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Queensland Government
Department of Main Roads

ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/3-2005

BOREHOLE No BHP43
SHEET 1 of 3
REFERENCE No H9909

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT
LOCATION 24m RIGHT FROM EASTN PILE OF PIER 43 OF EXIST BRIDGE COORDINATES 39379.0 E; 52997.2 N
PROJECT No FG5423 SURFACE R.L. -1.66 PLUNGE DATE STARTED 18/05/06 GRID DATUM PROJECT DATUM
JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 18/05/06 DRILLER CAIRNS DRILLING

DEPTH (m)	R.L. (m)	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	-1.66				**ESTUARINE SILTY CLAY** Dark grey, moist, very soft to soft. (Driller's record only.)		(OH)						
	-2.41				**ESTUARINE SILTY SAND** Dark grey, wet, very loose to loose.							2,1,1 N=2	
1				A	Slightly organic throughout; fine to medium grained sand; frequent partly decomposed shell fragments throughout; occasional silty clay seams. Becoming more silty with depth.		(SM)					pH_F = 8.08 pH_{Fox} = 7.43 ASS Sample stored at Herston Geotechnical Laboratory	SPT
2	-3.91				**ESTUARINE SILTY CLAY** Dark grey, moist, soft to mainly wet, very soft.							RW N<1	
				B	High organic content and high plasticity; slighly sandy and shelly at some places.							pH_F = 8.26 pH_{Fox} = 6.56 ASS Sample stored at Herston Geotechnical Laboratory	SPT
3													
4				C								RW N<1 pH_F = 8.03 pH_{Fox} = 6.73 ASS Sample stored at Herston Geotechnical Laboratory	SPT
5							(OH)						
6				D								RW N<1 pH_F = 7.82 pH_{Fox} = 4.38 ASS Sample stored at Herston Geotechnical Laboratory	SPT
7													
8	-9.66				**ALLUVIAL SILTY CLAY** Grey green to mottled orange brown/red, moist, stiff to very stiff.							3,5,6 N=11	
				E	Medium to high plasticity; slightly lateritic and concreted zones.		(CI-CH)					pH_F = 7.94 pH_{Fox} = 7.57 ASS Sample stored at Herston Geotechnical Laboratory	SPT
9													
10	-11.66												

A_ENGINEERING BOREHOLE LOG W LITHOLOGY FG5423 HIGHWAY BRIDGE.GPJ MRD_LIB_V1.2.GLB 25/10/06

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Department of Main Roads

ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/3-2005

BOREHOLE No BHP43
SHEET 2 of 3
REFERENCE No H9909

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT
LOCATION 24m RIGHT FROM EASTN PILE OF PIER 43 OF EXIST BRIDGE COORDINATES 39379.0 E; 52997.2 N
PROJECT No FG5423 SURFACE R.L. -1.66 PLUNGE DATE STARTED 18/05/06 GRID DATUM PROJECT DATUM
JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 18/05/06 DRILLER CAIRNS DRILLING

DEPTH (m)	R.L. (m)	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	-11.66				**ALLUVIAL SILTY CLAY** (As above.)								
11					Becoming clayey sand with depth.								
11				F								5,8,12 N=20	SPT
12							(CI-CH)						
13													
14													
	-16.16												
				G	**ALLUVIAL CLAYEY SAND** Pale green grey to mottled orange brown, moist, medium dense.							7,10,12 N=22	SPT
15					Fine to medium grained sand.								
16													
17							(SC)						
17				H								5,8,11 N=19	SPT
18													
19													
	-21.16												
20	-21.66				**ALLUVIAL SAND & GRAVEL** (Refer next page.)		(GP-GM)						

A_ENGINEERING BOREHOLE LOG W LITHOLOGY FG5423 HIGHWAY BRIDGE.GPJ MRD_LIB_V1.2.GLB 25/10/06

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ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/3-2005

BOREHOLE No BHP43
SHEET 3 of 3
REFERENCE No H9909

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT
LOCATION 24m RIGHT FROM EASTN PILE OF PIER 43 OF EXIST BRIDGE COORDINATES 39379.0 E; 52997.2 N
PROJECT No FG5423 SURFACE R.L. -1.66 PLUNGE DATE STARTED 18/05/06 GRID DATUM PROJECT DATUM
JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 18/05/06 DRILLER CAIRNS DRILLING

DEPTH (m)	R.L. (m)	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	-21.66				**ALLUVIAL SAND & GRAVEL** Grey white to orange brown, wet, medium dense to dense. Coarse fraction - Subangular to subrounded quartz and sandstone particles sizing up to 50mm. Fine fraction - Angular to subangular medium to coarse grained quartzo sand.		(GP-GM)					9,15,15 N=30	J	SPT
21														
22														
23														
24				K								13,13,16 N=29	K	SPT
25	-26.76				**SANDSTONE** **FINE TO MAINLY MEDIUM GRAINED SLIGHTLY LAMINATED TO MAINLY MASSIVE, POORLY CEMENTED SEDIMENTARY ROCK**		HW					20,10/10 N>50	L	SPT
26	-27.71		(88)		**HW:** Grey to dark grey, mainly dry, very dense silty sand abruptly grading into very low to low strength rock.							Is(50)=0.23 MPa Is(50)=0.14 MPa		x o
27					**SW:** Pale grey to grey white, mainly massive, fine to medium grained, mainly medium strength rock becoming high strength with depth. Some erodable bands in the upper area; occasional mudstone rip up clasts. Defects: Generally rare. - Some drilling-induced lamination partings <20° (1-2/m). - Drilling-induced breaks @ 70° (1/3m).		SW					Is(50)=0.34 MPa Is(50)=0.33 MPa Is(50)=0.52 MPa Is(50)=0.59 MPa Is(50)=0.66 MPa Is(50)=0.74 MPa Is(50)=0.96 MPa Is(50)=0.90 MPa Is(50)=1.16 MPa Is(50)=1.02 MPa Is(50)=0.95 MPa Is(50)=0.86 MPa		x o x o x o x o x o x o
28														
29	-30.66		100									Core left down the borehole.		
					Borehole terminated at 29m									
30														

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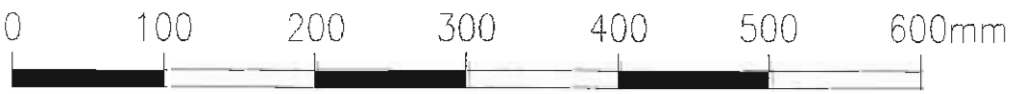
Project: **Houghton Highway Bridge Duplication**

Borehole No: **BHP43**

Start Depth: 26.00m
Finish Depth: 29.00m
Project No: FG5423
H No: 9909



SCALE 1:5

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Queensland Government
Department of Main Roads

ROAD SYSTEM & ENGINEERING
GEOTECHNICAL BRANCH
35 Butterfield St
Herston Q 4006

Point Load Strength Index - Test Report

Project: Houghton Highway Bridge Investigation
Project No: FG5423

Date Sampled 17/05/06 **Date Tested 06/06/06**
Feature: N/A
Sample Type: NMLC Core

Report No. FG5423/GS06-425/AS4133.4.1

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/425.A	BHP 43	26.10	D	0.23	0.23	L	Sandstone
GS06/425.B	BHP 43	26.13	A	0.14	0.14	L	Sandstone
GS06/425.C	BHP 43	26.60	D	0.35	0.34	M	Sandstone
GS06/425.D	BHP 43	26.68	A	0.35	0.33	M	Sandstone
GS06/425.E	BHP 43	27.42	D	0.52	0.52	M	Sandstone
GS06/425.F	BHP 43	27.44	A	0.64	0.59	M	Sandstone
GS06/425.G	BHP 43	27.85	D	0.66	0.66	M	Sandstone
GS06/425.H	BHP 43	27.90	A	0.76	0.74	M	Sandstone
GS06/425.J	BHP 43	28.18	D	0.96	0.96	M	Sandstone
GS06/425.K	BHP 43	28.20	A	0.90	0.90	M	Sandstone

Sample Remarks

* D - Diametral; A - Axial; B - Block; I - Irregular; ** EL - Extremely Low; VL - Very Low; L - Low; M - Medium; H - High; VH - Very High; EH - Extremely High (taken from AS1726 Table 8A)

Remarks / Variations to Test Procedures:

Test Method: AS4133.4.1
Software Version 2.03 April 2005

Client Name: Department of Main Roads
Client Address: PO Box 70, Spring Hill QLD 4004

Signatory 16/6/06
(MR P. REYNOLDS)

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Department of Main Roads

ROAD SYSTEM & ENGINEERING
GEOTECHNICAL BRANCH
35 Butterfield St
Herston Q 4006

Point Load Strength Index - Test Report

Project: Houghton Highway Bridge Investigation
Project No: FG5423

Date Sampled 17/05/06 **Date Tested 06/06/06**
Feature: N/A
Sample Type: NMLC Core

Report No. FG5423/GS06-425/AS4133.4.1

Sample Number	Sample Location	Depth (m)	Test Type D,A,B;I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/425.L	BHP 43	28.32	D	1.18	1.16	H	Sandstone
GS06/425.M	BHP 43	28.35	A	1.02	1.02	H	Sandstone
GS06/425.N	BHP 43	28.68	D	0.95	0.95	M	Sandstone
GS06/425.P	BHP 43	28.73	A	0.93	0.86	M	Sandstone

Sample Remarks

* D - Diametral; A - Axial; B - Block; I - Irregular; ** EL - Extremely Low; VL - Very Low; L - Low; M - Medium; H - High; VH - Very High; EH - Extremely High (taken from AS1726 Table 8A)

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