MBD. 25

DEPTH	INTERVAL	DEPTH from-to : ROCK UNIT (capital letters, underlined) Depth : Description and notes (indented about 10mm)	ADMIXER	GRAPHIC LOG	ADMIXER	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

028424

3.0m.	TRICONE TO 3.0m - NO CORE.		
3.0-48.9 (45.9)	3.0-48.9 DARK GREY SILTSTONES 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 thinly bedded, with minor folding, and intervals of brecciation (soft sediment disruption). 26.4-30.6 Interbedded siltstone and quartzite, hard and silicified, brecciated. Gradual Change		Py & PO, disseminated in silty beds, occasionally as blebs to 2 x 1.5 cm. Sporadic py-qtz-dolomite-fluorite-po-sp-arseno veining TOTAL 2-3%, locally 5%
48.9-62.0 (13.1)	48.9-62.0 MASSIVE SILTSTONES WITH MINOR SANDSTONES AND SILTY SHALE Medium grey, brecciated, with dark grey silty shales and thin quartzite beds.		Py. dissem., some blebs to 10x5mm, sparse qtz-carbonate-py-sp veining. TOTAL 2-3%
62.0-66.0 (4.0)	62.0-66.0. SERICITIC SILTSTONES with minor QUARTZOSE SILTSTONES		Py-fluorite-qtz-carbonate veining, 1%
66.0-88.6 (22.6)	66.0-88.6 QUARTZ FELSPAR PORPHYRY. Contact 40° Matrix creamy white, fine grained, in places slightly pinkish. Phenocrysts - Qtz - clear, cloudy rounded grains to 6mm, ranging from 7-10% to 20% in central portion Felspar - brownish creams (alteration), some zoning, max size 3mm, variable 1-10%.	40°	py, trace fluorite, sp, weak trace tourmaline and rare cassiterite. 10-15% as discrete grains to 3mm, some py is as fine grained irregular aggregates. Lower 2m mineralisation 1-3%.
88.6-90.2 (1.6)	88.6-90.2 SILTSTONE and DARK GREY SHALES, thinly bedded and brecciated.		Qtz veining, 1%
90.2-93.6 (3.4)	90.2-93.6 QUARTZ FELSPAR PORPHYRY, Qtz 3-5%, Felspar 7-10%	40°	Py, trace sp, tourmaline, marcasite, 5-7%.
93.6-98.9 (5.3)	93.6-98.9 THINLY BEDDED SILTSTONES. Dark grey clay rich alternating with minor brownish and pale grey quartzose beds.	15°	Py, qtz, in veinlets and dissem 20%
98.9-101.7 (2.8)	98.9-101.7 QUARTZ FELSPAR PORPHYRY.	85°	Py, some qtz veining - 20%.
101.7-104.8 (3.1)	101.7-104.8 SILICIFIED SILTSTONES AND SILTY SHALES	65°	Dissem Py, Py-carbonate qtz-fluorite veinlets 2-3%
104.8-138.6 (33.8)	104.8-138.6 QUARTZ FELSPAR PORPHYRY. Matrix faintly greyish cream, fine grained and very hard. Qtz - rounded turbid grains to 4mm 15%, locally 10-20%. Felspar - creamy white, intergrown with groundmass, some brownish alteration, 10-15%.	85°	Py, trace marcasite(?), brown and green fluorite, sp, cassiterite. Rare arseno. TOTAL 15%. Py as fgr. aggregates, distinct grains to 5mm, variable 5-25%, average 15%. Cassiterite, fluorite variable, cassiterite locally 3% (116-118) as rounded grains, scattered throughout.
138.6-143.3 (4.7)	138.6-143.3 SILTSTONES with GREY SILTY SHALES and BLACK PYRITIC SHALES	65°	Py, thin bedded laminae, finely dissem, averages 3-5%
143.3	END OF HOLE.		

5 cm

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 BROADBENT
Date: 5-3-80

HOLE No. MBD 25
Sheet of

SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	As	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	"	1950		240	46	240	2	20	660		
26		68.0	70.0	"	1500		250	70	280	1	20	65		
27		70.0	72.0	"	800		210	60	450	1	25	80		
28		72.0	74.0	"	2300		240	85	310	2	15	75		
29		74.0	76.0	"	3400		220	75	290	2	25	85		
230		76.0	78.0	"	1200		250	40	95	2	10	840		
31		78.0	80.0	"	2400		290	140	85	2	15	1050		
32		80.0	82.0	"	580		280	80	160	2	<10	270		
33		82.0	84.0	"	2200		240	90	25	2	15	100		
34		84.0	86.0	"	960		190	120	700	4	20	20		
35		86.0	88.0	"	380		33	95	830	1	<10	10		
36		88.0	88.7	0.7	320		42	130	4800	1	20	10		
37		88.7	89.9	1.2	60									
38		89.9	91.9	2.0	170									
39		91.9	93.7	1.8	320									
240		93.7	95.7	2.0	190								160	Re check of check Sn
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		250	70	90	1	15	250		
48		106.7	108.7	"	2850		280	55	50	2	40	180		
49		108.7	110.7	"	6000		320	190	65	3	30	560		
250		110.7	112.7	"	3300		340	150	210	3	20	150		
51		112.7	114.7	"	4400		430	250	160	4	<10	2400		
52		114.7	116.7	"	1.62%		240	120	60	1	75	260		
53		116.7	118.7	"	1.67%		270	170	260	2	90	1850		

Notes :— Sn by XRF Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT

ASSAY SUMMARY SHEET HOLE NO. MBD 25 A

SAMPLE TYPE : DRILL CORE FROM 64.0 TO 118.7

SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	As	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97254		118.7	120.7	2.0	6000		350	50	30	2	240	6000		
55		120.7	122.7	"	9400		340	210	5000	5	120	5300		
56		122.7	124.7	"	7000		390	310	150	5	50	3900		
57		124.7	126.7	"	1.16%		330	200	70	2	60	2700		
58		126.7	128.7	"	1600		300	48	60	2	35	1100		
59		128.7	130.7	"	340		330	130	120	4	15	260		
260		130.7	132.7	"	4050		270	95	670	2	30	210	3750	Re check of check Sn
61		132.7	134.7	"	840		140	120	6000	2	<10	240		
62		134.7	136.7	"	230		100	180	8000	2	<10	100		
63		136.7	138.6	1.9	1000		180	100	430	3	15	120		
64		138.6	140.6	2.0	140									

0284260

Notes:— Sn by XRF Bi Method

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT

ASSAY SUMMARY SHEET HOLE NO. MBD 25B

SAMPLE TYPE : DRILL CORE FROM 118.7 TO 140.6.

REPORT No. 028427

METALS EXPLORATION LTD.
& SUBSIDIARY COMPANIES

MINERAL EXPLORATION
DIAMOND DRILL LOG

MBD-25

Prospect, area, project or mine. MOUNT BISCHOFF

HOLE No. MBD 25

COLLAR LOCATION

	Grid name	Rectangular space co-ordinates PLANAR CO-ORDINATES			ELEVATION
(1)	MBJV	1807.77	N	860.07 E	619.08
(2)			N	E	
(3) Aust. Map Grid PRECISE / APPROX.			mE	mN	m A.H.D.

1:250 000 Sheet No. BURNIE SK 55-3 | 1:100 000 Sheet No. HELLYER 8015 | State TASMANIA

Mineral Tenement EL 13/79 | Holder METALS EXPLORATION LTD

Cadastral location and details
CROWN LAND / PRIVATE

W.C. Bearing from collar
- magnetic
- 180° grid (1)
- grid (2)
- grid (3)
- true

Inclination at collar 80°

Total length 144.3 m

Commenced: 29 / 1 / 80

Completed: 3 / 2 / 80

Drilling contractor: LONGYEAR AUST PTY LTD

Rig type: LONGYEAR 38

Core size and non-coring (NC)

TRKONG	0	TO	3.0 m
NQ	3.0	TO	51.0
BQ	51.0	TO	144.3
		TO	
		TO	
		TO	

Details of down hole location - survey methods.
TROPARI every 40m

Purpose of drilling and anticipated lengths to targets.
To intersect Ti mineralisation in White Face Porphyry dyke 71-99m. Planned depth of hole 110 m.

Results of down hole location - survey.

LENGTH FROM COLLAR	W.C. BEARING type Azimuth	DIP
42.5 m	149	81°
91.5 m	167	82°
142.5 m	172°	82°

Comments on drilling.

Legend for graphic log column (see drill log for Hole No. _____)
'DERWENT' PENCIL No. | FIELD ROCK NAME, ETC.

Symbols and abbreviations for drilling notes column.

LOGGED BY S BROADHURST | FROM 0 TO 144.3m | DATE 8-2-80

LOGGED BY _____ | FROM _____ TO _____ | DATE _____

LOGGED BY _____ | FROM _____ TO _____ | DATE _____

Company managing exploration programme.
METALS EXPLORATION LTD

HOLE No. MBD 25
Log sheet 1 of 3

TRICONE TO 30m - NO CORE.

30-260 INTERBEDDED SILTSTONES AND BLACK SHALES
30-33.4 light grey, grey with siltlaces and minor pale grey quartzose siltstones.
Dominantly intervals with bedding completely obliterated (later intense disruption), to 2 or 3m, alternate with well bedded intervals that have suffered only minor contortion and some flaking.

33.4-35.6 Mainly disrupted - clasts of pale grey siltstone to 30 x 15 mm in a contorted rather fissile/shaley matrix of almost black siltstone and shale.

260-377 INTERBEDDED SILTSTONES AND QUARTZITES
Mainly medium grey quartzites 1-10cm interbedded with dark grey shaly rich siltstones. Extensively disrupted and brecciated - the siltstones form discontinuous lenses, often strongly foliated/shaly planes and rather less in strong breccia - like zones with isolated irregular clasts of quartzites and siltstones.

377-460 Gradual decrease in proportion of quartzites - thickly bedded sandy siltstones/shaly rich siltstones black and greenish grey in colour (results?), minor disruption and some quartzite beds to 5 cm.

460-579 SILTSTONES, minor SHALES and TRANSITIONS
As for 5.3-264 with the addition of sparse medium grey fine grained sandstones to 0.8m

579-689 Gradually becomes better bedded, black shales increase in abundance and siltstones begin to acquire a greenish tinge

689-820 INTERBEDDED SILTSTONES AND QUARTZITES
As for 264-377

820-1002 THINLY BEDDED SILTSTONES
Hard greenish grey siltstone (rock) - siltstones with minor interbedded pale grey quartzose siltstones.
Disrupted and finely fractured by later shearing - carbonate and clay films along fractures.

1002-1088 QUARTZ FELSPAR PORPHYRY
1002-1017 Matrix creamy white, fine grained, fourth-banded grains 1 to 2 mm, mostly 1-3 mm, 7-10% - Felspar - black and bronzed/brown - altered, with some reddish weathered cores, max 2mm, 5-10%
1017-1049 Matrix creamy white, with a faint pinkish cast. Well jointed and better 30 cm - 1 m bedded, white
Phenocrysts: Silica, clear or / white and rosebud - rounded grains to 6 mm, occasional 5-10 cm patches of almost pure silica in groundmass, 20%
Felspar - brownish cream altered.
Rounded grains to 2 mm, some extremely hard must have rather indistinct outlines. Variable percentage 1-10%

1049-1088 SILTSTONES, minor SHALES.
Dark grey thinly bedded clay rich siltstones with dark grey shale beds - consistently disrupted with intensely deformation.

1088-1234 QUARTZ FELSPAR PORPHYRY
1088-1106 Fine grey, greenish matrix, 5-10%, felspar 10%
1106-1113 Fine grained grey banded matrix, 5% white felspar 5-10%
1113-1134 Pink grained pinkish cream matrix well bedded
Other - well formed to 5mm, 10-15%
Felspar - fine grained pinkish grey with indistinct margins, 5%

1134-1165 SILTSTONES, minor SHALES.
1134.6-1156 dark grey siltstones as for 88.6-110.1m

1156-1189 Pale greenish grey (sericitic)/thinly bedded siltstones with minor shales, disrupted and fractured.

1189-1205 QUARTZ FELSPAR PORPHYRY
Chloritic matrix fine grained matrix with pinkish and greyish patches, sometimes more highly chloritic, up to creamy
Phenocrysts: Silica - fine grained, rounded, commonly 4-5 mm with rounded large grains up to 7 mm, 15%
Felspar - white, stone bronzed, commonly to 2 mm, variable 1-10%, average 3-5%

1205-1278 SILTSTONES AND MINOR SHALES
1205-1267 Dominantly greenish grey siltstones - thinly bedded, clay rich siltstones and shaly shales. Still fractured and broken, chloritized with some veins (recrystallized silica?)
1267-1278 Greenish grey finely bedded siltstones and shales, minor disruption and later fracturing

1278-1385 QUARTZ FELSPAR PORPHYRY
1278-1299 Matrix very siliceous - grey, hard grey fine grained and almost translucent
Phenocrysts - Silica - rounded bluish grains to 4 mm - 15-20%
- Felspar - 1 creamy white, irregularly shaped aggregates finely intergrown with groundmass - probably altered to a soft greenish brown material. Variable 10-25%, average 10-15%
Some patches up to 1-2 m have a fine grained white matrix with discrete grains up to 3mm, 10%, felspar 1-2 mm, 7% and pyromorphite 10-15%.

(continued next page...)

Prospect or project: Mount Gilruth
Logged by: L. GRADIENT
date: 4/2/80

HOLE No. MGP 25
LOG SHEET 2 OF 3
from 0 m to 124.0 m

DEPTH from-to : ROCK UNIT (capital letters, underlined) Depth : Detailed rock description and notes indented about 15 mm.	GRAPHIC LOG	STRUCTURAL AND VEIN INFORMATION	MINERALISATION	NOTES
0-260 TRICONE TO 30m - NO CORE.				
260-377 INTERBEDDED SILTSTONES AND QUARTZITES Mainly medium grey quartzites 1-10cm interbedded with dark grey shaly rich siltstones. Extensively disrupted and brecciated - the siltstones form discontinuous lenses, often strongly foliated/shaly planes and rather less in strong breccia - like zones with isolated irregular clasts of quartzites and siltstones.		264-320 65 pg-po disseminated black siltstone bands, rarely in sandstones as blebs and grains.		3%
377-460 Gradual decrease in proportion of quartzites - thickly bedded sandy siltstones/shaly rich siltstones black and greenish grey in colour (results?), minor disruption and some quartzite beds to 5 cm.		320-377 pg finely disseminated, rarely in veinlets with py, carbonate.		1-2%
460-579 SILTSTONES, minor SHALES and TRANSITIONS As for 5.3-264 with the addition of sparse medium grey fine grained sandstones to 0.8m		377-689 py finely disseminated, sparse carbonate, py-cpy veinlets.		1-2%
579-689 Gradually becomes better bedded, black shales increase in abundance and siltstones begin to acquire a greenish tinge				
689-820 INTERBEDDED SILTSTONES AND QUARTZITES As for 264-377		689-820 py disseminated throughout, and in more blebs to 10 x 5 mm. Some are carbonate-py-fg veinlets.		2%
820-1002 THINLY BEDDED SILTSTONES Hard greenish grey siltstone (rock) - siltstones with minor interbedded pale grey quartzose siltstones. Disrupted and finely fractured by later shearing - carbonate and clay films along fractures.		820-1002 Minor Pyrrhotite - py-carbonate veinlets to 10 x 3 mm - typically 2% py - pyrrhotite - sparse veining - minor disseminations.		1%
1002-1088 QUARTZ FELSPAR PORPHYRY 1002-1017 Matrix creamy white, fine grained, fourth-banded grains to 2 mm, mostly 1-3 mm, 7-10% - Felspar - black and bronzed/brown - altered, with some reddish weathered cores, max 2mm, 5-10% 1017-1049 Matrix creamy white, with a faint pinkish cast. Well jointed and better 30 cm - 1 m bedded, white Phenocrysts: Silica, clear or / white and rosebud - rounded grains to 6 mm, occasional 5-10 cm patches of almost pure silica in groundmass, 20% Felspar - brownish cream altered. Rounded grains to 2 mm, some extremely hard must have rather indistinct outlines. Variable percentage 1-10%		1002-1088 60-65 py-(sph) veinlets 10-15 mm, 10-15% py with minor sph, as disrupted grains and veinlets to 10 x 3 mm - typically 2% py - minor pyrrhotite - sparse veining -		10-15%
1049-1088 SILTSTONES, minor SHALES. Dark grey thinly bedded clay rich siltstones with dark grey shale beds - consistently disrupted with intensely deformation.		1049-1088 py-po veinlets to 10 mm, 10% py, minor pyrrhotite		10-15%
1088-1234 QUARTZ FELSPAR PORPHYRY 1088-1106 Fine grey, greenish matrix, 5-10%, felspar 10% 1106-1113 Fine grained grey banded matrix, 5% white felspar 5-10% 1113-1134 Pink grained pinkish cream matrix well bedded Other - well formed to 5mm, 10-15% Felspar - fine grained pinkish grey with indistinct margins, 5%		1088-1134 py-(sph) veinlets to 10 mm, 10% py, trace sph, weak trace hematization (?) and fine grained pyrrhotite		10-15%
1134-1165 SILTSTONES, minor SHALES. 1134.6-1156 dark grey siltstones as for 88.6-110.1m		1134-1165 py-po veinlets to 10 mm, 10% py, trace sph, weak trace hematization (?) and fine grained pyrrhotite		10-15%
1156-1189 Pale greenish grey (sericitic)/thinly bedded siltstones with minor shales, disrupted and fractured.		1156-1189 5% py, fine grained throughout, 10% py-(sph) veinlets to 10 mm		10%
1189-1205 QUARTZ FELSPAR PORPHYRY Chloritic matrix fine grained matrix with pinkish and greyish patches, sometimes more highly chloritic, up to creamy Phenocrysts: Silica - fine grained, rounded, commonly 4-5 mm with rounded large grains up to 7 mm, 15% Felspar - white, stone bronzed, commonly to 2 mm, variable 1-10%, average 3-5%		1189-1205 py-(sph) veinlets to 10 mm, 10% py, trace sph, weak trace hematization (?) and fine grained pyrrhotite		10-15%
1205-1278 SILTSTONES AND MINOR SHALES 1205-1267 Dominantly greenish grey siltstones - thinly bedded, clay rich siltstones and shaly shales. Still fractured and broken, chloritized with some veins (recrystallized silica?) 1267-1278 Greenish grey finely bedded siltstones and shales, minor disruption and later fracturing		1205-1278 5% py, fine grained throughout, 10% py-(sph) veinlets to 10 mm, 10% py, trace sph, weak trace hematization (?) and fine grained pyrrhotite		10-15%
1278-1385 QUARTZ FELSPAR PORPHYRY 1278-1299 Matrix very siliceous - grey, hard grey fine grained and almost translucent Phenocrysts - Silica - rounded bluish grains to 4 mm - 15-20% - Felspar - 1 creamy white, irregularly shaped aggregates finely intergrown with groundmass - probably altered to a soft greenish brown material. Variable 10-25%, average 10-15% Some patches up to 1-2 m have a fine grained white matrix with discrete grains up to 3mm, 10%, felspar 1-2 mm, 7% and pyromorphite 10-15%.		1278-1385 5% py, fine grained throughout, 10% py-(sph) veinlets to 10 mm, 10% py, trace sph, weak trace hematization (?) and fine grained pyrrhotite		10-15%
(continued next page...)				

Continued from previous page.

125.9-138.58 Change in character of porphyry
Matrix creamy white, finely crystalline
Phenocrysts: Qtz - rounded and embedded grains to 4mm, average 2mm, 15%
Felspar - altered to hard brownish material (topaz?), distinct grains to 2mm 7-10%.

121.3-122 weak trace fine brownish black cassiterite
122-123 weak trace cassiterite, Fluorite 3%, arsen 1%
123-124.8 trace cassiterite, Fluorite, arsen.
124.8-125.9 cassiterite almost 1%, grains to 2mm.

125.9-138.58 Muscovite 10% as well defined blebs and grains to 5x7mm. Trace Sp, brown Fluorite and weak trace finely disseminated brownish black cassiterite. Concentrations variable 5-25%, Sp locally reaches 5-10% for a few cm.

138.58-144.30 SILTSTONES AND SHALES thinly bedded
Dark grey clay rich siltstones, thinly interbedded with lighter grey quartzose siltstones and thin black shale beds with pyrite laminae. Some of the more massive siltstone beds have thin sandy intervals 1-2cm. Well bedded, with minor soft sediment disruption and minor fracturing/microfaulting. Upper 1-1.5 m is hard and silicified.

Contact 65°

← 140.3 Bedding 60°
← 141.5 Bedding 35°
← 142.5 Bedding 70°
← 143.5 Bedding 50°

138.58-144.30 Py as thin bedded laminae with black shales and finely disseminated in some shale and siltstone beds. Some very thin Py stringers to 1mm and sparse qtz-Py veinlets.

END OF HOLE 144.3 m.

5 cm

DEPTH from-to : ROCK UNIT capital letters, underlined
Depth : Detailed rock description and notes indented about 15 mm.

GRAPHIC LOG

STRUCTURAL AND VEIN INFORMATION
ATTITUDES = Angle between fracture and CORE AXIS

MINERALISATION

NOTES

METALS EXPLORATION LIMITED

MINERAL EXPLORATION
DRILL LOG
Scale 1:100

Prospect or project: MOUNT BISCHOFF
Logged by: G. BRADBENT. date: 8/2/80
Written up 4/6/80

HOLE No. MBD 25
LOG SHEET 3 OF 3
from 120 m. to 144.3 m.