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REPORT OF BOREHOLE: CRR 216

SHEET: 1 OF 5

CLIENT: Aecom Australia Pty Ltd
 PROJECT: Cross River Rail
 LOCATION: Boggo Rd
 JOB NO: 107632034

COORDS: 502827.40 m E 6958586.71 m N MGA94 56
 SURFACE RL: 36.53 m DATUM: AHD
 INCLINATION: -90°
 HOLE DEPTH: 35.00 m

DRILL RIG: FD500
 CONTRACTOR: Foundril Pty Ltd
 LOGGED: CA DATE: 13/8/10
 CHECKED: NK DATE: 18/10/10

Drilling			Sampling		Field Material Description							
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	L		0	36.53			GC	Clayey GRAVEL fine to medium grained, sub-rounded, red brown and dark grey				
				0.30								
				36.23	SPT 1.00-1.45 m 7, 7, 6 N=13							
			2.50	34.03	SPT 2.50-2.87 m 4, 28, 30/65mm N>=58		GM	Silty GRAVEL fine grained, platy, pale brown, appears extremely weathered rock			VD	
			3					For Continuation Refer to Sheet 2				
			4									
			5									
			6									
			7									
			8									
			9									
			10									

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

GAP gINT FN. F01a
RL3

GAP 8.03 LIB: GLE Log GAP NON-CORED FULL PAGE 107632034_ACO.GPJ <<DrawingFile>> 29/11/2010 13:40 8.2.007



REPORT OF BOREHOLE: CRR 216

SHEET: 2 OF 5

CLIENT: Aecom Australia Pty Ltd
 PROJECT: Cross River Rail
 LOCATION: Boggo Rd
 JOB NO: 107632034

COORDS: 502827.40 m E 6958586.71 m N MGA94 56
 SURFACE RL: 36.53 m DATUM: AHD
 INCLINATION: -90°
 HOLE DEPTH: 35.00 m

DRILL RIG: FD500
 CONTRACTOR: Foundril Pty Ltd
 LOGGED: CA DATE: 13/8/10
 CHECKED: NK DATE: 18/10/10

Drilling				Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH Is(50) MPa	DEFECT DESCRIPTION & Additional Observations	FRACTURE FREQUENCY (Defects per unit metre length)
				0							
				1							
				2							
				2.90			Continuation of Sheet 1				
			100	33.63			SANDSTONE fine grained, pale brown	FR			
				3							
			85	36.22			becoming darker in colour	SW			
				3.73							
				32.80			CORE LOSS				
				3.93							
				32.60			TUFF fine to coarse grained, orange and grey and pale brown	MW EW		3.13: DL 3.23-3.42: FZ, highly fractured core, possibly by drilling 3.30: J, 90°, Un, Sm, Vr, CH, clay, high plasticity, brown 3.42: J, 10°, Un, Sm, Vr, CH, clay, high plasticity, brown 3.54: J, 20°, Un, Sm, Cn, possible drilling break 3.59-3.62: CS, 30 mm, GM, silty gravel, fine to medium, subrounded 3.69: DB	
				4						4.16-4.58: DZ, 420 mm, GW, gravel with some silt, fine to medium, subrounded, orange and red staining	
				4.58			CORE LOSS				
				31.95							
			25								
				0							
				5							
				5.64			TUFF fine to coarse grained, orange and grey and pale brown	EW		5.64-6.08: DZ, 440 mm, GW, gravel with some silt, fine to medium, subrounded, orange and red staining	
				30.89							
				6.08			CORE LOSS				
				30.45							
				6.29			TUFF weathered to soil properties. Remoulded sample is: Cl, CLAY, medium plasticity, pale brown	EW MW EW		6.29-6.64: DZ, 350 mm, GW, gravel with some sand, fine to medium, subrounded, orange and red staining	
				30.24						6.65: J, 0°, Un, Ro, Sn, orange and dark red 6.75: J, 5°, Un, Ro, Sn, orange and dark red, filled with extremely weathered rock 6.84: DL 6.97: DB 7.13: DB 7.24: DB 7.45: DB 7.55: DB 7.70: DB 7.87: DB 7.95: J, 5°, Un, Ro, Sn, orange and dark red	
				7							
				8							
				8.45			fine to coarse grained, pale grey with orange and red staining	MW		8.15: DB 8.24: DB 8.40: DL	
				28.08							
				9							
				8.92						8.92: J, 5°, Un, Ro, Sn, orange 9.00: J, 10°, Un, Ro, Sn, dark red 9.05: J, 10°, Un, Ro, Sn, orange 9.27: DB	
				100							
				100						9.61: DB	
				10						9.90: J, 5°, Un, Ro, Sn, dark red	

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GAP gINT FN. F02b
RL3

GAP 8_03 LIB: GLE Log GAP CORED BOREHOLE 107632034_ACO.GPJ <<DrawingFile>> 29/11/2010 14:00 8.2.007



REPORT OF BOREHOLE: CRR 216

SHEET: 3 OF 5

CLIENT: Aecom Australia Pty Ltd
 PROJECT: Cross River Rail
 LOCATION: Boggo Rd
 JOB NO: 107632034

COORDS: 502827.40 m E 6958586.71 m N MGA94 56
 SURFACE RL: 36.53 m DATUM: AHD
 INCLINATION: -90°
 HOLE DEPTH: 35.00 m

DRILL RIG: FD500
 CONTRACTOR: Foundril Pty Ltd
 LOGGED: CA DATE: 13/8/10
 CHECKED: NK DATE: 18/10/10

Drilling					Field Material Description			Defect Information			
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH Is(50) Mpa	DEFECT DESCRIPTION & Additional Observations	FRACTURE FREQUENCY (Defects per unit metre length)
								EL 0.03 VL 0.01 J 0.1 M 0.3 H 1 VH 0 EH			5 10 15 20 25 30 35
		100	100	10			TUFF weathered to soil properties. Remoulded sample is: Cl, CLAY, medium plasticity, pale brown	MW		10.45: DB	
				11	11.18 25.35		pale grey	FR		10.81: J, 0°, Un, Ro, Sn, dark red 10.92: J, 40°, Un, Ro, Sn-Vr, orange and dark red 11.09: J, 10°, Un, Ro, Ct, 5 mm, CL, clay, low plasticity, orange 11.18: J, 20°, Un, Sm, Cn 11.50: DL 11.61: J, 50°, Un, Ro, Cn, possible handling break 11.73: J, 50°, Un, Ro, Vr, CH, clay, high plasticity, pale brown 11.85: J, 50°, Un, Ro, Vr-Ct, CH, clay, high plasticity, pale brown 11.92: DB 12.25: J, 65°, Un, Ro, Vr, clay, pale brown	
		100	100	12						12.62: J, 0°, Un, Ro, Vr, clay, pale brown	
				13						13.00: DL 13.06: J, 55°, Un, Ro, Ct, Ci, silty clay, medium plasticity, pale brown 13.27: J, 30°, Un, Ro, Vr, clay, orange and pale brown 13.44: J, 30°, Un, Ro, Ct, Ci, silty clay, medium plasticity, orange and pale brown 13.47: J, 0°, Un, Ro, Ct, 15 mm, CL, silty clay, low plasticity, orange and pale brown 13.75: J, 60°, Un, Ro, Ct, CL, silty clay, low plasticity, orange, highly weathered and fractured around joint, orange and dark red staining 13.92: J, 20°, Un, Ro, Sn, orange and dark red 14.01: J, 40°, Un, Ro, Sn-Vr, CL, silty clay, low plasticity, orange and dark red staining 14.12: J, 50°, Un, Ro, Sn-Vr, CL, silty clay, low plasticity, orange and dark red to black staining 14.31-14.52: DB, 0° 14.50: DL 14.52: J, 0°, Un, Ro, Vr, CL, silty clay, low plasticity, dark orange 14.72: J, 30°, Un, Ro, Cn, possible drilling break 15.08: J, 10°, Un, Ro, Sn-Vr, clay, orange and dark red staining 15.18: J, 5°, Un, Ro, Sn, dark red to black 15.23: J, 30°, Un, Ro, Sn, orange and dark red 15.84: J, 40°, Un, Ro, Sn, orange and dark red	
		100	100	14	13.47 23.06		pale grey with orange staining	MW		16.00: DL 16.02: J, 0°, Un, Ro, Vr, clay, orange	
				15						16.32: J, 5°, Un, Ro, Vr, CH, clay, high plasticity, orange brown 16.33: IS, 30°, 20 mm, CH, clay, high plasticity, grey 16.42: J, 10°, Un, Sm-Ro, Vr 16.57: IS, 30°, 30 mm, CH, clay, high plasticity, grey and dark grey 16.71: J, 30°, Un, Ro, Cn 16.90: J, 15°, Un, Ro, Cn 17.00-17.26: J, 90°, Un, closed 17.26: J, 20°, Un, Ro, Vr, CL, silty clay, low plasticity, pale yellow brown 17.45: DL 17.54: J, 20°, Un-St, Ro, Ct, CL, silty clay, low plasticity, green grey 17.56: J, 30°, Un-St, Ro, Ct, CL, silty clay, low plasticity, green grey 17.83: IS, 0°, 10 mm, CH, clay, high plasticity, pale grey 17.90: DL 18.20: J, 20°, Un, Ro, Vr, open 18.34: J, 30°, Un-St, Ro, Vr, CL, silty clay, low plasticity, pale yellow brown 18.39: J, 10°, Un, Sm, Sn, green yellow 18.47: C, 30° 18.58: DB 18.82: DB 18.89: DB	
		100	100	16	15.35 21.18		pale grey occasional orange staining	SW		19.40: DL 19.50: DB	
				17	16.00 20.53		pale grey with orange staining	HW		19.70: J, 25°, Un-St, Ro, filled with brittle rock fragments 19.80-19.89: CS, 90 mm, GM, sandy gravel, fine to	
				18	16.30 20.23		pale yellow	SW			
		100	80	19			SANDSTONE medium grained, grey	FR			
				20	18.47 18.06		MUDSTONE fine grained, grey, bedding 0 to 20°, some sandstone interbedding brown grey	SW			
		100	95		19.20 17.33 19.40 17.13						
					20.00						

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GAP gINT FN. F02b
RL3

GAP 8.03 LIB: GLEB Log GAP CORED BOREHOLE 107632034_ACO.GPJ <<DrawingFile>> 29/11/2010 14:00 8.2.007



REPORT OF BOREHOLE: CRR 216

SHEET: 4 OF 5

CLIENT: Aecom Australia Pty Ltd
 PROJECT: Cross River Rail
 LOCATION: Boggo Rd
 JOB NO: 107632034

COORDS: 502827.40 m E 6958586.71 m N MGA94 56
 SURFACE RL: 36.53 m DATUM: AHD
 INCLINATION: -90°
 HOLE DEPTH: 35.00 m

DRILL RIG: FD500
 CONTRACTOR: Foundril Pty Ltd
 LOGGED: CA DATE: 13/8/10
 CHECKED: NK DATE: 18/10/10

Drilling					Field Material Description				Defect Information				
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH Is(50) MPa	DEFECT DESCRIPTION & Additional Observations		FRACTURE FREQUENCY (Defects per unit metre length)	
								EL 0.03 VL 0.01 J 0.1 M 0.3 H 1 VH 10 EH					
HMLC		100	95	100	100		CONGLOMERATE fine to coarse grained, pale grey, grey matrix with orange, white, grey and dark grey clasts. Occasional mudstone beds up to 100 mm thickness	FR		medium, angular, grey			
		0	0	0	0		CORE LOSS			20.28: DB 20.54: C, 20° 20.60: B, 0°, Un, Sm, Cn 20.66: C, 20° 20.75: C, 0°			
NMLC		100	70	70	70		CONGLOMERATE fine to coarse grained, green, yellow and grey clasts	FR		21.06-21.17: FZ, 0 to 20°, Un, Ro, Cn, average spacing 55mm 21.32: J, 70°, Un, Ro, Cn 21.63-21.67: CS, 40 mm, CL, silty clay, low plasticity, grey 21.67: DL 21.86: J, 20°, Un, Sm, Vr			
		95	95	95	95		MUDSTONE fine grained, dark grey, bedding 0 to 30°			23.16: C, 5° 23.24: J, 70°, Un, Sm, Ct, CL, silty clay, low plasticity, brown 23.31: B, 5°, Un, Sm, Vr, CL, silty clay, low plasticity, brown 23.45-23.75: FZ, 0°, CL, silty clay, low plasticity, brown, spacing 30 to 90mm 23.78: J, 50°, cemented with 10mm thickness clay infill			
		100	85	85	85					24.13: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 24.27: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 24.38: B, 5°, Pl, Sm, Ct, CH, clay, high plasticity, dark grey 24.53: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 24.62: B, 5°, Pl, Sm, Vr, ML, silt, dark brown 24.68: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 24.79: B, 0°, Pl, Sm, Vr, CH, clay, high plasticity, brown 24.82: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 24.84: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 24.90: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 25.05: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 25.14: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 25.15: B, Pl, Sm, Vr, CH, clay, high plasticity, black 25.49: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 25.69: J, 70°, Un, Sm, Cn 25.87: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 26.23: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 26.25: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 26.31: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 26.50: DL 26.67: J, 20°, Un, Sm, Cn 26.77: J, 20°, Un, Sm, Vr, CH, clay, high plasticity, dark grey 26.80: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 26.86: B, 10°, Pl, Sm, Cn, possible mechanical break along bedding plane 27.00: B, 30°, Un, Sm, Vr 27.15: B, 20°, Pl, Sm, Cn, possible mechanical break along bedding plane 27.20: B, 30°, Un, Sm, Vr, Cl, clay, medium plasticity, dark grey 27.41: J, 0° - random, cemented with CL, silty clay, low plasticity, dark grey, 10mm thickness 27.54: B, 30°, Pl, Sm, Cn, possible mechanical break along bedding plane 27.62-30.62: J, 70°, cemented with CL, silty clay, low plasticity, dark grey, 5mm thickness			
		100	20	20	20								
		95	75	75	75								

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GAP gINT FN. F02b
RL3



REPORT OF BOREHOLE: CRR 216

SHEET: 5 OF 5

CLIENT: Aecom Australia Pty Ltd
 PROJECT: Cross River Rail
 LOCATION: Boggo Rd
 JOB NO: 107632034

COORDS: 502827.40 m E 6958586.71 m N MGA94 56
 SURFACE RL: 36.53 m DATUM: AHD
 INCLINATION: -90°
 HOLE DEPTH: 35.00 m

DRILL RIG: FD500
 CONTRACTOR: Foundril Pty Ltd
 LOGGED: CA DATE: 13/8/10
 CHECKED: NK DATE: 18/10/10

Drilling					Field Material Description					Defect Information				
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $I_{s(50)}$ MPa	DEFECT DESCRIPTION & Additional Observations			FRACTURE FREQUENCY (Defects per unit metre length)	
								EL VI J M H V E						
NMLC			95	75	30		MUDSTONE fine grained, dark grey, bedding 0 to 30°	FR		27.63: J, 40°, Un, Sm, Cn 27.66: B, 30°, Pl, Sm, Vr 27.82: B, 30°, Pl, Sm, Cn, possible mechanical break along bedding plane 27.83: B, 30°, Pl, Sm, Cn, possible mechanical break along bedding plane 27.86: B, 30°, Pl, Sm, Cn, possible mechanical break along bedding plane 27.90: B, 30°, cemented with CL, silty clay, low plasticity, dark grey, 20mm thickness 27.96: B, 20°, Pl-Un, Sm-Ro, Cn 28.00-28.95: J, 0° - random, Un, cemented with CL, silty clay, low plasticity, dark grey, 10mm thickness 28.95: DL 29.10-29.28: CZ, 180 mm, CL, silty clay, low plasticity, grey and dark grey 29.32: B, 5°, Pl, Sm, Cn, possible mechanical break along bedding plane 29.49: B, 0°, Pl, Sm, Cn, possible mechanical break along bedding plane 29.73: B, 5°, Pl, Sm, Cn, possible mechanical break along bedding plane 29.81: B, 5°, Pl, Sm, Ct, CL, silty clay, low plasticity, grey 29.87: HB 29.97: HB 30.04: B, 5°, Pl, Sm, Cn, possible mechanical break along bedding plane 30.18: B, 5°, Pl, Sm, Cn, possible mechanical break along bedding plane 30.35: B, 5°, Pl, Sm, Cn, possible mechanical break along bedding plane 30.39: B, 5°, Pl, Sm, Cn, possible mechanical break along bedding plane 30.47: B, 5°, Pl, Sm, Cn, possible mechanical break along bedding plane 30.60: B, 20°, Un, Sm, Cn, possible mechanical break along bedding plane 30.62: B, 20°, Un, Sm, Cn, possible mechanical break along bedding plane 30.82: B, 5°, Pl, Sm, Cn, possible mechanical break along bedding plane 30.89: B, 5°, Pl, Sm, Cn, possible mechanical break along bedding plane 30.94: B, 5°, Pl, Sm, Cn, possible mechanical break along bedding plane				
					33.30 3.23		becoming medium grained							
			100	100	34			CONGLOMERATE fine to coarse grained, pale grey matrix with white, grey and dark grey clasts. Occasional sandstone beds up to 50 mm thickness						
					34.30 2.23									
					35		35.00 1.53	END OF BOREHOLE @ 35.00 m TARGET DEPTH LEFT OPEN						

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GAP gINT FN. F02b
RL3

GAP 8_03 LIB: GLE Log GAP CORED BOREHOLE 107632034_ACO.GPJ <<DrawingFile>> 29/11/2010 14:00 8.2.007

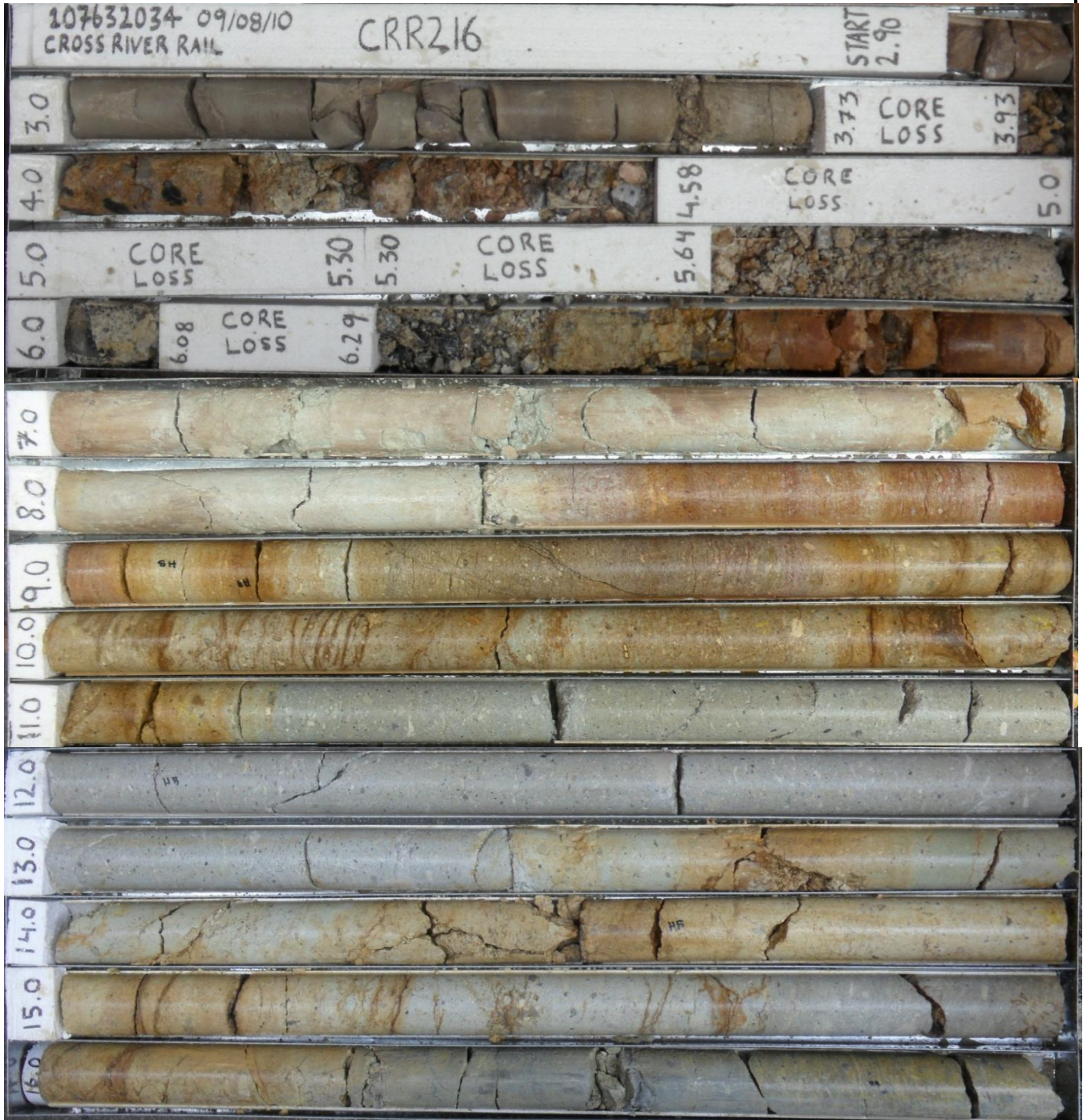


REPORT OF CORE PHOTOGRAPHS: CRR 216

CLIENT: Aecom Australia Pty Ltd
PROJECT: Cross River Rail
LOCATION: Boggo Road
JOB NO: 107632034

COORDS: 0502827 m E 6958586 m N
SURFACE RL: 36.53 DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 35.0 m

DEPTH RANGE: 2.9-17.0 m
DRILL RIG: FD500
DRILLER: Foundril Pty Ltd
LOGGED: CA DATE: 13/08/10
CHECKED: NK DATE: 4/10/10



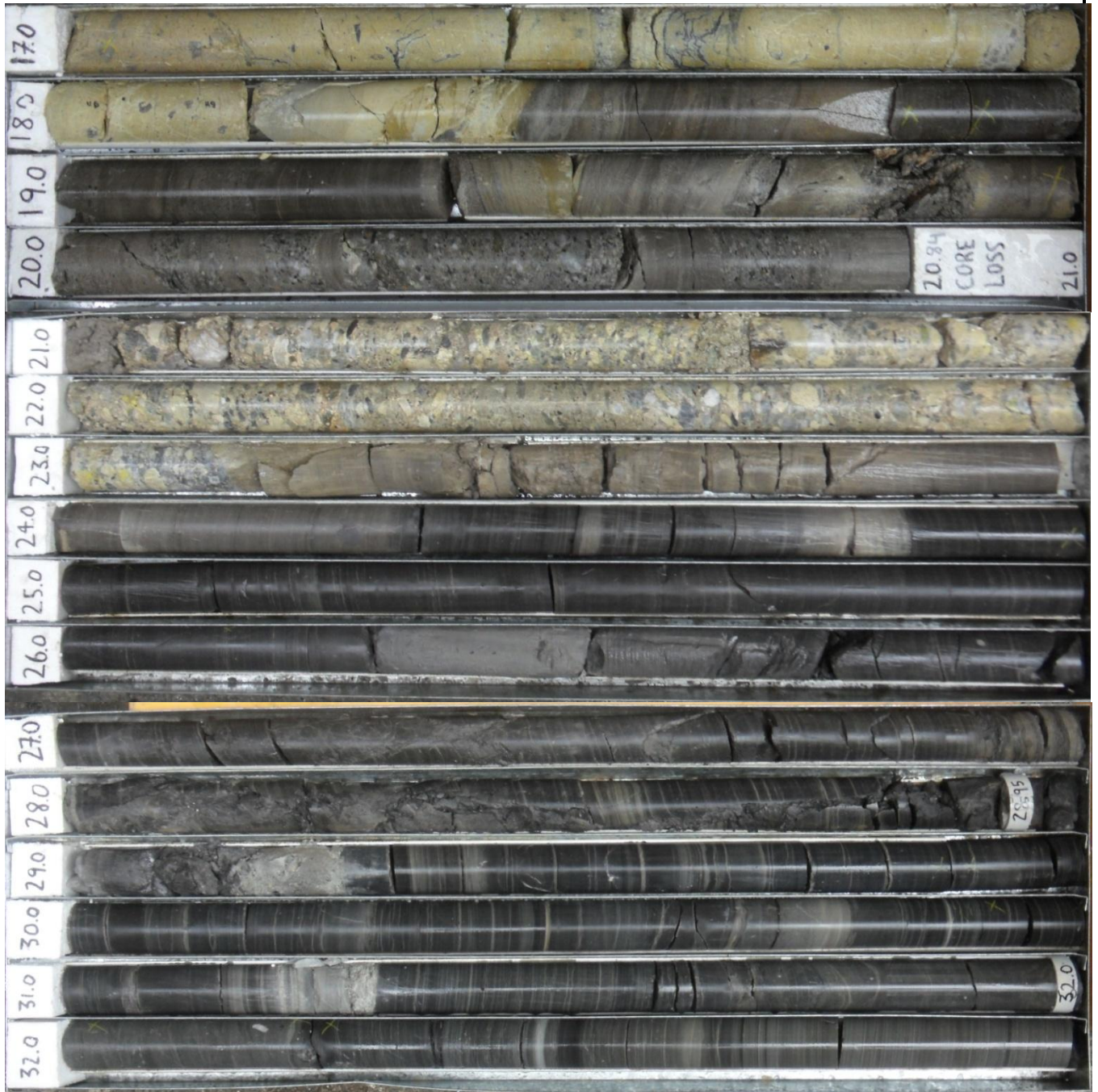


REPORT OF CORE PHOTOGRAPHS: CRR 216

CLIENT: Aecom Australia Pty Ltd
PROJECT: Cross River Rail
LOCATION: Boggo Road
JOB NO: 107632034

COORDS: 0502827 m E 6958586 m N
SURFACE RL: 36.53 DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 35.0 m

DEPTH RANGE: 17.0-32.0 m
DRILL RIG: FD500
DRILLER: Foundril Pty Ltd
LOGGED: CA DATE: 13/08/10
CHECKED: NK DATE: 4/10/10





REPORT OF CORE PHOTOGRAPHS: CRR 216

CLIENT: Aecom Australia Pty Ltd
PROJECT: Cross River Rail
LOCATION: Boggo Road
JOB NO: 107632034

COORDS: 0502827 m E 6958586 m N
SURFACE RL: 36.53 DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 35.0 m

DEPTH RANGE: 32.0-35.0 m
DRILL RIG: FD500
DRILLER: Foundril Pty Ltd
LOGGED: CA DATE: 13/08/10
CHECKED: NK DATE: 4/10/10





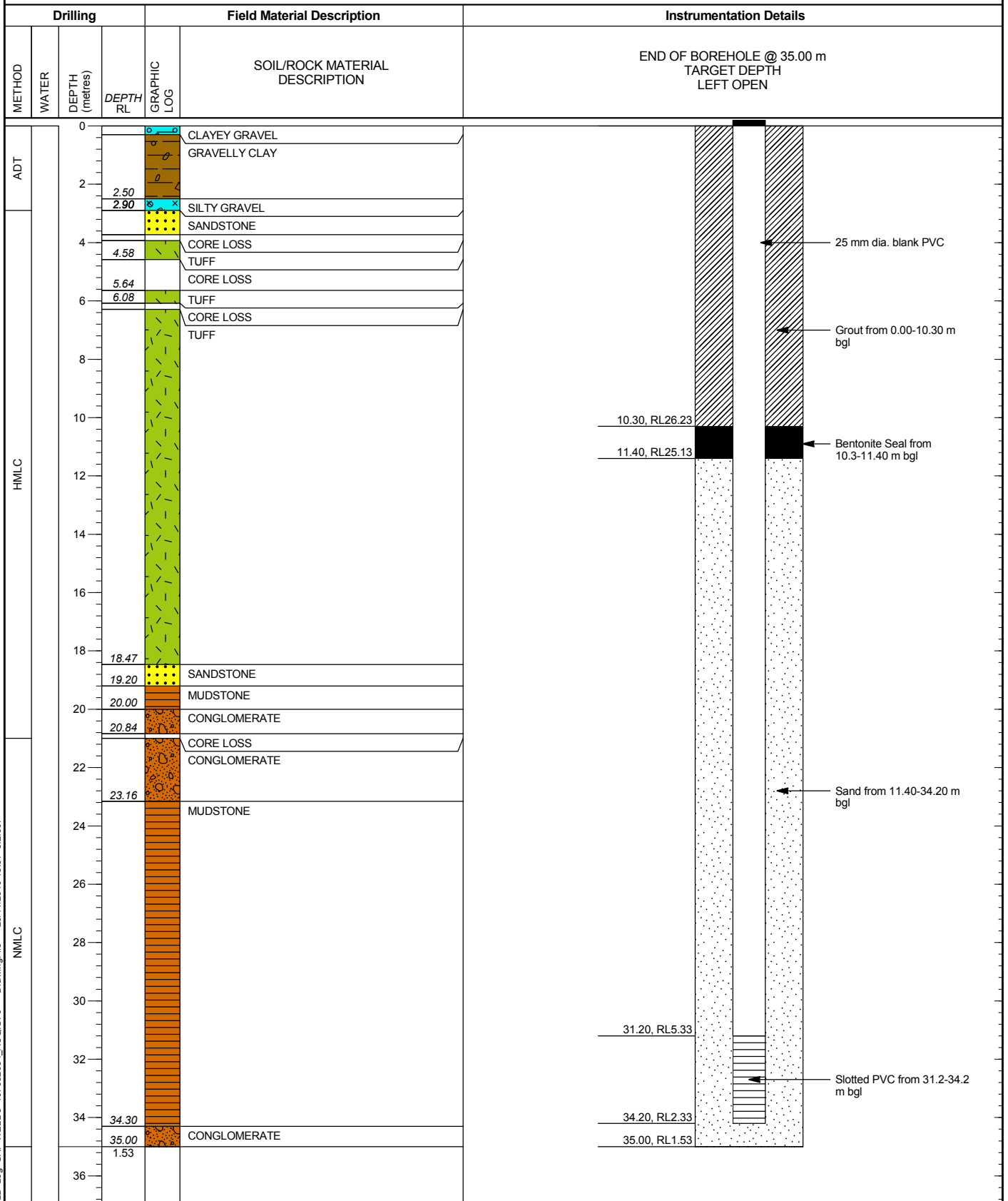
REPORT OF STANDPIPE INSTALLATION: CRR 216

SHEET: 1 OF 1

CLIENT: Aecom Australia Pty Ltd
 PROJECT: Cross River Rail
 LOCATION: Boggo Rd
 JOB NO: 107632034

COORDS: 502827.40 m E 6958586.71 m N MGA94 56
 SURFACE RL: 36.53 m DATUM: AHD
 INCLINATION: -90°
 HOLE DEPTH: 35.00 m

DRILL RIG: FD500
 CONTRACTOR: Foundril Pty Ltd
 LOGGED: CA DATE: 13/8/10
 CHECKED: NK DATE: 18/10/10



This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

GAP gINT FN. F17
RL1

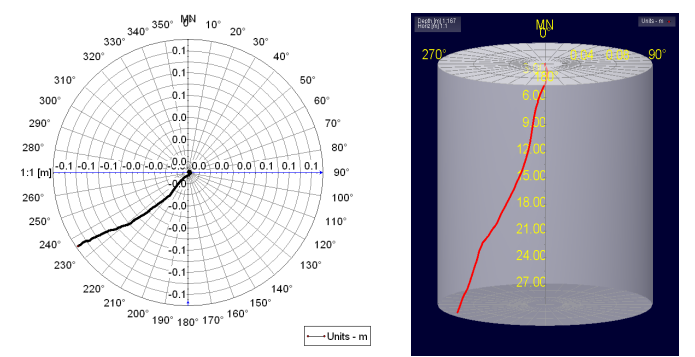
GAP-8.03 LIB: GLE Log GAP-WELL-3 107632034_ACO.GPJ <-DrawingFile>> 29/11/2010 15:37 8.2.007



GEOPHYSICAL RECORD OF BOREHOLE: CRR 216

PROJECT **Cross River Rail** PROJECT # **107632034**
 CLIENT **Department of Transport and Main Roads** DATE **12/10/2010**

DEVIATION DATA



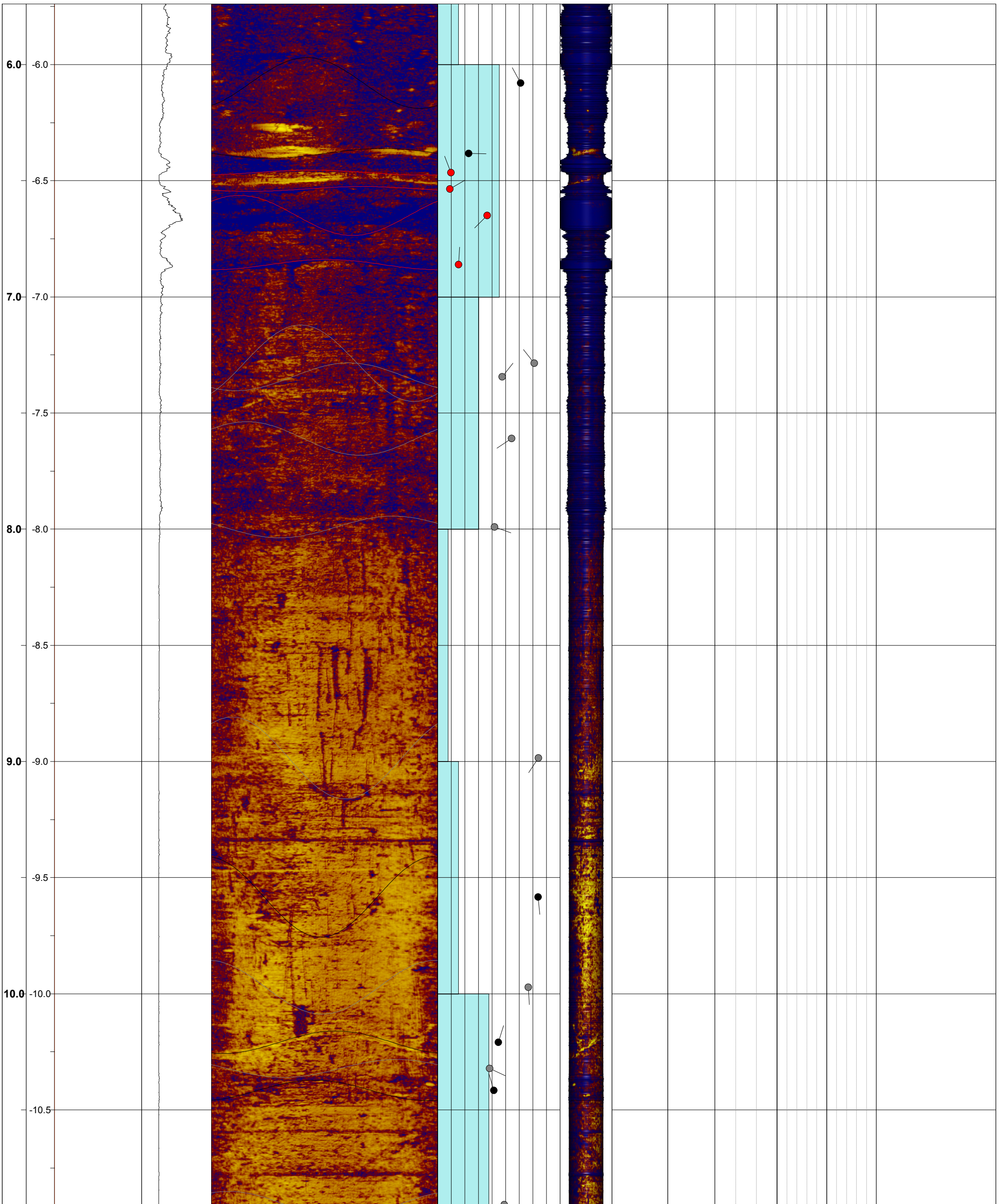
LOCATION- **Boggo Road** LOGGED BY- **CA**
 EASTING- **502834.00 m E** LOGGED DATE- **13/8/10**
 NORTHING- **6958592.00 m N** LOGGING DATUM-
 ELEVATION- LOGGED DEPTH- **28.86 m**
 DRILLED DEPTH- **35.00 m** DIAMETER- DRAWN BY- **RCD**
 PLUNGE- **-90°** AZIMUTH- **000** REVIEWED BY- **TR**
 CASING- DEPTH- FILE NAME- **CRR216-U.HED.WCL**

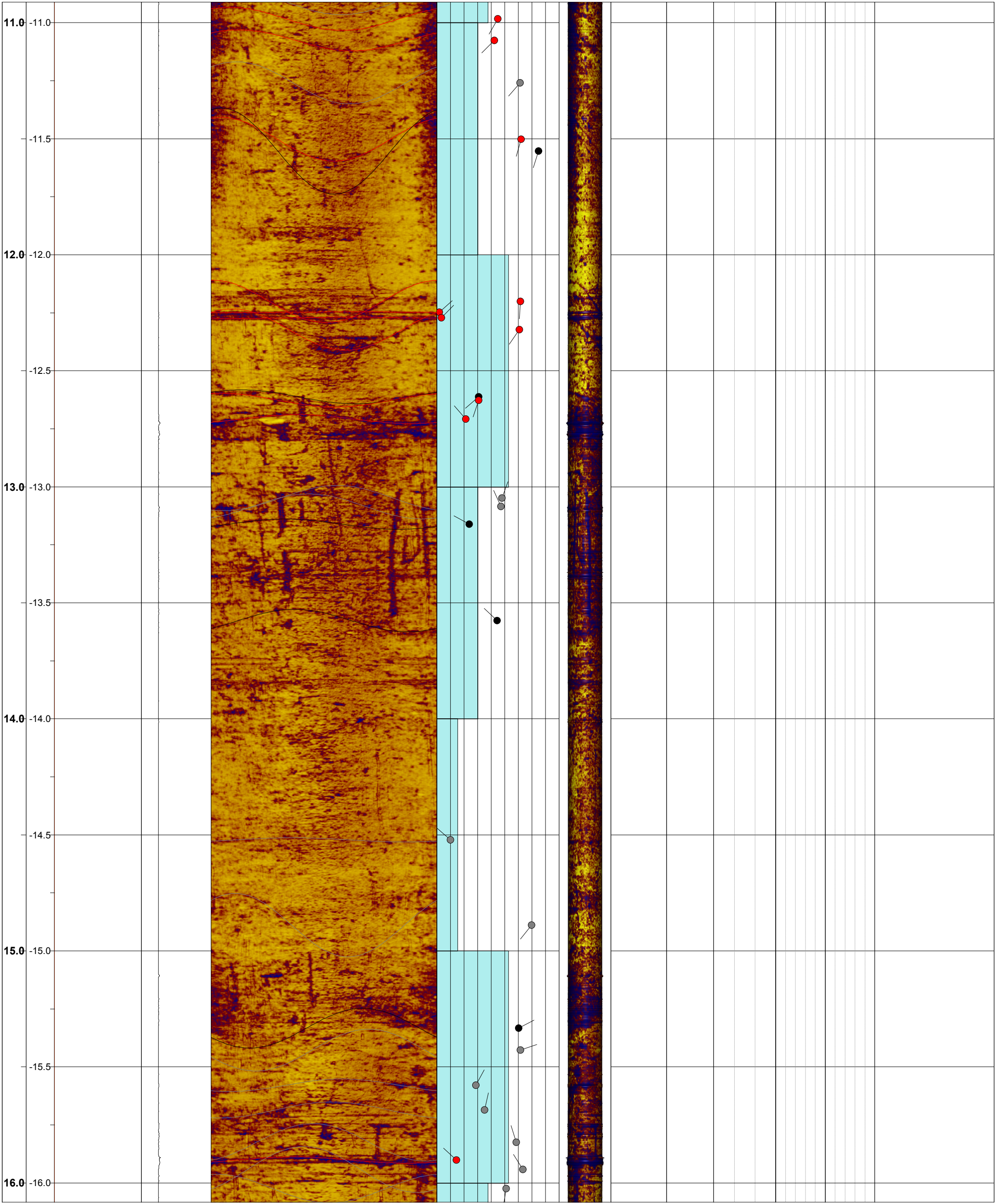
Lithology

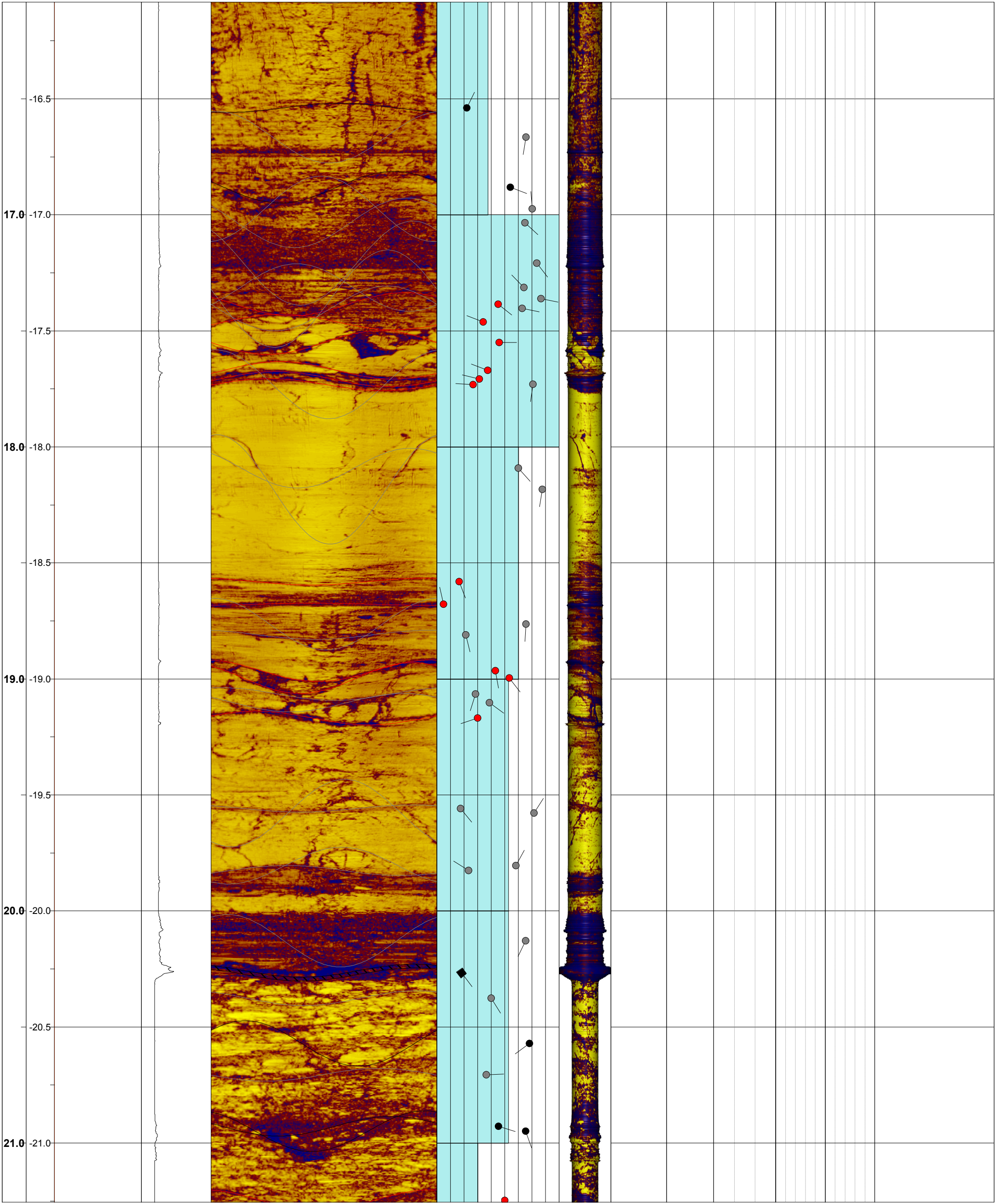
Interpreted Structures

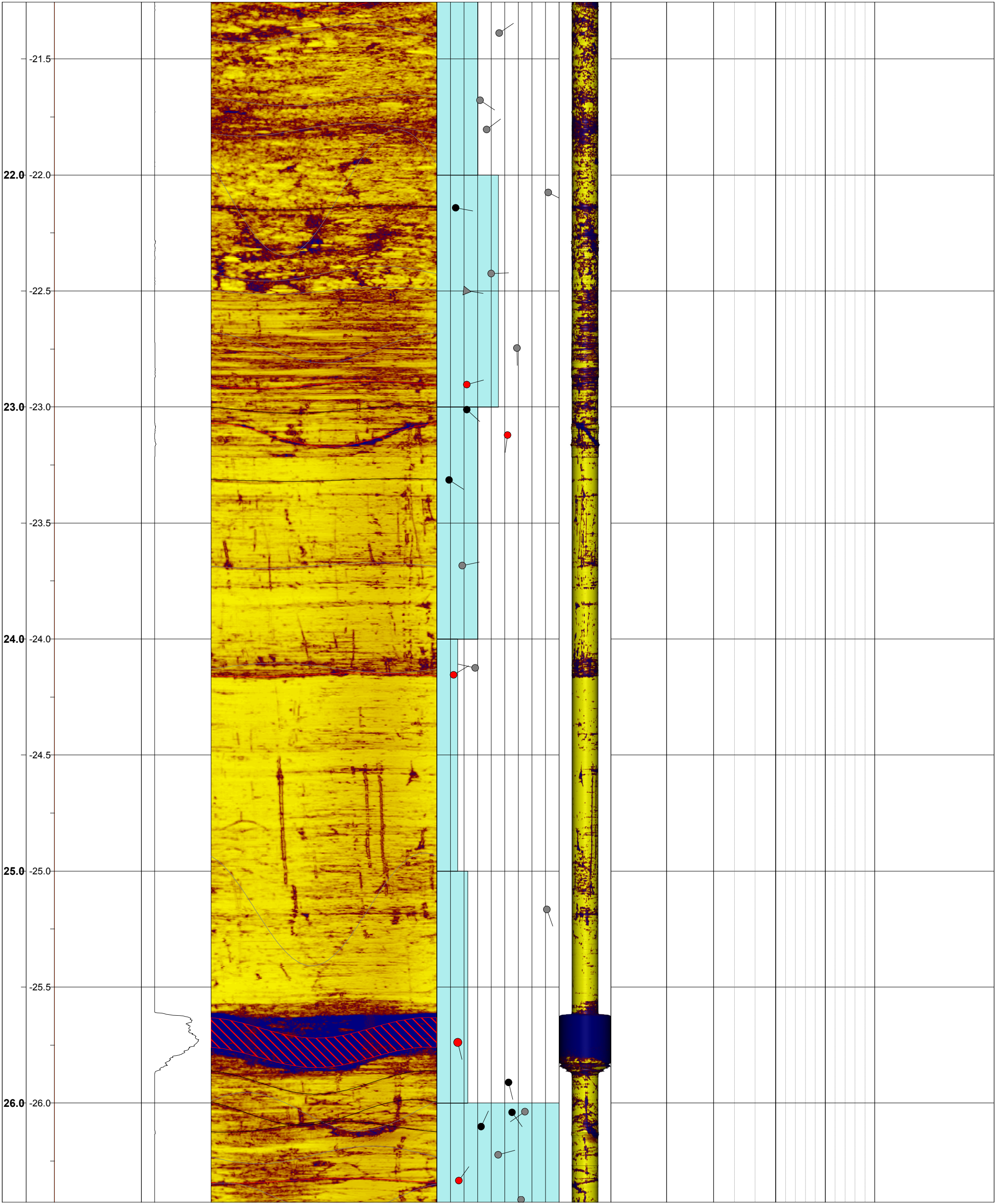
- Joint - Low Confidence
- Joint - High Confidence
- Crushed Seam - Medium Confidence
- Bedding - Low Confidence
- Decomposed Seam - High Confidence
- Joint - Medium Confidence

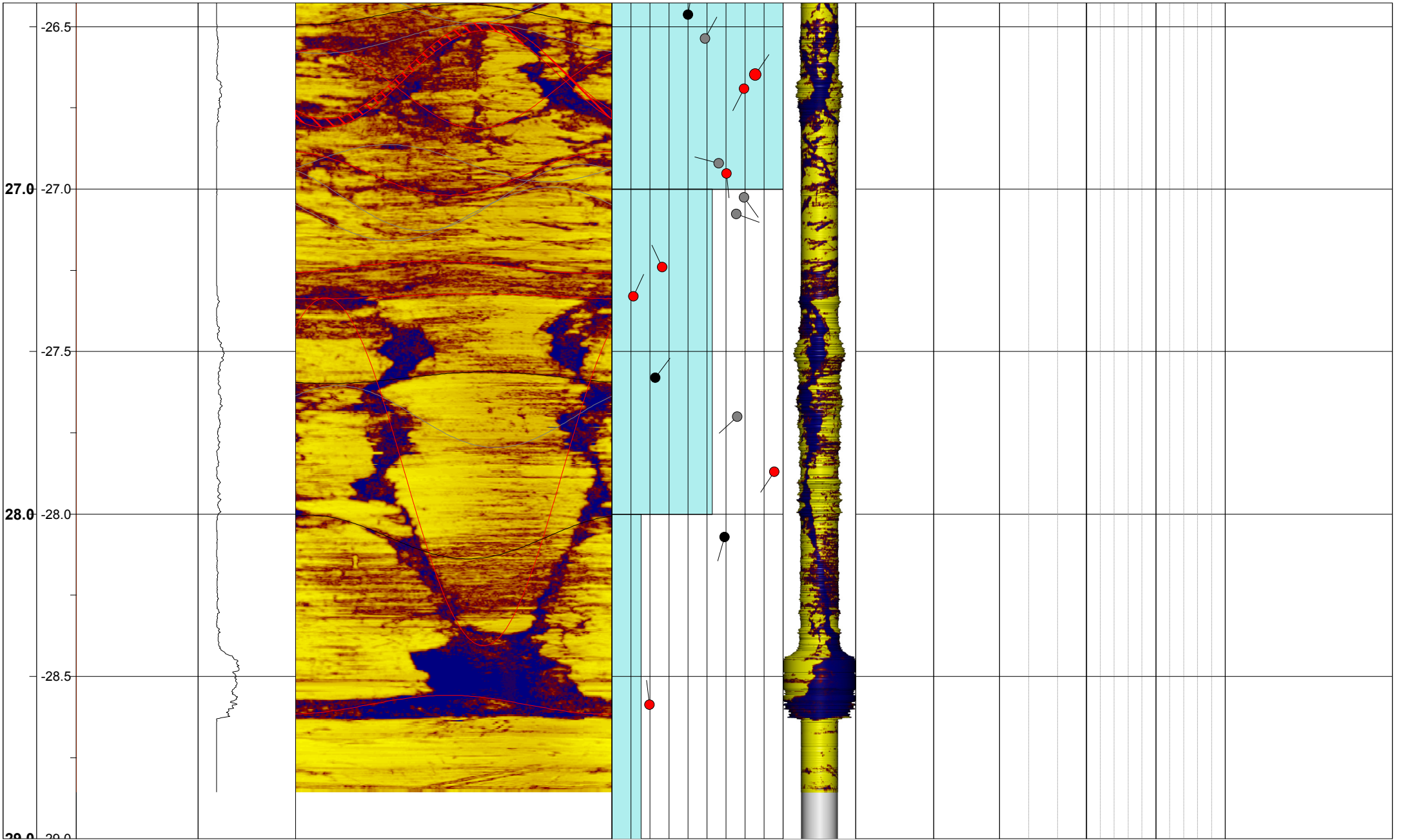
Depth 1:15	RL	TELEVIEWER DATA					CORE DATA					
		NATURAL GAMMA 0 cps 300	ATV Caliper 0 mm 400	Amplitude 0° 90° 180° 270° 0°	Structure Orientations 0 90	3D log 304°	Core Photo	Lithology	Logged FF 0 30	RQD 0 100	TCR 0 100	Defect Description
		Interpreted Structures			ATV FF	(Refer to detailed core log, provided separately)						
		0° 90° 180° 270° 0°			0 counts/m 12							
-2.5												
3.0	-3.0											
-3.5												
4.0	-4.0											
-4.5												
5.0	-5.0											
-5.5												



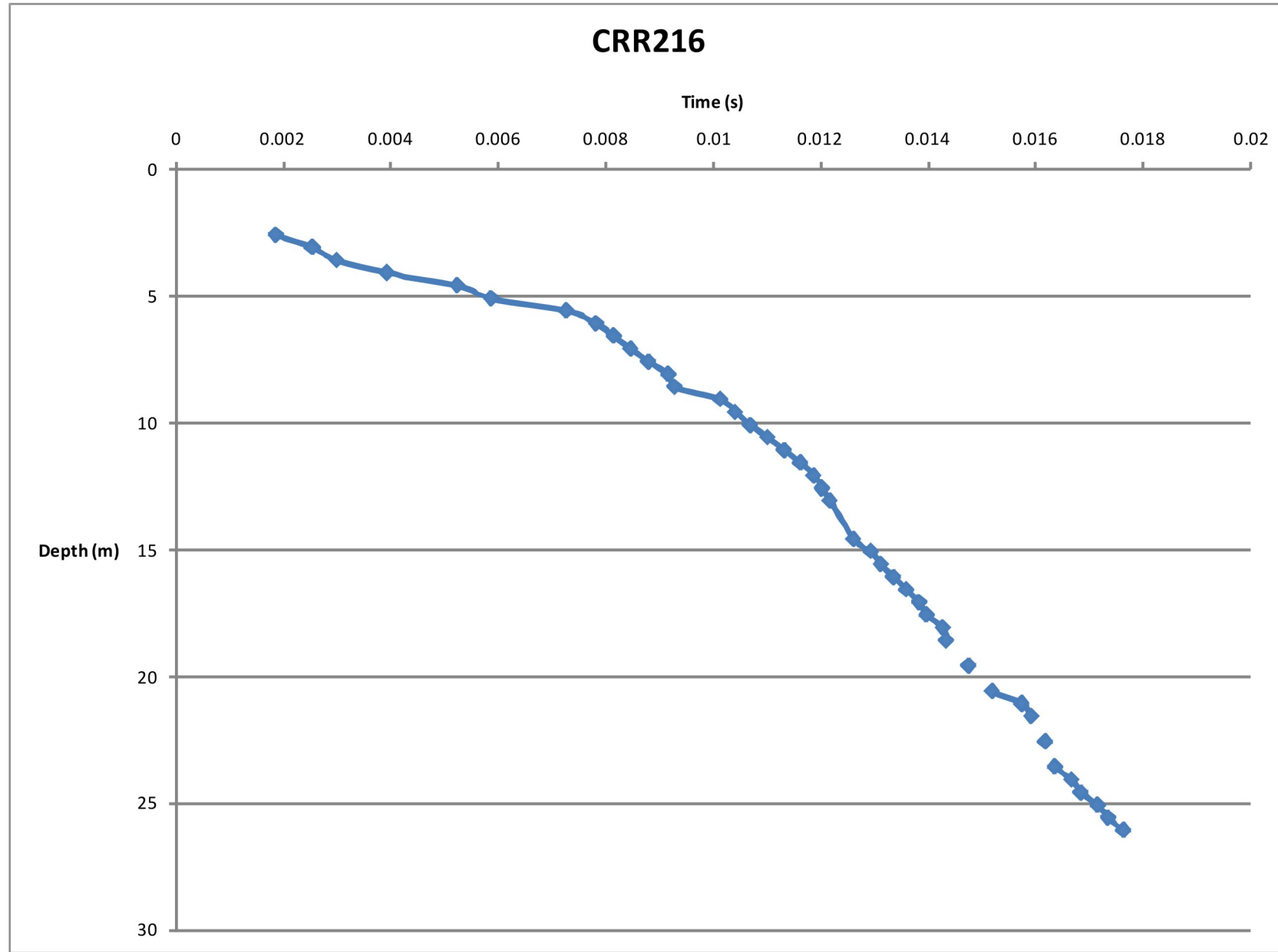








GA-BQ-291 RL1
Issued 31/03/10



Geophone Depth (m)		Interval velocity (P wave m/s)
from	to	
2.6	3.1	735
3.1	3.6	1111
3.6	4.1	532
4.1	4.6	383
4.6	5.1	788
5.1	5.6	357
5.6	6.1	912
6.1	6.6	1547
6.6	7.1	1530
7.1	7.6	1537
7.6	8.1	1361
8.1	8.6	4117
8.6	9.1	591
9.1	9.6	1781
9.6	10.1	1785
10.1	10.6	1557
10.6	11.1	1635
11.1	11.6	1637
11.6	12.1	1992
12.1	12.6	3372
12.6	13.1	3379
13.1	14.6	3365
14.6	15.1	1582
15.1	15.6	2710
15.6	16.1	2093
16.1	16.6	2094
16.6	17.1	2095
17.1	17.6	3621
17.6	18.1	1659
18.1	18.6	7729
18.6	19.1	*
19.1	19.6	*
19.6	20.1	*
20.1	20.6	*
20.6	21.1	910
21.1	21.6	2778
21.6	22.1	*
22.1	22.6	*
22.6	23.1	*
23.1	23.6	*
23.6	24.1	1600
24.1	24.6	2876
24.6	25.1	1600
25.1	25.6	2616
25.6	26.1	1694

Note:

* - 1st arrival not clear due to noise

Calculations done without accounting for borehole deviation



CLIENT Department of Transport and Main Roads		PROJECT Cross River Rail	
DRAWN GDK	DATE OCT 4	TITLE CRR216 VSP	
CHECKED TR	DATE		
SCALE NTS	PROJECT No 000-107632034	FIGURE No	REV No A3