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ENGINEERING BOREHOLE LOG

| BOREHOLE No | BH102 |
|--------------|----------------------|
| SHEET | <u>1</u> of <u>3</u> |
| REFERENCE No | 12049 |

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

 PROJECT
 Mackay Ring Road Geotechnical Investigation - Stage 1

 LOCATION
 Schmidtke's Road Overpass Abutment A; CH: 3825m;
 COORDINATES
 720708.1 E; 7656199.0 N

 PROJECT No
 FG6184
 SURFACE R.L.
 11.78m
 PLUNGE
 DATE STARTED
 18/9/14
 GRID DATUM
 GDA 94 /MGA Zone 55

 JOB No
 HEIGHT DATUM
 AHD
 BEARING
 DATE COMPLETED
 19/9/14
 DRILLER
 Saxon Drilling

 R.L.
 RQD
 INTACT
 DEFECT
 INTACT
 DEFECT

| o DEPTH (m) | R.L. (m) 11.78 | AUGER WASH BORING CORE DRILLING | RQD ()% CORE REC% | SAMPLE | MATERIAL DESCRIPTION | гітногоду | USC | INTACT STRENGTH | DEFECT SPACING (mm) | GRAPHIC LOG | ADDITIONAL DATA AND TEST RESULTS | SAMPLES TESTS |
|--|----------------------|---------------------------------------|----------------------------|--------|--|-----------|-----|--------------------|---------------------------|-------------|--|------------------|
| | | | | | Silty CLAY (ALLUVIUM) Dark brown mottled orange, moist, firm. High plasticity. Trace fine grained sand. | | (CH | | | | | |
| | 9.98 | | | A | | | | | | | 2,2,4 N=6 | SPT |
| -22 | | Ļ | | В | Silty SAND (ALLUVIUM) Pale brown and grey, moist, loose to medium dense. Fine grained sand. Trace medium gravel. | | | | | | 2,3,4 N=7 | SPT |
| +/03/2015 10:49 + 1 - 1 - 1 - 1 - 1 - 2 | | | | С | | | (SM |) | | | 6,5,5 N=10 | SPT |
| 70 U-1 4 1 1 4 4 4 4.70 | 7.08 | | | D | | | | | | | 4,4,5 N=9 | SPT - |
| FG8184 - BOREHOLES.GPJ < <drawingfile>> Datget CPT Tool ght Add-In 04/03/2015 10:49</drawingfile> | | | | E | Silty CLAY (ALLUVIUM) Pale brown and grey, moist, very stiff. | | | | | | 6,11,15 N=26 | SPT |
| - BOREHOLES.GPJ << | | | | F | 5.70m: Becoming Sandy Silty CLAY. | | | | | | 8,11,15 N=26 | SPT |
| ю W LITHOLOGY FG6184 1 1 1 1 1 1 1 1 1 1 1 2 1 1 1 1 1 1 1 1 | | | | G | 6.80m: Becoming Silty CLAY. | | (CH | | | | 7,9,12 N=21 | SPT |
| INEERING BOREHOLE LC | 2.98 | | | н | 8.00m: Becoming hard. | | | | | | 9,13,21 N=34 | SPT |
| TMR.JAN 15.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY | 2.00 | | | J | Silty SAND (ALLUVIUM) Pale grey and orange-brown, moist, very dense. Medium grained sand. | | (SM |) | | | 11,23,30 N=53 | SPT - |
| | 1.78 | S Kgwu | uWunda | aru G | | | _ | | <u></u> | L | LOGGED BY | <u>-</u> |
| | | | | | ng existing defect surface. | | | | | | ME | |

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ENGINEERING BOREHOLE LOG

| BOREHOLE No | BH102 |
|--------------|----------------------|
| SHEET | <u>2</u> of <u>3</u> |
| REFERENCE No | 12049 |

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

| PROJECT | Mackay Ring R | oad Geotechr | nical Investig | ation - Stage | 1 | | | | | | | |
|-----------|-------------------|--------------|----------------|---------------------|---------|--------------|---------|---------|----------|--------|-------------------|------------------|
| LOCATION | Schmidtke's Ro | pad Overpass | Abutment A | ; <u>CH: 3825m;</u> | | | | COOF | RDINATES | 72070 | 8.1 E; 7656199. | <u>0 N</u> |
| PROJECT N | lo_F <u>G6184</u> | SUR | RFACE R.L. | <u>11.78m</u> | PLUNGE | DATE S | TARTED | 18/9/14 | GRID | DATUM | <u>GDA 94 /MG</u> | <u>A Zone 55</u> |
| JOB No | | HEIGH | HT DATUM | _AHD | BEARING | DATE COM | IPLETED | 19/9/14 | D | RILLER | Saxon Drilling | L |
| R.L. | RQD | | | | | INTACT | DEFECT | | | | | |

| DEPTH (m) | R.L. (m) 1.78 | R H BORING E DRILLING | | RQD ()% | LE | MATERIAL | ГІТНОГОСУ | THERING | INTACT STRENGTH | DEFECT SPACING (mm) | GRAPHIC LOG | ADDITIONAL DATA AND | LES |
|---|---------------------|-----------------------------|------|--------------------------|--------------|--|---|-------------|--------------------|---------------------------|-------------|---|------------------|
| 出 10 | 1.78 | AUGE WASH CORE | | CORE REC % | SAMPLE | | | USC WEAT | TH TE TE | 00 ₩>0∑≥>>₩ | GRAP | TEST RESULTS | SAMPLES TESTS |
| | | | | | к | Silty CLAY (ALLUVIUM) Pale grey and orange-brown, moist, very stiff. High plasticity. Trace fine grained sand. | | (CH) | | | | 7,11,14 N=25 | SPT - |
| | 0.08 | | | | L | | | (0) | | | | 9,12,17 N=29 | SPT |
| - | | | | | М | Silty SAND (ALLUVIUM) Pale grey, moist, dense. Medium to coarse grained sand. | | (SM) | | | | 11,21,17 N=38 | SPT |
| 12.80 | -1.02 | | | | N | Silty CLAY (ALLUVIUM) Pale grey and brown, moist, very stiff. High plasticity. Trace fine grained sand. Trace medium gravel. | | | | | | 11,11,12 N=23 | SPT |
| 2PT ToolgINt Add-In 04/03 | -2.92 | | | | Р | | | (CH) | | | | 9,11,16 N=27 | SPT - |
| Daties Date: 2 12 12 12 12 12 12 12 12 12 12 12 12 12 | -3.82 | | | | Q | Silty Clayey SAND (RESIDUAL) Brown, moist, medium dense. | | (SC) | | | | 8,10,14 N=24 | SPT |
| FG6184 - BOREHOLES.GPJ < <dreamingfile>> Datgel CPT Tool glNt Add-In 04.03/2015 10:49 91</dreamingfile> | -5.02 | | | | R | Silty CLAY (RESIDUAL) Brown and grey, moist, hard. High plasticity. Trace fine grained sand. | | (CH) | | | | 8,15,18 N=33 | SPT |
| | -3.02 | | | | S | GRANODIORITE (Kgwu) HW: Pale grey and brown, medium to coarse grained, extremely low to very low strength. | + | | | | | 12,21,30/115 | SPT - |
| 14. 14. <td></td> <td></td> <td></td> <td></td> <td>Т</td> <td></td> <td>+ + - + +</td> <td>нw</td> <td></td> <td></td> <td></td> <td>12,30/135</td> <td>SPT -</td> | | | | | Т | | + + - + + | нw | | | | 12,30/135 | SPT - |
| ∠ | -7.35 | | | (0) | U | | + | | | | | 30/135 | SPT - |
| TMR JAN 15.GLB Lo | | | | (0) 100 (0) 100 | | MICRODIORITE (Kgwu) SW: Grey, fine to medium grained, massive, mainly very high strength. | + + + + + + + + + + + + + + + + + + + | SW | | | | □- 19.35m-19.39m: Cly seam. - 19.72m-19.74m: Cly seam. Is(50) = 0.06MPa; # | A (19.75m)- |
| | EMARK | s <u>Kg</u> v | vu - | Wunda | iru G | ranodiorite; | | | | | | LOGGED BY | |
| | | <u># S</u> | am | ple faile | <u>d alo</u> | ng existing defect surface. | (| | | | | . ME | |

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ENGINEERING BOREHOLE LOG

| BOREHOLE No | BH102 |
|--------------|----------------------|
| SHEET | <u>3</u> of <u>3</u> |
| REFERENCE No | 12049 |

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

| PRC | JECT | Mack | <u>ay Ring F</u> | Road | Geotechnical Investigation - Stage | <u>1</u> | | | | | | | | | |
|-----------|-------------|------------------------------------|--------------------|-------|------------------------------------|----------|---------|-----------------|----------|---------------------------|------------------|----------------|---------------------------|-------------------|------------------|
| LOC | ATION | <u>Schm</u> | nidtke's R | oad (| Dverpass Abutment A; CH: 3825m | <u> </u> | | | | | CO | ORDINATES | 720708 | B.1 E; 7656199 | <u>.0 N</u> |
| PRC | JECT N | lo <u>FG61</u> | 84 | | SURFACE R.L. <u>11.78m</u> | PLUNGE | | | DATE S | TARTED | <u>18/9/</u> | <u>14</u> GRID | DATUM | <u>GDA 94 /MG</u> | <u>A Zone 55</u> |
| JOB | No | | | | HEIGHT DATUM <u>AHD</u> | BEARING | | | DATE COM | IPLETED _ | <u>19/9/</u> | <u>14</u> D | RILLER | Saxon Drilling | <u>g</u> _ |
| DEPTH (m) | R.L. (m) | JGER ASH BORING DRE DRILLING | RQD ()% CORE | MPLE | MATERIAL | | THOLOGY | SC FATHERING | | DEFECT SPACING (mm) | EW RAPHIC LOG | | ITIONAL AND ST RESU | | (MPLES STS |

| 100 100 MCRODORTE (Kgwa) + 100 500 100 Borehole terminated at 22 2m . 100 Borehole terminated at 22 2m . 100 Borehole terminated at 22 2m . 100 Borehole terminated at 22 2m . 100 Borehole terminated at 22 2m . 100 Borehole terminated at 22 2m . 100 Borehole terminated at 22 2m . 100 Borehole terminated at 22 2m . 100 Borehole terminated at 22 2m . | 2 | 0 -8 | 22 < | WASH | COR | RE | SAMPL | DESCRIPTION | Н ГІТНОІ | USC | GRAPH GRAPH GRAPH GRAPH | TEST F | RESULTS | SAMPL TESTS |
|---|-------------------------------|------|------|------|-----|----|-------|-------------------------------------|-----------------------------|-----|----------------------------------|--|---|---------------------------|
| -7 + + + + + - 0.000 TV (by care.) - 0.000 TV (by care.) - 0.000 TV (by care.) 0 | - | -0. | | | (50 |) | | MICRODIORITE (Kgwu) SW: (Cont'd) | | | | ⊐— 20.20m-20.24m: C | - | |
| 100 21 (0) 27 2000; 10(0) 27 200; 10(0) 27 200; <td< td=""><td>-</td><td></td><td></td><td></td><td>(58</td><td>5)</td><td></td><td></td><td></td><td></td><td></td><td>_— 20.65m-20.73m: C</td><td></td><td>D _(20.45m)</td></td<> | - | | | | (58 | 5) | | | | | | _— 20.65m-20.73m: C | | D _(20.45m) |
| Hermitian Hermitian <t< td=""><td>-2</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td>[+]</td><td>sw</td><td></td><td>21.10m-21.20m: Cly seam.</td><td>UCS=189MPa ls(50) = 8.75MPa ls(50) = 7.49MPa</td><td>A (21.00m) D (21.05m)_</td></t<> | -2 | 1 | | | | | | | [+] | sw | | 21.10m-21.20m: Cly seam. | UCS=189MPa ls(50) = 8.75MPa ls(50) = 7.49MPa | A (21.00m) D (21.05m)_ |
| | | | .42 | | 10 | 0 | | | - + - - + - - + - | • | | 21.83m: Cly seam 21.90m: Cly seam 21.98m: Cly seam | Is(50) = 7.73MPa Is(50) = 10.08MPa 50°, 10mm. 30°, 5mm. 10°, 5mm. | A (21.53m) D (21.60m)- |
| REWARK Komonomic Incrementation | | | | | | | | Borehole terminated at 22.2m | | | | | | |
| REMARKS Kgwu - Wundaru Granodiorite; LOGGED BY | E | | | | | | | | | | | | | |
| REMARKS Kgwu - Wundaru Granodiorite; LOGGED BY | Nt Add-In 04/03/2 | 4 | | | | | | | | | | | | |
| REMARKS Kgwu - Wundaru Granodiorite; LOGGED BY | tgel CPT Tool gl | | | | | | | | | | | | | - |
| REMARKS Kgwu - Wundaru Granodiorite; LOGGED BY | TawingFile>> Da | 5 | | | | | | | | | | | | |
| REMARKS Kgwu - Wundaru Granodiorite; LOGGED BY | HOLES.GPJ <<[| 6 | | | | | | | | | | | | |
| REMARKS Kgwu - Wundaru Granodiorite; LOGGED BY | FG6184 - BORE | | | | | | | | | | | | | |
| REMARKS Kgwu - Wundaru Granodiorite; LOGGED BY | 2 1 1 1 1 1 M LITHOLOGY | 7 | | | | | | | | | | | | |
| REMARKS Kgwu - Wundaru Granodiorite; LOGGED BY | OREHOLE LOG | 8 | | | | | | | | | | | | |
| REMARKS Kgwu - Wundaru Granodiorite; LOGGED BY | NGINEERING B | | | | | | | | | | | | | |
| REMARKS Kgwu - Wundaru Granodiorite; LOGGED BY | 15.GLB Log A_E | 9 | | | | | | | | | | | | |
| | TMR JAN | 0 | | | | | | | | | | | | - |
| | | REMA | RKS | | | | | | | | | | | |

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CORE PHOTO LOG

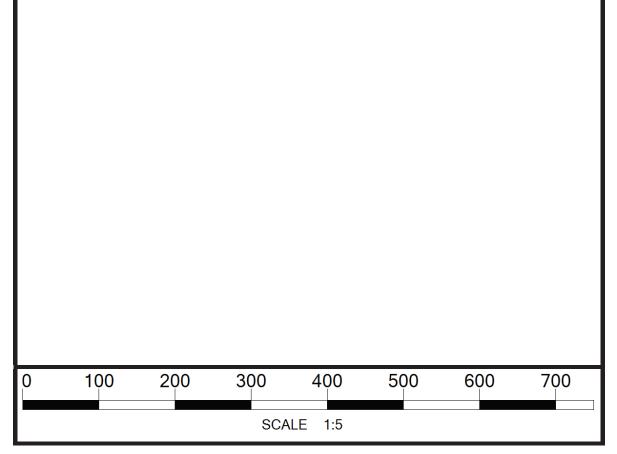
DEPARTMENT OF TRANSPORT & MAIN ROADS Geotechnical Branch 35 Butterfield Street, HERSTON Qld 4006 Phone 07 3066 3336



Department of Transport and Main Roads

| Project Name | Mackay – Ring Road | | |
|--------------|---------------------------|------------------|----------|
| Project No | FG6184 | Date | 16/09/14 |
| Borehole No | BH 102 | TMR H No | 12049 |
| Location | Schmidtke's Road Overpass | Start Depth (m) | 19.13 |
| Detail | Abutment A | Finish Depth (m) | 22.2 |
| Chainage | 3825m | Submitted By | M. Ensor |
| Remarks | | ÷ | |





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