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ENGINEERING BOREHOLE LOG

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

BOREHOLE No **BH153**
SHEET **1** of **3**
REFERENCE No **12094**

PROJECT Mackay Ring Road Geotechnical Investigation - Stage 1
LOCATION QR North Coast Rail Overpass Abutment B; CH: 9981m; COORDINATES 721587.1 E; 7662291.7 N
PROJECT No FG6184 SURFACE R.L. 11.07m PLUNGE _____ DATE STARTED 29/10/14 GRID DATUM GDA 94 /MGA Zone 55
JOB No _____ HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 30/10/14 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	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
0	11.07					Gravelly Clayey SAND (FILL) Brown, moist to dry, loose. Fine to coarse grained sand. Medium gravel.	(SC)						
0.70	10.37				A	Silty CLAY (ALLUVIUM) Dark brown to black, moist, stiff. High plasticity.	(CH)					Su _(PP) =60kPa;	U50
1					B							Su _(PP) =95kPa;	U50
2					C	Silty Sandy CLAY (ALLUVIUM) Grey mottled orange-brown, moist, stiff to very stiff. Medium to high plasticity.	(CI-CH)					4,5,8 N=13	SPT
2.90	8.17				D							3,4,14 N=18	SPT
3					E	Clayey SAND (ALLUVIUM) Grey-brown, moist, medium dense. Fine to coarse grained.	(SC)						
4	6.67				F	Silty CLAY (ALLUVIUM) Grey mottled brown, moist, stiff to very stiff. High plasticity.	(CH)					4,4,8 N=12	SPT
4.40					G							4,7,9 N=16	SPT
5	6.07				H							4,5,9 N=14	SPT
5.80					I	Clayey SAND (ALLUVIUM) Pale brown to white, moist, mainly medium dense to dense. Fine grained sand.	(SC)					8,11,12 N=23	SPT
6					J	9.00m: Becoming fine to medium grained sand.						6,8,8 N=16	SPT
7													
7.90	3.17												
8													
9													
10													

REMARKS Kgwu - Wundaru Granodiorite;

Sample failed along existing defect surface.

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ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH153
SHEET 2 of 3
REFERENCE No 12094

PROJECT Mackay Ring Road Geotechnical Investigation - Stage 1
LOCATION QR North Coast Rail Overpass Abutment B; CH: 9981m; COORDINATES 721587.1 E; 7662291.7 N
PROJECT No FG6184 SURFACE R.L. 11.07m PLUNGE _____ DATE STARTED 29/10/14 GRID DATUM GDA 94 /MGA Zone 55
JOB No _____ HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 30/10/14 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	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
10	1.07				K	Clayey SAND (ALLUVIUM) (Cont'd)	(SC)					10,16,20 N=36	SPT
10.80	0.27				L	Silty CLAY (RESIDUAL) Brown-grey, moist, very stiff. Medium plasticity.	(CI)					6,12,15 N=27	SPT
11					M							8,11,13 N=24	SPT
12	-1.43				N	GRANODIORITE (Kgwu) XW: Recovered as grey, white and brown, moist to dry, hard Sandy Silty CLAY. Low to medium plasticity. Some HW rock fragments.	XW					9,16,22 N=38	SPT
13					P							15,29,28 N=57	SPT
14	-3.93				Q	GRANODIORITE (Kgwu) HW: Grey, white and brown, fine to coarse grained, very low strength. Some XW zones throughout.	HW					30/110	SPT
15					R							30/50	SPT
16													
17													
18	-6.83					GRANODIORITE (Kgwu) MW: Grey, white and pink, fine to coarse grained, medium strength. Defects: - Js: 20° (1/m); Pl/Ro, some Cly; - Js: 60°-65° (4/m); Pl/Ro, some Cly;	MW					UCS=13.6MPa Is(50) = 1.24MPa Is(50) = 0.50MPa	A D (18.10m) (18.15m)
19	-8.43					MICRODIORITE (Kgwu) SW:	SW					19.52m-20.00m: BZ;	
20													

REMARKS Kgwu - Wundaru Granodiorite;

Sample failed along existing defect surface.

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ENGINEERING BOREHOLE LOG

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

BOREHOLE No **BH153**
SHEET **3** of **3**
REFERENCE No **12094**

PROJECT Mackay Ring Road Geotechnical Investigation - Stage 1
LOCATION QR North Coast Rail Overpass Abutment B; CH: 9981m; COORDINATES 721587.1 E; 7662291.7 N
PROJECT No FG6184 SURFACE R.L. 11.07m PLUNGE _____ DATE STARTED 29/10/14 GRID DATUM GDA 94 /MGA Zone 55
JOB No _____ HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 30/10/14 DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING CORE DRILLING	RQD () %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
20	-8.93		(23)		MICRODIORITE (Kgwu) SW: (Cont'd) Black, fine grained, massive, high strength. Some highly fractured zones. Defects: - Js: 20° (1/m); Pl-Un/Ro, Fe St, Cly Ct; - Js: 50° (2/m); Pl-Un/Ro, Fe St, Cly Ct; - Js: 80° (3/m); Pl-Un/Ro, Fe St, Cly Ct;						Is(50) = 5.16MPa; # Is(50) = 4.17MPa; #	D (20.10m) A (20.15m)
21			(26)								20.35m-20.75m: MW Granodiorite; 20.75m-20.92m: BZ;	
21.70	-10.63		(37)								21.20m-21.67m: BZ;	
22					GRANODIORITE (Kgwu) SW: White, grey and pink, fine to coarse grained, massive, high strength. Defects: - Js: 25° (1/m); Pl/Ro, OP, Cly; - Js: 45° (2/m); Pl/Ro, OP, Cly; - Js: 70°-80° (3/m); Pl/Ro, OP, Cly;						Is(50) = 4.98MPa Is(50) = 5.80MPa Is(50) = 1.76MPa; # Is(50) = 5.11MPa Is(50) = 3.64MPa; # 22.25m-22.61m: MW zone;	A (21.80m) D (21.85m) A (21.87m) D (22.15m) A (22.20m)
23	-12.03		100								Is(50) = 8.28MPa	D (22.90m)
23.10					Borehole terminated at 23.1m.							
24												
25												
26												
27												
28												
29												
30												

REMARKS Kgwu - Wundaru Granodiorite;
Sample failed along existing defect surface.

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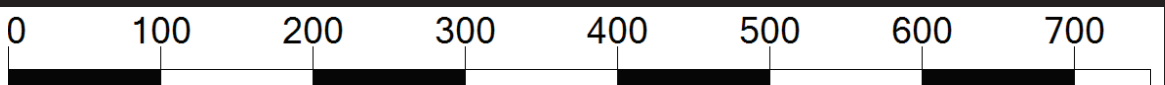
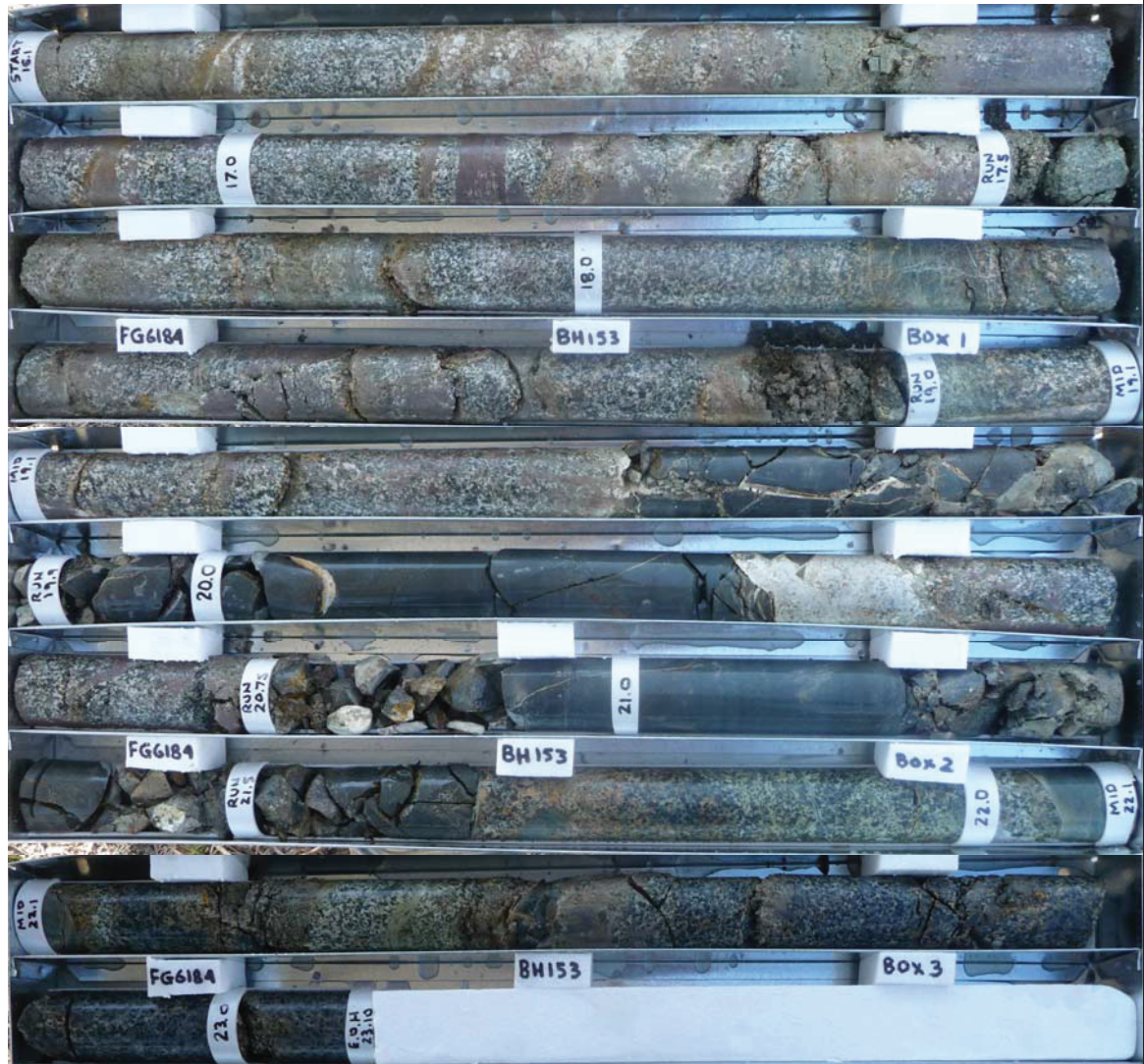
CORE PHOTO LOG

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



Department of
Transport and Main Roads

Project Name	Mackay – Ring Road		
Project No	FG6184	Date	30/10/14
Borehole No	BH153	TMR H No	12094
Location	QR North Coast Rail Overpass	Start Depth (m)	16.1
Detail	Abutment B	Finish Depth (m)	23.1
Chainage	9981m	Submitted By	J. Lopez
Remarks			



SCALE 1:5