TITLE: THIRD ANNUAL REPORT FOR THE FREW RIVER PROSPECT, EL 4877, KURUNDI DISTRICT, NORTHERN TERRITORY

PERIOD: 12TH FEBRUARY 1988
TO 11TH FEBRUARY 1989

TENEMENT: EXPLORATION LICENCE 4877

HOLDERS: MINERAL HORIZONS NL
GPO BOX 420
DARWIN NT 5794

AUTHOR: D.D. BOYER

DATE: FEBRUARY 1989

1:250,000 Sheet Frew River SF53-3
1:100,000 Sheet Hatches Creek 5956

COPY NO: 1.

120102DB.232
DISTRIBUTION:

1. Department of Mines and Energy, Northern Territory.


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KURINELLI BORE PROSPECT

ALLUVIAL GOLD EXPLORATION PROGRAMME
SEPTEMBER 1988
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<th>Title</th>
<th>Scale</th>
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<td>MH13-5</td>
<td>Locality Map, Exploration Licences, Davenport Range Area</td>
<td>1:1,000,000</td>
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<tr>
<td>MH15-1</td>
<td>Geology and Trench Locations Map</td>
<td>1: 10,000</td>
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<tr>
<td>MH15-2</td>
<td>Trench Sections</td>
<td>1: 125</td>
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**SUMMARY**

Exploration during the year included the trenching and bulk sampling of potentially auriferous alluvial material in the north eastern portion of the Licence.

Test work is planned to determine the gold content and gold recoverability of these samples.
1. INTRODUCTION

This report covers exploration carried out on the Frew River Prospect E 4877 during the 12 months ending February 11th 1989.

Exploration completed during the year included the trenching and bulk sampling of potentially auriferous alluvial material in the north east corner of the Licence, adjacent to the "Alfreds" workings, and a review of previous work.

2. LOCATION AND ACCESS

Access is via the sealed Stuart Highway to the Kurundi/Epennara turnoff 87km, south of Tennant Creek, then by graded unsealed road 53km to Kurundi Station Homestead (see Drawing No. MH13-5).

3. TENEMENTS

The location of the exploration licence is shown on Drawing No. MH13-5). It lies on the Bonney Well and Frew River 1:250,000 sheets.

<table>
<thead>
<tr>
<th>Tenement No.</th>
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<tr>
<td>E4877</td>
<td>1</td>
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<td>10/2/92</td>
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4. HISTORICAL NOTES AND PREVIOUS EXPLORATION

Previous exploration is described by Cullen, 1987.

5. GEOLOGY

The area is mostly covered by Recent and other Quaternary alluvium with minor outcrops of quartz and dolerite intruding Lower Proterozoic Hatches Creek Group Sediments (Kurinelli Sandstone and Rooney's Formation).

6. WORK PROGRAMME

Exploration during the year included the trenching and bulk sampling of alluvial material adjacent to the old workings. This work was carried out as an extension of a similar but more extensive programme on E4815 to the north. Full details of the programme are provided in the Appendix. A total of two trenches were excavated on E4877 and bulk sample material from these trenches was placed in sealed 44 gallon drums for future testing.

7. RESULTS

The gold content and gold recoverability of the bulk samples collected will be determined in a subsequent programme.
REFERENCES

CULLEN, L.J.  1988.  ANNUAL REPORT FOR THE FREW RIVER PROSPECT - E 4877 - KURUNDI DISTRICT NT.
APPENDIX
KURINELLI BORE PROSPECT

ALLUVIAL GOLD EXPLORATION PROGRAMME

SEPTEMBER 1988

MARTIN SPENCE
GOLDFIELDS RESOURCE DEVELOPMENT PTY LTD
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1. SUMMARY
2. LOCATION AND ACCESS
3. GEOLOGICAL AND GEOMORPHICAL OBSERVATIONS
4. EXPLORATION UNDERTAKEN SEPTEMBER 1988
   4.1 PROBLEMS ASSOCIATED WITH THIS METHOD OF EXPLORATION
5. RECOMMENDATIONS

DIAGRAMS

MH13-5 LOCATION MAP
MH15-1 COSTEAN LOCATIONS
MH15-2 COSTEAN SECTIONS & SAMPLE NUMBERS
1. SUMMARY

The Kurinelli Bore Prospect (EL 4815 and EL 4877) was tested for its alluvial gold potential by bulk sampling during September 1988.

Topographically the area consists of a hilly terrain with broad alluvial filled valleys. Limited conglomeratic beds are evidenced at surface as rounded to sub-angular polymictic lag.

The majority of the drainage consists of a fine to very fine grained sandy silt produced by sheet wash effect.

Sampling was undertaken to assess the volume and grade of alluvium by utilizing a back-hoe to excavate costeans.

The spoil was placed in 220 litre drums and forwarded to Tennant Creek for shipment to Darwin for analysis by an undetermined method. Gold panned from various costeans was extremely fine and "hid" under associated heavy minerals. It is proposed that the costean spoil should be initially tested by the cost-effective 10kg bottle roll cyanide leach method.

2. LOCATION AND ACCESS (Drawing No. WH13-5)

The Kurinelli Bore prospect is located on the eastern side of Exploration Licence 4815 and the northern portion of Exploration Licence 4877.

The prospect is centred some 450 kms north of Alice Springs; access is via the sealed Stuart Highway to the Kurundi-Epennara turn-off and then 50kms by graded road to the Kurundi homestead and a further 60 kms by graded road and tracks to Kurinelli Bore.

3. GEOLOGICAL AND GEOMORPHOLOGICAL OBSERVATIONS

The area was not mapped by the author, so the following comments are made from rapid visual inspection.

The dominant geology consists of sediments and mafic intrusives striking roughly north-south and occasionally standing proud as hills.

Gold mineralization is hosted by white (buck) quartz, weakly altered and showing minor copper carbonate and galena.

Geomorphologically the area consists of short weakly incised drainages that empty into alluvial filled valleys.

The alluvial fill deepens rapidly away from the hills and contain meandering intermittent creeks. Areas where higher energy drainage has occurred are shown at surface by rounded polymictic lag.
The following will dramatically affect the alluvial potential:-

1. Gold discovered in the area is nugget form, immediately about the parent quartz vein.

2. Gold tenor decreases rapidly away from the primary source.

3. The recent drainage is of such low energy deposition that any gold occurrence will be the very fine fraction.

4. EXPLORATION UNDERTAKEN DURING SEPTEMBER 1988

Costeans locations and a broad geomorphological interpretation are presented in MH15-1. Costeans mapping is presented as Drawing No. MH15-2.

Photographs with brief text are appended.

Costeans were sited using the following parameters:-

1. Located within alluvium downslope from known historical and recent gold workings.

2. "Staggered" costeans were dug down drainage to gauge the decrease in grade away from these primary sources.

3. Costean bearings were determined by the present drainage flow directions as limited paleo drainage indicators occur. It is proposed that the present drainage loosely reflects the ancient systems. A total of 29 costeans were dug and sampled using a back hoe excavator to dig to refusal. Costeans were generally 18 metres long and reached an average of 1.0 metres depth.

If more than one sedimentary horizon was observed, each was sampled independently, the upper horizon given the suffix A to its costean number, the lower suffixed B.

The costean spoil was packed in 220 litre drums, the lids welded on and transported to Tennant Creek for shipment to Darwin.

Costeans were back filled and the area smoothed over immediately after sampling.
KP 26

KP 26A

KP 26B

KP 27

Alluvium 1.0m thick

Angular boulders (0.45m thick)
(quartz content decreases with depth)

Pgb
Very strongly weathered coarse grained gabbro in floor of costean

Alluvium 0.6m thick

Quartz rich float (0.25m thick)

LEGEND

Pgb Proterozoic gabbro

Alluvium

Clasts; rounded, angular.

KP 26 Sample number showing horizon sampled

SCALE . 1:125

0 5 10 MTS

MINERAL HORIZONS N.L.

EL 4877

KURINELLI BORE PROSPECT
Costean Mapping
REVISIONS

DATE BY

ORIGINATOR D.B.

DRAWN V.W.

DATE Feb. 1989

SCALE 1:125 DWG. No. MH 15 - 2. REV.
4.1 PROBLEMS ASSOCIATED WITH THIS METHOD OF EXPLORATION

1. The vast area to be tested effectively would necessitate a major exploration programme.

2. The deep alluvium was not fully tested as it becomes compacted at depth and impenetrable by back-hoe. A more efficient method may be the use of an excavator or auger drill.

5. RECOMMENDATIONS

Very fine gold was panned from the costeans located near to historical gold workings. The fine nature of the gold may affect the efficiency of mechanical separation.

It is recommended that the 10kg bottle roll cyanide leach assay method be initially used to test the samples.

M. SPENCE
GOLDFIELDS RESOURCE DEVELOPMENT PTY LTD
SEPTEMBER, 1988
TRENCH KP26. SAMPLE 26B TO THE LEFT AND SAMPLE 26A TO THE RIGHT

TRENCH KP26. QUARTZ RICH B HORIZON IN LOWER PART OF TRENCH.
<table>
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**TOTAL** 5,741

**LOCAL OFFICE OVERHEADS** 3,270

**HEAD OFFICE OVERHEADS** 1,200

**GRAND TOTAL** 10,211
**NORTHERN TERRITORY GEOLOGICAL SURVEY - GEOSYSTEM DATA SHEET**

**REPORT NO.**

**REPORT TITLE** Third Annual Report for the Frew River Prospect, EL 4877, Kowany District, Northern Territory

**AUTHOR (S)** D.J. Boyer

**PUBLISHER**

**PLACE OF PUB’N**

**DATE OF PUB’N**

**DATA TYPE** Hard copy

**ACCOMPANIMENTS**

1 Appendix

**DRILL CORE ?** No

**LICENCE NO.** EL 4877

**PROJECT YEAR (S)** 3

**LICENSEE (S)** Mineral Horizons NL

**JOINT VENTURE (S)**

**OPERATOR (S)** Mineral Horizons NL

1:1 000 000

1: 250 000

Frew River SF53-3

1: 100 000

Hatchet Creek SF61

1: 50 000

**PROSPECT NAME** Frew River

**SITE LOCATION**

LAT: _____________  LONG: _____________

EAST: _____________  NORTH: _____________

**TECTONIC UNIT**

**MAJOR TERM** ☑ PETROLEUM GEOL.

☐ NONMETALLIFEROUS MINERALS

☐ METALLIFEROUS MINERALS

**MINOR TERMS**

**DRILLING**

- DIAMOND
- PERCUSSION
- AUGER
- ROTARY

**AERIAL SURVEYS**

**GEOGRAPHIC SURVEYS**

**GROUND SURVEYS**

- E.M. SURVEYS
- SEISMIC SURVEYS
- RESISTIVITY SURVEYS
- GEOPHYSICAL ANOM
- GRAVITY

**GEOLOGY**

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- SOIL
- ROCK CHIP
- WATER

**PHOTOLOGIC**

**GRIDING**

**REGIONAL GEOLOGY**

**LOCAL GEOLOGY**

**STRATIGRAPHY**

**RECONNAISSANCE**

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**GEOCHEMISTRY**

- DRAINAGE TESTING
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- ASSAYING
- GEOCHEMICAL ANALYSIS

**GENERAL**

- GEOLOGICAL MAPPING
- PHOTOLOGIC
- GRIDING
- METHODS
- REGIONAL GEOLOGY
- LOCAL GEOLOGY
- STRATIGRAPHY
- RECONNAISSANCE

**NOTES**

**ABSTRACT ATTACH**

**INDEXED BY/DATE** ___________

**CHECKED BY/DATE** ___________