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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 **BH244**

Sheet 1 of 3

REFERENCE No **H12253**

PROJECT Mackay Ring Road

LOCATION Pioneer River Bridge, Pier 14 (CL) COORDINATES 721348.2 E; 7660488.6 N

PROJECT No FG6184 SURFACE RL 3.50m PLUNGE 90° DATE STARTED 18/11/2015 GRID DATUM GDA 94 / MGA Z55

JOB No 242/10G/906 HEIGHT DATUM A.H.D. BEARING ° DATE COMPLETED 20/11/2015 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
1					Silty SAND (Fill) Pale orange-grey, moist to wet, very loose to loose. Sand is fine to medium grained; trace gravel <50mm, rounded to subrounded.						
2						(SM)					
3				A	Becoming very loose.					1, hw, 1 N=1	SPT
				Ax						1, 1, 1 N=2	SPT
4				B						1, hw, 2 N=2	SPT
	-1.00			Bx	Silty SAND (Alluvium) Pale orange-grey, wet, loose. Sand is fine to coarse grained; trace gravel <40mm, rounded.					1, 1, 1 N=2	SPT
5				C		(SM)				1, 2, 2 N=4	SPT
				Cx						1, 2, 3 N=5	SPT
6	-2.65			D	Silty SAND (Alluvium) Pale grey, moist, medium dense. Sand is fine grained.					3, 3, 5 N=8	SPT
				Dx	6.7m: Becoming orange-brown.					3, 6, 8 N=14	SPT
7				E	7.0m: Becoming pale grey, fine to medium grained sand.	(SM)				5, 7, 9 N=16	SPT
				Ex	7.5m: Trace clay, becoming yellow-grey.					7, 10, 12 N=22	SPT
8	-4.65			F	Clayey Gravelly SAND (Alluvium) Pale grey and orange-brown, moist, dense to very dense. Sand is medium to coarse grained; gravel <40mm, subrounded to subangular.	(SC)				10, 21, 30/140mm	SPT
				Fx						15, 10, 17 N=27	SPT
9	-5.70			G	CLAY (Alluvium) Pale grey mottled orange-brown, moist, hard. Medium plasticity; trace fine sand.	(CI)				16, 22, 14 N=36	SPT
				Gx						10, 15, 20 N=35	SPT
	-6.50										

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REMARKS: Kgwu = Wunduru Granodiorite

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C. Boyes

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FOR GEOTECHNICAL TERMS AND
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BOREHOLE No **BH244**

Sheet 2 of 3

REFERENCE No **H12253**

PROJECT	Mackay Ring Road				
LOCATION	Pioneer River Bridge, Pier 14 (CL)			COORDINATES 721348.2 E; 7660488.6 N	
PROJECT No	FG6184	SURFACE RL	3.50m	PLUNGE	90°
				DATE STARTED	18/11/2015
				GRID DATUM	GDA 94 / MGA Z55
JOB No	242/10G/906	HEIGHT DATUM	A.H.D.	BEARING	°
				DATE COMPLETED	20/11/2015
				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 _VL _EL	EC _VC _C _M _W _VW _EW										
				H	CLAY (Alluvium) Cont'd.		(CI)											11, 14, 17 N=31	SPT
				Hx														12, 11, 15 N=26	
11	-7.40			I	GRANODIORITE (Kgwu) XW: Recovered as Silty SAND. Pale grey and dark grey, moist, medium dense to dense. Sand is fine grained; trace clay; trace pyrite.													10, 15, 18 N=33	SPT
12				J	12.0m - 12.7m: Recovered as Silty Sandy CLAY. Pale grey, moist, stiff. Low plasticity; trace fine gravel, angular.													3, 4, 5 N=9	
					12.7m: Becoming very dense.														
13				K														23, 30, 30/100mm	SPT
14				L														7, 30/120mm	
15				M	15.0m - 15.1m: Recovered as Sandy Gravelly CLAY. Pale green- grey, moist, hard. Medium plasticity; fine to coarse sand; gravel <20mm, angular.		XW											30/30mm hb	SPT
16				N														hb	SPT
17				O	From 16.7m: Recovered as Sandy Clayey GRAVEL. Pale green-grey, moist, very dense. Sand is fine to coarse grained; gravel is fine to medium, angular.													30/80mm hb	SPT
18				P														hb	SPT
19	-15.60			Q														hb	SPT
	-16.50		(49)		GRANODIORITE (Kgwu) SW: Pale pink-grey, medium to coarse grained, porphyritic, high to very high strength.		SW											hb	(19.52m)
																		UCS=76.60 MPa E=59 GPa v=0.081	

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BOREHOLE No **BH244**

Sheet 3 of 3

REFERENCE No **H12253**

PROJECT	Mackay Ring Road				
LOCATION	Pioneer River Bridge, Pier 14 (CL)			COORDINATES 721348.2 E; 7660488.6 N	
PROJECT No	FG6184	SURFACE RL	3.50m	PLUNGE	90°
				DATE STARTED	18/11/2015
				GRID DATUM	GDA 94 / MGA Z55
JOB No	242/10G/906	HEIGHT DATUM	A.H.D.	BEARING	°
				DATE COMPLETED	20/11/2015
				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	VL	EL	EC	VC	C	M	W	VW	EW								
	-17.10				GRANODIORITE (Kgwu) SW: Cont'd. - Js: 5°-15° (~5/m) Pl/Sm-Ro, OP-Tl, Cn or CA Vn	+	SW										M										Is(50)=1.10 MPa Is(50)=3.80 MPa	A (20.05m) D (20.14m)	
21			100 (76)		- Js: 30°-50° (<2/m) Pl/Sm, Tl, Cn or CA VN <1mm.		SW		VH									EC-VC									20.59m-20.65m: HFZ 20.90m-20.96m: HFZ		
	-18.02				MICRODIORITE (Kgwu) SW: Dark grey, fine grained, massive, very high strength. Calcite veins throughout <1mm thick. - Js: 5°-15° (<1/m) Pl/Sm, Tl, Fe St or CA Vn - Js: 20°-40° (<2/m) Pl/Sm, Tl, Fe St or CA Vn - Js: 70°-80° (<2/m) Pl/Sm, Tl, Fe St or CA Vn.	+																					Is(50)=2.10 MPa	A (21.15m)	
22									H-VH										C								21.52m: Contact, 40°, Pl/Sm, CA Vn 10mm.		
						+																					Is(50)=2.20 MPa Is(50)=4.80 MPa	A (22.10m) D (22.20m)	
23			100 (17)		GRANODIORITE (Kgwu) SW: Pale pink-grey, medium to coarse grained, porphyritic, high to very high strength. Calcite veins throughout <10mm. - Js: 5°-15° (2-4/m) Pl/Sm-Ro, Tl, Cn or CA Vn., 23.0m: - Js: 5°-15° (~8/m) Pl/Sm-Ro, Tl, Fe St or Slnf - Js: 40°-50° (~2/m) Pl/Sm, Tl, CA Vn. - Js: 50°-70° (~2/m) Pl/Sm, Tl, Fe St or Slnf				VH										C								22.38m-22.41m: HW zone 23.03m: J,80°, Pl/Sm, Cn		
						+	SW		H-VH																		Is(50)=3.80 MPa	D (23.15m)	
24																											24.20m-24.25m: HW zone 24.30m-24.39m: BZ, HW		
			100 (40)			+			H									VC-C									Is(50)=0.95 MPa	A (24.05m)	
25			100 (39)						H											C								Is(50)=0.29 MPa UCS=17.40 MPa E=17.6 GPa v= 0.037	D (24.74m) (24.80m)
						+			VH											M									
26	-22.71								H											C							25.50m: J,50°,Pl/Sm,CA <10mm 25.76m: J,50°,Pl/Sm,CA <10mm		
						+			H									VC-C											
27	-23.15		100 (80)		BRECCIATED/ALTERD FAULT ZONE (Kgwu) SW: Pale green-grey, high strength. Angular rock fragments throughout, healed with CA Veins. -Js: 5°-15° (~3/m) Pl/Sm, Tl, Cn.		SW		VH											M							26.21m: Contact 75°, Pl/Sm, CA Vn 3mm.	Is(50)=0.46 MPa Is(50)=1.90 MPa	D (26.15m) A (26.33m)
						+																				26.65m: Contact 0°, Pl/Ro, Cn 26.65m-26.77m: HFZ			
28					MICRODIORITE (Kgwu) SW: Dark grey, fine grained, massive, very high strength. CA veins throughout ~70°.		SW													C							27.32m-27.37m: HFZ	Is(50)=4.30 MPa	D (27.25m)
						+			H-VH																		Is(50)=1.10 MPa Is(50)=0.77 MPa	D (28.00m) A (28.12m)	
29	-25.50																										28.23m-28.26m: CZ 28.46m-28.48m: CA VN, 60°		
	-26.00		100		GRANODIORITE (Kgwu) SW: Pale pink-grey, medium to coarse grained, porphyritic, extremely high strength.-Js: 5°-20° (<5/m) Pl/Sm, Tl, Cn or Fe St.	+	SW		H-VH																		29.00m: Contact, 40°, Pl/Sm, Cn	UCS=36.90 MPa Is(50)=2.50 MPa	(28.92m) A (29.30m)
					Borehole completed at 29.50m																								

Borehole completed at 29.50m

REMARKS: Kgwu = Wunduru Granodiorite

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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	20/11/15
Borehole No.	BH 244	TMR H No.	H12253
Location	Pioneer River Bridge	Start Depth (m)	19.10
Detail	Pier 14, centreline	Finish Depth (m)	29.50
Chainage		Submitted By	M.Ensor
Remarks			

The photograph shows three boxes of core samples, labeled BOX 1, BOX 2, and BOX 3. Each box contains several cylindrical core segments. Handwritten labels on the boxes and segments indicate project details (FG6184, BH244) and depths (e.g., 19.10m, 20.0m, 20.4m, 21.0m, 21.5m, 22.0m, 22.5m, 23.0m, 24.0m, 24.5m, 25.0m, 26.0m, 27.0m, 27.5m). A scale bar at the bottom indicates a length of 700 units, with a scale of 1:5.

CORE PHOTO LOG

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Project No.	FG6184	Date	20/11/15
Borehole No.	BH 244	TMR H No.	H12253
Location	Pioneer River Bridge	Start Depth (m)	19.10
Detail	Pier 14, centreline	Finish Depth (m)	29.50
Chainage		Submitted By	M. Ensor
Remarks			




0 100 200 300 400 500 600 700

SCALE 1:5