ANNUAL REPORT

EXPLORATION LICENCE 22957

SPRING HILL

FOR THE PERIOD 13/1/08 to 12/1/09

by

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1:250000 Pine Creek
1:100000 Pine Creek

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SUMMARY

The Exploration Licence was held by Tennant Creek Gold (NT) Pty Ltd until it was acquired by Western Desert Resources Ltd in July 2007. The tenement surrounds the historic Spring Hill gold mining centre.

The exploration licence is underlain by sediments of the South Alligator Group and the Finiss Group of Palaeoproterozoic age. These rocks have been folded along NW trending axes and the folds are tight to isoclinal. A major anticline, the Spring Hill Anticline, occurs in the project area and plunges to the south. The Pine Creek Shear, a regional NW trending structure, trends through the eastern part of the tenement.

Gold and tin mineralisation occurs within the project area.

Gold was discovered in the area in the 1870’s. Mining activities at Spring Hill took place between 1880 and 1905, and then intermittently until 1966. Total recorded production was about 22,000 oz of gold which was mainly derived before 1900. Mining mainly took place on the Main and Middle lodes with the oxidised ore being worked to depths in excess of 100m.

Old Tin workings can be found at the Horseshoe, Jimmys Knob, Teacup and Mundic prospects north of Spring Hill. Tin was discovered at the Jimmys Knob mine in the late 1880’s. A considerable amount of underground development was undertaken until 1909. It appears that several tons of tin concentrate were probably produced, however no records exist for the period. The mine was reopened in 1964-68 and in 1977 with production of about 1.4t of tin concentrate.

Previous exploration in the area has been for gold. Although systematic modern exploration has been carried out in the tenement area, no significant discoveries have been made.

Western Desert Resources Ltd has carried out an airborne EM survey over the tenement during 2008.

Preliminary interpretation of the airborne EM data shows that an anomalous conductive zone occurs within Koolpin Formation rocks in the NW portion of the EL. It is possible that the anomaly could be related to carbonaceous and pyritic sediments.
INTRODUCTION

BACKGROUND
The Exploration Licence was held by Tennant Creek Gold (NT) Pty Ltd until it was acquired by Western Desert Resources Ltd in July 2007. The tenement surrounds the historic Spring Hill gold mining centre.

LOCATION AND ACCESS
The tenement is located about 200km south east of Darwin in the Top End of the Northern Territory (Figure 1).

Access is by the sealed Stuart Highway south from Darwin, and thence by the unsealed Spring Hill road. Access within the project area is by 4WD tracks. Portions of the tenement are inaccessible to vehicles due to the rough terrain.

CLIMATE
The climate is semi-arid, tropical with warm dry winters and hot wet summers. The average annual rainfall is 1200mm with most falls in the wet season.

TOPOGRAPHY AND VEGETATION
The project area is located within the Uplands physiographic division. The Uplands represent low steep-sided hills separated by narrow valleys. The area is within the Mary River system which drains to the north.

The Spring Hill project is located within the Bonnie Ranges, which rise about 180 metres above the surrounding country. The country is typically highly dissected tropical savannah. Soils are skeletal and poorly developed. Part of the tenement lies within the floodplain of the McKinlay River.

The area can be classified as Low Woodland with *Eucalyptus tintinnans* (Salmon Gum) being the dominant tree species with a *Soghum* grassland understorey.

TENURE

MINING/MINERAL RIGHTS
EL22957 was granted to Tennant Creek Gold (NT) Pty Ltd on 13th January 2003.

The tenement was purchased by WDR Gold Pty Ltd, a wholly owned subsidiary of Western Desert Resources Ltd, on July 20th 2007.

The tenement contains within it a number of pre-existing granted mining leases and claims, which are not owned by Western Desert Resources.

LAND TENURE
The tenement is located within the boundaries of Perpetual Pastoral Leases 815 (Mary River West).
**NATIVE TITLE**
The Spring Hill project falls within the area of a registered Native Title Claim DC 01/6 Mary River West.

**ABORIGINAL SACRED SITES**
There are no known sacred sites within the project area.

**GEOLOGY**

**REGIONAL GEOLOGY**
The project area is located within the Palaeoproterozoic Pine Creek Orogen, which is aged between 2470-1870Ma. The Pine Creek Orogen consists of a sequence of psammitic and pelitic sediments, tuffs and minor volcanics. The sediments have been intruded by granitoids of the Cullen Batholith of Palaeoproterozoic age. The regional geology is shown on figure 2.

**LOCAL GEOLOGY**
The tenement is underlain by sediments of the South Alligator Group and the Finniss Group of Palaeoproterozoic age, see figure 3. These rocks have been folded along NW trending axes and the folds are tight to isoclinal. A major anticline, the Spring Hill Anticline, occurs in the project area and plunges to the south. The Pine Creek Shear, a regional NW trending structure, trends through the eastern part of the tenement.

The oldest rocks present in the area occur in the core of the Spring Hill Anticline in the north west of the tenement. Here carbonaceous siltstones/mudstones, ironstones and chert of the Koolpin Formation have been intruded by Zamu Dolerite. These rocks are overlain by the Gerowie Tuff, a sequence of siltstones, cherts and tuffaceous sediments. The Mt Bonnie Formation overlies the Gerowie Tuff and is host to the gold mineralisation at Spring Hill. This formation consists of interbedded shales, siltstones and greywacke with minor chert and BIF bands. The youngest formation present in the area is the Burrell Creek Formation which is a monotonous sequence of shales, siltstones and greywacke.

The gold mineralisation in the Spring Hill goldfield occurs in two separate zones –the Hong Kong zone and the historic mining centre of the Main, Middle and East lodes.

The Hong Kong zone contains a sheeted vein system which dips steeply to the south east (70°). The bedding in this area dips steeply to the west. The quartz veins vary in width from several millimetres to 0.5m, and contain pyrite when unweathered. The zone has a strike length of about 1000m and a width of about 100m.

The historic mining centre contains three main leader veins, which are lodes between 0.4 and 1.5m in width containing quartz with pyrite, galena and arsenopyrite. These were mainly mined in the oxidised zone where the grade averaged 30g/t Au. Bedding parallel veins and saddle reefs also occur within the mined area.
Tin mineralisation occurs in the area. At the Jimmys Knob mine, tin mineralisation (cassiterite) occurs in quartz-filled fractures in Mt Bonnie Formation carbonaceous sediments close to or at a contact with a quartz-syenite intrusive (Ahmad et al 1993).

PREVIOUS EXPLORATION

MINING HISTORY
The tenement surrounds the Spring Hill goldfield. Gold was discovered in the area in the 1870’s. Mining activities took place between 1880 and 1905, and then intermittently until 1966. Total recorded production was about 22,000 oz of gold which was mainly derived before 1900. Mining mainly took place on the Main and Middle lodes with the oxidised ore being worked to depths in excess of 100m.

In the 1930’s an adit was driven from the eastern side of Spring Hill to test the previously mined lodes at a depth of about 120m. Further work on the Main Adit and excavation of the South Adit were carried out in the 1940’s with recorded production of 650oz of gold.

Treatment of alluvial deposits in creeks draining from the western side of Spring Hill has occurred in recent years.

Tin mineralisation also occurs in the area. Old workings can be found at the Horseshoe, Jimmys Knob, Teacup and Mundic prospects north of Spring Hill.

Tin was discovered at the Jimmys Knob mine in the late 1880’s. A considerable amount of underground development was undertaken until 1909. It appears that several tons of tin concentrate were probably produced, however no records exist for the period. The mine was reopened in 1964-68 and in 1977 with production of about 1.4t of tin concentrate (Ahmad et al 1993).

Little historical production was recorded from the other tin workings in the area.

EXPLORATION BY PREVIOUS COMPANIES

Geopeko/CSR Ltd : EL3138 (1981-87)
This EL covered the north western portion of the existing tenement. It was initially explored by Geopeko who undertook stream sediment and soil surveys together with some rock chipping. An area around the old Horseshoe tin mine was found to be anomalous for Sn, Pb, As, Cu and Au. The anomalies were found to be associated with siliceous mudstone, BIF and gossan close to a contact with Zamu dolerite.

CSR Ltd undertook an airborne magnetic survey and a BLEG stream sediment survey over the EL. Soil sampling was carried out over the Horseshoe area and anomalous copper and arsenic results were found. Rock chip sampling failed to discover any gold mineralisation.
Carbon Minerals: EL4839 (1986-88)
This EL covered the current block immediately north of ML23812. Carbon Minerals N.L. undertook a programme of rock chipping of outcropping quartz veining. The results for gold were disappointing. Further work in the second year of the EL included BLEG and conventional stream sediment sampling. The results were not encouraging.

Billiton Australia: EL4793 and EL4839 (1988-90)
These two ELs covered the Spring Hill goldfield and the area to the west. Billiton undertook extensive exploration for gold over these tenements. Activities included an airborne magnetic survey, BLEG and conventional stream sediment surveys, reconnaissance mapping, soil sampling and rock chipping. The areas currently covered by EL22957 were not found to be prospective for gold.

Zapopan N.L./Billiton Australia: EL5439 (1988-90)
This EL was located east of the railway and covered the two eastern blocks of the current tenement. Zapopan carried out some rock chipping of veining and old workings for gold with no success in the first year. Billiton carried out a comprehensive programme and located some anomalous gold values in alluvium from the McKinlay River.

King and Perry: EL5968 (1989-90)
This EL covered the north western part of the current tenement. Some rock chip sampling was carried out with negative results.

McCleary: EL8474 (1994-97)
Norm McCleary held this licence which covered the western and southern part of the current tenement. A BLEG stream sediment survey was carried out as well as some rock chipping. One strongly anomalous result of 56g/t Au for a rock chip collected close to the W corner of ML23812 was reported. No follow-up work was done on this area. Some BLEG soli sampling was carried out over the SW corner block with negative results.

Tennant Creek Gold: EL22957 (2003-2007)
Tennant Creek Gold held the current exploration licence during this period. No ground exploration was completed.

EXPLORATION BY WESTERN DESERT RESOURCES LTD
Desk top studies and compilation of previous exploration results was carried out during 2007 following purchase of the tenement from Tennant Creek Gold.

Satellite imagery (Quickbird VHR) was purchased which covered the tenement. This data is presented in appendix 1.

EXPLORATION COMPLETED DURING CURRENT YEAR

Airborne EM survey
An airborne EM survey was flown by GeoForce using their Skytem system over the tenement during September 2009. A total of 283 line kilometres were collected in an east-west direction. The nominal
terrain clearance was 30m and the line spacing was 150m. The details of the survey are given in the logistics report in appendix 2. The data can be found in appendix 3.

RESULTS AND EXPENDITURE

Discussion of results
Preliminary interpretation of the airborne EM data shows that an anomalous conductive zone occurs within Koolpin Formation rocks in the NW portion of the EL (See figure 4). It is possible that the anomaly could be related to carbonaceous and pyritic sediments.

Expenditure
The expenditure commitment for 2008 was $65,000. Actual expenditure was $71,544.

PROPOSALS FOR FUTURE WORK

Proposed work programme for 2009-2010
WDR proposes to carry-out detailed interpretation of the airborne EM survey. Any anomalies identified by the interpretation will be subjected to ground follow-up which may include geological mapping, rock chip sampling, soil geochemistry and RC and/or diamond drilling.

The area has also been identified as being prospective for tin mineralisation and it is planned to carry-out reconnaissance exploration activities which may include a stream sediment survey, rock chip sampling and geological mapping.

The proposed expenditure on EL22957 for next year will be $100,000.

References
