

# Annual Technical Report

## EL 31024

### 31st May 2016 to 30th May 2017

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<b>TENEMENTS:</b>	E.L.31024
<b>PROJECT NAME:</b>	Bandicoot East
<b>TARGET COMMODITIES:</b>	GOLD
<b>DATUM &amp; ZONE:</b>	GDA94 ZONE 52
<b>TOPO MAP SHEET:</b>	MARRAKAI 8/5-II 1:50,000
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The source of any information included in this report that originates from historical reports or other sources is listed in the "References" section at the end of this document.

# FIRST ANNUAL REPORT 2017

EL 31024

NT Gold Pty Ltd and Wladimir Falko

Reporting Period 31st May 2016- to 30<sup>th</sup> May 2017

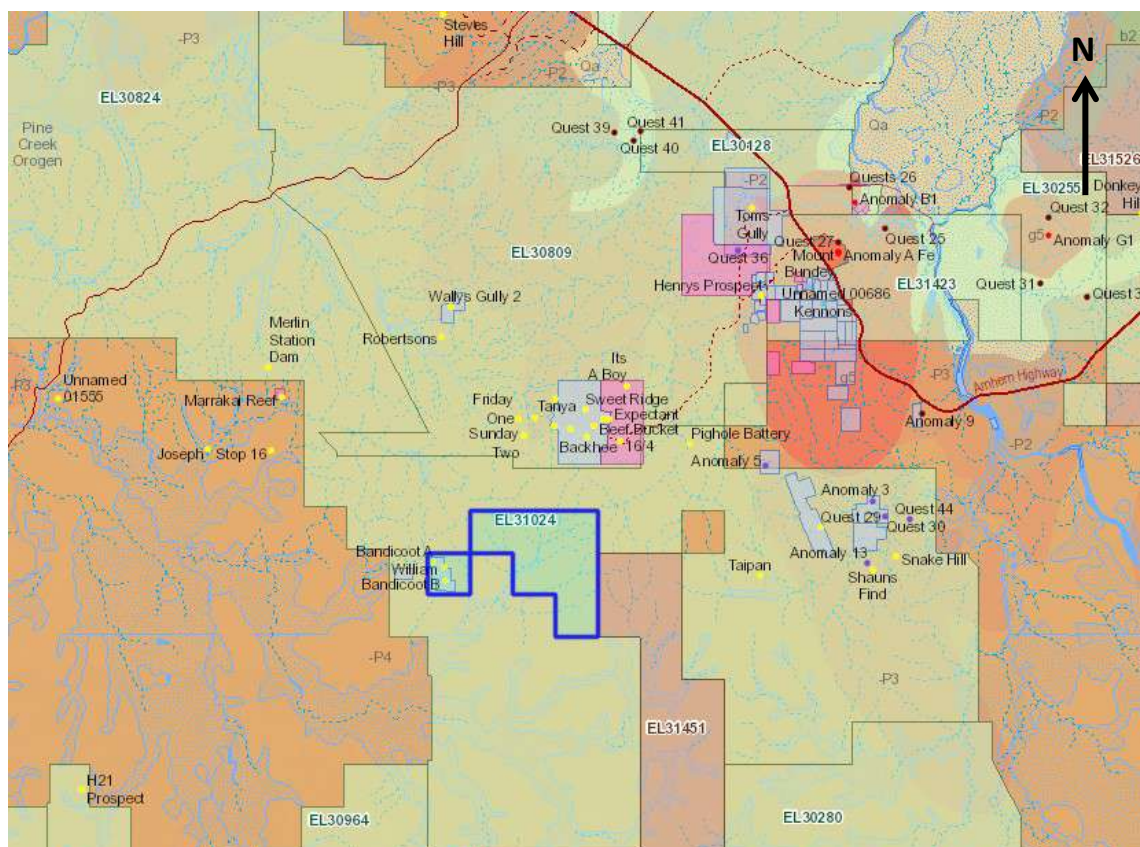
Annual Technical Report due 30th May 2017

Expenditure Report lodged 12th June 2017

## 1.0 INTRODUCTION

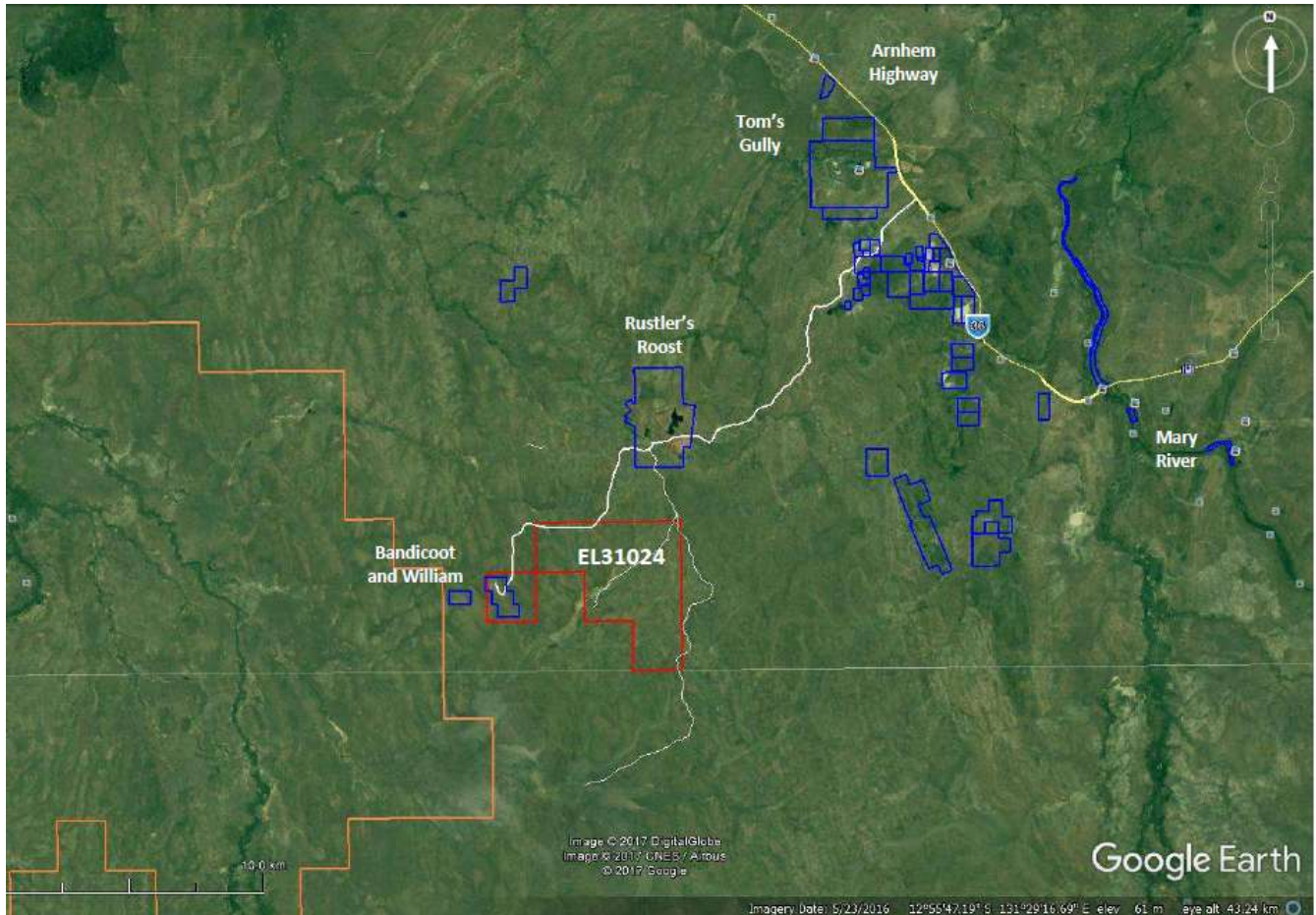
EL31024 covering seven graticular blocks was applied for on the 7<sup>th</sup> of October, 2015 and was subsequently granted for a period of six years commencing on the 31<sup>st</sup> of May, 2016. The target commodity sought in the area is gold and given that the nearby Bandicoot and William gold deposits contain relatively rich coarse gold in 'en-echelon' quartz reef systems we are hopeful of discovering further relatively small rich deposits.

The exploration licence is located in the Mount Bunday area and is a part of the Pine Creek Orogen (PCO), Northern Territory. The PCO is a world-class metallogenic province which contains significant uranium, gold and base metal deposits with the possibilities of new discoveries. The License has previously been explored for gold and uranium mineralisation, and this is the first annual report which covers the exploration activities undertaken during the 2006/ 2007 field season.



## 2.0 LOCATION AND ACCESS

EL31024 is situated about 120 km SE of Darwin and about 50km NE of the Adelaide River township and falls on the Marrakai 1:50,000 sheet. The area can be accessed via the Arnhem Highway and turning on to the Old Mount Bunday Station/ Rustler Roost access road about 90 km from Darwin and just east of the turnoff to the Tom's Gully gold mine.

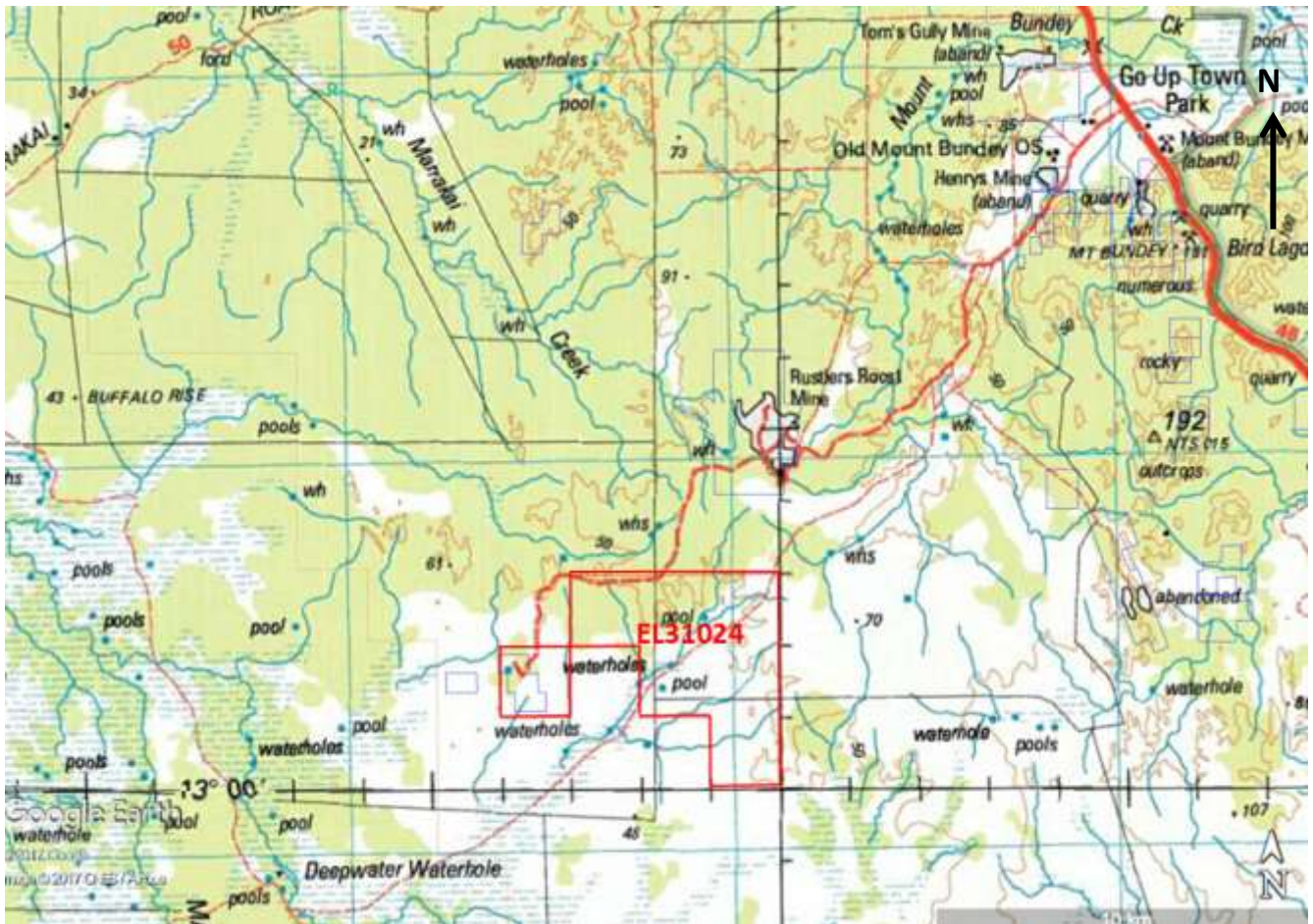


## 3.0 CLIMATE, TOPOGRAPHY AND VEGETATION

The area has a semi-arid, tropical climate with an April to September warm dry season followed by wet season from October to March. The average rain fall is about 1500 mm, most of which falls during the wet season. Temperatures are highest in October to November with the mean maximum 34–36° C, whereas mean minimum is 22–24° C. The coolest months are in June and July when the mean maximum is 30–32° C, with the mean minimum of 12–14° C.

The area underlain by EL31024 is generally low-lying, open, black soil plains with a central drainage system running to the south west; the areas peripheral to the drainage channels are moderately elevated, sparsely wooded savannah.





#### 4.0 GEOLOGICAL SETTING

EL31024 is situated within the Pine Creek Geosyncline, a tightly folded to isoclinally folded sequence of mainly pelitic and psammitic Lower Proterozoic sediments with interlayered tuff units. All the lithologies in the area have been metamorphosed to low, and in places, medium grade metamorphic assemblages.

The sequence has been intruded by pre-orogenic dolerite sills of the Zamu Dolerite and a large number of late syn-orogenic to post-orogenic Proterozoic granitoids. Largely undeformed Middle and Late Proterozoic, Paleozoic and Mesozoic strata, as well as Cainozoic sediments and laterites overlay the Pine Creek Geosyncline.

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 such as the Cosmo Howley, Rustlers Roost, Toms Gully, Moline, Mt Todd and Quest 29.

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

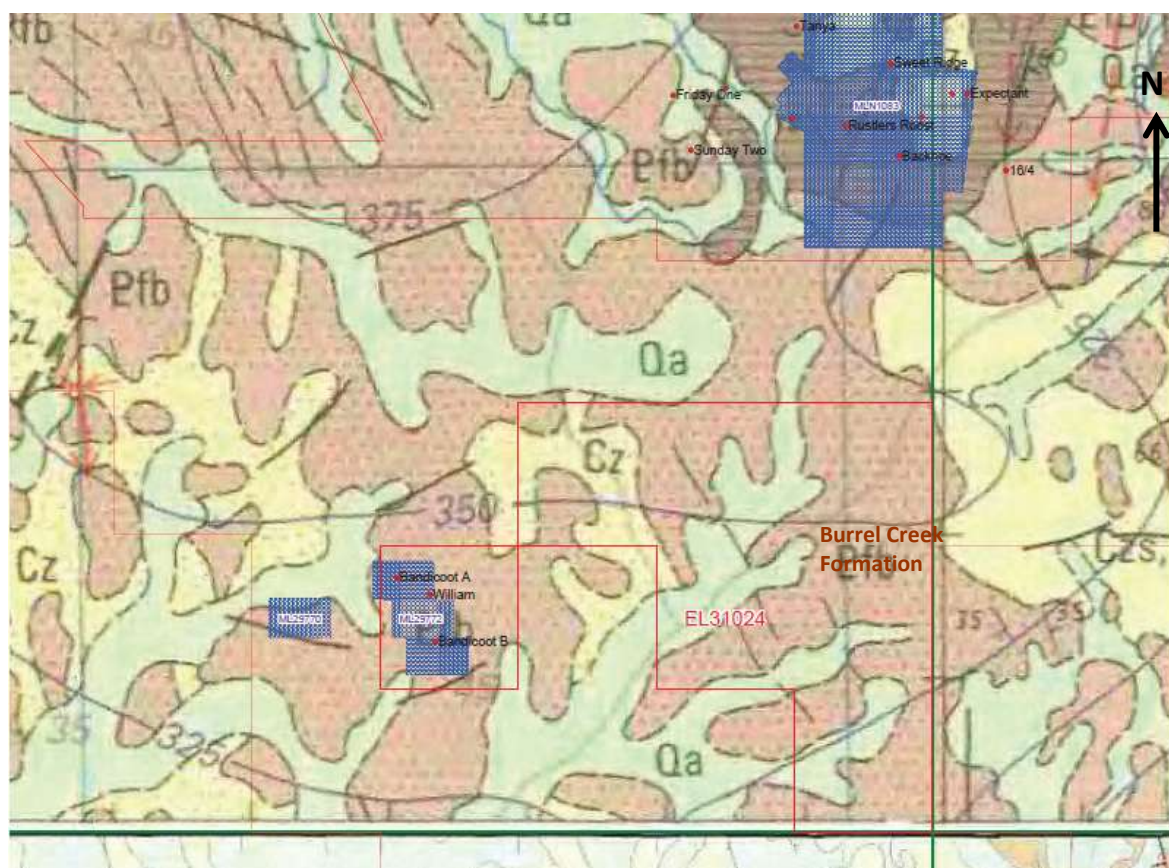
Mount Bundy Granite and the Mount Goyder Syenite is a comparable cogenetic pluton dated at  $1790 \pm 110$  My in the region. Structural deformation of the meta-sediments is complex.

The major folding episode resulted in tight folds of which the 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.

The exploration licence is dominated by the sediments of the Burrell Creek Formation which is mainly comprised of greywacke, siltstone, slate and phyllite. This Formation is conformably overlying the Mount Bonnie Formation and is interpreted as a flysch sequence of fine to coarse marine sediments that appears to be part of a continuous sedimentation process.

The Burrell Creek Formation is considered prospective for large low-grade gold deposits as typified by the Batman deposit at Mount Todd. The potential also exists for small high-grade deposits similar to Possum and Happy Valley with John Shield's GIGIAC Theory (Gold in Greywacke in Anticlinal Crests). Also high-grade deposits such as the nearby Bandicoot and William, Marrakai and the Ringwood line which all lie on a major deep-seated magnetic trend (Hall, 2007).

Lithologies of the South Alligator River Group such as Mount Bonnie Formation and Gerowie Tuff are exposed towards the north.



## 5.0 EXPLORATION ACTIVITIES DURING THE FIRST YEAR OF THE LICENSE

During the first year of the licence a review of geological, geochemical and geophysical data was conducted. It involved retrieval of exploration data from open file reports.

Previous geological and geophysical data interpretation indicated that almost all of the project area is underlain by the Palaeoproterozoic Burrell Creek Formation. It contains tightly folded sediments about axes, which swings from near N-S trends in the south, to NW-trending axes in the northwest. Plunges are to the north or northwest, mainly at low angles.

Towards the NE, a cluster of gold deposits/ prospects (Rustler Roost area containing Dolly Pot, Backhoe, Beef Bucket) are found, where Rustler Roost has produced 46,300 ounces of gold and still has a significant resource of 18.5 Mt @1.14 g/t. Here gold mineralisation occurs in the Mt Bonnie Formation/ Burrell Creek Formation. It is located at the closure of a regional scale south plunging anticline.

Other good examples of gold mineralisation such as Toms Gully and Quest 29 are located towards NE/ ENE, which have produced significant quantities of gold in the last 30 years. The small, rich Bandicoot and William deposits are within the westernmost graticular block of EL31024.

A review of historical exploration data also shows that significant exploration (geochemical sampling, drilling) has been undertaken around the project area. However, within the tenement area very little on-ground exploration has been conducted to date. Much of the project area is covered by a thick Quaternary cover, which hampers access to bed rock geology.

The target commodity sought in the area covered by EL31024 is gold and given that the nearby Bandicoot and William gold deposits contain relatively rich coarse gold in 'en echelon' quartz reef systems we are hopeful of discovering further relatively small rich deposits.

Wally Falko is extremely proficient with the use of the latest Minelab metal detectors and has had great success identifying coarse gold reefs at the nearby Wally's Gully gold occurrence and at our Great Northern gold mine as well as a number of other areas. He owns a number of machines incorporating the latest metal detection technology which are capable of detecting relatively coarse reef gold similar to that found at the Bandicoot and William deposits.

We consider that the area has the potential to host similar auriferous quartz reef systems and with the use of modern metal detector technology as well as milling and panning we are confident of identifying any relatively rich auriferous areas of quartz scree and/ or outcropping quartz reefs.



The first year's exploration efforts were concentrated on the three northern graticular blocks. The area was traversed extensively by buggy and on foot and several areas of quartz scree and minor quartz outcrops were inspected and intensively detected.

Disappointingly all of the areas of quartz scree and outcrops encountered were relatively barren with very little or no signs of mineralisation.

We intend to conduct similar first pass exploration activities over the remaining four southern graticular blocks during the current field system and we will also check the drainage system running to the SW through the middle of the tenement for any sedimentary traps suitable for stream sediment sampling.

It is likely that if the second year's exploration is as disappointing that we will surrender EL31024.

## **6.0 CONCLUSIONS AND RECOMMENDATIONS**

Previous appraisals of geological, geochemical and geophysical data indicate that EL31024 has little mineral potential for economic gold and uranium mineralisation.

Although much of the project is covered by a thick recent alluvial cover a TMI image of the project area had revealed some deep-seated structures along with subtle magnetic highs just to the south of the tenement which may be an important exploration target for gold mineralisation some time in the future.

Notwithstanding that the overall project mineral potential is low for discovering any economic size gold deposit we are still hopeful of discovering relatively small rich coarse gold occurrences similar to the Bandicoot and William deposits.

## **7. REFERENCES**

Australian Geoscience Pty Ltd: Annual and Final Report for EL29002 (Zia U. Bajwah, August, 2015)

Crocodile Gold: Final Report (Relinquished Area) for EL24682 (Marcelle Watson, January, 2012)

Northern Gold: 1997 Relinquishment Report for EL8702 (N Socic, October, 1997)