Victoria Highway

EL 28026

Partial Relinquishment Report

(Forth Year of Tenure)

Tenement Holder: Australian Minera Resources Pty Ltd

January 24, 2015
Summary

The licence was originally granted to Imperial Granite and Minerals Pty Ltd (IGM) in November 2010, Australian Minera Resources Pty Ltd (AMR) purchased the licence from IGM in 2012.

EL 28026 “Victoria Highway” is located approximately 100 km southwest of Katherine and approximately 320 km south southeast of Darwin. It covers the nexus of the Daly and Dunmarra Basins and the Kalkarini Province, all of these being important geological provinces. Modern mineral exploration in the region commenced in the late 1960s and has continued to the present day. Commodities sought have included base metals (copper and lead-zinc-silver), diamonds, phosphate and uranium.

Work completed by IGM and AMR within the relinquished areas including a reconnaissance field investigation, a detailed airborne magnetic and radiometric survey in late 2013. Follow up detailed regional stream sediment survey in July 2014 and related interpretations.
Bibliographic Data

Report Title: Partial Relinquished Report for EL 28026 by end of 4th year of Tenure (22 November 2014)

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Tenement Name: Willeroo /Victoria Highway

Tenement Number: EL 28026

Tenement Holder: Australian Minera Resources Pty Limited

Operator: Eupene Exploration Enterprises Pty Limited

Commodities: Copper, lead zinc, silver, uranium, diamonds, REEs

1:250 000 Map Sheet: Delamere (SD 52-16)

1:100 000 Map Sheet: Willeroo (5267)
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1.0 Introduction

EL 28026 was initially granted to Imperial Granite and Minerals Pty Ltd in 2010 and transferred to Australian Minera Resources Pty Ltd in 2012. It falls upon the Delamere 1:250 000 scale map sheet area and is located on the western margin of the Palaeozoic Daly Basin.

EL 28026 Willeroo project is centred about 100 km southwest of Katherine and is cut by its namesake, the Victoria Highway (Figure 1). Access is excellent with station tracks and fence lines cutting the tenement. The tenement is within the wet-dry climatic region of the ‘Top End’ and so field work is difficult to impossible between November and April.

Two major physiographic regions are present within the licence, the ‘Delamere Plains and Benches’ and the Sturt Plateau. The former covers the western part of the licence and is underlain mainly by Antrim Plateau Basalts. The Aroona drainage complex is within this region. The latter covers the eastern half; it represents the remnants of an extensive peneplain underlain by Cretaceous sediments and now with extensive ferricrete cover.

Mineralisation documented from the Delamere map sheet include large native Cu nuggets up to 4kg occurring as surface float within soil overlying the Antrim Plateau Volcanics. Localised copper anomalies in Cambrian units have been traced to malachite coated geodes weathering from Antrim Plateau Volcanic flow tops. Other base metal mineralisation from Cambrian formations in the Delamere map sheet are suggested by anomalous Pb, As, Ba, Co and Zn that have been reported from stream sediments samples and areas of outcropping sediments along the interpreted margin of the Daly Basin. Although semi-detailed stream sediment sampling programs have been conducted no significant diamond or kimberlite indicator minerals have been recovered to date (Beier et al, 2002). AMR’s exploration program represents the most detailed exploration in the district in around 20 years, and has focused on a broader range of target commodities than past exploration, which was directed at diamonds and base metals, the latter in restricted target areas.

2.0 Tenure

EL 28026 was granted to Imperial Granite and Minerals Pty Ltd (100 %) on 23 November 2010, and was purchased by AMR in 2012. The tenement comprises 150 sub-blocks for approximately 497 km². The tenement is within the Willeroo (PPL 1040; NT Portion 3983), Aroona (PPL 1038; NT Portion 3982) and East Mathison (PPL 1039; NT Portion 7061) pastoral properties. The area is subject to Native Title Claim NTD6011/02 (Willeroo / Delamere; 20/06/2002). See Figure 2.

An application of 50% reduction of the licence was submitted to mines department under section 29 of Act by end of the 4th year of tenure, and the application was approved by the department on 28th November 2014.
Figure 1. Regional Location of Victoria Highway EL 28026
3.0 Geology

The tenement lies wholly within the 1:250,000 Delamere sheet, which was re-mapped by the Northern Territory Geological Survey (NTGS) and published in 2002 (Beier PR et al).

EL 28026 covers the junction between the Daly and Dunmarra Basins and the Kalkarinji Province (Figure 3 &4): the latter underlies both the Daly and Dunmarra Basins. Much of the tenement consists of early Cambrian Antrim Plateau Volcanics, which belong to the extensive flood basalt event of the Kalkarinji Province. Sedimentary intercalations are known to occur within the basaltic rocks, having been identified by government (NTGS) mapping as sandstone and limestone. Field investigations during the IGM tenure (Green M, 2010) noted that these rocks were strongly ferruginous. There is little outcrop of the basaltic rocks with much of the area being soil and alluvium covered. The sedimentary component has been mapped in outcrop in the southwest and in the central northern portion of the licence.

Outcrops of Cambrian Daly Basin Tindall limestone have been mapped immediately to the north and east of the licence. It is likely that the limestone extends into the licence beneath cover rocks. Cretaceous sandstone, siltstone and minor conglomerate overlie the older rocks in the eastern third of the licence; the lateritised Cretaceous capping represent remnants of the peneplaned Sturt Plateau.
Figure 3: Location map of EL 28026 with background 250k geology
Figure 4: Stratigraphic relationship of geology on the Delamere 250k geology mapsheet (Fig. 3).
4.0 Historical Exploration

A study of the NTGS Strike database plus previous Imperial Granite & Minerals Pty Ltd work has shown that significant exploration has been completed historically in and around EL 28026.

4.1 Geological Survey Mapping

EL 28026 lies within the Delamere 1:250,000 mapsheet, for which the geological map was produced by the Northern Territory Geological Survey in 2002 (Beier et al., 2002; Cutovinos et al., 2002). The tenement lies at the outcropping contact between the Daly Basin and the Antrim Plateau Basalt (Figures 3 and 4). Mafic volcanic units and interbedded sediments of the Antrim Plateau Basalt from the Kalkarinji Province that underlies the Daly Basin. These are overlain by thin Cretaceous sediments (“Dunmarra Basin”), and subsequently lateritised in the Tertiary.

4.2 AP 1693 Continental Oil Company of Australia Ltd

(CR1967-0011, -0012, 1968-0017)

Exploration in the Daly Basin looking for phosphate. Unit with most promise was the Cambrian Tindall Limestone with P2O5 consistently >0.5 %. None of their work extended on to EL 28026, though it may be present beneath cover.

4.3 AP 2068, 2328 Metals Exploration NL / Freeport of Australia Inc.

(CR1968-0035, 1979-0047)

The Antrim Copper Project covered 20,000 km², mostly in the NT but also extending into Western Australia. The project was focussed on finding copper mineralisation within the flood basalt package, similar to the Keweenaw Peninsula deposits in Michigan, USA. About 10,000 stream sediment samples were collected and tested for copper only. Numerous mineralised occurrences were discovered or re-located, and these were tested with geophysics and many were ‘prospect-scale’ drilled. Although some of this work covered EL 28026, no anomalies were identified within. Some of these samples are recorded in the NTGS STRIKE database, but none from within EL 28026 appear to have survived.

4.4 EL 1904 AO Australia Pty Ltd

(CR1980-0103, 1981-0069)

Diamond exploration covered part of EL 28026. Twenty-one from 58 alluvial gravel samples contained chromite, but all were negative for kimberlite. The source of the chromite the Kalkarinji Basalts.

4.5 EL 1847 & 3091 Mineral Deposits Ltd

(CR1981-0050, 1982-0040, 1983-0026)

Soil sampling for base metals and gravel sampling for diamonds was carried out. The sampling did not extend in to EL 28026.

4.6 EL 3576 Freeport of Australia Inc.

(CR1983-0272, 1984-0126)
This licence covered the northwest corner of EL 28026. An airborne geophysical survey identified nine anomalies. None were within EL 28026. No diamonds or other minerals of economic interest were found.

4.7 EL 4766 Northern Cement Pty Ltd
(CR20080780)
Exploration focused on the Tindall Limestone in the Daly Basin. Here are no outcrops of this on EL 28026. The magnesia content was too high for cement production.

4.8 EL 6633 & 6881 Stockdale Prospecting Limited
These licences involved a Joint Venture with Poseidon Exploration Limited, where Stockdale explored for diamonds and Poseidon for base metals. Initial sampling showed great potential for both commodities. An area of great interest to Poseidon was near West Camp Oven Bore (Mathison Creek Prospect), where baryte veins associated with Pb-Zn-Ag anomalies were investigated. West Camp Oven Bore is within EL 28026, adjacent to the rocks of greatest interest here. The results of the work here are not in the NTGS STRIKE database, but are recorded in Poseidon’s various reports to NTDME.

4.9 EL 8868 NT Gold Ltd
(CR19976-0053)
No work completed, but mentions clean, high-grade baryte (1 to 6 m wide and 800 m long) in the Willeroo Fault. There is no map in the report to show this site, but there is a MODAT baryte occurrence ~13 km north of EL 28026.

4.10 EL 25807 Imperial Granite & Minerals Pty Ltd
(CR2008-0806)
The focus was on base metal exploration within the Antrim Plateau Volcanics. Zones of greatest interest were intercalated sediments and faults. Ten rock chip samples were collected on EL 28026, including some iron-rich samples with weakly anomalous Au, Pb and Zn near West Camp Oven Bore. See Figure 5 for rock sample locations. The project was terminated due to the 2008 Global Financial Crisis.

5.0 EXPLORATION COMPLETED WITHIN THE RELINQUISHED BLOCKS

5.1 EL 28026 Imperial Granite & Minerals Pty Ltd (Year1:2010-2011)
In the first year of tenure, a brief field visit was made to EL 28026 to confirm whether previous reports of copper mineralisation in the area were correct. Three rock chip samples were collected. But none of these samples was within relinquished area. Sample locations are showed in Figure 5.
Further activities were planned by the tenement holder Imperial Granite and Minerals, but the work failed to go ahead due to lack of available funds as a result of the prevailing economic conditions. The licence was subsequently purchased by AMR. A Variation of Conditions was lodged with NTDME by AMR and this was approved by the department.

5.3 Australian Minera Resources Pty Ltd (Year 3: 2012-2013)

In the third year of tenure, AMR’s consulting geologists Eupene Exploration Enterprises P/L recommended a low altitude, close spaced magnetic-radiometric survey by UTS Geophysics of Perth be carried out. The survey was planned to take place during the 2013 dry season so that on completion there would be sufficient time to analyse the data and instigate ground follow up. Unfortunately, for various operational and other contractor-related reasons, UTS Geophysics delayed the programme and completed a low level airborne geophysical survey between November 21 and December 5 2013 over entire area covered by EL 28026 with a total line length of 2,928km. The survey on the relinquished blocks is showed in Figure 6.
5.4 Australian Minera Resources Pty Ltd (Year 4: 2013-2014)

5.4.1 Geophysical Interpretation

Alterrex Pty Ltd were commissioned to review the airborne geophysical data in the light of some features of interest in the data and the complexity introduced by the widespread presence of flood basalt at or near surface. Their report is present in Appendix 1.

For the magnetic anomalies and uranium anomalies as interpreted from the airborne geophysical data, pls see Figure 7 for reference, there’re some small uranium anomalies on the relinquished blocks, and the anomalies seems not due to radon leakage from springs as is often the case, and seems to be associated with a geological structure and needs to be explained.
**Figure 7:** Interpretation Image of Airborne Survey showing anomalies on retained and relinquished areas
5.4.2 2014 Stream Sediment Survey

In July 2014 EEE implemented a stream sediment survey of EL28026. The intention was to collect samples over the entire EL on a sampling density of one sample per 1-2km², but access difficulties were encountered on part of the relinquished area, only a few stream sediment samples were collected from relinquished blocks in this survey. See Figure 8 for the location of these samples. Assays of these samples can be found in Appendix 2.

5.4.3 Geological Mapping and Rock Sampling

Prospecting of the geophysical anomalies and reconnaissance rock sampling thereof was conducted in conjunction with the stream sediment sampling programme. A total of 18 rock samples were collected. But none of these samples were within the relinquished area. Location of rock sampling as showed in Figure 8 below.
Figure 8: 2014 Stream Sediment and Rock Chips samples location within the retained and relinquished area of EL28026
6.0 Conclusions

Since the acquisition of the Exploration Licence from IGM, AMR has done the necessary preliminary exploration on the entire tenement, based on the work as completed by end of 4\textsuperscript{th} year of tenure, AMR’s exploration consultant Mr. Geoff Eupene of Eupene Exploration Enterprises recommended the company to surrender some blocks which are not prospective as expected. As recommended, the area retained contains the edge of the Daly basin. To the immediate east of this is a quite strong uranium anomaly which is most likely associated with the basal sediments of the Daly basin as they are further north. There is also potential for base metals, mainly lead and zinc, and also rare earths in this anomaly. The M1 and M2 magnetic anomalies as interpreted from the airborne survey result are also important targets for further work, so these areas should be retained.

The tenement is covered by three stations including Willeroo, Aroona and Mathison, however, the latter two stations have some problems of access, but were concluded as not so prospective and not worth to make further efforts based on the available exploration data and information, in order to focus exploration on the most prospective area, and as required by Section 29 of the Act, AMR decided to relinquish half of the blocks and submitted the application to the department on Nov. 21, 2014, this application of title area reduction was approved by the department on Nov. 27, 2014.