ENIGMA MINING LTD

MOUNT PEAKE PROJECT
PARTIAL RELINQUISHMENT REPORT
20/10/10-23/10/14
EL 27941

Tenement/s: EL 27941
1:250 000 Sheet Name: Mount Peake (SF5305)
Holder: Enigma Mining Ltd
Barrow Creek (SF5306)
Manager: N/A
Operator: Enigma Mining Ltd
1:100 000 Sheet Name: Anningie (5554)
Commodity: V, Ti, Fe, Cu, Pb, Zn
Datum: Barrow (5654)
Elements Analysed:

Keywords: Historical exploration, regional magnetics, recommended drilling
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Distribution: TNG Limited
Department of Mines and Energy (1)
(1)
EXECUTIVE SUMMARY

Exploration Licence 27941 was granted to Enigma Mining Limited (Enigma) on 20 October 2010. Enigma is a wholly owned subsidiary of TNG Ltd. The licence forms part of TNG’s Mount Peake project area together with EL 27069, EL 27070, EL 28491, EL 29578 and EL 29867.

The Mount Peake region has been partially explored for a variety of commodities including uranium, gold, copper, iron ore, bauxite and diamonds. Recent activities in the Mount Peake area have largely been directed towards U, Au and Ni.

Exploration carried out on the relinquished part EL 27941 has mainly been of a regional nature. A full literature review was carried out on the historical data and review and modelling of the current geophysical data were undertaken. Targets have been generated as a result of this regional exploration and these areas have been retained for further work.
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1. **INTRODUCTION**

Exploration Licence 27941, was granted to Enigma Mining Limited (Enigma) on 20 October 2010. Enigma is a wholly owned subsidiary of TNG Ltd. The licence forms part of TNG’s Mount Peake project area together with EL 27069, EL 27070, EL 28491, EL 29578 and EL 29867 (Figure 1).

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2. **LOCATION AND ACCESS**

The Mount Peake project area is located approximately 200km NE of Alice Springs. The sealed Stuart Highway to Darwin passes through the southern part of EL 27941 (Figure 1). The licence covers the south-eastern portion of the Mount Peake (SF53-05) 1:250,000 mapsheet, with the far eastern edge of the tenement falling within the Barrow Creek (SF53-06) mapsheet. It lies within the Stirling and Anningie Perpetual Pastoral Lease and is subject to Native Title. Access in the licence area is good with well-maintained station and previous exploration tracks.

The LNG gas pipeline runs through the project area and the Darwin to Adelaide railway 20km to the east.

![Figure 1: Location of Mount Peake project area.](image-url)
3. **TENURE**

Exploration Licence 27941 is part of the Mount Peake Project along with EL 27069, EL 27070, EL 28491, EL 29578 and EL 29867. EL 27941 was granted to Enigma on 20/10/10. Tenure details for EL 27941 are summarised in Table 1. A partial relinquishment has been undertaken in accordance with Section 29 of the Minerals Titles Act 2010 leading up to the fourth anniversary of grant reducing the area of the licence from 208 blocks to 39 blocks (Figure 2; Table 2).

| TABLE 1: EL 27941 tenement details. |
|-------------|-----------------|-----------------|---------------|----------------|
| TITLE       | PROSPECT        | AREA (blocks)   | GRANT DATE    | EXPIRY DATE   |
| EL 27941    | Mount Peake     | 39              | 20/10/2010    | 19/10/2016    |

**Figure 2: Blocks to be retained EL 27941.**
Table 2: Retained blocks on EL 27941.

<table>
<thead>
<tr>
<th>Map ID</th>
<th>Block</th>
<th>Sub-Block</th>
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<tbody>
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<td>04</td>
<td>F, G, L, M, Q, R, V, W</td>
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<tr>
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<tr>
<td>SF5316</td>
<td>76</td>
<td>A, B, F, G</td>
</tr>
</tbody>
</table>

4. REGIONAL GEOLOGY

The Mount Peake project area lies within the Aileron Province in the north-central part of the Paleoproterozoic Arunta Region (Donnellan, 2008). Neoproterozoic to Paleozoic rocks of the western edge of the Georgina Basin also occur in the area. The project area lies in the south-eastern portion of the MOUNT PEAKE (SF53-05) 1:250,000 mapsheet extending through to the western edge of the BARROW CREEK (SF53-06) mapsheet (Figure 3).

The Aileron Province includes at least five depositional packages that were deposited in the interval 1860-1740Ma (Scrimgeour, 2003), and has been affected by multiple tectonic events (Scrimgeour, 2006). The outcropping Paleoproterozoic geology of MOUNT PEAKE includes a succession of metapsammitic and metapelitic rocks of the Lander Rock Formation (Plr), which have been variably metamorphosed from greenschist to granulite facies (Donnellan, 2008). Stratiform amphibolites and retrogressed amphibolites outcrop locally. The Lander Rock Formation is intruded by a series of ‘early’ (ca 1820-1770Ma) and ‘late’ (post-1770Ma) granites. The dominant tectonic and thermal event in MOUNT PEAKE was the Stafford Event at 1805-1790Ma.

The Georgina Basin is a widespread Neoproterozoic to Paleozoic intracratonic basin that was initiated as part of the Centralian Superbasin (Donnellan, 2008). The dominant lithologies are dolostone, limestone, shales, sandstone and siltstone. These rocks unconformably overlie rocks of the Aileron Province in south-eastern MOUNT PEAKE.

There is minimal outcrop within the tenement. Small patches of Central Mt Stuart Formation (Pus) are evident in the area but the majority of the tenement is overlain by Cainozoic and Quaternary cover sequences (sand, red earth soils and colluvium), including a large amount of alluvial sediment (Qa) associated with the Hanson River which runs through the licence.
Figure 3: Regional geological setting of the Mount Peake project area.

5. PREVIOUS EXPLORATION

The Mount Peake region has been partially explored for a variety of commodities including uranium, gold, copper, iron ore, bauxite and diamonds. Recent activities in the Mount Peake area have largely been directed towards U, Au and Ni (Donnellan, 2008). A brief summary of exploration within the area is included below, and shown on Figure 4.

- In the late 1970’s and early 1980’s CRA undertook an exploration programme on EL 1881 in the Mt Peake area. This was predominantly for uranium and the programme included detailed airborne magnetic and radiometric surveys, follow-up on ground surveys, geochemical sampling (5 samples within EL 27941) and limited drilling (Harvey, 1982). No significant results were returned and EL 1881 was relinquished in 1982.

- In June 1988 Stockdale Prospecting were granted a series of EL’s in the Mount Peake area as part of a regional diamond exploration programme. 45 of these samples were taken within EL27941. No significant results were returned and no further work was warranted. The tenements were subsequently relinquished (Smith, 1989).
Western Mining held EL 7558 from 1993 to 1999. Lag soil sampling and an RC drilling programme were completed in 1995 in the Mount Peake region. Minor anomalous results were recorded from the lag sampling (Wedekind, 1995). Five RC holes were drilled at the McKay Prospect. Four of these TTRC0061-0063 and TTRC0065 fall within EL 27941. The holes were analysed for Cu, As, Cr and Au. No gold anomaly was detected and therefore no further work was completed (Lulofs and Wedekind, 1996).
• Aberfoyle Resources explored, primarily for gold, within the Mount Peake project area from 1994 to 1998. Ten holes (ROO20086-20095) from their Mistake Bore prospect fall within EL 27941. The results of the RAB program were deemed negative and thus no further work was planned (Drown, 1996).

• In 2004 Tanami Exploration and Deep Yellow resources revisited Western Mining’s anomalous gold samples recorded from the lag sampling. However, the results were unable to be replicated. (Rohde, 2005) and the tenements were relinquished.

• A number of companies have had ground overlapping EL 27941 in the last 10 years. These companies included Imperial Granite (2005-2006), Matilda Minerals (2008), Proto Resources/Discovery Nickel (2003-2008) and Astro Diamonds (2003-2009). No significant work was carried out within the boundaries of EL 27941.

• Uramet Minerals (2007-2011) however did complete a single aircore hole (WAC0104) in 2009 within the tenement boundaries. No anomalous values were encountered (Penna, 2009).

6. EXPLORATION COMPLETED 2010-2014

Exploration carried out on the relinquished portion of EL 27941 has mainly been of a regional nature. A full literature review was carried out on the previous exploration in the area and a review of the regional geophysics and modeling of data was completed. Targets were generated as a result of this regional exploration and these areas have been retained for further work.

![Figure 5: EL 27941 on regional magnetic data.](image)
REFERENCES


