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Borehole: BH-01

Commenced: 21/07/08 Completed: 21/07/08

Client: Department of Main Roads (DMR)

Location:

Project: Bruce Highway Road Cutting - Slope Stability Investigations: 464857

Project Number: 36826-001-01

Northing: 7104497

File Name: P:\WP\36826\Winlogs

Elevation: 78m

Inclination: 90°

Dri	Drilling Information				Soil Description	Testing			Strata Information			
Groundwater	Drilling Method	Sample Type	Depth	nsc	Material Type; Colour; Plasticity Or Particle Characteristics; Structure	Moisture Content	Consistency/ Relative Density VS S F St VSt H VL L MD D VD H	Comments/ Test Results/ Origin	SPT Values Blows/150mm	Graphic Log	Elevation (m)	Depth (m)
	AV		-		ROADBASE			Fill		1	_	_
			- - - -	ML	FILL (Clayey SILT) Brown-red, medium plasticity, firm, moist, some fine to medium grained sand	М				× × ×	- - - -	-
		SPT	- - 1.0—		Brown-grey				SPT @ 1.00m 4, 6, 16 N = 22	* - x - x - x - x - x	77.0-	- - - -1.0
		011	-	xw	Meta-SILTSTONE Pale grey, layered, extremely weathered, very low strength			Bedrock		x		-
			2.0— - - -								76.0	- -2.0 - -
	RC	SPT	-						SPT @ 2.50m 26, 18, 8/ 50mm N* = 42			
			3.0—		Begin NMLC Rock Log at -2.80m						75.0	-3.0 - - - -
			4.0—								74.0	-4.0
			5.0								73.0	-5.0

Driller: Geodrill

Remarks:

Logged By: RA

Logged Date: 21/07/08

Sheet: 1 of 3

Drill Type: Hydrapower Scout

Support: Hard Casing 2.50m

Checked By: MS

Checked Date: 08/08/08



Borehole: BH-01 core

Commenced: 21/07/08 Completed: 21/07/08

Client: Department of Main Roads (DMR)

Location:

Project: Bruce Highway Road Cutting- Slope Stability Investiga Fiesting: 464857

	Drilling Information			Rock Description			Intact Strength			Rock Mass Defects			Strata Information	
Groundwater	Drilling Method	Core Recovery	Depth	Weathering	Material Type; Colour; Plasticity Or Particle Characteristics; Structure	RQD (%)	Estimated Strength VL M VH EL: L: H: EH	Is(50) A/D (MPa)	UCS (MPa)	Defect Spacing (m) 0.02 0.2 0.006 0.06 0.6	Defect Description (depth, type, angle, roughness, infill, thickness)	Graphic Log	Elevation (m)	Depth (m)
	N M L	100	3.0	MW/ HW	Yellow-orange banded grey, moderately	0					Refer to attached defect sheet		75.0	- - - - - - - - - -
	C	100		SW	to highly weathered, medium strength Meta-SILTSTONE Mainly grey, some yellow bands, extremely weathered, extremely low strength Meta-SANDSTONE Slightly weathered, high strength Meta-SILTSTONE Meta-SANDSTONE	0								-
		100	4.0	MW/ HW	Meta-SILTSTONE Meta-SILTSTONE Meta-SILTSTONE Grey-orange, extremely weathered, extremely low strength Meta-SANDSTONE Orange-yellow banded grey, highly weathered, very low strength	0							74.0	-4.0 - - - - - -
		35	5.0	MW /	- Orange-yellow, moderately to highly weathered, very low to medium strength CORE LOSS (0.80m) Meta-SANDSTONE	18							73.0	- -5.0 - - - - -
			6.0	SW	Orange-yellow, moderately to highly weathered, medium to very low strength LIMESTONE Dark grey, with white calcite veins, slightly weathered, high to very high strength - Extremely weathered, very low strength - Slightly weathered, high to very high		20	7.79 D)	77.07				72.0	- 6.0 - 6.0
		57	7.0—	sw	strength CORE LOSS (0.20m) LIMESTONE As previous CORE LOSS (0.30m)	24						**	71.0	-7.0

Driller: Geodrill Remarks: Logged By: RA Date Logged: 21/07/08

Drill Type: Hydrapower Scout Support: Hard Casing 2.50m Checked By: MS Date Checked: 08/08/08



Borehole: BH-01 core

Commenced: 21/07/08 Completed: 21/07/08

Client: Department of Main Roads (DMR)

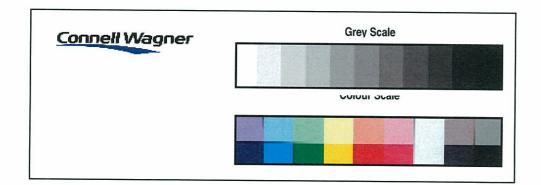
Project: Bruce Highway Road Cutting- Slope Stability Investigaliasting: 464857

Project Number: 36826-001-01 Northing: 7104497 Sheet: 3 of 3

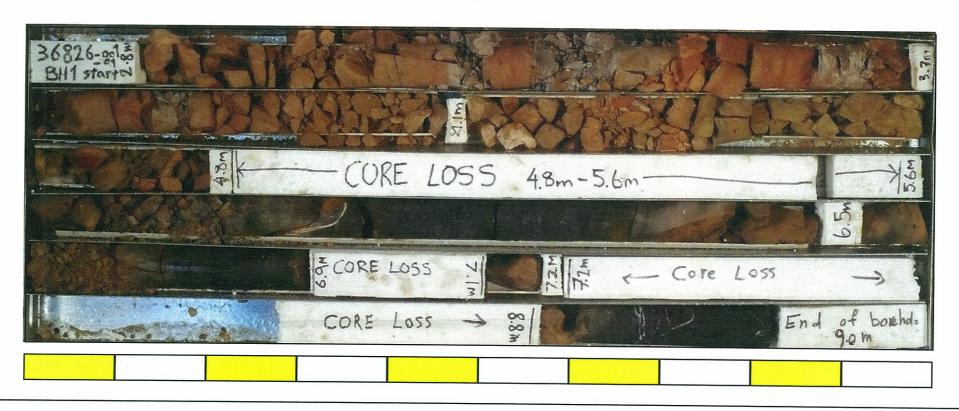
ı	Dr nfor	illing mati	on		Rock Description		Intact Stre	ngth		Roo	ck Mass Defects	In	Strat forma	
Groundwater	Drilling Method	Core Recovery	Depth	Weathering	Material Type; Colour; Plasticity Or Particle Characteristics; Structure	RQD (%)	Estimated Strength VL M VH EL L H EH	Is(50) A/D (MPa)	UCS (MPa)	Defect Spacing (m) 0.02 0.2 0.006 0.06 0.06	Defect Description (depth, type, angle, roughness, infill, thickness)	Graphic Log	Elevation (m)	Depth (m)
Gre	DISZ DI	11	9.0	W S FR/SW	As previous CORE LOSS (1.60m)	11		9)51	on en	0.006 0.06 0.6		Gra	200-000	
		,	12.0—	Ī									66.0	-12.0

Driller: Geodrill Remarks: Logged By: RA Date Logged: 21/07/08

Drill Type: Hydrapower Scout Support: Hard Casing 2.50m Checked By: MS Date Checked: 08/08/08



Borehole	Number	BH01				
Page	1	of	1			
Depth	2.80	to	9.00			
Project	Bruce Highway					
Number	36826-001-01-7D-7G	ì				
Client	Department of Main F	Roads				



Project: Bruce Highway Road Cutting - Slope Stability Investigation

BH ID: BH-01

Depth (m)	Type	Dip (Degrees)	Nature of Infilling	Infill Consistency	Roughness (Profile, JRC @ 100mm)	Defect Spacing	Defect Weathering
2.80	Joint	10°	Clean		Smooth - Undulating	Very Close	Moderately Weathered
2.90	Bedding	60-80°	Clean		Smooth - Planar	Close	Slightly Weathered
3.00	Bedding	10°	Clean		Rough - Undulating	Extremely Close	Moderately Weathered
3.05	Joint	40°	Clean		Smooth - Undulating	Very Close	Moderately Weathered
3.10	Joint	70-80°	Clean		Smooth - Planar	Close	Moderately Weathered
3.20	Bedding	0°	Cohesive (clay/silts)		Smooth - Planar	Very Close	Slightly Weathered
3.25	Joint	80°	Clean		Smooth - Planar	Close	Slightly Weathered
3.30	Bedding		Cohesive (clay/silts)		Smooth - Planar	Extremely Close	Slightly Weathered
3.50	Shear		Non Cohesive (sandy)		Smooth - Planar	Extremely Close	Moderately Weathered
3.55	Joint	80°	Clean		Smooth - Planar	Very Close	Moderately Weathered
3.60	Joint	80°	Clean		Smooth - Undulating	Very Close	Slightly Weathered
3.65	Joint	80°	Clean		Smooth - Planar	Extremely Close	Slightly Weathered
3.70	Joint	60-70°	Clean		Smooth - Planar	Close	Moderately Weathered
3.75	Bedding	10°	Clean		Smooth - Planar	Close	Slightly Weathered
3.80	Bedding	10°	Clean		Smooth - Planar	Close	Slightly Weathered
3.85	Bedding	10°	Cohesive (clay/silts)	Soft / Loose	Smooth - Undulating	Very Close	Moderately Weathered
3.90	Joint		Non Cohesive (sandy)	Soft / Loose	Smooth - Planar	Extremely Close	Moderately Weathered
4.00	Shear		Non Cohesive (sandy)	Soft / Loose	Smooth - Planar	Extremely Close	Moderately Weathered
4.10	Joint		Clean		Rough - Undulating	Extremely Close	Moderately Weathered
4.15	Bedding	10°	Clean		Smooth - Planar	Very Close	Moderately Weathered
4.25	Shear		Non Cohesive (sandy)	Soft / Loose	Smooth - Planar	Extremely Close	Moderately Weathered
4.35	Bedding	10°	Clean		Rough - Undulating	Extremely Close	Slightly Weathered
4.40	Joint	70°	Clean		Smooth - Planar	Close	Slightly Weathered
4.50	Joint	30-70°	Non Cohesive (sandy)	Soft / Loose	Rough - Planar	Very Close	Slightly Weathered
4.70	Shear		Non Cohesive (sandy)	Soft / Loose	Smooth - Planar	Extremely Close	Moderately Weathered
4.75	Joint		Clean		Smooth - Planar	Extremely Close	Moderately Weathered
5.60	Joint	60-80°	Clean		Rough - Planar	Very Close	Moderately Weathered
5.70-5.80	Shear		Cohesive (clay/silts)	Soft / Loose	Smooth - Planar	Extremely Close	Moderately Weathered
5.90	Joint	70-80°	Clean		Smooth - Planar	Close	Moderately Weathered
6.00	Joint	30°	Clean		Smooth - Planar	Medium	Slightly Weathered
6.10	Joint	10°	Clean		Smooth - Planar	Medium	Slightly Weathered
6.30	Joint	10°	Clean		Smooth - Planar	Medium	Slightly Weathered
6.40	Joint	60-80°	Clean		Smooth - Planar	Close	Moderately Weathered
6.50	Joint	45°	Clean		Smooth - Undulating	Close	Moderately Weathered
6.60-6.70	Shear			Soft / Loose	Smooth - Planar	Extremely Close	Highly Weathered
6.75	Joint	70-80°	Clean		Smooth - Planar	Close	Moderately Weathered
6.80	Joint	10°	Clean		Smooth - Undulating	Medium	Moderately Weathered
6.90	Joint	15°	Clean		Smooth - Planar	Medium	Moderately Weathered
7.15	Joint	80°	Clean		Smooth - Planar	Very Close	Moderately Weathered
8.80	Joint	15°	Clean		Smooth - Undulating	Medium	Slightly Weathered
9.00	Joint	15°	Clean		Smooth - Undulating	Medium	Slightly Weathered