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**Queensland
Government**

**GEOTECHNICAL
BOREHOLE LOG**

FOR GEOTECHNICAL TERMS AND
SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH232**

Sheet 1 of 4

REFERENCE No **H12241**

PROJECT Mackay Ring Road
 LOCATION Pioneer River Bridge, Pier 10 (CL) COORDINATES 721327.2 E; 7660350.7 N
 PROJECT No FG6184 SURFACE RL 3.42m PLUNGE 90° DATE STARTED 21/10/2015 GRID DATUM GDA 94 / MGA Z55
 JOB No 242/10G/906 HEIGHT DATUM A.H.D. BEARING ° DATE COMPLETED 23/10/2015 DRILLER Cairns Drilling

DEPTH (m)	R.L. (m)	AUGER CASING WASHBORING CONE DRILLING	RQD (%) CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS		
												EH	VH
0					SAND trace gravel (Fill) Brown, moist, loose to medium dense. Fine to coarse grained sand, fine to medium grained gravel, rounded grains. 1.00m: medium dense								
1				C							10, 13, 10 N=23		
				D	1.50m: loose						2, 3, 4 N=7		
2				E		(SP)				2.00m-2.45m: No sample recovered: BUND FILL			
				F							8, 6, 3 N=9		
				G	3.00m: very loose to loose						4, 3, 3 N=6		
3				H	3.50m: medium dense						2, 2, 2 N=4		
	-0.58			I	Sandy GRAVEL (Alluvium) Grey brown, wet, loose. Fine to coarse grained sand, fine to medium grained gravel, rounded grains.						2, 6, 5 N=11		
4				J		(GP)					4, 4, 3 N=7		
				K						5.00m-5.45m: No sample recovered	8, 5, 3 N=8		
5	-2.08			L	SAND (Alluvium) Brown, wet, very loose to loose. Fine to medium grained sand.						5, 4, 3 N=7		
				M		(SP)				5.50m-5.95m: No sample recovered	4, 3, 1 N=4		
6	-3.08			N	Clayey SAND (Alluvium) Brown, wet, medium dense. Fine to coarse grained sand, low plasticity.						6.00m-6.45m: No sample recovered	3, 3, 2 N=5	
				O	7.00m: becomes pale grey. Fine grained sand						4, 8, 13 N=21		
7				P	7.50m: becoming dense, fine to medium grained sand						8, 12, 15 N=27		
				Q		(SC)					11, 16, 18 N=34		
8				R							13, 16, 18 N=34		
				S	9.00m: becoming medium dense						9, 15, 15 N=30		
9				T	CLAY trace sand (Alluvium)						8, 10, 13 N=23		
	-6.38										7, 8, 9 N=17		

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REMARKS: Kgwu = Wundaru Granodiorite

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T.Goosey	S.Foley



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BOREHOLE No **BH232**

Sheet 2 of 4

REFERENCE No **H12241**

PROJECT	Mackay Ring Road		
LOCATION	Pioneer River Bridge, Pier 10 (CL)	COORDINATES 721327.2 E; 7660350.7 N	
PROJECT No	FG6184	SURFACE RL 3.42m	PLUNGE 90°
			DATE STARTED 21/10/2015
			GRID DATUM GDA 94 / MGA Z55
JOB No	242/10G/906	HEIGHT DATUM A.H.D.	BEARING °
			DATE COMPLETED 23/10/2015
			DRILLER Cairns Drilling

DEPTH (m)	R.L. (m)	FAUGER CASING WASHBORING CONE DRILLING	RQD (%) CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS		
												EH	VH
11	-7.88			U	Grey mottled orange brown, moist, very stiff. Medium to high plasticity. 10.50m: becoming hard	(CH)				9, 13, 16 N=29	SPT		
				V						10, 17, 24 N=41	SPT		
				W						11, 16, 22 N=38	SPT		
12	-8.58			X	Silty CLAY trace sand (Residual) Grey green and pale grey white, moist, hard.	(CI)				10, 12, 26 N=38	SPT		
				Y	Fine to medium grained sand, low to medium plasticity. Gravelly Silty CLAY trace sand (Residual)					18, 21, 31 N=52	SPT		
				Z	Pale grey and white, moist, hard. Low plasticity. 13.00m: becoming dense.					10, 27, 31 N=58	SPT		
				AA						15, 18, 21 N=39	SPT		
				AB		(CL)				10, 14, 24 N=38	SPT		
				AC						10, 24, 30/140	SPT		
				AD						15, 28, 30/120	SPT		
16	-13.58			AE	Sandy CLAY trace gravel (Residual) Brown grey, moist, hard. Fine to medium grained sand, fine grained gravel.	(CL)				30/70 hb	SPT		
				AF	Clayey SAND (Residual) Dark grey, moist, very dense. Fine to coarse grained sand.					28, 30/80 hb	SPT		
				AG		(SC)				16, 30/100 hb	SPT		
19	-16.58			AH						30/120 hb	SPT		

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Sheet 3 of 4

REFERENCE No **H12241**

PROJECT	Mackay Ring Road				
LOCATION	Pioneer River Bridge, Pier 10 (CL)			COORDINATES 721327.2 E; 7660350.7 N	
PROJECT No	FG6184	SURFACE RL 3.42m	PLUNGE 90°	DATE STARTED 21/10/2015	GRID DATUM GDA 94 / MGA 255
JOB No	242/10G/906	HEIGHT DATUM A.H.D.	BEARING °	DATE COMPLETED 23/10/2015	DRILLER Cairns Drilling

DEPTH (m)	R.L. (m)	FAUGER CASING WASHBORING CORE DRILLING	RQD (%) CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH		DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS	
								EH	VH	H	M			J
21				Al	Sandy CLAY trace gravel (Residual) Grey, moist, hard. Fine to coarse grained sand, low to medium plasticity.	(CI)						30/110 hb	SPT	
22	-18.58			AK	Silty SAND (Residual) Grey mottled brown, moist, very dense. Fine to coarse grained sand.	(SM)						30/0 hb	SPT	
23	-19.28		(58)		MICRODIORITE SW: Blue grey, fine to medium grained, massive, very high strength. Calcite veins throughout. Js: 5° to 15°; (5-6/m); Pl/Ro; Tl; Fe St, some Cly Vr;	SW		VH				Is(50)=6.90 MPa	D (23.20m)	
24			100 (83)		Js: 20° to 30°; (3/m); Pl/Ro; Tl-OP; Fe St, some Cly Vr;	MW			EC	VC		Is(50)=2.30 MPa	I (23.90m)	
25					Granodiorite	SW		VH				Is(50)=1.10 MPa Is(50)=7.60 MPa	A (24.57m) D (24.77m)	
26	-22.86		100 (85)		Granodiorite	SW		VH				Is(50)=3.60 MPa	A (25.55m)	
27			100 (46)		GRANODIORITE (Kgwu) SW: Pale red and pale grey, coarse grained, porphyritic, very high strength. Js: 0° to 10°; (1/m); Pl/Ro; Tl; Fe St; Js: 30° to 40°; (2/m); Pl/Ro; Tl; Fe St and CA;	SW		VH				Is(50)=4.30 MPa Is(50)=5.30 MPa	D (26.38m) A (26.46m)	
28					27.90m: Defects: - Js: 10°-20° (3-4/m); Pl-St/Ro, Tl, Fe St, some Sinf; - Js: 35°-50° (1/m); Pl/Ro, Tl, Fe St and Sinf; - Js: 70°-80° (1-2/m); Pl/Ro, Tl-OP, Fe St and Sinf;	MW						Is(50)=9.90 MPa UCS=110.00 MPa	D (27.33m) (27.45m)	
29						SW		VH				Is(50)=9.50 MPa	A (28.30m)	
						MW			LM	EC	VC		Is(50)=10.00 MPa	D (29.05m)
	-26.58		100 (5)			SW		VH				Is(50)=7.20 MPa	I (29.95m)	

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REMARKS: Kgwu = Wundaru Granodiorite

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BOREHOLE No **BH232**

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REFERENCE No **H12241**

PROJECT	Mackay Ring Road				
LOCATION	Pioneer River Bridge, Pier 10 (CL)			COORDINATES 721327.2 E; 7660350.7 N	
PROJECT No	FG6184	SURFACE RL	3.42m	PLUNGE	90°
				DATE STARTED	21/10/2015
				GRID DATUM	GDA 94 / MGA Z55
JOB No	242/10G/906	HEIGHT DATUM	A.H.D.	BEARING	°
				DATE COMPLETED	23/10/2015
				DRILLER	Cairns Drilling

DEPTH (m)	R.L. (m)	TAUGER CASING WASHBORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH											DEFECT SPACING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS					
									DEFECT SPACING																		
									EH	VH	H	M	L	J	VI	EL	EC	VC	C				M	W	VW	EW	
	-27.17					GRANODIORITE (Kgwu) SW: (Cont'd)	+	SW	VH																	Is(50)=7.90 MPa Is(50)=11.00 MPa	A (30.35m) D (30.44m)
31						GRANODIORITE (Kgwu) XW: Pale grey, coarse grained, porphyritic, extremely low to very low strength. Recovered as sandy clay. Some clasts of very high strength granite throughout.	+	HW	L																		
	-28.33					GRANODIORITE (Kgwu) MW: Pale grey, coarse grained, porphyritic, medium to high strength. Highly fractured zone, joints infilled with clay and sand.	+	XW	EL																	Is(50)=3.50 MPa	I (32.05m)
32							+	HW	L																		
	-29.43		100				+	XW	EL																		
33						Js: 20° to 50°; (10/m); Pl/Sm; TI; Cly FL; Js: 70° to 90°; (3/m); Pl/Sm; TI; Cly FL; Borehole completed at 32.85m	+	MW	MH																		
34							+	XW	EL																		
							+	MW	MH																		
35							+																				
36							+																				
37							+																				
38							+																				
39							+																				

32.11m-32.33m: XW zone, extremely low to very low strength (Sandy CLAY)

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CORE PHOTO LOG

DEPARTMENT OF TRANSPORT AND MAIN ROADS
 Geotechnical Section
 35 Butterfield Street, Herston Qld 4006
 Phone 07 3066 3336



Project Name	Mackay – Ring Road (Stage 2)		
Project No.	FG6184	Date	23/10/15
Borehole No.	BH 232	TMR H No.	H12241
Location	Pioneer River Bridge	Start Depth (m)	22.70
Detail	Pier 10, centreline	Finish Depth (m)	32.85
Chainage		Submitted By	M.Ensor
Remarks			



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Project Name	Mackay – Ring Road (Stage 2)		
Project No.	FG6184	Date	23/10/15
Borehole No.	BH 232	TMR H No.	H12241
Location	Pioneer River Bridge	Start Depth (m)	22.70
Detail	Pier 10, centreline	Finish Depth (m)	32.85
Chainage		Submitted By	M.Ensor
Remarks			



SCALE 1:5