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**Queensland
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**GEOTECHNICAL
BOREHOLE LOG**

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

BOREHOLE No **BH234**

Sheet 1 of 4

REFERENCE No **H12243**

PROJECT Mackay Ring Road
 LOCATION Pioneer River Bridge, Pier 11 (LHS) COORDINATES 721322.5 E; 7660386.4 N
 PROJECT No FG6184 SURFACE RL 3.49m PLUNGE 90° DATE STARTED 05/11/2015 GRID DATUM GDA 94 / MGA Z55
 JOB No 242/10G/906 HEIGHT DATUM A.H.D. BEARING ° DATE COMPLETED 06/11/2015 DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER 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 YH H M L J VI EI
0					SAND trace silt (Fill) Orange grey, moist to wet, loose. Fine to medium grained sand, gravel has rounded grains.							
1												
2						(SP)						
3												
4	-0.81			A	Gravelly SAND trace silt (Alluvium) Grey brown, wet, loose. Fine to coarse grained sand, fine grained gravel, subangular to rounded grains.						1, 3, 3 N=6	SPT
5				B							1, 2, 2 N=4	SPT
6				C		(SP)					2, 1, 2 N=3	SPT
7				D							13, 17, 18 N=35	SPT
8	-4.31			E	Silty SAND trace clay (Alluvium) Pale grey, moist, medium dense. Medium grained sand.						8, 9, 11 N=20	SPT
9				F		(SM)					8, 11, 12 N=23	SPT
9.70 to 9.90m	-6.51				9.70 to 9.90m: gravelly band.							

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REMARKS: Kgwu = Wundaru Granodiorite

LOGGED BY	REVIEWED BY
C.Boyes	S.Foley



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BOREHOLE No **BH234**

Sheet 2 of 4

REFERENCE No **H12243**

PROJECT	Mackay Ring Road		
LOCATION	Pioneer River Bridge, Pier 11 (LHS)	COORDINATES 721322.5 E; 7660386.4 N	
PROJECT No	FG6184	SURFACE RL 3.49m	PLUNGE 90°
			DATE STARTED 05/11/2015
			GRID DATUM GDA 94 / MGA Z55
JOB No	242/10G/906	HEIGHT DATUM A.H.D.	BEARING °
			DATE COMPLETED 06/11/2015
			DRILLER Saxon 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
	-7.31				G	Clayey SAND (Alluvium) Pale grey and orange brown, moist, medium dense. Fine to medium grained sand, medium to high plasticity.	(SC)					8, 11, 18 N=29	SPT
	-7.81				H	Sandy CLAY (Alluvium) White mottled brown, moist, hard. Medium plasticity.	(CI)					13, 13, 15 N=28	SPT
	-9.31				I	Clayey SAND trace gravel (Residual) Pale grey and green grey, moist, dense. Medium to coarse grained sand, fine grained gravel, angular grains, medium plasticity.	(SC)					9, 12, 20 N=32	SPT
	-10.31				J	Gravelly CLAY trace sand (Residual) Pale grey and green grey, moist, hard. Fine grained gravel, angular grains, medium plasticity.	(CI)					21, 23, 26 N=49	SPT
	-11.51				K	GRANODIORITE (Kgwu) XW: Recovered as pale grey and orange brown, moist, hard, silty clay trace sand. Fine grained sand, low plasticity.	XW					13, 14, 20 N=34	SPT
					L	GRANODIORITE (Kgwu) XW: Recovered as pale grey and orange brown, dry, very dense, silty sand trace clay. Fine grained sand.	XW					19, 30/150	SPT
					M		XW					30/135	SPT
					N		XW					30/90 hb	SPT
	-14.51				O	GRANODIORITE (Kgwu) HW: Pale grey and orange brown, medium to coarse grained, massive, extremely low to very low strength.	HW					30/70 hb	SPT
	-16.51				P		HW					30/20 hb	SPT

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Sheet 3 of 4

REFERENCE No **H12243**

PROJECT	Mackay Ring Road				
LOCATION	Pioneer River Bridge, Pier 11 (LHS)			COORDINATES 721322.5 E; 7660386.4 N	
PROJECT No	FG6184	SURFACE RL	3.49m	PLUNGE	90°
				DATE STARTED	05/11/2015
				GRID DATUM	GDA 94 / MGA Z55
JOB No	242/10G/906	HEIGHT DATUM	A.H.D.	BEARING	°
				DATE COMPLETED	06/11/2015
				DRILLER	Saxon 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
21				Q	MICRODIORITE (Kgwu) HW: Grey, fine grained, massive, extremely low to very low strength.						30/30 hb	SPT	
21				R	21.00m: clay content increasing.		HW				30/50 hb	SPT	
23	-19.01 -19.25		(38)		MICRODIORITE (Kgwu) SW: Grey, fine grained, massive, very high strength. Calcite veins <2mm thick, throughout. GRANODIORITE (Kgwu) SW: Pink and grey, medium to coarse grained, porphyritic, high to very high strength. Js: 5° to 15°; (5/m); Pl/Sm-Ro; OP-TI; Cn or Sinf; Js: 20° to 45°; (4/m); Pl/Sm-Ro; TI; Cn or Sinf; 23.50 to 23.65m: DOLERITE (SW): dark grey, fine grained, very high strength. 23.97 to 24.04m: DOLERITE (SW): dark grey, fine grained, very high strength. 25.00m: becomes pale grey speckled dark grey.	SW	VH	M	22.50m-22.74m: Contacts: 50°; Pl/Ro; 23.57m-23.65m: Contacts: 5°; gradational; 23.97m-24.04m: Contacts: 30°; Pl/Sm; CD; 24.42m-24.60m: AZ: becomes green white. 24.92m-24.97m: CZ; 25.26m-25.50m: HFZ; 25.71m-25.75m: Contacts: 5° to 15°; Pl/Sm; CD; 26.15m-26.26m: MW zone; 26.58m-26.73m: HFZ; 28.00m-28.10m: HFZ; 29.73m-29.92m: HFZ;	Is(50)=0.68 MPa Is(50)=1.90 MPa Is(50)=0.68 MPa Is(50)=0.82 MPa UCS=25.80 MPa E=20.7 GPa v= 0.22 Is(50)=1.40 MPa Is(50)=0.76 MPa Is(50)=1.40 MPa Is(50)=3.20 MPa Is(50)=8.50 MPa Is(50)=3.80 MPa Is(50)=12.00 MPa Is(50)=8.30 MPa	D (22.60m) A (23.18m) D (23.55m) A (23.60m) (24.28m) A (24.75m) D (24.85m) D (25.60m) A (26.41m) D (27.32m) A (27.38m) D (29.00m) A (29.10m)		
24			100 (61)			SW	H-VH	C					
25			100 (50)			MW	L	C					
26			100 (55)			SW	VH	M					
27			100 (68)			MW	H	C					
28			100 (13)			SW	VH-EH	M					
29						MW		C					

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REMARKS: Kgwu = Wundaru Granodiorite

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GEOTECHNICAL BOREHOLE LOG

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BOREHOLE No **BH234**

Sheet 4 of 4

REFERENCE No **H12243**

PROJECT	Mackay Ring Road								
LOCATION	Pioneer River Bridge, Pier 11 (LHS)			COORDINATES 721322.5 E; 7660386.4 N					
PROJECT No	FG6184	SURFACE RL	3.49m	PLUNGE	90°	DATE STARTED	05/11/2015	GRID DATUM	GDA 94 / MGA Z55
JOB No	242/10G/906	HEIGHT DATUM	A.H.D.	BEARING	°	DATE COMPLETED	06/11/2015	DRILLER	Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER 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	VI	EU	EC	VC	C			M	W	VW	EW						
31	-29.26		100 (67)		GRANODIORITE (Kgwu) SW: (Cont'd) Js: 5° to 15°; (3/m); Pl/Sm; CD; CA, Cly; Js: 40° to 60°; (4/m); Pl/Sm; CD; CA, Cly; Js: 70° to 90°; (3/m); Pl/Sm; CD; CA, Cly;	+	MW	VH							C					30.18m-30.46m: HW zone; calcite veins throughout.	Is(50)=6.40 MPa	A (30.05m)							
									M						VC-C								30.54m-30.63m: BZ;						
									VH-EH									M									UCS=166.00 MPa	(30.85m)	
																												Is(50)=3.60 MPa	D (31.10m)
																		VH										Is(50)=8.10 MPa	D (31.58m)
32						+	MW								EC-VC				31.49m-31.50m: CA VN: 10mm thick.										
							SW	VH-EH															31.66m-31.92m: CA VNs: <10mm thick;						
							MW									VL-L										32.16m-32.57m: HFZ: calcite veins throughout.			
33				Borehole completed at 32.75m		+	SW														Is(50)=9.80 MPa	A (32.70m)							
								EH																					
34																													
35																													
36																													
37																													
38																													
39																													

REMARKS: Kgwu = Wundaru Granodiorite	LOGGED BY	REVIEWED BY
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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	06/11/15
Borehole No.	BH 234	TMR H No.	H12243
Location	Pioneer River Bridge	Start Depth (m)	22.50
Detail	Pier 11, LHS	Finish Depth (m)	32.75
Chainage		Submitted By	M.Ensor
Remarks			



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 Geotechnical Section
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Project Name	Mackay – Ring Road (Stage 2)		
Project No.	FG6184	Date	06/11/15
Borehole No.	BH 234	TMR H No.	H12243
Location	Pioneer River Bridge	Start Depth (m)	22.50
Detail	Pier 11, LHS	Finish Depth (m)	32.75
Chainage		Submitted By	M.Ensor
Remarks			



SCALE 1:5