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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 BHP17

SHEET 1 of 4

REFERENCE No H9901

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 24m RIGHT, 1.8m STH FROM EASTN PILE OF PIER 17 OF EXIST BRIDGE COORDINATES 39072.4 E; 52351.0 N

PROJECT No FG5423 SURFACE R.L. -0.82 PLUNGE _____ DATE STARTED 28/04/06 GRID DATUM PROJECT DATUM

JOB No 165/122/35 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 28/04/06 DRILLER CAIRNS DRILLING

DEPTH (m)	R.L. (m)	CASING WASH BORING CORE DRILLING	RQD (%)	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH		DEFECT SPACING (mm)		GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
								ET	VT	HT	NT			
0	-0.82				ESTUARINE SAND & SHELL Pale grey, wet, mainly very loose to loose. Slightly organic; fine to medium grained sand; partly decomposed shell fragments throughout; high organic content.								pH _F = 7.78 pH _{Fox} = 2.94 ASS Sample stored at Herston Geotechnical Laboratory	
1				A		(SP-SM)							pH _F = 7.62 pH _{Fox} = 5.97 1,2,1 N=3	SPT
2														
3	-3.82			B	ESTUARINE SILTY CLAY Dark grey, moist to mainly wet, very soft. High organic content and high plasticity.	(OH)							pH _F = 7.33 pH _{Fox} = 5.07 RW N<1	SPT
4														
5	-5.32			C	ALLUVIAL SILTY CLAY Pale grey green to dark grey, moist to wet, very soft. Minor sand fraction; high plasticity.	(CH)							pH _F = 7.45 pH _{Fox} = 1.64 HW, HW, 2 ASS Sample stored at Herston Geotechnical Laboratory	SPT
6	-6.32				ALLUVIAL SILTY SAND / SAND Pale grey to grey, moist, medium dense.	(SP-SM)							pH _F = 7.46 pH _{Fox} = 6.88 5,7,11 N=18	SPT
7	-7.32				ALLUVIAL SILTY SANDY CLAY Pale grey to grey, moist, very stiff. Medium to high plasticity; occasional slightly lateritic and concreted zones; becoming more sandy with depth.	(CI-CH)								
8														
9				E									pH _F = 7.16 pH _{Fox} = 6.50 4,7,11 N=18 ASS Sample stored at Herston Geotechnical Laboratory	SPT
10	-10.82													

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

REMARKS FINE TO MEDIUM GRAINED MAINLY LAMINATED POORLY CEMENTED SEDIMENTARY ROCK

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ENGINEERING BOREHOLE LOG

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BOREHOLE No BHP17

SHEET 2 of 4

REFERENCE No H9901

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 24m RIGHT, 1.8m STH FROM EASTN PILE OF PIER 17 OF EXIST BRIDGE COORDINATES 39072.4 E; 52351.0 N

PROJECT No FG5423 SURFACE R.L. -0.82 PLUNGE DATE STARTED 28/04/06 GRID DATUM PROJECT DATUM

JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 28/04/06 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			
									q _u	f _{cu}	f _{ch}	f _{ch}	f _{ch}	f _{ch}	f _{ch}	f _{ch}	f _{ch}	f _{ch}				f _{ch}	f _{ch}	
10	-10.82					ALLUVIAL SILTY SANDY CLAY (As above.)																		
11																								
12					F																			
13																								
14																								
15	-15.32				G	ALLUVIAL SILTY SAND Brown, wet, medium dense. Minor fraction of high plastic clay.																		
16																								
17																								
18					H																			
19	-19.82																							
20	-20.82					ALLUVIAL SANDY GRAVEL Pale brown, wet, medium dense to dense. Gravel fraction - Angular to subangular quartzitic fragments sizing up to 30mm.																		

A: ENGINEERING BOREHOLE LOG W/ LITHOLOGY - FG5423 HIGHWAY BRIDGE.GPJ - MRD_LIB_V1.2.GLB - 25/10/06

REMARKS FINE TO MEDIUM GRAINED MAINLY LAMINATED POORLY CEMENTED SEDIMENTARY ROCK

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BOREHOLE No BHP17

SHEET 3 of 4

REFERENCE No H9901

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 24m RIGHT, 1.8m STH FROM EASTN PILE OF PIER 17 OF EXIST BRIDGE COORDINATES 39072.4 E; 52351.0 N

PROJECT No FG5423 SURFACE R.L. -0.82 PLUNGE _____ DATE STARTED 28/04/06 GRID DATUM PROJECT DATUM

JOB No 165/122/35 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 28/04/06 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
20	-20.82					ALLUVIAL SANDY GRAVEL (As above.) (Coarse fraction > Fine fraction)								
21					J		(GP)						9,13,17 N=30	SPT
22														
23					K								8,11,15 N=26	SPT
24	-24.32					ALLUVIAL GRAVELLY SAND Pale grey to white, wet, mainly loose with some loose and medium dense areas.								
25					L	(Fine fraction > Coarse fraction) Fine fraction - Subangular to subrounded quartzitic particles with high silt content. Coarse fraction - Angular to subangular quartz and sandstone particles sizing up to 30mm.							3,4,6 N=10	SPT
26													2,2,2 N=4 No recovery	SPT
27					M		(SP-SM)							
28														
29					N								4,3,4 N=7	SPT
30	-30.82				P								3,4,7 N=11	SPT

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

REMARKS FINE TO MEDIUM GRAINED MAINLY LAMINATED POORLY CEMENTED SEDIMENTARY ROCK

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BOREHOLE No BHP17

SHEET 4 of 4

REFERENCE No H9901

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 24m RIGHT, 1.8m STH FROM EASTN PILE OF PIER 17 OF EXIST BRIDGE COORDINATES 39072.4 E; 52351.0 N

PROJECT No FG5423 SURFACE R.L. -0.82 PLUNGE ----- DATE STARTED 28/04/06 GRID DATUM PROJECT DATUM

JOB No 165/122/35 HEIGHT DATUM AHD BEARING ----- DATE COMPLETED 28/04/06 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	EH	EH	EH	EH	EH	EH	EH			
30	-30.82					ALLUVIAL SANDY GRAVEL (As above.) (Gravel fraction > Sand fraction)		(GP)											
31	-31.82					SANDSTONE (See Remarks.) HW: White to dark grey, slightly moist to mainly dry, very dense silty sand rapidly grading into low strength rock.		HW											
32	-32.32		(95)			SW: Pale grey to grey, fine grained, slightly massive to mainly laminated, poorly cemented, mainly low strength. Defects: Generally rare. - Some drilling-induced lamination partings < 10° (1-2/m).											30/100mm N>50 SPT o x o o x o o		
33			100 (0)					SW									Is(50)=0.12 MPa Is(50)=0.14 MPa Is(50)=0.16 MPa Is(50)=0.14 MPa Is(50)=0.14 MPa Is(50)=0.28 MPa Is(50)=0.15 MPa		
34																	Core left down borehole.		
35	-35.42		0			Borehole terminated at 34.6m													
36																			
37																			
38																			
39																			
40																			

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

REMARKS FINE TO MEDIUM GRAINED MAINLY LAMINATED POORLY CEMENTED SEDIMENTARY ROCK

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Project: **Houghton Highway Bridge Duplication**

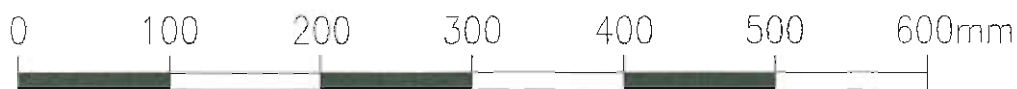
Borehole No: **BHP17**

Start Depth: 31.60m

Finish Depth: 34.00m

Project No: FG5423

H No: 9901



SCALE 1:5

Point Load Strength Index - Test Report

Project: Houghton Highway Bridgesite Investigation

Project No: FG5423

Date Sampled 28/04/06

Date Tested 31/05/06

Feature: N/A

Sample Type: NMLC Core

Report No. FG5423/GS06-413/AS4133.4.1

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/413.A	BHP 17	31.62	D	0.12	0.12	L	Sandstone
GS06/413.B	BHP 17	31.64	A	0.15	0.14	L	Sandstone
GS06/413.C	BHP 17	32.11	D	0.16	0.16	L	Sandstone
GS06/413.D	BHP 17	32.13	A	0.14	0.14	L	Sandstone
GS06/413.E	BHP 17	32.50	D	0.15	0.14	L	Sandstone
GS06/413.F	BHP 17	32.52	A	0.31	0.28	L	Sandstone
GS06/413.G	BHP 17	32.97	A	0.16	0.15	L	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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