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**WOODCUTTERS MINE**

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**Title:** ANNUAL REPORT  
EXPLORATION LICENCE 7522  
DARWIN RIVER AREA  
NORTHERN TERRITORY  
09/12/94 TO 08/12/95

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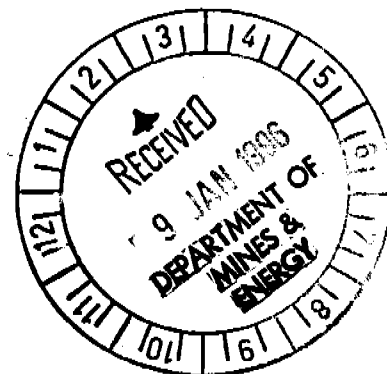
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Report No. 20235

CR 96 / 74

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**Author:** I.K. Butler

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### ***SUMMARY***

EL 7522 is part of a contiguous block of tenure in the Darwin River-Acacia area, Northern Territory which is being explored from Woodcutters Mine. The EL is located within the Proterozoic Pine Creek Geosyncline. It is on the northern margin of Archaean basement (Rum Jungle complex) and Early Proterozoic stratigraphy from basement to top of the South Alligator Group has been mapped or interpreted within the EL. It is considered prospective for polymetallic vein type and stratiform mineralisation. Recent work in nearby tenements has indicated it may also be prospective for stockwork/vein type gold in quartz mineralisation.

Previous exploration was mainly targeted at base metals and uranium. Anomalous gold was however located by Northern Gold, with only minor follow up work undertaken.

The licence was systematically laterite and stream sampled by Aztec in Year One. Follow up soil sampling on low level stream anomalies gave negative results. Work in Year Two mainly comprised follow up RAB drilling at a Cu, Zn laterite and BLEG stream anomaly (the Highway Anomaly). A N-S trending zone of anomalous but relatively low Cu, Zn and Au was defined. The zone is associated with an aeromagnetic anomaly, and is open to the south. No field work was conducted during Years Three and Four.

## **1. INTRODUCTION**

Exploration Licence 7522 was granted to Aztec Mining Company Limited on 9th December 1991 for a period of 6 years. Aztec was subject to a successful takeover by the Normandy Group in early 1994. The licence comprised 19 blocks. A 50% relinquishment took place at the end of Years Two, Three, and Four leaving a total of three blocks.

It is located approximately 50km SSE of Darwin (figure 1).

The licence is considered to be prospective for base metals and gold.

The purpose of this report is to outline work conducted during the fourth year of tenure and propose a work programme and expenditure for Year Five.

## **2. CONCLUSIONS**

1. Low level Cu-Zn mineralisation at the Highway Anomaly is probably stratiform in origin, and appears to occur within the Koolpin Formation.
2. Additional exploration is required to close off a coincident but low level Cu, Zn and Au C horizon geochemistry anomaly outlined at the Highway Anomaly.

## **3. PREVIOUS EXPLORATION**

Modern exploration began in 1952 when the BMR completed the first major airborne radiometric survey of the district.

The BMR identified the Brodribb radiometric anomaly which is located west of EL 7522. Exploration over the anomaly included SP, magnetic, radiometric and geological surveys, costeaning and diamond drilling. Radioactivity was found to be caused by thorium rather than uranium (Boots, 1990A).

### **Uranerz (EL 2159) CR81/079**

Exploration activity consisted of gridding, geological mapping, ground scintillometry and the drilling of six percussion drill holes totalling 334m over the Brodribb radiometric anomaly. Analyses confirmed thorium as the main source of radioactivity.



**CEGB Exploration (Australia) Pty Ltd (EL 4775) CR88/340, CR90/175**

Exploration was initially aimed at uranium mineralisation. Work included reprocessing of NTGS airborne data and regional INPUT and ground geophysical surveys. Two prospects were identified from this work; Luggs anomaly (north west of EL 7522) and Brodribb prospect.

CEGB conducted a gamma ray spectrometry survey over the Brodribb prospect, again confirming thorium as the main source of radiation.

Ground magnetic, radiometric and ROAC (Radon-on-activated charcoal) surveys were conducted over Lugg's anomaly. The anomaly was tested with 19 percussion drill holes but no uranium mineralisation was encountered. Base metal values from (auger) holes and percussion drilling were low.

In 1989 under a joint venture agreement with Compass Resources the exploration emphasis changed from uranium to base metals. Samples every 400 metres along the new Darwin-Katherine power line were collected but no significant results were recorded.

Rock chipping of a chert interpreted to be the Ella Creek member of Koolpin Formation, 4km east of the Brodribb anomaly (within EL 7522) contained up to 0.4% Pb.

**Auridiam (EL 6347) CR90/334**

Literature search and field examinations were directed towards uranium, base metal and gold exploration. There was little evidence of Whites Formation sediments which led to the conclusion that there was little potential for either uranium or base metal mineralisation.

Exploration generated three target areas for gold mineralisation, all of which are located south of EL 7522. Rock chip samples returned spot highs of gold (max 7.08 and 1.3ppm Au), however Auridiam concluded there was little potential for significant gold mineralisation.

**Northern Gold (EL5854) CR89/695**

Exploration conducted included mapping, BMR aeromagnetic data reinterpretation, stream sediment sampling (BLEG -6mm size fraction), reconnaissance soil (1km x 1km grid) sampling and rock chipping.

Stream sediment sampling identified three drainages anomalous in gold (1 to 1.5ppb Au). Soil sampling (BLEG) highlighted two anomalous samples (31.7 and 3.4ppb Au). Two rock samples were collected from the region with no anomalous results, and the licence was surrendered.

**Aztec Mining Company Ltd (EL 7522)**

In the first year of tenure, Aztec carried out regional laterite sampling, stream sediment sampling and rock chip sampling in the search for base metals and gold.

A number of low level base metal and gold -40 mesh stream sediment samples were found within and stratigraphically above the Acacia Gap Quartzite Member in the south of the licence (Grove 1992). Follow up -40 mesh soil sampling resulted in disappointingly low base metal and gold values. Only one sample was slightly anomalous in Zn (300 ppm), and a few were slightly anomalous for Au (max 0.02 ppm).

The laterite sampling resulted in a coincident Zn (max 1080 ppm) and Cu (max 165 ppm) anomaly in the north eastern corner of the licence. This anomaly, known as the Highway Anomaly, was the focus for further work in Year Two.

Work in Year Two comprised mainly follow-up RAB drilling on the Highway Anomaly. A small BLEG stream sediment sampling programme was conducted in the same area to follow-up an anomaly from earlier work.

The anomalous stream BLEG sample could not be repeated. RAB drilling outlined a N-S trending zone of anomalous, but relatively low, Cu, Zn, and Au.

No field work was conducted in Years Three and Four.

#### **4. GEOLOGY AND MINERALISATION**

EL 7522 lies on the northern margin of the Archaean Rum Jungle Complex. It is unconformably overlain by Early Proterozoic clastic and dolomitic units of the Noamona Group, Crater Formation and Coomalie Dolomite respectively. Shales and calcareous shales of Whites Formation overlie the Coomalie Dolomite which is conformably overlain by shales and siltstones of Wildman Siltstone with interbedded quartzite and of the Acacia Gap Quartzite member. Shales, cherts, tuff, iron formation and minor greywacke of the South Alligator Group complete the stratigraphic sequence. The sediments were intruded by sills of Zamu Dolerite prior to regional deformation at about 1800my.

The entire stratigraphy from basement to the top of the South Alligator Group, Mt Bonnie Formation has been mapped or interpreted within the boundaries of EL 7522. The South Alligator Group is poorly exposed in this region.

A lateritic duricrust of tertiary age is well preserved over the northern portion of the licence, particularly on South Alligator Group sediments. This in turn has been overlain by Quaternary alluvium, and colluvium which hinders surface exploration.

The structure of the licence area is dominated by an early phase of N-S trending open folds. Major arcuate faults consistent with growth faults off basin "highs" have been interpreted from aeromagnetic/radiometric and geological data around the Rum Jungle Complex in the south of the licence area. These structures have been subsequently offset by a later phase of NE-SW trending structures, dominated by the Giants Reef Fault.

Uranium and base metal mineralisation at Rum Jungle and Woodcutters is concentrated in structures at the base of Whites Formation, whilst gold mineralisation at Sundance, Batchelor, is found within palaeokarst collapse breccias in Coomalie Dolomite.

## **5. WORK CARRIED OUT AND RESULTS**

No field work was conducted within EL 7522 during Year Four of tenure.

Digital data from an airborne magnetic/radiometrics survey flown for the NT Department of Mines and Energy in 1981 and which covered EL 7522 was purchased and processed. The data has been combined with a survey flown by Aztec and will be utilised for future interpretation of the geology and mineralisation controls in the region.

## **6. EXPENDITURE FOR YEAR FOUR**

Expenditure on the licence area for Year Four was:-

Wages/Salaries .....	\$450
Consultants .....	225
Vehicle Costs/Fuel .....	125
Geophysical data purchase and processing .....	550
Administration (15%) .....	<u>202</u>
<b>TOTAL</b>	<b><u>\$1,552</u></b>

## **7. PROPOSED WORK PROGRAMME AND EXPENDITURE FOR YEAR FIVE**

The proposed work programme for Year Five is as follows:-

1. Follow up ground magnetics - Highway Anomaly.
2. RAB drilling.
3. Follow-up RC/diamond drilling dependant on results.

The proposed expenditure for Year Five is \$8,000.



## 8. REFERENCES

- Butler, I.K. 1995. Annual Report Exploration Licence 7522, Darwin River Area, N.T. *Unpublished Report for Department of Mines and Energy.*
- Boots, M.K., 1990A. Final Report on EL 4775 for the area relinquished, 27 January 1990. CEGB Exploration Pty Ltd. *NT Department of Mines and Energy Library CR90/175.*
- Boots, M.K., 1990B. Final Report on EL 4775 for the area relinquished, 27 July 1990. Compass Resources. *NT Department of Mines and Energy Library CR90/612.*
- Crick, I.H., 1983, Noonamah 1:100,000 Geological Sheet (5172) and explanatory notes. *BMR.*
- Fordyce, I.R., 1988. Final Report on EL 4775 for the 27 blocks relinquished at the end of the second year of tenure. CEGB Exploration Pty Ltd. *NT Department of Mines and Energy Library CR88/340.*
- Grove, A.D., 1992. Annual Report for Year One, EL 7522, Darwin River Project, NT. *NT Department of Mines and Energy Library.*
- Monti, R., and Stokes, M., 1989. Final Report on EL 5854 to August 1989. Northern Gold NL. *NT Department of Mines and Energy Library CR89/695.*
- Ormsby, W.R., 1994. Annual Report for Year Two Exploration Licence 7522. *Unpublished Report for NT Department of Mines and Energy*
- Romanoff, A., 1990. Exploration Report EL 6347, Manton Dam - Rum Jungle Area, NT. Auridium NL. *NT Department of Mines and Energy Library CR90/334.*
- Uranerz Company Report, 1981. Final Report on EL 2159 Rum Jungle Area, NT, 13 March 1980 to 12 March 1981. *NT Department of Mines and Energy Library CR81/079.*