## Open File Envelope No. 6456

## **EL 1284**

## ALGEBUCKINA HILL

## PROGRESS AND FINAL REPORTS TO LICENCE EXPIRY FOR THE PERIOD 22/5/1985 TO 21/5/1986

Submitted by Cyprus Australia Coal Co. 1986

© 30/7/1986

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**Enquiries:** Customer Services Branch

Minerals and Energy Resources

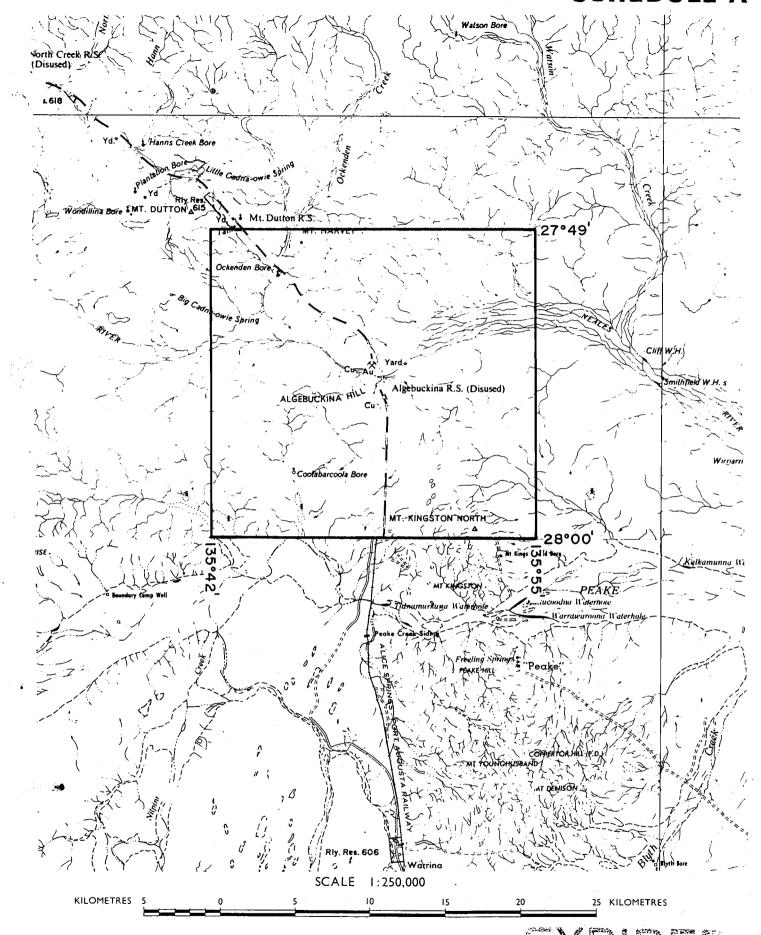
7th Floor

101 Grenfell Street, Adelaide 5000

Telephone: (08) 8463 3000 Facsimile: (08) 8204 1880



## SCHEDULE A



APPLICANT: GETTY OIL DEVELOPMENT COMPANY LTD.

AREA: 433 square kilometres (approx.)

1:250000 PLANS: OODNADATTA

DM: 253/84

LOCALITY: ALGEBUCKINA HILL AREA - Approx. 40km southeast of Oodnadatta

DATE GRANTED: 22.5.85 DATE EXPIRED: 21.5.85 EL No: 1284

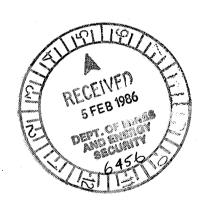
TENEMENT: E.L. 1284 Algebuckina Hill.

TENEMENT HOLDER: Getty Oil Development Co. Ltd.

REPORT: Quarterly report to 21st August 1985.	Pgs.	3-12
PLANS: Location Map. Fig. 1. (1:2,000,000 Scale) Location Map. Fig. 2. (1:250,000 Scale) Sirotem Geophysical Survey Locations. Fig. 3.	Pg. Pg. Pg.	7
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APPENDIX: Sirotem Geophysical Survey Data.	Pgs.	28-33
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211000m 100m01010. 115. 0°	Pg.	24

# GETTY AUSTRALIAN COAL COMPANY EXPLORATION LICENSE 1284 SOUTH AUSTRALIA

First Quarterly Report to 21 August 1985



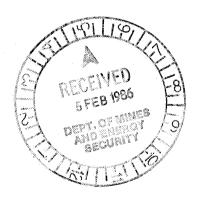
## Distribution

SADME (1) G.A.C.C., Sydney (2) Cyprus Coal Company (1)

December 1985
D. W. Schofield

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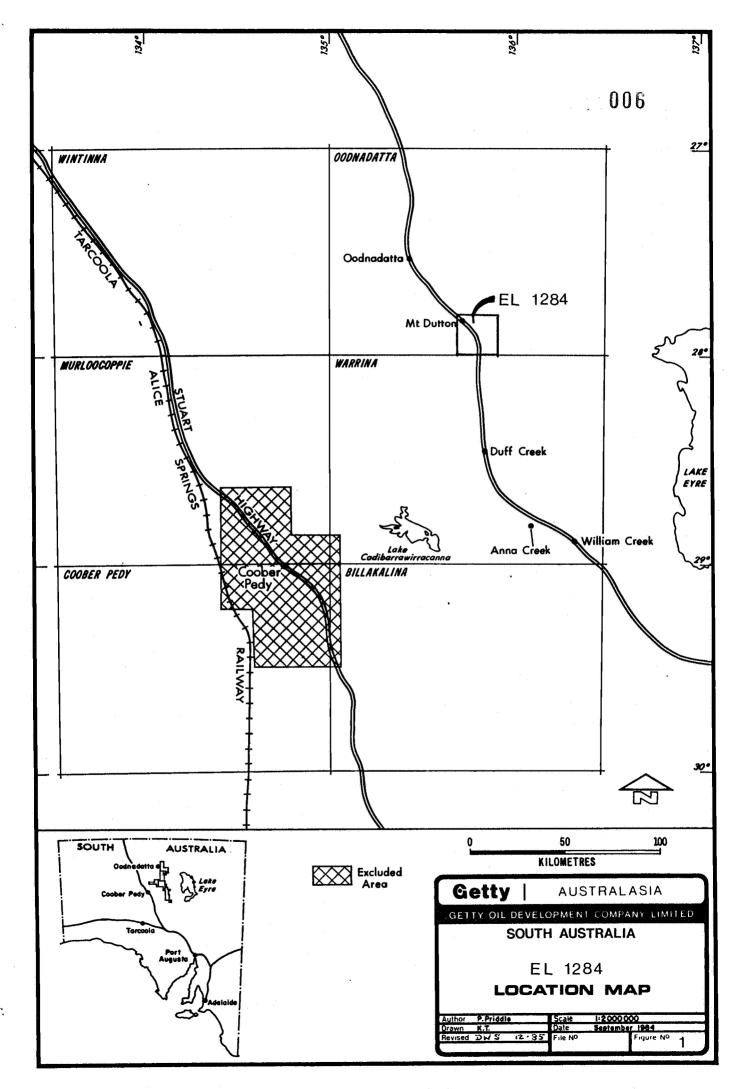


## 1.0 INTRODUCTION

EL1284 "Algebuckina Hill" was granted to Texaco
Oil Development Company (Formerly Getty Oil
Development Company) on 22 May 1985 for a period
of one year. All Getty/Texaco licenses in the
Arckaringa Basin area (EL's 1221, 1222,1284, 1295)
have subsequently been transferred to Getty Australian
Coal Company, a subsidiary of Texaco Oil Development
Company.

The Algebuckina Hill area lies approximately 40km southeast of Oodnadatta and is 433 square kilometres in area (figure 1). The Oodnadatta track and the abandoned Alice Springs/Port Augusta Railway cross the central part of the license from north to south (figure 2).

Data relating to the subsurface occurrence of Permian sediments in the license area is very limited. Outcrops of Jurrasic and Cretaceous sediments occur over significant portions of the area. It is possible that Permian sediments including the coal bearing Mt. Toondina Formation could be present beneath these younger units of the Great Artesian Basin. A sirotem geophysical survey was undertaken in hope of determining the presence or absence of coal bearing strata beneath the Permian-Jurrasic unconformity in the license area.



### 2.0 WORK COMPLETED

#### 2.1 Aerial Photography

Aerial photography in colour and black and white was obtained from the South Australian Lands Department. The photographs (1:87,000 scale) together with preliminary topographic maps at 1:100,000 scale were used for ground control of position during exploration.

2.2 Review of Existing Geological Information

A review of all geological maps and reports, groundwater data, and open file reports was undertaken. Data relating to Permian sediments in the license area is very limited, but presence of the Mt. Toondina Formation is possible in the subsurface of the western and northeastern portions of the area.

Prior to consideration of potential drilling sites a geophysical study was designed to imporve our interpretations of the western portions of the license area.

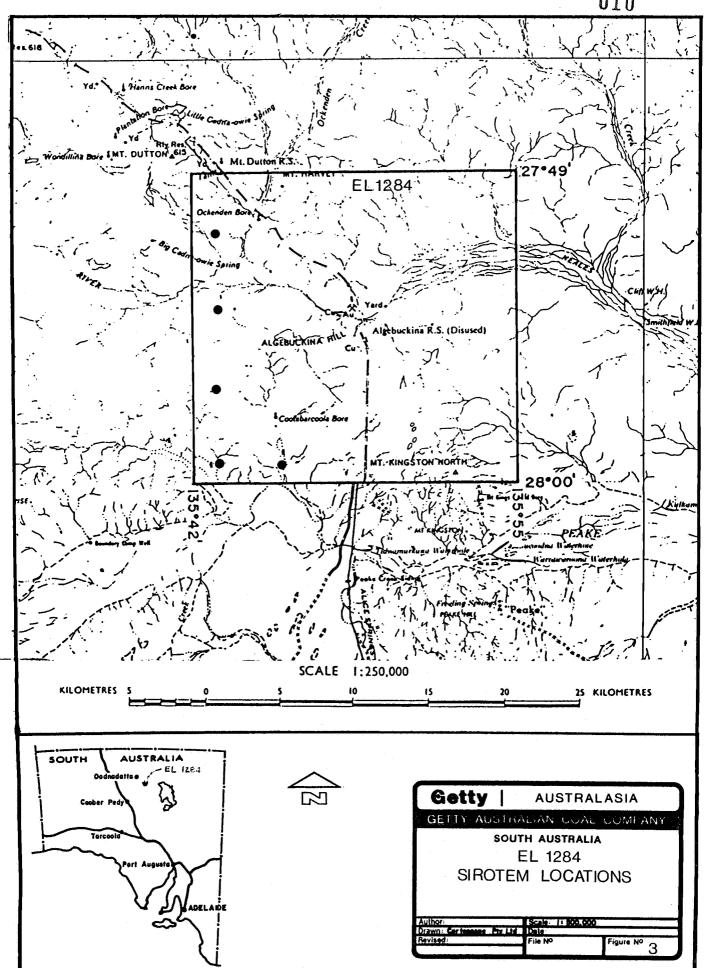
#### 2.3 Geophysical Surveys

A Sirotem Geophysical survey was undertaken to identify both the depth to the top coal and the total thickness of coal measures. The Sirotem equipment was used because it had a proven record of identifying coal seams at depth using resistivity variations (H. Rutter pers comm.). The survey was completed by Mr Hugh Rutter from Geophysical Exploration Consultants Pty Ltd using a Sirotem MK2, property of Stockdale Prospecting Limited. Loop size for the survey was 200 x 200 metres and site locations were on a 4 x 5 km grid.

A hughes 300 helicopter from Capricorn Helicopters of Alice Springs was found to be most efficient operating with three personel: a pilot, geophysicist and geologist. The geologist identified the location from airphotos and with the pilot set up a loop. The pilot then retrieved the geophysicist and a second loop from the previous location and while the geophysicist was recording on the new location the geologist and pilot moved on to the next locality with the second loop. In such a manner between 8 and 12 sites were measured on any one day.

On exploration license 1284 a total of 5 sites were chosen for measurement. The sites covered approximately 150 sq. km. of the western portion of the license area. The sites were chosen to test for the possible extension of Permian coals from the Boorthanna Trough eastward into the license area (fig. 3).

Results of the initial inversion of the T.E.M. data were very disappointing. In general the resistivities are very low and show only a restricted penetration by the E.M. signal to an horizon at less than 100m. Deeper layers were not recognized in most of the inversions and nearly all coal seams are located below the 100m level. The success of the survey would appear to be minimal and the results need further reinterpretation if they are to have any value.



## 3.0 WORK PLANNED

Due to disappointing results of the sirotem geophysical surveys, re-inversion and re-design of the mathematical model is required if any further use can be obtained from the surveys. This attempt at reinterpreting the data gathered is planned for the early part of 1986.

Further geophysical work, more mapping and drilling will be considered once further refinement of the sirotem surveys is complete.

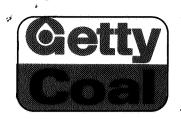
## **APPENDIX**

## EXPENDITURE STATEMENT EL.1284

## FOR THE PERIOD 21 August 1985

e e		CURRENT PERIOD	INCEPTION TO DATE
		\$	\$
Salaries and E.B.E.		1,062	1,062
Office Rent, Supplies, Com Travel, etc	munication,	1,127	1,127
Field Material and Supplies,	Rental - Storage	443	443
Automotive Expenses		332	332
Tenement Fees and Rental			
Contract Geochemistry			
Contract Geology		363	363
Contract Geophysics		3,838	3,838
Drilling			•
Assaying			
Aerial Photography	, • = ··•	52	52
Roads, Access and Trenchin	g	107	107
Gridding and Surveying	•	69	69
Other	Archaeology	122	122
	Prof. Services	120	120
	•		
	SUB-TOTAL	7,635	7,635
	OVERHEADS	1,145	1,145
	TOTAL		-
	EXPENDITURE	8,780	8,780
			,

Date: 29 January 1986
Prepared by: D. W. Schofield



## Getty Australian Coal Company Registered as a Foreign Company in the State of South Australia Suite 32, 22 Fisher Road, DEE WHY 2099

Telephone 982 2000 Telex AA121612

29 January 1986

Mr R. K. Johns, Director-General, Department of Mines and Energy, 191 Greenhill Road, PARKSIDE. S.A. 5063

Dear Sir,

Re: Exploration License 1284, Second Quarterly Report to 21 November 1985.

No active exploration work was undertaken on EL1284 during the report period. Further work is pending awaiting results of reinterpretation of data gathered during sirotem geophysical surveys as described in the previous report.

Better understanding of geology of the western portion of the license is developing from interpretation of drilling data gathered in the adjacent areas of EL1295.

A current expenditure statement is attached.

Yours sincerely

D. W. SCHOFIELD Vice President

Encl.



## APPENDIX

## EXPENDITURE STATEMENT EL. 1284

FOR THE PERIOD 21 November 1985 (Calculated to 30.11.85)

	CURRENT PERIOD	INCEPTION TO DATE
	\$	\$
-Salaries and E.B.E.	735	1,797
Office Rent, Supplies, Communication Travel, etc		1,773
Field Material and Supplies, Rental -	Storage	443
Automotive Expenses		332
Tenement Fees and Rental		
Contract Geochemistry		
Contract Geology		363
Contract Geophysics	39	3,877
Drilling		•
Assaying		
Aerial Photography		52
Roads, Access and Trenching	189	296
Gridding and Surveying		69
Other Prof.:	Serv. 374	494
Archae	eology 307	429
	· <del>California de la constantia de la con</del>	, and the second
SUB-TOT	AL 2,290	9,925
OVERHE	ADS 344	1,489
TOTAL EXPENDI	TURE 2,634	11,414

Date:

Prepared by: D.W. Schofield



## Cyprus Australia Coal Company Registered as a Foreign Company in the State of South Australia

Suite 32, 22 Fisher Road P.O. Box 364 Dee Why, N.S.W. 2099

Telephone: (02) 982 2000 Telex: AA121612

August 5, 1986

Mr R. K. Johns, Director General, Department of Mines and Energy South Australia, P.O. Box 151, EASTWOOD. S.A. 5063

Dear Mr Johns,

## Second and Third Quarterly Reports - EL.1284

Covering the periods 21 August 1985 to 21 November 1985 and 21 November 1985 to 21 February 1986

During the six month period covered by these two reports, field work was concentrated outside of the licence area, and costs incurred were mostly of an administrative nature. The final three months of the licence (now released) was covered in the Final Report submitted in July 1986.

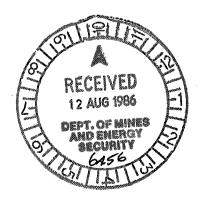
The Expenditure Statement attached details costs incurred during the Second and Third Quarters of the licence.

Yours Sincerely,

SAM REICH for

DONALD W. SCHOFIELD

Vice President



APPENDIX I

EXPENDITURE STATEMENT Second Quarter EL.1284

FOR THE PERIOD 21 August 1985 to 21 November 1985

		CURRENT PERIOD	INCEPTION TO DATE
		\$	\$
-Salaries and E.B.E.		735	- 1 <del>,</del> 797
Office Rent, Supplies, Con Travel, etc	nmunication,	646	1,773
Field Material and Supplies	, Rental - Storage	<u>:</u>	443
Automotive Expenses			332
Tenement Fees and Rental			
Contract Geochemistry			
Contract Geology			363
Contract Geophysics		39	3,877
Drilling		3)	2,011
Assaying			
Aerial Photography			52
Roads, Access and Trenchin	ng	189	296
Gridding and Surveying			69
Other Drafting		374	494
Archaeology		307	429
ATE A			
	SUB-TOTAL	2,290	9,925
A RECEIVED	OVERHEADS	344	<u>1,489</u>
12 AUG 1986	TOTAL EXPENDITURE	2,634	11,414
DEPT: OF MINES			. And the second se

Date: 1 August 1986

Prepared by: Sam Reich

APPENDIX II

EXPENDITURE STATEMENT Third Quarter EL.1284

FOR THE PERIOD 21 November 1985 to 21 February 1986

	CURRENT PERIOD	INCEPTION TO DATE
	\$	\$
-Salaries and E.B.E.	990	2 <del>,787</del>
Office Rent, Supplies, Communication, Travel, etc	1,054	2,827
Field Material and Supplies, Rental - Storage	87	530
Automotive Expenses		332
Tenement Fees and Rental		
Hydrology		
Contract & exchemistry	191	191
Contract Geology	306	669
Contract Geophysics		3,877
Drilling	•	
Assaying		
Aerial Photography	•	52
Roads, Access and Trenching		296
Gridding and Surveying		69
Other Environmental Studies	1,122	1,122
Archaeology		429
Drafting		494
SUB-TOTAL	3,750	13,675
OVERHEADS	563	2,051
TOTAL EXPENDITURE	4,313	15,726

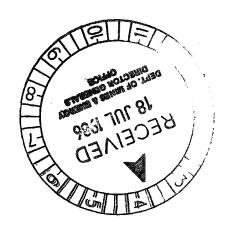
Date: 1 August 1986

Prepared by: Sam Reich

## CYPRUS AUSTRALIA COAL COMPANY EXPLORATION LICENSE 1284

## SOUTH AUSTRALIA

Final Report 22 May 1985 to 21 May 1986
Release Report



## Distribution

SADME			(1)
C.A.C.C	. Sy	lney	(2)
Cyprus	Coal	Company	(1)



July 1986 S. Reich

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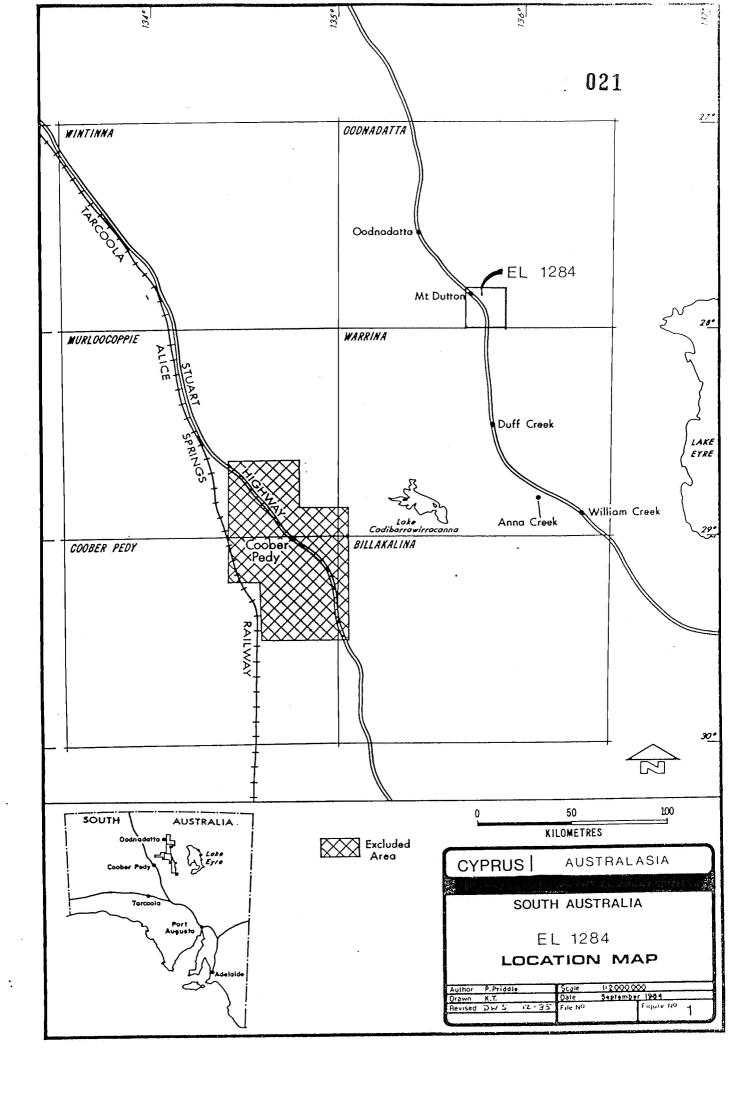
Sirotem Geophysical survey data

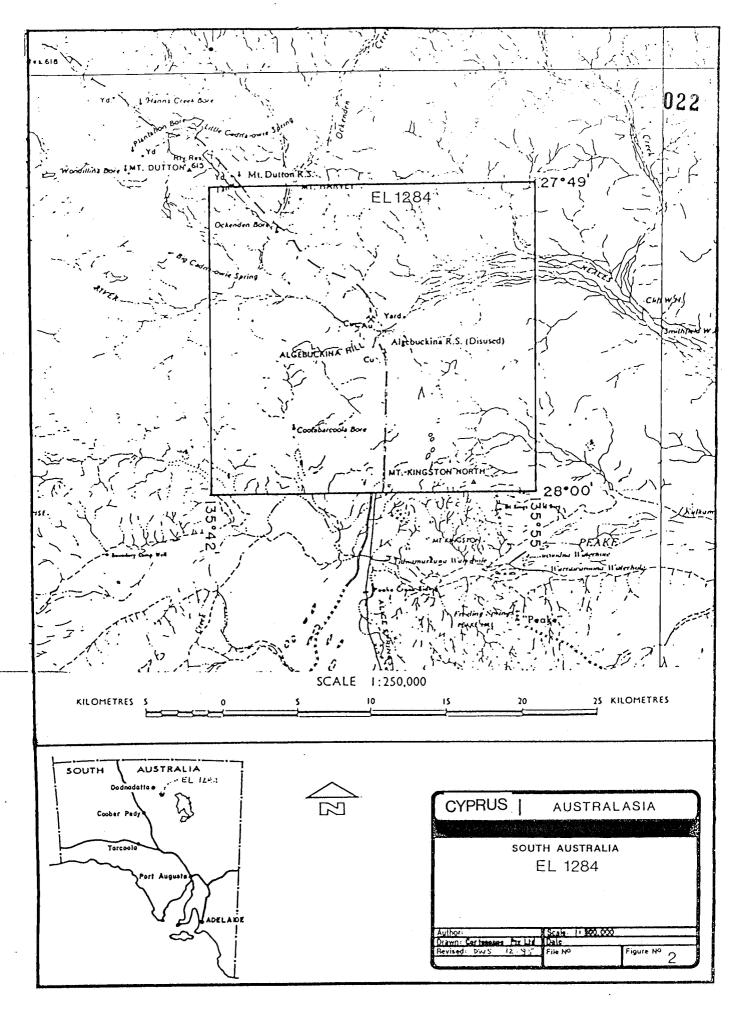
#### 1.0 INTRODUCTION

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## 2.0 WORK COMPLETED

### 2.1 Aerial Photography

Aerial photography in colour and black and white was obtained from the South Australian Lands Department. The photographs (1:87,000 scale) together with preliminary topographic maps at 1:100,000 scale were used for ground control of position during exploration.

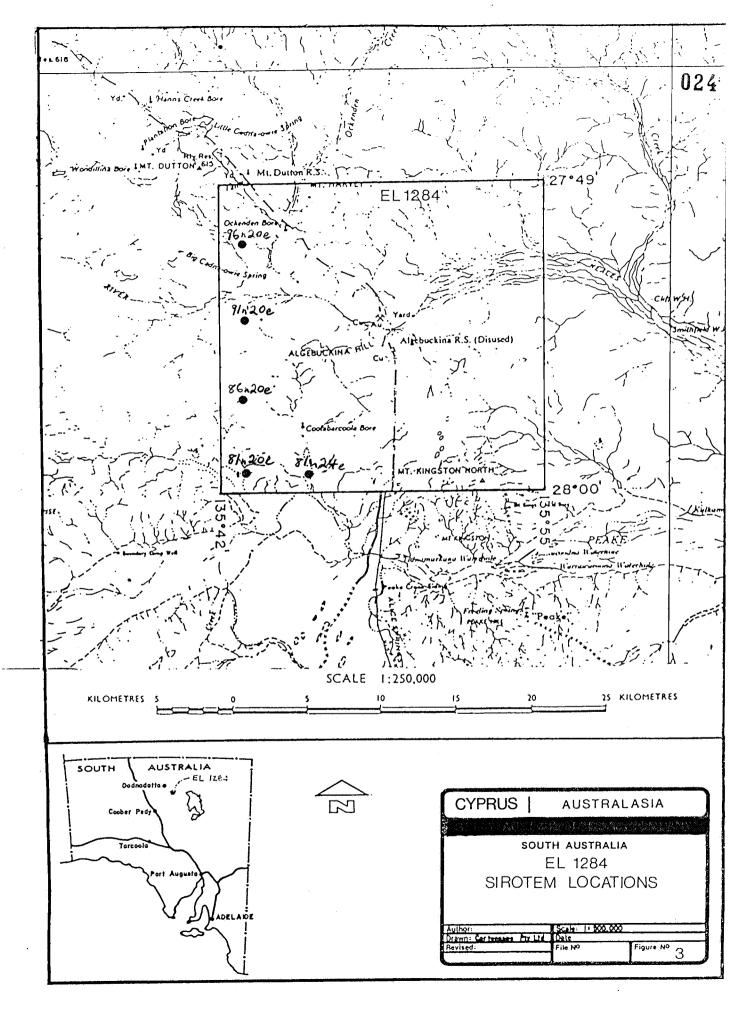
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#### 3.0 CONCLUSION

Based on the uncertain results of the Sirotem survey, and on drilling within the surrounding licences controlled by Cyprus Australia Coal Co., it was concluded that if the Permian Mt. Toondina Formation existed within EL.1284 at all, more than likely only the lower, non-coal bearing sequences were represented. The upper portion of the Permian measures have almost certainly been eroded during the late Permian to early Jurassic hiatus.

Wishing to concentrate exploration time and monies toward more prospective areas, Cyprus has released the licence area back to the South Australia Government.

027

### APPENDIX

EXPENDITURE STATEMENT EL 1284

FOR THE PERIOD FULL YEAR 22 May 1985 to 21 May 1986

		INCEPTION TO DATE
		\$
Salaries and E.B.E.		4,316
Office Rent, Supplies, Commun Travel, etc.	ication,	4,429
Field Material and Supplies,	Rental-Storage	1,160
Automotive Expenses		473
Tenement Fees and Rental		890
Contract Geochemistry		6.60
Contract Geology		669
Contract Geophysics		3,950
Drilling		
Assaying		
Aerial Photography		52
Roads, Access and Trenching		296
Gridding and Surveying		69
Other Archaelogy, Environment Contract Drafting	tal, Hydrological	872 307
	SUB-TOTAL	\$17,483
	OVERHEADS	2,622
	TOTAL EXPENDITURE	\$20,105

Date: July 16, 1986

Prepared by: Sam Reich

## SIROTEM GEOPHYSICAL SURVEY

DATA

## EL.1284

 $\underline{\text{Note}}$ : These are five of 93 locations surveyed. The remainder are within EL's 1295 and 1168, which are still held by Cyprus under licence. The data are as yet uninterpreted.

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MAXIMUM ITERATIONS REACHED

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1	RESISTIVITY	THICKNESS	DEPTH
			0.0000E+00
1	48.87	11.52	11.62
2	0.4806	11.56	
3	289.6	}-	23,18
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STANDARD ERROR = 15.3 PERCENT

NOISE TO SIGNAL RATIO = 1.93 PERCENT

GENERAL CROSS VALIDATION = 0.383E-01

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I	RESISTIVITY	THICKNESS	DEPTH
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NOISE TO SIGNAL RATIO = 1.08 PERCENT

GENERAL CROSS VALIDATION = 0.2018-01



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MAXIMUM ITERATIONS REACHED

\* \* FINAL MODEL AFTER INVERSION \* \* \*

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1	RESISTIVITY	THICKNESS	DEPTH
	F. 7.	2	0.0000E+00
1	51.36	7,137	7.137
2	0.3527	4.175	: • • • • :
3	9031.		11.31
ď	7,564.4		

STANDARD ERROR = 20.1

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NOISE TO SIGNAL RATIO = 2.57

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GENERAL CROSS VALIDATION = 0.557E-01