uranium present than would be expected from the radiometric intensity.

5. Conclusions and Recommendations

DYL intends to focus on the surface and subsurface paleodrainage, using regional airborne radiometrics to select areas for follow up by ground radiometric traverses and geochemical sampling to generate drill targets. The efficacy of this method has been validated at DYL’s Napperby uranium project.

6. Bibliography

Sinclair, J., Spurway, C., Spurway, N. First Group Annual Report for Arunta Agreement, EL 10222 (Pelsart) and EL 10223 (Cornelius) for the year ending 20 May 2003. Unpublished Report by AngloGold Australia Ltd.
