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QueenslandGovernment

GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND

FINAL 27/09/2018 **CRR902**

BOREHOLE No

Sheet 1 of 3

AUDAS AT I	(C2)	00				SYN	ИBOLS	REFER FORM	F:GEOT	017/8-2014		REFE	RENCE No	H1	.3106
ROJECT	Cross River Rail (CRR) Project - Additional Geotechnical Investigation														
OCATION	Salis	bury Sta	atior	1								COORDINATE	502261.4	E; 695224	16.9 N
ROJECT No	FG6470 SURFACE RL 12.73m				PLUNGE 90° DATE STARTED 05/07/2018					8 GRID DATUM MGA94					
OB No	HEIGHT DATUM AHD BEARING DATE COMPLETED 10/07/20								18	DRILLER G	eodrill				
DEPTH (m) (m) (m) (m) AUGER	CASING WASH BORING CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTIO	N	LITHOLOGY	USCS WEATHERING	INTACT STRENGT	H	DEFECT SPACING		ADDITIONA AND TEST RES			SAMPLES TESTS
12.38 - 1 - 2 - 3 - 4 - 5 - 6 - 7	OXX. NWA		B C C H	Silty Gravelly SAND (Fill) Brown-grey, moist, loose. Focarse grained. Fine to coangular to sub-angular graveled bles. Silty CLAY (Alluvium) Grey and red-brown, moist stiff. High plasticity. Trace for grained sand. From 1.60m: grey mottled or brown From 2.0m: stiff from 2.0m: stiff from dered-brown, very low streng some extremely weathered, and brown, very low streng some extremely weathered sections throughout.	rse vel. Trace r, firm to ine range- TONE grey tit,		(SM)				2.50m-2.95m: CU	Triaxial Test	LL= MC=24 	2, 3, 5 N=8 MC=34.6% b= 1.39 t/m3 i= 1.87 t/m3 3, 5, 7 77% PI= 55% 3, 45 12% 75μm= 95% 3, 6, 9 N=15	SPT SPT SPT SPT SPT SPT SPT
3.13				Grey, pale brown, moist, haplasticity. Fine grained sand	d.		(CL)			-			·	75µm= 71%	- - - - - - - - - - - - - - - - - - -
2.73			Ш	Continued on next shee	et	2.3			土						
REMARK	(S: F	Rjbw -	Wo	ogaroo Subgroup. Sta		oiez	ome	ter instal	led.				GED BY		WED BY
					71.10										

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GEOTECHNICAL BOREHOLE LOG

FINAL 27/09/2018

CRR902 BOREHOLE No

Sheet 2 of 3

	136	الرو	8	GU	ve	:IIIIIeiit	SYI		GEOTECHNICAL TER REFER FORM F:GEO			REFERENCE No	H:	13106
PROJE	СТ	C	ross	s River	Rail	(CRR) Project - Additional Geotechnic	al Ir	nvesti	gation					
LOCAT	ION	S	alisł	oury Sta	atior	1						COORDINATES 502261.	4 E; 69522	46.9 N
PROJE	CT No	_	-G64	470		SURFACE RL 12.73m	PLU	INGE S	90°	DATE STAR	TED 05/07/2018	GRID DATUM	MGA94	
JOB No)	_				HEIGHT DATUM AHD	BEA	RING _		DATE COMPLE	TED 10/07/2018	DRILLER	Geodrill	
DEPTH (m)	R.L. (m)	UGER	VASH BORING FORE DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
11 12		40	<u>A</u>	0		Clayey Silty SAND (Alluvium) Cont'd. Orange-brown and grey, moist, very dense. Fine grained. Some fine to coarse sandstone gravels and cobbles.		(SC)		-			80/80mm 28, 30/95mm MC=17.1% <75μm= 16%	SPI
13	-0.27 -1.87				M	Clayey SAND (Residual) Grey, moist, very dense. Fine to medium grained. SILTSTONE (Rjbw) XW: Recovered as grey, moist, dense, fine grained clayey Sand. SOme fine to coarse angular to subangular gravel.		(SC)		-			30/50mm 20, 30/130mm 30/105mm	SPT SPT SPT
	-4.32 -5.07	-		(94) 100 (44) 92 (71)		SILTSTONE (Rjbw) HW: Grey, fine grained, very thinly to thinly bedded, very low strength, some layers of fine to medium grained sandstone. SANDSTONE (Rjbw) HW: Grey, fine to medium grained, very thinly to thinly bedded, very low to low strength. SANDSTONE (Rjbw) HW: Pale grey, medium to coarse grained, medium bedded, generally very low to low strength.	***************************************	HW HW XW HW	V. V. V. V. L.	M	⊒ 18.10m-18.15m: XW 18.15m-18.17m: XW	l: /, Clayey Sand /, Clayey Gravel	s(50)=0.08 MPa (50)=0.11 MPa MPa (50)=0.28 MPa (50)=0.41 MPa	D (16.91m) A (16.92m)
— 19 - - - - - - - -	-7.27			100 (86)		SILTSTONE (Rjbw) HW: Grey, brown and orange, very thinly bedded, low strength. Continued on next sheet	× × × × × × × × × × × × × × × × × × ×	HW	L	M			s(50)=0.12 MPa s(50)=0.22 MPa	D (19.90m) A (19.91m)
RE	MAR	RKS:	F	Rjbw -	Wo	ogaroo Subgroup. Standpipe p	iez	ome	eter installed.			LOGGED BY	REVIE	WED BY
												МН	S.	Foley
						TMR G	EOTEC	HNICAL B	OREHOLE LOG - CREATED WIT	TH HOLEBASE SI			1	

Queensland Government

GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014 FINAL 27/09/2018

BOREHOLE No CRR902

Sheet 3 of 3

REFERENCE No

H13106

				D:	5 .1	(222) 2								
PROJE	CT	_				(CRR) Project - Additional Geotechnic	cal Ir	nvesti	gation					
LOCAT	ION	<u>S</u>	alisl	bury St	atio	1						COORDINATES 502261.4	1 E; 69522	46.9 N
PROJE	CT No	_!	G6	470		SURFACE RL 12.73m	PLU	INGE 9	0°	DATE STAF	05/07/2018	GRID DATUM	MGA94	
JOB No)	_				HEIGHT DATUM AHD	BEA	RING _		DATE COMPLI	ETED 10/07/2018	DRILLER	Geodrill	
DEPTH (m)	R.L. (m)	AUGER CASING	WASH BORING CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
222	-7.87 -10.82		MM (20)	94 (97)		SANDSTONE (Rjbw) HW: Grey, fine grained, very thinly to thinly bedded, low strength, some interbedded siltstone layers up to 700mm SANDSTONE (Rjbw) MW: pale grey, medium grained, thinly bedded, low to medium strength. Some thin extremely weathered layers. Borehole completed at 26.43m	X X X X X X X X X X X X X X X X X X X	HW HW HW	VI	M M M M M M M M M M M M M M M M M M M	== 21.83m-21.85m: XW Coal == 23.89m-23.91m: XW == 24.42m-24.45m: XW == 24.59m: W == 24.59m-24.62m: XW	Is is solution is solution in the solution is solution. It is solution is solution in the solution in the solution is solution. It is solution is solution is solution.	UCS=2.36 MPa E=0.195 GPa v= 0.224 (S0)=0.01 MPa (50)=0.11 MPa (50)=0.14 MPa (50)=0.12 MPa UCS=9.93 MPa E=2.12 GPa v= 0.02 (50)=0.31 MPa (50)=0.31 MPa (50)=0.25 MPa (50)=0.10 MPa (50)=0.10 MPa (50)=0.14 MPa	(20.80m) = D (20.95m) A (20.96m) = D (22.24m) A (22.25m) A (23.85m) A (23.86m) A (25.56m) A (26.26m) A (26.26m) A (26.26m)
RI	MAR	KS:	F	Rjbw -	Wo	oogaroo Subgroup. Standpipe န	oiez	ome	ter installed		I	LOGGED BY		EWED BY
												MH	S.	Foley
						TMR	SEOTEC	HNICAL B	REHOLE LOG - CREATED V	WITH HOLEBASE SI				

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		Cross Rive				Project No FG6470					
Site ID / Bo		CRR902	ı naıı • Staç	JC 4		Surface RL12.73					
Geologist	renoie No.	MARK HAY	EC			Date 9/07/2018					
Geologist		INIANK HAT	<u> </u>			Page	1	of	2		
Traverse	Туре	Dip ° / Dip	Planarity	Roughness	Roughness		Infilling	Zones ¹	Other		
Chainage;	Турс	Direction °;	Fiananty	Houginess	Class	Aperture	IIIIIIII		Other		
or	LP/	or			Class	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 ¹	AZ			
16.23	В	10°	PI	SM	VIII	CD	CN	7.12			
16.44	В	5°	PI	SM	VIII	CD	CN				
16.65	В	5°	PI	SM	VIII	CD	VR	CLAY			
16.75	В	5°	PI	SM	VIII	CD	CN				
17.05	В	5°	PI	SM	VIII	CD	VR	CLAY			
17.12	В	5°	PI	SM	VIIII	CD	CN				
17.88	В	50°	PI	SM	VIII	CD	VR	CLAY			
18.00	J	45°	PI	-	-	OP	BROKEN	SANDY	SURFACE		
18.10	J	35°	PI	SM	VIII	FL	Ct	CLAY	5mm		
18.32	В	5°	PI	SM	VII	FL	Ct	CLAY			
18.40	J	60°	Un	Ro	IV	CD	CN				
18.56	В	5°	PI	SM	VIII	CD	CN				
18.80	В	5°	Un	SM	V	OP	CN				
19.14	В	5°	PI	Ro	VII	OP	GRAVAL	LY CLAY			
19.27	В	5°	Un	SM	V	FL	Ct	CLAY	20mm		
19.29	J	30°	PI	Ro	VII	CD	Ct	CLAY	5mm		
19.36	В	5°	PI	SM	VIII	OP	Vr	CLAY			
19.45	J	40°	Un	SI	VI	OP	Cr				
19.72	В	5°	PI	Sm	VIII	CD	Cr				
19.80	TIGHT	5-15°	BEDDING	DEFECTS							
20.25	В	15°	PI	Sm	VIII	FL	Ct	CLAY 5mm			
20.45	J	45°	Un	Sm	VIII	FL	80mm	CLAYED BR	OKEN ZONE		
20.53	70MM C	ORE(0°)									
21.03	В	5°	PI	Sm	VIII	CD	CN				
21.33	В	5°	Un	Sm	V	CD	CN				
21.83	В	5°	PI	Sm	VIII	FL	Ct	CLAY 20mm			
21.93	J	20°	PI	Sm	VIII	CD	Vr	CLAY			
22.17	В	5°	PI	Sm	VIII	CD	CN				
22.34	В	5°	Un	Sm	V	CD	CN				
22.57	В	5°	PI	Sm	VIII	CD	CN				
23.04	В	5°	PI	Sm	VIII	CD	CN				

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 Rive	r Rail - Stag	je 2	Project No. FG6470						
Site ID / Bo	rehole No.	CRR902				Surface RL 12.73					
Geologist		MARK HAY	S		Date	9/07/2018					
		•				Page	2	of			
23.15	В	5°	PI	Sm	VIII	CD	Vr	CLAY			
23.45	В	5°	PI	Sm	IX	CD	Vr	CLAY			
23.55	В	5°	PI	Sm	VIII	CD	Vr	CLAY			
23.79	В	0°	Un	Sm	V	CD	CN				
23.89	В	5°	PI	Sm	VIII	FL	Ct	CLAY 20mm			
24.22	В	15°	PI	Sm	VIII	OP	CN				
24.30	В	10°	Un	Ro	IV	OP	Vr	CLAY			
24.42	В	5°	PI	Sm	VIII	FL	Ct	CLAY 30 mm			
24.56	В	5°	PI	Ro	VIII	OP	CN				
24.59	В	5°	PI	Sm	VIII	FL	Ct	CLAY 30mm			
24.66	J	30°	PI	Ro	VIII	CD	CN				
24.95	В	5°	PI	Sm	VIII	OP	CN				
25.08	В	5°	PI	Sm	VIII	CD	CN				
25.10	В	5°	PI	SI	IX	FL	Ct	CLAY 60mm			
25.22	В	5°	PI	Sm	VIII	CD	CN				
25.24	В	5°	PI	Sm	VIII	CD	CN				
25.27	В	5°	PI	Sm	VIII	CD	CN				
25.67	В	5°	PI	Sm	VIII	CD	CN				
26.03	В	0°	Un	Sm	V	CD	CN				
							1				
							1				
							1				

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

F:GEOT 533/9 - 2014

STANDPIPE PIEZOMETER INSTALLATION LOG

BOREHOLE No CRR902

FINAL 27/09/2018

Sheet 1 of 3

FOR GEOTECHNICAL TERMS AND **CRR902** PIEZOMETER No SYMBOLS REFER FORM F:GEOT 017/8-2014 Cross River Rail (CRR) Project - Additional Geotechnical Investigation PROJECT COORDINATES 502261.4 E; 6952246.9 N Salisbury Station LOCATION FG6470 SURFACE RL 12.73m PLUNGE 90° DATE STARTED 05/07/2018 GRID DATUM MGA94 PROJECT No DATE COMPLETED 10/07/2018 HEIGHT DATUM AHD BEARING ° DRILLER Geodrill JOB No **Standpipe Piezometer Construction Details** Ξ LITHOLOG) R.L. DEPTH (MATERIAL DESCRIPTION Depth (m) /RL 50mm PVC Class No. 18 (m) **Backfill Details** (AHD) Stick Up = 0.00m Silty Gravelly SAND (Fill) Brown-grey, moist, loose. Fine to coarse grained. Fine to coarse angular to sub-angular gravel. Trace Silty CLAY (Alluvium) Grey and red-brown, moist, firm to stiff. High plasticity. Trace fine grained sand. Grout: Bentonite / Cement Mix from 1.60m: grey mottled orange-brown from 2.0m: stiff 2.50m / 10.23 AHD Bentonite Seal 3.50m / 9.23 AHD from 6.7m to 8.65m: SILTSTONE boulder, highly weathered, grey and brown, very low strength, some extremely weathered sections throughout. 4.08 Sandy CLAY (Alluvium) Grey, pale brown, moist, hard. Low plasticity. Fine grained sand. 3.13 Clayey Silty SAND (Alluvium) Continued on next sheet REMARKS: Rjbw - Woogaroo Subgroup. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** MH S.Foley TMR STANDPIPE PIEZOMETER INSTALLATION LOG - CREATED WITH HOLEBASE SI



STANDPIPE PIEZOMETER INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No CRR902

Sheet 2 of 3

PIEZOMETER No CRR902

Cross River Rail (CRR) Project - Additional Geotechnical Investigation PROJECT COORDINATES 502261.4 E; 6952246.9 N Salisbury Station LOCATION FG6470 SURFACE RL 12.73m PLUNGE 90° DATE STARTED 05/07/2018 GRID DATUM MGA94 PROJECT No DATE COMPLETED 10/07/2018 HEIGHT DATUM AHD BEARING ° DRILLER Geodrill JOB No **Standpipe Piezometer Construction Details** Ξ LITHOLOG) R.L. DEPTH (MATERIAL DESCRIPTION Depth (m) /RL 50mm PVC Class No. 18 (m) **Backfill Details** (AHD) Stick Up = 0.00m Clayey Silty SAND (Alluvium) Cont'd. Orange-brown and grey, moist, very dense. Fine grained. Some fine to coarse sandstone gravels and cobbles. -0.27 Clayey SAND (Residual) Grey, moist, very dense. Fine to medium grained. Collapsed annulus -1.87 SILTSTONE (Rjbw) XW: Recovered as grey, moist, dense, fine grained 15 clayey Sand. SOme fine to coarse angular to subangular gravel. -3.47 SILTSTONE (Rjbw) HW: Grey, fine grained, very thinly to thinly bedded, very low strength, some layers of fine to medium grained sandstone. -4.32 17 SANDSTONE (Rjbw) HW: Grey, fine to medium grained, very thinly to thinly bedded, very low to low strength. -5.07 SANDSTONE (Rjbw) HW: Pale grey, medium to coarse grained, medium bedded, generally very low to low strength. 19.00m / -6.27 AHD -6.57 SILTSTONE (Rjbw) HW: Grey, brown and orange, very thinly bedded, low strength. Continued on next sheet REMARKS: Rjbw - Woogaroo Subgroup. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** MH S.Foley TMR STANDPIPE PIEZOMETER INSTALLATION LOG - CREATED WITH HOLEBASE SI



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STANDPIPE PIEZOMETER INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No CRR902
Sheet 3 of 3

PIEZOMETER No CRR902

Cross River Rail (CRR) Project - Additional Geotechnical Investigation PROJECT COORDINATES 502261.4 E; 6952246.9 N Salisbury Station LOCATION FG6470 SURFACE RL 12.73m PLUNGE 90° DATE STARTED 05/07/2018 GRID DATUM MGA94 PROJECT No DRILLER Geodrill DATE COMPLETED 10/07/2018 HEIGHT DATUM AHD BEARING ° JOB No **Standpipe Piezometer Construction Details** DEPTH (m) LITHOLOGY R.L. MATERIAL DESCRIPTION Depth (m) /RL 50mm PVC Class No. 18 (m) **Backfill Details** (AHD) Stick Up = 0.00m SILTSTONE (Rjbw) HW: Cont'd. -7.87 SANDSTONE (Rjbw) HW: Grey, fine grained, very thinly to thinly bedded, low strength, some interbedded siltstone layers up 22 23 23.20m / -10.47 AHD Top of Slotted Pipe Filter: Washed / Graded Sand -10.82 SANDSTONE (Rjbw) MW: pale grey, medium grained, thinly bedded, low to medium strength. Some thin extremely weathered layers. 25 26 26.20m / -13.47 AHD -13.70 26.43m / -13.70 AHD Borehole completed at 26.43m 27 28

REMARKS: Rjbw - Woogaroo Subgroup. Standpipe piezometer installed.

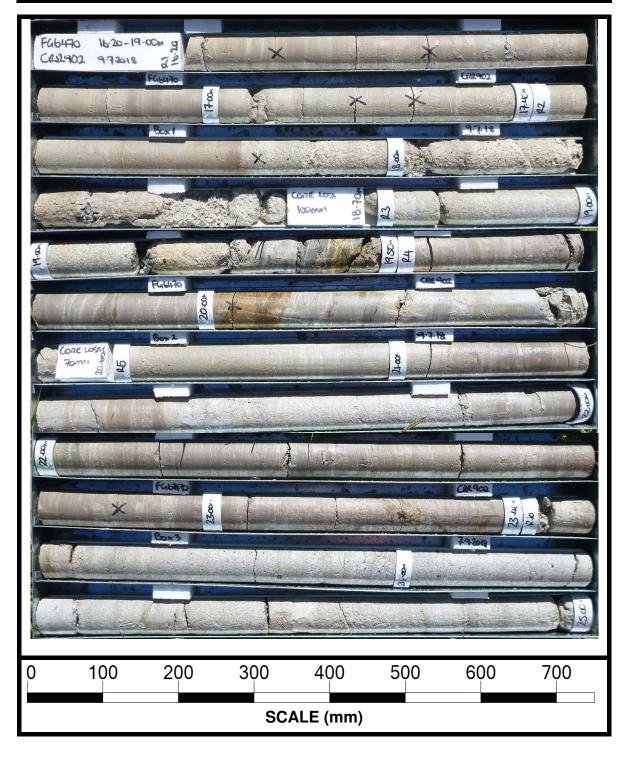
LOGGED BY
MH
S.Foley

TMR STANDPIPE PIEZOMETER INSTALLATION LOG - CREATED WITH HOLEBASE SI

CORE PHOTO LOG DEPARTMENT OF TRANSPORT AND MAIN ROADS GEOTECHNICAL SECTION



Project Name	Cross River Rail CRR 2018 – Geotechnical Investigation							
Project No.	FG6470	Date	09.07.2018					
Borehole No.	CRR902	Reference No.	H13106					
Location	Salisbury Street	Start Depth (m)	16.20					
Submitted By	J. Armstrong	Finish Depth (m)	26.40					



1

CORE PHOTO LOG DEPARTMENT OF TRANSPORT AND MAIN ROADS GEOTECHNICAL SECTION



Project Name	Cross River Rail CRR 2018 – Geotechnical Investigation							
Project No.	FG6470	Date	09.07.2018					
Borehole No.	CRR902	Reference No.	H13106					
Location	Salisbury Street	Start Depth (m)	16.20					
Submitted By	J. Armstrong	Finish Depth (m)	26.40					

