

BILLITON AUSTRALIA GOLD PTY LTD
MT TODD JOINT VENTURE, NT.

Report on Logging and Sampling of
Two Diamond Drill Holes from the Quigley's Prospect

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OPEN FILE

CR90/668A

Distribution:

1. NTDME x 1
2. Billiton Katherine x 2
3. Billiton Melbourne x 2 (BOD)
4. Billiton Melbourne x 1 (BXL)
5. Zapopan NL (Perth) x 1

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Quigley's Diamond Drill Core Report - DDH1 & DDH2

1.0 Introduction

Diamond drill core from Quigley's holes DDH1 and DDH2 was obtained from the Department of Mines and Energy by Billiton Australia Gold Pty Ltd in April 1990.

The holes were drilled by Australian Ores and Minerals, with D.M.E. assistance, during 1975 in order to test the nature of Quigley's Reef, which is situated approximately 40km north-north-west of Katherine, Northern Territory (Figure 1). Drill hole locations are shown in Figure 2. The holes were subsequently selectively sampled by A.O.M. Assay results reported by Cook (1982) were:

DDH1: 1.00m @ 7.0 g/t Au and
 1.46m @ 11.3 g/t Au

DDH2: 0.49m @ 0.4 g/t Au and
 1.50m @ 1.08 g/t Au

The depths of these zones were not reported and hence are not accurately known.

2.0 Core Logs & Assays

Billiton Australia Gold Pty Ltd obtained the core in order to gain a better understanding of the down dip extension of Quigley's Reef, as part of an ongoing exploration programme within ERL 112, at the Mt Todd prospect. This was effected by detailed core logging and subsequent assaying of 1m long, half core samples along the entire hole length. Core logs and assay results are given in Appendices 1 & 2 respectively.

Sections for DDH1 and DDH2, which incorporate both information from logs and assay results are shown in figure's 3 and 4 respectively.

3.0 Discussion

DDH1: As shown in figure 3, a shallowly westerly dipping zone of 16m @ 1.41 g/t has been inferred, which includes zones of 3m @ 1.59 g/t (54m - 57m), 3m @ 2.06 g/t (61m - 64m) and 1m @ 7.8 g/t (69m - 70m). These zones are characterized by stockwork and massive breccia veins in which, due to near total oxidation of pre-existing sulphides, ferruginous solution cavities exist. Sulphides, where visible include pyrite, chalcopyrite, arsenopyrite, pyrrhotite and sphalerite. Poor core recovery (see Appendix 1), probably due to previous selective sampling, may have led to considerable underestimation of grades within these zones.

Due to structural complexities within the area that encompasses the drill hole and the fact that the core's orientation was not recorded during drilling, bedding orientation's throughout the entire drill hole can not be accurately determined. Hence, bedding attitudes, as illustrated in figure 3, are diagrammatic and may not reflect true attitudes.

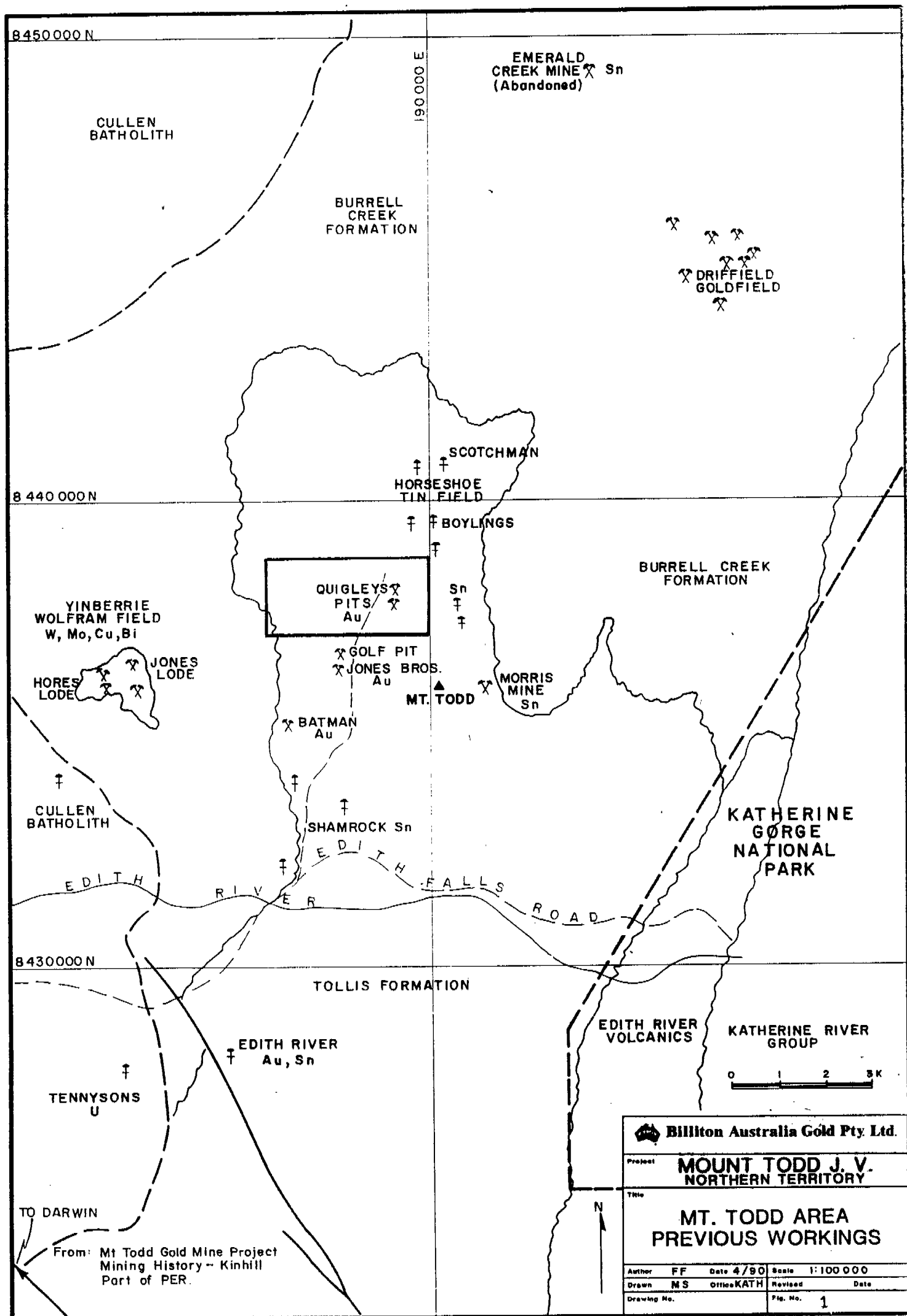
A thin (10cm wide) biotite granite dyke was intersected between 3-4m, from which one thin section was made and subsequently studied. The petrographic report for the section is given in Appendix 3.

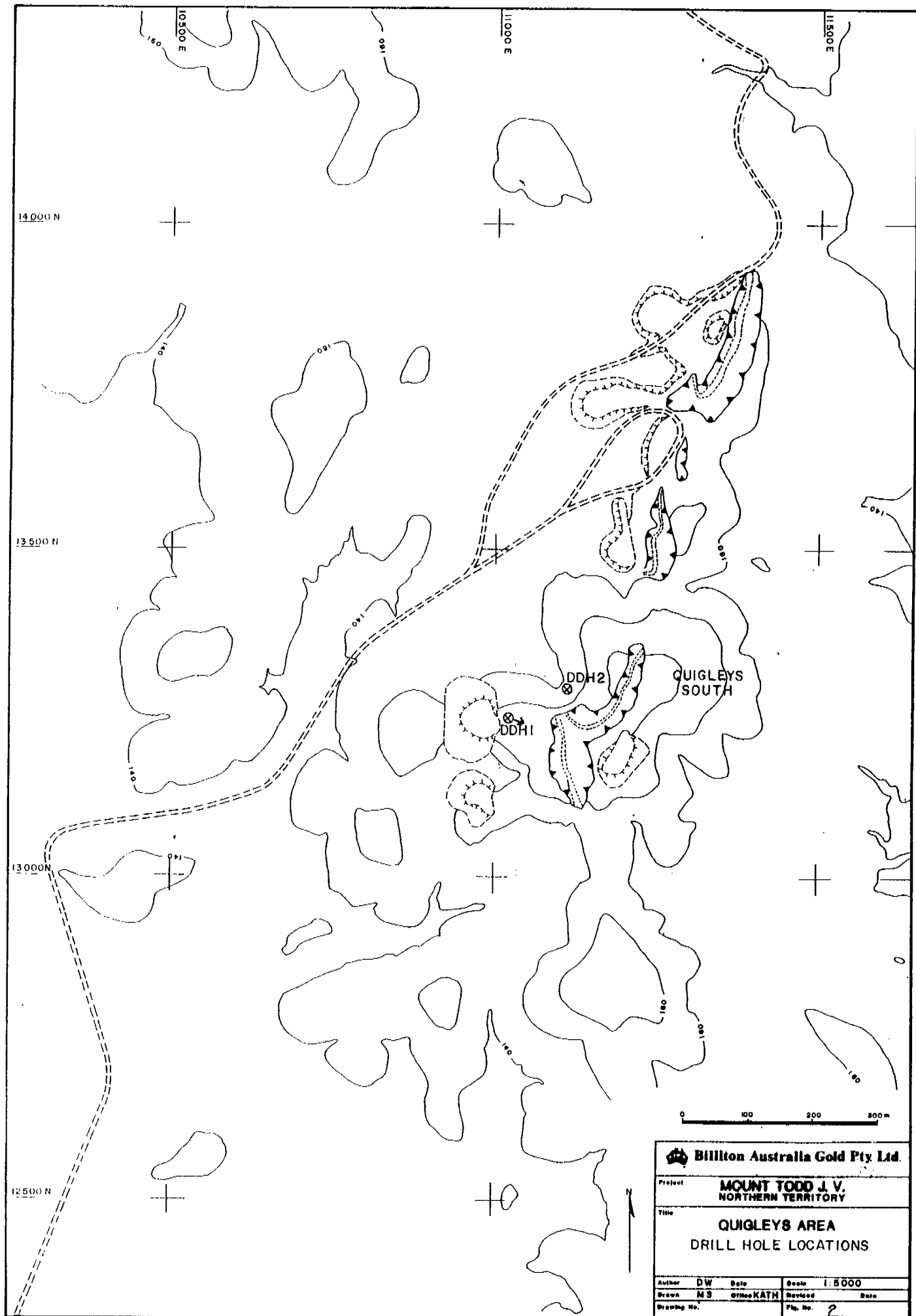
DDH2: As shown in figure 4 four mineralised zones, of an average width of 2m have been interpreted, all of which have an approximate dip of 30° to the west. Zones are typically characterized by stockwork and/or brecciated veins which contain, in order of abundance, pyrite, arsenopyrite, pyrrhotite ± chalcopyrite. Poor core recovery, probably due to previous selective sampling may have led to considerable underestimation of grades in these zones.

Given that the core's orientation was not recorded during drilling it is inferred from surface mapping that bedding dips approximately 40° to the west. Dominant lithologies consist of poorly bedded and interbedded siltstone and greywacke with less dominant units being massive greywacke and laminated siltstone.

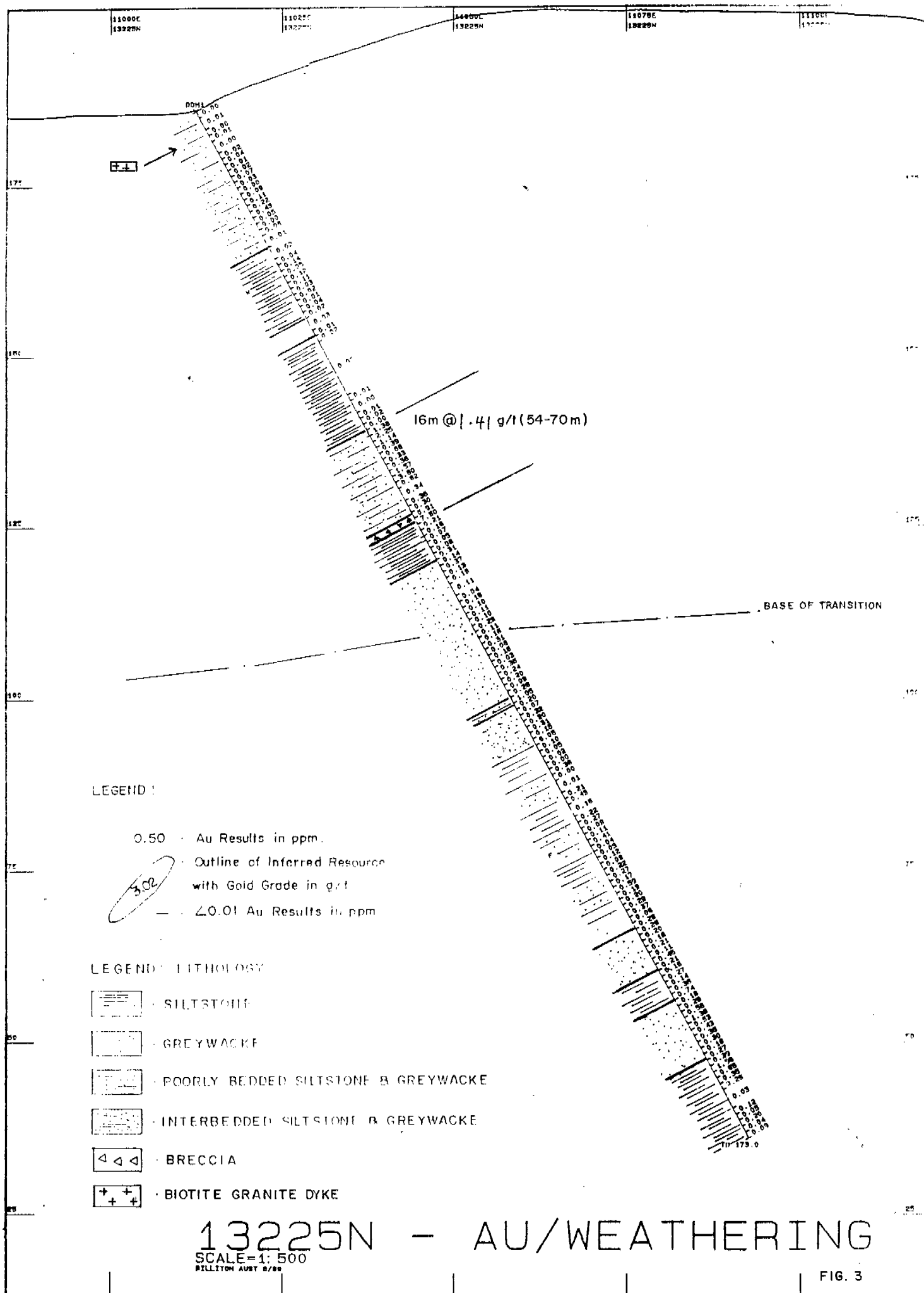
4.0 References

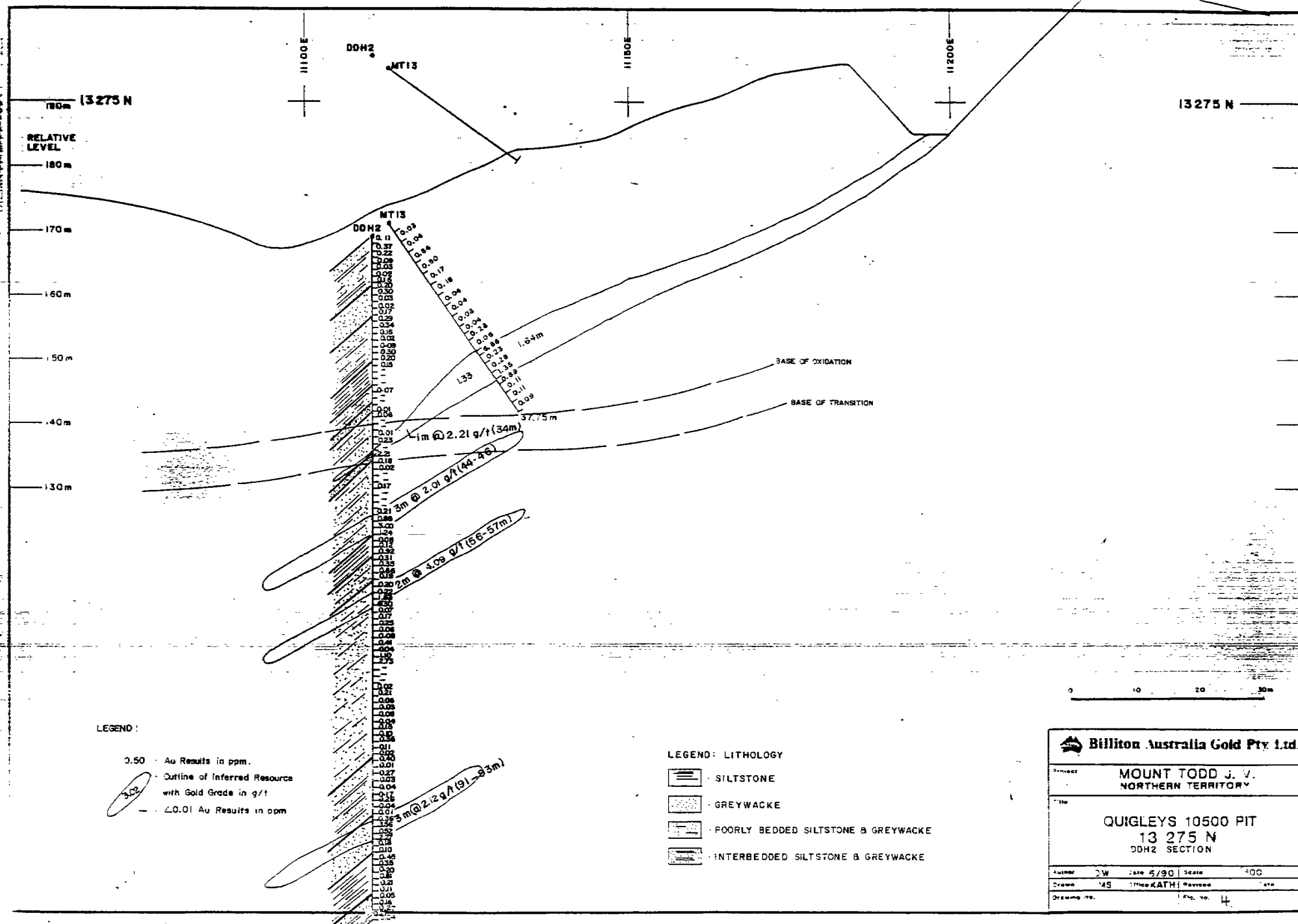
- COOK, I.A. (1982): Mt Todd Gold Prospect
Quigley Reef Drilling
C.R.A. Exploration Report No: 11134
(Unpublished)
- ENGLAND, R.N., (1990): Batman (outer zones), Tollis, Golf, Regatta and Quigley's Prospects:
Petrographic Report Billiton Australia Gold Pty Ltd Report No: 41151
(Unpublished)





Bilbiliton Australia Gold Pty Ltd.			
Project		MOUNT TODD J. V. NORTHERN TERRITORY	
Title		QUIGLEYS AREA DRILL HOLE LOCATIONS	
Author	DW	Date	Scale 1:5000
Drawn	MS	Checked KATH	Date
Drawing No.		Fig. No.	2.





APPENDIX 1

DDHI:- Core Logs and Assay Results

BILLITON AUSTRALIA
QUIGLEY C.R.A.E. DRILLHOLES
LITHOLOGICAL LOG
DDH1

METRE FROM	METRE TO	ROCK DESCRIPTION
0.00	13.80	LAM TO BED LIT.WKE + SLST + MUDST D RED TO PUR
13.80	18.00	LAM TO BED LIT.WKE + SLST + MUDST D RED TO PUR + VEIN L GRN
18.00	24.00	BED LIT.WKE + SLST + MUDST D RED TO PUR
24.00	26.10	MA TO BED L GRN SLST + MUDST
26.10	31.30	BREC + VEIN IN MA SLST
31.30	35.00	MA SLST + MUDST D RED TO PUR
35.00	38.00	LITTLE RECOVERY + VEIN
38.00	54.05	V.T.LAM D RED TO PUR
54.05	68.40	L RED + GRN + GRY MA LIT.WKE + SLST .C. STOCKWORK FRACTURE + VEINS
68.40	69.63	FLT.BREC
69.63	69.90	VEIN
69.90	76.30	LAM TO BED SLST + MUDST GRN TO GRY
76.30	99.00	CS TO FS. MA L GRY LIT.WKE
99.00	100.00	L GRY / LIT.WKE + SLST + MUDST
100.00	107.80	L GRY MA LIT.WKE
107.00	138.50	L GRY / SLST + LAM MUDST + MA LIT.WKE
138.50	145.20	L GRY CS TO FS. MA LIT.WKE
145.20	150.90	L GRY MA TO BED CS TO F SLST
150.90	160.70	L GRY MA LIT.WKE
160.70	173.00	L GRY MA CS TO F SLST

GEOLOGICAL LEGEND

G E O L O G I C A L L E G E N D										
C O D F		D E S C R I P T I O N								
ROCK TYPES		Metabaz	Metabasic	SEDIMENTARY STRUCTURE		GRAIN SIZE		COLOUR		
Qtz Ark	Quartz Arkosites/Quartzites	Tuff	Tuff	Flute	Flutes	Gr	Gravel	L	Light	Yel
S. Ark	Sub Arkose	Flt Brec	Fault Breccia	Scour	Scours	Vcs	Very Coarse Sand	M	Medium	Yellow
S.L Ark	Sub Lith Arkose	Vein	Vein	Rip	Ripples	Mx	Medium Sand	D	Dark	W - Weathered
Ark Ark	Arkosic Arkosites	No Rec	No Recovery	X Bed	Cross Bedding	Fs	Fine Sand	Blk	Black	T - Transition
Lit Ark	Lithic Arkosites			Grd Bed	Graded Bedding	Vfs	Very Fine Sand	Blu	Blue	F - Fresh
Qtz Wks	Quartz Wacke			Lit	Lenticles	Sd	Sand	Brn	Brown	M - Medium
Ark Wks	Arkosic Wacke			Imb	Imbricated	Sl	Silt	Buf	Buff	
Fsl Wks	Feldspathic Wacke			Flms	Flames	Cl	Clay	Grn	Green	
Lit Wks	Lithic Wacke			Slump	Slumps	METAMORPHIC MINERALS				
Gr Wks	Gray Wacke	V.T. Lam	Very Thinly Laminated	St Sed Det	Soft Sedimentary Deformation	Carb	Carbonite	Gr	Gray	
Silt	Siltstone	Lam	Laminated	Lodcasts	Lodcasts	Bial	Biotite	Orn	Orange	
Mudst	Mudstone	V.T. Bed	Very Thinly Bedded			Chl	Chlorite	Pnk	Pink	
Soll	Silt	Bed	Bedded					Pur	Purple	
Arsv	Arsvium	Ma	Massive					Red	Red	
								Wht	White	
										WEATHERING
										VN - Very Hard
										VVH - Very Very Hard

LOGGING CODE

WEATHER : W - weathered T - transition F - fresh

HARD : Hardness

The overall hardness of each logging interval was assessed using the following manual index:

VS Very soft Cannot be dug out by fingernail; broken by single geopick blow.

S Soft Can just be scraped and peeled with a knife. Indentations 1.5 to 3mm show in specimen with firm blows of pick point.

H Hard Cannot be scraped with a knife. Hand held specimen can be broken with hammer end of geopick with a single firm blow.

VH Very Hard Hand held specimen breaks with more than one blow of hammer end of pick.

VVH Very Very Hard Specimen requires many blows with geopick to break intact material.

MAG_SUS Magnetic susceptibility SI - units $\times 10^{-5}$

SULPHID SULPHIDES - Where abbreviated

PYRRHO - Pyrrhotite
CHALCO - Chalcopyrite
ARSENO - Arsenopyrite
SPHAL - Sphalerite

CARBON Carbonate

OTH_MIN Other minerals

S.G. Specific gravity g/cm^3

REC Recovery - % of core per metre interval

FRAC_FR Fracture frequency

With handling breaks disregarded, the number of discontinuities over the logging interval were counted and the total divided by the length of the interval.

VPM Veins per metre

V_THICK Vein thickness (mm)

R.Q.D. Rock Quality Designation

With "handling" breaks disregarded, the RQD for each logging interval was determined from:

$$\text{RQD (\%)} = \frac{\text{total length of pieces} > 100\text{mm}}{\text{length of logging interval}}$$

V_ANGLE Vein angle - measured relative to core long axis.

SO_ANGLE Bedding angle - measured relative to core long axis.

COMMENTS STK FRC - Stockwork Fracture
REV_DIS - Reverse Displacement
Sol vu - Solution vugs

BILLITON AUSTRALIA

QUIGLEY C.R.A.T. DRILLHOLES

Sulphide Minerals as Percentage of Total, Sulphide														% Volume of Interval																		Au(ppm)		Fire Assay Report																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
METRE FROM		METRE TO		SAMPLE NO		WEATHER		HARD		MAG		SUS		PYRITR		PYRRHO		CHALCO		ARSEN		GALENA		SPHAL		SULPHID		QUARTZ		CARBON		OTR		MIN		ALTERAT		SG		REC		FRAC		PR		VPM		V_THICK		RDQ		V_ANGLE		SCANGLE		COMMENTS		AU		AUR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
0.00	1.00	26001001	W	SO.	2	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.

BILLITON AUSTRALIA

QUIGLEY C.B.A.B. DRILLHOLES

DDH1

METRE FROM	METRE TO	SAMPLE NO	WEATHER	HARD	MAQ	SUS	PYRITE	PIRREO	CHALCO	ANSEMO	GALENA	SPEAL	SULPHID	QUARTZ	CARBON	OTI	MIN	ALTERAT	SG	REC	PLAC	FR	YPM	V_THICK	RDQ	V_ANGLE	SOANGLE	COMMENTS	AD	AOR
55.00	56.00	26001056 T	HA.	19	0	0	0	0	0	0	0	0	0.0	3.0	0.0	Fe1	W+SL	2.68 55	3	3	10.0	12	55	-9	HA Fe V EX1.10P	2.250	2.160			
56.00	57.00	26001057 T	HA.	11	0	0	0	0	0	0	0	0	0.0	2.1	0.0	Fe0.4	W+SL	2.62 92	3	7	5.0	66	35	70	Fe APT SUL INP	1.140	1.130			
57.00	58.00	26001058 T	HA.	19	0	0	0	0	0	0	0	0	0.0	1.7	0.0	Fe1.0	W+SL	2.58 100	3	3	12.0	86	80	80	STK FRC+V+SOLVU	0.390	0.330			
58.00	59.00	26001059 T	HA.	20	0	0	0	0	0	0	0	0	0.0	2.5	0.0	Fe1.0	W+SL	2.56 100	4	3	15.0	74	40	-9	STK FRC+V+SOLVU	0.660	-0.900			
59.00	60.00	26001060 T	HA.	16	0	0	0	0	0	0	0	0	0.0	3.2	0.0	Fe0.8	W+SL	2.62 100	8	7	10.0	66	20	-9	STK FRC+V+SOLVU	0.330	0.310			
60.00	61.00	26001061 T	HA.	8	0	0	0	0	0	0	0	0	0.0	2.5	0.0	Fe1.5	W+SL	2.59 100	4	6	20.0	60	40	-9	STK FRC+V+SOLVU	0.380	-0.900			
61.00	62.00	26001062 T	HA.	14	0	0	0	0	0	0	0	0	0.0	1.5	0.0	Fe1.5	W+SL	2.66 67	3	5	8.0	30	40	-9	STK FRC+V+SOLVU	1.570	1.860			
62.00	63.00	26001063 T	HA.	13	0	0	0	0	0	0	0	0	0.0	0.7	0.0	Fe0.3	W+SL	2.56 15	2	3	4.0	0	50	-9	STK FRC+V+SOLVU	1.800	3.820			
63.00	64.00	26001064 T	HA.	7	0	0	0	0	0	0	0	0	0.0	2.0	0.0	Fe1.0	W+SL	2.66 79	5	4	20.0	50	55	-9	STK FRC+V+SOLVU	0.820	-0.900			
64.00	65.00	26001065 T	HA.	11	0	0	0	0	0	0	0	0	0.0	4.0	0.0	Fe1.5	W+SL	2.59 100	5	10	20.0	41	60	-9	STK FRC+V+SOLVU	0.340	-0.900			
65.00	66.00	26001066 T	HA.	9	0	0	0	0	0	0	0	0	0.0	5.0	0.0	Fe1.0	W+SL	2.45 100	5	9	10.0	55	60	-9	VE DSP 10 FRC	0.340	-0.900			
66.00	67.00	26001067 T	HA.	8	0	0	0	0	0	0	0	0	0.0	3.0	0.0	Fe1.5	W+SL	2.56 95	4	7	20.0	40	70	-9	STK FRC REV DSV	0.380	-0.900			
67.00	68.00	26001068 T	HA.	4	0	0	0	0	0	0	0	0	0.0	5.5	0.0	Fe0.5	W+SL	2.58 50	3	4	30.0	15	50	-9	STK FRC	0.300	-0.900			
68.00	69.00	26001069 T	SO.	8	0	0	0	0	0	0	0	0	0.0	2.0	0.0	Cu+Fe	P GRN	2.51 30	3	3	20.0	12	50	-9	2a SHR COT ZON	0.910	-0.950			
69.00	70.00	26001070 T	SO.	4	0	0	0	0	0	0	0	0	0.0	5.0	0.0	Fe2.0	PCNL+SL	2.61 20	2	1	70.0	0	60	-9	HA Fe QT V ADJ CHL 2	7.600	7.850			
70.00	71.00	26001071 T	SO.	11	0	0	0	0	0	0	0	0	0.0	10.0	0.0	Fe1.0	PCNL+SL	2.53 55	3	3	50.0	11	-9	50 REV DIS/SO	0.210	-0.980				
71.00	72.00	26001072 T	SO.	14	0	0	0	0	0	0	0	0	0.0	2.5	0.0	Fe1.0	W+SL	2.56 58	4	2	40.0	0	50	-9		0.180	-0.900			
72.00	73.00	26001073 F	HA.	29	0	0	0	0	0	0	0	0	0.0	0.3	0.0	Fe1.0	W+SL	2.69 95	5	2	3.0	44	50	60	SF SED DEF	0.970	-0.900			
73.00	74.00	26001074 F	HA.	32	0	0	0	0	0	0	0	0	0.0	0.0	0.0			2.69 85	12	0	0.0	0	-9	60		0.050	-0.900			
74.00	75.00	26001075 F	HA.	20	100	0	0	0	0	0	0	0	0.1	5.7	0.0	Fe0.2	W+SL	-9.00 100	6	7	20.0	40	15	70	1st SIGN F.Py	0.080	0.090			
75.00	76.00	26001076 F	HA.	22	100	0	0	0	0	0	0	0	0.5	1.2	0.0		W+SL	2.66 100	5	4	5.0	38	70	70	TR CaCO3+VR'SO	0.310	-0.900			
76.00	77.00	26001077 F	HA.	27	100	0	0	0	0	0	0	0	0.1	0.5	0.0		W+SL	2.87 67	7	1	3.0	18	65	65		0.140	-0.900			
77.00	78.00	26001078 F	HA.	20	100	0	0	0	0	0	0	0	0.4	0.8	0.0		W+SL	2.80 90	7	3	4.0	26	40	70		0.370	-0.900			
78.00	79.00	26001079 F	HA.	24	100	0	0	0	0	0	0	0	0.6	1.2	0.0		W+SL	2.63 68	7	2	15.0	20	30	65		0.130	-0.900			
79.00	80.00	26001080 F	HA.	19	100	0	0	0	0	0	0	0	0.2	0.8	0.0		W+SL	2.80 84	6	5	3.0	43	70	80	INTAKEN FOR PETRO	0.180	0.200			
80.00	81.00	26001081 F	HA.	21	100	0	0	0	0	0	0	0	0.3	0.7	0.0		W+SL	2.73 77	7	3	4.0	45	60	50		0.110	-0.900			
81.00	82.00	26001082 F	HA.	20	30	0	0	0	0	70	0	0	0.2	0.9	0.0		W+SL	2.76 88	9	2	7.0	40	50	-9	SLECKENSIDS ON FRC	0.110	-0.900			
82.00	83.00	26001083 F	HA.	21	0	0	0	0	0	0	0	0	0.0	0.5	0.0		W+SL	2.77 77	8	1	5.0	12	60	80		0.040	-0.900			
83.00	84.00	26001084 F	HA.	28	0	0	0	0	0	0	0	0	0.0	0.0	0.0			2.68 85	8	0	0.0	20	-9	70		0.160	-0.900			
84.00	85.00	26001085 F	HA.	24	100	0	0	0	0	0	0	0	0.1	0.9	0.0		W+SL	2.70 87	7	3	3.0	35	60	85		0.100	-0.900			
85.00	86.00	26001086 F	HA.	24	100	0	0	0	0	0	0	0	0.1	0.3	0.0			2.75 72	10	2	2.0	12	67	70		0.110	-0.900			
86.00	87.00	26001087 F	HA.	1071	0	0	0	0	0	0	0	0	0.0	0.0	0.0			2.72 55	10	0	0.0	0	-9	54		0.100	-0.900			
87.00	88.00	26001088 F	HA.	26	100	0	0	0	0	0	0	0	0.1	0.7	0.0		W+SL	2.67 46	3	2	7.0	4	60	-9	SHEARED //20 FRC	0.290	-0.900			
88.00	89.00	26001089 F	HA.	32	0	0	0	0	0	0	0	0	0.0	0.0	0.0			2.74 82	6	0	0.0	32	-9	70		0.110	-0.900			
89.00	90.00	26001090 F	HA.	32	70	30	0	0	0	0	0	0	0.3	2.2	0.0		W SL	2.76 48	3	2	30.0	0	20	60	SAMPLED?	0.160	0.180			
90.00	91.00	26001091 F	HA.	-9	80	20	0	0	0	0	0	0	0.8	5.3	0.0		W SL	2.74 30	-9	2	50.0	0	40	-9	SAMPLED?	0.310	-0.900			
91.00	92.00	26001092 F	HA.	-9	100	0	0	0	0	0	0	0	0.2	1.8	0.0		W SL	2.88 24	3	1	3.0	0	45	-9	SAMPLED?	0.060	-0.900			
92.00	93.00	26001093 F	HA.	11	30	60	10	0	0	0	0	0	0.4	1.1	0.0		W SL	2.71 100	6	3	4.0	38	60	25		0.160	-0.900			
93.00	94.00	26001094 F	HA.	11	100	0	0	0	0	0	0	0	0.2	2.3	0.0		W SL	2.74 84	4	3	20.0	46	80	-9		0.430	-0.900			
94.00	95.00	26001095 F	HA.	4	100	0	0	0	0	0	0	0	0.1	0.5	0.0		W SL	2.66 86	8	3	3.0	51	70	-9		0.360	-0.900			
95.00	96.00	26001096 F	HA.	17	90	0	10	0	0	0	0	0	0.6	1.8	0.0		W SL	2.71 85	5	4	10.0	38	35	35	BED // VE	0.240	-0.900			
96.00	97.00	26001097 F	HA.	17	100	0	0	0	0	0	0	0	0.4	1.2	0.0		W SL	2.68 93	3	4	7.0	59	50	-9		0.200	-0.900			
97.00	98.00	26001098 F	HA.	32	40	0	0	0	0	0	0	60	0.4	2.6	0.0		S SL	2.64 65	5	5	7.0	27	50	-9		0.090	-0.900			
98.00	99.00	26001099 F	HA.	28	10	0	0	0	0	0	0	90	1.8	4.8	0.0		S SL	2.64 98	5	5	8.0	73	40	45		0.260	-0.900			
99.00	100.00	26001100 F	HA.	21	30	0	0	0	0	0	0	70	0.3	0.7	0.0		W SL	2.72 98	6	2	2.0	45	20	50		1.050	1.120			
100.00	101.00	26001101 F	HA.	21	80	0	20	0	0	0	0	0	0.5	0.5	0.0		W SL	2.67 35	6	1	8.0	51	70	60		0.200	-0.900			
101.00	102.00	26001102 F	HA.	17	100	0	0	0	0	0	0	0	0.2	1.9	0.0		W SL	2.68 80	6	3	7.0	37	60	60	BED SUB // VE	0.070	-0.900			
102.00	103.00	26001103 F	HA.	14	30	0	0	0	0	0	0	70	0.8	2.2	0.0		S SL	2.58 84	3	2	10.0	47	20	-9		0.320	-0.900			
103.00	104.00	26001104 F	HA.	39	100	0	0	0	0	0	0	0	0.2	0.5	0.0		S SL	2.65 37	4	2	2.0	65	60	-9		0.200	-0.900			
104.00	105.00	26001105 F	HA.	12	70	0	0	0	0	0	0	10	0.1	0.9	0.0		W SL	2.68 100	3	2	7.0	78	50	-9		0.310	-0.900			
105.00	106.00	26001106 F	HA.	14	40	40	0	0	0	0	0	20	0.4	1.1	0.0		W SL	2.69 100	3	5	3.0	67	60	-9		0.150	-0.900			
106.00	107.00	26001107 F	HA.	11	100	0	0	0	0	0	0	0	0.4	1.4	0.0		W SL	2.66 39	6	4	1.0	55	53	-9		0.050	-0.900			
107.00	108.00	26001108 F	HA.	16	40	40	0	0	0	0	0	0	0.2	1.3	0.0		W SL	2.58 63	4	0	7.0	37	53	50		0.190	-0.900			
108.00	109.00	26001109 F	HA.	13	100	0	0	0	0	0	0	0	0.1	0.9	0.0		W SL	2.56 77	4	2	1.0	46	62	62		0.050	-0.900			
109.00	110.00	26001110 F	HA.	33	0	0	0	0	0	0	0	0	0.0	0.0	0.0			2.63 75	5	2	1.0	57	-9	50		0.320</				

BILLIMON AUSTRALIA

QUIGLEY C.R.A.B. DRILLHOLES

DDH1

METRE FROM	METRE TO	SAMPLE NO	WEATHER	HARD	MAG	SUS	PYRITE	PYRHO	CHALCO	ARSEN	GALNA	SPHAL	SULPHID	QUARTZ	CARBON	OTN	MIX	ALTERAT	SG	IBC	PRAC	FR	VPM	V THICK	IQD	V ANGLE	SO ANGLE	COMMENTS	AU	AUR
110.00	111.00	26001111 F	HA.	27	20	0	0	0	0	0	0	80	0.3	0.7	0.0			Y SL	2.67	95	2	2	4.0	90	70	60	FLM FAC UP HOLE	0.005	-0.900	
111.00	112.00	26001112 F	HA.	18	100	0	0	0	0	0	0	0	0.7	2.4	0.0			S SL	2.62	90	7	5	4.0	54	60	60	FLM FAC UP HOLE	0.180	0.430	
112.00	113.00	26001113 F	HA.	13	100	0	0	0	0	0	0	0	0.6	1.9	0.0			S SL	2.59	84	7	6	6.0	45	72	32		0.005	-0.900	
113.00	114.00	26001114 F	HA.	19	100	0	0	0	0	0	0	0	0.1	0.7	0.0			S SL	2.68	99	4	2	3.0	76	55	70		0.010	-0.900	
114.00	115.00	26001115 F	HA.	26	100	0	0	0	0	0	0	0	0.3	0.5	0.0			S SL	2.04	100	3	3	2.0	80	53	60		0.010	-0.900	
115.00	116.00	26001116 F	HA.	21	100	0	0	0	0	0	0	0	0.2	0.7	0.0			W SL	2.60	96	5	3	2.0	60	60	23	FLM FAC UP HOLE	0.210	-0.900	
116.00	117.00	26001117 F	HA.	14	100	0	0	0	0	0	0	0	0.2	1.1	0.0			W SL	2.60	97	5	3	7.0	59	69	40		0.480	-0.900	
117.00	118.00	26001118 F	HA.	17	100	0	0	0	0	0	0	0	0.4	2.1	0.0			S SL	2.70	99	6	6	6.0	47	60	-9		0.160	0.130	
118.00	119.00	26001119 F	HA.	17	100	0	0	0	0	0	0	0	0.2	1.0	0.0			S SL	2.74	92	2	4	3.0	82	60	50		0.160	-0.900	
119.00	120.00	26001120 F	HA.	16	100	0	0	0	0	0	0	0	0.1	0.3	0.0			W SL	2.65	91	8	1	3.0	35	57	48		0.220	-0.900	
120.00	121.00	26001121 F	HA.	20	100	0	0	0	0	0	0	0	0.2	0.4	0.0			W SL	2.58	74	4	2	3.0	16	70	55	DIS VR ALONG 30 PRAC	0.270	-0.900	
121.00	122.00	26001122 F	HA.	16	95	5	5	0	0	0	0	0	0.2	0.5	0.0			W SL	2.58	82	7	2	3.0	38	60	-9		0.090	-0.900	
122.00	123.00	26001123 F	HA.	23	100	0	0	0	0	0	0	0	0.8	1.8	0.0			S SL	2.65	91	6	5	5.0	49	55	22		0.110	-0.900	
123.00	124.00	26001124 F	HA.	22	100	0	0	0	0	0	0	0	0.9	1.6	0.0			W SL	2.51	100	4	4	6.0	74	70	30		0.410	-0.900	
124.00	125.00	26001125 F	HA.	14	0	0	0	0	0	0	0	0	3.0	0.0	0.0				2.55	90	3	0	0.0	72	-9	20	FLMS FAC UP HOLE	0.040	-0.900	
125.00	126.00	26001126 F	HA.	21	20	0	0	0	0	80	0.0	0.0	0.0	0.0	0.0			F SL	2.60	99	3	2	4.0	78	10	30	STK FRC 10cm ZONE	0.090	0.030	
126.00	127.00	26001127 F	HA.	12	100	0	0	0	0	0	0	0	0.8	1.3	0.0			S SL	2.67	98	2	3	7.0	77	20	22	HIGH SUL VR SUB//SO	0.120	-0.900	
127.00	128.00	26001128 F	HA.	13	100	0	0	0	0	0	0	0	0.2	1.1	0.0			W SL	2.70	96	1	3	3.0	87	58	30		0.090	-0.900	
128.00	129.00	26001129 F	HA.	15	100	0	0	0	0	0	0	0	0.3	2.1	0.0			W SL	2.69	96	2	6	3.0	78	55	38		0.220	-0.900	
129.00	130.00	26001130 F	HA.	13	100	0	0	0	0	0	0	0	0.5	1.5	0.0			W SL	1.66	100	3	5	7.0	76	63	22	FLMS FAC UP HOLE	0.270	-0.900	
130.00	131.00	26001131 F	HA.	22	80	0	0	0	0	0	20	0.4	1.6	0.0			W SL	2.63	100	4	5	4.0	62	65	20	WOR DIS ON 10 FRC	0.170	-0.900		
131.00	132.00	26001132 F	HA.	24	100	0	0	0	0	0	0	0	0.3	2.2	0.0			S SL	2.70	100	5	2	9.0	63	20	30	VR // BED	0.590	-0.900	
132.00	133.00	26001133 F	HA.	30	40	0	0	0	0	0	60	0.4	1.0	0.0			W SL	2.73	100	3	3	3.0	80	60	20		0.190	-0.900		
133.00	134.00	26001134 F	HA.	24	20	0	0	0	0	0	80	1.1	2.0	0.0			S SL	2.76	100	3	5	9.0	82	40	60		0.200	-0.900		
134.00	135.00	26001135 F	HA.	19	70	30	30	0	0	0	0	0	0.4	1.8	0.0			W SL	2.01	100	4	9	7.0	84	60	20		0.290	-0.900	
135.00	136.00	26001136 F	HA.	20	100	0	0	0	0	0	0	0	0.3	0.9	0.0			W SL	2.69	96	7	4	4.0	47	45	20		0.370	-0.900	
136.00	137.00	26001137 F	HA.	15	100	0	0	0	0	0	0	0	0.3	1.2	0.0			S SL	2.71	100	1	4	3.0	100	60	20		0.090	0.060	
137.00	138.00	26001138 F	HA.	18	100	0	0	0	0	0	0	0	0.1	0.5	0.0			W SL	2.74	100	5	2	3.0	59	70	-9	DIS ON 50 PRAC	0.260	-0.900	
138.00	139.00	26001139 F	HA.	18	100	0	0	0	0	0	0	0	0.4	1.7	0.0			W SL	2.71	100	4	5	7.0	85	70	-9		0.280	-0.900	
139.00	140.00	26001140 F	HA.	15	100	0	0	0	0	0	0	0	0.4	2.2	0.0			W SL	2.73	100	2	6	4.0	81	60	-9		0.280	-0.900	
140.00	141.00	26001141 F	HA.	13	100	0	0	0	0	0	0	0	0.8	1.2	0.0			S SL	2.72	100	3	8	6.0	88	60	-9		0.190	-0.900	
141.00	142.00	26001142 F	HA.	15	100	0	0	0	0	0	0	0	1.2	3.3	0.0			S SL	2.71	100	4	8	7.0	83	60	-9		0.210	-0.900	
142.00	143.00	26001143 F	HA.	15	100	0	0	0	0	0	0	0	0.4	1.4	0.0			W SL	2.71	98	2	3	7.0	87	65	-9		0.110	-0.900	
143.00	144.00	26001144 F	HA.	15	90	10	10	0	0	0	0	0	0.7	2.8	0.0			S SL	2.73	94	4	7	5.0	79	62	-9		0.450	-0.900	
144.00	145.00	26001145 F	HA.	17	95	5	5	0	0	0	0	0	0.4	3.0	0.0			S SL	2.73	100	1	6	8.0	86	38	15	FLMS FAC UP HOLE	0.210	-0.900	
145.00	146.00	26001146 F	HA.	22	90	10	10	0	0	0	0	0	0.4	1.2	0.0			W SL	2.81	98	4	3	4.0	65	70	17		0.160	-0.900	
146.00	147.00	26001147 F	HA.	22	100	0	0	0	0	0	0	0	0.2	0.7	0.0			W SL	2.72	100	2	3	2.0	87	60	24		0.270	-0.900	
147.00	148.00	26001148 F	HA.	23	100	0	0	0	0	0	0	0	0.3	0.6	0.0			W SL	2.72	100	6	5	0.3	74	60	20		0.140	-0.900	
148.00	149.00	26001149 F	HA.	24	100	0	0	0	0	0	0	0	0.4	1.8	0.0			S SL	2.81	99	4	6	3.0	75	60	20		0.380	-0.900	
149.00	150.00	26001150 F	HA.	24	100	0	0	0	0	0	0	0	0.7	1.8	0.0			S SL	2.78	92	10	3	7.0	45	20	18	VR ALSO AT 60	0.740	-0.730	
150.00	151.00	26001151 F	HA.	38	15	0	0	0	0	85	0.8	0.7	0.0				W SL	2.71	99	2	4	9.0	87	80	50	REV DIS ALONG 20 FRC	0.180	-0.900		
151.00	152.00	26001152 F	HA.	16	10	0	0	0	0	90	0.7	1.3	0.0				W SL	2.69	93	3	3	7.0	73	50	-9		0.280	-0.900		
152.00	153.00	26001153 F	HA.	20	25	0	0	0	0	75	0.4	1.2	0.0				W SL	2.02	97	5	2	8.0	55	40	-9		0.560	-0.900		
153.00	154.00	26001154 F	HA.	14	6	0	0	50	0	0	1.5	4.5	0.0				S SL	2.72	100	3	3	40.0	80	48	-9		1.380	1.470		
154.00	155.00	26001155 F	HA.	17	25	0	0	0	0	70	0.8	2.8	0.0				S SL	2.70	100	1	3	5.0	100	60	-9		0.530	-0.900		
155.00	156.00	26001156 F	HA.	17	60	40	40	0	0	0	0	0	0.3	1.2	0.0			W SL	2.70	100	2	3	5.0	100	57	-9		0.430	-0.900	
156.00	157.00	26001157 F	HA.	19	40	0	0	0	0	60	0.7	2.1	0.0				S SL	2.72	100	5	6	5.0	67	70	-9		0.360	-0.900		
157.00	158.00	26001158 F	HA.	15	100	0	0	0	0	0	0	0	0.4	1.6	0.0			S SL	2.71	97	3	5	9.0	80	20	-9		0.300	-0.900	
158.00	159.00	26001159 F	HA.	19	30	70	70	0	0	0	0	0	0.6	2.4	0.0			W SL	2.72	100	4	4	7.0	90	63	-9	STX VR	0.160	-0.900	
159.00	160.00	26001160 F	HA.	16	100	0	0	0	0	0	0	0	0.4	1.2	0.0			S SL	2.75	100	1	4	3.0	100	60	-9		0.270	0.340	
160.00	161.00	26001161 F	HA.	17	100	0	0	0	0	0	0	0	0.4	1.6	0.0			W SL	2.72	96	5	6	3.0	88	60	50		0.330	-0.900	
161.00	162.00	26001162 F	HA.	29	80	15	5	0	0	0	0	0	1.2	2.7	0.0			W SL	2.71	100	2	1	12.0	100	15	10	FLMS FAC UP HOLE	1.980	1.830	
162.00	163.00	26001163 F	HA.	22	10	0	0	0	0	30	0.3	0.3	0.0				W SL	2.74	100	2	1	2.0	38	60	20	FLMS FAC UP HOLE	0.650	-0.900		
163.00	164.00	26001164 F	HA.	17	100	0	0	0	0	0	0	0	1.3																	

BILLITON AUSTRALIA
QUIGLEY C.N.A.S. DRILLHOLES

DDHI

METER FROM	METER TO	SAMPLE NO	WEATHER	HARD	MAG	SUS	PYRITE	PYRRO	CHALCO	ARSENO	GALENA	SPHAL	SULPHID	QUARTZ	CARBON	OTH	MIN	ALTERAT	SG	RBC	FRAC	PR	VFM	V_THICK	RQD	V_ANGLE	SOANGLE	COMMENTS	AU	AUR
165.00	166.00	26001166 F	HA.	25	80	0	20	0	0	0	0	0	0.4	1.4	0.0		W SL	2.72	100	3	3	2.0	87	30	-9			0.030	-0.900	
166.00	167.00	26001167 F	HA.	24	0	0	0	0	0	0	0	0	0.0	0.0	0.0			2.74	95	2	0	0.0	82	-9	-9			0.030	-0.900	
167.00	168.00	26001168 F	HA.	29	100	0	0	0	0	0	0	0	0.4	0.2	0.0		S SL	2.73	99	2	1	2.0	99	20	10			0.030	-0.900	
168.00	169.00	26001169 F	HA.	29	100	0	0	0	0	0	0	0	0.5	0.3	0.0		W SL	2.81	93	4	1	2.0	93	15	10			0.120	-0.900	
169.00	170.00	26001170 F	HA.	26	20	0	0	0	0	0	80	0.3	0.3	0.0		S SL	2.70	100	3	3	2.0	81	65	-9			0.050	-0.900		
170.00	171.00	26001171 F	HA.	17	100	0	0	0	0	0	0	0	0.1	0.5	0.0		W SL	2.70	94	2	3	2.0	94	45	-9			0.200	-0.900	
171.00	172.00	26001172 F	HA.	14	60	0	40	0	0	0	0	0	0.1	0.6	0.0		W SL	2.72	100	3	3	3.0	100	60	-9			0.040	-0.900	
172.00	173.00	26001173 F	HA.	18	100	0	0	0	0	0	0	0	0.3	1.3	0.0		S SL	2.78	100	5	4	4.0	76	25	22			0.090	-0.900	

APPENDIX 2

DDH2:- Core Logs and Assay Results

BILLITON AUSTRALIA
QUIGLEY C.R.A.E. DRILLHOLES
LITHOLOGICAL LOG
DDH2

METRE FROM	METRE TO	ROCK DESCRIPTION
0.00	7.10	RED TO PUR BED LIT.WKE + SLST + MUDST
7.10	12.10	RED TO PUR MA LIT.WKE
12.10	19.40	RED TO PUR BED LIT.WKE + SLST + MUDST
19.40	22.90	RED TO PUR LAM SLST + MUDST
22.90	25.50	RED TO PUR BED LIT.WKE + SLST + MUDST
25.50	26.40	L RED TO L GRY MA LIT.WKE
26.40	33.40	L RED TO L GRY BED LIT.WKE + LAM SLST + MUDST
33.40	34.30	L GRY MA LIT.WKE
34.30	46.10	D GRY / LIT.WKE + SLST + LAM MUDST
46.10	49.50	D GRY / SLST + LAM MUDST
49.50	53.20	D GRY / LIT.WKE + LAM SLST
53.20	79.40	L TO D GRY MA LIT.WKE + SLST
79.40	88.10	L TO D GRY BED LIT.WKE + LAM SLST
88.10	94.15	L TO D GRY MA LIT.WKE
94.15	100.20	D GRY + SLST + LAM MUDST
100.20	105.20	D GRY MA LIT.WKE + RARE /'S OF LAM SLST
105.20	105.80	D GRY / LAM SLST + MUDST

GEOLOGICAL LEGEND

C O D E D E S C R I P T I O N															
ROCK TYPES		Metabas	Metabasalt	SEDIMENTARY STRUCTURE		GRAIN SIZE		COLOUR		Yel	Yellow	W	Weathered	ALTERATION	
Qtz. Ark	Quartz Arkose(Duette)	Tuff	Tuff	Flute	Flutes	Gr	Gravel	L	Light			T	Transition	S	Strong
S. Ark	Sub Arkose	Fh. Brac	Fault Breccio	Schur	Schurs	Vcs	Very Coarse Sand	M	Medium			F	Fresh	M	Medium
S. L. Ark	Sub Lith Arkose	Vein	Vein	Rip	Ripples	Mx	Medium Sand	D	Dark	DESCRIPTORS				W	Weak
Ark. Ark	Arkose Arkose	No Rec	No Recovery	X Bed	Cross Bedding	Fs	Fine Sand	Blk	Black	I	Rock Boundary	WATER		SI	Silicates
Lit. Ark	Lithic Arkose			Grd Bed	Graded Bedding	Vfs	Very Fine Sand	Blu	Blue		Gradational Boundary	D	Dry	P	Pervasive
Qtz. Wks	Quartz Wacke			Lm	Lamination	Sd	Sand	Brn	Brown	/	Interbedded rock types	M	Moist		
Ark. Wks	Arkose Wacke			Imb	Imbricated	Sl	Silt	Buf	Buff	@	Ar	W	Wet		
Fsl. Wks	Feldspathic Wacke			Fms	Fossils	Cl	Clay	Grn	Green	+	And	I	Injected	SI	Silicified
Lit. Wks	Lithic Wacke	BEDDING		Stump	Stumps	METAMORPHIC MINERALS		Gr	Gray	J.C.	With	HARDNESS		Corb	Carbonate
Gr. Wks	Gray Wacke	V. T. Lom	Very Thinly Laminated	Sl. Sed. Del	Soft Sedimentary Deformation	Crd	Cordierite	Oge	Orange	%	Percent	VS	Very Soft	Chl	Chlorite
Slst	Siltstone	Lom	Laminated	Loadcasts	Loadcasts	Shl	Shale	Pnk	Pink			S	Soft		
Mudst	Mudstone	V. T. Bed	Very Thinly Bedded			Chl	Chlorite	Pur	Purple			H	Hard		
Soll	Soil	Bed	Bedded					Red	Red	WEATHERING		VH	Very Hard		
Aluv	Alluvium	Mo	Massive					Wht	White	C	Complete	VVH	Very Very Hard		

BILLINGTON AUSTRALIA

QUIGLEY C.R.A.Z. DRILLHOLES

DBB2

Sulphide Minerals as Percentage of																% Volume of Interval				OTHER
METER FROM	METER TO	SAMPLE NO	WEATHER	HARD	MAG	SUS	PYRITE	PYRROSE	CHALCO	ARSENIO	GALENA	SPHAL	SUSPHID	QUARTZ	CARBON	OTH	MIN	ALTERAT		
0.00	1.00	26002001	W	SO.	-9	0	0	0	0	0	0	0	0.0	0.0	0.0					
1.00	2.00	26002002	W		-9	0	0	0	0	0	0	0	0.0	0.0	0.0					
2.00	3.00	26002003	W	SO.	-9	0	0	0	0	0	0	0	0.0	0.0	0.0					
3.00	4.00	26002004	W	SO.	-9	0	0	0	0	0	0	0	0.0	0.0	0.0					
4.00	5.00	26002005	W	SO.	-9	0	0	0	0	0	0	0	0.0	0.0	0.0					
5.00	6.00	26002006	W	SO.	3	0	0	0	0	0	0	0	0.0	0.0	0.0					
6.00	7.00	26002007	W	SO.	15	0	0	0	0	0	0	0	0.0	0.2	0.0	Fe0.1				
7.00	8.00	26002008	W	SO.	18	0	0	0	0	0	0	0	0.0	0.0	0.0					
8.00	9.00	26002009	W	SO.	14	0	0	0	0	0	0	0	0.0	0.8	0.0	Fe0.2				
9.00	10.00	26002010	W	SO.	7	0	0	0	0	0	0	0	0.0	0.0	0.0					
10.00	11.00	26002011	W	SO.	15	0	0	0	0	0	0	0	0.0	0.6	0.0	Fe0.2				
11.00	12.00	26002012	W	SO.	3	0	0	0	0	0	0	0	0.0	0.5	0.0	Fe0.5	N SL			
12.00	13.00	26002013	W	SO.	7	0	0	0	0	0	0	0	0.0	0.5	0.0	Fe0.1	W SL			
13.00	14.00	26002014	W	SO.	13	0	0	0	0	0	0	0	0.0	0.2	0.0	Fe0.4	W SL			
14.00	15.00	26002015	W	SO.	11	0	0	0	0	0	0	0	0.0	0.0	0.0					
15.00	16.00	26002016	W	SO.	2	0	0	0	0	0	0	0	0.0	0.3	0.0	Fe0.2	W SL			
16.00	17.00	26002017	W	SO.	13	0	0	0	0	0	0	0	0.0	0.0	0.0					
17.00	18.00	26002018	W	SO.	15	0	0	0	0	0	0	0	0.0	0.0	0.0					
18.00	19.00	26002019	W	SO.	3	0	0	0	0	0	0	0	0.0	0.4	0.0	Fe0.4	N SL			
19.00	20.00	26002020	W	SO.	8	0	0	0	0	0	0	0	0.0	0.0	0.0					
20.00	21.00	26002021	W	SO.	11	0	0	0	0	0	0	0	0.0	0.0	0.0					
21.00	22.00	26002022	W	SO.	8	0	0	0	0	0	0	0	0.0	0.0	0.0					
22.00	23.00	26002023	W	SO.	10	0	0	0	0	0	0	0	0.0	0.0	0.0					
23.00	24.00	26002024	W	SO.	83	0	0	0	0	0	0	0	0.0	0.6	0.0	Fe0.2	W SL			
24.00	25.00	26002025	W	SO.	7	0	0	0	0	0	0	0	0.0	0.0	0.0					
25.00	26.00	26002026	W	SO.	7	0	0	0	0	0	0	0	0.0	0.4	0.0	Fe0.2	W SL			
26.00	27.00	26002027	W	SO.	8	0	0	0	0	0	0	0	0.0	0.0	0.0					
27.00	28.00	26002028	W	SO.	11	0	0	0	0	0	0	0	0.0	0.0	0.0					
28.00	29.00	26002029	W	SO.	11	0	0	0	0	0	0	0	0.0	0.0	0.0					
29.00	30.00	26002030	T	SO-H	13	0	0	0	0	0	0	0	0.0	0.6	0.0	Fe0.4				
30.00	31.00	26002031	T	HA	20	0	0	0	0	0	0	0	0.0	0.7	0.0	Fe0.1				
31.00	32.00	26002032	T	SO-H	17	0	0	0	0	0	0	0	0.0	2.0	0.0	Fe1.2	N SL			
32.00	33.00	26002033	T	SO-H	20	0	0	0	0	0	0	0	0.0	0.2	0.0	Fe0.1	S SL			
33.00	34.00	26002034	T	HA	13	0	0	0	0	0	0	0	0.0	1.7	0.0	Fe1.7	S SL			
34.00	35.00	26002035	T	HA	20	0	0	0	0	0	0	0	0.0	1.3	0.0	Fe0.7	S SL			
35.00	36.00	26002036	T	HA	20	0	0	0	0	0	0	0	0.0	0.3	0.0	Fe0.1	W SL			
36.00	37.00	26002037	P	HA	21	100	0	0	0	0	0	0	0.4	3.2	0.0		W SL			
37.00	38.00	26002038	P	HA	27	0	0	0	0	0	0	0	0.0	0.8	0.0		W SL			
38.00	39.00	26002039	P		0	70	0	10	20	0	0	0	0.4	6.5	0.0		S+SL			
39.00	40.00	26002040			-9	0	0	0	0	0	0	0	0.0	0.0	0.0					
40.00	41.00	26002041			-9	0	0	0	0	0	0	0	0.0	0.0	0.0					
41.00	42.00	26002042	F	HA	26	0	0	0	0	0	0	0	0.0	3.0	0.0	Fe0.8	S+SL			
42.00	43.00	26002043	F	HA	32	100	0	0	0	0	0	0	0.1	6.0	0.0		W+SL			
43.00	44.00	26002044	F	HA	-9	50	0	50	0	0	0	0	0.8	1.6	0.0		W+SL			
44.00	45.00	26002045	F	HA	-9	46	0	0	60	0	0	0	0.8	1.5	0.0		SL			
45.00	46.00	26002046	F	HA	12	0	0	0	0	0	0	0	0.0	0.0	0.0					
46.00	47.00	26002047	F	HA	36	70	0	0	30	0	0	0	0.5	0.6	0.0		N+SL			
47.00	48.00	26002048	F	HA	25	0	0	0	0	0	0	0	0.0	0.0	0.0					
48.00	49.00	26002049	F	HA	20	30	20	0	0	0	0	0	0.7	0.3	0.0		N+SL			
49.00	50.00	26002050	F	HA	24	100	0	0	0	0	0	0	0.1	0.7	0.0		W+SL			
50.00	51.00	26002051	F	HA	15	0	0	1	0	0	0	0	0.0	0.0	0.0					
51.00	52.00	26002052	T	HA	22	100	0	0	0	0	0	0	0.1	0.2	0.0		W+SL			
52.00	53.00	26002053	F	HA	11								0.0	0.0	0.0					
53.00	54.00	26002054	F	HA	10								0.0	0.0	0.0					
54.00	55.00	26002055	F	HA									0.0	0.0	0.0					

SG REC FRAC PR VPM V THICK RQO V ANGLE SCANGLE COMMENTS

Autogen Fire Assay Report

AU

AUR

2.36	40	-9	0	0.0	0	-9	-9	6cm FRAGMENTS	0.110	-0.900
2.36	50	-9	0	0.0	0	-9	-9	6cm FRAGMENTS	0.370	-0.900
2.39	50	-9	0	0.0	0	-9	-9	6cm FRAGMENTS	0.220	-0.900
2.36	50	-9	0	0.0	0	-9	-9	6cm FRAGMENTS	0.090	-0.900
2.36	55	6	0	0.0	25	-9	45	HQ TO NQ	0.020	-0.900
2.34	80	4	0	0.0	28	-9	52		0.020	0.020
2.41	70	6	1	3.0	68	5	50		0.160	-0.900
2.47	100	7	0	0.0	56	-9	50		0.200	-0.900
2.21	70	2	7	2.0	47	20	33	MIN STK VE 30cm	0.300	-0.900
2.47	89	4	0	0.0	38	-9	56		0.030	-0.900
2.52	73	3	4	2.0	33	20	60	20cm STK VE	0.020	-0.900
2.44	85	2	1	3.0	50	15	50		0.170	-0.900
2.45	55	3	1	3.0	46	19	50		0.230	-0.900
2.56	75	6	1	4.0	14	15	50		0.340	-0.900
2.46	100	2	0	0.0	85	-9	50		0.160	-0.900
2.38	100	4	1	5.0	54	20	50		0.020	-0.900
2.41	90	0	0	0.0	62	-9	55		0.090	-0.900
2.24	55	3	0	0.0	24	-9	40		0.300	-0.900
2.48	80	4	3	2.0	56	30	45		0.200	-0.900
2.43	82	4	0	0.0	56	-9	65		0.150	-0.900
2.32	78	9	0	0.0	11	-9	70		0.005	-0.900
2.48	71	6	0	0.0	0	-9	62		0.005	-0.900
2.48	92	10	0	0.0	54	-9	60		0.005	-0.900
2.48	98	4	2	2.0	68	10	-9		0.070	-0.900
2.32	96	8	0	0.0	24	-9	70		0.005	-0.900
2.46	88	5	1	3.0	66	10	70		0.005	-0.900
2.45	93	5	0	0.0	79	-9	60		0.010	-0.900
2.49	98	5	0	0.0	83	-9	60		0.005	-0.900
2.47	85	3	0	0.0	50	-9	68	1m STK PRAC LOW	0.005	-0.900
2.35	88	4	2	4.0	38	40	60	M DSP ON 20FRAC	0.005	-0.900
2.62	100	3	1	2.0	88	5	60	FLM PAC UPBOL	0.010	-0.900
2.50	100	5	2	27.0	55	70	70	SO//VE	0.230	-0.900
2.55	100	3	1	2.0	40	55	60	SO//VE	0.005	-0.900
2.54	100	5	2	17.0	80	50	60	FLM PAC UPBOL	2.210	2.360
2.67	96	3	1	8.0	90	40	60	13cm P SHEE VE	0.180	-0.900
2.63	96	6	1	2.0	80	23	30	BASE OF WTE LOW	0.020	-0.900
2.66	95	4	4	7.0	90	40	40	15cm VE DISLOPR	0.005	-0.900
2.59	70	4	3	2.0	37	50	30	INT FRC SUB//SO	0.005	-0.900
2.56	44	-9	1	70.0	0	50	-9	STK VE ADJ NA V	9.170	-0.900
9.00	-9	-9	0	0.0	0	-9	-9	NO RECOVERY	-0.900	-0.900
9.00	-9	-9	0	0.0	0	-9	-9	NO RECOVERY	-0.900	-0.900
2.66	60	2	2	20.0	48	50	-9	VUC IN VE 1X	0.005	-0.900
2.79	86	6	2	50.0	26	20	-9	OID SUL ADJ VE	0.210	-0.900
2.66	42	4	2	10.0	15	20	-9		0.880	-0.900
2.73	8	-9	1	3.0	0	-9	-9	SAMPLED?	3.800	4.500
2.71	65	4	0	0.0	25	-9	50		1.340	1.230
2.78	70	7	1	4.0	22	8	55	REV DIS 5 FRAC	0.080	-0.900
2.74	62	6	0	0.0	25	-9	70		0.120	-0.900
2.41	92	6	1	5.0	94	23	60		0.320	-0.900
2.56	88	7	1	5.0	30	12	60		0.310	-0.900
2.51	81	4	0	0.0	10	-9	70		0.350	-0.900
2.41	74	6	1	3.0	40	15	70		0.660	-0.900
2.53	83	4	0	7.0	10	-9	60		0.120	-0.900
2.53	76	4	0	7.0	12	-9	60		0.090	-0.900
2.53	76	4	0	7.0	12	-9	60		0.090	-0.900
2.53	76	4	0	7.0	12	-9	60		0.090	-0.900

BILLITON AUSTRALIA

QUIGLEY C.R.A.E. DRILLHOLES

D082

METRE FROM	METRE TO	SAMPLE NO	WEATHER	HARD	MAG. SUS	PYRITE	PTERHO	CHALCO	ARSENIO	GALENA	SPHAL	SULPHID	QUARTZ	CARBON	OTR	MIN	ALTERAT	SG	REC	FRAC	PA	VPW	V_THICK	200	V_ANGLE	SOANGLE	COMMENTS	4U	4UR
55.00	56.00	26002056 F	HA.	32	30	0	0	0	70	0	0	0.6	0.9	0.0			S+SL	2.50	50	4	1	12.0	0	12	60			1.870	1.410
56.00	57.00	26002057 F	HA.	15	60	40	0	0	0	0	0	1.0	5.0	0.0			W+SL	2.53	40	2	2	10.0	19	30	55	SAMPLED?		6.300	6.000
57.00	58.00	26002058 F	HA.	22	0	0	0	0	0	0	0	0.0	0.0	0.0				2.48	60	3	0	0.0	13	-9	70			0.070	-0.900
58.00	59.00	26002059 F	HA.	-9	100	0	0	0	0	0	0	0.2	0.2	0.0			W+SL	2.53	45	4	1	4.0	0	15	-9	SAMPLED?		0.170	-0.900
59.00	60.00	26002060 F	HA.	27	40	0	0	60	0	0	0	0.7	3.3	0.0			W+SL	2.77	45	4	2	10.0	0	25	-9	SAMPLED?		0.250	0.210
60.00	61.00	26002061 F	HA.	13	20	0	0	80	0	0	0	0.8	2.3	0.0			S+SL	2.62	80	5	3	7.0	12	15	-9			0.060	-0.900
61.00	62.00	26002062 F	HA.	11	0	0	0	0	0	0	1	0.0	0.0	0.0				2.61	56	4	0	0.0	16	-9	-9			0.080	-0.900
62.00	63.00	26002063 F	HA.	15	100	0	0	0	0	0	0	1.3	0.6	0.0			SL+W+SL	2.46	28	3	1	6.0	0	30	-9	NA QT VR+SLS BR		0.410	-0.900
63.00	64.00	26002064 F	HA.	-9	0	0	0	0	0	0	0	0.0	50.0	0.0			P SIL	2.33	35	-9	1	100.0	0	-9	-9	NA QT VR+SLS BR		0.040	-0.900
64.00	65.00	26002065 F	HA.	-9	0	0	0	0	0	0	0	0.0	50.0	0.0			P SIL	2.43	25	-9	1	100.0	0	-9	-9	NA QT VR+SLS BR		1.100	-0.900
65.00	66.00	26002066 F	HA.	-9	100	0	0	0	0	0	0	0.5	2.5	0.0			P SIL	2.30	20	-9	1	40.0	0	10	-9	NA QT VR+SLS BR		2.730	2.740
66.00	67.00	26002067 F		-9	0	0	0	0	0	0	0	0.0	0.0	0.0				-9.00	-9	-9	0	0.0	0	-9	-9	NO RECOV.		-0.900	-0.900
67.00	68.00	26002068 F	VE.	-9	0	0	0	0	0	0	0	0.0	0.0	0.0			P SIL	2.67	5	-9	0	0.0	0	-9	-9	VE STK		-0.900	-0.900
68.00	69.00	26002069 F	VE.	-9	0	0	0	0	0	0	0	0.0	0.0	0.0			P SIL	2.50	5	-9	0	0.0	0	-9	-9	VE STK		-0.900	-0.900
69.00	70.00	26002070 F	VE.	-9	0	0	0	0	0	0	0	0.0	0.0	0.0			P SIL	2.64	20	-9	0	0.0	0	-9	-9	STK FRC 2mm		0.020	-0.900
70.00	71.00	26002071 F	VE.	-9	0	0	0	0	0	0	0	0.0	0.0	0.0			P SIL	2.50	10	-9	0	0.0	0	-9	-9	STK FRC 2mm		0.210	-0.900
71.00	72.00	26002072 F	VE.	-9	0	0	0	0	0	0	0	0.0	0.0	0.0			P SIL	2.98	25	-9	0	0.0	0	-9	-9	STK FRC 2mm		0.060	-0.900
72.00	73.00	26002073 F	VE.	-9	0	0	0	0	0	0	0	0.0	0.5	0.0	Fe0.2		P SIL	2.59	25	-9	1	7.0	0	12	-9	STK VE		0.030	-0.900
73.00	74.00	26002074 F	VE.	-9	0	0	0	0	0	0	0	0.0	0.0	0.0			P SIL	2.76	19	-9	0	0.0	0	-9	-9			0.650	-0.900
74.00	75.00	26002075 F	VE.	8	0	0	0	0	0	0	0	0.0	0.0	0.0				2.69	64	3	0	0.0	20	-9	-9			0.040	-0.900
75.00	76.00	26002076 F	HA.	11	100	0	0	0	0	0	0	0.1	0.5	0.0				2.84	98	3	1	2.0	53	0	-9			0.150	-0.900
76.00	77.00	26002077 F	HA.	12	0	0	0	0	0	0	0	0.0	0.0	0.0				2.74	78	3	0	0.0	78	-9	-9			0.100	-0.900
77.00	78.00	26002078 F	HA.	20	100	0	0	0	0	0	0	0.2	0.3	0.0				2.61	100	4	1	3.0	42	15	-9			0.360	-0.900
78.00	79.00	26002079 F	HA.	13	0	0	0	0	0	0	0	0.0	0.0	0.0				2.54	99	5	0	0.0	65	-9	-9			0.110	-0.900
79.00	80.00	26002080 F	HA.	13	0	0	0	0	0	0	0	0.0	0.0	0.0				2.73	91	3	0	0.0	70	-9	60			0.020	-0.900
80.00	81.00	26002081 F	HA.	21	0	0	0	0	0	0	0	0.0	0.0	0.0				2.82	66	5	0	0.0	60	-9	70			0.400	-0.900
81.00	82.00	26002082 F	HA.	10	0	0	0	0	0	0	0	0.0	0.0	0.0				2.67	91	4	0	0.0	45	-9	-9	FLX FAC UP HOL		0.010	-0.900
82.00	83.00	26002083 F	HA.	20	0	0	0	0	0	0	0	0.0	0.0	0.0				2.66	95	5	0	0.0	90	-9	60			0.270	-0.900
83.00	84.00	26002084 F	HA.	24	0	0	0	0	0	0	0	0.0	0.0	0.0				2.69	57	4	0	0.0	11	-9	67			0.030	-0.900
84.00	85.00	26002085 F	HA.	50	100	0	0	0	0	0	0	0.3	2.0	0.0			M SL	2.73	93	5	3	5.0	45	10	70			0.040	-0.900
85.00	86.00	26002086 F	HA.	21	100	0	0	0	0	0	0	0.1	0.2	0.0			W SL	2.73	84	6	1	3.0	18	20	72			0.170	-0.900
86.00	87.00	26002087 F	HA.	28	100	0	0	0	0	0	0	0.1	0.5	0.0			M SL	2.75	74	8	1	3.0	19	15	70			0.260	-0.900
87.00	88.00	26002088 F	HA.	24	0	0	0	0	0	0	0	0.0	0.0	0.0				2.70	69	8	0	0.0	12	-9	55			0.040	-0.900
88.00	89.00	26002089 F	HA.	13	0	0	0	0	0	0	0	0.0	0.0	0.0				2.75	84	8	0	0.0	25	-9	50			0.310	-0.900
89.00	90.00	26002090 F	HA.	17	100	0	0	0	0	0	0	0.7	1.3	0.0			S SL	2.72	37	7	3	7.0	37	50	85	VE DIS 40 FRC		0.360	0.420
90.00	91.00	26002091 F	HA.	84	40	0	0	60	0	0	0	0.7	5.0	0.0			P SIL	2.88	59	3	2	20.0	0	60	-9	SAMPLED ?		3.560	3.330
91.00	92.00	26002092 F	HA.	24	50	0	0	50	0	0	0	0.2	1.8	0.0			M SL	2.68	70	4	1	10.0	21	20	-9	HRC+PFC20 SAMP?		0.520	0.470
92.00	93.00	26002093 F	HA.	38	40	50	10	0	0	0	0	5.0	17.0	0.0			S SL	3.07	100	5	2	20.0	48	0	-9	BIFURCATING VE		2.270	2.190
93.00	94.00	26002094 F	HA.	21	100	0	0	0	0	0	0	0.3	2.4	0.0			W SL	2.78	85	7	2	4.0	38	10	85			0.140	-0.900
94.00	95.00	26002095 F	HA.	22	100	0	0	0	0	0	0	0.2	1.7	0.0			W SL	2.75	95	6	4	5.0	33	18	70			0.100	-0.900
95.00	96.00	26002096 F	HA.	11	40	60	0	0	0	0	0	0.4	0.4	0.0			M SL	2.69	71	7	1	8.0	28	5	68	STK FRC 15cm		0.450	-0.900
96.00	97.00	26002097 F	HA.	-9	100	0	0	0	0	0	0	0.2	0.6	0.0			W SL	2.34	60	6	1	7.0	0	20	-9			0.350	-0.900
97.00	98.00	26002098 F	HA.	17	100	0	0	0	0	0	0	0.1	0.4	0.0			W SL	2.70	64	5	2	3.0	20	15	85			0.200	-0.900
98.00	99.00	26002099 F	HA.	32	100	0	0	0	0	0	0	0.2	0.5	0.0			W SL	2.73	70	6	2	3.0	0	20	-9			0.310	-0.900
99.00	100.00	26002100 F	HA.	32	100	0	0	0	0	0	0	0.3	0.5	0.0			W SL	2.74	85	3	1	8.0	57	80	50			0.210	-0.900
100.00	101.00	26002101 F	HA.	24	0	0	0	0	0	0	0	0.0	0.0	0.0				2.67	100	7	0	0.0	52	-9	-9			0.110	-0.900
101.00	102.00	26002102 F	HA.	17	0	0	0	0	0	0	0	0.0	0.0	0.0				2.70	100	8	0	0.0	47	-9	70			0.950	-0.900
102.00	103.00	26002103 F	HA.	12	100	0	0	0	0	0	0	0.1	1.1	0.0			W SL	2.61	30	2	1	3.0	74	10	50	MODULE		0.160	-0.900
103.00	104.00	26002104 F	HA.	15	0	0	0	0	0	0	0	0.0	0.0	0.0				2.68	100	7	0	0.0	44	-9	70			0.270	-0.900
104.00	105.00	26002105 F	HA.	13	100	0	0	0	0	0	0	0.2	0.5	0.0				2.66	90	5	1	4.0	57	15	-9			0.270	-0.900
105.00	105.00	26002106 F	HA.	20	0	0	0	0	0	0	0	0.0	0.0	0.0				2.73	76	7	0	0.0	15	-9	75			0.040	-0.900

APPENDIX 3

Petrographic Report - Biotite granite dyke

DDH1. Weakly porphyritic, fine grained I-type biotite granite.

Prominent minor blocky tabular plagioclase phenocrysts are zoned from heavily sericitised core about AN₃₀ to rims about AN₁₅. Very rare tabular biotite phenocrysts are up to 5mm across.

The groundmass consists of 0.1-1mm blocky tabular sericitised, albitised plagioclase, and interstitial anhedral 0.1-1mm quartz, orthoclase, and biotite(8%). Plagioclase and orthoclase are in roughly equal abundance. Apatite is slightly prominent and biotite is lightly chloritised. Fluid inclusions in quartz are weakly saline and rarely vapour rich. No CO₂ can be made to liquefy with a freezing spray.

Biotite is a typical colour for I-type granites.