



Drilling Information										Rock substance					Rock mass defects					Geol Interp				
Bit type/size	Case type/size/lift	Fluid loss/water	Notes Samples, tests, unit weight (UW, g/cc)	Core recovery	RQD	metres Vertical depth	metres Inclined depth	Graphic log	Substance description rock type, grain characteristics colour, structure, minor components	Weathering ABCDE	Est. strength ABCDE	Nature of defects ABCDE	Defect spacing (mm) 30 100 300 1000 3000	Defect description thickness, type, inclination, planarity, roughness, coating	Significant	General	Geol Interp							
William C. Cromer Pty. Ltd. Environmental, engineering and groundwater geologists Engineering log – Cored borehole Incorporating the Unified Rock Classification System (URCS)										DDH – SF6 Sheet 1 of 2														
Project HYDRO TASMANIA DUNGROVE SCHEME Location Southernfield (dam axis, west side)																								
Coordinates 490213.1mE 5320622.9mN Datum GDA94 RL Approx. 532m ASL Inclination Vertical Bearing										Drill type Hydra Power Scout Equipment 120mm hollow auger NQTT triple tube core drilling	Hole started 31 January 2008 Hole finished 1 February 2008 Drilled by D. Roberts KMR Drilling Pty. Ltd.													
Drilling Information										Rock substance					Rock mass defects					Geol Interp				
A			SPT 3 10.22 N=32					SAND: grey to orange; fine grained; silty; clayey; medium plasticity; dry; L-MD SANDSTONE: yellow, fine grained									Soil and EW bedrock							
NC	TT	Casing advanced Pecker (led 1.4 to 5.2m Luggons = 0.03) Pecker (led 5.2 to 9.0m Luggons = 0.2)				1		SANDSTONE: banded light yellow-grey; fine grained; interbedded with siltstone; weakly cemented		X			I _{ax} = 1.3MPa diametral 2.3MPa axial Joint, 10mm silty clay infill Roots in joint				Lower Triassic sedimentary rocks							
						2						I _{ax} = 1.9MPa diametral 4.3MPa axial Joint, 15mm sandy clay infill												
						3							I _{ax} = 1.8MPa diametral 4.3MPa axial Joint, 50mm silty clay infill											
						4																		
						5		SANDSTONE: light orange to grey banding; fine grained																
						6																		
						7																		
						8																		
						9																		





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Engineering log – Cored borehole										Sheet 2 of 2												
Incorporating the Unified Rock Classification System (URCS)																						
Project HYDRO TASMANIA DUNGROVE SCHEME						Location Southernfield (dam axis, west side)																
Coordinates			Drill type		Hydra Power Scout		Hole started		31 January 2008													
490213.1mE 5320622.9mN			Equipment		120mm hollow auger		Hole finished		1 February 2008													
Datum GDA94			RL		Approx. 532m ASL		Drilled by		D. Roberts													
Inclination Vertical			Drill fluid(s)		Water		Logged by		T. Lagden													
Bearing			Checked by		W. Cromer																	
Drilling Information				Rock substance				Rock mass defects														
Bit type/size	Case type/size/lift	Fluid loss/water	Notes (Samples tests, unit weight (UW, g/cc))	Core recovery	RQD	metres	Graphic log	Substance description rock type, grain characteristics, colour, structure, minor components	Weathering					Est. strength					Nature of defects	Defect spacing (mm)	Defect description (thickness, type, inclination, planarity, roughness, coating)	Geol Interp
									A	B	C	D	E	A	B	C	D	E				
NC	TT			20% 40% 60% 80%	20% 40% 60% 80%	Vertical depth Inclined depth			A B C D E	A B C D E	A B C D E	A B C D E	A B C D E	A B C D E	A B C D E	50 100 200 300 1000 3000	Significant General					
			Pecker test 9.0 to 12.8m Luggeons = 0.00			10		SANDSTONE: yellow brown to brown; fine grained; micaceous; grading to siltstone at 11.8m									1-4 MPa diametral 2.7 MPa axial					
			Pecker test 11.8 to 15.0m Luggeons = 5			11		SILTSTONE: grey; distinct bedding									100mm clayey gravel infill	Lower Triassic sedimentary rocks				
						12		SANDSTONE: yellow brown; fine grained; micaceous; bedded									1-2mm joint bedding 2mm joint bedding 0.5mm joint bedding 5mm joint bedding					
						13											1-3 MPa diametral 2.0 MPa axial					
						14																
						15		End of hole 15.0m														
						16																
						17																
						18																

Drilling
 T = Triple tube coring
 B = Blades
 R = Roller/Troone
 A = Auger
 W = Wash boring
 DT = Double tube coring
 HAM = Rotary hammer

Case lift
 Casing used
 Barrel withdrawn

Fluid loss
 No loss
 50% loss
 100% loss

RQD (Rock Quality Designation Index)
 The sum of the lengths of 'sound' core pieces >100mm in a drilling run is divided by the total core run length. Expressed as % Core length measured along centreline. Core drilling breaks not included!

Water Level Inflow Outflow

Unit weight (UW, g/cc)
 A = >2.55 B = 2.40-2.55 C = 2.25-2.40
 D = 2.10-2.25 E = <2.10

Strength
 Hammer impact test Approx. point load strength index (IS(50), MPa) Approx. UCS MPa

A = rebound (RQ) >4 >103
 B = pill (PQ) 2-4 55-103
 C = dent (DQ) 1-2 21-55
 D = crater (CQ) 0.25-1 7-21
 E = moldable, friable (MQ) <0.25 <7

Note: X on log is test result. Otherwise, strength is visually estimated. US = Unconfined Compressive Strength

Samples and Notes
 R = SPT penetration refusal
 D = Disturbed sample
 N = Standard Penetration Test
 pp = Hand penetrometer test
 SV = In-site Shear Vane test
 CS = Core Sample
 Ux = Undisturbed tube sample (x mm diameter)
 Nd = SPT and Disturbed Sample

Weathering
 A = Micro fresh state (MFS)
 B = Visually fresh state (VFS)
 C = Stained state (STS)
 D = Partly decomposed state (PDS)
 E = Completely decomposed state (CDS)

Soil consistency
 VS = Very Soft
 S = Soft
 F = Firm
 St = Stiff
 VSt = Very stiff
 H = Hard

Soil density index
 Coarse grained soils
 Fb = Frangible
 VY = Very Loose
 L = Loose
 MD = Medium Dense
 D = Dense
 VD = Very Dense

Defects
 Joint
 Shear zone
 Infill seam
 Vein
 Crush zone
 EW seam

Defect types
 A = Solid random breaks (SRB)
 B = Solid preferential breaks (SPB)
 C = Solid latent breaks (SLB)
 D = Non intersecting planes (2-D)
 E = Intersecting open planes (3-D)

Core loss
 Core loss (interval known)
 Core loss (interval unknown)
 Loss is shown in Graphic log column at top of run

