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TMR LIBRARY FILE 2014.GIB Log A\_ENGINEERING BOREHOLE LOG W LITHOLOGY FG6128 MT WHITESTONE COMBINED.GPJ <<DrawingFile>> Datgel CPT Tool gillt Add-In 11/11/2015 15:25

## ENGINEERING BOREHOLE LOG

| BOREHOLE No  | <u>BH2A</u>          |
|--------------|----------------------|
| SHEET        | <u>1</u> of <u>5</u> |
| REFERENCE No | 11526                |

| PROJECT     | Mt W   | hiteston      | e: SI         | ope Instability Investigation - Preliminary Incline  | <u>met</u> | er Bo             | oreholes  |   |                  |
|-------------|--|---------------|---------------|--|------------|-------------------|---|---|------------------|
| LOCATION    |  |               |               |  |            |                   |   | OORDINATES <u>416202.9 E; 6937824.3</u>       | <u>N</u>         |
| PROJECT N   |  |               |               | SURFACE R.L. 215.63m PLUNGE  |            |                   |   |   |                  |
| JOB No      |  |               |               | HEIGHT DATUM _AHD BEARING  |            | <b>-</b> -        | DATE COMPLETED 2/12/  | 13 DRILLER Northcoast                         |                  |
| R.L. (m)    | VUGER<br>SASING<br>VASH BORING<br>SORE DRILLING  | RQD<br>( )%   | SAMPLE        | MATERIAL<br>DESCRIPTION  | LITHOLOGY  | JSC<br>VEATHERING | INTACT DEFECT STRENGTH SPACING (AS1726) (AS1726)  USTRENGTH SPACING (AS1726) USTRENGTH  USTRENGTH SPACING (AS1726) USTRENGTH  USTRE | ADDITIONAL DATA  AND  TEST RESULTS            | SAMPLES<br>TESTS |
| 0 215.6<br> | AUGER CASING CAS | CORE<br>REC % | SAMPLE SAMPLE | Sandy CLAY (COLLUVIUM) Orange brown, moist, firm to stiff. Intermediate plasticity with some iron concretions throughout. Varies to silty CLAY in parts. Occasional cobble sized rock fragments. |            | OSO (CI)          |   | TEST RESULTS  Based on drillers logs  9,20,20 | SAMPLE LESTS     |
|             |  |               | С             | Becoming grey mottled orange with increased sand content and organic inclusions.   |            |                   |   | 13,HB = 8,14,20                               | SPT -            |
| REMARI      | KS *See !  | point load    | <u>tes</u> t  | results for details of this test   |            |                   |   | LOGGED BY                                     |                  |
|             |  |               |               |  |            |                   |   | - TAH   |                  |



TMR LIBRARY FILE 2014.GLB Log A\_ENGINEERING BOREHOLE LOG W LITHOLOGY FG6128 MT WHITESTONE COMBINED.GPJ <<DrawingFile>> Datgel CPT Tool gilnt Add-in 11/11/2015 15:25

## ENGINEERING BOREHOLE LOG

| BOREHOLE No  | <u>BH2A</u> |
|--------------|-------------|
| SHEET        | 2 of5       |
| REFERENCE No | 11526       |

| PRO.                            | JECT        | _Mt                            | W          | <u>hiteston</u> | e: Sl       | <u>ope Instability Investigation - Preliminary Inclin</u>                             | <u>omet</u> | <u>er B</u> | oreholes   |                                    |               |
|---------------------------------|-------------|--------------------------------|------------|-----------------|-------------|---|-------------|-------------|--|------------------------------------|---------------|
| LOC                             | ATION       | Ga                             | <u>tto</u> | n-Cliftor       | <u>Rd</u>   | , RHS table drain, approx Ch 15.22km  |             |             | COOR   | DINATES 416202.9 E; 6937824.3      | <u> </u>      |
| PRO.                            | JECT N      | o_ <u>FG</u>                   | 61         | 28              |             | SURFACE R.L. <u>215.63m</u> PLUNGE  |             |             | DATE STARTED _27/11/13   | GRID DATUM MGA94                   |               |
| JOB                             |             |                                |            |                 |             |   |             |             |  |                                    |               |
| DEPTH (m)                       | R.L.<br>(m) | AUGER<br>CASING<br>WASH BORING |            | RQD<br>( )%     | SAMPLE      | MATERIAL<br>DESCRIPTION   | LITHOLOGY   | USC         | INTACT DEFECT STRENGTH SPACING (AS1726)  (AS17 | ADDITIONAL DATA  AND  TEST RESULTS | SAMPLES TESTS |
| -11<br>-12<br>-13<br>-14<br>-15 | 205.63      |                                |            | REC %           | AS D E      | Sandy CLAY (COLLUVIUM) (Cont'd)  Sub angular rock fragments sized to 35mm.            |             |             |  | 11,29,30/110                       | SPT -         |
| 117                             |             |                                |            |                 |             | Varies to silty CLAY in parts with angular gravel and iron concretions sized to 15mm. |             |             |  | 4,9,10                             | SPT -         |
|                                 |             | - *0                           |            | noint !         | 1 +^-       | regulto for details of this test  | <i>/</i> /  | 1           |  | LOCOED BY                          |               |
| R                               | EMARK       | s <u>*</u> Se                  | ee p       | point load      | <u>test</u> | results for details of this test  |             |             |  | LOGGED BY                          |               |
|                                 |             |                                |            |                 |             |   |             |             |  | TAH                                |               |



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## ENGINEERING BOREHOLE LOG

| BOREHOLE No  | <u>BH2A</u>  |
|--------------|--------------|
| SHEET        | _3_ of _5_   |
| REFERENCE No | <u>11526</u> |

| PROJECT        | Mt W   | hiteston                         | e: SI  | lope Instability Investigation - Preliminary Incline  | <u>mete</u> | er B  | 3 <u>or</u>   | reholes  |        |                     |            |                  |
|----------------|--|----------------------------------|--------|---|-------------|-------|---------------|--|--------|---------------------|------------|------------------|
|                |  |                                  |        |   |             |       |               |  |        | NATES <u>416202</u> |            | <u>N</u>         |
|                | o <u>FG61</u>                                  |                                  |        | SURFACE R.L. 215.63m PLUNGE   |             |       |               |  |        |                     |            |                  |
| JOB No         |  |                                  |        | HEIGHT DATUM AHD BEARING  |             |       |               | DATE COMPLETED 2/12  | 2/13   | DRILLER             | Northcoast |                  |
| R.L. (m)       | ÜGER<br>SASING<br>VASH BORING<br>SORE DRILLING | RQD<br>( )%<br>CORE<br>REC %     | SAMPLE | MATERIAL<br>DESCRIPTION   | LITHOLOGY   | JSC   | מווציום אין א | INTACT DEFECT STRENGTH SPACING (AS1726) (AS1726)  LT |        | ADDITIONAL AND      |            | SAMPLES<br>TESTS |
| 20 195.63<br>- | 1050   | REC %                            | 0)     | Sandy CLAY (COLLUVIUM) (Cont'd)   |             | < ا ⊂ | ^             | 11111111111  | 1      |                     |            | <i>o</i> ⊢       |
|                |  | REC %  (86)  100 (100)  100 (78) | SAI 0  | Sandy CLAY with Cobbles and Boulders (COLLUVIUM)  Yellow orange, moist, hard. With high strength rock fragments sized to 270mm. |             | (CL)  |               |  |        | TEST NESO           | 10,19,21   | SPT -            |
| - 29<br>29<br> |  | 100 (83)                         |        |   |             |       |               |  |        |                     |            |                  |
|                | S *See   | point load                       | d test | results for details of this test  |             |       |               |  | -<br>- | I                   | LOGGED BY  |                  |



TMR LIBRARY FILE 2014.GIB Log A\_ENGINEERING BOREHOLE LOG W LITHOLOGY FG6128 MT WHITESTONE COMBINED.GFJ <Chromogelie>> Datgel CPT Tool gilnt Add-In 11/11/2015 15:25

## ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/7-2014

BOREHOLE No \_\_\_BH2A \_\_\_

SHEET \_\_4\_\_ of \_\_5\_\_

REFERENCE No \_\_\_11526 \_\_\_

| PROJ<br>LOCA  |               |                                |                            |        | ope Instability Investigation - Preliminary Inclind  |                                       |     |  |   |  | <br>3 N          |
|---|---------------|--------------------------------|----------------------------|--------|--|---------------------------------------|-----|--|---|--|------------------|
|   |               |                                |                            |        | SURFACE R.L. 215.63m PLUNGE  |                                       |     |  |   |  |                  |
| JOB N   |               |                                |                            |        |  |                                       |     |  |   |  |                  |
| % DEPTH (m)   | R.L.<br>(m)   | AÜGER<br>CASING<br>WASH BORING | ]                          | SAMPLE | MATERIAL<br>DESCRIPTION  | LITHOLOGY                             | USC |  | INTACT DEFECT TRENGTH SPACING (AS1726) (AS1726) 0 U T T T T T T T T T T T T T T T T T T | ADDITIONAL DATA AND TEST RESULTS   | SAMPLES<br>TESTS |
| -31   |               |                                | 100 (90)                   |        |  |                                       |     |  | <b>37</b>   | Sandstone boulder in colluvium.  |                  |
| - 32<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 182.01        | _                              | 100<br>(83)<br>100<br>(88) |        |  |                                       |     |  |   | □— Clay seam □— Basalt fragments   |                  |
| 34<br>34<br>  |               |                                | 100 (60)                   |        | SILTSTONE Fine grained sedimentary rock composed silt sized particles. HW: Grey to pale grey, fine grained, low to medium strength. Interbeds of medium grained sandstone, occasional coaliferous inclusions with relict shear zones. Defects: | × ×<br>•* ×<br>• × ×                  | HW  |  |   | — Clay seam  — Relict shear zone   |                  |
| - 35<br>  | 180.37        |                                | 28<br>(91)                 |        | LP: 20° (4/m): PL/Ro-Sm, OP.  MW: Grey, fine grained, medium strength. Thinly laminated throughout with some HW relict shear zones.  Defects are generally planar or irregular, slightly rough, open to closed.                                | × × × × × × × × × × × × × × × × × × × | q.  |  |   | HW Relict shear zone  Ts(50) = 0.20MPa; * Is(50) = 0.27MPa; *  HW Relict brecciated zone | x -              |
| -<br>-<br>-<br>-<br>-<br>37   | <u>178.43</u> |                                |                            |        | LP: 0-5° (6/m); Pl-Un/Ro-Sm, CD-OP.<br>LP: 20° (3/m); Pl-Un/Ro-Sm, CD-OP.<br>Js: 80-90° (1/m); Pl-Un/Ro-Sm, CD-OP.<br>Interbedded SILTSTONE and SANDSTONE<br>Fine to medium grained sedimentary rock   | × × × × × × × × × × × × × × × × × × × |     |  |   | HW Relict shear zone Fractured coal layer  |                  |
|   |               |                                | (96)                       |        | composed interbeds of sand and silt sized particles.  SW: Pale grey, fine to medium grained, medium strength with occasional HW and XW clayey seams.  Bedding at 0-5°.  Defects: Lamination partings at 0-5° (5/m)                             |                                       | SW  | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ |   | Sandstone bed   Is(50) = 0.12MPa; *   Is(50) = 0.54MPa                                   | X -              |
| - 39<br>  |               |                                | 100 (81)                   |        | Joints at 70-90° (2/m)  Defects are generally planar or irregular, slightly rough to rough, open to closed.  |                                       |     | •                                      |   | XW Clay laminations  VWP installed XW Clay laminations  Is(50) = 0.03MPa; *              | x -              |
| -<br>40<br>RE   | EMARKS        | S *See                         | point loa                  | d test | results for details of this test   |                                       |     | :<br>                                  |   | Is(50) = 0.08MPa; *  LOGGED BY  TAH  | 0 -              |



# **ENGINEERING**BOREHOLE LOG

| BOREHOLE No  | <u>BH2A</u>          |
|--------------|----------------------|
| SHEET        | <u>5</u> of <u>5</u> |
| REFERENCE No | <u>11526</u>         |

| PRO                                    | JECT        | Mt W  | /hiteston  | e: S   | ope Instability Investigation - Preliminary Inclin | <u>ome</u> | ter Bo | oreholes                       |                         |             |  |         |
|--|-------------|---|------------|--------|--|------------|--------|--------------------------------|-------------------------|-------------|--|---------|
|  |             |   |            |        |  |            |        |                                |                         |             | OORDINATES 416202.9 E; 6937824.                                | 3 N     |
| PRO                                    | JECT No     | _FG6  | 128        |        | SURFACE R.L215.63m PLUNGE                          |            |        | DATE STA                       | ARTED 27                | 7/11        | /13 GRID DATUM MGA94   |         |
| JOB                                    | No          |   |            |        | HEIGHT DATUM _AHD BEARING                          |            |        | DATE COMP                      | LETED 2/                | 12/1        | DRILLER Northcoast   |         |
| 04 DEPTH (m)                           | R.L.<br>(m) | AUGER<br>CASING<br>WASH BORING<br>CORE DRILLING |            | SAMPLE | MATERIAL<br>DESCRIPTION                            | LITHOLOGY  | USC    | INTACT<br>STRENGTH<br>(AS1726) | DEFECT SPACING (AS1726) | GRAPHIC LOG | ADDITIONAL DATA  AND  TEST RESULTS                             | SAMPLES |
| -                                      | 173.03      |   | 100 (100)  |        | Interbedded SILTSTONE and SANDSTONE SW: (Cont'd)   |            |        |                                |                         |             | ⊐− HW layer<br>□− Sandstone interbeds                          | -       |
| -<br>-41<br>-<br>-<br>-<br>-<br>-<br>- |             |   | 100        |        |  |            | SW     |                                |                         |             | □- Sandstone interbed  Is(50) = 0.14MPa; * Is(50) = 0.34MPa; * |         |
| - 42                                   | 173.63      |   | 100        |        |  |            |        |                                |                         |             | - Washbore - no sample retrieved.                              |         |
| 43 44 45 46 47 47 48 49 49             |             |   |            |        | Borehole terminated at 42m                         |            |        |                                |                         |             |  |         |
| 50                                     |             |   |            |        |  |            |        | I : : : : : <del>I</del> :     |                         |             |  | _       |
| F                                      | REMARKS     | * <u>See</u>                                    | point load | d test | results for details of this test                   | <br>       |        |                                |                         | <br>        | LOGGED BY<br>TAH   |         |

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



| Project Name   | Gatton-Clifton Rd: Investigation of I  | nstability at Mt Whitestone  | )               |
|--|--|--|-----------------|
| Project No   | FG 6128  | Date   | 27/11/13        |
| Borehole No  | BH 2A  | TMR H No   | 11526           |
| Location   | RHS table drain (Middle)   | Start Depth (m)  | 23.80           |
| Detail   |  | Finish Depth (m)   | 41.80           |
| Chainage   | Ch 15.04 - 15.4km  | Submitted By   | J. Lopez        |
| Remarks  |  |  |                 |
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DEPARTMENT OF TRANSPORT & MAIN ROADS Geotechnical Branch 35 Butterfield Street, HERSTON Qld 4006 Phone 07 3066 3336



| D :                       | O-H Olifi D.I.I.     |                     | - 1 - 1 - 1 1 1 1 1 1 B # 1 1 A / 1 - 1 - 1 |           |
|---------------------------|----------------------|---------------------|---|-----------|
| Project Name              | FG 6128              | nvestigation of ins | stability at Mt Whiteston                   | 27/11/13  |
| Project No<br>Borehole No | BH 2A                |                     | TMR H No                                    | 11526     |
| Location                  |                      | dla)                |   | 23.80     |
| Detail                    | RHS table drain (Mid | uie)                | Start Depth (m)                             | 41.80     |
|                           | Ch 15.04 - 15.4km    |                     | Finish Depth (m) Submitted By               |           |
| Chainage<br>Remarks       | GIT 15.04 - 15.4KIII |                     | Submitted by                                | J. Lopez  |
| G M Z                     | G6128                | O mm                | Box 3                                       | 32.0 RAUM |
|                           | 0. K.                |                     |   |           |
|                           | EGGIZS SAME          | ORE LO.             | Gox   | 33.0      |
| 0 100                     | 200 3                | 00 400<br>SCALE 1:5 | 500 600                                     | 700       |

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



| TOECHMAINE                 | Gatton-Clifton Rd: Investigation        | of Instability at Mt Whiteston | ne   |
|----------------------------|---|--------------------------------|--|
| Project Name<br>Project No | FG 6128                                 | Date                           | 27/11/13   |
| Borehole No                | BH 2A                                   | TMR H No                       | 11526  |
| ocation                    | RHS table drain (Middle)                | Start Depth (m)                | 23.80  |
| )etail                     | ,                                       | Finish Depth (m)               | 41.80  |
| Chainage                   | Ch 15.04 - 15.4km                       | Submitted By                   | J. Lopez   |
| Remarks                    |   | •                              | •  |
|                            | 355                                     | 310                            |  |
| FG 6129                    | BHZ                                     | Box.                           | The second secon |
|                            |   |                                |  |
|                            | See | 0.04                           |  |
|                            | G6128 BH2                               |                                | 41.0   |
|                            |   | 200                            | 91.0   |