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# ENGINEERING BOREHOLE LOG

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

BOREHOLE No   BH164    
SHEET   1   of   2    
REFERENCE No   12105  

PROJECT   Mackay Ring Road Geotechnical Investigation - Stage 1    
LOCATION   QR Port Rail Overpass Abutment A; CH: 11048m;   COORDINATES   721186.0 E; 7663273.2 N    
PROJECT No   FG6184   SURFACE R.L.   18.42m   PLUNGE            DATE STARTED   6/11/14   GRID DATUM   GDA 94 /MGA Zone 55    
JOB No            HEIGHT DATUM   AHD   BEARING            DATE COMPLETED   7/11/14   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					
									EH	VH	H	M	J	VL	EL	EC	VC	W	WV	WVW				EW				
0	18.42					<b>Silty CLAY (TOPSOIL)</b> Dark brown, moist, soft to firm. High plasticity. 0.50m: Becoming orange-brown.	(CH)																					
1.00	17.42				A	<b>Silty CLAY (RESIDUAL)</b> Brown and orange mottled grey, moist, firm to stiff. Low to medium plasticity. Trace sand.	(CL-CI)																		2,3,5 N=8	SPT		
2					B																				2,4,5 N=9	SPT		
2.90	15.52				C	<b>Sandy SILT (RESIDUAL)</b> Brown-orange and white, dry, hard. Low plasticity.	(ML)																		4,9,22 N=31	SPT		
4.00	14.42				D	<b>MICRODIORITE (Kgwu)</b> XW: Recovered as dark grey-black, dry, very dense Gravelly SAND. Fine to medium grained sand. Fine to medium gravel.		XW																	18,30/75	SPT		
4.80	13.62				E	<b>GRANODIORITE (Kgwu)</b> XW: Recovered as grey, black and white, dry to moist, hard Silty CLAY with sand. Low plasticity.		XW																	16,16,18 N=34	SPT		
5.80	12.62				F	<b>MICRODIORITE (Kgwu)</b> XW: Recovered as black to dark grey, dry, very dense Sandy GRAVEL.		XW																	30/110	SPT		
7					G			XW																	30/80	SPT		
8.02	10.40				H	<b>MICRODIORITE (Kgwu)</b> SW: Brown-grey speckled black, fine to medium grained, massive, very high strength. Defects: - Js: 5°-30° (3-4/m); PI/Ro, TI, Cn, some Cly; - Js: 45° (2/m); PI/Ro, TI, Cn, some Cly; - Js: 70°-80° (1/m); PI/Ro, TI, Cn, some Cly;		SW HW																	8.12m-8.26m: HW zone, EL-VL strength. Is(50) = 2.65MPa; #	D (8.35m)		
9								SW																	Is(50) = 7.06MPa Is(50) = 4.84MPa	A (8.80m) D (8.85m)		
9																									Is(50) = 5.29MPa Is(50) = 6.75MPa	D (9.45m) A (9.50m)		

REMARKS   Kgwu - Wundaru Granodiorite;  

  # Sample failed along existing defect surface.  

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**MS**

# ENGINEERING BOREHOLE LOG

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

BOREHOLE No	<b>BH164</b>
SHEET	2 of 2
REFERENCE No	<b>12105</b>

PROJECT Mackay Ring Road Geotechnical Investigation - Stage 1

LOCATION QR Port Rail Overpass Abutment A; CH: 11048m; COORDINATES 721186.0 E; 7663273.2 N

PROJECT No FG6184 SURFACE R.L. 18.42m PLUNGE \_\_\_\_\_ DATE STARTED 6/11/14 GRID DATUM GDA 94 /MGA Zone 55

JOB No \_\_\_\_\_ HEIGHT DATUM AHD BEARING \_\_\_\_\_ DATE COMPLETED 7/11/14 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	8.42			100 (82)		<b>MICRODIORITE (Kgwu) SW: (Cont'd)</b>	+						Is(50) = 2.12MPa; # Is(50) = 1.58MPa; #	D (10.20m) A (10.25m)
10.60	7.82					<b>GRANODIORITE (Kgwu) SW: Dark grey and pink, fine to medium grained, massive, very high strength.</b>	+						UCS=135MPa Is(50) = 6.23MPa	D (10.95m)
11				100 (100)			+							
11.70	6.72					<b>MICRODIORITE (Kgwu) SW: Dark grey, fine grained, massive, very high to extremely high strength. Defects: - Js; 55° (1/m); Pl/Sm, Cn;</b>	+						Is(50) = 11.28MPa Is(50) = 9.71MPa	A (11.70m) D (11.75m)
12							+						Is(50) = 5.04MPa Is(50) = 10.53MPa	D (12.45m) A (12.50m)
12.40	5.32			100			+							
13						Borehole terminated at 13.1m.								
14														
15														
16														
17														
18														
19														
20														

TMJR JAN 15.GLB Log\_A\_ENG ENGINEERING BOREHOLE LOG W LITHOLOGY FG6184 - BOREHOLES.GPJ <<DrawingFile>> Datget CPT Tool gInt Add-In 04/03/2015 10:52

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

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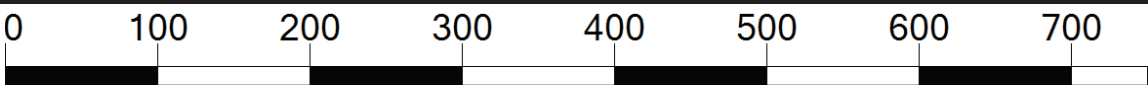
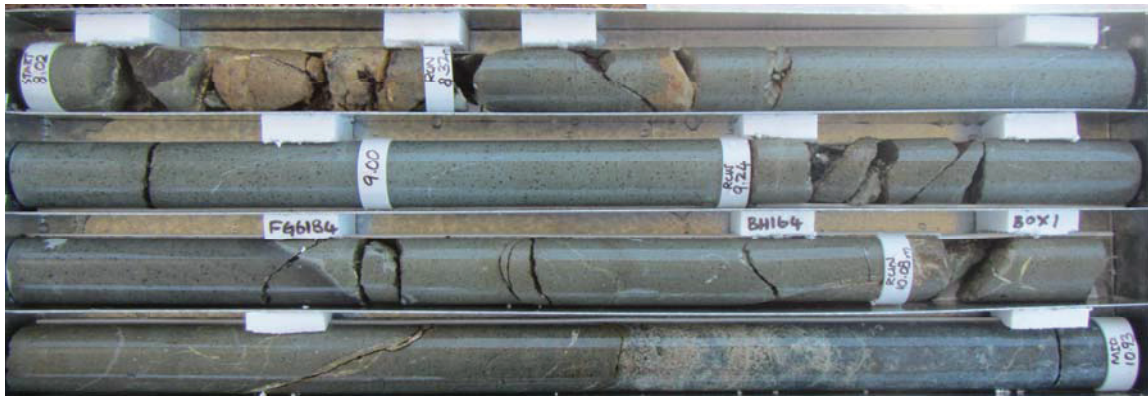
**CORE PHOTO LOG**

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	<b>Mackay – Ring Road</b>		
Project No	FG6184	Date	07/11/14
Borehole No	BH164	TMR H No	12105
Location	QR Port Rail Overpass	Start Depth (m)	8.02
Detail	Abutment A	Finish Depth (m)	13.1
Chainage	<b>11048</b>	Submitted By	J. Lopez
Remarks			



SCALE 1:5