

ANNUAL REPORT E.L. 4328

26th August, 1984
to
25th August, 1985

OPEN FILE

Licensee: Ashton Mining Limited
Operator: Ashton Mining Limited
Sheet
Reference: Brunette Downs (SE 53-11) 1:250,000
Submitted to: Department of Mines & Energy

Ashton Mining Limited
444 Queen Street
Brisbane. 4000

September, 1985

NORTHERN TERRITORY
GEOLOGICAL SURVEY

CR 85 / 230 A

ABSTRACT

During the period 26th August, 1984 to 25th August, 1985, Ashton Mining Limited as Manager of the A.D.E. Joint Venture carried out an exploration program in E.L. 4328 aimed at the location of kimberlite pipes.

A program of airborne remote sensing using thematic mapper techniques was undertaken over the whole of the licence area. The data generated from the survey was evaluated in conjunction with a photogeological study and targets defined for ground follow-up.

TABLE OF CONTENTS

		page
	ABSTRACT	...
1.00	INTRODUCTION	1
2.00	AIRBORNE THEMATIC MAPPER SURVEY	2
3.00	FUTURE PROGRAMS	4

LIST OF FIGURES

	opposite page
1. Location Map	1

LIST OF TABLES

	opposite page
1. Survey Specifications	2
2. Thematic Mapper Anomalies - E.L. 4328	3

LIST OF PLANS

	back pocket
1. Thematic Mapper Anomaly Locations	"

LIST OF APPENDICES

1. Statement of Expenditure

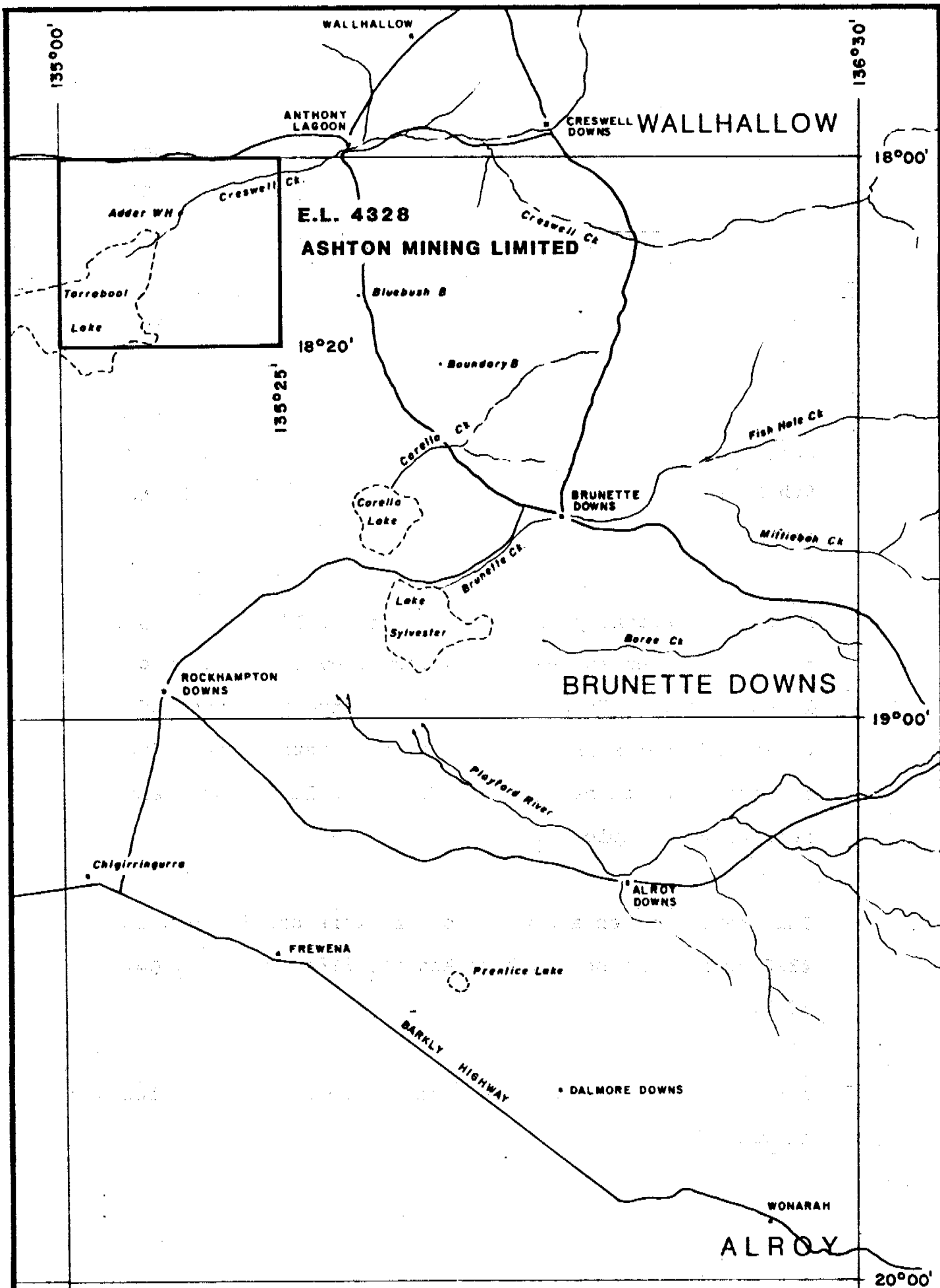


FIGURE 1
LOCATION MAP

1.00 INTRODUCTION

Exploration Licence 4328 covers an area of 1,610 square kilometres (500 blocks) on the Brunette Downs 1:250,000 sheet (refer to Figure 1).

The licence, which was granted to Ashton Mining Limited on 26th August, 1983, is subject to the A.D.E. Joint Venture Agreement between Ashton Mining Limited, A.O.G. Minerals Limited and Aberfoyle Exploration Pty. Limited, concluded on 9th September, 1980. Ashton Mining Limited is the Manager of the Joint Venture.

During the second year of tenure of the licence, an airborne thematic mapper survey was conducted over the whole of the licence area. In addition initial interpretation of data collected from a previous airborne magnetic survey (the results of which have been reported in last year's annual report) was completed.

This report gives a summary of the work carried out in E.L. 4328 during the period 26th August, 1984 to 25th August, 1985.

A statement of expenditure covering this period is included in the report.

TABLE 1

SURVEY SPECIFICATIONS.

Instrument: Daedalus 1268 Scanner (11 channels)

Channels available:	Channel	Wave length (μm)
	1	0.42 - 0.45
	2	0.45 - 0.52
	3	0.52 - 0.6
	4	0.605 - 0.625
	5	0.63 - 0.69
	6	0.695 - 0.75
	7	0.76 - 0.9
	8	0.91 - 1.05
	9	1.55 - 1.75
	10	2.08 - 2.35
	11	8.5 - 13

Aircraft: Beech King Air

Flying Altitude: 8000 metres above ground level

Ground Element Size: 20m x 20m

Flight Times: 0930 hours to 1430 hours

Azimuth of Runs: North or South

Overlap between runs: 40%

2.00 AIRBORNE THEMATIC MAPPER SURVEY

An airborne thematic mapper survey, undertaken on behalf of the A.D.E. Joint Venture by the National Safety Council of Australia, Victorian Division ("NSCA"), was flown over the whole of the licence area. Specifications for the survey are given in Table 1.

Thematic mapping was chosen over other remote sensing exploration methods as it had the advantage of using an eleven channel scanner giving a larger number of spectral bands which can be discriminated and because all data collected is digitized allowing for the greatest flexibility in manipulation of the data.

Within Exploration Licence 4328 the exploration method of thematic mapping was aimed primarily to enhance or distinguish between a possible kimberlite body and its surrounding overburden of Cainozoic black and grey clayey soils, alluvium, laterite, minor nodular, white limestone and sparse Cambrian dolomite and dolomitic limestone of the Anthony Lagoon Beds.

The scanner data in the form of 'quick look paper prints' collected from the airborne thematic survey, together with all relevant aerial photography, was forwarded to Hunting Geology and Geophysics (Australia) Pty. Limited for examination.

LISTING OF ANOMALIES

The format used for the listing of anomalies is as follows:-

Anomaly Number	Grading	Map Ref. Number	Air Photo	Scanner Run & Channel No.	Description	Size
----------------	---------	-----------------	-----------	---------------------------	-------------	------

ABBREVIATIONS

Grading

H	=	high (highest priority)
M	=	medium (definitely worth checking)
L	=	low (probably worth checking)
X	=	lowest (of low interest unless supported by additional data)

Map Ref Tar = Tarrabool

Air Photo Number

BD = Brunette Downs

Description NSC = No stereo coverage

TABLE 2. , recorder Asubiter

THEMATIC MAPPER ANOMALIES - E.L. 4328

- 503 L Tar R42 ch 3-11 Part-circular structure with small topo ?high on rim. 500m.
- 506 L Tar BD3/5015 R44 ch 3-5,7-8,10-11 Part-circular structure in laterite over limestone. NSC. 350m.

The procedure used by Hunting in such an examination is listed below:

1. Monoscopic examination of aerial photography.
2. Identification of anomalies from Step 1 on scanner data.
3. Examination of 11 channels of scanner data.
4. Identification of additional anomalies from Step 3 on aerial photography.
5. Stereoscopic examination of all anomalies on aerial photography where stereoscopic coverage was available.
6. Grading of anomalies.

The targets selected by Hunting were rated on a lowest, low, medium or high priority scale. Grading was established solely on the appearance of the anomalous zones without consideration of their position in regard to regional tectonic structures, or their apparent age in relation to residual surfaces.

Within E.L. 4328 two low priority thematic targets were outlined, details of these being listed in Table 2.

Anomaly locations are given in Plan 1.

3.00 FUTURE PROGRAMS

Potential target areas outlined by the thematic mapper survey will be subject to field inspection and, where appropriate, ground magnetic surveys and/or loam sampling.

Further interpretation of airborne magnetic data together with additional ground follow-up in the form of detailed gravel and/or loam sampling and possibly ground magnetic surveys may also be undertaken.

Depending on the outcome of such a work program, the thematic mapper data, initially acquired on high density tape may be converted into computer compatible tapes for further image processing.

APPENDIX 1.

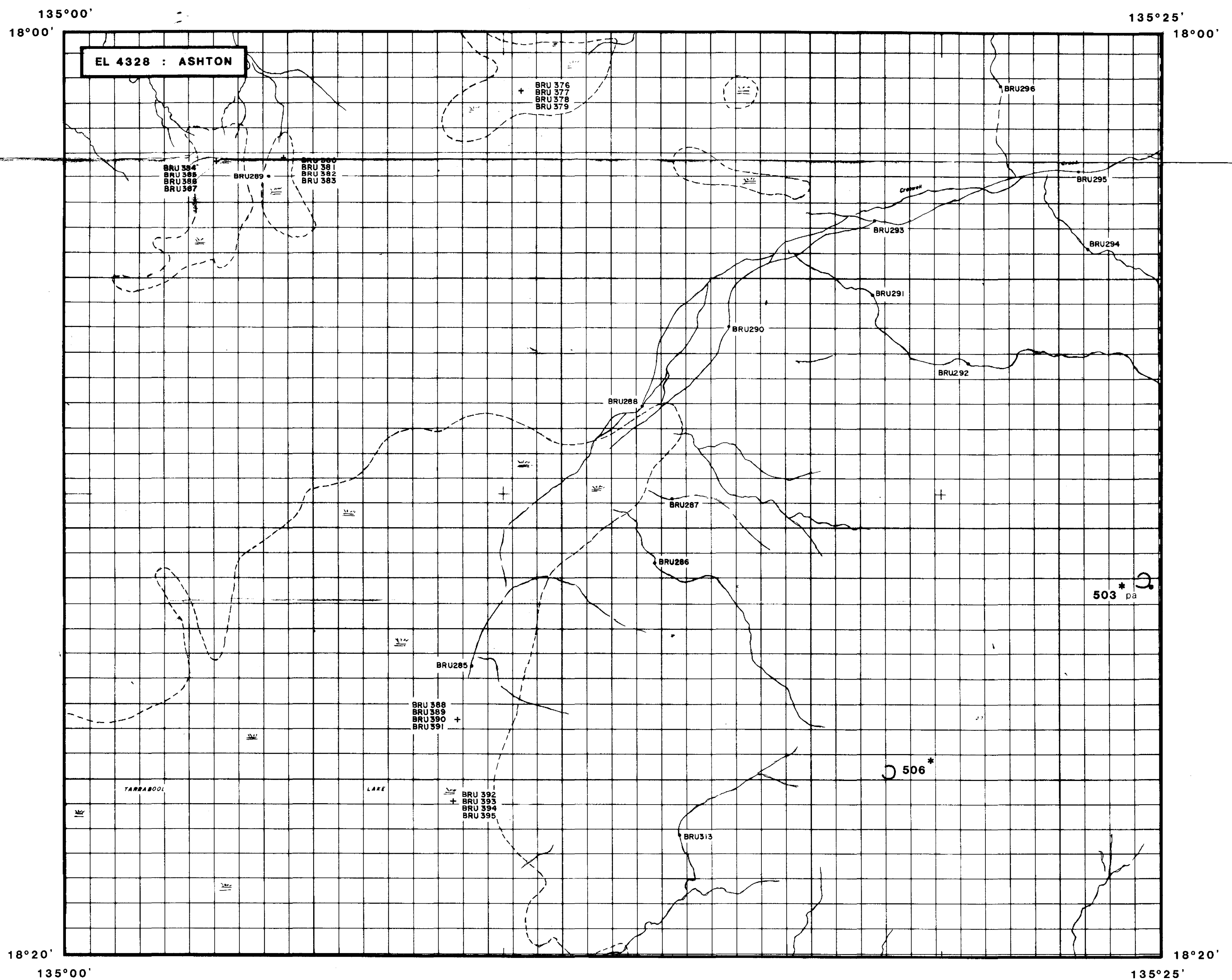
A.D.E. JOINT VENTURE

EXPLORATION LICENCE NO. 4328

EXPENDITURE FOR THE YEAR ENDED 25.8.85

	\$
Salaries	4,323
Field & Laboratory Expenses	24,383
Miscellaneous	3,993
	<hr/>
Expenditure for year:	32,699
	<hr/>

Date Licence Granted: 26.8.83



LEGEND

- Gravel sample
- + Loam sample
- x Rock sample
- 123 Sample for period ending 25/8/1984 (previously reported)
- 456 Sample for period ending 25/8/1985

THEMATIC MAPPER ANOMALY

- Approximate size and shape of anomaly
- 342 Anomaly number
- *** Anomaly grading - high
- ** - medium
- * - low
- lowest
- pa Position approximate
- Fracture or other linear feature
- - - Weak linear
- /// Ridge
- Dyke

NORTHERN TERRITORY
GEOLOGICAL SURVEY

CR85/230A

ASHTON MINING LIMITED
A.D.E. JOINT VENTURE
E.L. 4328
THEMATIC MAPPER ANOMALY LOCATIONS
PLAN 1
0 1 2 3 4 5 KM
Scale 1:100 000
ASHTON MINING LIMITED SEPTEMBER, 1985