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RESOURCES NL

# **ABM RESOURCES NL**

ABN 58 009 127 020

## **COMBINED ANNUAL REPORT EL's 5888 and 8809 SUPPLEJACK PROJECT**

For the year ending 31 December 2009

### **NIL WORK REPORT**

Holder	Tanami Exploration NL
Operator	ABM Resources NL
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Date	January 2010
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Target Commodity	Gold
Datum/Zone	GDA94/ MGA Zone 52
250,000 mapsheet	Limbunya (SE52-07), Birrindudu (SE52-11)

#### **Distribution:**

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## 1.0 SUMMARY

The Supplejack Project comprises Exploration Licences 5888, 8809 and is situated approximately 250km east-southeast of Halls Creek, in the north-western portion of the Tanami Desert (**Figure 1, 2**). The tenements are granted to Tanami Exploration NL (TENL), a wholly owned subsidiary of Tanami Gold NL (TGNL), a publicly listed company. From December 2000 to December 2005 it formed part of the Tanami (NT) JV, a Joint Venture agreement between Tanami Gold NL (TGNL) and Barrick Gold of Australia Limited (Barrick).

On 09 December 2009, TENL entered into a Joint Venture agreement with ABM Resources NL (ABM) covering EL 5888 and 8809.

EL 5889 and 8809 are subject to a transfer to ABM Resources NL, which is yet to be lodged and registered.

All previous exploration has been outlined in the preceding seven annual reports. No on-ground exploration was conducted during the seventh year of term; therefore this report covers nothing conducted during the reporting period.

## 2.0 INTRODUCTION

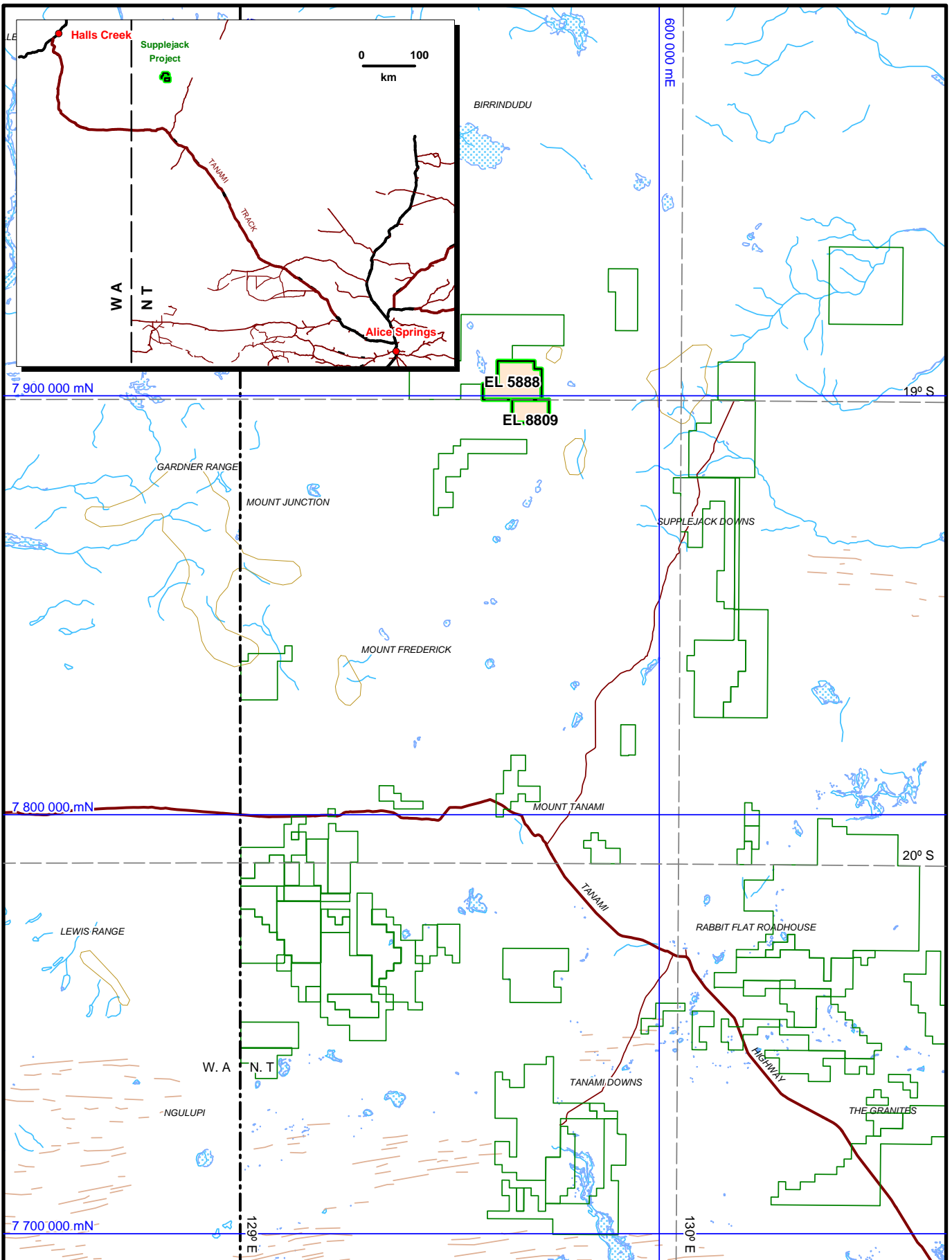
The Supplejack Project is located approximately 250km east-southeast of Halls Creek, in the north-western portion of the Tanami Desert. The tenement group lies on the Limbunya (SE52-07) and Birrindudu (SE52-11) 1:250,000 geological map sheets. Access from Halls Creek is southeast via the unsealed Tanami Highway for approximately 320km to the Tanami Mine, then 80km north along the Lajamanu (Hooker Creek) Road to the Supplejack Downs homestead, then 40km northwest using station and access tracks. Access from Alice Springs is northwest via the Tanami Highway for approximately 700km until the Lajamanu turnoff.

The project covers an area of gently undulating hills and aeolian sand plains, dominated by spinifex, acacia thickets and sparse stands of eucalypts. Scarps of flat lying Proterozoic sandstones (20-50m) surround the plains to the north, east and west of the project, and support little but spinifex and sparse acacia scrub. Occasional springs and ephemeral waterholes occur close to these scarps.

The area is affected annually by high temperatures and seasonal rainfall associated with the northern monsoon, which generally extends from November to April. During this time access via road may be restricted due to wet conditions (Purcell, 2004).

## 3.0 TENURE

The Supplejack Project comprises Exploration Licences EL 5888, EL 8809 (**Figure 2**). Tenement details are listed below in **Table 1**. On 09 December 2009, TENL entered into a Joint Venture agreement with ABM Resources NL (ABM) covering EL 5888 and 8809. Both tenements are subject to a transfer to ABM Resources NL, which is yet to be lodged and registered.



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**TANAMI**

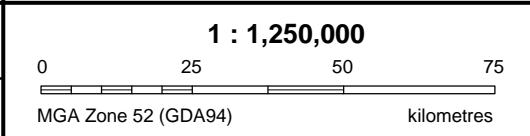
ORIGINATOR:  
**J. Rohde**

DATE:  
**Feb 2010**

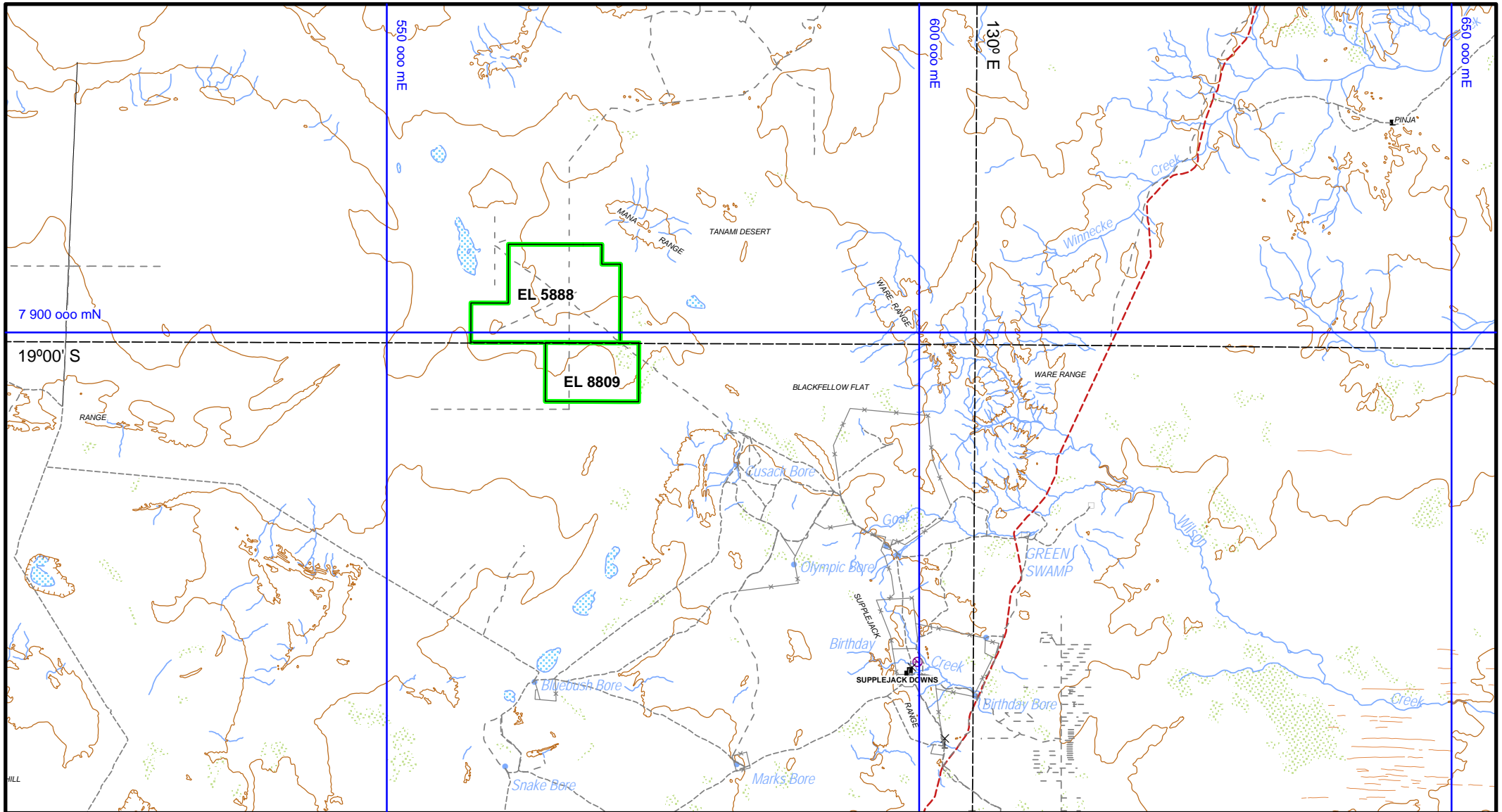
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**B.Mastaglia**

PLAN No: **SU\_1\_0\_010**

**PROJECT LOCATION**



**FIGURE 1**

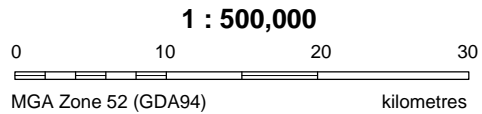


**FIGURE 2**

ORIGINATOR: <b>J. Rohde</b>	DATE: <b>Feb 2010</b>	DRAWN: <b>B.Mastaglia</b>
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**BIRRINDUDU / SUPLEJACK**

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**TENEMENT LOCALITY**

PLAN No: **SU\_1\_0\_002**

Table 1: Tenement Details

Tenement Name	Tenement No	Blocks	Km <sup>2</sup>	Grant Date	Expiry	Current Covenant
Supplejack	EL 5888	33	107.19	22 Aug 02	21 Aug 10	\$77,000
North Breadan	EL 8809	15	48.7	17 Oct 02	16 Oct 10	\$41,400
<b>TOTAL</b>		<b>48</b>	<b>155.89</b>			<b>\$118,400</b>

Tanami Exploration NL, a wholly owned subsidiary of Tanami Gold NL (TGNL), is the registered title holder of the tenements. Barrick Gold of Australia Limited (Barrick) managed exploration through the Tanami (NT) JV agreement with TGNL, from December 2000 to December 2005.

## 4.0 GEOLOGY

### 4.1 Regional Geology and Mineralisation

The Tanami Region comprises a package of Neo-Archaean to Meso-Proterozoic rocks, dominated by multiply deformed Palaeoproterozoic metasediments and felsic and mafic intrusives. It forms part of the North Australian Craton, separating the Palaeoproterozoic Halls Creek and Arunta Orogens. Collectively the region has a gold endowment in excess of 12 million ounces, and to date is recognised as one of the worlds most fertile Palaeoproterozoic gold provinces (TENL, 2005).

The Tanami Region has been divided into a number of stratigraphic packages.

#### ARCHAEAN

##### Basement

The presence of Archaean basement has been noted in drill core and in a single area of outcrop south east of the Granites mine. Rocks in this area, known as the Billabong Complex, contain banded granite and gneisses. SHRIMP zircon U-Pb dating of these rocks gives an age of 2514±3 Ma. Recent review of this outcrop suggests this age constraint may have sampled Archaean xenoliths within a Proterozoic gneiss.

#### PROTEROZOIC

##### Tanami Group

The Tanami Group unconformably overlies Archaean basement. Currently the Tanami Group is subdivided into two separate formations – the Dead Bullock Formation and the conformably overlying Killi Killi Formation (Wygralak et. al., 2004). Work undertaken by Bagas (pers. comm. 2007) suggests an additional subdivision to the Tanami Group, namely the Stubbins Formation.

The Stubbins Formation is currently interpreted to be the oldest unit within the Tanami Group recently constrained by a ca. 1864 Ma SHRIMP zircon U-Pb date from an intrusive unit (Bagas et. al., 2007). The Stubbins Formation occurs as a ~200 m thick succession of iron-rich siltstone, graphitic and carbonaceous shale, banded and nodular chert, siltstone, basalt, dolerite sills and rare turbiditic sandstone (wacke), and a 2 to 3 km-thick lower succession of interlayered sandstone, pelite, and dolerite sills (Bagas et. al., 2007b).

The Dead Bullock Formation is interpreted to be stratigraphically above the Stubbins Formation, constrained by a SHRIMP U-Pb zircon age of ca 1838 Ma from a tuffaceous unit within the Callie Member (Bagas et. al., 2007a and references therein). The Dead Bullock Formation is further subdivided into two separate members – the lower Ferdies member and the overlying Callie member. The Ferdies member comprises a fining upward package of thinly bedded

carbonaceous sandstone and siltstone. The Callies member comprises chemical sediments, silicate facies banded iron formation, calc silicate and cherts in a siltstone dominated package. Bands of chert nodules are common. The upper contact of the Dead Bullock Formation is considered gradational into the Killi Killi Formation (Lambeck, 2004).

The Killi Killi Formation is composed of poorly sorted sandstones with substantial detrital mica component. The formation is interpreted to be a 4000 m thick turbidite package (Wygralak et al., 2004). Currently the age of the Killi Killi Formation is constrained by the ca. 1838 Ma age of the Dead Bullock Formation and the ca. 1820 Ma age of volcanic rocks overlying the Killi Killi Formation (Bagas et al., 2007a).

Doleritic sills cross cut both Dead Bullock and Killi Killi Formations. Peperitic textures are locally developed indicating emplacement synchronous with deposition.

Tanami Group rocks were subjected to the 1835-1825 Ma Tanami Orogeny. This involved disharmonic and angular folding combined with regional metamorphism to greenschist and locally, amphibolite facies (Bagas et al. 2007a).

### **Ware Group**

Rocks of the Ware Group are currently interpreted to unconformably overly the Tanami Group. The Ware Group comprises four distinct packages.

Quartz sandstone and granular conglomerate comprise the Mt Winnecke Formation (ca 1825 Ma). Volcanogenic sandstone interbedded with felsic volcanic rocks comprise a younger package known as the Nanny Goat Volcanic Complex (ca. 1820 Ma). Conglomeratic sandstone, siltstone and fine grained sandstones comprise the Century Formation (1825-1815 Ma) and wacke and siltstone comprise the Wilson Formation (ca. 1815-1800 Ma) (Bagas et al., 2007a and references therein).

Intrusives of the Birthday Suite are thought to correlate with Ware Group volcanics as interpreted intrusive ages are between 1825 and 1850 Ma. Birthday suite intrusives are generally restricted to the north east part of the Tanami.

### **Mount Charles Formation**

The Mount Charles Formation contains poorly exposed intercalated basalts and fine to coarse turbidite, currently interpreted to have been deposited in a narrow continental rift setting (Wygralak et al. 2004). The Mount Charles Formation is limited to the western margin of the Frankenia Dome. It is believed to unconformably overly the Ware Group, and to be unconformably overlain by the Birrindudu Group (Wygralak et al., 2004).

A further five events of complex deformation are interpreted to have occurred to the aforementioned packages between 1820 and 1790 Ma (Bagas et al., 2007a and references therein) although current interpretation suggest the Mount Charles Formation may only have experienced the last event. This series of deformation events was accompanied by broadly synchronous emplacement of Frederick and Grimwade Suite intrusives.

### **Pargee Sandstone**

The Pargee Sandstone consists of a thick bedded quartz arenite, lithic arenite and conglomerate, with a maximum thickness of 1300m (Wyralak et al., 2004). The unit unconformably overlies the Killi Killi Formation, and is overlain by Gardiner Sandstone of the Birrindudu Group.

### **Birringudu Group**

The Birringudu Group occurs as a widespread unconformable blanket across much of the Tanami. It is broken down into four separate units – The Gardiner Sandstone, Supplejack Downs Sandstone, Talbot Well Formation and Coomarie Sandstone. These units include lithic arenites, quartz arenites and conglomerates. Subtle variations make these units distinguishable.

### **PHANEROZOIC**

Antrim Plateau Volcanics comprise the oldest reported Phanerozoic rocks within the Tanami Region. These normally consist of intensely weathered basalt >20 metres thick, capped by pisolitic laterite. The exposures are flat-lying and unconformably overlie the Proterozoic lithologies. (TENL, 2005)

The southern part of the Tanami Region is covered by Permian sandstone and conglomerate of the Canning Basin.

### **GOLD MINERALISATION**

Bagas et. al. (2007a) suggests that gold was emplaced into Tanami Group lithologies as two separate events. This includes an early ca. 1835-1825 Ma gold event affecting the Stubbins Formation and a second 1790 Ma event in the Dead Bullock and Killi Killi Formations, the Ware Group, and Mt Charles Formation.

## **4.2 Local Geology**

The Supplejack area comprises isolated rafts of Tanami Group basement and large granitoid bodies, surrounded and covered by thick sequences of flat lying Birringudu Group sediments. These sediments form elevated plateaus rising 20-50 m above surrounding topography (Purcell, 2004). Outcrops of Tanami Group lithologies are relatively rare over the majority of the project area, occurring as highly weathered isolated outcrop and subcrop on shallow lateritic rises. Basement is more commonly covered by a transported horizon of alluvial and aeolian material.

Transported nodular and pisolitic gravels occur over and around the flanks of the majority of shallow rises. This material comprises both locally derived and transported material. In some cases, gravels are multiple metres thick, and locally iron cemented (ferricretes). Thickness of material decreases with increasing proximity away from rises.

Aeolian sands cover much of the low lying areas varying in thickness from less than 10 cm to multiple metres. Alluvial material commonly occurs immediately beneath aeolian sands. This material comprises poorly sorted sands, clays and often basal gravels with thicknesses of single metres to in excess of 30 metres over areas of localised palaeochannel development. Silcrete is commonly developed within transported material in low lying areas.

Basement Tanami Group rocks comprise deformed and metamorphosed, fine to coarse poorly sorted sandstones, carbonaceous shale, ferruginous shale, chert, ferruginous chert, volcanogenic (pyroclastic?) sediments and dolerite dykes, intruded by stocks of granitic dykes. These are currently interpreted to comprise rocks of the Dead Bullock Formation.

Aeromagnetic assessment of the Supplejack area suggests that basement lithologies are complexly deformed. Tight NNW-SSE folding is apparent through much of the sequence defined by magnetically responsive dolerite marker units and outcrop exposures of deformed



metasediment. Pervasive cleavages within pelitic units are believed to be axial planar to this event. An earlier ENE-WSW folding event is also thought to have influenced the area.

Aeromagnetism also suggests the presence of significant faulting and shearing throughout much of the area. A major NNW-SSW structure is observed transecting the west of the project area. This structure juxtaposes Tanami Group lithologies against a major lozenge shaped granitic body in the immediate Supplejack Project area. Numerous subsidiary structures to this domain bounding fault are also recognised throughout the Supplejack area. These are particularly prevalent southwest of the Supplejack tenement, where the major shear locally splays into horsetail structures.

## 5.0 PREVIOUS EXPLORATION

There is no record of historical exploration within the Supplejack tenement group.

Early explorers Davidson and Talbot passed through the region in 1901 and 1909 respectively, where they recorded the presence of gold at a number of locations, including The Granites, Tanami and Larranganni Bluff (Kookaburra/Sandpiper mineralised system). More recent activities by the NTGS within the Tanami region have been extensive. A mapping project of the Birrindudu (SE52-11) 1:250,000 geological map sheet is in progress.

Barrick first conducted exploration within the tenement group during 2003 with all activities detailed in Purcell, 2004.

A programme of 87 holes for 4,530m (SUAC0001-0087) were drilled to test significant mineralisation identified from rock-chip sampling of quartz veining within carbonaceous and Fe-rich sediments during 2003 (Old Soldier Prospect), and prospective litho-structural positions identified from geophysics. Holes were drilled on a 100 x 100m, 100 x 200m and 400 x 200m pattern on a local grid (GN @ 315°) or on AMG. The drilling was either vertical or angled at – 60° towards 225° magnetic.

All drill holes were sampled at 1m increments and were analysed by Genalysis Laboratory Services P/L for Au,As and multi-element analysis on geological event horizons or geologically interesting horizons (eg quartz veining). A BLEG analysis was also carried out on the majority of AC holes targeting the pisolitic or lag rich horizon that was located below the aeolian sand.

Drilling of the **Old Soldier** prospect intersected a differentiated mafic intrusive body with intercalated Dead Bullock Fm sediments and sporadic bucky to fractured and ferruginous quartz veining. A broad granite intrusive body was noted immediately to the south of the prospect area.

The mafic body comprises a pyroxene - talcose rich ultramafic base with sparse remnant cumulate texture that grade into a pyroxene rich dolerite then a classic sub-ophitic textured dolerite. A fine-grained dolerite (chilled margin?) caps the sequence, that overall displays a north plunging right way up orientation. Intercalated sediments comprise chert, fine to medium-grained quartzose and matrix rich volcanic derived greywacke, shale, carbonaceous shale and fine-grained strongly ferruginous sediments (low-grade BIF). Sporadic quartz veining was noted throughout the prospect area, though was not strongly manifest around the mineralised quartz veining identified at surface. No obvious alteration was noted, however a fine spotted texture was observed within some sediments that may be related to hornfelsing from the mafic or granitic intrusives.

No significant assays (+1g/t Au) were returned. Results from the immediate area surrounding the +2g/t Au rock chips were disappointing, generally in the range of 100-200ppb Au and peaking at 401ppb Au. Broad arsenic anomalism is noted, generally at 100-300 ppm and peaking at 1770ppm. Multi-elements such as Ba, Bi, W, Te were also elevated. Anomalism appears associated with sporadic quartz veining and within the saprolite horizon.

Drilling conducted away from the Old Soldier Prospect, targeting potential lithostructural positions, intersected differentiated mafic intrusives and intercalated sediments comprising chert, fine to medium-grained quartzose and matrix rich volcanic derived greywacke, shale, carbonaceous shale and fine-grained strongly ferruginous sediments (low-grade BIF). Sporadic quartz veining was rarely noted.

No significant assays (+1g/t Au) were returned. Results were disappointing, generally in the range of 10-100ppb Au. Sporadic arsenic anomalism was noted, generally at 50-150 ppm. No significant multi-element anomalism was noted.

## 6.0 EXPLORATION

No on ground exploration was conducted on EL5888 and 8809 during the year by TENL as exploration programs were placed on hold pending positive cash flow from the Coyote gold operation, which changed from open pit mining to underground narrow vein mining.

ABM conducted no on ground exploration in the short time from the Agreement (09 December 2009) to the end of the reporting period (31 December 2009).

## 7.0 BIBLIOGRAPHY

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