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GEOTECHNICAL
BOREHOLE LOG

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

BOREHOLE No **CRR706**

Sheet 1 of 4

REFERENCE No **H12932**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation				
LOCATION	Hubert Street			COORDINATES 6959676.9 E; 6959676.9 N	
PROJECT No	FG6470	SURFACE RL	14.80m	PLUNGE	90°
				DATE STARTED	11/01/2018
				GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°
				DATE COMPLETED	16/01/2018
				DRILLER	Schneider

DEPTH (m)	R.L. (m)	AUGER CASING	WASHBORING	CORE DRILLING	RQD (%) CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH						DEFECT SPACING						ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Dcf - Neranleigh Fernvale Beds. Standpipe piezometer installed. CAI = Average Cerchar abrasivity index (HRC=55).	LOGGED BY		REVIEWED BY
	HA		S. Foley



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GEOTECHNICAL BOREHOLE LOG

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

BOREHOLE No **CRR706**

Sheet 2 of 4

REFERENCE No **H12932**

PROJECT **Cross River Rail CRR2017 - Additional Geotechnical Investigation**

LOCATION **Hubert Street**

COORDINATES **6959676.9 E; 6959676.9 N**

PROJECT No **FG6470**

SURFACE RL **14.80m**

PLUNGE **90°**

DATE STARTED **11/01/2018**

GRID DATUM **MGA94**

JOB No

HEIGHT DATUM **AHD**

BEARING °

DATE COMPLETED **16/01/2018**

DRILLER **Schneider**

DEPTH (m)	R.L. (m)	AUGER CASING WASHBORING CORE DRILLING	RQD (%) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH										DEFECT SPACING										ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS	
								EH	VH	H	M	J	L	VL	EL	EC	VC	C	M	W	VW	EW								
11					TUFF (Rif) SW: Cont'd.		SW																					11.80m: J infilled with Clay, 20°, 20mm	Is(50)=1.40 MPa Is(50)=2.40 MPa	D (12.15m) A (12.17m)
12			100 (57)																											
13																														
14	0.45				From 13.5m: Becoming dark grey.		FR																					13.44m-13.60m: J: 85°, Un/Ro, TI, Fe St 13.87m-14.15m: J: 80°, Pl/Ro, TI, Fe St	Is(50)=0.14 MPa Is(50)=3.90 MPa	D (14.28m) A (14.29m)
15			100 (97)	TUFF (Rif) FR: Grey, fine grained with fine to medium gravel sized clasts, massive, high strength. - Js: 5°-45° (2/m); Pl-Un/Ro, TI, Cn - Js: 70°-90° (<1/m); Un/Ro, TI-OP, Cn																										
16			100 (85)																											
17							FR																					Is(50)=1.70 MPa Is(50)=1.70 MPa	D (16.35m) A (16.36m)	
18			100 (85)																											
19																														
	-5.20																													

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Dcf - Neranleigh Fernvale Beds.
Standpipe piezometer installed. CAI = Average Cerchar abrasivity index (HRC=55).

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GEOTECHNICAL BOREHOLE LOG

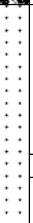
FOR GEOTECHNICAL TERMS AND
SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **CRR706**

Sheet 3 of 4

REFERENCE No **H12932**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation				
LOCATION	Hubert Street			COORDINATES 6959676.9 E; 6959676.9 N	
PROJECT No	FG6470	SURFACE RL	14.80m	PLUNGE	90°
				DATE STARTED	11/01/2018
JOB No		HEIGHT DATUM	AHD	BEARING	°
				DATE COMPLETED	16/01/2018
				DRILLER	Schneider

DEPTH (m)	R.L. (m)	AUGER CASING WASHBORING CORE DRILLING	RQD (%) CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH						DEFECT SPACING			ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS												
								EH VH	H M	L VL	EL	EC VC	C M	W VW	EW															
21			100 (73)		TUFF (Rif) FR: Cont'd		FR										Is(50)=0.45 MPa Is(50)=1.50 MPa	D (20.83m) A (20.84m)												
22																														
23																														
	-8.90		100 (42)		TUFF (Rif) MW: Dark grey, fine grained, massive, medium strength. -Js: 5°-10° (~10/m); Pl/Sm, TI-OP, Cn		MW				M		C				Is(50)=2.20 MPa Is(50)=2.10 MPa UCS=37.90 MPa E=9.41 GPa v= 0.097 22.62m-22.69m: CAI=0.85 23.35m-23.75m: J: 80°-90°, Un/Ro, OP, Cn	D (22.55m) A (22.57m) (22.80m)												
24							HW				L		VC						Is(50)=0.04 MPa Is(50)=0.41 MPa	D (23.85m) A (23.86m)										
	-9.95		100 (93)		Interbedded SANDSTONE & SILTSTONE (Rip) FR: Pale grey and dark grey, fine grained, laminated to thinly bedded, high strength. Bedding dips at 5°-10°. - Js: 5°-20° (2/m); Pl/Sm, TI, Cn		XW									Is(50)=0.04 MPa Is(50)=0.63 MPa			D (24.35m) A (24.36m)											
25							FR				H						Is(50)=0.33 MPa Is(50)=2.50 MPa 25.06m-25.14m: CAI=0.48 25.70m-25.77m: Slake Durability Index Test 25.80m-25.96m: Conglomerate bed, MW, medium strength, fine to medium gravel clasts. 26.00m-26.15m: Conglomerate bed, FR 26.39m-26.57m: Brazilian Tensile Strength = 2.90 MPa	D (24.90m) A (24.92m)												
26							MW				M		M			Is(50)=1.10 MPa Is(50)=1.80 MPa			D (25.55m) A (25.56m)											
	-11.50						FR				H					Is(50)=1.90 MPa Is(50)=0.88 MPa			D (26.10m) A (26.12m)											
27					CONGLOMERATE (Rip) FR: Grey, coarse grained gravel clasts in sand matrix, thickly bedded, high strength. Gravel clasts are rounded, <50mm. - Js: 5°-20° (1/m); Pl/Ro, OP, Cn		FR									UCS=22.20 MPa E=12.2 GPa v= 0.456	Is(50)=0.30 MPa Is(50)=0.08 MPa	D (26.68m) (26.85m)												
28			100 (89)																				H		W			Is(50)=0.30 MPa Is(50)=0.08 MPa	D (27.15m) A (27.17m)	
29							MW									UCS=15.00 MPa E=6.85 GPa v= 0.105	Is(50)=0.35 MPa Is(50)=0.28 MPa	D (28.13m) A (28.15m) (28.85m)												
	-14.57																													
	-15.20				CONGLOMERATE (Rip) MW: Grey-green, medium to coarse gravel clasts in sand matrix,																		M		M			Is(50)=0.18 MPa Is(50)=0.72 MPa	D (29.50m) A (29.52m)	
																Is(50)=0.36 MPa Is(50)=0.33 MPa	D (29.85m) A (29.87m)													

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Dcf - Neranleigh Fernvale Beds.
Standpipe piezometer installed. CAI = Average Cerchar abrasivity index (HRC=55).

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GEOTECHNICAL BOREHOLE LOG

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

BOREHOLE No **CRR706**

Sheet 4 of 4

REFERENCE No **H12932**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation
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LOCATION	Hubert Street
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COORDINATES 6959676.9 E; 6959676.9 N

PROJECT No	FG6470
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SURFACE RL 14.80m

PLUNGE 90°

DATE STARTED 11/01/2018

GRID DATUM MGA94

JOB No

HEIGHT DATUM AHD

BEARING °

DATE COMPLETED 16/01/2018

DRILLER Schneider

DEPTH (m)	R.L. (m)	AUGER CASING WASHBORING CORE DRILLING	ROD () % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS	
								EH LH H M L L VL EL	EC VC C M W VW EW			
	-16.05		100 (44)		CONGLOMERATE (Rip) MW: Cont'd. Thickly bedded, mainly medium strength. Subrounded to angular clasts. Chlorite alteration. - Js: 5°-20° (2/m); Pl/Ro, OP, Cn 30.16m: Becoming mainly HW. ARGILLITE (DCf) FR: Green-grey, fine grained, foliated, high strength. With very closely spaced quartz veins parallel to foliation. Silicified throughout. - FP: 5°-45° (3/m); Pl/Ro, OP, Cn - Js: 5°-45° (7/m); Pl-Un/Ro, OP, Cn		MW HW			30.20m-30.43m: HW bed 30.47m-30.85m: HW bed 30.85m-31.25m: Qz VN	Is(50)=1.00 MPa Is(50)=0.90 MPa	D (30.90m) A (30.92m)
31			100 (100) 100 (80)									
32			100 (74)				FR				Is(50)=0.54 MPa Is(50)=0.94 MPa	D (32.30m) A (32.32m)
33										33.27m-33.35m: BZ, Qz	Is(50)=0.13 MPa Is(50)=0.65 MPa	D (33.60m) A (33.65m)
34											Is(50)=0.44 MPa Is(50)=0.39 MPa	D (34.86m) A (34.87m)
35	-20.35		100		Borehole completed at 35.15m							
36												
37												
38												
39												

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. DCf - Neranleigh Fernvale Beds.
Standpipe piezometer installed. CAI = Average Cerchar abrasivity index (HRC=55).

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STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR706**

Sheet 1 of 4

PIEZOMETER No **CRR706**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Hubert Street COORDINATES 6959676.9 E; 6959676.9 N

PROJECT No FG6470 SURFACE RL 14.80m PLUNGE 90° DATE STARTED 11/01/2018 GRID DATUM MGA94

JOB No HEIGHT DATUM AHD BEARING ° DATE COMPLETED 16/01/2018 DRILLER Schneider

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Standpipe Construction Details		
				Depth (m) / RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details
	14.70		ASPHALT			
			Sandy GRAVEL(Fill)			
	14.10		Orange-brown and grey, dry, medium dense. Fine to coarse grained sand; coarse gravel, angular, trace quartz.			
1			TUFF			
			Grey and orange, fine grained, massive, high to very high strength.			
			Trace medium gravel sized clasts <15mm, subangular.			
2			- Js: 5°-40° (4/m); Pl/Ro, TI-OP, Fe St			
3						
4						
5						
6						
7						
8						
9						
	4.80					

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. DCf - Neranleigh Fernvale Beds. Standpipe piezometer installed. CAI = Average Cerchar abrasivity index (HRC=55).

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STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR706**

Sheet 2 of 4

PIEZOMETER No **CRR706**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Hubert Street COORDINATES 6959676.9 E; 6959676.9 N

PROJECT No FG6470 SURFACE RL 14.80m PLUNGE 90° DATE STARTED 11/01/2018 GRID DATUM MGA94

JOB No HEIGHT DATUM AHD BEARING ° DATE COMPLETED 16/01/2018 DRILLER Schneider

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Standpipe Construction Details		
				Depth (m) / RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details
11			TUFF Cont'd.			
12						
13						
14			From 13.5m: Becoming dark grey.			
15	0.45		TUFF Grey, fine grained with fine to medium gravel sized clasts, massive, high strength. - Js: 5°-45° (2/m); Pl-Un/Ro, TI, Cn - Js: 70°-90° (<1/m); Un/Ro, TI-OP, Cn			Grout: Cement / Bentonite Mix
16						
17						
18						
19						
-5.20						

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Dcf - Neranleigh Fernvale Beds. Standpipe piezometer installed. CAI = Average Cerchar abrasivity index (HRC=55).

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STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR706**

Sheet 3 of 4

PIEZOMETER No **CRR706**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation					
LOCATION	Hubert Street			COORDINATES 6959676.9 E; 6959676.9 N		
PROJECT No	FG6470	SURFACE RL	14.80m	PLUNGE	90°	DATE STARTED 11/01/2018
JOB No		HEIGHT DATUM	AHD	BEARING	°	DATE COMPLETED 16/01/2018
						GRID DATUM MGA94
						DRILLER Schneider

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Standpipe Construction Details		
				Depth (m) / RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details
21			TUFF Cont'd			
22						
23						
-8.90						
24			TUFF Dark grey, fine grained, massive, medium strength. - Js: 5°-10° (~10/m); Pl/Sm, TI-OP, Cn			
-9.95						
25			Interbedded SANDSTONE & SILTSTONE Pale grey and dark grey, fine grained, laminated to thinly bedded, high strength. Bedding dips at 5°-10°. - Js: 5°-20° (2/m); Pl/Sm, TI, Cn			
26						
-11.50						
27			CONGLOMERATE Grey, coarse grained gravel clasts in sand matrix, thickly bedded, high strength. Gravel clasts are rounded, <50mm. - Js: 5°-20° (1/m); Pl/Ro, OP, Cn	27.15m / -12.35 AHD		
28				28.15m / -13.35 AHD		Bentonite Seal
29				29.15m / -14.35 AHD		Top of slotted pipe
-14.57						
-15.20			CONGLOMERATE Grey-green, medium to coarse gravel clasts in sand matrix,			

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Dcf - Neranleigh Fernvale Beds. Standpipe piezometer installed. CAI = Average Cerchar abrasivity index (HRC=55).

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STANDPIPE
INSTALLATION LOG

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

BOREHOLE No **CRR706**

Sheet 4 of 4

PIEZOMETER No **CRR706**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation								
LOCATION	Hubert Street				COORDINATES 6959676.9 E; 6959676.9 N				
PROJECT No	FG6470	SURFACE RL	14.80m	PLUNGE	90°	DATE STARTED	11/01/2018	GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°	DATE COMPLETED	16/01/2018	DRILLER	Schneider

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Standpipe Construction Details		
				Depth (m) / RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details
31	-16.05	CONGLOMERATE Cont'd. Thickly bedded, mainly medium strength. Subrounded to angular clasts. Chlorite alteration. - Js: 5°-20° (2/m); Pl/Ro, OP, Cn 30.16m: Becoming mainly HW.				
32		ARGILLITE Green-grey, fine grained, foliated, high strength. With very closely spaced quartz veins parallel to foliation. Silicified throughout. - FP: 5°-45° (3/m); Pl/Ro, OP, Cn - Js: 5°-45° (7/m); Pl-Un/Ro, OP, Cn				
33						
34						
35	-20.35			35.15m / -20.35 AHD		Filter: Washed / Graded Sand
36			Borehole completed at 35.15m			
37						
38						
39						

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. DCf - Neranleigh Fernvale Beds. Standpipe piezometer installed. CAI = Average Cerchar abrasivity index (HRC=55).	LOGGED BY	REVIEWED BY
	HA	S. Foley

CORE PHOTO LOG
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	16/01/2018
Borehole No.	CRR706	Reference No.	H12932
Location	Hubert Street	Start Depth (m)	0.80
Submitted By	J. Armstrong	Finish Depth (m)	35.15



CORE PHOTO LOG
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	16/01/2018
Borehole No.	CRR706	Reference No.	H12932
Location	Hubert Street	Start Depth (m)	0.80
Submitted By	J. Armstrong	Finish Depth (m)	35.15



CORE PHOTO LOG
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	16/01/2018
Borehole No.	CRR706	Reference No.	H12932
Location	Hubert Street	Start Depth (m)	0.80
Submitted By	J. Armstrong	Finish Depth (m)	35.15



CORE PHOTO LOG
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	16/01/2018
Borehole No.	CRR706	Reference No.	H12932
Location	Hubert Street	Start Depth (m)	0.80
Submitted By	J. Armstrong	Finish Depth (m)	35.15



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 Name		Cross River Rail				Project No		FG6470	
Site ID / Borehole No.		CRR706				Surface RL		14.80	
Geologist		H.A.				Date		26/01/2018	
						Page	1	of	5
Traverse Chainage; or Down hole depth (rock core)	Type LP / BP / FP / J etc.	Dip ° / Dip Direction °; or Angle ° from horizontal (rock core)	Planarity Stp / Un / Pl	Roughness Ro / Sm / SI	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹ SZ / CZ / HFZ / AZ	Other
0.80	J	5	Pl	Ro	VII	OP	Cn		
0.91	J	20	Un	Ro	IV	OP	St		Fe
1.12	J	15	Pl	Ro	VII	OP	St		Fe
1.55	J	25	Pl	Ro	VII	OP	St		Fe
1.75	J	10	Pl	Ro	VII	OP	St		Fe
1.95	J	25	Un	Ro	IV	OP	St		Fe
2.32	J	5	Pl	Ro	VII	OP	St		Fe
2.56	J	45	Pl	Ro	VII	OP	St		Fe
2.79	J	5	Pl	Ro	VII	OP	St		Fe
3.15	J	5	Pl	Ro	VII	OP	St		Fe
3.41	J	2	Pl	Ro	VII	OP	St		Fe
3.61	J	10	Pl	Ro	VII	OP	St		Fe
3.70	J	5	Pl	Ro	VII	OP	St		Fe
4.08	J	80	Pl	Ro	VII	OP	St		Fe
4.11	J	5	Pl	Ro	VII	OP	St		Fe
4.37	J	15	Pl	Ro	VII	OP	St		Fe
4.47	J	30	Pl	Ro	VII	OP	St		Fe
4.78	J	45	Pl	Ro	VII	OP	St		Fe
4.95	J	30	Pl	Ro	VII	OP	St		Fe
5.03	J	2	Pl	Ro	VII	OP	St		Fe
5.30	J	2	Pl	Ro	VII	OP	St		Fe
5.40	J	45	Pl	Ro	VII	OP	St		Fe
5.53	J	1	Pl	Ro	VII	OP	St		Fe
5.71	J	5	Pl	Ro	VII	OP	St		Fe
6.43	J	10	Pl	Ro	VII	OP	St		Fe
6.68	J	40	Pl	Ro	VII	OP	St		Fe
6.82	J	15	Pl	Ro	VII	OP	St		Fe
6.91	J	40	Pl	Ro	VII	OP	St		Fe
7.07	J	5	Pl	Ro	VII	OP	St		Fe
7.18	J	15	Un	Ro	IV	OP	St		Fe
7.29	J	90	Pl	Ro	VII	TI	St		Fe

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 Name		Cross River Rail				Project No	FG6470		
Site ID / Borehole No.		CRR706				Surface RL	14.80		
Geologist		H.A.				Date	26/01/2018		
						Page	2	of	5
Traverse Chainage; or Down hole depth (rock core)	Type	Dip ° / Dip Direction °;	Planarity	Roughness	Roughness Class	Aperture	Infilling	Zones ¹	Other
	LP /	or				CD /	Cn /	SZ /	
	BP /	Angle ° from	Stp /	Ro /	I to IX	OP /	St /	CZ /	
	FP /	horizontal	Un /	Sm /		FL /	Vr /	HFZ /	
J etc.	(rock core)	PI	SI			TI	Ct ¹	AZ	
7.39	J	10	PI	Ro	VII	OP	St		Fe
7.55	J	2	PI	Ro	VII	OP	St		Fe
7.79	J	45	PI	Ro	VII	OP	St		Fe
8.24	J	2	PI	Ro	VII	OP	St		Fe
8.54	J	10	PI	Ro	VII	OP	St		Fe
8.84	J	5	PI	Ro	VII	OP	St		Fe
9.10	J	5	PI	Ro	VII	OP	St		Fe
9.55	J	10	Stp	Ro	I	OP	St		Fe
10.22	J	5	PI	Ro	VII	OP	St		Fe
10.61	J	5	PI	Ro	VII	OP	St		Fe
10.66	J	10	PI	Ro	VII	OP	St		Fe
10.88	J	10	PI	Ro	VII	OP	St		Fe
11.36	J	10	Stp	Ro	I	OP	St		Fe
11.51	J	5	PI	Ro	VII	OP	St		Fe
11.77	J	5	PI	Ro	VII	OP	St		Fe
11.79	J	15	PI	Ro	VII	TI	Ct		Cly
12.07	J	10	PI	Ro	VII	OP	Cn		
12.40	J	5	PI	Ro	VII	OP	Cn		
12.50	J	85	PI	Ro	VII	OP	Cn		
13.11	J	2	PI	Ro	VII	OP	Cn		
13.54	J	80	PI	Ro	VII	TI	St		Fe
13.71	J	10	PI	Ro	VII	OP	Cn		
13.77	J	5	PI	Ro	VII	OP	Cn		
13.95	J	40	PI	Ro	VII	TI	St		Fe
14.22	J	10	PI	Ro	VII	OP	Cn		
14.30	J	25	PI	Ro	VII	OP	Cn		
14.76	J	15	Un	Ro	IV	OP	Cn		
15.10	J	5	PI	Ro	VII	OP	Cn		
15.51	J	5	PI	Ro	VII	OP	Cn		
16.29	J	30	PI	Ro	VII	OP	Cn		
16.64	J	10	PI	Ro	VII	OP	Cn		

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

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Site ID / Borehole No.		CRR706				Surface RL		14.80	
Geologist		H.A.				Date		26/01/2018	
						Page	3	of	5
Traverse Chainage; or Down hole depth (rock core)	Type LP / BP / FP / J etc.	Dip ° / Dip Direction °; or Angle ° from horizontal (rock core)	Planarity Stp / Un / Pl	Roughness Ro / Sm / SI	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹ SZ / CZ / HFZ / AZ	Other
16.90	J	45	PI	Ro	VII	OP	Cn		
17.41	J	2	PI	Ro	VII	OP	Cn		
18.10	J	30	PI	Ro	VII	OP	Cn		
18.15	J	40	PI	Ro	VII	OP	Cn		
18.47	J	15	PI	Ro	VII	OP	Cn		
20.04	J	2	PI	Ro	VII	OP	Cn		
20.50	J	90	PI	Ro	VII	TI	Cn		
20.66	J	15	PI	Ro	VII	OP	Cn		
20.75	J	90	PI	Ro	VII	TI	Cn		
20.76	J	5	PI	Ro	VII	TI	Cn		
21.15	J	90	PI	Ro	VII	TI	Cn		
21.48	J	2	PI	Ro	VII	OP	Cn		
21.85	J	15	PI	Ro	VII	OP	Cn		
22.40	J	45	PI	Ro	VII	OP	Cn		
22.71	J	5	PI	Ro	VII	OP	Cn		
23.50	J	90	PI	Ro	VII	OP	Cn		
23.80	J	20	PI	Ro	VII	OP	Cn		
23.93	J	5	PI	Ro	VII	OP	Cn		
23.95	J	5	PI	Ro	VII	OP	Cn		
24.12	J	45	PI	Ro	VII	OP	Cn		
24.24	J	2	PI	Ro	VII	OP	Cn		
24.47	J	5	PI	Ro	VII	OP	Cn		
24.51	J	10	PI	Ro	VII	OP	Cn		
24.63	J	10	PI	Ro	VII	OP	Cn		
24.71	J	5	PI	Ro	VII	OP	Cn		
24.76	J	5	PI	Ro	VII	OP	Cn		
25.14	J	5	PI	Ro	VII	OP	Cn		
25.77	J	15	PI	Ro	VII	OP	Cn		
25.84	J	5	PI	Ro	VII	OP	Cn		
25.88	J	20	PI	Ro	VII	TI	Cn		
25.95	J	2	PI	Ro	VII	OP	Cn		

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Geologist		H.A.				Date	26/01/2018		
						Page	4	of	5
Traverse Chainage; or Down hole depth (rock core)	Type	Dip ° / Dip Direction °;	Planarity	Roughness	Roughness Class	Aperture	Infilling	Zones ¹	Other
	LP /	or				CD /	Cn /	SZ /	
	BP /	Angle ° from	Stp /	Ro /	I to IX	OP /	St /	CZ /	
	FP /	horizontal	Un /	Sm /		FL /	Vr /	HFZ /	
J etc.	(rock core)	PI	SI			TI	Ct ¹	AZ	
26.31	BP	10	PI	Ro	VII	OP	Cn		
26.87	J	5	PI	Ro	VII	OP	Cn		
27.04	J	40	PI	Ro	VII	TI	Cn		
27.90	BP	20	PI	Ro	VII	TI	Vr		Carb
28.16	J	15	PI	Ro	VII	TI	Cn		
28.70	J	40	PI	Ro	VII	OP	Cn		
28.99	J	15	PI	Ro	VII	OP	Cn		
29.10	J	5	PI	Ro	VII	OP	Cn		
29.44	J	30	PI	Ro	VII	OP	Cn		
29.54	J	2	PI	Ro	VII	OP	Cn		
30.42	J	2	PI	Ro	VII	OP	Cn		
30.61	J	5	PI	Ro	VII	OP	Cn		
30.64	J	5	PI	Ro	VII	OP	Cn		
30.74	J	20	PI	Ro	VII	OP	Cn		
30.83	J	15	PI	Ro	VII	OP	Cn	HFZ	
30.89	J	15	PI	Ro	VII	OP	Cn		
30.99	J	2	PI	Ro	VII	OP	Cn		
31.13	J	15	Un	Ro	IV	OP	Cn		
31.28	J	30	PI	Ro	VII	OP	Cn	HFZ	
31.33	J	10	PI	Ro	VII	OP	Cn	HFZ	
31.40	J	10	PI	Ro	VII	OP	Cn	HFZ	
31.42	J	10	PI	Ro	VII	OP	Cn	HFZ	
31.54	J	15	PI	Ro	VII	OP	Cn		
31.57	J	15	PI	Ro	VII	OP	Cn		
32.10	J	15	Stp	Ro	I	OP	Cn		
32.18	J	40	PI	Ro	VII	OP	Cn		
32.23	J	45	PI	Ro	VII	OP	Cn		
32.35	J	5	PI	Ro	VII	OP	Cn		
32.48	J	40	PI	Ro	VII	OP	Cn		
32.53	J	45	PI	Ro	VII	OP	Cn		
32.88	J	30	PI	Ro	VII	OP	Cn		

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

F:GEOT 533/9 – 2014

[illegible]

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