



**ANNUAL REPORT ON
EXPLORATION LICENCE, EL 24150**

AuQuest Project

For Period Ending 24 January 2010

**DARWIN: 250 000
Noonamah: 100 000**

**Distribution:
DOR Darwin NT
Crocodile Gold Australia, Humpty Doo
Crocodile Gold Australia, Brocks Creek NT**

CGA Report No: DA/TG/10-01

**Zia U. Bajwah
February 2010**

SUMMARY

Exploration License (EL) 24150 is situated about 80 km east of Darwin and 28 km northwest of the Toms Gully Gold Mine. It is an important tenement within Crocodile Gold Australia's portfolio. The EL is part of tenement package which the company acquired by purchasing liquidated assets of GBS Gold Australia. It was granted on 25 January 2005 for a period of 6 years. The tenement comprises 22 blocks and covers 47.7 km².

EL 24150 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. Predominant rocks exposed in the project area belong to the Wildman Siltstone, Koolpin Formation and Burrell Creek Formation. In places sills of the Zamu Dolerite may also be present. Much of the bed rock geology is obscured by thick black soil cover.

During the year under review, a technical review, tenement ranking and valuation was undertaken in order to prepare assets for sale. TMI image of the project area shows a deep-seated structure which could be an important feature for gold mineralisation. A number of uranium anomalies have also been identified from radiometric data which require further field testing. During the reporting period, JV partner, Rum Jungle Uranium Limited flew the area with high resolution TEPEST geophysical survey. The aim of the survey was to try and map graphitic and sulphide conductors near the base of the Koolpin Formation, where black shales are in contact with carbonate units and also in the Wildman Siltstone Formation.

High resolution geophysical survey has identified several gold and uranium anomalous areas which require follow-up. During 2010 –11, ground-truthing of the project area will take place with an aim of checking the gold and uranium anomalies. This will lead to a program of soil/rock chip sampling and may also include detail mapping of selected areas. If encouraging results received, it will lead to drilling.

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1.0 INTRODUCTION

Exploration Licence (EL) 24150 is situated about 80 km east of Darwin and 28 km northwest of the Toms Gully Gold Mine. The EL is a part of tenement package which Crocodile Gold Australia acquired by purchasing assets held by Gold Australia Pty Ltd (liquidated) in 2009. In the following, exploration activities carried during the year under review are discussed.

2.0 LOCATION AND ACCES

The tenement is located on the southern side of the Arnhem Highway (Figure 1) about 80 km from Darwin. EL 24150 can be reached by Arnhem Highway East of Darwin and then by station tracks. It mainly covers the flood plains of Adelaide River which makes the access challenging during the wet season. Access to the north of the tenement is via the Arnhem Highway, along station fence-lines, whereas eastern areas of the tenement can be accessed by bush tracks leading from Leaning Tree Lagoon. The southern parts of the licence were accessed from a fence-line track extending north from Adelaide River station. These tracks provide good access for 4WD vehicles during the dry season, however these tracks become impassable after heavy rain, and therefore no access is possible throughout the wet season.

3.0 TENEMENT DETAILS

This Tenement was applied for in 1999 and has been held up in Native Title until recently. Eventually, it was granted to Renison Consolidated Mines in January 2005 for a period of 6 years. The tenement comprises 22 blocks covering 47.7 km². Underlying cadastre belongs to Sunhardy Pty Ltd (Crown Lease in Perpetuity No. 143).

In July 2007, Renison Consolidated Mines sold all exploration and mining tenements in the Toms Gully area, including EL 24150 to GBS Gold Australia. On 15 September 2008, GBS Gold Australia went into voluntary administration and all assets were liquidated. Crocodile Gold Australia purchased all assets including EL 24150 in November 2009.

Figure 1: Tenement Location Map



EL 24150 is also part of a farm-in agreement between GBS Gold Australia Pty Ltd (honored by Crocodile Gold Australia) and Rum Jungle Uranium Pty Ltd, which allows the later to explore for uranium mineralisation.

4.0 REGIONAL GEOLOGY

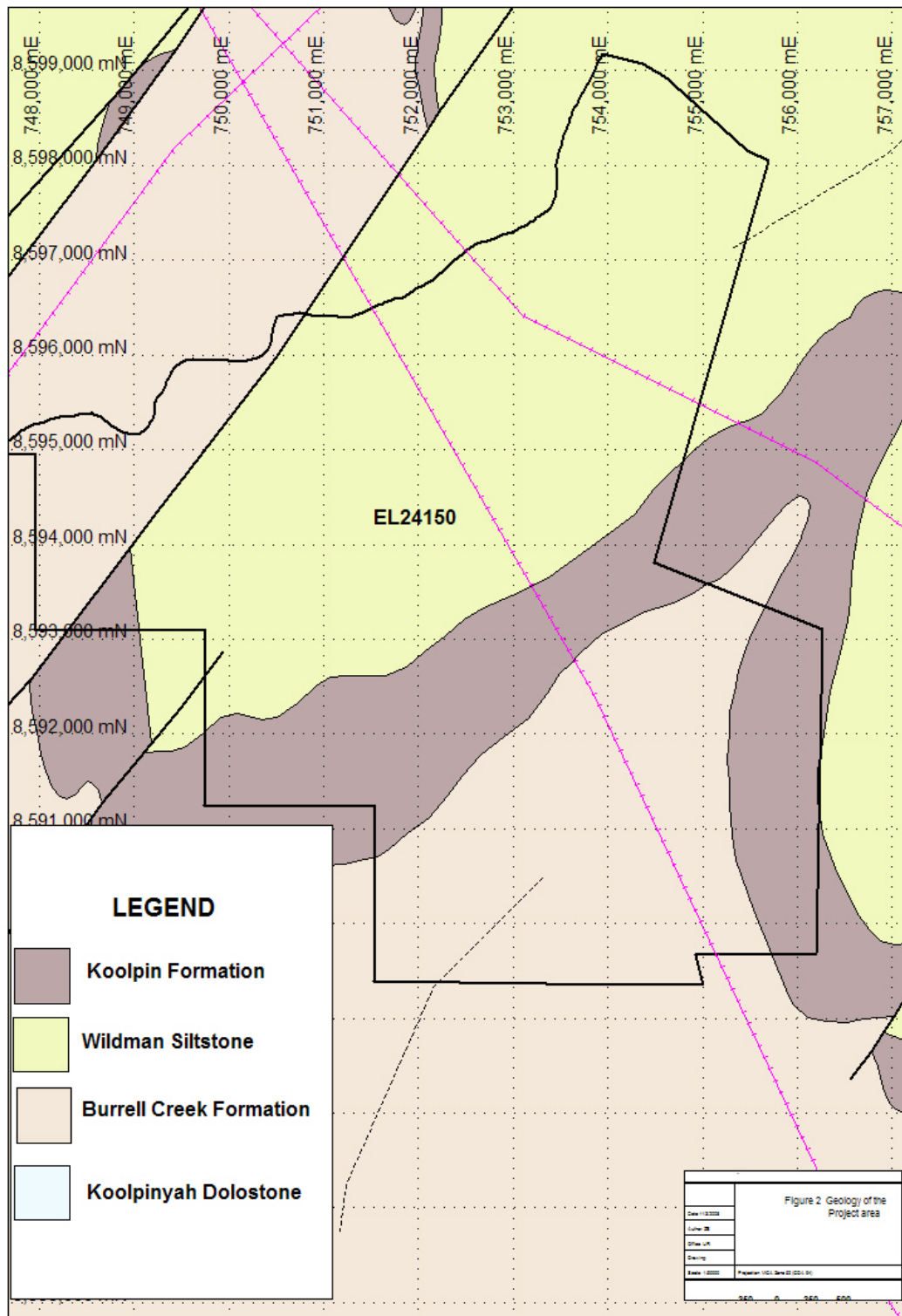
EL 24150 is located within the Pine Creek Orogen, which has been interpreted as an intracratonic basin lying on an Archaean basement, and containing a 14 km thick sequence of Palaeoproterozoic sediments, accompanied by lesser volcanics, granitic plutons and dolerite intrusions. The northern part of the project area contains the oldest sediments such as the Mount Partridge Group that is unconformably overlain by the South Alligator Group and comprises most of the tenement areas. The southern and western portion of the Project area is comprised of Burrell Creek Formation (Figure 2), 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". 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.

4.1 The Mount Partridge Group

The 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 interbedded with undifferentiated volcanics 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. The Wildman Siltstone hosts the Tom's Gully gold deposit.

Figure 2: Geological Setting of the Project area



4.2 The South Alligator Group

The Koolpin Formation, Gerowie Tuff and 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.

The 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 be present. 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 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 Bunday Region it is dominated by graded beds of siliceous tuffaceous mudstones grading to greywacke and arenite, diagenetically altered. It is 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.

The Mount Bonnie Formation

The Mount Bonnie Formation 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. This formation is not exposed in the project area.

4.3 Finnis River Group

The 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, and in places, 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 Bunday Granite & Mount Goyder Syenite

The sedimentary sequences and the Zamu Dolerite are intruded by the Palaeoproterozoic Mount Goyder Syenite and Mount Bunday Granite, which form a co genetic complex cropping out over about an 80km² area. These intrusions are believed to have been the source for the mineralisation, which occurs throughout the local region (Bajwah, 1994). 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 Bunday Granite intrusive has resulted in the development of both cordierite and

andalusite, and probably was responsible for the local gold mineralisation. Further to the south of the Mount Bunday and Mount Goyder Syenite 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 Bunday Granite and Mount Goyder Syenite is a comparable cogenetic pluton dated at 1790 ± 110 My in the region. Structural deformation of the meta-sediments is complex.

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 Orogen e.g. Cosmo Howley, Rustlers Roost, Toms Gully, Moline, Mt Todd and Quest 29 (Bajwah, 1994).

5.0 PREVIOUS EXPLORATION

The earliest known record of exploration in this area of the Mount Bunday region was undertaken during the 1970's by Geopeko and then by CRA Exploration. Geopeko used costeaning, rock chipping, soil sampling, drilling and core sampling, while CRA mainly used rock chipping.

During the early 1980's Aquitaine Australian Minerals/ Pan D'Or Mining and Jimberlana Mining occupied EL1653, as well as Optimal Mining and ACA Howe Australia. Euralba

Mining and Burmine (EL3298) completed gridding, minor drilling and rock chip sampling, while Inco Australia and Dominion Gold Operations held the tenements for EL 2240 and EL 6781 respectively.

During the late 1980's to the early 1990's Carpentaria Gold held the tenements for EL5290, in which they took rock chip, soil, and stream sediments samples as a means of searching for gold deposits. Normandy Exploration held the tenement EL8019, and conducted stream sediment sampling. Euralba Mining/Burmine and Carpentaria Gold (EL5941) undertook rock chip, stream sediment sampling, costeaning and drilling.

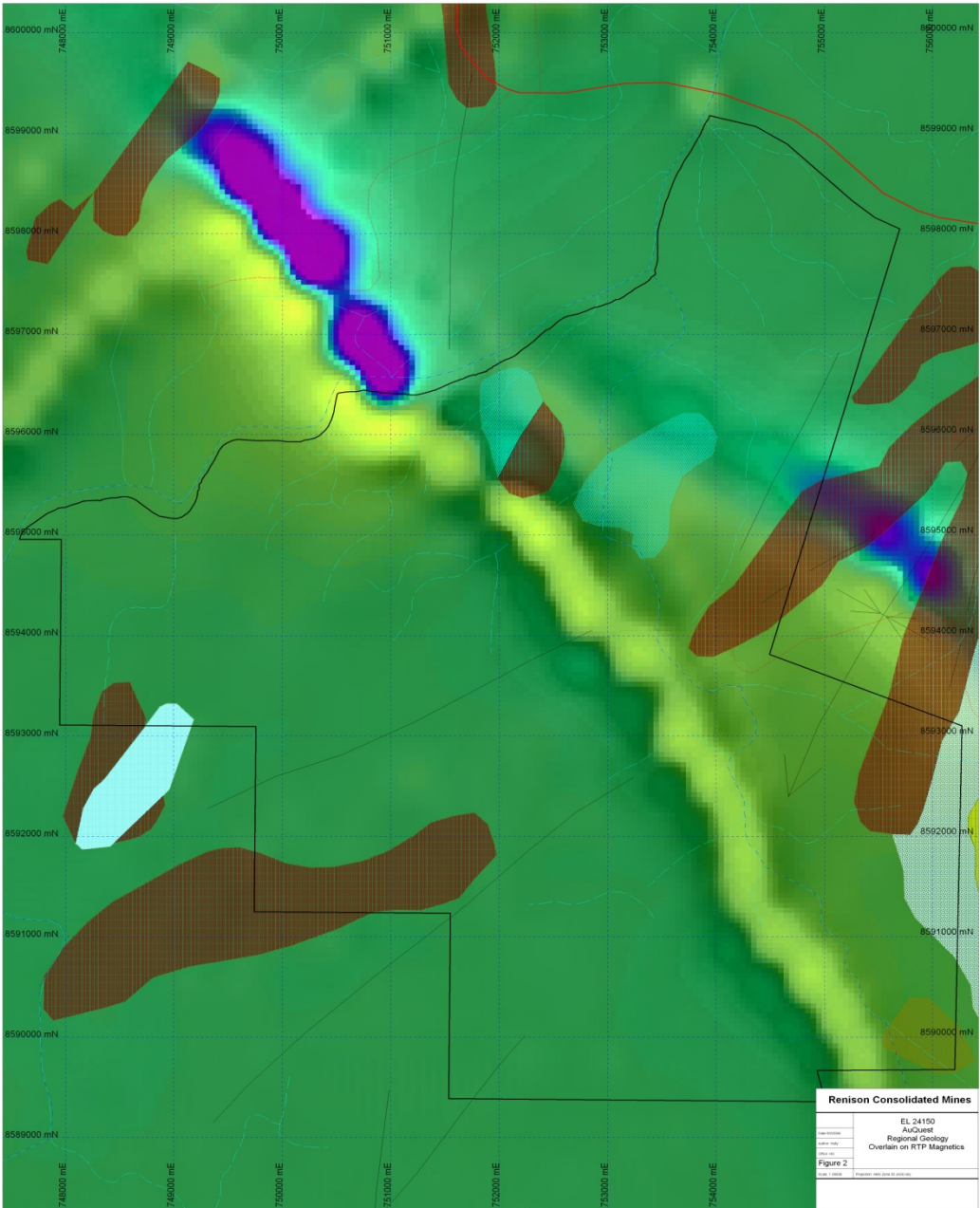
During the 1990's Normandy Exploration (EL8019) and Poseidon Exploration held the tenements EL7583 and EL7568, collecting stream sediment samples, with the prior drilling some RAB holes and minor percussion drilling with diamond tails. Soil samples were taken within EL9154 by Northern Gold.

Current Tenement Holders in the Project area include Northern Gold 1990-present, Valdora -Rustler's Roost Mining –Williams Inc. now called Valencia Ventures 1993-present, and Renison Consolidated Mines NL 1997-present. This work is currently being compiled into GIS format for target generation and to prevent repetition with follow up work.

During 2005-06 reporting period, literature reviews of previous work were carried out and entered into GIS databases. Interpretation of all available Geodata was carried out concurrently with field activities; Geology maps, 1:20,000 colour aerial photography, Landsat imagery, reprocessed aeromagnetic and radiometric imagery, and detailed 1:20,000 topographic maps were all extensively consulted.

Reprocessed aeromagnetic imagery displays a prominent NNW-SSE trending magnetic linear feature passing through the centre of the tenement (Figure 3), just to the west and parallel with Marrakai Creek. Another NW-SE magnetic low linear enters the tenement further to the north from beneath the folded syncline. These structures are interpreted to be dolerites probably within major basement faults; they may be acting as conduits for gold mineralising fluids to be channeled into overlying structures.

Figure 3: Regional Geology and Magnetics



Reconnaissance rock chip sampling was confined to an outcropping brecciated quartz vein in the south east corner, and the Banded iron formation on low rises east of Denny's Hill. The brecciated quartz vein returned a value of 0.05 ppm Au and 0.07 ppm Au on the repeat assay. The Banded iron with laminated chert returned 0.03 ppm Au.

The two samples were analysed for Au by 50 gram Fire Assay.

Rockchip assay results and locations are displayed below.

SAMPLE	EASTING	NORTHING	AU1PPM	AU2PPM
SH124	756630	8589522	0.05	0.07
23178-41	752051	8591878	0.03	

During 2007-08, a technical review of the project area was undertaken which indentified uranium and gold potential of the project area. An optional agreement with Rum Jungle Uranium Pty Ltd was also signed which gave the exclusive right of uranium exploration to Rum Jungle Uranium Pty Ltd.

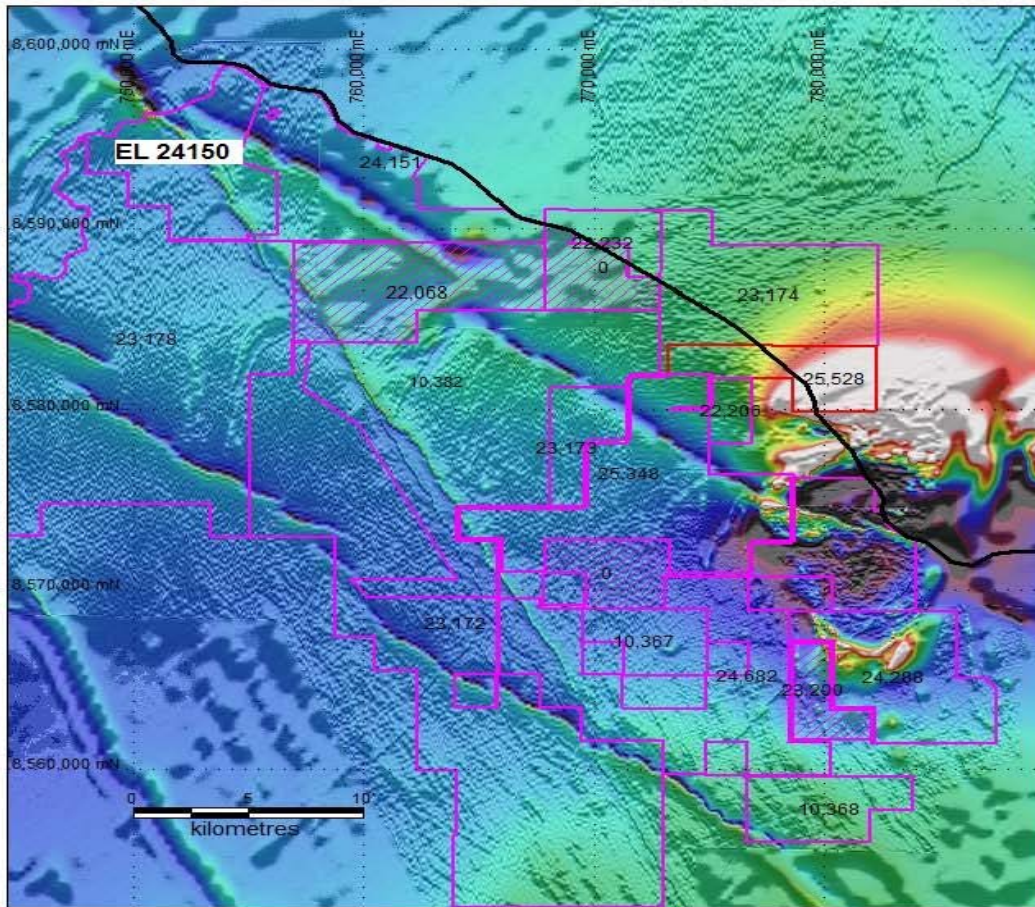
6.0 EXPLORATION PROGRAM FOR PERIOD ENDING 24 JANUARY 2010

Reporting year ending on 24 January 2010 saw the purchase of Toms Gully tenement package which also included EL 24150 by Crocodile gold Australia Pty Ltd. The new owner took over the control of tenements only on 9 November 2009 after meeting all regulatory and statutory requirements and immediately embarked on mining, processing and exploration programs in the region.

Crocodile gold Australia also commenced a technical review of geological, geochemical and geophysical data of the project area.

TMI image of the project area (Figure 4) reveals a deep seated structure which runs from north-west to south-east, where it transects the Mt Bundy Granite. Toms Gully gold deposit is located on the edge of this structure where it intersects the granite body. It is

Figure 4: TMI image of the project area



highly likely that this deep seated structure could be a fault which might have acted as fluid conduit, emanating from the Mt Bundy Granite. It may also be noted that in EL 24150, another magnetic feature is present which intersects the prominent deep seated structure (fault) at a steep angle at the north-western edge of the tenement. This feature has been interpreted as a doleritic dyke which is significant for hosting gold mineralisation within the Pine Creek Orogen. It is recommended that entire strike length of confluence of deep seated structure (fault) and doleritic dyke should be tested by soil/rock chip sampling, followed by drilling.

Figure 5 shows the radiometric image of the project area which is characterised by some anomalous areas for uranium mineralisation. These anomalies are located within the Koolpin Formation and have been ear-marked for field checking in 2011.

During the reporting period TEPEST geophysical survey was also conducted in the project area by JV partner Rum Jungle Uranium Limited. The TEMPEST data map graphitic shale units very well. The aim of the survey was to try and map graphitic and sulphide conductors near the base of the Koolpin Formation where black shales are in contact with carbonate units and also in the Wildman Siltstone Formation.

TEMPEST profiles over the Adelaide River floodplain seem to map the conductive black soil near the surface and do not provide much use at depth. One conductive unit seems to map a fold in the Koolpin Formation throughout EL 24150 and EL24151 (Figure 6). One RC hole into this conductor was drilled on EL 24151 intersecting graphitic black shale over carbonate but the hole produced no mineralisation. It appears that TEMPEST survey is quite useful tool in identifying conductors in the Top End and could be very useful technique particularly for base metals. It could be useful for gold mineralisation, if some conductor minerals are associated with gold. Appendix 1 contains the raw TEMPEST geophysical data.

During the reporting period, in addition, tenement review, ranking and valuation was also undertaken in order to prepare assets for sale.

This activity costed \$26200.00 and details are given in Appendix 2.

Figure 5: Radiometric (Uranium Count) image of the project area

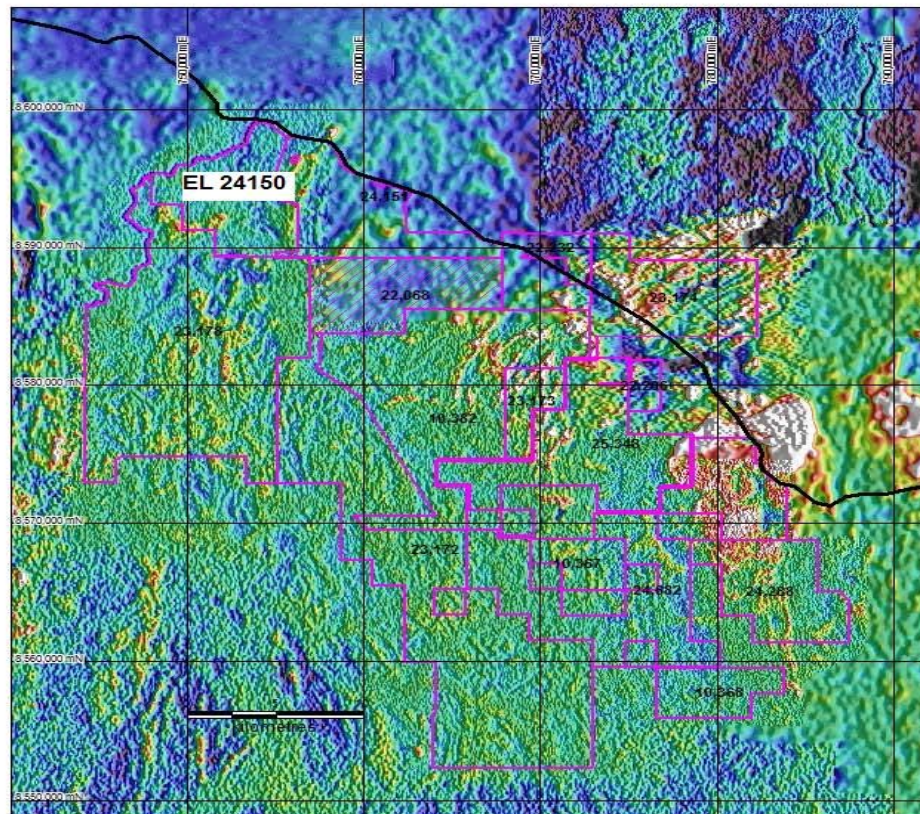
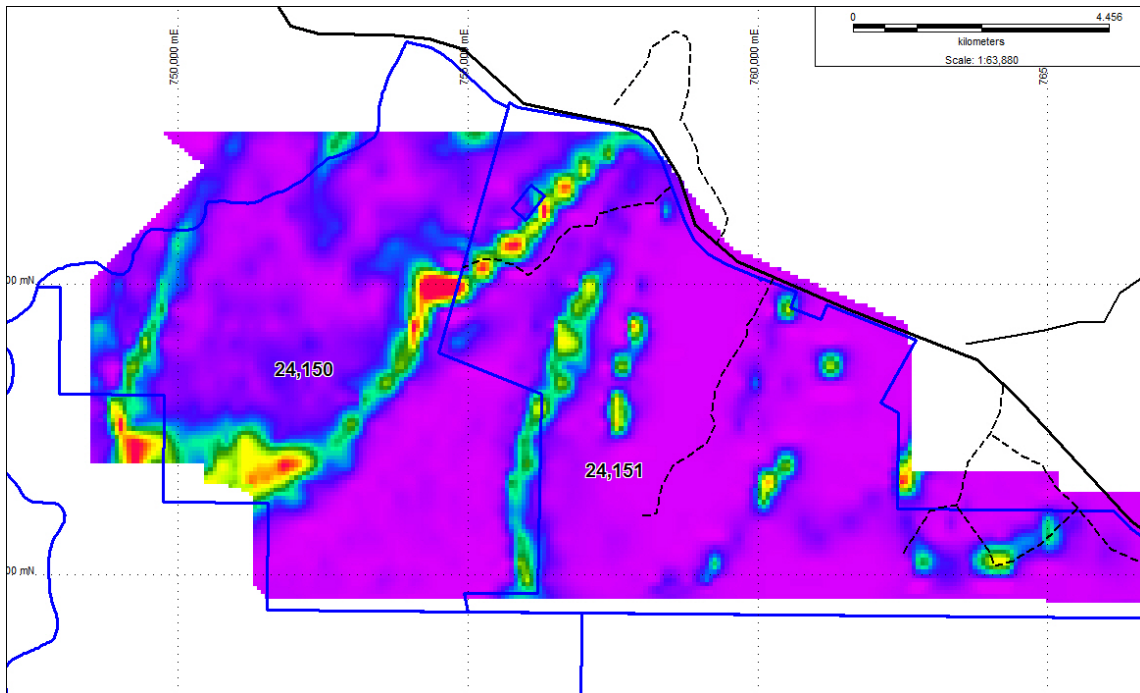


Figure 6: Conductivity depth image (100-150m) from the TEMPEST data showing a conductive unit



7.0 PROPOSED EXPLORATION PROGRAM FOR PERIOD ENDING 24 JANUARY 2011

After securing the tenement control, Crocodile Gold Australia has embarked on the review of the project area. Currently, in-depth review of previous exploration data is underway which has highlighted the significance of EL 24150.

High resolution geophysical survey has identified several gold and uranium anomalous areas which require follow up. During 2010 – 11, ground-truthing of the project area will take place with an aim of checking the gold and uranium anomalies. This will lead to a program of soil/rock chip sampling and may also include detail mapping of selected

areas. If encouraging results received, it will lead to drilling. A minimum budget of \$20000.00 is proposed.

8.0 REFERENCES

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