Hydro Tasmania

# Engineering Log
# Borehole

borehole no: RT3

sheet 1 of 2

Job no: 5203332 file:

Project: DUNGROVE DAM - UPGRADE

Borehole Location: mE 492206
mN 5320906

Borehole commenced: 19/2/08
Borehole completed: 19/2/08
Supervised by: B. Crorken / M. Davidson
Log checked by:

drill model and mounting: HP Scout
hole diameter: 125 mm

slope: Vertical
bearing:

R.L surface m
datum

Driller: D. Roberts

| drilling information | | | | | | material substance | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| method | penetration 1 2 3 | support | water | notes samples tests, etc | R.L depth metres | graphic log | classification symbol | material: soil type; plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency, density index | hand penetrometer kPa 100 200 300 400 | structure and additional observations |
| | | | | SPT 0.25 (3,4,4) N=8 | 0 | | | SAND: orange brown; f-m; trace silt; dry (logged from spade drill hole) | D | MD | | p.p. @ 0.7m 5 kg/cm² |
| | | | | | | | SC | SAND: pale orange brown; oxide colouring at 0.55m micaceous noticeably becomes more sandy towards end of interval becomes more dry towards end of interval low plasticity | D to M | MD | | pp @ 0.35m 4kg/cm² pp @ 0.5m 3.5 kg/cm² |
| | | | | | 1 | | | | | | | |
| | | | | | 2 | | | | | | | |
| | | | | | 3 | | | | | | | |
| | | | | | 4 | | | | | | | |
| | | | | | 5 | | | | | | | |
| | | | | | 6 | | | | | | | |
| | | | | | 7 | | | | | | | |
| | | | | | 8 | | | | | | | |

**KEY**

**method**
- AS auger screwing
- AD auger drilling
- RR roller/tricone
- W washbore
- HA hand auger
- HFA hollow flight auger

**support**
- T - timbering
- C - casing

**penetration**
1 2 3 — no resistance ranging to refusal

**water**
level (date)
inflow
outflow

**notes** - samples and tests
- $U_s$ undisturbed sample 50mm diameter
- S disturbed sample
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Bs bulk sample
- R refusal

**classification symbols and soil description**
based on Unified Classification System

**moisture condition**
- D dry
- M moist
- W wet
- PL plastic 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

Hydro Tasmania

# Engineering Log
# Cored Borehole

borehole no: RT3
Sheet 2 of 2

Job no: E 203332 file:

Project: DUNGROVE DAMS RUPERTS
hole commenced: 18/2/08
hole completed:
borehole location: mE 492206 (MGA 94) mN 5320906
supervised by: B. Cromer / M. Davidson
log checked by:
drill model and mounting: HP Scout
slope: vertical ° 84
barrel type and length: NQTT fluid Water
bearing: -274
R.L surface: m
datum: AHD
Driller D. Roberts

| drilling information | | | | rock substance | | | | rock mass defects | | |
|---|---|---|---|---|---|---|---|---|---|---|
| method | case-lift | water | R.L depth (m) | graphic log / core loss | substance description: rock type: grain characteristics, colour, structure, minor components. | weathering | strength (EL VL L M H VH EH; x 50 100 300 1000 >3000) | defect spacing mm | RQD % | defect description: thickness, type, inclination, planarity, roughness, coating — particular / general |
| | | | | | Set casing at 0.95m | | | | | |
| NQ TT | 1 | | 1 | | SANDSTONE: fine to medium grain; cream/orange/brown; sub-horizontal bedding; some soft clayey zones in small fractures. | DW | | | 59 | Joints aligned with bedding; planar rough; range from 1mm to 10mm; 0mm min as clay. Is(50) = 2.2MPa Diametral, 3.5MPa Axial |
| | 2 | | 2 | | | | | | | |
| | | | 3 | | SANDSTONE: fine to medium grain, thinly bedded, more coarse grain towards end; orange to grey; bedded sub-horizontal; blebs of pyrite (?); mudstone clasts 3.75m. | DW | | | 93 | Joints, few + aligned with bedding; some stained at bottom of interval suggesting closed joints (?). At depth = 3.05m Is(50) = 2.1MPa Diametral, 4.0MPa Axial |
| | 3 | | 4 | | SANDSTONE: med to c.g.; orange to grey; bedded sub-horizontal; seems to be fine/med between grains; fe-stained; pyrite throughout but more common in grey zone. | EW | | | 83 | Is(50) = 3.6MPa Diametral, 6.7MPa Axial 2 joints (~4.1m), one planar rough, the other planar smooth; parallel to bedding; fe-staining; about 1mm Is(50) = 3.0MPa Diametral, 4.1MPa Axial |
| | 4 | | 5 | | SANDSTONE: mg-cg, some small pebbles (quartz); sandstone clast at 5.46m. At 5.34 thin (10mm) layer of mudstone, orange/brown. No obvious bedding until 5.70m with beds dipping ~10° | DW | | | 83 | 1 joint set (5.84-6.1m) parallel to bedding; minor fe-staining; undulating to planar rough |
| | 5 | | 6 | | | | | | | |
| | | | 7 | | SANDSTONE: fg-cg; conglomerate interval 7.15-7.6m, clasts ~5mm poorly sorted + poorly graded; bright orange; sub-horizontal bedding continues from previous interval to ~6.5m, then difficult to determine; thin bed of mudstone at 6.7m ~5mm thick. Mafic clast at 7.6(?) (basalt?) ~100mm | DW | | | 80 | Breaks (joints?) in interval generally aligned with mudstone layer, + coarse-grain component. Fractures sub-horizontal + heavily fe-stained. At depth = 6.7m Is(50) = 1.2MPa Diametral, 1.7MPa Axial Is(50) = 0.6MPa Diametral, 1.5MPa Axial |
| | 6 | | 8 | | SANDSTONE: fg-cg; conglomerate at top of interval (~20mm) then fg-mg. Cream-light brown except for 7.85-8.05m where grey; apparent bedding sub-horiz. grey interval well sorted but presence of sulphides about 8.1m E.O.H. | SW | | | 83 | Largely competent except for where grain size changes, + coarser grain interval; sub-horizontal, undulating rough surfaces and heavily fe-stained. At depth = 8.1m Is(50) = 1.8MPa Diametral, 4.2MPa Axial |
| | | | 9 | | | | | | | |

**KEY**

**method**
- AS auger screwing
- AD auger drilling
- R roller/tricone
- W washbore
- NQTT NQ triple tube core drilling

**case-lift**
- casing used
- barrel withdrawn

**water**
- 6 May 07 water level, date shown
- water inflow
- partial drilling water loss
- complete drilling water loss

**graphic log/ core loss**
- core recovered (hatching indicates material)
- no core recovered

**weathering**
- Fr - fresh
- SW - slightly weathered
- DW - distinctly weathered
- EW - extremely weathered
- RS - residual soil

**strength** (Indirect tensile strength)
- x Point Load Test
- EL extremely low
- VL very low
- L low
- M medium
- H high
- VH very high
- EH extremely high