

CRA EXPLORATION PTY. LIMITED.

U of M	A.O.	C.G.	E.O.	D.S.M.E.
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ML's 63M/68 and 58M/68 - BALFOUR TASMANIA.

REPORT FOR THE YEAR ENDING 31ST DECEMBER, 1981.

Author: P.Heithersay (Geopeko)

Date: 31st March, 1982.

Submitted to: T.W.Dickson

Copies: S.Tatlow
Mines Department, Tasmania
 Geopeko
 CRAE Library
 CRAE Hobart

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AMG REFERENCE POINTS ADDED

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1. SUMMARY

Detailed investigations, involving geological mapping, jacro bedrock sampling and geophysical surveys were carried out over the Balfour Grid. Within the area of the two option agreements with S.Tatlow (ML's 63M/68 and 58M/68) this work led to the development of one diamond drill hole designed to test the down plunge continuation of the high grade tin shoot worked in Tatlow's shaft.

The hole failed to intersect significant mineralisation, and the lode would appear to be a small lens with limited depth extent.

Any further work within the two leases would depend on results from additional drilling in the adjacent Specimen Hill and Peter's Ridge areas.

2. INTRODUCTION

This report covers work carried out on mineral leases 58M/68 and 63M/68 of S.Tatlow for the period ending 31st December 1981. The Tatlow option agreements are dated 7th May 1981 (lease 58M/68) and 10th September 1981 (lease 63M/68). Both form part of a number of farm in - joint venture agreements between CRA Exploration Pty.Limited and various other syndicates in the Balfour area.

P.Laan & S.Caddy

MINING LEASE 73M/77

P.Laan & W.Baker (L. & B. Syndicate)

MINING LEASES 20M/76; 72M/77; 103M/77
104M/77; 8M/78; 57M/78

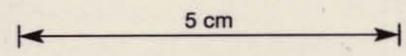
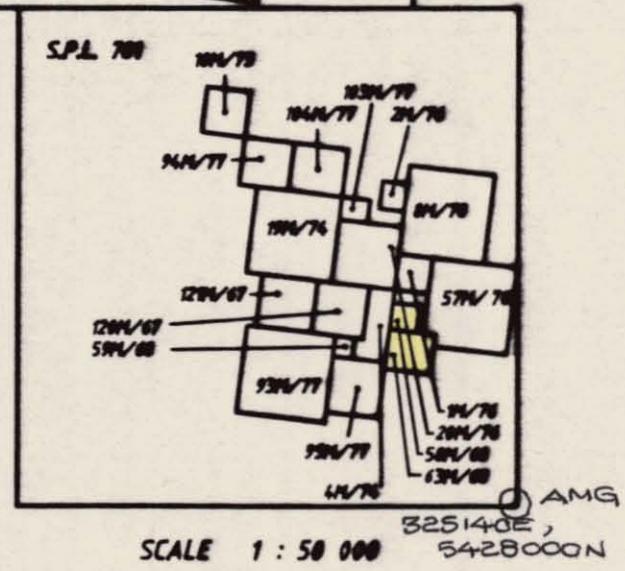
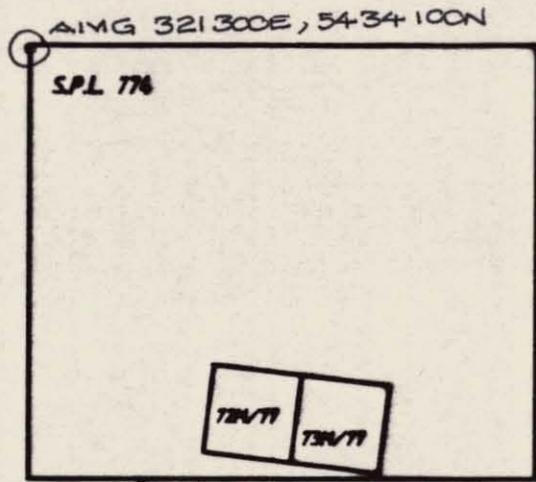
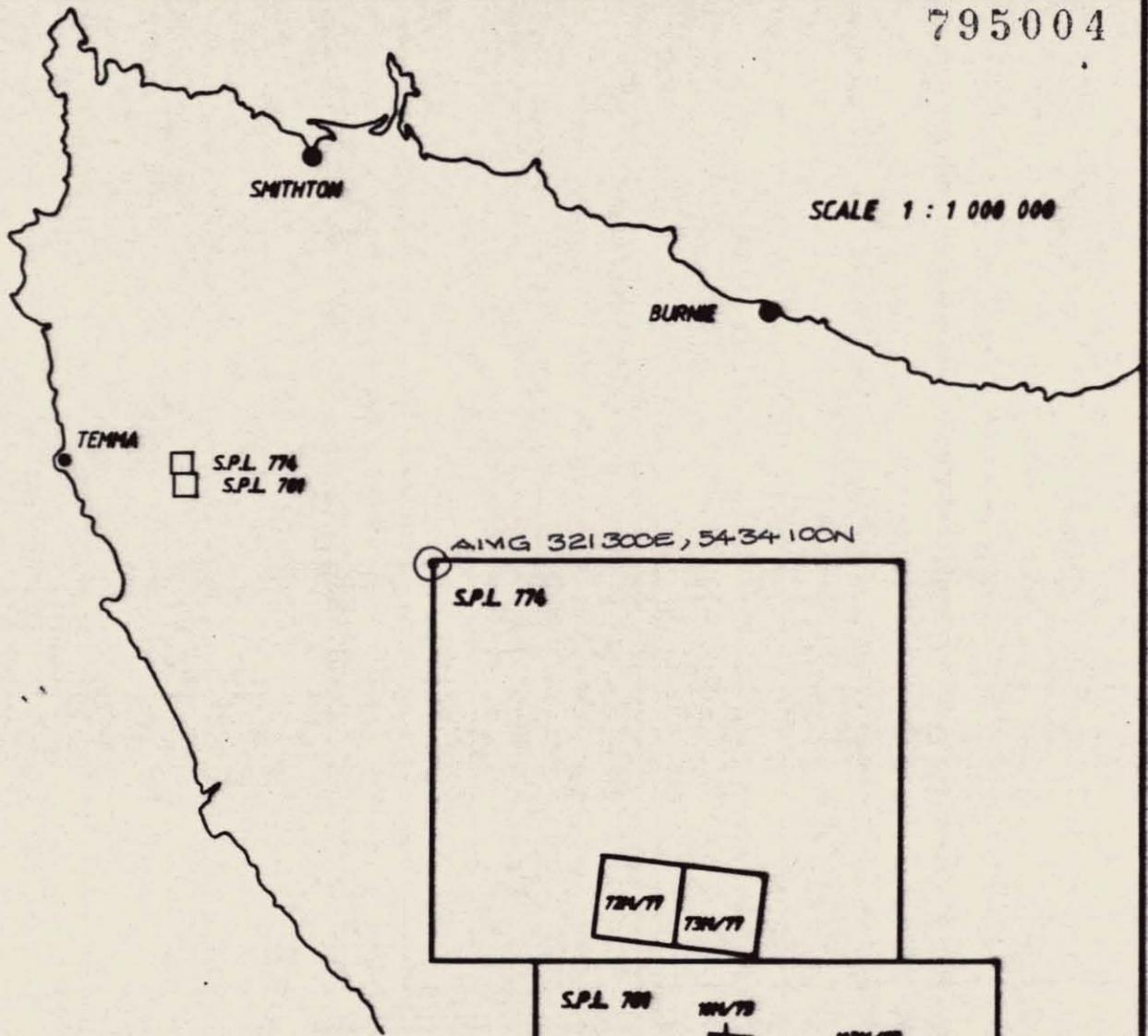
S.P.L.'s 774 and 781

M.Laan & N.R.Langsford (Balfour Agreement)

MINING LEASES 120M/67; 121M/67; 10M/73; 1M/73
2M/76; 93M/77; 94M/77; 95M/77

P.Laan, M.Laan, N.R.Langsford, W.Baker

MINING LEASE 19M/76



AMG REFERENCE POINTS ADDED

CRA EXPLORATION PTY. LIMITED	
BALFOUR TENEMENTS	
LOCALITY PLAN	
Ref. s SK55 - 3	
Scale AS SHOWN	Drawn R. T.
Author T. W. B.	Report No.
Date 16th Feb. 1982	Plan No. TASH 585

J.Holloway and R.South

MINING LEASE 59M.76; 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 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 ML's 58M/68 and 63M/68 includes.

- Geological mapping at both regional and 1:5,000 scale.

- .I.P.Surveying - original data collected 1979 with fill-in work carried out in December 1980

- A jacro auger bedrock geochemical sampling programme.

- .One diamond drill hole of 100 metres to test tin mineralisation below Tatlow's shaft.

The I.P. survey was planned and interpreted by M.Flis and carried out by Geoterrex Ltd. The auger sampling and Jacro diamond drilling was carried out under contract by Geopeko Ltd with geological supervision by P.Heithersay. The auger samples were prepared and the core split by Geopeko Ltd. All assays are by Analabs of Coee, Tasmania.

3. CONCLUSIONS

The geochemical and geophysical results indicated little of interest within the two leases but high grade tin mineralisation was being worked from a small pipe like deposit at Tatlow's shaft.

DD81 BC5 was drilled to test this mineralisation at depth and although a few minor stanniferous veins were intersected, there was no indication of any significant mineralisation.

4. RECOMMENDATIONS

No further work on this lease is warranted at this stage. Further work will depend on results of additional drilling to be undertaken on the nearby Specimen Hill and Peter's Ridge prospects.

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5. GEOLOGY

5.1 Regional Geology (Refer Fig.1)

S.W.Careys (1981) photogeological study of the Rocky Cape E. 1/77 places the Balfour region within his Epsilon Group rocks. Epsilon Group is upper Proterozoic in age and is the most extensive Pre-cambrian sequence delineated by his study. Where Epsilon Group runs into areas where field data are available the group correlates with the Balfour Slates and Interview Slates.

The structure of the Balfour region is dominated by north-north westerly trending faults which form within Careys 'Balfour-Redpa deep fault corridor'.

The style of folding in the region is a series of doubly plunging anticlines and synclines forming 'dome and basin' structures with fold axes trending NW-SE and E-W.

5.2 Prospect Geology (Refer Plan TASH 607)

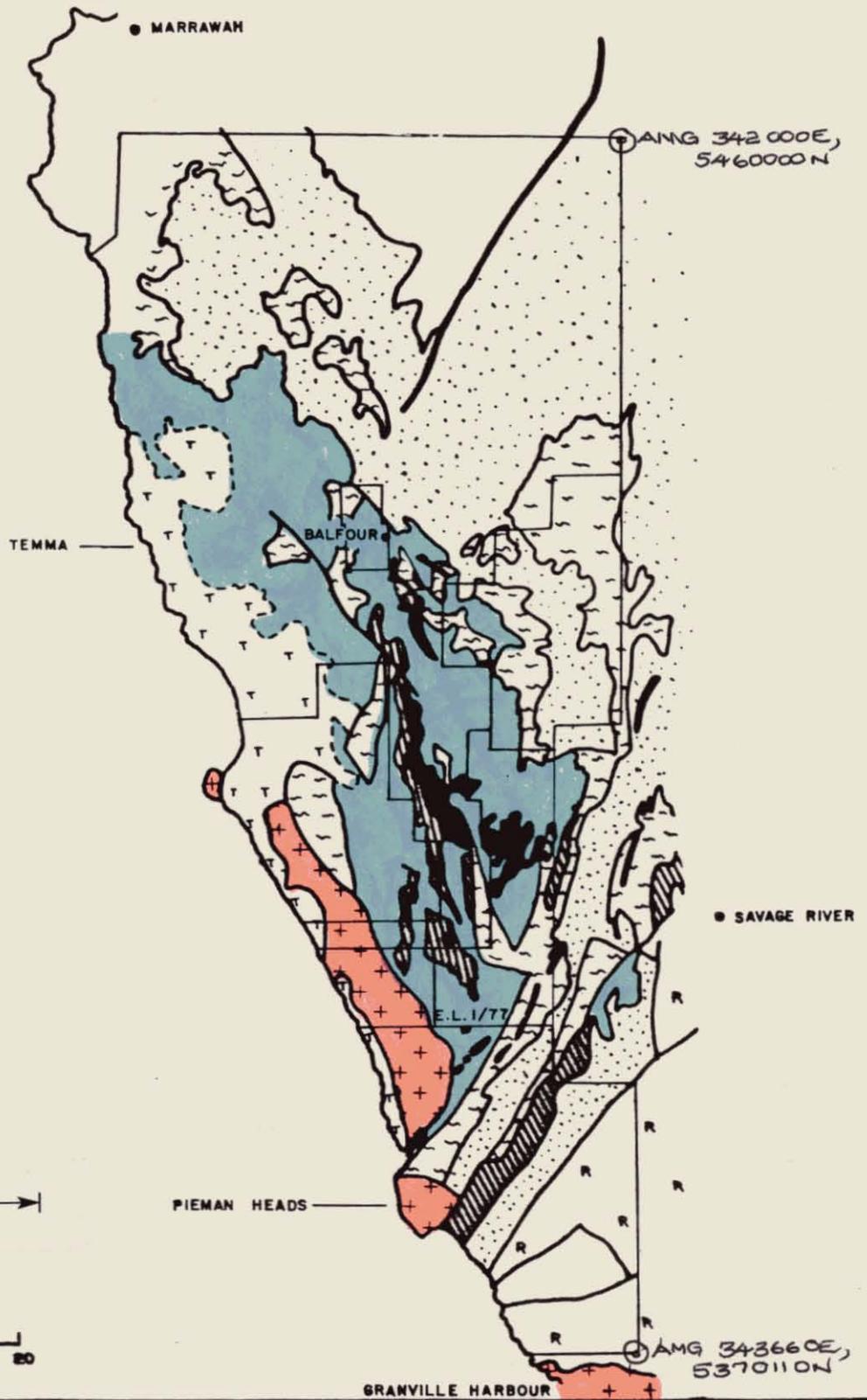
Methods

Grid extensions were mapped at 1:2500 scale using enlarged Lands Department aerial photos.

Stratigraphy

The Balfour stratigraphy is illustrated in figure 2. Facing criteria such as crossbedding and graded bedding established that the sequence youngs from west to east.

The rock sequences exhibit gradational contacts and mapping has illustrated the facies relationships between them. Hence they will be described as lithofacies.



Scale 0 10 20

LEGEND:

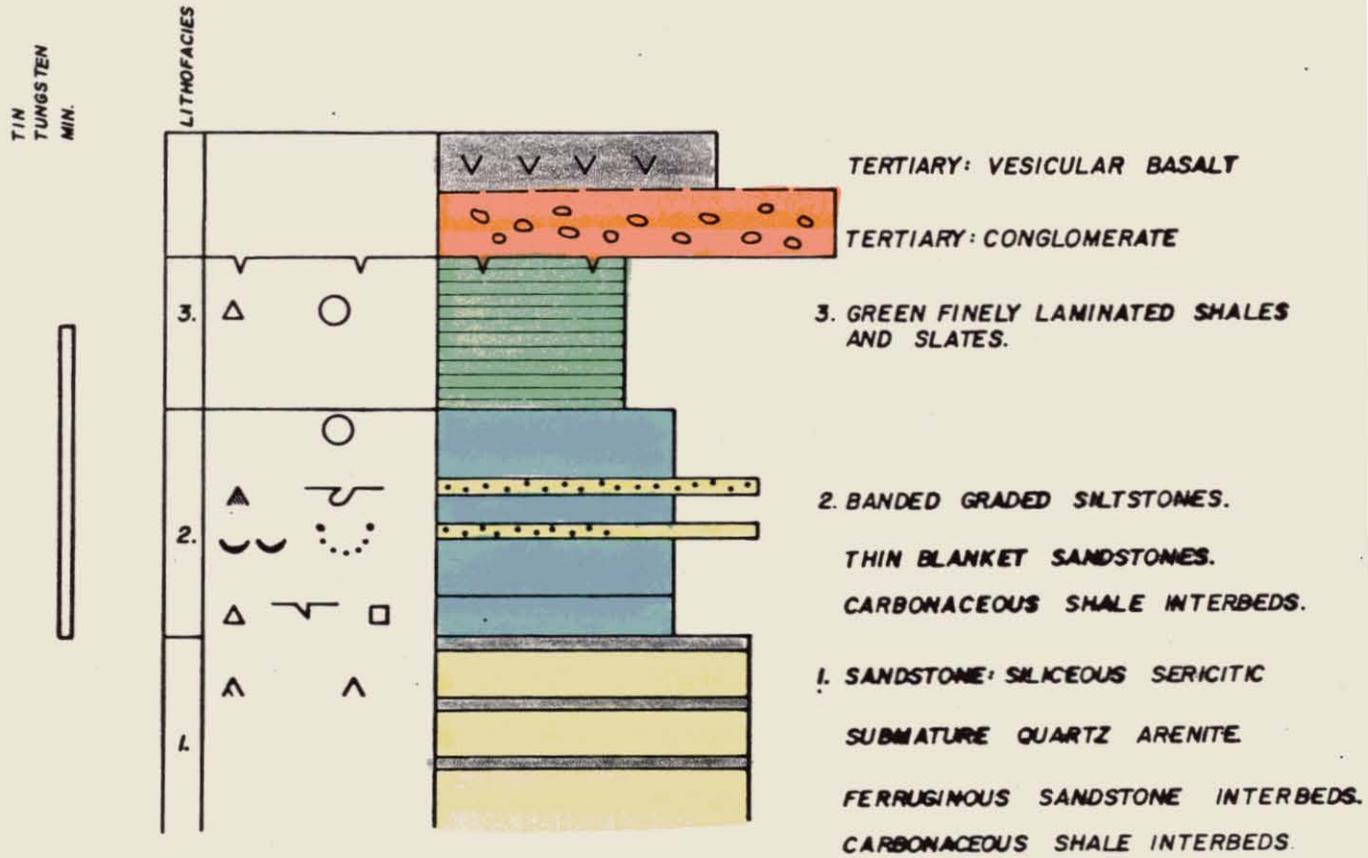
- | | |
|--------------------------|-------------------------|
| Quaternary, Tertiary | Proterozoic Alpha Group |
| Eocambrian, Sigina Group | Rho Group |
| Proterozoic Phi Group | Devonian Granite |
| Epsilon Group | Eocambrian: Kappa Group |

GEOPEKO

ROCKY CAPE E.L. 1/77
SUMMARY REGIONAL GEOLOGY
LOCATION MAP

FIG.1 TASH 680

STRATIGRAPHIC COLUMN - BALFOUR REGION



LEGEND:

- \wedge Wave Ripples
- \wedge Cross Lamination
- ∇ Mud Cracks
- \smile Flaser Bedding
- \sim Load Casts
- \square Possible Evaporite Casts
- \dots Channel Scour And Fill
- Δ Upwards Fining Grading
- \equiv Horizontal Lamination
- \bigcirc Syngenetic Pyrite

TASH 681

FIGURE 2

Lithofacies 1:

Consists dominantly of fine sandstone: siliceous sericitic-submature quartz arenite. Carbonaceous black shales and brown ferruginous sandstones are interbedded in the sequence, Crossbedding, rip up shale clasts are common sedimentary features and bedding planes showing symmetric ripple marks are occasionally seen.

Lithofacies 2:

Consists dominantly of irregularly laminated and banded rock which is characterized by beds and laminae which grade from white fine grained sericitic sandstone to grey green or brown, chlorite or tourmaline rich, argillaceous siltstone. Sedimentary features include oversteepened cross-stratification, 'sandstone dikelets', load structures and scour and fill structures. Soft sediment deformation is ubiquitous. Interbedded in the lower part of the sequence are thin black shale interbeds which appear to be laterally extensive.

Further up in the sequence, are interbeds of silica and sericite rich quartz arenites. These form the backbones of the ridges in the area. They are individually quite thin, rarely exceeding 3 metres in thickness, but are laterally extensive.

This lithofacies has been termed Pyjama Siltstones by CRAE geologists. This is a general name applied to tourmaline bearing siltstones and quartzites commonly found in the Upper Precambrian of Western Tasmania.

This sequence hosts the tin and tungsten bearing veins of Specimen Hill and a similar rock type is present in the footwall of the massive pyrrhotite cassiterite lodes at Mt.Bischoff.

010

The sequence has undergone lower greenschist facies metamorphism and an incipient schistosity develops to varying degrees.

Tourmaline content varies throughout the 'Pyjama Siltstones' but is generally confined to the argillaceous layers. A tourmaline rich zone has been mapped on Specimen Hill (Porter 1979) which crosscuts bedding, suggesting epigenetic replacement. A syngenetic origin involving boron rich sediments has been suggested in the past. Petrographic evidence has given conflicting viewpoints. Drill hole data suggests however that tourmalinisation has preceded veining, hence this zone could be viewed as an alteration zone associated with veining.

Rare thin beds of probable andesite has been noted in this lithofacies.

Lithofacies 3:

Lithofacies 2 grades both vertically and laterally into a monotonous, finely laminated, green, chloritic shale and slate sequence. Pyrite is common and is usually disseminated along bedding planes. This sequence hosts the Murray's Reward copper mineralisation and Tatlow's tin prospect.

Unconformably overlying this is a remnant Tertiary basalt flow on which the Balfour township is located. To the south remnant flat lying silicified Tertiary conglomerate beds can be seen.

Structure

The general lack of continuous marker beds has made structural interpretation difficult. However, the strata generally dip fairly steeply to the east. Southerly plunging flexures can be mapped on Specimen Hill and around the baseline on line 9100N. Plotting of cleavages developed on Specimen Hill reveals two distinct cleavages at approximately 335°/80E and 035/95E

This suggests that fold axes have developed with approximately 60° difference in trend. This would result in dome and basin structures, which ties in well with Carey's (1981) regional interpretation.

A structural problem which is apparent at Balfour is the difference in dip between Lithofacies 1 and 2. The sandstones of Lithofacies 1 form generally flat lying small scale domes and basins. As you proceed into Lithofacies 2, the dips become very steep. The contact between the two is gradational and no evidence for an unconformity or fault can be seen.

Strike slip faults are common displacing prominent sandstone/quartzite ridges.

The main quartz veins are generally between 1 to 10cm in thickness with a maximum thickness of 30cm. Two trends of veining are evident. The dominant trend is approximately 300°M while the subordinate trend is 235°M. The main concentration of veining which is exposed, occurs between 9600N and 9700N.

The veining exposed consists of massive white quartz containing varying amounts of cassiterite and rare wolframite. Bladed voids after wolframite are, however, commonly seen. Cassiterite occurs as small crystals in 'vughs' with blebs up to 5cm in diameter or as thin layers on margins of veins.

6. GEOCHEMICAL INVESTIGATIONS

During 1963-1964 BHP undertook exploration centred around the Specimen Hill mineralisation. Peat and gravel samples were taken and assayed for tin so as to define surface areas in which tin mineralisation appeared strongest. Small scattered areas of high tin content emerged mainly in the north west quadrant of the hill (Chestnut 1964).

1979 saw the establishment of 2.6km x 0.65km grid by the CRAE/Geopeko joint venture partners. A rock chip sampling programme over available outcrop was initiated, followed later by a Jacro auger sampling programme over areas of sparse outcrop, where magnetic and IP anomalies had been defined.

During 1980 a more comprehensive programme of Jacro bedrock sampling was completed. The first stage was completed during the period 25/4/80 to 10/6/80 and the lines selected on the following basis:

Auger holes were drilled to depths ranging from 0.5 to 3 metres using a Bombardier mounted Jacro auger. Particular care was taken to achieve a clean bedrock or if impractical, a 'C' horizon sample and to avoid contamination from alluvial and eluvial material at the tops of the holes. Where it was thought contamination could not be avoided, it was duly noted in the ledger sheets.

The samples were analysed for Tin, Tungsten, Copper, Lead, Zinc, Silver and Iron by A.A.S. The results, on CRA Exploration Geochemical Ledger Sheets, are given in Appendix 1 with geological description of the rock chips by Mr.A.McKay, Mr.N.R.Langsford and Mr.P.Heithersay.

6.1 Discussion of Results

Geochemical results from the two leases were generally low and uniform with only spot highs of Tungsten and zinc.

Tin Geochemistry (Refer Plan TASH 609)

Most values fall below the background of 30 ppm with a series of small spot highs occurring around the margins of the lease. A narrow band with values in excess of 100 ppm crosses the south-west corner of 63M/68 and this lies close to the pajama rock - green shale contact.

Tungsten Geochemistry (Refer Plan TASH 610)

Anomalous values are considered to be greater than 20 parts per million against a background of 10 ppm. As the detection limit of XRF for tungsten is 10 ppm, anomalies of 20 ppm should be regarded with caution.

Two isolated spot highs occur. One of 250 parts per million close to the western boundary of 58M/68 and a second with a peak value of 1700 ppm WO_3 occurring just north of the northern west boundary.

Copper Geochemistry (Refer Plan TASH 614)

No significant results.

Zinc Geochemistry (Refer Plan TASH 613)

Visual estimation over the whole Balfour area suggests a background value of around 50 parts per million. Samples in excess of 100 ppm are considered anomalous while approximately 3 per cent of samples exceed 1000 ppm.

The two leases 58M/68 and 63M/68 have a generally raised background marked by a +100 parts per million contour. Peak values of +400 occur on line 89 in the south and of +800 ppm on line 93 in the north.

Lead Geochemistry (Refer Plan TASH 612)

No significant results.

Iron Geochemistry (Refer Plan TASH 611)

A major zone of strong iron values extends through both leases with peak values in excess of 4%. The general strong iron content is clearly related to the green shale contact with green shale the dominant rock type underlying the two leases.

7. GEOPHYSICS

In December 1980 I.P. work was carried out to extend the existing coverage along Peter's Ridge to the west, and lines were extended across the two Tatlow leases.

The survey was carried out by Geoterrex using a 2.5 KVA transmitter and an IPR - 7 Receiver. A dipole-dipole configuration of 50 metres was used.

The results are appended in the form of chargeability/resistivity pseudosections. Line numbers refer to the Balfour grid.

A very weak "possible grade" anomaly extending through the southern lease on lines 88, 89 and 91 north some 400 metres east of the baseline. It most probably represents a formational effect rather than sulphide mineralisation.

8. DIAMOND DRILLING RESULTS

Drill hole nomenclature varies between CRA Exploration and Geopeko. CRAE number the holes as they are drilled within the current exploration programme. That is hole DD81 BC5 is the fourth hole drilled by the CRAE-Geopeko joint venture at Balfour. Geopeko on the other hand includes all previous drilling within their numbering system (i.e. they include ten holes previously drilled by B.H.P.) so that their equivalent number for CRAE hole DD81 BC 5 is DDB 15. Both numbers are referred to in this report.

8.1 DD81 BC 5 (DDB 15 of Geopeko) TASH 686

DDB 15 was targetted to test the cassiterite, pyrite, muscovite mineralisation which was being mined by S.Tatlow and Partners.

A detailed geological and geochemical log is appended. Similarly a discussion of the deposit together with criteria as to how the hole was targetted is included in the appendix. A summary section is shown in Plan TASH

The hole intersected fairly monotonous finely laminated slaty shale. Approximately 2-3% pyrite occurs throughout the hole, disseminated along bedding/cleavage planes. A few minor stanniferous veins were intersected. No indication of significant mineralisation was intersected.

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10. KEYWORDS

Tin, Tungsten, veins, Drill-Diamond, Geochem-rock, soil, Geology,
Geophysics, Mag, I.P.

Locality: Burnie 1:250 000 Sheet SK55-3

11. LIST OF PLANS

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- Appendix 1. Geochemical Ledger Sheets.
- Appendix 2. Diamond Drill Logs.

APPENDIX 1

GEOCHEMICAL LEDGER SHEETS

Tenement name **020 S.P.L 781**

U.R.A. EXPLORATION - GEOCHEMICAL SAMPLE LEDGER

No. Sample numbers **819493 - 819503** Collected by **N.R.L.**

Sheet no. **48**

Area / Prospect **3/4 FOUR**

Date **May 1980**

Map / Photo reference

Analysed by **A.L.S.**

DPO no.

Sample No.	Type	ss channel **						Carbon	Metal content ppm or %										Grid ref	Geological Observations
		ss*	fl	wi	al	co	ca		pH	Cu	Pb	Zn	Ag	Mo	Mn Fe	Au	Sn	W		
		oc	o/c sample type ***																	
		f	s sample type ****																	
		Depth																		
819493	S	0.6						45	25	150	4		3.68		35	<10	10550E	0-0.3m peat 0.3-0.6m light grey siltstone		
494	"	0.6						2	5	30	1		1.40		30	<10	10525E	0-0.3m peat 0.3-0.6m light grey siltst.		
495	"	0.6						2	5	60	1		4.56		20	<10	10500E	0-0.3m peat 0.3-0.6m yellow clay		
496	"	1						10	5	45	1		4.72		30	<10	10475E	0-0.6m peat 0.6-1m yellow siltstone		
497	"	1.2						5	15	55	1		3.36		10	<10	10450E	0-0.5m peat 0.5-1.2m yellow siltstone		
498	"	1.0						30	20	160	1		4.00		5	<10	10425E	0-0.6m peat 0.6-1m grey siltstone		
499	"	1.2						<2	15	65	1		3.56		5	<10	10400E	0-0.6m peat 0.6-1.2m yellow siltstone		
500	"	1						25	10	115	1		3.60		45	<10	10375E	0-0.3m peat 0.3-1m green grey siltstone		
501	"	1						<2	<5	2	1		0.14		295	40	10350E	0-0.5m peat 0.5-1m red brown siltstone		
502	"	1						<2	5	15	1		0.46		30	<10	10325E	0-0.5m peat 0.5-1m brown-green siltstone		
503	"	1.8						<2	15	5	1		0.16		120	50	10300E	0-1m peat 1-1.8m brown grey siltstone		

* Sample type ss = stream sediment oc = outcrop f = float s = soil
 ** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2
 *** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)
 **** Soil sample type auger hole or pit depth m A, B or C horizon

Tenement name S.P.L. 781 U.R.A. EXPLORATION - GEOCHEMICAL SAMPLE LOGGER
 Area / Prospect PALEOUR No. 819513 - 819524 Sample numbers N.R.L. Collected by N.R.L. Sheet no. 50
 Map / Photo reference PALEOUR Analysed by A.L.S. Date MAY 1980 DPO no.

Sample No.	Type	ss channel **						Carbon	Metal content ppm or %								Grid ref	Geological Observations	
		fl	wl	al	co	ca	pH		Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn			W
		o/c sample type ***																	
		Depth	s sample type ****																
819514	S	1	(m)					<2	5	20	1		680 ppm		745	40	10025E	near old shaft 0-0.3m peat 0.3-1m grey green siltstone	
515	"	1						15	15	15	1		0.54		0.24%	60	10050E	0-0.3m peat 0.3m-1m grey green siltstone	
516	"	1						5	5	20	1		1.42		165	20	10075E	(Road) 0-0.3m peat 0.3-1m yellow siltstone	
517	"	1						5	5	50	1		0.26		20	10	10100E	0-0.3m peat 0.3-1m grey siltstone	
518	"	1						<2	<5	30	1		440 ppm		20	10	10125E	0-0.3m peat 0.3m-1m white siltite	
519	"	1						<2	<5	30	1		400 ppm		355	10	10150E	as above	
520	"	1.2						<2	15	35	<1		0.14		30	10	10175E	0-0.3m peat 0.3-1.2m brown siltstone	
521	"	1.4						2	15	70	1		1.79		40	10	10200E	0-0.3m peat 0.3-1.4m yellow brown siltstone	
522	"	1.4						5	10	95	<1		2.60		10	10	10225E	0-0.3m peat 0.3-1.4m yellow brown siltstone	
523	"	0.5						15	10	290	1		3.48		5	<10	10275E	(road) 0-0.5m green siltstone	
524	"	1						2	10	90	1		3.28		10	20	10300E	0-0.5m peat 0.5-1m green siltstone	

* Sample type ss = stream sediment oc = outcrop f = float s = soil
 ** Stream sed. sample description fl = flow m3/sec wl = width m al = alluvial co = colluvial ca = catchment km2
 *** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)
 **** Soil sample type auger hole or pit depth m A, B or C horizon

Tenement name 022 S.P.L. 781

U.R.A. EXPLORATION GEOCHEMICAL SAMPLE LOGS

No. Sample numbers 819525 - 819535

Collected by N.R.L.

Sheet no. 51

Area / Prospect BALFOUR

Date MAY 1980

Map / Photo reference

Analysed by A.L.S.

DPO no.

Sample No.	Type	as channel **						Carbon	Metal content ppm or %										Grid ref	Geological Observations
		fl	wi	al	co	ca	pH		Cu	Pb	Zn	Ag	Mo	Mn Fe	Au	Sn	W			
		o/c sample type ***																		
		Depth	s sample type ****																	
819525	S	1	(m)						5	10	80	1		2.72		5	<10	10325E	0-0.3m peat 0.3-1m yellow green siltstone	
526	"	1.2							2	5	105	1		4.04		5	<10	10350E	0-0.3m peat 0.3-1.2m yellow green siltstone	
527	"	1							10	15	100	1		2.52		<5	<10	10375E	0-0.6m peat 0.6-1m pale grey green siltstone	
528	"	1							5	10	100	1		2.80		95	10	10400E	0-0.3m peat 0.3-1m pale grey green siltstone	
529	"	1							20	25	125	2		3.52		20	10	10425E	0-0.3m peat 0.3-1m green siltstone	
530	"	1.5							50	30	190	2		2.40		5	20	10450E	0-1m peat, rubble 1-1.5m green siltstone	
531	"	1.2							5	25	145	2		2.40		155	40	10475E	0-0.3m peat 0.3-1.2m pyritic green siltstone	
532	"	1.2							5	10	90	1		4.80		115	<10	10500E	0-0.3m peat 0.3-1.2m yellow siltstone	
533	"	1.5							85	35	60	1		2.30		10	<10	10525E	0-0.6m peat 0.6-1.5m yellow siltstone	
534	"	1							15	10	120	1		2.44		5	<10	10550E	0-0.3m peat 0.3-1m grey green siltstone	
535	"	1							5	5	75	1		2.64		10	<10	10575E	0-0.3m peat 0.3-1m grey green siltstone	

* Sample type as = stream sediment oc = outcrop f = float s = soil
 ** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2
 *** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)
 **** Soil sample type auger hole or pit depth m A, B or C horizon

Tenement name 023 S.P.L. 781
 Area / Prospect FOUR
 Map / Photo reference

C.R.A. EXPLORATION GEOCHEMICAL SAMPLE DGER

No. Sample numbers 819558 - 819568 Collected by N.R.L.

Sher no 54
 Date MAY 1980
 DPO no

Analysed by A.L.S.

Sample No.	Type	ss channel **						Carbon	Metal content ppm or %										Grid ref	Geological Observations
		fl	wi	al	co	ca	pH		Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W			
		o/c sample type ***																		
		Depth s sample type ****																		
819558	S	1	(m)					35	10	110	<1		3.29		5	<10	10425E	0-0.3m peat 0.3m-1m grey siltstone		
559	"	2						15	35	150	1		4.48		10	<10	10400E	0-1m peat 1-2m yellow green siltstone		
560	"	2						15	55	120	<1		3.32		25	10	10375E	As above		
561	"	2						50	120	190	3		2.80		70	10	10350E	As above		
562	"	2						2	10	135	<1		3.44		20	10	10325E	As above		
563	"	2						2	5	165	<1		0.62		80	20	10300E	near costean 0-1 peat rubble 1-2m pale cream pyritic siltstone		
564	"	1						15	10	65	<1		1.24		115	10	10275E	0-0.5m peat 0.5-1m brown siltstone		
565	"	1						20	20	70	<1		2.64		55	<10	10250E	0-0.5m peat 0.5-1m yellow clay		
566	"	1						5	10	105	<1		1.72		45	60	10225E	0-0.5 peat 0.5-1m brown siltstone		
567	"	1						2	5	60	<1		0.90		35	10	10200E	0-0.5m peat 0.5-1m brown-grey siltstone		
568	"	1						2	.5	55	<1		0.30		5	10	10175E	As above		

* Sample type ss = stream sediment oc = outcrop f = float s = soil
 ** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2
 *** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)
 **** Soil sample type auger hole or pit depth m A, B or C horizon

Tenement name 024 S.P.L 781 No. 819580 - 819590 Sample numbers 819580 - 819590 Collected by N.K.L. Sheet no. 56
 Area / Prospect 2 FOUR Date MAY 1980
 Map / Photo reference Analysed by A.L.S. DPO no.

Sample No.	Type	ss channel **						Carbon	Metal content ppm or %										Grid ref	Geological Observations
		fl	wi	al	co	ca	pH		Cu	Pb	Zn	Ag	Mo	Mn Fe	Au	Sn	W			
		o/c sample type ***																		
		Depth s sample type ****																		
819580	S	1-2	(m)					15	25	100	<1			2.80		5	<10	89N 10725E	0-0.3m peat 0.3-1.2m dark grey siltstone	
581	"	1-2						5	35	100	<1			3.92		<5	<10	10750E	As above	
582	"	0.6						<2	10	105	<1			2.40		5	<10	10775E	0-0.3m peat 0.3-0.6m pale green siltstone	
583	"	1						<2	5	85	<1			3.16		<5	<10	10800E	0-0.5m peat 88N 0.5-1m yellow siltstone	
584	"	1.8						5	10	110	<1			2.76		<5	<10	11000E	0-1m peat 1-1.8m bright green siltstone	
585	"	2						70	5	70	<1			1.62		<5	<10	10975E	0-1m peat 1-2m bright green siltstone	
586	"	2						2	20	45	<1			0.14		<5	<10	10950E	0-1m peat 1-2m pale yellow siltstone	
587	"	2						2	10	180	<1			2.96		<5	<10	10925E	0-1m peat 1-2m pale green siltstone	
588	"	1.5						5	10	170	<1			3.44		<5	<10	10900E	0-1m peat 1-1.5m green siltstone	
589	"	1.5						<2	10	125	1			2.80		15	30	10875E	0-1m peat 1-1.5m yellow grey siltstone	
590	"	2						5	5	130	1			2.04		30	10	10850E	0-1m peat 1-2m yellow grey siltstone	

* Sample type ss = stream sediment oc = outcrop f = float s = soil
 ** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2
 *** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)
 **** Soil sample type s = sugar hole or pit depth m A, B or C horizon

APPENDIX 11

DIAMOND DRILL LOG

DD81 BC5

2.5

LOG OF BALFOUR DDB 15

ROCKY CAPE E.L. 1/77

Proposed: P. Heithersay

Depth: 100m

Location: Tatlow's prospect

Collar coordinates: 9175N 10460E

Collar inclination -55°

Collar azimuth 047°M

Purpose of hole: To test the extent of Tatlow's prospect at depth.

Final depth: 100m

Summary Result: The hole intersected a sequence of finely laminated green chloritic shales and slates. No economic mineralization was intersected.

DRILLING DETAILS

Rig: Warman Scout

Driller: G. Steel

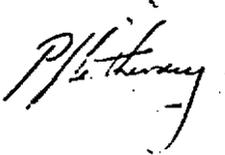
Commenced: 30/7/81

Completed: 13/8/81

Drilling Conditions: Very good. 97% recovery overall.

I concluded that the rodding caused by the three intersecting cleavages would be the best estimation of a pipelike body of mineralization. Plotting cleavages on a stereonet gave an intersection lineation of 76° plunge with plunge direction of 110° . The drill is targeted to hit this pipe at 50m vertical depth. Its approx. co-ordinates are given above. The hole was sited from a datum point on the shaft. Accompanying attachments exhibit the expected geometry of the mineralization.

Regards,

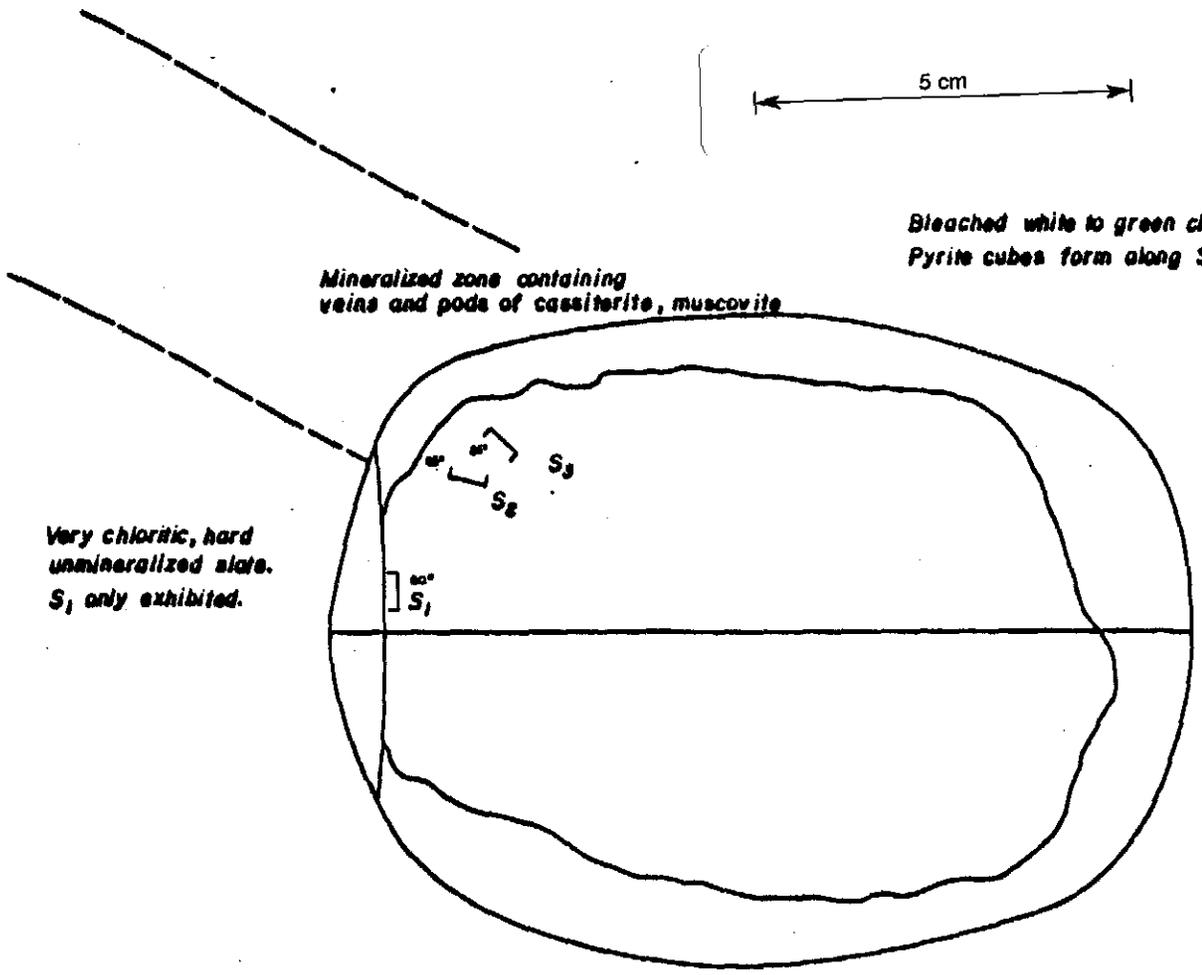
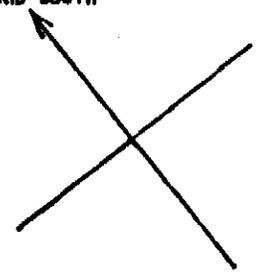
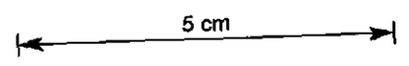


P. HEITHERSAY.

030

PLAN OF FLOOR OF TATLOW SHAFT
DEPTH 17m.

GRID SOUTH



*Mineralized zone containing
veins and pods of cassiterite, muscovite*

*Bleached white to green chloritic slates.
Pyrite cubes form along S₁ and S₃ cleavages.*

*Very chloritic, hard
unmineralized slates.
S₁ only exhibited.*

Datum

FIGURE 1

795031

031

TATLOWS LODE
SCALE 1:500

SECTION 137° (Grid South)

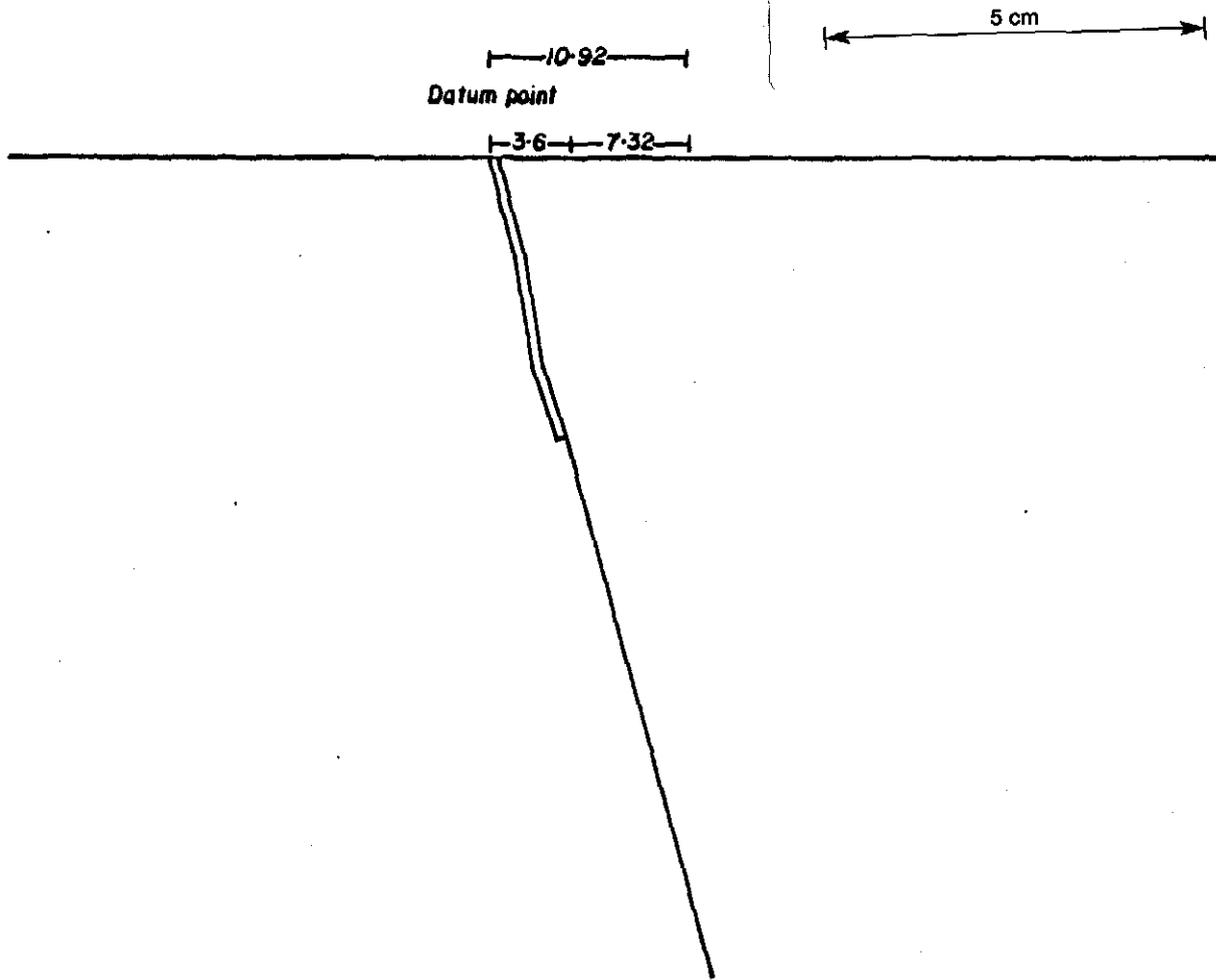


FIGURE 2

795032

032

TATLOWS LODE
SCALE 1:500

SECTION 227° (Grid West)

Proposed DDH

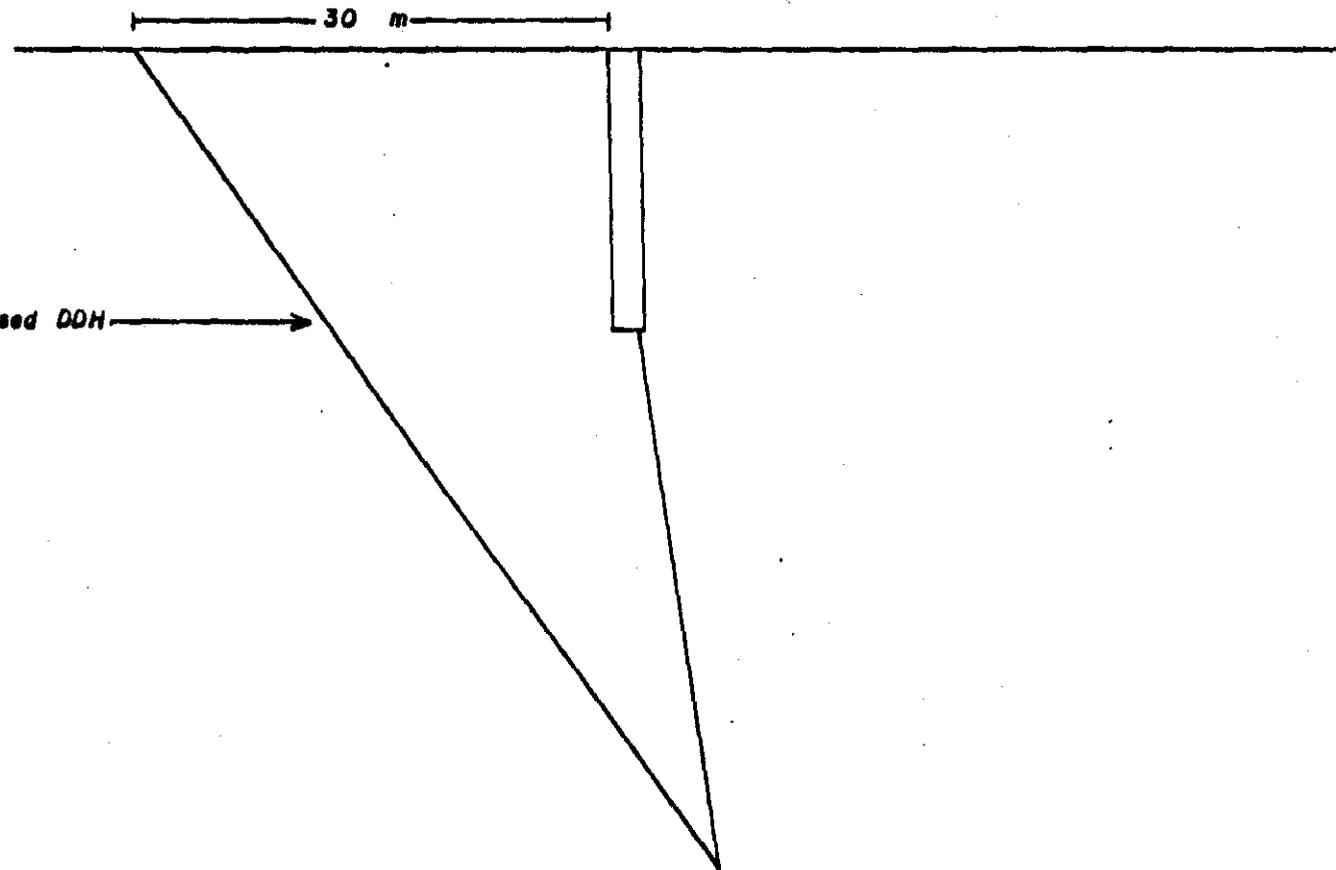


FIGURE 3

795033

DETERMINING PLUNGE AND PLUNGE DIRECTION OF TATLOWS LODE
RODDING 76° to 120° & 10°

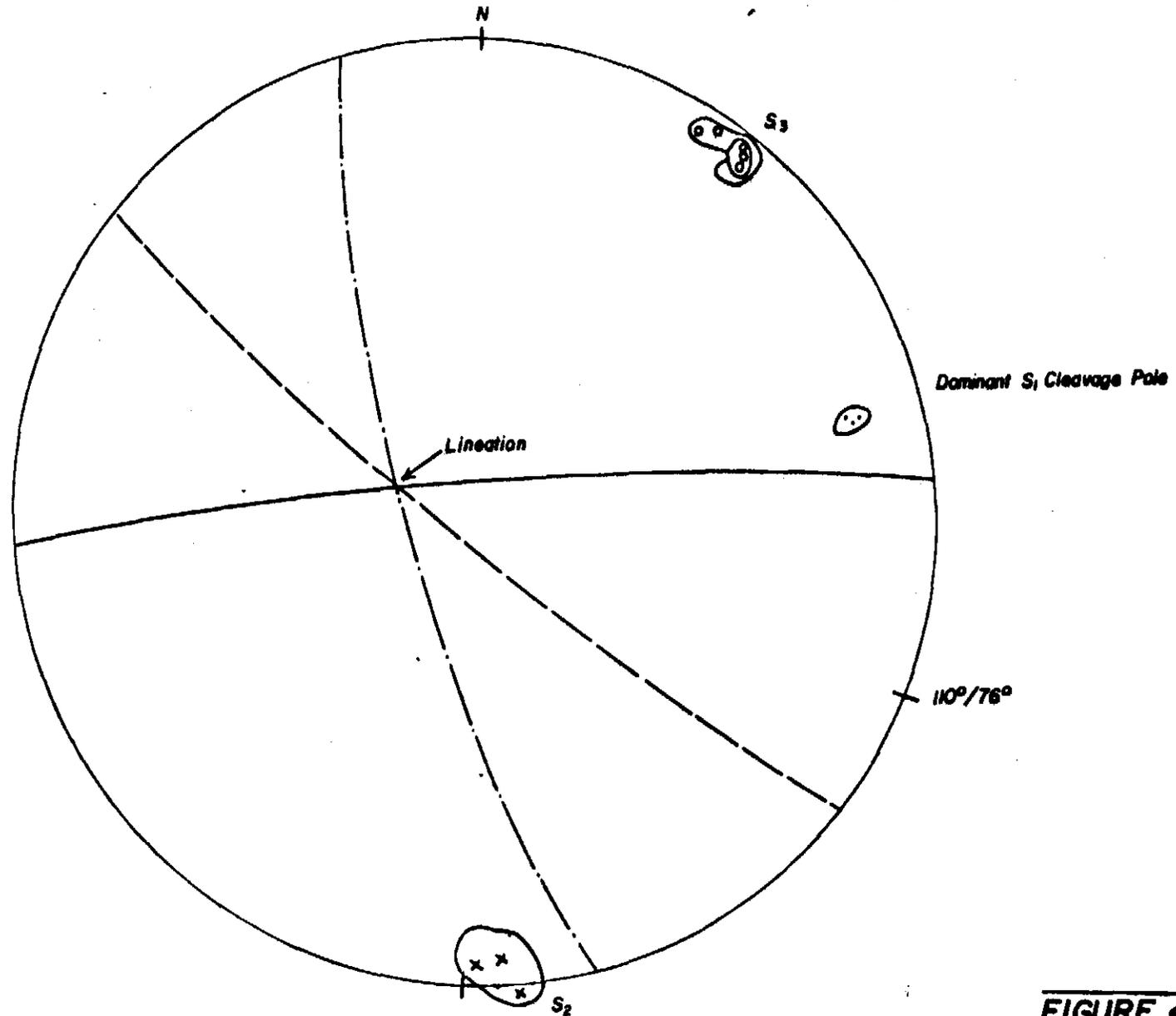


FIGURE 4

095		ANGLE TO COAL AXIS		GEOLOGICAL DESCRIPTION	Alteration	MINERALIZATION	Fracturing	Sample No	From (m)	To (m)	Asc (m)	ASSAYS									
10	166	S0	S1									P3	SW	W	Ca	Pb	Zn	Fe	As	Ac	Si
				Breccia Zone.				933449	40	41	1	152	20	80	55	2100	3.0	120	0.8	X	
				Green chloritic silt and shale. Clots of pyrite along S0. Quartz, pyrite veinlets disturbed by cleavage				450	41	42	1	X	X	50	X	85	3.15	16	0.2	X	
					451	42	43	1	167	X	105	20	75	2.4	52	0.7	X				
					452	43	44	1	6	X	55	X	80	3.3	18	0.2	X				
					453	44	45	1	X	X	15	5	50	2.3	2	X	X				
					454	45	46	1	8	X	10	5	55	2.4	1	X	X				
					455	46	47	1	7	X	10	X	55	2.75	2	X	X				
					456	47	48	1	X	X	20	10	60	3.0	19	0.5	X				
					457	48	49	1	194	X	30	30	185	2.35	360	0.3	X				
					458	49	50	1	6	X	20	10	55	2.35	19	0.2	X				
					459	50	51	1	X	X	20	5	55	2.5	5	0.2	X				
				460	51	52	1	7	X	15	10	210	4.6	3	0.1	X					
35	30			Pyrite massive chalcopyrite filling cleavage fracture voids. Very chloritic in patches.				461	52	52.8	0.3	X	X	6	5	55	2.45	3	0.1	X	
								462	52.8	54	1.2	X	X	15	5	70	3.3	2	0.1	X	
								463	54	55	1	X	X	15	5	80	3.9	1	X	X	
								464	55	56	1	X	X	10	5	40	2.45	2	0.2	X	
20	30			Between S5-S6 veinlets along S1 quartz, pyrite, siderite				465	56	57	1	X	X	5	10	65	3.4	1	X	X	
								466	57	58	1	29	X	25	5	180	3.0	2	0.1	X	
								467	58	59	1	X	X	X	5	50	2.45	1	0.2	X	
								468	59	60	1	4	X	25	10	65	2.45	5	0.3	X	
				1002m - 2cm vein quartz, pyrite, chalcopyrite, sphalerite parallel to KSA				469	60	61	1	62	X	30	10	90	2.0	65	0.3	X	
								470	61	62	1	28	X	40	5	90	5.0	9	0.2	2	
								471	62	63	1	X	X	40	5	100	4.3	22	0.2	X	
				Zone of interest. No increase in pyrite content or alteration				472	63	65	1	X	X	15	10	75	2.65	18	0.5	X	
								473	64	65	1	X	X	5	20	90	4.75	3	0.2	X	
								474	65	66	1	X	X	15	35	90	3.9	13	0.2	X	
								475	66	67	1	8	X	25	35	105	4.6	64	0.2	X	
								476	67	68	1	9	X	10	40	165	3.25	25	0.3	X	
								477	68	69	1										
								478	69	70	1										
								479	70	71	1										
								480	71	72	1										
								481	72	73	1										
								482	73	74	1	X	X	20	30	50	2.5	10	2.2	X	
								483	74	75	1	X	X	10	15	65	3.0	3	0.2	X	
								484	75	76	1	X	X	25	15	100	3.8	4	X	X	
								485	76	77	1	X	X	15	50	80	3.4	7	0.4	X	
								486	77	78	1	10	X	25	35	80	3.5	12	0.3	X	
								487	78	79	1	34	X	90	50	155	3.2	140	0.6	X	

795036

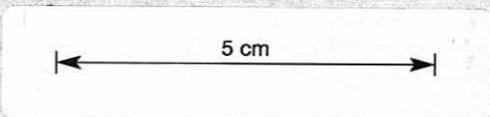
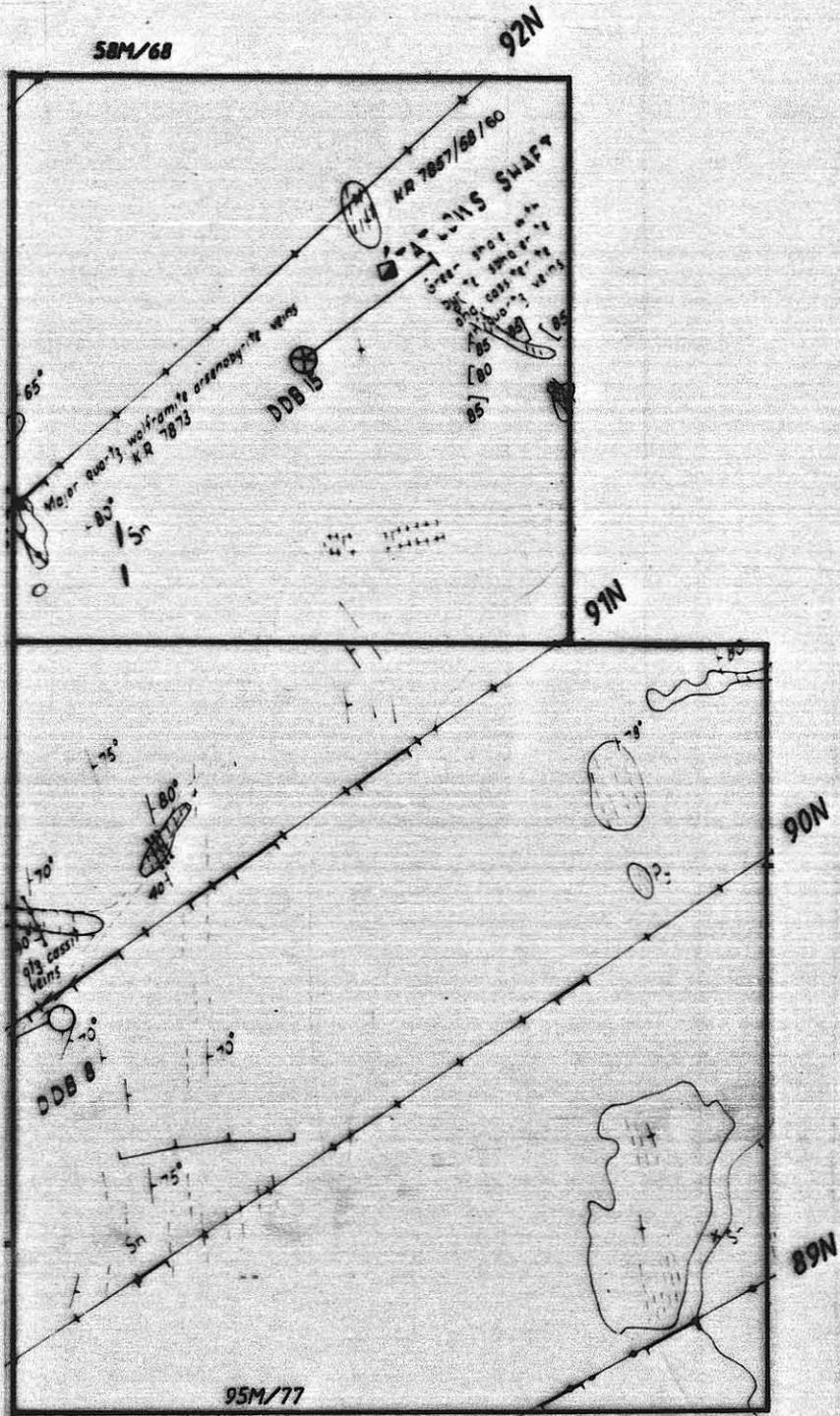
036

GEOPEKO TASMANIA DRILL LOG

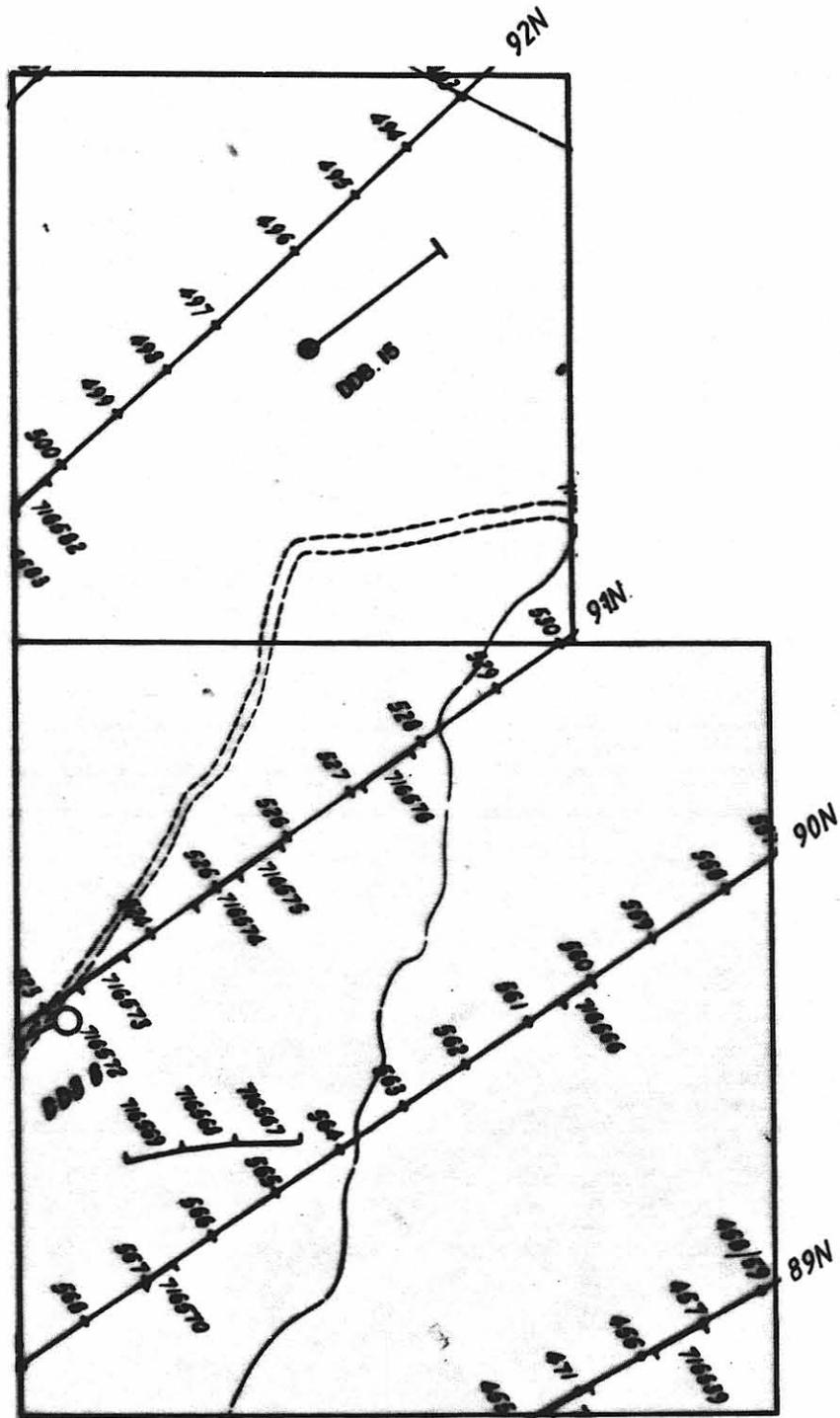
Prospect BALFOUR File no. DD15

DEPTH (m)		ANGLE TO CO-E AXIS		GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION		Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS									
From	To	Lo	Hi			BY	assess						uniform	SW	W	Cu	Pb	Zn	Fe %	As	Ag	Bi
				At 78.3m Quartz, pyrite cassiterite vein Subparallel to S ₀ 0.7mm thick		BY V	V		933488	79	80	0.75	X	X	25	25	75	29	34	0.2	X	
									489	80	81	0.8	X	X	85	50	45	45	10	0.2	X	
				At 81.85. 10cm zone of increased chlorite content Fine Stringers of pyrite parallel to S ₀	Blank				490	81	82	1.0	X	X	85	10	75	46	5	0.1	X	
									491	82	83	1	X	X	30	35	75	40	4	0.1	X	
									492	83	84	1	X	X	15	X	50	23	2	0.2	X	
									493	84	85	1	5	X	45	15	65	33	14	0.1	X	
									494	85	86	1	5	X	25	X	50	245	1	X	X	
									495	86	87	1	23	X	30	25	90	245	30	X	X	
									496	87	88	1	33	X	25	25	125	245	10	0.2	X	
									497	88	89	1	X	X	40	10	80	305	5	0.1	X	
									498	89	90	1	18	X	15	30	90	255	4	0.2	X	
									499	90	91	0.7	6	X	75	10	75	62	3	0.1	X	
									500	91	92	1	X	X	10	5	55	26	X	0.1	X	
									791	92	93	1	X	X	40	5	55	255	1	0.1	X	
									792	93	94	1	X	X	45	5	55	245	1	0.1	X	
									793	94	95	1	X	X	35	20	140	285	X	0.2	X	
									794	95	95.55	0.5	X	X	20	10	60	275	X	0.2	X	
			35°	EOH 95.55m																		

795037



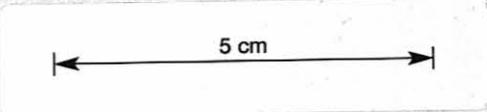
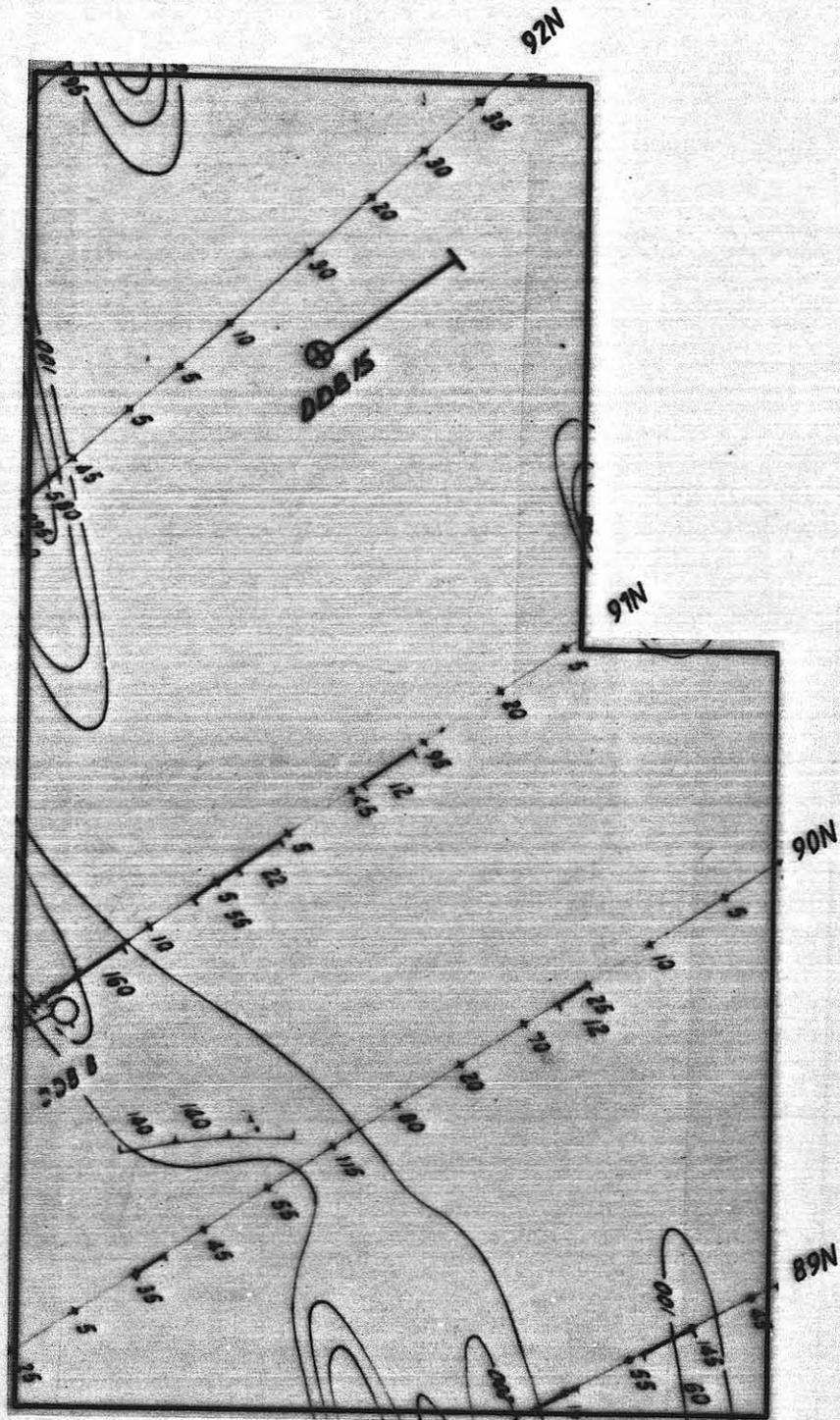
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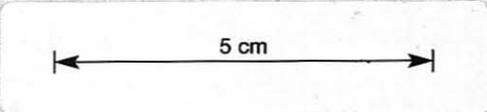
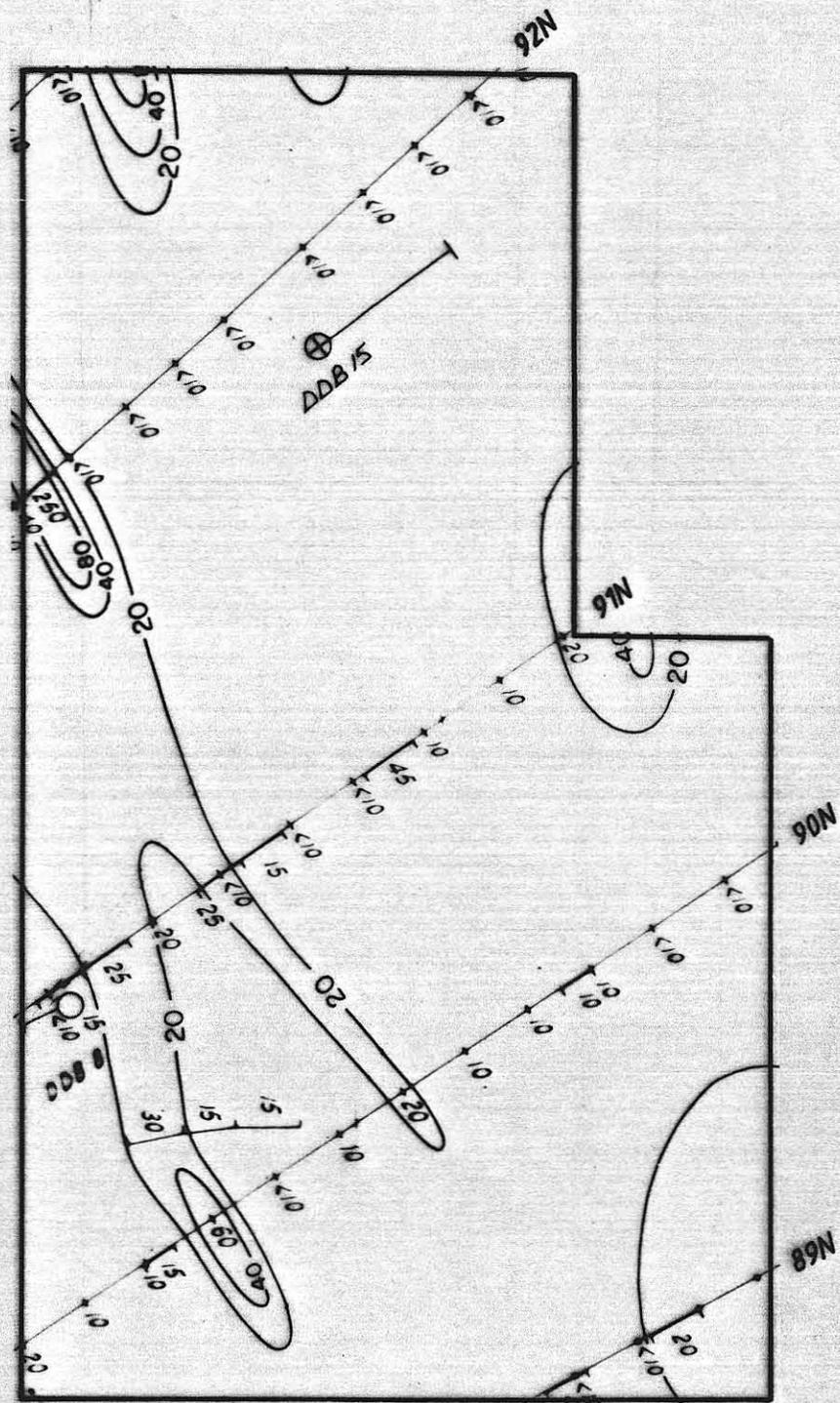
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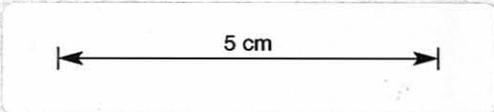
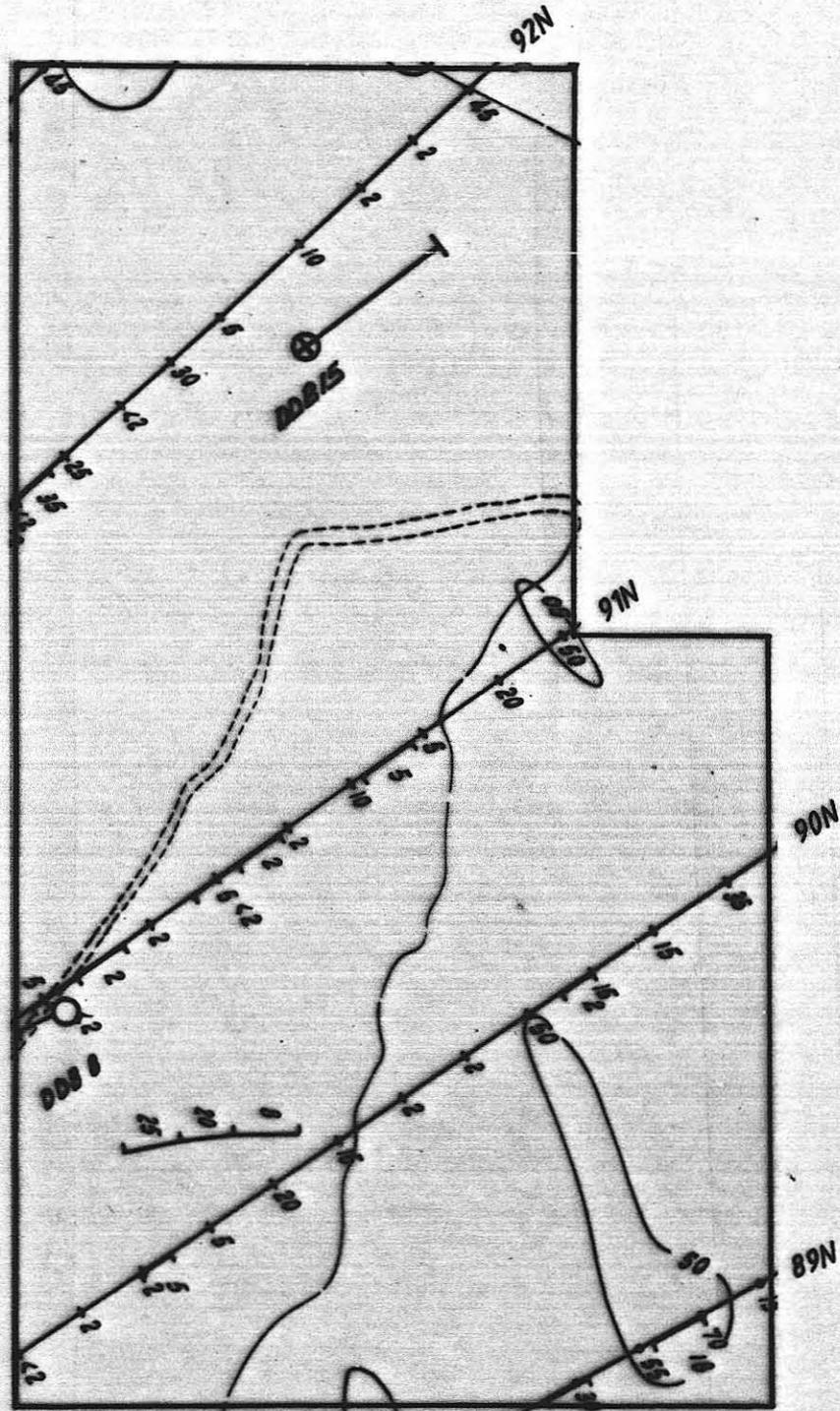
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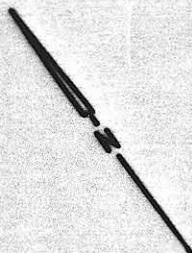
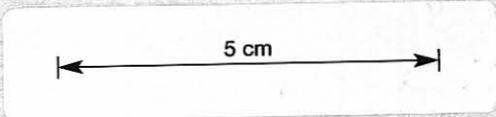
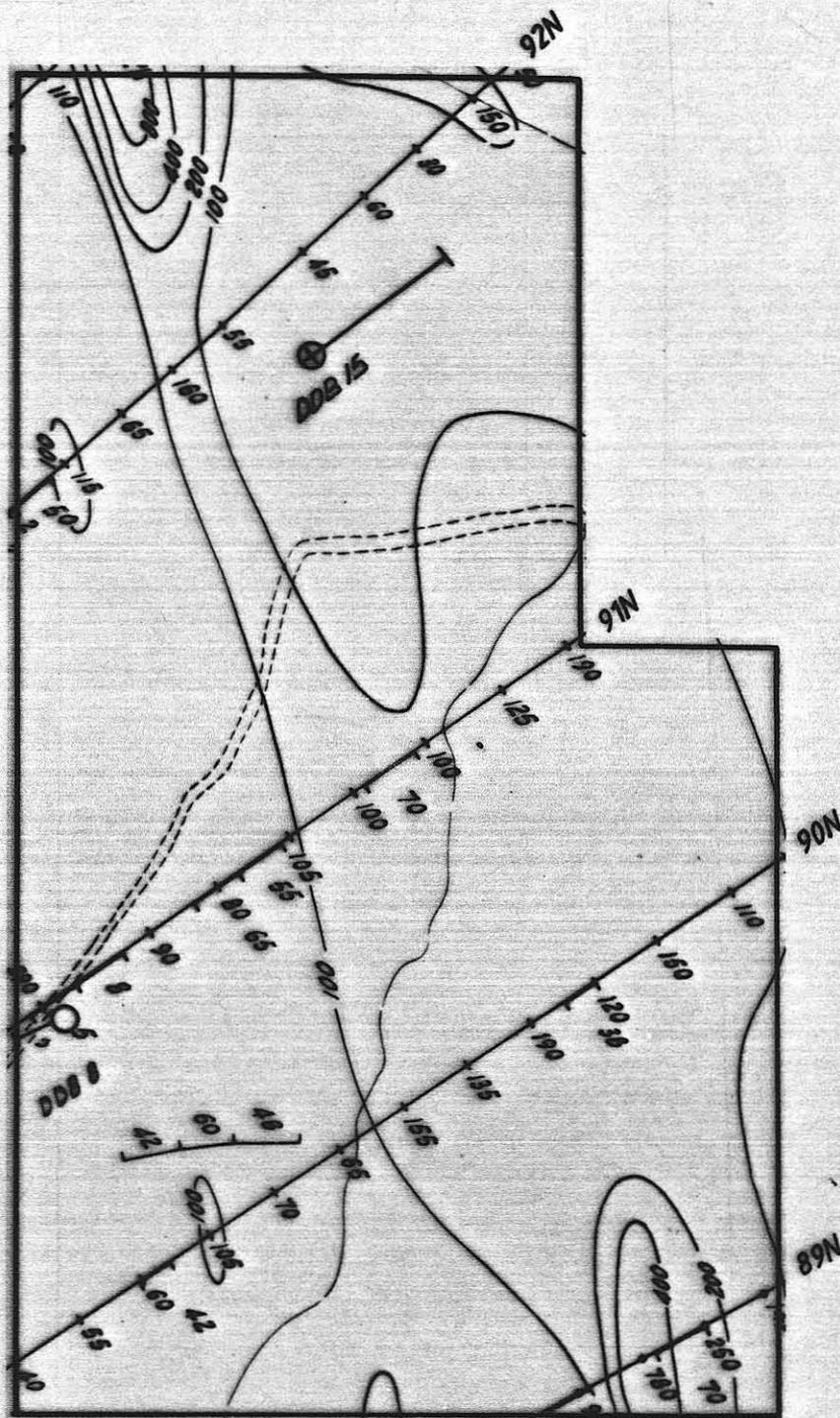
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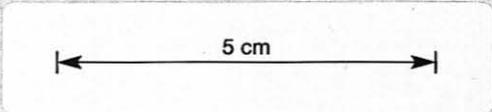
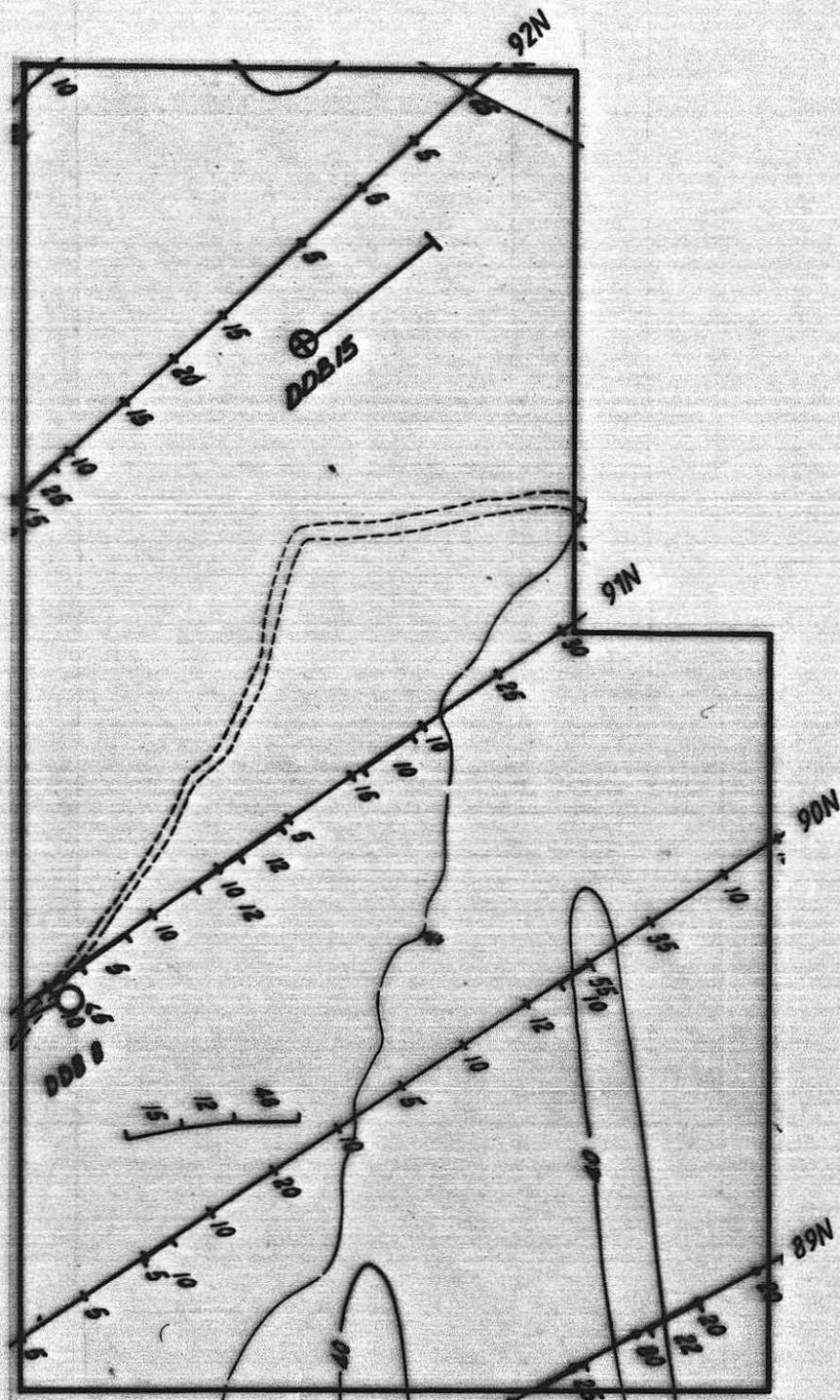
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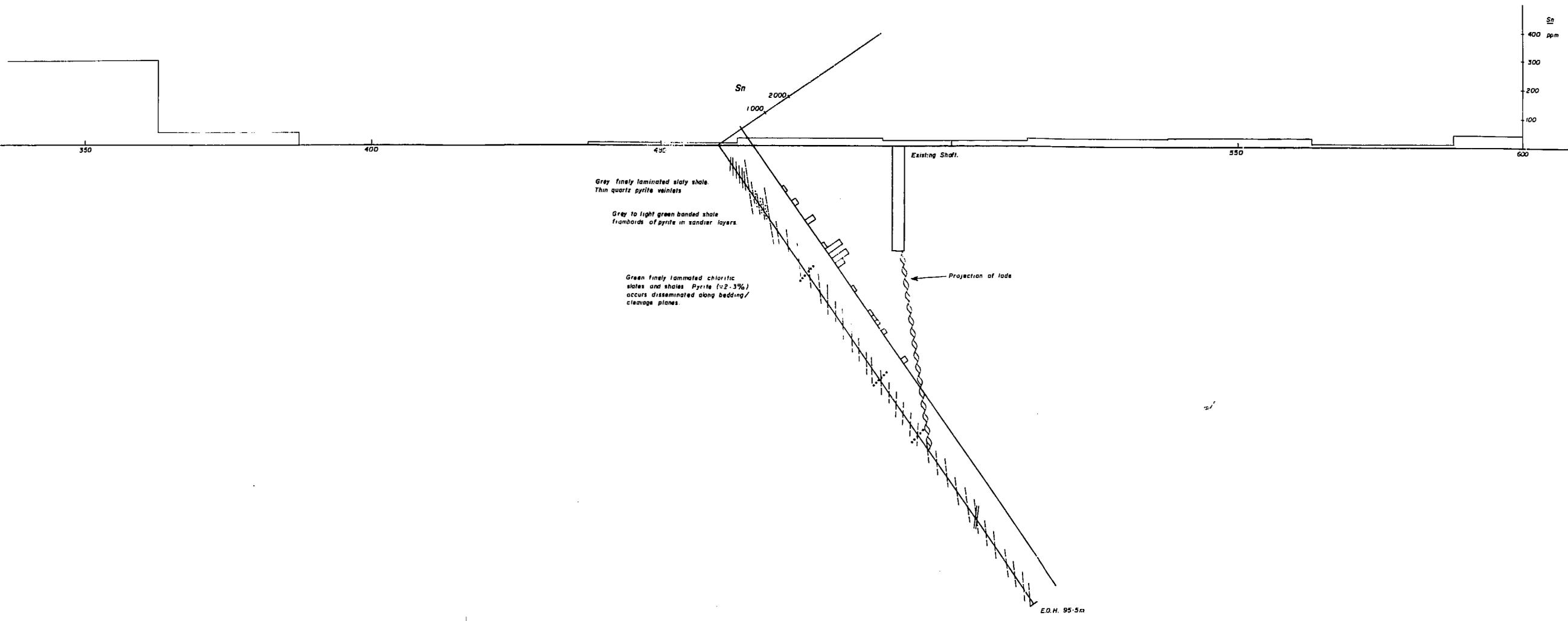
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DATE	FEB '82
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AUTHOR T.W.D	REPORT
DATE FEB '82	PLAN No TASH 613



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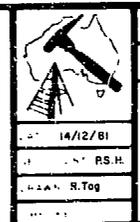


6860

LEGEND:

- Lithological Boundary: sharp, gradational.
- ==== Vein: showing orientation.
- Vein: indetermined orientation

DDB 15
 Co-ord. 9175mN 10460mN
 Bearing. 47°M
 Declination 55°
 Depth 95.5m
 Date Com. 30/7/81
 Date Term. 13/8/81



GEOPEKO LIMITED
 DEVONPORT BASE, TASMANIA
 TASH 686

ROCKY CAPE E.L.1/77
BALFOUR
DRILL HOLE SECTION ON DD 81 BC5 (BC15)
Geological and Geochemical Summary.