## **COPYRIGHT NOTICE**

This geotechnical log and its associated data (the Document) is licensed by the Queensland Department of Transport and Main Roads under the <u>Creative Commons Attribution 4.0 Licence</u> (CC BY 4.0). When reusing the Document, in whole or in part, please attribute the Department as follows: "(c) State of Queensland (Department of Transport and Main Roads) 2020, licensed under the CC BY 4.0 Licence". This licence does not apply to the Queensland Government logo or trademarks.

### LIMITATION OF LIABILITY

The CC BY 4.0 Licence contains a comprehensive Disclaimer of Warranties and Limitation of Liability. In addition, please note that this Document was prepared for Departmental use only. Reuse of the Document by anyone for any other purpose could result in error and/or loss. You should obtain professional advice before making decisions based on the contents of the Document.

When reproducing any part of this Document, you must also reproduce this limitation of liability notice in addition to the italicised attribution statement above.

Retrieved from the Queensland Geotechnical Database http://qgd.org.au/

	<b>Queensland</b> Government
--	---------------------------------

# **GEOTECHNICAL BOREHOLE LOG**

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

FINAL 18/03/2016

BH251

Sheet 1 of 4

BOREHOLE No

REFERENCE No

H12260

PROJE	DIECT Mackay Ring Road														
LOCAT	ION	F	Pior	neer	River	Br	idge, Pier 16 (RHS)					Ci	OORDINATES 721368.0	E; 766055	58.8 N
PROJE	CT No	F	G6	184			SURFACE RL 3.09m	PLU	NGE 9	0°	DATE STAF	RTED 16/11/2015	GRID DATUM GDA 94 /		/IGA Z55
JOB No	D	2	242,	/100	6/906		HEIGHT DATUM A.H.D.	BEAF			DATE COMPLE	ETED 18/11/2015	DRILLER S	axon Drill	ing
DEPTH (m)	R.L. (m)	NUGER	WASH BORING CORF DRI LING		QD )%	SAIMPLE	MATERIAL DESCRIPTION	ГІТНОГОСУ	USCS WEATHERING	INTACT STRENGTH 표구구구우구경교	DEFECT SPACING	A	ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
- - - - - - - - - - - - - - - - - - -					,		SAND trace silt and gravel (Fill) Pale orange grey, moist, very loose. Fine to medium grained sand, fine to coarse grained gravel, angular grains. 1.00m: becomes pale orange and grey, clay content decreasing.							2, 1, 1 N=2	SPT
- - - - - - - - -	0.29	-			1	в	Gravelly SAND trace silt and clay							1, 1, 1 N=2	SPT
- 3 					(	С	(Alluvium) Dark grey, wet, loose. Fine to medium grained sand, fine to coarse grained gravel, rounded grains.	د او در او در در در در در در در در به در در در او در						3, 3, 4 N=7	SPT
- - - - - - - - - - - - -						D		المراجع المراجع المراجع المراجع	(SP)					2, 2, 5 N=7	SPT 
	-2.31 -2.91						CLAY trace sand (Alluvium) Pale brown grey, moist, firm. Fine grained sand, low plasticity.		(CL)					2, 3, 2 N=5	SPT 
						F	Silty SAND trace clay (Alluvium) Pale grey, moist, medium dense. Fine to medium grained sand.	×x×××××××						10, 8, 10 N=18	SPT
- 7 					(	G			(SM)					5, 5, 9 N=14	SPT
- 8 					1	Н	8.00m: becomes medium to coarse grained sand.	X X X X X X						6, 8, 9 N=17	SPT
- - - - - - - - - - - -	-6.41						Clayey SAND (Residual) Yellow brown, moist, medium dense		(SC)		- - - - - - - - - - - - - - - - - - -			6, 6, 6 N=12	SPT
							Continued on next sheet					I			
RI	LIVIAR	ĸS		кgv	/u =	vV	undaru Granodiorite						LOGGED BY		WED BY
							TMR (	GEOTECH	INICAL BO	DREHOLE LOG - CREATED V	VITH HOLEBASE SI		C.Boyes	5.1	oley
ι <u> </u>							TWIC								

					_		FINAL 18	/03/2016
	AC		GE	OTECHNICAL		BOREHOLE No	ВН	251
		ensland	BO	REHOLE LOG		Sheet 2	2 of 4	
N.S.	🗶 Gov	ernment		GEOTECHNICAL TERMS AND REFER FORM F:GEOT 017/8-2014		REFERENCE No	H12	2260
PROJECT	Mackay Ring Ro	J			L			
LOCATION		Bridge, Pier 16 (RHS)				COORDINATES 721368.0	E; 7660558	8.8 N
PROJECT No	FG6184	SURFACE RL 3.09m	plunge 9	0° DATE STAF	RTED 16/11/201	5 GRID DATUM G	6DA 94 / M	GA Z55
JOB No	242/10G/906	HEIGHT DATUM A.H.D.	BEARING	DATE COMPLE	ETED 18/11/201	5 DRILLER S	axon Drillir	ng
	RQD		<u></u> υ			ADDITIONAL DATA		
(m) HLGAD (m) (m)	Auger Casing Corse Bening Corse Bening Sample Sample	MATERIAL DESCRIPTION	LITHOLOGY USCS WEATHERING			AND TEST RESULTS		SAMPLES TESTS
7.06	J	to dense. Medium to coarse grained					13, 21, 27	SPT
-		sand. Clayey SAND (Residual)	/ ++	+			N=48	
		(Cont'd) GRANODIORITE (Kgwu)	/ • • •	<u> </u>				-
11		XW: Recovered as Silty Clayey SAND: Pale yellow grey, dry to	++	+				
-	К	moist, dense. Fine to medium	• + + - • +	+			15, 20, 23 N=43	SPT
-		grained sand.	+ XW	+				-
- - 12		12.00m: becomes pale grey, very	+ + + +	+				
-	L	dense.	++	+			32, 30, 29 N=59	SPT
-			• + +	+			N-59	-
9.91			++	+				-
- 13	М		+ + +			22	3, 30/110mm	SPT
-		XW: Recovered as Silty SAND: Pale grey, dry to moist, very dense. Fine	++	±		23	5, 50/110000	-
-		to coarse grained sand, angular grains.	• +	+				-
14	N	•	• + +	+				SPT -
			<b>•</b>	±			30/120mm	-
-			+ +	+				-
-			► + + · ► + XW	+				-
- 15 -	0		• + ×w • •	+			30/140mm	SPT -
-			+ +	<u> </u>				_
-			• +	+				-
- 16 - 16	Р		÷	+				SPT
-			+ +	+			30/130mm	-
-			++	±				
13.91		-	+	<u>+</u>				
-		GRANODIORITE (Kgwu) HW: Pale red and grey, coarse	+ +	÷.			30/20mm	-
		grained, massive, extremely low to very low strength.	• +	+			hb	-
		17.00m: becomes pale pink grey and dark grey. Fine to medium	+ + + + -	±				-
18	R		+ +	 				SPT
			<b>+</b> нw	±			30/110mm	-
			• • · · · · · · · · · · · · · · · · · ·					-
- 19	-	=	+ + +	+			-	SPT -
			•_+				20/30mm hb	-
			+					-
16.91			++	+				
		Continued on next sheet						
REMAR	KS: Kgwu = V	Vundaru Granodiorite				LOGGED BY		NED BY
						C.Boyes	S.F	oley

										_		FINAL 1	8/03/2016
بالايد	31	AG	Nu -				G	EOTECHN	ICAL		BOREHOLE No	В	H251
5					ensland		BC	OREHOLE	LOG		Sheet	3 of 4	
Ķ	S.	2	, G	0V	ernment			DR GEOTECHNICAL TER LS REFER FORM F:GEO			REFERENCE No	H	12260
PROJECT		Μ	ackay R	ing R	oad								
LOCATION	N	Pi	oneer R	iver E	Bridge, Pier 16 (RHS)						COORDINATES 721368.0	E; 76605	58.8 N
PROJECT I	No	FG	66184		SURFACE RL 3.09m	P	LUNGE	90°	DATE STAF	RTED 16/11/2015	GRID DATUM	GDA 94 / I	MGA Z55
JOB No		24	2/10G/	906	HEIGHT DATUM A.H.D.	BE	ARING	°	DATE COMPLE	TED 18/11/2015	DRILLER	Saxon Dril	ling
	R.L. (m)	AUGER CASING WASH RORING		RAMPLE	MATERIAL DESCRIPTION		USCS	INTACT STRENGTH 표독고독고취리			ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
-				T	GRANODIORITE (Kgwu) HW: (Cont'd)	1	+	+	-			30/50mm hb	SPT 
22					22.00m: becomes pale grey ar dark grey. Fine to medium grai sand, angular to subangular gr 23.00m: becomes pink grey ar dark grey.	ined rains.	+ · + · + · + · + · + · + · + · + · + ·				uc	hb 30/120mm hb 30/120mm cS=68.80 MPa 30/40mm hb	SPT (23.40m) SPT (23.40m) SPT 
- 26 - 26 				-2		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	+++++++		· 			hb hb	
28 28 29 29	4.21		(64	)	GRANODIORITE (Kgwu) SW: Pale grey and dark grey, medium to coarse grained, porphyritic, extremely high strength. - Js: 5° to 15° (~4/m); PI/Sm-R Cn or CA Vr; - Js: 20° to 30° (~3/m); PI/Sm- Cn or CA Vr;	o; TI;	* * * * * * * *		с м с м	27.33m-27.43m: HF2	is() Is(5) UCS Is(5)	(J) 50)=0.56 MPa J)=12.00 MPa J)=10.00 MPa J)=10.00 MPa	A (27.60m) D (27.90m) (28.60m) (28.60m) A (29.30m) D (29.40m)
2	6.91		100 (86				+			29.70m: VN; 50°; PI/ <10mm;	'Sm; CA;		
	445				Continued on next sheet								
REN	/IARI	KS:	KgWl	1 = V	Vundaru Granodiorite						LOGGED BY		WED BY
								PORTUOI FIND	TH 1101 FR 107 C		C.Boyes	S.	Foley
						TMR GEOT	ECHNICAL	BOREHOLE LOG - CREATED WI	TH HOLEBASE SI				

										_		FINAL 1	.8/03/2016
		ÀG.					GE	OTECHI	NICAL		BOREHOLE No	В	H251
					ensland		BC	DREHOL	e log		Shee	et 4 of 4	
	1 Se	×1°	GC	)Ve	ernment	SY		R GEOTECHNICAL T S REFER FORM F:G			REFERENCE No	Н	12260
PROJE	ст	Mac	kay Rin	ig Ro	bad								
LOCAT	ION	Pion	ieer Riv	er B	ridge, Pier 16 (RHS)					(	COORDINATES 721368.	0 E; 76605	58.8 N
PROJE	CT No	FG6	184		SURFACE RL 3.09m	PLL	UNGE	90°	DATE STAF	RTED 16/11/2015	GRID DATUM	GDA 94 / I	MGA Z55
JOB N	0	242/	/10G/9	06	HEIGHT DATUM A.H.D.	BEA	RING	D	DATE COMPLI	ETED 18/11/2015	DRILLER	Saxon Dril	ling
Ê			RQD			7	ŰZ	INTACT	DEFECT		ADDITIONAL DATA		(0
DEPTH (m)	R.L. (m)	SORING	()%	SAMPLE	MATERIAL DESCRIPTION	гітногоду	USCS WEATHERING	STRENGTH	SPACING		AND TEST RESULTS		SAMPLES TESTS
DE		AUGER CASING WASHBC CORE DF	CORE REC %	S		LI	WEA	ਜ਼ੵਖ਼ਸ਼ਫ਼ਸ਼ਖ਼ਗ਼	$\underset{I}{\overset{\circ}{\overset{\circ}}}_{\overset{\circ}{\overset{\circ}}}_{\overset{\circ}{\overset{\circ}}}_{\overset{\circ}{\overset{\circ}$				`&`
-					GRANODIORITE (Kgwu) SW: (Cont'd)	+++++			м		I	s(50)=2.90 MPa	A (30.07m)
-					- Js: 85° to 90° (~1/m); Un/Ro; TI; C Vr <2mm;	CA + +	-						-
-						÷.			м				
- 31 -						++				24 24 m MAL 40% DI	(c		
-						++	1		м	31.31m: VN: 40°; Pl/ <10mm;		s(50)=6.80 MPa s(50)=9.10 MPa	A (31.50m)
-						+	-			31.65m: VN: 60°; Pl/ <10mm;		5(50)-5.10 WPa	D (31.61m)_ - -
32						ļ.	sw	H-VH		32.00m: VN: 50°; Pl/ <15mm;	/Sm; CA,		
-						÷			с		1	s(50)=1.30 MPa	D (32.37m)-
-			100 (65)			++							
— 33 - -					From 32.94m: Defects become: - Js: 5° to 15° (~2/m); Pl/Ro; Tl;	ļ.							
-					Cn; - Js: 50° to 60° (<1/m); Pl/Ro-Sm; TI; CA Vr <2mm;	++	-		м				
-						++++++							-
34						+			c				
-	-31.48					ţ.		VH-EH	M	24 57-00 Counter at 55	Is	s(50)=6.50 MPa (50)=16.00 MPa	A (34.26m)_ D (34.36m)_
_			100 (92)		MICRODIORITE (Kgwu) SW: Dark grey, fine grained,	$\sim$			c	34.57m: Contact: 55	, uiysii, cu,		
— 35 - -					massive, very high strength. - Js: 5° to 10° (<4/m); Pl/Sm; TI; Cn	. 🕅			м			s(50)=6.80 MPa	A (35.06m)-
-						' (X	sw	VH					-
-						- 8			w				
- - 36						Ň						UCS=71.40 MPa	(36.05m) _
-					Granodiorite band	÷	sw	EH	м	36.23m: Contact: 60 36.54m: Contact: 60			
-					From 36.54m: - Js: 40°-55°(<2/m); PI/Ro; TI; CA Vr	++			c	50.54m. contact. 00		s(50)=2.90 MPa	– – – D (36.85m)
37	-34.18		100			++	sw	VH	м			s(50)=4.80 MPa	A (36.90m)
_	-34.10		100		GRANODIORITE (Kgwu)	+			-				-
-					SW: Pale grey and dark grey, medium to coarse grained,				+				-
- - 38 -					porphyritic, extremely high strength.				+				
-					Js: 5° to 15° (3/m); Pl/Sm-Ro; TI; CA Vr;	į							-
-					Granodiorite band From 36.54m: - Js: 40°-55°(<2/m);				+				-
- - 39 -					PI/Ro; TI; CA Vr Borehole completed at 37.27m	_!			+				
-									+				-
									+				-
_								· · · · ·	+				
RI	EMAR	KS: I	Kgwu	= W	/undaru Granodiorite						LOGGED BY	REVI	EWED BY
											C.Boyes		Foley
					TM	R GEOTEC	HNICAL B	BOREHOLE LOG - CREATED	WITH HOLEBASE SI		· · · · · · · · · · · · · · · · · · ·	1	

### 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	2)	
Project No.	FG6184	Date	18/11/15
Borehole No.	BH 251	TMR H No.	H12260
Location	Pioneer River Bridge	Start Depth (m)	27.30
Detail	Pier 16, RHS	Finish Depth (m)	37.27
Chainage		Submitted By	M.Ensor
Remarks			
Schert Societ 23.30	NA TEAM	BHZSI	BOX I
	the states	N.R.R	
	o de la companya de l		
	- Control Car	e a construction of the second se	
F46184		BH251	Box 2
310	Karra Carra		
	35.0		
4		H.P.R	
THE T			
0 100		400 500 600	700
	SCALE	1:5	

### CORE PHOTO LOG

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



Droject Name	Mackay – Ring Road	(Stage 2)		
Project Name Project No.	FG6184	(Slaye 2)	Date	18/11/15
Borehole No.	BH 251		TMR H No.	H12260
Location	Pioneer River Bridge			27.30
			Start Depth (m)	
Detail	Pier 16, RHS		Finish Depth (m)	37.27
Chainage Remarks			Submitted By	M.Ensor
FZ45		BH251		80X4
		S.		
			A CONTRACTOR PROPERTY.	-
		di-	Participant d	
04		37.23. EOH		
L'anna anta.				
0 100	200 30	0 400	500 600	700
	200 30		500 000	,00
		SCALE 1:5		