ENGINEERING BOREHOLE LOG

Queensland Government

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

BOREHOLE No **BH173**
SHEET 1 of 3
REFERENCE No **12114**

PROJECT Mackay Ring Road Geotechnical Investigation - Stage 1
LOCATION Fursden Creek Overflow Bridge Pier 1; CH: 8710m; COORDINATES 721432.6 E; 7661030.2 N
PROJECT No FG6184 SURFACE R.L. 7.34m PLUNGE DATE STARTED 20/10/14 GRID DATUM GDA 94 /MGA Zone 55
JOB No HEIGHT DATUM AHD BEARING DATE COMPLETED 21/10/14 DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( ) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (EC VC C M W VW EW)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
0	7.34				**Silty CLAY (TOPSOIL)** Dark brown, moist, stiff. Medium plasticity. Some roots.		(CI)							
1				A								4,5,7 N=12		SPT
1.50	5.84				**Silty SAND (ALLUVIUM)** Brown, moist, mainly loose to medium dense. Fine to medium grained sand.									
2				B								2,4,4 N=8		SPT
3				C								3,3,5 N=8		SPT
4				D			(SM)					4,4,4 N=8		SPT
5				E								4,5,6 N=11		SPT
6				F								2,4,5 N=9		SPT
7				G	7.00m: Becoming medium to coarse grained sand. Trace medium subangular gravel.							6,7,8 N=15		SPT
7.50	-0.16				**Sandy GRAVEL (ALLUVIUM)** Brown and black, moist to wet, medium dense to dense. Fine to medium, subrounded gravel. Trace fine to coarse grained sand.									
8				H			(GP)					16,17,15 N=32		SPT
9				J								4,5,6 N=11		SPT
9.50	-2.16				**Silty CLAY (ALLUVIUM)**		(CH)							
10														

REMARKS Kgwu - Wundaru Granodiorite;
Sample failed along existing defect surface.
Rock roller bit used 21.60m to 22.00m.

LOGGED BY MS

TMR JAN 15.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY FG6184 - BOREHOLES.GPJ <<DrawingFile>> Datgel CPT Tool gINt Add-In 04/03/2015 10:52

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ENGINEERING BOREHOLE LOG

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

BOREHOLE No **BH173**
SHEET 2 of 3
REFERENCE No **12114**

PROJECT Mackay Ring Road Geotechnical Investigation - Stage 1
LOCATION Fursden Creek Overflow Bridge Pier 1; CH: 8710m; COORDINATES 721432.6 E; 7661030.2 N
PROJECT No FG6184 SURFACE R.L. 7.34m PLUNGE DATE STARTED 20/10/14 GRID DATUM GDA 94 /MGA Zone 55
JOB No HEIGHT DATUM AHD BEARING DATE COMPLETED 21/10/14 DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( ) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (EC VC C M W VW EW)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
10	-2.66			K	**Silty CLAY (ALLUVIUM)** (Cont'd) Brown, yellow and pale grey, moist, very stiff. High plasticity.							3,7,9 N=16		SPT
11				L								6,10,12 N=22		SPT
12				M								5,9,11 N=20		SPT
13				N			(CH)					6,10,13 N=23		SPT
14				P								6,13,12 N=25		SPT
15				Q								9,13,15 N=28		SPT
15.50	-8.16				**Silty Sandy CLAY (RESIDUAL)** Pale brown and pale grey, moist, hard. Medium plasticity.									
16				R			(CI)					9,15,20 N=35		SPT
16.50	-9.16				**GRANODIORITE (Kgwu)** **XW:** Recovered as grey-brown, moist to dry, dense to very dense Clayey SAND. Fine to medium grained sand. Clay content decreases with depth.									
17				S								11,19,26 N=45		SPT
18				T			XW					19,27,30/110		SPT
19				U	19.00m: Becoming Silty SAND.							30/90		SPT
20														

REMARKS Kgwu - Wundaru Granodiorite;
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Rock roller bit used 21.60m to 22.00m.

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BOREHOLE No **BH173**
SHEET 3 of 3
REFERENCE No **12114**

PROJECT Mackay Ring Road Geotechnical Investigation - Stage 1
LOCATION Fursden Creek Overflow Bridge Pier 1; CH: 8710m; COORDINATES 721432.6 E; 7661030.2 N
PROJECT No FG6184 SURFACE R.L. 7.34m PLUNGE DATE STARTED 20/10/14 GRID DATUM GDA 94 /MGA Zone 55
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DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( ) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (EC VC C M W VW EW)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
20	-12.66			V	**GRANODIORITE (Kgwu)** **XW:** (Cont'd)		XW					30/120		SPT
21				W								30/100		SPT
21.60	-14.26													
					GRANODIORITE (Kgwu) **HW:** Grey, white and pink, fine to coarse grained, very low strength.		HW					21.60m-22.00m: Rock Roller bit used.		
22														
22.20	-14.86		(90)		22.00m: Becoming MW with high strength.		MW							
					MICRODIORITE (Kgwu) **SW:** Black, fine to medium grained, massive, high to very high strength. Some thin calcite veins throughout. Defects: - Js; 5°-15° (2/m); Pl/Ro, OP, some CA Ct; - Js; 30° (1/m); Pl/Ro, OP, some CA Ct;							Is(50) = 2.37MPa; #	A (22.35m)	
23														
			100									UCS=140MPa Is(50) = 6.53MPa Is(50) = 8.56MPa	A (23.40m) A (23.45m)	
			(85)											
24							SW					Is(50) = 3.47MPa; # Is(50) = 1.92MPa	D (23.90m) A (23.95m)	
			100											
			(93)											
25												Is(50) = 5.44MPa	A (24.80m)	
25.80	-18.46											Is(50) = 10.46MPa Is(50) = 12.08MPa	D (25.59m) A (25.62m)	
			100		**GRANODIORITE (Kgwu)** **SW:** Pink, white and grey, fine to coarse grained, massive, medium to high strength.		SW							
26			(57)				HW					26.00m-26.15m: HW zone.		
							MW					26.15m-26.45m: MW Microdiorite, medium strength.		
							SW					Is(50) = 0.52MPa; #	D (26.65m)	
26.90	-19.56													
27					**MICRODIORITE (Kgwu)** **SW:** Black, fine to medium grained, massive, very high strength. Defects: - Js; 20° (1/m); Pl/Ro, OP, Cn; - Js; 30°-40° (2/m); Pl/Ro, OP, Cn;		SW					Is(50) = 7.21MPa	D (27.10m)	
27.58	-20.24		100		Borehole terminated at 27.58m. .									
28														
29														
30														

REMARKS Kgwu - Wundaru Granodiorite;
Sample failed along existing defect surface.
Rock roller bit used 21.60m to 22.00m.

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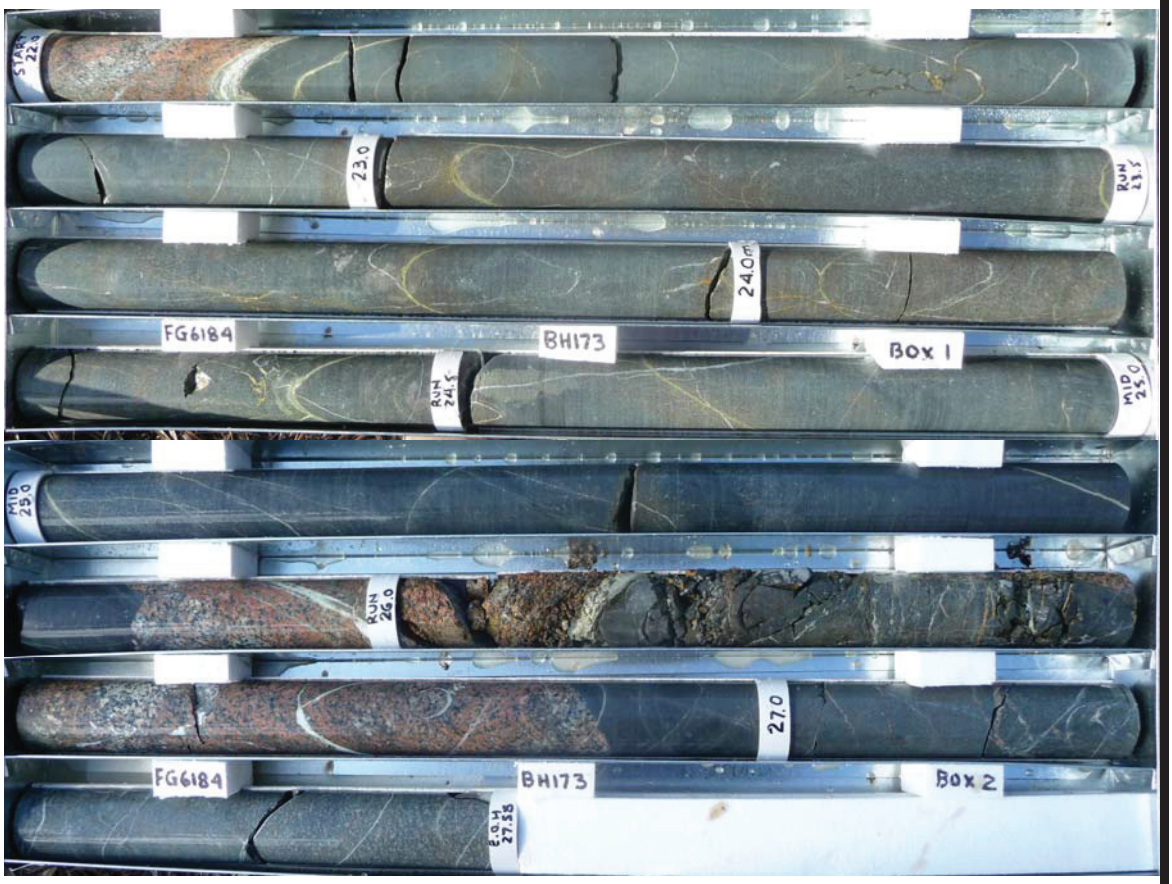
CORE PHOTO LOG

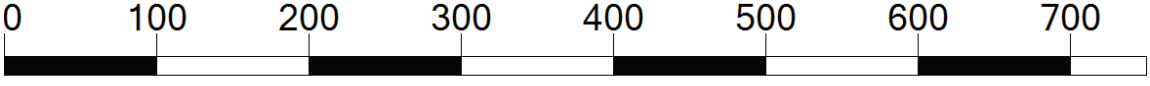
DEPARTMENT OF TRANSPORT & MAIN ROADS
Geotechnical Branch
35 Butterfield Street, HERSTON Qld 4006
Phone 07 3066 3336

Queensland Government

Department of Transport and Main Roads

Project Name	**Mackay – Ring Road**		
Project No	FG6184	Date	21/10/14
Borehole No	BH173	TMR H No	12114
Location	Fursden Creek Overflow Bridge	Start Depth (m)	22.0
Detail	Pier 1	Finish Depth (m)	27.58
Chainage	**8710m**	Submitted By	J. Lopez
Remarks			





SCALE 1:5

GEOT043/1