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GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014 FINAL 17/03/2016

BH208

Sheet 1 of 4

BOREHOLE No

REFERENCE No

H12217

PROJE	PROJECT Mackay Ring Road													
LOCA	ΓΙΟΝ	Pioneer River Bridge, Pier 2 (CL) COORDINATES 721286.7 E; 7660073.7 N												
PROJE	CT No	FC	661	84		SURFACE RL 7.04m	PLU	INGE 9	0°	DATE STAF	RTED 25/09/2015	GRID DATUM	GDA 94 / MGA Z55	
JOB N	0	24	12/2	10G/90	6	HEIGHT DATUM A.H.D.	BEAR	RING_		DATE COMPLE	ETED 28/09/2015	DRILLER C	airns Drill	ing
DEPTH (m)	R.L. (m)	AUGER CASING WASH BODING	CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION	ГІТНОГОGY	USCS WEATHERING	INTACT STRENGTH 표구구ㅋㅋㅋ리쿄	DEFECT SPACING		DDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
	6.54					Clayey SAND (Topsoil) Brown, moist, very loose to loose. Rootlets and organics.		(SC)						
					Δ	CLAY trace sand (Alluvium) Brown, moist, very stiff. Low to medium plasticity.		(CI)	-	-			5, 10, 13 N=23	SPT
-	5.54				В					-			6, 9, 13 N=22	SPT
- - - - 2					С	Sandy CLAY (Alluvium) Brown, moist, very stiff. Fine grained sand, low to medium		(CI)		-			7, 10, 17 N=27	SPT
	4.54				D	plastīcity.							5, 8, 11 N=19	SPT
- - - - 3	4.04				Е	CLAY (Alluvium) Dark brown, moist, very stiff. Medium to high plasticity.		(СН)		- - - -			6, 8, 12 N=20	SPT
-	3.54				F	Sandy CLAY (Alluvium) Dark brown, moist, very stiff. Fine to medium grained sand,		(CH)		- - - -			6, 9, 16 N=25	SPT
- 4					G	medium to high plasticity. Clayey SAND (Alluvium) Frey brown, moist, dense.			- - - -				7, 10, 25 N=35	SPT
-						Fine to medium grained sand. 4.00m: becomes grey, very dense 4.50m: becoming dense.		(SC)				15	5, 26, 30/130	SPT
- 5	2.04				I					= - - -			14, 17, 22 N=39	SPT
						SAND trace clay (Alluvium) Grey brown, moist, medium dense. Fine to medium grained. 5.50m: becomes dense							7, 12, 16 N=28	SPT
- 6					К	5.50m. becomes dense			-	-			8, 14, 17 N=31	SPT
-					L			(SP)					9, 12, 20 N=32	SPT
- 7					Μ					_ _ _ 			11, 13, 21 N=34	SPT
	-0.46				N	CLAY trace sand (Alluvium)				- - - - -			15, 19, 24 N=43	SPT
- 8					0	Grey brown, moist, hard. Fine grained sand, low to medium plasticity.			- - 	= - - -			7, 14, 20 N=34	SPT
-					Ρ	8.00m: becomes very stiff 8.50m: becomes very stiff to hard		(CI)	- - - -	- - - -			8, 11, 14 N=25	SPT
- - - - 9	-2.06				Q	9.00m: becomes very stiff			- - - -	- - -			7, 13, 17 N=30	SPT
						Clayey SAND (Alluvium) Brown grey, moist, medium dense to dense.		(SC)		= - - -			8, 12, 16 N=28	SPT
-	-2.96				S	Fine to medium grained sand, low				- - -			6, 10, 21 N=31	SPT
						Continued on next sheet					I			
R	emar	KS:	K	gwu =	W	'undaru Granodiorite					-	LOGGED BY		WED BY
						TMR G	EOTECI	HNICAL BO	DREHOLE LOG - CREATED \	VITH HOLEBASE SI		T.Goosey	S.I	oley

												FINAL 1	7/03/2016
		ÌC.	* •					OTECHN			BOREHOLE No	Bł	1208
	了。 加		Qu	e	ensland		BC	REHOLE	LOG		Sheet 2	2 of 4	
	18 ye		Go	Ve	ernment	SYI		GEOTECHNICAL TE REFER FORM F:GE			REFERENCE No	H1	2217
PROJE	CT	Mac	ckay Ring	g Rc	ad								
LOCAT	ΓΙΟΝ	Pior	neer Rive	er B	ridge, Pier 2 (CL)						OORDINATES 721286.7	E; 766007	73.7 N
PROJE	CT No	FG6	184		SURFACE RL 7.04m	PLU	INGE S	0°	DATE STAF	RTED 25/09/2015	GRID DATUM	ida 94 / N	/IGA Z55
JOB N	0	242	/10G/90)6	HEIGHT DATUM A.H.D.	BEA	RING °		DATE COMPLE	ETED 28/09/2015	DRILLER C	airns Drill	ing
		111					-						
DEPTH (m)	R.L. (m)	UGER ASING VASH BORING ORF DRITING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH 표,폭,ᆂ,ᆂ,ᆂ,,ᆃ,ᇳ	DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
	2.00	< D 5 C		т	plasticity.		(SC)						SPT
-	-3.26			1	Clayey SAND (Alluvium) Brown grey, moist, dense.	Ë-		-	_			16, 17, 18 N=35	371
-				υ	Fine to medium grained sand.		(0)	-	_			5, 8, 12	SPT
- 11					CLAY (Alluvium) Grey, moist, very stiff.	E	(CI)		- -			N=20	
-	-4.26			v	Low to medium plasticity.	E						4, 7, 12	SPT
-	-4.51				Sandy CLAY (Alluvium) Grey, moist, very stiff. Fine to		(CI)		-			N=19	
_				w	medium grained sand, low to	<u> </u> =			_			5, 7, 9 N=16	SPT
- 12					medium plasticity. CLAY trace sand (Alluvium)	F:			<u>-</u>				
_				Q	Grey, moist, mainly very stiff to stiff.	E	-	-	-			4, 5, 9 N=14	SPT
-				Y	Fine grained sand, low to medium plasticity.	_	(CI)		_			4, 7, 10	SPT
- - - 13						_			-			4, 7, 10 N=17	
				z		=	-	-	_			5, 7, 11	SPT
-	-6.46				Sandy CLAY (Alluvium)	-	-		-			N=18	
_				AA	Brown grey, moist, very stiff.			-	-			5, 9, 13 N=22	SPT
- 14					Fine to medium grained sand, low to medium plasticity.		(CI)	-	-			N=22	
-	-7.46			AB	14.00m: becomes very stiff to hard.			-	-			7, 12, 18 N=30	SPT
-	-7.40				Clayey SAND (Residual)	F		-					SPT
- 15					Brown grey, moist, medium dense. Fine to coarse grained sand, low to			_	-			8, 12, 16 N=28	011
- 15 -				AD	medium plasticity.		(SC)	-	_			9, 12, 14	SPT
_					15.50m: becomes dense.	-		-	_			N=26	
_				AE		-		-	-			9, 10, 23	SPT
- - 16	-8.96				SAND (Residual)				-			N=33	
_				AF	Brown grey, moist, very dense.				-		13	3, 21, 30/130	SPT
-			1		Fine to coarse grained sand.				-				
- 17			1					-	L 				
17 			1	AG				-				30/140	SPT -
-			1				(SP)						-
-			1					-	-				-
- 18				АН					-				SPT
Ē			1					-	_			30/60 hb	-
-			1						-				-
- - - 19	-11.96		1						- - 				-
			1	AL	Gravelly SAND (Residual) Brown grey, moist, very dense.							30/80	
-			1		Fine to coarse grained sand, fine		(SP)		-			hb	-
_	40.00		1		grained gravel.			-					-
	-12.96		1		Continued on next sheet		1		L	<u> </u>			
R	EMARI	KS:	Kgwu =	= W	/undaru Granodiorite						LOGGED BY	REVIF	WED BY
											T.Goosey		-oley
1											,	0.1	,

TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

Queensland Government

GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014 FINAL 17/03/2016

BH208

Sheet 3 of 4

BOREHOLE No

REFERENCE No

H12217

PROJEC	CT	Ν	Ласŀ	kay Ring	Ro	ad								
LOCATI	ION	P	ione	eer Rive	r Bı	ridge, Pier 2 (CL)					C	OORDINATES 721286.7	E; 766007	73.7 N
PROJEC	CT No	F	G61	.84		SURFACE RL 7.04m	PLU	NGE S	90°	DATE STARTED 25/09/201		5 GRID DATUM GDA 94 / I		/IGA Z55
JOB No)	2	242/10G/906			HEIGHT DATUM A.H.D.	BEAF			DATE COMPLE	TED 28/09/2015	DRILLER C	Cairns Dril	ing
DEPTH (m)	R.L. (m)	AUGER	WASH BORING CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH 표于고우니커쿄	DEFECT SPACING	,	ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
-				(0)		GRANODIORITE (Kgwu) MW: Pale grey brown, coarse grained, porphyritic, low to high	+++++++++++++++++++++++++++++++++++++++	мw	M	vc-c	20.03m-20.08m: Clay	ey sand seam Is(S	50)=0.59 MPa	A (20.10m)-
-						strength. Js: 5° to 15°; (5-6/m); Pl/Ro; FL; Cly and Sinf, Fe St;	+++++++++++++++++++++++++++++++++++++++	нw		vc	20.75m-21.06m: HW		50)=0.27 MPa	D (20.60m)
21				100 (0)		Js: 20° to 30°; (5-6/m); PI/Ro; TI-FL; Sinf and Fe St;	+ · + + + ·	мw] => 21.16m-21.19m: Clay seam	and sand		
- - - - 22				100		Js: 40° to 50°; (1-2/m); Pl/Ro; TI-FL; Sinf and Fe St;	+ · + + + ·	нw	L	vc-c	21.56m-21.90m: HW	BZ; Is(5	50)=0.29 MPa	l (21.55m)
- 22 - - -							+ + + + + +	мw нw	MH VL-L	VC-C	22.25m-22.50m: HW	zone		
- - - 23	-15.61			100 (0) 100		GRANODIORITE (Kgwu) HW: Grey brown, coarse grained,	+ + + + + +	MW	MH	E	22.65m-23.00m: HW	BZ		
-				(0) 100		porphyritic, very low to low strength.	+ + + + +	нw	VL-L VL	vc		Is(5	50)=0.38 MPa	I (23.30m) –
24	-16.66			(0)		GRANODIORITE (Kgwu) MW: Grey brown, coarse grained,	+++++++++++++++++++++++++++++++++++++++	MW	MH	vc-c	23.84m-24.05m: Mic			
	-17.41			100		porphyritic, medium to high strength. MICRODIORITE (Kgwu)	+ + + +		LM			Is(5	50)=0.67 MPa	D (24.14m)
- - - 25 -				(00)		MW: Green grey, fine to medium grained, massive, high strength. Js: 5° to 15°; (2/m); PI/Ro; TI-FL; Cly Vr and Fe St;	+ + + + + + + + + + + + + + + + + + + +	мw	н	c		ls(5	50)=3.60 MPa	D (24.90m)- - -
-	-18.81			100		Js: 25° to 35°; (2/m); Pl/Ro; TI; Fe St; Js: 75° to 85°; (1/m); Pl/Sm; TI; Fe St;	+ + + + + + + + + + + + + + + + + + + +		н	M	25.41m-25.48m: HW and sand infill		CS=6.97 MPa	(25.00m)
- 26 	10.01			(0)		GRANODIORITE (Kgwu) MW: Pale red grey, coarse grained, porphyritic, medium to high	+ + + + + +	HW	MH		26.22m-26.33m: HW		CS=6.97 MPa	(25.80m) -
-				100 (13)		strength.	+ + + + +	<u>мw</u> нw		vc	26.45m-27.00m: HW	zone		
27 				100			+ + + + +	мw	MH	vc-c	27.35m-27.62m: XW	zone		
	-20.58			100 (56)		GRANODIORITE (Kgwu) SW: Pale red grey, coarse grained,	• + + • + +	xw			27.68m-27.72m: Clay band		50)=3.00 MPa	 D (27.90m)
28 				100 (95)		porphyritic, high to very high strength. Js: 5° to 10°; (2/m); PI/Ro; TI; Fe St;	• + + · • +			c			50)=1.10 MPa	A (28.45m)
				(95)		Js: 60° to 70°; (2/m); Pl/Ro; TI; Fe St;) + + · +	sw	H-VH	м			=108.00 MPa	(28.85m)
29 										w				
	-22.96					Continued on part - t t	+++++			С			0)=16.00 MPa 0)=12.00 MPa	D (29.62m) A (29.73m)
RE	MAR	KS:	K	(gwu =	W	Continued on next sheet undaru Granodiorite						LOGGED BY	REVIE	WED BY
				-							·	T.Goosey		-oley
						TMR G	EOTECH	HNICAL B	OREHOLE LOG - CREATED V	ITH HOLEBASE SI		,	I	

						_		FINAL 1	7/03/2016
	AC.		GEC	DTECHN	ICAL		BOREHOLE No	В	H208
	💓 Queensland		BOF	REHOLE	LOG	_	Shee	t 4 of 4	
1 Se	🕲 Governmen	t s		EOTECHNICAL TER EFER FORM F:GEC			REFERENCE No	H	12217
PROJECT	Mackay Ring Road								
LOCATION	Pioneer River Bridge, Pier 2 (Cl	_)					COORDINATES 721286.	7 E; 76600	73.7 N
PROJECT No	FG6184 SUF	RFACE RL 7.04m PL	LUNGE 90	•	DATE STAF	RTED 25/09/2015	GRID DATUM	GDA 94 / 1	MGA Z55
JOB No	242/10G/906 HEIGHT	DATUM A.H.D. BE	ARING		DATE COMPLE	TED 28/09/2015	DRILLER	Cairns Dril	lling
(w) HL R.L. (m) D		IAL DESCRIPTION	USCS WEATHERING EH	INTACT STRENGTH			ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
	100 GRANODIORIT (0) SW: (Cont'd) From 30.10m Js: 5° to 10°; some Cly Vra Js: 30° to 40° FL; some Cly Js: 65° to 75° 100 Some Cly Vra (0) GRANODIORIT HW: Pale brow grained, porph 100 to very low str (100) fractured. GRANODIORIT SW: Pale red g porphyritic, hig strength. MICRODIORITT SW: Green gre grained, massi strength. 100 100	(10/m); Pl/Ro; TI-FL; and Fe St; ; (6-8/m); Pl/Ro; TI- Vr and Fe St; ; (2/m); Pl/Ro; TI-FL; and Fe St; E (Kgwu) yrn grey, coarse enyritic, extremely low ength. Highly E (Kgwu) rey, coarse grained, gh to very high	+ SW + HW + SW + SW + HW + SW + HW + SW + HW + SW + SW	н		30.36m-30.41m: HW 30.45m-30.60m: HW 32.35m-32.60m: XW 33.05m: Contact; 70 St 34.50m: J; 20°, PI/Ro	/ zone / Cly zone *, Pl/Ro, Tl, Fe Is Is Is	s(50)=5.60 MPa s(50)=3.60 MPa s(50)=4.70 MPa s(50)=6.50 MPa JCS=38.10 MPa JCS=62.90 MPa	A (33.03m) D (33.73m) (33.92m)
					-				
						L			L
REMAR	KS: Kgwu = Wundaru Grar	nodiorite					LOGGED BY	REVIE	EWED BY
							T.Goosey	S.	Foley
		TMR GEOTE	ECHNICAL BORE	EHOLE LOG - CREATED W	ITH HOLEBASE SI				

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	28/09/15
Borehole No.	BH 208		TMR H No.	H12217
Location	Pioneer River Bridge		Start Depth (m)	20.00
Detail	Pier 2, centreline		Finish Depth (m)	34.60
Chainage			Submitted By	M.Ensor
Remarks			· ·	
				29.04
0 100	200 300	400	500 600	700
	SCAL	E 1:5		

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 Name Project No.	FG6184	Date	28/09/15
Borehole No.	BH 208	TMR H No.	H12217
Location	Pioneer River Bridge	Start Depth (m)	20.00
Detail	Pier 2, centreline	Finish Depth (m)	34.60
Chainage		Submitted By	M.Ensor
Remarks		Cubinitiou Dy	
		MiR.A	
0 100	200 300 400 SCALE 1:5	500 600	700