



ANNUAL EXPLORATION REPORT

EL 23174

Au Quest Project

YEAR ENDING 18 SEPTEMBER 2010

**Darwin 1:250,000 SD5204
Noonamah 1:100,000 5172**

Distribution:

- **DOR Darwin NT**
- **Crocodile Gold Australia Humpty Doo**
- **Crocodile Gold Australia Brocks Creek NT**

Report No: PC/BJV/10-35

**Zia U. Bajwah
October 2010**

SUMMARY

EL 23174 is strategic landholding which is situated about 80km East of Darwin NT, and 3.5 km north of the Toms Gully Mine along the Arnhem Highway. On 6 November 2009, Crocodile Gold Australia Pty Ltd acquired EL 23174 and other assets held by GBS Gold Australia (liquidated) in the Northern Territory.

EL 23174 is located within the Pine Creek Orogen, which has been interpreted as an intra-cratonic basin lying on an Archaean basement, and containing 14 km thick sequence of Proterozoic sediments, accompanied by lesser volcanics, granitic plutons and dolerite intrusions. In the tenement area rocks of the Mount Partridge Group, South Alligator Group and Finnis River Group are exposed.

Previous owner, GBS Gold Australia was declared under receivership on 15 September 2008, and as a result of that all exploration and mining projects were placed under 'Care and Maintenance'. During the reporting period, sale process of EL 23174 to Crocodile Gold Australia was completed, and new owner commenced a review of all gold resources in the Burnside area. Due diligence undertaken of the project area shows that it has significant potential for gold, base metals and uranium mineralisation. Other duties included tenement ranking, evaluation reconnaissance visits, future planning and report writing.

Crocodile Gold Australia regards the tenement highly and plans to explore it with a dedicated exploration program. In the next reporting period, a soil/rocks chip sampling program will be undertake. Selected areas will be mapped in detail and if encouraging result received, it will be drill-tested.

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EL23174

1.0 INTRODUCTION

EL 23174 was applied for by previous owner Renison Consolidated Mines NL to cover ground on the north-east of Toms Gully Gold mine, which appears to follow regional mineralised trend. This report deals with exploration activity carried out during the year ending on 18 September 2010.

2.0 TENEMENT DETAILS

EL 23174 was granted on 19 September 2003 and expires on 18 September 2011. It comprises 21 graticular blocks that comprises approximately 54.88 km².

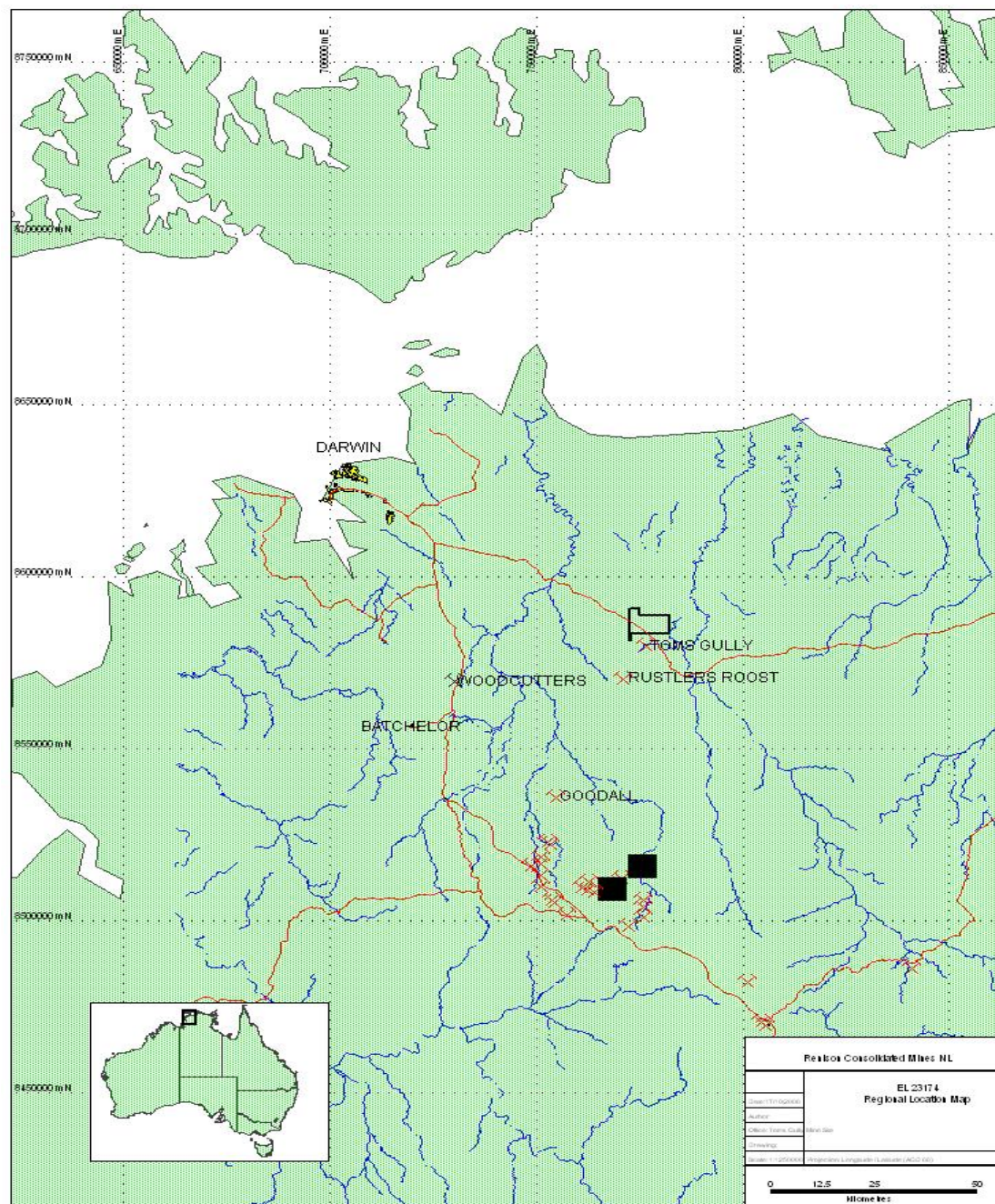
On 25 July 2007, GBS Gold Australia Pty Ltd by virtue of an agreement acquired all exploration and mining tenements and Toms Gully gold mine held by Renison Consolidated Mines NL including EL 23174 in Toms Gully area, Northern Territory. GBS Gold Australia went into voluntary administration on 15 September 2008 and as a result of that all mining and exploration assets were placed under care and maintenance. Crocodile Gold Australia announced to purchase these assets in June 2009 and after meeting all statutory and regulatory requirements, these assets including EL 23174 were transferred to Crocodile Gold Australia.

3.0 LOCATION AND ACCESS

EL23174 is situated 80km East of Darwin NT and 3.5km north of the Toms Gully Mine along the Arnhem Highway.

Access to the tenement is via the Arnhem Highway, thence via secondary tracks that provide good access during the dry season although crossing creeks can be challenging. After heavy rain the tracks become impassable during the wet season. The existing bush tracks lead to and from Scott Creek, and in the east old station tracks were utilised to gain access into the denuded laterite and residual soil areas.

Figure 1: EL23174 Tenement Location



A major wet season creek (Scott Creek) drains the region to the northwest towards the Adelaide River Floodplains. Black soil plains cover the tenement and subdued areas of eroding laterite and residual soils cover the remainder.

The tenement falls within the Marrakai Pastoral Co. Pty Ltd (PPL 1131).

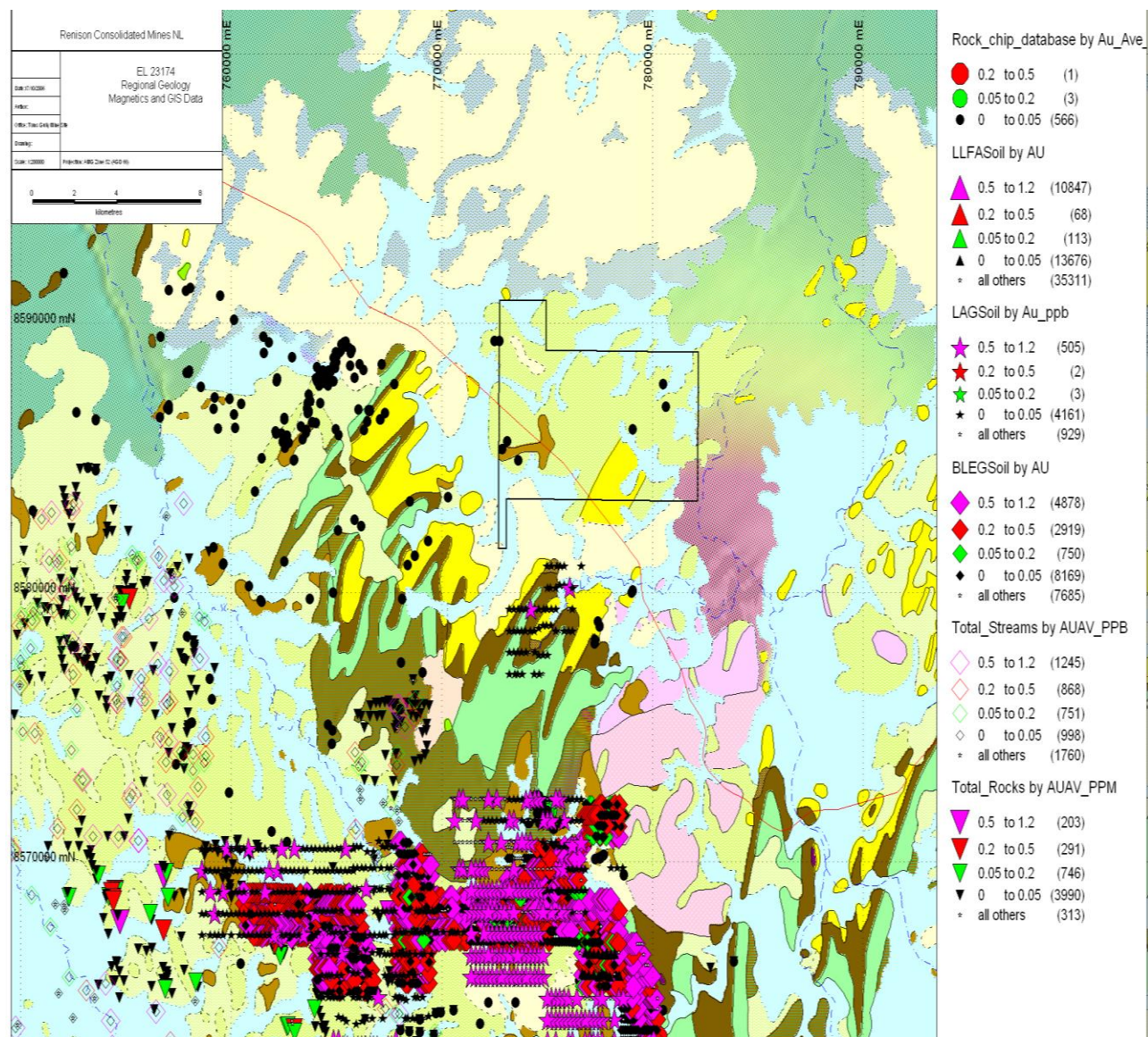
4.0 GEOLOGICAL SETTING

The following description is taken from Kobiolke and Hall (2006).

4.1 Regional Geology

EL23174 is located within the Pine Creek Orogen, which has been interpreted as an intra-cratonic basin lying on an Archaean basement, and containing 14 km thick sequence of Proterozoic sediments, accompanied by lesser volcanics, granitic plutons and dolerite intrusions. The Northern portions of the project area contain the oldest sediments of the Mount Partridge Group that are unconformably overlain by the South Alligator Group, which comprises most of the tenement areas. The southern portion of the Project area is comprised of Burrell Creek Formation, which conformably overlies the South Alligator Group. Tertiary and Quaternary Soils and Gravel's unconformably overlie all the low 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 plunging gently to the south. General geology of the project area in regional context is presented in Figure 2.

Figure 2: Regional Geology and GIS Data



4.2 Local Geology

- The *Mount Partridge Group* is represented by the **Wildman Siltstone**, which is interpreted to be up to 1500m thick. In the Mount Bunday Region the Wildman Siltstone consists of laminated and banded shale, carbonaceous and often pyritic siltstone interbedded with undifferentiated volcanics up to 100m interbeds, minor dolomitic sediments may also be present. The sediments near the granite intrusion are generally 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. The majority of EL23174 is within Wildman Siltstone.
- The *South Alligator Group* is represented by the **Koolpin Formation**, which comprises ferruginous siltstone and shale and 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 Formation is one of the most prospective units in the Mount Bunday region for hosting mineralisation (West Koolpin, Taipan, BHS and North Koolpin Open Pits at Quest 29 are all within Koolpin Formation).
- The *South Alligator Group* is represented by the **Gerowie Tuff** which comprises siltstone, argillite and crystal tuff. Pale green, brown or grey siliceous siltstone and phyllite interbedded with pale cherty argillite, black cherty crystal tuff, spotted feldspathic crystal tuff and lithic tuff; minor felsic ignimbrite, chloritic volcanoclastic shale, lithic tuff and lapilli tuff; porphyritic dacite. The depositional environment is described by the NTGS as Subaerial dacitic volcanic ash with shallow marine lutites.
- The *South Alligator Group* is represented by the **Mount Bonnie Formation** which conformably 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.

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- The *Finniss River Group* is represented by the **Burrell Creek Formation** which conformably overlies the Mount Bonnie Formation and is 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 thick. 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.
- *Intrusives* within the Exploration Licence include the **Zamu Dolerite**. This 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 Formation but this is not fully understood at this stage. Mineralisation is also hosted within this unit at Quest 29 and Chinese Howley.

5.0 PREVIOUS EXPLORATION ACTIVITY

The earliest record of exploration in this area of the Mount Bunday region was by Geopeko from 1974 until 1977. They were primarily looking for uranium and base metals using costeaning and the sampling of rock chips within EL142, however results from these samples were poor, with no economic value. Four costeans were completed in 1975, along with seven diamond drill holes and the collection of soil and rock chip samples. One further diamond hole was drilled in 1976.

During the 1980's and into 1990 Western Mining Corporation used stream sediment sampling, trenching, and drilling to explore for gold and base metals in EL4720. Carpentaria Gold was also collecting stream sediments samples in 1989, within EL6223 following the discovery of Tom's Gully by this method in 1987.

In 1992 Mount Isa Mines held the EL7554 tenure, and in 1993 Poseidon Exploration used stream sediment samples for location of gold anomalies in EL7568. From 1994 - 95 Normandy Exploration held the EL7568 and EL8019 tenures, using stream sediment samples, and drilling in their exploration. In 1995 they completed three hundred twenty five RAB holes, and ten Percussion holes with diamond tails.

This work has been compiled into GIS format for target generation and to prevent repetition with follow up work.

2005-2006

Initial work on EL 23174 comprised in-house interpretation of processed aeromagnetics and radiometric data along with reconnaissance and geological traverses. Subtle north to north-east trending magnetic anomalies reflect lithological and structural trends in the Wildman Siltstone. A north-east/south-west oriented magnetic linear feature in the south-eastern sector of the tenement probably indicates a deep seated dyke. Regionally, this feature passes just to the west of Toms Gully and continues to the south-west to underlie the Bandicoot and Williams gold occurrences. Residual lateritic soils are present in the topographically flat land surface in the west and north-west of the tenement. Occasional outcrops of laterite are also present scattered throughout this sector. The central and eastern areas of EL 23174 are presently undergoing active dissection during the Monsoonal wet season. The

topographically flat lateritic duricrust over the licence is being gullied and eroded away by creeks draining to the north-east and east into the Mary River, and to the south west into Scott Creek.

A prominent topographic ridgeline trending north-east with incised gullies draining east is present in the eastern sector of the licence. Saprolitic Wildman Siltstone

weathered maroon-orange in colour crops out along this ridgeline. Occasional more ferruginous bands are also present. Several roadside cuttings along the Arnhem Highway have exposed more resistant arenaceous/sandstone interbeds within the Wildman Siltstone.

2006-2007

GBS Gold Australia purchased EL 23174 from Renison Consolidated Mines in July 2007 and embarked on the review of the data and other administrative matters.

2008-2009

In 2008 - 2009, project area was flown by another high resolution TEMPSET geophysical survey. Preliminary examination of the TEMPEST profiles indicates thick folded graphitic siltstone units that are providing a conductive response throughout the area. These are thought to be prospective for gold, silver, base metals and uranium mineralisation.

6.0 EXPLORATION YEAR ENDING 18 SEPTEMBER 2010

During the year under review, Crocodile Gold Australia took over the control of EL 23174 and other assets held by GBS Gold Australia (liquidated), and commenced mining, processing and exploration activities in the region. The new owner embarked on the due diligence of all the assets including EL 23174.

Crocodile Gold regards EL 23174 highly due to its close proximity to the Toms Gully gold mine and having extension of similar geological structures which host gold mineralisation. An in-depth review of the Toms Gully and Rustler's Roost project is underway to commence mining and processing activity in the area and EL 23174 will play an important role for the supply of ore to the Toms Gully mill. Furthermore, the tenement also holds good potential for uranium and base metals mineralisation which will be explored with the help of JV partners. 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 costed a sum of \$ 10510.00 and details are given in attached Appendix 1.

7.0 FORWARD PROGRAMME YEAR ENDING 18 SEPTEMBER 2011

In the next reporting period, project area will be examined in details and anomalies will be tested. For this purpose a program of soil survey will be undertaken and samples will be analysed for the presence of gold, uranium and base metal mineralisation. Selected areas will be mapped in detail and if encouraging result received, it will be drill-tested.

A budget of \$28 000 has been set-a side for EL 23174 for 2009-10.

8.0 REFERENCES

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