MC S 38
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GHEKO PROSPECT
NORTHERN TERRITORY

CENTRAL PACIFIC MINERALS N.L.
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**FIGURE 1. Local Plan**
1. INTRODUCTION

The Gheko zinc, lead and copper prospect is situated on The Gardens Station, some 50 km NE of Alice Springs, N.T. Mineralisation was discovered in 1969 as a result of geochemical stream sediment reconnaissance. 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. MC 38 (formerly MC 463H) of 33 hectares was granted to Central Pacific Minerals N.L. on 22nd March 1984.

3. GEOLOGICAL SETTING

The prospect is near the north-eastern margin of the Upper Proterozoic to Late Palaeozoic, Amadeus Basin. Most of the area consists of crystalline basement rocks of the Archaean Arunta Complex. Gneiss, schist, amphibolite, marble, and calc-silicates 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.

To the north, the Upper Proterozoic Heavitree Quartzite and the Bitter Springs Formation, which are the two lowermost formations of the Amadeus Basin are infolded into the Arunta Complex to form the Winnecke Nappe Complex.

4. GENERAL GEOLOGY OF THE GHEKO PROSPECT

The mineralisation is essentially low grade lead-zinc with relatively minor, associated copper. Gossans can be seen flanking lenticular developments of garnetiferous metaquartzite which occurs along the contact of a sequence of biotite gneisses with a sequence of fine-grained, even-textured amphibolite. This relatively simple control is complicated by extremely complex and tight folding, particularly in the north-east corner of the area mapped. The similarity of the control and the presence of similar gneisses and amphibolite strongly suggests that the Gheko Prospect is a stratigraphic equivalent of the Rankin's Prospect mineralisation.

The lead-zinc mineralisation is stratigraphically controlled and occurs in gossanous haematite-actinolite rocks marginal to garnetiferous quartzite. The actinolite rocks presumably are replacements of former calcareous lenses. The garnet quartzite is intensely recrystallized; 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. **STRUCTURE**

Small scale structures have been used to classify areas as "high grade" or "retrograde", as follows:

**High Grade:**

(a) **Schistosity, foliation folds:** Schistosity and foliation are parallel in all gneiss outcrops except in the hinges of small folds, where schistosity forms an axial plane structure to folds defined by foliation. Such folds are usually asymmetrical, similar and isoclinal in style. Schistosity is absent from the amphibolites, but folds of identical style are common.

(b) **Lineation:** A lineation in both the gneisses and amphibolites is defined by mineral streaking, and lies parallel to fold axes defined in foliation.

**Retrograde:**

(a) **Schistosity, foliation:** Well-developed, fine foliation defined by 1-2mm thick layers, occurs parallel to a retrograde schistosity in the chlorite and mica schists of the retrograde schist-zones. No folds observed.

(b) **Lineation:** A rare, down-dip lineation lies in the "retrograde" schistosity.

The mineralization at the surface is represented by gossanous ironstones in quartz-haematite and quartz-magnetite "reefs". Most of the reefs and gossans are small and lenticular, concordant with schistosity and occur at or near the amphibolite/quartz-feldspathic gneiss contact. Other quartz-haematite rocks, usually without a gossanous structure, occur enclosed within the amphibolite or quartz-feldspathic gneiss.

The origin of the ironstones is uncertain, but the occurrence of a form of folded layering within them and because they are restricted to a fairly constant horizon, makes it likely that they have undergone deformation and metamorphism with the country rocks. Assuming strain is large, the form of any body will almost certainly reflect the geometry of the country rocks. Hence the bodies of quartz-haematite or quartz-magnetite and gossan are probably lenticular in shape, with the longest dimension parallel to lineation, (i.e. parallel to the direction 85 degrees to 307 degrees) and the shortest dimension normal to schistosity. It seems unlikely that their maximum elongation could be to the east, unless complicated by later deformation.
6. MINERALISATION

Several zones of sulphides were encountered in the percussion drilling. The sulphides recorded were principally pyrite and chalcopyrite but the presence of sphalerite and galena is presumed from the assays which reached 7.8% zinc and 8.5 g/t silver (PH2 135-140 feet) and 1.42% lead and 37 g/t silver (PH3, 135-140 feet). No noteworthy amounts of other elements were found although cobalt, bismuth, silver, cadmium, vanadium, tungsten and molybdenum checks were done. Copper reached 0.5% (PH2).

7. 1989 PROGRAMME

The prospect was re-examined in 1989. However, the small size of the resource and the lack of significant price-rise incentive remain problems and it was concluded that the property should continue, for the time being, on a care-and-maintenance basis.

8. REFERENCES


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