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CRA EXPLORATION PTY.LIMITED.

FINAL REPORT MINERAL LEASES

120M/67, 121M/67, 10M/73, 1M/76, 2M/76, 93M/77

94M/77 AND 95M/77 L AND L SYNDICATE BALFOUR

Author: T.W.Dickson

Date: January, 1983.

Copies: M.Laan and N.Langsford
Department of Mines, Tas.
Geopeko (2 Copies)
CRAE Melbourne
CRAE Hobart
CRAE Burnie

AMG REFERENCE POINTS ADDED

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CONTENTS

1. SUMMARY

Over the period January 1979 to December 1982, detailed investigations involving geological mapping, jacro bedrock sampling and various geophysical surveys were carried out over the Balfour grid. Within the area of the M.Laan and N.R.Langsford Syndicate leases, 120M/67, 121M/77, 10M/73, 1M/76, 2M/76, 93M/77, 94M/77, and 95M/77, this work led to the development of three diamond drill holes to test a major area of tourmalinisation and quartz veining on Specimen Hill. Four additional diamond drill holes were developed in adjacent areas held by other syndicates.

A number of veins were intersected in each hole some of which contain appreciable values of tin and tungsten mineralisation. Average vein thickness is 7.5 centimetres and the average grade of all vein material intersected is 0.8% Tin and 1.02% Tungsten. However, the average vein content is only 0.66% and as sections with higher vein densities are widely scattered, it is believed that the area is unsuitable for bulk pit mining and upgrading of photometric ore sorting.

2. INTRODUCTION

This report details work carried out on Mineral Leases 120M/67, 121M/67 10M/73, 1M/76, 2M/76, 93M/77, 94M/77, and 95M/77, held by M.Laan and N.R.Langsford for the period January to December 1982, and refers to the results of all work previously carried out from December 1978 through to December 1981.

The L and L Syndicate Balfour option agreement was dated 27th June, 1978 and it is one of a number of farm in - joint venture agreements negotiated between CRA Exploration Pty.Limited. and various syndicates in the Balfour area -

P.Laan and S.Caddy
Mining Lease 73M/77

P.Laan and Estate of W.Baker (L and B Syndicate)
Mining Lease 20M/76; 72M/77, 103M/77, 104M/77, 8M/78, 57M/78
SPL's 774 and 781.

M.Laan and N.R.Langsford (Balfour Agreement)
Mining Leases 120M/67, 121M/67, 10M/73, 1M/76, 2M/76, 93M/77, 94M/77, 95M/77.

P.Laan, M.Laan, N.R.Langsford, W.Baker
Mining Lease 19M/76

J.Holloway and R.South
Mining Lease 59M/68, 4M/74

S.Tatlow (Agreement 1)
Mining Lease 63M/68

S.Tatlow (Agreement 2)
Mining Lease 58M/68

All the above agreements are part of the Rocky Cape Joint Venture between CRA Exploration Pty.Limited, and Geopeko.

The township of Balfour is situated approximately 16km inland from Temma Harbour and lies some 50km south of Smithton.

The programme of work carried out within the L and L Syndicate leases includes.

- Geological mapping, and both regional and detailed scales.
- Airborne magnetic and Dighem surveys with detailed ground follow-up including I.P. S.P. and magnetic surveys.
- Jacro auger bedrock geochemical sampling programme.
- One shallow jacro diamond drill hole and three deep diamond drill holes to test the zone of tourmalinisation and quartz veining on Specimen Hill.

Previous report submitted to the L and L Syndicate are -

- CRAE Report 9755, T.M.Porter "The Balfour - Specimen Hill Programme Six Monthly Report to June 26th 1979."
- CRAE Report 9991, T.M.Porter "The Balfour - Specimen Hill Programme Six Monthly Report to December 26th 1979.
- CRAE Report 10467, A.D.McKay and M.F.Flis "Results of Geophysical Surveys in the Balfour Area N.W.Tasmania, November 1980.

- CRAE Report 11203 P.Heithersay, Mineral Leases 120M/67, 121M.67, 10M/73, 1M/76, 2M/76, 93M/77, 94M/77, and 95M/77, Balfour Tasmania Report for the year ending 31st December, 1981.

- N.R.Langsford (for CRAE) Geology and Mineralisation Specimen Hill Area Balfour Tasmania, 27th November, 1982.

3. CONCLUSIONS

An extensive and intensive exploration programme has been carried out over the L and L Syndicate Leases.

Three diamond drill holes have been developed to evaluate the major zone of tourmalinisation and quartz veining on Specimen Hill. The area had potential for bulk mining with subsequent up grading of the vein material by photometric ore sorters, but the vein density and distribution appear insufficient to allow economic development of the deposit.

There are no other untested geological, geochemical or geophysical targets within the L and L Syndicate leases and no further drill testing of the area is warranted.

4. RECOMMENDATION

CRA Exploration Pty.Limited and Geopeko have withdrawn from the L and L Sybdicate option agreement as from Monday 13th December, 1982.

5. PREVIOUS WORK

BHP conducted detailed investigations in the Specimen Hill area during 1963-64. They carried out detailed geological mapping with magnetic and gravity surveys and took peat and gravel samples to define surface areas where tin mineralisation appeared strongest.

They dug a number of costeans (unsuccessfully) and developed six diamond drill holes for a total of 825 metres.

Four holes were drilled to test quartz veining on Specimen Hill and two holes BC5 and 6 were drilled to test broad magnetic anomalies to the north and south of Specimen Hill. Weakly disseminated pyrrhotite was intersected and remnant magnetic susceptibility measurements suggested that remnant magnetism of the pyrrhotite was sufficient to explain the size of the anomalies.

From 1969 - 1973 ACI extensively tested the Murrays Reward line of workings, a line of old copper workings occurring along the eastern margin of the Balfour Leases. ACI put down at least 15 shallow drill holes and proved the existence of a small, low grade, discordant copper-quartz-dolomite body, striking north-west and dipping 50 to 60 degrees west. It contains 0.8% copper with dimensions of 220 metres length, 270 metres depth and five metres width. Grade and thickness were reported to decrease along strike to the north-west.

Exploration by the CRAE-Geopeko joint venture commenced in 1979 with the establishment of a 2.6km by 0.65km grid. The following work has been carried out and reported to the leaseholders.

- Geological mapping at 1:5000 scale (CRAE Report 9755) at 1:2500 scale (CRAE Report 11203), together with detailed mapping at 1:1000 scale of selected areas at Specimen Hill and Peters Ridge (Report by N.R.Langsford).

- Geochemistry - initial rock chip sampling (Report 9755), Jacro auger bedrock sampling (Reports 9991 and 11203) and selective vein sampling (Report by N.R.Langsford).

- Geophysics - aeromagnetic survey, ground magnetics and I.P. (Report 9755) follow up I.P. and S.P. surveys (Report 9991) Dighem (Multicoil EM) survey of March 1980, and summary of geophysics (Report 10467).

A summary of all geophysical data together with the location of all the Balfour drill holes is given in Plan TASh 822 accompanying this report.

Four diamond drill holes have been developed within the L and L Syndicate Leases, by the CRAE/Geopeko Joint Venture. They are -

DDB9 was collared at 10900N, 10050 East within 10M/73 and drilled -60° to the east, to evaluate the major magnetic anomaly between 104N and 114N. The hole ran almost directly down dip and was abandoned at 15.5 metres. Massive siltstones and sandstones carrying 1 - 2 % pyrite with less than 5 ppm tin was intersected over the length of the hole.
Full details are given in CRAE Report 9991.
The same magnetic anomaly was later drilled on line 108N immediately south of 10M/73 in hole DD82 BC7. Only trace amounts of pyrrhotite were present in the hole and as with all major magnetic anomalies in the Balfour area it has been attributed to remnant magnetism of the disseminated pyrrhotite.

DDB81 BC1 (DDB11 of Geopeko) was collared at 9630N, 10075E and drilled at -45° to 227° magnetic. It was designed to test the main zone of quartz veining on Specimen Hill. The hole intersected 119 metres of banded siltstones and quartzites and intersected a number of veins which contained wolframite rather than the expected cassiterite.
Detailed logs and cross sections are given in CRAE Report 11203.

DD81 BC2 (DDB12 of Geopeko) was collared at 9585N 10060E and drilled at -45° to 260° magnetic. It was targeted to pass through the flexural anticline on Specimen Hill and to test the geochemically anomalous tourmaline zone. The hole was drilled to a depth of 210.5 metres and a detailed log and cross section is given in CRAE Report 11203.

The hole intersected variably tourmalinised and silicified siltstones. Pyrite and pyrrhotite blebs and veinlets occur throughout the core but are concentrated in the lighter coloured sandy layers where the content ranges from 3 to 7%.

Veins represented in the core averaged 1cm in thickness with several larger veins reaching up to 30 centimetres. Most contained quartz pyrite, arsenopyrite, chalcopyrite, wolframite and siderite in varying amounts. Coarse cassiterite crystals in quartz veins, so common on the surface, were noticeably absent in the core.

Taken together the veins formed a zone from 29 metres to 115 metres (87 metres) with a grade of 0.14% WO_3.

The third hole DD82 BC8 was collared at 9770N, 10090E and drilled -60 degrees to 167° magnetic. The hole was completed at 300 metres and is described in this report.

6. 1982 WORK PROGRAMME

During 1982 the whole area of Specimen Hill was remapped in detail (at 1:1000 scale) by N.R.Langsford, and an attempt was made to bulk sample individual areas of quartz veining. This work led to an increase in surface area of tourmalinisation and brecciation and led to the development of a diamond drill hole DD82 BC8 to test the Specimen Hill zone at depth.

Following this work a detailed examination was made of all veining on Specimen Hill to see if bulk mining and ore sorting was at all possible.

6.1 Specimen Hill Mapping (Plan TASh 994)

Langsfords detailed mapping has confirmed the stratigraphy originally established by Heithersay (CRAE Report 11203). The oldest unit, Lithofacies 1 of Heithersay and Matrix Creek Beds of Langsford, is a massive to faintly laminated siltstone - sandstone black shale unit. It dips and faces west along the western flank of Specimen Hill and is seperated from the overlying east facing Specimen Hill siltstone by a major fault.

The Specimen Hill siltstone is about 400 metres thick. It consists of an upper and lower unit of banded "pyjama" siltstones seperated by a more massive siltstone - quartzite unit. Conformably overlying the Specimen Hill siltstone is the Balfour Shale, a thinly regularly laminated green chloritic siltstone - shale unit. The stratigraphy is summarised in Plan TASh 1139.

The dominant structure is a broad open anticline trending approximately 330° magnetic and plunging 60° south. The eastern limb dips steeply east and is quite regular but the Southern flank is more complex and is sheared out along the Specimen Hill fault. This fault which dips steeply east is deep seated and probably one of the major structural features of the area. It contains minor tin mineralisation in silicified siltstone within the fault zone itself, and the quartz veining so prominant on Specimen Hill are either parallel to the fault plane itself or parallel to a number of associated feather faults.

On Specimen Hill the proximity of the fault and anticlinal axis has resulted in a major area of brecciation and tourmalinisation. The zone covers an area of about 50,000 square metres and has resulted in partial to almost complete replacement of the siltstones. Quartzite beds are broken and completely disoriented in the northern section of the zone but are rarer and less broken in the south. Tin content of the breccia averages only 240 ppm while tungsten averages only 40 ppm. There are however occassional high grade pods of quartz-cassiterite-tourmaline mineralisation - Langsford lists two examples at 9520N 10090E and 9560N 10090E. The mineralisation in each case consisted of a quartz cassiterite pod 3-5 metres long, up to 30 centimetres thick with 10-15 centimetre halo of disseminated cassiterite crystals.

The bulk of the mineralisation on Specimen Hill however occurs in quartz veining which ranges in thickness from mere threads to occassional large veins one metre in thickness. Langsford recognises five types of quartz veins.

Quartz with a selvage of black cassiterite grains and no cassiterite within the vein.

Veins with coarse brown zoned cassiterite in central section of the vein and commonly a mica selvage.

Coarse grained wolframite-quartz-arsenopyrite-pyrite veins with complete lack of cassiterite.

Quartz-wolframite veins often very vughy on the surface.

A thick, flat lying, quartz-wolframite-cassiterite sulphide vein on the west flank of Specimen Hill. BHP drilled four diamond drillholes DDB 1-4 to evaluate this vein.

Heithersay (Report 11203) suggested that the quartz veining on Specimen Hill as intersected in DD81 BC1 and 2 trended 300° magnetic and dipped shallowly(0-35°) east.

However, very few flat veins can be seen on Specimen Hill and a stereoplot of veining prepared by Langsford suggests that the great majority of veins are steep 75 to 85° to the north and west. The dominant strike is 070° magnetic with a spread to other peaks at 050° 100° and 130° magnetic.

6.2 Diamond Drilling

DD82 BC8 was drilled to evaluate the tourmaline-breccia-quartz vein zone on Specimen Hill at depth. The hole was collared at 8770N 10090E and drilled -60 degrees to 167° magnetic. A detailed drill log and assay sheet is appended with the report and a drill section is shown on Plan TASh 1125). It has commenced within 19M/76 and passed into 121M/67 at depth.

The hole passed through pyjama siltstones and quartzites to 130metres, laminated siltstones to 222.5 metres and through silicified and tourmalinised siltstones to a total depth of 300 metres. A major fault zone - The Specimen Hill fault was encountered at 293 metres. A total of 33 quartz veins with a thickness greater than 1 centimetre were encountered but there appeared to be no abnormal concentration of veins in any one section of the hole. A weighted average of all vein material intersected in the hole ran 1830 ppm Tin 2300 ppm Tungsten, 6.1% Arsenic, 5200 ppm Copper, 1830 ppm Zinc and 7.5 ppm Silver.

6.3 Evaluation of Specimen Hill Veining

The most potential target in the Balfour area was considered to be the bulk mining of quartz veining on Specimen Hill with subsequent upgrading by photometric ore sorters. Holes DDB1 to 6 drilled by BHP and holes DD81 BC1,2,4,6 and DD82 BC8 drilled by CRAE/Geopeko have been used to evaluate this potential.

Data on vein density, vein thickness, bulked assay data and volume of core available at various vein density cut offs is listed in Tables 1 to 4. These figures can be compared with those from Mt.Carbine where photometric ore sorters are used to seperate quartz vein material from barren dark shales.

At Mt.Carbine, a swarm of steeply dipping quartz veins ranging from 20mm to 1 metre in width occur in dark micaceous greywackes of the Hodgkinson Formation.

The veins average about 1% WO_3 and form 8 - 10% of the rock volume. A cut of grade of 4% veining is used in mining and after primary crushing to sizes between 150 and 20 mm, about 80% of the shale gangue is rejected by the ore sorters.

The major points of comparison are -

	Mt.Carbine	Balfour
Average vein content	8 - 10%	0.66%
Vein width (a) Range	2cm to 1 metre	1cm to 67 cms
(b) Average	10 - 20 cms	7.64 cms
Average grade	1% WO_3(0.79%W)	0.8%Sn 1.02%W
% Vein mineralised	10 %	42 %

It is obvious that although the Balfour veins are higher grade, they are very much thinner and that the vein density is very much less.

Theoretically, ore sorters can upgrade quite low concentrations of material and as the grade of the vein quartz is considerably higher than Mt.Carbine, there was still an element of hope. However, it is very likely that the abundant clean white quartzite would be sorted with the quartz and seriously lower the grade of the concentrate. Even more important however, is the fact that the sections with higher vein densities are widely scattered through the drill holes. Table 4 clearly shows that even in applying a vein density cut off as low as 0.5% veining the "ore grade" sections are widely scattered, and that only three sections DDB 2 (120 - 180 feet), DDB 6 (420 - 480 feet), and DD81 BC4 (130 - 150 metres) are adjacent sections above the cut off grade. See also Plans TASh 959 - 964.

There is simply no way that widely scattered "ore sections" like these could be mined in an open pit operation.

7. KEYWORDS

Tin, Tungsten, veins, Drill Diamond, Geology, Ore Sorting.

Location: Burnie 1:250 000 Sheet SK55-3

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Vein Density and Assay Data DDB5	TASh 959
" " " " " DDB6	TASh 960
" " " " " DD81 BC1	TASh 962
" " " " " DD81 BC2	TASh 961
" " " " " DD81 BC4	TASh 964
" " " " " DD81 BC6	TASh 963

10. LIST OF APPENDICES

TABLES 1 - 4

TABLE 1. VEIN DENSITIES

Hole No.	Depth of Hole (m)	All Veins			Veins + 1 Cm		
		No. of Veins	Total Thick-ness(Cms)	%Vein Material	No. of Veins	Total Thick-ness(Cms)	%Vein Material
BHP DDB1	88.6	NA			6	116.0	1.31
2	73.2	NA			4	53.0	0.71
3	30.0	NA			1	43.0	1.40
4	167.5	NA			7	152.0	0.91
5	283.2	160	176.5	0.62	32	114.0	0.47
6	182.9	96	367.0	2.00	19	331.7	1.81
DD81 BC1	119.0	21	23.8	0.20	6	11.0	0.10
2	210.5	60	122.8	0.58	16	85.0	0.40
3	143.1	NA					
4	210.4	22	74.8	0.35	14	68.0	0.32
5	100.0	NA					
6	274.6	25	93.0	0.34	17	86.5	0.32
DD82 BC7		NA					
8	300.0				33	330	1.10

Weighted average vein content for all veins + 1Cm = 0.66%.

Data for holes DDB1 - 4 from graphic logs, remainder from detailed written logs.

N.A. Not Applicable

TABLE 2 VEIN THICKNESS

(includes only veins thicker than 1cm)

Hole No.	Number of Veins	Thickness Range Cms	Average Thickness Cms
BHP DDB 1	6	9 - 46	19.3
2	4	6 - 30	13.2
3	1	? - 43	43.0
4	7	9 - 55	21.7
5	32	1 - 20	2.84
6	19	1 - 67	17.46
DD81 BC 1	6	1 - 6	1.10
2	16	1 - 30	2.05
3	NA		
4	14	1 - 15	3.09
5	NA		
6	17	1 - 10	3.72
7	NA		
8	33	1 - 15	9·48
Weighted Average for all holes			7.64

N.A. Not Applicable

TABLE 3 ASSAY DATA

A/. BHP Drilling

Hole No.	Total Thickness of Quartz (Cms)	Length Weighted Assay	
		% Sn	% W
DDB 1	116.0	0.87	1.78
2	53.0	0.33	0.23
3	43.0	1.41	1.19
Weighted Average		0.84	1.27

Note. No assay data available for DDB4. Veins not assayed seperately in DDB5 and 6 and no W assay available. Low values reported as trace only, so that vein assay cannot be re calculated.

B/. CRAE/GEOPEKO Drilling (Holes 1 - 6)

Hole No.	Total Thickness of Quartz (Cms)	Length Weighted Assay	
		% Sn	% W
DD81 BC1	11.0	0.07	0.14
2	85.0	0.06	1.12
4	68.0	0.69	0.55
6	86.5	1.67	0.78
Weighted Average		0.79	0.80

Note. Holes BC 3,5 and 7 not applicable. For the above veins have not been assayed seperately. Vein assay has been calculated by subtracting background value from each one metre assay value, recalculating the remainder to the total vein width for that interval and weighting that result to allow for vein angle to core axis. For example - One 5cm quartz vein at 30° to axis within a one metre assay interval of 1200 ppm tin and a background of 200 ppm tin gives a re-calculated vein assay of 1% tin.

C. CRAE/Geopeko DD82 BC8

Hole No.	*Total Thickness of Quartz (Cms)*	*Length Weighted Assay*	
		% Sn	*% W*
DD82 BC8	313	0.18	0.23

Note. *All quartz veins greater than 2 cms have been assayed seperately for this hole.*

The data from all three sources agrees fairly closely and when bulked together give an average assay for quartz vein material as

0.81% Tin and 1.02% Tungsten

TABLE 4. Proportion of core effected by different cut off densities.

Hole No.	Number of 10 metre core intervals effected at cut off				
	4%	3%	2%	1%	0.5%
DDB 1	2	2	2	3	3
2	1	1	1	2	2
3	1	1	1	1	1
4	1	1	1	5	5
5	1	1	2	3	5
6	1	1	1	2	3
DD81BC1	-	-	-	-	1
2	-	-	1	3	4
4	-	-	-	2	4
6	-	1	1	2	3

Note. The individual sections above the cut off level are all scattered. Only at 1% cut off level do any sections adjoin. They are -

60 ft between 120 and 180 feet in DDB2
60 ft between 420 and 480 feet in DDB6
20 metres between 130 to 150 in DD81 BC4

APPENDIX I

DIAMOND DRILL LOG DD82 BC8

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME Rocky Cape No. 177

PLAN – MAP REFERENCE Balfour Grid

CO-ORDINATES 9770N 10090E AZIMUTH 167°M DRILLERS Parry COMMENCED 9/11/82 DEPTH 300 HOLE No. DD82BC9

RL COLLAR ____ INCLINATION -60° DRILL TYPE Boyles COMPLETED 20/11/82 CASING LEFT Nil DPO No(s) ____

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Pb Ppm	Zn	Cu	Ag	As	Bi	W	Sn
0	3				Tri cone drilled.		931151											
3	18		NQ		Specimen Hill Siltstone (informal name) banded to laminated grey to pale green siltstones. "pyjama rocks". Individual bands 10–40cms thick, lower section laminated to massive grey silstone, some times grass bedded on cm. scale. Graded upwards into massive to regularly laminated dark grey siltstone. Base of units show "dyklets" intruding lower units load casts, slump structures etc.	7m LCA 45°												
						3–8m core broken and weathered.												
						10m LCA 35°												
						14m LCA 25°												
							931151	29.4	29.6	0.2	165	1550	2500	3.0	3.0%	60	43	177
						17m LCA 30°												
						19.3m 3mm q–asp vein 45° LCA												
						23m LCA 10°												
18	19				White silty fg sandstone													
19	23				Thinly lam grey siltstone	28m LCA 35°												
23	30				As for 3–18m.													
						28.8 – 29.7 Grey fg pyritic quartzite 2–5% fg pyrite, minor sp.												
						29.2 5mm q–asp–vein 80° LCA												
						29.5 – 29.6 qtz–asp–py–musc veins vuggy, in silic siltstone 40° LCA.												

021 614022

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No: 2/

TENEMENT NAME ROCKY CAPE No. 177

PLAN – MAP REFERENCE BALFOUR GRID

CO-ORDINATES 9770N AZIMUTH 167°M DRILLERS PARRY COMMENCED 9/11/82 DEPTH 300.0m HOLE No. DD82B18

RL COLLAR 1009.0E INCLINATION -60° DRILL TYPE BOYLES COMPLETED 20/11/82 CASING LEFT NIL DPO No(s)

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Pb	Zn	Cu	Ag	As	Bi	W	Sn
30	31·6				White silty fg silicified sandstone, faintly laminated Core broken.	2-5% fg pyrite.	931152	31·5	32·6	1·1	55	1500	230	x	1500	x	26	102
						31.2 2mm qtz-asp-minor cp vein.												
31·6	34·2				As for 3-18m.													
						34m LCA @20°												
34·2	35·6				Thinly lam grey siltstone.													
35·6	-39				"Pyjama" siltstones.	31·5 - 32·6m Dark grey fg pyritic qtzite, grades down to white lam. silic s/s 5-10 py, minor sp.												
						33·5m 2mm qtz-asp vein 35° LCA												
					Broken core, slickensides, minor clay.	33·5 - 33·7 Shear zone												
						35m 2mm qtz-asp vein, minor py.												
							931163	41·3			300	120	1500	6·5	7·0%	320	x	193
						38m LCA 40°	931164	42·7			135	155	1·2%	17	12·5%	165	x	124
38	39·2				Thinly lam grey siltstone.	44m LCA 45°	931153	43·4	43·5	0·1	95	85	1000	1·5	3·65%	10	x	957
						41·3m 2cm qtz-asp-py vein												
39·2	55·4				"Pyjama" siltstones.	43·4 - 10cm qtz-py-asp vein. Wolframite in selvage.												
						49-49·2 qtz-asp-py vein	931165	49	49·2	0·2	820	385	435	10·0	2·4%	480	x	1650

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3
TENEMENT NAME ROCKY CAPE No. 177
PLAN – MAP REFERENCE BALFOUR GRID
CO-ORDINATES 9770N 10090E AZIMUTH 167° M DRILLERS PARRY COMMENCED 9/11/82 DEPTH 200 m HOLE No. DD 82 B/2
RL COLLAR INCLINATION -60° DRILL TYPE BOYLES COMPLETED 20/11/82 CASING LEFT NIL DPO No(s)

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Pb	Zn	Cu	Ag	As	Bi	W	Sn
						50m LCA - bedding //												
						54m LCA 30°												
55.4	57.9	2.5	NQ		Dark grey pyritic silty fg s/s, minor cross bedding.		931154	55.4	57.9	2.5	140	110	1700	2.5	2000	90	977	7070
						Sulphide rich (20% py minor sp, cp) s.s. Silicified, minor tourmalinization.												
57.9	65.2				"Pyjama" siltstones.	56.6 - 56.7 q - py - minor asp - carb vein. 30° LCA.												
						Minor py. on joint planes.	931155	56.6	56.7	0.1	720	100	1650	12.5	2.4%	810	4710	467
					-	58m bedding // LCA												
						59.2 m 2cm qtz - minor asp vein 40° LCA.												
						61m bedding // L.C.A.												
65.2	69.1				Fine grained grey faintly lam. quartzite, minor inter bedded lam. siltstone.	67 20° L.C.A.	931166	63.3	63.4	0.1	240	150	4600	6.0	5.0%	560	x	4350
						63.3 - 63.4 q - py - asp - carb vein, minor cp, SnO_2? 40° L.C.A.												
						65.2 - 69m Minor dissem fg py, fg py on joints, few thin irreg py veins.												
					Broken core, minor clay zone 66.7 - 67m.	Shear zone 66.7 - 67m.												
						68.9 - 69.1 minor tourmaline alt'n												
						70m bedding // L.C.A.												
						70.5 irreg 2mm py vein.												

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 4/

TENEMENT NAME ROCKY CAPE No. 177

PLAN – MAP REFERENCE BALFOUR GRID

CO-ORDINATES 9770N 16090E AZIMUTH 167°M DRILLERS PARRY COMMENCED 9/11/82 DEPTH 300m HOLE No. DD82 B18

RL COLLAR ..... INCLINATION -60° DRILL TYPE BOYLES COMPLETED 20/11/82 CASING LEFT NIL DPO No(s) .....

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Pb	Zn	Cu	Ag	As	Bi	W	Sn
69·1	72·2				"Pyjama" siltstones	73·8m 1cm qutz-py-asp-carb vein 30° L.C.A.												
72·2	77·6				Pale grey mg-fg silicified? silty s/s. Faintly laminated, minor cross bedding.	Close jointing 73-77m.												
						79·2 2cm qutz-asp vein, minor CP	931169	79·2		0·02	325	540	3300	7·0	250	70	9530	3160
						75m LCA 30°	931167	80·2		0·02m	50	45	305	1·0	6·1%	70	*	3090
						80m LCA 20°												
77·6	96·4				"Pyjama" siltstone.	80·8m 2cm qutz-asp vein												
						81·7-81·8 qutz-asp-py-wo vein 40° LCA	931156	81·7	81·8	0·1m	345	215	2550	10·5	6·4%	320	102	1710
						84·7-84·9 qutz-asp-py wo vein 35° LCA	931157	84·7	94·7	0·2	665	335	3750	20·0	6·5%	670	379	687
						87·2-87·3m qutz-py-asp-carb. vein 20° LCA minor CP, SP?	931158	87·2	87·3	0·1	405	440	9100	15·5	9·4%	380	135	760
						91·2 2cm qutz-asp vein.	931170	91·2		0·02	455	3500	2090	13·0	5·8%	470	283	247
						92·6-92·9 Films of py, chlorite? on joints.												
						95·8 1cm qutz-carb-asp vein, 40° L.C.A.												
						97·4 97·7 Silicified zone, irregular qutz-asp veins, minor dissem. carbonate.	931159	97·4	97·7	0·3	15	170	540	*	6700	20	252	116
						83m LCA 20°												
						87 " 20°												
						90 " 25°												
						93 " 20°												
						96 " 40°												

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 5/

TENEMENT NAME Rocky Cape No. 177

PLAN – MAP REFERENCE Balfour Grid

CO-ORDINATES 9770N 10090E AZIMUTH 167°M DRILLERS Parry COMMENCED 9/11/82 DEPTH 300m HOLE No. PD82 B19

RL COLLAR ... INCLINATION -60° DRILL TYPE Boyles COMPLETED 20/11/82 CASING LEFT Nil DPO No(s) ...

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ...) Pb	Zn	Cu	Ag	As	Bi	W	Sn
2.4	99.7				Thinly lam grey siltstones, minor thin white silty s/s interbeds.	1-2% dissem pyrite, fg.												
						97.8m 2cm qutz - asp - py vein, minor carbonate	931168	97.8		0.02	1100	95	2000	33.0	6.4%	1100	<	77
99.7	130				"Pyjama" siltstones.	95.7m 5cm qutz - carb - asp vein 70° LCA	931171	95.7		0.05	170	1500	490	5.0	5.2%	120	x	106
						98.6m 1cm qutz - carb - asp vein 30° LCA.												
						99m 5cm qutz - asp - py carb. vein 45° LCA	931172	99		0.05	270	2700	1700	4.5	2.5%	390	x	1920
						99m bedding 20° LCA												
						104.2m yellow clay on joint.												
						106.1m 5cm breccia zone.												
						119.3 - 120.4. Dark brown silicified tourmalinised? zone.												
						5-10% dissem py, thin qutz - py veins.	931173	119.3	120.4	0.14	30	735	325	x	4000	10	52	637
						124.3 2cm qutz - asp - py carb vein 20° L.C.A.												
						129.2 2cm qutz - asp - py - wo - SnO_2 vein 50° LCA	931174	129.2		0.03	420	145	2700	80	10.3%	530	2.24%	1.38%
						132.3 - 133.4 Shear zone, minor dissem pyrite.												

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 6/

TENEMENT NAME ROCKY CAPE No. 177

PLAN – MAP REFERENCE BALFOUR GRID

CO-ORDINATES 9770N / 10090E AZIMUTH 167° M DRILLERS PARRY COMMENCED 9/11/82 DEPTH 300m HOLE No. DP82B18

RL COLLAR ..... INCLINATION -60° DRILL TYPE BOYLES COMPLETED 20/11/82 CASING LEFT NIL DPO No(s) .....

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Pb	Zn	Cu	Ag	As	Bi	W	Sn
					"Pyjama" siltstones.	99m bedding 20° LCA												
						104 25°												
					105m NQ – BQ	109 //												
						112 15°												
						119 10°												
130	-2235				Thinly laminated dark grey	132 //												
					siltstones, thinly bedded.	137 10°												
					Laminations commonly													
					irregular. Pale siliceous	134·6m 1cm irreg qtz-py												
					s/s interbedd 1-2cm	vein 20° LCA.												
					thick No dyklets etc													
					chargeteristic of "pyjama"	139·9m 4cm qutz-carb-												
					siltstones.	py asp vein 45° LCA	931175	139·9		0·04	75	670	4950	0·5	1·39%	70	200	65
						140.7 5mm qutz-py-asp-												
						vein 30° L.C.A.												
						142·2 - 145·5m. Silicified												
						siltstone. 5% dissem py												
						minor po. Irreg. qutz												
						veining.												
						143.8 - 144m. Q.-carb-												
						asp - py - no vein 30° L.C.A.	931160	143·8	144·0	0·2	375	8100	4300	6·0	12·1%	600	4780	1340
144	144·5				Dk. Grey pyritic quartzite.													
						144 - 144.5 Grey f.g quartzite,													
						silicified; 5-10% py	931161	144	144·5	0·5	50	405	1150	0·5	440	110	431	1200
						157·9 - 158 qutz - asp - carb	931162	157·9	158	0·1	95	7500	9800	4·5	1·45%	200	25	1540
			"	"		cp vein 20° L.C.A.					"	"	"					

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 7/

TENEMENT NAME ROCKY CAPE No. 127

9770N

PLAN – MAP REFERENCE BALFOUR GRID

CO-ORDINATES 10090E AZIMUTH 167° M DRILLERS PARRY COMMENCED 9/11/82 DEPTH 300m HOLE No. DD82B18

RL COLLAR INCLINATION -60° DRILL TYPE BOYLES COMPLETED 20/11/82 CASING LEFT NIL DPO No(s)

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Pb	Zn	Cu	Ag	As	Bi	W	Sn
					Thinly lam siltstones.	140 ° 10° LCA												
						144 // LCA												
						149 15° LCA												
						159 // LCA												
						169 // LCA												
						148 – 147.2 Closely jointed zone, irreg. thin py veins.												
						146.7 – 146.8 10cm qutz-carb- asp py vein 30° LCA	931192	146.7	146.8	0.1	330	2100	4250	11.0	7.5%	1000	3020	3130
						157.8 – 158 qutz - carb - py asp vein 20° LCA	931162	157.8	158.0	0.2	95	7500	9800	45	14.5	200	25	1450
						Minor dissem py 167 – 167.5m												
						177.9 – 182m Quartz - minor py-asp veins in silicified zone	931176	177.9	182.3	0.4	20	1450	690	*	3900	10	682	487
						187.6 5cm qutz -asp- SnO_2 vein 40° LCA	931177	187.6		0.05	345	860	3900	6.5	2.7%	340	2250	4400
						194.2 1cm qutz - py - vein 25° L.C.A.												
						205.2 – 205.4 minor dissem py, po.												
						173 Bedding // LCA ; 176 20° LCA												
						179 " // LCA 191 // LCA												

027 614028

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 8/

TENEMENT NAME ROCKY CAPE No. 177

PLAN – MAP REFERENCE BALFOUR GRID

9770N
CO-ORDINATES 10090E AZIMUTH 167°M DRILLERS PARRY COMMENCED 9/11/82 DEPTH 300m HOLE No. RD #2 B18

RL COLLAR INCLINATION -60° DRILL TYPE BOYLES COMPLETED 20/11/82 CASING LEFT NIL DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To. (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Pb	Zn	Cu	Ag	As	Bi	W	Sn
					Thin lam. siltstones.	208·5 py films on joints.												
						213·8 - 214 Silicified zone, irregular quartz veins with asp, py.	931178	213·8	214·0	0·2	245	50	305	2·5	1.34%	20	55	1280
						216 1cm qtz-asp-py vein, 20° L.C.A.												
222.5	300				Dark brown to grey hard fg silicified siltstone. Laminations preserved.	222·5 - 300. Zone of intense silicification, minor tourmalization. Up to 5% fg carbonate. 5-10% dissem py, po.												
						227·8 m. 2cm qtz-py-asp vein 45° L.C.A.												
						233·8 - 234·1 qtz - asp-py-cp vein, 35° LCA	931179	233·8	234·1	0·3	290	4750	1·10%	8·5	16·0%	440	x	346
						234·5 - 235. Irreg. py. vein in dark brown silicified tourmalinised? Siltstone. Thin irreg. carb veins minor dissem po. Vein 3cm wide, 11 L.C.A.	931193	234·5	235·0	0·5	65	545	2750	2·5	2000	10	24	1790

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 9/

TENEMENT NAME ROCKY CAPE No. 177

PLAN – MAP REFERENCE BALFOUR GRID

CO-ORDINATES 9770N 10090E AZIMUTH 167° M DRILLERS PARRY COMMENCED 9/11/82 DEPTH 300m HOLE No. DP 82 RR

RL COLLAR INCLINATION -60° DRILL TYPE BOYLES COMPLETED 20/11/82 CASING LEFT NIL DPO No(s)

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Pb	Zn	Cu	Ag	As	Bi	W	Sn
						233m 15° LCA												
						240m // LCA												
						245 // LCA.												
						237.6 239.9m As for 234.5 - 235.	931180	237.6	239.9	2.3	195	300	2000	25	3200	70	106	304
						238.9 - 239.2 Qutz carb py - asp vein 20° LCA	931181	238.9	239.2	0.3	75	85	1650	11.0	1.2%	440	191	3200
						239.9 - 241.3 As for 234.5 - 235	931182	239.9	241.3	1.4	75	150	2850	15	2500	70	111	169
						244.9 - 245.9 As for 234.5 - 235	931183	244.9	245.9	1.0	50	1300	3100	6.5	5700	180	219	499
						245.9 - 246 qutz - carb - asp - py - wo vein 30° LCA	931184	245.9	246	0.1	70	130	2250	0.5	12.5%	740	6290	25
						247.3 2cm qutz - carb - asp py vein, 25° LCA	931185	247.3		0.02	95	560	2150	1.0	3.5%	510	x	99
						252.0 2cm qutz - asp - py cp vein. 45° L.C.A	931186	252.0		0.02	460	6550	5250	4.0	6.0%	1250	1020	116
						253.9 cm qutz - carb - py vein 45° LCA	931187	253.9	254.0	0.1	70	160	1150	x	1.05%	80	25	200
						260.2 5cm white qutz vein minor asp 45° L C A												

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 10
TENEMENT NAME ROCKY CAPE No. 177
PLAN – MAP REFERENCE BALFOUR GRID

CO-ORDINATES 9770N 10090E AZIMUTH 167° M DRILLERS PARRY COMMENCED 9/11/82 DEPTH 300m HOLE No. DD82 B18
RL COLLAR ..... INCLINATION -60° DRILL TYPE BOYLES COMPLETED 20/11/82 CASING LEFT Nil DPO No(s) .....

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Pb	Zn	Cu	Ag	As	Bi	W	Sn
						262m // LCA												
						265·6 5cm white qtz vein minor asp, cp, sp? 35° LCA	931188	265·6		0·05	295	4600	2900	6·0	40%	670	x	1090
						266·8 - 266·9 qtz - py - asp carb vein 45° LCA	931189	266·8	266·9	0·1	.	.	1	·5	40%	340	x	15
						274·2 - 274·5 White qtz vein, minor asp - py at topo vein. 45° LCA	931190	274·2	274·5	0·3	75	370	1100	0·5	1·4%	80	43	75
						277·2 - 277·3 Qtz - cg carb. vein 45° LCA	931191	277·2	277·3	0·1	5	65	40	x	50	x		
						288·0 1cm brecc. qtz asp vein.												
293	300m				Dark green fractured laminated siliceous siltstones. Much less alteration than in interval above. Probably Specimen Hill Fault.	293 - 295·5 Broken core, close spaced joints. Sheared slickensided zone at 294.4. White clay along joints. Slickensided joints at 296·4, 297·2m.												
					EOH 300m													

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1/1

TENEMENT NAME ROCKY CAPE No. 117

PLAN – MAP REFERENCE BALFOUR GRID

CO-ORDINATES 9770 N 10090 E AZIMUTH 167 Mag DRILLERS PARRY COMMENCED 9/11/82 DEPTH 300m HOLE No. DD82 B18

RL COLLAR ..... INCLINATION -60° DRILL TYPE BOYLES COMPLETED 20/11/82 CASING LEFT NIL DPO No(s) .....

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION (SUMMARY)	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)
						SURVEYS					
					0 – 130m "Pyjama" siltstones, minor interbedded quartzites, pyritic in part.	135 m Az 167° Dip -50°					
						180 m 51°? -24°?					
						200 m 167° -38°					
					130 – 222.5m. Laminated siltstones, thin quartzite inter beds.	250 m 165° -34°					
						300 m 165° -35					
					222.5 – 300m. Silicified, tourmalinised? siltstones. Fault zone at 293m.						
					Approx 3.3m of vein material intersected in hole; weighted mean values Sn 1830 ppm. W 2300 ppm As 6.1% Cu 5200 ppm Zn 1830 ppm Ag 7.5 ppm						
					Sulphide bearing. 55.4 – 57.9 7070 ppm Sn.						

APPENDIX II

PETROGRAPHIC DESCRIPTIONS

SAMPLE NO.	931194	237.6 metres
	931195	245.8 "
	931196	251.8 "
	931197	271.8 "
	931198	282.6 "
	931199	292.3 "

032

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Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. G.B. Weber
Senior Geologist
C.R.A. Exploration Pty. Ltd.
P.O. Box 138
BURNIE / TAS. 7320

9th December, 1982

REPORT CMS 82/12/1

YOUR REFERENCE:	D.P.O. No. 30216
DATE RECEIVED:	2nd December, 1982
SAMPLE NOS.:	931194 - 931199
SUBMITTED BY:	G.B. Weber
WORK REQUESTED:	Petrology

Copy to:
The Chief Geologist
C.R.A. Exploration Pty. Ltd.
G.P.O. Box 384D
MELBOURNE / VIC. 3001

Copy & Invoice to:
Administration Officer
C.R.A. Exploration Pty. Ltd.
P.O. Box 138
ROSNY PARK / TAS. 7018

H.W. Fander, M. Sc.

REPORT CMS 82/12/1

Six samples of diamond drill core were received for petrological examination, and brief descriptions and results are compiled in the attached table. Descriptions incorporate data from stereobinocular and petrological microscopic examination of representative thin-sections and offcuts, and include interpretative comments.

Summary

All six samples are representative of a weakly polymetamorphic pelitic sediment sequence. Relict primary features indicate a weakly dolomitic, quartzose to subarkosic, shale-parted siltstone as the primary lithology. Individual samples reflect rather conspicuous detrital opaques and zircon, which may be significant in terms of stratigraphic correlation.

Metamorphic features may be summarised as mild hornfelsing (albite-epidote hornfels facies) and semi-contemporaneous metasomatism followed by a weak, low-grade "regional" metamorphism. Metasomatic phases are fine-grained schorl, impregnating shaly partings/interbeds, and sideritic carbonate as a replacement of dolomite. Minor shear-related quartz and adularia-ankerite veinlets postdate an earlier generation of minor quartz veinlets with accessory traces of chalcopyrite. A few samples include disseminated fine-grained pyrrhotite which, in part, appears to represent a contact-related replacement of "syngenetic" pyrite.

Overall, this suite exhibits affinities with the low-grade contact-metamorphosed/metasomatised pelites marginal to, for example, the Renison mineralisation. Cassiterite was not detected, but assays for Sn may be warranted.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
931194 (T.S. 44713)	Tourmalinised Pelite. Quartz and semi-sericitic muscovite with varying proportions fine-grained green-brown schorl. Disseminated fine-grained Fe-sulphides. Minor quartz veinlets, impregnations of sideritic carbonate.	Relict, massive to shale-parted/laminated silty clastic. Mildly hornfelsed, mildly sheared.	Relict detrital muscovite flakes, zircons. Traces metasomatic phlogopite, minor trace chalcopyrite.	Contact-metamorphosed/metasomatised argillaceous siltstone with mild discordant subsequent shearing. Fe-sulphide apparently syngenetic; chalcopyrite in quartz veinlets.
931195	Tourmalinised Pelite. Quartz-sericite hornfels similar to 931194, with partly tourmalinised shaly interbeds. Disseminated fine pyrrhotite (after ?pyrite). Minor quartz veinlets with siderite, pyrrhotite, chalcopyrite.	Hornfelsic with relict slightly/relatively quartzose silty bedding laminations. Mildly crenulated/stressed.	Relict detrital muscovite, zircon. Disseminated leucoxenic flaky opaques.	Close affinities with 931194. Main contrast is the relatively mild post-hornfelsing/tourmalinisation stress. Partly recrystallized veinlet quartz.
931196	Metapelite. Quartz and semi-sericitic muscovite with minor impregnations, films of sideritic carbonate, fine-grained schorl. Disseminated fine-grained pyrrhotite.	Weakly hornfelsic, incipiently sheared. Relict faintly laminated silty pelitic.	Traces chalcopyrite (in carbonate clots, films). Relatively conspicuous detrital zircons.	Relatively mildly hornfelsed, weakly metasomatised quartzose silty pelite. Relict features closely analogous to 931194 and particularly 931195.
931197	Metapelite. Mildly hornfelsed sericitic quartzose pelite similar to 931195, 931196, but weakly feldspathic. WEakly stained with metasomatic schorl and cloudy sideritic carbonate. Thinly disseminated opaques.	Similar to 931194, with a relatively marked high-angle discordant slaty cleavage.	Rare relict detrital zircons, muscovite flakes, late quartz veinlets (along slaty cleavage).	Mildly hornfelsed/metasomatised pelite analogous to 931196. Opaques are recrystallized detrital, concentrated into very thin "placers".
931198	Metapelite. Quartz and semi-sericitic muscovite with minor sericitised/chloritised feldspar, partly chloritised dolomite. Disseminated opaques. Thinly disseminated very fine metasomatic schorl.	Relatively laminated (shale-parted) silty clastic with mildly sheared hornfelsic overprint.	Relatively conspicuous detrital zircons.	Mildly hornfelsed, subsequently incipiently sheared subarkosic, weakly dolomitic pelite (shale-parted siltstone) with conspicuous detrital opaques, zircon. Only incipiently tourmalinised.
931199 (T.S. 44718)	Metapelite. Quartz and semi-sericitic muscovite with disseminated poikilitic clots of sideritic carbonate, minor schorl. Disseminated opaques. Minor late veinlets of adularia and ankeritic carbonate.	Mildly hornfelsic, weakly sheared, shale-parted silty clastic.	Detrital zircons, muscovite flakes. Traces dolomitic carbonate (corroded/replaced by siderite).	Typical weakly poly-metamorphic pelite reflecting contact related siderite impregnations, incipient tourmalinisation, subsequent adularia-ankerite veining.

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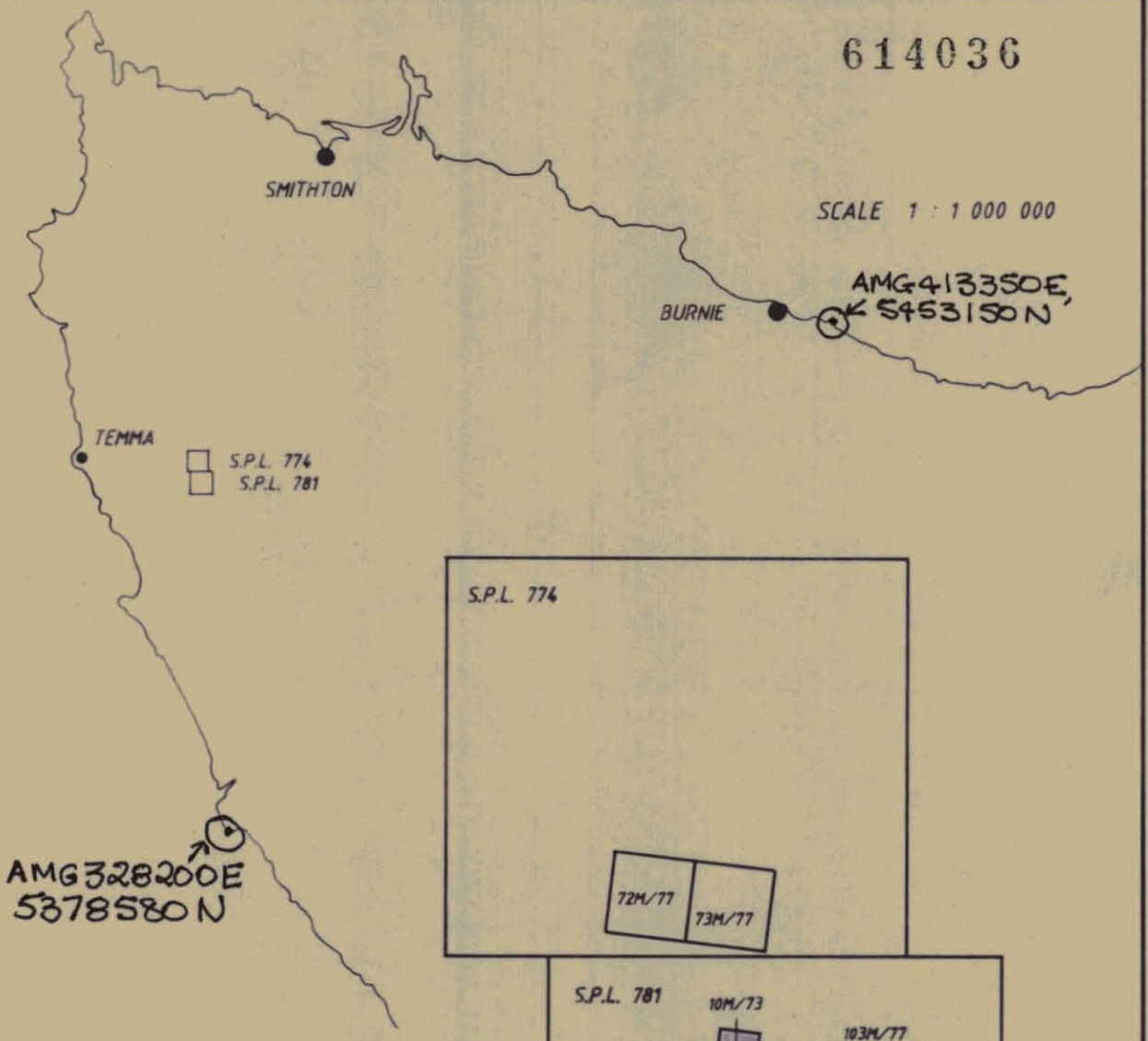

SCALE 1 : 50 000

83-1935R

CRA EXPLORATION PTY. LIMITED

BALFOUR TENEMENTS

LOCALITY PLAN

Ref. s SKSS - 3	
Scale AS SHOWN	Drawn. R. T.
Author. T. W. D.	Report N°. [redacted] 11913
Date. 16th Feb. 1982	Plan N°. TASh 585

AMG REFERENCE POINTS ADDED

5 cm

035

LEGEND

LINES SURVEYED WITH I.P. .....

I.P. ANOMALY - DEFINITE ..... 10-30 (Approx. depth range if shallow or depth to top if deep, in metres)

- PROBABLE .....
- POSSIBLE .....
- POSSIBLE EXTENSION .....

GROUND MAGNETIC ANOMALY OUTLINE (APPROX 300nT ABOVE BACKGROUND) .....

DIGHEM AIRBORNE E.M. ANOMALY ..... 7 - (conductivity in mhos) 30 (min. depth to modelled dyke body in metres)

DRILL HOLE B7

116 N
115 N
114 N
113 N
112 N
111 N
110 N
109 N
108 N
107 N
106 N
105 N
104 N
103 N
102 N
101 N
100 N
99 N
98 N
97 N
96 N
95 N
94 N
93 N
92 N
91 N
90 N
89 N
88 N

Mag. inversion of Lines 107, 108 & 109N individually using infinite depth extent Dyke Model:

	SUSC.(cgs)	DIP	POSITION	WIDTH	DEPTH
109 N	0.01	70° W	10030mE	23m	59m
108 N	0.005	82° W	10050mE	37m	45m
107 N	0.002	89° E	10020mE	101m	45m

MAG. INVERSION FOR LINES 106N TO 110N USING 3D PRISM MODEL:

DIP:	79° W
WIDTH:	22 m
DEPTH:	73 m
DEPTH EXTENT:	505 m
X - CENTRE:	10040 mE
Y - CENTRE:	108 N
SUSC:	0.011 cgs

MAG. MODEL FOR 88 N
Depth: 240 m
Dip: 75° E
Width: 90 m
Susc.: 0.0225 cgs

B1 B2 B3 B4 B5 B6 B7 B8 B9 B10
BC1 BC2 BC3 BC4 BC5 BC6 BC7 BC8

5 cm

614037
83-1935

CRA EXPLORATION PTY. LIMITED

BALFOUR

SUMMARY OF GEOPHYSICS

Ref:	SK55 - 3		
Scale:	1 : 5000	Drawn:	R. T.
Author:	M. F. F.	Report N°.	11913
Date:	22 - 7 - 1982	Plan N°.	TASh 822

037

037

massive white quartz with minor sulphides.

DD B6

yellow clays silicified, sheared siltstones.

100N.

Base line 10,000 East.

silicified sheared siltstones, minor limonite staining.

yellow clays, silicification

Dump

99N

portal

adit

black siltstone in end of adit,

pits in silicified limonite stained siltstone

black shale band

silicified siltstone

98N

DD82 BC8

Sn tourmalinised zone

97N

yellow clays

DD B1

DD B11

Tin mineralisation in tourmalinised zone (S28)

Shattered silicified quartzite

Fractured quartzite and brown shale

deep trench

deep trench

96N

DD B12

orange clay (S15)

quartz - SnO_2 vein in quartzite

TAILINGS PILE - (covers orange clays with quartz - wolframite veinlets)

quartzite rubble

95N

210m

Tourmalinised siltstone (on dump)

Costean - hard quartzite wash

S4

S35 S34 S33 S32

hard quartzite wash

Fault zone?

contorted dark brown siltstone

94N

S36

hard quartzite wash

quartzite rubble

S2

SnO_2

SnO_2 in fractured silicified quartzite

GRID NORTH
317° MAGNETIC

LEGEND

- Quartz vein
- Pit or Trench
- S12 — Sample interval (chip)
- S27 — Spot Sample
- Shearing
- Boundary of Tourmaline / Breccia zone.
- ? — Concealed, interpreted
- 30 — Dip & Strike of Bedding
- Strike of Vertical Bedding
- 75 — Dip & Strike of Foliation
- 30 — Dip & Strike of Joints
- Strike of Vertical Joints
- Cleavage

- // — MATRIX CREEK BEDS — Interbedded massive to faintly laminated grey siltstones: black carbonaceous siltstones and grey to white quartzites.
- SPECIMEN HILL SILTSTONE Lower Member — Laminated grey green siltstone, includes " pyjama " rocks, minor friable sandstones.
- Middle Member — Interbedded quartzites and massive grey green to brown siltstones.
- Tourmalinisation
- Specimen Hill Breccia
- Specimen Hill Fault

614038

5 cm

83-1935R

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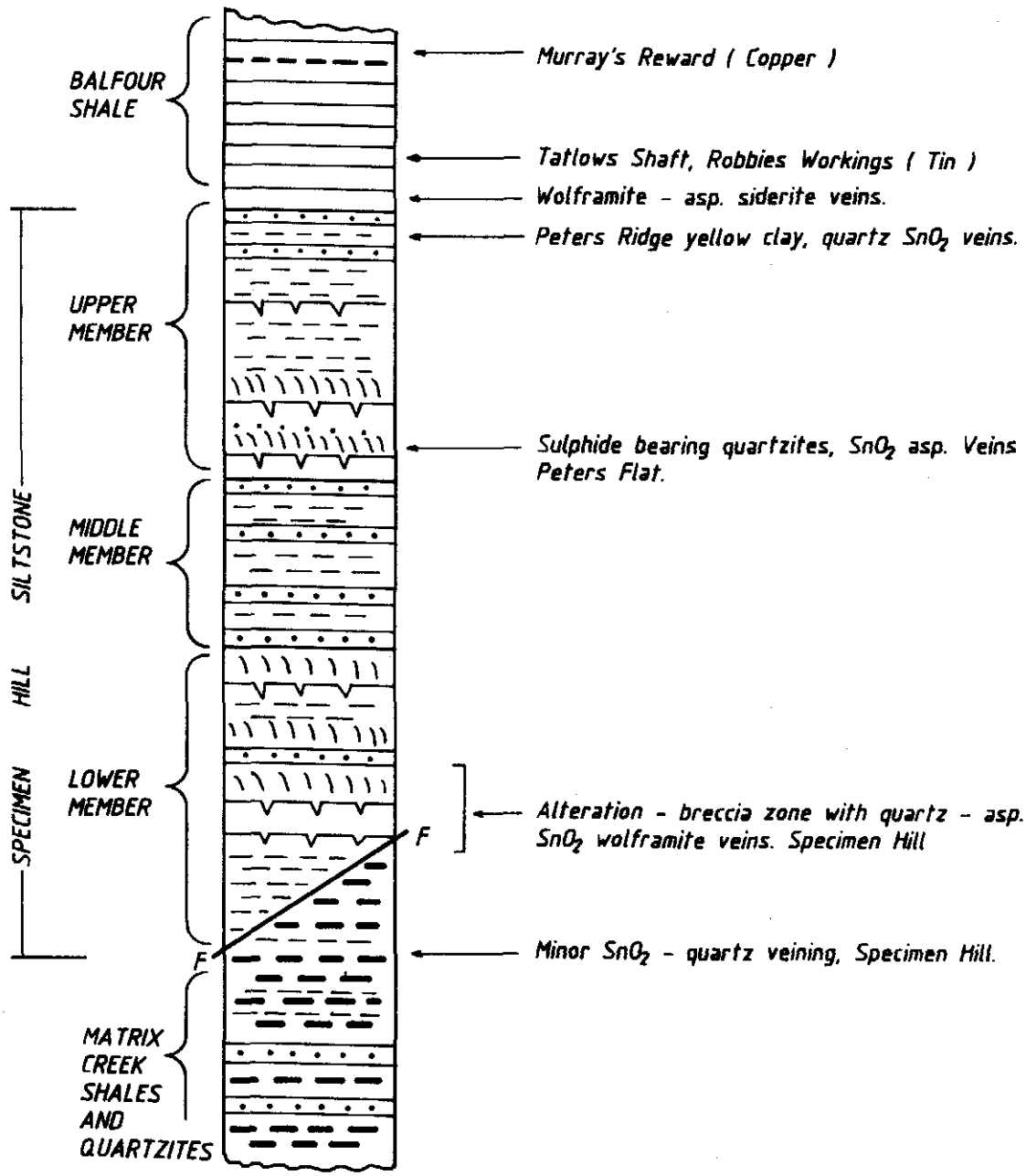
GEOLOGICAL MAP
of part of
SPECIMEN HILL BALFOUR

REF	SK55 - 3		
AUTHOR	N.R.L	PROJECT N°.	11913
SCALE	1 : 1000	DRAWN	R. T.
DATE	20 - 12 - 1982	Plan N°.	TASh 994

MINERALISATION



614039 6330

83-1935 R

Regularly lam. green siltstone.

Massive to laminated siltstone

" Pyjama " siltstone

Quartzites sandstones

Black shales, siltstones.

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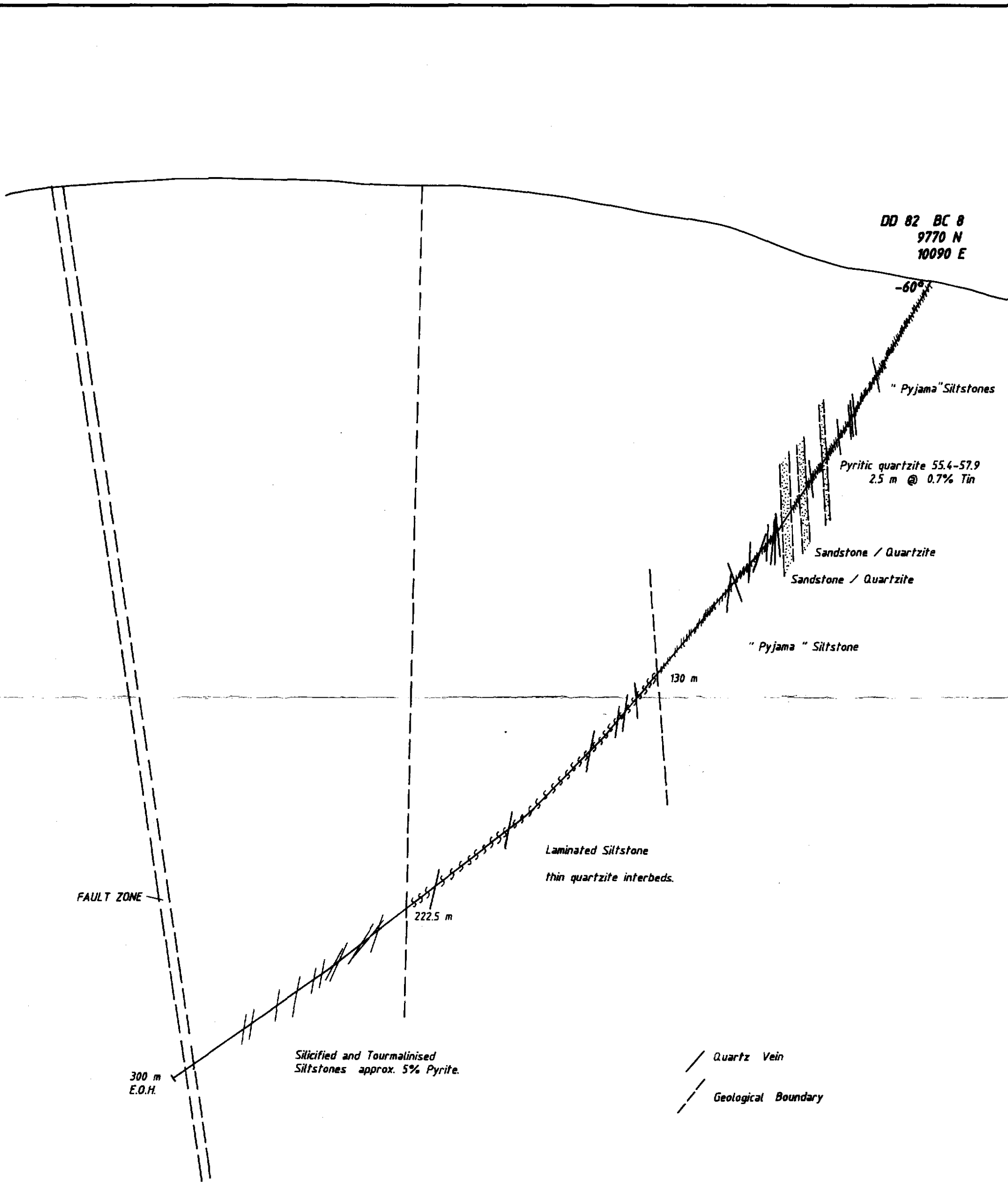
DIAGRAMATIC STRATIGRAPHIC COLUMN SPECIMEN HILL AREA

Ref:	SK55 - 3		
Scale:		Drawn:	R. T.
Author:	N. R. L.	Report N°:	11913
Date:	JAN 1983	Plan N°:	TASh 1139



6331

83-1935 R

614040

5 cm

CRA EXPLORATION PTY. LIMITED	
SPECIMEN HILL BALFOUR GEOLOGICAL SECTION DD 82 BC 8 Plane of Section 167° Magnetic	
Ref: SKSS - 3	
Scale: 1 : 1000	Drawn. R. T.
Author: T. W. D.	Report N°. 11913
Date : JAN 1983	Plan N°. TASh 1125

TIN ASSAY %

2%

1%

0·5%

1·10% Sulphide lode 1·5ft.

0·21%

6·74% — 7·08%

0 30 60 90 120 150 180 210 240 270 300 330 360 390 420 450 480 510 540 570 600 630 660 690 720 750 780 810 840 870 900 930

MEASUREMENTS IN FEET

Banded Quartzite

Shale

All Veins

All Veins + ½ inch.

Tin not detected

Trace Tin

5 cm

614041

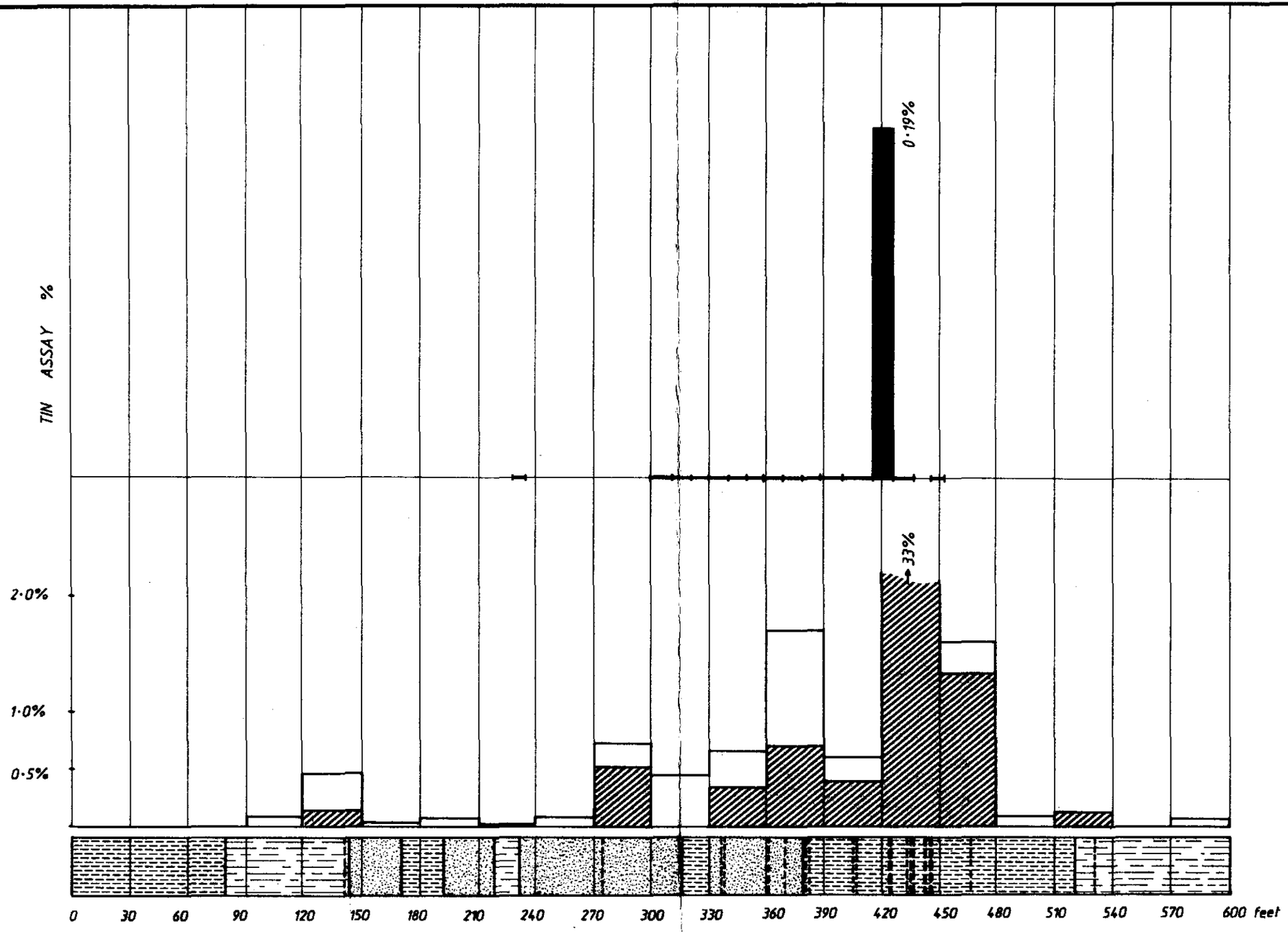
6332

83-1935R

CRA EXPLORATION PTY. LIMITED

BALFOUR AREA
NORTH WEST TASMANIA
B.H.P. DRILL HOLE DD B 5
VEIN DENSITY & ASSAY DATA

REF.	SK55 - 3		
SCALE.	1 : 750	DRAWN.	R. T.
AUTHOR.	T. W. D.	REPORT N°.	11913
DATE.	30 - 11 - 1982	TASh N°.	959



614042

6333

5 cm

83-1935 R

Banded Quartzite

Shale

Siltstone

All Veins

All Veins + ½ inch

Tin not Detected

Trace Tin

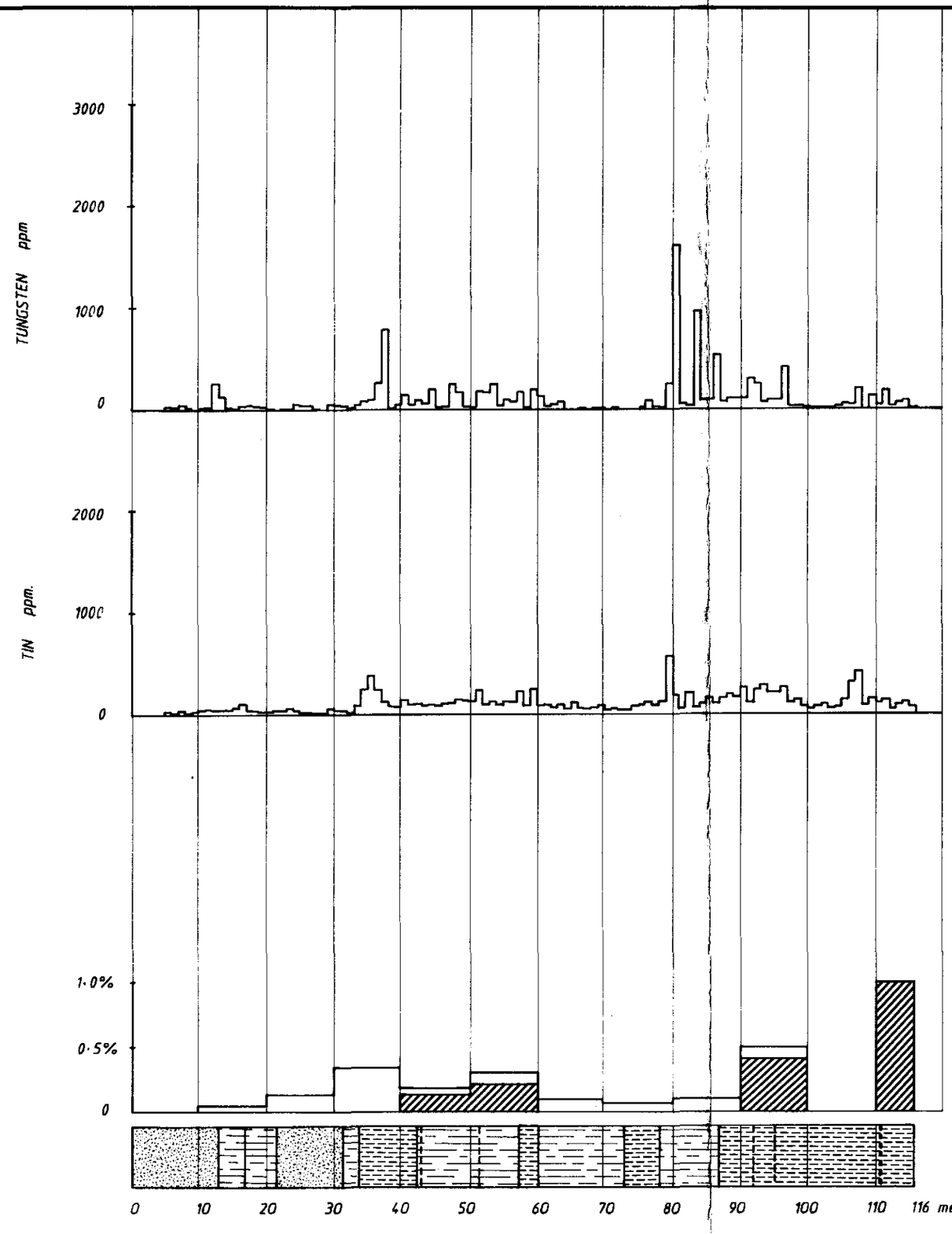
Vein + ½ inch -2 inch

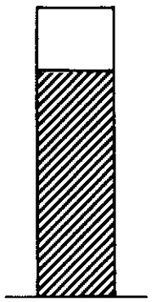
Vein + 2 inch

CRA EXPLORATION PTY. LIMITED

BALFOUR AREA
NORTH WEST TASMANIA
B.H.P. DRILL HOLE DD B 6
VEIN DENSITY & ASSAY DATA

REF. SK55 - 3	
SCALE. 1 : 750	DRAWN. R. T.
AUTHOR. T. W. D.	REPORT N°. 11913
DATE. 30 - 11 - 1982	TASh N°. 960





All Veins

All Veins + 10 mm

Banded Quartzite

Shale

Siltstone

Vein + 10mm - 40mm

Vein + 40 mm.

5 cm

614043

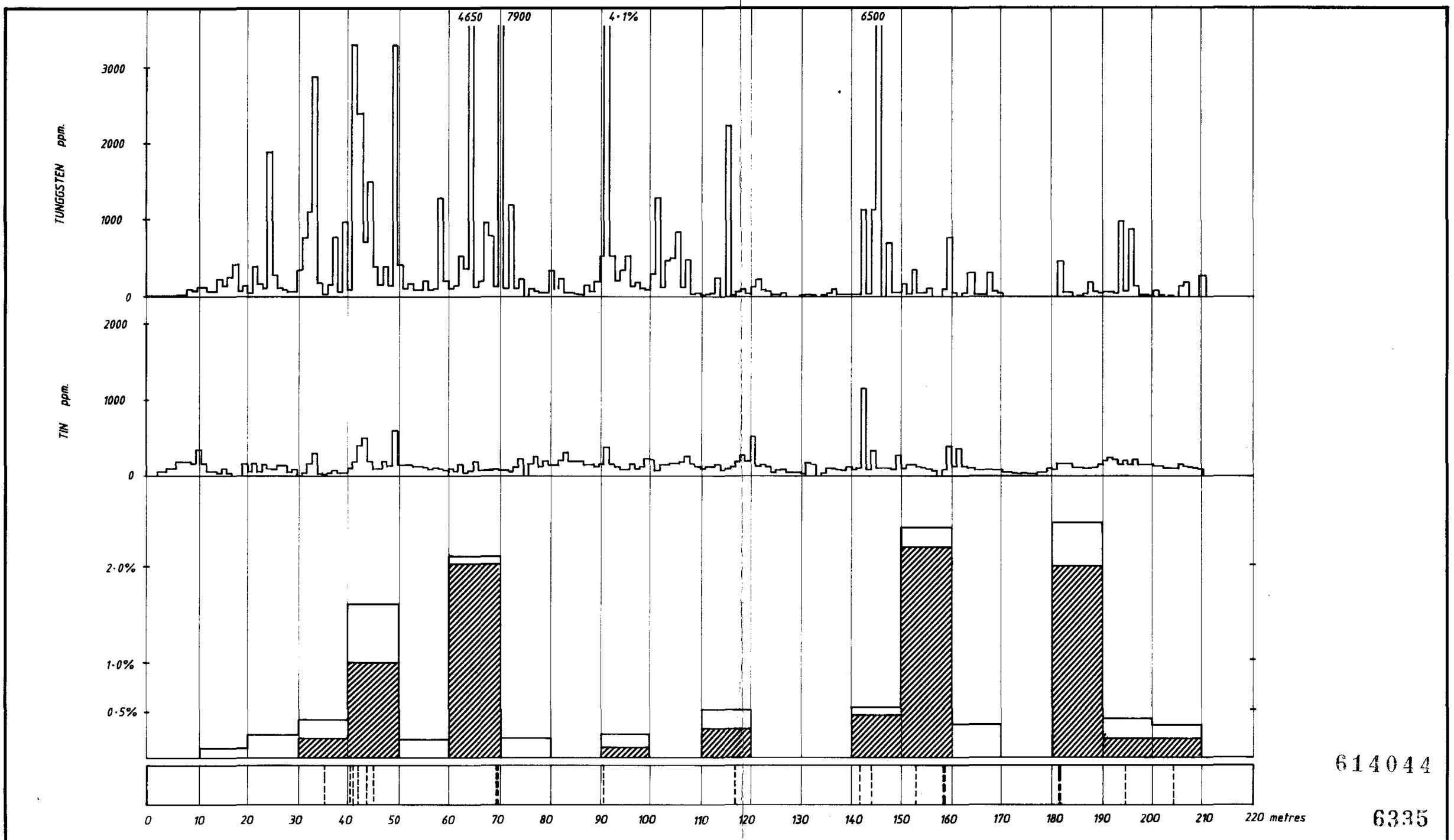
6334

83-1935R

CRA EXPLORATION PTY. LIMITED

BALFOUR AREA
NORTH WEST TASMANIA
DD 81 BC 1
VEIN DENSITY & ASSAY DATA

REF.	SK55 - 3		
SCALE.	1 : 750	DRAWN.	R. T.
AUTHOR.	T. W. D.	REPORT N°.	11913
DATE.	1 - 12 - 1982	TASh N°.	962



All Veins

All Veins + 10 mm

Vein +10 mm, -40 mm.

Vein +40 mm.

5 cm

614044

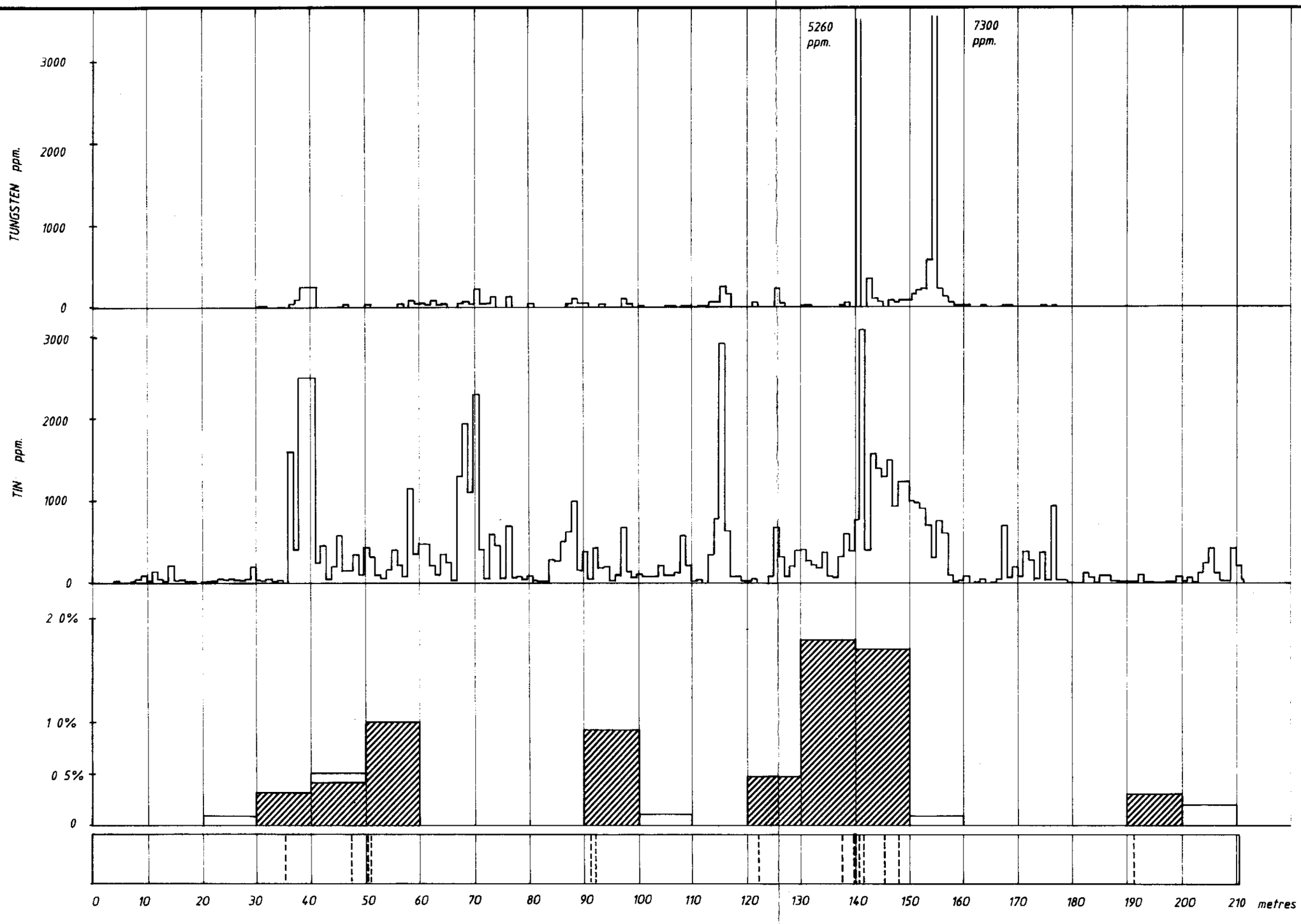
6335

83-1935R

CRA EXPLORATION PTY. LIMITED

BALFOUR AREA
NORTH WEST TASMANIA
DD 81 BC 2
VEIN DENSITY & ASSAY DATA

REF.	SK55 - 3		
SCALE.	1 : 750	DRAWN.	R. T.
AUTHOR.	T. W. D.	REPORT N°.	11913
DATE.	30 - 11 - 1982	TASh N°.	961



All Veins

All Veins
+ 10mm.

Vein +10mm -40mm.

Vein +40mm.

5 cm

614045

6336

83-1935 R

CRA EXPLORATION PTY. LIMITED

BALFOUR AREA
NORTH WEST TASMANIA
DD 81 BC 4
VEIN DENSITY & ASSAY DATA

REF.	SK55 - 3		
SCALE.	1: 750	DRAWN.	R. T.
AUTHOR.	T. W. D.	REPORT N°.	11913
DATE.	1 - 12 - 1982	TASh N°.	964

TUNGSTEN ppm. 0 1000 2000 3000

5600 ppm.

TIN ppm. 0 1000 2000 3000

5000 ppm.

1·05%

4720 ppm.

3060 ppm.

5050 ppm

2·0%
1·0%
0·5%
0

3·90%

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 274m

83-1935 R

All Veins

All Veins + 10 mm

Vein +10mm, -40mm.

Vein +40mm.

614046

5 cm

6337

CRA EXPLORATION PTY. LIMITED

BALFOUR AREA
NORTH WEST TASMANIA
DD 81 BC 6
VEIN DENSITY & ASSAY DATA

REF.	SK55 - 3		
SCALE.	1 : 750	DRAWN.	R. T.
AUTHOR.	T. W. D.	REPORT N°.	11913
DATE.	1 - 12 - 1982	TASh N°.	963