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QueenslandGovernment

GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND

FINAL 02/03/2018

BOREHOLE No **CRR702**

Sheet 1 of 3

AUDAS AT F	(C)	00	•			SYMBOLS REFER FORM F:GEOT 017/8-2014						REFERENCE No	н	12928
ROJECT	Cros	s River	Rail	CRR2017 - Additional Geo	otechnical In	vesti	igatio	n						
OCATION	Abin	igdon St	reet	<u> </u>								COORDINATES 50301	8.5 E; 69591	43.5 N
ROJECT No	FG6	470		SURFACE RL 24.	00m	PLUI	NGE 9	0°	-	DATE STA	RTED 23/10/201	GRID DATU	м <u>М</u> GA94	
OB No				HEIGHT DATUM AHI	D	BEAR	ING _		_	DATE COMPL	ETED 27/10/201	L7 DRILLI	ER Schneider	
DEPTH (m) (m)	CASING WASH BORING CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIP	TION	LITHOLOGY	USCS WEATHERING	INTAC STRENC	GTH	DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
23.85 23.20 - 1 22.38 - 2 19.60 - 5 - 6 - 7 - 8 - 9 14.20		100 (45) 100 (69)		ASPHALT Gravelly SAND (Fill) Pale grey brown, moist, r dense. Medium to coarse, sand, coarse grained grav angular. CONGLOMERATE (Rip) XW: Recovered as Gravel (CL), grey orange, moist, plasticity. Fine to coarse, gravel. CONGLOMERATE (Rip) HW: Orange grey, mediu grained, bedded, general to medium strength. Sub angular to sub round size clasts up to 30mm in matrix. Some limonite str-BP: 10°-30° (8-10/m), Pl, some Fest, some Cly VrJs: 50°-60° (1-2/m), Pl/R Fest and Cly Vr. CONGLOMERATE (Rip) MW: Orange grey, mediu coarse grained, closely to bedded, low to medium Sub angular to sub round size clasts up to 30mm in matrix. Some limonite str-BP: 10°-30° (<2/m), Pl/R Fest, some Cly Vr.	e grained vel, sub Illy CLAY hard. Low angular m to coarse lly very low ded gravel a clay aining. Ato, TI, some on medium strength. ded gravel a clay aining. Ato, TI, some on medium strength. Sto, TI, some on the clay aining.		(SP) XW HW		VL-L VL	M M	2.98m-3.38m: Hig sandstone, very to	thly weathered w strength.	Is(50)=0.30 MPa Is(50)=0.15 MPa Is(50)=0.78 MPa Is(50)=0.78 MPa Is(50)=0.40 MPa Is(50)=0.40 MPa Is(50)=0.17 MPa	A (3.63m)
REMARK	S: I	∢ip - A	sple	ey Formation. Rif - Br	isbane Tuf	tt. St	tand	pipe pi	ezom	eter install	ed.	LOGGED BY	_	WED BY
												HA	S.	Foley
					T2 10 0	COTTO	NICAL CO	0511015100	005.750	THURSTERACE CL				

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GEOTECHNICAL BOREHOLE LOG

FINAL 02/03/2018

CRR702 BOREHOLE No

Sheet 2 of 3 FOR GEOTECHNICAL TERMS AND H12928 REFERENCE No SYMBOLS REFER FORM F:GEOT 017/8-2014 Cross River Rail CRR2017 - Additional Geotechnical Investigation PROJECT Abingdon Street COORDINATES 503018.5 E; 6959143.5 N LOCATION SURFACE RL 24.00m FG6470 PLUNGE 90° DATE STARTED 23/10/2017 GRID DATUM MGA94 PROJECT No DRILLER Schneider DATE COMPLETED 27/10/2017 JOB No HEIGHT DATUM AHD BEARING ' USCS WEATHERING RQD ADDITIONAL DATA INTACT DEFECT SPACING SAMPLES TESTS Ξ LITHOLOGY AND TEST RESULTS STRENGTH RΙ DEPTH SAMP MATERIAL DESCRIPTION CORE REC % HW: Cont'd. Pale grey and grey, fine to medium grained, massive, mainly very low to low strength. Is(50)=0.08 MPa D (10.66m)-Is(50)=0.33 MPa Clasts up to 20mm in a fine grained A (10.68m) matrix. Some limonite staining. -Js: 5°-15° (4/m), PI/Ro, TI-OP, FeSt-Cly Vr Is(50)=0.09 MPa D (11.33m) Is(50)=0.86 MPa A (11.39m)-HW Is(50)=0.05 MPa Is(50)=0.12 MPa A (11.76m) 100 D (11.78m<u>)</u> 12 10.80 XW CORE LOSS 10.30 (81) TUFF (Rif) TUFF (Rif) SW: Pale grey green, fine to medium XW grained, massive, medium to high Is(50)=0.89 MPa D (14.27m)strength. Is(50)=0.41 MPa A (14.30m) Clasts up to 10mm in a fine grained matrix. Trace limonite staining. 14.73m-14.85m: CAI=0.73 -Js: 0°-10° (1/m), Pl/Ro, OP, Cn Is(50)=2.50 MPa A (14.87m)-SW Is(50)=1.80 MPa 15 100 (98) D (14.90m)_ 15.33m-15.45m: Brazilian Tensile Strength = 3.49 MPa Is(50)=1.30 MPa D (15.73m) 8.10 Is(50)=0.08 MPa A (15.80m)-TUFF (Rif) 16 100 FR: Pale grey green, fine to medium grained, massive, high strength. Clasts up to 10mm in a fine grained Is(50)=0.83 MPa D (16.64m)_ matrix. Trace limonite staining. Is(50)=1.50 MPa A (16.80m) -Js: 5°-45° (5/m), Pl/Ro, OP, Cn. 17.08m-17.18m: CAI=0.73 Is(50)=1.80 MPa D (17.38m)-Is(50)=1.40 MPa A (17.48m) 17.60m-17.71m: Slake Durability Index Test FR A (17.98m) 100 Is(50)=1.10 MPa D (18.06m) (67) Is(50)=1.20 MPa Is(50)=2.90 MPa D (18.70m) A (18.74m)-18.95m-19.25m; J 45°, Tl, Cn UCS=30.20 MPa 19 (18.87m) E=4.55 GPa v= 0.04 100 19.29m-19.40m: CAI=0.57 (78) Is(50)=2.50 MPa D (19.91m)⁻¹ Is(50)=0.87 MPa A (19.97m) Continued on next sheet REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** HΑ S. Foley TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

Queensland

GEOTECHNICAL BOREHOLE LOG

FINAL 02/03/2018

BOREHOLE No **CRR702**

Sheet 3 of 3

		%		GO	VE	ernment		SY		GEOTECHNICAL TE REFER FORM F:GE			REFERENCE No	Н	12928
PROJE	СТ	C	ross	River	Rail	CRR2017 - Additional	Geotechnic	al Inves	tigatio	on					
LOCAT	ION	Α	bing	gdon St	ree	t							COORDINATES 503018.5	5 E; 69591	43.5 N
PROJE	CT No	_F	-G64	470		SURFACE RL	24.00m	PLU	JNGE 9	00°	DATE STAF	RTED 23/10/2017	GRID DATUM	MGA94	
JOB No)	_				HEIGHT DATUM	AHD	BEA	RING _		DATE COMPLI	ETED 27/10/2017	DRILLER	Schneider	
DЕРТН (m)	R.L. (m)	AUGER CASING	WASH BORING CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESC	CRIPTION	ГІТНОГОĞҮ	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
222	-3.20	AUGE CASIN CONTRACT C	MSW)	100 (72)		TUFF (Rif) FR: Cont'd.	d at 27.20m		FR	HAN	C VC-C C C	20.20m-20.40m: Bra Strength = 2.42 MPa 21.55m-22.05m: He 80*-90*, Pl/Ro, silicid	aled joint, us infill. Is Is	(50)=2.10 MPa (50)=1.70 MPa (50)=0.45 MPa (50)=0.14 MPa (50)=0.95 MPa (50)=0.70 MPa (50)=0.70 MPa CS=16.20 MPa v= 0.087	D (20.69m) A (20.80m) D (21.70m) A (21.73m) A (22.32m) D (23.60m) C (23.82m) D (26.14m) D (26.14m)
-		Ш	Ш								<u> </u>				_
RE	MAR	KS:	R	Rip - A	sple	ey Formation. Rif	- Brisbane	e Tuff. S	Stanc	lpipe piezon	neter installe	ed.	LOGGED BY		EWED BY Foley
														٥.	ı oley



STANDPIPE INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014 BOREHOLE No CRR702

Sheet 1 of 3

PIEZOMETER No CRR702

Cross River Rail CRR2017 - Additional Geotechnical Investigation PROJECT COORDINATES 503018.5 E; 6959143.5 N Abingdon Street LOCATION FG6470 SURFACE RL 24.00m PLUNGE 90° DATE STARTED 23/10/2017 GRID DATUM MGA94 PROJECT No HEIGHT DATUM AHD BEARING ° DATE COMPLETED 27/10/2017 DRILLER Schneider JOB No Standpipe Construction Details Ξ LITHOLOG) R.L. DEPTH (MATERIAL DESCRIPTION (m) Depth (m) /RL 50mm PVC Class No. 18 **Backfill Details** (AHD) Stick Up = 0.00m 23.85 ASPHALT Gravelly SAND(Fill) Pale grey brown, moist, medium dense. Medium to coarse grained sand, coarse grained gravel, sub 23.20 angular. CONGLOMERATE Recovered as Gravelly CLAY (CL), grey orange, moist, hard. Low plasticity. Fine to coarse, angular gravel. 22.38 CONGLOMERATE Orange grey, medium to coarse grained, bedded, generally very low to medium strength. Sub angular to sub rounded gravel size clasts up to 30mm in clay matrix. Some limonite staining. -BP: 10°-30° (8-10/m), PI/Ro, TI, some Fest, some Cly Vr. -Js: 50°-60° (1-2/m), Pl/Ro, Tl, some Fest and Cly Vr. 19.60 CONGLOMERATE Orange grey, medium to coarse grained, closely to medium bedded, low to medium strength. Grout: Cement / Bentonite mix Sub angular to sub rounded gravel size clasts up to 30mm in clay matrix. Some limonite staining. -BP: 10°-30° (<2/m), PI/Ro, TI, some Fest, some Cly 14.20 TUFF Continued on next sheet REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** HΑ S. Foley TMR STANDPIPE INSTALLATION LOG - CREATED WITH HOLEBASE SI

BOREHOLE No

FINAL 06/03/2018 CRR702

Sheet 2 of 3

Queensland Government

FOR GEOTECHNICAL TERMS AND

PIEZOMETER No CRR702

OCATION	Abingdon Street			00000000000000000000000000000000000000	E; 6959143.5 N
ROJECT No	FG6470 SURFACE RL 24.00m	PLUNGE 90°	DATE STARTED 23/10/2017	GRID DATUM	MGA94
OB No	HEIGHT DATUM AHD	BEARING <u></u>	DATE COMPLETED 27/10/2017	DRILLER S	Schneider
E R.L.	OGY		Standpipe Constru	ction Details	
DEPTH (m)		Depth (m) /RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill D	etails
- 11	TUFF Pale grey green, fine to medium grained, mas medium to high strength. Clasts up to 10mm in a fine grained matrix. Tr limonite stainingJs: 0°-10° (1/m), Pl/Ro, OP, Cn TUFF Pale grey green, fine to medium grained, mas high strength. Clasts up to 10mm in a fine grained matrix. Tr limonite stainingJs: 5°-45° (5/m), Pl/Ro, OP, Cn.	ssive,		Bentonite	Seal
4.00					
REMAI	Continued on next sheet RKS: Rip - Aspley Formation. Rif - Brisbane Tuff. S	tandnine niezometer instal	led	100055 57	DEL #514/55 51
IVE IVIAI	INO. The Aspect Formation. Mil Brisbane full. 5	apipo piezometei mistai	.=	LOGGED BY	REVIEWED BY

Queensland STANDPIPE INSTALLATION LOG

STANDPIPE

CRR702 BOREHOLE No

FINAL 06/03/2018

Sheet 3 of 3

	1218		~~~~~~		111017 (EE/ (11)	,,, <u> </u>	,	Sileet :	5 01 5
			Governme	ent	FOR GEOTECHNICAL T SYMBOLS REFER FORM F:G			PIEZOMETER No	CRR702
ROJE	СТ	Cro	oss River Rail CRR2017 -	Additional Geotechnica	l Investigation				
OCAT	ION	Abi	ngdon Street				C	OORDINATES <u>503018.5</u>	E; 6959143.5 N
ROJE	CT No	FG	6470	SURFACE RL 24.00m	PLUNGE 90°	DATE STARTED	23/10/2017	GRID DATUM N	//GA94
OB N	0			EIGHT DATUM AHD	BEARING <u>*</u>	DATE COMPLETED	27/10/2017	DRILLER S	chneider
٦ آ		δ				Standpip	e Construc	ction Details	
DEPTH (m)	R.L. (m)	ПТНОСОБУ	MATERIAL	DESCRIPTION	Depth (m) /RL (AHD)	50mm PVC Class Stick Up = 0.0	No. 18	Backfill Do	etails
- 21 - 22 - 23 - 24			UFF ont'd.		21.20m / 2.80 AHD			Top of Slotte	
- 27	-3.20				27.20m / -3.20 AHD				
- 30			Borenole con	ppleted at 27.20m					
- 28									
- 29									
R	EMAR	KS.	Rip - Asplev Formation	. Rif - Brisbane Tuff. Star	ndpipe piezometer installe	d.		LOGGED BY	DEVIEWED BY
11	∟ı v 1/¬\1\		, , , , , , , , , , , , , , , , , , , ,		, , , ,		}	HA	S. Foley
				-	TMR STANDPIPE INSTALLATION LOG - CREATED	WITH HOLERASE SI			3. Foley
				1	IVIK STANDPIPE INSTALLATION LOG - CREATED	WITH HOLEBASE SI			



Project Name	Cross River Rail CR	Cross River Rail CRR2017 – Geotechnical Investigation								
Project No.	FG6470	Date	27/10/2017							
Borehole No.	CRR702	Reference No.	H12928							
Location	Abingdon Street	Start Depth (m)	1.50							
Submitted By	M. de Gee	Finish Depth (m)	27.20							



1



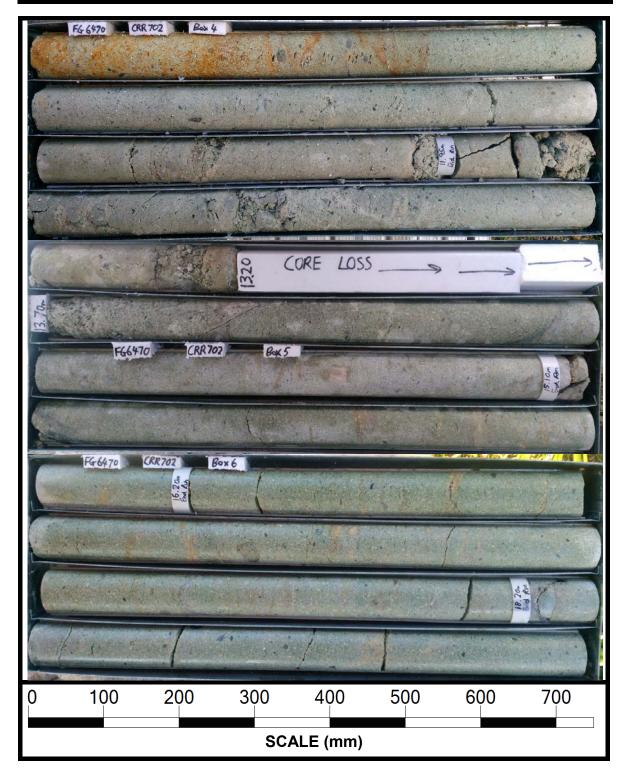
Project Name	Cross River Rail CR	Cross River Rail CRR2017 – Geotechnical Investigation								
Project No.	FG6470	Date	27/10/2017							
Borehole No.	CRR702	Reference No.	H12928							
Location	Abingdon Street	Start Depth (m)	1.50							
Submitted By	M. de Gee	Finish Depth (m)	27.20							



1



Project Name	Cross River Rail CR	Cross River Rail CRR2017 – Geotechnical Investigation									
Project No.	FG6470	Date	27/10/2017								
Borehole No.	CRR702	Reference No.	H12928								
Location	Abingdon Street	Start Depth (m)	1.50								
Submitted By	M. de Gee	Finish Depth (m)	27.20								



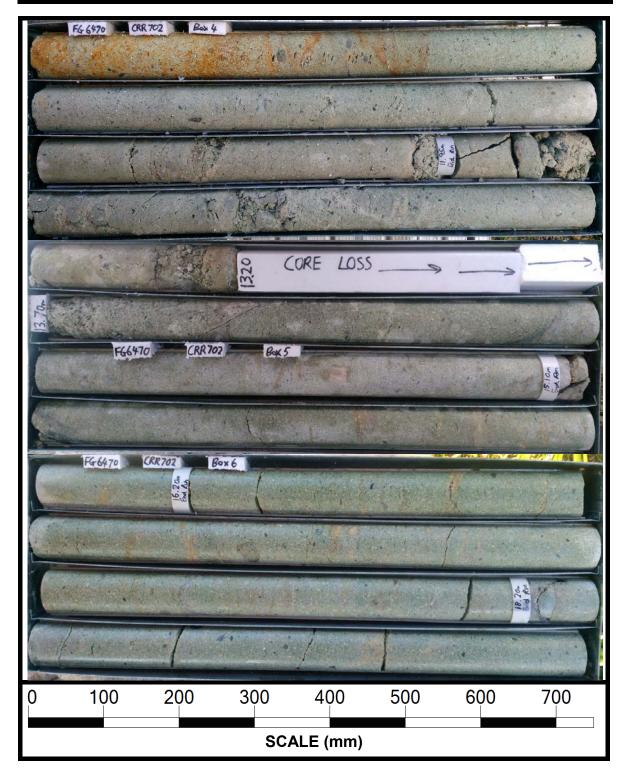


Project Name	Cross River Rail CR	Cross River Rail CRR2017 – Geotechnical Investigation									
Project No.	FG6470	Date	27/10/2017								
Borehole No.	CRR702	Reference No.	H12928								
Location	Abingdon Street	Start Depth (m)	1.50								
Submitted By	M. de Gee	Finish Depth (m)	27.20								





Project Name	Cross River Rail CR	Cross River Rail CRR2017 – Geotechnical Investigation									
Project No.	FG6470	Date	27/10/2017								
Borehole No.	CRR702	Reference No.	H12928								
Location	Abingdon Street	Start Depth (m)	1.50								
Submitted By	M. de Gee	Finish Depth (m)	27.20								





Project Name	Cross River Rail CR	Cross River Rail CRR2017 – Geotechnical Investigation									
Project No.	FG6470	Date	27/10/2017								
Borehole No.	CRR702	Reference No.	H12928								
Location	Abingdon Street	Start Depth (m)	1.50								
Submitted By	M. de Gee	Finish Depth (m)	27.20								



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		Cross Rive	r Rail			Project No			
Site ID / Bo	rehole No.	CRR702				Surface RL	23.92		
Geologist		H.A.				Date	23/10/2017		
					Page	1	of	2	
Traverse	Туре	Dip ° / Dip	Planarity	Roughness	Roughness	Aperture	Infilling	Zones ¹	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	
1.51	J	30	PI	Ro	VII	TI	St		
1.60	J	55	PI	Ro	VII	TI	St		
1.72	J	10	Pl	Ro	VII	OP	St		
1.76	J	20	Stp	Ro	I	OP	St		
1.81	J	85	Un	Ro	IV	OP	Vr		
2.34	J	45	Un	Ro	IV	OP	St		
2.70	J	55	Un	Ro	IV	OP	St		
2.92	J	25	Pl	Ro	VII	OP	St		
3.01	J	45	Stp	Ro	1	OP	Cn		
3.06	J	40	PI	Ro	VII	OP	Cn		
3.13	J	35	Stp	Ro	ı	OP	Cn		
3.33	J	10	PI	Ro	VII	OP	St		
3.45	J	40	PI	Ro	VII	OP	St		
3.60	J	10	Pl	Ro	VII	OP	St		
3.77	J	45	PI	Ro	VII	OP	St		
4.86	J	5	PI	Ro	VII	TI	St		
5.07	J	45	PI	Ro	VII	TI	Cn		
5.42	J	30	Stp	Ro	I	TI	St		
5.58	J	5	PI	Ro	VII	TI	St		
6.33	J	40	Stp	Ro	I	TI			
6.78	J	2	PI	Ro	VII	TI			
7.68	J	20	PI	Ro	VII	OP			
7.99	J	30	Un	Ro	IV	OP			
8.31	J	15	PI	Ro	VII	OP			
8.38	J	20	PI	Ro	VII	OP			
8.84	J	10	PI	Ro	VII	OP			
9.04	J	20	PI	Ro	VII	OP			
9.15	J	20	PI	Ro	VII	OP			
9.41	J	45	PI	Ro	VII	TI			
10.92	J	50	Stp	Ro	ı	TI			
11.34	J	10	Pl	Ro	VII	OP			

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 Nar	ne	Cross River	r Rail			Project No.	FG6470					
Site ID / Bo	rehole No.	CRR702				Surface RL	23.92	23.92				
Geologist		H.A.				Date	23/10/2017					
	•				Page	2	of	2				
Traverse	Туре	Dip ° / Dip	Planarity	Roughness	Roughness	Aperture	Infilling	Zones ¹	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				
11.60	J	5	Pl	Ro	VII	OP						
11.70	J	40	Pl	Ro	VII	OP						
11.89	J	20	Pl	Ro	VII	OP						
12.00	J	60	Pl	Ro	VII	OP						
12.05	J	15	Pl	Ro	VII	OP						
12.24	J	50	Pl	Ro	VII	TI						

Note: 1. Describe zones and coatings in terms of composition and thickness (mm) $F:GEOT\ 533/9-2014$