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PASMINCO EXPLORATION

Final Report
EL 9505 (Mount Riddoch)
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SUMMARY

Work under Exploration Licence 9505 consisted of literature research, incorporation of government topographic and geological information and company exploration data into a comprehensive GIS for the eastern Arunta Block, aboriginal site clearance, geological reconnaissance, and data interpretation.

Geological reconnaissance and checking of stream float in catchments thought to be anomalous, on the basis of historical data, revealed no indications of mineralisation. More detailed follow-up work within Exploration Licence 9504 nearby was similarly disappointing and so Pasminco decided to relinquish Exploration Licence 9505 after the initial twelve-month period.
1 INTRODUCTION

Exploration Licence 9505 Mount Riddoch was granted to Pasminco Exploration on July 18, 1996. The licence covered 15 graticular blocks (Fig. 1).

The exploration programme targeted the Harts Range sequence of the Central Tectonic Province of the Arunta Block. This sequence was considered to have potential for lead-zinc deposits although no mineralisation is known within the licence area.

2 GEOLOGY

The Arunta Block is a 200,000 sq. km. Proterozoic terrane with a long metamorphic and structural history (Shaw et al, 1984; Stewart et al. 1984; Shaw, 1990). The block is made up of a partly fault-bounded Central Tectonic Province of high-grade metamorphic rocks and a few granites, flanked by Northern and Southern Tectonic Provinces, which contain low-grade metamorphic rocks and numerous granites. The structural complexity of the block necessitated the establishment of a stratigraphic model which recognises three divisions based on facies assemblages and lithological correlation. These are as follows:

Division 1: Felsic and mafic granulites interpreted as metavolcanic rocks with intercalated sillimanite gneiss representing pelitic sediments, calc-silicate rocks representing calcareous sediments, and marbles

Division 2: Pelitic metasediments with common calc-silicate rocks and locally extensive amphibolites and felsic and mafic gneisses

Division 3: Metaquartzite and pelite sequence commonly occurring as outliers on the older divisions
The Central Province consists of Division 1 (locally called the Strangways Metamorphic Complex) and Division 2 (Harts Range sequence) rocks. Exploration Licence 9505 targeted the Harts Range sequence which can be recognised by a remarkable abundance of garnet, a lack of sillimanite, and generally shallow dips. It comprises pelitic metasediments, calc-silicates, amphibolites, and felsic and mafic gneisses.

3 WORK CARRIED OUT

3.1 Literature Research and GIS Compilation

Previous company data were checked using NTDME and AIESIS compilations. The most significant previous exploration programmes within and around Exploration Licence 9505 were carried out by Russgar Minerals (regional rock chip sampling, CR74/102), CRA Exploration (stream sediment sampling, CR81/64 and CR 82/52), Endras/Pancontinental Resources (stream sediment sampling, CR90/005 and CR91/400), and PNC Exploration Australia (airborne magnetic and radiometric work, CR95/525).

Government topographic information, AGSO/NTGS geological mapping, and company stream sediment and rock chip data for the licence area were incorporated in a comprehensive GIS for the eastern Arunta Block. The GIS allows easy selection of areas worthy of more detailed work.

3.2 Geological Reconnaissance

Orientation surveys indicated that stream sediment sampling is an effective technique in the eastern Arunta Block where outcrop is good and drainage is well developed, and it was decided that this method was an adequate primary exploration tool within Exploration Licence 9505.

Accordingly field work within the licence area consisted of follow-up of the CRA Exploration and Endras/Pancontinental Resources stream sediment surveys (Fig. 2).
Stream float was examined and reconnaissance geological mapping was undertaken in allegedly anomalous catchments.

Further work under Exploration Licence 9505 could not be justified after detailed follow-up work within Exploration Licence 9504 nearby could not confirm anomalies generated by the CRA Exploration and Endras/Pancontinental Resources stream sediment surveys.

4 CONCLUSIONS

Although previous geochemical work suggested that the northwestern part of the licence area is anomalous in copper and zinc, examination of stream float and geological reconnaissance revealed no indications of mineralisation. More detailed follow-up work within Exploration Licence 9504 nearby was similarly disappointing. Accordingly Pasminco decided to relinquish Exploration Licence 9505 after the initial twelve-month period.
REFERENCES


KEYWORDS AND LOCALITY

Keywords
PROTEROZOIC, METAMORPHIC HOSTED Pb-Zn DEPOSITS, STREAM SEDIMENT, ARUNTA, ALICE SPRINGS

Locality
ALICE SPRINGS SF53-14