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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 BH111
SHEET 1 of 4
REFERENCE No H9420

PROJECT GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION
LOCATION CONTROL LINE: MCAO - Ch. 20093.7 - OFFSET 3.0 L COORDINATES 8975.0 E; 170571.7 N
PROJECT No FM2055 SURFACE R.L. 4.77 DATE STARTED 23/7/04 DATUM SETP
JOB No _____ DATUM AHD DATE COMPLETED 27/7/04 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
0	4.77					SILTY CLAY - FILL [EARTH BUND] Brown to mottled red, moist, mainly firm to occasionally stiff. Medium plasticity, slightly organic in the upper area.		CI				Bund wall	3,3,4 N=7 SPT
1													
2													
2.07						SILTY CLAY - FILL (??) Grey, moist, firm. High organic content.		OL				Possible hydraulically placed deposit	2,2,3 N=5 SPT
3													
0.87						SAND / SILTY SAND - FILL Grey brown, wet, very loose.		SP-SM				Possible hydraulically placed deposit	HW, - N<1 SPT
4													
-0.23						SAND / SILTY SAND Pale brown, wet, medium dense.		SP-SM					7,8,11 N=19 SPT
5													
-2.03						CLAYEY GRAVEL - ALLUVIUM Red brown to mottled red brown, moist, medium dense. Some lateritic and concreted zones, angular to subangular gravel sizing up to 30mm.		GC					4,7,8 N=15 SPT
6													
7													
8													
9													
-5.23													7,7,9 N=16 SPT
10													

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



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BOREHOLE No BH111

SHEET 2 of 4

REFERENCE No H9420

PROJECT GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION

LOCATION CONTROL LINE: MCAO - Ch. 20093.7 - OFFSET 3.0 L COORDINATES 8975.0 E; 170571.7 N

PROJECT No FM2055 SURFACE R.L. 4.77 DATE STARTED 23/7/04 DATUM SETP

JOB No DATUM AHD DATE COMPLETED 27/7/04 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
10	-5.23					CLAYEY GRAVEL - ALLUVIUM (As above)						7,10,10 N=20	SPT
11	-6.23					CLAYEY GRAVEL - ALLUVIUM Pale orange, moist, medium dense. Subangular to subrounded gravel sizing up to 30mm.						9,9,9 N=18	SPT
12												10,9,11 N=20	SPT
13												7,8,9 N=17	SPT
14												6,9,14 N=23	SPT
15												9,11,18 N=29	SPT
16												9,12,16 N=28	SPT
17													
18													
19													
20	-15.23												

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BOREHOLE No BH111
SHEET 3 of 4
REFERENCE No H9420

PROJECT GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION
LOCATION CONTROL LINE: MCAO - Ch. 20093.7 - OFFSET 3.0 L COORDINATES 8975.0 E; 170571.7 N
PROJECT No FM2055 SURFACE R.L. 4.77 DATE STARTED 23/7/04 DATUM SETP
JOB No DATUM AHD DATE COMPLETED 27/7/04 DRILLER R & D Drilling Pty Ltd

DEPTH (m)	R.L. (m)	AUGER 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
20	-15.23		CORE REC %										
21					CLAYEY GRAVEL - ALLUVIUM (As above) Becoming dense with depth.		GC					11,17,22 N=39	SPT
22	-16.73				BASALT FINE TO MEDIUM GRAINED LAYERED, INTERMEDIATE TO BASIC, EXTRUSIVE IGNEOUS ROCK. HW : Pale green to green brown, moist, very dense silty sand comprising very low to low strength corestones and rock kernels throughout.		HW					11,13,30/120 N=50	SPT
23												30/100,-,- N>50	SPT
24													
25	-20.23		(0)		MW : Orange green to orange brown, subhorizontally layered, very low to low strength. Defects : - Subhorizontal stress relief joints <30deg (10-30/m). - Joints <20deg (>10/m)		MW					Is(50)=0.37 MPa	o
26												Is(50)=0.08 MPa	x
27	-22.28		100 (60)		SW : Dark grey to blue grey, subhorizontally layered, mainly medium to high strength. Defects : - Subhorizontal stress relief joints <30deg (3-7m). - Joints @ 40deg (1/2m).		SW					Is(50)=0.10 MPa	o
28												Is(50)=0.59 MPa	o
29												Highly fractured zone Is(50)=2.46 MPa Is(50)=0.81 MPa Is(50)=1.50 MPa	o x o
30	-25.23		100 (80)										

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 BH111

SHEET 4 of 4

REFERENCE No H9420

PROJECT GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION

LOCATION CONTROL LINE: MCAO - Ch. 20093.7 - OFFSET 3.0 L COORDINATES 8975.0 E; 170571.7 N

PROJECT No FM2055 SURFACE R.L. 4.77 DATE STARTED 23/7/04 DATUM SETP

JOB No DATUM AHD DATE COMPLETED 27/7/04 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
30	-25.23														
31	-26.78		100			SW : (As above) Rock mass tends to break along subhorizontal layering joints with mild handling. Defects are generally planar to irregular open becoming tight with depth, rough, slightly altered and ironstained and occasionally infilled with concordant calcite and zeolite veinlets (<20mm thick). Borehole terminated at 31.55m		SW					Is(50)=0.17 MPa Is(50)=1.07 MPa Is(50)=2.65 MPa	x o x	
32															
33															
34															
35															
36															
37															
38															
39															
40															

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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Project: **Gateway Upgrade Project Geotechnical Investigation**
Borehole No: **BH 111**
Start Depth: 25.00m
Finish Depth: 31.55m
Project No: FM2055
H No: 9420

