ANNUAL REPORT

EL 5847

RANFORD HILL

PREPARED BY:

MINING MANAGEMENT
SERVICES PTY LTD

MARCH 1989

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FIGURES:

1. INTRODUCTION

This report was prepared by Mining Management Services Pty Ltd for Driffield Mining Pty Ltd to document the exploration programme carried out on EL 5847 in the year ending 16 March 1989.

EL 5847 is located in the Ranford Hill area, approximately 25kms NE of Pine Creek (Figure 1) and 5-10kms south-east of the Moline Goldmine, presently operated by Greenbushes - Cyprus Joint Venture. Access is via the Kakadu National Park bitumen road from Pine Creek, then a loop road from the main highway. This road is only accessible with 4x4 vehicles in the dry season. The topography of the area is indulating in the north and south with the central portion very steep and rugged. Outcrop in the area is good, compared with elsewhere in the region.

2. TENEMENT DETAILS

Application for EL 5847 was made on 12 October 1987 and the licence was granted on 17 March 1989 for a period of three years expiring on 16 March 1991.

The licence in the name of Driffield Mining Pty Ltd covers two graticular blocks or 6.5sq kms. The Expenditure Covenant for the first year of the exploration licence was $20,000.00. Within the Exploration Licence area, it was found that five mineral claims had been pegged in the licence area by Cyprus/Greenbushes after the application for EL 5847 had been made.

3. MINING HISTORY

The McCarthy's Lead Mine is the only known mine on the tenement. The mine reportedly, Walpole (1962) produced 488.5 tons of high grade pyromorphite and galena silver ore, which was handpicked from shallow workings (20-25m).

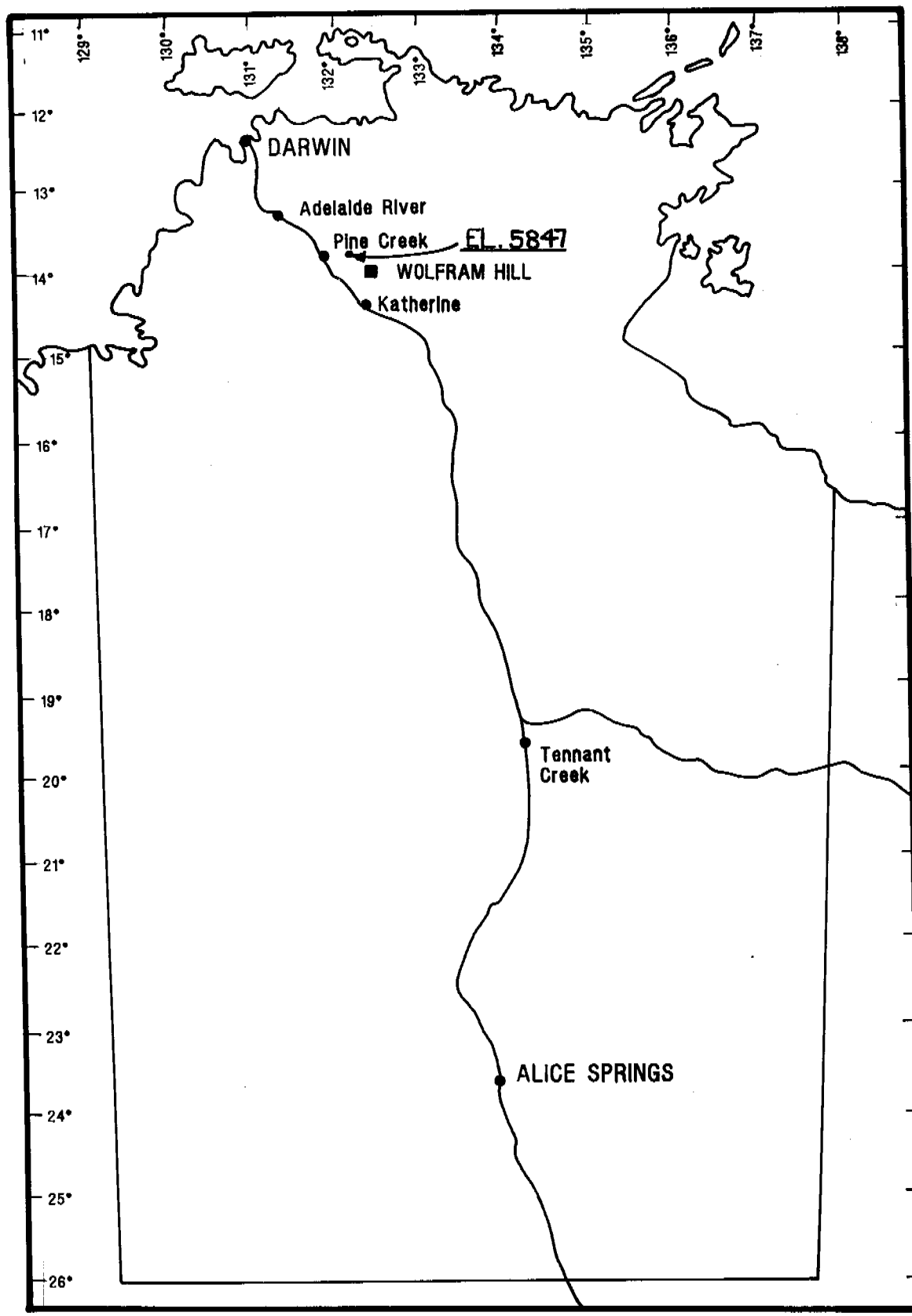


Figure 1

LOCALITY MAP

Scale Approx. 1 : 8,000,000

In 1916 the main shaft had been sunk to 24.4m, but a "heavy influx of water suspended operations". The lode at "the bottom was 3ft (0.91m) wide and of solid galena". In the period 1915-16 a total of 178 tons of ore with an average 70% Pb and 10ozs of silver per ton was shipped.

In 1966 United Uranium (A G Storm DME Report No. CR 66/38) drilled 16 percussion holes totalling 373.4m or 23.3m average per hole into the projected extensions of the McCarthy Lodes. One hole No. 12 intersected 4% lead in the last 1.52m sample of the hole before wet conditions prevented further drilling. This appears to have been the problem with the bulk of the holes drilled in this programme. The holes were prematurely stopped due to wet conditions (4 holes in northern workings and at least 1 hole in northern workings) or the loss of dust (4 holes in southern workings).

United Uranium also carried out a soil sampling programme in the vicinity of the old workings. Coincident lead and zinc anomalies north of the northern workings and on strike with the mineralized shear through the main working warrants further evaluation.

In 1968 C R Weber carried out mapping and trace element analysis of the rock types in the McCarthy's Area (CR 68/84 A & B). This was followed by reconnaissance stream sediment sampling.

4. REGIONAL GEOLOGY

The project area lies immediately north and east of the Cullen River Batholith (Figure 2). Locally the batholith consists of the more southern Allamber Springs Granite, which is course grained to porphyritic biotitic pink granite and McCarthy's Granite, which is a darker course grained biotite/hornfels granite.

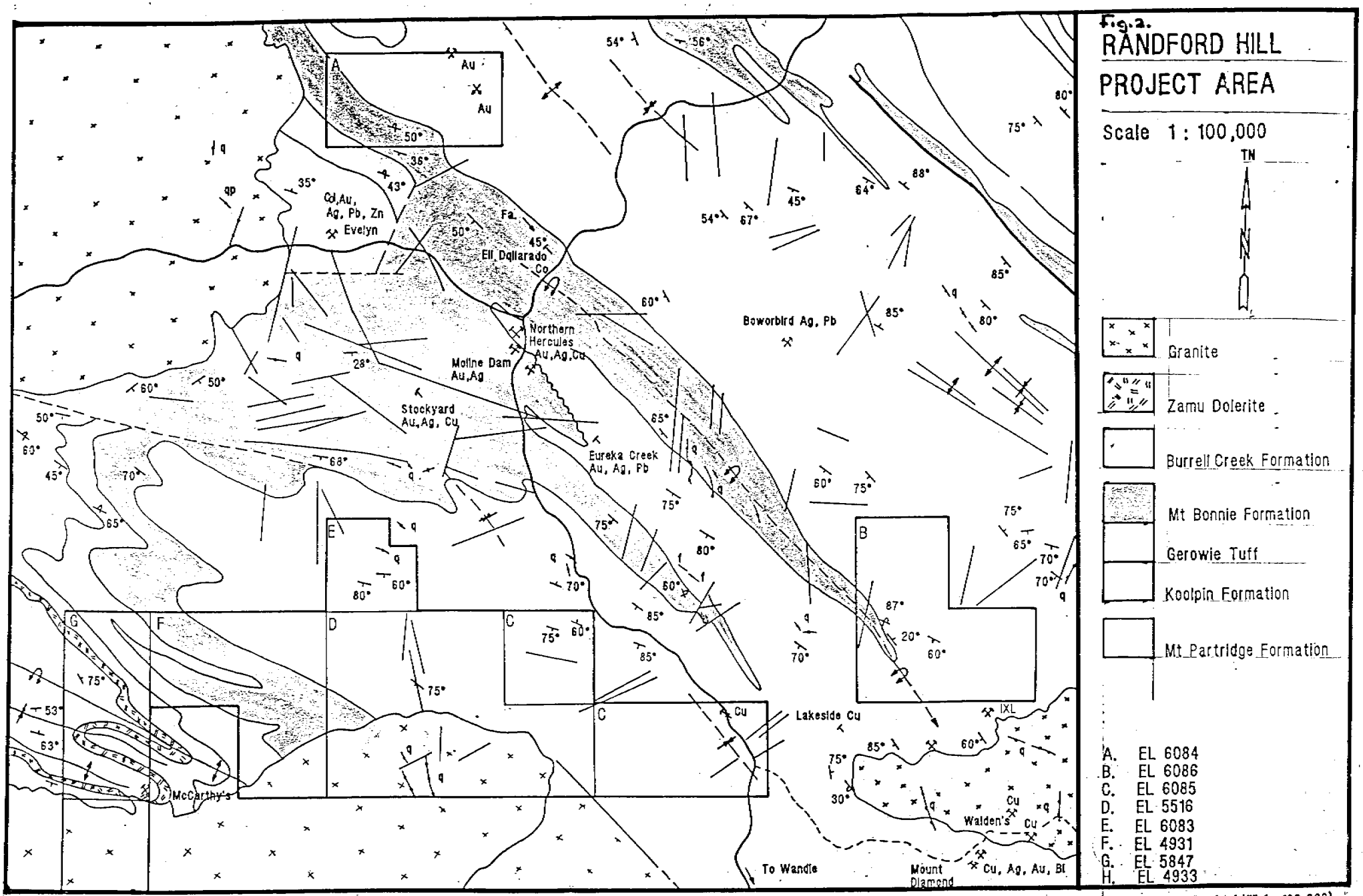


Fig.2.
RANDFORD HILL
PROJECT AREA
Scale 1 : 100,000
TN
Granite
Zamu Dolerite
Burrell Creek Formation
Mt Bonnie Formation
Gerowie Tuff
Koolpin Formation
Mt Partridge Formation
A. EL 6084
B. EL 6086
C. EL 6085
D. EL 5516
E. EL 6083
F. EL 4931
G. EL 5847
H. EL 4933
(Adapted from Ranford Hill 1 : 100,000)
Au
Au
Cd,Au, Ag, Pb, Zn
Evelyn
Fa
Ell Dqllarado Co
Northern Hercules Au,Ag,Cu
Boworbird Ag, Pb
Moline Dam Au,Ag
Stockyard Au,Ag, Cu
Eureka Creek Au, Ag, Pb
Lakeside Cu
IXL
Walden's
Cu
McCarthy's
To Wandle
Mount Diamond
Cu, Ag, Au, Bi

Adjacent to the granite batholith is an attenuated and asymetrically folded sequence of Proterozoic sediments of the Finniss River Group, the South Alligator Group and the Mt Partridge Group. EL 5847 covers a portion of this folded sequence (Figure 2). Locally the Burrell Creek Formation (Finniss River Group) consists of grey green siltstones, shales and near the granite batholith boitite hornfels. The Koolpin Formation (South Alligator Group) is a fine grained carbonaceous, cherty hornfels.

This sequence of folded sediments is associated with a major magnetic anomaly as can be seen from the BMR's 1:500,000 magnetic contour map for the Pine Creek Geosyncline.

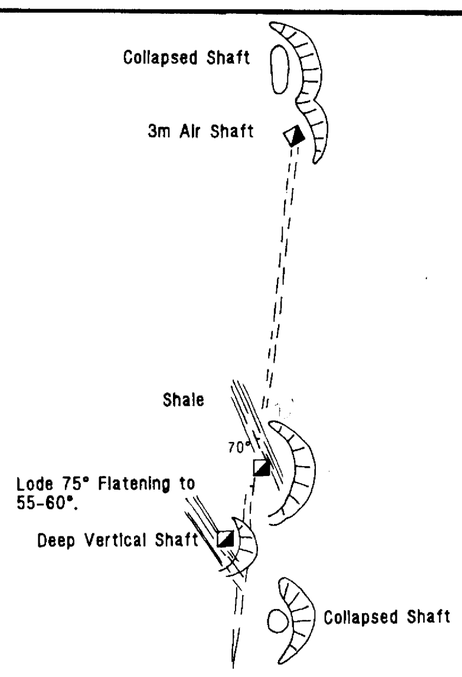
Within the region, gold mineralization is hosted by the South Alligator River and Burrell Creek Formation sediments often in structurally complex quartz veined and stockworked environments. Relatively small, rich silver-lead deposits associated with shear zones and often relatively close to granite stocks or batholiths are relatively common within the Pine Creek Geosyncline (eg. Evelyn, McCarthy's, McKinlays, Flora Bell, Pickfords etc). Uranium hosted by carbonaceous South Alligator River Sediments has been noted north-east of this region.

Therefore, gold, base metals and to a lesser extent uranium were initially considered the major exploration targets for the project area.

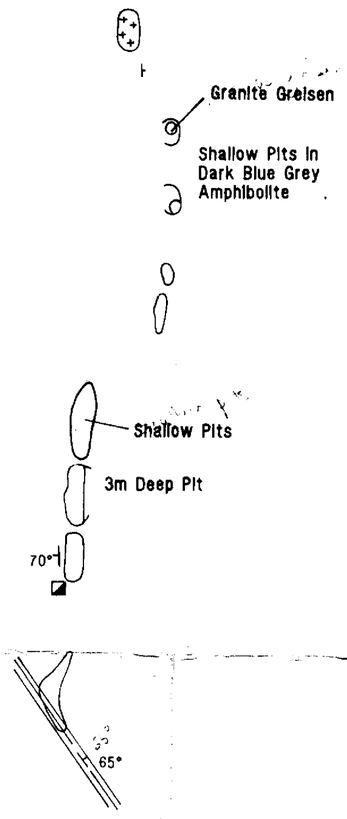
5. EXPLORATION COMPLETED

5.1 McCARTHY'S MINE

The old McCarthy's Mine workings were mapped (Figure 3) by pace and compass. There are two separate groups of workings separated by approximately 160m.



NORTH McCARTHY'S



SOUTH McCARTHY'S

Granite 200m East ⇨

○ Shallow Pit

Shales

Granite and Aplite Dykes

McCARTHY'S

Ag/Pb MINE

SCALE 1 : 500

CR89/222

The northern workings cover a 70m strikelength along an almost N-S trenching shear zone, which is a maximum of 1m wide. The shear is discordant to the surrounding banded chiastolite carbonaceous silts and shales which strike in a NW-SE direction and dip steeply NE. Mineralization is restricted to a number of pods and possible shutes within the shear zone. The shear dips to the west at approximately 75 flattening to 55-60 in places at depth.

Muscovite is present on joints reflecting the proximity of the mineralized zone to the granites to the east and south. Sampling of this lode by United Uranium NL yielded results of 26.5% Pb over 0.91m (nth face) and 19.5% Pb over 0.84m (sth face) at a depth of 9.1m. However, at 12.2m the lode on the north face was reduced to 0.23m which assayed 2.1% Pb and the lode on the south face 4.8% Pb over 0.38m. Sample 7011 (Table 1) was collected from the dumps, to determine the gold, silver and zinc content of the lode.

TABLE 1 - McCARTHY'S MINE DUMP ROCK CHIP SAMPLING

	Au g/t	Pb %	Ag ppm	Zn %	Description
7011	<.008	17.0	12	.57	Ferruginous felsic muscovite tuff pyromorphite cherty box work
7013	<.008	16.6	42	.10	Pyromorphite Qtz - blue-grey felsic
7015	<.010	20.0	54	.30	Blue-grey shale pyromorphite, Tr galena

Unlike other Silver - Pb - Zn deposits in the Pine Creek Geosyncline the McCarthy's Lead Deposit contains virtually no gold mineralization. Other similar deposits, Flora Belle, McKinlay and Pickfords carry from 0.25 - 1gm/t Au.

The southern workings at McCarthy's cover a N-South strikelength of approximately 70m with partially infilled shallow pits, shafts and a small open cut. Again the shear is discordant to the NW striking host rocks which include silts, shales and actinolite amphbolite.

In the south, granite or an aplitic dyke is exposed close to the workings. The Cullen Creek Batholith outcrops only 90m south and approximately 200m east of the southern workings at McCarthy's. United Uranium's sampling of the lode gave assays of 25% Pb and 7.5% Pb over 0.61m.

Dump samples 7013 and 7015 (Table 1) show the southern lead lode has no gold, little zinc and moderate to weak associated silver mineralization.

5.2 ROCK CHIP GEOCHEMISTRY McCARTHY'S MINE AREA

This work was previously carried out as part of a programme involving the evaluation of EL 4933. However, the use of aerial photographs showed the rock chip sampling was immediately north of the licence boundary within EL 5847. One sample 7007 (Table 2) returned a significantly anomalous gold value of 1.0gm/t Au. However, resampling of this site failed to repeat this assay and it was concluded the result was due to laboratory contamination.

TABLE 2 - EL 5847 ROCK CHIP SAMPLING RESULTS - SOUTH

Sample No	Co-Ordinates n	Co-Ordinates w	As ppm	Au g/t	Pb ppm	Zn	Rock Description
N/S	1000	100					No outcrop
7000	900	100	4	<.008	85	30	Blue/grey vesicular tuff-aceous rock no Fe/Q
7001	800	100	50	<.008	285	285	Fe rich red/brown griesen muscovite present
7002	700	100	360	<.008	235	155	Blue/grey tuff qtz veined strongly Fe
7003	600	100	68	<.008	480	325	Blue/grey fine grained shale Qtz/musc/felds/ griesen milky qtz to 3cms
End of line 100W granite contact at 560N							
7004	1000	400	63	<.008	25	380	Blue/grey Fe tuff shale 10mm amphib needles
7005	900	400	36	.009	40	85	Blue/grey shale felsic/mica alteration amphib needles
7006	800	400	46	<.008	<5	35	Blue/grey shale felsic/mica alteration amphib needles
7007	1000	700	65	1.0	65	780	Blue/grey silicious shale vesicular no Fe/q
7008	900	700	80	.016	10	55	Blue/grey Fe Qtz veined tuffaceous shale
7009	1000	516	160	<.018	235	135	Grey silic, shale Fe on joints boxwork - gossanous, qtz veining

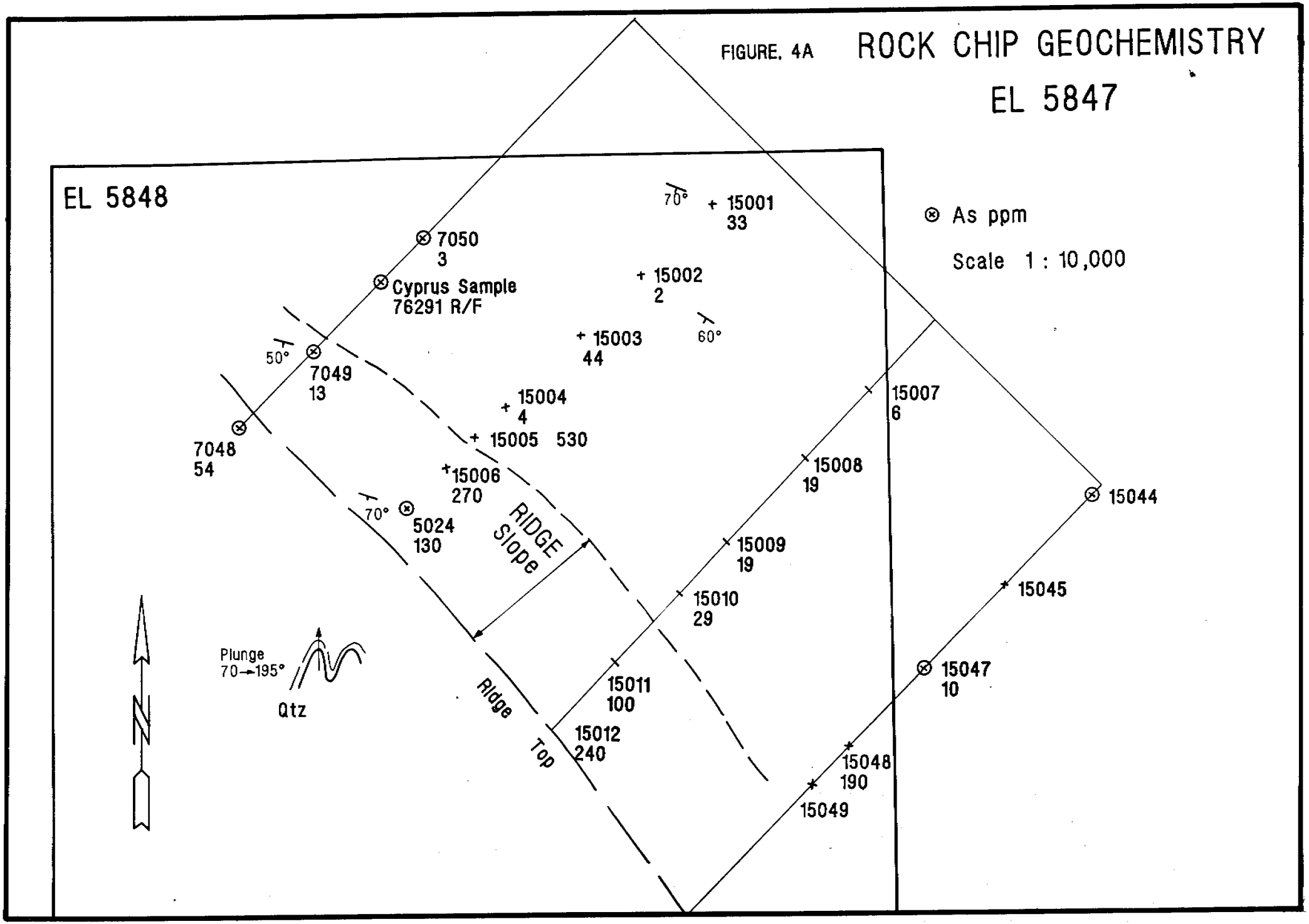
5.3 PRELIMINARY ROCK CHIP SAMPLING - NORTH

It was decided that a rock chip geochemical sampling programme was the appropriate method to test for mineralization associated with the magnetic anomaly outlined by the BMR over the folded sequence of Gerowie Tuff, Koolpin Formation and Zamu Dolerite in the centre and north of EL 5847. Four grid lines at 500m spacings were pegged over the northern part of the exploration licence, perpendicular to the strike of the major rock units. Rock chip samples were collected at approximately 200-250m intervals along each line. Preference was given to sampling ferruginous or quartz veined outcrops if they were available. In the north-east the topography was flat and undulating, with outcrop moderate. As indicated on Figure 4A the topography rose steeply up a 300m wide ridge slope to the crest of the ridge in the centre of the licence area. The ridge top is a prominent topographic feature striking 320 m. Along the crest of the ridge is a strongly ferruginous gossan in a grey silicious siltstone, with minor quartz veining. The quartz has been asymetrically folded.

As indicated in Figures 4A, B and C and Table 3 the ferruginous gossanous ridge capping is strongly anomalous in arsenic, and probably anomalous in lead, zinc, silver and copper, although additional work will be required to establish background values for these elements.

FIGURE. 4A

ROCK CHIP GEOCHEMISTRY
EL 5847



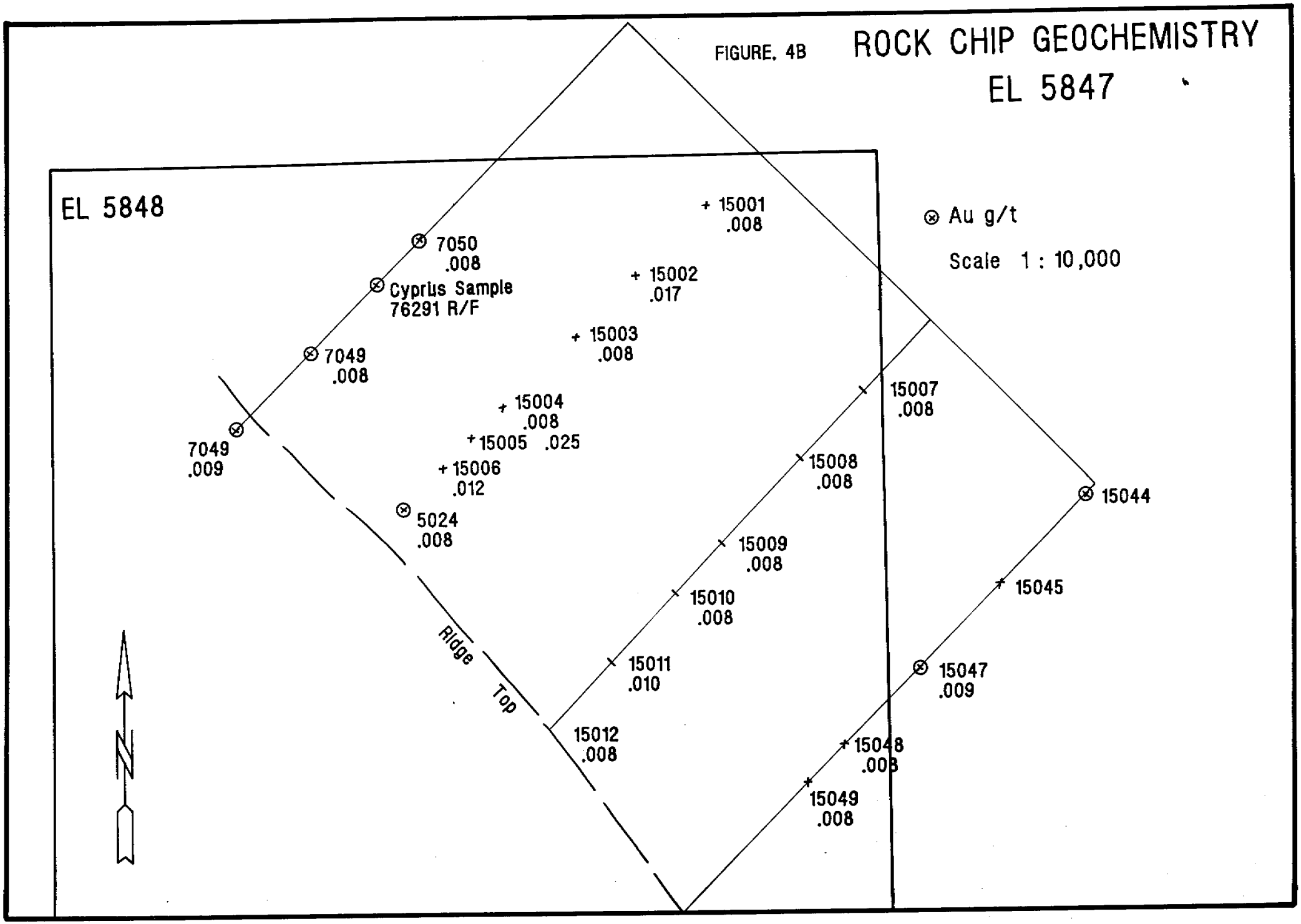


FIGURE. 4B
ROCK CHIP GEOCHEMISTRY
EL 5847
EL 5848
⊗ Au g/t
Scale 1 : 10,000
+ 15001
.008
⊗ 7050
.008
Cyprus Sample
76291 R/F
+ 15002
.017
+ 15003
.008
⊗ 7049
.008
+ 15004
.008
+ 15005 .025
7049
.009
+ 15006
.012
⊗ 5024
.008
15007
.008
15008
.008
⊗ 15044
15009
.008
15045
15010
.008
Ridge Top
15011
.010
⊗ 15047
.009
15012
.008
+ 15048
.008
15049
.008
N

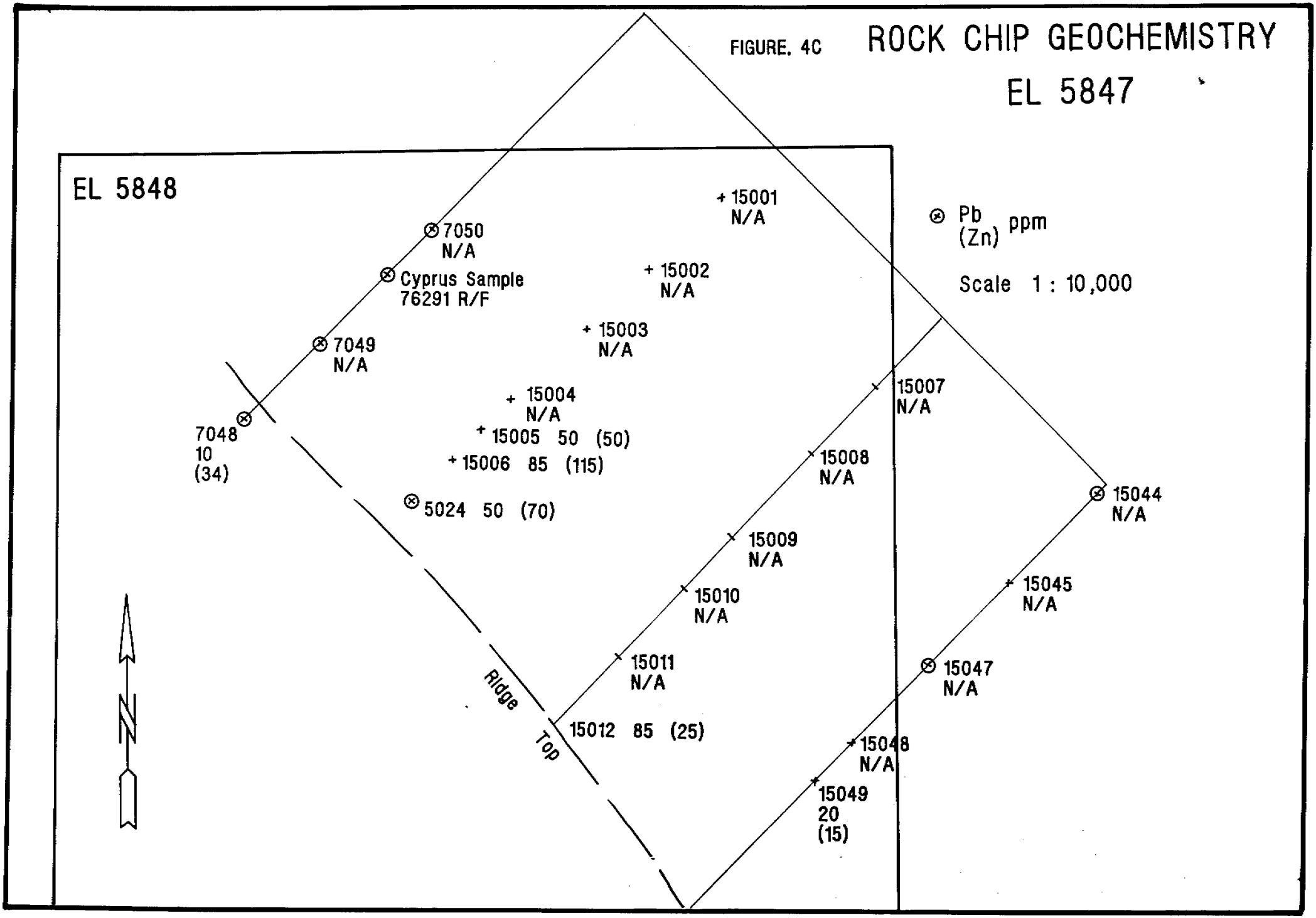


FIGURE. 4C
ROCK CHIP GEOCHEMISTRY
EL 5847
EL 5848
Pb
(Zn) ppm
Scale 1 : 10,000
7050
N/A
Cyprus Sample
76291 R/F
7049
N/A
7048
10
(34)
15001
N/A
15002
N/A
15003
N/A
15004
N/A
15005 50 (50)
15006 85 (115)
5024 50 (70)
15007
N/A
15008
N/A
15009
N/A
15010
N/A
15011
N/A
15012 85 (25)
15044
N/A
15045
N/A
15047
N/A
15048
N/A
15049
20
(15)
Ridge
Top
N

6. ESTIMATED EXPENDITURE EL 5847 1988/89

The table below is an estimate of the expenditure on EL 5847 for the year ending March 1989.

Item	Estimated Cost
Arifares (1 1/2 Perth-Darwin)	$ 1,500.00
Tenement Administration	$ 500.00
Vehicles (2 x 4x4)	$ 1,000.00
Fuel, Oil and Tyres	$ 400.00
Legal	$ 500.00
Field Assistants	$ 3,200.00
Geologist	$ 4,200.00
Communications	$ 250.00
Accommodation/Messing (Pine Creek, Darwin)	$ 2,000.00
Assays	$ 750.00
Sample Bags and Supplies (Consumables)	$ 100.00
Office (Perth and Darwin)	$ 1,600.00
Drafting	$ 120.00
Report	$ 500.00
Surveying (preliminary)	$ 1,500.00
Field Equipment (Airphoto's etc)	$ 200.00
Administration Overheads	$ 2,500.00
Engineer Services	$ 1,000.00
ESTIMATED TOTAL	$21,820.00

TABLE 3 - ROCK CHIP GEOCHEMISTRY NORTHERN AREA - RANFORD HILL EL 5847

SAMPLE NO	DESCRIPTION	Au G/T	AS ppm	O ppm	Ph ppm	Zn ppm	Ni	Cu	Ag
LINE 1									
7048	gy silic. s/st, fe-gossanous, brecciated, asyset. folded	0.009	54	<1	10	34			
7049	dk. gy to blk chert,tr. fe no qtz	lt.008	13						
7050	dk. bl-gy or rb cherty shale, sin aky qtz,tr,fe	lt.008	3						
LINE 2									
15001	bk & rb chert, aky qtz vein	lt.008	33						
15002	blk chert, well cleaved weather gy-b	0.017	2						
15003	sub o/c blk cherty sh, aky qtz veining, fe-bx	lt.008	44						
15004	blk-gy chert, massive no qtz	lt.008	4						
15005	fe bx gossan, scree	0.025	530	1	50	50	10	100	.5
15006	rb - ppl s/st, fract. cemented with fe bx gossan, sub o/c	0.012	270	1	85	115			
5024	rb s/st, fe gossanous, bx, brecciated, asymetric folded	0.008	130	1	50	10	15	85	1.0

SAMPLE NO	DESCRIPTION	Au G/T	AS ppm	O ppm	Ph ppm	Zn ppm	Ni	Cu	Ag
LINE 3									
15007	gy blk amphib, 1-2mm liotite lenzes in fg dk silic astrix	lt.008	6						
15008	gy b silic s/st-chert with 1mm biotite lenzes	lt.008	19						
15009	gy gn s/st silic & chert in places, weak fe qtz veining	lt.008	19						
15010	gy-blk carbonaceous s/st, nmo fe cr qtz	lt.008	29						
15011	b-gy chert, fe gossanous bx, min glassy gy qtz veining	0.010	100						
15012	lt.gy s/st, strongly fe gossanous bx, min blk chert	lt.008	240	2	85	25			
LINE 4									
15046	blk ag dolerite, not assayed	N/A							
15047	blk chert, 1cm wide boudinage texture, qtz authiganic & 1m vlets, tr fe	0.009	10						
15048	rb-lt b s/st. fract weakly fe (1m vlets no qtz)	lt.008	190						
15049	gy chert & ppl s/st, fe stained poss, bx qtz veining to 2 cms - sky	0.008	N/A	<1	15	20			