EXPLORATION LICENCE EL 8093
ALLANS BORE, N.T.
FIRST RELINQUISHMENT REPORT

Prepared for
Roebuck Resources NL
by
S.B. Warne

May, 1995
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SUMMARY

Alans Bore Exploration Licence EL 8093 was granted to Roebuck Resources NL on 7 June, 1993. The original area of 297 graticular blocks will be reduced to 149 blocks on renewal of the licence in June, 1995.

The area to be relinquished covers strata of lower magnetic susceptibility flanking sand-covered, magnetically anomalous Arunta Complex rocks.

This report records the results of geochemical samplings within the relinquished area.
1. INTRODUCTION

Exploration Licence 8093, covering 297 graticular blocks, was applied for to explore for gold and base metal deposits within magnetically anomalous Arunta Complex rocks in the southern portion of the Illogwa 1:250,000 Sheet area.

The licence is located approximately 160 kilometres east of Alice Springs. Access can be either via the Plenty River Highway and Indiana Station or Ross River Highway and Numery Station. The area extends over portions of Indiana Pastoral Lease (north of Latitude 23° 30'), the Numery Pastoral Lease (south of Latitude 23° 30') and vacant Crown Lands within the northern margin of the Simpson Desert.

Roebuck Resources NL has carried out field appraisals of four magnetic anomalies involving lag and rock geochemistry and RAB drilling for bedrock samples over three anomalies.

2. GEOLOGY

2.1 REGIONAL GEOLOGY

The regional geology is described in Shaw (1990) and the geology of the Illogwa Creek 1:250,000 sheet area is described in Shaw and Milligan (1969). The latter description includes a summary of magnetic interpretations by Wells, Milsom and Tipper (1966, unpubl.) and gravity interpretations by Barlow (1966, unpubl.) and Vale (1965, unpubl.) which describe probable basement features beneath cover.

The Illogwa area is the southeastern portion of the central Australia Arunta orogenic domain. Basement rocks of the domain are Lower Proterozoic medium to high grade metamorphics which accumulated as sedimentary and volcanogenic rocks in an east-west trough. These rocks have been divided into three broad divisions on generalised gross lithologies which provide a loose chronostratigraphic classification.

Division 1 rocks are felsic and mafic granulites derived from mafic and felsic volcanogenic rocks interbedded with varying proportions of pelitic and calcareous sediments.

Division 2 rocks are dominantly schistose pelitic metasediments and quartz-felspar gneisses (meta-felsic volcanics in part) with carbonate horizons and some mafic rocks.

Division 3 rocks are pelitic schists and quartzites.
Deep burial, metamorphism and accompanying folding and faulting is correlated with the 1800 Ma Strangways Event accompanied by intrusion of granites and basic igneous rocks. Post-tectonic granites and basic igneous intrusion followed.

After deposition of Amadeus Basin Sediments to the south the Carboniferous Alice Springs Orogeny reactivated basement faults. Thrust faulting was extensively developed along the northern margin of the Amadeus Basin affecting both cover and basement strata.

2.2 GEOLOGY E.L. 8093

The Licence area is mainly covered by veneers of Tertiary to Recent sediments.

A Miocene laterite surface developed on basement rocks was progressively eroded during later Tertiary times as clays, sands and carbonates infilled shallow drainage depressions, including evaporite lakes. Quaternary sands now cover almost the entire area.

Basement outcrop occurs in the north of the Licence as a series of separated hills and low rises in the Acacia Bore area, one small hill, low rises and rock surfaces at Desert Storm and as low outcrop and subcrop in the bed of an interdune lake at Jurassic Park. These rocks, described in other sections of this report, are dominantly felsic and mafic granulites, carbonates and iron formations conforming to Arunta Division 1 strata with lesser pelitic schists possibly correlating with Division 2.

An interpretation based on published geologic mapping and geophysics for Illogwa (Figure 3) suggests E.L. 8093 covers a west-northwest trending zone of high magnetic susceptibility Division 1 strata flanked by much lower susceptibility Division 2 strata.

Magnetics and gravity values define an overall north-northwest structural trend through the sheet area consistent with other major basement fracture features in central Australia, e.g. Woolanga Lineament (Shaw, 1990).

3. PREVIOUS EXPLORATION

Previous recorded exploration has been confined to search for uranium within Cainozoic cover sediments by Agip Nucleare Australia Pty. Ltd. (1977-1979) and Afmecco Pty. Ltd. (1980). These searches were unsuccessful but the reported exploration provides reliable data on surface sampled basement rocks, the cover sequence, depth of cover and nature of concealed basement.
4. AEROMAGNETIC AND GRAVITY SURVEYS

Aeromagnetic surveys were completed over the Illogwa 1:250,000 sheet area by the Bureau of Mineral Resources in 1962 (southern half as part of the Simpson Desert survey) and 1963-64 (northern half as part of the Georgina Basin Survey). Lines were flown east-west and spaced 5-10 km apart. Contours for this coverage are shown on Figure 6.

Gravity surveys were done in 1961-1962 as part of a regional reconnaissance of the Georgina Basin.

A summary of interpretations for these surveys is given in Shaw and Milligan (1969). The licence area is interpreted as a west-northwest-north-northwest trending zone of high magnetic disturbance with steep gradient anomalies suggesting near-surface basement. This zone coincides with a minor gravity high (ridge).

In 1981 the N.T. Department of Mines and Energy completed an aeromagnetic survey over the Brahma 1:100,000 sheet at 500m. east-west line spacing and 100m terrain clearance. This covered the most northerly portion of E.L. 8093 in the Acacia Bore area (see Figure 7).

5. SURRENDERED AREA OF EL 8093

The locations of surrendered graticular block areas are shown on Figure 1, portion of the Illogwa 1:250,000 sheet tenement plan.

The surrendered areas are those surrounding magnetic anomalies designated 1 to 5 in Figure 2.

6. WORK COMPLETED IN SURRENDERED AREAS

The locations for lag samples collected within surrendered areas are shown on Figure 4. Logs and assays for these samples are given in Appendix I.

Samples M25-M27, magnetic lag material from the Numery-Indiana boundary track, were slightly copper anomalous (circa 30 ppm) but not considered significant.

Magnetic lag samples M15-M17 were anomalous in arsenic, tin and lead. The pisolithes comprising the samples are thought to have been transported northwards from the area of Desert Storm magnetic anomaly (Figure 2).
7. REFERENCES


APPENDIX I

Sample Logs and Assays
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 Many areas trace to Diatom Stromatolite

 SAMPLED BY:  
 DATE:
ATTENTION P ALLCHURCH
ROEBUCK RESOURCES NL
PO BOX 690
WEST PERTH WA 6872
AUSTRALIA

ANALYTICAL REPORT.

COMMENTS: ATTENTION: S WARNE, P ALLCHURCH
COMMENTS: UNSPEC....

JOB INFORMATION
JOB CODE: 269.0/936029
NO. SAMPLES: 17
ELEMENTS: 11
CLIENT O/N: 0715
DATE RECEIVED: 02/11/93
DATE COMPLETED: 25/11/93

LEGEND
'X' = LESS THAN DETECTION LIMIT
'N/L' = SAMPLE NOT RECEIVED
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'(' ') = RESULTS STILL TO COME
'I/S' = INSUFFICIENT SAMPLE FOR ANALYSIS
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STD: PC02
9000

STD: PC02
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END OF REPORT

2450