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Report No.08/1522

The Shell Company of Australia

Boobyalla EL58/80

Northeast Tasmania

Relinquishment Report

**MICROFILMED**

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DMH/11

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155 William St

RELINQUISHMENT REPORT FOR EXPLORATION LICENCE 58/80BOOBYALLA, NORTHEAST TASMANIACONTENTS

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RELINQUISHMENT REPORT FOR EXPLORATION LICENCE 58/80SUMMARY

One diamond drill hole was drilled to test for possible oil shale units in the sediment-filled basin underlying Boobyalla Plains.

The hole was stopped at 265 m after intersecting a sequence of interbedded gravels, sandstones and mudstones, with no evidence of oil shale. Six samples of fine grained sediment (mudstone) were submitted for shale oil yield estimates, and all gave a yield of less than 5 litres per tonne.

INTRODUCTION

An Exploration Licence for coal, oil, oil shale and precious stones was applied for and granted over an area centred on the Boobyalla Plains area, northwest of Gladstone in northeast Tasmania (Fig 1). The results of Mines Department geophysical surveys and drilling in the area indicated a deep, steep-sided, probably fault-bounded, sediment filled basin of possible Tertiary age. Similar basins in Queensland contain substantial deposits of oil shale, and this was the target in EL 58/80.

PREVIOUS WORK

Alluvial tin has been mined at various times in and adjacent to the Ringarooma River. Deep leads were mined on the northeast side of the river at Scotia and MacGregor. The Delta mine is situated on the west bank of Ringarooma River near the eastern boundary of the basin. Exploration for alluvial tin has been carried out by various companies, with little success so far.

The Tasmanian Mines Department have carried out several geophysical surveys, consisting of magnetic, gravity, seismic reflection and refraction (Fig 2). The results of all these surveys show that a steep-sided, deep basin exists beneath the Boobyalla Plains, probably filled with Tertiary and/or Cretaceous sediments. The most recent survey (Richardson 1981) consisted of a north-south trending seismic reflection traverse, the results from which indicate a depth of basement varying from 400 m to 900 m (Fig 3).

A diamond drill hole, Boobyalla DDH 1 was drilled by the Mines Department near the interpreted southern margin of the basin. This hole was stopped at 417 m before reaching basement. The predominant rock type is conglomerate. Palynological investigations of the microflora in the rocks give a late Cretaceous age (Forsyth, 1980), which are interpreted as being coeval with other Late Cretaceous sediments nearby, and not derived by reworking of those sediments.

WORK COMPLETED

No further geophysical surveys were carried out, as the Mines Department work had sufficiently outlined the basin, and indicated with a fair degree of accuracy the depth of sediments in the basin.

For any oil shale to be prospective for future development the following parameters can be applied:

- shallow overburden
- thick sequence of oil shale, say minimum 20 m
- moderate oil yield, say 80 litres per tonne
- little or no tectonic disturbance
- large available tonnages, say 500 million tonnes

It was considered that a single diamond drill hole drilled to a maximum of 300 m, close to the centre of the basin, would be sufficient to indicate if the correct geological environment existed for the development of oil shales, and the extent and quality of any oil shales intersected.

Diamond drill hole BPD-1 was located approximately 600 m SSE from the Cemetery Reserve (Fig 4). The hole was completed at 265 m. A description of the geology of the hole is attached as Appendix A. The top 13 m of the hole intersected unconsolidated sand and fine gravels. The remainder of the core consisted of interbedded gravels, sandstones, sandy mudstones and mudstones, only partly consolidated but non-indurated.

Six samples of mudstone were submitted to AMDEL for shale oil yield estimation. All analyses were less than five litres per tonne - Table 1.

The surface sands and gravels were panned on-site to test for the presence of heavy minerals, but none of significance were present.

The core was checked with a scintillometer, with nil response.

#### CONCLUSIONS

No oil shales were recognised in the core, and analyses of selected fine grained units gave negligible oil yield.

It is considered that the basin sediments have been sufficiently tested for the development of oil shales.

No other minerals were recognised in the core.

#### RECOMMENDATIONS

The Exploration Licence is recommended for relinquishment.

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TABLE 1  
OIL YIELD ANALYSES

<u>Sample No.</u>	<u>From</u> <u>m</u>	<u>To</u> <u>m</u>	<u>Thickness</u> <u>m</u>	<u>Yield</u> <u>l/t</u>
5378	35.9	36.4	0.5	0.5 - 1.5
5379	95.87	96.37	0.5	1.5 - 5.0
5380	147.9	148.4	0.5	1.5 - 5.0
5381	193.5	194.0	0.5	1.5 - 5.0
5382	245.0	245.5	0.5	1.5 - 5.0
5383	264.5	265.0	0.5	1.5 - 5.0

REFERENCES

- LONGMAN, M.J.: 1970: Seismic Travers - line 14, Great Northern Plains; Tasmania Dept. of Mines, Tech. Report No. 13
- LEAMAN, D.E.: 1973: Summary of Geophysical Work, Gladstone Area  
Tasmanian Dept. of Mines, Tech. Report No. 16
- MOORE, W.R., AND LEAMAN, D.E.: 1974:  
Further Geophysical Work, Gladstone;  
Tasmanian Dept. of Mines, Tech. Report No. 17
- FORSYTH, S.M. 1980: Preliminary palynological investigation of Boobyalla DDH 1, 1977-1979, northeast groundwater investigation; Tasmania Dept. of Mines, Unpublished Report 1980/37
- RICHARDSON, R.G. 1981:  
A seismic reflection traverse, Boobyalla Plains, northeast Tasmania; Tasmanian Dept. of Mines, Unpublished Report 1981/8.

APPENDIX A

Diamond Drill Hole BPD-1  
Drill Log

EL 58/80

Boobyalla N.E. Tas

B.P.D. 1 Hole log.

August 17 - 25th 1981.

Contract Geolgy for The Shell Co. of Australia

by Roger Poltock Geological P/L

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B P D 1 is located 620m S.S.E. of Boobyalla cemetery on J. Proberts property. see Fig.

The hole was programmed to be 300m deep but due to difficult drilling from 253.90 - 265.00m, the hole was terminated here. To drill further would have necessitated casing the hole to 265m.

The core has been - logged in detail see sheets 1-3, this has been summarised below.

- checked with a scintillometer with nil response.

- sampled to check for kerogenous content, six 50cm intervals of fine grained sediment - mudstone selected at 35.90 - 36.40, 95.87 - 96.37, 147.90 - 148.40, 193.50 - 194.00, 245.00 - 245.50, 264.50 - 265.00.

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Summarised drill log.

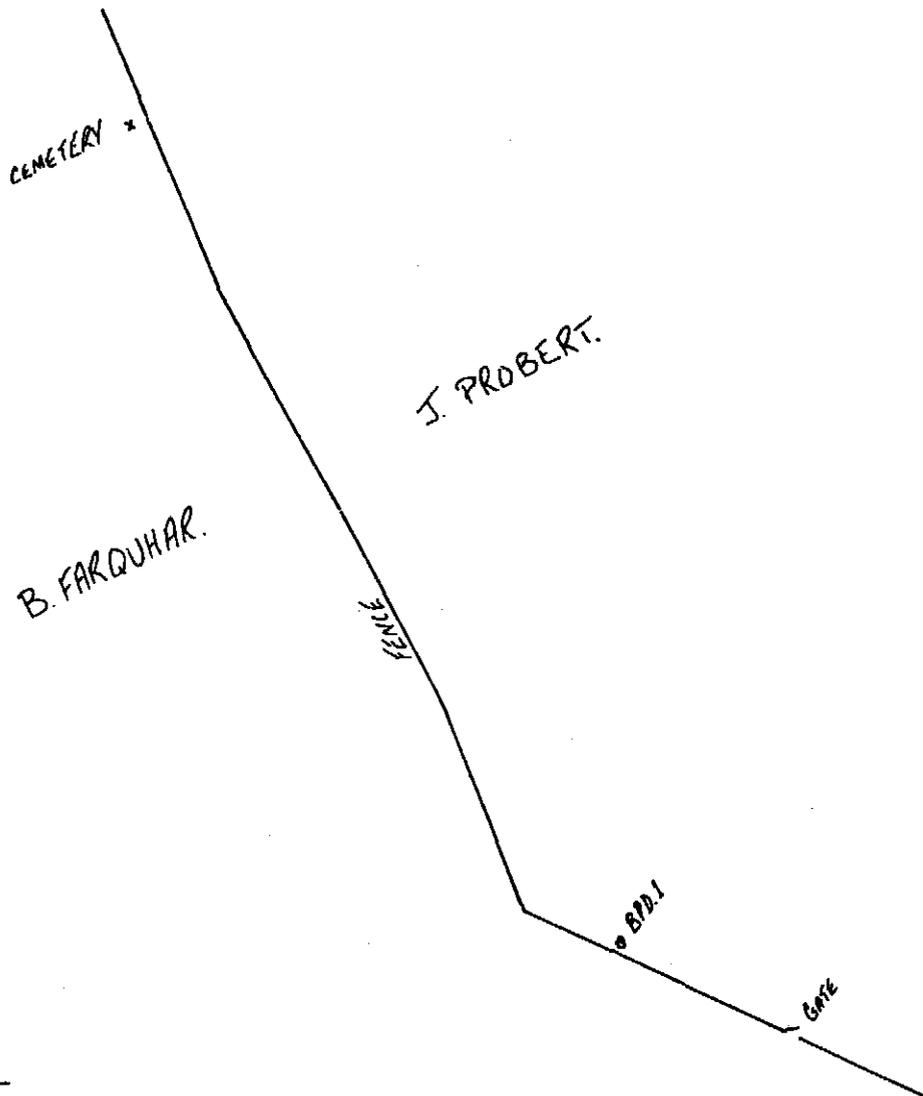
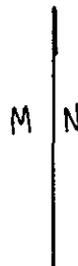
0 - 13m Sand and fine gravels, unconsolidated, Recent.

13 - 248.30m. Interbedded gravels, mudstones and sandstones, these partly consolidated but non indurated probably Tertiary or Cretaceous.

The gravels are composed of aplite, fine hornfels, quartz and minor dolerite - diorite (max. 15cm). Sorting is poor, fragments set in a clay - sand matrix. Core recovery in gravels was consistently poor. (10 - 30%), except where they have been cemented 126 - 130, 152.6 - 157.0, 240.6 - 243.6.

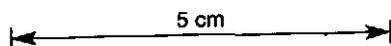
Sandstone - mudstones are the dominant lithology, like the gravels they are poorly sorted i.e. sandstones with abundant clay matrix and mudstones frequently gritty. These sediments are commonly micaceous, carbonaceous and tuffaceous. The latter occurs as feldspathic? bands and scattered subrounded blocks of yellow - brown vesicular basalt (bombs) these maximum of 10cm.

248.30 - 253.90. Diorite, fine - medium grained, dark green, chloritized and serpentized? in places. This may be a coarse gravel bed, or a thin flow (latter unlikely due to relatively coarse grain size 2 - 3mm) 253.90 - 265.00. Sandstone pale green and chocolate brown mudstone, the latter with abundant diorite fragments. Both these sediments aren't carbonaceous.



LOCATION BPD 1  
EL 58-80 BOOBYALLA.  
N.E. TAS.

SCALE 1:5000.  
TAPE & COMPASS TRAVERSE



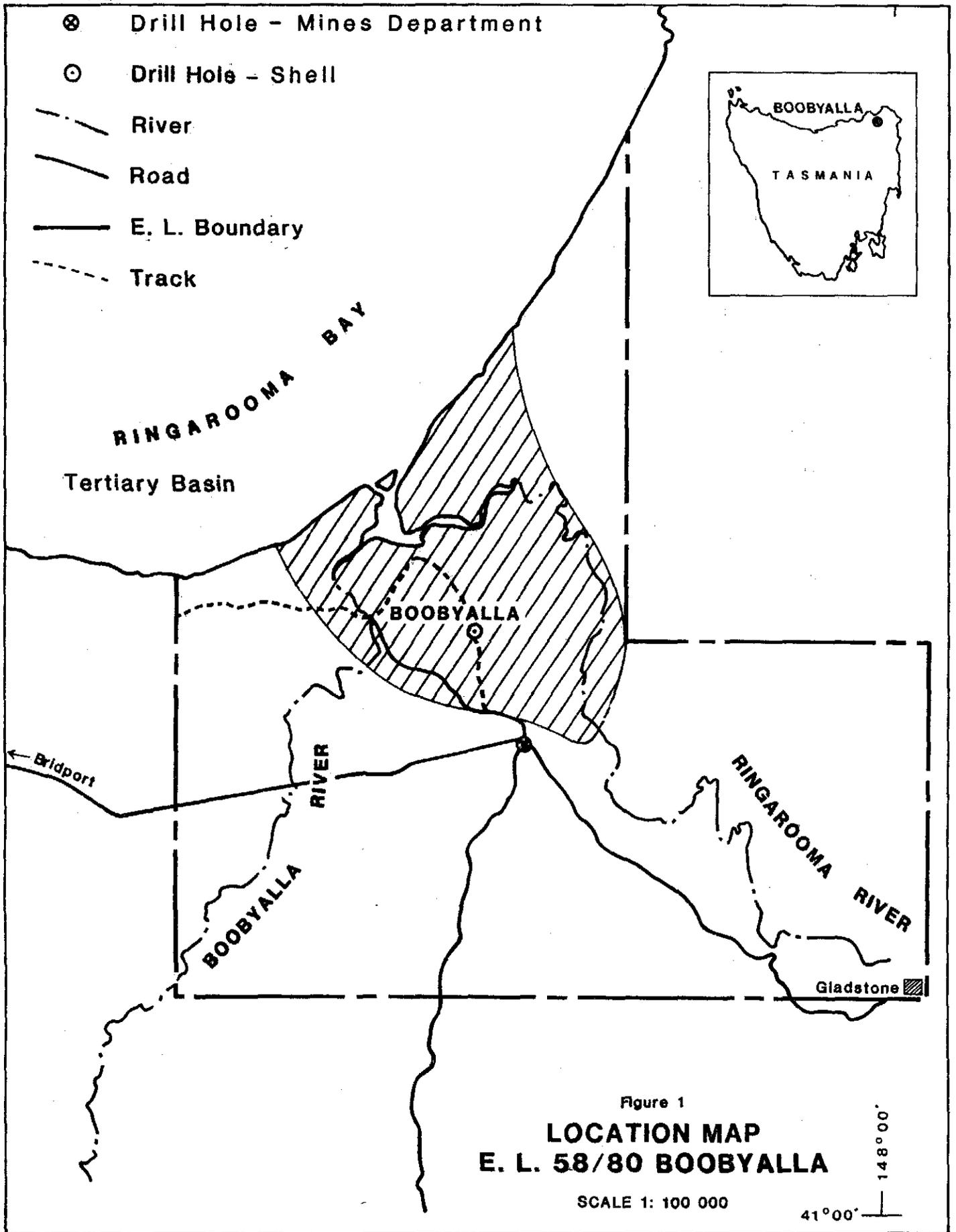
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WELL NO. BPD 1		CONTRACTOR	EAST COAST DRILLING	THE SHELL COMPANY OF AUSTRALIA LIMITED METALS DIVISION		DATE STARTED	17-8-'81	SHEET No. 1		
LOCATION		MACHINE	LONGYEAR 38	<b>DIAMOND DRILL LOG</b>		DATE FINISHED	25-8-81	HOLE SURVEY DATA		
PHOTO REFERENCE		DRILLERS	TONY WERDEN			No OF SHIFTS		INSTRUMENT:		
GRID COORDINATES		ASSAYERS	ALLAN GREEN			TOTAL DEPTH	265 m	DEPTH	INCLINATION	AZIMUTH
WELL ELEVATION		D.P.O. Nos		PROJECT		CODE				
		LOGGED BY	ROGER PALTOCK			NON CORING	0	13		
						CORING	13	265		
						CASING LEFT				

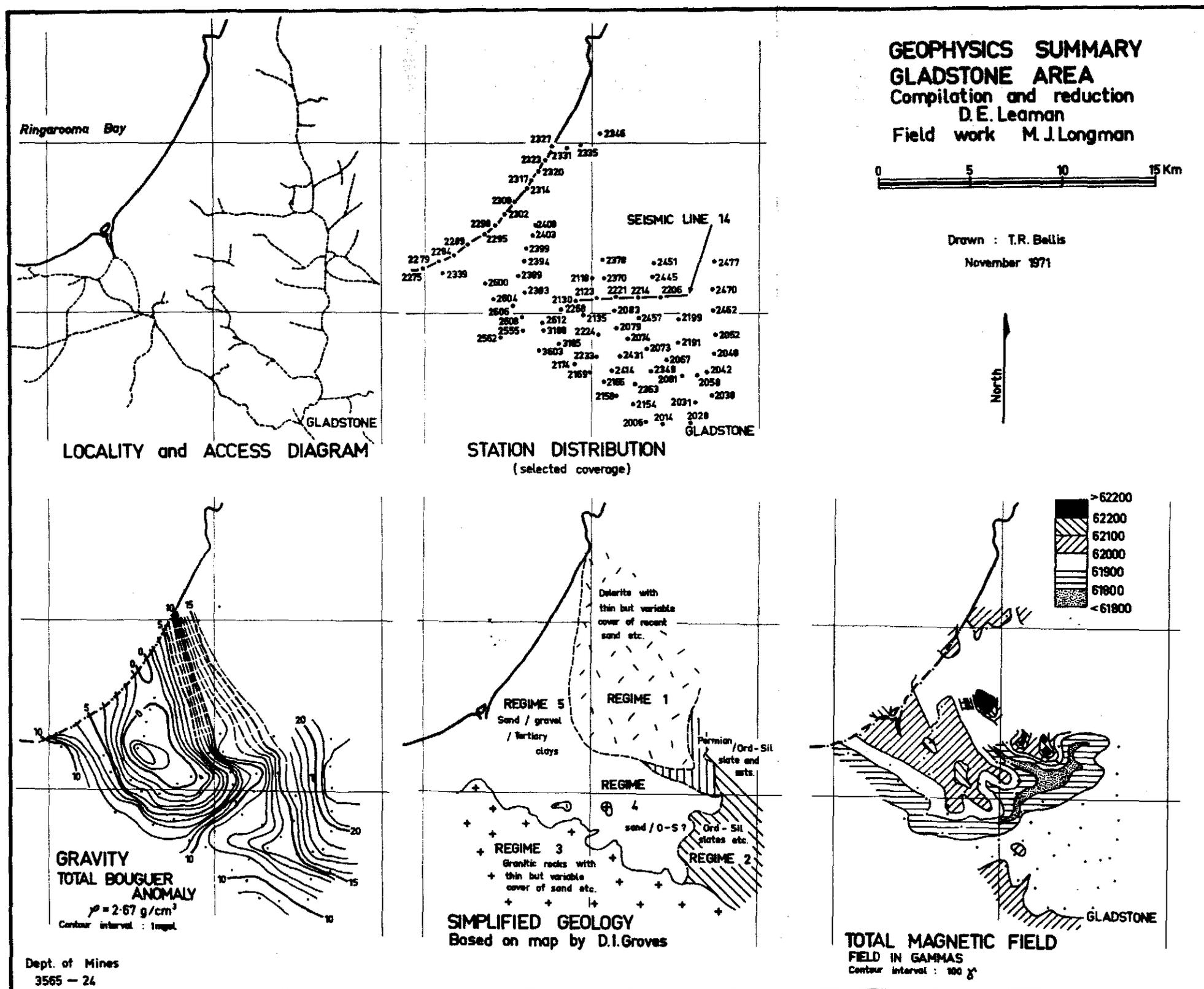
TO	CORE SIZE	CORE REC. VD.	% REC VRY.	SAMPLE NO.	ASSAYS										WEIGHTED ASSAYS										ASSAY RATIOS										PERCENT ESTIMATES										CORE ANGLES										T.S.	P.S.	DESCRIPTION
13	-	-	-																																																						0-13 Sand white-grey with minor fine gravel between 8-9m.
14.5	NQ	.23	15																																																						
16.00		.23	15																																																						
19.00		.60	20																																																						13-22 Gravel coarse.
22.00		.44	15																																																						
25.00		1.67	56																																																						22-25 Sandstone - clay sandstone
26.00		.30	30																																																						
28.50		.50	20																																																						
29.65		.67	58																																																						
31.00		1.35	100																																																						
32.80		1.55	86																																																						
34.50		1.56	92																																																						
36.10		1.66	103																																																						
37.65		1.64	106																																																						
39.25		1.61	100																																																						
41.00		.95	54																																																						
42.70		1.62	95																																																						
44.40		1.32	76																																																						
45.10		.88	59																																																						
46.40		.53	100																																																						
46.70		.30	100																																																						
49.00		1.60	70																																																						
50.00		.47	47																																																						
51.10		.75	68																																																						
52.30		.34	28																																																						
54.10		1.75	97																																																						
55.75		1.66	100																																																						
57.45		1.65	97																																																						
59.50		1.60	78																																																						
61.00		1.05	70																																																						
63.00		1.44	72																																																						
64.00		.25	25																																																						
66.20		.60	27																																																						

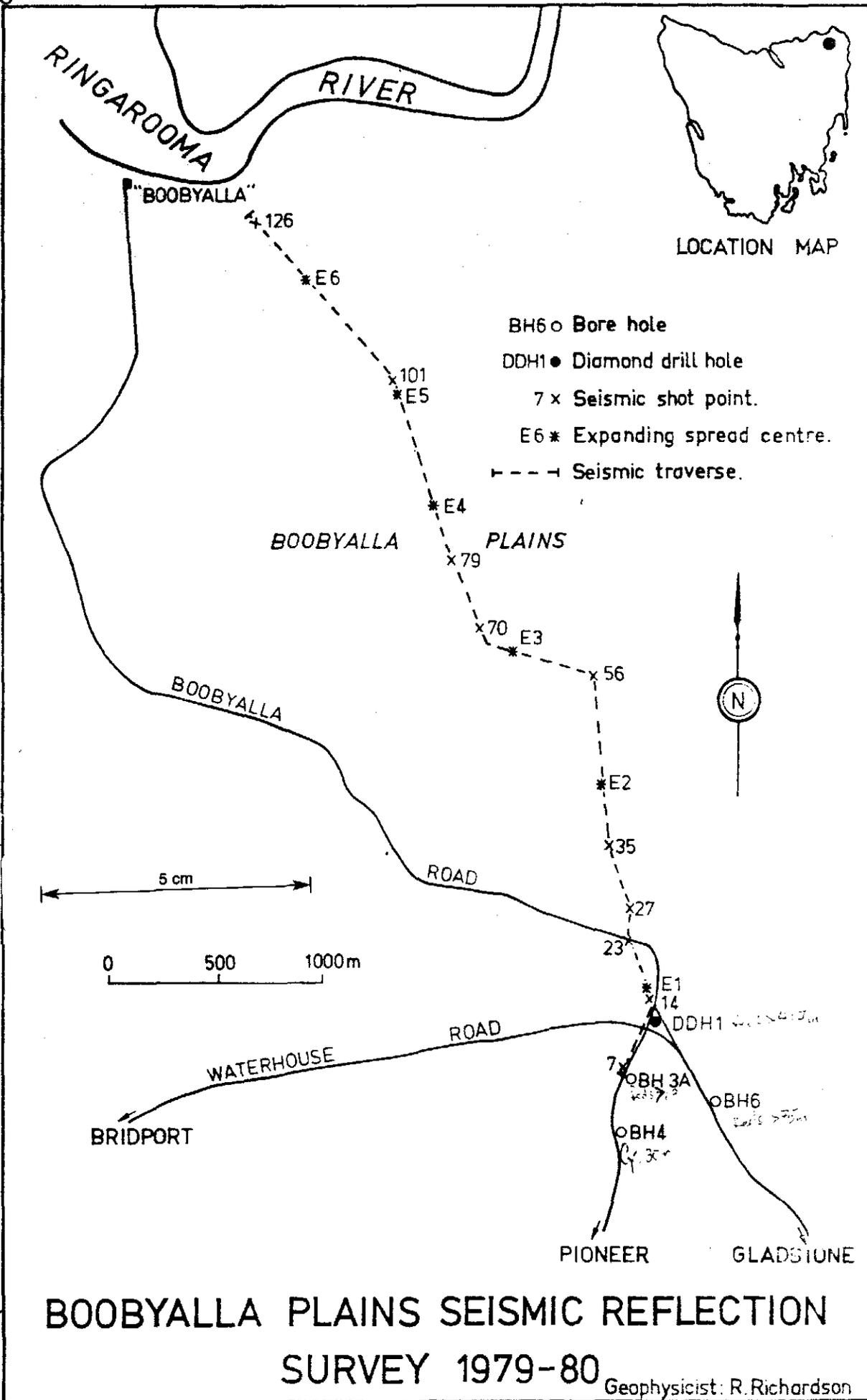






5 cm





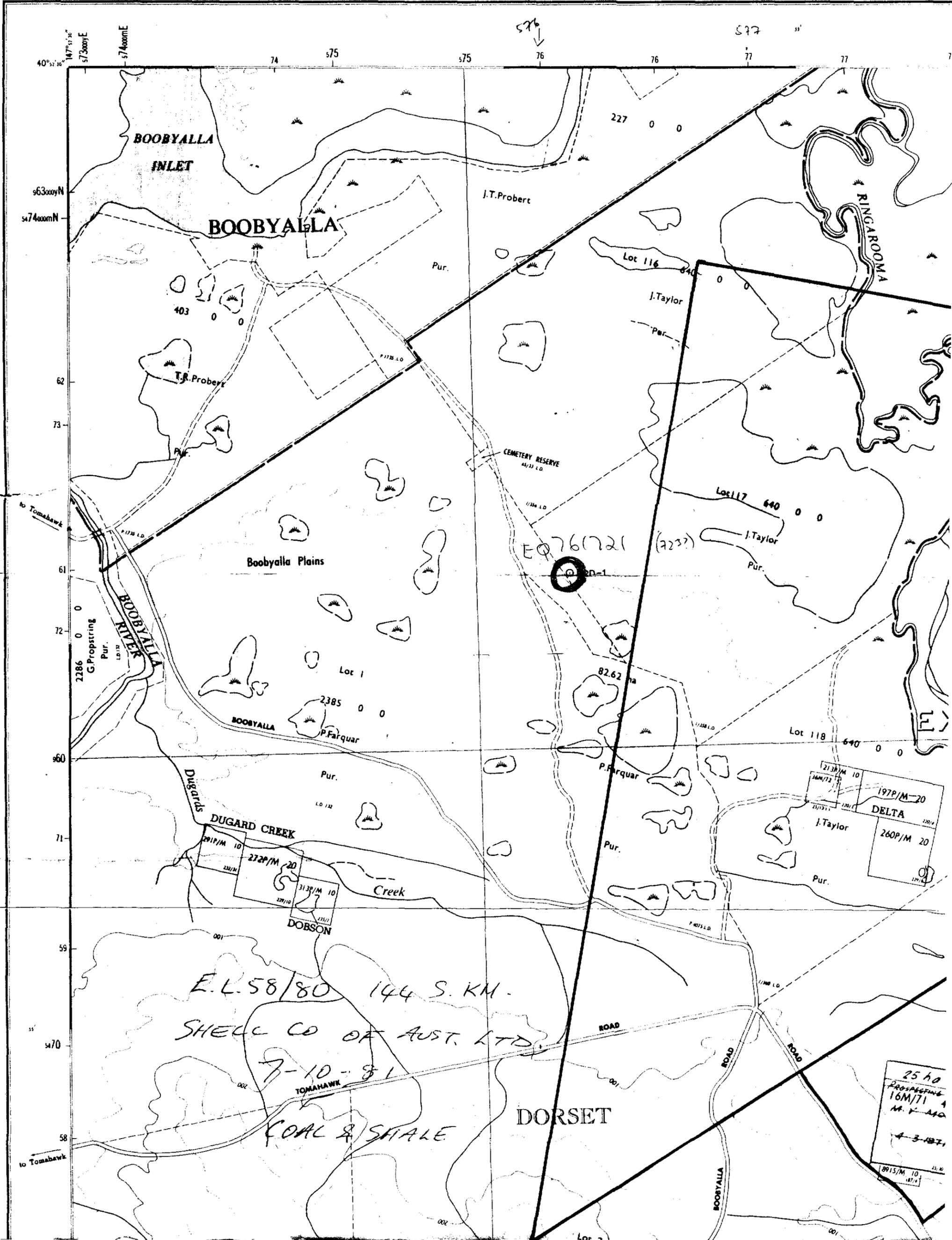
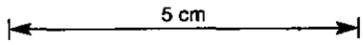
**BOOBYALLA PLAINS SEISMIC REFLECTION SURVEY 1979-80**

Geophysicist: R. Richardson

FIG. 3

MINERAL

AUSTRALIA 1:15,840



21-11.21

25 ha  
PROGRAMME A  
16M/71  
M.V. 440  
4-3-1971  
8915/M 10  
187/4