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BOREHOLE ENGINEERING LOG

HOLE NO : CURVE 22_BH10

CLIENT : TRANSPORT AND MAIN ROADS	POSITION : E: 359426, N: 8137537 (56 MGA94)	PAGE : 1 OF 2
PROJECT : BLACK SPOT PROJECT	SURFACE ELEVATION : 109.2 (AHD)	DATE DRILLED : 8/8/13 TO 8/8/13
JOB NO : CB24735.04	DIP / AZIMUTH : 90°	LOGGED BY : JP
LOCATION : KENNEDY HWY (CAIRNS - MAREEBA)		CHECKED BY : AJ

DRILLING				MATERIAL			
DRILLING & CASING	WATER	DRILLING PENETRATION	SAMPLES & FIELD TESTS	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	STRUCTURE & Other Observations
ADIT WB	VH			0.08m		ASPHALT: 0.08 m.	
				0.80m	GM	SILTY GRAVEL (GM): Orange brown, brown, fine to medium gravel, angular, with fine to medium sand.	FILL
			1.00m SPT 3, 5, 5 N*=10	1.10m	ML	SANDY SILT (ML): Brown, low plasticity, fine to coarse grained sand, trace fine grained, angular gravel.	
			1.45m			QUARTZITE: Orange brown, grey brown, highly weathered, low to medium.	HIGHLY WEATHERED ROCK
		F		2.50m		QUARTZITE: Orange brown, extremely to highly weathered, very low to low strength, appears as CLAYEY GRAVEL (CG), fine to medium grained angular gravel, with fine to coarse grained sand.	EXTREMELY WEATHERED ROCK
			2.95m			QUARTZITE: Grey brown, red brown, extremely to highly weathered, very low to low strength.	EXTREMELY TO HIGHLY WEATHERED ROCK
		H		4.00m		Continued as Cored Drill Hole	
				103.2			

DRILLING		SAMPLES & FIELD TESTS		DENSITY (SPT N-value)		CONSISTENCY (Su) {N-value}	
HA Hand Auger	RR Rock Rolling	DS Disturbed Sample	SPT Standard Penetration Test	VL Very Loose	0 - 4	VS Very Soft	< 12 kPa {0-2}
AS Auger Screw	AT Air Track	ES Env Soil Sample	U Undisturbed Tube Sample	L Loose	4 - 10	S Soft	12 - 25 {2-4}
AD/T Auger Drill TC-bit	HQ HQ Coring	EW Env Water Sample	W Water Sample	MD Medium Dense	10 - 30	F Firm	25 - 50 {4-8}
AD/V Auger Drill V-bit	NQ NQ Coring			D Dense	30 - 50	St Stiff	50 - 100 {8-15}
WB Washbore	NMLC NMLC Coring			VD Very Dense	50 - 100	VSt Very Stiff	100 - 200 {15-30}
		HP Hand Penetrometer	MOISTURE CONDITION	CO Compact	>50/150mm	H Hard	> 200 kPa {>30}
		HV Hand Vane Shear	D = Dry M = Moist W = Wet				
VE Very Easy	F Firm	(P: Peak Su R: Residual Su)					
E Easy	H Hard	N SPT blows per 300mm					
		HW SPT penetration by hammer weight					
		RW SPT penetration by rod weight					

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CORED BOREHOLE ENGINEERING LOG HOLE NO : CURVE 22_BH10

CLIENT : TRANSPORT AND MAIN ROADS	POSITION : E: 359426, N: 8137537 (56 MGA94)	PAGE : 2 OF 2
PROJECT : BLACK SPOT PROJECT	SURFACE ELEVATION : 109.2 (AHD)	DATE DRILLED : 8/8/13 TO 8/8/13
JOB NO : CB24735.04	DIP / AZIMUTH : 90°	LOGGED BY : JP
LOCATION : KENNEDY HWY (CAIRNS - MAREEBA)		CHECKED BY : AJ

DRILLING			MATERIAL				DEFECTS & COMMENTS				
DRILLING	WATER DETAIL	TCR/RQD	RL (m)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50)	DEFECT SPACING (mm)	Description of joints, seams, defects, additional observations and comments	GENERAL
		DRILL DEPTH						EL -0.03 VI -0.1 L -0.3 M -1 H -3 V1 -5 V2 -10 EH	20 60 100 200 300 500 1000		
			109.2	0.0							
			108.2	1.0							
			107.2	2.0							
			106.2	3.0							
			105.2	4.0		START CORING AT 4.10m					
						QUARTZITE: Grey, grey brown, indistinct to distinct bedding at 30° to 40°.	MW			4.10 JT 40° IR RF 4.20 JT 10° IR RF 4.26 JT 20° IR S 4.34 JT 5° IR S 4.37 JT 5 - 90° IR RF 4.82 JT 30° PR RF 5.20 JT 60° IR RF 5.50 JT 30° IR RF 5.60 JT 0 - 40° IR RF 5.82 JT 20° CU RF 5.95 JT 5° IR RF	JT 70 - 90 PR-IR RF
						Terminated Cored Drill Hole at 6.00 m					
			103.2	6.0							

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DRILLING NMLC NMLC Coring NQ NQ Coring TCR % core run recovered RQD % core run > 100mm long (rock fraction only measured) GROUNDWATER SYMBOLS = Water level (static) = Water level (during drilling)	SAMPLES & FIELD TESTS D Disturbed Sample W Water Sample SPT SPT Sample U Undisturbed Tube Sample ES Env Soil Sample EW Env Water Sample	DEFECT ABBREVIATIONS CS Crushed Seam CZ Crushed Zone DB Drill Break FZ Fractured Zone JT Joint IS Infilled Seam SZ Shear Zone VN Vein CN Clean CT Coating SN Stain VR Veneer POL Polished RF Rough S Smooth SL Slicksided Cu Curved IR Irregular PR Planar ST Stepped Un Undulated	ROCK STRENGTH (Is50 MPa) 0-0.03 Extremely Low 0.03-0.1 Very Low 0.1-0.3 Low 0.3-1.0 Medium 1.0-3.0 High 3.0-10 Very High
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		Client: Transport and Main Roads	
		Project: Black Spot	
drawn	AJ	Core Photograph – Curve 22_BH10	
date	14/08/2013	Project no. CB24735.04	Photo No: Curve 22_BH10
scale	NTS		1 of 1