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UNION CORPORATION (AUSTRALIA) PTY. LIMITED. N.J.W. OCTOBER, 1981

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E.L. 11/77  
SIX MONTHLY REPORT

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871002

UNION CORPORATION (AUSTRALIA) PTY. LIMITED. N.J.W. OCTOBER, 1981

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SIX MONTHLY REPORT

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1. ATTACHED

- Appendix 1 - Table 1, Sample Analyses and Localities (with two thin section descriptions attached).
- Appendix 2 - Percussion Drillhole logging and sampling, HT.1 and MP.1.
- Appendix 3 - Diamond borehole logs and analytical sheets, MT.1, 2, 3 and 4 with respective thin section descriptions attached.
- Appendix 4 - 'Some Observations upon the Mount Paris Tin Prospect' by R.G. Taylor and M. Rubenach.
- Plan 1 - E.L. 11/77 - North East Tasmania. Geology, Sample localities, Rock and Stream Geochemistry, Diamond and Percussion Borehole localities and Mineral Leases. Scale 1:15,840 (approx)
- Plan 2 - Mount Paris Area, Geology, Percussion and Diamond Borehole localities. Scale 1:2,000.
- Plan 3 - Mount Terror. Interpretative Geological Cross Section of Diamond Boreholes MT.2, 3 and 4 with Summary of Borehole Tin Geochemistry. Scale 1:250.
- Plan 4 - Mount Terror. Interpretative Geological Cross Section of Borehole MT.1 with Summary of Borehole Tin Geochemistry. Scale 1:250.
- Plan 5 - Hill Top. Sample Localities, Costean, Soil. Rock and Percussion Borehole (HT.1) Geochemistry Scale 1:500
- Plan 6 - Mount Paris. Percussion Borehole MP.1. Geochemistry. Scale 1:500.

2. INTRODUCTION

This report summarises previous exploratory work and outlines in more detail the investigations carried out during the last six months.

We submit this report as the operating partner in a joint venture with Mineral Holdings Australia Pty. Limited who hold the licence.

3. SUMMARY OF PREVIOUS EXPLORATORY WORK

- a) Literature Research was carried out on reports of previous exploratory activities available on 'open file' at the Mines Department Library, Hobart. Most recent were the investigations of Newmont Pty. Limited (1978) who attempted to intersect, with

shallow percussion drillholes, the anticipated favourable contact between granite and Mathinna Beds Sediments with limited success. The Mines Department, Tasmania and Texins Development Pty. Limited shallow diamond drilled small greisen 'vein swarms' at Mullins and Bald Hill/Star of Peace prospects respectively without success. Grove (1972) assessed the major part of the E.L. area.

- b) Geological Mapping and Sampling was carried out on numerous traverses over granite, greisen occurrences, along the 'favourable' granite/sediment contact and over Mathinna Beds. Continuous chip, grab and float samples were collected during prospecting the localities of which are listed on Table 1, Appendix 1 and located on Plan 1. Thirteen thin section descriptions are also listed and included.
- c) Geophysical Feasibility was assessed over the entire E.L. area for magnetics and over selected areas e.g. Mount Paris area for gravity.
- d) A Stream Sediment Survey was carried out in conjunction with a similar survey in E.L. 21/80 (Union Corporation (Australia) Pty. Limited - licence holders) and threshold levels determined. Known tin prospects reflected well and follow up on anomalies is continuing (see Plan 1).
- e) Detailed Geological Mapping and Sampling was implemented in the Mount Paris area (see Plan 2) and consequently four diamond boreholes (MT.1,2,3 and 4) were drilled at Mount Terror and two percussion boreholes, MP.1 and HT.1, were drilled at Mount Paris and Hill Top respectively.

The results of the drilling are discussed in detail in Section 5 and 6.

#### 4. ANALYTICAL DATA

Analyses were carried out by Australian Laboratory Services (Pty) Limited in Brisbane, Queensland for tin, tungsten, gold, copper, lead and zinc. John F. Gilfillan and Associates Pty. Limited of Sydney, New South Wales carried out analyses for mercury.

Analytical data are tabulated below.

##### AUSTRALIAN LABORATORY SERVICES

<u>Element</u>	<u>Method</u>	<u>Limits of Detection</u> (ppm)	<u>Relative Precision</u>
Sn	XRF	5	±5
W	XRF	10	±5
Au	Fire Assay	0.1	±5
Cu	HClO <sub>4</sub> -A.A.S	2	±10
Pb	"	5	±10
Zn	"	2	±10

##### John F. Gilfillan

Jerome Model 301 Gold Film Detector

<u>Element</u>	<u>Method</u>	<u>Limits of Detection</u>	<u>Sensitivity</u>
Hg	Adsorption of Hg onto Au film	$1 \times 10^{-12}$ g	$0.1 \times 10^{-9}$ g

## 5. PERCUSSION DRILLING

A T4 percussion drilling rig was utilised at Hill Top and Mount Paris in an attempt to intersect the 'favourable' granite/sediment contact on two topographical 'highs' underlain by Mathinna Beds sediments (see discussions below).

A 6 1/4 inch diameter hole was bored and a 1/16th split sample was obtained for logging and analytical purposes. The sample interval was one metre but for analytical testing samples were combined over two metre intervals (see Appendix 2).

A total of 226 metres of percussion drilling was carried out and cuttings are retained at the Regional Office, Launceston, Tasmania.

### a) Hill Top

HT.1 was also sited to intersect narrow greisen veins exposed in a costean close by which a soil traverse indicates mercury and low order base metal anomalies (see Plan 5 and Appendix 2).

The target greisen vein was intersected from 82 to 87 metres with values of 15 and 20 ppm. tin. The granite/sediment contact was not intersected.

Tin contents in Mathinna Beds vary erratically and range from 5 to 80 ppm. Mercury levels are extremely low and also vary erratically. This type of variation is probably due to contamination between samples downhole, particularly below the water table.

The grid reference (AMG.) for HT.1 is EQ 636374.

### b) Mount Paris

Mathinna Beds sediments only were encountered and tin analyses ranged haphazardly between 15 and 115 ppm. (see Plan 6 and Appendix 2)  
Mercury values are of a very low order.

The grid reference (AMG.) for MP.1. is EQ 651373.

## 6. DIAMOND DRILLING

Four angled diamond boreholes, three of one hundred metres and one of seventy four metres, were drilled by a Longyear 38 drilling rig to test the greisen lode at depth and possible lateral extensions at Mount Terror. (formerly the old Mount Paris. Tine Mine) - see Plans 2,3 and 4. The total of 374 metres drilled comprised 144 metres NQ and 231 metres BQ core drilling. All boreholes are central about a spot at an approximate grid reference (AMG.) EQ 642374.

The core is retained at the Regional Office in Launceston, Tasmania.

Plans 3 and 4 show the interpretative cross sections of the geology and a summary of tin mineralisation. As indicated (Plan 3) four generalised rock units are interpreted and these are described below.

### a) Layered Unit

The unit comprises flat lying, alternating sheets of massive quartz muscovite (Dqm) and muscovite granite/adamellite (Dmga) some of which is greisenised.

Muscovite granite/adamellite layers (Dmga - possibly albitised) are thickest at the base of the sequence and possibly thin northward. Greisenisation has occurred above and adjacent to massive quartz muscovite (Dqm).

The weighted average tin value, as calculated from MT.2 and 3, is 0.05 per cent. Quartz muscovite (Dqm) contains between 165 ppm and 0.18 per cent tin, commonly 600 ppm.

b) Breccia

This unit has a maximum thickness of 55 metres and comprises small fragments to boulder/block-size Mathinna Beds xenoliths in a matrix of muscovite aplite (Dma) which is locally pegmatitic and is variably spotted by coarse tourmaline and fine quartz tourmaline aggregates and possibly by trace cassiterite.

There appears to be an increase in the percentage volume of Mathinna Beds (SDs) and a sympathetic decrease in tin content (from analyses) from south to north i.e. MT.2 - 55% volume and 0.02 per cent tin to MT.3 - 71% volume and 0.01 per cent tin and MT.4 - 59% volume and 0.06 per cent tin. The figure of 59% volume in MT.4 may appear contradictory but the 'breccia' unit thins northward against an arbitrary contact dip of approximately 50° N with 'in-situ' Mathinna Beds (SDs) - see Plan 3.

The weighted average value is 0.017 per cent tin from data of MT.2,3 and 4. Muscovite aplite (Dma), some with sediment fragments, has tin values which range from 35 ppm to 0.21 per cent (and 0.27 per cent for a sludge sample) and are commonly 280 ppm.

c) Pegmatite/Granite/Adamellite

The contact with breccia is the top of the uppermost pegmatite layer (Dp).

The pegmatite layers (Dp) are thin (up to 1 metre wide), sub-horizontal layers which sometimes overlie Mathinna Beds (SDs) fragments and breccia, in which case the matrix to the sediments is designated muscovite aplite (Dma) and not muscovite granite/adamellite (Dmga). Pegmatite (Dp) often consists of quartz and K-feldspar-rich layers and contains between 20 and 45 ppm. tin.

Muscovite granite/adamellite (Dmga - possibly albitised) overlies porphyritic adamellite (Dpa) the contact of which shows a tendency toward 'doming' under the summit of Mount Terror. Some plagioclase phenocrysts are weathered and the textural relationships between pyrite and ironstone (as indicated in logs) suggests that pyrite has oxidised.

The weighted average value is 0.005 per cent tin as calculated from MT.2,3 and 4 data.

d) Mathinna

This unit overlies both breccia and layered units. Exposures of narrow breccia and aplite veins at the collar of MT.3 suggest that the Mathinna Beds (SDs) are 'in situ' and were 'block shuffled' in the same manner as the granites to the south as discussed by R.G. Taylor (see Appendix 4).

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The essential siltstone and pelite represent 'turbidite' sequences in which the more argillaceous sediments are often hornfelsed. Slump structures may occur but other features typical of turbidite units are difficult to recognise. Pervasive greisenisation is most evident adjacent to muscovite aplite (Dma).

The weighted average value of tin from MT. 3 and 4 data is 0.004 per cent.

Attempts to correlate the cross sections of MT.1 and 2 (see Plan 4) are difficult because the respective cross sectional plane relationships are near normal. However, the breccia unit is virtually absent below Mathinna Beds (SDs). The pegmatitic muscovite granite/adamellite (Dmga) appears to be thinning to the north.

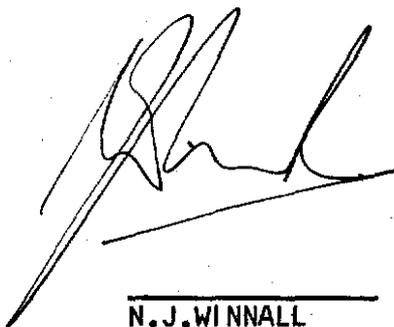
There is an increase in tin values from base upward i.e. from pegmatite/granite/adamellite through breccia to the layered unit which averages 0.05 per cent and in which the highest grades over narrow widths are 975ppm and 0.18 per cent for 3 and 1.2 metres respectively. A rough estimate of the tonnage of layered and breccia units is 1.4 million tonnes.

#### 7. VISIT BY STAFF OF JAMES COOK UNIVERSITY OF NORTH QUEENSLAND

Dr. R.G.Taylor and Dr. M.Rubenach visited the Mount Terror prospect whilst drilling was in progress. A report is in Appendix 4.

#### 8. FUTURE WORK

There are numerous stream sediment anomalies which are not fully investigated and evaluated. These will be assessed by geological reconnaissance, possibly detailed stream sediment surveys and follow up by soil and rock chip sampling with possible drilling where warranted.



N.J. WINNALL

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APPENDIX 1

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SAMPLE ANALYSES AND LOCALITIES

SAMPLE NO (UCT prefix)	ANALYSES (ppm)		DESCRIPTION (sample width in metres)	LOCALITY
	Sn	W		
28	700		quartz greisen (1)	Ruby Flats
29	210		" " float	"
30	75		" " (0.3)	"
31	105		" " float	"
32	140		quartz muscovite greisen (0.05)	"
33	445		" " " (0.07)	"
34	80		muscovite greisen (0.05)	"
35	190		" " (0.04)	"
36	0.17%		quartz muscovite greisen float	"
37	660		" " " (3)	"
38	770		" " " (4.5)	"
39	910		" " " (6)	"
40	335		" " " (4)	"
41	345		" " " float	"
42	350		" greisen (0.1)	"
43	180		quartz muscovite-biotite greisen (0.20)	"
44	210		greisen, kaolinised (0.04)	"
45	215		quartz muscovite greisen	"
46	135		quartz muscovite-biotite greisen (0.04)	"
47	25		pegmatite; float	Star of Peace
48	345		quartz greisen, float	"
49	20		pegmatite, float	"
50	140		biotite in Mathinna sediments, float	"
51	95		granite, greisenised (0.1)	"
52	305		" " float	"
53	25		quartz and mica vein	"
54	2.19%		quartz, cassiterite (0.02)	Rattler
55	<5		quartz (0.02)	"
56	0.50%		granite, greisenised (0.05)	"
57	935		quartz greisen (0.01)	Star of Peace
58	0.18%		quartz biotite, float	Mammoth
59	0.19%		quartz greisen (0.3), float	"
60	180		quartz greisen, float	"
61	450		quartz greisen, float	"
62	0.15%		quartz greisen, float	"
63	945		quartz greisen, float	"
64	710		quartz greisen, (1)	Bells Hill
65	0.26%		quartz greisen, (2)	"
66	0.24%	20	quartz greisen, (4)	"
67	0.19%		quartz greisen, (1.5)	"

SAMPLE NO (UCT prefix)	ANALYSES (ppm)		DESCRIPTION (sample width in metres)	LOCALITY
	Sn	W		
68	1.08%		quartz greisen, (2)	Bells Hill
69	2.34%		quartz greisen, (0.3)	"
70	3.26%		quartz greisen, (1)	"
71	0.15%		quartz greisen, (1)	"
72	0.16%		quartz greisen, (1)	"
73	0.22%		quartz greisen, (1.5)	"
74	0.39%		quartz greisen, (4)	"
75	870		quartz greisen (0.1)	Mullins
76	0.2%		quartz greisen, (3)	"
77	0.16%		quartz muscovite greisen, float	"
78	0.58%		quartz greisen, (2)	"
79	295		quartz greisen, (0.2)	"
80	0.15%		quartz greisen, (0.15)	"
81	475		quartz greisen, (0.15)	"
82	920		quartz greisen, (0.25)	"
83	0.13%		quartz greisen, (0.40)	"
84	0.14%		quartz greisen, (1)	"
85	0.40%		quartz greisen, (1)	"
86	0.24%		quartz greisen, (0.2)	"
87	0.13%		quartz greisen, (0.3)	"
88	210		granite	"
89	0.52%		quartz and sulphides (2)	Mammoth
93	0.11%	130	quartz greisen, (4.4)	Cox
100	710	<10	quartz greisen, float	Mullins
101	140	10	quartz muscovite greisen, float	"
102	180	<10	quartz greisen, float	"
103	110	10	quartz greisen, float	"
104	120	<10	quartz muscovite greisen, float	"
105	125	<10	quartz muscovite greisen, float	"
106	30	20	quartz muscovite greisen, float	"
107	175	10	quartz muscovite greisen, float	"
108	45	20	quartz muscovite greisen, float	"
109	620	<10	quartz muscovite greisen, float	"
110	45	<10	quartz muscovite greisen, float	"
111	35	<10	quartz muscovite greisen, float	"
112	35	<10	quartz muscovite greisen, float	"
113	20		quartz vein, float	Bakhaps
114	115		quartz greisen, float	"
115	210		quartz greisen, float	"
116	140		quartz and greisen, float	"
117	300		quartz greisen, float	"
118	165		quartz muscovite greisen	Bakers
119	215		quartz muscovite greisen	"
120	0.25%		quartz greisen, float	"
121	620		quartz greisen, (0.5)	"
122	0.48%		quartz greisen, float	"
123	180		quartz greisen, float	"
124	0.16%		quartz greisen, (0.2)	Bald Hill
125	100		granite	"
126	0.52%	30	quartz greisen (4)	Bells Hill
127	0.29%	50	quartz greisen (4)	"
128	0.65%	30	quartz greisen (0.5)	"
138	905		quartz muscovite greisen	Mount terror
139	390		"	"
140	1.78%		" , (0.02)	"
141	240		" , (1.2)	"
142	110		" , (1.2)	"

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SAMPLE NO. (UCT prefix)	ANALYSES (ppm)			DESCRIPTION (sample width in metres)	LOCALITY
	Sn	W	Cu-Pb-Zn		
143	70		10-5-15	Quartz tourmaline vein, float	Hill Top
144	85			Granite with tourmaline	Griff
145	30			Quartz greisen, float	"
146	150			Quartz muscovite greisen, float	"
147	110			" ,float	"
148	55			Quartz greisen, sulphides, (2.7)	Star of peace
149	0.16%			" , malachite, (2.6)	"
150	30			Quartz veins, float	"
151	85			" , "	"
152	130			Quartz muscovite greisen, float	Hill Top
184	160			Quartz vein, sulphides, float	"
185	220			" , " , float	"
186	0.48%			Quartz greisen, float	Mullins
187	945			" , sulphides, float	"
188	405			Quartz greisen, granite	"
189	90			" , float	Mullins-Bakhaps
190	340			Muscovite quartz greisen	"
191	470			Quartz muscovite greisen(2)	"
192	120			Quartz muscovite greisen, float	"
193	25			Quartz vein, greisen, float	"
194	155			" , "	"
195	320			" , "	"
196	115			Quartz muscovite greisen, float	"
197	55			" , "	"
198	740			" , (6)	"
199	105			Quartz greisen, float	New Hope No. 2
200	100			Quartz greisen, float	"
201	100			" , float	"
202	0.14%			Quartz muscovite greisen, float	"
203	0.18%			" , "	"
204	55			Quartz greisen	New Hope No. 1
205	60			Quartz muscovite greisen	"
206	45			"	"
207	35			"	"
208	55			Greisenised granite	"
209	65			Quartz greisen	"
238	135			Greisenised granite, float	Carnac
239	0.27%			Quartz greisen, float	"
240	0.2%			Quartz greisen, see attached thin section description	Tin Pot
271B	10			Quartz vein, float	New Hope No. 1
272	20			" , "	"
273	-			Aplite, see attached thin section description	Bald Hill
274	120			Quartz greisen, sulphides(1.5)	Star of Peace
275	0.41%			Quartz muscovite greisen, float	Ruby Flats
276	950			Quartz muscovite greisen	"
277	110			Quartz greisen, float	"
278	90			Quartz and siltstone, float	New Hope No. 1
279	140			Greisen	"
280	165			Quartz muscovite greisen, float	"
281	145			" , "	"
282	0.41%			" , "	" , east of
283	305			Quartz greisen	" , "
284	35			Aplite, (0.04)	" , "
285	215			" , (0.1)	" , "
333	430			Greisen, float	Walsh's
334	145			Greisen, quartz, (0.04)	"

SAMPLE NO. (UCT prefix)	ANALYSES (ppm)			DESCRIPTION (sample width in metres)	LOCALITY
	Sn	W	Cu-Pb-Zn		
335	535			Greisenised granite	Walsh's
336	375			Greisen, quartz, float	"
372	50		<2-5-10	Quartz tourmaline, float	Hill Top
373	0.48%			Quartz muscovite (1.7)	Mount Terror
374	220			Greisen, float	"
375	50			Aplite, float	"
376	80			" , "	"
377	120			Greisen, "	Walsh's
378	105			Greisen, quartz	"
379	660			Quartz muscovite greisen, float	"
380	215			Greisen, quartz, float	"
381	340			Muscovite granite	"
382	50			Granite, (0.5)	"
383	-			metaquartzite, see attached thin section description	Mount Terror
384	-			silt, quartz sandstone, see thin section description attached	Mount Paris
385	-			quartz sandstone, see attached thin section description	Hill Top
391	-			quartz sandstone, see attached thin section description	New Hope No.1
392	-			quartz sandstone, see attached thin section description	Hill Top
395	0.93%			Greisen	Star of Peace
396	690			" , (0.2)	Brock's
397	940			Greisenised granite(0.4)	"
398	65	1.17%		Quartz-wolframite, (0.1)	Cox
399	650	90		Greisenised granite, float	"
400			Au<1	Quartz, minor tourmaline, float	Gold Creek
401	145			Muscovite quartz greisen, float	"
402	45			Aplite	Mount Terror
403	45			Granite(muscovite, biotite),float	"
404	180			Quartz vein, muscovite, float	"
405	<5			Quartzite	Mount Terror
406	70			Quartz muscovite greisen	"
407	30			Granite, equigranular	"
408	65			Quartz muscovite greisen	"
409	30			Granite, equigranular	"
410	135			Quartz muscovite greisen	"
411	340			"	"
412	30			Quartz veined sandstone	"
413	10			Brecciated sediments	"
414	135			Granite, equigranular	"
415	85			Quartz muscovite greisen	"
416	80			"	"
417	125			"	"
418	85			"	"
419	55			"	"
420	45			"	"
421	150			"	"
422	385			"	"
423	45			Granite, equigranular	"
424	40			"	"
425	30			Quartz muscovite greisen	"
426	455			"	"
427	70			Granite, equigranular	"
428	185			"	"
429	0.1%			"	"
430	110			Quartz veined sediments	"
431	75			"	"
432	150			"	Mount Paris
433	15			"	Mount Terror
434	30			"	Hill Top
435	205			Quartz muscovite greisen	"

SAMPLE NO. (UCT prefix)	ANALYSES			DESCRIPTION (sample width in metres)	LOCALITY
	Sn	W	Cu-Pb-Zn		
436	0.14%			Quartz muscovite greisen	Mount Terror
437	965			"	"
438	275			"	"
439	270			"	"
440	365			"	"
441	220			"	"
442	1.27%			"	"
443	380			"	"
444	595			"	"
445	0.23%			"	"
446	340			"	"
447	690			"	"
448	275			kaolinised granite	"
449	0.26%			Quartz muscovite greisen	"
450	0.3%			"	"
458	255			Quartz muscovite greisen	Mount Terror
459	0.1%			"	"
460	240			"	"
461	235			"	"
462	745			"	"
463	165			Granite, kaolinised	"
464	195			Quartz muscovite greisen	"
465	105			"	"
466	430			"	"
467	190			"	"
468	180			"	"
469	315			"	"
470	175			"	"
471	625			"	"
472	735			"	"
473	0.15%			"	"
474	280			"	"
475	275			"	"
476	260			"	"
477	10			"	"
478	420			"	"
478	0.15%			"	"
479	0.15%			"	"
480	685			"	"
481	85			"	"
482	0.11%			"	"
483	0.28%			"	"
484	0.22%			"	"
485	175			"	"
486	80			Quartz veined sediment	"
487	45			Heavily limonitised sediment	"
489	-			Muscovite adamellite, see thin section description attached	"
490	-			Porphyritic adamellite, see thin section description attached	"
491	-			Muscovite granite, see attached thin section description	"
492	450			Greisen, float	Hill Top
493	-			Massive quartz muscovite, see thin section description attached	"
494	-			Quartz muscovite, see attached thin section description	"
495	-			Greisen, see attached thin section description	Bakhaps
496	415			Greisen	Mount Terror

013

SAMPLE NO. (UCT prefix)	ANALYSES			DESCRIPTION (sample width in metres)	LOCALITY
	Sn	W	Cu-Pb-Zn		
497	170			Porphyritic granite, UCT495 equivalent	Bakhaps
498	0.11%			Greisen, equivalent to UCT.494	Mount Terror
499	540			Greisen, " " " 493	Mount Terror
915	195		45-60-45	Greisen, (0.2)	Hill Top
918	320		60-10-30	Greisen, (0.13)	Hill Top
1144	75	30	15-20-10 +Mo 5	Quartz tourmaline, float	Bells Hill, west of

015

UCT 240 : quartz-fine muscovite greisen;  
minor primary biotite, replaced by muscovite,  
accompanied by minute titaniferous granules  
(and trace cassiterite?)  
also by oxidised pyrite

The petrographic examination confirms the greisen characteristics of this rock. Irregular, fairly coarse,, allotriomorphic quartz is intricately aggregated with subordinate, equally irregular patches of mainly extremely fine muscovite which appears to replace former primary feldspar and/or coarser muscovite.

Minor (7 - 10%), coarse (1 mm), flakes of muscovite (some replacing biotite), are randomly disposed.

Minute crystals of rutile/leucoxene accompany the biotite replaced by muscovite.

Detailed search failed to positively identify cassiterite. However, given the assay figure of 0.20% Sn, accessory minute amber/brownish granules of high R.I., maximum size 0.03 mm, located within the muscovite pseudomorphs after biotite do appear to be cassiterite, although they are difficult to positively distinguish optically from the titaniferous granules which have the same mode of occurrence. These possible cassiterite grains appear to be insufficient however to account for 0.20% Sn. (It is suggested that in attempt to specifically locate the mode of occurrence of this anomalous Sn, several sections should be checked by electron probe.)

Small (to 1 mm) limonite pseudomorphs after pyrite (1%) locally accompany some altered coarser micas.

Trace minute crystals of zircon are scattered, mainly in quartz.

016

UCT 273 : leucocratic, fine grained,  
muscovite aplite; minor fine  
myrmekite, accessory pale  
biotite and topaz

Field note : from Mount Paris Mass :  
?aplite or microgranite

Most of this rock has a fairly homogeneous allotriomorphic granular texture, average grain size about 0.5 mm. It consists of interlocking subhedral crystals of K-spar, plagioclase and anhedral quartz, each about 30%. The distribution and abundance of the K-spar is highlighted on the stained offcut, and this mineral is turbid with clays  $\pm$  lesser sericite alteration.

Irregular flakes of muscovite (7 - 10%) are scattered, locally more or less poikilitic.

Locally the quartz and muscovite are anomalously large (2 - 3 mm); local small patches of myrmekite (micro-vermicular plagioclase in K-spar  $\pm$  quartz).

Accessory irregular crystals of very pale greenish-brown tourmaline (3%) are scattered, some are more or less interstitial; some contain minute rutile crystals. Topaz (1 - 2%) occurs as single crystals and in small clusters.

In a general sense, this is a leuco, microgranite, but the presence of topaz and the scattered myrmekite suggests that 'aplite' is a more appropriate specific name. No doubt it is a high-level intrusive.

COMMENTS

The main aim of this investigation was to establish variations in the grade of metamorphism of sediments, including variations in the degree of hydrothermal alteration, in the sediments, at different distances away from granite contact.

The evidence indicates that the sediments are variably very fine through to medium grained quartz sandstones. Very fine muscovite (including sericite) is virtually ubiquitous throughout intergranular areas. These micas are quite randomly disposed and accompanied by accessory to minor tourmaline, lesser titaniferous oxides and trace zircon.

This interstitial (intergranular) assemblage is basically of hydrothermal origin, albeit probably, partly derived from and/or replacing original intergranular pelitic material.

Veins in most samples consist of hydrothermal quartz, generally carrying muscovite (except in 392). Tourmaline also occurs in veins in 384, it is marginal to veins in 391, absent from veins in 392.

The sandstones generally show metamorphic compaction, and only incipient 'quartzitic' textural development, but the original clastic grains are not really recrystallised. This development is slightly more advanced in 383 (1 m from the contact), also muscovite is coarsest in this sample, and muscovite-rich bands, along incipient fissures occur only in this 383 sample.

cont...2

Comments cont...

Muscovite and tourmaline however are as abundant in 384 (300 metres from the same contact), and the fact that it is finer appears to be a function of the grain size of the host rock, rather than distance from the hydrothermal source. The intensity and abundance of muscovite alteration is similar in 385 (50 metres from the contact), and in 391 and 392. Tourmaline is less in 385, 391 and 392, than in 383 (1 m distant) but also less than in 384 (300 m distant).

The evidence suggests that there is no predictable variation in muscovite alteration, or tourmaline abundance, which may be confidently correlated with distance from contact. However thin muscovite-rich tracts along incipient fissures, seem to be confined to sediments immediately adjacent to the contact, also 'quartzitic' development may be slightly more advanced nearer the contact.

UCT 383 : massive, meta quartzite;  
subordinate hydrothermal muscovite + accessory tourmaline,  
wide spread/intergranular and along vague fissures.

Field note: One metre above granite contact.

This rock is dominated by a homogeneous, quite compact, more or less polygonal aggregate of subangular detrital quartz grains, ranging in size from 0.05 mm to 0.3 mm. This is essentially a metamorphic (quartzitic) aggregate.

Fine (0.3 mm) flakes of muscovite (10 - 15%) are randomly disposed throughout intergranular areas. Locally they are relatively more concentrated in ill-defined bands apparently along incipient fissures. Minor grains of greenish-brown tourmaline (5%) is also scattered, more or less intergranular (to 'poikiloblastic') associated with the muscovite. The micas are variably limonitised.

Given the field setting of this rock the muscovite and associated tourmaline are interpreted as manifestations of hydrothermal alteration, possibly developed from former intergranular (meta) clays within the original sandstone.

020

UCT 384 : massive quartz silt to very fine grained quartz sandstone;  
ubiquitous intergranular (hydrothermal) muscovite lesser  
biotite and tourmaline;  
vein of coarser quartz, muscovite, tourmaline trace biotite.

Field note: 300 metres from granite contact.

About 65% of this rock consists of a vaguely bedded, albeit massive homogeneous and compact aggregate of subangular to subrounded quartz grains, average size about 0.1 mm.

The majority of intergranular contacts are occupied by randomly oriented, very fine muscovite (including sericite), (15 - 20%), lesser biotite (5 - 10%), and disseminated fine tourmaline (5 - 10%).

A vein of coarser quartz, subordinate muscovite tourmaline and lesser biotite cuts the rock.

021

UCT 385 : massive, silty, to medium grained quartz sandstone, minor hydrothermal sericite, lesser limonitised TiO and accessory tourmaline, fairly wide spread through intergranular areas.

Field note: 50 metres from granite contact.

This is a fine quartzose sediment, but less sorted than those above, and with a more or less discrete limonite phase.

It consists mainly of a fairly compact, incipiently quartzitic aggregate of subangular to subrounded quartz grains which range in size from 0.04 mm to 0.3 mm.

Fine muscovite, including sericite (10 - 12%) is almost ubiquitous along intergranular contacts. Accessory greenish-yellowish brown tourmaline crystals (1 - 2%), and more abundant fine granular limonite (5 - 10%) is also scattered, intergranular. Most limonite appears to permeate and replace titaniferous oxides.

022

UCT 391 : massive, fine to medium grained quartz sandstone; hydrothermal sericite trace tourmaline and Ti 'Os intergranular, veins of quartz-muscovite + marginal tourmaline.

Field note: Topographic high ? above granite.

This is a fairly homogeneous, compact but somewhat in equigranular metamorphic aggregate of quartz grains ranging from very fine sand to medium grained sand size.

Fine muscovite, including sericite (12 - 15%) is more or less ubiquitous throughout intergranular contacts. Individual flakes have a quite random disposition indicating the hydrothermal, (rather than metamorphic) origin.

Accessory very fine titaniferous granules, also accessory fine tourmaline crystals (1 - 2%) have a similar disseminated mode of occurrence.

Patchy veins of quite coarse quartz-muscovite. Ragged tourmaline occurs in the adjacent host rock, vaguely around the margins of these, but tourmaline does not occur within the actual veins.

023

UCT 392 : massive, fine to medium grained quartz sandstone, hydrothermal sericite, and accessory tourmaline extensive intergranular; numerous veins of quartz and accessory biotite.

Field note: Topographic high ? above granite.

This is a vaguely bedded fine to medium grained and rather poorly sorted quartz sandstone, metamorphosed to produce an incipiently quartzitic texture. Fine, rather ragged flakes of hydrothermal muscovite (15%) are randomly disposed throughout virtually all intergranular areas.

Minor ragged grains of bluish-greenish-brown tourmaline and some greenish tourmaline (total 5%), also trace zircon and titaniferous granules have a similar, random intergranular mode of occurrence.

Numerous veins and stringers of hydrothermal quartz are roughly parallel, albeit coalescing through the rock. These contain more comb-like aggregates of relatively more euhedral quartz crystals than in veins in other samples. These veins carry accessory oxidised biotite, but no muscovite which is common in veins elsewhere.

COMMENTS

Each thin section offcut is treated with HF and sodium cobaltinitrite; K-spar is accordingly highlighted by an intense yellow stain on the thin section offcuts of 489, 490, 491. In response to questions raised in your covering letter, the following comments are made -

1. The gross adamellitic composition of 489 and 490, gradational to the more potassic, and thus granitic 491, suggests that a common plutonic source is quite feasible, with variations in texture being due to specific physical/spatial positions in the pluton. Conceivably 489 is characteristic of the central undifferentiated part of the intrusion. Sample 490 may be a marginal, high-level or dyke-like differentiate, and 491 conceivably an incipiently pegmatitic cupola.

The same accessory phases and their similar peculiar mode of occurrence in 490 and 491 certainly suggests common genesis.

2. Samples 493 and 494 both consist entirely of muscovite and quartz; however there is substantially more muscovite in 494; and texturally 493 is substantially coarser than 494.

These characteristics are consistent with the reported occurrences of greisen cupola (493) and greisen vein (494).

\*\*

025

UCT 489 : medium grained, leucocratic, muscovite  
adamellite; essentially unaltered;  
only accessory is biotite

This rock has a homogeneous hypidiomorphic granular texture, composed of intricately interlocking, evenly disposed,, allotriomorphic quartz and subhedral to euhedral feldspars; with minor irregular micas.

Quartz (30%) is quite coarse (1 - 2 mm) and some is incipiently poikilitic. Potash feldspar (30%) is orthoclase, flecked by incipient sericite alteration, and contains rare inclusions of muscovite and plagioclase. Average size is about 1 mm.

Plagioclase (30%) has a composition of about  $Ab_{72}$  as also flecked with trace sericite.

Muscovite flakes (7 - 10%) are particularly ragged and more or less intergranular; accessory very pale-brown (leached) biotite is also present.

UCT 490 :

fine to medium grained, mesocratic and porphyritic adamellite, essentially unaltered; includes muscovite, biotite; very localised accessory sphene/rutile, lesser apatite zircon xenotime ?cassiterite

This rock has an irregular porphyritic texture. Phenocrysts have an uneven size from 1 - 6 mm, and consist mainly of quartz (10 - 15% of the rock), but rare phenocrysts of perthitic and/or sericitised plagioclase, of muscovite and lesser leached biotite are also present.

The groundmass has an average grain size of 0.5 mm and consists of a fairly homogeneous allotriomorphic granular aggregate of quartz, orthoclase and plagioclase, in equal abundance, and each forming about 25% of the whole rock. Minor fine ragged flakes of muscovite and of pale brown biotite (commonly chloritised) are randomly disposed.

Yellowish-brown tourmaline forms a skeletal intergranular network over two areas about 3 mm across.

Two ill-defined 'clots' about 1.5 mm across, consist of microcrystalline quartz-felspar mosaic incorporating coarse, skeletal, optically continuous biotite, and studded with small (0.25 mm) stumpy prisms of turbid sphene/rutile; lesser zircon, apatite, ?xenotime; trace fluorite and possible cassiterite. (The sphene/rutile may be stanniferous.)

027

UCT 491 : medium to coarse (?incipiently  
pegmatitic) leucocratic muscovite granite;  
minor biotite;  
trace rutile and zircon mainly  
in localised cluster

This rock has a medium to coarse generally allotriomorphic granular texture. It is composed of evenly intergrown allotriomorphic quartz (30%); much coarser, prismatic orthoclase (35 - 40%) which commonly contains irregular skeletal intergrowths of plagioclase (i.e. perthitic); also of small and large prismatic crystals of plagioclase (20 - 25%). Some feldspars are flecked by and contain clusters of sericite.

Muscovite (7 - 10%) is intergranular and forms fine primary networks within some feldspars. Accessory pale brown (? leached) biotite flakes carry minute inclusions of rutile.

A single 'clot' 2 mm across has essentially the same composition as those in 490, including small prisms of rutile, and zircon (but without the other accessories).

UCT 493 :                    coarse, massive quartz-muscovite rock;  
                                 greisen (or pegmatite);  
                                 no accessory phases

This rock consists of a homogeneous mass of medium to coarse allotriomorphic quartz, with subordinate (25 - 30%) coarse muscovite, randomly disposed as single flakes and in clusters.

By definition this is a greisen, however there are no accessory minerals, and no evidence of a former rock which may have been pervasively, pneumatolytically replaced.  
(Is it simply a quartz-muscovite pegmatite?)

UCT 494 : fine grained massive aggregate  
of quartz and muscovite;  
(greisen)

This sample consists of a homogeneous massive aggregate of allotriomorphic quartz mosaic (50%), crowded with somewhat more irregular, similarly fine mosaics of randomly interlocking muscovite (50%). Average grain size is about 0.5 mm.

Some of the micas and intergranular spaces are lined by limonite. There are no accessory minerals, and no evidence of a former rock being replaced.

030

UCT 495 : greisen of massive allotriomorphic quartz incorporating a similar amount of muscovite; minor relict quartz and feldspar phenocrysts; rare crystals of rutile and zircon in a cluster

A relict porphyritic texture is manifest in this rock by fairly discrete phenocrysts about 5 mm across, of subrounded quartz grains (10%), and leached clay replicas after feldspar crystals (7 - 10%) of similar size.

These are randomly scattered through a finer crystalline (0.5 mm) aggregate of allotriomorphic quartz with intimately intergrown, more or less intergranular muscovite, commonly as poikilitic flakes, optically continuous over areas of about 1 mm. Quartz and muscovite occur in subequal abundance in this groundmass.

There is no evidence of existing or pre-existing feldspar in the groundmass, thus presumably some of the quartz and muscovite has replaced (or substitutes for) primary feldspar. Several small prismatic crystals of sphene/rutile and lesser minute zircon crystals are clustered in a muscovite flake 2 mm across.

It is possible, but not conclusive that these are a relict of the 'clots' described in 490 and 491.

031

APPENDIX 2

APPENDIX 3

033

871034

Percussion Drillhole Logging and Sampling

UNION CORPORATION (AUSTRALIA) PTY. LIMITED

Company : UNION CORPORATION (AUSTRALIA) PTY LIMITED

Drillhole No. : HT:†

Property : HILL TOP., E.L., 11/77, N.E., TASMANIA

Azimuth : 220°m

Collar : co-ordinates .....  
elevation .....

Angle from Horizontal : -80°

Page : 1

Depth (M)		Log	Sample No. UCT	Analyses			Hg ppb	Description of Chips.
From	To			Sn ppm				
0	1		-				No recovery (Tricone drilling)	
1	2		1017	) 15			brown	
2	3		8	)			grey	
3	4		9	) 10			fawn	
4	5		1020	)			"	
5	6		1	) 15			"	
6	7		2	)		4,4	grey, minor blue grey chips	
7	8		3	) 10			"	
8	9		4	)			fawn	
9	10		5	) 10			"	
10	11		6	)			"	
1	2		7	) 5			"	
2	3		8	)		4	" , minor blue grey chips	
3	4		9	) 10			grey fawn	
4	5		1030	)			" " , minor blue grey chips	
5	6		1	) 10			fawn	
6	7		2	)			"	
7	8		3	) 10			"	
8	9		4	)		5	grey	
9	20		5	) 10			" fawn	
20	1		6	)			grey	
1	2		7	) 35			"	
2	3		8	)			"	
3	4		9	) 10			"	
4	5		1040	)		3	"	
5	6	SDs	1	) 10			"	
6	7		2	)			" , some blue grey chips	
7	8		3	) 10			grey	
8	9		4	)			"	
9	30		5	) 10			"	
30	1		6	)		3	light grey	
1	2		7	) 10			blue grey chips	
2	3		8	)			"	
3	4		9	) 15			"	
4	5		1050	)			"	
5	6		1	) 10			"	
6	7		2	)		3	"	
7	8		3	) 20			"	
8	9		4	)			"	
9	40		5	) 30			"	
40	1		6	)			"	
1	2		7	) 15			"	
2	3		8	)		4	"	
3	4	water table	9	) 10			"	
4	5		1060	)			"	
5	6		1	) 10			"	
6	7		2	)			"	
7	8		3	) 20			"	
8	9		4	)		4,4	"	
9	50		5	cont'd			"	

Sampled By : N. J. WINNALL

Date : 28th May, 1981

SDs Mathinna Beds sediments - mainly siltstone

034

UNION CORPORATION (AUSTRALIA) PTY. LIMITED

Company : UNION CORPORATION (AUSTRALIA) PTY LIMITED  
 Property : ... HILL TOP., E.L., 11/77, N.E., TASMANIA  
 Collar : co-ordinates .....  
 elevation .....

Drillhole No. : ..... HT. 1  
 Azimuth : ..... 220° m.  
 Angle from Horizontal : ..... -80°  
 Page : ... 2 .....

Depth (M)		Log	Sample No. UCT	Analyses			Description of Chips.
From	To			Sn ppm		Hg ppb	
50	51	SDs	1066	15			blue grey chips
1	2		7	) 5			"
2	3		8	)			"
3	4		9	) 15			"
4	5		1070	)		4	"
5	6		1	) 10			"
6	7		2	)			"
7	8		3	) 5			"
8	9		4	)			"
9	60		5	) 10			"
60	1	6	)		4	"	
1	2	7	) 15			"	
2	3	8	)			"	
3	4	9	) 20			"	
4	5	1080	)			"	
5	6	1	) 5			"	
6	7	2	)		3	"	
7	8	3	) 10			"	
8	9	4	)			"	
9	70	5	) 15			"	
70	1	6	)			"	
1	2	7	) 10			"	
2	3	8	)		3	"	
3	4	9	) 10			"	
4	5	1090	)			"	
5	6	1	) 15			" ,minor quartz	
6	7	2	)			" "	
7	8	3	) 10			" "	
8	9	4	)		3	" "	
9	80	5	) 5			blue grey chips	
80	1	6	)			"	
1	2	7	) 15			"	
2	3	8	)			"	
3	4	9	) 15			" ,abundant quartz, muscovite	
4	5	1100	)		3	" " "	
5	6	1	) 15			" " "	
6	7	2	)			" " "	
7	8	3	) 20			" " "	
8	9	4	)			" ,minor quartz and muscovite	
9	90	5	) 50			" "	
90	1	6	)		3	" "	
1	2	7	) 35			" "	
2	3	8	)			" "	
3	4	9	) 80			" "	
4	5	1110	)			" "	
5	6	1	) 35			" "	
6	7	2	)		3	" "	
7	8	3	) 40			" "	
8	9	4	)			" ,minor quartz	
9	100	5	cont'd			" "	

Sampled By: .... N. J. WINNALL .....

Date: ..... 28th, May, 1981 .....

Dqm Quartz - muscovite

SDs Mathinna Beds sediments - mainly siltstone



036

UNION CORPORATION (AUSTRALIA) PTY. LIMITED

Company : UNION CORPORATION (AUSTRALIA) PTY. LIMITED

Drillhole No. : ...MP1.....

Property: MOUNT. PARIS, E.L., 11/77, N.E., TASMANIA.

Azimuth : ...T.....

Collar : co-ordinates .....  
elevation .....

Angle from Horizontal: ..90°.....

Page: .....1.....

Depth (M.)		Log	Sample No. UCT	Analyses			Hg (ppb)	Description of Chips.
From	To			Sn ppm				
0	1.2	Dq	-				No recovery (Tricone drilling)	
1.2	2		918	) 115			4,4	Fawn
2	3		919	)				"
3	4		920	)				"
4	5		1	) 110				"
5	6		2	)				"
6	7		3	) 100			6	" quartz vein (1 cm)
7	8		4	)				"
8	9		5	) 80				" pinkish
9	10		6	)				"
10	11		7	) 105				"
11	12		8	)				"
12	13		9	) 95			6	"
13	14		930	)				"
14	15		1	) 75				"
15	16		2	)				"
16	17		3	) 75				"
17	18		4	)				"
18	19		5	) 85			3	"
19	20		6	)				"
20	21		7	) 100				"
21	22		8	)				"
22	23		9	) 85				"
23	24		940	)				" some fresh blue grey chips
24	25		1	) 105			3	reddish grey powder and chips
25	26		2	) 65				sandy, some fresh chips
26	27		3	)				bone
27	28		4	) 95				fawn
28	29		5	)				reddish grey powder. /chips
29	30		6	) 70				fawn, darker, pinkish
30	31		7	)			6	"
31	32		8	) 95				"
32	33		9	)				"
33	34		950	) 85				"
34	35		1	)				"
35	36		2	) 110				"
36	37		3	)			3	"
37	38		4	) 75				"
38	39		5	)				"
39	40		6	) 100				"
40	41		7	)				"
41	42		8	) 70				light grey, some fresh blue grey chips
42	43		9	)			5,5	grey fawn
43	44		960	) 60				"
44	45		962	)				"
45	46		3	) 115				grey
46	47		4	)				"
47	48		5	) 60				" virtually no chips
48	49		6	)			4	" brown
49	50	7	cont'd				"	

Sampled By: . N.J. WJNNALL.....

Date: 23rd May, 1981.....

 White vein quartz

 Mathinna Beds Sediments - mainly siltstone

037

UNION CORPORATION (AUSTRALIA) PTY. LIMITED

Company : UNION CORPORATION (AUSTRALIA) PTY. LIMITED  
 Property : MOUNT. PARIS E.L. 11/77. N.E. TASMANIA  
 Collar : co-ordinates .....  
 elevation .....

Drillhole No. : MPI .....  
 Azimuth : .....  
 Angle from Horizontal : 90° .....  
 Page : 2 .....

Depth (M)		Log	Sample No. UCT	Analyses			Description of Chips.
From	To			Sn ppm		Hg	
50	1	SDs	968	80		ppb	brown
1	2		9	45			"
2	3		970				grey
3	4		1	90			fawn
4	5		2			4	"
5	6		3	65			"
6	7		4				grey, minor blue grey chips
7	8		5	55			"
8	9		6				fawn
9	60		7	35			"
60	1		8			6.6	"
1	2		9	30			"
2	3		980				" minor blue grey chips
3	4		1	50			grey fawn
4	5		2				" " minor blue grey chips
5	6		3	45			fawn
6	7		4			3	fawn
7	8		5	35			" minor blue grey chips
8	9		6				grey, minor blue grey chips
9	70		7	15			grey fawn minor blue grey chips
70	1		8				" "
1	2		9	15			" "
2	3		990			5	" "
3	4		1	25			fawn
4	5		2				grey
5	6		3	40			"
6	7		4				"
7	8		5	60			"
8	9		6			4	grey (darker) some blue grey chips
9	80		7	60			grey
80	1		8				"
1	2		9	30			"
2	3		1000				light grey
3	4		1	45			fresh blue grey chips
4	5		2			4	"
5	6		3	35			"
6	7		4				"
7	8		5	40			"
8	9		6				"
9	90		7	40			"
90	1		8			6.6	"
1	2		9	30			"
2	3		1010				"
3	4		1	40			"
4	5		2				"
5	6		3	40			"
6	7		4			6	"
7	8		5	45			"
8	9		1016			6	"

End of hole

Sampled By: ..N.J..WINNALL.....

Date: .23rd May, 1981.....

SDs

Mathinna Beds Sediments - mainly siltstone

038

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COMPANY UNION CORPORATION (AUSTRALIA) PTY LIMITED

PAGE 1

DRILL HOLE NO. MT. 1 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. - AZIMUTH 77°m ANGLE -60°

DEPTH		GEOL. SECT. 20cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
0	43		NQ core drilling No core recovery to 0.43m	
0	95		Fractured and occasionally broken core	
1	11		Irregular contact Medium grained granite Sharp contact	60°
1	42		Irregular aplite breccia	
1	57		Irregular aplite veins to 2.02m	
1	90		Aplite vein (2cm)	
2	17			
4	50		Broken core at spotted pelite zone	
4	65		Quartz muscovite vein (5mm), minor cassiterite at 4.73m	
4	79		Aplite veins (5mm)	
4	87			
5	71		Aplite vein	
5	85		Aplite vein	
6	07		Aplite vein, minor chips lost	
6	96		Broken core, 60% recovery to 7.86m	
			Quartz vein (5mm), depth unknown	
7	86			
8	02		Broken core, 75% recovery to 8.40m	
8	40			
8	94		Fracture at quartz vein (7mm)	
9	30		Large chip lost	
9	88		Broken core	

LOGGED BY G.A. ANDERSON

DATE 8th September, 1981

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COMPANY UNION CORPORATION (AUSTRALIA) PTY. LIMITED PAGE 2

DRILL HOLE NO. MT.1 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. - AZIMUTH 77° ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP	
m.	cm.				
10	20		<b>MATHINNA BEDS</b> Buff, pink and dark green siltstone. Contains a number of irregular greisen veins (±cassiterite).	40°	
10	40				
10	50				
11	10		Broken core, irregular 15mm quartz muscovite (trace cassiterite) veins.  Irregular 5cm quartz vein		
11	25				
11	50				
11	86		Irregular 7 cm aplite lens		
12	20		Sharp contact 2cm muscovite zone  <b>MUSCOVITE GRANITE/ADAMELLITE</b> Weathered, medium grained granite dyke. Upper contact is a muscovite rich zone.	50°	
13	45				Contact not recovered
13	95		<b>MATHINNA BEDS</b> Dark green to tan siltstones, some spotted pelite. Frequent aplite veins and stringers occasionally spotted by tourmaline. Thinner veins often sugary-textured. Zones of partial brecciation up to 10cm thick intruded by thin aplites from 18.00m to 19.03m.	35°	
14	72				Bedding
14	89				Irregular aplite lens (2cm)
15	00		Quartz vein (1cm) Core ground Spotted aplite vein		
15	34				Broken and ground core 49% recovery to 15.83
15	83		Aplite vein (1cm)		
15	93				
16	38		Fractured core		
16	55				
16	85				Aplite vein (1cm), trace ?cassiterite
17	40		Sugary-textured aplite vein (5cm). Fractures and vugs contain muscovite		
18	00		Irregular veins (1cm) and stringers of granite		
18	13				
18	58		Aplite vein (2cm)		
18	68				
18	95		Breccia		
19	03				
19	30		Quartz vein (2mm)		

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COMPANY UNION CORPORATION (AUSTRALIA) PTY LIMITED

PAGE 3

DRILL HOLE NO. MT. 1 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R. L. - AZIMUTH 77°m

ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
20	07		Quartz vein with siltstone fragments	
20	10			
20	85		Irregular spotted pelite zone with tabular fragments of quartz	
21	03			
21	20		BQ core drilling	
21	76		Aplite veins (thicknesses of 5mm, 25mm, 10mm, and 8mm)	
22	00			
22	31		2cm quartz vein with stringers to irregular aplite (2 to 5cm)	
22	44			
22	62			50°
22	96		Aplite with siltstone fragments from 22.81m	
23	10			
23	32		Partial breccia, minor aplite veins	50°
23	97			
24	01		Quartz vein	
24	38			
24	45		Ground core	
24	60		Quartz bleb	
25	29		Broken core, contains several vuggy sericite, quartz, feldspar veins (commonly 2cm)	
26	00			
26	26		Aplite vein (15 mm)	
26	80		Broken core. Tourmaline spotted aplite; 66% recovery to 27.15 m	
27	15			
27	50		Spotted pelite	
27	71		Aplite vein (4cm)	
27	76		Aplite vein (1cm)	
27	92		Aplite vein (1cm)	
28	18		Irregular aplite vein (1-2.5cm)	
28	30		Aplite vein (1cm)	
29	75		Fractured core, chips lost	
29	90		Fractured core, chips lost	

LOGGED BY G.A. Anderson

DATE 10th September, 1981

COMPANY UNION CORPORATION (AUSTRALIA) PTY. LIMITED

DRILL HOLE NO. MT.1 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. - AZIMUTH 77°m ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
30	72		<p><u>MATHINNA BEDS</u> Siltstone sequence as above.</p> <p>No core recovery to 34.94m No sludge sample taken</p> <p><u>MUSCOVITE GRANITE/ADAMELLITE</u> ?Argillised muscovite granite.</p>	
34 35	94 04		<p>Chips of aplite and siltstone</p> <p><u>MUSCOVITE GRANITE/ADAMELLITE</u> Light grey fine to medium grained soft kaolinised ?albitised adamellite. Rock mottled by dark grey round quartz phenocrysts. Muscovite 5% of rock.</p>	
35	99		<p>Broken core and gravel 54% recovery to 38.0m</p>	
38	00			
39	94		<p>Pelite xenolith (25mm)</p>	

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DATE 10th September, 1981

041

DEPTH		GEOL. SECT. 2.0 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
40	16		Broken core minor chips lost	
40	40		Quartz vein (5mm) and stringer	
40	60		Tourmaline spotted aplite	
40	70		Granite dyke, trace cassiterite	15°
40	87			45°
41	56		Pegmatite; quartz, kaoline	15°
41	62		tourmaline (5%), trace cassiterite.	
41	75		'Gravel' 62% recovery to 42.36m.	
42	36			
43	84		Contact sharp	5°
44	35		Lens of tourmaline, quartz.	
44	57		Quartz, tourmaline vein (2cm).	45°
44	82		Contact sharp.	
44	89		Irregular aplite.	
45	06		Aplite vein (15mm).	
45	26		Fracture, chip lost.	
45	36		Aplite vein (15mm).	
45	58		Fracture, chip lost.	
45	86		Irregular quartz vein in spotted pelite.	
45	89			
46	50		Bedding.	15°
46	91		Aplite vein (4mm).	
48	14		15mm pegmatite grading into 'sodic' adamellite with occasional individual grains and blebs of cassiterite (1-2% of rock).	30°
49	02		5cm pegmatite grading into hornblende hornfels with irregular quartz stringers	
49	38		Contact sharp	65°
49	67		Fragments 45%	

042

DRILL HOLE NO. MT. 1 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. - AZIMUTH 77°m

ANGLE -60°

DEPTH		GEOL. SECT. 2.0 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
50	22		Pegmatite (15mm). Fragments 40%	45°
50	89		Sharp contact	
51	64		Aplite vein (2.5cm). Tourmaline and trace cassiterite	40°
51	85		Irregular aplite vein	
51	91			
52	20		Aplite-breccia, fragments 50%	
52	31			
52	75		Quartz-tourmaline vein (1cm), trace cassiterite	
54	23		Aplite vein (1cm) with fragments of greisenized pelite.	
54	34		Aplite vein (2cm)	
54	70		Aplite vein (7mm)	
54	87		Fine to medium grained adamellite. Disseminated tourmaline, trace cassiterite. Stringers extend to 55.12m	
55	02			
55	48		Aplite vein (5mm) and stringer	
56	14		'Sodic' adamellite with trace cassiterite grades into aplite breccia at 56.5m	25°
56	50		Aplite breccia, fragments 35%	
56	72		Aplite stringers extend to 56.78m	
57	03		Medium grained aplite, one large fragment	
57	11			
57	25		Aplite veins and stringers, trace disseminated cassiterite	
57	42			
57	72		Aplite breccia, fragments 55%. 2% disseminated cassiterite	
57	85			
58	04		Aplite breccia, fragments 55%	
58	32			
58	40		Partial brecciation	
58	82		Aplite veining	
58	88			
59	17		Aplite breccia, fragments 50%	
59	41			
59	57		Quartz-muscovite vein (3-4cm)	
59	92			

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DATE 11th September, 1981

DRILL HOLE NO. MT.1

LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. -

AZIMUTH

77°m

ANGLE -60°

044

DEPTH		GEOL. SECT.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
60	14		Fine grained aplite vein	45°
60	20			
60	31		Irregular aplite veining	
60	41			
60	77		Broken core, some chips lost	50°
60	98		Aplite-breccia (3cm) from 60.85m	
61	00			
61	20		Aplite-breccia, fragments 50% Broken core	
61	50		Aplite vein (1cm)	60°
62	26		Aplite, minor fragments	
62	31			
62	56		Broken core of pegmatite vein (4cm), 15% tourmaline	
63	60		Irregular quartz vein (3cm)	15°
64	00		Irregular aplite veins, partial brecciation. Disseminated cassiterite towards base	
64	24			
64	68		Irregular, brecciated contact. Muscovite granite/adamellite. Disseminated tourmaline and cassiterite	
65	50		Basal 11 cm contains breccia	30°
65	55		Contact sharp	
64	79		Fracture at quartz vein. Quartz veins (x5)	
66	22			
66	68		Quartz veins (x3)	60°
67	03		Contact sharp Adamellite, top 2cm contains coarse quartz, muscovite, tourmaline.	
67	49		Minor greisenised pelite fragments. Contact sharp	
67	70			
67	86		Adamellite with quartz-tourmaline stringer	15°
67	98			
68	21		Contact sharp	
68	71		Two xenoliths of greisenised pelite	
68	87			30°
69	08		Pegmatite. Quartz, feldspar phenocrysts. Disseminated tourmaline and ?cassiterite	
69	63			

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DATE 11th September, 1981

045

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
			<p><u>MUSCOVITE GRANITE/ADAMELLITE</u>                      Medium grained, equigranular yellow grey muscovite adamellite. May contain trace disseminated cassiterite.</p>	
71	45		Muscovite, quartz, tourmaline and ?cassiterite at fracture	
73	16		<p>Irregular contact                      End of Hole</p>	
73	59		<p><u>PORPHYRITIC ADAMELLITE</u>                      Pale yellow grey, fine to medium grained porphyritic adamellite. Larger phenocrysts are round grey quartz and euhedral feldspars. The remainder fine grained quartz, feldspar, muscovite and minor biotite.</p>	

046 DRILL HOLE NO. MT.1 LOCATION E.L. 11/77, MT. TERROR, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 77°m

ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm								
			no sample												
0	43		1271	0.52	0.52		5								
0	95		1272	0.16	0.16		30								
1	11		1273	0.67	1.56		20								
2	67		1274	1.52	1.55		<5								
4	22		*1275	0.47	0.57		<5								
4	79		1276	1.81	2.17		<5								
6	96		*1277	0.54	0.9		5								
7	86		1278	1.94	2.14		<5								
10	00		*1279												

\* whole core submitted for analysis

SAMPLED BY G.A. ANDERSON

DATE September, 1981

047

COMPANY UNION CORPORATION (AUSTRALIA) PTY., LIMITED

DRILL HOLE NO. MT.1 LOCATION E.L. 11/77, MT. TERROR, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 77°m

ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES						CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm							
			1279	2.2	2.2		5							
12	20													
			*1280	0.29	1.25		50							
13	45													
			1281	1.22	1.55		15							
15	00													
			*1282	0.58	0.83		35							
15	83													
			1283	2.12	2.17		20							
18	00													
			1284	1.03	1.03		30							
19	03													
			1285 cont'd											

\* whole core submitted for analysis

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DATE September, 1981

COMPANY UNION CORPORATION (AUSTRALIA) PTY. LIMITED

DRILL HOLE NO. .... MT.J. .... LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. .... -

COLLAR R L .... - AZIMUTH .... 77°m. .... ANGLE .... -60°

048

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP
m.	cm.			Rec	Rep	True	Sn ppm								
			1285	1.54	2		<5								
21	03														
			1286	1.59	1.59		5								
22	62														
			1287	2.34	2.38		10								
25	00														
			1288	1.28	1.8		5								
26	80														
27	15		*1290	0.23	0.35		10								
			1291	1.73	1.82		5								
28	97														
			1292 cont'd												

\*whole core submitted for analysis

SAMPLED BY ..... G.A. ANDERSON .....

DATE September, 1981

DRILL HOLE NO. MT.1 LOCATION E.L. 11/77, MT. TERROR, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 77°m ANGLE -60°

049

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP
m.	cm.			Rec	Rep	True	Sn ppm							
			1292	1.67	1.75		5							
30	72													
			No Sample	0	4.22		—							
34	94		*1293	1.01	1.05		155							
35	99													
			*1294	1.09	2.01		225							
38	00													
			1295	1.78	2		210							
40	00													

\* whole core submitted for analysis

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DATE SEPTEMBER, 1981.

050 DRILL HOLE NO. MT.1

LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. -

COLLAR R L -

AZIMUTH

77°m

ANGLE

-60°

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP
m.	cm.			Rec	Rep	True	Sn ppm								
			1296	1.23	1.56		40								
41	56														
			*1297	2.05	2.28		635								
43	84		1298	0.73	0.73		70								
44	57														
			1299	1.3	1.3		<5								
45	87														
			1300	2.27	2.27		<5								
48	14														
			1301	0.88	0.88		170								
49	02														
49	38		1302	0.36	0.36		25								
			1303												
			cont'd												

\* whole core submitted for analysis

SAMPLED BY G.A. ANDERSON

DATE SEPTEMBER, 1981

COMPANY UNION CORPORATION (AUSTRALIA) PTY. LIMITED

DRILL HOLE NO. MT.1

LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L -

AZIMUTH 77°m

ANGLE -60°

051

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES						CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm							
50	89		1303	1.51	1.51		65							
51	64		1304	0.75	0.75		15							
52	77		1305	1.13	1.13		35							
54	00		1306	1.23	1.23		30							
54	87		1307	0.87	0.87		5							
55	02		1308	0.15	0.15		45							
56	14		1309	1.12	1.12		15							
56	72		1310	0.58	0.58		50							
57	03		1311	0.31	0.31		40							
58	04		1312	1.01	1.01		40							
59	57		1313	1.53	1.53		45							
			1314 cont'd											

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DATE SEPTEMBER, 1981

DRILL HOLE NO. MT.1 LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 77°m

ANGLE -60

052

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm									
			1314	1.2	1.2		60									
60	77															
			1315	0.7	0.73		55									
61	50															
			1316	1.1	1.1		20									
62	60															
			1317	1.4	1.4		10									
64	00															
			1318	0.24	0.24		25									
64	24															
			1319	0.59	0.59		30									
64	83															
			1320	0.67	0.67		120									
65	50															
			1321	1.53	1.53		5									
67	03															
			1322	1.18	1.18		85									
68	21															
			1323	0.87	0.87		80									
69	08															
			1324	0.55	0.55		55									
69	63		1325 cont'd													

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DATE SEPTEMBER, 1981

053

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COMPANY UNION CORPORATION (AUSTRALIA) PTY. LIMITED

PAGE 8

DRILL HOLE NO. MT.1 LOCATION E.L. 11/77, MT. TERROR, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 77°m ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES						CORE DIP
m.	cm.			Rec	Rep	True	Sn ppm						
			1325	1.77	1.77		50						
71	40												
			1326	1.76	1.76		55						
73	16												
73	59		1327	0.43	0.43		35						
			End of hole										
SUMMARY OF MINERALISATION													
Sample interval (metres)				Weighted average			Remarks						
from	to		value			%Sn							
0	68.21					0.006	Incomplete.						
68.21	73.59					0.006	Complete.						
0	73.59					0.006	Incomplete.						

SAMPLED BY G.A. ANDERSON

DATE SEPTEMBER, 1981

DEPTH		GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.		
		NQ core drilling No core recovery to 2.41m., sludge sample collected	
2	41	Fractured core	30°
2	61	2cm. quartz vein, minor muscovite	3°
2	85	2cm. muscovite vein, fibrous aggregates in globular crystals (up to 3cm.wide), some quartz, fractured with minor core loss	40°
3	10	Coarse topaz in ?vein, core broken and fractured with some loss	
		Sharp contact	
4	98	Quartz muscovite ? inclusion, 4 cm. wide	30°
5	35	Broken core, some loss	
5	50	Fractured contact, some core loss	30°
5	68	Sharp contact	50°
5	98	Steep fractures	
		Sharp contact	
7	26	Increase in muscovite toward 783m	30°
7	55	Fractured, sharp contact	
7	83	Fine grained zone, fractured	30°
7	96	lower contact	40°
8	11	Irregular steep contact, fine grained zone to 9.42m.	75°
8	63	Muscovite-rich zones	
9	12	Sharp contact	
9	42	Weathered and broken core	20°
9	76	Fresh, leucocratic adamellite	
9	86	Gradational contact	30°

055  
CSO

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION		CORE DIP
m.	cm.				
10	01		Irregular muscovite veins	<u>MASSIVE QUARTZ MUSCOVITE</u> Medium to coarse grained; scattered clusters of small (up to 2mm.) marioles contain- ing faceted quartz-muscovite ±cassiterite	
11	12		Abundant muscovite		±80°
			Irregular sharp contact	<u>MUSCOVITE GRANITE/ADAMELLITE</u> Medium to fine grained, locally pegmatitic	
11	67		Broken, fractured core, some loss		
11	87				
12	03		Fine grained massive quartz-minor muscovite, minor marioles		
12	35		<u>Interlayered flat contact</u>		10°
12	38		Steep 5mm. quartz-tourmaline vein	<u>MASSIVE QUARTZ MUSCOVITE</u> Fine to medium grained	65°
12	80		Muscovite adamellite		35°
12	83				
			Gradational contact		
13	69			<u>MUSCOVITE GRANITE/ADAMELLITE</u> Medium to fine grained, weathered	
14	40		Broken core, some loss		
14	57		Gradational contact	<u>GREISENISED GRANITE</u> Leucocratic, fine to medium grained; some quartz- muscovite zones with minor feldspar	
			Gradational contact, fracture		40°
16	63		Several muscovite veins, broken core	<u>MASSIVE QUARTZ MUSCOVITE</u> Medium to coarse grained; scattered clusters of small (up to 2mm.) marioles contain- ing faceted quartz-muscovite ±cassiterite; one massive muscovite zone	40°
16	84				
17	32		Irregular sharp contact Massive muscovite (±sericite)- quartz to 18.13m. Muscovite rich zones at upper and lower contacts. Marioles occur		40°
18	13		Sharp contact		30°
18	48		Steep quartz-muscovite vein		70°
18	86		Broken core Gradational, greisenised contact		
19	10				
19	25		Muscovite-rich zone	<u>MUSCOVITE GRANITE/ADAMELLITE</u> Medium grained, weathered	

056

DEPTH		GEOL. SECT. 20cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
20	70	Irregular quartz-muscovite veins	<u>MUSCOVITE GRANITE/ADAMELLITE</u> Medium grained, weathered	
24	86			
25	40	Gradational contact	<u>MASSIVE QUARTZ MUSCOVITE</u> Medium to coarse grained; scattered clusters of small (up to 2mm.) marioles contain- ing faceted quartz-muscovite ±cassiterite; some clay minerals occur	
29	85	Broken core, some loss		

DEPTH		GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.		
30	70	<p>Gradational contact</p> <p><u>MASSIVE QUARTZ MUSCOVITE</u> Medium to coarse grained; scattered clusters of small (up to 2mm.) marbles containing faceted quartz-muscovite ± cassiterite; some clay minerals occur</p>	
		<p><u>MUSCOVITE APLITE</u> Medium grained, leucocratic, weathered</p>	
32	24	<p>Undulating, sharp contact</p> <p><u>MATHINNA BEDS</u> Mainly siltstone; some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins</p>	10°
33	80	<p>Fine network of fractures</p>	
34	50	<p>Irregularly 'spotted' pelite</p>	
35	20	<p>Spotted zone, 10 cm. wide</p>	
35	33	<p>1cm. quartz vein</p>	
35	62	<p>Grinding, minor core loss</p>	
		<p>Siltstone darkens toward contact</p>	
37	56	<p>Grinding at contact, some core loss</p> <p><u>MUSCOVITE APLITE</u> Medium grained, weathered</p>	
38	46	<p>No core recovery, sludge sample only to 39.4m.</p>	
39	40		

057

058

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
			<u>MUSCOVITE APLITE</u> Medium grained, weathered	
40	66		Gradational contact	
			<u>MASSIVE QUARTZ MUSCOVITE</u> Medium to coarse grained; scattered clusters of small (up to 2mm.) marbles containing faceted quartz-muscovite ± cassiterite; massive muscovite zone; several siltstone fragments, some greisenised	35°
41	85		Massive muscovite to 43.86m	
42	20		Siltstone fragment	
			No core recovered to 42.6m., sludge sample only	
42	60			
43	20		Massive quartz-muscovite, irregular lower contact	10°
43	30			30°
43	47		Siltstone fragment, ?sheared lower contact	45°
43	68		Irregular quartz veins	
43	86			
44	00		<u>MUSCOVITE APLITE</u> Siltstone fragments Medium grained; several siltstone blocks and fragments, some greisenised; weathered	
			No core recovered to 44.55m., sludge sample only	
44	55		Siltstone fragments	
45	04			
45	20		Soft, broken core, some loss	
			<u>MATHINNA BEDS</u> Broken core	25°
45	60		Thin quartz-tourmaline vein	
			Mainly siltstone; some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; with breccia and some greisenised siltstone; sugary-textured aplite (locally pegmatitic) comprises matrix in breccia	80°
46	00		Breccia, faulted, quartz-muscovite-?cassiterite veins	
46	20		Steep ? sheared quartz vein	
46	56		Irregular aplite veins	
46	65		Breccia	
			Minor aplite veins	
47	00		Breccia, 4cm. wide	
47	54		Breccia, wedge shaped	
47	80		Hard quartzitic (some mica) zone, quartz-tourmaline vein	
47	06		lets to 48.14m.	
48	14		Quartz-tourmaline vein	
48	45		Irregular aplite vein	
48	80		Sharp contact	30°
			<u>MUSCOVITE APLITE</u> Medium grained; several siltstone blocks and fragments, some greisenised; weathered; locally pegmatitic	
49	37		Siltstone fragments	
49	60		Fine tourmaline grains at greisenised contact	
49	96		Brecciated contact, local pegmatite	42°



030

DEPTH		GEOL. SECT. 20cm. per div.	GEOLOGICAL DESCRIPTION		CORE DIP
m.	cm.				
60	04		Scattered tourmaline grains	MUSCOVITE APLITE	
60	30			Medium grained; several siltstone blocks and fragments, some greisenised; weathered	
60	50		Pegmatite		
60	76		Pegmatite		
60	99		Aplite, spotted with tourmaline	MATHINNA BEDS	40°
61	06		Irregular quartz-muscovite pegmatite	Mainly siltstone; some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; some greisenisation at contact with aplite	
61	27				
62	00		BQ core drilling		
62	50		Irregular, brecciated contact	MASSIVE QUARTZ MUSCOVITE	
62	90		Broken, soft core, some loss	Medium grained; ? vein	
63	20				30°
63	50		Sharp contact	MUSCOVITE APLITE	
63	59		Quartz vein	Fine to medium grained	30°
63	80		Greisenised granite/adamellite	MATHINNA BEDS	25°
				Siltstone	
				MASSIVE QUARTZ MUSCOVITE	
				Medium grained	
64	33		Siltstone fragments, some greisenised		60°
64	54		Siltstone xenolith	MATHINNA BEDS	50°
64	79		Aplite with scattered tourmaline, fragments of siltstone, some greisenised	Mainly siltstone; some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins	20°
64	84		Pegmatite (quartz-feldspar-tourmaline)		
64	93		Irregular contact, brecciated, irregular aplite veins (breccia), irregular quartz veins		
65	20				
69	93		Fault filled by earthy, gossanous material with fine quartz-muscovite selvages. Fault cuts across quartz-?cassiterite-muscovite vein (1cm wide)		
69	91		Sharp contact	MUSCOVITE APLITE	20°
				Medium grained, slightly weathered	

DRILL HOLE NO. MT.2 LOCATION MOUNT TERROR, E.L. 11/77 N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. - AZIMUTH 180°

ANGLE -60°

061

DEPTH		GEOL. SECT. 20cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
			MUSCOVITE APLITE Medium grained, slightly weathered	
71	40		Siltstone fragments, greisenised	20°
71	46		Sharp contact	
71	67		Steep, narrow (1cm.) aplite veins	80°
71	87		Grinding, 20cm core loss to 71.87 m.	60°
72	10		Irregular quartz vein	30°
72	28		Quartz vein (1cm wide)	30°
72	59		Aplite, scattered tourmaline grains, minor greisenised siltstone fragments	30°
72	90		Grinding, some core loss	
75	56		Broken core	
75	74		Aplite, fine quartz-tourmaline clusters UCT 1211 (75.74-75.8m) see thin section description attached	10°
76	31			
76	90		Scattered tourmaline grains, fragments of siltstone mostly greisenised. Quartz-feldspar-tourmaline-muscovite-?cassiterite pegmatite at 77.1 m.	30°
77	10			
77	29			60°
78	73		Quartz-muscovite-tourmaline-?cassiterite pegmatite	45°
78	92		Aplite, specks of tourmaline Thin aplite vein (5mm)	15°
79	55		Thin aplite vein (2mm)	20°
79	90		Sharp contact, tourmaline grains	40°
			MATHINNA BEDS Mainly siltstone; some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; some aplite veins and dykes, locally pegmatitic.	
			MUSCOVITE APLITE Medium grained; siltstone and pelite xenoliths and fragments, some greisenised	

DRILL HOLE NO. MT.2

LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. -

AZIMUTH 180°

ANGLE -60°

DEPTH		GEOL. SECT. 20cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
80	09		Dark quartz-tourmaline, trace sulphide <u>MUSCOVITE APLITE</u>	
80	41		Sericite patches	
80	54		Siltstone Medium grained; siltstone and pelite xenoliths and fragments, some greisenised	
80	88		Siltstone	55°
81	10			40°
81	33		Siltstone	40°
81	50		Siltstone fragments in finer grained aplite, spotted by tourmaline	
81	63		Quartz-muscovite ± cassiterite pegmatite zones	
81	67		Tourmaline vein (5mm) Irregular contact <u>MATHINNA BEDS</u>	
82	11		Quartz-tourmaline-minor muscovite, steep thin (1mm) tourmaline veins	55°
82	26		Quartz vein (1cm) Aplite (?greisenised) spotted by clusters of fine quartz-tourmaline, trace sulphide grains	45°
82	55		Ditto description for 82.95 to 83.31m Hard, dark grey, finer grained	20°
82	95			60°
83	31			
83	52			
83	64			
84	09			
85	60		Quartz vein (3cm) Greisenisation at contact	55°
85	96		Broken core, pegmatite zone (10 cm)	
86	06		Steep muscovite fracture vein <u>MUSCOVITE APLITE</u>	
86	57		Medium grained; locally pegmatitic; clusters of fine pyrite and ?other sulphides, blebs of interstitial sulphides; rare spotted quartz-tourmaline zones	
87	17		UCT 1212 (87.17-87.25m)-see thin section description attached	
87	20		Quartz-muscovite to 87.86m, more muscovite and breccia toward base, Fine dark granules (tourmaline) above breccia fragments <u>PEGMATITE</u>	
87	86		Quartz-Kspar ± muscovite crystals up to 5cm; contact with aplite is gradational <u>MUSCOVITE APLITE</u>	
87	86		Medium grained; locally pegmatitic; clusters of fine pyrite and ?other sulphides, blebs of interstitial sulphides; rare spotted quartz-tourmaline zones	60°
88	31		Irregular quartz-muscovite ± tourmaline ± cassiterite veins	
88	50		Broken, weathered zone, underground water channel?, 10cm core loss	
88	76		<u>MATHINNA BEDS</u> Mainly siltstone; some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (±muscovite) veins	
89	77		Irregular quartz-muscovite-tourmaline veins (2mm)	

0630

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
90	00			
90	38		<u>MATHINNA BEDS</u> Mainly siltstone; some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins	65° 20°
90	90			
91	11	Medium grained quartz-tourmaline to 91.11m	<u>PEGMATITE</u>	
91	35	Siltstone fragments	Quartz-Kspar ± muscovite crystals up to 5cm, ± tourmaline zones; some fine dark inclusions (?biotite) in Kspar	
91	54			
91	60	Irregular quartz-tourmaline, siltstone fragments		
91	85	Siltstone fragments		
92	00		<u>MUSCOVITE APLITE</u>	
92	20	Quartz-rich zone to 92.8m	Medium grained, some spotted with tourmaline, locally pegmatitic; greisenised siltstone fragments	
92	80		<u>PEGMATITE</u>	
93	07	Broken core at contact	Quartz-Kspar ± muscovite crystals up to 5cm, ± tourmaline zones; some fine dark inclusions (?biotite) in Kspar; locally aplitic	
93	80	Pegmatite zone (4cm)	<u>MUSCOVITE ADAMELLITE</u>	
94	36	Pegmatite zone (6cm)	Medium grained, locally pegmatitic; scattered trace sulphides	
94	67	Pegmatite zone (3cm)		
96	52	Pegmatite veins (X3), layering ?		50°



COMMENTS

All section offcuts were stained with sodium cobaltinitrite to highlight the distribution and abundance of K-spar (stained yellow).

Sample UCT 1209 is an inequigranular muscovite, 'plagioclase-granite' (i.e. without K-spar). The quartz is notably coarser (incipiently pegmatitic) than muscovite and the plagioclase of albite to oligoclase composition. This has the same composition and texture as most of 1212, but that sample also includes quartz-(sericitised)-K-spar pegmatite.

Sample 1210 is also a muscovite 'plagioclase-granite' (also without K-spar), carrying tourmaline, locally pegmatitic, and gradational to fine quartz-muscovite greisen with tourmaline rutile and zircon.

Sample 1211 has a similar texture as the 'plagioclase-granite' in 1210, but differs from that sample, and the other 'plagioclase-granites' 1209 and 1212 in having K-spar as an essential rock-forming mineral; the equal abundance of K-spar and plagioclase makes 1211 an adamellite (with minor muscovite).

Primary muscovite apparently replacing K-spar in 1211, suggests that the more extensive muscovite in the 'plagioclase-granites' has formed at the exclusion of K-spar, and together with tourmaline in 1210 may indicate that 1209, 1210 and 1212 are more volatile-charged, pegmatitic phases of the 1211 phase.

Cassiterite was not seen in any sample.

066  
2.

The field term aplite, fairly adequately applies to the fine grained leucocratic assemblages in this suite, particularly if they represent veins or dykes.

The petrography does not reveal quite the homogeneous, even allotriomorphic texture implied by 'aplite' however. Also, in the absence of K-spar 'soda-aplite' may be more appropriate (except for 1211).

\*\*

UCT

1209 :

inequigranular, incipiently pegmatitic  
muscovite, 'albitic-granite'  
(i.e. without K-spar)

Field note :

muscovite adamellite

This rock consists of a homogeneous aggregate of coarse (to 3 mm) allotriomorphic quartz (50%); randomly disposed muscovite (25 - 30%), commonly in partly radiating clusters; and more or less euhedral laths of plagioclase (20%). The muscovite and plagioclase crystals are commonly intergrown, and they are smaller than the quartz, generally about 1 mm in maximum dimension.

The plagioclase has an albitic composition and is moderately altered to clays along cleavages; this is primary plagioclase, i.e. primarily soda-rich (which may be expected with such an abundance of muscovite).

Trace minute fluid inclusions occur in the quartz, and locally the quartz appears to invade plagioclase laths, indicating a probable 'hydrothermal' late-stage genesis. Potash feldspar is absent.

The rock is identified as an incipient pegmatite of 'albitic, muscovite granite' composition.

UCT 1210 : fine to medium grained muscovite, albite-oligoclase granite; locally pegmatitic; with scattered coarse tourmaline; in contact with a greisen and greisenised fine sediment, with disseminated tourmaline, zircon and ultrafine rutile (no cassiterite)

Field note : pegmatite, aplite and siltstone, tourmaline + cassiterite

The most extensive area in this thin section is similar to 1209, and consists of a random, fairly homogeneous aggregate of quite coarse allotriomorphic quartz (35 - 40%), muscovite (25%), and plagioclase laths (30 - 35%). Compared with 1209, muscovite is less abundant and only very rarely in clusters, plagioclase is more abundant, and the quartz is generally not coarser than the other components. Most plagioclase appears to be oligoclase, but some crystals are relatively albitic. Minor quite coarse tourmaline (5 - 7%) is scattered; it is variably pale orange, pale yellowish to pale blue in thin section. Diligent search failed to locate any cassiterite.

This area is locally very coarse (1 to 5 mm) and presumably represents the pegmatite mentioned in the field note.

It is mainly this pegmatitic domain which forms reasonably sharp contact with irregular areas of quartz micromosaic, locally crowded with fine muscovite. Accessory small (0.15 mm) grains of yellow-orange tourmaline, also much finer (0.01 to 0.05 mm) crystals of rutile, lesser tourmaline and zircon are disseminated through this domain, which must surely be a greisen. Cassiterite was not detected.

This greisen merges into the area probably designated as siltstone in the field note, which consists of a compact mass of decussate sericite, very fine muscovite and minor fine quartz; with minute rutile crystals dispersed throughout.

UCT 1211 : leucocratic, fine to medium grained, muscovite  
adamellite; skeletal intergrowths of muscovite  
in K-spar suggest incipient development of  
muscovite at expense of the K-spar

Field note : aplite, ?specs of cassiterite

This rock has essentially the same texture as the fine to medium grained muscovite 'leuco-granite' UCT 1210, however it differs from that sample in containing essential K-spar (K-spar is absent from 1210 and 1209).

Basically it consists of a fine to medium, hypidiomorphic granular aggregate of quartz (30%), oligoclase-plagioclase (30%), and potash feldspar (about 30%). Muscovite (about 10%) occurs as random, ragged flakes, also as highly irregular networks intricately intergrown with the potash feldspar, more or less replacing this K-spar.

This relationship suggests that the relatively more abundant muscovite in 1209 and 1210 has developed at the expense of K-spar, indicating a greater concentration of volatiles in 1209 and 1210, compared with this microadamellite 1211. Trace grains of pyrite are present (in hand specimen); cassiterite was not seen in the thin section.

The homogeneous, fine grain size and leucocratic nature of this rock, renders the name 'aplite' as suitable as fine leuco-adamellite, particularly if it occurs as a dyke or vein (although the fine overall allotriomorphic texture is not quite as well advanced as in classical aplites).

UCT 1212 : granite-pegmatite with essential coarse K-spar; in contact with an inequigranular, muscovite, 'plagioclase-granite'; (i.e. without K-spar)

Field note : pegmatite + aplite

The so-called aplite in this rock is the same as the whole of 1209, i.e. an aggregate of coarse allotriomorphic quartz, with subordinate and similar amounts of slightly finer muscovite and plagioclase laths. The muscovite commonly occurs in clusters, and/or is closely associated with plagioclase. Potash felspar is absent.

The pegmatite consists of very large (10 - 20 mm) crystals of allotriomorphic quartz and subhedral to euhedral K-spar and rare muscovite. The K-spar shows moderate to advanced alteration to sericite.

1071

DRILL HOLE NO. MT.2 LOCATION E.L. 11/77, MT. TERROR, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L AZIMUTH 180°m ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES						CORE DIP		
m.	cm.			Rec	Rep	True	Sn ppm								
			1213	0	2.41		360								
			sludge sample only												
2	41														
			1214	2.57	2.57		195								
4	98														
			1215	0.7	0.7		85								
5	68														
			1216	1.58	1.58		205								
7	26														
			1217	0.57	0.57		420								
7	83														
			1218	1.59	1.59		340								
9	42														
			1219 cont'd												

072

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DRILL HOLE NO. .... MT.2 ..... LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA .....

COLLAR CO-ORDS. .... - .....

COLLAR R L ..... - ..... AZIMUTH 180° ..... ANGLE -60°

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm									
			1219	1.7	1.7		180									
11	12		1220	1.23	1.23		110									
12	35		1221	1.34	1.34		240									
13	69		1222	0.88	0.88		175									
14	57		1223	1.56	1.56		505									
16	13		1224	1.19	1.19		0.18%									
17	32		1225	0.81	0.81		880									
18	13		1226	0.97	0.97		825									
19	10		1227	No												
			cont'd	analysis												

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DATE AUGUST, 1981 .....

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DRILL HOLE NO. MT.2 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180°m

ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm								
		[Red shaded area]	No analysis												
			1227	3.15	3.15		-								
22	25														
				1228	3.15	3.15		835							
25	40	[Red shaded area]													
			1229	2.65	2.65		960								
28	05														
				1230 cont'd											

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DATE AUGUST, 1981

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DRILL HOLE NO. MT.2 LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180°m

ANGLE -60°

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm									
			1230	2.65	2.65		395									
30	70															
			1231	1.54	1.54		630									
32	24															
			1232	2.66	2.66		30									
34	90															
			1233	2.66	2.66		10									
37	56															
			1234	0.9	0.9		620									
38	46															
			1235	0	0.94		0.27%									
39	40		Sludge sample													
			1236													
			cont'd													

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PAGE 5

DRILL HOLE NO. MT.2 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180°m

ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP
m.	cm.			Rec	Rep	True	Sn ppm								
			1236	1.26	1.26		175								
40	66														
			*												
			1237	1.54	1.54		165								
42	20														
			1238	0	0.4		735								
42	60		Sludge												
			*												
			1239	1.08	1.08		235								
43	68		*												
44	00		1240	0.32	0.32		105								
			1241	0	0.55		710								
44	55		Sludge												
			*												
			1242	0.49	0.49		75								
45	04														
			*												
			1243	3.76	3.76		90								
			*												
			1244	1.16	1.16		145								
			1245												
49	96		cont'd												

\* whole core submitted for analysis

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COMPANY UNION CORPORATION (AUSTRALIA) PTY. LIMITED

DRILL HOLE NO. MT.2

LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L -

AZIMUTH 180°m

ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP		
m.	cm.			Rec	Rep	True	Sn ppm									
			* 1245	2.29	2.29		20									
52	25															
			1246	3.46	3.46		5									
55	71															
			* 1247	2.97	2.97		90									
58	68		1248 cont'd													

\* whole core submitted for analysis

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DATE AUGUST, 1981

COMPANY UNION CORPORATION (AUSTRALIA) PTY. LIMITED

DRILL HOLE NO. MT.2 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180°m ANGLE -60°

DEPTH		GEOLOGICAL SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP
m.	cm.			Rec	Rep	True	Sn ppm								
			1248	2.08	2.08		80								
60	76														
			1249	1.74	1.74		40								
62	50		*												
			1250	0.7	0.7		110								
63	20		1251	0.3	0.3		110								
63	50														
			1252	1.34	1.34		70								
64	84														
			1253	2.16	2.16		10								
67	00														
			1254	2.91	2.91		100								
69	91		1255	cont'd											

\* whole core submitted for analysis

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DATE AUGUST, 1981

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COMPANY UNION CORPORATION (AUSTRALIA) PTY. LIMITED

DRILL HOLE NO. MT.2

LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. -

COLLAR R L -

AZIMUTH 180°m

ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm								
			1255	1.55	1.55		0.26%								
71	46														
			1256	3.9	4.1		15								
75	56														
			1257	1.73	1.73		50								
77	29														
			1258	2.61	2.61		10								
			*												
				1259											
			cont'd												
79	90														

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DATE AUGUST, 1981

079

DRILL HOLE NO. .... MT.2 ..... LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA .....

COLLAR CO-ORDS. .... - .....

COLLAR R L .... - ..... AZIMUTH ..... 180°m ..... ANGLE -60° .....

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm								
			*												
			1259	1.77	1.77		225								
81	67														
			1260	2.42	2.42		110								
84	09														
			1261	1.87	1.87		30								
85	96														
			1262	0.61	0.61		80								
86	57														
			1263	0.63	0.63		45								
87	20														
			1264	0.66	0.66		70								
87	86														
			1265												
			cont'd												

\* whole core submitted for analysis

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DATE AUGUST, 1981 .....

080

DRILL HOLE NO. MT.2 ..... LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. - .....

COLLAR R L - ..... AZIMUTH 180°m ..... ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP		
m.	cm.			Rec	Rep	True	Sn ppm										
90	38		1265	2.52	2.52		40										
				1266	1.82	1.82		30									
92	20																
				1267	0.87	0.87		30									
93	07																
				1268	3	3		80									
96	07																
				1269	2.93	2.93		65									
99	00		1270														
			cont'd														

DRILL HOLE NO. MT.2 ..... LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. - .....

COLLAR R L - ..... AZIMUTH 180°m ..... ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES						CORE DIP
m.	cm.			Rec	Rep	True	Sn ppm						
			1270	2	2		115						
101	00		End of hole										
SUMMARY OF MINERALISATION													
Sample interval (metres)				Weighted average			Remarks						
from		to		value %Sn									
0		30.7		0.05			Incomplete						
30.7		86.57		0.02			Incomplete						
86.57		101		0.006			Virtually complete						
0		86.57		0.03			Incomplete						
0		101		0.03			Incomplete						

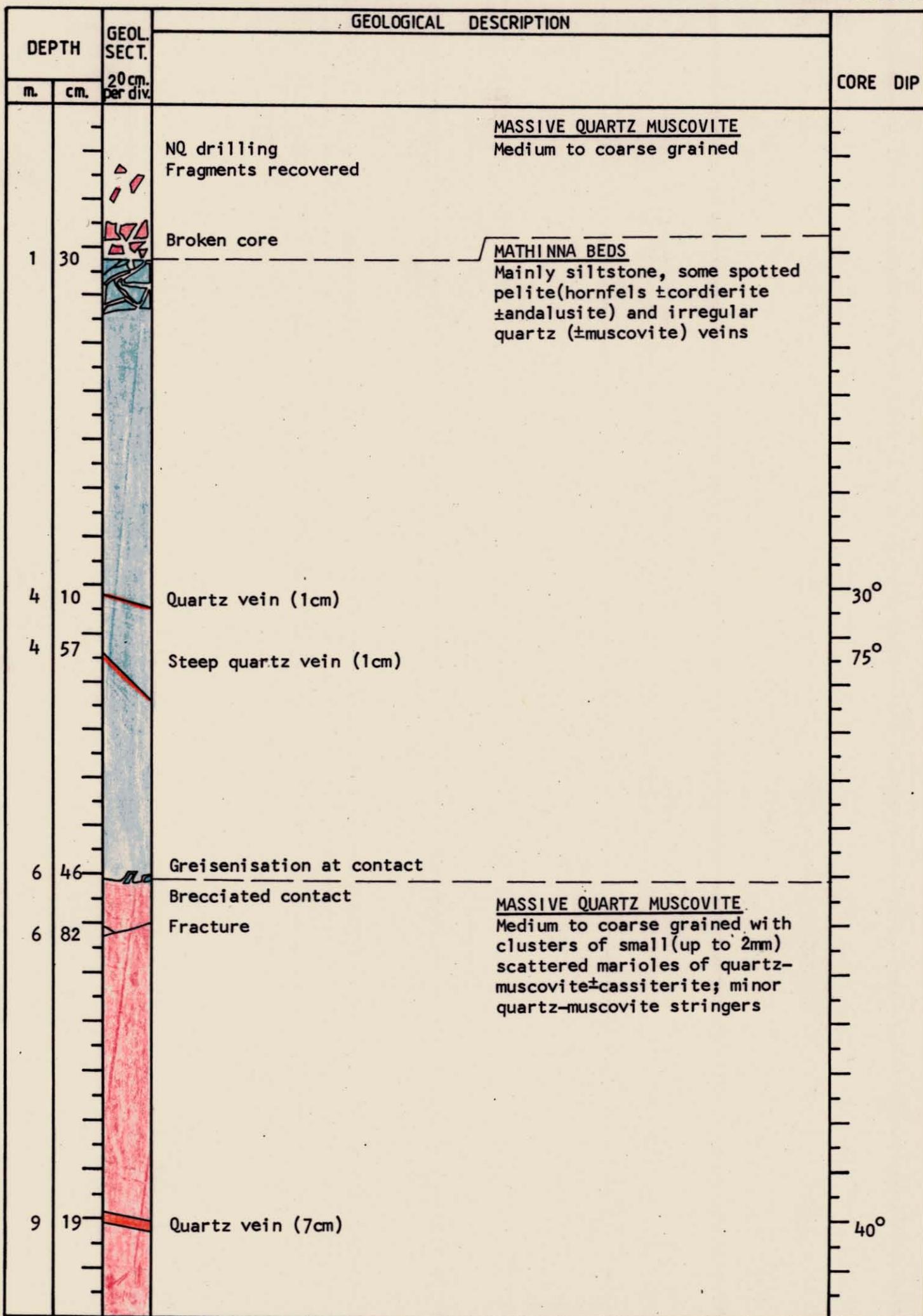
081

DRILL HOLE NO. MT. 3 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. - AZIMUTH 180°m ANGLE -60°

082



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DATE AUGUST, 1981

083

DRILL HOLE NO. .... MT. 3 ..... LOCATION .... MOUNT TERROR, E.L., 11/77, N.E., TASMANIA .....

COLLAR CO-ORDS. .... - .....

COLLAR R. L. .... - ..... AZIMUTH 180° ..... ANGLE -60° .....

DEPTH		GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.		
		<p><u>MASSIVE QUARTZ MUSCOVITE</u> Medium to coarse grained, with clusters of small (up to 2mm) scattered marbles of quartz-muscovite ± cassiterite; minor quartz-muscovite stringers</p>	
12	73	Steep quartz-muscovite vein	
13	98	BQ core drilling	
15	40	Gradational contact	
		<p><u>GREISENISED GRANITE</u> Medium grained with clayey subordinate feldspar</p>	
17	58	Gradational contact	
		<p><u>MUSCOVITE GRANITE/ADAMELLITE</u> Medium grained, leucocratic, weathered</p>	
18	58	Gradational contact	
		<p><u>GREISENISED GRANITE</u> Medium grained, with clayey subordinate feldspar</p>	
19	48	Gradational contact	
		<p><u>MASSIVE QUARTZ MUSCOVITE</u> Medium to coarse grained with clusters of small (up to 2mm) scattered marbles of quartz-muscovite ± cassiterite; minor quartz-muscovite stringers</p>	

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
			<u>MASSIVE QUARTZ MUSCOVITE</u> Medium to coarse grained with clusters of small (up to 2mm) scattered marbles of quartz-muscovite ± cassiterite; minor quartz-muscovite stringers	
21	04		Broken core, some loss	
21	23		Massive muscovite	25°
21	37		Massive muscovite	
21	60		Greisenised granite to 21.85m	
21	85		Gradational contact	
21	95		Siltstone fragments, greisenised	
			<u>MUSCOVITE APLITE</u> Medium grained, leucocratic, weathered, some breccia fragments	
23	25		Breccia fragments, greisenised	
23	75		Aplite finer grained and spotted by tourmaline toward 23.75m	40°
			<u>MATHINNA BEDS</u>	
24	20		Massive quartz-muscovite, scattered coarse tourmaline	
24	40		Siltstone fragment, greisenised	50°
24	70		Breccia, quartz matrix	
25	30		Irregular quartz-muscovite vein, medium and fine grained, becoming aplitic toward base	
25	45		Irregular quartz-muscovite vein, medium and fine grained, becoming aplitic toward base	
			(tourmaline) aplite and quartz-muscovite zones from 30.2m; sugary-textured aplite comprises matrix in breccia	

085 DRILL HOLE NO. MT. 3 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. - AZIMUTH 180°m ANGLE -60°

DEPTH		GEOL. SECT.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
30	00		Broken core, some quartz vein fragments	
30	20		Spotted aplite in highly broken and brecciated zone to 31.1m, possibly 40% core recovery	
31	10		Aplite spotted by tourmaline with greisenised siltstone fragments	
31	25			
31	55			
32	15		Breccia and aplite with minor clusters of tourmaline	50°
32	60		Scattered tourmaline in broken aplite zone to 33.73m, possibly 30% core recovery from 33.1 to 33.73m	
33	10			
33	73			
34	20		Quartz-muscovite vein(2cm)	25°
34	46		Coarse and fine quartz-muscovite±tourmaline in breccia	
34	66			
			Quartz vein	
			Greisenised siltstone	
35	30		Irregular coarse quartz-muscovite veins	
35	50		Minor siltstone fragments in spotted aplite	
35	70			
			Siltstone comprises 85% of rock to 36.7m	
36	70		Broken core at contact	
37	64		Aplite	
37	74			
			Breccia	
38	00		Broken core	
38	36		Irregular fractures filled with aplite	
38	81		Quartz-tourmaline vein with muscovite selvages	70°
39	20		Breccia	
39	33			

DEPTH		GEOLOG. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
			<u>MATHINNA BEDS</u> Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; breccia, often greisenised, numerous spotted (tourmaline) aplite and quartz-muscovite zones from 30.2m; sugary-textured aplite comprises matrix in breccia	
41	14		Quartz stringer	
41	25		Aplite veins resembling 'stockworks'	
42	04		Irregular quartz veins	
42	86		Aplite, core lost from 42.88 to 43.15m	
43	15		Quartz vein and pronounced spottiness in pelite	
43	95		Irregular quartz veins in highly fractured and broken core to 43.95m	
45	00		Aplite stringer	
46	53		Irregular quartz veins	
46	84		Tourmaline stringer	
47	70		Broken core, some loss	30°
47	90		Siltstone fragments	
48	00		Quartz vein	
48	40		Siltstone fragments	
48	74		No core recovery to 50.3m, sludge sample only recovered	
			<u>MUSCOVITE APLITE</u> Medium grained, spotted with tourmaline	

087

DRILL HOLE NO. MT. 3 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. - AZIMUTH 180°m ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
50	30		MUSCOVITE APLITE Medium grained, spotted with tourmaline	
50	78	Fine grained quartz-minor muscovite zone with massive fine grained quartz-tourmaline		60°
50	90		MATHINNA BEDS	
51	00	Quartz-muscovite vuggy vein(2cm)	Mainly siltstone, minor spotted pelite zones	
51	20	Quartz-muscovite vuggy vein(3cm)		
51	57	Breccia		
51	75		MUSCOVITE APLITE Medium grained	
52	20			
52	70	Aplite, very soft core	MATHINNA BEDS Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins	
54	90	Siltstone darkens toward contact		30°
			MUSCOVITE APLITE Medium grained	
55	95		MATHINNA BEDS Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins	40°
58	30	Pronounced spotting		50°
58	46	Quartz-felspar pegmatite at contact		
58	65	Siltstone fragments	MUSCOVITE APLITE Medium grained, some fine grained zones; trace sulphides (± ironstone); scattered specks of tourmaline; breccia and scattered fragments of Mathinna Beds, some greisenised	
60	00	Pyrite - ironstone		

DRILL HOLE NO. MT. 3 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. - AZIMUTH 180°m ANGLE -60°

088

DEPTH		GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.		
60	08	Breccia with finer grained and more leucocratic aplite, increase in number of specks of tourmaline toward base	
60	30		
60	43		
60	60	Siltstone	
60	68		
60	84	Irregular muscovite pegmatite vein	
61	76	Muscovite-quartz-tourmaline pegmatite vein	
62	10	Abundant breccia	20°
62	88		5°
63	08	Aplite spotted with tourmaline	
63	42	Siltstone fragments and breccia, some greisenised	
63	62	Irregular pegmatite zone (quartz-feldspar-muscovite-cassiterite), possibly trapped below siltstone fragments	15°
65	00	No core recovery to 67.34m, old mine workings	
67	34	Breccia, some greisenised	
67	53		
67	69		
68	02	Grinding Breccia	
68	10		
68	65	Aplite veins (3mm)	40°
69	01	Breccia	
69	40		
69	60	Irregular aplite veins	

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680

DEPTH		GEOLOG. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
70	06		Aplite veins, some fine quartz-tourmaline aggregates Pegmatite, quartz-felspar-tourmaline	MATHINNA BEDS
70	12			
70	72		Breccia, some quartz-muscovite pegmatite irregular veins, stringers and small clusters of quartz-tourmaline	Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; breccia and fragments often greisenised; sugary-textured aplite comprises matrix in breccia, variably spotted by tourmaline, locally pegmatitic
71	46			
71	77		Grinding	
73	17		Irregular aplite veins	35°
73	30			
73	50		Siltstone fragments, pegmatite at top	
73	72		Irregular aplite veins	
74	23		Thin aplite veins	
75	00		Grinding	
75	50		Grinding Breccia	20°
75	77			
76	05		Breccia	70°
76	19			
76	77		Steep aplite veins	
77	40		Grinding	
79	60		Steep fracture	85°

060

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
			<u>MATHINNA BEDS</u> Mainly siltstone	
80	67		Sharp contact	30°
81	04		Breccia fragments	
81	07		Pegmatite, quartz-feldspar-muscovite-tourmaline? cassiterite	
81	30		Siltstone	
			Siltstone fragments	
81	84		Siltstone fragments with irregular quartz-tourmaline vein	
			Pyrite and ironstone grains	
82	80		Siltstone fragments	
83	02		Irregular contact,	
			<u>PEGMATITE</u> Coarse (up to 5cm) quartz-Kspar, rare muscovite; locally aplitic	
83	60		Broken core	
83	88			20°
			<u>MUSCOVITE APLITE</u> Fine to medium grained; scattered tourmaline; breccia fragments, some greisenised; scattered sulphides	
84	34		Siltstone fragments	
84	44			
			Pyrite ± ironstone grains	
84	80		Irregular contact	
85	00			
			<u>PEGMATITE</u> Coarse (up to 5cm) quartz-Kspar, minor muscovite	
85	24		Greater concentration of pyrite ± ironstone toward 87m	
			<u>MUSCOVITE ADAMELLITE</u> Medium grained	
87	00			
87	75		Grinding	
88	50		Iron staining, weathered to 89.5m	
89	00		Fractured core	
89	50		Highly weathered and broken core, approximately 25% core recovery to 94.46m	
			<u>PORPHYRITIC ADAMELLITE</u> Fine to medium grained, includes muscovite and biotite, phenocrysts of quartz, plagioclase, muscovite and minor biotite	



092

DRILL HOLE NO. MT.3 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L AZIMUTH 180°m ANGLE -60°

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES						CORE DIP		
m.	cm.			Rec	Rep	True	Sn ppm								
		*													
		[Red Fragments]	1238	Frag- ments	1.3		260								
1	30	[Blue Core]													
			1329	2	2		15								
3	30														
			1330	3.16	3.16		10								
6	46	[Red Core]													
			1331	cont'd											

\* whole core submitted for analysis

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093

DRILL HOLE NO. MT.3 LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS.

COLLAR R L - AZIMUTH 180°m ANGLE -60°

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm								
			1331	4.47	4.47		445								
10	93														
			1332	3.05	3.05		975								
13	98														
			1333	1.42	1.42		550								
15	40														
			1334	2.18	2.18		330								
17	58														
			1335	1	1		140								
18	58														
			1336	0.9	0.9		245								
19	48														
			1337												
			cont'd												

094

DRILL HOLE NO. MT.3 ..... LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA .....

COLLAR CO-ORDS. - .....

COLLAR R L - ..... AZIMUTH 180°m ..... ANGLE -60° .....

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm								
			1337	2.37	2.37		610								
21	85														
			1338	1.9	1.9		435								
23	75														
			1339	1.7	1.7		180								
25	45														
			1340	2.55	2.55		65								
28	00														
			1341 cont'd												

DRILL HOLE NO. MT,3 LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. -

COLLAR R L AZIMUTH 180°m ANGLE -60°

095

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP		
m.	cm.			Rec	Rep	True	Sp ppm										
30	20		1341	2.2	2.2		25										
			*	1342	0.32	0.9		115									
31	10		1343	2	2		205										
			*	1344	0.19	0.63		300									
33	10		*1345	2.97	2.97		110										
33	73																
36	70		*1716	2	2		40										
				1717													
38	70		cont'd														

\* whole core submitted for analysis

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0960

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DRILL HOLE NO. MT3 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180°m ANGLE -60°

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm									
			*													
			1717	2	2		35									
40	70															
			1718	2.16	2.16		25									
42	86		*													
43	15		1719	0.08	0.29		20									
			1720	2	2		15									
45	15															
			1721	2.55	2.55		40									
47	70		*													
			1722	1	1.04		100									
48	74		Sludge sample													
			1723													
			cont'd													

\* whole core submitted for analysis

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DRILL HOLE NO. MT3 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180°m ANGLE -60°

097

DEPTH		GEOLOGICAL SECTION 20 cm. per div	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm									
			1723	0	1.56		500									
50	30		*													
			1724	0.6	0.6		495									
50	90															
			1725	0.67	0.67		185									
51	57															
			1726	0.63	0.63		135									
52	20															
			1727	0.5	0.5		35									
52	70															
52	76		1728	0.06	0.06		170									
			1729	2.14	2.14		25									
54	90															
			1730	1.05	1.05		90									
55	95															
			1731	2.35	2.35		10									
58	30															
			1732													
			cont'd													

\* whole core submitted for analysis

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DRILL HOLE NO. MT.3

LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. -

COLLAR R L -

AZIMUTH

180°m

ANGLE

-60°

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES						CORE DIP
m.	cm.			Rec	Rep	True	Sn ppm						
			1732	2.54	2.54		240						
60	84		1733	1.26	1.26		70						
62	10		1734	0.78	0.78		15						
62	88		1735	0.74	0.74		45						
63	62		1736	1.38	1.38		75						
65	00		No sample, mine workings	0	2.34								
67	34		1737	2.66	2.66		90						
70	00												

DRILL HOLE NO. MT.3

LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. -

COLLAR R L -

AZIMUTH 180°m

ANGLE -60°

690

DEPTH		GEOL. SECT. 20 cm. per div	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm								
70	00		1738	2	2		60								
72	00		1739	2	2		115								
74	00		1740	2	2		60								
76	00		1741	2	2		35								
78	00		1742												
				cont'd											
80	00														

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DRILL HOLE NO. MT.3 LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180°m ANGLE -60°

100

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm									
80	67		1742	2.67	2.67		20									
			1743	2.35	2.35		70									
83	02		1744	0.86	0.86		25									
83	88		1745	1.12	1.12		90									
85	00		1746	0.24	0.24		30									
85	24		1747	1.76	1.76		115									
87	00		1748	2.5	2.5		140									
89	50	 * 1749 cont'd														

\*whole core submitted for analysis

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DATE AUGUST, 1981



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DRILL HOLE NO. MT. 4

LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. -

AZIMUTH 180°m

ANGLE -60°

102

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
			NQ core drilling No core recovery to 0.9m.	
0	90		Broken core <u>MATHINNA BEDS</u> Mainly siltstone with minor quartz and aplite veins and hornfels (pelitic) zones	
2	03		Irregular contact No core recovery to 4.96m., sludge sample only	
2	04			<u>MUSCOVITE APLITE</u> Medium grained
4	96		Breccia Broken core at contact <u>MATHINNA BEDS</u> Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; breccia and fragments of siltstone, variably greisenised; sugary-textured aplite occurs as veins and as matrix to breccia, often spotted by tourmaline	30°
5	31	Quartz vein Broken core		
8	04		Bedding	54°
8	75		Aplite vein, broken zone	

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DRILL HOLE NO. MT.4 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R.L. - AZIMUTH 180° m

ANGLE -60°

103

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
10	44	Quartz vein	MATHINNA BEDS Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; breccia and fragments of siltstone, variably greisenised; sugary-textured aplite occurs as veins and as matrix to breccia, often spotted by tourmaline	20°
12	00	Aplite, no core recovery, sludge sample only		
12	30			
12	78	Breccia fragments	MUSCOVITE APLITE	55°
13	16	Quartz vein	Medium grained; minor scattered tourmaline grains	
13	54		MATHINNA BEDS	30°
14	49	Irregular aplite veins	Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; breccia and fragments of siltstone, variably greisenised; sugary-textured aplite occurs as veins and as matrix to breccia, often spotted by tourmaline	
14	80	Aplite stringer		
15	40	Irregular aplite veins (3mm) to 15.65m with tourmaline grains		
15	65			
17	36	Aplite with minor siltstone fragments		
17	48			
17	6	Breccia		
17	92			
18	37	Breccia		
18	52			
19	10	Breccia		
19	25			

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DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
20	96	Quartz vein	<u>MATHINNA BEDS</u> Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; breccia and fragments of siltstone, variably greisenised; sugary-textured aplite occurs as veins and as matrix to breccia, often spotted by tourmaline	40°
24	67	Broken core at contact	<u>MUSCOVITE APLITE</u> Medium grained and weathered; Mathinna Beds sediments (mainly siltstone) fragments, some brecciated, variably greisenised; some scattered tourmaline specks; abundant core loss	
24	80	Greisenised siltstone fragment No core recovery to 26m., sludge samples only		
25	10	Sludge sample		
26	00	Siltstone		
26	10			
27	10	Siltstone fragment, greisenised No core recovery to 29.6m., sludge samples only		
		Sludge sample		
28	10	Sludge sample		
29	10	Sludge sample		
29	60	Quartzite, broken core		
29	90	Siltstone		

105

DEPTH		GEOLOG. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
30	25		Siltstone	15°
30	30		No core recovery to 31.23m., sludge sample only	
			<u>MUSCOVITE APLITE</u> Medium grained and weathered; Mathinna Beds sediments (mainly siltstone) fragments, some brecciated, variably greisenised; some scattered tourmaline specks; abundant core loss	
31	23			
			No core recovery to 33.73m., sludge sample only	
33	30			
			Aplite becoming spotted by tourmaline, some biotite, and finer grained in association with siltstone fragments	
33	73			
			Brecciated siltstone, tourmaline grains in aplitite	
34	62			
			Steep quartz-tourmaline vein	
34	72			
			Siltstone fragments	
34	80			
			Pegmatitic quartz-feldspar-muscovite ± tourmaline veins	
35	13			
			Siltstone block	
35	44			
			Greisenised siltstone at contact, broken core	
35	61			
			No core recovery, sludge sample only	
36	50			
			Aplite, scattered tourmaline or cassiterite grains to 38.01m.	
36	75			
			Siltstone fragments	
37	34			
			Broken core at contact	
38	01			
			Irregular quartz vein with muscovite	
			<u>MATHINNA BEDS</u> Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; minor breccia toward base, variably greisenised; sugary-textured aplitite occurs as veins and as matrix to breccia, often spotted by tourmaline	
39	95		Thin aplitite vein (2mm)	

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DEPTH		GEOLOG. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
			<u>MATHINNA BEDS</u> Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; minor breccia toward base, variably greisenised; sugary-textured aplite occurs as veins and as matrix to breccia, often spotted by tourmaline	65°
40	60		Aplite vein (1cm)	
40	91		Aplite vein (1mm)	
41	89-97		Irregular zone of breccia	
47	00		BQ drilling	
47	36		Aplite vein (7mm)	
48	55		Quartz-muscovite vein (5mm)	50°
49	50		Breccia	

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DEPTH		GEOL. SECT. 2.0 cm. Per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
50	00		<u>MATHINNA BEDS</u> Breccia	
50	40		Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; minor breccia toward base, variably greisenised; sugary-textured aplite occurs as veins and as matrix to breccia, often spotted by tourmaline	
51	35		Brecciated contact	
51	54		Tourmaline needles, ± biotite to 52.26m	
51	64		<u>MUSCOVITE APLITE</u>	
51	74		Medium to fine grained; weathered; locally pegmatitic; needle tourmaline specks	
51	90			
52	26		Fine quartz-tourmaline clusters to 53.13m.	
52	36		Fine needles (2mm) of tourmaline	
53	13		Pegmatitic quartz-Kspar-tourmaline-pyrite (? ironstone)	
53	70			
54	75		Brecciated contact Breccia to 55.85m (±90% siltstone)	
54	75		<u>MATHINNA BEDS</u> Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; breccia and fragments of siltstone, variably greisenised; sugary-textured aplite occurs as veins and as matrix to breccia, often spotted by tourmaline	
55	85			
57	25		Irregular coarse muscovite vein	
57	43		Aplite, spotted by tourmaline	
57	54			
57	75		Grinding	
57	90		Irregular steep quartz-minor muscovite vein (1cm)	
58	25			
59	10		Quartz muscovite vein	70°
59	39		Irregular brecciated contact Pegmatitic Kspar crystals (2cm) to 59.96 m	
59	39		<u>MUSCOVITE APLITE</u> Fine to medium grained, incipiently pegmatitic; scattered fine tourmaline grains	
59	96		Aplite, fine tourmaline needles	65°

108

DEPTH		GEOL. SECT.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
		2.0 cm. per div.		
			<u>MUSCOVITE APLITE</u> Fine to medium grained, incipiently pegmatitic; scattered fine tourmaline grains.	
62	30		Coarse muscovite at contact	
62	54		Sharp contact Breccia (5cm)	
			<u>MATHINA BEDS</u> Mainly siltstone, some spotted pelite (hornfels ± cordierite ± andalusite) and irregular quartz (± muscovite) veins; breccia and fragments of siltstone, variably greisenised; sugary-textured aplite occurs as veins and as matrix to breccia, often spotted by tourmaline	
63	23		Breccia (4cm)	
63	70		Aplite	
63	94			
64	04		Pegmatitic quartz-Kspar-	
64	09		muscovite-tourmaline zone	
64	25		Breccia	
64	31		Aplite vein	
64	57		Aplite vein, local muscovite pegmatite	
65	38			
65	50		Breccia, broken core	
65	88		Pegmatite at contact	
66	24		Aplite with siltstone fragments	
66	98		Breccia (±65% siltstone)	
67	38			
67	44		Irregular quartz veins	
67	70			
67	92		Brecciated zone to 68.48 (±90% siltstone)	
68	48			
			Abundant fine grained aggregates of quartz-tourmaline to 69.9m	
			<u>MUSCOVITE APLITE</u> Medium to fine grained, locally pegmatitic; variably scattered tourmaline and trace sulphides	
69	30		Siltstone fragments	
69	49		No core recovery to 69.8m.	
69	80		Broken core, grinding	
69	90		Siltstone fragments	

DRILL HOLE NO. .... MT.4 ..... LOCATION MOUNT TERROR, E.L. 11/77 N.E. TASMANIA

COLLAR CO-ORDS. .... - .....

COLLAR R.L. .... - ..... AZIMUTH ..... 180°m ..... ANGLE -60°

DEPTH		GEOLOG. SECT. 2.0 cm. per div.	GEOLOGICAL DESCRIPTION		CORE DIP
m.	cm.				
70	16		Some pegmatitic crystals	<u>MUSCOVITE APLITE</u> Medium to fine grained, locally pegmatitic; variably scattered tourmaline and trace sulphides	
70	51				
70	66		Pegmatite		
70	87		Pegmatite to 71.16m.		
71	10		Irregular contact	<u>PEGMATITE</u> Quartz-Kspar ± muscovite ± tourmaline, coarse grained to 5cm; locally aplitic	
71	40				
72	72		Irregular contact	<u>MUSCOVITE APLITE</u> Medium grained; siltstone fragments, some greisenised	
73	16				
73	30		Siltstone block		
73	60		Siltstone fragments, greisenised		
73	80			<u>MUSCOVITE ADAMELLITE</u> Medium grained; zones of phenocrysts of spherulitic muscovite	
75	68		Sharp contact Coarse, spherulitic muscovite phenocrysts to 76.1m.		50°
76	10				
76	49		Zone of weathered sulphides		

110

DEPTH		GEOL. SECT. 20 cm. Per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
			<p><u>MUSCOVITE ADAMELLITE</u> Medium grained; zones of phenocrysts of spherulitic muscovite</p>	
83	98		<p>Gradational contact, some feldspar phenocrysts weathered to 98m.</p> <p><u>PORPHYRITIC ADAMELLITE</u> Fine to medium grained, includes muscovite and biotite, phenocrysts of quartz, plagioclase, muscovite and minor biotite; some phenocrysts weathered to clay</p>	?10°

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DRILL HOLE NO. MT.4 ..... LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. - .....

COLLAR R. L. - ..... AZIMUTH 180°m ..... ANGLE -60°

111

DEPTH		GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.		
		<p><u>PORPHYRITIC ADAMELLITE</u>                      Fine to medium grained, includes muscovite and biotite, phenocrysts of quartz, plagioclase, muscovite and minor biotite; some phenocrysts weathered to clay</p>	
98	00		

DRILL HOLE NO. MT.4 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R. L. - AZIMUTH 180°m ANGLE -60°

112

DEPTH		GEOL. SECT. 20 cm. per div.	GEOLOGICAL DESCRIPTION	CORE DIP
m.	cm.			
100	22		<p>END OF HOLE</p> <p><u>PHORPHYRITIC ADAMELLITE</u>            Fine to medium grained, includes muscovite and biotite, phenocrysts of quartz, plagioclase, muscovite and minor biotite; some phenocrysts weathered to clay</p>	



DRILL HOLE NO. MT. 4 ..... LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. - .....

COLLAR R L - ..... AZIMUTH 180°m ..... ANGLE -60°

113

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT.	SAMPLE WIDTH			ASSAY VALUES						CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm							
			No sample	0	0.9									
0	90		1753	1.13	1.13		5							
2	03		Sludge sample											
			1754	0	2.93		90							
4	96		*1755	0.04	0.04		80							
5	00													
			1756	4	4		10							
9	00		1757 (cont'd)											

\*whole core submitted for analysis

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DATE AUGUST, 1981 .....

DRILL HOLE NO. MT. 4 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180°m ANGLE -60°

114

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP
m.	cm.			Rec	Rep	True	Sn ppm							
			1757	3	3		15							
12	00		Sludge 1758	0	0.3		140							
12	30		*1759	0.48	0.48		10							
12	78		*1760	0.75	0.75		45							
13	54													
			1761	3.83	3.83		30							
17	36		1762 (cont'd)											

\*whole core submitted for analysis

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COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180° ANGLE -60°

115

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES						CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm							
			1762	3.6	3.6		40							
20	96													
			1763	3.71	3.71		25							
24	67		*1764	0.13	0.13		60							
24	80		Sludge	0	0.3		100							
25	10		1765											
			Sludge											
			1766	0	0.9		110							
26	00													
			1767	1.1	1.1		90							
27	10													
			Sludge											
			1768	0	1		80							
28	10													
			Sludge											
			1769	0	1		100							
29	10													
			Sludge											
29	60		1770	0	0.5		105							
			1771											
			(cont'd)											

\*whole core submitted for analysis

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DRILL HOLE NO. MT. 4 LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180°m ANGLE -60°

116

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP		
m.	cm.			Rec	Rep	True	Sn ppm										
30	30		1771	0.7	0.7		15										
		Sludge sample	1772	0	0.93		150										
31	23		*1773	2.07	2.07		190										
33	30		Sludge 1774	0	0.43		195										
33	73		*1775	2	2		70										
35	73		1776	0.97	0.97		45										
36	70		Sludge 1777	0	0.05		145										
36	75		1778	1.26	1.26		55										
38	01		1779	1.99	1.99		10										
40	00																

\*whole core submitted for analysis

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DRILL HOLE NO. MT. 4 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180°m ANGLE -60°

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP		
m.	cm.			Rec	Rep	True	Sn ppm										
40	00																
			1780	2	2		10										
42	00																
			1781	2	2		25										
44	00																
			1782	3	3		35										
47	00																
			1783	2.5	2.5		25										
49	50		1784														
			(cont'd)														

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DRILL HOLE NO. MT. 4 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180°m ANGLE -60°

118

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm								
			1784	2.14	2.14		15								
51	64		1785	3.11	3.11		35								
54	75		1786	1.1	1.1		15								
55	85		1787	3.54	3.54		15								
59	39		1788 (cont'd)												

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COLLAR CO-ORDS. - .....

COLLAR R L - ..... AZIMUTH 180°m ..... ANGLE -60°

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm									
			1788	2.91	2.91		55									
62	30															
			1789	2.27	2.27		25									
64	57		1790	1.67	1.67		20									
66	24		1791	2.24	2.24		30									
68	48		1792	1.01	1.01		555									
69	49		No sample	0	0.31											
69	80			1793												

(cont'd)

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DRILL HOLE NO. MT. 4 LOCATION MOUNT TERROR, E.L. 11/77, N.E. TASMANIA

120 COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180°m ANGLE -60°

DEPTH		GEOLOGICAL SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES								CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm									
			1793	1.6	1.6		115									
71	40															
			1794	1.32	1.32		20									
72	72															
			1795	2.96	2.96		45									
75	68															
			1796	2.32	2.32		65									
78	00															
			1797	2	2		40									
80	00															

DRILL HOLE NO. MT. 4 LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. -

COLLAR R L - AZIMUTH 180 m ANGLE -60°

121

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP		
m.	cm.			Rec	Rep	True	Sn ppm									
80	00															
				1798	3.98	3.98		50								
83	98															
				1799	4.02	4.02		30								
88	00															
			1800													
			(cont'd)													

DRILL HOLE NO. MT. 4 ..... LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA .....

COLLAR CO-ORDS. - .....

COLLAR R L - ..... AZIMUTH 180<sup>0</sup><sub>m</sub> ..... ANGLE -60<sup>0</sup> .....

DEPTH		GEOL. SECT. 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP	
m.	cm.			Rec	Rep	True	Sn ppm								
			1800	4	4		30								
92	00														
			1801	4	4		30								
96	00														
			1802 (cont'd)												

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DRILL HOLE NO. MT. 4 ..... LOCATION MOUNT TERROR, E.L. 11/77, N.E.TASMANIA

COLLAR CO-ORDS. - .....

COLLAR R L - ..... AZIMUTH 180<sup>0</sup> ..... ANGLE -60<sup>0</sup>

DEPTH		GEOLOGICAL SECTION 20 cm. per div.	SAMPLE NO. UCT	SAMPLE WIDTH			ASSAY VALUES							CORE DIP
m.	cm.			Rec	Rep	True	Sn ppm							
100	22		1802	4.22	4.22		30							
			End of Hole											
SUMMARY OF MINERALISATION														
				Sample interval (metres)			Weighted average		Remarks					
				from	to		value % Sn							
				0	24.67		0.003	Incomplete						
				24.67	71.4		0.006	Incomplete						
				71.4	100.22		0.004	Virtually complete						
				0	71.4		0.005	Incomplete						
				0	100.22		0.005	Incomplete						

APPENDIX 4

SOME OBSERVATIONS UPON THE MT. PARIS TIN PROSPECT

by

R.G. TAYLOR, B.Sc., D.I.C., Ph.D., M.I.M.M., A.M. Aus. I.M.M.  
and M.J. RUBENACH, B.Sc., Ph.D.

- 1) The property was visited at the request of Mr. J. Smart of Union Corporation during July 22-23rd. The purpose of the visit was to generally overview the mineralisation and the authors were accompanied by Mr. N. Winnall and Mr. M. Rampe. The inspection constituted a SW? traverse across the old mine workings up to the main greisen on Mt. Horrer and inspection of the first diamond drill hole.
  
- 2) The main mine workings appear to have been essentially sluicing faces (with minor open pitting) cut into argillised granite. Numerous hard zones of siliceous (+ mica) greisen remain as remnant 'pillars' throughout the general zone of working. This situation is strikingly reminiscent of many of the workings in the Cooktown tinfield, Queensland (China Camp, Collingwood Face, etc.).
  
- 3) The greisen remnants/pillars are essentially quartz greisen with minor muscovite, and are presumed to result from alteration of the biotite-muscovite (Anchor style) granite. Many loose greisen boulders have an extremely 'knobbly' appearance which is highly suggestive of broken (brecciated) rock. However, careful inspection could not clearly identify infill material between potential fragments and further work is required to test the suspicion of brecciation. Frequently in greisen rocks, the results of alteration are very similar to the infilling material, making fragment identification difficult. Medium-sized boulders require slabbing and careful examination. A noticeable feature of the greisen was the general lack of quartz

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veining/infill. Several quartz veins were noted, but the occurrence of quartz was relatively rare for a greisen environment. Inspection of several faces indicated that the majority of the greisen occurred as discontinuous veins of seemingly erratic distribution. In two faces the greisen seemed to occur as an alteration along linear fractured zones which link together in an erratic manner. This pattern is interpreted by R.G. Taylor as fluids entering a zone of crackled rock causing greisen alteration as they move through channels around large-scale, block fracturing. Actual movement of blocks is minimal and the process is best envisaged as a pile of 'cubes/oblongs' within a bag which has been greatly shaken (see Figure 1 attached).

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- 4) The amount of greisen increases considerably towards the top of Mt Terror. ~~Here~~ approaching the granite/metasediment contact (see Figure 2). Considerable difficulty was experienced in this zone sorting outcrop from float, and it is very possible that the greisen zone will prove less continuous than at first impression (i.e. zones of greisen separated by narrow zones of altered granite). It was similarly, very difficult to discern the dip of the greisenised zone. Several rather sharp, vertical faces suggested that it may be quite steeply dipping rather than 'flat' parallel to the contact. However, this impression could well be erroneous and mapping is required to gain a better perspective.
- 5) The main zone of greisen was carefully inspected for evidence of brecciation. Minor zones of probable broken rock (now greisenised) were noted around the top 'adit' (i.e. knobbly rock). However, the majority of the greisen rock appeared unbroken and close mapping is required together with rock slabbing to gain further insight into the question of fluid access. The general lack of obvious infill quartz or quartz mica was noted (see 3 above).
- 6) The argillisation is of particular interest. The rock seems to have formed the base for the sluicing operations and contains low grade tin (0.1% or less). Inspection of several faces gave the impression that much of the argillisation occurred after greisenation. Many fractures contain clay or heavily argillised material and again, a 'block shuffling' process was suspected. If these fractures existed at the time of greisenation, then they should contain greisen alter-

ation effects (quartz-mica greisens are chemically inert to the argillisation process). The timing of argillisation is less clear. It postdates greisenisation, but could have occurred any time thereafter (R.G. Taylor). It could be a result of surface weathering, or a late stage overprint alteration associated with the mineralisation process (it may be a combination of both).

- 7) Extensive argillisation is very common in association with greisen deposits. The argillised material frequently carries significant tin values and often forms a 'soft orebody' extracted via hydraulic or bulk mining techniques. The association with tin values strongly suggests a link with the mineralising process. It is also noted that away from the mineralised zone the granitoids are usually unargillised within a short distance from the surface. Recent isotope studies have indicated meteoric sources for the argillising fluids. However, it is possible that original igneous fluids caused the argillisation and that the clays have subsequently 'exchanged isotopes' acting as permeable zones for surface waters. At this stage the timing of the argillic alteration at Mt. ~~Paris~~<sup>Terror</sup> remains uncertain. From a practical viewpoint it should be reiterated that this material forms the best chance for a commercially viable orebody.

- 8) One section of drill core contained some interesting features which deserve comment. Near the base of the first hole, several 'dykes' of granite traverse the overlying sediments. The granite intrusion seems relatively passive with rafts of metasediments stoped into the melt.

130:

One small granite 'dyke' contained a basal section of aplite containing vugs of feldspar-quartz+muscovite, cassiterite. This section also contained numerous metasediment fragments which may have been instrumental in trapping the fluids. The presence of feldspar associated with cassiterite is particularly interesting, suggesting that cassiterite is precipitating within feldspar stability fields. Another granite section nearby contained small vugs of quartz-muscovite-cassiterite and the granite was composed of white feldspars-quartz and muscovite. The general appearance and mineral assemblage of this rock is very suggestive of albitisation, and requires microscopic examination. The association of cassiterite with albitised granite has been reported from N.E. Tasmania. This rock type can give grades of up to 0.30% Sn and superficially looks like fresh granite. Albitisation on this scale normally precedes greisenisation and may be responsible for providing the potassium required for sericite development.

#### Terror

- 9) At this stage, the Mt. ~~Parr~~ tin system seems to consist of medium-fine grained granite which has been subjected to early albitisation succeeded by greisenisation with a final phase of argillic overprinting. Cassiterite is present throughout the altered rocks and the system is directly analogous to that of the Anchor mine and other greisen systems in the Blue Tier. Tin grades can be expected to reach a maximum in the greisen (up to about 0.5-1.5% in patches), although the argillic zones may prove more interesting due to their softer and sluicable nature. Grades in the argillic material by analogy with Cooktown examples could be anticipated at around 0.03-0.05% Sn.

- 10) The distribution and grades of the greisen zone will obviously be critical to any hard rock assessment. The current drilling/sampling programme is designed to test the outcropping zone and the possibility that it extends beneath the shallow metasediment cover. Although there are obvious environmental problems, serious thought could be given to combined monitoring/hard rock operations. It seems very probable that greisen grades will be low (0.20% Sn or less), and that conventional open pitting will be precluded or marginal. However, if the current drilling reveals additional greisen and argillic ground it might prove possible to strip the sedimentary overburden and conduct a combined monitoring-hard rock mining operation. The current exploration programme should allow evaluation of these possibilities. Care however, will be required to assess the 'soft rock' which may not core easily, and it may prove necessary to collect sludge samples to obtain some concept of grade.

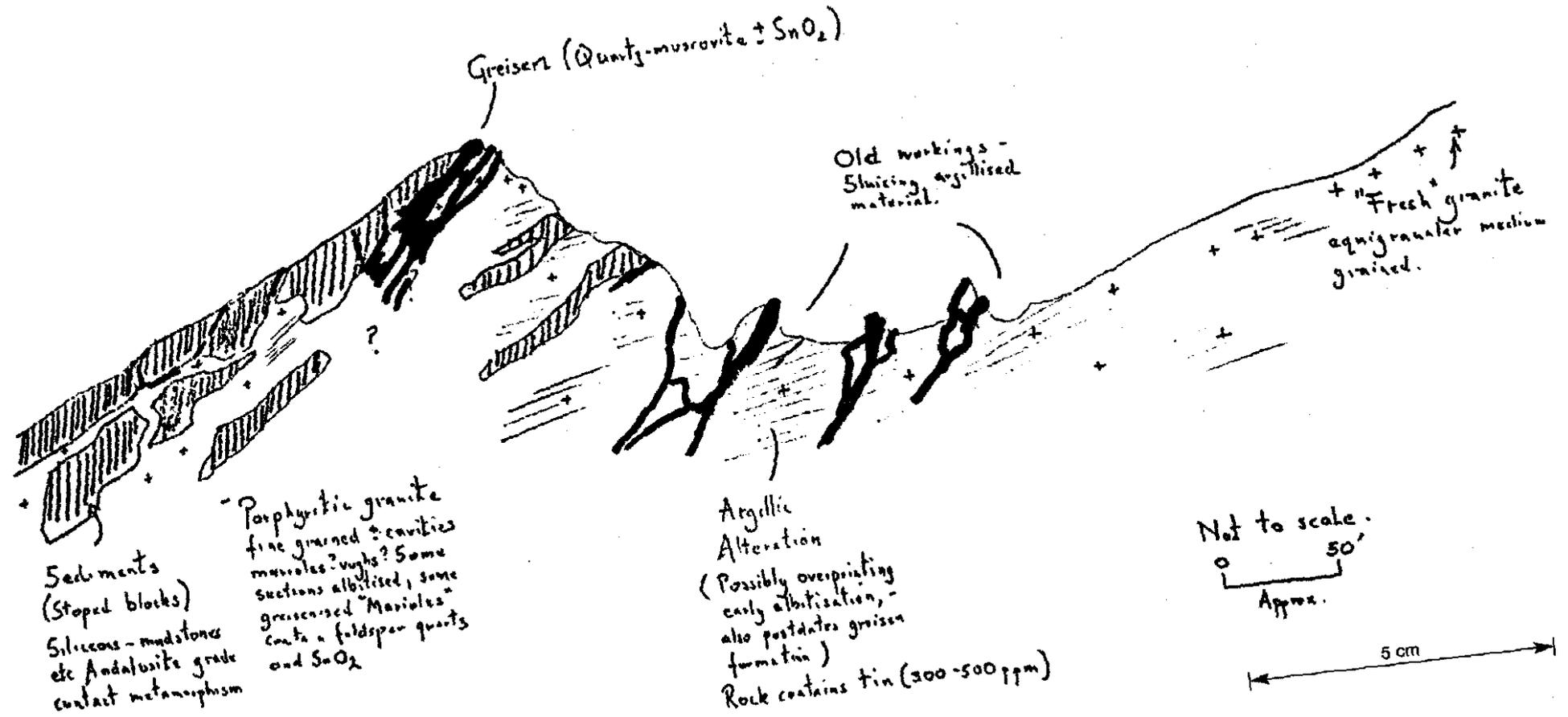
871133

N?

S?

Fig 2.

Mt Horner. (MT. TERROR)



Sediments  
(Stoped blocks)  
Siliceous - mudstones  
etc Andalusite grade  
contact metamorphism

Porphyritic granite  
fine grained cavities  
muscovite veins? Some  
sections albited, some  
greisenized "Marbles"  
cont. a feldspar quartz  
and SnO<sub>2</sub>

Greisen (Quartz-muscovite + SnO<sub>2</sub>)

Argillie  
Alteration  
(Possibly overprinting  
early albite, -  
also postdates greisen  
formation)  
Rock contains tin (300-500 ppm)

Old workings -  
Sluicing argillised  
material.

"Fresh" granite  
equigranular medium  
grained.

Not to scale.  
50'  
Approx.

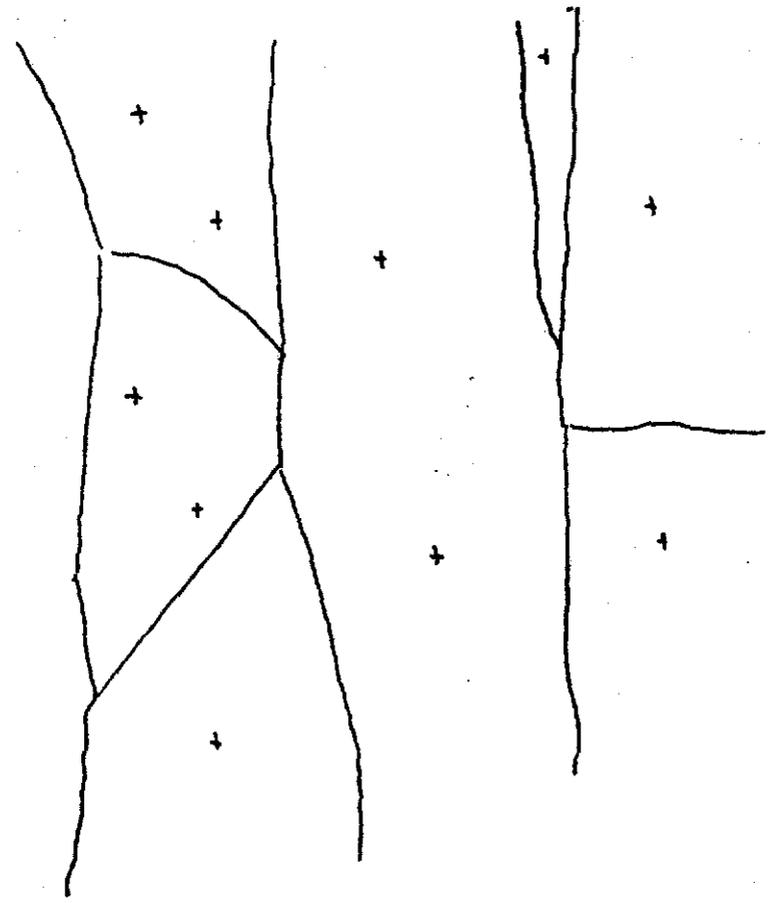
5 cm

Mt Paris - Diagrammatic interpretation of  
(MT. TERROR) mineralisation styles.

R. Maylor

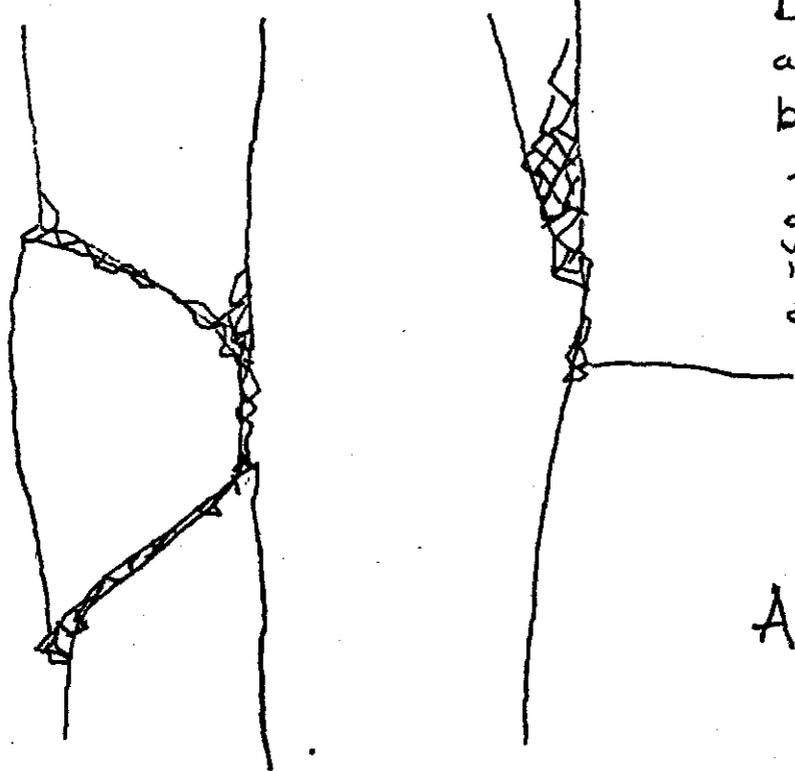
NB Based on 3-4 hour traverse S-N Aug 1981.

132



Initial Fracture Pattern

Fig 1.



Block jostling and fracture provides breccia access for fluids. Maximum greisenisation occurs in these regions. Greisen distribution semi-erratic

Any Scale.

2979

REFERENCE

- Geological boundary
- - - Geological boundary - inferred
- ↘ Strike & dip
- Diamond drill borehole with number
- Percussion drill boreholes that intersected granite
- Percussion drill boreholes that failed to intersect granite, some with minor greisen or granite as indicated, drilled to a maximum depth of 40metres (more commonly 20-30metres)
- Sample locality
- Groves (1972) sample with assay in percent tin
- Castean
- Adit
- Shaft
- River, stream with stream sediment sample location & number
- Dam
- Road, track
- COX Mineral prospect
- ML 37M/77 Mineral Lease with number
- Exploration Licence boundary
- CPY, PY Chalcopyrite, pyrite occurrence
- Magnetite in panned concentrate
- Fluorescent minerals (probably) zircon in panned concentrate
- Thin section sample locality

LEGEND

- PLEISTOCENE & RECENT
  - Qa Alluvium or alluvial material carrying cassiterite (dotted)
  - Tb Basalt
- TERTIARY
  - Greisen, quartz-tourmaline, pegmatite
  - Kaolinised granite - worked to depths of 5metres or less
  - Kaolinised granite - worked to depths of 5metres or more
  - Adamellite (alkali) granite - fine to coarse-grained biotite-muscovite granite mainly equigranular with some porphyritic types (Dag) & minor apite (Ap)
- UPPER DEVONIAN - LOWER CARBONIFEROUS
  - Dag
  - Ap
- DEVONIAN - SILURIAN - (?) ORDOVICIAN
  - SDs Mathinna Beds - mainly siltstones and argillaceous sandstones

STREAM SEDIMENT GEOCHEMISTRY

TOTAL TIN CONTENT OF STREAM SEDIMENT SAMPLES CALCULATED FROM ASSAYS OF PANNED CONCENTRATES

Below limit of detection <1 1-50 >50 ppm Sn

MULTI-ELEMENT PLOT, MINUS 80 MESH FRACTION

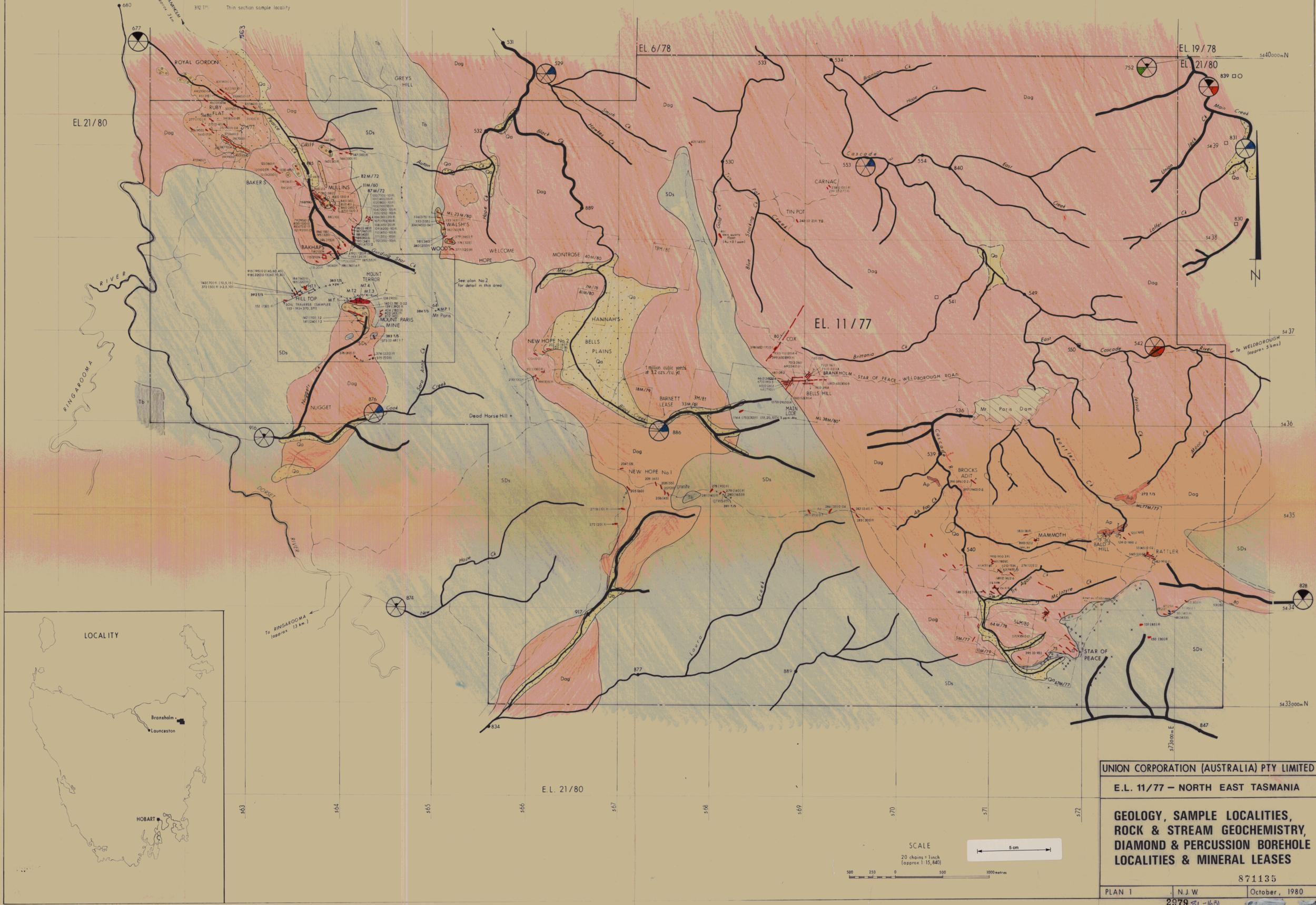
KEY

THRESHOLD VALUES

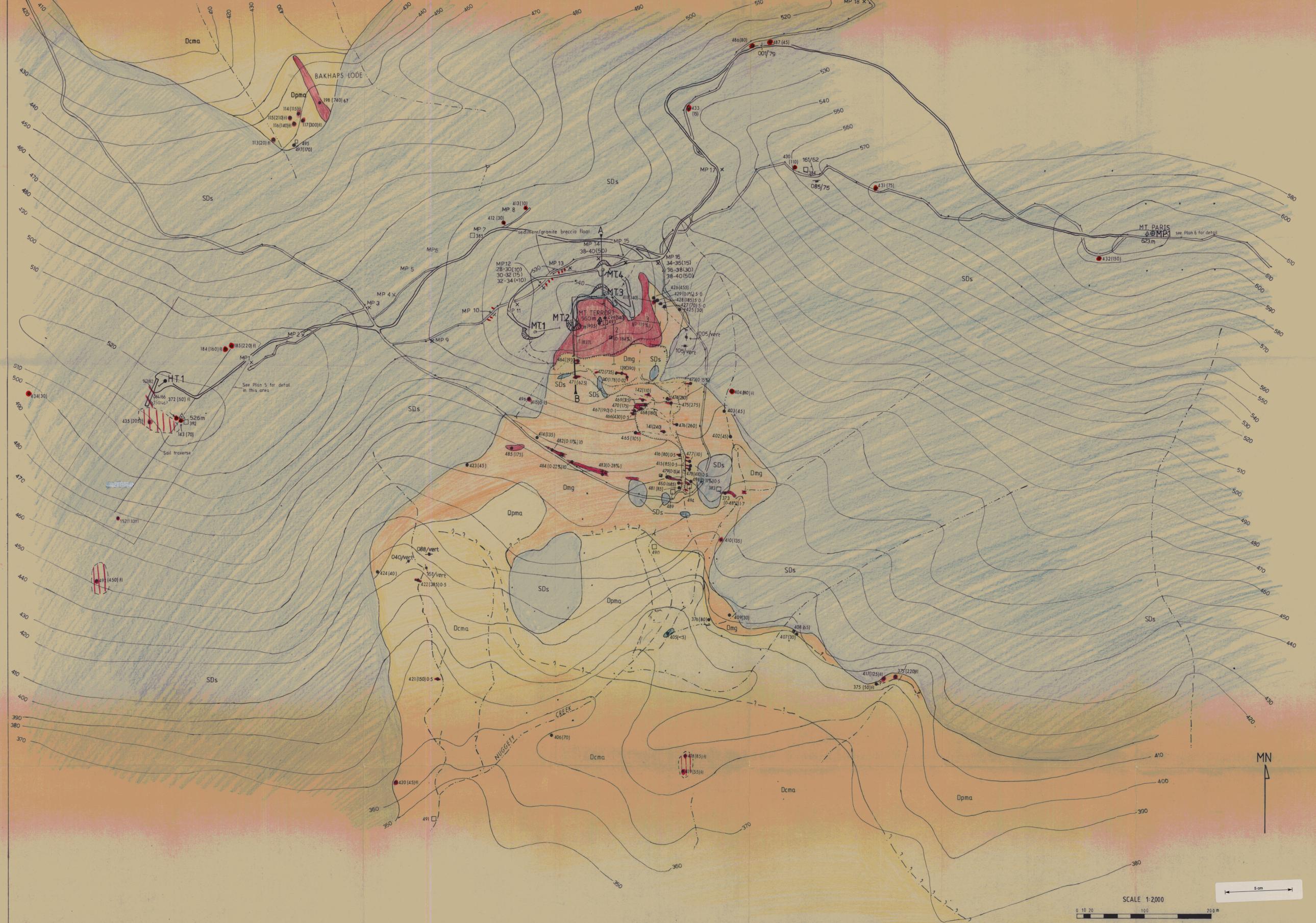
	MATHINNA BEDS	ADAMELITE / ALKALI GRANITE
Sn	210	2975
W	20	104
M	10	9
Cu	39	115
Pb	87	57
Zn	135	162

1 = threshold  
2 = threshold  
3 = threshold  
4 = threshold & greater

NOTE: Major Geology after Groves (1972)



UNION CORPORATION (AUSTRALIA) PTY LIMITED  
 E.L. 11/77 - NORTH EAST TASMANIA  
 GEOLOGY, SAMPLE LOCALITIES,  
 ROCK & STREAM GEOCHEMISTRY,  
 DIAMOND & PERCUSSION BOREHOLE  
 LOCALITIES & MINERAL LEASES  
 871135  
 PLAN 1 N.J.W. October, 1980  
 2979 81-1681

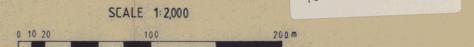


REFERENCE

- Four wheel drive track
- - - Track
- Stream
- ▲ Topographic high height in meters above sea level
- Survey point
- Bluff
- Topographic contour in metres
- Adit
- Shaft or rise
- Geological boundary
- Geological boundary - uncertain
- Float boundary
- Bedding strike/dip
- Joint strike/dip
- 407(190)0.1 or H. Sample locality, sample no., tm in ppm unless otherwise specified, sample width in metres where measured, or float sample(H)
- 1 (837) Rock chip sample traverse, tm in ppm unless otherwise specified
- ⊗ MP 14 38-40(50) Newmont Pty Ltd percussion drill hole with granite intersection indicated, tm in ppm, given in brackets
- 383 Petrographic sample locality
- ⊕ MP 1 Percussion borehole, vertical
- ⊙ HT 1 Percussion borehole, inclined - 80°
- ⊙ MT.1 Diamond borehole, inclined - 60°
- Geological cross section of diamond boreholes MT. 2, 3 and 4 - see PLAN 3

LEGEND

- Greisen
- Dmg Fine to medium grained muscovite granite
- Dpma Porphyritic muscovite adamellite
- Dcma Coarse-grained muscovite adamellite
- SDs Mathinna Beds - quartz sandstones and siltstones
- Quartz ± tourmaline ± muscovite veins in Mathinna Beds



UNION CORPORATION(AUSTRALIA)PTY LIMITED

E.L.11/77, NORTH EAST TASMANIA

MOUNT PARIS AREA

GEOLOGY, GEOCHEMISTRY, PERCUSSION AND DIAMOND BOREHOLE LOCALITIES

PLAN 2	P.W.E./N.J.W	FEBRUARY, 1981
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2980

871136

81-1631 2980

DIAGRAMMATIC REPRESENTATION OF GENERALISED ROCK UNITS

SUMMARY OF TIN GEOCHEMICAL DATA

Borehole	Sample interval (metres)	Weighted average value %Sn	Rock unit (see left)
MT. 2	0-30.7	0.05	Layered
	30.7-86.57 = 55.87	0.02	Breccia
	86.57-101 = 14.43	0.006	Pegmatite/granite/adamellite
	0-86.57	0.03	
	0-101	0.03	
MT. 3	0-6.46	0.006	Mathinna
	6.46-21.85 = 15.39	0.05	Layered
	21.85-83.02 = 61.17	0.01	Breccia
	83.02-100 = 16.98	0.006	Pegmatite/granite/adamellite
	0-21.85	0.04	
	0-83.02	0.02	
MT. 4	0-24.67	0.003	Mathinna
	24.67-71.4 = 46.73	0.006	Breccia
	71.4-100.22 = 28.82	0.004	Pegmatite/granite/adamellite
	0-71.4	0.005	
	0-100.22	0.005	

GENERALISED ROCK UNIT	WEIGHTED AVERAGE VALUE %Sn
Layered	0.05
Breccia	0.017
Pegmatite granite pegmatite	0.005
Mathinna	0.004

SECTION LOOKING EAST

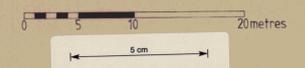


- REFERENCE**
- Geological contact —
  - as measured from core
  - interpretative
  - irregular and/or brecciated
  - nature unknown because of grinding and core loss
  - gradational
  - topographical cross section - MT. 2
  - topographical cross section - MT. 3 and 4 projected 50metres west
  - drill pad fill material
- A — B cross section as indicated on PLAN 2

**LEGEND**

- MASSIVE QUARTZ MUSCOVITE - fine to coarse grained
- MUSCOVITE GRANITE/ADAMELLITE - medium grained, some greisenised granite
- MUSCOVITE APLITE - predominantly 'soda' aplite with spotted zones of scattered tourmaline, fine to medium grained, locally pegmatitic
- PEGMATITE - quartz - Kspar ± muscovite
- PORPHYRITIC ADAMELLITE - fine to medium grained, phenocrysts of quartz, plagioclase, ± muscovite, ± biotite
- MATHINNA BEDS - mainly siltstone, some spotted pelite, often brecciated with muscovite aplite matrix, abundant greisenised fragments

SCALE 1:250



UNION CORPORATION (AUSTRALIA) PTY. LIMITED

871137  
E.L. 11/77, NORTH EAST TASMANIA

MOUNT TERROR  
INTERPRETATIVE GEOLOGICAL CROSS SECTION OF  
DIAMOND BOREHOLES MT. 2, 3 AND 4 WITH  
SUMMARY OF BOREHOLE TIN GEOCHEMISTRY

2981

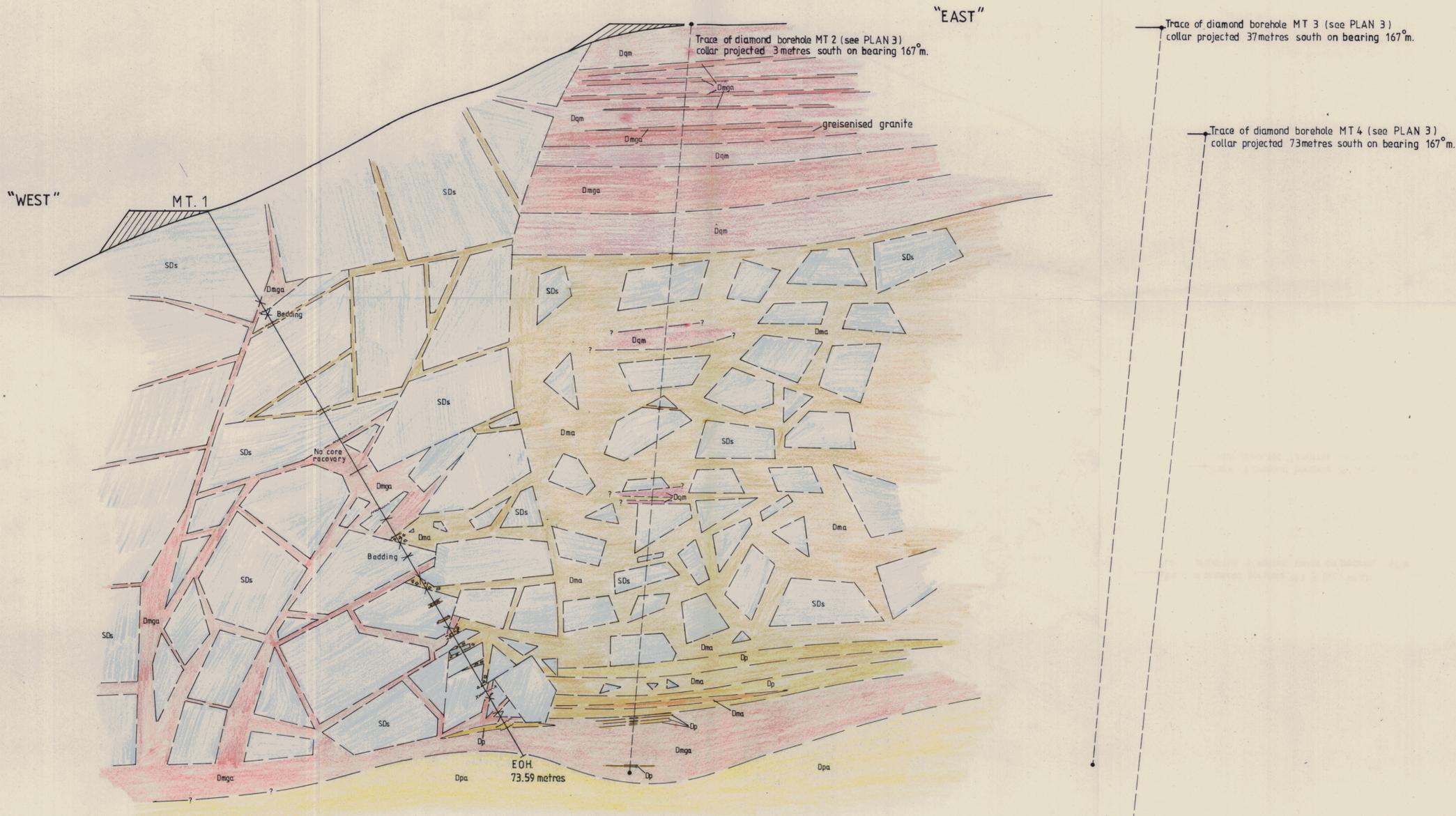
PLAN 3      N. J. W.      SEPTEMBER, 1981

51-163

2981

2982

VERTICAL SECTION ALONG LINE BEARING 077° MAGNETIC LOOKING NORTH



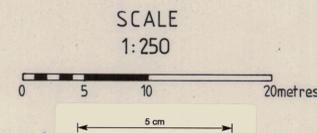
REFERENCE

- Geological contact -
- as measured from core
- interpretative
- irregular and/or brecciated
- nature unknown because of grinding and core loss
- gradational
- Topographical cross section MT. 1
- Drill pad fill material

LEGEND

- Dqm** MASSIVE QUARTZ MUSCOVITE - fine to coarse grained
- Dmga** MUSCOVITE GRANITE/ADAMELLITE - medium grained, some greisenised granite
- Dma** MUSCOVITE APLITE - predominantly 'soda' aplite with spotted zones of scattered tourmaline, fine to medium grained, locally pegmatitic
- Dp** PEGMATITE - quartz - K spar ± muscovite
- Dpa** PORPHYRITIC ADAMELLITE - fine to medium grained, phenocrysts of quartz, plagioclase, ± muscovite ± biotite
- SDs** MATHINNA BEDS - mainly siltstone some spotted pelite; often brecciated with muscovite aplite matrix; abundant greisenised fragments

SUMMARY OF TIN GEOCHEMICAL DATA			
Borehole	Sample interval (metres)	Weighted average value % Sn	Rock unit
MT 1	0 - 68.21	0.006	Mathinna Pegmatite/granite/ adamellite
	68.21 - 73.59 = 5.38	0.006	
	0 - 73.59	0.006	



UNION CORPORATION (AUSTRALIA) PTY. LIMITED

MOUNT TERROR, E. L. 11/77, NORTH EAST TASMANIA

INTERPRETATIVE GEOLOGICAL CROSS SECTION OF DIAMOND BOREHOLE MT. 1 WITH SUMMARY OF BOREHOLE TIN GEOCHEMISTRY

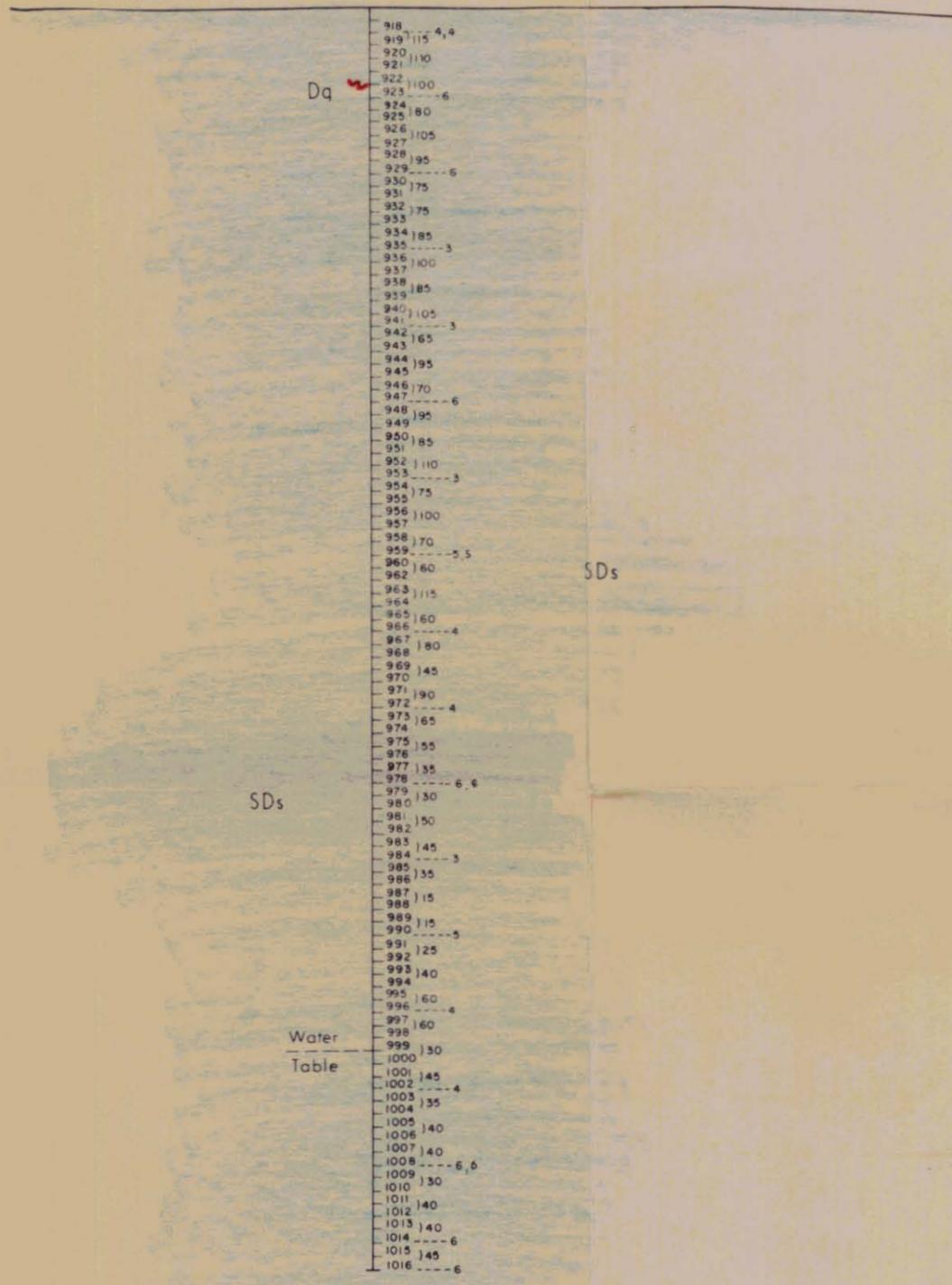
871138 2982

PLAN 4 G.A.A. OCTOBER 1981

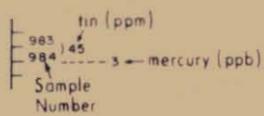
31-1631



M P 1 Collar



GEOCHEMISTRY



GEOLOGY

- Dq Quartz vein
- SDs Mathinna Beds - mainly siltstone, quartzwacke ± pelite

871140 81-1631

UNION CORPORATION (AUSTRALIA) PTY LIMITED		
E.L. 11/77 - NORTH EAST TASMANIA		
MOUNT PARIS PERCUSSION BOREHOLE (M.P.1) GEOCHEMISTRY		
2984		
PLAN 6	N.J.W	MAY, 1981