SUMMARY DRILL LOG MBD 16

			Veins over 50 mm	Mineralisation (excluding veins over 50 mm)	
TRICONE TO 3 m - No Core		0			
CORE BADLY BROKEN - fragments of grey pink DOLOMITE and sparse green talc/serpentine fragments	3 - 9.60 (6.60)	2/7	Poor core recovery to 29.5 m ≈ 40%	Fragments of Py, Fluorite and green serpentine/talc.	5%
PUGGY FAULT ZONE - crushed and shattered - light brown friable silty clay with intervals of sticky black laminated clay with fragments of dolomite	9.6 - 20.0 (10.4)	10 F		Fragments of py, fluorite and rare arsen	1-2%
DOLOMITE SULPHIDE LODE (serpentine/talc type - carbonate)	20.0 - 23.0 (3.0)	20 7/5	21.3 - 23 shattered by faulting	Remnant patches Py, trace arsen, sp fluorite	2%
QUARTZ-FELSPAR PORPHYRY. Creamy white matrix, alternating with pinkish cream. Phenocrysts - qtz white and turbid, rounded grains in variable proportions 5 - 30% - Felspar - white, soft and weathered, showing variable alteration to brown and yellowish hues. 5 - 15% up to 2 mm. Well jointed/fractured, crushed zones throughout due to faulting. In places percentage of qtz/felspar increases to almost 50% 'sugary' texture.	23.0 - 55.97 (32.97)	30 1 40 50	Broken contact 50° (?) ← Fault zone, core shattered and broken. ← Contact 60°	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, arsen and rare cassiterite as small discrete grains. Some sparse qtz-py-arsen veinlets.	10-15%
Faulted and shattered DOLOMITE SULPHIDE LODE - Banded serpentine/talc.	55.97 - 62.20 (6.23)	7/5 60		Weathered py, arsen, schorl tourmaline and finely disseminated fluorite	10%
QUARTZ FELSPAR PORPHYRY. Qtz 25% Felspar	62.20 65.5 (3.3)	1	← Contacts broken.	Py (pitted) trace sp, fluorite.	2%
Variably altered GREY SILICEOUS DOLOMITE. Brecciated, with weak alteration to talc-serpentinite along later fracturing. Margins of fractures commonly bleached/recrystallised to dolomite-calcite-qtz	65.5 - 82.5 (17.0)	70 2/3 80	← 50 cm massive talc/serpentinite with py marcasite, sp, arsen. ← 25 cm py, marcasite, arsen, sp 90% qtz-carbonate and talc 30°	Sp, py trace marcasite, arsen Scattered blebs and grains, and thin fracture fillings with qtz talc-serpentinite and fluorite.	1%
Thinly Bedded SILTSTONES AND SILTY SHALES. Upper 3 m greenish and silicified with interleaved altered dolomite. Dark grey, well bedded, with some brecciation and contortion. Beds 1-5 cm.	82.5 - 100.0 (17.5+)	90 10/9 100	← Gradual Change. ← Bedding 60° ← Bedding 55° ← Bedding 70° ← Bedding 65° ← Bedding 75°	po, py, finely disseminated some sparse thin qtz-carbonate-fluorite veinlets	2%
END OF HOLE 100.0					

028383

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								
96469		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		95	85	4200	1	45	65		
75		15.0	17.0	"	360		85	330	4400	1	55	130		
76		17.0	19.0	"	5900		460	160	5400	2	65	1250		
77		19.0	21.0	"	2.14%		640	160	3500	2	95	620		
78		21.0	23.0	"	2.14%		660	360	5100	3	80	230		
79		23.0	25.0	"	740		300	140	290	1	75	1200		
480		25.0	25.6	0.6	680		360	33	110	1	40	560		
81		25.6	28.1	2.5	1.52%		410	255	5800	2	60	860		
82		28.1	30.1	2.0	760		120	320	7500	2	20	140		
83		30.1	32.1	"	210		48	290	320	1	15	25		
84		32.1	34.1	"	1150		170	840	1.30%	8	30	180		
85		34.1	36.1	"	520		270	220	790	10	10	370		
86		36.1	38.1	"	6700		430	760	2200	21	60	580		
87		38.1	40.1	"	5600		560	350	1700	21	30	960		
88		40.1	42.1	"	2450		530	150	1000	12	30	1750		
89		42.1	44.1	"	3400		390	90	330	8	30	1350		
490		44.1	46.1	"	2350		320	150	4900	9	35	370		
91		46.1	48.1	"	430		230	300	3100	7	15	90		
92		48.1	50.1	"	500		260	660	1500	9	25	110		
93		50.1	52.1	"	660		200	640	450	9	15	95		
94		52.1	54.1	"	2000		210	140	360	4	10	35		
95		54.1	55.9	1.8	2000		240	70	200	2	25	490		
96		55.9	57.9	2.0	1.26%		640	100	330	1	110	3050		
97		57.9	58.2	0.3	1.25%		670	100	630	1	65	2500		
96498		58.2	59.5	1.3	7500		560	180	800	8	50	1400		

Notes :— Sn by XRF B1 Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT A

ASSAY SUMMARY SHEET HOLE NO. MBD 16

SAMPLE TYPE : DRILL CORE FROM 3.0 TO 59.5

0 2 8 3 4

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								
96499		59.5	62.2	2.7	9700		590	115	780	2	75	1250		
97260		62.2	65.5	3.3	2900									
97710		65.5	67.5	2.0	170									
11		67.5	69.5	"	30									
12		69.5	71.5	"	28									
13		71.5	74.0	2.5	1150									
97209		74.0	76.0	2.0	120									
210		76.0	77.88	1.88	190									
11		77.88	79.88	2.0	2360									
97714		79.8	82.5	2.7	660									

Notes :— Sn by XRF B. Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT B

ASSAY SUMMARY SHEET HOLE NO. MBD16

SAMPLE TYPE : DRILL CORE FROM 59.5 TO 825

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		1.52%								
	2	20.0	21.5	1.5		1.41%								
	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	"		3300								
	8	71.5	74.5	"		5000								

Notes :—

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT

ASSAY SUMMARY SHEET HOLE NO. MBD16

SAMPLE TYPE : DRILL CORE FROM 17.0 TO 74.5

SLUDGE

028387

REPORT No.

METALS EXPLORATION LTD.
& SUBSIDIARY COMPANIES

MINERAL EXPLORATION
DIAMOND DRILL LOG

Prospect, area, project or mine. Mt Bischoff

HOLE No. MBD 16

COLLAR LOCATION

Grid name	Rectangular space co-ordinates PLANAR CO-ORDINATES		ELEVATION
(1) MBJV	1859.90 N	1059.85 E	635.90
(2)	N	E	
(3) Aust. Map Grid PRECISE / APPROX.	mE	mN	m A.H.D.

1:250 000 Sheet No. BURNIE SIC 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

_____ grid (1)

_____ grid (2)

_____ grid (3)

_____ true

Inclination at collar 90°

Total length 100.00 m

Commenced: 15 / 1 / 80

Completed: 22 / 1 / 80

Drilling contractor LONGYEAR AUST

Rig type BBS 1

Core size and non-coring (NC)

NQ		
NC	0	TO 3.0
HQ	3.0	TO 58.2
BQ	58.2	TO 100.0
		TO
		TO
		TO

Details of down hole location-survey methods.

TROPARI.

Purpose of drilling and anticipated lengths to targets.

To investigate dolomite mineralisation from 0-32 m, the white feldspar porphyry dyke 29-49 m and further dolomite 49-110 m.

Results of down hole location-survey.

LENGTH FROM COLLAR	W.C. BEARING type Azimuth (Mag)	DIP
50.0 m	094	89°
98.5 m	233	88°

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 G. BROADBENT	LOGGED BY	LOGGED BY
FROM 0 TO 100.0 m	FROM TO	FROM TO
DATE 27.1.80	DATE	DATE

Company managing exploration programme.

METALS EXPLORATION LTD

HOLE No. MBD-16

Log sheet 1 of 2

TALONE TO 3.0m - NO CORE.

3.0 – 9.60 DOLOMITE weakly recrystallised and fractured.
Flaggy bedded and broken – fragments & washed grey sediment. Weathered – chalky textured dolomite and minor clay. Intervals – cuttings fragments. Some pieces are lightly mottled and recrystallised with minor calcite and qtz and weak talcose alteration.

Pieces with wispy recrystallised carbonate, fissures and blebs of fg. muscovite. Rare cross qtz and fg. sulphides.

9.60 – 17.20.0 FAULT PUG (DOLOMITE/CLAY bulked)
Incoherent black and brown muddy clay with minor fragments & some dolomite and rare QTZ.
9.6–12.2 Fine black clay thickened with pale grey clay material crushed rock to 2–3 mm. Fragments strong grey dolomite & rare sulphide
12.2 – 14.2 Soft friable grey – brown clay with dolomite fragments and pieces of a hard pinkish brown finely crystalline bearing material – the carbonate?
14.2 – 17.15 Laminated black clay with white and brownish grey friable partings.

96-102 trace fg. fluorite (an unusual occurrence) and reversed grains.

102-175 fg. rare wispy qtz + muscovite. Some wispy carbonate veins with a trace fg. fluorite.

17.5–19.6 Black and brown friable pug with a greenish talc/hydrosilicate component

19.8-20.0 trace fg. fluorite

19.6–20.0 Black laminated pug with a shiny texture and some brittle dolomite fragments

20.0 – 23.0 DOLOMITE SULPHIDE VEIN. weathered.
Highly fractured – fragments & finely interbedded greenish grey bed "impurities" and porous cryptic brown minor qtz and weight dolomite.
20.5–22.9 fine grained 5% py.

23.0 – 58.9 QUARTZ – FELSPAR PORPHYRY.
23.0 – 23.6 F.G. creamy white matrix mineral phenocrysts of qtz to 3mm, 5% felspar & 1% blue bastard qtz eyes.
23.6–25.6 Fine grained white matrix, pink and pinkish brown 23% – 24.6 (moderately) Core 10% (rounded grains to 3mm), Felspar 5-8% (some yellowish alteration & felspars)
25.6–28.2 Fault zone. Brownish / cream with quartz grains friable and leached.

28.2 – 28.8 Broken with small soggy zones. Fine grained light brownish grey stained matrix. Core 4 x 4cm, 5–7% Felspar < 2mm 5–7% pyrites 10–15%.
28.8–31.2 Matrix now as yellowish green colour, fine grained and finely bandoned. Core 10% rounded grains to 1mm. Felspar soft and weathered weakly altered 15–20%.
31.2–36.8 Matrix grey white, fine grained with minor brownish grey staining. Core 10% felspar = 2% weakly altered Pheno qtz core up to 6 mm, average 2-3. Well fractured, with some coarse ground white mica on joint faces.

28.2-29.6 fg. sp. trace mica as matrix. Abrupt ground 5mm

29.6–31.1 trace fg. muscovite. Patch of yellow and brown, some stained by weathering?

31.2–36.8 fg. sp. flooded as distinct grains to 5mm rounded 2y. to 15% in 15cm. structure broad. Black band ancient, some fine grained cassiterite.

36.8–63.2 Brownish grey stained matrix Phenocrysts increase in abundance and decrease in size – the rock has a layered texture with up to 60% qtz + felspar
Core – up to 15-20% bunted grains to 5 mm, mostly < 3mm
Felspar – some white and unaltered, mostly fine grained and had pale pinkish / brown 20% (altered).
Well fractured and broken.

85.8–63.2 fg. pitted and weathered, muscovite flecks, trace sp. cassiterite/pyrrhotite. 85 distinct grains to 3 mm and fine grained aggregates with poorly defined structure 45° to c.a.

63.2–64.6 Pale/creamy/grey matrix qtz clouds and knotlenses with indistinct outlines 2–3 mm, 15–20% felspar soft white and weathered 3–5%
64.6–67.4 As for 36.8–63.2, but felspar more variable in concentration, 2–10% well fractured and broken, pitted by weathering

pitted 63.2–67.4 fg. sp. trace sp. as above grains and fine grained aggregates

51.6–53.0 Pale creamy grey fine grained matrix – 60% to brown / marked rounded grains 15%, Felspar weakly altered 3-5% grains and irregular patches, less fractured and pitted.

53.0–57.0 Very fine ground creamy coloured matrix with lesser degree of fracturing. Some platy fg. weathering. The porphyry and core of phenocrysts decreases
Qtz – up to 1 mm 10%
Felspar – max 1 mm, 5 10%.

fg. 53-57 fg. muscovite as clusters with formed grains and aggregates of grains to 5 mm. Some individual purple and brown fluorite to 3 mm. Minor fg. muscovite veining

55.7–62.1(?) DOLOMITE SULPHIDE LODE, Fractured.
Hard green coloured 'serpentine' finely interbanded (2 mm) with Fe sulphides and a little pale green talc in irregular patches. The banding is defined and patterned / wrinkled. Minor highly pitted by weathering (removal of Fe?) and fractured and broken – most of the rock mass is a friable brown/black powdery material with fragments of the above.

Contact 60°

55.7-62.1 pitted fg. dolomite with blende veins, fine grained w. blende & galena more concentrated in the banded between layered bands, or as aggregate blebs and grains.

62.2-65.5 QUARTZ FELSPAR PORPHYRY.
Heavy core loss – some pieces of pinkish cream porphyry with a "sugary" texture – phenocrysts 60% Qtz – as rounded grains to 5mm, 25% felspar variably altered, 2–10%

Contact Broken < 55°

62.2-65.5 fg. with muscovite veins, trace fluorite, sp.

65.5–76.0 DOLOMITE
Brecciated and fractured, with core losses to 68m
Some brecciation appears to be pre faulting – fine dark grey dolomitic fractures opposite clasts of pale grey fine grained dolomite. Later fracturing was thin films of finely material along shear planes, and also mobilisation of Qtz and carbonates to 6mm thin veinlets.
Evidence of fracturing decreases with depth – core is more competent and recovery increases

Contact @ 80°

65.5-76.0 fg. muscovite, calcite/qtz. fluorite veining. The sulphides occur mainly as discrete blebs along fractures and within veins. 1%

76.0 – 77.9 ALTERED DOLOMITE
Finely veined recrystallised creamy white dolomite with talcose alteration – "shiny fractured" planes. The contact 25° is almost vertical grained talc and sugaroidal with a little pyrite

Gradual Change

76.0-77.9 fg. muscovite, calcite, qtz, trace fg. arsenic (fluorite/calcite) patches with talc/hydrosiliate or in fractured planes.

77.9 – 82.5 DOLOMITE
As for 65.5–76.0

Gradual Change

77.9-82.5 As for 65.5-76.0

82.5 – 100.0 THINLY BEDDED SILTSTONES AND SHALES.
(82.5–83.5 greenish and pinkish/cream thin dolomitic (?) laminae
Finely bedded dirty dark (shales) dark grey to silver (calcitic rock matrix). Quite well bedded with minor soft sediment recirculation and some minor folding and undulation. Scale of bedding 1–2 cm.
The shale beds are rather thin (4.5 mm) and become progressively thinner in colour towards the bottom of the hole, until they are black and carbonaceous.

82.5-100.0 pp. 5 py. dirtiness and in veinlets with qtz, calcite/talc and flooding & talc? trace large blebs pp to 2x4cm. Blebs veinlets < 5 mm.

←84.3 Bedding 60°
←88.8 Bedding 55°
←91.3 Bedding 70°
←94.2 Bedding 65°
←96.4 Bedding 75°
←98.8 Bedding 65°

END OF HOLE 100.0 m.

5 cm

DEPTH from-to : ROCK UNIT capital letters, underlined
Depth : Detailed rock description and notes
indented about 19 cm.

GRAPHIC LOG | STRUCTURAL AND VEIN INFORMATION | MINERALISATION | NOTES

METALS EXPLORATION LIMITED

MINERAL EXPLORATION
DRILL LOG
Scale 1:100

Prospect or project: MOUNT GISCHOFF
Logged by: G. BROADBENT date: 21/5/80

HOLE No. MB016
LOG SHEET 2 OF 2
from 0 m to 100.0 m