Final and Annual report on EL 25791 (Coppock Bore)
from 22 February 2010 to 21 February 2011
Central Australia, Northern Territory

Tenement Holder: Legend International Investments Pty Ltd

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Zia U. Bajwah
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SUMMARY

EL 25791 is located about 1400 km south of Darwin and 84 km North of Alice Springs. The tenement was applied for on 7 December 2006 by Legend International Investments Pty Ltd and was granted on 22 February 2008 for a period of 6 years. Originally, it covered 8 blocks (22.53 km²), however, in 2010, 4 northern blocks were surrender in order to meet NT Mining Act requirements.

The geological mapping done so far indicate that the Strangways Complex consists essentially of high-grade metamorphics rocks. In EL 25791, much of the area, particularly northern part is covered by recent sediments. In the southern part of the tenement rocks of the Arunta Block may dominate which have been overlain by recent sediments including alluvium, red sand accumulation and minor calcrete. TMI image of the project area shows that under the recent sedimentary cover, particularly the southern part of the area is dominated by basement rocks of the Arunta Block.

During the term of the licence, all historical exploration data were retrieved and a technical review of the tenement was undertaken. Geophysical and geological modelling of the project area was undertaken, which suggested that tenement lack the mineral potential of interest. As a result of that EL 25791 was surrendered in 2011.
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1.0 INTRODUCTION
EL 25791 is located about 1400 km south of Darwin and approximately 84 km north of Alice Springs. It is final report and covers the exploration activities undertaken during the term of EL.

2.0 TENEMENT STATUS
Legend International Investments Pty Ltd applied for EL 25791 on 7 December 2006 and was granted on 22 February 2008 for a period of 6 years. Originally, it covered 8 blocks (22.53 km2), but in 2010, four northern blocks were surrendered to meet NT Mining Act requirements. In 2008, Legend International entered into an agreement with NU Power Resources Limited to explore uranium in the project area. This communication reports on the exploration activities undertaken during the reporting period ended on 21 February 2011.

3.0 LOCATION AND ACCESS
EL 25791 is situated in central Australia and is located about 1400 km south of Darwin and 84 km north of Alice Springs (Figure 1). The tenement is intersected by Alice to Darwin Railway. Southern part of the tenement is interested by Plenty Highway. Two topographic high points Mt Strangways and Mt Byrne are located about 20 km SE and NW of the licence area. Tenement is situated in the southern part of the Alcoota (1:250 000) sheet area and Bushy Park (1:100 000) sheets. Access to the project area is gained via Plenty Highway, and then through four wheels drive station tracks. The project area is mainly covered by red sandy plans with occasional sand dunes.

The area experiences a continental desert climate with annual rain of about 100 millimetres. Summers are dry and hot with maximum temperature over 50°C whilst winters are relatively cooling (maximum 30°C). Winter season is the most suitable for exploration.
Figure 1: Tenement Location Map
4.0 GEOLOGICAL SETTING

The project area is situated within southern part of the Ngalia Basin which probably overlies Palaeoproterozoic Arunta Blocks. The Strangways Complex forms part of the southern Arunta Block which consists of Palaeoproterozoic volcanics and sedimentary rocks, which were strongly deformed and metamorphosed to granulite and amphibolite facies and intruded by granite in Palaeoproterozoic (Shaw and Warren, 1975). An episode of migmatisation occurred during Neo-Palaeoproterozoic followed by wide spread thrust-faulting and associated retrogressive metamorphism occurred in Neoproterozoic (Alice Springs Orogeny). A major north-west gravity lineament known as Woolwonga Lineament is present in the northern part of the area. The Mud Tank Carbonatite intrusion and ultramafic Mordor Complex are both possibly related to this lineament.

The geological mapping done so far indicate that the Strangways Complex consists essentially of high-grade metamorphics rocks – granulite of mafic and felsic and pelitic compositions, including pyroxene granulite, cordierite granulites, charnockites, anorthosite and migmatites. The metamorphics comprised of amphibolites, gneisses, schists, marbles, pegmatites and meta-dolerites. Common mineral assemblages are quartz-hypersthene-cordierite-biotite and garnet.

In EL 25791, much of the area particularly northern part is covered by recent sediments (Figure 2). In the southern part of the tenement rocks of the Ngalia Basin may dominate which also have been overlain by recent sediments including alluvium, red sand accumulation and minor calcrete. However, magnetic image of the project area shows (Figure 3) that under the recent sedimentary cover, particularly the southern part of the area is dominated by the basement rocks of the Arunta Block. These are characterised by magnetic ridges which are oriented EW direction and conforms to the general strike of the basement in central Australia.
Figure 2: Geological Setting of the Project Area
5.0  PREVIOUS EXPLORATION

The project area constitutes a small portion and has been explored and investigated as part of the expired tenements.

Perhaps the earliest investigation of the area started with the exploration of area south of EL 25791 (Fruzzetti, 1969). During this program a base metal – gold prospect (Coles Hill) was discovered. Gold values as high as 1.56 g/t were assayed. This type of mineralisation is thought to be stratiform, stratabound and has been described as Kuroku-type.

Geological mapping of the area was undertaken by Bureau of Mineral Resources, Geology and Geophysics in 1975 (Shaw and Warren, 1975). During this exercise, the area was mapped first time as part of Alcoota (1:250 000) project. This led to division of main geological stratigraphy which forms the basis of our geological understanding of the area.

In 1977-78, northern part of the tenement area was explored under ELs 1889 and 1891 for base metals mineralisation. It involved a detail literature search and two weeks field work. Prospects identified during field work such as Red Rock Bore, Harry’s Creek and Edwards Creek prospects (Close, 1979a) are located south of EL 25791. Base metals mineralisation discovered so far has been classified as stratiform, stratabound Kuroko-type, and it resembles to that of Coles prospect, discussed earlier.

Base metals prospects were further explored in 1979 by Amdex Mining Limited (Close, 1979b). These prospects were tested with I.P geophysical survey. Red Bore Rock and Harry’s Creek prospects registered encouraging response. It shows the presence of anomalies over and along strike from known stratiform mineralisation. In addition, 156 soil and bed rock chip/channel samples were collected. A strongly anomalous zone with maximum value of 385 ppm of Cu, 1583 ppm of Pb and 1160 ppm of Zn concentrations was delineated.
6.0  EXPLORATION ACTIVITY YEAR ENDING 21 FEBRUARY 2011 and Term of the TENEMENT

During the reporting period, a thorough review of the project area was undertaken which included historical exploration data along with geophysical data and interpretation done by JV partner, Nu Power Limited.

The project area is mainly covered by recent sand deposits which hampered access to the bed rock geology. However, it may be noted below shallow cover rocks of the Arunta Complex are present which are known to host uranium and base metal mineralisation. TMI image (Figure 3) of the area has provided insight into the bed rock geology, particularly southern part of the project area, where under cover, rocks of the Arunta Block are present. These areas are characterised by high magnetic ridges and points towards their mafic nature. These are probably amphibolite, dolerite, or other rocks of mafic composition (i.e. banded iron formation).

The northern part of the project area lacks any magnetic character apart from subtle ridges or anomalies which may be moderately magnetic. These probably are mainly red sand accumulation, or here basin may contain non-magnetic sequence or may be deeper as compared to southern parts of EL 25791.

Radiometric image of the project is quite flat and does not reveal any significant radiometric anomaly (STRIKE, NTGS online mapping system). Probably, it is too broad and is not suitable for small area covered by EL 25791.
Figure 3: TMI Image of the Project Area
During the term of the licence, NU Power Pty Ltd withdrew from the JV agreement and that prompted to undertake the review in order to assess the potential of the project area. In recent sediments, uranium mineralisation is common (Lally and Bajwah, 2006) where uraniferous ground water evaporation in playa lake environment led to concentration of uranium deposits in the region.

Both data sets were processed and interpreted to generate a basement model. AEM model is shown in Figure 4 where it reveals that the basement is shallow, and furthermore no palaeochannels were detected. This means that sedimentary sequence is not thick enough to support any hydrological regime which could be responsible for uranium mineralisation. Therefore, this interpretation downgrades the potential of surficial/secondary uranium mineralisation in the project area. However, near-surface presence of basement which is characterised by significant EW-trending magnetic ridges (Figure 3) could be important for mineralisation.

Gravity data did not reveal any significant concealed structure. Twenty kilometres west of the project area, gravity survey revealed an intersection of a regional NW-trending structural zone and an ENE-trending shear zone.

In 2009, NU Power Pty Ltd withdrew from the JV agreement and after reviewing the data, Legend International decided to surrender the tenement because it has no potential for commodities of interest.

During the reporting period, a sum of $24720.00 and details are given in Appendix 1.
Figure 4: Conductivity Depth Image from EL 25791
8.0 REFERENCES


