# RELINQUISHMENT REPORT FOR EXPLORATION LICENCE 25084 KIRKIMBIE, NORTHERN TERRITORY

FOR THE PERIOD ENDING OCTOBER 2013

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# **Distribution**

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# **SUMMARY**

Exploration licenses 25084, 25085, 29803 and 30219 located in the north west of the Northern Territory are part of Daylight Jack Minerals Pty Ltd Kirkimbie Project exploring for diamonds and base metals. The licenses cover Proterozoic to Mesozoic sedimentary rocks and the Antrim Plateau Volcanics.

Exploration during the report period has involved a high resolution aero magnetic geophysical survey, geophysical interpretation and target generation for diamond exploration.

Refinement of exploration targets in 2013 has resulted in the relinquishment of 172 blocks in EL 25084.

## **KEYWORDS**

Kirkimbie, Limbunya, mineralisation, Antrim Plateau Volcanics, Limbunya Group sediments, Precambrian basins.

# **MAPSHEET**

Birrundudu SE52-11 1:250000 Limbunya SE52-7 1:250000

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#### 1 INTRODUCTION

Daylight Jack Minerals Pty Ltd currently holds two (4) exploration leases at Kirkimbie in the Limbunya area of the northwest of the Northern Territory in Australia (EL 25084, EL 25085, EL 29803 and EL30219), refer to Figure 1.

The area has been long considered prospective for diamonds and base metals with major mining companies holding leases in the area.

There are significant geological structures in the area and favorable rock types to host various styles of base metal mineralisation.

In early 2013 Daylight Jack Minerals Pty Ltd and Australia China Corporation of Coal Geology Engineering Pty Ltd conducted a high resolution aeromagnetic survey over EL 25084 and EL 25085. The results of this survey are considered vital for ongoing exploration planning and hence were of significance in the relinquishment of parts EL 25084 in October 2013.

#### 2 GEOLOGY

Regionally the geological sequence comprises a metamorphic basement, overlain by the carbonate rich Proterozoic Limbunya Group, Wattie Group and Auvergne Group sediments (various dolomitic mudstone, siltstone, sandstone and conglomerate units).

Unconformably overlaying this is the regionally significant and generally flat lying Cambrian Antrim Plateau Volcanic's, a suite of tholeitic basalt's, breccia's and associated sedimentary beds.

Further carbonate rich marine sediments and generally undifferentiated Mesozoic to recent sediments top the sequence.

## 3 EXPLORATION CONCEPT

ELs 25084, 25085, 29803 and 30219 (Kirkimbie Project) have long been considered prospective for diamonds with major mining companies holding leases in the area. Regional scale stream sediment sampling has been periodically completed since the late 1970s for diamonds and minerals.

The project is located 150km south southeast of the Argyle Diamond Mine and 50km south west of Rio Tinto's Victoria River Diamond Project.

In the 1990s BHP were involved in exploration in the area immediately covered by the Kirkimbie project. The program involved wide spread regional stream sediment sampling. This work recovered significant micro diamonds from the Maude Creek Area. This area is covered by the south of EL 24084 and EL 25085. Two samples contained possible kimberlitic chromite. Three (3) magnetic targets were drilled on Daylight Jack Mineral's current EL's, but no Kimberlite was intersected.

Two companies; Ausquest and Gravity Diamonds held leases and have reported on the area covered by the Kirkimbie Project however no significant exploration has taken place in the last 15 years. Ausquest identified six dipole magnetic anomalies occurring in the southern most parts of the project and fall within drainages that contained micro diamond bearing samples.

The area has also been identified as having potential for base metal mineralisation particularly MVT zinc-lead-silver (Cutovinos et al 2002, Morey and Beere, 1985). Within the Proterozoic basins of dolostone, sandstone, limestone and shale. In addition minor Pb-Ag mineralisation has been noted.

The overlying Antrim Volcanics also host small copper occurrences worthy of further investigation. This flood basalt terrain is also noted for its potential to host Ni-Cu-PGE sulphides (Gole, 2004).

As with the recent previous diamond exploration, the exploration for base metals in the area was limited. Daylight Jack considers the area to be highly prospective for diamonds and having a significant level of exploration potential for base mental. The area warrants further substantial investigation and Daylight Jack has used the recent hi-resolution magnetic survey to generate new exploration targets and further refine their area of interest.

## **4 WORK DONE**

The entire area of EL's 25084 and 25085 were covered by a high-resolution aero magnetic survey.

- ➤ Line Spacing = 100m
- ➤ Line Direction = EAST WEST
- ➤ Tie Line Spacing = 1000m
- ➤ Tie Line Direction = North South
- $\triangleright$  Sensor Height = 50m

Total Line Km = 16,440Km

Coordinate System = MGA Zone 52 / GDA 94

The magnetic data was processed and interpreted by a consultant geophysicist and reviewed to target potential kimberlite occurances and to identify other significant geological structures.

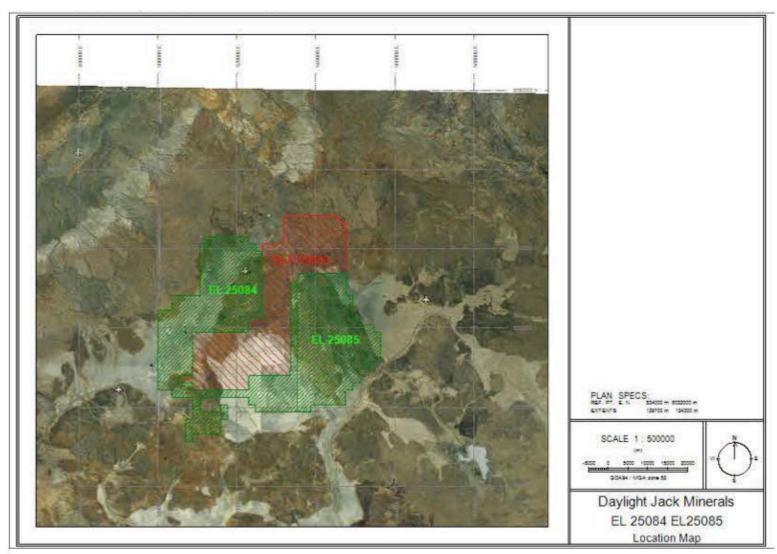


Figure 1 Map of EL 25084 and EL 25085 prior to Relinquishment.

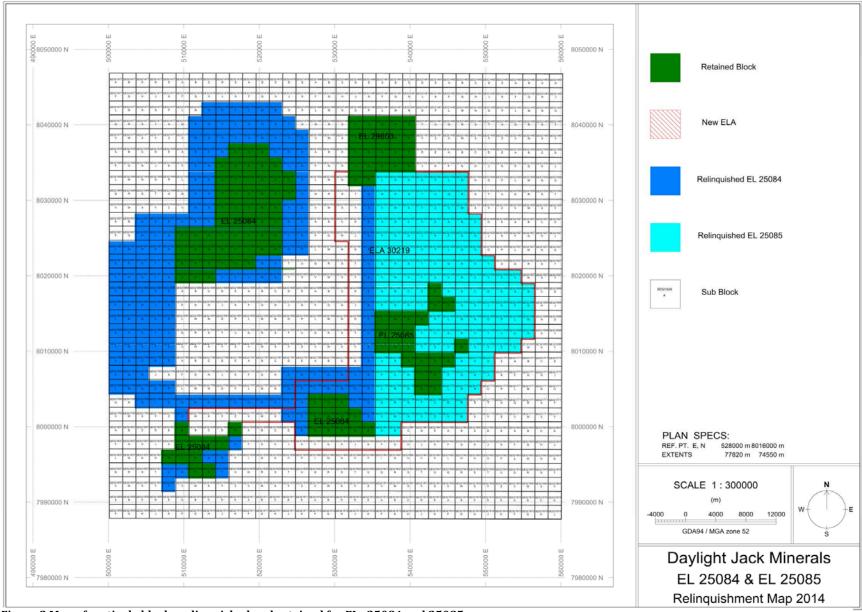


Figure 2 Map of graticule blocks relinquished and retained for ELs 25084 and 25085

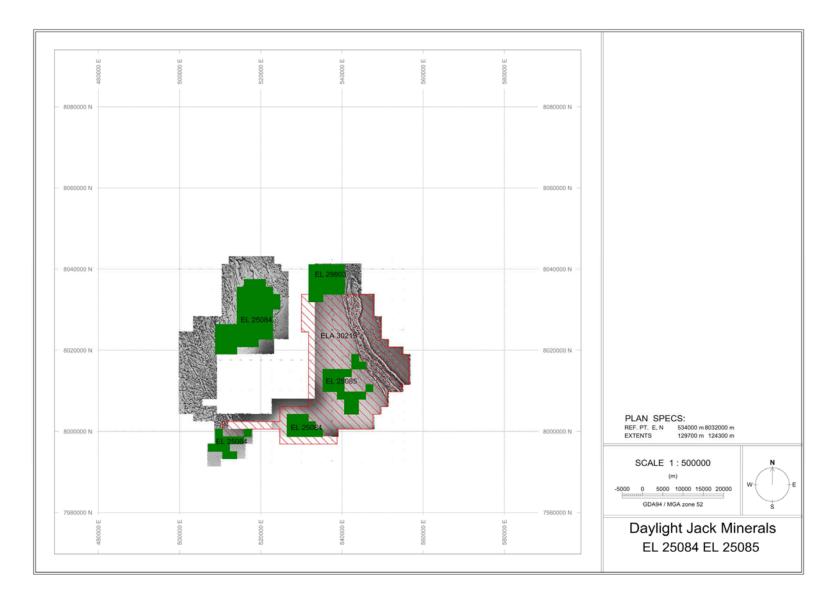


Figure 3 1VD Aeromagnetic Map of ELs 25084 and 25085.

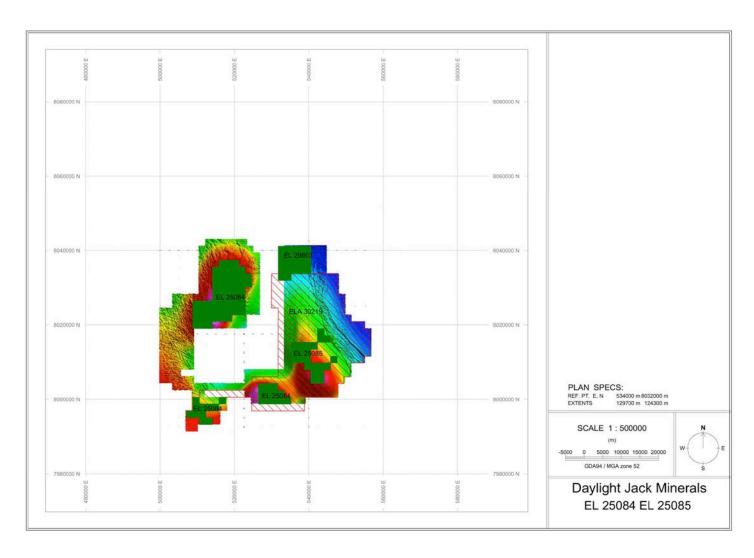


Figure 4 Total Magnetic Intensity Map of ELs 25084 and 25085.

# **5 INTERPRETATIONS**

Interpretation of the 2013 high-resolution aero magnetics has generated 26 new diamond exploration targets in addition to the previous targets identified in 2008 and historically.

Numerous significant geological structures have been identified from the high-resolution aero magnetics that may be of interest and could be possible fluid migration pathways for various mineralization systems.

# **6 CONCLUSIONS AND RECOMMENDATIONS**

The recent high-resolution magnetic survey has refined Daylight Jack's exploration focus and as a result the relinquishment of 172 blocks has been requested. There is no significant justification for retaining these blocks. In areas that have been identified as warranting further exploration the 78 blocks are being retained. Refer to Figure 2.

# **7 REFERENCES**

Cutovinos A, Beier PR, Kruse Pd, Abbot ST, Dunster JN and Brescianini RF, 2002. Limbunya, Northern Territory, Sheet SE 52-07, 1:250 000 geological map series and explanatory notes, NTGS

Morey AG and Beere GM, 1985. Palaeozoic stratigraphy of the Ord Basin in Western Australia. WA Geological Survey Bulletin 134.

Gole, M 2004, Antrim Project, Northern Territory – Relinquishment report for Exploration Licence 22645, Northern Territory, Unpublished report.

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