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**Queensland  
Government**

Department of  
Main Roads

# ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND  
SYMBOLS REFER FORM F:GEOT 01/73-2005

BOREHOLE No BHP48

SHEET 1 of 3

REFERENCE No H9911

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 24m RIGHT, 1m STH FROM EASTN PILE OF PIER 43 OF EXIST BRIDGE COORDINATES 39437.5 E; 53120.2 N

PROJECT No FG5423 SURFACE R.L. -0.98 PLUNGE \_\_\_\_\_ DATE STARTED 20/05/06 GRID DATUM PROJECT DATUM

JOB No 165/122/35 HEIGHT DATUM AHD BEARING \_\_\_\_\_ DATE COMPLETED 20/05/06 DRILLER CAIRNS DRILLING

DEPTH (m)	R.L. (m)	CASING WASH BORING CORE DRILLING	ROD (%) CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
0	-0.98				<b>ESTUARINE CLAYEY SILTY SAND</b> Dark grey, moist to mainly wet, very loose to loose.							
1				A	Slightly organic throughout; mainly fine to medium sand; frequent partly decomposed shell fragments.						pH <sub>f</sub> = 8.06 pH <sub>Fox</sub> = 6.13	Bulk sample in casing JAR
2				B	Becoming more silty clay with depth.	(SC-SM)					pH <sub>f</sub> = 8.21 pH <sub>Fox</sub> = 6.76	HW, HW, 1 N<1
3	-3.98				<b>ESTUARINE SILTY CLAY</b> Dark grey, moist to mainly wet, very soft.						pH <sub>f</sub> = 8.44 pH <sub>Fox</sub> = 5.76	RW N<1
4				C	High organic content; high plasticity; slightly sandy and shelly in the upper area.	(CH)						
5	-6.08				<b>ALLUVIAL SILTY SANDY CLAY</b> Pale green grey to slightly mottled orange, moist, very stiff.						pH <sub>f</sub> = 7.99 pH <sub>Fox</sub> = 5.60	RW N<1
6				D	Fine to medium grained sand.	(CH)						
7	-7.98				<b>ALLUVIAL SILTY CLAY</b> Pale grey to mottled orange, moist, stiff.							
8				E	Medium to high plasticity; some lateritic and concreted zones.	(CH)						
9												
10	-10.98			F		(Cl-CH)						5,10,15 N=25
												3,6,6 N=12

A. ENGINEERING BOREHOLE LOG w LITHOLOGY FG5423 HIGHWAY BRIDGE CPJ MRD LIB V1.2 GLB 25/10/06

REMARKS \_\_\_\_\_

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**Main Roads**

# ENGINEERING BOREHOLE LOG

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

BOREHOLE No   BHP48  

SHEET   2   of   3  

REFERENCE No   H9911  

PROJECT   HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT  

LOCATION   24m RIGHT, 1m STH FROM EASTN PILE OF PIER 43 OF EXIST BRIDGE   COORDINATES   39437.5 E; 53120.2 N  

PROJECT No   FG5423   SURFACE R.L.   -0.98   PLUNGE            DATE STARTED   20/05/06   GRID DATUM   PROJECT DATUM  

JOB No   165/122/35   HEIGHT DATUM   AHD   BEARING            DATE COMPLETED   20/05/06   DRILLER   CAIRNS DRILLING  

DEPTH (m)	R.L. (m)	CASING WASH BORING CORE DRILLING	RQD ( ) %	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS	
														EH
10	-10.98					<b>ALLUVIAL SILTY CLAY</b> (As above.)	(Cl-CH)							
11	-12.48				G	<b>ALLUVIAL SAND / SILTY SAND</b> Brown, wet, medium dense. Very fine to fine grained sand.	(SP-SM)					8,10,12 N=22	SPT	
13	-13.98				H	<b>ALLUVIAL SANDY SILTY CLAY</b> Pale grey to mottled orange, moist, very stiff. Fine grained sand; medium to high plasticity.	(Cl)					5,9,11 N=20	SPT	
18	-18.48				J	<b>ALLUVIAL SAND / SILTY SAND</b> Pale brown to brown, wet, medium dense. Very fine grained sand.	(SP-SM)					Sandy layer	3,6,8 N=14	SPT
20	-20.48					<b>ALLUVIAL GRAVELLY SAND</b> (See next page.)	(SP)							

A. ENGINEERING BOREHOLE LOG W LITHOLOGY FG5423 HIGHWAY BRIDGE.GPJ MRD LIB V1.2.GLB 25/10/06

REMARKS

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# ENGINEERING BOREHOLE LOG

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

BOREHOLE No BHP48  
SHEET 3 of 3  
REFERENCE No H9911

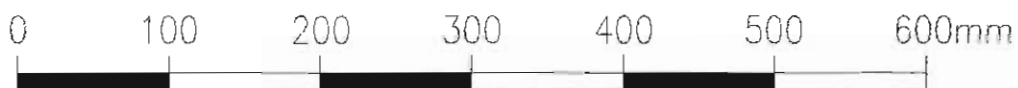
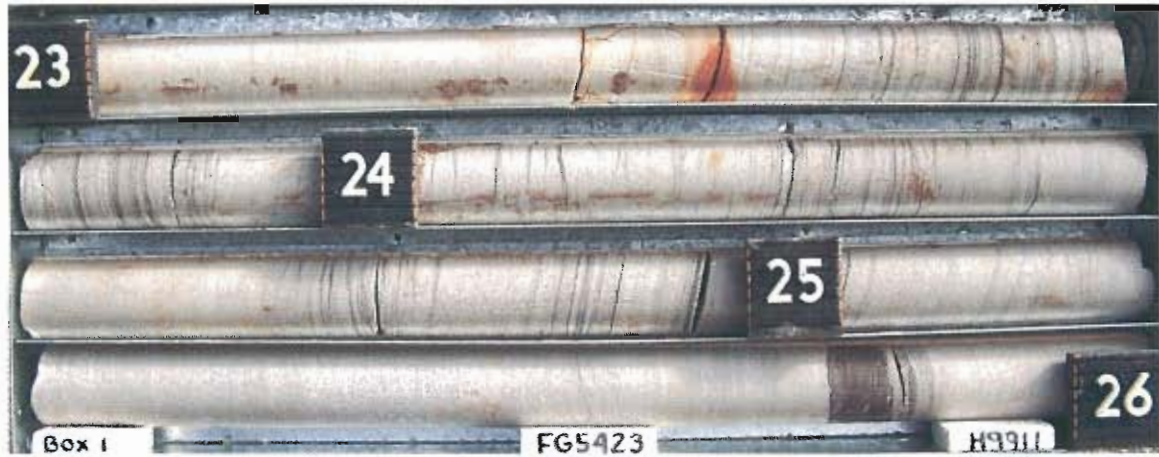
PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT  
LOCATION 24m RIGHT 1m STH FROM EASTN PILE OF PIER 43 OF EXIST BRIDGE COORDINATES 39437.5 E; 53120.2 N  
PROJECT No FG5423 SURFACE R.L. -0.98 PLUNGE \_\_\_\_\_ DATE STARTED 20/05/06 GRID DATUM PROJECT DATUM  
JOB No 165/122/35 HEIGHT DATUM AHD BEARING \_\_\_\_\_ DATE COMPLETED 20/05/06 DRILLER CAIRNS DRILLING

DEPTH (m)	R.L. (m)	CASING WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH					DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
									EH	HM	HL	UL	UL				
20	-20.98					<b>ALLUVIAL GRAVELLY SAND</b> Pale grey brown to white, wet, medium dense.  (Fine fraction > Coarse fraction.)											
21					K	Fine fraction - Angular to subangular, fine to medium quartzitic particles.  Coarse fraction - Subangular to subrounded sandstone and quartz fragments sizing up to 30mm.	(SP)								7.9,13 N=22	SPT	
22																	
23	-23.58				L	<b>SANDSTONE</b> (See Remarks.) <b>HW:</b> (??) (Driller's records only.)	HW								15,10/0,HB N>50	SPT	
23	-23.98		(100)			<b>SW:</b> Fine to medium grained, medium to mainly high strength.  Defects: Nil.  Minor discolouration in some places.	SW							Orange brown discolouration Orange brown discolouration	Is(50)=0.93 MPa Is(50)=1.20 MPa Is(50)=0.80 MPa Is(50)=1.88 MPa  Is(50)=0.48 MPa	x o x o  o	
24	-24.33					<b>SW:</b> Fine to medium grained, laminated, mainly medium to high strength with depth.  Defects: Some drilling induced lamination partings <20° (5/m).  Frequent carbonaceous laminations.	SW								Is(50)=0.54 MPa Is(50)=0.37 MPa  Is(50)=1.56 MPa Is(50)=1.39 MPa	x o  x o	
25	-26.48					<b>SW:</b> Mainly medium grained, mainly medium strength. Defects: Nil.	SW							Mudstone interbed	Is(50)=0.89 MPa Is(50)=1.73 MPa Is(50)=0.35 MPa Is(50)=1.09 MPa	x o o x	
26	-26.98		100			Occasional mudstone interbeds up to 50mm. Borehole terminated at 26m									Is(50)=0.52 MPa Is(50)=0.64 MPa	x o	
27																	
28																	
29																	
30																	

REMARKS \_\_\_\_\_

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Project: **Houghton Highway Bridge Duplication**  
Borehole No: **BHP48**  
Start Depth: 23.00m  
Finish Depth: 26.00m  
Project No: FG5423  
H No: 9911



# Point Load Strength Index - Test Report

**Project: Houghton Highway Bridge Investigation**

**Project No: FG5423**

**Date Sampled 20/05/06**

**Date Tested 10/06/06**

**Feature: N/A**

**Sample Type: NMLC Core**

**Report No. FG5423/GS06-480/AS4133.4.1**

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/480.A	BHP 48	23.05	D	0.92	0.93	M	Sandstone
GS06/480.B	BHP 48	23.07	A	1.14	1.20	H	Sandstone
GS06/480.C	BHP 48	23.32	D	0.80	0.80	M	Sandstone
GS06/480.D	BHP 48	23.34	A	1.97	1.88	H	Sandstone
GS06/480.E	BHP 48	23.69	A	0.54	0.48	M	Sandstone
GS06/480.F	BHP 48	24.22	D	0.55	0.54	M	Sandstone
GS06/480.G	BHP 48	24.25	A	0.39	0.37	M	Sandstone
GS06/480.H	BHP 48	24.70	D	1.56	1.56	H	Sandstone
GS06/480.J	BHP 48	24.73	A	1.39	1.39	H	Sandstone
GS06/480.K	BHP 48	25.10	D	0.89	0.89	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

*P. Simson* 14.16.06

( Mr Peter Simson )



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# Point Load Strength Index - Test Report

**Project: Houghton Highway Bridge Investigation**

**Project No: FG5423**

**Date Sampled 20/05/06**

**Date Tested 10/06/06**

**Feature: N/A**

**Sample Type: NMLC Core**

**Report No. FG5423/GS06-480/AS4133.4.1**

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/480.L	BHP 48	25.22	A	1.77	1.73	H	Sandstone
GS06/480.M	BHP 48	25.30	A	0.39	0.35	M	Sandstone
GS06/480.N	BHP 48	25.38	D	1.09	1.09	H	Sandstone
GS06/480.P	BHP 48	25.80	D	0.52	0.52	M	Sandstone
GS06/480.Q	BHP 48	25.83	A	0.64	0.64	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

*P. Simson* 14.6.06

( Mr Peter Simson )



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