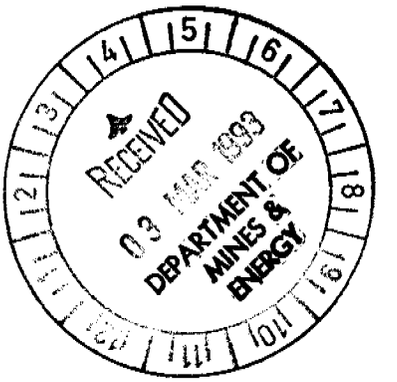
OPEN FILE



RELINQUISHMENT REPORT
EXPLORATION LICENCE 7054
McCARTHY'S AREA, NT

7 DECEMBER 1990 TO 6 DECEMBER 1992

BY

I.K. BUTLER, B.APP.SC

OF

AZTEC MINING COMPANY LIMITED

MOUNT EVELYN SD 53-5
Ranford Hill 5370

March 1993
Darwin NT

TABLE OF CONTENTS

SUMMARY

1. INTRODUCTION

2. TENURE

3. CONCLUSIONS

4. PREVIOUS EXPLORATION

5. GEOLOGY AND MINERALISATION

6. WORK CARRIED OUT AND RESULTS

6.1 Stream Sediment Sampling

7. REFERENCES

LIST OF FIGURES

Figure 1. EL 7054 Location Map 1:1,000,000

LIST OF ENCLOSURES

Enclosure 1. EL 7054 Sample Locations and Tenure 1:10,000

LIST OF APPENDICES

Appendix I. Analytical Results - Stream and Rock Samples

SUMMARY

The geology of Exploration Licence 7054 comprises sediments of the Lower Proterozoic Pine Creek Geosyncline which have been intruded by granite belonging to the Cullen Batholith. The exposed metasediments have been mapped as the Mount Partridge and South Alligator Groups by the BMR/NTGS.

The McCarthys Pb-Ag mine with a total recorded production of 580t, is located within EL 7054. Literature research revealed that the area had been explored since the 1960's for a number of different commodities, however no significant mineralisation had been located as a result of this work. It revealed however, there were gossanous limonite horizons throughout the area with anomalous Pb and Zn which were not systematically tested for their base metal potential.

Work conducted by Aztec Mining Limited within the relinquished area included literature research, stream and rock chip sampling. This work has failed to locate geochemically anomalous areas indicative of significant mineralisation.

1. INTRODUCTION

Exploration Licence 7054 is located 30 kms ENE of Pine Creek and is 9 kms south-west of the Moline Mine on the Ranford Hill 1:100,000 (5370) geological map sheet (Figure 1). Access is gained via the Kakadu Highway and then cleared tracks leading into the old McCarthys mine site.

The licence is held by Nicron Resources Ltd and was taken out in conjunction with adjacent licences (MCN 4419-26 EL's 7014, 7615) to explore more fully the old McCarthys silver-lead mine and surrounding area for base metal and gold mineralisation. The area has been explored extensively since the 1960's for a number of commodities, however the potential for discordant and stratiform base metal mineralisation has not been fully evaluated.

The aim of this report is to outline the work conducted within the relinquished area during the two years of tenure and present results.

2. TENURE

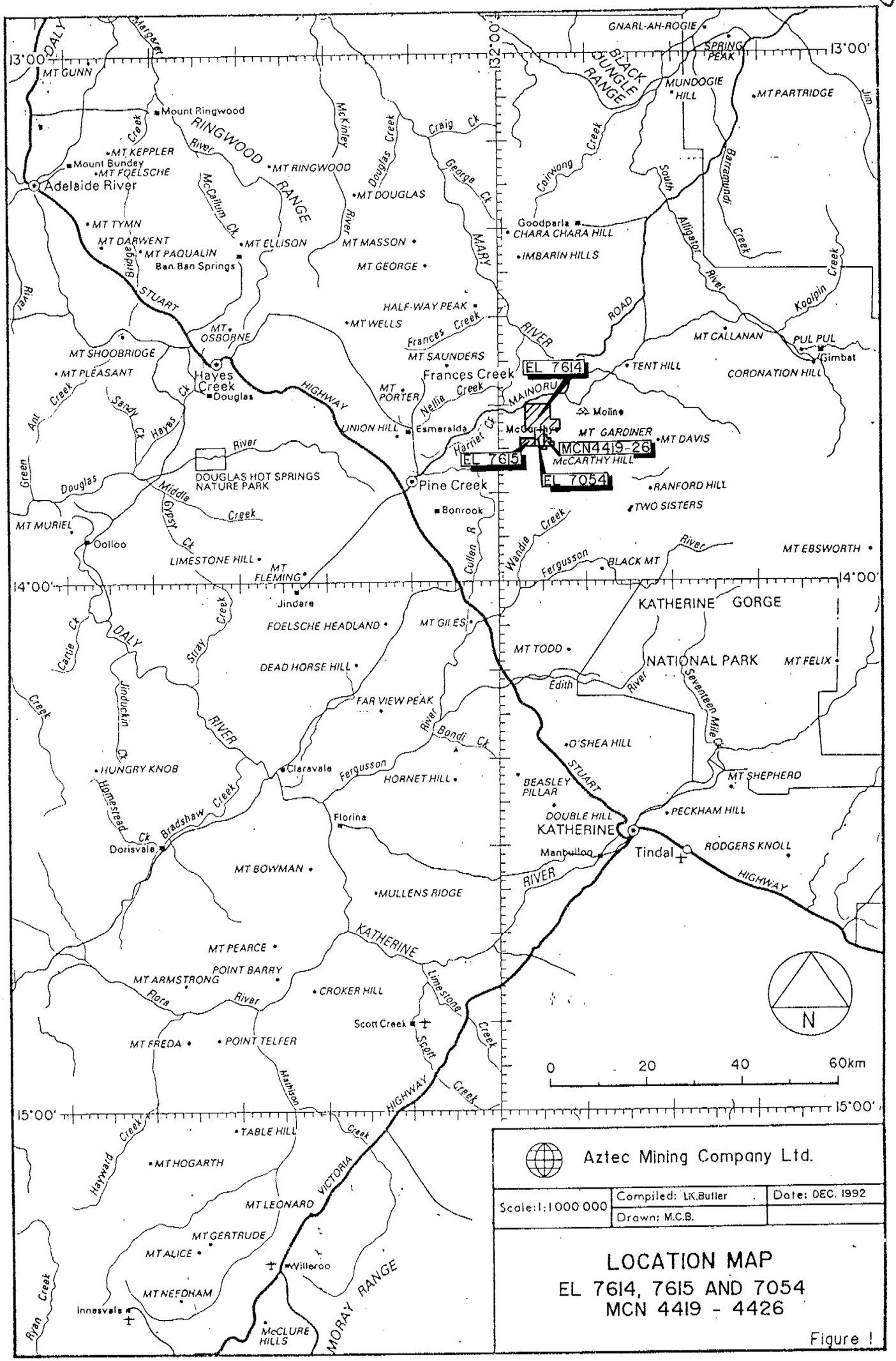
Exploration Licence 7054 was granted to Nicron Resources Limited (77.08%), Lachlan Zinc NL (12.50%) and Petrocarb Exploration NL (10.42%) on the 7th December, 1990 for a period of four years. Since the granting Lachlan Zinc NL and Petrocarb Exploration NL have been incorporated into Nicron Resources Ltd which in turn has become a wholly owned subsidiary of Aztec Mining Company Ltd.

The licence area originally comprised four graticular blocks (12 square kilometres) however two blocks were relinquished at the completion of Year Two and are the subject of this report.

3. CONCLUSIONS

1. Despite a considerable amount of previous exploration for a number of different commodities, and using different mineralisation models, the base metal potential of the area has not been fully tested.

2. With the exception of one small area, the base metal and gold stream geochemistry is background throughout the relinquished area.


13°00'
132°00'
14°00'
15°00'
DALY
Margaret
MT GUNN
Mount Ringwood
RINGWOOD RIVER
MT KEPPLER
Mount Bundey
MT FOELSCHE
Adelaide River
McKinley River
Douglas Creek
Craig Ck
MT RINGWOOD
MT DOUGLAS
George Ck
McCallum Ck
RANGE
MT TYMN
MT DARWENT
MT PAQUALIN
MT ELLISON
MT MASSON
Ban Ban Springs
MT GEORGE
Bridge
STUART
River
MARY
HALF-WAY PEAK
MT WELLS
Frances Creek
MT OSBORNE
MT SAUNDERS
RIVER
ROAD
MT SHOOBRIDGE
MT PLEASANT
Hayes Creek
Douglas
Ant Creek
Sandy Ck
Hayes Ck
HIGHWAY
MT PORTER
Nellie Creek
MAINORU
UNION HILL
Esmeralda
Harriet Ck
McCarthy
MT GARDINER
MT DAVIS
EL 7614
Frances Creek
TENT HILL
Molino
EL 7615
MCN4419-26
McCARTHY HILL
EL 7054
DOUGLAS HOT SPRINGS NATURE PARK
Green
Douglas
Middle
Gypsy Ck
Creek
Pine Creek
RANFORD HILL
TWO SISTERS
Bonrook
MT MURIEL
Ooloo
LIMESTONE HILL
MT FLEMING
Cullen R
Wandie Creek
Fergusson
BLACK MT
MT EBSWORTH
Jindare
KATHERINE GORGE
NATIONAL PARK
FOELSCHE HEADLAND
MT GILES
MT TODD
MT FELIX
Carlie Ck
DALY
Stray Creek
DEAD HORSE HILL
Edith
River
Seventeen Mile Ck
Jinduckin Ck
FAR VIEW PEAK
RIVER
Bondi Ck
O'SHEA HILL
HUNGRY KNOB
Claravale
Fergusson
HORNET HILL
BEASLEY PILLAR
STUART
MT SHEPHERD
Homestead Ck
Bradshaw Creek
Florina
DOUBLE HILL
KATHERINE
PECKHAM HILL
Dorisvale
Manbulloo
Tindal
RODGERS KNOLL
MT BOWMAN
MULLENS RIDGE
RIVER
HIGHWAY
KATHERINE
MT PEARCE
POINT BARRY
MT ARMSTRONG
CROKER HILL
Flora
River
Limestone
Creek
Scott Creek
MT FREDA
POINT TELFER
Scott
Creek
Mathison
HIGHWAY
TABLE HILL
Hayward Creek
MT HOGARTH
VICTORIA
MT LEONARD
MT GERTRUDE
MT ALICE
Willeroo
MT NEEDHAM
Innesvale
Ryan Creek
McCLURE HILLS
MORAY RANGE
GNARL-AH-ROGIE
SPRING PEAK
BLACK JUNGLE RANGE
MUNDOGIE HILL
MT PARTRIDGE
Jim
Cairwong Creek
South Alligator River
Barramundi Creek
Goodparla
CHARA CHARA HILL
IMBARIN HILLS
Koolpin Creek
MT CALLANAN
PUL PUL
Gimbat
CORONATION HILL
N
0 20 40 60km
Aztec Mining Company Ltd.
Scale: 1:1 000 000
Compiled: L.K. Butler
Drawn: M.C.B.
Date: DEC. 1992
LOCATION MAP
EL 7614, 7615 AND 7054
MCN 4419 - 4426
Figure 1

4. PREVIOUS EXPLORATION

Exploration in the region of the licence area has been well documented since the mid 1960's.

Sturm (1966) undertook an investigation of the McCarthys lead prospect for United Uranium. He undertook geological mapping, soil sampling and wagon drilling and identified two separate lodes; A, to the south and B, to the north.

Channel sampling in the areas of one of the inclined shafts at 10 metres recorded 26.5% Pb over 1 metre and 19.5% Pb over 0.9 metres. Sturm indicated that there was no one distinctive lode, but that mineralisation occurred in siltstone bordering an aplite dyke. Unfortunately the 16 wagon drill holes did not test the ore at depth fully, due to ground water and loss of circulation.

Weber (1968) undertook geological mapping and rock chip sampling in the vicinity of the McCarthys mine for United Uranium. The only evidence of sulphide mineralisation he found in the region was pyrite, however he recorded high base metal values throughout his sampling grid. These could not be traced to actual base metal mineralisation, but he recommended that further sampling take place to determine whether non-outcropping sulphide-rich zones occurred in the region. Concurrent with this programme a reconnaissance steam sediment (-80 mesh) sampling programme was completed in the area and reported by T W Middleton (1968). The samples were analysed for Cu, Pb, Zn, Ni, Co and Bi. A number of drainages were geochemically anomalous in base metals.

CRA Exploration (Wills 1978) reported on exploration over the Moline region in EL 1091 which incorporated the area now covered by EL 7054. Soil sampling across the Golden Spider Anticline revealed elevated base metal results through the Wildman Siltstone and Zamu Dolerite rock types. Two soil anomalies were identified form the 1977 sampling (Anomalies 11.3 and 11.5) with assays up to 795 ppm Pb, 490 ppm Zn and 89 ppm Cu recorded.

The results from the second year of exploration (Wills, 1979) repeated Anomaly 11.3, with soil samples returning maximum assays of 751 ppm Pb, 296 ppm Zn and 75 ppm Cu. Rock chips returned a maximum lead assay of 1.28%, while maximum Zn, Cu and Ag were 691, 510 and 1 ppm respectively. These anomalous results were obtained form a line of ironstone breccias along a fault zone.

Follow-up work on Anomaly 11.5 recorded best soil results of 265 ppm Pb, 260 ppm Zn and 78 ppm Cu. These results were obtained from a zone of ironstone and haematitic shales adjacent to Zamu Dolerite. Maximum rock chip assays were 2040 ppm Pb, 1.31% Zn and 748 ppm Cu. Both anomalous zones lie due west of EL 7054 parallel to the dominate north-west trending fold axis.

The Australian and New Zealand Exploration Company (Davies 1980) conducted a stream sediment sampling survey over areas underlain by te Koolpin Formation. A statistical test on the results did not provide a meaningful interpretation however elevated Pb, Zn and Cu results were recorded at McCarthys, and to the west and north-west of McCarthys. Davies believed the elevated results were due to higher background content of some metals in the shale units and the higher metal content in the ironstone bodies.

Cyprus carried out a mapping and rock chip sampling survey (Miller 1988) over EL 3008 and recorded some anomalous Pb, Cu and Zn from rock chip samples in carbonaceous cherty shales of Koolpin Formation and Wildman Siltstone. Maximum results recorded were 930 ppm Cu, 1.14% Pb and 5060 ppm Zn.

Vann (1988) reported on exploration carried out in three exploration licences one of which was EL 5196 known at McCarthys East for Renison Goldfields. The licence lies directly over the current EL 7054.

Mapping by Vann revealed a complex fold structure in associated with the Golden Spider Anticline. He identified a zone of weakly anomalous gold in the Golden Spider anticlinal closure. The best result recorded was 0.394 g/t over 6 metres. Assay quality control was poor however, and repeat determinations were recommended.

Fitzgerald (1989) carried out follow-up sampling at the Golden Spider prospect in the nose of the anticline. Exploration was for gold and 13 samples were taken from quartz saddle reefs in the Koolpin Formation. Only one sample recorded greater than 0.1 g/t, viz 1.5 g/t.

Driffield Mining Pty Ltd (1989) carried out rock chip sampling on four traverses at 500 metre spacing north of the McCarthys mine within EL 5847. No significant gold or base metal anomalies were reported.

5. GEOLOGY AND MINERALISATION

Exploration Licence 7054 is located near the centre of the Pine Creek Geosyncline and Early Proterozoic metasediments of the Mt Partridge, South Alligator and Finnis River Groups are exposed in the area.

Within the southern portion of EL 7054 the Cullen River Batholith outcrops and is comprised of McCarthy Granite which is a course grained porphyritic hornblende biotite rock. The granite is generally well exposed in the area and form low undulating hills well incised by numerous perennial streams. The intrusive granite contact with the sedimentary rocks to the north is often marked by a zone of quartz, pegmatite and aplite veining, rafts of sedimentary rocks within the granite and slivers of granite within the sedimentary rock pile.

Directly north of the granite contact the Early Proterozoic sedimentary sequences of the Mt Partridge, South Alligator and Finnis River Groups have folded into an asymetrical sequence along north-westerly trending axis. Two anticlines, called the McCarthy's and Spider Anticline, after Gold Field's Exploration Pty Ltd work in 1988, form the prominent features within this folded sequence. These anticlines expose Mundogie Sandstone in the core and Wildman Siltstone units of the Mt Partridge Group and the Koolpin Formation of the South Alligator Group within the centre of the lease. Further to the north the folded sequence only exposes stratigraphically higher units of South Alligator and Finnis River Groups.

A description of each formation in ascending order is discussed below:-

Mundogie Sandstone

The Mundogie Sandstone consists of coarse grained felspathic quartz sandstones and pebble conglomerate. It forms a prominent topographic high feature with rugged and deeply incised streams draining from it. On the contact with the Wildman Siltstone a strongly ferruginous, brecciated, gossanous and quartz veined horizon is occasionally developed. Secondary ferruginization is ubiquitous in these instances often forming the framework within the sandstones and breccias. This horizon is conformable and can be mapped over a considerable strike length. It is interpreted to be a décollement structure. A relic boxwork texture is observed at times and contributes to the strong ferruginous alteration. Quartz veining in this horizon is multiphased and stockworked in appearance and also often affected by later tectonic brecciation.

Wildman Siltstone

This unit predominantly comprises siltstones and carbonaceous phyllite and forms areas of relatively gentle undulating relief. A strong cleavage is developed in these rocks and exposed bedrock is typically stained by iron oxide. The McCarthy's Mine is hosted by the Wildman Siltstone. A distinctive haematite rich horizon can be traced within the unit over most of the licence area. It is interpreted to be a lateral equivalent of the iron ore deposits at Frances Creek and is locally termed, Frances Creek beds.

Koolpin Formation

The Koolpin Formation forms the topographic high ridge lines. On the limbs of the Spider Anticline these ridges are flat topped and have cliff like drop offs along the edges. Silicification as a result of weathering phenomena has strongly altered these rocks although the original texture and nature can still be discerned. The Koolpin predominantly comprise carbonaceous mudstone but has chert, ironstone and phyllite interbeds. A commonly exposed ironstone interbed is characterised by the presence of sugary and nodular cherty bands which resemble the I5 ironstone horizon as known within the Middle Koolpin Formation in the Mt Bonnie and Burrundie Dome regions. The nodular chert ironstone horizon often forms the steep drops along the edges of the ridge. Strong secondary silicification in conjunction with ferruginization within this bed make it particularly resistant to erosion. Ferruginization within the Koolpin Formation is a common feature. Boxwork textures is disseminations and within fractures is often observed throughout but is particularly concentrated along cherty and ironstone horizons.

Gerowie Tuff

The Gerowie Tuff comprises light brown siliceous siltstones, argillites and albitic cherts These rocks, along with the Mt Bonnie Formation, form a series of relatively low undulating hills that are well incised by a perennial drainage system. Very thin skeletal soils develop over the Gerowie Tuff and rock types are difficult to discern through the effects of weathering on similarly textured and coloured lithologies.

Mt Bonnie Formation

The Mt Bonnie Formation superficially, at least, resemble the Gerowie Tuff in it's occurrence and nature. Siliceous siltstones, slates, argillites, cherts, and greywackes are observed. Areas of well incised but low relief are formed and thin skeletal soils are commonly developed.

Burrell Creek Formation

The Burrell Creek Formation is typified by felspathic greywacke, slates and siltstones.

Zamu Dolerite

This dolerite occurs as a medium to course grained sill in the Koolpin Formation. It can occur as a distinctive series of resistant outcrop and rubble or become preferentially weathered and be obscured under soil and regolith cover. Distinctive dark red clay rich soils are developed over the dolerites in these instances.

The closest mineral deposit to the licence is the McCarthys lead and silver mine in the south of EL 7054. The lode is 0.3 metres to 1.0 meters wide and was worked between 1912 and 1927 from several shafts. The lode occupies a shear zone dipping between 70° and 80° west and transgresses carbonaceous siltstone of the Wildman Siltstone. The ore comprises an oxidised zone with pyromorphite, cerussite, anglesite and galena. It is postulated that the ore formed due to metal precipitation by reduction during contact metamorphism within the hornblende-hornfels zone around the McCarthys Granite. Total recorded production is estimated at 580 t concentrate of silver and lead (Stuart-Smith et al, 1988).

6. WORK CARRIED OUT AND RESULTS

6.1 Stream Sampling

A stream with anomalous lead and zinc from earlier stream sediment sampling programmes (conducted by other companies) was followed up with more detailed -40# (425 micron) sampling to confirm the anomaly. A total of two samples (578929-930) were collected from one stream and two (578934, 21027) from another to the west. Sample locations are plotted on Enclosure 1. The samples were analysed for Cu(2) Pb(2) Zn(1) and As(100) by AAS (MA-3 method) at Assaycorp in Pine Creek. Anomalous arsenic (165 ppm), weakly anomalous Zn (114 ppm max) and Pb (99 ppm max) values were obtained. The Cu levels were background only. The source of the anomaly is interpreted to be concordant gossanous zones in the Koolpin Formation.

Two rock chips (87287-288) were collected near the old McCarthy's workings (see Enclosure 1) and analysed for Cu, Pb, Zn, As, Ag, Bi (AAS), Au (AAS) and SnW by XRF at Classic Laboratories in Darwin. Background values only were obtained.

7. REFERENCES

Butler, I.K., 1992. Annual Report for Year Two, Exploration Licence 7054, McCarthy's Area, NT. *Department of Mines and Energy Company Report, unpublished.*

Butler, I.K., 1992. Final Report Exploration Licence 6556, Aztec Mining Company. *Department of Mines and Energy Company Report, unpublished.*

Davies, E.R., 1980. Final Report EL 2029, Moline Area, NT. Australia and New Zealand Exploration Company. *Department of Mines and Energy Company Report CR81/44, unpublished.*

Fitzgerald, R.G., 1989. Final Report, Moline West Project Area; EL 5194 Evelyn creek West, EL 5195 McCarthys West, EL 5916 McCarthys East. RGC Exploration Pty Ltd. *Department of Mines and Energy Company Report CR89/364, unpublished.*

Hickey, S.H., 1990. Annual Report for Year One, Exploration Licence 7054, 1 August, 1989 to 31 July, 1990. *Department of Mines and Energy Company Report, unpublished.*

Miller, G.C., 1988. Final Report on Ground not retained under ERL's or MCN's. Cyprus Minerals Australia Company. *Department of Mines and Energy Company Report CR88/203, unpublished.*

Stuart-Smith, P.G., Bagas, L. & Needham, R.S., 1988. Ranford Hill 1:100,000 Geological Map Commentary. *Bureau of Mineral Resources and NT Department of Mines and Energy Map Commentary.*

Strum, A.G., 1966. Report on the investigation of McCarthys lead prospect, Nt. United Uranium NL. *Department of Mines and Energy Company Report CR66/38, unpublished.*

Vann, J., 1988. Annual Report Moline West Project Area; EL 5194 Evelyn Creek, EL 5195 McCarthys West, EL 5196 McCarthys East. Gold Fields Exploration Pty Ltd. *Department of Mines and Energy Company Report CR88/227, unpublished.*

Verbeek, P.A., 1991. Annual Report EL 7054 for Year One. Aztec Mining Company Limited. *Department of Mines and Energy Company Report, unpublished.*

Weber, C.R., 1968. Geology of McCarthys Area, Moline District, NT. Geomin Exploration Pty Ltd. *Department of Mines and Energy Company Report CR68/64, unpublished.*

Wills, K.J., 1978. Annual reports. Moline EL 1091, Goodparla El 1092, George Creek El 1094, Pine Creek Basin, NT. CRA Exploration Pty Limited. *Department of Mines and Energy Company Report CR78/62, unpublished.*

Wills, K.J., 1979. Final Report. Moline EL 1091, Pine Creek Basin, NT. CRA Exploration Pty Limited. *Department of Mines and Energy Company Report CR79/61, unpublished.*

APPENDIX I

ANALYTICAL RESULTS STREAM AND ROCK SAMPLES

ASSAYCORP PTY LTD
A.C.N. 052 982 911
174 Ward Street, Pine Creek, N.T. 0847
P.O. Box 41, Pine Creek, N.T. 0847
Telephone (089) 76 1262
Facsimile (089) 76 1310

ASSAY CODE: AC 04988

Woodcutters Joint Venture
McCARTHYS PROSPECT
EL 7054 (Pegged by MC)
(Stream Seds)

Distribution
Ian Butler
Peter Nicholson

Client Reference:
Project :
Cost Code:

Date Received: 12/11/1992
Number of Samples: 6

Sample Preparation

Analysis	Analytical Technique	Precision & Accuracy	Detection Limit	Data Units
Cu	AAS/MA-3	Prec. ± 10%	2	ppm
Pb	AAS/MA-3	Prec. ± 10%	2	ppm
Zn	AAS/MA-3	Prec. ± 10%	1	ppm
As	AAS/MA-3	Prec. ± 10%	100	ppm

Authorisation: Ray Wooldridge
Report Dated: 13/11/1992

ASSAYCORP PTY LTD
A.C.N. 052 982 911
174 Ward Street, Pine Creek, N.T. 0847
P.O. Box 41, Pine Creek, N.T. 0847
Telephone (089) 76 1262
Facsimile (089) 76 1310

ASSAY CODE: AC 04988

Sample	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
578929	24	99	114	165
578930	35	77	87	<100
578934	69	120	190	<100

185 000 E

STREAM SEDIMENT SAMPLES

SAMPLE NO.	CU	ZN	AS	AG	AU	PB	AU1
21027	9	31	8	0.2	0.001	39	-
21028	10	29	9	0.2	0.003	50	-
Detection	1	1	1	0.1	0.001	1	0.001
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm

CLASSIC LABORATORIES LTD

Final

ANALYTICAL REPORT

SAMPLE	Cu	Pb	Zn	As	Ag	Bi
* 87287	<20	<50	80	<500	<2	<50
* 87288	<20	<50	40	<500	<2	50
UNITS	ppm	ppm	ppm	ppm	ppm	ppm
DET.LIM	20	50	20	500	2	50
SCHEME	AAS2S	AAS2S	AAS2S	AAS2S	AAS2S	AAS2S

CLASSIC LABORATORIES LTD

Job: 1DN1232A
O/N: 031319 D/S 11129

ANALYTICAL REPORT

SAMPLE	Au	AuDup1	Sn	W
87287	<0.02	--	<4	<10
87288	<0.02	--	6	10
UNITS	ppm	ppm	ppm	ppm
DET.LIM	0.02	0.02	4	10
SCHEME	AAS7	AAS7	XRF1	XRF1

RELINQUISHED AREA

EL 6556

RELINQUISHED AREA

EL 7054

MCN(A) 4482

MCN(A) 4419

MCN(A) 4420

MCN(A) 4421

MCN(A) 4422

MCN(A) 4423

MCN(A) 4424

MCN(A) 4425

MCN(A) 4426

MCN(A) 4483

McCARTHYS Pb/Ag

COST 16

COST 17

LEGEND

AUSTRALIA AND NEW ZEALAND EXP. COMP.

- Heavy mineral concentrate location and number.

UNITED URANIUM

- Stream sediment sample location

CRA

- Soil sample traverse
- Rock chip sample location and number

RENISON GOLD CORPORATION

- * Rock chip sample location and number

CYPRUS

- Stream sediment location (Cyprus)
- ◆ Rock chip sample location and number (Cyprus)
- ▲ Stream sediment location and number (Greenbushes)
- △ Rock chip sample location and number (Greenbushes)

DRIFFIELD

- □ Rock chip sample location and number

AZTEC - NICRON

- x Soil and rock chip sample locations
- x····x Soil traverse at 25m sample spacing. End sample numbers being shown.
- ○ Stream sediment sample location and number
- ⊗ Rock chip sample location and number

NB All sample numbers PREFIX with 87(0).

200 0 200 400 600 800 metres

N

Aztec Mining Company Ltd

EL 7054 AND 6556
SAMPLE LOCATION PLAN
AND TENURE

PROJ. NAME: McCARTHY NO.

SCALE: 1:10 000

PREPARED BY: P.A. Verbeek DATE OF SURVEY: December 1991

DRAWN BY: C.S.D.S. Enclosure I

CR9371