14.5

EXPLORATION LICENCE 5046 MT OSBORNE

NEAR HAYES CREEK NORTHERN TERRITORY

REPORT FOR THE YEAR ENDING 6 JANUARY, 1988

PREPARED FOR OCEANIA EXPLORATION AND MINING N.L.

by
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GEONORTH
DARWIN N.T.

JANUARY, 1988

CONTENTS

A. SUMMARY

Exploration Licence 5046 is in the southeastern sector of a synclinorial region lying between major domes at Brocks Creek and Golden Dyke. It is underlain by greywackes and siltstones of the Burrell Creek Formation apart from a small area of Mt Bonnie Formation banded iron formation and black slate in an anticlinal core in the extreme southeast of the area. A gold exploration programme, carried out between July and December 1987, comprised geological reconnaissance and soil stream sediment and rock-chip geochemistry and was completed at a cost of $11,693. This work disclosed anomalous gold values associated with a zone of quartz-hematite mineralisation in Burrell Creek Formation in the southwest and with the banded iron formations in the southeast. Proposals are made for follow-up mapping and sampling at an estimated cost of $15,400.

1. INTRODUCTION

Exploration Licence 5046 is situated 140 kilometres southeast of Darwin and 50 kilometres northwest of Pine Creek in the Bachelor 1:100,000 sheet area. Hayes Creek is situated four kilometres south of the area.

The Exploration Licence was granted to Oceania Exploration & Mining NL for a two year term commencing 7th January 1987. It includes four one-minute square blocks with a total area of 13.3 square kilometres.

Topographically the area consists of three main sectors, a northwestern portion of undulating, largely soil covered country, a central rugged plateau area extending southwest from Mt Osborne, and a southeastern portion of low undulating country separated from the Mt Osborne plateau by an abrupt linear escarpment.

Vehicle access into the area can be gained from the road to the radio repeater tower in the north, and from the old Darwin-Katherine road which crosses the southeast corner (4WD only).

This report describes geological and geochemical surveys carried out between July and December 1987 by GEONORTH on behalf of Oceania Exploration & Mining NL.

2. GEOLOGY AND MINERALISATION

2.1 Regional Features

The Exploration Licence is in the Cullen Mineral Field which lies centrally within the Pine Creek Geosyncline (Stuart Smith & Needham 1984). The geosyncline contains Early Proterozoic, dominently clastic sediments, and minor volcanics, which were folded and metamorphosed between 1870 and 1800 m.y. The sediments are intruded by pre-orogenic mafic sills and late synorogenic to post-orogenic granitoid plutons. The granitoids contact metamorphosed the sediments and mafic intrusives to hornblende hornfels and albite-epidote hornfels facies. Largely undeformed Late Proterozoic, Palaeozoic and Mezozoic strata rest on the Early Proterozoic rocks with marked unconformity.

Table 1 summarises the stratigraphic succession in the area surrounding EL 5046.

Mineral deposits of the Cullen Mineral Field are of both epigenetic-hydrothermal type and stratabound-syngenetic type.

The hydrothermal types are by far the most numerous and show a broad regional zonation from uranium through tungsten, copper, tin, silver-lead to gold with increasing distance from granitoid contacts. Nearly all the deposits are in the granitoids or their contact metamorphic aurioles. They are commonly located within north to northwest trending shear zones and/or anticlinal hinge lines.

The hydrothermal gold deposits are widespread and occur in sulphide-bearing quartz veins, the dominent sulphides being pyrite and arsenopyrite. The most important host rocks are interbedded greywackes and slates which are best developed in the Mt. Bonnie and Burrell Creek Formations. In the axial zones of major anticlines these formations host quartz vein systems in fissure veins, saddle reefs and stockworks such as form the orebodies at Pine Creek, Goodall, Zapopan and Fountain Head among others. Relatively minor quartz - gold vein systems also occur in the Koolpin Formation, Gerowie Tuff and Zamu Dolerite.

TABLE 1 - SUMMARY OF STRATIGRAPHY

MESOZOIC	Jurassic to late Cretaceous		PETREL FORMATION	Quartz sandstone & minor conglomerate.
		---------- unconformity ----------		
PALAEOZOIC	Cambrian to Ordovician	DALY RIVER GROUP	TINDALL LIMESTONE	Limestone with chert bands and nodules.
			JINDARE FORMATION	Quartz sandstone.
		---------- unconformity ----------		
MID PROTEROZOIC		TOLMER GROUP	STRAY CREEK SANDSTONE	Quartzite and micaceous siltstone.
			DEPOT CREEK SANDSTONE	Quartz sandstone.
		---------- unconformity ----------		
EARLY PROTEROZOIC	Cullen Batholith		FENTON, BURNSIDE, MARGARET, SHOOBRIDGE AND CULLEN GRANITES	Granite, adamellite and granodiorite.
		---------- folding metamorphism and granite intrusion ----------		
			ZAMU DOLERITE	Quartz dolerite and amphibolite.
		FINNISS RIVER GROUP	BURRELL CREEK FORMATION	Feldspathic greywacke and siltstone.
		SOUTH ALLIGATOR GROUP	MT. BONNIE FORMATION	Feldspathic greywacke, siltstone, mudstone, black shale, tuff and banded iron formation.
			GEROWIE TUFF	Tuffaceous chert and siltstone.
			KOOLPIN FORMATION	Ferruginous and carbonaceous argillite, chert and banded iron formation.
		---------- warping ----------		
		MOUNT PARTRIDGE GROUP	WILDMAN SILTSTONE	Siltstone, carbonaceous shale and quartz sandstone.
			MUNDOGIE SANDSTONE	Feldspathic sandstone, micaceous quartzite, minor chert and conglomerate.
		---------- warping ----------		
		NAMOONA GROUP	MASSON FORMATION	Carbonaceous shale, siltstone, minor quartzite.

The syngenetic stratabound deposits are relatively few in number. They include lead-zinc-silver (gold, tin) deposits associated with bedded sulphides in carbonaceous argillites of the South Alligator and Mt. Partridge Groups (e.g. Jessops, Mary River, Namoona), volcanogenic polymetallic (Pb, Zn, Ag, Au) sulphide lenses in Mt. Bonnie Formation (e.g. Mt. Bonnie Iron Blow); gold associated with banded iron formation in the Koolpin and Mt. Bonnie Formations (e.g. Cosmo Howley, Golden Dyke, Spring Hill).

The syngenetic deposits have in some cases probably been remobilised and locally enriched during metamorphism and deformation. Deep oxidation and lateritic weathering have also been factors in producing ore from metallurgically difficult or low grade primary mineralisation (e.g. Mt. Bonnie, Golden Dyke).

2.2 Local Geology and Mineralisation

The Mt Osborne area is situated towards the SE margin of a broadly synclinorial region that intervenes between domal structures of the Golden Dyke Dome to the southeast and Brocks Creek to the northwest (see Figure 3.)

Most of the area is underlain by siltstones and greywackes of the Burrell Creek Formation. These are well exposed in the rugged plateau area extending SSW from Mt Osborne where they dip steeply west-northwest. They also underly most of the plains area in the southeast but there is little exposure.

In the extreme southeast corner of the Exploration Licence area is a strong ridge feature formed by banded cherty ironstones and black shales interpreted as Mt Bonnie Formation in the axial zone of a NNE-plunging anticiline.

On the Mt Osborne plateau several zones of irregular poddy quartz veins are associated with abundant specular hematite and hematitic alteration of the country rock. These zones trend parallel to the strike of the country rocks and are up to 50 metres wide and several hundred metres length. A scattering of small mine workings extend over some 600 metres along one of these quartz-hematite zones in the south of the area.

3. WORK CARRIED OUT

The exploration work carried out included photogeology, geological reconnaissance, rock chip sampling of quartz, ironstone and gossan, stream sediment sampling of the elevated areas where drainage was well developed, and soil sample traversing of the plains areas where drainage was ill defined.

Figure 4 illustrates the main geological features and also shows locations of rock, stream sediment and soil samples.

Analytical results are included in Appendixes I, II and III.

The soil sample traverses were laid out selectively to test outcrop and sub-outcrop avoiding extensive areas of transported soil and alluvium. Samples were taken at 20-30cm depth at 25m intervals along east-west traverse lines, and the minus 80 mesh fraction was analysed for gold, arsenic, copper, lead and zinc. Spacing between traverse lines varied from 200 metres to 800 metres.

The stream sediment samples consisted of the minus 80 mesh fraction of active sediment and were analysed for gold, arsenic, copper, lead and zinc.

4. DISCUSSION OF RESULTS

Rock chip samples reporting significant gold values were the following:-

MC 132	0.53 g/t	MC 154	11.0 g/t
135	0.11 g/t	204	0.10 g/t
139	0.10 g/t	228	0.12 g/t
147	0.17 g/t	231	0.09 g/t
153	0.10 g/t		

All other samples contained < 0.10 g/t gold.

Samples MC 147, 153 and 154 are banded iron formations from Mt Bonnie Formation in the southeast.

Sample MC 132 is from the line of old workings on hematite and quartz in the southwest.

Sample MC 135 is of quartz from close to an area having very high gold values in soils (see below).

A preliminary inspection of the soil sample analyses is summarised as follows:-

	Range	Nominal Threshold	No. of Values Above Threshold
GOLD	< 1 - 300ppb	4ppb	6
COPPER	< 2 - 780ppm	99ppm	13
LEAD	< 5 - 180ppm	24ppm	12
ZINC	6 - 890ppm	99ppm	17
ARSENIC	< 20 - 450ppm	99ppm	44

These results show two particular anomalous areas. Firstly, in the southeast, the area of black shales and banded iron formations in the Mt Bonnie Formation contains high values in gold, arsenic and base metals, indicating a very high background in these metals and potential for mineralisation. Secondly, exceptionally high gold values in soils (without other anomalous metals) occur on the most southwesterly traverse line (samples MC 1138-41).

Bulk stream sediment samples containing possibly anomalous gold are as follows:-

MC 2	150ppb	CS 31	2000ppb	in ppt
MC 4	1950ppb	CS 33	2200ppb	not ppb !

Samples MC 2, MC 4 and CS 200 are from drainages originating from areas in which anomalous soils and/or rock samples were obtained. Sample CS 33 is from a drainage sourcing outside the EL area.

The minus 80 mesh stream sediment samples did not report any anomalies.

The above results indicate the presence of previously unreported gold mineralisation. Whether this is of economic significance remains to be established.

5. PROPOSALS FOR FUTURE EXPLORATION

Proposals for ongoing exploration comprise detailed mapping and rock chip sampling of the anomalous areas. The estimated costs of completing this work are as follows:

Geological consultants	5,600
Wages and salaries	3,000
Transport	1,500
Consumables	600
Travel and accommodation	9,000
Assay	2,000
Drafting	400
Overheads	1,400
TOTAL	$ 15,400

APPENDIX I

Stream Sediment Samples Analytical Reports

Sample Numbers

MC 1 - MC 4, MC 7 - MC 11, MC 16 - MC 19
CS 31, CS 33, CS 34

MC 100 - MC 103, MC 106 - MC 110, MC 115 - MC 118, MC 251 - MC 261
CS 130, CS 132, CS 133

amdel

ANALYSIS

SAMPLE MARK	Au ppm	Pb ppm	Zn ppm	As ppm	Cu ppm
MC100	<0.01	6	18	17	24
MC101	<0.01	8	22	14	20
MC102	<0.01	8	20	10	12
MC103	<0.01	8	22	<2	14
MC104	<0.01	4	12	5	6
MC105	<0.01	<4	16	<2	6
MC106	<0.01	<4	6	<2	2
MC107	<0.01	<4	28	2	6
MC108	<0.01	<4	10	5	4
MC109	<0.01	4	8	5	4
MC110	<0.01	<4	16	3	8
MC111	<0.01	6	26	<2	6
MC112	<0.01	<4	20	5	4
MC113	<0.01	6	16	<2	4
MC114	<0.01	<4	6	<2	4
MC115	<0.01	<4	8	2	4
MC116	<0.01	<4	20	<2	2
MC117	<0.01	<4	20	5	6
MC118	<0.01	6	20	2	10

METHOD : PM1/3, A2, X3

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LABORATORY REPORT

ient: GEONORTH
ess: 18-20 CAVENAGH STREET
DARWIN
N.T. 5790

Batch Number: G055

act: DR. G. ORRIDGE

No. of Samples: 31
Date Received: 07/07/87
Date Completed: 23/07/87

rder No. VERBAL

Sample Type: STREAM SEDIMENT

SAMPLE NUMBER	Element Unit Method	Au ppt PM216	S.Wt Kg			
MC 1		850	7.76			
MC 2		1500	7.26			
MC 3		200	7.48			
MC 4		1950	6.42			
MC 5		200	8.61			
MC 6		100	8.81			
MC 7		100	9.82			
MC 8		550	6.97			
MC 9		200	7.63			
MC10		900	7.48			
MC11		900	6.29			
MC12		150	6.30			
MC13		150	5.79			
MC14		<50	6.41			
MC15		450	7.42			
MC16		100	5.72			
MC17		300	6.63			
MC18		400	7.98			
MC19		650	6.24			
tection Limit:		50				

mments:

LESS NOTIFIED PULPS WILL BE DUMPED ON 07/01/88 AND SPLITS (IF ANY) ON 07/10/87

Signatory: A.A. Finlayson

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LABORATORY REPORT

Client: GEONORTH
Address: 18-20 CAVENAGH STREET
DARWIN
N.T. 5790

Batch Number: F288

Contact: DR. G. ORRIDGE

No. of Samples: 45
Date Received: 29/06/87
Date Completed: 14/07/87

Order No. VERBAL

Sample Type: STREAM SEDIMENT

SAMPLE NUMBER	Element / Unit / Method	Au ppt PM216	S.Wt Kg			
CS31		2000	7.93			
CS32		350	3.54			
CS33		2200	4.64			
CS34		950	6.11			
Detection Limit:		50				

Comments:

UNLESS NOTIFIED PULPS WILL BE DUMPED ON 29/12/87 AND SPLITS (IF ANY) ON 30/09/87

Signatory: G. J. Kelmister

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FORM 38

REPORT AC D985/87

ANALYSIS PPM

Sample Nº	Au	Cu	Pb	Zn	As			
CS 125	<0.01	<2	15	6	<50			
126	0.07	10	25	10	<50			
127	<0.01	5	21	8	<50			
128	0.02	2	20	10	<50			
129	0.07	<2	21	6	<50			
130	0.07	9	15	8	<50			
131	0.01	2	11	10	<50			
132	0.02	12	9	7	<50			
133	0.02	INSUFFICIENT SAMPLE						
GDA 500	0.06	45	27	24	<50			

METHOD PM1/3, A1, A2.

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FORM 38

REPORT AC D615/88

ANALYSIS PPB

Sample N°	Au		Cu	Pb	Zn	As		
MC 251	2		7	7	9	<20		
252	1		7	<5	6	<20		
253	<		5	<5	6	<20		
254	<		14	5	8	<20		
255	<		15	<	10	<20		
256	<		15	8	10	<20		
257	<		7	<5	8	25		
258	<		9	5	12	<20		
259	<		14	10	22	<20		
260	<		10	8	16	<20		
261	<		11	7	11	<20		

APPENDIX II

Soil Sample Analytical Reports

Sample Numbers

MC 1001 to MC 1306

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technology and enterprise

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FORM 38

REPORT AC D614/88

ANALYSIS ppm

Sample Nº		ppb Au	Cu	Pb	Zn	As	
MC 1001		<1	51	16	93	150	
2		Leaked	not received				
3		<	16	4	9	<20	
4		<	48	17	40	210	
5		<	142	40	109	70	
6		<	64	12	51	75	
7		<	38	9	60	40	
8		<	104	29	84	40	
9		<	56	17	34	90	
10		<	122	30	126	50	
11		<	31	15	31	50	
12		<	96	23	190	400	
13		<	37	15	12	<20	
14		<	60	5	20	210	
15		<	95	24	19	190	
16		<	76	54	17	230	
17		<	69	39	17	190	
18		<	100	25	20	120	
19		<	62	17	16	160	
20		<	55	5	14	20	
21		<	56	9	13	40	
22		<	112	<5	18	30	
23		<	63	12	11	90	
24		<	102	10	20	120	
25		<	37	14	8	60	

PM2/2 , A1/A2

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FORM 16

REPORT AC D614/88

ANALYSIS ppm

Sample N°		ppb Au	Cu	Pb	Zn	As	
MC 1026		< 1	53	10	11	30	
27		<	32	5	8	20	
28		<	780	10	20	30	
29		<	41	29	8	<20	
30		<	<2	14	3	<20	
31		<	21	<5	6	<20	
32		<	55	22	21	20	
33		<	90	25	18	180	
34		<	60	14	12	150	
35		listed	not	received			
36A		<	142	16	17	190	
36B			108	44	14	470	
37		<	43	35	8	500	
38		<	135	29	110	310	
39		<	60	26	51	260	
40		<	150	<5	150	210	
41		<	60	12	62	260	
42		<	155	18	110	240	
43		<	74	17	52	230	
44		<	99	19	73	155	
45		<	76	14	46	130	
46		<	97	15	62	80	
47		<	58	13	35	75	
48		<	28	12	36	75	
49		<	23	6	21	70	
50		<	16	<5	25	35	

Pm2/2 , A1/A2

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FORM 38

REPORT AC D614/88

ANALYSIS

Sample Nº		Au ppb	Cu ppm	Pb ppm	Zn ppm	As ppm		
MC 1051		<	31	10	29	40		
52		<	30	9	49	25		
53		<	36	20	110	<20		
54		<	42	17	120	25		
55		<	41	10	130	25		
56		<	51	18	185	45		
57		<	47	12	185	60		
58		<	41	24	140	100		
59		<	145	180	395	325		
60		<	70	32	52	260		
61		<	60	26	68	170		
62		<	51	22	77	180		
63		<	50	15	72	260		
64		<	57	7	110	325		
65		<	61	10	70	365		
66		<	48	13	43	200		
67		<	64	10	64	290		
68		<	105	16	84	430		
69		<	91	21	80	450		
70		<	67	18	87	280		
71		<	65	16	72	180		
72		<	61	11	72	100		
73		<	88	7	86	75		
74		<	46	7	45	30		
75		<	44	12	77	45		

PM2/2 , A1/A2

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

FORM 3P

REPORT AC D614/88

ANALYSIS ppm

Sample Nº		Au ppb	Cu	Pb	Zn	As		
MC 1076		< 1	45	15	58	50		
77		<	49	17	61	50		
78		<	57	16	77	75		
79		<	48	15	74	75		
80		<	60	18	105	90		
81		<	61	7	110	120		
82		4·7	45	10	145	90		
83		<	44	12	85	50		
84		<	72	16	77	60		
85		<	56	17	57	80		
86		<	65	15	58	125		
87		<	49	21	43	135		
88		<	41	19	59	90		
89		<	37	20	33	130		
90		<	40	16	35	160		
91		<	67	8	59	240		
92		1·5	80	14	73	300		
93		<	93	22	83	240		
94		<	43	9	47	130		
95	listed not received							
96		<	26	5	55	30		
97		<	40	8	75	40		
98		<	32	9	61	25		
99		<	20	8	39	<20		
1100		<	15	7	29	<20		

pm2/2 , A1/A2

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

FORM 38

REPORT AC D614/88

ANALYSIS ppm

Sample Nº		ppb Au	Cu	Pb	Zn	As		
MC 1101		< 1	15	5	34	20		
2		<	17	8	28	<20		
3		<	14	6	30	<20		
4		<	14	6	28	20		
5		<	16	5	34	<20		
6		<	15	7	34	<20		
7		<	19	12	43	20		
8		<	13	4	31	<20		
9		<	16	8	37	<20		
10		< 1	11	7	23	<		
11		<	13	8	30	<		
12		<	14	7	21	<		
13		<	14	4	22	<		
14		<	11	4	18	<		
15		<	11	8	23	<		
16		<	7	<5	26	<		
17		<	12	5	58	<		
18		<	12	5	64	<		
19		<	11	<5	63	<		
20		<	11	<5	58	<		
21		<	7	6	41	<		
22		<	7	5	40	<		
23		<	11	5	51	<		
24		<	11	5	49	<		
25		<	15	6	66	<		

PM2/2 , A1/A2

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

FORM 38

REPORT AC D614/88

ANALYSIS ppm

Sample Nº	ppb Au	Cu	Pb	Zn	As
MC 1126	<	22	6	90	<20
27	<	25	3	62	<
28	<	22	6	56	<
29	<	20	4	105	<
30	<	25	6	77	35
31	<	27	11	66	25
32	<	22	6	48	<
33	<	20	<5	50	<
34	<	21	<	52	<
35	listed	not received			
36A	<	29	<5	44	25
36B		18	15	27	25
37	<	19	10	45	20
38	300	19	15	43	<
39	42	11	8	29	<
40	90	14	7	42	<
41	10	14	7	33	20
42	2	16	7	26	<
43	2	15	6	31	<
44	2	14	4	29	<
45	1	4	5	17	<
46	<	7	<5	25	<20
47	<	12	6	30	<20
48	<	16	<5	40	<20
49	<	13	<5	43	<20
50	<	24	<5	60	<20

pm2/2, A1/A2

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

FORM 3P

REPORT AC D614/88

ANALYSIS

Sample No		ppb Au	ppm Cu	Pb	Zn	As
MC 1151		<1	38	7	59	<20
52		<	36	<5	35	<20
53		<	34	<5	38	<20
54		<	48	5	53	<20
55		<	21	8	49	<20
56		<	20	6	50	<20
57		<	28	<5	39	<20
58		<	24	<5	37	<20
59		<	13	5	29	<20
60		<	12	<5	28	<20
61		<	11	<5	34	<20
62		<	10	5	28	<20
63		<	10	<5	30	<20
64		<	21	<5	30	<20
65		<	21	<5	32	<20
66		<	17	<5	27	<20
67		<	15	<5	36	<20
68		<	19	<5	51	<20
69		<	12	8	32	<20
70		<	23	8	44	<20
71		<	20	7	34	<20
72		<	7	11	23	<20
73		<	26	9	42	<20
74		<	19	<5	42	<20
75		<	15	5	44	<20

Pm2/2 , A1/A2

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

FORM 3P

REPORT AC D614/88

ANALYSIS ppm

Sample Nº		ppb Au	Cu	Pb	Zn	As		
mc 1176		<1	69	<5	43	<20		
77		<	60	<5	54	<20		
78		<	47	8	62	<20		
79		<	25	8	40	<20		
80		<	23	7	34	<20		
81		<	31	<5	43	<20		
82		<	25	<5	8	<20		
83		<	17	9	7	<20		
84		<	15	16	12	<20		
85		<	16	12	9	<20		
86		<	14	11	9	<20		
87		<	16	12	12	<20		
88		<	16	13	10	<20		
89		<	12	7	9	<20		
90		<	11	7	8	<20		
91		<	19	12	10	<20		
92		<	22	11	12	<20		
93		<	17	8	11	<20		
94		<	23	9	14	<20		
95		<	25	8	15	<20		
96		<	21	7	14	<20		
97		<	18	<5	11	<20		
98		<	15	5	11	<20		
99		<	20	6	10	<20		
1200		<	26	<5	7	<20		

pm2/2 , A1/A2

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

FORM 18

REPORT AC D614/88

ANALYSIS ppm

Sample Nº		ppb Au	Cu	Pb	Zn	As		
MC 1201		<1	32	<5	9	<20		
2		1	39	<5	17	<20		
3		<	21	<5	63	<20		
4		<	13	<5	9	<20		
5		<	36	<5	13	<20		
6		<	26	<5	8	<20		
7		<	33	<5	9	<20		
8		<	38	<5	10	<20		
9		<	34	9	9	<20		
10		<	39	5	8	<20		
11		<	45.	<5	9	<20		
12		<	31	8	12	<20		
13		<	29	9	27	<20		
14		<	22	11	12	<20		
15		<	27	12	10	<20		
16		<	30	<5	11	<20		
17		<	32	<5	12	<20		
18		<	33	<5	18	<20		
19		<	34	<5	19	<20		
20		<	31	<5	15	<20		
21		<	32	<5	18	<20		
22		<	24	<5	14	<20		
23		<	30	<5	16	<20		
24		<	24	<5	14	<20		
25		<	33	5	18	<20		

PM2/2, A1/A2

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

FORM 3P

REPORT AC D614/88

ANALYSIS ppm

Sample No		Au ppb	Cu	Pb	Zn	As		
MC 1226		<	27	<5	17	<20		
27		<	38	<5	15	<20		
28		<	34	<5	13	<20		
29		<	45	<5	18	<20		
30		<	43	<5	890	<20		
31		<	35	<5	46	<20		
32		<	39	6	22	<20		
33		<	22	<5	11	<20		
34		<	20	<5	11	<20		
35	NO SAMPLE							
36		<	22	<5	14	<20		
37		<	27	<5	15	<20		
38		<1	20	16	54	<20		
39		<	24	17	66	<		
40		<	23	11	56	<		
41		<	7	9	36	<		
42		3.4	6	6	39	<		
43		<1	7	9	43	<		
44		<	3	8	31	<		
45		<	3	12	36	<		
46		<	<2	6	29	<		
47		<	12	11	49	<		
48		<	8	8	38	<		
49		<	17	11	51	<		
50		<	<2	3	37	<		

PM2/2, A1/A2

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

FORM 18

REPORT AC D614/88

ANALYSIS ppm

Sample Nº		ppb Au	Cu	Pb	Zn	As		
MC 1251		<	12	13	55	<20		
52		<	6	5	45	<		
53		<	13	<5	40	<		
54		2.2	7	7	37	<		
55		<	11	6	49	<		
56		6.6	13	7	61	<		
57		<	22	6	57	<		
58		<	18	7	47	<		
59		<	15	<5	37	<		
60		<	19	5	42	<		
61		<	25	8	55	<		
62		<	15	<5	40	<		
63		<	24	7	55	<		
64		<	20	7	32	<		
65		<	19	5	41	<		
66		<	26	6	67	<		
67		<	27	<5	81	<		
68		<	26	8	93	<		
69		<	45	5	55	<		
70		<	33	<5	69	<		
71		1.0	54	<5	79	<		
72		<	125	5	87	<		
73		<	56	<5	80	<		
74		<1	51	<5	15	<20		
75		<	52	<5	14	<20		

PM2/2 , A1/A2

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

FORM 3H

REPORT AC D614/88

ANALYSIS ppm

Sample No		ppb Au	Cu	Pb	Zn	As		
MC 1276		<	34	<5	13	<20		
77		<	21	<5	11	<20		
78		<	20	<5	10	<20		
79		<	30	5	12	<20		
80		<	23	<5	8	<20		
81		<	21	<5	10	<20		
82		<	49	5	13	<20		
83		<	40	<5	12	<20		
84		<	27	5	11	<20		
85		<	23	<5	12	<20		
86		<	25	<5	11	<20		
87		<	30	<5	9	<20		
88		<	22	<5	11	<20		
89		<	18	<5	9	<20		
90		<	14	<5	8	<20		
91		<	22	5	9	<20		
92		<	22	5	8	<20		
93		<	37	5	10	<20		
94		<	48	5	13	<20		
95		<	36	6	11	<20		
96		<	38	5	13	<20		
97		<	56	7	16	25		
98		<	48	<5	14	30		
99		<	57	7	15	<20		
1300		<	42	<5	16	<20		

PM2/2 , A1/A2

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

FORM 3P

REPORT AC D614/88

ANALYSIS ppm

Sample N°		ppb Au	Cu	Pb	Zn	As		
mc 1301		< 1	99	< 5	21	< 20		
2		<	73	< 5	31	< 20		
3		<	55	12	37	< 20		
4		<	20	< 5	21	< 20		
5		<	18	5	18	< 20		
6		<	14	5	8	< 20		
unlabelled sample		<	47	7	19	45		

PM2/2, A1/A2

APPENDIX III

Rock Sample Analytical Reports

Sample Numbers

MC 201 - MC209, MC 220 - MC 231

MC 131 - MC 160

CS 206

ANALYSIS

SAMPLE MARK	Au ppm
MC200	0.08
MC201	0.05
MC202	0.05
MC203	0.05
MC204	0.10
MC205	<0.05
MC206	0.05
MC207	<0.05

METHOD : PM3/2

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES Mos Rocks

FORM 36

REPORT AC D11/88

ANALYSIS PPM

Sample Nº	Au
MC 208	<0.05
209	<0.05
210	<0.05
211	0.05
212	<0.05
213	0.05
214	0.05
215	<0.05
216	<0.05
217	0.05
218	0.05
219	0.08
220	0.05
221	<0.05
222	0.07
223	<0.05
224	<0.05
225	<0.05
226	0.06
227	<0.05
228	0.12
229	<0.05
230	<0.05
231	0.09

METHOD

PM 3/2

amdel
technology and enterprise

Amdel Limited
(Incorporated in S.A.)
P.O. Box 58
Berrimah, N.T. 5788

Telephone (089) 32 2637
Telex: AA85987

26th November, 1987

Our Ref : D616/88

REPORT NUMBER : D616/88

CLIENT :	Geonorth
CLIENT REFERENCE :	Order Number 6
REPORT COMPRISING :	Cover Page Pages 1&2
DATE RECEIVED :	17th November, 1987

Alan Ciplys
Manager
AMDEL Limited (N.T.)

ANALYSIS

SAMPLE MARK	Au ppm	Au (ppm) QC CHECKS
MC131	0.01	
MC132	0.53	
MC133	0.04	
MC134	0.02	
MC135	0.11	
MC136	<0.01	
MC137	<0.01	
MC138	<0.01	
MC139	0.10	
MC140	0.02	<0.01
MC141	0.06	
MC142	0.03	
MC143	<0.01	
MC144	<0.01	
MC145	<0.01	
MC146	<0.01	
MC147	0.17	
MC148	0.03	
MC149	0.06	
MC150	<0.01	
MC151	0.08	
MC152	<0.01	
MC153	0.10	
MC154	11.0	
MC155	0.05	0.03

METHOD : PM3/2

ANALYSIS

SAMPLE MARK	Au ppm	Au (ppm) QC CHECKS
MC156	0.05	
MC157	0.06	
MC158	0.05	
MC159	0.01	
MC160	<0.01	
MC161	0.02	
MC162	<0.01	
MC163	<0.01	
MC164	<0.01	
MC165	0.02	0.01
MC166	0.03	
MC167	0.02	
MC168	0.01	

METHOD : PM3/2

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

FORM 38

REPORT AC D985/87

ANALYSIS PP17

Sample Nº	Au							
LA 101	0.05							
102	<0.05							
103	<0.05							
104	0.06							
105	0.08							
CS 200	<0.05							
201	<0.05							
202	0.05							
203	<0.05							
204	0.07							
CS 206	0.05							

METHOD PM 3/2.

APPENDIX IV

Exploration Expenditures

ADDITIONAL WORK CARRIED OUT ON EXPLORATION LICENCE 5046

During November and December 1987 an airborne magnetic and radiometric survey was carried out within the area of this licence as well as a number of other licences in the Mount Bundey area.

The survey involved a total of 2,200 line kilometre with the following specifications:-

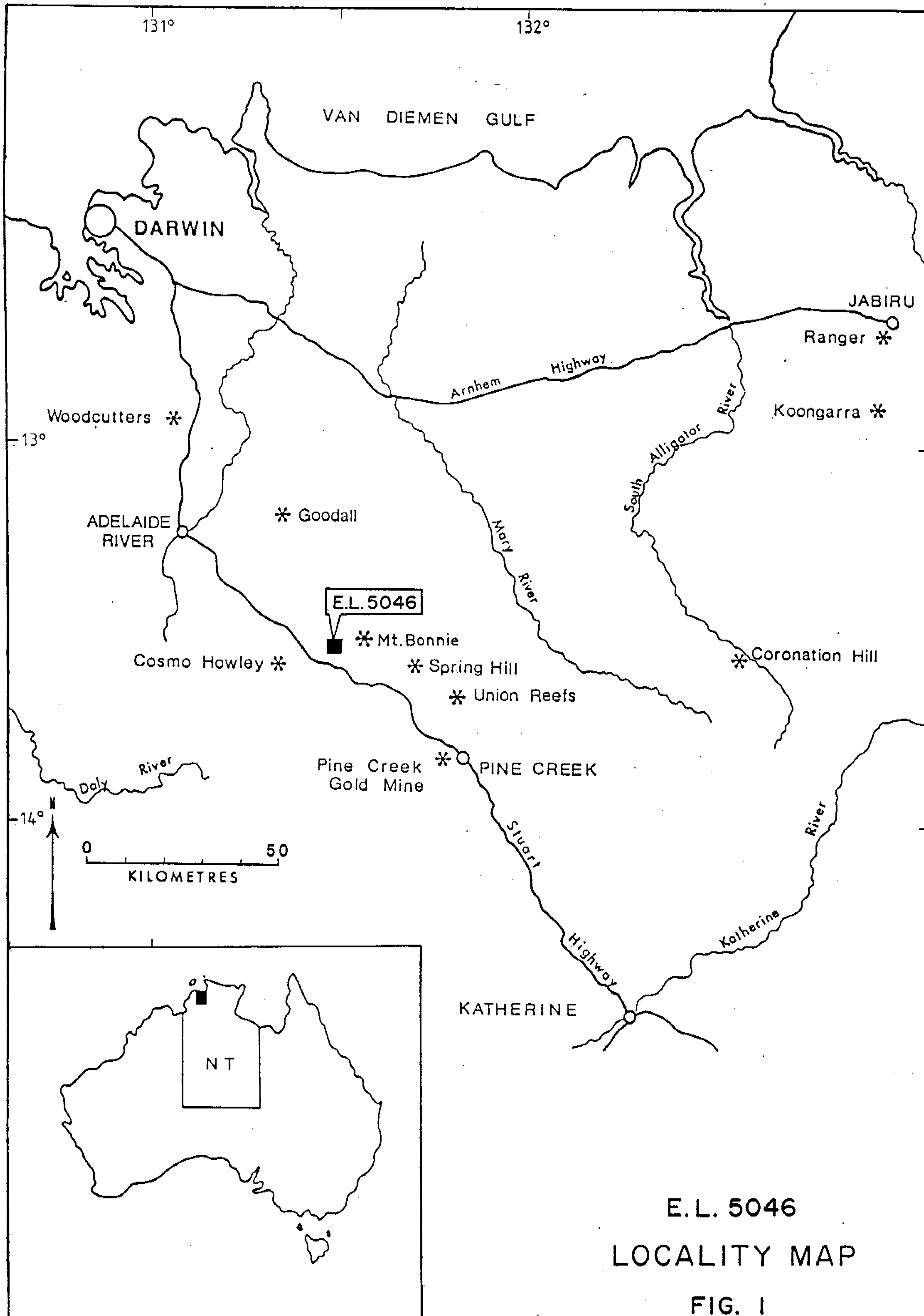
Flight line spacing	-	200 metres
Tie line spacing	-	5,000 metres
Flight line directions	-	East-West
Tie line direction	-	North-South
Nominal sensor height	-	70 metres
Magnetometer cycle rate	-	0.2 seconds
Magnetometer sample interval	-	14 metres
Spectrometer cycle rate	-	1.0 seconds
Spectrometer sample interval	-	70 metres
Magetometer resolution	-	0.06 nT
Magnetometer noise envelope	-	less than 0.25 nT

The data from this programme is still being interpreted with results expected by mid-March.

EXPLORATION LICENCE 5046

Exploration expenditures during the year ending 6th January, 1988 are estimated to be as follows:

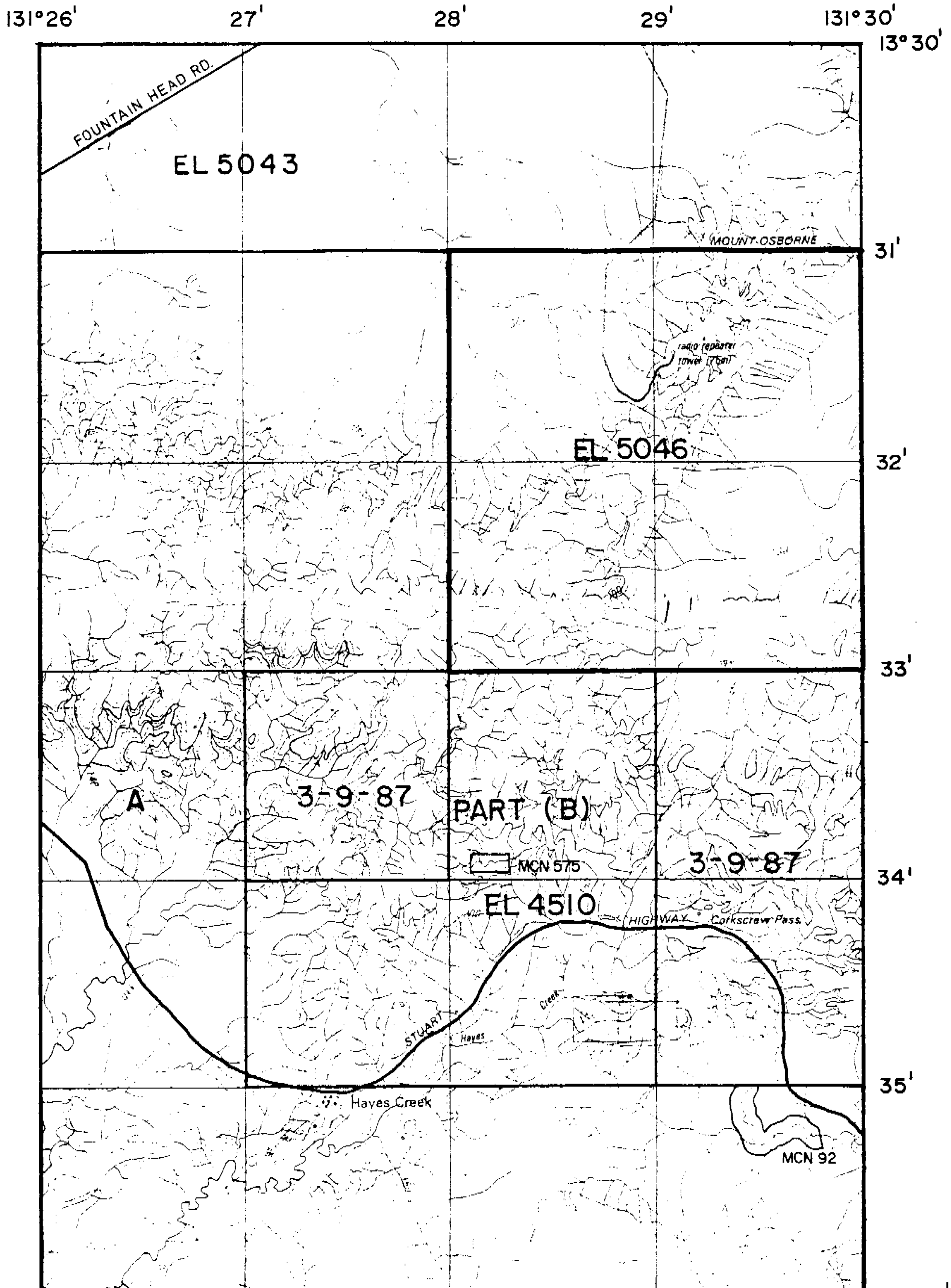
Geological consultants	3,250
Wages and Salaries	1,875
Transport	875
Consumables	437
Accommodation and Travel	699
Assays	4,386
Airborne magnetic survey	5,500
Plan and report preparation	189
Administration	2,582
	$19,793



E. L. 5046

LOCALITY MAP

FIG. 1



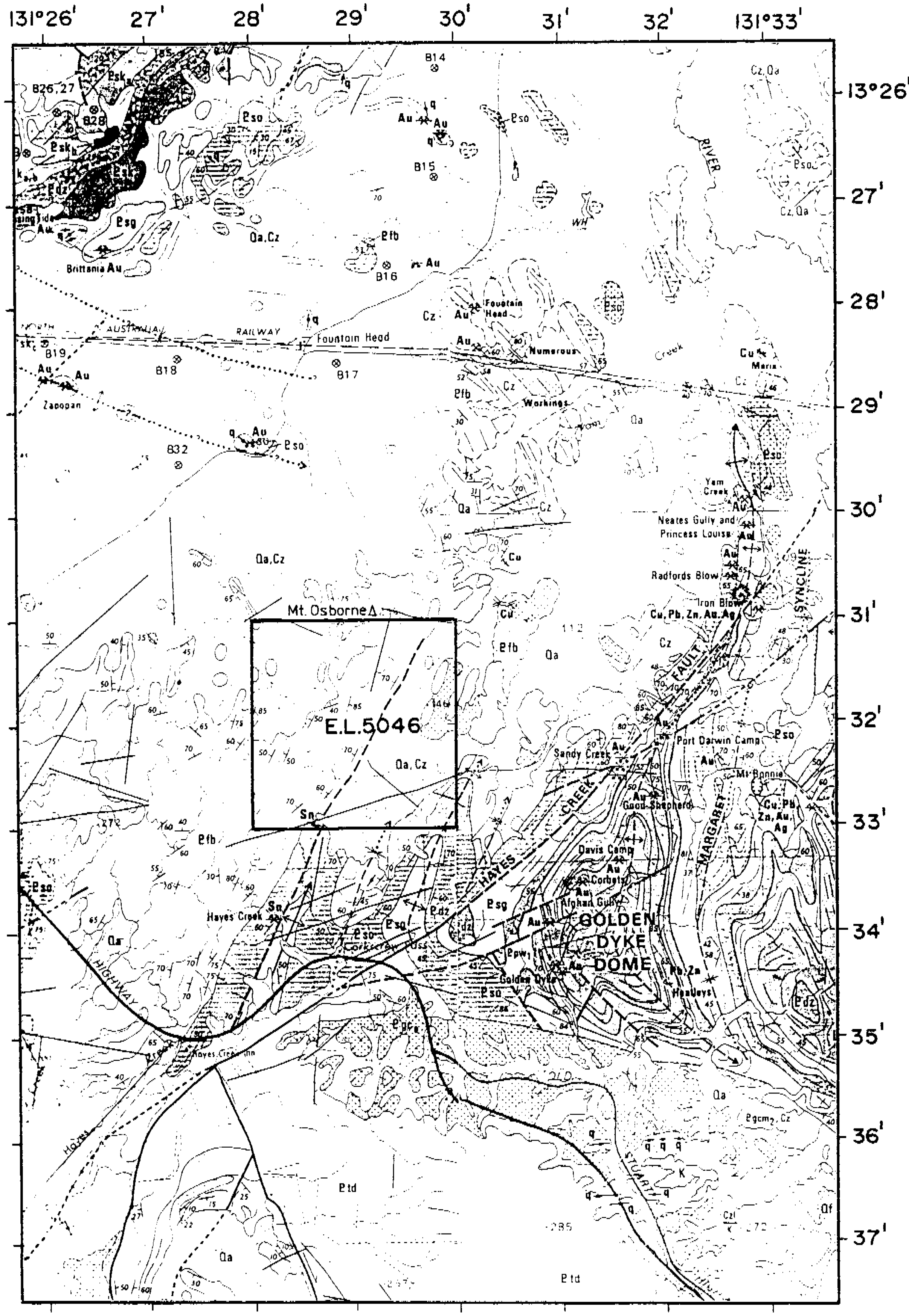
From D.M.E. Map 14/5-1

1:50000

0 1 2 3 kms.

TENEMENT MAP
E.L. 5046
MT. OSBORNE

FIG. 2



CAINOZOIC

Qa	Alluvium.
Cz	Soil

EARLY PROTEROZOIC

Efb	Burrell Creek Formation.
Eso	Mt. Bonnie Formation.

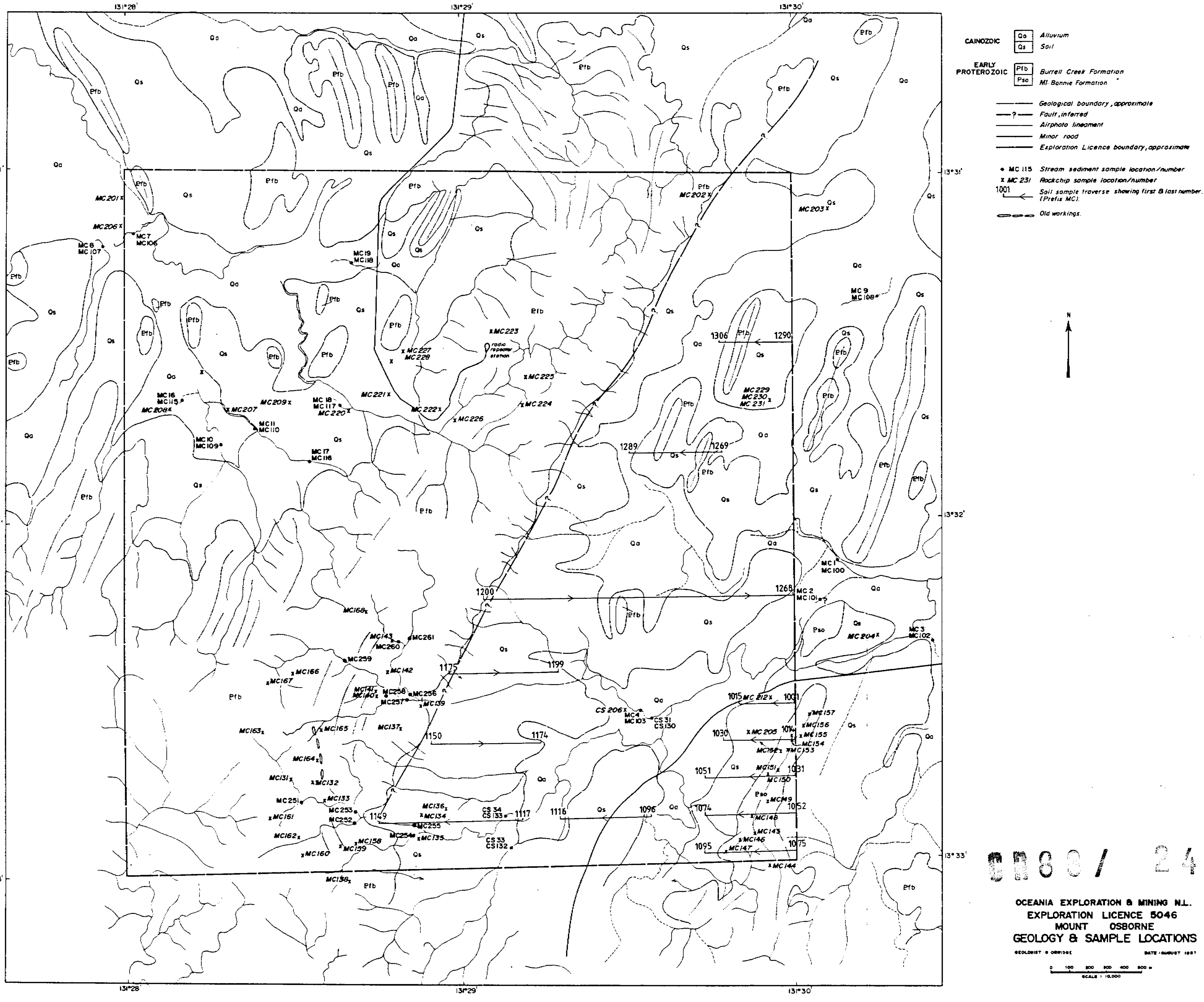
1:100000

0 1 2 3 4 5 kms.

REGIONAL GEOLOGY

E.L. 5046

FIG. 3



OCEANIA EXPLORATION & MINING N.L.
EXPLORATION LICENCE 5046
MOUNT OSBORNE
GEOLOGY & SAMPLE LOCATIONS

SCALE 1:10,000

FIG. 4