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No. 6644

EL 1327

MCDOUALL PEAK

**PROGRESS AND FINAL REPORTS TO LICENCE
SURRENDER FOR THE PERIOD 21/4/86 TO 20/4/87**

Submitted by
Stockdale Prospecting Ltd
1987

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AND RESOURCES SA**

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TENEMENT HOLDER: Stockdale Prospecting Ltd.

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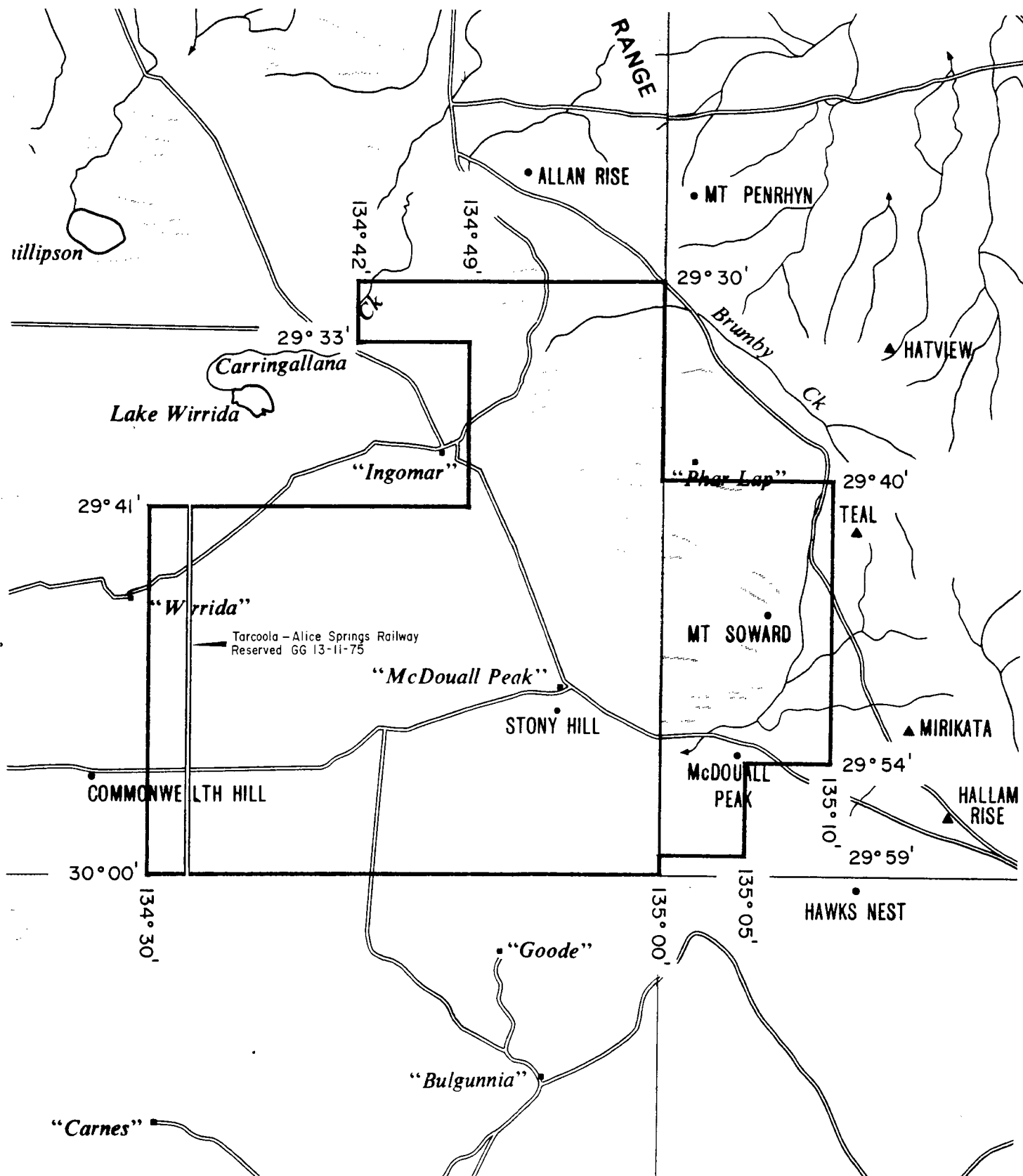
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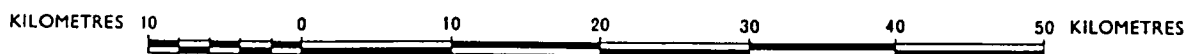
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SCHEDULE A ✓



SCALE 1:500,000



APPLICANT: STOCKDALE PROSPECTING LIMITED

DME 304/85

AREA: 2 602 square kilometres (approx.)

1:250000 PLANS: COOBER PEDY BILLAKALINA

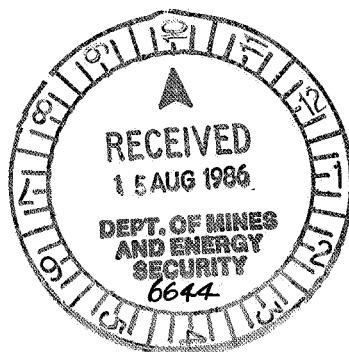
LOCALITY: McDOUALL PEAK AREA — approx. 90 km south of Coober Pedy

DATE GRANTED: 21.4.86

DATE EXPIRED: 20.4.87

EL No: 1327

STOCKDALE PROSPECTING LIMITED
EXPLORATION LICENCE NO 1327
MCDOUALL PEAK
FIRST QUARTERLY REPORT FOR THE PERIOD ENDING
21ST JULY, 1986.





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0001
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Telex Stodal AA39546

Project Name: COOBER PEDY

Title: EXPLORATION LICENCE NO 1327
FIRST QUARTERLY REPORT FOR THE PERIOD
ENDING 21ST JULY, 1986.

Author/s: P.D. WILSON

Edited/Approved: H.R. ROBISON

Keywords: BARRAGE SAMPLING, LOAM-SCRAPE, BLOWER
HELICOPTER SURVEY

1:250,000 Sheet Name/s & No/s.: COOBER PEDY SH53-6
BILLA KALINA SH53-7

Text Pages No.: 4

Plan Nos.: 2

Table Nos.: 1

Appendices: -

Date: JULY, 1986.

Copy to: SADME, WHYALLA, IC.

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Map 2: Sample Locations : McDouall Peak EL 1327

STOCKDALE PROSPECTING LIMITED

EXPLORATION LICENCE NO 1327 : MCDOUALL PEAK

FIRST QUARTERLY REPORT FOR THE PERIOD ENDING 21ST JULY, 1986.

1. INTRODUCTION

EL 1327 covers an area of approximately 2610 km² centred on the McDouall Peak Homestead, 100km south of Coober Pedy. It is bounded to the north by the Coober Pedy Precious Stones Field and Lake Phillipson Special Area, and to the east and south by ELs 1343 and 1277 (Figure 1). The Exploration Licence covers the southeastern portion of the Coober Pedy 1:250 000 sheet (SH53-6) and the southwestern part of the Billa Kalina Sheet (SH53-7).

2. LEGAL

Exploration Licence 1327 was applied for on 15th November, 1985. The application was approved on 6th February 1986, and the licence subsequently granted on 21st April 1986.

3. PHYSIOGRAPHY

EL 1327 lies within the arid region of Australia. Rainfall is very low, averaging 150 mm per year; and the evaporation rate is high, with a potential of 3m to 4m per year. Summer maximum temperatures average 35°C. All drainages are ephemeral, and no permanent surface water exists.

The major physiographic divisions existing in the Exploration Licence, as defined in the Explanatory Notes for the Coober Pedy 1:250 000 geological sheet, are:

- a) Central Sand Plains
- a low lying area of sparse mulga vegetation with a thin cover of aeolian red-brown sands and areas of super-imposed dunes.
- b) Southern Plains
- an area corresponding to shallow sub-surface Precambrian basement and Jurassic Algebuckina Sandstone. Typically an undulating and flat terrain characterised by low rises capped with silcrete and calcrete, and with generally thin mulga and bluebush-saltbush vegetation.

c) Stuart Range

- a gently undulating gibber-covered plain with very little vegetation, and of generally higher elevation dipping to the southwest. This unit is underlain by weathered clay rocks of the Cretaceous Bulldog Shale.

4. STRATIGRAPHY

The broad stratigraphy of the area is outlined below :

Cretaceous	Bulldog Shale	- marine, dark grey shales and silty shales.
	Cadna-owie Fm	- conglomeratic and feldspathic sandstones
Jurassic	Algebuckina Sandstone	- cross-bedded, white kaolinitic sandstones ; conglomeratic in part.
	unconformity	
Permian	Mt Toondina Fm	- sandstone, siltstone carbonaceous shales, and coal.
	Stuart Range Fm	- grey-green clay with silt lenticles
	Boorthanna Fm	- diamictic clays, pebbly sandstones and conglomerate
	unconformity	
Precambrian	Mulgathing Complex	- crystalline basement

5. GEOLOGY

The geology of most of the Exploration Licence is concealed beneath a covering of Quaternary aeolian sands, but it is believed that the Cadna-owie Formation underlies much of it. Outcrop of ferruginised Cadna-owie Fm occurs in claypans near McDouall Peak Homestead, Tea Tree Dam, Birthday Swamp, and Burntillaby Waterhole. Bulldog Shale caps Stony Hill, McDouall Peak, and several other un-named hills, mainly in the southern portion of the EL. No outcrop of Precambrian rocks has been recorded within the EL, but it is thought to exist at shallow depth, below the Mesozoic sediments.

6. HELICOPTER RECONNAISSANCE

A helicopter reconnaissance of EL 1327 was carried out to assess the potential of the area for heavy mineral sampling, to locate sample sites, and establish the existence of access.

Eight sample sites were selected and these were duly targetted for further work.

7. SAMPLING

A barrage sampling programme of eight loam-scrape samples and one in situ lithological sample was undertaken in June, 1986. Due to the absence of any well defined drainage within the licence area, it is believed that large loam scrape samples from claypans offer the best chance of locating secondary concentrations of diamonds and indicator minerals. Sample locations are given on Figure 2.

Samples were collected from claypans where there is obvious aeolian concentration of sand and fine gravel on the leeward (N.E.) margins. These concentrates are believed to have been derived from deflation of the claypan surface and thus represent a sample of the underlying Cadna-owie Formation.

From each site 300 l of -4+12 mesh, and 450 l of -12+36 mesh of sample was collected. These are to be treated and examined for diamonds and indicator minerals.

A sample collection device based on the Coober Pedy style "Blower" was constructed for the sampling programme, and proved very effective. It reduced the time and effort required to collect each sample, as well as producing a very good quality of sample.

8. RESULTS

As yet no results have been received.

9. FORWARD PROGRAMME

Any further work is dependent upon the results of the barrage sampling programme. Should significant concentrations of indicator minerals be recovered this would involve an air-borne magnetic survey to locate potential kimberlite targets, and follow-up drilling.

10. STAFF

Staff employed in the above field exploration programme were as follows :

Geologists	2
Prospecting Hands	2

The project has been supported by the facilities of the Regional Office in Whyalla and the Head Office in Melbourne.

11. EXPENDITURE

5009

Expenditure of \$ ^{\$82,832}~~199,157.87~~
in Table 1.

has been allocated as shown

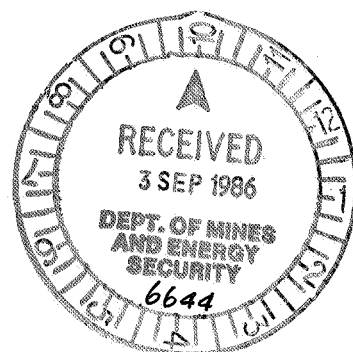
A handwritten signature in black ink, appearing to be 'H.R. Robison', with a long horizontal line extending to the right.

P.D. Wilson,
Geologist,
Whyalla.

H.R. Robison,
Chief Geologist - South

TABLE 1 : EXPENDITURE

	EL 1327
OPERATIONAL STAFF COSTS	\$ 10,804
GENERAL OPERATIONAL EXPENSES	2,370
TRANSPORT AND TRAVEL	1,529
AIRCRAFT CHARTER	2,415
TENEMENT COSTS	4,818
CENTRAL TREATMENT PLANT	21,525
LABORATORY - TREATMENT	4,920
- EXAMINATION	9,840
REMOTE SENSING	2,402
DRAFTING	735
ADMINISTRATION - REGIONAL	9,203
- HEAD OFFICE	12,271
TOTAL	82,832
TOTAL PREVIOUSLY REPORTED	-
TOTAL EXPENDITURE TO DATE	\$ 82,832



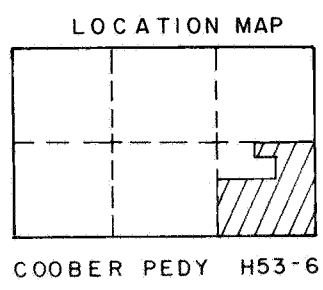
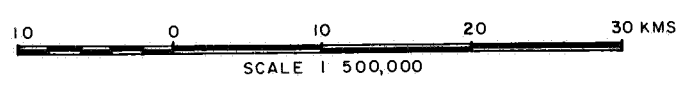
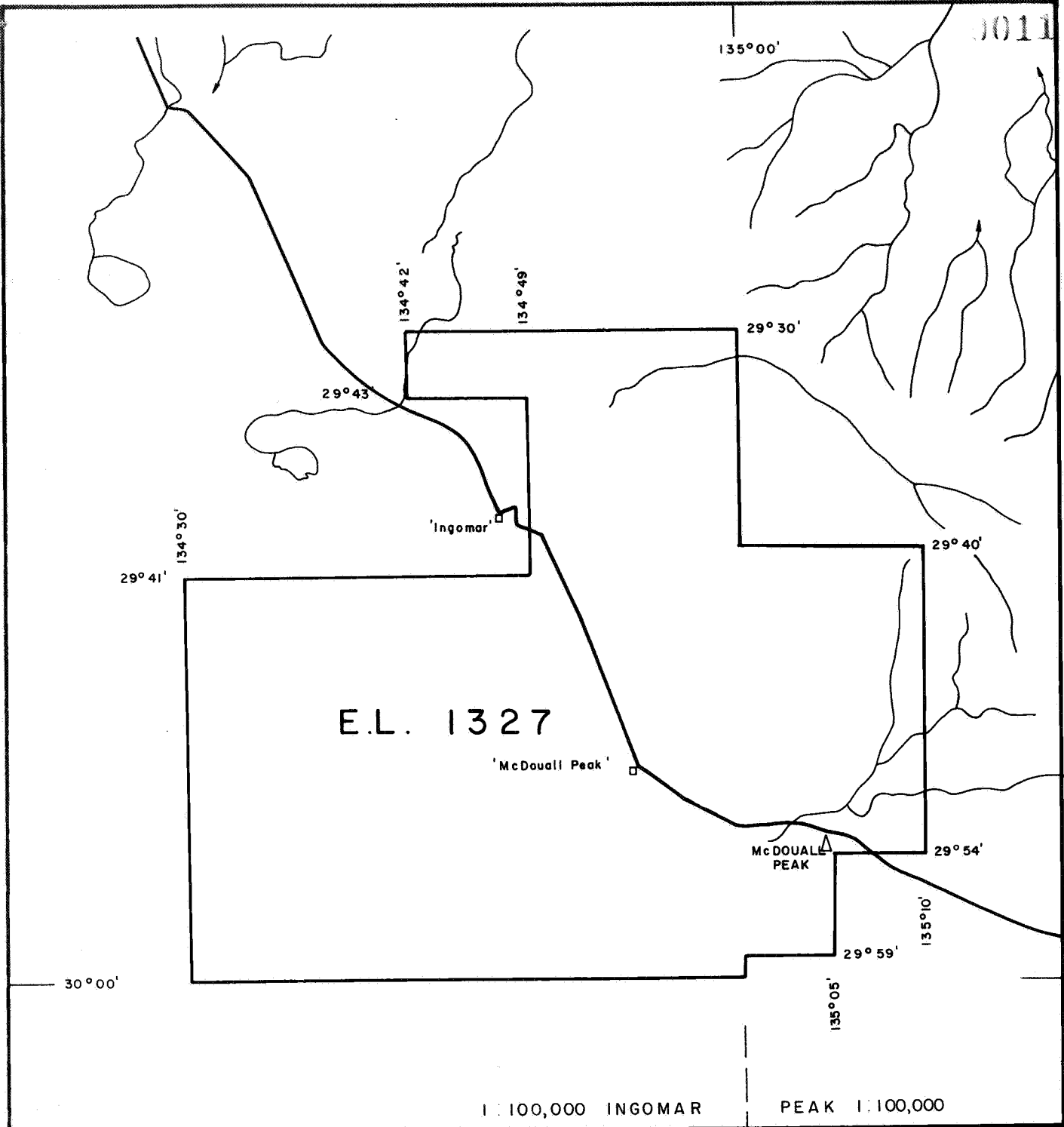


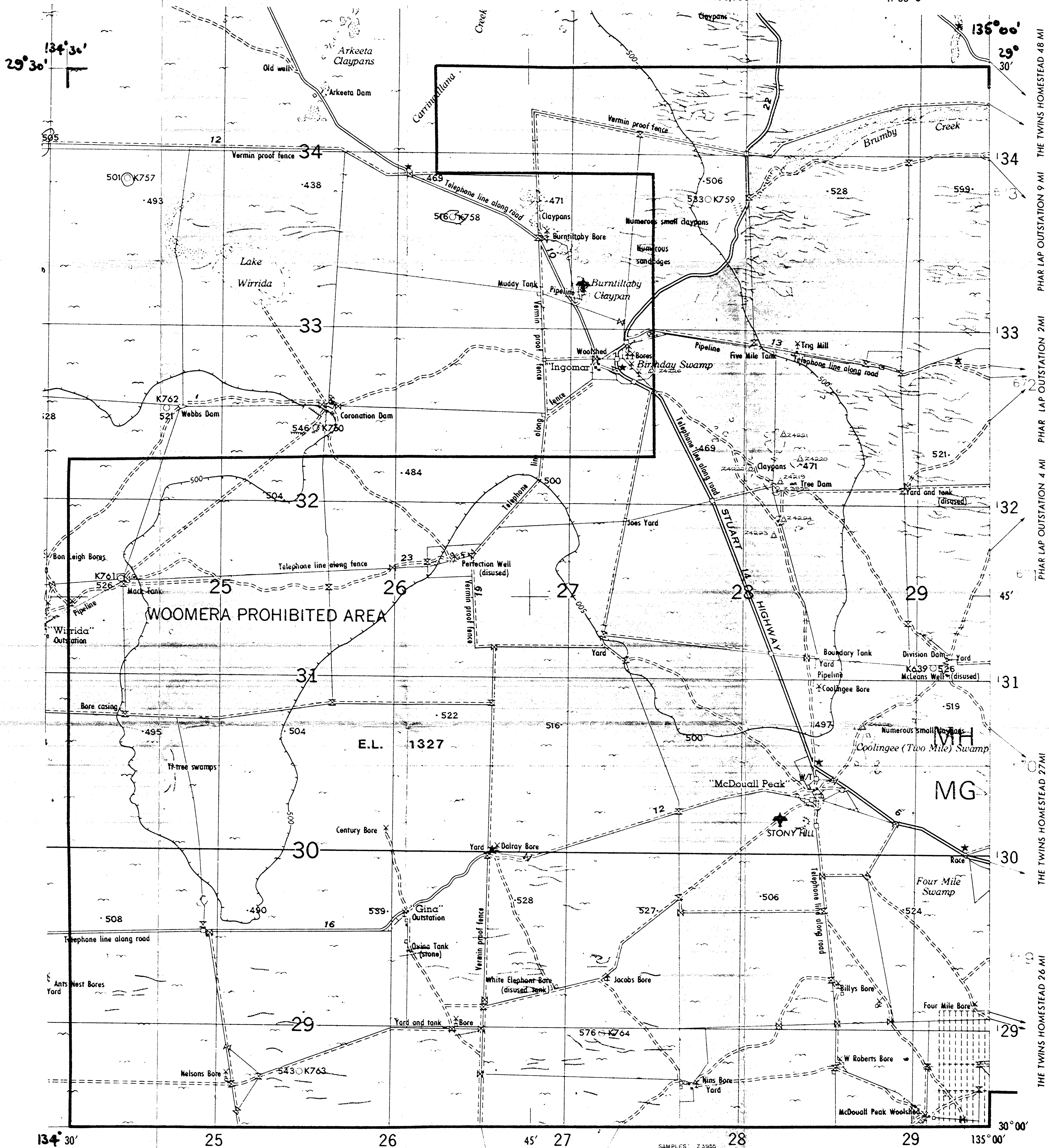
FIG. 1

STOCKDALE PROSPECTING LIMITED	
COOBER PEDY H53-6	
E.L. 1327	
LOCATION MAP	
Compiled	MAK
Drawn	MAK
Date	21st JULY '86
Scale	
Revised	
SEL	2783

INGOMAR

1:100,000

H 53-6



SAMPLES: Z 3955
Z 4219 - 4226 (Total 9)
○ Sample location
△ Borehole sample

INGOMAR H53-6
Current Sampling
As at: 21/7/86

BULGUNNIA HOMESTEAD 20 MI BLACK OAK BORE 2 MI

THE TWINS HOMESTEAD 48 MI
PHAR LAP OUTSTATION 9 MI
PHAR LAP OUTSTATION 2 MI
PHAR LAP OUTSTATION 4 MI
THE TWINS HOMESTEAD 27 MI
THE TWINS HOMESTEAD 26 MI

6644-1

STOCKDALE PROSPECTING LIMITED
EXPLORATION LICENCE NO 1327
MCDOUALL PEAK
SECOND QUARTERLY REPORT FOR THE PERIOD ENDING
21ST OCTOBER, 1986.



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0013
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Project Name: COOBER PEDY

Title: EXPLORATION LICENCE NO 1327
SECOND QUARTERLY REPORT FOR THE PERIOD
ENDING 21ST OCTOBER, 1986.

Author/s: P.D. WILSON

Edited/Approved: H.R. ROBISON

Keywords: BARRAGE SAMPLING, LOAM-SCRAPE.

1 : 250,000 Sheet Name/s & No/s.: COOBER PEDY SH53-6
BILLA KALINA SH53-7

Text Pages No.: 2

Plan Nos.: 2

Table Nos.: 1

Appendices: -

Date: NOVEMBER, 1986.

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4. RESULTS
5. FORWARD PROGRAMME
6. STAFF
7. EXPENDITURE

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Table 1: Expenditure Report

MAPS

Map 1: Location Map : McDouall Peak EL 1327
Map 2: Sample Locations : McDouall Peak EL 1327

STOCKDALE PROSPECTING LIMITED

EXPLORATION LICENCE NO 1327 : MCDOUALL PEAK

SECOND QUARTERLY REPORT FOR THE PERIOD ENDING 21ST

OCTOBER, 1986.

1. INTRODUCTION

EL1327 covers an area of approximately 2610 km² centred on the McDouall Peak homestead, 100km south of Coober Pedy. It is bounded to the north by the Coober Pedy Precious Stones Field and Lake Phillipson Special Area, and to the east and south by ELs 1343 and 1277 (Figure 1). The Exploration Licence is covered by the south - eastern portion of the Coober Pedy 1:250 000 sheet (SH53-6) and the south - western part of the Billa Kalina sheet (SH53-7).

2. LEGAL

Exploration Licence 1327 was applied for on 15th November 1985. The application was approved on 6th February 1986, and the licence subsequently granted on 21st April, 1986.

3. FIELD WORK

No field work was undertaken in this quarter. Heavy mineral sampling, where this was possible, was carried out in the previous quarter and any further field work is dependent on the return of positive indications from this sampling.

4. RESULTS

Partial results for the previous quarter's sampling have been received.

The -4+12# fractions of samples Z4224, Z4225, Z4226 and Z4227 have been examined for diamonds, and the -12+36# fraction of sample Z4219 for diamonds and indicator minerals. All results were negative. Sample locations are given on Figure 2.

5. FORWARD PROGRAMME

Any further work is dependent upon the full results of the barrage sampling programme. Should significant concentrations of indicator minerals be recovered this would involve an air-borne magnetic survey to locate potential kimberlite targets, and follow-up drilling. The remaining sample results should be available next quarter.

6. STAFF

One geologist has supervised the administration and drafting required during the quarter.

The project has been supported by the facilities of the Regional Office in Whyalla and the Head Office in Melbourne.

7. EXPENDITURE

Expenditure of \$ ~~83~~³⁶⁵ 197
in Table 1.

has been allocated as shown



P.D. Wilson,
Geologist,
Whyalla,
November, 1986.



H. R. Robison,
Chief Geologist - South.

EL 1327

OPERATIONAL STAFF COSTS	\$	-
GENERAL OPERATIONAL EXPENSES		34
TRANSPORT AND TRAVEL		270
AIRCRAFT CHARTER		-
TENEMENT COSTS		-
LABORATORY : TREATMENT		-
: EXAMINATION		-
CENTRAL TREATMENT PLANT		-
REMOTE SENSING		-
DRAFTING		-
ADMINISTRATION : HEAD OFFICE		61
: REGIONAL OFFICE		-
 TOTAL	\$	365
 TOTAL PREVIOUSLY REPORTED	\$	82,832
 TOTAL EXPENDITURE	\$	83,197

OFG:JE182

STOCKDALE PROSPECTING LIMITED

EXPLORATION LICENCE NO 1327 : McDOUALL PEAK

THIRD QUARTERLY REPORT FOR THE PERIOD ENDING 21ST JANUARY,
1987.

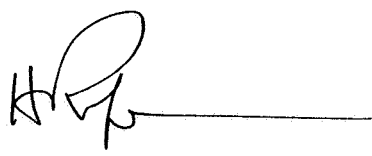
No field work was undertaken by Stockdale in this quarter. Treatment of samples collected in the first quarter is continuing and results are tabulated below. Sample locations were provided in the Second Quarterly Report.

SUMMARY OF RESULTS

SAMPLE NO	-4+12#	-12+36#
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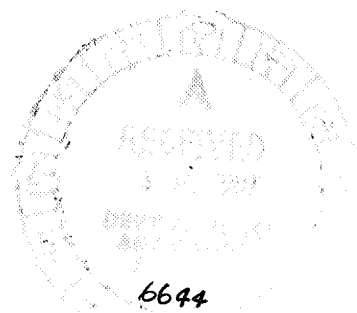
Z4219	awaited	-ve
Z4220	"	-ve
Z4221	"	awaited
Z4222	"	awaited
Z4223	"	awaited
Z4224	-ve	"
Z4225	-ve	"
Z4226	-ve	"
Z4227	-ve	"

B. H. Newell,
Whyalla,
January, 1987.



H. R. Robison,
Chief Geologist - South.

Distribution: SADME, WHYALLA, MELBOURNE.



STOCKDALE PROSPECTING LIMITED
EXPLORATION LICENCE NO 1327
MCDOUALL PEAK
FINAL AND RELINQUISHMENT REPORT
FOR PERIOD ENDING 20TH APRIL, 1987





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0020

Project Name: COOBER PEDY

Title: EXPLORATION LICENCE NO 1327
MCDOUALL PEAK
FINAL AND RELINQUISHMENT REPORT
FOR PERIOD ENDING 20TH APRIL, 1987.

Author/s: P. D. WILSON

Edited/Approved: H. R. ROBISON

Keywords: BULK SAMPLING, SOIL SAMPLING, BLOWER
AERIAL SURVEYS, COOBER PEDY PROJECT,
GAWLER BLOCK

1 : 250,000 Sheet Name/s & No/s.:

COOBER PEDY SH53-6
BILLA KALINA SH53-7

Text Pages No.: 4

Plan Nos.: 2

Table Nos.: 1

Appendices: -

Date: April 1987

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4.	STRATIGRAPHY
5.	GEOLOGY
6.	HELICOPTER RECONNAISSANCE
7.	SAMPLING
8.	RESULTS
9.	RECOMMENDATIONS
10.	STAFF
11.	EXPENDITURE

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Table 1:	Expenditure Report
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MAPS + FIGURES

Figure 1:	Location Map : McDouall Peak EL 1327
Map 1:	Sample Locations : McDouall Peak EL 1327

EXPLORATION LICENCE NO 1327 : MCDOUALL PEAK

FINAL AND RELINQUISHMENT REPORT FOR PERIOD ENDING 20TH APRIL,
1987.

1. INTRODUCTION

EL 1327 covers an area of approximately 2610 km² centred on the McDouall Peak Homestead, 100km south of Coober Pedy. It is bounded to the north by the Coober Pedy Precious Stones Field and Lake Phillipson Special Area, and to the east and south by ELs 1343 and 1277 (Figure 1). The Exploration Licence covers the southeastern portion of the Coober Pedy 1:250 000 sheet (SH53-6) and the southwestern part of the Billa Kalina Sheet (SH53-7).

2. LEGAL

Exploration Licence 1327 was applied for on 15th November, 1985. The application was approved on 6th February 1986, and the licence subsequently granted on 21st April 1986. The licence expires on 20th April 1987 and a renewal is not being sought.

3. PHYSIOGRAPHY

EL 1327 lies within the arid region of Australia. Rainfall is very low, averaging 150 mm per year; and the evaporation rate is high, with a potential of 3m to 4m per year. Summer maximum temperatures average 35°C. All drainages are ephemeral, and no permanent surface water exists.

The major physiographic divisions existing in the Exploration Licence, as defined in the Explanatory Notes for the Coober Pedy 1:250 000 geological sheet, are :

- a) Central Sand Plains
- a low lying area of sparse mulga vegetation with a thin cover of aeolian red-brown sands and areas of super-imposed dunes.
- b) Southern Plains
- an area corresponding to shallow sub-surface Precambrian basement and Jurassic Algebuckina Sandstone. Typically an undulating and flat terrain, characterised by low rises capped with silcrete and calcrete, and with generally thin mulga and bluebush-saltbush vegetation.

- c) **Stuart Range**
 - a gently undulating gibber-covered plain with very little vegetation, and of generally higher elevation dipping to the southwest. This unit is underlain by weathered clay rocks of the Cretaceous Bulldog Shale.

4. STRATIGRAPHY

The broad stratigraphy of the area is outlined below :

Cretaceous	Bulldog Shale	- marine, dark grey shales and silty shales.
	Cadna-owie Fm	- conglomeratic and feldspathic sandstones.
Jurassic	Algebuckina Sandstone	- cross-bedded, white kaolinitic sandstones ; conglomeratic in part.
	unconformity	
Permian	Mt Toondina Fm	- sandstone, siltstone carbonaceous shales, and coal.
	Stuart Range Fm	- grey-green clay with silt lenticles.
	Boorthanna Fm	- diamictic clays, pebbly sandstones and conglomerate
	unconformity	
Precambrian	Mulgathing Complex	- crystalline basement

5. GEOLOGY

The geology of most of the Exploration Licence is concealed beneath a covering of Quaternary aeolian sands, but it is believed that the Cadna-owie Formation underlies much of it. Outcrop of ferruginised Cadna-owie Fm occurs in claypans near McDouall Peak Homestead, Tea Tree Dam, Birthday Swamp and Burnttilaby Waterhole. Bulldog Shale caps Stony Hill, McDouall Peak, and several other un-named hills, mainly in the southern portion of the EL. No outcrop of Precambrian rocks has been recorded within the EL, but it is thought to exist at shallow depth, below the Mesozoic sediments.

6. HELICOPTER RECONNAISSANCE

A helicopter reconnaissance of EL 1327 was carried out to assess the potential of the area for heavy mineral sampling, to locate sample sites, and establish the existence of access.

Eight sample sites were selected and these were duly targetted for further work.

7. SAMPLING

A barrage sampling programme of eight loam-scrape samples and one in situ lithological sample was undertaken in June, 1986. Due to the absence of any well defined drainage within the licence area, it was believed that large loam scrape samples from claypans offered the best chance of locating secondary concentrations of diamonds and indicator minerals. Sample locations are given on Map 1.

Samples were collected from claypans where there was obvious aeolian concentration of sand and fine gravel on the leeward (NE) margins. These concentrates are believed to have been derived from deflation of the claypan surface and thus represent a sample of the underlying Cadna-owie Formation.

From each sample site 300 litre of 2.00 - 4.75mm material and 450 litres 0.5 - 2.0mm material was collected. These were treated and examined for diamonds and indicator minerals.

A sample collection device based on the Coober Pedy style "Blower" was constructed for the sampling programme, and proved very effective. It reduced the time and effort required to collect each sample, as well as producing a very good quality sample.

8. RESULTS

The -12+36 mesh (0.5 - 2.0mm) fraction of each sample was treated and examined for diamonds and kimberlitic indicator minerals. All samples proved to be negative. The -4+12mesh (2.00 - 4.75mm) fraction of each sample was treated and examined for diamonds only, and again all were negative.

9. RECOMMENDATIONS

The failure of the barrage loam sampling programme to identify concentrations of kimberlitic indicator minerals suggests that if kimberlite is present within the bounds of the licence, then it is not detectable by conventional heavy mineral sampling techniques. The greatly increased expenditure which would be required if a remote sensing technique, such as an aeromagnetic survey were to be employed is felt to be not justified without the incentive of positive heavy mineral results. This being the case, Exploration Licence 1327 is to be allowed to lapse.

10. STAFF

Staff employed in the field programme described above were as follows : two geologists, and two prospecting hands.

The project has been supported by the facilities of the Regional Office in Whyalla, and the Head Office in Melbourne.

11. EXPENDITURE

Expenditure of \$ 50,862.00
Table 1.

has been allocated as shown in



P. D. Wilson,
Geologist,
Whyalla.



H. R. Robison,
Chief Geologist - South.

TABLE 1 : EXPENDITURE SUMMARY

	MCDOUALL PEAK EL 1327
	\$
TRANSPORT AND TRAVEL	59
CENTRAL TREATMENT PLANT	10418
LABORATORY - TREATMENT	18449
- EXAMINATION	17364
ADMINISTRATION: HEAD OFFICE	4560
: REGIONAL	12
 TOTAL	 \$ 50862
 TOTAL PREVIOUSLY REPORTED	 \$ 83197
 TOTAL EXPENDITURE	 \$ 134059

OFG:KS182