

Borehole No. **BH6**

# Engineering Log - Piezometer

Sheet 3 of 4  
Project No: **CH1613/1**

Client: **RIDER HUNT TEROTECH**

Date started: **31.5.2006**

Principal:

Date completed: **31.5.2006**


Project: **PROPOSED DEVELOPMENT - BLUE DOLPHIN RESORT**





Logged by: **ELC**

Borehole Location: **REFER TO FIGURE 1**

Checked by:

|                                    |                       |             |                    |
|------------------------------------|-----------------------|-------------|--------------------|
| drill model & mounting: P120 TRUCK | Easting: 533262.034   | slope: -90° | R.L. Surface: 1.75 |
| hole diameter:                     | Northing: 6744033.133 | bearing:    | datum: AHD         |

| drilling information |             |   |   |         |       |                                 | material substance   |    |                 |             |                          |   |                       |                               |  |                                     |
|----------------------|-------------|---|---|---------|-------|---------------------------------|--|----|-----------------|-------------|--------------------------|---|-----------------------|-------------------------------|--|-------------------------------------|
| method               | penetration |   |   | support | water | notes<br>samples,<br>tests, etc | well<br>details  | RL | depth<br>metres | graphic log | classification<br>symbol | material<br><br>soil type: plasticity or particle characteristics,<br>colour, secondary and minor components. | moisture<br>condition | consistency/<br>density index | structure and<br>additional observations |                                     |
|                      | 1           | 2 | 3 |         |       |                                 |  |    |                 |             |                          |   |                       |                               |  |                                     |
| WB                   |             |   |   | M       |       | SPT<br>23,R,-<br>N*=R           |  |    |                 |             |                          | SAND: fine to medium grained, brown ( <i>continued</i> )  | W                     | VD                            | SPT 30 blows for 125mm penetration.      |                                     |
|                      |             |   |   |         |       |                                 |  |    | 17              |             |                          |   |                       |                               |  |                                     |
|                      |             |   |   |         |       | SPT<br>21,R,-<br>N*=R           |  |    | 18              |             |                          |   |                       |                               |  | SPT 30 blows for 125mm penetration. |
|                      |             |   |   |         |       |                                 |  |    | 19              |             |                          |   |                       |                               |  |                                     |
|                      |             |   |   |         |       | SPT<br>18,32,R<br>N*=R          |  |    | 20              |             |                          |   |                       |                               |  | SPT 32 blows for 150mm penetration. |
|                      |             |   |   |         |       |                                 |  |    | 21              |             |                          |   |                       |                               |  |                                     |
|                      |             |   |   |         |       | SPT<br>18,34,R<br>N*=R          |  |    | 22              |             |                          |   |                       |                               |  | SPT 34 blows for 150mm penetration. |
|                      |             |   |   |         |       |                                 |  |    | 23              |             |                          |   |                       | MD                            |  |                                     |
|                      |             |   |   |         |       | SPT<br>6,10,13<br>N*=23         |  |    | 24              |             |                          |   |                       |                               |  |                                     |
|                      |             |   |   |         |       |                                 |  |    |                 |             |                          |   |                       |                               |  |                                     |
|                      |             |   |   |         |       | SPT<br>6,9,11<br>N*=20          |  |    |                 |             |                          |   |                       |                               |  |                                     |

|  |  |   |   |   |
|--|--|---|---|---|
| <b>method</b><br>AS auger screwing*<br>AD auger drilling*<br>RR roller/tricone<br>W washbore<br>CT cable tool<br>DT diatube<br>B blank bit<br>V V bit<br>T TC bit<br>TBX Tubex<br>*bit shown by suffix<br>e.g. ADT | <b>support</b><br>C casing N nil<br><br><b>penetration</b><br>1 2 3 4<br><br>no resistance ranging to refusal<br><br><b>water</b><br> 10/1/98 water level on date shown<br> water inflow<br> water outflow | <b>notes, samples, tests</b><br>U <sub>50</sub> undisturbed sample 50mm diameter<br>D disturbed sample<br>N standard penetration test (SPT)<br>N* SPT - sample recovered<br>Nc SPT with solid cone<br>P pressure meter<br>Bs bulk sample<br>R refusal<br>E environmental sample<br>PID PID measurement<br>WS water sample<br>PZ piezometer<br>ALT air lift test | <b>classification symbols and soil description</b><br>based on unified classification system<br><br><b>moisture</b><br>D dry<br>M moist<br>W wet<br>W <sub>p</sub> plastic limit<br>W <sub>L</sub> liquid limit | <b>consistency/density index</b><br>VS very soft<br>S soft<br>F firm<br>St stiff<br>VSt very stiff<br>H hard<br>Fb friable<br>VL very loose<br>L loose<br>MD medium dense<br>D dense<br>VD very dense |
|--|--|---|---|---|

Borehole No. **BH6**

# Engineering Log - Piezometer

Sheet 4 of 4  
Project No: **CH1613/1**

Client: **RIDER HUNT TEROTECH**

Date started: **31.5.2006**

Principal:

Date completed: **31.5.2006**

Project: **PROPOSED DEVELOPMENT - BLUE DOLPHIN RESORT**

Logged by: **ELC**

Borehole Location: **REFER TO FIGURE 1**

Checked by:

| drill model & mounting: P120 TRUCK |             |         |       | Easting: 533262.034             |                    | slope: -90° |                 | R.L. Surface: 1.75 |                          |  |                       |                               |  |
|------------------------------------|-------------|---------|-------|---------------------------------|--------------------|-------------|-----------------|--------------------|--------------------------|--|-----------------------|-------------------------------|--|
| hole diameter:                     |             |         |       | Northing: 6744033.133           |                    | bearing:    |                 | datum: AHD         |                          |  |                       |                               |  |
| drilling information               |             |         |       |                                 | material substance |             |                 |                    |                          |  |                       |                               |  |
| method                             | penetration | support | water | notes<br>samples,<br>tests, etc | well<br>details    | RL          | depth<br>metres | graphic log        | classification<br>symbol | material   | moisture<br>condition | consistency/<br>density index | structure and<br>additional observations |
| WB                                 | 1 2 3       | M       |       |                                 |                    | -23         | 25              |                    |                          | <b>SAND:</b> fine to medium grained, brown ( <i>continued</i> )                            | W                     | MD                            |  |
|                                    |             |         |       |                                 |                    | -24         | 26              |                    |                          | End BH6 at 25.45m due to limit of required investigation.<br>Borehole terminated at 25.45m |                       |                               |  |
|                                    |             |         |       |                                 |                    | -25         | 27              |                    |                          |  |                       |                               |  |
|                                    |             |         |       |                                 |                    | -26         | 28              |                    |                          |  |                       |                               |  |
|                                    |             |         |       |                                 |                    | -27         | 29              |                    |                          |  |                       |                               |  |
|                                    |             |         |       |                                 |                    | -28         | 30              |                    |                          |  |                       |                               |  |
|                                    |             |         |       |                                 |                    | -29         | 31              |                    |                          |  |                       |                               |  |
|                                    |             |         |       |                                 |                    | -30         | 32              |                    |                          |  |                       |                               |  |

**method**  
AS auger screwing\*  
AD auger drilling\*  
RR roller/tricone  
W washbore  
CT cable tool  
DT diatube  
B blank bit  
V V bit  
T TC bit  
TBX Tubex  
\*bit shown by suffix  
e.g. ADT

**support**  
C casing N nil  
**penetration**  
  
water  
  
10/1/98 water level on date shown  
 water inflow  
 water outflow

**notes, samples, tests**  
U<sub>50</sub> undisturbed sample 50mm diameter  
D disturbed sample  
N standard penetration test (SPT)  
N\* SPT - sample recovered  
Nc SPT with solid cone  
P pressure meter  
Bs bulk sample  
R refusal  
E environmental sample  
PID PID measurement  
WS water sample  
PZ piezometer  
ALT air lift test

**classification symbols and soil description**  
based on unified classification system  
**moisture**  
D dry  
M moist  
W wet  
Wp plastic limit  
WL liquid limit

**consistency/density index**  
VS very soft  
S soft  
F firm  
St stiff  
VSt very stiff  
H hard  
Fb friable  
VL very loose  
L loose  
MD medium dense  
D dense  
VD very dense

Borehole No. **BH7**

# Engineering Log - Piezometer

Sheet 1 of 6  
Project No: **CH1613/1**

Client: **RIDER HUNT TEROTECH**

Date started: **29.5.2006**

Principal:

Date completed: **30.5.2006**

Project: **PROPOSED DEVELOPMENT - BLUE DOLPHIN RESORT**

Logged by: **ELC**

Borehole Location: **REFER TO FIGURE 1**

Checked by:

|                                    |                       |             |                    |
|------------------------------------|-----------------------|-------------|--------------------|
| drill model & mounting: P120 TRUCK | Easting: 533049.973   | slope: -90° | R.L. Surface: 1.56 |
| hole diameter:                     | Northing: 6744153.418 | bearing:    | datum: AHD         |

| drilling information |             |   |   |         |       |                                 | material substance |     |                 |             |                          |   |                       |                               |  |
|----------------------|-------------|---|---|---------|-------|---------------------------------|--------------------|-----|-----------------|-------------|--------------------------|---|-----------------------|-------------------------------|--|
| method               | penetration |   |   | support | water | notes<br>samples,<br>tests, etc | well<br>details    | RL  | depth<br>metres | graphic log | classification<br>symbol | material<br><br>soil type: plasticity or particle characteristics,<br>colour, secondary and minor components. | moisture<br>condition | consistency/<br>density index | structure and<br>additional observations |
|                      | 1           | 2 | 3 |         |       |                                 |                    |     |                 |             |                          |   |                       |                               |  |
| ADV                  |             |   |   | N       |       |                                 |                    |     |                 |             | SP                       | <b>SAND:</b> fine to coarse grained, dark brown   | M                     | L/MD?                         | ALLUVIAL SOIL                            |
|                      |             |   |   |         |       | D                               |                    | 1.1 |                 |             |                          | Colour change to pale grey/pale brown at 0.8m.  |                       |                               |  |
|                      |             |   |   |         |       | D                               |                    |     |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       | D                               |                    |     |                 |             |                          |   | W                     | MD/D                          |  |
|                      |             |   |   |         |       | SPT<br>3,4,7<br>N*=11           |                    | 2   |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    |     |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       | D                               |                    | 1.1 |                 |             |                          |   |                       | D/VD                          |  |
|                      |             |   |   |         |       | D                               |                    |     |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       | SPT<br>8,14,16<br>N*=30         |                    | 3   |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    |     |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    | 2   |                 |             |                          |   |                       | VD                            |  |
|                      |             |   |   |         |       | D                               |                    | 4   |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       | D                               |                    |     |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       | SPT<br>9,14,25<br>N*=39         |                    | 5   |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    |     |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       | SPT<br>25,R,-<br>N*=R           |                    | 6   |                 |             |                          |   |                       |                               | SPT 24 blows fro 60mm<br>penetration.    |
|                      |             |   |   |         |       |                                 |                    |     |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    | 5   |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    |     |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       | SPT<br>15,R,-<br>N*=R           |                    | 7   |                 |             |                          |   |                       |                               | SPT 30 blows for 120mm<br>penetration.   |
|                      |             |   |   |         |       |                                 |                    |     |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    | 6   |                 |             |                          |   |                       |                               |  |

Borehole No. **BH7**

# Engineering Log - Piezometer

Sheet 2 of 6  
Project No: **CH1613/1**

Client: **RIDER HUNT TEROTECH**

Date started: **29.5.2006**

Principal:

Date completed: **30.5.2006**

Project: **PROPOSED DEVELOPMENT - BLUE DOLPHIN RESORT**





Logged by: **ELC**

Borehole Location: **REFER TO FIGURE 1**

Checked by:

|                                    |                       |             |                    |
|------------------------------------|-----------------------|-------------|--------------------|
| drill model & mounting: P120 TRUCK | Easting: 533049.973   | slope: -90° | R.L. Surface: 1.56 |
| hole diameter:                     | Northing: 6744153.418 | bearing:    | datum: AHD         |

| drilling information |             |   |   |         |       |                                 | material substance |      |                 |             |                          |   |                       |                               |  |
|----------------------|-------------|---|---|---------|-------|---------------------------------|--------------------|------|-----------------|-------------|--------------------------|---|-----------------------|-------------------------------|--|
| method               | penetration |   |   | support | water | notes<br>samples,<br>tests, etc | well<br>details    | RL   | depth<br>metres | graphic log | classification<br>symbol | material<br><br>soil type: plasticity or particle characteristics,<br>colour, secondary and minor components.                         | moisture<br>condition | consistency/<br>density index | structure and<br>additional observations |
|                      | 1           | 2 | 3 |         |       |                                 |                    |      |                 |             |                          |   |                       |                               |  |
| WB                   |             |   |   | M       |       |                                 |                    |      |                 |             | SP                       | <b>SAND:</b> fine to coarse grained, dark brown<br><i>(continued)</i><br><br>Thin layer of fine grained gravel at approximately 8.5m. | W                     | VD                            |  |
|                      |             |   |   |         |       | SPT<br>16,R,-<br>N*=R           |                    | -7   | 9               |             |                          |   |                       |                               | SPT 30 blows for 130mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -8   | 10              |             |                          |   |                       |                               | SPT 30 blows for 110mm penetration.      |
|                      |             |   |   |         |       | SPT<br>R,-,-<br>N*=R            |                    | -9   | 11              |             |                          |   |                       |                               | SPT 30 blows for 115mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -10  | 12              |             |                          |   |                       |                               | SPT 30 blows for 120mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -11  | 13              |             |                          |   |                       |                               | SPT 30 blows for 125mm penetration.      |
|                      |             |   |   |         |       | SPT<br>R,-,-<br>N*=R            |                    | -12  | 14              |             |                          |   |                       |                               | SPT 30 blows for 130mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -13  | 15              |             |                          |   |                       |                               | SPT 30 blows for 135mm penetration.      |
|                      |             |   |   |         |       | SPT<br>30,R,-<br>N*=R           |                    | -14  | 16              |             |                          |   |                       |                               | SPT 30 blows for 140mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -15  | 17              |             |                          |   |                       |                               | SPT 30 blows for 145mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -16  | 18              |             |                          |   |                       |                               | SPT 30 blows for 150mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -17  | 19              |             |                          |   |                       |                               | SPT 30 blows for 155mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -18  | 20              |             |                          |   |                       |                               | SPT 30 blows for 160mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -19  | 21              |             |                          |   |                       |                               | SPT 30 blows for 165mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -20  | 22              |             |                          |   |                       |                               | SPT 30 blows for 170mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -21  | 23              |             |                          |   |                       |                               | SPT 30 blows for 175mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -22  | 24              |             |                          |   |                       |                               | SPT 30 blows for 180mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -23  | 25              |             |                          |   |                       |                               | SPT 30 blows for 185mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -24  | 26              |             |                          |   |                       |                               | SPT 30 blows for 190mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -25  | 27              |             |                          |   |                       |                               | SPT 30 blows for 195mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -26  | 28              |             |                          |   |                       |                               | SPT 30 blows for 200mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -27  | 29              |             |                          |   |                       |                               | SPT 30 blows for 205mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -28  | 30              |             |                          |   |                       |                               | SPT 30 blows for 210mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -29  | 31              |             |                          |   |                       |                               | SPT 30 blows for 215mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -30  | 32              |             |                          |   |                       |                               | SPT 30 blows for 220mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -31  | 33              |             |                          |   |                       |                               | SPT 30 blows for 225mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -32  | 34              |             |                          |   |                       |                               | SPT 30 blows for 230mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -33  | 35              |             |                          |   |                       |                               | SPT 30 blows for 235mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -34  | 36              |             |                          |   |                       |                               | SPT 30 blows for 240mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -35  | 37              |             |                          |   |                       |                               | SPT 30 blows for 245mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -36  | 38              |             |                          |   |                       |                               | SPT 30 blows for 250mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -37  | 39              |             |                          |   |                       |                               | SPT 30 blows for 255mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -38  | 40              |             |                          |   |                       |                               | SPT 30 blows for 260mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -39  | 41              |             |                          |   |                       |                               | SPT 30 blows for 265mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -40  | 42              |             |                          |   |                       |                               | SPT 30 blows for 270mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -41  | 43              |             |                          |   |                       |                               | SPT 30 blows for 275mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -42  | 44              |             |                          |   |                       |                               | SPT 30 blows for 280mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -43  | 45              |             |                          |   |                       |                               | SPT 30 blows for 285mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -44  | 46              |             |                          |   |                       |                               | SPT 30 blows for 290mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -45  | 47              |             |                          |   |                       |                               | SPT 30 blows for 295mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -46  | 48              |             |                          |   |                       |                               | SPT 30 blows for 300mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -47  | 49              |             |                          |   |                       |                               | SPT 30 blows for 305mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -48  | 50              |             |                          |   |                       |                               | SPT 30 blows for 310mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -49  | 51              |             |                          |   |                       |                               | SPT 30 blows for 315mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -50  | 52              |             |                          |   |                       |                               | SPT 30 blows for 320mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -51  | 53              |             |                          |   |                       |                               | SPT 30 blows for 325mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -52  | 54              |             |                          |   |                       |                               | SPT 30 blows for 330mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -53  | 55              |             |                          |   |                       |                               | SPT 30 blows for 335mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -54  | 56              |             |                          |   |                       |                               | SPT 30 blows for 340mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -55  | 57              |             |                          |   |                       |                               | SPT 30 blows for 345mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -56  | 58              |             |                          |   |                       |                               | SPT 30 blows for 350mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -57  | 59              |             |                          |   |                       |                               | SPT 30 blows for 355mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -58  | 60              |             |                          |   |                       |                               | SPT 30 blows for 360mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -59  | 61              |             |                          |   |                       |                               | SPT 30 blows for 365mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -60  | 62              |             |                          |   |                       |                               | SPT 30 blows for 370mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -61  | 63              |             |                          |   |                       |                               | SPT 30 blows for 375mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -62  | 64              |             |                          |   |                       |                               | SPT 30 blows for 380mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -63  | 65              |             |                          |   |                       |                               | SPT 30 blows for 385mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -64  | 66              |             |                          |   |                       |                               | SPT 30 blows for 390mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -65  | 67              |             |                          |   |                       |                               | SPT 30 blows for 395mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -66  | 68              |             |                          |   |                       |                               | SPT 30 blows for 400mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -67  | 69              |             |                          |   |                       |                               | SPT 30 blows for 405mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -68  | 70              |             |                          |   |                       |                               | SPT 30 blows for 410mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -69  | 71              |             |                          |   |                       |                               | SPT 30 blows for 415mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -70  | 72              |             |                          |   |                       |                               | SPT 30 blows for 420mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -71  | 73              |             |                          |   |                       |                               | SPT 30 blows for 425mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -72  | 74              |             |                          |   |                       |                               | SPT 30 blows for 430mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -73  | 75              |             |                          |   |                       |                               | SPT 30 blows for 435mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -74  | 76              |             |                          |   |                       |                               | SPT 30 blows for 440mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -75  | 77              |             |                          |   |                       |                               | SPT 30 blows for 445mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -76  | 78              |             |                          |   |                       |                               | SPT 30 blows for 450mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -77  | 79              |             |                          |   |                       |                               | SPT 30 blows for 455mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -78  | 80              |             |                          |   |                       |                               | SPT 30 blows for 460mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -79  | 81              |             |                          |   |                       |                               | SPT 30 blows for 465mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -80  | 82              |             |                          |   |                       |                               | SPT 30 blows for 470mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -81  | 83              |             |                          |   |                       |                               | SPT 30 blows for 475mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -82  | 84              |             |                          |   |                       |                               | SPT 30 blows for 480mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -83  | 85              |             |                          |   |                       |                               | SPT 30 blows for 485mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -84  | 86              |             |                          |   |                       |                               | SPT 30 blows for 490mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -85  | 87              |             |                          |   |                       |                               | SPT 30 blows for 495mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -86  | 88              |             |                          |   |                       |                               | SPT 30 blows for 500mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -87  | 89              |             |                          |   |                       |                               | SPT 30 blows for 505mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -88  | 90              |             |                          |   |                       |                               | SPT 30 blows for 510mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -89  | 91              |             |                          |   |                       |                               | SPT 30 blows for 515mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -90  | 92              |             |                          |   |                       |                               | SPT 30 blows for 520mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -91  | 93              |             |                          |   |                       |                               | SPT 30 blows for 525mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -92  | 94              |             |                          |   |                       |                               | SPT 30 blows for 530mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -93  | 95              |             |                          |   |                       |                               | SPT 30 blows for 535mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -94  | 96              |             |                          |   |                       |                               | SPT 30 blows for 540mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -95  | 97              |             |                          |   |                       |                               | SPT 30 blows for 545mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -96  | 98              |             |                          |   |                       |                               | SPT 30 blows for 550mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -97  | 99              |             |                          |   |                       |                               | SPT 30 blows for 555mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -98  | 100             |             |                          |   |                       |                               | SPT 30 blows for 560mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -99  | 101             |             |                          |   |                       |                               | SPT 30 blows for 565mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -100 | 102             |             |                          |   |                       |                               | SPT 30 blows for 570mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -101 | 103             |             |                          |   |                       |                               | SPT 30 blows for 575mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -102 | 104             |             |                          |   |                       |                               | SPT 30 blows for 580mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -103 | 105             |             |                          |   |                       |                               | SPT 30 blows for 585mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -104 | 106             |             |                          |   |                       |                               | SPT 30 blows for 590mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -105 | 107             |             |                          |   |                       |                               | SPT 30 blows for 595mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -106 | 108             |             |                          |   |                       |                               | SPT 30 blows for 600mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -107 | 109             |             |                          |   |                       |                               | SPT 30 blows for 605mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -108 | 110             |             |                          |   |                       |                               | SPT 30 blows for 610mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -109 | 111             |             |                          |   |                       |                               | SPT 30 blows for 615mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -110 | 112             |             |                          |   |                       |                               | SPT 30 blows for 620mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -111 | 113             |             |                          |   |                       |                               | SPT 30 blows for 625mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -112 | 114             |             |                          |   |                       |                               | SPT 30 blows for 630mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -113 | 115             |             |                          |   |                       |                               | SPT 30 blows for 635mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -114 | 116             |             |                          |   |                       |                               | SPT 30 blows for 640mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -115 | 117             |             |                          |   |                       |                               | SPT 30 blows for 645mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -116 | 118             |             |                          |   |                       |                               | SPT 30 blows for 650mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -117 | 119             |             |                          |   |                       |                               | SPT 30 blows for 655mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -118 | 120             |             |                          |   |                       |                               | SPT 30 blows for 660mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -119 | 121             |             |                          |   |                       |                               | SPT 30 blows for 665mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -120 | 122             |             |                          |   |                       |                               | SPT 30 blows for 670mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -121 | 123             |             |                          |   |                       |                               | SPT 30 blows for 675mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -122 | 124             |             |                          |   |                       |                               | SPT 30 blows for 680mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -123 | 125             |             |                          |   |                       |                               | SPT 30 blows for 685mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -124 | 126             |             |                          |   |                       |                               | SPT 30 blows for 690mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -125 | 127             |             |                          |   |                       |                               | SPT 30 blows for 695mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -126 | 128             |             |                          |   |                       |                               | SPT 30 blows for 700mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -127 | 129             |             |                          |   |                       |                               | SPT 30 blows for 705mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -128 | 130             |             |                          |   |                       |                               | SPT 30 blows for 710mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -129 | 131             |             |                          |   |                       |                               | SPT 30 blows for 715mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -130 | 132             |             |                          |   |                       |                               | SPT 30 blows for 720mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -131 | 133             |             |                          |   |                       |                               | SPT 30 blows for 725mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -132 | 134             |             |                          |   |                       |                               | SPT 30 blows for 730mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -133 | 135             |             |                          |   |                       |                               | SPT 30 blows for 735mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -134 | 136             |             |                          |   |                       |                               | SPT 30 blows for 740mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -135 | 137             |             |                          |   |                       |                               | SPT 30 blows for 745mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -136 | 138             |             |                          |   |                       |                               | SPT 30 blows for 750mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -137 | 139             |             |                          |   |                       |                               | SPT 30 blows for 755mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -138 | 140             |             |                          |   |                       |                               | SPT 30 blows for 760mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -139 | 141             |             |                          |   |                       |                               | SPT 30 blows for 765mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -140 | 142             |             |                          |   |                       |                               | SPT 30 blows for 770mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -141 | 143             |             |                          |   |                       |                               | SPT 30 blows for 775mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -142 | 144             |             |                          |   |                       |                               | SPT 30 blows for 780mm penetration.      |
|                      |             |   |   |         |       |                                 |                    | -143 | 145             |             |                          |   |                       |                               |  |

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| <b>method</b><br>AS auger screwing*<br>AD auger drilling*<br>RR roller/tricone<br>W washbore<br>CT cable tool<br>DT diatube<br>B blank bit<br>V V bit<br>T TC bit<br>TBX Tubex<br>*bit shown by suffix<br>e.g. ADT | <b>support</b><br>C casing N nil<br><br><b>penetration</b><br>1 2 3 4<br><br>no resistance ranging to refusal<br><br><b>water</b><br> 10/1/98 water level on date shown<br> water inflow<br> water outflow | <b>notes, samples, tests</b><br>U <sub>50</sub> undisturbed sample 50mm diameter<br>D disturbed sample<br>N standard penetration test (SPT)<br>N* SPT - sample recovered<br>Nc SPT with solid cone<br>P pressure meter<br>Bs bulk sample<br>R refusal<br>E environmental sample<br>PID PID measurement<br>WS water sample<br>PZ piezometer<br>ALT air lift test | <b>classification symbols and soil description</b><br>based on unified classification system<br><br><b>moisture</b><br>D dry<br>M moist<br>W wet<br>Wp plastic limit<br>WL liquid limit | <b>consistency/density index</b><br>VS very soft<br>S soft<br>F firm<br>St stiff<br>VSt very stiff<br>H hard<br>Fb friable<br>VL very loose<br>L loose<br>MD medium dense<br>D dense<br>VD very dense |
|--|--|---|---|---|

Borehole No. **BH7**

# Engineering Log - Piezometer

Sheet 3 of 6  
Project No: **CH1613/1**

Client: **RIDER HUNT TEROTECH**

Date started: **29.5.2006**

Principal:

Date completed: **30.5.2006**


Project: **PROPOSED DEVELOPMENT - BLUE DOLPHIN RESORT**





Logged by: **ELC**

Borehole Location: **REFER TO FIGURE 1**

Checked by:

|                                    |                       |             |                    |
|------------------------------------|-----------------------|-------------|--------------------|
| drill model & mounting: P120 TRUCK | Easting: 533049.973   | slope: -90° | R.L. Surface: 1.56 |
| hole diameter:                     | Northing: 6744153.418 | bearing:    | datum: AHD         |

| drilling information |             |   |   |         |       |                                 | material substance   |     |                 |             |                          |   |                       |                               |  |
|----------------------|-------------|---|---|---------|-------|---------------------------------|--|-----|-----------------|-------------|--------------------------|---|-----------------------|-------------------------------|--|
| method               | penetration |   |   | support | water | notes<br>samples,<br>tests, etc | well<br>details  | RL  | depth<br>metres | graphic log | classification<br>symbol | material<br><br>soil type: plasticity or particle characteristics,<br>colour, secondary and minor components. | moisture<br>condition | consistency/<br>density index | structure and<br>additional observations |
|                      | 1           | 2 | 3 |         |       |                                 |  |     |                 |             |                          |   |                       |                               |  |
| WB                   |             |   |   | M       |       | SPT<br>17,R,-<br>N*=R           |  |     |                 |             | SP                       | <b>SAND:</b> fine to coarse grained, dark brown<br><i>(continued)</i>   | W                     | VD                            | SPT 30 blows for 125mm penetration.      |
|                      |             |   |   |         |       |                                 |  | -15 | 17              |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       | SPT<br>17,28,R<br>N*=R          |  | -16 | 18              |             |                          |   |                       |                               | SPT 28 blows for 150mm penetration       |
|                      |             |   |   |         |       |                                 |  | -17 | 19              |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       | SPT<br>12,26,R<br>N*=R          |  | -18 | 20              |             |                          | Colour change to brown, no longer indurated at approximately 18.8m.   |                       |                               | SPT 26 blows for 150mm penetration.      |
|                      |             |   |   |         |       |                                 |  | -19 | 21              |             |                          |   |                       |                               | SPT 30 blows for 150mm penetration.      |
|                      |             |   |   |         |       | SPT<br>13,30,R<br>N*=R          |  | -20 | 22              |             |                          |   |                       | D                             |  |
|                      |             |   |   |         |       | SPT<br>12,23,30<br>N*=53        |  | -21 | 23              |             |                          |   |                       |                               | SPT 30 blows for 140mm penetration.      |
|                      |             |   |   |         |       |                                 |  | -22 | 24              |             |                          |   |                       |                               | SPT 29 blows for 150mm penetration.      |

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| <b>method</b><br>AS auger screwing*<br>AD auger drilling*<br>RR roller/tricone<br>W washbore<br>CT cable tool<br>DT diatube<br>B blank bit<br>V V bit<br>T TC bit<br>TBX Tubex<br>*bit shown by suffix<br>e.g. ADT | <b>support</b><br>C casing N nil<br><br><b>penetration</b><br>1 2 3 4<br><br>no resistance ranging to refusal<br><br><b>water</b><br> 10/1/98 water level on date shown<br> water inflow<br> water outflow | <b>notes, samples, tests</b><br>U <sub>50</sub> undisturbed sample 50mm diameter<br>D disturbed sample<br>N standard penetration test (SPT)<br>N* SPT - sample recovered<br>Nc SPT with solid cone<br>P pressure meter<br>Bs bulk sample<br>R refusal<br>E environmental sample<br>PID PID measurement<br>WS water sample<br>PZ piezometer<br>ALT air lift test | <b>classification symbols and soil description</b><br>based on unified classification system<br><br><b>moisture</b><br>D dry<br>M moist<br>W wet<br>Wp plastic limit<br>WL liquid limit | <b>consistency/density index</b><br>VS very soft<br>S soft<br>F firm<br>St stiff<br>VSt very stiff<br>H hard<br>Fb friable<br>VL very loose<br>L loose<br>MD medium dense<br>D dense<br>VD very dense |
|--|--|---|---|---|

Borehole No. **BH7**

# Engineering Log - Piezometer

Sheet 4 of 6  
Project No: **CH1613/1**

Client: **RIDER HUNT TEROTECH**

Date started: **29.5.2006**

Principal:

Date completed: **30.5.2006**

Project: **PROPOSED DEVELOPMENT - BLUE DOLPHIN RESORT**





Logged by: **ELC**

Borehole Location: **REFER TO FIGURE 1**

Checked by:

|                                    |                       |             |                    |
|------------------------------------|-----------------------|-------------|--------------------|
| drill model & mounting: P120 TRUCK | Easting: 533049.973   | slope: -90° | R.L. Surface: 1.56 |
| hole diameter:                     | Northing: 6744153.418 | bearing:    | datum: AHD         |

| drilling information |             |   |   |         |                          |                                 | material substance |     |                 |             |                          |  |                       |                               |  |
|----------------------|-------------|---|---|---------|--------------------------|---------------------------------|--------------------|-----|-----------------|-------------|--------------------------|--|-----------------------|-------------------------------|--|
| method               | penetration |   |   | support | water                    | notes<br>samples,<br>tests, etc | well<br>details    | RL  | depth<br>metres | graphic log | classification<br>symbol | material<br><br>soil type: plasticity or particle characteristics,<br>colour, secondary and minor components.      | moisture<br>condition | consistency/<br>density index | structure and<br>additional observations |
|                      | 1           | 2 | 3 |         |                          |                                 |                    |     |                 |             |                          |  |                       |                               |  |
| WB                   |             |   |   | M       |                          |                                 |                    |     |                 |             | SP                       | <b>SAND:</b> fine to coarse grained, dark brown<br><i>(continued)</i><br><br>Colour change to pale brown at 24.5m. | W                     | D                             |  |
|                      |             |   |   |         |                          |                                 |                    | -23 | 25              |             |                          |  |                       |                               |  |
|                      |             |   |   |         | SPT<br>10,17,19<br>N*=36 |                                 |                    | -24 | 26              |             | SP                       | <b>SAND:</b> fine to medium grained, grey, trace of fines  |                       | MD                            |  |
|                      |             |   |   |         |                          |                                 |                    | -25 | 27              |             |                          |  |                       |                               |  |
|                      |             |   |   |         | SPT<br>3,5,11<br>N*=16   |                                 |                    | -26 | 28              |             |                          |  |                       |                               |  |
|                      |             |   |   |         |                          |                                 |                    | -27 | 29              |             |                          |  |                       |                               |  |
|                      |             |   |   |         | SPT<br>7,12,13<br>N*=25  |                                 |                    | -28 | 30              |             |                          |  |                       | D                             |  |
|                      |             |   |   |         |                          |                                 |                    | -29 | 31              |             |                          |  |                       |                               |  |
|                      |             |   |   |         | SPT<br>11,23,26<br>N*=49 |                                 |                    | -30 | 32              |             |                          |  |                       |                               |  |
|                      |             |   |   |         |                          |                                 |                    |     |                 |             |                          |  |                       |                               |  |
|                      |             |   |   |         | SPT<br>14,24,26<br>N*=50 |                                 |                    |     |                 |             |                          |  |                       |                               |  |
|                      |             |   |   |         |                          |                                 |                    |     |                 |             |                          |  |                       |                               |  |

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| <b>method</b><br>AS auger screwing*<br>AD auger drilling*<br>RR roller/tricone<br>W washbore<br>CT cable tool<br>DT diatube<br>B blank bit<br>V V bit<br>T TC bit<br>TBX Tubex<br>*bit shown by suffix<br>e.g. ADT | <b>support</b><br>C casing N nil<br><br><b>penetration</b><br>1 2 3 4<br><br>no resistance ranging to refusal<br><br><b>water</b><br> 10/1/98 water level on date shown<br> water inflow<br> water outflow | <b>notes, samples, tests</b><br>U <sub>50</sub> undisturbed sample 50mm diameter<br>D disturbed sample<br>N standard penetration test (SPT)<br>N* SPT - sample recovered<br>Nc SPT with solid cone<br>P pressure meter<br>Bs bulk sample<br>R refusal<br>E environmental sample<br>PID PID measurement<br>WS water sample<br>PZ piezometer<br>ALT air lift test | <b>classification symbols and soil description</b><br>based on unified classification system<br><br><b>moisture</b><br>D dry<br>M moist<br>W wet<br>Wp plastic limit<br>WL liquid limit | <b>consistency/density index</b><br>VS very soft<br>S soft<br>F firm<br>St stiff<br>VSt very stiff<br>H hard<br>Fb friable<br>VL very loose<br>L loose<br>MD medium dense<br>D dense<br>VD very dense |
|--|--|---|---|---|

Borehole No. **BH7**

# Engineering Log - Piezometer

Sheet 5 of 6  
Project No: **CH1613/1**

Client: **RIDER HUNT TEROTECH**

Date started: **29.5.2006**

Principal:

Date completed: **30.5.2006**

Project: **PROPOSED DEVELOPMENT - BLUE DOLPHIN RESORT**





Logged by: **ELC**

Borehole Location: **REFER TO FIGURE 1**

Checked by:

|                                    |                       |             |                    |
|------------------------------------|-----------------------|-------------|--------------------|
| drill model & mounting: P120 TRUCK | Easting: 533049.973   | slope: -90° | R.L. Surface: 1.56 |
| hole diameter:                     | Northing: 6744153.418 | bearing:    | datum: AHD         |

| drilling information |             |   |   |         |                          |                                 | material substance |    |                 |             |   |   |                       |                               |  |                                     |  |
|----------------------|-------------|---|---|---------|--------------------------|---------------------------------|--------------------|----|-----------------|-------------|---|---|-----------------------|-------------------------------|--|-------------------------------------|--|
| method               | penetration |   |   | support | water                    | notes<br>samples,<br>tests, etc | well<br>details    | RL | depth<br>metres | graphic log | classification<br>symbol  | material<br><br>soil type: plasticity or particle characteristics,<br>colour, secondary and minor components. | moisture<br>condition | consistency/<br>density index | structure and<br>additional observations |                                     |  |
|                      | 1           | 2 | 3 |         |                          |                                 |                    |    |                 |             |   |   |                       |                               |  |                                     |  |
| WB                   |             |   |   | M       |                          |                                 |                    |    |                 |             | SP  | <b>SAND:</b> fine to medium grained, grey, trace of fines<br><i>(continued)</i>                               | W                     | MD                            | SPT 30 blows for 130mm penetration.      |                                     |  |
|                      |             |   |   |         | SPT<br>16,R,-<br>N*=R    |                                 | -31                | 33 |                 |             |   |   |                       | MD                            |  |                                     |  |
|                      |             |   |   |         |                          |                                 | -32                | 34 |                 |             |   |   |                       |                               |  |                                     |  |
|                      |             |   |   |         | SPT<br>8,10,6<br>N*=16   |                                 | -33                | 35 |                 | SP          | <b>SAND:</b> fine to medium grained, grey, some<br>medium plasticity fines                        |   |                       | D                             |  | SPT 32 blows for 150mm penetration. |  |
|                      |             |   |   |         |                          |                                 | -34                | 36 |                 |             |   |   |                       |                               |  |                                     |  |
|                      |             |   |   |         | SPT<br>11,16,32<br>N*=48 |                                 | -35                | 37 |                 |             |   |   |                       | MD                            |  |                                     |  |
|                      |             |   |   |         |                          |                                 | -36                | 38 |                 |             |   |   |                       |                               |  |                                     |  |
|                      |             |   |   |         | SPT<br>7,5,9<br>N*=14    |                                 | -37                | 39 |                 | SC          | <b>Sandy CLAY/Clayey SAND:</b> sand is fine to medium<br>grained, clay is medium plasticity, grey |   |                       | L/F                           |  |                                     |  |
|                      |             |   |   |         |                          |                                 | -38                | 40 |                 |             |   |   |                       |                               |  |                                     |  |
|                      |             |   |   |         | SPT<br>0,1,5<br>N*=6     |                                 |                    |    |                 |             |   |   |                       |                               |  |                                     |  |
|                      |             |   |   |         |                          |                                 |                    |    |                 |             |   |   |                       |                               |  |                                     |  |
|                      |             |   |   |         |                          |                                 |                    |    |                 |             |   |   |                       |                               |  |                                     |  |

|  |  |   |   |   |
|--|--|---|---|---|
| <b>method</b><br>AS auger screwing*<br>AD auger drilling*<br>RR roller/tricone<br>W washbore<br>CT cable tool<br>DT diatube<br>B blank bit<br>V V bit<br>T TC bit<br>TBX Tubex<br>*bit shown by suffix<br>e.g. ADT | <b>support</b><br>C casing N nil<br><br><b>penetration</b><br>1 2 3 4<br><br>no resistance ranging to refusal<br><br><b>water</b><br> 10/1/98 water level on date shown<br> water inflow<br> water outflow | <b>notes, samples, tests</b><br>U <sub>50</sub> undisturbed sample 50mm diameter<br>D disturbed sample<br>N standard penetration test (SPT)<br>N* SPT - sample recovered<br>Nc SPT with solid cone<br>P pressure meter<br>Bs bulk sample<br>R refusal<br>E environmental sample<br>PID PID measurement<br>WS water sample<br>PZ piezometer<br>ALT air lift test | <b>classification symbols and soil description</b><br>based on unified classification system<br><br><b>moisture</b><br>D dry<br>M moist<br>W wet<br>Wp plastic limit<br>WL liquid limit | <b>consistency/density index</b><br>VS very soft<br>S soft<br>F firm<br>St stiff<br>VSt very stiff<br>H hard<br>Fb friable<br>VL very loose<br>L loose<br>MD medium dense<br>D dense<br>VD very dense |
|--|--|---|---|---|



Borehole No. **BH7**

# Engineering Log - Piezometer

Sheet 6 of 6  
Project No: **CH1613/1**

Client: **RIDER HUNT TEROTECH**

Date started: **29.5.2006**

Principal:

Date completed: **30.5.2006**




Project: **PROPOSED DEVELOPMENT - BLUE DOLPHIN RESORT**





Logged by: **ELC**

Borehole Location: **REFER TO FIGURE 1**

Checked by:

|                                    |                       |             |                    |
|------------------------------------|-----------------------|-------------|--------------------|
| drill model & mounting: P120 TRUCK | Easting: 533049.973   | slope: -90° | R.L. Surface: 1.56 |
| hole diameter:                     | Northing: 6744153.418 | bearing:    | datum: AHD         |

| drilling information |             |   |   |         |       |                                 | material substance   |     |                 |   |                          |   |                       |                               |  |                        |     |    |  |    |   |   |    |                       |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |
|----------------------|-------------|---|---|---------|-------|---------------------------------|--|-----|-----------------|---|--------------------------|---|-----------------------|-------------------------------|--|------------------------|-----|----|--|----|---|---|----|-----------------------|-----|----|--|--|--|--|-----|----|--|--|--|--|-----|----|--|--|--|--|-----|----|--|--|--|--|-----|----|--|--|--|--|-----|----|--|--|--|--|--|--|--|--|--|--|
| method               | penetration |   |   | support | water | notes<br>samples,<br>tests, etc | well<br>details  | RL  | depth<br>metres | graphic log   | classification<br>symbol | material<br><br>soil type: plasticity or particle characteristics,<br>colour, secondary and minor components. | moisture<br>condition | consistency/<br>density index | structure and<br>additional observations |                        |     |    |  |    |   |   |    |                       |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |
|                      | 1           | 2 | 3 |         |       |                                 |  |     |                 |   |                          |   |                       |                               |  |                        |     |    |  |    |   |   |    |                       |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |
| WB                   |             |   |   | M       |       |                                 |  | -39 | 41              |  | SC                       | Sandy CLAY/Clayey SAND: sand is fine to medium grained, clay is medium plasticity, grey ( <i>continued</i> )  | W                     | L/F                           |  |                        |     |    |  |    |   |   |    |                       |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |
|                      |             |   |   |         |       |                                 |  |     |                 |   |                          |   |                       |                               |  | SPT<br>4,6,10<br>N*=16 | -40 | 42 |  | CH | CLAY: high plasticity, grey, some fine grained sand | M | St |                       |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |
|                      |             |   |   |         |       |                                 |  |     |                 |   |                          |   |                       |                               |  |                        |     |    |  |    |   |   |    | SPT<br>5,9,9<br>N*=18 | -41 | 43 |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |
|                      |             |   |   |         |       |                                 |  |     |                 |   |                          |   |                       |                               |  |                        |     |    |  |    |   |   |    |                       |     |    |  |  |  |  | -42 | 44 |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |
|                      |             |   |   |         |       |                                 |  |     |                 |   |                          |   |                       |                               |  |                        |     |    |  |    |   |   |    |                       |     |    |  |  |  |  |     |    |  |  |  |  | -43 | 45 |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |
|                      |             |   |   |         |       |                                 |  |     |                 |   |                          |   |                       |                               |  |                        |     |    |  |    |   |   |    |                       |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  | -44 | 46 |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |
|                      |             |   |   |         |       |                                 |  |     |                 |   |                          |   |                       |                               |  |                        |     |    |  |    |   |   |    |                       |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  | -45 | 47 |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |
|                      |             |   |   |         |       |                                 |  |     |                 |   |                          |   |                       |                               |  |                        |     |    |  |    |   |   |    |                       |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  | -46 | 48 |  |  |  |  |  |  |  |  |  |  |
|                      |             |   |   |         |       |                                 |  |     |                 |   |                          |   |                       |                               |  |                        |     |    |  |    |   |   |    |                       |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |
|                      |             |   |   |         |       |                                 |  |     |                 |   |                          |   |                       |                               |  |                        |     |    |  |    |   |   |    |                       |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |
|                      |             |   |   |         |       |                                 |  |     |                 |   |                          |   |                       |                               |  |                        |     |    |  |    |   |   |    |                       |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |     |    |  |  |  |  |  |  |  |  |  |  |

|  |  |   |   |   |
|--|--|---|---|---|
| <b>method</b><br>AS auger screwing*<br>AD auger drilling*<br>RR roller/tricone<br>W washbore<br>CT cable tool<br>DT diatube<br>B blank bit<br>V V bit<br>T TC bit<br>TBX Tubex<br>*bit shown by suffix<br>e.g. ADT | <b>support</b><br>C casing N nil<br><br><b>penetration</b><br>1 2 3 4<br><br>no resistance ranging to refusal<br><br><b>water</b><br> 10/1/98 water level on date shown<br> water inflow<br> water outflow | <b>notes, samples, tests</b><br>U <sub>50</sub> undisturbed sample 50mm diameter<br>D disturbed sample<br>N standard penetration test (SPT)<br>N* SPT - sample recovered<br>Nc SPT with solid cone<br>P pressure meter<br>Bs bulk sample<br>R refusal<br>E environmental sample<br>PID PID measurement<br>WS water sample<br>PZ piezometer<br>ALT air lift test | <b>classification symbols and soil description</b><br>based on unified classification system<br><br><b>moisture</b><br>D dry<br>M moist<br>W wet<br>W <sub>p</sub> plastic limit<br>W <sub>L</sub> liquid limit | <b>consistency/density index</b><br>VS very soft<br>S soft<br>F firm<br>St stiff<br>VSt very stiff<br>H hard<br>Fb friable<br>VL very loose<br>L loose<br>MD medium dense<br>D dense<br>VD very dense |
|--|--|---|---|---|



Borehole No. **BH8**

# Engineering Log - Piezometer

Sheet 1 of 4  
Project No: **CH1613/1**

Client: **RIDER HUNT TEROTECH**

Date started: **1.6.2006**

Principal:

Date completed: **1.6.2006**

Project: **PROPOSED DEVELOPMENT - BLUE DOLPHIN RESORT**





Logged by: **ELC**

Borehole Location: **REFER TO FIGURE 1**

Checked by:

|                                    |                       |             |                    |
|------------------------------------|-----------------------|-------------|--------------------|
| drill model & mounting: P120 TRUCK | Easting: 533143.425   | slope: -90° | R.L. Surface: 1.61 |
| hole diameter:                     | Northing: 6744273.849 | bearing:    | datum: AHD         |

| drilling information |             |   |   |         |                        |                                 | material substance |    |                 |             |                          |   |                       |                               |  |
|----------------------|-------------|---|---|---------|------------------------|---------------------------------|--------------------|----|-----------------|-------------|--------------------------|---|-----------------------|-------------------------------|--|
| method               | penetration |   |   | support | water                  | notes<br>samples,<br>tests, etc | well<br>details    | RL | depth<br>metres | graphic log | classification<br>symbol | material<br><br>soil type: plasticity or particle characteristics,<br>colour, secondary and minor components. | moisture<br>condition | consistency/<br>density index | structure and<br>additional observations |
|                      | 1           | 2 | 3 |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
| ADV                  |             |   |   | N       |                        |                                 |                    |    |                 |             | SP                       | SAND: fine to medium grained, brown   | M                     | MD?                           | ALLUVIAL SOIL                            |
|                      |             |   |   |         | D                      |                                 |                    | 1  |                 |             | SC                       | Clayey SAND/Sandy CLAY: fine to medium<br>grained, brown, clay is medium plasticity                           |                       |                               |  |
|                      |             |   |   |         | D                      |                                 |                    |    |                 |             | SP                       | SAND: fine to medium grained, grey  | W                     | D                             |  |
|                      |             |   |   |         | SPT<br>7,9,9<br>N*=18  |                                 |                    | 2  |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         | D                      |                                 |                    |    |                 |             |                          |   |                       | MD                            |  |
|                      |             |   |   |         | D                      |                                 |                    | 3  |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         | SPT<br>1,3,6<br>N*=9   |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    | 4  |                 |             |                          |   |                       | D                             |  |
|                      |             |   |   | M       | D                      |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         | D                      |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         | SPT<br>5,9,10<br>N*=19 |                                 |                    | 5  |                 |             |                          | Colour change to dark brown at 4.8m.  |                       | VD                            |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         | SPT<br>22,R,-<br>N*=R  |                                 |                    | 6  |                 |             |                          |   |                       |                               | SPT 30 blows fro 40mm<br>penetration.    |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |
|                      |             |   |   |         |                        |                                 |                    |    |                 |             |                          |   |                       |                               |  |

|  |   |   |  |   |
|--|---|---|--|---|
| <b>method</b><br>AS auger screwing*<br>AD auger drilling*<br>RR roller/tricone<br>W washbore<br>CT cable tool<br>DT diatube<br>B blank bit<br>V V bit<br>T TC bit<br>TBX Tubex<br>*bit shown by suffix<br>e.g. ADT | <b>support</b><br>C casing N nil<br><b>penetration</b><br>1 2 3 4<br><br>no resistance<br>ranging to<br>refusal<br><b>water</b><br> 10/1/98 water level<br>on date shown<br> water inflow<br> water outflow | <b>notes, samples, tests</b><br>U <sub>50</sub> undisturbed sample 50mm diameter<br>D disturbed sample<br>N standard penetration test (SPT)<br>N* SPT - sample recovered<br>Nc SPT with solid cone<br>P pressure meter<br>Bs bulk sample<br>R refusal<br>E environmental sample<br>PID PID measurement<br>WS water sample<br>PZ piezometer<br>ALT air lift test | <b>classification symbols and<br/>soil description</b><br>based on unified classification<br>system<br><b>moisture</b><br>D dry<br>M moist<br>W wet<br>Wp plastic limit<br>WL liquid limit | <b>consistency/density index</b><br>VS very soft<br>S soft<br>F firm<br>St stiff<br>VSt very stiff<br>H hard<br>Fb friable<br>VL very loose<br>L loose<br>MD medium dense<br>D dense<br>VD very dense |
|--|---|---|--|---|

Borehole No. **BH8**

# Engineering Log - Piezometer

Sheet 2 of 4  
Project No: **CH1613/1**

Client: **RIDER HUNT TEROTECH**

Date started: **1.6.2006**

Principal:

Date completed: **1.6.2006**









Project: **PROPOSED DEVELOPMENT - BLUE DOLPHIN RESORT**





Logged by: **ELC**

Borehole Location: **REFER TO FIGURE 1**

Checked by:

|                                    |                       |             |                    |
|------------------------------------|-----------------------|-------------|--------------------|
| drill model & mounting: P120 TRUCK | Easting: 533143.425   | slope: -90° | R.L. Surface: 1.61 |
| hole diameter:                     | Northing: 6744273.849 | bearing:    | datum: AHD         |

| drilling information |             |   |   |         |       |   | material substance   |     |                 |             |                          |   |                       |                               |  |
|----------------------|-------------|---|---|---------|-------|---|--|-----|-----------------|-------------|--------------------------|---|-----------------------|-------------------------------|--|
| method               | penetration |   |   | support | water | notes<br>samples,<br>tests, etc                   | well<br>details  | RL  | depth<br>metres | graphic log | classification<br>symbol | material<br><br>soil type: plasticity or particle characteristics,<br>colour, secondary and minor components. | moisture<br>condition | consistency/<br>density index | structure and<br>additional observations |
|                      | 1           | 2 | 3 |         |       |   |  |     |                 |             |                          |   |                       |                               |  |
| WB                   |             |   |   | M       |       |   |  |     |                 |             | SP                       | SAND: fine to medium grained, grey ( <i>continued</i> )   | W                     | VD                            |  |
|                      |             |   |   |         |       | SPT<br>R <sub>1-2</sub> =<br>N <sub>1-2</sub> = R |  | -7  | 9               |             |                          |   |                       |                               | SPT 25 blows for 80mm penetration.       |
|                      |             |   |   |         |       | SPT<br>18,26,R<br>N <sub>1-2</sub> = R            |  | -8  | 10              |             |                          |   |                       |                               | SPT 26 blows for 150mm penetration.      |
|                      |             |   |   |         |       | SPT<br>R <sub>1-2</sub> =<br>N <sub>1-2</sub> = R |  | -9  | 11              |             |                          | Thin band of fine grained gravel at approximately 10.5m.  |                       |                               | SPT 30 blows for 110mm penetration.      |
|                      |             |   |   |         |       | SPT<br>R <sub>1-2</sub> =<br>N <sub>1-2</sub> = R |  | -10 | 12              |             |                          |   |                       |                               | SPT 30 blows for 130mm penetraation.     |
|                      |             |   |   |         |       | SPT<br>R <sub>1-2</sub> =<br>N <sub>1-2</sub> = R |  | -11 | 13              |             |                          |   |                       |                               | SPT 30 blows for 90mm penetration.       |
|                      |             |   |   |         |       | SPT<br>R <sub>1-2</sub> =<br>N <sub>1-2</sub> = R |  | -12 | 14              |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       | SPT<br>R <sub>1-2</sub> =<br>N <sub>1-2</sub> = R |  | -13 | 15              |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |   |  | -14 | 16              |             |                          |   |                       |                               |  |

|  |  |   |   |   |
|--|--|---|---|---|
| <b>method</b><br>AS auger screwing*<br>AD auger drilling*<br>RR roller/tricone<br>W washbore<br>CT cable tool<br>DT diatube<br>B blank bit<br>V V bit<br>T TC bit<br>TBX Tubex<br>*bit shown by suffix<br>e.g. ADT | <b>support</b><br>C casing N nil<br><br><b>penetration</b><br>1 2 3 4<br><br>no resistance ranging to refusal<br><br><b>water</b><br> 10/1/98 water level on date shown<br> water inflow<br> water outflow | <b>notes, samples, tests</b><br>U <sub>50</sub> undisturbed sample 50mm diameter<br>D disturbed sample<br>N standard penetration test (SPT)<br>N* SPT - sample recovered<br>Nc SPT with solid cone<br>P pressure meter<br>Bs bulk sample<br>R refusal<br>E environmental sample<br>PID PID measurement<br>WS water sample<br>PZ piezometer<br>ALT air lift test | <b>classification symbols and soil description</b><br>based on unified classification system<br><br><b>moisture</b><br>D dry<br>M moist<br>W wet<br>Wp plastic limit<br>WL liquid limit | <b>consistency/density index</b><br>VS very soft<br>S soft<br>F firm<br>St stiff<br>VSt very stiff<br>H hard<br>Fb friable<br>VL very loose<br>L loose<br>MD medium dense<br>D dense<br>VD very dense |
|--|--|---|---|---|

Borehole No. **BH8**

Sheet 3 of 4  
Project No: **CH1613/1**

# Engineering Log - Piezometer

Client: **RIDER HUNT TEROTECH**

Date started: **1.6.2006**

Principal:

Date completed: **1.6.2006**

Project: ***PROPOSED DEVELOPMENT - BLUE DOLPHIN RESORT***

Logged by: **ELC**

Borehole Location: **REFER TO FIGURE 1**

Checked by:

[illegible]

Borehole No. **BH8**

# Engineering Log - Piezometer

Sheet 4 of 4  
Project No: **CH1613/1**

Client: **RIDER HUNT TEROTECH**

Date started: **1.6.2006**

Principal:

Date completed: **1.6.2006**

Project: **PROPOSED DEVELOPMENT - BLUE DOLPHIN RESORT**





Logged by: **ELC**

Borehole Location: **REFER TO FIGURE 1**

Checked by:

|                                    |                       |             |                    |
|------------------------------------|-----------------------|-------------|--------------------|
| drill model & mounting: P120 TRUCK | Easting: 533143.425   | slope: -90° | R.L. Surface: 1.61 |
| hole diameter:                     | Northing: 6744273.849 | bearing:    | datum: AHD         |

| drilling information |             |   |   |         |       |                                 | material substance |    |                 |             |                          |   |                       |                               |  |
|----------------------|-------------|---|---|---------|-------|---------------------------------|--------------------|----|-----------------|-------------|--------------------------|---|-----------------------|-------------------------------|--|
| method               | penetration |   |   | support | water | notes<br>samples,<br>tests, etc | well<br>details    | RL | depth<br>metres | graphic log | classification<br>symbol | material<br><br>soil type: plasticity or particle characteristics,<br>colour, secondary and minor components. | moisture<br>condition | consistency/<br>density index | structure and<br>additional observations |
|                      | 1           | 2 | 3 |         |       |                                 |                    |    |                 |             |                          |   |                       |                               |  |
| WB                   |             |   |   | M       |       |                                 |                    |    |                 |             | SP                       | SAND: fine to medium grained, grey ( <i>continued</i> )   | W                     | VD                            |  |
|                      |             |   |   |         |       | SPT<br>10,21,27<br>N*=48        |                    |    | 25              |             |                          |   |                       | D/VD                          |  |
|                      |             |   |   |         |       |                                 |                    |    | 26              |             |                          | End BH8 at 25.45m due to limit of required<br>investigation.<br>Borehole terminated at 25.45m                 |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    |    | 27              |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    |    | 28              |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    |    | 29              |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    |    | 30              |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    |    | 31              |             |                          |   |                       |                               |  |
|                      |             |   |   |         |       |                                 |                    |    | 32              |             |                          |   |                       |                               |  |

|  |  |   |   |   |
|--|--|---|---|---|
| <b>method</b><br>AS auger screwing*<br>AD auger drilling*<br>RR roller/tricone<br>W washbore<br>CT cable tool<br>DT diatube<br>B blank bit<br>V V bit<br>T TC bit<br>TBX Tubex<br>*bit shown by suffix<br>e.g. ADT | <b>support</b><br>C casing N nil<br><br><b>penetration</b><br>1 2 3 4<br><br>no resistance ranging to refusal<br><br><b>water</b><br> 10/1/98 water level on date shown<br> water inflow<br> water outflow | <b>notes, samples, tests</b><br>U <sub>50</sub> undisturbed sample 50mm diameter<br>D disturbed sample<br>N standard penetration test (SPT)<br>N* SPT - sample recovered<br>Nc SPT with solid cone<br>P pressure meter<br>Bs bulk sample<br>R refusal<br>E environmental sample<br>PID PID measurement<br>WS water sample<br>PZ piezometer<br>ALT air lift test | <b>classification symbols and soil description</b><br>based on unified classification system<br><br><b>moisture</b><br>D dry<br>M moist<br>W wet<br>Wp plastic limit<br>WL liquid limit | <b>consistency/density index</b><br>VS very soft<br>S soft<br>F firm<br>St stiff<br>VSt very stiff<br>H hard<br>Fb friable<br>VL very loose<br>L loose<br>MD medium dense<br>D dense<br>VD very dense |
|--|--|---|---|---|