FINAL REPORT
MINERAL CLAIMS S 1-5 AND 9-11
BONYA BORE AND
JERVOIS MINE AREA, NT

MC S 1-5: 17 November 1983 to 16 November 1993
MC S 9-11: 16 November 1983 to 15 November 1993

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DARWIN NT
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Final Report Mineral Claims S 1-5 and 9-11
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SUMMARY

Mineral Claims S 1-5 covered the old Cu-W workings in the Bonya Hills area and MCS 11 covered a magnetic anomaly near the Jervois Mine area of the Northern Territory. Mineral Claims 9-10 covered circular features in the Dneiper area of the Northern Territory. Geologically they are situated in the Early Proterozoic Arunta Block, a polydeformed highly metamorphosed orogen comprised of sediments and volcanoclastics and intruded by granites.

The Bonya Hills area has a number of scheelite and copper shows which occur within a calc silicate gneiss unit and amphibolite member of the Bonya Schist. They are interpreted to be genetically linked to granite emplacements (Shaw, R.D. 1990). The same calc silicate unit is host for copper, lead and silver mineralisation at the Jervois mines nearby.

The Mineral Claims were pegged by a prospector/miner Lindsay Johannsen and/or Petrocarb Exploration NL. Later on Petrocarb purchased Johannsen's interest to get 100% ownership and Petrocarb became a wholly owned subsidiary of Nicron Resources which in turn has become a wholly owned subsidiary of Aztec Mining Ltd. In most cases the ground work and evaluation were initially conducted by Lindsay Johannsen. Little or no work has been conducted on the claims since and they have been allowed to lapse.
1. **INTRODUCTION**

Mineral Claims S 1-5, 9-11 are located 250 kms (approximately) north east of Alice Springs in the Jervois Range and Dnieper areas of the Northern Territory (Figure 1). They are on the Huckitta 1:250,000 geological map sheet.

Access is gained via the Plenty Highway and then station roads.

The claims were held by Petrocarb Exploration N.L. but pegged by a local prospector/miner Mr Johannsen and were taken out in conjunction with a number of other leases in the area to explore primarily for W, Mo and to a lesser extent Cu mineralisation away from the two main centres of activity at Molyhil and Jervois.

The aim of this report is to outline the work conducted during the period of tenure.

2. **TENURE**

The tenure status is summarised below in Table 1.

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3. **CONCLUSIONS**

1. Work conducted by L Johannsen indicated there was little potential to outline significant reserves of mineralisation within Mineral Claims 1-5 in the Bonya Hills area.

2. Circular features noted on air photographs and covered by Mineral Claims 9 and 10 could be meteorite craters.
4. **PREVIOUS EXPLORATION**

The Bonya Hills area has a number of old tungsten (scheelite) and copper shows which were initially investigated by prospectors. Several shafts were sunk and secondary copper with a little chalcocyprite being won from quartz veins. The workings were systematically investigated in the early 1970's by Petrocarb, Fama Mines Pty Ltd and Central Pacific; which included drilling and mining. Geopeko conducted extensive exploration throughout the region in the 1980's.

The Jervois Mine (Cu Pb Zn and Ag) workings are located only 16 kms to the east of Bonya Hills. An operation to produce copper sulphate by leaching commenced in 1957 and continued sporadically during the early 1960's. A small mining operation (200,000 + pa) commenced production in 1981 (Plenty River Mining Co.) but ceased shortly after opening.

5. **GEOLOGY AND MINERALISATION**

5.1 **REGIONAL GEOLOGY**

The Jervois - Bonya Hills area is located within the Arunta Block, a polydeformed orogen which originated as a sequence of sediments and volcanoclastics within the period 2400 to 2000 Myr (Stewart, Shaw and Black 1984). The orogen was widely metamorphosed and granites intruded in periods from 1800 Myr to 900 Myr.

The Arunta Block is interpreted to be made up of a partly fault bounded Central Tectonic Province of high grade metamorphic rocks and a few granites, flanked by the northern and southern provinces which contain low grade metamorphic rocks and numerous granite intrusions. (See Figure 2). The block is surrounded on most sides by Proterozoic and Phanerozoic sedimentary cover.

The geology of the block has been subdivided into three divisions and the Jervois - Bonya Hills area is located within Division 2 comprising aluminous and siliceous sediments and a few mafic flows and sills.
5.2 LOCAL GEOLOGY AND MINERALISATION

In the Jervois region, division 2 cordierite - biotite schist and chlorite - biotite schist of the Bonya schist contain copper and lead deposits. Chalcopyrite lodes are localised within narrow boudinaged units of chlorite-garnet rock and small silver bearing galena lodes occur within manganese rich calc - silicate rock. The lodes are essentially stratabound and occur within units of magnetite quartzite, BIF and calc - silicate rock in the Bonya Schist (Shaw et al., 1984; Freeman, 1986; Whiting, 1986).

Scheelite occurrences occur alongside and within the same calc - silicate gneiss unit in the Bonya Schist as the base metals (Shaw et al., 1984; Freeman, 1986) however the scheelite occurrences are also localised in the Kings Legend Amphibolite Member of the Bonya Schist. They show a close spatial relationship to pegmatites and small granitoids, themselves at the margins of the large Jinka and Jervois Granite batholiths. These spatial associations suggest the scheelite deposits are genetically linked to granite emplacement (Shaw R D 1990).

6. WORK CARRIED OUT

MINERAL CLAIMS 1-5 - BONYA HILLS, JERVOIS RANGE

Mineral Claims 1 and 2 cover the strike extent of a small copper show Xanten (Mineral Occurrence No. 95 Huckitta 1:250,000 sheet) within a quartz schist of the Bellbird (Jervois Mine) type. No significant exploration was carried out on these leases other than cursory prospecting out from the workings.

Mineral Claim 3 covers Mineral Occurrence No. 102 White Violet on the Huckitta 1:250,000 sheet. It is a small W show where scheelite is hosted by skarn bands 3 to 6m wide. Lindsay Johannsen is reported to have mined 300 tonnes @ 0.5% scheelite from there. He commented the ore was very hard and grades marginal. No further work was reported by Petrocarb.

Mineral Claims 4 and 5 cover Mineral Occurrence No. 104 Samarrand, on the Huckitta 1:250,000 sheet. Lindsay Johannsen reported that weak tungsten mineralisation occurs in skarn or calc silicate hornfels over a 100m strike length. The mineralisation had been discovered by earlier exploration in the area (Goldfields or Central Pacific Minerals). He commented that the potential was poor and about 30 tonnes of ore @ 0.6% scheelite had been recovered from the area.
MINERAL CLAIMS 9 AND 10 DNEIPER AREA

These claims were pegged by Lindsay Johannsen over circular features on air photographs which may have indicated Kimerlite pipes. One hole was drilled on MCS and barren amphibolite rocks were encountered. Lindsay Johannsen considers the unique round feature in MCS 10 could possibly be a meteorite crater.

MINERAL CLAIM 11 - JERVOIS MINE AREA

Lindsay Johannsen reported this claim was pegged over an aeromagnetic anomaly. The exposed outcrop consists of schist and mafic intrusives. Traces of copper are visible and some vanadium had been detected. There are no records held by Aztec Mining that revealed any substantial work has been carried out on the leases by Petrocarb.
Generalized geological map of Arunta Block, showing major stratigraphic subdivisions and granite. Compiled from geological mapping, airphoto interpretation, and aeromagnetic interpretation by BMR, 1956-1976. Inset map shows location of Arunta Block in Southern part of Northern Territory.
7. REFERENCES

