ANNUAL REPORT ON
EXPLORATION LICENCE, EL 23173
AuQuest Project Area
Period Beginning 4 March 2009
to Period Ending 3 March 2010

Distribution:-
1. DOR Darwin NT
2. Crocodile Gold Australia Humpty Doo NT
3. Brocks Creek NT

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SUMMARY

Crocodile Gold Australia Pty Ltd acquired Exploration Licence (EL) 23173 in November 2009, after purchasing all assets held by GBS Gold Australia Pty Ltd (liquidated) in the Northern Territory. The tenement is located about 90 km east of Darwin and is an important asset within Crocodile Gold Australia’s portfolio. It was granted to Renison Consolidated Mines Limited on 4 March 2003 for a period of six years. It comprises 6 blocks and covers 11 km². The tenement was renewed for another two years on 8 January 2009 and now will expire on 3 March 2011. Underlying cadastre is held by B.F Coulter PPL 1163.

EL 23173 is located in the Pine Creek Orogen, where northern part of the project area contains the oldest sediments such as the Mount Partridge Group. It is unconformably overlain by the South Alligator Group, which comprises the Koolpin Formation, Mt Bonnie Formation and Gerowie Tuff. The southern portion of the project area is comprised of the Burrell Creek Formation, which conformably overlies the South Alligator Group. Tertiary and Quaternary Soils and Gravel’s unconformably overlie all the lower lying portions of the tenement areas, generally referred to as Black Soils Regions.

In the year under review, previous owner GBs Gold Australia remained under voluntary administration and as result of that EL 23173 was under care and maintenance. During the period, a detailed review of the tenement was undertaken which also involved tenement ranking and evaluation in order to prepare asset for sale.

In 2010-11, detailed geological mapping will be undertaken to ascertain structural complexities. This will be complemented with rock chip/soil sampling program to define geochemical anomalies better. Previous drilling has provided encouraging results and it will be followed up with additional RC/RAB drilling. Sample retrieved during this program will be assayed for gold, uranium and base metals.
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1.0 INTRODUCTION
EL 23173 is part of AuQuest Project, located SW of the Toms Gully Gold Mine, which was operated by Renison Consolidated Mines Limited until July 2007. The tenement has been explored by the Renison Consolidated Mines and other companies in the past for gold mineralisation. This report summarises the work carried out on the tenement during the reporting period ending 3 March 2010.

2.0 LOCATION AND ACCESS
EL 23173 is located about 90 km east of Darwin and about 12 km west of Toms Gully Gold Mine. Access to the tenement is available from the 47 Mile Road (the original Marrakai Track) which links the Arnhem Highway to the Marrakai Track; the turnoff is located between the Tom’s Gully Mine Site and Corroboree Park Tavern. The 47 Mile Road then links to a dry season only track to the Tenement boundary. However these tracks become impassable after heavy rains and therefore no access is possible throughout the wet season.

3.0 TENEMENT DETAILS
EL 23173 was granted to Renison Consolidated Mines Limited on 4 March 2003 for a period of six years. This tenement was applied for in 1999 and was held up in Native Title until recently. The tenement comprises 6 blocks covering 11km² west of Tom’s Gully Mine Site. Underlying cadastre is held by B.F Coulter PPL 1163.

On 25 July 2007, by virtue of an agreement, GBS Gold Australia Pty Ltd acquired all mining and exploration assets, located in the Toms Gully Region. EL 23173 and other tenements were registered against GBS Gold Australia (Toms Gully) Pty Ltd in 2008. GBS Gold Australia went into voluntary administration on 15 September 2008, and all assets including EL 23173 were placed under care and maintenance. In April 2009, Crocodile Gold Australia announced to purchase Northern Territory assets held by GBS Gold Australia (liquidated). After meeting regulatory and statuary requirements all assets including EL 23173 were transferred to Crocodile Gold Australia on 6 November 2009.
4.0 GEOLOGICL SETTING

EL 23173 is located within the Pine Creek Orogen, which has been interpreted as an intra-cratonic basin lying on an Archaean basement, and containing a 14 km thick sequence of Palaeoproterozoic sediments, accompanied by lesser volcanics, granitic plutons and dolerite intrusions. The northern part of the project area contains the oldest sediments such as the Mount Partridge Group that is unconformably overlain by the South Alligator Group (Figure 2). The South Alligator Group mainly contains the Koolpin Formation, Mt Bonnie Formation and Gerowie Tuff. The southern portion of the project area is comprised of the Burrell Creek Formation (Figure 2), which conformably overlies the South Alligator Group. Towards NE, the rocks have been intruded by the Mount Bundey Granite. Tertiary and Quaternary Soils and Gravel’s unconformably overlie all the lower lying portions of the tenement areas, generally referred to as “Black Soils Regions”. All of the Palaeoproterozoic sediments and volcanics in the Mount Bundey area were folded in a major deformation event dated around 1800 million years. The fold axes trend north-northeast, and generally plunge gently to the south. A brief description exposed in the region is given below.

4.1 THE MOUNT PARTRIDGE GROUP

Wildman Siltstone

The Mount Partridge Group is represented by the Wildman Siltstone, which is interpreted to be up to 1500m thick. In the Mount Bundey Region the Wildman Siltstone consists of laminated and banded shale, carbonaceous and often pyritic siltstone inter bedded with undifferentiated volcanics in up to 100m interbeds, minor dolomitic sediments may also be present. The sediments near the granite intrusion may also be hornfelsed. The Wildman Siltstone is interpreted to be prospective for large tonnage, low-grade gold deposits and small tonnage, high-grade deposits. Wildman Siltstone hosts the Tom’s Gully gold deposit.

4.2 THE SOUTH ALLIGATOR GROUP

The Koolpin Formation, Gerowie Tuff and the Mount Bonnie Formation represent the South Alligator Group. The rocks of the South Alligator Group are considered to be prospective for either large tonnage, low grade gold deposits (such as that at the nearby Rustler’s Roost gold mine) or small tonnage, high grade deposits.
**Koolpin Formation**
The Koolpin Formation comprises ferruginous siltstone and shale, which is commonly carbonaceous and pyritic. Chert bands and nodular horizons are common and lenses of ironstone occur occasionally, as haematitic breccias throughout the sequence into undisturbed quartz-veined siltstone and shale. Minor components of dolomite can also occur. The Koolpin is one of the most prospective units in the Mount Bundey Region for hosting mineralisation (West Koolpin, Taipan, BHS and North Koolpin Open Pits at Quest 29 are all within Koolpin sediments.

**Gerowie Tuff**
The Gerowie Tuff conformably overlies the Koolpin and has similar characteristics of siltstones and shales but is not as iron rich. Within the Mount Bundey Region it is dominated by graded beds of siliceous tuffaceous mudstones grading to greywacke and arenite, diagenetically altered, up to 600m thick, and generally poorly mineralised. The highly siliceous component of the tuffs and arenites make them resistant to erosion, and they tend to form areas of high relief.

**Mount Bonnie Formation**
The Mount Bonnie Formation conformable overlies the Gerowie Tuff and is dominated by a shallow marine sequence of interbedded and graded siltstone, chert and greywacke with occasional BIF’s. The unit can be up to 600m thick and is generally iron rich and may be siliceous in places. The Mount Bonnie Formation hosts the Rustler’s Roost deposit.

### 4.3 FINNISS RIVER GROUP

**Burrell Creek Formation**
Conformably overlying the Mount Bonnie Formation is the Burrell Creek Formation interpreted as a flysch sequence of fine to coarse marine sediments and appears to be part of continuous sedimentation process. Due to the lack of marker horizons and poor exposure the width of the unit is unknown but is thought to be >1000m. This Formation is considered prospective for large low-grade gold deposits as typified by the Batman deposit of Mount Todd. The potential also exists for small high-grade deposits similar to Possum and Happy Valley with John Shields GIGIAC Theory (Gold in Greywacke in Anticlinal Crests). Also high-grade deposits such as Bandicoot, Marrakai and the Ringwood line which all lie on a major deep-seated magnetic trend.
4.4 INTRUSIVES

Zamu Dolerite
The Zamu Dolerite occurs as small bodies that are poorly exposed, as a result of its weathering, some rubble boulders may be present at surface. It consists of altered quartz dolerite and gabbro and is generally narrow and broadly conformable to bedding as thin sills. The Zamu Dolerite is the only known suite of mafic intrusives that were emplaced prior to regional metamorphism and deformation. The Zamu Dolerite appears to have a controlling influence on the mineralisation at Quest 29 within the Koolpin sediments but this is not fully understood at this stage. Mineralisation is also hosted within this unit at Quest 29 and also at Chinese Howley.

Mount Bundey Granite & Mount Goyder Syenite
The sedimentary sequences and the Zamu Dolerite are intruded by the Proterozoic Mount Goyder Syenite and Mount Bundey Granite which form a co-genetic complex which crops out over about an 80km area. This intrusion is believed to have been the heat and fluid source for the mineralisation, which occurs throughout the local region. Their mineralogy and geochemistry suggests they are both differentiated from a common magma, which intruded into the gently south plunging folded belt of sediments.

A thermal metamorphic overprint associated with the southern margin of the Mount Bundey Granite intrusive has resulted in the development of both cordierite and andalusite, and probably was the generator for the local gold mineralisation. Further to the south of the Mount Bundey and Mount Goyder intrusive is possibly a second deep-seated pluton as indicated by a roughly circular magnetic feature (Discussions with Williams Resources 1998).

4.5 DEFORMATION & METAMORPHISM

Regional deformation with north-northeast folding plunging gently south occurred around 1800 my, based on a rubidium-strontium analysis, causing metamorphism to greenschist, and sometimes higher to amphibolite facies. This event also resulted in the intrusion of thin sills of Zamu Dolerite, and the post – tectonic emplacement of the Mount Bundey granite and Mount Goyder Syenite is a comparable co-genetic pluton dated at 1790 ± 110 my in the region. Structural deformation of the meta-sediments is complex.
Figure 2: Regional Geology Map & GIS Data
The major folding episode resulted in tight folds whose axes plunge southwest. However within these major folds the more incompetent beds, i.e. carbonaceous shales, have been deformed into localised complex structures. The granitic emplacement has also influenced the fold structures as can be seen on the regional geological map. Metamorphism to greenschist facies through dynamic compression associated with intense folding is common. The granitic emplacement and the associated structural deformation and generation of hydrothermal fluids are thought to have been responsible for most of the gold enrichment throughout the Pine Creek Geosyncline. e.g. Cosmo Howley, Rustlers Roost, Toms Gully, Moline, Mt Todd and Quest 29.

5.0 PREVIOUS EXPLORATION

The earliest record of exploration in the Mount Bundey region was Australian Geophysical Pty. Ltd. (AP 1727-1730, AP 1751 & AP 2226-2228) from 1967 – 1971 utilising geochemical and geophysical surveys and some limited follow up RAB drilling, primarily looking for uranium and base metals with no recorded success.

The next significant exploration within the region was undertaken by Geopeko (EL 142) during the early 1970's following their acquisition of the then relatively new BMR aeromagnetic and radiometric survey data, which was flown during 1970. Interpretation of this geophysical data outlined a large number of potential target areas throughout the region, which were subsequently investigated by ground based geophysics, geochemical sampling, stream sediment sampling; soil geochemistry; rock chipping, geological mapping, costeaneing, and limited drilling. These sampling programs defined anomalies, which were thence-designated "Quest" numbers for identification. These anomalies became the focus of Geopeko's exploration activities for some six years. The majority of the Quest prospects were covered by Mining Claims during this exploration program.

All of this early exploration was focused on uranium and base metals with gold being of minor consideration. Geopeko having located some base metal and gold mineralisation at Quest 29 then brought in Carpentaria Exploration.

In 1986 EL 4927 was granted to Carpentaria Exploration who from a stream sediment survey discovered a new gold deposit at Tom's Gully in the Wildman Siltstone.
Following the successful discovery of the Tom's Gully gold deposit during 1986 - 1993, Carpentaria launched a regional gold exploration program, largely completed under Joint Venture agreements with smaller companies or syndicates, which held exploration tenure within the area. (EL 4165, EL 5355). The programmes were comprised mainly of stream sediment sampling, which had successfully discovered Tom’s Gully. The work on the rest of the Mount Bundey Region however produced limited success with follow up rock chipping and drilling only finding very small scale prospects. No drilling was completed within EL 23173.

Normandy Poseidon 1993 – 1995 (SEL8019, EL7568, EL7643) searching for diamonds, base metals and gold. The most recent exploration completed by Poseidon Exploration under a regional exploration program aimed primarily at the discovery and evaluation of lamprophyre dykes, which were found to be shedding kimberlitic indicator minerals. Exploration was based upon interpretation of kimberlitic target signatures from aeromagnetic imaging. The project area consisted of 15 separate Exploration Licences that were subsequently amalgamated under Substitute Exploration Licence 8019. This work has been compiled into GIS format; which can be seen in Figure 2.


During 2006-07, literature review of the tenement was undertaken and previous data was entered into GIS database. This review determines the potential of the project area. A stream sediment program was thought to be useful exercise which could provide lead for gold localisation in the project area.

In the reporting period ended on 3 March 2009, an in-depth technical review of the project area was undertaken in conjunction with reconnaissance visit. This led to the identification of W-shaped radiometric anomalous area. Selective drilling (9 RAB drill holes for 291 meters) of the area revealed radioactive stratigraphic horizons dominated by the carbonaceous, graphitic siltstone/shales which belong to the Koolpin Formation. 4 rock chip samples were analysed for uranium, gold, iron and base metals. Assay results also indicated elevated levels of uranium, gold and iron (Bajwah, 2009).
6.0 EXPLORATION PROGRAM YEAR ENDING 3 MARCH 2010

GBS Gold Australia remained under voluntary administration during most of the 2009-10 reporting period. The main activity has been to prepare assets for sale. For this purpose, a technical review, tenement ranking and valuation was undertaken. In addition, reconnaissance visits were also undertaken. This exercise established the mineral potential of the tenement for gold and uranium. After meeting regulatory and statutory requirements Crocodile Gold Australia acquired all assets including EL 23173 held by GBS Gold Australia (liquidated) on 6 November 2009. Following this transaction, Crocodile Gold Australia embarked on an ambitious exploration and mining programs in the area. Gold mining and processing re-commenced and first gold pour was achieved on 29 December 2009.

During the review it was realised that although project area lacks any pronounced magnetic anomalies which are considered important for the presence of gold mineralisation (Figure 3). However, there are some subtle magnetic anomalies which are scattered within the project area. It may be noted that there are a few gold deposits in the Pine Creek Orogen which are associated apparently weak subtle magnetic anomalies for example Goodall. An important feature is a deep-seated NW-trending structure which is present in the northern part of the project area.

Geological setting also appears to be fertile for the localisation of small to medium size uranium deposit. EL 23173 is located in the vicinity of world-class Alligator River Uranium Field which contains deposits such as Ranger, Jabiluka and Koongarra. Further north, Archaean Woolner Granite is overlain by Palaeoproterozoic strata with possible unconformity, which is a typical feature of unconformity-related uranium deposits in the Orogen. The Koolpin and Burrell Creek Formations contain sizeable vein-type uranium mineralisation in the Orogen. This observation points towards uranium prospectivity of the project area. Figure 4 shows radiometric (U-counts) image of the project area which shows a W-shaped pronounced radiometric anomaly. If this image is compared with Figure 2 (geological setting of the project area) then it is clear that W-shaped radiometric anomaly follows the folded Koolpin Folded Formation. This formation is known to have uranium concentrations due to the presence of carbonaceous shales, and therefore, provides a good target in the project area for drill-testing.
Figure 3: TMI Image of the Project Area
Figure 4: Radiometric Image of the Project Area. Previous drill holes and rock chip sample locations are also shown.
Uranium has a tendency to concentrate in carbonaceous reduced lithologies and in the Pine Creek Orogen, the Koolpin Formation appears to be suitable for this kind of uranium enrichment (Lally and Bajwah, 2006).

There are a number of uranium deposits/prospects which occur as quartz vein system such as Fleur de Lys, Adelaide River, and similar type of mineralisation is possible from EL 23173. This drilling campaign conducted so far is limited in nature, and to test the full potential of the project area, an intensive drilling campaign is required.

This exploration program costed $10345.00 and details are given in Appendix 1.

7.0 PROPOSED EXPLORATION PROGRAM YEAR ENDING 3 MARCH 2011

Review of the project area has established mineral potential (uranium, gold, iron ore) of EL 23173. In 2010-11, detailed geological mapping will be undertaken to ascertain structural complexities. This will be complemented with rock chip/soil sampling program to define geochemical anomalies better. Previous drilling has provided encouraging results and it will be followed up with additional RC/RAB drilling. Sample retrieved during this program will be assayed for gold, uranium and base metals. This program is expected to cost a minimum of $18000.00.

8.0 REFERENCES


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