ENGINEERING BOREHOLE LOG

Queensland Government

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No **BH01**
SHEET 1 of 7
REFERENCE No

PROJECT BURDEKIN REALIGNMENT BRIDGE PRELIMINARY FOUNDATION INVESTIGATION - CONCEPT / PLANNING STAGE
LOCATION Abutment A @ CH 104400 COORDINATES 541320.0 E; 7827651.3 N
PROJECT No FG5945 SURFACE R.L. 14.65m PLUNGE DATE STARTED 3/9/11 GRID DATUM PMBH
JOB No 5/10L/951 HEIGHT DATUM AHD BEARING DATE COMPLETED 4/9/11 DRILLER R&D Drilling Pty Ltd

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) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
0	14.65				**Silty SAND (ALLUVIAL)** Brown, moist, very loose to loose. Fine grained; some tree roots.								
1				A								2,1,3 N=4	SPT
2							(SM)						
3				B								2,2,3 N=5	SPT
4				C								2,3,4 N=7	SPT
5	9.65				**Clayey Sandy SILT (ALLUVIAL)** Brown, moist, stiff. Mainly low to medium plasticity; very fine grained sand.								
6				D								3,5,7 N=12	SPT
7				E			(ML)					4,6,8 N=14	SPT
8	6.65				**Sandy Silty CLAY (ALLUVIAL)** Mottled yellow brown to grey, moist, very stiff. Medium plasticity; fine grained sand.								
9				F			(CI)					3,9,7 N=16	SPT
10	4.65												

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REMARKS

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BOREHOLE No **BH01**
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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) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
10	4.65			G	**Clayey Sandy SILT (ALLUVIAL)** Brown yellow to grey, moist, firm to very stiff. Mainly low to medium plasticity.							4,6,10 N=16	SPT
11				H	soft clay layer at 11.5m							2,2,3 N=5	SPT
12							(ML)						
13				J								2,3,5 N=8	SPT
14				K								4,6,8 N=14	SPT
15	-0.87				**Silty SAND (ALLUVIAL)** Brown to yellow, moist, medium dense.								
16				L	Fine to coarse grained sand; some gravel.							9,9,10 N=19	SPT
17							(SM)						
18				M								9,12,13 N=25	SPT
	-3.85				**Gravelly SAND (ALLUVIAL)** Brown to yellow, moist, medium dense to dense.								
19				N	Fine to coarse grained sand; fine to medium grained gravel.		(SP)					15,28,25 N>50	SPT
20	-5.35												

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BOREHOLE No **BH01**
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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) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES / TESTS
20	-5.35				**Gravelly SAND (ALLUVIAL)** (Cont'd) Some gravel-sized granitic rock fragments in the upper areas of the profile. (May have over estimated the SPT 'N' value).								
				P								20,20,24 N=44	SPT
21													
22				Q			(SP)					15,13,10 N=23	SPT
23													
				R								14,13,16 N=29	SPT
24	-9.85				**Silty SAND (ALLUVIAL)** Pale grey to pale brown, moist, medium dense.								
25				S	Fine to coarse grained sand; trace of fine gravel.							16,11,13 N=24	SPT
26							(SM)						
				T								No recovery 11,15,13 N=28	SPT
27	-12.85				**Gravelly SAND (ALLUVIAL)** Yellow to brown, moist, mainly medium dense to occasionally very dense.								
28				U	Fine to coarse grained sand; fine gravel.							9,6,8 N=14	SPT
29							(SP)						
				V								15,14,16 N=30	SPT
30	-15.35												

REMARKS

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ENGINEERING BOREHOLE LOG

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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) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES / TESTS
30	-15.35				**Gravelly SAND (ALLUVIAL)** (Cont'd)								
31				W								16,16,13 N=29	SPT
32				X			(SP)					11,16,16 N=32	SPT
33													
34				Y								11,10,14 N=24	SPT
35	-20.85												
				Z	**Silty CLAY (ALLUVIAL)** Mottled grey to yellow brown, moist, stiff to very stiff. Mainly high to medium plasticity.		(CH-CI)					8,9,12 N=21	SPT
37				AA								4,10,13 N=23	SPT
38	-23.35				**Silty SAND (ALLUVIAL)** Pale brown to orange, moist, mainly medium dense to dense.								
39				AB	Fine grained.		(SM)					10,12,11 N=23	SPT
40	-25.35												

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BOREHOLE No **BH01**
SHEET 5 of 7
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PROJECT BURDEKIN REALIGNMENT BRIDGE PRELIMINARY FOUNDATION INVESTIGATION - CONCEPT / PLANNING STAGE
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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) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
40	-25.35			AC	**Silty SAND (ALLUVIAL)** (Cont'd)							Based on Driller's logs only 12,15,11 N=26		SPT
41							(SM)							
				AD	Becoming clayey sand at 41.5m.							12,22,17 N=39		SPT
42	-27.35				**GRANODIORITE** **Intrusive, crystalline, medium to coarse grained, acid to basic igneous rock** **XW:** Generally exhibits the engineering properties of dark brown to dark grey, moist, hard sandy silt.									
43				AE	Low plasticity.		XW					14,26,30/130mm N>50		SPT
44				AF								30/130mm,HB N>50		SPT
	-29.85		(93)		**HW:** Dark grey to pale brown patches, fine to medium grained, massive, very low to low strength.									
45					Defects: - Joints @ 30° (1/m) - Joint @ 65° (1/m)							DD = 2.18t/m^3; WD = 2.36t/m^3; MC = 7.8%; SOIL UCS=472kPa		
46			100 (0)		Defects are generally medium wide spaced, planar, rough, open and weathered.									
47			100 (0)		Several bands of HW-XW fine to medium grained microdiorite.		HW					XW-HW white granite band		
48														
49			100 (60)									XW granite band		
50	-35.35											Is(50) = 0.12MPa Is(50) = 0.17MPa		x o

REMARKS

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ENGINEERING BOREHOLE LOG

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DEPTH (m)	R.L. (m)	RQD ( )% / CORE REC %	MATERIAL DESCRIPTION	USC	WEATHERING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
50	-35.35	100 (86)	**GRANODIORITE** **HW:** (Cont'd)			XW granite band DD = 2.28t/m^3; WD = 2.40t/m^3; MC = 5.2%; SOIL UCS=1082kPa		x
						Is(50) = 0.09MPa		o
51						Is(50) = 0.16MPa HW granite band Is(50) = 0.14MPa		x
						Is(50) = 0.12MPa		o
		100 (40)				Is(50) = 0.02MPa		x
						Is(50) = 0.05MPa		o
52				HW		Is(50) = 0.04MPa XW-HW granite band		x
53		77 (93)						
	-39.25							
54		100 (10)	**HORNBLENDE DIORITE** **Intrusive, crystalline, fine to medium grained, basic igneous rock** **MW:** Dark grey to black, fine to medium grained, massive, low to mainly medium strength. Defects: - Joints @ 20° (1/m) - Joints @ 50° (3/m) Defects are generally close to widely spaced, planar, rough, tight and weathered.			Is(50) = 0.35MPa		x
						Is(50) = 0.32MPa		o
						DD = 2.42t/m^3; WD = 2.56t/m^3; MC = 6.2%; SOIL UCS=869kPa		
55				MW		XW granite band		
						Is(50) = 0.44MPa		x
						Is(50) = 0.19MPa		o
56		68 (83)						
						White granite band		
	-42.05							
57		100 (0)	**GRANITE** **Intrusive, crystalline, coarse grained, acid igneous rock** **XW:** Generally exhibits the engineering prioerties of white to grey, moist, dense clayey sand. Fine to coarse grained, very low strength HW bands about 400mm.	XW		HW zone		
		100 (0)						
58	-43.55							
		100 (43)	**MW:** White and dark grey to black, medium to coarse grained, massive, low to medium strength.			XW microgranite band		
59				MW		Is(50) = 0.10MPa		x
						Is(50) = 0.11MPa		o
						DD = 2.48t/m^3; WD = 2.52t/m^3; MC = 1.8%; SOIL UCS=2520kPa		
						Is(50) = 0.19MPa		x
						Is(50) = 0.25MPa		o
		100 (73)				UCS=10.6MPa		
60	-45.35					Is(50) = 0.21MPa		o

REMARKS

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ENGINEERING BOREHOLE LOG

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BOREHOLE No **BH01**
SHEET 7 of 7
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60	-45.35				**GRANITE** **MW:** (Cont'd) Defects: - Joints @ 20-30° (2/m) - Joints @ 75-80 (2/m) Defects are generally close to widely spaced, planar, rough, open and stained.		MW					Is(50) = 0.83MPa Is(50) = 0.78MPa	o x	
61			100 (55)											
	-46.85				60.55-61.5: MW Hornblende Diorite band - black, fine grained, massive, medium strength rock band.							Is(50) = 5.48MPa Is(50) = 9.45MPa	o x	
62					**SW:** White pink and grey, medium to coarse grained, massive, very high strength to occasionally extremely high strength. Defects: - Joints @ 25-30° (4/m) - Joints @ 55-65° (1/m) Defects are generally medium to very widely spaced, planar, rough, open and iron stained.							Is(50) = 6.94MPa	o	
63												UCS=60.4MPa Is(50) = 8.89MPa Is(50) = 8.51MPa	 x o	
64			100 (100)				SW					Is(50) = 6.64MPa	x	
65												Is(50) = 7.79MPa	o	
66												Is(50) = 10.11MPa Is(50) = 7.06MPa	x o	
67	-52.35		100		Borehole terminated at 67m									
68														
69														
70														

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REMARKS

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Project Name	**Burdekin River Bridge Realignment**		
Project No	FG 5945	**Date**	05/09/11
Borehole No	BH 1	**TMR H No**	
Location	Abutment A	**Start Depth (m)**	44.50
Detail		**Finish Depth (m)**	67.00
Chainage		**Submitted By**	**BW**
Remarks			

0 100 200 300 400 500 600mm

SCALE 1:5

CORE PHOTO LOG **GEOT043/1**

DEPARTMENT OF TRANSPORT & MAIN ROADS
Geotechnical Branch
35 Butterfield Street, HERSTON Qld 4006
Phone 07 3115 3035 Fax 07 3115 3011

Project Name	**Burdekin River Bridge Realignment**		
Project No	FG 5945	**Date**	05/09/11
Borehole No	BH 1	**TMR H No**	
Location	Abutment A	**Start Depth (m)**	44.50
Detail		**Finish Depth (m)**	67.00
Chainage		**Submitted By**	**BW**
Remarks			

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Phone 07 3115 3035 Fax 07 3115 3011

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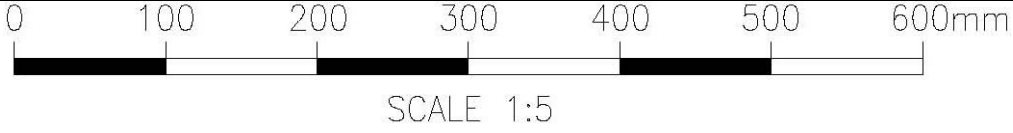
Project No	FG 5945	**Date**	05/09/11
Borehole No	BH 1	**TMR H No**	
Location	Abutment A	**Start Depth (m)**	44.50
Detail		**Finish Depth (m)**	67.00
Chainage		**Submitted By**	**BW**
Remarks			



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