

**COMPENSATED DENSITY  
NEUTRON  
LOG**

Company	Pioneer Natural Resources	Company	Pioneer Natural Resources
Well	Rolls Royce 33-36	Well	Rolls Royce 33-36
Field	Purgatoire River	Field	Purgatoire River
County	Las Animas	County	Las Animas
State	Colorado	State	Colorado
Location:	API #: 05 071 09878 00 2078' FSL & 1824' FEL		
Permanent Datum	SEC 36 TWP 32S RGE 66W	Ground Level	Elevation 7120'
Log Measured From		Kelly Bushing 4' AGL	
Drilling Measured From		Kelly Bushing	
Other Services	SIL		
Elevation	K.B. 7124' D.F. ----- G.L. 7120'		
Date	9-18-11		
Run Number	One		
Depth Driller	1810'		
Depth Logger	1807'		
Bottom Logged Interval	1795'		
Top Log Interval	Surface Casing		
Casing Driller	8 5/8" @ 479'		
Casing Logger	479'		
Bit Size	7 7/8"		
Type Fluid in Hole	Airated Water		
Density / Viscosity	///		
pH / Fluid Loss	///		
Source of Sample	///		
Rm @ Meas. Temp	///		
Rmf @ Meas. Temp	///		
Rmc @ Meas. Temp	///		
Source of Rmf / Rmc	///		
Rm @ BHT	///		
Time Circulation Stopped	3:00 A.M.		
Time Logger on Bottom	6:00 A.M.		
Maximum Recorded Temperature	90 DEG F		
Equipment Number	T590		
Location	Trinidad		
Recorded By	C. Sisneros		
Witnessed By	Mr. Billy Vigil		

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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**

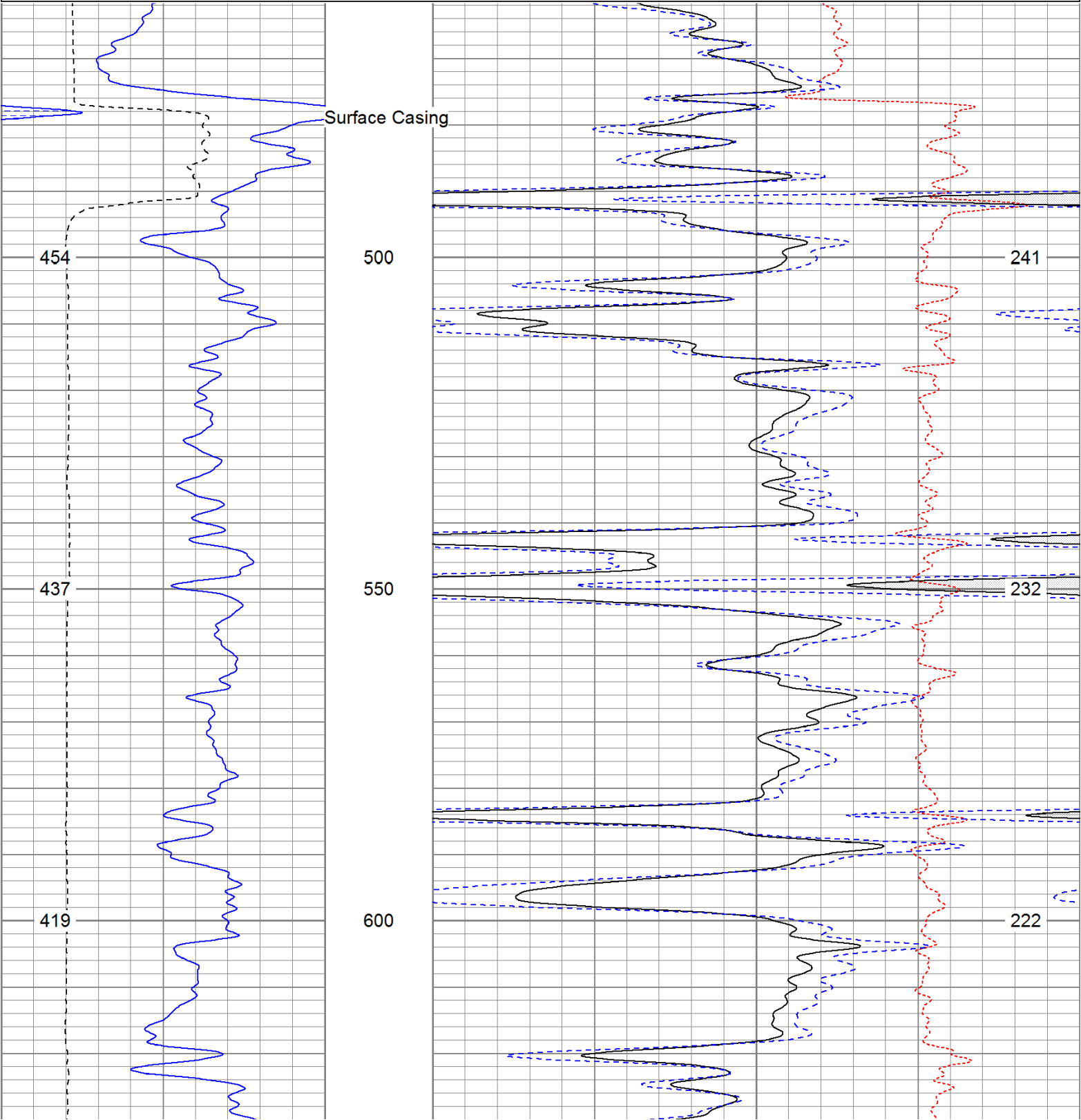
Density Porosity Presented On Sandstone Matrix.  
ABHV Calculated For 5.5" Casing.

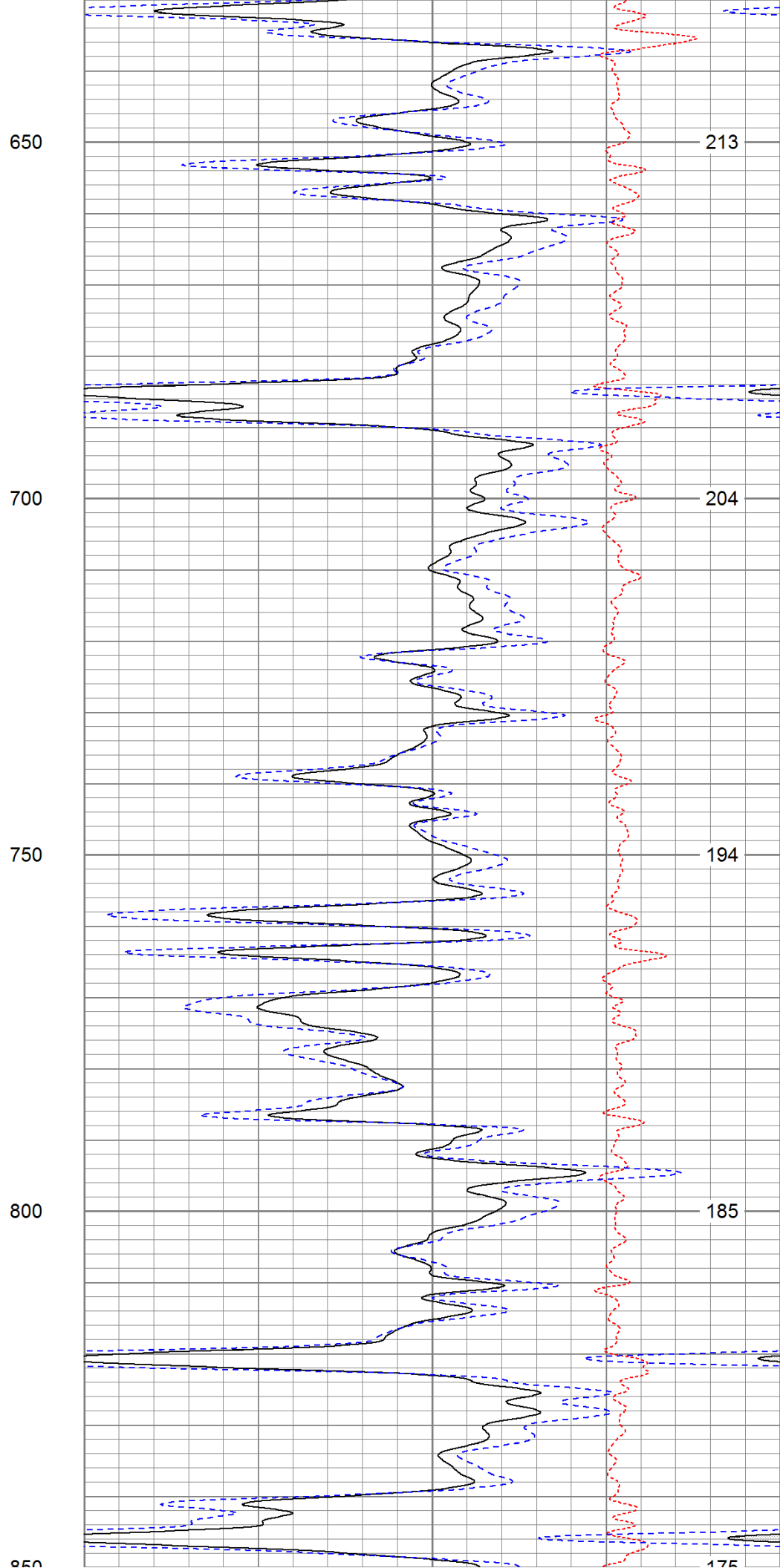
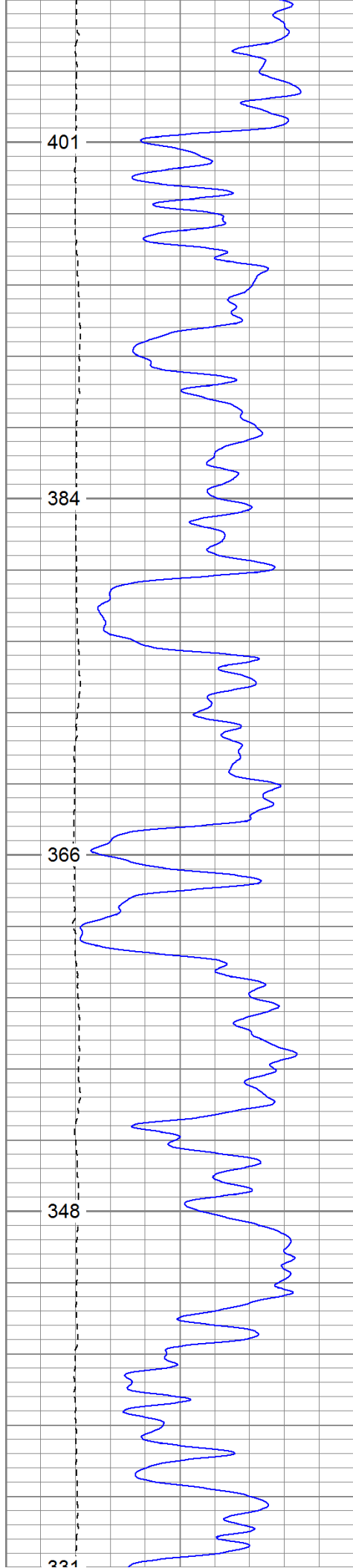
Directions:

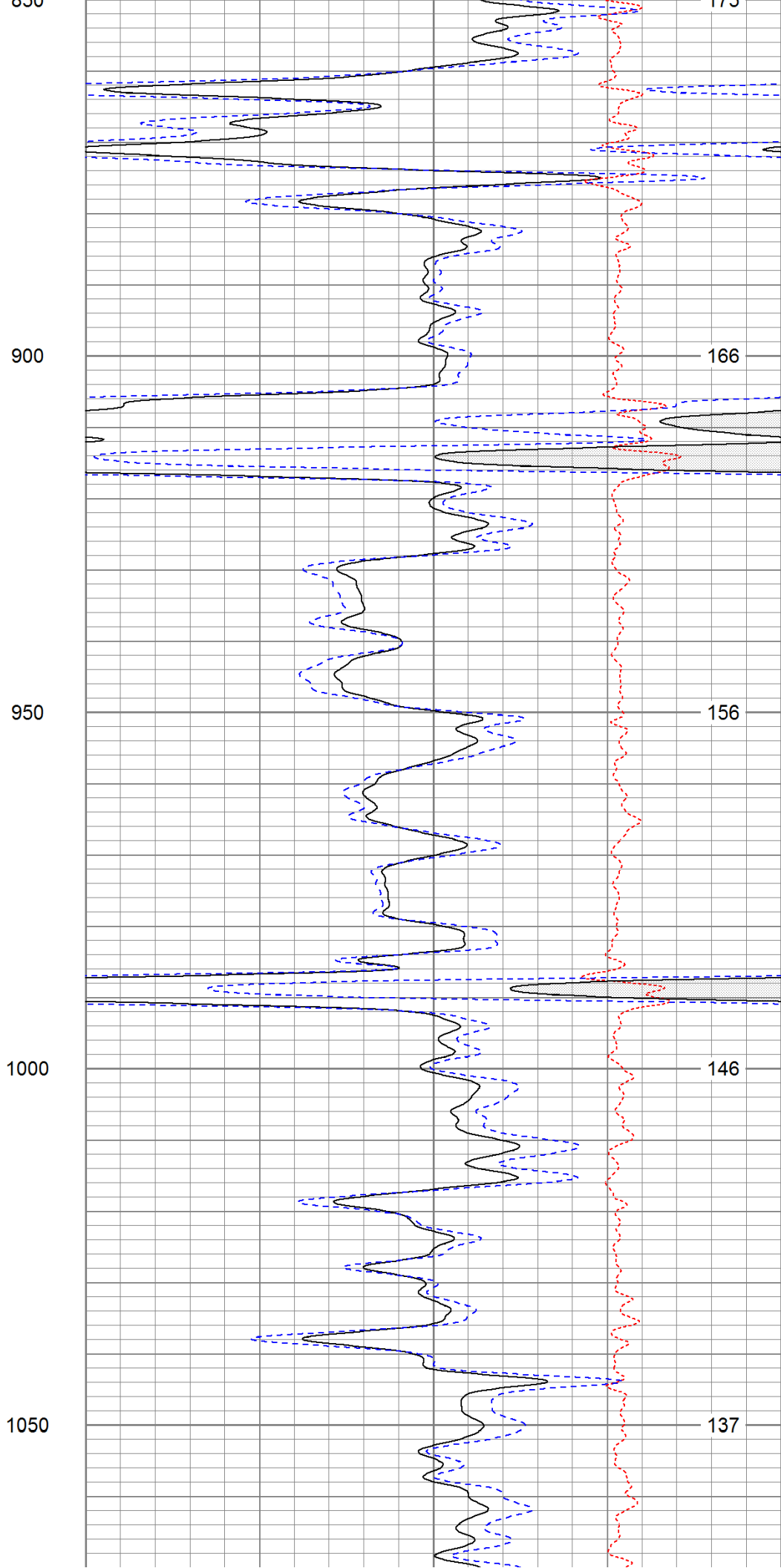
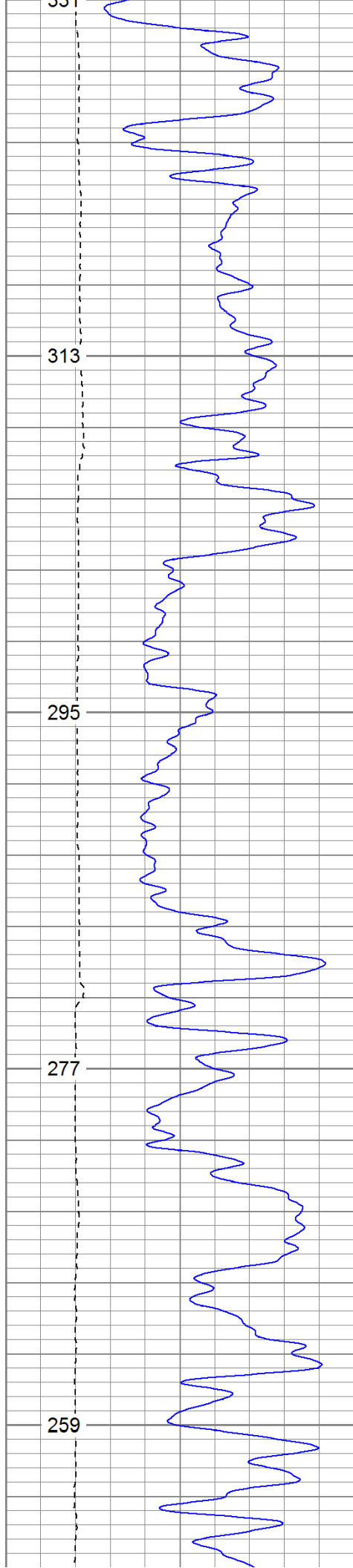
Database File: rollsroyce.db  
Dataset Pathname: pass2.1  
Presentation Format: cdl  
Dataset Creation: Sun Sep 18 06:57:53 2011 by Calc Open-Cased 110302  
Charted by: Depth in Feet scaled 1:240

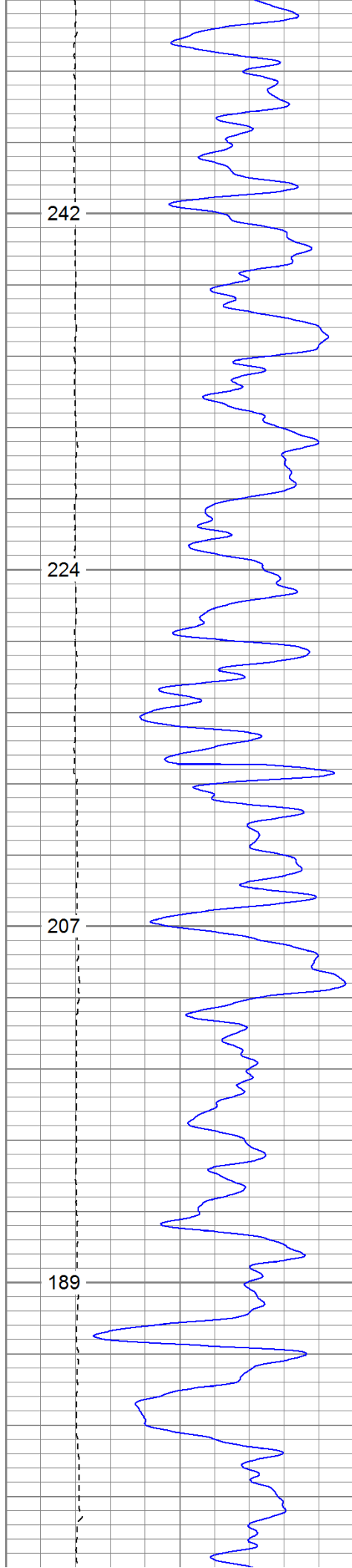
0	GR (GAPI)	200
6	DCAL (in)	16
TBHV (ft3)		

2	RHOB (g/cc)		3
1	RHOB (g/cc)		2
30	DPOR (pu)		-10
-0.5		RHOC (g/cc)	0.5
7000		LTEN (lb)	0
ABHV (ft3)			







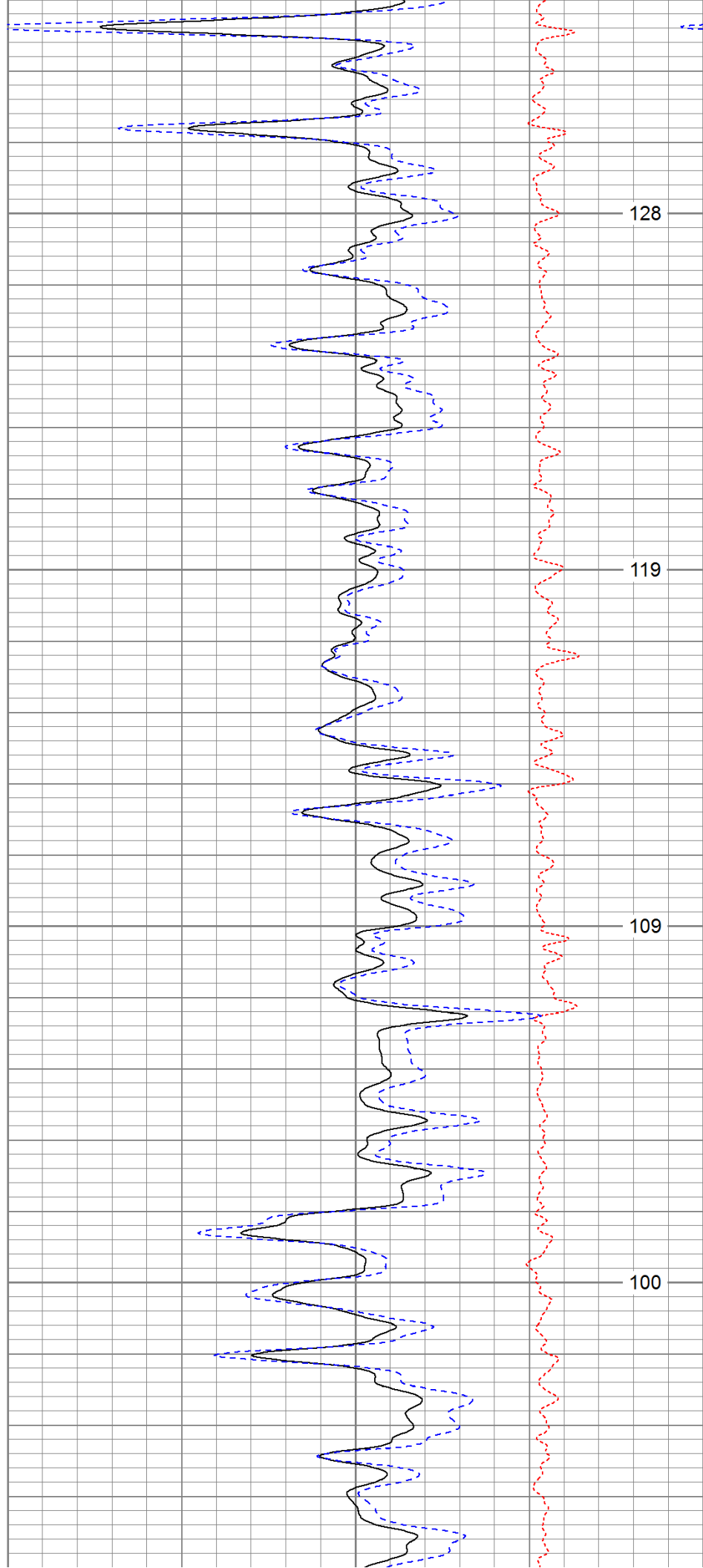


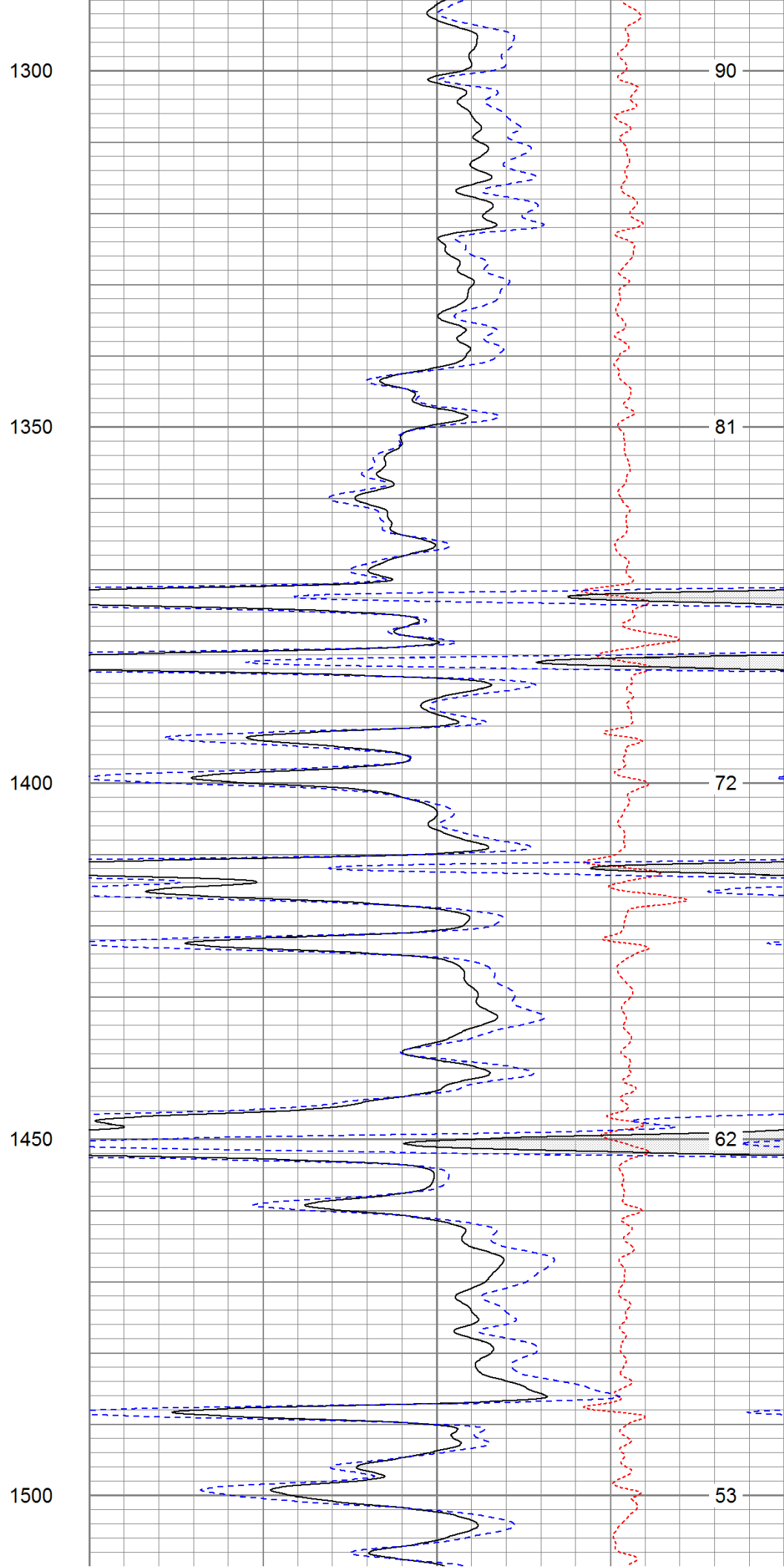
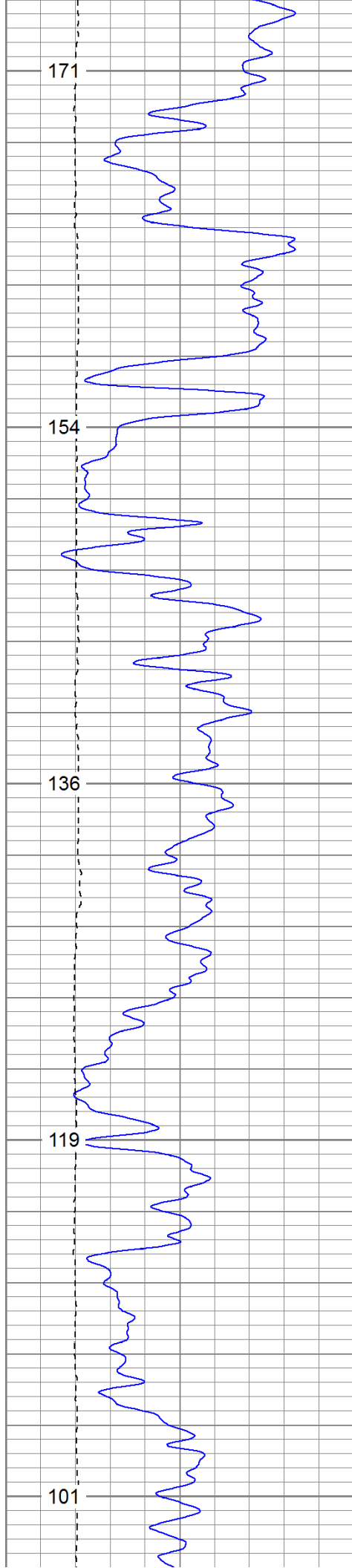
1100

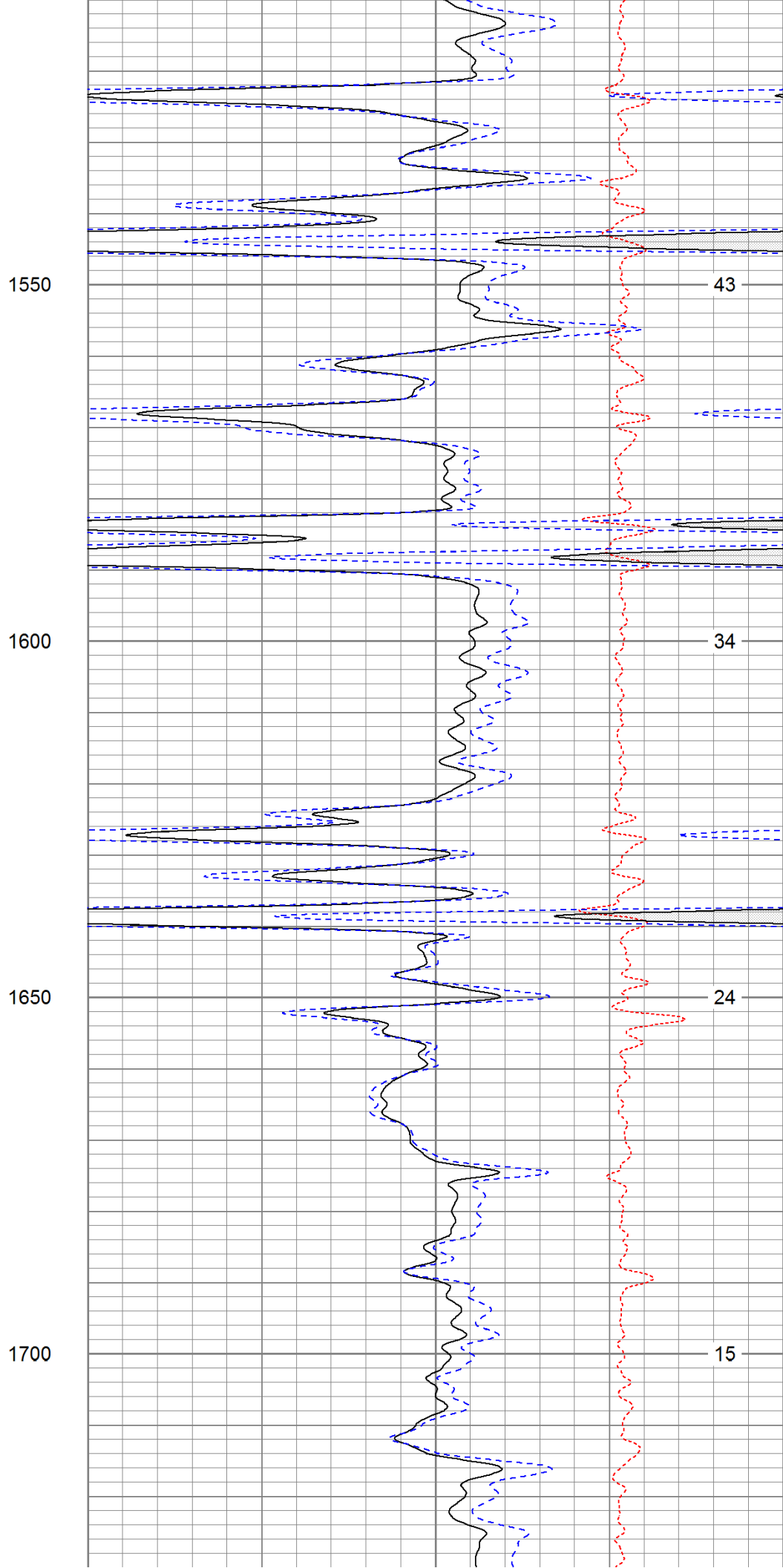
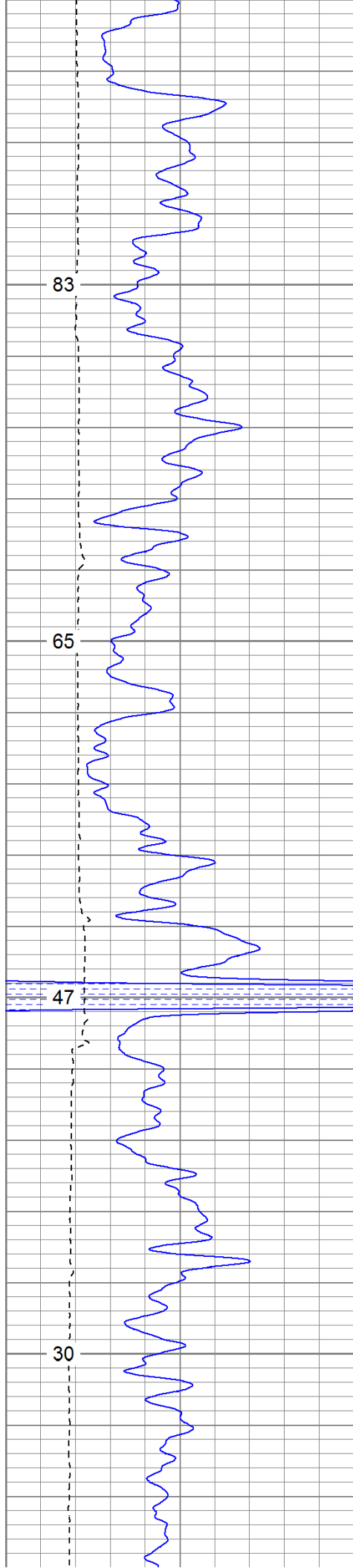
1150

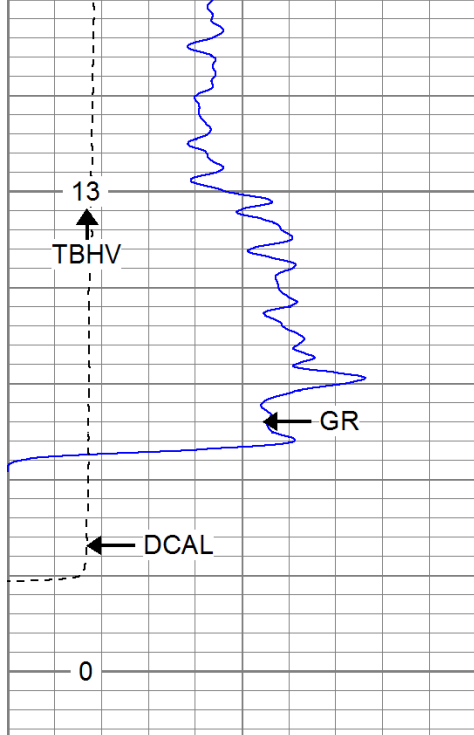
1200

1250





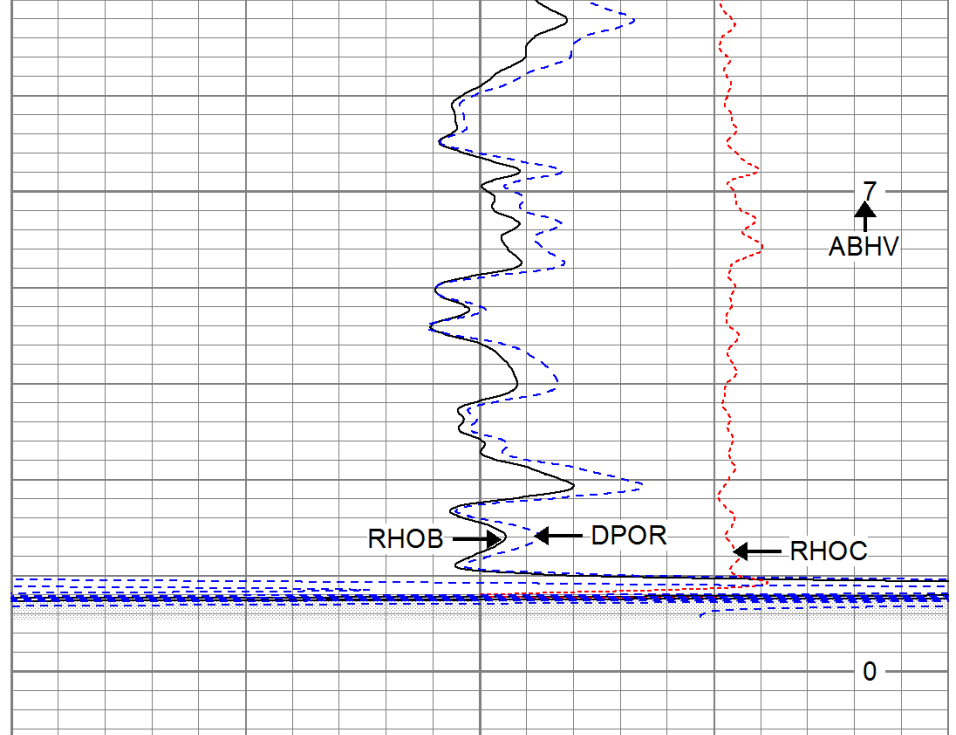




0	GR (GAPI)	200
6	DCAL (in)	16
TBHV (ft3)		

1750

1800



2	RHOB (g/cc)	3
1	RHOB (g/cc)	2
30	DPOR (pu)	-10

-0.5	RHOC (g/cc)	0.5
7000	LTEN (lb)	0
ABHV (ft3)		



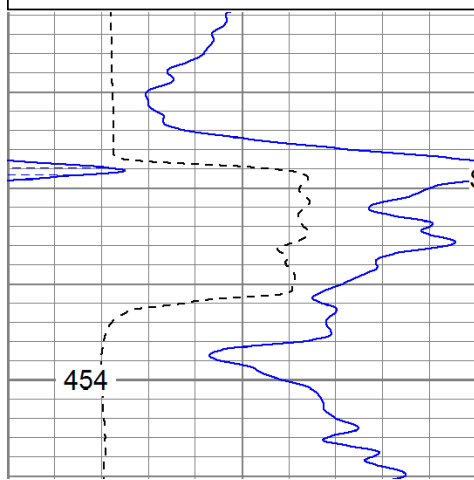
# Main Pass

Database File: rollsroyce.db  
 Dataset Pathname: pass2.1  
 Presentation Format: cdnl  
 Dataset Creation: Sun Sep 18 06:57:53 2011 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:240

0	GR (GAPI)	200
6	DCAL (in)	16
TBHV (ft3)		

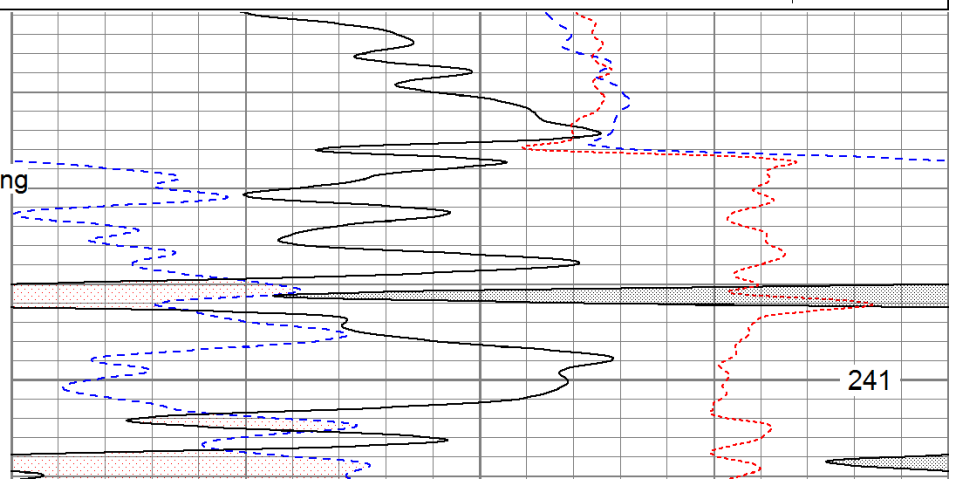
30	NPOR (pu)	-10
30	DPOR (pu)	-10
-0.5	RHOC (g/cc)	0.5

ABHV (ft3)

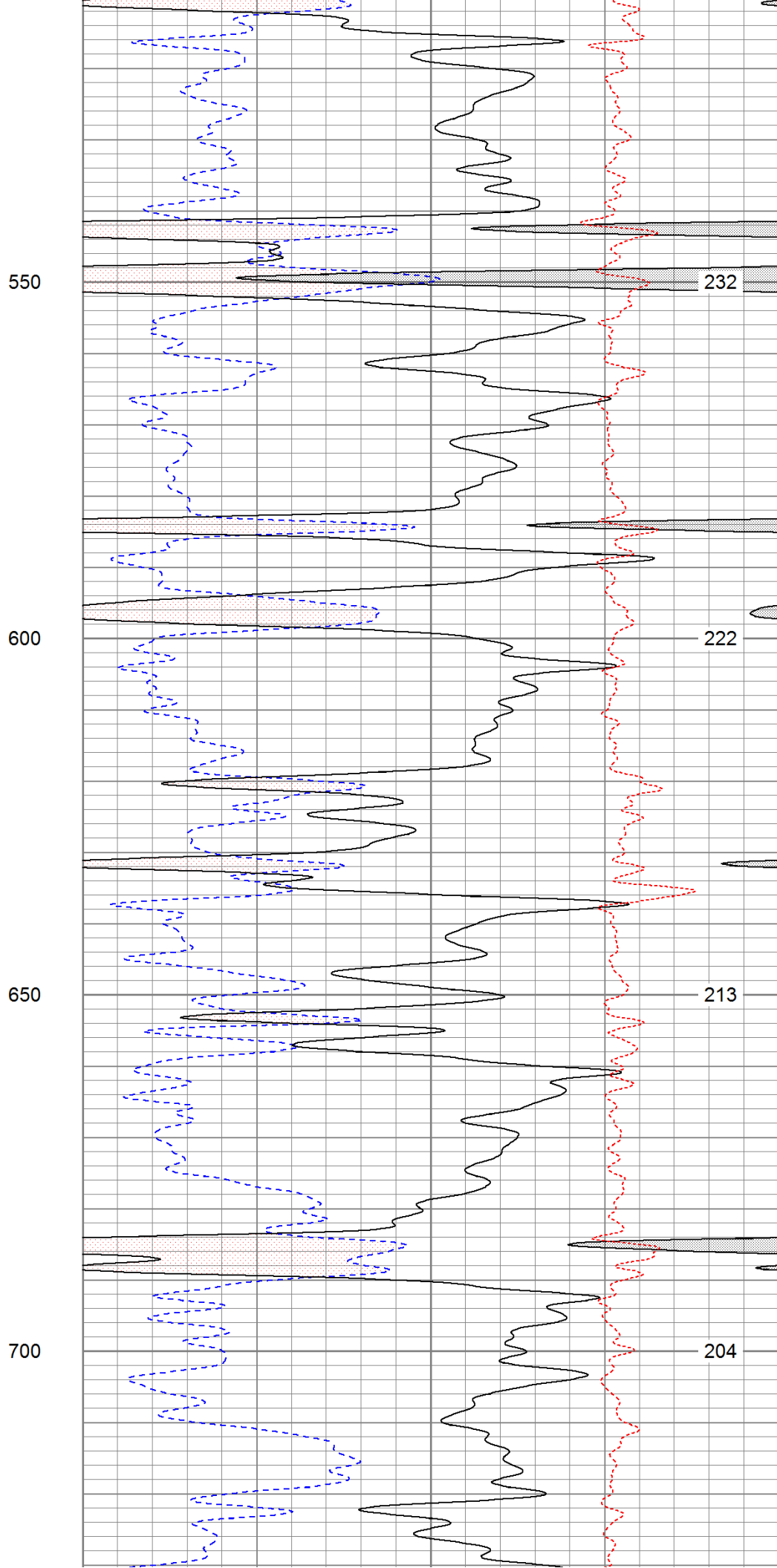
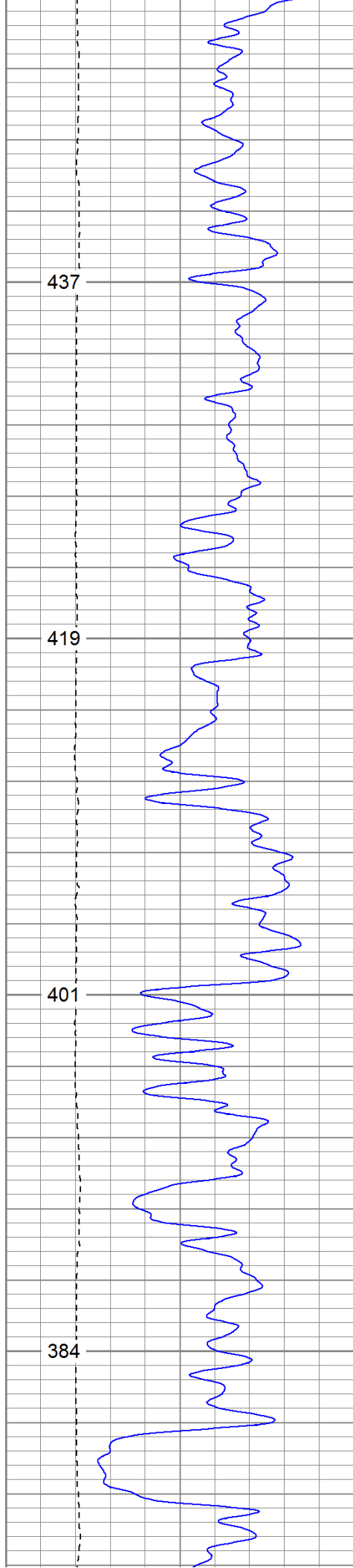


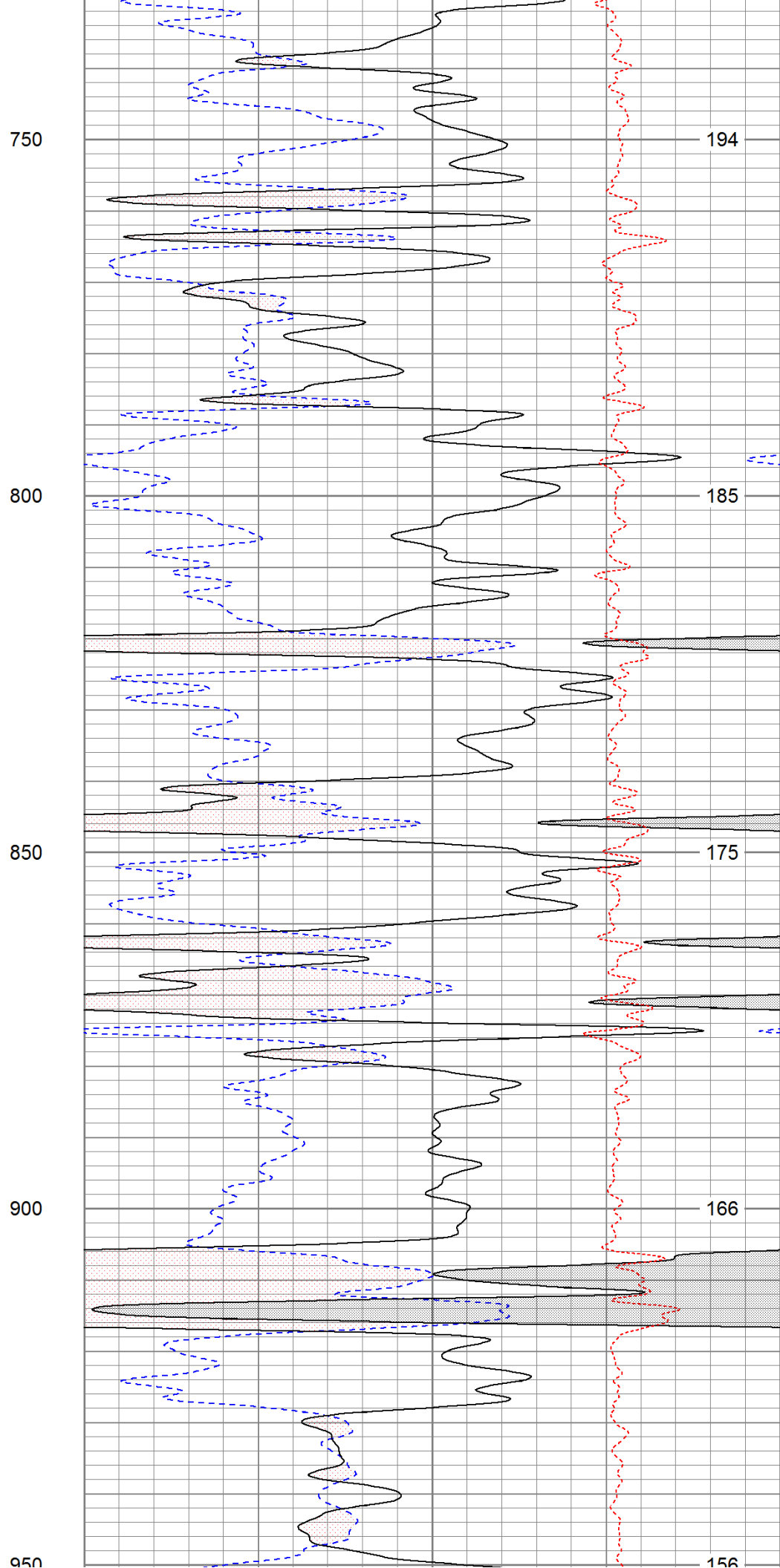
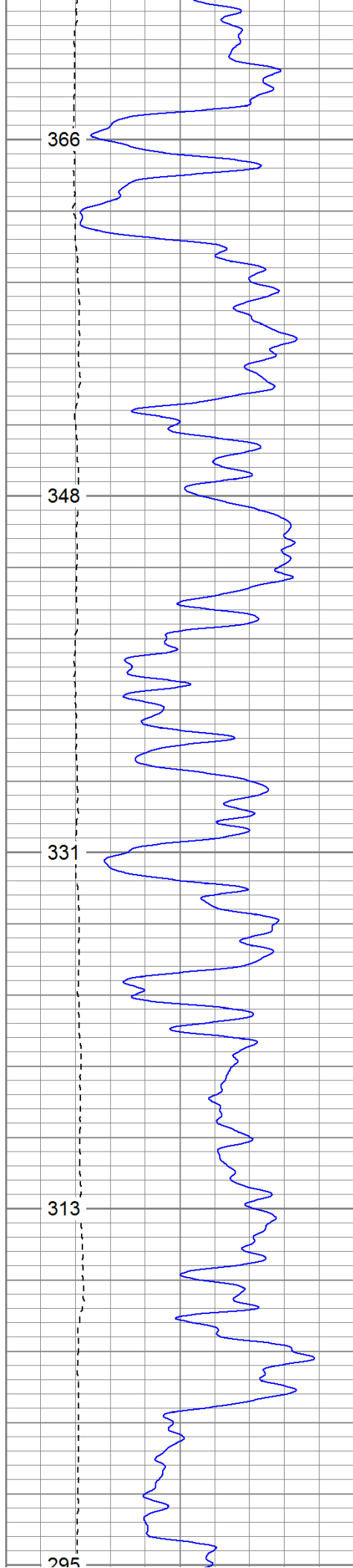
Surface Casing

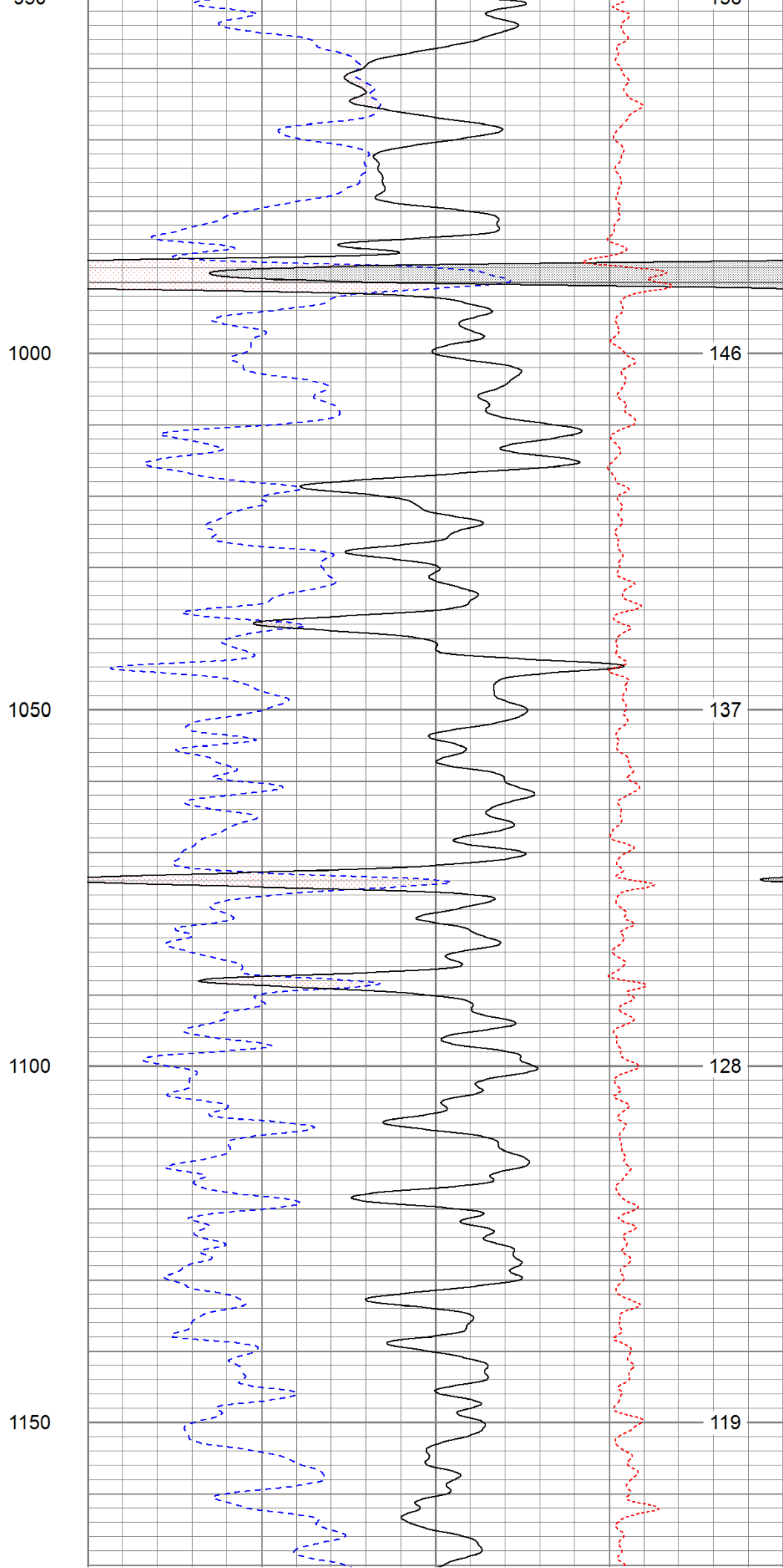
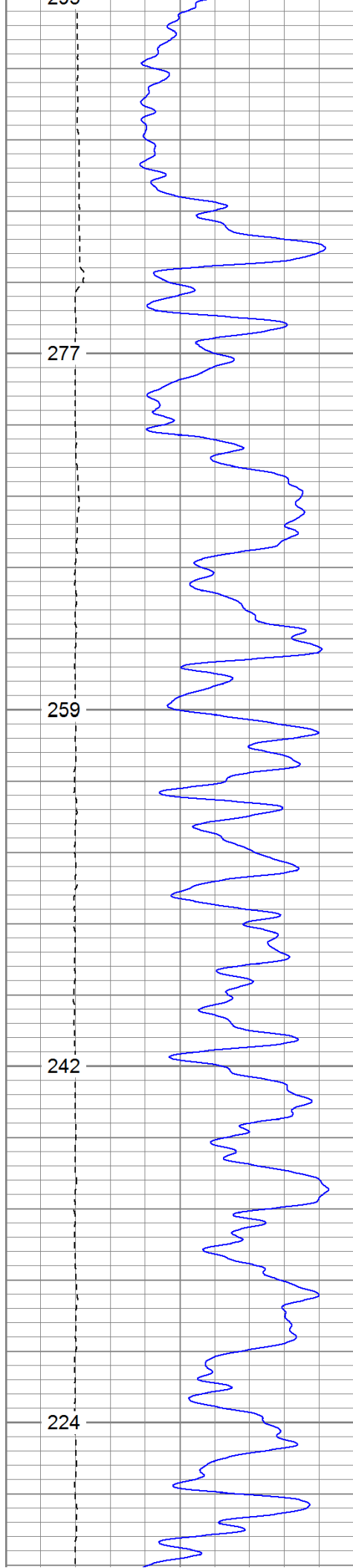
500

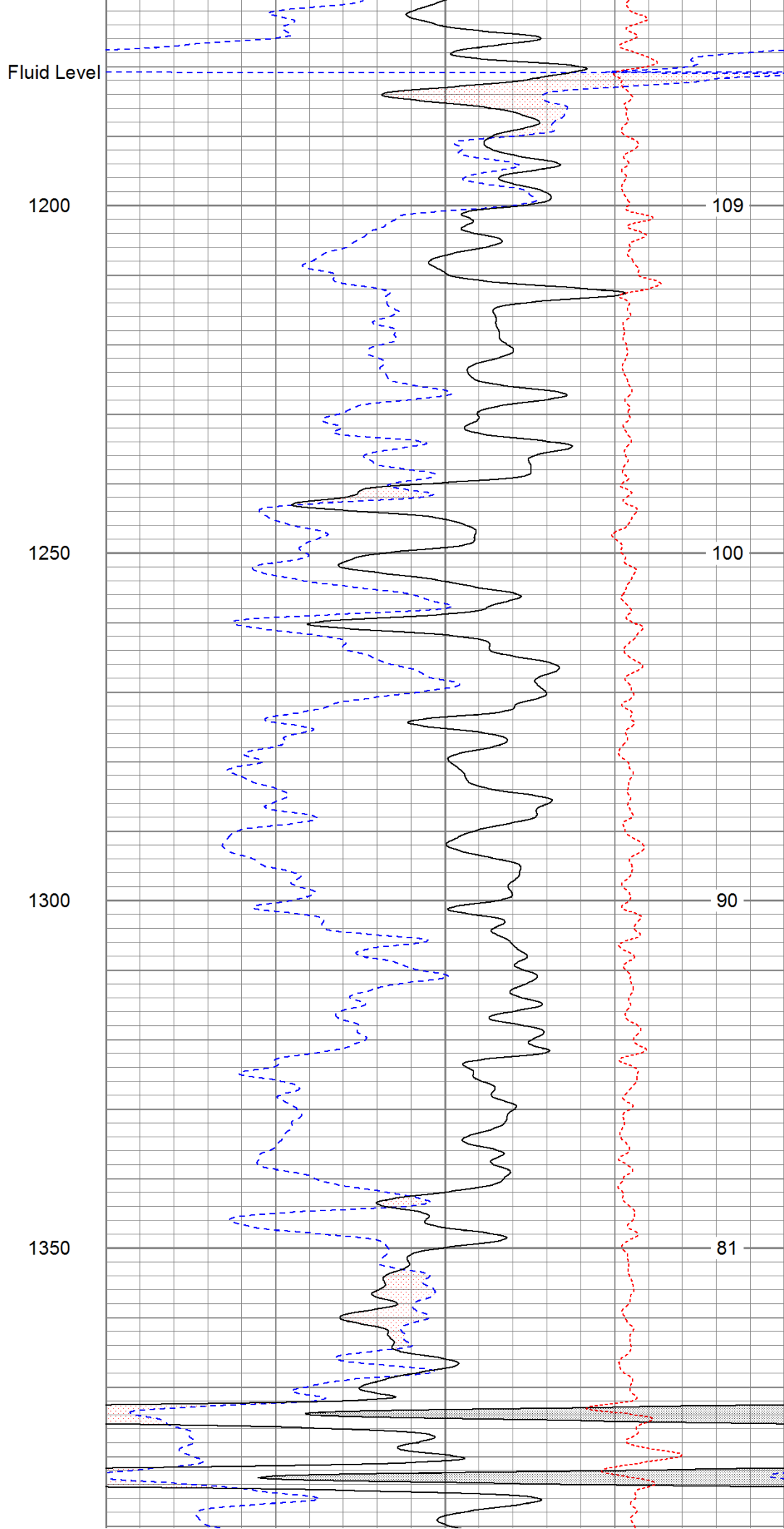
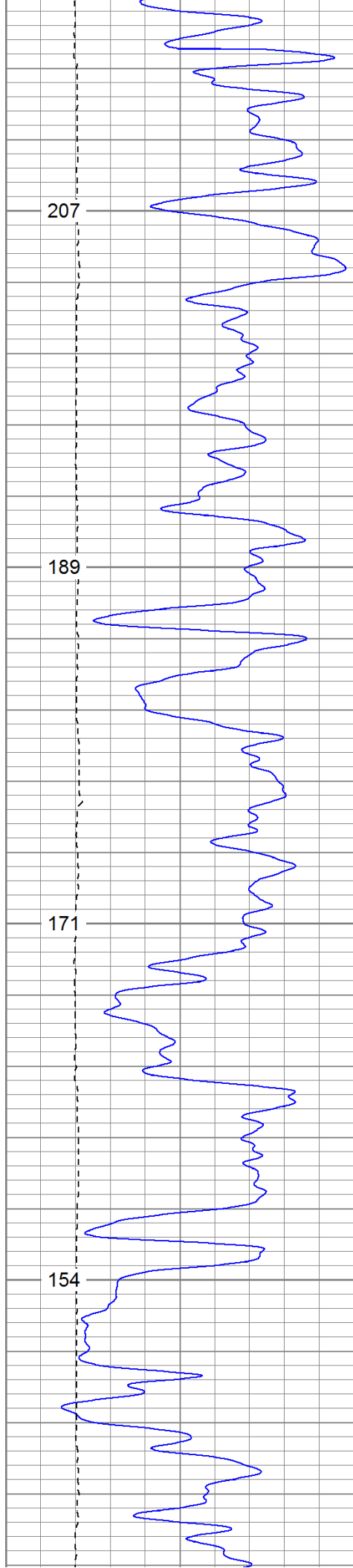


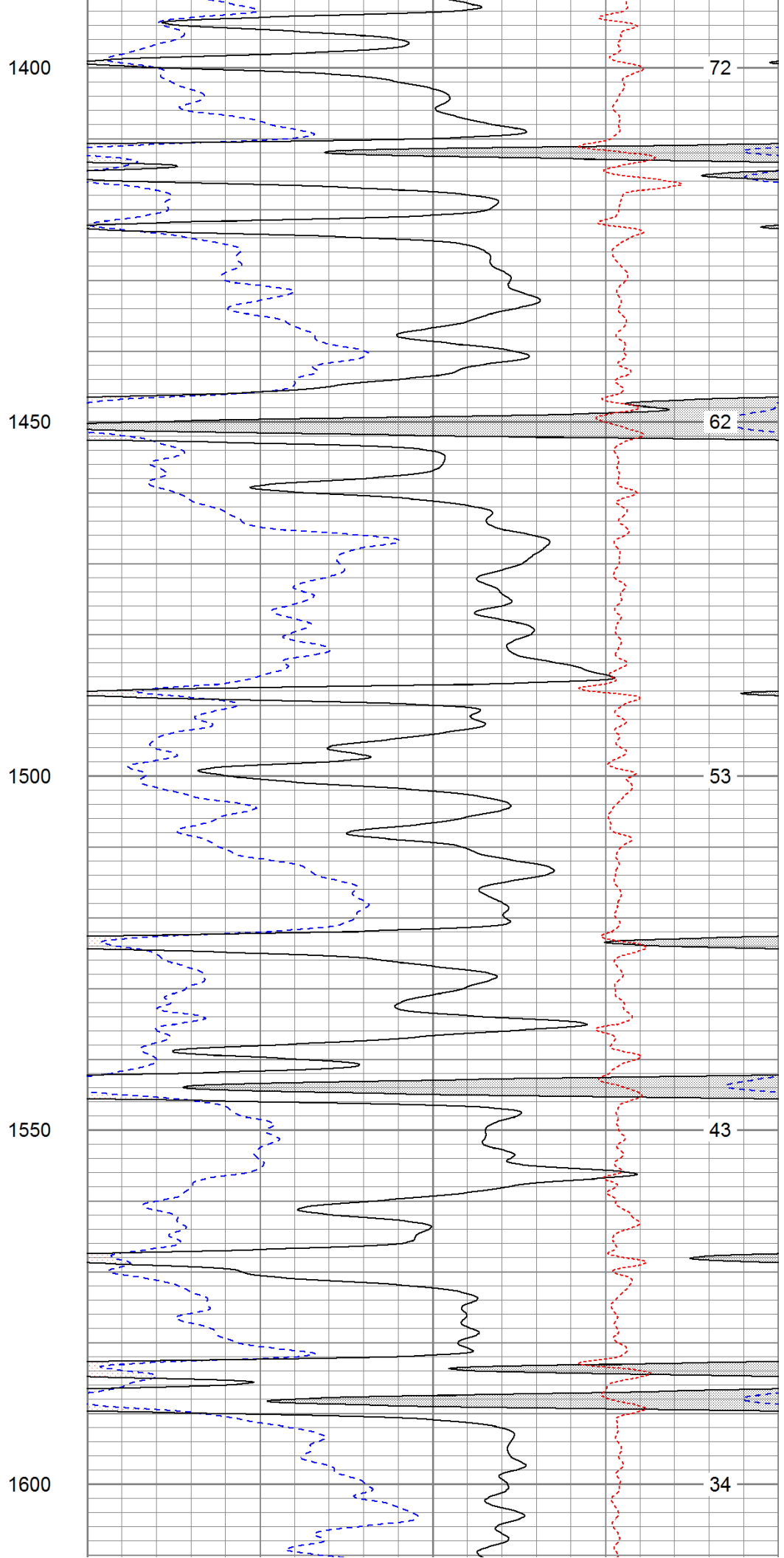
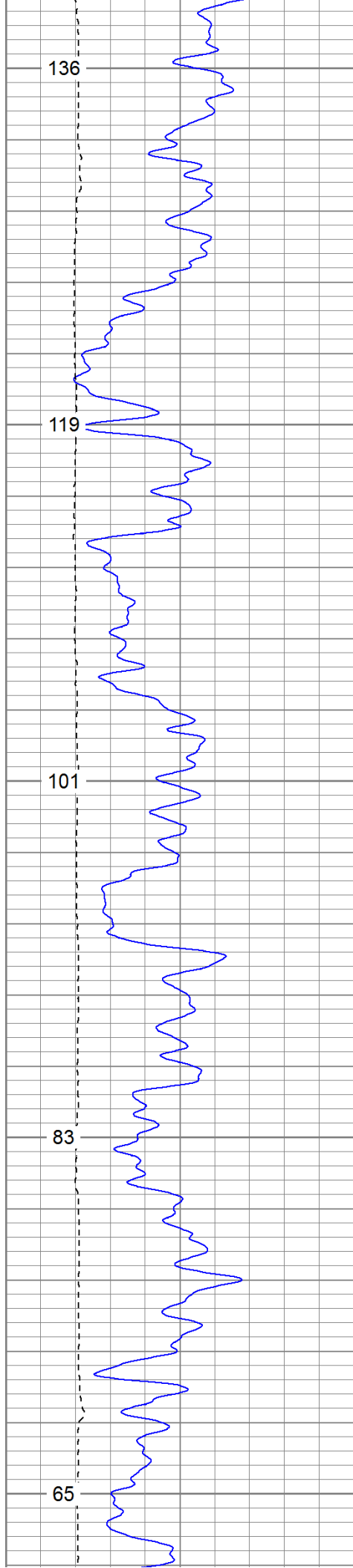
241

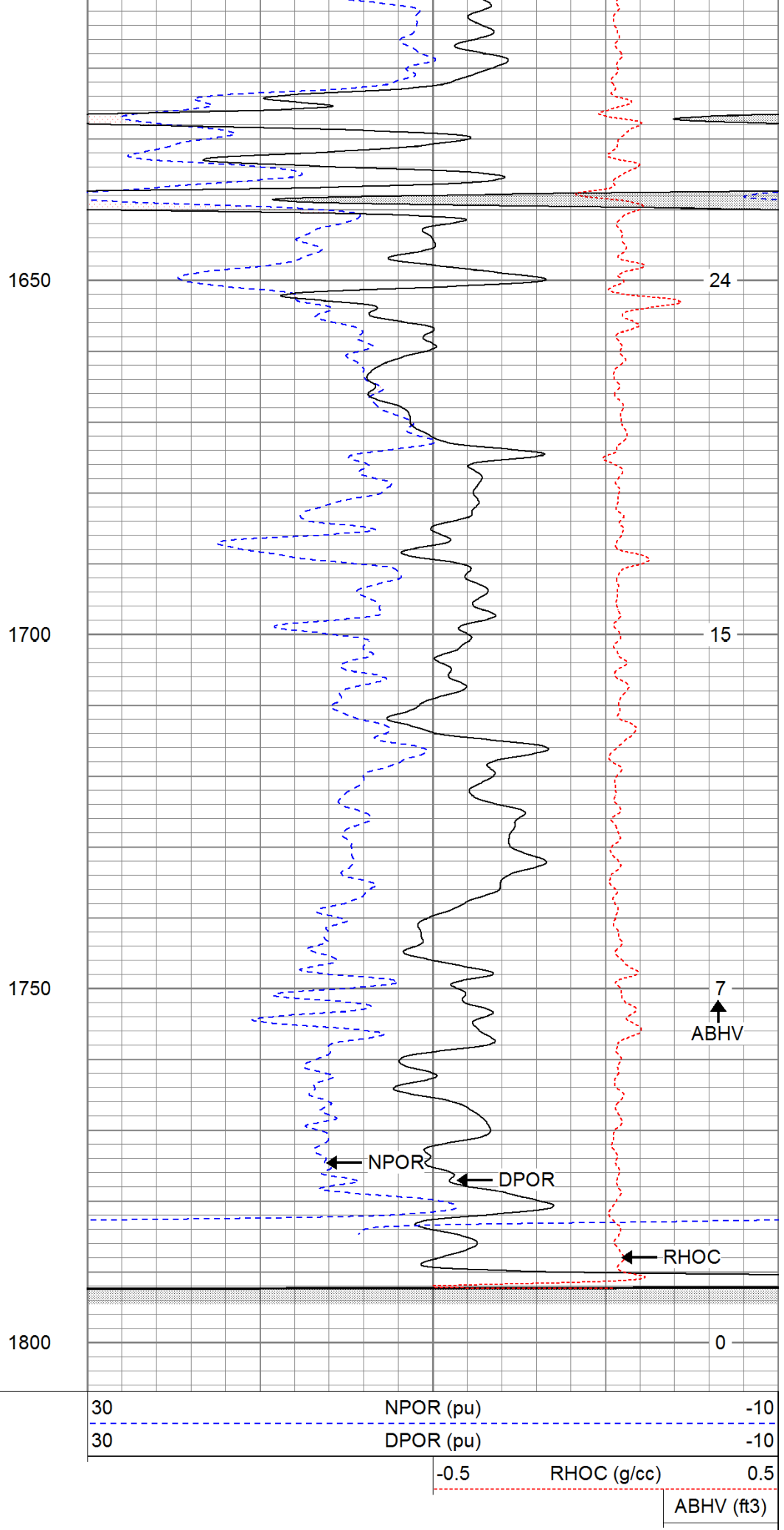
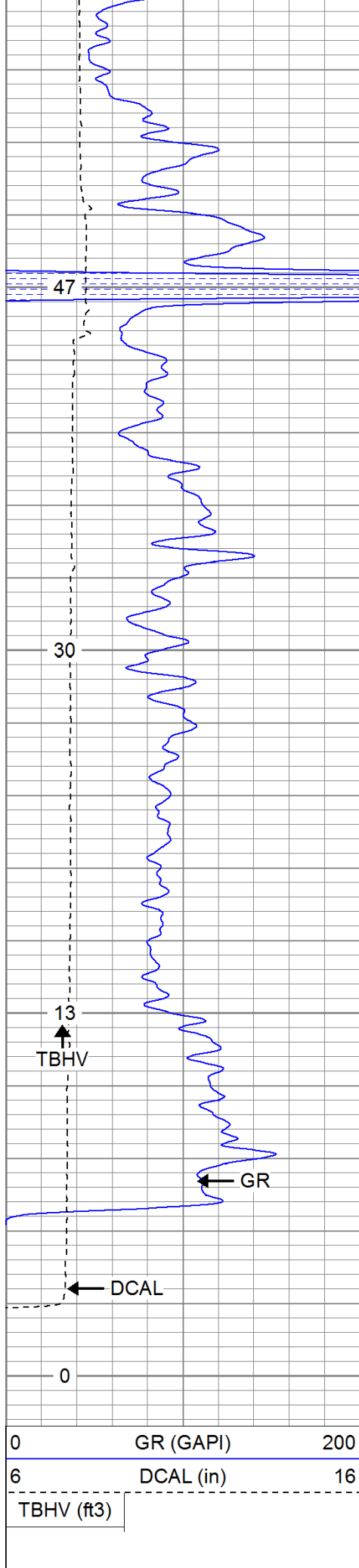












# Repeat Pass

Database File: rollsroyce.db  
 Dataset Pathname: pass1.1  
 Presentation Format: cdnl  
 Dataset Creation: Sun Sep 18 06:56:26 2011 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:240

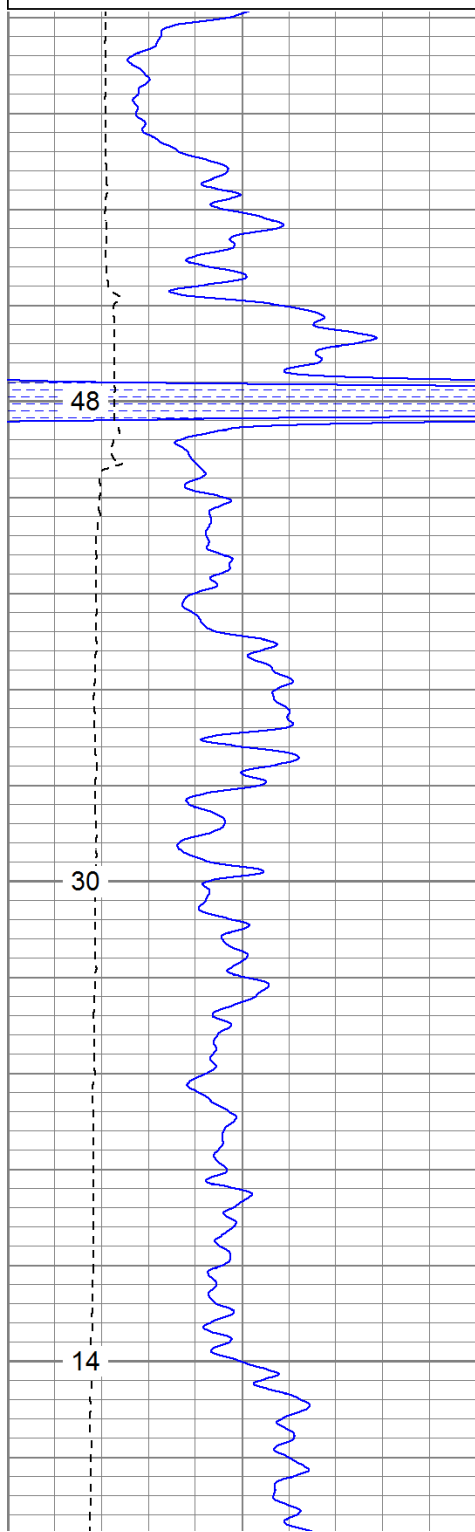
0	GR (GAPI)	200
6	DCAL (in)	16

TBHV (ft3)

30	NPOR (pu)	-10
30	DPOR (pu)	-10

-0.5 RHOC (g/cc) 0.5

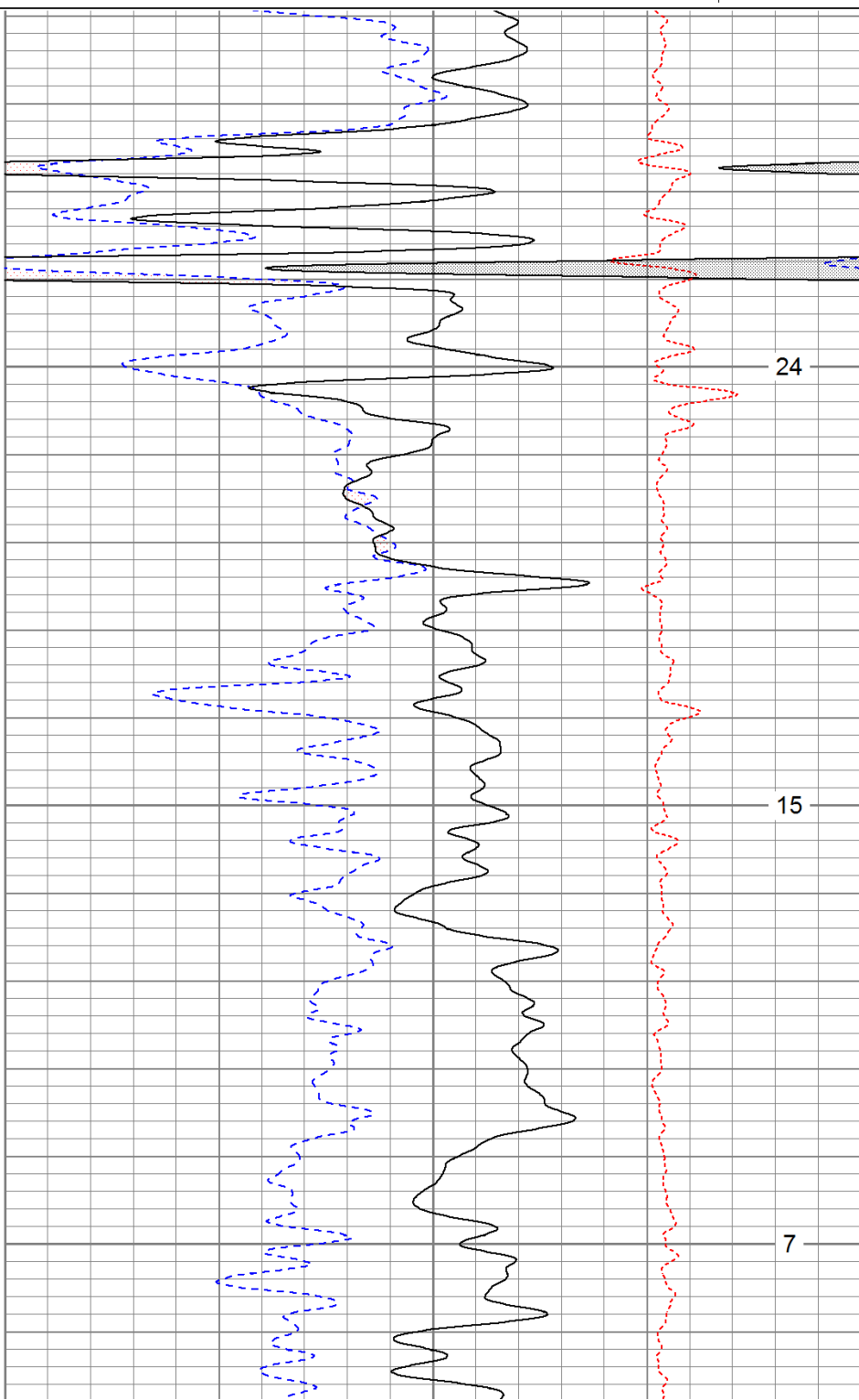
ABHV (ft3)



1650

1700

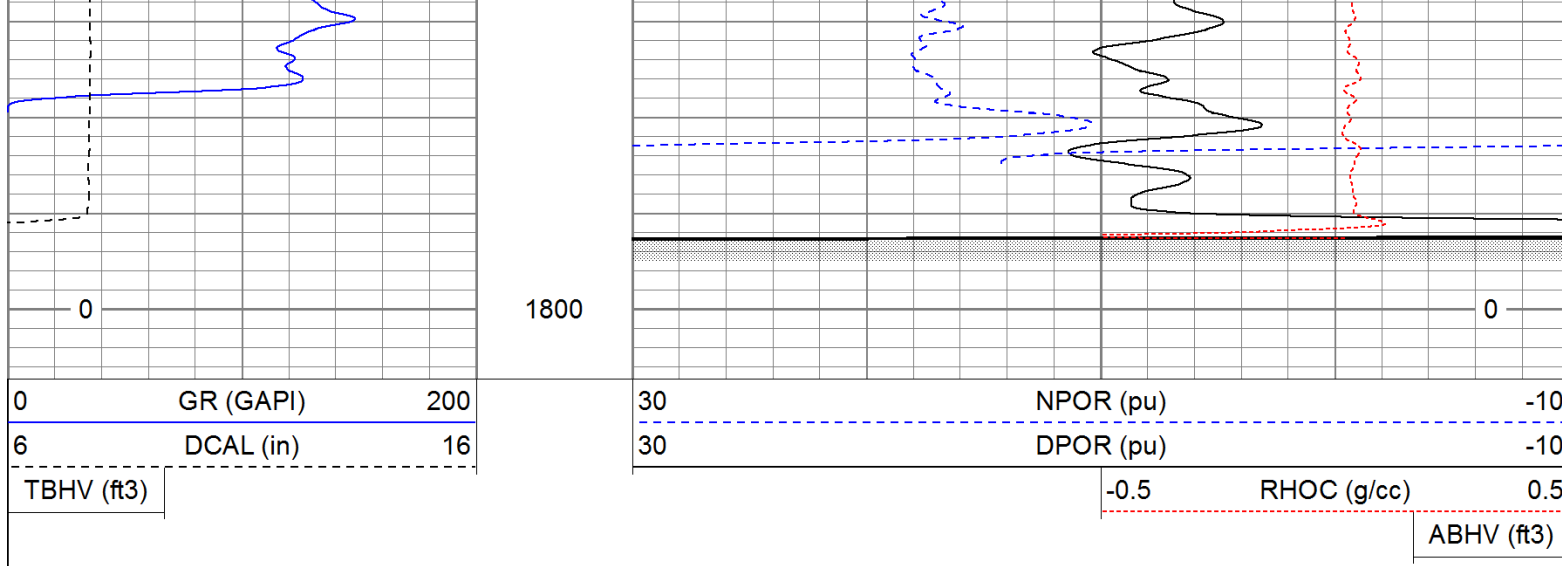
1750



24

15

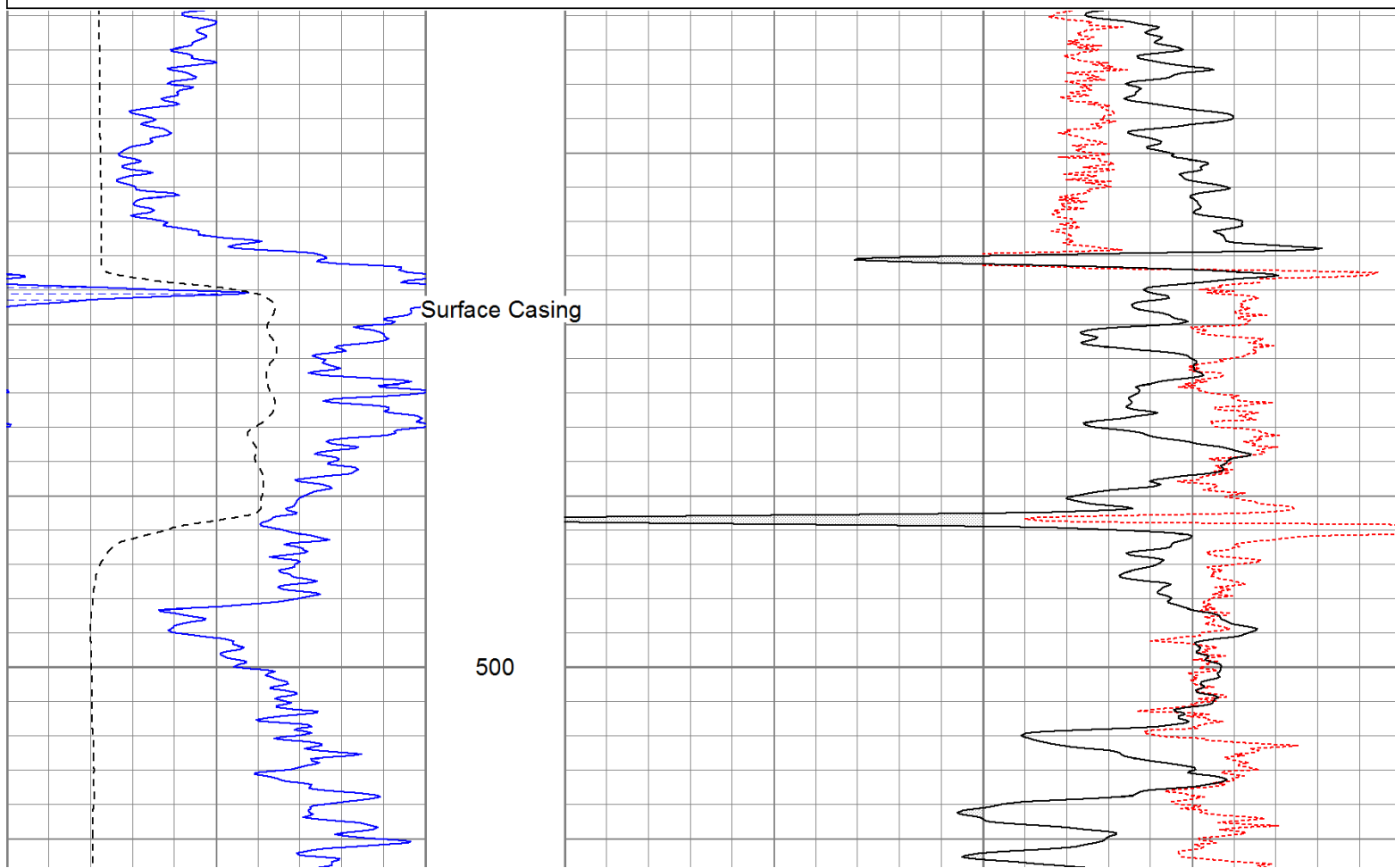
7

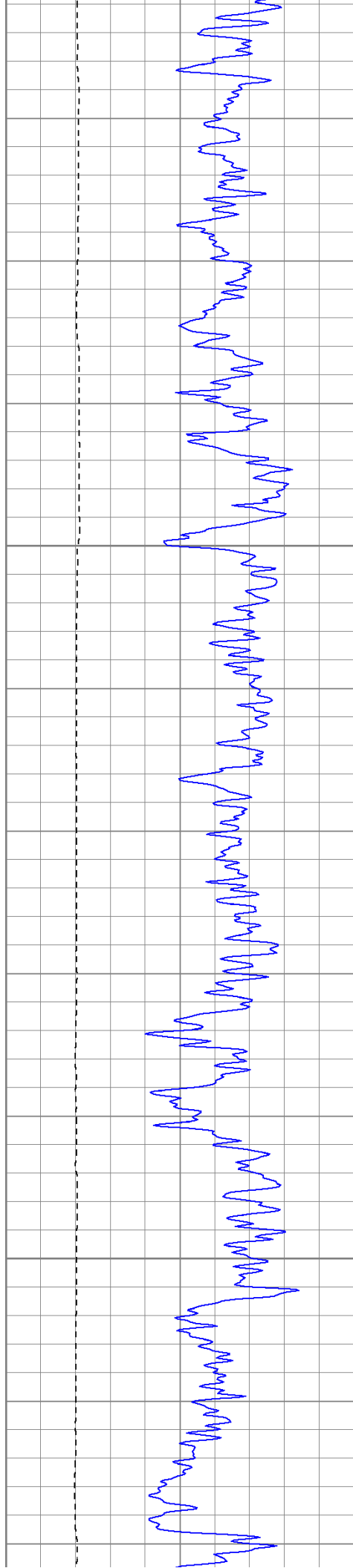


# High Resolution Pass

Database File: rollsroyce.db  
 Dataset Pathname: pass2.2  
 Presentation Format: cdlhr  
 Dataset Creation: Sun Sep 18 07:03:34 2011 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:120

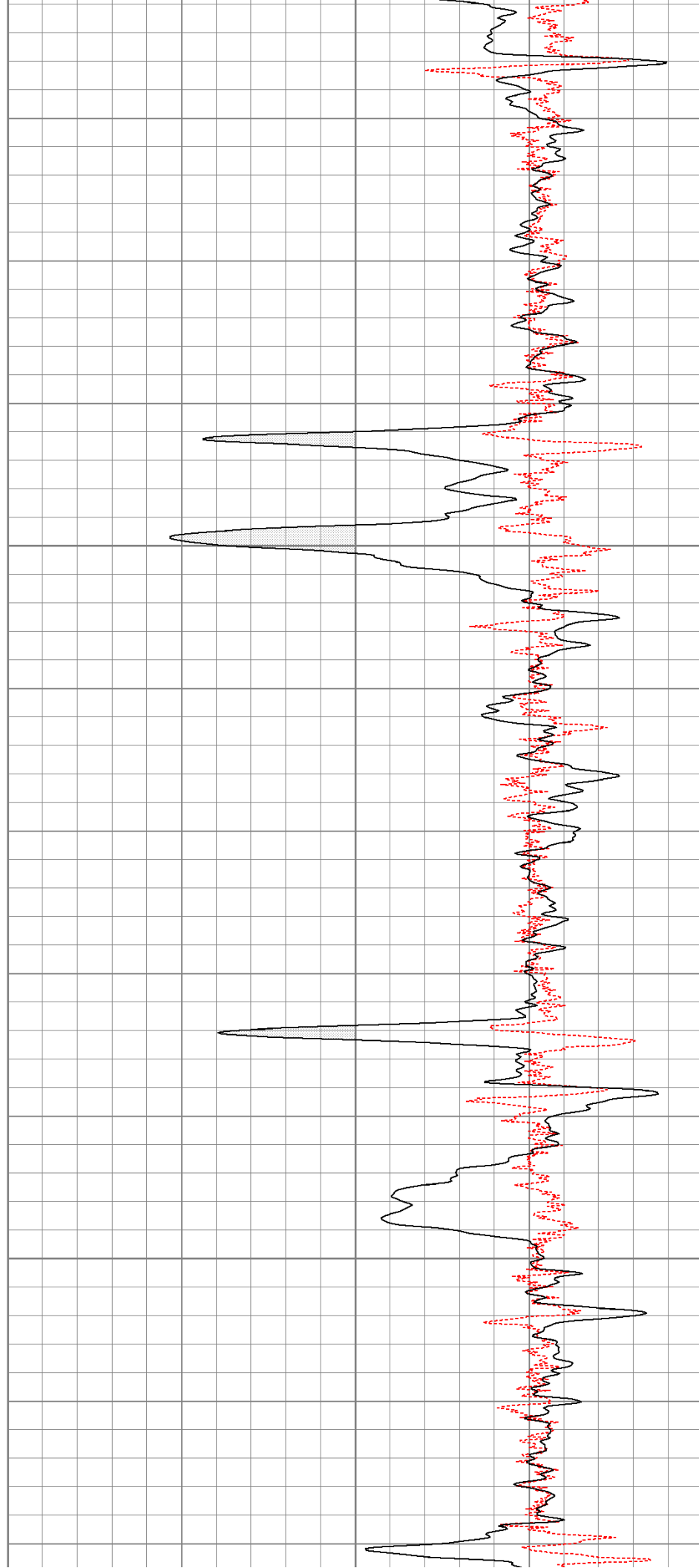
0	GR (GAPI)	200	1	RHOB (g/cc)	3
6	DCAL (in)	16	-0.5	RHOC (g/cc)	0.5

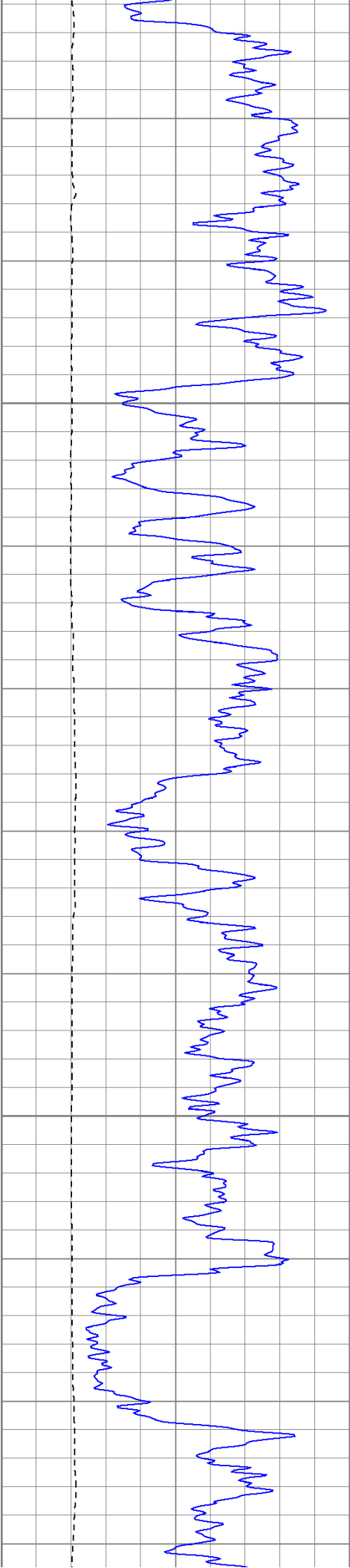




550

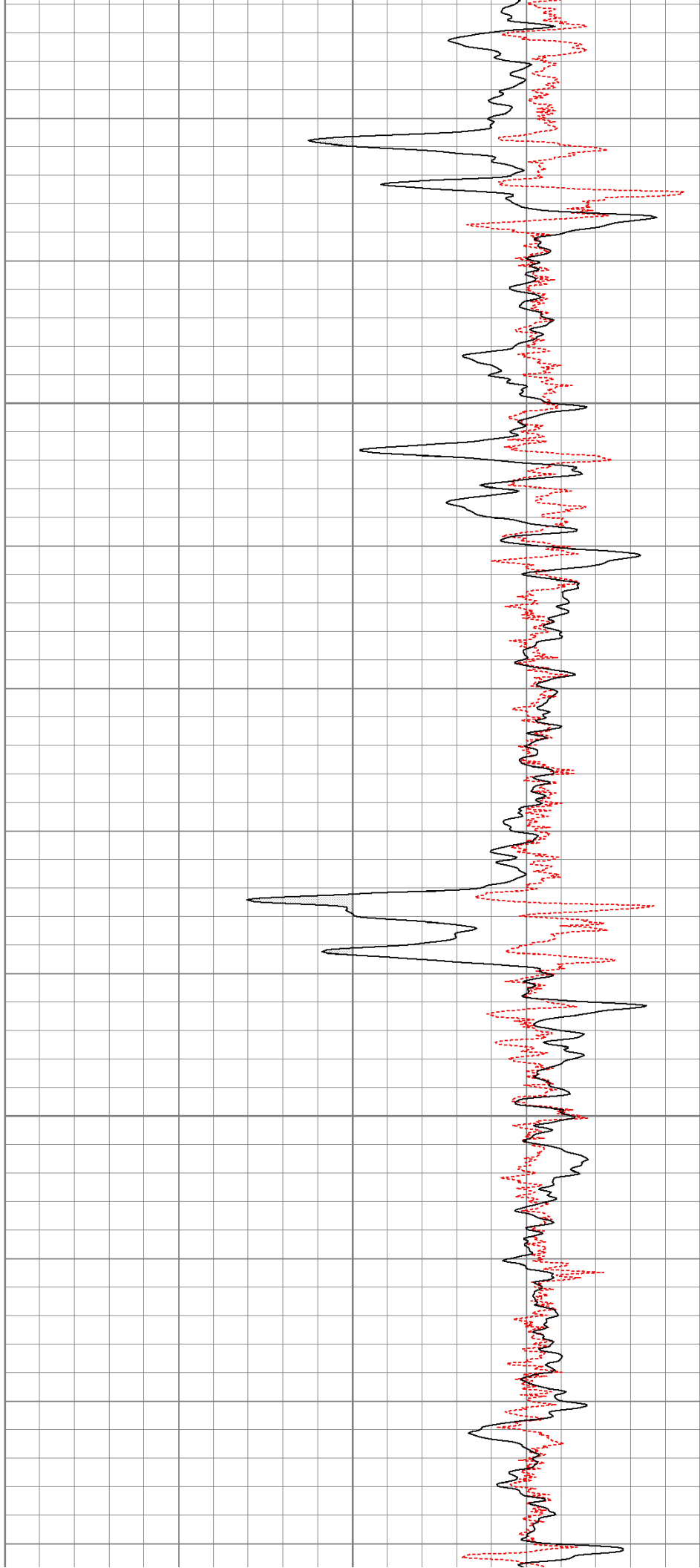
600

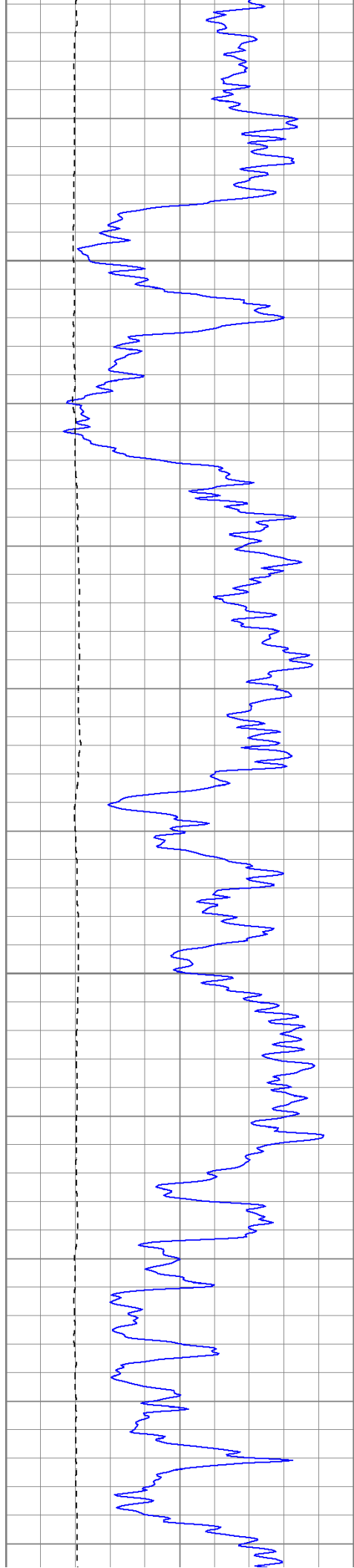




650

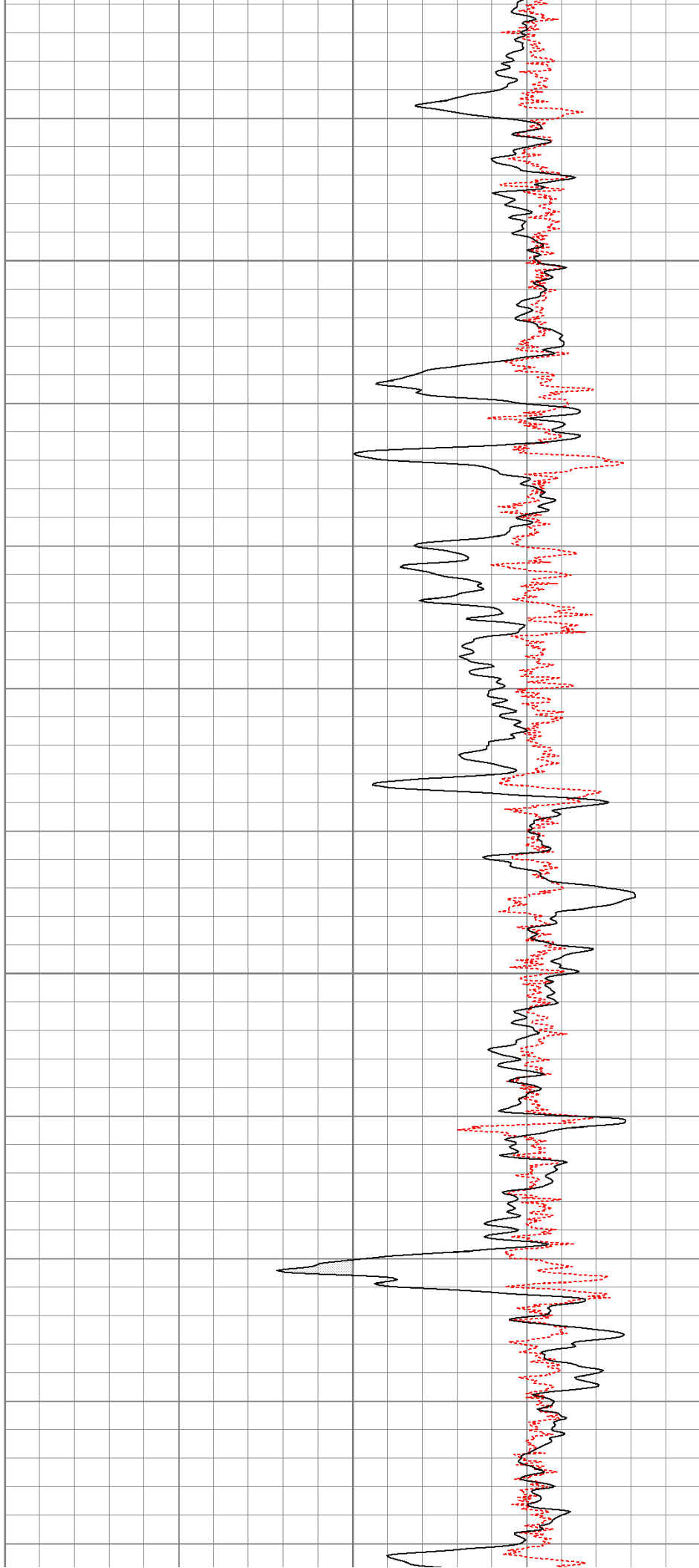
700

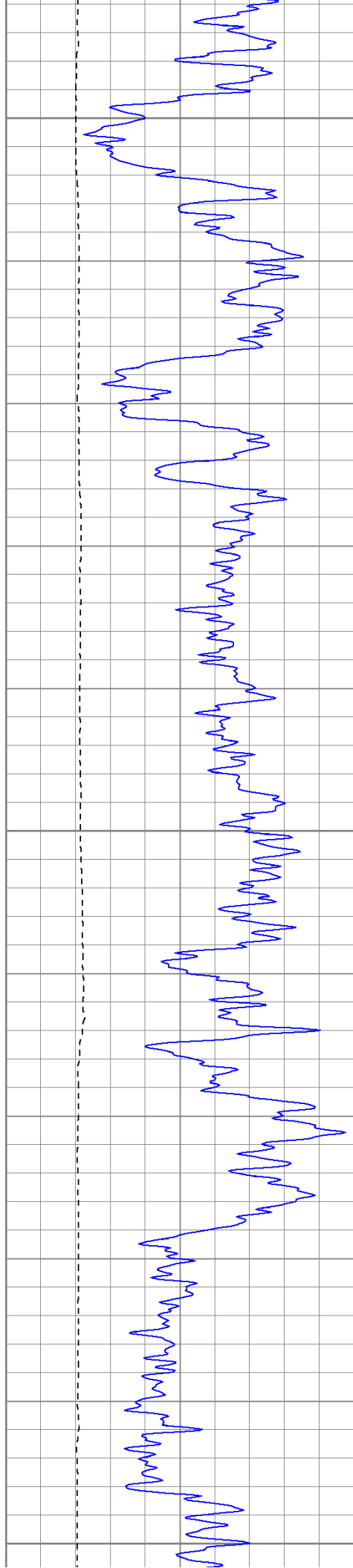




750

800

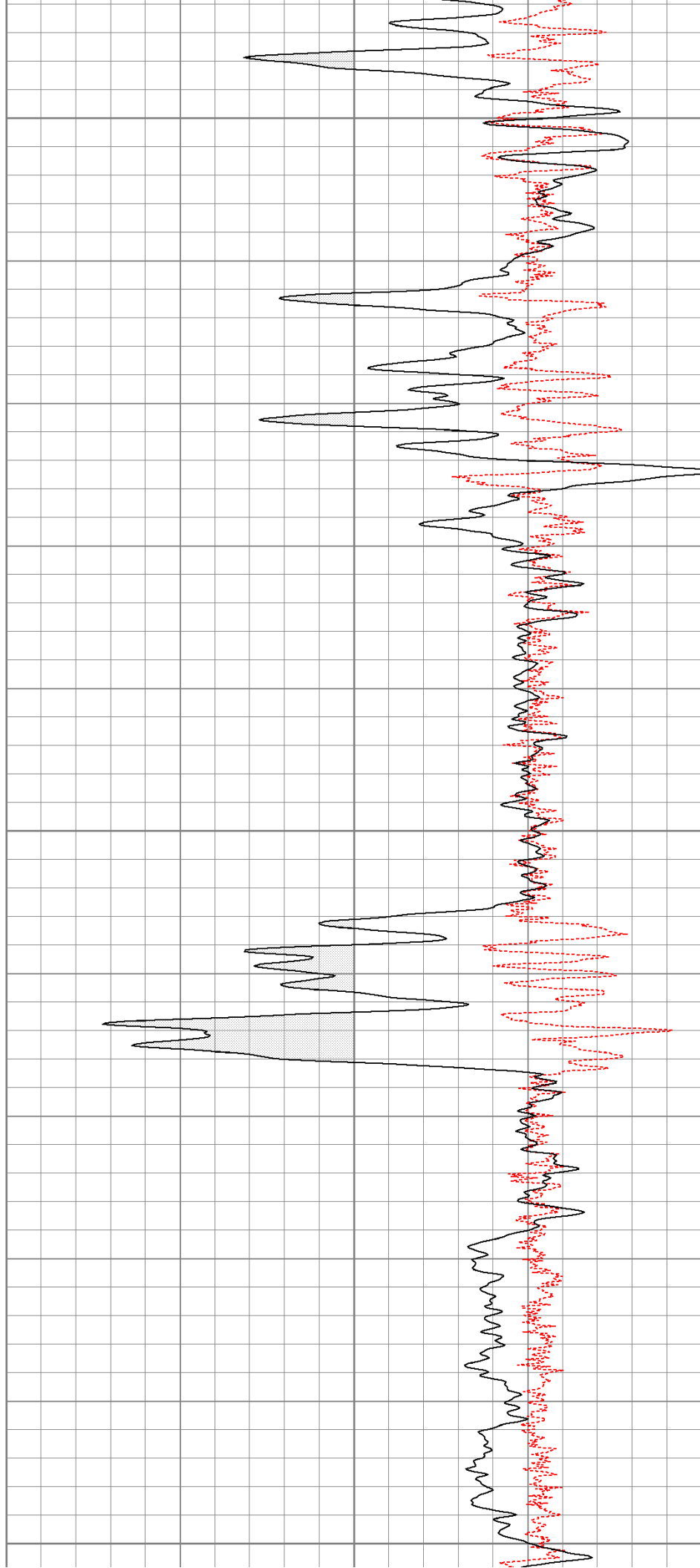


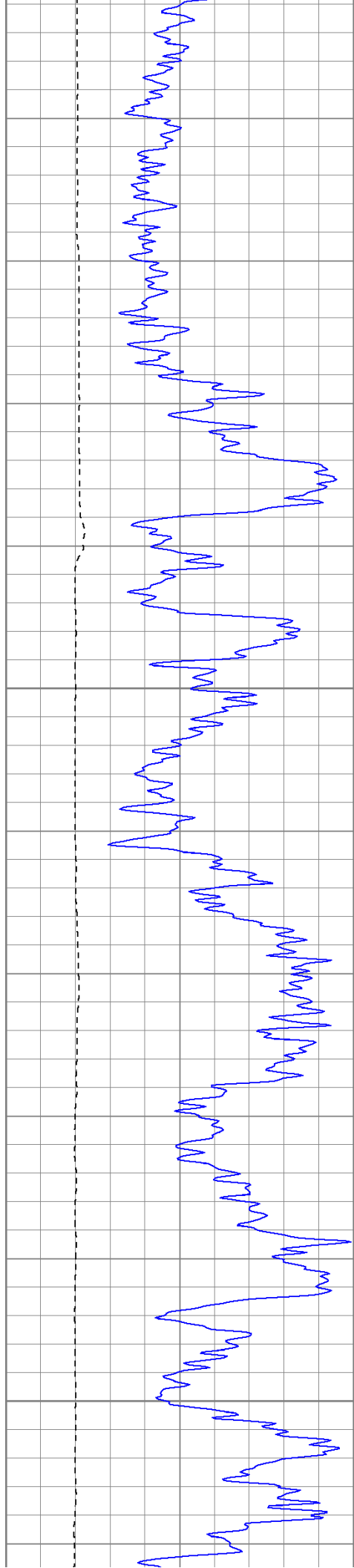


850

900

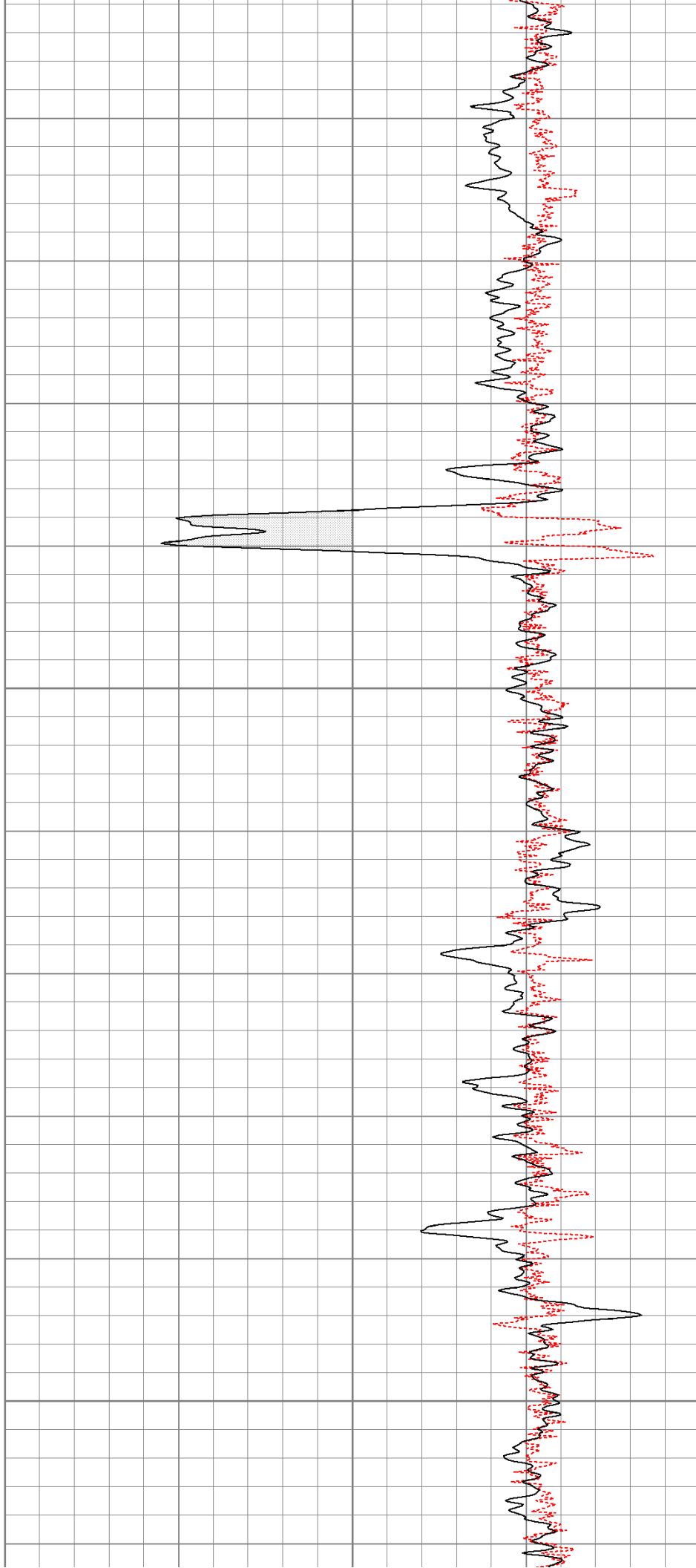
950

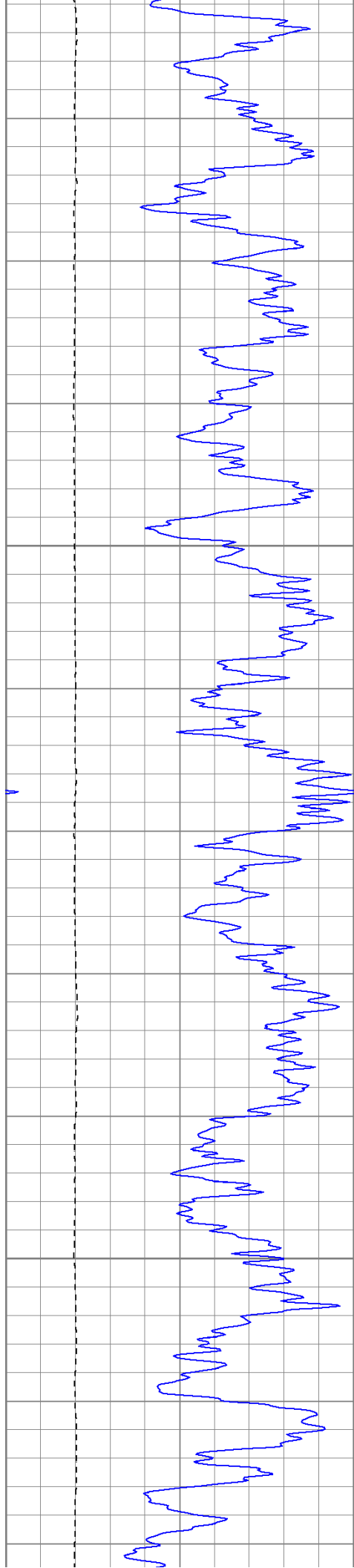




1000

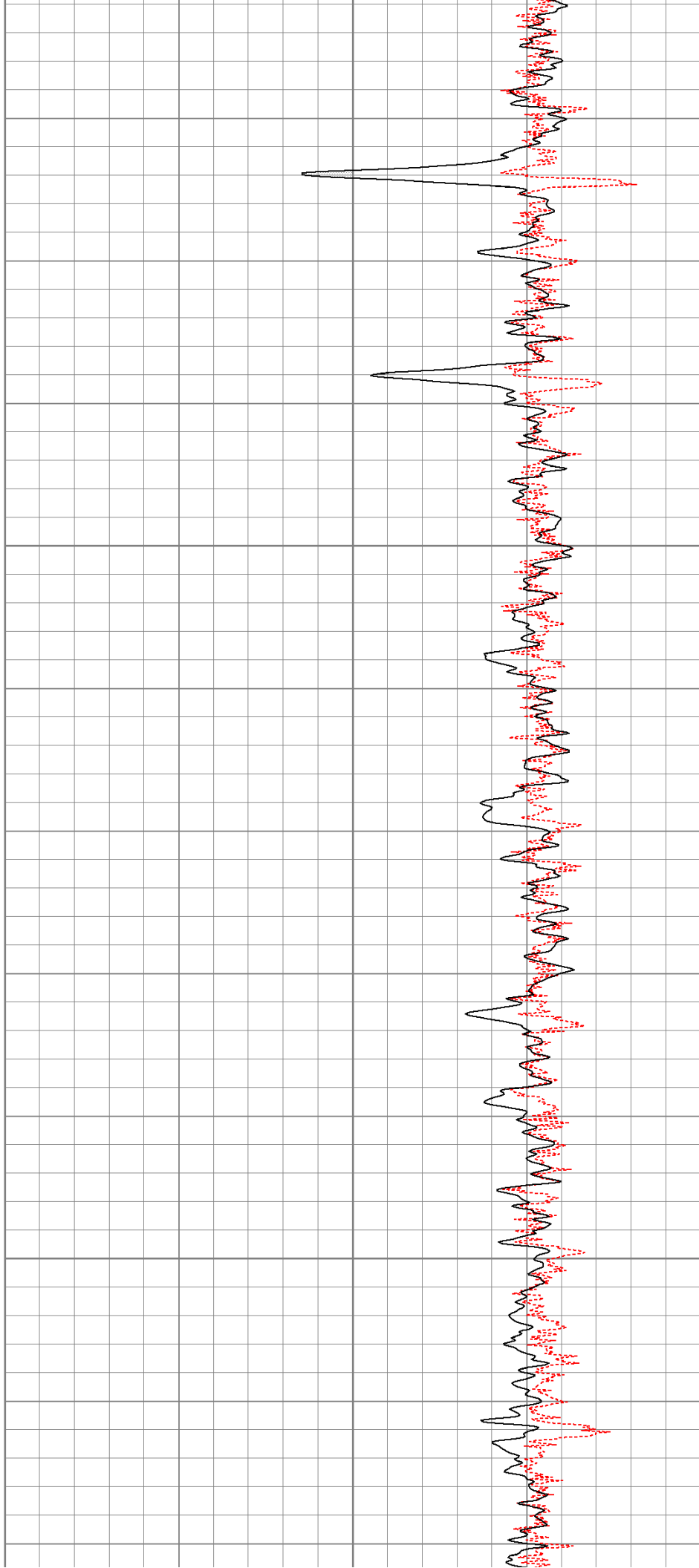
1050

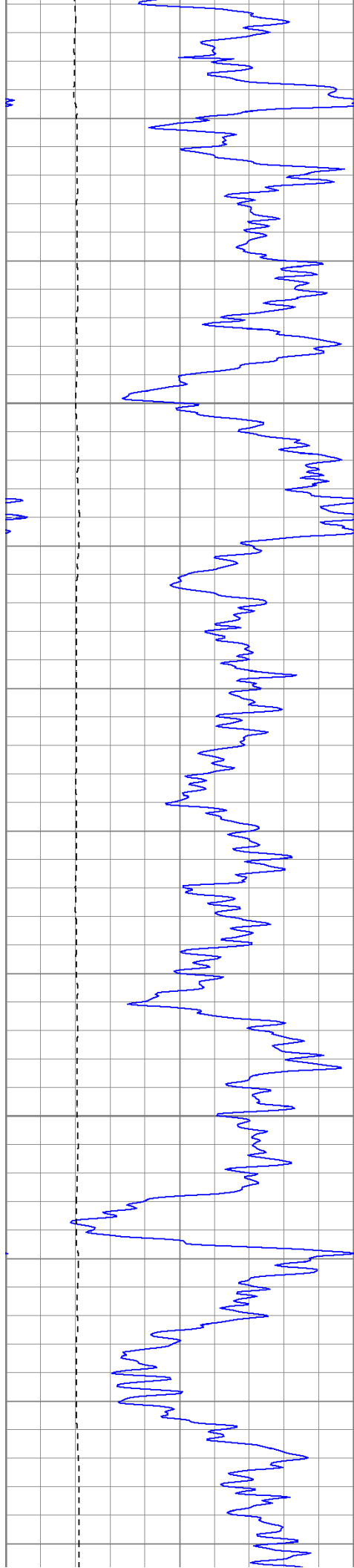




1100

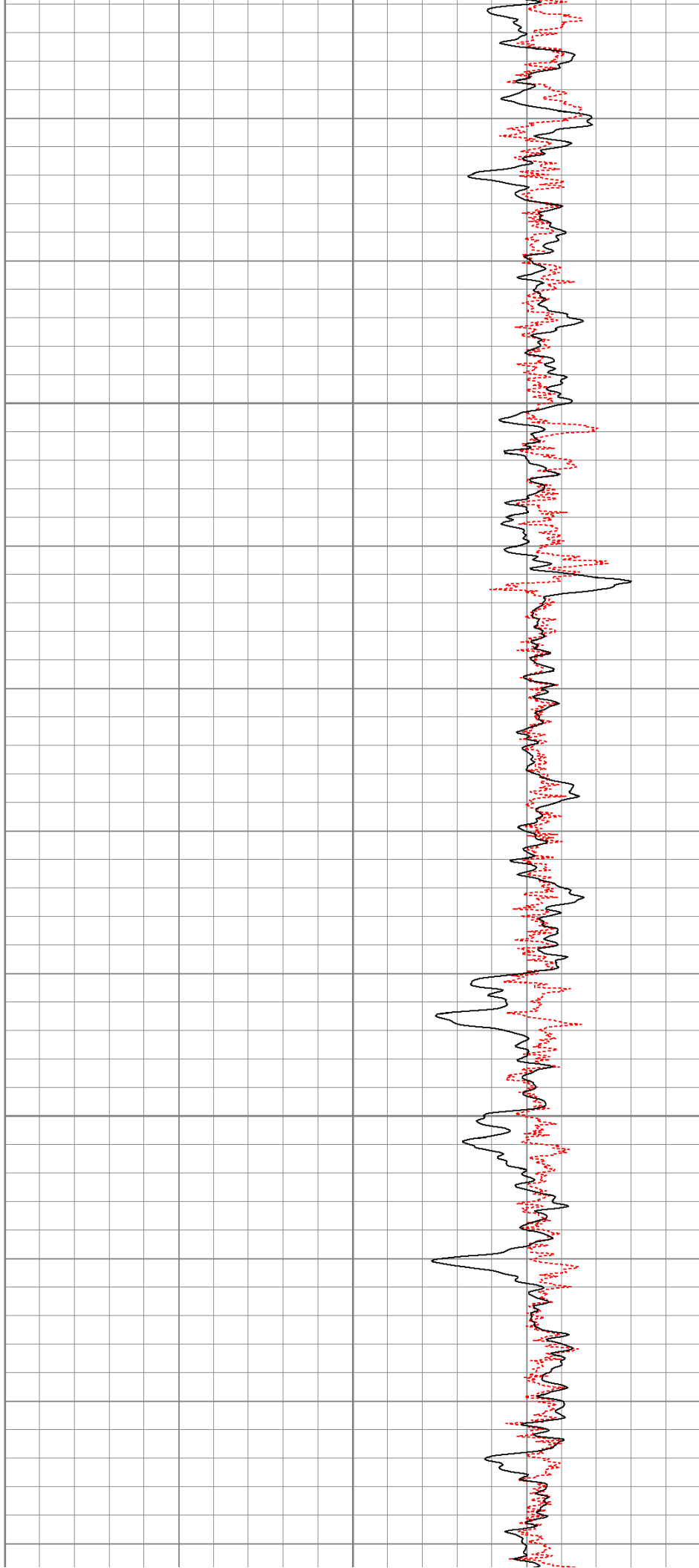
1150

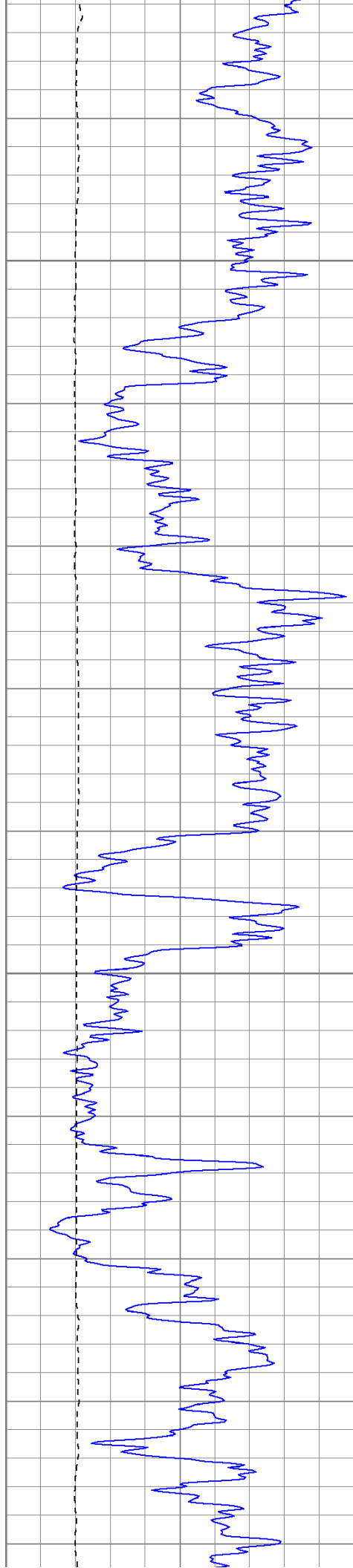




1200

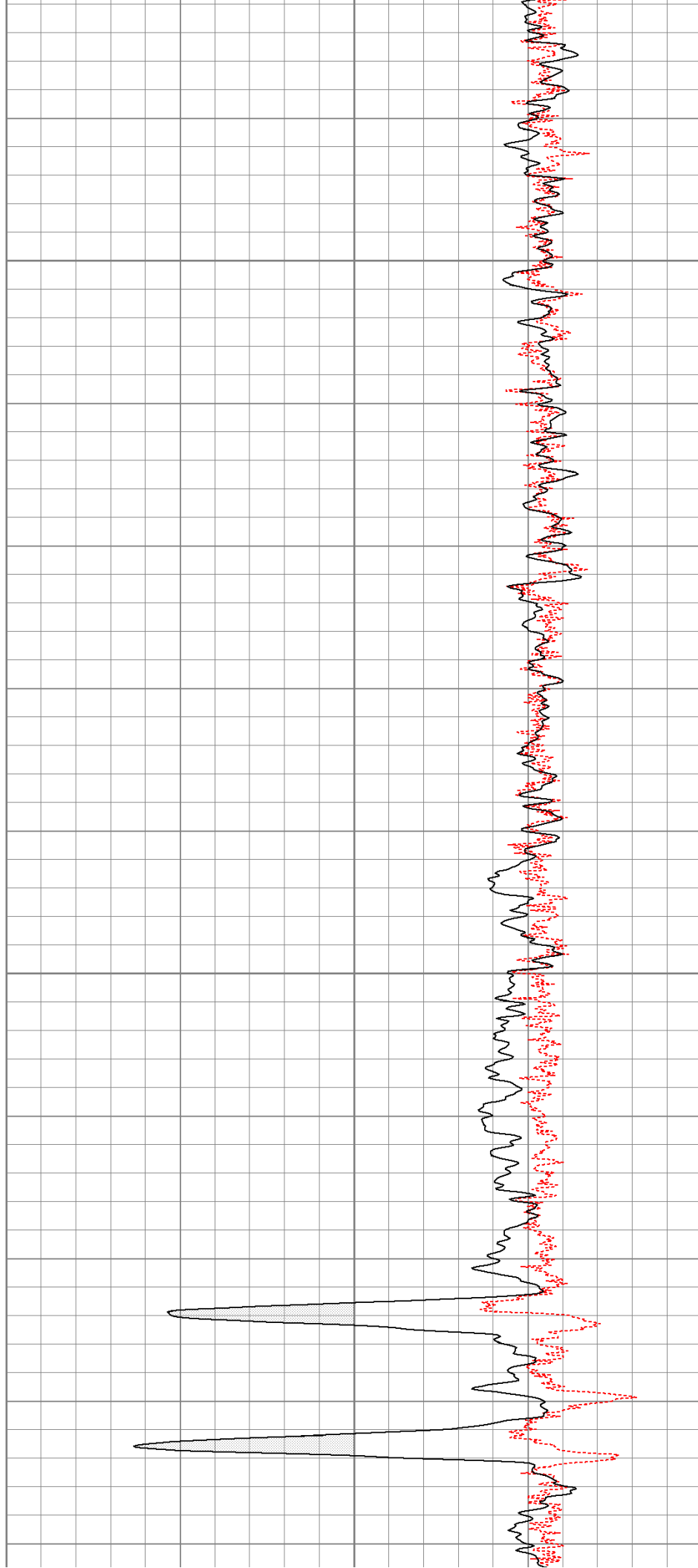
1250

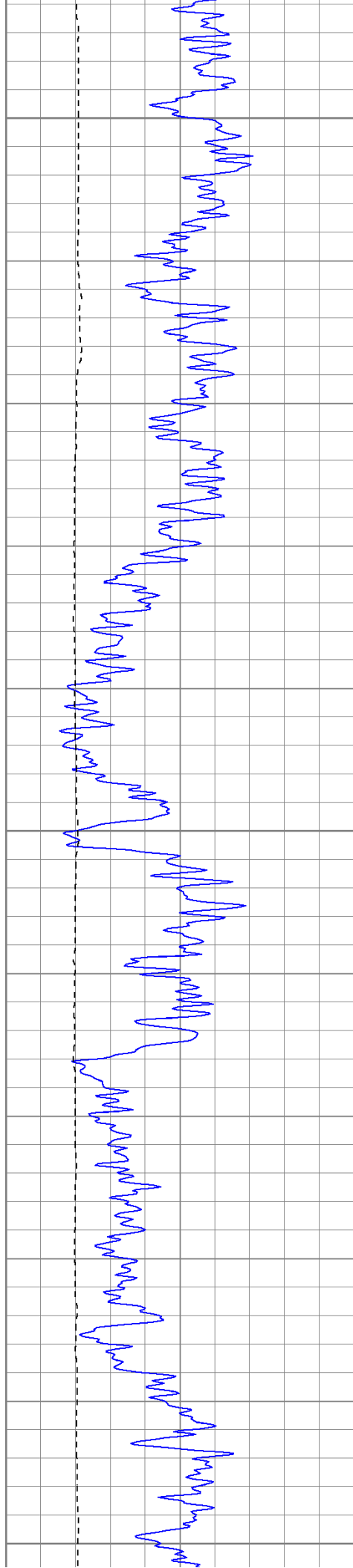




1300

1350

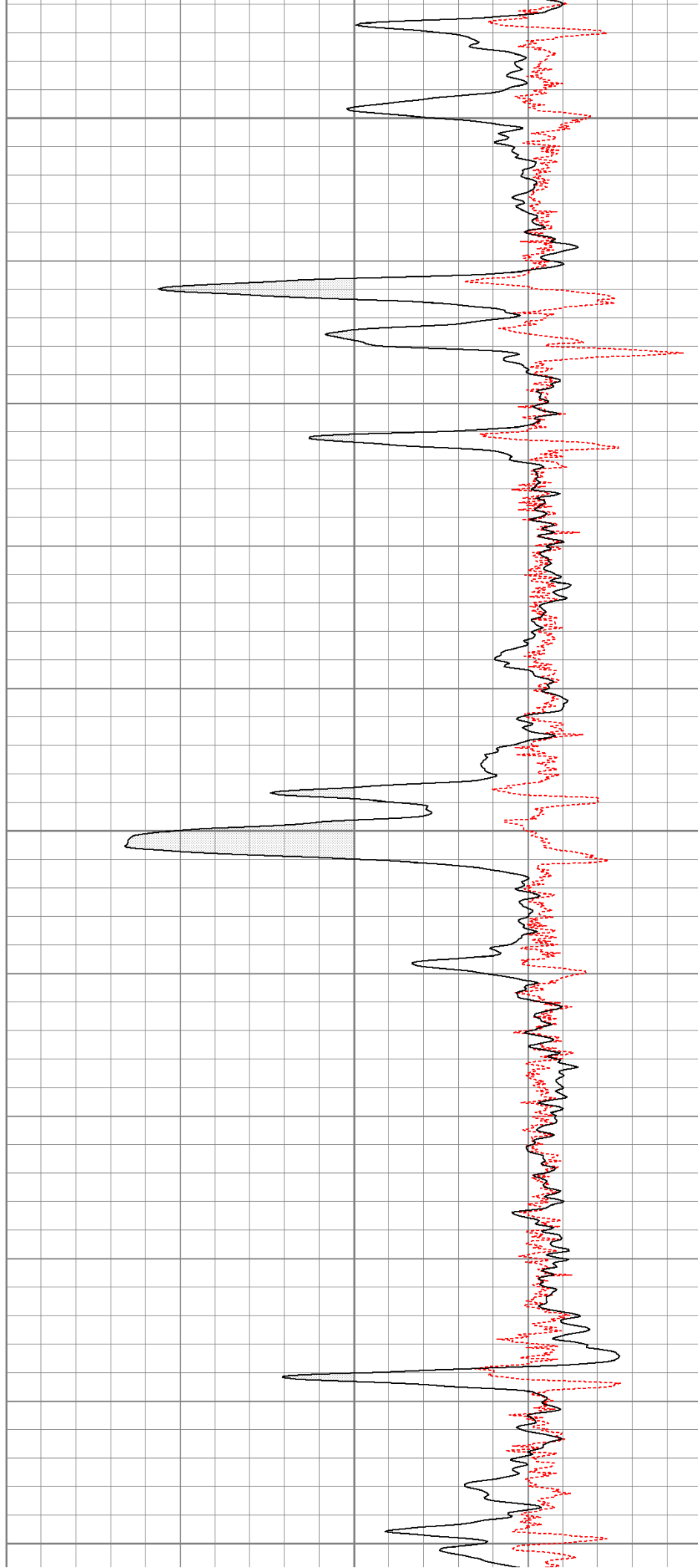


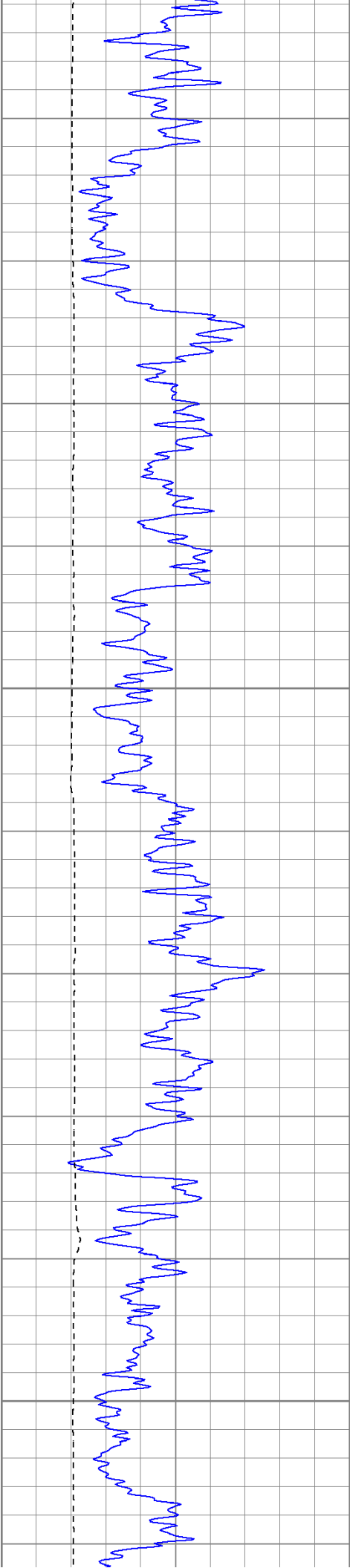


1400

1450

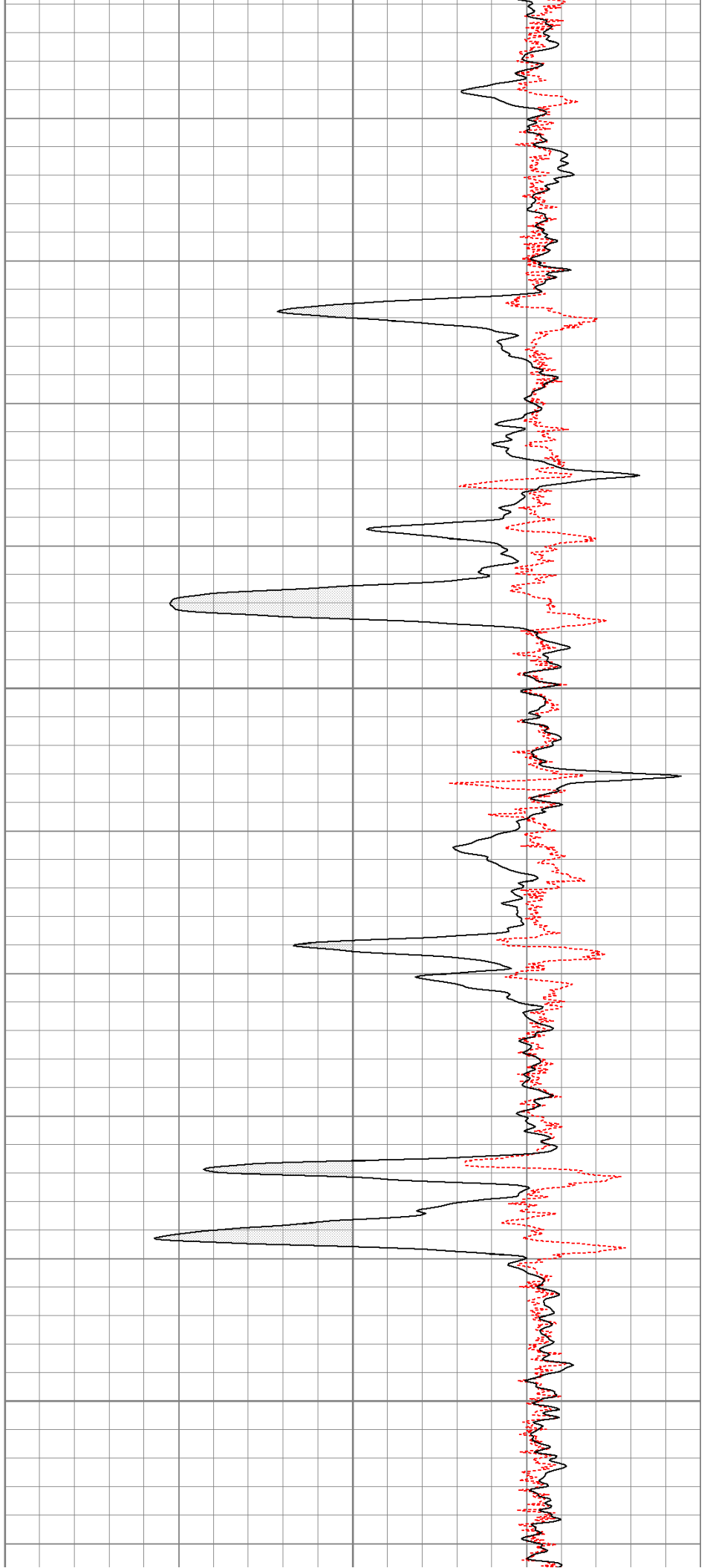
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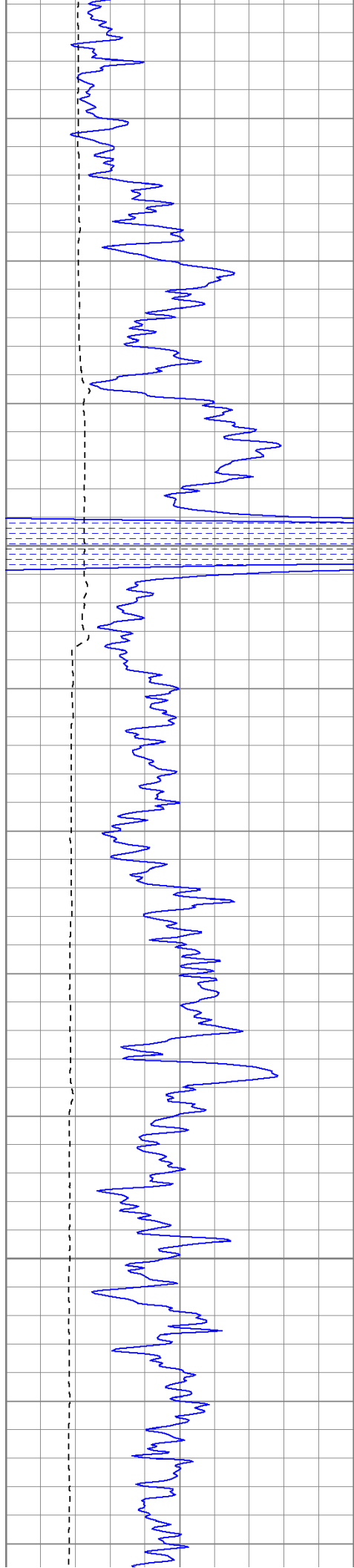




1550

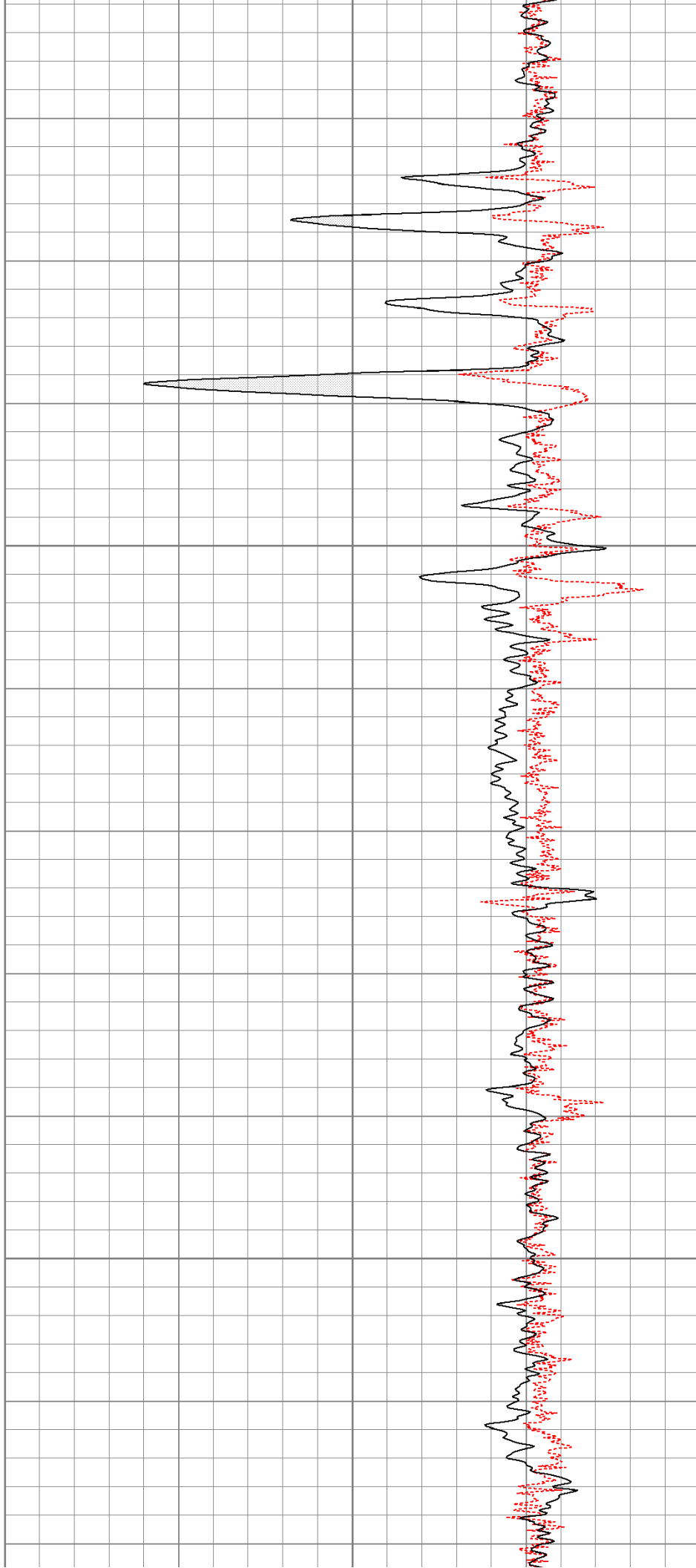
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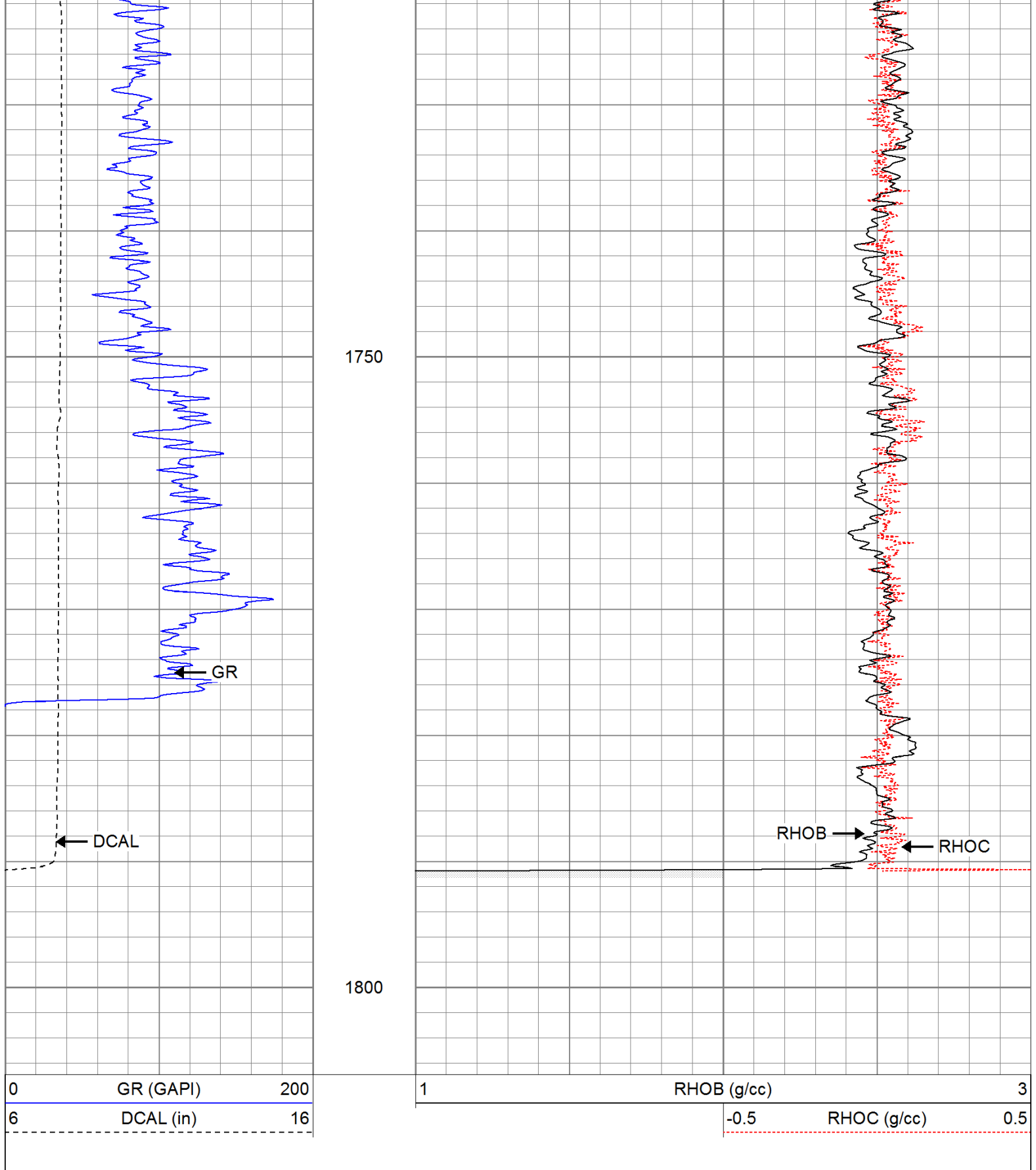




1650

1700





### Calibration Report

Database File: rollsroyce.db  
Dataset Pathname: pass1  
Dataset Creation: Sun Sep 18 06:01:30 2011 by Log Open-Cased 110302

### Induction Tool Calibration Report

Serial Number: 903  
Tool Model: Probe

Root Model: Downhole Cal Performed: Surface Cal Performed: After Survey Verification Performed:		Probe Mon Aug 29 09:43:41 2011 Mon Aug 29 13:58:06 2011	
Surface Calibration: Conductivity Reference: Conductivity Reading: Internal Reference: Conductivity Reference: Conductivity Reading:		Air 0.000 -0.045 Zero 0.000 0.006	Loop 500.000 0.642 Cal 500.000 0.641
			mmho V mmho V
Downhole Calibration: Conductivity Reference: Conductivity Reading: Short Normal Reference: Short Normal Reading:		Internal Zero -0.702 -0.082 0.000 0.006	Internal Cal 499.904 503.319 20.000 0.233
			mmho V Ohm-m V
Results: Loop Conductivity: Downhole Correction: Short Normal Resistivity:		Gain 728.211 0.994 88.245	Offset 32.770 -0.621 -3.000
After Survey Verification Conductivity Reading: Conductivity Result: Short Normal Reading: Short Normal Result:		Internal Zero 0.000 0.000 0.000 0.000	Internal Cal 0.000 0.000 0.000 0.000
			V mmho V Ohm-m

Compensated Density Calibration Report

Serial-Model: Source / Verifier: Master Calibration Performed: Before Survey Verification Performed: After Survey Verification Performed:		901-2.75POH / Mon Aug 29 11:08:43 2011
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Master Calibration					
	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1001.79	578.48	cps
Aluminum	2.590	g/cc	180.36	300.39	cps
	Spine Angle = 69.08		Density/Spine Ratio = 0.479		
	Size		Reading		
Small Ring	8.00	in	2.50	V	
Large Ring	16.00	in	4.57	V	

Before Survey Verification					
	Target		Measured		
		g/cc			g/cc
		g/cc			g/cc
		g/cc			g/cc

After Survey Verification					
	Target		Measured		
		g/cc			g/cc
		g/cc			g/cc
		g/cc			g/cc

Neutron Calibration Report

Serial Number:	803
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

Sensor Number: 803  
Tool Model: 2.75POH  
Performed: Fri Sep 02 07:59:19 2011

Calibrator Value: 1 NAPI  
Calibrator Reading: 1 cps  
Sensitivity: 1 NAPI/cps

### Gamma Ray Calibration Report

Serial Number: 804  
Tool Model: 2.75POH  
Performed: Fri Aug 12 08:39:59 2011

Calibrator Value: 1.0 GAPI  
Background Reading: 0.0 cps  
Calibrator Reading: 1.0 cps  
Sensitivity: 0.6500 GAPI/cps

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	29.58		None	0.75	1.50	5.00
			GR-2.75POH (804) Probe 2.75" Probe Open Hole Gamma Ray	3.73	2.75	43.00
NEU	24.04		NEU-2.75POH (803) Probe Epithermal	4.75	2.75	58.00
			CDL-2.75POH (901) Probe	8.43	2.75	106.00
LSD	16.21					
DCAL	15.94					
SSD	15.69					
DIC	6.24		IEL-Probe (903)	13.46	2.75	93.00

