



TORO JV PROJECT

FINAL SURRENDER REPORT

Exploration License (EL) 27001

LICENSEE

TORO ENERGY LIMITED

OPERATED BY

NORTHERN MINERALS LIMITED

FINAL SURRENDER REPORT

GROUP REPORT:

NAME: TORO JV PROJECT – FINAL SURRENDER REPORT, EXPLORATION LICENSE (EL) 27001

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TARGET COMMODITIES: Heavy Rare Earths (HREE)

NT 1:100,000 SHEET: 4860 "Ware"

NT 1:250,000 SHEET: SE5211 "Birrindudu"

Abstract

Tenement EL27001 was granted to Toro Energy Ltd on the 16 February 2012. Toro Energy subsequently announced it was entering a joint venture agreement with Northern Minerals for a group of seven tenements, including EL27001, which together were named the Toro JV Project.

The tenement is extensively underlain by Palaeoproterozoic Nanny Goat Volcanics. Much of the surface geology is dominated by unconsolidated Quaternary sediments. In some areas of the tenement, Tertiary ferricrete has developed over the Nanny Goat Volcanics.

Northern Minerals is currently exploring the tenement as part of a wider exploration program covering contiguous tenements in the Tanami region of the Northern Territory. The targeted commodity is Heavy Rare Earths associated with xenotime mineralization, similar to that discovered at the Wolverine prospect on the Western Australian side of the Browns Range Dome. Other occurrences of xenotime mineralization have been reported from within the Tanami Region, including Northern Mineral's Boulder Ridge prospect.

There was no on-ground exploration completed on EL27001 during the life of the tenement.

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1.0 INTRODUCTION

The tenement EL27001 was granted to Toro Energy Limited on the 16/02/2012.

On the 23/04/2012, Northern Minerals announced to the ASX that it had entered into a joint venture agreement with Toro Energy Limited, where it can earn up to an 80% stake for the non-uranium rights in exploration licenses EL26270, EL26271, EL26286, EL26635, EL27000 EL27590 and EL27001, together referred to as the Toro JV Project. The agreement was not however formally signed off until the 08/02/2013, after which Northern Minerals was appointed project manager of the tenements

2.0 LOCATION & ACCESS

The tenement is located approximately 680km northwest of Alice Springs (Figure 1) within the Central Desert Aboriginal Land. Access to the tenement is via the Tanami Track to the Tanami Mine site, approximately 650km from Alice Springs or alternatively 400km from Halls Creek in Western Australia. From the Tanami Track, access is via the Lajamanu Road heading north-northeast for approximately 90 kilometres to the Suplejack Downs homestead, from which a limited number of station tracks head north westwards towards the tenement.

A potential alternative access route to the tenement is via the Buntine Highway to Inverway, and then approximately 72 kilometres to Birrindudu. From Birrindudu, a limited number of tracks head south east towards the tenement.

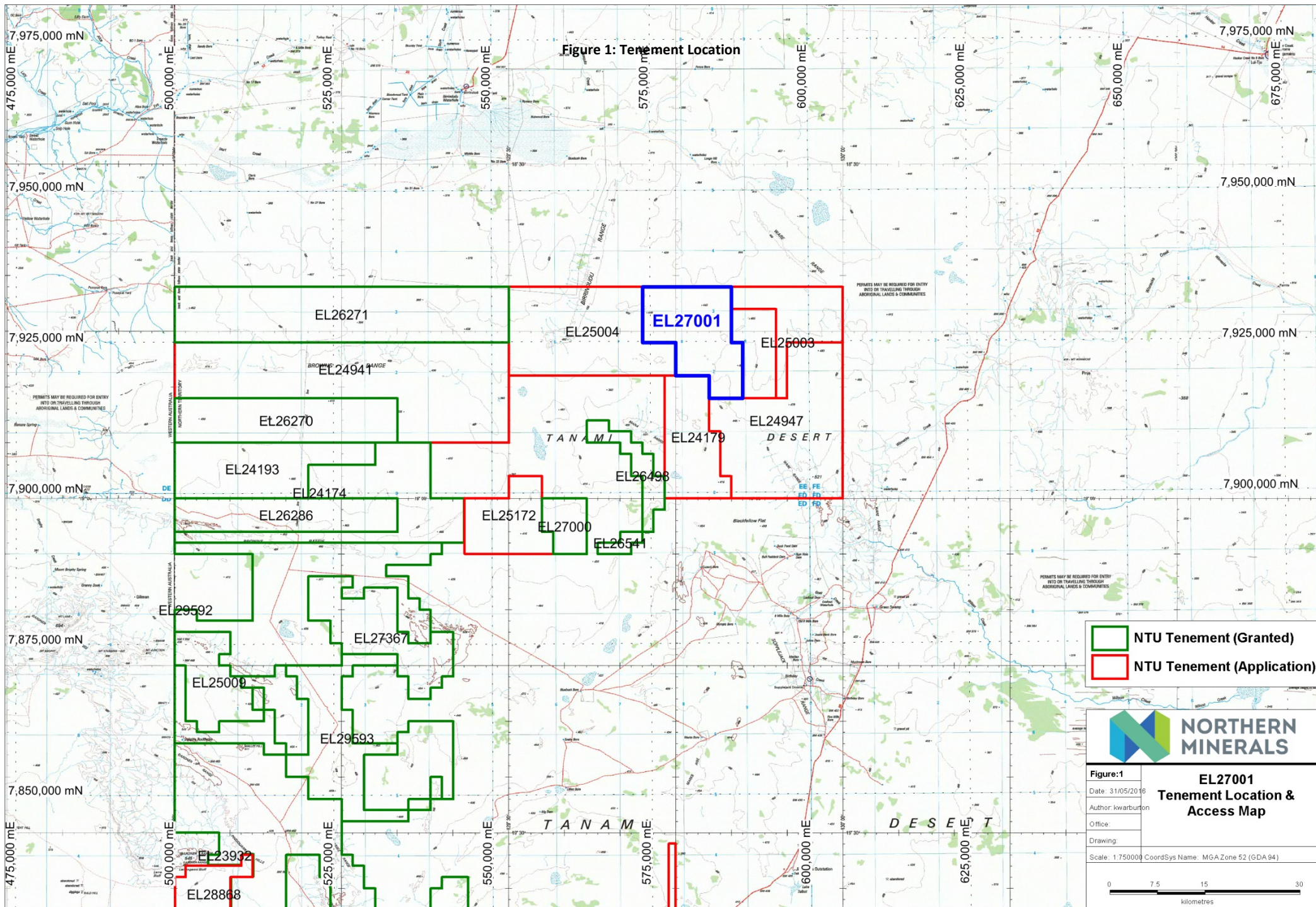
3.0 TENURE

The tenement EL27001 was applied for on the 9/07/2007 and granted on the 16/02/2012, consisting of 64 graticular blocks and covering an area of 208 square kilometres (Table 1).

EL27001 was originally granted to and held by Toro Energy Limited; however on the 14th March 2016 Northern Minerals announced to the ASX that it had acquired ownership, excluding uranium rights, of the Toro JV tenements. EL27001 was not included in the transaction, and was subsequently surrendered on the 8th April 2016.

Table 1: Tenement Schedule

Tenement	Tenement No.	Blocks	Blocks Relinquished	Grant Date	Expiry Date
Toro JV Project	EL27001	64	64	16/02/2012	08/04/2016



4.0 REGIONAL GEOLOGY

In the Tanami Region, one of the most important tectonic units in the North Australian Craton, the stratigraphic succession shows similarities with the Pine Creek and Halls Creek Orogens, other Palaeoproterozoic successions in northern Australia.

Within the region, the MacFarlane Peak Group, which is interpreted to be the basal unit of the Palaeoproterozoic sequence, is dominated by volcanic and volcanoclastic rocks, along with clastic and calc-silicate sediments. These are overlain by siltstone, carbonaceous shale, calc silicates and BIF of the Dead Bullock Formation. This in turn is overlain by a thick sequence of turbidites, the Killi Killi Formation. Interbedded siltstone, greywacke and chert west of Tanami are included in the Twigg Formation. The latter three units are grouped together in the Tanami Group.

The Pargee Sandstone and the Mount Charles Formation occur in small extensional basins. A period of wider extension follows, accompanied by felsic volcanism in the Mount Winnecke Group and Nanny Goat Volcanics. Five main granitic suites are recognised in the Tanami Region, the most important being the Coomarie and Frederick Suites. The youngest granites in the area belong to The Granites Suite. Archaean rocks identified from drilling comprise of the Browns Range Metamorphics and the Billabong Complex.

Deposition in the Birrindudu Basin began with sandstone transgressing over the metamorphic and crystalline basement probably at about 1.7 Ga. This was accompanied by regionally extensive north-trending growth faults and volcanism, possibly indicating rifting. The Birrindudu and Tolmer Groups represent the exposed basal section of this basin and may be as much as 6,000m thick locally. Apart from minor felsic volcanic rocks (tentatively assigned to undifferentiated Birrindudu Group) and carbonate rocks and shale in the upper Tolmer Group, these units are dominated by coarse clastic sedimentary rocks.

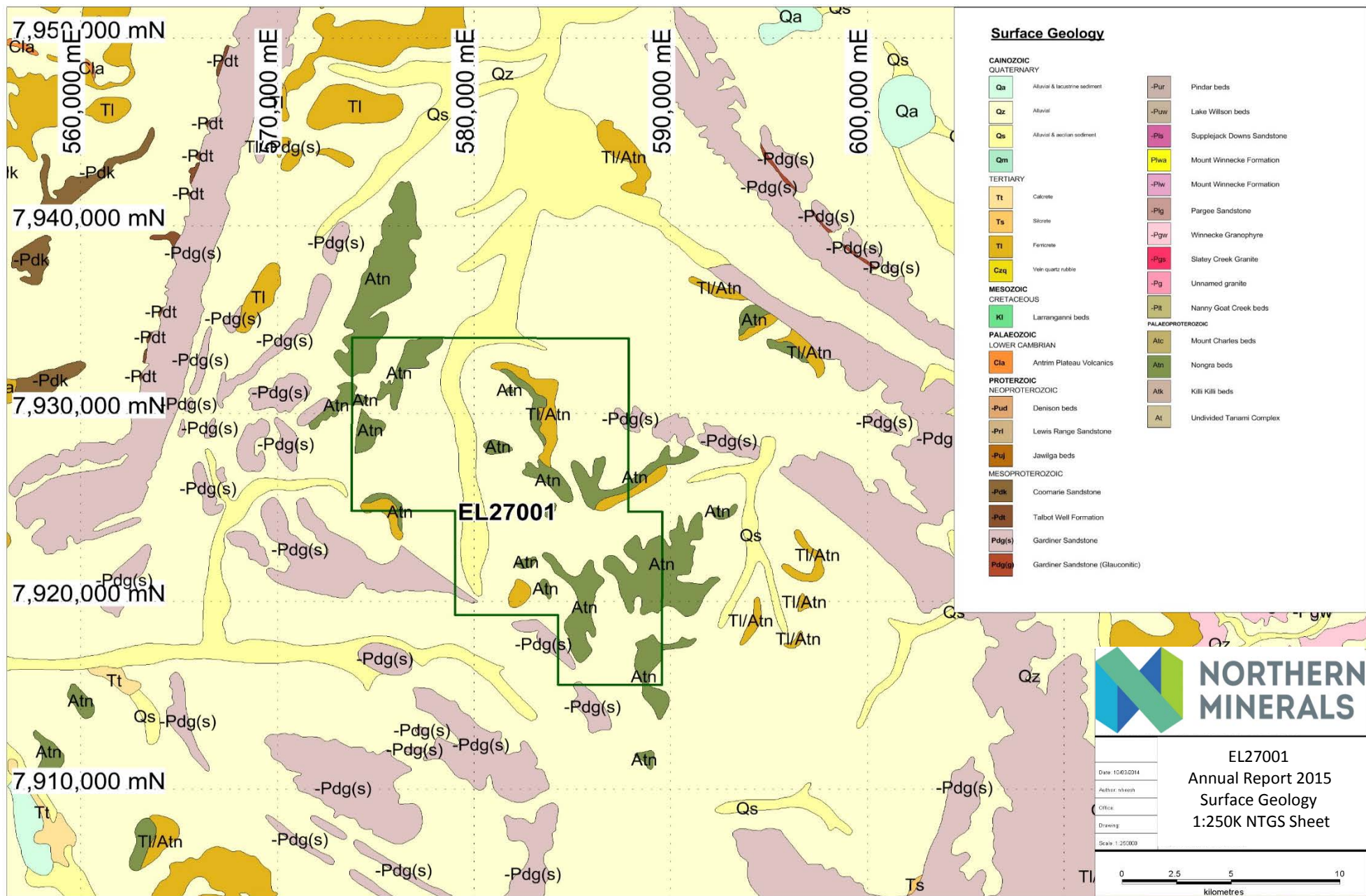
Cambrian flood basalts (Antrim Plateau Volcanics) overlie the Mesoproterozoic Gardiner Sandstones of the Birrindudu Basin.

Several ESE, SE and N-trending structures have been identified within the region, which represent subsidiary structures to the major regional ESE-trending structures, such as the Trans-Tanami Fault and the Bluebush Fault.

Large portions of the region are covered by ferricrete as well as surficial deposits including alluvium, lateritic lag and windblown sand. The Gardiner Formation outcrops are frequently capped by a silcrete layer of variable thickness.

EL27001 is located in the south of the Birrindudu 1:250,000 Sheet, approximately 40 kilometres east of the Browns Range Dome. The tenement is extensively underlain by Nanny Goat Volcanics, which have been mapped on the Birrindudu 1:250,000 sheet as Nongra Beds (Hendrickx, 2000). Gardiner Sandstone of the Birrindudu Basin occurs along the south western margin of the tenement. Much of the surface geology is covered by Tertiary ferricrete developed over the Nanny Goat Volcanics, and unconsolidated Quaternary sediments.

Figure 2 shows the outcrop geology taken from the NTGS 1:250,000 scale geological mapping of the area.



5.0 EXPLORATION TARGET RATIONALE

Northern Minerals is currently exploring for Heavy Rare Earth (HRE) mineralisation on its tenement holdings in the Tanami Region of WA and the NT. At the Browns Range project in WA, HRE mineralisation associated with xenotime mineralisation was first identified at what was called the Area 5 prospect in 1986 by PNC Exploration (Australia) Pty Ltd. The primary host of this mineralisation was vuggy quartz veins within a Palaeoproterozoic arkose unit of the Browns Range Metamorphics; although the xenotime also pervaded the arkose forming massive veins up to 30cm width. Subsequent shallow drilling at the prospect was disappointing.

More recently, Northern Minerals identified xenotime mineralisation from highly silicified and brecciated arkose at the Wolverine, Gambit and Gambit West Prospects, located within 3-5km north of Area 5. A JORC compliant resource of 8.98 million tons for 56,663t of contained TREO has recently been estimated for the aforementioned prospects, together with Area 5, Cyclops and Banshee. The HRE distribution, of which the primary components are the elements yttrium and dysprosium, constitute 87% of the total rare earths.

Elsewhere in the Tanami Region, occurrences of xenotime associated HRE mineralisation have been identified at the Killi Killi Hills, where it is associated with the basal conglomerate unit of the Mesoproterozoic Gardiner Sandstone at the unconformity with the underlying Killi Killi Formation; and at the Boulder Ridge prospect located within Palaeoproterozoic - Mesoproterozoic Pargee Sandstone. The potential for additional (economic?) occurrences of xenotime mineralisation in the Tanami region is being assessed.

The exploration strategy is to survey specifically targeted areas with different airborne geophysical techniques in order to help generate targets for further ground based follow-up work, including geological mapping and geochemical sampling, and ultimately to provide drill targets. The geophysical surveys would likely comprise of a detailed airborne radiometric and magnetic survey and a hyperspectral survey.

The detailed airborne radiometric and magnetic survey is designed to locate radiometric anomalies that may possibly be associated with xenotime. It will also help understand in more detail the structural and geological framework of the project area.

The hyperspectral survey is able to detect superficial mineral alteration zones that may correspond to alteration haloes surrounding hydrothermal mineralisation.

6.0 EXPLORATION ACTIVITIES

No on-ground exploration was completed on EL27001 during the life of the tenement, and activities were limited to historical and regional data compilation and a heritage survey undertaken in 2014.

6.1 Heritage Survey

Tenement EL27001 is located wholly within Aboriginal Freehold Land occupying a portion of the Central Land Trust. A Deed of Exploration was signed by representatives from the Central Land Council on behalf of the Traditional Owners, and Toro Energy Limited, on the 20th October 2011

Prior to on-ground work commencing, an Aboriginal heritage survey was necessary to ensure exploration activities were not going to threaten or interfere with any potential sacred sites.

Between the 6th and the 11th of August 2014 a heritage survey was conducted by the Central Land Council (CLC) and representatives of the Traditional Owners across Northern's tenement holdings in the Tanami region, which incorporated the Toro JV tenement EL27001. A Sacred Site Clearance was received from the CLC following completion of the survey.

7.0 CONCLUSIONS

No on-ground exploration was completed over the tenement largely as a result Northern Minerals primary focus on developing its Browns Range Heavy Rare Earth Project in Western Australia, and more recently due to budgetary constraints.

During late 2015 Northern Minerals entered into negotiations with Toro Energy to obtain a 100% interest in the Toro JV tenements. However as EL27001 is in a geological setting not likely to be favorable for heavy rare earth mineralisation similar to the Browns Range style, the tenement doesn't meet Northern Minerals' exploration priorities and will not be included in the transfer. The tenement was subsequently surrendered.

8.0 REFERENCES

Tanami, NTGS 1:250,000 Geological Series Explanatory Notes, Sheet SE/52-15

Hendrickx MA, Slater KR, Crispe AJ, Dean AA, Vandenberg LC and Smith JB, 2000.

Palaeoproterozoic stratigraphy of the Tanami: regional correlations and relation to mineralisation - preliminary results. Northern Territory Geological Survey Record 2000-0013.