RELIANCE OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company TEP Rocky Mountain LLC
Well Youberg SR 41-12
Field Rulison
County Garfield State Colorado

Location: API # : 05-045-23294
1909' FNL & 2110' FEL SWNE
SEC 12 TWP 7S RGE 94W

Other Services
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			Elevation
Permanent Datum	Ground Level	Elevation 7254'	K.B. 7278'
Log Measured From	Kelly Bushing	24 FT	D.F. 7277'
Drilling Measured From	Kelly Bushing		G.L. 7254'

Company	TEP Rocky Mountain LLC
Well	Youberg SR 41-12
Field	Rulison
County	Garfield
State	Colorado

Date	06-NOV-2017		
Run Number	One		
Depth Driller	9883 FT		
Depth Logger	9776 FT		
Bottom Logged Interval	9776 FT		
Top Log Interval	Surface		
Open Hole Size	8.750"		
Type Fluid	Fresh Water		
Density / Viscosity	8.34 lb/gal		
Max. Recorded Temp.	242°F		
Estimated Cement Top	See Log		
Time Well Ready	ROA		
Time Logger on Bottom	10:05		
Equipment Number	HD-359		
Location	Grand Junction, CO		
Recorded By	A. Ellsworth		
Witnessed By	D. Welsh		

Borehole Record			Tubing Record			
Run Number	Bit	From	To	Size (in)	Weight (lb/ft)	From	To

Casing Record	Size (in)	Wgt (lb/ft)	Grade	Top	Bottom
Surface Casing	9 5/8	32.3	H-40	Surface	1225 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	9824 FT
Intermediate #2					
Liner					

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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 ran as per customer request
Depth referenced to Kelly Bushing at 24 FT
Marker Joint logged at 6344 FT - 6364 FT
Log ran from 9776 FT to Surface
Recorded with 0 PSI Surface Induced Pressure

Thank you for choosing Reliance Oilfield Services, LLC!!

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Main Pass

Recorded With 0 PSI Surface Induced Pressure

Database File	tep_youberg sr 41-12_rcbl_11-06-2017\tep_youberg sr 41-12_rbl_11-06-17.db
Dataset Pathname	Main.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Nov 07 12:06:55 2017
Charted by	Depth in Feet scaled 1:240

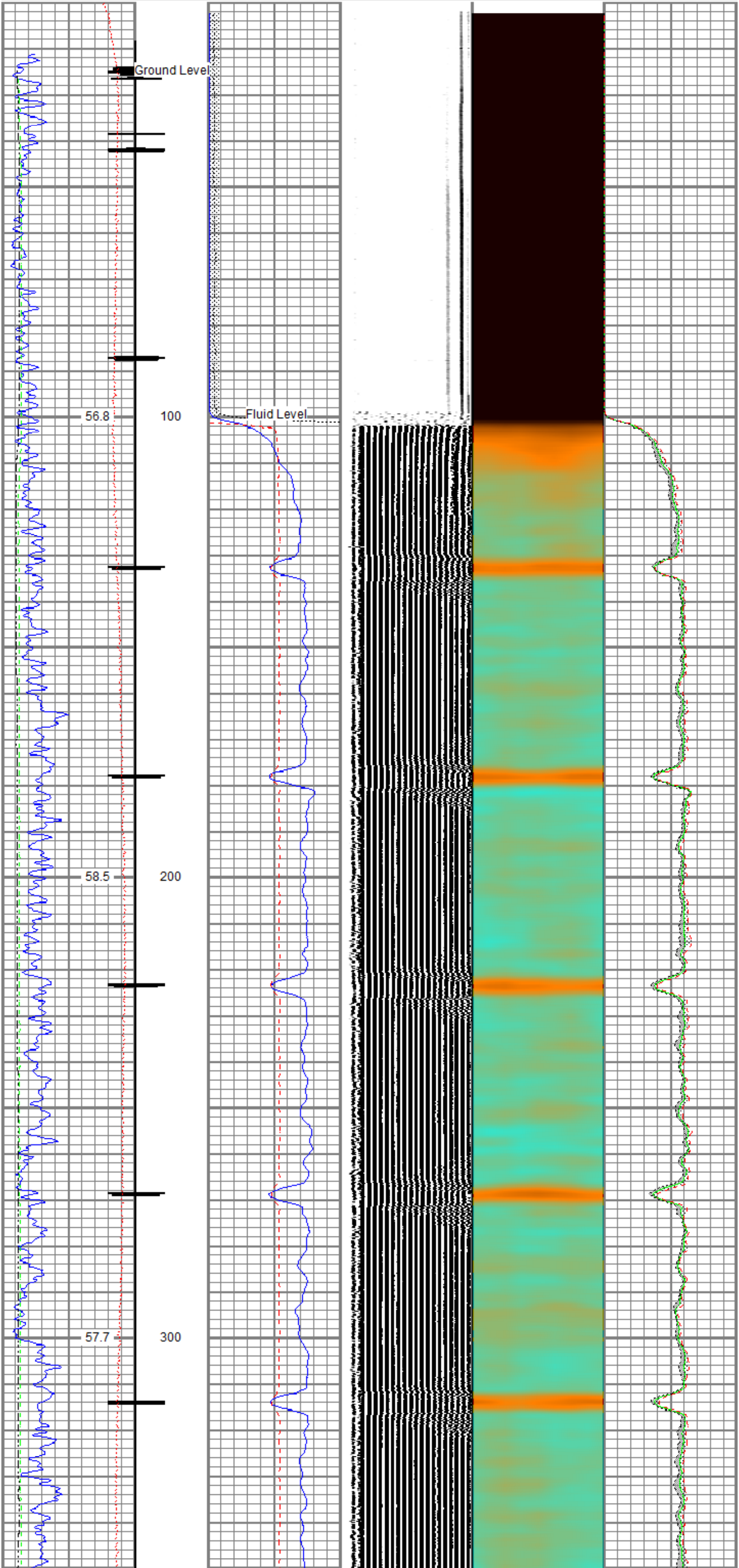
Gamma Ray
0 (GAPI) 200
Casing Collar Locator
Line Speed
-150 (ft/min) 150
Line Tension
0 (lb) 2000
Temperature
0 (degF) 20

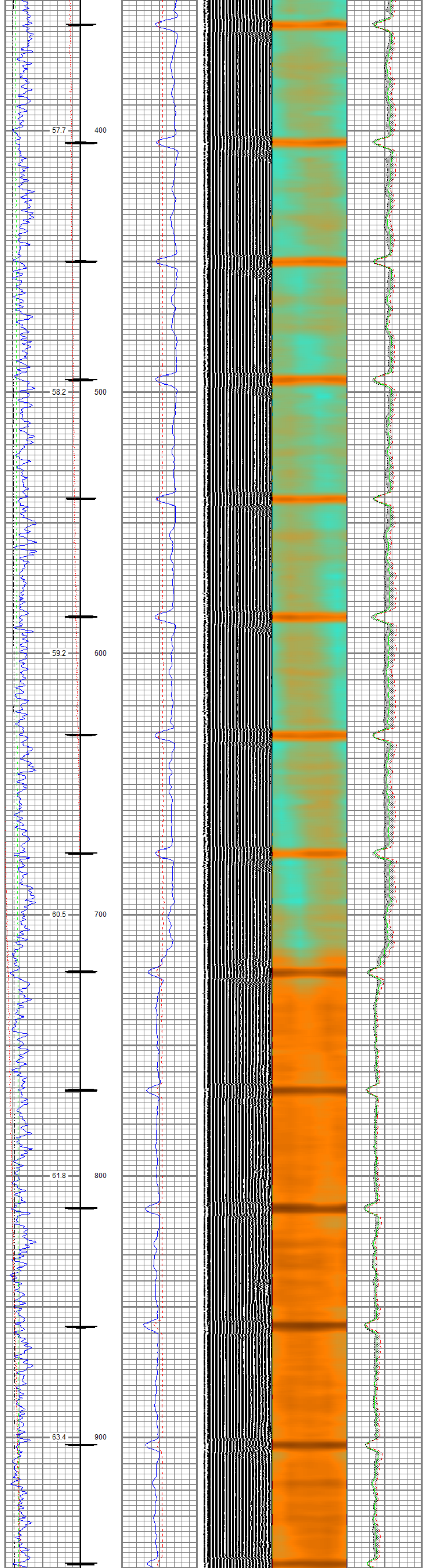
3' Amplitude
0 (mV) 100
3' Amplitude x 5
0 (mV) 20
3' Travel Time
300 (usec) 200

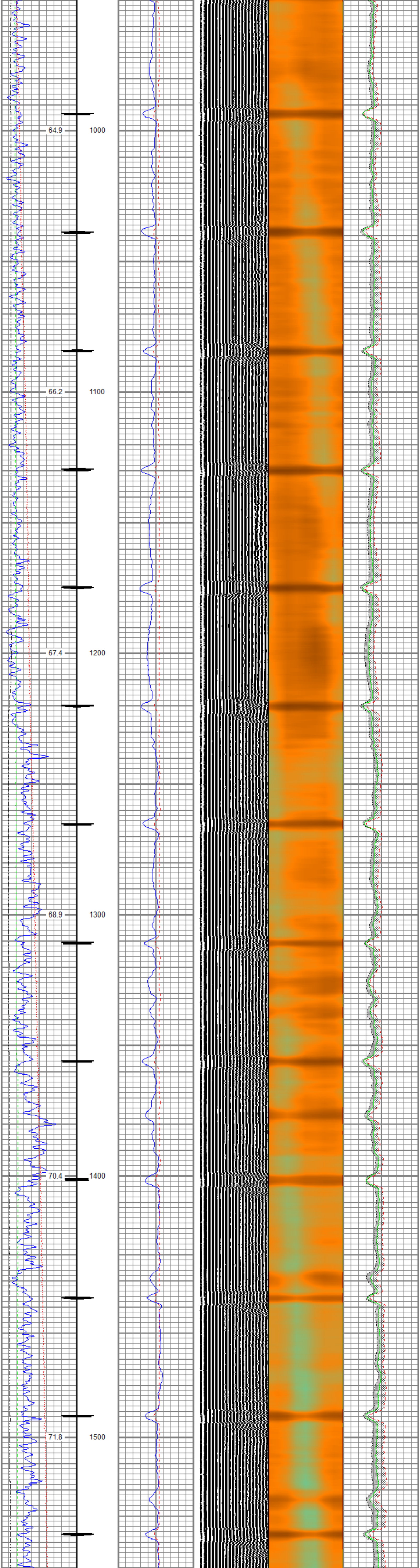
5' Variable Density Log
200 1200

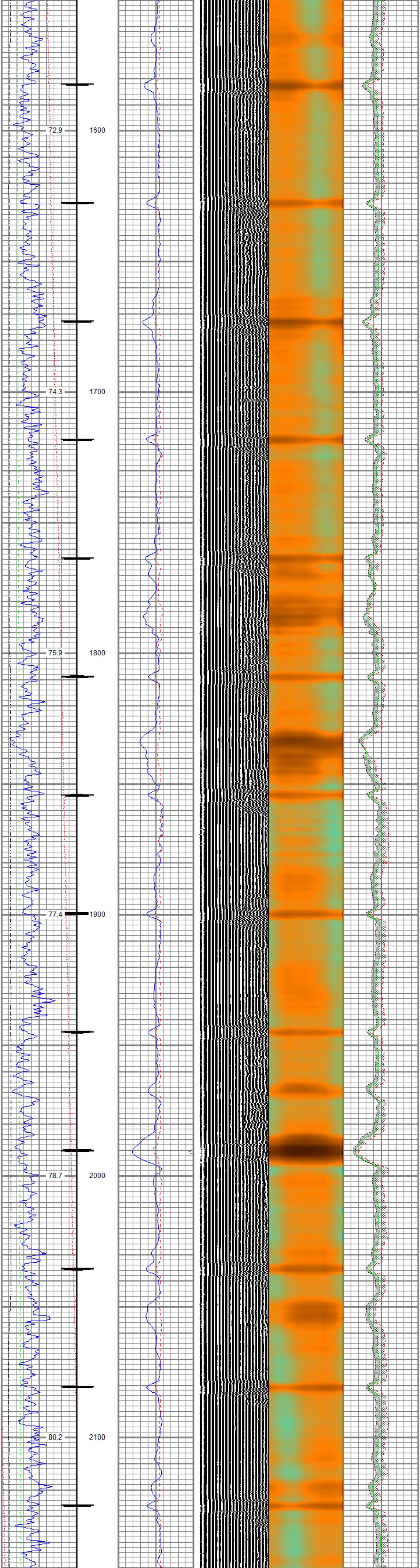
Sector Map
10 110

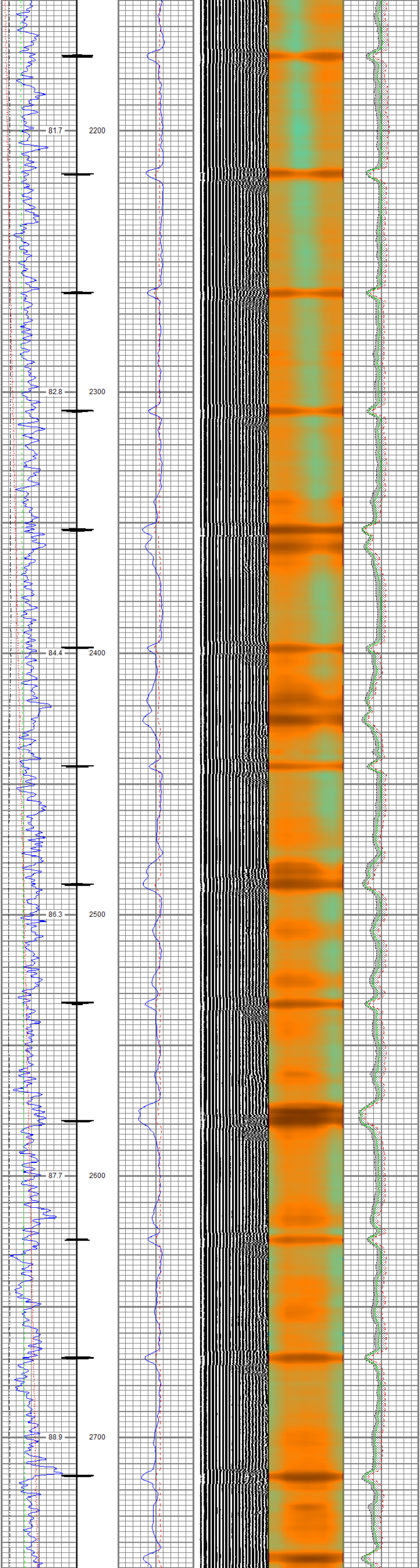
Average Amplitude
0 150
Mimimum Amplitude
0 150
Maximum Amplitude
0 150

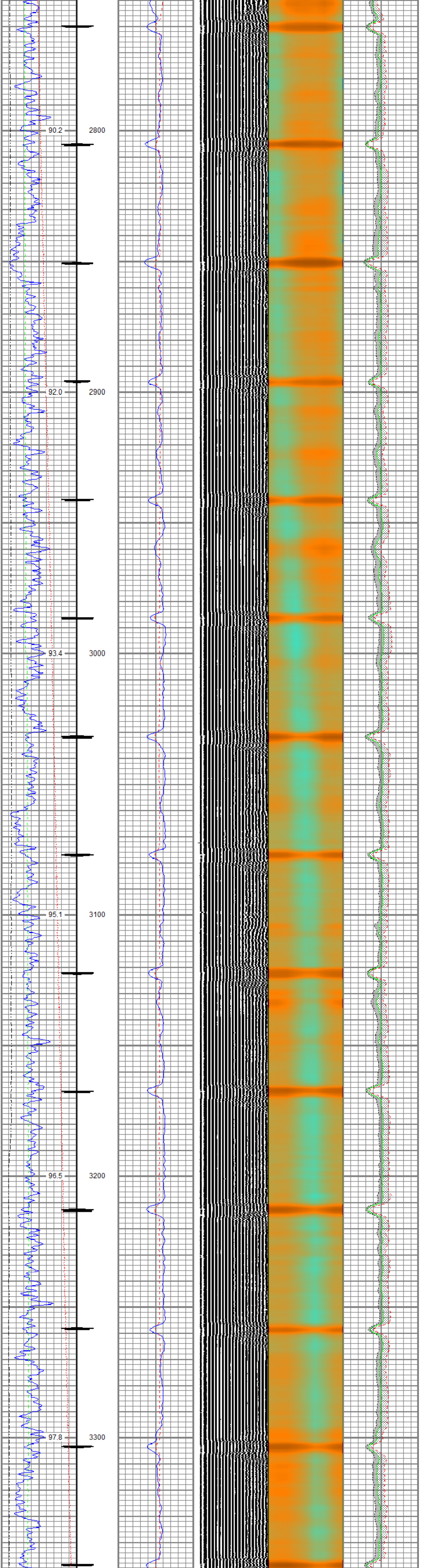


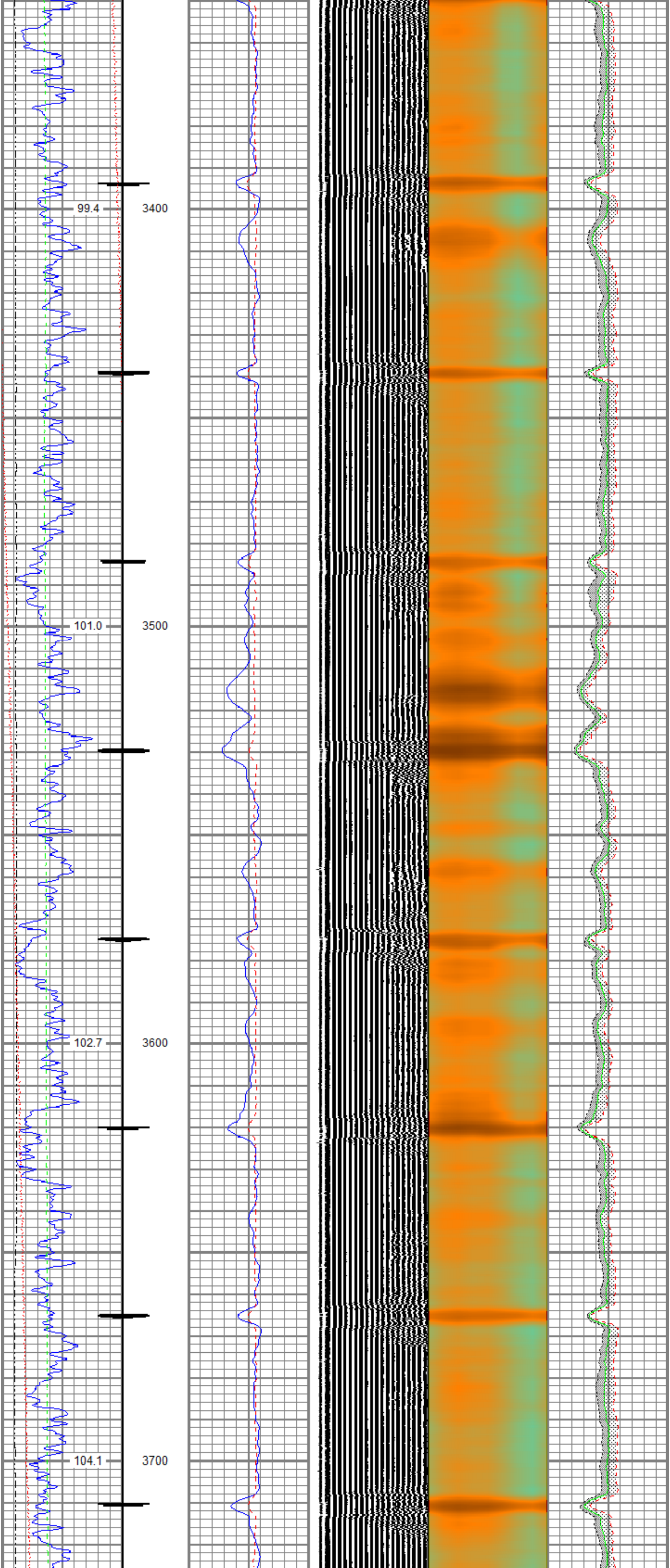


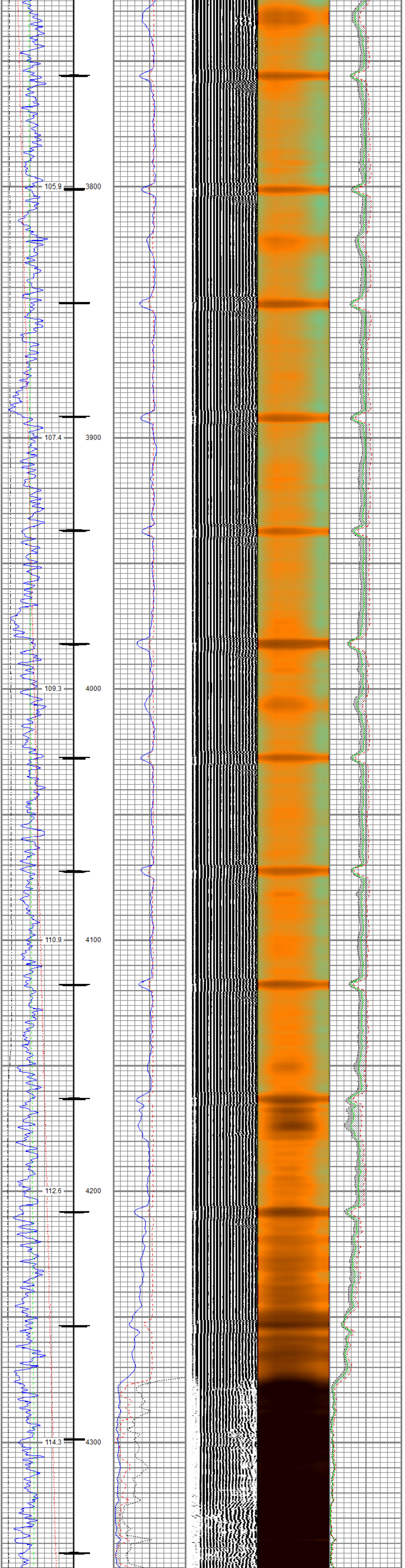








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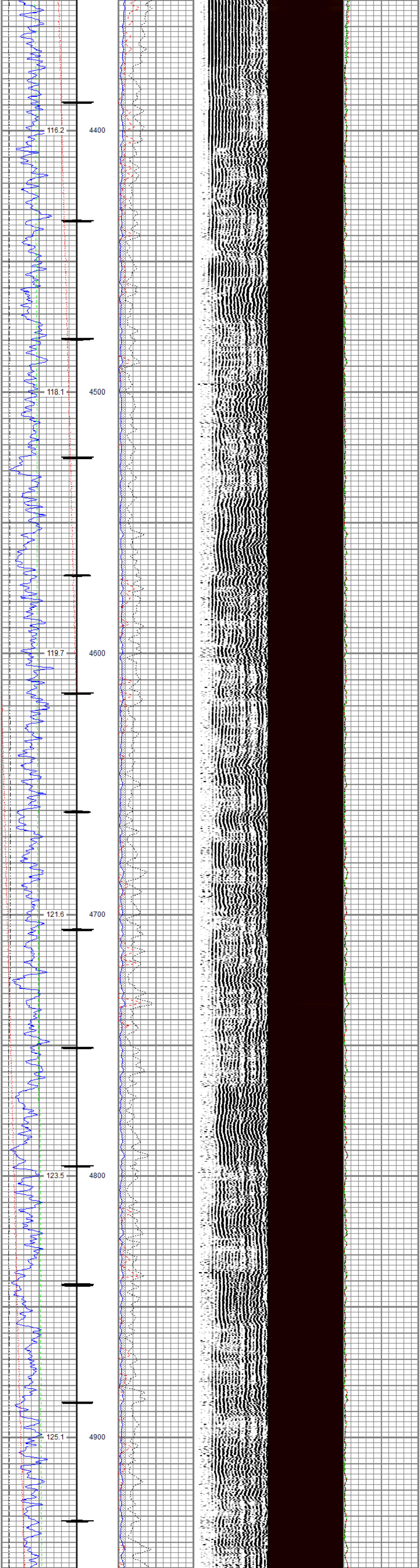
4200
114.3
4300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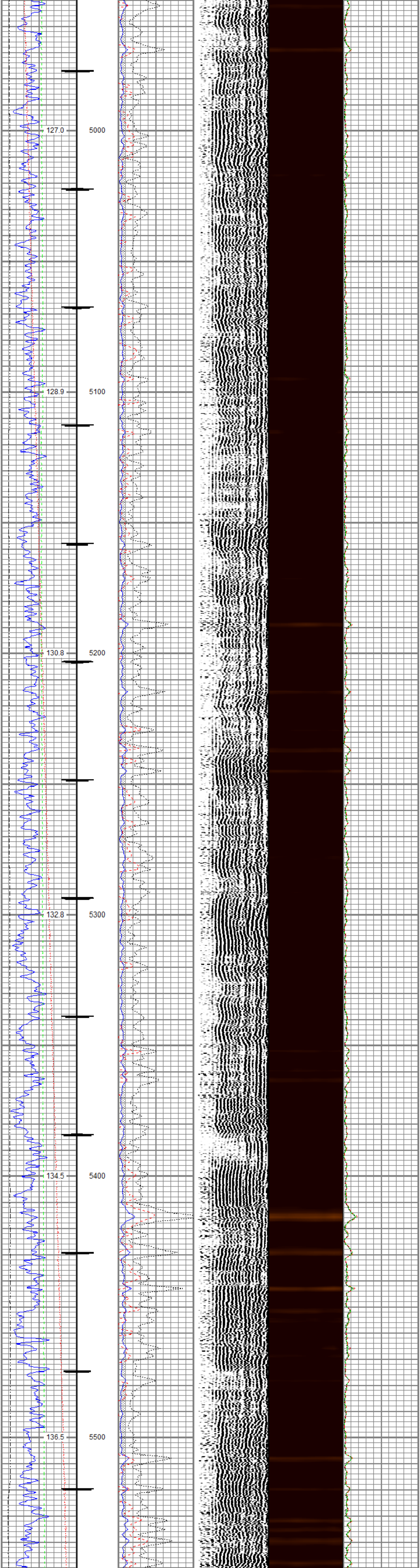
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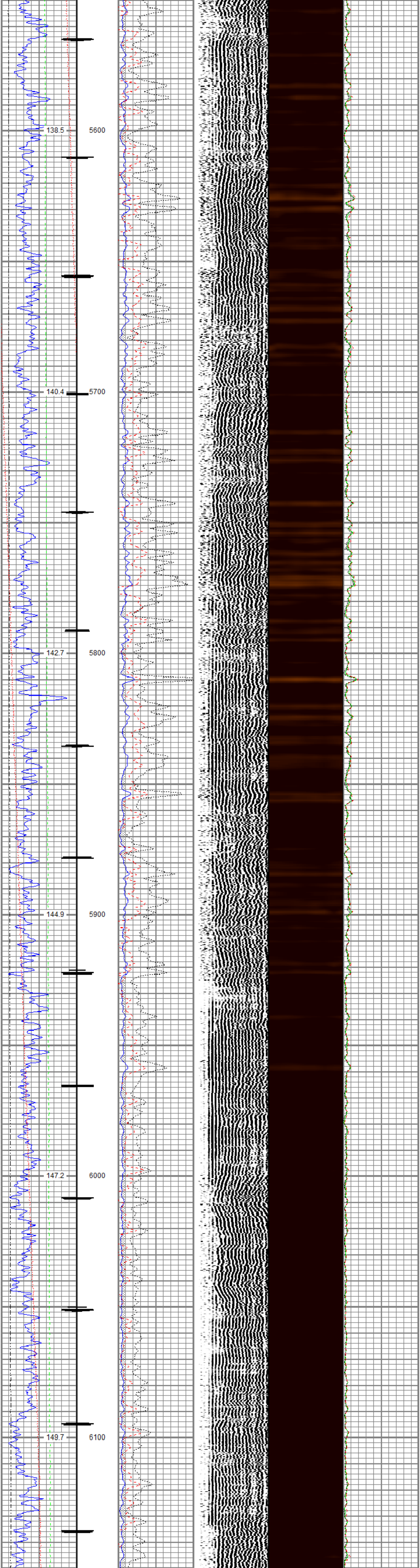
136.5
5500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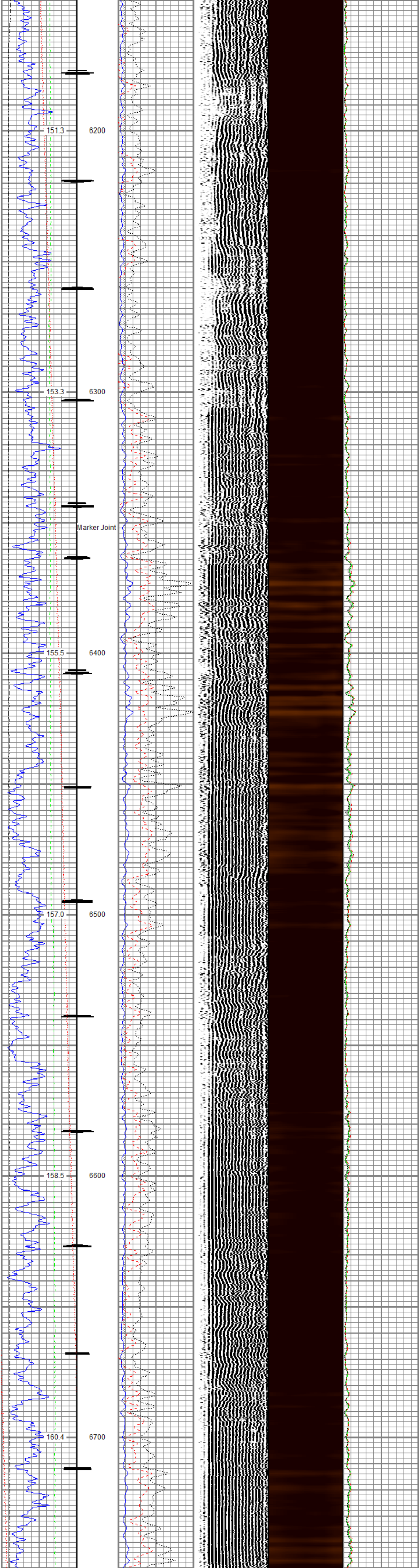
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6600
160.4
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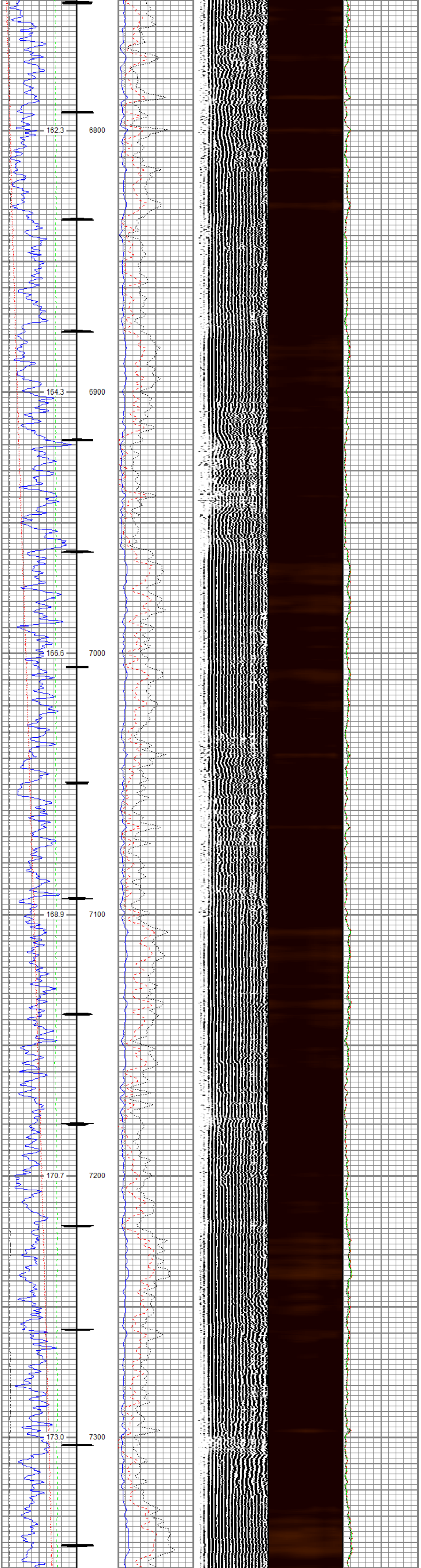
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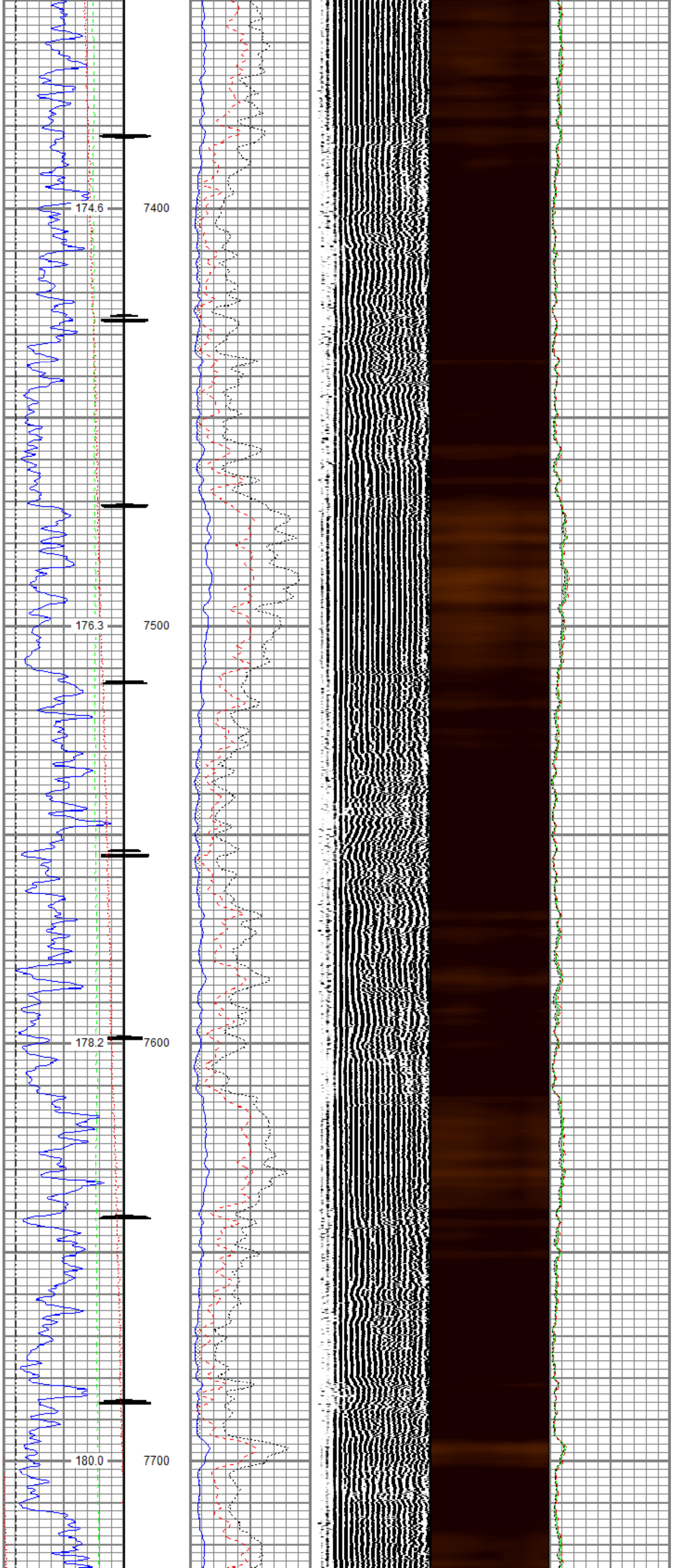
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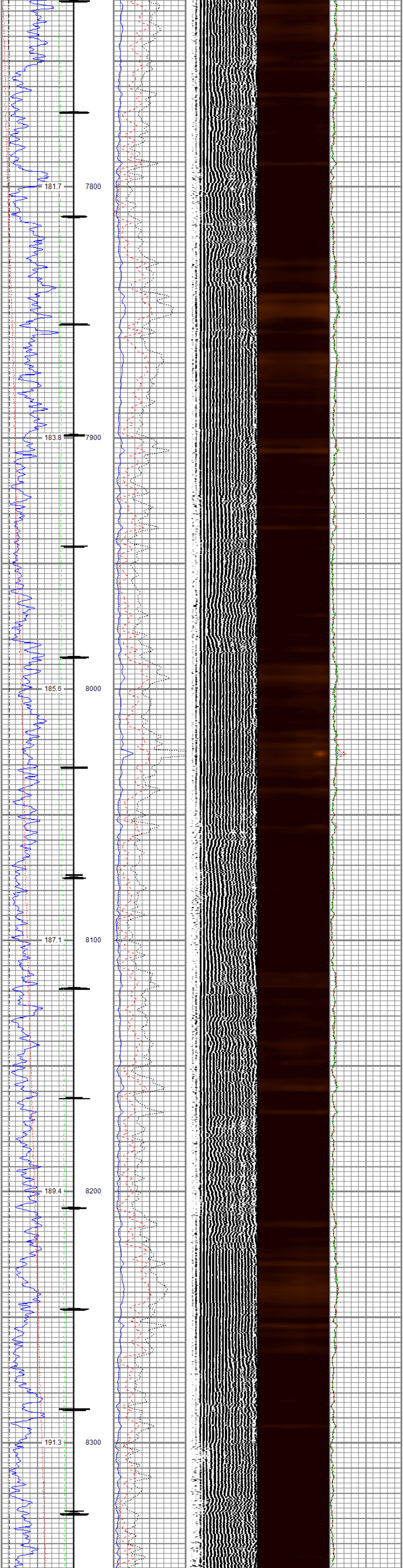

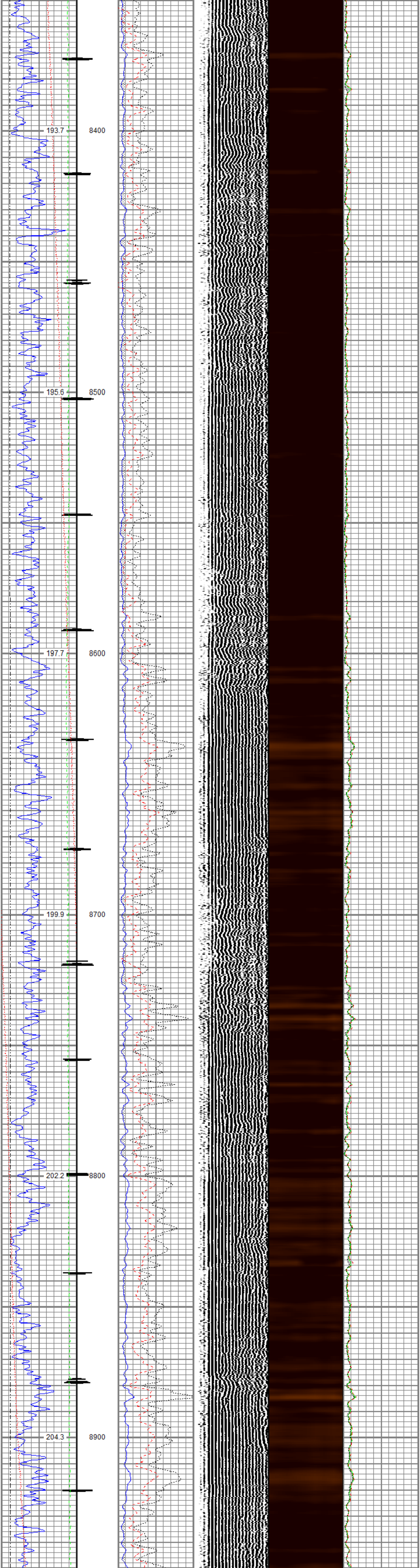

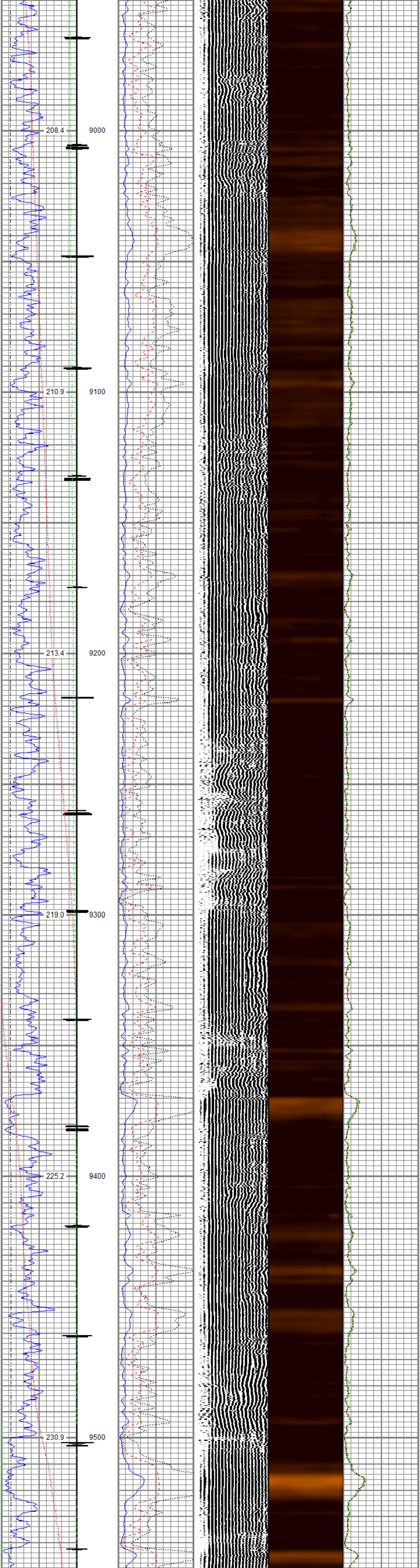

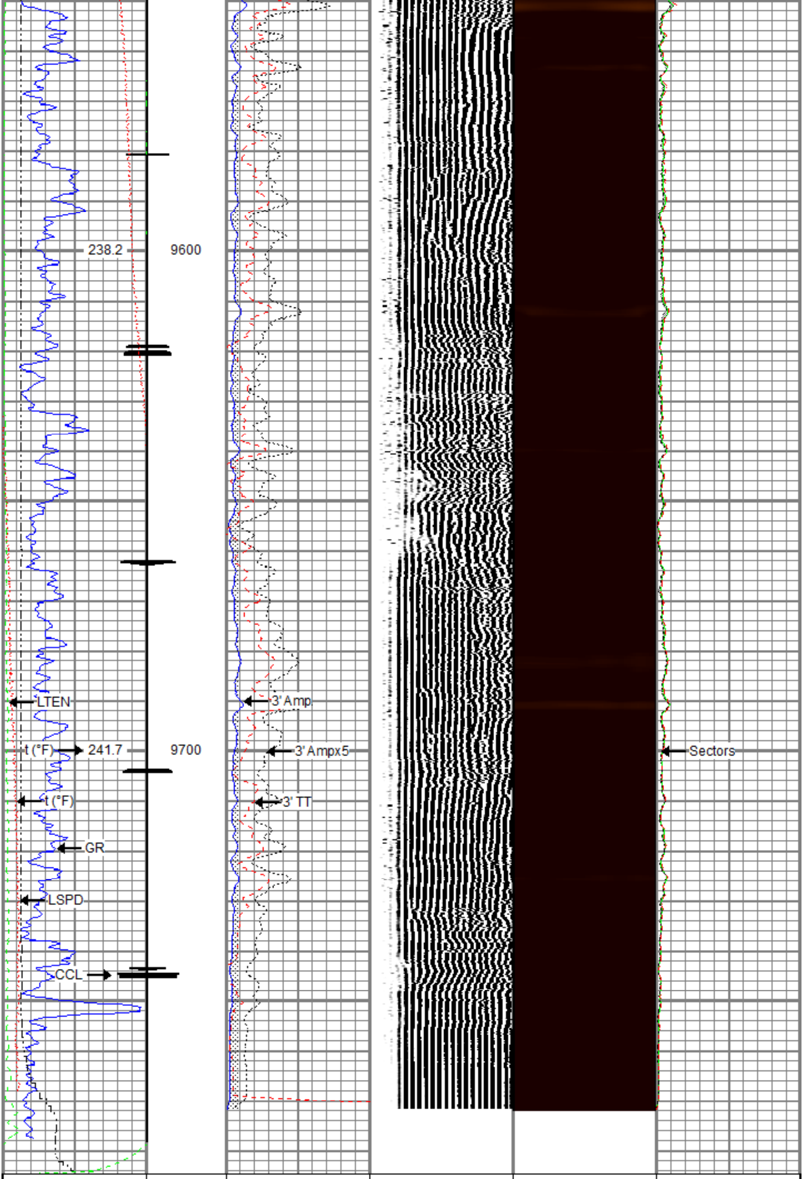

Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 1200	10 110	0 150
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 150
-150 (ft/min) 150	3' Travel Time			Maximum Amplitude
Line Tension	300 (usec) 200			0 150
0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

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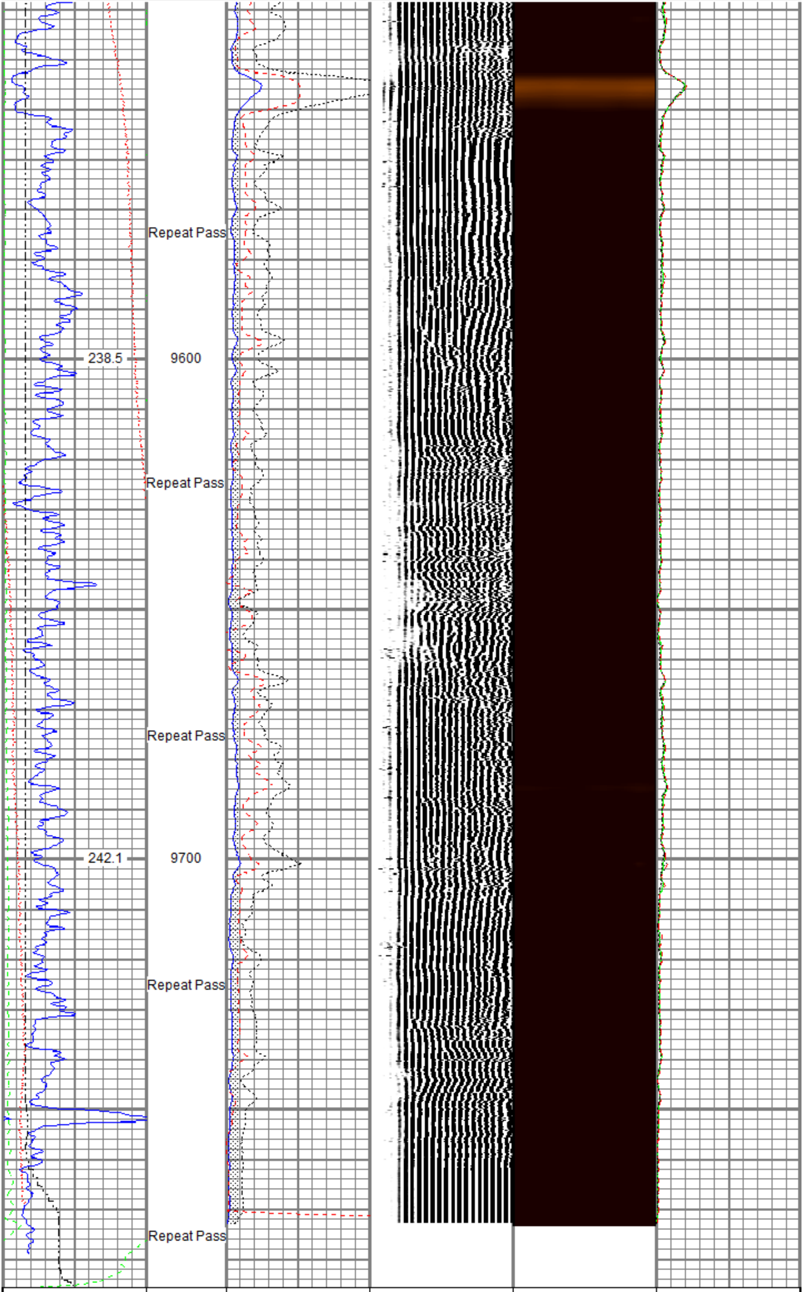
Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

Database File	tep_youberg sr 41-12_rcbl_11-06-2017\tep_youberg sr 41-12_rbl_11-06-17.db
Dataset Pathname	Repeat.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Nov 07 12:18:15 2017
Charted by	Depth in Feet scaled 1:240

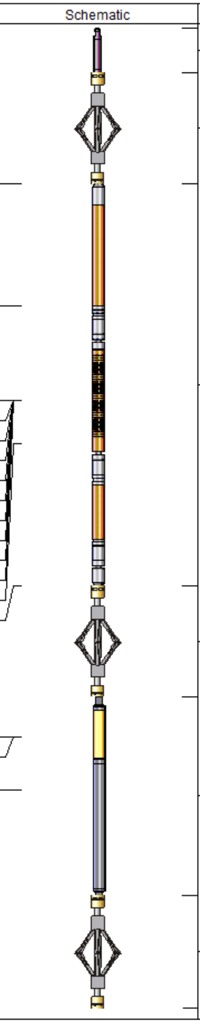
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 1200	10 110	0 150
Line Speed	3' Amplitude x 5			Mimimum Amplitude
-150 (ft/min) 150	0 (mV) 20			0 150
Line Tension	3' Travel Time			Maximum Amplitude
0 (lb) 2000	300 (usec) 200			0 150
Temperature				
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)
HeadVolt	18.84
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

Schematic



Description	Length (ft)	O.D. (in)	Weight (lb)
Titan_Electric_Cable_Heads-Titan_1-11/1 Electric Cable Head with 1" Fishing Neck	1.03	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	9.19	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 (FW12 Probe 2-3/4" Digital CCL / Gamma Ray Combined	4.54	2.75	55.00
DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00

Dataset:	TEP_Youberg SR 41-12_RBL_11-06-17.db: field/well/run1/Main
Total length:	22.40 ft
Total weight:	261.40 lb
O.D.:	2.75 in

Calibration Report

Database File	c:\programdata\warrior\data\tep_ youberg sr 41-12_rcbl_11-06-2017\tep_youberg sr 41-12_rbl_11-06-17.db
Dataset Pathname	Main.1
Dataset Creation	Tue Nov 07 12:06:55 2017

Gamma Ray Calibration Report

Serial Number:	FW1211-081	
Tool Model:	P_CGR_2750_S	
Performed:	Sat Feb 06 11:31:52 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:	10.032	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.004	0.856	0.800	81.196	93.568	1.137
CAL	-0.006	0.757				
5'	-0.013	0.810	0.800	81.196	97.695	2.106
SUM						
S1	-0.008	0.859	0.000	100.000	115.314	0.954
S2	-0.005	0.899	0.000	100.000	110.569	0.577
S3	-0.006	0.921	0.000	100.000	107.885	0.639
S4	-0.006	0.903	0.000	100.000	109.990	0.662
S5	-0.006	0.910	0.000	100.000	109.173	0.704
S6	-0.007	0.885	0.000	100.000	112.150	0.755
S7	-0.007	0.870	0.000	100.000	113.997	0.839
S8	-0.005	0.842	0.000	100.000	118.013	0.629

Internal Reference Calibration, performed Fri May 05 10:29:14 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.006	0.757	1.000	0.000

Air Zero Calibration, performed Mon Nov 06 07:39:44 2017:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	-0.003	0.000	0.000
5'	-0.001	0.000	-0.000
SUM			
S1	-0.009	0.000	0.000
S2	-0.005	0.000	-0.000
S3	-0.005	0.000	-0.000
S4	-0.006	0.000	-0.000
S5	-0.005	0.000	-0.000
S6	-0.005	0.000	-0.000
S7	-0.005	0.000	-0.000
S8	-0.005	0.000	-0.000

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Company	TEP Rocky Mountain LLC
Well	Youberg SR 41-12
Field	Rulison
County	Garfield
State	Colorado