MBD.37

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

028497

0-3.0 (3.0)	0-3.0 TRICONE DRILLED - NO CORE.			
3.0-71.0 (68.0)	3.0-71.0 THINLY BEDDED SILTSTONES and SILTY SHALES with interbedded MASSIVE QUARTZITES Greys, medium hard siltstones, some pale grey and quartzose, grading into fine sandstones, others clay rich and darker grey. Thinly bedded (< 5 cm), quartzose beds are silicified, some soft-sediment brecciation and later contortion, minor folding and disruption. Hard grey fine → 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. Core is well fractured and broken, particularly near top of interval - two sets of intersecting fractures 20-40° CA with opposite senses, and partings along bedding planes.	10/11/9	3.0-17.5 py, qtz. Py finely dissem in qtzites, with qtz as stringers + blebs along small fracture zones. TOTAL 2-3%. 17.5-71.0 py, dissem as above, also in veinlets, etc with qtz, and as sparse thin bedded laminae. 3%. 50.5-58.5. As above; 3-5%.
71.0-72.3	71.0-72.3 QUARTZ-FELSPAR PORPHYRY. Qtz 8-10% Felsp 1-3% 50°	1	py, trace sp. 7-10%.
72.3-102.4 (30.1m)	72.3-102.4 QUARTZITES and THINLY BEDDED SILTSTONES Hard grey quartzites, with minor quartzose siltstones, brecciated. As for 3-71.0m, some are a pale brownish grey-tourmaline rich? 55° Gradual Change	11/10	py, qtz, marcasite in thin veinlets and finely stringers. py is dissem. in qtzites. TOTAL 3-5%.
102.4-108.1	102.4-108.1 THINLY BEDDED SILTSTONES, SILTY SHALES, MINOR QUARTZITES As for 3-71.0, but weakly sericitic	10/9/11	py as thin bedded laminae + stringers with qtz, marcasite. 3-5%.
108.1-125.8 (17.7)	108.1-125.8 QUARTZ FELSPAR PORPHYRY 70° Matrix f.gr., brownish cream in colour, well fractured and porous due to removal of sulphides + felspar by weathering. Phenocrysts: Qtz to 7x6 mm, 20% Felspar - not apparent; altered or removed by weathering. 30°	1	py, pitted + weathered, with some marcasite rims. Disobe grains to 4 mm and f.gr. aggregates to 5x3 mm. 10-15%. Weak trace arseno, cp.
125.8-135.0 (9.8m)	125.8-138.0 THINLY BEDDED SILTSTONES, MINOR QUARTZITES some SILTY SHALES. As for 102.4-108.1.	10/11	py, qtz in veinlets, stringers and irregular blebs, some dissem in qtzites. 5-7%.
	END OF HOLE 135.0 m.		

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: 26.3.80

HOLE No. MBD 37
Sheet of

028498

REPORT No.

METALS EXPLORATION LTD.
& SUBSIDIARY COMPANIES

MINERAL EXPLORATION
DIAMOND DRILL LOG

MBD-37

Prospect, area, project or mine. MOUNT BISCHOFF.

HOLE No. MBD37

COLLAR LOCATION

	Grid name	Rectangular space co-ordinates PLANAR CO-ORDINATES		ELEVATION
(1)	MBJV	2094.42 N	1260.06 E	683.26 m
(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 70°

Total length 135 m.

Commenced: 13 / 3 / 80
Completed: 17 / 3 / 80

Drilling contractor
NORMAC AUST PTY LTD

Rig type
LONGYEAR 38

Core size and non-coring (NC)

TRICONE	0	TO	3.0 m
NQ	3.0	TO	53.8
BB	53.8	TO	135.0 m
		TO	
		TO	
		TO	

Details of down hole location-survey methods.
TROPARI every 30 m.

Purpose of drilling and anticipated lengths to targets.
To intersect possible tin mineralisation in 'Smithope' porphyry dyke 93-113 m. Planned depth of hole: 120 m.

Results of down hole location-survey.

LENGTH FROM COLLAR	W.C. BEARING type magnetic	DIP
32.0 m	325	68°
72.5 m	168° ?	68°
102.5 m	154° 30'	65°
132.5 m	079° ?	69°

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. BRANDENT	LOGGED BY	LOGGED BY
FROM 0 TO 135.0 m	FROM ____ TO ____	FROM ____ TO ____
DATE 23.3.80	DATE	DATE

Company managing exploration programme.
METALS EXPLORATION LTD

HOLE No. MBD 37
Log sheet 1 of 3

028499

Depth markers: 0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84

Rock unit descriptions

TRICONE TO 3.0 m – NO CORE.

3.0 – 32.0 THINLY BEDDED SILTSTONES, SHALES minor QUARTZITES (10/11/9)

Grey medium hard thinly bedded (1-2cm) quartzose and clay rich siltstones with silty shale laminae (to 5mm). Intervals of siltstone to 5m are separated by hard grey brecciated quartzites, poorly bedded, to 2m.
Well fractured and broken – two sets of intersecting fractures at low angles LCA, combined with a parting along shaley beds. Proportion of shales increases with depth, with some thin bedded pyrite laminae after 17.5m.
Well bedded, with minor disruption and contortion.

32 – 50.5 SILTSTONES with QUARTZITES (10/11)

Thinly bedded quartzose siltstones (pale grey, hard) with minor interbedded clay rich siltstones.
Hard grey brecciated quartzites with fine dark dendritic staining about brecciation fractures.
Quartzites to 2.5m thick, divided by short intervals thinly bedded siltstones, minor disruption and soft sediment contortion.

50.5 – 65.8 THINLY BEDDED SILTSTONES and SHALES (10/9)

Fairly greenish grey, clay rich siltstones with thin shaley beds, interbedded on a 1-2 cm scale with pale grey quartzose siltstones. Some sparse silty shale beds are very dark grey, almost black and carbonaceous.
Sparse thin bedded yellowish clay laminae in shaley intervals – decomposed bedded py?
Well bedded, minor disruption and later fracturing.

65.8 – 71.06 QUARTZITES – with SILTSTONES (11/10)

See 32-50.5 for description, the quartzites are not so silicified – well fractured and slightly weathered.

71.06 – 72.30 QUARTZ FELSPAR PORPHYRY
Fine grained buff coloured matrix, weakly banded ∠ 60° LCA.
Qtz rounded grains < 3mm, 5-7% ; Felspar, altered brownish, < 1mm, 1-2%.

72.30 – 102.4 SILTSTONES with QUARTZITES (10/11)

Thinly bedded pale grey quartzose siltstones with minor clay rich greenish grey siltstones.
Hard brown grey quartzites to 2m, brecciated and disrupted.
The siltstones gradually acquire a brownish tinge with depth – tourmaline rich?
Minor soft sediment disruption with later fracturing – some minor 1-2 cm py/qtz zones scattered sporadically throughout.

Structural and vein information

- 8.2 Bedding 70°
- 11.1 Bedding 55°
- 14.8 Bedding 65°
- 16.5 Bedding 55°
- 19.3 Bedding 65°
- 21.9 Bedding 70°
- 23.2 Bedding 60°
- 25.8 Bedding 60°
- 28.3 Bedding 80°
- 30.0 Bedding 65°
- Gradual Change
- 33.4 Bedding 55°
- 35.4 Bedding 80°
- 38.0 35mm vuggy py-qtz-marcasite vein, 48°
- 38.6 Bedding 70°
- 42.4 Bedding 65°
- 44.8 Bedding 45°
- 47.6 Bedding 65°
- Gradual Change
- 50.5 Bedding 55°
- 53.4 Bedding 55°
- 56.8 Bedding 70°
- 59.9 Bedding 75°
- 62.9 15 mm arseno, py vein, 60°
- 65.6 Bedding 55°
- 69.2 Bedding 60°
- Contact 50°
- Contact 60°
- 73.0 Bedding 70°
- 76.4 Bedding 70°
- 79.2 Bedding 70°
- 82.5 Bedding 75°

5 cm

Mineralisation

Mineralisation	Percent
3.0-17.5 py, finely dissem. and as blebs along small fracture zones, thin veinlets.	2-3%
17.5-32.0 py dissem as above and in stringers with qtz. Some bedded laminae of py in shale beds.	3%
32.0-50.5 py, finely dissem in quartzose siltstones and sandstones, minor thin veinlets and stringers with qtz.	2-3%
50.5-58.5 py as blebs to 5mm, finely dissem in some siltstone beds and as thin veinlets and stringers.	3-5%
58.5-65.8 py, finely dissem and as thin veinlets and stringers	2-3%
65.8-71.06 py, finely dissem and as thin veinlets and stringers with minor qtz	2-3%
71.06-72.30 pitted py, mccsp as fine grained aggregates, irregularly distributed parallel to banding in matrix	7-10%
72.30-102.4 py/marcasite-qtz veinlets and irregular stringers to 5mm. Sparse finely dissem py. in quartzites.	3-5%

DEPTH from-to : ROCK UNIT capital letters, underlined Depth : Detailed rock description and notes indented about 15mm	DEPTH POINTER	GRAPHIC LOG (SEE LEGEND ON SHEET 1)	DEPTH POINTER	STRUCTURAL AND VEIN INFORMATION (ATTITUDE = Angle between feature and LONG CORE AXIS)	MINERALISATION	PERCENT	NOTES

METALS EXPLORATION LIMITED

MINERAL EXPLORATION DRILL LOG
Scale 1:100

Prospect or project	MOUNT BISCHOFF
Logged by	C. BROADBENT
date	23/3/80
HOLE No.	MBD 37
LOG SHEET	2 OF 3
from … m. to … m.	

Prepared 10/6/80

028500

Rock unit descriptions

See previous page.

<u>102.4 - 108.13 THINLY BEDDED SILTSTONES AND BLACK SHALES.</u>

Faintly greenish dark grey siltstones thinly interbedded with grey and black shale laminae.
Well bedded, minor brecciation and soft sediment disruption.

<u>108.13 - 125.79 QUARTZ FELSPAR PORPHYRY.</u>

108.13 - 108.78 Matrix fine grained and creamy coloured.
Qtz, well formed to 2.5 mm, 10%
Felspar - trace brownish grains to 2 mm.

108.78 - 124.7 Matrix - fine grained, with sparse greyish siliceous patches. Mostly brownish cream due to weathering, well fractured and pitted by weathering.
Phenocrysts; Qtz - as rounded grains to 7x6 mm, mostly < 3 mm, 20-25%
Felspar - sparse white grains in groundmass, rest has possibly been removed by weathering, or altered, and resembles qtz grains.
Overall has a 'sugary' texture - abundant phenocrysts.

124.7 - 125.15 As for 108.13 - 108.78.
125.15 - 125.79 Matrix greenish grey, fine grained; Qtz to 2.5 mm, 1%; Felspar soft, white and weathered to 2 mm, 20%.

<u>125.79 - 135.0 THINLY BEDDED SILTSTONES / SHALES minor QUARTZITES</u>

Medium greys, silicified near contact, otherwise quite soft, some beds weakly sericitic (clay rich). Some pale grey quartzose siltstones to 2 cm occur sporadically throughout; occasionally sandy and pale brownish grey.
Quartzites are light brownish greys, massive and brecciated to 0.5 m thick; very hard.
Quite well bedded, with disrupted and contorted intervals to 0.5 m, and minor fracturing. Core is well broken, mainly along bedding planes.

END OF HOLE 135.0 m.

Graphic log

10/9/(c) (at 102.4)

10/11/9 (at 125.79)

Structural and vein information

- ← 85.5 Bedding 55°
- ← 88.4 Bedding 85°
- ← 91.2 Bedding
- ← 94.3 Bedding 75°
- ← 96.4 Bedding 55°
- ← 99.5 Bedding 70°
- ↙ Gradual Change
- ← 102.6 Bedding 80°
- ← 104.7 Bedding 60°
- ↙ Contact 70°
- ↙ Contact ragged and indistinct, 30°
- ← 127.7 Bedding 70°
- ← 130.7 Bedding 60°
- ← 132.0 Bedding 65°
- ← 134.7 Bedding 65°

Mineralisation

Mineralisation	Percent mineralisation (visual estimate)
See previous page.	
102.4 - 108.13 py, finely dissem in siltstones, as finely bedded laminae < 1 mm in black shales. Sparse thin qtz - py - marcasite veinlets and stringers.	3-5%
108.13 - 108.78 py, marcasite as distinct grains to 2.5 mm	5-7%
108.78 - 124.7 py, pitted and weathered with minor marcasite in discrete grains to 4 mm. 110 - 124.7 py occurs mainly as small fine grained aggregates to 5x3 mm, trace cassiterite, wsc10. Pitted and weathered. originally 20-25%? Sparse qtz-py-cassit veining on joint faces.	10-15%
124.7 - 125.15 py, minor marcasite	7-10%
125.15 - 125.79 fluorite, some fine black tourmaline?	1%
125.79 - 133.3 py, finely dissem along bedding and as thin veinlets and stringers with qtz.	3%
133.3 - 135.0 py, dissem, mainly in veinlets < 5 mm with qtz and in irregular stringers.	5%

Form legend

DRILL ADVANCE	LOST CORE ZONE	CORE LENGTH RECOVERED	% RECOVERY ESTIMATE OR	DEPTH from-to : ROCK UNIT capital letters, underlined. Depth : Detailed rock description and notes indented about 15 mm	DRILL LOG DEPTH TAG	DEPTH POINTER	GRAPHIC LOG SEE LEGEND ON SHEET 1	DEPTH POINTER	STRUCTURAL AND VEIN INFORMATION ATTITUDE = Angle between feature and LONG CORE AXIS	MINERALISATION	PERCENT MINERALISATION Visual estimate	NOTES

METALS EXPLORATION LIMITED

MINERAL EXPLORATION DRILL LOG
Scale 1:100

Prospect or project: MOUNT BISCHOFF	HOLE No. MBD 37
Logged by: G. BROADBENT date 23/3/80	LOG SHEET 3 OF 3
	from 84.0 m. to 135.0 m.

Prepared 10/6/80

SAMPLE NO. SPLIT CORE	SAMPLE NO GROUND CORE	FROM m	TO m	INTER-VAL m	Sn SPLIT	Sn GROUND	Cu	Pb	Zn	Ag	W	As	Check Sn	Bulked Assays
97836		71.0	72.3	1.3	3500									
37		106.1	108.1	2.0	260									
38		108.1	110.1	"	1150		290	80	96	2	20	32		
39		110.1	112.1	"	3450		490	100	190	3	30	600		
840		112.1	114.1	"	6100		360	55	170	<1	130	410	7000	Pulp check.
41		114.1	116.1	"	3800		570	60	220	1	45	700		
42		116.1	118.1	"	4650		400	20	290	1	30	920		
43		118.1	120.1	"	3350		430	50	200	<1	60	960		
44		120.1	122.1	"	3550		490	85	240	2	30	1400		
45		122.1	124.1	"	3500		590	110	390	2	20	1350		
46		124.1	125.8	1.7	2400		200	65	620	<1	20	220		
47		125.8	127.8	2.0	50									

0285 01

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.