Title: ANNUAL REPORT
EXPLORATION LICENCE 7034
DARWIN RIVER PROJECT
NORTHERN TERRITORY
21.02.94 - 20.02.95

Project Name: DARWIN RIVER

Map Sheets: DARWIN SD 52-43 1:250,000

Commodities: COPPER, LEAD, ZINC, GOLD

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Date: 17 March 1995

Volumes: VOLUME 1 OF 1

Accepted by: [Signature]

Distribution:
1. NT Department of Mines and Energy
2. Woodcutters Mine, NT
3. Posex, Adelaide

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Report No. 18472
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1. Location and Tenure Plan 1:1,000,000
Exploration Licence 7034 lies on the northern margin of the Archaean - early Lower Proterozoic Rum Jungle and Waterhouse basement complexes. The southern margin of the licence is bound by a prominent E-W trending ridge of Acacia Gap quartzite and minor outcrops of Wildman Siltstone and Koolpin Formation. In the north, subcropping Mount Bonnie and Burrell Creek Formation sediments form low hills. The majority of the licence is covered by a regolith comprised of alluvial sands, clays and laterite.

Previous exploration efforts by the BMR, Uranerz and CEGBEA were directed towards uranium. Two prospects were identified, Brodribb and Lugg's, but radiometric anomalies were attributed to thorium rather than uranium.

Work carried out by Aztec Mining Company Limited during the first year of tenure consisted of a literature search, rock chip sampling, -40 # and BLEG stream sediment sampling and laterite sampling. Several base metal and gold anomalies were identified. Follow-up work on the two gold anomalies failed to duplicate previous results.

During the second year of tenure RAB drilling over the base metal anomalies delineated a large (1700 x 300m) Pb and Zn anomaly in the south of the licence. Geological mapping and ground magnetics were conducted. The peak geochemistry high was tested with a diamond drillhole.

Diamond drilling identified minor stratiform base metal mineralisation in a biotite schist of the Koolpin Formation stratigraphically above a limestone rich sequence.

Follow up stream sediment sampling has failed to confirm an earlier stream gold anomaly.

Additional geochemical sampling is planned to follow-up low order Au anomalies generated by previous surveys.
1. **INTRODUCTION**

Exploration Licence 7034 is located on the Noonamah (5172) 1:100,000 sheet and is approximately 55km south of Darwin (Figure 1). Access is gained via the Stuart Highway and numerous rural roads and tracks.

The licence is considered prospective for base metal and to a lesser extent gold mineralisation.

The purpose of this report is to discuss the work conducted during the fourth year of tenure, present results and propose a work programme and budget for year five.

2. **CONCLUSIONS**

(i) Recent exploration has revealed EL 7034 is prospective for gold mineralisation associated with the Pine Creek Shear zone which is interpreted to pass close by.

(ii) Exploration to date has revealed there is strike continuous weak stratiform base metal mineralisation in carbonaceous mudstone of the Lower Koolpin Formation.

(iii) Additional geochemical sampling is required to follow up samples with weakly elevated Au obtained from earlier surveys.

3. **TENURE**

Exploration licence 7034 originally comprising 13 graticular blocks (40 km²) was granted to Nicron Resources Limited (100%) on 21st February 1991 for a period of six years. Exploration was managed by Aztec Mining Company Limited operator of the Woodcutters Ag-Pb-Zn Mine 80km south of Darwin. In early 1994 Poseidon Gold was successful in taking over Aztec Mining Limited.

The licence underwent 50% partial relinquishment at the end of the second, third and fourth year of tenure and is now comprised of two graticular blocks.
4. **PREVIOUS EXPLORATION**

1950's and 60's

The BMR identified the Brodribb uranium anomaly in the southern portion of EL 7034. Exploration activity over the anomaly included SP, magnetic, radiometric and geological surveys, costeasing and diamond drilling. Radiometric anomalies were found to be caused by thorium rather than uranium (Boots, 1990A).

1980 - 1981 Uranerz (EL 2159) CR81/079

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

1986 - 1990 CEGB Exploration (Australia) Pty Ltd (EL 4775) CR88/340 and CR90/175

Exploration was initially directed at uranium mineralisation (CR90/175). Work included reprocessing of NTGS airborne data, a regional INPUT and ground geophysical surveys. Two prospects were identified from this work; Luggs anomaly and Brodribb prospect.

CEGB Exploration (Australia) Pty Ltd conducted a gamma ray spectrometry survey over the Brodribb prospect, 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 drillholes but no uranium mineralisation was encountered. Base metal values from both ROAC (auger) holes and 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 power line were collected but no significant results recorded.
5. WORK CARRIED OUT AND RESULTS

There was no fieldwork conducted within EL 7034 during the fourth year of tenure. The base metal interests of Aztec, which included 100% of the Woodcutters Operation, were put up for tender and the final outcome was not resolved until the end of July. As a result work planned for EL 7034 was delayed whilst higher priority target areas were explored. Exploration conducted by Nicron in the region during 1994 has revealed EL 7034 is prospective for gold mineralisation in close association with the Pine Creek shear zone which is interpreted to pass close by. Additional geochemical sampling (RAB, soil) is planned for 1995 to follow up samples with weakly elevated Au obtained from earlier surveys within EL 7034.

6. GEOLOGY AND MINERALISATION

Exploration licence 7034 lies on the northern margin of the Archaean and Lower Proterozoic Rum Jungle and Waterhouse basement complexes. These are overlain by clastic and dolomitic units, shales and calcareous shales of the Early Proterozoic Namoona Group.

The licence area has exposures of Early Proterozoic Mt Partridge, South Alligator and Finnick River Groups.

Minor outcrops of Wildman Siltstone occur on the fringes of the prominent east-west trending ridge of Acacia Gap Quartzite along the southern boundary of the licence.

Koolpin Formation shales, siltstones and massive goethitic ironstone form lower outcrops along the northern slopes of the Acacia Gap Quartzite ridge. Outcrops of Gerowie Tuff have been mapped to the south east of the licence area (Crick 1983).

The north eastern corner of the licence area consists of low hills of subcropping Mount Bonnie and Burrell Creek Formation siltstones, shales and greywacke with northwest-southeast trending quartz veins.

The majority of the licence area is covered by a regolith comprised of sands, clays and laterite.
7. **EXPENDITURE**

The overall expenditure on EL 7034 for year three was as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries/Labour</td>
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<tr>
<td>Contract Services</td>
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</tr>
<tr>
<td>Printing/Stationery</td>
<td>129</td>
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<tr>
<td>Administration (15%)</td>
<td>142</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$1,091</strong></td>
</tr>
</tbody>
</table>

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8. **PROPOSED WORK PROGRAMME AND BUDGET**

The proposed work programme for year four is as follows:

1. Comprehensive review of all data collected to date ... $1,500

2. Follow up geochemical sampling (soil, rock, laterite) as required .................. $4,000

3. Data interpretation and reporting .................. $ 500

The estimated expenditure is $5,000 however should results be encouraging then additional work would be carried out.
9. REFERENCES


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