ENIGMA MINING LTD

EL28218 (EAST ARNHEM LAND)

ANNUAL REPORT

For the period 28/03/12 - 27/03/13

Tenement/s: EL 28218  
1:250 000 Sheet Name: Urapunga (SD5310)

Holder: Enigma Mining Ltd  
1:100 000 Sheet Name: Moroak (5668)

Manager: N/A  
Datum: WGS84

Operator: Enigma Mining Ltd

Keywords: Base maps, database

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TNG Limited  
Department of Mines & Energy

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EL 28218 Base Map_Geology, 1:10,000.

Appendix 2 – Digital Data: Historical Stream Sediment Data
Historical Diamond Sample Locations
1. INTRODUCTION

Exploration Licence 28218, was granted to Enigma Mining Limited (Enigma) on 28 March 2011. Enigma is a wholly owned subsidiary of TNG Ltd. The licence is one of two East Arnhem Land tenements the company holds.

The introduction of a new Exploration Manager in mid-2012 resulted in the review of all TNG projects, compilation of base maps for field purposes and construction of a database of previous exploration data for each project.

2. LOCATION AND ACCESS

EL 28218 is located approximately 150km ESE of Katherine via the Stuart and Roper Highways, and then on station tracks to the licence area (Figure 1). The licence falls in the south-western portion of the Urapunga (SD53-10) 1:250,000 mapsheet. It lies within the Goondooloo and Moroak Perpetual Pastoral Leases and is subject to native title.

![Figure 1: Location of EL 23218.](image)

3. TENURE

Exploration Licence 28218 covers an area of 19.94 km². It is 100% held by Enigma Mining Limited, a wholly owned subsidiary of TNG Limited. A waiver of reduction was submitted for the licence on 25 March 2013 and this was approved on 8 May 2013. Tenure details for EL 28218 are summarised in Table 1.

<table>
<thead>
<tr>
<th>TITLE</th>
<th>PROJECT</th>
<th>AREA (blocks)</th>
<th>GRANT DATE</th>
<th>EXPIRY DATE</th>
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<tr>
<td>EL 28218</td>
<td>East Arnhem Land</td>
<td>6</td>
<td>28/03/2011</td>
<td>27/03/2017</td>
</tr>
</tbody>
</table>
4. REGIONAL GEOLOGY

Exploration Licence 28218 occurs within the central part of the McArthur Basin on the northern edge of the Urapunga Fault Zone. Depositional geometries and the deformation history of the McArthur Basin were influenced by the northerly structural trends inherited from the underlying basement. Subdivision of the province into shelf areas and fault zones reflects its sedimentary and deformational history (Figure 2; Abbott, et al., 2001).

The Urapunga Fault Zone is situated over a reversely faulted basement high which separates the Bauhinia Shelf to the south, from the Arnhem Shelf to the north (Abbott, et al., 2001). A comparatively thin succession of McArthur Basin sediment accumulated in this area.

The local stratigraphy includes rocks of the Roper Group (Prk – Moroak Sandstone, Prv – Velkerri Formation, Pre – Bessie Creek Sandstone; Figure 3). The Roper Group is comprised of undivided quartz sandstones alternating with micaceous and glauconitic sandstones, siltstone and shales and the iron-rich Sherwin Formation which forms significant deposits in the Roper River area.
Dolerite sills (Pdd – Derim Derim Dolerite) intruded the Roper Group around 1300 Ma before the McArthur Basin was deformed.

Most of the tenement is covered by superficial sand, laterite and soils (Figure 3). Valleys of major drainages are aggrading and covered by extensive flats comprised of transported black soil. Regional lateritisation occurred in the early Tertiary after emergence of the Cretaceous sediments, followed by downwarping. The present day drainage, dominated by the Roper River, developed on this warped surface.

![Figure 3: Regional geological setting of the EL 28218.](image)

5. PREVIOUS EXPLORATION

The area has mainly been explored for diamonds. Ashton Mining Ltd (Ashton Mining, 1982) and Stockdale Prospecting have both held licences in the area in the 1980’s and early 1990’s.

Ashton identified a single chromite from the 87 samples taken (none within EL 28218) and this was found to be non-kimberlitic (Ashton Mining, 1983). No further exploration was undertaken.

Stockdale collected 223 samples in the region (Podolsky, 1990; two within EL 28218) and no kimberlitic indicators were returned. Stockdale also carried out limited geochemical exploration within their licence areas. Several anomalies were identified from the sampling programme.
(Podolsky, 1991) but further investigation downgraded the anomalies and the licences were surrendered (Podolsky, 1992). Sample locations are shown on Figure 4.

CRA Exploration Pty Ltd held EL 8942 in 1995. Auger drilling, loam and soil sampling and geophysical review were done within the project area. No targets were identified or specific exploration carried out within the boundaries of EL 28218.

Figure 4: Sample locations within EL 28218 and EL 28219.
EL 25692 was granted to Tianda Resources in 2007; the relinquished areas make up EL’s 28218 and 28219. During 2008 exploration focussed on ground truthing radiometric anomalies in the north western and southern parts of the tenement. These were field checked and appear to be related to black soil areas forming in valleys between the sandstone outcrops and as such no further work was recommended (Tianda Resources, 2009).

6. 2012 - 2013 EXPLORATION

The introduction of a new Exploration Manager in mid-2012 resulted in the review of all projects. The review process involved the production of base maps and databases of historical data for each project.

The 1:10,000 A0 base maps, with topographic and geological backgrounds, for the EL 28218 are included in Appendix 1. These maps are designed to be able to be used as a base for compilation of data in the field, with locations easily identifiable at the scale used.

All historical geochemical and diamond sampling data from the STRIKE system falling within EL 28218 and EL 28219 has been compiled into Excel Databases containing the relevant location and assay data, where available. These have been entered into the MRT software and are included in Appendix 2. Sample locations are shown in Figure 4.

7. 2013 - 2014 EXPLORATION PROGRAM AND EXPENDITURE

A field mapping and NITON sampling programme is expected to take place in the second half of 2013. Samples will also be collected for laboratory analysis. Results of this programme will determine how exploration proceeds for the remainder of the reporting year. A breakdown of expected expenditure is shown in Table 2.

<table>
<thead>
<tr>
<th>Exploration Activity</th>
<th>Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Mapping and NITON Soil Sampling Programme</td>
<td>7,750</td>
</tr>
<tr>
<td>Sample Analysis</td>
<td>1,000</td>
</tr>
<tr>
<td>Report and map preparation, exploration planning</td>
<td>3,750</td>
</tr>
<tr>
<td>Travel, accommodation, tenement management, office admin costs</td>
<td>2,000</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$14,500</strong></td>
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References


