CONTENTNS ENVELOPE 4255

TENEMENT: EXPLORATION LICENCE 734

TENEMENT HOLDER: C.R.A. EXPLORATION PTY. LTD

REPORT:

PLANS:

CRA EXPLORATION PTY. LIMITED

FINAL REPORT ON WYOLA 5, E.L. 734 SOUTH AUSTRALIA

AUTHOR: D.L. ANDREWS

COPIES TO: S.A.D.M.E.
CRAE LIBRARY
SWAN RESOURCES LIMITED/
EAGLE CORPORATION LIMITED.

DATE: 11 JUNE, 1981

SUBMITTED BY: D.L. Andrews.

ACCEPTED BY:

CONTENTS

1. SUMMARY

Two drill holes completed by CRA Exploration intersected the target Cretaceous Madura Formation. Modified Fischer distillation results were all less than five litres/tonne.

The Cambrian Observatory Hill beds were intersected in 80EP6a and over a 156 metre intersection were non calcareous shales and siltstones. Shale intervals within the Observatory Hill beds were submitted for approximate oil yield determinations and returned values less than five litres/tonne.

As a consequence of these two drill holes the oil shale potential for E.L. 734 has been significantly downgraded and it is recommended that E.L. 734 be relinquished.

2. INTRODUCTION

CRA Exploration Pty Limited entered into a joint venture on the 9th April, 1980 with Swan Resources Limited and Eagle Corporation Limited to explore for oil shale in the Eucla Basin of South Australia. Attention was focussed on the region by a reported occurrence of a thick, oil Cretaceous shale horizon intersected in Muddaugana No. 7 in the 1920's.

Wyola E.L. 734 was granted to the joint venture partners by the S.A.D.M.E. on 6th October, 1980.

The licence covers an area of approximately 2 450 square kilometres and is located approximately 60 kilometres north west of Cook R.S. (Plan SAa 836)

3. CONCLUSIONS AND RECOMMENDATIONS

The dominant targets of exploration was the possible development of thick extensive accumulations of oil shale within the Cretaceous Madura Formation.

From the results of the drilling program it is concluded that laterally extensive developments of oil shale is not likely within E.L. 734 and that E.L. 734 should be relinquished.

4. WORK DONE

4.1 Drilling

Drill holes 80EP6a and 81EPR10 both intersected the Madura Formation target horizon. The location of the drill holes are shown on Plan SAa 836 and summary logs presented below.

80EP6a

0 - 2m	Calcrete (Quaternary).	
2 - 18m	Limestone, pale brown and grey-green.	Nullarbor Limestone (Miocene)
18 - 40m	Clay, carbonaceous and olive green, locally very stiff and fissile.	Pidinga Formation (Eocene)
40 - 56m	Sands, coarse grained, glauconitic.	Hampton Conglomerate (Eocene)
56m	Base of oxidation.	Madura Formation (Cretaceous)
56 - 76m	Shale, dark grey.	
76 - 128m	Shale, brown and grey, becoming micaceous at base.	Observatory Hill Beds (Cambrian)
128 - 232m	Siltstone, chocolate coloured, with interbedded biotite sandstone, fine grained, dark grey and chocolate coloured.	
	B.O.H. 232m	

81EPR10

0 - 60m	Limestone, pale brown-grey.	Nullabor and Wilsons Bluff Limestone (Miocene)
60 - 72m	No sample recovery	
72 - 76m	Sands, brown and clays, black.	Pidinga Formation (Eocene)
76 - 96m	Claystone, black carbonaceous very fine grained.	Madura Formation (Cretaceous)

96 - 146m	Sands, grey, coarse grained	Loongana Conglomerate (Cretaceous)
	B.O.H. 146m	

80EP6a was drilled using an Ingersoll Rand T-3 percussion rig and was geophysically logged for long spaced density, natural gamma and neutron-neutron using a S.I.E. logger.

81EPR10 was pre-collared through the limestone using an Ingersoll Rand T-3 drill rig and drilled with a Mayhew 1000 through the Madura Formation and Loongana Conglomerate. 81EPR10 was geophysically logged by GEOEX for caliper, long spaced density, short spaced density, natural gamma, neutron-neutron, self potential and resistance (Plan SAa 837). Detailed logs and assays are presented in Appendices I and II.

5. INTERPRETATION

The two drill holes were sited to test the possible development of thick laterally extensive oil shales within the Madura Formation and, to a lesser extent, the Cambrian Observatory Hill beds within E.L. 734.

The intersection in 80EP6a of carbonate poor shales and fine grained sandstones which returned oil yields of less than five litres/tonne downgrades the potential for the Observatory Hill beds to host oil shale deposits and/or Mississippi Valley Type lead-zinc deposits within E.L. 734.

The very low oil yields from the Madura Formation intersected in 80EP6a and 81EPR10 indicate that laterally extensive oil shales are not present in the Madura Formation within E.L. 734. The low specific gravity, fine grained carbonaceous character of the Madura Formation suggest that smaller deposits of oil shale may be present within marginal Cretaceous depressions. This type of exploration target would be extremely difficult to define and locate through the overlying Tertiary sands and limestone.

D.L. Andrews.

D.L. ANDREWS

KEYWORDS:

008

Wyola, Eucla Basin, oil shale, drill-percussion, drill-rotary, drill logs, carbonaceous.

LOCATIONS:

Wyola	SH52-7	1:250 000
Cook	SH52-11	

LIST OF PLANS:

SAa 836	Location Plan for Wyola E.L. 734	1:250 000
SAa 837	Composite log 81EPR10	1:1 000

APPENDIX I

Assay Results

APPENDIX II

Detailed Drill Logs

APPENDIX I

Assay Results

Assay Results 80EP6a

(Analyses carried out by A.M.D.E.L. according to code R7: shale oil yield estimate)

80EP6a	56-60(m)	<0.5
	60-62	0.5-1.5
	62-64	<0.5
	64-66	0.5-1.5
	66-68	0.5-1.5
	68-70	0.5-1.5
	70-72	0.5-1.5
	72-74	0.5-1.5
	74-76	<0.5
	76-78	<0.5
	78-80	0.5-1.5
	80-82	<0.5
	82-84	0.5-1.5
	84-86	<0.5
	86-88	0.5-1.5
	88-90	<0.5
	90-92	0.5-1.5
	92-94	<0.5
	94-96	<0.5
	96-98	<0.5
	98-100	0.5-1.5
	100-102	0.5-1.5
	102-104	1.5-5
	104-106	1.5-5
	106-108	<0.5
	108-110	0.5-1.5
	110-112	<0.5
	112-114	<0.5
	114-116	0.5-1.5
	116-118	0.5-1.5
	118-120	0.5-1.5
	120-122	0.5-1.5
	122-124	1.5-5
	124-126	<0.5
	126-128	0.5-1.5
	128-130	0.5-1.5

Assay Results 81EPR10

011

(Analyses carried out by A.M.D.E.L. according to code R7: shale oil yield estimate)

81EPR10	74-76(m)	0.5-1.5
	76-78	0.5-1.5
	78-80	0.5-1.5
	80-82	0.5-1.5
	82-84	0.5-1.5
	84-86	0.5-1.5
	86-88	0.5-1.5
	88-90	0.5-1.5
	90-92	0.5-1.5
	92-94	0.5-1.5
	94-96	0.5-1.5
	102-104	0.5-1.5
	104-106	0.5-1.5
	106-108	0.5-1.5
	108-110	0.5-1.5
	110-112	0.5-1.5
	112-114	0.5-1.5
	114-116	1.5-5.0
	116-118	0.5-1.5
	118-120	0.5-1.5
	120-122	0.5-1.5
	122-124	0.5-1.5
	124-126	0.5-1.5
	126-128	0.5-1.5
	128-130	0.5-1.5
	130-132	0.5-1.5
	132-134	0.5-1.5
	134-136	0.5-1.5
	136-138	0.5-1.5
	138-140	0.5-1.5
	140-142	0.5-1.5
	142-144	0.5-1.5
	144-146	0.5-1.5

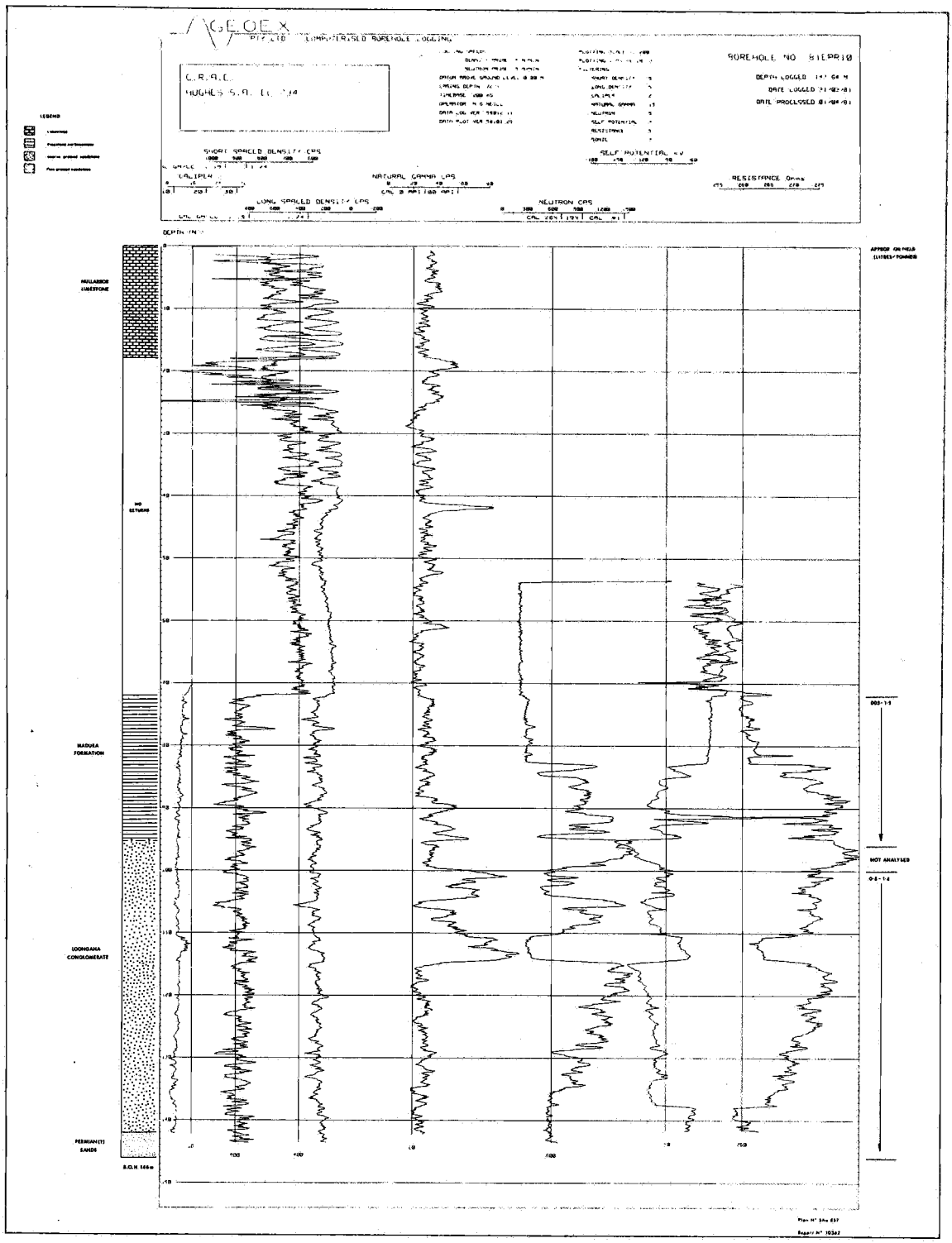
APPENDIX II

Detailed Drill Logs

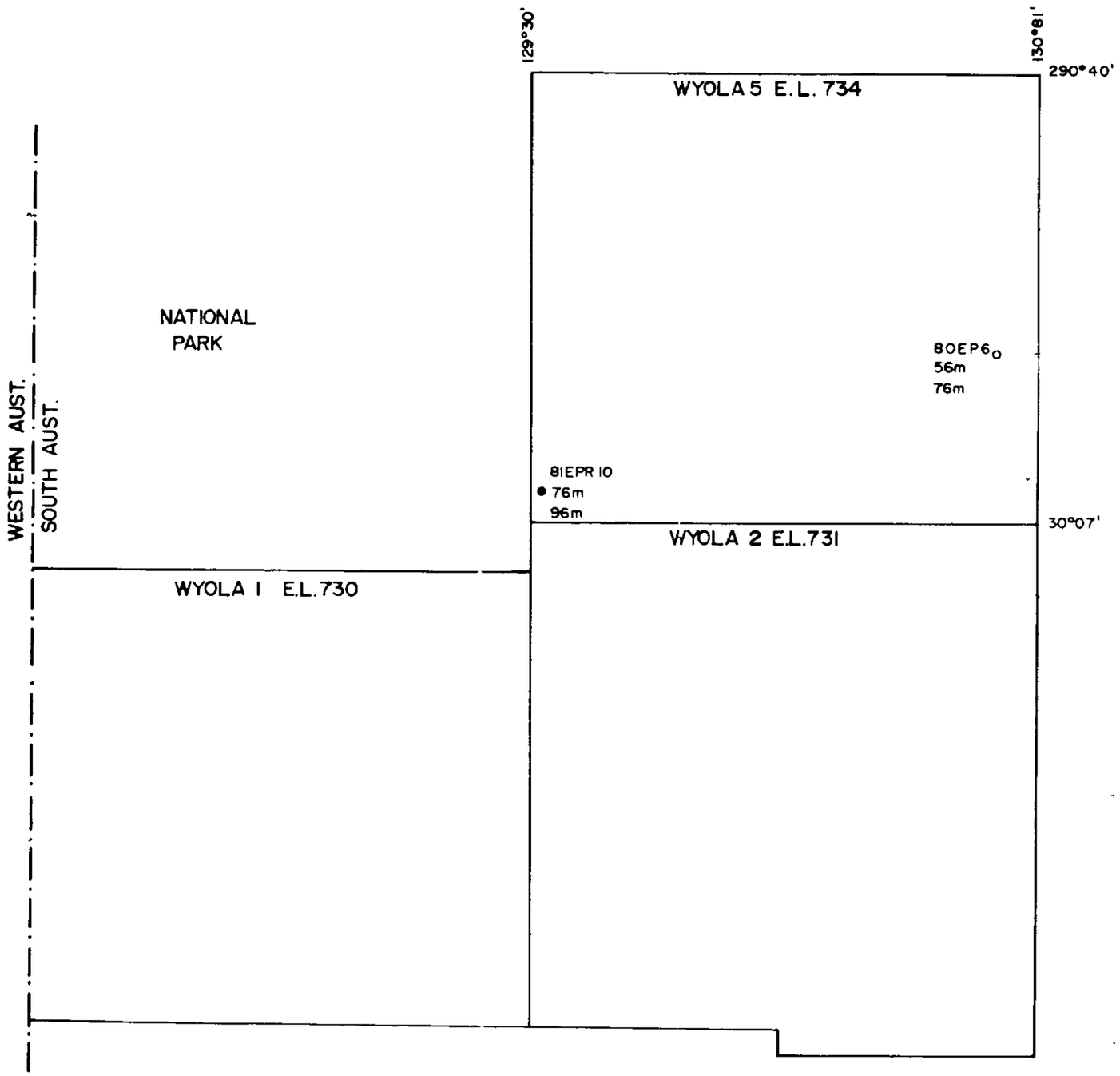
81EPR10

Open hole drilled and cased to 64m. by Percussion rig.

64 - 72m	No sample recovery.
72 - 76m	Claystone 70% off white to grey, hard. Mudstone 20% dark grey, hard, carbonaceous. Minor red and orange mudstone and clay.
76 - 78m	Mudstone 60% carbonaceous, dark grey, medium hard. Claystone 30%, grey, hard. Minor red-brown and orange claystone chips.
78 - 80m	Mudstone 80% soft, dark grey, carbonaceous. Claystone 20% light grey, medium hard.
80 - 88m	Mudstone 99% dark grey-black, soft. Claystone - minor, light grey chips.
88 - 90m	Mudstone 99% dark grey-black, soft, minor clay and sand recovered.
90 - 92m	Mudstone 90% dark grey to black, soft. Sandstone 10% angular to subangular, fine to medium grains, light grey colour.
92 - 94m	Mudstone 85% dark greym soft, carbonaceous. Sand 15% light grey, angular to subangular, fine to medium grained.
94 - 96m	Mudstone 70% dark grey, soft, carbonaceous. Sand 30% medium to coarse, off white to light grey, subangular.
96 - 100m	Sand 70% medium to coarse, off white to light grey, subangular grains. Mudstone 30% dark grey, soft, carbonaceous.
100 - 140m	Sand 99% fine-medium, light grey, angular to subangular, minor carbonaceous chips.
140 - 146m	Sand 99% fine light to mid grey, minor carbonaceous chips, white clay particles, silty at base.
	End of hole 146.40m.



C. R. A. EXPLORATION PTY. LIMITED	
EUCLA BASIN E.L. 734 81 EPR 10	
Ref. WYOLA SH 52-7 COOK SH 52-11	
Scale 1:1000	Drawn S.W.
Author D.L.A.	Report No. 10362
Date JUNE 1981	Plan No. SA a 837



o 80 EP6 1980 CRAE Percussion Drill Hole

● 81 EPR7 1981 CRAE Percussion / Rotary Mud Drill Hole showing depth to top and bottom of Madura Formation
74m
142m

0 10 20 30 Km.

4255-1

C. R. A. EXPLORATION PTY. LIMITED

EUCLA BASIN
WYOLA 5 E.L. 734
LOCATION PLAN

Ref. COOK SH 52-11, COOMPANA SH 52-15, NULLARBOR SH52-16	
Scale 1 500000	Drawn DD
Author DLA	Report No. 10362
Date JUNE 1981	Plan No. SAa836