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**Queensland
Government**

Department of
Main Roads

ENGINEERING BOREHOLE

FOR GEOTECHNICAL TERMS AND
SYMBOLS REFER FORM F:GEOT 017/2-2004

BOREHOLE No BH127

SHEET 1 of 4

REFERENCE No H9436

PROJECT GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION

LOCATION CONTROL LINE: MCAO - Ch. 22760 - OFFSET 4.9 L COORDINATES 9494.5 E; 173014.1 N

PROJECT No FM2055 SURFACE R.L. 1.33 DATE STARTED 20/7/04 DATUM SETP

JOB No DATUM AHD DATE COMPLETED 21/7/04 DRILLER R&D DRILLING PTY LTD

DEPTH (m)	R.L. (m)	AUGER 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	VH	H	W	L	EL	20	60	200			
0	1.33					ESTUARINE WEATHERED OC CRUST Mottled brown grey, moist, firm silty clay.		OH												
0.58						ESTUARINE SILTY CLAY Dark grey, moist, soft to mainly firm, extra sensitive.												Peak Su=31.4kPa, Res Su=<1kPa	FSV	
3								CH										PP=30kPa	U50	
4																		Peak Su=29.7kPa, Res Su=1.8kPa	FSV	
5						Heavy shell content towards bottom.														
4.12						ESTUARINE SILTY CLAY Dark grey, moist, firm, sensitive.												PP=10kPa	U50	
6																		Peak Su=26.1kPa, Res Su=5.4kPa	FSV	
8								CH										PP=30kPa	U50	
10	-8.67																			

BOREHOLE WITH LITHOLOGY GATEWAY NORTHERN UPGRADE GPJ ENG BOREHOLE FINAL GDT 28/4/05

REMARKS SPT N values in clayey gravel can overestimate density due to influence of coarser size gravel particles. Defect angles have been measured with respect to a horizontal plane.

LOGGED BY
B.Woodgate & A.Dissanayake



ENGINEERING BOREHOLE

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/2-2004

BOREHOLE No BH127
SHEET 2 of 4
REFERENCE No H9436

PROJECT GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION
LOCATION CONTROL LINE: MCAO - Ch. 22760 - OFFSET 4.9 L COORDINATES 9494.5 E; 173014.1 N
PROJECT No FM2055 SURFACE R.L. 1.33 DATE STARTED 20/7/04 DATUM SETP
JOB No _____ DATUM AHD DATE COMPLETED 21/7/04 DRILLER R&D DRILLING PTY LTD

DEPTH (m)	R.L. (m)	AUGER 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	
														BT
10	-8.67					ESTUARINE SILTY CLAY (As above)	CH					Peak Su=32.4kPa, Res Su=7.2kPa	FSV	
11														
12	-10.37					SILTY SAND / SAND - ALLUVIUM Pale brown to orange brown, moist to wet, loose. Fine sand becoming coarse with depth, silt content decreasing with depth.	CI						U50	
13												3,2,3 N=5	SPT	
14														
15												5,4,3 N=7	SPT	
16	-14.17					SANDY SILTY CLAY - ALLUVIUM Pale grey to brown, moist, stiff to very stiff. Becoming stiff and sandy with depth.	CI						6,7,11 N=18	SPT
17														
18												4,6,8 N=14	SPT	
19														
20	-18.67											6,6,7 N=13	SPT	

REMARKS SPT N values in clayey gravel can overestimate density due to influence of coarser size gravel particles. Defect angles have been measured with respect to a horizontal plane.

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BOREHOLE No BH127

SHEET 3 of 4

REFERENCE No H9436

PROJECT GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION

LOCATION CONTROL LINE: MCAO - Ch. 22760 - OFFSET 4.9 L COORDINATES 9494.5 E; 173014.1 N

PROJECT No FM2055 SURFACE R.L. 1.33 DATE STARTED 20/7/04 DATUM SETP

JOB No _____ DATUM AHD DATE COMPLETED 21/7/04 DRILLER R&D DRILLING PTY LTD

DEPTH (m)	R L (m)	AUGER 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	-18.67					SILTY / CLAYEY SAND - ALLUVIUM Brown to grey brown, mainly moist to wet, medium dense.							
21												11,14,13 N=27	SPT
22													
23							SM-SC						
24												4,9,14 N=23	SPT
25													
26	-24.37					CLAYEY GRAVEL - ALLUVIUM Orange brown to dark grey, moist, very dense.						Roller bit was used	
27							GC					27,30/120,- N>50	SPT
28	-25.97					SANDSTONE FINE TO MEDIUM GRAINED, MAINLY MASSIVE TO SLIGHTLY LAMINATED, MAINLY POORLY CEMENTED TO WELL CEMENTED SEDIMENTARY ROCK. HW : Generally exhibits engineering properties of pale brown to orange brown, moist, hard sandy silty clay grading in to very low to low strength rock with depth.							
29							HW					9,14,23 N=37	SPT
30	-28.67											15,30/100,- N>50	SPT

BOREHOLE WITH LITHOLOGY GATEWAY NORTHERN UPGRADE GPJ ENG BOREHOLE FINAL GDT 28/4/05

REMARKS SPT N values in clayey gravel can overestimate density due to influence of coarser size gravel particles. Defect angles have been measured with respect to a horizontal plane.

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BOREHOLE No BH127

SHEET 4 of 4

REFERENCE No H9436

PROJECT GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION

LOCATION CONTROL LINE: MCAO - Ch. 22760 - OFFSET 4.9 L COORDINATES 9494.5 E; 173014.1 N

PROJECT No FM2055 SURFACE R.L. 1.33 DATE STARTED 20/7/04 DATUM SETP

JOB No DATUM AHD DATE COMPLETED 21/7/04 DRILLER R&D DRILLING PTY LTD

DEPTH (m)	R.L (m)	ALUSER CASING WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY		INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
							USC	WEATHERING					
30	-28.67					HW : (As above)		HW					
31	-29.17		(100)			MW : Pale orange to red brown to grey white, thinly laminated, mainly low to medium strength. Sequences of three normal grading bands between 31.00 and 31.90m. Defects - General rare. - Occasional drilling induced lamination partings (1/m).		MW SW MW SW MW MW			Is(50)=0.06 MPa Is(50)=0.14 MPa Is(50)=0.06 MPa Is(50)=0.04 MPa Is(50)=0.11 MPa Is(50)=0.05 MPa Is(50)=0.03 MPa Is(50)=0.09 MPa	o x o o o x x o	
32	-30.57					SW : Pale grey to grey white, slightly laminated to mainly massive with depth, mainly low to medium strength. Defects - Generally rare. - Occasional drilling induced lamination partings 20-30deg (1/2m).		SW MW			Is(50)=0.17 MPa Is(50)=0.17 MPa	o x	
33			100 (100)			Some carbonaceous layers on the top and becoming coarse gravel and calcareously cemented with depth.					Is(50)=0.21 MPa Is(50)=0.29 MPa Is(50)=0.20 MPa Is(50)=0.13 MPa	o x o x	
34											Some carbonaceous and coarse grained, rip-up clasts		
35								MW SW			Is(50)=0.26 MPa Is(50)=0.36 MPa Is(50)=0.46 MPa Is(50)=0.50 MPa	o x o x	
36			100 (100)								Is(50)=0.24 MPa Is(50)=0.24 MPa	o x	
37											Is(50)=0.32 MPa Is(50)=0.21 MPa Is(50)=0.23 MPa Is(50)=0.36 MPa	o x o x	
38	-36.17		100			Borehole terminated at 37.5m							

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Project: **Gateway Upgrade Project Geotechnical Investigation**

Borehole No: **BH 127**

Start Depth: 30.50m

Finish Depth: 37.50m

Project No: FM2055

H No: 9436

