

BRIDGING REPORT

EXPLORATION LICENCE 23583

Pine Creek Project

16 July 2010 to 15 March 2011

Distribution:-

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

Marcelle Watson November 2011

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1 EXECUTIVE SUMMARY

Exploration Licence (EL) 23583 is a strategic landing holding of 2 blocks, which is situated approximately 220 km SE of Darwin NT, and around 2 km south of the Pine Creek Township. The tenement was granted on 16 July 2003 to Buffalo Creek Mines Pty Ltd (50%) and Territory Goldfields NL (50%) which were the subsidiaries of GBS Gold Australia. On 6 November 2009, Crocodile Gold Australia acquired EL 23583 and other assets held by GBS Gold Australia (liquidated) in the Northern Territory.

The tenement overlies the Burrell Creek Formation of the Finniss River Group. The Mount Bonnie Formation sediments crop out further north of the Licence, but are constrained within the Enterprise fold that plunges south through of EL 23583. Meta-sediments in the project area are intruded by the Table Top, Allamber Springs, and McCarthys Granites and are responsible for the development of contact aureole which contains most of the gold mineralisation.

There was no exploration conducted on EL23583 during the reporting period. Exploration activities were focused around the Pine Creek mining centre with resource drilling and environmental sampling conducted on MLN13 and MLN1130, a review of the Enterprise and International resource models was also completed.

The Pine Creek mining centre has become an important focus for Crocodile Gold. An application to mine the International deposit on MLN 1130 is awaiting approval. Further resource drilling and resource model updates are planned for the 2011/2012 reporting year. A review of the entire Pine Creek project area will also be conducted which will include a review of historic exploration and mining data over EL23583. The review of EL23583 may lead to mapping and geochemical soil sampling if necessary.

2 INTRODUCTION

EL 23583 is located south-west of the Pine Creek Township, and abuts with Pine Creek group of mining tenements. The Pine Creek group of tenements envelops mines such as International, Enterprise, Elsinore and Kohinoor which have all produced significant quantities of gold in the past. The abandoned Lucknow poly-metallic Cu-Pb-Zn-Ag deposit is situated to the south within EL23583. Due to the similar geological setting to those gold deposits present in the immediate vicinity, EL23583 has significant potential to host similar type of gold mineralisation.

In this report, exploration activity conducted between 16 July 2010 and 15 March 2011 is documented.

3 LOCATION AND ACCESS

EL 23583 is situated approximately 220 km SE of Darwin NT, and around 2 km south of the Pine Creek township. The Stuart Highway transects the tenement south of Pine Creek. Topography in the southern block of the EL is subdued and colluvial cover is extensive. Access to the tenement may be gained via Stuart Highway and then by four wheels tracks within the tenements. During wet season, access within the tenement is difficult due to inundation by creek system in the area.

The location of the EL23583 is shown in Figure 1.

4 **TENEMENT DETAILS**

EL 23583 was granted on 16 July 2003 in equal shares to Buffalo Creek Mines Pty Ltd (50%) and Territory Goldfields NL (50%), which were part of the Burnside JV. The Burnside JV was between Harmony Gold (50%) and Northern Gold NL (50%). During 2005, GBS successfully made a takeover for Northern Gold NL, and reached an agreement to purchase Harmony's 50% share of the Burnside project.

However on 15 September 2008, GBS Gold Australia went into voluntary administration and as result, all exploration and mining assets were placed under care and maintenance. In June 2009, Crocodile Gold Australia announced to purchase all assets held by GBS Gold Australia (liquidated) in the Northern Territory. After meeting all statuary and regulatory requirements, these assets including EL 23583 were transferred to Crocodile Gold Australia on 6 November 2009.

An application for another 2 year renewal was lodged with the NTDoR on the 14 July 2011 and is awaiting approval.

Underlying cadastre is mixed; the dominant landholder is Bonrook Station (Franz Weber; PPL 710), with smaller parcels of Crown Lease \ (Perpetual) around the Chin Phillips mineral occurrence, and a Crown Lease (Term) covering the railway corridor. The Pine Creek Mango Plantation P/L holds a pastoral lease (PL 5096) in the NE part of the licence.



Figure 1: EL23583 Tenement Location

5 GEOLOGICAL SETTING

5.1 REGIONAL GEOLOGY

EL23583 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 EL23583.



Figure 2: EL23583 Regional Geology

5.2 LOCAL GEOLOGY

The tenement overlies the Burrell Creek Formation of the Finniss River Group. The Mount Bonnie Formation sediments crop out further north of the Licence, but are constrained within the Enterprise fold that plunges south through EL 23583. Metasediments in the project area are intruded by the Table Top, Allamber Springs, McCarthys Granites and are responsible for the development of contact aureole, which contains most of the gold mineralisation.

The Pine Creek shear zone also runs through the project area, known for its potential for gold mineralisation in the region. At Koohinoor, 45° SW-dipping thrust faults have superimposed slices of western fold limbs over the eastern limbs, and have also been the focus of mineralisation. The more southerly block covers a sequence of Burrell Creek Formation sediments that dip south westwards at an average of 65 degrees. Quartz veining in the eastern half of the tenement, striking generally 340 degrees, is sporadically mineralised by either argentiferous galena or gold.

The Lucknow poly-metallic mine is located towards the south and is one of the more prominent prospects developed by shallow workings. Other small pits and shafts are on gold bearing sectors of quartz veins. Gold mineralisation within the area occurs within quartz-sulphide veins or their alteration haloes, either as free gold which accounts for 2% to 50% of the total gold content, or with sulphides. Sulphide minerals include pyrite, pyrrhotite, arsenopyrite, marcasite, chalcopyrite, galena, sphalerite, bismuthinite, tetrahedrite, and covellite, with rare native copper and bismuth. Veins are either radial (discordant), which includes ladder veins; north-trending sheeted veins that dip shallowly to the east at 35° - 45°, and later N-trending veins that are near vertical.

6 PREVIOUS EXPLORATION

Historically, the Pine Creek area has been explored for gold and base metals since the mid to late 1800's. Since then, there has been expensive modern day exploration conducted over the Pine Creek area. EL23583 has been covered by a number of exploration licences which have expired (EL4398, EL4907, EL8060).

Pine Creek Goldfields explored the area over the southern block of EL 23583 from 1988. A ground magnetic survey in the first year was unsuccessful due to noise. Quartz veining was identified during mapping, and soil sampling delineated an anomaly corresponding to a NE-trending fault surrounded by quartz veining. Follow up costeaning intersected siltstones and greywackes with minimal quartz veining and numerous small faults. A maximum value of 3.22g/t Au came from costean sampling, but most of the assays were low. RAB and RC drilling did not highlight economic mineralisation.

Dominion carried out data compilation, which outlined favourable structures associated with anomalous base metal values, and also carried out RAB drilling, which also intersected base metal anomalism (outside the area of EL23583). Dominion only carried out one year of exploration before divesting its NT assets during 1995.

Northern Gold acquired the tenement area from Dominion, and work was limited to acquisition of SPOT imagery over the area. A programme of deeper angled RAB drilling was planned to test the base metal geochemical anomalies but this was not carried out. Gold mineralisation was either below detection levels, or contaminated by alluvial workings.

During 2005-06, a literature survey of previous exploration programs was undertaken. An appraisal of EL 23583 noted that most of the gold and base metal anomalism as defined by previous rock chip sampling resides within the eastern half of the exploration licence. This anomalous eastern sector broadly coincides with the route of the Stuart Highway and its reserve and/or the railway reserve occupied by the new Darwin to Adelaide Railway.

The Burnside JV focused work on the main mining centre at Pine Creek with minor work extending onto the EL. The technical review indicated that the northern block is well placed to contain additional economic extensions to mineralisation south of MCN523. The southern block of the EL is shown to contain anomalous quartz vein trends but many of these are inconveniently close to either the Stuart Highway or the Darwin-Adelaide railway. Further exploration activities included compilation of historic data.

During the 2008 to 2009 reporting year the tenement remained under care and maintenance. A technical review, tenement ranking and valuation was undertaken in order to prepare assets for sale. In June 2009, Crocodile Gold Australia announced to purchase all assets held by GBS Gold Australia (liquidated). After meeting all statuary and regulatory requirements, these assets included EL23583 were transferred to new owner.

From 2009 to July 2010 exploration activities were limited to reconnaissance visits and a technical review of the tenement.

7 EXPLORATION ACTIVITY 16 JULY 2010 TO 15 MARCH 2011

There was no exploration conducted on EL23583 during the reporting period. Exploration activities were focused around the Pine Creek mining centre with resource drilling and environmental sampling conducted on MLN13 and MLN1130, a review of the Enterprise and International resource models was also completed.

8 FORWARD PROGRAM YEAR ENDING 15 MARCH 2012

The Pine Creek mining centre has become an important focus for Crocodile Gold. An application to mine the International deposit on MLN 1130 is awaiting approval. Further resource drilling and resource model updates are planned for the 2011/2012 reporting year.

A review of the entire Pine Creek project area will also be conducted which will include a review of historic exploration and mining data over EL23583. The review of EL23583 may lead to mapping and geochemical soil sampling if necessary.

A minimum budget of \$15,000 has been proposed for EL23583.

9 **REFERENCES**

Ahmad, M., Wygralak, A.S., Ferenczi, P.A., and Bajwah, Z.U. 1993. Explanatory Notes and Mineral Deposit Data Sheets. *1:250,000 Metallogenic Map Series, Department of Mines and Energy, Northern Territory Geological Survey.*

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