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ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND
SYMBOLS REFER FORM F.GEOT 017/6-2010

BOREHOLE No BH C38
SHEET 1 of 2
REFERENCE No H11128

PROJECT Bruce Highway Upgrade (Cooroy to Curra) Section C
LOCATION Cut 10/Woondum Rd Overpass Abut A COORDINATES 471555.0 E; 7094752.9 N
PROJECT No FG5799 SURFACE R.L. 77.90m PLUNGE _____ DATE STARTED 01/08/11 GRID DATUM MGA94
JOB No 232/10A/2 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 01/08/11 DRILLER Drillure 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 | 77.90 | | | | | TOPSOIL: Mottled grey. | | | | | | | |
| | 77.50 | | | | | Sandy SILT (Residual): Orange/brown. | | (ML) | | | | Based only on driller's logs only | |
| | 77.20 | | | | | SANDSTONE (HW): Brown, fine grained. | | HW | | | | 30/130, 30/150, 30 N>50 | SPT |
| 1 | | | | | A | | | | | | | | |
| 2 | 75.90 | | (0) | | | SANDSTONE (HW): Brown/orange, fined grained, massive, medium strength, indurated and/or slightly metamorphosed. | | | | | | J, 60°, Pl, T, Clnf Is(50) = 0.31MPa J, 40°, Pl, T, S, Clnf Is(50) = 0.46MPa | x o |
| 3 | | | 100 (0) | | | Defects: ~Joint at 30°-40° (4/m) ~Joint at 60° (2/m) | | | | | | J, 60°, Pl, T, Clnf | |
| 4 | | | 100 (0) | | | Defect spacing is very close to mainly close. Defect surfaces are planar, closed or tight, smooth or clay infilled. Occasional quartz seams. | | | | | | XW Clayey Seam XW Clayey Seam Broken QZ Vein | |
| 5 | | | 100 (9) | | | | | HW | | | | J, 40°, Pl, T, Clnf Is(50) = 0.84MPa Is(50) = 0.68MPa | x o |
| 6 | | | | | | | | | | | | Is(50) = 0.38MPa Is(50) = 0.18MPa | x o |
| 7 | | | 100 (20) | | | | | | | | | Brecciated Zone Is(50) = 0.57MPa | x |
| 8 | | | 100 (0) | | | | | | | | | | |
| 9 | 69.60 | | 100 (35) | | | SANDSTONE (MW): Grey to slightly orange, medium to coarse grained, massive, mainly high strength, indurated and/or slightly metamorphosed. | | MW | | | | Is(50) = 1.65MPa Is(50) = 0.84MPa | x o |
| 10 | | | | | | Defects: ~Joint at 10° (1-2/m) ~Joint at 30°-35° (3/m) ~Joint at 60° (1-2/m) (See over) | | | | | | | |

REMARKS _____

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ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND
SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No BH C38
SHEET 2 of 2
REFERENCE No H11128

PROJECT Bruce Highway Upgrade (Cooroy to Curra) Section C
LOCATION Cut 10/Woondum Rd Overpass Abut A COORDINATES 471555.0 E; 7094752.9 N
PROJECT No FG5799 SURFACE R.L. 77.90m PLUNGE _____ DATE STARTED 01/08/11 GRID DATUM MG94
JOB No 232/10A/2 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 01/08/11 DRILLER Drillsure 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 |
|-----------|----------|--|----------|--------|--|-----------|-----|------------|-----------------|---------------------|-------------|---|---------------|
| 10 | 87.90 | | | | | | | | | | | | |
| 11 | | | 100 (39) | | SANDSTONE (MW): Cont'd Defect spacing is medium. Defect Surfaces are planar or irregular, closed or tight, slightly rough, iron stained or thinly clay infilled. | | | | | | | J, 60°, Pl, T, FeSt Is(50) = 2.13MPa Is(50) = 1.95MPa | x o |
| 12 | | | 100 (58) | | | | | | | | | J, 60°, Pl, O, SR, FeSt J, Subvertical, Pl, T, S, FeSt DD = 2.54t/m ² ; MC = 1.2%; J, 40°, Pl, T, S, FeSt UCS=27MPa | UCS |
| 13 | | | 100 (24) | | | MW | | | | | | Is(50) = 1.85MPa Is(50) = 2.18MPa HW Zone | x o |
| 14 | | | | | | | | | | | | J, 50°, Pl, T, S, Clnf | |
| 15 | | | 100 (8) | | | | | | | | | J, 50°, Pl, T, S, FeSt BZ, Drilling Induced? | |
| 16 | 61.95 | | | | SANDSTONE (SW): Grey, medium grained, massive, high to very high strength, indurated and/or slightly metamorphosed. Defects: -Joint at 20° (1/m) -Joint at 30° (2/m) -Joint at 60° (3/m) Defect spacing is mainly medium. Defect surfaces are planar, tight, slightly rough, iron stained or thinly clay infilled. | | | | | | | J, 60°, Pl, T, S, FeSt J, 50°, Pl, O, S, FeSt J, 50°, Pl, O, S, FeSt Is(50) = 2.62MPa Is(50) = 2.75MPa | x o |
| 17 | | | 100 (45) | | | | | | | | | | |
| 18 | | | 100 (26) | | | SW | | | | | | HW Broken Zone J, 60°, Pl, T, S, Clnf J, 30°, Pl, T, S, FeSt J, 60°, Pl, C, FeSt J, 30°, Pl, O, R, FeSt | |
| 19 | 58.35 | | 100 | | | | | | | | | | |
| 20 | | | | | Borehole terminated at 19.55m | | | | | | | | |

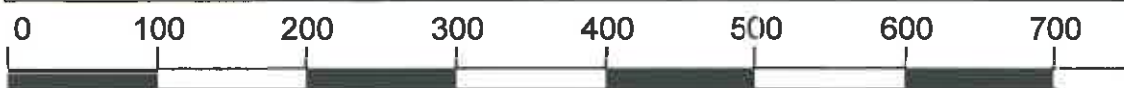
REMARKS _____

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CORE PHOTO LOG - BH C38

| | | | |
|----------------|-----------------------------------|-------------------|------------|
| Project Name: | BRUCE HIGHWAY UPGRADE - SECTION C | | |
| Project No.: | FG5799 | Date: | 08/09/2011 |
| Details: | Cut 10 | Start Depth (m): | 2.00 |
| Reference No.: | H11128 | Finish Depth (m): | 19.55 |



SCALE 1:5

CORE PHOTO LOG - BH C38

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SCALE 1:5