FINAL REPORT

SUBSTITUTE EXPLORATION LICENCE 10341

Union Reefs Project

For Year Ending 29 September 2011

Distribution:-

1. DOR Darwin, NT
2. Crocodile Gold Australia, Humpty Doo

Marcelle Watson
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# TABLE OF CONTENTS

1 EXECUTIVE SUMMARY ........................................................................................................3
2 INTRODUCTION ..................................................................................................................4
3 LOCATION AND ACCESS ..................................................................................................4
4 TENEMENT DETAILS .........................................................................................................4
5 GEOLOGICAL SETTING .....................................................................................................6
   5.1 Regional Geology ........................................................................................................6
   5.2 Local Geology .............................................................................................................7
6 EXPLORATION ACTIVITIES FOR SEL10341 – 2003 to 2011 .................................8
7 REFERENCES .....................................................................................................................11
EXECUTIVE SUMMARY

Substitute Exploration Licence (SEL) 10341 is located 165km SE of Darwin NT and 20km north west of Pine Creek and abuts the Union Reef group of tenements toward south. The licence expired on 29 September 2011. An application for ELR29039 was submitted on 29 September 2011 to cover this tenement.

SEL10341 was originally granted to AngloGold (Ashanti) Australia Ltd on 30 September 2003 and was transferred to the Burnside JV subsequent to purchase of the mill and tenements in August 2004. GBS Gold Australia Pty Ltd took over Buffalo Creek Mines Pty Ltd and Territory Goldfields Pty Ltd (Burnside JV) in 2005. Crocodile Gold acquired the SEL10341 in 2009 after GBS Gold Australia (liquidated) went into voluntary administration.

The tenement area covers the Burrell Creek Formation with dominant lithologies of greywacke, siltstone and mudstone. Towards the north-west, minor rocks of the Mount Bonnie Formation (South Alligator Group) are also exposed. These lithologies have been intruded and thermally metamorphosed by the Tabletop, Allamber Springs and McKinlay Granites. The central part of the tenement is transected north-northwest to south-southeast by the Pine Creek Shear Zone, a grossly antiformal zone averaging 300m wide, characterised by phyllitic schist and tightly compressed folds. The axial zones on the principal anticlines have frequently failed within the PCSZ and predominant bedding and fabric attitudes are steeply dipping to the north east. Some parasitic folds have steep westerly dips. The PCSZ is the most mineralised structure with respect to gold in the region and host many gold deposits such as Union Reefs, Enterprise, International, Gandys, Czarina, Spring Hill and may more prospects.

From 2003 to the licence expiry in September 2011, exploration activities on SEL10341 have included desktop and literature reviews, a remote sensing study, data compilation, reconnaissance mapping and field visits, RC drilling and assaying and the purchase of new satellite images.

A total of $126,359 has been spent over the life of the tenement.
2 INTRODUCTION

Substitute Exploration Licence (SEL) 10341 is located 165km SE of Darwin NT and 20km north west of Pine Creek. It abuts the Union Reef group of tenements toward south. The tenement expired on the 29 September 2011. An application for ELR29039 was submitted on 29 September 2011 to cover this tenement area.

In this report, exploration activity conducted over the life of the tenement is documented.

3 LOCATION AND ACCESS

SEL10341 is situated 165km SE of Darwin NT and 20km north west of Pine Creek. Access to the central portion of the tenement may be obtained via Mt Wells road from Union Reefs mine complex north-westwards, or alternatively by turning NE off the Stuart Highway on the Spring Hill Road, some 20km north of Pine Creek. The Darwin-Adelaide railway crosses the eastern boundary and north eastern sectors of the tenement and in addition, the Darwin-Palm Springs gas pipeline easement crosses the same sectors. For reasons of public safety there are statutory restrictions relating to exploring in the vicinity of these easements.

The tenement covers part of the McKinlay River and its tributaries. These have excised the area and created a terrain that is undulating and marked by north-west trending ridges. It is also within the Mary River West Pastoral Lease

The location of the SEL10341 is shown in Figure 1.

4 TENEMENT DETAILS

SEL10341 was granted to AngloGold (Ashanti) Australia Ltd on 30 September 2003 and was transferred to the Burnside JV subsequent to purchase of the mill and tenements in August 2004. It originally comprised 18 blocks that covered approximately 64.02 km², with a statutory reduction of 50% during 2005, and second reduction in 2006 leaving behind 26.37 km².

GBS Gold Australia Pty Ltd took over Buffalo Creek Mines Pty Ltd and Territory Goldfields Pty Ltd in 2005. GBS Gold Australia went into voluntary administration on 15 September 2008 and as a result all assets held by the company were placed under care and maintenance. In June 2009, Crocodile Gold Australia announced to purchase all assets and exploration rights held by GBS Gold Australia (liquidated) in the Northern Territory. Crocodile Gold acquired the SEL10341 as part of the takeover from GBS Gold Australia liquidated) in November 2009.

The tenement expired on 29 September 2011. An application for ELR29039 was submitted to the DoR on 29 September 2011 to cover the project area.
Figure 1: SEL10341 Tenement Location
5 GEOLOGICAL SETTING

5.1 REGIONAL GEOLOGY

SEL10341 is situated within the Pine Creek Orogen, a tightly folded sequence of Lower Proterozoic rocks, 10km to 14km in thickness, laid down on a rifted granitic Archaean basement during the interval ~2.2-1.87Ga. The sequence is dominated by pelitic and psammitic (continental shelf shallow marine) sediments with locally significant interlayered cherty tuff units. Pre-orogenic mafic sills of the Zamu Dolerite event (~1.87Ga) intruded the lower formations of the South Alligator Group (Ahmad et al 1993). During the Top End Orogeny (Nimbuwah Event ~1.87-1.85Ga) the sequence was tightly folded, faulted and pervasively altered with metamorphic grade averaging greenschist facies with phyllite in sheared zones.

The Cullen intrusive event introduced a suite of fractionated calc-alkaline granitic batholith into the sequence in the period ~1.84-1.1.78Ga. These high temperature I-type intrusives induced strong contact metamorphic aureoles ranging up to (garnet) amphibolite facies, and created regionally extensive biotite and andalusite hornfels facies. Less deformed Middle and Late Proterozoic clastic rocks and volcanics have an unconformable relationship to the older sequences. Flat lying Palaeozoic and Mesozoic strata along with Cainozoic sediments and proto-laterite cementation overlie parts of the Pine Creek Orogen lithologies. Recent scree deposits sometimes with proto-laterite cement occupy the lower hill slopes while fluviatile sands, gravels and black soil deposits mask the river/creek flats areas.

There is a tendency for gold mineralisation to be focused in anticlinal settings within strata of the South Alligator Group and lower parts of the Finniss River Group. This sequence evolved from initial low energy shallow basinal sedimentation to higher energy deeper water flysch facies.

Gold mineralisation appears to be related to the I-type members of the Cullen Batholith, formed as a result of fractionation and differentiation processes during magma emplacement. That ultimately led to the evolution of hydrothermal fluids responsible for gold mineralisation in the adjacent meta-sediments (Bajwah, 1994).

Figure 2 illustrates the regional geology of the SEL10341.
Figure 2: SEL10341 Regional Geology

5.2 LOCAL GEOLOGY

The tenement area covers the Burrell Creek Formation with dominant lithologies of greywacke, siltstone and mudstone. Towards the north-west, minor rocks of the Mount Bonnie Formation (South Alligator Group) are also exposed. These lithologies have been intruded and thermally metamorphosed by the Tabletop, Allamber Springs and McKinlay Granites.

The central part of the tenement is transected north-northwest to south-southeast by the Pine Creek Shear Zone, a grossly antiformal zone averaging 300m wide, characterised by phyllitic schist and tightly compressed folds. The axial zones on the principal anticlines have frequently failed within the PCSZ and predominant bedding and fabric attitudes are steeply dipping to the north east. Some parasitic folds have steep westerly dips. The PCSZ is the most mineralised structure with respect to gold in the region and host many gold deposits such as Union Reefs, Enterprise, International, Gandy’s, Czarina, Spring Hill and may more prospects.
In the first year of tenure no work was reported by AngloGold as they were preparing the project for sale following closure of the Union Reefs mill.

Upon acquisition of the tenement during the 2004 to 2005 reporting year, the Burnside Joint Venture carried out a remote sensing study based upon satellite SPOT imagery and AGSO geological mapping.

Exploration activities from September 2005 to September 2006, conducted by GBS Gold Australia included a desktop review and reconnaissance field mapping.

During the 2006 to 2007 reporting year, exploration activities included a desktop review, data validation and reconnaissance field mapping. The desktop review highlighted some anomalous zones and a series of drill holes were planned.

During the 2007 to 2008 reporting year, anomalies identified in the previous desk top review were tested with a campaign of RC drilling. GBS Gold drilled a total of 6 RC holes for 591 metres. A total of 614 samples were retrieved and analysed for Au, As, Cu, Pb and Zn. Logging of the RC chips showed that rocks generally belong to the Burrell Creek Formation with some evidence of hydrothermal alteration. Assaying of chip samples provided disappointing results with most samples showing very low concentrations of gold, generally below the detection limit. Au values range from 0.1 to 0.20 ppm with an average of 0.02 ppm which were much below the expectation. These values were mirrored in As values. Cu values were moderately higher ranging from 1 to 292 ppm with an average of 32.43 ppm. Pb and Zn concentrations are anomalously higher. This could be due to the presence of galena-zinc mineralisation in the tenement (e.g., Flora Bella). Pb values varied from 5 to 7269 ppm with an average of 132 ppm whereas Zn has the highest concentration of 8040 ppm.

Other activities included a review of the results, data compilation and reconnaissance visits.

Figure 3 illustrates the RC holes drilled during 2007/08 exploration year. The map in Figure 3 shows the holes plotting outside SEL10341. The holes were in fact drilled within the tenement during the 2007/08 year; the tenement has since been reduced with the grid shift from AGD66 to 86 in September 2009.

In September 2008, GBS Gold Australia went into voluntary administration and hence exploration activities for the 2008 to 2009 year were confined to a desktop review and reconnaissance visits.

Crocodile Gold obtained SEL10341 in November 2009. Exploration activities carried out for the 2009 to 2010 period included a review of the tenement and reconnaissance mapping. From September 2010 to the expiry date of 29 September 2011, Crocodile Gold has conducted a review of satellite imagery, purchased new satellite images and conducted field reconnaissance mapping.

Over the life of the tenement a total of $126,359 has been spent on SEL10341. Table 1 lists the exploration expenditure for each year of tenure.
<table>
<thead>
<tr>
<th>Year</th>
<th>Exploration Activity</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept 2003 to Sept 2004</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sept 2004 to Sept 2005</td>
<td>remote sensing study of SPOT imagery and geological mapping</td>
<td>$2,800</td>
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<tr>
<td>Sept 2005 to Sept 2006</td>
<td>desktop review, reconnaissance mapping</td>
<td>$3,075</td>
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<tr>
<td>Sept 2006 to Sept 2007</td>
<td>desktop review, data validation and recon mapping</td>
<td>$12,455</td>
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<tr>
<td>Sept 2007 to Sept 2008</td>
<td>RC drilling and assaying, review of results, data compilation and recon mapping</td>
<td>$83,160</td>
</tr>
<tr>
<td>Sept 2008 to Sept 2009</td>
<td>project review and recon visits</td>
<td>$8,895</td>
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<tr>
<td>Sept 2009 to Sept 2010</td>
<td>project review and recon visits</td>
<td>$8,780</td>
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<tr>
<td>Sept 2010 to expiry</td>
<td>review and purchase of satellite imagery and feild mapping</td>
<td>$7,194</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>$126,359</strong></td>
</tr>
</tbody>
</table>

Table 1: SEL10341 expenditure 2003 to 2011
Figure 3: RC holes drilled during the 2007/2008 reporting year.
REFERENCES


