



Weatherford

**SECUREVIEW
CALVIEW/BONDVIEW**

COMPANY

BONANZA CREEK ENERGY

WELL

**LATHAM 21-24-14 HNC
WATTENBURG**

FIELD

U.S.A./COLORADO

PROVINCE/COUNTY

WELD

COUNTRY/STATE

317' FNL 333' FEL

LOCATION

05-123-49908-00

LSD

SEC 14

TWP 4N

RGE 63W

**Other Services
CALVIEW**

Licence Number

045448

Permanent Datum Ground Level, Elevation 4604 feet

Log Measured From KB, 17.00 feet above Permanent Datum

Drilling Measured From KB

Date

09-OCT-2019

Run Number

ONE

Service Order

5839-257646197

Type Log

SECUREVIEW

Depth Driller

12495.00

Depth Logger

7073.40

Top Log Interval

0.00

PERFORATION RECORD

Elevations:
KB 4621.00
DF
GL 4604.00

Shot Number Density of Shots Depth From Depth To

feet

feet

feet

feet

feet

feet

feet

feet

feet

feet

feet

feet

feet

feet

feet

feet

feet

CASING / TUBING RECORD

Type	Grade	TypeJoint	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
	J-55	LT&C	9.625	0.00	1633.00	36.00
	P-110	LT&C	5.500	0.00	12485.00	20.00

REMARKS

- Logging correlated to rig kelly bushing depth (K.B.) of 17' above ground level.
- 100% standard 3' free pipe amplitude in 5.5" 20lb casing with this series of bond tool: 72mV
- 100% standard 3' bonded pipe amplitude in this casing with this series of bond tool: 2.2mV
- Top of cement estimated to be approx. 1871'.
- Crew: Leo Pirela, Shane Craycraft, Andrew Taylor
- Thanks from the crew for choosing Weatherford Wireline Services!

In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

MAIN PASS

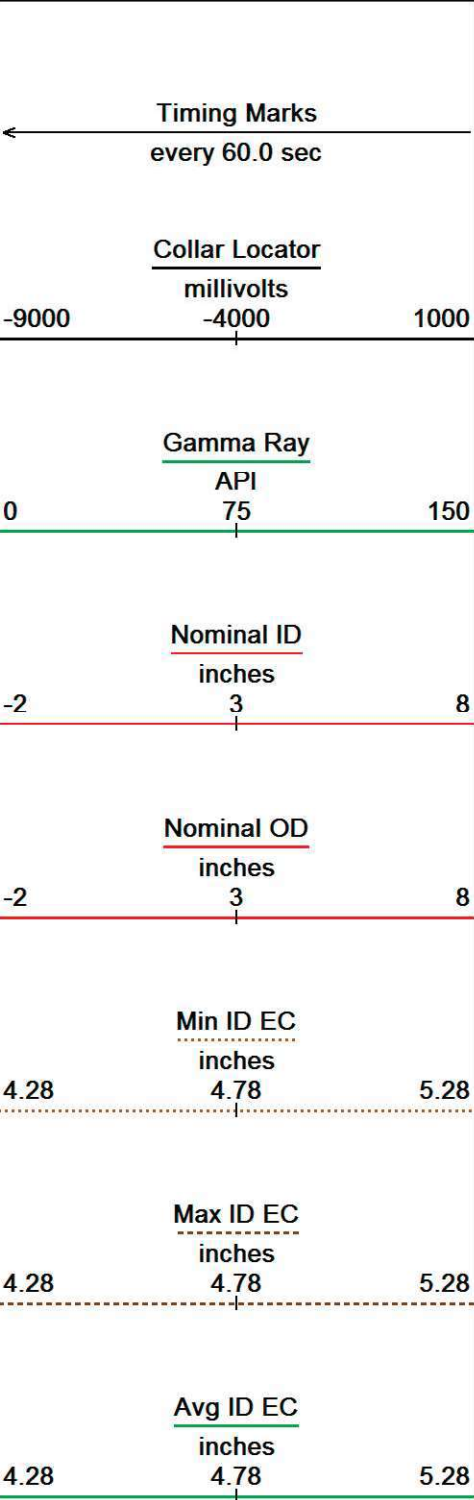
Depth Based Data - Maximum Sampling Increment 2.5cm

Plotted on 09-OCT-2019 20:34

Filename: C:\Logs\URS\Colorado\BonanzaCreek\La...Latham 21-24-14 HNC_MSC-CBT_MainPass.dta

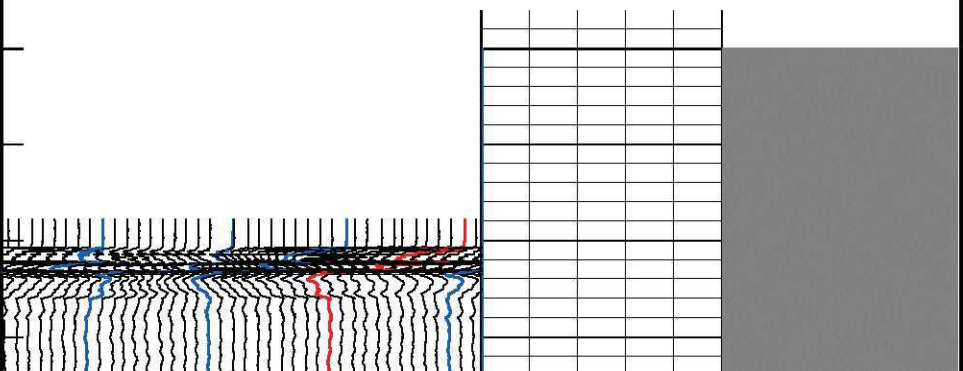
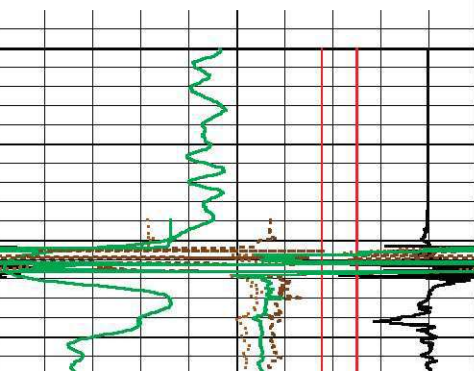
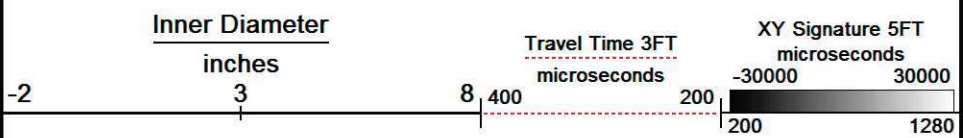
Recorded on 09-OCT-2019 20:17

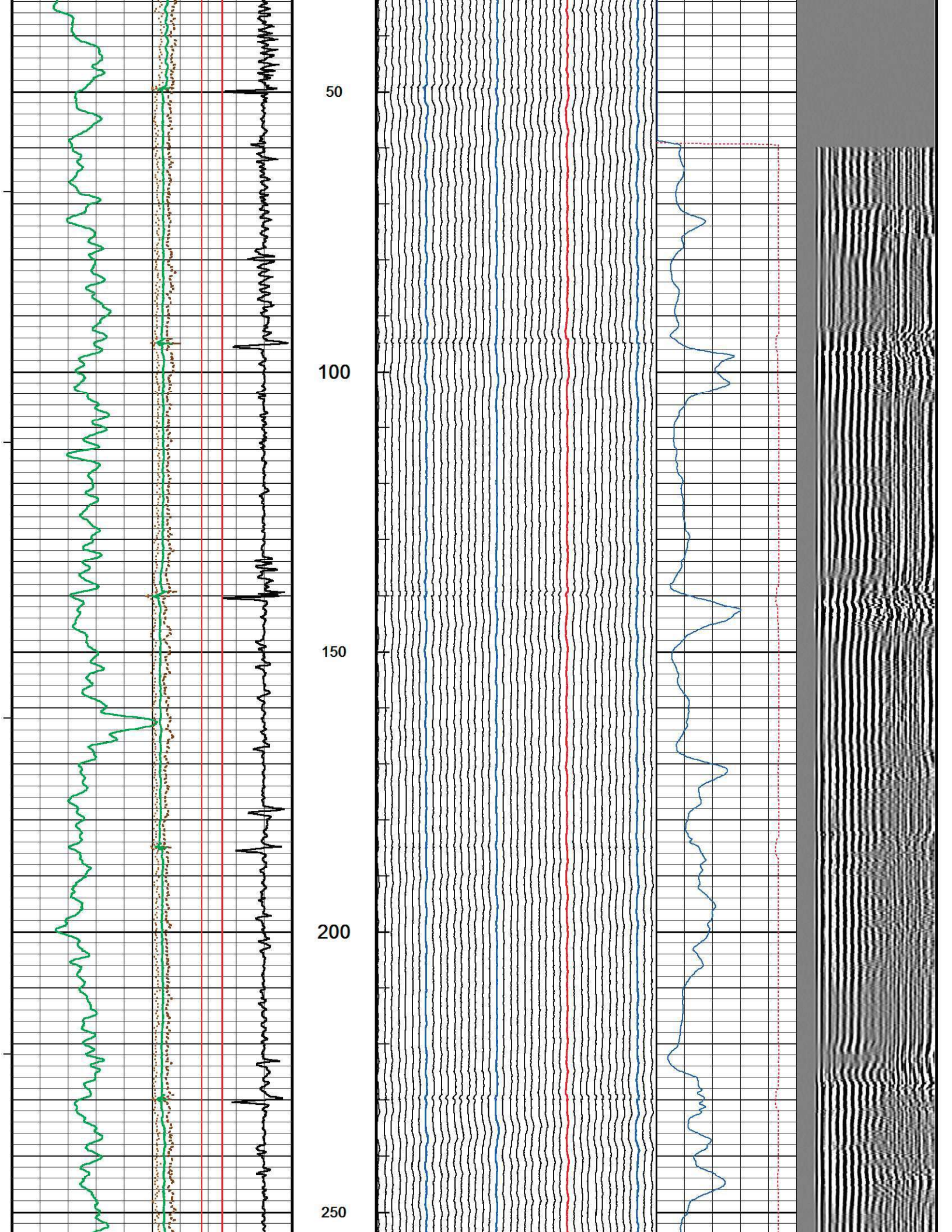
System Versions: Logged with 18.03.9344 Plotted with 18.03.9344

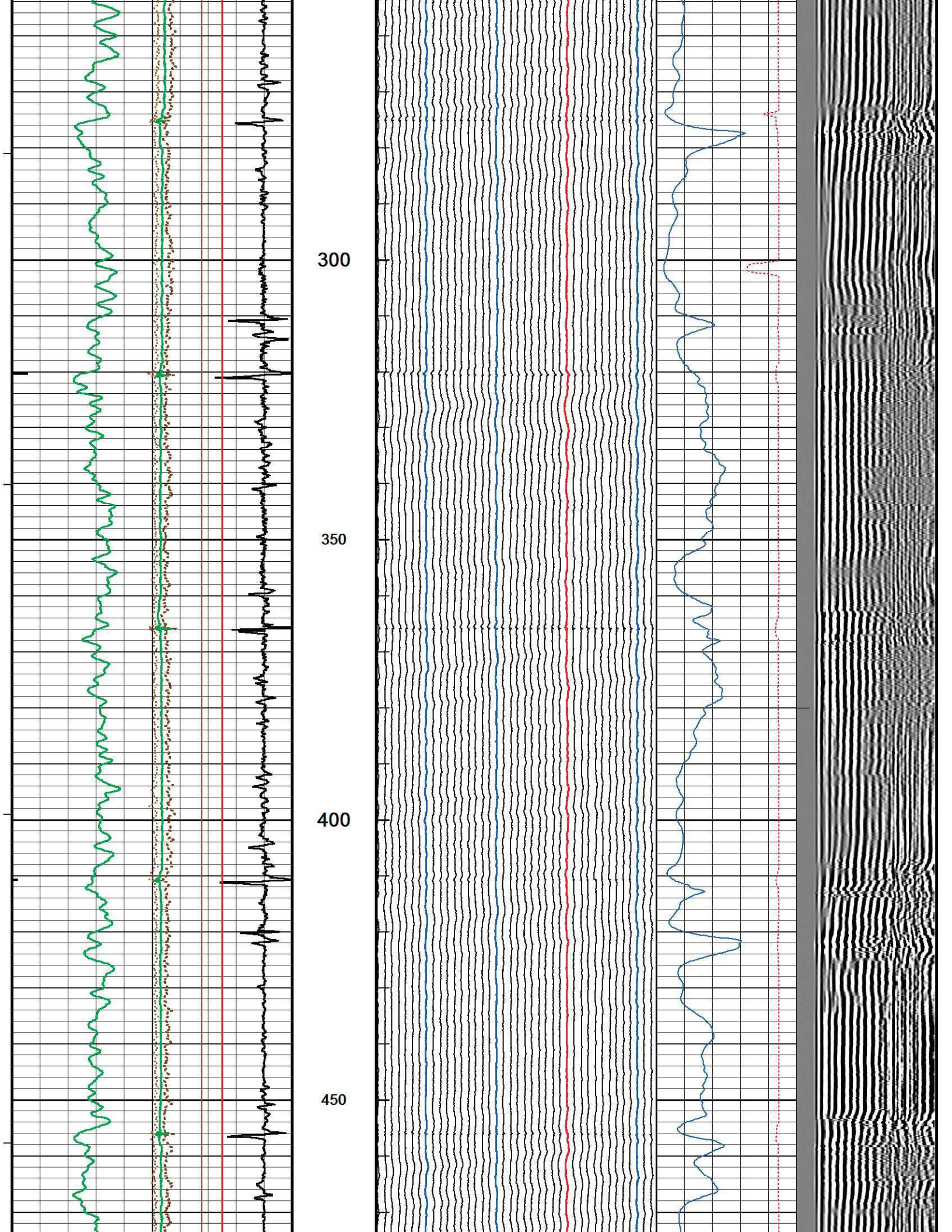


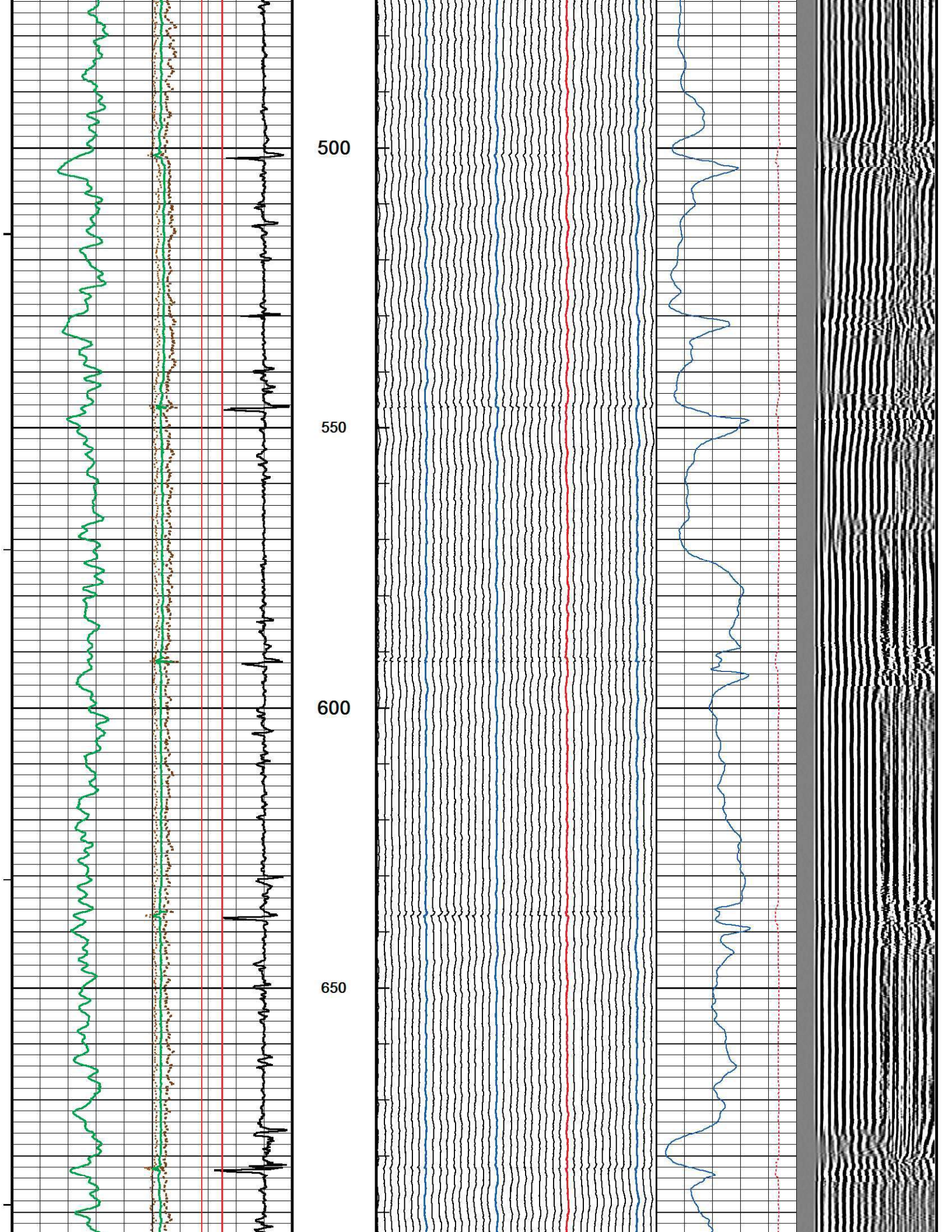
Depth in Feet

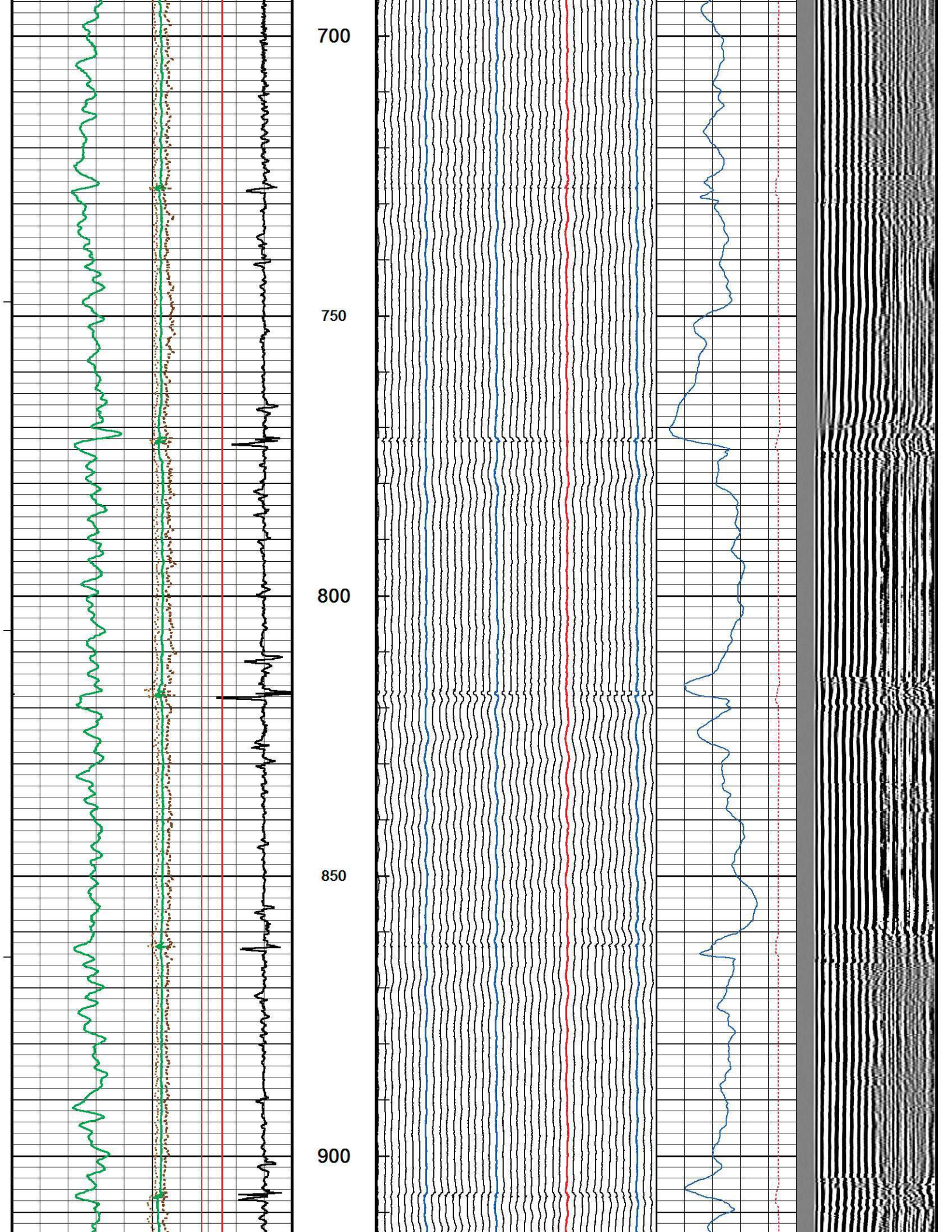
Replay Scale 1:240

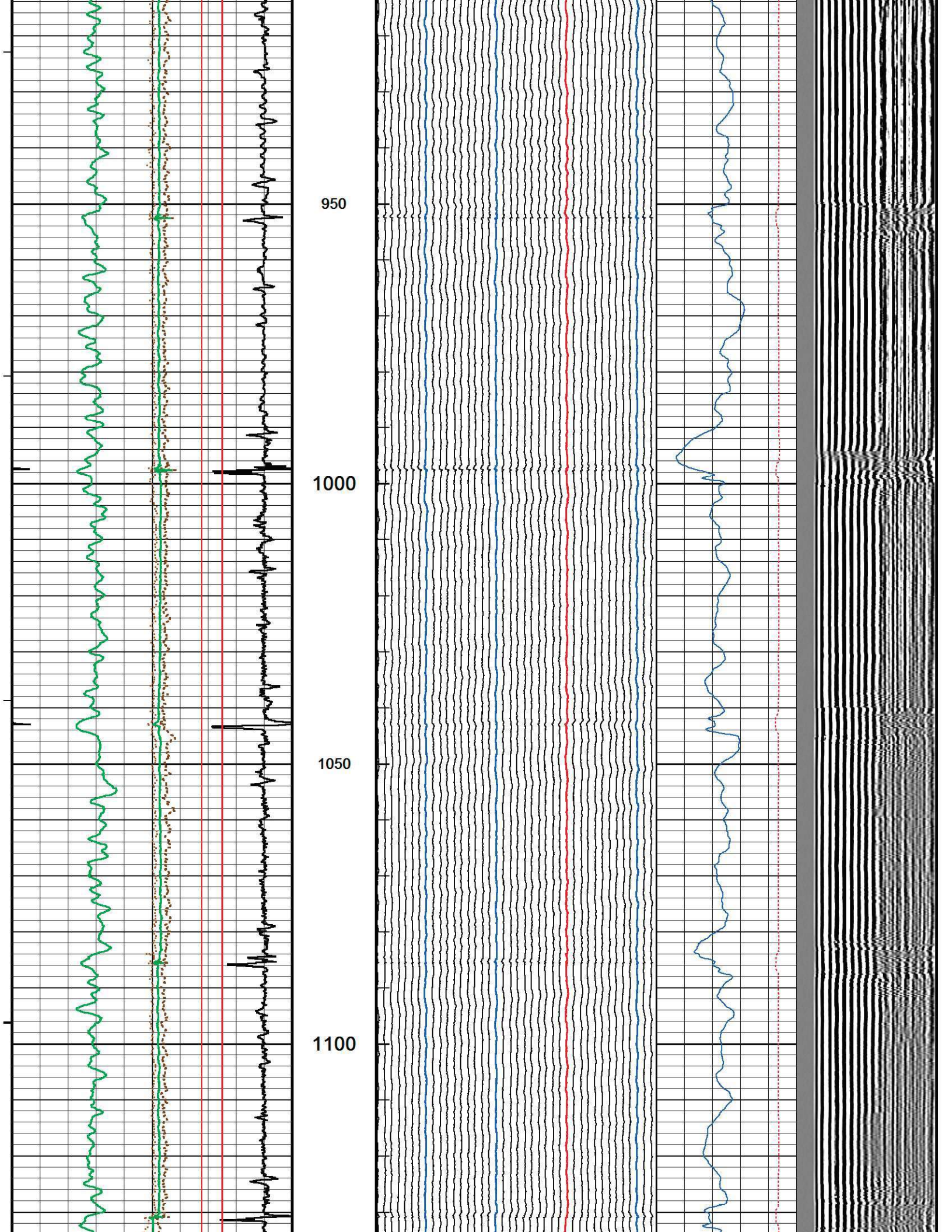


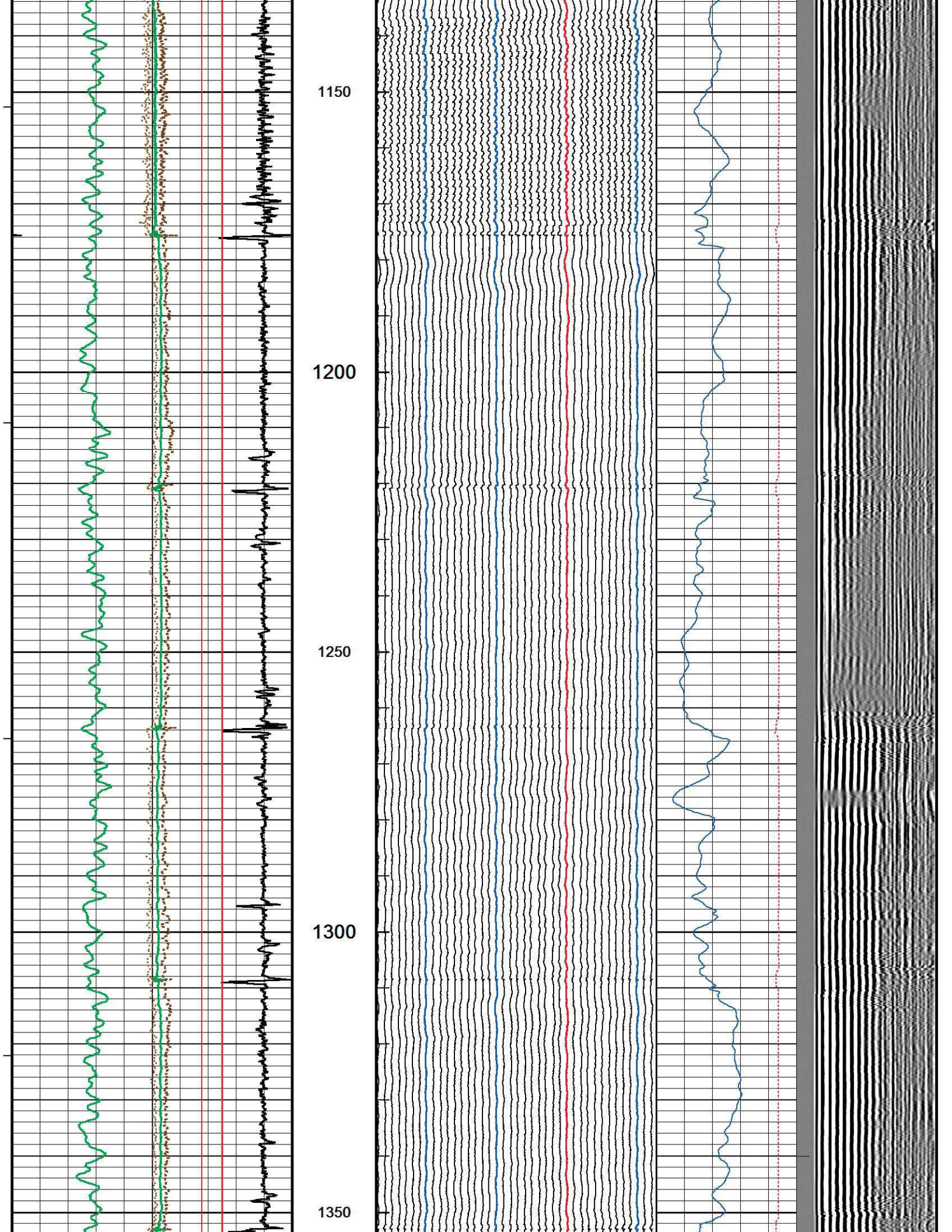


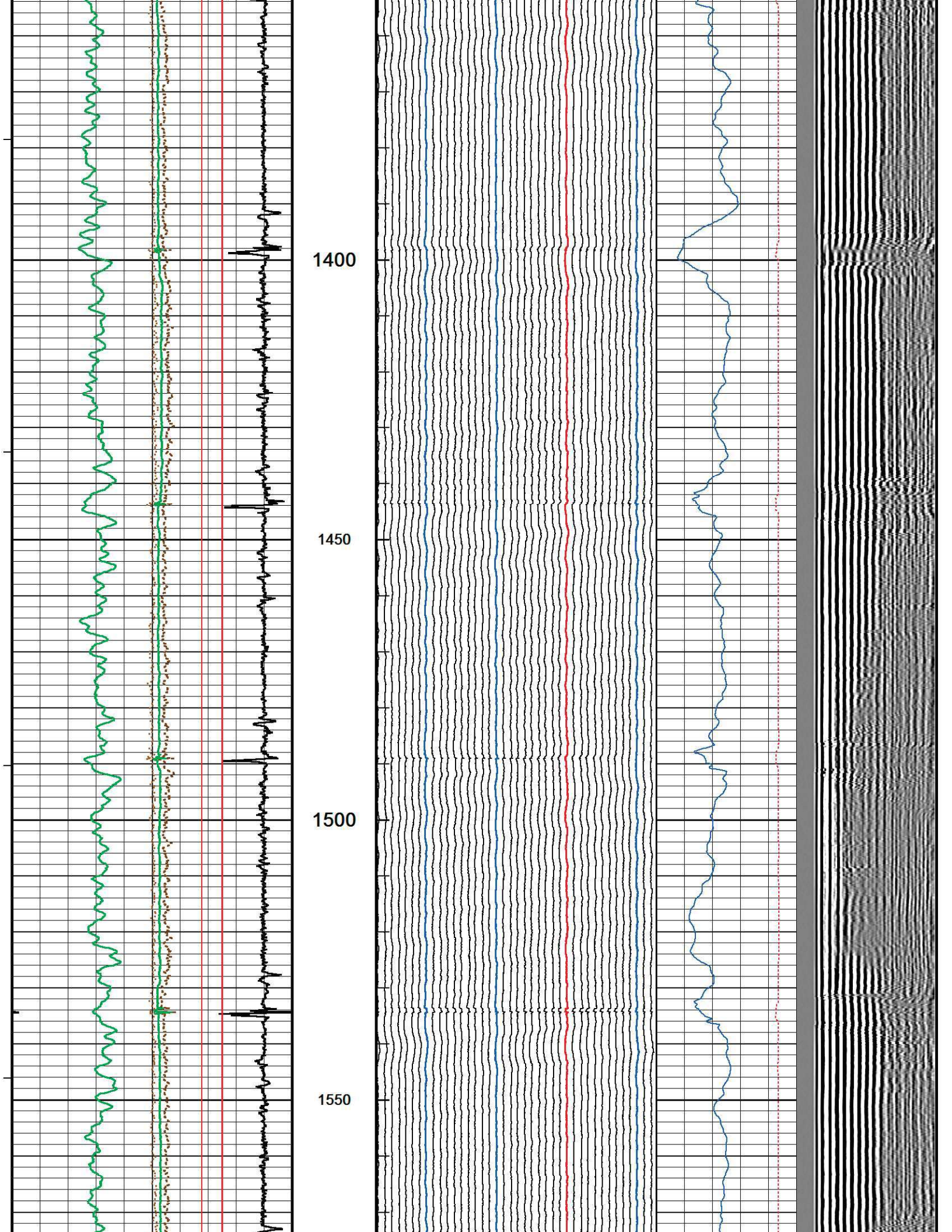


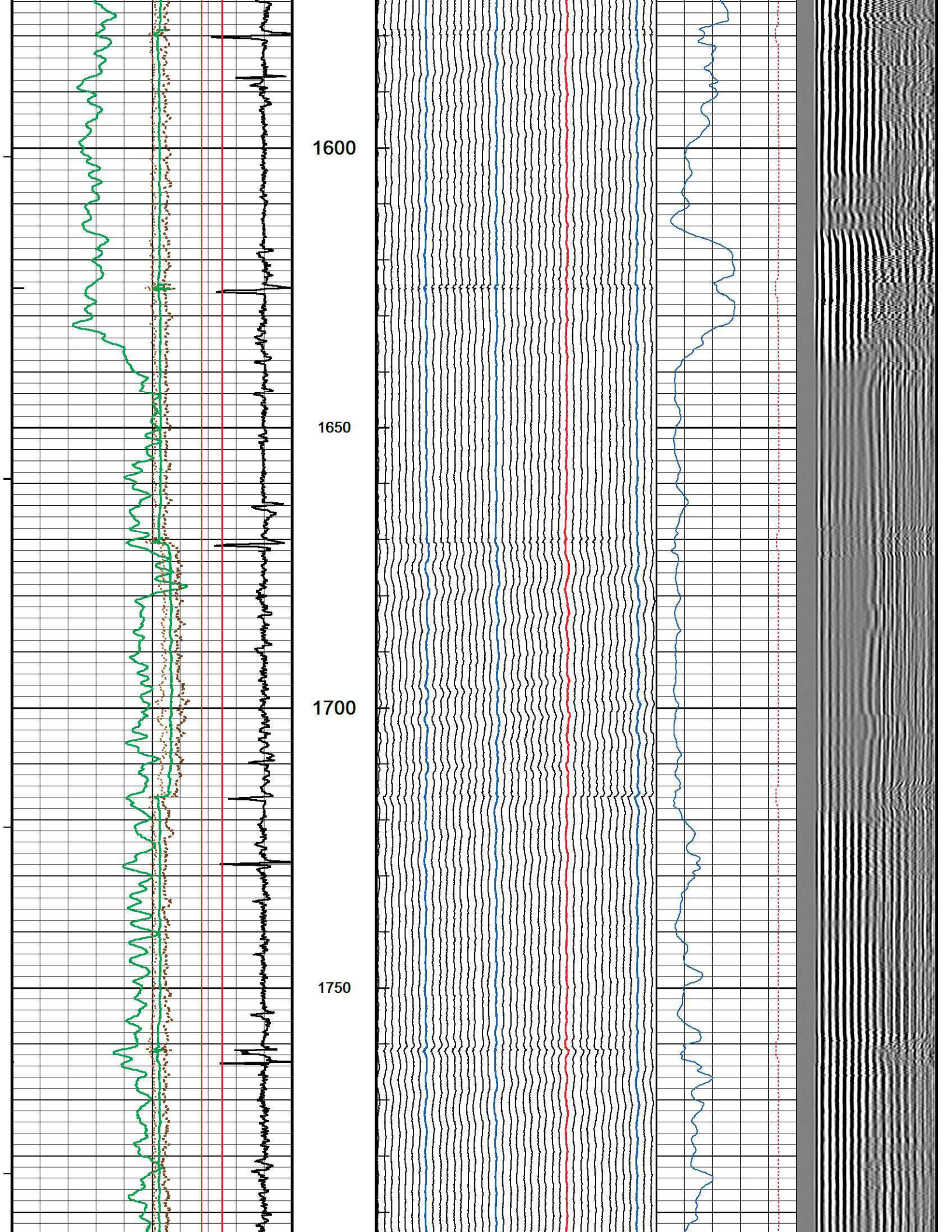


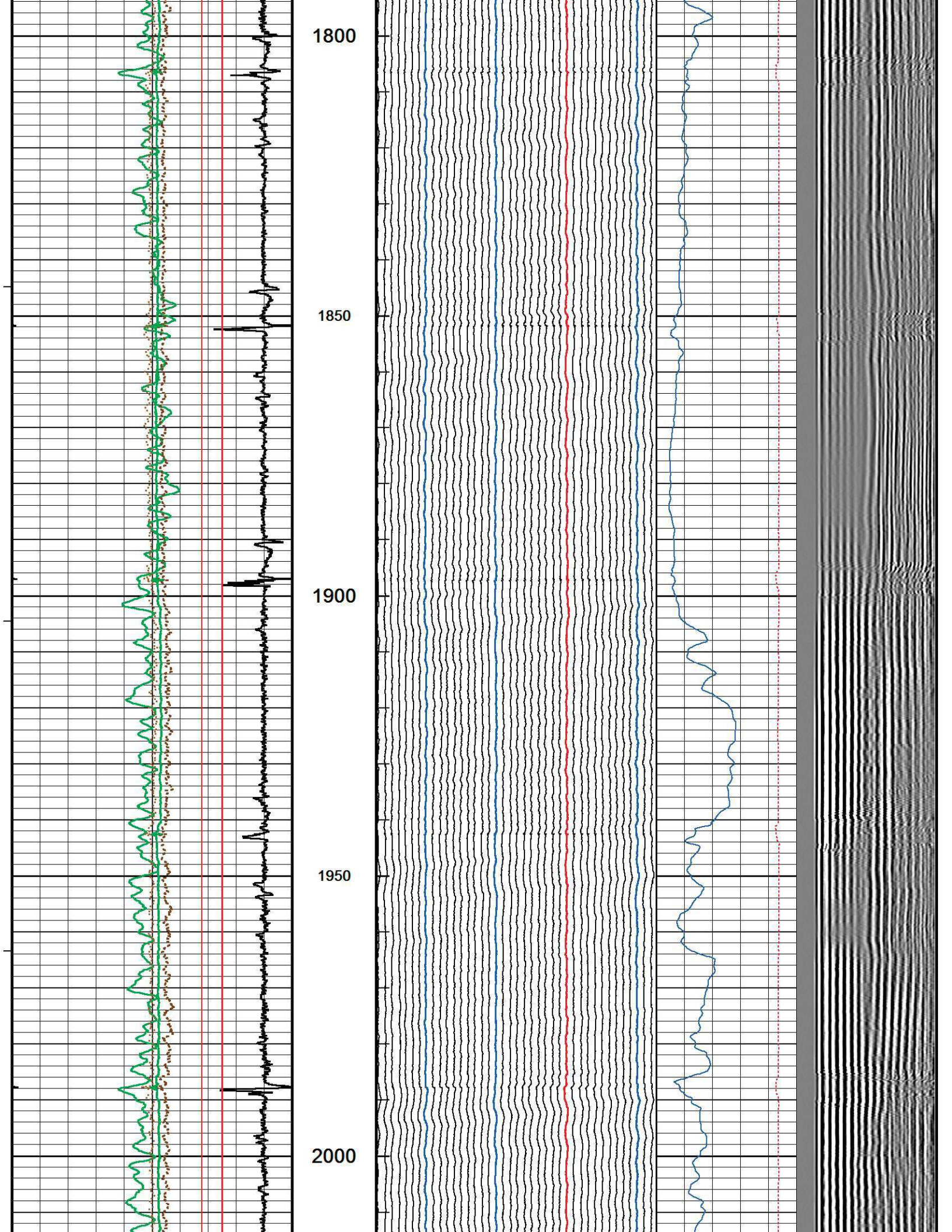


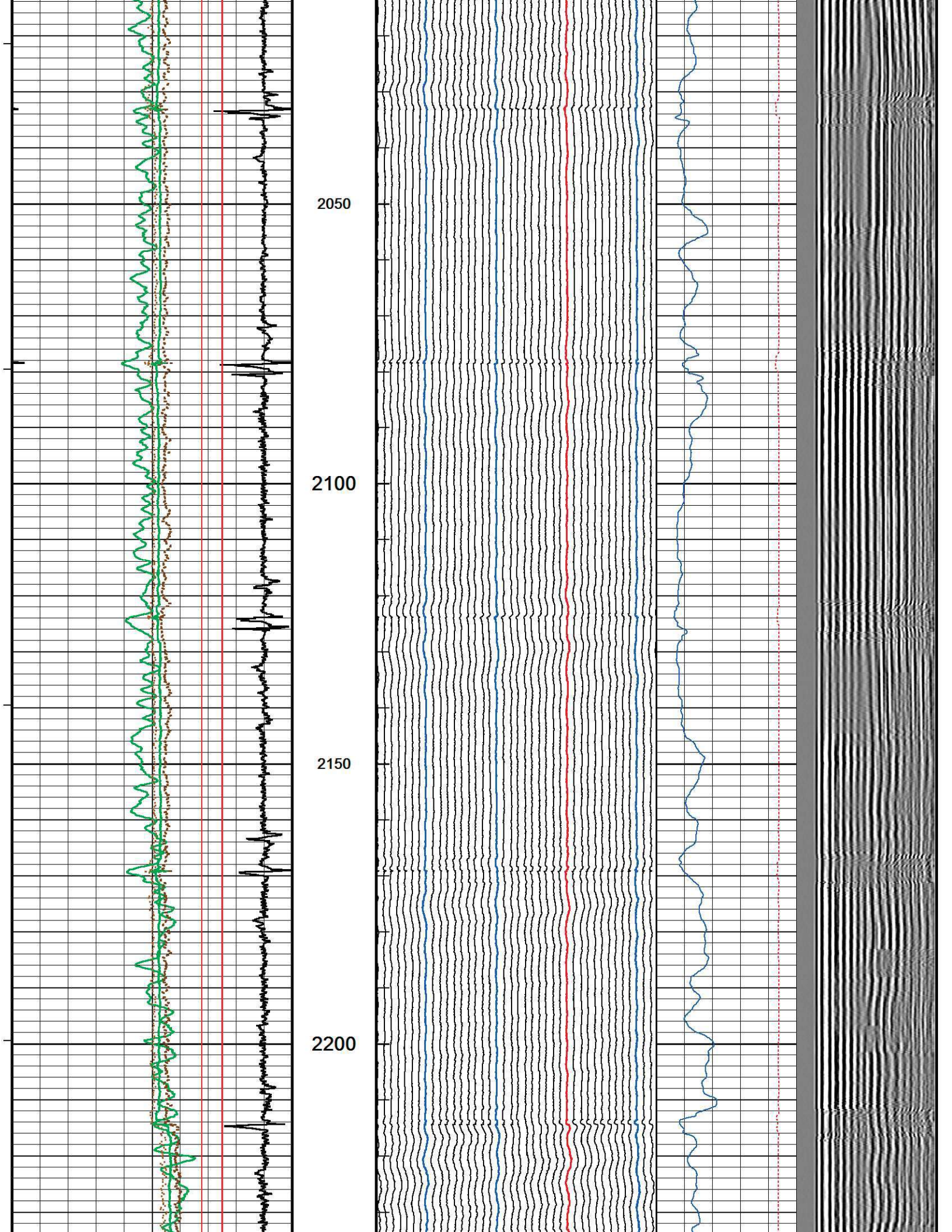


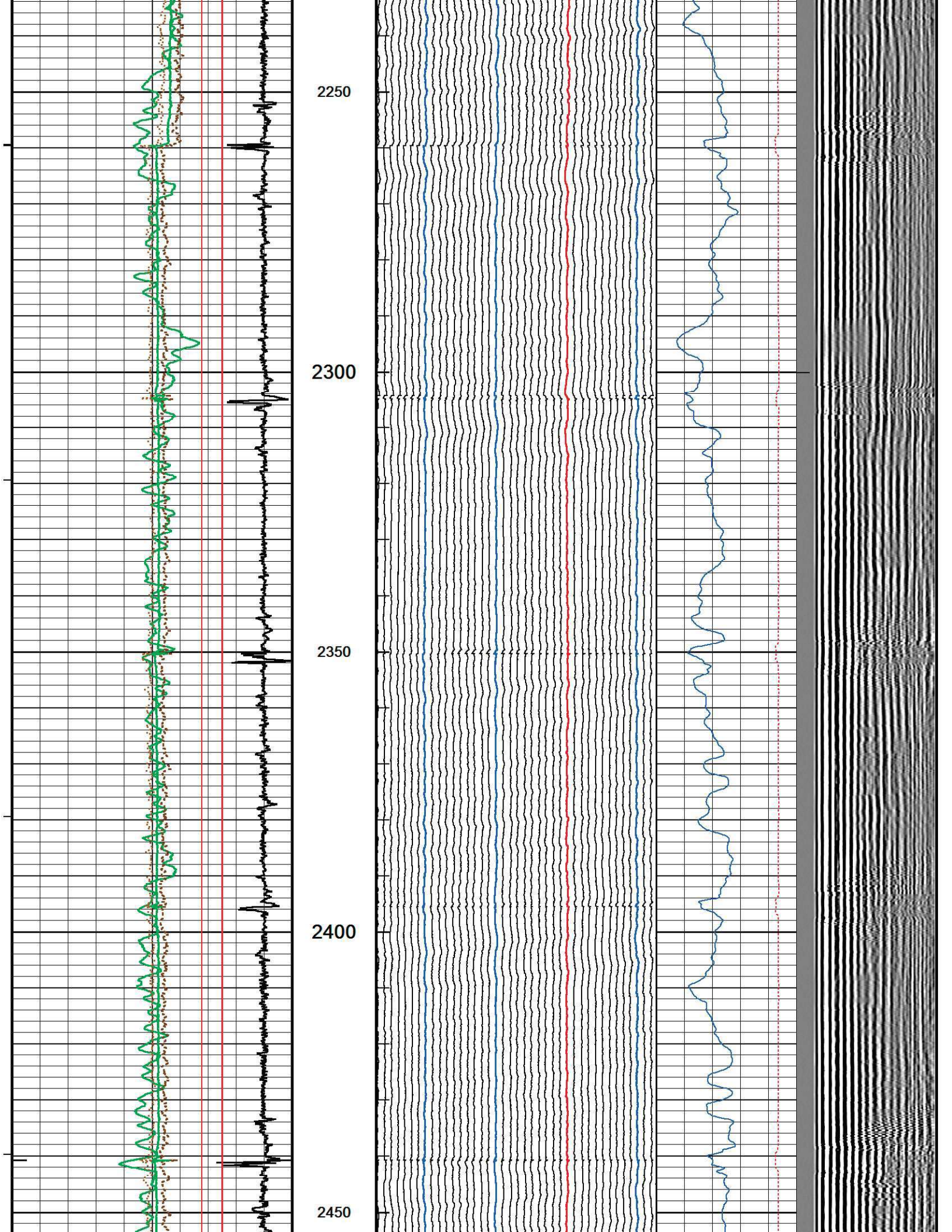


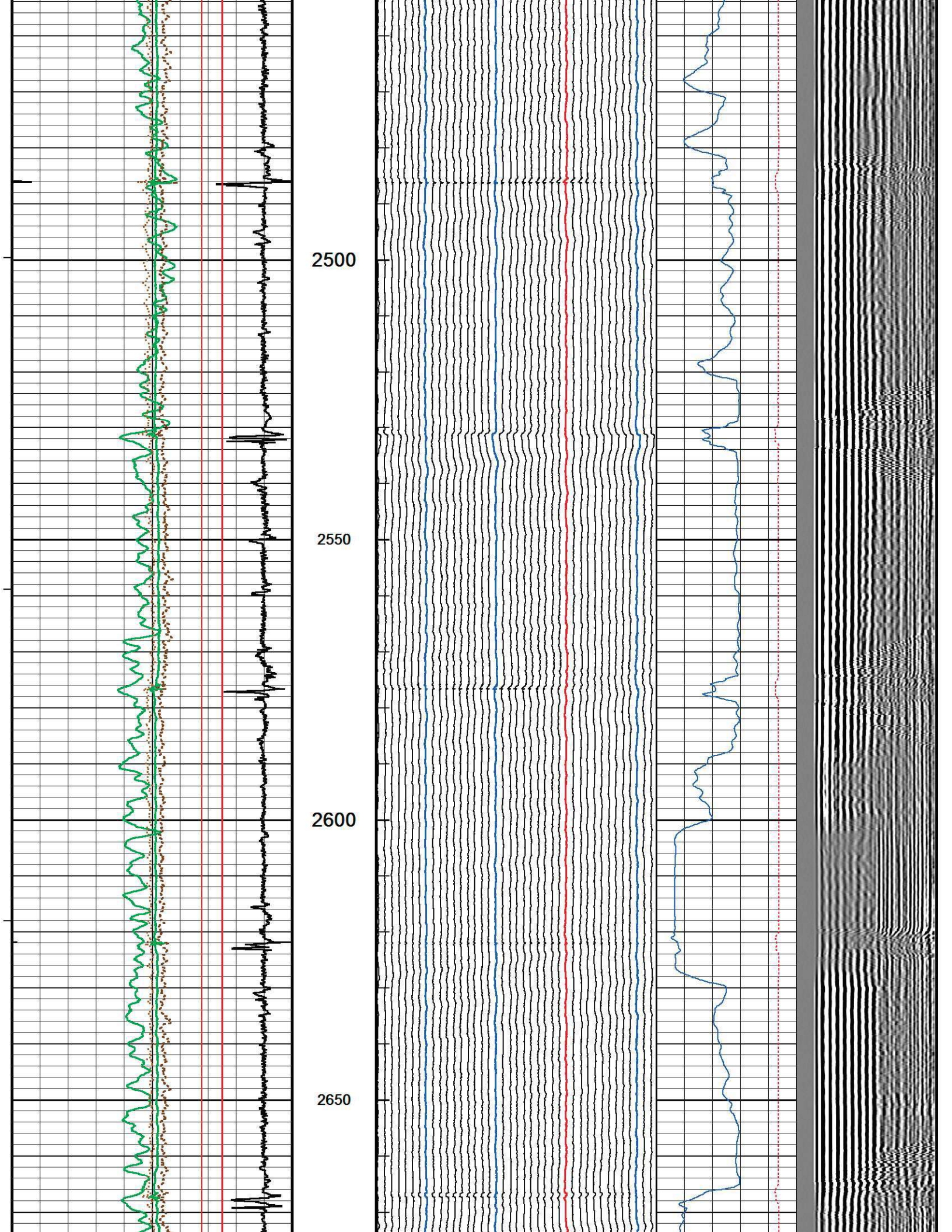


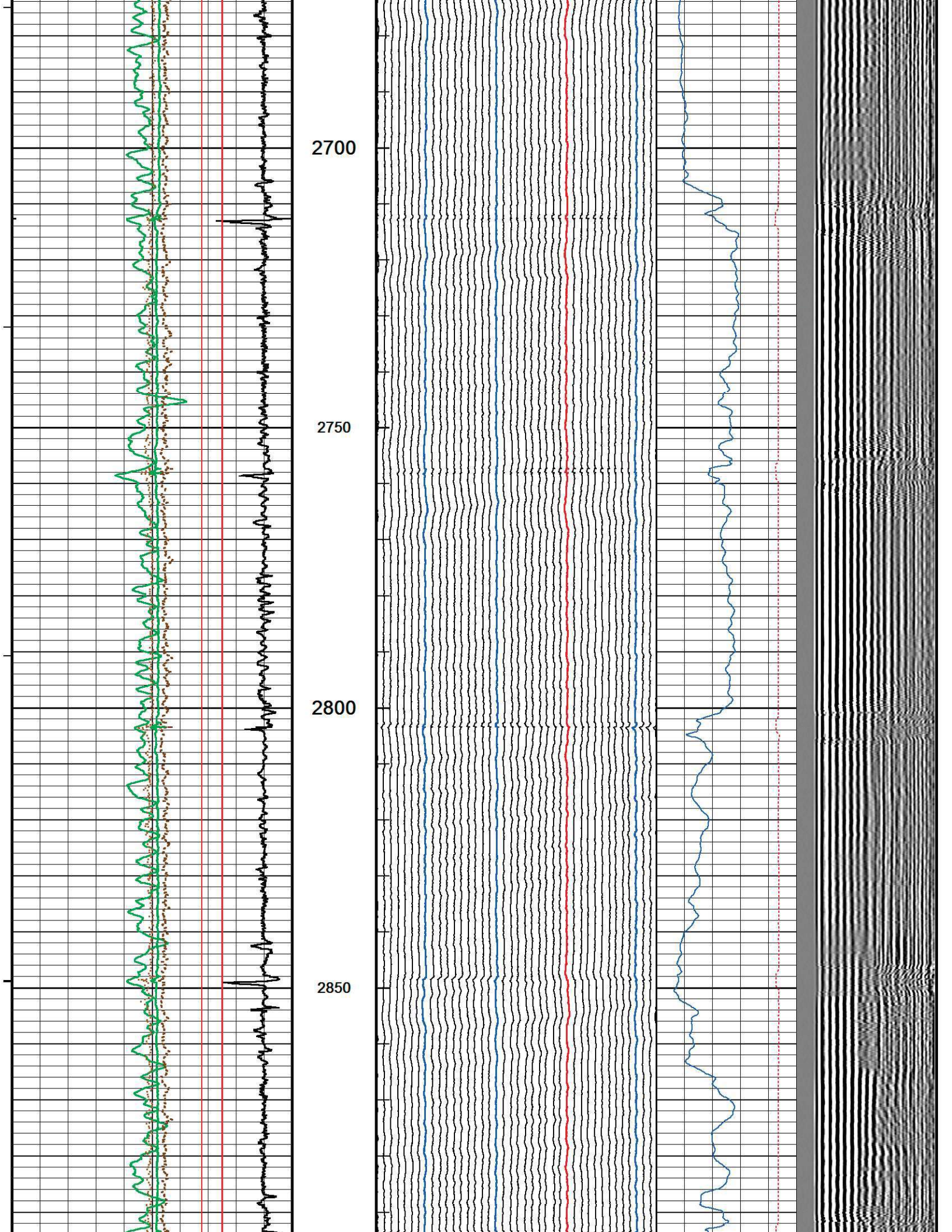


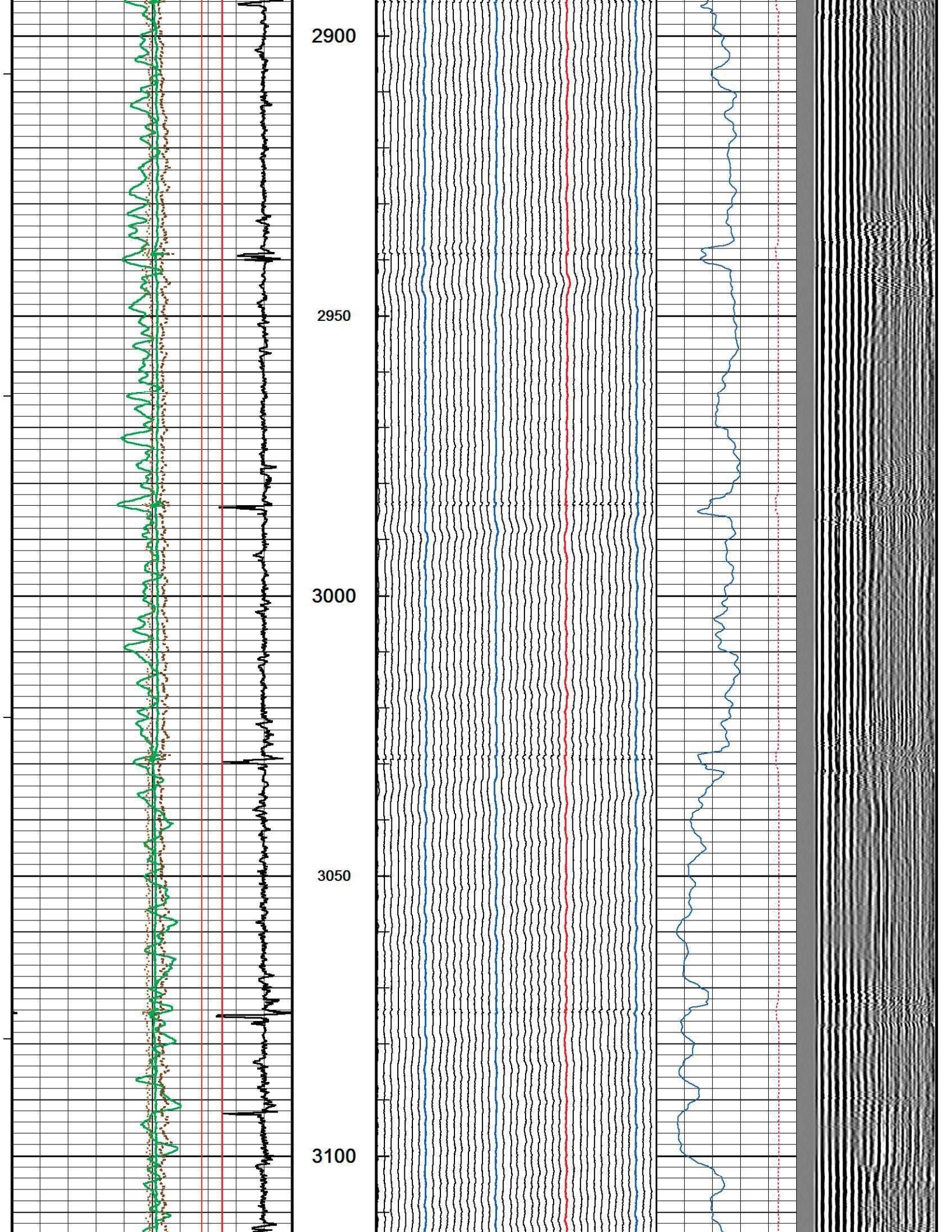


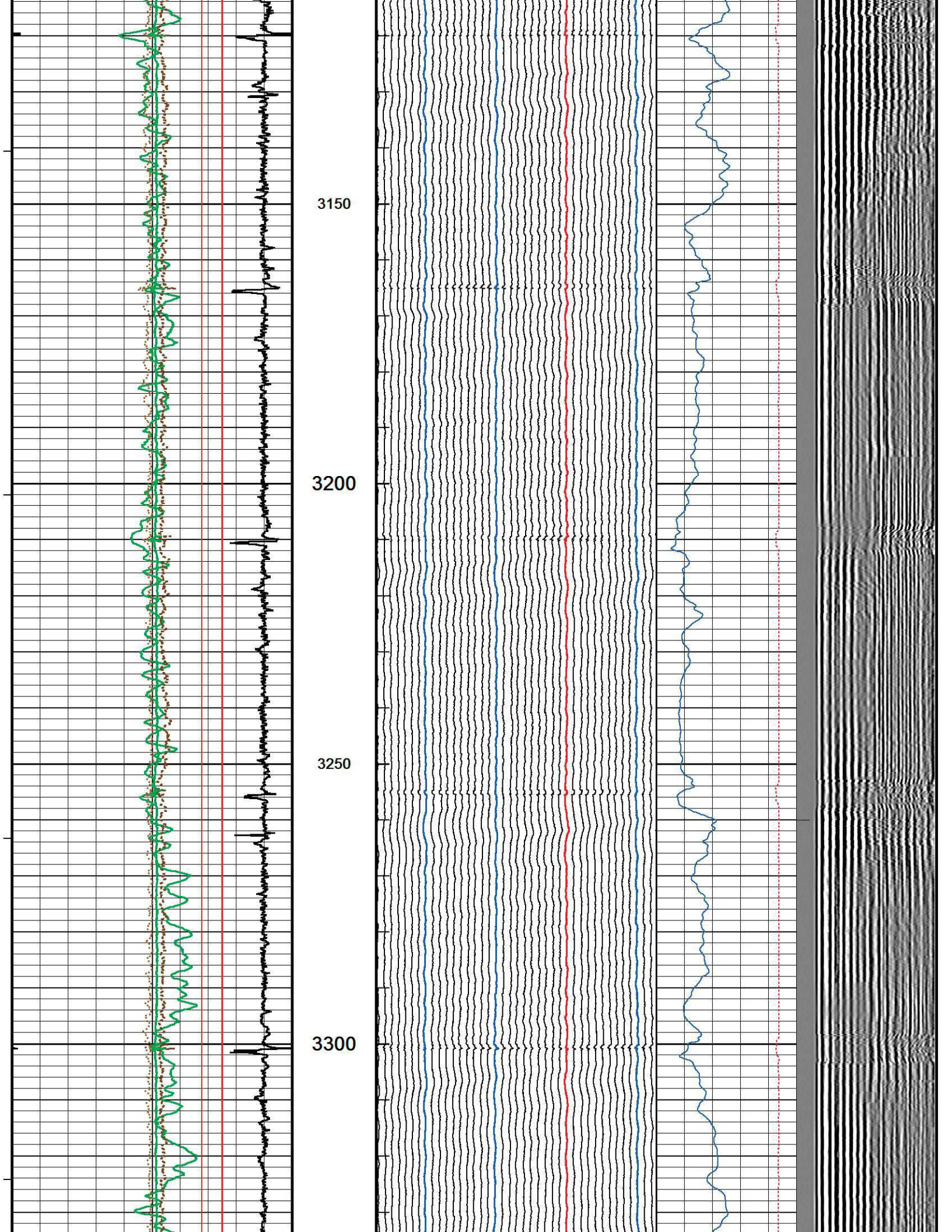


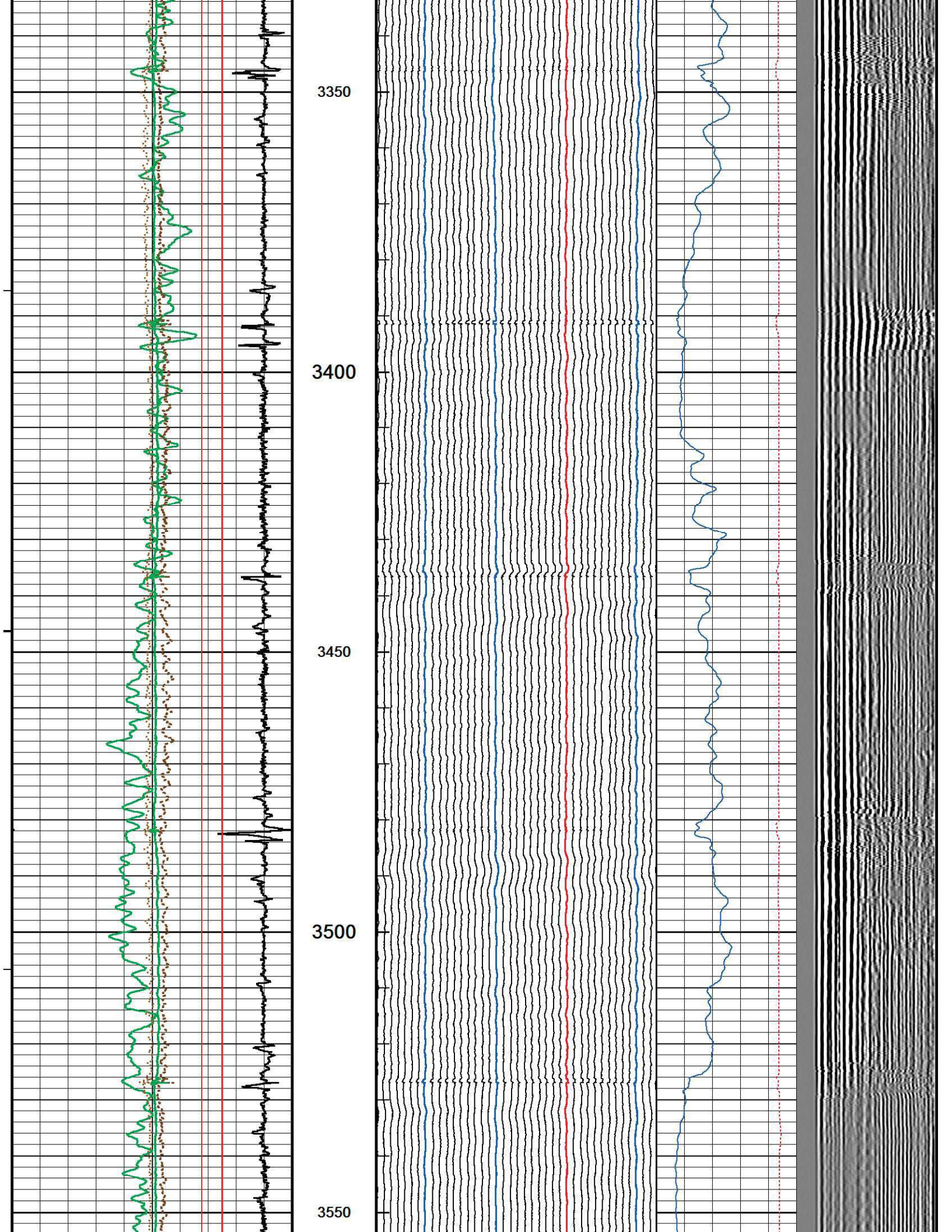


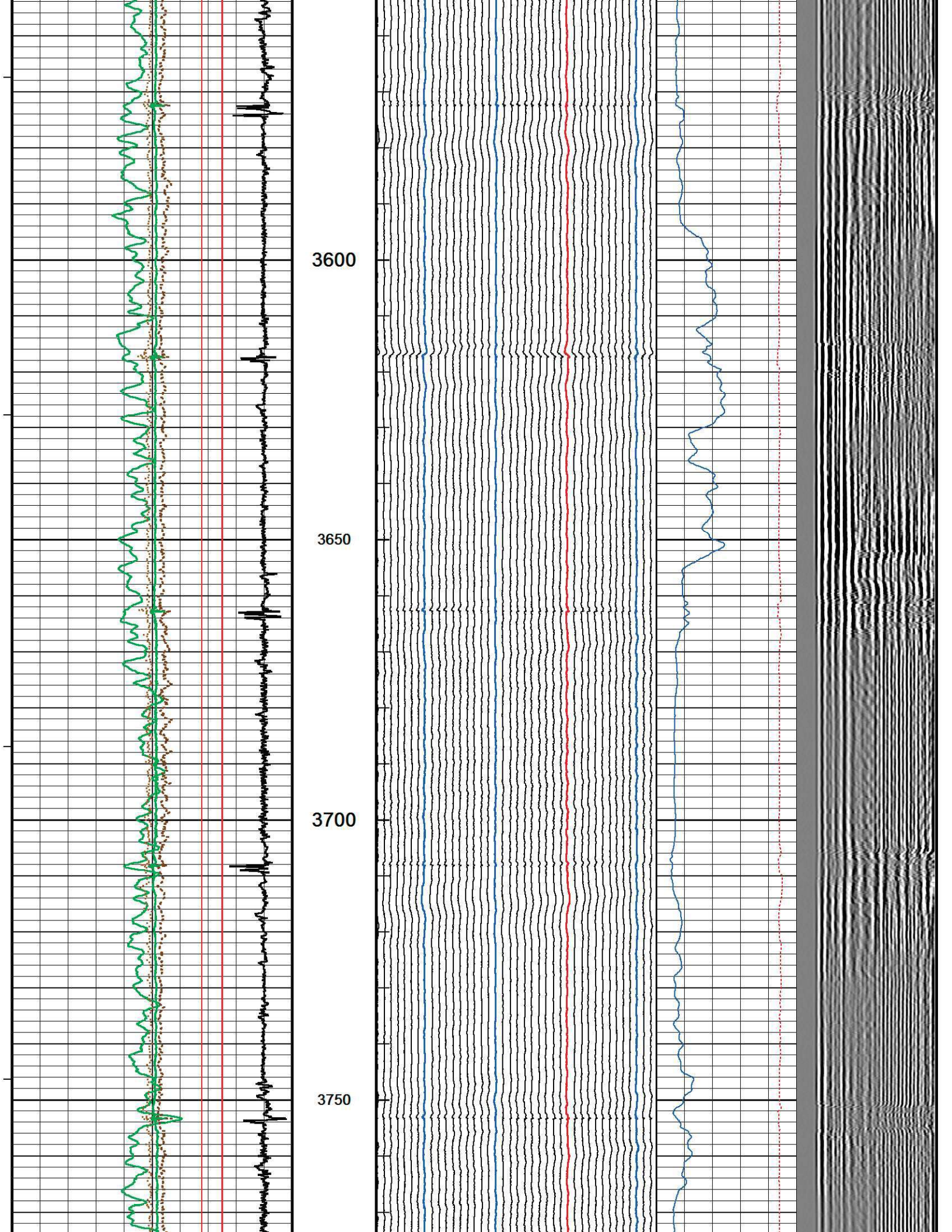


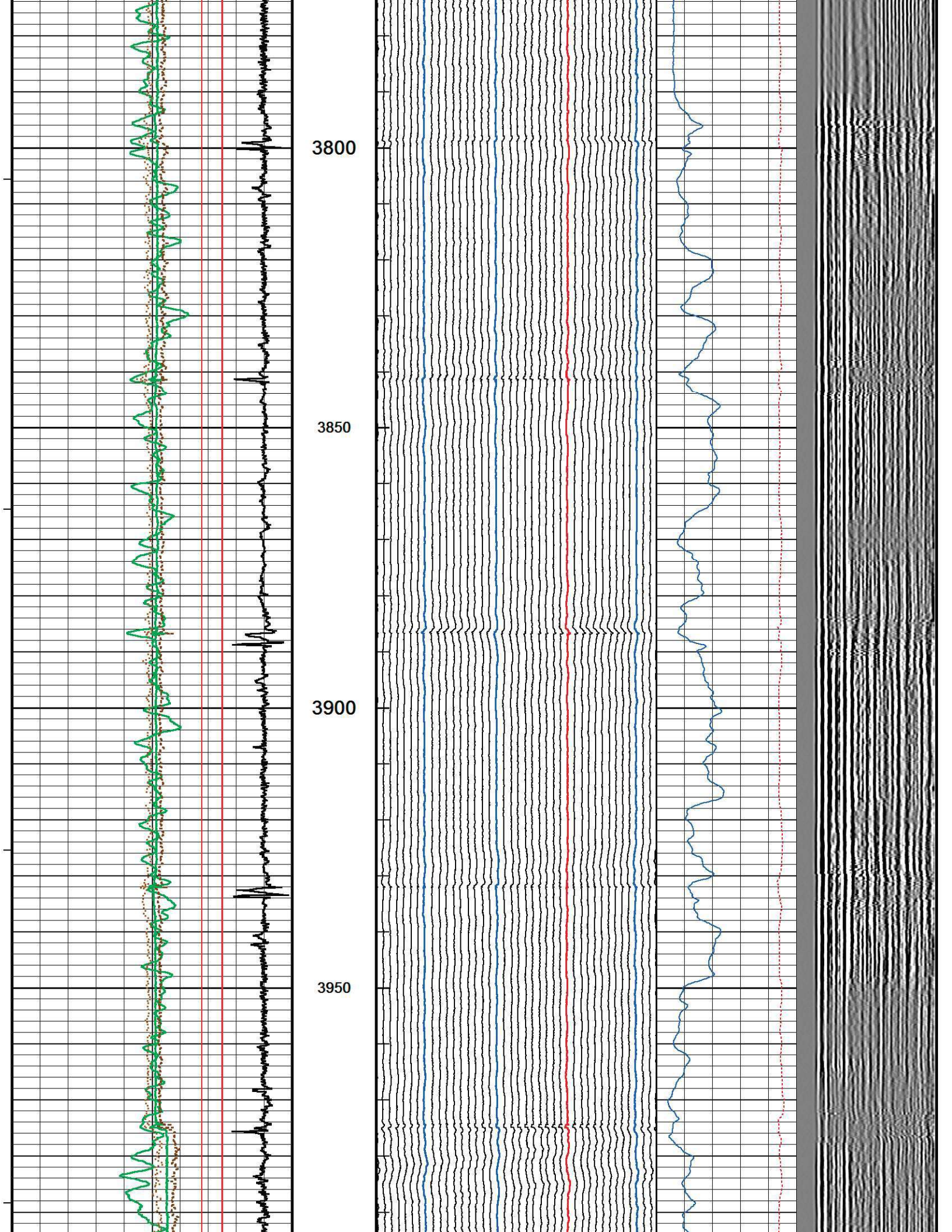


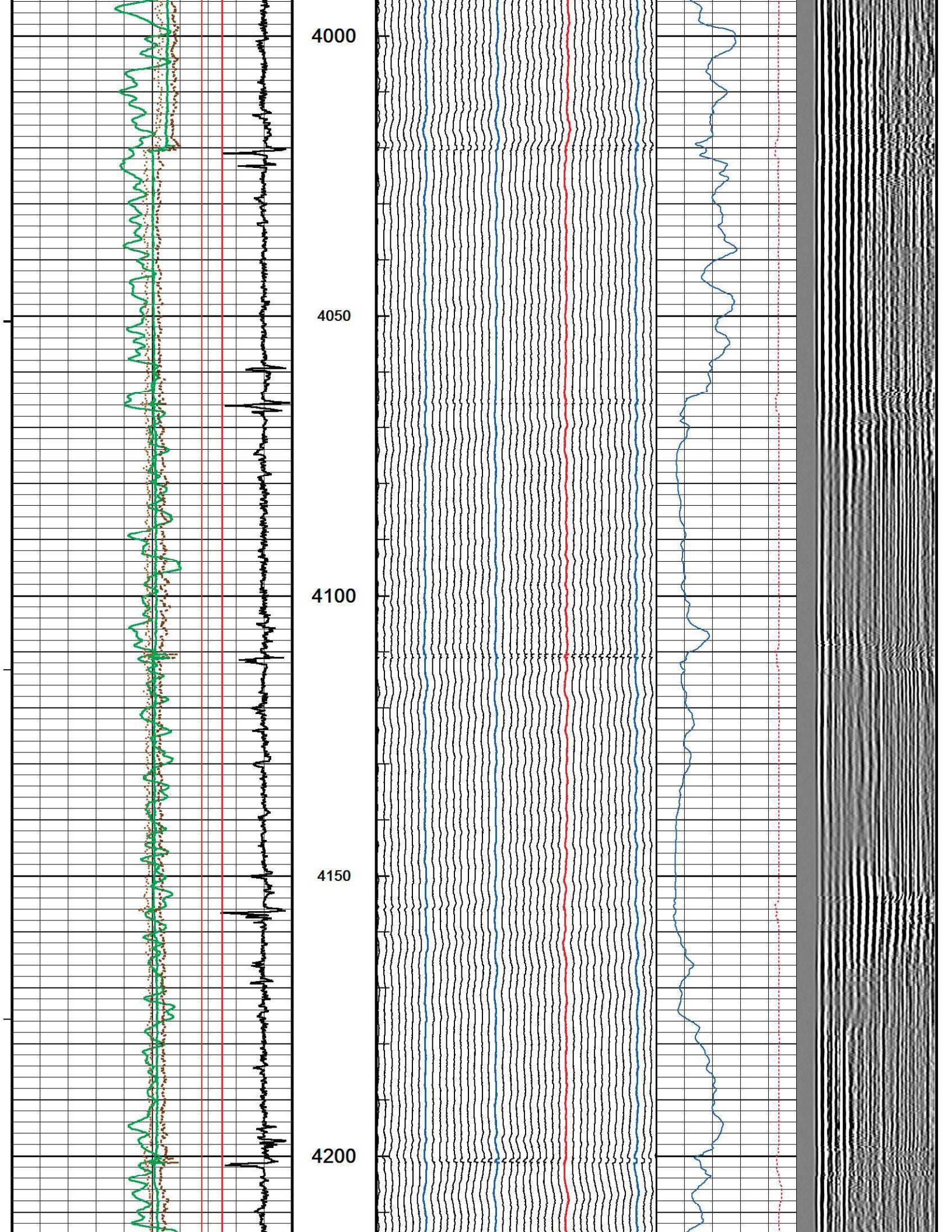


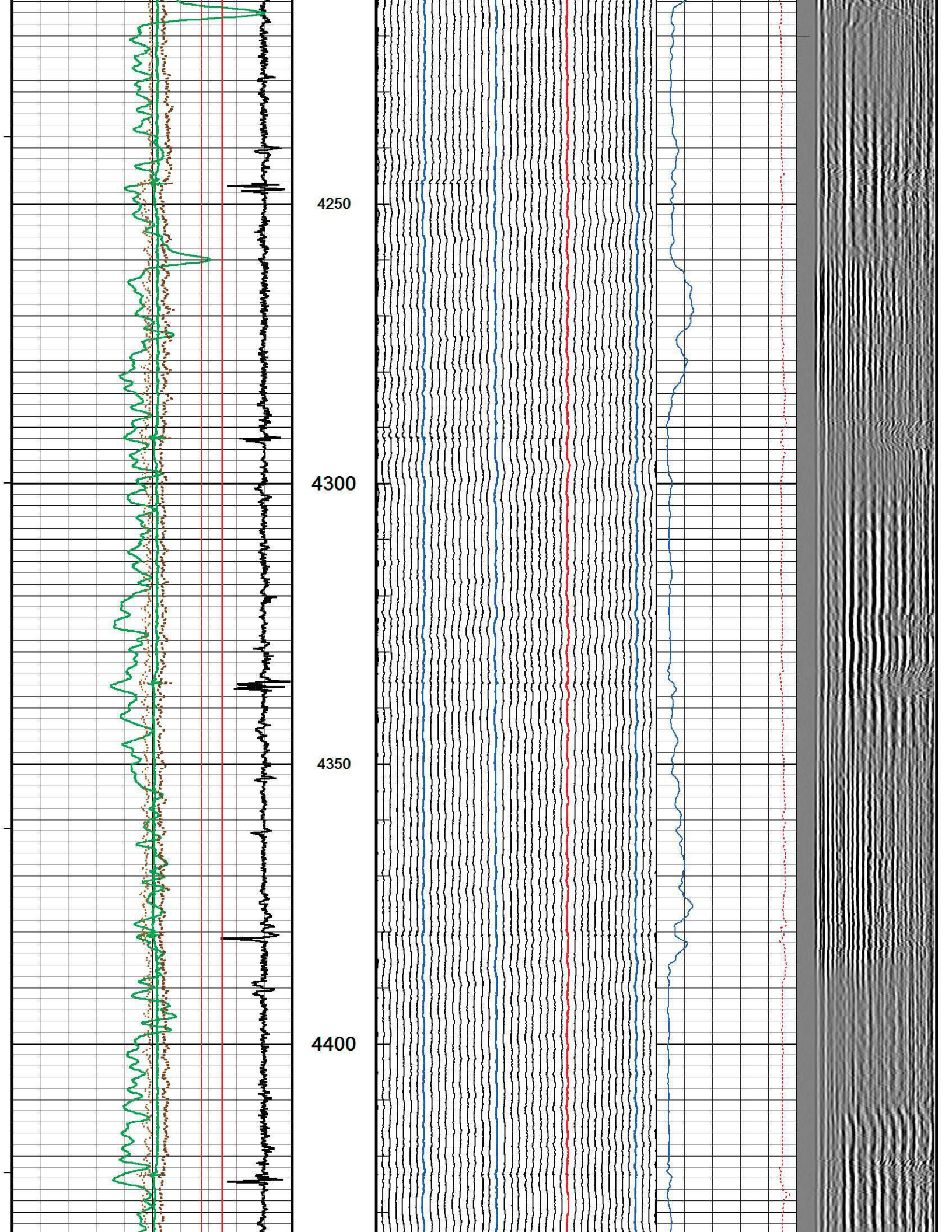


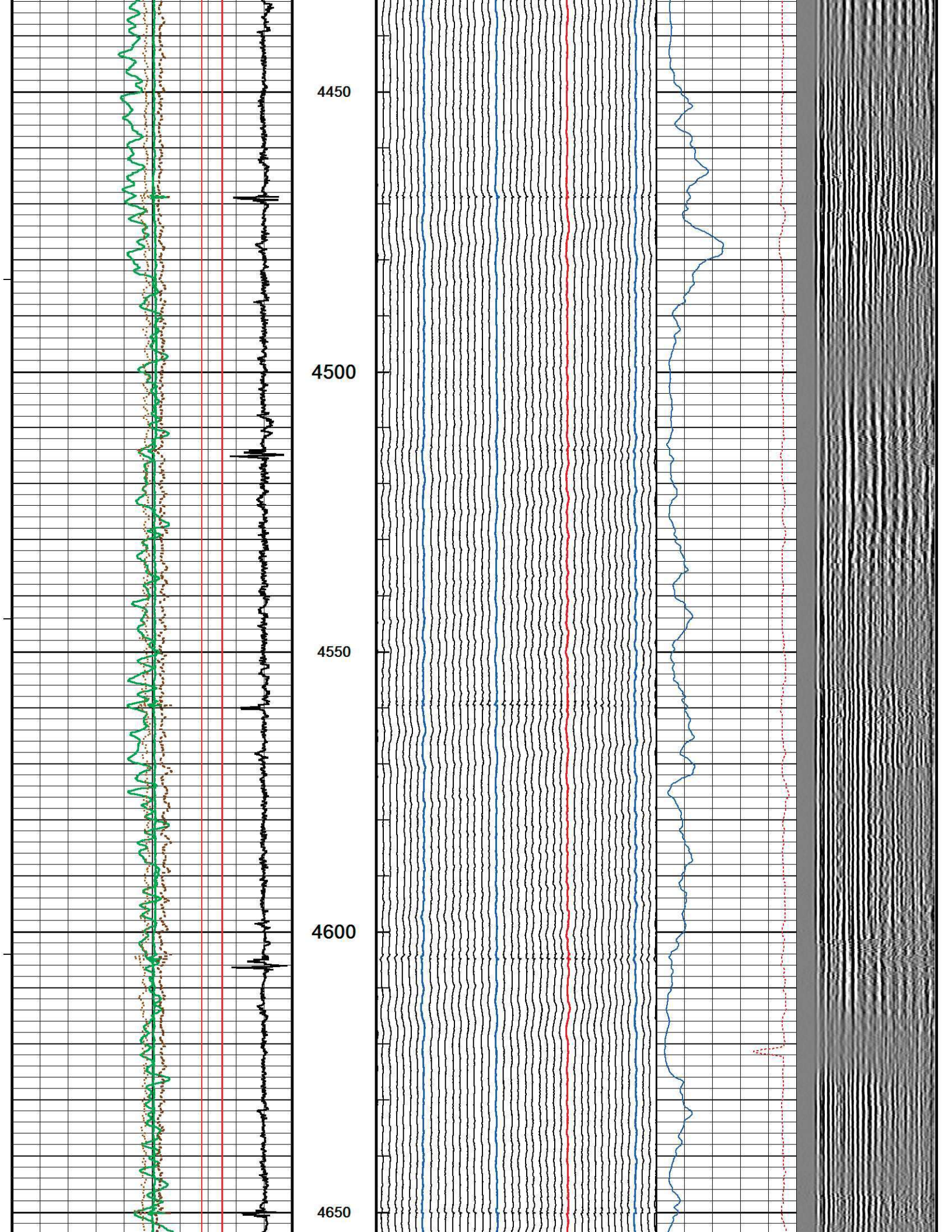


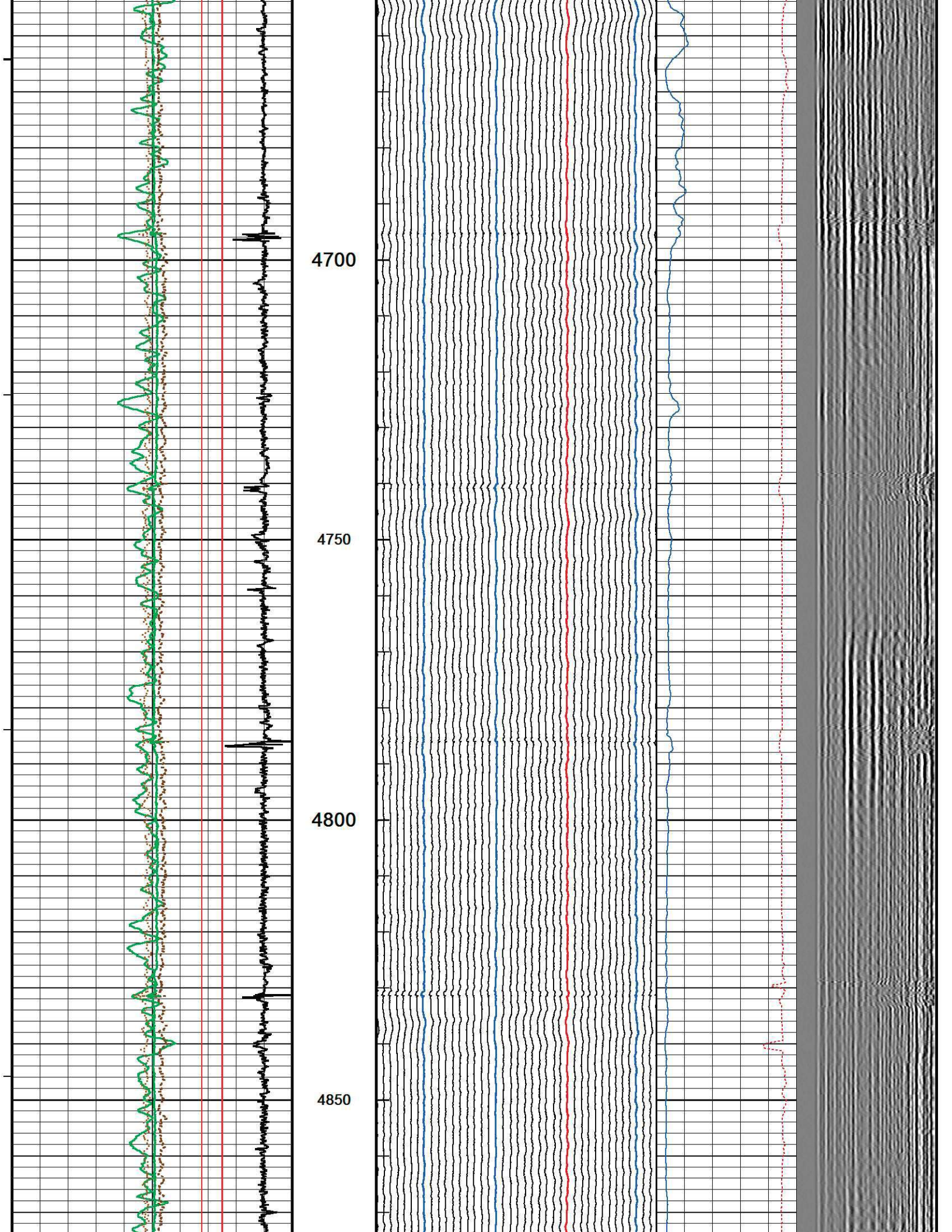


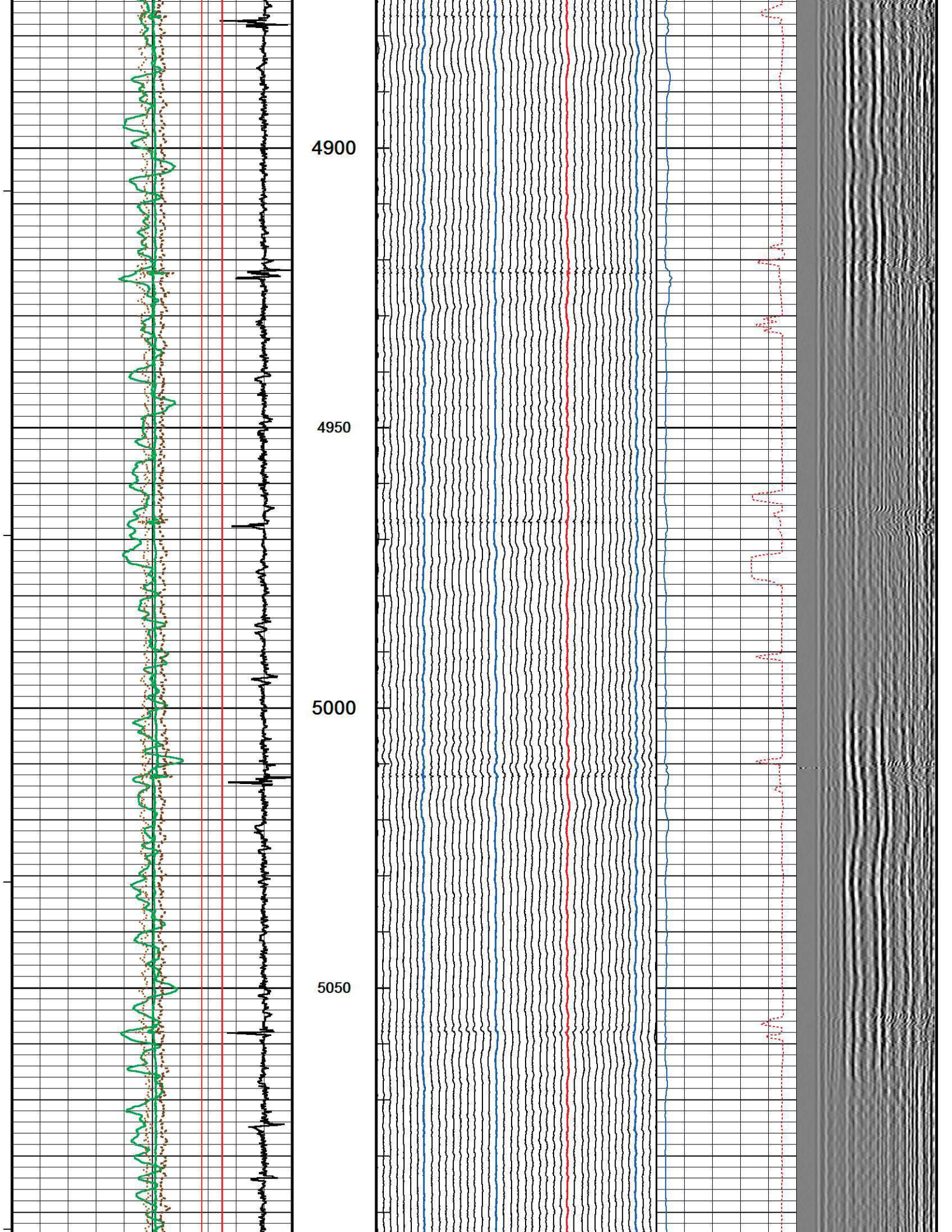


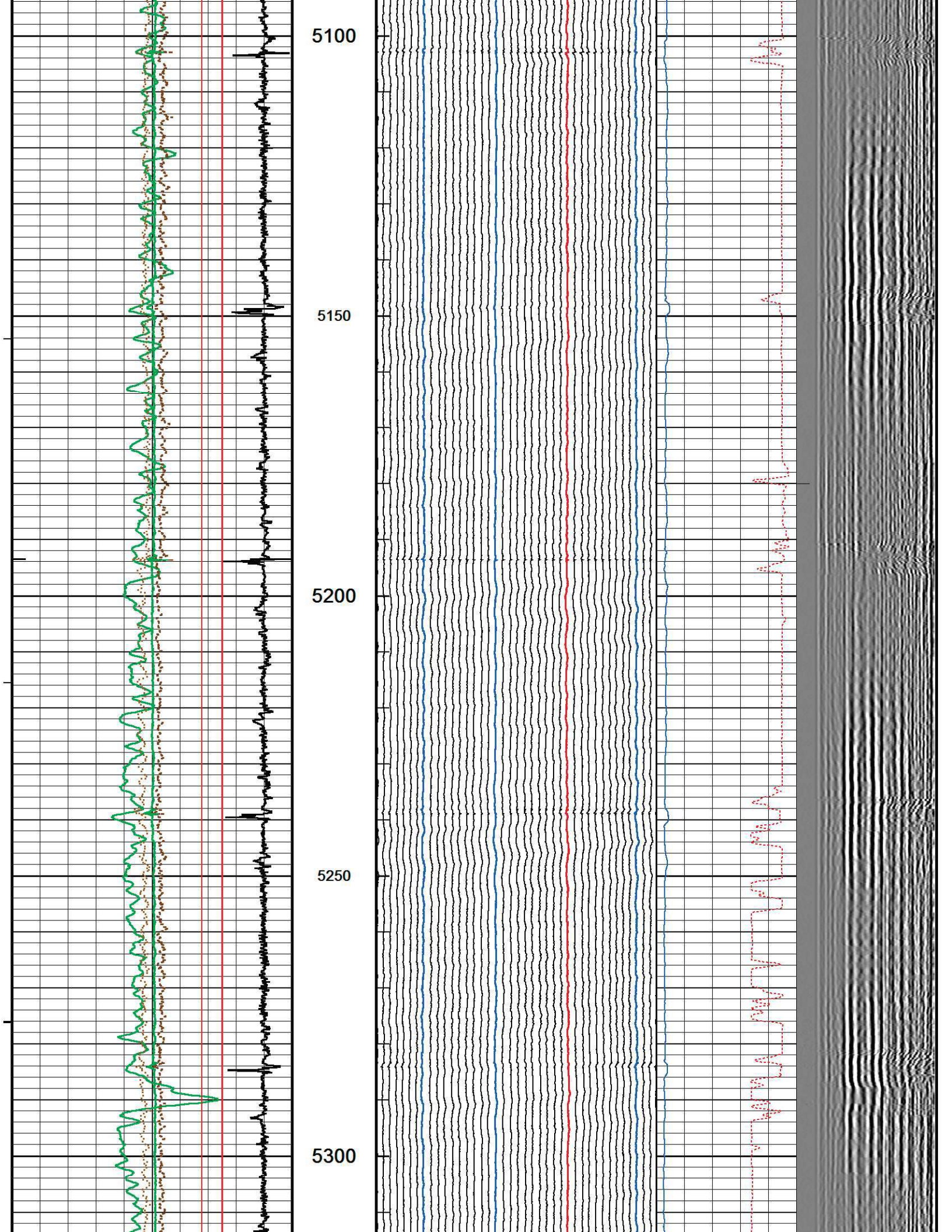


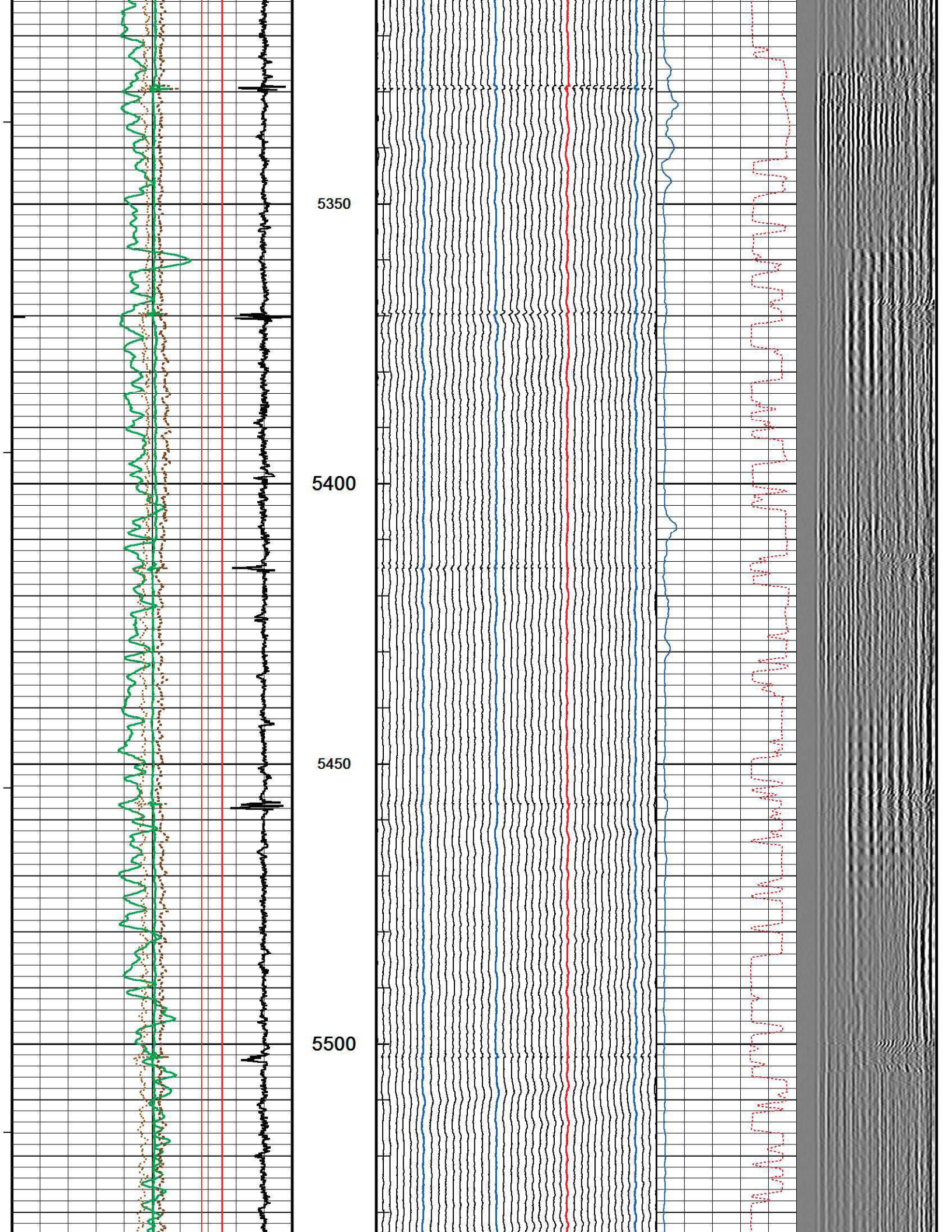


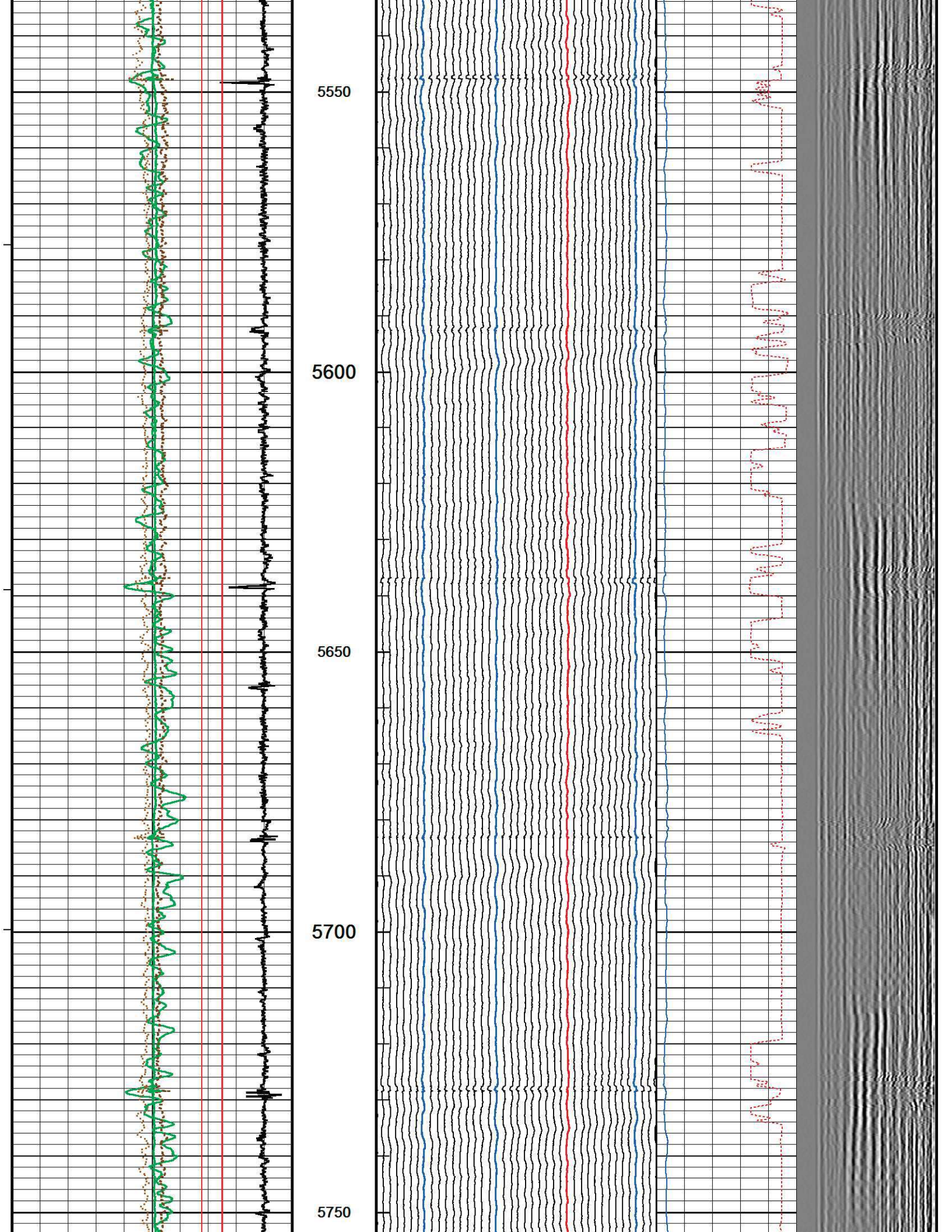


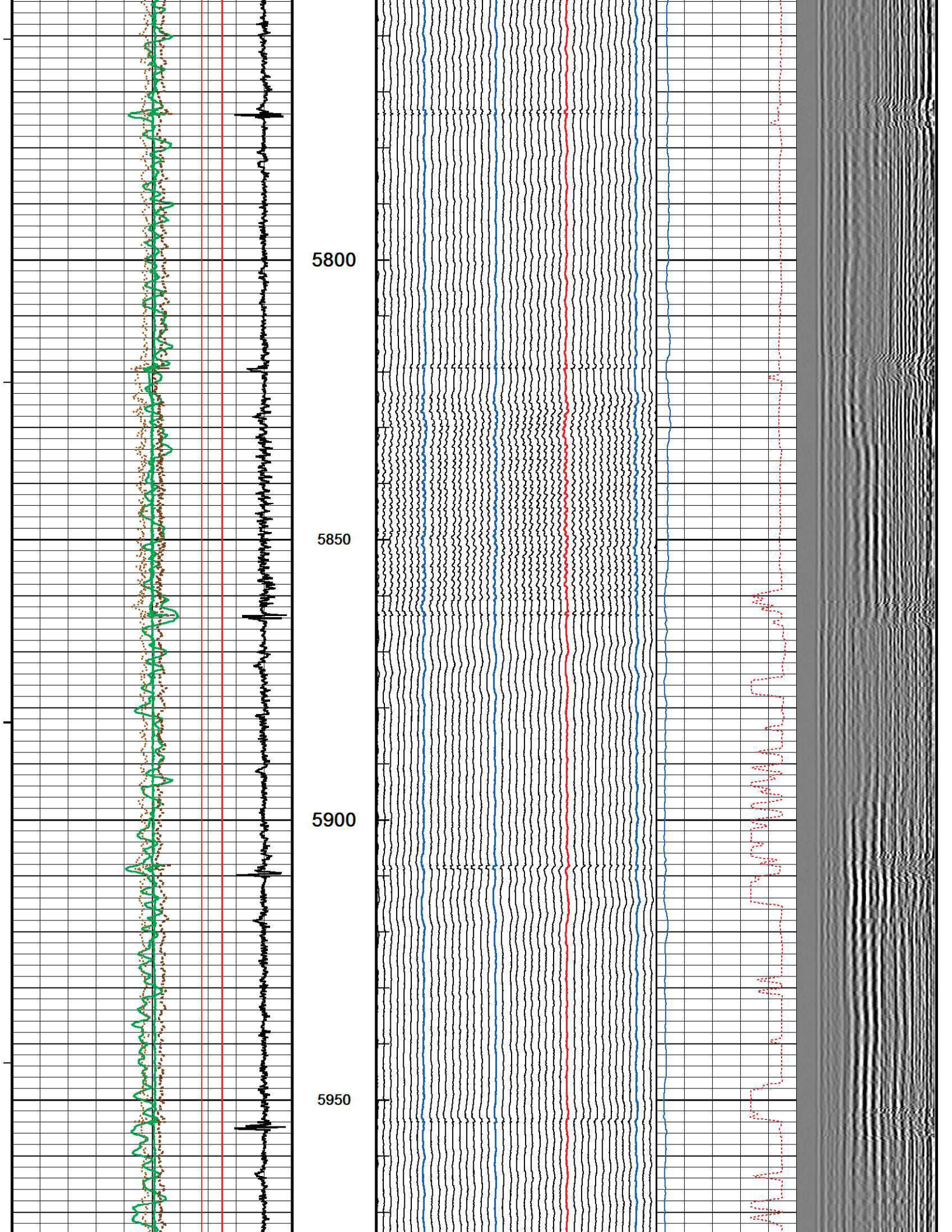


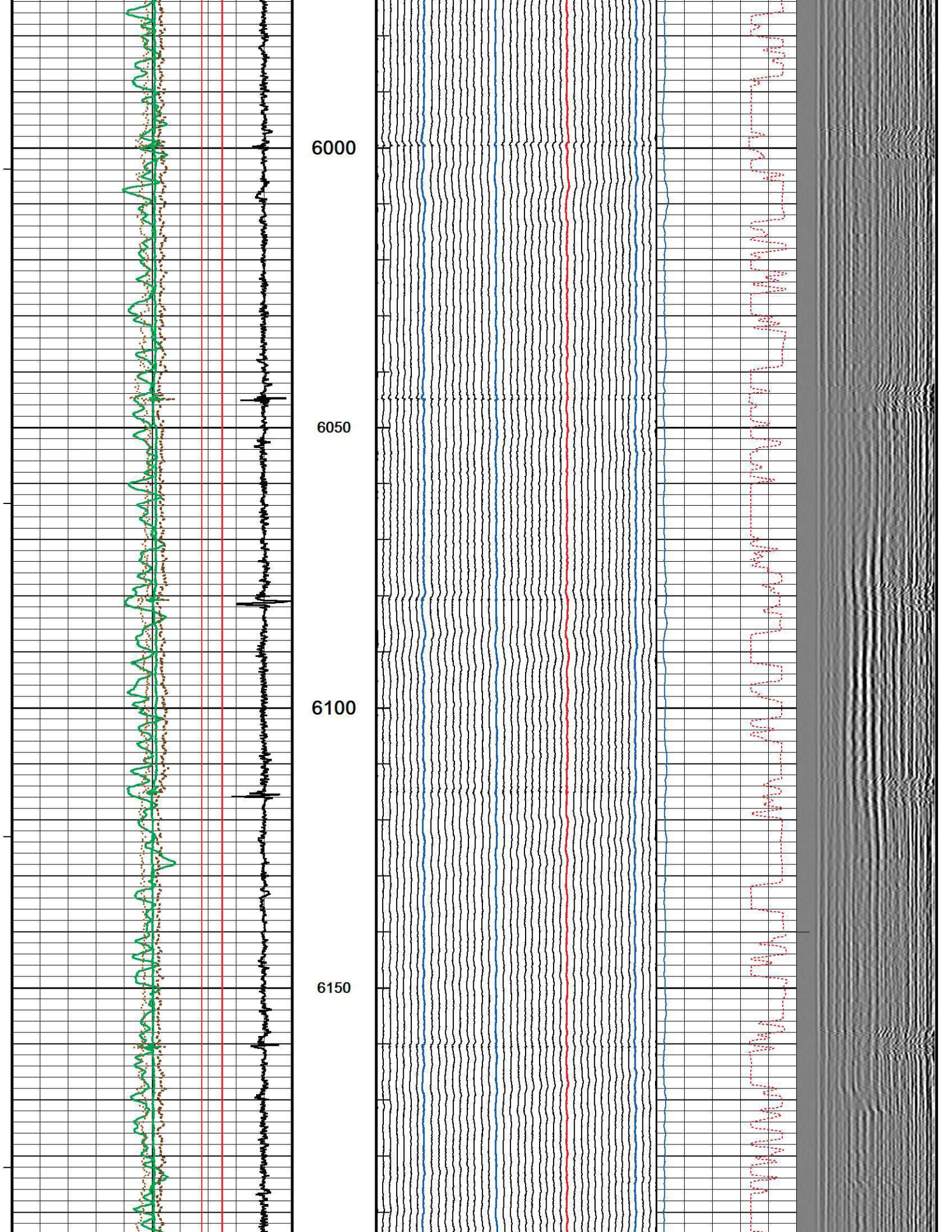


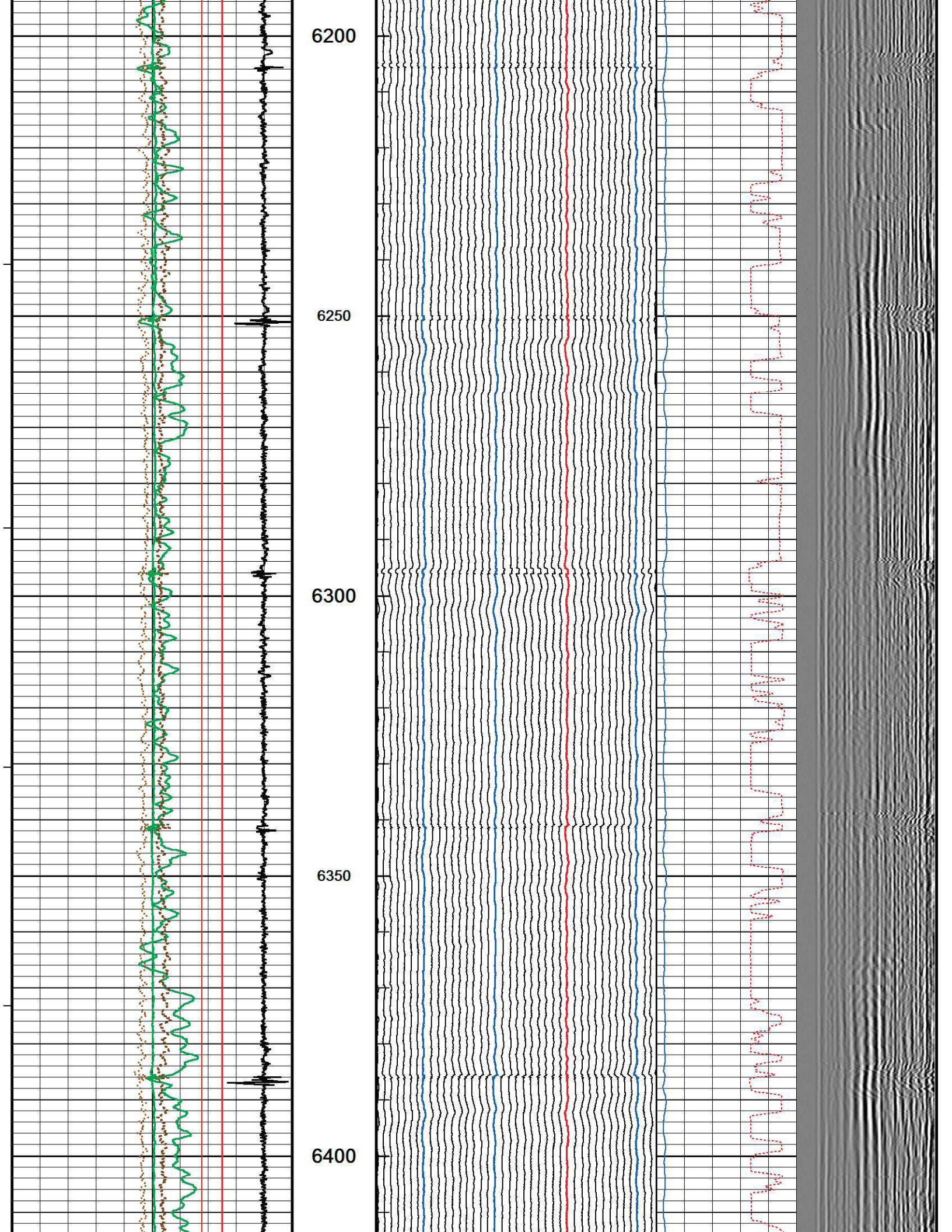


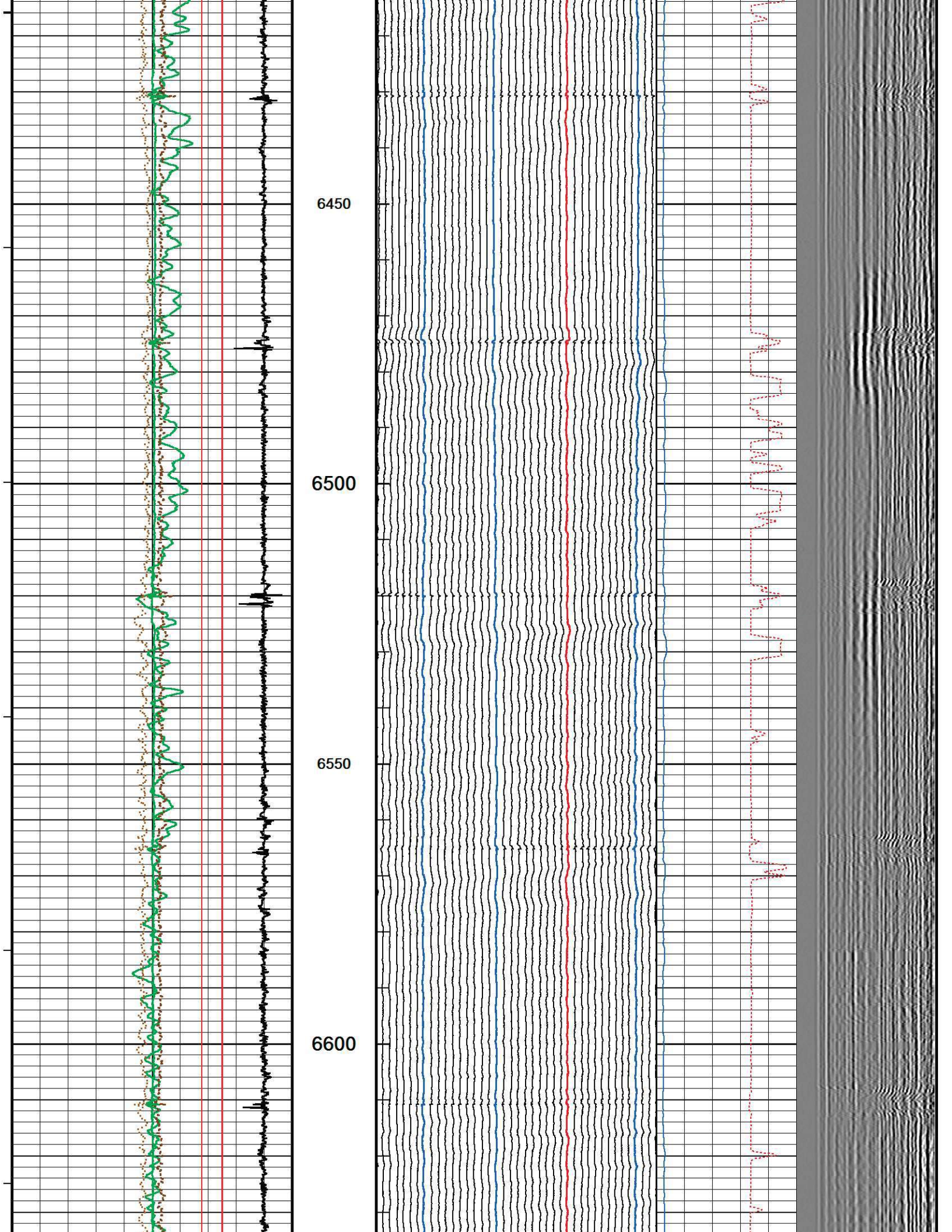


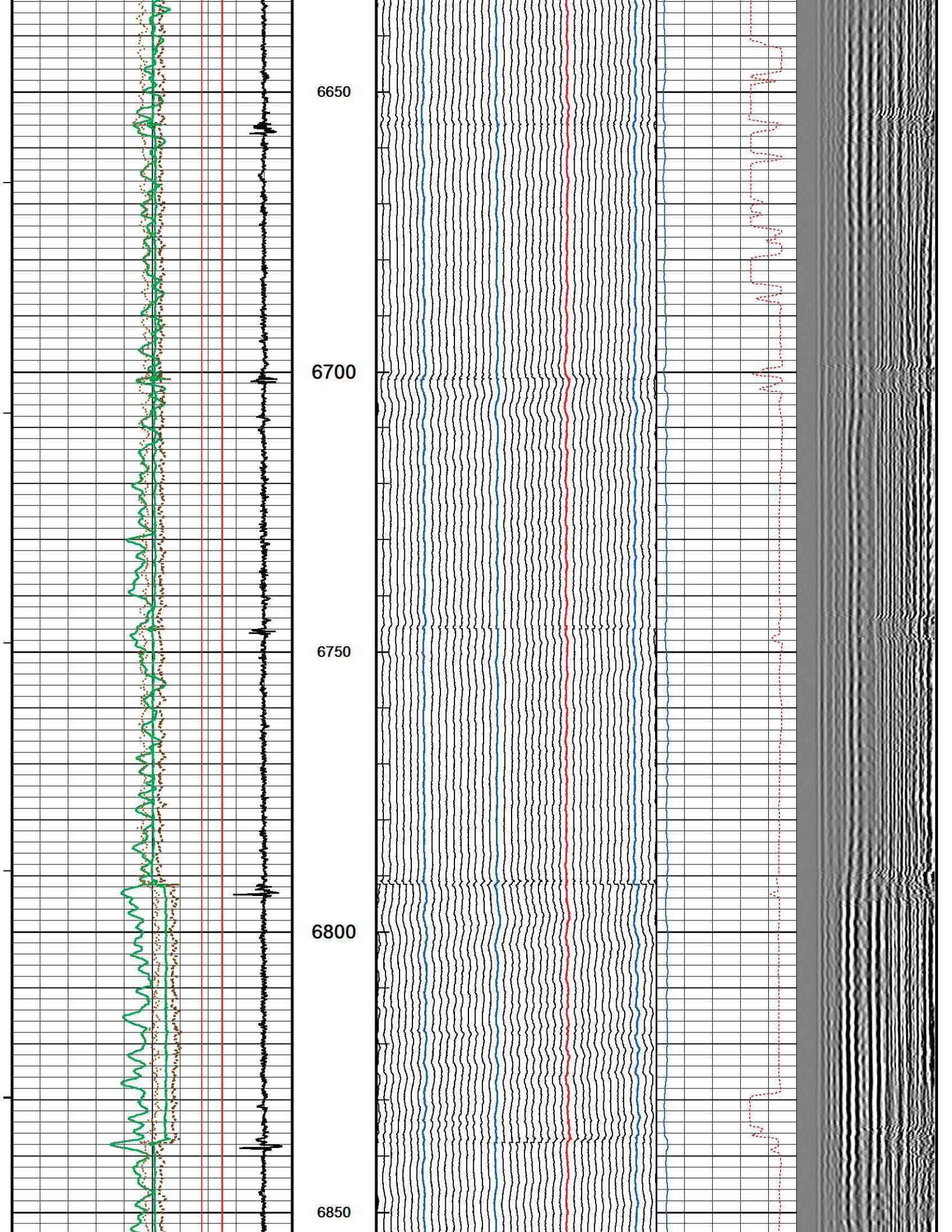


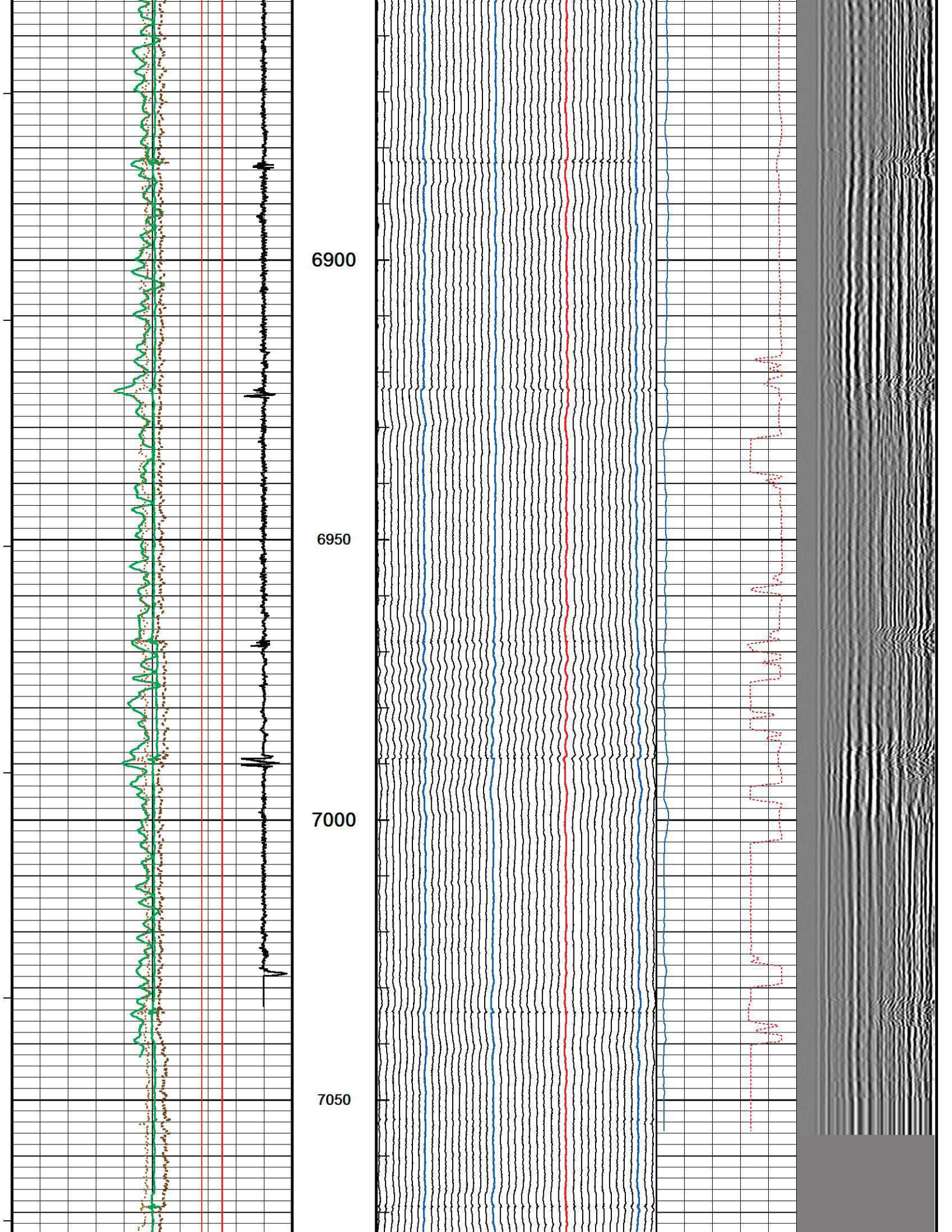


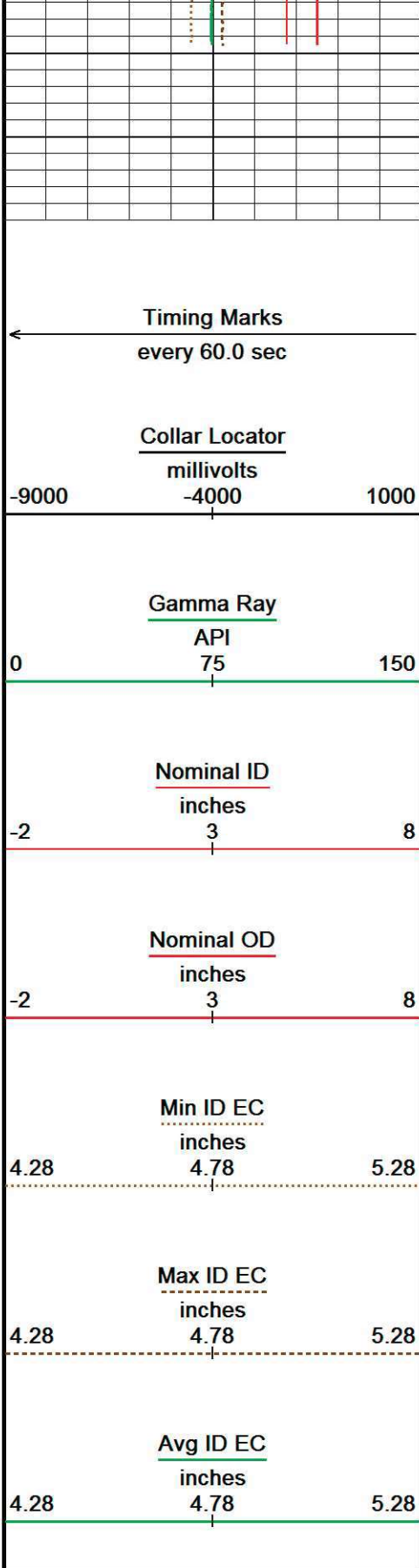




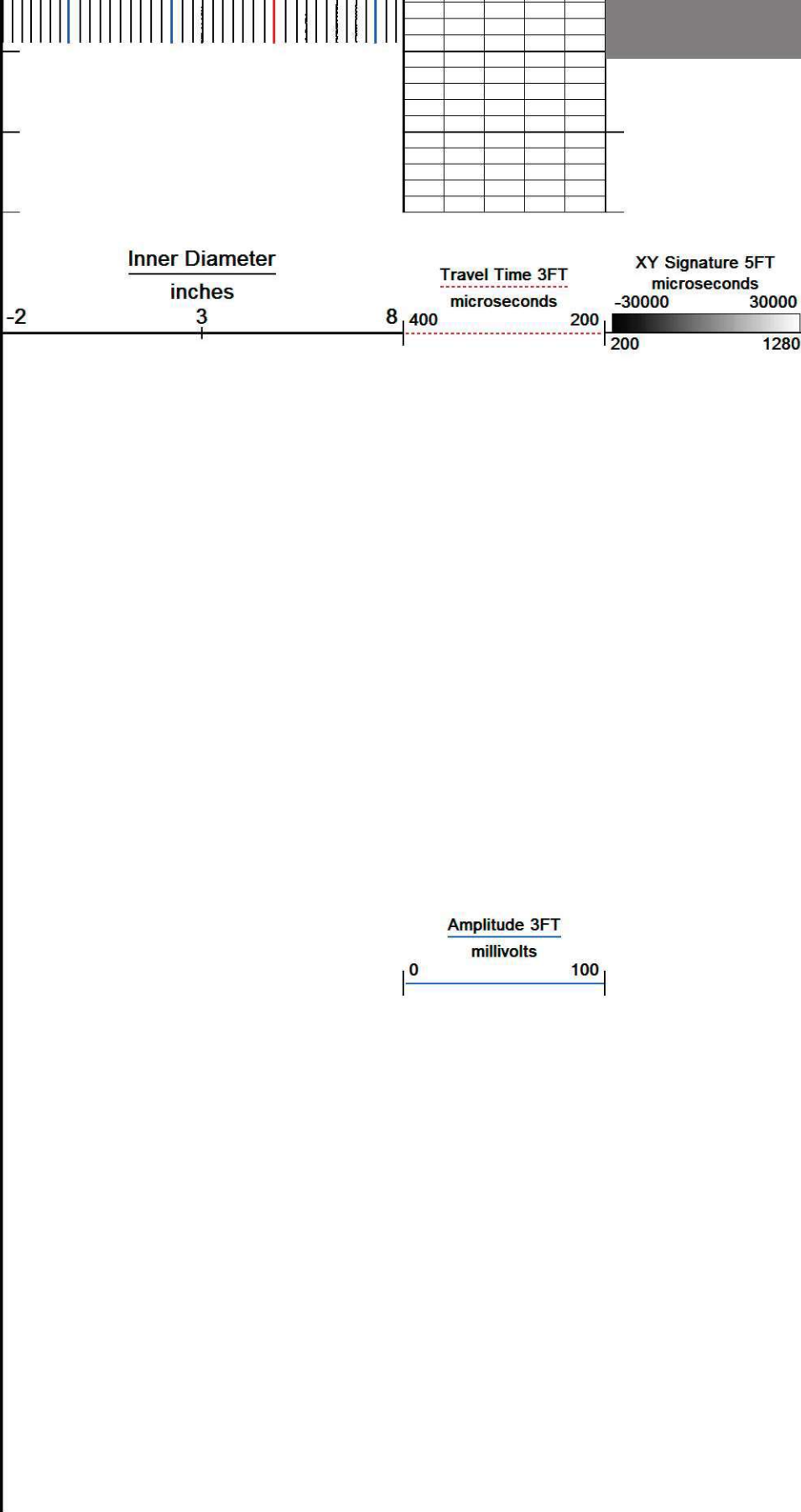








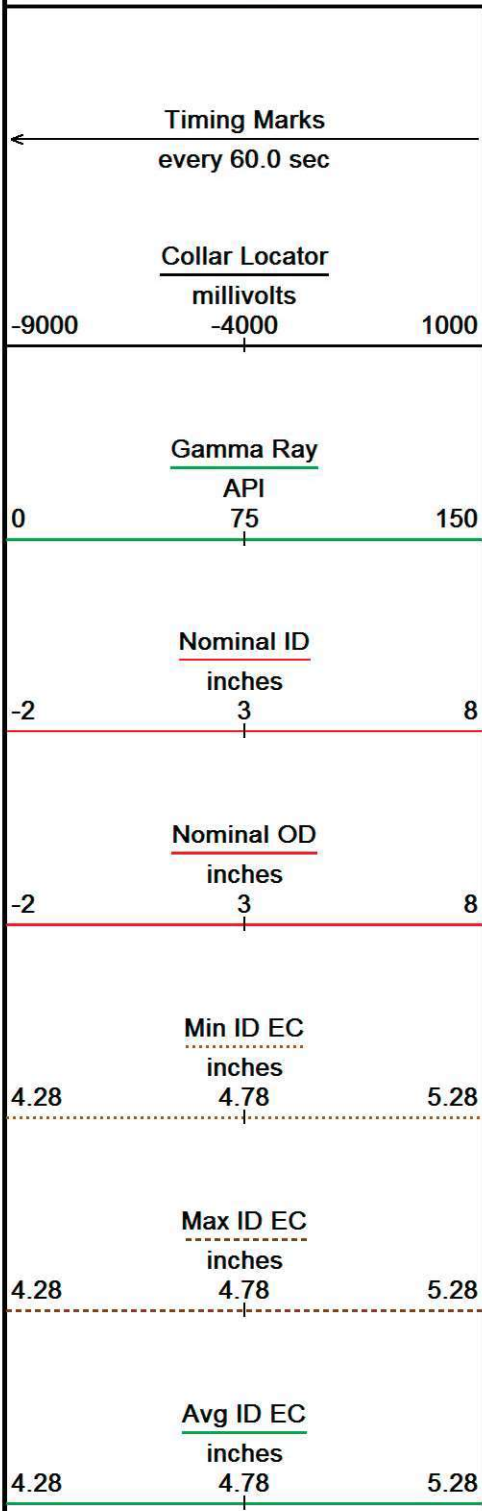
7100
Depth
in
Feet



Depth Based Data - Maximum Sampling Increment 2.5cm
 Filename: C:\Logs\URS\Colorado\BonanzaCreek\La...\Latham 21-24-14 HNC_MSC-CBT_MainPass.dta
 System Versions: Logged with 18.03.9344 Plotted with 18.03.9344
 Plotted on 09-OCT-2019 20:34
 Recorded on 09-OCT-2019 20:17

↑ MAIN PASS ↑

↓ REPEAT PASS MAIN PASS ↓

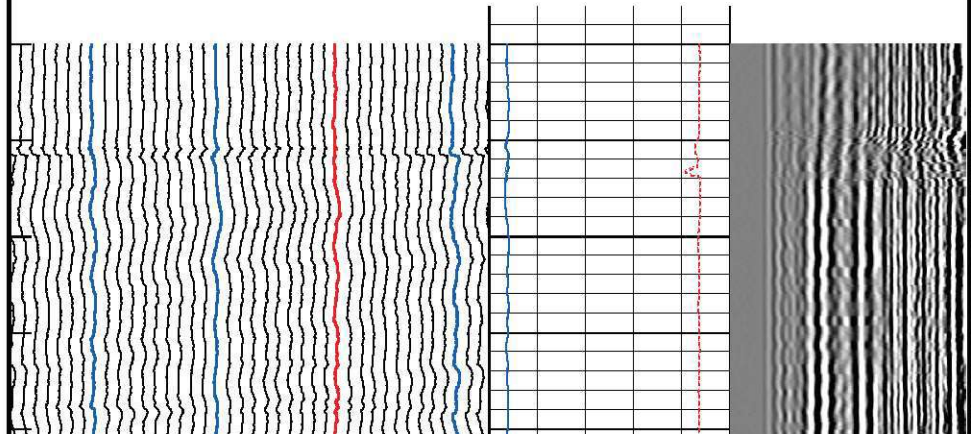
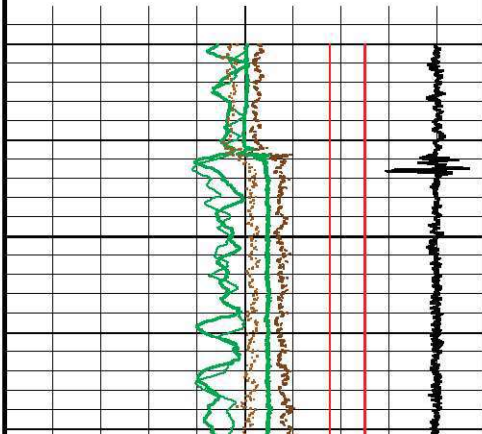
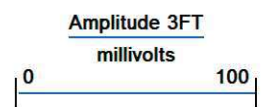
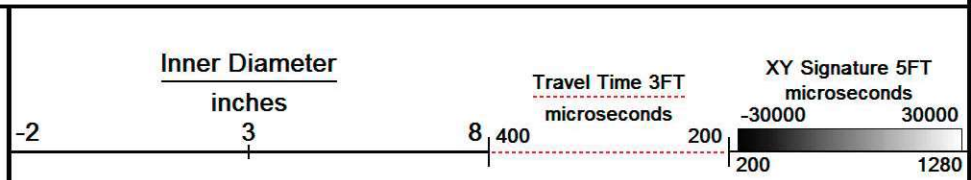


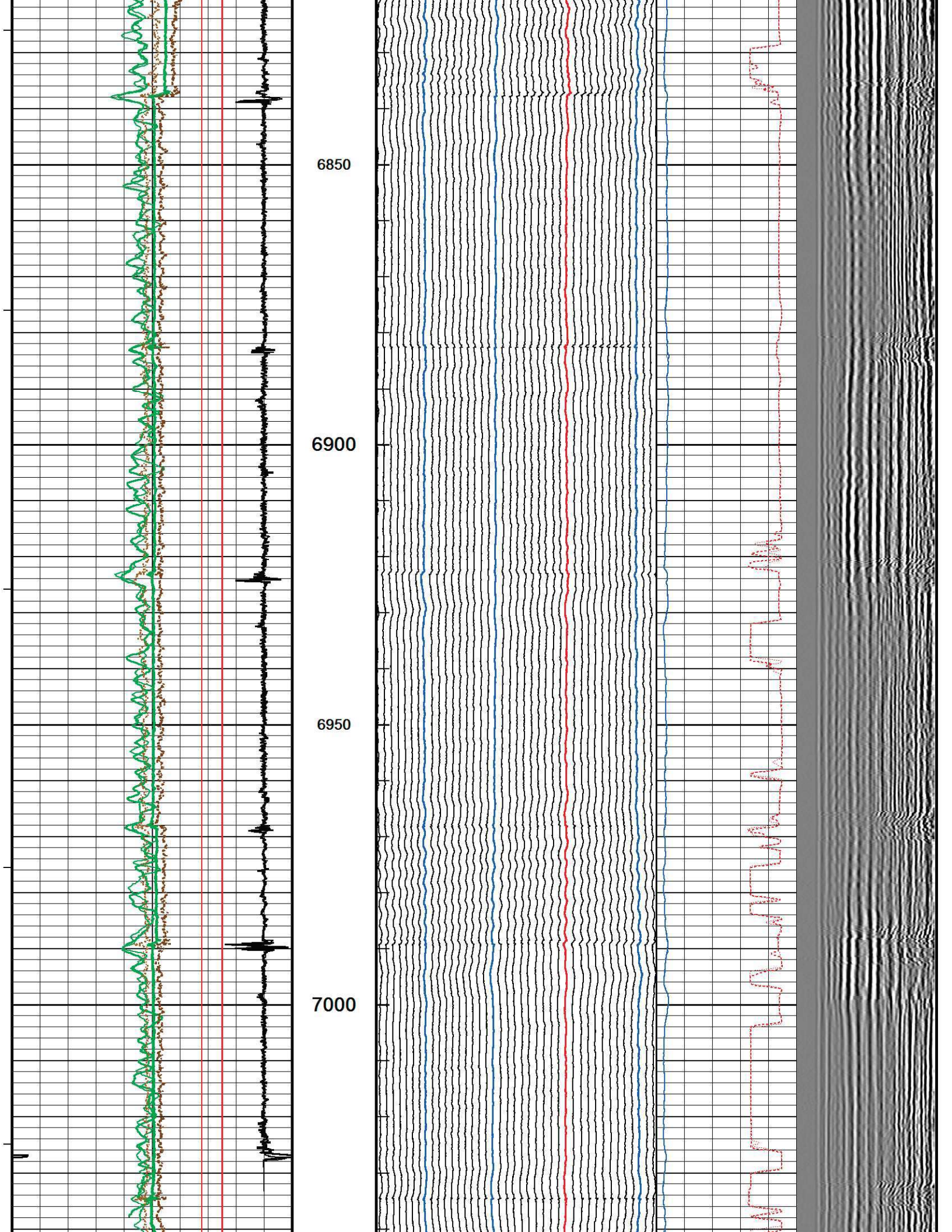
Depth in Feet

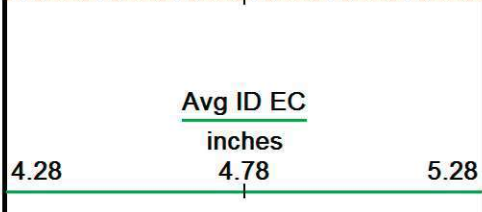
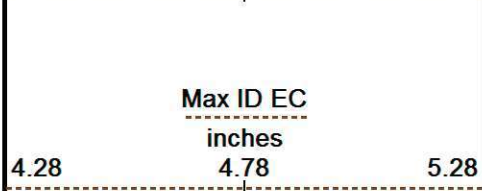
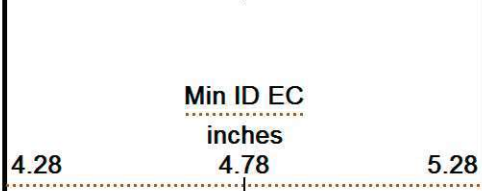
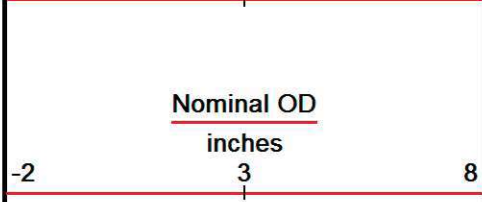
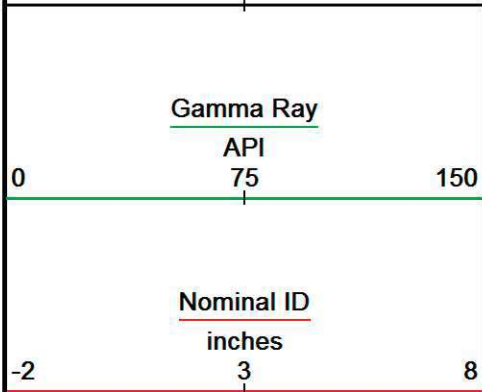
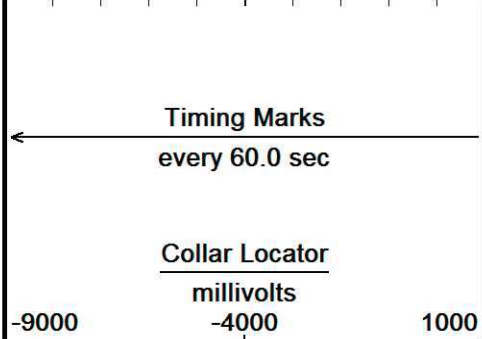
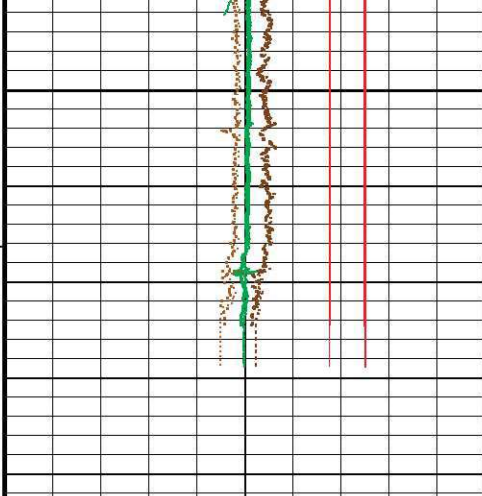
Replay Scale 1:240

6778

6800



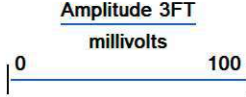
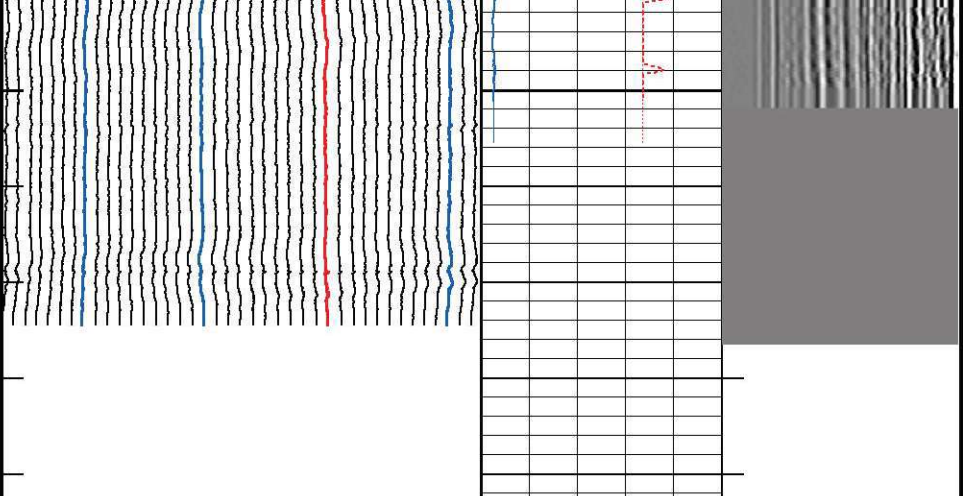




7050

7090

Depth in Feet



Replay Scale 1:240

↑ REPEAT PASS MAIN PASS ↑

SHOP AND FIELD CALIBRATIONS

C:\Logs\URS\Colorado\BonanzaCreek\Latham 21-24-14 HNC\Logging\Latham 21-24-14 HNC_MSC-CBT_MainPass.dta

UGR Field survey cal UGR-JD 312

Field calibration on 00-JAN-1988 00:00

Gamma Ray Field survey calibration

Tool Type: UGR-JD Serial No: 312
 Calibrator No:

Background	Calibrator	Standard	Units
0.0	490.0	140.0	CPS

Delta Counts Per Sec: 490.0 CPS/API = 3.500

CBT Field calibration CBT-AA 101

Field calibration on 09-OCT-2019 08:56

Cement Bond Tool Amplitude Field calibration

Tool Type CBT-AA Serial No 101
 Free Pipe Depth

Sensor	Description	Standard(mV)	Measured(mV)
AMP 3 FT	100 % Bond	3.60	31.43
	Free Pipe	72.00	755.81
AMP 5 FT	100 % Bond	0.40	7.15
	Free Pipe	48.00	721.43

CBT Constants CBT-AA 101

Last Edited on 09-OCT-2019 20:11

Min Ampl 100% Bond	3.64 MV
Max Ampl 0% Bond	71.77 MV
Cement Cmpr Strength	1500 PSI
Casing Size	5.50 IN
Casing Weight	20.0 LB/F
Casing Velocity	56.50 US/F
DT Fluid	200.0 US/F
Maximum Attenuation	12.00 DB/F
3' TT Correction	0.0 US
Cement Weight	0.00 LB/G

MSC-CB 160

Field calibration on 08-OCT-2019 11:38

Field calibration

Tool Type MSC-CB Tool s/N 160 Cal. Ring S/N

Standard [IN]

Span 1 Span 2 Span 3 Span 4
 4.00 to 4.75 4.75 to 5.50 5.50 to 6.25 6.25 to 7.00

Arm #	4.00 (Bits)	Span 1	Span 2	Span 3 (Cnts/IN)	Span 4	Average
1	10835	22090.67	20880.00	21034.67	21445.33	21362.67
2	12066	21890.67	20736.00	20962.67	21653.33	21310.67
3	14069	21381.33	19954.67	20757.33	21456.00	20887.33
4	13403	21298.67	20464.00	20746.67	21605.33	21028.67
5	12874	22114.67	21045.33	21114.67	21629.33	21476.00
6	14299	21642.67	20805.33	20970.67	21725.33	21286.00
7	11987	22557.33	21360.00	21474.67	22133.33	21881.33
8	10540	22234.67	21600.00	21778.67	22394.67	22002.00
9	10908	22165.33	21538.67	21661.33	22413.33	21944.67
10	9282	22389.33	21960.00	22037.33	22474.67	22215.33
11	10730	21056.00	20397.33	20410.67	20949.33	20703.33
12	9771	22130.67	21685.33	21333.33	22376.00	21881.33
13	13367	21173.33	20509.33	20560.00	21272.00	20878.67
14	10586	21986.67	21525.33	21573.33	22194.67	21820.00
15	10359	22362.67	21616.00	21544.00	22013.33	21884.00
16	12314	21861.33	21554.67	21725.33	22616.00	21939.33
17	13797	21874.67	20512.00	20733.33	21200.00	21080.00
18	12543	21189.33	20733.33	20978.67	21538.67	21110.00
19	12142	22077.33	21224.00	21370.67	21917.33	21647.33
20	11900	21360.00	20621.33	20880.00	21453.33	21078.67
21	3043	19210.67	23165.33	30754.67	25216.00	24586.67
22	14237	21218.67	20458.67	20845.33	21565.33	21022.00
23	14094	21394.67	20936.00	20872.00	21562.67	21191.33
24	11893	21816.00	21266.67	21514.67	22058.67	21664.00
25	14240	21818.67	20285.33	20693.33	21557.33	21088.67
26	13898	21578.67	20680.00	21106.67	22117.33	21370.67
27	13372	22192.00	21101.33	21642.67	22432.00	21842.00
28	11376	21616.00	20757.33	21162.67	21898.67	21358.67
29	10365	22722.67	21320.00	21637.33	22432.00	22028.00
30	13578	21672.00	20677.33	21122.67	21925.33	21349.33
31	10076	22597.33	21472.00	21802.67	22426.67	22074.67
32	12138	21672.00	20794.67	21349.33	22130.67	21486.67
33	13365	22088.00	20626.67	20829.33	21624.00	21292.00
34	12362	21245.33	20309.33	20808.00	21653.33	21004.00
35	13444	21696.00	20498.67	21245.33	22016.00	21364.00
36	9323	22093.33	21138.67	21616.00	22290.67	21784.67
37	14808	21656.00	20352.00	20786.67	21880.00	21168.67
38	13343	21552.00	20709.33	21186.67	22000.00	21362.00
39	11365	22661.33	21584.00	21877.33	22328.00	22112.67
40	13844	21416.00	20482.67	21056.00	21898.67	21213.33

Deviation Calibration

-g +g g/my

X	-3415.3	mv	3415.3	mv	0.000146	G
Y	-3415.3	mv	3415.3	mv	0.000146	G
Z	-2500.8	mv	2500.8	mv	0.000200	G

AFTER SURVEY CHECKS

C:\Logs\URS\Colorado\BonanzaCreek\Latham 21-24-14 HNC\Logging\Latham 21-24-14 HNC_MSC-CBT_aftercal.dta

UGR After Survey Cal UGR-JD 312

After Calibration on 00-JAN-1988 00:00

Gamma Ray After Survey Calibration

Tool Type: UGR-JD Serial No: 312
 Calibrator No:

Background	Calibrator	Standard	Units
0.0	140.0	140.0	CPS

Delta Counts Per Sec: 140.0 CPS/API = 1.000

MSC-CB 160

After Calibration on 09-OCT-2019 18:56

After Calibration

Tool Type MSC-CB Tool S/N 160 Cal. Ring S/N

After - Field (IN)

Radius	2.00	2.38	2.75	3.13	3.50
1	0.01	0.02	0.02	0.01	0.01
2	0.01	0.01	0.01	0.01	0.01
3	0.02	0.02	0.03	0.02	0.02
4	0.01	0.01	0.01	0.01	0.01
5	0.02	0.02	0.02	0.01	0.01
6	0.01	0.01	0.01	0.01	0.01
7	0.02	0.02	0.02	0.01	0.01
8	0.01	0.01	0.01	0.01	0.01
9	0.01	0.02	0.01	0.01	0.01
10	0.01	0.01	0.01	0.01	0.00
11	0.01	0.01	0.01	0.01	0.00
12	0.01	0.01	0.01	0.00	-0.00
13	0.01	0.01	0.01	0.00	-0.00
14	0.01	0.01	0.00	0.00	-0.00
15	0.01	0.01	0.00	-0.00	-0.01
16	0.00	0.01	-0.00	-0.00	-0.01
17	0.00	-0.00	-0.00	-0.01	-0.01
18	-0.00	-0.00	-0.01	-0.01	-0.01
19	-0.00	-0.01	-0.01	-0.01	-0.02
20	-0.00	-0.00	-0.01	-0.01	-0.01
21	-0.00	-0.00	-0.01	-0.00	0.00
22	-0.00	-0.01	-0.01	-0.01	-0.02
23	-0.01	-0.01	-0.02	-0.02	-0.02

24	-0.01	-0.01	-0.01	-0.01	-0.02
25	-0.01	-0.01	-0.01	-0.02	-0.02
26	-0.01	-0.01	-0.01	-0.01	-0.02
27	-0.01	-0.01	-0.01	-0.02	-0.02
28	-0.01	-0.00	-0.01	-0.01	-0.01
29	-0.01	-0.01	-0.01	-0.01	-0.02
30	-0.00	-0.00	-0.01	-0.01	-0.01
31	-0.00	-0.00	-0.00	-0.01	-0.01
32	-0.00	-0.00	-0.00	-0.01	-0.01
33	-0.00	-0.00	-0.00	-0.01	-0.01
34	0.00	-0.00	0.00	-0.00	-0.00
35	0.00	0.00	0.01	0.00	-0.00
36	0.00	0.00	0.00	0.00	-0.00
37	0.01	0.01	0.01	0.00	0.00
38	0.00	0.00	0.00	0.00	0.00
39	0.01	0.01	0.01	0.01	0.00
40	-0.02	-0.02	-0.02	0.01	0.00

Deviation calibration

	-g	+g	g/mv	
X	-3415.3 mv	3415.3 mv	0.000146	G
Y	-3415.3 mv	3415.3 mv	0.000146	G
Z	-2500.8 mv	2500.8 mv	0.000200	G

DOWNHOLE EQUIPMENT

C:\Logs\URS\Colorado\BonanzaCreek\Latham 21-24-14 HNC\Logging\Latham 21-24-14 HNC_MSC-CBT_MainPass.dta

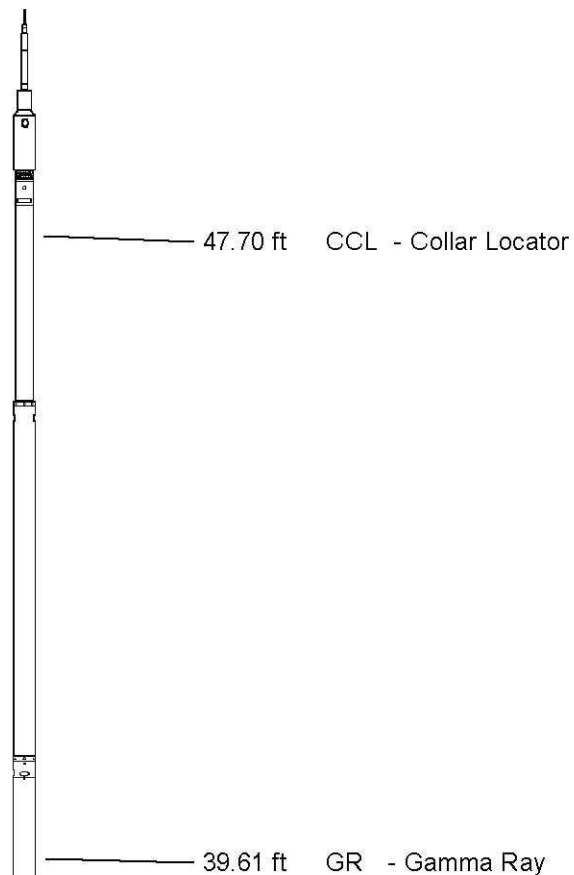
Mono-Cablehead
MCH-AA 0 LG: 1.03 ft WT: 2.2 lb OD: 1.457 in

Crossover 1-pin to 55-pin for WCC-D
XOV-WC 120 LG: 1.05 ft WT: 15.4 lb OD: 3.386 in

Casing Collar Locator, 55 pin
CCL-WA 198 LG: 3.01 ft WT: 19.8 lb OD: 2.756 in

Communication Cartridge 55pin 3-3/8in
WCC-DA 141 LG: 4.60 ft WT: 63.9 lb OD: 3.386 in

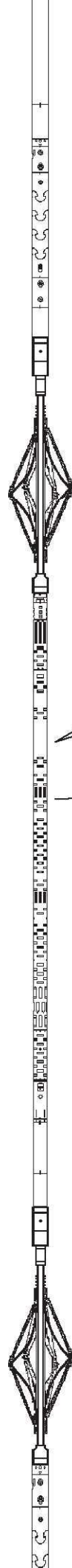
Gamma Ray
UGR-JD 312 LG: 4.60 ft WT: 81.6 lb OD: 3.386 in



Flexible Joint, 55 Pin
FTP-AA 159 LG: 3.44 ft WT: 77.2 lb OD: 3.346 in

55 pin Roller Centralizer
CEN-XA 185 LG: 4.49 ft WT: 86.0 lb OD: 3.386 in

Cement Bond Tool
CBT-AA 101 LG: 10.75 ft WT: 163.1 lb OD: 3.386 in



25.82 ft AM3F - Amplitude 3FT

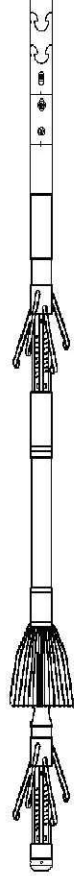
25.82 ft TM3 - Travel Time 3FT

24.82 ft XY5 - XY Signature 5FT

55 pin Roller Centralizer
CEN-XA 225 LG: 4.49 ft WT: 86.0 lb OD: 3.386 in

Flexible Joint, URS, 55 Pin
FTP-FA 122 LG: 4.35 ft WT: 90.4 lb OD: 3.386 in

Multi Sensor Caliper ITB, 40 Arm
 MSC-CB 160 LG: 8.64 ft WT: 154.3 lb OD: 3.622 in



Bull Plug, 55 pin, w/ITB termination
 BUL-DA 0 LG: 0.16 ft WT: 4.4 lb OD: 3.386 in

Total Length: 50.62 ft Weight: 844.4 lb

- 2.16 ft NOMO - Nominal OD
- 2.16 ft NOMI - Nominal ID
- 2.16 ft IDMNEC - Min ID EC
- 2.16 ft IDAVEC - Avg ID EC
- 2.16 ft IDMXEC - Max ID EC
- 2.16 ft ID - Inner Diameter

Tool Zero (0.00ft from bottom)

All measurements relative to tool zero.

COMPANY	BONANZA CREEK ENERGY				
WELL	LATHAM 21-24-14 HNC				
FIELD	WATTENBURG				
PROVINCE/COUNTY	WELD				
COUNTRY/STATE	U.S.A./COLORADO				
Elevation Kelly Bushing	4621	feet	Bottom Log Interval	7073.40	feet
Elevation Drill Floor		feet	Depth Driller	12495.00	feet
Elevation Ground Level	4604	feet	Depth Logger	7073.40	feet



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