

# OPEN FILE

FIRST AND FINAL REPORT

ON

EXPLORATION LICENCE 3557

ALICE SPRINGS

NORTHERN TERRITORY

Covering the period

11 May 1982 to 10 May 1983

Compiled

by

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K.S. Taylor

PERTH

JULY 1983

SCANNED

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SUMMARY

EL 3557 was one of several tenements examined by UAL in the Northeast Arunta Block during 1982.

The tenement was geologically mapped, aided by ground radiometry; several radiometric anomalies were located, but were all found to be thorium based.

The tenement was surrendered at the end of the first year.

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1. INTRODUCTION

Exploration Licence 3557, covering an area of 146 blocks (447 km<sup>2</sup>) was applied for on 25th February 1982 and granted on 11th May 1982. It is among a number of tenements in the N.E. Arunta Basin examined by Uranerz Australia Pty Ltd (UAL) for uranium mineralization.

The tenement was worked from a trailer camp, with UAL's regional office in Alice Springs providing a base for supplies and communications.

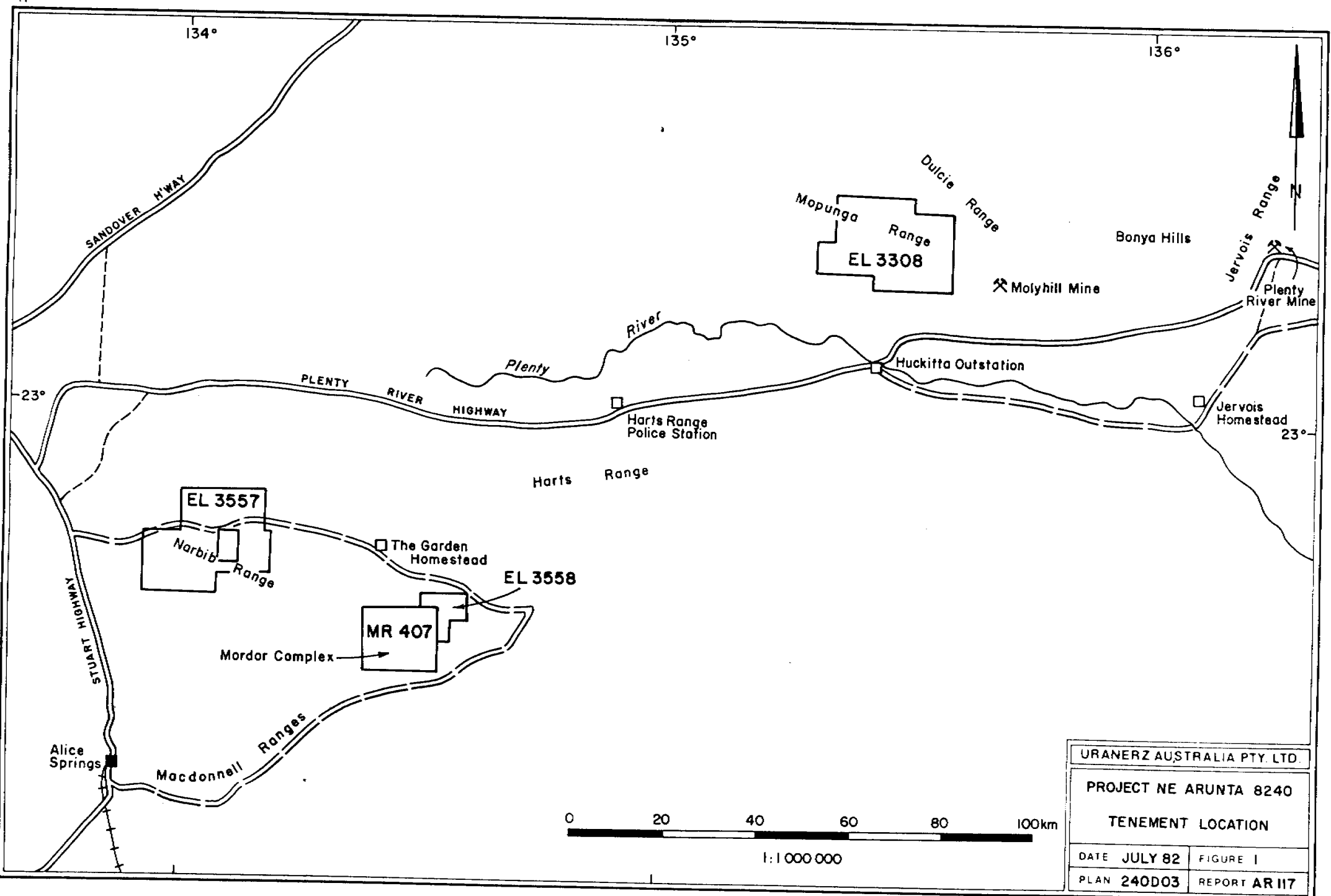
The results of the exploration carried out were not encouraging and the tenement was surrendered on 10th May 1983.

2. LOCATION

EL 3557 is located on the boundary of Bond Springs and Yambah Stations approximately 40 km northeast of Alice Springs on the ALICE SPRINGS 1:250,000 Sheet SF 53-14.

3. GEOLOGY

The project area is contained within the Arunta Block, a region of igneous and metamorphic rocks exposed between Alice Springs and Barrow Creek, which results from at least two periods of uplift; the first in the Proterozoic at about 1700 Ma and the second in the Palaeozoic at about 340 Ma. The rocks of the Arunta Block are subdivided into three lithological divisions based on areal distribution, metamorphic character and stratigraphic position. Division I consists of mafic and felsic rocks, almost always metamorphosed to granulite grade. Division II units contain a higher proportion of sedimentary rocks while Division III units are characterized by the pelites and psammities. Division II units are less deformed than Division III. All units are older than 1800 Ma.



URANERZ AUSTRALIA PTY. LTD.	
PROJECT NE ARUNTA 8240	
TENEMENT LOCATION	
DATE JULY 82	FIGURE 1
PLAN 240D03	REPORT AR 117

The Arunta Block is cut by numerous major faults or deep seated deformed zones which trend mainly west-northwest. The exploration target models associated with these deformed zones were firstly, uranium associated albitite targets and secondly, for skarn-type deposits located on the exocontact of uraniferous post-tectonic granite, in calcsilicate lithologies.

#### 4. INVESTIGATIONS AND RESULTS

##### 4.1 Geological Mapping

EL 3557 is dominated by a retrograde metamorphic event dated at about 350 Ma - the Ankala-Mt. Laughlen-Ruby Gap retrograde zone. Within this zone are two older zones of deformation (at least 900 Ma) the Harry Creek Deformed Zone and the Narbib Shear Zone. Detailed geological mapping, aided by the use of a hand held SRAT SPP2 scintillometer, was carried out over the Harry Creek Deformed Zone.

##### Harry Creek Deformed Zone

The deformed zone strikes approximately east-west and the area can conveniently be divided into east, central and west zones. The zone separates Division I granulite to the north of Division II amphibolite to the south.

The East zone cuts through a metasedimentary sequence. Rock types are :- quartzofeldspathic (commonly "pegmatoidal") gneiss; para-amphibolite; biotite gneiss; garnet gneiss; quartz-biotite granulite and minor calcsilicate rock. Isoclinal andptygmatic folding was found to be common within the deformed zone and also surrounding country rocks.

Radiometric background was low (110 cps). Anomalous areas were localized to the following:-

550 cps in altered gneiss (adjacent to calcrete) which gave a uranium:thorium ratio of 2.7:1.

The Central zone (Gumtree Bore area) comprises essentially quartzofeldspathic gneiss, para-amphibolite, biotite gneiss, calcsilicate and minor blastomylonite. Silicification, epidotization, hematization and chloritization are more common, possibly due to the dilation effect on the zone forms a ridge which is anomalous along strike for over 75 km (350-1000 cps).

The ridge has a thorium-bias except for one outcrop which indicated a uranium-bias (2.7:1, uranium:thorium). In this outcrop yellow secondary minerals of uranium were observed. Fluorescence indicates that the mineral is either carnotite or meta-autunite.

The West zone comprises similar metasediments. Blastomylonite becomes more dominant. Average SRAT is 140 cps. Several radiometric anomalies, all thorium based, were found (600 cps) predominantly in quartzofeldspathic rocks, and decreasing westwards.

The Gumtree Granite lies to the north of the deformed zone and is affected by it, giving rise to sheared granite and orthogneiss (350 cps) and is commonly anomalous (600cps). All anomalies have a thorium-bias. In the metasediments, minor cross-cutting pegmatite dykes were observed.

#### Narbib Shear Zone

The country rocks comprise garnetiferous blastoporphyratic quartzofeldspathic biotite gneiss which are commonly highly folded and micro-faulted. These appear to be a transition sequence into amphibolite through a blastoporphyratic amphibolite gneiss (or blastomylonite). Very large feldspar blasts are common. In one outcrop a vein of pseudotachylite was seen. The average radiometric signature is 130 cps.



Between Harry Creek Deformed Zone and the Narbib Shear Zone on the track over the Narbib Range an anomalous radiometric zone with a strike length of 75 m was observed.

Radiometric anomalies of 250-1000 cps occur in a background of 90 cps. Large (2-3 cms) crystals of allanite were seen in a quartzofeldspathic gneiss. This may be in a retrograde zone. The anomaly has a thorium-bias.

5. STATEMENT OF EXPENDITURE5.1 Exploration Licence 3557

Covering the period 11th May 1982 to 10th May 1983

Salaries and Wages	10,376
Drilling Contractor	-
Field operating costs including consumables, rents, vehicle operating and repairs, air- fares, freight, etc.	6,494
Depreciation of vehicles and geophysical instruments, consultants fees, management and distribution of Head Office costs.	2,530
	<u>\$19,400</u>

6. TECHNICAL DETAILS

6.1 Personnel

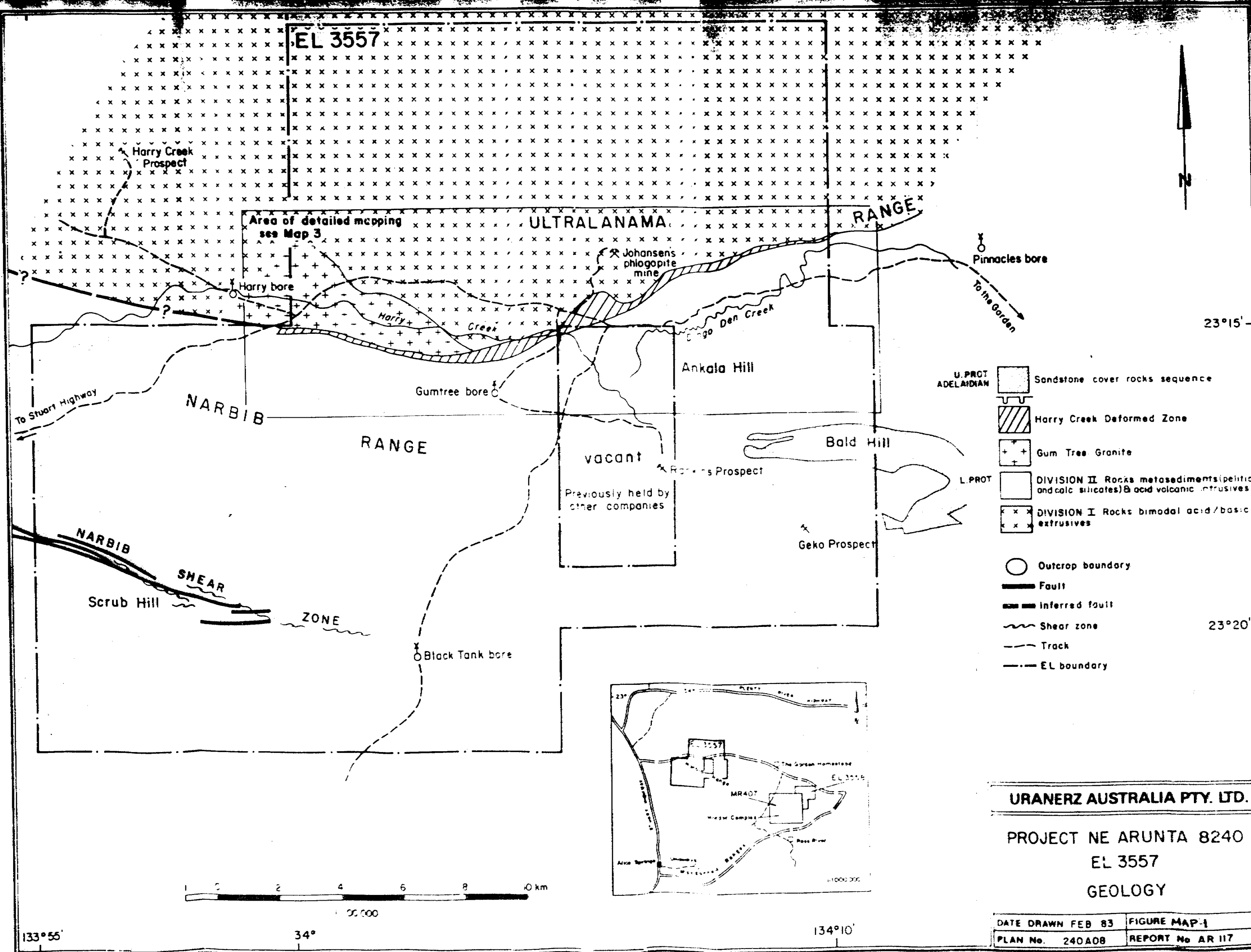
Chief Geologist ----- J. Borshoff  
Regional Geologist ----- K. Ferguson  
Project Geologist ----- L. Booth

6.2 Vehicles

1 Toyota Landcruiser  
1 Caravan

6.3 Instruments

2 SRAT SPP2 scintillometer  
2 GAD-6 spectrometer  
1 GSP 3  
1 U.V. Light



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PROJECT NE ARUNTA 8240

EL 3557

GEOLOGY

DATE DRAWN FEB 83

FIGURE MAP-1

PLAN No. 240A08

REPORT No AR 117

