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ENGINEERING BOREHOLE LOG

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

BOREHOLE No	BHP78
SHEET	_ <u>1</u> _ of _ <u>3</u> _
REFERENCE No	H9914

	JECT				SHWAY BRIDGE DUPLICATION - HOUGHTO									
					<u>STH FROM EASTN PILE OF PIER 78 OF E</u> SURFACE R.L. <u>-1.13</u> PLUNGE								5 E; 53863.8 N _PROJECT DA	 TUM
JOB					HEIGHT DATUM AHD BEARING								CAIRNS DRIL	
DEPTH (m)	R.L. (m)	SING SH BORING RE DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	C	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG		AND		SAMPLES
0	-1.13	₹ \$8	REC %	SA	ESTUARINE SILTY SAND	15 711	SN S	m>±≶¬>m	TTTTİ	8				SA E
					Dark grey, wet, very loose to loose. Some partly decomposed shell fragments;				-					
-1					mainly fine grained sand; slightly organic throughout.				-					-
-2				Α					-		$\rho H_F = 7.80$ $\rho H_{FOX} = 6.$	0 38	1,1,1 N=2	SPT
							(SM		-					-
-3				В					-		pH _F = 7.96 pH _{FOX} = 6.	.05	RW N<1	SPT
-4								+	- -	00000	J			1
5				С							$\rho H_F = 8.19$ $\rho H_{FOX} = 6.19$	5 .55	1,1,- N=1	SPT
	-6.63				ESTUARINE SAND AND SHELL									
; ;		ш			Dark grey, wet, medium dense.									=
6				D			(SP SM)		-		$pH_F = 8.00$ $pH_{FOX} = 6$	2 .55	2,5,7 N=12	SPT
-7	-8.13							ļ‡	— — — —	ļ]
					ESTUARINE SILTY CLAY Dark grey, moist, very soft.			1						
-				E	High plasticity; high organic content; minor fraction of decomposed shell fragments.				- - -		pH _F ≃ 8.1		RW N<1	SPT
-8									-		DH _{FOX} = 6	.26		
							(OH	, ‡	· -					
<u> </u>						****		 	· ·					
9	,			F					-		$pH_{F} = 8.3$ $pH_{FOX} = 6$	0	RW N<1	SPT
1 1 1] F, 160X = 0			
10	-11.13						3	†	•				100050 01	
K	EMARKS	' — —		 		 					- -		LOGGED BY BW / ADISS	



ENGINEERING BOREHOLE LOG

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

BOREHOLE No	BHP78
SHEET	_2_ of _3_
REFERENCE No	H9914

	JECT				CHWAY BRIDGE DUPLICATION - HOUGHT								
	ATION JECT No				STH FROM EASTN PILE OF PIER 78 OF E SURFACE R.L1.13 PLUNGE							39791.5 E; 53863.8 N ATUM <u>PROJECT DA</u>	
JOB					HEIGHT DATUM AHD BEARING							LLER <u>CAIRNS DRIL</u>	
© DEPTH (m)	R.L. (m)	CASING WASH BORING CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	INTACT STRENGTH ボチェミンタヴ	DEFECT SPACING (mm)	GRAPHIC LOG		ONAL DATA AND RESULTS	SAMPLES
-	(1.10	0.8			ESTUARINE SILTY CLAY (As above.)	X			- 				-
111	-12.63			G			(OH				pH _F = 8.03 pH _{Fox} = 6.38	RW N<1	SPT
12				Н	ESTUARINE SILTY SAND Dark grey, wet, mainly very loose. Some shell fragments below 16.0m.			- - - - - - - - - - - - - - - - - - -			pH _e = 7.48 pH _{eox} = 6.18	RW N<1	SPT
- - - - - - - 14				J				-			pH _F = 8.52 pH _{FOX} = 5.81	HW N<1	SPT
GPJ MRD_LIB_V1.2.GLB_Z5/10/06 Trrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr				к			(SM	-			ρH _F = 7.95 ρH _{FOX} = 5.70	1,-,- N<1	SPT
A ENGINEERING BOREHOLE LOG W LITHOLOGY FG5423 HIGHWAY BRIDGE,GF7	-18.63			L				- - - - - - - - -			pH _F = 7.91 pH _{FOX} = 6.54	1,1,1 N=2	SPT
10GY	10.00				ESTUARINE CLAYEY GRAVEL Dark grey, mainly wet, medium dense.			<u>:</u>			<u> </u>	· 	-
18 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -				М	Some shell fragments; subangular quartz particles sizing up to 25mm.		(GC	-			ρH _F = 7.63 ρH _{FOX} = 4.25	6,6,6 N=12	SPT
A ENGINEERING BORE	-20.13 -21.13			N	ALLUVIAL SANDY GRAVEL Grey brown to pale grey brown, wet, medium dense.		(GP			20000		4,5,6 N=11	SPT
	EMARKS										-	LOGGED BY	
												BW / ADISS	



ENGINEERING BOREHOLE LOG

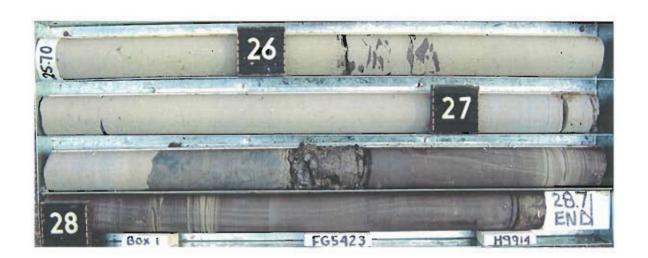
FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/3-2005

BOREHOLE No	BHP78
SHEET	3 of3
REFERENCE No	<u>H9914</u>

PRO.					GHWAY BRIDGE DUPLICATION - HOUGHT						_	
	ATION				N STH FROM EASTN PILE OF PIER 78 OF E						ORDINATES 39791.5 E; 53863.8 N	
					SURFACE R.L1.13 PLUNGE							
JOB I	NO	_100/	122/33_		HEIGHT DATUM AHD BEARING			DATE COMPLET	IEU <u>02</u>	06/	06 DRILLER <u>CAIRNS DRIL</u>	LING
DEPTH (m)	R.L. (m)	S BORING DRILLING	RQD ()%		MATERIAL	OGY	HERING	STRENGTH SPAC	2000 (mm) (mm) (2000 (ADDITIONAL DATA	S
월	-21.13	SAN	CORE	SAMPLE	DESCRIPTION	LITHOLOGY	SATH	프子프로그국의 88%	888		TEST RESULTS	SAMPLES
20	-21.13	ರಿ≩೮	REC %	Ŝ	ALL CAMPY OF AUG	5	3 8	711777	711			& ¤
					(As above.)			† †	0) {		
F					(Coarse fraction > Fine fraction)	°0		Ŧ	5	1		
21					Coarse fraction - Angular to subangular quartzo particles sizing up to 50mm.			‡	Š	d		
[P	Fine fraction - Angular to subangular	60		Ī		ď	8,7,6 N=13	SPT
<u> </u>					medium to coarse grained sand with minor silt fraction.	0		‡	6	۱,	694	
					Sit Hactori.	10 N		Ī	Š	1 /	- High water loss	
-22						00		‡		ď		2,
[0	(GP)	<u> </u>		1		
-						00	1	‡	Š	1		١.
						60		<u> </u>	Ď	d		
-23						0	1	+	2	'	_3	
[]				Q		60		Ī	ĬČ	1	8,8,9 N=17	SPT
-							1	<u> </u>	Ő	d		
Εl						6 N		<u>†</u>	5)		
-24				S.		0	1	<u> </u>	K	ď		
-						10 V		‡	b	1		
	-25.63								}c	ו נ		
-					ALLUVIAL CLAY Dark grey, moist, firm.		(OL)	‡			pH _F = 6.53	
25	-26.13				(Driller's record only.)		(00)				pH _{FOX} = 1.64	_
-25	-26.83				SANDSTONE FINE GRAINED MAINLY MASSIVE POORLY CEMENTED SEDIMENTARY ROCK		нw	‡ +				-
'I I	-20.03		(97)		HW?: (Driller's record only.) SW: Pale grey to white, mainly massive,	<u> </u>			- + -	+	Is(50)=1.45 MPa	x
-26		-			fine grained, medium to mainly high	: : :					Is(50)=1.58 MPa	0
-		- 11		15	strength.	: : :					 Some siltstone rip-up clasts. ls(50)=2.26 MPa 	0
El		-11		18	Occasional discontinuous carbonaceous laminations / pods with thickness varying	:::	sw				Is(50)=1.60 MPa	x
<u> </u>				143	up to 20mm.			DES F				
-27					Defects: Generally rare.	:::					ls(50)=0.43 MPa	
t L	-28.46				- Occasional drilling induced lamination partings <10° (1/m).	<u> </u>					is(50)=0.43 MPa	, x
<u> </u>				1 2	MUDSTONE			1		_	- HW and altered ls(50)=0.84 MPa	×
<u> </u>					FINE GRAINED THINLY LAMINATED SEDIMENTARY ROCK					٦	clay infilled ls(50)=1.04 MPa band.	٥
28					SW: Dark grey to black, thinly laminated,	E	sw				ls(50)=0.80 MPa	×
;f					fine grained, mainly medium to high strength.	E		2-21			ls(50)=0.73 MPa	ô
-					Some sandstone laminations. Defects: Generally rare.						Is(50)=0.83 MPa	×
	-29.83		100	100	- Occasional drilling induced lamination	F	-	-		\dashv	ls(50)=0.76 MPa	0
29					partings (1-2/m) Occasional weathered and aftered bands			+				
					<100 mm. Borehole terminated at 28.7m	1		l İ				
-				-	Soldio Chimiated at 20.7111			1 = 1		İ		
-28 -27 -28								İ				
30						\perp	<u> </u>	L T				
RE	EMARKS										LOGGED BY	
											BW / ADISS	

Project: Houghton Highway Bridge Duplication

Borehole No: BHP78
Start Depth: 25.70m
Finish Depth: 28.70m
Project No: FG5423
H No: 9914





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

Point Load Strength Index - Test Report

Project: Houghton Highway Bridgesite Investigation

Project No: FG5423

Date Sampled 02/06/06

Feature: N/A

Sample Type: NMLC Core

Report No. FG5423/GS06-489/AS4133.4.1

Date Tested 15/06/06

			• •				
Sample	Sample	Depth	Test Type	ls	ls50	Strength	Lithology
Number	Location	(m)	D,A,B,Í*	(MPa)	(MPa)	Descriptor	**
		, ,			,		
GS06/489.A	BHP 78	25.77	D	1.46	1.45	Н	Sandstone
GS06/489.B	BHP 78	25.79	Α	1.58	1.58	Н	Sandstone
GS06/489.C	BHP 78	26.30	Α	2.17	2.26	H	Sandstone
GS06/489.D	BHP 78	26.40	D	1.61	1.60	H	Sandstone
GS06/489.E	BHP 78	27.09	D	0.43	0.43	M	Sandstone
GS06/489.F	BHP 78	27.11	Α	0.32	0.32	M	Sandstone
GS06/489.G	BHP 78	27.50	D	0.85	0.84	M	Mudstone
GS06/489.H	BHP 78	27.64	Α	1.09	1.04	H	Mudstone
GS06/489.J	BHP 78	28.06	D	0.81	0.80	M	Mudstone
GS06/489.K	BHP 78	28.08	Α	0.74	0.73	M	Mudstone

Sample Remarks

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

(P.REYNOLDS)

NATA

Accreditation Number: 1302: Accredited for compliance with ISO/IEC 17025

This document is issued in accordance with NATA's

^{*} 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)



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

Point Load Strength Index - Test Report

Project: Houghton Highway Bridgesite Investigation

Project No: FG5423

Date Sampled 02/06/06

Feature: N/A

Sample Type: NMLC Core

Report No. FG5423/GS06-489/AS4133.4.1

Date Tested 15/06/06

			:				
Sample	Sample	Depth	Test Type	ls	ls50	Strength	Lithology
Number	Location	(m)	D,A,B,I*	(MPa)	(MPa)	Descriptor	
GS06/489.L	BHP 78	28.53	D	0.87	0.83	M	Mudstone
GS06/489 M	BHP 78	28.55	A		0.76	M	Mudstone

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.REYNOLDS)



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

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