

EL 26942 – LEAKY BORE

YEAR 4 ANNUAL REPORT

For the Period

5 August 2012 to 4 August 2013

Compiled By

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Commodities Sought – Nickel, Copper, Cobalt

MAP REFERENCE: Illogwa Creek 250K - Sheet SG53/15

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SUMMARY

This report presents the work completed during the fourth year of tenure on the Leaky Bore Tenement (EL 26942).

Work focussed on reassessing the tenement to host nickel sulphides by Mithrils Joint Venture partner – MMG Exploration Ltd.

Field work completed during the reporting period included

- Helicopter assisted stream sediment sampling 76 samples.
- Re-assay of pulps 54 samples
- Review of all Mithrils historic data by MMG

This work identified a number of targets that will be followed up on the ground in the next reporting period with this work consisting of ground truthing geochemical anomalies and ground geophysics to delineate drill targets.

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APPENDICES

Appendix 1:	Surface sample geochemical data Digital file: EL26942_2013_A_02_SurfaceGeochem.txt
Appendix 2:	Surface sample QAQC geochemical data Digital file: EL26942_2013_A_03_QAQCGeochem.txt
Appendix 3:	File listing information

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	Digital file: EL26942_2013_A_04_FileListings.txt	

1 INTRODUCTION

This report presents the work completed on the Leaky Bore Tenement (EL 26942) by Mithril Resources and MMG Exploration Ltd (Mithrils JV partner) for the fourth reporting year which ended on the 4 August 2013.

EL 26942 is located approximately 150 km east-northeast of Alice Springs (Figure 1). The tenement can be accessed from the north via the Plenty Highway and station tracks or the south via the Ross Highway and station tracks. Station tracks provide for reasonable access to much of the tenement area.



Figure 1: EL 26942 Location.

Mithril initially targeted the area for Ni-Cu-PGE sulphide deposits associated with mafic and ultramafic magmatic rocks. This style of mineralisation has been identified on adjacent tenements. However, recent exploration (this report) indicates the area is also prospective for copper-cobalt rich sulphide mineralisation.

2 TENURE

Mithril Resources Limited (ACN 099 883 922) was granted exploration license EL 26942 for a six year period due to expire on 4 August 2015.

Project	Tenement	Tenement	Application	Grant	Area	Grant	Grant
	Name	No	Date	Blocks	(km ²)	Date	Period
Huckitta	Leaky Bore	26942	05/09/2008	129	402	05/08/2009	6 years

Table 1: EL 26942 (Leaky Bore) tenure.

3 GEOLOGY

3.1 Regional Geology

EL 26942 lies within the Cambrian aged Irindina Province (also known as the Harts Range Metamorphic Complex) and Proterozoic Aelieron Province of the south-eastern Arunta Inlier. The Irindina Province comprises the Harts Range Group, a volcanosedimentary succession that was metamorphosed to granulite facies during the Ordovician Larapinta Event (475-460 Ma). Litho-stratigraphical and geochronological data indicate that the Harts Range Group correlates with Neoproterozoic to Cambrian sediments of the adjacent Amadeus and Georgina Basins. Therefore, the Harts Range Group was probably deposited in a basin contiguous with, and possibly linking, the Amadeus and Georgina Basins.

While the Harts Range Group was metamorphosed to granulite-facies, however, sedimentation continued in the Amadeus and Georgina Basins. Structural and lithological evidence suggest that the Larapinta Event was extensional, with very deep burial required for the measured metamorphic conditions (30-35 km). Such an event was probably associated with mantle melting. The numerous mafic and ultramafic units found throughout the Irindina Province, although their timing is poorly constrained, may have intruded during the Larapinta Event. These intrusions are considered prospective for Ni-Cu-PGE sulphide deposits.

The Harts Range Group and Amadeus and Georgina Basins were structurally inverted and brought to the surface during the mid-Palaeozoic Alice Springs Orogeny (450-300 Ma).

3.2 Project Geology

EL 26942 contains approximately 50 % outcrop and 50 % aeolian and colluvial sand and gravel (Figure 2).

Where outcrop is available the dominant stratigraphic units are the Irinndina Gneiss and the Riddoch Amphibolite. The Irindina Gneiss is a quartz-feldspar-biotite +/-garnet gneiss with interbedded massive amphibolites with lesser calc-silicates and marble. The Riddoch amphibolites are massive to compositionally layered ambhibolite intervalated with garnet-biotite-feldspar-quartz gneiss and rare quartzitic units.

The area has been subjected to intense deformation and metamorphism (as outlined in regional geology above).

The area is considered prospective for;

- Ni-Cu-PGE mineralisation associated with mafic and ultramafic intrusions
- "Basil type" Cu-Co semi-massive sulphides
- Vein-style REE-Th mineralisation
- Uranium mineralisation



Figure 2: Geology of EL 26942 (from published 1:250K geology map sheet).

4 HISTORICAL EXPLORATION WORK COMPLETED

Numerous companies and individuals have explored in the general area covered by EL 26942.

A detailed synthesis of previous exploration work is contained in the first year of tenure report.

4.1 Mithril work completed during 2009 – 2012

Work completed during this period included

- Diamond, RC and Aircore drilling
- Rock chip and Trench sampling
- VTEM surveys
- Moving loop and fixed loop ground EM surveys
- DHEM surveys
- Airborne magnetics
- Ground gravity surveys

Comprehensive details of all work completed is included in previous annual reports.

5 MITHRIL WORK COMPLETED DURING REPORTING PERIOD

Throughout the current reporting period, exploration programs included a reconnaissance surface geochemical sampling program and re-analysis of existing pulps from previous rock chip sampling.

5.1 Surface Geochemical Sampling

Aim of the surface geochemical survey was to identify the presence of coincident Ni-Cu-PGE anomalism that may represent magmatic nickel sulphide mineralisation. Due to the undulating topography and well incised valleys, stream sediment sampling was considered to be an effective targeting technique. In total, 76 samples were collected over the tenement over a 2 week period in August 2012 (Figure 3). Each sample involved in-field collection of 15kg of -1.56mm material. The fine fraction of this material was analysed for trace element geochemistry.

Unfortunately, the survey failed to identify any areas of coincident Ni-Cu-PGE anomalism. Some samples returned anomalous values of Ni, Cu and Co individually and occur close to a large, regionally extensive outcropping amphibolite – which is interpreted to be the source of the anomalism. The anomalies are scheduled for follow-up but are ranked as a low priority. The heavy mineral concentrate of selected samples showing chalcophile element anomalism (e.g. either elevated Ni or Cu) was picked for PGE and sulphide grains. None of the samples showed any signs of PGE or sulphide grains, consistent with their fine fraction results.

One of the methods of differentiating the different mafic suites in the project area is through lithogeochemistry – specifically REE and some trace elements. Previous rock samples collected on the project had been not been analysed for REE elements or did not have high resolution data for a number of key trace elements.

In order to assist interpretations, pre-existing pulps from rock chip samples were re-analysed for the required elements and REEs. Data from these samples has been included in this report (Appendix 1 and 2).



Figure 3: Geochemical sample locations on EL 26942.

6 CONCLUSIONS AND PLANNED WORK 2012-13

In the previous reporting period, ground reconnaissance of VTEM anomalies had identified two anomalies – Target 11 & Target 9 – that despite being inconclusive as to the nature of the EM response, were interesting enough to warrant ground EM as a further test (Figure 4). The plan was to complete ground EM on Target 11 in this reporting period. This was meant to occur concurrently with the EM surveying of anomalies picked from the airborne magnetic survey (due to pastoralist concerns) and waiting for heritage clearances to drill test the magnetic anomalies delayed the planned EM work till the end of this year at the earliest. Once the magnetic anomalies in the eastern project area are drill tested in October 2013, those validated as mafic-ultramafic rocks will be covered with ground EM; at which time, Target 11 will also be covered with ground EM.

Target 9 is a moderate EM conductor with associated minor geochemical anomalism. However due to its location, it is near impossible to access Gertrude via foot particularly for an EM crew with equipment. We are looking at feasible ways of getting an EM crew with equipment to survey Gertrude. Putting in a track or helicopter-supporting the survey crew are not feasible.



Figure 4: VTEM anomalies scheduled for ground EM.

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