FINAL REPORT

E.L. 455 OODNAPPINA

NGALIA BASIN, NORTHERN TERRITORY

Distribution:
Mines Branch, Darwin

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R.T. Gardiner

CR76/15
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   from Seismic Data
2 Depth (in feet) to Basement from Aero-Magnetic
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3 Gravity - (Bouger Anomalies - milligals).
4 Section of Proposed Drill Hole and Expected Stratigraphy.
RECOMMENDATIONS

It is recommended that a vertical stratigraphic hole be drilled at track etch location 0/227 (see map NT-73-10) to test the possibility of a repetition of the Walbiri Horizon into this area.

This hole will cover the expenditure commitment for the exploration licence for 1975 - 76.

Fig. 4 shows the proposed hole and expected stratigraphy.
INTRODUCTION

The Oodnappina Exploration Licence was initially granted to Central Pacific Minerals N.L. for 12 months from the 28th May, 1972. Previously this area had been part of Authority to Prospect No. 2923 which was granted to this company for a period of 6 months, expiring on the 9th March, 1972.

This report summarises all work carried out by Central Pacific Minerals N.L. on E.L. 455 since granting, discusses the uranium potential of the area as currently known and makes recommendations for any future commitment to the area.

LOCATION AND ACCESS

E.L. 455 lies approximately 320 km. north-west of Alice Springs, Northern Territory.

Access to the area is by sealed Stuart Highway north of Alice Springs for 20 km., thence 300 km. north-westerly on the Yuendumu Beef Road, thence 30 km. southerly on the Newhaven Road. Access within the area is by seismic track only; there are no station tracks or roads in the exploration licence area.

TOPOGRAPHY AND CLIMATE

The topography of the area is characterised by low, flat, mulga covered terrain broken only by the presence of a single small outcrop in the middle of the area and a major outcrop of Vaughan Springs Quartzite which comprises the southern margin of the exploration licence.

The exploration licence falls in the 8 to 10 inch rainfall belt with temperature variations of 38 deg. plus in summer and to 0 deg. C in winter.

HISTORY AND PREVIOUS INVESTIGATIONS

A complete resume of all geological work carried out in this area is well presented in Wells et al, 1968. Very little mineral exploration has been done in the area although the area has been the subject of seismic and gravity surveys conducted by Magellan Petroleum (Aust.) Ltd., which work is summarised in Wells et al.
CHRONOLOGICAL LIST OF WORK DONE

Examination of Magellan Seismic Data

The quality of reflections from the base of the Mt. Eclipse Sandstone is poor, but strong indications of block faulting exist, with east-west trending folds terminating against a north-north-east trending basement high. 2,000 m. of Mt. Eclipse Sandstone occur in the north-west corner of the block with a general thinning southwards (see Fig. 1).

Aeromagnetic and gravity data show a north-north-east trending basement high across the centre of the area. Basement crops out in the south-west corner (Sidley Range area) and north-west of BMR-10 (see Fig. 2 and 3). On the only outcrop in the central part of the exploration licence Vaughan Springs Quartzite outcrops.

An airborne survey in 1972 covered a small portion of the north-east corner of the area. No anomalies were recognised.

An airborne survey in 1972 over the gap in the Sidley Ranges detected low order anomalies over alluvium and were considered as a possible calcrete channel environment, however 37 line km. of ground radiometric surveying was completed in this area and only minor anomalism associated with near surface basement granites was discovered.

BMR-10, a 161.65 m. BMR stratigraphic hole, was re-logged. The hole was divided into 2 units:

1. 0 to 106.7 m. - medium sandstone, greyish orange and pale orange with minor micaceous siltstone.

2. 106.7 to 161.65 m. - medium sandstone, feldspathic to arkosic, white to greyish orange, abundant carbonaceous matter and pyrite shale and siltstone bed 155.5 to 160.1 m. of medium brown mudstone, carbonaceous and pyritic.

This unit is a possible uranium host rock and may be near the base of the Mt. Eclipse Sandstone. It should be noted that the area immediately adjacent to BMR-10 is no longer in this exploration licence.

The cuttings piles of seismic shot holes were radiometrically examined on the ground; no anomalies were detected.

An airborne survey during 1974 covered the northern part of the exploration licence. Anomaly 136A was found to be associated with slight radioactivity near the base of the Mt. Eclipse Sandstone north-west of BMR-10. (Refer Report NT-102)
On inspection it was not considered significant being due to shake-sandstone contrast. During regional mapping and photo interpretation traverses were carried out in the Bean Tree Anticline area and identified white reduced sandstones with fossil wood which is considered to be equivalent to the Walbiri Channel. The area (Bean Tree Anticline) is immediately north of the northern boundary of E.L. 455.

Forty-six samples from seismic shot holes were lithologically logged. One sample (No. NN370) showed favourable features – this is a white sand. 115 samples were radiometrically logged by multichannel spectrometer. Samples NN380 and 397 were classed as possibly anomalous. Both samples were assayed for uranium and both returned values of 4 ppm U.

102 auger holes with a cumulative meterage of 276.5 m. were drilled. One line of holes in the north-west corner of the exploration licence ran north-easterly across trend lines. Mt. Eclipse Sandstone was intersected at depths of less than 4 m. No gamma or radon anomalies were detected. The second line was across basal Mt. Eclipse in the central part of the exploration licence where Vaughan Springs Quartzite outcrops. The holes did not reach bedrock. No gamma or radon anomalies were detected.

275 track etch cups were laid and recovered from Oodnappina. The results show a bi-modal population which makes interpretation difficult. The north-east portion of the block shows low order anomalies not considered significant. Other anomalies occur adjacent to the Bean Tree Anticline which repeats the Walbiri Stratigraphy immediately north of Oodnappina. (Refer Report NT-128)

CONCLUSIONS

BMR-10 intersected Mt. Eclipse Sandstone of favourable lithology. No indication of radioactivity has been discovered on the exploration licence.

Some potential for uranium mineralization could occur on the flanks of the BMR-10 basement high in the lower carbonaceous and pyritic unit found in BMR-10. However the track etch cups laid in this area failed to detect anomalous radon concentrations. Radon anomalous south of the Bean Tree Anticline is possibly caused by a southwards repetition of the Walbiri Horizon on the flank of the concealed syncline in this area.

REFERENCES

Annual Reports for E.L. 455


Area: 491 sq. miles (Approx)

Flight lines of airborne survey
1972

CENTRAL PACIFIC MINERALS N.L.
OODNAPPINA NT73
E.L. 455

AIRBORNE RADIOMETRIC SURVEY

Scale: 1:250,000
Plan no: NT73-1-a
Date: 24.1.72
Drawn by: J.G.A.

MAP 1
Area: 491 sq. miles (Approx)

Flight lines of G.R.D. 1971

CENTRAL PACIFIC MINERALS N.L.
OODNAPPINA NT73
E.L. 455
AIRBORNE RADIOMETRIC SURVEY
Scale: 1:250,000  Plan No. NT73-1-C
Date: 24-1-72  Drawn by J.G.A

MAP 3
CENTRAL PACIFIC MINERALS N.L.
OODNAPPINA   EL 455
NT 73
DEPTH (IN FEET) TO THE BASE OF THE
MT.ECLIPSE SANDSTONE FROM
SEISMIC DATA

Scale: 1:250,000  Plan No.: NT 75
Date: 10-11-75  Drawn by: J.G.A.
Projected Surface positions of Walbiri Channel Horizons