RELIANCE OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Ware SR 313-12
Field	Rulison
County	Garfield
State	Colorado

Company	TEP Rocky Mountain LLC		
Well	Ware SR 313-12		
Field	Rulison		
County	Garfield	State	Colorado

Location: API # : 05-045-23448

SEC 12 TWP 7S RGE 94W

Other Services

Permanent Datum	Ground Level	Elevation	7479'	Elevation K.B. 7503' D.F. 7502' G.L. 7479'
Log Measured From	Kelly Bushing	24 FT		
Drilling Measured From	Kelly Bushing			

Date	07-JAN-2018		
Run Number	One		
Depth Driller	9883 FT		
Depth Logger	9779 FT		
Bottom Logged Interval	9774 FT		
Top Log Interval	Surface		
Open Hole Size	8.750"		
Type Fluid	Fresh Water		
Density / Viscosity	8.34 lb/gal		
Max. Recorded Temp.	244°F		
Estimated Cement Top	See Log		
Time Well Ready	ROA		
Time Logger on Bottom	19:00		
Equipment Number	HD-0359		
Location	Grand Junction, CO		
Recorded By	Z. Fisher		
Witnessed By	C. Applegate		

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

Casing Record	Size (in)	Wgt (lbs/Ft)	Grade	Top	Bottom
Surface Casing	9 5/8	32.3	H-40	Surface	1140 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	9841 FT
Intermediate #2					
Liner					

<<< Fold Here >>>

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 ran as per customer request
Depth referenced to Kelly Bushing at 24 FT
Marker Joint logged at 6145-6167 FT
Log ran from 9779 FT to Surface
Recorded with 0 PSI Surface Induced Pressure

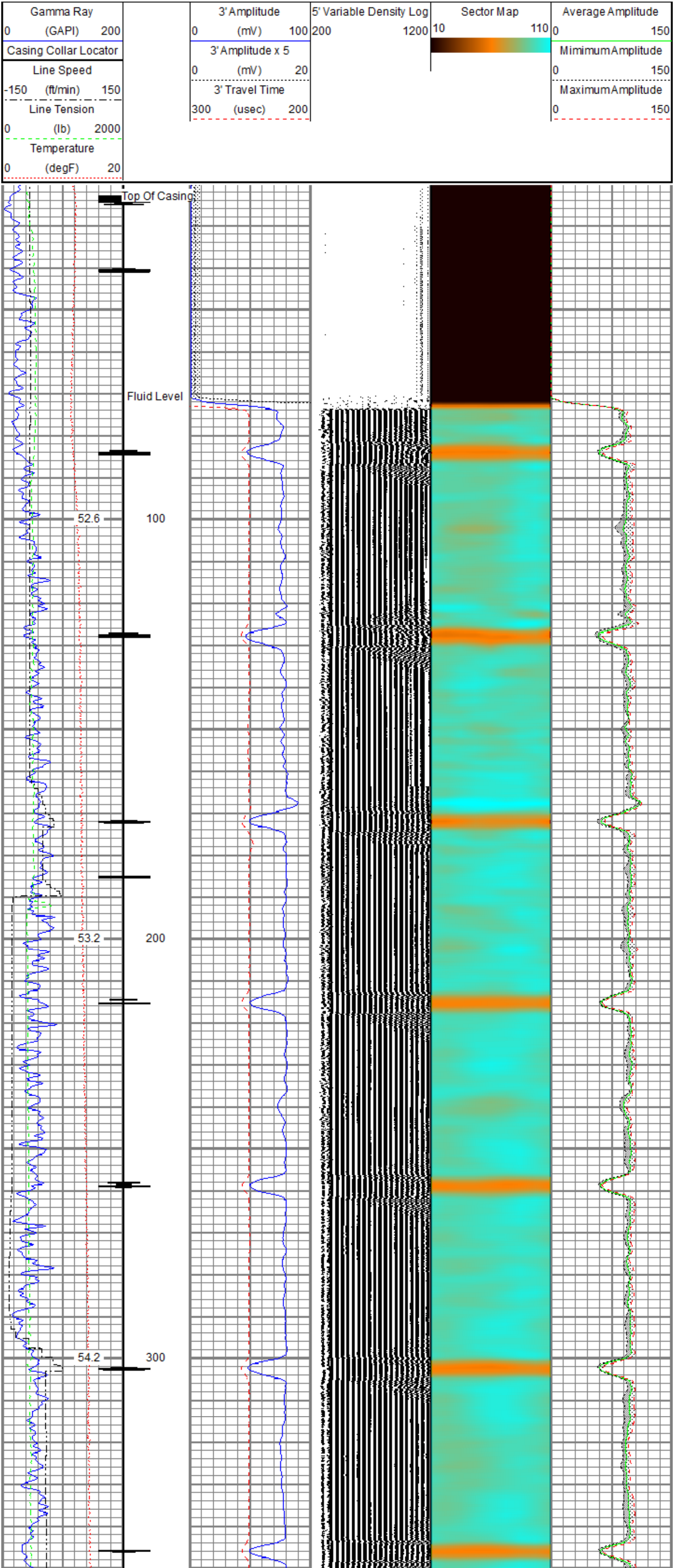
Thank You for choosing Reliance Oilfield Services, LLC!!

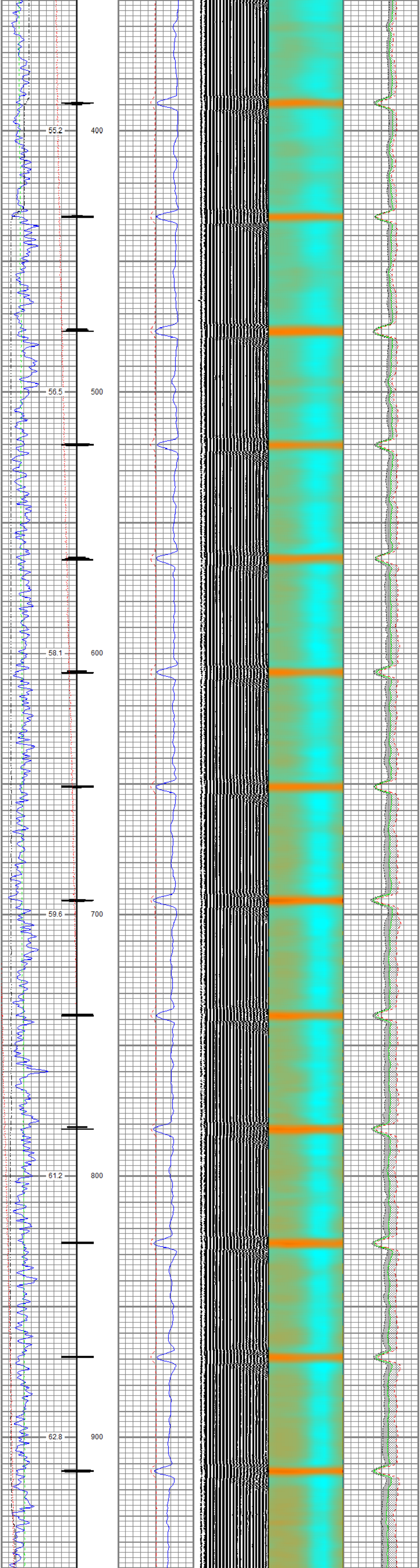
RELIANCE OILFIELD SERVICES

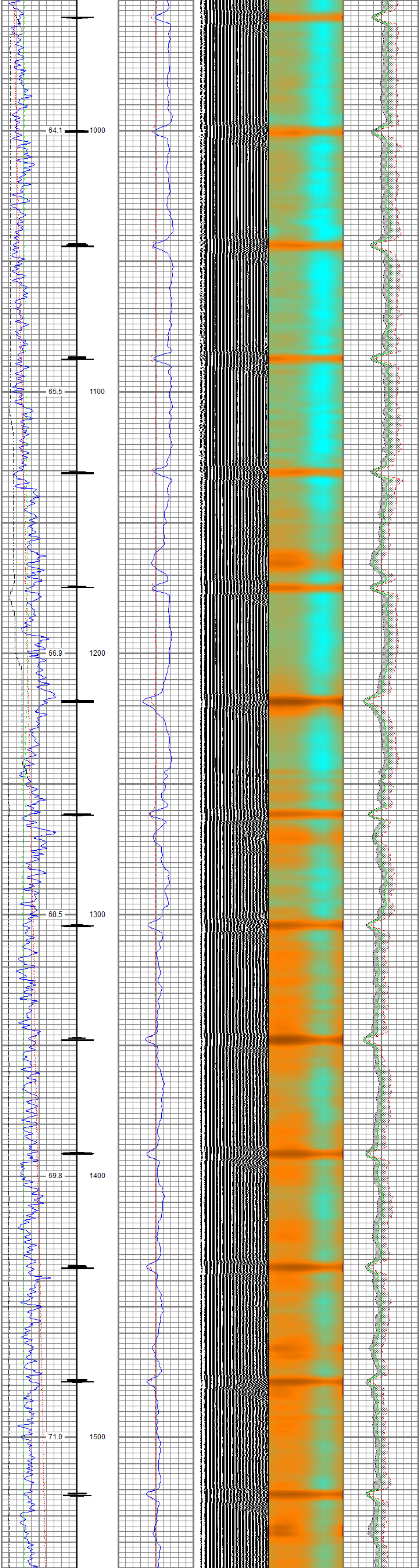
Main Pass

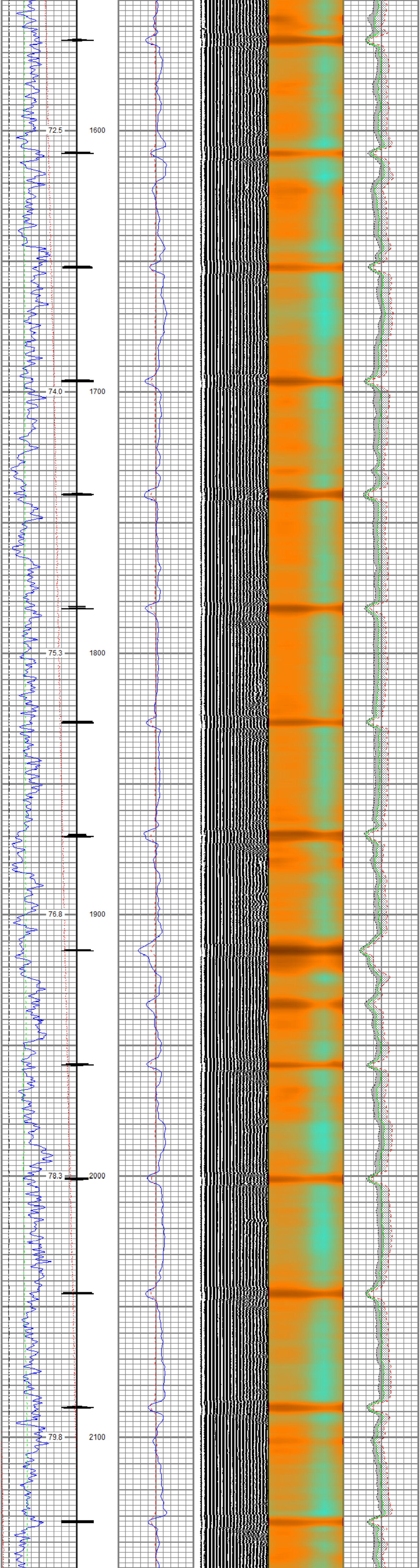
Recorded with 0 PSI Surface Induced Pressure

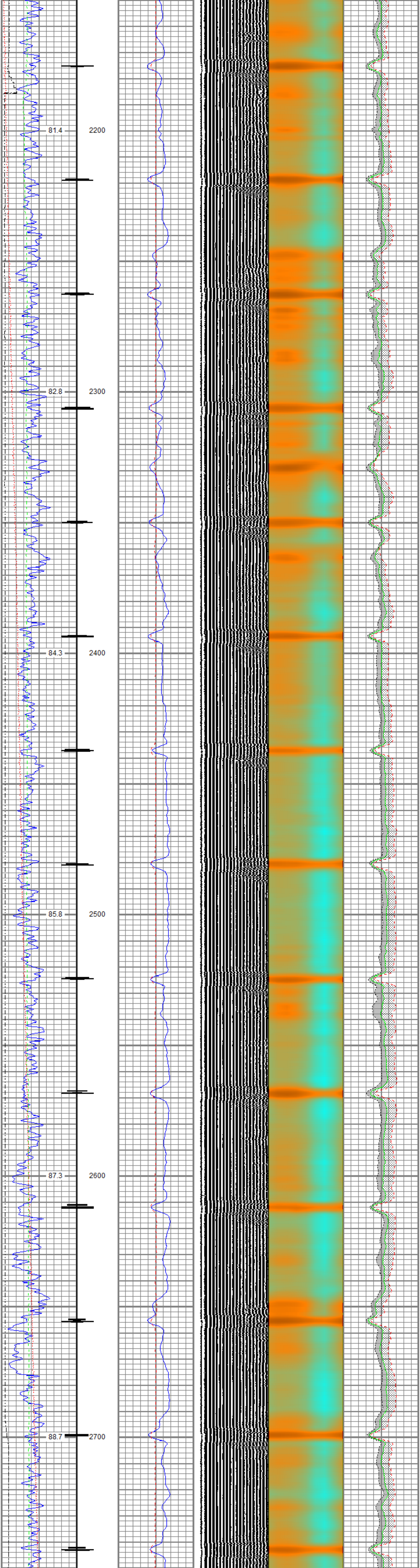
Database File	tep_ware sr 313-12_rbl_01-07-18\processed_tep_ware sr 313-12_rbl_01-07-18.db
Dataset Pathname	main.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Mon Jan 08 12:56:43 2018
Charted by	Depth in Feet scaled 1:240

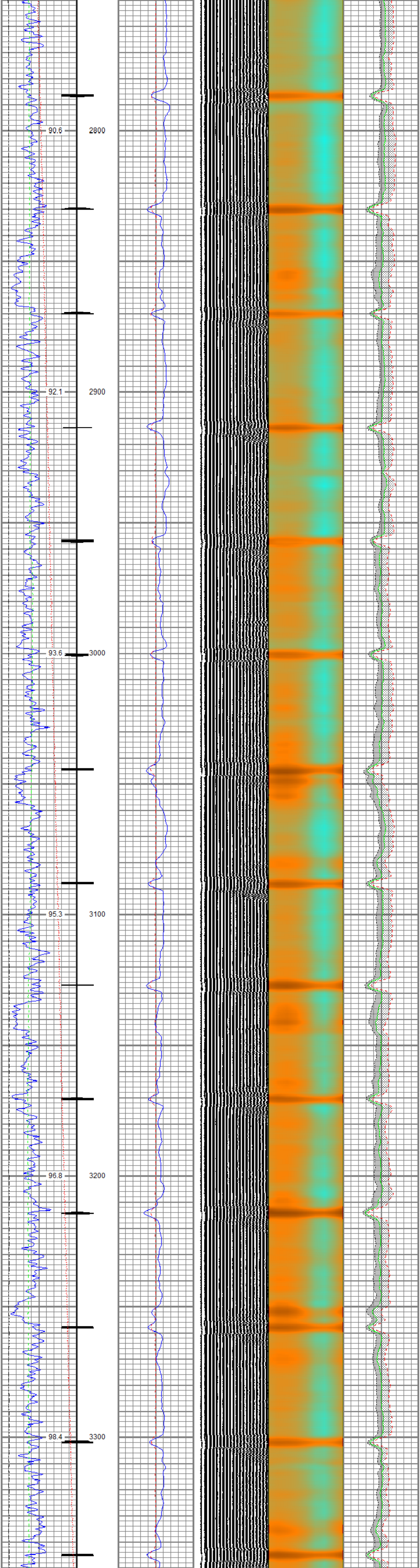


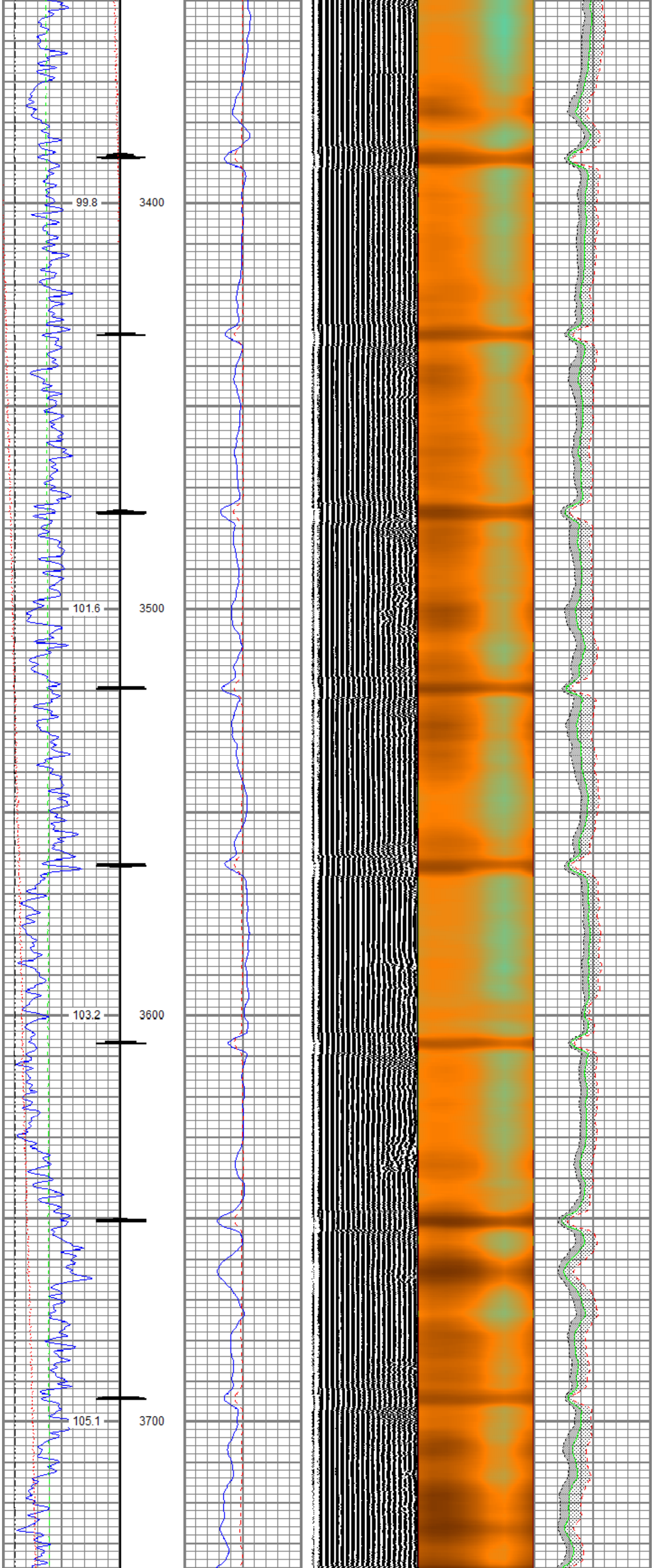


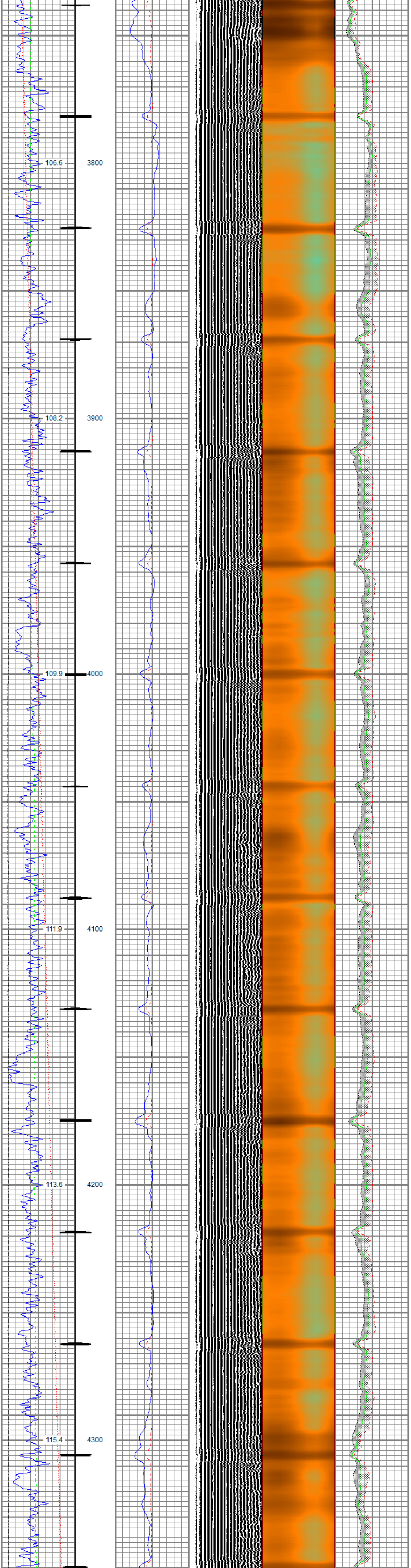


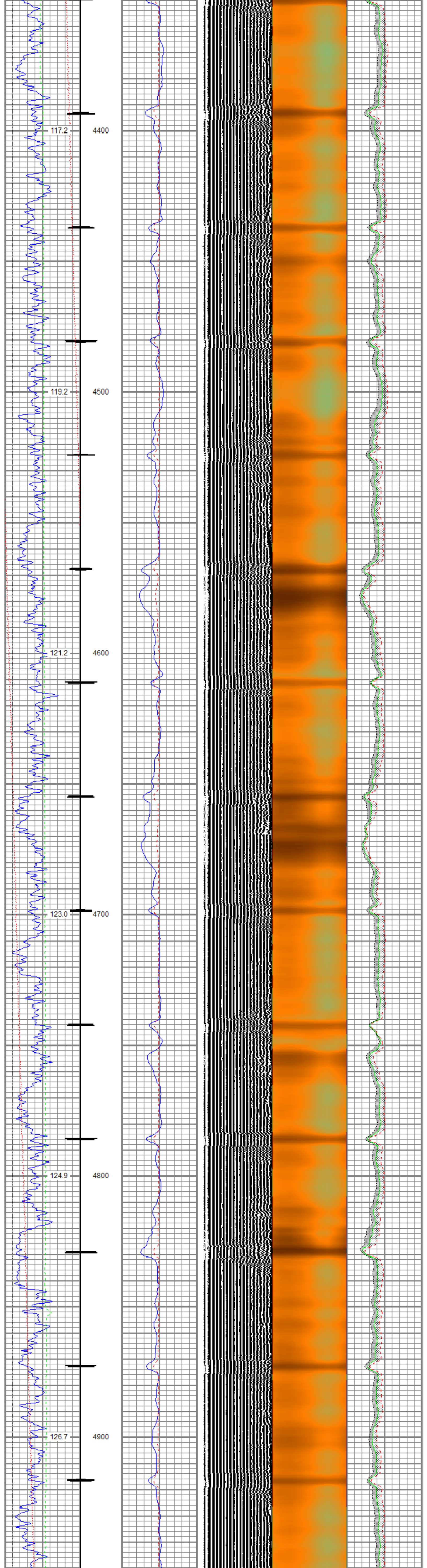


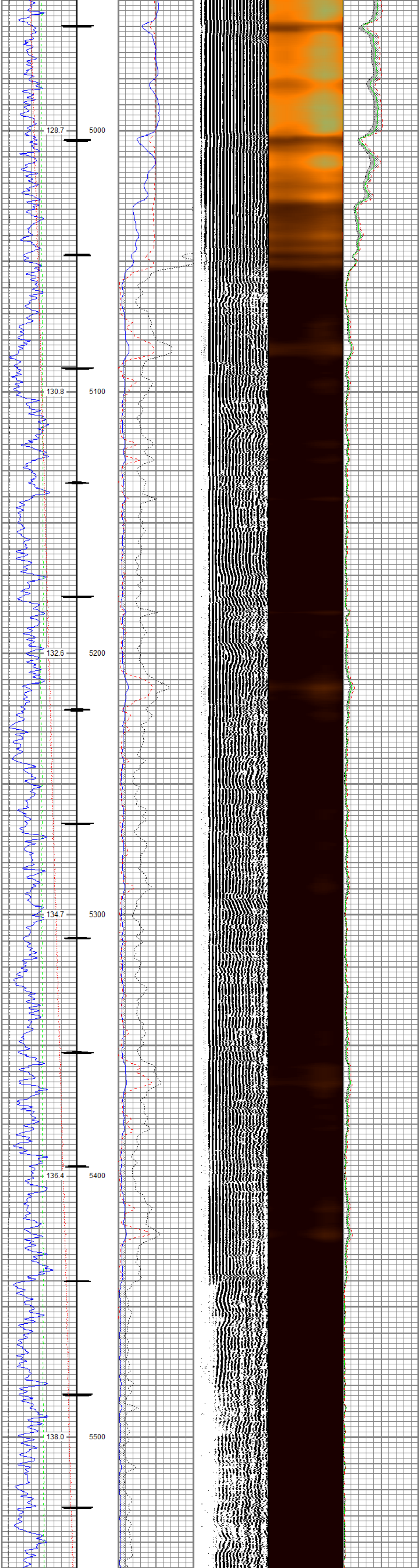


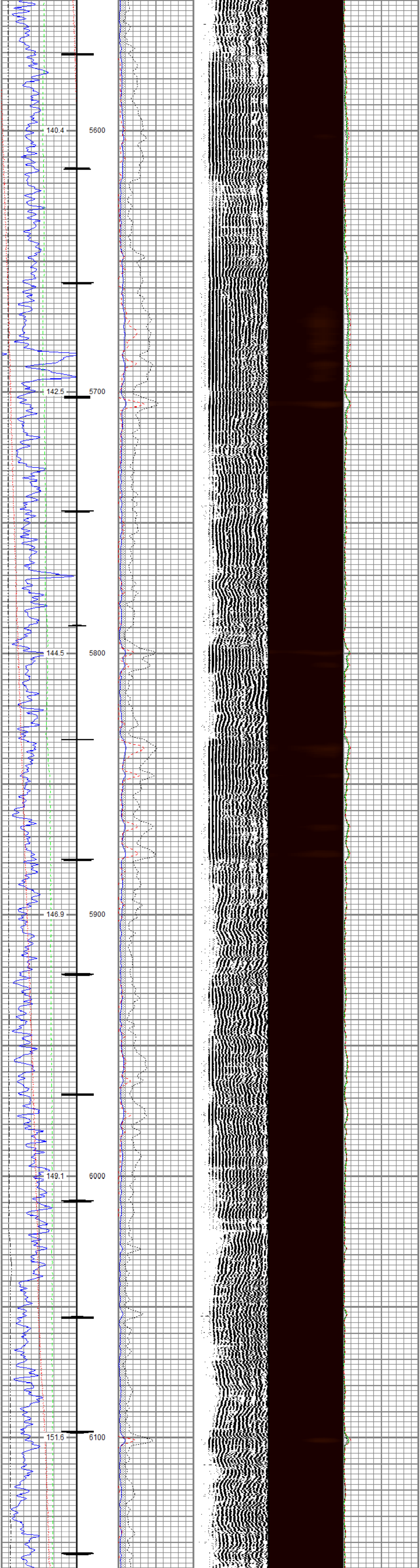


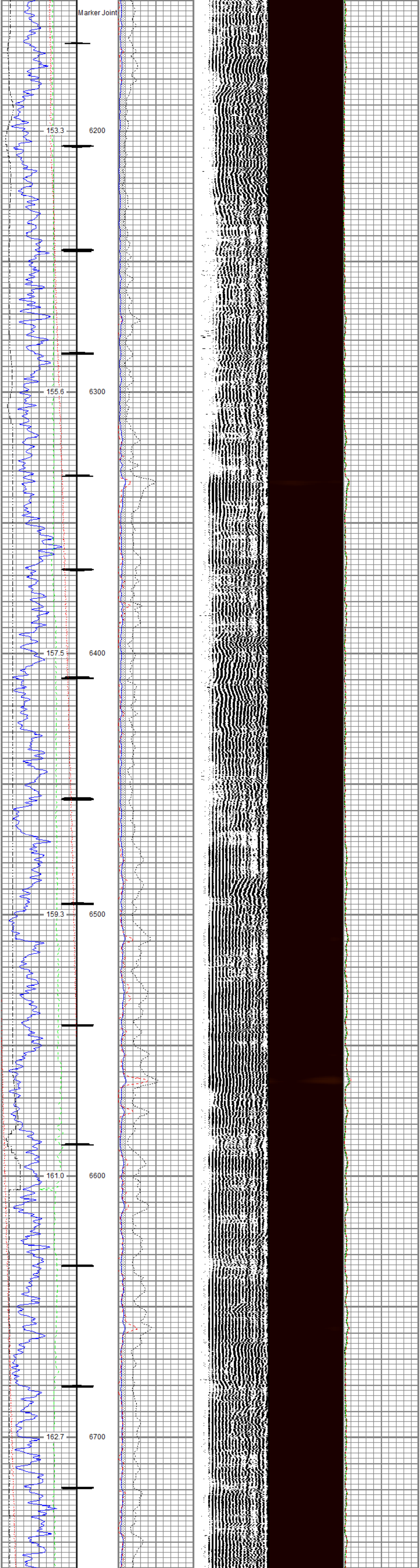


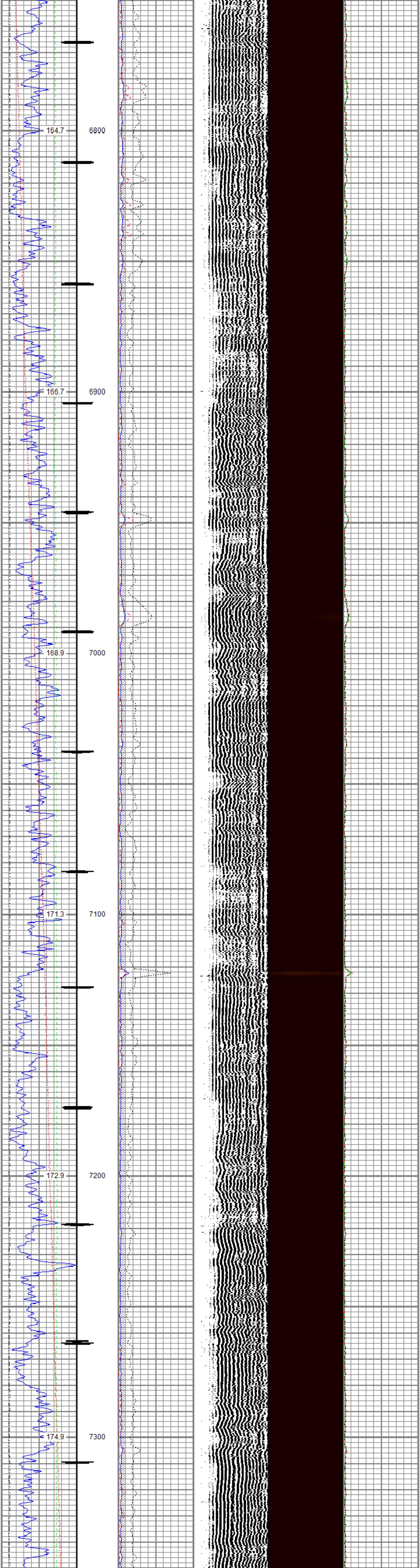

106.6
3800
108.2
3900
109.9
4000
111.9
4100
113.6
4200
115.4
4300

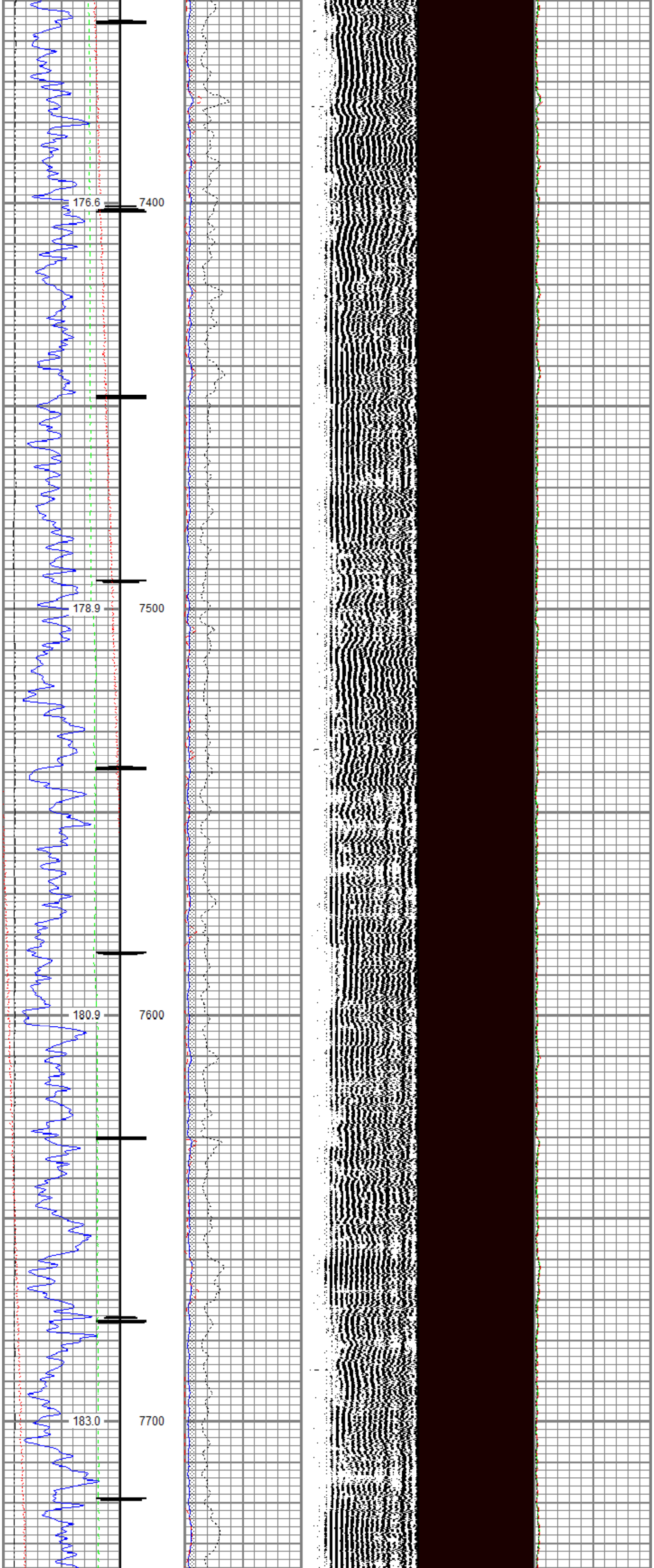

117.2
4400
119.2
4500
121.2
4600
123.0
4700
124.9
4800
126.7
4900

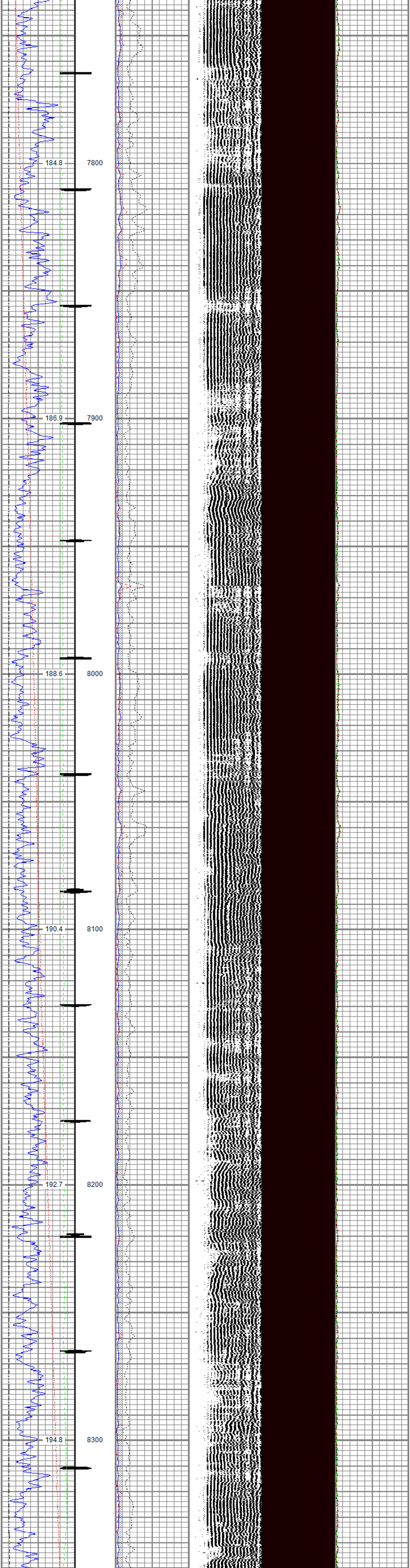

128.7
5000
130.8
5100
132.6
5200
134.7
5300
136.4
5400
138.0
5500

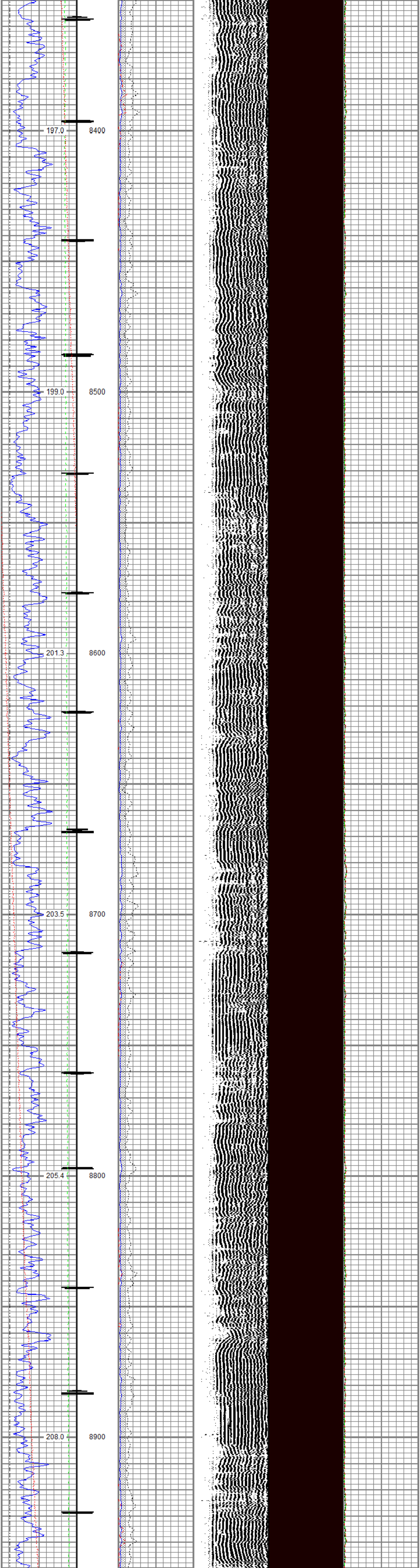

140.4
5600
142.5
5700
144.5
5800
146.9
5900
149.1
6000
151.6
6100

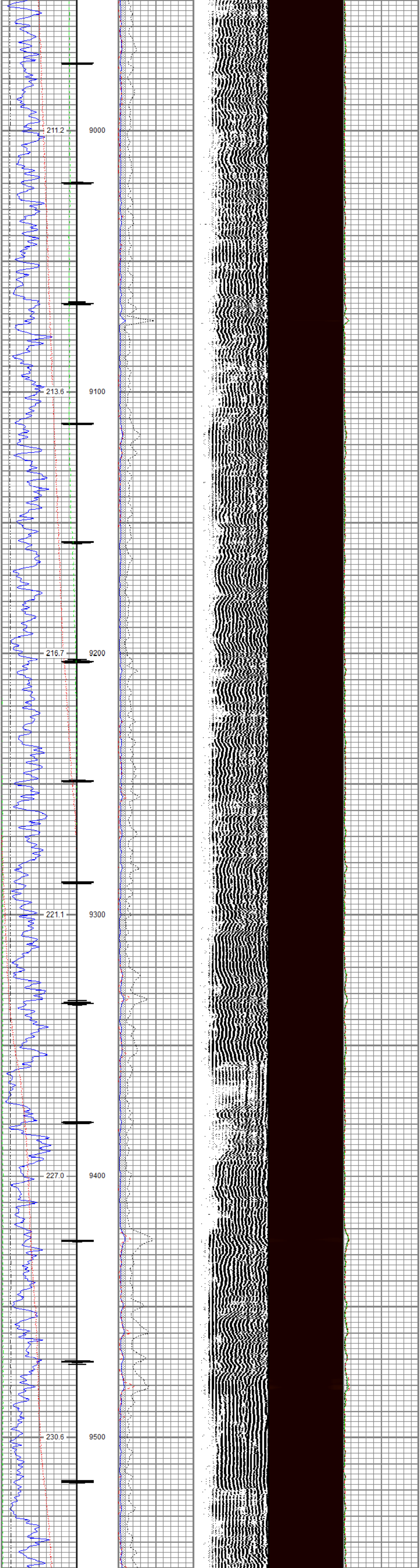

Marker Joint
153.3
6200
155.6
6300
157.5
6400
159.3
6500
161.0
6600
162.7
6700

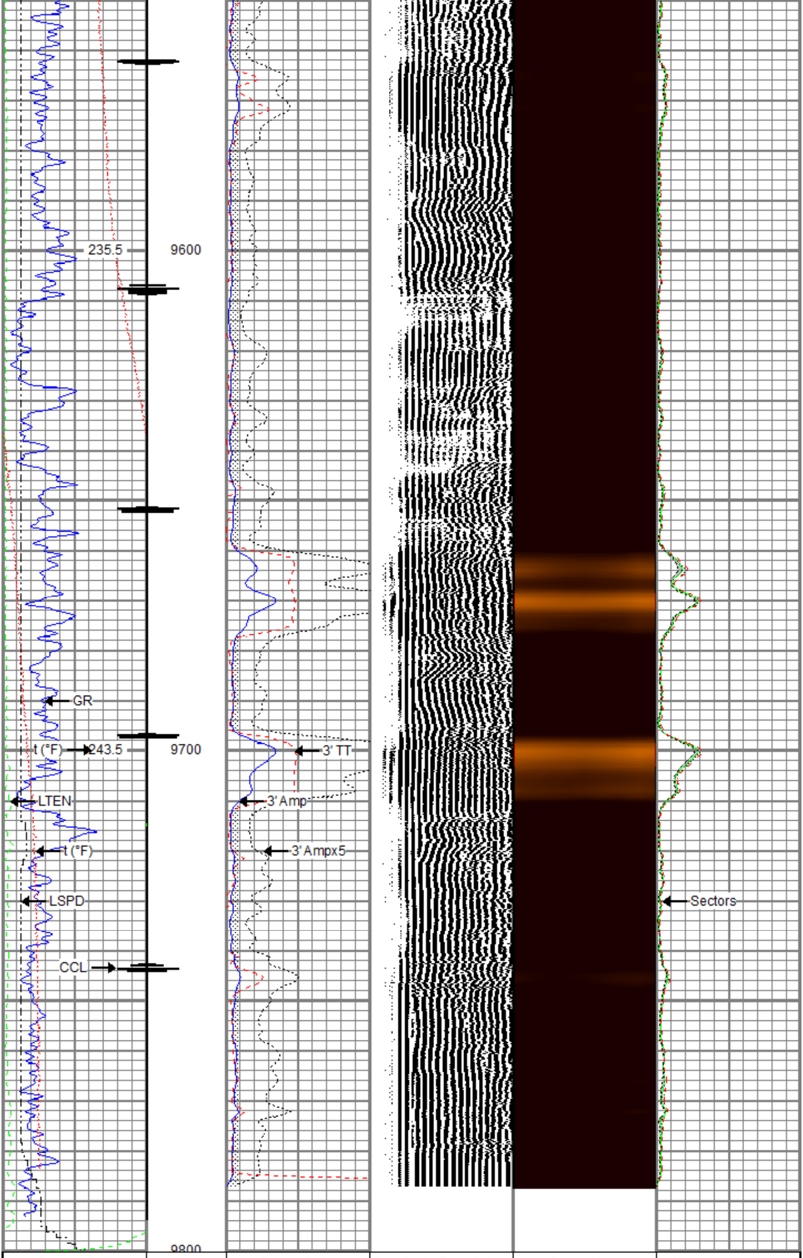

164.7
6800
166.7
6900
168.9
7000
171.3
7100
172.9
7200
174.9
7300


176.6
7400
178.9
7500
180.9
7600
183.0
7700









Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 1200	10 110	0 150
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 150
-150 (ft/min) 150	3' Travel Time			Maximum Amplitude
Line Tension	300 (usec) 200			0 150
0 (lb) 2000				
Temperature				
0 (degF) 20				

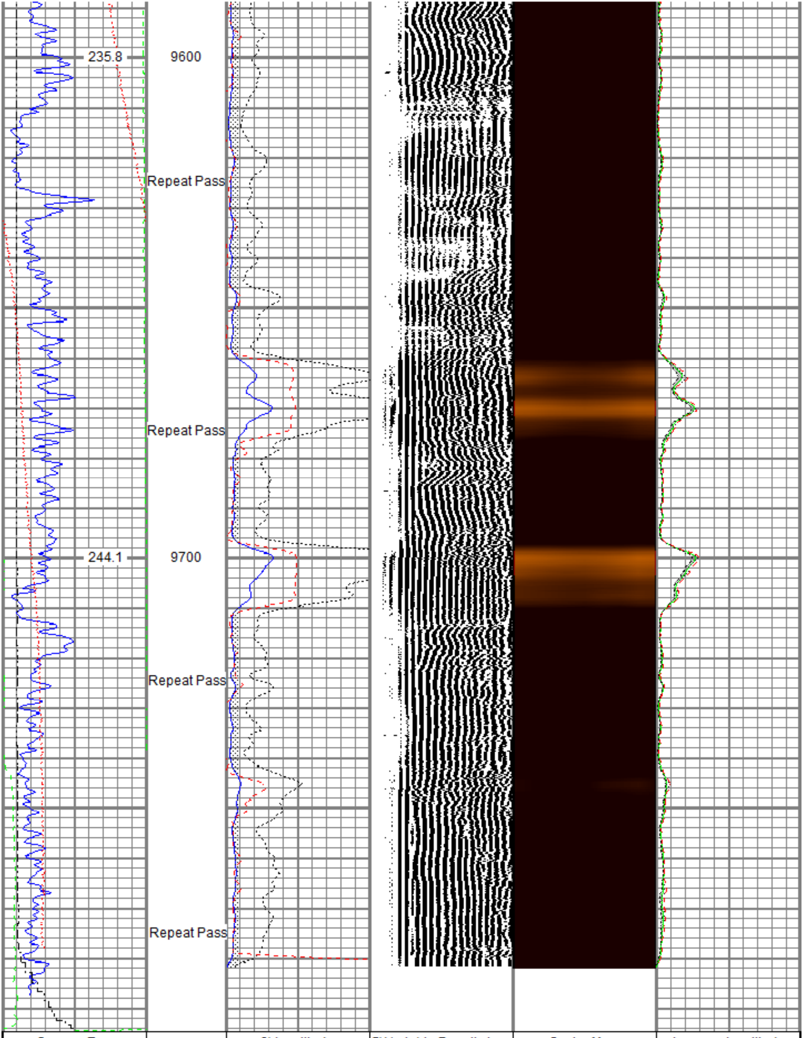
RELIANCE
OILFIELD SERVICES

Repeat Pass

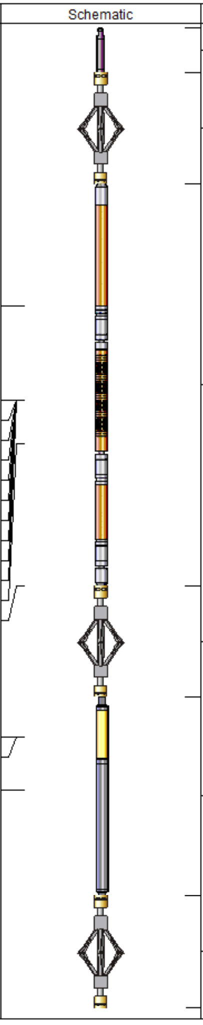
Recorded with 0 PSI Surface Induced Pressure

Database File	tep_ware sr 313-12_rbl_01-07-18\processed_tep_ware sr 313-12_rbl_01-07-18.db
Dataset Pathname	repeat.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Mon Jan 08 13:22:46 2018
Charted by	Depth in Feet scaled 1:240

Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 1200	10 110	0 150
Line Speed	3' Amplitude x 5			Mimimum Amplitude
-150 (ft/min) 150	0 (mV) 20			0 150
Line Tension	3' Travel Time			Maximum Amplitude
0 (lb) 2000	300 (usec) 200			0 150
Temperature				
0 (degF) 20				



Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 1200	10 110	0 150
Line Speed	3' Amplitude x 5			Mimimum Amplitude
-150 (ft/min) 150	0 (mV) 20			0 150
Line Tension	3' Travel Time			Maximum Amplitude
0 (lb) 2000	300 (usec) 200			0 150
Temperature				
0 (degF) 20				



Sensor	Offset (ft)
Temp	16.05
WVFS8	13.88
WVFS7	13.88
WVFS6	13.88
WVFS5	13.88
WVFS4	13.88
WVFS3	13.88
WVFS2	13.88
WVFS1	13.88
WVFCAL	13.88
WVF3FT	13.88
WVF5FT	12.88
HeadVolt	9.63
DCCL	6.18
CCL	6.18
GR	4.96

Description	Length (ft)	O.D. (in)	Weight (lb)
Titan_Electric_Cable_Heads-Titan_1-1 Electric Cable Head with 1" Fishing Neck	1/11.03	1.69	5.40
DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
Probe_RADII-C-P_RBT_2750 (FW1305-0 Probe 2-3/4" Sector Cement Bond Tool with Temperature Probe	99.19	2.75	105.00
DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
Probe_GR_CCL-P_CGR_2750_S (FW1 Probe 2-3/4" Digital CCL / Gamma Ray Combined	304.548)	2.75	55.00
DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00

Dataset:	processed_tep_ware sr 313-12_rbl_01-07-18.db: field/well/run1/main.1
Total length:	22.40 ft
Total weight:	261.40 lb
O.D.:	2.75 in

Calibration Report

Database File	c:\programdata\warrior\data\tep_ware sr 313-12_rbl_01-07-18\processed_tep_ware sr 313-12_rbl_01-07-18
Dataset Pathname	main.1
Dataset Creation	Mon Jan 08 12:56:43 2018

Gamma Ray Calibration Report

Serial Number:	FW1307-038	
Tool Model:	P_CGR_2750_S	
Performed:	Sat Feb 06 11:43:09 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.6	cps
Sensitivity:	0.6061	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1305-098	
Tool Model:	P_RBT_2750	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	442.974	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.003	0.846	0.800	81.196	94.758	1.053
CAL	0.722	0.722				
5'	-0.001	0.753	0.800	81.196	106.609	0.949
SUM						
S1	-0.008	0.778	0.000	100.000	127.230	1.078
S2	-0.004	0.819	0.000	100.000	121.414	0.532
S3	-0.005	0.880	0.000	100.000	113.038	0.563
S4	-0.005	0.970	0.000	100.000	102.588	0.465
S5	-0.006	0.995	0.000	100.000	99.955	0.563
S6	-0.005	0.924	0.000	100.000	107.706	0.518
S7	-0.007	0.830	0.000	100.000	119.435	0.875
S8	-0.006	0.775	0.000	100.000	128.074	0.759

Internal Reference Calibration, performed Tue Nov 07 10:59:54 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.722	0.722	1.000	0.000

Air Zero Calibration, performed Sun Jan 07 16:27:52 2018:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000

RELIANCE
OILFIELD SERVICES

Company	TEP Rocky Mountain LLC
Well	Ware SR 313-12
Field	Rulison
County	Garfield
State	Colorado