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EL 2226

PINDA SPRINGS

ANNUAL REPORTS FOR THE PERIOD 4/11/96 TO 3/11/2001

Submitted by

Modern Exploration Pty Ltd and Mount Gleam Mining Pty Ltd
2002

Enquiries: Customer Services
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101 Grenfell Street, Adelaide 5000

Telephone: (08) 8463 3000
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PRIMARY INDUSTRIES AND RESOURCES SA

MODERN EXPLORATION PTY LTD

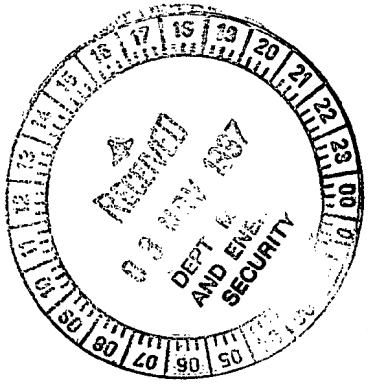
A.C.N. 073 218 247

215 ANGAS STREET
ADELAIDE
S.A. 5000
TEL: (08) 8223 1888
FAX: (08) 8223 1883

EL 2226

ANNUAL TECHNICAL REPORT

PERIOD ENDING 3rd NOVEMBER 1997



Edek Choros
3/35 Henry Drive
SINGLETON NSW 2330

24 October 1997

Exploration Report
El 2226 - Pinda Springs

1.0 Previous Exploration and Mining

Extensive records of gold and silver-lead mining within El 2226 exist in different reports published by South Australian Government. The publications include the following:

- Pinda Springs Mine - 45 tonnes of silver- lead ore with 5.2 kg of silver per tonne have been produced;
- Christmas Gold Mine - 40 tonnes of gold ore with average grade of 180 g/t of gold and unrecorded quantity of gold ore with average grade of 72 g/t of gold have been produced.

2.0 Current Exploration

The following works were completed:

- Review of all available records of historical mining and previous exploration carried out within El 2226;
- Development of exploration strategy;
- Extensive mapping and sampling;
- Laboratory testing of selected samples;
- Data analysis.

As a result of the above works very extensive mineralisation of copper, silver-lead and gold was discovered within El 2226. The most promising findings are:

- Prospect No1 - Pinda Springs Mine, extensive mineralisation of galena (Ref. Sample No 1) was mapped within area approx 300m x 50m. Galena is forming infill within joints and faults. Recorded thicknesses of individual veins were up to 5 cm. Chemical assays of representative samples shown grades up to 79% lead and 0.33kg/t silver;

- **Prospect No 2 - Silver - Lead,** similar mineralisation (Ref. Sample No 2) as within Prospect 1 was discovered within northern part of El 2226. Chemical assays of galena shown silver grades of up to 1.2 kg/t.

- **Prospect No 3 - Copper-Gold,** two thick veins (thickens from 0.5 to 3m) of oxidised copper ore (Ref. Sample No 3) were discovered close to Prospect No 2. Representative samples shown copper grades of up to 10.5% and 0.5 g/t of gold;

- **Prospect No 4 - Christmas Gold Mine,** panning of material from the creeks and loose infill of joints and faults produced visible gold grains (Ref attached Sample No 4). Soil sampling and geochemical testing shown presence of extensive (min 300m x 200m) gold anomaly. Normal background gold contents is less than 0.01 ppm, recorded values were up to 0.22 ppm of gold.

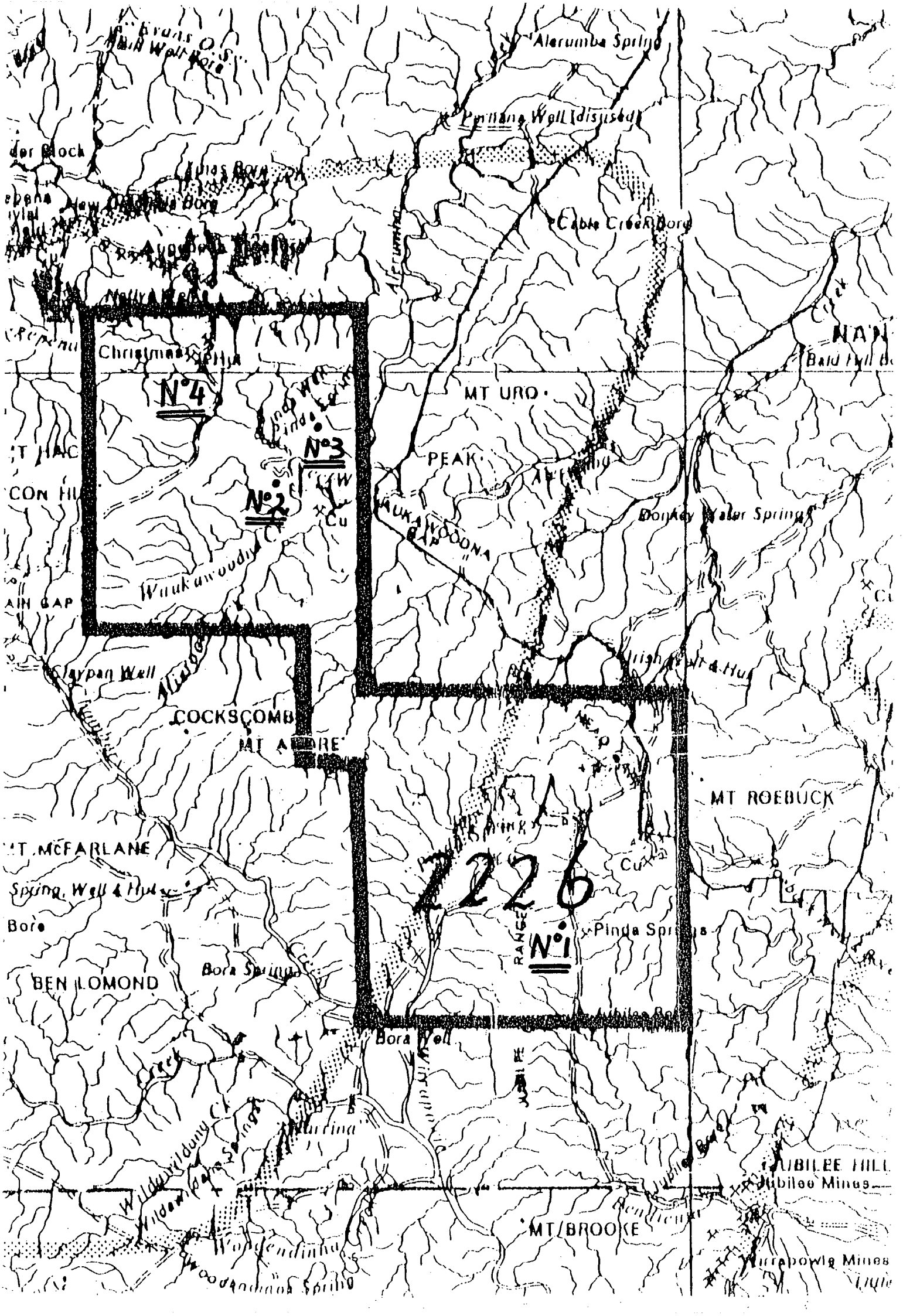
3.0 Plan for further exploration

All four described prospects are looking very promising. To analyse their full potential we are planning to drill exploration holes and take large samples for purpose of resource evaluation. Anticipated budget for this stage of work is approximately $45,000.00.

This work will be done in partnership with Mount Gleam Mining Pty Ltd.

E. Choros

Edek Choros
Geologist
Corporate Member of Australian Institute of Mining and Metallurgy
Membership Card No. 110281


Alcrumba Springs
Pinnana Well (disused)
Cable Creek Bore
MT URO
PEAK
Donkey Water Springs
Christmas Well
N°4
N°3
N°2
Cu
Cockscomb
MT ROEBUCK
4226
N°1
Pinda Springs
Bora Well
BEN LOMOND
MT McFARLANE
MT BROOKE
JUBILEE HILL
Jubilee Mines

MINERAL CHEMISTRY

Amdel Laboratories Ltd
PO Box 338
Torrensville Plaza SA 5031
ACN 009 076 555

Telephone (08) 416 5300
Facsimile (08) 234 0321

Mr Edek Choros
Mr Edek Choros
8 Ti Tree Place
LEIGH CREEK SA 5731

FINAL ANALYSIS REPORT

Your Order No: L 31/10/95 Our Job Number : 5AD4306

Sample rec'd : 07/11/95 Results reported : 15/11/95
No. of samples : 2
Report comprises a cover sheet and pages 1 to 1

This report relates specifically to the samples tested in so far that the samples as supplied are truly representative of the sample source.

Approved Signature:

Chris Alxmann

for
Alan Ciplys
Manager - Mineral Chemistry
AMDEL LABORATORIES ADELAIDE

Report Codes:
N.A. - Not Available.
L.N.R. - Listed But Not Received.
I.S. - Insufficient Sample.

Distribution Codes:
CC - Carbon Copy
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MM - Magnetic Media

amdel

Job: 5AD4306
O/N: L 31/10/95

Final

ANALYTICAL REPORT

SAMPLE	Ag
NO. 1	1200
NO. 2	1100

3 Prospect No 2

UNITS	ppm
DET.LIM	2
SCHEME	MET1

amdel
MINERAL CHEMISTRY

invoice

00073328

Amdel Laboratories Limited
Stirling Street, Thebarton SA 5031
PO Box 338, Torrensville Plaza SA 5031
Telephone: (08) 8416 5300 Facsimile: (08) 8234 0321

Quality System Certified - ISO9001
Certification No. 7554

Dr. TO

Modern Exploration
6 Tay Road
WOODFORDE SA 5072

OUR REF. **7AD0762**

DATE **10/04/97**

YOUR REF. **SDA 33214**

ANALYTICAL SCHEME	ACCOUNT CODE	DESCRIPTION	No. OF ANALYSES	No. SAMPLES No. UNITS	PRICE PER SAMPLE PRICE PER UNIT	AMOUNT
PREP2	C012000C	Total Prep < 2kgs		8	$6.20	$49.60
FA1	C002000C	Fire Assay (Au)	1	8	$12.00	$96.00
REP1	C102000C	Batch Fee		1	$35.00	$35.00

E. & O. E.

TERMS

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PLEASE PAY **$180.60**

MINERAL CHEMISTRY
Amdel Laboratories Ltd
PO Box 338
Torrensville Plaza SA 5031
ACN 009 076 555
Telephone (08) 8416 5300
Facsimile (08) 8234 0321

Mr J Andrecki
Modern Exploration
6 Tay Road
WOODFORDE SA 5072

FINAL ANALYSIS REPORT

Your Order No: SDA 33214

Our Job Number : 7AD0762

Sample rec'd : 01/04/97

Results reported : 10/04/97

No. of samples : 8

Report comprises a cover sheet and pages 1 to 1

Approved Signature:

for
Alan Ciplys
Manager - Mineral Chemistry

Report Codes:
N.A. - Not Available.
L.N.R. - Listed But Not Received.
I.S. - Insufficient Sample.

Distribution Codes:
CC - Carbon Copy
EM - Electronic Media
MM - Magnetic Media

Job: 7AD0762
O/N: SDA 33214

Final

ANALYTICAL REPORT

MPLE	Au	Au Dpl
XMAS HUT 15/3/97 1	0.01	0.01
XMAS HUT 15/3/97 2	<0.01	--
XMAS HUT 15/3/97 3	<0.01	--
XMAS HUT 15/3/97 4	0.22	--
XMAS HUT 15/3/97 5	0.02	0.04
XMAS HUT 15/3/97 6	0.10	--
XMAS HUT 15/3/97 7	0.18	--
XMAS HUT 15/3/97 8	<0.01	--

Prospect No 4

UNITS	ppm	ppm
DET.LIM	0.01	0.01
SCHEME	FA1	FA1

PO Box 338
Torrensville Plaza SA 5031
ACN 009 076 555

Facsimile (08) 8234 0321

Mr J Andrecki
Modern Exploration
6 Tay Road
WOODFORDE SA 5072

FINAL ANALYSIS REPORT

Your Order No:

Our Job Number : 6AD3915

Sample rec'd : 25/11/96
No. of samples : 6

Results reported : 09/12/96

Report comprises a cover sheet and pages 1 to 1

This report relates specifically to the samples tested in so far that the samples as supplied are truly representative of the sample source.

Approved Signature:

for
Alan Ciplys
Manager - Mineral Chemistry

Report Codes:
N.A. - Not Available.
L.N.R. - Listed But Not Received.
I.S. - Insufficient Sample.

Distribution Codes:
CC - Carbon Copy
EM - Electronic Media
MM - Magnetic Media

amdel

Job: 6AD3915
O/N:

Final

ANALYTICAL REPORT

SAMPLE	Au	Au Dpl	Cu
SAMPLE 2	0.03	--	--
SAMPLE 3	0.02	--	--
SAMPLE 7	0.01	--	--
SAMPLE 1	0.49	--	10.5%
SAMPLE 4	0.03	0.04	9.16%
SAMPLE FIS 1	0.06	--	5.18%

Prospect No 3-

UNITS	ppm	ppm	ppm
DET.LIM	0.01	0.01	2
SCHEME	FA1	FA1	AA1R
UPPER SCHEME			MET1

amdel
MINERAL CHEMISTRY

invoice

00071964

Amdel Laboratories Limited
Brown Street, Thebarton SA 5031
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Telephone: (08) 8416 5300 Facsimile: (08) 8234 0321

Dr. TO

Modern Exploration
6 Tay Road
WOODFORDE SA 5072

OUR REF. **6AD3915**

DATE **10/12/96**

YOUR REF.

ANALYTICAL SCHEME	ACCOUNT CODE	DESCRIPTION	No. OF ANALYSES	No. SAMPLES No. UNITS	PRICE PER SAMPLE PRICE PER UNIT	AMOUNT
PREP1	C012000C	Sample Drying < 2kg		6	$1.35	$8.10
PREP2	C012000C	Total Prep < 2kgs		6	$6.20	$37.20
PREP3	C012000C	Jaw Crushing		6	$2.10	$12.60
FA1	C002000C	Fire Assay (Au)	1	6	$12.00	$72.00
MET1	C042000C	Metallurgical	1	3	$32.80	$98.40
REP1	C102000C	Batch Fee		1	$35.00	$35.00

PAID

E. & O.E.

TERMS

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MINERAL CHEMISTRY

Amdel Laboratories Ltd
PO Box 338
Torrensville Plaza SA 5031
ACN 009 076 555

Telephone (08) 416 5300
Facsimile (08) 234 0321

Mr J Andrecki
Modern Exploration
6 Tay Road
WOODFORDE SA 5072

FINAL ANALYSIS REPORT

Your Order No:

Our Job Number : 6AD3136

Sample rec'd : 05/09/96
No. of samples : 2
Report comprises a cover sheet and pages 1 to 1

Results reported : 10/09/96

This report relates specifically to the samples tested in so far that the samples as supplied are truly representative of the sample source.

Approved Signature:

for
Alan Ciplys
Manager - Mineral Chemistry

Report Codes:
N.A. - Not Available.
L.N.R. - Listed But Not Received.
I.S. - Insufficient Sample.

Distribution Codes:
CC - Carbon Copy
EM - Electronic Media
MM - Magnetic Media

amdel

Job: 6AD3136
O/N:

Final

ANALYTICAL REPORT

SAMPLE	Ag
PINDA SPRINGS 1	220
PINDA SPRINGS 2	210

3 Prospect No 1

UNITS	ppm
DET.LIM	2
SCHEME	MET1

MINERAL CHEMISTRY

Amdel Laboratories Ltd
PO Box 338
Torrensville Plaza SA 5031
ACN 009 076 555

Telephone (08) 8416 5300
Facsimile (08) 8234 0321

Mr J Andrecki
Modern Exploration
6 Tay Road
WOODFORDE SA 5072

FINAL ANALYSIS REPORT

Your Order No:

Our Job Number : 6AD3491

Sample rec'd : 15/10/96
No. of samples : 1
Report comprises a cover sheet and pages 1 to 1

Results reported : 24/10/96

This report relates specifically to the samples tested in so far that the samples as supplied are truly representative of the sample source.

Approved Signature:

for
Alan Ciplys
Manager - Mineral Chemistry

Report Codes:
N.A. - Not Available.
L.N.R. - Listed But Not Received.
I.S. - Insufficient Sample.

Distribution Codes:
CC - Carbon Copy
EM - Electronic Media
MM - Magnetic Media

amdel

Job: 6AD3491
O/N:

Final

ANALYTICAL REPORT

SAMPLE	Cu	Ag	Pb	Zn	Cd	Ni
PINDA SPRINGS	0.020	330	79.3	0.015	25	80

Prospect No 1

UNITS	%	ppm	%	%	ppm	ppm
DET.LIM	0.005	2	0.005	0.005	10	20
SCHEME	MET1	MET1	MET1	MET1	MET1	MET1

amdel
MINERAL CHEMISTRY

invoice

00071366

Amdel Laboratories Limited
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PO Box 338, Torrensville Plaza SA 5031
Telephone: (08) 8416 5300 Facsimile: (08) 8234 0321

Dr. TO

Modern Exploration
6 Tay Road
WOODFORDE SA 5072

OUR REF. **6AD3491**

DATE **28/10/96**

YOUR REF.

ANALYTICAL SCHEME	ACCOUNT CODE	DESCRIPTION	No. OF ANALYSES	No. SAMPLES No. UNITS	PRICE PER SAMPLE PRICE PER UNIT	AMOUNT
PREP1	**C012000C**	**Sample Drying < 2kg**		**1**	**$1.35**	**$1.35**
PREP2	**C012000C**	**Total Prep < 2kgs**		**1**	**$6.20**	**$6.20**
MET1	**C042000C**	**Metallurgical**	**6**	**1**	**$32.80**	**$32.80**
REP1	**C102000C**	**Batch Fee**		**1**	**$35.00**	**$35.00**

PAID

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TERMS

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PLEASE PAY **$75.35**

MARY INDUSTRIES
SOURCES SA

Mineral Resources
Primary Industries and Resources SA
101 Grenfell Street
ADELAIDE SA

GPO BOX 1671
ADELAIDE SA 5001
Facsimile: 08 8463 3101

Note OK

EPORT ON MINERAL EXPLORATION

(Separate form for each licence)

Exploration Licence No: 2226

For ~~Six~~ 12 Months Ending: 3 Nov 1998

Mineral(s) Sought: ALL

Operator/Manager: MT GLEAM MINING

Prepared by: D.C. WATKINS

Date: 17-11-99

Phone No: 8359 3149

Fax No: 8389 3123

MMARY OF OPERATIONS

(I... type of samples: line km & type of survey: No of holes: metres of each type of drilling: Environmental activities etc).

A magnetic survey + shallow drilling program carried out over the mining leare at Pinda Springs. This ML is covered by EL 2226.

During this period discussions and negotiations took place regarding acces, native title and joint ventive proposals.

The primary focus was on gold-lead-zinc mineralisation estensions to the Pinda Springs mine and the Jubilee Mine to the south.

Following the drilling program the large area of the licence area became the focus of the exploration program and the need for airborne geophysics was discussed as this area only had limited geophysical coverage.

[If field activity undertaken, attach A4 size plan showing general location and type of work done]

EXPENDITURE

Expenditure for Period: $45 760
(Add detailed statement)

Total Expenditure for Licence: $90 760

PRIMARY INDUSTRIES
RESOURCES SA

Mineral Resources
Primary Industries and Resources SA
101 Grenfell Street
ADELAIDE SA

GPO BOX 1671
ADELAIDE SA 5001
Facsimile: 08 8463 3101

Note
DC

REPORT ON MINERAL EXPLORATION

(Separate form for each licence)

Exploration Licence No: 2226

12
For ~~Six~~ Months Ending: 3 Nov 1999

Mineral(s) Sought: ALL.

Operator/Manager: MT GLEAM MINING

Prepared by: D.C. WATKINS

Date: 17-11-99

Phone No: 8359 3149

Fax No: 8359 3123

SUMMARY OF OPERATIONS

(e.g. type of samples; line km & type of survey; No of holes; metres of each type of drilling; Environmental activities etc).

The need for airborne geophysical data was met with the AGSO program.
This geophysical data became available during the period and to date only limited assessment of the data has occurred. The report from the consultant who was to enhance + interpet the data and propose follow up work on delineated anomalies and geophysical structures will be available shortly.

The future plans are to locate these geological anomalies on the ground, to assess them according to priority, for follow up exploration. As these targets will be similar to others encountered within the Adelaidean it is anticipated exploration methods will primarily be by drilling.
Additionally alluvial gold areas are of immediate interest.

[If field activity undertaken, attach A4 size plan showing general location and type of work done]

EXPENDITURE

Expenditure for Period: $15 760
(Add detailed statement)

Total Expenditure for Licence: $106 520

The overdue technical report will be forwarded shortly when the report from the geophysical interpretation is complete

Peter Lewis

Member for Hammond

Jobs

Education

Health

Horticulture

Transport

Agriculture

Environment

3rd November 1999

Mr George Kwitko
Mineral Resources
Primary Industries and Resources SA
101 Grenfell Street
ADELAIDE SA 5000

Dear Mr Kwitko

Re: Renewal of Term – Exploration Licence No. 2226

Could you please renew the term of the Mineral Exploration Licence for an additional one (1) year for Exploration Licence No. 2226.

See attached summary of work and expenditure to date.

The required summary reports are currently being prepared by my Consulting Geologist, Mr Dave Watkins, and will be forwarded within the next 2 weeks.

Yours sincerely

PETER LEWIS, AFAIM, MAIAST, RDA (Hort), JP, MP
MEMBER FOR HAMMOND
CHAIRMAN, PUBLIC WORKS COMMITTEE

PRIMARY INDUSTRIES & RESOURCES SA
- 8 NOV 1999
MINERAL

ELECTORATE OFFICE: 64 Adelaide Road, Murray Bridge, SA, 5253
Telephone: (08) 85 31 1144, Facsimile: (08) 85 31 0462, Pager (08) 8273 2605
Parliament House: FREECALL 1800 18 2097 – lewis.peter@parliamentsa.sa.gov.au

168 sqv K

A Brief Summary of Work to Date:

On Exploration Licence No. 2226 in conjunction with the Pinda Springs Mining Lease No. 5926 in the Hundred of Copley and the EL 217/97 in the name of Graeme Hunt to be transferred to myself and Mt Gleam Mining Pty Ltd.

As already reported we have done an extensive drilling program at Pinda Springs which has resulted in the discovery of no significant ore bodies. This is in stark contrast to the expectations given to us by its previous owner Mr Dominic Amuso who offered it to myself and Mr Hunt as collateral if we would pay out his bankruptcy commitments. At that time we approached and had discussions with Modern Exploration which resulted in the transfer of Exploration Licence No. 2226 to a joint venture to be managed by Mt Gleam Mining Pty Ltd.

Subsequent to these events and more recently, we took up the offer from AGSO made jointly by AGSO and PIRSA for a 200 metre interval infill aerial geomagnetic survey of the entire area in May this year. We did this on the separate advice of Mr D Watkins, a Consultant Geologist and mining associates of Nick Birdseye and Associates.

We have had the results on disc printed out and analysed by Mr D Watkins, have visited 2226 and conducted inspections on three occasions this winter and now sought advice from a Dr Miller, who was recommended by Mr D Watkins in his report. We expect that to come to hand late in October whereupon we will most likely, depending upon his advice, commence an extensive drilling programme of the target anomalies to which Mr Watkins has referred and which we have topographically examined. This drilling programme will be undertaken in early 2000 and on present indications will easily exceed $200,000 in total cost. We have spent over $55,000 to date net of the costs of Dr Miller's reports.

****

Please accept this as an Application for Renewal of Mineral Exploration Licence No. 2226

FAX TO: Peter Lewis

FAX FROM: David Watkins

Re: Exploration Licences around Pinda Springs

As you know a number of companies have shown interest in the Adelaidean rocks and have various theories associated with the brecciation zones in particular, you might know them better as diapirs. Minotaur has the Bibliando structure, Lynas Blue Rose, Eagles Camp Boolooroo, Mintech Teetulpa, just to name a few and what these have in common are magnetic anomalies associated with mineralisation. The anomalies are thought to be ultrabasic intrusions eg volcanics and the kimberlites, carbonatites and lamphroites are generally considered to be responsible, ie iron rich, low in silica.

Notable old mines in the Adelaidean include the Burra and Blinman mines and also include many of the barite mines.

The Pinda Springs area has a few notable features, one significant one being Mt Roebuck. This geographic feature has a diapiric structure associated with it, probably caused the high spot. But what the new high resolution airborne geophysics has shown up is a very prominent EW trending magnetic anomaly on its northern side, which also is related to an EW trending prominent shear zone. This area is one where exploration would be recommended.

Within this same structure but on the eastern boundary is another linear magnetic feature trending almost NS. This not as pronounced as the northern feature but does give evidence of a string of volcanic intrusives which probably lie just beneath the surface. This fits in with targets that the above companies are currently investigating and getting very encouraging results.

Another area worthy of further exploration is the area marked on the geology map as "Pinda Springs" which is about 4-5 kms north of the lead occurrence you have the mining lease over. This is a fairly complex zone geologically and has a fairly intense magnetic anomaly associated with it as well as being the same shear zone as the first target mentioned above.

No features of interest appear to be obvious around the Pinda Springs mining lease.

Of lesser interest are the drainage channels coming from in and around Mt Roebuck. They are shown clearly on the aeromagnetics as well as on the radiometrics. These drainage channels could be exploration target zones for heavy mineral accumulations and without knowing the area in question but having seen these things elsewhere in the Flinders Ranges I would expect these drainage channels to be palaeo channels and superficially covered by shallow alluvium.

As you are aware from previous discussions this geophysical data can be enhanced using sophisticated computer programs. The data then can be manipulated to zoom in on anomalous features. However to do this exercise takes a specialist geophysicist who is familiar with the Flinders Ranges geology and current exploration activity. I.

suggest to pass the data onto Dr Miller so he can under take a comprehensive review of the area. He would be able to give a quote first off, but I would expect an account off around $2000-$3000 for this work. He would want to have all the preliminary ground work done eg go through all the old records and previous exploration data on the area. I am opposed to this approach because I would like to see new targets generated without influence from previous exploration work ie fresh ideas. Research into PIRSA files can be undertaken at a later date.

I think the fact that around Mt Roebuck shows evidence of a few old copper and lead workings indicates that these intrusives are or were mineralised and were probably responsible for these small mines. This geophysical data tends to only be useful for highlighting significant exploration targets.

D. Watkins 21st June 1999.

Mt. Gleam Mining Pty Ltd

Technical Report for the 2Year Period Ending 3rd November 2000

Exploration Licence 2226

Pinda Springs Area- Flinders Ranges South Australia

D. C. Watkins, August 2000.

CONTENTS

LOCATION & ACCESS

Exploration Licence 2226 is located in the northern portion of the Flinders Ranges in South Australia, approximately 500 kilometres due north of Adelaide. The licence area is located primarily on Mulga View Station.
Travelling time by road is approximately 6 hours from Adelaide, and a distance of approximately 550 kilometres. The roads are variable in condition from smooth bitumen surfaces to rough and narrow bitumen south of Wilpena Pound with rough built up (sometimes graded) earth roads north of Wilpena Pound. The last 20 kilometres to the licence area is by rough un-maintained station track, prone to washouts and boggy conditions.

The boundaries are defined by the following latitudes and longitudes.
Northern Section 30° 44'- 30° 49' 138° 49'- 138° 54'
Central Section 30° 49'- 30° 51' 138° 53'- 138° 54'
Southern Section 30° 50'- 30° 55' 138° 54'- 139° 00'
Total area is approximately 168 square kilometres.

Access within the licence area is very difficult because of the limited number of station tracks and because of the rugged nature of the ranges.

GEOLOGY

Primarily the area is covered by Lower Cambrian and Upper Proterozoic sedimentary sequences.
Lower Cambrian sequences include the Wilkawillina Limestone Formation a massive clean grey limestone; Midwerta Sale a sequence of green grey shales and calcareous shales; Parara Limestone Formation composed of dark grey shaley limestone; and Parachilna Formation sandstones, shales and limestone lenses.
Upper Proterozoic sequences include the Pound Quartzite, Wonoka Formation green grey shales, Billy Springs Formation siltstones, Bunyeroo Formation red brown and purple siltstones and shales, ABC Range quartzite and Brachina Formation olive green and purple siltstones.
Recent drilling near the old Pinda Springs silver lead prospect indicated the presence of dark grey to black dolomitic limestone, which is presumed to be Bunyeroo Formation.
At the southern end of the licence area is one of considerable disturbance with a north east-south west trending prominent fault and a "diapiric" structure evident. Diapiric breccia is also evident around "Pinda Springs" and Mt Roebuck to the east. This prominent fault truncates the Jubilee Range at its northern end.
The northern side of the licence area is just to the south of what is known as the Angepena Goldfield. The most prominent geological feature in this area is the large fault controlled diapiric structure.

See Appendix 1, Miller's Report for maps of the area.

EXPLORATION TARGETS

Primarily three exploration targets were identified prior to the commissioning of Dr Miller to interpret the airborne geophysical data, which was flown in 1999.

(1) The obvious "diapiric" structure in the north of the licence area was the focus of potential alluvial gold and other heavy minerals weathering from the diapiric breccia and other sources within this structure. No historic record exists of alluvial gold in this precise location, but alluvial gold was mined several kilometres further north on what is known as the Angepena Goldfield. Most alluvial gold occurrences within the Adelaidean are associated with these "diapiric" structures. Additionally these structures also host copper deposits.

(2) The southern end of the licence area around the "Pinda Springs" homestead, has evidence of small scale copper mining last century. This area appeared to be an obvious choice for further exploration because of the series of NE-SW faults and copper occurrences in the area. The copper occurrences are no doubt associated with known diapiric breccia in the area.

(3) The other area of interest was the potential for heavy minerals associated with the drainage channels associated with the flowing creeks coming from within the area of brecciation associated with the diapiric brecciation. Diapiric structures tend to shed all sorts of rare earth minerals as well as various iron titanium minerals.

(4) The area around the Pinda Springs Ag-Pb prospect had been dismissed as unprospective because of previous earlier drilling, however the shear associated with this small pocket of mineralisation maybe provide further targets.

The airborne geophysical data gathered by AGSO became available during early 1999. Some difficulty arose in the supplying of this data by AGSO, which caused some delays, and even though the area was flown at a 200 metre line spacing the data had processing errors which were obvious but not addressed by AGSO. This data was provided to Dr Miller for basic geophysical interpretation and for site recommendation for further closer inspection as exploration targets.

The intention is to follow-up the recommendations from the Miller Report, Appendix 1. Where several areas have been highlighted as areas where geophysical anomalies have been recognised.

EXPLORATION DIFFICULTIES

The first problem encountered was AGSO and its poor service provided in supplying data from the airborne geophysical survey. This was particularly poor service as the data collection was in joint venture with AGSO and PIRSA and it was expected the end results would have been of the best quality possible. AGSO will be contacted again and the total radiometric data will be sought enabling it to be enhanced and manipulated by Pitt Research to give clear images.

The next serious problem is Native Title and associated negotiations. During the early phases of exploration Native Title considerations must be explored, but it seems a one sided effort. With petroleum licences, the "clock doesn't start ticking" until native title considerations are resolved, however no such considerations are given with mineral exploration licences. Native Title negotiators very often do not respond at all to letters or telephone calls. Now there has been an amalgamation of Native Title Claimants under one single claim "Adnyamathanha People SG6001/98"; this has again extended resolution of this issue and parties have until November 2000 to register. Resolution of this Native Title problem appears that it will never be resolved unless government intervenes.

The next problem is an access one. Access for drilling is virtually ruled out for most of the area because it will cause environmental disturbance in a picturesque area of the Flinders Ranges. PIRSA officials seem to be more worried about environmental issues than finding orebodies. In recent discussions I was informed to forget about any thoughts of mining in the Flinders Ranges because it was highly likely no approval will be given because of environmental concerns.

Raising funds from investors is difficult even at the best of times, but when PIRSA officials are stating that Native Title issues will be an unresolved issue in the foreseeable future and coupled with their reluctance to support mining in the scenic areas of the Flinders Ranges makes fundraising almost impossible.

CONCLUSIONS

Of the four areas of immediate interest on this licence area as mentioned previously, the obvious area to focus on is the area to the south around the "Pinda Springs" where access is not a problem however environmental issues might be. An exploration program for this area is being formulated following a recent visit to the area.
The northern end poses several problems, access being the main one. More geophysical evaluation is needed to attempt to clarify some of the original observations and is being undertaken.

MODERN EXPLORATION PTY LTD

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Primary Industries and Resources SA
Mr George Kwitko
GPO Box 1671
ADELAIDE SA 5001

6/2/2002

RE: Annual Technical Report EL 2226
3 November 2001

Dear Sir

1. No fieldwork was done during the last 12 months due to Joint Venture technical problems

2. Corporate problems arose between ourselves and the other Joint Venture partner Mount Gleam Pty Ltd.
Mount Gleam's MD, Mr Peter Lewis, had problems elsewhere and could not fulfil his obligations per our contract and failed to renew the EL.

3. Furthermore, our Joint Venture partner Mount Gleam Pty Ltd sighted uncertainties with native title claims which held up his ability to fulfil his obligation.

Yours faithfully

Ernst Kirsten

CONTENTS

Introduction

Location

Exploration licences 2511 and 2226 are located 65 km south east of Leigh Creek in the northern Flinders Ranges. The licence areas cover 315 km^2 which are composed of hilly terrain in the west and north, with open alluvial plains in the east.

Geology

The geology in this region is comprised of Cambrian and Neoproterozic sedimentary sequences. The strata are folded and faulted, and contain syn and post depositional diapiric structures[1]. The typically carbonate rich diapiric structures contain xenoliths of older Proterozoic (early Neoproterozoic, Mesoproterozoic and Palaeoproterozoic) metasediments, metamorphic and igneous rocks.

The emplacement of igneous and metamorphic basement geology into young sedimentary sequences has provided opportunities for base metals and gold deposits to form in the Cambrian and Neoproterozoic strata.

The region containing the exploration licence contains evidence of an active history of mineral exploration and the exploitation of copper, lead, zinc, gold and coal deposits. Electrolytic Zinc's willemite deposit to the west is an example of a current mine.

Local exploration

The exploration licence area has received various levels of mineral exploration in recent times. The main emphasis of exploration has been copper and gold exploration. Most mineralisation is reported to occur within diapiric strata or along faults emanating from the diapiric structures. Mineralisation along the Pinda Springs-Mt Roebuck fault has revealed low grade copper mineralisation within zones of ironstone, magnetite and siderite. Galena and silver have been reported to occur in quartz veins within bedding of the Wilpena Group strata 5 to 10 km west and south west of Mt Roebuck.

Alluvial gold occurs to the north west in the old Angepena gold field. Numerous attempts have been made to discover further occurrences of gold in this area but little success is reported. One micro-diamond was recovered in the Mt Roebuck area (Donnelly et al, 1991).

Aim

The job specification was to examine geophysical data (magnetic and radiometric) and identify exploration target areas. Priority was to be given to the area west of Mulga View station within EL 2511 with a lower priority to identify other areas of potential interest within EL 2226.

[1] The term diapiric structure is used loosely in this report and doesn't imply a particular age or mechanism of emplacement.

Data supplied

The client has supplied located and grided magnetic, radiometric and elevation data in digital format from an airborne geophysical survey (200m-line spacing) conducted by AGSO during early 1999.

The located data was supplied as a simple ASCII file format with flight line, longitude, latitude, fiducial and corrected magnetics. The radiometric data contained the total count, potassium, uranium and thorium channels. Grids generated in ERmapper format were also supplied.

Method

The magnetic, radiometric and digital elevation data were interpreted using GIS (MapInfo/Discover) and geophysical software (Modelvision). The geophysical data were further processed and enhanced prior to producing images suitable for interpretation. The images were used to identify geophysical lineaments and structures. These features have, where possible, been correlated with known geology. Combinations of geophysical features and geological structures have been used to identify exploration target areas.

Data processing and enhancement

The supplied located data sets have received pre-interpretation processing and enhancements to improve the survey processing conducted by AGSO.

The supplied data contained only longitude and latitude on the WGS94 reference surface. For interpretation purposes and integration with the local coordinate system the long/lat data was converted to Easting and Northing (AGD84).

The magnetic data was supplied with no details of post-survey processing and didn't appear to have been micro-levelled to eliminate residual errors. The data was micro-levelled to minimise errors and enhance subtle anomalies.

Examination of the radiometric data[2] suggested that the U and Th channels were incorrectly labelled. Consequently all grids and images used in the interpretation were generated from the modified data set.

Prior to the interpretation process, various filters were applied to the magnetic and radiometric data. First and second vertical derivatives were applied to the magnetic line data to enhance short wavelength anomalies, while the radiometric data received low-pass filters to minimised short wavelength noise. The ratio of K to Th was also calculated to identify areas of radioelement depletion and enrichment.

Images of the enhanced data were produced from the data grids. Various colour schemes and balances have been applied to enhance the magnetic and radiometric features.

[2] A statistical examination of the count intensity of the three channels showed that the channel names for the Th and U channels were transposed.

Interpretation - Magnetic survey

Magnetic sources

Several near surface magnetic sources have been identified in the geology of the Flinders Ranges. There are strong correlations between dolerites within the diapiric strata and positive spot anomalies. Similar anomalies may also be caused by man-made structures and should be interpreted with caution.

Magnetite rich horizons are common in the Neoproterozoic Umberatana and Wilpena Group sediments. These layers are visible in the magnetic data within this exploration region. The geological boundaries between the carbonate and clastic strata are quite evident due to a moderate magnetic contrast.

Drainage patterns reflected in the magnetic data have been attributed to the dispersal of ironstone and magnetite from sedimentary units and fault zones.

Regional and deep magnetic structures

The regional magnetic field (Figure 1a) across the survey has a variation of 700nT. The total magnetic field shows deep magnetic basement shallowing to the east. It is possible that a major north-south basement structure lies along this magnetic gradient.

A north westerly trending magnetic ridge[3] is also apparent on the western side of the survey area. Several large isolated magnetic anomalies are situated along this trend. These isolated anomalies are likely to be related to a north westerly chain of diapiric structures including the Angepena gold field in the north west and Mt John diapir to the south east.

Shallow and localised magnetic anomalies

Three distinctive zones occur within the tenement. The most apparent zones are located in the south east (EL 2511) and north west (EL 2226) corners of the tenements. The south east feature is composed of numerous short wavelength linear structures that are sub-parallel and tend to fan out. These lineamants, in the most part, correlate well with the local drainage pattern. The magnetic pattern suggests the presence of high density magnetic and iron rich minerals, perhaps specularite. The mineralisation has probably originated from the Mt Roebuck-Pinda Spring's diapir-fault complex.

The NNE trending magnetic lineament (30-40nT) along the western side of the drainage pattern correlates in most places with a vermin proof fence. Even though this is a prominent linear feature, its strong correlation with the fence line suggests that it is not a geological feature.

Magnetic lineaments in the south west portion of the study area correlate well with lithological boundaries of the Neoproterozoic and Cambrian strata. This is also true for the dome structure around Mt Roebuck. The lithological boundaries of the Umberatana Formation are clearly visible in the magnetic signal.

Terminations in magnetic lineaments have highlighted several fault structures that are marked on the interpretive maps.

[3] A subtle radiometric anomaly runs along the basement trend. See the following section.

Interpretation - Radiometric Survey

The radiometric data has been investigated by examining the separate K, Th and U channels and the total count.

The relative intensity over the survey area shows a variation of some 3500 counts. Attempts have also been made, without using any further processing, to remove background noise levels[4], to examine ratios of K/Th and U/Th to pinpoint areas of enrichment and depletion of these elements that may indicate area of alteration due to mineralisation.

Each of the separate channels and the total count have been interpreted separately. The anomalies identified have been combined with the magnetic interpretation to produce a composite interpretation.

Radiometric sources

Radiometric sources in this region are primarily related to outcropping geology, scree slope deposits and alluvial outwash. The semi arid to arid climate precludes the development of complex soils and consequently the majority of the radiometric signal reflects exposed rock in situ (down slope movement of rock can be seen). The Neoproterozoic units provide the strongest signal related to K, Th and U bearing minerals. The Neoproterozoic Rawnsley Quartzite and the Cambrian carbonates are for the most part depleted and consequently show as radiometric lows. Shale units in the carbonates show up as moderate highs.

Interpretation

A high/low colour scheme was applied to the potassium channel (Figure 3a) to highlight lithological boundaries and other surface features, including drainage patterns. The distinct colour contrast has sharpened lithological boundaries by de-emphasising the response from weathered material that is dispersed down-slope.

High potassium levels are clearly related to the Neoproterozoic strata, while Cambrian carbonates are low K (Figure 3b). Variations in K levels clearly show lithological boundaries. Alluvial outwash from the central highlands is exhibited clearly in this image. The Mount Roebuck-Pinda Springs fault is seen as a sharp discontinuity in the west-central portion of the image.

The distinct lineament cutting diagonally (north east trend) across EL 2511 (Figure 3b) is probably a reflection of the fence acting as a natural barrier to the migration of sediment down-slope.

[4] A MNF (multi-channel noise reduction filter) would enhance the quality of the images produced and the occurrence of subtle structures.

Exploration target areas

Summary for area A

The Mt Roebuck region (Figure 10a and 10c) contains several geophysical features that are significant. This area lies above a major north west trending magnetic basement ridge associated with several diapiric structures.

The importance of the diapiric structures lies in the placement of Meso and Palaeoproterozoic basement material (pre-Neoproterozoic basement is typically at > 5 km) at the surface within the local Neoproterozoic and Cambrian strata. The rafts of basement geology can potentially contain precious metals and stones. The possibility that base metals have been leach out and concentrated in the local geology is an important exploration model in this area. The many small mineral deposits (see the geology map) in close proximity to the diapirs supports this mechanism.

This exploration target also resides in a complex fault system. The Pinda Springs-Mt Roebuck Fault, which contains mineralised veins intersects with geophysical lineaments trending north west into geology hosting the gold at Angepena.

A small uranium anomaly (Figure 10b) within the Mt Roebuck fracture zone suggest the presence of igneous basement rafts. It is important to note that this uranium anomaly lies within and adjacent to diapirc material and in close proximity to several small magnetic anomalies (Figure 10a, 10b and 10h).

Another striking feature is the major magnetic anomaly north of Mt Roebuck. This anomaly (Figure 10h and 10i) lies on the north north western side of a dome structure composed primarily of Umberatana and Wilpena Group sediments. Limited exposure of magnetic lithologies occurs south east of the anomaly. The amplitude of the anomaly can not be simply explained by the fault placement of the Brachina Formation against the Cambrian carbonates along the axis of the anomaly (the magnetic susceptibilities are similar in this area). It is likely that the Mt Roebuck dome contains a significant core of diapiric material with magnetic rich units.

Recommendations

The Mt Roebuck exploration target area warrants detailed follow up groundwork. In particular the immediate area containing the uranium-fault-magnetic anomaly requires surface sampling and geological mapping.

It is certainly reasonable to consider a bulk stream sediment sampling program (Figure 10f) within the creek system of the dome complex as the next exploration step. If positive results are located a more detailed assessment of the area including geophysical modelling and drilling would be necessary.

The recovery of one diamond in this area justifies considering the possibility of kimberlites within the structural weaknesses provided by the diapiric structures.

An area directly south (approx. 2km) of Mt roebuck (Figure 10c and 10g) exposes diapiric material adjacent to what is mapped as Quaternary sediments. These sediments may host concentrations of heavy minerals derived from the diapiric intrusive. It would be sensible to test this location.

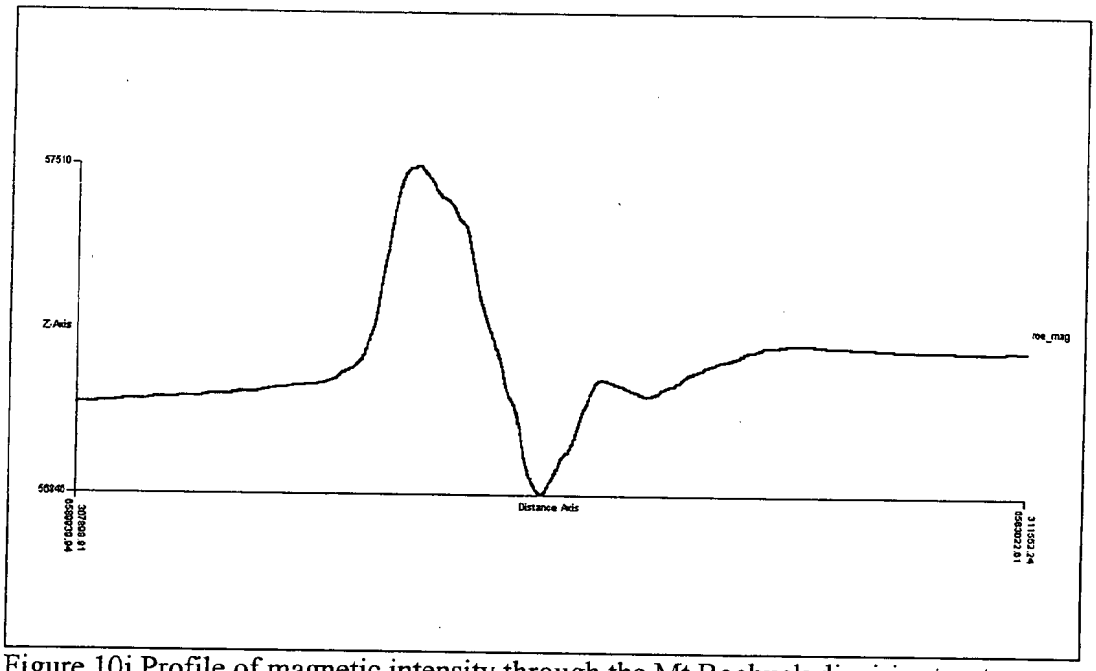


Figure 10i Profile of magnetic intensity through the Mt Roebuck diapiric structure.

Summary for area B and B1

The regions south west and north west of exploration target area A provide similar geophysical features (Figure 10g, 11a and 11b). They do, however, lack the presence of a distinctive uranium anomaly.

The south west zone again lies over the Mt Roebuck-Pinda Springs fault system (Figure 10g). The main fault zone is very distinct on the magnetic and radiometric images (Figure 2b,3b and 6b). A very prominent K/Th lineament is associated with the fault (figure 7). The presence of copper, silver and lead mineralisation (eg Pinda Springs mine) in lithologies that truncate against this feature suggest that it may have acted as a source for the mineralisation.

A positive magnetic anomaly located on the fault line (305500E, 6584000N) correlates with mapped diapiric rocks. The anomaly is very similar to anomalies to the north west associated with dolerite plugs. The presence of copper mineralisation (Figure 10e) in the Bunyeroo Formation has probably been derived from the intrusive body.

The north west area (Figure 11b) contains doleritic xenoliths within brecciated diapiric material. Magnetic anomalies in this area correlate with mapped dolerite plugs. The presence of igneous rocks within the diapir carbonates may be involved in the evolution of the Angepena gold field further to the north west.

Recommendations

The presence of diapiric material within, and mineralisation adjacent, to a major fault system such as the Mt Roebuck-Pinda Springs fault provides a worthy exploration target. Small mineral deposits within the Neoproterozoic shales adjacent to faults are common throughout this region. The main targets should be structural features such as drag folds and shears. The truncation of the Cambrian carbonates along the Mt Roebuck-Pinda Springs fault (Figure 10g) is a likely location for deposits of copper

Summary for area C

A subtle thorium lineament runs northwest across the exploration tenements (Figure 11, green dashed line). This lineament has the same trend as the basement magnetic anomaly and chain of diapiric structures. It also intersects with the Mt Roebuck-Pinda Spring fault system. Although this feature doesn't constitute a major exploration target it lies in close proximity to two small magnetic anomalies (Figure 11, black stars) directly south (310000E, 6581000N) of area A. The eastern magnetic anomaly lies over a bald hill suggesting the possible presence of an iron rich gossan or dolerite plug.

Recommendations

It would be prudent in the first instance to confirm what is located at the magnetic anomaly site and to determine if there is any surface feature that can explain the linear thorium anomaly (Fence line accumulating wind blown and water deposited thorium rich sand).

Summary for area D

A prominent set of short wavelength magnetic and radiometric anomalies reside along the eastern side of EL 2511(Figure 12a and 12b). The majority of these linear features correlate with the alluvial streams draining away from the hills to the west.

The edge of the alluvial plain is characterised by a distinct lineament running approximately north-south. This perturbation can be seen in both the magnetics and radiometrics. The correlation of the magnetic anomaly with a vermin proof fence and the likelihood that sediments from the hills have accumulated along the fence downgrades this geophysical anomaly from being a geological structure. It must be remembered that geophysical signatures are not necessarily associated with geological features.

The remaining magnetic anomalies located over the alluvial plain have a pattern similar to the present drainage pattern but with a southerly orientation. These anomalies may be associated with palaeo-drainage channels.

The south western corner of EL 2511 contains an area of faulted Neoproterozoic Bunyeroo and Wonoka Formation. A subtle magnetic anomaly is associated with the Wirrapowie and Jubilee mines. The anomaly may reflect the disturbance of the ground due to mining operations or possible reflects magnetic minerals associated with the faults. A similar magnetic signature is situated several kilometres to the north east along the strike of the fault system. It is likely that further mineralisation may occur at this location beneath a thin cover of Quaternary sediments.

Recommendations

If gold and precious stones have been liberated from the intrusive features in the Mt Roebuck area it is possible that they have accumulated in the present or palaeo-channel deposits. The ability to map the general pattern of the channels makes this a possible exploration target. Stream sediment sampling up stream may provide evidence of the presence of gold and precious stones in this region.

Conclusion

The geophysical data covering EL's 2511 and 2226 contains several regions of exploration potential. The most promising of these lies in the area surrounding Mt Roebuck. The combination of magnetic, radiometric and geological anomalies in this area provides strong justification for follow up ground exploration. This location is the focus of numerous intersecting geological structures. It also resides along a geophysical corridor that appears to control the placement of the diapiric structures. The presence of the Angepena gold field along this tend increase the prospectivity of the Mt Roebuck exploration target.

The presence of mineralised brecciated diapiric material along the Mt Roebuck-Pinda Springs fault system provides excellent opportunities for the existence of hidden concentrations of base metals in the Neoproterozoic strata.

Several zones of Quaternary sediments are situated adjacent to diapiric breccia and may host precious stones derived from basement intrusives.

The other target areas discussed above have merit and should be considered for further investigation.

If positive results are derived from the exploration targets it is recommended that areas such as Mt Roebuck are investigated with geophysical modelling to determine the sub-surface structure and depth to mineralisation.

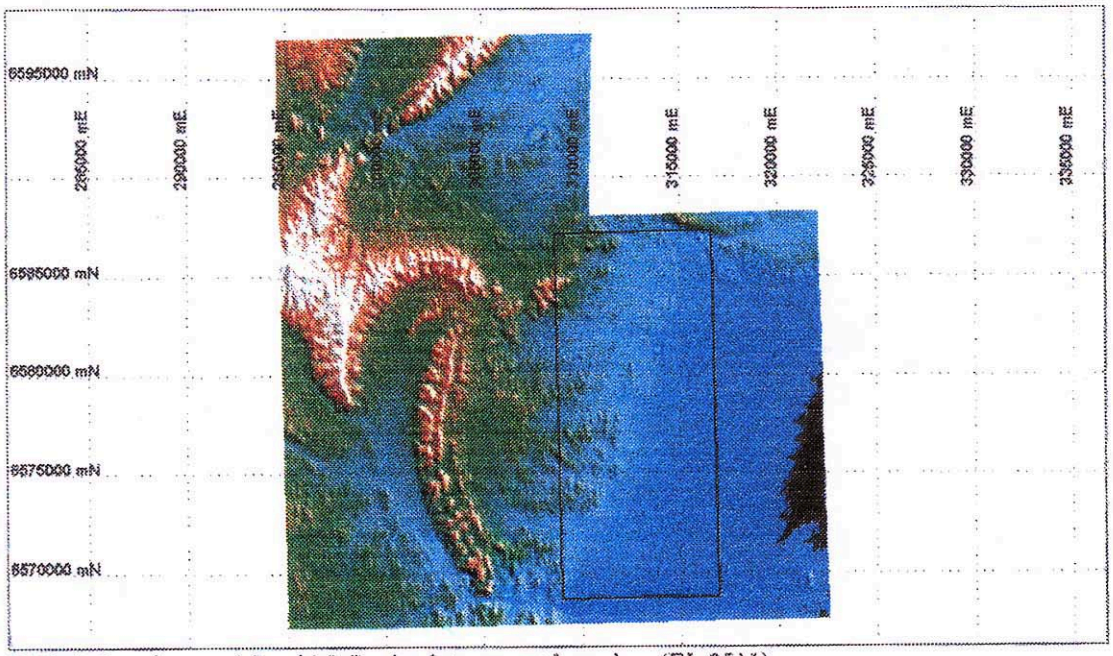
Cu one surface sample

		6572521
Mt. R. 1/00	collected	310917
Mt. R. 2+3/00		6572528
		310754

APPENDIX

INTERPRETATION OF MT ROEBUCK GEOPHYSICAL DATASET

Client: Mr Peter Lewis MP



Digital elevation model and Mt Roebuck tenement boundary (EL 2511)

Geophysical consultant: Dr David T. Miller, December 1999

The large amplitude magnetic anomalies in the central portion of the survey area are related to a north easterly trending fault structure. The anomalies themselves are likely to reflect a high level of BIF, micaceous haematite and igneous xenoliths within a diapiric matrix.

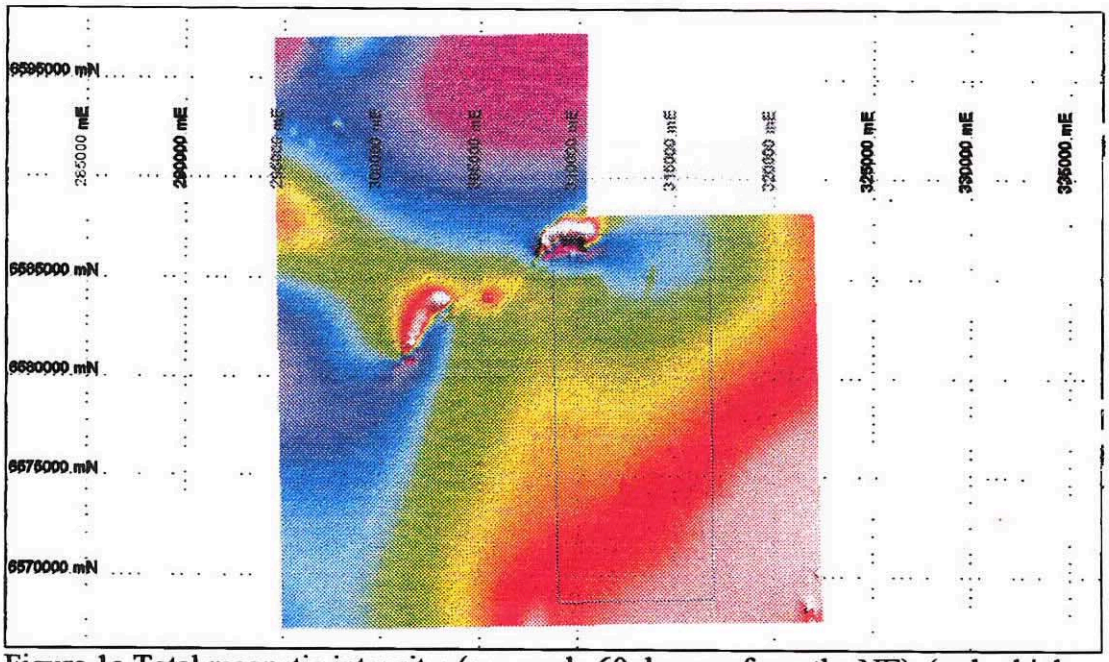


Figure 1a Total magnetic intensity; (sun angle 60 degrees from the NE), (red = high, purple = low).

Figures 1a and 1b show magnetic basement shallowing to the south east. A noticeable ridge, possible a basement horst, can also be seen running north west. Several isolated anomalies are located in the central and north western (small cluster of three anomalies) quadrants.

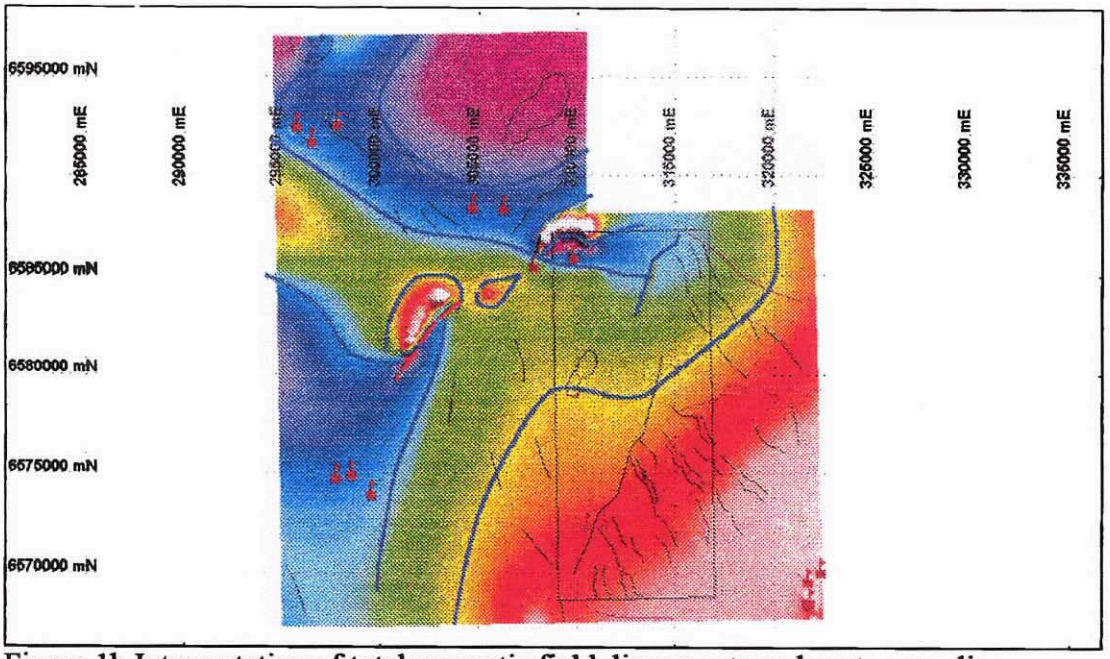


Figure 1b Interpretation of total magnetic field, lineaments and spot anomalies (squares with flags).

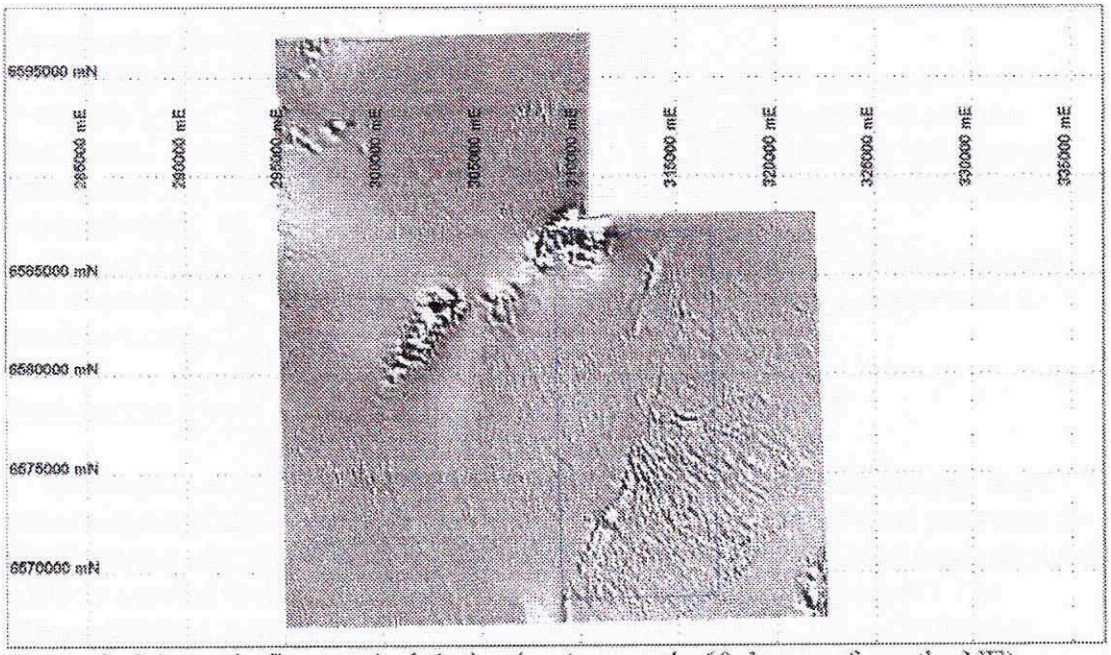


Figure 2a Magnetic first vertical derivative (sun angle 60 degrees from the NE)

Application of a first vertical derivative filter has highlighted short wavelength anomalies related primarily to near surface features (Figure 2a). A very prominent alluvial fan can be seen in the south east related to the outflow of magnetic minerals from the western highlands. Several narrow north west trending magnetic lineaments can be seen in the north west quadrant (Figure 2b).

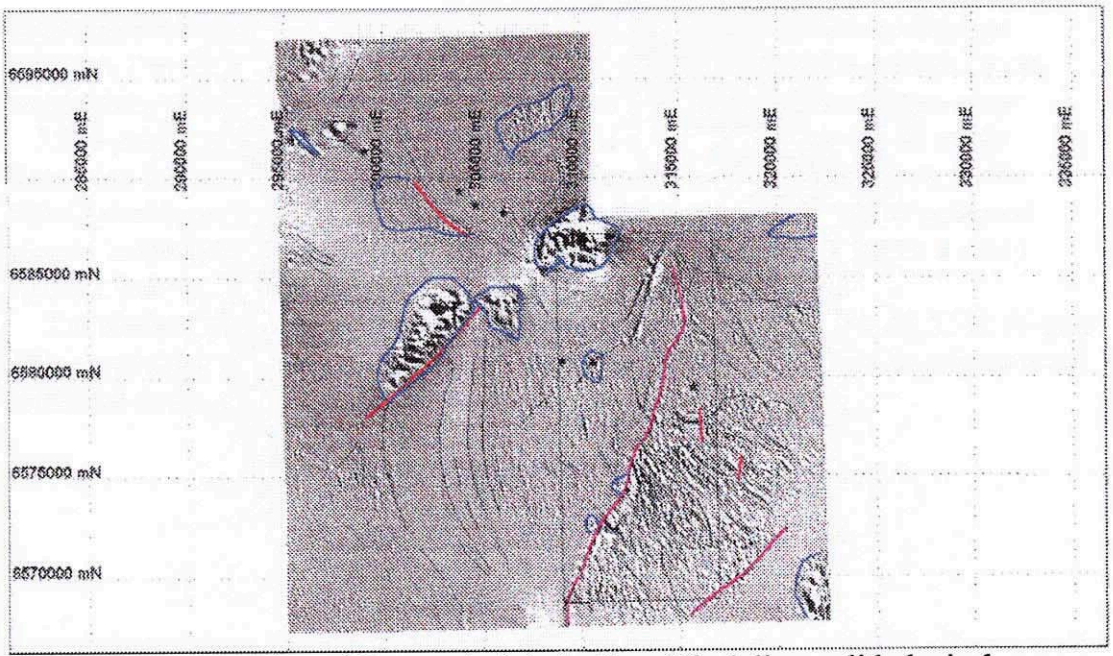


Figure 2b Interpretation of first vertical derivative. (Black lines = lithological boundaries, red lines = faults, blue features = magnetic highs, purples lines = cultural features, and black stars = either small magnetic highs related to small geological or cultural features).

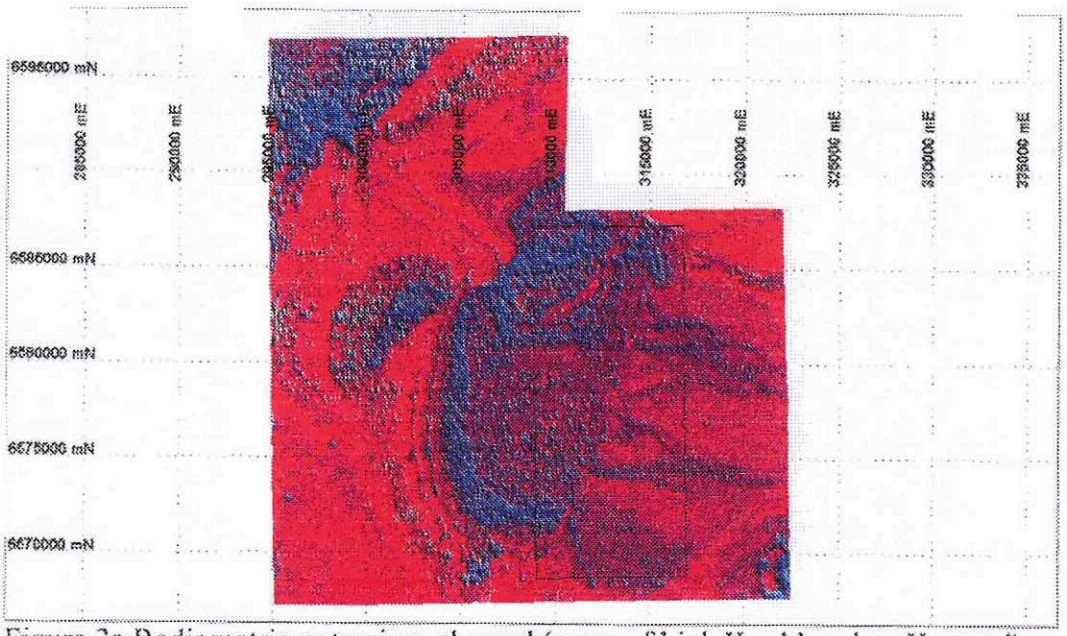


Figure 3a Radiometric potassium channel (areas of high K = blue, low K = red).

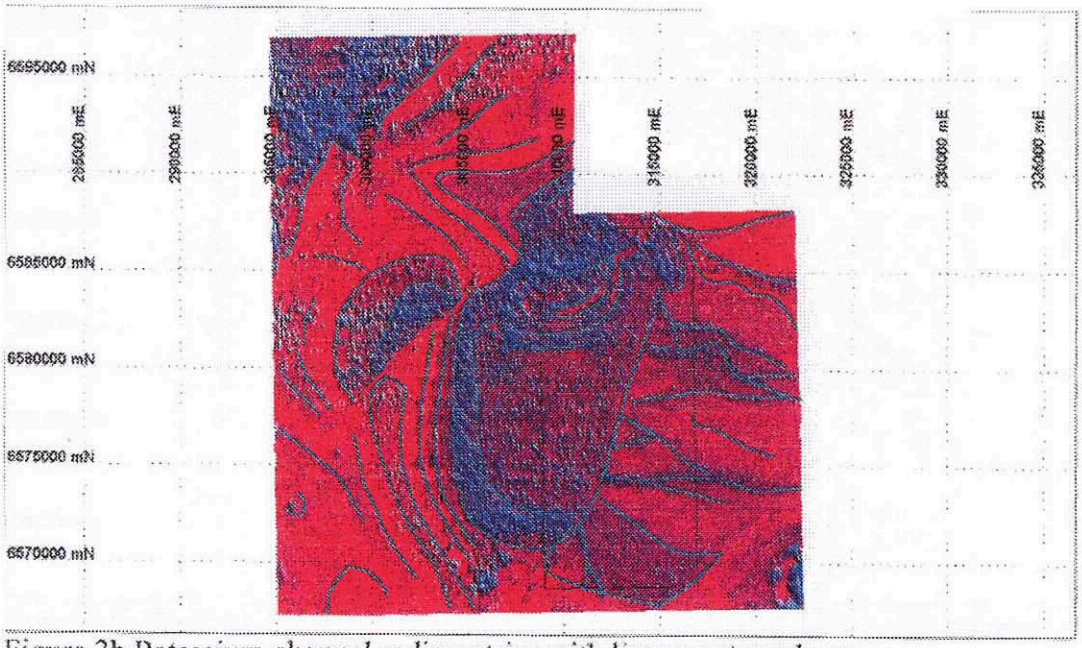


Figure 3b Potassium channel radiometrics with lineaments and zones

A reversed colour scheme has been applied to exaggerate the lithologies (Figure 4b) for the Th channel (Figure 4a). The thorium channel clearly shows higher levels within the Brachina Formation and the diapiric structures. Minerals such as monazite and zircon (containing thorium) liberated from the Brachina Formation shales can be seen washed out of the creeks onto the eastern plains. Lower levels of thorium rich mineral are contained within the Wilpena Group Rawnsley Quartzite and Cambrian strata.

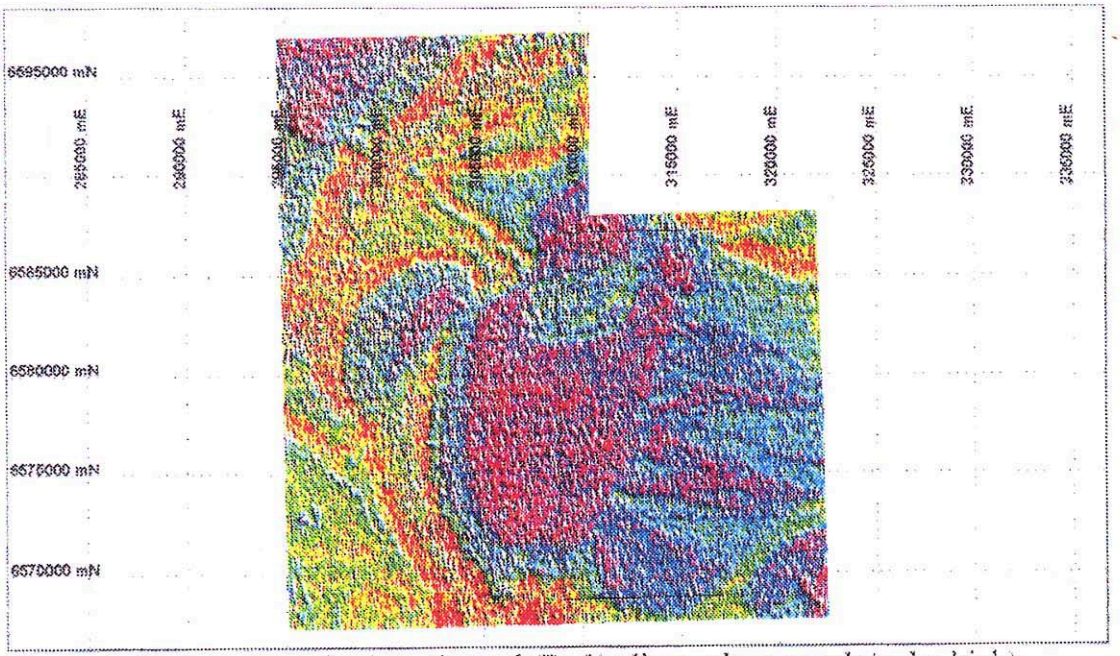


Figure 4a Radiometrics thorium channel (Red/yellow = low, purple/red = high).

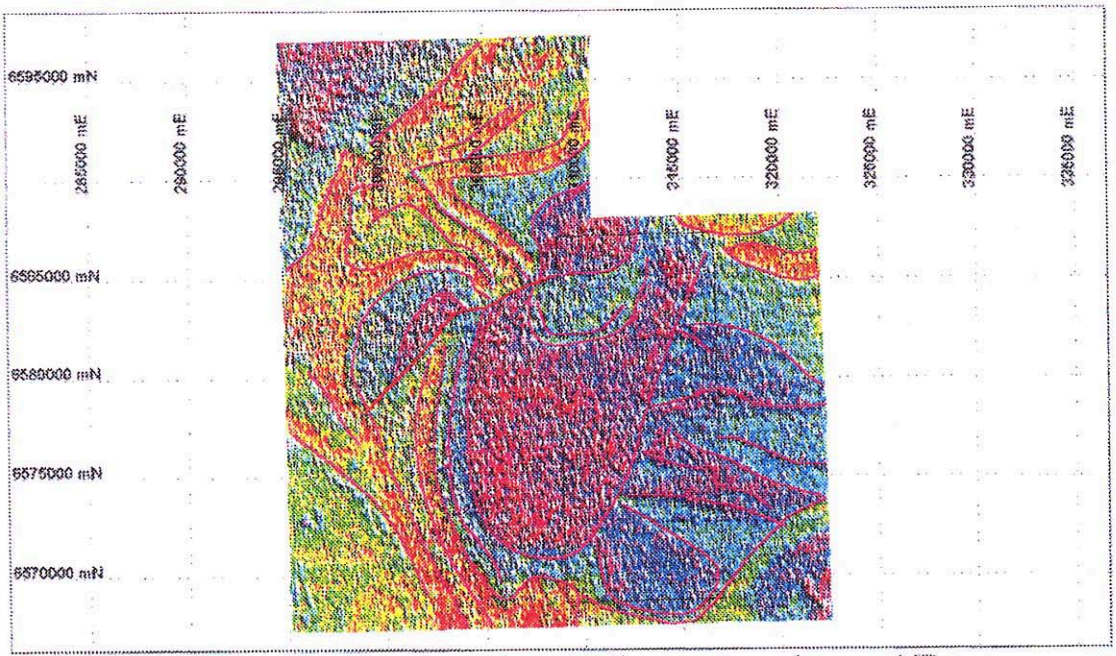


Figure 4b Thorium channel radiometrics with lineaments and zones. NB some structures are omitted since they have already been identified on the other channels.

The uranium data is less energetic and consequently doesn't exhibit the clarity afforded by the other channels (Figure 5a). However, it is possible to identify boundaries (Figure 5b) related to lithological changes. In general there is an expected similarity between the uranium and thorium patterns. Again the Brachina Formation contains the highests levels related to the presences of minerals such as monazite and zircon.

A small area of uranium concentration (thorium depletion) is located in the north west corner of EL 2511 at the edge of diapiric material. This may be related to a weathered igneous xenolith within the Mt Roebuck diapiric structure. The high

uranium at this site may indicate the concentration of uranium released from weathered U-bearing minerals. Elevated uranium levels are associated with the exposed diapiric structures to the south east and north west corners of the survey area.

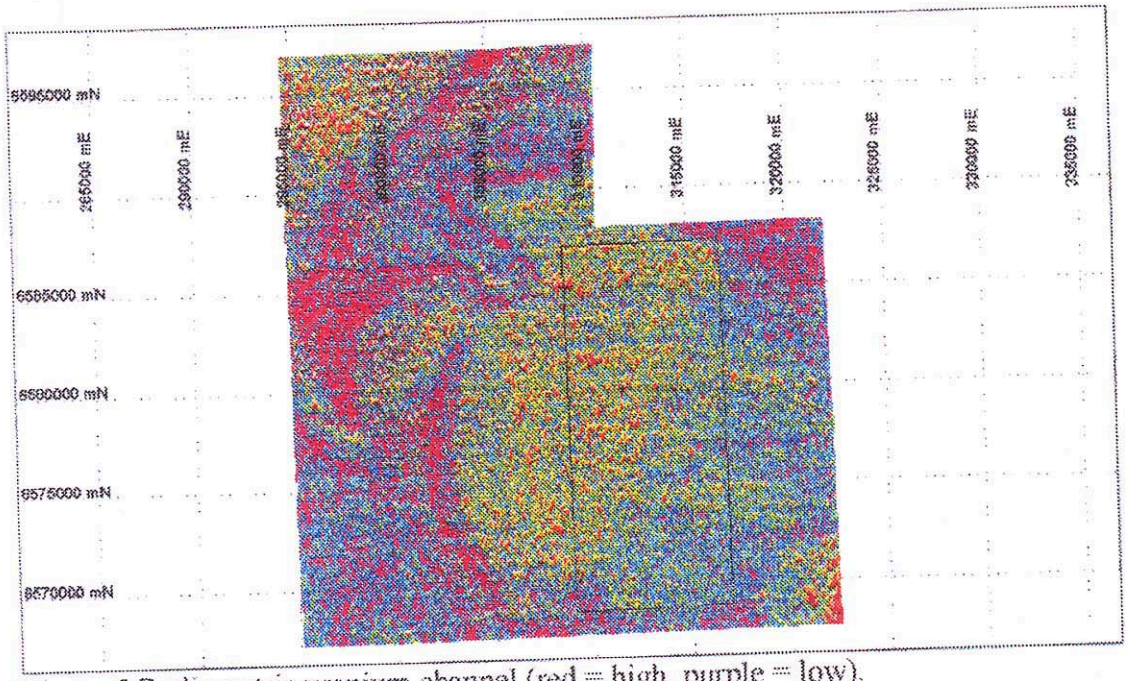


Figure 5 Radiometric uranium channel (red = high, purple = low).

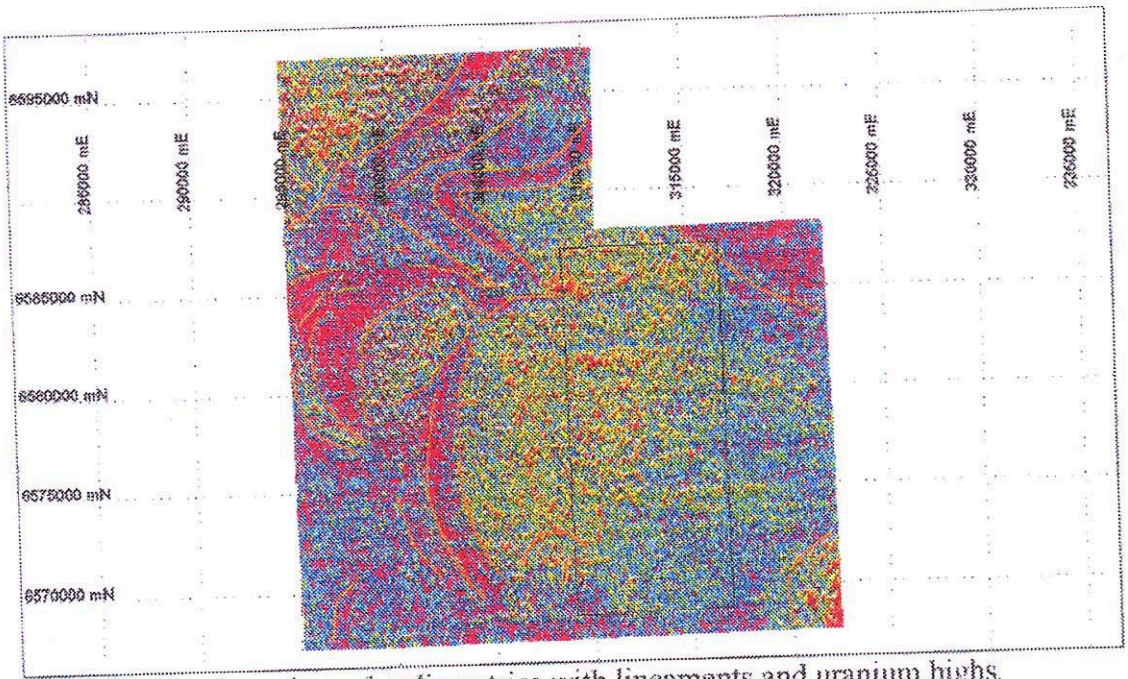


Figure 5b Uranium channel radiometrics with lineaments and uranium highs.

Figure 6a Radiometircs total count (Red = high, purple = low).

The full radiometric spectrum (Figure 6a) highlights the lithological boundaries associated with the exposed geology within the survey area. Higher counts are associated with the Neoproterozoic strata and the diapiric structures. Lower counts are attributed to the Cambrian carbonates and sediments. The drainage pattern to the east is distinctive and depicts a major alluvial flood plain.

Several radiometric lineaments trend north west across the survey area following the chain of diapiric structures associated with the magnetic basement ridge discussed in the previous section.

The Mt Roebuck-Pinda Springs fault zone is clearly visible in the radiometric total count, truncating and displacing the strata.

A faint circular structure is evident in the south west corner of the survey area and has no definite correlation with mapped Cambrian geology. Another circular structure, 3 km to the north west, is truncated by the Mt Roebuck-Pinda Springs fault.

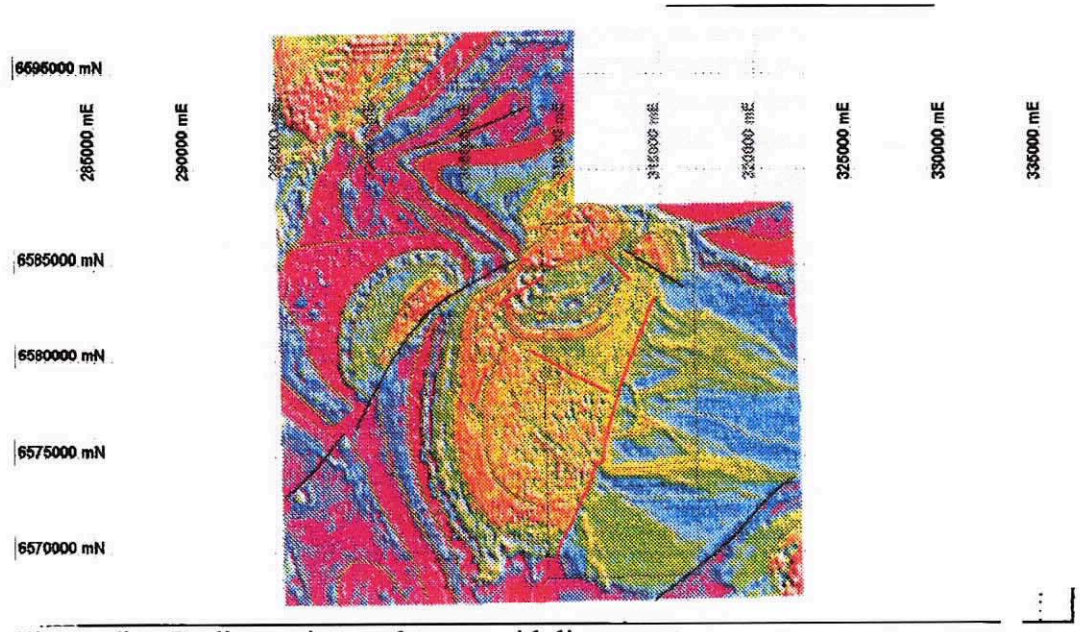


Figure 6b Radiometrics total count with lineaments

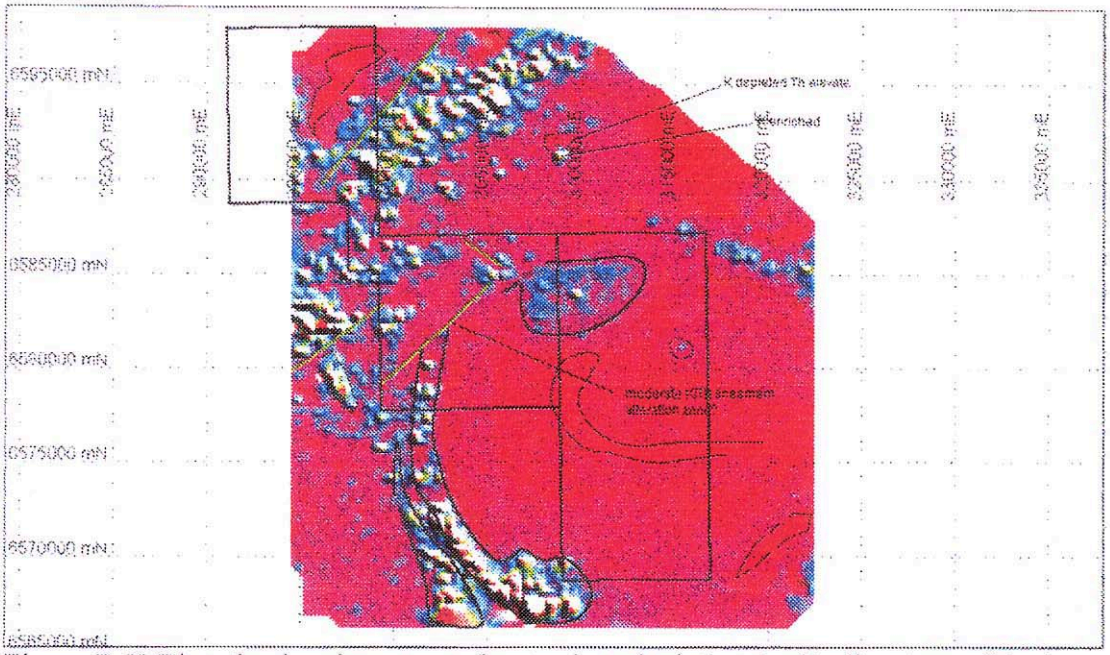


Figure 7 K/Th ratio showing areas of potassium depletion (red/yellow/green/blue).

The image derived from the K/Th ratio (Figure 7) reveals a strong correlation with the Wilpena Group (Rawnsley Quartzite) and the Cambrian carbonates due to their lack of thorium bearing minerals.

The dome structure at Mt Roebuck is clearly evident (marked in Figure 7) and shows several spot anomalies that correlate with the elevated uranium anomalies. A smaller spot anomaly is situated 5 km to the south east (circled). These radiometric features are likely to be associated with weathered exposures of basement igneous xenoliths within the local diapiric structures.

Integration of data

The lineaments and anomalies identified within the geophysical data have been combined to identify structural trends and anomalous areas worthy of mineral exploration. The lineaments and anomalies have been compared with the local mapped geology in an attempt to eliminate geophysical features that have a non-economic interest. Geophysical features that are associated with man-made structures such as fences, water bores and buildings have been highlighted (Figure 9a and 9b).

Exploration targets and recommendations

The integrated interpretation shown in Figure 8a and 8b incorporates significant anomalies and structure identified on the magnetic and radiometric images.

The intersection and grouping of geophysical features has been used to select exploration target areas. Each exploration target area has been ranked and will be discussed from highest to lowest priority.

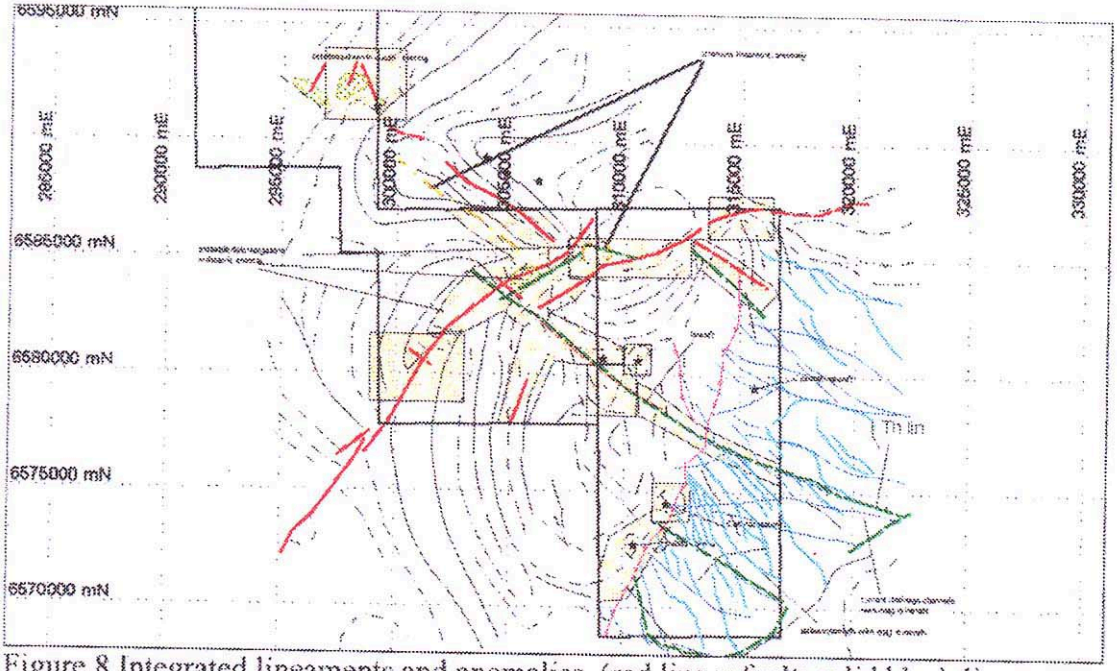


Figure 8 Integrated lineaments and anomalies. (red line = fault; solid black line = lithological boundary; dashed black line = geological trend; dashed green-yellow lines = radiometric lineaments; black stars = small magnetic highs; blue lines = magnetic and radiometric lineaments associated with drainage; cyan lines = magnetic anomalies associated with shallow features possible palaeo-channels; purple lines = magnetic lineaments correlated with fence line; yellow areas = zones of exploration interest).

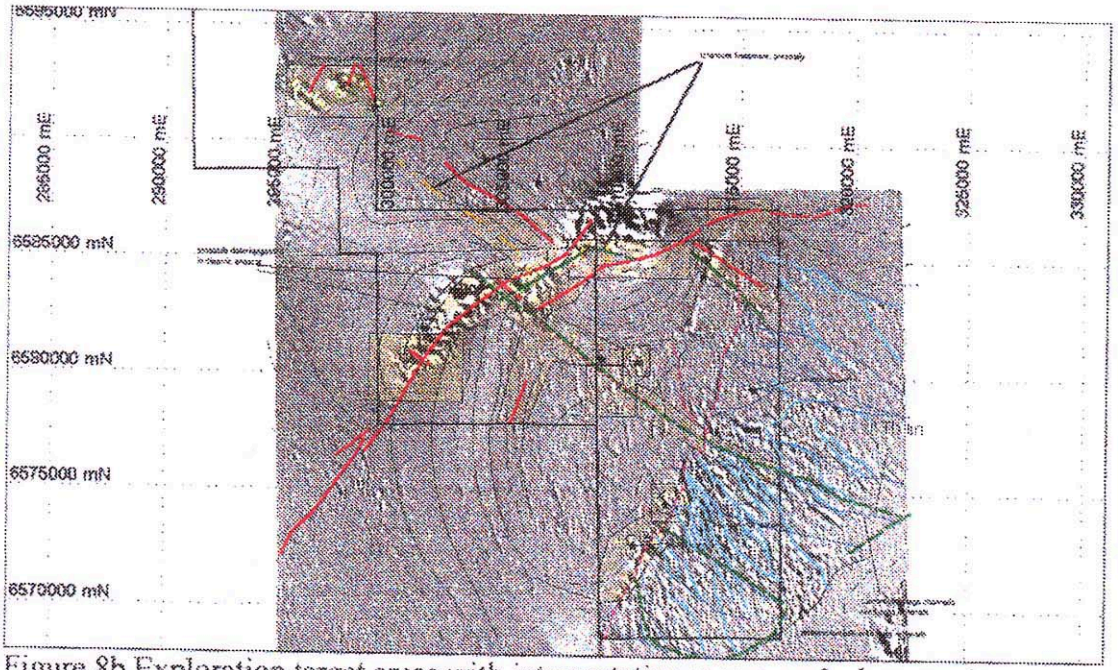


Figure 8b Exploration target areas with interpretation map over 1vd magnetic backdrop.

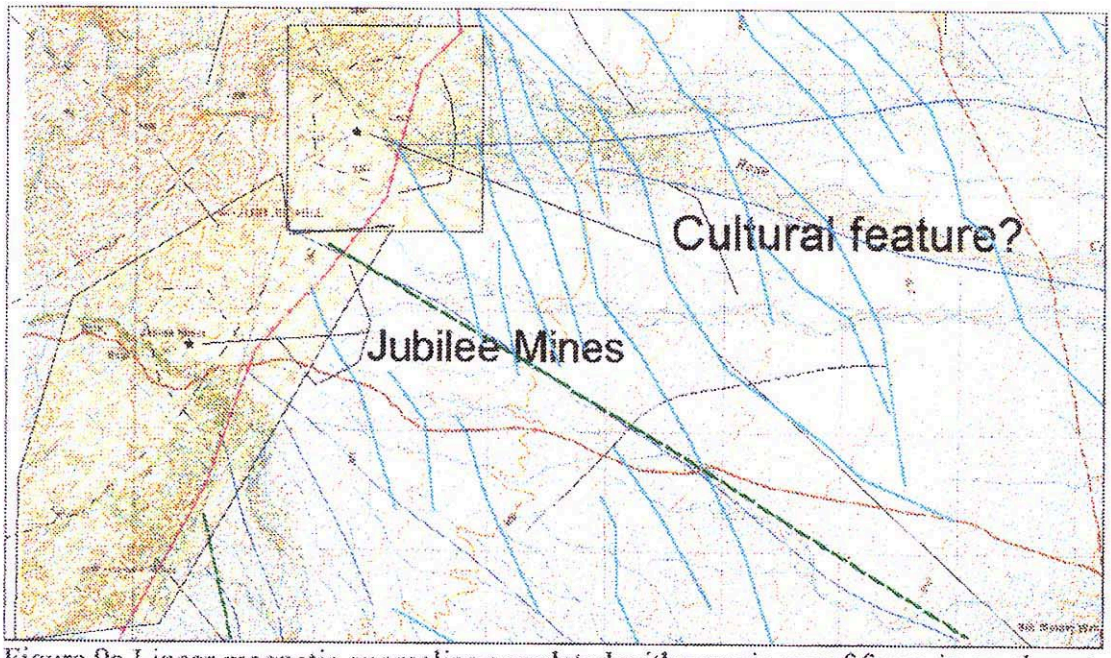


Figure 9a Linear magnetic anomalies correlated with vermin proof fence in south east; correlation of some magnetic/radiometric lineaments (blue lines) with recent stream patterns and magnetic lineaments (cyan lines) crossing recent drainage pattern (old dunes or palaeo stream channels).

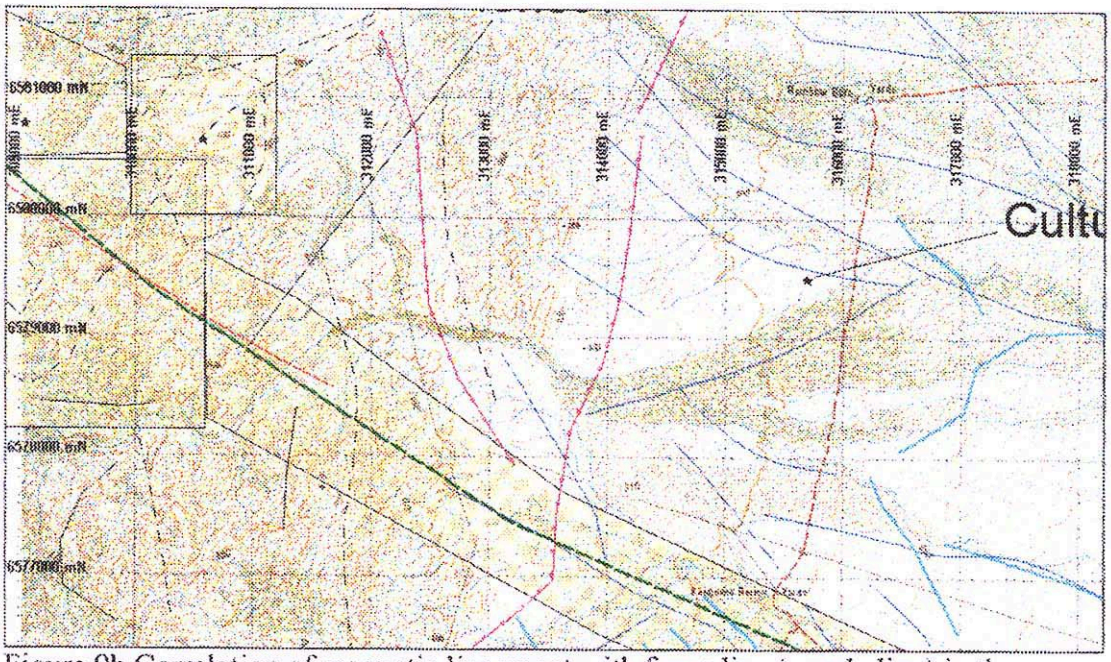


Figure 9b Correlation of magnetic lineament with fence line (purple line) in the central east; radiometric and magnetic lineaments correlated with stream pattern (blue and cyan lines). Exploration area along northwest trending radiometric lineament (green dashed line) and magnetic spot anomaly associated with bald hill (black star).

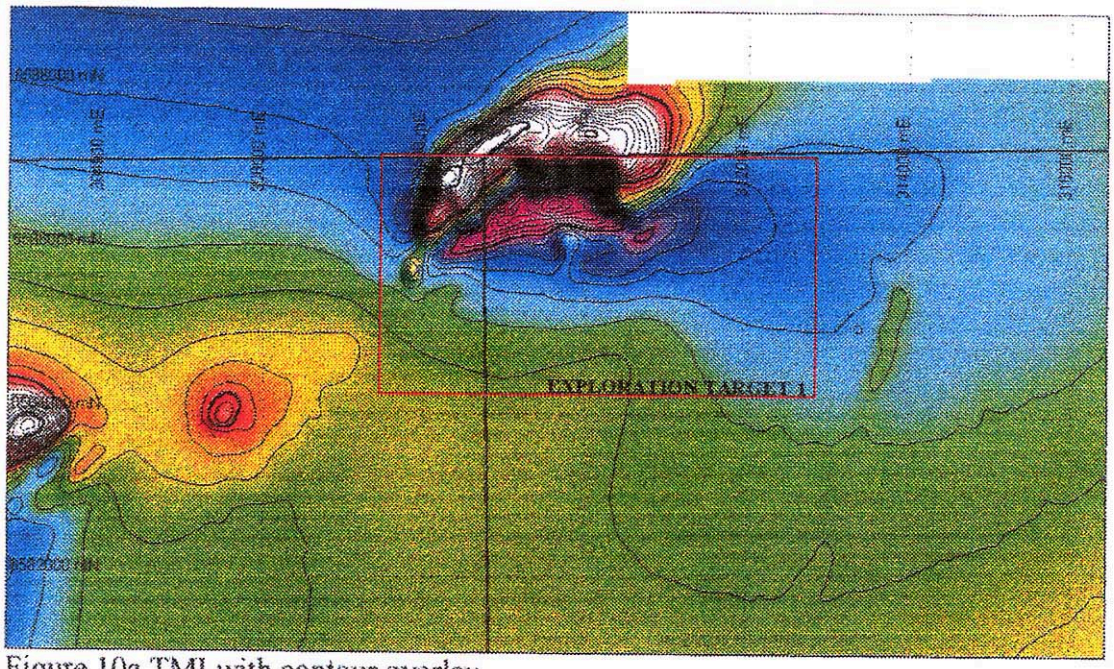


Figure 10a TMI with contour overlay.

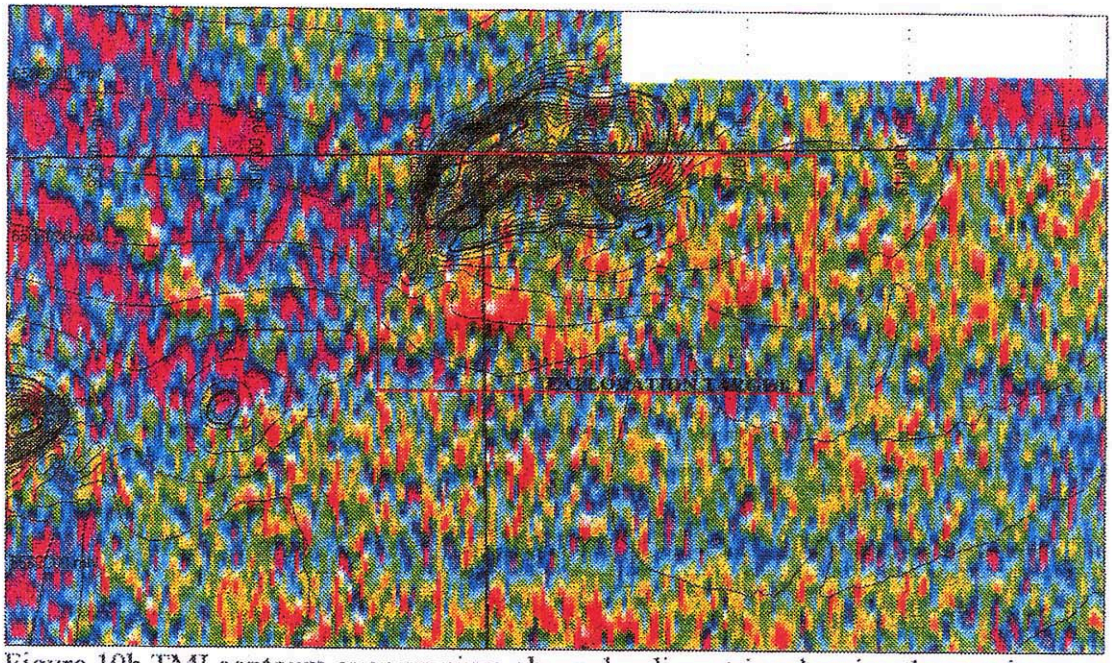


Figure 10b TMI contours over uranium channel radiometrics showing the uranium anomaly

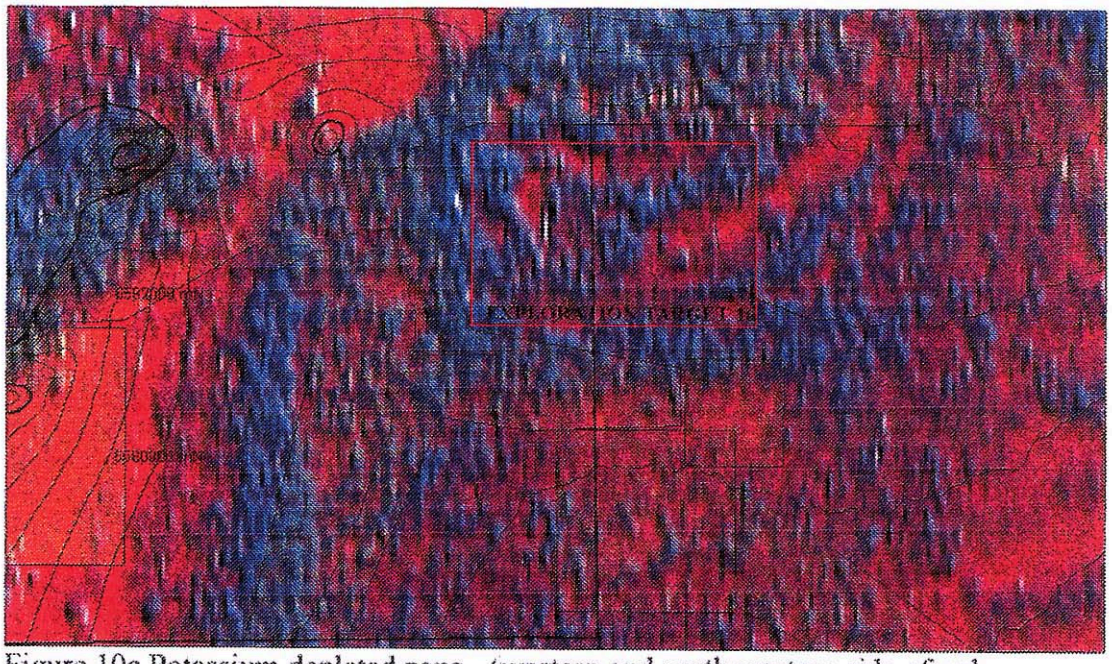


Figure 10c Potassium depleted zone - (western and north western side of red rectangle) associated with complex faulting, diapiric intrusives and Quaternary sediments.

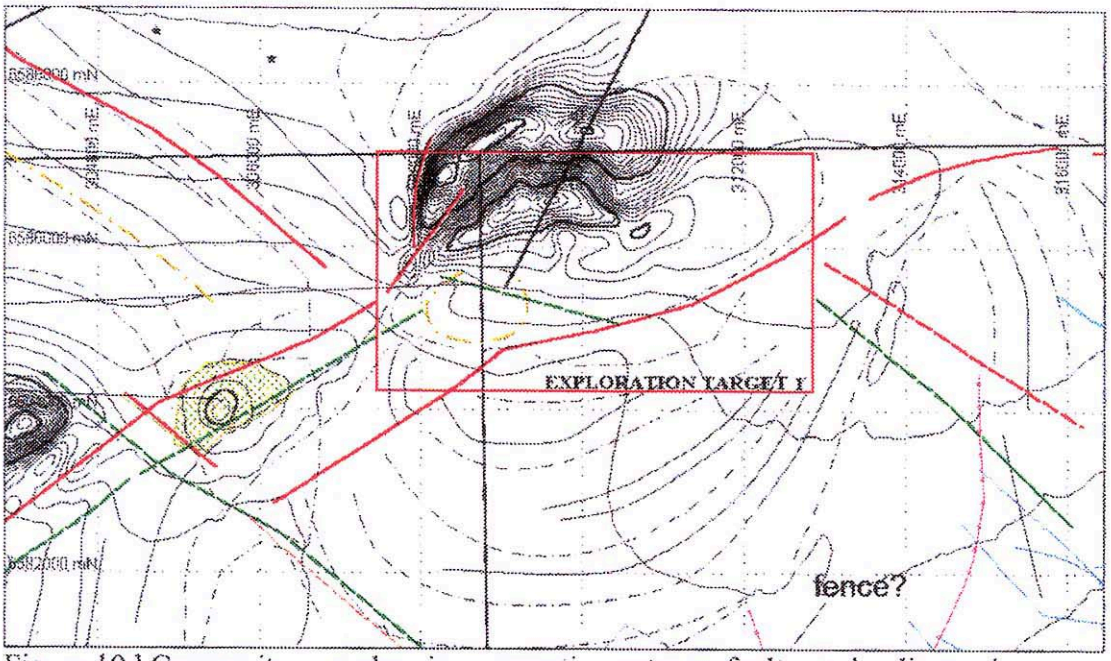


Figure 10d Composite map showing magnetic contours, faults, and radiometric anomalies (green cross hatched area interpreted dolerite).

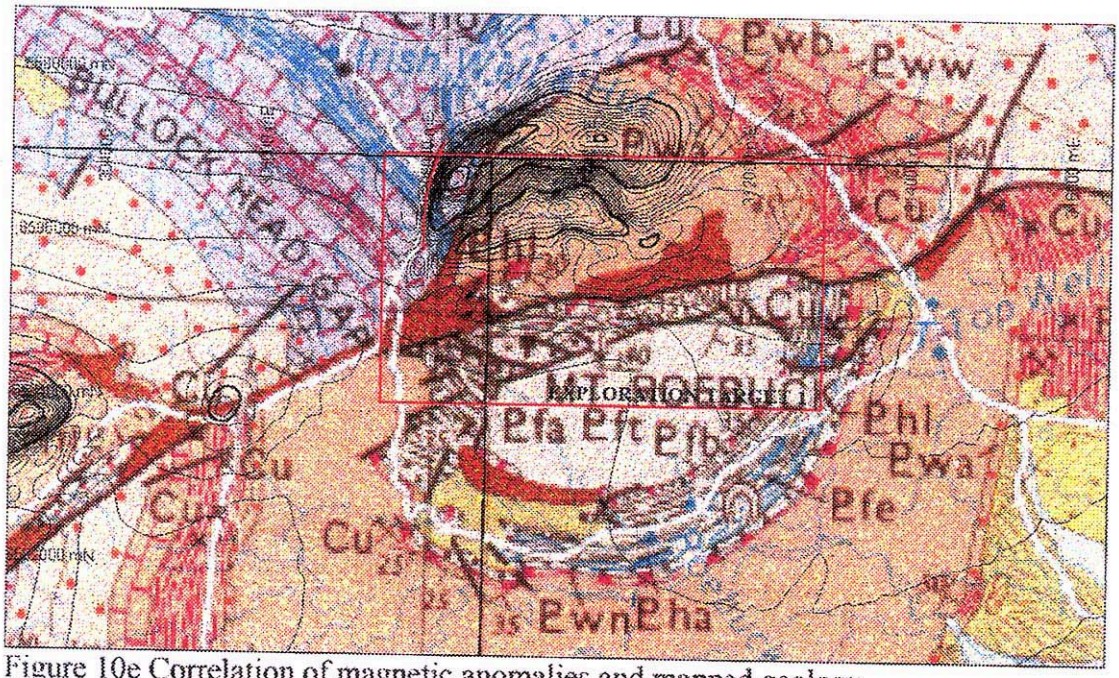


Figure 10e Correlation of magnetic anomalies and mapped geology.

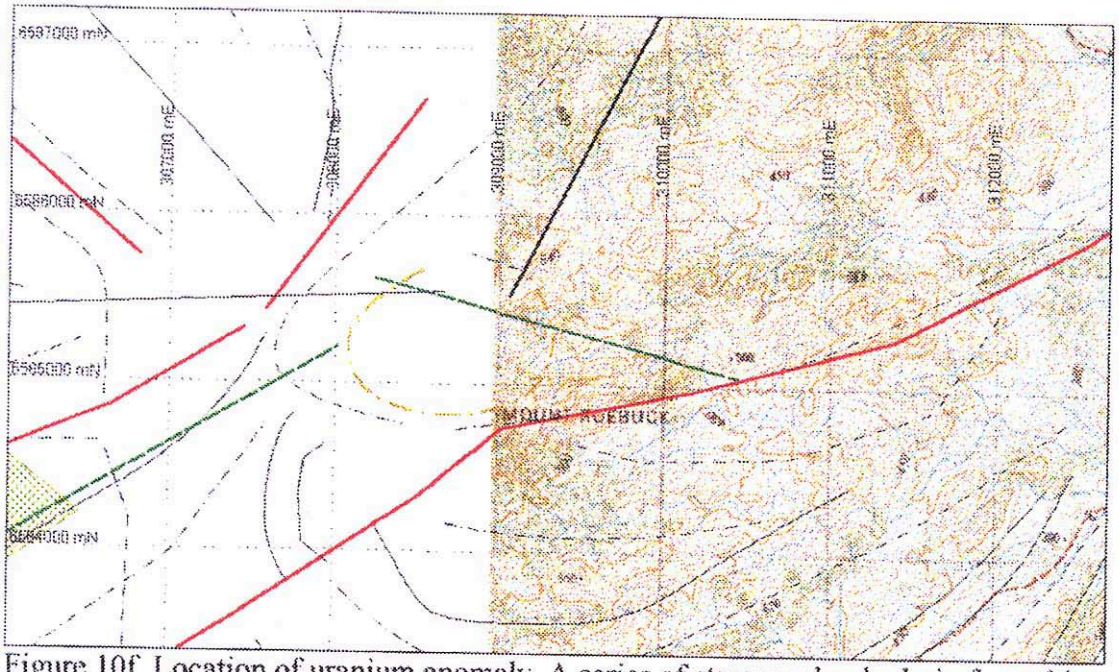


Figure 10f Location of uranium anomaly. A series of streams clearly drain from this area and may provide a suitable starting point for sampling to test for the presence of gold, base metals and precious stones.

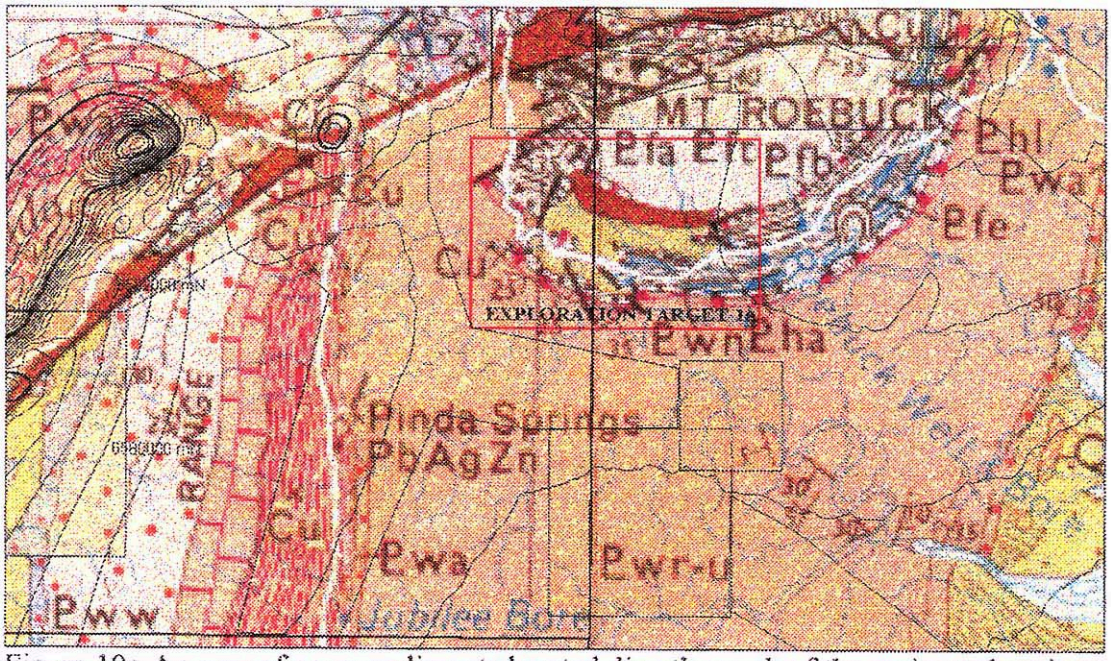


Figure 10g An area of cover sediments located directly south of the main exploration target.

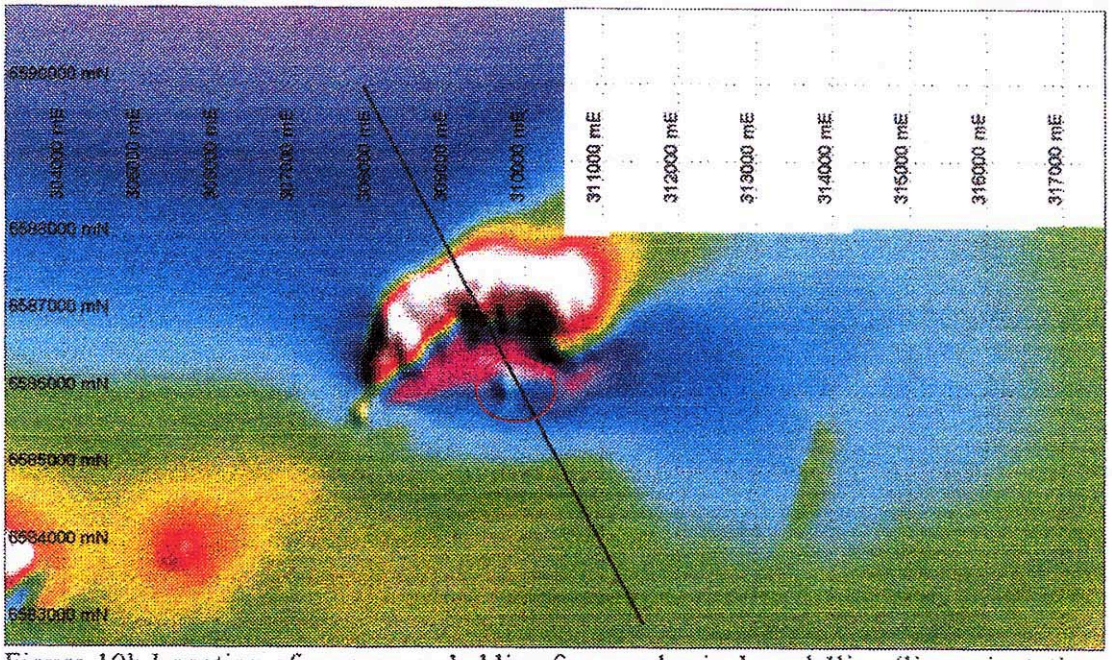


Figure 10h Location of recommended line for geophysical modelling (line orientation 152 degrees, length 7.8 km). Note also small magnetic high in red circle (dolerite intrusive?)

and zinc carbonates. Economic deposits within the Bunyeroo and Wonoka Formation are less likely unless associated with crosscutting fractures and shear systems.

The area to the north west warrants examination in light of the close proximity to the Angepena gold field. It is possible that the diapiric structure is associated with the gold mineralisation. If this were the case it would make the other diapiric structures to the south east favourable for gold exploration.

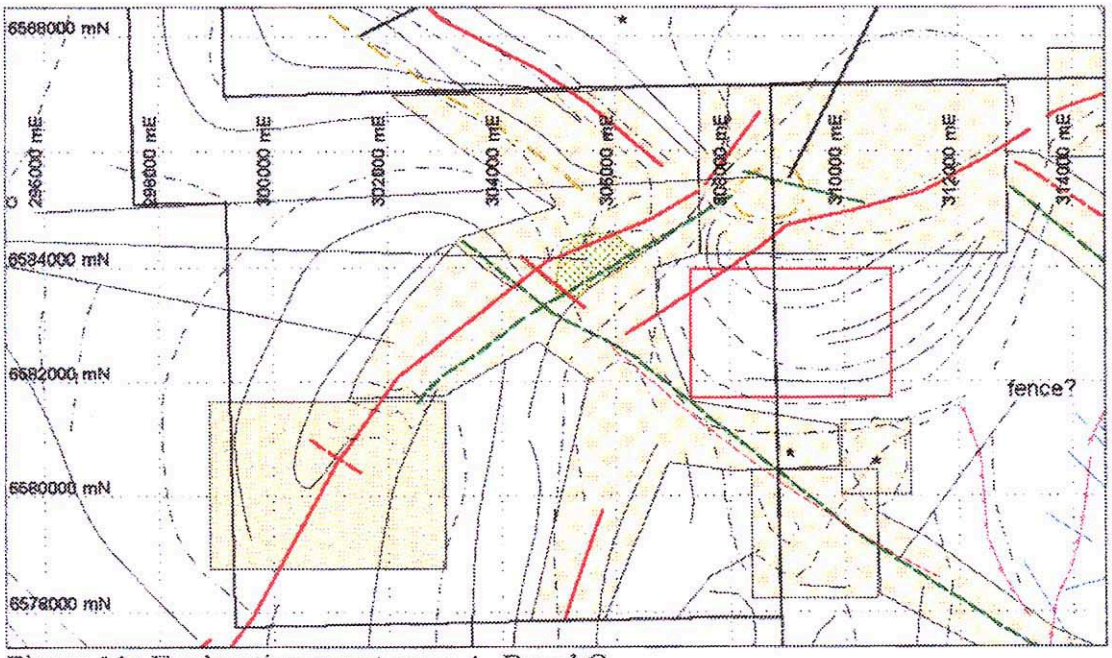


Figure 11a Exploration target areas A, B and C

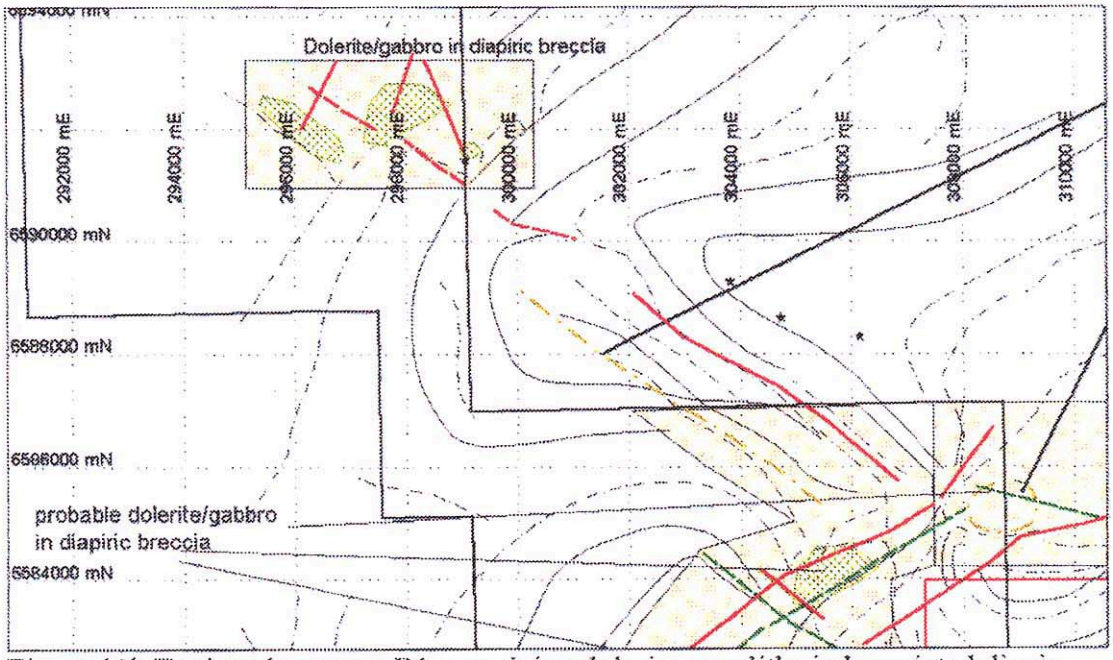


Figure 11b Exploration target B1 containing dolerite xenoliths in brecciated diapir.

The area north east of the Wirrapowie- Jubilee mines (Figure 12b) warrants further investigation. This site would lend it self to surface sampling and shallow drilling to test for the presence of mineralisation.

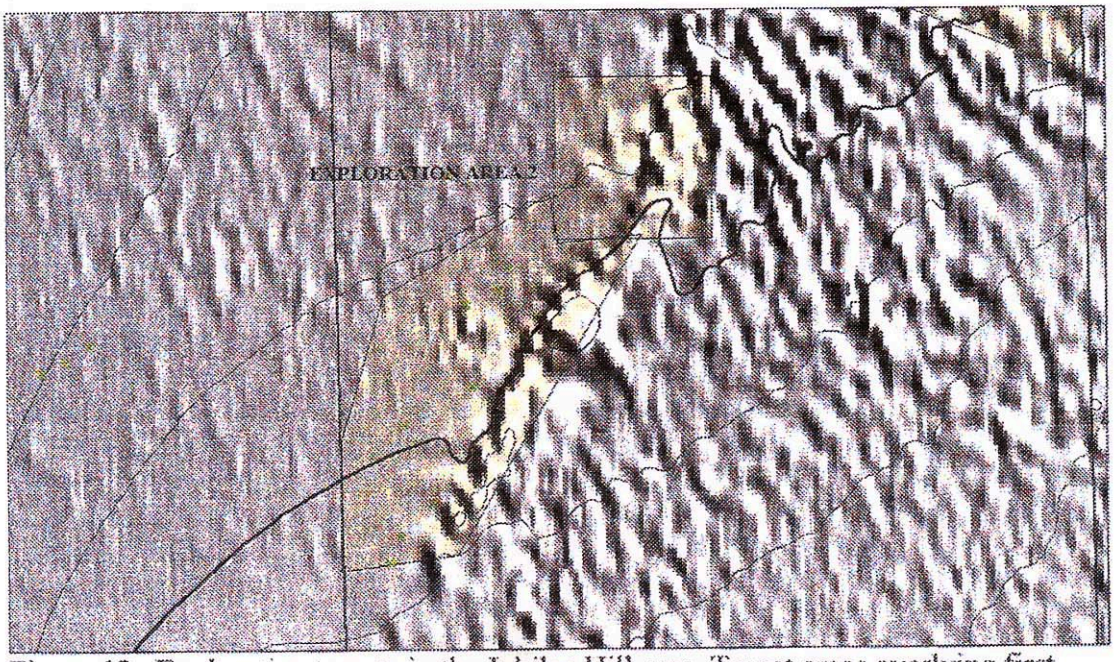


Figure 12a Exploration targets in the Jubilee Hill area. Target areas overlying first vertical derivative and TMI contours- magnetic data (green symbols = old mines).

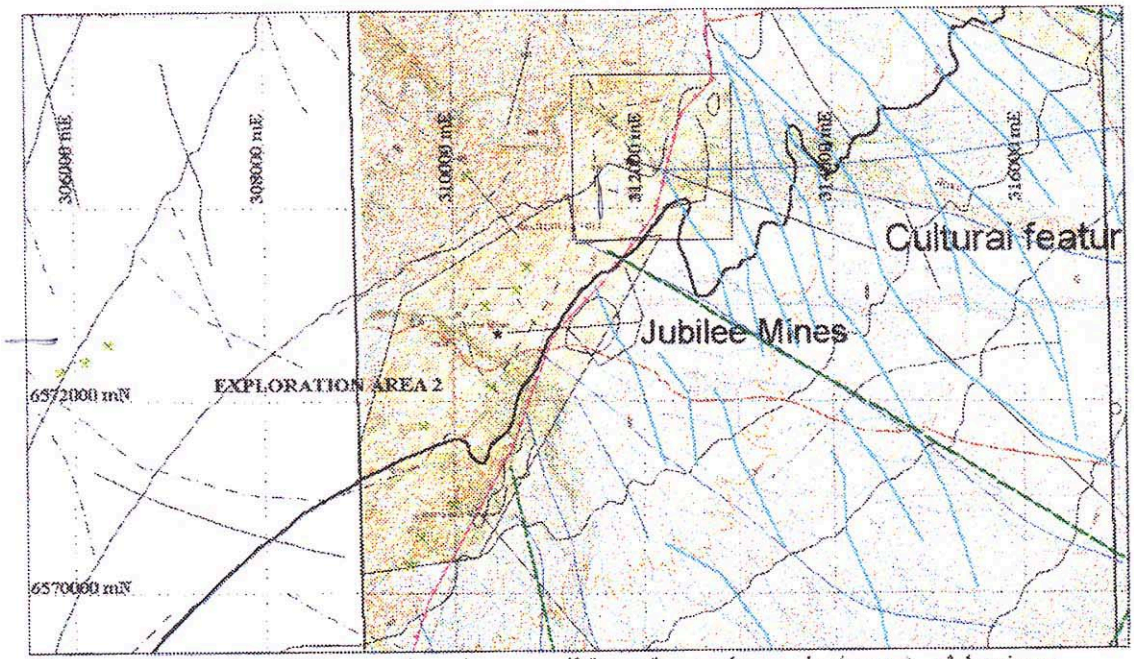


Figure 12b Jubilee Hill area showing possible palaeo-channels (cyan), old mines (Wirrapowie Mines) and subtle magnetic anomalies.

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