



40 Arm Caliper
Magnetic Thickness
Radial Bond Log

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Wishbone 29N-E24HZ
Field Wattenberg
County Weld State Colorado

Location: API # : 05-123-37149-00
SHL: 320' FSL 1940' FWL
Lat/Long: 40.11741/-104.728037
SEC 24 TWP 2N RGE 66W
Permanent Datum Ground Level Elevation 5084'
Log Measured From Kelly Bushing 16'
Drilling Measured From Kelly Bushing
Other Services Gauge Ring
Elevation
K.B. 5100'
D.F. 5099'
G.L. 5084'

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Wishbone 29N-E24HZ
Field Wattenberg
County Weld
State Colorado

Date July 16, 2013

Run Number	One
Depth Driller	11895 FT
Depth Logger	6875 FT
Bottom Logged Interval	6875 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	-----
Estimated Cement Top	ROA
Time Well Ready	-----
Time Logger on Bottom	HD-0311
Equipment Number	-----
Location	Ft. Lupton, Colorado
Recorded By	Ryan Harris
Witnessed By	Rick Dunford

Borehole Record		Tubing Record					
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	9.625"	36#	Surface	1042 FT
Prot. String				
Production String	7"	26#	Surface	7772 FT
Liner	4.5"	11.6#	6823 FT	11895 FT

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

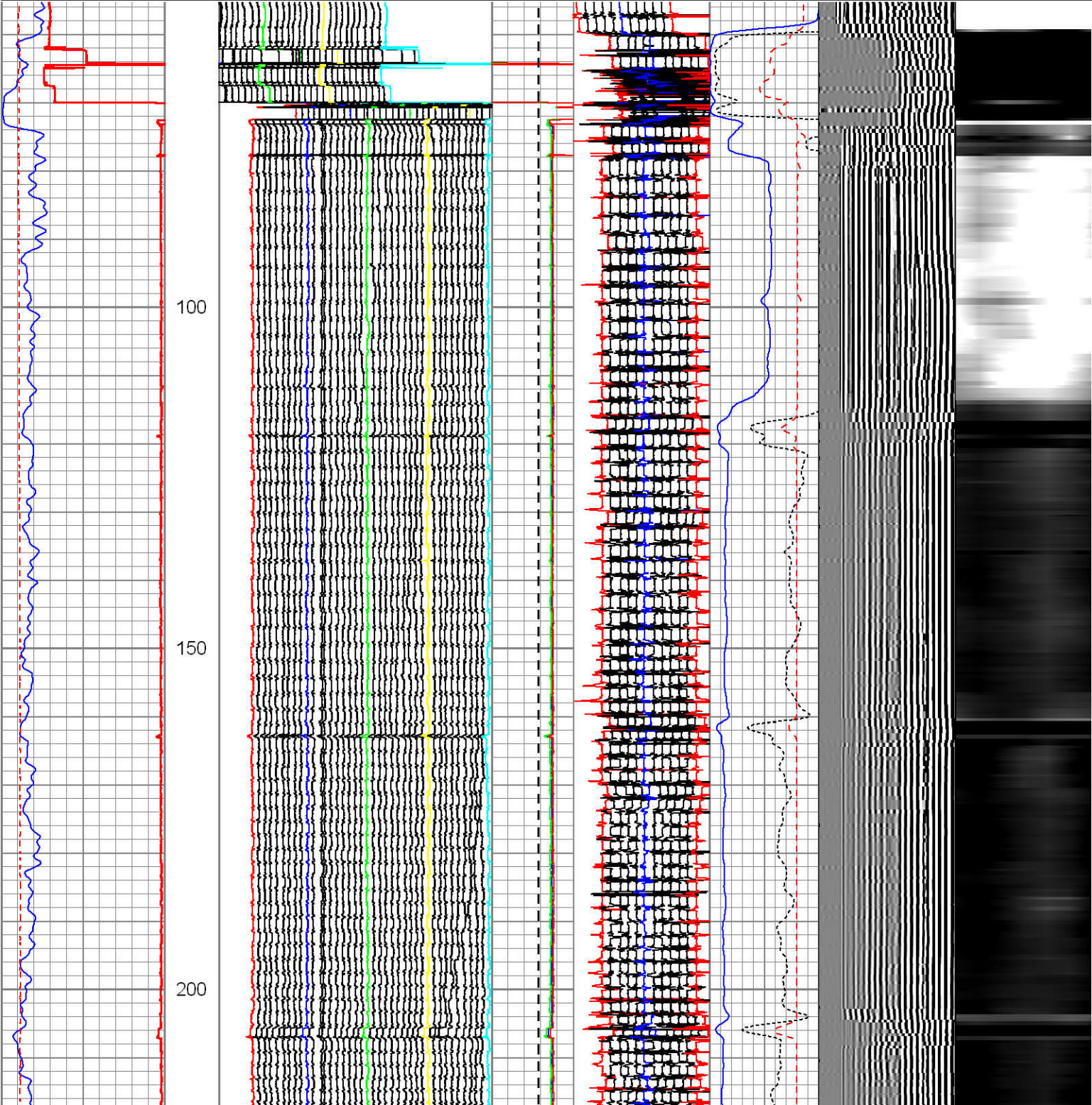
Comments

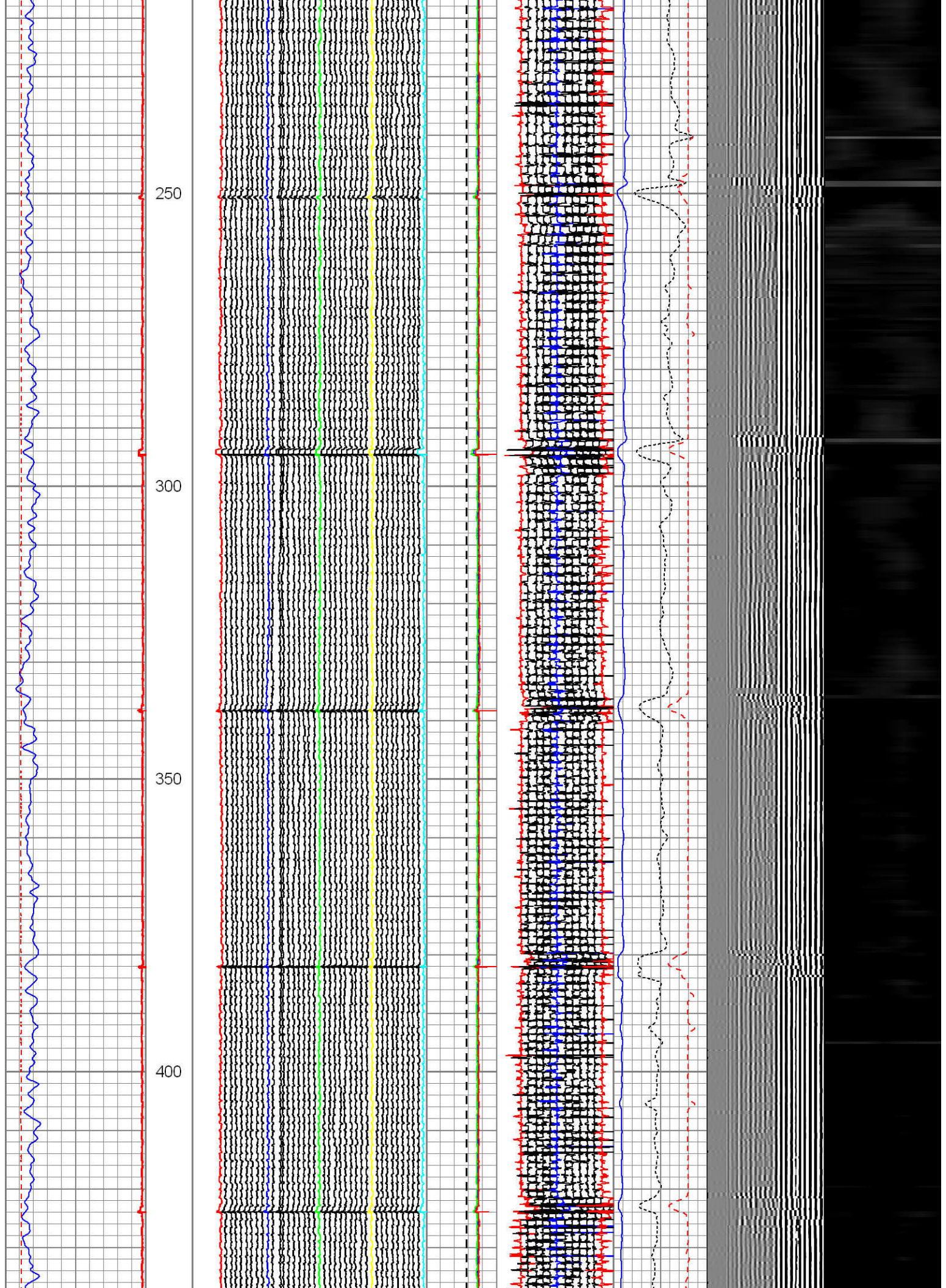
Log Was Correlated To The Liner Top @ 6823'
Adjusted +42'

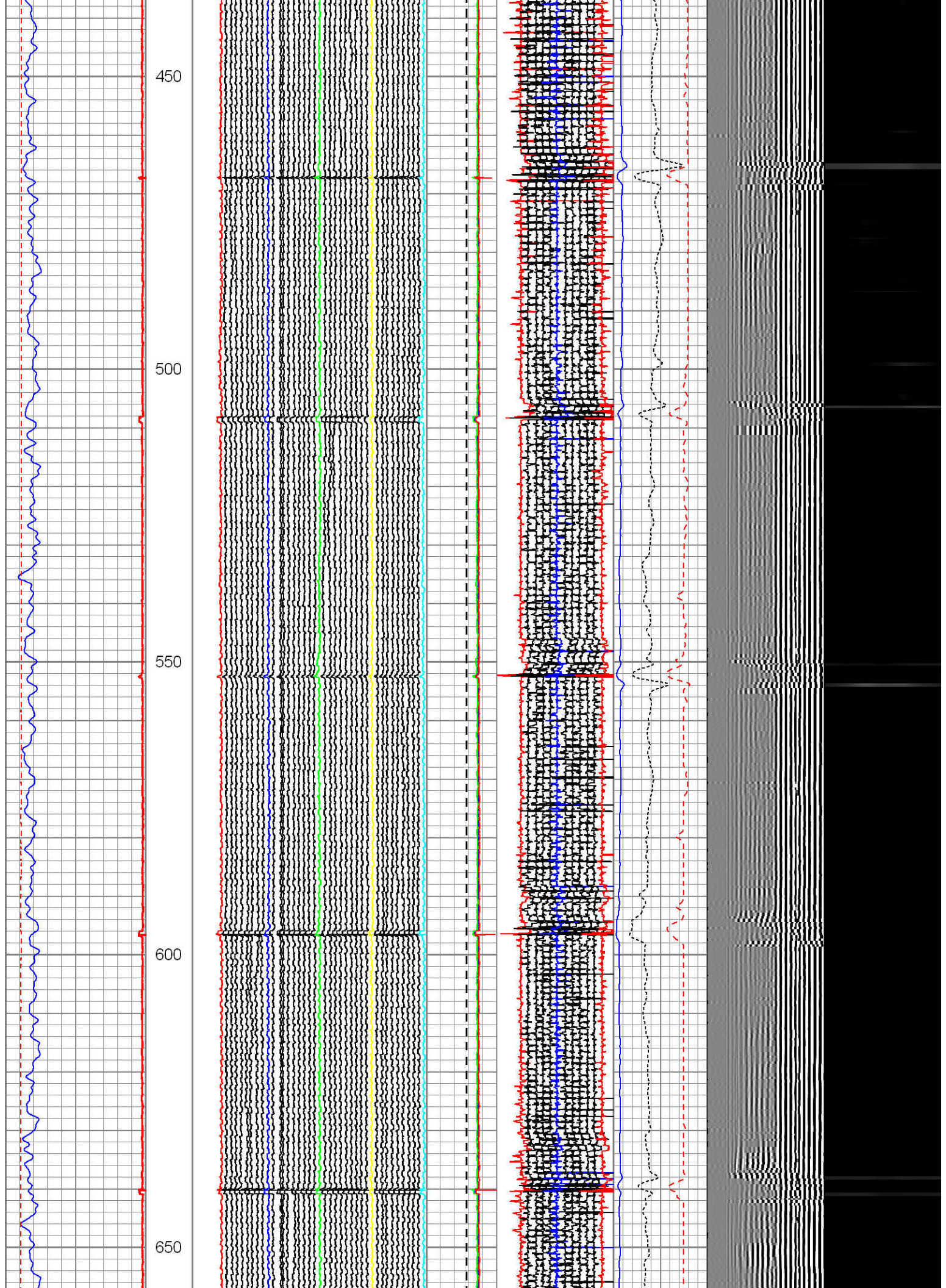
Thank You For Choosing FMC Technologies Completion Services, Inc.

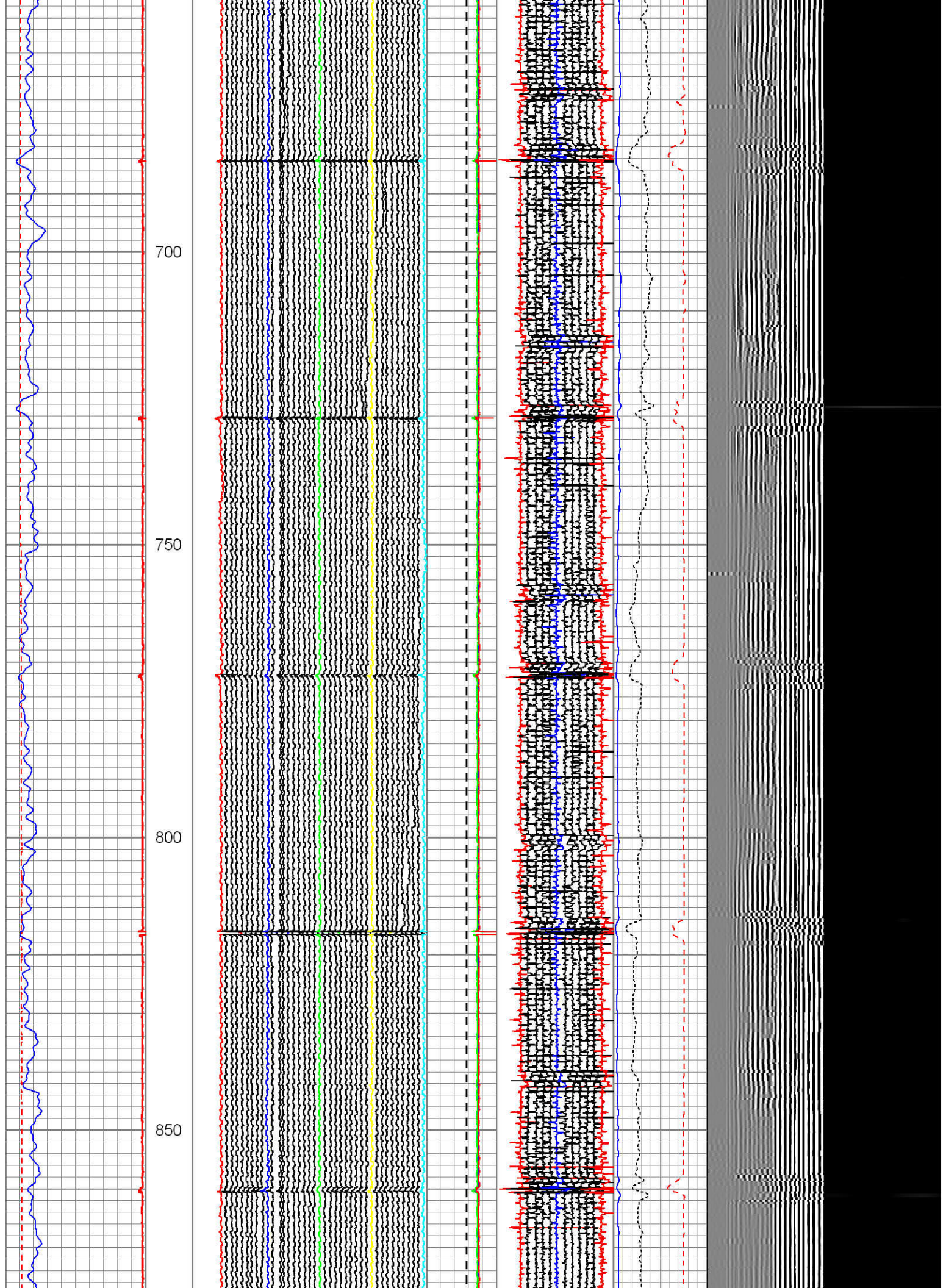
Database File: 05-123-37149_wishbone 29n-e24hzcil_rcbl_w7.db
Dataset Pathname: main1
Presentation Format: us40rbl7
Dataset Creation: Tue Jul 16 12:18:56 2013 by Log Sondex V7.03
Charted by: Depth in Feet scaled 1:240

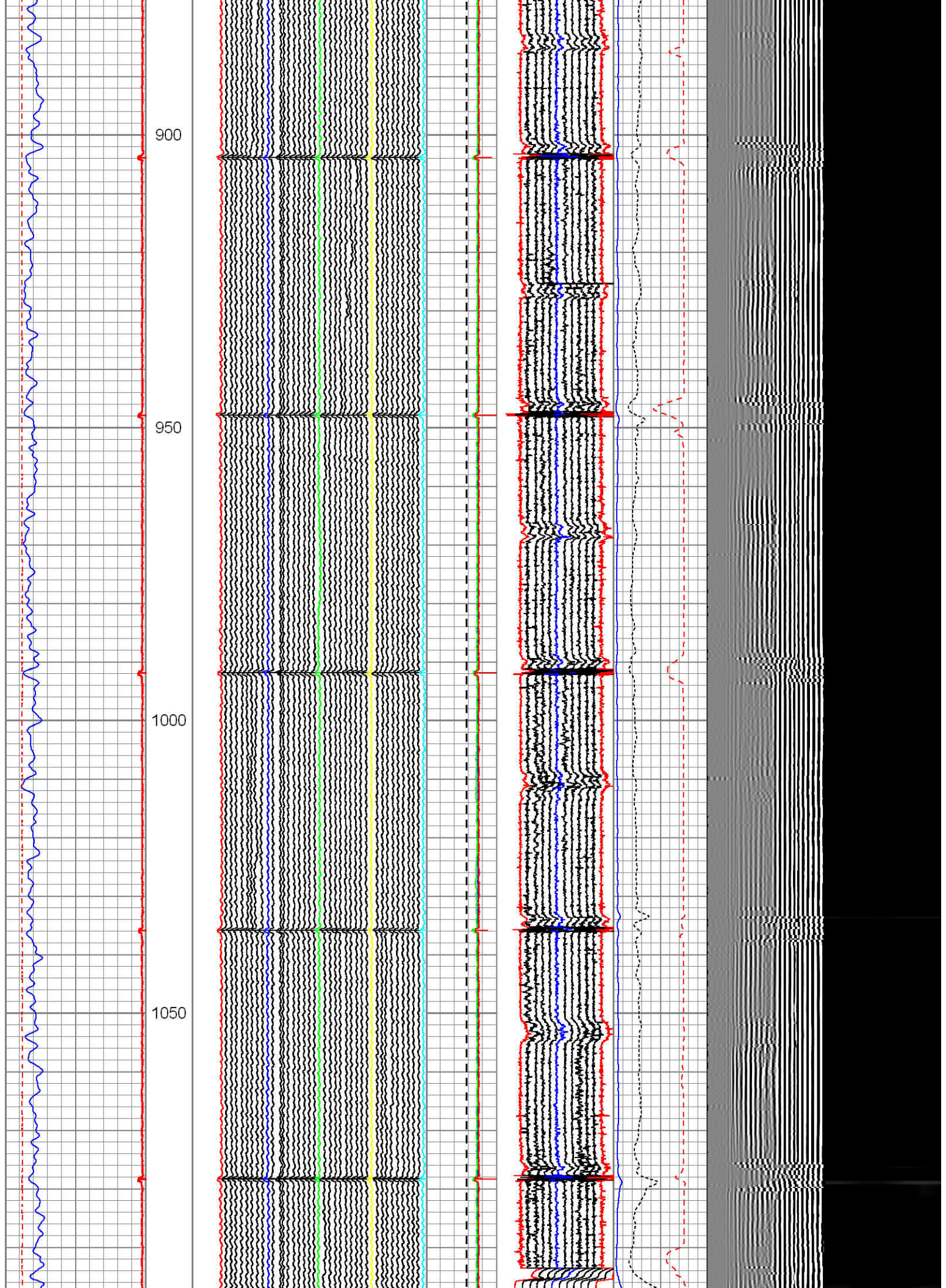
CCL			3	Caliper #1 (in)	4.8	Ave ID	MTTP01	3' Amp	5' VDL	Sector Map
0	GR (GAPI)	120	2.64	Caliper #10 (in)	4.44	(in)	1 (rad) 9	(mV)	200 1200	
Deviation			2.24	Caliper #20 (in)	4.04	5.7 6.7	MTTP06	0 100		
-10	(°)	90	1.84	Caliper #30 (in)	3.64	Min ID	-1.5 (rad) 6.5	3' Amp X 5		
			1.44	Caliper #40 (in)	3.24	(in)	MTTP12	3' TT		
						5.7 6.7	-4.5 (rad) 3.5	(usec)		
						Max ID		650 150		
						(in)				
						5.7 6.7				
						Nom ID				
						(in)				
						5.7 6.7				

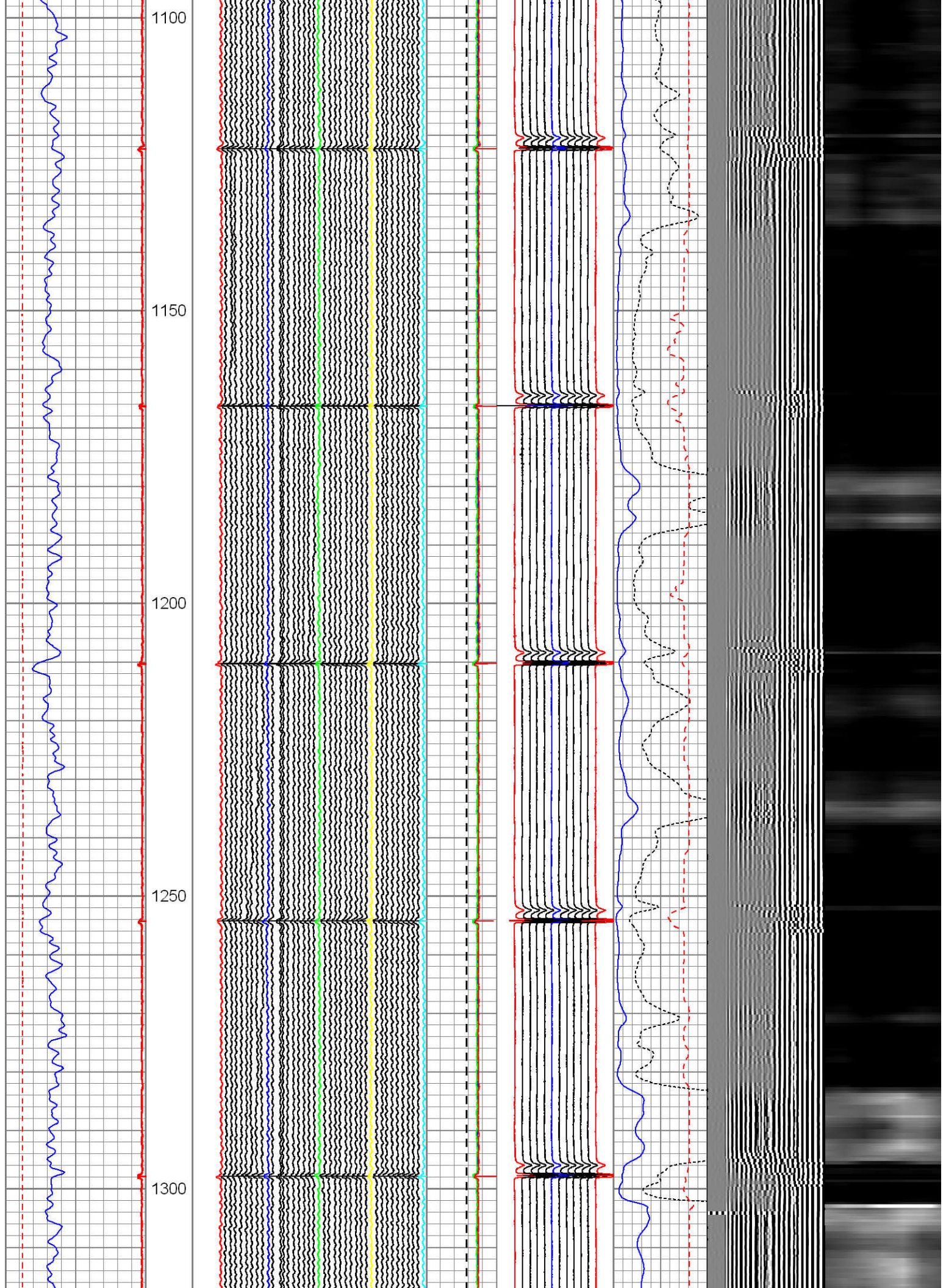


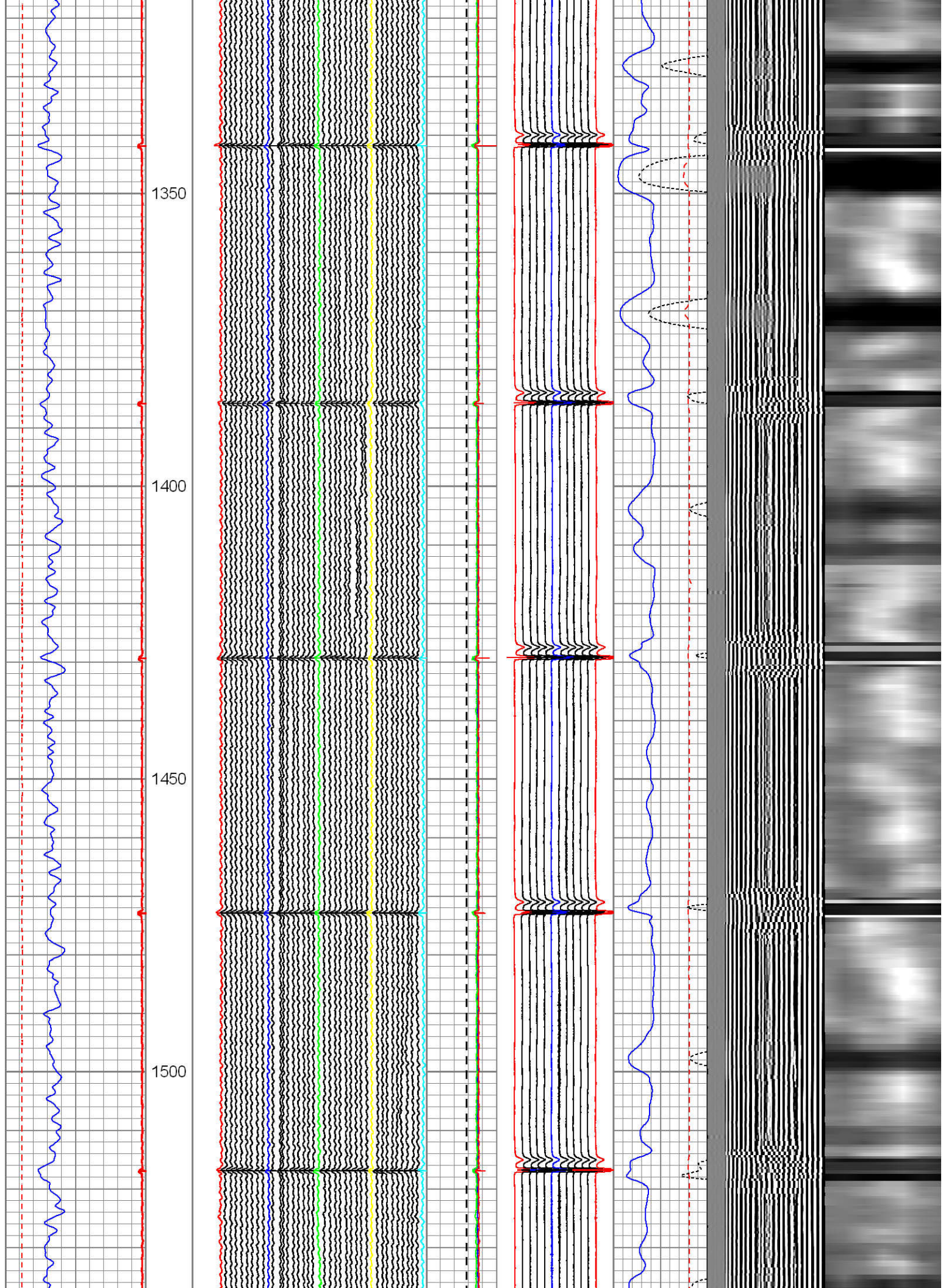


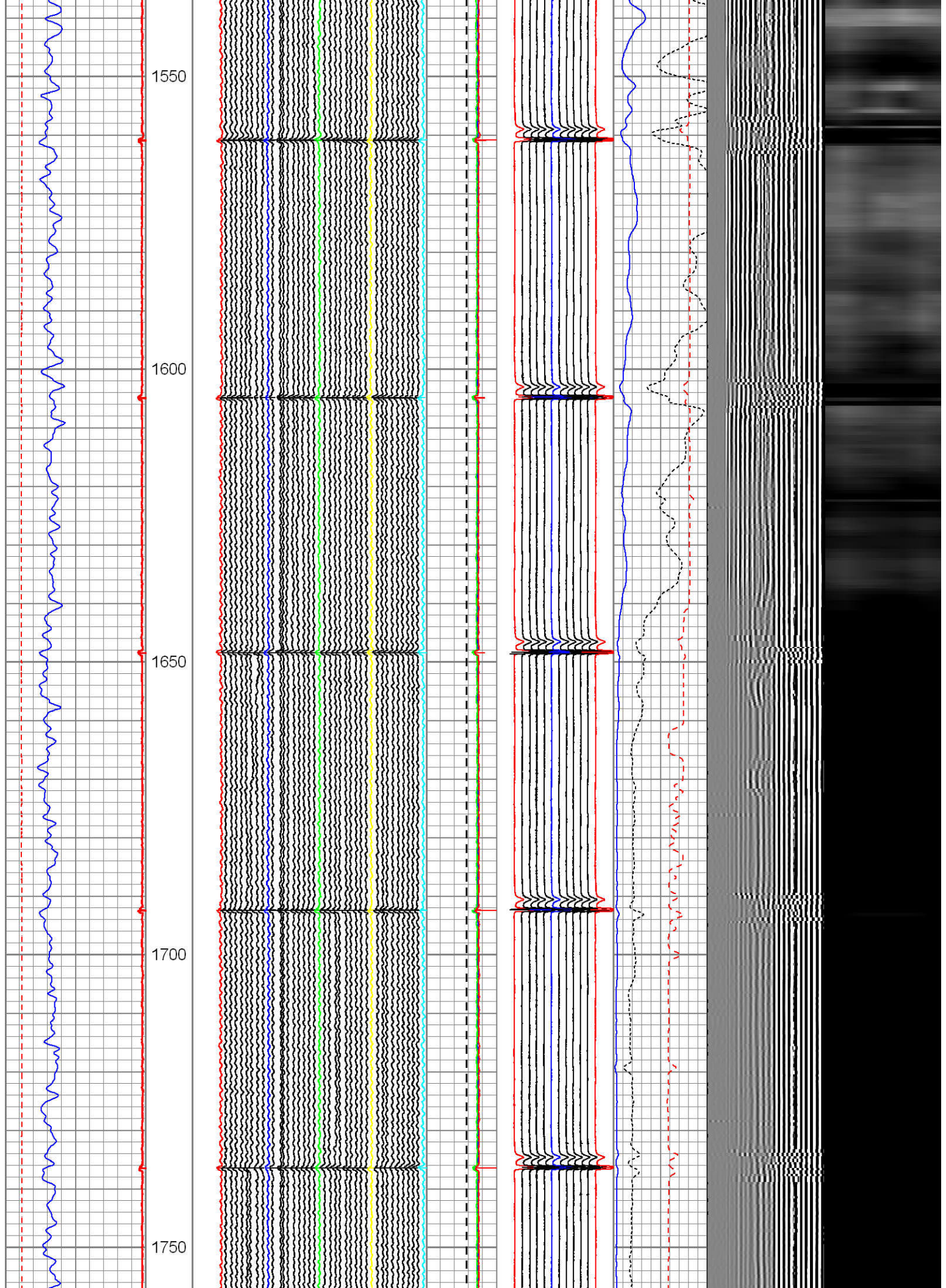


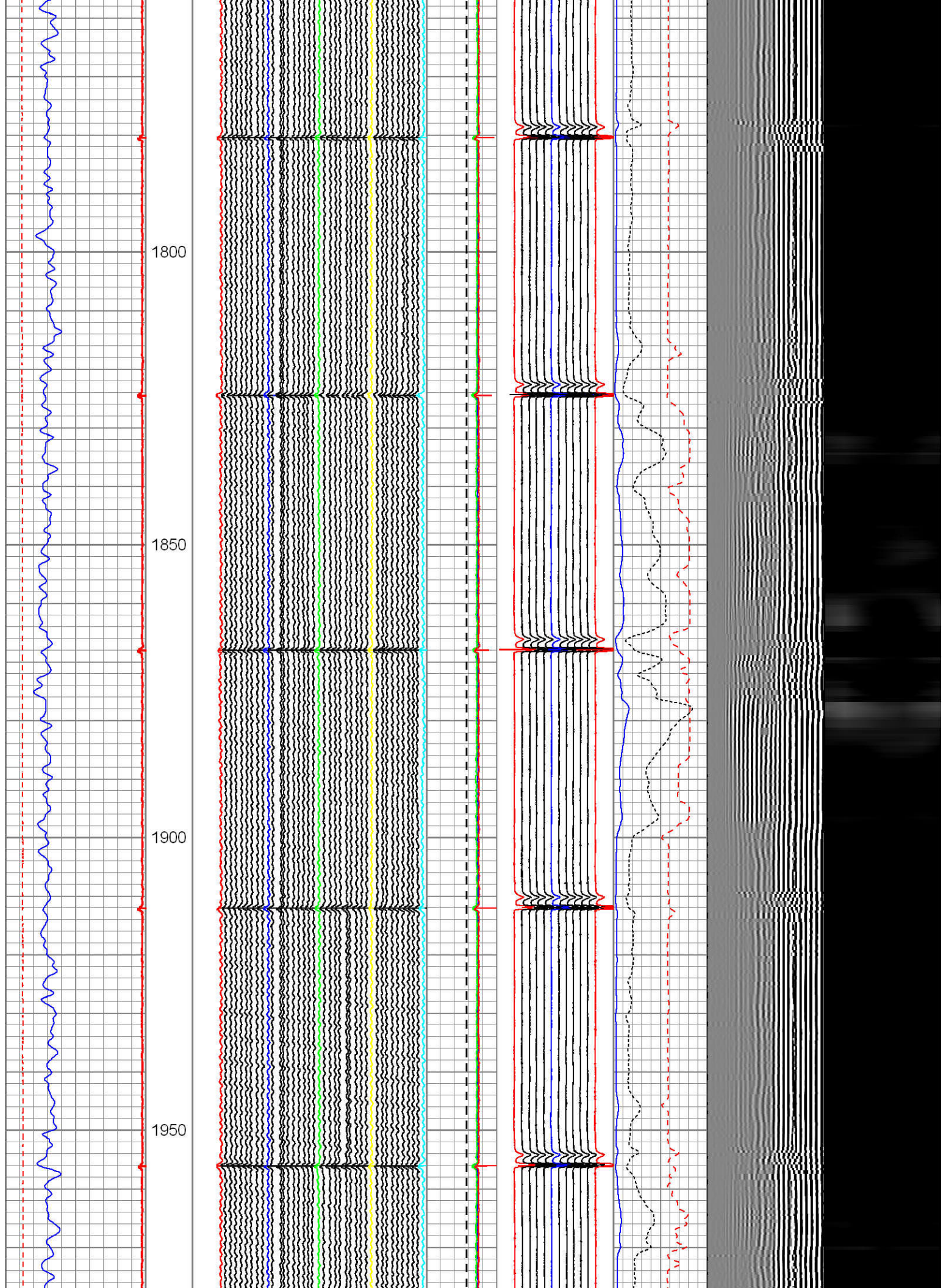


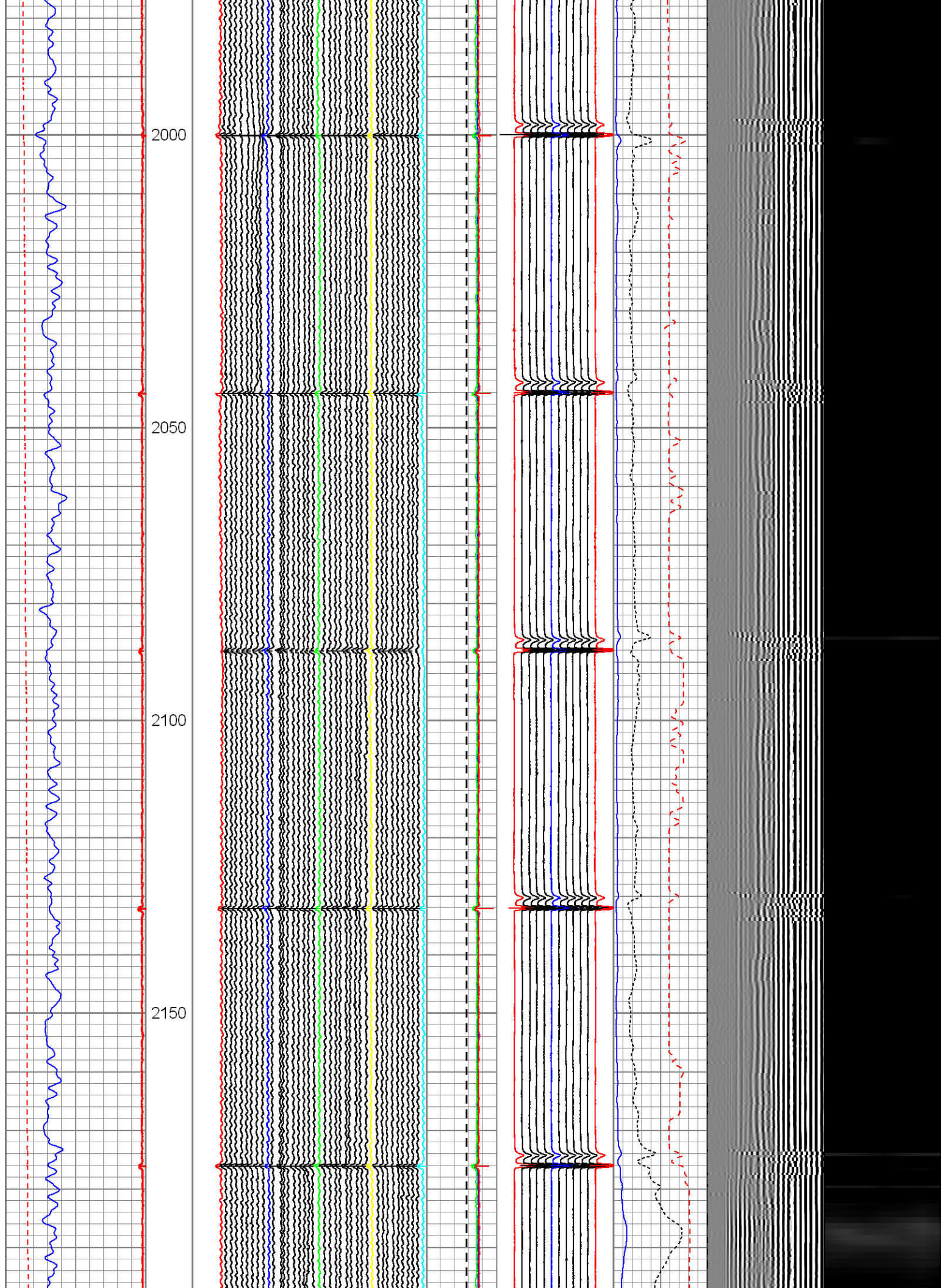


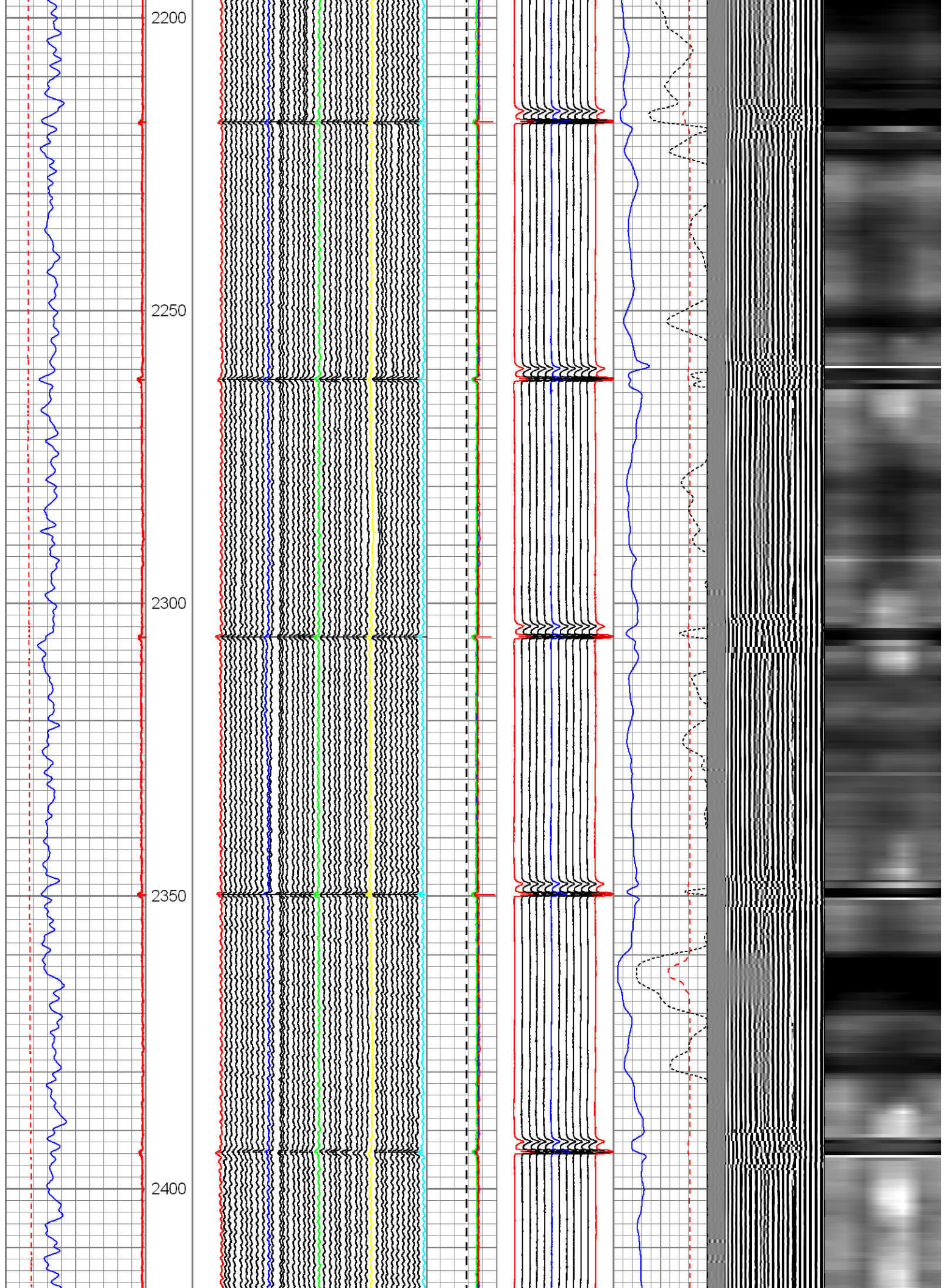


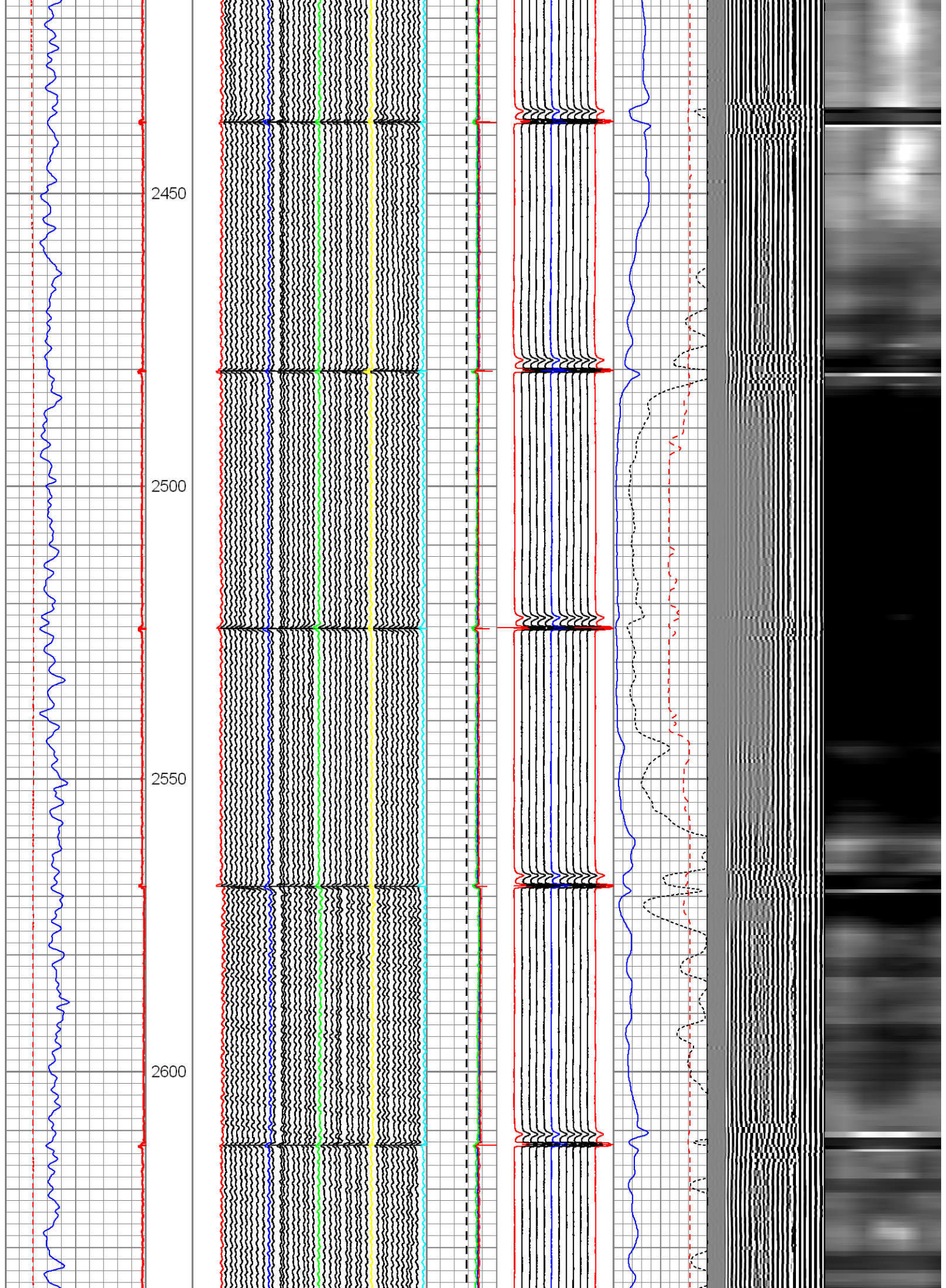


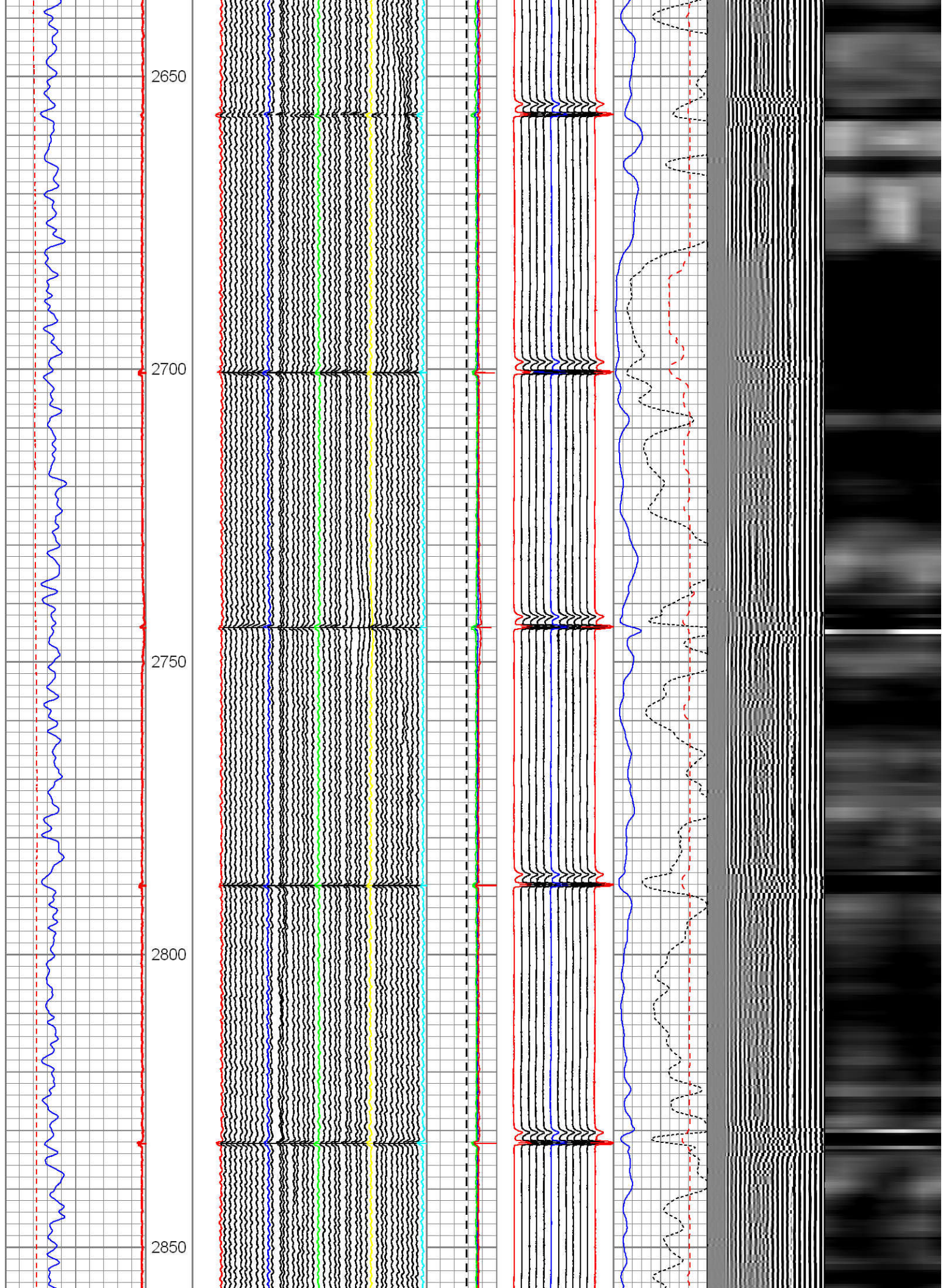


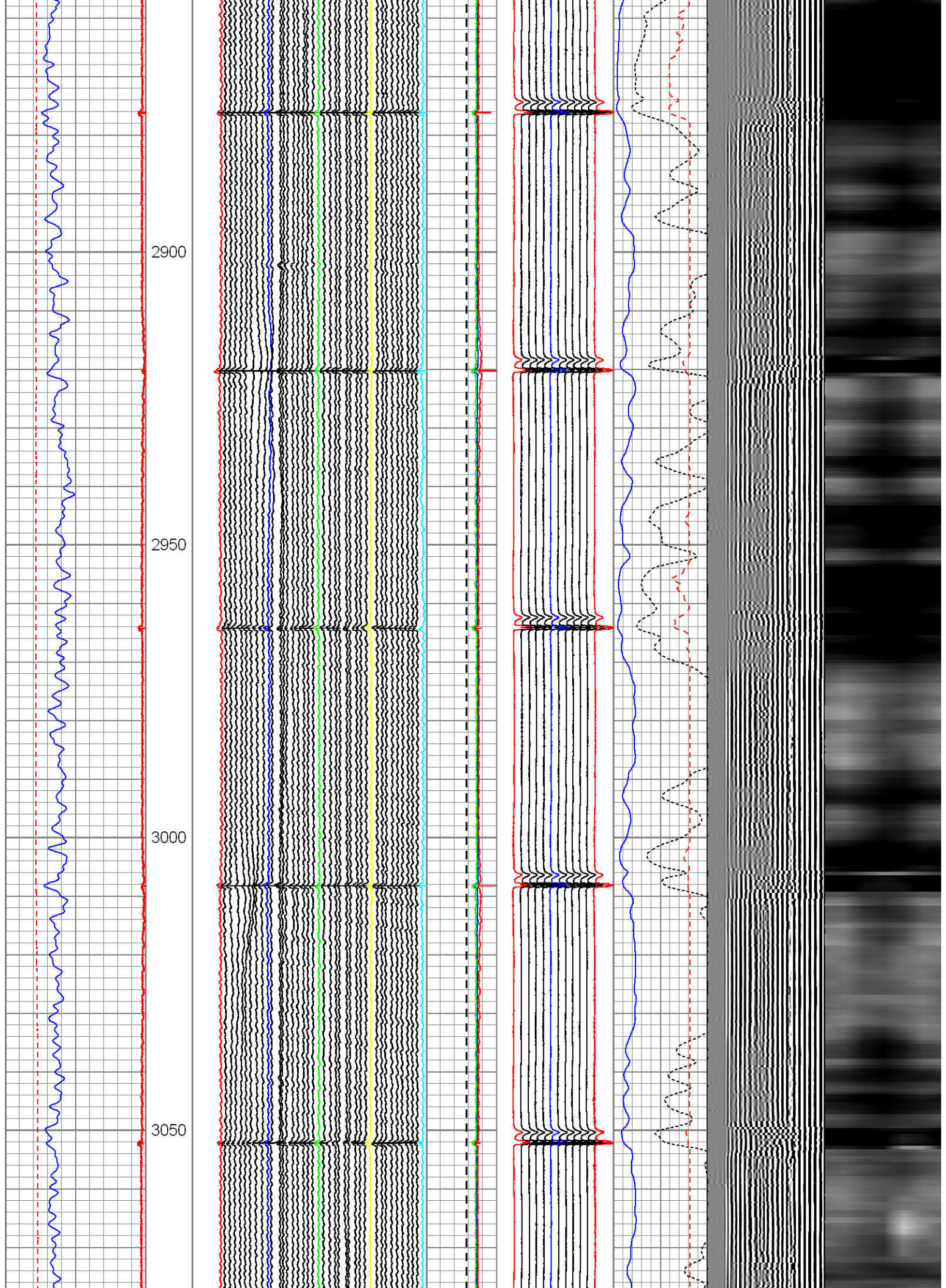


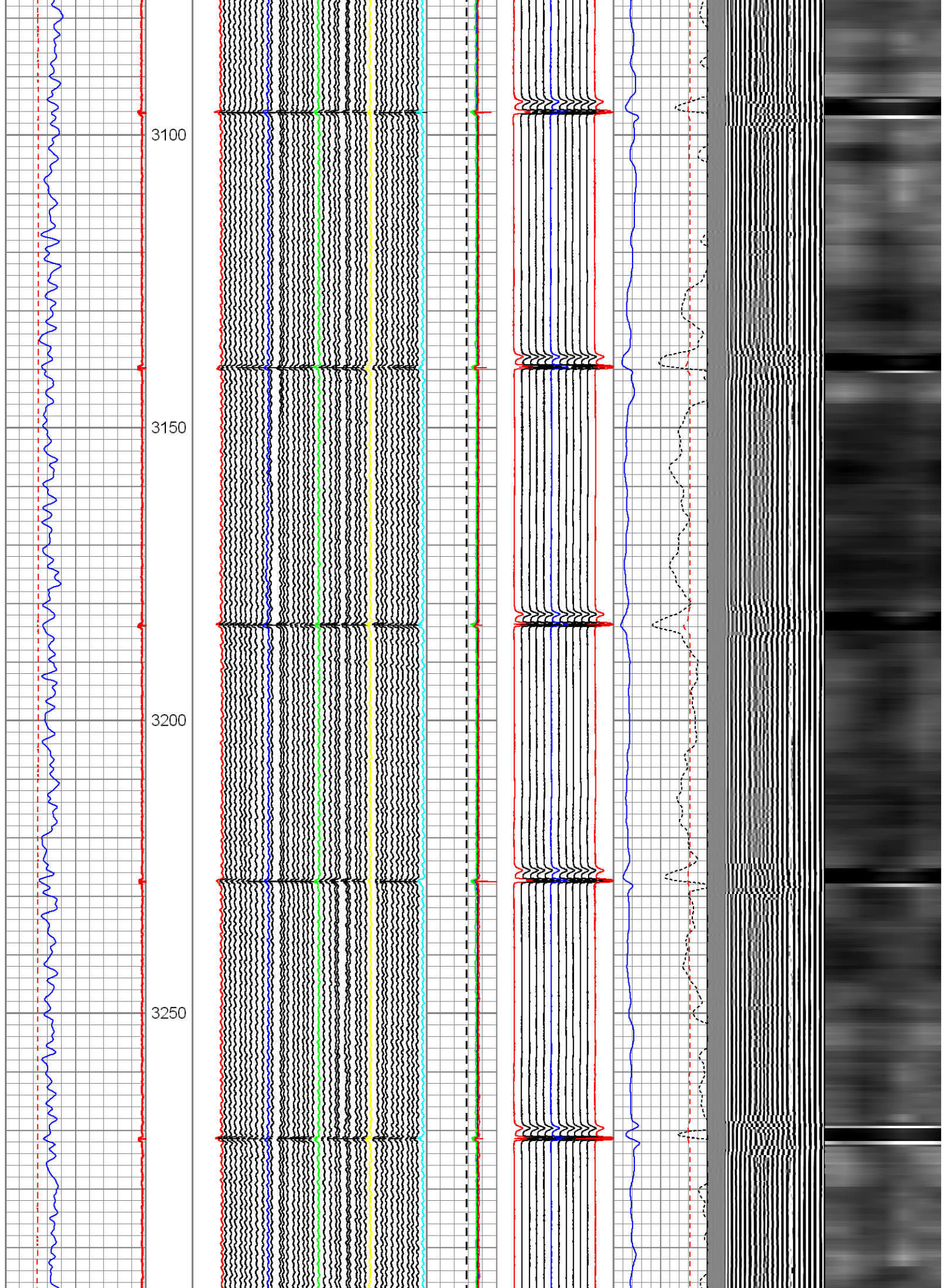


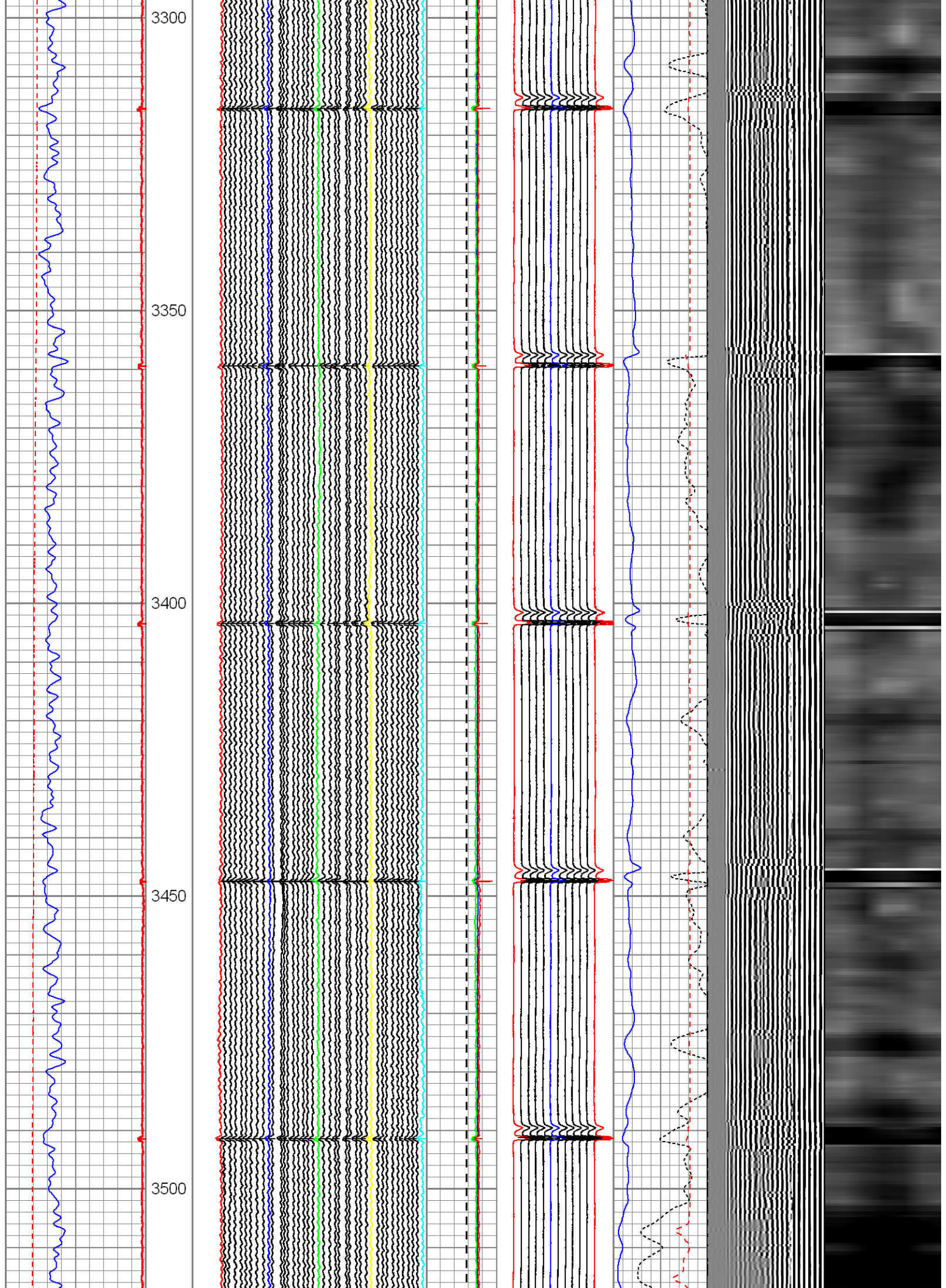


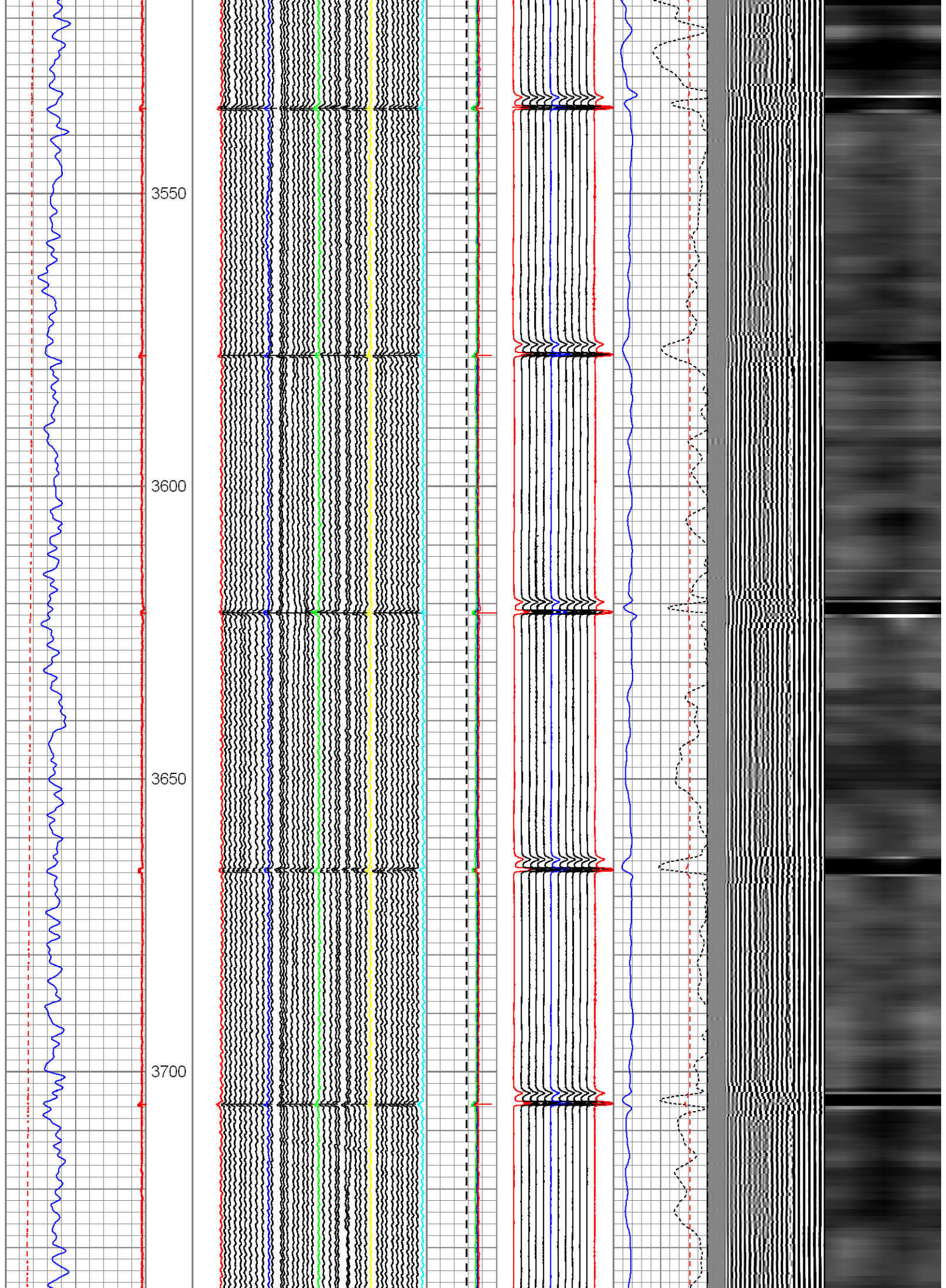


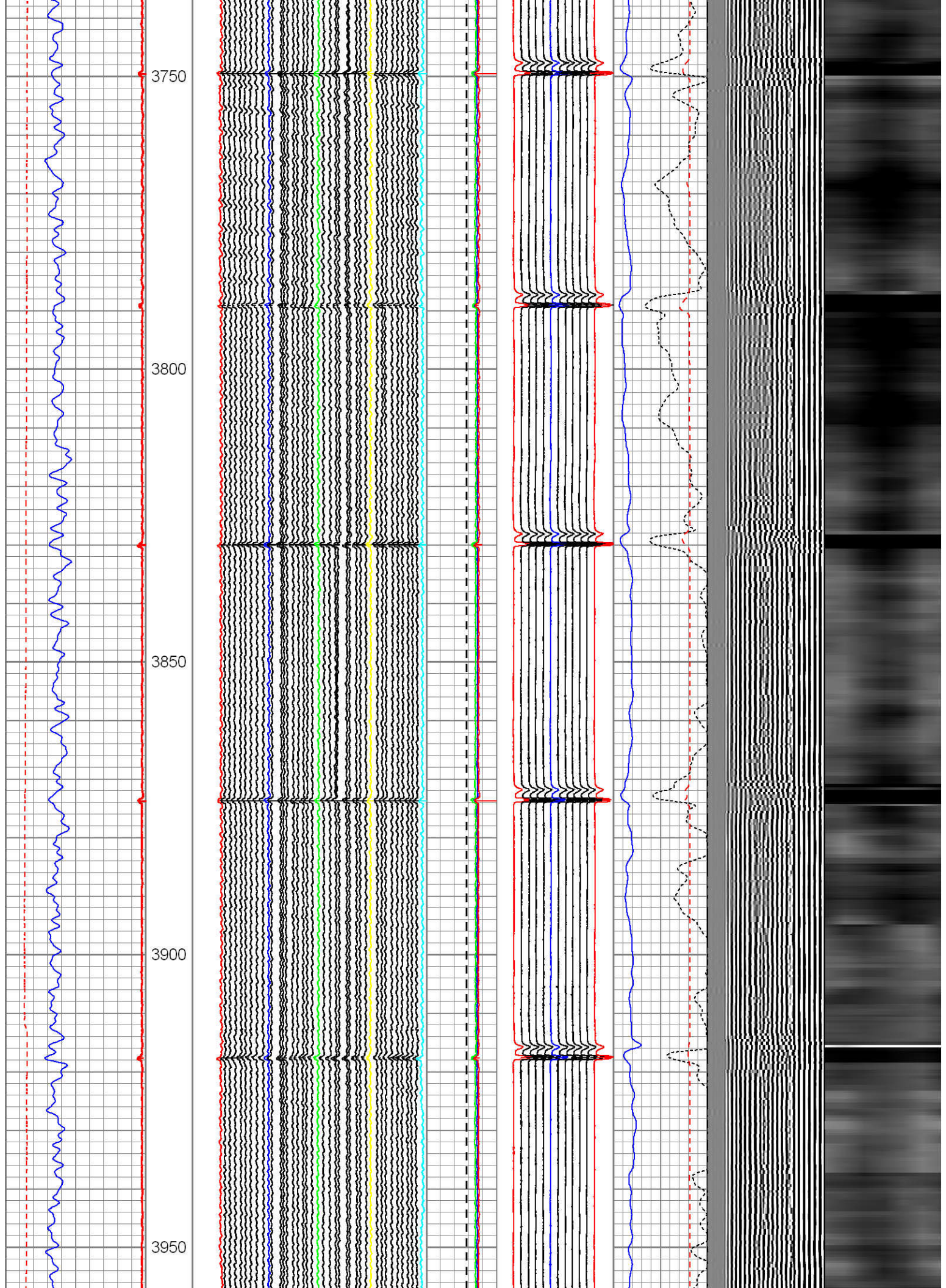


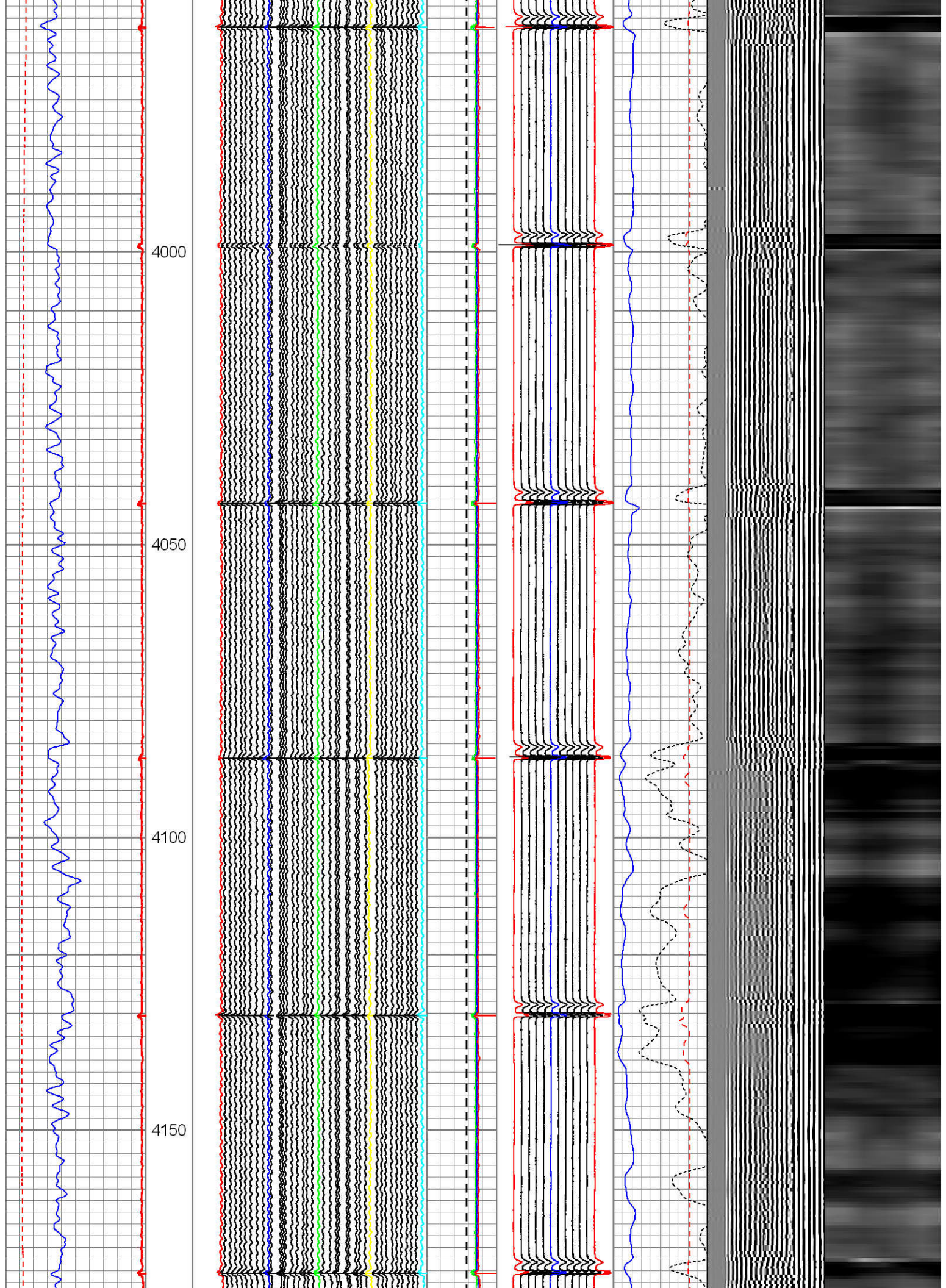


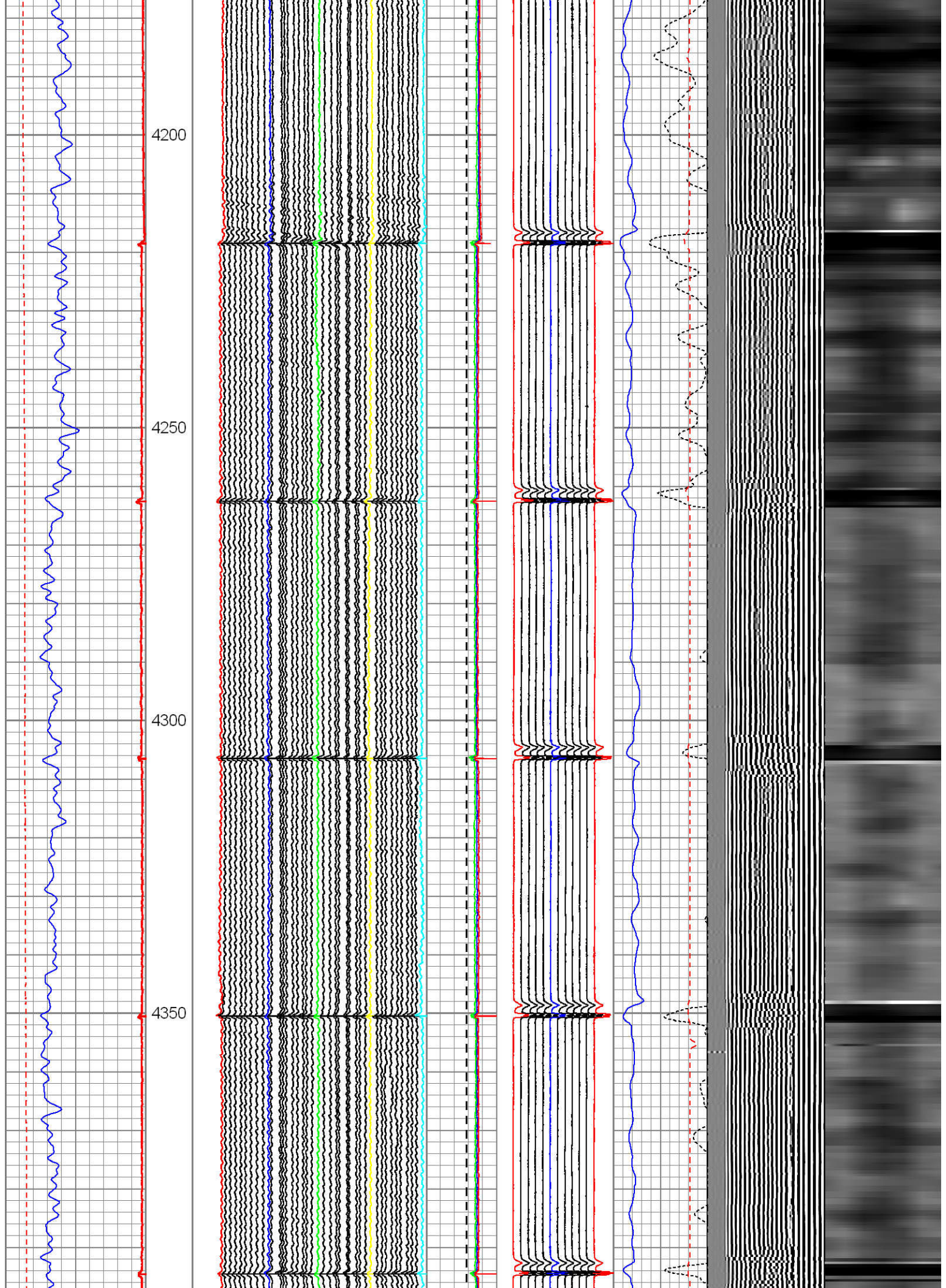


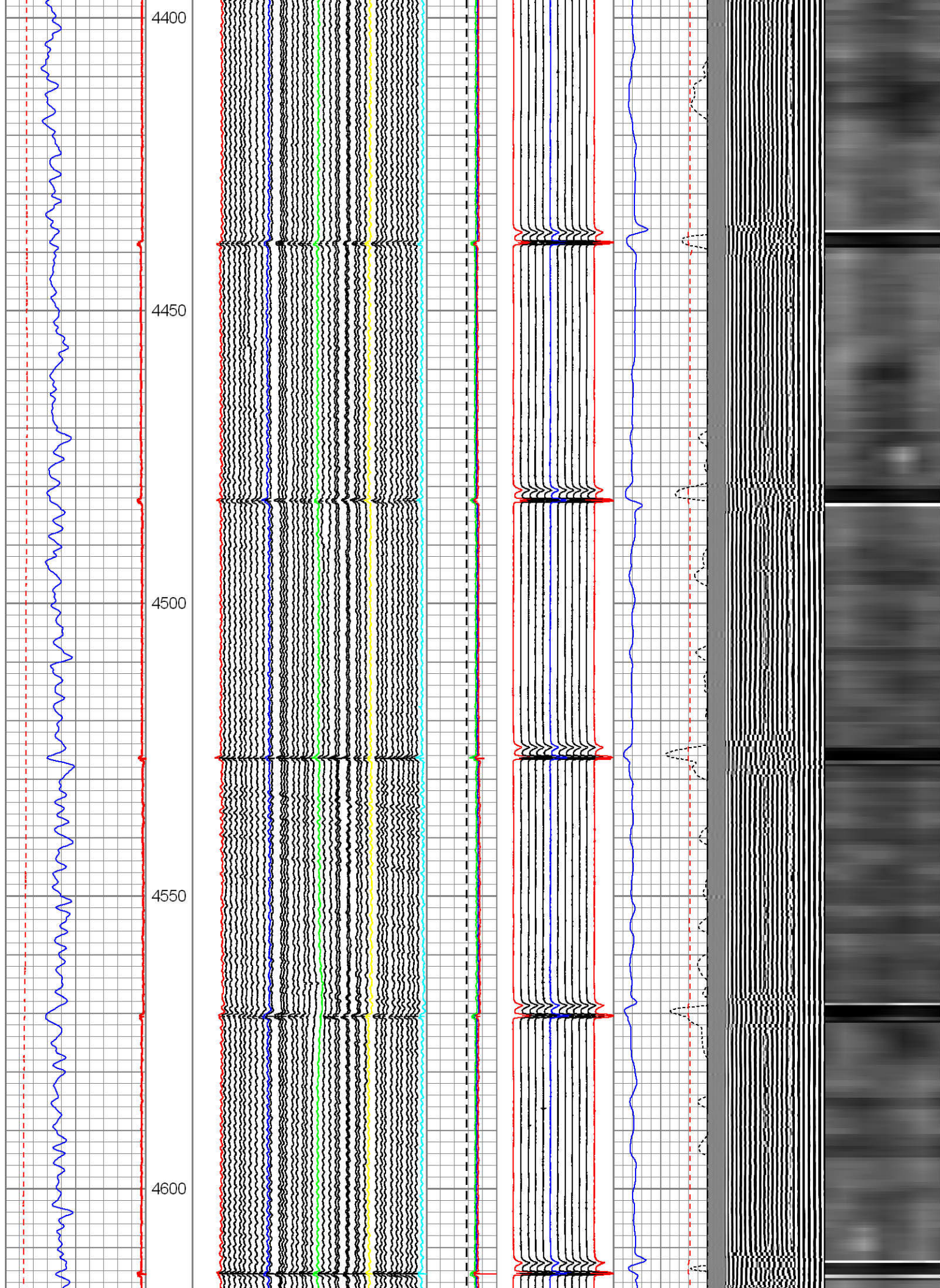


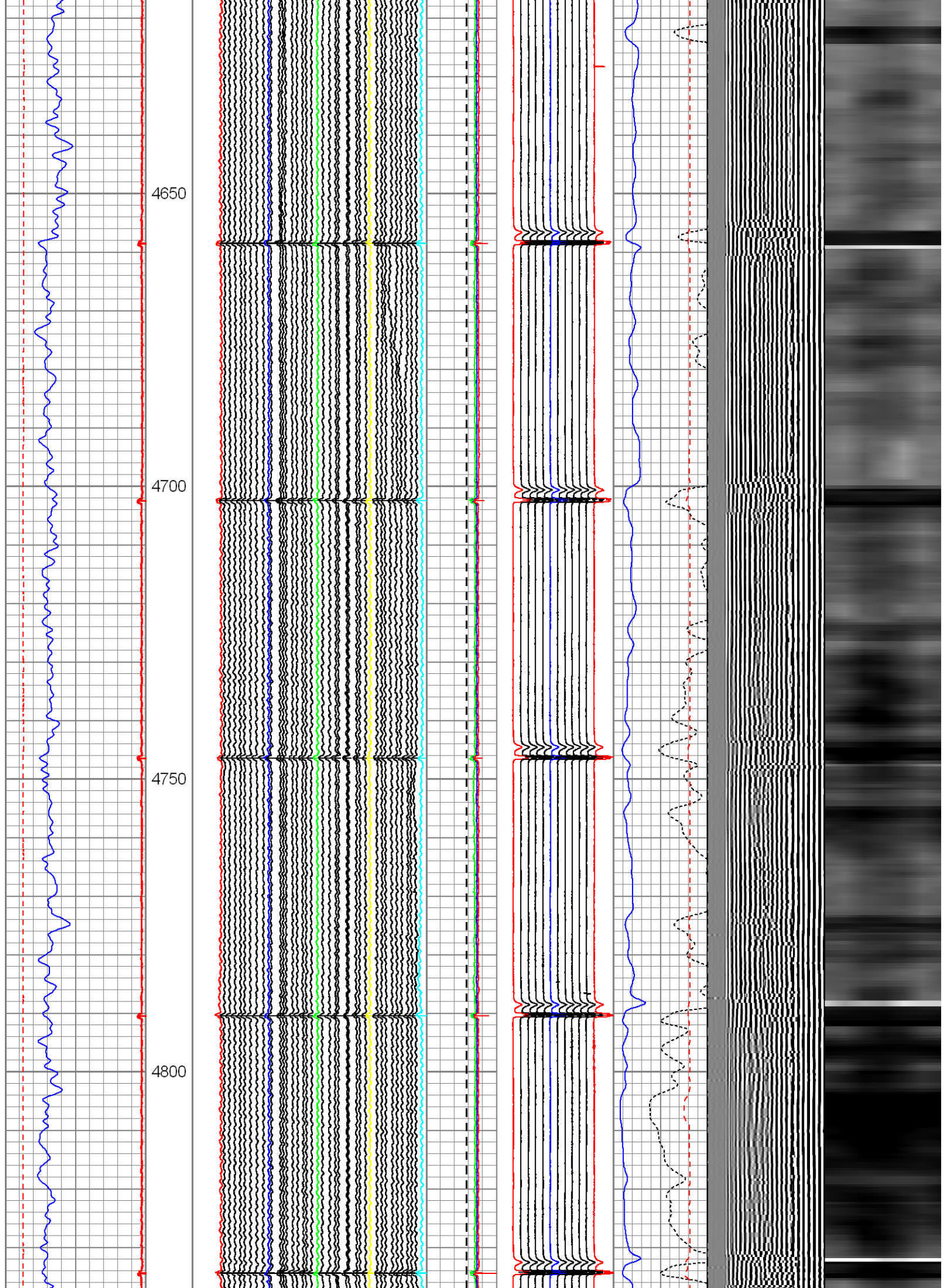


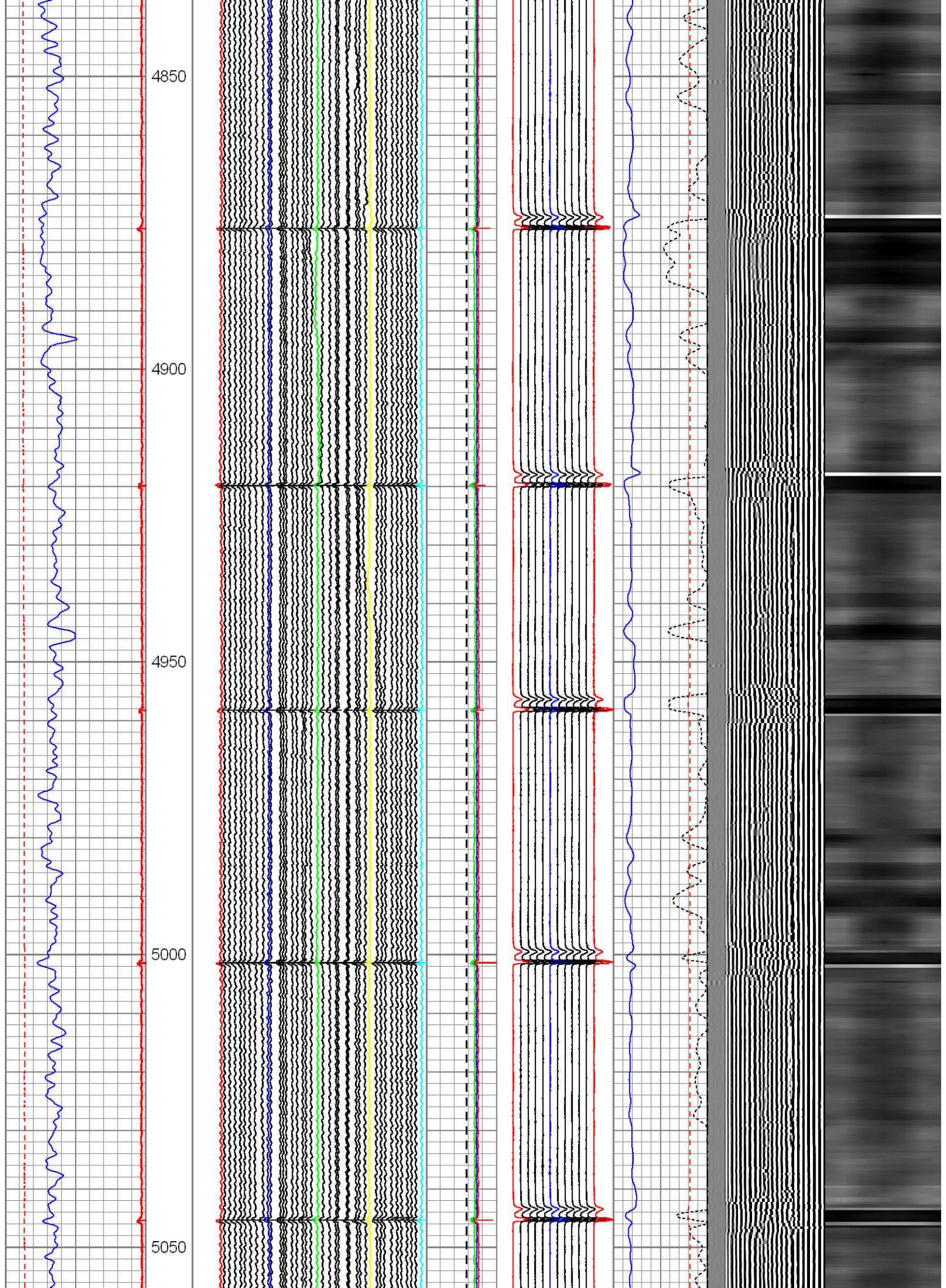


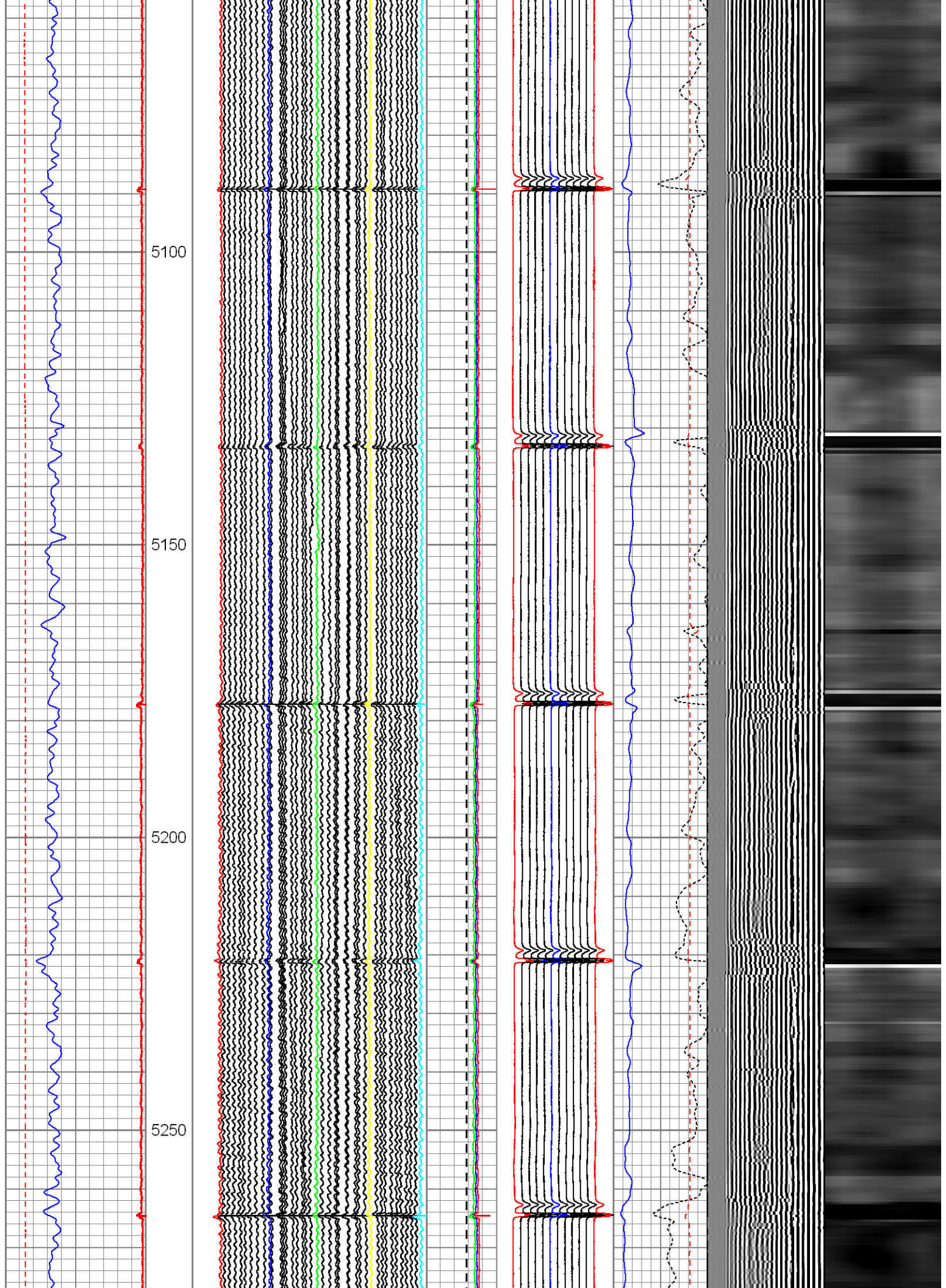


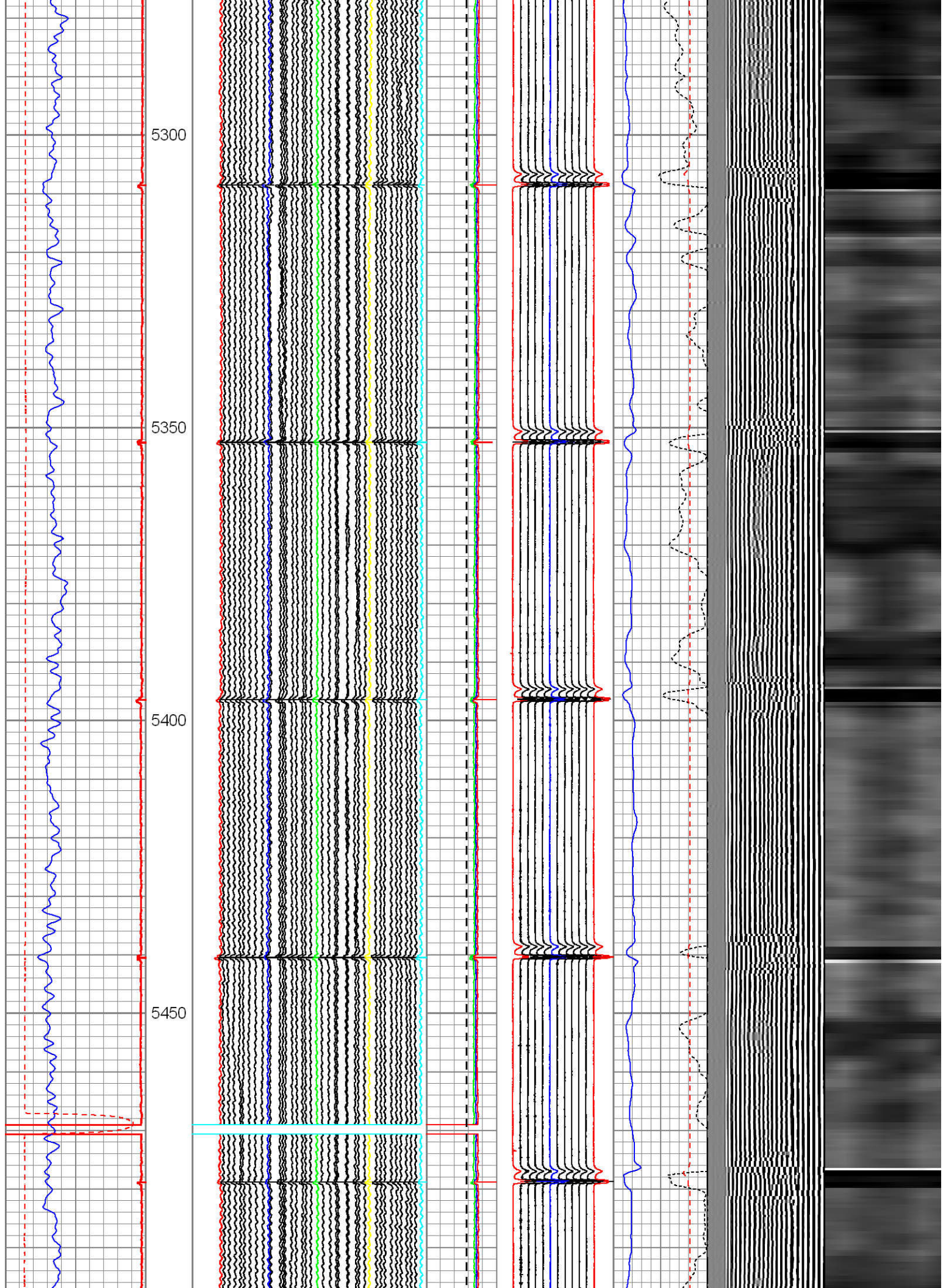


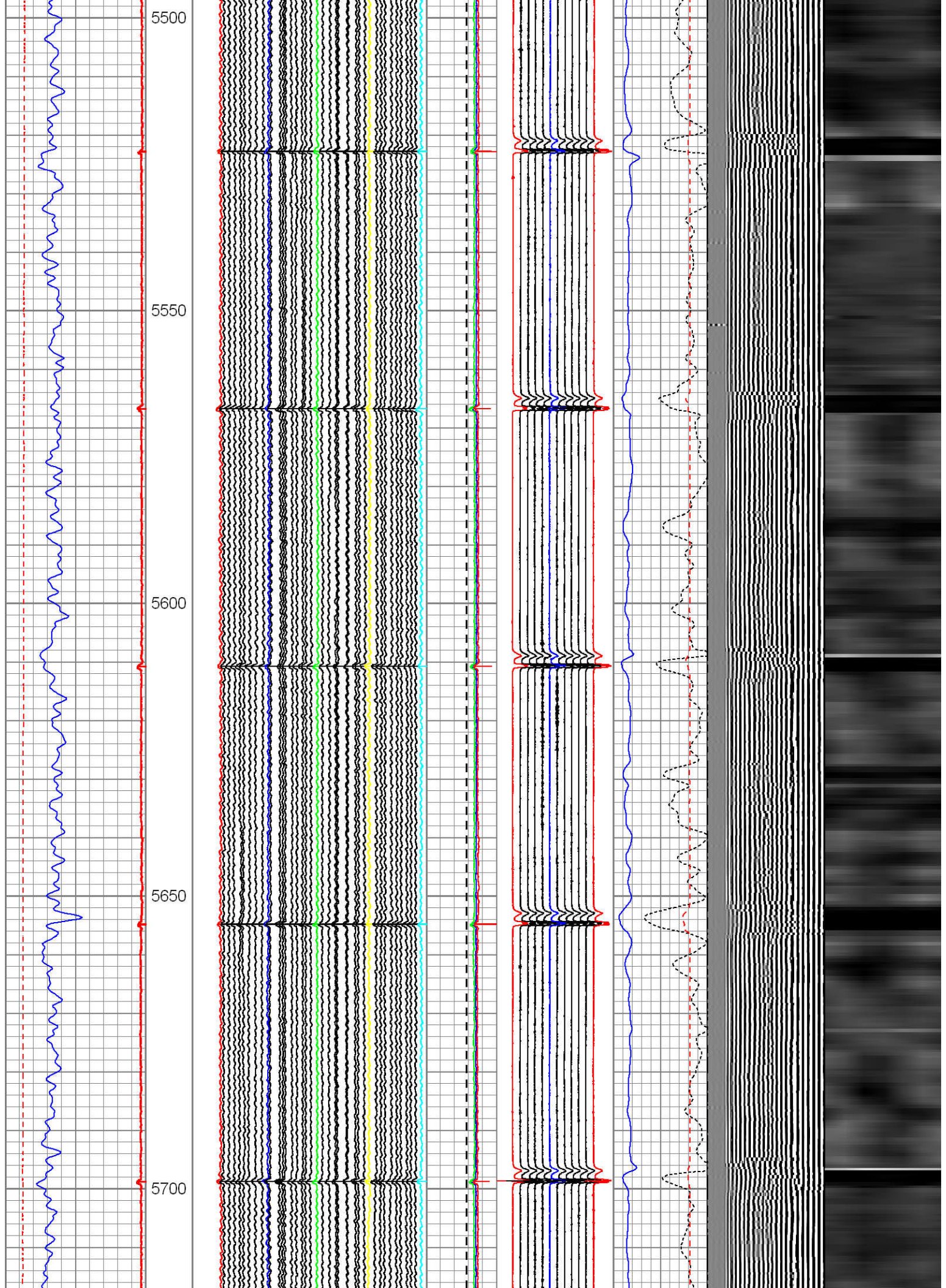


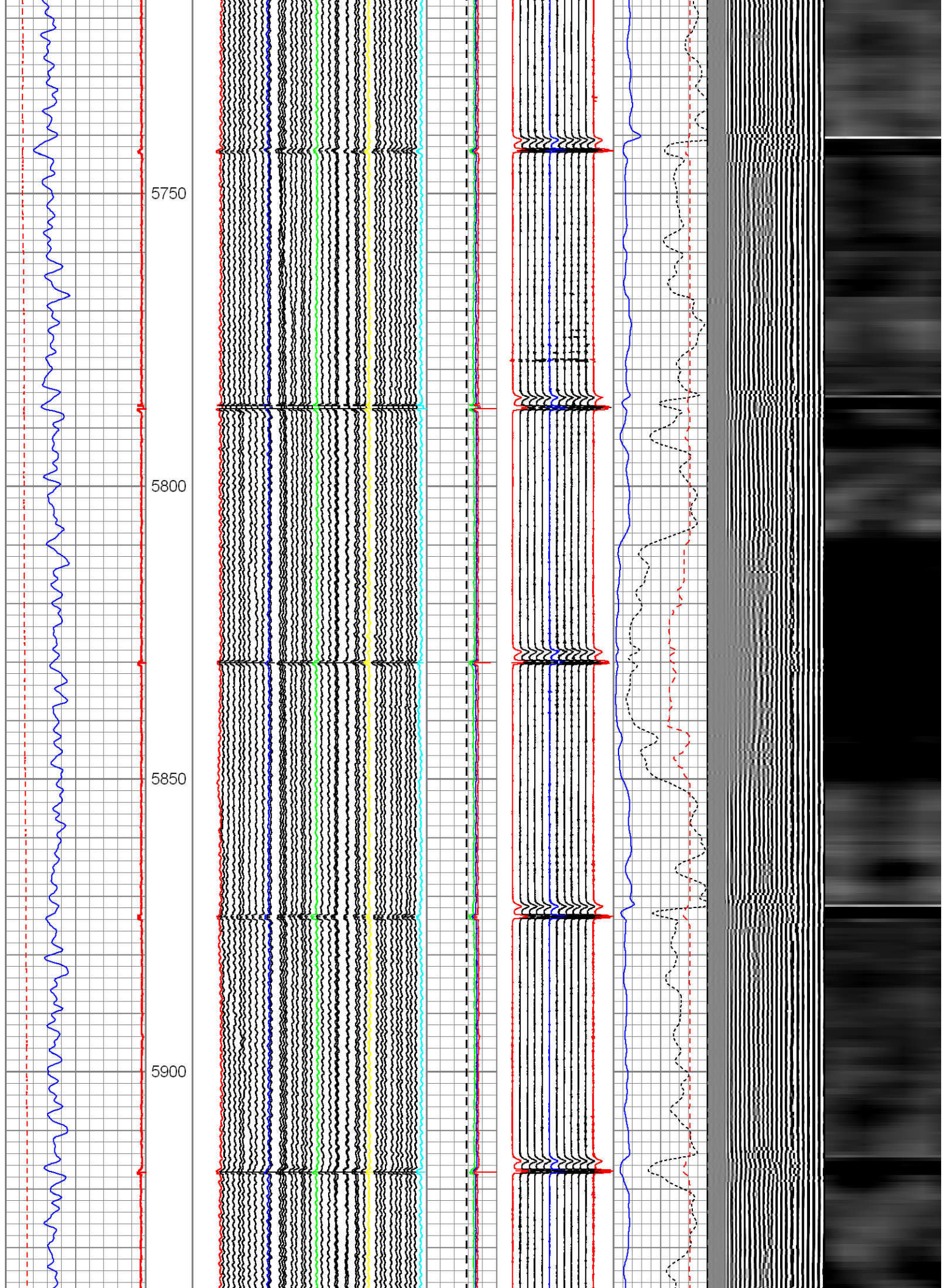


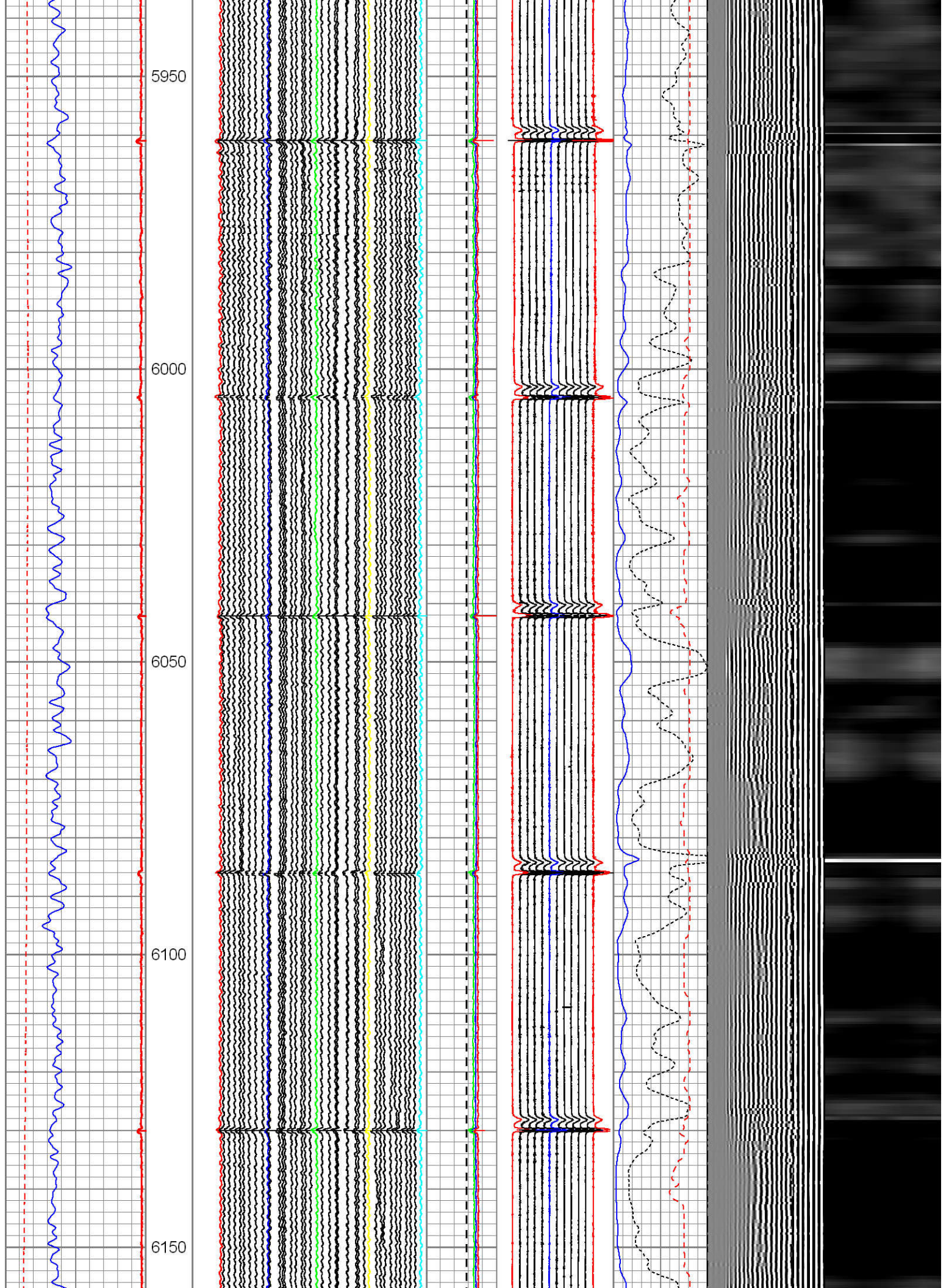


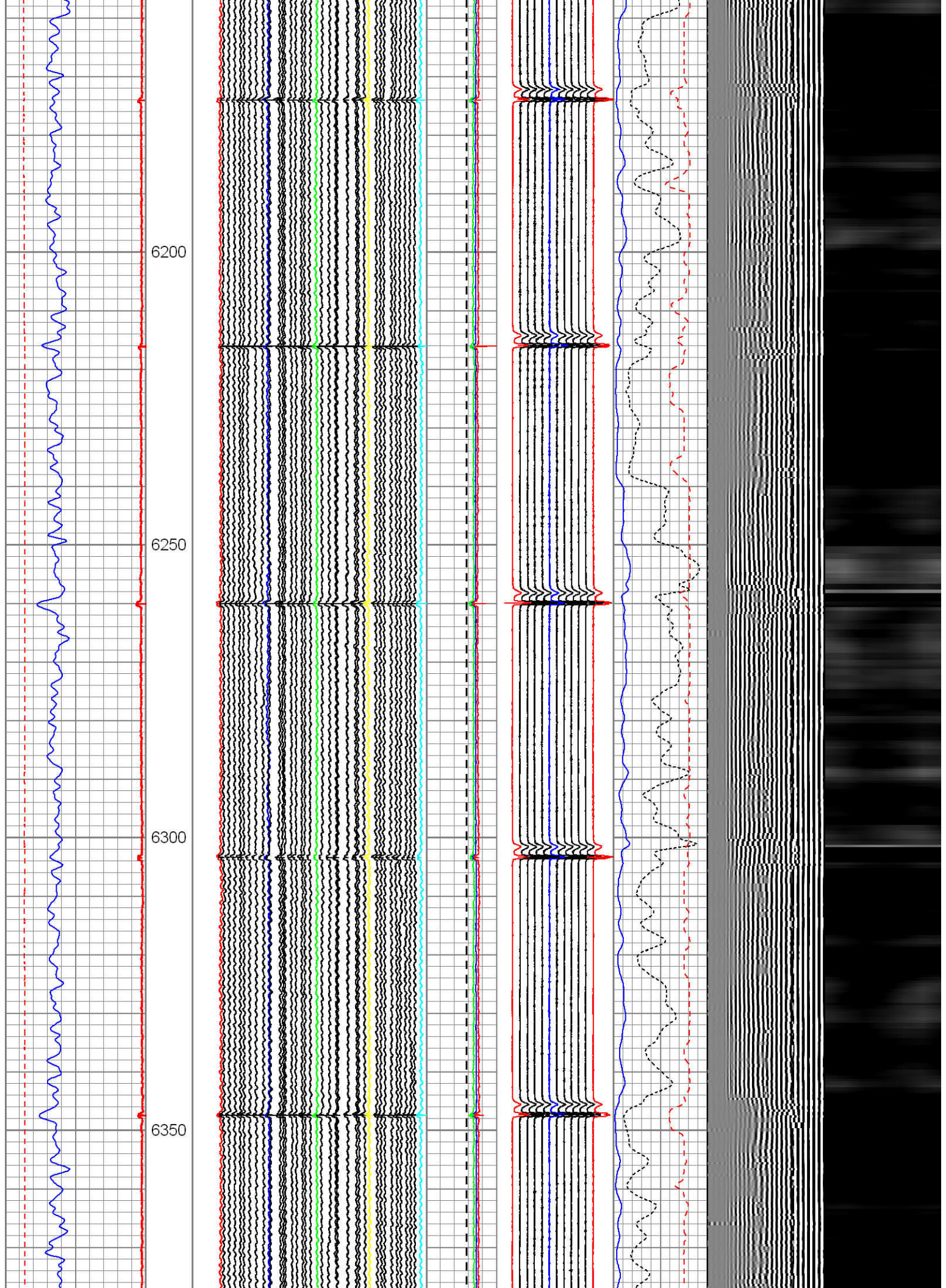


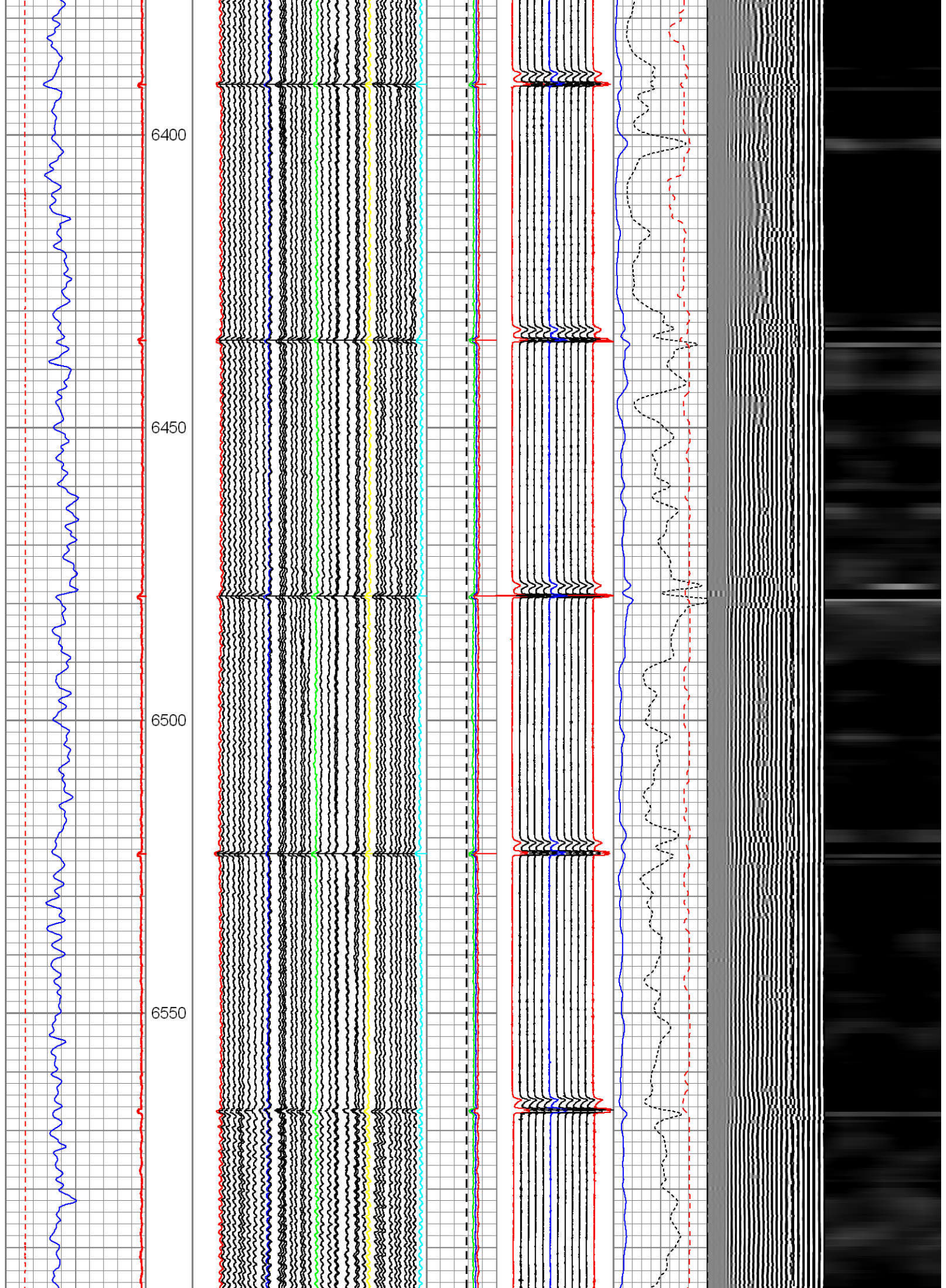


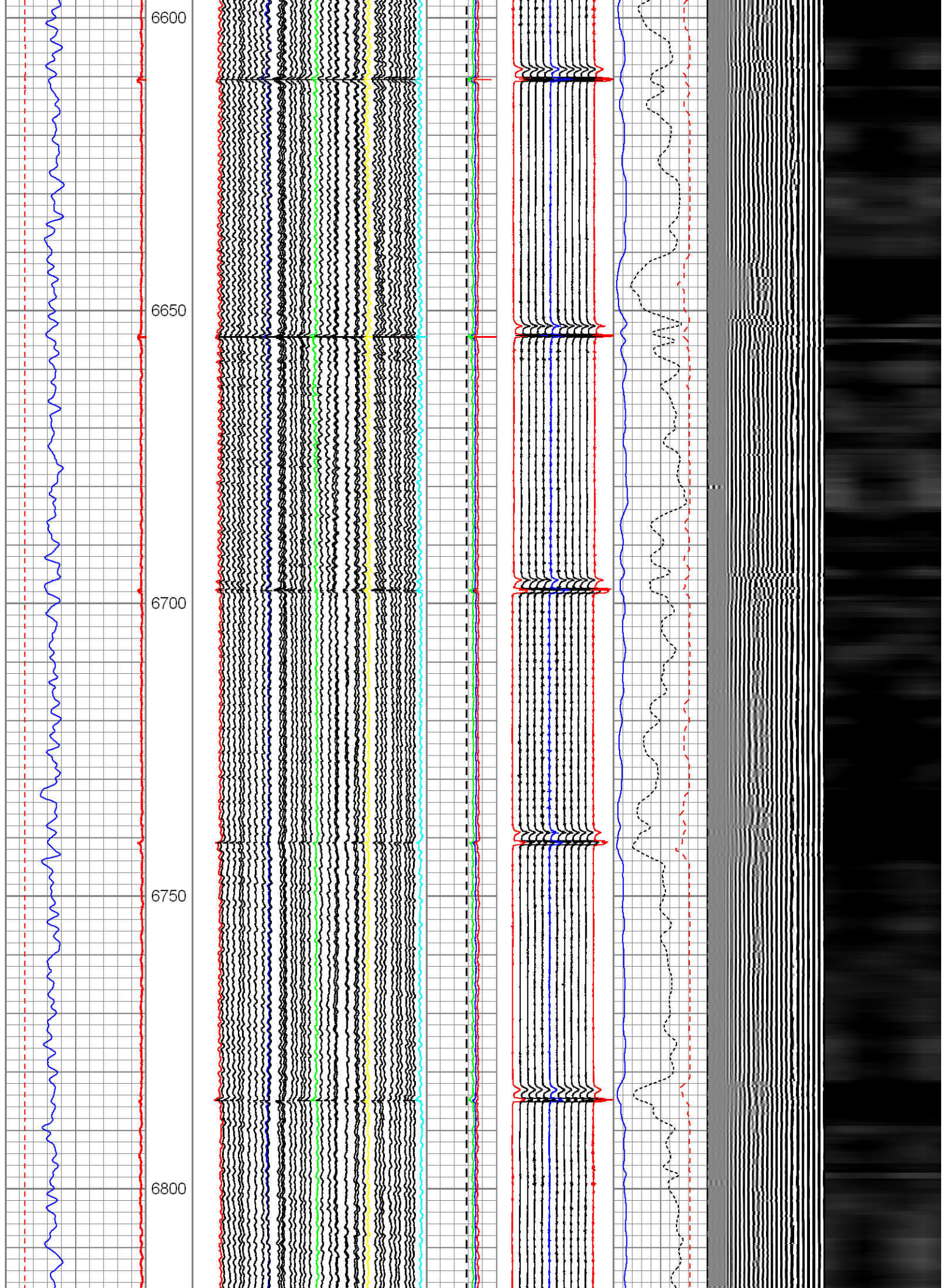


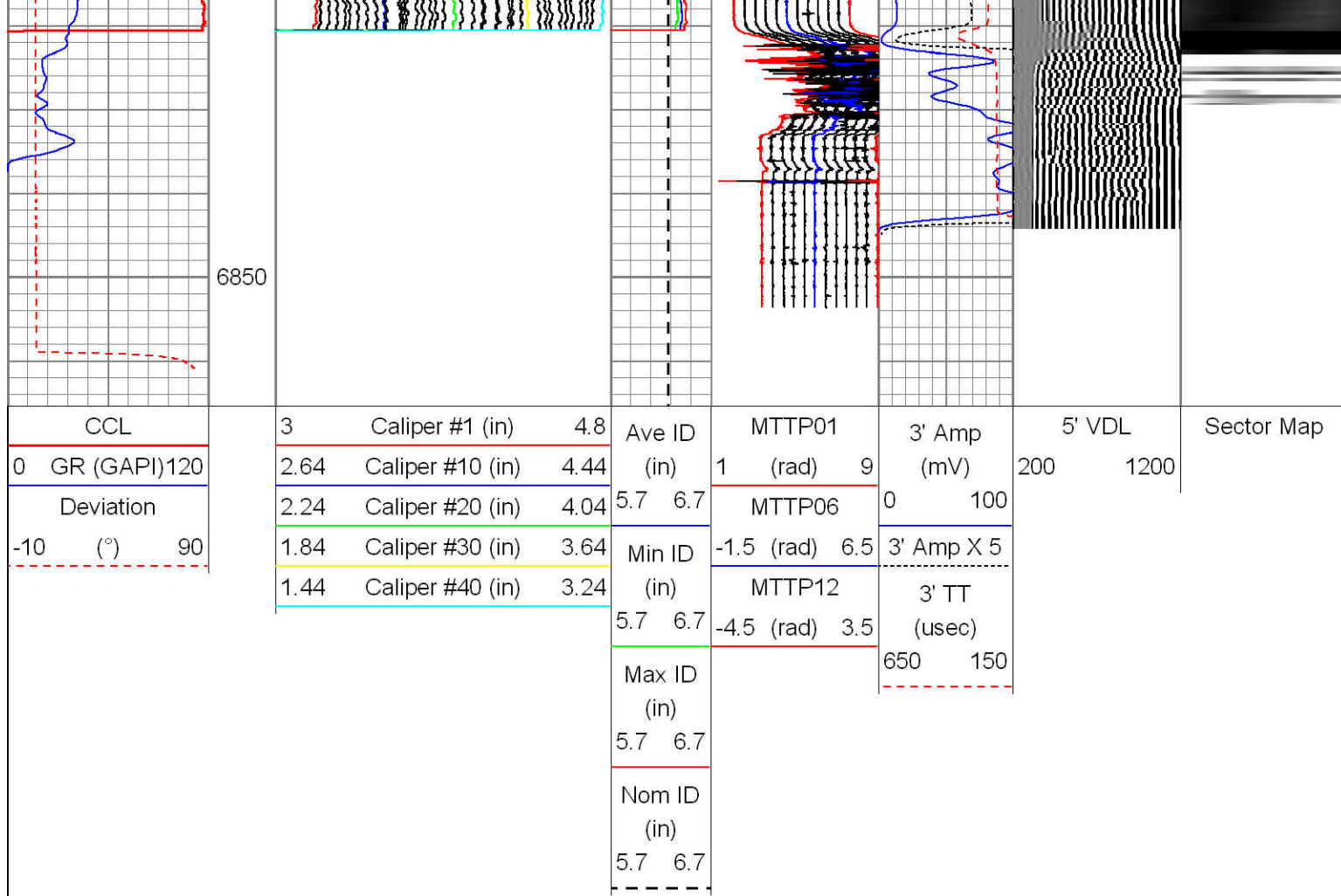








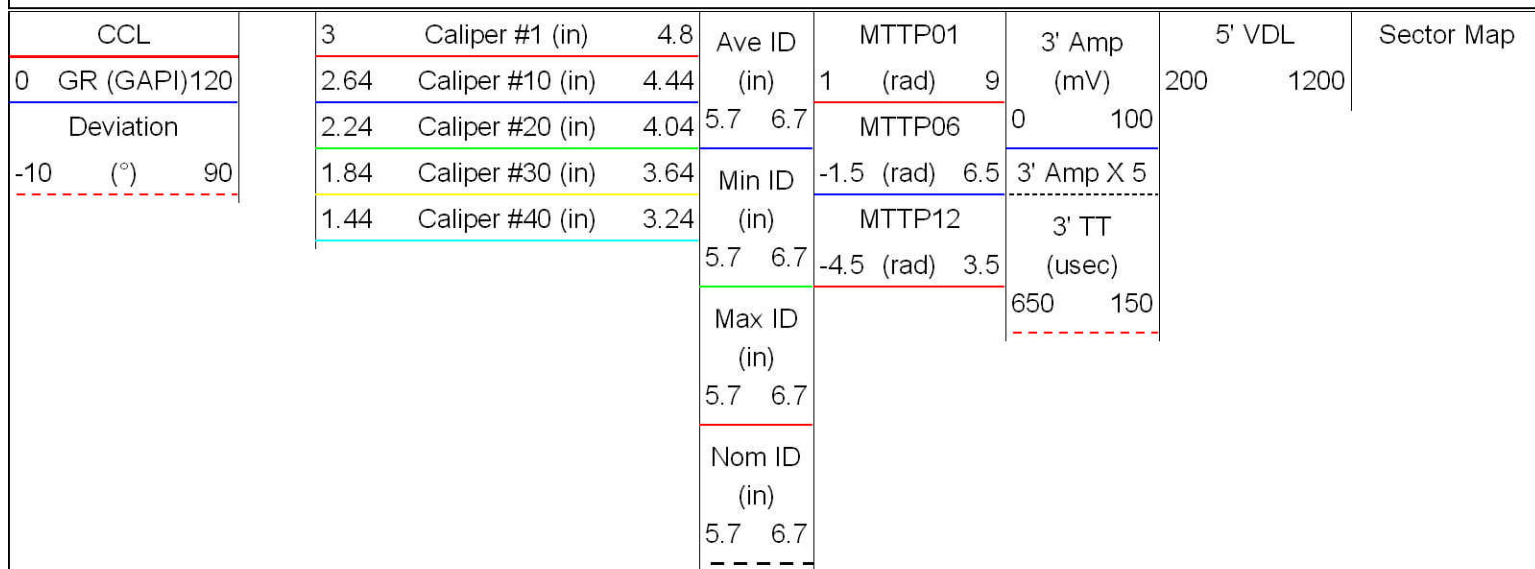


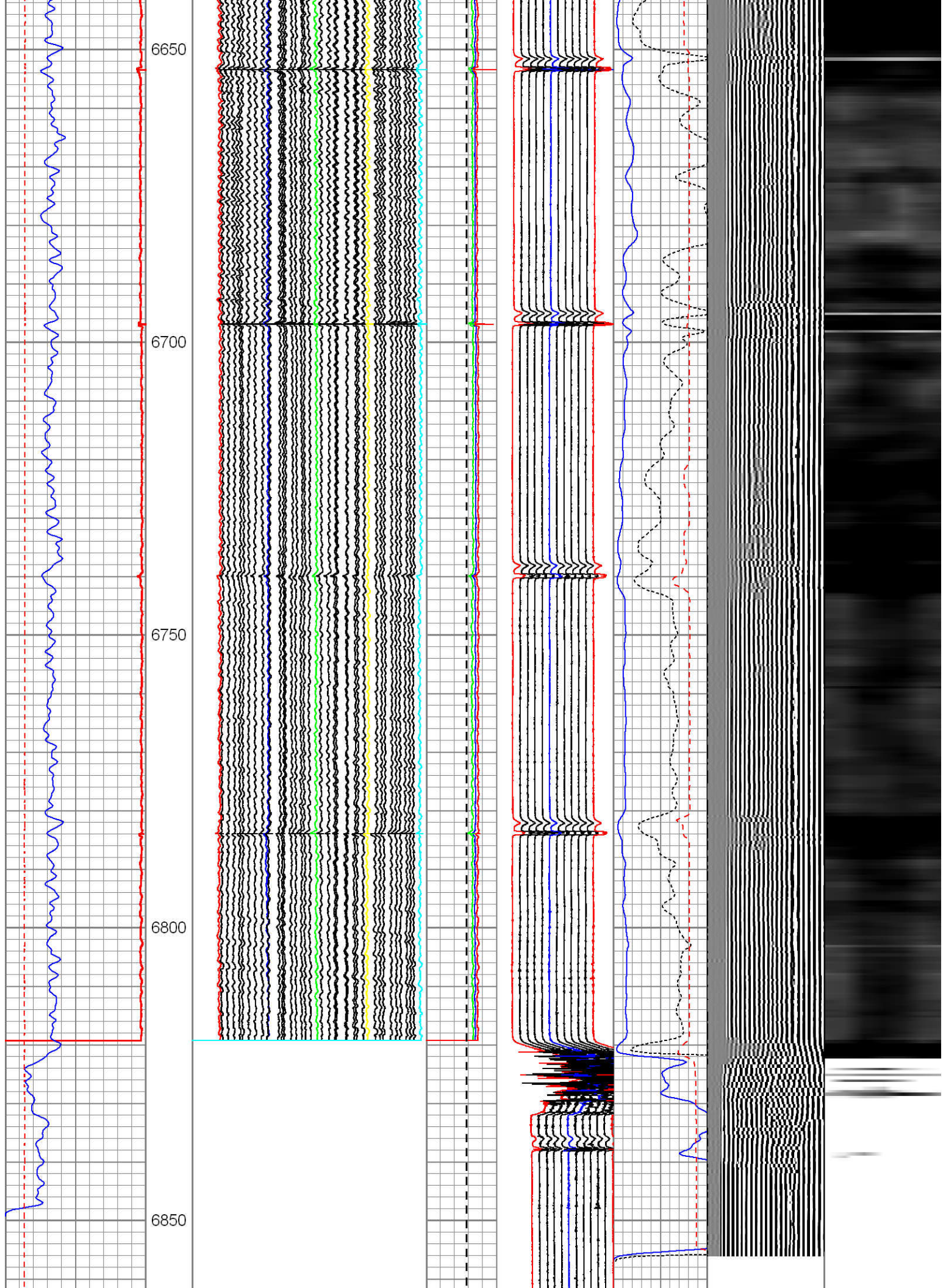


Repeat Pass

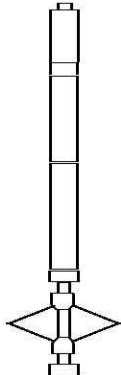
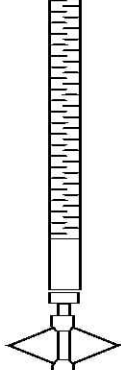
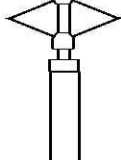
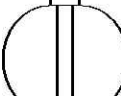
Logged With 2000 PSI @ Surface

Database File: 05-123-37149_wishbone 29n-e24hzcil_robl_w7.db
 Dataset Pathname: repeatpas
 Presentation Format: us40rbl7
 Dataset Creation: Tue Jul 16 10:22:54 2013 by Log Sondex V7.03
 Charted by: Depth in Feet scaled 1:240





CCL		3	Caliper #1 (in)	4.8	Ave ID	MTTP01	3' Amp	5' VDL		Sector Map
0	GR (GAPI)120	2.64	Caliper #10 (in)	4.44	(in)	1 (rad) 9	(mV)	200	1200	
Deviation		2.24	Caliper #20 (in)	4.04	5.7 6.7	MTTP06	0 100			
-10	(°) 90	1.84	Caliper #30 (in)	3.64	Min ID	-1.5 (rad) 6.5	3' Amp X 5			
		1.44	Caliper #40 (in)	3.24	(in)	MTTP12	3' TT			
					5.7 6.7	-4.5 (rad) 3.5	(usec)			
					Max ID			650 150		
					(in)					
					5.7 6.7					
					Nom ID					
					(in)					
					5.7 6.7					

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	29.56		AES 1-7/16" Cablehead	1.08	1.44	1.00
			AGS-001 (218874) Adaptor GO to Sondex	0.21	1.69	1.00
			XTU-002 (211461) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			PGR-020 (050836) Production Gamma Ray	1.93	1.69	9.50
			PRC-001 (218411) 1-11/16" 3-Arm Production Roller Centraliser	1.92	1.69	7.00
WVF3FT	22.26		RBT-003 (1048) 1-11/16" Radial Bond Tool	9.93	1.69	42.00
WVFS1	22.26					
WVFS2	22.26					
WVFS3	22.26					
WVFS4	22.26					
WVFS5	22.26					
WVFS6	22.26					
CBLTEMP	22.26		PRC-001 (219087) 1-11/16" 3-Arm Production Roller Centraliser	1.92	1.69	7.00
CBLROT	22.26					
WVF5FT	21.26					
MTT	11.62		MTT-002 (1009) Magnetic Thickness Tool	6.69	1.69	30.00

				PRC-001 (1070) 1-11/16" 3-Arm Production Roller Centraliser	1.92	1.69	7.00
MIT	4.35			MIT-027 (218949) 40 Multifinger Imaging Tool	4.54	2.75	61.10
TSTAMP	0.00			PRC-001 (219086) 1-11/16" 3-Arm Production Roller Centraliser	1.92	1.69	7.00
ITEMPX	0.00			BUL-006 (218707) Bullnose Terminator	0.22	1.69	1.20
HVOLTX	0.00						
Dataset: 05-123-37149_wishbone 29n-e24hzcil_rcbl_w7.db: field/well/run1/main1 Total Length: 33.86 ft Total Weight: 180.30 lb O.D. 2.75 in							

Calibration Report	
Database File:	05-123-37149_wishbone 29n-e24hzcil_rcbl_w7.db
Dataset Pathname:	main1
Dataset Creation:	Tue Jul 16 12:18:56 2013 by Log Sondex V7.03

Multi-finger Imaging Tool Calibration Report
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Serial Number:	218949
Number of Fingers:	40
Tool Model:	027

Inclinometer Calibration Report		
Performed:	Mon, Oct, 06 14:03:04 2008	
Calibration Angle:	45	
	Inc X	Inc Y
Vertical:	1996	1984
Finger 1 up:	1780	1738
Finger 31 up:	2235	1756
Finger 21 up:	2216	2228
Finger 11 up:	1736	2196
Sensitivity ratio:	1.0062	
X-axis angle:	131.534	
Deviation const.:	331.322	

Finger Calibration Report							
Performed:				Tue Jul 16 08:37:20 2013			
Ring size:	4	5	6	7			
(in)	Sens	Sens	Sens				
Finger 01:	1503 255.0	1758 290.0	2048 261.0	2309			
Finger 02:	1493 262.0	1755 294.0	2049 267.0	2316			
Finger 03:	1475 266.0	1741 296.0	2037 277.0	2314			
Finger 04:	1459 270.0	1729 300.0	2029 284.0	2313			
Finger 05:	1474 272.0	1746 298.0	2044 287.0	2331			
Finger 06:	1460 268.0	1728 293.0	2021 284.0	2305			
Finger 07:	1507 260.0	1767 277.0	2044 279.0	2323			
Finger 08:	1482 274.0	1756 289.0	2045 297.0	2342			
Finger 09:	1524 264.0	1788 272.0	2060 281.0	2341			
Finger 10:	1508 273.0	1781 276.0	2057 286.0	2343			
Finger 11:	1503 275.0	1778 274.0	2052 294.0	2346			
Finger 12:	1492 274.0	1766 280.0	2035 286.0	2331			

Finger 12:	1492	274.0	1766	269.0	2035	296.0	2331
Finger 13:	1538	263.0	1801	255.0	2056	287.0	2343
Finger 14:	1469	287.0	1756	273.0	2029	311.0	2340
Finger 15:	1506	287.0	1793	269.0	2062	309.0	2371
Finger 16:	1481	293.0	1774	273.0	2047	319.0	2366
Finger 17:	1526	274.0	1800	254.0	2054	292.0	2346
Finger 18:	1523	281.0	1804	262.0	2066	308.0	2374
Finger 19:	1507	292.0	1799	265.0	2064	311.0	2375
Finger 20:	1545	280.0	1825	256.0	2081	296.0	2377
Finger 21:	1508	296.0	1804	272.0	2076	318.0	2394
Finger 22:	1505	282.0	1787	265.0	2052	304.0	2356
Finger 23:	1569	264.0	1833	246.0	2079	278.0	2357
Finger 24:	1508	293.0	1801	279.0	2080	308.0	2388
Finger 25:	1525	278.0	1803	269.0	2072	294.0	2366
Finger 26:	1470	294.0	1764	288.0	2052	307.0	2359
Finger 27:	1546	277.0	1823	273.0	2096	285.0	2381
Finger 28:	1531	264.0	1795	267.0	2062	274.0	2336
Finger 29:	1521	280.0	1801	286.0	2087	282.0	2369
Finger 30:	1262	287.0	1549	307.0	1856	313.0	2169
Finger 31:	1466	258.0	1724	270.0	1994	261.0	2255
Finger 32:	1490	285.0	1775	306.0	2081	290.0	2371
Finger 33:	1410	296.0	1706	329.0	2035	312.0	2347
Finger 34:	1549	256.0	1805	271.0	2076	247.0	2323
Finger 35:	1513	267.0	1780	291.0	2071	267.0	2338
Finger 36:	1512	269.0	1781	301.0	2082	268.0	2350
Finger 37:	1624	276.0	1900	310.0	2210	278.0	2488
Finger 38:	1373	249.0	1622	287.0	1909	261.0	2170
Finger 39:	1464	270.0	1734	307.0	2041	276.0	2317
Finger 40:	1507	258.0	1765	293.0	2058	262.0	2320

Segmented Cement Bond Log Calibration Report

Serial Number:	1048
Tool Model:	003
Calibration Casing Diameter:	7.000 in
Calibration Depth:	241.554 ft

Master Calibration, performed Tue Jul 16 08:56:55 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.005	1.019	0.800	62.165	60.477	0.528
5FT	0.009	0.604	0.800	62.165	103.212	-0.150
S1	0.009	1.102	0.000	100.000	91.459	-0.809
S2	0.004	1.055	0.000	100.000	95.184	-0.409
S3	0.008	1.150	0.000	100.000	87.581	-0.690
S4	0.005	1.230	0.000	100.000	81.658	-0.431
S5	0.005	1.176	0.000	100.000	85.357	-0.393
S6	0.016	1.137	0.000	100.000	89.198	-1.451

Gamma Ray Calibration Report

Serial Number:	050836
Tool Model:	020
Performed:	Sun Jun 13 13:33:21 1993
Calibrator Value:	1.0 GAPI
Background Reading:	0.0 cps
Calibrator Reading:	1.0 cps
Sensitivity:	1.0000 GAPI/cps



Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Wishbone 29N-E24HZ
Field	Wattenberg
County	Weld
State	Colorado