ANNUAL REPORT E.L. 4329

26th August, 1983

to

25th August, 1984

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, 1984.

NORTHERN TERRITORY GEOLOGICAL SURVEY

CR84/223A
ABSTRACT

During the period 26th August, 1983 to 25th August, 1984 Ashton Mining Limited as Manager of the A.D.E. Joint Venture carried out an exploration program in E.L. 4329 aimed at the location of kimberlite pipes.

Work undertaken included regional gravel sampling and airborne magnetics.

While no kimberlite pipes were located, several gravel samples were found to contain microdiamonds.
TABLE OF CONTENTS

ABSTRACT

1.00 INTRODUCTION ... ... 1

2.00 REGIONAL SAMPLING PROGRAM ... ... 2

2.10 Field Phase 2
2.20 Laboratory Phase 3

3.00 AIRBORNE MAGNETIC SURVEY ... ... 4

4.00 FUTURE PROGRAMS ... ... 5

LIST OF FIGURES

1. Location Map 1

2. Airborne Magnetic Survey: Plan Location 4

LIST OF APPENDICES

1. Results of Laboratory Examinations

2. Statement of Expenditure
LIST OF PLANS

1. Sample Locations
2. Magnetic Stacked Profiles
3. Magnetic Stacked Profiles
4. Flight Path Recovery
5. Flight Path Recovery

back pocket
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FIGURE 1
LOCATION MAP

A.D.E. JOINT VENTURE / ASHTON MINING LIMITED
Scale 1:1000 000
SEPTEMBER, 1984
1.00 INTRODUCTION

Exploration Licence 4329 covers an area of 1,610 square kilometres (500 blocks) on the Brunette Downs 1:250,000 sheet.

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. Ltd., concluded on 9th September, 1980. Ashton Mining Limited is the Manager of the Joint Venture.

During the first year of tenure of the licence, a program of regional gravel and loam sampling was undertaken. In addition an airborne magnetic survey was conducted over the extreme eastern portion of the licence area.

This report gives a summary of the work carried out in E.L. 4329 during the period 26th August, 1983 to 25th August, 1984.

A statement of expenditure covering this period is included in the report.
2.00 REGIONAL SAMPLING PROGRAM

2.10 Field Phase

Prior to the commencement of field work, gravel sample locations were plotted in the office on the Tarrabool and Rockhampton Downs 1:100,000 sheets so that sample sites tested the available drainage at intervals of eight kilometres. As there is a paucity of drainage in the region, this resulted in only 11 gravel samples being taken in E.L. 4329. An additional 20 loam samples were collected to help test the area.

During the field program, individual gravel sample sites were selected on the basis of the quality of the available heavy mineral traps in the vicinity of the preselected site, care being taken to sample the most suitable trap site. Helicopter was the most practical mode of transport as it had the advantage of ease of access and navigation and enabled the geologist to scan the area for suitable trap sites.

Once a suitable gravel sample site was located, approximately 40 kg of gravel were gathered, sieved and the minus 4mm fraction collected for laboratory examination. Generally the minus 4mm samples weighed 30 to 35 kg. The sample sites were accurately plotted in the field on a prepared 1:100,000 base plan. Within E.L. 4329 a total of 11 gravel samples were collected.
corresponding to a gravel sample density of one sample per 147 square kilometres. Loam samples, which are surface scrap samples usually weighed 15 to 20 kg.

All sample locations are given on Plan 1.

2.20 Laboratory Phase

The samples were processed at the Ashton Mining Limited laboratory in Perth where they were concentrated by Wilfley Table and heavy liquid separation techniques.

The heavy liquid used was tetrabromoethane with a specific gravity of 2.96. The concentrates were then screened into various size fractions, further concentrated, where required, by magnetic and electrostatic separation techniques and a comprehensive grain by grain examination carried out on the minus 1.0mm plus 0.425mm fractions.

Of the 31 samples collected within the licence, 28 contained no detectable kimberlite indicator minerals. Each of the remaining three samples contained a microdiamond.

A complete listing of the laboratory results for all the samples is given in Appendix 1.
FIGURE 2

AIRBORNE MAGNETIC SURVEY

PLAN LOCATION
3.00 AIRBORNE MAGNETIC SURVEY

A fixed wing airborne magnetic survey was flown by Geometrics International Incorporation over an area of approximately 130 square kilometres in the eastern part of the licence (refer to Figure 2).

This work was carried out as part of a larger regional airborne magnetic program by the A.D.E. Joint Venture in the Brunette Downs area. Flight line spacing was 300 metres with lines oriented in a north-south direction. Additional survey specifications are listed in the legend to Plan 2.

Results within E.L. 4329 are presented as stacked profiles and flight path recovery plans (refer to Plans 2 and 5).
FUTURE PROGRAMS

Although only a small number of gravel samples were collected, three microdiamonds were recovered and the area therefore is regarded as of interest. Further follow-up sampling is planned. Once detailed interpretation of the magnetic data is completed and anomalies outlined, ground magnetic surveys will be undertaken over selected targets. At this stage it is also envisaged that an airborne multispectral scanner survey will be flown which will include the licence area.
APPENDIX 1.
RESULTS OF LABORATORY EXAMINATIONS

REGIONAL GRAVEL SAMPLES EL 4329

The following fractions of each sample were studied:

-1.0 mm  +0.8 mm;  denoted by +0.8
-0.8 mm  +0.5 mm;  denoted by +0.5
-0.5 mm  +0.425 mm; denoted by +0.4

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<tr>
<th>Sample No</th>
<th>Results</th>
<th>Comments</th>
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<td>BRU 304</td>
<td>Nil</td>
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<tr>
<td>BRU 305</td>
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<tr>
<td>BRU 306</td>
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<td>BRU 311</td>
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<tr>
<td>BRU 312</td>
<td>1 -0.4 DIAMOND</td>
<td>1 +0.2 x 0.2 x 0.1 STONE anhedral fragment of creamy-white turbid, poor</td>
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<td></td>
<td></td>
<td>quality material. Good 'sugary' lustre in some orientations.</td>
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<td>1 +0.15 x 0.15 x 0.1 STONE clear colourless fragment, all surfaces are</td>
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<td>cleavage or fracture surfaces, some frosted.</td>
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<tr>
<td>BRU 322</td>
<td>1 -0.4 DIAMOND</td>
<td>1 +0.15 x 0.15 x 0.1 STONE pale pink anhedral, frosted surfaces, subtranslucent generally rounded shape, but not good quality, fractured whilst testing.</td>
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APPENDIX 2.
## A.D.E. JOINT VENTURE

**EXPLORATION LICENCE NO. 4329**

### EXPENDITURE FOR THE YEAR ENDED 25.8.84

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<td><strong>Expenditure for year</strong></td>
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Date Licence Granted: 26.8.83