



# FINAL REPORT

**Exploration Licence 26068  
Mount Doreen Station  
Northern Territory**

**November 2008**

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**Distribution:**

- Geoscience Information, Northern Territory Geological Survey, Department of Primary Industry, Fisheries & Mines, N.T.
- Matilda Minerals Ltd
- Austwide Mining Title Management Pty Ltd

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## **1. SUMMARY**

This is the Final Report for EL26068.

Since its grant, Matilda has been attempting to farm-out EL26068 but has been unsuccessful. This along with the October 2008 world financial crisis has resulted in Matilda surrendering the EL.

No on-ground exploration or any ground disturbing work of any nature was carried out during the term of the EL by Matilda Minerals Limited or its agents.

## **2. INTRODUCTION**

Matilda Minerals Ltd ("Matilda") was admitted to the Australian Stock Exchange on 15 September 2004. Matilda owns and operates the Andranangoo mineral sand mine on Melville Island in the Northern Territory. The mine started production in November 2006 and produces a heavy mineral concentrate comprising approximately 50% zircon, 25% rutile + other valuable heavy minerals for export directly to China. Until recently Matilda has specialised in mineral sands exploration and development using state-of-the-art exploration and production techniques. Matilda's mineral sand interests are on the Tiwi Islands, the Top End of Northern Territory, Cape York in Queensland, Broome in Western Australia, and Narrabri in New South Wales. Matilda started to diversify its portfolio with the search for other commodities in Northern Territory and Western Australia and applied for a number of ELs prospective for uranium.

The EL is located approximately 290km NW of Alice Springs on the eastern boundary of Mount Doreen Station, straddling the Tanami Road (see figure 1).

The EL was granted on 22<sup>nd</sup> January 2008 and comprises 17 blocks, an area of approximately 52.1 sq km.

No details of registered and recorded sites have been sought from the Aboriginal Areas Protection Authority ("AAPA").

The exploration rationale for EL26068 is based on its location in the Arunta Basin, on the margins of the Ngalia Basin, an area of high prospectivity for uranium (see figures 3 & 4).

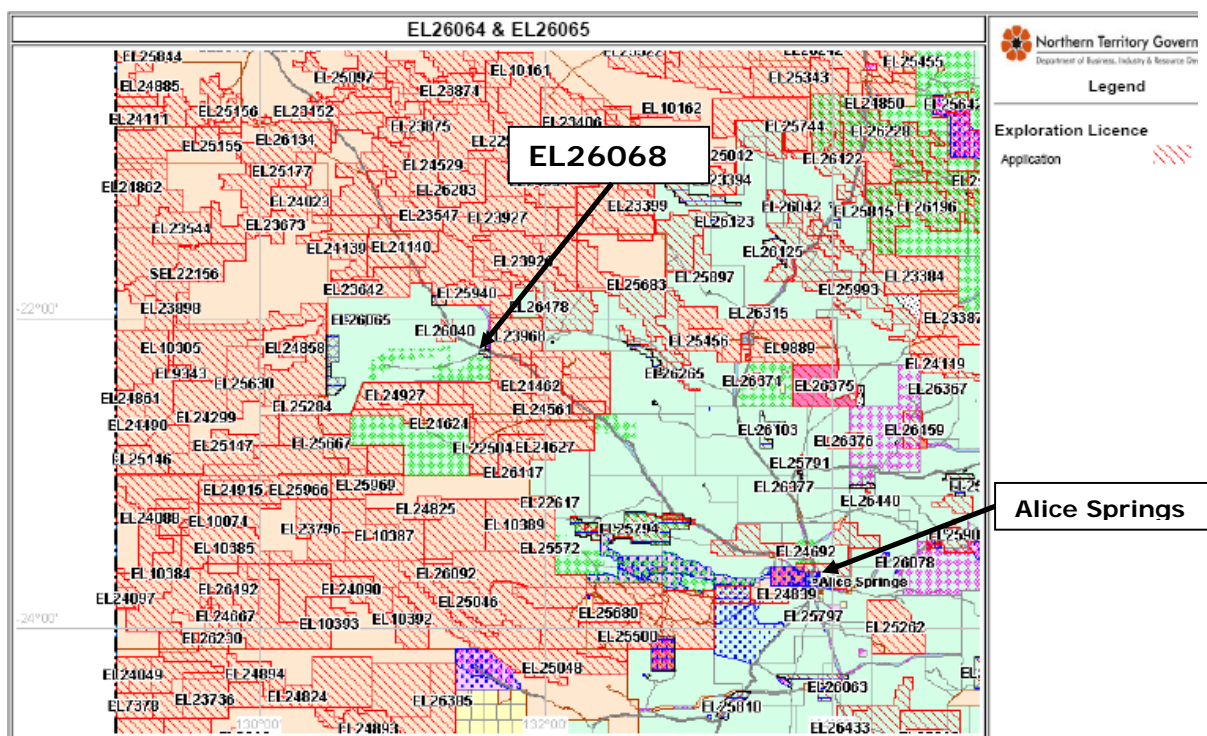


Figure 1 - EL26068 location

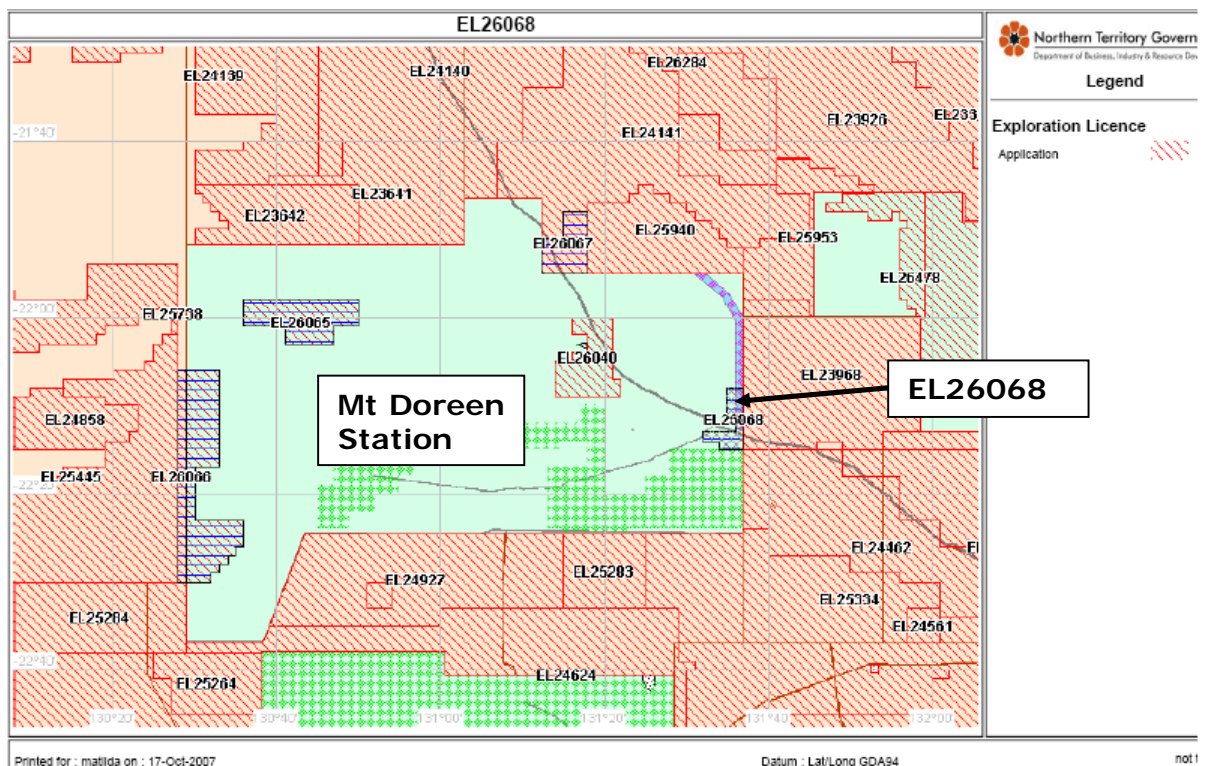
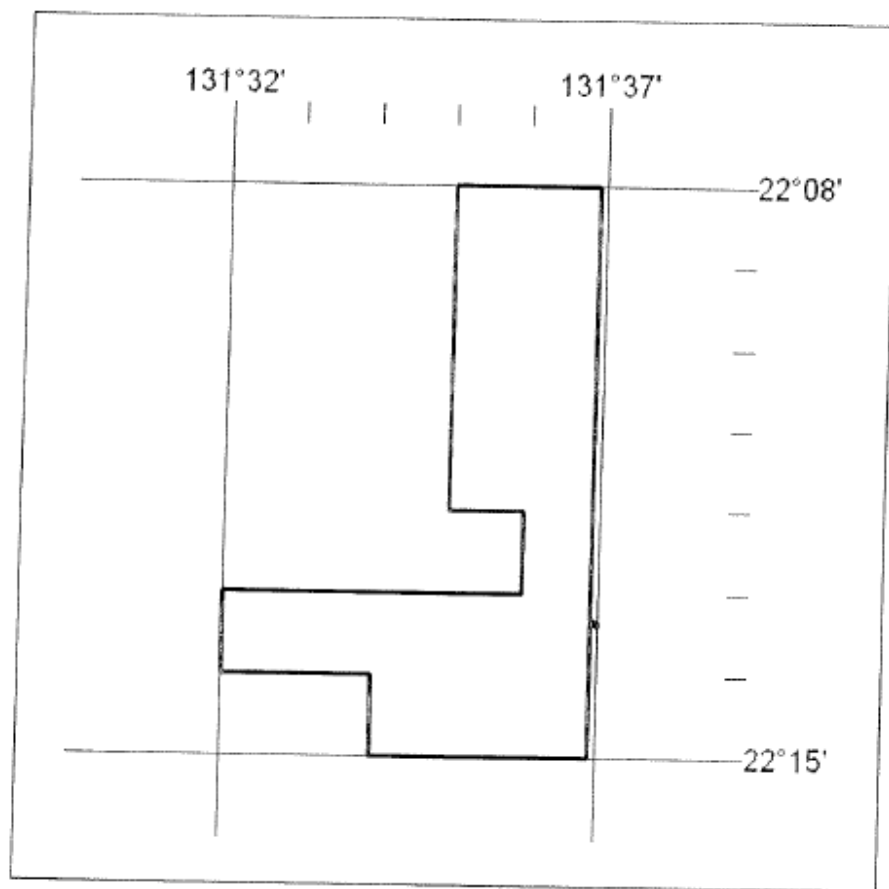


Figure 2 - EL26068 location on Mt Doreen Station



**EL26068**  
17 Blocks  
52.09 sq kms

**Figure 3 –EL26068 blocks**

### **3. GEOLOGY**

EL26068 occurs in the Arunta Basin adjacent to the western end of the Ngalia Basin:

The Ngalia Basin and its immediate surrounds host a variety of known uranium deposits and occurrences. Sandstone-type uranium mineralisation occurs in the northern and central parts of the Ngalia Basin, within the uppermost preserved unit, the Mount Eclipse Sandstone. This is a medium- to coarse-grained feldspathic sandstone, with a carbonate cement, that can contain significant amounts of carbonaceous material. Surficial (calcrete) uranium mineralisation also occurs within Cenozoic calcrete near the southern margin of the basin. Within the basin Uranium deposits include Biglyi, Nigalia, Malawiri and Currinya. Known deposits within the Arunta Province adjacent to the Basin are Napperby, Nolans Bore, Brookes, Yalyarumbi and Woodford River. This area lies to the south west of the Reynolds Range between the uraniferous granite and gneiss source rocks of the Arunta Province and the known calcrete-hosted uranium resource at Napperby. Both the palaeo-channels and palaeo-lakes were formed from alluvium derived from the nearby uraniferous granites and gneisses of the Arunta and Strangways Complexes and offer excellent potential for the development of secondary uranium deposits.

The Ngalia Basin is an elongate intracratonic basin within the Palaeo- to Mesoproterozoic Arunta Region, infilled by Neoproterozoic- to Carboniferous-aged sedimentary rocks that have a cumulative thickness of about 5000 m Cambrian and Ordovician shallow-marine sedimentary rocks, including carbonates, unconformably overlie Neoproterozoic continental and fluvioglacial marine sedimentary rocks. These are unconformably overlain by Devonian to Carboniferous fluvial sandstone and minor mudstone, conglomerate and greywacke, which were deposited in response to uplift during the 320–300 Ma Alice Springs Orogeny. The northern margin of the basin is marked by low-angle north-dipping thrust faults and the southern margin is a gently north dipping unconformity.



Figure 46. Uranium occurrences and areas with potential for uranium in the Northern Territory, (from M Ahmad, NTGS, unpublished data).

**Figure 4 - Northern Territory Geology showing areas of uranium potential (after NTGS)**



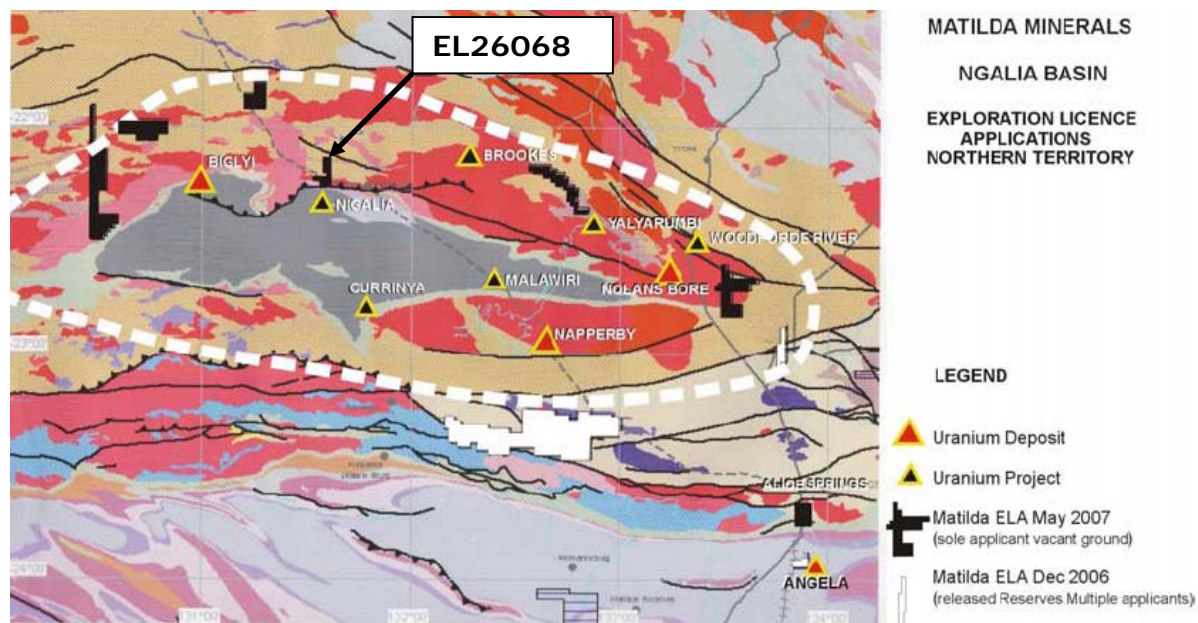


Figure 5 - Ngalia Basin Geology & Matilda ELs

## 4. EXPLORATION

No on-ground exploration or any ground disturbing work of any nature was carried out during the term of EL26068 by Matilda Minerals Limited or its agents.

This EL was granted in January 2008 and for the past 10 months Matilda has attempted to farm-out the tenement but, despite some interest from several companies, was unable to secure a deal. Exploration was planned to commence during the 2008 dry season, however due to the on-going discussions with potential joint venture partners this did not happen.