Queensland Government
Department of Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No BHABA
SHEET 1 of 3
REFERENCE No H9905

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT
LOCATION APPR 24m RIGHT,5M STH FROM EASTN PILE-STHN ABUTMT OF EXIST BRIDGE COORDINATES 38870.7 E; 51923.5 N
PROJECT No FG5423 SURFACE R.L. 1.59 PLUNGE DATE STARTED 22/05/06 GRID DATUM PROJECT DATUM
JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 22/05/06 DRILLER SCHNEIDER DRILLING

DEPTH (m)	R.L. (m)	AUGER / 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	1.59				**FILL - SAND** (Driller's record only.) Grey.		(SM)						
	0.99				**FILL - CLAYEY SILTY SAND** Red mottled brown to red, moist, soft to firm.		(SC-SM)						
1				A	Fine grained sand.							1,2,3 N=5	SPT
	0.09			B	**ESTUARINE SAND / SILTY SAND** Dark grey, wet, very loose to mainly loose.							pH_F = 7.93 pH_{Fox} = 6.50	U50
2					Slightly organic and high content of shell fragments in the upper area; mainly fine to medium grained sand; minor fraction of silt.								
				C								1,3,2 N=5	SPT
3				D			(SC-SM)					pH_F = 7.14 pH_{Fox} = 2.24 ASS Sample stored at Herston Geotechnical Laboratory	U50
4				E								1,3,3 N=6	SPT
	-3.06			F	**RESIDUAL SANDY SILTY CLAY / SILTY CLAY** Mottled red to white, mainly moist to dry, very stiff, becoming stiff with depth.							pH_F = 7.45 pH_{Fox} = 6.03 ASS Sample stored at Herston Geotechnical Laboratory	U50
5				G	Frequent lateritic and slightly concreted zones; medium plastic kaolinitic clay; fine grained sand throughout; medium plasticity.							3,7,10 N=17	SPT
6													
7				H			(CI)					4,7,9 N=16	SPT
8													
9				J								5,6,6 N=12	SPT
10	-8.41												

REMARKS

LOGGED BY
AS/ ADISS

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

Queensland Government
Department of Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No BHABA
SHEET 2 of 3
REFERENCE No H9905

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT
LOCATION APPR 24m RIGHT,5M STH FROM EASTN PILE-STHN ABUTMT OF EXIST BRIDGE COORDINATES 38870.7 E; 51923.5 N
PROJECT No FG5423 SURFACE R.L. 1.59 PLUNGE DATE STARTED 22/05/06 GRID DATUM PROJECT DATUM
JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 22/05/06 DRILLER SCHNEIDER DRILLING

DEPTH (m)	R.L. (m)	AUGER / 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	-8.41			K	**RESIDUAL SANDY SILTY CLAY / SILTY CLAY** (As above.)							2,3,5 N=8	SPT
11				L								3,4,6 N=10	SPT
12							(CI)						
13				M								2,3,6 N=9	SPT
14	-12.41				**SANDSTONE** **FINE TO MEDIUM GRAINED MASSIVE TO MAINLY LAMINATED POORLY CEMENTED SEDIMENTARY ROCK**							
15	-13.61			N	**XW:** Generally exhibits engineering properties of white to mottled orange brown, moist, mainly stiff sandy silty clay. Fine to medium grained sand; medium plasticity; gradually becoming hard with depth.		XW					3,5,9 N=14	SPT
16				P	**HW:** Grey white to pale orange brown, moist, dense to very dense silty sand gradually grading into very low to low strength rock. Relic rock structures throughout.							6,12,29 N=41	SPT
17													
18				Q			HW					25,12/10,- N>50	SPT
19				R								10,23,12/10 N>50	SPT
20	-18.41												

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

REMARKS

LOGGED BY
AS/ ADISS

Queensland Government
Department of Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No BHABA
SHEET 3 of 3
REFERENCE No H9905

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT
LOCATION APPR 24m RIGHT,5M STH FROM EASTN PILE-STHN ABUTMT OF EXIST BRIDGE COORDINATES 38870.7 E; 51923.5 N
PROJECT No FG5423 SURFACE R.L. 1.59 PLUNGE DATE STARTED 22/05/06 GRID DATUM PROJECT DATUM
JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 22/05/06 DRILLER SCHNEIDER DRILLING

DEPTH (m)	R.L. (m)	AUGER / 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	-18.41				**HW(??):** (As above.)			HW				30/100 N>50		SPT
21	-19.41		(100)		**MW:** Pale orange grey to orange brown, fine to mainly medium grained, mainly massive to slightly laminated, low to medium strength with some very low strength areas. Multi-directional (<35°) carbonaceous and low grade coal seams up to 20mm. Defects: - Predominately drilling-induced lamination partings <10° (4/m). - Occasional joints @ 40° (1/m). Gradually grading into SW rock with depth.			MW				Is(50)=0.16 MPa Is(50)=0.12 MPa Is(50)=0.11 MPa Is(50)=0.15 MPa Is(50)=0.34 MPa Is(50)=0.44 MPa Is(50)=0.58 MPa Is(50)=0.68 MPa Is(50)=0.64 MPa Is(50)=0.71 MPa Is(50)=0.66 MPa Is(50)=0.84 MPa	x o x o x o x o x o x o	
22														
23	-21.66													
24			100 (100)		**SW:** Pale grey to white, fine to mainly medium grained, mainly massive to slightly laminated, medium to high strength. Defects: Generally rare. - Occasional drilling-induced lamination partings <10° (1/2m).			SW				Is(50)=0.58 MPa Is(50)=0.99 MPa Is(50)=0.52 MPa Is(50)=0.71 MPa Is(50)=1.28 MPa Is(50)=2.20 MPa Is(50)=0.50 MPa Is(50)=1.33 MPa	x o o x x o x o	
25														
26	-25.16		100											
27					Borehole terminated at 26.75m									
28														
29														
30														

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

REMARKS

LOGGED BY
AS/ ADISS

Project: **Houghton Highway Bridge Duplication**

Borehole No: **BH ABA**

Start Depth: 21.00m
Finish Depth: 26.75m
Project No: FG5423
H No: 9905

0 100 200 300 400 500 600mm

SCALE 1:5

Queensland Government
Department of Main Roads

Road System & Engineering
35 Butterfield Street
Herston Qld 4006

Point Load Strength Index - Test Report

Project: Houghton Highway Bridge Investigation
Project No: FG5423

Date Sampled 22/05/06 **Date Tested 10/06/06**
Feature: N/A
Sample Type: NMLC Core

Report No. FG5423/GS06-481/AS4133.4.1

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/481.A	BHP ABA	21.15	D	0.16	0.16	L	Sandstone
GS06/481.B	BHP ABA	21.18	A	0.11	0.12	L	Sandstone
GS06/481.C	BHP ABA	21.71	D	0.11	0.11	L	Sandstone
GS06/481.D	BHP ABA	21.74	A	0.15	0.15	L	Sandstone
GS06/481.E	BHP ABA	22.81	D	0.34	0.34	M	Sandstone
GS06/481.F	BHP ABA	22.84	A	0.45	0.44	M	Sandstone
GS06/481.G	BHP ABA	23.22	D	0.58	0.58	M	Sandstone
GS06/481.H	BHP ABA	23.24	A	0.72	0.68	M	Sandstone
GS06/481.J	BHP ABA	23.56	D	0.64	0.64	M	Sandstone
GS06/481.K	BHP ABA	23.58	A	0.73	0.71	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
(Peter W Reynolds)

NATA
Accreditation Number: 2302
Accredited for compliance with ISO/IEC 17025
This document is issued in accordance with NATA's accreditation requirements

Queensland Government
Department of Main Roads

Road System & Engineering
35 Butterfield Street
Herston Qld 4006

Point Load Strength Index - Test Report

Project: Houghton Highway Bridge Investigation
Project No: FG5423

Date Sampled 22/05/06 **Date Tested 10/06/06**
Feature: N/A
Sample Type: NMLC Core

Report No. FG5423/GS06-481/AS4133.4.1

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/481.L	BHP ABA	23.94	D	0.66	0.66	M	Sandstone
GS06/481.M	BHP ABA	23.96	A	0.81	0.84	M	Sandstone
GS06/481.N	BHP ABA	24.69	D	0.58	0.58	M	Sandstone
GS06/481.P	BHP ABA	24.71	A	1.03	0.99	M	Sandstone
GS06/481.Q	BHP ABA	25.56	A	0.52	0.52	M	Sandstone
GS06/481.R	BHP ABA	25.65	D	0.70	0.71	M	Sandstone
GS06/481.S	BHP ABA	26.19	D	1.26	1.28	H	Sandstone
GS06/481.T	BHP ABA	26.21	A	2.20	2.25	H	Sandstone
GS06/481.U	BHP ABA	26.72	D	0.50	0.50	M	Sandstone
GS06/481.V	BHP ABA	26.74	A	1.36	1.33	H	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
(Peter W Reynolds)

NATA TECHNICAL

Accreditation Number: 2302
Accredited for compliance with ISO/IEC 17025

This document is issued in accordance with NATA's accreditation requirements.