FINAL 02/11/2017

Queensland Government

# GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH07**

Sheet 1 of 4

REFERENCE No **H12968**

PROJECT Boyne River Bridge Repalcement

LOCATION Pier 3, LHS

COORDINATES 323458.0 E; 7159891.2 N

PROJECT No FG6482 | SURFACE RL 114.35m | PLUNGE 90° | DATE STARTED 01/09/2017 | GRID DATUM MGA Z56

JOB No 249/435/375550 | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 02/09/2017 | DRILLER NorthCoast Drilling

| DEPTH (m) | R.L. (m) | AUGER / CASING / WASH BORING / CORE DRILLING | RQD ( ) % CORE REC % | SAMPLE | MATERIAL DESCRIPTION | LITHOLOGY | USCS WEATHERING | INTACT STRENGTH EH VH H M L VL EL | DEFECT SPACING EC VC C M W VW EW | ADDITIONAL DATA AND TEST RESULTS | SAMPLES TESTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 113.85 | | | | Sandy GRAVEL (Fill)<br>Brown, dry, very loose to loose.<br>Fine to coarse grained gravel, sub rounded. Trace cobbles. | | (GP) | | | | |
| 1 | | | | A | Sandy GRAVEL (Alluvium)<br>Brown, moist, very loose.<br>Fine to medium grained gravel, sub rounded. Medium to coarse grained sand. Trace cobbles. | | | | | 1, 1, 1<br>N=2 | SPT |
| 2 | | | | B | | | | | | 2, 1, hw<br>N=1 | SPT |
| 3 | | | | C | 3.0m: Becoming loose. | | | | | 8, 5, 3<br>N=8 | SPT |
| 4 | | | | D | | | (GP) | | | 5, 3, 3<br>N=6 | SPT |
| 5 | | | | E | | | | | | 5, 4, 5<br>N=9 | SPT |
| 6 | | | | F | 6.0m: Becoming medium dense. | | | | | 5, 5, 14<br>N=19 | SPT |
| 7 | 107.15 | | | G | | | | | | 2, 1, 1<br>N=2 | SPT |
| | 106.65 | | | H | Silty CLAY (Alluvium)<br>Grey brown, wet, soft. | | (CI) | | | | DIST |
| 8 | | | | I | Sandy GRAVEL (Alluvium)<br>Grey brown, wet, medium dense to dense.<br>Fine to medium grained gravel, sub angular to sub rounded. Medium to coarse grained sand. Trace cobbles, silt. | | | | | 15, 16, 14<br>N=30 | SPT |
| 9 | | | | J | | | (GW) | | | 15, 11, 10<br>N=21 | SPT |
| | 104.35 | | | | | | | | | | |

Continued on next sheet

REMARKS: Je1 - Evergreen Formation.

| LOGGED BY | REVIEWED BY |
|---|---|
| M. de Gee | S. Foley |

Queensland Government

# GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH07**

Sheet 2 of 4

REFERENCE No **H12968**

PROJECT Boyne River Bridge Repalcement

LOCATION Pier 3, LHS

COORDINATES 323458.0 E; 7159891.2 N

PROJECT No FG6482 | SURFACE RL 114.35m | PLUNGE 90° | DATE STARTED 01/09/2017 | GRID DATUM MGA Z56

JOB No 249/435/375550 | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 02/09/2017 | DRILLER NorthCoast Drilling

| DEPTH (m) | R.L. (m) | RQD ( ) % / CORE REC % | SAMPLE | MATERIAL DESCRIPTION | USCS / WEATHERING | ADDITIONAL DATA AND TEST RESULTS | SAMPLES / TESTS |
|---|---|---|---|---|---|---|---|
| | | | K | Sandy GRAVEL (Alluvium)<br>Cont'd. Becoming very dense. | (GW) | 30/50mm | SPT |
| | 103.75 | (64) | | SANDSTONE (Je1)<br>HW: Pale grey and brown, fine to medium grained, medium bedded, low strength. With highly fractured zones.<br>BP: 0°-15° (2-3/m), Pl/Ro, OP-TI, Vr and Clayey Sand Ct.<br>Js: 45°-75° (2/m), Pl-Un/Ro, OP-CD, Vr-Clay Ct. | | 10.46m-11.80m: HFZ | |
| 11 | | 100 | | | | Is(50)=0.15 MPa<br>Is(50)=0.19 MPa | D (11.12m)<br>A (11.13m) |
| | | (45) | | | | | |
| 12 | | | | | HW | 12.45m-12.47m: CZ<br>12.57m-12.60m: BZ | |
| | | | | | | Is(50)=0.03 MPa<br>Is(50)=0.14 MPa | D (12.73m)<br>A (12.74m) |
| 13 | | 100 | | | | 12.85m-13.00m: BZ<br>13.04m-13.10m: XWZ | |
| | | (17) | | | | 13.38m-13.44m: CZ<br>13.50m-13.75m: BZ | |
| | | 100 | | | | | |
| | | (86) | | | | | |
| 14 | | | | | | | |
| | | | | | MW | Is(50)=0.16 MPa<br>Is(50)=0.13 MPa | D (14.70m)<br>A (14.72m) |
| 15 | | 100 | | | HW | 15.09m-15.15m: BZ | |
| | | (0) | | | XW | 15.20m-15.33m: HFZ | |
| | | | | | HW | | |
| | 98.66 | | | | XW | 15.46m-15.80m: HFZ | |
| | | 83 | CORE LOSS | SILTSTONE (Je1)<br>MW: Pale grey minor brown, fine grained, medium bedded, mainly low strength.<br>With interbeds of fine to medium grained sandstone, <150mm.<br>Frequent HW zones.<br>BP: 5°-15° (1-3/m), Un/Ro, OP-TI, Vr-Cly Ct.<br>Js: 30°-45° (1/m), Pl/Ro, OP, St-Vr.<br>Js: 55°-70° (1/m), Pl-Stp/Ro, OP-CD, St-Vr. | | | |
| | | (0) | | | HW | 15.90m-15.98m: HFZ | |
| 16 | | 100 | | | | 16.18m-16.20m: XW<br>16.20m-16.30m: BZ<br>16.25m-16.30m: XW | |
| | | (46) | | | MW | Is(50)=0.26 MPa<br>Is(50)=0.20 MPa | D (16.37m)<br>A (16.38m) |
| | | | | | HW | 16.84m-16.90m: HFZ | |
| 17 | | 93 | CORE LOSS | | | Is(50)=0.25 MPa<br>Is(50)=0.19 MPa | D (16.78m)<br>A (16.79m) |
| | | (13) | | | | 17.12m-17.17m: CZ<br>17.14m-17.18m: XW | |
| | | | | | MW | Is(50)=0.15 MPa<br>Is(50)=0.33 MPa | D (17.63m)<br>A (17.64m) |
| 18 | | 100 | | | XW | 17.90m-18.25m: BZ | |
| | | (55) | | | MW | Is(50)=0.17 MPa<br>Is(50)=0.09 MPa | D (18.32m)<br>A (18.33m) |
| | | | | | HW | 18.85m-19.00m: HFZ | |
| 19 | | | | | MW | | |
| | | | | | HW | | |
| | 94.35 | | | | MW | UCS=20.60 MPa | (19.81m) |

Continued on next sheet

REMARKS: Je1 - Evergreen Formation.

| LOGGED BY | REVIEWED BY |
|---|---|
| M. de Gee | S. Foley |

Queensland Government

# GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH07**

Sheet 3 of 4

REFERENCE No **H12968**

PROJECT Boyne River Bridge Repalcement

LOCATION Pier 3, LHS

COORDINATES 323458.0 E; 7159891.2 N

PROJECT No FG6482 | SURFACE RL 114.35m | PLUNGE 90° | DATE STARTED 01/09/2017 | GRID DATUM MGA Z56

JOB No 249/435/375550 | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 02/09/2017 | DRILLER NorthCoast Drilling

| DEPTH (m) | R.L. (m) | RQD ( ) % / CORE REC % | SAMPLE | MATERIAL DESCRIPTION | USCS WEATHERING | ADDITIONAL DATA AND TEST RESULTS | SAMPLES TESTS |
|---|---|---|---|---|---|---|---|
| | | 97.5 (10) | CORE LOSS | SILTSTONE (Je1)<br>MW: Cont'd. | MW | 20.10m-20.20m: BZ | Is(50)=0.39 MPa<br>Is(50)=0.44 MPa<br>D (20.04m)<br>A (20.05m) |
| | | | | | | 20.52m-20.57m: HFZ | |
| | | | | | | 20.74m-20.80m: HFZ | Is(50)=0.08 MPa<br>Is(50)=0.16 MPa<br>D (20.70m)<br>A (20.71m) |
| | | | | | | 20.90m-21.20m: HFZ | |
| 21 | | 100 (15) | | | MW | | |
| | | 100 (14) | | | | 21.75m-21.85m: HW BZ | |
| 22 | | | | | HW | 22.28m-22.37m: CZ<br>22.40m-22.60m: BZ | |
| | | 100 (58) | | | MW | | Is(50)=1.20 MPa<br>Is(50)=0.42 MPa<br>D (22.73m)<br>A (22.75m) |
| 23 | | | | | | | Is(50)=0.77 MPa<br>Is(50)=0.50 MPa<br>D (23.07m)<br>A (23.08m) |
| | | | | | HW | | |
| | | | | | XW | 23.72m-23.86m: XW | |
| 24 | | | | | MW | | |
| | 90.10 | 100 (18) | | CONGLOMERATE (Je1)<br>MW: Pale grey minor brown, fine to medium gravel, clay matrix, medium to high strength.<br>J: 10° Pl/Ro, OP, Cn.<br>J: 90° Un/Ro, OP, Cn. | HW | 24.17m-24.25m: HW<br>24.19m-24.25m: HFZ<br>24.38m-24.45m: XW | |
| | 89.62 | | | | MW | | |
| | | | | | MW | | |
| 25 | | | | | HW | 24.85m-25.05m: HFZ | |
| | | 100 (49) | | SANDSTONE (Je1)<br>MW: Grey pale brown, fine to medium grained, medium to thickly bedded, medium strength.<br>BP: 0°-10 (3-4/m), Pl/Ro, OP, Vn-Ct.<br>Js: 30°-40° (1/m), Pl/Ro, OP, CN.<br>J: 80° (1/5m), Pl/Ro, OP, CN. | | Is(50)=0.35 MPa<br>Is(50)=0.07 MPa<br>D (25.15m)<br>A (25.25m) | |
| 26 | | | | | | | Is(50)=0.74 MPa<br>Is(50)=1.20 MPa<br>D (25.75m)<br>A (25.78m) |
| | | | | | MW | 26.70m-26.80m: HFZ | |
| 27 | | 100 (97) | | | | | Is(50)=0.65 MPa<br>Is(50)=0.59 MPa<br>D (26.90m)<br>A (26.92m) |
| | | | | | | | Is(50)=0.21 MPa<br>Is(50)=0.31 MPa<br>UCS=2.35 MPa<br>D (27.30m)<br>A (27.31m)<br>(27.47m) |
| 28 | | | | | | | |
| | | | | | | | Is(50)=0.80 MPa<br>Is(50)=1.10 MPa<br>D (28.26m)<br>A (28.27m) |
| 29 | | | | | SW | | |
| | 84.35 | | | | | | Is(50)=0.61 MPa<br>Is(50)=0.64 MPa<br>D (29.55m)<br>A (29.60m) |

Continued on next sheet

REMARKS: Je1 - Evergreen Formation.

| LOGGED BY | REVIEWED BY |
|---|---|
| M. de Gee | S. Foley |

FINAL 02/11/2017

Queensland Government

# GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH07**

Sheet 4 of 4

REFERENCE No **H12968**

PROJECT Boyne River Bridge Repalcement

LOCATION Pier 3, LHS

COORDINATES 323458.0 E; 7159891.2 N

PROJECT No FG6482 | SURFACE RL 114.35m | PLUNGE 90° | DATE STARTED 01/09/2017 | GRID DATUM MGA Z56

JOB No 249/435/375550 | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 02/09/2017 | DRILLER NorthCoast Drilling

| DEPTH (m) | R.L. (m) | AUGER / CASING / WASH BORING / CORE DRILLING | RQD ( ) % / CORE REC % | SAMPLE | MATERIAL DESCRIPTION | LITHOLOGY | USCS WEATHERING | INTACT STRENGTH (EH VH H M L VL EL) | DEFECT SPACING (EC VC C M W VW EW) | ADDITIONAL DATA AND TEST RESULTS | SAMPLES TESTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | | | 100 (86) | | SANDSTONE (Je1) MW: Cont'd. | | MW | M | | Is(50)=0.39 MPa Is(50)=0.34 MPa | D (30.58m) A (30.59m) |
| | | | | | | | | | | Is(50)=0.81 MPa Is(50)=0.57 MPa | D (31.43m) A (31.44m) |
| 32 | | | | | | | | M | C | Is(50)=0.26 MPa Is(50)=0.39 MPa | D (32.05m) A (32.06m) |
| | | | | | | | SW | | | Is(50)=0.76 MPa Is(50)=0.48 MPa | D (32.60m) A (32.61m) |
| 33 | 80.95 | | 100 | | Borehole completed at 33.40m | | | | | Is(50)=0.41 MPa Is(50)=0.39 MPa | D (33.35m) A (33.36m) |
| 34 | | | | | | | | | | | |
| 35 | | | | | | | | | | | |
| 36 | | | | | | | | | | | |
| 37 | | | | | | | | | | | |
| 38 | | | | | | | | | | | |
| 39 | | | | | | | | | | | |

REMARKS: Je1 - Evergreen Formation.

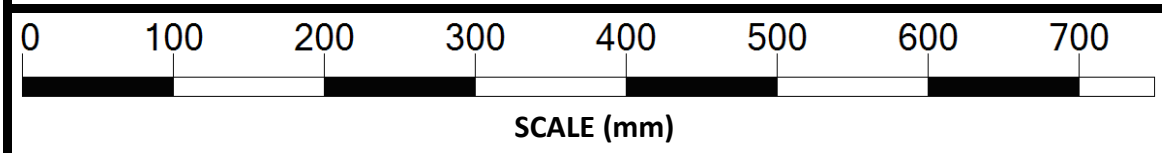
| LOGGED BY | REVIEWED BY |
|---|---|
| M. de Gee | S. Foley |

TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

**CORE PHOTO LOG**
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Queensland Government

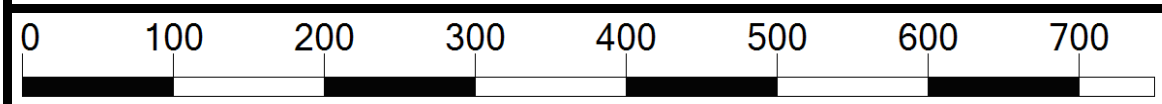
| | | | |
|---|---|---|---|
| Project Name | **Boyne River Bridge Replacement** | | |
| Project No. | FG6482 | Date | 01/09/2017 |
| Borehole No. | BH07 | Reference No. | H12968 |
| Location | Pier 3, LHS | Start Depth (m) | 10.60 |
| Submitted By | M. de Gee | Finish Depth (m) | 33.40 |
| Remarks | | | |

**CORE PHOTO LOG**
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Queensland Government

| | | | |
|---|---|---|---|
| Project Name | **Boyne River Bridge Replacement** | | |
| Project No. | FG6482 | Date | 01/09/2017 |
| Borehole No. | BH07 | Reference No. | H12968 |
| Location | Pier 3, LHS | Start Depth (m) | 10.60 |
| Submitted By | M. de Gee | Finish Depth (m) | 33.40 |
| Remarks | | | |

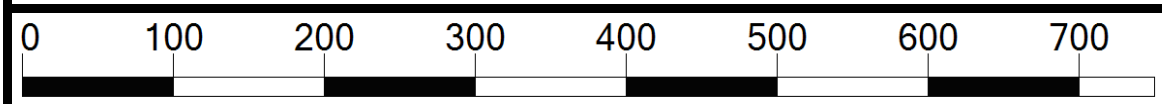




**SCALE (mm)**

**CORE PHOTO LOG**
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Queensland Government

| | | | |
|---|---|---|---|
| Project Name | **Boyne River Bridge Replacement** | | |
| Project No. | FG6482 | Date | 01/09/2017 |
| Borehole No. | BH07 | Reference No. | H12968 |
| Location | Pier 3, LHS | Start Depth (m) | 10.60 |
| Submitted By | M. de Gee | Finish Depth (m) | 33.40 |
| Remarks | | | |


**SCALE (mm)**