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BOREHOLE ENGINEERING LOG

BOREHOLE NO.

RTBH25

SHEET 1 OF 5

Client:	Department of Transport and Main Roads	Date Commenced:	22/3/10
Project:	Gold Coast Rapid Transit	Date Completed:	23/3/10
Borehole Location:	Gold Coast Highway, Ch: 31278.9	Recorded By:	NG
Project Number:	2161016A	Log Checked By:	J.M.K

Drill Model/Mounting:	Drillpower Hydrapower Scout	Hole Angle:	90°	Surface RL:	3.40 m AHD*
Borehole Diameter:	75 mm	Bearing:	---	Co-ords:	E 86100.84 N 58987.78 GCCC Grid*

Borehole Information						Field Material Description													
1	2	3	4	5	6	7	8	9	10	11	12	13							
METHOD	SUPPORT	WATER	RL(m) AHD*	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY / CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS						
TC	AS									VS	FB	VL	SL	MD	VS	TD	VD		
				3					FILL (Silty SAND): medium grained, brown										FILL
				1	SPT 1,1,1 N=2	SPT													
				2															
				1.60				SP	SAND: medium grained, pale yellow and brown.										BEACH SEDIMENTS
				2															
				1	SPT 1,0,0 N=0	SPT													
				3															
				0															
				4	SPT 1,0,0 N=0	SPT			... 4.0 m: pale grey and brown, shell fragments										SPT One hit for 550 mm
				-1															
				5															
				-2	SPT 1,1,0 N=1	SPT													SPT: One hit for 350 mm, two hits for 650 mm
				6															
				-3															
				7	SPT 2,2,3 N=5	SPT			... 7.0 m: trace gravel (<10 mm), well rounded										
				-4															
				8															
				-5	SPT 5,10,4 N=14	SPT		SC	... 8.4 m: lenses of clayey sand.										ESTUARINE SEDIMENTS
				9					... 9.2 - 9.5 m: organics										
				-6															

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.



BOREHOLE ENGINEERING LOG

BOREHOLE NO.

RTBH25

SHEET 2 OF 5

Client:	Department of Transport and Main Roads	Date Commenced:	22/3/10
Project:	Gold Coast Rapid Transit	Date Completed:	23/3/10
Borehole Location:	Gold Coast Highway, Ch: 31278.9	Recorded By:	NG
Project Number:	2161016A	Log Checked By:	<i>LMK</i>
Drill Model/Mounting:	Drillpower Hydrapower Scout	Hole Angle:	90°
Borehole Diameter:	75 mm	Bearing:	---
		Surface RL:	3.40 m AHD*
		Co-ords:	E 86100.84 N 58987.78 GCCC Grid*

Borehole Information						Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	12	13	
METHOD	SUPPORT	WATER	RL(m) AHD*	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY / CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
										VS FB VL SL L MD ST VST D H VD			
WB				-7	SPT 22,30 /110mm	SPT		SP	SAND: medium grained, pale yellow and brown. (continued)				BEACH SEDIMENTS
				-8	SPT 30 /140mm	SPT							
				-9									
				-10	SPT 8,30 /130mm	SPT							13 m: Possible fall in
				-11	SPT 30 /110mm	SPT		SC	... 14.5 - 15.0 m: coffee rock and coarse shell fragments.				ESTUARINE SEDIMENTS
				-12				SP	... dark brown coffee rock (sand).				
				-13	SPT 30,30 /100mm	SPT							BEACH SEDIMENTS
				-14									
				-15	SPT 16,23,30 /130mm	SPT							
				-16									

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

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BOREHOLE ENGINEERING LOG

BOREHOLE NO.

RTBH25

SHEET 3 OF 5

Client: Department of Transport and Main Roads
 Project: Gold Coast Rapid Transit
 Borehole Location: Gold Coast Highway, Ch: 31278.9
 Project Number: 2161016A

Date Commenced: 22/3/10
 Date Completed: 23/3/10
 Recorded By: NG
 Log Checked By: LMSK

Drill Model/Mounting: Drillpower Hydrapower Scout Hole Angle: 90° Surface RL: 3.40 m AHD*
 Borehole Diameter: 75 mm Bearing: --- Co-ords: E 86100.84 N 58987.78 GCCC Grid*

Borehole Information						Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	12	13	
METHOD	SUPPORT	WATER	RL(m) AHD*	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY / CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
VS	FB	VL	SL	LD	ST	D	H	VD					
WB								SP	SAND: medium grained, pale yellow and brown. (continued) ... change of colour to brown, fine to medium grained.				
				17	SPT 12,19,17 N=36	SPT							
				21									
				18									
				22									
				19									
				23									
				20	SPT 22,30 N=110mm	SPT							
				24									
				21									
				25									
				22									
				26									
				23									
				26.50	SPT 1,2,18 N=20	SPT		SC-SM	Silty clayey SAND: fine to medium grained, grey, low plasticity fines				ESTUARINE SEDIMENTS
				27									
				24									
				28									
				25									
				29									
				26	SPT 3,6,10 N=16	SPT		CH	CLAY: high plasticity, grey, trace organic fragments	MC-PL			29.5 m: High organic content?
				29.50									

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.



BOREHOLE ENGINEERING LOG

BOREHOLE NO.

RTBH25

SHEET 4 OF 5

Client:	Department of Transport and Main Roads	Date Commenced:	22/3/10
Project:	Gold Coast Rapid Transit	Date Completed:	23/3/10
Borehole Location:	Gold Coast Highway, Ch: 31278.9	Recorded By:	NG
Project Number:	2161016A	Log Checked By:	<i>L.M.C.K.</i>
Drill Model/Mounting:	Drillpower Hydrapower Scout	Hole Angle:	90°
Borehole Diameter:	75 mm	Bearing:	---
		Surface RL:	3.40 m AHD*
		Co-ords:	E 86100.84 N 58987.78 GCCC Grid*

Borehole Information						Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	12	13	
METHOD	SUPPORT	WATER	RL(m) AHD*	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY / CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
										VS FB VL SL JL ST MD VST D H VD			
WB				-27				CH	CLAY: high plasticity, grey, trace organic fragments <i>(continued)</i> ... clay and sand	MC-PL			
				31									
				-28									
				32									
				-29									
				32.50	SPT 21,24,27 N=51	SPT		SC-SM	SAND: medium grained, pale grey and brown, trace silt				
				33									
				-30				CH	CLAY: high plasticity, grey to green.	MC-PL			RESIDUAL SOIL (?)
				33.30									
				34									
				-31									
				34.80					META-SANDSTONE: trace greywacke (?), quartz, extremely weathered, extremely low strength. ... 35.5 m: increase rock fragments				WEATHERED ROCK 35.5 m: Resistance to wash bore. SPT not taken.
				35									
				-32									
				36									
				-33					REFER TO CORED BOREHOLE LOG				
				37									
				-34									
				38									
				-35									
				39									
				-36									

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.



CORED BOREHOLE ENGINEERING LOG

BOREHOLE NO.

RTBH25

SHEET 5 OF 5

Client: Department of Transport and Main Roads
 Project: Gold Coast Rapid Transit
 Borehole Location: Gold Coast Highway, Ch: 31278.9
 Project Number: 2161016A

Date Commenced: 22/3/10
 Date Completed: 23/3/10
 Recorded By: NG
 Log Checked By: LMK

Drill Model/Mounting: Drillpower Hydrapower Scout Hole Angle: 90° Surface RL: 3.40 m AHD*
 Borehole Diameter: 75 mm Bearing: --- Co-ords: E 86100.84 N 58987.78 GCCC Grid*

Borehole Information						Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	
METHOD	SUPPORT	WATER	CORE RECOVERY	RQD	RL(m) AHD*	DEPTH(m)	GRAPHIC LOG	SOIL/ROCK MATERIAL FIELD DESCRIPTION	WEATHERING	INFERRED STRENGTH Is(50) MPa	AVERAGE DEFECT SPACING mm	STRUCTURE AND ADDITIONAL OBSERVATIONS
									EL 0.03 VL 0.1 L 0.3 M 1 H 3 VH 10 EH 10			
						-27						
						31						
						-28						
						32						
						-29						
						33						
						-30						
						34						
						-31						
						35						
						-32						
						36						
						-33		COMMENCE CORING AT 36.5 m				
						36.60		CORE LOSS				
						37		<p>META-SILTSTONE: grey, chlorite (?) with sulphide (pyrite?) on foliation surfaces.</p> <p>... 36.9 - 38.0 m: numerous quartz veins up to 20 mm thick and vertical to sub vertical veinlets 1 - 5 mm thick</p>				<p>36.6 - 36.8 m: Non intact core</p> <p>36.7 m: Foliation appears subhorizontal</p> <p>36.7 - 38 m: 10 x DB, clean, along subhorizontal (<30°) foliation</p> <p>37.45 m: J, 45°, P, S, clean</p>
						38		END OF BOREHOLE AT 38.00 m				
						-35						Limit of Investigation
						39						* Horizontal and vertical data determined by Ground Survey
						-36						

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

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REPORT OF PHOTOGRAPHS



Borehole number: RTBH25

Sheet 1 of 1

Client:	Department of Transport and Main Roads	Coordinates:	E 86100.84 N 58987.78	Depth range:	36.5 m – 38.0 m
Project:	Gold Coast Rapid Transit	Surface RL:	3.40 m AHD	Inclined length:	-
Borehole location:	Ch: 31279.4	Hole angle:	90 °	Drill model/mounting:	Hydrapower Scout
Project number:	2161016A	Bearing:	-	Borehole diameter:	75 mm

