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**GEOTECHNICAL
BOREHOLE LOG**

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

BOREHOLE No **CRR702**

Sheet 1 of 3

REFERENCE No **H12928**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation		
LOCATION	Abingdon Street	COORDINATES 503018.5 E; 6959143.5 N	
PROJECT No	FG6470	SURFACE RL 24.00m	PLUNGE 90°
			DATE STARTED 23/10/2017
			GRID DATUM MGA94
JOB No		HEIGHT DATUM AHD	BEARING °
			DATE COMPLETED 27/10/2017
			DRILLER Schneider

DEPTH (m)	R.L. (m)	FAUGER 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
23.85						ASPHALT					0.00m-1.50m: Non destructive drilling.		
23.20						Gravelly SAND (Fill) Pale grey brown, moist, medium dense. Medium to coarse grained sand, coarse grained gravel, sub angular.	(SP)						
22.38					(74)	CONGLOMERATE (Rip) XW: Recovered as Gravelly CLAY (CL), grey orange, moist, hard. Low plasticity. Fine to coarse, angular gravel.	XW						
						CONGLOMERATE (Rip) HW: Orange grey, medium to coarse grained, bedded, generally very low to medium strength.	XW						
			100 (45)			Sub angular to sub rounded gravel size clasts up to 30mm in clay matrix. Some limonite staining.	HW				2.98m-3.38m: Highly weathered sandstone, very low strength.		
			100 (69)			-BP: 10°-30° (8-10/m), Pl/Ro, Tl, some Fest, some Cly Vr. -Js: 50°-60° (1-2/m), Pl/Ro, Tl, some Fest and Cly Vr.					Is(50)=0.30 MPa Is(50)=0.15 MPa	A (3.63m) D (3.65m)	
19.60						CONGLOMERATE (Rip) MW: Orange grey, medium to coarse grained, closely to medium bedded, low to medium strength. Sub angular to sub rounded gravel size clasts up to 30mm in clay matrix. Some limonite staining.							
						-BP: 10°-30° (<2/m), Pl/Ro, Tl, some Fest, some Cly Vr.							
			100 (67)				MW					Is(50)=0.97 MPa Is(50)=0.78 MPa	D (4.26m) A (4.31m)
			100 (78)									Is(50)=0.16 MPa Is(50)=0.40 MPa	D (5.89m) A (5.93m)
			100 (74)									Is(50)=0.13 MPa Is(50)=0.17 MPa	D (7.29m) A (7.45m)
14.20						TUFF (Rif)	HW				9.39m-9.75m: Slightly weathered Argillite boulder		
												Is(50)=0.19 MPa Is(50)=0.33 MPa	A (9.70m) D (9.85m)

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.

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 **CRR702**

Sheet 2 of 3

REFERENCE No **H12928**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation		
LOCATION	Abingdon Street	COORDINATES 503018.5 E; 6959143.5 N	
PROJECT No	FG6470	SURFACE RL 24.00m	PLUNGE 90°
		PLUNGE 90°	DATE STARTED 23/10/2017
		PLUNGE 90°	GRID DATUM MGA94
JOB No		HEIGHT DATUM AHD	BEARING °
		HEIGHT DATUM AHD	DATE COMPLETED 27/10/2017
		HEIGHT DATUM AHD	DRILLER Schneider

DEPTH (m)	R.L. (m)	FAUGER 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
11						HW: Cont'd. Pale grey and grey, fine to medium grained, massive, mainly very low to low strength. Clasts up to 20mm in a fine grained matrix. Some limonite staining. -Js: 5°-15° (4/m), PI/Ro, TI-OP, FeSt-Cly Vr		HW	VL-L		Is(50)=0.08 MPa Is(50)=0.33 MPa	D (10.66m) A (10.68m)	
12			100 (0)						M	VC	Is(50)=0.09 MPa Is(50)=0.86 MPa	D (11.33m) A (11.39m)	
12									L		Is(50)=0.05 MPa Is(50)=0.12 MPa	A (11.76m) D (11.78m)	
13	10.80					CORE LOSS		XW	VL				
14	10.30		0 (81)			TUFF (Rif) SW: Pale grey green, fine to medium grained, massive, medium to high strength. Clasts up to 10mm in a fine grained matrix. Trace limonite staining. -Js: 0°-10° (1/m), PI/Ro, OP, Cn		XW	EL-VL		Is(50)=0.89 MPa Is(50)=0.41 MPa	D (14.27m) A (14.30m)	
15			100 (98)					SW	MH		14.73m-14.85m: CAI=0.73 Is(50)=2.50 MPa Is(50)=1.80 MPa	A (14.87m) D (14.90m)	
16	8.10		100 (92)			TUFF (Rif) FR: Pale grey green, fine to medium grained, massive, high strength. Clasts up to 10mm in a fine grained matrix. Trace limonite staining. -Js: 5°-45° (5/m), PI/Ro, OP, Cn.					15.33m-15.45m: Brazilian Tensile Strength = 3.49 MPa Is(50)=1.30 MPa Is(50)=0.08 MPa	D (15.73m) A (15.80m)	
17											17.08m-17.18m: CAI=0.73 Is(50)=0.83 MPa Is(50)=1.50 MPa	D (16.64m) A (16.80m)	
18			100 (67)					FR	H		17.60m-17.71m: Slake Durability Index Test Is(50)=1.80 MPa Is(50)=1.40 MPa	D (17.38m) A (17.48m)	
19			100 (78)								18.95m-19.25m: J 45°, TI, Cn. Is(50)=1.20 MPa Is(50)=2.90 MPa UCS=30.20 MPa E=4.55 GPa v= 0.04	D (18.70m) A (18.74m) (18.87m)	
	4.00										19.29m-19.40m: CAI=0.57 Is(50)=2.50 MPa Is(50)=0.87 MPa	D (19.91m) A (19.97m)	

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.

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**GEOTECHNICAL
BOREHOLE LOG**

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

BOREHOLE No **CRR702**

Sheet 3 of 3

REFERENCE No **H12928**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation				
LOCATION	Abingdon Street		COORDINATES 503018.5 E; 6959143.5 N		
PROJECT No	FG6470	SURFACE RL	24.00m	PLUNGE	90°
		DATE STARTED	23/10/2017	GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°
		DATE COMPLETED	27/10/2017	DRILLER	Schneider

DEPTH (m)	R.L. (m)	BOREHOLE 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		EC	
												VH	H	VC	C
21					TUFF (Rif) FR: Cont'd.	FR				20.20m-20.40m: Brazilian Tensile Strength = 2.42 MPa	Is(50)=2.10 MPa Is(50)=1.70 MPa	D (20.69m) A (20.80m)			
22			100 (72)							21.55m-22.05m: Healed joint, 80°-90°, Pl/Ro, silicious infill.	Is(50)=0.45 MPa Is(50)=0.14 MPa	D (21.70m) A (21.73m)			
23											Is(50)=1.40 MPa Is(50)=0.95 MPa	A (22.30m) D (22.32m)			
24											Is(50)=1.70 MPa Is(50)=0.70 MPa UCS=16.20 MPa E=4 GPa v= 0.087	A (23.57m) D (23.60m) (23.82m)			
25			100 (58)							25.20m-25.47m: HFZ					
26										25.70m-25.74m: HFZ					
27	-3.20		100								Is(50)=1.10 MPa Is(50)=0.86 MPa	A (26.10m) D (26.14m)			
Borehole completed at 27.20m															

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.	LOGGED BY	REVIEWED BY
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**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**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation				
LOCATION	Abingdon Street			COORDINATES 503018.5 E; 6959143.5 N	
PROJECT No	FG6470	SURFACE RL	24.00m	PLUNGE	90°
				DATE STARTED	23/10/2017
				GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°
				DATE COMPLETED	27/10/2017
				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
23.85		ASPHALT				
		Gravelly SAND(Fill)				
23.20		Pale grey brown, moist, medium dense. Medium to coarse grained sand, coarse grained gravel, sub angular.				
1		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.				
2		Sub angular to sub rounded gravel size clasts up to 30mm in clay matrix. Some limonite staining.				
		-BP: 10°-30° (8-10/m), Pl/Ro, TI, some Fest, some Cly Vr.				
3		-Js: 50°-60° (1-2/m), Pl/Ro, TI, some Fest and Cly Vr.				
4						
19.60		CONGLOMERATE				
		Orange grey, medium to coarse grained, closely to medium bedded, low to medium strength.				
5		Sub angular to sub rounded gravel size clasts up to 30mm in clay matrix. Some limonite staining.				
		-BP: 10°-30° (<2/m), Pl/Ro, TI, some Fest, some Cly Vr.				
6						
7						
8						
9						
14.20		TUFF				

Grout: Cement / Bentonite mix

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.	LOGGED BY	REVIEWED BY
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STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR702**

Sheet 2 of 3

PIEZOMETER No **CRR702**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation								
LOCATION	Abingdon Street				COORDINATES 503018.5 E; 6959143.5 N				
PROJECT No	FG6470	SURFACE RL	24.00m	PLUNGE	90°	DATE STARTED	23/10/2017	GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°	DATE COMPLETED	27/10/2017	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			Cont'd. Pale grey and grey, fine to medium grained, massive, mainly very low to low strength. Clasts up to 20mm in a fine grained matrix. Some limonite staining. -Js: 5°-15° (4/m), Pl/Ro, TI-OP, FeSt-Cly Vr			
13	10.80		CORE LOSS			
14	10.30		TUFF Pale grey green, fine to medium grained, massive, medium to high strength. Clasts up to 10mm in a fine grained matrix. Trace limonite staining. -Js: 0°-10° (1/m), Pl/Ro, OP, Cn			
16	8.10		TUFF Pale grey green, fine to medium grained, massive, high strength. Clasts up to 10mm in a fine grained matrix. Trace limonite staining. -Js: 5°-45° (5/m), Pl/Ro, OP, Cn.			
19				18.80m / 5.20 AHD		
19						Bentonite Seal
19				19.80m / 4.20 AHD		
4.00						

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.	LOGGED BY	REVIEWED BY
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STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR702**

Sheet 3 of 3

PIEZOMETER No **CRR702**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation		
LOCATION	Abingdon Street	COORDINATES 503018.5 E; 6959143.5 N	
PROJECT No	FG6470	SURFACE RL 24.00m	PLUNGE 90°
			DATE STARTED 23/10/2017
			GRID DATUM MGA94
JOB No		HEIGHT DATUM AHD	BEARING °
			DATE COMPLETED 27/10/2017
			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.	21.20m / 2.80 AHD		Top of Slotted Pipe
22						
23						
24						Filter: Washed / Graded Sand
25						
26						
27	-3.20		Borehole completed at 27.20m	27.20m / -3.20 AHD		
28						
29						

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.	LOGGED BY	REVIEWED BY
	HA	S. Foley

Project Name	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 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



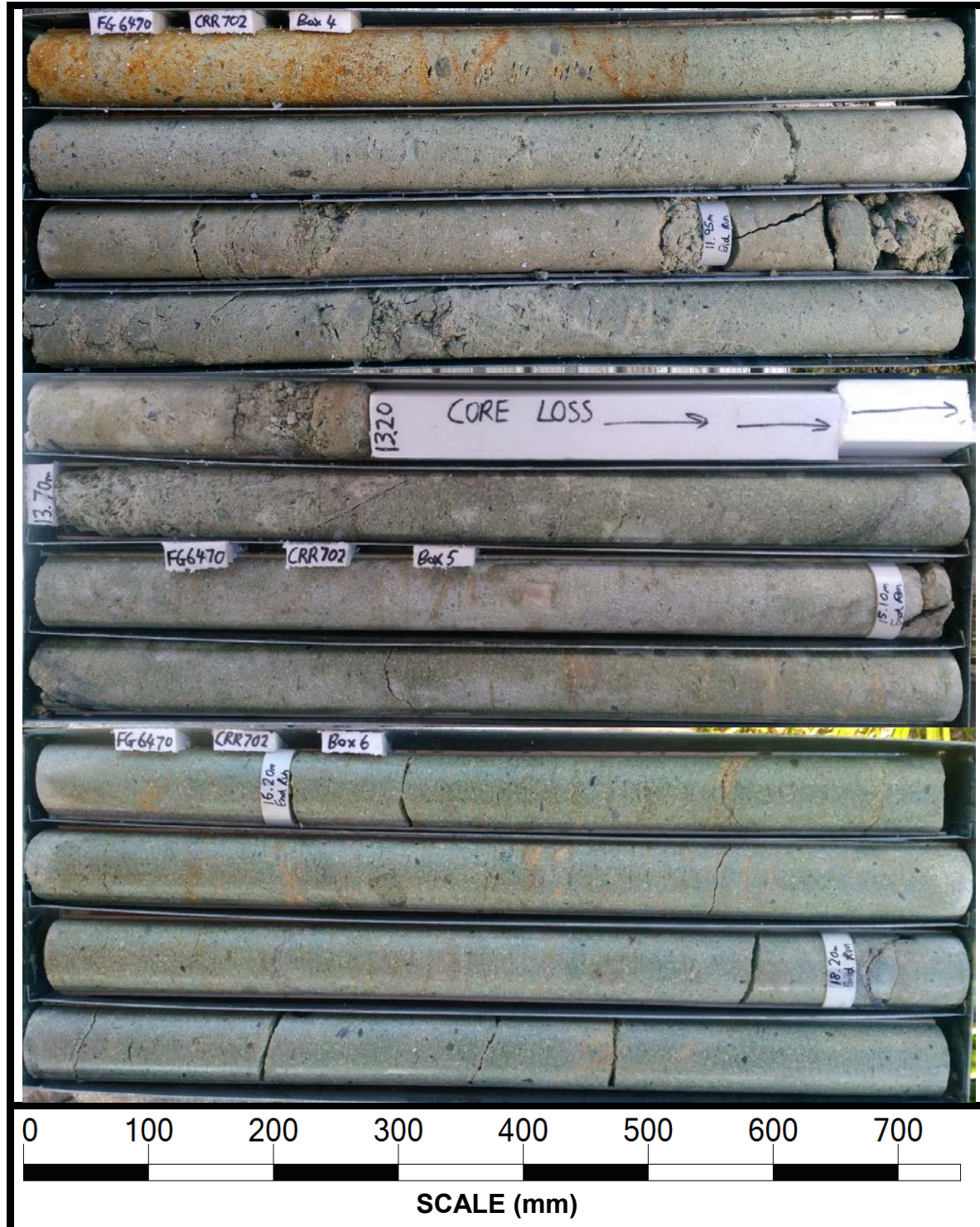
Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	27/10/2017
Borehole No.	CRR702	Reference No.	H12928
Location	Abingdon Street	Start Depth (m)	1.50
Submitted By	M. de Gee	Finish Depth (m)	27.20



Project Name	Cross River Rail 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 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 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 Name		Cross River Rail				Project No.		FG6470	
Site ID / Borehole No.		CRR702				Surface RL		23.92	
Geologist		H.A.				Date		23/10/2017	
						Page		1	of 2
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 / Sl	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹	
								SZ / CZ / HFZ / AZ	Other
1.51	J	30	Pl	Ro	VII	TI	St		
1.60	J	55	Pl	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	I	OP	Cn		
3.06	J	40	Pl	Ro	VII	OP	Cn		
3.13	J	35	Stp	Ro	I	OP	Cn		
3.33	J	10	Pl	Ro	VII	OP	St		
3.45	J	40	Pl	Ro	VII	OP	St		
3.60	J	10	Pl	Ro	VII	OP	St		
3.77	J	45	Pl	Ro	VII	OP	St		
4.86	J	5	Pl	Ro	VII	TI	St		
5.07	J	45	Pl	Ro	VII	TI	Cn		
5.42	J	30	Stp	Ro	I	TI	St		
5.58	J	5	Pl	Ro	VII	TI	St		
6.33	J	40	Stp	Ro	I	TI			
6.78	J	2	Pl	Ro	VII	TI			
7.68	J	20	Pl	Ro	VII	OP			
7.99	J	30	Un	Ro	IV	OP			
8.31	J	15	Pl	Ro	VII	OP			
8.38	J	20	Pl	Ro	VII	OP			
8.84	J	10	Pl	Ro	VII	OP			
9.04	J	20	Pl	Ro	VII	OP			
9.15	J	20	Pl	Ro	VII	OP			
9.41	J	45	Pl	Ro	VII	TI			
10.92	J	50	Stp	Ro	I	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 Name		Cross River Rail				Project No.		FG6470	
Site ID / Borehole No.		CRR702				Surface RL		23.92	
Geologist		H.A.				Date		23/10/2017	
						Page		2 of 2	
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 / Sl	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹	
								SZ / CZ / HFZ / AZ	Other
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