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REPORT OF BOREHOLE: CRR 205

SHEET: 1 OF 6

CLIENT: Aecom Australia Pty Ltd

COORDS: 502841.32 m E 6961116.20 m N MGA94 56

DRILL RIG: FOX B40

PROJECT: Cross River Rail

SURFACE RL: 6.00 m DATUM: AHD

CONTRACTOR: Schneider Drilling Pty Ltd

LOCATION: Corner Albert and Alice St

INCLINATION: -90°

LOGGED: MGM

DATE: 5/8/10

JOB NO: 107632034

HOLE DEPTH: 45.00 m

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	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADV	M		0	6.00	SPT 1.00-1.45 m 5, 7, 7 N=14			ASPHALT		
			0.35							
			0.50				GM	Silty GRAVEL	D	
			5.50				SM	fine to coarse grained, angular, brown, with some fine to coarse sand, dry, medium dense (FILL)		
			1	1.00				Silty SAND		
			5.00				GC	fine grained, angular, red to brown, with some fine, angular gravel		
								Clayey GRAVEL low plasticity	MD	
								fine to coarse grained, angular, orange brown some white, residual soil	M	
					SPT 2.50-2.51 m 30/5mm HB			For Continuation Refer to Sheet 2	VD	
			3							
			4							
			5							
			6							
			7							
			8							
			9							
			10							

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GAP gINT FN. F01a
RL3



REPORT OF BOREHOLE: CRR 205

SHEET: 2 OF 6

CLIENT: Aecom Australia Pty Ltd

COORDS: 502841.32 m E 6961116.20 m N MGA94 56

DRILL RIG: FOX B40

PROJECT: Cross River Rail

SURFACE RL: 6.00 m DATUM: AHD

CONTRACTOR: Schneider Drilling Pty Ltd

LOCATION: Corner Albert and Alice St

INCLINATION: -90°

LOGGED: MGM

DATE: 5/8/10

JOB NO: 107632034

HOLE DEPTH: 45.00 m

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										
				3										
				3.50			Continuation of Sheet 1							
				2.50			CORE LOSS							
				3.75										
				2.25			comprised of angular fragments of metasiltstone, argillite and quartz and medium to high plasticity clay matrix (RESIDUAL SOIL)							
		85	5	4.09			META SILTSTONE	MW		4.11: J, 55°, Pl, Sm, 3 mm, soft white clay infill				
				1.91			fine grained, brown to grey, interlaminated with dark grey to black argillite, localised quartz bands, joints along/parallel to bands, dip of banding variable but typically in range of 40 to 60 degrees			4.15-4.25: CZ				
				4.95			CORE LOSS	MW		4.25: J, Pl, Sm, Vr, soft white clay infill				
				1.00			META SILTSTONE			4.36-4.42: CZ				
							fine grained, orange to brown and grey, metasiltstone interlaminated with dark grey to black argillite, localised quartz bands, joints along/parallel to bands, dip of banding variable but typically in range of 40 to 60 degrees (NERANLEIGH-FERNVALE FM)			4.48-4.53: SS, 45°, Pl, Sm, 5 mm, up to 10mm thick soft white clay infill				
		95	20							4.59-4.78: J, 40°, Pl, Sm, 2 mm, soft clay infill, Join set, 4-7mm spacing				
				5						5.57: J, 10°, St, Ro, Vr, soft white clay infill				
				6						5.61-5.64: CS, 10°, Un, Sm, soft white clay and crushed rock infill, cross cutting				
				7						5.72-5.76: J, 45°, Pl, Sm, Vr, some crushed rock fragments				
				8						6.00-6.05: J, 50°, Pl, Sm, Vr, clay				
				9						6.48-6.52: J, 50°, Pl, Sm, Vr				
		100	10					MW - SW		7.53-7.62: CZ, 30°, St, Ro, Cn, crushed quartz fragments				
				10						7.88-7.98: J, 55°, St, Ro, Cn, sand/crushed rock infill, dip opposite bedding/laminations				
										8.00-8.55: J, St, Ro, series of joint sets along weathered interbeds, spaced 1-2, and 10 cm				
										9.08-9.10: J, 40°, Un, Sm, Vr, clay				
										9.23-9.26: J, 45°, Pl, Sm, Cn				
										9.38-9.41: CZ, 30°, Pl-Un, Sm, 10 mm, silty sand infill, trace quartz fragments				
										9.48-9.62: J, 80°, Pl, Sm, Vr, open hairline, black infill				
		85	20							9.63-9.70: CZ, 60°, quartz gravel and HW siltstone fragments				

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GAP gINT FN. F02b
RL3



REPORT OF BOREHOLE: CRR 205

SHEET: 3 OF 6

CLIENT: Aecom Australia Pty Ltd

COORDS: 502841.32 m E 6961116.20 m N MGA94 56

DRILL RIG: FOX B40

PROJECT: Cross River Rail

SURFACE RL: 6.00 m DATUM: AHD

CONTRACTOR: Schneider Drilling Pty Ltd

LOCATION: Corner Albert and Alice St

INCLINATION: -90°

LOGGED: MGM

DATE: 5/8/10

JOB NO: 107632034

HOLE DEPTH: 45.00 m

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)
				10	10.30					9.84: V, 70°, Pl, Sm, Vr, clay along lower contact with quartz vein		
		85	20	-4.30	10.59		CORE LOSS			10.18-10.24: J, 60°, Pl, Sm, 15 mm, soft clay		
				-4.59			META SILTSTONE fine grained, orange to brown, metasiltstone inter laminated with dark grey to black argillite, localised quartz bands, joints along/parallel to bands, dip of banding variable but typically in range of 40 to 60 degrees (NERANLEIGH-FERNVALE FM)	MW - SW		10.86-10.97: CZ, possible drilling induced		
				11						11.21: J, 25°, Un, Ro, Cn		
										11.40: J, 25°, Un, Ro, Vr		
		100	85	12						11.87: J, 30°, St, Sm, Cn		
				13								
				13.73	-7.73		CORE LOSS					
		40	40	14	14.00		META SILTSTONE fine grained, orange to brown, metasiltstone inter laminated with dark grey to black argillite, localised quartz bands, joints along / parallel to bands, dip of banding variable but typically in range of 40 to 60 degrees (NERANLEIGH-FERNVALE FM)	HW - MW - MW		14.00-14.30: CZ, 25°, Pl, Sm, Vr, clay Vr on bottom surface		
				-8.00								
		100	20	15	15.20		becoming predominantly dark grey to black	SW		14.97: J, 70°, Un, Sm, Cn		
				-9.20						15.08: J, 30°, St, Ro, Cn		
				16				SW - FR		15.49: J, 60°, Pl, Sm, Sn-Vr		
										15.74: J, 35°, Pl, Sm, Sn-Vr		
		95	65	17						16.12: J, 20°, St, Ro		
										16.28: J, 10°, Pl, Sm, Vr		
				18	17.52		CORE LOSS			17.41: J, 45°, Pl, Sm, Vr, along argillite band		
				-11.63			META SILTSTONE fine grained, dark grey to black, metasiltstone inter laminated with dark grey to black argillite, occasional quartz bands, typically thicker than above, ranging from approx. 5 mm to 20 mm, joints typically along / parallel to bands, dip of banding variable but typically in range of 40 to 60 degrees (NERANLEIGH-FERNVALE FM)	SW - FR		17.49: J, 35°, Pl, Sm, Vr, along argillite band		
										17.60: J, 50°, Pl, Sm, Cn		
				19						17.95: J, 45°, Pl, Sm, Vr, along argillite band		
		100	75	20						18.65-18.76: CZ, 45°, brittle		
										18.86: J, 40°, Pl, Sm, Vr, black		
										19.14: J, 55°, St, Sm, Vr, black clay		
										19.55-19.71: CZ, 65°, St, Ro, crushed gravelly sand, along underlying quartz band		

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GAP gINT FN. F02b
RL3



REPORT OF BOREHOLE: CRR 205

SHEET: 4 OF 6

CLIENT: Aecom Australia Pty Ltd

COORDS: 502841.32 m E 6961116.20 m N MGA94 56

DRILL RIG: FOX B40

PROJECT: Cross River Rail

SURFACE RL: 6.00 m DATUM: AHD

CONTRACTOR: Schneider Drilling Pty Ltd

LOCATION: Corner Albert and Alice St

INCLINATION: -90°

LOGGED: MGM

DATE: 5/8/10

JOB NO: 107632034

HOLE DEPTH: 45.00 m

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)
				20				SW - FR				
		100	75		20.60			FR		20.30: J, 55°, Pl, Sm, Vr		
					-14.63		CORE LOSS	FR		20.36: J, 30°, Pl, Sm, Cn		
							META SILTSTONE			20.48: J, Pl, Sm, Cn		
				21			grey to black, metasiltstone interlaminated with dark grey to black argillite, with numerous quartz bands spaced 1-10 cm apart, typically 5-10 mm thick but locally up to 24 mm, joints typically along / parallel to bands, banding not as prevalent as above			20.77: J, St, Ro, Cn		
										21.01: J, Un, Ro, Vr		
										21.45: J, Un, Ro, Vr		
		100	65	22								
										22.35: J, Pl, Sm, Vr		
										22.49-22.53: CS		
										22.59: J, 70°, Pl, Sm, Vr		
				23						22.73: J, 50°, Pl, Sm, Cn, 2 cross-cutting joints		
										22.91: J, 30°, Pl, Sm, Vr		
				24								
										24.24: J, Pl, Sm, Vr, black clay Vr		
		100	75	25						25.06: J, 40°, Un, Sm, Vr		
										25.56: J, 60°, Un, Ro, Vr		
				26								
					26.60							
					-20.63		CORE LOSS	FR				
				27			META SILTSTONE					
							fine grained, grey to black, metasiltstone interlaminated with dark grey to black argillite, increase in number and thickness of quartz bands typically 1-5 cm apart, typically 5-10 mm thick but locally up to 40 mm, joints typically along / parallel to bands, dip of banding typically in the range of 40 to 60 degrees (NERANGLEIGH-FERNVALE FM)					
				28								
		100	100									
				29								
		100	90	30								

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GAP gINT FN. F02b
RL3



REPORT OF BOREHOLE: CRR 205

SHEET: 5 OF 6

CLIENT: Aecom Australia Pty Ltd

COORDS: 502841.32 m E 6961116.20 m N MGA94 56

DRILL RIG: FOX B40

PROJECT: Cross River Rail

SURFACE RL: 6.00 m DATUM: AHD

CONTRACTOR: Schneider Drilling Pty Ltd

LOCATION: Corner Albert and Alice St

INCLINATION: -90°

LOGGED: MGM

DATE: 5/8/10

JOB NO: 107632034

HOLE DEPTH: 45.00 m

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)
				30			META SILTSTONE fine grained, grey to black, metasiltstone interlaminated with dark grey to black argillite, increase in number and thickness of quartz bands typically 1-5 cm apart, typically 5-10 mm thick but locally up to 40 mm, joints typically along / parallel to bands, dip of banding typically in the range of 40 to 60 degrees (NERANGLEIGH-FERNVALE FM)	FR				
			100 90	31						31.14: J, 30°, Pl, Sm, Vr		
										31.49: J, 30°, Pl, Sm, Vr		
				32						31.83-31.85: CS, 10°, Un, Sm, Vr		
			100 90	33								
				34						33.54: J, 40°, Pl, Ro, Vr, Dip opposite that of banding 33.63: J, 50°, Pl, Sm, Vr, along top of quartz vein, filled with soft black clay 33.71: J, 45°, Pl, Sm, Vr		
				35								
			100 90	36								
				37								
				38								
			100 100	39						38.97: J, 25°, Pl, Sm, Cn 39.18: J, 40°, Un, Sm, Cn		
				40								

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GAP gINT FN. F02b
RL3



REPORT OF BOREHOLE: CRR 205

SHEET: 6 OF 6

DRILL RIG: FOX B40

CONTRACTOR: Schneider Drilling Pty Ltd

LOGGED: MGM DATE: 5/8/10

CHECKED: NK DATE: 18/10/10

CLIENT: Aecom Australia Pty Ltd

COORDS: 502841.32 m E 6961116.20 m N MGA94 56

PROJECT: Cross River Rail

SURFACE RL: 6.00 m DATUM: AHD

LOCATION: Corner Albert and Alice St

INCLINATION: -90°

JOB NO: 107632034

HOLE DEPTH: 45.00 m

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)	
NMLC			100	100	40		META SILTSTONE fine grained, grey to black, metasiltstone interlaminated with dark grey to black argillite, increase in number and thickness of quartz bands typically 1-5 cm apart, typically 5-10 mm thick but locally up to 40 mm, joints typically along / parallel to bands, dip of banding typically in the range of 40 to 60 degrees (NERANGLEIGH-FERNVALE FM)	FR		40.55: J, 35°, St, Sm, Cn 41.36-41.45: CS, -possible drilling induced fracturing 44.85: J, 45°, St, Ro, Cn				
				41										
			100	95	42									
				43										
				44										
			100	100	45									
				46										
				47										
				48										
				49										
					45.00 -39.00									

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GAP gINT FN. F02b
RL3



REPORT OF CORE PHOTOGRAPHS: CRR 205

CLIENT: Aecom Australia Pty Ltd
PROJECT: Cross River Rail
LOCATION: Albert and Alice St
JOB NO: 107632034

COORDS: 0502841 m E 6961116 m N
SURFACE RL: 6.00 DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 45.0 m

DEPTH RANGE: 3.50-21.00 m
DRILL RIG: Fox B40
DRILLER: Schneider Drilling Pty Ltd
LOGGED: MGM DATE: 5/08/10
CHECKED: NK DATE: 4/10/10





REPORT OF CORE PHOTOGRAPHS: CRR 205

CLIENT: Aecom Australia Pty Ltd
PROJECT: Cross River Rail
LOCATION: Albert and Alice St
JOB NO: 107632034

COORDS: 0502841 m E 6961116 m N
SURFACE RL: 6.00 DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 45.0 m

DEPTH RANGE: 21.0-38.0 m
DRILL RIG: Fox B40
DRILLER: Schneider Drilling Pty Ltd
LOGGED: MGM DATE: 5/08/10
CHECKED: NK DATE: 4/10/10



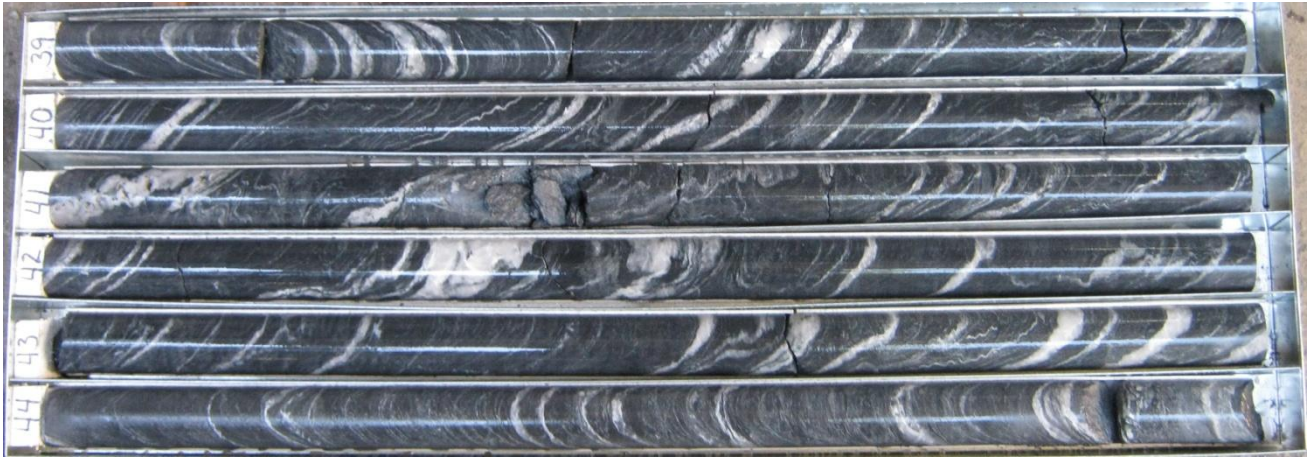


REPORT OF CORE PHOTOGRAPHS: CRR 205

CLIENT: Aecom Australia Pty Ltd
PROJECT: Cross River Rail
LOCATION: Albert and Alice St
JOB NO: 107632034

COORDS: 0502841 m E 6961116 m N
SURFACE RL: 6.00 DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 45.0 m

DEPTH RANGE: 38.0-45.0 m
DRILL RIG: Fox B40
DRILLER: Schneider Drilling Pty Ltd
LOGGED: MGM DATE: 5/08/10
CHECKED: NK DATE: 4/10/10





REPORT OF STANDPIPE INSTALLATION: CRR 205

SHEET: 1 OF 1

DRILL RIG: FOX B40

CONTRACTOR: Schneider Drilling Pty Ltd

LOGGED: MGM DATE: 5/8/10

CHECKED: NK DATE: 18/10/10

CLIENT: Aecom Australia Pty Ltd

COORDS: 502841.32 m E 6961116.20 m N MGA94 56

PROJECT: Cross River Rail

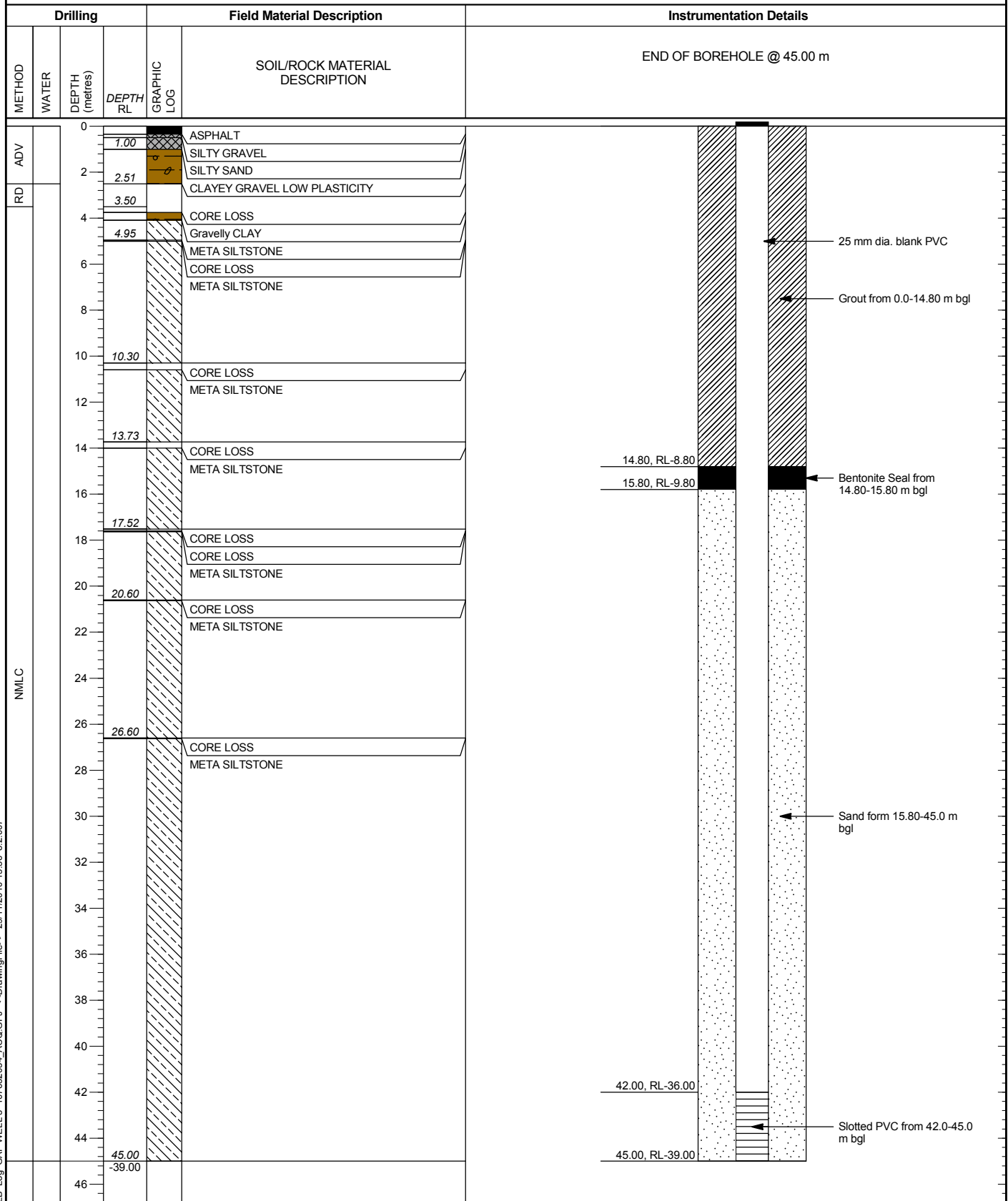
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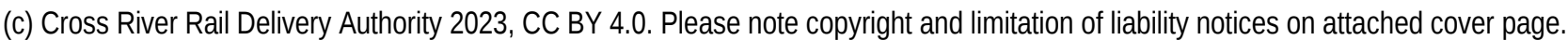
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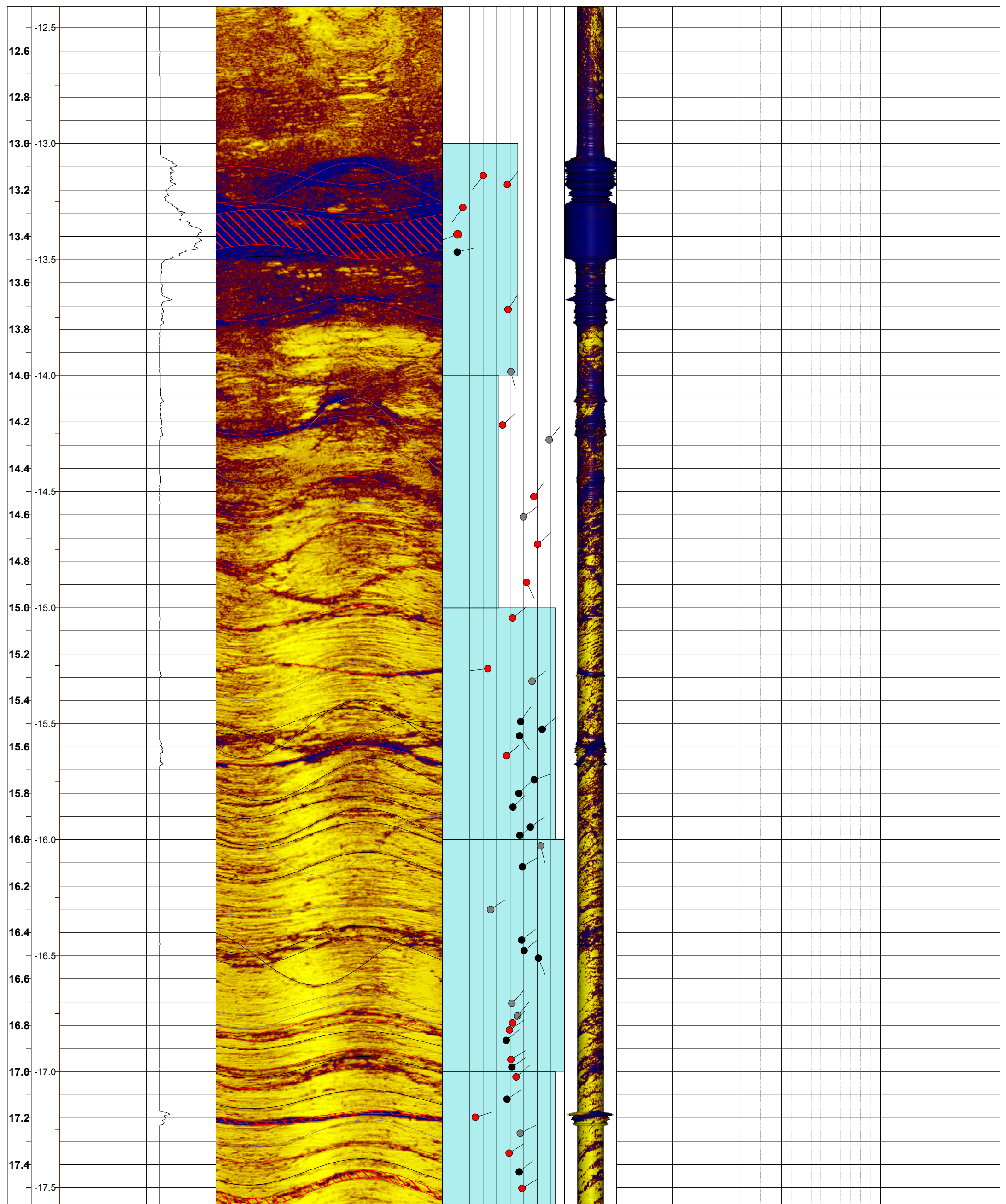
INCLINATION: -90°

JOB NO: 107632034

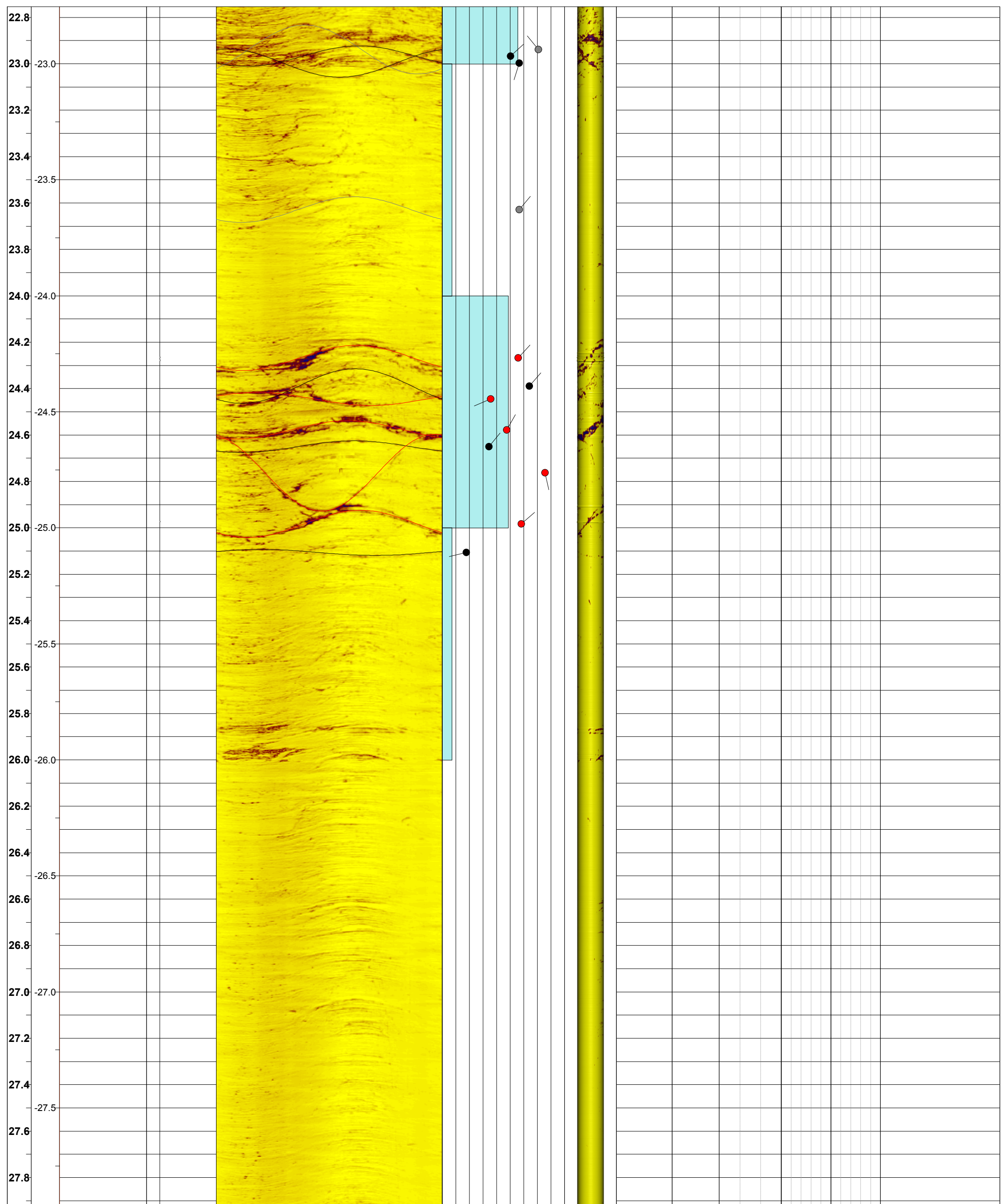
HOLE DEPTH: 45.00 m

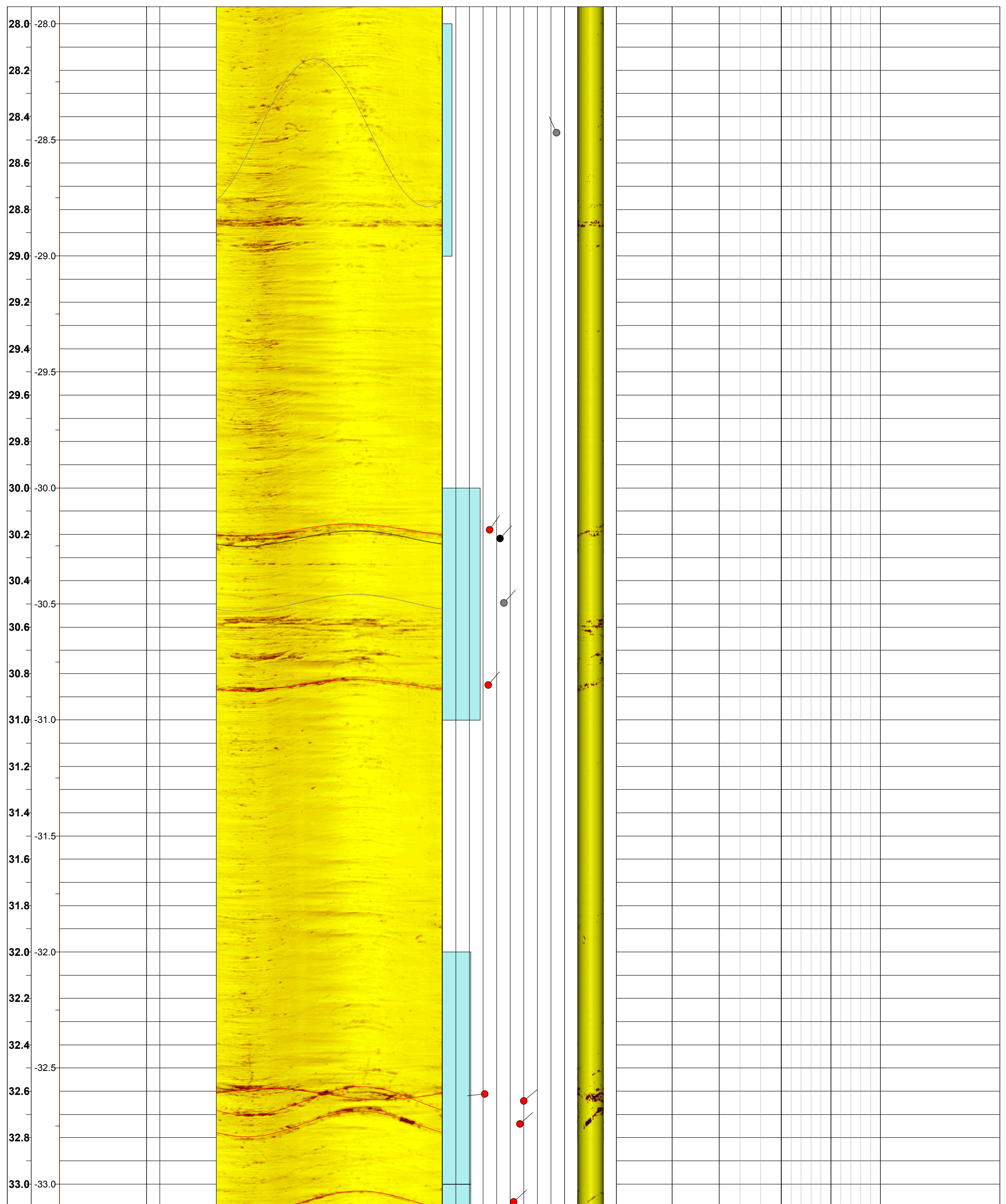


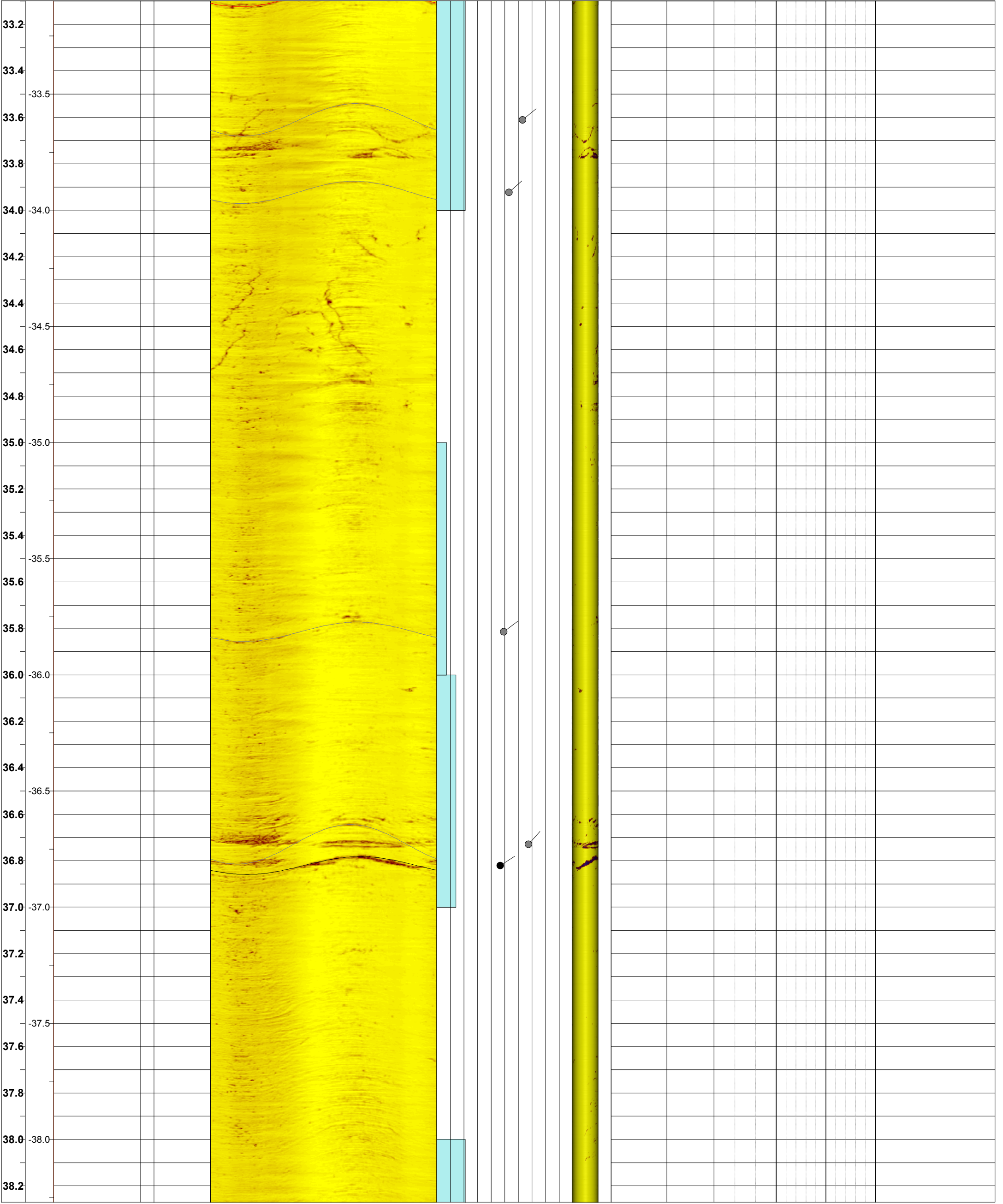


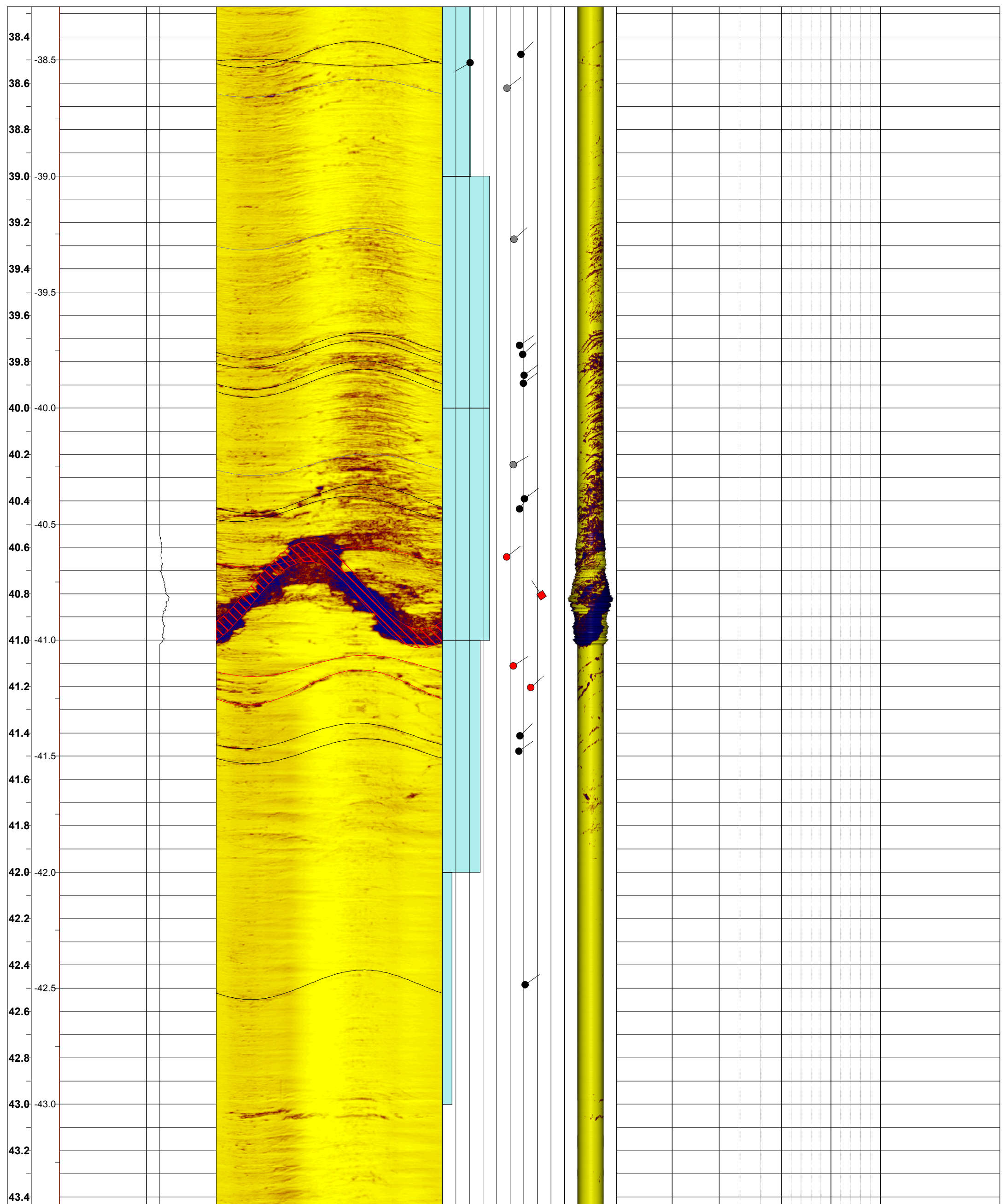






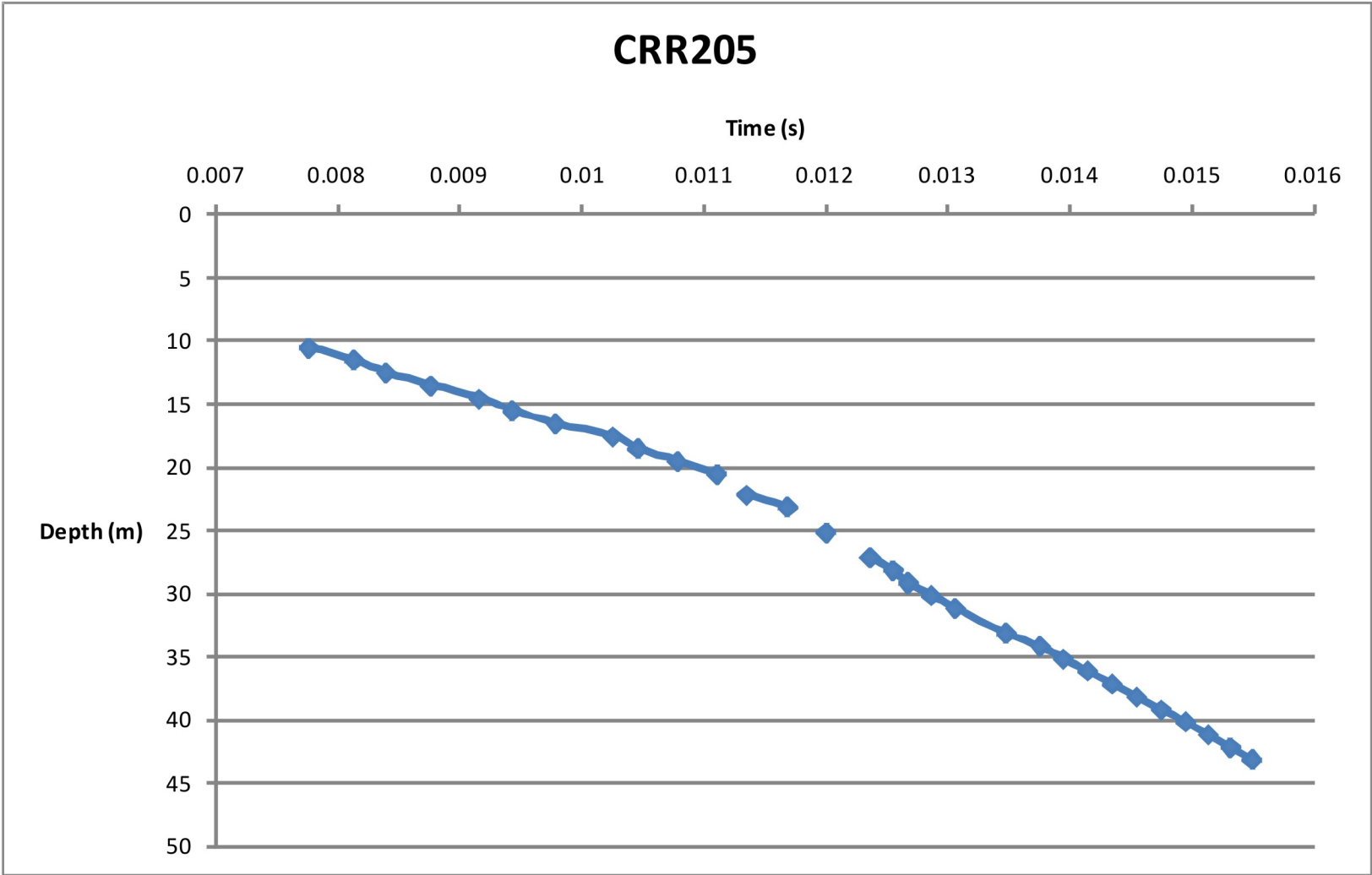






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GA-BQ-291 RL1
Issued 31/03/10



Note:

* - 1st arrival not clear due to noise

Calculations done without accounting for borehole deviation

Geophone Depth (m)		Interval velocity (P wave m/s)
from	to	
10.6	11.6	2714
11.6	12.6	3790
12.6	13.6	2725
13.6	14.6	2548
14.6	15.6	3605
15.6	16.6	2852
16.6	17.6	2130
17.6	18.6	4821
18.6	19.6	3086
19.6	20.6	3088
20.6	21.2	*
21.2	22.2	*
22.2	23.2	3005
23.2	24.2	*
24.2	25.2	*
25.2	26.2	*
26.2	27.2	*
27.2	28.2	5285
28.2	29.2	8361
29.2	30.2	5171
30.2	31.2	5172
31.2	33.2	4802
33.2	34.2	3587
34.2	35.2	5263
35.2	36.2	4979
36.2	37.2	4979
37.2	38.2	4980
38.2	39.2	4980
39.2	40.2	4980
40.2	41.2	5366
41.2	42.2	5546
42.2	43.2	5546
43.2	44.2	5546



CLIENT Department of Transport and Main Roads		PROJECT Cross River Rail		
DRAWN GDK	DATE OCT 4	TITLE CRR205 VSP		
CHECKED TR	DATE			
SCALE NTS	PROJECT No 000-107632034	FIGURE No	REV No	A3



Job No. : 107632034

Client : AECOM

Project : Cross River Rail

Location :

Tested By : MGM

Date : 4/08/2010

Hole No. : CRR205

Dip (Deg) : -90

Interval Top (m) : 25.50

Interval Base (m) : 31.50

Computed By : MGM

Date : 4/08/2010

Drilling Method : NMLC

Hole Diameter (m) : 0.0757

Tested Length (m) : 6.00

Packer Type : Mechanical - Non-Wireline - Single

Rock tested :

Vertical depth to Groundwater

Pressure Gauge Height (m agl) : 1.70

Presumed Water Temperature : 25

Casing Inner Diameter (mm) : 60.300

Revision No : 12.00

Immediately prior to test (m bgl) :

Used in analysis (m bgl) :

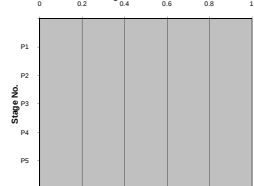
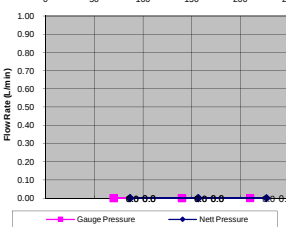
Date : 28/10/2010

Water Meter Reading in Litres

Checked By : NK

Pressure Stage	Gauge Pressure kPa	No	Actual Time (h:m:s)	Time Intervals (min)	Water Meter Readings (Litres)	Volume (L)	Discharge (L/min)	Discharge/m (L/min/m)	Remarks
P1	70	0	0:00:00	0	5.30	0.00	0.00	0.00	c : 1
		1	0:01:00	01:00	5.30	0.00	0.00	0.00	
		2	0:02:00	01:00	5.30	0.00	0.00	0.00	
		3	0:03:00	01:00	5.30	0.00	0.00	0.00	
		4	0:04:00	01:00	5.30	0.00	0.00	0.00	
		5	0:05:00	01:00	5.30	0.00	0.00	0.00	
		6	0:06:00	01:00	5.30	0.00	0.00	0.00	
		7	0:07:00	01:00	5.30	0.00	0.00	0.00	
		8	0:08:00	01:00	5.30	0.00	0.00	0.00	
		9	0:09:00	01:00	5.30	0.00	0.00	0.00	
		10	0:10:00	01:00	5.30	0.00	0.00	0.00	
Total :						0.00	0.00	0.00	
Average:						0.000	0.000		
P2	140	0	0:11:00	0	5.30	0.00	0.00	0.00	c : 1
		1	0:12:00	01:00	5.30	0.00	0.00	0.00	
		2	0:13:00	01:00	5.30	0.00	0.00	0.00	
		3	0:14:00	01:00	5.30	0.00	0.00	0.00	
		4	0:15:00	01:00	5.30	0.00	0.00	0.00	
		5	0:16:00	01:00	5.30	0.00	0.00	0.00	
		6	0:17:00	01:00	5.30	0.00	0.00	0.00	
		7	0:18:00	01:00	5.30	0.00	0.00	0.00	
		8	0:19:00	01:00	5.30	0.00	0.00	0.00	
		9	0:20:00	01:00	5.30	0.00	0.00	0.00	
		10	0:21:00	01:00	5.30	0.00	0.00	0.00	
Total :						0.00	0.00	0.00	
Average:						0.000	0.000		
P3	210	0	0:22:00	0	5.30	0.00	0.00	0.00	c : 1
		1	0:23:00	01:00	5.30	0.00	0.00	0.00	
		2	0:24:00	01:00	5.30	0.00	0.00	0.00	
		3	0:25:00	01:00	5.30	0.00	0.00	0.00	
		4	0:26:00	01:00	5.30	0.00	0.00	0.00	
		5	0:27:00	01:00	5.30	0.00	0.00	0.00	
		6	0:28:00	01:00	5.30	0.00	0.00	0.00	
		7	0:29:00	01:00	5.30	0.00	0.00	0.00	
		8	0:30:00	01:00	5.30	0.00	0.00	0.00	
		9	0:31:00	01:00	5.30	0.00	0.00	0.00	
		10	0:32:00	01:00	5.30	0.00	0.00	0.00	
Total :						0.00	0.00	0.00	
Average:						0.000	0.000		
P4	140	0	0:33:00	0	5.30	0.00	0.00	0.00	c : 1
		1	0:34:00	01:00	5.30	0.00	0.00	0.00	
		2	0:35:00	01:00	5.30	0.00	0.00	0.00	
		3	0:36:00	01:00	5.30	0.00	0.00	0.00	
		4	0:37:00	01:00	5.30	0.00	0.00	0.00	
		5	0:38:00	01:00	5.30	0.00	0.00	0.00	
		6	0:39:00	01:00	5.30	0.00	0.00	0.00	
		7	0:40:00	01:00	5.30	0.00	0.00	0.00	
		8	0:41:00	01:00	5.30	0.00	0.00	0.00	
		9	0:42:00	01:00	5.30	0.00	0.00	0.00	
		10	0:43:00	01:00	5.30	0.00	0.00	0.00	
Total :						0.00	0.00	0.00	
Average:						0.000	0.000		
P5	70	1	0:44:00	0	5.30	0.00	0.00	0.00	c : 1
		2	0:45:00	01:00	5.30	0.00	0.00	0.00	
		3	0:46:00	01:00	5.30	0.00	0.00	0.00	
		4	0:47:00	01:00	5.30	0.00	0.00	0.00	
		5	0:48:00	01:00	5.30	0.00	0.00	0.00	
		6	0:49:00	01:00	5.30	0.00	0.00	0.00	
		7	0:50:00	01:00	5.30	0.00	0.00	0.00	
		8	0:51:00	01:00	5.30	0.00	0.00	0.00	
		9	0:52:00	01:00	5.30	0.00	0.00	0.00	
		10	0:53:00	01:00	5.30	0.00	0.00	0.00	
		5.3000						Total :	
Average:						0.000	0.000		

TEST RESULTS

Stage No.	Houlsby (1976) Value	Lugeon Value Curve	Nett Pressures	Pressure Vs Flow	Interpreted Result & Hydraulic Conductivity
P1	0.0		86.7		H_{LOSS} 0.00 kPa Stage No. Average Gauge Pressure 126 kPa Q 0.00 L/min H 14.5 m Interpreted Result 0 uL Reported k at Stage Average Analytical Method 1: (ref = Golder geotechnical field notes draft 1997) $k = Q/H \times 6.10889 \times 10^{-5} \times ((\log(2L/D))/L)$ k = 0.0E+00 m/s Analytical Method 2: (ref = Sharp, J.C 1975 Pit Slope Manual, CANMET report) $k = 1/(2L \times 3.14) \times (Q/H) \ln(R/r)$ m/s (convert L/min to m/s). Assume R = radius of influence of 100m & r = radius of borehole. k = 0.0E+00 m/s
P2	0.0		156.7		
P3	0.0		226.7		
P4	0.0		156.7		
P5	0.0		86.7		
Houlsby (1976) method - no pressure corrections for Hf (head losses), nor is the pressure corrected for Hg (location of watertable).					
Flow Type	LOW PERMEABILITY	COMMENTS	No Flow		



Job No. : 107632034

Client : AECOM

Project : Cross River Rail

Location :

Tested By : MGM

Date : 5/08/2010

Hole No. : CRR205

Dip (Deg) : -90

Interval Top (m) : 31.50

Interval Base (m) : 37.50

Computed By : MGM

Date : 5/08/2010

Drilling Method : NMLC

Hole Diameter (m) : 0.0757

Tested Length (m) : 6.00

Packer Type : Mechanical - Non-Wireline - Single

Rock tested :

Vertical depth to Groundwater

Pressure Gauge Height (m agl) : 1.70

Presumed Water Temperature : 25

Casing Inner Diameter (mm) : 60.300

Revision No : 12.00

Immediately prior to test (m bgl) :

Used in analysis (m bgl) :

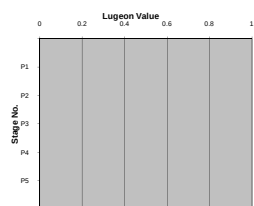
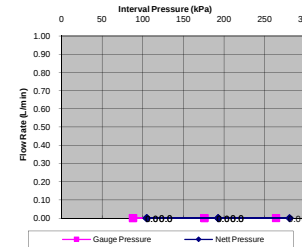
Water Meter Reading in Litres

Checked By : NK

Date : 28/10/2010

Pressure Stage	Gauge Pressure kPa	No	Actual Time (h:m:s)	Time Intervals (min)	Water Meter Readings (Litres)	Volume (L)	Discharge (L/min)	Discharge/m (L/min/m)	Remarks
P1	88	0	0:00:00	0	8.00	0.00	0.00	0.00	c : 1
		1	0:01:00	01:00	8.00	0.00	0.00	0.00	
		2	0:02:00	01:00	8.00	0.00	0.00	0.00	
		3	0:03:00	01:00	8.00	0.00	0.00	0.00	
		4	0:04:00	01:00	8.00	0.00	0.00	0.00	
		5	0:05:00	01:00	8.00	0.00	0.00	0.00	
		6	0:06:00	01:00	8.00	0.00	0.00	0.00	
		7	0:07:00	01:00	8.00	0.00	0.00	0.00	
		8	0:08:00	01:00	8.00	0.00	0.00	0.00	
		9	0:09:00	01:00	8.00	0.00	0.00	0.00	
		10	0:10:00	01:00	8.00	0.00	0.00	0.00	
Total :						0.00	0.00		
Average:						0.000	0.000		
P2	176	0	0:11:00	0	8.00	0.00	0.00	0.00	c : 1
		1	0:12:00	01:00	8.00	0.00	0.00	0.00	
		2	0:13:00	01:00	8.00	0.00	0.00	0.00	
		3	0:14:00	01:00	8.00	0.00	0.00	0.00	
		4	0:15:00	01:00	8.00	0.00	0.00	0.00	
		5	0:16:00	01:00	8.00	0.00	0.00	0.00	
		6	0:17:00	01:00	8.00	0.00	0.00	0.00	
		7	0:18:00	01:00	8.00	0.00	0.00	0.00	
		8	0:19:00	01:00	8.00	0.00	0.00	0.00	
		9	0:20:00	01:00	8.00	0.00	0.00	0.00	
		10	0:21:00	01:00	8.00	0.00	0.00	0.00	
Total :						0.00	0.00		
Average:						0.000	0.000		
P3	264	0	0:22:00	0	8.00	0.00	0.00	0.00	c : 1
		1	0:23:00	01:00	8.00	0.00	0.00	0.00	
		2	0:24:00	01:00	8.00	0.00	0.00	0.00	
		3	0:25:00	01:00	8.00	0.00	0.00	0.00	
		4	0:26:00	01:00	8.00	0.00	0.00	0.00	
		5	0:27:00	01:00	8.00	0.00	0.00	0.00	
		6	0:28:00	01:00	8.00	0.00	0.00	0.00	
		7	0:29:00	01:00	8.00	0.00	0.00	0.00	
		8	0:30:00	01:00	8.00	0.00	0.00	0.00	
		9	0:31:00	01:00	8.00	0.00	0.00	0.00	
		10	0:32:00	01:00	8.00	0.00	0.00	0.00	
Total :						0.00	0.00		
Average:						0.000	0.000		
P4	176	0	0:33:00	0	8.00	0.00	0.00	0.00	c : 1
		1	0:34:00	01:00	8.00	0.00	0.00	0.00	
		2	0:35:00	01:00	8.00	0.00	0.00	0.00	
		3	0:36:00	01:00	8.00	0.00	0.00	0.00	
		4	0:37:00	01:00	8.00	0.00	0.00	0.00	
		5	0:38:00	01:00	8.00	0.00	0.00	0.00	
		6	0:39:00	01:00	8.00	0.00	0.00	0.00	
		7	0:40:00	01:00	8.00	0.00	0.00	0.00	
		8	0:41:00	01:00	8.00	0.00	0.00	0.00	
		9	0:42:00	01:00	8.00	0.00	0.00	0.00	
		10	0:43:00	01:00	8.00	0.00	0.00	0.00	
Total :						0.00	0.00		
Average:						0.000	0.000		
P5	88	1	0:44:00	0	8.00	0.00	0.00	0.00	c : 1
		2	0:45:00	01:00	8.00	0.00	0.00	0.00	
		3	0:46:00	01:00	8.00	0.00	0.00	0.00	
		4	0:47:00	01:00	8.00	0.00	0.00	0.00	
		5	0:48:00	01:00	8.00	0.00	0.00	0.00	
		6	0:49:00	01:00	8.00	0.00	0.00	0.00	
		7	0:50:00	01:00	8.00	0.00	0.00	0.00	
		8	0:51:00	01:00	8.00	0.00	0.00	0.00	
		9	0:52:00	01:00	8.00	0.00	0.00	0.00	
		10	0:53:00	01:00	8.00	0.00	0.00	0.00	
		Total :						0.00	
Average:						0.000	0.000		

TEST RESULTS

Stage No.	Houlsby (1976) Value	Lugeon Value Curve	Nett Pressures	Pressure Vs Flow	Interpreted Result & Hydraulic Conductivity
P1	0.0		104.7		H_{LOSS} 0.00 kPa Stage No. Average Gauge Pressure 158 kPa Q 0.00 L/min H 17.9 m
P2	0.0		192.7		
P3	0.0		280.7		
P4	0.0		192.7		
P5	0.0		104.7		
Houlsby (1976) method - no pressure corrections for Hf (head losses), nor is the pressure corrected for Hg (location of watertable).					
Flow Type	LOW PERMEABILITY	COMMENTS	No Flow		
k = 0.0E+00 m/s Analytical Method 2: (ref = Sharp, J.C 1975 Pit Slope Manual, CANMET report) k = 1/(2Lx3.14 x (Q/H) ln(R/r)) m/s (convert L/min to m/s). Assume R = radius of influence of 100m & r = radius of borehole.					k = 0.0E+00 m/s