NORMANDY
WOODCUTTERS LIMITED

ACN 000 828 535

WOODCUTTERS MINE
80km Stuart Highway, via Darwin, Northern Territory 0800
PMB 60, Winnellie, Northern Territory, Australia 0821

Telephone (08) 8976 0088
Facsimile (08) 8976 0108

ANNUAL REPORT FOR YEAR NINE
EXPLORATION LICENCE 6431
ACACIA AREA
NORTHERN TERRITORY
04.09.97 TO 03.09.98

Project Name:	**ACACIA**
Map Sheets:	**DARWIN SD 52-04 1:250,000** **NOONAMAH 5172 1:100,000** **MANTON DAM 5172-3 1: 50,000**
Commodities:	**COPPER, LEAD, ZINC, GOLD**
Author:	**K. Taylor**
Date:	**9 October, 1998**
Volumes:	**VOLUME 1 OF 1**
Accepted by:	
Distribution:	1. NT Department of Mines and Energy 2. Woodcutters Mine, NT 3. Normandy Exploration

Report No. 23607

TABLE OF CONTENTS

LIST OF FIGURES

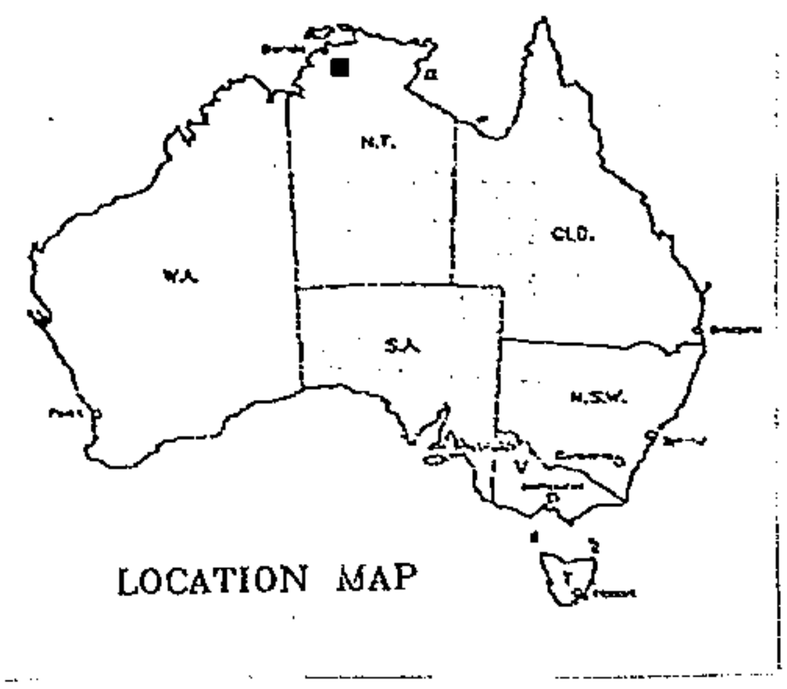
LIST OF ENCLOSURES

Report No: 23607

Title: ANNUAL REPORT FOR YEAR NINE
EXPLORATION LICENCE 6431
ACACIA AREA, NORTHERN TERRITORY
04.09.97 - 03.09.98

Author: K. Taylor

Date: 9 October, 1998



LOCATION MAP

SUMMARY

A review of previous exploration work was undertaken to determine the potential of the remaining portion of the licence area for economic gold and base metal mineralisation. This work concluded that there are only two areas worthy of further work. The first is the Manton base metal prospect and the second is the Acacia North gold prospect.

The Manton prospect is a concealed zone of anomalous lead and zinc at an inferred fault intersection. It has an associated gravity high and has not been drill tested. The Acacia North gold prospect comprises a series of poorly outcropping, en-echelon, auriferous, north-east striking quartz reefs and veins hosted by a dolerite. Previous drilling has not been targeted at possible steeply plunging fault intersection shoots. Further work is warranted on both prospects.

CONCLUSIONS

- There are two areas within the remaining portion of EL 6431 requiring follow-up exploration work.

- the concealed Manton lead/zinc geochemical target lies along the northerly continuation of the Woodcutters Fault where it is cut by an east north-east trending cross fault. It is likely to be a fault intersection target with a limited strike extent and a steep plunge.

- There is a gravity high coincident with the northern part of the Manton geochemical zone. The anomaly remains open to the north along the inferred Woodcutters Fault.

- Gold mineralisation at the Acacia North prospect occurs in an en-echelon quartz vein array hosted by dolerite. The vein pattern may be a result of sinistral shearing along the margins of the dolerite, suggesting the potential for untested steeply north plunging fault intersection shoots.

RECOMMENDATIONS

The Manton target requires reconnaissance drill testing. At least 5 holes drilled towards the east are warranted; three holes to test the north western part of the zone with its associated gravity high at 100m line spacing, and two other holes to test the strong lead geochemical zones.

The Acacia North gold prospect warrants further work to determine if there is potential for as yet undrilled high grade intersection shoots. A study of the core from the single diamond hole should be undertaken as the initial step since drill logs state that veins are paralleling the core axis. Drilling of an orientated core hole close to hole ACRC006 to determine the orientation of auriferous vein sets is warranted.

1. INTRODUCTION

EL 6431 was initially taken out to explore for Whites Formation hosted base metal mineralisation exposed by a regional anticline north of Woodcutters Mine. The eastern limb of the anticline was inferred to contain the continuation of the Woodcutters Fault, along which the Woodcutters deposit occurs to the south. Previous exploration work by the BMR and Geopeko Limited had identified base metal soil anomalies along the inferred position of the Woodcutters Fault.

This report presents the results of a review of exploration data from the remaining parts of EL 6431 and recommends further work on two prospects.

2. LOCATION AND ACCESS

Exploration Licence 6431 is located on the Manton Dam (5172-3) 1:50,000 sheet with the centre being approximately 55km south-south east of Darwin. The south-western corner of the tenement is on the Stuart Highway adjacent to Manton Dam which is 12km north of the Woodcutters silver-lead-zinc mine (Figure 1).

3. TENURE

Exploration Licence 6431 was granted on the 4th of September 1989 for a period of six (6) years. The licence originally comprised seventeen (17) graticular blocks. A 50% reduction took place at the end of Year Three, after being granted a deferral from the normal Year Two reduction. A number of mineral claim applications were made over part of the relinquished area. Further 50% relinquishments occurred at the end of Years Four and Five.

In 1995 and 1997 an application for the renewal of EL 6431 for a further two years was granted.

The licence holder is 100% Normandy Woodcutters Limited.

4. PREVIOUS EXPLORATION

The licence area has received a significant amount of attention from previous explorers for base metals and uranium. The BMR located four lead geochemical anomalies (L1 to L4) and tested the L1 anomaly (now known as Acacia South) with three diamond drill holes. No significant mineralisation was found. Subsequently Geopeko Ltd and later Uranerz Australia Pty Ltd also carried out geochemical surveys and geological mapping. Further details are reported in Butler (1990).

During Year One of tenure, Nicron Resources Ltd conducted literature research and reconnaissance field investigations. Anomalous Au (1.58 g/t) and As (1100 ppm) were recorded from rock samples collected in the north-eastern portion of the licence (Butler, 1990).

Data from previous exploration was compiled in Year Two, and geological mapping and further rock chip sampling was undertaken. Stream sediment sampling and follow-up rock chipping confirmed a low grade gold bearing gossanous quartz vein swarm in the NE portion of the licence (Pevely, 1991).

In Year Three, a detailed airborne magnetic and radiometric survey was flown, and a self potential survey, Rotary Air Blast (RAB) drilling and diamond drilling were carried out (Ormsby, 1992).

In Year Four exploration included RAB drilling at the Manton anomaly (Pb Zn), Acacia North (Au) and Acacia Dome (Pb - Zn and magnesite). A semi-detailed gravity survey was conducted over the Manton anomaly.

In Year Five, RAB drilling was conducted over the Acacia North anomaly. Rock chip and soil samples were also taken.

Additional RAB drilling and soil sampling was conducted in year six.

During Year Seven RAB and RC drilling was conducted over the Acacia North prospect as well as an IP/Resistivity Survey. In addition a single diamond hole was drilled at Acacia North to test the high chargeability IP target as well as shallow intersection of gold mineralisation.

No work was conducted during the Year Eight report period.

5. *REGIONAL GEOLOGY*

EL 6431 currently comprises two blocks covering Whites formation carbonaceous and calcareous shales either side of a regional anticline here referred to as the "Woodcutters Anticline" (Figure 2). The western block covers the inferred northern continuation of the Woodcutters Fault hosting the Woodcutters lead, zinc and silver mine. The eastern block is completely contained within the Whites Formation. Both areas have very little outcrop of Whites Formation shales.

6. *LOCAL GEOLOGY*

6.1 MANTON BASE METAL PROSPECT

The Manton base metal prospect lies within the western part of the licence area (Enclosure 1). Exposures of the Whites Formation are restricted to a small area near the southern margin of the block. There are a few isolated outcrops of Coomalie Dolomite and one outcrop of Zamu Dolerite. Acacia Gap Quartzite outcrops along the western margin of the licence and it is apparent that the Whites Formation is unusually thin within this area. This could be explained by possible thrust faulting along the Woodcutters Fault zone. The Manton lead anomaly occurs in an area devoid of outcrop (Enclosure 1).

6.2 ACACIA NORTH GOLD PROSPECT

The Acacia North gold prospect occurs within the eastern licence block. Outcrops of east dipping Acacia Gap Quartzite occur along the eastern margin of the licence area (Enclosure 1). Steeply east dipping quartz veined Whites Formation outcrops within the south western part of the licence. The Acacia North gold bearing zone contains only outcrops of north-east trending quartz veins.

It is apparent that the Manton base metal zone and the Acacia North gold target occupy a similar stratigraphic position with both occurring near the top of the Whites Formation.

The Acacia North gold prospect is hosted by a dolerite sill within upper Whites Formation carbonaceous shales. Stratigraphically, the dolerite lies immediately below the first sandstone/greywacke unit of the Acacia Gap Quartzite/Wildman Siltstone (see Enclosure 1).

Within the mineralised zone (1000m N-S x 250m E-W) the dolerite is intruded by generally north-west trending, north-easterly dipping quartz veins. From costean mapping, the dolerite appears to trend N-S but due to structural complexity is not of uniform thickness. Petrological analysis indicates that the gold mineralisation is hosted in sheeted K-spar/carbonate quartz veins in the dolerite.

A fault trending NE-SW interpreted from airborne magnetic data is believed to interrupt the dolerite to the north of the mineralisation.

7. WORK CARRIED OUT DURING THE REPORTING PERIOD

Data from the remaining licence areas was reviewed and the Manton base metal prospect was examined in the field. Geochemical data was transformed into MapInfo format.

7.1 MANTON BASE METAL PROSPECT

RAB drilling results show the presence of two approximately parallel northerly trending lead/zinc geochemical zones defining the Manton prospect (Figure 3). The two zones lie on the approximate southern projection of the Acacia South prospect (to the north within MCN's 4498 and 4503). A recent re-evaluation of this prospect suggested that the mineralisation occurs along a west dipping thrust fault (the Woodcutters Fault). The two geochemical zones at Manton are therefore also inferred to be associated with the Woodcutters Fault. The westernmost and strongest geochemical zone has an apparent cross fault displacement at approximately 8400N (Figure 3). The eastern zone is defined largely by weakly anomalous zinc supported by one high lead result.

Aeromagnetics (Figure 4) shows that the Manton geochemical zone is apparently localised by an east north-east trending inferred cross fault just south of the Manton River. It appears that the Manton zone is therefore localised by the intersection of the Woodcutters Fault and the cross fault. Drill testing of the target should therefore be targeted at fault intersection shoots with a limited strike extent and steep plunges.

Costeaning of the target zone is required prior to drill testing in order to determine the optimum drill hole orientation.

7.2 ACACIA NORTH GOLD PROSPECT

RAB drilling bedrock geochemical results show that the auriferous quartz veining is associated with a discrete arsenic zone of approximate dimensions 700 x 300 metres (Figure 5). The arsenic zone encloses the

north-west striking auriferous quartz veins and highlights three north-west striking strongly anomalous arsenic target zones, only one of which is systematically drill tested. Gold bedrock drilling results support the arsenic target zones. To the south of the main arsenic zone is a small arsenic bedrock zone with a similar north-west trend.

Reverse circulation percussion drilling returned significant ore grade intersections on reconnaissance drill line 10100N (Figure 5). A single follow-up diamond hole beneath the relatively shallow intersections failed to identify a continuation of the high grade mineralisation to depth. However, it did establish the association of gold mineralisation and quartz veining with pyrite and arsenopyrite bearing carbonate alteration zones. Drill logs from the diamond hole record veining approximately parallel to the core axis suggesting that a different hole orientation would be a better test of the mineralisation.

The en-echelon nature of the north-west quartz reefs hosted apparently by a north striking dolerite unit suggests that they may be tension gash style reefs formed as a result of sinistral shearing along the dolerite margins. If this is the case, then there may be potential for high grade shoots at the intersection of the veins and the faults. Such shoots would be likely to moderately plunge to the north-east and would be difficult to intersect given the drill pattern used.

An orientated diamond drill core vein orientation study is required to determine the optimum drill hole orientation. A hole drilled close to hole ACRC006 would determine the orientation of the auriferous veins. This work should be undertaken in conjunction with costeaning of the auriferous zone on line 10100N.

8. EXPENDITURE DURING YEAR NINE

Salaries/labour	1,500
Contract Services	2,000
Administration - 15%	525
Total	**$4,025**

9. PROPOSED WORK PROGRAMME AND EXPENDITURE

Additional compilation and interpretation of data	2,000
Costeaning	5,000
RC drill testing	20,000
Diamond drilling of the Acacia North target	10,000
Total	**$37,000**

10. ENVIRONMENTAL DISTURBANCE AND REHABILITATION

The Acacia South prospect, formerly within EL 6431, is presently being rehabilitated. Acacia North prospect has not yet been field checked and it is probable that some rehabilitation will be required and that some drill holes have not been buried at least 30cm below surface.

All environmental rehabilitation is carried out under the guidance of the Normandy Woodcutters Environmental section.

11. REFERENCES

Berthelsen, R.R., 1995. Annual Report for Year Six, Exploration Licence 6431, Acacia Area, NT., 04/09/94 - 03/09/95.

Browne, A.L.L., 1978. Final Report on EL 384 (Acacia). Geopeko Limited, North Australia. *Northern Territory Department of Mines and Energy Open File Report.*

Butler, I.K., 1990. Annual Report for EL 6431 - Year One, Acacia Gap Area. *Unpublished Company Report for Woodcutters Joint Venture.*

Butler, I.K., 1994. Annual Report for EL 6431 - Year Five, Acacia Gap Area. *Unpublished Report for Northern Territory Department of Mines and Energy.*

Contrads-Broicher, R. and Taylor, L.S., 1983. Final Report on Exploration Licence No. 2256 Manton Dam, Northern Territory, covering the period 4 December 1980 to 25 November 1982. Uranerz Australia Pty Ltd. *Department of Mines and Energy Library Open File Report CR83/20.*

Goulevitch, J. and Butler, I.K., 1998. Geological Advances at Woodcutters in 1997 and Implication for Continuing Local Exploration. *Internal Report for Normandy Woodcutters Limited.*

Ormsby, W.R., 1992. Annual Report EL 6431 for Year Three, Acacia Gap Area. *Unpublished Company Report for Nicron Resources Ltd.*

Ormsby, W.R., 1993. Annual Report EL 6431 for Year Four, Acacia Gap Area. *Unpublished Report for Northern Territory Department of Mines and Energy.*

Pevely, S.G., 1991. Annual Report EL 6431 for Year Two, Acacia Gap Area. *Unpublished Company Report for Nicron Resources Ltd.*

Pevely, S.G., 1992. Report on Acacia South Drilling Programme - EL 6431. *Unpublished Company Report for Nicron Resources Ltd.*

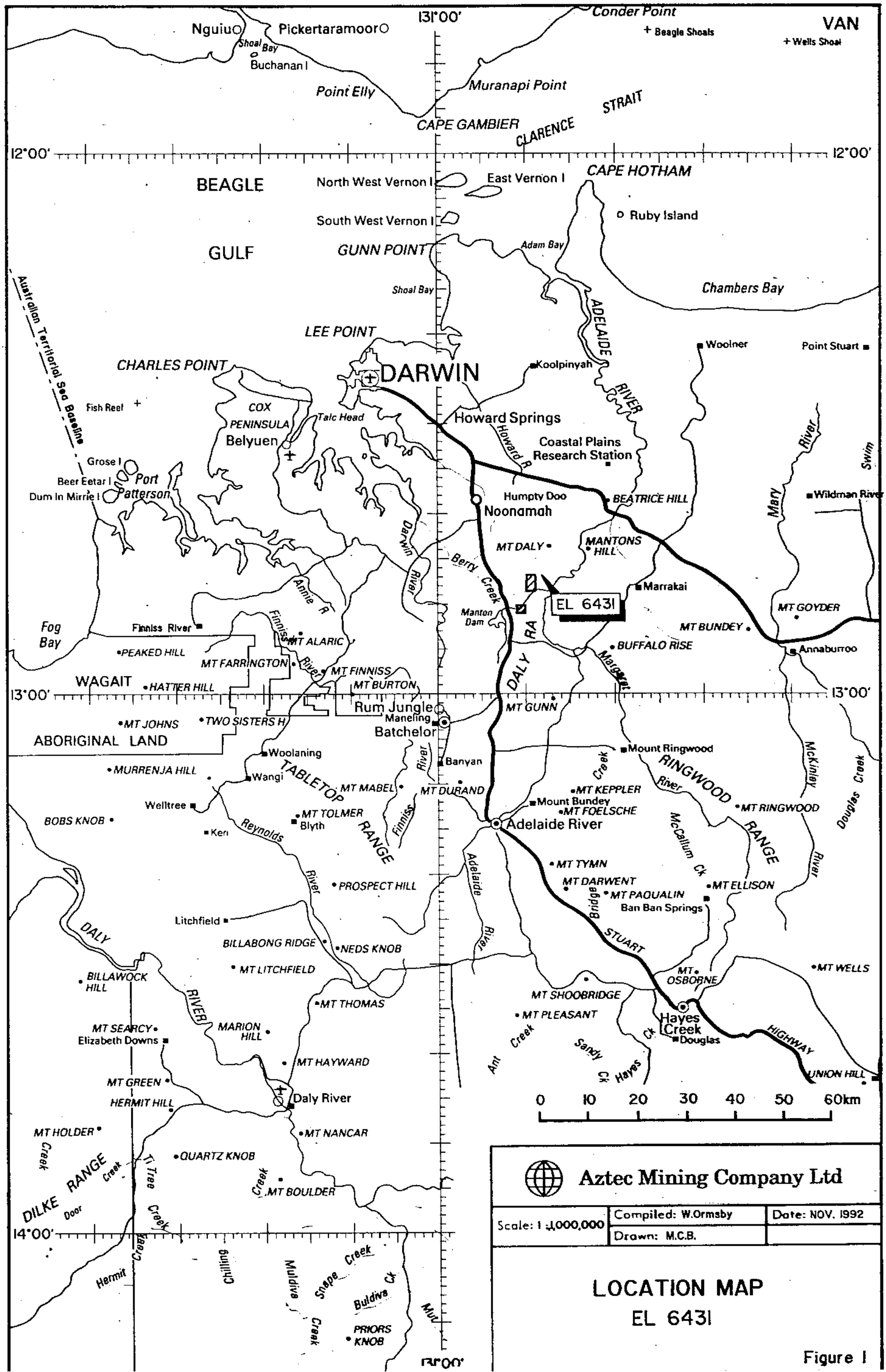
Semple, D.G., 1967. Geochemical and Radiometric Investigations, Acacia Area, Northern Territory. *BMR Record No. 1968/8.*

Twist, R.F., 1977. Report on Area Retained within EL 384 as at 8.7.77. Geopeko Limited, North Australia. *Department of Mines and Energy Library Open File Report CR77/126.*

Uranerz Australia Pty Ltd, 1982. Annual Report on Exploration Licence No. 2256 Manton Dam, Northern Territory, covering the period 4 December 1980 to 3 December 1981. *Department of Mines and Energy Library Open File Report CR82/063.*

Williams, K.A., 1996. Annual Report for Year Seven EL6431 Acacia Area, NT, 04.09.95 to 03.09.96. *Unpublished Report for Northern Territory Department of Mines and Energy.*

Williams, K.A., 1997. Annual Report for Year Eight EL6431 Acacia Area, NT, 04.09.96 to 03.09.97. *Unpublished Report for Northern Territory Department of Mines and Energy.*



Aztec Mining Company Ltd

Scale: 1 :1,000,000	Compiled: W.Ormsby	Date: NOV. 1992
	Drawn: M.C.B.	

LOCATION MAP
EL 6431

Figure 1

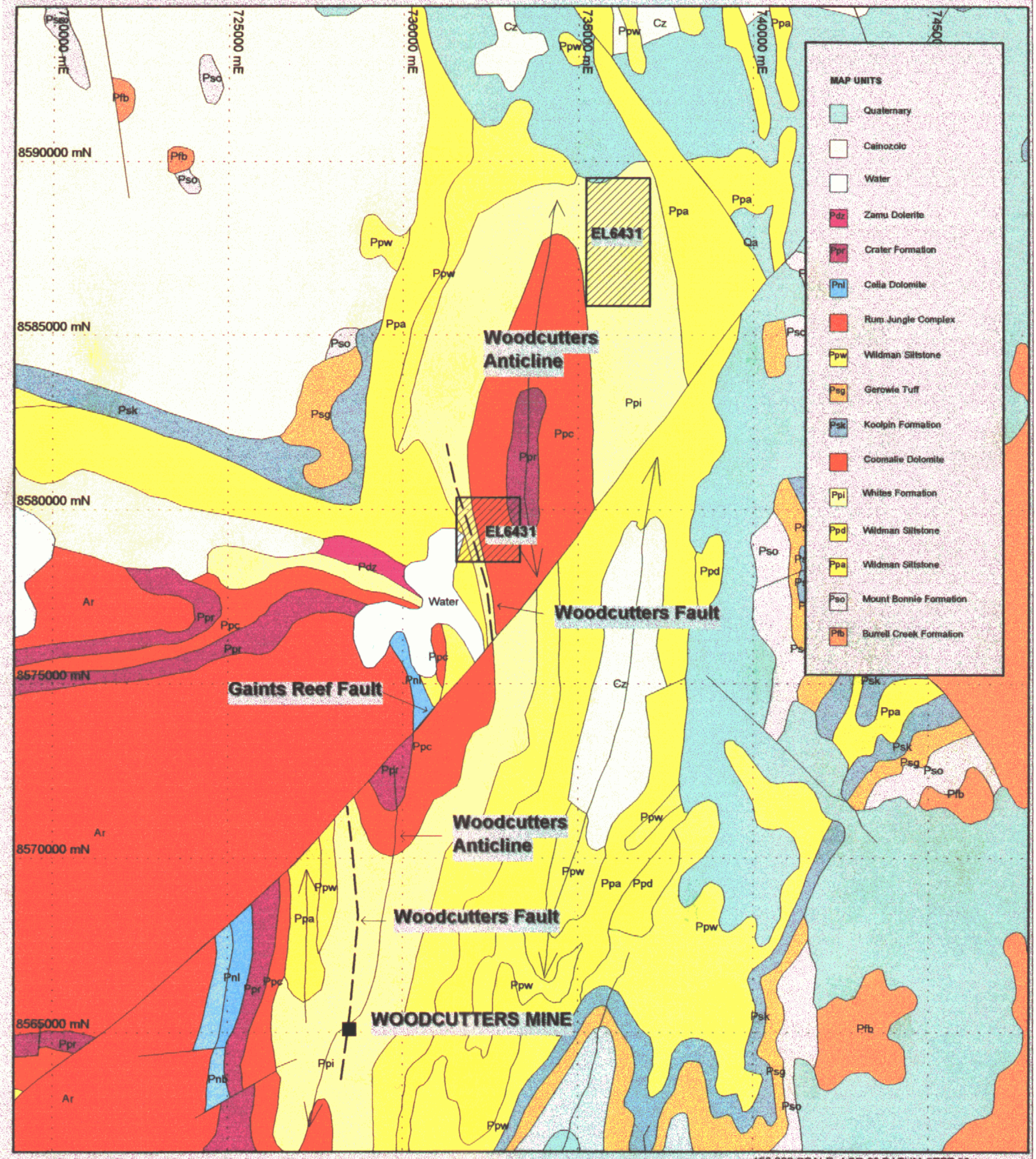


Figure 2. Regional Geology

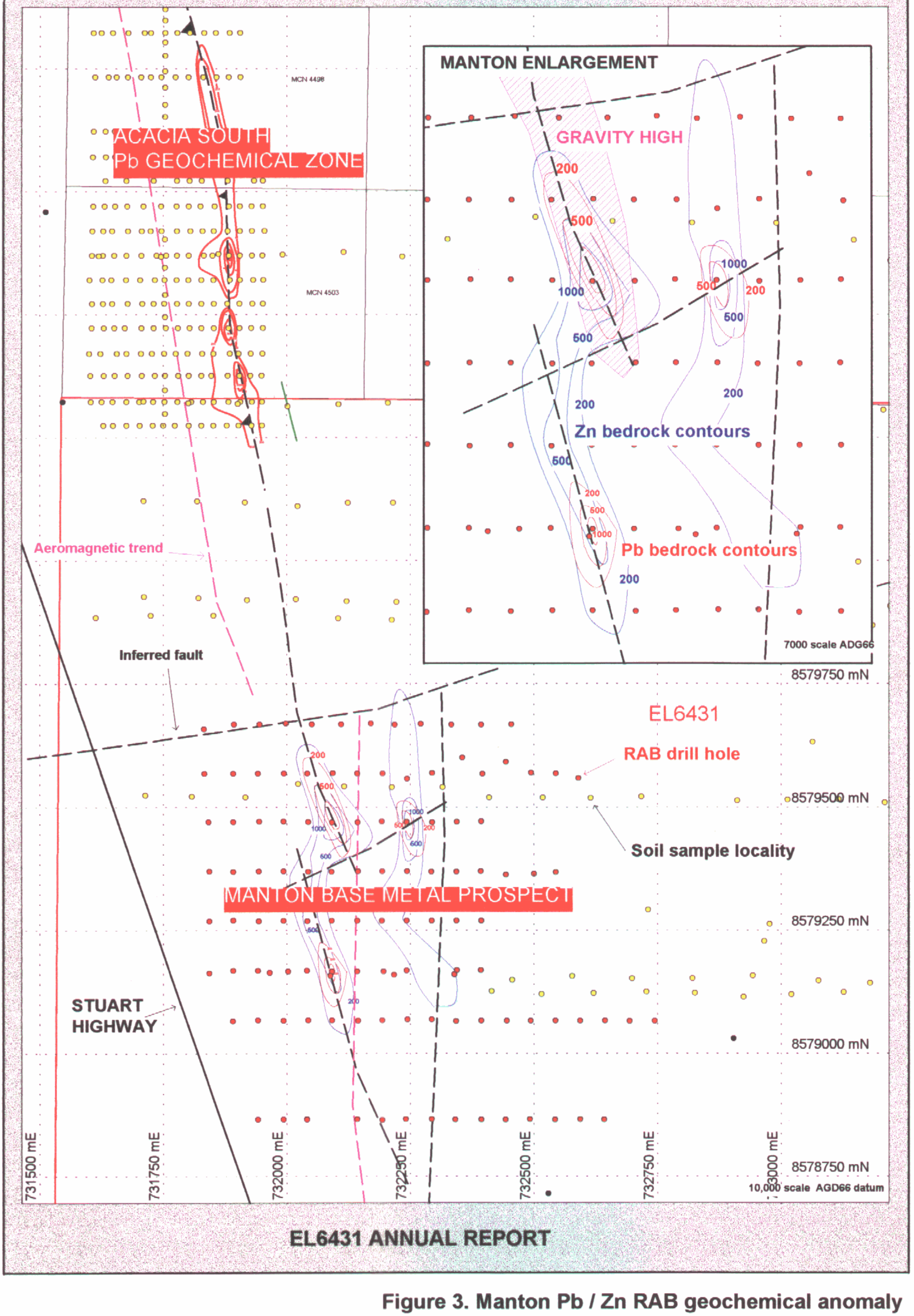


Figure 3. Manton Pb / Zn RAB geochemical anomaly

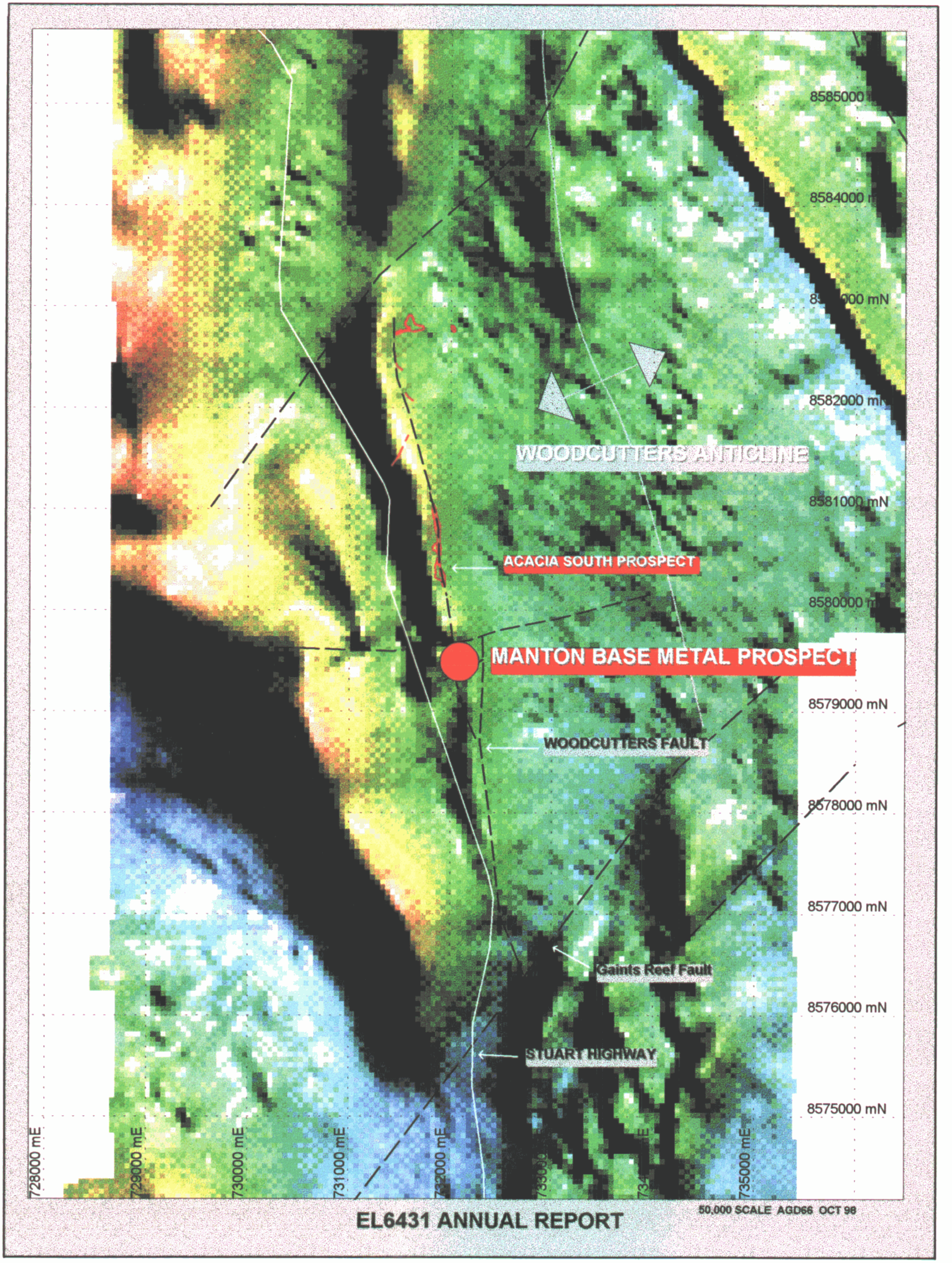


Figure 4. Manton prospect and aeromagnetics

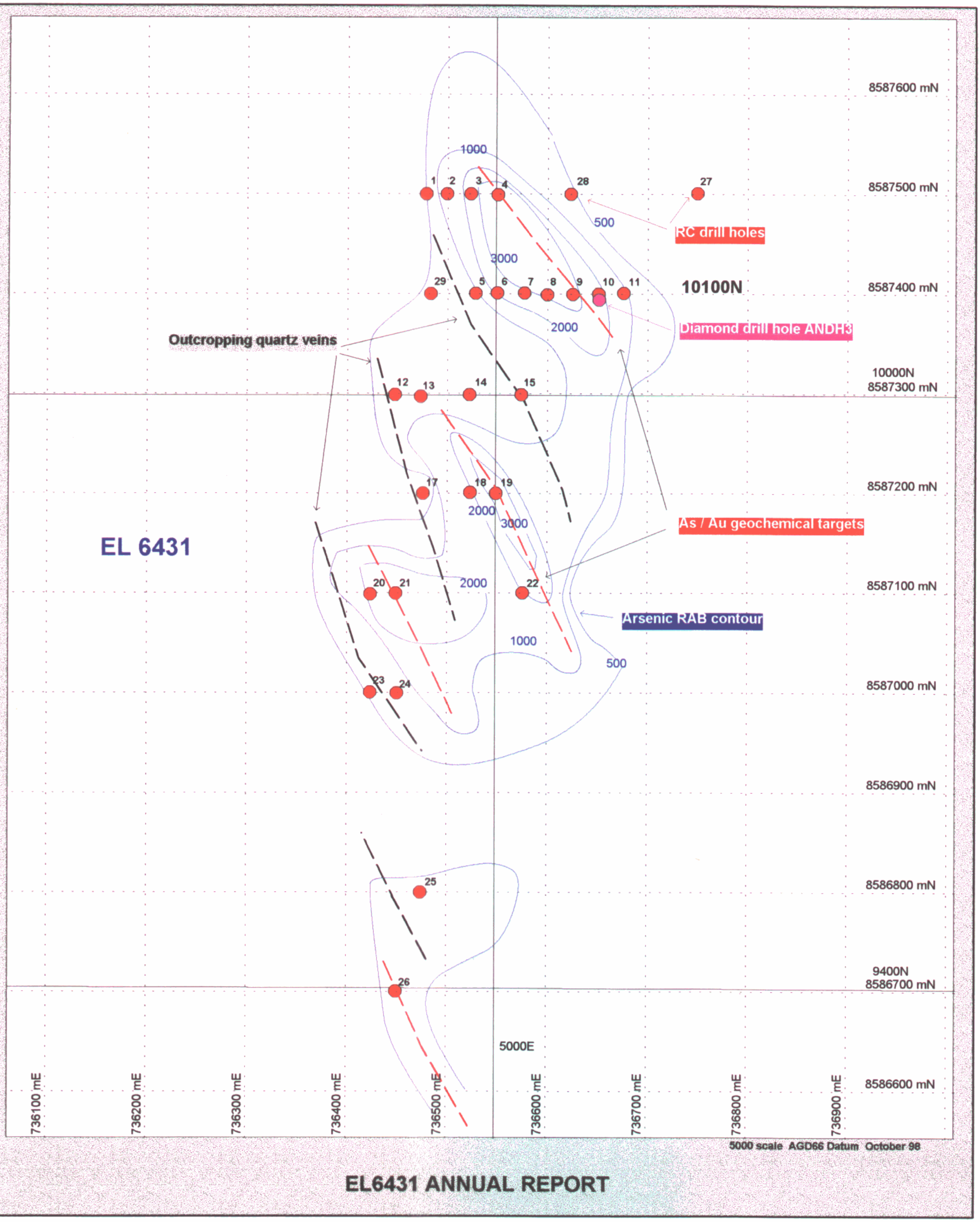
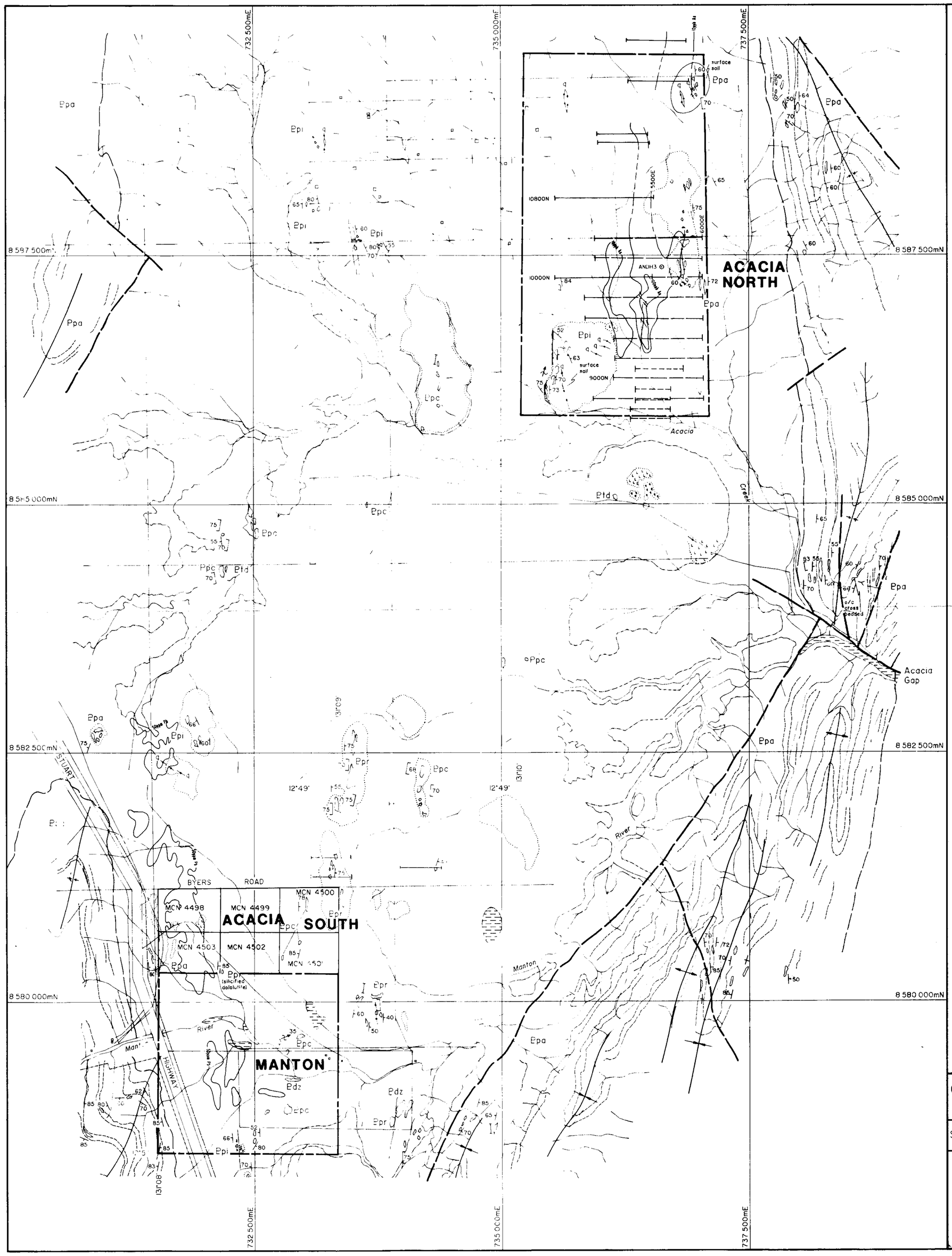


Figure 5. Acacia North gold prospect

BIBLIOGRAPHIC DATA SHEET

REPORT NUMBER:	23607
REPORT TITLE:	Annual Report for Year Nine Exploration Licence 6431 Acacia Area, Northern Territory 04.09.97 to 03.09.98
PROSPECT NAME:	Acacia North, Manton
TENEMENT NUMBERS:	EL 6431
OWNER/JV PARTNERS:	Normandy Woodcutters Limited
COMMODITIES:	Copper, Lead, Zinc, Gold
TECTONIC UNITS:	Pine Creek Geosyncline
STRATIGRAPHIC UNITS:	Crater Formation Coomalie Dolomite Whites Formation
1:250,000 MAP SHEET:	Darwin SD 52-04
1:100,000 MAP SHEET:	Noonamah 5172
KEYWORDS:	Geochemical anomalies Geological models Gravity surveys Exploration review



LEGEND

- Subcrop / lag boundary - air photo interpretation
- Limit of outcrop
- Lag / alluvium boundary - air photo interpretation
- Laterite
- Vein quartz rich laterite
- Quartz vein
- Lamprophyre dyke
- Geological boundary - inferred
- Geological boundary - air photo interpretation
- Quartzite marker bed - air photo interpretation
- Trend of anticlinal axis - air photo interpretation
- Trend of synclinal axis - air photo interpretation
- Fault - inferred - air photo interpretation
- 70 Observed strike and dip of bedding
- 60 Observed strike and dip of foliation
- 35 Dip direction of minor fold (with plunge if observed)
- Buildings
- Track / property boundary
- Rivers, creeks
- Billabong
- Fence
- EL boundary
- Observed facing direction

DEPOT CREEK SANDSTONE	Ptd	Pink, friable quartz sandstone - massive bedding. Dark brown with haematite cement where ferruginised - overlies karstic surface of the Coomalie Dolomite
ZAMU DOLERITE	Pdz	Intensely weathered dark purple basic intrusive often ferruginised on outcrop
ACACIA GAP QUARTZITE MEMBER	Ppa	Orthoquartzite with abundant ex-pyrite casts on outcrop. Base of member represented by dark brown ferruginous quartz-conglomerate
WHITES FORMATION	Ppi	Laminated calcareous argillite and dololutite
COOMALIE DOLOMITE	Ppc	Massive, silicified light grey dolomite invariably associated with dark red brown ferruginised chaotic haematite-quartz-dolomite breccia on outcrop
CRATER FORMATION	Ppr	Dark brown haematitic cross stratified quartz conglomerate, light grey massive arkosic quartz conglomerate

- RAB traverses 1993
- RAB traverses 1994
- RAB traverses 1995
- ⊙ Diamond Drill Hole

N

0 500 1000 1500 2000 metres

CR98/647

eupene exploration enterprises

Client : Nicron Resources

Scale: 1:25 000	Compiled: S. Pevely	Date: Oct 1991
	Drawn: C.S.D.S.	

EL 6431
ACACIA GAP PROJECT
EXPLORATION SUMMARY MAP

Enclosure :