



ANNUAL EXPLORATION REPORT ON EL 9608

“Mount Bonnie South”

YEAR ENDING 24 MAY 2010

Pine Creek SD5208 1:250,000

Pine Creek 5270 1:100,000

TITLE HOLDERS: CROCODILE GOLD AUSTRALIA PTY LTD

Distribution:-

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

Report Number: PC/BJV/ 10-22

**Zia U. Bajwah
June 2010**

SUMMARY

EL 9608 is a strategic landholding which is located about 145 km SE of Darwin, NT and 18 km SE of Brocks Creek. EL 9608 was granted on 25 May 2004 and expires on 24 May 2010. A renewal application has been lodged with the NT Dept of Resources. It comprises three blocks that cover approximately 10 km². Originally, EL 9608 was granted to Northern Gold NL, which in 2005 became the subsidiary of GBS Gold Australia Pty Ltd. On 15 September 2008, GBS Gold Australia went into voluntary administration and in the following year, all assets were purchased by Crocodile Gold Australia on 6 November 2009.

EL 9608 covers the Koolpin Formation meta-sediments that have been tightly folded and faulted on NW-SE axes. The Koolpin Formation has been intruded and dilated regionally by dolerite sills with a wide range of thicknesses. Cross-folding has generated a domal structure in the southern most block of the tenement. This feature is a clone of the mineralised Golden Dyke Dome 4 km to the west. The area is well exposed on strike ridges with scree deposits and alluvial cover in the valley floors and flanks of the ridges.

During most the year under review, tenement remained under care and maintenance. Under the instructions from Several Administrators, EL 9608 was reviewed, ranked and valued. Review of previous geochemical and drilling data indicates that the EL 9608 has significant potential for gold, uranium and base metal metals mineralisation, which new owner will pursue aggressively. During the reporting, high resolution geophysical survey (magnetic and radiometric) of EL 9608 was flown. Interpretation of geophysical data supports the mineral potential for gold, uranium and base metal mineralisation. Other exploration activities were reconnaissance visits of the area, data compilation, tenement management and annual exploration report preparation.

Proposed exploration program for the next reporting year will involve field checking zones of previous anomalous geochemistry and geological significance and interpreting the geophysical and structural aspects of the tenement, and defining further drill targets. This will lead to RC/RAB drilling in the project area to fully test the geochemical and geophysical targets.

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1.0 INTRODUCTION

EL 9608 is located approximately 145 km SE of Darwin, NT and about 18km SE of Brocks Creek, immediately south of Mt Bonnie Project area. Crocodile Gold regards the tenement highly and will pursue dedicated exploration program for gold, uranium and base metals mineralisation.

2.0 TENEMENT DETAILS

Northern Gold NL applied for EL 9608 (3 blocks) on 10th July 1996. EL 9608 was granted on 25 May 2004 and expires on 24 May 2010. A renewal application with the NT Dept of Resources has been lodged due to its strategic value. It comprises three blocks that cover approximately 10 km². Underlying cadastre is pastoral lease, with Equest Pty Ltd (PL 1630; Mary River West Station) on the eastern side of the tenement, and Branir Pty Ltd (PL 2683) covering most of the 2 western blocks.

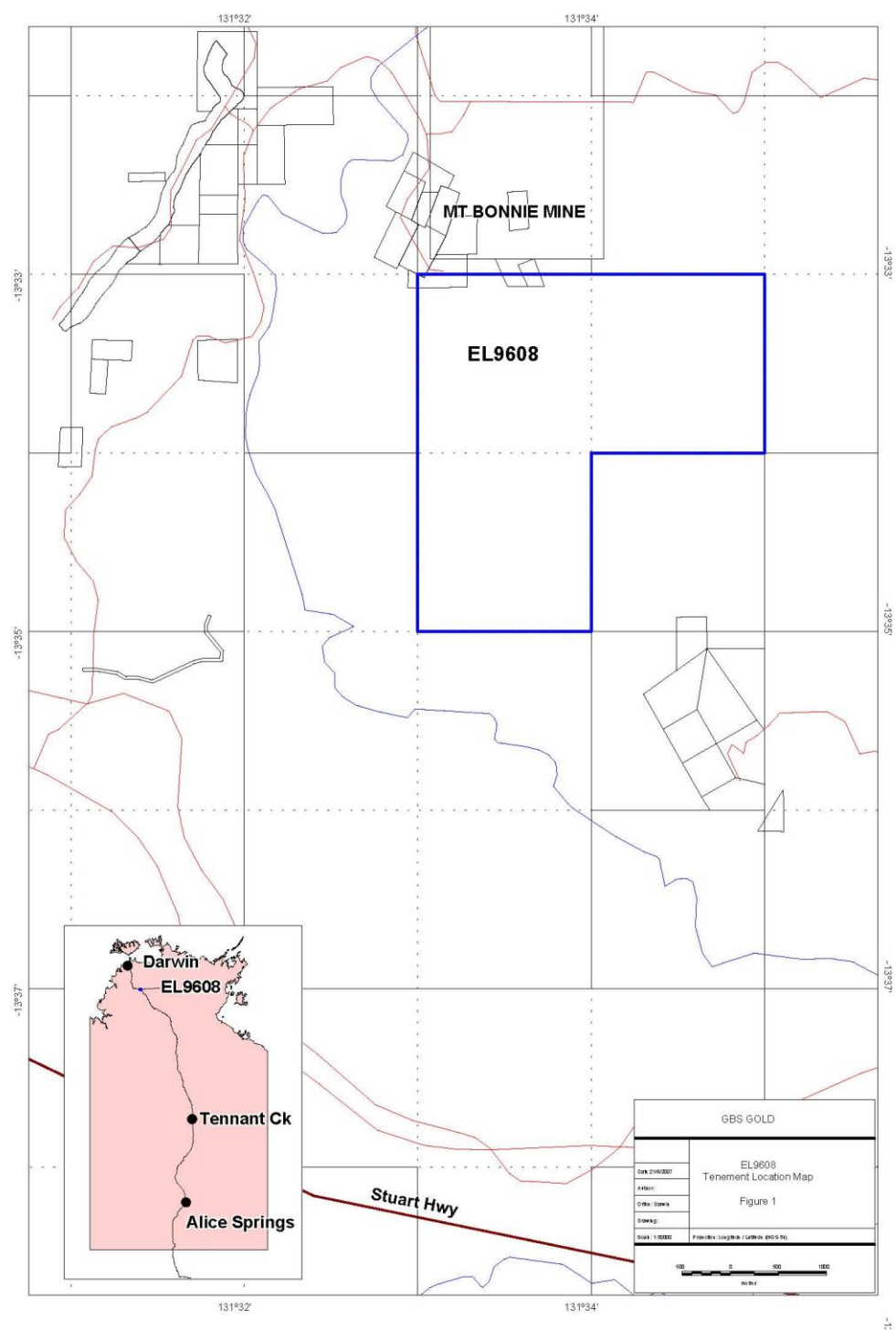
Originally, EL 9608 was granted to Northern Gold NL, but as Northern Gold NL were in JV with Harmony subsidiary Buffalo Mines Pty Ltd (Burnside JV) the tenement was transferred to being 50% Buffalo Creek Mines Pty Ltd, and 50% Territory Goldfields NL upon grant. During 2005, GBS made a successful takeover of Northern Gold NL, with the takeover becoming final in November 2005. In April 2006, GBS acquired Harmony's 50% share in the Burnside JV, and now control 100% of the Burnside Project.

On 15 September 2008, GBS Gold Australia went into voluntary administration and as a result of that all exploration and mining assets were placed under care and maintenance. Crocodile Gold Australia announced to purchase these assets in June 2009, and after meeting regulatory and statutory requirements, all these assets were transferred to Crocodile gold Australia on 6 November 2009.

3.0 LOCATION AND ACCESS

EL 9608 is located 145km SE of Darwin, NT and 18km SE of Brocks Creek (Figure 1). Access from the Stuart Highway is via the Grove Hill Road for 7km, then to the

Figure 1: EL 9608 Tenement Location Map



Mt Bonnie access road. From Mt Bonnie, there is a track that heads south towards the Margaret Diggings.

Within the tenement access is poor, due to the hilly terrain and lack of tracks.

4.0 GEOLOGICAL SETTING

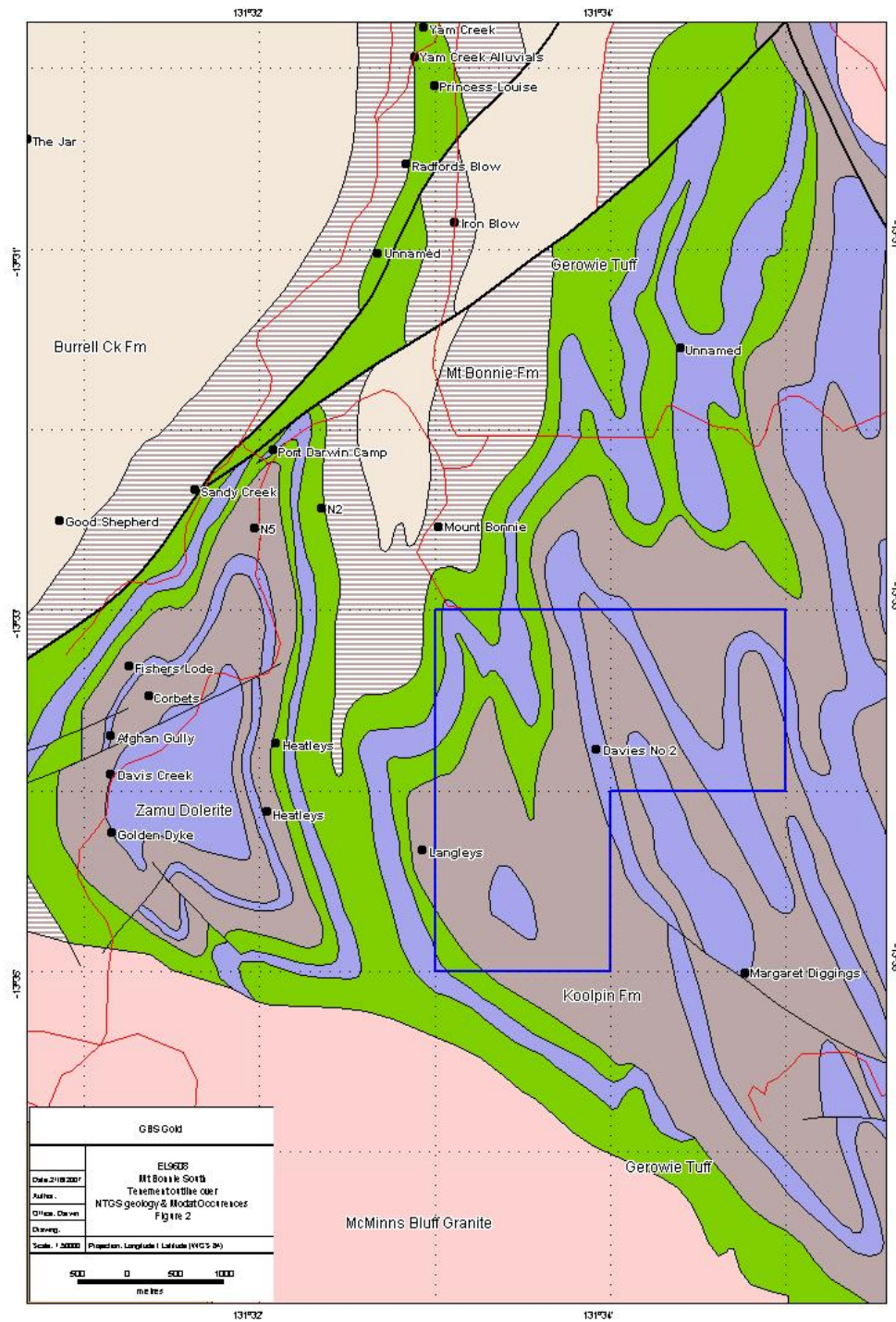
Regional geology is outlined in many publications, notably Ahmad *et al.* (1994) and Needham and Needham and Stuart-Smith (1984), and Needham *et al.* (1988). The tenements are within the Pine Creek Orogen, a folded sequence of Lower Proterozoic pelitic and psammitic sediments, with interlayered cherty tuff units. Mafic sills of the Zamu Dolerite (~1.87Ga) intruded lower formations of the South Alligator Group.

EL 9608 covers a sector of Koolpin Formation meta-sediments that have been tightly folded and faulted on NW-SE axes (Figure 2). The Koolpin Formation has been intruded and dilated regionally by dolerite sills with a wide range of thicknesses. These dolerites comprise the Zamu Dolerite event that just predates the Pine Creek Orogeny. Cross folding has generated a domal structure in the southern most block of the tenement. This feature is a clone of the mineralised Golden Dyke Dome 4km to the west. The area is well exposed on strike ridges with scree deposits and alluvial cover in the valley floors and flanks of the ridges.

Gold is well known in a variety of settings in the region of EL9608. The Koolpin Formation occurrences at Golden Dyke Dome 4km to the west are similar to those at Cosmo Howley and by some workers have been considered syn-genetic in style or at least strata-bound. Sener (2003) showed that an epigenetic origin is most likely supported with rock chemistry and metamorphic grade setting more likely to have played a dominant part. Shaw (2005 interpreted within EL9608 strike (reverse?) faults from the SPOT image cut the axial zones of the principal anticlinal folds and are potential sites for gold deposition. Where these are cut by late stage WNW trending fractures a favourable gold depositional site is to be expected.

Mapping of the project area shows that the Koolpin Formation and Zamu Dolerite have been folded along NNW-SSE axes. The Zamu Dolerite forms the core of a double-plunging anticline, forming an elliptical outcrop with well-defined contacts. This feature is interpreted to be similar to that of the Golden Dyke dome in the north which contains significant gold and base metal mineralisation. Ground-truthing has

Figure 2: Geological setting of the project area



identified prominent quart-veining within the dolerite. Box-work goethite, possibly after sulfides is prominent in veins.

5.0 PREVIOUS EXPLORATION ACTIVITY

Previous exploration came from examining the historic tenure layer (NT_Historical_EL_AP dated 12/08/2005 from NTGS) in MapInfo, and also from examining scanned Mining Tenure maps from the Minerals and Energy website. A list of previous tenure was compiled, and the reports were obtained after interrogating IRMS. Further checks on work within the Licence came from examining Explorer 3, MODAT and COREDAT.

AP1959 covered the whole of EL9608, plus a very large area south of EL9608, but also including the Mount Bonnie and Yam Creek areas. Exploration focused on prospects outside of EL23432, such as Woolwonga, Lady Josephine, Mount Ringwood, Grove Hill etc. Central Pacific Minerals explored AP1959 in JV with Magellan Petroleum in the late 1960's and early 1970's, focusing on Cu, Pb, Zn, with lesser focus on U, Au, Ag, Co, Fe and Mn. No specific work is mentioned within EL 9608.

EL615 – AOG minerals held a large tenement in the area in the mid-1970's and concentrated most of their work on the Mount Bonnie and Iron Blow prospects.

EL 3138 covered 57 blocks to the east of EL9608, and included the eastern block of EL9608. Geopeko explored EL 3138, and work done in the early 1980's included soil sampling and rock chip sampling, but most of this work was further east over the Burrundie Dome. Geopeko then applied for mineral claims over 3 areas (further east of EL 9608) showing geochemical anomalism.

EL 3612 consisted of 7 blocks, 2 of which are the western blocks of EL9608. The Aquitaine-Nord JV explored for base metals, and drilled 3 percussion/diamond holes into pyrrhotitic carbonaceous sediments within the Upper Koolpin Formation on the western boundary of EL9608 in 1983. Minor sphalerite and galena were present but gold results were negative.

Oceania Exploration held **EL 4818** for 3 years in the mid-1980's. EL 4818 consisted of 2 blocks, one of which is the eastern block of EL9608, and continued further south. Oceania carried out photogeological mapping and geological field reconnaissance in the first year, and recognised that the Koolpin Formation had iron-rich horizons analogous to those hosting mineralisation at Golden Dyke mine. Approximately 28 stream sediment samples were collected within EL 9608 from this work, with no anomalous values recorded within EL 9608.

EL 4897 covered the same 7 blocks as EL3612 for 3 years in the mid-1980's. Dundas Gold were exploring for gold and base metal deposits with an emphasis on quartz vein systems and stratabound exhalite related mineralisation. Approximately 19 stream sediment samples were taken within EL9608, with maximum value of 77ppb Au at MGA52 776610E / 8497 950N (assayed by Amdel using method PM6 – bulk cyanide). Dundas outlined 3 prospects from the anomalous results, all of which are west and outside EL 9608.

In the late 1980's there were several MCN's within EL 9608. **MCN' 2910 and 3161** (on the northern boundary of EL 9608) were granted to Zapopan but Dominion gained control in the early 1990's, and planned soil sampling, vacuum and RAB drilling looking for Mt Bonnie style of mineralisation, but no further results (or whether the work was carried out) is available.

Zapopan held **MCN's 2908, 2909, 2911 – 2921, 2923 and 2924** but only carried out a review of previous exploration before deeming the tenements as being of low prospectivity and relinquishing them.

Northern Territory Gold held **MCN's 3123 – 3140** for a couple of years from 1989. Soil sampling was carried out with anomalous values (as reported by Mt Carrington Mines in EL 7913 reports). In mid-1990 the controlling company went into liquidation and the ground was relinquished.

Mt Carrington Mines held **EL7913** to explore for Cosmo Howley / Golden Dyke style mineralisation, with a lesser emphasis on quartz-stockwork type gold mineralisation and stratiform base metal mineralisation. Exploration concentrated on the Cosmo Howley / Golden Dyke mineralisation model, with BLEG soil sampling and 1:2000 geological mapping along the soil lines, which followed up results from Northern

Territory Gold. Maximum values of 124ppb Au and 770ppm As were reported. An Au-As association with a meta-dolerite host similar to Quest 29 mineralisation (near Mt Bundy) was recognised, and RC drilling was recommended. The lack of gold anomalism over the bulk of the area underlain by meta-sediments downgraded the potential for Golden Dyke-style mineralisation in the Koolpin Formation. No drilling was carried out.

Checking of Explorer 3 and COREDAT databases yielded no data within EL 9608.

As **EL9608** exploration during 2004/2005 concentrated on a remote sensing study based upon satellite SPOT imagery by Shaw (2005). He noted that the domal structure within EL9608 is a clone of the Golden Dyke Dome, and the gold anomaly outlined by previous workers occupies an analogous position to the Golden Dyke and Langleys deposits. He noted splay faults appearing to originate in the McMinns Bluff dislocation cut the tenement. These run sub parallel to the fold axes (orange lines) and may represent limb failures. These are shown as thick blue lines on the image. Lesser faults and fractures (thin blue lines) cut the tenement sub parallel to the McMinns Bluff granite contact (WNW).

Exploration within EL9608 during the second year of tenure included a review of previous exploration on the Licence. This showed EL 9608 as being highly prospective with:

- a) similar host lithologies to Cosmo/Chinese Howley
- b) several favorable structures crosscutting through the tenement
- c) recognition of NW-trending soil anomalies from previous work that have not been followed up with further work
- d) similarities to adjacent Golden Dyke mineralisation
- e) possible extensions of Mt Bonnie mineralisation

These results show that a strong geochemical anomaly is within the SE corner of the licence overlying the dolerite. Drilling by Acquitaine focussed on the Koolpin Formation, and results were 'inconclusive'. Due to management changes and rig availability, the drilling planned was not carried out.

In 2007/08, a RC drilling campaign commenced in the project area to test the presence of gold mineralisation. A total of six drill holes were planned. Some reconnaissance field visits were undertaken in addition to data entry, tenement administration and report writing

During 2007-08 reporting year, a drilling campaign which commenced in early 2007 was completed. It involved drilling of 8 RC holes for 589 metres. During this campaign, 592 RC chip samples (1 meter composite) were selected and assayed for Au, As, Cu, Zn and Pb by NAL Laboratories Pine Creek. Au was analysed by fire assay method and rests were analysed by AAS.

Sample retrieved during drilling assayed as high as 6.18 ppm Au (Sample No 1285, DRC005) at 22 metre depth. The Zamu Dolerite is the main host rock which has been cut-across by quartz veins. Evidence of hydrothermal alteration in the formation of chlorite and sericitisation is present. Generally, Au concentrations varies from -0.01 to 6.18 ppm with an average of 0.05 ppm.

6.0 EXPLORATION YEAR ENDING 24 MAY 2010

During most of the reporting period, the tenement remained under care and maintenance. However, under the instructions from Several Administrators, 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 statutory and regulatory requirements, these assets included EL 9608 were transferred to new owner. Crocodile Gold Australia immediately commenced exploration, mining and processing activities in the region. Mining started from Brocks Creek underground and Chinese South (Extension) open pit; hauling ore to Union Reefs gold mill for treatment. Work is underway to re-commence mining and processing at Toms Gully gold project, which is expected to come on-line in August 2010. So far, over \$100.00 million has been spent of which approximately \$15.0 million has been directed towards drilling in order to prove up resource base, which is vital for mining and processing operations in the region.

In 1009, JV partner Thundelarra Exploration Limited flew the project area with high resolution geophysical survey (magnetic and radiometric). GDF formatted data as part of EL 23431 annual report have already been provided to Dept of Resources (Bajwah and Mees, 2009).

Figure 3 shows TMI image of the project area which has some interesting features. Towards north, a pronounced magnetic anomaly which defines Mt Bonnie gold-base metal deposit is present. Similar magnetic anomalies or magnetic ridges are present within the project area. These types of structures are known to host gold and base metals mineralisation in the Pine Creek Orogen. It may be noted that geology of EL 9608 is dominated by the Koolpin Formation (Figure 2) along with beds of the Gerowie Tuff and dykes of the Zammu Dolerite. Parts of these magnetic anomalies/ridges belong to the Koolpin Formation where some parts of the Zammu Dolerite are also strongly magnetic. These anomalies/ridges are good targets for gold and base metals mineralisation.

Radiometric image (U-counts) of EL 9608 is shown in Figure 4. In the central part of the tenement, there are at least three radioactive anomalous areas which are similar to Thunderball uranium prospect recently discovered (Bajwah and Mees, 2009). Although, the project area lacks fault structure similar to that Hays Creek Fault which appears to be related to uranium mineralisation. However, presence of strong radiometric anomaly within the Koolpin Formation is worth further exploration.

Crocodile Gold regards the tenement highly, particularly due to its close proximity to the Union Reefs mill. Review of geological, geochemical and drilling data indicates that EL 9608 has significant potential for gold and base metals mineralisation, which new owner will pursue aggressively. High resolution geophysical data further supports this contention and furthermore, identifies additional uranium potential. Other exploration activities were reconnaissance visits of the area, data compilation, tenement management and annual exploration report preparation.

This exploration activity costed \$26305.00 and details are given in Appendix 1.

Figure 3: TMI Image of the Project Area

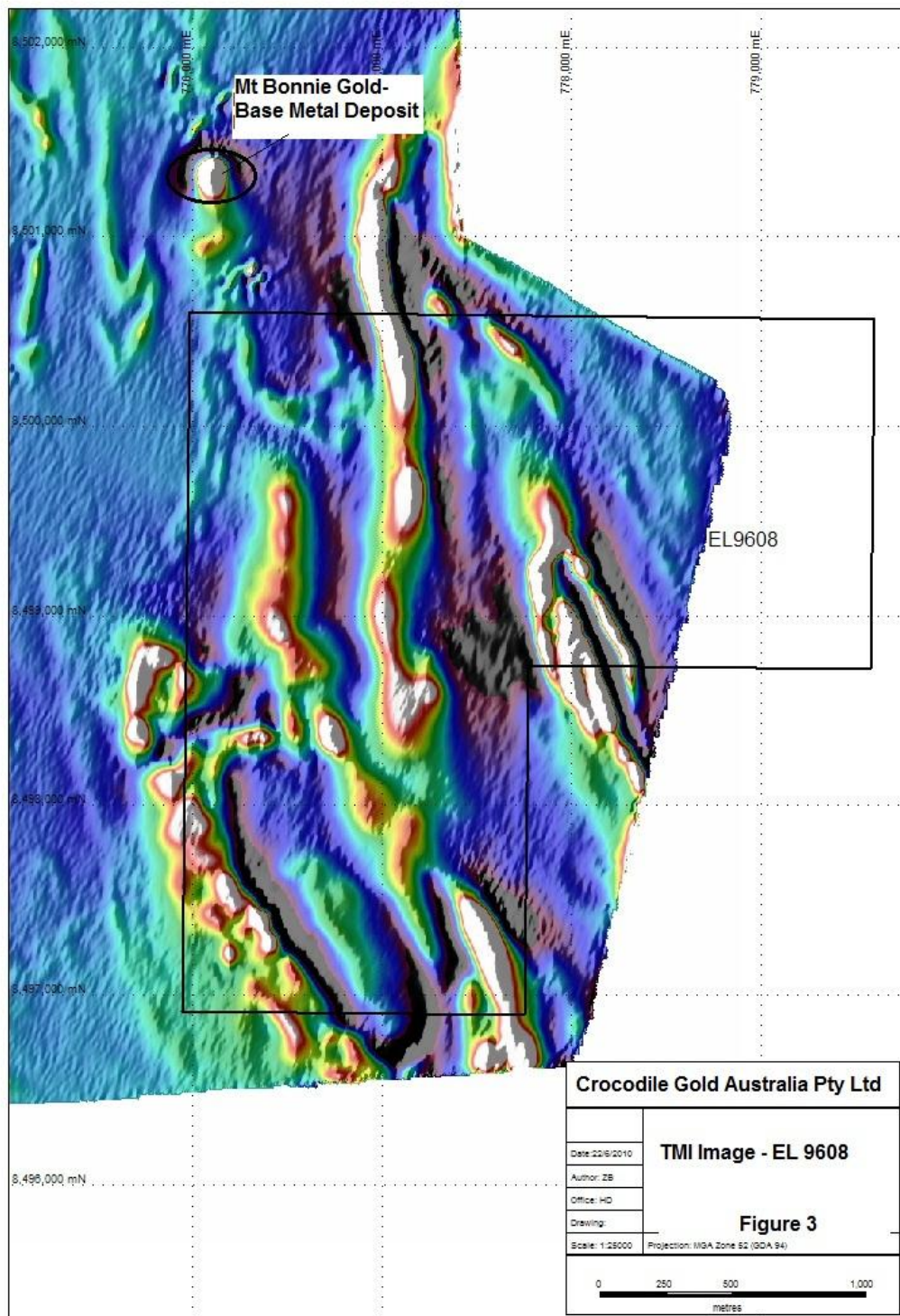
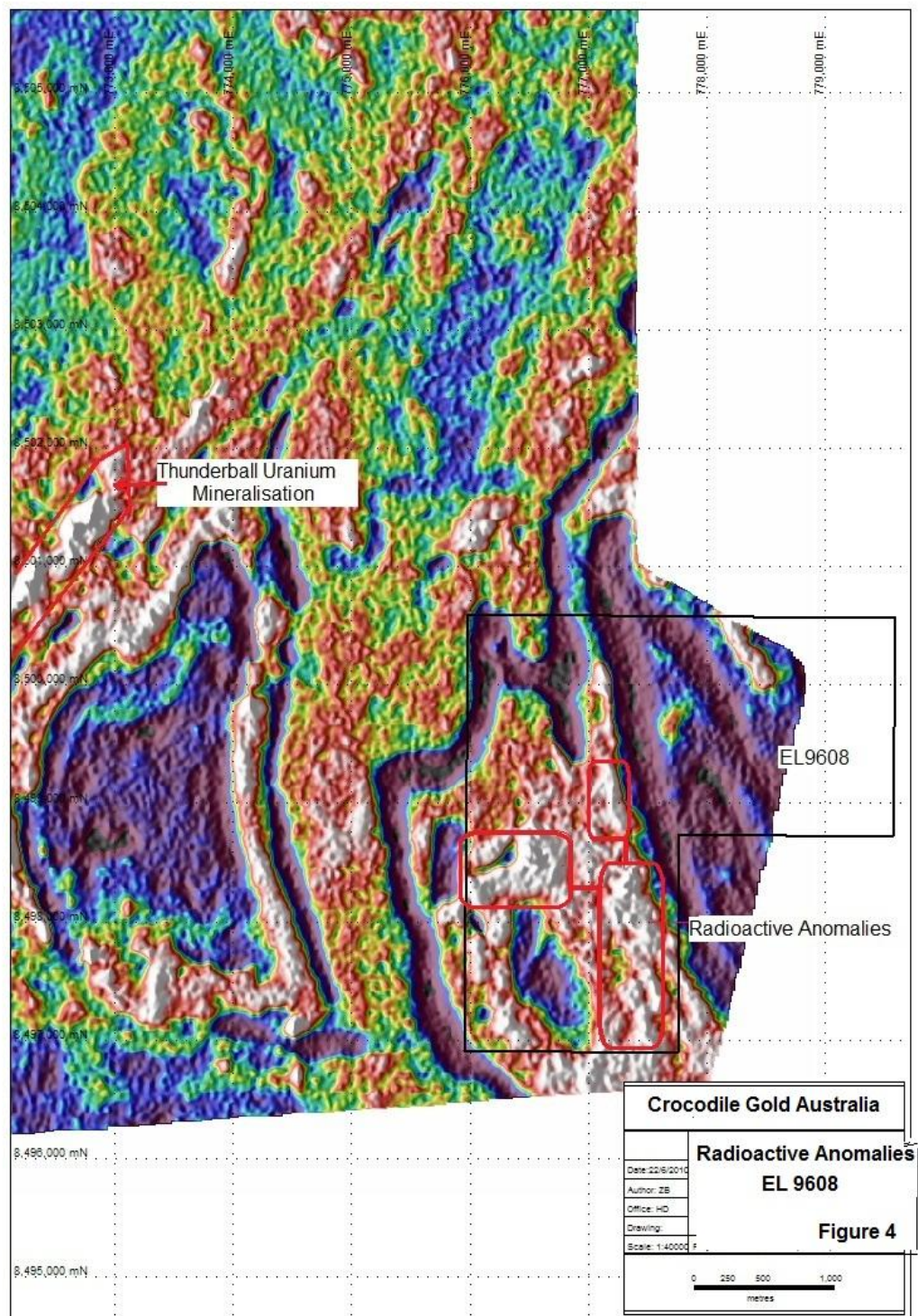


Figure 4: Radiometric Image (U-counts) of the Project Area



7.0 PROPOSED EXPLORATION PROGRAMME FOR YEAR ENDING 24 MAY 2011

EL 9608 has significant importance due to its multi-commodity potential and its position within Crocodile Gold Australia's total tenement portfolio and within the sphere of its Burnside mining operations.

Proposed future work would involve field checking anomalous zones of geochemistry and geological significance and interpreting further geophysical and structural aspects of the tenement, and defining further drill targets. This will lead to RC/RAB drilling in the project area to fully assess the geochemical and geophysical targets. Expected expenditure would be a minimum of \$26000.00 for the 2010-11 field season and details are given in attached Appendix 1.

8.0 REFERENCES

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