



**Radial Cement Bond
Gamma Ray
Casing Collar Log**

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Bryant 33-29
Field Spindle
County Weld
State Colorado

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Location: SEC 30 TWP 2N RGE 68W
 API #: 05-123-31725
 Permanent Datum Ground Level Elevation 4928'
 Log Measured From Ground Level 0 FT
 Drilling Measured From Kelly Bushing
 Other Services ---
 Elevation
 K.B. 4943'
 D.F. ---
 G.L. 4928'

Date	04-SEPT-2019				
Run Number	One				
Depth Driller	8410 FT				
Depth Logger	2001 FT				
Bottom Logged Interval	1986 FT				
Top Log Interval	Surface				
Open Hole Size	7.875"				
Type Fluid	Water				
Density / Viscosity	8.34 lb/gal				
Max. Recorded Temp.	93°F				
Estimated Cement Top	See Log				
Time Well Ready	ROA				
Time Logger on Bottom	08:22				
Equipment Number	HD-361				
Location	Platteville, CO				
Recorded By	J. Fresquez				
Witnessed By	Seth Chappell				
Run Number	Borehole Record		Tubing Record		
	Bit	From	To	Size	
				Weight	
				From	
				To	
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top	Bottom
Surface Casing	8.5/8	24	---	Surface	883 FT
Intermediate #1	4.1/2	11.6	---	Surface	8389 FT
Intermediate #2					
Inner					

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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 Ground Level at 0 FT
Adjusted 0 FT to correlate with Ground Level
Shop calibrations performed on the RBL Tool on 03-SEPT-2019
Free Pipe Calibrated at 10 FT
GOBO indicates 80% Bond Index for 4.5-inch casing (16.24 mV)
Log ran with 0 PSI Surface Induced Pressure
Logging tools were clean and free of debris upon completion of operations

Thank you for choosing Reliance Oilfield Services, LLC!!

Main Pass

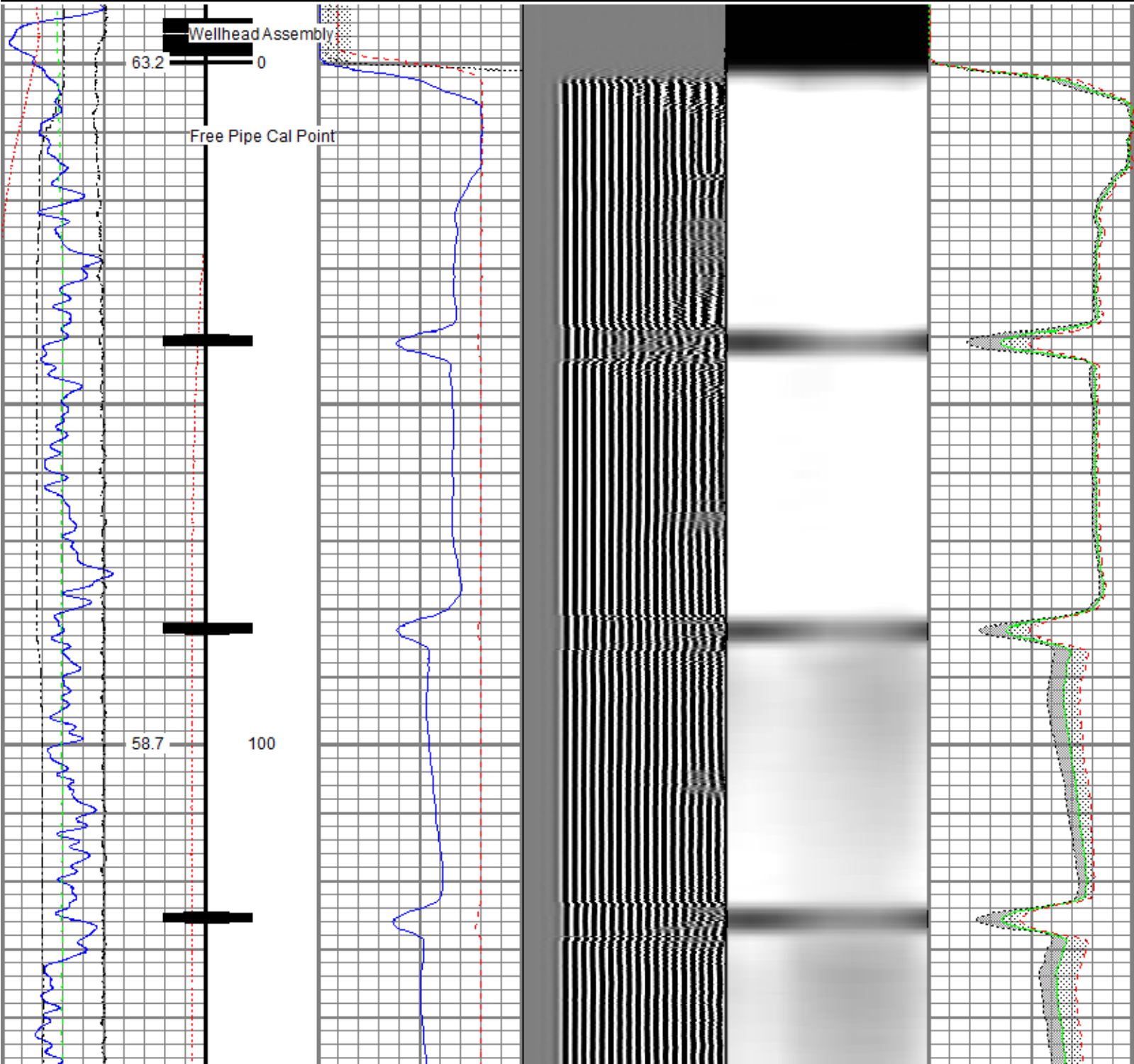


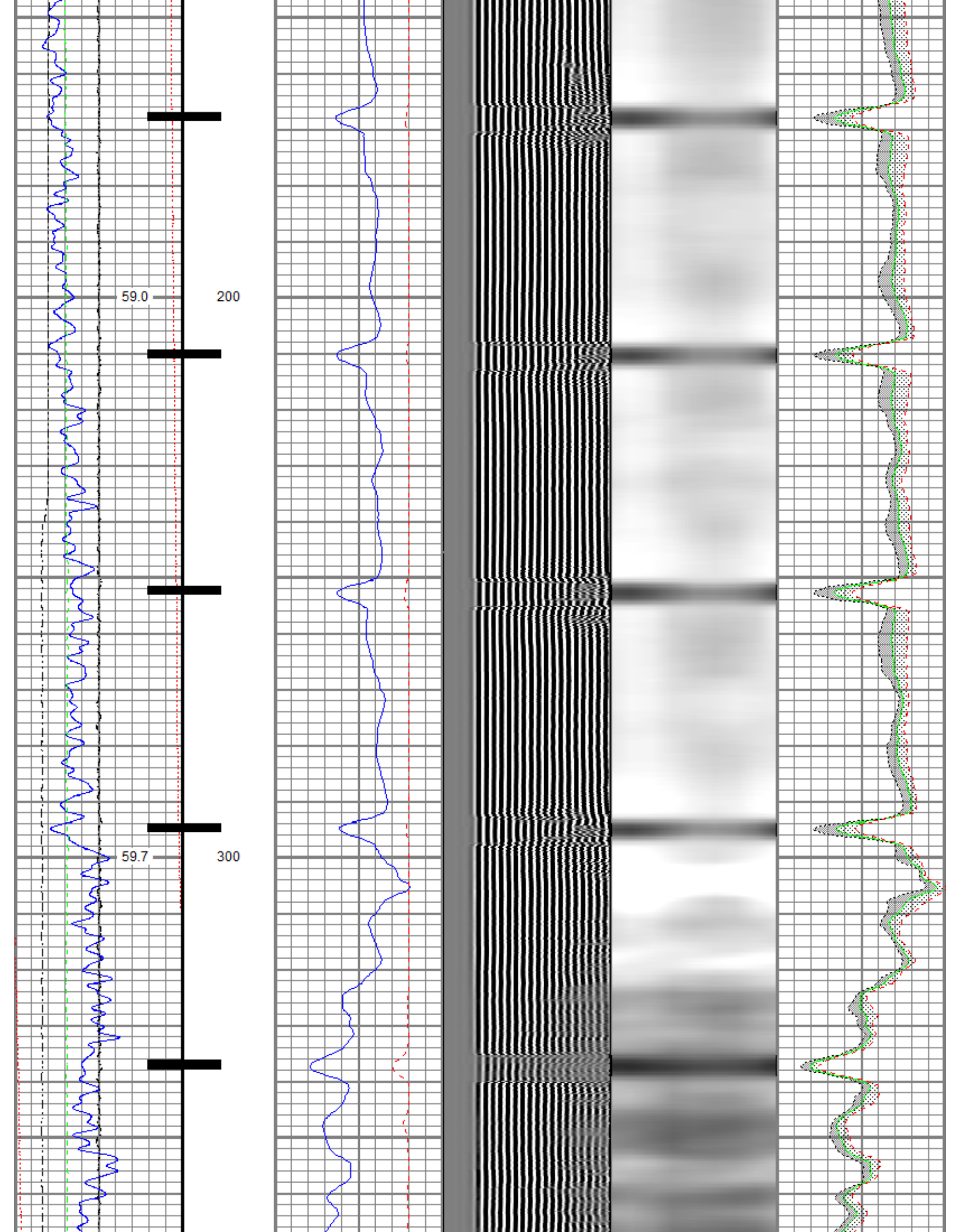
Recorded With 0 PSI Surface Induced Pressure

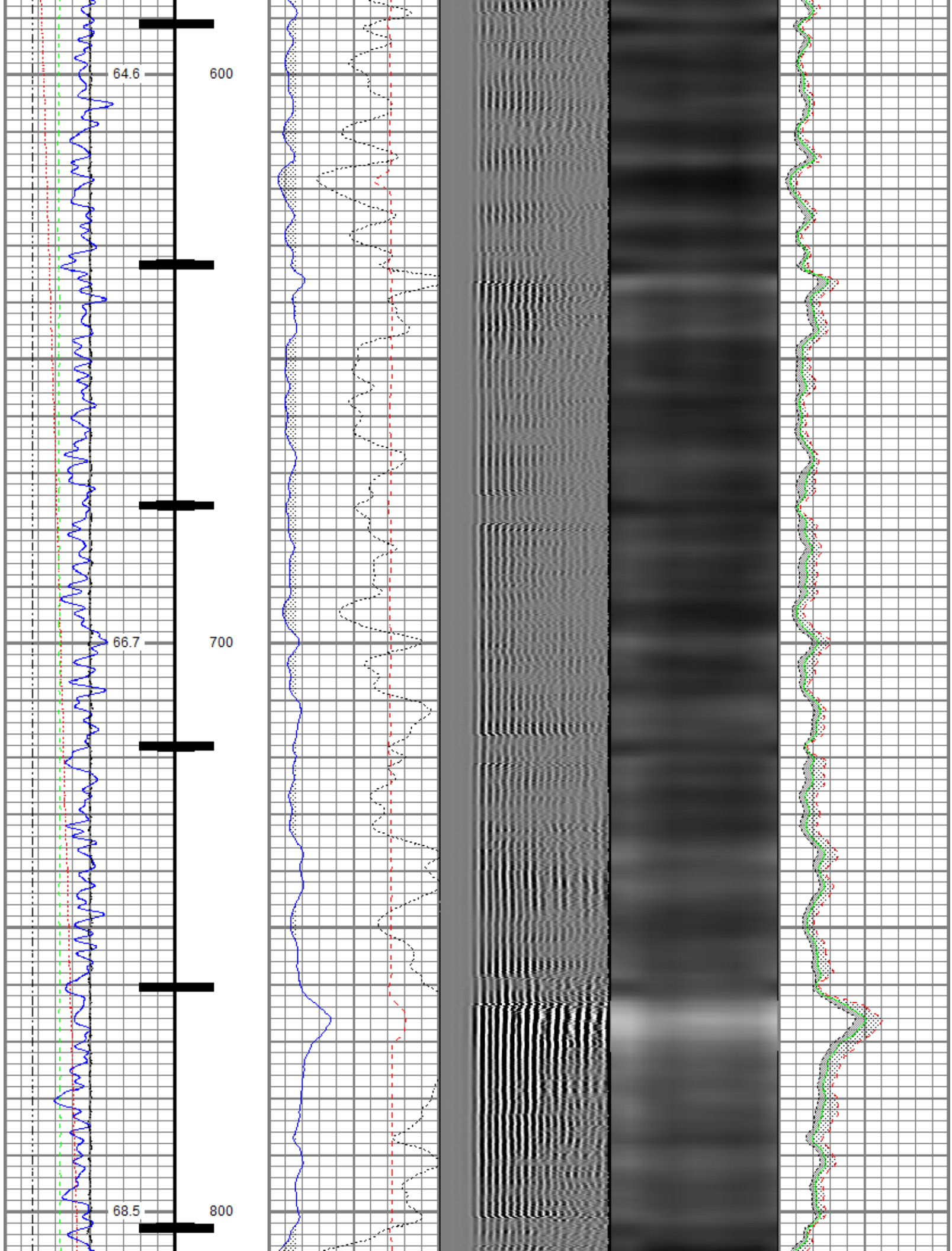
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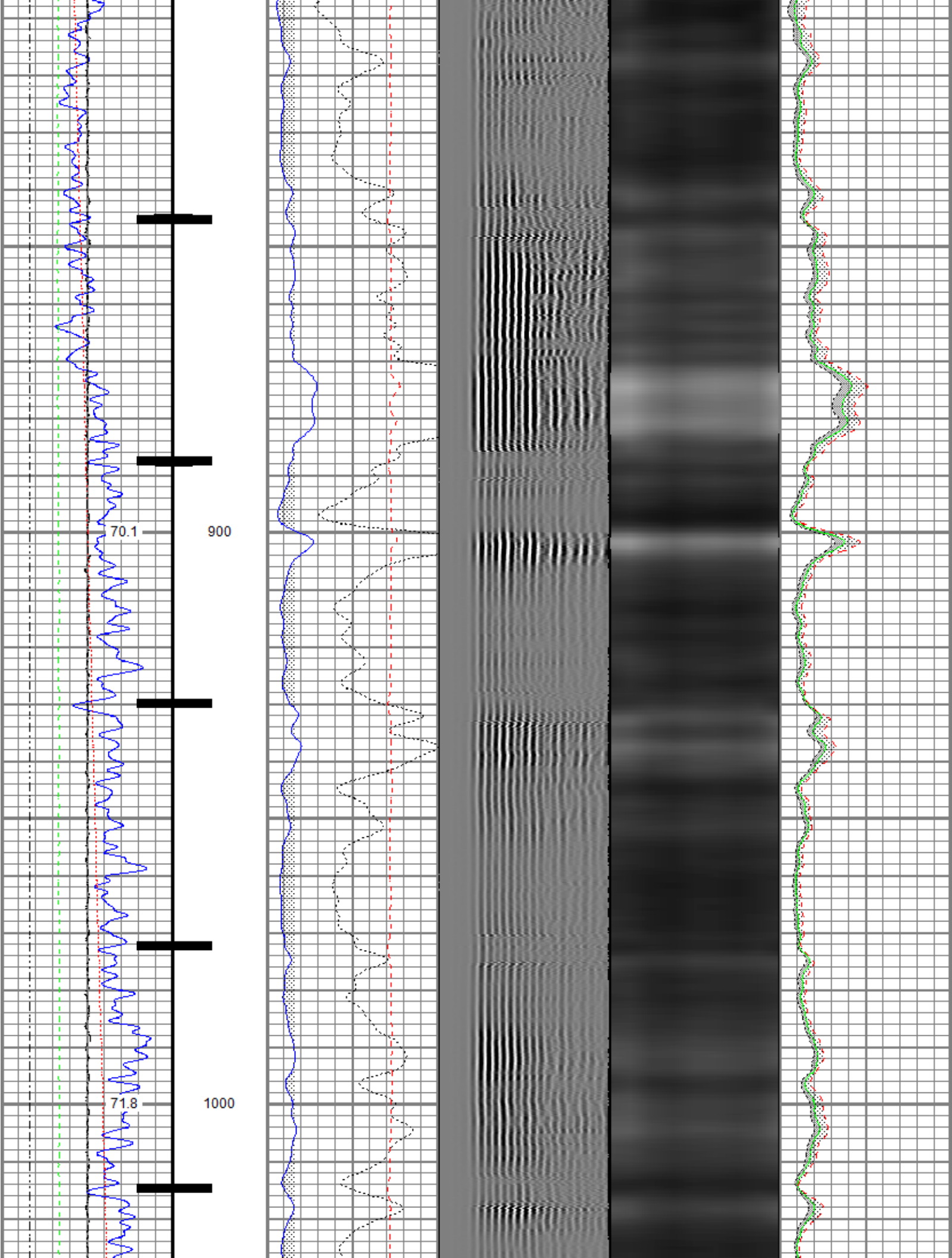
Database File	oxy\0512331725_oxy_bryant 33-29_rbl_09-04-19\processed_0512331725_oxy_bryant 33-29_rbl_09-04-19.db
Dataset Pathname	byant33-29/run1/pass5.1
Presentation Format	ros_radrii_anadarko_vert_gobo_45
Dataset Creation	Wed Sep 04 08:47:32 2019
Charted by	Depth in Feet scaled 1:240

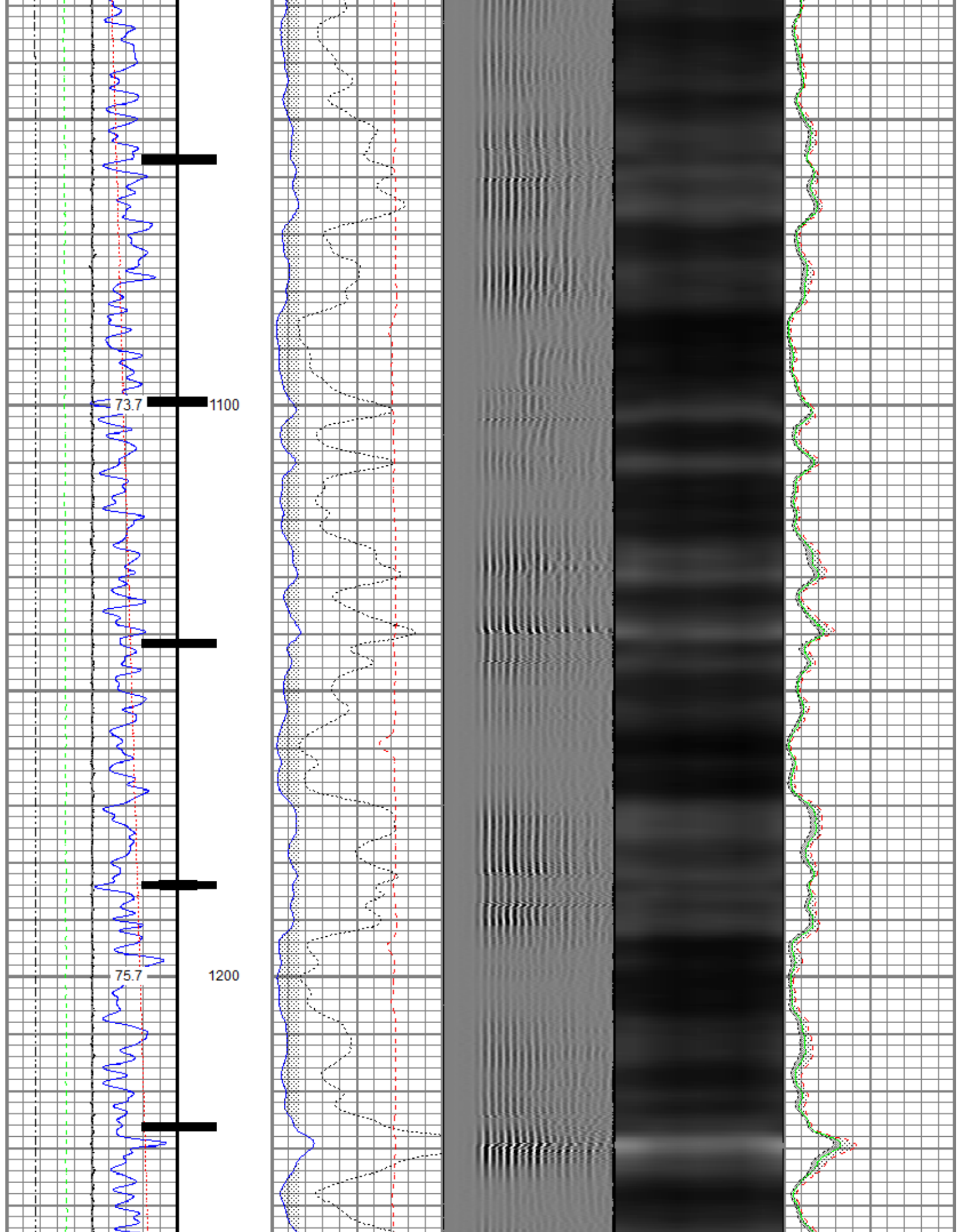
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Gamma Ray</td> <td style="text-align: center;">0</td> <td style="text-align: center;">3' Amplitude (mV)</td> <td style="text-align: center;">100</td> </tr> <tr> <td style="text-align: center;">(GAPI)</td> <td style="text-align: center;">120</td> <td style="text-align: center;">3' Amplitude x 5</td> <td style="text-align: center;">200</td> </tr> <tr> <td style="text-align: center;">Temperature (degF)</td> <td style="text-align: center;">20</td> <td style="text-align: center;">(mV)</td> <td style="text-align: center;">20</td> </tr> <tr> <td style="text-align: center;">Line Speed</td> <td style="text-align: center;">-150</td> <td style="text-align: center;">3' Travel Time</td> <td style="text-align: center;">650</td> </tr> <tr> <td style="text-align: center;">(ft/min)</td> <td style="text-align: center;">150</td> <td style="text-align: center;">(usec)</td> <td style="text-align: center;">150</td> </tr> <tr> <td style="text-align: center;">Line Tension (lb)</td> <td style="text-align: center;">2000</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Differential Temperature</td> <td style="text-align: center;">-2</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">(degF)</td> <td style="text-align: center;">2</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Casing Collar Locator</td> <td></td> <td></td> <td></td> </tr> </table>	Gamma Ray	0	3' Amplitude (mV)	100	(GAPI)	120	3' Amplitude x 5	200	Temperature (degF)	20	(mV)	20	Line Speed	-150	3' Travel Time	650	(ft/min)	150	(usec)	150	Line Tension (lb)	2000			Differential Temperature	-2			(degF)	2			Casing Collar Locator				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">5' Variable Density Log</td> <td style="text-align: center;">200</td> <td style="text-align: center;">(usec)</td> <td style="text-align: center;">1200</td> </tr> </table>	5' Variable Density Log	200	(usec)	1200	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Sector Map</td> <td style="text-align: center;">0</td> <td style="text-align: center;">Average Amplitude</td> <td style="text-align: center;">100</td> </tr> <tr> <td></td> <td style="text-align: center;">0</td> <td style="text-align: center;">Minimum Amplitude</td> <td style="text-align: center;">100</td> </tr> <tr> <td></td> <td style="text-align: center;">0</td> <td style="text-align: center;">Maximum Amplitude</td> <td style="text-align: center;">100</td> </tr> </table>	Sector Map	0	Average Amplitude	100		0	Minimum Amplitude	100		0	Maximum Amplitude	100
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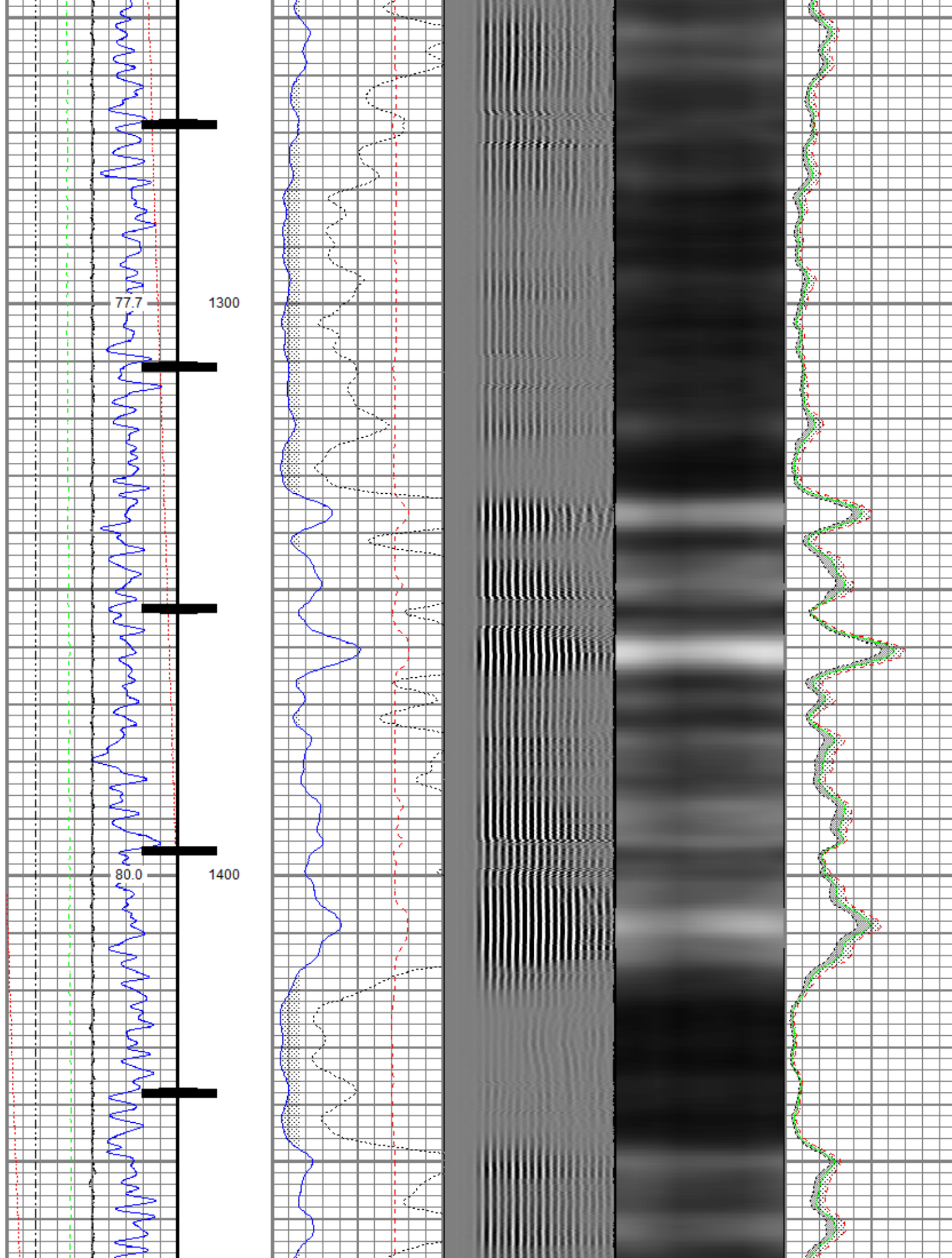


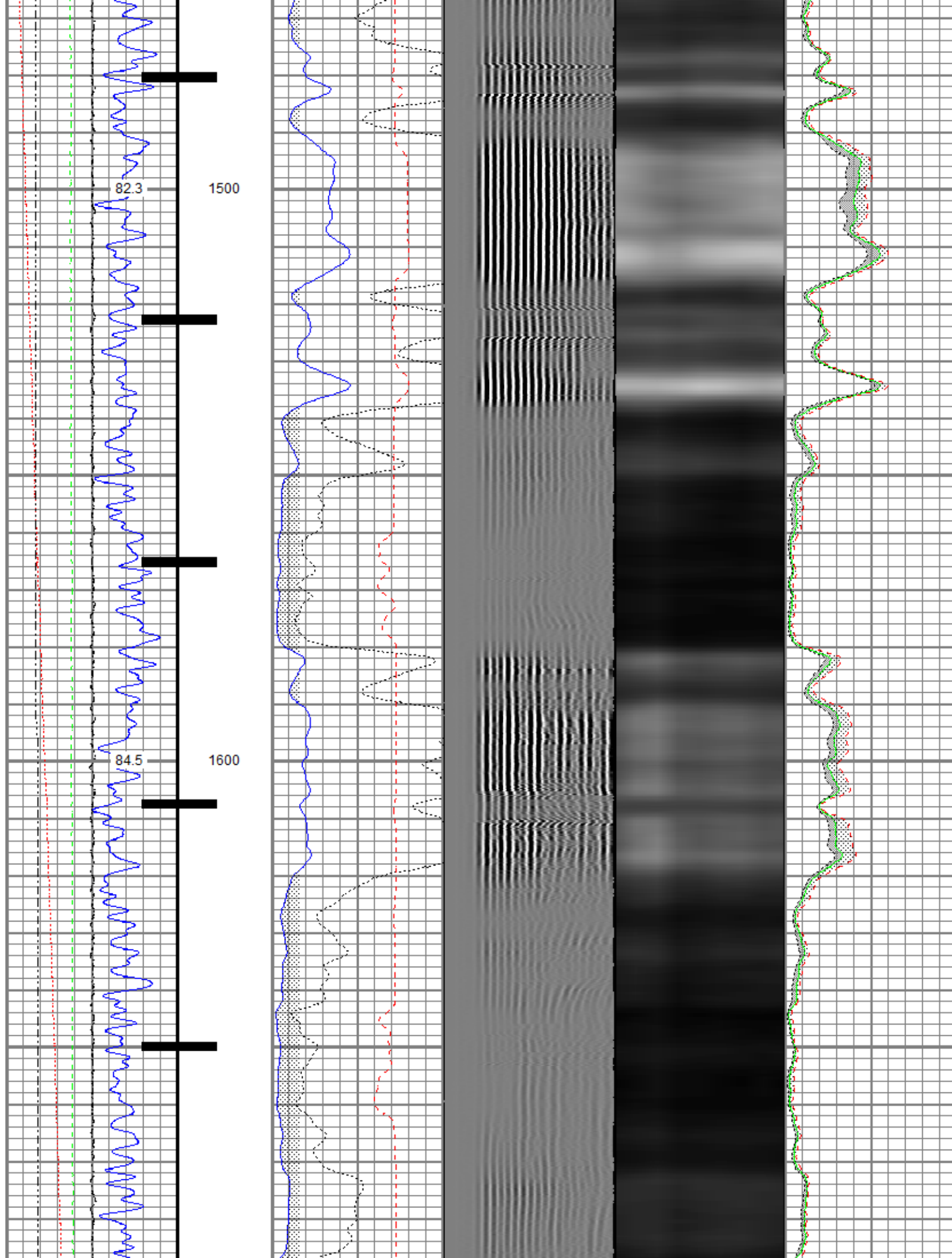


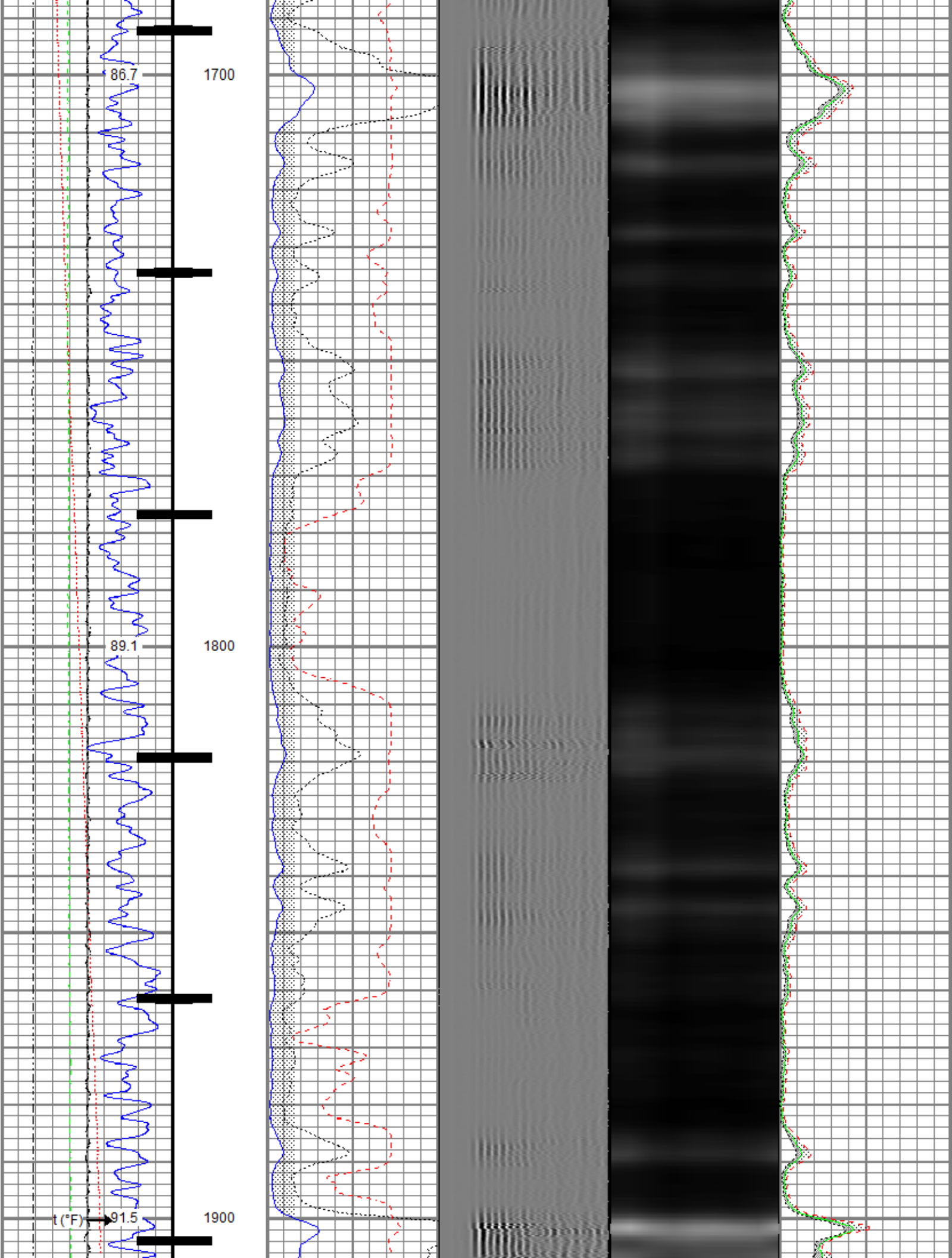


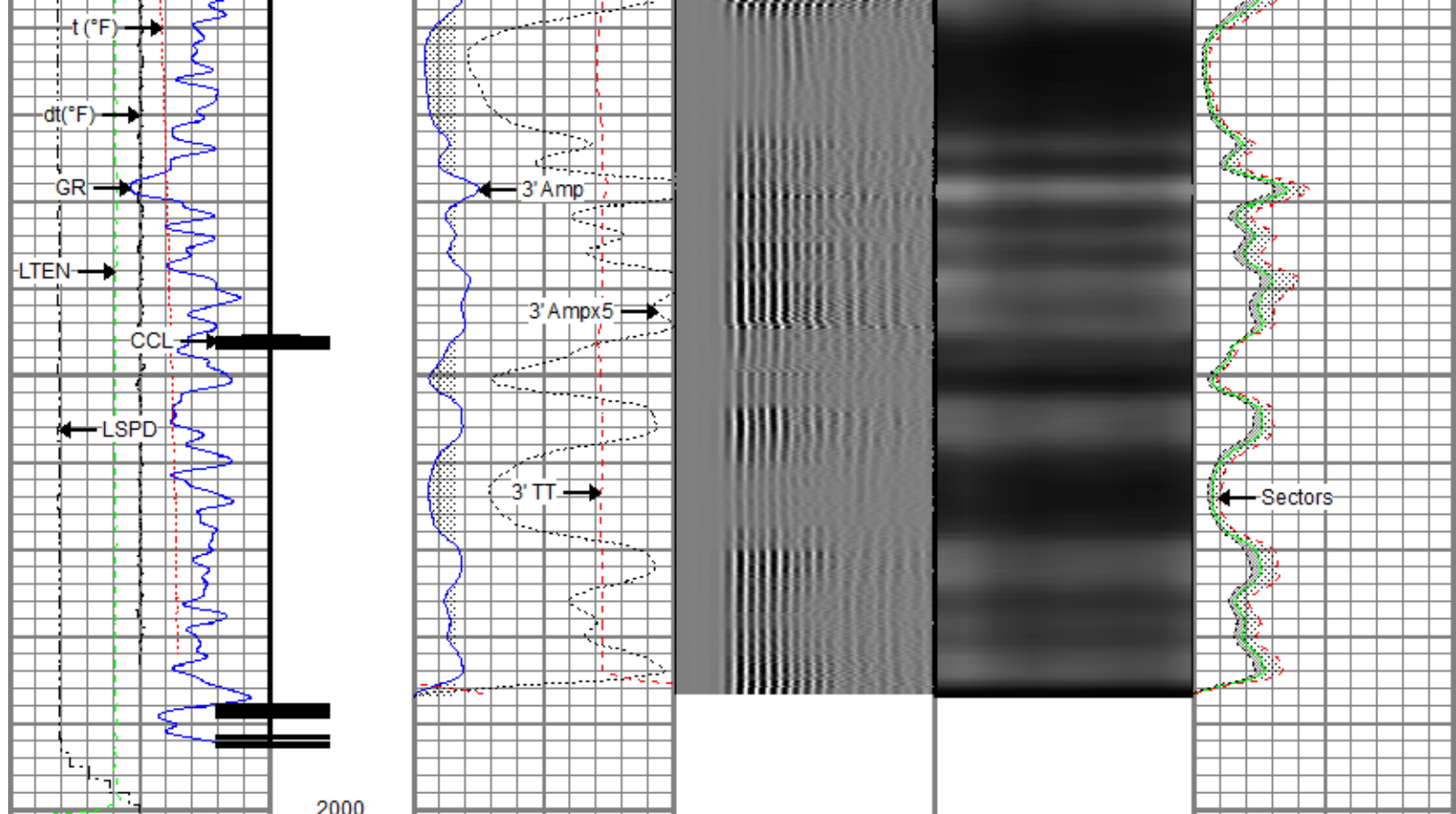












Gamma Ray (GAPI) 120	0 3' Amplitude (mV) 100	5' Variable Density Log 200 (usec) 1200	Sector Map	0 Average Amplitude 100
0 Temperature (degF) 20	3' Amplitude x 5 (mV) 20			Minimum Amplitude 0 100
Line Speed -150 (ft/min) 150	3' Travel Time 650 (usec) 150			Maximum Amplitude 0 100
0 Line Tension (lb) 2000				
Differential Temperature -2 (degF) 2				
Casing Collar Locator				



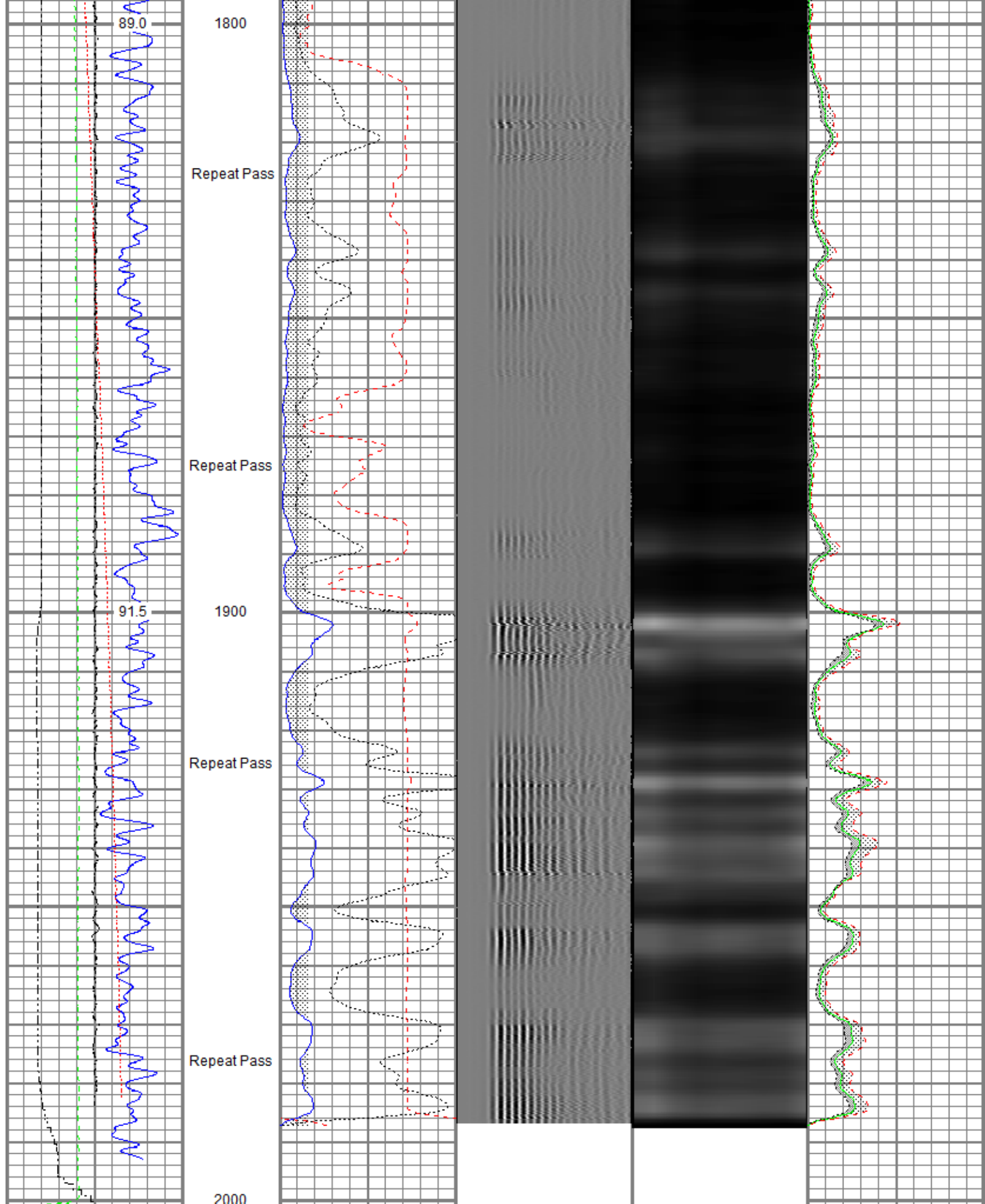
Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

Database File: oxy\0512331725_oxy_bryant 33-29_rbl_09-04-19\processed_0512331725_oxy_bryant 33-29_rbl_09-04-19.db
 Dataset Pathname: byant33-29/run1/pass3.1
 Presentation Format: ros_radil_anadarko_vert_gobo_45
 Dataset Creation: Wed Sep 04 09:00:29 2019
 Charted by: Depth in Feet scaled 1:240

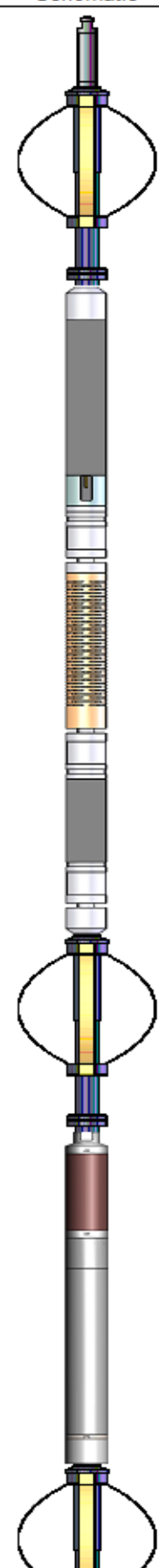
Gamma Ray (GAPI) 120	0 3' Amplitude (mV) 100	5' Variable Density Log 200 (usec) 1200	Sector Map	0 Average Amplitude 100
0 Temperature (degF) 20	3' Amplitude x 5 (mV) 20			Minimum Amplitude 0 100
Line Speed -150 (ft/min) 150	3' Travel Time 650 (usec) 150			Maximum Amplitude 0 100
0 Line Tension (lb) 2000				
Differential Temperature -2 (degF) 2				





Gamma Ray 0 (GAPI) 120 0 Temperature (degF) 20 Line Speed	Repeat Pass Repeat Pass Repeat Pass Repeat Pass	0 3' Amplitude (mV) 100 3' Amplitude x 5 0 (mV) 20 3' Travel Time	5' Variable Density Log 200 (usec) 1200	Sector Map	0 Average Amplitude 100 Minimum Amplitude 0 100 Maximum Amplitude
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Line Speed	(ft/min)	150	Wave Time	(usec)	150	Maximum Amplitude	0	100
Line Tension (lb)	2000							
Differential Temperature	(degF)							
	-2	2						

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
			Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	3.60	
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00	
TEMP	17.04						
WVFS8	14.81			Probe Radii-2750 RBT (FW1305-096) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
WVFS7	14.81						
WVFS6	14.81						
WVFS5	14.81						
WVFS4	14.81						
WVFS3	14.81						
WVFS2	14.81						
WVFS1	14.81						
WVFCAL	14.81						
WVF3FT	14.81						
WVF5FT	13.81						
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00	
CCL\$2	6.80						
CCL\$1	6.80						
GR	5.46		Probe GR-CCL-2750 6PB (101001) Probe 2-3/4" rev.1 Digital Scintillation Gamma Ray/CCL Combined with 6 Pin Bottom for CNT	4.80	2.75	55.00	
			Probe CENT-2750 Probe 2-3/4" Electric Inline Bowspring Centralizer	2.88	2.75	20.00	

Dataset: processed_0512331725_oxy_bryant 33-29_rbl_09-04-19.db: field/byant33-29/run1/pass5.1
 Total length: 23.86 ft
 Total weight: 223.60 lb
 O.D.: 2.75 in

Calibration Report

Database File c:\programdata\warrior\data\oxy\0512331725_oxy_bryant 33-29_rbl_09-04-19\processed_0512331725_oxy_bryant 33-29_rbl_0
 Dataset Pathname byant33-29/run1/pass5.1
 Dataset Creation Wed Sep 04 08:47:32 2019

Gamma Ray Calibration Report

Serial Number: 101001
 Tool Model: 2750 6PB
 Performed: Mon Oct 01 11:32:32 2018
 Calibrator Value: 637.0 GAPI
 Background Reading: 100.6 cps
 Calibrator Reading: 981.1 cps
 Sensitivity: 0.7235 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1305-096
 Tool Model: 2750 RBT
 Calibration Casing Diameter: 4.500 in
 Calibration Depth: 199.528 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.006	0.352	0.800	81.196	232.622	-0.573
CAL	0.614	0.616				
5'	0.009	0.360	0.800	81.196	229.447	-1.361
SUM						
S1	0.004	0.353	0.000	100.000	286.516	-1.256
S2	0.007	0.360	0.000	100.000	283.460	-1.963
S3	0.006	0.376	0.000	100.000	270.527	-1.665
S4	0.007	0.367	0.000	100.000	277.849	-2.014
S5	0.007	0.359	0.000	100.000	284.143	-1.911
S6	0.007	0.357	0.000	100.000	285.903	-2.023
S7	0.005	0.347	0.000	100.000	292.508	-1.603
S8	0.008	0.367	0.000	100.000	277.849	-2.097

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.614	0.616	1.000	0.000

Air Zero Calibration, performed Wed Sep 04 07:54:27 2019:

	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

Temperature Calibration Report

Serial Number: FW1305-096
Tool Model: 2750 RBT
Performed: Mon Oct 01 11:32:16 2018

	Reference		Reading
Low Reference:	100.00 degF		109.43 degF
High Reference:	350.00 degF		405.87 degF

Gain: 0.84
Offset: 7.72
Delta Spacing: 1



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