# TNGLIMITED

#### **ENIGMA MINING LTD**

## WALABANBA PROJECT PARTIAL RELINQUISHMENT REPORT

18/09/09 to 17/09/13

EL 27115

Tenement/s EL27115 1:250 000 Sheet Mount Peake

Name (SE5305)

Holder 1:100 000 Sheet Anningie (5554), Toro Energy Limited

Mount Peake (5454) Name Willowra (5455)

Manager **Datum** GDA94-53

Operator Enigma Mining Ltd GDA\_E GDA\_N

Cu, Au, Ni, Pb, Zn Commodity

Elements

Analysed HELITEM, field inspection, historical exploration Keywords

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#### **Executive Summary**

Exploration Licence 27115 was granted to Toro Energy Limited (Toro) on 18/09/2009. The licence forms part of Walabanba Hills Project together with EL 26848 and EL 27876.

The Walabanba Hills Project is operated by Enigma Mining Limited (Enigma), a wholly owned subsidiary of TNG Ltd.

Enigma signed a Heads of Agreement (HOA) with the Australian uranium exploration and project development company, Toro in April 2012. The agreement gives TNG the right to explore for all minerals except uranium within EL 26848, EL 27115, and EL 27876.

Enigma took out the JV agreement with a view to exploration for primary base metal sulphides, nickel and magnetite hosted vanadium-titanium, as found in the Mount Peake Fe-V-Ti deposit to the east.

Since the licence was granted a TEMPEST survey has been carried out, surface sampling and aircore drilling has also been undertaken. Only one rock sample and one drillhole fall within the relinquished area.

A partial relinquishment from 336 down to 124 blocks has been undertaken prior to the fourth anniversary of grant of the licence, and all areas of interest have been retained for further work.

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#### 1. INTRODUCTION

Exploration Licence 27115 was granted to Toro Energy Limited (Toro) on 18/09/2009. The licence forms part of Walabanba Hills Project together with EL 26848 and EL 27876 (Figure 1).

The Walabanba Hills Project is operated by Enigma Mining Limited (Enigma), a wholly owned subsidiary of TNG Ltd.

Enigma signed a Heads of Agreement (HOA) with the Australian uranium exploration and project development company, Toro in April 2012. The agreement gives TNG the right to explore for all minerals except uranium within EL 26848, EL 27115, and EL 27876.

A partial relinquishment from 336 down to 124 blocks has been undertaken prior to the third anniversary of grant of the licence, and all areas of interest have been retained for further work.

#### 2. LOCATION AND ACCESS

The Walabanba Hills project is located immediately to the west of the Mount Peake project Fe-V-Ti deposit. EL 27115 is situated on Anningie station approximately 250km north-northwest of Alice Springs with good access via the Stuart Highway then unsealed station tracks to the licence area. The tenement sits in the south-eastern corner of the Mt Peake 1:250,000 map sheet.

#### 3. TENURE

Exploration Licence 27115 was granted to Toro Energy Limited (Toro) on 18/09/2009 and is part of the Walabanba Hills Project along with EL 26848 and EL 27876. Tenure details for EL 27115 are summarised in Table 1. A partial relinquishment has been undertaken on the tenement leading up to the fourth anniversary of grant, reducing the number of blocks from 336 to 124 (Table 2; Figure 2).

Table 1: EL 27115 tenement details.

TITLE	PROJECT	AREA (blocks)	GRANT DATE	<b>EXPIRY DATE</b>
EL 27115	Walabanba Hills	124	18/09/2009	17/09/2015

Table 2: Retained blocks on EL 27115.

Map ID	Block	Sub-Block
SF5312	38	D, E, J, K, O, P
SF5312	39	A, B, F, G, L, M
SF5314	52	P, U, Z
SF5314	53	L, M, Q, R, V, W
SF5315	23	O, P, T, U, Z
SF5315	24	E, K, L, P, Q, U, V, W, X, Y, Z
SF5315	25	A, B, F, G, H, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
SF5315	26	F, G, L, M, Q, R, V, W
SF5315	95	E
SF5315	96	A, B, C, D, E, G, H, J, K, P,
SF5315	97	A, B, C, D, E, F, G, H, J, K, L, M, N, O, P, S, T, U, X, Y, Z
SF5315	98	A, B, F, G, H, J, K, L, M, N, O, P, Q, V
SF5315	99	F, G, H, L, M, N, Q, R, S, V, W

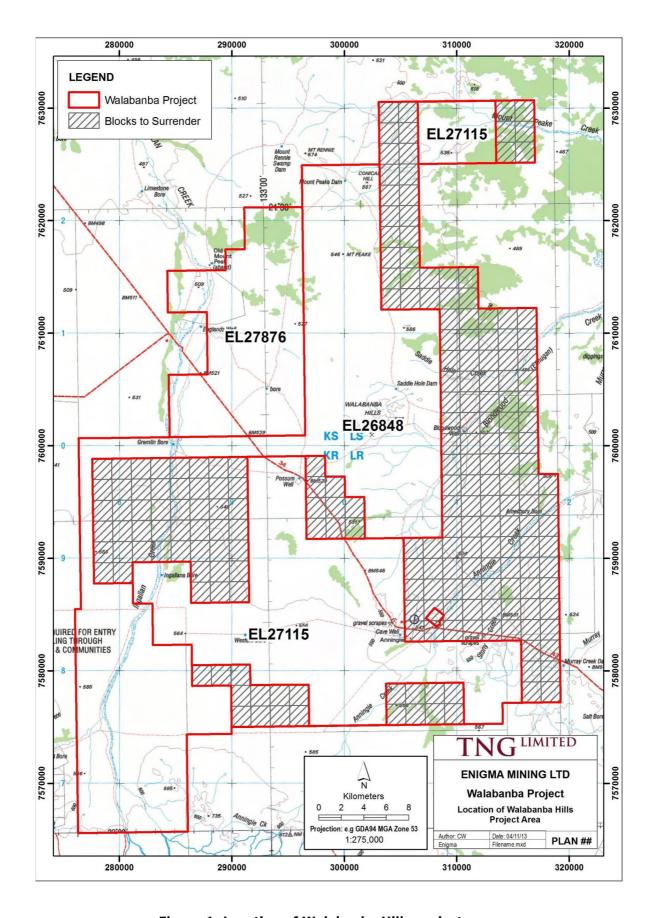


Figure 1: Location of Walabanba Hills project area.

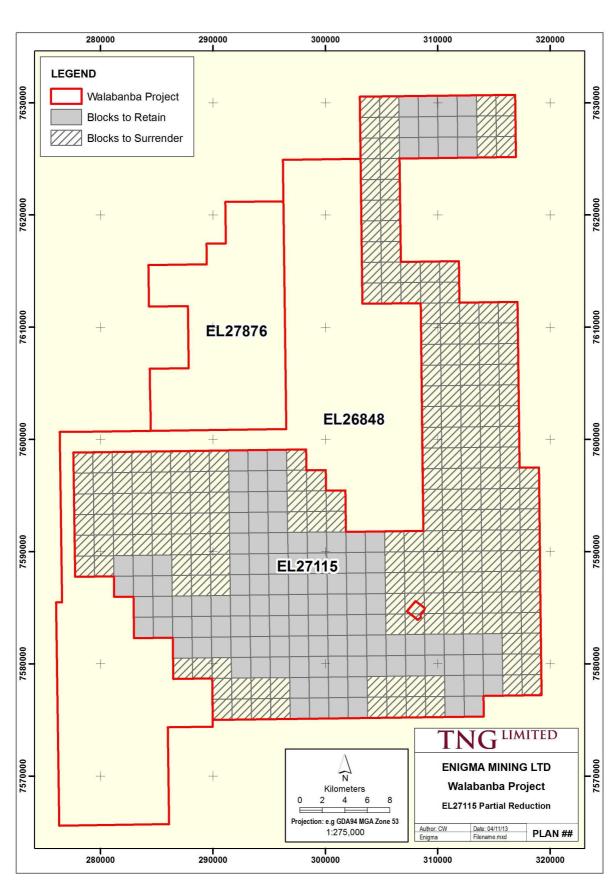


Figure 2: Retained blocks on EL 27115.

#### 4. REGIONAL GEOLOGY

The Walabanba Hills project lies within the Arunta region of the Northern Territory. Basement is comprised of Palaeoproterozoic to Mesoproterozoic metasedimentary and granitic rocks within the Aileron Province, including the Reynolds Range Group. 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 granites and orthogneisses are highly-radiogenic within the Reynolds Range, hosting numerous veins and pegmatites with anomalous uranium and thorium. Locally the Aileron Province rocks are overlain by Tertiary to recent clastic sequences, derived from erosion of the radiogenic granites in the Reynolds Range.

Uranium mineralisation is known in the region and is restricted to the Proterozoic Aileron Province and nearby Carboniferous Ngalia Basin. To the southeast uranium occurs in phosphatic and REE-enriched metasomatic pods and veins within the high metamorphic grade Lander Rock beds.

To the east lies the mineralised Mount Peake gabbro, a Ti-V-Fe ore body hosted by a differentiated basic sill with minor ultrabasic layers. The predominant rock type is olivine gabbro with layering defined by variations in plagioclase/olivine+clinopyroxene ratios. Most of the gabbros are massive - typical of many layered intrusions-without discernible layering.

The local geology (Figure 3) comprises sodic granites, gneisses and minor amphibolites, folded metasediments and intruded metabasic rocks. Major northwest shears cut the sequence and are associated with barren quartz intrusions. Two prominent structures run along the Lander River Valley, to the west and along the Salt Creek – Blue Bush Bore Valley. The granite batholiths are interpreted to be shallowly eroded with exposure of their upper levels only, with abundant pegmatite outcrops, typically of quartz-feldspar-muscovite-tourmaline composition. Some very coarse examples occur in association with minor tantalum or tin mineralisation that has in places been mined. The metasediments, comprising meta shales, cherts, siltstone and fine sandstone range in grade from lower to upper greenschist facies and are common in the Lander valley. Some exhibit quartz sericite alteration. Tertiary to Recent cover comprising laterite derived sands and clays (alluvium and colluvium), calcrete and ferricrete is common in low lying areas and can be up to 70m thick, however Toro's drilling indicates it is over 200m thick in places.

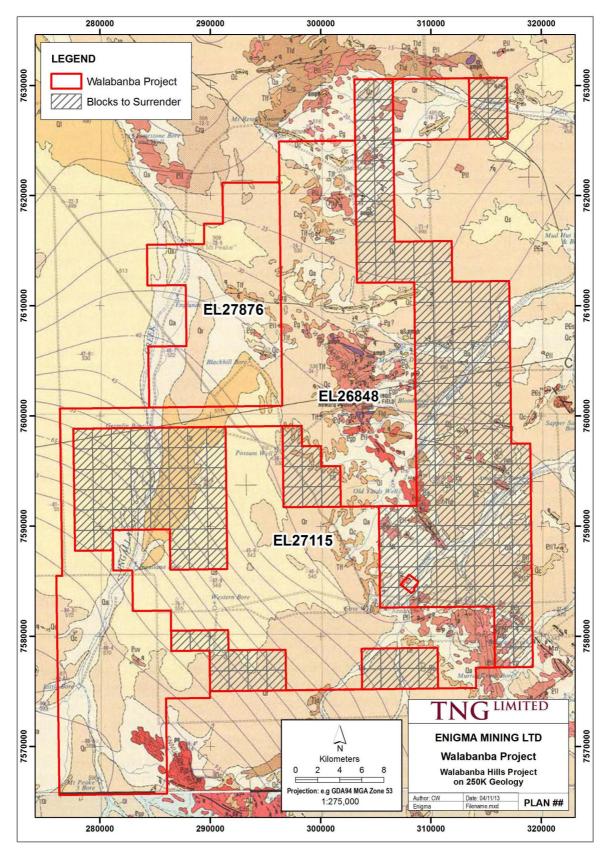


Figure 3: Walabanba Hills tenements on 250K geology.

#### 5. PREVIOUS EXPLORATION

Numerous companies have been exploring in the region over the past 40 years in search of uranium, gold, base metals and diamonds. Within the project boundaries most drilling has been carried out in search of gold. Holes tend to be shallow (<10m). Uranium has been extensively explored for in the area but exploration has been restricted to water bore sampling, hard rock and limited near surface calcrete styles of uranium within or proximal to outcropping terrains. Very little exploration data is available from within EL 27876, primarily because of the relatively deep cover sequence and the lack of outcrop.

Highlights of the exploration prior to Toro Energy include aeromagnetic surveys over the region, conducted by Anglo American Corporation (Anglo), and focused on magnetic and Electro-Magnetic (EM) anomalies. These surveys identified numerous targets anomalous in nickel, copper and platinum group elements, suggesting the presence of sulphide bearing intrusive rocks.

#### 6. EXPLORATION UNDERTAKEN ON THE RELINQUISHED AREA

In 2009 Toro undertook a TEMPEST survey over the south western part of the project area (Figure 4). Some of the relinquished portion of the licence is covered by a portion of the survey but cookie cutting of the data will not produce meaningful results on its own and has therefore not been included in this report. Toro has also undertaken a geochemical soil/rock sampling programme across the Walabanba Hills project area, one rock sample falling within the relinquished area (ID\_231027) and an aircore drilling programme, of which one hole falls within the relinquished area (RP00052).

After the drilling a groundwater information report was prepared for the landowners in the area. When measuring flow-rate and collecting a water sample the air was circulated for enough time for the drillers water to be flushed from the hole so that only groundwater was being tested. The excerpt for RP00052 is a follows, "RP00052 ended on top of a hard crystalline sandstone or silcrete. This hole produced strong flows of warm to hot slightly salty water with total dissolved solids from 2300-2500 ppm".

Surface sampling and drilling data has been attached.

Reviews of available geology, hydrogeology and geophysics within the project area have resulted in 124 blocks being retained for further exploration.

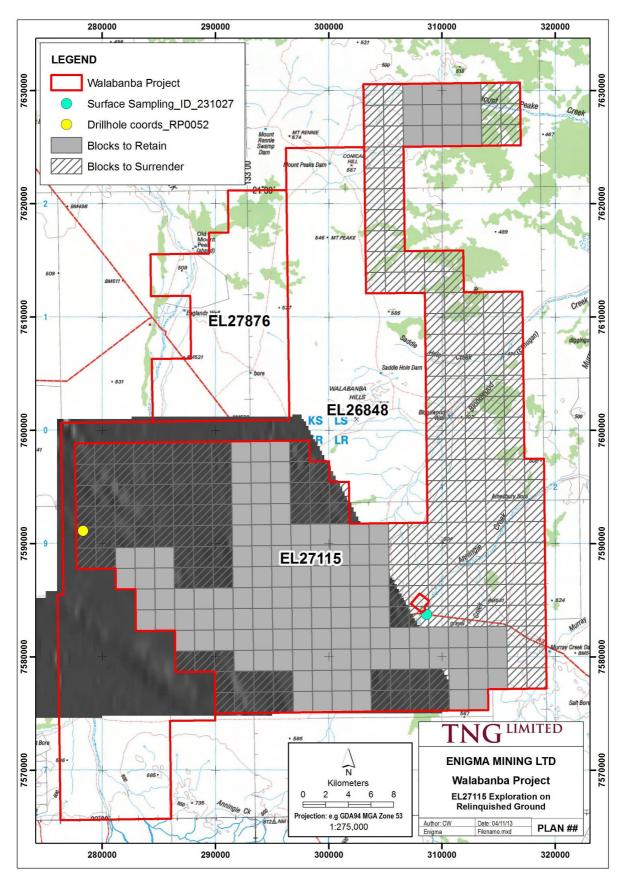


Figure 4: Exploration on relinquished blocks, EL 27115.

#### **REFERENCES**

Scrimgeour, I. R., 2003. Developing a revised framework for the Arunta Region: in 'Annual Geoscience Exploration Seminar (AGES) 2003. Record of Abstracts.' Northern Territory Geological Survey, Record 2003-001.

Scrimgeour, I.R., 2006. The Arunta Region: Links between tectonics and mineralisation: in: 'Annual Geoscience Exploration Seminar (AGES) 2006. Record of Abstracts.' Northern Territory Geological Survey, Record 2006-002.