

COPYRIGHT NOTICE

This geotechnical log and its associated data (the Document) is licensed by the Queensland Department of Transport and Main Roads under the [Creative Commons Attribution 4.0 Licence](#) (CC BY 4.0). When reusing the Document, in whole or in part, please attribute the Department as follows: "*(c) State of Queensland (Department of Transport and Main Roads) 2020, licensed under the CC BY 4.0 Licence*". This licence does not apply to the Queensland Government logo or trademarks.

LIMITATION OF LIABILITY

The CC BY 4.0 Licence contains a comprehensive Disclaimer of Warranties and Limitation of Liability. In addition, please note that this Document was prepared for Departmental use only. Reuse of the Document by anyone for any other purpose could result in error and/or loss. You should obtain professional advice before making decisions based on the contents of the Document.

When reproducing any part of this Document, you must also reproduce this limitation of liability notice in addition to the italicised attribution statement above.

Retrieved from the Queensland Geotechnical Database <http://qgd.org.au/>



**Queensland
Government**

Department of
Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No **BHP11**

SHEET **1** of **3**

REFERENCE No **H9899**

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 24m RIGHT, 1.8m STH FROM EASTN PILE OF PIER 11 OF EXIST BRIDGE COORDINATES 39001.9 E; 52202.2 N

PROJECT No FG5423 SURFACE R.L. -0.79 PLUNGE _____ DATE STARTED 24/04/06 GRID DATUM PROJECT DATUM

JOB No 165/122/35 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 25/04/06 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
0	-0.79												
0.5					A	ESTUARINE SILTY SAND / SAND Dark grey, wet, very loose.						pH _F = 7.98 pH _{FOX} = 6.96	1,1,1 N=2 SPT
1.0					B	Partly decomposed shell fragments throughout, occasional lenses of dark grey soft clay.						pH _F = 8.19 pH _{FOX} = 7.30	U50
1.5					C		(SP-SM)					pH _F = 8.52 pH _{FOX} = 3.85	U50
2.0					D							pH _F = 7.71 pH _{FOX} = 6.54	1,1,1 N<1 SPT
2.5					E							pH _F = 8.12 pH _{FOX} = 6.65	3,1,1 N=2 SPT
3.0					F							pH _F = 8.27 pH _{FOX} = 6.73	U50
3.5					G	ESTUARINE SILTY CLAY Dark grey, moist, very soft.						pH _F = 7.53 pH _{FOX} = 3.86	RW N<1 SPT
4.0						High organic content and high plasticity.	(OH)						
4.5					H	ALLUVIAL SANDY SILTY CLAY Mottled grey to yellow, moist, mainly very soft to soft.						pH _F = 6.91 pH _{FOX} = 2.68	RW, RW, HW N<1 ASS Sample stored at Herston Geotechnical Laboratory SPT
5.0							(CI-CH)						
5.5					I	ALLUVIAL SANDY SILTY CLAY Green grey to mottled yellow brown, moist, very stiff.							
6.0					J	Minor fraction of fine to medium grained sand.							4,8,10 N=18 SPT
6.5							(CI)						
7.0					K								5,9,12 N=21 SPT
7.5													
8.0													
8.5													
9.0													
9.5													
10.0													

REMARKS

LOGGED BY
BW / ADISS



**Queensland
Government**

Department of
Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No **BHP11**

SHEET **2** of **3**

REFERENCE No **H9899**

PROJECT **HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT**

LOCATION **24m RIGHT, 1.8m STH FROM EASTN PILE OF PIER 11 OF EXIST BRIDGE** COORDINATES **39001.9 E; 52202.2 N**

PROJECT No **FG5423** SURFACE R.L. **-0.79** PLUNGE DATE STARTED **24/04/06** GRID DATUM **PROJECT DATUM**

JOB No **165/122/35** HEIGHT DATUM **AHD** BEARING DATE COMPLETED **25/04/06** 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
10	-10.79												
11					L	ALLUVIAL SILTY CLAY Grey green to mottled yellow brown, moist, very stiff. Medium to high plasticity; occasional organic and dead root fragments.						4,7,11 N=18	SPT
12					M							4,7,10 N=17	SPT
13					N		(Cl-CH)					5,8,10 N=18	SPT
14					P							5,10,17 N=27 ASS Sample stored at Herston Geotechnical Laboratory	SPT
15	-16.19					ALLUVIAL SILTY SAND / SAND Grey brown, moist, medium dense. Mainly fine grained sand with some clay and silt fraction in the upper area. Gradually becoming subangular coarse quartzo sand (<10mm) with depth.						pH _F = 6.58 pH _{Fox} = 5.78	
16					Q							7,10,13 N=23	SPT
17					R		(SP-SM)					2,4,10 N=14	SPT
18						ALLUVIAL SAND AND GRAVEL Pale grey brown to white, wet, mainly dense to very dense. (Fine fraction = Coarse fraction)						10,12,20 N=32	SPT
19	-19.59				S		(SP-GM)						
20	-20.79												

REMARKS

LOGGED BY
BW / ADISS



**Queensland
Government**

Department of
Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No BHP11

SHEET 3 of 3

REFERENCE No H9899

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 24m RIGHT, 1.8m STH FROM EASTN PILE OF PIER 11 OF EXIST BRIDGE COORDINATES 39001.9 E; 52202.2 N

PROJECT No FG5423 SURFACE R.L. -0.79 PLUNGE DATE STARTED 24/04/06 GRID DATUM PROJECT DATUM

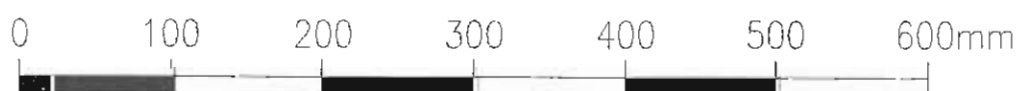
JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 25/04/06 DRILLER CAIRNS DRILLING

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	-20.79								EH VH H M L SL		20 60 200 600 2000				
21					T	ALLUVIAL SAND AND GRAVEL (As above.) Fine fraction - Fine to coarse grained, subangular to angular quartzitic sand with some clayey matrix.							16,22,18 N=40	SPT	
22					U	Coarse fraction - Angular to subangular quartz and sandstone particles sizing up to 20mm.	(SP-GM)						No recovery.	22,30/120 N>50	SPT
23	-23.79														
24	-24.49				V	INTERBEDDED MUDSTONE AND SANDSTONE FINE TO MEDIUM GRAINED MAINLY LAMINATED POORLY CEMENTED SEDIMENTARY ROCK HW: Grey, moist, dry hard clayey silt abruptly grading into very low to low strength rock. SW: Dark grey to white banded, fine to medium grained, mainly laminated, low to mainly medium strength. Defects: Generally rare. - Some drilling-induced lamination partings <15° (1-2/m). Core is slightly erodable with depth; core tends to delaminate with excessive drying.		HW					30/100 N>50	SPT	
25			(95)										Is(50)=0.18 MPa Is(50)=0.27 MPa	x o	
26								SW					Is(50)=0.33 MPa Is(50)=0.41 MPa	x o	
27	-27.49		100										Very high strength mudstone band. Clay seam (<3mm) Is(50)=0.30 MPa Is(50)=0.41 MPa Is(50)=0.23 MPa Is(50)=0.49 MPa Is(50)=0.22 MPa Is(50)=0.43 MPa Is(50)=0.17 MPa Is(50)=0.34 MPa	x o x o x o x o	
28						Borehole terminated at 26.7m							Is(50)=0.15 MPa Is(50)=0.44 MPa	x o	
29															
30															

REMARKS

LOGGED BY
BW / ADISS

Project: **Houghton Highway Bridge Duplication**
Borehole No: **BHP11**
Start Depth: 23.70m
Finish Depth: 26.70m
Project No: FG5423
H No: 9899



Point Load Strength Index - Test Report

Project: Houghton Highway Bridgesite Investigation

Project No: FG5423

Date Sampled 24/04/06

Feature: N/A

Sample Type: NMLC Core

Date Tested 31/05/06

Report No. FG5423/GS06-411/AS4133.4.1

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/411.A	BHP 11	23.84	D	0.18	0.18	L	I/B Mudstone & Sandstone
GS06/411.B	BHP 11	23.86	A	0.28	0.27	L	I/B Mudstone & Sandstone
GS06/411.C	BHP 11	24.27	D	0.33	0.33	M	I/B Mudstone & Sandstone
GS06/411.D	BHP 11	24.33	A	0.45	0.41	M	I/B Mudstone & Sandstone
GS06/411.E	BHP 11	25.29	D	0.30	0.30	L	Mudstone
GS06/411.F	BHP 11	25.32	A	0.43	0.41	M	Mudstone
GS06/411.G	BHP 11	25.45	D	0.23	0.23	L	Mudstone
GS06/411.H	BHP 11	25.47	A	0.55	0.49	M	Mudstone
GS06/411.J	BHP 11	25.61	D	0.22	0.22	L	I/B Mudstone & Sandstone
GS06/411.K	BHP 11	25.63	A	0.46	0.43	M	I/B Mudstone & 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:
I/B - Interbedded

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

(Peter Simson)



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

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

Point Load Strength Index - Test Report

Project: Houghton Highway Bridgesite Investigation

Project No: FG5423

Date Sampled 24/04/06

Feature: N/A

Sample Type: NMLC Core

Date Tested 31/05/06

Report No. FG5423/GS06-411/AS4133.4.1

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/411.L	BHP 11	26.10	D	0.18	0.17	L	I/B Mudstone & Sandstone
GS06/411.M	BHP 11	26.12	A	0.36	0.34	M	I/B Mudstone & Sandstone
GS06/411.N	BHP 11	26.49	D	0.15	0.15	L	I/B Mudstone & Sandstone
GS06/411.P	BHP 11	26.56	A	0.45	0.44	M	I/B Mudstone & 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

(Mr Peter Simson)



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

This document is issued in
accordance with NATA's
policy on the cover page.