

# **GBS GOLD AUSTRALIA PTY LTD**

# ANNUAL EXPLORATION REPORT *ML 23617 BONS RUSH* YEAR ENDING 14 JUNE 2009

Batchelor: 1: 100 000 Pine Creek: 125 000

**Title Holder: Northern Gold Pty Ltd** 

**Distribution:** 

- DPIFM Darwin NT
- GBS Gold Australia P/L Perth
- Burnside Operations P/L Brocks Creek NT
- Union Reef Mine Site Pine Creek NT

Report NO: PC/BJV/09-35

Zia U. Bajwah September 2009

#### SUMMARY

ML 23617 is a significant tenement which contains gold resource (Bons Rush). It is located approximately 150 km SSE of Darwin and about 22 km NW of Brocks Creek (Zapopan) mine. In this report exploration carried during the first reporting period is presented. ML 23617 was granted to Northern Gold Pty Ltd on 15 June 2006 and expires on 14 June 2031.

MLN 23617 underlies rocks of the South Alligator Group which comprises the Koolpin Formation, Gerowie Tuff and Mount Bonnie Formation. The sequence occurs as north-trending tongue which is surrounded by the Burrell Creek Formation. In the project area, the sequence has been folded into south-plunging anticlinal structure (F3) here western limb has been effected by a NW-trending fault. The Zamu dolerite occupies hinge of the fold and appears to have been interlayered within the Koolpin Formation and Gerowie Tuff – an artifact of deformation. Bons Rush is associated with quartz-carbonate veins that dip shallowly (~25-30°) to the northeast. The mineralised zone is hosted by a carbonated, sulphidised, sericitised and occasionally silicified granophyric phase of the Zamu Dolerite.

During the reporting period, GBS Gold Australia was declared under voluntary receivership and assets were placed under care and maintenance. Main activity however was to prepare GBS assets for sale. For this purpose, tenement ranking and evaluation was undertaken. Other activities are reconnaissance visit, technical review of the tenement and report writing and tenement management activities. In 2009-10 reporting year, project area will be explored for gold, uranium and base metals mineralisation. For this purpose, area identified during this review will undergo soil/rock chip sampling along with geological mapping. If encouraging results received, some RAB/RC drilling may also take place.

# TABLE OF CONTENTS

SUMMARY	
1.0 INTRODUCTION	4
2.0 TENURE DETAILS	4
<ul> <li>3.0 GEOLOGICAL SETTING</li> <li>3.1 Regional Geology</li> <li>3.2 Local Geology</li> <li>3.3 Gold Mineralisation and Potential</li> </ul>	6 6 8
4.0 PREVIOUS EXPLORATION	10
5.0 EXPLORATION FOR YEAR 2008-09	13
6.0 FORWARD PROGRAM 2009-10	13
7.0 REFERENCES	14

# **LIST OF FIGURES**

Figure 1: MLN 23617 Tenement Location Plan

Figure 2: Geological Setting of the Project area

Figure 3: TMI Image of the project area

### **1.0 INTRODUCTION**

ML 23617 is located approximately 150 km SSE of Darwin and about 22 km NW of Brocks Creek (Zapopan) mine. In this report exploration carried during the first reporting period is presented.

#### 2.0 TENURE DETAILS

ML 23617 was granted to Northern Gold Pty Ltd on 15 June 2006 and expires on 14 June 2031. It covers 981 hectares and is located on Batchelor (1:1000 000) and Pine Cree (1:250 000) sheets. Northern Gold Pty Ltd is wholly owned subsidiary of GBS Gold Australia Pty Ltd. The tenement centres on Latitude 13°120' and Longitude 131°19'. Figure shows the location of he tenement. Underlying cadastre is within Perpetual Pastoral Lease No. 1111, Ban Ban Springs, held by Ban Ban Springs Station Pty Ltd. ML 23617 replaces much of the SEL 9591 which was granted to Northern Gold NL on 31 October 1996 for a period 4 years with two further extensions covering period of two years respectively. Now ML 23617 is almost surrounded by SEL 25748.

Access is via Stuart Highway near Brocks Creek turn off. Most of the Brocks Creek road has been sealed or graded which terminates at Brocks Creek mine site and then access can be negotiated via station tracks. Most of the area surrounding the tenement is covered by alluvial plans which make the access quite difficult during the wet season.



Figure 1: ML 23617 Tenement Location Plan

# 3.0 GEOLOGICAL SETTING

#### 3.1 Regional Geology

ML 23617 is located within the Pine Creek Orogen, a tightly folded sequence of Palaeoproterozoic rocks, 10km to 14km in thickness, laid down on a rifted granitic Archaean basement during the interval ~2.2-1.87Ga (Ahmad et al. 1993). The sequence is dominated by pelitic and psammitic (continental shelf shallow marine) sediments with minor inter-layered tuff units. Pre-orogenic mafic sills of the Zamu Dolerite intruded the sequence prior to regional metamorphism and deformation.

During the Top End Orogeny (Nimbuwah Event ~1.87-1.85Ga) the sequence was tightly folded and pervasively altered with metamorphic grade averaging greenschist facies to phyllite. The Cullen intrusive event introduced a suite of fractionated calc-alkaline granitic batholiths into the sequence in the period ~1.85-1.78Ga (Bajwah 1994). These high temperature I-type intrusives induced strong contact metamorphic aureoles ranging up to (garnet) amphibolite facies, and created more 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 overlie parts of the Pine Creek Orogen lithologies. Recent scree deposits occupy the lower hill slopes while fluviatile sands, gravels and black soil deposits mask the river/creek flats areas.

#### 3.2 Local Geology

MLN 23617 underlies rocks of the South Alligator Group which comprises the Koolpin Formation, Gerowie Tuff and Mount Bonnie Formation (Figure 2). The sequence occurs as north-trending tongue which is surrounded by the Burrell Creek Formation. In the project area, the sequence has been folded into south-plunging anticlinal structure (F3)





where western limb has been effected by a NW-trending fault. The Zamu dolerite occupies hinge of the fold and appears to have been interlayered within the Koolpin Formation and Gerowie Tuff – an artifact of deformation. In the previous exploration programs, areas of gold mineralisation have been discovered at two prospects namely Bons Rush and Big Red Blob. Now these two prospects have been combined together and are known as Bons Rush Gold prospect.

Bons Rush is associated with quartz-carbonate veins that dip shallowly (~25-30°) to the northeast. The mineralised zone is hosted by a carbonated, sulphidised, sericitised and occasionally silicified granophyric phase of the Zamu Dolerite. The higher grades are associated with a zone of quartz veining, chloritisation, pyrite, arsenopyrite and minor pyrrhotite, hosted within a shear zone in the hanging wall of the Upper Zamu Dolerite Sill.

#### **3.3 Gold Mineralisation and Potential**

Rock formations in the project area contain the sequence, dominated by the presence of meta-sediments of the South Alligator Group together with the Zamu Dolerite and that has the potential for hosting gold mineralisation in the Pine Creek Orogen. The sequence comprises the Koolpin Formation, Gerowie Tuff and Mount Bonnie Formation folded into an anticlinal structure and intruded by the Burnside Granite towards south. This sequence is the most important for gold localisation within dilational zone, generated during deformation. This geological and structural setting is similar to that found in the Cosmo Howley area which has been a significant gold producer during the mining history in the Orogen. Exploration conducted so far, has delineated several gold prospects such as Bons Rush, Kazi, Mount Paqualin and Santorini (Figures, 2 and 3) within in ML23617 and surroundings. After discovering these prospects, perhaps gold price was too low to explore these areas any further and further development could not take place.



Figure 3: TMI Image of the project area

TMI image of the area (Figure 3) further supports the contention for the gold prospectivity of the project area in particular and whole area in general. Gold mineralisation is generally confined to magnetic highs/rides in many cases and project area represents a pronounced magnetic high and this magnetic high/ridge can be traced and follows the south-plunging anticlinal structure. Gold prospects such as Bons Rush, Kazi, Mount Paqualin and Santorini, all are located within defined magnetic highs/ridges (Figure 3). With further exploration, it is highly likely to intercept additional area of mineralisation both along strike and depth.

#### 4.0 PREVIOUS EXPLORATION

In the past exploration activity carried over EL 918, EL 4178, EL 1195 and SEL 9486 covers the tenement partly or wholly.

Under EL 918, the area was explored by Commonwealth Aluminum Corporation Limited (Comalco) in 1974. The exploration target was fluorite mineralisation and work carried out under agreement with Geopeko Limited included geological mapping, extensive ground prospecting, geochemical sampling and costeaning (Chaku, 1974).

Geological evaluation of the area under EL 4178 was based on previous work by Geopeko which involved photo interpretation. This led to the geochemical sampling of steam sediments over the Koolpin Formation (Radford and Rolfe, 1983). However, results were disappointing and did not support the contention of significant stratiform gold or base metal mineralised system. During this survey, Pb values reached a maximum of 400 ppm, but only 10% of the samples exceed 100 ppm (Radford and Rolfe, 1983).

Geopeko held part of the area under EL 1195 and completed airborne magnetic and radgiometric surveys, reconnaissance mapping and drilling (Kirpatrick, 1980).

Northern Gold NL acquired the large area under SEL 9591 which also contained area covered by MLN 23617. During 1997-98, infill soil sampling programs were completed over prospects in the northwest and south of SEL 9591. The prospects covered by soil sampling in the northwest were Big Red Blob, Bons Rush, Santorini East, Santorini South and 8550 East (Shaw, 2004).

The Big Red Blob Prospect infill soil sampling program outlined a north northeast trending mineralised structure with maximum values to 1,540 ppb Au. Results from the Bons Rush soil sampling returned moderate to highly anomalous soil values to 1,710 ppb Au.

During 1999-2000, another program of soil, rock sampling was conducted which returned values of up to 3.78 ppm from the Bons Rush Prospect. At the same time, RAB drilling and re-sampling programs were completed over both the Big Red Blob and Bons Rush prospects, targeting previously identified soil and RAB gold anomalies. A total of 234 blade and hammer holes were completed for 4,102.5m.

A RAB drilling program over the Big Red Blob Prospect identified north to north northeast striking zones of gold and arsenic bedrock mineralisation hosted by dolerite. The peak results were 9m @ 0.93 g/t Au, from 3m, including 3m @ 1.32 g/t Au from 3m, and 3m @ 1.3 g/t Au from 9m, in BRRB539, and 6m @ 0.64 g/t Au from surface in BRRB525 (Shaw, 2004).

The RAB drilling program over the Bons Rush Prospect was successful in identifying north, northwest and northeast trending zones of gold bedrock mineralisation. Peak intersections returned included 25m @ 1.95 g/t Au, from 5m, including 7m @ 4.16 g/t Au from 7m; 16m @ 1.3 g/t Au, from 6m; 14m @ 1.45 g/t Au from 3m; and 3m @ 19.25 g/t Au, from 9m.

Two phases of RC drilling were conducted over the Bons Rush Prospect, targeting RAB gold anomalies. The programs were successful in confirming gold in bedrock coincident with previously identified soil and RAB drilling anomalies.

The +75µm fraction samples analysed by Amdel Laboratories, in Kalgoorlie, utilising FAS1 method, confirmed the presence of coarse gold at the Bons Rush Prospect.

Diamond drilling was also completed over the Bons Rush Prospect to examine structural and geological features within the main zone of mineralisation. Two HQ holes were drilled for 150.3m including 41.3m of RC pre-collar.

During 2000-01 Northern Gold N.L. conducted infill soil sampling, RAB drilling, RC drilling and rehabilitation over SEL 9591. RC drilling programs were carried out over the

Bons Rush Prospect, targeting gold soil and bedrock anomalies, associated with fold closures of the Howley Anticline, and higher grade dolerite-hosted gold previously identified by surface sampling and RAB drilling programs.

Holes were drilled at dips of -60° and azimuths of 087° and 267°, over six, east-west lines.

A total of 13 angled face-sample hammer RC holes (BRRC033- 043, BRRC046, BRRC047) were completed for 921.5m. RC drilling intercepted promising grades of gold mineralisation. The higher grades are associated with a zone of quartz veining, chloritisation, pyrite, arsenopyrite and minor pyrrhotite, hosted within a shear zone in the hanging wall of the Upper Zamu Dolerite Sill. Selected intersection of gold mineralisation is given below.

Hole	AMG	From	Interval	Grade
Number	Coordinates	( <b>m</b> )	( <b>m</b> )	(g/t Au)
BRRC040	8526845.24N	14	16	3.00
	752531.39E	38	3	3.45
		59	4	3.87
BRRC042	8526844.94N	5	2	3.01
	752561.40E			
BRRC046	8526649.07N	10	2	4.88
	752139.26E	31	1	80.50
BRRC047	8526649.32N	23	2	10.16
	752114.25E			

## **RC Drilling Program Peak Intercepts**

# 5.0 EXPLORATION FOR YEAR 2008-09

During 2008-09 reporting period, company resources focused on the development of Chinese South (Big Pit), Toms Gully, Cosmo Deep and Maud Creek projects with a budget of tens of millions dollars. Chinese South came on-line in April and Toms Gully commenced production in July 2008. At the same time significant progress was made in developing Maud Creek deposit with the targeted production of over 75 000 ounces of gold per year. However, on 15 September 2008, GBS Gold Australia was declared under voluntary receivership, and all exploration and mining projects were placed under 'Care and Maintenance'.

GBS Gold regards MLN 23617 highly due to its strategic significance for containing significant gold resource at Bons Rush, where resource can increase substantially by additional resource drilling. During the reporting period main activity however was to prepare GBS assets for sale. For this purpose, tenement ranking and evaluation was undertaken. Other activities are given below:

- Reconnaissance visit
- Technical review of the tenement
- Planning for up-coming field season
- Report writing and tenement management activities.

This program and other activities during the reporting period costed \$ 6550.00.

## 6.0 FORWARD PROGRAM 2009-10

During the technical review significance of the ML 23617 was realised which contains an important Bons Rush prospect, and has the potential to produce substantial quantities of ore to feed the gold mill located at Union Reefs.

In April 2009, Forbes Manhattan, a Canadian investment bank through its subsidiary Crocodile Gold Australia, has acquired all GBS Gold Australia assets with the intention to re-commence gold production in an immediate future. Currently, registration of all assets against Crocodile Gold is underway, and it is expected that within a few weeks this process will be completed.

In 2009-10 reporting year, project area will be explored for gold, uranium and base metals mineralisation. For this purpose, area identified during this review will undergo soil/rock chip sampling along with geological mapping. If encouraging results received, some RAB/RC drilling may also take place. A minimum budget of \$8000.00 is proposed.

# 7.0 REFERENCE

- AHMAD, M., WYGRALAK, A.S., FERENCZI, P.A., and BAJWAH, Z.U. 1993. Explanatory Notes and ineral Deposit Data Sheets. 1:250,000 Metallogenic Map Series, Department of Mines and Energy, Northern Territory Geological Survey..
- BAJWAH, Z.U, 1994. A contribution of geology, petrology and geochemistry to the Cullen Batholith and related hydrothermal activity responsible for mineralisation, Pine Creek Geosyncline, Northern Territory. Northern Territory Geological Survey Report 8.
- CHAKU, S.K., (1974). Burnside area NT., Final Report on Exploration Licence Nos. 828, 829, 830, 920, 923, 924, Annual report on Exploration Licences Nos. 918, 919, 921, 923. Unpublished report by Geopeko North Australia for the NTDME.
- KIRKPATRICK, B.L., (1980). Final Report, EL 1195, Ban Ban. Unpublished report by Geopeko North Australia for the NTDME.
- RADFORD, N. W., and Rolfe, G.L., (1983). Exploration Licence 4178, Final year of Tenure, 23 march 1983 to 22 March 1984. Unpublished report by Geopeko North Australia for the NTDME.
- SHAW, J., (2003) Annual Exploration Report SEL9591, year ending October 30<sup>th</sup> 2004 For the Burnside JV, and DBIRD.
- SOCIC, N., (1997b). SEL 9591, 1996/97 Annual Report to 31<sup>st</sup> of October, 1997. Volumes 1 to 3. Unpublished report by Northern Gold N.L. to the Northern Territory Department of Mines and Energy.