

80-1437

086001

vol 1.

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MT BISCHOFF TIN PROSPECT  
EXPLORATION LICENCE 13/79  
TASMANIA

MONTHLY REPORTS FOR JANUARY TO DECEMBER 1980



086002

METALS EXPLORATION LTD.

20 LITTLE COLLINS STREET MELBOURNE, AUSTRALIA 3000 TELEPHONE 654 4200 TELEX AA32051. TELEGRAM ROCKDOC

MT. BISCHOFF TIN PROSPECT

EXPLORATION LICENCE 13/79

TASMANIA

REPORT FOR JANUARY 1980

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A. Jannink

12.2.80

MT. BISCHOFF TIN PROSPECTTASMANIAREPORT FOR JANUARY, 1980GENERAL:

Diamond drilling continued during the month with two drill rigs on site to make up for the delays experienced in December 1979. By the end of January 797.7 metres had been drilled out of a programmed 912 metres leaving the programme only 114.3 metres behind schedule.

Gridding was completed on the H.B. Grid over magnetic anomaly 12 in the south west corner of the E.L., and has been commenced in the Fook's Lode area. Ground magnetics and soil sampling were also commenced.

The term of the Exploration Licence 13/79 has been extended for a further 6 months from 1st January 1980. Personnel on site during the period included 2 geologists, 1 technician and 2 field assistants.

DIAMOND DRILLING:

Diamond drilling recommenced on 8th January 1980 and a total of 751.7 metres were completed. Eleven holes were completed and one is in progress. All the HQ diameter holes (for metallurgical purposes) were completed during the month.

Both porphyry and dolomite sulphide lode targets have been drilled. Generally the smaller mobile BBS 1 drilling rig has been set on the shorter holes collared over dolomite sulphide lode targets, and the larger skid mounted rig (F 38) on the deeper porphyry targets. It is hoped that the BBS 1 rig may be retained until it has completed a further 350 metres in 6 holes.

Summary diamond drill logs are attached, and significant assay results are as follows:

(Abbreviation DSL stands for Dolomite Sulphide Lode)

Hole No.	From	To	Width (m)	%Sn	Rock Type
MBD 15	35.3	55.8	20.5	0.17	Porphyry
Incl.	43.3	53.3	10	0.25	"
	55.8	59.8	4	0.33	Transition Porphyry/DSL
MBD 16	5.0	7.0	2	0.40	Dolomite/DSL
	13.0	23.0	10	1.01	Dolomite/Fault Zone
	23.0	55.9	32.9	0.29	Porphyry
Incl.	36.1	46.1	10	0.41	"
	55.9	62.2	6.3	1.01	DSL/Fault Zone
	62.2	65.5	3.3	0.29	Porphyry
	77.9	79.8	1.9	0.23	Dolomite/DSL
MBD 17	0	10.0	10	0.37	DSL/Dolomite
	15.9	36.1	20.2	0.30	Porphyry
Incl.	17.9	29.9	12	0.42	"
	60.1	70.1	10	0.40	DSL
	76.1	78.6	2.5	0.42	"
MBD 18	5.7	6.7	1	1.02	DSL
	6.7	8.8	2.1	0.25	Porphyry
	8.8	28.3	19.5	2.11	DSL
MBD 19	15.9	16.7	0.8	0.76	DSL
MBD 20	19.2	27.8	8.6	0.45	Dolomite/DSL
	27.8	31.8	4.0	0.82	DSL
	37.8	41.3	3.5	0.36	DSL
MBD 21	9.4	15.7	6.3	0.36	DSL
	38.4	40.9	2.5	0.25	"

Hole No.	From	To	Width (m)	%Sn	Rock Type
MBD 22	Results not yet available				
MBD 23	7.3	23.1	15.8	1.73	DSL
	35.7	40.6	4.9	0.64	"
MBD 24	80.5	97.3	16.8	0.12	Porphyry

N.B. These are preliminary figures only - all assay results above 1% Sn are to be checked by XRF B2 Method (AMDEL).

"OLD CORE"

The core of two further "old" diamond drill holes has been re-logged. Re-boxing of old core was continued.

The dolomite sulphide lode in hole B1 was quartered and assayed. The following comparative results were obtained:

Hole No.	From	To	Width (m)	%Sn	Company
B1	19.8	37.7	17.9	0.95	M.E.L.
	19.8	37.7	17.9	0.88	Comstaff

A small section of previously unsplit core in hole B10 was also analysed:

Hole No.	From	To	Width (m)	%Sn	Rock Type
B10	67.1	70.1	3	0.14	Porphyry

GROUND MAGNETICS:

A ground magnetic survey has commenced on the H.B. Grid (aeromagnetic anomaly number 12) and three of the eleven lines have been completed.

GEOCHEMICAL SURVEY:

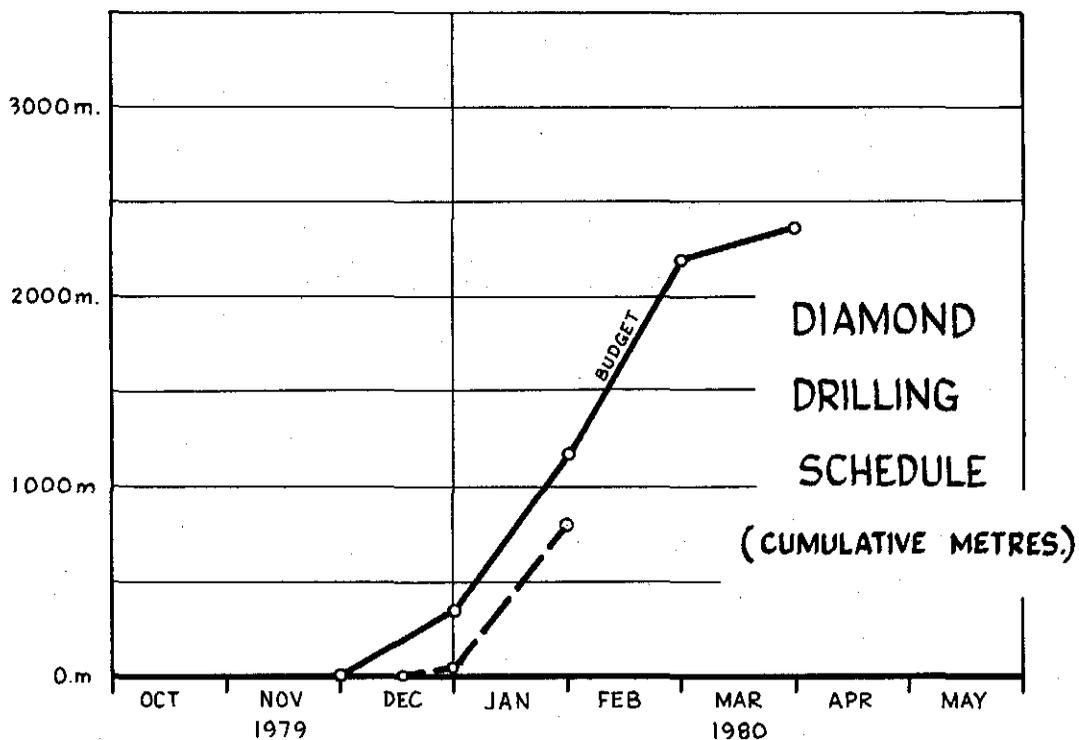
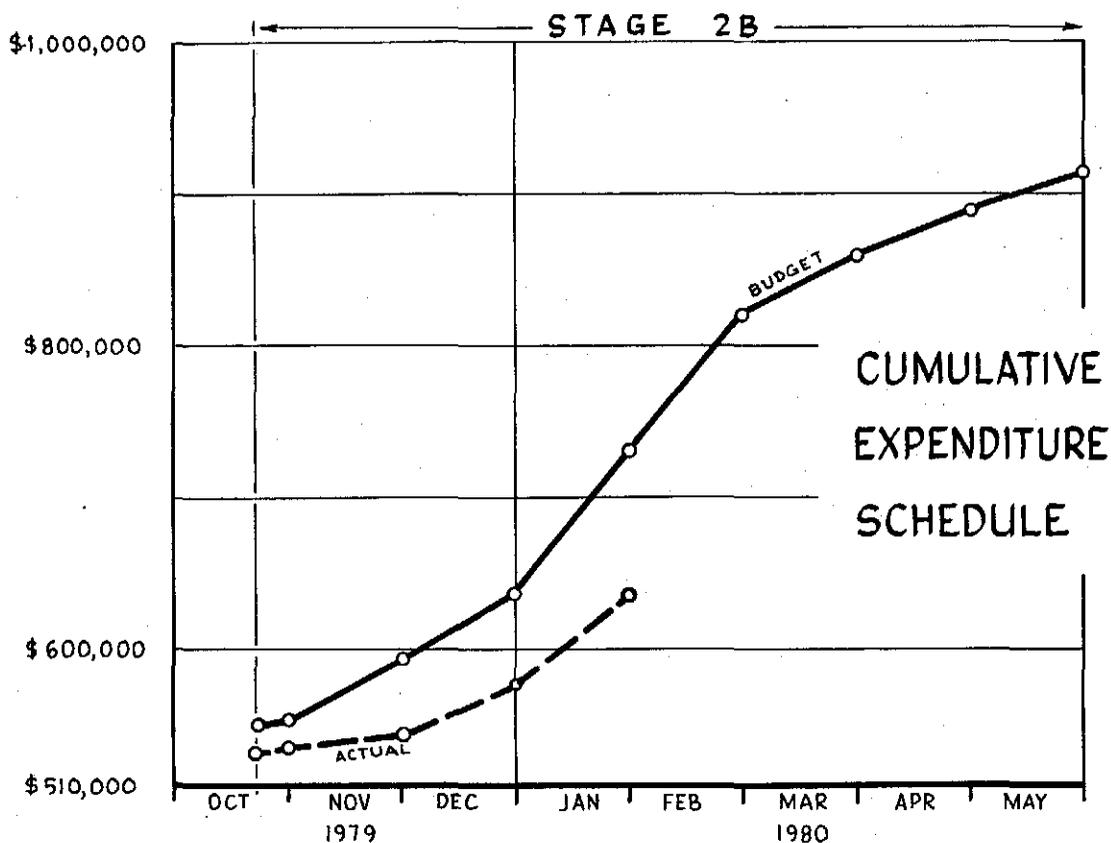
Hand augering on a 40 metre spacing along the lines of the H.B. Grid has commenced. Holes are drilled to bedrock (maximum 1 metre) and samples will be sieved to minus 80 mesh for analysis. Material from each hole is geologically logged in the field.

METALLURGY:

A metallurgical programme has been finalized with AMDEL staff and work will commence in February 1980.

MT BISCHOFF PROJECT CRA/MELDETAILED EXPENDITURE STATEMENT FOR JANUARY, 1980STAGE 2B

	<u>THIS MONTH</u>		<u>STAGE 2B TO DATE</u>	
	<u>BUDGET</u>	<u>ACTUAL</u>	<u>BUDGET</u>	<u>ACTUAL</u>
<u>Field Costs</u>				
Technical Services	15,000	9,268	41,200	25,449
Travel & Accommodation	700	349	2,100	1,421
Labour	1,800	2,141	5,400	4,843
Camp & Messing	1,000	968	3,850	2,401
Vehicles	1,000	868	3,000	2,601
Equipment Rental	400	200	700	200
General Expenses and Consumables	9,250	1,461	22,800	14,174
Lease Expenses			500	148
Track Cutting	3,750		3,750	
Diamond Drilling	50,200	40,633	76,000	40,633
Site Preparation			4,500	3,870
Metallurgical	10,000		15,000	
Assays	2,100	250	3,180	292
<u>Capital Items</u>				
Core Shed			5,100	5,085
	<u>95,200</u>	<u>56,138</u>	<u>187,080</u>	<u>101,117</u>
<u>Over Runs</u>				
Metallurgical - C.R.A.E.				23,500
Stage 1 - M.E.L.				11,308
<u>STAGE 2A</u>				198,818
<u>STAGE 2A - EARLY START</u>				29,020
<u>STAGE 1</u>				270,000
<u>CUMULATIVE EXPENDITURE TO DATE</u>				<u>633,763</u>



MT. BISCHOFF

STAGE 2B SUMMARY

as at 31-1-80

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 14  
Location : 2060.08 N 1340.08 E grid  
Elevation : 688.98 m  
Dip : 90°  
Azimuth : -  
Total Depth : 80 m  
Surveys : Tropari every 40 m  
Commenced : 15.12.79 Completed: 10.1.80  
Logged by : G. Broadbent  
Drilling Contractor : Longyear Australia Pty. Ltd.

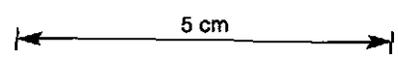
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SUMMARY DRILL LOG MBD 14

Veins over 50 mm

Mineralisation excluding veins over 50 mm

TRICONE TO 3m - NO CORE	(1-3)	0		
GREY SILTSTONES with interbedded PYRITIC BLACK SHALES and 'PUFF' bands - clasts of siltstone in matrix well bedded	3.4-20 (6.20)	0-10	← Bedding 50°	Finely dissen and bedded laminae to 1mm in black shale beds 1%
QUARTZ-FELSPAR PORPHYRY Mottled creamy-grey matrix GtC phenocrysts to 5mm, rounded, white and translucent. Felsph variable proportion 5-15% weathered. Core is highly fractured and the upper 5m with east-silted, bleached and stained with Fe-oxides	9.20-24.84 (15.64)	10-20	← Underwise contact, 80°	Coarsely pitted, Fe sulphides removed by weathering. Brown Fe-oxide staining. Pj as fine grained aggregates to 5x3mm, some distinct grains. Variable concentration 5-25% 2-3% 15%
GREY SILTSTONES, SILTY SHALES with minor interbedded BLACK SHALES. Siltstones massive, finely laminated or bedded 1-2cm. Black shales decrease with depth. Some brecciation and minor bedding	24.84-37.4 (12.56)	20-30	← contact 55°, some pyrite Bedding 35°	Pj bedded, disseminations in black shales, silty shales. Some small veinlets of pj to 2mm and sparse qtz-marcasite-pj-sp veins to 25mm. 2-3%
MASSIVE GREY SILTSTONES AND IMPURE BLuish-GREY QUARTZITES. Hard, silicified, brecciated, with poorly defined bedding.	37.4-49.4 (12.0)	30-40	← Gradual change Bedding 35° Bedding 75°	Pj, trace py as blebs, veinlets and stringers. Sparse qtz-pj-marcasite veinlets to 15mm. 2%
GREY SILTSTONES SILTY SHALES and interbedded black pyritic shales. See 24.84-37.4, black shales more constant, 1-2cm thick.	49.4-59.7 (10.3)	40-50	← Gradual change Bedding 50° Bedding 60°	Pj dissen in selected siltstone beds and as bedded laminae to 2mm with black shales. Minor qtz-pj-arsenite stringers. 3%
MASSIVE GREY SILTSTONES AND IMPURE BLuish-GREY QUARTZITES. As for 37.4-49.4.	59.7-76.50 (17.10)	50-70	← Gradual change Bedding 35° Bedding 70° Bedding 55°	Pj as thin laminae and stringers, rare fine disseminations. Some thin atz-pj veins (to 2mm) and qtz-pj-marcasite-sp-pj veins to 10mm. 3%
GREY SILTS, SILTY SHALES, BLACK SHALES	76.5-80 (3.2+)	70-80	76.5-77.47 Vein zone - pj, marcasite, arsenite, sp	sp to 120mm. Form sulphides 5-10% in veins 3%
END OF HOLE 80.0		80		





MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 15  
Location : 1819.97 N 1019.99 E grid  
Elevation : 624.31 m  
Dip : 90°  
Azimuth : -  
Total Depth : 80 m  
Surveys : Tropari every 40m  
Commenced : 8.1.80 Completed: 15.1.80  
Logged by : G. Broadbent  
Drilling Contractor : Longyear Australia Pty. Ltd.

SUMMARY DRILL LOG M30 15

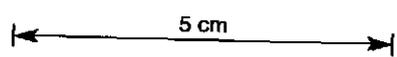
086013

Vein size 50mm

Mineralisation (excluding veins over 50mm)

TRICONE TO 3m No Core	0-3m				
3-6.5 Very weathered and broken - dolomite and py in sticky black clay. GREY SILICEOUS DOLOMITE. Patches mottled grey white, due to recrystallisation - some separation of calcite and atx. More pure creamy coloured dolomite in patches up to 5x5cm. Highly brecciated, angular-sub angular fragments separated by dark grey stained fractures.	3-25.65 (21.65)	0-10	Poor recovery 340m on 35%. 12.8-14.6 cavity.	Py, trace Anorthite, siderite, arsenic in black clay	2-3%
DOLOMITE SULPHIDE LODE and unaltered dolomite. talc/serpentine & atx. carbonate	25.65-28.8 (3.15)	10-30		Py, marcasite, Anorthite, sp, arsenic; blebs, dissen	10%
GREY SILICEOUS DOLOMITE. Fractured and weakly altered to talc/serpentine along fractures	28.8-35.33 (6.53)	30-40	10cm massive atx, 25cm carbonate, py, sp surrounding major fracture.	Sp, trace py as blebs in brecciation cavities	1%
QUARTZ - FELSPAR PORPHYRY. Matrix pale creamy grey. Qtz as rounded turbid grains to 3mm 10%. Felspar cream with yellowish alteration, indistinct outlines to 2-3mm, 3-10%. Well jointed and broken 10-40° WEA. Greenish upper and lower 1/2 of selvages (1M)	35.33-55.82 (20.49)	40-60	Contact broken, 80° Contact indistinct and ragged.	Py, marcasite (blebs and grains to 6mm) trace sp, fluorite, weak trace arsenic, cassiterite. Py, marcasite, fluorite and trace cassiterite	15% 25%
TRANSITION between PORPHYRY AND DOLOMITE. Fg, porphyritic texture - smoky grey and yellow	55.82-59.30 (3.48)	60-70	Undulose contact, 15°	FLUORITE phenocrysts up to 10µm, Py-sp arsenic - cassiterite Py, marcasite, trace arsenic, sp, fluorite	10% 20%
59.3-60.90 Dolomite Sulphide lode 60.9-65.2 GREY DOLOMITE with Qtz, CALCITE	59.3-65.2 (5.9)	70-80	20cm	SP, py as scarce blebs in brecciation cavities	<1%
Recrystallised DOLOMITE. Brecciated, with remnant pieces of grey siliceous dolomite surrounded by pure crystalline dolomite	65.2-72.6 (7.4)		Brecciated - dolomite veins to 30mm in zones up to 0.5m.	Trace sp, py and purple and blue crystalline fluorite in cavities.	<1%
INTERBEDDED MOTTLED GREEN SERPENTINITE (altered dolomite) and SILTSTONE	72.6-77.8 (5.2)		Bedding 50°	Dolomite veining: sulphides scarce to absent - trace sp, fluorite	<1%
77.8-80.0 MASSIVE SILTSTONES	77.8-80.0				

END OF HOLE 80.0 M.



SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
96441		24.0	26.0	2.0	150									
42		26.0	28.0	"	240									
43		28.0	30.0	"	42									
44		30.0	32.0	"	22									
45		32.0	34.0	"	230									
46		34.0	35.28	1.28	400									
47		35.28	37.28	2.0	840									
48		37.28	39.28	"	520									
49		39.28	41.28	"	640									
50		41.28	43.28	"	420									
51		43.28	45.28	"	5100									
52		45.28	47.28	"	1000									
53		47.28	49.28	"	1750									
54		49.28	51.28	"	1950									
55		51.28	53.28	"	2550									
56		53.28	53.82	0.54	1700									
57		53.82	57.82	2.0	2750									
58		57.82	59.82	"	3750									
59		59.82	61.82	"	760									
60		61.82	63.82	"	16									
61		63.82	65.82	"	16									
62		65.82	67.82	"	8									
63		67.82	69.82	"	4									
64		69.82	71.82	"	53									
65		71.82	72.92	1.10	500									
66		72.92	74.92	2.0	60									
67		74.92	76.92	"	60									

Notes:— XRF B<sub>1</sub> Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD15

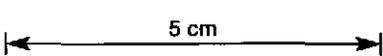
SAMPLE TYPE : DRILL CORE FROM 24.0 TO 76.92m

086014

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 16  
Location : 1859.90 N 1059.85 E grid  
Elevation : 635.90 m  
Dip : 90°  
Azimuth : -  
Total Depth : 100m  
Surveys : Tropari every 50m  
Commenced : 15.1.80 Completed: 22.1.80  
Logged by : G. Broadbent  
Drilling Contractor : Longyear Australia Pty. Ltd.

<p>TRICONE TO 3 m - No Core          CORE BAOLY BROKEN - fragments of grey porous DOLOMITE and sparse green talc/sepehtinite fragments</p>	<p>3-9.60 (6.60)</p>	<p>0          Poor Core recovery to 29.5m          ≈ 40%</p>	<p>Fragments of py, fluorite and green sepehtinite/talc. 5%</p>
<p>POGGY FAULT ZONE - crushed and shattered - light brown friable silty clay with intervals of sticky black laminated clay with fragments of dolomite.</p>	<p>9.6-20.0 (10.4)</p>	<p>10</p>	<p>Fragments of py, fluorite and rare arseno 1-2%</p>
<p>DOLOMITE SULPHIDE LOSE (sepehtinite/talc) (py, arseno)</p>	<p>20.0-23.0 (3.0)</p>	<p>20</p>	<p>Remnant porous py, trace arseno, sp fluorite 2%</p>
<p>QUARTZ-FELSPAR PORPHYRY.          Creamy white matrix, alternating with pinkish cream. Phenocrysts - qtz white and turbid, rounded grains in variable proportions 5-30%. - feldsp - white, soft and weathered, showing variable alteration to brownish and yellowish tints. 5-15% up to 2mm. Well jointed/fractured, crushed zones throughout due to faulting. In places percentage of qtz/feldsp increases to almost 50% 'sugary' texture.</p>	<p>23.0-55.97 (32.97)</p>	<p>20          30          40          50          Contact 60°</p>	<p>21.3-23 shattered by faulting. (different CONTACT 50° (L))          Fault zone, core shattered and broken.          Py, with marcasite rims in more unweathered portions. Pitted by weathering. Concentrations variable 1%-30% on a scale of 0.5-2.5 m. Accessory sp, fluorite, arseno and rare cassiterite as small discrete grains. Some sparse qtz-py-arseno veinlets. 10-15%</p>
<p>Faulted and shattered DOLOMITE SULPHIDE LOSE - Banded sepehtinite/talc.</p>	<p>55.97-62.20 (6.23)</p>	<p>60</p>	<p>Weathered py, arseno, schorl tourmaline and finely dissemin fluorite 10%</p>
<p>QUARTZ FELSPAR PORPHYRY. Atz 25%, Feldsp 6%</p>	<p>62.20-65.5 (3.3)</p>	<p>Contact broken.</p>	<p>Py (pitted) trace sp, fluorite. 7%</p>
<p>Weakly altered GREY SILICEOUS DOLOMITE. Brecciated, with weak alteration to talc-sepehtinite along later fracturing. Margins of fractures commonly bleached/recrystallised to dolomite-calcite-qtz</p>	<p>65.5-82.5 (17.0)</p>	<p>70          80          50 cm massive talc/sepehtinite with py, marcasite, sp, arseno.          25 cm py, marcasite, arseno, sp 90%, atz-carbonate and talc 30%</p>	<p>Sp, py trace marcasite, arseno scattered blebs and grains, and thin fracture fillings with qtz talc-sepehtinite and fluorite. 1%</p>
<p>Thinly Bedded SILTSTONES AND SILTY SHALES.          Upper 3m greenish and silicified with interbedded altered dolomite. Dark greys, well bedded, with some brecciation and cementation. Beds 1-5 cm.</p>	<p>82.5-100.0 (17.5+)</p>	<p>90          100          Gradual Change.          Bedding 60°          Bedding 55°          Bedding 70°          Bedding 65°          Bedding 75°</p>	<p>po, py, finely disseminated some sparse thin atz-carbonate-fluorite veinlets 2%</p>
<p>END OF HOLE 100.0</p>			



SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
46464		3.0	5.0	2.0	580									
70		5.0	7.0	"	4000									
71		7.0	9.0	"	720									
72		9.0	11.0	"	640									
73		11.0	13.0	"	620									
74		13.0	15.0	"	4550									
75		15.0	17.0	"	560									
76		17.0	19.0	"	5900									
77		19.0	21.0	"	1.94%									
78		21.0	23.0	"	1.99%									
79		23.0	25.0	"	740									
-180		25.0	25.6	1.6	680									
81		25.6	28.1	2.5	1.35%									
82		28.1	30.1	2.0	760									
83		30.1	32.1	"	210									
84		32.1	34.1	"	1150									
85		34.1	36.1	"	520									
86		36.1	38.1	"	6700									
87		38.1	40.1	"	5600									
88		40.1	42.1	"	2450									
89		42.1	44.1	"	3400									
490		44.1	46.1	"	2350									
91		46.1	48.1	"	430									
92		48.1	50.1	"										
93		50.1	52.1	"	660									
94		52.1	54.1	"	3000									
95		54.1	55.9	1.8	2000									
96		55.9	57.9	2.0	1.22%									
97		57.9	58.2	0.3	1.19%									
46498		58.2	59.5	1.3	7500									

Notes: — Sn by XRF. Bl Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 16  
 SAMPLE TYPE: DRILL CORE FROM 3.0 TO 59.3

086017



SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	SLUDGE	m	m	m	SPLIT	SLUDGE								
	97201	17.0	20.0	3.0		1.47%								
	2	20.0	21.5	1.5		1.39%								
	3	21.5	23.0	"		8600								
	4	59.5	62.5	1.5		9800								
	5	62.5	65.5	3.0		7000								
	6	65.5	68.5	3.0		5200								
	7	68.5	71.5	"		5300								
	8	71.5	74.5	"		5000								

086019

Notes: —

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD/6  
 SAMPLE TYPE : DRILL CORE FROM 17.0 TO 74.5  
 SLUDGE

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 17  
Location : 1901.59 N 1100.44 E grid  
Elevation : 626.39 m  
Dip : 90 °  
Azimuth : -  
Total Depth : 83.1 m  
Surveys : Tropari every 40 m  
Commenced : 11.1.80 Completed: 17.1.80  
Logged by : G. Broadbent  
Drilling Contractor : Longyear Australia Pty. Ltd.

SUMMARY DRILL LOG MBD 17

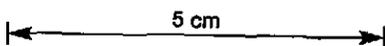
Veins over 50 mm

Mineatization (excluding veins over 50 mm) **086021**

Coring commenced 0 m; upper 20-30 cm mullock.

<p>DOLomite SULPHIDE LOOSE. Weathered and badly broken. Porous matrix. Calcite and Serpentine fragments.</p>	<p>0-3-6.10 (5.8)</p>	<p>0</p>	<p>Poor Recovery &lt; 50% to 20.0 m - washed, fractured and broken.</p>	<p>Py (pitted), Fluorite, trace arsenic (?) 20%</p>
<p>ALTERED DOLomite. Core broken and washed out - pink heavy mineral with recrystallized dolomite.</p>	<p>6.1-11.0 (4.9)</p>	<p>10</p>		<p>Py, marcasite, sp, fluorite in sludge samples. ? 10%</p>
<p>FAULT ZONE - yellow and black Pugs. 11.0-13.40 dolomite fragments. 13.40-16.75 Siltstone.</p>	<p>11.0-16.75 (5.75)</p>	<p>10</p>		<p>Sparsely Py-qtz-biotite-sp-ep fragments (veins?) ?</p>
<p>QUARTZ-FELSPAR PORPHYRY. Matrix pinkish brown. Phenocrysts variable, up to 50% - sugary texture. Qtz - 10-25%, rounded grains to 5mm. Felspar - 3-15%, altered to brownish material, otherwise creamy white and weathered. max 3m. Faulted and broken.</p>	<p>16.75-36.1 (19.35)</p>	<p>20</p>	<p>← Contact Broken.</p>	<p>Py, pitted in more fractured intervals rms of marcasite where unweathered. weak trace ep, cassiterite and arsenic. Sp occurs sporadically. Some qtz-pg-cassiterite veining. Proportion of sulphides variable 5-30%; blebs and hgr. aggregates. 15%</p>
<p>FAULT PUG ZONE. 36.1-45.3 Blue puggy clay laminated. 39.6-45.3 Recovery poor - siltstone and dolomite fragments.</p>	<p>36.1-45.3 (9.2)</p>	<p>40</p>	<p>← Contact Broken - 40°?</p>	<p>Sparsely fragments of pyrite. 1%</p>
<p>GREY SILICEOUS DOLomite. Brecciated, with fine dark grey fractures. Some minor recrystallization to dolomite-calcite-qtz along fractures. Very thin talc-serpentine along late fractures.</p>	<p>45.3-60.00 (14.70)</p>	<p>50</p>	<p>← Contact Broken. Zone of alteration to talc/serpentine with clasts of dolomite, qtz, calcite. Sp Py 20% 10 cm Py-sp-arsenic-fluorite-tourmaline. 40°</p>	<p>Sp trace py weak trace arsenic, ep, as blebs and irregular masses along brecciation fractures. 10%</p>
<p>DOLomite SULPHIDE LOOSE. Angular fragments of altered dolomite surrounded by bands talc/serpentine, dolomite, alk, calcite and sulphides.</p>	<p>60.0-70.35 (10.35)</p>	<p>60</p>	<p>← Undulose contact, 80°</p>	<p>PO &gt; Py, trace sp, fluorite, ep arsenic, marcasite in contorted bands. Other sulphides distributed unevenly in Po. Upper 1.5 m 20% 65%</p>
<p>GREY SILICEOUS DOLomite. As above, with altered intervals. 76.15-78.43 DOLomite sulphide loose. (talc/serpentine)</p>	<p>70.35-79.36 (9.01)</p>	<p>70</p>	<p>← Gradual Change.</p>	<p>2%</p>
<p>SEMI-TITANIC SILTSTONES AND SILTY SHALES. Hard, silicified, contorted.</p>	<p>79.36-83.1 (3.74)</p>	<p>80</p>	<p>← Gradual Change. Bedding 45°</p>	<p>Po, sp, fluorite, trace sp, arsenic. 35% Py, trace Po as thin veinlets and blebs in small fracture zones. 1% Po, Py, 2%</p>

END OF HOLE 83.1





SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97142		0.0	2.0	2.0	3500									
13		2.0	4.0	"	5400									
14		4.0	6.0	"	6900									
45		6.0	8.0	"	480									
46		8.0	10.0	"	3450									
47		10.0	12.0	"	540									
48		12.0	13.9	1.9	370									
97100		13.9	15.9	2.0	920									
01		15.9	17.9	"	1650									
2		17.9	19.9	"	2550									
3		19.9	21.9	"	3000									
4		21.9	23.9	"	6100									
5		23.9	25.9	"	3100									
6		25.9	27.9	"	5600									
7		27.9	29.9	"	4600									
8		29.9	31.9	"	1850									
9		31.9	33.9	"	900									
10		33.9	36.1	2.2	740									
11		36.1	38.1	2.0	450									
12		38.1	39.6	1.5	170									
13		39.6	41.6	2.0	100									
14		41.6	43.6	"	100									
15		43.6	45.3	1.7	70									
16		45.3	47.3	2.0	20									
17		47.3	49.3	"	14									
18		49.3	51.3	"	55									
19		51.3	53.3	"	65									
120		53.3	55.3	"	28									
21		55.3	57.3	"	10									
97122		57.3	60.07	2.77	44									

Notes:— Sn by XRF B. Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD17

SAMPLE TYPE : DRILL CORE FROM 00 TO 60.07

086023

SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
23		60.07	62.07	2.0	2850									
24		62.07	64.07	"	4550									
25		64.07	66.07	"	2100									
26		66.07	68.07	"	3650									
27		68.07	70.11	2.04	6900									
28		70.11	72.11	2.0	600									
29		72.11	74.11	"	290									
30		74.11	76.11	"	95									
31		76.11	78.63	2.52	4150									
32		78.63	80.63	2.0	170									
33		80.63	82.63	"	28									

Notes: — Sn by XRF B. Method.

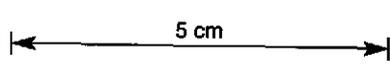
METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 17  
 SAMPLE TYPE : DRILL CORE FROM 60.07 TO 82.63

086024

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 18  
Location : 1919.32 M 1100.05 E grid  
Elevation : 626.86 m  
Dip : 45°  
Azimuth : 360° grid  
Total Depth : 40.1 m  
Surveys : Tropari every 40m  
Commenced : 18.1.80 Completed: 20.1.80  
Logged by : G. Broadbent  
Drilling Contractor : Longyear Australia Pty. Ltd.

TRICONE to 2.3m.		0		
GREENISH GREY SILTSTONES AND GREY SANDSTONE	2.3 - 5.65 (3.35)		← FAULTED	
DOLOMITE SULPHIDE LOOSE	5.65 - 6.70 (1.05)		← broken contact.	Py, malacchite, PO, fluorsite, sp, arsenic, CO ← 50%
QUARTZ-FELSPAR PORPHYRY	6.70 - 8.85 (2.15)		← 25° sharp contact 10.35 - 10.65 qtz porphyry with irregular contacts.	Pg, malacchite, fluorsite trace cassiterite 200%
DOLOMITE SULPHIDE LOOSE Bronze coloured due to po 50-70% qtz-dolomite-calcite intergrown, minor talc/serpentine, weakly foliated. lower 0.7 m bluish grey talc/serpentine with fluorsite and qtz-carbonate.	8.85 - 28.4 (19.55)	10 20		Po >>> Pg, trace sp and dark brown fluorsite. Fine grained cassiterite is visible in isolated patches up to 10%, otherwise sparsely disseminated Sulphides are disseminated and intergrown with qtz-carbonate. lower 0.7 m fluorsite rich sulphide 5% 40% 12.5%
WEAKLY ALTERED DOLOMITE	28.4 - 31.6 (3.2)	30	← Gradual change.	Weak trace pg, ? cassiterite in fractures 10%
TRANSITION ALTERED DOLOMITE / SILTSTONES	31.6 - 33.65 (2.05)		← 100 mm py, malacchite, talc, dolomite, sp	Pg, PO, dissem. veins with sp ← 50%
QUARTZ-FELSPAR PORPHYRY. Hard white f. q. matrix, qtz 5-7%, talc 7%	33.65 - 34.30 (0.65)		← Irregular, 30°	Pg with malacchite rims, strong trace sp, weak trace arsenic. 15-20%
BRECCIATED GREENISH SILTSTONES	34.3 - 40.10 (5.8)	40	← Irregular 35°	Pg, PO, sp, dissem, stringers 7%
END OF HOLE 40.1 m.				



SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
50		3.1	4.1	1.0	780									
51		4.1	5.7	1.6	460									
52		5.7	6.7	1.0	1.02%									
53		6.7	8.8	2.1	2450									
54		8.8	10.2	1.4	1.51%									
55		10.2	10.6	0.4	1300									
56		10.6	12.6	2.0	0.86%									
57		12.6	14.6	"	0.92%									
58		14.6	16.6	"	0.57%									
59		16.6	18.6	"	1.81%									
160		18.6	20.6	"	3.20%									
61		20.6	22.6	"	4.24%									
62		22.6	24.6	"	2.68%									
63		24.6	26.6	"	3.26%									
64		26.6	27.6	1.0	3.66%									
65		27.6	28.3	0.7	2850									
66		28.3	30.3	2.0	120									
67		30.3	32.3	"	40									
68		32.3	33.7	1.4	310									
69		33.7	35.7	2.0	480									
170		35.7	37.7	"	940									
71		37.7	39.3	1.6	200									
72		39.3	40.1	0.8	2700									

Notes: —

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 18  
 SAMPLE TYPE : DRILL CORE FROM 3.1 TO 40.1

086027



MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

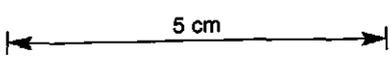
Hole Number : MBD 19  
Location : 1943.15 N 1056.99 E grid  
Elevation : 641.60 m  
Dip : 60°  
Azimuth : 360° grid  
Total Depth : 39.2 m  
Surveys : Tropari every 40 m  
Commenced : 20.1.80 Completed: 22.1.80  
Logged by : G. Broadbent  
Drilling Contractor : Longyear Australia Pty. Ltd.

SUMMARY DRILL LOG MBD 19.

Veins over 50 mm

086030  
Mineralisation (excluding veins over 50 mm.)

TRICONE TO 3m - No Core.	0-3.0m	0		
DOLOMITE WITH QUARTZ AND CALCITE. Mottled dark grey siliceous dolomite with patchy creamy white dolomite. Mottling is due to partial recrystallisation.	3.0-15.75 (12.75)	10	Gradual Change.	Po Py, trace sp, arsen. Concentrated along fracture zones (5.95-8.7m in intervals 12.9-13.65m, together with repetitive calc. qtz, calcite) 3-5%
DOLOMITE SULPHIDE LOOSE	15.75-16.93 (1.18)			Po, Fluorite trace arsen. py, sp 50%
ALTERED DOLOMITE, Recrystallised - dolomite, white calcite and qtz.	16.93-21.05 (4.12)	20	25° irregular Gradual Change.	Po Py, disseminated aggregates and blebs along ore vein cracks 10%
DOLOMITE SULPHIDE LOOSE, qtz-carbonate mixed on a micro scale talc (serpentine)	21.05-27.10 (6.05)		Gradual Change.	Po Py trace sp and arsen. Variable proportions 10-70% dissemin. 40%
THINLY BEDDED SERPENTINE SILTSTONES AND GREY MASSIVE SANDSTONES. Hard, greenish siltstones with grey quartzites (Silicified). Brecciated and unsorted.	27.10-39.2 (12.10)	30	Gradual Change (interbedded) Bedding 70° Bedding 45° Bedding 75°	Trace Po, Py, highly dissemin in sandstones. small blebs in siltstones <1%
END OF HOLE 39.2.		40		





MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 20  
Location : 1959.96 N 981.95 E grid  
Elevation : 644.26 m  
Dip : 50°  
Azimuth : 360° grid  
Total Depth : 44.9 m  
Surveys : Tropari every 40 m  
Commenced : 22.1.80 Completed: 25.1.80  
Logged by : G. Broadbent  
Drilling Contractor : Longyear Australia Pty. Ltd.

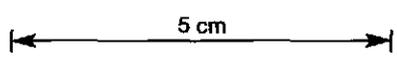
SUMMARY DRILL LOG MBD 20

Veins see 50 mm

086033

Mineralisation (excluding veins  
over 50 mm)

<p>TRICONE TO 1.5 m - NO CORE</p> <p>DOLOMITE WITH QTZ AND CALCITE. Grey siliceous dolomite, more or less recrystallised (dolomite-calcite-qtz) or altered to talc-serpentine in zones. 9.55-11.45 recrystallised with talc, carbonate and etc. 11.45-12.86 talc/serpentine and qtz calcite, sulphides 100% 19.1-22.96 - Recrystallised along fractures. 26.8-27.8 totally recrystallised, talc.</p>	<p>0-1.5 1.5-27.8 (26.3)</p>	<p>0 10 20</p>	<p>Core fractured and broken, fine yellow fractures 0.40" dia. ← 300 mm fault zone, shattered.</p>	<p>Po &gt;&gt; py, sp, fluore variable, do not usually exceed 10%. More barren portions mainly sp, &lt; 1%. Most sulphides are localised along fractures as blebs and grains, fluorite with carbonate as discrete grains or finely dissem. to talc/serpentine.</p> <p>3-5% 10%</p>
<p>DOLOMITE SULPHIDE LOBE. Completely altered to talc-serpentine, in places almost massive. Sulphide concentrations variable on a scale of 2m or less, range from 20-90%, banded.</p>	<p>27.8-41.3 (13.5)</p>	<p>30 40</p>	<p>Gradual Change</p>	<p>po &gt;&gt; py, trace sp, arseno, sp Fluorite locally abundant. Sulphide intervals of 2 m or less with concentrations 90-20% and in between where py occurs, have trace marcasite.</p> <p>50%</p>
<p>GREENISH SILTSTONES AND GREY QUARTZITES.</p>	<p>41.3-44.10</p>	<p>40</p>	<p>Gradual Change (interbedded)</p>	<p>po, trace py, sp; dissem, blebs and grains</p> <p>7-10%</p>
<p>END OF HOLE 44.1 m</p>				



SAMPLE NO.	SAMPLE NO.	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97188		1.5	3.5	2.0	190									
89		3.5	5.5	"	580									
90		5.5	7.5	"	410									
97194		7.5	9.5	2.0	240									
95		9.5	11.5	"	130									
96		11.5	13.5	"	460									
97		13.5	15.5	"	55									
98		15.5	17.5	"	90									
99		17.5	19.18	1.68	55									
97300		19.15	21.18	2.0	8900									
1		21.15	22.38	1.0	320									
2		22.38	24.38	2.0	480									
3		24.38	26.38	"	3600									
4		26.38	27.84	1.46	9000									
5		27.84	29.84	2.0	1.22%									
6		29.84	31.84	"	4250									
7		31.84	33.84	"	300									
8		33.84	35.84	"	140									
9		35.84	37.84	"	200									
310		37.84	39.34	"	1050									
11		39.34	41.3	2.0	6900									
12		41.3	43.3	2.0	740									

Notes: — Sn by XRF Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 20  
 SAMPLE TYPE: DRILL CORE FROM 15 TO 433m

086034

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

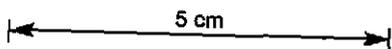
Hole Number : MBD 21  
Location : 1940.06 N 980.07 E grid  
Elevation : 644.73 m  
Dip : 90°  
Azimuth : -  
Total Depth : 46.1 m  
Surveys : Tropari every 40 m  
Commenced : 26.1.80 Completed: 28.1.80  
Logged by : G. Broadbent  
Drilling Contractor : Longyear Australia Pty. Ltd.

SUMMARY DRILL LOG MBD 21

Veins over 50 mm.

Mineralisation (excluding veins over 50 mm.)

TRICONE TO 3.0 m - No Core	0-3.0	0		
GREY DOLOMITE. Weakly recrystallised. faintly mottled grey-white (calcite + qtz). Fractured - extensively recryst. along fractures	3.1-3.4 (6.34)			Sp trace py, po in recrystallised dolomite along fractures as blebs < 2.3m < 1%
DOLOMITE SULPHIDE LORE. Not completely altered - clasts of grey dolomite surrounded by qtz, carbonates, talc and serpentine; 11.5-12.2 m altered	9.34-15.71 (6.37)	10	← Gradual change	py, fluoite, sp trace py, arsen, dissem and weakly banded 11.5-12.2 m barren. 10-15%
WEAKLY ALTERED GREY DOLOMITE. Brecciated - clasts of grey siliceous dolomite separated by recryst. fractures; weak alteration to talc (serpentine occasional) along these fractures, also deposition of almost pure coarsely dolomite in isolated intervals up to 1m. Some segregation of qtz and calcite	15.71-38.5 (22.79)	20 30	← Gradual change	Sp, py as blebs and grains in mottled grey white recrystallised dolomite - calcite - qtz. Some weak dolomite - fluoite - calcite - qtz - py - po veining. Distribution of sulphides patchy, reflecting patchy alteration on a scale of 1-2 m. 2%
DOLOMITE SULPHIDE LORE, serpentine / talc	38.5-40.86 (2.36)	40	← Gradual change	po, py, dissem fluoite (weakly foliated 35-50° 15-20%
SERICITE SLTSTONES AND GRAY QUARTZITES. And siliceous greenish silstones with brecciated quartzites. Brecciated	40.86-46.10 (5.24)		← interbedded contacts gradual, 50°	po, py as small blebs and stringers in fine dark fracturing. py, monazite - sp - po veins 2-3%
END OF HOLE 46.1		50		



086036

SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97315		7.4	9.4	2.0	30									
16		9.4	11.4	"	4650									
17		11.4	13.4	"	1600									
18		13.4	15.7	2.3	4400									
19		15.7	17.7	2.0	120									
20		23.3	25.3	"	36									
21		25.3	27.3	"	50									
22		27.3	30.2	2.9	28									
23		34.4	36.4	2.0	14									
24		36.4	38.4	"	120									
25		38.4	40.9	2.5	2500									
26		40.9	42.9	2.0	20									

Notes: — Sn by XRF B. Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT

ASSAY SUMMARY SHEET HOLE NO. MBD 21037

SAMPLE TYPE : DRILL CORE

FROM 7.4 TO 42.9

086037

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

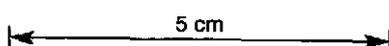
Hole Number : MBD 22  
Location : 1964.91 N 939.94 E grid  
Elevation : 642.97 m  
Dip : 55°  
Azimuth : 360° grid  
Total Depth : 36.7 m  
Surveys : Tropari every 30 m  
Commenced : 30.1.80 Completed: 31.1.80  
Logged by : G. Broadbent  
Drilling Contractor : Longyear Australia Pty. Ltd.

SUMMARY DRILL LOG M30 22

Veins over 50 mm

086039  
Mineralisation (excluding veins over 50 mm)

TRICONE - 1.0m, No Core		0-1.0	0			
HARD GREY QUARTZITE, well fractured	1.0-3.0 (2.0)			Broken contact.	Very finely disseminated, py. weathered Py, fluorite, trace po, sp, (consistent)	1%
DOLOMITE SULPHIDE LOOSE SERPENTINE (calc)	2.0-4.5 (1.5)			Broken contact.		15-20%
GREY SILICEOUS DOLOMITE. Brecciated and weakly recrystallised. Some thin siliceous siltstone bands	4.5-11.62 (7.12)			Bedding 50°	Sp, trace po associated with weak recrystallisation. Some weak qtz- carbonate - fluorite - py veining	3-5%
DOLOMITE SULPHIDE LOOSE. 11.6-16.8 Banded talc-serpentine, with patches of qtz-carbonate to 50cm. 16.8-22.4 Talc-serpentine, massive, weakly foliated. po varies 30-40% 24-32.6 Carbonates - qtz - talc - serpentine not obviously foliated, sulphides (po) 50%	11.62-32.67 (21.05)			Contact irregular. Foliation in po 55° Foliation in po 80° Foliation in po 50°	po, fluorite (variable), py, trace arsenic, sp, cp disseminated within po as irregular blebs to 1-2mm. Py occurs on the margins of po grains, and as small stockwork -type accumulations within po. Sulphides are weakly oxidised in talc- serpentine host rock.	35% 70% 50%
SEALICITE WITH SPHALERITE AND GREY QUARTZITE Hard, greenish shales, gneisses, brecciated and concreted.	32.67-36.7 (4.03)			Contact interbedded transitional. 40° Carbonate - fluorite - talc - py - po - sp - arsenic breccia zones to 200 mm.	Disseminated po, py, carbonate, fluorite, talc - py - sp - arsenic veining in shattered zones.	10%
END OF HOLE 36.7m.						



MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

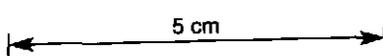
Hole Number : MBD 23  
Location : 1939.92 N 939.97 E grid  
Elevation : 642.28 m  
Dip : 90°  
Azimuth : -  
Total Depth : 44 m  
Surveys : Tropari every 40 m  
Commenced : 29.1.80 Completed: 29.1.80  
Logged by : G. Broadbent  
Drilling Contractor : Longyear Australia Pty. Ltd.

SUMMARY DRILL LOG MBD 23

Veins over 50mm.

086041  
Mineralisation (excluding veins over 50mm)

TRICONE TO 3m - NO CORE	0-3.0			
GREY SILICEOUS DOLOMITE. Core broken with soft brown Fe oxides on fractures	3.0-7.2 (4.2)			Sulphides absent, presumably weathered 0
DOLOMITE SULPHIDE LODGE. 7.2-11.2 Talc-qtz-carbonate with minor black serpentine. 11.2-16.7 Dark green talc, minor serpentine 16.7-23 Alternating carbonate-talc-qtz and talc-serpentine on a metre or so scale. Fine contorted irregular banding.	7.2-23.0 (15.8)	Broken Contact.		po, py, trace cp, v. sp. Sulphides have variable concentrations 10-90% Fluorite variable trace to 5%. 7.2-9.5 Patches of f.g. disseminated calcite in qtz-carbonate 2% 16.7-23 Fluorite up to 2-5%
GREY SILICEOUS DOLOMITE. Hard, grey, silicified with weak alteration along fine fractures to talc-serpentine, with some microcrystallisation. Some bands show stronger talc alteration.	23.0-35.7 (12.7)	Contact indistinct. Fully fractured 40-50° LCA. Some crushed zones to 30 cm - minor faulting.		Sp, faint trace po and py as blebs Sparse calcite - fluorite - qtz - py - sp - po veins. Increasing mineralisation towards base.
DOLOMITE SULPHIDE LODGE. Bluish green talc-serpentine with minor carbonates	35.7-40.5 (4.8)	Gradual change		Fluorite, py, po. Fluorite blue, green colourless and brown, disseminated Sulphides disseminated
SERPENTINE SILTY SHALES AND SILTSTONES	40.5-44.0 (3.5)	Interbedded, 60°		po, trace py blebs and stringers qtz-carbonate veins etc.
END OF HOLE 44.0 m.				





MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

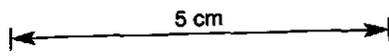
Hole Number : MBD 24  
Location : 1864.31 N 920.05 E grid  
Elevation : 637.08 m  
Dip : 75°  
Azimuth : 180° grid  
Total Depth : 101 m  
Surveys : Tropari every 30m  
Commenced : 25.1.80 Completed: 28.1.80  
Logged by : G. Broadbent  
Drilling Contractor : Longyear Australia Pty. Ltd.

SUMMARY LOG M60 24

Veins over 50 mm.

Mineralisation (excluding veins over 50 mm.)

TRICONE TO 3.0 m - No Core	O 30			
<p>MASSIVE BRECCIATED SILTSTONES WITH THINLY BEDDED BLACK SHALES. Highly brecciated - soft pebble conglomerate texture with black carbonaceous shale in interstices. Fractures and broken by later shearing. Overall the rock mass is a very dark grey, fairly soft. Bedding is difficult to determine due to soft sediment disruption and occasional (?) re-sedimentation.</p>	<p>30-59.3 (56.3)</p>	<p>0-30 m very fractured and broken - fine unmineralising fractures filled with yellow clay every 1 cm at all angles to core. 20-38 yellow fractures decrease in abundance to every few cm and become sparse after 36 m. ← Bedding 40° ← Bedding 45°</p>	<p>Pg, po, as rare blebs and grains to 5 x 6 mm. Some finely disseminated po in silt - bedded, local enrichment. Sparse carbonate - qtz - fluoite - Fe sulphide veins up to</p>	<p>2-3%</p>
<p>MASSIVE SILTSTONES AND QUARTZITES. Medium - dark greys, hard, silicified. The siltstones are argillaceous, and have a faint greenish tinge - sericitic? Brecciated - soft sediment disruption. Some thin pale grey quartzose siltstones.</p>	<p>59.3-80.47 (11-17)</p>	<p>Gradual Transition to ← Bedding 50° ← Bedding 25° ← Bedding 12° 120 mm py, sp, arsen with qtz abundant 45° Small fault pug 10 cm.</p>	<p>Rare dissemination of pg, po. Sparse carbonate - py, qtz - fluoite - sulphide veins up to 10 mm</p>	<p>2%</p>
<p>QUARTZ-FELSPAR PORPHYRY. Matrix f. qz, pinkish cream. Pheno-crysts up to 60% (rock has a sugary texture). Qtz 5-30%, turbid, white up to 6 x 5 mm. Felspar 7-15%, altered to pinkish brown (some grains indistinct) to 3 mm.</p>	<p>80.47-91.28 (16-81)</p>	<p>Contains irregular, 40°. Well jointed and fractured.</p>	<p>Pg, trace marcasite, sp, arsen, rare granular calcite - 1 mm. Fluoite variable, up to 10%. Sulphides occur as discrete blebs and grains (Pg has marcasite inclusions), as dark grey f. q. aggregates to 6 x 6 mm. Concentration variable 5-25%.</p>	<p>15-20%</p>
<p>BRECCIATED SILTSTONES AND SHALES (see 3.0-59.3) Hard, silicified</p>	<p>91.28-101.0 (2.72)</p>	<p>← Contact 45° (Broken core)</p>	<p>Mixed carbonate, fluoite - sp, pg, po veins</p>	<p>1%</p>
<p>END OF HOLE 101 m.</p>				



SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
47212		78.5	80.5	2.0	3250									
13		80.5	82.5	"	600									
14		82.5	84.5	"	720									
15		84.5	86.5	"	900									
16		86.5	88.5	"	920									
17		88.5	90.5	"	1150									
18		90.5	92.5	"	720									
19		92.5	94.5	"	2700									
220		94.5	97.3	2.8	1600									
21		97.3	99.3	2.0	40									

Notes:— Sn by XRF B<sub>1</sub> Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT

ASSAY SUMMARY SHEET HOLE NO. MBD24

SAMPLE TYPE : DRILL CORE

FROM 78.5 TO 99.3

086045

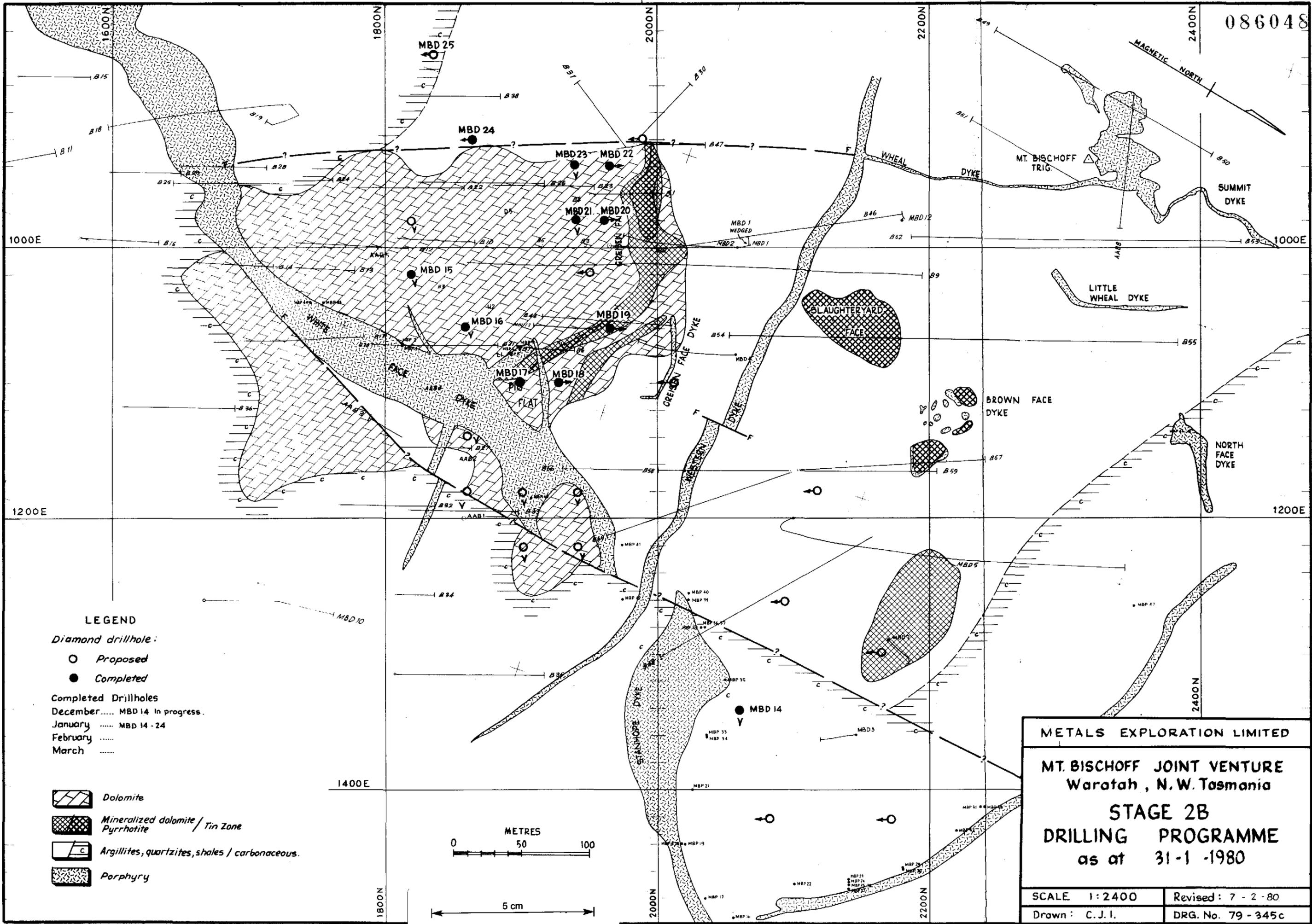
SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
96428		19.8	21.8	2.0	3300									
29		21.8	23.8	"	310									
30		23.8	25.8	"	2200									
31		25.8	27.8	"	1.86%									
32		27.8	29.0	1.2	1.32%									
33		31.7	33.7	2.0	1.63%									
34		33.7	35.7	"	2.12%									
35		35.7	37.7	"	3700									
36		37.7	39.7	"	680									
37		39.7	41.7	"	100									
38		41.7	43.7	"	75									
39		43.7	45.7	"	16									
96440		45.7	48.2	2.5	12									

Notes:— XRF Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. B1  
 SAMPLE TYPE : DRILL CORE FROM 19.8 TO 48.2

086046





**LEGEND**

Diamond drillhole:

- Proposed
- Completed

Completed Drillholes

- December..... MBD 14 In progress.
- January ..... MBD 14 - 24
- February .....
- March .....

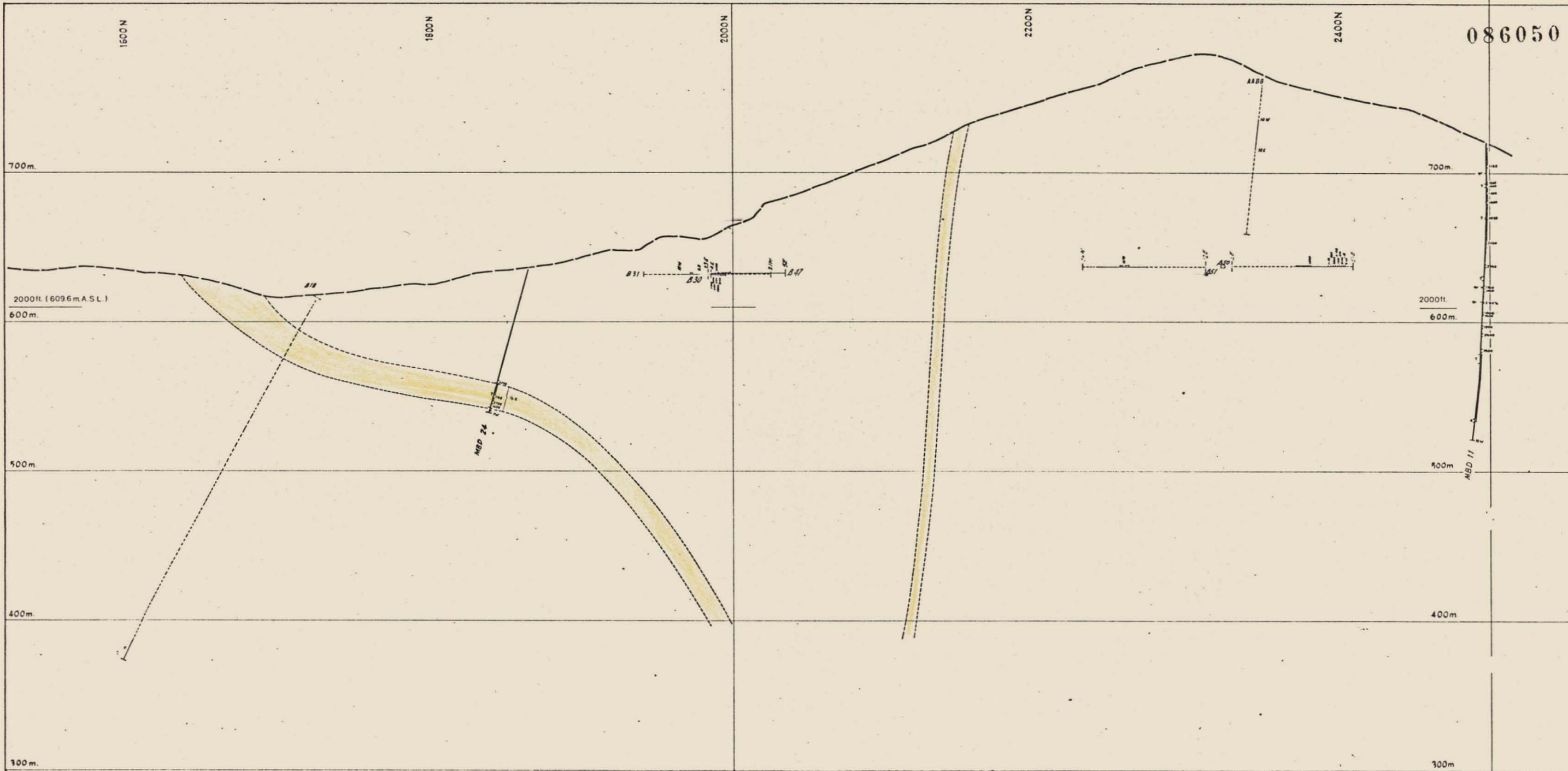
- Dolomite
- Mineralized dolomite / Tin Zone / Pyrrhotite
- Argillites, quartzites, shales / carbonaceous.
- Porphyry



5 cm

METALS EXPLORATION LIMITED	
MT. BISCHOFF JOINT VENTURE Waratah, N.W. Tasmania	
STAGE 2B DRILLING PROGRAMME as at 31-1-1980	
SCALE 1:2400	Revised: 7 - 2 - 80
Drawn: C.J.I.	DRG. No. 79 - 345c





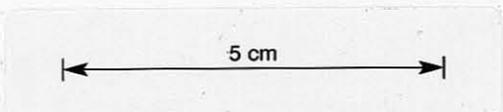
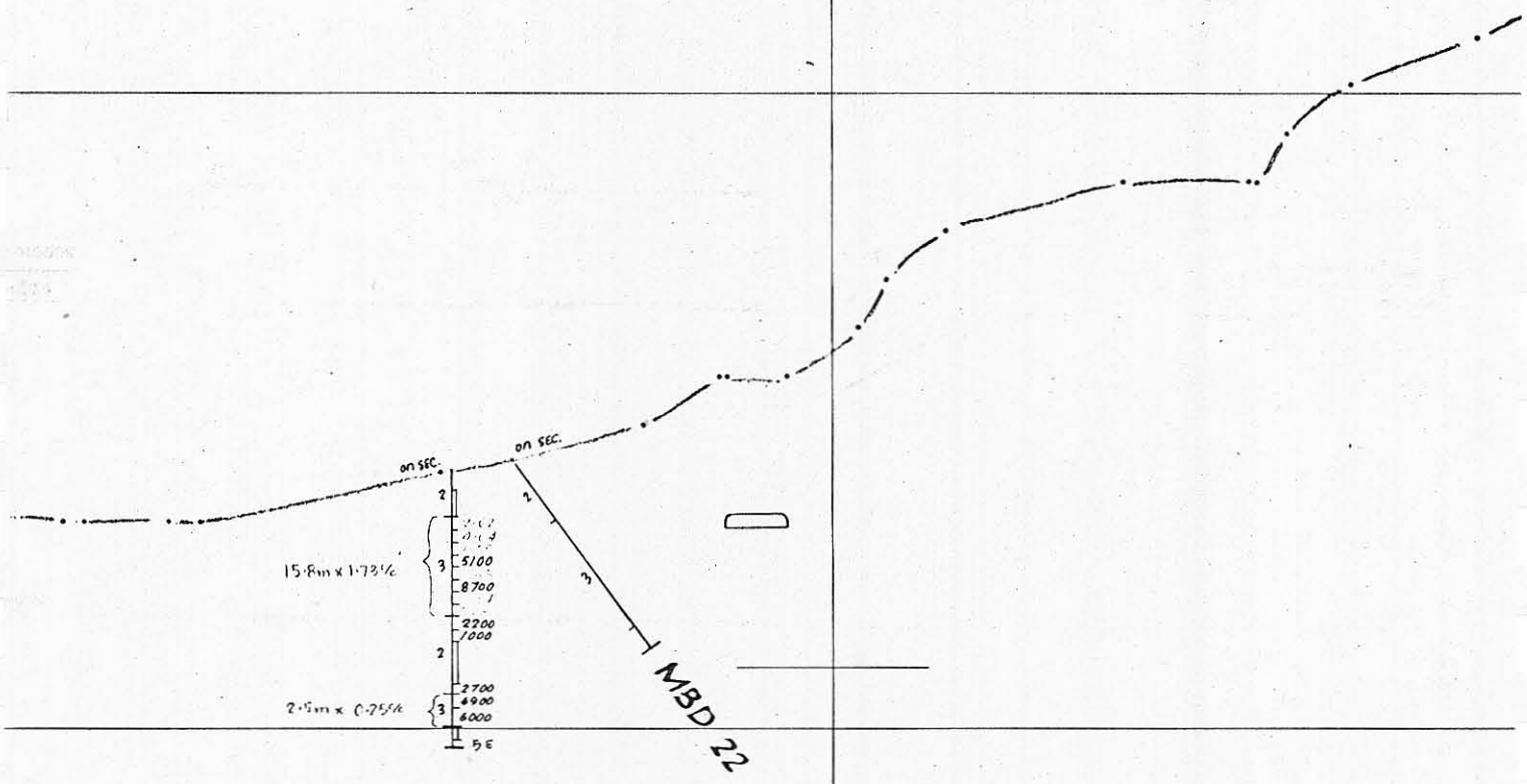
MASTER SECTION DRG. NO. 79-054A

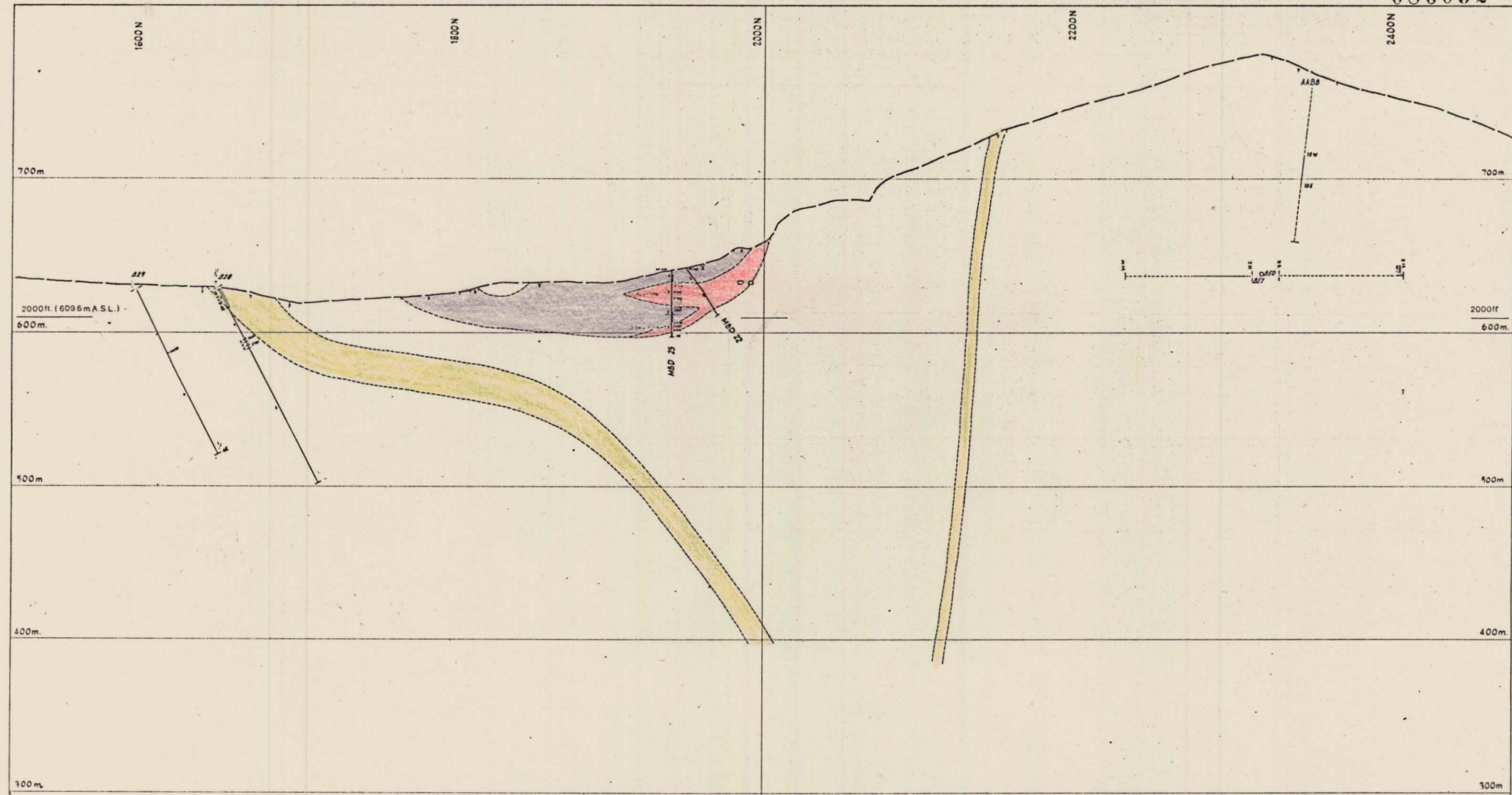


- Z DOLOMITE
- Z/L MINERALIZED DOLOMITE / TIN ZONE
- a PYRRHOTITE
- a ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- P PORPHYRY
- INTERPRETED GEOLOGICAL CONTACT

METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 920 mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE DEC 1978    REVISED    DRG. NO. 79-008A



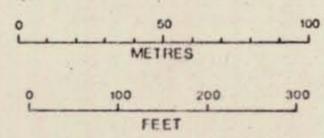


DDM  
 1000 ppm  
 500 ppm  
 100 ppm

DOLOMITE  
 MINERALIZED DOLOMITE / TIN ZONE  
 PIERROTITE  
 ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS  
 PORPHYRY

200m. 200m.

5 cm



METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 940 mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE:            REVISED: SEPT '19    DRG. NO. 79-009

2000N

(6.5W) D5

D4(2W)

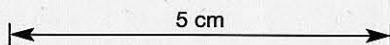
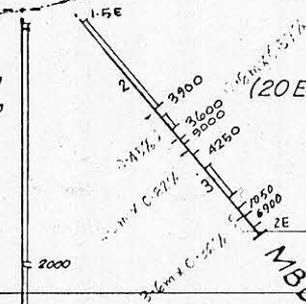
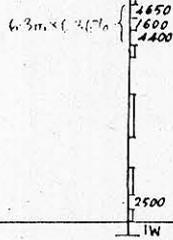
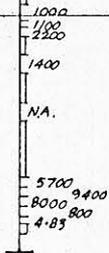
on sec

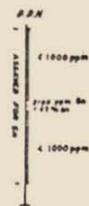
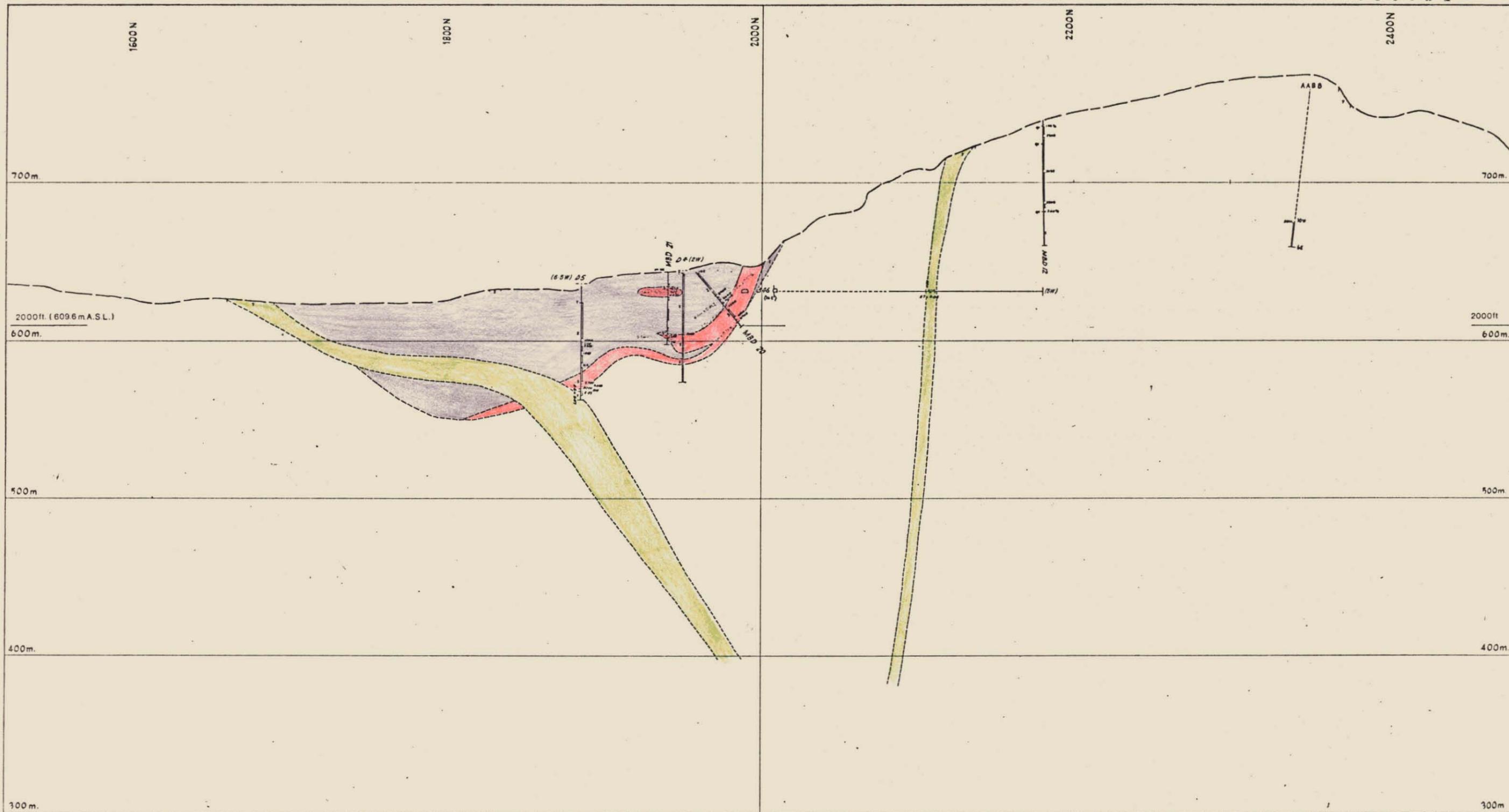
6.3m x 6.3m

MBD 21

MBD 20

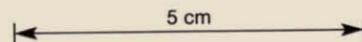
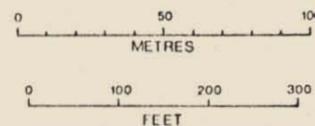
(20E) B46





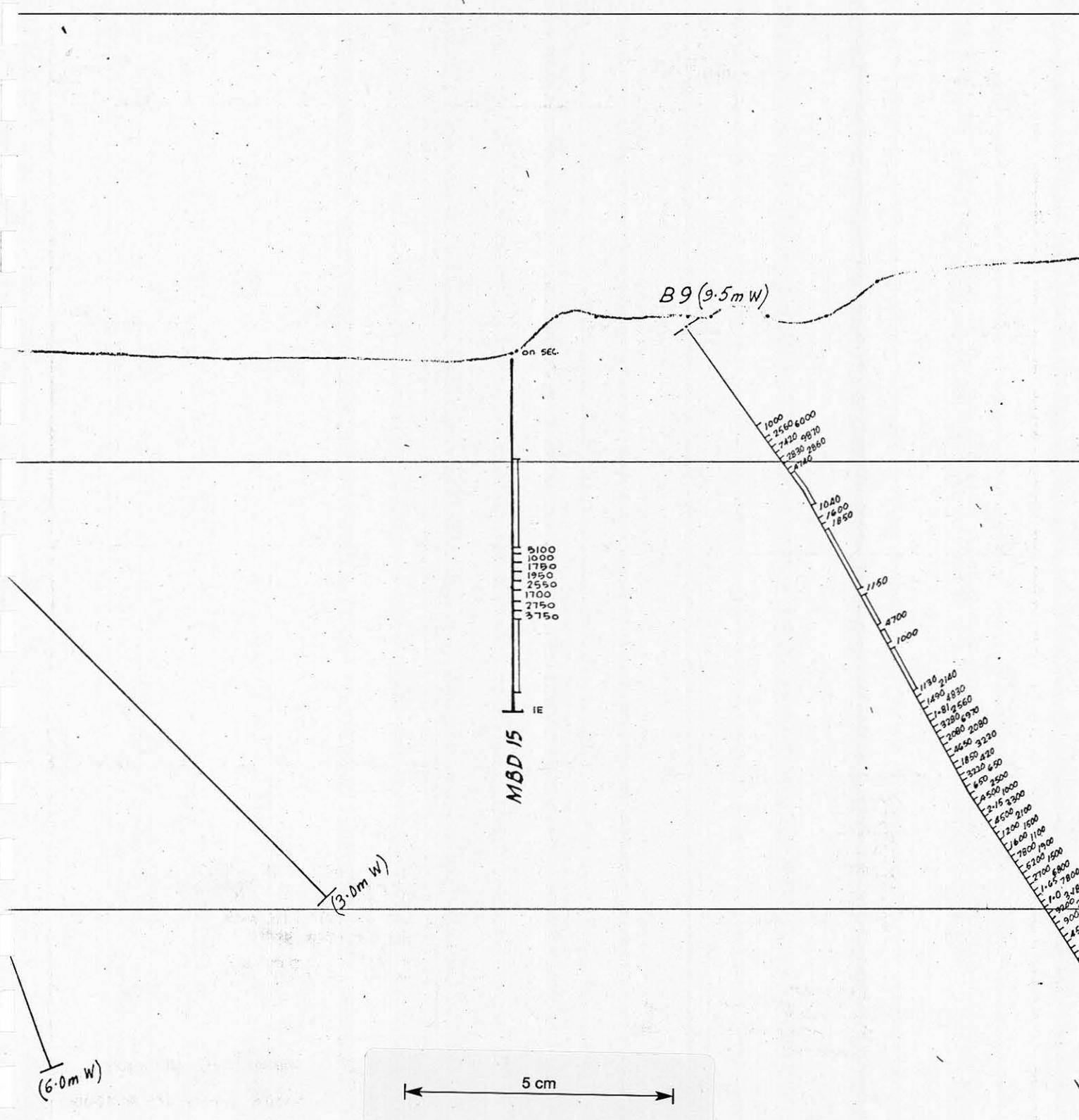
- DOLOMITE
- MINERALIZED DOLOMITE / TIN ZONE
- PYRROPHOTITE
- ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- PORPHYRY
- INTERPRETED GEOLOGICAL CONTACT

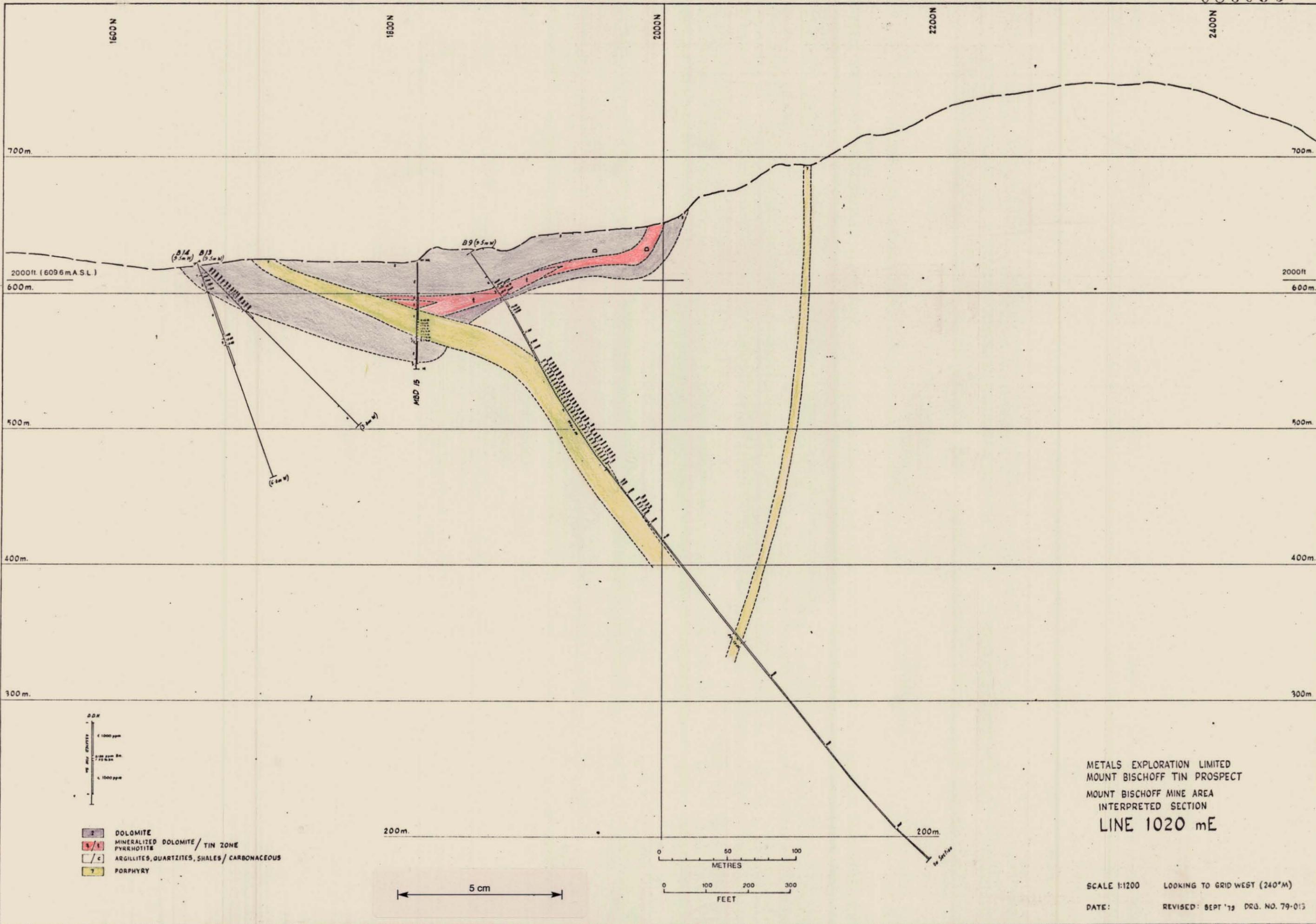
200m. 200m.



METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 980 mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE:            REVISED:            DRG. NO. 79-011





1600 N

1800 N

2000 N

2200 N

2400 N

700m.

700m.

2000ft. (6096 m A.S.L.)

600m.

2000ft

600m.

500m.

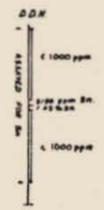
500m.

400m.

400m.

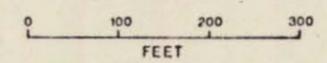
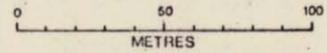
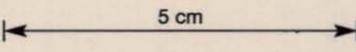
300m.

300m.



- DOLOMITE
- MINERALIZED DOLOMITE / TIN ZONE
- PYRRHOTITE
- ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- PORPHYRY

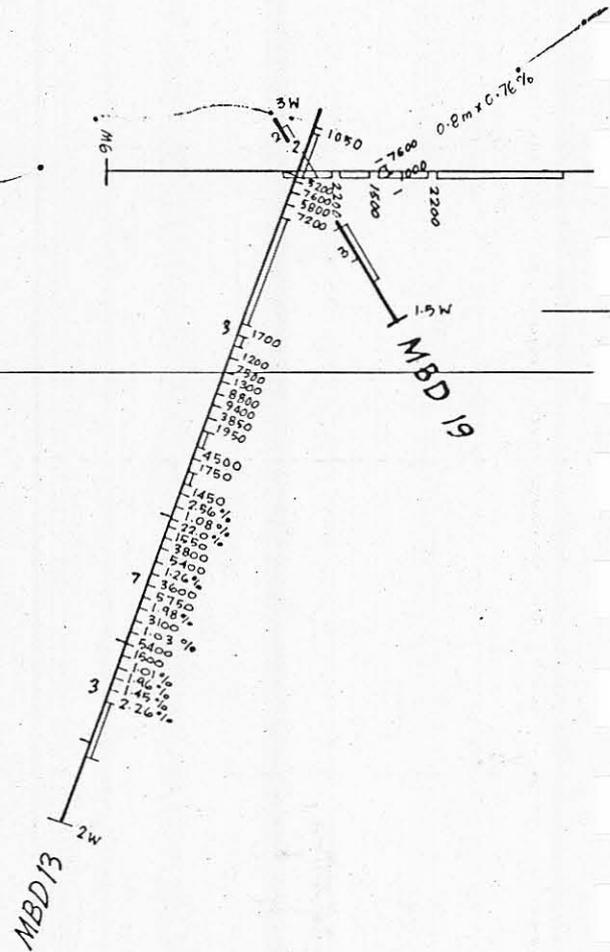
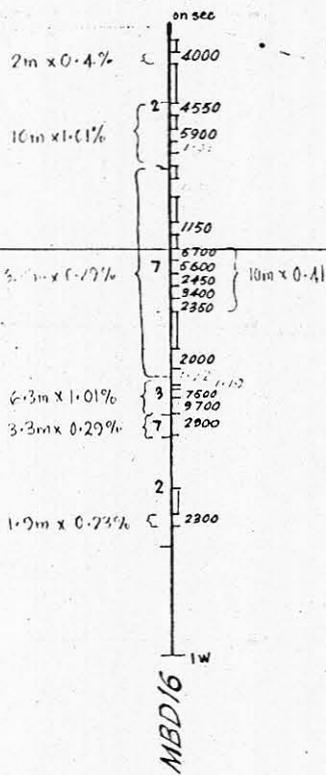
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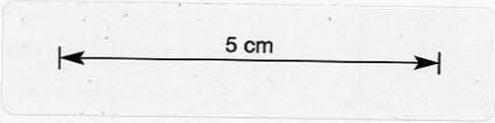
200m.

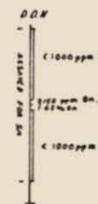
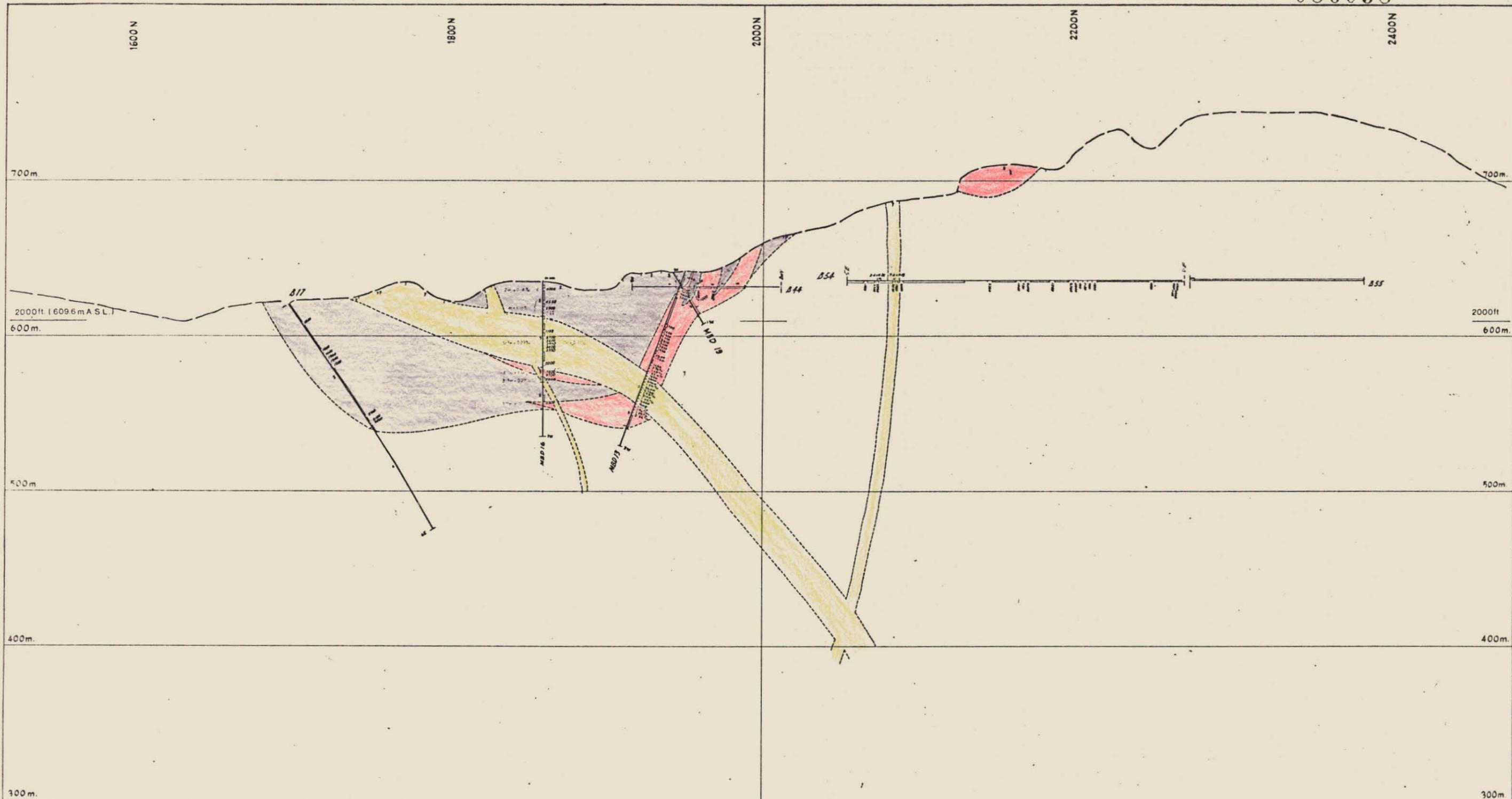
METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 1020 mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE:            REVISED: SEPT '79    DRG. NO. 79-013

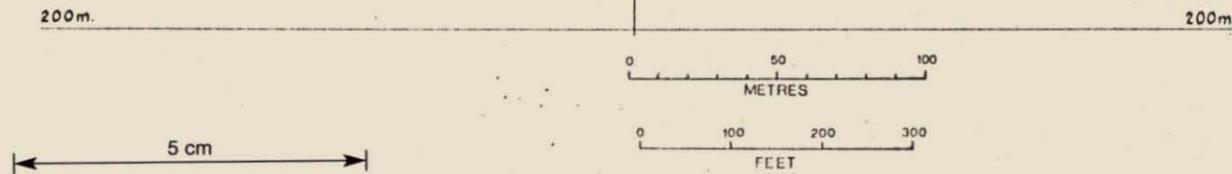


GE





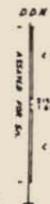
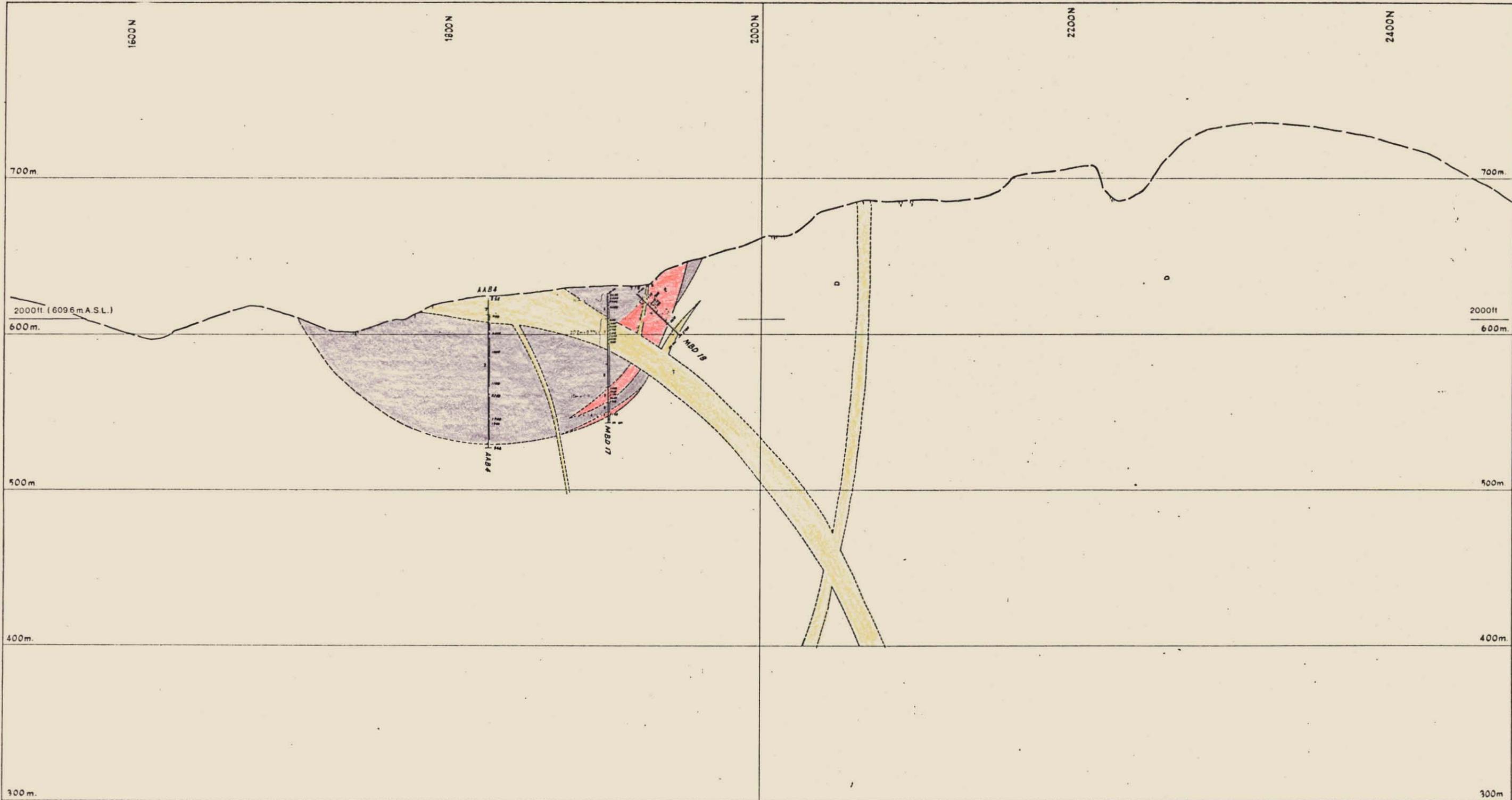
- DOLOMITE
- MINERALIZED DOLOMITE / TIN ZONE
- PYRRHOTITE
- ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- PORPHYRY
- INTERPRETED GEOLOGICAL CONTACT



METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 1060 mE**

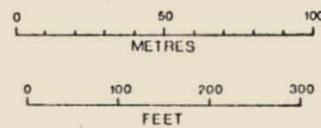
SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE:            REVISED: JUL 79    DRG. NO. 79-019





- DOLOMITE
- MINERALIZED DOLOMITE / TIN ZONE
- PYRRHOTITE
- ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- PORPHYRY

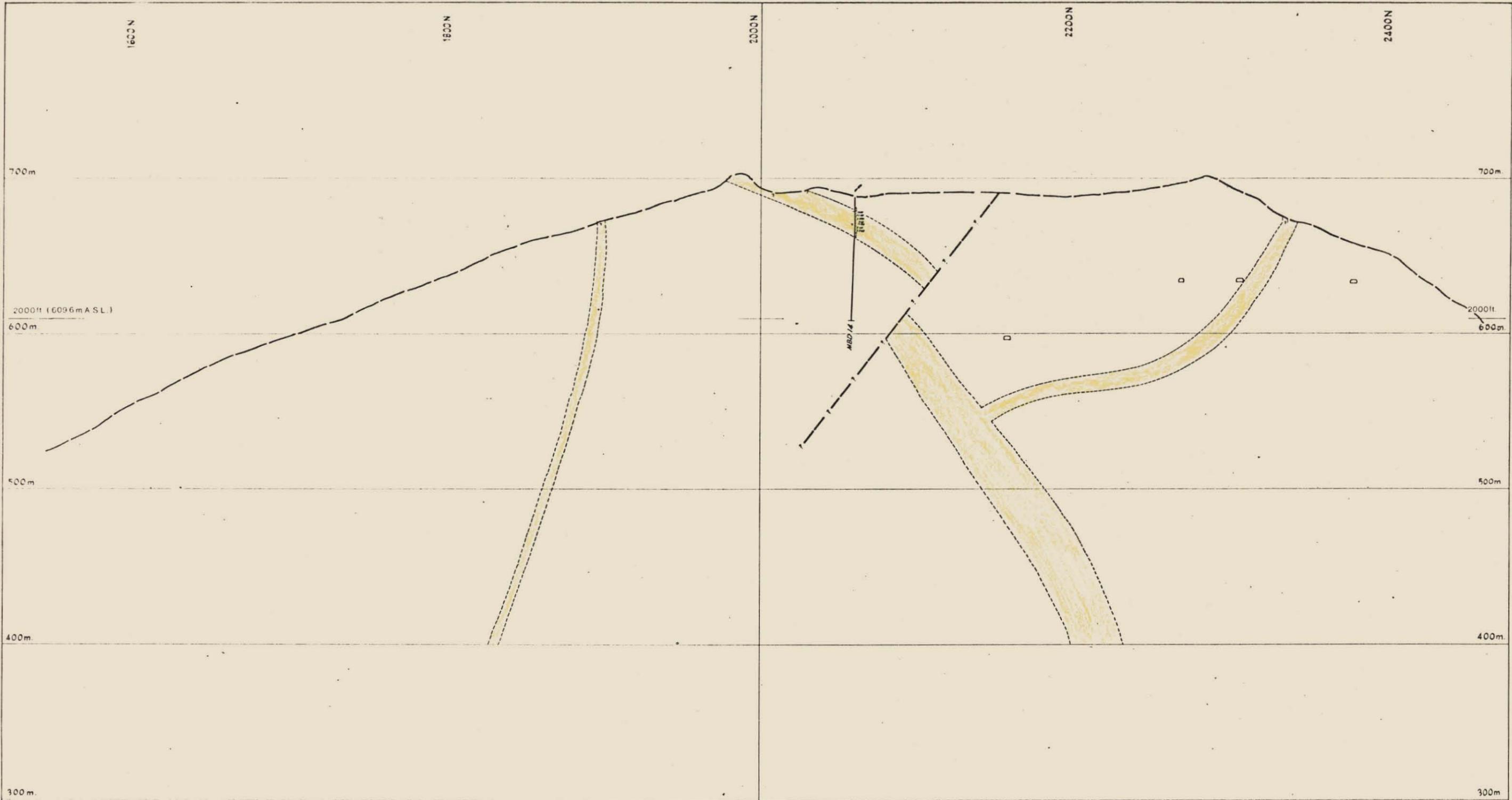
200m. 200m.



5 cm

METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 1100 mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE:                    REVISED: SEPT '79    DRG. NO. 79-017



0.00m  
10000 ppm  
2000 ppm  
10000 ppm

2	DOLOMITE
3/t	MINERALIZED DOLOMITE / TIN ZONE
/c	PYRRHOTITE
/c	ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
7	PORPHYRY

200m

5 cm

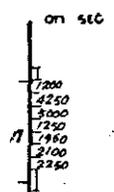
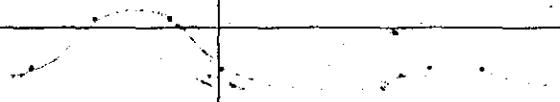
0 50 100 METRES

0 100 200 300 FEET

METALS EXPLORATION LIMITED  
MOUNT BISCHOFF TIN PROSPECT  
MOUNT BISCHOFF MINE AREA  
INTERPRETED SECTION  
**LINE 1340 mE**

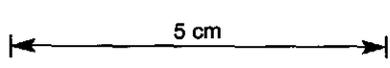
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DATE:            REVISED: SEPT '79    DRG. NO. 79-029

2000N



MBD 14

D



MT. BISCHOFF TIN PROSPECTEXPLORATION LICENCE 13/79TASMANIAREPORT FOR FEBRUARY 1980

Distribution:	Copy No.		
		1:	<u>Department of Mines, Tasmania</u>
	" "	2:	CRAE
	" "	3:	CRAE
	" "	4:	AAA (Comstaff)
	" "	5:	AAA (Preussag)
	" "	6:	K.E. Fletcher
	" "	7:	J.E. Lynch
	" "	8:	A. Jannink
	" "	9:	Circulation - Library
	" "	10:	Spare Copy

A. Jannink

25.3.80

MT. BISCHOFF TIN PROSPECTTASMANIAREPORT FOR FEBRUARY, 1980GENERAL:

Diamond drilling continued during the month with two drill rigs on site. By the end of February 1980, 1732.3 metres had been completed out of the programmed schedule of 1922 metres, leaving the programme 189.7 metres behind schedule. The total programme involves 2400 metres plus an estimated 1000 metres of un-allotted drilling. The main delays experienced were due to slow coring of bad ground and of hard quartzite and porphyry rock types.

Ground magnetics, geochemistry and geology were completed on the H. Brooks grid. Gridding was continued and ground magnetics commenced on the Housego grid in the Fook's Lode area.

Eight drill core samples were despatched to AMDEL for metallurgical studies. Four samples were of porphyry rock type and four were of dolomite sulphide lode.

Personnel employed on site were 2 geologists, 1 technician and two field assistants.

DIAMOND DRILLING:

During the month 9 holes were completed and 2 are in progress. A total of 934.6 metres was completed out of a scheduled 1010 metres. Troubles were encountered in hole MBD 29 when the drill rods jammed in the hole after drilling 44 metres, and a new hole was commenced (MBD 29A) some 3 metres away. The smaller BBS1 drill rig will be taken off site after it has completed its present hole (MBD 35) and deepened hole MBD 21 by some 20 metres. Drilling of the dolomite targets will have been completed when the current holes are finished leaving the current programme with a further 5 holes on porphyry targets.

Previous assay results above 1% Sn have been checked by

XRF B2 method (AMDEL) and all significant assay results for the Stage 2B programme to the end of February 1980 are listed below:

<u>Hole No.</u>	<u>From</u>	<u>To</u>	<u>Width(m)</u>	<u>%Sn</u>	<u>Rock Type</u>
MBD 14	9.2	24.8	15.6	0.23	Porphyry
MBD 15	3.0	7.0	4.0	0.88	Dolomite
	35.3	55.8	20.5	0.17	Porphyry
	55.8	59.8	4.0	0.33	Porphyry/Dolomite
MBD 16	5.0	7.0	2.0	0.40	Dolomite
	13.0	23.0	10.0	1.08	Dolomite
	23.0	55.9	32.9	0.30	Porphyry
	55.9	62.2	6.3	1.07	Dolomite
	62.2	65.5	3.3	0.29	Porphyry
	77.9	79.8	1.9	0.23	Dolomite
MBD 17	0	10.0	10.0	0.37	Dolomite
	15.9	36.1	20.2	0.30	Porphyry
	60.1	70.1	10.0	0.40	Dolomite
	76.1	78.6	2.5	0.42	Dolomite
MBD 18	5.7	6.7	1.0	1.02	Dolomite
	6.7	8.8	2.1	0.25	Porphyry
	8.8	28.3	19.5	2.37	Dolomite
MBD 19	15.9	16.7	0.8	0.76	Dolomite
MBD 20	19.2	31.8	12.6	0.57	Dolomite
	37.8	41.3	3.5	0.36	Dolomite
MBD 21	9.4	15.7	6.3	0.36	Dolomite
	38.4	40.9	2.5	0.25	Dolomite
MBD 22	3.0	4.7	1.7	0.55	Dolomite
	11.6	29.6	18.0	0.45	Dolomite
	34.7	36.7	2.0	0.29	Sediments
MBD 23	7.3	23.1	15.8	1.90	Dolomite
	35.7	40.6	4.9	0.64	Dolomite
MBD 24	80.5	97.3	16.8	0.12	Porphyry

<u>Hole No.</u>	<u>From</u>	<u>To</u>	<u>Width(m)</u>	<u>%Sn</u>	<u>Rock Type</u>
MBD 25	66.0	88.7	22.7	0.16	Porphyry
	98.9	101.7	2.8	0.28	Porphyry
	104.7	138.6	33.9	0.56	Porphyry
MBD 26	176.8	178.8	2.0	0.58	Sediments
	178.8	196.2	17.4	0.24	Porphyry
MBD 27	19.0	21.0	2.0	0.47	Dolomite
	29.0	33.0	4.0	0.60	Dolomite
	41.0	45.0	4.0	0.25	Dolomite
	49.0	59.0	10.0	0.60	Dolomite
	63.0	65.0	2.0	0.73	Dolomite
	86.2	104.8	18.6	0.14	Porphyry
MBD 28	4.3	12.6	8.3	0.46	Porphyry
	104.8	106.8	2.0	0.26	Sediments
	106.8	130.0	23.2	0.21	Porphyry
	130.0	132.7	2.7	0.29	Sediments
	132.7	133.7	1.0	0.21	Porphyry
	135.7	136.8	1.1	0.22	Sediments
MBD 29	15.0	17.0	2.0	0.20	Dolomite
	39.0	42.2	3.2	0.71	Dolomite
MBD 29A	In progress				
MBD 30	54.0	56.0	2.0	0.22	Dolomite
MBD 31	1.5	7.5	6.0	0.24	Porphyry
	7.5	27.5	20.0	0.49	Dolomite/clay
MBD 32	3.0	7.3	4.3	0.19	Porphyry
MBD 33	4.4	6.4	2.0	0.22	Sediments
MBD 34	No significant results				
MBD 35	In progress				

OLD CORE:

Only a small amount of "old" core was relogged during the month.

H. BROOKS GRID:

Geological logging of the hand auger samples has shown that the contact zone between the Precambrian and Cambrian rocks extends for about 750 metres before being obscured by Tertiary basalt to the east. Outcrop in the area is rare, but the regional strike is (grid) east-west and dips are to the south.

The Ground magnetic survey has revealed two lines of anomalies parallel to the Precambrian/Cambrian contact zone and overlying the Cambrian rocks some 40 to 140 metres (for the first line of anomalies) and about 220 metres (for the second line) from the contact. The anomalies are of the order of 500 gammas with one large anomaly over the basalt of 1000 gammas. The survey was conducted over lines 120 metres apart with readings taken every 10 metres on each line.

The spacing for the hand auger samples was 40 metres on each of the 120 metre apart lines. Samples were analysed for tin, copper, lead, zinc, nickel. No anomalous zones were found for tin or lead with samples generally being of the order of 10 ppm. Copper, zinc and nickel reflected the different backgrounds of the Precambrian and Cambrian rock types as geologically mapped, with the Precambrian having very low backgrounds compared to the Cambrian (order of 10:1). Slight anomalous copper and zinc values, of the order of twice background, were found at the base of the Cambrian over a strike length of about 250 metres. Higher nickel values were found over the Tertiary basalt.

HOUSEGO GRID:

Five lines of ground magnetics have been surveyed on the Housego grid. Three of the lines covered airborne magnetic anomaly 10 by the Waratah River but failed to confirm an anomaly of any appreciable size.

At the north-eastern end of the grid and to the north of the basalt cover, an appreciable anomaly (airborne magnetic anomaly 6) of 1000 to 1500 gammas was recorded.

METALLURGY:

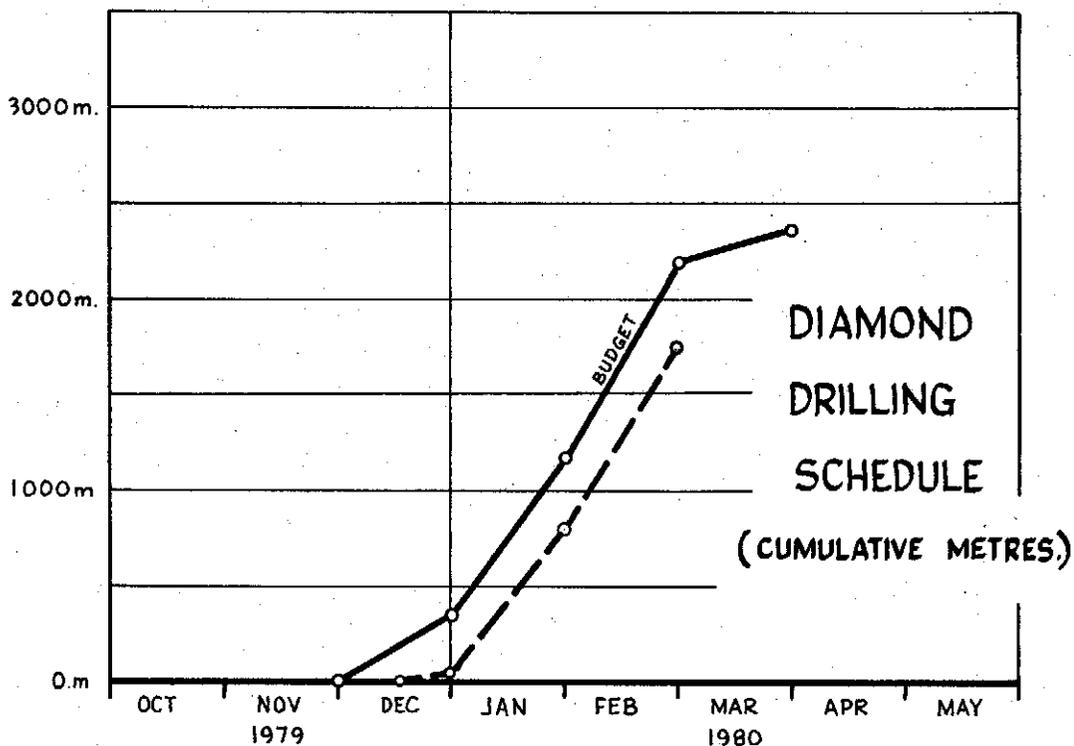
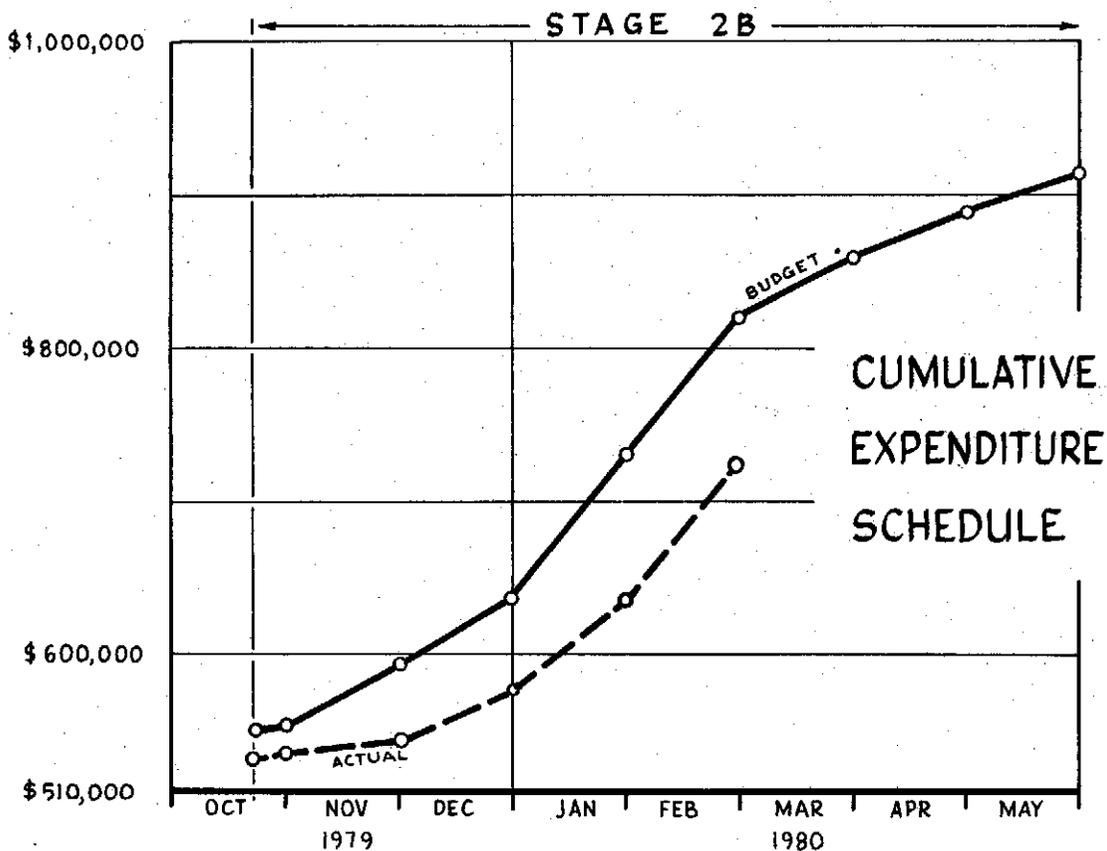
Eight samples of drill core were despatched to AMDEL for metallurgical studies. The estimated total weight of the samples was 750kg. The metallurgical studies have been commenced and some head assays for the samples have been received.

The specifications of the samples are as follows:-

<u>Sample No.</u>	<u>Rock Type</u>	<u>Drill Hole</u>	<u>Interval</u>	<u>%Sn</u>	<u>Acid Soluble %Sn</u>	<u>%Sn</u>	<u>Acid Soluble %Sn</u>
97528	Porphyry	MBD 14	9.2-24.8	0.23	0.02 )	0.24	0.02
97529	"	MBD 15	43.3-55.8	0.26	0.02 )		
97530	"	MBD 16	23.0-55.9	0.26	0.02 )	0.29	0.02
97531	"	MBD 17	15.9-31.9	0.33	0.02 )		
97532	Dolomite	MBD 17	59.6-70.6	0.34	0.02 )	1.40	0.05
97533	"	MBD 18	5.7- 6.9 and 8.8-29.3	2.38	0.09 )		
97534	"	MBD 20	18.7-32.3	0.61	0.01 )	1.20	0.01
97535	"	MBD 23	7.3-25.1 and 35.7-40.6	1.72	0.02 )		

MT BISCHOFF PROJECT CRA/MELDETAILED EXPENDITURE STATEMENT FOR FEBRUARY 1980STAGE 2B

	<u>THIS MONTH</u>		<u>STAGE 2B TO DATE</u>	
	<u>BUDGET</u>	<u>ACTUAL</u>	<u>BUDGET</u>	<u>ACTUAL</u>
<u>Field Costs</u>				
Technical Services	14,500	11,593	55,700	37,042
Travel & Accommodation	700	173	2,800	1,594
Labour	1,800	1,384	7,200	6,227
Camp & Messing	1,000	651	4,850	3,052
Vehicles	1,000	931	4,000	3,532
Equipment Rental	450	50	1,150	250
General Expenses and Consumables	1,250	7,609	24,050	21,783
Lease Expenses			500	148
Geochemical Surveys	-	595		595
Track Cutting	-	-	3,750	-
Diamond Drilling	55,700	68,150	131,700	108,783
Site Preparation		-	4,500	3,870
Metallurgical	10,000	1,011	25,000	1,011
Assays	2,000	-	5,240	292
<u>Capital Items</u>				
Core Shed		-	5,100	5,085
	<u>88,400</u>	<u>92,147</u>	<u>275,540</u>	<u>193,264</u>
<u>Over Runs</u>				
Metallurgical - C.R.A.E.				23,500
Stage 1 - M.E.L.				11,308
<u>STAGE 2A</u>				198,818
<u>STAGE 2A - EARLY START</u>				29,020
<u>STAGE 1</u>				270,000
<u>CUMULATIVE EXPENDITURE TO DATE</u>				<u>725,910</u>



MT. BISCHOFF

STAGE 2B SUMMARY  
as at 29 - 2 - 80

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 25

Location : 1807.77 N 860.07 E grid

Elevation : 619.08 m

Dip : 80°

Azimuth : 180° grid

Total Depth : 143.3 m

Surveys : Tropari every 40 m

Commenced : 29.1.80 Completed: 3.2.80

Logged By : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT <small>Depth: Description and notes inserted about 10cm</small>	MINERALISATION	BILLED ANALYSIS
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FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BERRYMAN & W.R. KYALL (ED), MONOGRAPH NO. 3, AUSTRALIAN INSTITUTE OF MINING AND METALLURGY, 1976

<p>↑</p> <p>240m (1:1000), 120m (1:500), 60m (1:250)</p> <p>AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE</p> <p>↓</p>	0	30m. TRICONE TO 30m - NO CORE			
	20	30-48.9 (18.9) DARK GREY SILTSTONE'S BLACK CARBONACEOUS SHALES and minor SANDSTONES	Siltstones mostly clay rich and dark grey, some light grey quartzose beds. Variable proportions of fine grained carbonaceous shale, locally as abundant as the siltstone, but overall less. The sandstones are medium grey and occur as massive beds to 1.5m. Quite well bedded - the siltstones and black shales are finely bedded, with minor folding, and intervals of brecciation (soft sediment disintegration). 24.4-20.6 Interbedded siltstone and quartzite, hard and indurated, brecciated.	Pg 2 po, distributed in silty beds, occasionally as beds to 2x1.5 cm. Sporadic py-etc-debitate. Anomalous po-sp. areas varying TOTAL 2-3%, locally 5%	
	40	48.9-62.0 (13.1) MASSIVE SILTSTONES WITH MINOR SANDSTONES and SILTY SHALE	Medium grey, brecciated, with dark grey silty shales and thin quartzite beds.	Pg, disse. some beds to 10x5mm, sparse. qh-carbonate-pg-sp varying. TOTAL 2-3%	
	60	62.0-66.0 (4.0) SILTY SHALE	Medium grey, brecciated, with dark grey silty shales and thin quartzite beds.	Pg-Quartzite-qt-carbonate varying, 1%	
	80	66.0-88.6 (22.6) QUARTZ FELSPAR PORPHYRY	Matrix creamy white, fine grained, in places slightly pinkish. Phenocrysts - Qtz - clear, cloudy rounded grains to 6mm, varying from 7-10% to 20% in central portion. Feldspar - brownish cream (alteration), some zoning, max size 3mm, variable 1-10%.	Pg, trace Anorthite, qf, weaver, trace hornblende and rare Cassiterite. 10-15% as discrete grains to 3mm, some pg is as fine grained irregular aggregates. Lower 2m mineralisation 1-3%.	
	100	88.6-92.7 (4.1) SILTSTONE and DARK GREY SHALES, finely bedded and brecciated.		Qtz varying, 1%	
	120	92.7-98.2 (5.5) QUARTZ FELSPAR PORPHYRY, Qtz 3-5%, Feldspar 7-10%		Pg, trace hornblende, muscovite, 5-7%	
	140	98.2-98.9 (0.7) THINLY BEDDED SILTSTONES	Dark grey clay rich alternating with minor brownish and pale grey shaly beds.	Pg, etc, in veins and disse. 20%	
	160	98.9-101.7 (2.8) QUARTZ FELSPAR PORPHYRY		Pg, some qf varying 20%	
	180	101.7-104.9 (3.2) SILTIFIED SILTSTONES and SILTY SHALES		Disse. Pg, py-carbonate qf. Anorthite veins 2-3%	
	200	104.9-138.6 (33.7) QUARTZ FELSPAR PORPHYRY	Matrix faintly greyish cream, fine grained and very hard. Qtz - rounded turbid grains to 4mm 10%, locally to 20%. Feldspar - creamy white, intergrown with groundmass, some brownish alteration, 10-15%.	Pg, trace monazite(?), brown and green Anorthite, sp. Cassiterite. Rare arsenic. TOTAL 15%. Pg as P. qf. aggregates, distinct grains to 5mm, variable 5-25%, average 15%. Cassiterite, Clinohite variable, cassiterite locally 3% (116-118) as rounded grains, scattered throughout.	
	220	138.6-143.3 (4.7) SILTSTONES with GREY SILTY SHALES and BLACK PYRITIC SHALES		Pg, thin bedded laminae, finely disse. Arsenic 2-5%	
240	143.3	END OF HOLE.			

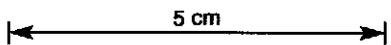
FIELD COPY - COPY TO BE SENT TO MELBOURNE FOR TYPING

METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENT

SUMMARY DRILL LOG  
Scale 1:1000, 1:500, 1:250  
(when reduced to A4)

Prepared by: G. CROSBY  
Date: 15-3-80

HOLE No. MBD 25  
Sheet of



AMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97224		64.0	66.0	2.0	290									
25		66.0	68.0	"	1550									
26		68.0	70.0	"	1500									
27		70.0	72.0	"	800									
28		72.0	74.0	"	2300									
29		74.0	76.0	"	3400									
230		76.0	78.0	"	1200									
31		78.0	80.0	"	2400									
32		80.0	82.0	"	580									
33		82.0	84.0	"	2200									
34		84.0	86.0	"	960									
35		86.0	88.0	"	350									
36		88.0	88.7	0.7	320									
37		88.7	89.9	1.2	60									
38		89.9	91.9	2.0	170									
39		91.9	93.7	1.8	520									
240		93.7	95.7	2.0	190								175	
41		95.7	97.7	"	170									
42		97.7	98.9	1.2	960									
43		98.9	100.9	2.0	3450									
44		100.9	101.7	0.8	1050									
45		101.7	103.7	"	290									
46		103.7	104.7	"	350									
47		104.7	106.7	"	3300									
48		106.7	108.7	"	2550									
49		108.7	110.7	"	6000									
250		110.7	112.7	"	3300									
51		112.7	114.7	"	4400									
52		114.7	116.7	"	1.62%									
53		116.7	118.7	"	1.67%									

Notes: - Sn by XRF Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 25  
 SAMPLE TYPE : DRILL CORE FROM 64.0 TO 118.7

080070

AMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97254		118.7	120.7	2.0	6000									
55		120.7	122.7	"	9400									
56		122.7	124.7	"	7000									
57		124.7	126.7	"	1.16%									
58		126.7	128.7	"	1600									
59		128.7	130.7	"	840									
260		130.7	132.7	"	1050								0.38%	
61		132.7	134.7	"	840									
62		134.7	136.7	"	230									
63		136.7	138.6	1.9	1000									
64		138.6	140.6	2.0	140									

Notes - Sn by XRF Bi Method

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT

ASSAY SUMMARY SHEET HOLE NO. MBD 25

SAMPLE TYPE : DRILL CORE

FROM 118.7 TO 140.6.

086074

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 26

Location : 1983.14 N 922.53 E grid

Elevation : 655.55 m

Dip : 60°

Azimuth : 180° grid

Total Depth : 208.1 m

Surveys : Tropari every 40 m

Commenced : 4.2.80 Completed: 10.2.80

Logged By : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT Depth: Description and notes mounted about 10mm	GRAPHIC LOG	MINERALISATION	BULKED ASSAYS
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FOR ABBREVIATIONS SEE 'FIELD GEOLOGIST'S MANUAL', D.A. BERNMAN & W.R. VALL (ED), MONOGRAPH NO. 9 AUSTRALAS. INST. MIN. METAL. 1976

0	0-2.5 (2.5)	TRUCKED TO 2.5 m - NO CORE			
0	2.5-10.6 (7.9)	3.5-10.6 DOLOMITE SULPHIDE LOSE. Carbonate - qtz with minor talcose alteration and serpentine			Pg, marcantite, minor py trace sp, ep, arsen fluorite. TOTAL 30-40%
20	10.6-30.4 (19.8)	10.6-30.4 SILICIFIED SILTSTONE AND SILTY SHALE 30° Hard, silicified and greenish grey, brecciated and crinoid. Thickly bedded, with occasional thin intercalations of talc serpentine and grey dolomite. Sparse thin quartzite bed near bottom of interval.			Pg, sp, po in thin carbonate veinlets up to 3mm. TOTAL: 2-3% Occasional black py, po to 10x6 mm
40	30.4-35.9 (5.5)	30.4-35.9 DOLOMITE SULPHIDE LOSE 40° 33.4-35.9 SILICIFIED SERICITIC SILTSTONE AND SILTY SHALE 35° As for 10.6-30.4 but dolomite (OSL) intercalations and quartzite scarce to absent.			po, py, fluorite, trace sp, qtz TOTAL 40-50% po, py, qtz veins to 4x2 mm, dissem. Carbonate - fluorite - po - py - qtz veinlets } 3-5%
60	35.9-47.0 (11.1)	35.9-47.0 DOLOMITE SULPHIDE LOSE 60° 47.0-50.4 SILICIFIED SERICITIC SILTSTONE AND SILTY SHALE. As for 33.4-35.9. Finely fractured - yellow clay filled anastomosing fine fractured every few cm.			As for 30.4-35.9 py, po, dissem. and as veins, some minor carbonate - fluorite - qtz - py veinlets 1-2%
80	50.4-80.4 (30.0)	50.4-80.4 MASSIVE SILTSTONES AND QUARTZITES Hard silicified quartzose sandstones and siltstones, grey to black grey. 86.8-106.6 GREY SILTSTONES, SILTY SHALES AND QUARTZITES. Medium grey quartzose and clay rich siltstones, shales finely greenish with bluish grey quartzite bands to 0.5m. Brecciated some shaly bedded with minor disphion.			po, py, dissem. in more coarse siltstone and sandstone beds. Some py - qtz - fluorite carbonate veining TOTAL 3-5%.
100	106.6-120.4 (13.8)	106.6-120.4 Some siltstone beds are a pinkish brown (laminated?) interbedded with soft greenish siltstones. Some thin dark grey shale lenses near base of interval.			
120	120.4-146.6 (26.2)	120.4-146.6 MASSIVE QUARTZOSE SANDSTONES AND SILTSTONES Very hard, pale grey and silicified fine grained quartzite with some thick bedded siltstone or massive brecciated quartzose siltstone with quartzite bands to 0.75m.			py, po, dissem. and in thin stringers } 1-2% Some weak qtz - py - carbonate veining
146	146.6-160.0 (13.4)	146.6-160.0 INTERBEDDED SILTY SHALES, SILTSTONES and minor FRAGILE BLACK SHALES. Medium grey silty shales, with thin pyritic black shale laminae separated by lighter grey siltstones. Well bedded.			py, as thin bedded laminae, dissem. in siltstones and thin veinlets and stringers 3-5%
160	160.0-178.8 (18.8)	160.0-178.8 SILTSTONES, SILTY SHALES AND QUARTZITES. As for 86.8-106.6.			py, po, thin bedded laminae, veinlets and stringers with qtz - carbonate, fluorite - sp - qtz Some black po to 30x10mm. TOTAL 5% 146.6-178.8 py, po, dissem, veinlets 15%
180	178.8-196.2 (17.4)	178.8-196.2 QUARTZ FELSPAR PORPHYRY 75° White f.sp. matrix near mafic, faintly greyish in centre Phenocrysts: qtz - rounded grains to 2mm, 10-15% Felspar - creamy white with some weak brownish alteration 7%, uranite 2-10%.			py, po, irregular grains and py aggregates 15-20%. Trace sp, weak trace chlorite, fluorite, tourmaline.
200	196.2-208.1 (11.9)	196.2-208.1 INTERBEDDED SILTY SHALES, QUARTZOSE SILTSTONES and minor BLACK SHALES WITH FRAGILE. As for 146.6-160.0			py, trace po near contact, thick bedded, dissem. and thin stringers 3-5%.
220		END OF HOLE 208.1m.			

AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE

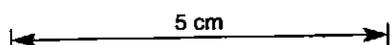
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METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENT

SUMMARY DRILL LOG  
Scale 1:1000, 1:500, 1:250  
(when reduced to A4)

Prepared by: G. BRODSKY  
Date: 5.3.80

HOLE No. MBD26  
Sheet of



AMPLE NO.	SAMPLE NO	FROM	TO	INTERVAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
PLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97364		4.5	6.5	2.0	120									
65		6.5	8.5	"	20									
66		8.5	10.5	"	660									
67		10.5	12.5	"	220									
68		12.5	16.6	4.1	100									
69		16.6	28.6	2.0	600									
370		28.6	30.6	"	1200									
71		30.6	31.6	"	1600									
72		31.6	33.5	1.9	1100									
73		33.5	35.5	2.0	370									
97374		45.8	47.1	1.3	240									
97375		176.8	178.8	2.0	5800									
76		178.8	180.8	"	1450									
77		180.8	182.8	"	2150									
78		182.8	184.8	"	980									
79		184.8	186.8	"	440									
380		186.8	188.8	"	1460								0.10%	
81		188.8	190.8	"	2500									
82		190.8	192.8	"	1950									
83		192.8	194.8	"	9200									
84		194.8	196.2	1.4	720									
85		196.2	198.2	2.0	85									

Notes: — Sn by XRF B1 Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 26  
 SAMPLE TYPE : DRILL CORE FROM 45 TO 198.2

086073

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 27

Location : 1949.17 N 1020.01 E grid

Elevation : 643.68 m

Dip : 60°

Azimuth : 180° grid

Total Depth : 120.3 m

Surveys : Tropari every 40 m

Commenced : 11.2.80 Completed: 15.2.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

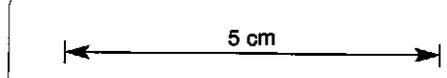
DEPTH INTERVAL	DEPTH from-to : ROCK UNIT Depth: Description and notes Interval about 10m	MINERALISATION	RILKED ASSAYS
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FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BIRKMAN & W.R. DYALL (ED), MONOGRAPH NO. 9, AUSTRALAS. INST. MIN. METALL., 1976

DEPTH INTERVAL	DEPTH from-to : ROCK UNIT Depth: Description and notes Interval about 10m	MINERALISATION	RILKED ASSAYS
0-3.0 (2.0)	TRICONE TO 3.0m - NO CORE		
3.0-9.9 (6.9)	LOST CORE 3-7.4; 7.6-9.9. 7.4-7.6 DOLOMITE SULPHIDE LOSE. -carbonates, qtz, with hard bluish green talc/separatite, granular texture.	po, py, fluorite 10% in recovered fragments 7.4-7.6.	
9.9-19.0 (9.1)	9.9-19.0 GREEN DOLOMITE WITH QUARTZ AND CALCITE. Brecciated and weakly recrystallised, some minor talcose alteration. qtz and carbonates occur as inclusions around angular fragments in brecciated zones.	po, py as blebs along fractures with recryst. carbonates. <1%.	
19.0-49.0 (30.0)	19.0-49.0 MIXED GREEN DOLOMITE / DOLOMITE SULPHIDE LOSE. Dolomite > DSL. Inwards of mottled grey dolomite/separatite by talc qtz-enriched or talc/separatite Dk. 0.3-3.0m. Overall DSL 30%, some finely banded, or coarsely crystalline granular/matrix textures of separatite.	Dolomite: blebs po, py trace sp along fractures and thin veinlets, stringers 10% DSL: po, py, fluorite, trace arsenic, sp, weak trace cp in varying proportions and amounts % mineralisation varies 5-25%, average 10-15%. Overall: total=5%	
49.0-67.7 (18.7)	49.0-67.7 DOLOMITE SULPHIDE LOSE. Pale green and dark green talc with dark green and grey separatite, with minor qtz and carbonates. Some banding with carbonates and sulphides, irregular, elsewhere almost massive talc/separatite with some phlogopite being calcitic and enveloping interstitial qtz and fluorite.	po, fluorite, trace py, weak trace cp, varying amounts & fine grained dark bluish-grey (trace). Pocul mineralisation fluctuates <1% to 50% on a scale of a few cm, and overall over a few metres: 49-54 10% 54-67 50% 67-82 40% 67-67.7 5-7% 67-67.7 30%	
67.7-86.3 (18.6)	67.7-86.3 SERICITIC SLTSTONES, SILTY SHALES. Greenish grey siltstones with minor grey quartzose siltstones (massive) to 0.5m and thinly interbedded greenish shale beds. Brecciated and contorted - chert of siltstone and shale in a poorly structured matrix. Some thin intercalations of talc and separatite near upper contact, hard, silicified.	po, py, thin veinlets and stringers } 7-10% fluorite - carbonates - talc - py - cp veins	
86.3-104.8 (18.5)	86.3-104.8 QUARTZ FELSPAR PORPHYRY Matrix white. Fsp near margin, faintly greyish in central portion. Phenocrysts: qtz - rounded, turbid, to 6mm, 10% near margin, 15-20% in central portion. Felspar - creamy white, ill defined patches, small well formed phenocrysts to 1.2mm, some minor alteration. 5-7% near margin, 2-3% in central portion.	py, arsenic, alternating intervals to 2m of po, py, py, arsenic. Sulphides as distinct rounded grains to 4mm, and diffuse fine grained aggregates. Trace calcite, fluorite, sp, weak trace arsenic. 20%.	
104.8-120.3 (15.5)	104.8-120.3 SERICITIC SLTSTONES, SILTY SHALES AND QUARTZOSE SLTSTONES. As for 67.7-86.3, except that below 109m, gradually greenish, some almost black carbonaceous shale intervals appear, increased siltstone, sandstone towards bottom & talc, decrease in shale beds.	104.8-109.4 py, arsenic, thin veinlets and stringers, disseminated in siltstone beds. 5-7%. Some rare blebs po to 2x3cm. 104.8-120.30 as above, but less sulphides and some sparse calcite - qtz - fluorite - py veins 3-5%	

AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE

END OF HOLE 120.3m.



MPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97551		65.0	67.8	2.8	160									
52		67.8	69.8	2.0	50									
53		82.06	84.2	2.14	30									
54		84.2	86.2	2.0	130									
55		86.2	88.2	"	500									
56		88.2	90.2	"	1100									
57		90.2	92.2	"	450									
58		92.2	94.2	"	2200									
59		94.2	96.2	"	780									
60		96.2	98.2	"	1200								0.11%	
61		98.2	100.2	"	3850									
62		100.2	102.2	"	1800									
63		102.2	104.2	2.2	800									
64		104.2	104.8	0.6	500									
65		104.8	106.8	2.0	370									

2725 - Sn by XRF Bi Method

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 27  
 SAMPLE TYPE : DRILL CORE FROM 65 TO 106.8

086080

AMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
PLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97337		7.4	7.6	0.2	2650									
88		9.4	11.1	1.2	370									
89		11.1	13.1	2.0	100									
90		15.2	17.2	"	250									
91		17.2	19.0	1.8	60									
92		19.0	21.0	2.0	4700									
93		21.0	23.0	"	600									
94		23.0	25.0	"	1250									
95		25.0	27.0	"	1050									
96		27.0	29.0	"	900									
97		29.0	31.0	"	5600									
98		31.0	33.0	"	6300									
99		33.0	35.0	"	310									
97536		35.0	37.0	"	1000									
37		37.0	39.0	"	1350									
38		39.0	41.0	"	320									
39		41.0	43.0	"	3400									
40		43.0	45.0	"	1600								0.14%	
41		45.0	47.0	"	640									
42		47.0	49.0	"	50									
43		49.0	51.0	"	7000									
44		51.0	53.0	"	7900									
45		53.0	55.0	"	1.19%									
46		55.0	57.0	"	1200									
47		57.0	59.0	"	2000									
48		59.0	61.0	"	26									
49		61.0	63.0	"	70									
50		63.0	65.0	"	7300									

Notes: — Sn by XRF B. Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO, MBD 27  
 SAMPLE TYPE: DRILL CORE FROM 7.4 TO 65.0

086081

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 28

Location : 2014.20 N 1099.85 E grid

Elevation : 662.15 m

Dip : 75°

Azimuth : 180° grid

Total Depth : 157.5 m

Surveys : Tropari every 40 m

Commenced : 16.2.80 Completed: 23.2.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH INTERVAL	DEPTH from-to : ROCK UNIT Depth - Description and notes indicated about 10cm	MINERALISATION	BULKED ASSAYS
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FOR ABBREVIATIONS SEE 'FIELD GEOLOGIST'S MANUAL', D. A. BECKMAN & W. W. BHAL, (ED), MONOGRAPH NO. 9 AUSTRALIAN INST. MIN. METAL. - 1974

DEPTH INTERVAL	DEPTH from-to : ROCK UNIT Depth - Description and notes indicated about 10cm	MINERALISATION	BULKED ASSAYS
0-4.0 (4.0)	TRICONE TO 4.0m - NO CORE.		
4-12.6 (8.6)	4-6.8 DOLOMITE SHALLOE BLUE, weathered 4.3-12.6 QUARTZ FELSPAR PORPHYRY. Fgr. yellowish cream matrix, Qtz 10%, Felspar 7%	4.3-12.6 po, trace sp, cassiteite. Some thin 4.3-4.4-cassiteite veins. TOTAL 15%.	
12.6-16.9 (4.3)	12.6-16.9 DOLOMITE. Sphalerite, lodite, qtz, serpentine, talc, carbonates	Po>Pg, intergrown with granular matrix, 50%	
16.9-25.7 (8.8)	16.9-25.7 SERICITE SILTSTONES WITH THINLY BEDDED SERICITE SILTY SHALES AND QUARTZITES Hard, greenish grey and silicified siltstones medium grade	P, sp, as bedded discontinuous. Fine stringers with qtz - fluoite, blebs 5%	
25.7-34.8 (9.1)	25.7-34.8 MASSIVE SILTSTONES AND SANDSTONES. Hard, grey, silicified - impurified. Brecciated. 35.8-36.9 "TUFF" - ressedimented class of Lithium etc. Graded Change	Pg>po, dissem. blebs and stringers 3-5%. Minor qtz - carbonates veining with sulphides.	
34.8-106.8 (72.0)	34.8-106.8 SERICITE SILTSTONES QUARTZOSE SILTSTONES AND SANDSTONES Thinly bedded greenish grey siltstones with fine shale laminae. Brecciated and unmineralized. Thinly bedded siltstones and quartzose siltstones (<3cm), minor carbonates and silting. Massive grey quartzite beds (silt-size and mm-size), brecciated intervals 2-8 m repeating intervals of either of the above.	Po>Pg, dissem. also blebs and stringers. Veinlets with carbonates, qtz, fluoite 5-7%. Sparse qtz-carbonate - fluoite-sulphide veins to 50mm 25-30% LCA.	
106.8-130.0 (23.2)	106.8-130.0 QUARTZ FELSPAR PORPHYRY. Fine grained, white and greyish white matrix. Phenocrysts: qtz - rounded, turbid, to 6mm, 10-15%, locally 20%. Felspar - small, white, with brownish alteration, <2mm, 1-2%	Pg, po, alternating Pg>po, Po>Pg intervals to 4m. Trace amounts fluoite, sp and weak trace cassiteite. Some minor qtz - Pg veining at margins. TOTAL 15%, variable 5-20%	
130.0-132.6 (2.6)	130.0-132.6 QUARTZITES, UNDER SILTSTONES	Po>Pg, dissem. veinlets, stringers 10%	
132.6-137.7 (5.1)	132.6-137.7 QUARTZ FELSPAR PORPHYRY	Po, fluoite, po, minor qtz	
137.7-136.8 (0.9)	137.7-136.8 Thinly bedded SILTSTONES AND SILTY SHALES	Pg>po, thin veinlets, stringers with qtz, fluoite 15%	
136.8-145.4 (8.6)	136.8-145.4 QUARTZ FELSPAR PORPHYRY. Greyish white Lgr matrix, qtz 10%, Felspar 1-2%, altered.	Pg, po, trace sp, arsenic, fluoite, some qtz - fluoite - sp - arsenic veining. Weak trace cassiteite. TOTAL 25%	
145.4-157.5 (12.1)	145.4-157.5 SILTSTONES AND SHALES WITH MASSIVE QUARTZITES. Pale grey, well bedded, with thin shale laminae and bedded laminae of pyrite. Quartzites are brecciated and silicified to 3m.	Pg (po near contact) Pg is in fine bedded laminae, dissem in shales, stringers 3-5%.	
157.5	END OF HOLE - 157.5m.		

240 m (1:1000), 120 m (1:500), 60 m (1:250)  
AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE

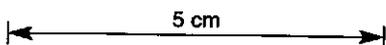
FIELD COPY - COPY TO BE SENT TO MELBOURNE FOR TYPING

METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENT

SUMMARY DRILL LOG  
Scale 1:1000, 1:500, 1:250  
(when reduced to A4)

Prepared by: G. BRADBENT  
Date: 5.3.80.

HOLE No. MDD 28  
Sheet of



SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97566		4.0	4.3	0.3	1050									
67		4.3	6.3	2.0	4450									
65		6.3	8.3	"	4900									
69		8.3	10.3	"	3100									
70		10.3	12.6	"	5800									
71		12.6	14.6	"	260									
72		14.6	16.6	"	14									
73		16.6	17.0	0.4	32									
74		17.0	19.0	2.0	50									
75		104.8	106.8	2.0	2550									
76		106.8	108.8	"	2350									
77		108.8	110.8	"	1450									
78		110.8	112.8	"	1100									
79		112.8	114.8	"	2450									
80		114.8	116.8	"	2000								0.11%	
81		116.8	118.8	"	2550									
82		118.8	120.8	"	840									
83		120.8	122.8	"	1150									
84		122.8	124.8	"	960									
85		124.8	126.8	"	2400									
86		126.8	128.8	"	460									
87		128.8	130.0	1.2	3850									
88		130.0	132.7	2.7	2900									
89		132.7	133.7	2.0	2100									
590		133.7	135.7	"	430									
91		135.7	136.8	1.1	3750									
92		136.8	138.8	2.0	1200									
93		138.8	140.8	"	520									
94		140.8	142.8	"	1050									

Notes:— Sn by XRF Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT

ASSAY SUMMARY SHEET HOLE NO. MBD 28084

SAMPLE TYPE : DRILL CORE FROM 4.0 TO 142.8

086084



MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 30

Location : 1859.96 N 1139.93 E grid

Elevation : 626.69 m

Dip : Vertical

Azimuth :

Total Depth : 95 m

Surveys : Tropari every 30 m

Commenced : 1.2.80 Completed: 11.2.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH	INTERVAL	DEPTH from to: ROCK UNIT <small>Depth: Description and notes indented about 10 mm</small>	MINERALISATION	BULKED ASSAYS
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FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BERKMAN & W.J. DYALL (ED), MONOGRAPH NO 9 AUSTRALIAN INST. MIN. METAL - 1976

<p>↑</p> <p>240 m (1:1000), 120 m (1:500), 60 m (1:250)</p> <p>AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE</p> <p>↓</p>	<p>0-3.0 (2.0)</p> <p>3-53.2 (50.2)</p> <p>53.2-73.6 (14.6)</p> <p>73.6-82.9 (9.3)</p> <p>82.9-93.3 (10.4)</p> <p>93.3-95.0 (1.7)</p> <p>100</p> <p>110</p> <p>120</p>	<p>TRILITE TO 3m - NO CORE.</p> <p><b>DOLOMITE WITH QUARTZ AND CALCITE.</b></p> <p>30-9.5 Recovery &lt; 1% - some fragments of creamy coloured dolomite, some gray shale and pinkish weathered porphyry (overburden?) Possible originally DSL? (at least in part)</p> <p>9.5-53.2 Pale grey dolomite with bleached creamy coloured sections (weathered) to 1.5m. Minor recrystallisation - segregation of white carbonates and qtz in small ill defined grains to 2mm occurs in patches to 10 cm. Small zones are brecciated, angular fragments with dark gray matrix cemented with carbonates and qtz. Later faulting - broken core, locally reduced to rubble.</p> <p>23.7-49.0 FAULT ZONE - very broken and shattered core - dolomite fragments &lt; 5cm, porous and cherty with patches of soft white puggy matrix still intact. Recoveries poor - 20%</p> <p>49-62.0 Pieces of core to 30-40cm, separated by small faultlets/puggy zone - large core pieces.</p> <p>62-95.0 Broken core, but recoveries quite good.</p> <p>53.2-66.0 <b>FAULTED DOLOMITE SULPHIDE ZONE</b> with some minor fine grained porphyry (70.5-70.7, 71.4-73.6m)</p> <p>66.0-62 Core very weathered and broken - grayish weathered rock fragments and soft puggy material. Mostly recrystallised carbonates and qtz with minor greenish indurated alteration, some fragments relatively unaltered dolomite</p> <p>62-68 Fragments soft gray shale, carbonates, qtz</p> <p>68-70.5 Recrystallised creamy yellow carbonates + dolomite - calcite with some pyrite and qtz</p> <p>70.5-73.6 Matrix - P. sp porphyry or below, alternating with etc - carbonate DSL and seropinite rich (P)DSL.</p> <p>73.6-82.9 <b>MASSIVE SILTSTONES with minor SILT SHALES</b></p> <p>Siltstones, gray, hard and silicified, with fine contorted bedding laminations and brecciation. Shales are dark gray, thinly interbedded. Core is well faulted but recovery good. Rare inclusions of minor porphyry as below, to 15cm.</p> <p>82.9-93.3 <b>'Aplite looking' QUARTZ CALSIPAR PORPHYRY.</b> Broken contact base</p> <p>Fine grained yellowish and greenish gray matrix, weakly banded. Phenozyte - Qtz 3-5%, well formed to 2mm. Py as rare phenocrysts, and in thin veinlets. TOTAL 1-20%.</p> <p>Felspar - variable 0-10%, 1-2 mm creamy white phenocrysts with poorly etched outlines. Some are brownish and altered.</p> <p>(irregular contact, 75°)</p> <p>93.3-95.0 <b>FINE GRAINED QUARTZITE</b> Hard, dark gray, well bedded, bedding 45°</p> <p>END OF HOLE 95.0m</p>	<p>3-9.5 Recovery &lt; 1%, impossible to estimate</p> <p>9.5-23.7 Finely disseminated py, trace po in brecciated dolomite. Py, sp in blocks, mostly 2-3mm, some py 3-5mm, concentrated in breccia zones. Total 3-5%.</p> <p>23.7-62.0 Weathered - weak trace py in some fragments.</p> <p>Py, trace po, weak trace arseno, sp. Pyrite is disseminated and intergrown with qtz, carbonate, pyrite and porous. Po occurs intergrown with Py. Sp as blocks 2-3mm, rarely 20-40mm. Arseno in well formed xth 1-2mm. Total 20-30%.</p> <p>68-70.5 Py etc total 5%.</p> <p>70.5-73.6 Fluorite, py trace sp 3-5%.</p> <p>Trace py, carbonate, qtz, Arseno in small veinlets, weathered &lt; 1%.</p> <p>Fluorite, trace py. Fluorite as small dark purple and brown phenocrysts to 2mm. Py as rare phenocrysts, and in thin veinlets. TOTAL 1-20%.</p> <p>Py, qtz thin veinlets, finely disseminated py 3%.</p>	<p>0</p> <p>10</p> <p>20</p> <p>30</p> <p>40</p> <p>50</p> <p>60</p> <p>70</p> <p>80</p> <p>90</p> <p>100</p> <p>110</p> <p>120</p>
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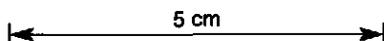
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METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENT

**SUMMARY DRILL LOG**  
Scale 1:1000, (1:500) 1:250  
(when reduced to A4)

Prepared by: G. Broadbent  
Date: 14/3/80

HOLE No. MBD 30  
Sheet of



AMPLE NO.	SAMPLE NO.	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97265		34.0	36.0	2.0	50									
66		36.0	38.0	"	60									
67		38.0	40.0	"	28									
68		40.0	42.0	"	24									
69		42.0	44.0	"	85									
270		44.0	46.0	"	75									
71		46.0	48.0	"	48									
72		48.0	50.0	"	240									
73		50.0	52.0	"	180									
74		52.0	54.0	"	110									
75		54.0	56.0	"	2150									
76		56.0	58.0	"	1200									
77		58.0	60.0	"	210									
78		60.0	62.0	"	14									
79		62.0	64.0	"	15									
280		64.0	66.0	"	46									
81		66.0	68.0	"	18								20	
82		68.0	70.0	"	46									
83		70.0	71.9	1.9	50									
84		71.9	73.9	2.0	85									
85		80.9	82.9	2.0	70									
86		82.9	84.9	"	110									
87		84.9	86.9	"	40									
88		86.9	88.9	"	100									
89		88.9	90.9	"	120									
90		90.9	93.5	1.6	100									
91		93.5	95.0	1.5	32									

Notes: - Sn by XRF Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. 112D 30  
 SAMPLE TYPE: DRILL CORE FROM 34.0 TO 95.0

080980

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 31

Location : 1900.82 N 1182.75 E grid

Elevation : 642.85 m

Dip : Vertical

Azimuth :

Total Depth : 53 m

Surveys : Tropari every 50 m

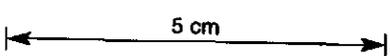
Commenced : 12.1.80 Completed: 17.2.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT Depth - Description and notes <i>(depth interval, unmineral)</i>	MINERALISATION	BOINED AWAYS
0	0-1.5m (1.5m)	TRILONE TO 1.5m - NO CORE.		
5	1.5-7.5 (6.0m)	1.5-7.5 QUARTZ FELSPAR PORPHYRY Brownish-grey fine grained matrix, well fractured and broken, with bleaching and removal of material by weathering. Qtz - rounded and irregular tabular, porphyroblasts to 6 x 5 mm. Felspar not apparent - possibly removed by weathering? <i>Broken contact</i>	Pyrite, porous and pitted, some matrix grains up to 2mm. TOTAL 10%	
10	7.5-17 (9.5m)	7.5-17 FAULTED DOLOMITE SULPHIDE LORE. Very faulted and broken - recovery 25-30%. Mostly residual pyrite, with qtz grains in a matrix of sticky black clay. Some intervals of fine grained ochraceous grey pug with very little sulphide - faulted weathered dolomite? Some rare fragments of weathered porphyry (eporphytes). <i>Broken contact</i>	Pg 40-50%, porous, pitted, in almost massive fragments	
20	17-26 (9m)	17-26 FAULT ZONE Laminated black puggy clay with minor intercalations of fault breccia - clasts of pale grey dolomite and bluish green (?) serpentine with pyrite fragments in a brownish or black puggy matrix. The laminated clay has a banding of silt and clay size grains 1-5mm, and a shiny <i>parting</i> along the fine grained laminations. <i>Broken contact</i>	Pg in <i>fragments</i> fragments in breccia zones 2-3%.	
25	26-34 (8m)	26-34 WEAKLY ALTERED DOLOMITE. Some fragments DSL in top 4m, with heavy pyritisation.	Pg in upper 4m no porous aggregates	
30	34-40 (6.5m)	LOST CORE ZONE altered dolomite, lower 4m is brecciated unmineralised and white dolomite fragments, some in a matrix of soft white pug. Recovery poor. <i>Broken contact</i>	?	
35	40-45 (5.5m)	40-45 BRECCIATED GREY SILTSTONE, SANDSTONE AND SILTY SHALES. Ochraceous siltstone, sandstone are hard and silicified, medium grey. More clay rich siltstones and shales are a darker grey and softer. Very fractured and broken - are reduced to rubble. 45-48 Grey quartzite? - weakly banded sp LCA with sparse 1-2mm cavities. Well fractured and broken.	Nil - possibly removed by weathering.	
45	48-52 (4.5m)	48-52 Friable soft white fine grained fault pug. Originally siltstone? LOST CORE ZONE - SILTSTONE AND QUARTZITES? Sludge samples - grey quartzite fragments and white qtz grains with some minor grains Pg.	Trace pg in sludge samples.	
50	52-53 (1.0m)	52-53 GREEN SILTSTONES AND SILTY SHALES containing 25% <i>25/3/32</i>	Trace thin bedded pg	
55	53-58 (5.5m)	END OF HOLE 58.0m. The interval 7.5-22m has been badly crushed and broken by faulting, with attendant removal of diagnostic mineral assemblages by a combination of catclastic and subsequent weathering. Total core recovery: 30%		

AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE



AMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
PLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97292		1.5	3.5	2.0	2350									
93		3.5	5.5	"	410									
94		5.5	7.5	"	4300									
95		7.5	9.5	"	1.02%									
96		9.5	11.5	"	860									
97		11.5	13.5	"	410									
98		13.5	15.5	"	1.42%									
99		15.5	17.5	"	3350									
97600		17.5	19.5	"	2600								0.28%	
01		19.5	21.5	"	5900									
2		21.5	23.5	"	3450									
3		23.5	25.5	"	5100									
4		25.5	27.5	"	2850									
5		29.0	30.4	1.4	1000									
6		30.4	32.0	1.6	130									
7		32.0	34.0	2.0	85									
8		34.0	36.0	"	290									
9		36.0	37.8	2.8	380									
10		38.3	41.0	2.7	1000									
11		41.0	42.5	1.5	65									

Notes:— Sn by XRF Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 31

SAMPLE TYPE : DRILL CORE FROM 1.5 TO 42.5

086091

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 32

Location : 1939.99 N 1180.06 E grid

Elevation : 645.59 m

Dip : Vertical

Azimuth :

Total Depth : 30 m

Surveys : Tropari every 30 m

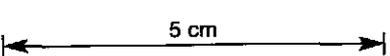
Commenced : 18.2.80 Completed 20.2.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT Depth: Description and notes Interval: 10m	GRAPHIC LOG	MINERALISATION	RUBLED ASSAYS
0	0-3.0 (3m)	TRICONE DRILLED - NO CORE.			
3.0-7.31 (4.31m)	3.0-7.31	<b>QUARTZ FELSPAR PORPHYRY.</b> Matrix off-white and fine grained, with some pale grey patches. Qtz - 11% as phenocrysts to 700µm, mostly 2-3mm. Felspar - creamy white and altered, 3-8%. Bleached by weathering along fractures, with deposition of brown Fe oxides on truncation to bleaching. 6.3-7.3 Fider grained Qtz 10%, Felsp 15%.		Pg. base up and rare. Fg. translucent. Pg. is pitted and weathered to haematitic reddish Fe oxides. Some plagioclase and completely removed. Occurs as discrete rounded grains and fgs. aggregates to 4mm. 6.3-7.3 reduced in size to 2mm. TOTAL 100%.	
7.31-30.0 (22.69m)	7.31-30.0	<b>MASSIVE SILTSTONES AND SANDSTONES</b> - in minor SILTY SHALE LAMINAE. Conat 75° Bedding 40° Massive, poorly bedded, brecciated (with relict disruption) Bedding difficult to determine. The core is a medium grey and medium hard, with occasional very hard bluish grey silicified intervals. Body fractured and broken by two sets of intersecting fractures, reduced to rubble for runs of 2.5m. Some micro faulting visible in unbroken core - displacements < 1cm. 19-30.0 Fracturing decreases - core is broken, but still well jointed. 24.7-30.0 Siltstones acquire a distinct bedding lamination - thickly interbedded shales and darker grey clay rich siltstones with some highly greenish silty shales. Some thin bedded clay laminae (11mm). Minor brecciated intervals, some weak bedding and concretion. Sandstone beds become smaller, < 1m. Bedding 40° Bedding 55° Bedding 35° Bedding 20°		Pg. some Qtz as irregular veins and clumps - some lying fracture surfaces. Some beds and fine discontinuities in sandstone made. Fracture surfaces are lined with fine black puggy clay - weathered fgs. TOTAL 1-2%  17.5-20.6 20% pyrite in dendritic aggregates surrounding fine fractures.  24.7-30.0 Some sparse Qtz - pg. veinlets near top of interval, otherwise barren.	
30		END OF HOLE 30.0m.			

240m (1:1000), 120m (1:500), 60m (1:250), 60m (1:250)  
AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE





MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 33

Location : 1939.93 N 1220.06 E grid

Elevation : 649.00 m

Dip : Vertical

Azimuth :

Total Depth : 30 m

Surveys : Tropari every 30 m

Commenced : 21.2.80 Completed: 22.2.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH INTERVAL	DEPTH from-to : ROCK UNIT Depth: Description and notes indented about 15 mm	MINERALISATION	BULKED ASSAYS
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FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BEALMAN & W.B. RYALL (EDS), MONOGRAPH NO. 9, AUSTRALIAN INST. MIN. METALS, - 1976

240 m (1:1000), 120 m (1:500), 60 m (1:250)  
AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE

DEPTH INTERVAL	DEPTH from-to : ROCK UNIT Depth: Description and notes indented about 15 mm	MINERALISATION	BULKED ASSAYS
0-4 m (4 m)	<b>0-4 m DOLOMITE SILIMIDE LOOSE</b> Core recovery poor - 5%. Fragments of pitted and porous residual pyrite with soft black clay in interstices. Some residual qtz grains in sludge sample and sand from core barrel.	py, residual cellular structure and in sand from core barrel, sludge sample 90% (C)	
4-30 m (25-6 m)	<b>4-4 m → 30.0 m (end of hole) MASSIVE QUARTZOSE SILTSTONES AND SANDSTONES with THIN SHALE LAMINAE.</b> Medium grey. Bedding defined by thin shale sands (11 cm) 4-4-15-6 Brecciated - soft sediment disruption, followed by extensive fracturing (microfaulting on two sets of planes $\approx 80^\circ$ and $30^\circ$ LCA which reduces the core to rubble. The massive beds have poorly defined bedding - rather featureless. Some are bluish grey and silicified - very hard. 15-6-30-0 Rock type identical to above, except that massive siltstone beds have a well defined bedding lamination - clean quartzose siltstones alternating with slightly darker grey siltstones on a scale of $\approx 2$ cm. Bedding is 10 cm → 2 m. Core is not quite so broken - decreased density of fractures, main parting is along shale beds with occasional small puffy fault zones (10 cm) Bedding 55 and runs of broken core 10-5 m. Bedding 40 → Bedding 60 → Bedding 30 → Bedding 35 →	py, trace py, qtz. Finely disseminated in some sandstone beds, and in thin veins and stringers with qtz. Py occurs as rare blebs below 15-6 m. Py pitted - some removal of material by weathering TOTAL: 1-20%	
30-30 m	END OF HOLE 30.0 m		

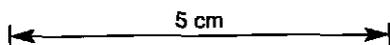
FIELD COPY - COPY TO BE SENT TO MELBOURNE FOR TYPING

METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENT

**SUMMARY DRILL LOG**  
Scale 1:1000, 1:500, (1:250)  
(when reduced to A4)

Prepared by: G. BROADBENT  
Date: 28.2.80

HOLE No. MBD 33  
Sheet 01





MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 34

Location : 1899.77 N 1220.02 E grid

Elevation : 646.75 m

Dip : Vertical

Azimuth :

Total Depth : 60 m

Surveys : Tropari every 30 m

Commenced : 23.2.80 Completed: 27.2.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH INTERVAL	DEPTH from-to : ROCK UNIT Depth - Description and Notes Interval about 10m	MINERALISATION	RELATED ASSAYS
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FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BERGMAN & W.R. RYAN (ED.), MONOGRAPH NO. 5, AUSTRALIAN INST. MIN. METALS, 1976

240m (1:1000), 120m (1:500), 60m (1:250)  
AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE

0 3.0 (3.0)	TRICONE TO 3.0m - NO CORE.		
3.0-14.2 (11.2)	3.0-14.2 DOLOMITE SULPHIDE LORE, FAULTED. 3.0-30.0 Core highly fractured and broken - recoveries 20-30% 3.0-14.2. Residual cellular pyrite, with some granular qtz and rare Fluorite in a matrix of puggy black clay. 13-14.2 some fragments greenish serpentine (etc.)		Pg, trace Fluorite, some wuggly carbonates 13.0m. Pg is crystalline, porous and pitted, 70%
14.2-22.0 (6.5)	14.2-22.0 GREY DOLOMITE (FAULTED) Recovery <20%. Fragments unaltered grey dolomite in a matrix of still brown and black puggy clay.		Pg as blebs and grains, some small cellular fragments. Minor wuggly qtz-carbonate fragments. TOTAL 3%.
22.0-60.0 (38.0)	22.0-60.0 MASSIVE SILTSTONES AND SANDSTONES. 20.7-30.0 Recovery <30%, LOST CORE 22.0-24.0. Washed fragments grey silicified siltstones with some faintly greenish dark grey siltstones and minor shales and bluish grey quartzites. Some rare clasts almost black carbonaceous siltstone surrounded by greenish sericitic siltstone. 30.0-42.0 Recovery slightly better - broken are separated by small puggy zones. 39.5-60.0 Massive dark grey sandstones, brecciated, with faintly greenish grey siltstone intervals and rare thin carbonaceous shale laminae. Some sandstones are hard, silicified, with grey quartzites. 62.0-60.0 Core is fractured and broken, but recovery 90-100%		20.7-32.1 Microfossils NIL. 32.1-39.5 sparse veinlets pg, carbonates 1% 39.5-60.0 po, pg, dissem. in some beds and as small blebs to 2mm. Pg occurs in small veinlets and stringers with qtz and rare po. TOTAL: 2-3% 54.5-57.1 pg, po, dissem and as veinlets and stringers in quartzite 7%

END OF HOLE 60.0m.

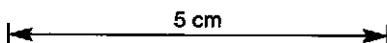
FIELD COPY - COPY TO BE SENT TO MELBOURNE FOR TYPING

METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENT

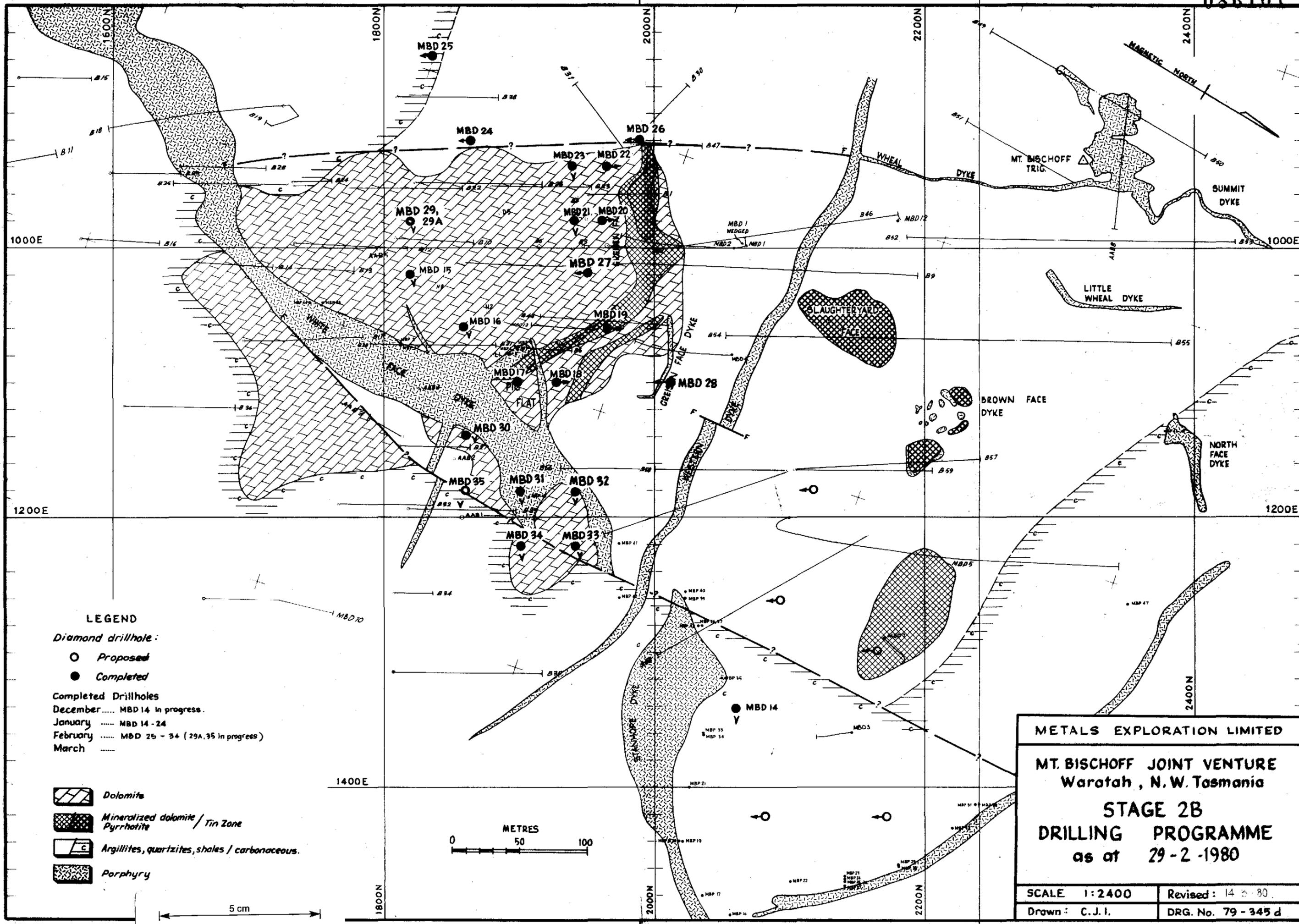
SUMMARY DRILL LOG  
Scale 1:1000, 1:500, 1:250  
(when reduced to A4)

Prepared by: G BRADGENT  
Date: 5-3-80.

HOLE NO. MBD 34  
Sheet of







**LEGEND**

*Diamond drillhole:*

- Proposed
- Completed

**Completed Drillholes**

December..... MBD 14 in progress.

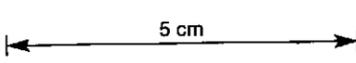
January ..... MBD 14 - 24

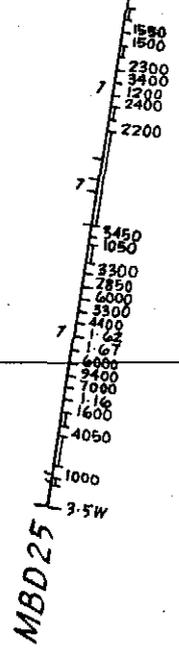
February ..... MBD 25 - 34 (29A, 35 in progress)

March .....

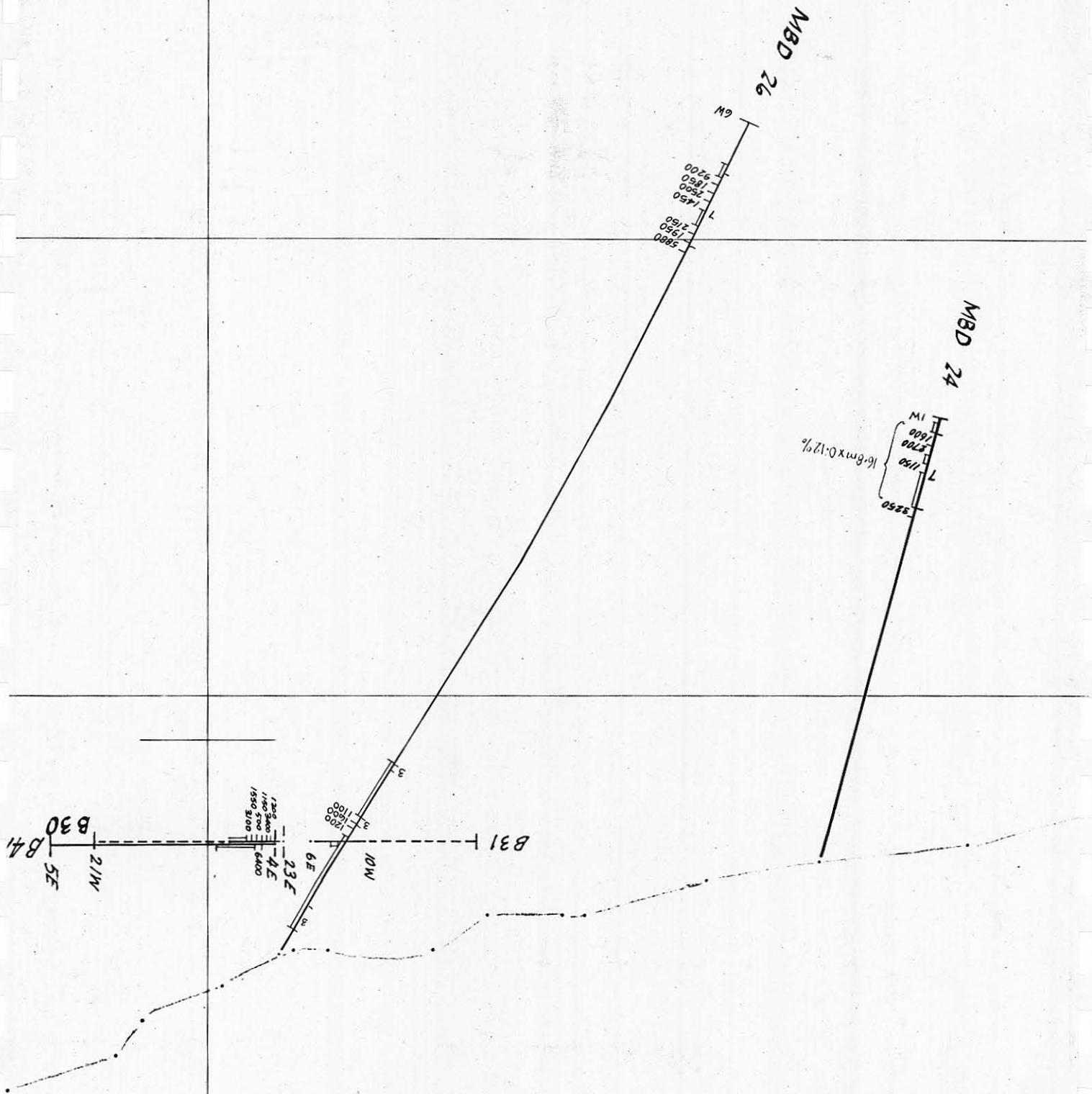
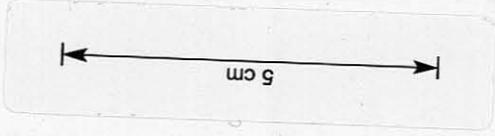
-  Dolomite
-  Mineralized dolomite / Tin Zone / Pyrrhotite
-  Argillites, quartzites, shales / carbonaceous.
-  Porphyry

<b>METALS EXPLORATION LIMITED</b>	
<b>MT. BISCHOFF JOINT VENTURE</b> Waratah, N.W. Tasmania	
<b>STAGE 2B</b> <b>DRILLING PROGRAMME</b> as at 29-2-1980	
SCALE 1:2400	Revised: 14.6.80
Drawn: C.J.I.	DRG. No. 79-345 d









086104

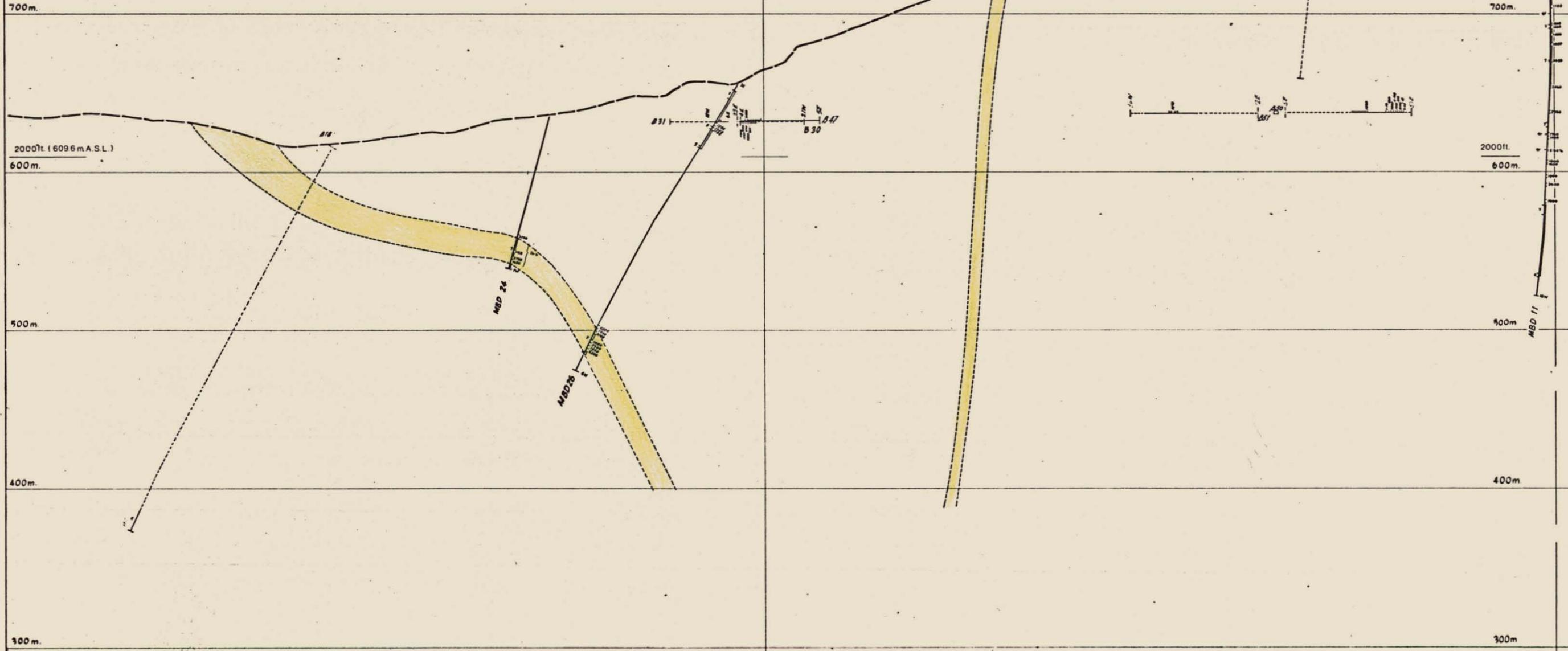
1600N

1800N

2000N

2200N

2400N



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600m.

2000ft.  
600m.

500m.

500m.

400m.

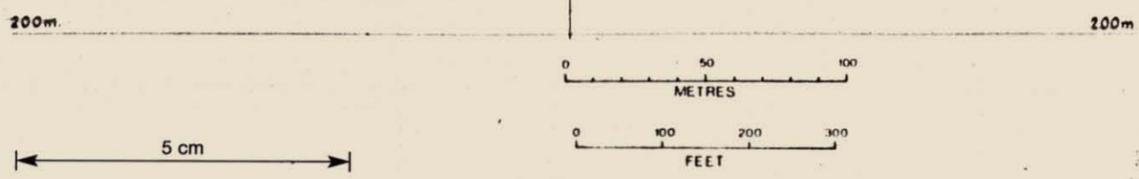
400m.

300m.

300m.

MASTER SECTION DRG. NO. 79-054A

- DDK
  - 4 1000 ppm
  - 2 500 ppm
  - 1 250 ppm
  - 0 125 ppm
- 1 DOLOMITE
  - 2/4 MINERALIZED DOLOMITE / TIN ZONE
  - 3/4 PYRRHOTITE
  - 5 ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
  - 7 PORPHYRY
  - INTERPRETED GEOLOGICAL CONTACT

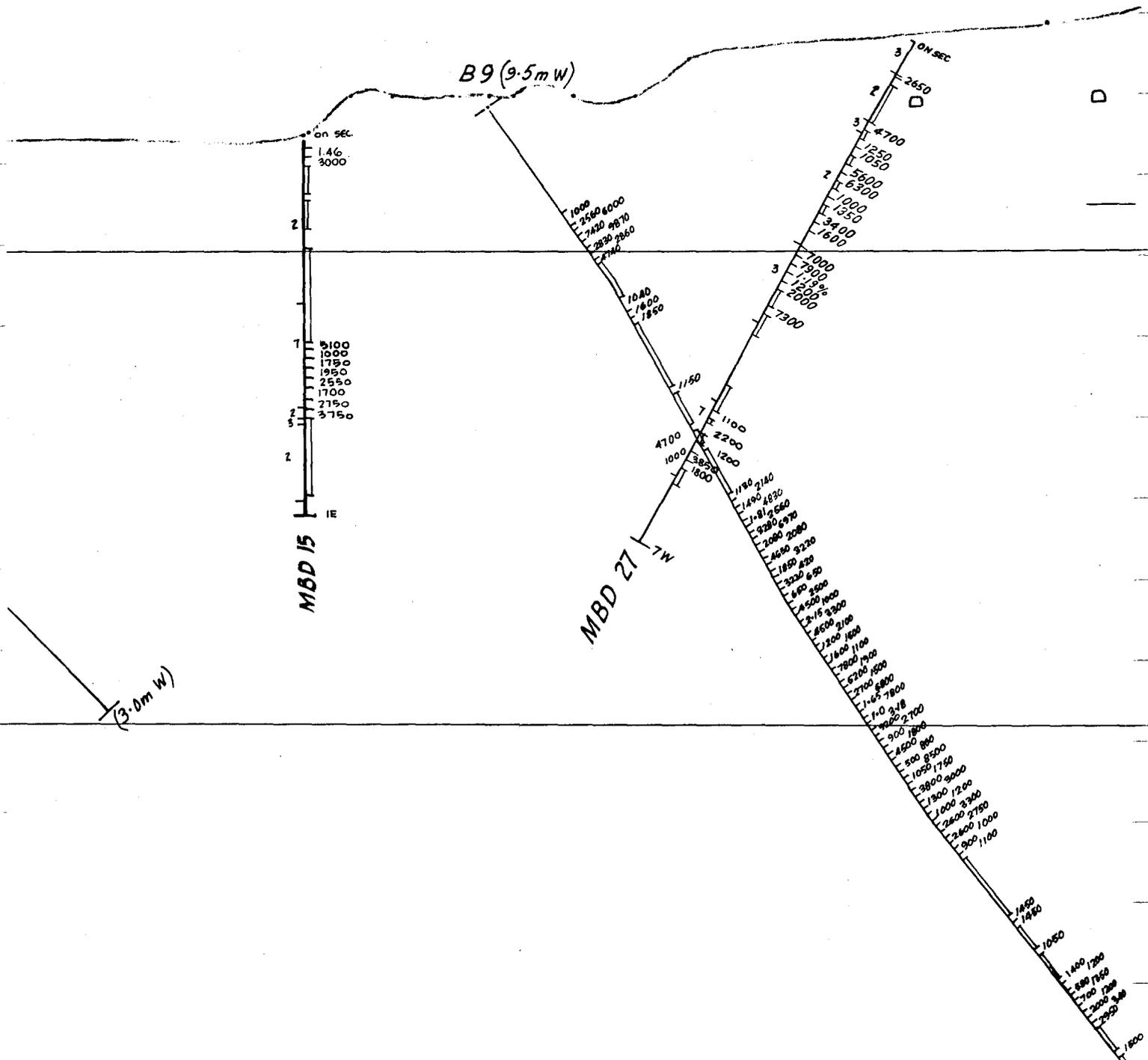


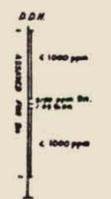
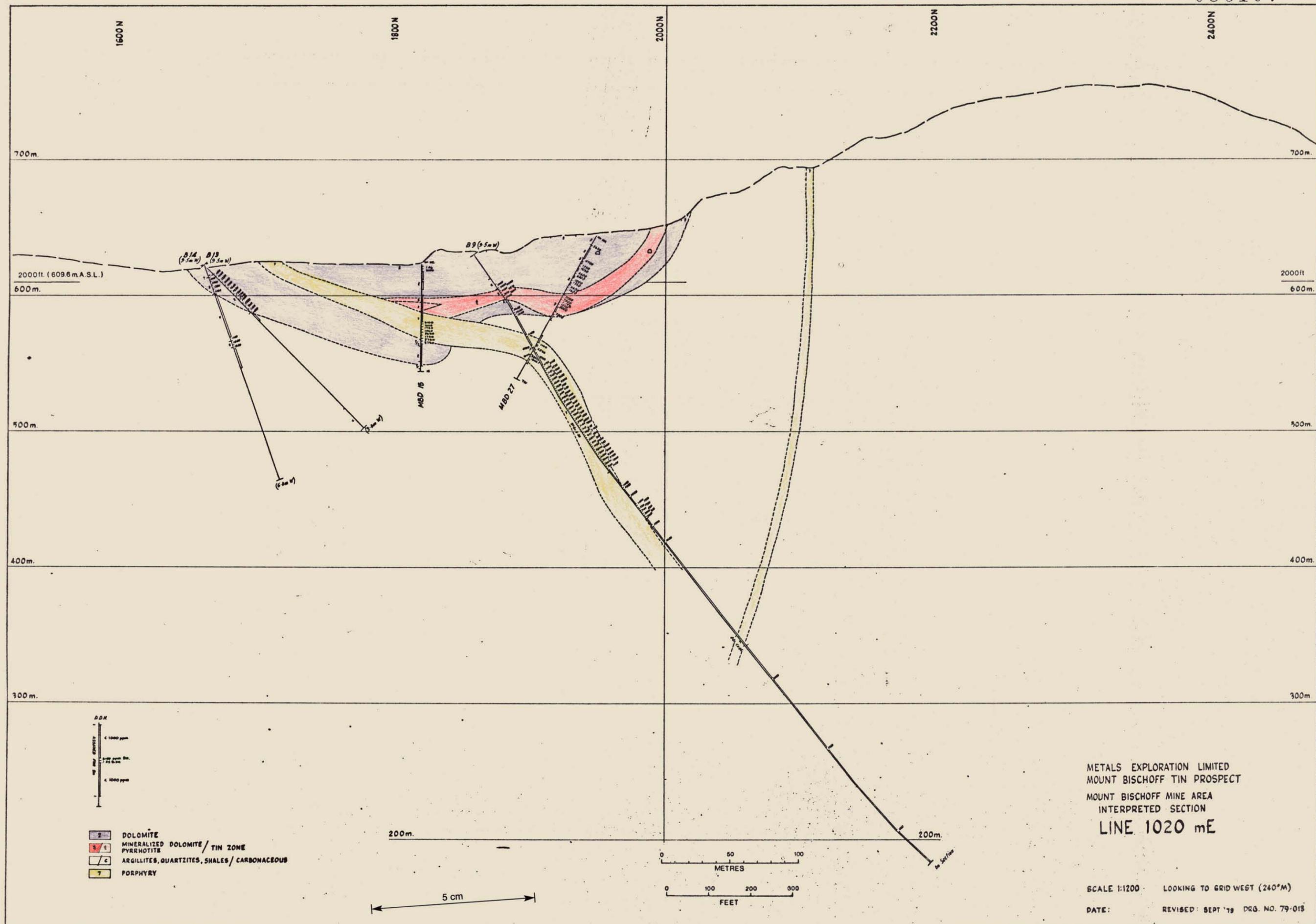
METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 920 mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE DEC 1978    REVISED    DRG. NO. 79-008A

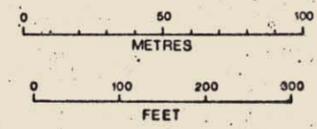
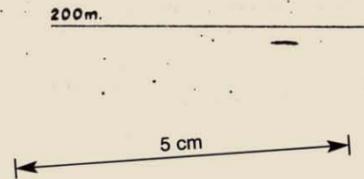
5 cm

086106





- DOLOMITE
- MINERALIZED DOLOMITE / TIN ZONE
- PYRRHOTITE
- ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- PORPHYRY



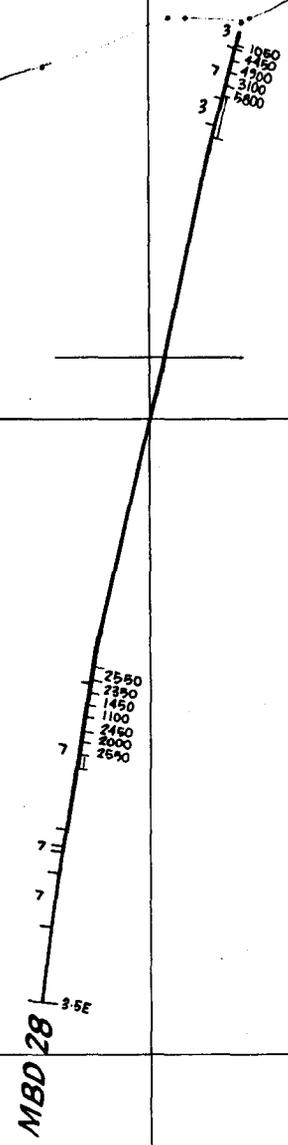
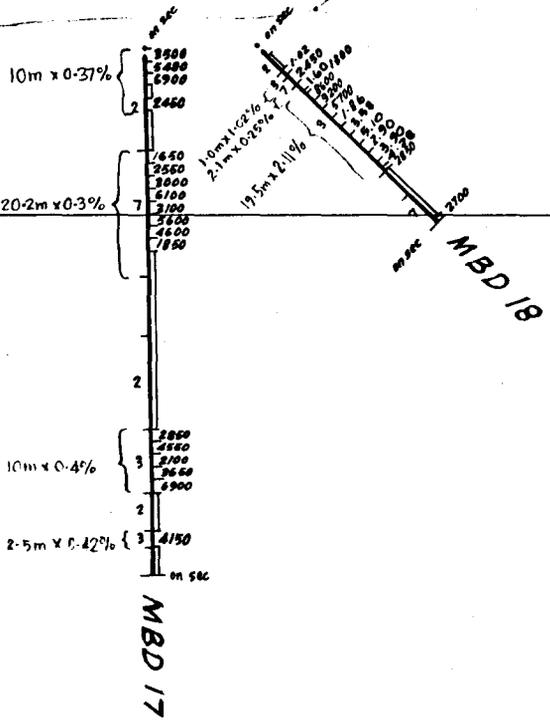
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 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 1020 mE**

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 DATE:            REVISED: SEPT '79    DRG. NO. 79-018

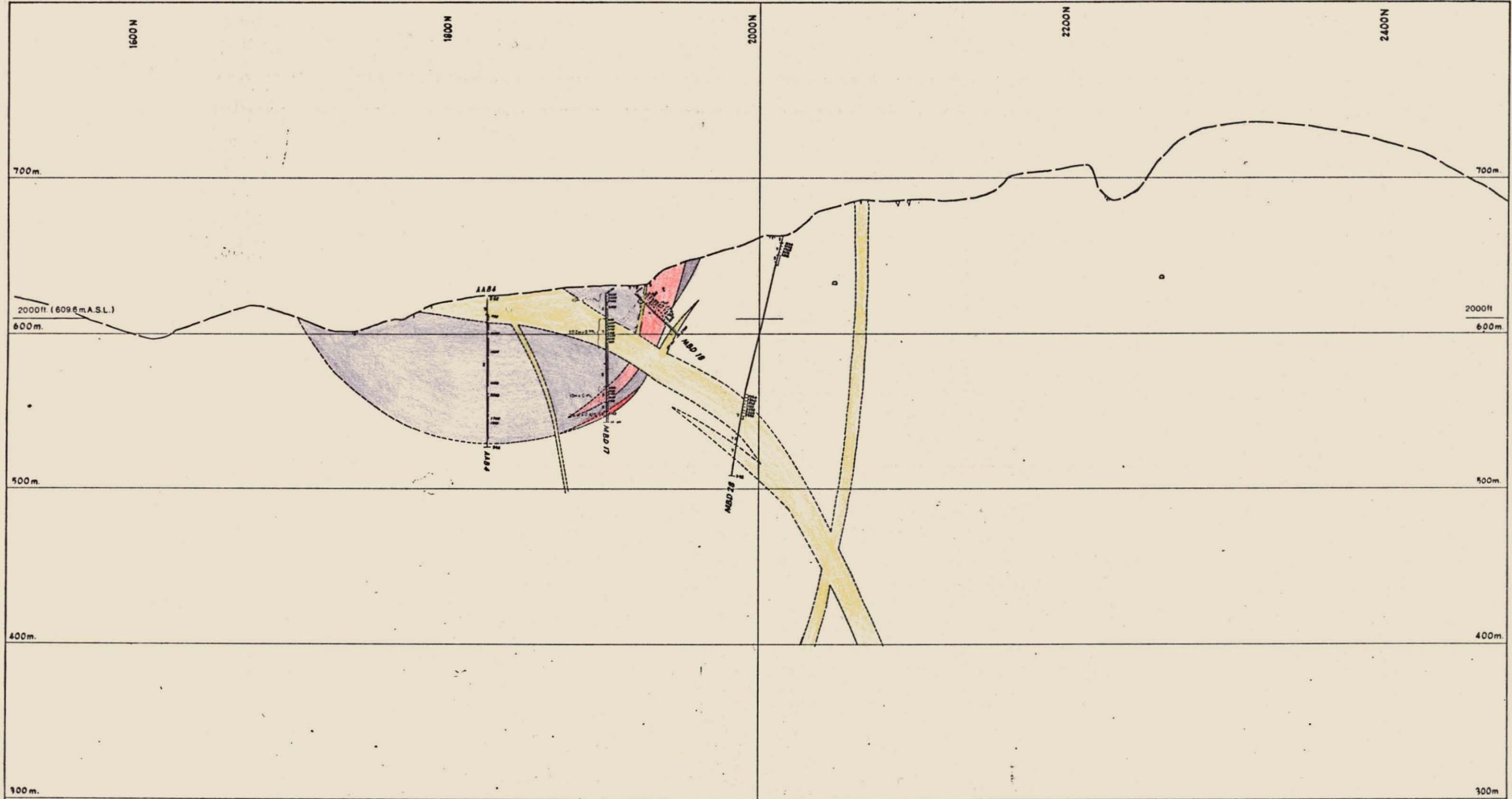
5 cm

2000N

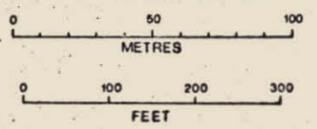
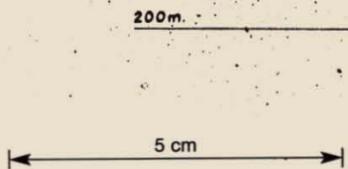
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□



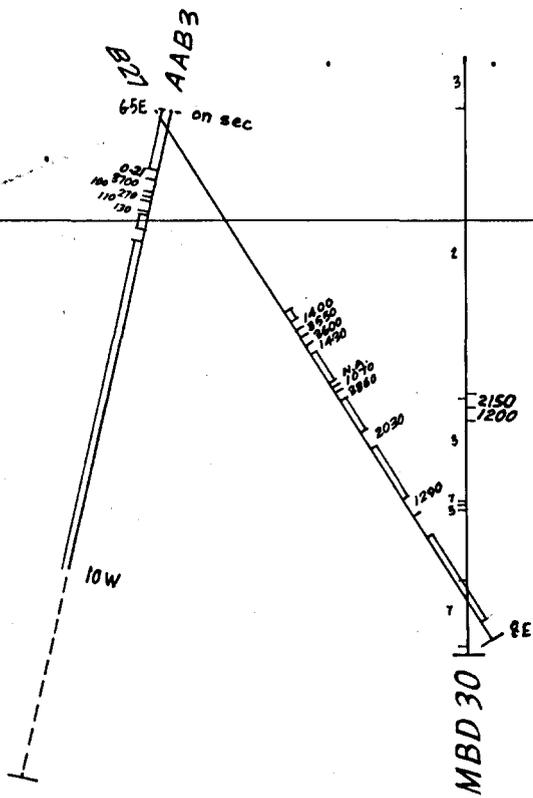
- DOLOMITE
- MINERALIZED DOLOMITE / TIN ZONE
- PORPHYRY
- ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- PYRRHOTITE

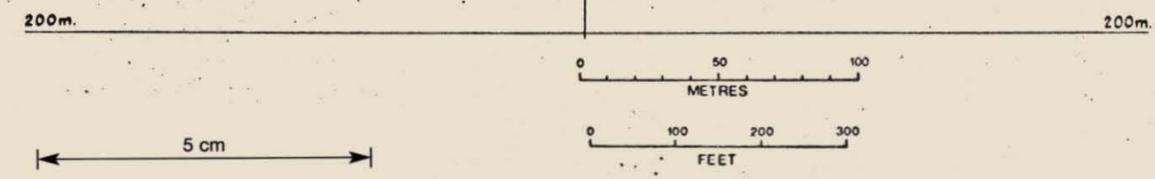
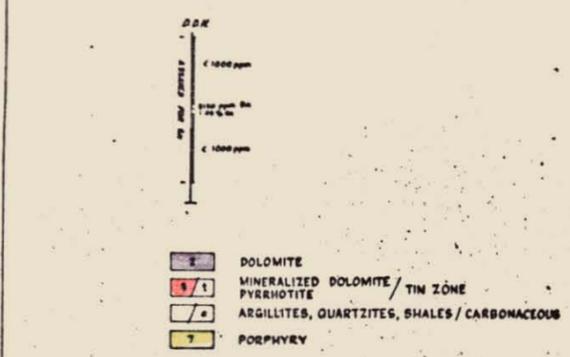
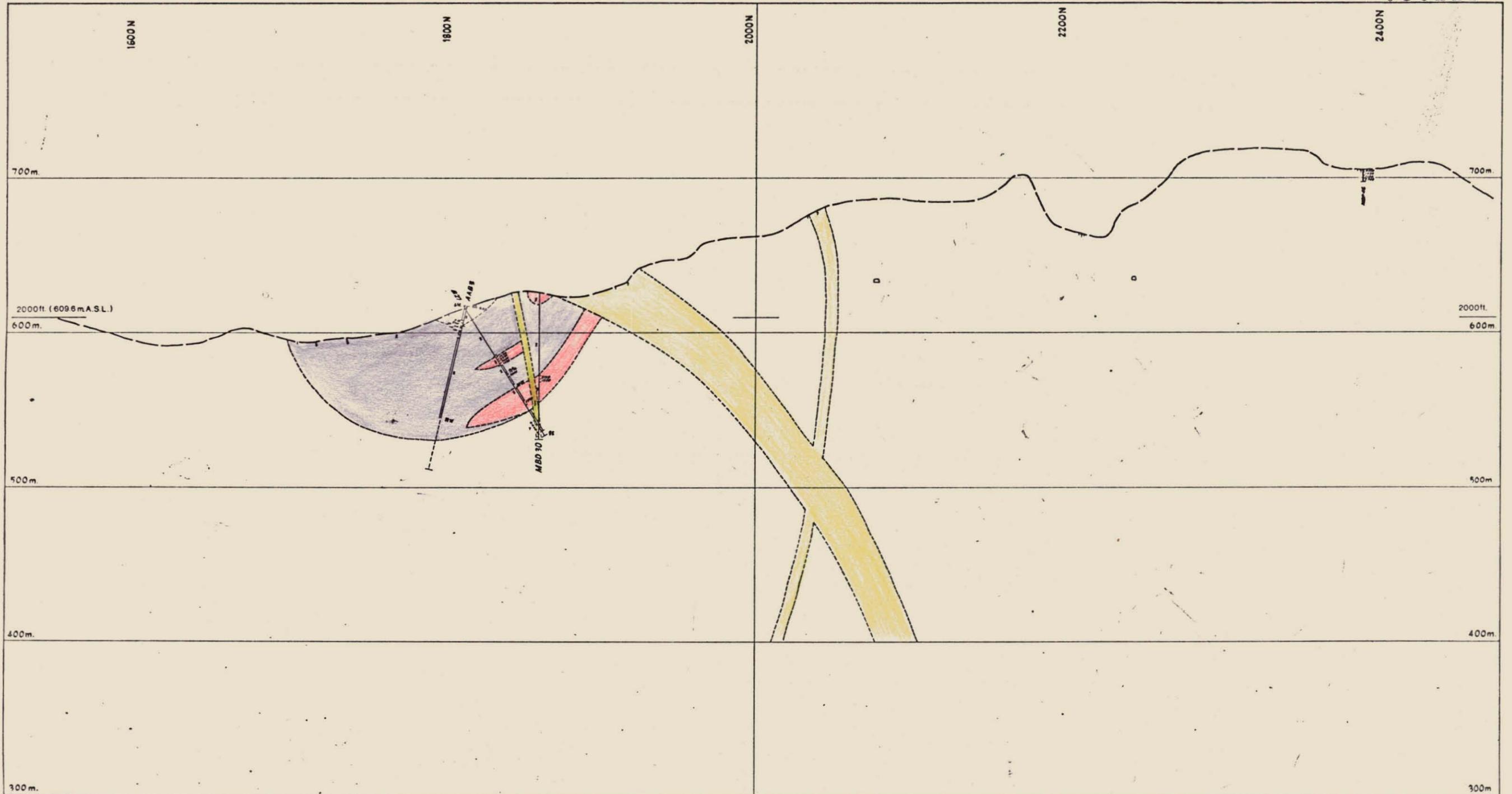


METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 1100 mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE:            REVISED: SEPT '79    DRG. NO. 79-017

5 cm





METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 1140 mE**

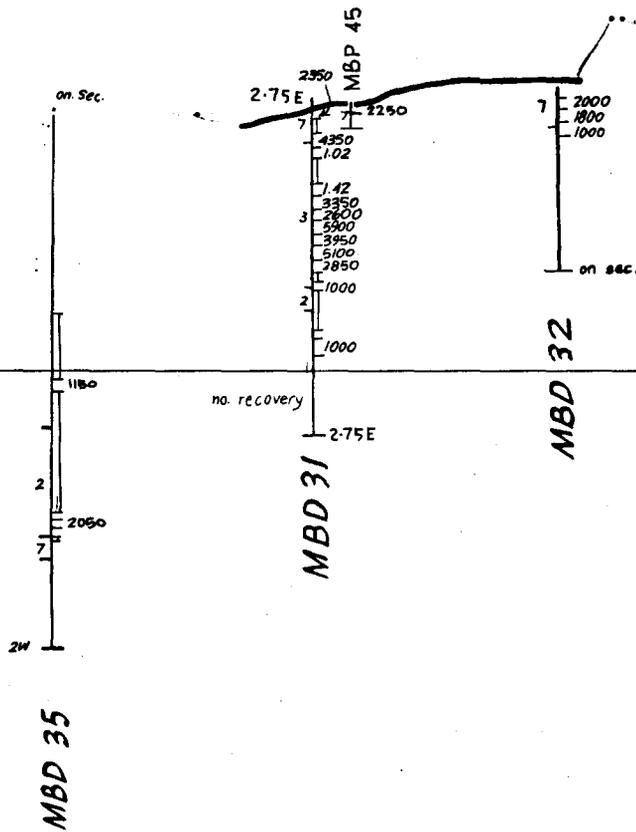
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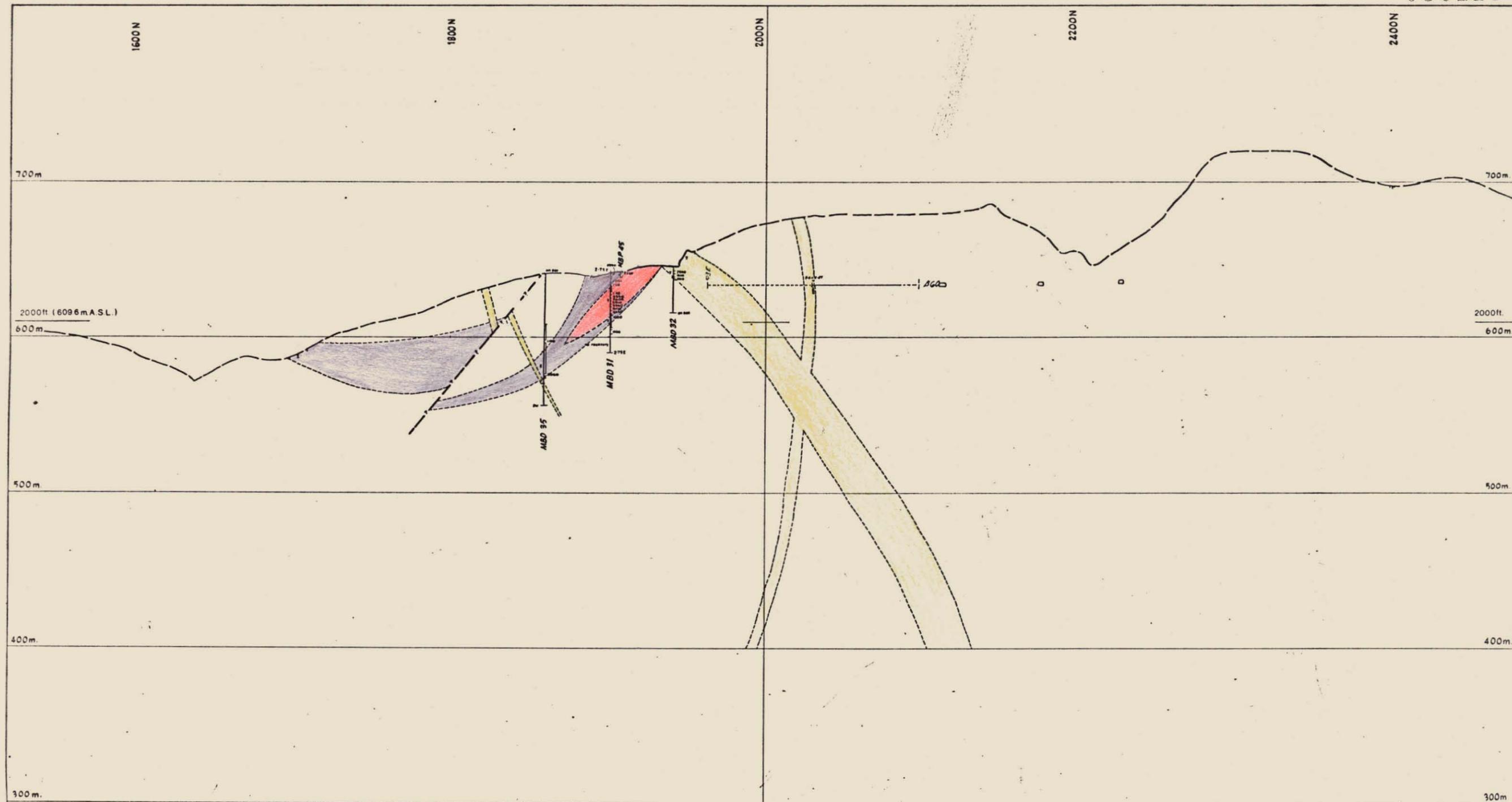
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5 cm

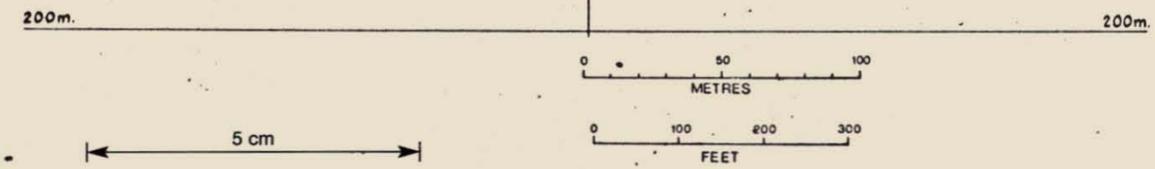
086112

2000N





- DOLOMITE
- MINERALIZED DOLOMITE / TIN ZONE
- PYRRHOTITE
- ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- PORPHYRY



METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 1180 mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE:            REVISED SEPT '79    DRG. NO. 79-021

5 cm

2000N

086114

MBD 34



MBD 33

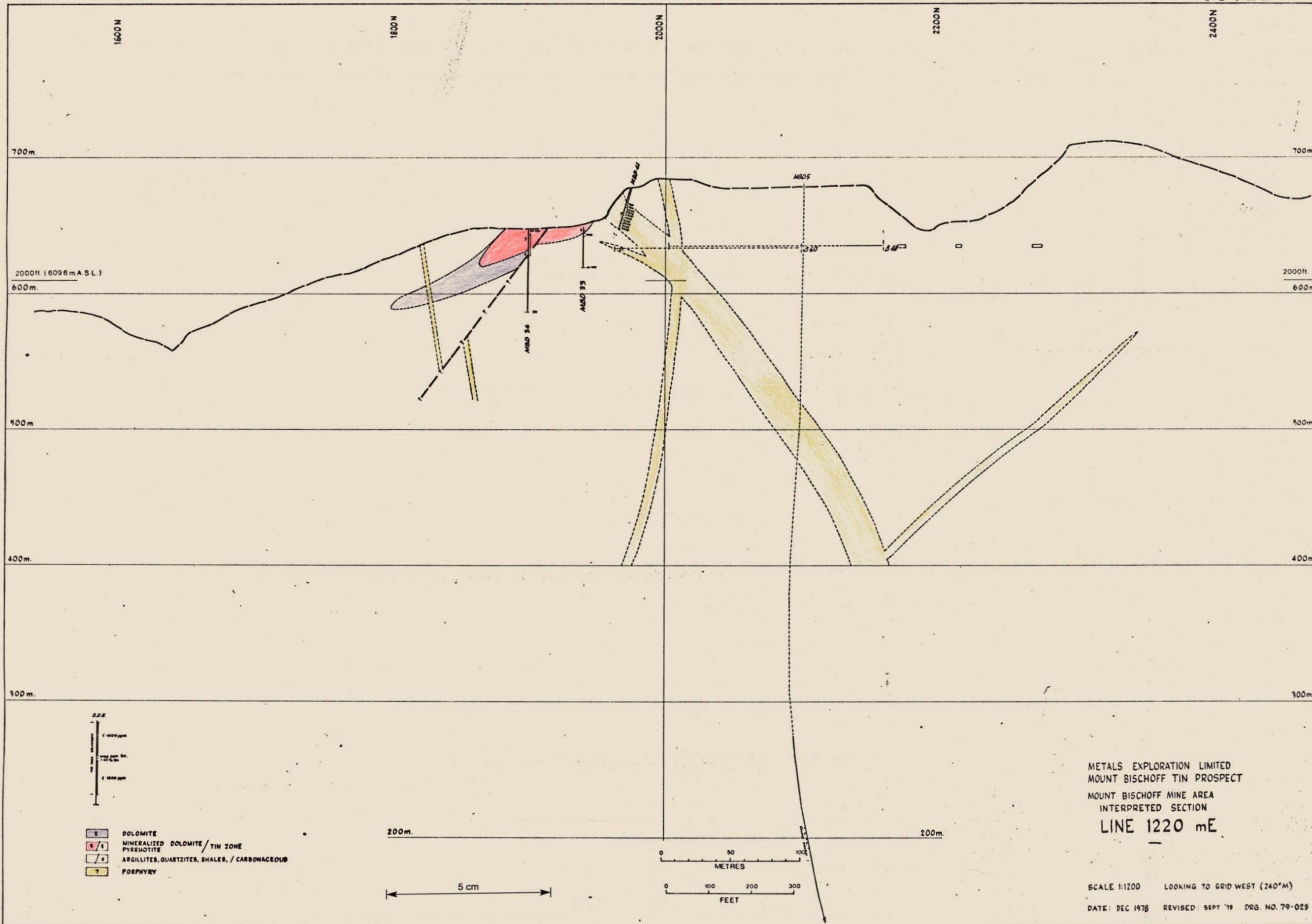


MBP 41

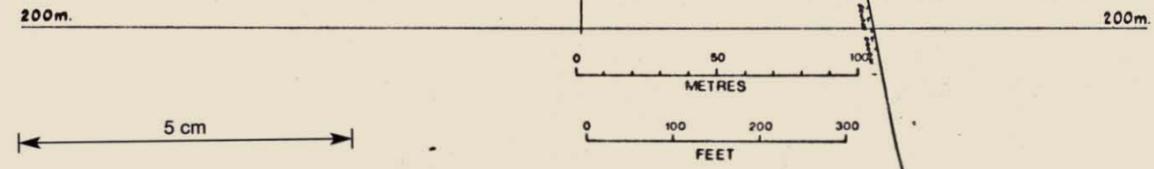


11E





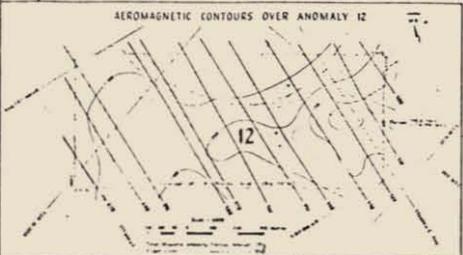
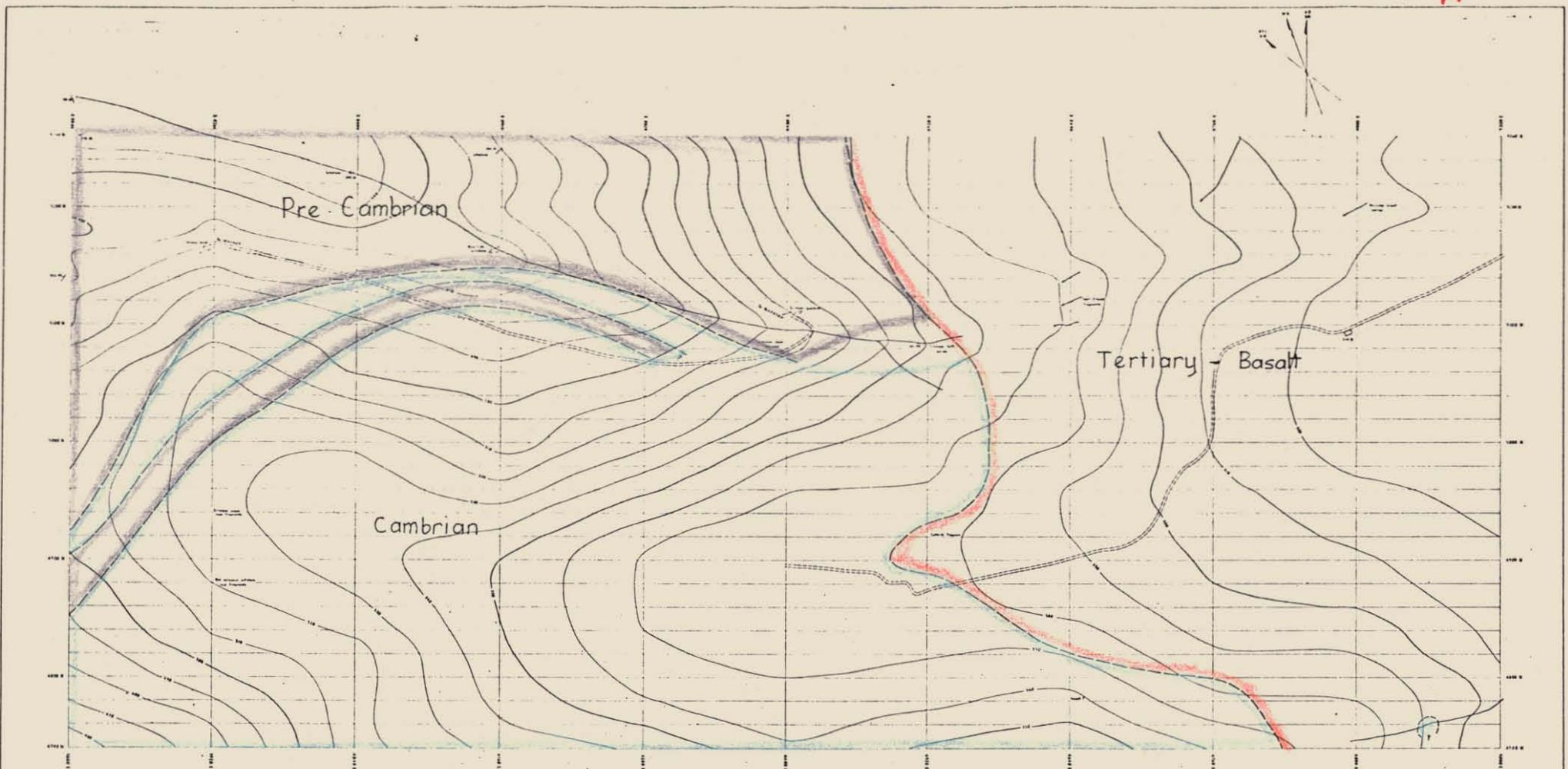
- DOLOMITE
- MINERALIZED DOLOMITE / TIN ZONE
- ARGILLITES, QUARTZITES, SHALES, / CARBONACEOUS
- PORPHYRY



METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 1220 mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE: DEC 1978    REVISED: SEPT '79    DRG. NO. 79-029

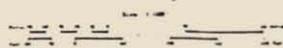
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METALS EXPLORATION LIMITED  
 H. BROOKS GRID - MAGNETIC ANOMALY 12  
 GEOLOGY AND TOPOGRAPHY

- Basalt
- Cambrian
- Pre-Cambrian

- Road
- Boundary
- Contour



METALS EXPLORATION LIMITED  
 MT BISCHOFF TIN PROSPECT  
 H. BROOKS GRID - MAGNETIC ANOMALY 12  
 GEOLOGY AND TOPOGRAPHY

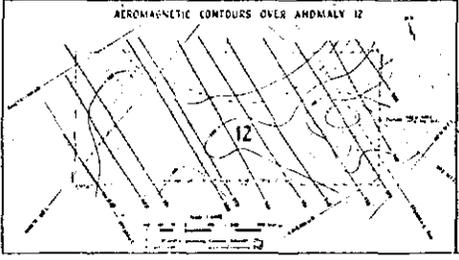
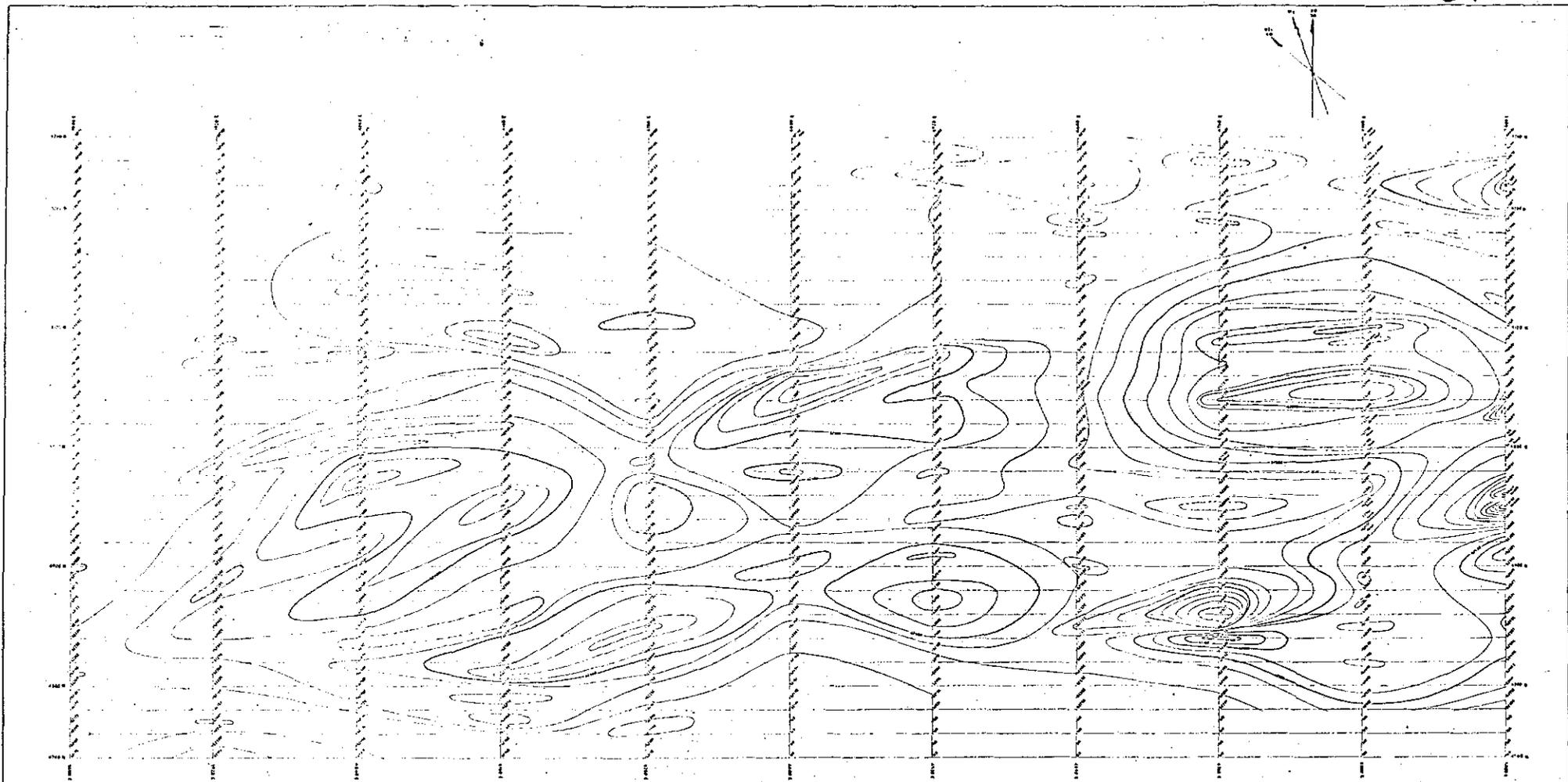
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FIG No R80-048

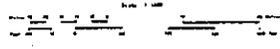
5 cm

086116

B.



Contour interval: 100 to 1000 units  
 Contour interval: 100 to 1000 units  
 Contour interval: 100 to 1000 units

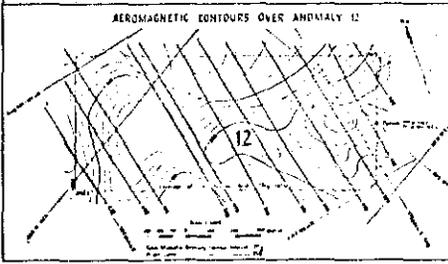
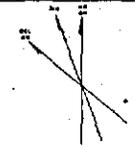
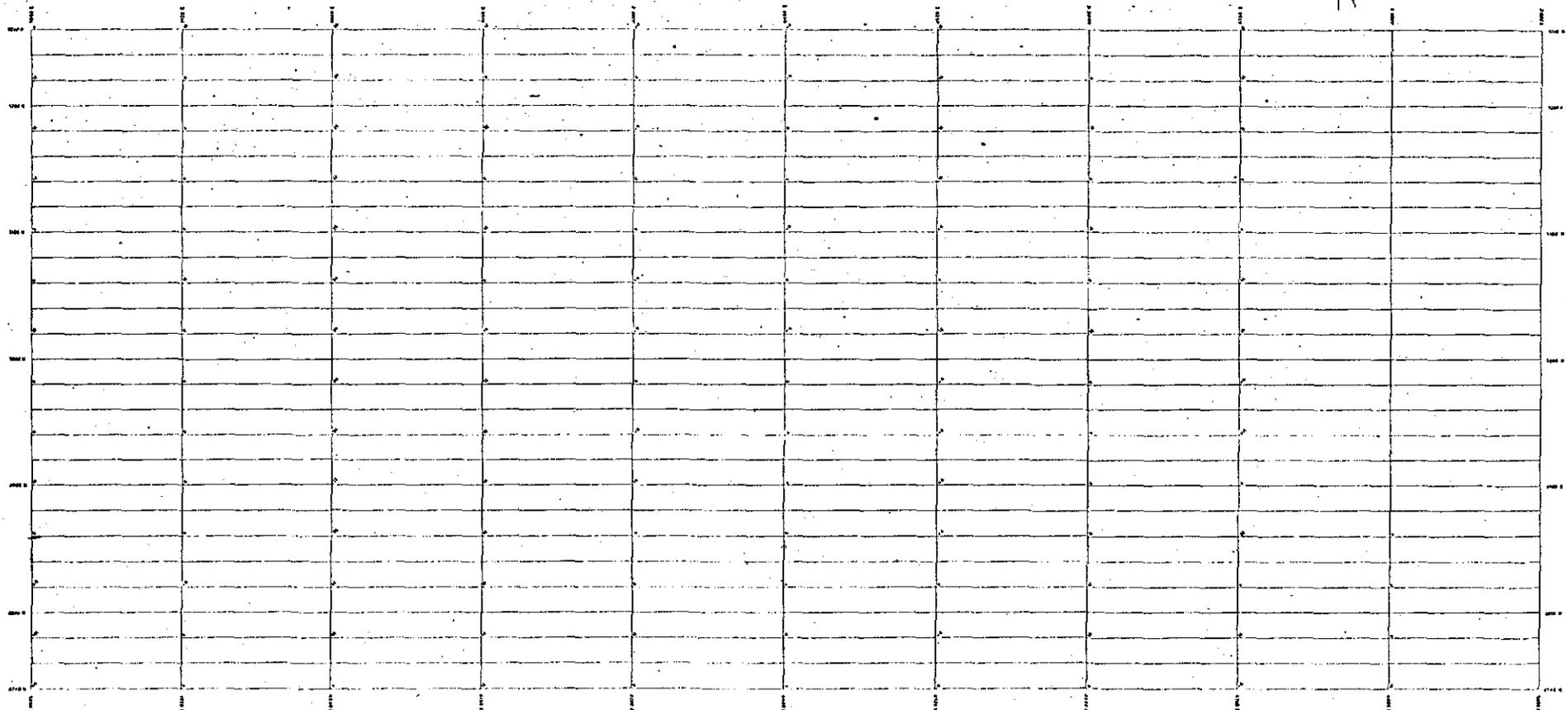


METALS EXPLORATION LIMITED  
 MT BISCHOFF TIN PROSPECT  
 H. BROOKS GRID - MAGNETIC ANOMALY 12  
 GROUND MAGNETIC SURVEY  
 TOTAL MAGNETIC INTENSITY CONTOURS  
 Date: 12-3-88  
 CRG No RED-030

5 cm

086117

C



METALS EXPLORATION LIMITED  
 MT BISCHOFF TIN PROSPECT  
 H. BROOKS GRID - MAGNETIC ANOMALY 12  
 SA GEOCHEMICAL CONTOURS

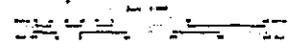
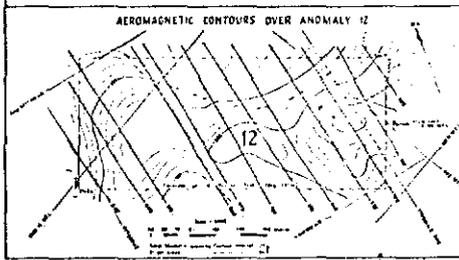
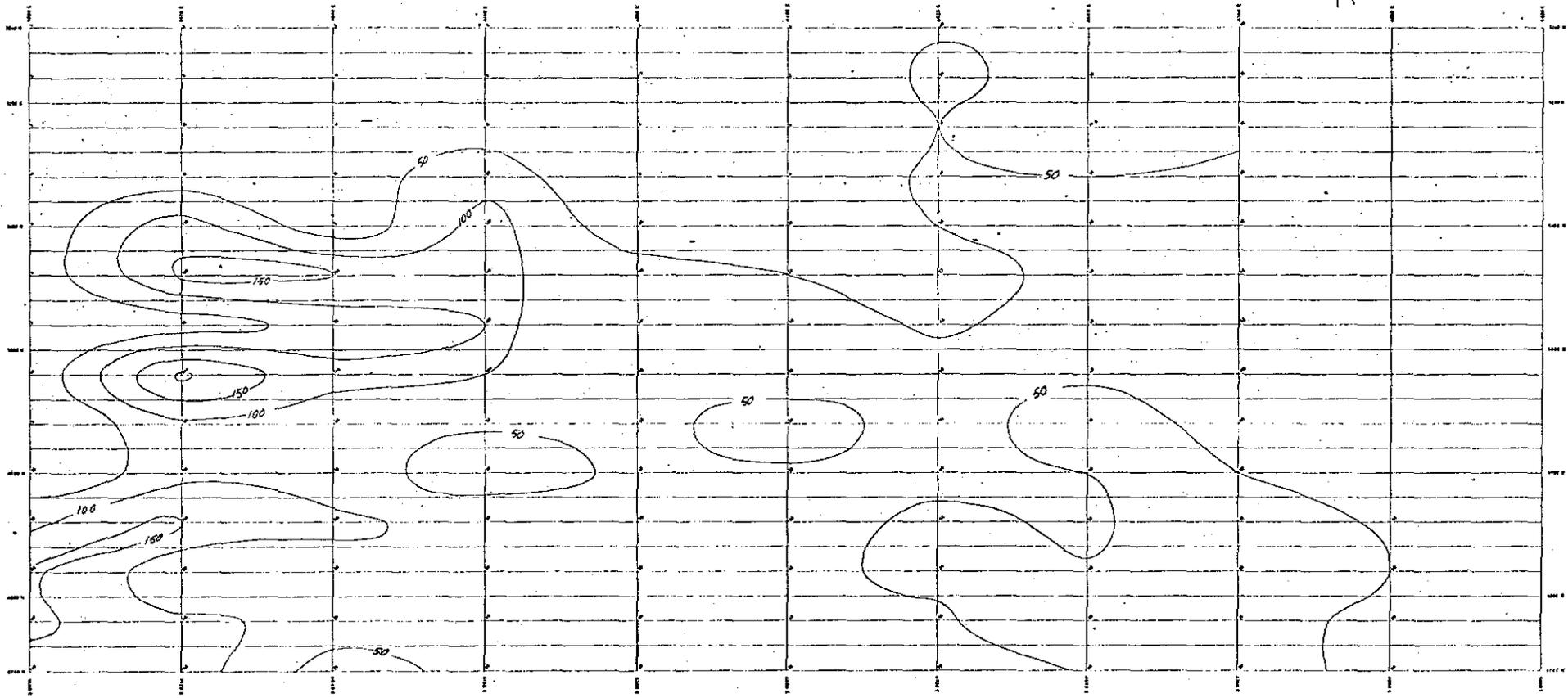
Date 26-3-80 O.S. No. 80

MASTER GRID O.S. No. X23 050

5 cm

086118

D



METALS EXPLORATION LIMITED  
 MT BISCHOFF TIN PROSPECT  
 H. BROOKS GRID - MAGNETIC ANOMALY 12  
 Cu GEOCHEMICAL CONTOURS

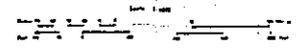
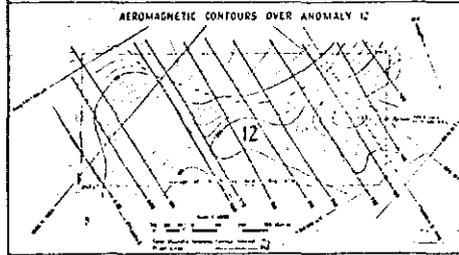
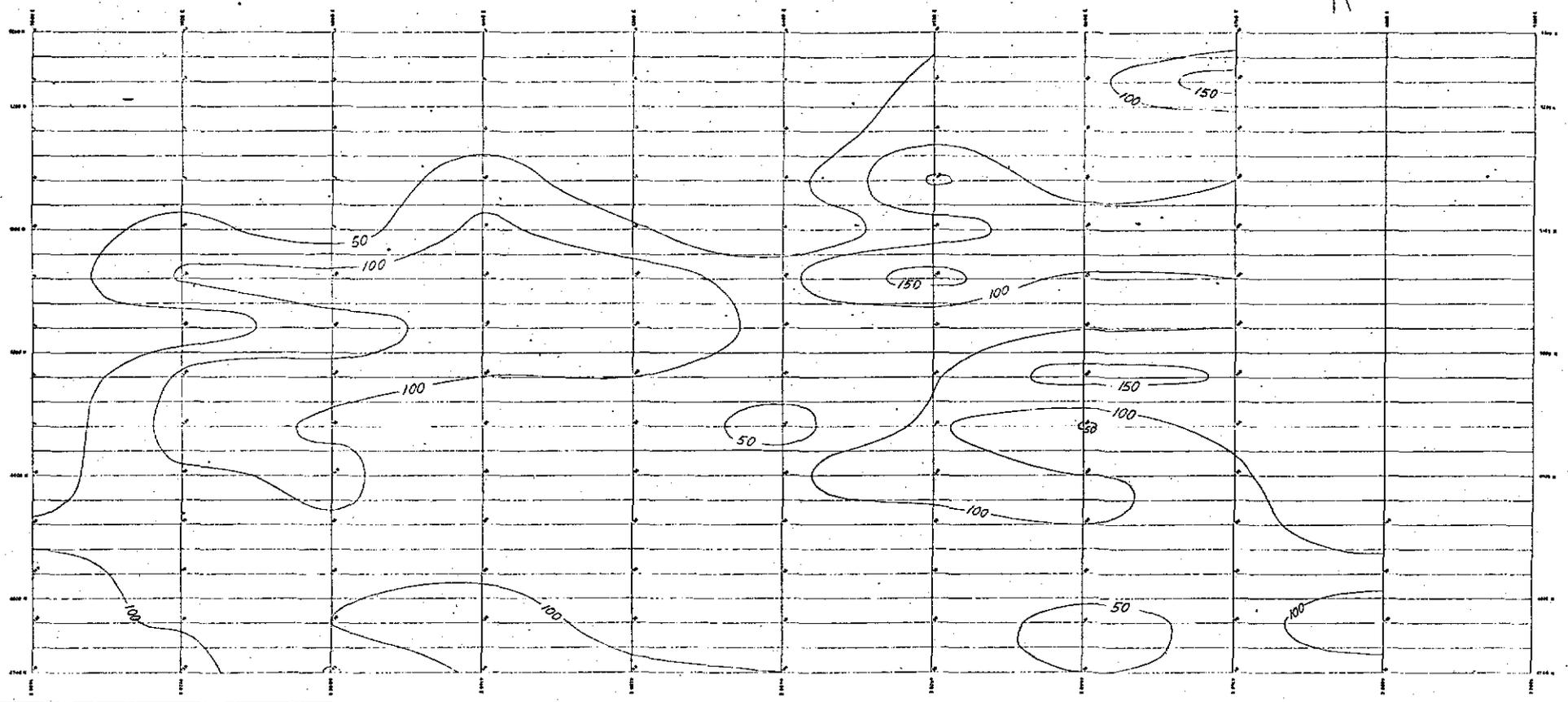
Date 26-3-80

Grid No. 8D

MASHER 4418 ORG No. 880 050

086119

E



METALS EXPLORATION LIMITED  
 MT BISCHOFF TIN PROSPECT  
 H. BROOKS GRID - MAGNETIC ANOMALY 12  
 Zn GEOCHEMICAL CONTOURS

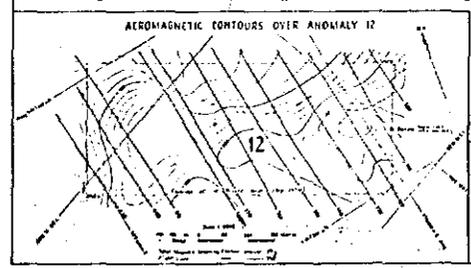
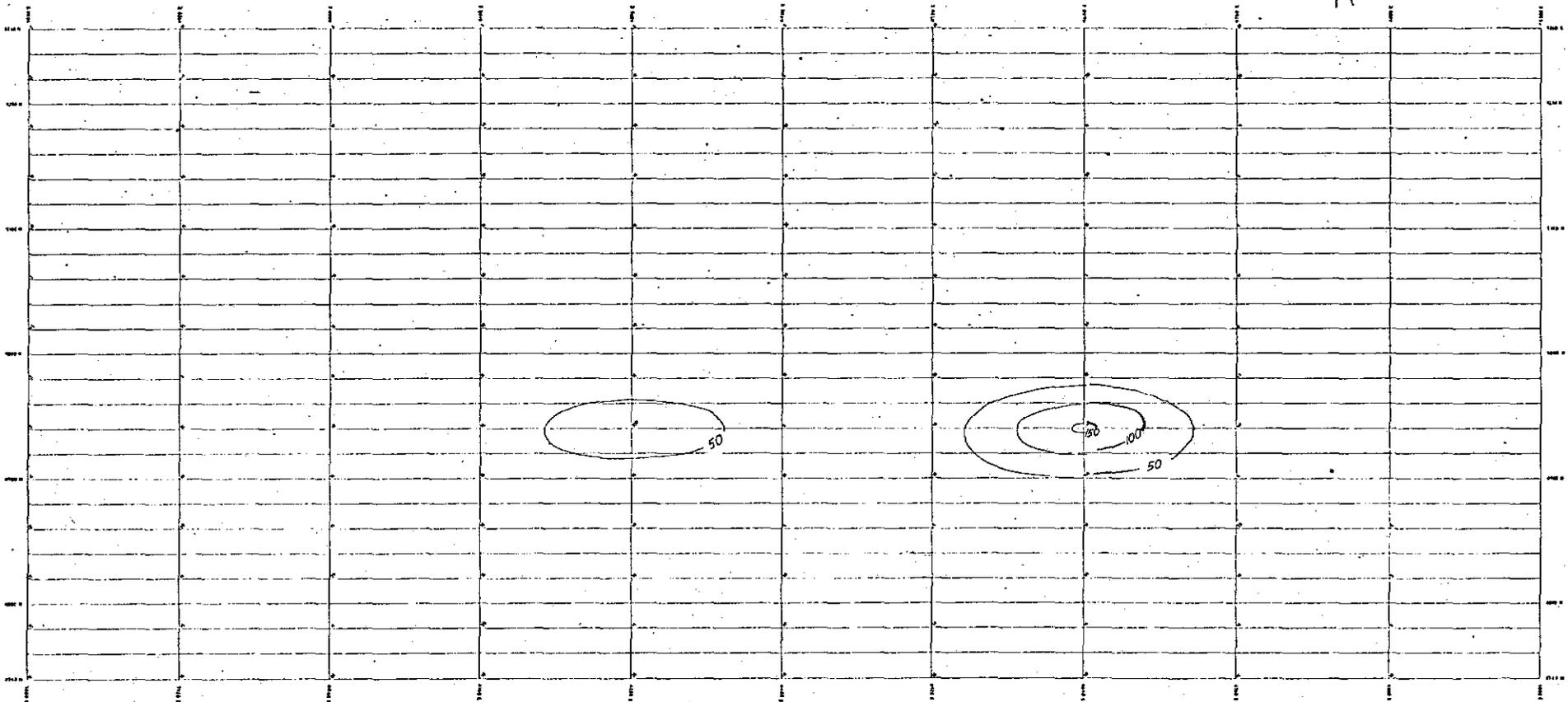
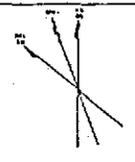
Date 29-3-80 DGC No. 80-

MUSTER GEO 090 1, 800 010

5 cm

086120

F



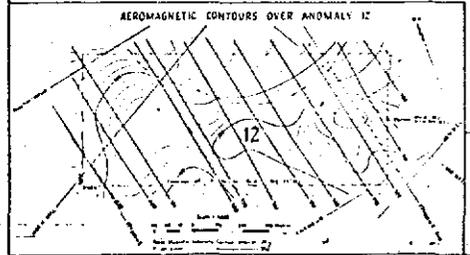
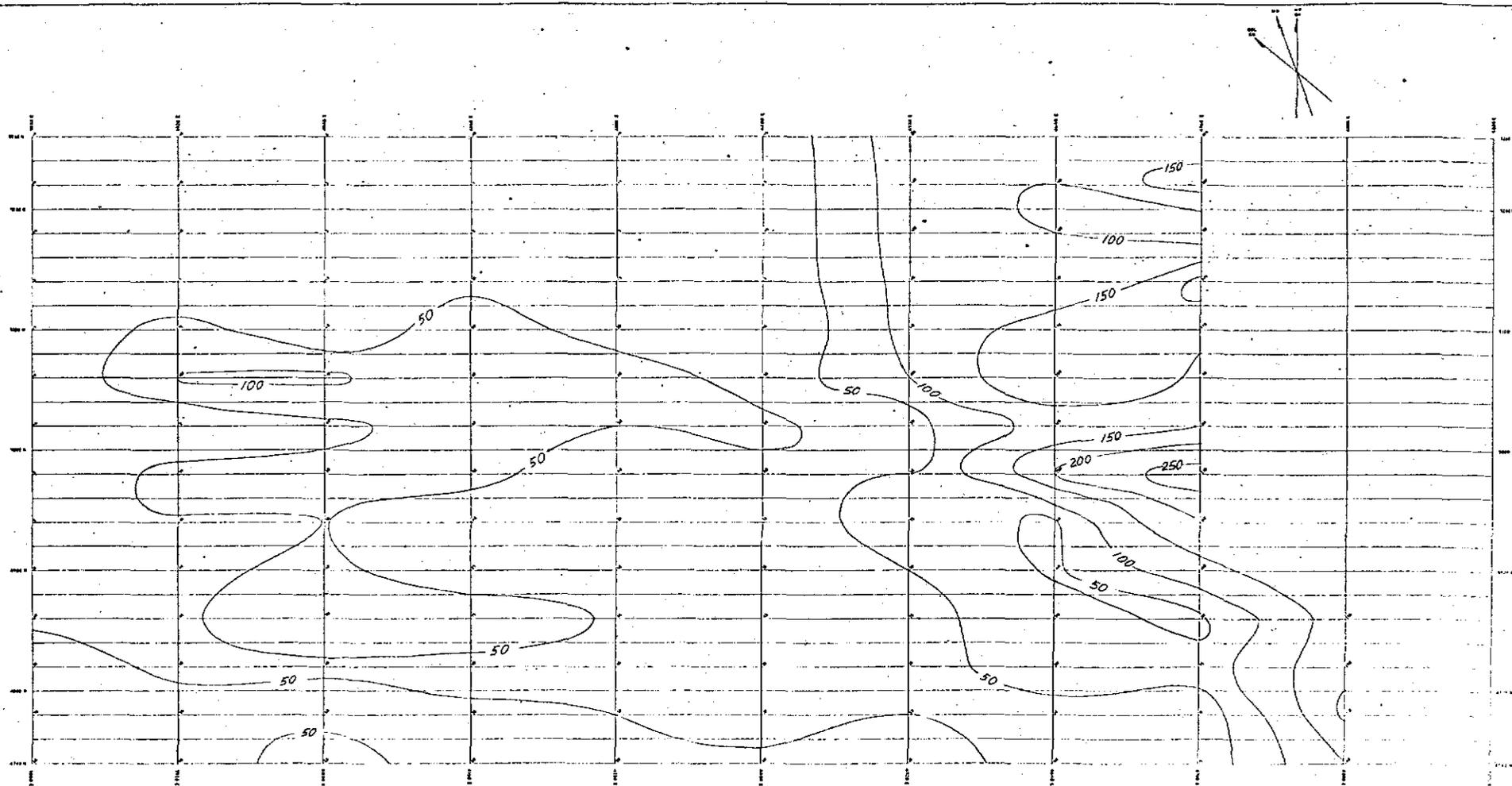
METALS EXPLORATION LIMITED  
MT BISCHOFF TIN PROSPECT  
H. BROOKS GRID - MAGNETIC ANOMALY 12  
Pb GEOCHEMICAL CONTOURS

Doc 26-3-30 DGS No. 80-

MASTER COPY DGS No. 80-214

5 cm

086121



METALS EXPLORATION LIMITED  
 MT BISCHOFF TIN PROSPECT  
 H. BROOKS GRID - MAGNETIC ANOMALY 12  
 NI GEOCHEMICAL CONTOURS

QTM 24-3-60 GPT No. 21

5 cm

086122



086123

**METALS EXPLORATION LTD.**

20 LITTLE COLLINS STREET MELBOURNE, AUSTRALIA 3000. TELEPHONE 654 4200. TELEX AA32051. TELEGRAM ROCKDOC.

MT. BISCHOFF TIN PROSPECT

EXPLORATION LICENCE 13/79

TASMANIA

REPORT FOR MARCH, 1980

Distribution:	Copy No.		
		1:	Department of Mines, / Tasmania
	" "	2:	CRAE
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	" "	10:	Spare Copy

A. Jannink

18th April, 1980.

MT. BISCHOFF JOINT VENTUREREPORT FOR MARCH 1980GENERAL:

The initially programmed diamond drilling of 27 holes was completed by the end of the month. At the end of March 1980, 2531 metres had been drilled in an allotted programme of 2400 metres. Two drilling rigs were on site until 7th March, 1980, when the smaller BBS 1 rig was removed from the job.

Gridding, ground magnetics and some geochemistry were completed on the Housego grid in the Fook's Lode area.

Work was continued at AMDEL on metallurgical studies of eight drill core samples (4 porphyry, 4 dolomite sulphide lode) submitted during the previous month.

A technical meeting was held at Mt. Bischoff between members of CRA Exploration and Metals Exploration on 13th March, 1980. The meeting reviewed the progress and results of the Stage 2B Programme to date, and formulated a programme for the unallotted budget of the Stage 2B Programme. A further 1000 metres of diamond drilling was agreed upon.

DIAMOND DRILLING:

During the month 7 holes were completed and one extended. A total of 798.7 metres were drilled. Nearly all the drilling was targetted on the White Face and Stanhope porphyry dykes.

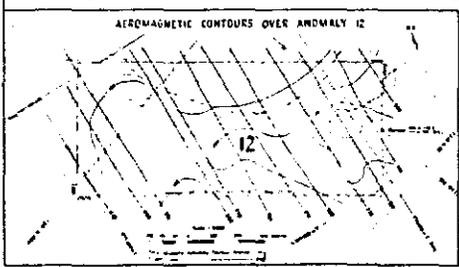
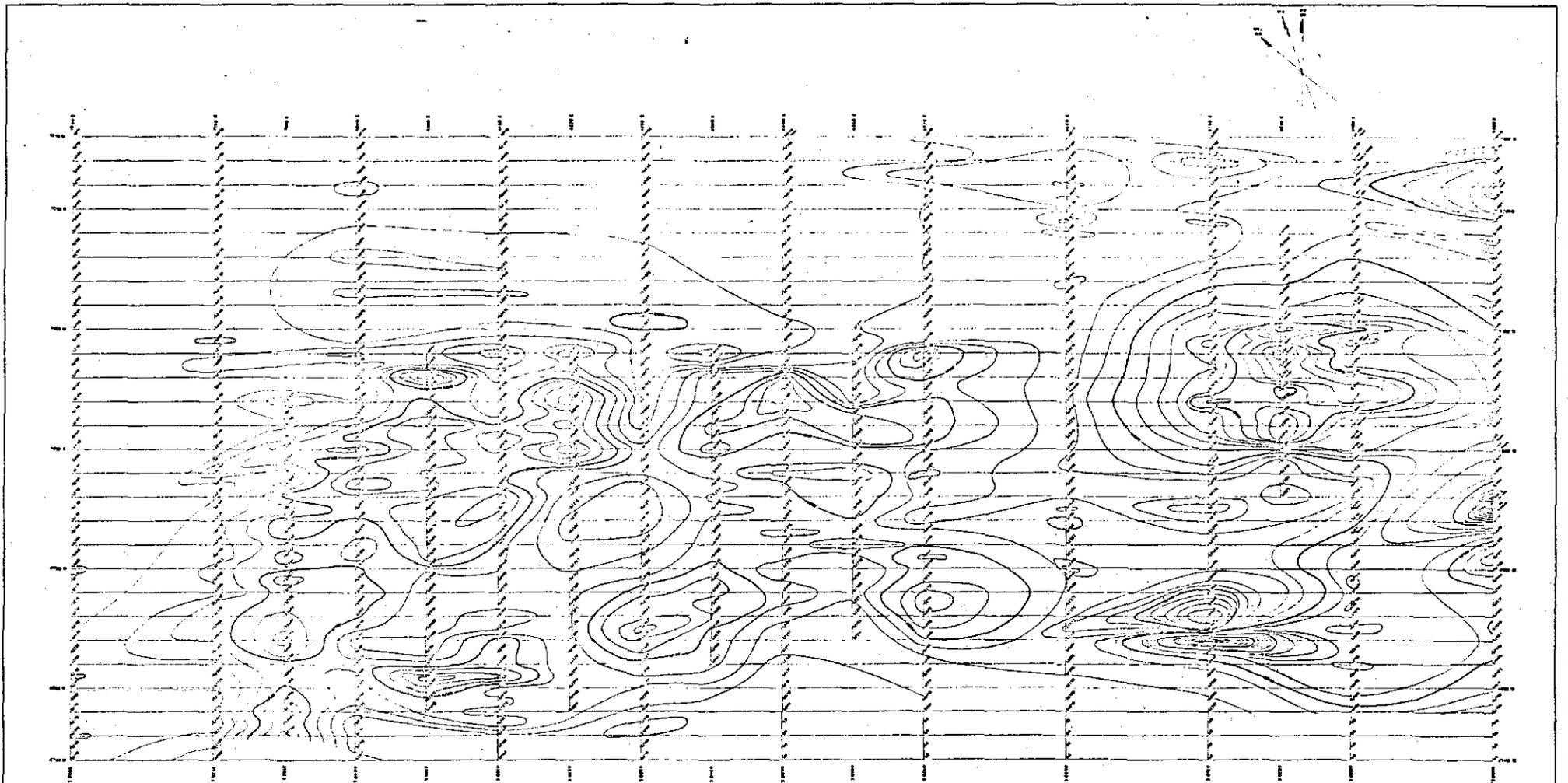
The following significant assay results were obtained:  
 (Abbreviation DSL stands for Dolomite Sulphide Lode)

Hole No.	From	To	Width (m)	%Sn	Rock Type
MBD21	(Extended)	No significant results			
MBD29A	22.0	24.0	2.0	0.40	Dolomite
	39.5	61.1	21.6	0.19	Porphyry
including	41.5	53.5	12.0	0.24	"
	61.1	66.5	5.4	3.16	DSL
MBD35	77.8	78.8	1.0	0.89	Dolomite
	64.7	65.7	1.0	0.21	Dolomite and Puggy Clay
MBD36	70.4	74.4	4.0	0.44	Sediments
	35.8	38.0	2.2	0.84	Quartz vein & Sediments
including	176.5	194.5	18.0	0.17	Porphyry
	176.5	182.5	6.0	0.30	"
MBD37	71.0	72.3	1.3	0.35	Porphyry
	108.1	125.8	17.7	0.37	"
MBD38	143.6	164.2	20.6	0.20	Porphyry
	145.6	153.6	8.0	0.29	"
MBD39	42.3	56.1	13.8	0.38	Porphyry
	56.1	58.1	2.0	0.52	Sediments
MBD40	74.6	93.1	18.5	0.83	Porphyry

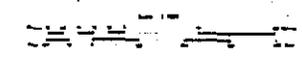
OLD CORE:

Reboxing of "old" core was continued and some old core was relogged.

A1



Scale of 1:50,000  
 Contour interval 100 gamma  
 Contour interval 100 gamma  
 Contour interval 100 gamma



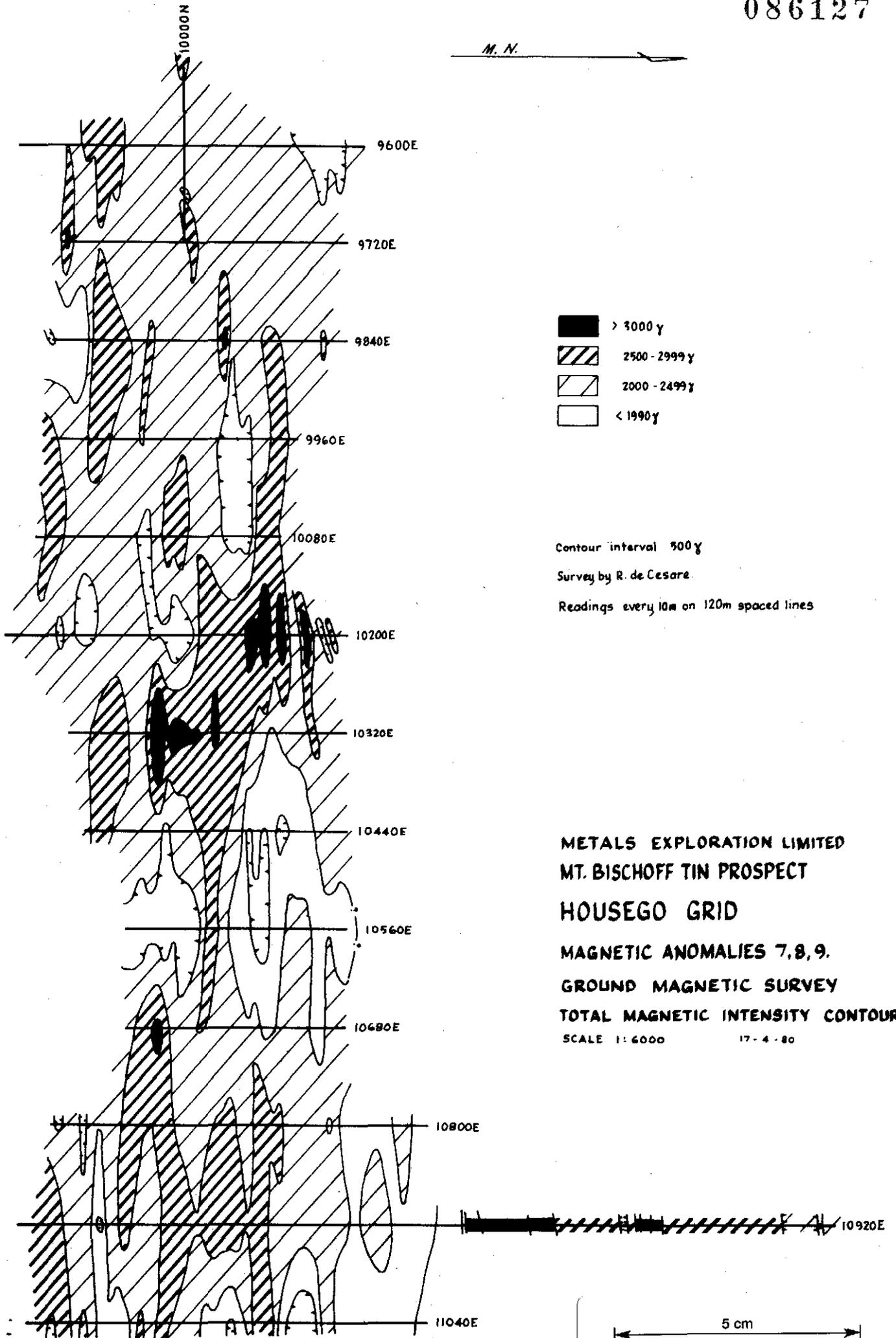
METALS EXPLORATION LIMITED  
 MT BISCHOFF TIN PROSPECT  
 H. BROOKS GRID - MAGNETIC ANOMALY 12  
 GROUND MAGNETIC SURVEY  
 TOTAL MAGNETIC INTENSITY CONTOURS  
 Date: 12-1-50  
 POC No. R-101-030

FILL IN GRID AS AT MAR 21ST '50

5 cm

086126

M. N.



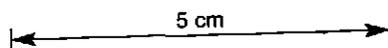
METALS EXPLORATION LIMITED  
 MT. BISCHOFF TIN PROSPECT  
 HOUSEGO GRID  
 MAGNETIC ANOMALIES 7,8,9.  
 GROUND MAGNETIC SURVEY  
 TOTAL MAGNETIC INTENSITY CONTOURS  
 SCALE 1: 6000 17-4-80

	Sn	Cu	Pb	Zn	Ni
○ 10800N	x	48	<5	140	130
○ 10760N	I.S.	40	15	100	95
○ 10720N	x	50	15	140	120
○ 10680N	10	52	20	150	130
○ 10640N	16	35	5	75	90
○ 10620N	I.S.	30	10	70	75
○ 10600N	8	48	5	95	110
○ 10580N	10	50	<5	100	120
○ 10560N	16	42	10	75	85
○ 10540N	32	35	100	110	55
○ 10500N	10	30	<5	80	85
○ 10460N	18	25	<5	90	70
○ 10440N	140	22	5	200	85
○ 10420N	I.S.	22	<5	90	55
○ 10400N	14	22	<5	90	70
○ 10380N	x	20	<5	120	65
○ 10360N	8	22	10	80	45
○ 10340N	44	40	5	100	90

x denotes below limit of detection.

I.S. Insufficient sample.

5 cm



METALS EXPLORATION LTD.  
HOUSEGO GRID - ANOMALY 6  
HAND AUGER SAMPLING RESULTS  
LINE 10920E  
SCALE 1:2000  
DRG. NO. 80-127

H. BROOKS GRID:

Lines were cut and ground magnetics were run over intermediate lines (60 metre spacing) between the magnetic highs found during the initial ground magnetic survey (120 metre spacing). Geophysical interpretation of the results is awaited.

HOUSEGO GRID:

Gridding and ground magnetics were completed on the Housego grid. This grid lies chiefly over Tertiary basalt and only one line, that was extended over the older sediments, was hand augured and geochemically sampled.

The ground magnetics has revealed one major anomaly about 700 metres long with peak values of over 1000 gammas above background. Various other anomalies also exist. Geophysical interpretation of the anomalies is awaited.

The geochemical survey of line 10920E produced one anomalous tin value of 140 ppm which was, however, effectively a stream sediment sample in Falls Creek. Virtually none of the samples came from the "C" horizon since it could not be penetrated. Copper, zinc and nickel values appeared to relate more to Cambrian rocks than Precambrian.

METALLURGY:

Metallurgical studies of the 8 diamond drill core samples submitted to AMDEL were continued. Assaying of the composite head samples has been completed including multi-element scans. It was decided to have all individual (2 metre) drill core samples of porphyry and dolomite sulphide lode assayed for the following elements

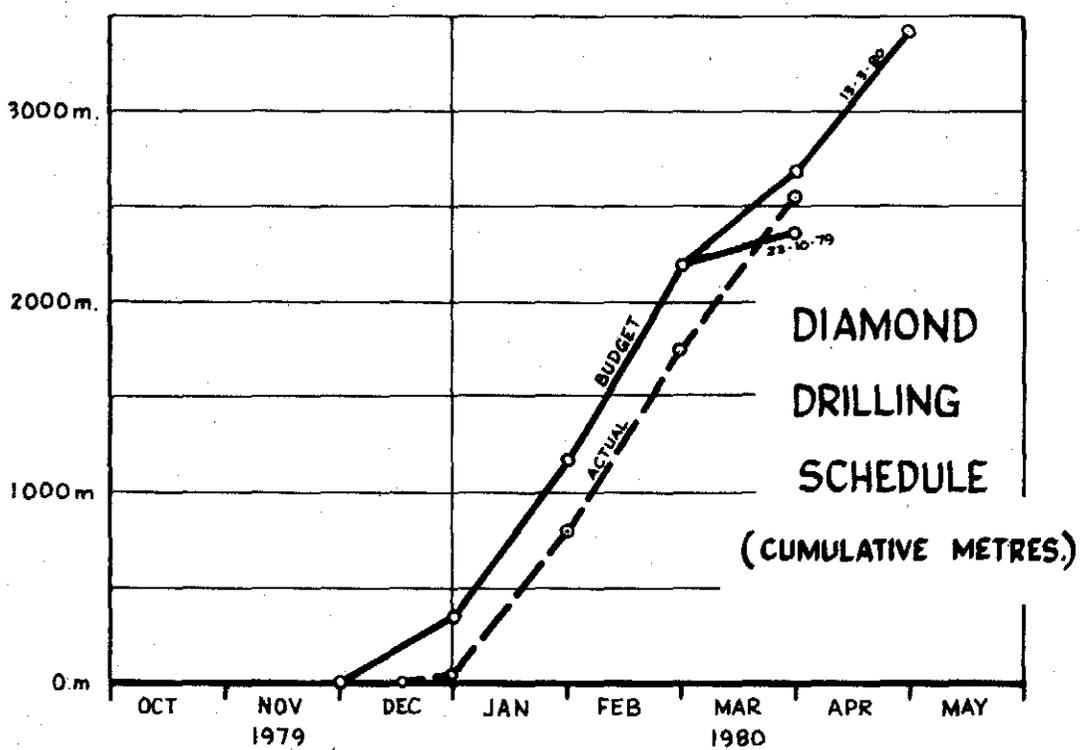
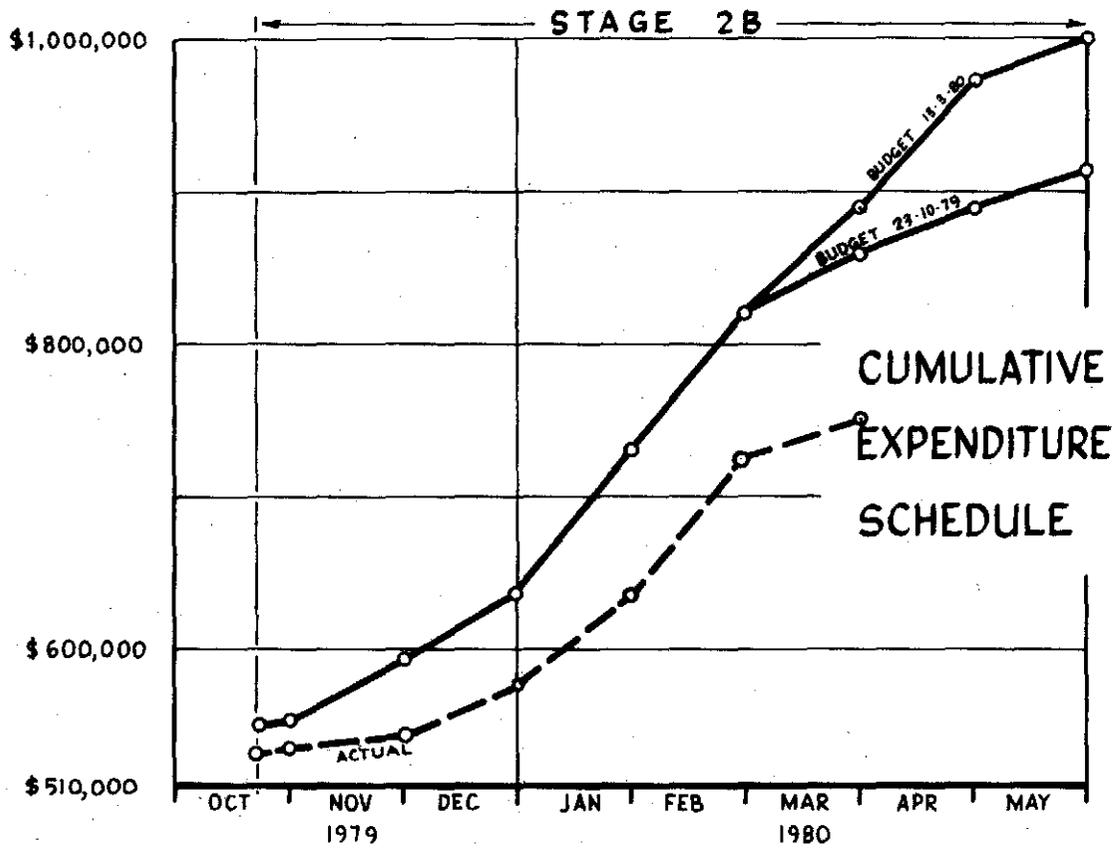
Copper  
Lead  
Zinc  
Silver  
Arsenic  
Tungsten

MT BISCHOFF PROJECT CRA/MELDETAILED EXPENDITURE STATEMENT FOR MARCH, 1980

<u>STAGE 2B</u>	<u>MARCH 1980</u>		<u>STAGE 2B TO DATE</u>	
	<u>ACTUAL</u>	<u>BUDGET</u>	<u>ACTUAL</u>	<u>BUDGET</u>
<u>Field Costs</u>				
Technical Services	16,922	15,000	53,964	70,700
Travel & Accommodation	419	700	2,012	3,500
Labour	728	1,800	6,954	9,000
Camp & Messing	498	1,000	3,550	5,850
Vehicles	791	1,000	4,324	5,000
Equipment Rental	198	350	448	1,500
General Expenses and Consumables	2,828	2,050	24,631	26,100
Lease Expenses	-	-	148	500
Geochemical Surveys	-	-	595	-
Geophysical Surveys	59	-	59	-
Track Cutting	-	-	-	3,750
Diamond Drilling	17,964	30,300	126,728	162,000
Site Preparation	-	3,150	3,870	7,650
Metallurgical	8,922	10,000	9,933	35,000
Assays	3,270	1,600	3,562	6,840
<u>Capital Items</u>				
Core Shed	-	-	5,085	5,100
	<u>52,599</u>	<u>66,950</u>	<u>245,863</u>	<u>342,490</u>

SUMMARY OF EXPENDITURE TO 31.3.80.

Stage 1	270,000
Stage 2A - Early Start	29,020
Stage 2A	198,818
<u>Over Runs</u>	
Stage 1 - M.E.L.	11,308
Metallurgical - C.R.A.E.	23,500
Stage 2B	245,863
<u>CUMULATIVE EXPENDITURE TO DATE</u>	<u>\$ 778,509</u>



MT. BISCHOFF

STAGE 2B SUMMARY

as at 31 - 3 - 80

ATTN TONY JAVILLA

A  
18 MAR 1980  
RECEIVED

SAMPLE NO	SULPHUR COMPOUNDS		SULPHIDE COMPOUNDS	
	PC1	PC2	SC1	SC2
PA (200)	-	-	-	-
PE (1)	3	20	150	100
CE (300)	-	-	-	-
CO (5)	-	-	-	15
CR (20)	150	150	40	30
LA (50)	-	-	-	-
HM (10)	1000	50	600	4000
HO (3)	6	3	-	-
NR (20)	40	20	-	-
NI (5)	30	30	-	5
SC (3)	3	3	3	-
SR (50)	-	-	-	-
TA (100)	-	-	-	-
TH (100)	-	-	-	-
TJ (100)	200	200	100	100
V (10)	15	15	25	25
W (50)	50	50	100	200
Y (10)	100	80	30	20
YB (1)	60	20	6	3
ZR (10)	100	80	150	150
AG (0.1)	2.0	5.0	0.5	0.5
AS (50)	1500	2000	3000	-
BI (1)	20	15	30	40
CD (3)	-	-	40	-
CU (1)	250	200	800	300
GA (1)	30	40	60	30
GE (1)	20	5	-	5
IN (10)	-	-	10	-
PS (1)	100	250	40	60
SB (30)	-	-	-	-
SN (1)	2000	2000	+10000	+10000
ZN (20)	150	800	2000	200
AU (3)	-	-	-	-
P (100)	-	-	-	-
YE (20)	-	-	-	-
TL (1)	-	-	-	-
LI (1)	30	20	150	100
NA (50)	-	-	50	100
CS (30)	-	-	-	-
K (5)	1000	500	6000	4000
RB (10)	30	20	300	200
B (3)	40	40	30	200
AL (100)	+10000	+10000	+10000	+10000
GA (100)	8000	300	10000	+10000
FE (100)	+10000	+10000	++10000	++10000
MG (100)	3000	800	+10000	+10000
SI (100)	++10000	++10000	++10000	++10000

+ DENOTES GREATER THAN  
++ DENOTES MUCH GREATER THAN

REGARDS  
K WONG - AMDEL

SENT 17/3/80  
FINNY

WHERE IT READS CA SHOULD READ AS GA

TKU

\*  
ROCKWELL 4432051  
AMDEL 443200

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 21

Location : 1940.06 N 980.07 E grid

Elevation : 644.73 m

Dip : 90°

Azimuth :

Total Depth : 71 m (extended from 46.1m)

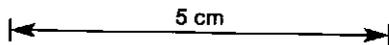
Surveys : Tropari every 40 m

Commenced : 6.3.80 Completed 7.3.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT <small>Depth: Description and notes indicated about 10mm</small>	GRAPHIC LOG	MINERALISATION	BULKED ASSAYS
0	0-3.0 (3.0m)	TRICONE TO 3m - NO CORE.			
	3.0-9.34 (6.34)	3.0-9.34 DOLOMITE. Faintly mottled grey/white due to weak recrystallisation. Brecciated - most extensive recrystallisation is along brecciation fractures. <i>Gradual change</i>	2/3	Sp, trace py, pb as blebs in recrystallised patches. < 1%.	
	9.34-15.71 (6.37)	9.34-15.71 DOLOMITE SULPHIDE LODGE. Incomplete alteration - clasts of grey dolomite surrounded by qtz, carbonates, minor talc (sepehtinite). 11.5m-12.2 unaltered. <i>Gradual Changes</i>	8/25	Pg, fluonite, sp, trace pb, arsenic; disseminated and weakly banded. 10-15% 11.5-12.2 < 1%	
20	15.71-38.5 (22.79)	15.71-38.5 DOLOMITE, weakly recrystallised. Brecciated - clasts of weakly mottled grey/white siliceous dolomite with more extensive recrystallisation along fractures and occasional thin films of talc + sepehtinite. Some intervals of creamy white recrystallised dolomite up to 1m thick. <i>Gradual Change over 2m</i>	3	Sp, pg as blebs in mottled grey/white recrystallised dolomite. Some sparse dolomite - fluonite - calcite - qtz - pg - py - arsenic. Concentration of mineralisation variable 0-5% average 2%.	
40	38.5-40.86 (2.36)	38.5-40.86 DOLOMITE SULPHIDE LODGE sepehtinite / talc.	7/4	pb, pg, massive trace fluonite, minor carbonates - fluonite - pb - pg - arsenic varying 15-20%	
	40.86-44.0 (3.14)	40.86-44.0 SERICITIC SILTSTONES WITH QUARTZITES greenish, hard, silicified and brecciated. quartzites <i>Gradual Change</i>	10/11	po, sp, small blebs and stringers. Some pg - malachite - sp - po - qtz veinlets. 2-3%.	
	44.0-51.53 (7.53)	44.0-51.53 QUARTZITES MINOR SILTSTONE Brecciated, very hard and bluish grey, some brownish haloes about fractures. Massive quartzites to 3m separated by thin siltstone beds (< 10cm) 50°	11/10	Pg, po, disseminated (3%). Dolomite - fluonite - po - sp veinlets. Total 10%.	
	51.53-54.35 (2.82)	51.53-54.35 DOLOMITE SULPHIDE LODGE talc > sepehtinite	4/6	po, trace pg, weak trace sp, 50%.	
	54.35-59.20 (4.85)	54.35-59.20 QUARTZITES, minor SILTSTONE Brownish grey brecciated quartzites, fine grained and very hard with thin beds disrupted grey siltstone. 45° 40°	11/10	po, pg, disseminated along bedding planes, and as veinlets and stringers 5-7%.	
60	59.2-63.8 (4.6)	59.2-63.8 DOLOMITE SULPHIDE LODGE Greenish grey talc, minor black sepehtinite and qtz - carbonate	6/4	po, sp, trace fluonite, weakly foliated blebs and grains. 40%.	
	63.8-71.0	63.8-71.0 QUARTZITES, MINOR SILTSTONES As for 44.0-51.53 and 54.35-59.20 45°	11/10	po, pb, disseminated along bedding planes, in and veinlets & stringers with sparse qtz, carbonates. 5%.	
		END OF HOLE 71.0 m			



086135

AFTER TYPING THIS SHEET FROM WELL SE PHOTO REDUCED TO A4 SIZE  
 240m (11000), (120m (1:250))  
 1:250 (1:250)

FIELD COPY - COPY TO BE SENT TO MELBOURNE FOR TYPING

METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENT

SUMMARY DRILL LOG  
S.E. 11711 (50) 1250

Prepared by: G. BROWN  
D. + 10. 1. 63

HOLE NO. MED 21  
Sheet of

SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97705		3.0	5.0	2.0	32									
6		5.0	7.4	2.4	10									
97315		7.4	9.4	2.0	30									
16		9.4	11.4	"	4650									
17		11.4	13.4	"	600									
18		13.4	15.7	2.3	4400									
19		15.7	17.7	2.0	120									
20		23.3	25.3	"	36									
21		25.3	27.3	"	50									
22		27.3	30.2	2.9	28									
23		34.4	36.4	2.0	14									
24		36.4	38.4	"	120									
25		38.4	40.9	2.5	2500									
26		40.9	42.9	2.0	26									
97817		49.5	51.5	2.0	960									
18		51.5	53.5	"	1100									
19		53.5	57.5	"	270									
20		57.4	59.2	1.8	490									
21		59.2	61.2	2.0	24									
22		61.2	63.7	2.5	14									
23		63.7	65.7	2.0	290									

Notes:— Sn by XRF Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 21  
 SAMPLE TYPE : DRILL CORE FROM 3.0 TO 65.7.

086136

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 29

Location : 1820.15 N 979.85 E grid

Elevation : 625.46 m

Dip : 90°

Azimuth :

Total Depth : 44 m (Hole abandoned)

Surveys :

Commenced : 22.2.80 Completed: 25.2.80

Logged : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97615		3.0	5.0	2.0	80									
16		5.0	1.0	"	200									
17		7.0	9.0	"	40									
18		9.0	11.0	"	16									
19		11.0	13.0	"	400									
620		13.0	15.0	"	190									
21		15.0	17.0	"	2000									
22		17.0	19.0	"	460									
23		19.0	21.0	"	30									
24		21.0	23.0	"	120									
25		23.0	25.0	"	1450									
26		25.0	27.0	"	1550									
27		27.0	29.0	"	430									
28		29.0	31.0	"	190									
29		31.0	33.0	"	180									
30		33.0	35.0	"	60									
31		35.0	37.0	"	42									
32		37.0	39.0	"	75									
33		39.0	41.0	"	5700									
34		41.0	42.2	1.2	4500									
35		42.2	44.0	1.8	400									

Notes:— Sn by XRF B. Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO, MBD 29  
 SAMPLE TYPE : DRILL CORE FROM 30 TO 44.0

086138

AMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
PLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97789		4.0	5.1	1.1	180									
90		5.1	6.6	1.5	170									
91		6.6	8.1	"	230									
92		8.1	9.6	"	2250									
93		9.6	11.1	"	2500									
94		11.1	12.6	"	2500									
95		12.6	14.1	"	1600									
96		14.1	15.0	0.9	1800									
97		15.0	17.1	2.1	2750									
98		17.1	18.6	1.5	1850									
99		18.6	19.0	0.4	1400									
		1												
97597		19.1	20.6	1.5	980									
98		21.6	23.1	2.0	1100									
99		27.6	30.6	2.0	1200									

Notes:— Sn by XRF Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 29  
 SAMPLE TYPE : DRILL CORE FROM 4.0 TO 30.6  
 SLUDGE

086139

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 29A

Location : 1823.13 N 980.10 E grid

Elevation : 625.52 m

Dip : 90°

Azimuth :

Total Depth : 89 m

Surveys : Tropari every 40 m

Commenced : 25.2.80 Completed: 1.3.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH

DEPTH from-to : ROCK UNIT

capital letters, unrounded

INTERVAL

Depth : Description and notes  
indented about 10 mm

P

GRAPHIC  
LOG

P

MINERALISATION

ASSAYS  
ANALYSISBULKED  
ASSAYS

FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BERKMAN &amp; W.R. RYALL (ED), MONOGRAPH No. 9 AUSTRALAS. INST. MIN. METALL. - 1976

086141

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT	MINERALISATION	BULKED ASSAYS
0	0-4.0 (4.0m)	TRICONE TO 4.0 m - NO CORE		
20	4.0-39.5 (35.5m)	4.0-39.5 DOLOMITE, recrystallised and faulted. Brecciated fabric - mottled creams, whites, yellows and greys in rock fragments contained in puggy yellow and brown matrix (later faulting). Intact rock frags and short runs of core <sup>to 3m</sup> have been <sup>more or less</sup> recrystallised - segregation of etc. calcite, dolomite, with some rare thin films of talc/serpentine along fracture planes. Some short intervals of Dst to 2.8m - talc/serpentine matrix, weakly foliated at 22-24.8m, 39.2-39.5m, and as sparse fragments in crushed zones. 4.0-42.4 - fault zone - intervals of fault pug, with rust of broken core to 3m (mostly <1m), washed rock fragments	4-14.9 Py, sp, trace fluoite, rare galena in fragments, relict py in fault pug. Blebs and grains concentrated along brecciation fractures and in cavities, 10% 14.9-17.1 as above, core not so weathered and broken - 50%. 17.1-22 As for 4-14.9, 10%. 22-24.8 (Dst) py, sp, fluoite, granular blebs, veins, stringers, 10-15%. 24.8-35.0 sp, py, blebs etc, 10% 35.0-39.5 Py, sp, fluoite (?) calcite in interstices of brecciated dolomite, 15%	
40	39.5-61.1 (21.6)	39.5-61.1 QUARTZ-FELSPAR PORPHYRY. Soaker. Matrix creamy white, fine grained, some fine fracturing. b ow 42.4m Phenocrysts - qtz - rounded grains to 6x5mm, 15% Felspar - creamy white with some greenish and brownish alteration to 1.5mm, 5-7%. 47.5-51.6 - inclusion of dolomite? - qtz, carbonates, serpentine, talc in irregular patches, well fractured and veined by carbonate qtz, fluoite etc.	Py, trace fluoite, weak trace calcite, arsenic, sp. Py rounded distinct grains to 4mm, others as small discoid grains, some inagrown with py to 1.5m 10-15%. 47.5-51.6 py > fluoite, trace sp as granular aggregates and vein fillings, 20-25%. 51.2-61.1 Soakwater of dolomite and sp veins in addition to porphyry mineralisation as above TOTAL 40-50%.	
60	61.1-65.5 (4.4)	61.1-65.5 DOLOMITE SULPHIDE LORE. <sup>65.5</sup> Bronze coloured due to po, grey qtz-carbonate gangue.	Py, po, fluoite, trace arsenic, sp, sp. Fine grained and granular, 70%.	
80	65.5-78.9 (13.4)	65.5-78.9 DOLOMITE, brecciated and recrystallised. <sup>60</sup> Creamy rounded fragments of dolomite with some talcose alteration, with grey qtz, and white and cream carbonates as infillings of brecciation fractures.	Py, sp, fluoite, weak trace arsenic Sulphides as blebs along brecciation fractures, granular aggregates. Fluoite as cavity filling TOTAL 2-3%, variable 0-5%.	
80	78.9-89.0 (10.1)	78.9-89.0 SILTSTONES AND BLACK SHALES, minor QUARTZITE. Brecciated and silicified - siltstones dark grey, locally massive or as rounded clasts in contorted black shale matrix. Some siltstones faintly greenish-sericitic? <sup>0.7m massive sulphides on contact.</sup>	py > po, dolomite, fluoite. po as blebs to 2cm, finely disseminated in dolomite - fluoite - qtz veins and stringers. TOTAL 5-7%.	
100		END OF HOLE 89.0m.		

5 cm

FIELD COPY - COPY TO BE SENT TO MELBOURNE FOR TYPING

METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENTSUMMARY DRILL LOG  
Scale 1:1000, (1:500), 1:250Prepared by: G. BOADGENT  
Date: 12.3.80HOLE No. MBB 39A  
Sheet of

AMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
PLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
36		4.0	8.0	4.0	170									
38		8.0	10.0	2.0	1550									
39		10.0	12.0	"	540									
40		12.0	14.0	"	430									
41		14.0	16.0	"	1200									
42		16.0	18.0	"	1700									
43		18.0	20.0	"	1550									
44		20.0	22.0	"	920									
45		22.0	24.0	"	3950									
46		24.0	26.0	"	680									
47		26.0	28.0	"	740									
48		28.0	30.0	"	400									
49		30.0	32.0	"	220									
650		32.0	34.0	"	95									
51		34.0	36.0	"	420									
52		36.0	38.0	"	260									
53		38.0	39.5	1.5	3200									
54		39.5	41.5	2.0	1000									
55		41.5	43.5	"	2850									
56		43.5	45.5	"	2400									
57		45.5	47.5	"	3850									
58		47.5	49.5	"	1350									
59		49.5	51.5	"	1300									
660		51.5	53.5	"	2600									
61		53.5	55.5	"	1300									
62		55.5	57.5	"	1650									
63		57.5	59.5	"	600									
64		59.5	61.1	2.6	1600									
65		61.1	63.1	2.0	4.99%									
66		63.1	65.1	2.0	2.68%									

Notes: — Sn by XRF B<sub>1</sub> Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 29A

SAMPLE TYPE : DRILL CORE FROM 4.0 TO 65.1

086142



MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 35

Location : 1860.04 N 1179.97 E grid

Elevation : 640.91 m

Dip : 90°

Azimuth :

Total Depth : 85 m

Surveys : Tropari every 40 m

Commenced : 28.2.80 Completed: 5.3.80

Logged by : G. Broadbent

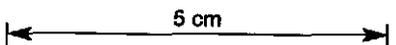
Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT <small>capital letters, underlined</small>	POWER	GRAPHIC LOG	MINERALISATION	ASSAYS	BULKED ASSAYS
		Depth: Description and notes inserted about 10 mm					

FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BERKMAN & W.R. RYALL (ED), MONOGRAPH NO. 9 AUSTRALAS. INST. MIN. METALL., 1972

240 m (1:1000), 120 m (1:500), 60 m (1:250)  
 WATER PUMPING CURVES SHOULD FORM WILL BE PHOTO-REDUCED TO A4 SIZE

0	0-3.0 (3.0m)	TRICONE TO 3.0m - NO CORE.				
20	3.0-49.8 (46.8m)	<p><u>3.0-49.8 QUARTZITES AND THINLY BEDDED SILTSTONES.</u></p> <p>Highly faulted and fractured - fragments of light grey massive quartzite, thinly bedded siltstone and rare dark grey shale in a matrix of grey puggy clay. Some quartzites have sparse flakes of white mica, also some dark grey dendritic staining along fracture paths.</p> <p>3-10.5 Max length of core 20-30 cm, broken by fractures 20 and 80° LCA, and puggy clay. Recovery poor.</p> <p>20.5-27.1 recovery better, 80%, not as shattered.</p> <p>27.1-45.2 Dark grey puggy clay, some fragments quartz etc.</p>				<p>Sparse remnant pg, qtz as thin veinlets and stringers &lt; 1%.</p>
60	49.8-67.6 (17.8m)	<p><u>49.8-67.6 DOLOMITE</u>, faulted.</p> <p>Creamy white, soft, friable in places, bleached and patches of brown-black laminated puggy clay with dolomite fragments. Originally brecciated fabric, virtually unaltered clasts of dolomite separated by fine dark grey fractures. Some minor recrystallisation of rare fragments of perovskite etc.</p>	Broken			<p>Weathered - originally probably &lt; 1%.</p>
80	67.6-70.5 (2.9)	<p><u>67.6-70.5 QUARTZ FELSPAR PORPHYRY</u> Fine grained Qtz 1% Felspar 2-3%</p>	Broken			<p>Pg, trace fluorite, sp to 2 mm 1-2%.</p>
80	70.5-85.0 (14.5)	<p><u>70.5-85.0 SILTSTONES AND QUARTZITES, minor SHALES.</u></p> <p>Siltstones greenish grey and sericitic, sometimes quartzose, thinly bedded and brecciated, with intervals of dark grey fine grained quartzite, - non micaceous</p> <p>70.5-74.7 Puggy grey clay with rock fragments</p> <p>74.7-85.0 Highly broken, bedding and recovery low angles LCA.</p>	Broken			<p>70.5-74.7 Sparse frags pg, qtz</p> <p>74.7-85.0 pg, qtz as thin veinlets and irregular stringers, 1% - locally 5%.</p>
80		END OF HOLE 85.0 m.				



FIELD COPY - COPY TO BE SENT TO MELBOURNE FOR TYPING

AMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
PLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97902		3.0	5.0	2.0	150									
3		5.0	7.0	"	14									
4		7.0	9.0	"	10									
5		9.0	11.0	"	10									
6		11.0	13.0	"	20									
7		13.0	15.0	"	18									
8		15.0	17.0	"	26									
9		17.0	19.0	"	28									
810		19.0	21.0	"	22									
11		21.0	23.0	"	30									
12		23.0	25.0	"	36									
13		25.0	27.0	"	90									
14		27.0	29.0	"	440									
15		29.0	31.0	"	180									
16		31.0	32.5	1.5	270									
97676		32.5	34.5	2.0	210									
77		34.5	36.5		130									
78		36.5	39.5	"	120									
79		38.5	40.5	"	80									
80		40.5	42.5	"	110									
81		42.5	44.5	"	1150									
82		44.5	46.5	"	300									
83		46.5	48.5	"	100									
84		48.5	50.5	"	34									
85		50.5	54.3	3.8	75									
86		54.3	56.3	2.0	100									
87		56.3	58.3	"	350									
88		58.3	60.3	"	820									
89		60.3	62.3	"	250									
90		62.3	63.3	"	620									

086146

Notes:— Sn by XRF B. Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 35  
 SAMPLE TYPE : DRILL CORE FROM 30 TO 63.3

AMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
PLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97691		64.7	65.7	1.0	2050									
92		67.0	67.5	0.5	660									
93		67.5	69.5	2.0	320									
94		69.5	70.4	1.9	300									
95		70.4	72.4	2.0	5300									
96		72.4	74.4	"	3550									
97		74.4	76.4	"	60									
98		76.4	78.4	"	36									
99		78.4	80.4	"	100									
97800		80.4	82.4	"	110									
1		82.4	85.0	2.6	170									

086147

Notes:— Sn by XRF Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 35  
 SAMPLE TYPE : DRILL CORE FROM 64.7 TO 85.0



MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 36

Location : 2117.21 N 1179.82 E grid

Elevation : 685.92 m

Dip : 70°

Azimuth : 180° (grid)

Total Depth : 206.9 m

Surveys : Tropari every 30 m

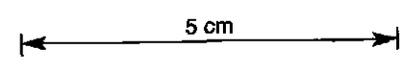
Commenced : 2.3.80 Completed: 12.3.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT <small>Depth: Description and notes indented about 10 mm</small>	MINERALISATION	BULKED ASSAYS
		FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BERKMAN & W.R. RYALL (ED), MONOGRAPH NO. 9 AUSTRALAS. INST. MIN. METALL. 1976		
				086150
0	0-30(2.0)	TRICONE TO 3 m - NO CORE		
0	3.0-176.5 (173.5 m)	3.0-176.5 THINLY BEDDED SILTSTONES AND SHALES ALTERNATING WITH QUARTZITES.  Medium grey clay rich or quartzose siltstones with thin silty shale beds, sometimes sericitic. Well bedded, scale of individual beds < 5 cm with brecciated intervals and some folding and concretion.  The quartzites range from small fine grained beds interleaved with the siltstones etc as above to massive rather featureless brown or greyish, medium grained, often well fractured and broken; intervals from 50 cm to 20 metres, with very minor siltstones.  3-87.0 Thinly bedded siltstones, well fractured in upper 30 m. Gradually become more sericitic with depth; the quartzose beds are hard and silicified. Minor quartzites (< 2m) towards bottom of interval.  87-109.5 Massive quartzites as above.  109.5-132.8 As for 3-87.0, some 'quartzose' siltstones faintly brownish grey, others bluish grey and very hard (silicified); shales are greenish and sericitic.  132.8-140.8 Massive brownish grey quartzites  140.8-176.5 As for 109.5-132.8, brownish 'quartzose' siltstones not common - mostly bluish grey fine grained quartzites (coarse gr. siltstones) with thin greenish silty shale beds etc.  161-168.7 Small faults and raggy patches: broken core.  Broken	10/9/44 3.0-37.0 Py, qtz, po as thin veinlets and stringers, some with cassiterite, 10%.  37.0-38.0 0.5 m Py-qtz-CO <sub>2</sub> - go, Fluorite - arsenic - sl vein, 40° 38.0-72.0 Thin bedded laminae Py, po in siltstones, dissem in quartzites and rare qtz-carbonate - py-cassit. veins. 2-3%  73.0-132.6 Py, po, dissem in quartzites, veinlets etc with qtz, Fluorite, marcasite, sl. 5-7%. Some small stockwork-type fracture zones to 10 cm with blebby py, qtz etc  132.6-140.8 py, po, dissem py inclusions, po as veinlets with qtz, carbonates, 7-10%.  140.8-176.5 Py, thin bedded laminae, richly dissem, veinlets etc with qtz 3-5%	
180	176.5-194.5 (18.0 m)	176.5-194.5 QUARTZ FELSPAR PORPHYRY. Matrix: fine grained, pinkish cream. Rock is well fractured and pitted by weathering. Phenocrysts: Six rounded subhedral grains to 6 mm, 15-20%. Felspar - after 186.5 m, soft white weathered grains, 3% irregular, 75%	1 pitted py as discrete grains to 4 mm, trace rounded cassiterite, weak trace of 7% (much removed by weathering, originally > 10%)	
200	194.5-206.9 (12.4 m)	194.5-206.9 THINLY BEDDED SILTSTONES + SHALES, MINOR QUARTZITES. As for 3.0-87.0, weakly sericitic.	10/9/44 py, thin bedded laminae, and in small irregular veinlets with qtz, 5%.	
		END OF HOLE 206.90		
220				
240				

240 m (1.166), 144 m (1.506), 144 m (1.250), 60 m (1.250) WILL BE RECORDED TO 4 SHEETS  
 WATER LOGGING SHEETS FOR WILL BE RECORDED TO 4 SHEETS



AMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
PLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97835		35.8	38.0	2.2	8400									
97834		174.5	176.5	2.0	65									
25		176.5	178.5	"	200									
26		178.5	180.5	"	3750									
27		180	182.5	"	350									
28		182.5	184.5	"	600									
29		184.5	186.5	"	400									
30		186.5	188.5	"	500									
31		188.5	190.5	"	1350									
32		190.5	192.5	"	1450									
33		192.5	194.5	"	1450									
34		194.5	196.5	"	200									

Notes: — Sn by IRE Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 36  
 SAMPLE TYPE : DRILL CORE. FROM 35.8 TO 196.5.

086151

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 37

Location : 2094.42 N 1260.06 E grid

Elevation : 683.26 m

Dip : 70°

Azimuth : 180° (grid)

Total Depth : 135 m

Surveys : Tropari every 30 m

Commenced : 13.3.80 Completed: 17.3.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH

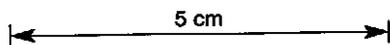
INTERVAL	DEPTH from-to : ROCK UNIT <small>capital letters, underlined</small>	MINERALISATION	BULKED ASSAYS
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Depth: Description and notes  
indented about 10 mm

GRAPHIC LOG

FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BERKMAN & W.R. RYALL (ED), MONOGRAPH NO. 9 AUSTRALAS. INST. MIN. METALL. - 1976

0-30(30)	0-30 TRICONE DRILLED - NO CORE.		
30-71.0 (68.0)	<p><u>30-71.0 THINLY BEDDED SILTSTONES and SILTY SHALES</u> with interbedded MASSIVE QUARTZITES.</p> <p>Greys, medium hard siltstones, some pale grey and quartzose, grading into fine sandstones, others clay rich and darker grey. Thinly bedded (0.5 cm), quartzose beds are silicified, some soft sediment brecciation and later concretion, minor folding and disruption.</p> <p>Hard grey fine to medium grained massive brecciated quartzites to 8.0 m. separate intervals of siltstones, etc. to 10 m. The quartzites have sparse thin contorted siltstone and rare shale laminae.</p> <p>Core is well fractured and broken, particularly near top of interval - two sets of intersecting fractures 20-40° LCA with opposite senses, and partings along bedding planes.</p>	10/11a	<p>30-71.5 Pg, qtz. Pg finely dissem in quartzites, with qtz as stringers + blebs along small fracture zones. TOTAL 2-3%.</p> <p>17.5-71.0 pg, dissem as above, also in veinlets, etc with qtz, and as sparse thin bedded laminae. 3%.</p> <p>50.5-58.5. As above, 3-5%.</p>
71.0-72.3 72.3-102.4 (30.1n)	<p><u>71.0-72.3 QUARTZ - FELSPAR PORPHYRY, 62.5% FeFe, 1.5% Mn</u></p> <p><u>72.3-102.4 QUARTZITES and THINLY BEDDED SILTSTONES</u></p> <p>Hard grey quartzites, with minor quartzose siltstones, brecciated. As for 30-71.0m, some are a pale brownish grey - tourmaline rich?</p>	11/10	<p>Pg, qtz, muscovite in thin veinlets and stringers. pg is finely dissem. in quartzites. TOTAL 3-5%.</p>
102.4-108.1	<p><u>102.4-108.1 THINLY BEDDED SILTSTONES, SILTY SHALES</u> with QUARTZITES. As for 30-71.0, but weakly ferritic.</p>	10/11a	<p>Pg as thin bedded laminae + stringers with qtz, muscovite. 3-5%.</p>
108.1-125.8 (17.7)	<p><u>108.1-125.8 QUARTZ FELSPAR PORPHYRY</u></p> <p>Mainly f.g., brownish cream in colour, well fractured and porous due to removal of sulphides + fclsp by weathering.</p> <p>Phenocrysts: Qtz to 7x6 mm, 20% Fclsp - not apparent; altered or removed by weathering.</p>	1	<p>pg, pitted + weathered, with some muscovite rim. Discrete grains to 4 mm and f.g. aggregates to 5x3 mm. 10-15%. Weak trace arsenic, sp.</p>
125.8-135.0 (9.8m)	<p><u>125.8-135.0 THINLY BEDDED SILTSTONES, MINOR QUARTZITES</u> with SILTY SHALES.</p> <p>As for 102.4-108.1.</p>	10/11	<p>pg, qtz in veinlets, stringers and irregular blebs, some dissem in quartzites. 5-7%.</p>
135.0	END OF HOLE 135.0 m.		



240 m (1:1000), 120 m (1:500), 60 m (1:250) PHOTO-REDUCED TO A4 SIZE

FIELD COPY - COPY TO BE SENT TO MELBOURNE FOR TYPING.

METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENT

SUMMARY DRILL LOG  
S. I. (1000) 1500 (250)

Prepared by: G. BROADBENT  
D. F. 21.2.80

HOLE No. M80 37  
S. I. + 25

AMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97836		71.0	72.3	113	3500									
37		106.1	108.1	2.0	260									
38		108.1	110.1	"	1150									
39		110.1	112.1	"	3450									
340		112.1	114.1	"	6100									
41		114.1	116.1	"	3800									
42		116.1	118.1	"	4650									
43		118.1	120.1	"	3750									
44		120.1	122.1	"	3550									
45		122.1	124.1	"	3500									
46		124.1	125.8	1.7	2400									
47		125.8	127.8	2.0	50									

Notes:—

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 37  
 SAMPLE TYPE : DRILL CORE FROM 71.0 TO 127.8

086154

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 38

Location : 2164.69 N 1300.15 E grid

Elevation : 678.37 m

Dip : 60°

Azimuth : 180° (grid)

Total Depth : 172.5 m

Surveys : Tropari every 30 m

Commenced : 18.3.80 Completed: 25.3.80

Logged by : G. Broadbent

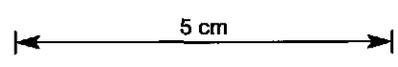
Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT		MINERALISATION	BULKED ASSAYS
		Interval	Rock Unit		

FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BIRKMAN & W.R. RYALL (ED), MONOGRAPH NO. 9 AUSTRALAS. INST. MIN. METALL., - 1976

240m (1:1000), 120m (1:500), 60m (1:200) WILL BE PHOTO-RECORDED TO 4 SIZE  
 ER NGING S

0	0-4.0 (4.0m)	0-4.0 TRICONE DRILLED - NO CORE.			
4.0	4.0-22.4 (18.4m)	4.0-22.4 DOLOMITE SULPHIDE LOOSE Mottled greens - talc and serpentinite with bronze coloured po. Some minor matrix grey quartz and small patches of tremolite/actinolite Overall texture is weakly banded, po alternating with talc (serpentinite etc) in mottled, irregular bands, some cross cutting fracturing/veining.	4/6/17 7/6/14		po - py, MnO <sub>2</sub> , trace arsenic in varying proportions and abundance. 0-7.5, 60-70% 7.5-11.0, 20% 11.0-12.2, 90% 12.2-17.4, 10% 17.4-22.4, 30-40%
22.4	22.4-76.9 (54.5)	22.4-76.9 THINLY BEDDED GREY SILTSTONES, MASSIVE QUARTZITES. Siltstones mid grey and quartzose or darker grey and clay rich, faintly sericitic in places. Well bedded, with frequent brecciated intervals and minor folding/fan-folding. The quartzites are massive and occasionally well bedded, sometimes alternating with quartz siltstones. Hard and bluish brownish greys, brecciated, with dark dendritic staining about fractures. Some thin dark grey silty shale laminae occur rarely in siltstones. 27-38.4 Rare thin 'sulfaceous' beds < 2 cm. Core is well fractured and broken.	10/11		22.4-38.4 py, finely dissem in quartz, in veins & stringers with qtz 1-2% 38.4-54.7 py, qtz as above 1% 54.7-76.9 As above, 2%h, locally 7%h
76.9	76.9-79.0 (2.1m)	76.9-79.0 QUARTZ FELSPAR PORPHYRY qtz 3-5%, weathered.	1		trace py (weathered)
79.0	79.0-129.5 (50.5m)	79.0-129.5 THINLY BEDDED SILTSTONES AND SANDSTONES, QUARTZITES. As for 22.4-76.9, quartzites decrease with depth, some rare thin black shale beds appear with depth. Not so brecciated as above, but well fractured to 115m. Clay rich siltstones are faintly greenish and sericitic.	10/11/5		79.0-114.6 py, dissem and as blebs, in veins with qtz and rare cassiterite 1-2% 114.6-129.5 py, dissem, veining with qtz, CO <sub>2</sub> , muscovite, sp and cassiterite. Some rare large blebs po. 7%.
129.5	129.5-143.6 (14.1)	129.5-143.6 THINLY BEDDED SILTSTONES, SHALES AND SANDSTONES. Mid grey quartzose siltstones & sandstones, clay rich siltstones dark grey, minor shales (almost black and carbonaceous). Most beds < 2cm thick, weakly brecciated.	10		129.5-143.6 py, qtz, CO <sub>2</sub> as veins and stringers, some dissem py. 2-3%.
143.6	143.6-164.1 (20.6)	143.6-164.1 QUARTZ FELSPAR PORPHYRY. Matrix fine grained and pale grey. Fractured and stained brownish grey by weathering. Qtz - subhedral rounded turbid grains to 6mm, 15% Felspar - altered, some removed by weathering? 7-10%	1		py, muscovite, as fine grained aggregates (muscovite as rims around py). Rare grains cassiterite. Variable concentrations (some removed by weathering), average 10%.
164.1	164.1-172.5 (7.6m)	164.1-172.5 THINLY BEDDED SILTSTONES As for 129.5-143.6.	10		164.1-172.5 As for 129.5-143.6.
172.5	172.5m	END OF HOLE.			



SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
47848		4.0	6.0	2.0	50									
49		6.0	8.0	"	X									
50		8.0	10.0	"	X									
51		10.0	12.0	"	X									
52		12.0	14.0	"	16									
53		14.0	16.0	"	14									
54		16.0	18.0	"	X									
55		18.0	20.0	"	8									
56		20.0	21.2	1.2	X									
57		21.2	23.1	1.9	38									
47858		76.9	79.0		620									
59		141.6	143.6	2.0	65									
60		143.6	145.6	"	450									
61		145.6	147.6	"	4350									
62		147.6	149.6	"	2950									
63		149.6	151.6	"	1550									
64		151.6	153.6	"	2700									
65		153.6	155.6	"	520									
66		155.6	157.6	"	340									
67		157.6	159.6	"	340									
68		159.6	161.6	"	5400									
69		161.6	164.2	2.6	1250									
70		164.2	166.2	2.0	180									

Notes: - Sn by XRF B. Method.

X - means less than detection limit

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT

ASSAY SUMMARY SHEET HOLE NO. MBD 38

SAMPLE TYPE: DRILL CORE FROM 4.0 TO 166.2

086157



MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 39

Location : 2081.24 N 1420.14 E grid

Elevation : 701.24 m

Dip : 60°

Azimuth : 180° (grid)

Total Depth : 66 m

Surveys : Tropari every 40 m

Commenced : 25.3.80 Completed: 27.3.80

Logged by : G. Broadbent

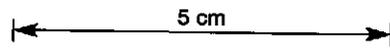
Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH INTERVAL	DEPTH from-to : ROCK UNIT <i>capital letters, underlined</i> Depth: Description and notes <i>indented about 10 mm</i>	POWER GRAPHIC LOG POWER	MINERALISATION	ASSAYS AVAILABLE	BULKED ASSAYS

FOR ABBREVIATIONS SEE 'FIELD GEOLOGIST'S MANUAL', D.A. BERKMAN & W.R. RYALL (ED.), MONOGRAPH NO.9 AUSTRALAS. INST. MIN. METALL. - 1976

240 m (1:1000), 120 m (1:500), 60 m (1:250)  
 PHOTO-REDUCED TO A4 SIZE  
 INTER-INDICES S... FOR WILSONE PHOTO-REDUCED TO A4 SIZE

0	0-3.0 (3.0m)	TRIGONE TO 3.0m - NO CORE.			
20	3.0-20.4 (17.4m)	<u>3.0-20.4 QUARTZITES AND SILTSTONES, minor SHALES.</u> Quartzites medium grey, brecciated, up to 1m thick, some sand-size beds in thinly bedded siltstones. The siltstones are finely bedded, dark and light greys in intervals up to 2m alternating with the quartzites. Overall well fractured and broken, with minor soft-sediment brecciation and distortion, some small pyritic faults 4.5m.	11/10		3.0-16.0 pg, finely dissemin and in stringers and veinlets with qtz 2%.  16.0-20.4 As above + some thin bedded py laminae 1-2%.
20	20.4-22.4 (2.0m)	20.4-22.4 QUARTZ FELSPAR PORPHYRY. 40°	1		pg, marcellite, trace sp. 10%
40	22.4-42.3 (19.9m)	<u>22.4-42.3 QUARTZITES AND SILTSTONES, minor SHALES.</u> As for 3.0-20.4, slightly more brecciation and distortion and some more black shales with more clay rich siltstones.  32.5-34.5 Some mottled grey 'buff' beds to 8m thick, bedded	11/10	10/12	22.4-26.4 pg, qtz, veinlets, bedded laminae 3-5% 26.4-39.5 pg, finely dissemin, minor qtz-pg veining 10%.
40	42.3-56.1 (13.8m)	<u>42.3-56.1 QUARTZ FELSPAR PORPHYRY.</u> 60° Matrix is creamy white and fine grained when unweathered but highly fractured - bleached and stained grey-brown and orange browns (limonite) from subsequent weathering. Qtz - rounded and subhedral phenocrysts to 5mm, 7-10% Felspar - altered to hard brownish mineral or weathered. Originally 5-7%?	1		pg, pitted and weathered, occasionally with thin marcellite veins, as rounded grains to 4mm or fine aggregates. Variable concentrations 3-15%. Some minor qtz-pg veining. trace marcellite 50.4-51.3m.
60	56.1-66.0 (9.9m)	<u>56.1-66.0 QUARTZITES and SILTSTONES.</u> As for 3.0-20.4	11/10		pg, qtz, marcellite - arsen - sp - marcellite veining, stringers + blebs. Some dissemin pg in quartzites, and thin bedded laminae in siltstones 10%.
60	END OF HOLE 66.0 m.				



AMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
PLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97871		20.4	22.5	2.1	1800									
72		40.3	42.3	2.0	320									
73		42.3	44.3	"	2000									
74		44.3	46.3	"	3700									
75		46.3	48.3	"	2650									
76		48.3	50.3	"	4050									
77		50.3	52.3	"	4500									
78		52.3	54.3	"	7400									
79		54.3	56.1	1.8	2700									
80		56.1	58.1	2.0	5200									

086161

Notes: ---

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO, MBD 39  
 SAMPLE TYPE : DRILL CORE FROM 20.4 TO

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 40

Location : 2170.50 N 1419.99 E grid

Elevation : 702.37 m

Dip : 60°

Azimuth : 180° (grid)

Total Depth : 115.4 m

Surveys : Tropari every 40 m

Commenced : 27.3.80 Completed: 31.3.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH

INTERVAL	DEPTH from-to : ROCK UNIT <small>capital letters, underlined</small> Depth: Description and notes <small>indented about 10mm</small>	POINT	GRAPHIC LOG	MINERALISATION	ASSAYS AVAILABLE	BULKED ASSAYS
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FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BERKMAN &amp; W.R. RYALL (ED), MONOGRAPH NO.9 AUSTRALAS. INST. MIN. METALL. - 1976

086163

0-4.0 (4.0-m)	TRILONE TO 4.0 m - NO CORE.					
4.0-25.6 (21.6-m)	4.0-25.6 THINLY BEDDED SILTSTONES WITH QUARTZITES. Pale greys - fractured, and bleached by subsequent weathering, gradually becomes darker with depth. Well bedded. Fine grained, sandstones / quartzose siltstones, medium hard and silicified, alternate with soft medium grey argillaceous siltstones. Minor disruption and contortion, followed by later fracturing $\approx 40^\circ$ LCA. 22.5-25.6 some sparse black carbonaceous shale beds. <i>Good clay.</i>	10/11		4.0-16.5 rare qtz - cassiterite veinlets $\approx 2$ mm thick. 16.5-22.5 trace py in sparse veinlets & stringers.		
25.6-74.6 (49.0-m)	25.6-74.6 QUARTZITES WITH THINLY BEDDED SILTSTONES. As for 4.0-25.6, but quartzites are harder, and less well bedded - mostly massive and brecciated, up to 4 m thick, and separated by intervals of thinly bedded clay rich siltstones. Well fractured, some limonitic material on fracture planes.  Quartzites decrease in abundance towards base of interval, some minor shales appear.	10/9/c	11/10	25.6-32.7 py, qtz as veinlets, some dissem py along bedding planes. 1-2%. 32.7-60.5 as for 25.6-32.7, weathered, $< 1\%$  60.5-69.5 as for 25.6-32.7, 1-2%.  69.5-74.6 Some sparse bedded laminae py; also dissem, and in veinlets etc with qtz 3-5%		
74.6-93.1 (18.7-m)	74.6-93.1 QUARTZ FELSPAR PORPHYRY. Matrix fine grained, bleached white, or stained greyish brown by weathering or orange brown by limonite. Very fractured and broken, pitted by weathering. Qtz - rounded colorless grains to 4 mm, 15-20%. ? Felspar - altered, had faintly brownish phenocrysts; locally 10%, overall 1-2%. Core losses 82.6-91.5 m, and an inclusion of weathered thinly bedded siltstone from (?) 88.7 $\rightarrow$ ? 91.2 m.		1	Residual py, qtz in pitted veinlets. Original Fe sulphides in porphyry almost totally removed by weathering (originally $\approx 10-15\%$ ) remain $< 1\%$ . Trace rounded cassiterite 78.1-79.5. 83.5 irregular mass(?) cassiterite 2 x 3 cm in core vein. 91.5-93.1 trace hgr, cassiterite		
93.1-115.4 (22.3)	93.1-115.4 THINLY BEDDED SILTSTONES WITH QUARTZITES. As for 4.0-25.6, quartzites not so well bedded, hard and bluish grey. Core well fractured and broken low angles LCA.		10/11	py, marcasite, qtz in stringers & veinlets Some dissem. black py in quartzites. 3-7%.		
	END OF HOLE 115.4 m.					

5 cm

FIELD COPY - COPY TO BE SENT TO MELBOURNE FOR TYPING.

METALS EXPLORATION LTD.

SUMMARY DRILL LOG

Prepared by: G. BROWN/ONT

HOLE No. MBD 40

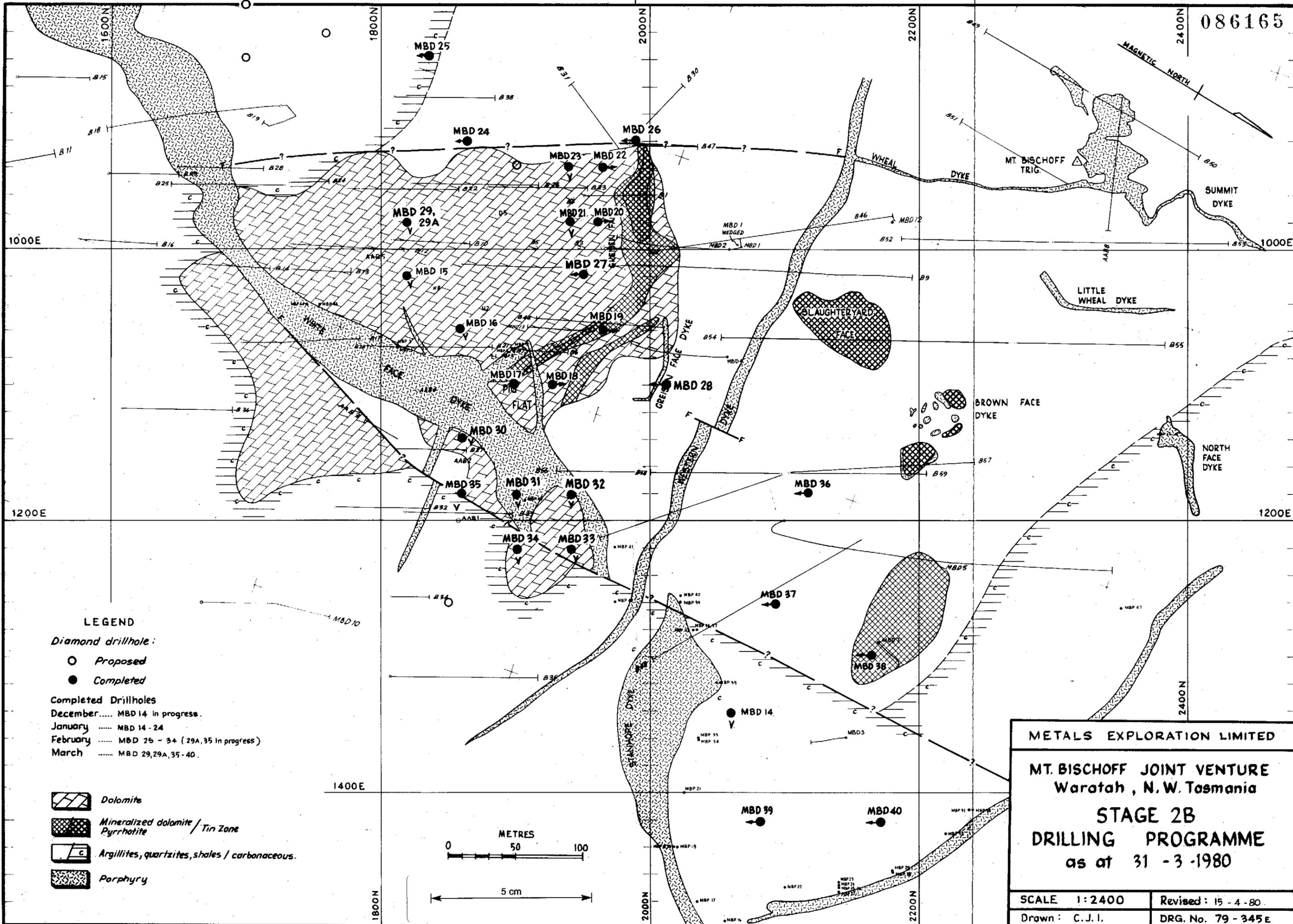
240 m (1:1000), 120 m (1:500), 60 m (1:250), 30 m (1:125) IS USED FOR W.H. SE O-R. REDUCED TO A4 SIZE

SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97900		72.6	74.6	2.0	300									
1		74.6	76.6	"	2200									
2		76.6	78.6	"	5200									
3		78.6	80.6	"	6000									
4		80.6	82.6	"	2.18%									
5		82.6	84.6	"	8000									
6		84.6	86.6	"	1.08%									
7		86.6	88.6	"	1.02%									
8		88.6	90.6	"	7500									
9		90.6	93.1	2.5	3350									
10		93.1	95.1	2.0	580									

Notes: - XRF Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO, MBD 40  
 SAMPLE TYPE : DRILL CORE FROM TO

086164



LEGEND

Diamond drillhole:

- Proposed
- Completed

Completed Drillholes

- December..... MBD 14 In progress.
- January..... MBD 14 - 24
- February..... MBD 25 - 34 (29A, 35 In progress)
- March..... MBD 29, 29A, 35 - 40.

- Dolomite
- Mineralized dolomite / Tin Zone  
Pyrrhotite
- Argillites, quartzites, shales / carbonaceous.
- Porphyry



5 cm

METALS EXPLORATION LIMITED

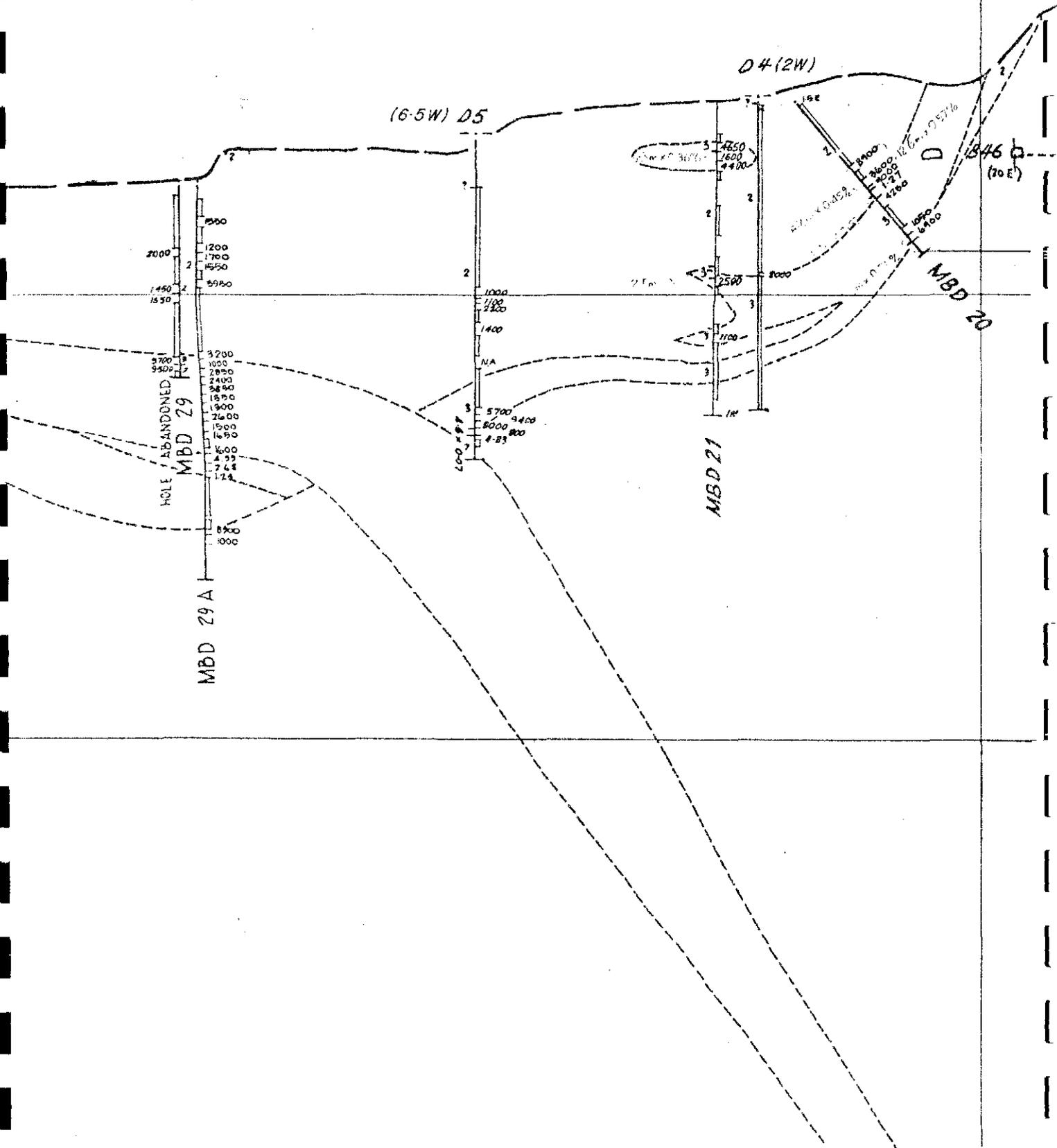
MT. BISCHOFF JOINT VENTURE  
Waratah, N.W. Tasmania

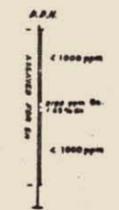
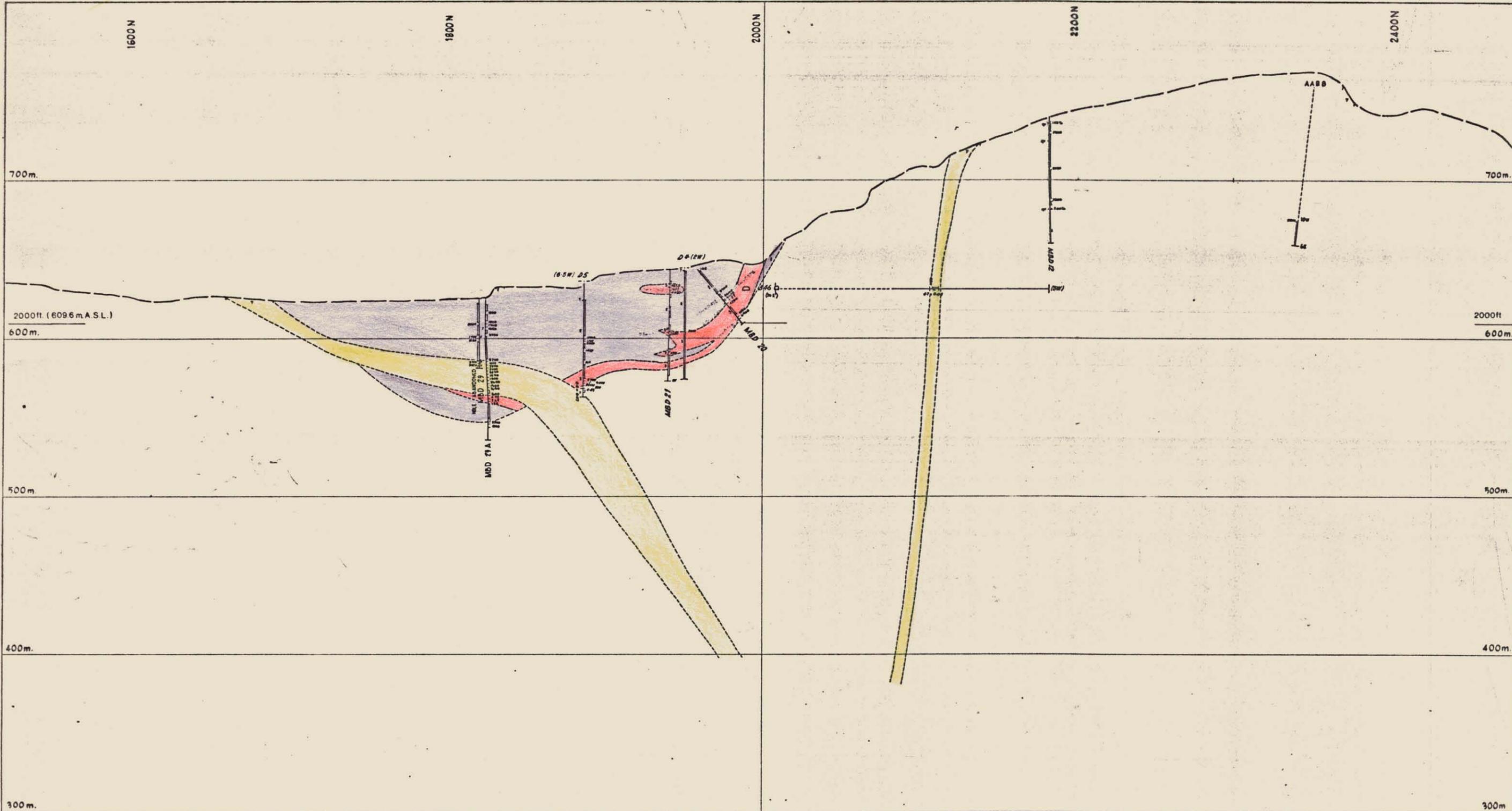
STAGE 2B  
DRILLING PROGRAMME  
as at 31 - 3 - 1980

SCALE 1:2400	Revised: 15 - 4 - 80.
Drawn: C.J.I.	DRG. No. 79 - 345E

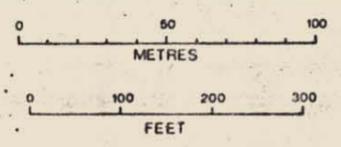
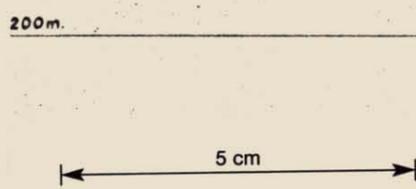
5 cm

086166





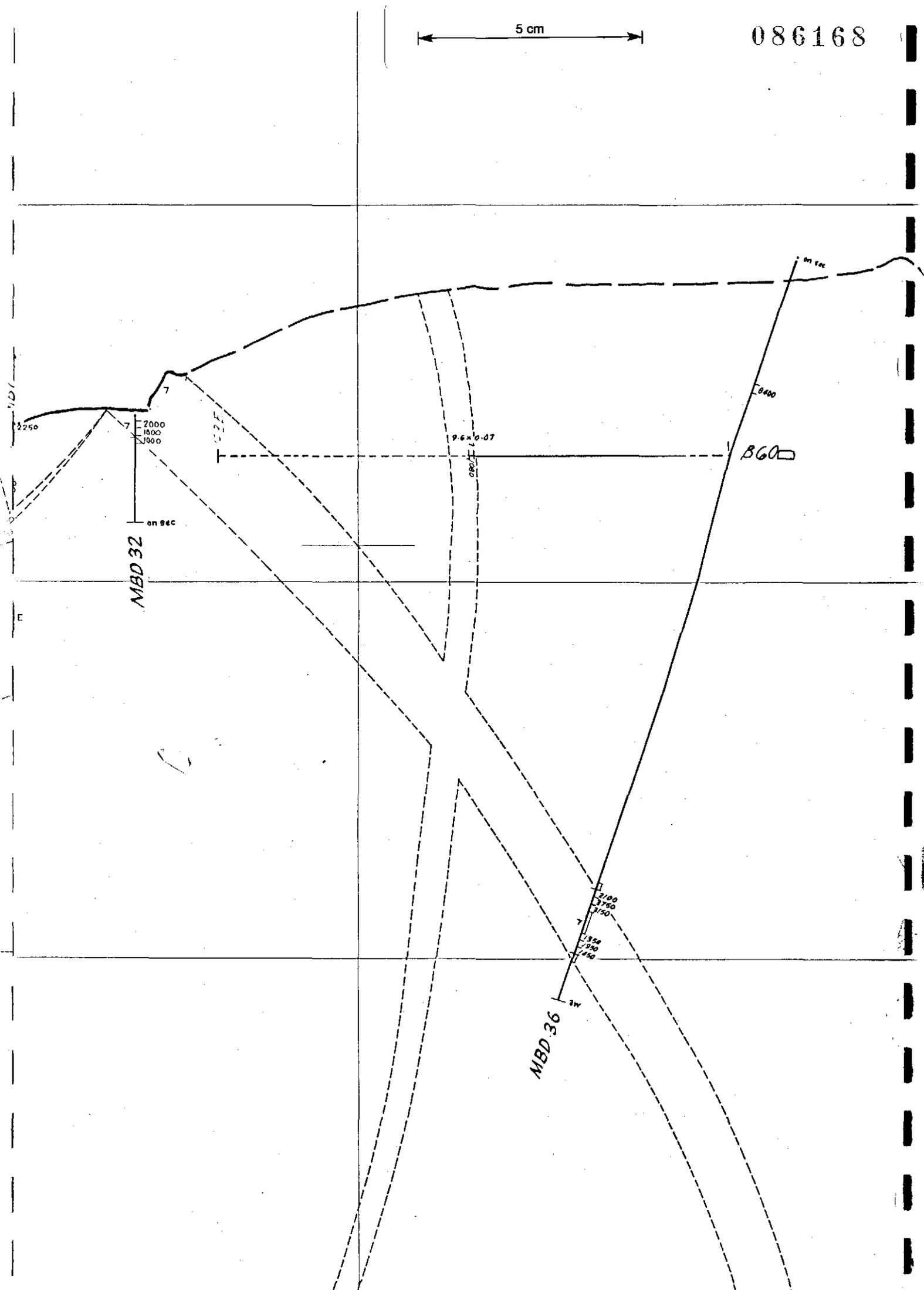
- DOLOMITE
- MINERALIZED DOLOMITE / TIN ZONE  
PYRRHOTITE
- ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- PORPHYRY
- INTERPRETED GEOLOGICAL CONTACT



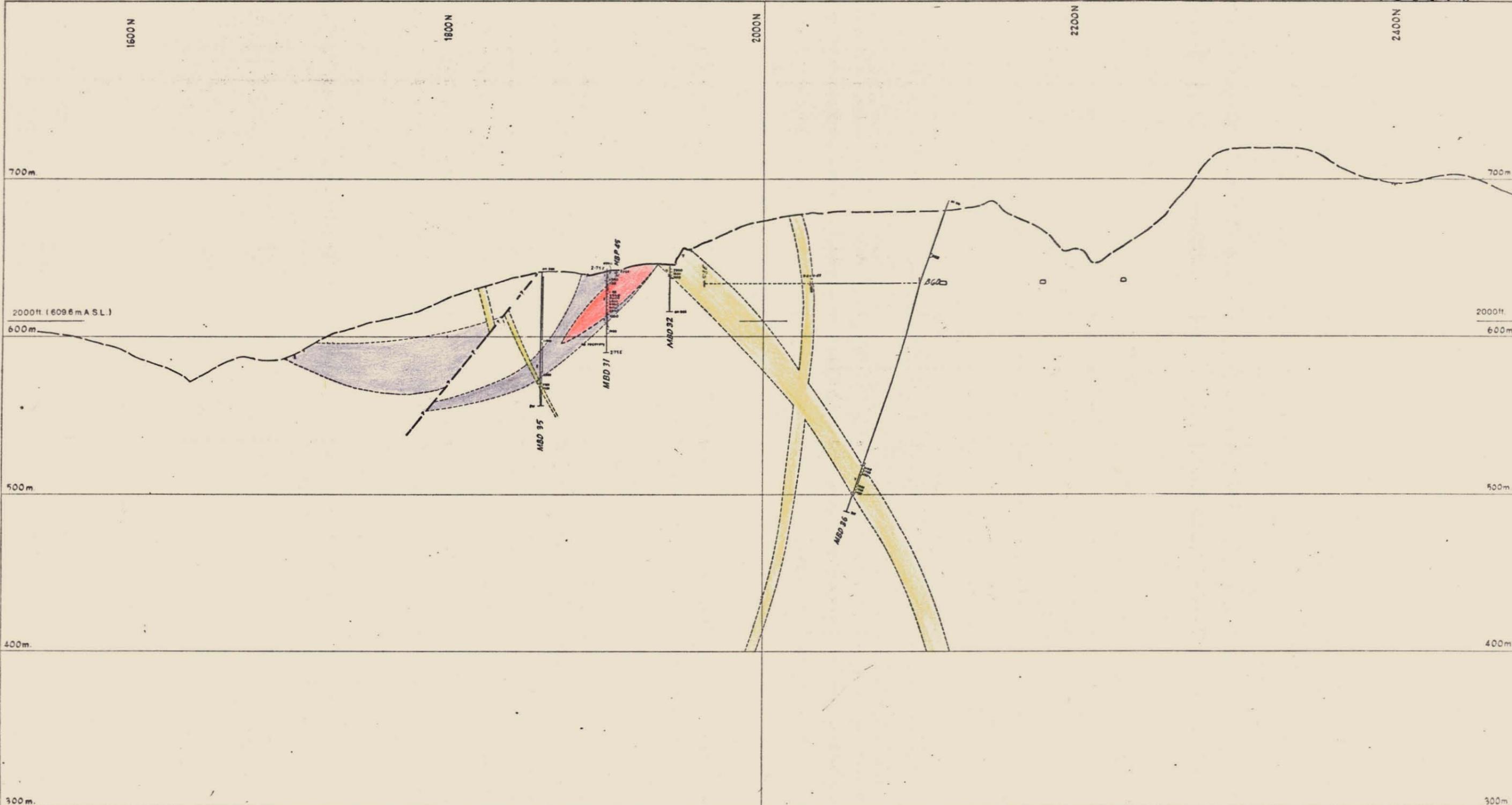
METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 980 mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE:                      REVISED:                      DRG. NO. 79-011

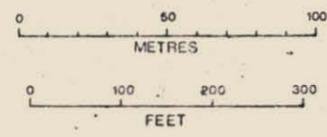
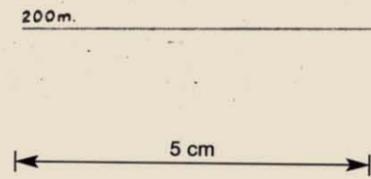
5 cm







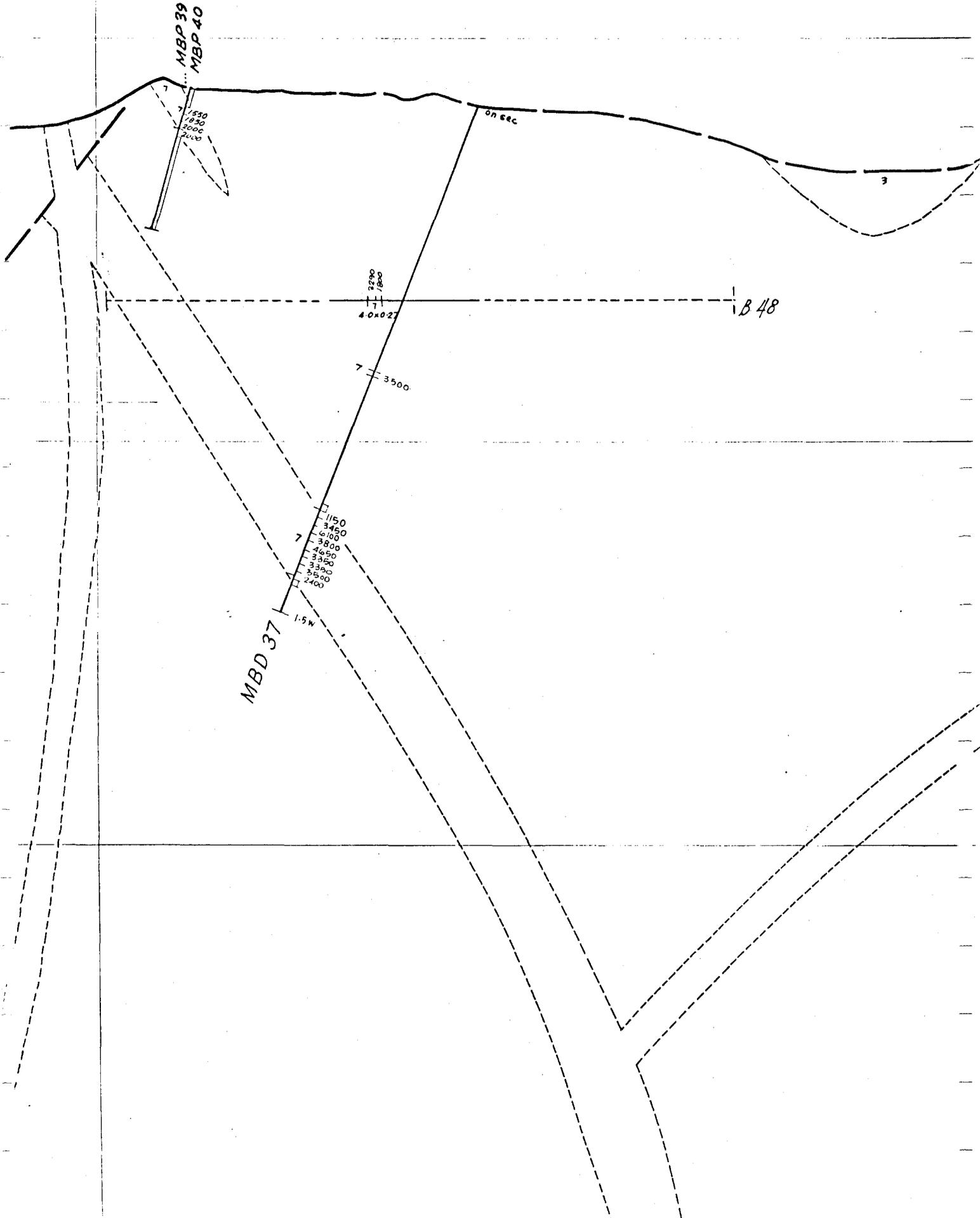
- DOLOMITE
- MINERALIZED DOLOMITE / TIN ZONE
- ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- PYRRHOTITE
- PORPHYRY

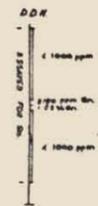
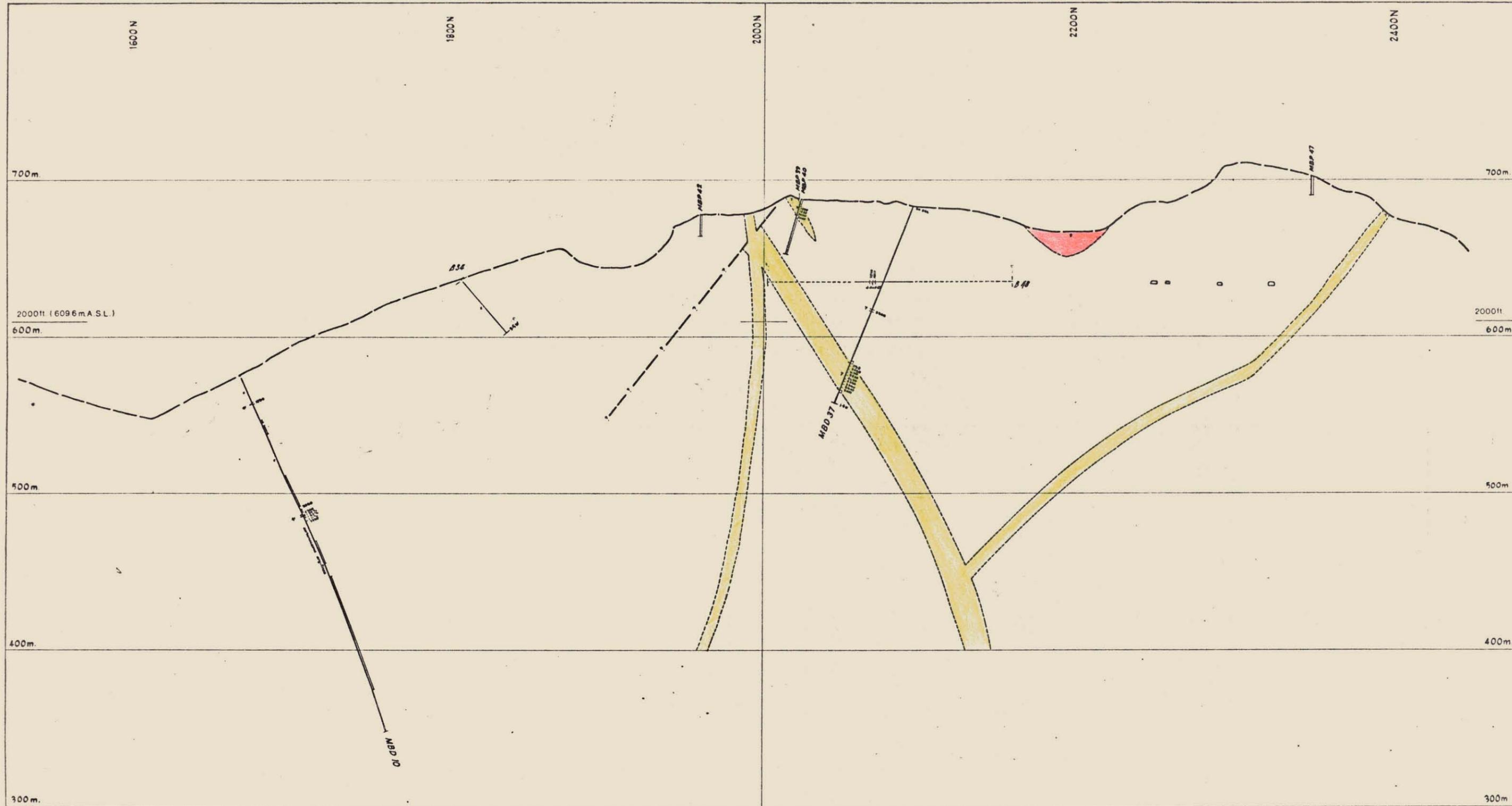


METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
 LINE 1180 mE

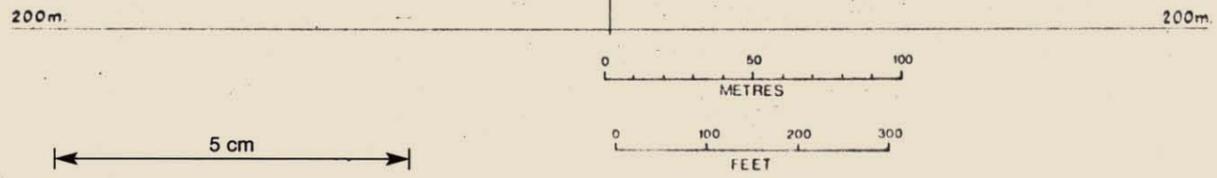
SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE:            REVISED SEPT '79    DRG. NO. 79-021

5 cm





- 2 DOLOMITE
- 1 MINERALIZED DOLOMITE / TIN ZONE
- 3 PYRROTITE
- 2 ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- 7 PORPHYRY

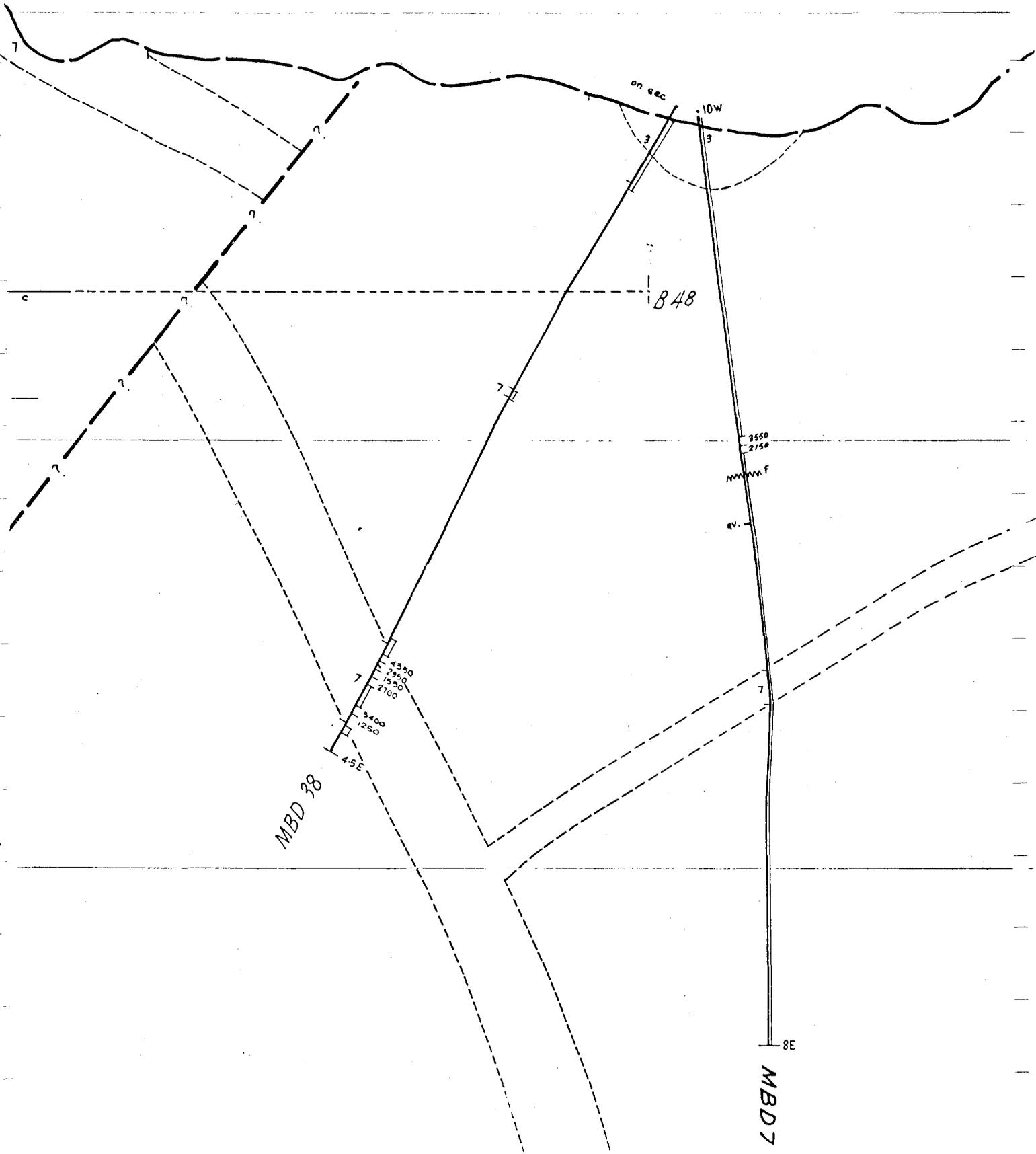


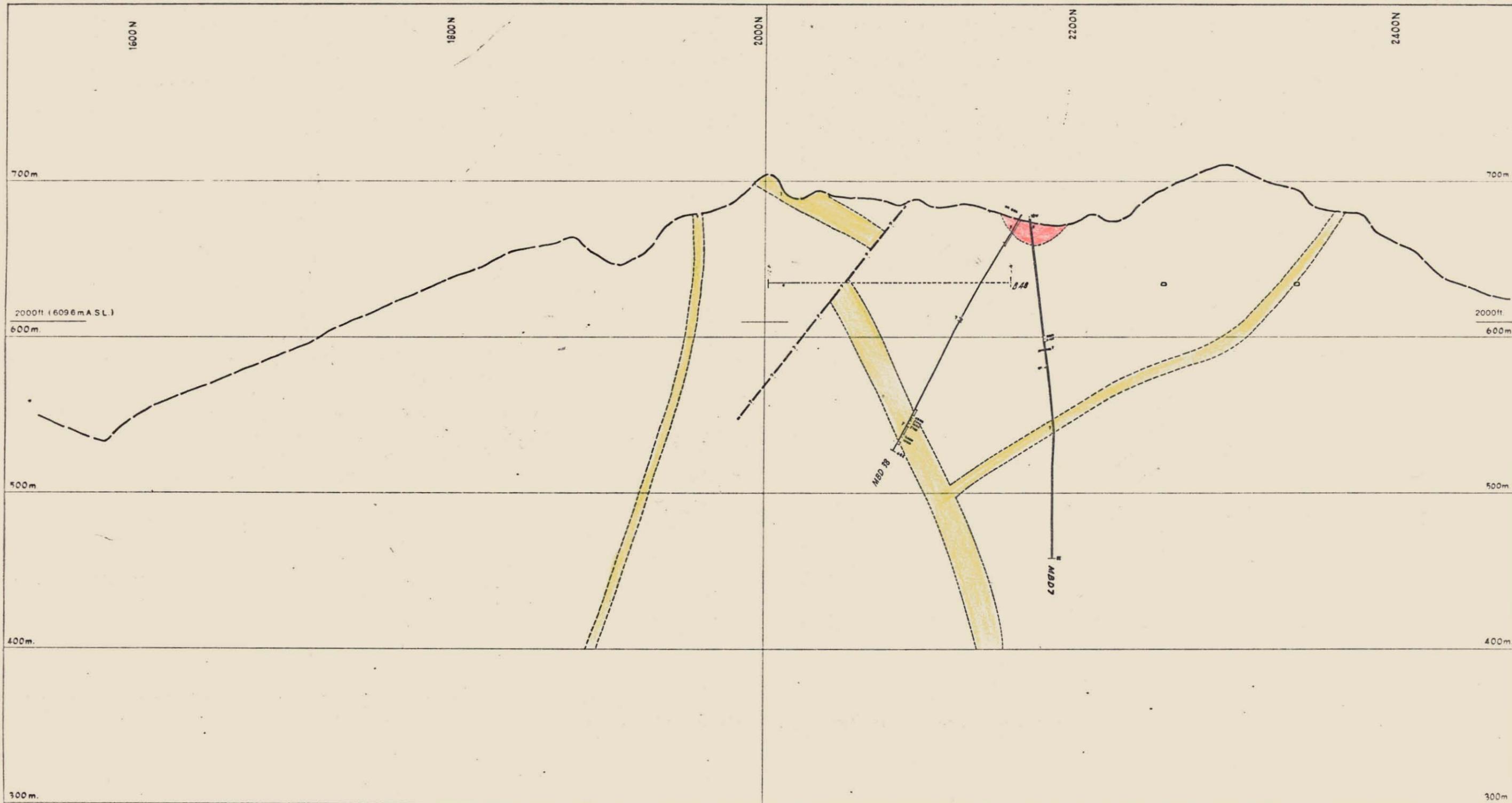
METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
 LINE 1260 mE

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE:            REVISED SEPT '79    DRG NO. 79-025

5 cm

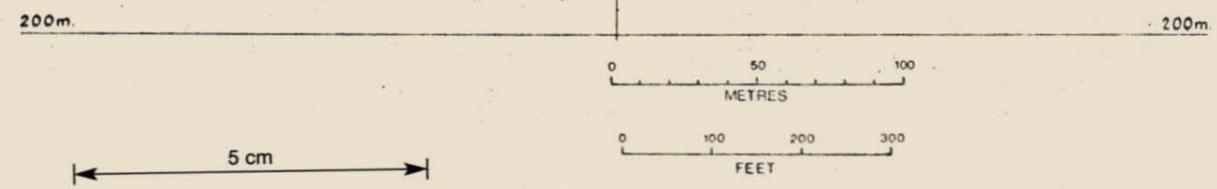
086173





DDK  
1000 ppm  
500 ppm  
250 ppm  
100 ppm

2	DOLOMITE
S/t	MINERALIZED DOLOMITE / TIN ZONE
/c	ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
T	PORPHYRY

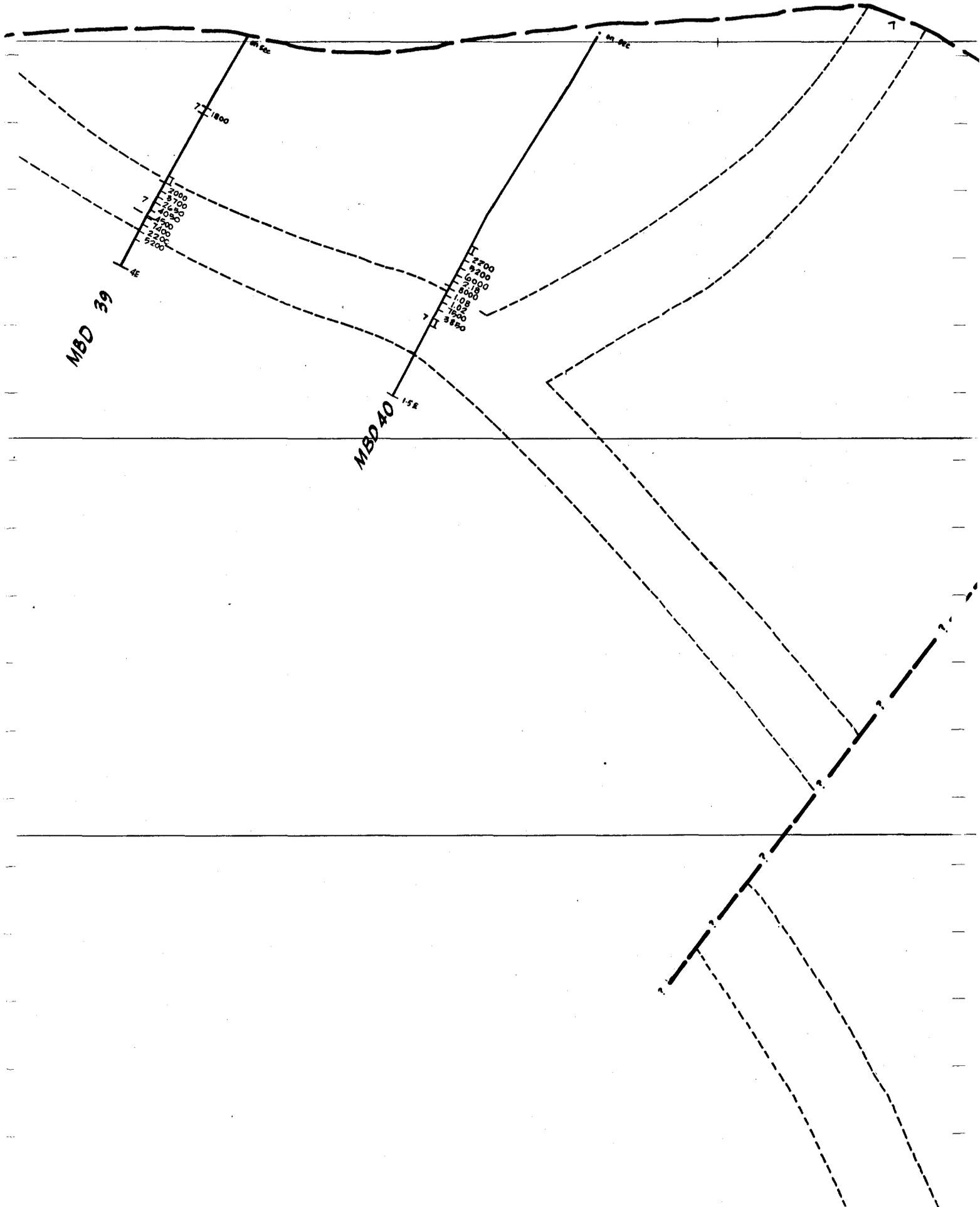


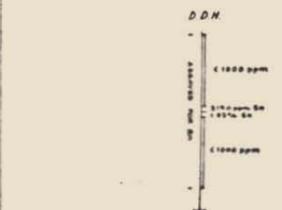
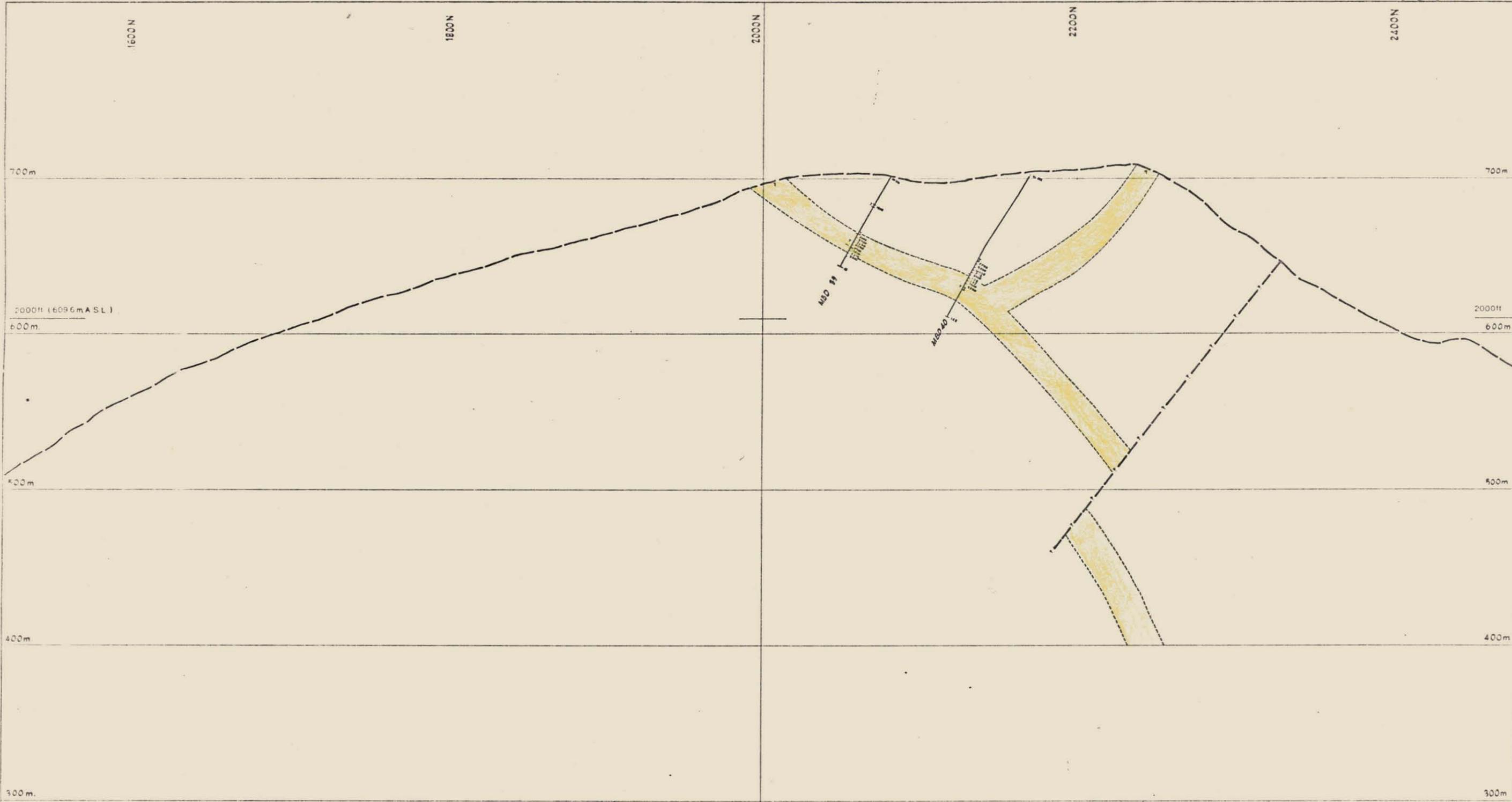
METALS EXPLORATION LIMITED  
MOUNT BISCHOFF TIN PROSPECT  
MOUNT BISCHOFF MINE AREA  
INTERPRETED SECTION  
LINE 1300 mE

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
DATE:            REVISED: SEPT '79    DRG. NO. 79-027

5 cm

086175

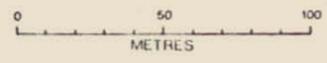




- 2 DOLOMITE
- 3/1 MINERALIZED DOLOMITE / TIN ZONE
- 4/1 PYRRHOTITE
- 5/1 ARGILLITES, QUARTZITE, SHALES / CARBONACEOUS
- 7 PORPHYRY
- INTERPRETED GEOLOGICAL CONTACT

200m

5 cm



200m

METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 1420mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE:            REVISED: SEPT 79    DRG. NO. 79-033

80-2001

086177



**METALS EXPLORATION LTD.**

20 LITTLE COLLINS STREET MELBOURNE, AUSTRALIA 3000. TELEPHONE 654 4200. TELEX AA32051. TELEGRAM ROCKDOC.

**OPEN FILE**

MT. BISCHOFF TIN PROSPECT  
EXPLORATION LICENCE 13/79  
TASMANIA  
REPORT FOR APRIL 1980

80-2001

VOL 2.

Distribution:	Copy No.	1:	Department of Mines, Tasmania
	" "	2:	CRAE
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	" "	5:	AAA (Preussag)
	" "	6:	J.E. Lynch
	" "	7:	A. Jannink
	" "	8:	Circulation - K. Fletcher D. Campi

A. Jannink  
16th May, 1980.

MT. BISCHOFF JOINT VENTUREREPORT FOR APRIL 1980GENERAL:

As a result of a significant intersection of tin (in MBD 41) in a buried dolomite to the south west of the main dolomite outcrop of Greisen Face area, two of the previously proposed diamond drill holes were substituted for further drilling near MBD 41. In addition, an over run on Stage 2B was agreed upon in order to accommodate an extra drill hole to 250 metres. At the end of the month this final hole for the programme was in progress. None of the holes drilled around MBD 41 had intersected significant tin mineralization or dolomite (A 0.5 metre wide dolomite was found in MBD 45).

At the end of April 1980, 3637.5 metres had been drilled in an allotted programme of 3400 metres.

Surface and hand auger sampling was carried out over the dolomite sulphide lodes outcropping in Slaughteryard Face and Brown Face (eastern end). Slaughteryard Face was confirmed to have good grades of tin and Brown Face to be poorly mineralized.

A geophysical interpretation on the ground magnetics run over the H. Brooks Grid was received. It appears that only one anomaly is significant, but may be due to basalt cover.

Metallurgical studies were continued at AMDEL on the eight drill core samples submitted in February 1980. The first progress report was received and it indicates that the cassiterite is very fine grained. Considerable grinding will be necessary to liberate the cassiterite.

..2..

DIAMOND DRILLING:

During the month 5 holes were completed and one was in progress. A total of 1106.5 metres was drilled. All except one of the holes were drilled to the south west of the outcropping dolomite around Greisen Face. The targets were both porphyry dykes and dolomite horizons. MBD 41 intersected 37.2 metres of dolomite beneath 123.4 metres, but MBD's 44 and 45, drilled to the west and south west of MBD 41 failed to find any significant dolomite horizon. MBD 46 is currently being drilled to the south east, and is at 67.5 metres.

MBD 42 was drilled to test westerly extensions of the porphyry dykes cut in MBD 25. MBD 43 was drilled to test both dolomite and porphyry targets on line 940E in Gossan Face.

The following significant assay results were obtained.  
(Abbreviation DSL stands for Dolomite Sulphide Lode):

Hole No.	From	To	Width (m)	% Sn	Rock Type
MBD 41	19.6	22.4	2.8	0.23	Veins & Sediments
	63.0	86.8	23.8	0.07	Porphyry
	including 85.0	86.8	1.8	0.33	"
	123.4	126.7	3.3	0.31	DSL
including	150.7	160.6	9.9	0.59	Dolomite
	152.7	160.6	7.8	0.69	"
MBD 42	49.0	51.7	2.7	0.26	Veins & Sediments
	189.5	215.0	25.5	0.14	Porphyry
	215.0	217.0	2.0	0.40	Sediments & Veins

Hole No.	From	To	Width (m)	% Sn	Rock Type
MBD 43	37.2	39.2	2.0	0.56	Dolomite
	48.5	51.8	3.3	0.62	"
	93.6	101.2	7.6	0.39	Porphyry
MBD 44	74.7	84.9	10.2	0.21	"
	including 78.7	82.7	4.0	0.31	"
	93.8	94.5	0.7	0.35	Vein
MBD 45	27.4	53.0	25.6	0.01	Porphyry
	149.9	151.0	1.1	0.46	Vein
	156.0	156.5	<del>0.5</del>	<del>6.38</del>	Dolomite
	237.2	237.6	0.4	1.44	Vein

OLD CORE:

Reboxing of "old" core was continued and a further 7 holes were relogged.

SURFACE SAMPLING:1. SLAUGHTERYARD FACE

Chip sampling was carried out on two lines, 20 metres apart, over dolomite sulphide lode in Slaughteryard Face. Each sample weighed about 4 kg. and covered 10 metres on each line. The chips were taken laterally within 1 metre of the line.

The following results were obtained:

Line Number	From	To	Width (m)	% Sn
1040E	2110N	2180N	70	0.84
1060E	2110N	2180N	70	1.23
Average				1.04% Sn

2. BROWN FACE

As a result of the surface rubble covering the dolomite sulphide lode at the eastern end of Brown Face (Dessert Face end), this rubble was penetrated by taking hand auger samples. Samples were taken every 5 metres along 4 lines. No samples were taken between 2155N and 2180N on line 1300E because the depth of rubble was too

..4..

deep to penetrate where a diamond drill pad had been constructed.

The following results were obtained:

Line Number	From	To	Width (m)	Ppm Sn
1300E	2140N	2220N	60*	491
1280E	2140N	2210N	75	723
incl.	2190N	2200N	15	0.20%
1260E	2155N	2210N	60	797
incl.	2160N		5	0.32%
1240E	2180N	2210N	35	547

\* Excludes 2155N to 2180N

#### H. BROOKS GRID:

Geophysical interpretation of the ground magnetic results has been received from R.J. Smith of CRAE. The magnetic contour map can be divided into three zones:

##### Zone A (Eastern side)

Several anomalies are present with amplitudes in excess of 1000nT over the Tertiary basalt cover. Generally the gradients are steep suggesting shallow sources but surface cultural features (fence lines etc.) may have obscured sources at depth.

##### Zone B (South western portion)

The Cambrian greywacke, tuff co-occur with moderate and variable magnetic relief (maximums typically 500 nT). There are no clearly defined pronounced anomalies suggesting discrete bodies of mineralization.

##### Zone C (North western portion)

The Precambrian siltstones and quartzites are magnetically quiet.

One anomaly in Zone A, at 5000N to 5100N on lines 4760E to 4880E, appears to co-incide with the Cambrian-Precambrian extrapolated contact. The source could be either a magnetic body beneath a shallow basalt cover, or due to a local thickening of the basalt.

#### METALLURGY:

Progress Report No. 1 on Beneficiation of Mt. Bischoff Tin Ores - Stage II was received from AMDEL.

##### 1. Pre-requisite Testwork

A mineralogical study was conducted on the composite head sample No. 1 used in the Stage I testwork (porphyry from White Face dyke). The tin minerals appear to be well liberated throughout the grind size ranges, and the proportion of tin in cassiterite increases with finer grain size.

##### 2. Tin Flotation Optimization

Five of the twenty flotation tests have been completed on a porphyry composite sample (PC2). Comparisons to date have been between different grind sizes ( $-75\mu\text{m}$  and  $-150\mu\text{m}$ ) and number of tin rougher floats (9 and 12). For 9 tin rougher floats the  $-75\mu\text{m}$  grind size produced a tin rougher concentrate of 3.63% Sn at 75.34% recovery and the  $-150\mu\text{m}$  a concentrate of 3.33% Sn at 70.94% recovery. 12 tin rougher floats on the  $-75\mu\text{m}$  grind size produced a concentrate of 3.20% Sn at 83.69% recovery.

##### 3. Unconventional Procedure

These tests will be carried out on completion of Section 2.

##### 4,5. Head Samples and Mineralogy of Head Samples

Assay data of the head samples has been included in the February and March monthly reports. The general mineralogy of the samples accompanies this report. The distribution of tin in sized heavy liquid products shows that a relatively fine size grind is necessary to liberate the tin from

TABLE 23: MINERALOGY OF COMPOSITE HEAD SAMPLES

Sample	Tin Minerals <sup>(1)</sup>	Other Minerals <sup>(1)</sup>			
		Major (>20%)	Minor (~10%)	Accessory (~1%)	Trace (<0.5%)
Porphyry Comp. 1 (PC1)	Cassiterite Stannite	Quartz Topaz	Pyrite Siderite	Fluorite Muscovite Iron Oxides	Chalcopyrite Arsenopyrite Marcasite Pyrrhotite Covellite/chalcosite Sphalerite Galena
Porphyry Comp. 2 (PC2)	Cassiterite Stannite Franckeite	Quartz Topaz	Pyrite	Iron Oxides	Chalcopyrite Sphalerite Covellite/chalcosite Arsenopyrite Marcasite Galena Rutile
Sulphide Comp. 1 (SC1)	Cassiterite	Pyrrhotite Sellaite	Muscovite Dolomite Siderite Quartz	Fluorite Talc Iron Oxide Pyrite	Arsenopyrite Chalcopyrite Sphalerite Galena
Sulphide Comp. 2 (SC2)	Cassiterite Stannite Franckeite	Magnesite Dolomite Talc Pyrrhotite	Muscovite Siderite Sellaite Pyrite <sup>(2)</sup>	Quartz Fluorite	Chalcopyrite Sphalerite

<sup>(1)</sup> Listed in approximate order of decreasing abundance

<sup>(2)</sup> A large proportion of this pyrite shows textures indicating it is a supergene replacement product of pyrrhotite.

gangue minerals.

The finest grind size ( $-105 + 53 \mu\text{m}$ ) for each of the 4 composite samples produced the following tin liberation statistics:

Sample No.	% Distribution Tin Liberated	% Tin Locked
PC1	69	31
PC2	56	44
SC1	44	56
SC2	72	28

(PC = Porphyry Composite, SC = Dolomite Sulphide Lode Composite)

The total tin distributions for all size fractions for different specific gravities is as follows:-

S.G.	PC1	PC2	SC1	SC2
< 2.96	14.5%	17.6%	4.6%	5.1%
< 4.00	37.9%	23.4%	51.5%	32.3%
> 4.00	47.6%	59.0%	44.0%	62.6%

## 6. Beneficiation of Ore Samples

### 6.1 Bulk Sulphide Flotation

The composite samples were stage crushed to  $-401 \mu\text{m}$  and the sulphides floated off followed by cleaner and re-cleaner floats. Problems were encountered in the flotation of the Sulphide Composites due to the presence of talc and other minerals, and only a rougher concentrate was obtained. The proportionate weights and grades of tin obtained were as follows:-

Sample No.	Sulphide Cons.			Sulphide Tail		
	% Wt	% Sn	% Acid Sol Sn	% Wt	% Sn	% Acid Sol Sn
PC1	2.61	0.35	0.27	97.39	0.235	0.02
PC2	4.03	0.24	0.16	95.97	0.28	0.02
SC1	20.44	0.50	0.13	79.56	1.52	0.04
SC2	14.95	0.385	0.05	85.05	1.28	0.01

### 6.2 Superpanning

The tailings and middlings from the above flotation tests were sized and superpanned. A considerable proportion of the tin distribution was found in the fine material ( $-53\mu\text{m}$ ):

Sample No.	$- 53 \mu\text{m}$ Sn Distribution	% Total	Grade % Sn
PC1		34.07	0.25
PC2		41.79	0.32
SC1		30.04	2.10
SC2		19.49	0.975

The distribution in the following 3 sizes was almost equal for all four samples:

+  $250 \mu\text{m}$  ,      -  $250 + 150 \mu\text{m}$  ,      -  $150 + 75 \mu\text{m}$

The last size fraction ( $-75 + 53 \mu\text{m}$  ) contained only about 5% by weight for each of the samples.

### 6.3 Tabling/Superpanning

These tests on the tailings and middlings of the sulphide flotation products revealed similar results to 6.2 to date. Mineralogical examination of the products is still in progress.

### 6.4 Production of High Grade Concentrates

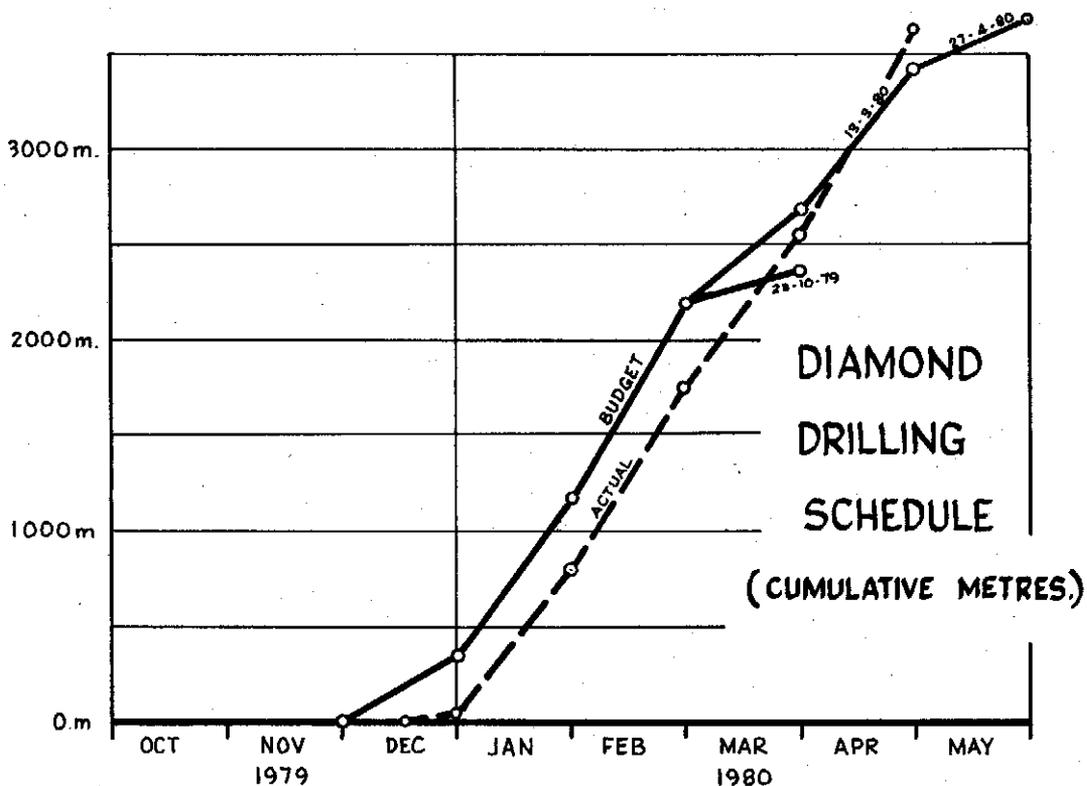
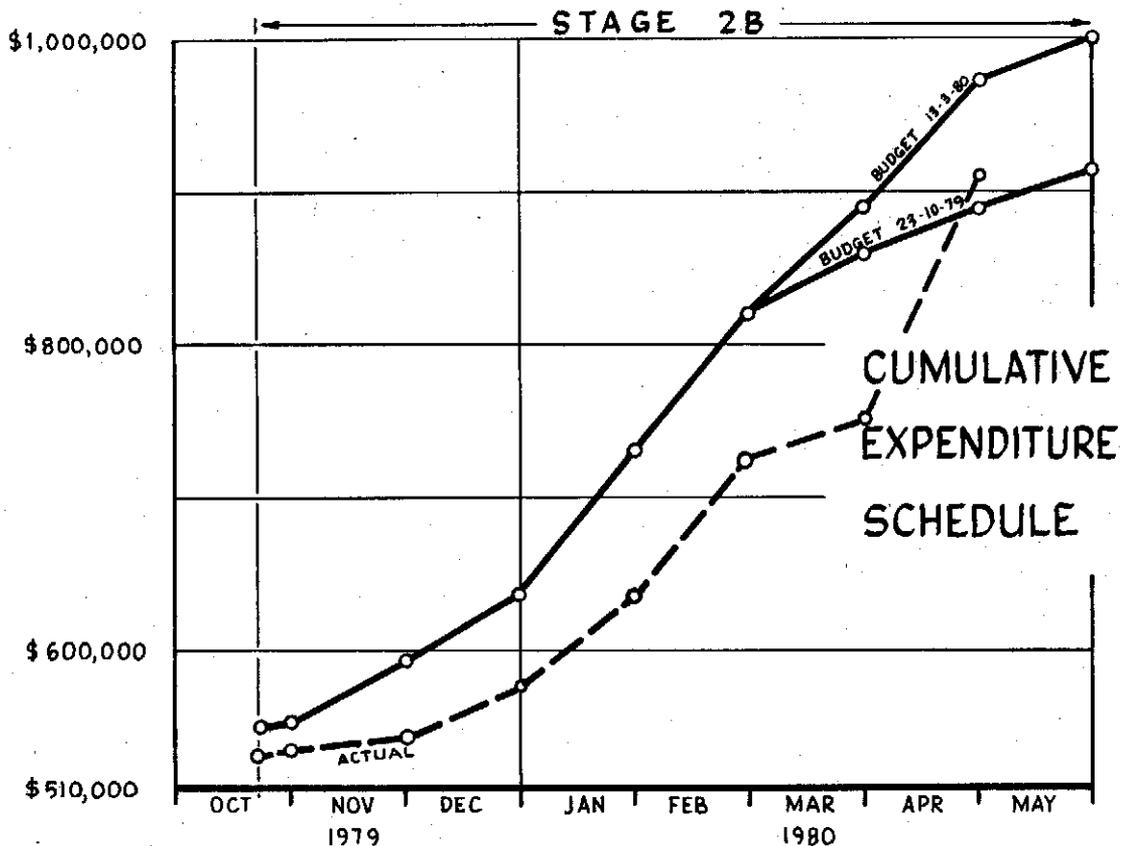
Test work is in progress.

MT. BISCHOFF PROJECT CRA/MELDETAILED EXPENDITURE STATEMENT FOR APRIL, 1980.

<u>STAGE 2B</u>	<u>APRIL, 1980</u>		<u>STAGE 2B TO DATE</u>	
	<u>ACTUAL</u>	<u>BUDGET</u>	<u>ACTUAL</u>	<u>BUDGET</u>
<u>Field Costs</u>				
Technical Services	22,061	15,800	76,025	86,500
Travel & Accommodation	321	700	2,333	4,200
Labour	1,550	1,800	8,504	10,800
Camp & Messing	707	1,000	4,257	6,850
Vehicles	994	1,000	5,318	6,000
Equipment Rental	436	250	884	1,750
General Expenses and Consumables	6,555	5,300	31,186	31,400
Lease Expenses			148	500
Geochemical Surveys			595	-
Geophysical Surveys			59	-
Track Cutting				3,750
Diamond Drilling	77,866	45,000	204,593	207,000
Site Preparation	108		3,978	7,650
Metallurgical	17,900	10,000	27,833	45,000
Assays	2,313	3,000	5,875	10,000
<u>Capital Items</u>				
Core Shed	-		5,085	5,100
	<u>130,811</u>	<u>83,850</u>	<u>376,673</u>	<u>426,500</u>

SUMMARY OF EXPENDITURE TO 30.4.80

Stage 1	270,000
Stage 2A - Early Start	29,020
Stage 2A	198,818
<u>Over Runs</u>	
Stage 1 - M.E.L.	11,308
Metallurgical - C.R.A.E.	23,500
Stage 2B	376,673
<u>CUMULATIVE EXPENDITURE TO DATE</u>	<u>909,319</u>



MT. BISCHOFF

STAGE 2B SUMMARY  
as at 30 - 4 - 80

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 41

Location : 1700.44 N 859.99 E grid

Elevation : 608.54 m

Dip : 75°

Azimuth : 180° (grid)

Total Depth : 200 m

Surveys : Tropari every 40 m

Commenced : 1.4.80 Completed: 5.4.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT Depth: Description and notes Interval: about 10 m	GRAPHIC LOG	MINERALISATION	RELATED ASSAYS
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FOR ABBREVIATIONS SEE 'FIELD GEOLOGIST'S MANUAL', D. A. BERNHARD & W. R. ZAL (ED), MUNGITHY RD. AUSTRALAS INST MIN METAL. 1972

AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE

0-30	30-62.95	TRILITE DRILLED TO 30.0 m - N/A CORE. <b>SILTSTONES, BLACK SHALES, MINE SANDSTONES</b> Dark grey clay rich siltstones, (some almost black and carbonaceous) with medium grey quartzose siltstones which sometimes grade into fine grained sandstones. The black shales occur as fine laminae (thin beds) to coarse dividing siltstone beds. Very brecciated - sub-angular-rounded siltstone clasts in a cemented matrix of finely bedded siltstone and black shale. Some sparse well bedded intervals of siltstone to 2m thick occur. Well fractured and broken, some minor fault zones to 1 m.  Contact 30m	10/Al	30-62.95 finely disseminated py, concentrated in some siltstone beds and shales, also in veins to 5mm 3-5%. Also with dolomite. Heavy 40-62.95 - serpentine, muscovite, phlogopite sp. ga veins TOTAL 7% 62.95-123.45 Vein zone, as above, but includes 22.4-62.95 disseminated py, some blebs py, muscovite and rare po. Sparse veining as above. TOTAL 3%.	
62.95-86.8	86.8-123.45	<b>QUARTZ FELSPAR PORPHYRY</b> Matrix greyish cream to white, finely crystalline, in places greenish and brownish grey. Qtz - subhedral rounded grains to 4mm 10-15%. Feldspar - variable, some alteration to hard brownish cream mineral (sp. near margins) 2-15%. Highest proportion and least alteration in central 13 m (10-15%).  Contact 40m	1	62.95-66.5 py muscovite, sp. Minor etc. py. Fluorite veining. TOTAL 10% 66.5-71.3 sp, trace py, weak etc. py veining 2-3% 71.3-81.4 py muscovite, sp, fluorite veins and rare anhydrite 10-15%, sp locally 3 py 81.4-86.8 py, sp, muscovite, dolomite fluorite etc. py-po veining 3-4% LCA 2-3%.	
123.45-128.45	128.45-156.6	<b>SILTSTONES, BLACK SHALES</b> As for 30-62.95  116.4-123.45 As above, but lighter greys and weakly sericitic.  Contact 70m	10/Al	86.8-104.1 py as rounded blebs to 5mm and heavily disseminated in some siltstone beds. etc. py-muscovite-carbonate-fluorite-serpentine-white mica-chalotte(?) veining. TOTAL 7% 10% in 2.5m adjacent to contact. 104.1-116.4 As for 86.8-104.1, but only 2-3% 116.4-123.45 py, muscovite, po as blebs, some finely disseminated. Veining as above. TOTAL 5-7%.	
156.6-167.5	167.5-185.7	<b>DOLOMITE</b> Fine grained, pale grey and brecciated (dark grey staining along fine brecciation fractures) some weak talcose and sericitous alteration along brecciation fractures. irregular patches with bleached halos 1-2m.  Contact irregular	2	128.45-156.6 Denomite sulphide loc. serpentine, minor talc patches 156.6-167.5 Dolomite 167.5-185.7 py, sp, fluorite, trace po 2-3% 185.7-200.00 Fluorite, py, muscovite, po. sp as blebs and patches to 10 cm, irregular throughout. Patches bluish to 30 cm thick. TOTAL 15-20%.	
185.7-199.55	199.55-200.00	<b>RECRYSTALLISED DOLOMITE</b> Mottled p grey and cream, with abundant purple fluorite in places. Brecciated and well fractured, minor talcose etc alteration along fracture planes.  Contact irregular	3	185.7-199.55 As for 30-62.95, with the addition of some quartzose sandstone beds to 1m thick. Well fractured and broken - fine clay filled fractures. 199.55-200.00 'TUFF' 40-45m END OF HOLE 200.00 m.	
199.55-200.00		<b>SILTSTONES, BLACK SHALES, MINE SANDSTONES</b> 160.6-185.7 As for 30-62.95, with the addition of some quartzose sandstone beds to 1m thick. Well fractured and broken - fine clay filled fractures. 185.7-199.55 As above, but well bedded, with only minor brecciation and contortion. Siltstones and shales thinly bedded (< 2cm). Some thinly cemented siltstone silty shale intervals to 1m.  Contact 200m	10/Al	100.6-166.5 py as disseminated blebs to 3mm, also finely disseminated. Fine dol. calcite etc. bluish veining. TOTAL 7-10% 166.5-185.7 py, finely disseminated, some blebs and thin stringers sparse etc-carbonate py veining. TOTAL 2-3% 185.7-200.00 Py etc as above, with the addition of some thin bedded py laminae to 3mm. TOTAL 3%, locally 5-7%	
200.00-200.00		<b>'TUFF' 40-45m</b> END OF HOLE 200.00 m.	12		

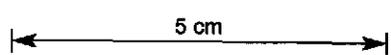
FIELD COPY - COPY TO BE SENT TO MELBOURNE FOR TYPING

METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENT

SUMMARY DRILL LOG  
Scale (1:1000), 1:500, 1:250  
(when reduced to A4)

Prepared by: G. GILMOUR  
Date: 1/15/80

HOLE NO. MBD41  
Sheet of



SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97947		19.6	22.4	2.8	2250									
91911		61.0	63.0	2.0	400									
12		63.0	65.0	"	490									
13		65.0	67.0	"	420									
14		67.0	69.0	"	190									
15		69.0	71.0	"	180									
16		71.0	73.0	"	1000									
17		73.0	75.0	"	860									
18		75.0	77.0	"	320									
19		77.0	79.0	"	1150									
920		79.0	81.0	"	340									
21		81.0	83.0	"	400									
22		83.0	85.0	"	540									
23		85.0	86.8	1.8	3300									
24		86.8	88.8	2.0	420									
25		121.4	123.4	2.0	300									
26		123.4	125.4	"	3200									
27		125.4	126.7	1.3	3050									
28		126.7	128.7	2.0	110									
29		128.7	130.7	"	40									
930		130.7	132.7	"	24									
31		132.7	134.7	"	70									
32		134.7	136.7	"	26									
33		136.7	138.7	"	14									
34		138.7	140.7	"	8									
35		140.7	142.7	"	55									
36		142.7	144.7	"	860									
37		144.7	146.7	"	410									

Notes: — Sn by XRF B. Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET, HOLE NO. MBD 41  
 SAMPLE TYPE: DRILL CORE FROM 19.6 TO 146.7

086190



MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number	:	MBD 42
Location	:	1759.94 N 840.01 E grid
Elevation	:	606.68 m
Dip	:	90°
Azimuth	:	--
Total Depth	:	226.5 m
Surveys	:	Tropari every 40 m
Commenced	:	6.4.80 Completed: 12.4.80
Logged by	:	G. Broadbent
Drilling Contractor	:	Longyear Australia Pty. Ltd.

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT <small>Depth: Description and notes inserted about 10mm</small>	GRAPHIC LOG	MINERALISATION	FIELD ASSAYS
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FOR ABBREVIATIONS SEE 'FIELD GEOLOGIST'S MANUAL', D. A. BENKMAN & W. R. VITAL (ED), MONOGRAPH NO. 2 AUSTRALAS INST MIN METAL. - 1976

AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE

0-3.0		TRACED TO 30m NO CORE.			
3.0-72.7 (69.7m)		3.0-72.7 SILTSTONES AND BLACK SHALES, MINOR SANDSTONES Dark grey clay rich siltstone, medium grey quartzose siltstone, brecciated, with discontinuous lenses and clasts of black shale. Some clasts are unsorted and rounded - 'soft pebble conglomerate' texture. Well bedded - matrix permeated by fine white clay filled fractures 40-60% CA, with small faults at 5-7m intervals. The sandstones are dark grey, silt rich and massive to 1m thickness. 40-55m weakly sericitic and silicified	10/10/11/15	3.0-11.0 pg. qtz in stringers and veins 1%	
72.7-74.2		117-72.7 QUARTZ FELSPAR PORPHYRY			
74.2-86.2		74.2-86.2 SILTSTONES, BLACK SHALES, MINOR SANDSTONES As for 3.0-72.7m	10/10/11/15	pg. qtz, dissemin. and in stringers and veins with carbonate, qtz, muscovite, marcasite TOTAL 5%	
86.2-112.2		86.2-112.2 SILTSTONES, BLACK SHALES, MINOR SANDSTONES As for 3.0-72.7, but sandstones are silicified - quartzites. Proportion of sandstone increases towards base of interval.	10/10/11/15	pg. dissemin. and in stringers and veins with carbonate, qtz, muscovite, marcasite TOTAL 5%	
112.2-126.0 (13.8)		112.2-126.0 SANDSTONES, SILTSTONES and BLACK SHALES Sandstones mid grey, some weakly micaceous, concentrated in intervals to 5m, separated by thinly bedded, weakly brecciated siltstones and shales.	14/10/11/15	112.2-123 sparse carbonate, qtz pg. veining, a little dissemin. pg. - 1%	
126.0-126.7 (17.3)		126.0-126.7 SANDSTONES, SILTSTONES and BLACK SHALES As for 112.2-126.0, some siltstones faintly greenish and sericitic.	14/10/11/15	123-126.0 pg. zone veining 5%.	
126.7-144.0 (17.3)		144.0-182.0 SILTSTONES and BLACK SHALES Well bedded dark grey clay rich and pale grey quartzose siltstones with black shale beds < 0.5cm and some thin pyrite laminae to 2mm. Some minor folding and rotation and small brecciated zones to 2m.	10/10/11/15	pg. dissemin. in these beds, veins with qtz, carbonate, marcasite - 3%.	
182.0-189.48 (7.48)		182-189.48 QUARTZITES, SILTSTONES and SHALES Pale grey, fine grained and silicified siltstones mostly quartzose and weakly sericitic.	14/10/11/15	pg. dissemin. in quartzites and in thin veins and stringers. Sparse dolomite, qtz, pg. marcasite veining, 3%.	
189.48-215.0 (25.52)		189.48-215.0 QUARTZ FELSPAR PORPHYRY Matrix: white, finely crystalline with some faintly greyish very fine grained portions. Qtz - subhedral grains to 2-3mm, 10-15%. Felspar - altered to hard brownish mineral, scattered locally throughout 0-5%. Average size < 2mm, 1%.		pg. as distinct grains with marcasite rims to 2 or 3mm. Sp variable (trace to 5%). Weak trace of cassiterite, muscovite and some minor qtz-carbonate, pg. - spruening TOTAL 10-15%.	
215.0-226.5 (11.5)		215.0-226.5 SILTSTONES, MINOR BLACK SHALES and QUARTZITES Upper 4m hard brecciated quartzites 215.0-226.5 Siltstones thinly bedded with black shales, minor rotation and brecciation	11/10	189.48-215.0 As for 144-161, 2-3%.	
226.5-240.0		END OF HOLE 226.5 m.			

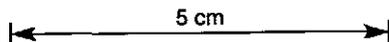
FIELD COPY - COPY TO BE SENT TO MELBOURNE FOR TYPING

METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENT

SUMMARY DRILL LOG  
Scale (1:1000), 1:500, 1:250  
(when reduced to A4)

Prepared by: G. SPENCER  
Date: 1/5/80

HOLE No. MBD 42  
Sheet of



SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97946		49.0	51.7	2.7	2600									
97948		72.7	74.5	1.8	500									
97949		86.1	87.6	1.5	450									
97995		187.5	189.5	2.0	280									
46		189.5	191.5	"	1550									
47		191.5	193.5	"	1250									
48		193.5	195.5	"	380									
49		195.5	197.5	"	1850									
98000		197.5	199.5	"	1750									
1		199.5	201.5	"	1850									
2		201.5	203.5	"	1800									
3		203.5	205.5	"	1150									
4		205.5	207.5	"	2400									
5		207.5	209.5	"	540									
6		209.5	211.5	"	1200									
7		211.5	213.5	"	420									
8		213.5	215.0	1.5	1750									
9		215.0	217.0		3750									

Notes:—

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
ASSAY SUMMARY SHEET HOLE NO, MBD 42

SAMPLE TYPE : DRILL CORE FROM 49.0 TO 217.0

086194

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number	:	MBD 43
Location	:	1899.82 N 940.44 E grid
Elevation	:	632.99 m
Dip	:	65°
Azimuth	:	180° (grid)
Total Depth	:	112.5m
Surveys	:	Tropari and acid etch
Commenced	:	13.4.80 Completed: 17.4.80
Logged by	:	G. Broadbent
Drilling Contractor	:	Longyear Australia Pty. Ltd.

DEPTH INTERVAL	DEPTH from-to : ROCK UNIT	MINERALISATION	GRAVIMETRIC LOG	WET/DRY ASSAYS
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FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D. A. BENJAMIN & W. H. RYAN (EDS), MIMSWORTH N.S.W. AUSTRALIAN INST. MIN. METALS - 1974

<p>240 m (1:1000), 120 m (1:500), 60 m (1:250)</p> <p>AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE</p>	<p>0-36.1 (36.1m)</p> <p>0-36.1 DOLOMITE, weakly recrystallised.</p> <p>Fine grained pale grey and cream dolomite with weak recrystallisation along brecciation fractures. Some segregation of qtz and carbonates into open space fillings. Well fractured - yellowish clayey material lining fracture planes and puggy zones. (Recovery poor to 18.2m)</p> <p>Fine grained grey dolomite with fine dark grey brecciation fractures alternates with the finely mottled pale cream and grey recrystallised dolomite as above.</p>	<p>2/3</p>	<p>0-12.2 pg-sp. fluents as blebs along inclusions, irregular veins with qtz and carbonates and patches to 30mm. 3-5%</p> <p>12.2-19.9 trace sp in qtz-carbonate veining &lt; 1%</p> <p>19.9-36.1 sp, pg with qtz, carbonates in veins 1-2%</p>	<p>0</p> <p>10</p> <p>20</p> <p>30</p> <p>40</p> <p>50</p> <p>60</p> <p>70</p> <p>80</p> <p>90</p> <p>100</p> <p>110</p> <p>120</p>
	<p>36.1-37.2 36.1-37.2 DOLOMITE SURPHIDE LODE.</p> <p>37.2-46.6 DOLOMITE, weakly recrystallised.</p> <p>As for 0-36.1</p>	<p>7/8</p> <p>2/3</p>	<p>Fluore, pg, po sp, some calcite? 10-1%</p> <p>Ac Cr 12.2-19.9, &lt; 1%</p>	
	<p>46.6-51.8 46.6-51.8 Recrystallised DOLOMITE.</p> <p>Dat grey recrystallised carbonates and qtz with white calcite and creamy dolomite surrounding embayed clasts of brecciated dolomite.</p>	<p>3/2</p>	<p>sp, pg, fluore as blebs and grains to 5mm 3-5%</p>	
	<p>51.8-93.6 51.8-93.6 SILTSTONES AND QUARTZITES</p> <p>Khaki green and pale grey clay rich siltstones - siliceous! with some brownish quartzose siltstones, thinly bedded (mostly &lt; 2cm). The quartzites are hard, bluish or brownish grey, some well bedded alternating above siltstones and sandstones, and occur in intervals 30cm - 2m, separated by siltstone intervals. Brecciated and disrupted, with later fine fracturing 30-60cm. Some sparse greenish shale beds 60m-75m.</p>	<p>10/11</p> <p>11/10</p> <p>10/11</p>	<p>51.8-58.5 pg, po dissem, as blebs, stringers and veins 1-2%. Some minor dolomite - qtz - fluore - pg - sp veining. TOTAL 5%</p> <p>58.5-93.6 pg, trace po, dissem, and in veins. Some carbonate - pg - fluore - qtz - sp - 70 - monoxide - ga veining. TOTAL 2-3%</p>	
	<p>93.6-101.25 93.6-101.25 QUARTZ FELSPAR PERPHYAN.</p> <p>Matrix - finely crystalline, in places pale grey and semi translucent, or yellowish cream.</p> <p>Qtz - subhedral - rounded grains to 4mm 10-15%</p> <p>Felspar - yellowish or greenish due to alteration, 2mm or less, 3-5%</p>	<p>1</p>	<p>pg, mica, trace po, arsenic, fluore and sp. Cassiterite. Variable concentrations and proportions 3-35%, average 20%. Some weak qtz - pg - cassiterite - sp veining (1%)</p>	
	<p>101.25-112.5 101.25-112.5 SILTSTONES and QUARTZITES</p> <p>As for 51.8-93.6</p>	<p>10/11</p>	<p>101.25-103.5 pg, trace mica, dissem and in blebs and stringers 7%</p> <p>103.5-112.5 pg, dissem and blebs, stringers. Some sparse qtz-carbonate - fluore - pg veining. TOTAL 2-3%</p>	
	<p>END OF HOLE 112.5 m</p>			

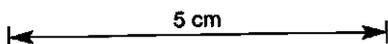
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METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENT

SUMMARY DRILL LOG  
Scale 1:1000, 1:500, 1:250  
(when reduced to A4)

Prepared by: G. BROOKINGS  
Date: 7/5/80.

HOLE No. MBD 43  
Sheet of



SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
PLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
98010		1.1	3.0	2.0	470									
98011		5.2	7.2	"	980									
12		7.2	9.2	"	520									
13		9.2	11.2	"	420									
14		11.2	13.2	"	210									
15		13.2	14.8	1.6	160									
16		16.1	18.1	2.0	10									
17		18.1	20.1	"	30									
18		20.1	22.1	"	110									
19		22.1	24.1	"	180									
20		24.1	26.1	"	270									
21		26.1	28.1	"	180									
22		28.1	30.1	"	330									
23		30.1	32.1	"	X									
24		32.1	34.1	"	18									
25		34.1	36.1	"	150									
326		36.1	37.2	1.1	65									
27		37.2	39.2	2.0	5000									
28		39.2	41.2	"	14									
29		41.2	43.2	"	12									
030		43.2	45.2	"	16									
31		45.2	47.2	"	10									
32		47.5	48.5	1.3	130									
33		48.5	50.5	2.0	2400									
34		50.5	51.8	1.8	2850									
35		51.8	53.8	2.0	90									
36		91.6	93.6	"	180									

Notes - Sn by XRF B. Method  
 X - means less than 4.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 43  
 SAMPLE TYPE : DRILL CORE FROM 11 TO 936

086197



MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number	:	MBD 44
Location	:	1700.08 N 819.99 E grid
Elevation	:	600.94 m
Dip	:	75°
Azimuth	:	180° (grid)
Total Depth	:	251 m
Surveys	:	Tropari every 40 m
Commenced	:	18.4.80 Completed: 22.4.80
Logged by	:	G. Broadbent
Drilling Contractor	:	Longyear Australia Pty. Ltd.



SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
980+2		72.7	74.7	2.0	48									
43		74.7	76.7	"	2200									
44		76.7	78.7	"	720									
45		78.7	80.7	"	2750									
46		80.7	82.7	"	3400									
47		82.7	84.9	2.2	1400									
48		84.9	86.9	2.0	85									
49.		93.8	94.5	0.7	3450									

Notes:— Sn by XRF B. Method

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 44201  
 SAMPLE TYPE : DRILL CORE FROM 72.7 TO 94.5

086901

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number	:	MBD 45
Location	:	1640.38 N 820.18 E grid
Elevation	:	609.69 m
Dip	:	75°
Azimuth	:	180° (grid)
Total Depth	:	249 m
Surveys	:	Eastman every 40 m
Commenced	:	23.4.80 Completed: 27.4.80
Logged by	:	G. Broadbent
Drilling Contractor	:	Longyear Australia Pty. Ltd.

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT Depth : Description and notes interval about 10mm	GRAPHIC LOG	MINERALISATION	GRAVIMETRIC ANALYSIS	WETTED ASSAYS
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FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D A BERMAN & W R BYALL (ED), MONOGRAPH NO 9 AUSTRALAS INST MIN METAL - 1976

AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE

0-3.0	TRIKONE TO 3.0m - NO CORE					
3.0-27.36 (24.36)	3.0-27.36 SILTSTONES AND BLACK SHALES dark grey clay rich siltstones and minor sandstone quartzose siltstones surrounded by irregular lenses and oriented beds of black shale and siltstone. Very brecciated - soft ground description Well bedded - Puggy lamb zone 10-24.1 km		10/a/c F			27.36-31.9 pg. dissemin and veinlets and dissem in some siltstone beds. Weak glauconite - py veining. TOTAL 3%
27.36-53.00	27.36-53.00 QUARTZ FELSPAR PORPHYRY Matrix grey and finely crystalline, greyish cream near margin. Qtz - rounded grains to 6mm, mostly 1-5mm 10% Felspar - soft white, and weathered, some well formed grains to 6mm, mostly 2-3mm, 15% Finely fractured and quite weak (fairly weak in places), weathered. Contact 60°					27.36-31.9 pg. trace hematite, sp. 2% 31.9-44.1 trace sp. hematite, some glauconite - hematite veining. 44.1-53.0 pg. trace sp. hematite and ? hematite 2-3%
53.00-60.3 (7.3m)	53.00-60.3 SILTSTONES, MINOR SANDSTONES dark grey siltstones with sandstone beds to 20cm. Brecciated and cherty		10/11/c			53.0-60.3 pg. trace hematite, hematite - sp. hematite - vein and stringers to 20cm TOTAL 3-5%
60.3-73.0 (12.7m)	60.3-73.0 SILTSTONES AND BLACK SHALES As for 0-27.36		10/a/c			60.3-73.0 decrease in detrital veining, py dissem in siltstones and as thin stringers 2-3%
73.0-88.0 (15.0m)	73.0-88.0 SILTSTONES AND BLACK SHALES WITH SANDSTONES Finely bedded, brecciated siltstones and black shales with hard bluish grey quartzite beds up to 1.5m thick. Some quartzites are weakly micaceous. Well fractured and broken. Gradual Change		10/11/c			73.0-88.0 pg. hematite, dissem and in stringers and veinlets 2 qt. carbonate. 3-5%
88.0-97.8 (9.8m)	88.0-97.8 QUARTZITES AND SILTSTONES As for 73.0-88.0, but quartzites > siltstones		11/10/c			88.0-97.8 pg. dissem in quartzites and veinlets, stringers as above 2-3%
97.8-133.0	97.8-133.0 SILTSTONES AND BLACK SHALES. 97.8-103.5 As for 0-27.36. 103.5-120 SILTSTONES, FINELY LAMINATED. Dark grey, clay rich. Brecciated, finely bedded (< 2mm) with rare thin quartzose siltstones to 5mm and very thin black shale laminae.		10/a/c 10			97.8-120 pg. increase to 2-5%
133.0-155.97	133.0-155.97 SILTSTONES AND BLACK SHALES WITH SANDSTONES. As for 73.0-88.0		10/11/c			120-133.0 pg. as thin veinlets and dissem, sparse black and stringers qt. carbonate, minor veining 2%
155.97-181.0 (24.5)	155.97-181.0 SILTSTONES, minor SANDSTONES Very brecciated, thinly bedded siltstones, some carbonaceous with dark grey, sometimes weakly micaceous, sandstones to 20cm		10/11/c			133-150 pg. trace po, as black and dissem. Minor qt. py-po - hematite-carbonate - sp. of veining. 5% 0.5- vein as described at 149.9-150.6, 30° 150.6-155.97 pg. hematite, trace po, much veining and py-po. 155.97-181.0 hematite 10% 7% carbonate 10-15%
181.0-190.9 (9.9m)	181.0-190.9 SILTSTONES, finely laminated. As for 103.5-120		10/c			155-170.2 pg. dissem and in veins with hematite, hematite - qt. py-po - sp. hematite, trace. Abundance of hematite decreased with depth. 5-7% 170.2-181.0 - pg. dissem and minor veining as above 2-3%
190.9-201.1 (10.2)	190.9-201.1 SILTSTONES with BLACK SHALES As for 0-27.36		10/a/c			181.0-190.9 pg. finely dissem and in veinlets with qt. 4.1%
201.1-208.5 (7.4m)	201.1-208.5 SILTSTONES, finely laminated. As for 103.5-120, but only minor dissection and oxidation of bed.		10			190.9-201.1 pg. dissem in siltstones 1-2%
208.5-210.9 (2.4m)	208.5-210.9 TUFFS, SANDSTONES and SILTSTONES		10/11/c			201.1-208.5 pg. very finely dissem and as thin laminae and beds to 1.5cm 3%
210.9-218.9 (8.0m)	210.9-218.9 SILTSTONES, SANDSTONES, minor BLACK SHALES Well bedded fine siltstone and shale (2cm) in intervals to 1m with fine grey sandstone to 20cm.		10/11/c			208.5-210.9 pg. dissem in beds and siltstones, 15% 210.9-218.9 pg. dissem and in sparse qt. carbonate stringers 1-2%.
218.9-224.2 (5.3)	218.9-224.2 TUFFS with SANDSTONES and SILTSTONES Cone shaped hill, grades into sandstone, separated by siltstones		10/11/c			218.9-224.2 pg. with qt. py, hematite stringers 10%.
224.2-249.0	224.2-249.0 SILTSTONES and BLACK SHALES with SANDSTONES As for 210.9-218.9, minor faulting, well bedded with only minor carbonation. Sandstone content decreases 239-249 (2cm)		10/11/c			224.2-249.0 pg. dissem, clay bedding, some thin bedded laminae, hematite - py - sp. hematite veining. TOTAL 5%.

END OF HOLE 249.0m

METALS EXPLORATION LTD.  
EXPLORATION DEPARTMENT

SUMMARY DRILL LOG  
Scale 1:1000, 1:500, 1:250  
(when reduced to A4)

Prepared by: G. BROADBENT  
Date: 8/5/90.

HOLE NO. MBD 45  
Sheet of

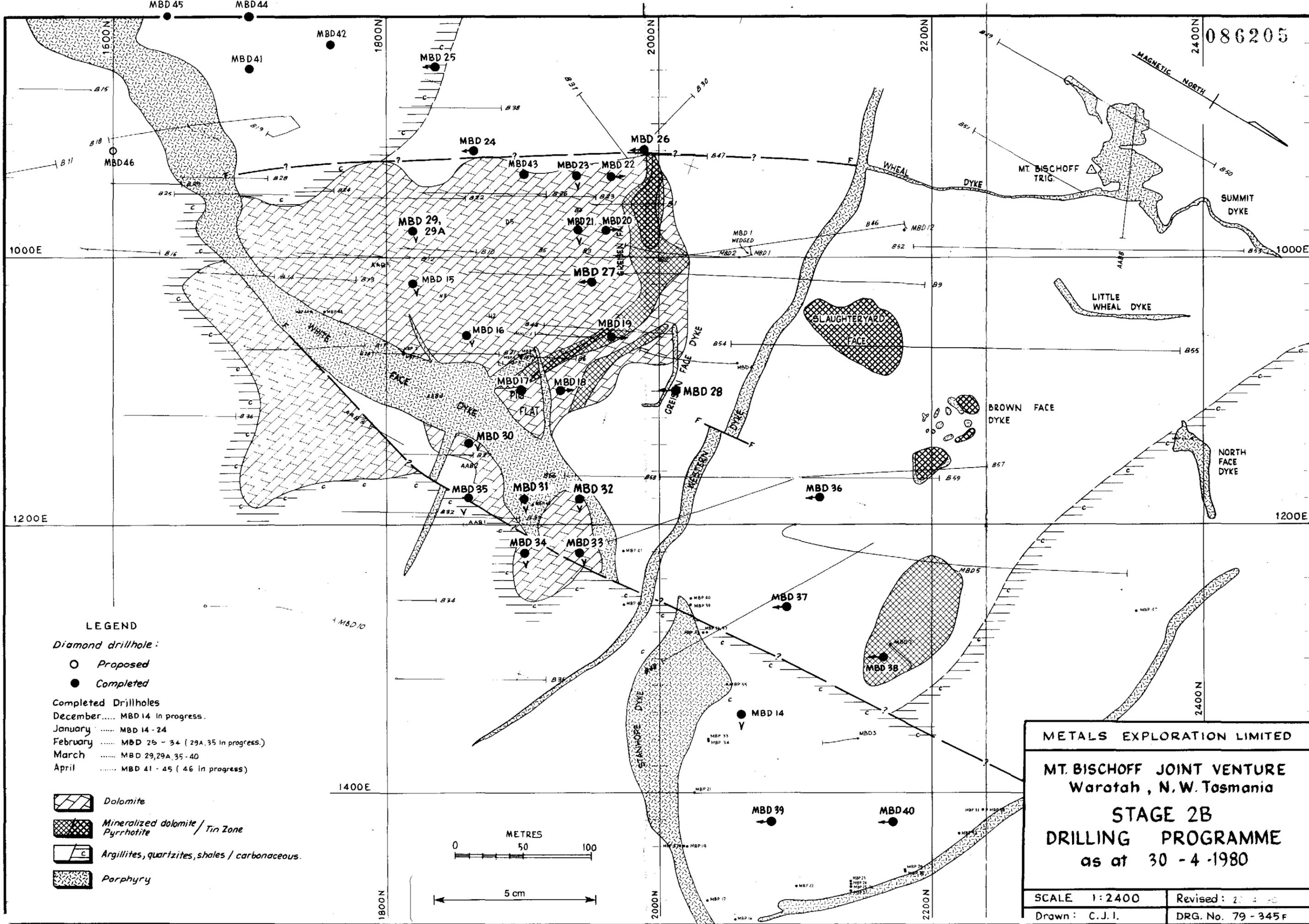
5 cm

AMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
PLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
98051		25.4	27.4	2.0	18									
52		27.4	29.5	2.1	200									
53		29.5	31.5	2.0	140									
54		31.5	33.5	"	60									
55		33.5	35.5	"	46									
56		35.7	37.5	1.8	80									
57		37.5	39.5	2.0	110									
58		39.5	41.5	"	75									
59		41.5	43.5	"	70									
60		43.5	45.5	"	80									
61		45.5	47.5	"	75									
62		47.5	49.5	"	85									
63		49.5	51.5	"	160									
64		51.5	53.0	1.5	250									
65		53.0	55.0	2.0	85									
66		149.9	151.0	1.1	4600									
67		154.0	156.0	2.0	130									
68		156.0	156.5	0.5	6.38%									
69		156.5	158.5	2.0	240									
70		237.2	237.6	0.4	1.44%									

Notes: - Sn by XRF B1 Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 45  
 SAMPLE TYPE : DRILL CORE FROM 25.4 TO 237.6

086204



LEGEND

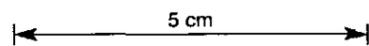
Diamond drillhole:

- Proposed
- Completed

Completed Drillholes

- December..... MBD 14 In progress.
- January ..... MBD 14 - 24
- February ..... MBD 25 - 34 ( 29A, 35 In progress.)
- March ..... MBD 29, 29A, 35 - 40
- April ..... MBD 41 - 45 ( 46 In progress)

-  Dolomite
-  Mineralized dolomite / Tin Zone  
Pyrrhotite
-  Argillites, quartzites, shales / carbonaceous.
-  Porphyry



METALS EXPLORATION LIMITED

MT. BISCHOFF JOINT VENTURE  
Waratah, N.W. Tasmania

STAGE 2B  
DRILLING PROGRAMME  
as at 30 - 4 - 1980

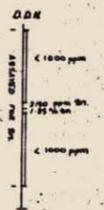
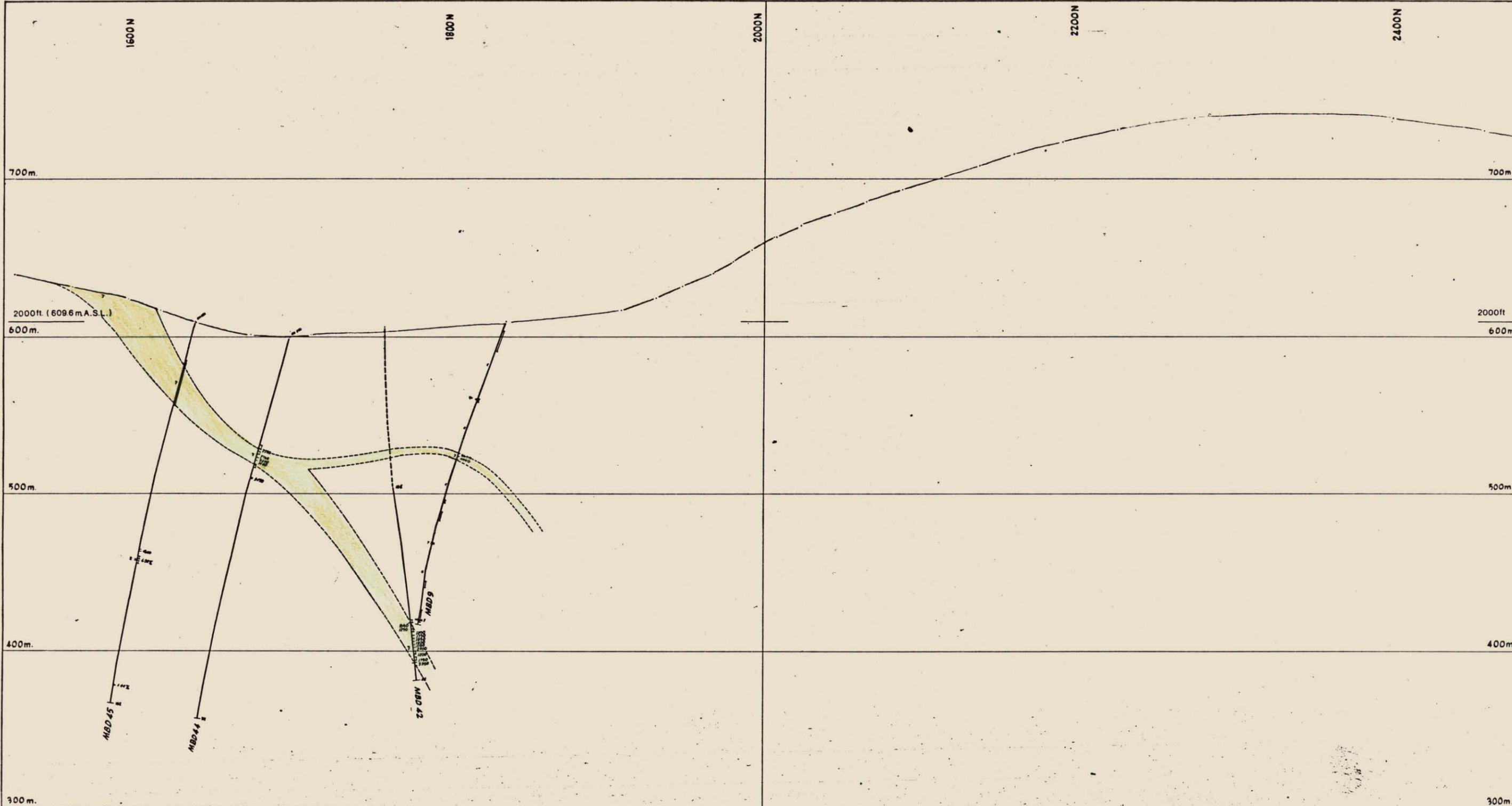
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Revised: 20 4 80

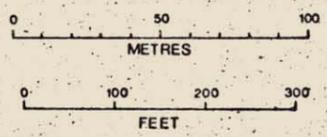
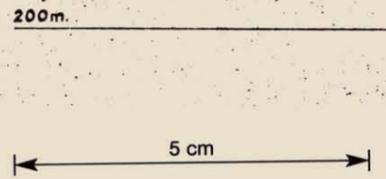
Drawn: C.J.I.

DRG. No. 79 - 345 F





- 2 DOLOMITE
- 3/5 MINERALIZED DOLOMITE / TIN ZONE
- 4/5 PYRRHOTITE
- 6 ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- 7 PORPHYRY
- INTERPRETED GEOLOGICAL CONTACT

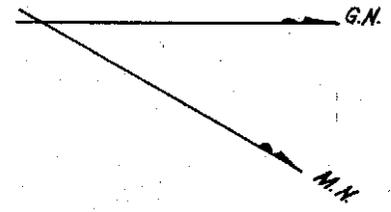
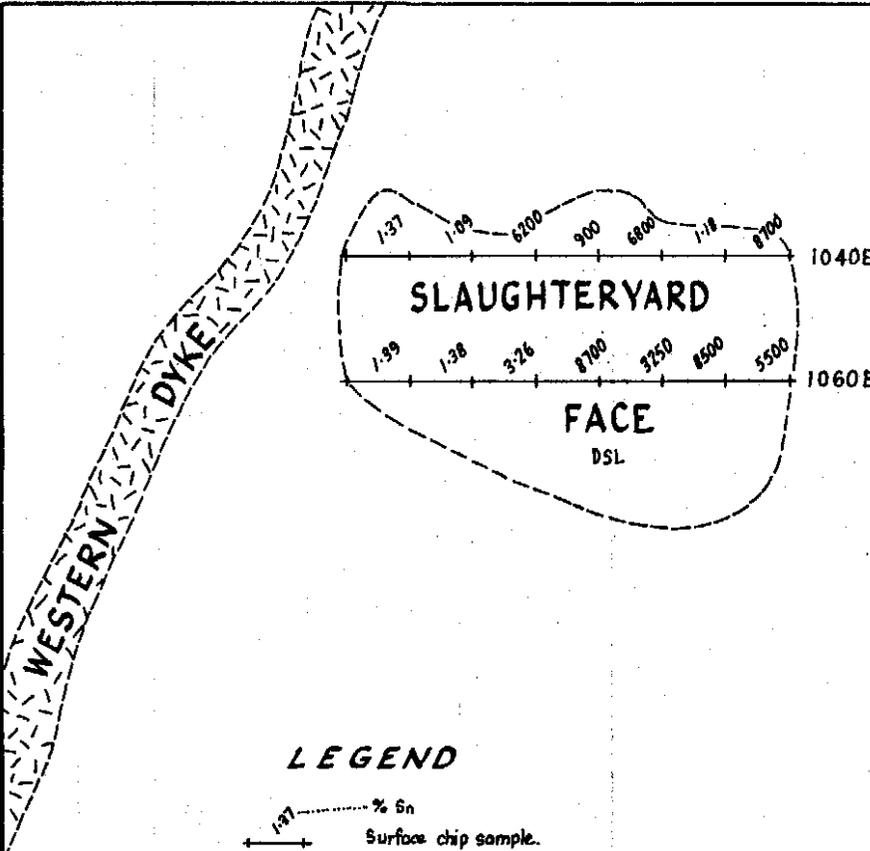


METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 820 mE**

SCALE 1:1200      LOOKING TO GRID WEST (240°M)  
 DATE:              REVISED: SEPT 79    DRG. NO. 79-003

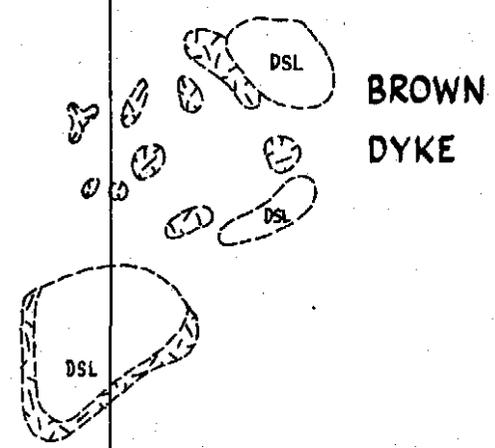
086208

2200N

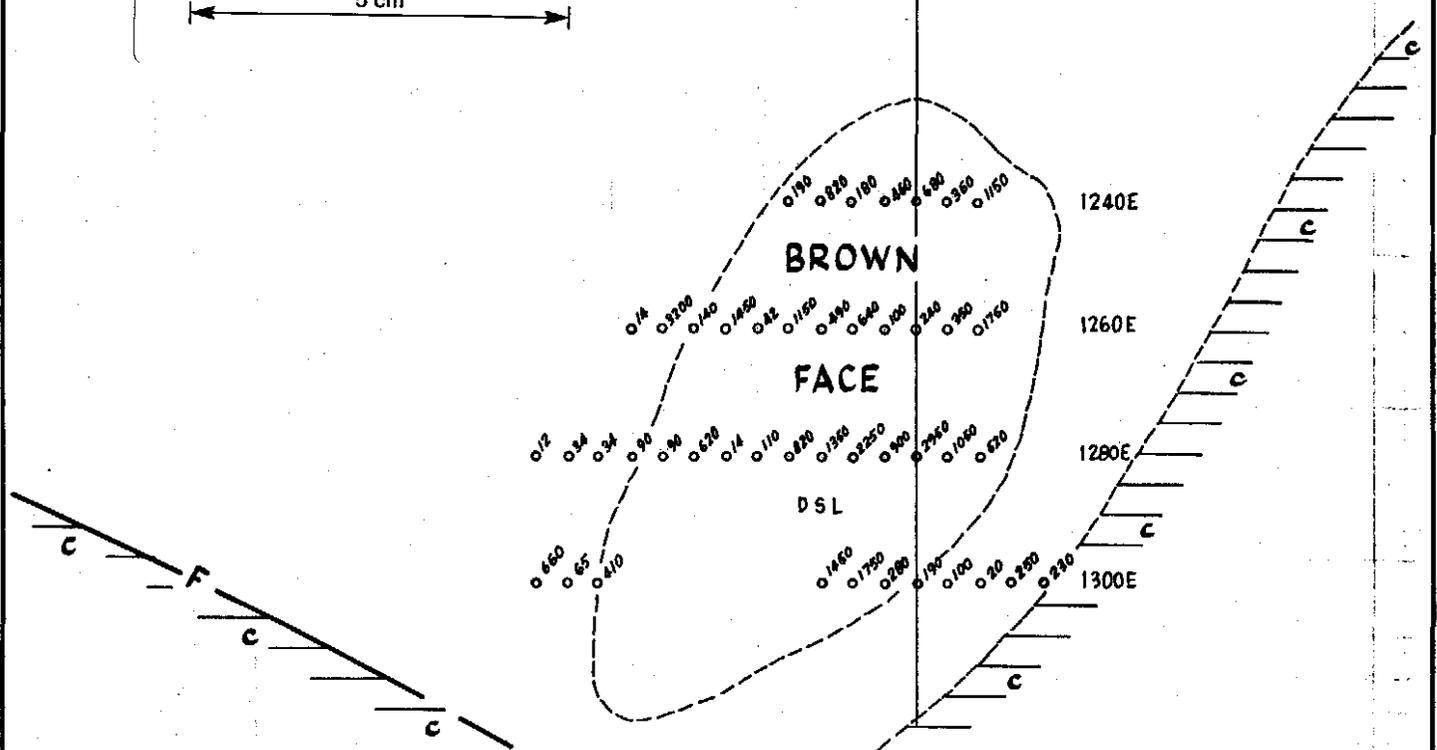
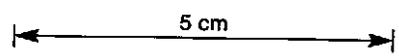


**LEGEND**

- $\frac{1.87}{\dots\dots\dots}$  % Sn
  - $\frac{1.87}{\text{---}}$  Surface chip sample.
  - $\frac{1450}{\text{---}}$  ppm Sn
  - $\frac{1450}{\text{---}}$  Hand auger sample.
  - DSL** Dolomite Sulphide Lode
  - Porphyry.
  - c** Argillites / Carbonaceous.
- 0 10 20 30 40 50 Metres



1200E



METALS EXPLORATION LTD.  
MT. BISCHOFF TIN PROSPECT

SLAUGHTERYARD FACE / BROWN FACE  
AUGER AND CHIP SAMPLING

DRG NO 80-179



**METALS EXPLORATION LTD.**

20 LITTLE COLLINS STREET MELBOURNE, AUSTRALIA 3000 TELEPHONE 654 4200 TELEX AA32051 TELEGRAM ROCKDOC

MT. BISCHOFF TIN PROSPECT

EXPLORATION LICENCE 13/79

TASMANIA

REPORT FOR MAY 1980

Distribution:	Copy No.		
		1:	Department of Mines, Tasmania
	" "	2:	C.R.A.E.
	" "	3:	C.R.A.E.
	" "	4:	A.A.A. (Comstaff)
	" "	5:	A.A.A. (Preussag)
	" "	6:	J.E. Lynch
	" "	7:	A. Jannink
	" "	8:	Circulation- K. Fletcher D. Campi

A. Jannink  
20th May, 1980.

086210

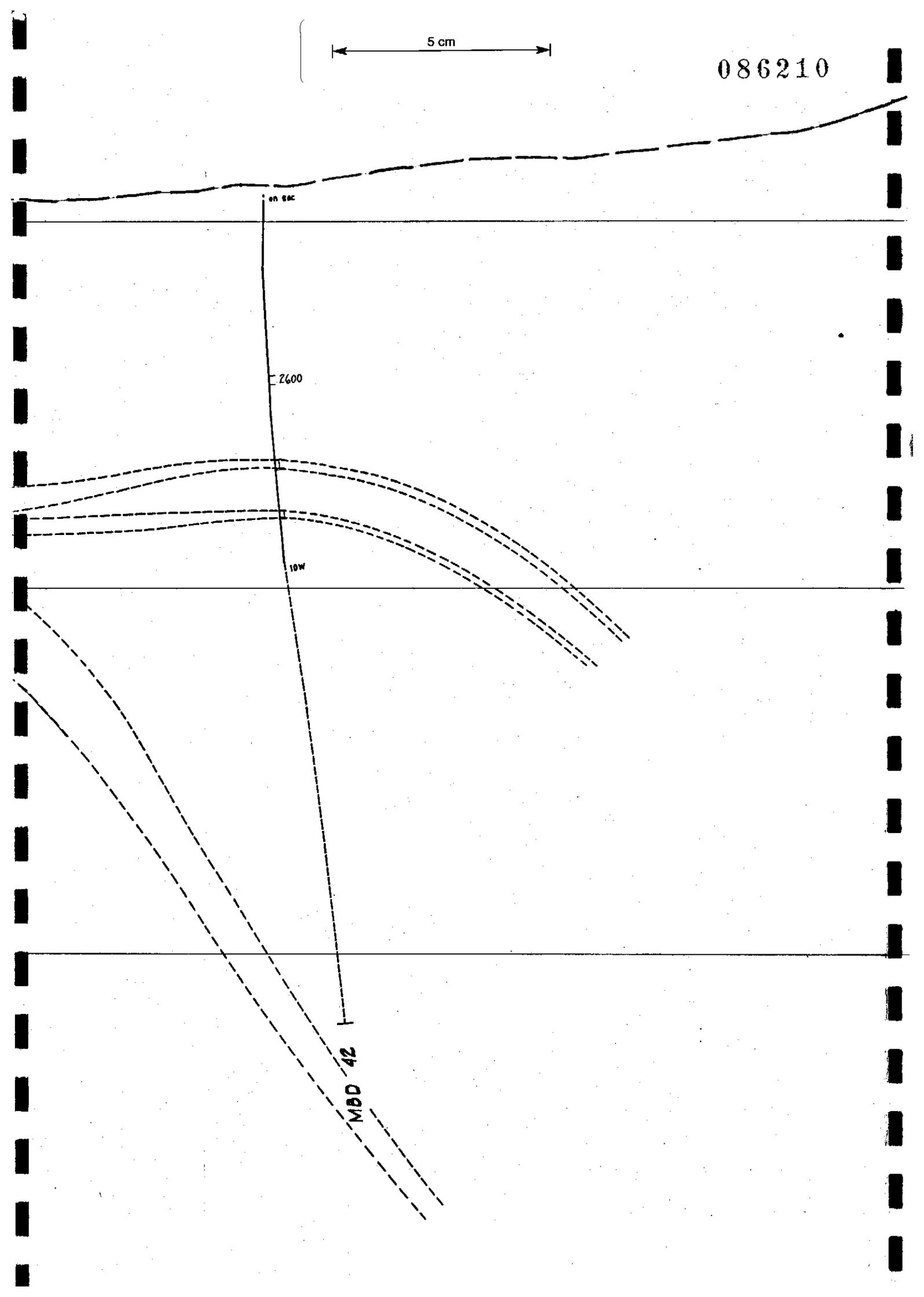
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en sac

2600

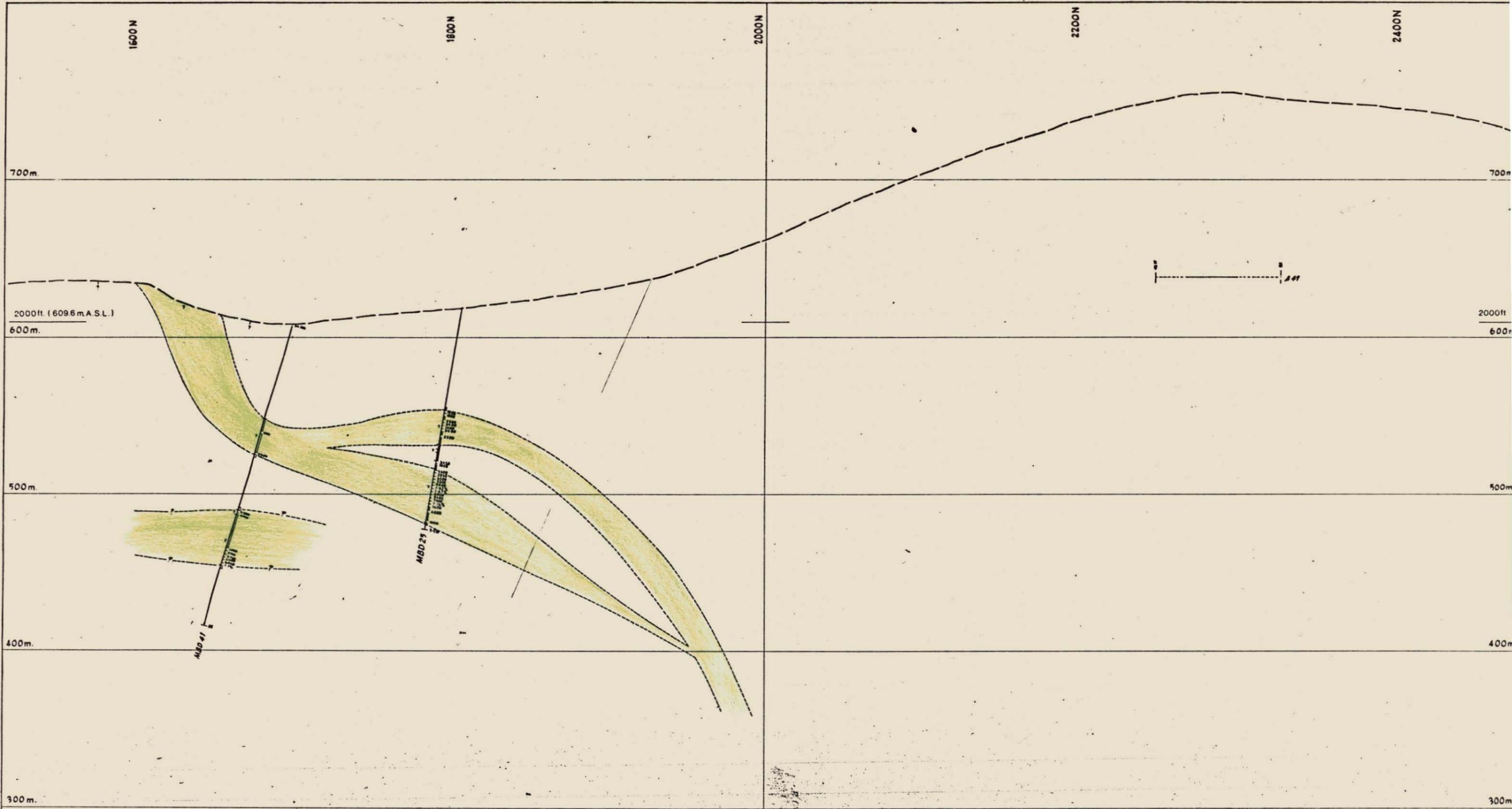
10W

MBD 42









2000ft. (609.6m.A.S.L.)  
600m.

500m.

400m.

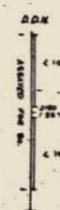
300m.

2000ft.  
600m.

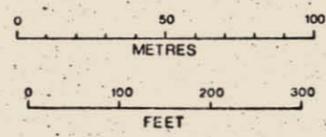
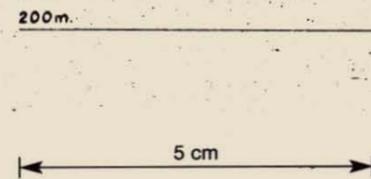
500m.

400m.

300m.



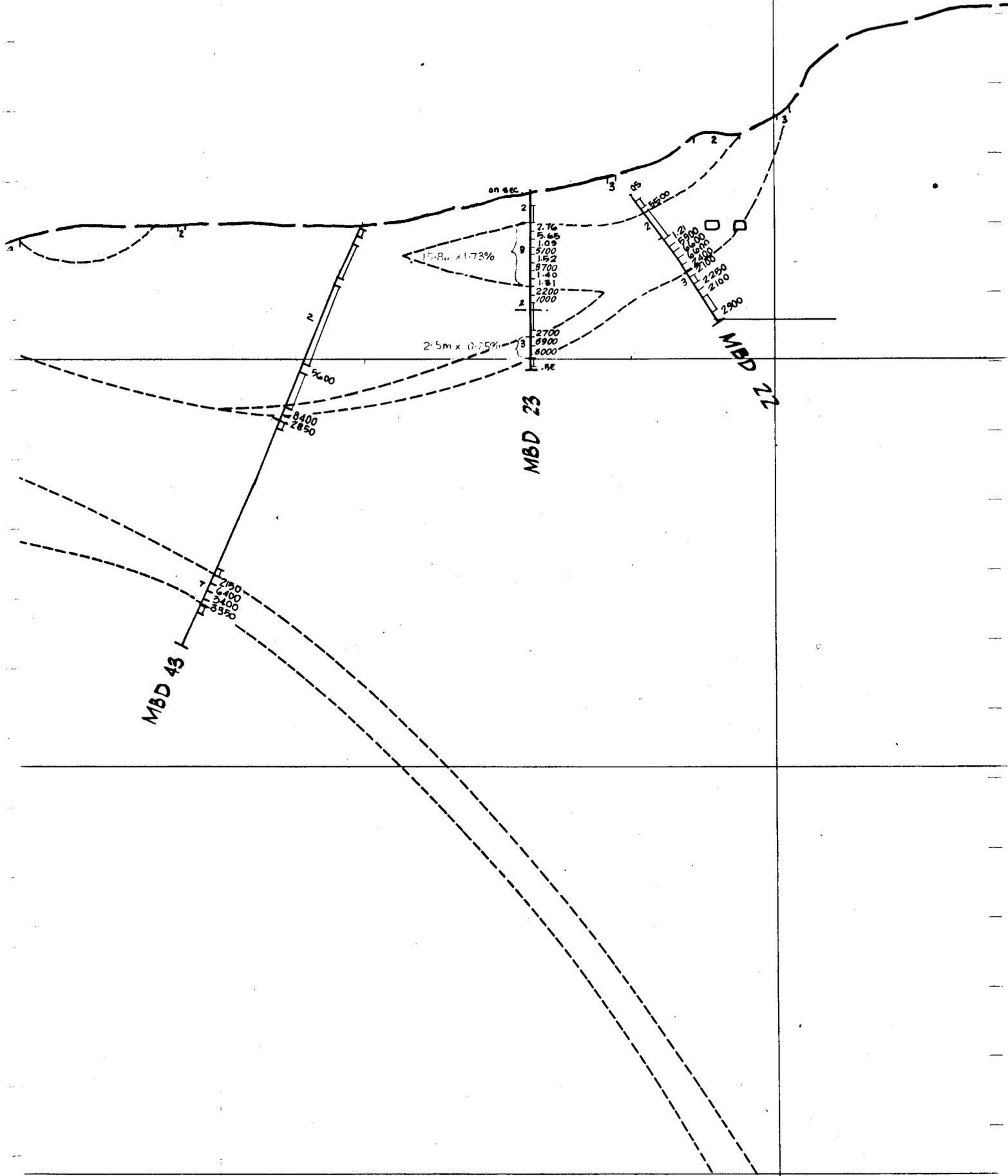
- Z DOLOMITE
- S/T MINERALIZED DOLOMITE / TIN ZONE
- /C PYRRHOTITE
- /C ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
- 7 PORPHYRY

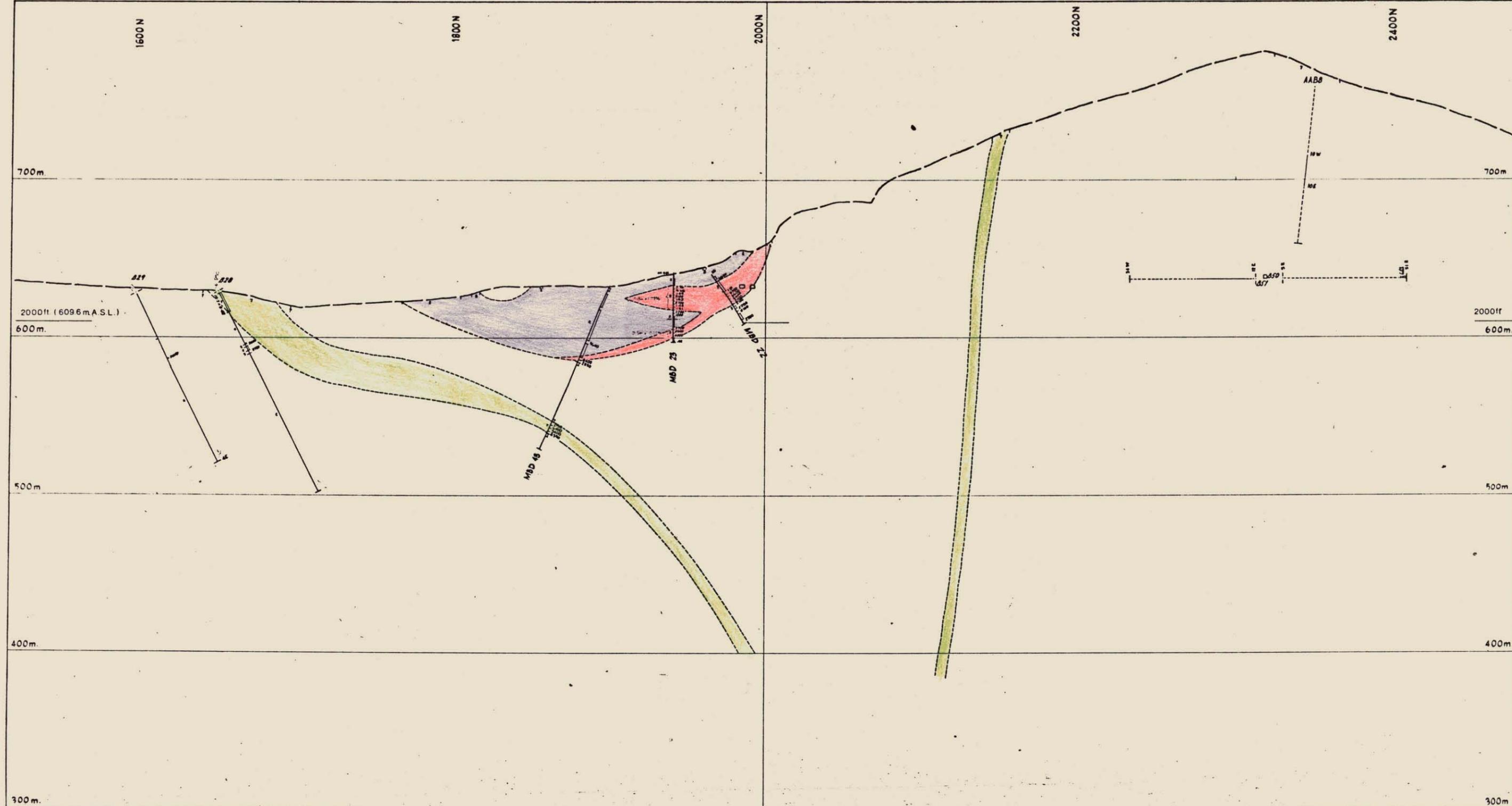


METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 860 mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE:            REVISED: SEPT '79    DRG. NO. 79-005

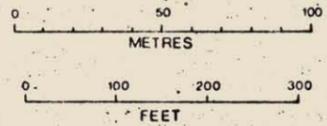
5 cm





- DDK
- 1000 ppm
- 500 ppm
- 1000 ppm
- 2 DOLOMITE
  - 3/1 MINERALIZED DOLOMITE / TIN ZONE
  - 4/0 ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
  - 7 PORPHYRY

200m. 200m.



5 cm

METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
 LINE 940 mE

SCALE 1:1200 LOOKING TO GRID WEST (240°M)  
 DATE: REVISED: 6EPT '79 DRG. NO. 79-009

MT. BISCHOFF JOINT VENTUREREPORT FOR MAY 1980GENERAL:

The final diamond drill hole of the Stage 2B Programme was completed on 5th May, 1980. No significant intersections were found in the hole. The cumulative metreage for the programme was 3821 metres in 33 drill holes.

Reboxing of old core was completed and relogging continued.

Metallurgical studies continued at AMDEL on the samples submitted in February 1980.

All field work was completed except for the relogging of old core.

DIAMOND DRILLING:

MBD 46, the final diamond drill hole, was completed at 250 metres. The progress for the month was 182.5 metres.

The hole was drilled to test south-easterly extensions of the buried dolomite intersected in MBD 41 and B18, but no dolomite was found.

One assay result was received:

Hole No.	From	To	Width (m)	% Sn	Rock Type
MBD 46	186.4	187.1	0.7	0.61	Vein

OLD CORE:

Re-boxing of old core was completed. A total of 3669.5 metres in 30 diamond drill holes was reboxed. All the old holes that intersected the main Greisen Face/Pig Flat/White Face dolomite horizon had been selected for re-boxing and

re-logging. A further 8 holes (1936.6 metres) to the south west of the main dolomite horizon (i.e. in the vicinity of MBD 41) were laid out and logged summarily. A short dolomitic intersection between 91.7 and 93.5 metres was found in B 37, drilled about 300 metres south west of MBD 41.

Detailed relogging of re-boxed core was continued and a further 12 holes remain to be logged. In hole B 22 an intersection between 118.9 and 125.1, which was previously logged as a vein, has been re-interpreted as dolomite sulphide lode.

METALLURGY:

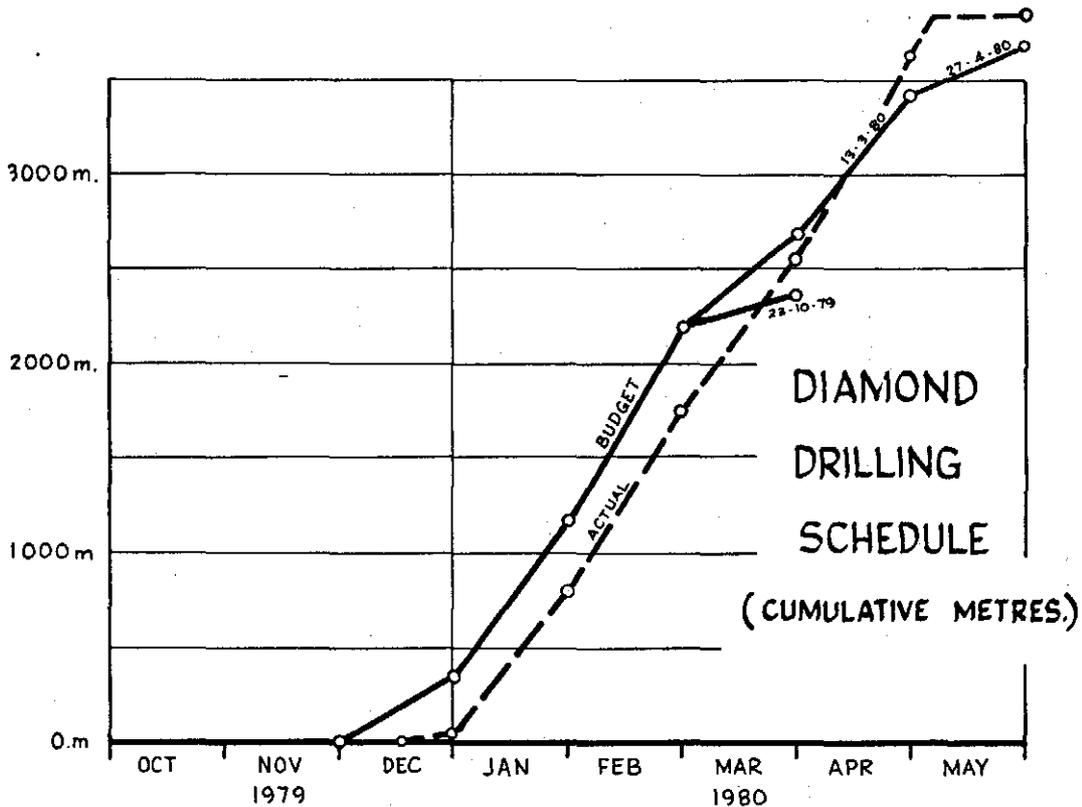
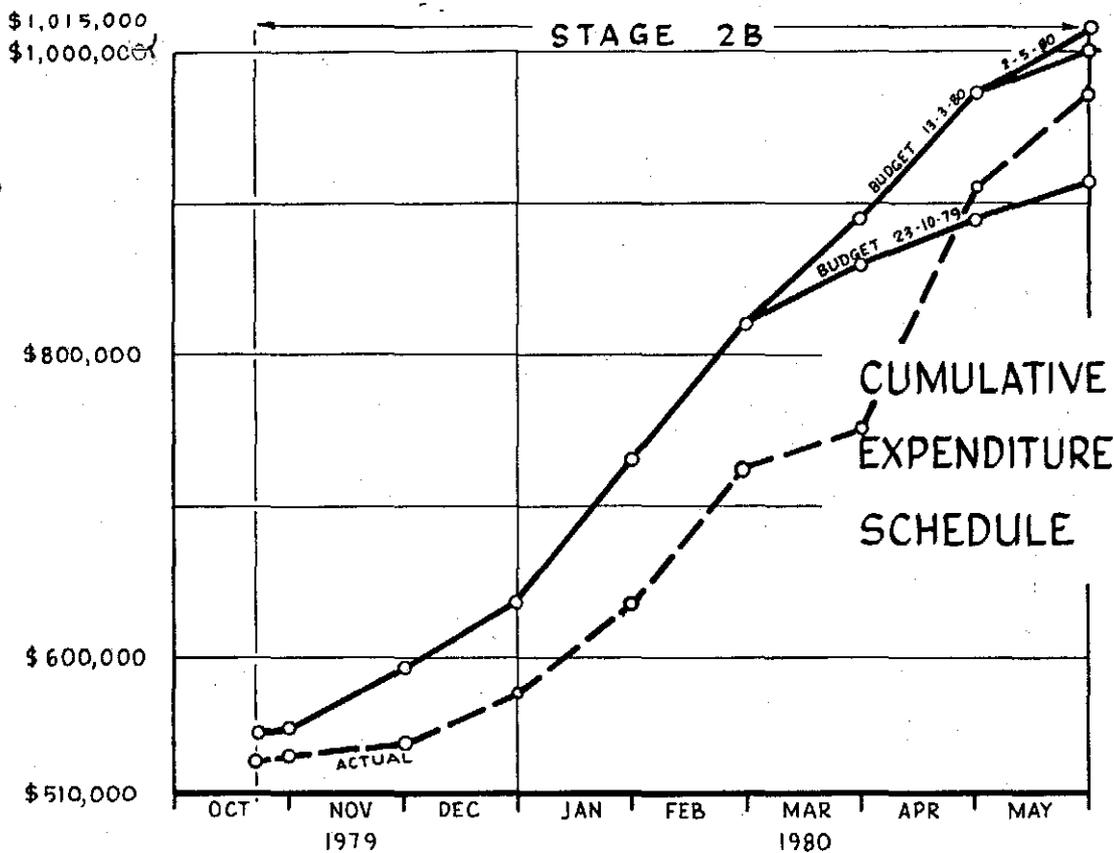
Metallurgical work was continued at AMDEL, but no progress reports were received during the month.

MT. BISCHOFF PROJECT CRA/MELDETAILED EXPENDITURE STATEMENT FOR MAY 1980

<u>STAGE 2B</u>	<u>MAY 1980</u>		<u>STAGE 2B TO DATE</u>	
	<u>ACTUAL</u>	<u>BUDGET</u>	<u>ACTUAL</u>	<u>BUDGET</u>
<u>Field Costs</u>				
Technical Services	20,843	18,500	96,868	105,000
Travel & Accommodation	213	700	2,546	4,900
Labour	2,058	1,800	10,562	12,600
Camp & Messing	1,306	1,000	5,563	7,850
Vehicles	900	1,000	6,218	7,000
Equipment Rental	182	150	1,066	1,900
General Expenses and Consumables	1,560	2,000	32,747	33,400
Lease Expenses			148	500
Geochemical Surveys			595	
Geophysical Surveys			59	
Track Cutting				3,750
Diamond Drilling	12,540		217,134	207,000
Site Preparation			3,978	7,650
Metallurgical	15,500	13,800	43,333	58,800
Assays	1,253		7,129	10,000
<u>Capital Items</u>				
Core Shed			5,085	5,100
	<u>56,355</u>	<u>38,950</u>	<u>433,031</u>	<u>465,450</u>

SUMMARY OF EXPENDITURE TO 31.5.80

Stage 1	270,000
Stage 2A - Early Start	29,020
Stage 2A	198,818
<u>Over Runs</u>	
Stage 1 - M.E.L.	11,308
Metallurgical - C.R.A.E.	23,500
Stage 2B	433,031
<u>CUMULATIVE EXPENDITURE TO DATE</u>	<u>965,677</u>



MT. BISCHOFF

STAGE 2B SUMMARY

as at 31 - 5 - 80

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 46

Location : 1600.32N 920.07E grid

Elevation : 632.76m

Dip : Vertical

Azimuth :

Total Depth : 250.0m

Surveys : Eastman every 40m

Commenced : 29.4.80 Completed 5.5.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH

DEPTH from-to : ROCK UNIT

GRAPHIC LOG

FOR ABBREVIATIONS SEE... ATTITUDE OF BEDDING, V.E.N., ETC. IS ANGLES BETWEEN PLAIN STRUCTURE AND LINE AND OF DIPS... IS GIVEN IN DEGREES OR MILLIMETRES

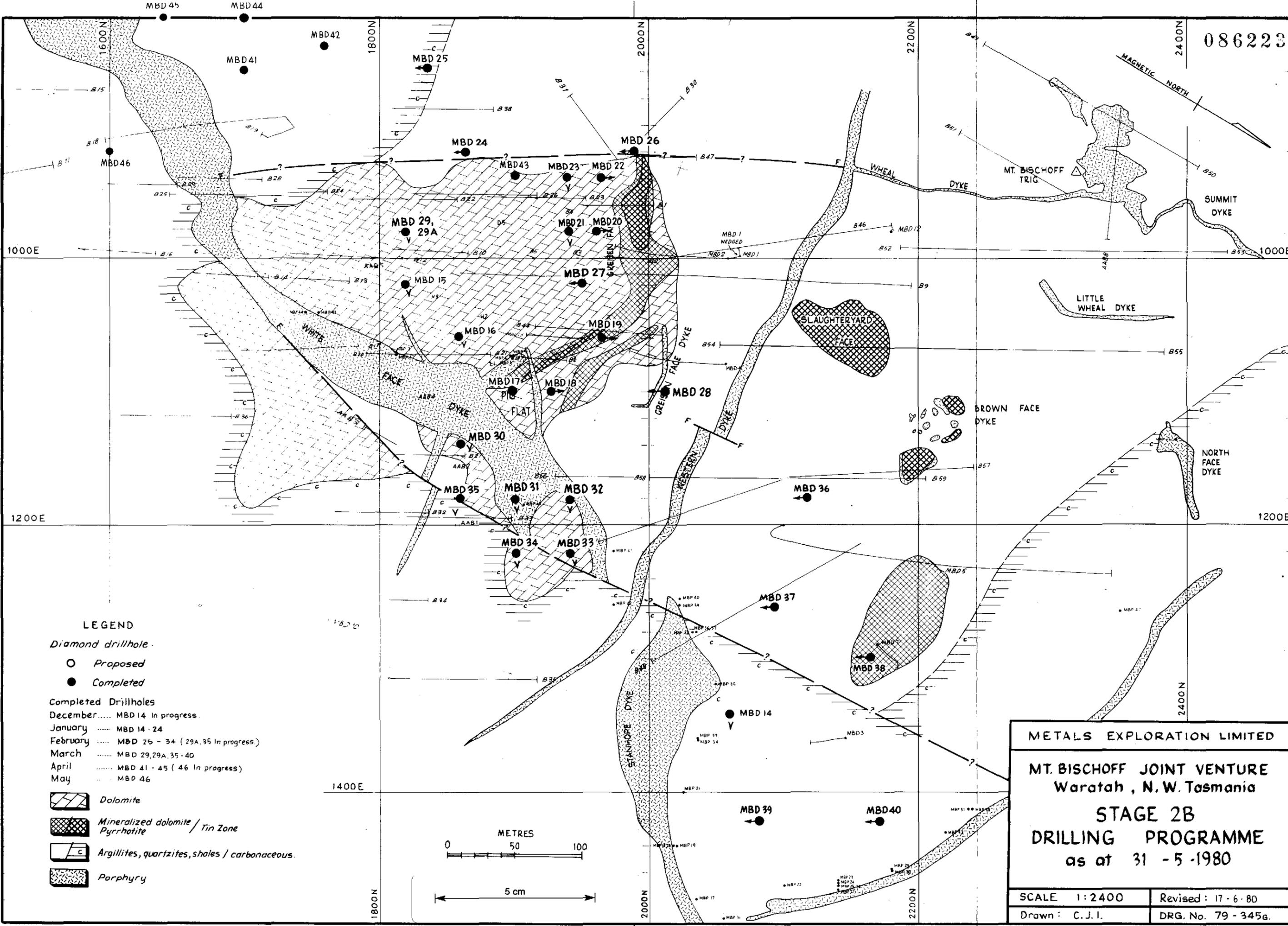
086221

AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A SIZE

5 cm

Table with columns for Depth (0 to 250+), Lithology (e.g., SILTSTONES, SANDSTONES, SHALES), and Petrography (e.g., 30-1045, 10-1146). Includes detailed descriptions of rock units and their characteristics.





**LEGEND**

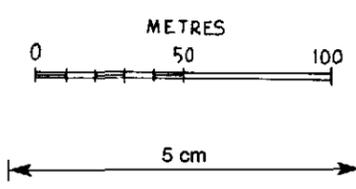
Diamond drillhole

- Proposed
- Completed

Completed Drillholes

- December..... MBD 14 In progress.
- January..... MBD 14 - 24
- February..... MBD 25 - 34 (29A, 35 In progress)
- March..... MBD 29, 29A, 35 - 40
- April..... MBD 41 - 45 (46 In progress)
- May..... MBD 46

- Dolomite
- Mineralized dolomite / Pyrrotite
- Argillites, quartzites, shales / carbonaceous.
- Porphyry



METALS EXPLORATION LIMITED

MT. BISCHOFF JOINT VENTURE  
Waratah, N.W. Tasmania

**STAGE 2B  
DRILLING PROGRAMME**  
as at 31 - 5 - 1980

SCALE 1:2400	Revised: 17-6-80
Drawn: C.J.I.	DRG. No. 79-345a.

086224

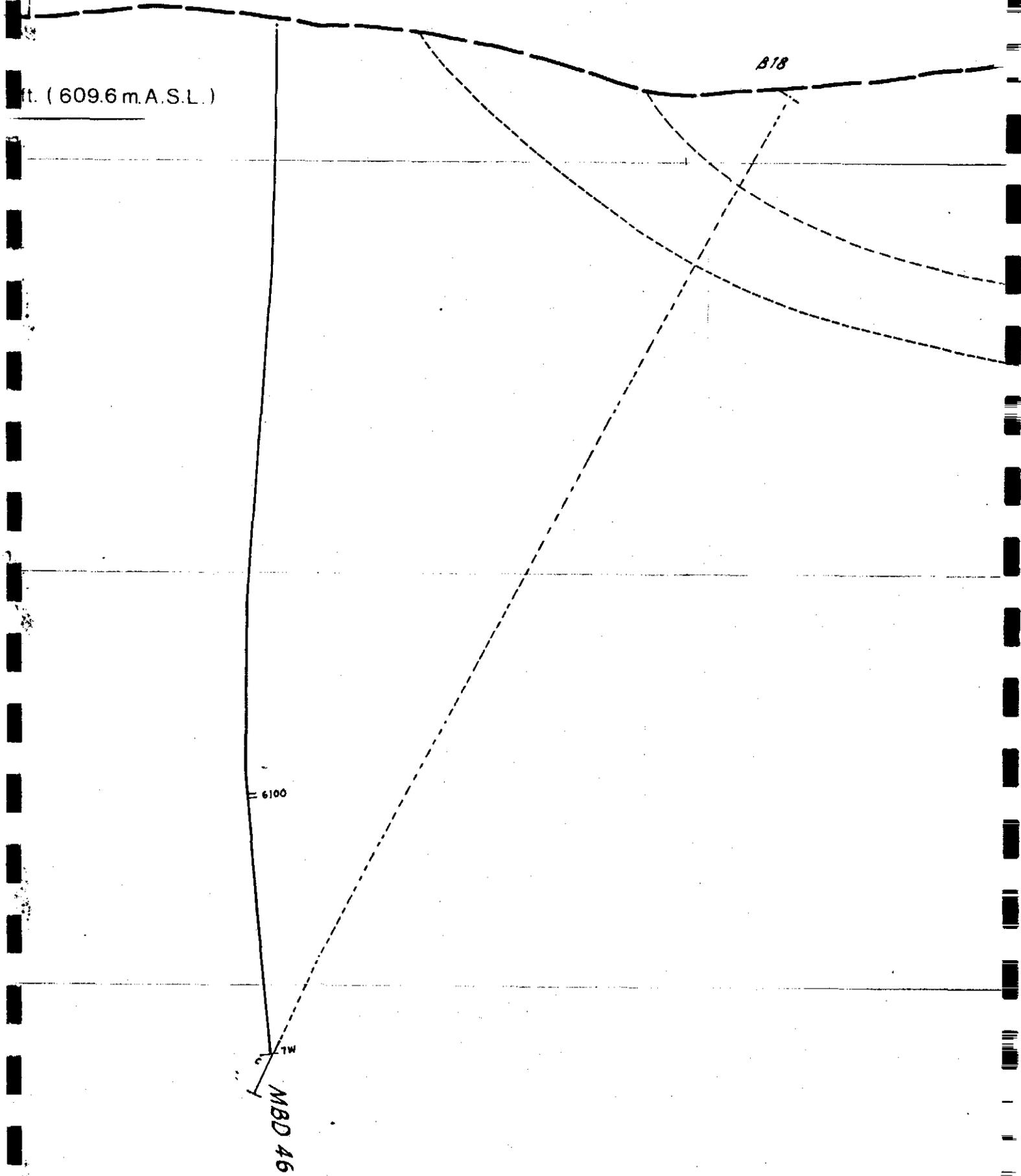
5 cm

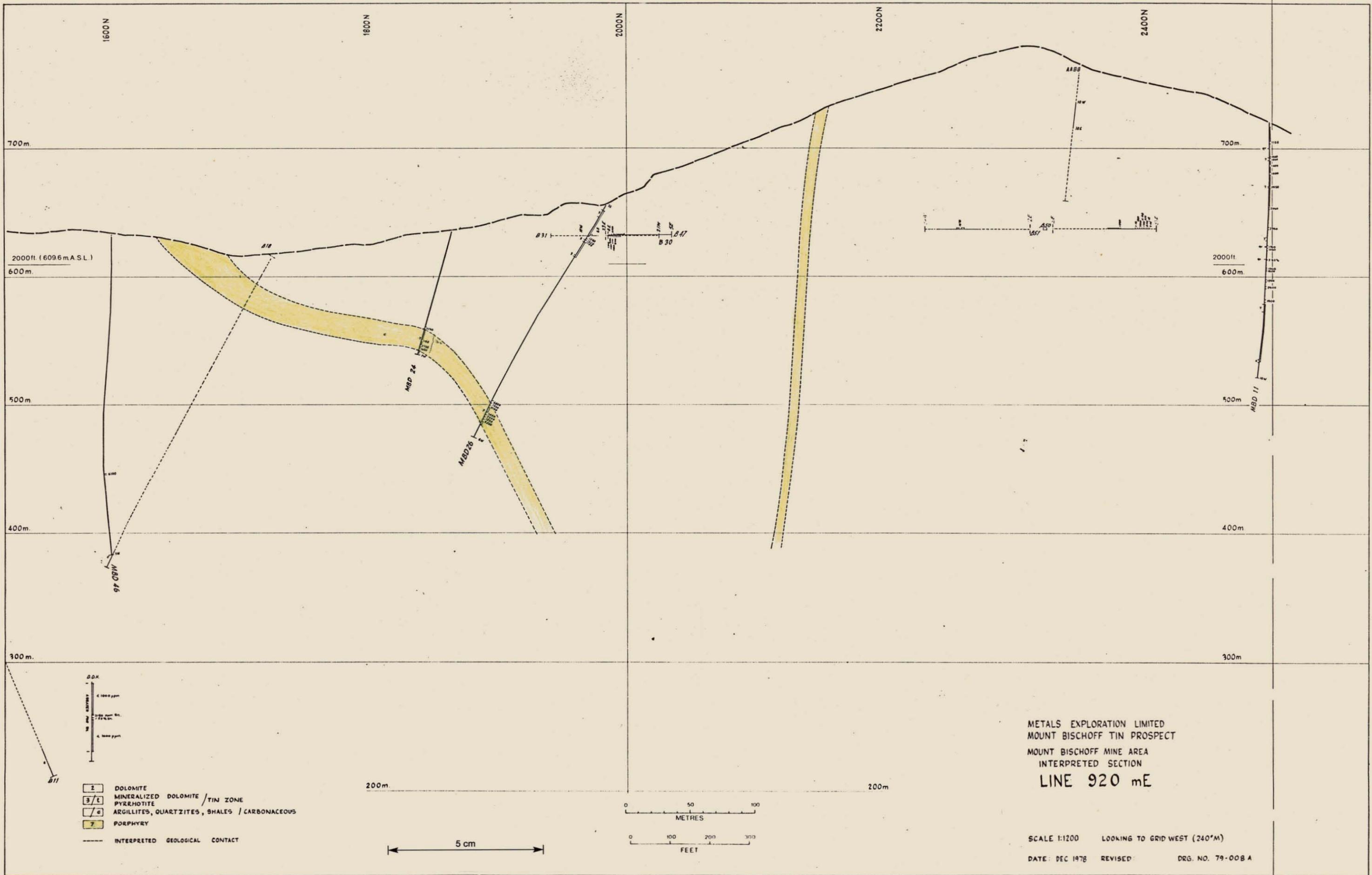
ft. ( 609.6 m.A.S.L.)

B18

6100

MBD 46





MASTER SECTION DRG. NO. 79-054A

METALS EXPLORATION LIMITED  
 MOUNT BISCHOFF TIN PROSPECT  
 MOUNT BISCHOFF MINE AREA  
 INTERPRETED SECTION  
**LINE 920 mE**

SCALE 1:1200    LOOKING TO GRID WEST (240°M)  
 DATE: DEC 1978    REVISED    DRG. NO. 79-008 A

- Legend:
- 2 DOLOMITE
  - 3/4 MINERALIZED DOLOMITE / TIN ZONE
  - 5/6 PYRRHOTITE
  - 7 ARGILLITES, QUARTZITES, SHALES / CARBONACEOUS
  - 8 PORPHYRY
  - INTERPRETED GEOLOGICAL CONTACT





METALS EXPLORATION LTD.

20 LITTLE COLLINS STREET MELBOURNE, AUSTRALIA 3000 TELEPHONE 654 4200. TELEX AA32051. TELEGRAM ROCKDOC.

086226

MT. BISCHOFF TIN PROSPECT

EXPLORATION LICENCE 13/79

TASMANIA

REPORT FOR JUNE 1980

Distribution:	Copy No.		
		1:	Department of Mines, Tasmania
	" "	2:	CRAE
	" "	3:	CRAE
	" "	4:	AAA (Comstaff)
	" "	5:	AAA (Preussag)
	" "	6:	J.E. Lynch
	" "	7:	A. Jannink
	" "	8:	Circulation - K. Fletcher D. Campi

A. Jannink  
16th July, 1980.

MT. BISCHOFF JOINT VENTUREREPORT FOR JUNE 1980GENERAL:

Field work for the Stage 2B Programme was completed on 9th June, 1980, when the last of the old core was relogged. The camp at Mt. Bischoff has been left on a care and maintenance basis.

Metallurgical studies continued at AMDEL and Progress Report No. 2 was issued during the month.

A complete appraisal of all drilling results has commenced and geological interpretation on the 1:500 scale plans and sections is in progress. The final report on the Stage 2B Programme is expected to be produced in early August 1980.

OLD CORE:

12 old diamond drill holes were relogged, thus completing the relogging programme.

Parts of the following old diamond drill holes were split (or quartered) and sent for assay:

B22, B23, B24, B25, B26, B37, B44

Two significant results were obtained, the first being confirmatory to previous assaying:

Hole No.	From	To	Width (m)	% Sn	Rock Type
B24	32.2	35.1	2.9	1.50	DSL
B44	80.2	81.2	1.0	0.54	"

(DSL is abbreviation for Dolomite Sulphide Lode)

METALLURGY:

A grant to cover \$40,000 of the cost of the metallurgical studies on the Mt. Bischoff ore types has been arranged with the Australian Industrial Research and Development Incentives Board. This grant is aligned mainly on the "unconventional" flotation tests being carried out by AMDEL.

Progress Report No.2 on Beneficiation of Mt. Bischoff Tin Ores - Stage II was received from AMDEL.

1. Pre-requisite Testwork

Mineralogical composition and size/assay analysis of Ore Sample No. 1 (Stage I) have been requested from AMDEL, and the additional testwork is being carried out at present.

2. Tin Flotation Optimization

A further 8 flotation tests have been completed, 5 on Porphyry Composite 2 sample, 2 on Sulphide Composite 1 sample, and 1 on Sulphide Composite 2 sample.

A brief summary of the flotation tests is as follows:-

Test No.	Sample	Grind Size $\mu\text{m}$	No. of Floats	Sn Distribution % in Concentrate	Sn Grade % in Concentrate	Comments
F1	PC2	-75	9	75.9	4.39	Old PTAA Collector
F2	PC2	-75	9	75.3	3.63	New PTAA Collector
F3	PC2	-150	9	70.9	3.33	
F4	PC2	-75	12	83.7	3.20	
F5	PC2	-150	12	75	5.18	
F6	PC2	-75	12	85.1	3.01	Increase in PTAA Collector
F7	PC2	-150	12	85.2	5.04	Increase in PTAA Collector
F9	PC2	-75	2	86.8	0.34	CA540 Collector

A brief summary of the flotation tests (cont'd.)

Test No.	Sample	Grind Size $\mu\text{m}$	No. of Floats	Sn Distribution % in Concentrate	Sn Grade % in Concentrate	Comments
F1	SC1	-75	12	74.7	3.93	
F2	SC1	-75	6	78.3	5.76	3 Additional Sulphide Cleaner Floats
F1	SC2	-150	6	77.4	4.09	Talc Prefloat

Sulphide rougher floats were carried out before tin rougher floats in all cases. For the PC2 sample the distribution of the tin in the sulphide concentrate varied between 9.03% and 13.12%; for SC1 the two values were 20.85% and 19.45%; for SC2 the sulphide concentrate contained 6.76% of the tin and the talc 12.31%.

Tests F8 and F10 on PC2 studied the upgrading of the tin flotation concentrates by superpanning and (for F10) cyclosizing:

Test No.	Grind Size $\mu\text{m}$	+ 38 $\mu\text{m}$ Sn Distribution %	+ 38 $\mu\text{m}$ Sn Grade %	+ 38 $\mu\text{m}$ Recovery Within Size Fraction	- 38 $\mu\text{m}$ Sn Distribution %	- 38 $\mu\text{m}$ Sn Grade %	- 38 $\mu\text{m}$ Recovery Within Size Fraction
F8	-75	30.2	70.5	77.5	25.9	29.2	61.6
F10	-150	31.1	41.2	63.3	14.0*	37.7*	40.9*

\* Cyclosizing cone 1 product only.

### 3. Unconventional Procedure

These tests will be carried out on completion of Section 2.

### 4, 5. Head Samples and Mineralogy of Head Samples

Some additional work was requested on the leach residues of two size fractions of the four composite head samples. Also a plot of tin liberation versus particle size of the head samples was drawn up. (Figure C1)

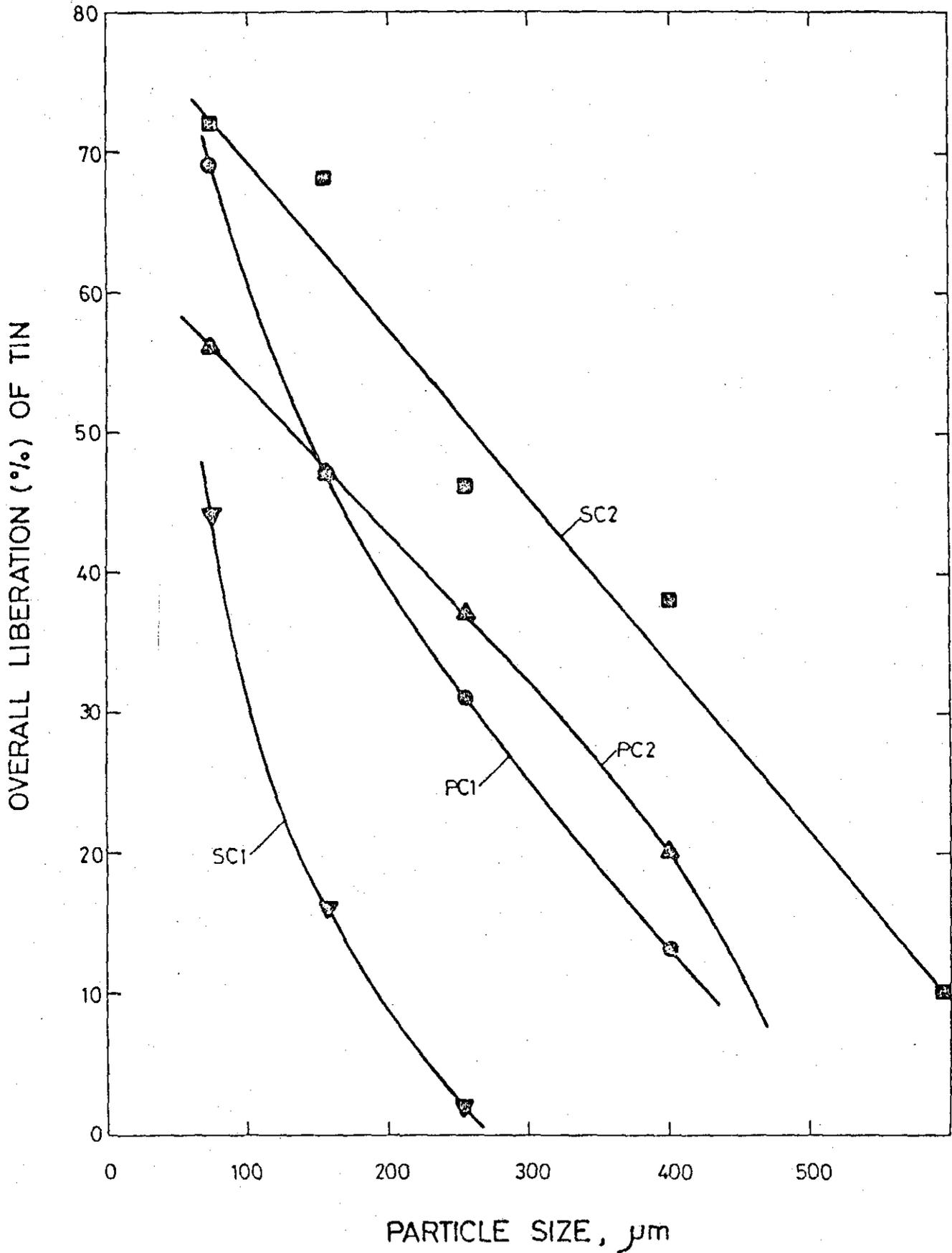


FIG.C1: TIN LIBERATION AS A FUNCTION OF PARTICLE SIZE IN THE FOUR HEAD SAMPLES

## 6. Beneficiation of Ore Samples

### 6.1 Bulk Sulphide Flotation

A mineralogical study of the four sulphide flotation concentrates has been completed (see accompanying sheet D3. Mineralogy). In addition further sulphur analyses were carried out to obtain a complete sulphur balance. It appears that the sulphide flotation tests carried out by AMDEL remove only a small amount of the total sulphur:

Sample No.	Sulphide Assays %S	Recleaner Cons. Distribution %S	Sulphide Assays %S	Recleaner Tails Distribution %S
PC1	45.8	20.4	4.8	79.6
PC2	51.4	30.6	4.9	69.4
SC1	34.2	35.0	16.3	65.0
SC2	9.8	11.2	13.6	88.8

### 6.2 Superpanning

Previously reported.

### 6.3 Tabling/Superpanning

The mineralogical examination of the concentrates has been completed. The mineralogical compositions of the various size fractions are shown in table F1, and the liberation and locking characteristics are shown in table F2.

### 6.4 Production of High Grade Concentrates

Sulphide flotation followed by superpanning treatment of the flotation tailing products were used to carry out the upgrading testwork. The results are summarised as follows:-

Sample	Sn Concentrate Grade %	Sn Distribution %
PC1	48.3	69.8
PC2	50.0	81.8
SC1	37.2	77.8
SC2	66.6	86.6

Chemical and Semi-quantitative Spectrographic analyses (pages H5 and H6) of the concentrates is appended.

## D3. MINERALOGY

D3.1 Porphyry Composite Samples (PC1/BF, PC2/BF)

Both Samples PC1/BF and PC2/BF have very similar mineralogies, consisting mainly of pyrite and a smaller amount of non-opaque gangue with trace to accessory pyrrhotite, marcasite, arsenopyrite, covellite and sphalerite. A trace of galena was also noted in Sample PC2/BF. The covellite and sphalerite tend to form small grains approximately 0.05 mm and 0.1-0.15 mm in size respectively. The galena in Sample PC2/BF generally has a grain size similar to the sphalerite.

The major tin mineral in Samples PC1/BF and PC2/BF is stannite, with cassiterite being much less abundant. The stannite typically occurs as liberated grains up to 0.1 mm in size. The cassiterite forms small grains generally about 0.05 mm in size, some of which are locked with non-opaque gangue. Only a very small proportion of the cassiterite is locked with sulphides.

D3.2 Sulphide Composite Sample SC1/BF

Sample SC1/BF consists mainly of pyrrhotite with a smaller proportion of non-opaque gangue and pyrite. Arsenopyrite, chalcopyrite and sphalerite occur at trace to accessory levels. The chalcopyrite has a maximum grain size of 0.1 mm and the sphalerite is generally slightly finer-grained. A single grain of an anisotropic copper sulphide mineral was noted intergrown with chalcopyrite. This mineral could be idaite or cubanite.

Both stannite and cassiterite are present in this sample. Most of the cassiterite is locked with sulphides (mainly pyrrhotite) or sulphides and non-opaque gangue as small grains with a liberation size of about 0.05-0.1 mm. Some cassiterite (possibly about 10%) is locked with very small (50 µm) marginal sulphide intergrowths and some cassiterite (possibly about 20%) is locked with non-opaque gangue as grains typically about 0.05 mm in size. Only minor liberated cassiterite was noted as very small grains below 0.05 mm in size. Stannite forms grains up to 0.1 mm in size which are commonly associated with chalcopyrite.

D3.3 Sulphide Composite Sample SC2/BF

This sample consists mainly of talc with accessory poorly crystalline magnesite, muscovite, pyrite, dolomite and a trace of quartz. The heavy product consists mainly of pyrite with a much smaller proportion of non-opaque gangue. Accessory pyrrhotite is present in the heavy product and at least a small percentage of the pyrite has colloform textures typical of supergene pyrite after pyrrhotite. Chalcopyrite occurs as an accessory mineral and sphalerite at trace levels. Both chalcopyrite and sphalerite are largely liberated and generally have a grain size between 0.05 and 0.1 mm.

Both cassiterite and stannite occur in this sample. Most of the cassiterite consists of small grains about 0.05 mm in size which are liberated or are locked with non-opaque gangue. Only minor cassiterite is locked with sulphide. The stannite has a maximum grain size of 0.1 mm and forms liberated grains and grains locked with other sulphides (mainly pyrrhotite and chalcopyrite) and non-opaque gangue.

TABLE F1: MINERALOGY (WEIGHT %) OF SUPERPANNER CONCENTRATES

Sample	Size Fraction		Cassit- erite	Stannite	Pyrite	Pyrrho- tite	Arseno- pyrite	Sphal- erite	Iron Oxides	Non-Opaque Gangue
	BSS mesh	µm								
PC1/BF	+60	+250	3	<1	63	1	1	-	1	31
	-60+100	-250+150	5	<1	66	1	3	-	3	22
	-100+200	-150+75	21	<1	56	1	7	-	2	13
	-200+300	-75+53	19	<1	62	-	4	-	4	11
	-300	-53	30	<1	44	-	1	-	4	21
PC2/BF	+60	+250	1	<1	65	-	3	1	-	29
	-60+100	-250+150	6	<1	75	-	1	-	1	16
	-100+200	-150+75	3	<1	62	-	1	-	3	30
	-200+300	-75+53	10	1	51	-	1	1	1	35
	-300	-53	27	1	30	-	1	-	2	39
SC1/BF	+60	+250	3	-	2	81	8	1	-	5
	-60+100	-250+150	3	-	2	79	7	1	-	8
	-100+200	-150+75	9	-	5	55	4	1	2	24
	-200+300	-75+53	16	-	5	24	1	1	2	51
	-300	-53	69	-	1	6	1	2	2	19
SC2/BF	+60	+250	13	-	14	67	-	-	-	6
	-60+100	-250+150	27	-	22	44	-	-	-	7
	-100+200	-150+75	41	-	21	16	1	-	1	20
	-200+300	-75+53	32	-	12	26	1	-	1	28
	-300	-53	55	-	9	19	-	-	1	16

TABLE F2: CASSITERITE LIBERATION IN SUPERPANNER CONCENTRATES

Sample	Size Fraction		% Liberated Cassiterite	% Cassiterite locked with		
	BSS mesh	$\mu\text{m}$		Sulphides	Iron Oxides	Non-opaque Gangue
PC1/BF	+60	+250	42	3	12	43
	-60+100	-250+150	52	9	-	39
	-100+200	-150+75	64	4	3	29
	-200+300	-75+53	80	3	3	14
	-300	-53	85	-	3	12
PC2/BF	+60	+250	55	6	6	33
	-60+100	-250+150	66	8	4	22
	-100+200	-150+75	71	5	6	19
	-200+300	-75+53	82	-	7	11
	-300	-53	90	1	5	4
SC1/BF	+60	+250	6	60	2	32
	-60+100	-250+150	35	43	1	21
	-100+200	-150+75	44	25	3	28
	-200+300	-75+53	54	19	-	36
	-300	-53	86	3	1	10
SC2/BF	+60	+250	64	6	-	30
	-60+100	-250+150	70	2	-	28
	-100+200	-150+75	67	2	2	29
	-200+300	-75+53	79	1	1	19
	-300	-53	88	1	-	11

Additional Chemical Analyses

Element	Assay Result			
	PC1/HG Superpanner Tin Conc	PC2/HG Superpanner Tin Conc	SC1/HG Superpanner Tin Conc	SC2/HG Superpanner Tin Conc
Acid Soluble Sn %	0.05	0.13	0.05	0.03
CO <sub>2</sub> %	0.55	0.45	0.10	0.05
Fe %	nd	nd	10.4	3.90
Bi g/t	nd	nd	19	3
Cu g/t	nd	nd	120	4
Pb g/t	nd	nd	55	20
Zn g/t	nd	nd	305	115
TiO <sub>2</sub> %	nd	nd	0.035	0.025
WO <sub>3</sub> %	nd	nd	0.68	0.35
As g/t	nd	nd	700	<100
Sb g/t	nd	nd	<40	<40
Ag g/t	nd	nd	1.0	1.0
Au g/t	nd	nd	na	na

Notes: nd = not determined due to insufficient sample  
na = not available during compilation of this Report.

Element	Semi-quantitative Spectrographic Analysis g/t	
	PC1/HG Superpanner Tin Conc.	PC2/HG Superpanner Tin Conc.
Ba(200)	X	X
Be(1)	1	2
Ce(300)	500	800
Co(5)	10	X
Cr(20)	80	80
La(50)	250	400
Mn(10)	3,000	600
Mo(3)	10	6
Nb(20)	X	X
Ni(5)	200	50
Sc(3)	X	X
Sr(50)	X	X
Ta(100)	X	X
Th(100)	X	X
Ti(100)	6,000	10,000
V(10)	50	80
W(50)	10,000	>10,000
Y(10)	250	1,500
Yb(1)	60	100
Zr(10)	250	400
Ag(0.1)	5	20
As(50)	4,000	4,000
Bi(1)	25	25
Cd(3)	X	X
Cu(1)	100	1,000
Ga(1)	60	60
Ge(1)	2	3
In(10)	60	30
Pb(1)	400	800
Sb(30)	30	30
Sn(1)	>>10,000	>>10,000
Zn(20)	250	60
Au(3)	30	5
P(100)	X	X
Te(20)	X	X
Tl(1)	X	X
Al(100)	>10,000	>10,000
Ca(100)	1,000	200

MT. BISCHOFF PROJECT CRA/MELDETAILED EXPENDITURE STATEMENT FOR JUNE, 1980.

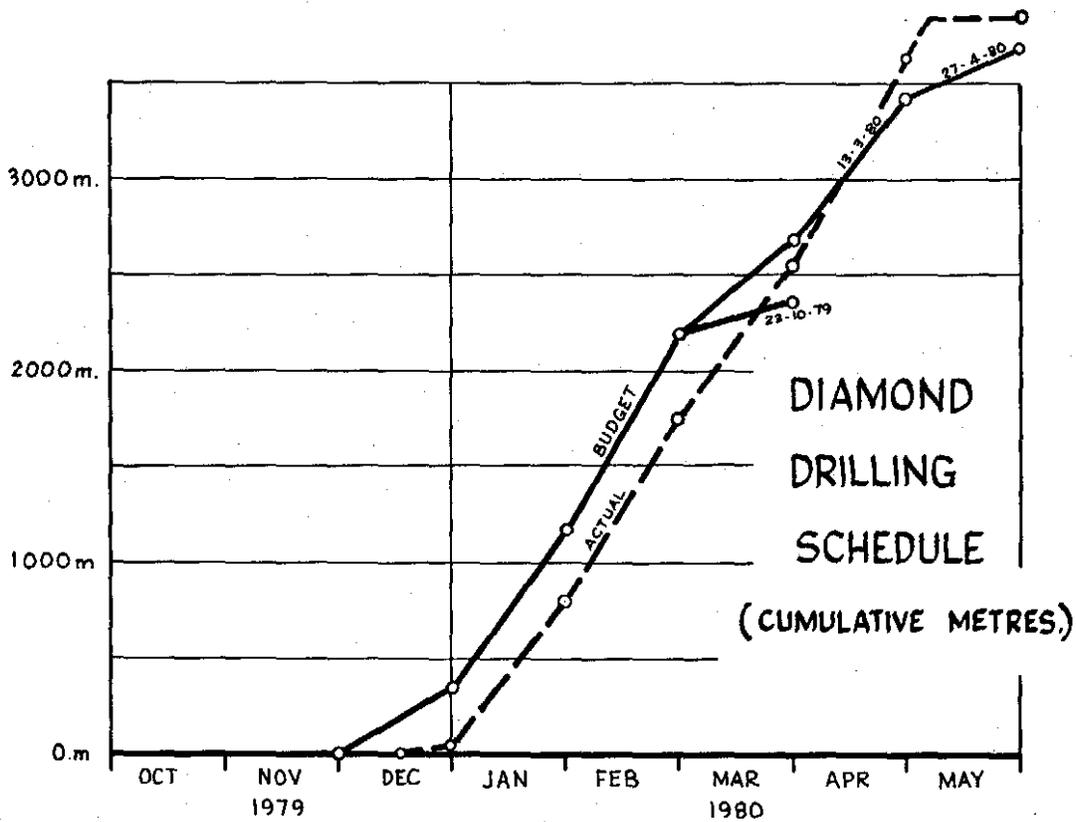
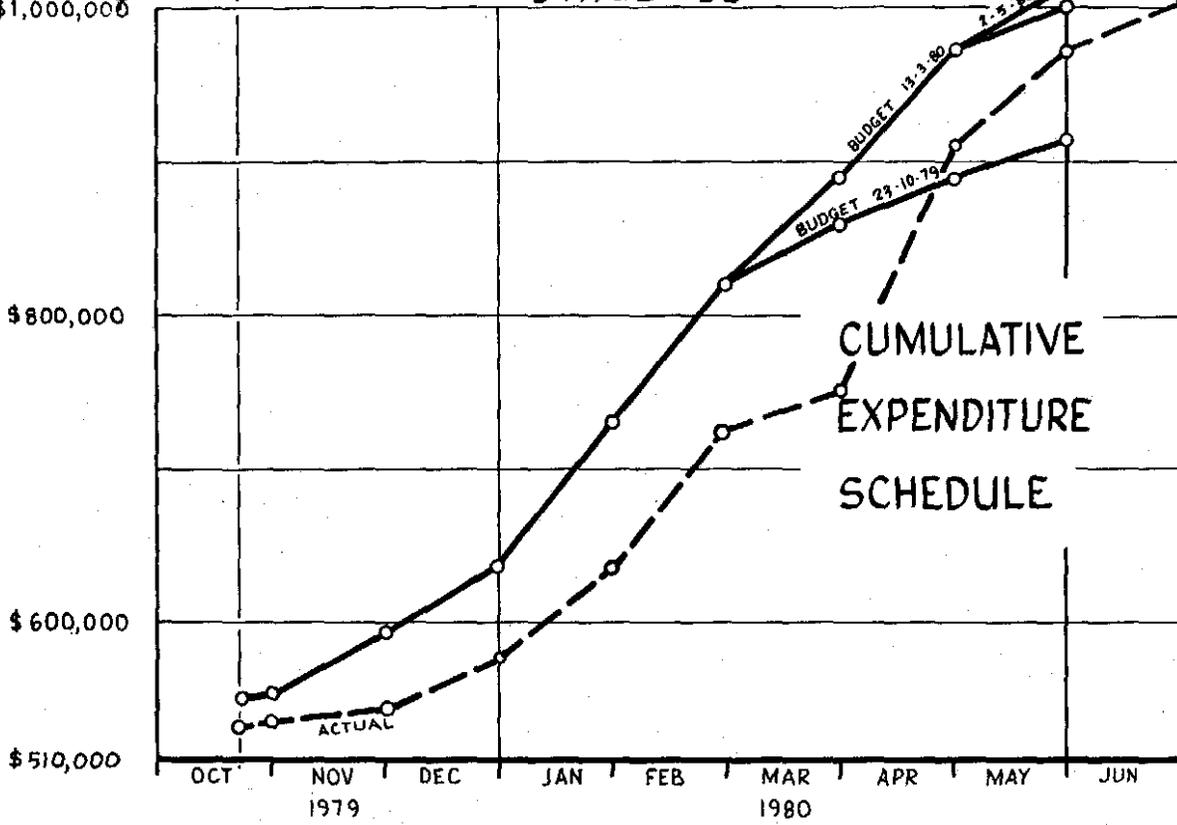
<u>STAGE 2B</u>	<u>JUNE, 1980.</u>		<u>STAGE 2B TO DATE</u>	
	<u>ACTUAL</u>	<u>BUDGET</u>	<u>ACTUAL</u>	<u>BUDGET</u>
	\$	\$	\$	\$
<u>Field Costs</u>				
Technical Services	14,957		111,826	105,000
Travel & Accommodation	530		3,076	4,900
Labour	398		10,961	12,600
Camp & Messing	1,695		7,258	7,850
Vehicles	1,483		7,701	7,000
Equipment Rental	50		1,116	1,900
General Expenses and Consumables	4,185		36,932	33,400
Lease Expenses	158		306	500
Geochemical Surveys	-		595	-
Geophysical Surveys	-		59	-
Track Cutting	-		-	3,750
Diamond Drilling	-		217,134	207,000
Site Preparation	1,221		5,199	7,650
Metallurgical	9,698		53,031	58,800
Assays	882		8,011	10,000
<u>Capital Items</u>				
Core Shed	-		5,085	5,100
	<u>35,257</u>	<u>          </u>	<u>468,290</u>	<u>465,450</u>

SUMMARY OF EXPENDITURE TO 30.6.80.

Stage 1	270,000
Stage 2A - Early Start	29,020
Stage 2A	198,818
<u>Over Runs</u>	
Stage 1 - M.E.L.	11,308
Metallurgical - C.R.A.E.	23,500
Stage 2B	468,290
<u>CUMULATIVE EXPENDITURE TO DATE</u>	<u>\$ 1,000,936</u>

\$1,015,000  
\$1,000,000

STAGE 2B



MT. BISCHOFF

STAGE 2B SUMMARY  
as at 30-6-80



MT. BISCHOFF TIN PROSPECT

EXPLORATION LICENCE 13/79

TASMANIA

REPORT FOR JULY, 1980

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A. Jannink,  
27th August, 1980

MT. BISCHOFF JOINT VENTUREREPORT FOR JULY 1980GENERAL:

Compilation of the report on the Stage 2B Programme continued. The report is expected to be issued in August 1980.

Progress Report No. 3 on metallurgical studies was issued by AMDEL. This is the last progress report. A final report will be included in the report on Stage 2B Programme.

An application was made for an Authority to Prospect over the Fook's Lode area, SR 1965 No. 178, which was exempt from the Mining Act. Approval was given for an Authority to Prospect AP 5/80 covering 129.5 hectares over Fook's Lode commencing on 23rd June, 1980. The authority was issued subject to similar conditions which exist for Exploration Licences.

METALLURGY:1. Pre-requisite Testwork

Mineralogical composition and size/assay analysis of Ore Sample No. 1 (Stage 1) were supplied. This was the original porphyry sample, chipped from White Face Dyke, on which testwork was done in Stage 1 and Stage 2A.

2. Tin Flotation Optimization

A further 14 flotation tests were completed. Seven tests were on porphyry samples (PC1 and PC2) and seven on sulphide samples (SC1 and SC2).

A brief summary of the flotation tests is as follows:

<u>Test No.</u>	<u>Sample</u>	<u>Grind Size <math>\mu</math>m</u>	<u>No. of Floats</u>	<u>Sn Distrib- ution % in Concentrate</u>	<u>Sn Grade % in Concentrate</u>	<u>Comments</u>
F11	PC2	-75	9	71.7	2.97	SPA collector.
F12	PC2	-75	6	81.4	7.97	PTAA collector; deslimed.
F13	PC2	-75	6	69.4	8.54	SPA collector; deslimed.
F14	PC2	-75	6	62.4	1.48	S-3903 collector; deslimed.

A brief summary of the flotation tests (cont'd.)

Test No.	Sample	Grind Size $\mu\text{m}$	No. of Floats	Sn Distribution % in Concentrate	Sn Grade % in Concentrate	Comments
F1	PC1	-75	6	85.0	1.90	PTAA collector; deslimed.
F2	PC1	-75	6	84.8	2.34	SPA collector; deslimed.
F3	PC1	-75	6	70.5	1.03	S-3903 collector; deslimed.
F3	SC1	-75	6	73.7	5.72	PTAA collector; deslimed.
F4	SC1	-75	6	74.1	6.49	SPA collector; deslimed.
F5	SC1	-75	6	76.4	3.24	S-3903 collector; deslimed.
F2	SC2	-150	3	74.0	14.8	PTAA collector; deslimed; talc prefloat.
F3	SC2	-150	3	73.6	5.95	SPA collector; deslimed; talc prefloat.
F4	SC2	-150	4	4.85	0.43	S-3903 collector; deslimed; talc prefloat.

Sulphide rougher floats were carried out before tin floats in all cases.

Test F6 on sulphide sample SC1 studied the upgrading of the tin flotation concentrates by superpanning:-

Grind Size $\mu\text{m}$	+38 $\mu\text{m}$ Sn Distribution %	+38 $\mu\text{m}$ Sn Grade %	+ 38 $\mu\text{m}$ Recovery within Size Fraction %	-38 $\mu\text{m}$ Sn Distribution %	- 38 $\mu\text{m}$ Sn Grade %	- 38 $\mu\text{m}$ Recovery within Size Fraction %
-75	13.6	60.9	68.6	29.6	65.0	58.6

(Test F3 on SC1 conditions were used to produce the flotation rougher concentrate.)

### 3. Unconventional Procedure

This section of testwork was integrated with Section 2 above.

### 4,5. Head Samples and Mineralogy of Head Samples

Total sulphur assays were re-checked and amended. The final results are about half those previously reported.

### 6. Beneficiation of Ore Samples

- 6.1 Bulk Sulphide Flotation.  
Sulphur assays were re-checked and amended.
- 6.2 Superpanning.  
Previously reported.
- 6.3 Tabling/Superpanning.  
A brief mineralogical examination was conducted on the concentrates in an attempt to identify the tungsten minerals present. Some of the tungsten is present as scheelite, but other less easily detectable tungsten minerals are also present.
- 6.4 Production of High Grade Concentrates.  
Gold assays of the high grade superpanner tin concentrate from the sulphide composite samples are: 1.02 and 0.69 grammes/tonne.

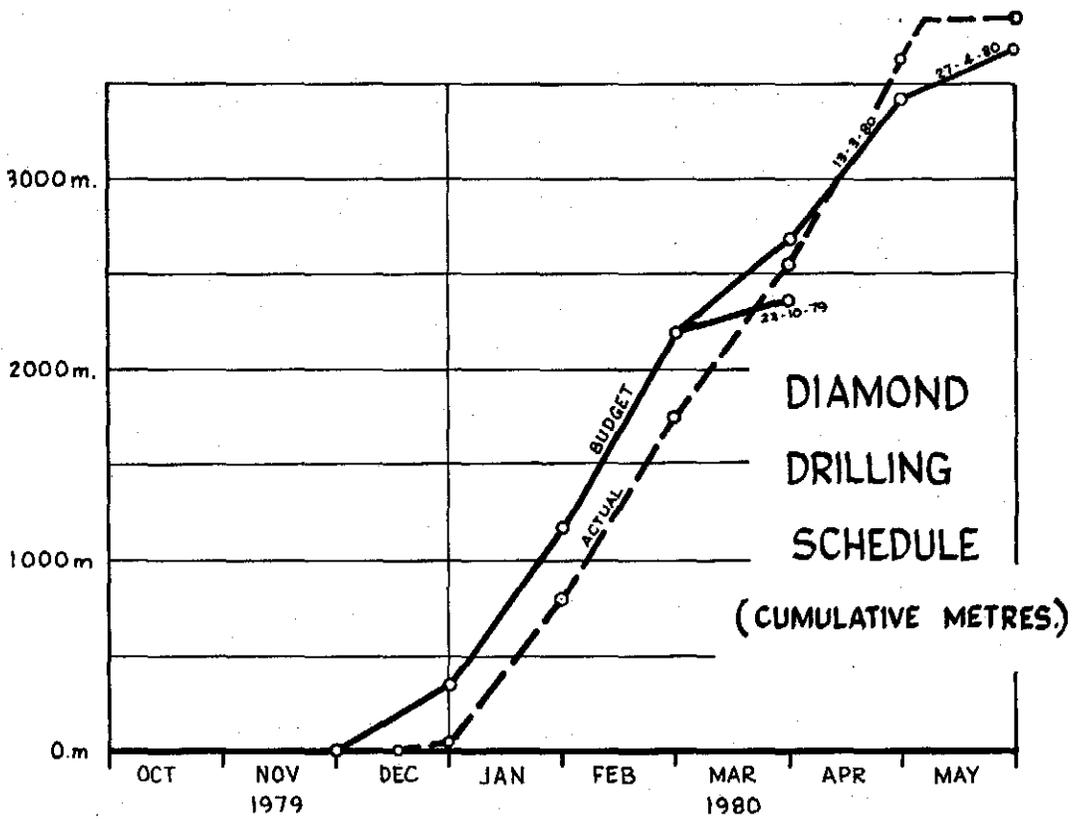
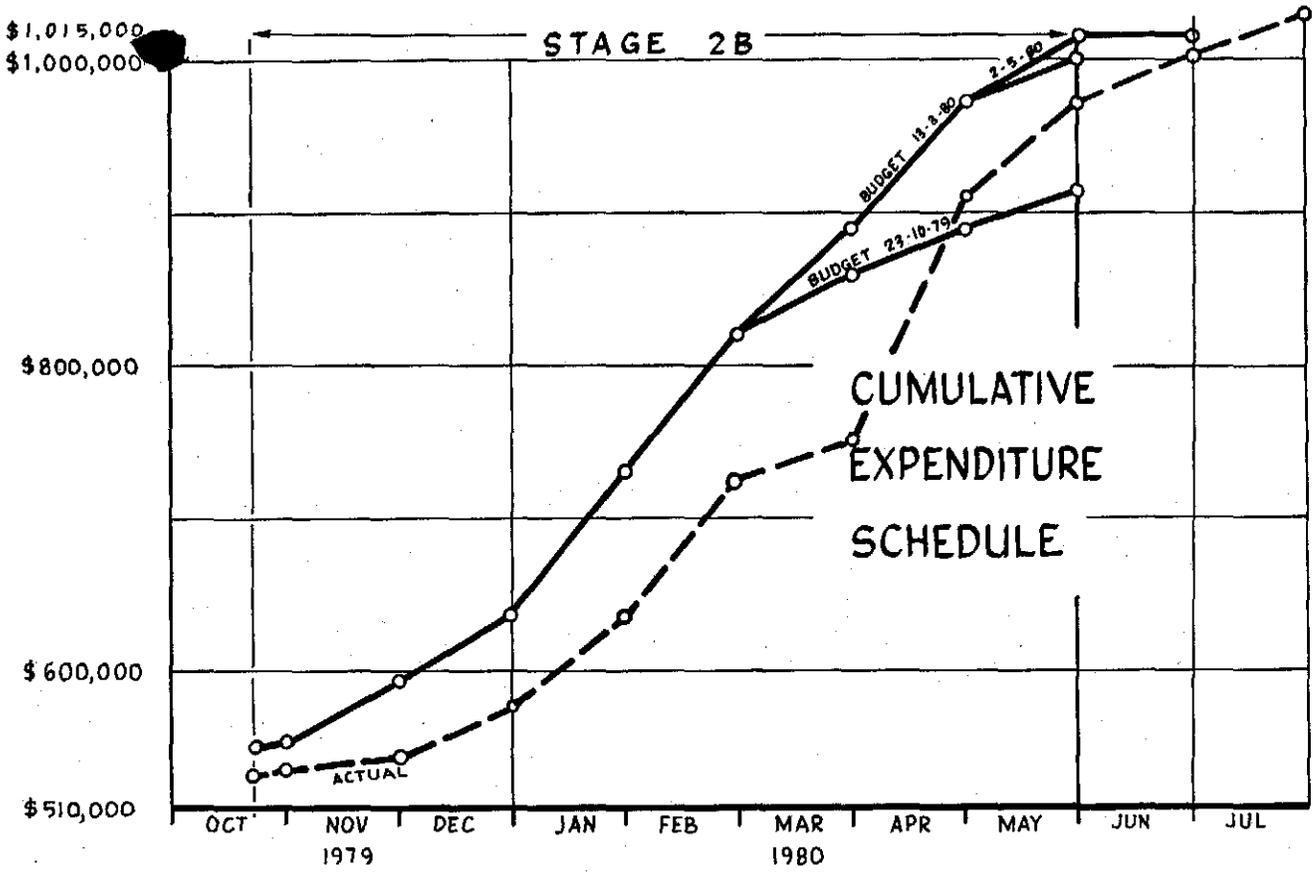
DETAILED EXPENDITURE STATEMENT FOR JULY 1980.

<u>STAGE 2B</u>	<u>JULY 1980</u>		<u>STAGE 2B TO DATE</u>	
	<u>ACTUAL</u>	<u>BUDGET</u>	<u>ACTUAL</u>	<u>BUDGET</u>
	\$	\$	\$	\$
<u>Field Costs</u>				
Technical Services	18,364		126,390	112,000
Travel & Accommodation	269		3,458	4,900
Labour	796		11,757	12,600
Camp & Messing	396		7,653	7,850
Vehicles			7,588	7,000
Equipment Rental			1,116	1,900
General Expenses and Consumables	322		37,000	35,300
Lease Expenses			306	500
Geochemical Surveys			595	-
Geophysical Surveys			56	-
Track Cutting				3,750
Diamond Drilling			217,134	215,000
Site Preparation			5,199	7,650
Metallurgical	11,022		64,053	58,800
Assays	349		8,360	10,000
<u>Capital Items</u>				
Core Shed			5,085	5,100
	<u>31,518</u>	<u></u>	<u>495,750</u>	<u>482,350</u>

SUMMARY OF EXPENDITURE TO

Stage 1	270,000
Stage 2A - Early Start	29,020
Stage 2A	198,818
<u>Over Runs</u>	
Stage 1 - M.E.L.	11,308
Metallurgical - C.R.A.E.	23,500
Stage 2B	495,750
<u>CUMULATIVE EXPENDITURE TO DATE</u>	<u>1,028,396</u>

A \$40,000 grant has been received from the Australian Industrial Research & Development Incentives Board In June but is not reflected in the above expenditure.



MT. BISCHOFF

STAGE 2B SUMMARY

as at 31.7.80



## METALS EXPLORATION LTD.

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A. Jannink  
27th October, 1980

MT. BISCHOFF TIN PROSPECTREPORT FOR SEPTEMBER, 1980

All copies of the report on Stage 2B Programme were completed and distributed during the month.

Preliminary programmes and budgets for Stage 3 were initiated. It is hoped that the programme will be finalised in late October, 1980, and field work will commence in mid-November, 1980.

086247

M.E.L.

MT. BISCHOFF PROJECT

C.R.A.

STAGE 2B - 3A HOLDING COSTS

	<u>SEPTEMBER</u>		<u>JULY - SEPTEMBER</u>	
	<u>ACTUAL</u>	<u>BUDGET</u>	<u>ACTUAL</u>	<u>BUDGET</u>
	\$	\$	\$	\$
Technical Services	6,889		22,429	
Travel & Accommodation	133		244	
Labour	1,658		1,658	
Camp & Messing	216		216	
Vehicles	50		50	
General Expenses	1,476		2,934	
Lease Expenses			1,043	
Metallurgical			10,183	
Assays	110		1,535	
	<u>10,532</u>	<u>          </u>	<u>40,292</u>	<u>          </u>
<u>Less:</u>				
Australian Industrial Research & Development Incentives Board Grant			40,000	
Stage 3A			292	

SUMMARY OF EXPENDITURE TO 30.9.80

Stage 1	270,000
Stage 2A - Early Start	29,020
Stage 2A	198,818
Overruns: Stage 1 - M.E.L.	11,308
Metallurgical - C.R.A.E.	23,500
Stage 2B	482,354
Holding Costs Offset - AIR & D Grant	40,000
Stage 3A	292
<u>CUMULATIVE EXPENDITURE TO DATE</u>	<u>1,055,292</u>



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G. Motteram  
28th November, 1980

MT. BISCHOFF TIN PROSPECTREPORT FOR OCTOBER, 1980

Activities on site were restricted to minor regional surface sampling.

A Project Manager was appointed and a draft Programme and Budget compiled for the period to June, 1981, along with an overall estimate through to an assumed project authorisation. Copies of the draft were to be distributed during November.

Preparation for the resumption of field work and technical studies progressed, including an approach to the Tasmanian Department of Mines, Launceston Branch, for continuation of metallurgical investigations.

Ground geophysical work will now begin late in November with drilling for metallurgical samples initiating early in December.

M.E.L.

MT. BISCHOFF PROJECT

C.R.A.

STAGE 3A EXPENDITURE

	<u>OCTOBER 1980</u>	
	<u>ACTUAL</u>	<u>BUDGET</u>
Technical Services	12,181	14,000
Travel & Accommodation	458	700
Labour		800
Camp & Messing	320	500
Vehicles	204	100
Equipment Rental		-
Consumables & General	3,786	3,700
Tenement Expenses		
Track Cutting		
Geophysical Surveys		
Diamond Drilling	1,867	
Site Preparation		
Assays	125	
Metallurgical	1,837	
Capital Items		
	<u>20,778</u>	<u>19,800</u>

SUMMARY OF EXPENDITURE TO 31 OCTOBER 1980

Stage 1	270,000
Stage 2A - Early Start	29,020
Stage 2A	198,818
Overruns: Stage 1 - M.E.L.	11,308
Metallurgical - CRAE	23,500
Stage 2B	482,354
Stage 2B - 3A Holding Costs Offset - A.I.R. & D. Grant	40,000
Stage 3A	21,070
<u>CUMULATIVE EXPENDITURE TO DATE</u>	<u>1,076,070</u>

M.E.L.

MT. BISCHOFF PROJECT

086251

C.R.A.

STAGE 3A EXPENDITURE

EL 13/79

	<u>OCTOBER 1980</u>	<u>JULY - OCTOBER 1980</u>
Technical Services	11,996	45,886
Travel & Accommodation	458	975
Labour		1,227
Camp & Messing	320	932
Vehicles	204	263
Equipment Rental		
Consumables & General	3,786	7,029
Tenement Expenses		
Track Cutting		
Geophysical Surveys		
Diamond Drilling	1,867	1,867
Site Preparation		
Assays	125	2,009
Metallurgical	1,837	16,279
Capital Items		
	<u>20,593</u>	<u>76,467</u>

086252

M.E.L.

MT. BISCHOFF PROJECT

C.R.A.

STAGE 3A EXPENDITURE

AP 5/80

	<u>OCTOBER 1980</u>	<u>JULY - OCTOBER 1980</u>
Technical Services	180	450
Travel & Accommodation		
Labour		1,227
Camp & Messing		
Vehicles		
Equipment Rental		
Consumables & General		
Tenement Expenses		1,043
Track Cutting		
Geophysical Surveys		
Diamond Drilling		
Site Preparation		
Assays		
Metallurgical		
Capital Items		
	<u>180</u>	<u>2,720</u>



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MT. BISCHOFF TIN PROSPECT  
EXPLORATION LICENCE 13/79  
AND AUTHORITY TO PROSPECT 5/80

TASMANIA

REPORT FOR NOVEMBER, 1980

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G.M. Motteram  
23rd December 1980

MT. BISCHOFF TIN PROSPECTREPORT FOR NOVEMBER, 1980General

The draft Programme and Budget for Stage 3A was discussed at a meeting between CRA and Metals Exploration personnel. It was agreed that diamond drilling for metallurgical samples should commence as soon as possible, but that formal ratification of the programme be delayed until the first Operating Committee meeting, scheduled for 10th December, 1980.

It was also agreed that the purchase of a transportable accommodation unit and core shed extension should proceed.

Field Work

Field work commenced on 14th November, 1980. This work included preparation and surveying of diamond drill sites, plus line cutting and gridding on the SW "Buried Dolomite" and Housego grids.

Commencement of diamond drilling was delayed by a holdup in the relocation of the Longyear rig from Adelaide to site. Scheduled start date for drilling is now the first week in December, 1980.

Ground magnetic surveys will also commence during the first week in December with EM surveys over relevant grids to be run during December.

Metallurgy

The Project Manager and Mr. L. Bollen, Metallurgical Consultant, visited the Tasmanian Department of Mines, Launceston Branch, to confirm arrangements for Stage 3A metallurgical testwork to be conducted in Launceston.

Arrangements were made for all Stage 2B metallurgical samples to be transferred from Amdel to Launceston.

M.E.L.

MT. BISCHOFF PROJECT

086255

C.R.A.

STAGE 3A EXPENDITURE

	<u>NOVEMBER 1980</u>		<u>TWO MONTHS TO 30.11.80</u>	
	<u>ACTUAL</u>	<u>BUDGET</u>	<u>ACTUAL</u>	<u>BUDGET</u>
	\$	\$	\$	\$
Technical Services	9,462	19,400	21,935	33,400
Travel & Accommodation	1,164	700	1,622	1,400
Labour	2,220	1,500	2,220	2,300
Camp & Messing	485	1,300	805	1,800
Vehicles	811	1,000	1,015	1,100
Equipment Rental	50	350	50	350
Consumables & General	9,656	8,400	13,442	12,100
Tenement Expenses				
Track Cutting		2,000		2,000
Geophysical Surveys				
Diamond Drilling		35,000	1,867	35,000
Site Preparation		2,000		2,000
Assays	16	1,400	141	1,400
Metallurgical	154	4,800	1,991	4,800
Capital Items				
	<u>24,018</u>	<u>77,850</u>	<u>45,088</u>	<u>97,650</u>

SUMMARY OF EXPENDITURE TO 30 NOVEMBER 1980

Stage 1	270,000
Stage 2A - Early Start	29,020
Stage 2A	198,818
Overruns: Stage 1 - M.E.L.	11,308
Metallurgical - CRAE	23,500
Stage 2B	482,354
Stage 2B - 3A Holding Costs Offset - A.I.R. & D. Grant	40,000
Stage 3A	45,088
<u>CUMULATIVE EXPENDITURE TO DATE</u>	<u>1,100,088</u>

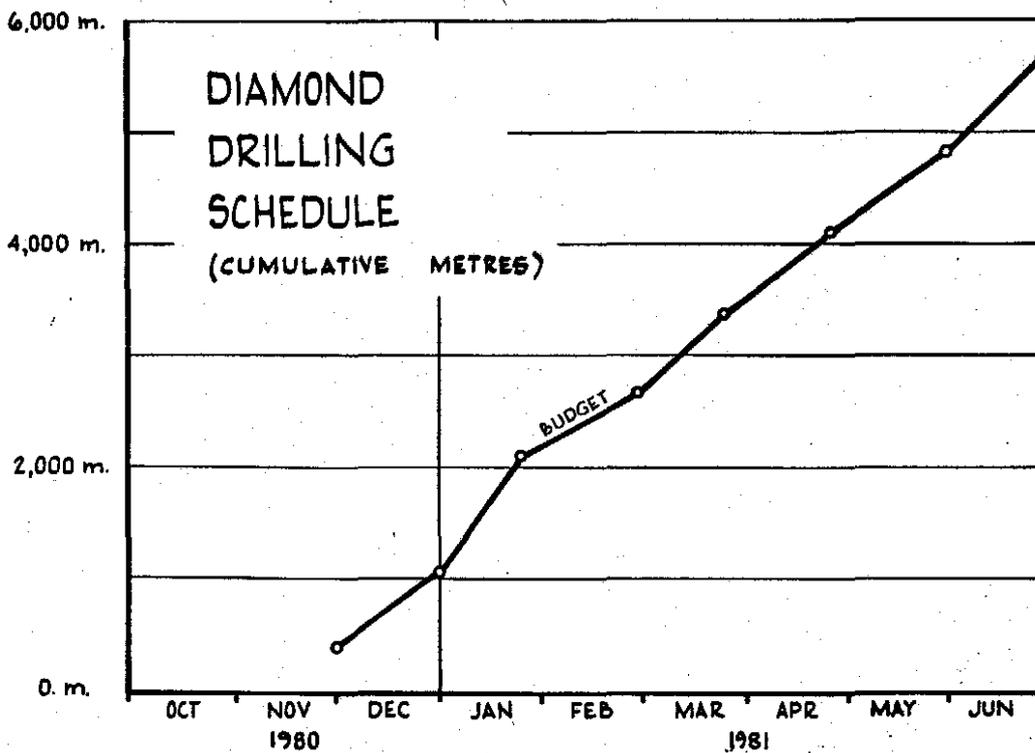
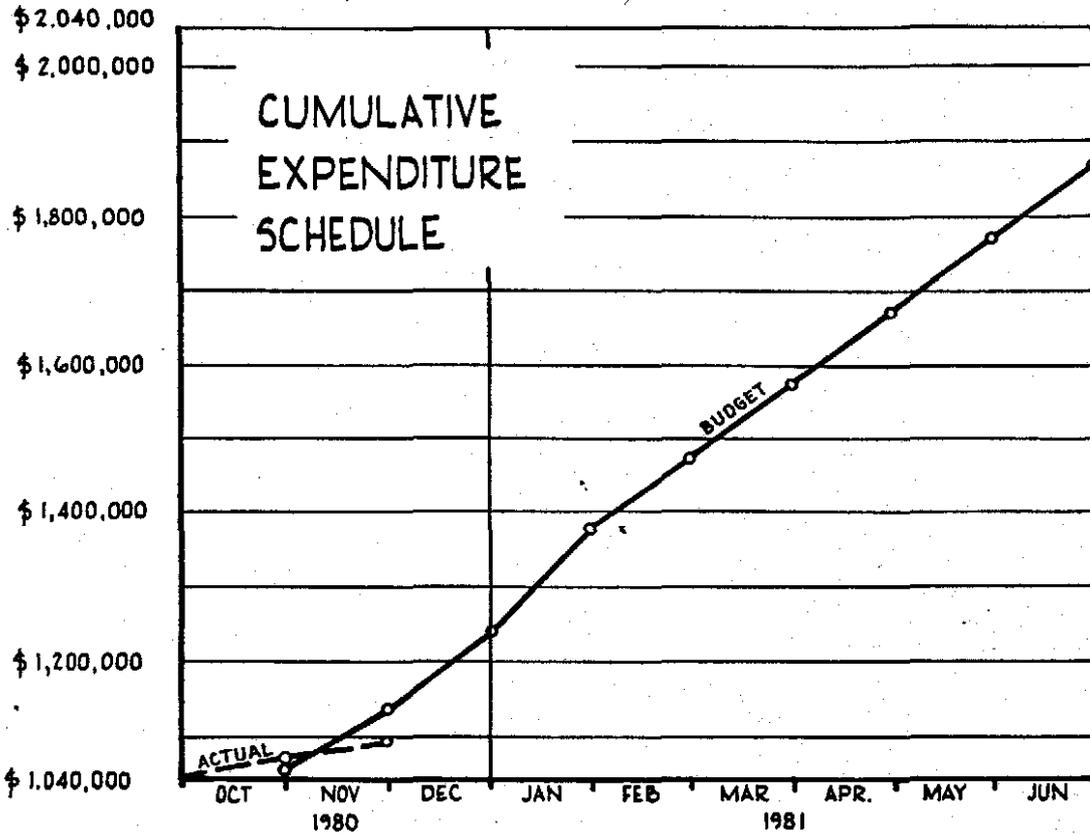
M.E.L.

MT. BISCHOFF PROJECT

C.R.A.

STAGE 3A EXPENDITUREAP 5/80

	<u>NOVEMBER</u> <u>1980</u>	<u>JULY - NOVEMBER</u> <u>1980</u>
Technical Services		450
Travel & Accommodation		
Labour	384	1,611
Camp & Messing		
Vehicles		
Equipment Rental		
Consumables & General	3,425	3,425
Tenement Expenses		1,043
Track Cutting		
Geophysical Surveys		
Diamond Drilling		
Site Preparation		
Assays		
Metallurgical		
Capital Items		
	<u>3,809</u>	<u>6,529</u>



MT. BISCHOFF

STAGE 3A SUMMARY  
as at 30-11-80



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MT. BISCHOFF TIN PROSPECT

EXPLORATION LICENCE 13/79

AND AUTHORITY TO PROSPECT 5/80

TASMANIA

REPORT FOR DECEMBER, 1980

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G.M. Motteram  
22nd January 1981

MT. BISCHOFF TIN PROSPECTREPORT FOR DECEMBER, 1980General

The first Operating Committee meeting between C.R.A. and M.E.L. was held during the month. At this meeting, the Stage 3A Programme and Budget was formally approved. Copies of the Stage 3A Programme and Budget have been circulated.

Diamond drilling commenced on 3rd December, 1980, but ceased on 9th December, 1980, due to rig breakdown. Three of the ten metallurgical holes were completed. Drilling will recommence in early January 1981.

Other field work carried out during the month included line cutting, gridding, ground magnetics, auger and chip sampling and core grinding and splitting. A number of drill pads have been prepared and surveyed. Field work terminated on 20th December, 1980, and will start up on 5th January, 1981.

A camp, to accommodate up to 12 field personnel, was purchased. It is situated in Waratah township, approximately 2 kilometres south of Mt. Bischoff Trig.

Diamond Drilling

Three holes (MBD 47 to MBD 49) were completed for 173.4 metres. All the holes were in HQ core size, and parts will be selected for metallurgical testing. All three holes intersected DSL (Dolomite Sulphide Lode). Summary drill logs are appended. The following significant results were obtained.

<u>Hole No.</u>	<u>From</u>	<u>To</u>	<u>Width</u>	<u>% Sn</u>	<u>Rock Type</u>
MBD 47	12.9	16.3	3.4	0.48	DSL
	18.0	19.4	1.4	0.44	DSL
	21.4	24.5	3.1	0.49	DSL
	26.4	30.9	4.5	0.67	DSL
	34.0	40.9	6.9	1.00	DSL + dol
	43.1	44.1	1.0	0.80	DSL
MBD 48	44.9	55.9	11.0	1.11	DSL
	57.3	58.3	1.0	0.85	Seds
MBD 49	22.3	33.9	11.6	1.57	DSL

Core Grinding

Core grinding was commenced on the holes in the vicinity of the "buried dolomite". The whole of MBD 44 (251.0 metres less that portion previously split) has been sampled, and the first 115.0 metres of MBD 45.

Assay results for MBD 44 between 0 and 116.6 metres have been received. Of the 41 samples, the highest assay was 200 p.p.m. Sn.

### Regional Exploration

Line cutting and gridding was completed in the "buried dolomite" and Housego grid areas. Ground magnetic traverses have been run over the grid lines. Plotting and contouring of these results is in progress. An E.M. Survey will be carried out over these grids in early January 1981.

The results of hand auger samples taken around the basalt edge on the Housego grid have been received. Of the 25 samples taken, one sample assayed 210 p.p.m. Sn (in the Fooks Lode area), and all the other samples gave results of less than 15 p.p.m. Sn. Three of the samples, about 60 metres apart, contained quartz porphyry chips.

Five rock chip samples were taken from outcrop in a small gully on the H. Brooks grid. The highest assay was 36 p.p.m. Sn in a quartz porphyry, and the lowest was less than 4 p.p.m. in a dolomite siltstone.

Four chip samples were taken from the Stanhope Extended porphyry dyke where it crosses the Waratah River, and four from the White Face dyke to the southwest of Mt. Bischoff. The highest value obtained was 220 p.p.m. Sn.

### Metallurgy

All samples and test residues from the Stage 2B testwork at AMDEL have been received and catalogued at the Tasmanian Mines Department, Launceston.

Available minus ½" material has been mixed to reform the dolomite sulphide composites SC1 and SC2. Porphyry testwork will be conducted on one higher grade section from the Stage 2B porphyry composites.

Mineralogical samples were despatched to Hobart and preparations made for the Initial Phase Testwork to begin in the first week of January.

Discussions were also held with Aberfoyle Limited personnel, with respect to possible testwork at Aberfoyle's Burnie laboratories relating to applicability of Mt. Bischoff material as matte fumer feed stock.

M.E.L.

MT. BISCHOFF PROJECT

086261

C.R.A.

STAGE 3A EXPENDITURE

	<u>DECEMBER 1980</u>		<u>THREE MONTHS TO 31.12.80</u>	
	<u>ACTUAL</u>	<u>BUDGET</u>	<u>ACTUAL</u>	<u>BUDGET</u>
Technical Services	17,047	19,200	38,982	52,600
Travel & Accommodation	972	700	2,594	2,100
Labour	1,314	1,850	3,534	4,150
Camp & Messing	295	1,200	1,100	3,000
Vehicles	764	1,000	1,779	2,100
Equipment Rental	50	550	100	900
Consumables & General	3,016	1,700	16,458	13,800
Tenement Expenses		500		500
Track Cutting	875	2,000	875	4,000
Geophysical Surveys		4,000		4,000
Diamond Drilling		34,000	1,867	69,000
Site Preparation		2,000		4,000
Assays		1,400	141	2,800
Metallurgical	3,450	4,400	5,441	9,200
Capital Items	35,322	32,500	35,322	32,500
	<u>63,105</u>	<u>107,000</u>	<u>108,193</u>	<u>204,650</u>

SUMMARY OF EXPENDITURE TO 30 DECEMBER 1980

Stage 1	270,000
Stage 2A - Early Start	29,020
Stage 2A	198,818
Overruns: Stage 1 - M.E.L.	11,308
Metallurgical - CRAE	23,500
Stage 2B	482,354
Stage 2B - 3A Holding Costs Offset - A.I.R. & D. Grant	40,000
Stage 3A	108,193
<u>CUMULATIVE EXPENDITURE TO DATE</u>	<u>1,163,193</u>

M.E.L.

MT. BISCHOFF PROJECT

C.R.A.

STAGE 3A EXPENDITUREEL 13/79

	<u>DECEMBER</u> <u>1980</u>	<u>JULY - DECEMBER</u> <u>1980</u>
Technical Services	14,937	70,285
Travel & Accommodation	539	2,678
Labour	1,245	4,308
Camp & Messing	295	1,712
Vehicles	764	1,838
Equipment Rental	50	100
Consumables & General	3,016	16,276
Diamond Drilling	-	1,867
Track Cutting	875	875
Assays	-	2,025
Metallurgical	3,450	19,883
Core Shed	35,322	35,322
	<u>60,493</u>	<u>157,169</u>

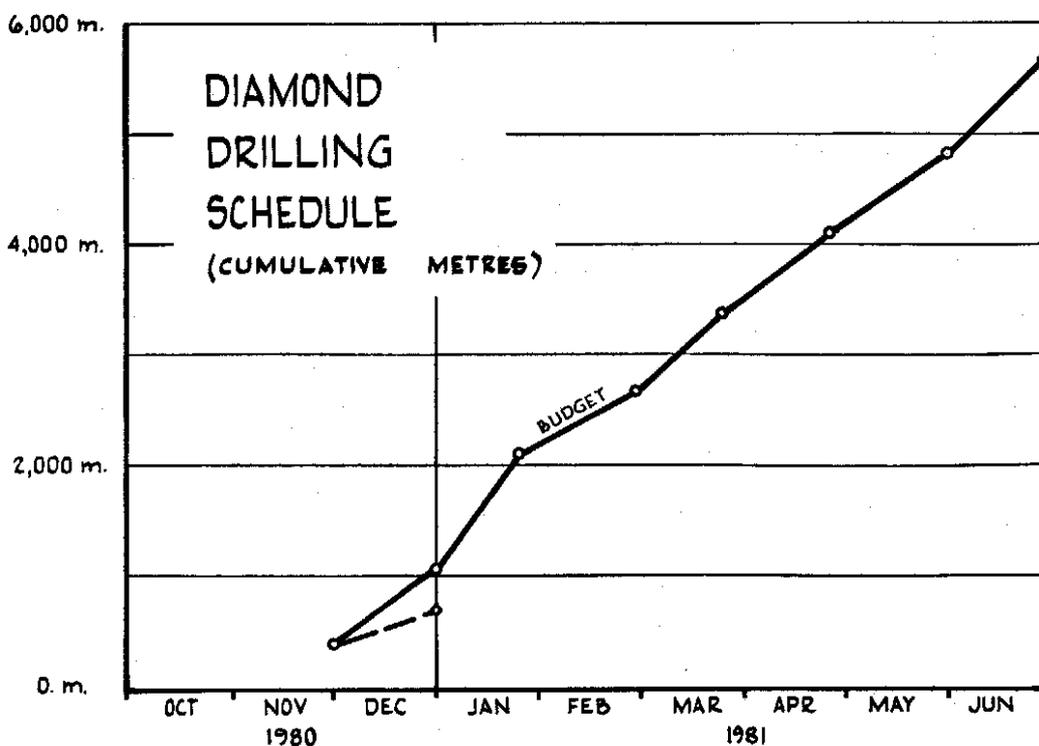
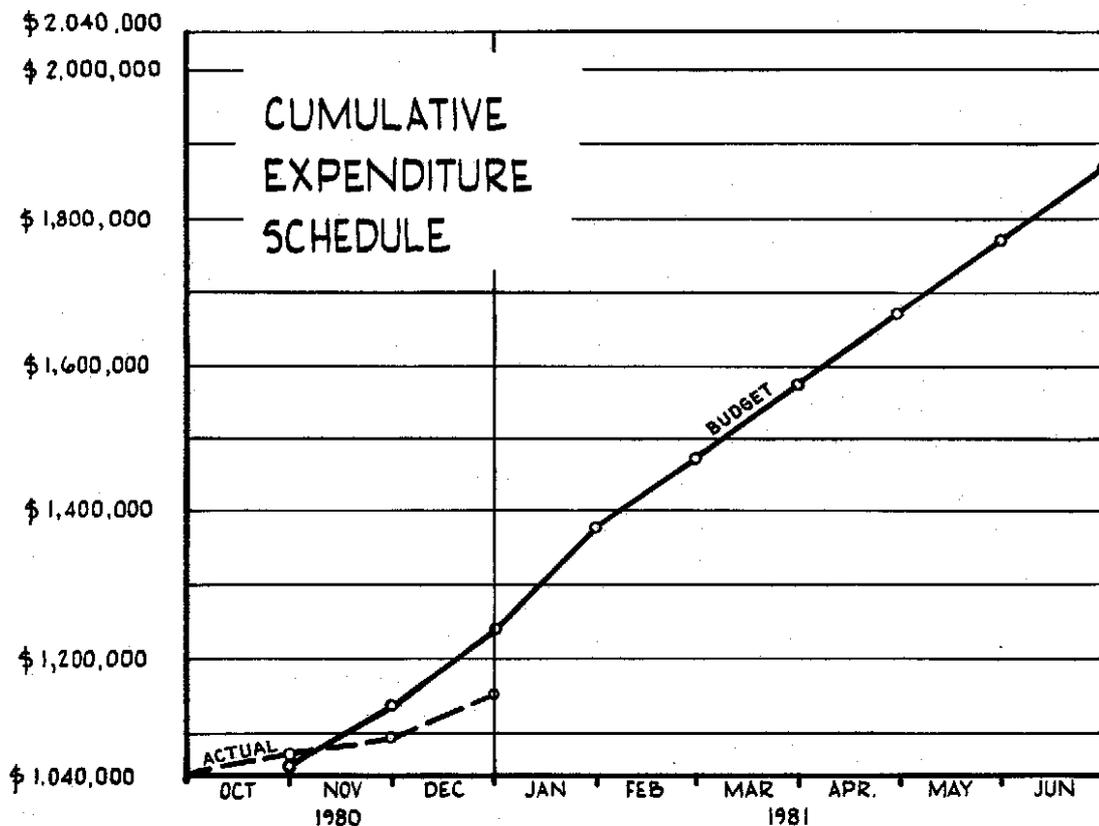
M.E.L.

MT. BISCHOFF PROJECT

C.R.A.

STAGE 3A EXPENDITUREAP 5/80

	<u>DECEMBER</u> <u>1980</u>	<u>JULY - DECEMBER</u> <u>1980</u>
Technical Services	2,110	2,560
Travel & Accomodation	433	433
Labour	68	1,679
Camp & Messing		
Vehicles		
Equipment Rental		
Consumables & General		3,425
Tenement Expenses		1,043
Track Cutting		
Geophysical Surveys		
Diamond Drilling		
Site Preparation		
Assays		
Metallurgical		
Capital Items		
	<u>2,611</u>	<u>9,140</u>



MT. BISCHOFF

STAGE 3A SUMMARY  
as at 31.12.80

MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 47

Location : 1933.08N 980.00E

Elevation : 643.87

Dip : 50°

Azimuth : 360° grid

Total Depth : 65.3 m

Surveys : Eastman every 30 m

Commenced : 3.12.80 Completed: 5.12.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.

DEPTH  
(length  
from collar)

INTERVAL	DEPTH from - to : ROCK UNIT Depth - Description and notes, veins over 50mm. INDENTED ABOUT 10mm	CAPITAL LETTERS, UNDERLINED	POINTER & CODE	GRAPHIC LOG	POINTER & CODE	MINERALISATION Excluding veins over 50mm. Visual estimate of % mineralisation in brackets.	ASSAYS AVAILABLE	BULKED ASSAYS Sn
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NOTES: 1. FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BERKMAN & W.R. RYALL (ED.), MONOGRAPH NO. 9 AUSTRALAS. INST. MIN. METALL. - 1976  
2. ATTITUDE OF BEDDING, VEIN, ETC. IS ANGLE BETWEEN PLANAR STRUCTURE AND LONG AXIS OF CORE 3. LENGTH IS GIVEN AS METRES OR MILLIMETRES

086266

0	TRICONE TO 1.5m - NO CORE							
11.50	1.5-13.0: DOLOMITE, weakly RECRYSTALLISED Pale grey hard finely crystalline dolomite with irregular segregations of coarsely crystalline white dolomite, qtz and other carbonates. The recrystallisation has proceeded along brecciation fractures.			213		trace sp,py, rare blebs po,cp and arseno intergrown with gy. Concentration variable 0-5% over a few cm, overall, trace.		
	12.3-13.0 Mixed dolomite/DSL Irregular					12.3-13.0 py,po, fluorite, trace sp, 15%		
3.30	13.0-16.3: DOLOMITE SULPHIDE LODE. Banded-carbonates, serpentinite with fluorite & blue tourmaline vein	15°		7/8		13.0-16.3 fluorite,py,po, trace sp, weak trace ga,arseno. Finely disseminated along banding 30-35%		
1.70	16.3-18.0: DOLOMITE. Fine Grained & pale grey in colour	40°		2		16.3-18.0 po,trace py,sp,fluorite 1%		
1.35	18.0-19.25: DOLOMITE SULPHIDE LODE Irregular			8/5		18.0-19.35 py/marcasite,fluorite,trace sp 30%		
2.10	19.35-21.45: DOLOMITE. Pale grey, faintly mottled with white & grey speckles Irregular			2/3		19.35-21.45 po,sp,fluorite,py,trace		
3.15	21.45-24.60: DOLOMITE SULPHIDE LODE. Finely banded talcy carbonates,pyrrhotite,fluorite,tourmaline	25°		6/4/6		21.45-24.60 po,py,fluorite,tourmaline trace sp 40%		
1.75	24.60-26.35: DOLOMITE. Pale grey,faintly speckled	70°		2/3		24.6-26.35 po,py,sp,fluorite trace to 40%		
4.65	26.35-31.0: DOLOMITE SULPHIDE LODE. Finely banded dark green talcy serpentinite with sparse remnant carbonates Irregular			7/4/6		26.35-31.0 po, fluorite 1-2%,trace py 40-45%		
2.95	31.0-33.95: DOLOMITE. Pale grey f.gr. dolomite, bedded 70°	25°		2/(3)		31.0-33.95 po,trace op, fluorite: 2%		
3.55	33.95-37.5 RECRYSTALLISED DOLOMITE. White coarsely crystalline weakly talcy dolomite mottled with po	70°		3		33.95-37.5 po,py, trace marcasite 10-15% dissem. as blebs to lcm.		
3.40	37.5-40.9: DOLOMITE SULPHIDE LODE. Virtually massive bottle green talc with minor po. small fault pug	40.0-40.15		6/4		37.5-39.3 po,trace py: 30-35% 39.3-40.9 po,rare grains py 2-3%		
1.1	40.9-42.0: RECRYSTALLISED DOLOMITE Indistinct	30°		3		po, trace py: 5-7%		
20.5	42.0-62.5: DOLOMITE SULPHIDE LODE Dominantly pyrrhotite and talc; intervals of po,talc alternating with talc,po. Remnant carbonates occur to a minor extent virtually anywhere throughout the interval, but are not significant. Serpentinite becomes a common accessory towards the base of the interval.			6/4 4/6 etc. see detailed log		42.0-62.5 pyrrhotite very abundant, with accessory (trace) py,cp, rare sp, arseno and ga. Fluorite occurs as a trace constituent sporadically - usually with high carbonate contents. Overall: 46%		
		45° bedded						
2.80	62.5-65.30: SILTSTONES, minor QUARTZITES			10/ 11		62.5-65.3 po,py,minor marcasite: 10-15%		
	END OF HOLE 65.3M							

5 cm

FOR LEGEND  
SEE DRAWING  
NO.



**METALS  
EXPLORATION  
LIMITED**

**SUMMARY  
DRILL LOG**  
Scale

Prospect or project  
**MT BISCHOFF TIN**

HOLE No. MBD 47  
LOG SHEET OF

SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
98200		1.5	2.5	1.0	8									
01		2.5	3.5	"	12									
2		3.5	4.5	"	34									
3		4.5	5.5	"	16									
4		5.5	6.5	"	30									
5		6.5	7.5	"	50									
6		7.5	8.5	"	4									
7		8.5	9.5	"	4									
8		9.5	10.5	"	8									
9		10.5	11.5	"	<4									
210		11.5	12.9	1.4	1350									
11		12.9	13.9	1.0	6400									
12		13.9	14.9	"	6000									
13		14.9	15.9	"	2950									
14		15.9	16.3	0.4	2050									
15		16.3	17.3	1.0	390									
16		17.3	18.0	0.7	270									

Notes:— XRF Bi Method for Sn.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO. MBD 47  
 SAMPLE TYPE : DRILL CORE FROM 15 TO

086267

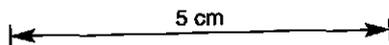
MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number	:	MBD 48
Location	:	1945.74N 979.90E
Elevation	:	644.04
Dip	:	50°
Azimuth	:	360° grid
Total Depth	:	61.8 m
Surveys	"	Eastman every 30 m
Commenced	:	6.12.80      Completed: 7.12.80
Logged by	:	G. Broadbent
Drilling Contractor	:	Longyear Australia Pty. Ltd.

DEPTH (length from collar)	INTERVAL	DEPTH from - to : ROCK UNIT		MINERALISATION		BULKED ASSAYS 5g
		CAPITAL LETTERS, UNDERLINED Depth: Description and notes, veins over 50mm. INDENTED ABOUT 10mm		Excluding veins over 50mm. Visual estimate of % mineralisation in brackets.		

NOTES: 1. FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BERKMAN & W.R. RYALL (ED.), MONOGRAPH NO. 3 AUSTRALAS. INST. MIN. METALL. - 1976  
 2. ATTITUDE OF BEDDING, VEIN, ETC. IS ANGLE BETWEEN PLANAR STRUCTURE AND LONG AXIS OF CORE 3. LENGTH IS GIVEN AS METRES OR MILLIMETRES.

0		TRICONE TO 1.5M - NO CORE				
9.45	1.5-10.95: DOLOMITE	Pale grey fine grained dolomite with minor intervals of white recrystallised carbonates and minor qtz.	Irregular	2/3	1.5-10.95 po,py,trace sp, fluorite: 2% as blebs and veinlets	
10	3.45	10.95-14.4: RECRYSTALLISED DOLOMITE	Granular coarsely crystalline white dolomite + qtz.	Irregular	10.95-14.4 po,py,marcasite,trace sp: 3-5%	
	4.60	14.4-19.0: DOLOMITE	Grey finely crystalline dolomite, well fractured and broken	Irregular	14.4-10.0 py,po,rare sp: 2-3%	
20	3.00	19.0-22.0: RECRYSTALLISED DOLOMITE	As above, 10.95-14.4, but faintly talcy.	Gradual Change	19.0-22.0 po,py,minor marcasite, trace sp and ? cassiterite: 10-15%	
	5.85	22.0-27.85: DOLOMITE, partially RECRYSTALLISED	Approx 50% grey f.gr. dolomite as corestones surrounded by recrystallised dolomite as above.	Broken	22.0-27.85 po,py as blebs and f.gr. aggregates to 5 x 2mm: 2-5%	
30	2.05	27.85-29.90: DOLOMITE SULPHIDE LODGE		80°	27.85-29.90 po,trace py,cp : 7-10%	
	2.10	29.90-32.00: DOLOMITE.	Finely crystalline; altered to talc in part.	75°	29.9-32.0 po,py : 5-7%	
	6.70	32.00-38.7: DOLOMITE SULPHIDE LODGE	Mottled bronze (po) and dark greens (talc-serpent) - lenses of talc and serpentinite dividing intervals of po up to 10cm thick	25°	32.0-38.7 po,py,trace cp,fluorite and rare ? cassiterite: 65-70%	
40	2.13	38.7-40.83: DOLOMITE	Grey f.gr. dolomite, weakly talcy	80°	38.7-40.83 po,trace py: 5-10%	
	16.52	40.83-57.35: DOLOMITE SULPHIDE LODGE	Mostly pyrrhotite and greyish green talc, with sparse irregular patches of remnant carbonates and qtz. Minor black talcy serpentinite becomes progressively more abundant towards base of interval.	60°, bedded	40-83-57.35 po, with traces of py, marcasite, fluorite,cp,arseno,ga and sp occurring in various proportions within po. TOTAL mineralisation: 50%	
60	4.45	57.35-61.8: SILTSTONES, MINOR QUARTZITES	Very hard thinly bedded brown & green, grey clay rich siltstones & f.gr. quartzites. 59.2-60.33 massive c-gr quartzite	10/11	57.35-58.2 po,py,fluorite,marcasite qtz,talc, trace sp,sp;35%. 58.2-61.8 carbonate-fluorite-py etc. veining po,py dissem: 10-15%	
70		END OF HOLE 61.8M				



FOR LEGEND  
SEE DRAWING  
NO.



METALS  
EXPLORATION

SUMMARY  
DRILL LOG

Prospect or project

MT BISCHOFF TIN

HOLE No. MBD 48

LOG SHEET OF

SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
98263		1.5	2.5	1.0	380									
64		2.5	3.5	1.0	30									
65		3.5	4.5	1.0	160									
66		4.5	5.5	1.0	220									
67		5.5	6.5	1.0	46									
68		6.5	7.5	1.0	18									
69		7.5	8.5	1.0	28									
270		8.5	9.5	1.0	85									
71		9.5	10.5	1.0	26									
72		10.5	11.0	0.5	40									
73		11.0	11.6	0.6	75									
74		11.6	12.6	1.0	48									
75		12.6	13.7	1.1	36									
76		13.7	14.4	0.7	100									
77		14.4	15.4	1.0	65									
78		15.4	16.05	0.65	65									
98376		16.05	16.4	0.35										Not Available
99279		16.4	17.4	1.0	80									
280		17.4	18.4	1.0	65									
81		18.4	19.0	0.6	260									
82		19.0	20.0	1.0	65									
83		20.0	21.0	1.0	210									
84		21.0	22.0	1.0	75									
85		22.0	23.0	1.0	640									
86		23.0	24.0	1.0	400									
87		24.0	24.7	0.7	60									
88		24.7	25.7	1.0	120									
89		25.7	26.7	1.0	110									
290		26.7	27.8	1.1	250									
91		27.8	28.8	1.0	34									

Notes:—

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT  
 ASSAY SUMMARY SHEET HOLE NO, MBD 48

SAMPLE TYPE : DRILL CORE FROM 1.5 TO 28.8

086270

SAMPLE NO.	SAMPLE NO	FROM	TO	INTER- VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
98292		28.8	29.9	1.1	26									
93		29.9	30.9	1.0	840									
94		30.9	32.0	1.1	280									
95		32.0	32.9	0.9	12									
96		32.9	33.9	1.0	4									
97		33.9	34.9	1.0	10									
98		34.9	35.9	1.0	14									
99		35.9	36.9	1.0	4									
98307		36.9	37.9	1.0	<4									
08		37.9	38.7	0.8	<4									
09		38.7	39.7	1.0	150									
310		39.7	40.9	1.2	2350									
11		40.9	41.9	1.0	28									
12		41.9	42.9	1.0	<4									
13		42.9	43.9	1.0	110									
14		43.9	44.9	1.0	110									
15		44.9	45.9	1.0	2550									
16		45.9	46.9	1.0	9330									
17		46.9	47.9	1.0	1.40%									
18		47.9	48.9	1.0	1.52%									
19		48.9	49.9	1.0	2100									
320		49.9	50.9	1.0	8500									
21		50.9	51.9	1.0	1900									
22		51.9	52.9	1.0	28									
23		52.9	53.9	1.0	2.48%									
24		53.9	54.9	1.0	2.96%									
25		54.9	55.9	1.0	1.37%									
26		55.9	57.3	1.4	460									
27		57.3	58.3	1.0	9500									
28		58.3	59.3	1.0	2300									

Notes:—

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT

ASSAY SUMMARY SHEET HOLE NO, MBD 48271

SAMPLE TYPE : DRILL CORE FROM 28.8 TO 59.3

086271



MT. BISCHOFF JOINT VENTUREDIAMOND DRILL LOG

Hole Number : MBD 49

Location : 1960.33N 970.18E

Elevation : 644.51

Dip : 50°

Azimuth : 360° grid

Total Depth : 46.3 m

Surveys : Eastman every 20 m

Commenced : 8.12.80 Completed: 9.12.80

Logged by : G. Broadbent

Drilling Contractor : Longyear Australia Pty. Ltd.



SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
98332		1.8	2.8	1.0	240									
33		2.8	3.8	1.0	940									
34		3.8	4.8	1.0	170									
35		4.8	5.8	1.0	80									
36		5.8	6.8	1.0	180									
37		6.8	8.1	1.3	210									
38		8.1	9.1	1.0	60									
39		9.1	10.4	1.3	150									
340		10.4	11.7	1.3	170									
41		11.7	12.8	1.1	100									
42		12.8	13.5	0.7	44									
43		13.5	14.3	0.8	2600									
44		14.3	15.3	1.0	10									
45		15.3	16.3	1.0	<4									
46		16.3	17.3	1.0	<4									
47		17.3	18.3	1.0	<4									
48		18.3	19.3	1.0	8									
49		19.3	20.3	1.0	<4									
350		20.3	21.3	1.0	4									
51		21.3	22.3	1.0	4									
52		22.3	23.2	0.9	2.98%									
53		23.2	23.9	0.7	2.84%									
54		23.9	24.9	1.0	2.78%									
55		24.9	25.9	1.0	4.42%									
56		25.9	26.9	1.0	3.22%									
57		26.9	27.9	1.0	3350									
58		27.9	28.9	1.0	3050									
59		28.9	29.9	1.0	520									
360		29.9	30.9	1.0	3050									
61		30.9	31.9	1.0	42									

Notes:—

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT

ASSAY SUMMARY SHEET HOLE NO. MBD 49

SAMPLE TYPE : DRILL CORE FROM 1.8 TO 31.9

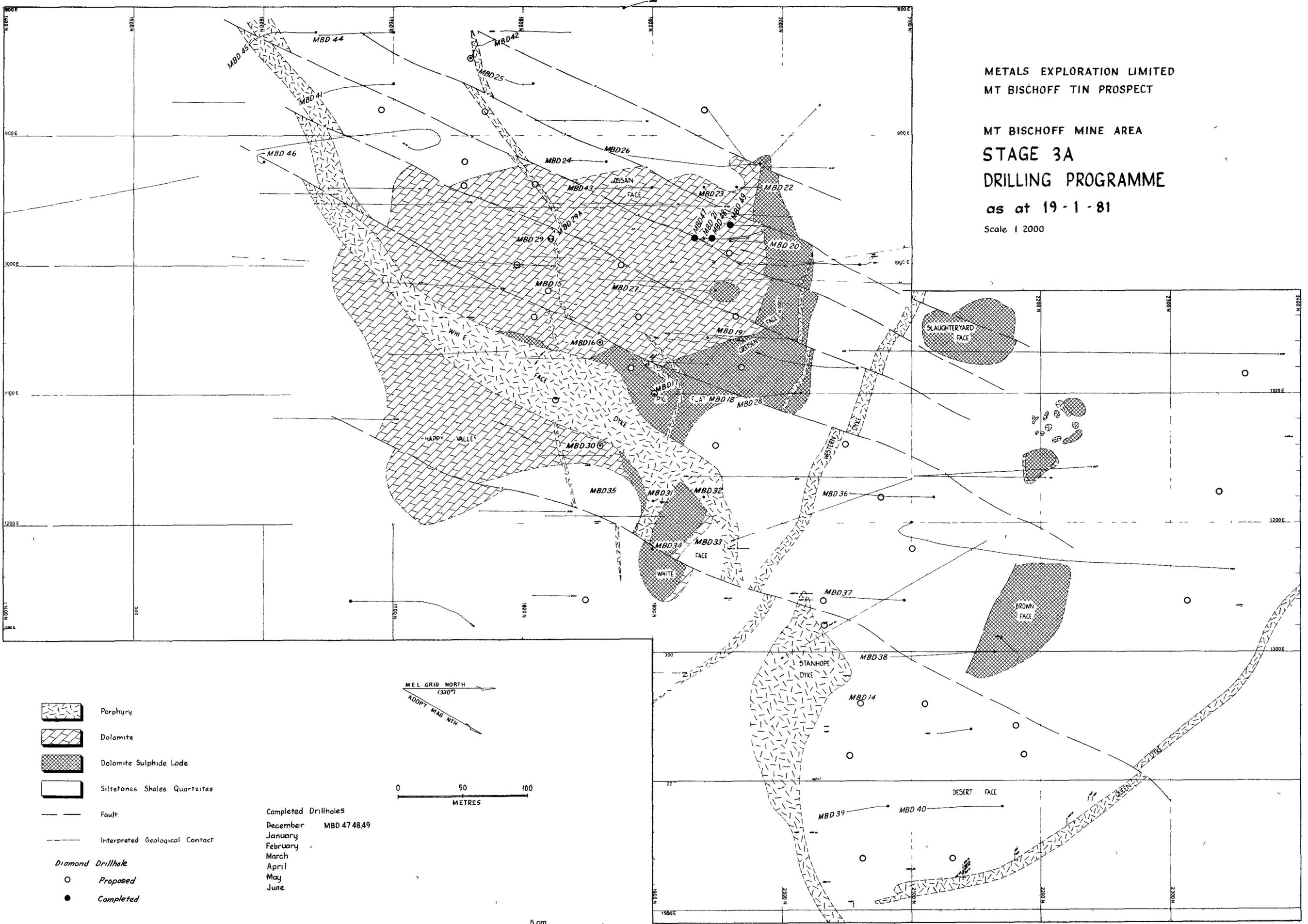
086275



METALS EXPLORATION LIMITED  
MT BISCHOFF TIN PROSPECT

MT BISCHOFF MINE AREA  
STAGE 3A  
DRILLING PROGRAMME

as at 19-1-81  
Scale 1:2000

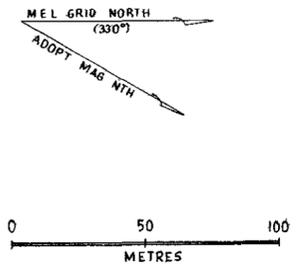


-  Porphyry
-  Dolomite
-  Dolomite Sulphide Lode
-  Siltstones Shales Quartzites
-  Fault
-  Interpreted Geological Contact

- Diamond Drillhole*
-  Proposed
  -  Completed

Completed Drillholes

December	MBD 47, 48, 49
January	
February	
March	
April	
May	
June	



5 cm

1900 N

1950 N

2000 N

DEVONIAN

qv

Quartz vein.

1

Porphyry.

PRE-CAMBRIAN

2

Dolomite

3

Recrystallised dolomite

4

lode pyrrhotite rich.

5

pyrite rich.

6

talc rich.

7

serpentinite rich.

8

quartz/carbonate rich.

Dolomite sulphide

9/c

Shale / carbonaceous.

10

Siltstone.

11/s

Quartzite / sandstone.

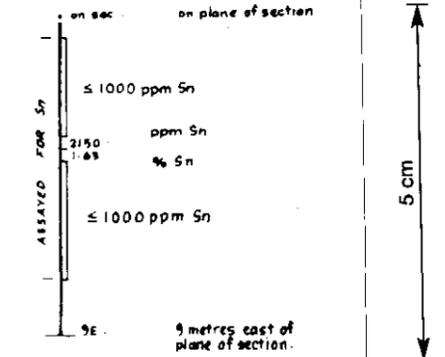
12

Tuff.

F ——— Fault - interpreted.

- - - - - Interpreted geological contact.

D.D.H.



METALS EXPLORATION LTD.

MT. BISCHOFF TIN PROJECT

GREISEN FACE AREA  
INTERPRETED GEOLOGY  
SECTION 970 E

Stage 3A Drilling Programme

Scale 1:500

Date Jan.81 Drg.No. 81-002

650m

600m

550m

NE 0.2E

2/3

1/3

3/28

2/3

4-8

4-8

6.4

MBD 49

1.9E

10/11

4-8

2/3

4-8

2/3

4-8

1

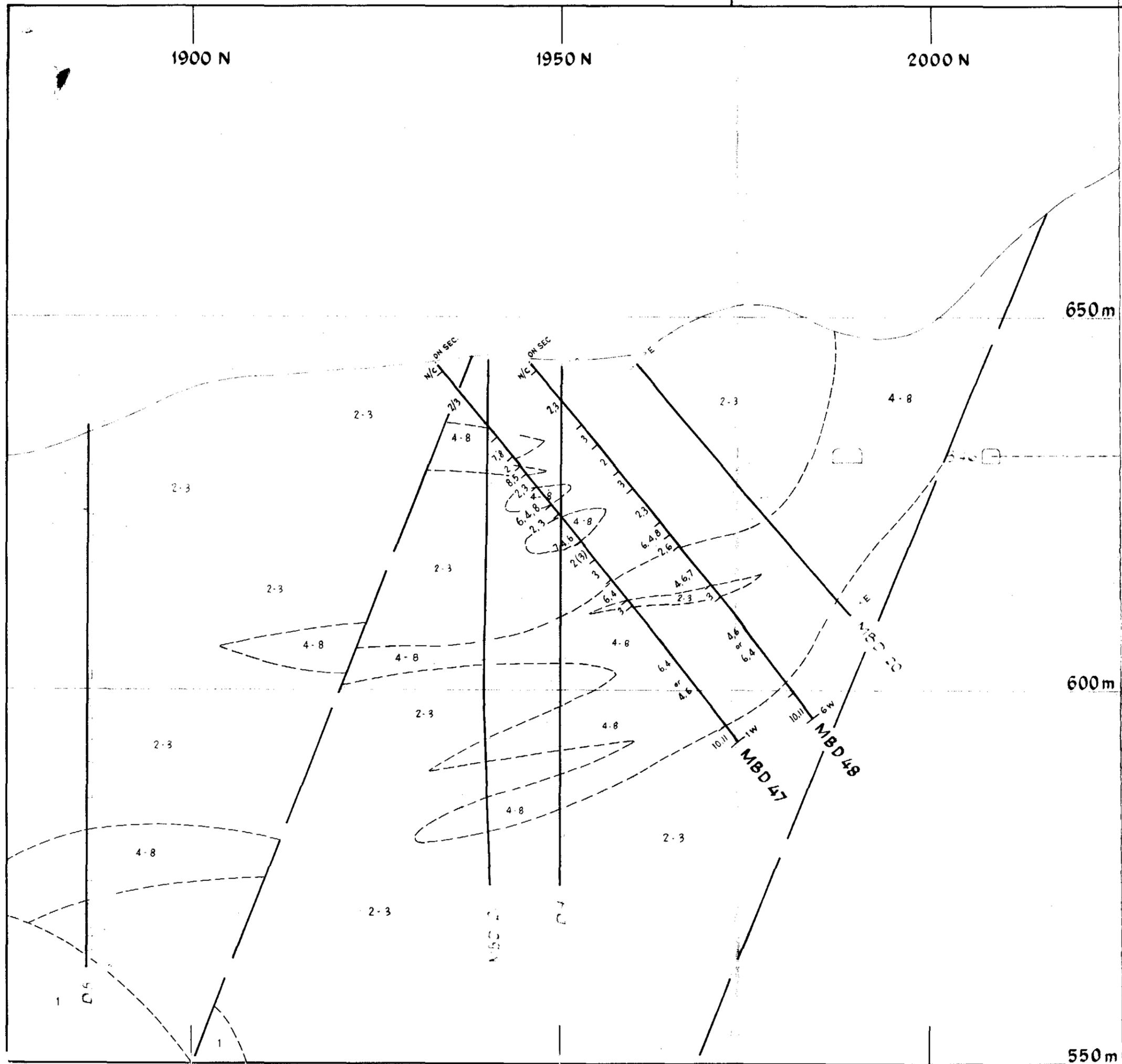
1

1900 N

1950 N

2000 N

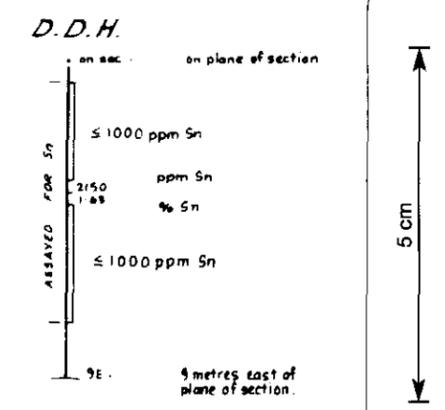
- DEVONIAN**
- qv Quartz vein.
  - 1 Porphyry.
- PRE-CAMBRIAN**
- 2 Dolomite
  - 3 Recrystallised dolomite
  - 4 pyrrhotite rich.
  - 5 pyrite rich.
  - 6 talc rich.
  - 7 serpentinite rich.
  - 8 Dolomite sulphide lode quartz/carbonate rich
  - 9/c Shale / carbonaceous.
  - 10 Siltstone.
  - 11/s Quartzite / sandstone.
  - 12 Tuff
- Fault - interpreted  
 - - - - - Interpreted geological contact.



650m

600m

550m



**METALS EXPLORATION LTD.**

**MT. BISCHOFF TIN PROJECT**

**GREISEN FACE AREA**

**INTERPRETED GEOLOGY**

**SECTION 980 E**

Stage 3A Drilling Programme

Scale 1:500

Date Jan.81 Drg.No. 81-003