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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 BH130

SHEET 1 of 3

REFERENCE No H9439

PROJECT GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION

LOCATION CONTROL LINE: MCAO - Ch. 23442.9 - OFFSET 0.4 R COORDINATES 9431.1 E; 173692.0 N

PROJECT No FM2055 SURFACE R.L. 4.96 DATE STARTED 17/8/04 DATUM SETP

JOB No _____ DATUM AHD DATE COMPLETED 17/8/04 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 | M | J | V | | | | | EL | 20 |
| 0 | 4.96 | | | | | LANDFILL Brown, moist, firm silty clay comprising bricks, glass, rocks, wood, rags, plastic and metals. | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | 3,7,8 N=15 | SPT | |
| 2 | | | | | | | | | | | | | | | | | | 1,4,3 N=7 | SPT | |
| 3 | | | | | | | | | | | | | | | | | | 1,3,4 N=7 | SPT | |
| 4 | | | | | | Minor organic content. | | | | | | | | | Wood 150mm. Hammer bounced. | | 10/0,- N>50 | SPT | | |
| 5 | 0.66 | | | | | SANDY SILTY CLAY / FILL (??) Orange brown to dark grey brown, moist, firm. | CI | | | | | | | | Sandy at base | | | | | |
| 6 | -0.34 | | | | | CLAYEY SANDY GRAVEL / FILL (??) Orange brown to dark brown, moist to wet, loose. | GC | | | | | | | | | | | 2,2,4 N=6 | SPT | |
| 7 | -2.04 | | | | | ESTUARINE SILTY CLAY Dark grey, moist, firm, sensitive. Minor organic content, high plasticity. Some cubic structures and fissuring towards bottom. | OH | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | MC=60.2%, WD=1.66t/m3, PP=40kPa DD=1.04t/m3 | U50 |
| 9 | | | | | | | | | | | | | | | | | | | Peak Su=41.6kPa, Res Su=9.6kPa | FSV |
| 10 | -5.04 | | | | | | | | | | | | | | | | | | APD=2.676t/m3, LL=77.8%, PI=47.2%, PP=30kPa LS=19.8% MC=71.6%, WD=1.62t/m3, DD=1.56t/m3; APD=2.676t/m3 LL=77.8%; PI=47.2%, LS=19.8 | U50 |

BOREHOLE WITH LITHOLOGY GATEWAY NORTHERN UPGRADE.GPJ ENG BOREHOLE FINAL.GDT 30/4/05

REMARKS 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 BH130
SHEET 2 of 3
REFERENCE No H9439

PROJECT GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION
LOCATION CONTROL LINE: MCAO - Ch. 23442.9 - OFFSET 0.4 R COORDINATES 9431.1 E; 173692.0 N
PROJECT No FM2055 SURFACE R.L. 4.96 DATE STARTED 17/8/04 DATUM SETP
JOB No DATUM AHD DATE COMPLETED 17/8/04 DRILLER R&D DRILLING PTY LTD

| DEPTH (m) | R.L. (m) | USER 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 | -5.04 | | | | | ESTUARINE SILTY CLAY (As above) | | | | | | Peak Su=38.4, Res Su=6.4kPa | FSV |
| 11 | | | | | | | OH | | | | | MC=76.8, WD=1.56t/m ³ , DD=0.88t/m ³ ; APD=2.62t/m ³ PP=30kPa | U50 |
| 12 | -7.04 | | | | | SANDY CLAY - ALLUVIUM Grey, moist, stiff. High plasticity, fine to medium grained sand. | | | | | | Peak Su=112kPa, Res Su=9.6kPa | FSV |
| 13 | | | | | | | CL | | | | | 3,5,8 N=13 | SPT |
| 14 | -9.04 | | | | | SANDSTONE FINE TO MEDIUM GRAINED, LAMINATED, POORLY CEMENTED SEDIMENTARY ROCK. HW : Generally exhibits engineering properties of pale green to mottled orange, dry, hard sandy silty clay gradually grading to low strength rock with depth. | | | | | | 11,22,30 N=52 | SPT |
| 15 | | | | | | | HW | | | | | 12,19,28 N=47 | SPT |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | -12.54 | | (91) | | | SILTSTONE FINE GRAINED, THINLY LAMINATED, SEDIMENTARY ROCK. MW : Orange brown to grey brown, thinly laminated, very low to low strength with some low to medium strength bands. Defects : - Frequent lamination parting <20deg (4-5/m). | | | | | | Is(50)=0.08 MPa | o |
| 19 | | | | | | | MW | | | | | Sandstone bed Is(50)=0.70 MPa Is(50)=0.72 MPa Is(50)=0.06 MPa Is(50)=0.01 MPa | o x o x |
| 20 | -14.94 -15.04 | | 100 (92) | | | | | | | | | | |

REMARKS Defect angles have been measured with respect to a horizontal plane.

LOGGED BY
B.Woodgate & A.Dissanayake



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ENGINEERING BOREHOLE

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

BOREHOLE No BH130
SHEET 3 of 3
REFERENCE No H9439

PROJECT GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION

LOCATION CONTROL LINE: MCAO - Ch. 23442.9 - OFFSET 0.4 R COORDINATES 9431.1 E; 173692.0 N

PROJECT No FM2055 SURFACE R.L. 4.96 DATE STARTED 17/8/04 DATUM SETP

JOB No DATUM AHD DATE COMPLETED 17/8/04 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 | | | | | | |
|-----------|----------|--|---------|------------|--------|---|-----------|----------------|-----------------|---------------------|-------------|----------------------------------|---------------|----|----|----|-----------------|-----------------|---|
| | | | | | | | | | | | | | | HT | VT | TM | VL | EL | |
| 20 | -15.04 | | | | | SANDSTONE FINE TO MEDIUM GRAINED, LAMINATED, POORLY CEMENTED, SEDIMENTARY ROCK. MW : Orange brown to brown, thinly laminated to slightly massive, mainly medium to some high strength bands. Occasional carbonaceous up to 2-5mm. Defects : - Drilling induced lamination partings <25deg (1-2/m). | MW | | | | | Is(50)=0.40 MPa | o | | | | | | |
| | | | | | | | | | | | | | | | | | Is(50)=0.13 MPa | x | |
| 21 | | | | | | | | | | | | | | | | | | Is(50)=0.38 MPa | o |
| | | | | | | | | | | | | | | | | | | Is(50)=0.40 MPa | x |
| 22 | | | | | | | | | | | | Is(50)=0.51 MPa | o | | | | | | |
| | | | | | | | | | | | | Is(50)=0.35 MPa | x | | | | | | |
| | -17.54 | | 100 | | | | | | | | | Is(50)=1.11 MPa | o | | | | | | |
| | | | | | | | | | | | | Is(50)=0.64 MPa | x | | | | | | |
| 23 | | | | | | Borehole terminated at 22.5m | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | | |

REMARKS Defect angles have been measured with respect to a horizontal plane.

LOGGED BY
B.Woodgate & A.Dissanayake

Project: **Gateway Upgrade Project Geotechnical Investigation**

Borehole No: **BH 130**

Start Depth: 17.50m

Finish Depth: 22.50m

Project No: FM2055

H No: 9439

