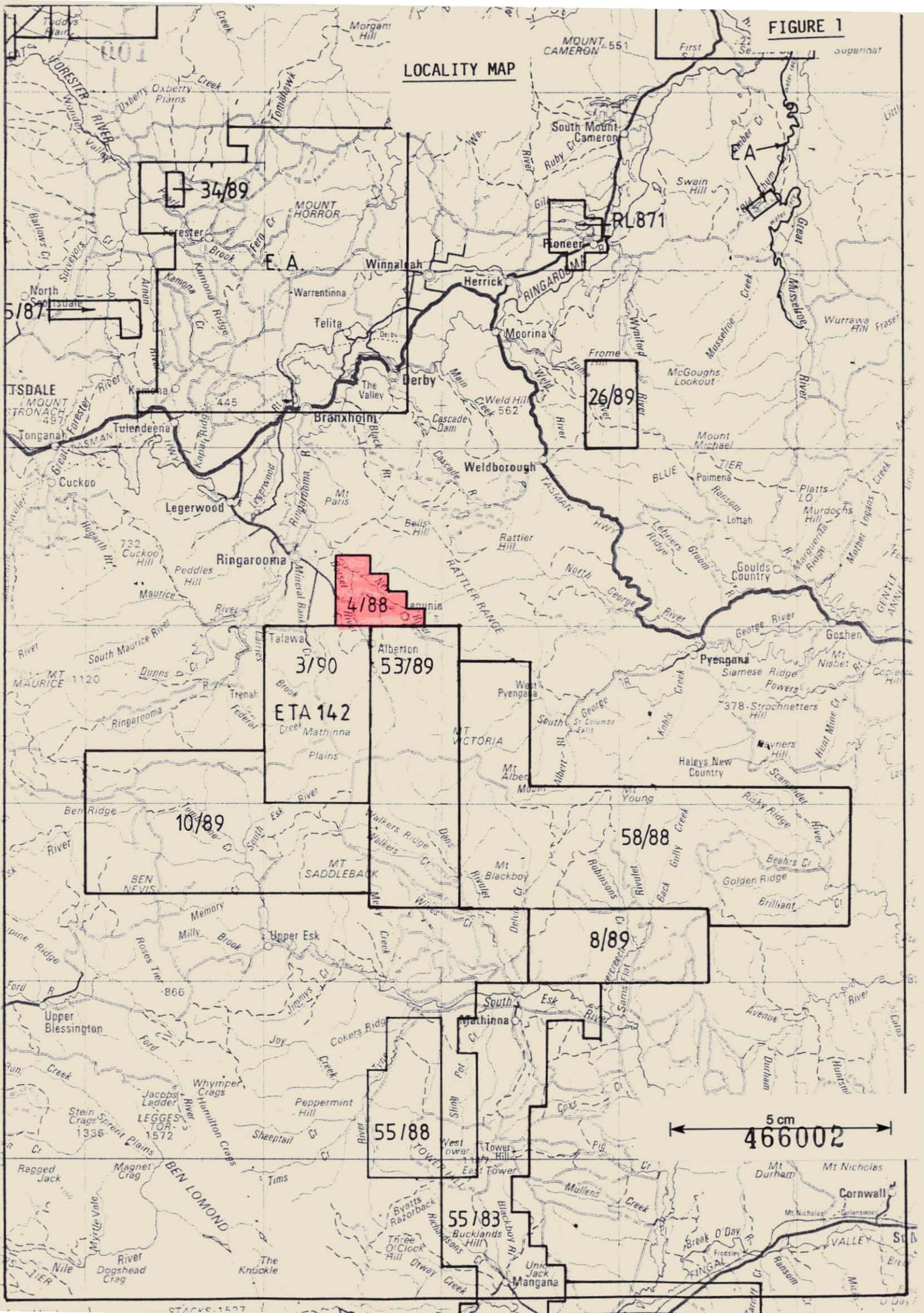


LOCALITY MAP



5 cm
466002

C O N T E N T S

Introduction

Previous Exploration and Mining

Exploration in E.L.4/88

1988-89

- 1989-90 a) Churn Drilling
 b) Second Seismic Survey
 c) Further Drilling
 d) *General Geology*

1990-91 Proposed Programme

References

Figures:

1. Locality Map (1 : 500 000)
2. E.L. Map (1 : 12500)
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4. Seismic Profiles ((Appendix 1)
5. Calyx Drilling Graphic Section
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1. Seismic Report (R.G. Richardson)
2. Calyx Drilling Logs (1939)
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4. Mineralogy of Dyke Rock (Alberton Road)
(R. S. Bottrill)

Introduction

The licence was issued on 18th August 1988 and this report presents the results of seismic surveys and churn drilling during the second year of tenure.

Exploration in the licence area aims to delineate palaeochannels in the alluvial plains of the Dorset and New Rivers. These rivers drain the Alberton goldfield (which lies 4 - 6 km to the south of the southern boundary of the E.L.) and it can reasonably be expected that these palaeochannels, here designated the Dorset and New River Leads, would be gold bearing.

Previous Exploration and Mining

Calyx drilling was undertaken by the Department of Mines in 1939 and 1940 in the New River Alluvial Goldfield (Appendix 2) and values up to 3.1 g/m³ over 8.3m were recorded but were generally variable. A shaft was sunk on Krushka's lease (303P/M) on the rich area and is reputed to have been successful but groundwater caused difficult working conditions. Production records are non-existent and the reason for closure is unknown.

The Department of Mines also diamond drilled the area to the south. Four holes were drilled into bedrock, two on the E.L. and two further south, but gold reefs were not recorded in any of them. There are numerous abandoned alluvial workings (Figure 2) in the area, many of them shallow and unrelated to Leads with the exception of Krushka's shaft and a shaft reputed to be 10m deep near the stockyards on Pera Flats Road. The exact location of these shafts is not known.

Exploration in E.L.4/88

1988-1989: Two kilometers of seismic profiling using 15m spacing was carried out in 1989 (Annual Report for 1989) and several possible palaeochannels were identified (Figure 2). This survey, using 15m

and 7.5m spreads, interpreted a surface layer with a velocity of 400m/sec, an intermediate layer of 1150 m/sec and a bottom layer of 2000-2400 m/sec. One 30m spread indicated a 4500m/sec layer at 60m.

1989-1990:

Churn Drilling. Drilling commenced in January 1990 using a Keystone Churn Drill hired from the Department of Mines. Two holes were drilled on the seismic line, neither of which were thought at the time to have bottomed on bedrock at the depths predicted from the seismic survey. The predicted depth to basement was 8m in B.H.1 and 5.5m in B.H.2. The depth of the holes was 8.5m in B.H.1 (abandoned at that depth due to loss of a casing shoe down the hole), and 13.6m in B.H.2. In both holes, rounded pebbles in the samples indicated that bedrock had not been reached.

At this stage drilling was discontinued due to unavailability of a drilling crew and it was decided to continue with seismic surveys to obtain more precise information on depth to bedrock.

Second Seismic Survey. Thirteen seismic spreads were recorded using: 30m spacing (Nos 1, 2, 3, 4, 5, 9, 10)

15m	~	(No.8)
10m	~	(Nos 7, 12)
5m	~	(No.11)
3m	~	(Nos 6, 13, 14)

The locations of the spreads are shown on Figure 2. No.13 west of nos 11 and 14 on Mathinna outcrop at Cemetery Corner were fired for velocity control and are not shown on Figure 2.

All but Spread 10 were located in the Dorset valley which is thought to be the most prospective as this river drains the greater part of

the lode goldfield to the south.

The wider spaced spreads in this survey indicated an upper velocity layer of 1200 - 1500 m/sec and a basement velocity of 2700 - 4000 m/sec. except in nos 2 and 3, where it was 6000 m/sec.

Further Drilling. A line of holes was drilled across the New River alluvial flats close to the eastern boundary of "Mineral Banks" and in the vicinity of Spread 10. Drilling in this area would a) provide a control on seismic interpretation and b) search for a continuation of the New River Lead.

Six holes (nos 3 - 8) were drilled and depths to bottom (weathered Mathinna Beds) varied from 4 to 11m, whereas the seismic interpretation gave depths of 15 to 33m (Figure 4c). A discrepancy of this magnitude (x5) is unlikely to be due to an incorrect velocity factor but could be caused by two different interfaces, drilling having located the alluvium/bedrock contact and seismic, the weathering front.

The borehole and seismic lines were not coincident but the low point of each would correlate if the channel (?) paralleled the present day Crown Prince Creek which traverses the area, which suggests that the weathering front could be a (subdued) reflection of the erosion surface. If this were the case then the 30m spaced seismic profiles could be utilised for plotting palaeochannels as well as the 10m or 15m ones - perhaps even better as minor peaks and troughs would probably not be apparent in the wider spaced profiles and also the seismic velocity difference between alluvium and weathered bedrock appears to be smaller than that between weathered and unweathered bedrock, making the latter a better defined surface. This matter could be resolved by a 10m spaced seismic spread over the borehole line or a 40m borehole (to the weathering front) or preferably both.

With regard to boreholes 1 and 2 which were both thought to be in alluvium at 8.5m and 13.6m (resp.) on the evidence of the presence of rounded pebbles could both have actually bottomed on weathered Mathinna Beds. The experience gained in the New River drilling indicates that pebbles can carry over into samples drawn from bedrock and a more reliable indicator is probably the yellow colour and high clay content of weathered Mathinna Beds.

Sampling Procedure. Samples were taken from the bailer at 1m or 2m intervals, cradled and pan concentrated in the field. If visible gold was noted, the cradle overflow was also pan concentrated as a check on possible losses (but none was found in any of the samples treated). All samples contained tramp iron but no heavy mineral other than gold and this only in minor amounts.

Grains were individually counted and measured under the microscope and an average grade was estimated and recorded (Appendix 3).

The grain size of gold was in the range of 300-800 μ m and the highest average grade (58mg/m³ - around one tenth of economic grade), was recorded in B.H.6.

A minor channel is apparent in this line of holes but the main one is anticipated to lie ahead of the line. The drilling programme has been suspended due to wet ground conditions but will be recommenced as soon as practicable.

General Geology. Midway in Spread 4 the seismic profile was stepped, indicating some degree of attenuation of the signal, suggestive of a fault (Richardson - pers. comm.). The step was repeated when the spread was fired from the opposite end. This step coincides with the position of the Dorset River which parallels, if not occupies, the Mangana-Waterhouse goldfield lineament.

A 1km long dolerite dyke lies to the east of the Alberton Road and also parallels the trend of the goldfields lineament. The age of this rock is uncertain as it is mineralogically dissimilar to Jurassic dolerite (Bottrill - pers. comm.). Dolerite also crops out west of the Alberton Road close to Spreads 4 and 11. The dolerite has been previously mapped but the dyke form was not recognised at the time (Threader 1967). Close to the northern extremity of the dolerite dyke is a weathered acid igneous rock, probably originally a quartz porphyry (Appendix 4). The occurrence was noted in a seismic shot hole and its extent is not, at this stage, known. A Quartz Porphyry dyke, intrusive into Mathinna Beds, was intersected in the Crown Prince adit and also in diamond drill holes 2 and 3 (Alberton Goldfield drilling - 1967?). This dyke had a strike of 030°? a dip of 50°NW. McClenaghan (1977 and 1982) mapped dolerite and quartz porphyry dykes intruding granites in the Blue Tier area about 15km easterly to nor-nor-easterly of these occurrences at Alberton and Alberton Road.

The Blue Tier dykes strike 030-050 and are vertical and similar occurrences have been noted in the Boobyalla-Tomahawk area where they intruded both granitic rocks and Mathinna Beds.

Exploration Programme for 1990-1991

It is proposed to continue the line of holes across the New River Lead and to drill two lines of holes on the Dorset Lead located at the 4.5.12 and the 6.7.8.9 seismic lines.

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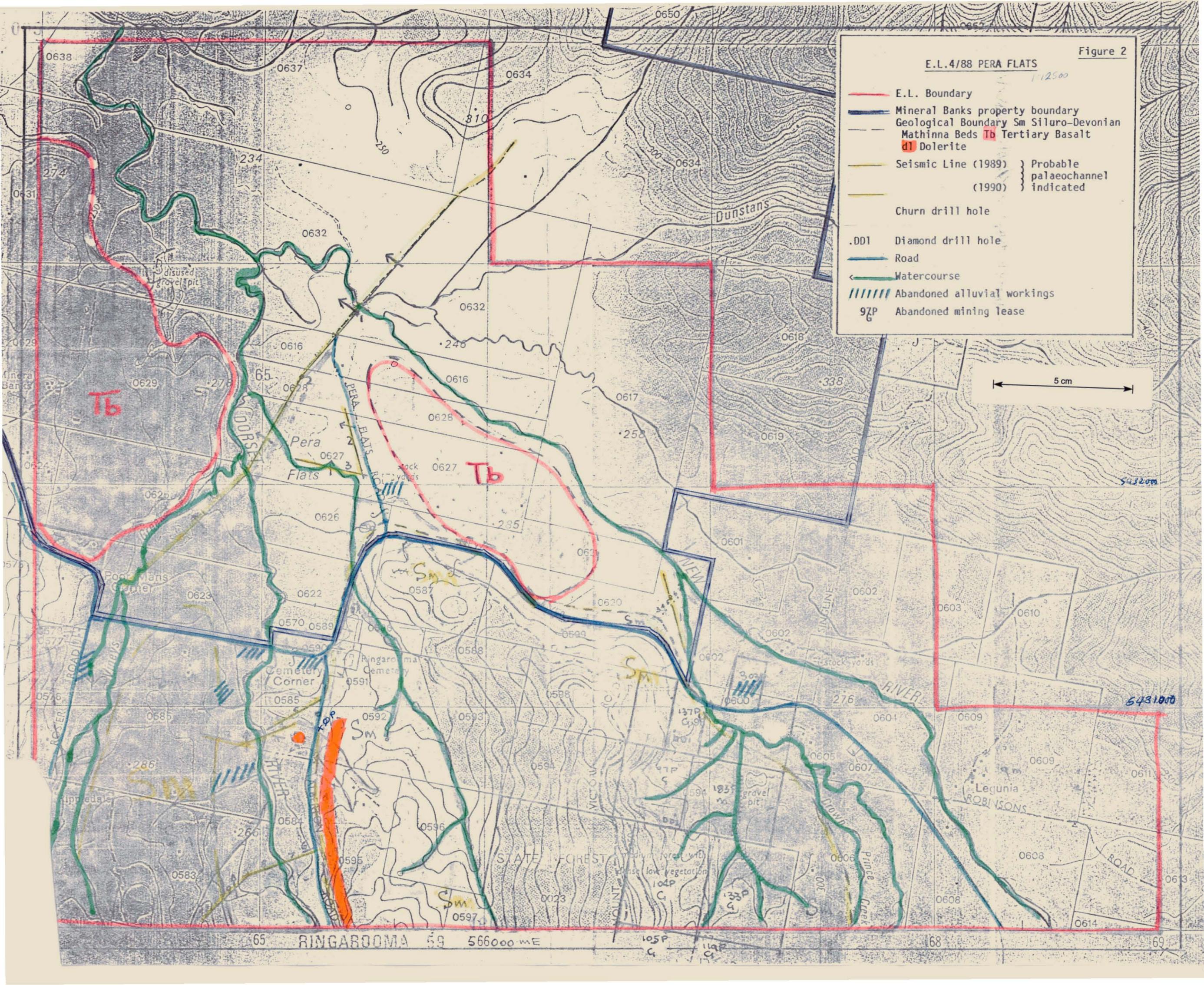
Figure 2

E.L.4/88 PERA FLATS

1:2500

- E.L. Boundary
- Mineral Banks property boundary
- Geological Boundary Sm Siluro-Devonian
- Mathinna Beds Tb Tertiary Basalt
- Dolerite
- Seismic Line (1989) } Probable palaeochannel indicated
- (1990) }
- Churn drill hole
- .DD1 Diamond drill hole
- Road
- Watercourse
- ||||| Abandoned alluvial workings
- 97P Abandoned mining lease

5 cm



A P P E N D I X 1

Seismic Report

by R.G. Richardson

(and Seismic Profiles - Fig.4 a to c)

(Locations of Seismic Lines on Fig.2)

SEISMIC SURVEY - EL 4/88 PERA FLATS

At the request of Vic Threader and Associates fourteen seismic refraction spreads were recorded in the Pera Flats area. The nominal locations and orientations are shown on Figure 1. Data were recorded using a Nimbus ES-1210F seismograph and geophone intervals between 3 m and 30 m. Explosive sources were buried in holes dug by a backhoe to depths of between 1.5 and 2.3 m.

Spreads 13 and 14 were 3 m interval spreads shot to provide velocity control for interpretation. Spread 14 was entirely on Mathinna Beds (weathered, fractured) and showed a velocity of 1200 - 1300 m/sec. Spread 13 was shot over an area believed to contain dolerite. It clearly showed the presence of a dolerite dyke approximately 11 m wide surrounded by Mathinna Beds with a velocity of 1500 m/sec. It should be noted that the velocities obtained here are a minimum as depth of burial will tighten the jointing.

Spread 1 (CG) (30 m)

Basement velocity 2700 + 3800 m/sec

Geophone	VTT	Depth (m)	Elev ⁿ
CC12	8	17	100 (arbitrary datum)
CC11	6	13	99.5
CC10	11	23	99.6
CC9	13	27	99.5
CC8	14	29	99.2
CC7	16	34	99.5
CC6	16.5	35	99.8
CC5	17	36	99.3
CC4	15	31	99.2
CC3	10	21	99.7
2			100.9
1			103.1

Spread 2 (SY) (30 m)

Basement velocity 5330 - 6000 m/sec (Granite?)

Geophone	VTT	Depth (m)	
SY12	17	36	100 (datum)
SY11	17	36	98.6
SY10	18.5	40	98.0
SY9	22.5	48	97.7
SY8	24.5	52	97.3
SY7	25.5	55	96.9
SY6	26.5	57	96.5
SY5	26.5	57	96.4
SY4	27	58	96.4
SY3	26	56	96.4
SY2	21	45	95.8
1			95.1

Spread 3 (SYA) (30 m)

Basement velocity 6000 m/sec

Geophone	VTT	Depth (m)	Elev'n.	
SYA12	14.5	31	100 (datum)	SYA2 / 96.2 m
SYA11	19	41	98.1	
SYA10	21.5	46	97.5	95.9
SYA9	25	53	97.3	
SYA8	26.5	57	97.5	
SYA7	29.5	63	97.4	
SYA6	27.5	59	97.0	
5			96.3	
4			96.8	
Spread 4 (DR) (30 m)			96.4	

Basement velocity 2700 - 3000 m/sec

Geophone	VTT	Depth (m)	100 (datum)
12			
DR11	6	12	98.1
DR10	10.5	21	96.9
DR9	9.5	19	97.6
DR8	8.5	17	98.2
DR7	6	12	97.8
DR6	12.5	25	98.7
DR5	13	26	98.8
DR4	9	18	99.0
DR3	6.5	13	99.0
2	3	6	99.5
1			99.5

Spread 5 (DRA) (30 m)

Basement velocity 3000 m/sec

Geophone	VTT	Depth (m)		DR12 (datum) / 100
DRA8	18	36	96.4	
DRA7	16	32	96.9	11 97.3
DRA6	17	34	96.7	10 95.8
DRA5	15	30	97.6	9 96.0
DRA4	13.5	27	98.0	
DRA3	7.5	15	98.5	
2			98.9	

Spread 6 (3 m)

Basement velocity 1800 m/sec

Geophone	VTT	Depth (m)
12	5.2	10
11	5.5	11
10	4.4	9
9	3.7	7
8	3.7	7
7	3.6	7
6	3.3	7
5	2.7	5
4	2.3	5
3	3.4	7
2	4.1	8

Spread 7 (OS) (10 m)

Basement velocity 2200 m/sec

Geophone	VTT	Depth (m)	Elev.		
OS12	3	6	100 (datum)	6 /	99.0
OS11	3	6	99.8	5	98.5
OS10	3.5	7	99.8	4	98.5
OS9	2.5	5	99.8	3	98.6
OS8	4	8	99.7	2	98.7
OS7	5	10	99.0	1	98.5

Spread 8 (OSA) (15 m)

Basement velocity 4000 m/sec

Geophone	VTT	Depth (m)	Elev.		
OSA12	6.5	13	100 (datum)	4 /	99.6
OSA11	9	18	99.5	3	99.8
OSA10	12	24	99.9	2	99.8
OSA9	14.5	29	99.8	1	99.6
OSA8	12.5	28 25	100.1		
OSA7	14	28	99.8		
OSA6	13.5	27	99.9		
OSA5	14	28	99.8		

Spread 9 (OSB) (30 m)

Basement velocity 4000 m/sec

Geophone	VTT	Depth (m)	Elev'n.
OSB12	18.5	37	100 (datum)
OSB11	20	40	97.7
OSB10	22	44	98.0
OSB9	22.5	45	96.1
OSB8	25	50	96.0
OSB7	27	54	96.0
OSB6	26.5	53	96.0
OSB5	21	42	95.4
OSB4	18	36	95.3
OSB3	14.5	29	95.0
OSB2	13	26	95.3
			95.6

Spread 10 (NR) (30 m)

Basement velocity 3500 - 4000 m/sec

Geophone	VTT	Depth	(Not levelled)
NR12	7.5	15	
NR11	11.5	23	
NR10	15	30	
NR9	13.5	27	
NR8	16.5	33	
NR7	16.5	33	
NR6	15	30	
NR5	14	28	
NR4	13	26	
NR3	13	26	

Spread 11 (DRB) (5 m)

Basement velocity 2500 m/sec

Geophone	VTT	Depth (m)	Elev'n.
DRB12	4	8	100 (datum)
DRB11	2.5	5	99.4
DRB10	2	4	98.5
DRB9	2.5	5	97.9
DRB8	1.5	3	97.2
DRB7	0.5	1	96.3
DRB6	1	2	95.7
DRB5	3.5	7	95.3
DRB4	2.5	5	95.3
DRB3	2	4	95.3
DRB2	3	6	95.4
			95.6

Spread 12 (DRC) (10 m)

Basement velocity 2100 m/sec

Geophone	VTT	Depth (m)
DRC12	7	14
DRC11	6	12
DRC10	6.5	13
DRC9	7.5	15
DRC8	7	14
DRC7	7.5	15
DRC6	8.5	17
DRC5	8	16
DRC4	6.5	13
DRC3	7.5	15
DRC2	7	14

The depths listed above assume a velocity factor of 2.0 km/sec and will, in practice, require adjustment for each site. As drilling control becomes available the profile should be re-calculated. The shape of the profile will, however, remain unchanged. With one exception (Spread 6) the horizon being profiled is the base of the weathering. It should be noted that the weathered layer thickness is often a minimum in the buried valleys and increases on to the valley sides. Thus the expected shallowing at the valley margins is not always obvious.



R.G. Richardson
SUPERVISING GEOPHYSICIST

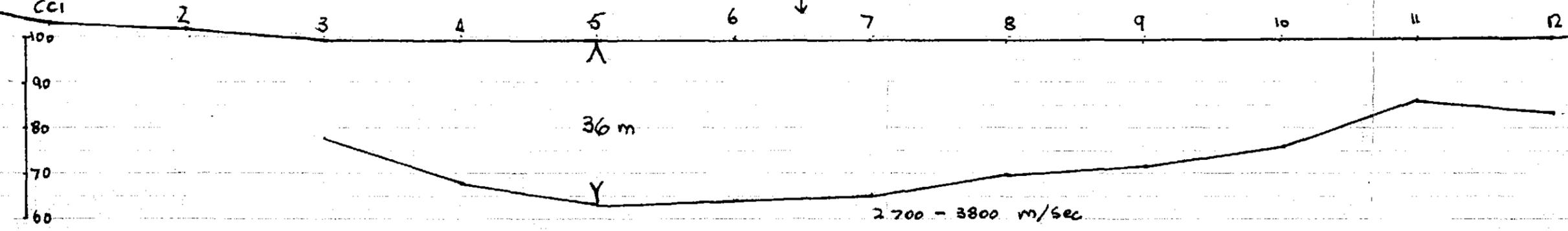
SEISMIC PROFILES

FIGURE 4a

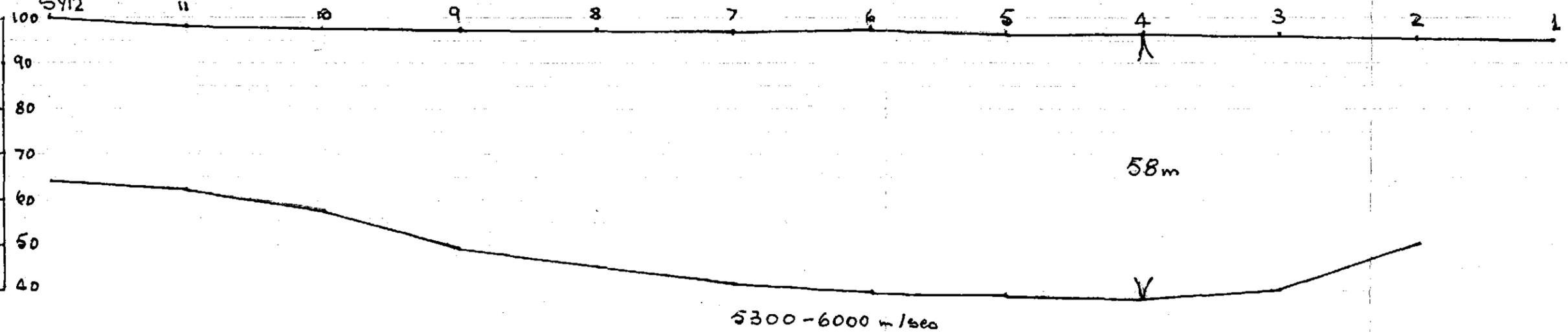
E

To cemetery corner

W. Spread 1
CC1



SE. Spread 2
SY12



W. Spread 3

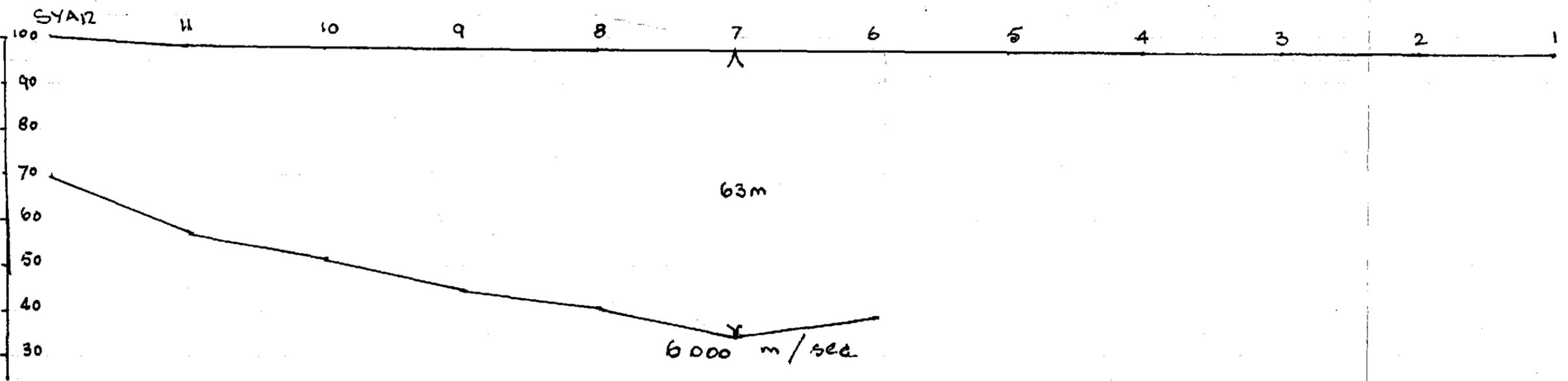


FIGURE 4b

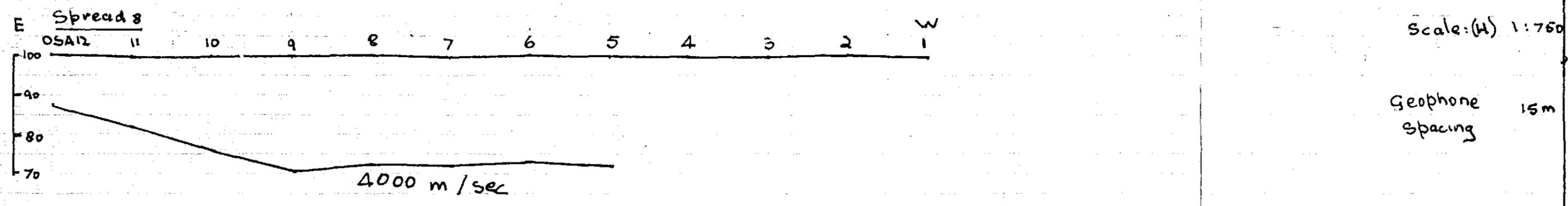
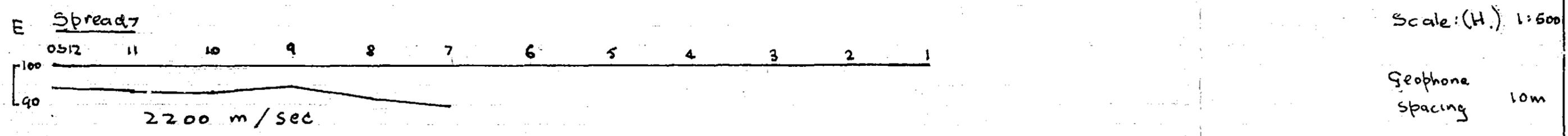
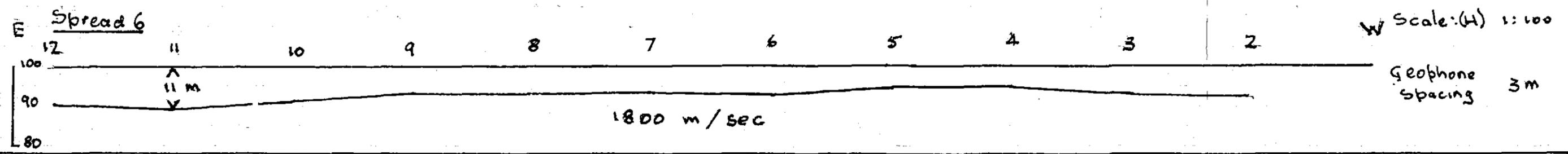
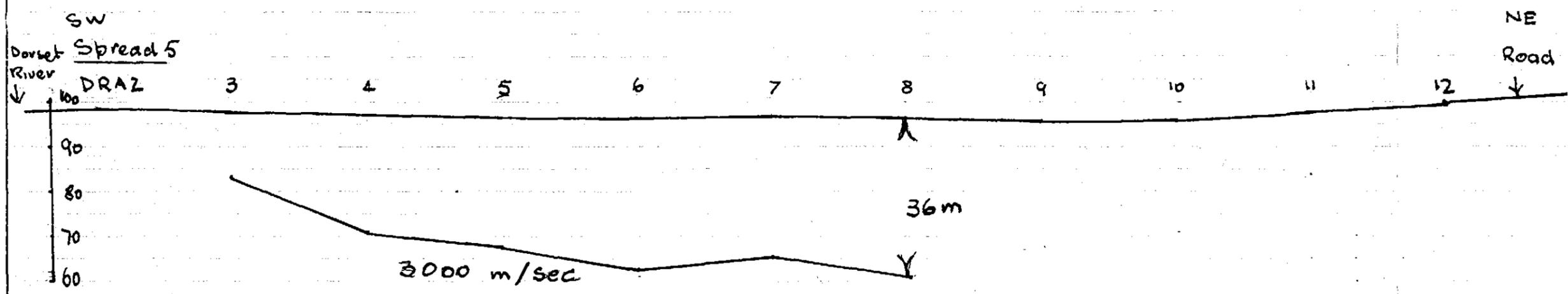
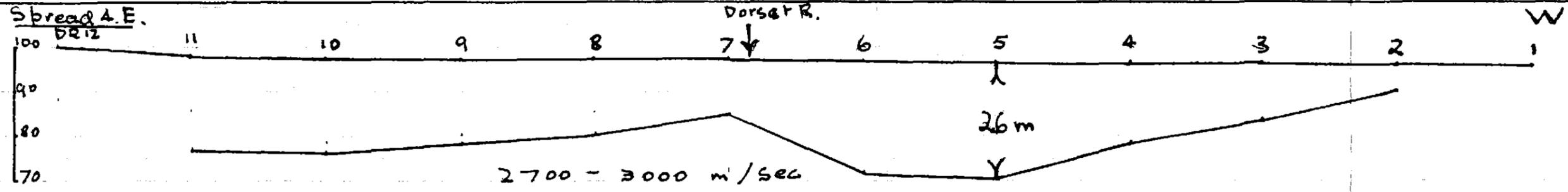
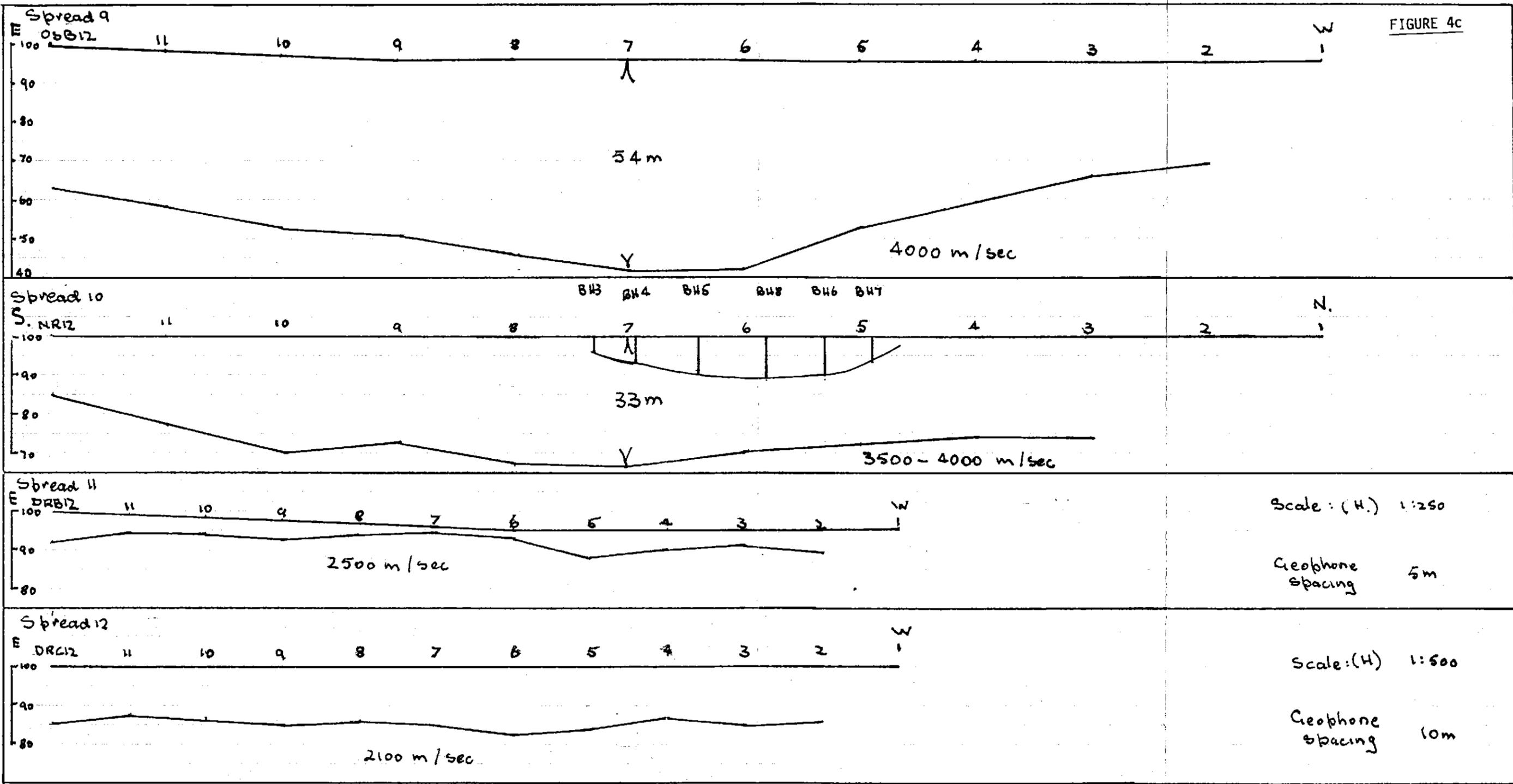
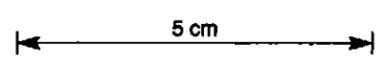


FIGURE 4c



Vertical scale in all sections is 1:1000
 Horizontal scale in sections is 1:1000 unless indicated



466020

A P P E N D I X 2

Calyx Drilling Logs and Graphic Sections

(Location of holes in Fig.3)

Calyx Drilling at Legunia by D.O.M. 10.7.39

B.H.	Depth	Thickness	Log	Gold Content	
				Depth	gm ³ Mean
1A	0-5.18	5.18	Hard shingle wash		
	-6.10	.92	Small "		
	-7.62	1.52	Slate-sandstone wash		
	-8.23	0.61	Soft bottom		
	-8.53	0.30	Quartz leader		
					0.24
2A	0-4.88	4.88	Hard shingle wash	0-2.23	nil
	-5.49	.61	Small "	2.23-4.47	"
	-5.56	.07	Red cement	4.47-6.71	0.57
	-8.43	2.87	Slate-sandstone wash	6.71-8.33	0.78
	-8.84	.41	Soft slate bottom		
					0.30
3A	0-5.79	5.79	Hard shingle wash	0-8.94	nil
	-6.10	.31	Small "		
	-6.86	.76	Red sandstone		
	-10.67	3.81	White slate-sandstone wash	8.94-10.67	
	-11.28	.61	Soft slate bottom		
					0.01
4A	0-5.18	5.18	Shingle wash	0-4.47	nil
	-5.79	.61	Small shingle	4.47-8.33	6.65
	-6.10	.31	Cementing wash		
	-8.33	2.23	White wash		
	-8.84	.51	Slate bottom		
					3.1
1B	0-1.07	1.07	Surface clay	0-4.47	nil
	-6.40	5.33	Shingle	4.47-11.18	0.24
	-7.32	.92	Cementing wash	11.18-21.64	nil
	-21.00	13.68	White wash		
	-21.64	.64	Slate bottom		
					.08
2B	0-0.91	0.91	Surface clay		
	-7.62	6.71	Shingle wash	0-6.71	nil
	-9.45	1.83	Red cementing sandstone	6.71-11.18	0.26
	-17.98	8.53	White wash	11.18-20.88	nil
	-19.20	1.22	Hard conglomerate wash		
	-20.88	1.68	White wash		
-21.95	1.07	Slate bottom			
					0.06
3B	0-0.76	0.76	Surface clay	0-4.47	nil
	-7.32	0.56	Shingle white wash	4.47-8.98	0.19
	-11.58	4.26		8.98-11.18	nil
					0.08
4B	0-0.91	0.91	Surface clay	0-4.47	nil
	-7.01	6.11	Shingle	4.47-10.97	0.63
	-8.23	1.22	Red cemented sandstone wash	10.97-11.58	nil
	-11.58	3.35	White wash		
					0.35

1C	0-0.30	0.30	Surface		
	-1.37	1.07	Shingle		
	-5.48	4.11	Fine shingle		
	-6.71	1.23	Red wash		
	-7.62	0.91	Slate bottom		
					nil
2C	0-0.30	0.30	Surface	0-4.47	nil
	-2.13	0.83	Shingle wash		
	-2.44	0.31	Drift		
	-5.49	3.05	Shingle	4.47-6.10	0.28
	-6.10	0.61	Red cement wash		
	-6.71	0.61	Slate bottom		
					0.07
3C	0-0.15	0.15	Surface	0-4.47	nil
	-1.07	0.92	Shingle		
	-1.52	0.45	Drift		
	-6.48	4.96	Shingle	4.47-6.48	0.31
	-7.32	0.84	Soft Slate		
					0.10
4C	0-0.76	0.76	Surface	0-6.71	nil
	-6.71	5.95	Shingle		
	-7.16	0.45	Red clay wash	6.71-7.16	1.68
	-7.62	0.46	Slate bottom		
					0.11
5C	0-0.30	0.30	Surface		
	-5.94	5.64	Shingle		Tr
	-7.01	1.07	Slate bottom		
6C	0-0.76	0.76	Surface	0-4.47	nil
	-3.05	2.29	Drift		
	-7.01	3.96	Shingle (Gold first noted at 5.79m)	4.47-7.92	2.74
	-7.92	0.91	Cementing wash		
	-8.84	0.92	Slate bottom		
					1.19
7C	0-0.30	0.30	Surface	0-6.71	nil
	-6.55	6.25	Shingle		
	-7.16	0.61	Cementing wash	6.71-7.16	6.23
	-7.62	0.46	Slate bottom		
					0.40
8C	0-0.76	0.76	Surface	0-4.47	
	-5.94	5.18	Shingle (Gold first noted at 5.79m)	4.47-6.71	0.35
	-6.71	0.77	Cementing wash		
	-7.32	0.61	Slate bottom		
					0.17

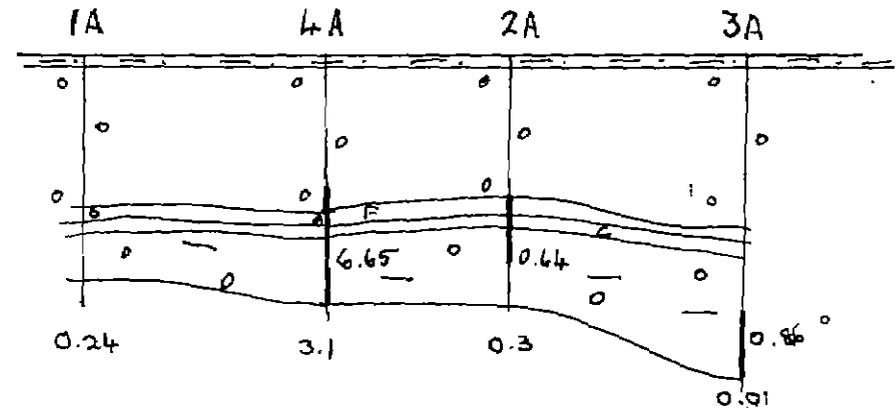
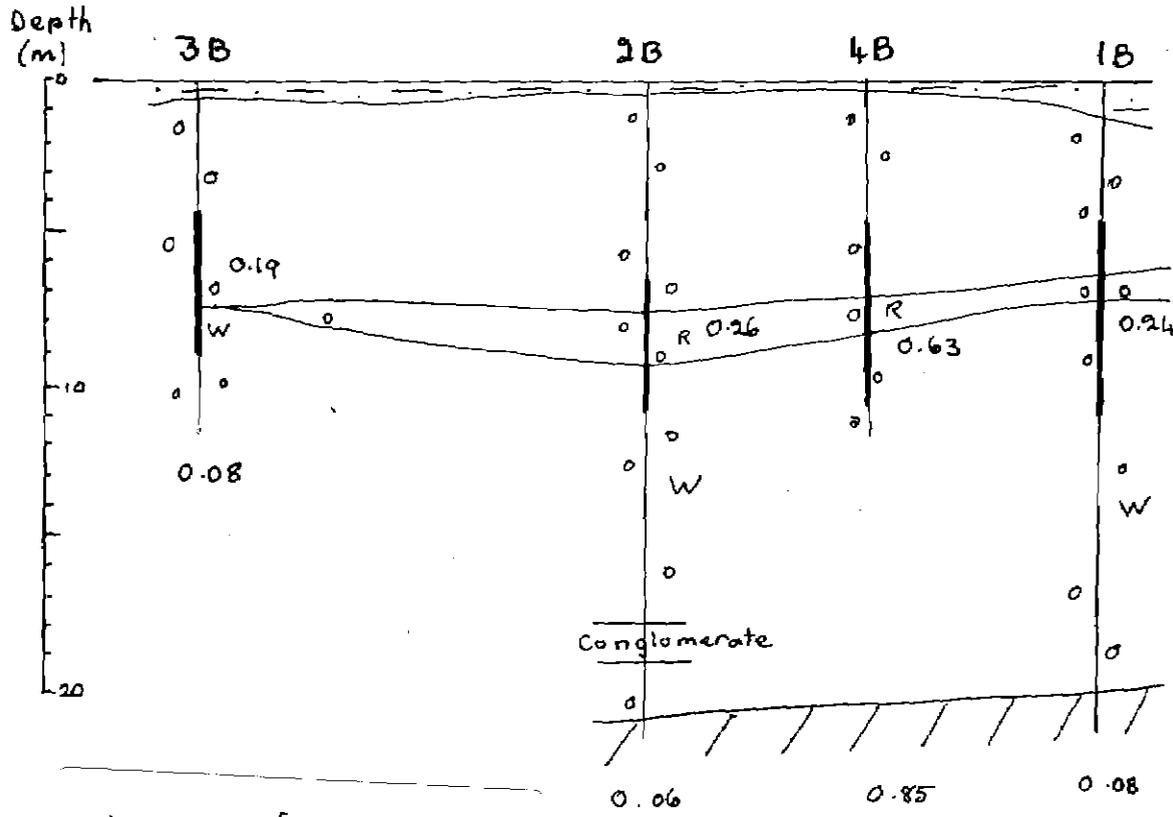
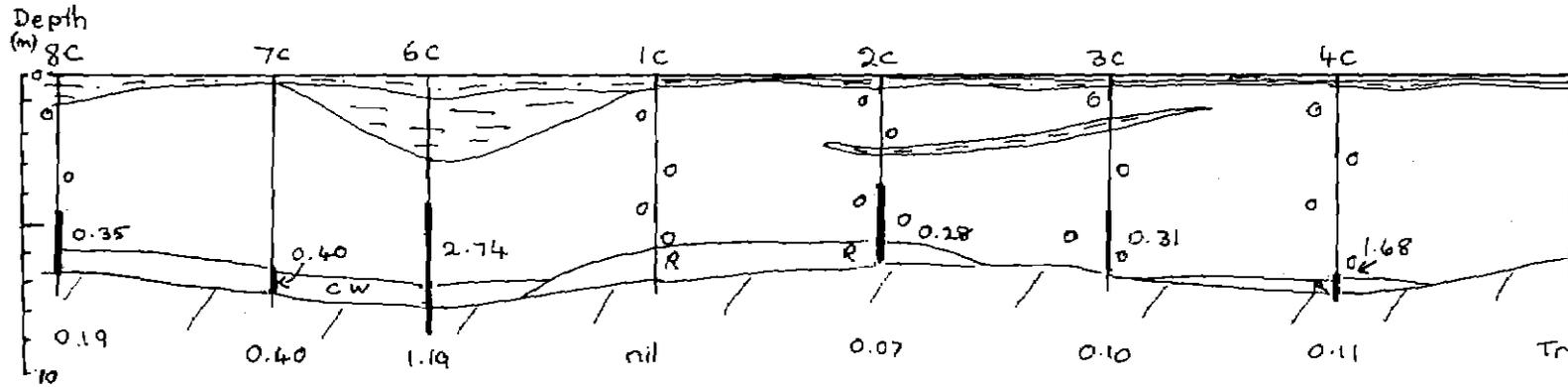
FIGURE 5

CALYX DRILLING

Dept of Mines 1939

in ML 303 P/M

New River



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FIGURE 5

3B	0.19	Borehole gold values and mean gold values indicated
0.08		
[Soil symbol]		Soil
[Clay symbol]		Clay
[Shingle symbol]		Shingle (F fine, C cementing, R red, W white)
[Slate/Sandstone gravel symbol]		Slate/Sandstone gravel
[Bedrock symbol]		Bedrock

Scale: Horizontal 1 : 2500 Vertical 1 : 250

APPENDIX 3

Churn Drilling Logs and Location of Holes

Churn Drilling Logs E.L.4/88 Pera Flats

B.H.	Grid Reference		Depth (m)		Thickness (m)	Depth* (m) to Bedrock	Log	Gold Content
	mE	mN	From	To				
1	565415	5432770	0	1	1	8?	Pebbly clayey soil	nil
			1	2	1		Pebbly clay	
			2	3	1		Pebbly sand	
			3	4	1		Clayey gravel	
			4	6	2		Pebbly clayey sand	
			6	8	2		Pebbly sand	
			8	8.5	0.5		Pebbly sandy clay	
2	565170	5432485	0	1	1	7?	Pebbly clayey soil	
			1	2	1		Pebbly clay	
			2	3	1		Pebbly sand	
			3	5	2		Pebbly clayey sand	
			5	7	2		Sandy clay	
			7	13.6	5.6		Clay with rounded Mathinna Beds pebbles	
3	566824	5433416	0	1.5	1.5	4	Pebbly clayey soil	
			1.5	4	2.5		Sandy clay	
			4	6	2		Sandy clay	
4	566840	5433426	0	1.5	1.5	6	Pebbly clayey soil	2
			1.5	3.0	1.5		Pebbly clayey sand	
			3	4.5	1.5			
			4.5	6	1.5			
			6	7.5	1.5		Sandy clay	
5	566872	5433454	0	1.5	1.5	9	Pebbly clayey soil	1
			1.5	6.0	4.5		Pebbly sand	
			6	7.5	1.5			
			7.5	9	1.5		Sandy clay	
			9	10	1			
6	566904	5433477	0	1.5	1.5	11	Pebbly clayey soil	14
			1.5	3	1.5		Sandy gravel	
			3	8.5	5.5			
			8.5	11	3		Pebbly sandy clay	
			11	12	1		Clay with fragments of vein quartz.	
7	566904	5433477	0	1	1	7.5	Pebbly clayey soil	1
			1	7.5	6.5		Pebbly clayey soil	
			7.5	9	1.5		Sandy clay	
8	566886	5433470	0	1.5	1.5	11	Pebbly clayey soil	3
			1.5	6	4.5		Pebbly sandy clay	
			6	11	5			
			11	14	3		Clay with weathered Mathinna Bed fragments	

Gold in Churn Drill Samples

B.H.No.	Depth (m)	No. of Grains	Mean	Estimated		Average Grade for hole mg/m ³
			Diam. (mm)	Mass (mg)	Grade mg/m ³	
4	3-4.5	2	0.4	1.2	44	35
5	6-7.5	1	0.6	2.8	52	17
	7.5-9	1	0.4			
6	9-9.5	8	0.4	4.8	267	58
	9.5-10.25	2	0.5	2		
	10.25-11	1	0.5	1		
	11-11.5	3	0.8	1.5		
			0.5	1		
Total 2.5m		0.6	2	12.3		
7	8.5-9	1	0.6	2	-	12
8	6-7	1	0.5	1	-	15
	13-14	3	0.6	2		
			0.4	0.6		
			0.3	0.25		
				3.85		

Calculation

Volume of material in a 6 inch diameter hole = $\pi \times (3 \times .0254)^2 = .018\text{m}^3/\text{m}$

1 mg gold/m drilled = $\frac{1}{.018} = 55 \text{ mg/m}^3$

1 mm diam spherical grain of gold of fineness 9000 weighs $\frac{4}{3} \times \pi \times .05^3 \times 18 = 0.9\text{mg}$

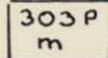
thus:

Diam (mm)	Mass (mg)
1.0	9
0.9	7
0.8	5
0.7	3
0.6	2
0.5	1
0.4	0.6
0.3	0.25
0.2	0.07
0.1	0.01

FIGURE 3

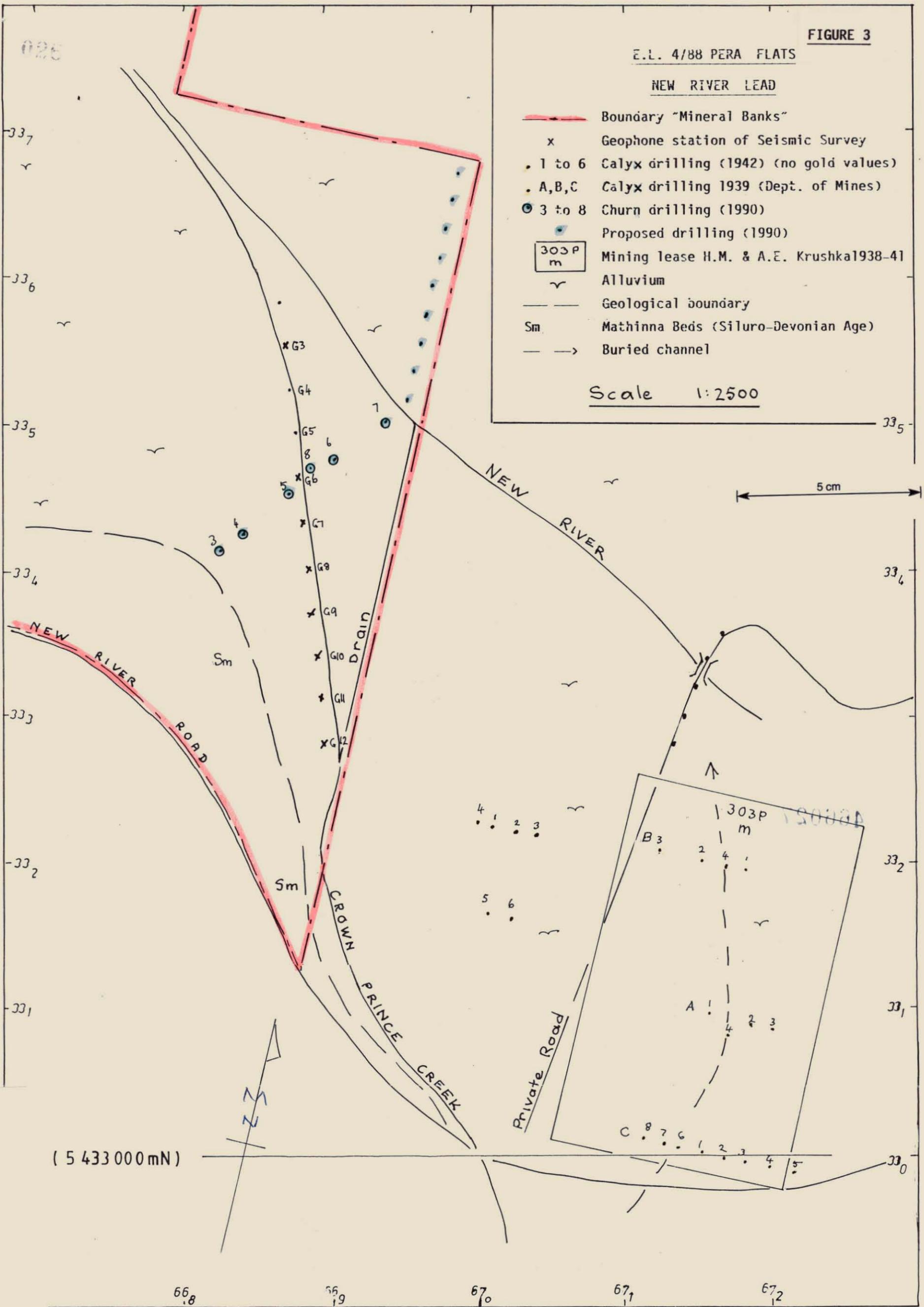
E.L. 4/88 PERA FLATS

NEW RIVER LEAD

-  Boundary "Mineral Banks"
-  Geophone station of Seismic Survey
-  1 to 6 Calyx drilling (1942) (no gold values)
-  A,B,C Calyx drilling 1939 (Dept. of Mines)
-  3 to 8 Churn drilling (1990)
-  Proposed drilling (1990)
-  Mining lease H.M. & A.E. Krushka 1938-41
-  Alluvium
-  Geological boundary
-  Mathinna Beds (Siluro-Devonian Age)
-  Buried channel

Scale 1:2500

5 cm



466028

APPENDIX 4

Mineralogy

by Ralph Bottrill

466029



Department of Resources & Energy

DIVISION OF MINES & MINERAL RESOURCES

Enquiries: R.S. Bottrill
Phone: 30 8359
your ref:
our file: RSB14.90:LD

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Mr V M Threader
Vic Threader & Associates Pty Ltd
43 Kingston Heights
KINGSTON BEACH TAS 7050

20 MAR 1990

Dear Sir,

MINERAL/ROCK IDENTIFICATIONS

Two samples of sandy and clayey material from a seismic borehole at Alberton, were submitted for identification. They were examined by standard stereomicroscopic and X-ray diffraction techniques and are described below.

G400902 (PFDR 12, sand fraction) is composed almost entirely of quartz, with a trace of kaolinite. Most of this quartz occurs as well-formed hexagonal bipyramidal crystals, typical of the high temperature (573-870° C) form, β -quartz. Some slightly distorted crystals do resemble octahedra but, where broken, the crystals do not appear to be polygonal or pseudomorphic. The genesis of these crystals is enigmatic but suggest a high temperature, medium-grained acid dyke, with quartz phenocrysts in a feldpathic matrix.

G400902 (PFDR 12, fine fraction) is composed of quartz (~65%), kaolinite (~30%) and feldspar (~5%).

Please find enclosed invoice No. 18420 for \$80.00 for these identifications.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'R.S. Bottrill'.

R.S. Bottrill
MINERALOGIST/PETROLOGIST

Encl.

Mr. R. Bocerill,
Mineralogist/Petrologist,
Dept. of Mines,
P.O. Box 55,
ROSNY PARK 7018.

15th March, 1990.

565250 5430980

Dear Ralph,

Mineral Identification Sample No. PFORA 12

Please identify mineral content of two samples left at your office yesterday (14.3.90). For your records the location of samples is: a seismic shot hole on the Alberton Road (MIS 565250NE 5430980m). These samples are the coarse and fine fractions of the original material which is also included.

A map showing the location of the sample and including the locations of quartz porphyry samples collected in 1967-8 from Alberton benches and abandoned mine workings in the Alberton goldfield and two thin sections, 67-121 C & B are enclosed.

Yours sincerely,



Enc.

9728

2.4983 KAOL
2.5732 KAOL
2.7821 KAOL

2.4571 QTZ

33°

2.8987
FELD

3.2436
FELD

3.3436
QTZ

3.5783
KAOL

3.8353
KAOL

4.2576
QTZ

4.4564
KAOL

7.1886
KAOL

PRODUCED
BY
MOUNT

DOES NOT
CONSTITUTE
A PEAK

3°

(2E3)(40/30)

PFD RA 12

