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### FIGURES

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1. **INTRODUCTION**

The copper, lead and zinc gossan of the Gheko Prospect is located approximately 50km north-east of Alice Springs, in the Northern Territory (Figure 1). The summit of Bald Hill is the nearest topographic feature, about 1.6km to the south. The mineralisation was discovered in 1969 as a result of stream sediment geochemical sampling in the area of former Authority to Prospect 1721.

Subsequently, forty "Cobra" drill samples were collected, induced polarisation surveys, geological mapping and a four-hole percussion drill programme were completed. Grades of 7.8% zinc and 8.5 g/t silver over a 1.5m interval (PH2) were the best obtained.

2. **TENURE**

The area was initially held as part of AP 1721. MCs,38 (formerly MC 463H) of 33 hectares was granted to Central Pacific Minerals N.L. on 22nd March 1984. An application for renewal of MCs 38 for a further 10 years was lodged with the N.T. Department of Minerals & Energy in September 1993. Formal notification of the outcome of the application is yet to be received.

3. **GEOLOGICAL SETTING**

The rocks of the prospect area consist of crystalline basement assigned to Early Proterozoic? Division Two rocks of the Arunta Block near the north-eastern margin of the Late Proterozoic to Late Palaeozoic, Amadeus Basin (Alice Springs 1:250 000 Geological Sheet SF 53-14). Gneiss, schist, amphibolite, marble and calc-silicates of the Sliding Rock metamorphics are the principal rock types. The metamorphic grade is as high as the almandine amphibolite facies. Small pegmatite and microdiorite intrusions are common but no large igneous intrusions are present. A retrograde schist zone, possibly related to similar more widespread zones to the north, transects the Prospect.

Further to the north, the Late Proterozoic Heavitree Quartzite and the Bitter Springs Formation, which are the two lowermost formations of the Amadeus Basin are infolded into the Arunta Block to form the Arltunga Nappe Complex.

4. **GENERAL GEOLOGY OF THE GHEKO PROSPECT**

Gossans crop out on the flanks of lenticular developments of garnetiferous metaquartzite. The metaquartzite occurs along the contact of a sequence of biotite gneisses with a sequence of fine-grained, even-textured amphibolite (Figure 2). The relatively simple lithological relationship is complicated by extremely complex and tight folding, particularly in the north-east corner of the area mapped. The similarity of the position of the gossan and the presence of similar gneisses and amphibolite strongly suggests that the Gheko Prospect is a stratigraphic equivalent of the Rankin's Prospect mineralisation (7km to the west-northwest).
The lead-zinc mineralisation was found to be principally sphalerite, with some galena and chalcopyrite associated with magnetite and quartz. The mineralisation appears to be stratigraphically controlled as it occurs in gossanous haematite-actinolite rocks marginal to garnetiferous quartzite with the actinolite rocks presumably replacements of former calcareous lenses. The garnet quartzite is intensely recrystallised; no quartz grain boundaries can be discerned and the quartzite superficially resembles a garnetiferous quartz vein. In several places decomposed amphibole and pyrite occur in the quartzite.

5. CURRENT PROGRAMME

The potential of the Prospect was again reviewed in 1993. However, the small size and continuing low price for the commodities involved were such that it was decided that the property should remain on a care-and-maintenance basis. However despite this assessment, a decision was made to retain MCs 38 and an application to renew the area was forwarded to the N.T. Department of Minerals and Energy.

In the 1991 Annual Report (Fidler, 1992), examined the means by which the present limits of the mineralisation could be increased.

Despite the complications presented by complex geological history of the area and the relatively high metamorphic grade (almandine amphibolite), geological mapping coupled with the geochemical results and use of geophysical methods such as magnetics (given the link between sulphide mineralisation and magnetite) and I.P. (since the strongest anomaly was obtained over the most successful hole) remain a useful base from which to begin any further drilling.

The results from initial percussion drilling in 1971 are given below, with the location of each hole shown on Figure 2. (Since the measurements were originally made in feet, it has been found preferable in the description to retain measurements in those units rather than use fractions of metres).

PH1

A moderate zone of sulphide mineralisation was intersected between 100 and 115 feet within the amphibolite and contains abundant pyrite with a trace of chalcopyrite. A best result of 1.6% Zn, 270ppm Pb and 0.43% Cu was assayed for the 5 foot interval 105-110 feet.

PH 2

Three main zones of pyrite and chalcopyrite mineralisation were intersected within the amphibolite layers. The first zone occurred from 115 to 120 feet (1.3% Zn, 240ppm Pb & 0.24% Cu), the second from 130 to 135 feet and the third from 140 to 145 feet. The 20 foot interval from 130 to 150 feet averaged 3.9% Zn, 1100ppm Pb & 0.33% Cu.
Two zones of mineralisation were intersected between 70 and 80 feet (2.2% Zn, 290ppm Pb & 0.20% Cu) and 135 to 140 feet (1.7% Zn, 1.42% Pb, 0.21% Cu). The mineralisation was mainly pyrite and occurred within the amphibolite bands.

Three major zones of sulphide mineralisation were intersected. These zones occurred from 125 to 135 feet (1.2% Zn, 0.22% Pb & 0.16% Cu over 5 feet), 160 to 170 feet and 185 to 200 feet (3.35% Zn, 0.18% Pb & 0.18% Cu over 10 feet from 190 to 200 feet). The last zone contained widely ranging amounts of sulphide. The main sulphide mineralisation was chiefly pyrite with a trace of chalcopyrite.

6. REFERENCES


McPhar Geophysics, 1970 Report on the Induced Polarisation and Resistivity Survey on Several Areas in A to P 1721, Northern Territory, Australia, for Central Pacific Minerals N.L.


