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GEOTECHNICAL
BOREHOLE LOG

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

BOREHOLE No **CRR720**

Sheet 1 of 5

REFERENCE No **H12946**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation				
LOCATION	Hardgrave Park			COORDINATES 501454.8 E; 6962463.2 N	
PROJECT No	FG6470	SURFACE RL	33.14m	PLUNGE	90°
				DATE STARTED	26/10/2017
				GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°
				DATE COMPLETED	31/10/2017
				DRILLER	Hinterland

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
1	31.94				Gravelly SAND (Fill) Grey, moist to wet. Medium to coarse grained sand, fine to medium grained gravel. Trace silt.	(SP)				0.00m-1.00m: Non Destructive Drilling	
2	31.34			A	Sandy Clayey GRAVEL (Residual) Orange brown mottled brown, moist, very dense. Fine to medium grained gravel, sub angular. Medium plasticity clay.	GC				9, 21, 30/80mm hb LL=39% PI= 23% MC=13.1% LS= 11% <75µm= 35%	SPT
3	30.14			B	ARGILLITE (DCf) HW: Grey brown with some orange brown staining, very low strength.	HW				30/80mm	SPT
4				(36) 100 (25)	ARGILLITE (DCf) MW: Pale grey, grey and orange brown, fine grained, foliated, medium to high strength. -Js: 5°-20° (7-10/m), Un-Pl/Ro-Sm, CD-OP, FeSt -Js: 45°-60° (1-3m), Un-Pl/Ro-Sm, CD-OP, FeSt -FP: 45°-60° (1-2/m), Un-Pl/Ro-Sm, CD-OP, FeSt	MW				Is(50)=2.70 MPa Is(50)=0.47 MPa Is(50)=0.98 MPa	D (3.17m) A (3.18m) A (3.31m)
5				100 (23)						Is(50)=3.70 MPa Is(50)=1.80 MPa	D (4.44m) A (4.45m)
6				100 (45)						Is(50)=0.14 MPa Is(50)=0.14 MPa	D (5.50m) A (5.55m)
7				100 (73)						Is(50)=0.82 MPa Is(50)=1.30 MPa	D (6.20m) A (6.27m)
8										Is(50)=0.08 MPa Is(50)=0.04 MPa	D (7.19m) A (7.21m)
9				100 (50)		XW					
				100 (58)		HW				Is(50)=0.68 MPa Is(50)=0.71 MPa	D (8.63m) A (8.65m)
						MW				Is(50)=0.33 MPa Is(50)=0.80 MPa	D (9.34m) A (9.35m)
	23.14										

Continued on next sheet

REMARKS: DCf - Neranleigh Fernvale Beds. Standpipe piezometer installed.	LOGGED BY	REVIEWED BY
	MS	S. Foley



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GEOTECHNICAL BOREHOLE LOG

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

BOREHOLE No **CRR720**

Sheet 2 of 5

REFERENCE No **H12946**

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

LOCATION **Hardgrave Park**

COORDINATES **501454.8 E; 6962463.2 N**

PROJECT No **FG6470**

SURFACE RL **33.14m**

PLUNGE **90°**

DATE STARTED **26/10/2017**

GRID DATUM **MGA94**

JOB No

HEIGHT DATUM **AHD**

BEARING °

DATE COMPLETED **31/10/2017**

DRILLER **Hinterland**

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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23.04					ARGILLITE (DCf) MW: Cont'd.		MW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				</

Is(50)=0.43 MPa
Is(50)=2.20 MPa

D (13.85m)
A (13.87m)

Is(50)=3.30 MPa
Is(50)=1.90 MPa
UCS=45.60 MPa
E=169 GPa
v= 0.274
Is(50)=1.50 MPa
Is(50)=2.80 MPa

D (17.44m)
A (17.46m)
(17.73m)
A (17.88m)
D (17.89m)

Is(50)=8.00 MPa
Is(50)=0.89 MPa

D (19.10m)
A (19.11m)

Continued on next sheet

REMARKS: DCf - Neranleigh Fernvale Beds. Standpipe piezometer installed.

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GEOTECHNICAL
BOREHOLE LOG

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

BOREHOLE No **CRR720**

Sheet 3 of 5

REFERENCE No **H12946**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation				
LOCATION	Hardgrave Park			COORDINATES 501454.8 E; 6962463.2 N	
PROJECT No	FG6470	SURFACE RL	33.14m	PLUNGE	90°
				DATE STARTED	26/10/2017
				GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°
				DATE COMPLETED	31/10/2017
				DRILLER	Hinterland

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: DCf - Neranleigh Fernvale Beds. Standpipe piezometer installed.	LOGGED BY	REVIEWED BY
	MS	S. Foley

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation
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LOCATION	Hardgrave Park
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COORDINATES 501454.8 E; 6962463.2 N

PROJECT No	FG6470
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SURFACE RL 33.14m

PLUNGE 90°

DATE STARTED 26/10/2017

GRID DATUM MGA94

JOB No

HEIGHT DATUM AHD

BEARING °

DATE COMPLETED 31/10/2017

DRILLER Hinterland

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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Continued on next sheet

REMARKS: DCF - Neranleigh Fernvale Beds. Standpipe piezometer installed.

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MS

S. Foley



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GEOTECHNICAL
BOREHOLE LOG

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

BOREHOLE No **CRR720**

Sheet 5 of 5

REFERENCE No **H12946**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Hardgrave Park COORDINATES 501454.8 E; 6962463.2 N

PROJECT No FG6470 SURFACE RL 33.14m PLUNGE 90° DATE STARTED 26/10/2017 GRID DATUM MGA94

JOB No HEIGHT DATUM AHD BEARING ° DATE COMPLETED 31/10/2017 DRILLER Hinterland

DEPTH (m)	R.L. (m)	AUGER CASING	WASHBORING	CORE DRILLING	RQD () %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH					DEFECT SPACING					ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS		
					CORE REC %					EH	VH	H	M	L	VL	EL	EC	VC	C			M	W
41							ARGILLITE (DCf) SW: Cont'd.															Is(50)=0.33 MPa Is(50)=1.10 MPa	D (40.14m) A (40.15m)
42					100 (100)				SW													Is(50)=4.00 MPa Is(50)=6.60 MPa	D (41.68m) A (41.69m)
43																						Is(50)=2.50 MPa Is(50)=6.30 MPa	D (42.20m) A (42.23m)
44	-10.31				100		Borehole completed at 43.45m															Is(50)=3.80 MPa Is(50)=3.80 MPa	D (43.25m) A (43.26m)
45																							
46																							
47																							
48																							
49																							

REMARKS: <u>DCf - Neranleigh Fernvale Beds. Standpipe piezometer installed.</u>	LOGGED BY	REVIEWED BY
	MS	S. Foley



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STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR720**

Sheet 1 of 5

PIEZOMETER No **CRR720**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation								
LOCATION	Hardgrave Park			COORDINATES 501454.8 E; 6962463.2 N					
PROJECT No	FG6470	SURFACE RL	33.14m	PLUNGE	90°	DATE STARTED	26/10/2017	GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°	DATE COMPLETED	31/10/2017	DRILLER	Hinterland

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
1	31.94		Gravelly SAND(Fill) Grey, moist to wet. Medium to coarse grained sand, fine to medium grained gravel. Trace silt.			
2	31.34		Sandy Clayey GRAVEL(Residual) Orange brown mottled brown, moist, very dense. Fine to medium grained gravel, sub angular. Medium plasticity clay.			
3	30.14		ARGILLITE Grey brown with some orange brown staining, very low strength.			
4			ARGILLITE Pale grey, grey and orange brown, fine grained, foliated, medium to high strength. -Js: 5°-20° (7-10/m), Un-Pl/Ro-Sm, CD-OP, FeSt -Js: 45°-60° (1-3m), Un-Pl/Ro-Sm, CD-OP, FeSt -FP: 45°-60° (1-2/m), Un-Pl/Ro-Sm, CD-OP, FeSt			
5						
6						
7						
8						
9						
	23.14					

Continued on next sheet

REMARKS: Dcf - Neranleigh Fernvale Beds. Standpipe piezometer installed.

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STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR720**

Sheet 2 of 5

PIEZOMETER No **CRR720**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation						
LOCATION	Hardgrave Park				COORDINATES 501454.8 E; 6962463.2 N		
PROJECT No	FG6470	SURFACE RL	33.14m	PLUNGE	90°	DATE STARTED	26/10/2017
JOB No		HEIGHT DATUM	AHD	BEARING	°	DATE COMPLETED	31/10/2017
						GRID DATUM	MGA94
						DRILLER	Hinterland

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
23.04			ARGILLITE Cont'd.			
			ARGILLITE Pale grey and grey, fine grained, foliated, high to very high strength.			
11			-Js: 5°-20° (2-3/m), Un-Pl/Ro-Sm, CD-OP, FeSt			
			-Js: 45°-60° (0-1/m), Un-Pl/Ro-Sm, CD-OP, FeSt			
			-FP: 45°-60° (0-1/m), Un-Pl/Ro-Sm, CD-OP, Cn-FeSt			
12						
13						
14						
15			14.6m: - FP: 20°-40° (1-2/m) Pl/Sm-Ro, TI, Cn, some Fe St			Grout: Cement / Bentonite mix
16						
17						
18						
19						
13.14						

Continued on next sheet

REMARKS: Dcf - Neranleigh Fernvale Beds. Standpipe piezometer installed.

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STANDPIPE
INSTALLATION LOG

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

BOREHOLE No **CRR720**

Sheet 3 of 5

PIEZOMETER No **CRR720**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation								
LOCATION	Hardgrave Park				COORDINATES 501454.8 E; 6962463.2 N				
PROJECT No	FG6470	SURFACE RL	33.14m	PLUNGE	90°	DATE STARTED	26/10/2017	GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°	DATE COMPLETED	31/10/2017	DRILLER	Hinterland

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			ARGILLITE Cont'd.			
22						
23						
24						
25						
26						
27						
28						
29						
3.14						

Continued on next sheet

REMARKS: DCF - Neranleigh Fernvale Beds. Standpipe piezometer installed.	LOGGED BY	REVIEWED BY
	MS	S. Foley



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STANDPIPE
INSTALLATION LOG

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

BOREHOLE No **CRR720**

Sheet 4 of 5

PIEZOMETER No **CRR720**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation								
LOCATION	Hardgrave Park				COORDINATES 501454.8 E; 6962463.2 N				
PROJECT No	FG6470	SURFACE RL	33.14m	PLUNGE	90°	DATE STARTED	26/10/2017	GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°	DATE COMPLETED	31/10/2017	DRILLER	Hinterland

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			ARGILLITE Cont'd.			
32						
33						
34						
35				34.95m / -1.81 AHD		
36				35.95m / -2.81 AHD		Bentonite Seal
37				37.45m / -4.31 AHD		Top of Slotted Pipe
38						Filter: Washed / Graded Sand
39						
-6.86						

Continued on next sheet

REMARKS: Dcf - Neranleigh Fernvale Beds. Standpipe piezometer installed.

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STANDPIPE
INSTALLATION LOG

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

BOREHOLE No **CRR720**

Sheet 5 of 5

PIEZOMETER No **CRR720**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation								
LOCATION	Hardgrave Park				COORDINATES 501454.8 E; 6962463.2 N				
PROJECT No	FG6470	SURFACE RL	33.14m	PLUNGE	90°	DATE STARTED	26/10/2017	GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°	DATE COMPLETED	31/10/2017	DRILLER	Hinterland

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
41			ARGILLITE Cont'd.			
42						
43						
-10.31				43.45m / -10.31 AHD		
Borehole completed at 43.45m						
44						
45						
46						
47						
48						
49						

REMARKS: DCF - Neranleigh Fernvale Beds. Standpipe piezometer installed.	LOGGED BY	REVIEWED BY
	MS	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	31/10/2017
Borehole No.	CRR720	Reference No.	H12946
Location	Hardgrave Park	Start Depth (m)	3.00
Submitted By	M. de Gee	Finish Depth (m)	43.45



CORE PHOTO LOG
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	31/10/2017
Borehole No.	CRR720	Reference No.	H12946
Location	Hardgrave Park	Start Depth (m)	3.00
Submitted By	M. de Gee	Finish Depth (m)	43.45



CORE PHOTO LOG

DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	31/10/2017
Borehole No.	CRR720	Reference No.	H12946
Location	Hardgrave Park	Start Depth (m)	3.00
Submitted By	M. de Gee	Finish Depth (m)	43.45



CORE PHOTO LOG
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	31/10/2017
Borehole No.	CRR720	Reference No.	H12946
Location	Hardgrave Park	Start Depth (m)	3.00
Submitted By	M. de Gee	Finish Depth (m)	43.45



CORE PHOTO LOG
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	31/10/2017
Borehole No.	CRR720	Reference No.	H12946
Location	Hardgrave Park	Start Depth (m)	3.00
Submitted By	M. de Gee	Finish Depth (m)	43.45



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.		F66470	
Site ID / Borehole No.		CRR720				Surface RL		34.83	
Geologist		M.S.				Date		26/10/2017	
						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 / Sl	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹ SZ / CZ / HFZ / AZ	Other
3.04	J	20	Pl	Sm	VIII	OP	St		Fe
3.11	J	20	Pl	Sm	VIII	CD	St		Fe
3.27	J	65	Pl	Sm	VIII	CD	St		Fe
3.47	J	70	Un	Sm	V	OP	St		Fe
3.63	J	10	Pl	Sm	VIII	OP	St		Fe
3.65	J	60	Un	Sm	V	OP	St		Fe
3.68	J	60	Un	Sm	V	OP	St		Fe
3.81	J	20	Pl	Sm	VIII	OP	St		Fe
3.88	J	40	Pl	Sm	VIII	OP	St		Fe
3.94	J	10	Pl	Sm	VIII	OP	St		Fe, *
*gravel and clay infill fragmented zone									
4.06	J	60	Un	Sm	V	OP	St		Fe
4.14	J	10	Stp	Sm	II	OP	St		Fe
4.30	J	20	Un	Sm	V	OP	St		Fe
4.33	J	60	Pl	Sm	VIII	OP	St		Fe
4.41	J	10	Pl	Sm	VIII	OP	St		Fe
4.50	J	10	Pl	Ro	VII	OP	St		Fe
4.70	J	30	Pl	Sm	VIII	OP	St		Fe
4.82	J	60	Un	Sm	V	OP	St		Fe
4.86	J	30	Pl	Sm	VIII	OP	St		Fe
4.90	J	80	Un	Sm	V	OP	St		Fe
4.94	J	20	Un	Sm	V	OP	St		Fe
5.00	J	60	Pl	Sm	VIII	OP	St		Fe
5.06	J	40	Un	Sm	V	OP	St		Fe
5.10	J	60	Un	Sm	V	OP	St		Fe
5.17	J	60	Un	Ro	IV	OP	St		Fe
5.17	BP	10	Un	Ro	IV	OP	St		Fe
5.33	FP	45	Un	Ro	IV	OP	St	Fe, Gravel infill	
5.38	J	10	Un	Ro	IV	OP	St		Fe
5.44	J	20	Un	Ro	IV	OP	St		Fe
5.51	J	60	Un	Ro	IV	OP	St		Fe

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

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Detailed Discontinuity Description Log

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Project Name		Cross River Rail				Project No.		F66470	
Site ID / Borehole No.		CRR720				Surface RL		34.83	
Geologist		M.S.				Date		26/10/2017	
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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
5.57	J	40	Pl	Sm	VIII	OP	St		Fe
5.65	J	60	Un	Ro	IV	OP	St		Fe
5.85	J	40	Pl	Sm	VIII	OP	St		
5.92	J	30	Pl	Sm	VIII	OP	St		
6.06	J	60	Pl	Sm	VIII	OP	St		
6.08	J	5	Un	Sm	V	OP	St		
6.10	FP	45	Pl	Sm	VIII	OP	St		Fe
6.25	J	60	Un	Ro	IV	OP	St		
6.31	J	10	Un	Ro	IV	OP	St		
6.45	J	20	Un	Ro	IV	OP	St		
6.55	J	80	Un	Ro	IV	CD	St		
7.15	J	30	Stp	Ro	I	OP	St		
7.44	J	30	Un	Ro	IV	OP	St		
7.52	J	10	Pl	Ro	VII	OP	St		
7.54	J	10	Pl	Ro	VII	OP	St		
7.57	J	10	Un	Ro	IV	OP	St		Cly infill
7.61	J	60	Pl	Ro	VII	CD	St		Cly infill
7.65	J	70	Pl	Ro	VII	CD	St		
8.30	J	30	Un	Ro	IV	OP	St		
8.35	J	60	Un	Ro	IV	OP	St		
8.43	J	80	Un	Ro	IV	CD	St		Cly infill
8.55	J	40	Stp	Ro	I	OP	St		Gravel infill
8.68	J	30	Pl	Sm	VIII	OP	St		
8.75	J	30	Un	Ro	IV	OP	St		
8.90	J	60	Un	Ro	IV	OP	St		
9.20	FP	60	Un	Ro	IV	OP	St		
9.21	FP	15	Pl	Sm	IV	OP	St		
9.54	J	20	Pl	Sm	VIII	OP	St		
9.68	J	60	Pl	Sm	VIII	OP	St		
9.85	FP	50	Pl	Sm	VIII	OP	St		
9.89	J	60	Pl	Sm	VIII	OP	St		

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

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Site ID / Borehole No.		CRR720				Surface RL		34.83	
Geologist		M.S.				Date		26/10/2017	
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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
9.95	J	60	Pl	Sm	VIII	OP	St		
10.10	FP	60	Pl	Sm	VIII	OP	St		
10.25	FP	60	Un	Sm	V	OP	St		
10.53	FP	60	Pl	Sm	VIII	OP	St		
10.81	J	20	Un	Sm	V	OP	St		
11.12	FP	60	Un	Sm	V	OP	St		
11.29	J	20	Un	Sm	V	OP	St		
12.36	J	10	Un	Ro	IV	OP	St		
12.70	FP	20	Un	Ro	IV	OP	St		
12.75	FP	60	Un	Ro	IV	OP	St		
12.93	J	40	Un	Sm	V	OP	St		
13.04	J	40	Stp	Sm	II	OP	St		
13.29	FP	40	Pl	Sm	VIII	OP	St		
13.38	J	50	Un	Ro	IV	OP	St		
13.52	J	5	Pl	Sm	VIII	OP	St		
13.54	J	60	Pl	Sm	VIII	OP	St		
13.98	J	30	Un	Ro	IV	OP	St		
14.10	J	60	Pl	Sm	VIII	OP	St		
14.29	J	30	Un	Ro	IV	OP	St		
14.32	J	20	Un	Ro	IV	OP	St		
14.4	FP	60	Un	Ro	IV	OP	St		
14.48	J	45	Un	Ro	IV	CD	St		
14.75	J	10	Un	Ro	IV	CD	St		
15.14	FP	50	Pl	Sm	VIII	OP	St		
15.26	J	50	Pl	Sm	VIII	OP	St		
15.67	J	5	Stp	Sm	II	OP	St		
15.79	J	10	Un	Ro	IV	OP	St		
16.10	J	60	Un	Ro	IV	OP	St		
16.70	FP	60	Pl	Sm	VIII	OP	St		
17.02	J	30	Un	Ro	IV	OP	St		
17.31	J	30	Un	Ro	IV	OP	St		

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

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Site ID / Borehole No.		CRR720				Surface RL		34.83	
Geologist		M.S.				Date		26/10/2017	
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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
17.48	J	50	Pl	Sm	VIII	OP	St		
18.12	J	10	Stp	Ro	I	OP	St		
18.85	J	60	Pl	Sm	VIII	OP	St		
19.20	J	20	Pl	Sm	VIII	OP	St		
19.38	J	5	Un	Ro	IV	OP	St		
20.27	FP	50	Pl	Sm	VIII	OP	St		
20.59	J	20	Un	Ro	IV	OP	St		
20.66	J	20	Un	Ro	IV	OP	St		
20.75	J	30	Un	Ro	IV	OP	St		
20.79	FP	40	Un	Ro	IV	OP	St		
23.87	J	60	Pl	Sm	VIII	OP	St		
24.18	J	40	Un	Ro	IV	OP	St		
26.41	J	10	Stp	Ro	I	OP	St		
27.50	J	30	Un	Ro	IV	OP	St		
30.40	J	70	Un	Ro	IV	OP	St		Quartz infill
31.71	J	20	Un	Ro	IV	OP	St		
33.29	J	40	Un	Ro	IV	OP	St		
33.75	J	30	Un	Ro	IV	OP	St		
34.00	J	20	Un	Ro	IV	OP	St		Cly infill
34.78	FP	45	Pl	Sm	VIII	OP	St		
35.00	J	45	Pl	Sm	VIII	OP	Cn		
35.49	J	10	Pl	Sm	VIII	OP	Cn		
35.67	J	5	Un	Ro	IV	OP	St		
35.79	J	40	Pl	Sm	VIII	OP	St		
35.89	J	30	Un	Ro	IV	OP	St		
36.43	J	60	Un	Ro	IV	OP	St		
36.80	J	30	Un	Ro	IV	OP	St		
36.98	J	30	Pl	Ro	VII	OP	St		Cly infill
37.39	J	40	Un	Ro	IV	OP	St		
37.63	FP	30	Un	Ro	IV	OP	St		Cly infill
37.98	J	20	Un	Ro	IV	OP	St		

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

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Site ID / Borehole No.		CRR720				Surface RL		34.83	
Geologist		M.S.				Date		26/10/2017	
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									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 / Sl	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹ SZ / CZ / HFZ / AZ	Other
38.73	J	30	Stp	Ro	I	OP	St		Cly infill
39.50	J	30	Un	Ro	IV	OP	St		
39.85	J	20	Un	Ro	IV	OP	St		
41.55	J	15	Un	Ro	IV	OP	St		
41.81	J	50	Pl	Sm	VIII	OP	St		

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

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