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Item 366

SAMANTHA MINES N.L.

TEMPORARY RESERVE NO. 6351H

FINAL REPORT

SHELF/BAY No.	
243	

Box 965

SAMANTHA MINES N.L.

TEMPORARY RESERVE NO. 6351

FINAL REPORT



D. W. MULLER M.Sc.

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SAMANTHA MINES. N. L.

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1. 0

SUMMARY

Samantha Mines Pty. Ltd. was granted right of occupancy to Temporary Reserve No. 6351H on September 17th, 1976. On November 24th a request to cancel the Rights to the Temporary Reserve was made by Samantha Mines Pty. Ltd. and such request was granted on December 7th, 1976.

The shortened duration of occupancy and the request to terminate all rights were brought about as a result of the new knowledge that other companies had unsuccessfully carried out exploration for uranium within the area of the Temporary Reserve. Subsequent investigations suggested that the chance of finding a sizeable deposit of Uranium within the Temporary Reserve was remote.

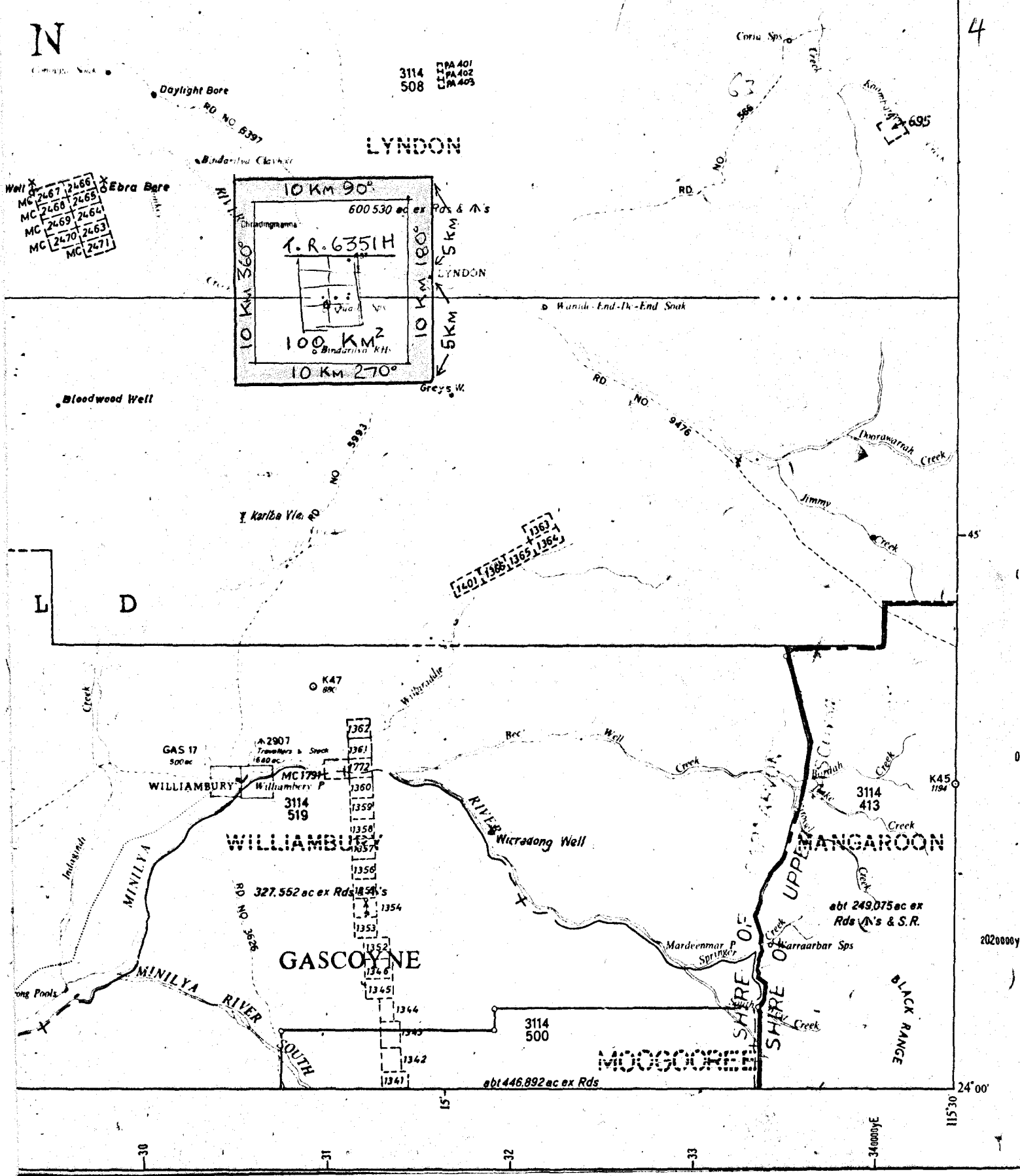


FIGURE 1 :

T. R. 6351H LYNDON

LOCATION MAP

WINNING POOL 1 : 250,000

2. 0

EXPENDITURE

The following is a breakdown of expenditure incurred by  
Samantha Mines Pty. Ltd.

Mines Department Fees	\$2,000. 00	
Field Living	270. 00	
Travelling	246. 00	
Salaries and Wages	1,600. 00	
Geochemistry	90. 00	
Equipment Hire	160. 00	
Materials and Supplies	62. 00	
Telephone and Postage	16. 00	
Maps and Reports	<u>114. 00</u>	
		4,558. 00
Office Administration and Overhead		<u>450. 00</u>
TOTAL	-	<u>\$5,008. 00</u>

### 3. 0 GEOLOGICAL INTERPRETATIONS

A prospecting visit was made to the Lyndon Station area during August, 1976 by the writer, and a number of small highly uraniferous calcrete deposits were examined. It was initially decided that the potential existed for a small high grade calcrete/carnotite type deposit, which may have been covered by recent colluvial deposits from a sequence of proterozoic outcropping sediments forming a low range on the western margin of the Temporary Reserve.

The uranium mineralization is directly associated with enrichment of carnotite in calcrete, overlying an anomalous, unaniferous granite, shown to be cropping out in a wide area of the Temporary Reserve.

Subsequent investigations showed the potential for calcrete development to be extremely limited, as in most places there appeared to be only a thin veneer of colluvium and aeolian material covering the granite. This was supported by the location of several old percussion drill sites in which calcrete development was almost totally lacking. A number of traverses along stream and creek channels also pointed to the thinness of the cover.

Where calcrete had developed in thin horizons, the grade of mineralization did not exceed  $\frac{1}{4}$  kg. per tonne in drill cuttings.

PREVIOUS WORK

At the time of the first reconnaissance visit during August, it was not apparent to the writer that several companies had previously conducted work in the area.

Amoco Minerals and several other companies had conducted low level radiometric traverses. A copy of portion of an Amoco plan depicting the main radiometric anomaly in the area (Quail Springs Anomaly) is included as Figure 3.

Westfield Minerals is believed to have drilled a number of percussion holes on mineral claims once held in the area, and these holes were subsequently located and visited.

A prospector had dug two shallow pits into colluvium and calcrete to determine the grade and thickness of mineralization.

Results of these ground surveys demonstrated that calcrete was usually only present as a thin veneer, and sporadically occurring.

Most percussion holes have since caved in, but rows of sample intervals are still present at the old drill sites.



5. 0

MINERALIZATION

Initial reconnaissance samples from mineralized calcrete, sampled in August, 1976 yielded the following results.

<u>Sample No.</u>	<u>Location</u>	<u>PPM Uranium</u> (Not U O 3 8)
3203	Percussion chips representing general background in leached granitic source.	60
3204	Two feet deep prospector's pit in granular calcrete.	150
3205	Isolated percussion hole drilled by Westfield two miles from radiometric anomaly (sample 3206). Weathered granite/clay source.	170
3206	Hard calcrete with visible carnotite outcropping alongside granite and radiometric anomaly, Quail Springs.	2900
3207	Background granite next to 3206	80
3208	Calcrete from wall of creek 200 meters from 3206.	640

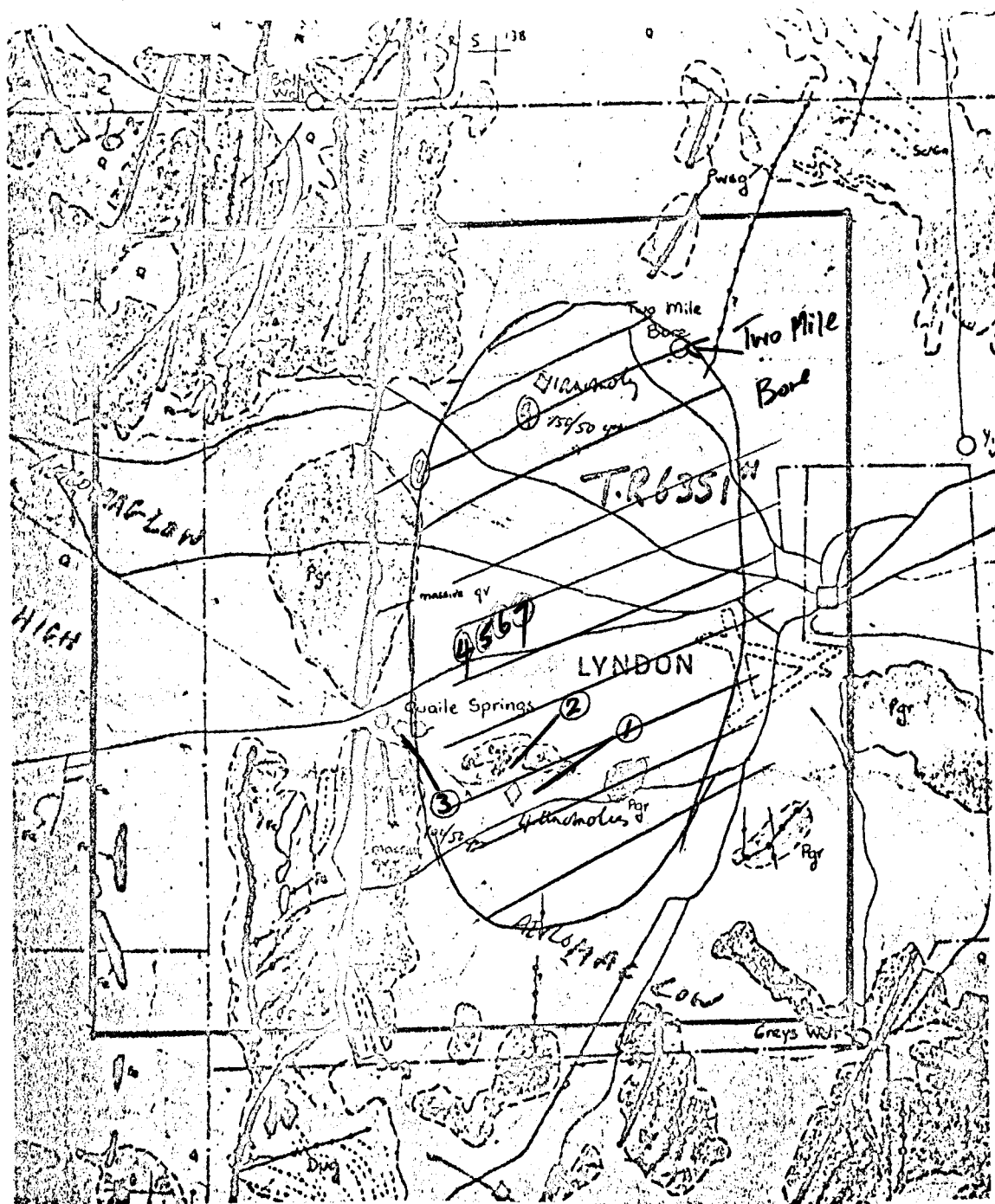
A Temporary Reserve was then applied for. Subsequent to this work and the location of several other percussion holes in an area which was initially thought to be a potential basin for calcrete formation, an Austral Down-Hole Logger was utilized to measure down hole radioactivity, which was correlated with assay of percussion heaps alongside the located holes.

Down hole-logging showed that radiometric highs were due to spot anomalies only, and this correlated with assay data from percussion hole samples which demonstrated that bulk samples representing five feet sections were generally well below  $\frac{1}{4}$  kg.  $U_{38}$ /tonne. The location of these sample points is depicted in figure 2 and the radiometric logs are included as Appendix 1.

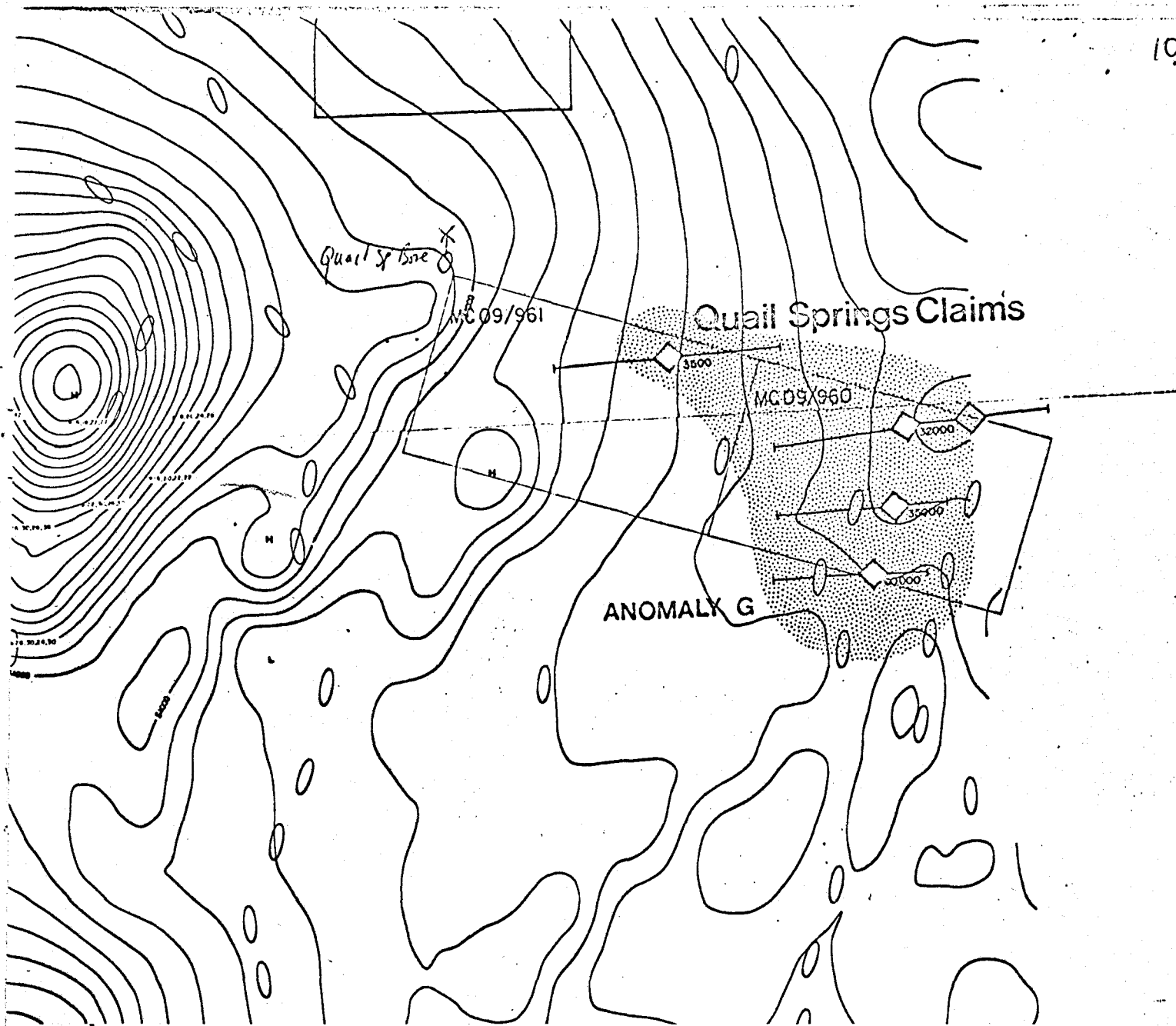
Although the sizeable anomaly depicted on figure 3 returned assays up to 3 kg. per tonne from uraniferous calcrete, this order of mineralization is extremely spotty and the main basis for the radiometric anomaly is a highly anomalous, uraniferous

FIGURE 2:

LOCATION OF ANOMALOUS CALCRETE GRANITE AREAS






ANOMALOUS CALCRETE AND GRANITE  
SPORADICALLY APPEARING AT  
SURFACE







## SYMBOLS





### MAGNETIC RESPONSE

-  20 GAMMA CONTOURS
-  MAGNETIC HIGH
-  MAGNETIC LOW

### RADIOMETRIC RESPONSE

-  THORIUM - counts per minute
-  total count
-  URANIUM - counts per minute
-  URANIUM ? - counts per minute

### ELECTROMAGNETIC RESPONSE

-  BROAD SOURCE F-400 RESPONSE
-  NARROW SOURCE F-400 RESPONSE WITH CONDUCTIVITY RATIO
-  apparent conductivity
-  NARROW SOURCE F-400 RESPONSE

copper, nickel, lead, zinc

• 40, 42, 36, 38

GEOCHEMICAL SOIL SAMPLE SITE

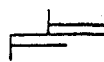
METAL VALUES IN PARTS PER MILLION

MC 08-1465

MINERAL CLAIM



RADIOMETRIC ANOMALY



GEOCHEMICAL GRID

Feet

0 2000 4000 60

Meters

0 500 1000 1500

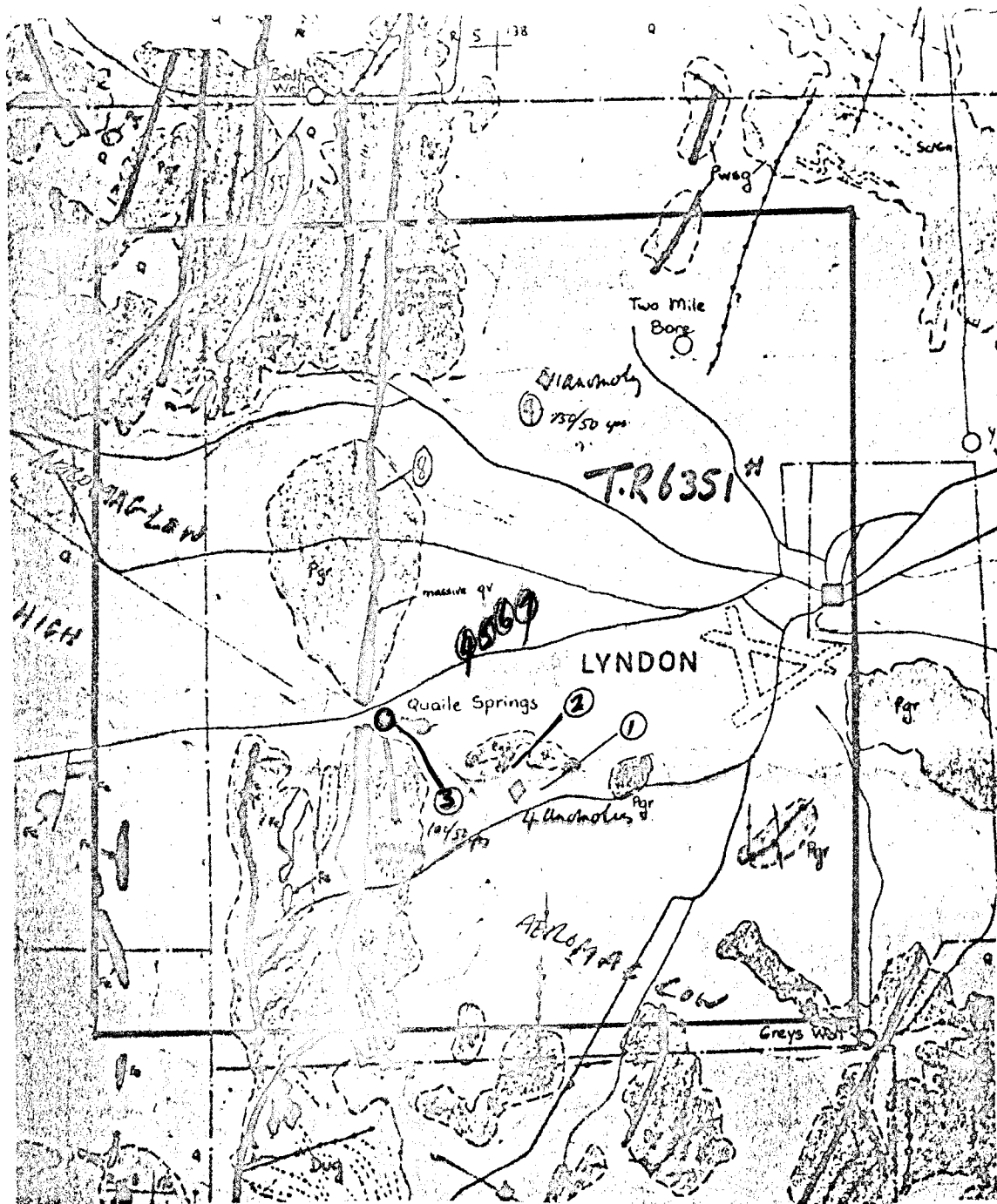
APPENDICES

APPENDIX 1

DOWN-HOLE SAMPLE LOGS

APPENDIX 1.

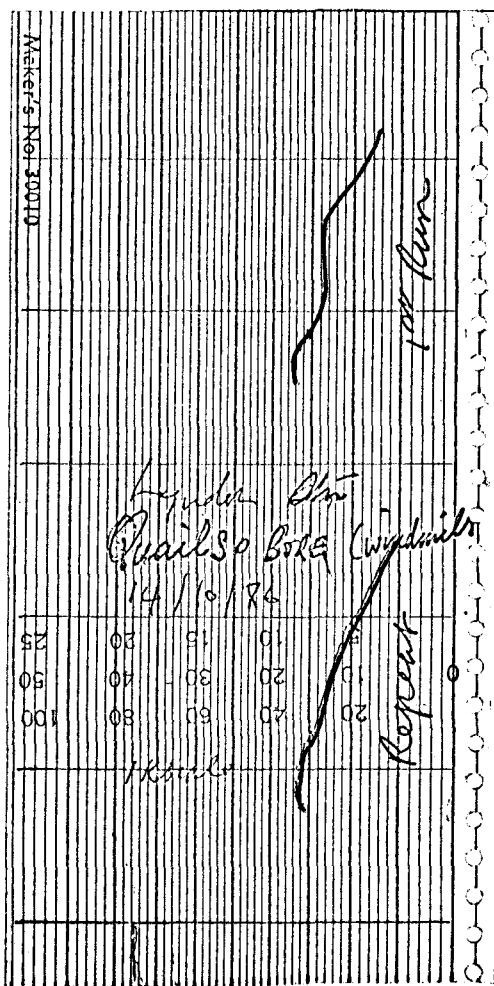
DOWN-HOLE LOG SAMPLE LOCATIONS



APPENDIX 1A

QUAIL SPRINGS BORE

1" K' SCALE

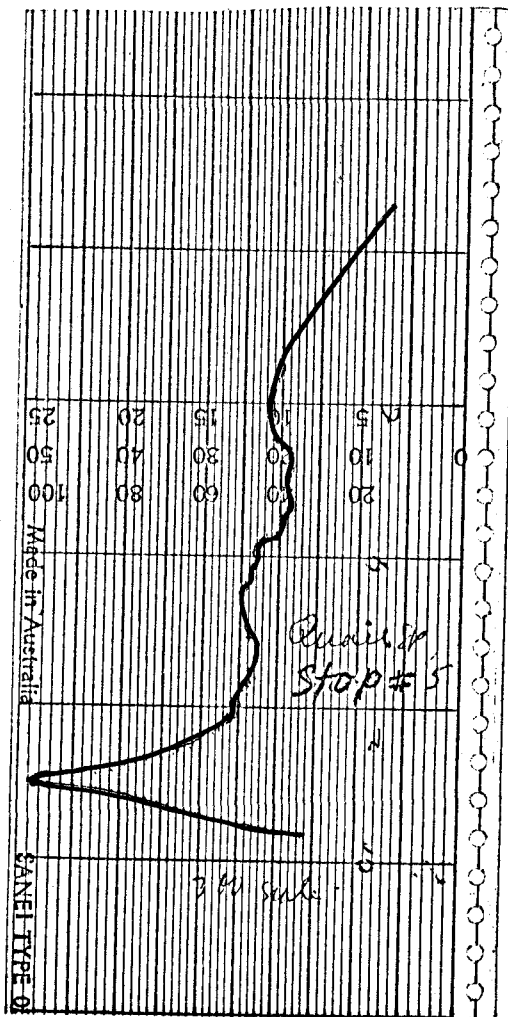


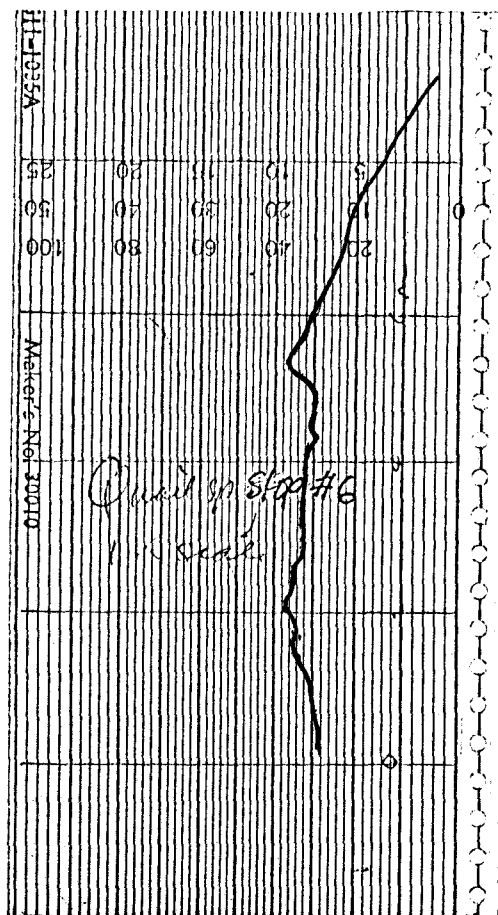
APPENDIX 1 B

STOP 5

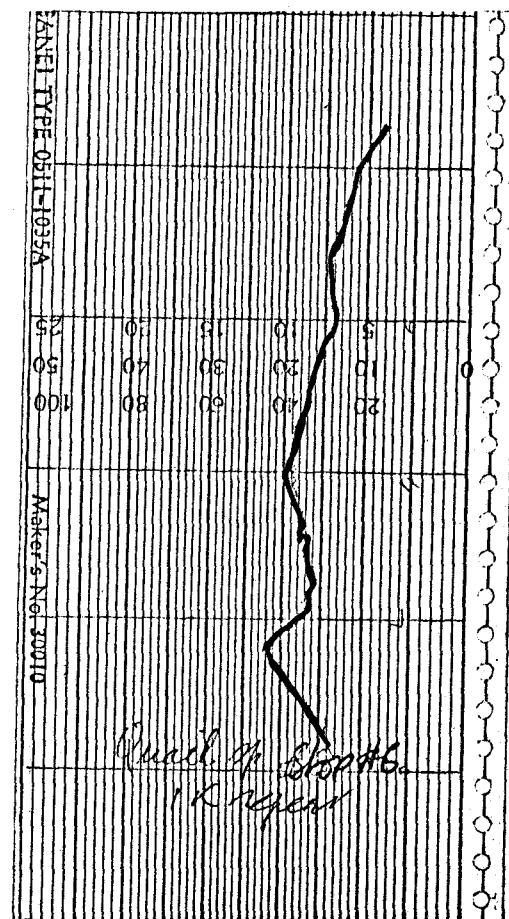
PERCUSSION HOLE RUN

300 SCALE

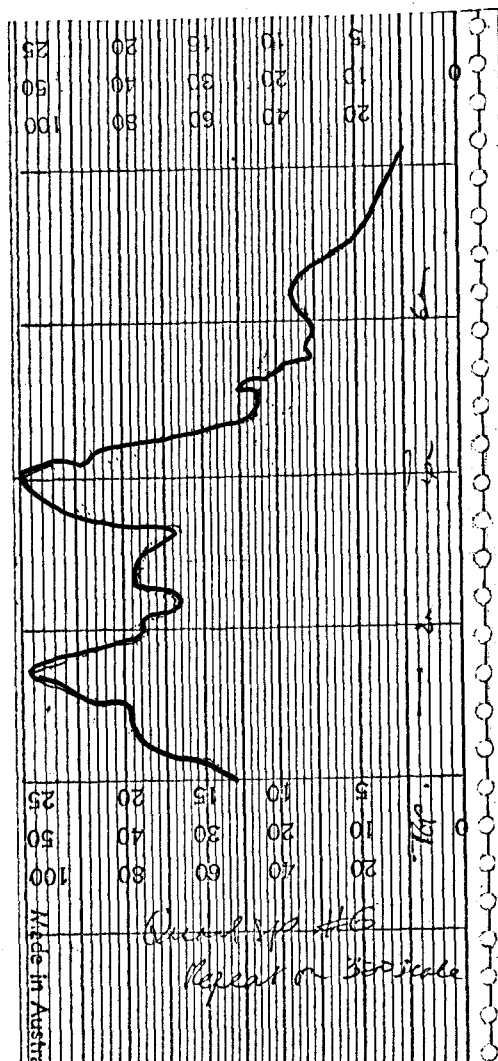




1 K SCALE



1K SCALE 2ND REPEAT



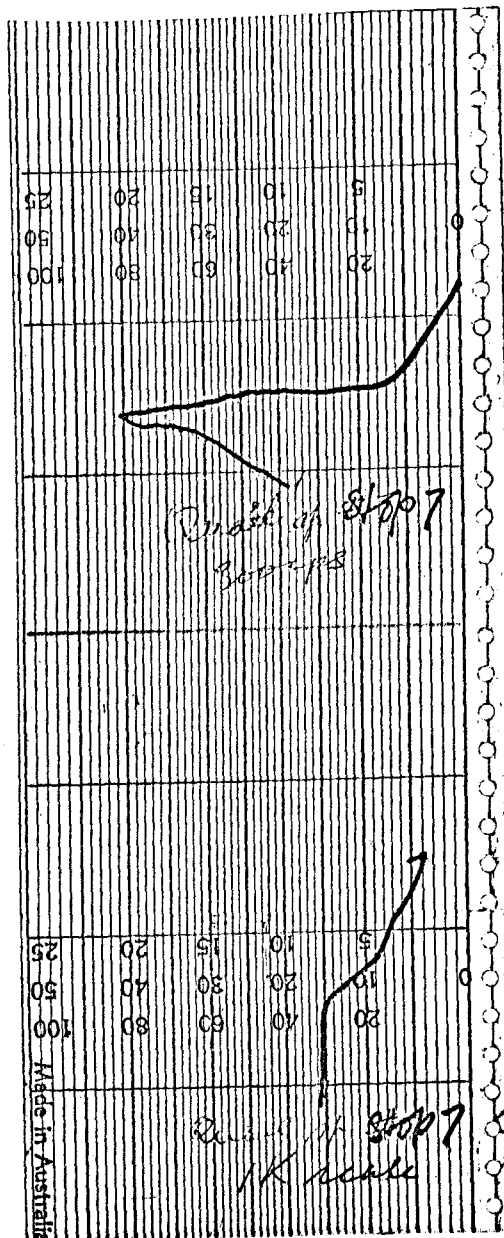
300 SCALE



APPENDIX 1 D

STOP 7

PERCUSSION HOLE RUN



300 SCALE

1 K SCALE