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ANNUAL REPORT E.L. 4342

26th August, 1983
to
25th August, 1984

Licensee: Aberfoyle Exploration Pty. Ltd.
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.

CR84/229A
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. 4342 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.
LIST OF PLANS

1. Sample Locations
2. Magnetic Stacked Profiles
3. Magnetic Stacked Profiles
4. Magnetic Stacked Profiles
5. Magnetic Stacked Profiles
6. Magnetic Stacked Profiles
7. Magnetic Stacked Profiles
8. Flight Path Recovery
9. Flight Path Recovery
10. Flight Path Recovery
11. Flight Path Recovery
12. Flight Path Recovery
13. Flight Path Recovery

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1.00 INTRODUCTION

Exploration Licence 4342 covers an area of 1,449 square kilometres (450 blocks) on the Brunette Downs 1:250,000 sheet.

The licence, which was granted to Aberfoyle Exploration Pty. Ltd. 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 sampling was undertaken. In addition an airborne magnetic survey was conducted over the whole of the licence area.

This report gives a summary of the work carried out in E.L. 4342 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 Paradise Bore 1:100,000 sheet so that sample sites tested the available drainage at intervals of six kilometres. As there is a paucity of drainage in the region, this resulted in only 15 gravel samples being taken in E.L. 4342.

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. 4342 a total of 15 gravel samples were collected corresponding to a gravel sample density of one sample per 97 square kilometres.
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 15 samples collected within the licence, 11 contained no detectable kimberlite indicator minerals. Each of the remining samples contained a microdiamond.

A complete listing of the laboratory results for 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 the entire licence area. Refer to Figure 2 for plan locations.

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. 4342 are presented as stacked profiles and flight path recovery plans (refer to Plans 2 and 13).
4.00 FUTURE PROGRAMS

Although only a small number of gravel samples were collected, four microdiamonds were nevertheless recovered and the area is therefore still considered 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 4342

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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<tr>
<td>BRU 47</td>
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<td>BRU 48</td>
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<td>BRU 49</td>
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<td>BRU 58</td>
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<td></td>
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<tr>
<td>BRU 59</td>
<td>1 -0.4 DIAMOND</td>
<td>1 +0.25 x 0.25 x 0.15 STONE good quality, all surfaces either cleavage or fracture faces, no visible inclusions.</td>
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<td>1 -0.4 DIAMOND</td>
<td>1 +0.1 x 0.1 STONE greyish cube, rounded and textured surfaces.</td>
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<td>BRU 77</td>
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<td>BRU 78</td>
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<td>1 +0.2 x 0.2 STONE orange-brown, cube structure with twinning, broken open, interior turbid.</td>
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<td>1 +0.3 x 0.3 STONE yellow, one fracture face, remainder high lustre, rounded smooth surfaces.</td>
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APPENDIX 2.
A.D.E. JOINT VENTURE

EXPLORATION LICENCE NO. 4342

EXPENDITURE FOR THE YEAR ENDED 25.8.84

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Salaries  6,695  
Field & Laboratory Expenses  37,834  
Miscellaneous  7,369  

Expenditure for year  51,898

Date Licence Granted: 26.3.85