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#### **GEOTECHNICAL BOREHOLE LOG**

FINAL 02/03/2018 **CRR732** BOREHOLE No

Sheet 1 of 2 FOR GEOTECHNICAL TERMS AND H12958 REFERENCE No SYMBOLS REFER FORM F:GEOT 017/8-2014 Cross River Rail CRR2017 - Additional Geotechnical Investigation PROJECT RNA showgrounds COORDINATES 503130.9 E; 6963771.4 N LOCATION SURFACE RL 7.34m FG6470 PLUNGE 90° DATE STARTED 25/09/2017 GRID DATUM MGA94 PROJECT No HEIGHT DATUM AHD DATE COMPLETED 26/09/2017 DRILLER Hinterland JOB No BEARING ' RQD USCS WEATHERING ADDITIONAL DATA INTACT DEFECT SPACING SAMPLES TESTS Ê LITHOLOGY AND TEST RESULTS STRENGTH RΙ DEPTH SAMP MATERIAL DESCRIPTION CORE REC % ᇳᆂᆂᄝᅿᅿᆿᆙᇬᇬᄝᇂᇂᇕ 7.19 ASPHALT (Fill) 0.15m-1.50m: The fill appears to be Silty SAND (Fill) poorly compacted Grey, moist, very loose. Medium to coarse grained sand; trace fine grained gravel. (SM) 5.84 1, hw, 1 Silty SAND (Fill) SPT (SM) Grey and grey brown, moist, very 5.34 loose. Fine to medium grained, poorly compacted. Sandy Gravelly CLAY (Fill) Orange brown and brown grey, 7, 11, 21 (CI) moist, hard. Poorly compacted; SPT medium plasticity; fine to medium grained gravel; medium to coarse 4.14 grained sand. Clayey SAND (Residual) Light grey and grey with orange LL=71% PI= 52% SPT brown mottling, moist, dense. High MC=9.8% LS= 15% plasticity clay. Medium to coarse grained sand. SC Trace medium to coarse grained, sub angular, quartz gravel. 7, 11, 14 N=25 SPT LL=49% PI= 33% MC=11.4% LS= 11% <75μm= 39% 2.04 TUFF (Rif) HW 30/70mr HW: Light grey, very low strength. 1.64 (38) TUFF (Rif) A (5.94m) MW: Light grey and orange brown, Is(50)=2.10 MPa D (5.96m) fine to medium grained, massive, MW Is(50)=0.81 MPa high strength, highly fractured. (0)-Js: 50°-60° (2/m), Pl/Sm, Cly Ct 0.74 \Js: 5°-10° (2/m), Un/Sm-Ro, Cly Ct 0.39 46 CORE LOSS 0.35m (23) Is(50)=0.18 MPa A (7.00m) TUFF (Rif) Is(50)=2.50 MPa D (7.06m) \_\_ 7.20m-7.25m: HFZ SW: Light grey and orange brown, 7.34m-7.35m: J: 30°, PI/Sm, FL Cly fine to medium grained, massive, Is(50)=5.10 MPa A (7.40m) 100 high strength. (38) -Js: 50°-60° (2-3/m), Pl/Sm, Cly Ct D (7.76m) Is(50)=2.20 MPa -Js: 30°-45° (2-3/m), Un/Ro -Js: 0°-10° (2-4/m), Pl-Un/Ro, FeSt Is(50)=2.40 MPa A (8.16m) 100 Is(50)=1.80 MPa D (8.38m) (20) 8.50m-9.00m: HFZ (55) Is(50)=3.20 MPa D (9 20m) Is(50)=0.64 MPa A (9.24m) UCS=23.30 MPa 9.50m-9.75m: HFZ (9.38m) E=7.58 GPa 9.80m-9.90m: HFZ Continued on next sheet REMARKS: Rif - Brisbane Tuff. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** MH S. Foley TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

# GEOTECHNICAL BOREHOLE LOG

FINAL 02/03/2018

BOREHOLE No CRR732

Sheet 2 of 2

		<b>%</b>		Go	VE	ernment	SY					REFERENCE No	Н	12958	
PROJEC	T	С	ross	River	Rail	CRR2017 - Additional Ge	otechnical Inves	tigatio	on						
_OCATI	ON	R	RNA showgrounds									COORDINATES 503130.9 E; 6963771.4 N			
PROJEC	T No	F	G64	170		SURFACE RL 7.3	34m PLL	INGE 9	90°	DATE STARTE	25/09/201	7 GRID DATUM	MGA94		
OB No		_				HEIGHT DATUM AF	AND SEARING * DATE COMPLETED 25/09/2017 GRID DATUM MGA94  BILLY, 34rm PLUNGE 90* DATE COMPLETED 25/09/2017 GRID DATUM MGA94  MAHD BEARING * DATE COMPLETED 25/09/2017 DRILLER HINTERIAND  SCRIPTION DESCRIPTION DEFECT SPACING AND TEST RESILETS  SCRIPTION DEFECT SPACING AND TEST RESILETS  DEFECT SPACING AND TEST RESILETS		l						
DEPTH (m)	R.L. (m)	AUGER CASING	WASH BORING CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIF	иотч	USCS WEATHERING				ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS	
- 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19	-3.16	AUG	WASS	100		TUFF (Rif) SW: Cont'd.  Borehole completed at		MW	H-VH			Is Is	(50)=4.00 MPa (50)=3.40 MPa		
-									- - -	- - - -				- - - - - - -	
									=					=	
RE	MAR	KS:	R	if - Bı	isb	ane Tuff. Standpipe p	oiezometer in	stalle	ed.			LOGGED BY		WED BY	
												MH	S.	Foley	

## STANDPIPE INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND

BOREHOLE No CRR732

Sheet 1 of 2

CRR732

**FINAL** 06/03/2018

	AUDAY A	T FIDELIS	5	9	SYMBOLS REFER FORM F:GI	EOT 017/8-2014		PIEZUWIETEK NO		
PROJE	:CT	C	ross River Rail CRR2017 - Additiona	Il Geotechnical Inve	estigation					
LOCAT	ΓΙΟΝ	R	NA showgrounds					COORDINATES 503130.9	E; 6963771.4 N	
PROJE	CT No	F	FG6470 SURFACE R	L 7.34m P	lunge 90°	DATE STARTI	25/09/201	7 GRID DATUM	MGA94	
IOB N	0	_	HEIGHT DATUM	и_AHD ве	EARING	DATE COMPLETI	26/09/201	7 DRILLER	Hinterland	
Ē		λĐ				Standpi	pe Constru	uction Details	ction Details	
<b>DEPTH (m)</b>	R.L. (m)	гітного <del>с</del> у	MATERIAL DESCRIP	MATERIAL DESCRIPTION		50mm PVC Clas		Racktill Details		
	7.19		ASPHALT(Fill)		(AHD)	Stick Up = 0	.00m			
2 2 3 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	5.84		Silty SAND(Fill) Grey, moist, very loose. Medium to sand; trace fine grained gravel.  Silty SAND(Fill) Grey and grey brown, moist, very medium grained, poorly compacted Sandy Gravelly CLAY(Fill) Orange brown and brown grey, mocompacted; medium plasticity; fin grained gravel; medium to coarse  Clayey SAND(Residual) Light grey and grey with orange browist, dense. High plasticity clay. Medium to coarse grained sand. Tooarse grained, sub angular, quart	loose. Fine to ed.  Dist, hard. Poorly e to medium grained sand.  rown mottling, race medium to				Grout: Cement / E	Sentonite mix	
	2.04		TUFF		5.50m / 1.84 AHD					
- 6 - 6		9000000	Light grey, very low strength. TUFF Light grey and orange brown, fine grained, massive, high strength, hi -Js: 50°-60° (2/m), PI/Sm, Cly Ct -Js: 5°-10° (2/m), Un/Sm-Ro, Cly Ct CORE LOSS 0.35m	ghly fractured.	6.50m / 0.84 AHD			Bentonite	Seal	
. 7	0.39	∌% <b>વ</b>	THEE							
7  - -		900	TUFF Light grey and orange brown, fine grained, massive, high strength. -Js: 50°-60° (2-3/m), PI/Sm, Cly Ct	to medium	7.45m / -0.11 AHD			Top of Slotte	ed Pipe	
8 8 9 9 9	-2.66		-Js: 30°-45° (2-3/m), Un/Ro -Js: 0°-10° (2-4/m), Pl-Un/Ro, FeSt  Continued on next she					Filter: Washed / 0	Graded Sand	
R	EMAR	Kc.						IOCCED BY	DEVIEWED BY	
П	LIVIAN	٠,١	Brisbane ran. Standpipe pie	zameter mataneu.				LOGGED BY	REVIEWED BY	
				TMR STAN	IDPIPE INSTALLATION LOG - CREATED V	WITH HOLEBASE SI		MH	S. Foley	

### **STANDPIPE INSTALLATION LOG**

FINAL 06/03/2018 **CRR732** 

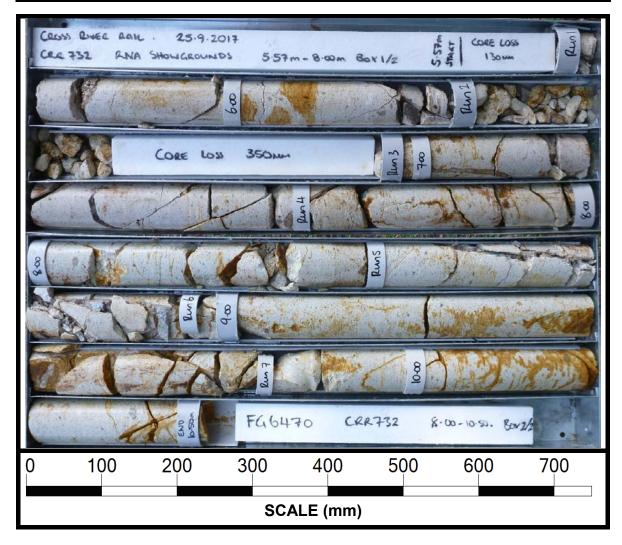
BOREHOLE No

Sheet 2 of 2 FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014 **CRR732** PIEZOMETER No Cross River Rail CRR2017 - Additional Geotechnical Investigation PROJECT RNA showgrounds COORDINATES 503130.9 E; 6963771.4 N LOCATION SURFACE RL 7.34m PLUNGE 90° FG6470 DATE STARTED 25/09/2017 grid datum MGA94 PROJECT No height datum AHD BEARING  $^{\circ}$ DATE COMPLETED 26/09/2017 DRILLER Hinterland JOB No **Standpipe Construction Details** DEPTH (m) LITHOLOGY R.L. MATERIAL DESCRIPTION (m) Depth (m) /RL 50mm PVC Class No. 18 **Backfill Details** (AHD) Stick Up = 0.00m TUFF Cont'd. -3.16 10.50m / -3.16 AHD Borehole completed at 10.50m 12 13 15 16 17 18 19 REMARKS: Rif - Brisbane Tuff. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** МН S. Foley TMR STANDPIPE INSTALLATION LOG - CREATED WITH HOLEBASE SI

# CORE PHOTO LOG DEPARTMENT OF TRANSPORT AND MAIN ROADS GEOTECHNICAL SECTION



Project Name	Cross River Rail CRR2017 – Geotechnical Investigation						
Project No.	FG6470	Date	25/09/2017				
Borehole No.	CRR732	Reference No.	H12958				
Location	RNA showgrounds	Start Depth (m)	5.57				
Submitted By	M. de Gee	Finish Depth (m)	10.50				



1

## **Detailed Discontinuity Description Log**



This form is intended for the detailed description of discontinuities and defects as measured in outcrop by line mapping, or as they occur downhole in drilled rock core. The descriptions and abbreviations used shall be in accordance with Australian Standard AS1726-1993 Geotechnical site investigations and TMR Geotechnical Terms and Symbols Form F:GEOT017/8.

Project Nar	ne	Cross Rive		····s and sy		Project No. FG6470				
Site ID / Bo		CRR732	ΙΙΩΠ			Surface RL 7.40				
Geologist	ienole No.	M.H.				Date 25/09/2017				
Geologist		<u> </u>				Page 1 of 2				
Traverse	Туре	Dip ° / Dip	Planarity	Roughness	Roughness		Infilling	Zones <sup>1</sup>	Other	
Chainage;	турс	Direction °;	rialiality	nougilless	Class	Aperture	Illillilly	201103	Other	
or	LP /	or			Olass	CD /	Cn /	SZ/		
Down hole	BP /	Angle ° from	Stp /	Ro /	I to IX	OP /	St /	CZ /		
depth	FP /	horizontal	Un /	Sm /	TOIX	FL/	Vr /	HFZ /		
(rock core)	J etc.	(rock core)	PI	SI		TI	Ct <sup>1</sup>	AZ		
5.70	0 0(0)	(rook coro)		0.		•			BZ to 5.75	
5.80	J	10	Un	Sm	V	FL	Vr		BZ 10mm	
5.96	J	50	Pi	Sm	VIII	CD/	Vr		Clay	
6.00	J	5	Un	Ro	IV	TI	Cn			
6.23	J	60	Pi	Sm	VIII	OP	Vr		Clay	
6.24								BZ	,	
7.00	J	60	Stp	Ro	ı	OP	Cn			
7.15	J	30	Pl	Ro	VII	OP	Cn			
7.20	J	10	PI	Ro	VII	OP	Vr		Clay	
7.23	J	60	PI	Sm	VIII	CD	Vr		Clay	
7.34	J	30	PI	Sm	VIII	FL			Clay	
7.42	J	60	PI	Sm	VIII	CD	Vr		Clay	
7.48	J	5	PI	Ro	VIII	CD	Cn			
7.52	J	60	PI	Sm	VII	CD	Vr		Clay	
7.56	J	5	PI	Ro	VIII	OP	Vr		Clay	
7.62	J	50	PI	Sm	VII	OP	Vr		Clay	
7.68	J	20	Un	Ro	VIII	OP	St		Fe	
7.80	J	30	Un	Ro	IV	OP	St		Fe	
7.86	J	15	PI	Ro	IV	OP	St		Fe	
7.93	J	30	PI	Sm	VII	CD	St		Fe	
7.97	J	30	PI	Sm	VIII	CD	St		Fe	
8.05	J	65	PI	Sm	VIII	CD	Vr		Clay	
8.23	J	15	Un	Ro	IV	CD	St		Fe	
8.27	J	45	PI	Ro	VII	CD	St		Fe, BZ	
8.56	J	30	PI	Ro	VII	CD	St		Fe	
Repeated 40-	60m to 9m	, ,		ı	1	ı	ı			
8.75	J	85	PI	Sm	VIII	FL	Vr		Clay *	
* Start 8/56m	, end 9.05m	, ·		ı	1	ı	ı			
8.94	J	45	PI	Sm	VIII	CD	Vr		Clay	
8.97	J	60	PI	Sm	VIII	CD	Vr		Clay	
8.99	J	60	PI	Sm	VIII	CD	Vr		Clay	

Note: 1. Describe zones and coatings in terms of composition and thickness (mm)

F:GEOT 533/9 - 2014

## **Detailed Discontinuity Description Log**



This form is intended for the detailed description of discontinuities and defects as measured in outcrop by line mapping, or as they occur downhole in drilled rock core. The descriptions and abbreviations used shall be in accordance with Australian Standard AS1726-1993 Geotechnical site investigations and TMR Geotechnical Terms and Symbols Form F:GEOT017/8.

Project Nan	ne	Cross River	r Rail			Project No	FG6470			
Site ID / Boi	rehole No.	CRR732				Surface RL	7.40			
Geologist		м.н.				Date	25/09/2017			
						Page	2	of	2	
Traverse	Туре	Dip ° / Dip	Planarity	Roughness	Roughness	Aperture	Infilling	Zones <sup>1</sup>	Other	
Chainage;		Direction °;			Class					
or	LP/	or				CD/	Cn /	SZ/		
Down hole	BP/	Angle ° from	Stp /	Ro /	I to IX	OP /	St /	CZ /		
depth	FP/	horizontal	Un /	Sm /		FL/	Vr /	HFZ /		
(rock core)	J etc.	(rock core)	PI	SI		TI	Ct 1	AZ		
9.28	J	5	Un	Sm	٧	CD				
9.65	J	80	PI	Sm	VIII	CD	St		Fe	
9.70	J	60	PI	Sm	VIII	CD	Vr		Clay	
9.71	J	45	PI	Sm	VIII	CD	Vr		Clay	
9.74	J	45	PI	Sm	VIII	CD	Vr		Clay	
9.80	J	30	Un	Sm	VIII	CD	Vr		Clay	
10.05	J	20	Un	Ro	IV	CD	St		Fe	
10.23	J	45	PI	Ro	VII	CD	St		Fe	
10.24	J	30	PI	Ro	VII	CD	St		Fe	
10.40	J	40	PI	Sm	VIII	CD	St		Fe	
10.45	J	60	PI	Sm	VIII	CD	St		Fe	

Note: 1. Describe zones and coatings in terms of composition and thickness (mm)

F:GEOT 533/9 - 2014