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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 **BH239**

Sheet 1 of 4

REFERENCE No **H12248**

PROJECT	Mackay Ring Road		
LOCATION	Pioneer River Bridge, Pier 12	COORDINATES 721346.9 E; 7660419.4 N	
PROJECT No	FG6184	SURFACE RL 3.33m	PLUNGE 90°
			DATE STARTED 02/11/2015
			GRID DATUM GDA 94 / MGA Z55
JOB No	242/10G/906	HEIGHT DATUM A.H.D.	BEARING °
			DATE COMPLETED 04/11/2015
			DRILLER Cairns 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
0 - 1.67				A	SAND (Fill) Brown, moist, very loose to loose. Fine to coarse sand; trace gravel.	(SP)					1, 2, 2 N=4	SPT	
1.67 - 2.0				B	2.0m: Becoming medium dense.	(SP)					8, 8, 8 N=16	SPT	
2.0 - 3.0				C	3.0m - 3.15m: Sandy GRAVEL, brown grey, wet, loose. Fine to medium gravel.	(SP)					5, 6, 6 N=12	SPT	
3.0 - 4.0				D	4.0m: Becoming loose.	(SP)					2, 3, 2 N=5	SPT	
4.0 - 5.67	-1.67			E	Gravelly SAND (Fill) Brown, wet, loose. Fine to coarse sand; fine to medium gravel.	(SP)					4, 4, 4 N=8	SPT	
5.67 - 6.67	-3.17			F		(SP)					6, 7, 9 N=16	SPT	
6.67 - 7.0				G	Clayey SAND (Alluvium) Pale brown, moist, medium dense. Fine to medium sand; Low plasticity clay.	(SC)					6, 10, 14 N=24	SPT	
7.0 - 8.0				H		(SC)					9, 9, 10 N=19	SPT	
8.0 - 9.0				I	CLAY (Alluvium) Brown grey, moist, very stiff. Medium to high plasticity; trace sand.	(CI)					6, 10, 15 N=25	SPT	
9.0 - 9.67	-5.67												
9.67 - 10.0	-6.67												

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REMARKS:

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T. Goosey	S.Foley



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BOREHOLE No **BH239**

Sheet 2 of 4

REFERENCE No **H12248**

PROJECT Mackay Ring Road
 LOCATION Pioneer River Bridge, Pier 12 COORDINATES 721346.9 E; 7660419.4 N
 PROJECT No FG6184 SURFACE RL 3.33m PLUNGE 90° DATE STARTED 02/11/2015 GRID DATUM GDA 94 / MGA Z55
 JOB No 242/10G/906 HEIGHT DATUM A.H.D. BEARING ° DATE COMPLETED 04/11/2015 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
11	-7.67			J	CLAY (Alluvium) Cont'd.	(CI)				16, 20, 33 N=53	SPT		
12				K	Silty CLAY trace Sand (Residual) Grey brown, moist, hard. Medium to high plasticity; fine to medium sand; trace gravel.					8, 17, 24 N=41	SPT		
12				L						10, 17, 28 N=45	SPT		
13				M		(CI)				10, 21, 30/90mm	SPT		
14				N	14.0m: Trace gravel.					14, 30/120mm	SPT		
15	-11.67			O	GRANODIORITE (Kgwu) XW: Recovered as Sandy CLAY. Grey brown mottled white, moist, hard. Low plasticity.					14, 17, 30 N=47	SPT		
16				P						14, 21, 30/110mm	SPT		
17				Q						30/150mm	SPT		
18				R		XW				30/90mm	SPT		
19				S	19.0m: Trace gravel.					30/80mm	SPT		
16.67	-16.67												

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BOREHOLE No **BH239**

Sheet 3 of 4

REFERENCE No **H12248**

PROJECT	Mackay Ring Road		
LOCATION	Pioneer River Bridge, Pier 12	COORDINATES 721346.9 E; 7660419.4 N	
PROJECT No	FG6184	SURFACE RL 3.33m	PLUNGE 90°
			DATE STARTED 02/11/2015
			GRID DATUM GDA 94 / MGA Z55
JOB No	242/10G/906	HEIGHT DATUM A.H.D.	BEARING °
			DATE COMPLETED 04/11/2015
			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
21					U	GRANODIORITE (Kgwu) XW: Cont'd.	+	XW			30/100mm	SPT	
22	-18.67				V	GRANODIORITE (Kgwu) HW: Grey and orange brown, medium to coarse grained, massive, very low to low strength.	+	HW			30/50mm	SPT	
23					W		+				30/70mm	SPT	
24			(30)			GRANODIORITE (Kgwu) SW: Pale grey, coarse grained, porphyritic, high to very high strength. - Js: 5°-15° (3-4/m) Pl/Ro, TI-OP, Fe St - Js: 50°-60° (1-2/m) Pl/Ro, TI-OP, Fe St - Js: 70°-80° (2/m) Pl/Ro, TI-OP, Fe St	+	SW	H-VH	C	Is(50)=2.00 MPa	A (24.05m)	
25			100 (94)				+	MW	H	VC	Is(50)=1.80 MPa	I (24.60m)	
26	-22.45					MICRODIORITE (Kgwu) SW: Blue grey, fine grained, massive, very high strength. - Js: 5°-15° (2-3/m) Pl/Ro, TI, Fe St - Js: 50°-60° (1/m) Pl/Ro, TI-OP, Fe St	+	SW		C	Is(50)=7.40 MPa	D (25.33m)	
27			100 (81)				+			M	UCS=50.30 MPa	(25.53m)	
28	-24.60					GRANODIORITE (Kgwu) SW: Pale grey, coarse grained, porphyritic, very high strength. - Js: 5°-15° (2/m) Pl/Ro, TI-OP, Fe St - Js: 40°-50° (<1/m) Pl/Ro, TI, Fe St	+	SW	VH	C	Is(50)=7.40 MPa	D (26.13m)	
29			100 (92)				+			M	Is(50)=0.48 MPa	A (26.45m)	
							+			C	Is(50)=5.50 MPa	A (27.22m)	
							+			M	Is(50)=5.50 MPa	A (28.18m)	
							+			M	Is(50)=4.70 MPa	D (28.28m)	
							+			M	UCS=119.00 MPa	(28.98m)	

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Sheet 4 of 4

REFERENCE No **H12248**

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LOCATION	Pioneer River Bridge, Pier 12	COORDINATES 721346.9 E; 7660419.4 N	
PROJECT No	FG6184	SURFACE RL 3.33m	PLUNGE 90°
			DATE STARTED 02/11/2015
			GRID DATUM GDA 94 / MGA Z55
JOB No	242/10G/906	HEIGHT DATUM A.H.D.	BEARING °
			DATE COMPLETED 04/11/2015
			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
								INTACT STRENGTH													
								EH	VH	H	M	L	VL	EL	EC	VC	C	M			
31					GRANODIORITE (Kgwu) SW: Cont'd.	+		[Strength Data]												Is(50)=13.00 MPa	D (30.17m)
32						+	SW	[Strength Data]												Is(50)=7.80 MPa	A (31.26m)
33			100 (68)			+		[Strength Data]												Is(50)=3.50 MPa	A (32.29m)
34	-31.02		100			+		[Strength Data]											32.77m-32.96m: DI BZ	UCS=80.60 MPa E=37.3 GPa v= 0.069	(33.15m)
35						+		[Strength Data]												Is(50)=0.86 MPa Is(50)=3.40 MPa	A (33.59m) D (33.70m)
36						+		[Strength Data]													
37						+		[Strength Data]													
38						+		[Strength Data]													
39						+		[Strength Data]													
					Borehole completed at 34.35m																

REMARKS:	LOGGED BY	REVIEWED BY
	T. Goosey	S.Foley

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	04/11/15
Borehole No.	BH 239	TMR H No.	H12248
Location	Pioneer River Bridge	Start Depth (m)	23.50
Detail	Pier 12, RHS	Finish Depth (m)	34.35
Chainage		Submitted By	M.Ensor
Remarks			



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Project Name	Mackay – Ring Road (Stage 2)		
Project No.	FG6184	Date	04/11/15
Borehole No.	BH 239	TMR H No.	H12248
Location	Pioneer River Bridge	Start Depth (m)	23.50
Detail	Pier 12, RHS	Finish Depth (m)	34.35
Chainage		Submitted By	M.Ensor
Remarks			



SCALE 1:5