

# COMPENSATED DENSITY NEUTRON LOG

Company	Pioneer Natural Resources	Company	Pioneer Natural Resources
Well	Icehouse 23-34	Well	Icehouse 23-34
Field	Purgatoire River	Field	Purgatoire River
County	Las Animas	County	Las Animas
State	Colorado	State	Colorado
Location:	2217' FSL & 1500' FWL	APL # :	05 071 09822 00
SEC 34 TWP 31S RGE 66W		SIL	
Permanent Datum	Ground Level	Elevation	7168'
Log Measured From	Kelly Bushing 9' AGL		
Drilling Measured From	Kelly Bushing		
Date	7-16-11		
Run Number	One		
Depth Driller	2070'		
Depth Logger	2068'		
Bottom Logged Interval	2052'		
Top Log Interval	Surface Casing		
Casing Driller	8 5/8" @ 756'		
Casing Logger	755'		
Bit Size	7 7/8"		
Type Fluid in Hole	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	7:00 P.M.		
Time Logger on Bottom	12:45 A.M.		
Maximum Recorded Temperature	98 DEG F		
Equipment Number	T590		
Location	Trinidad		
Recorded By	C. Sisneros		
Witnessed By	Mr. Derrick Berry		

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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.

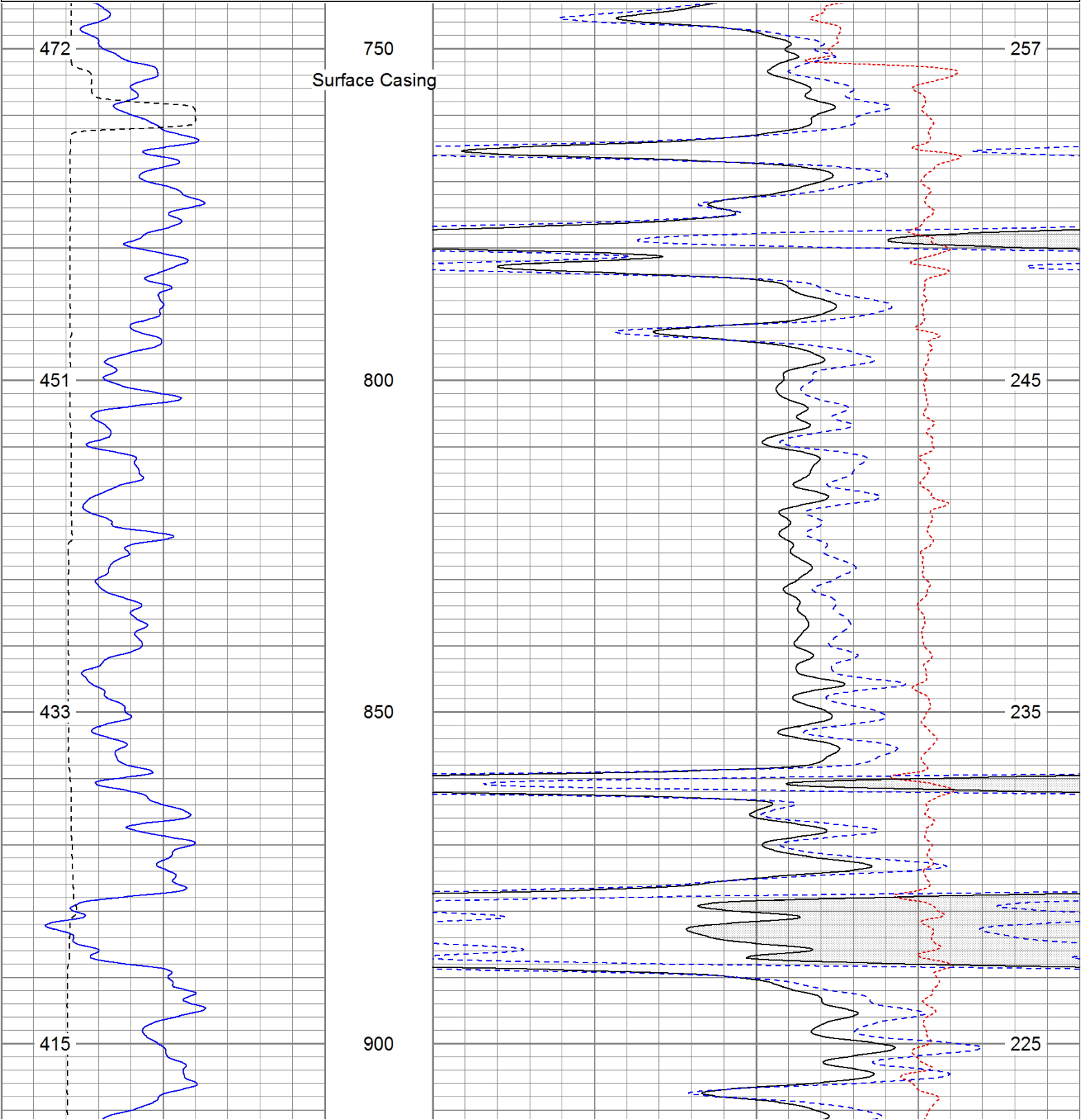
## Directions:

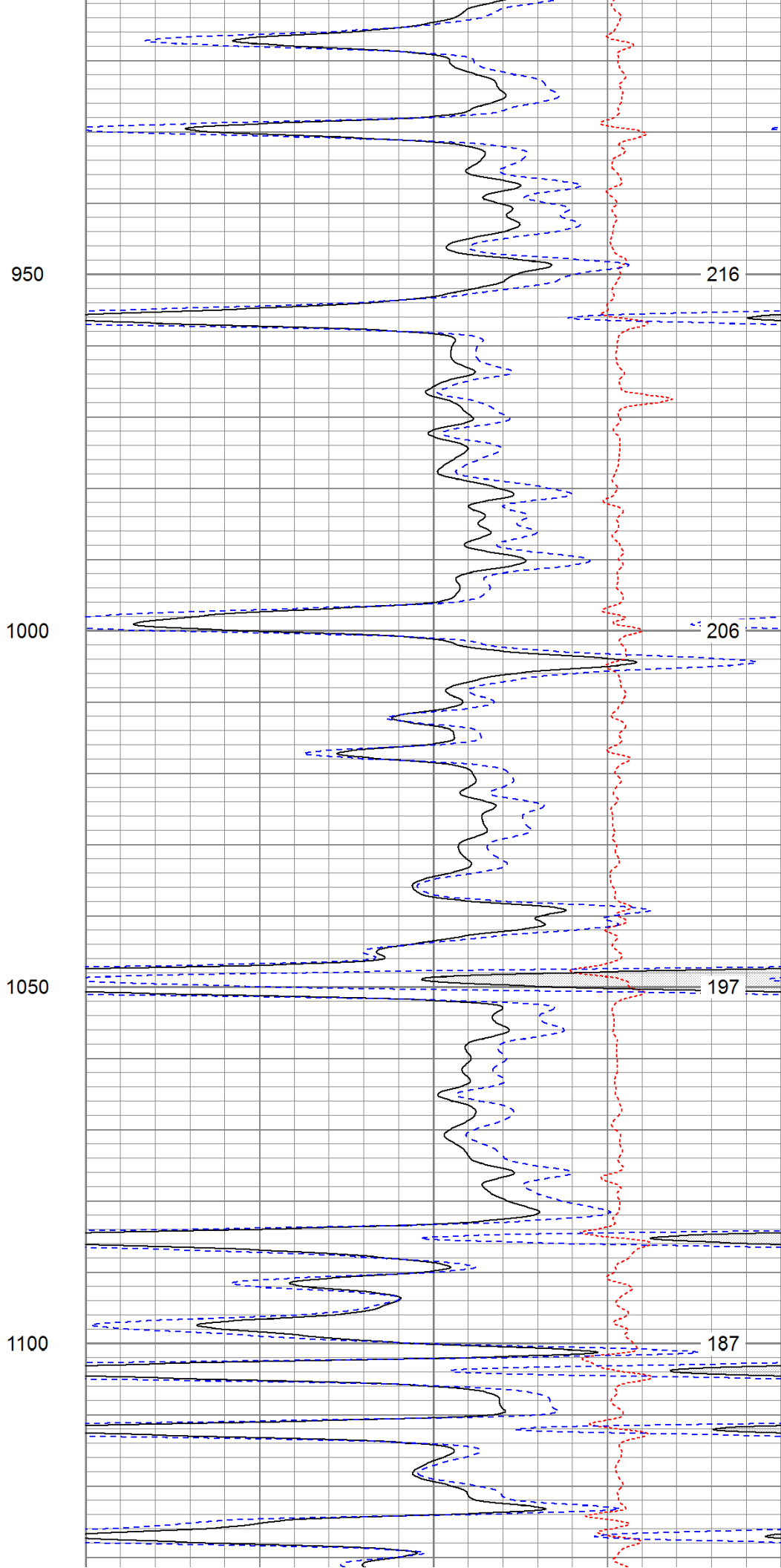
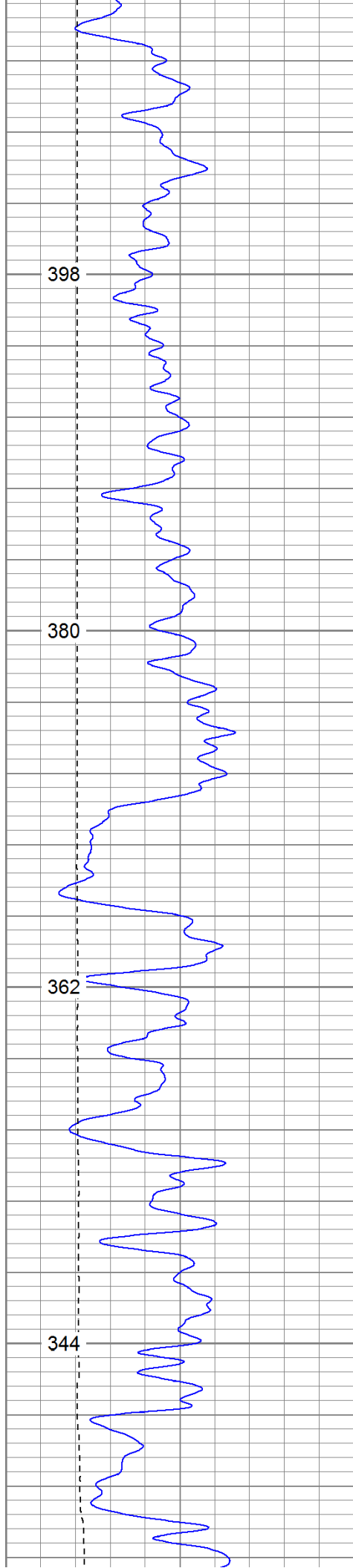
Gulnare to Gravel Pit, at Y go left, drive thru Rampart location, follow main rd,  
drive thru Lifeboat location, dead end on location.

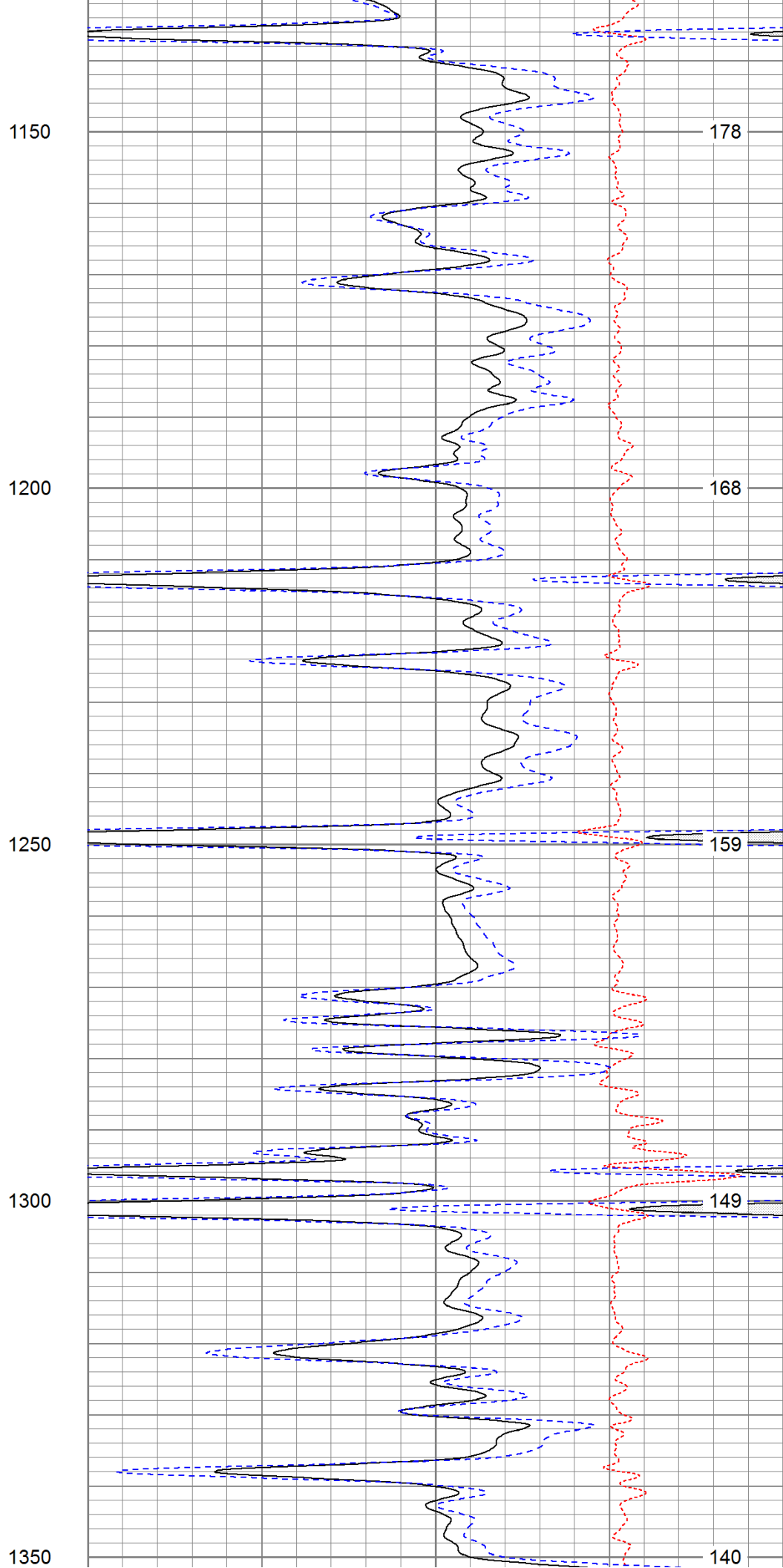
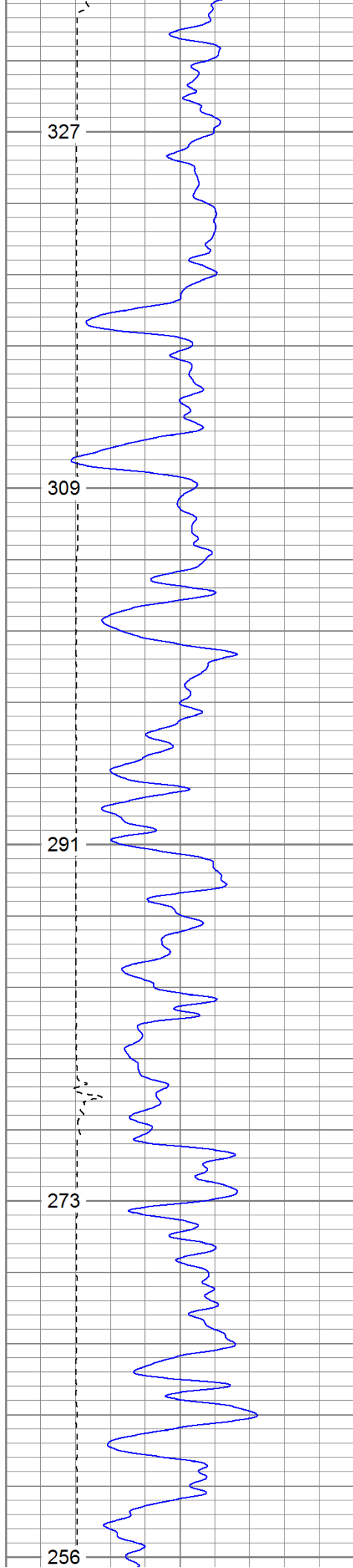
Database File: icehouse.db  
Dataset Pathname: pass2.1  
Presentation Format: cdl  
Dataset Creation: Sat Jul 16 01:46:56 2011 by Calc Open-Cased 110302  
Charted by: Depth in Feet scaled 1:240

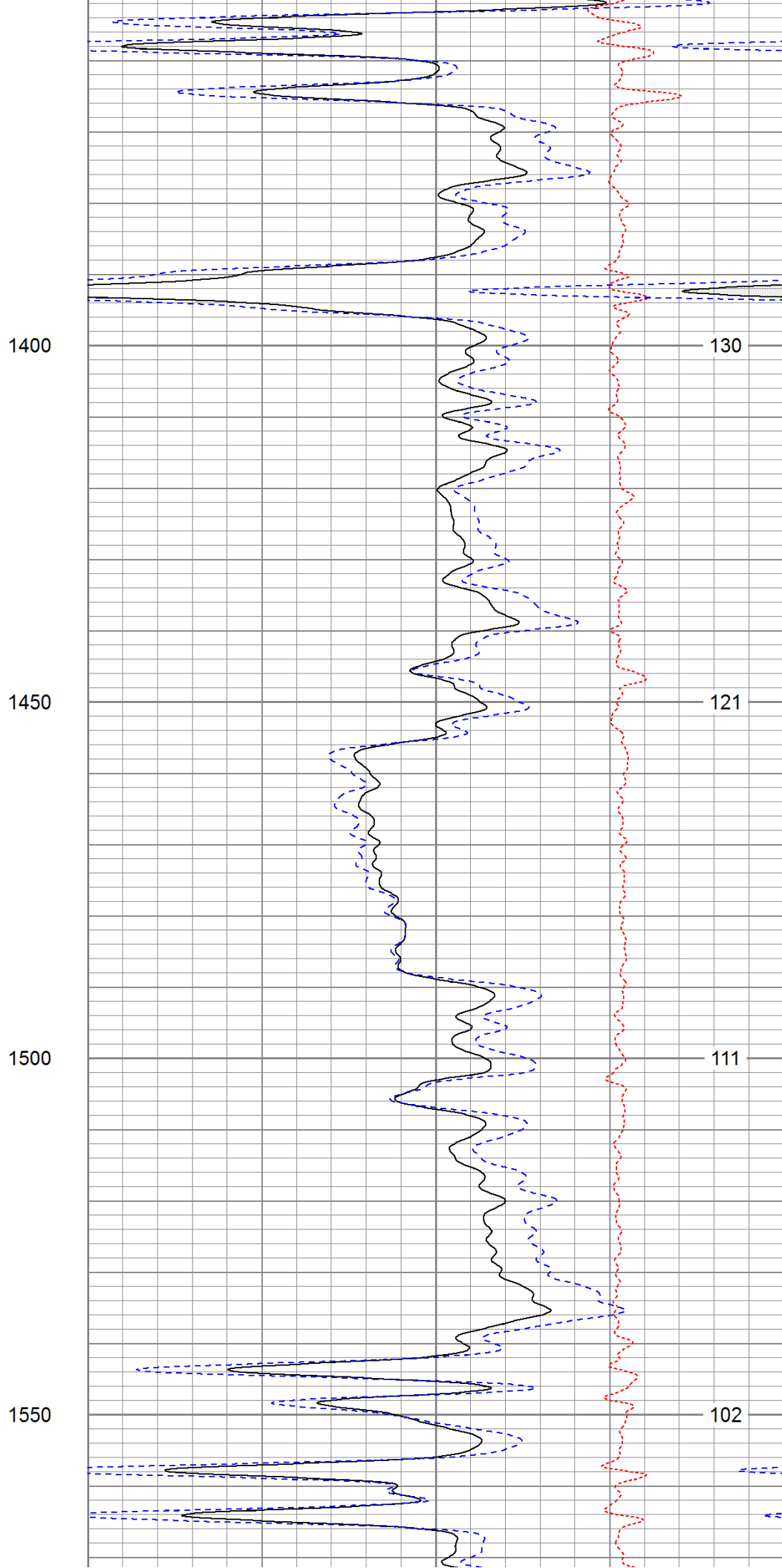
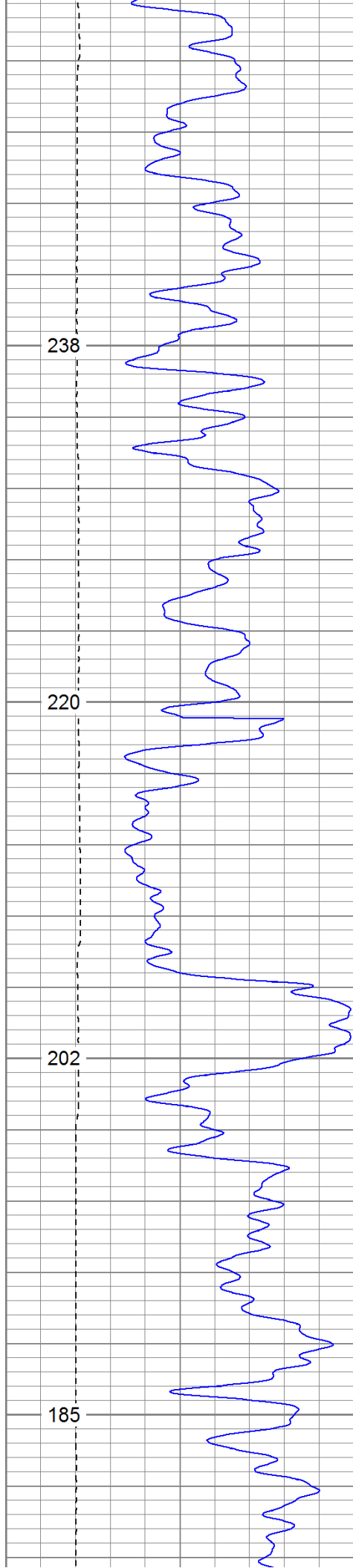
0	GR (GAPI)	200
6	DCAL (in)	16
TBHV (ft3)		

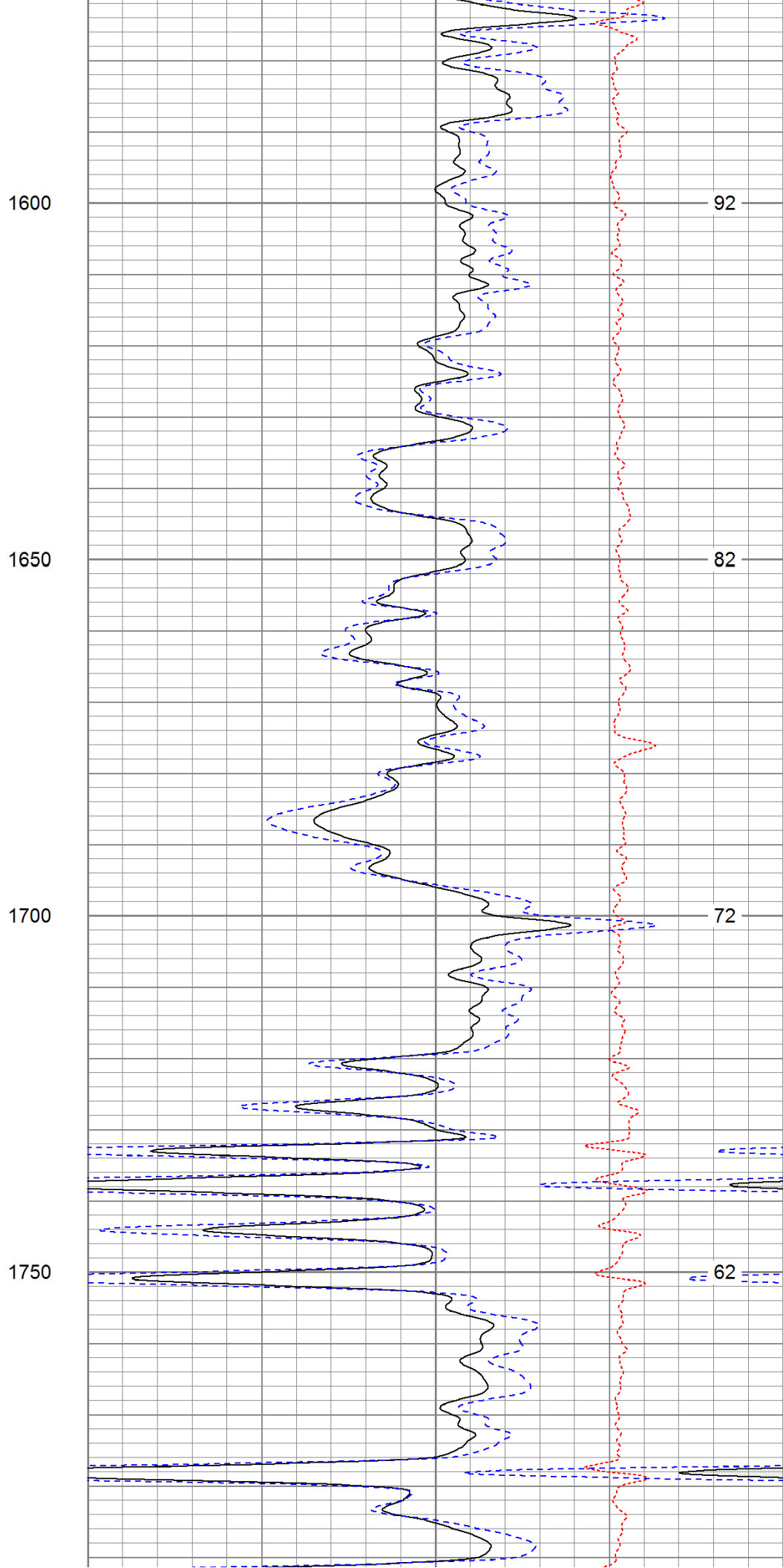
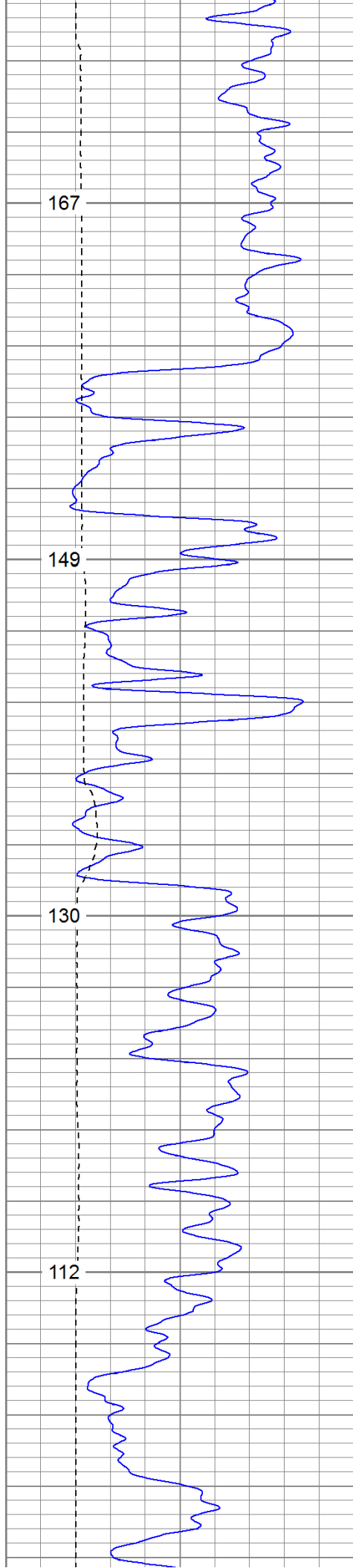
2	RHOB (g/cc)		3
1	RHOB (g/cc)		2
30	DPOR (pu)		-10
-0.5		RHOC (g/cc)	0.5
7000		LTEN (lb)	0
ABHV (ft3)			

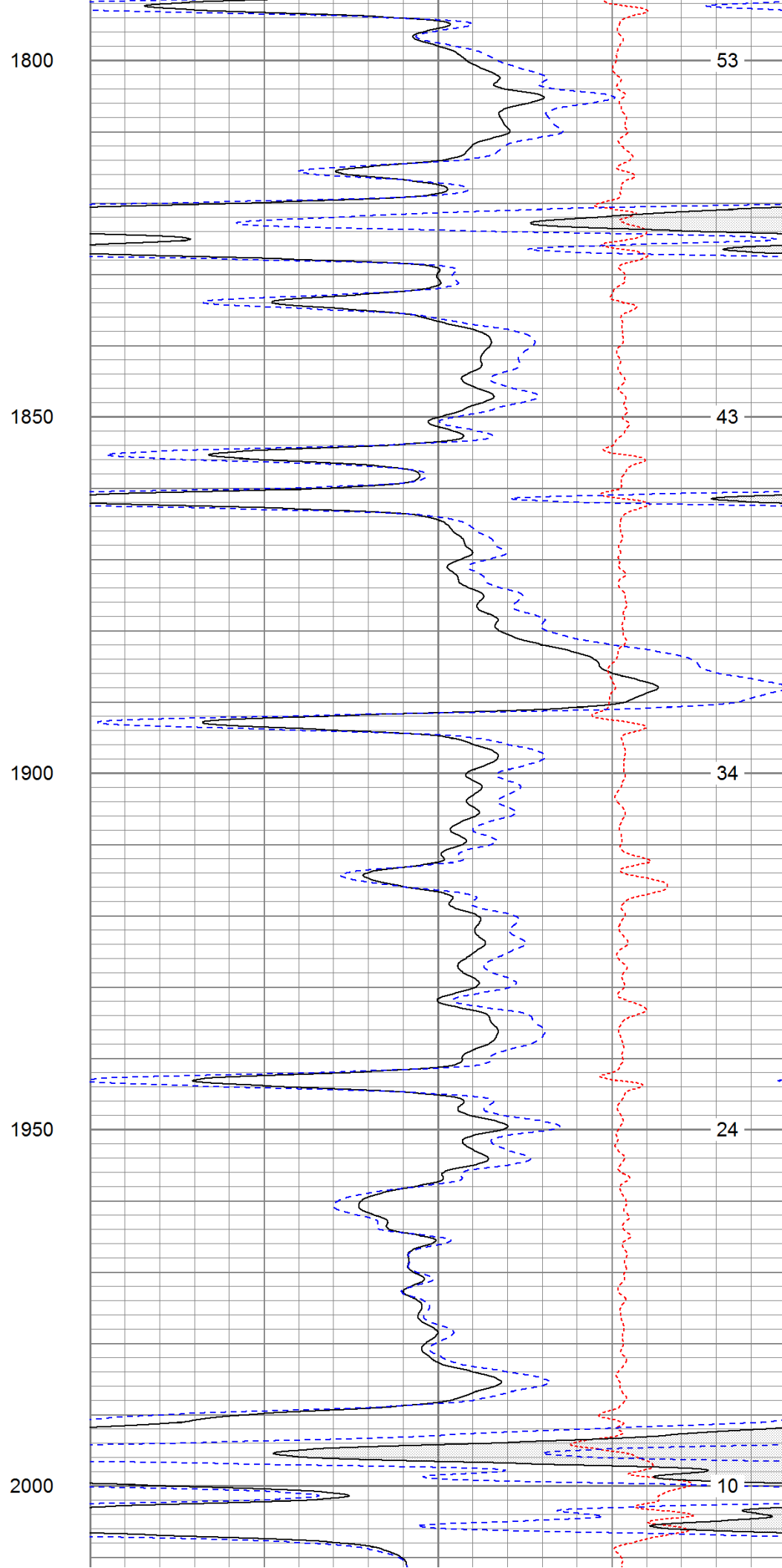
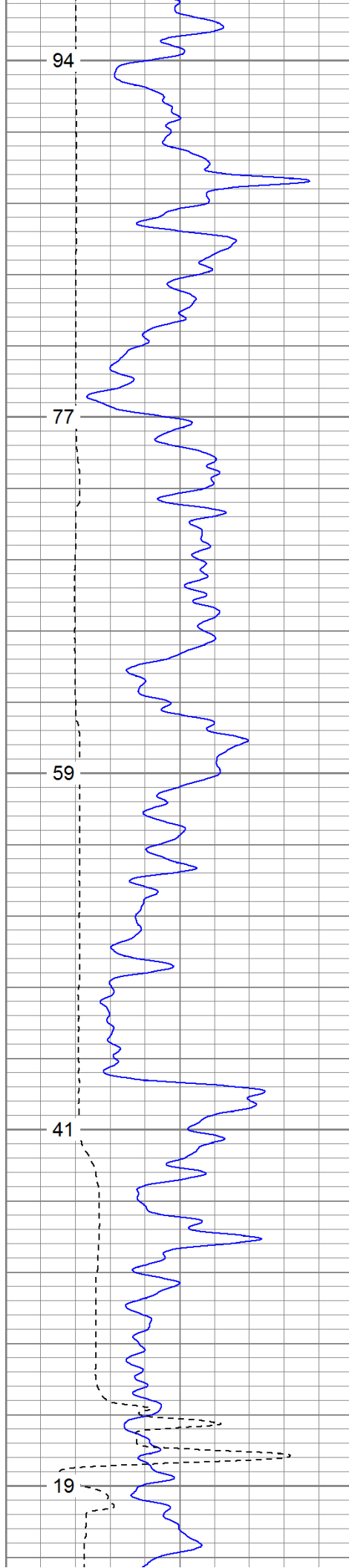


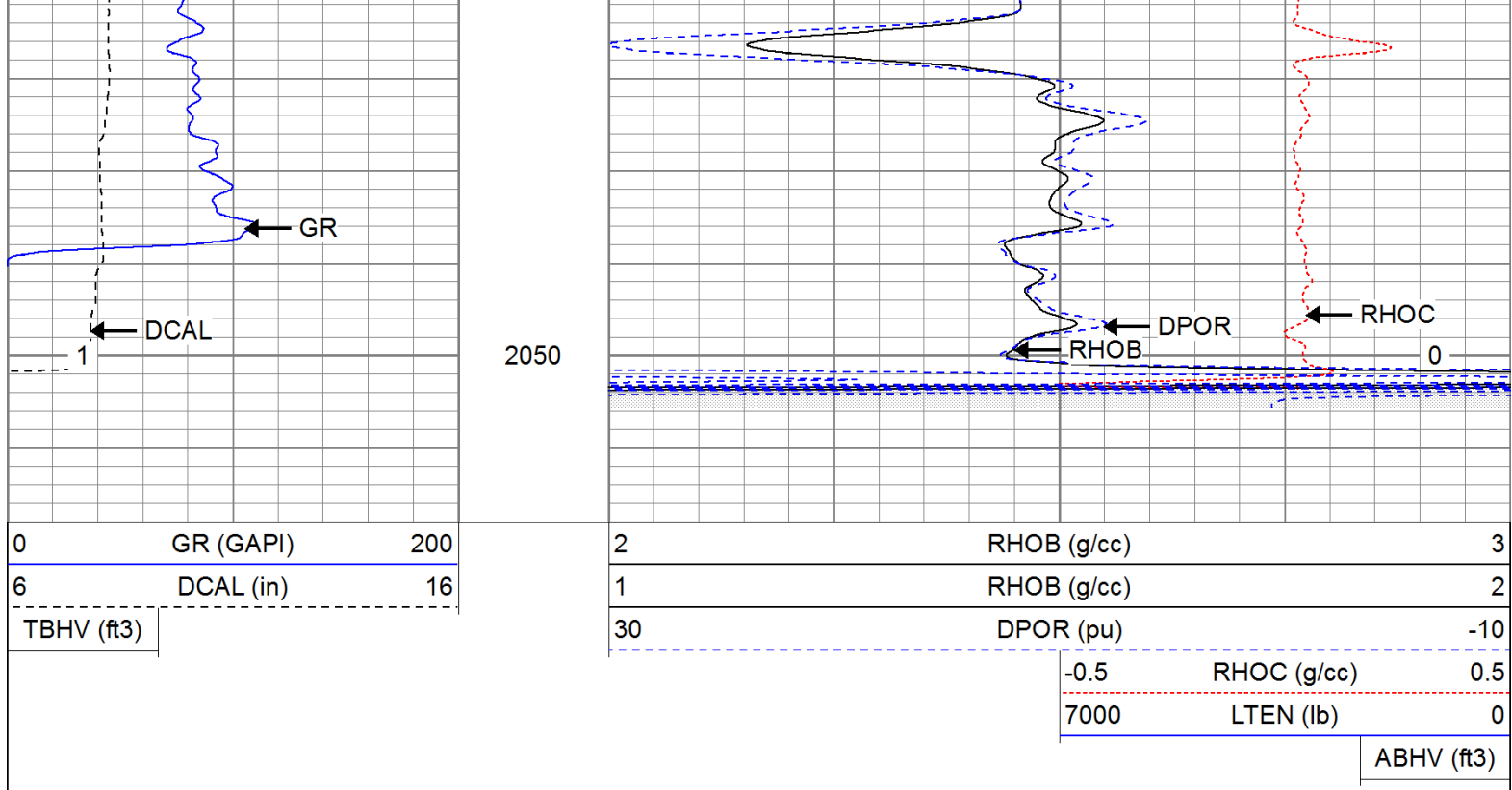






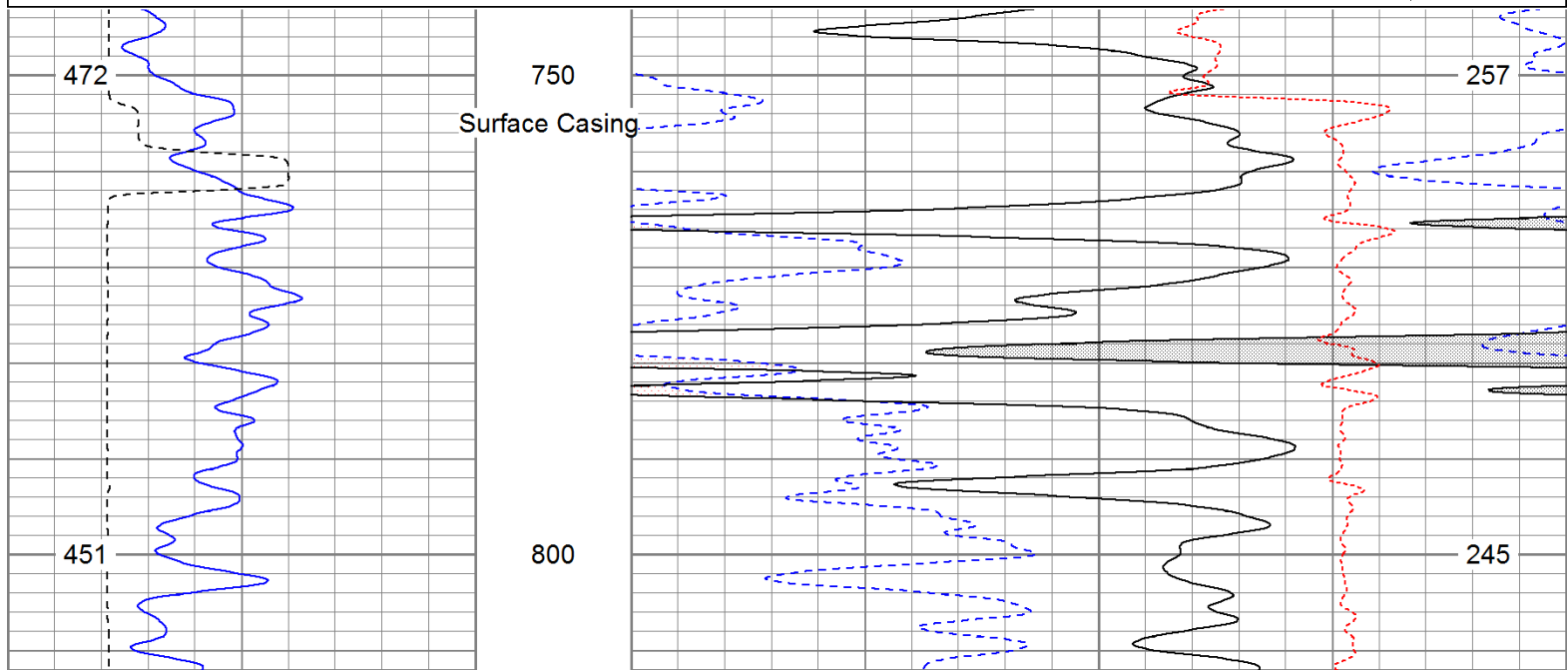
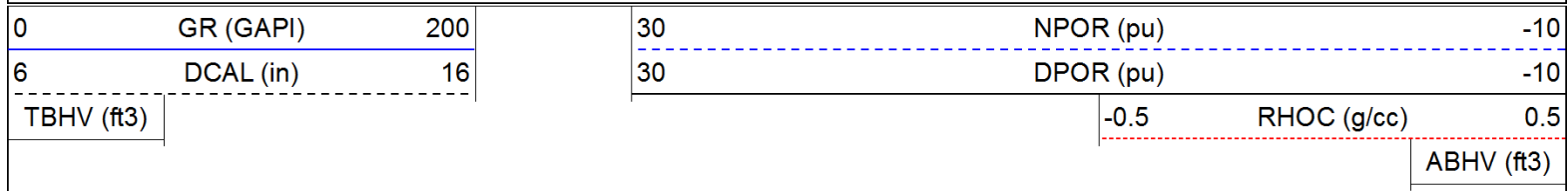




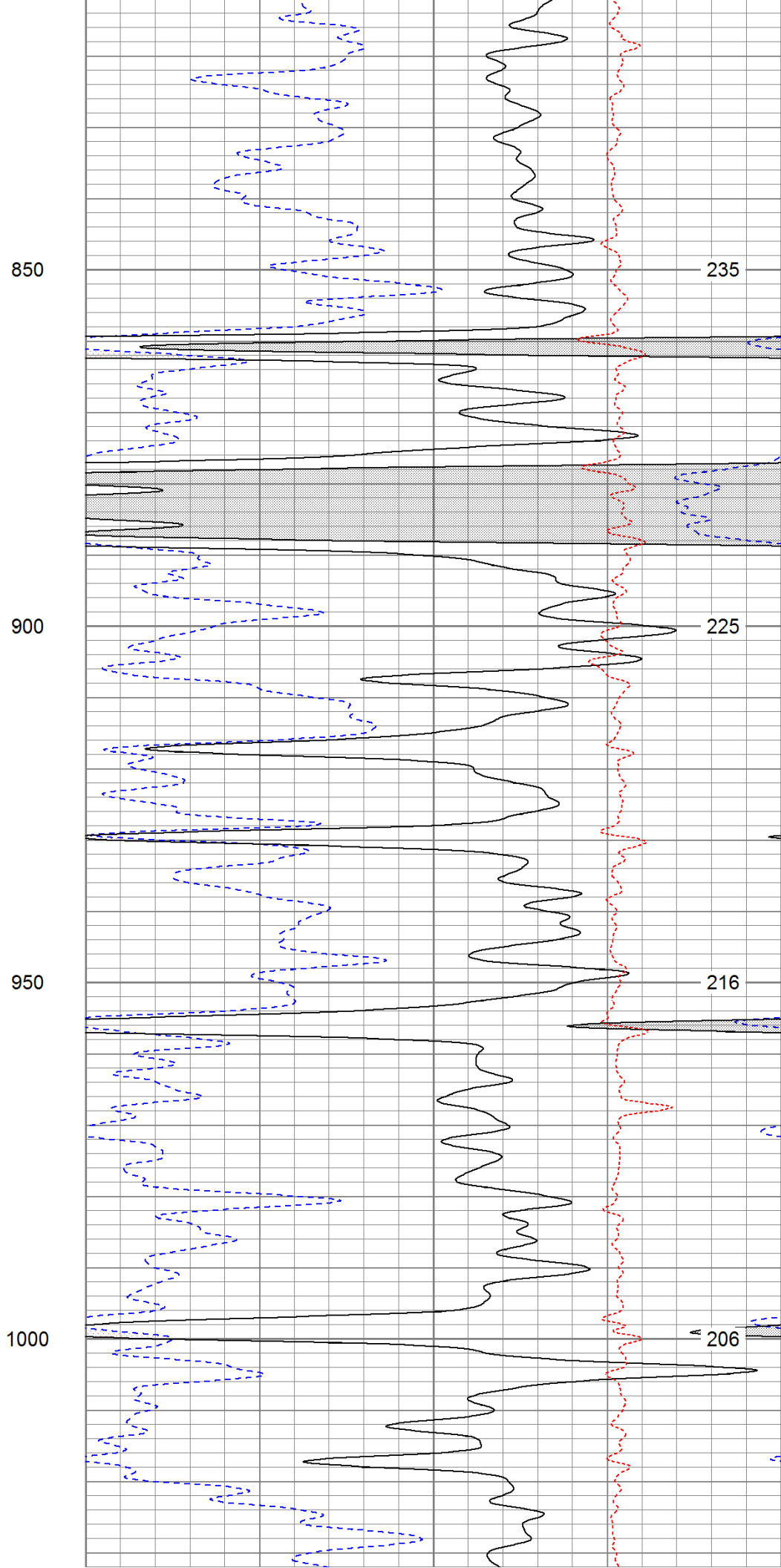
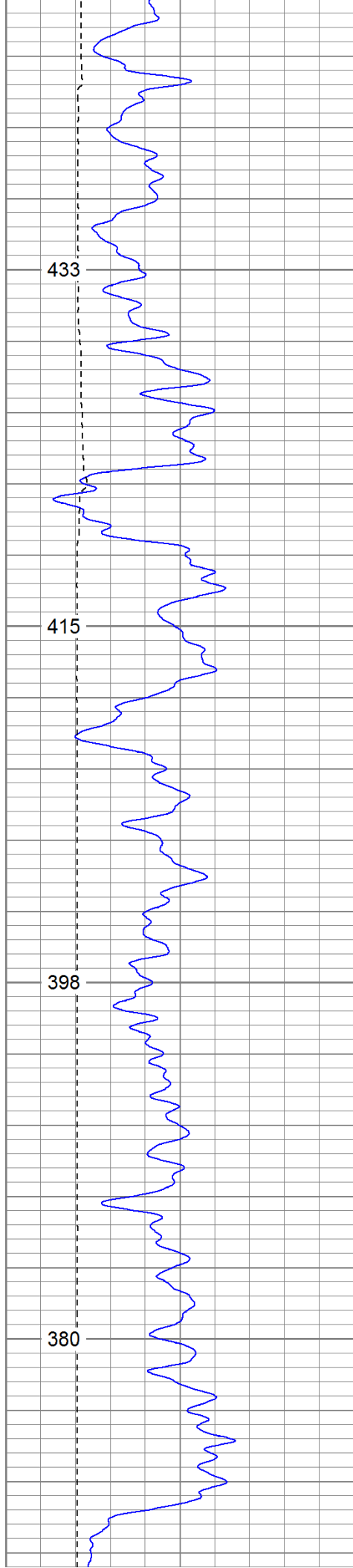


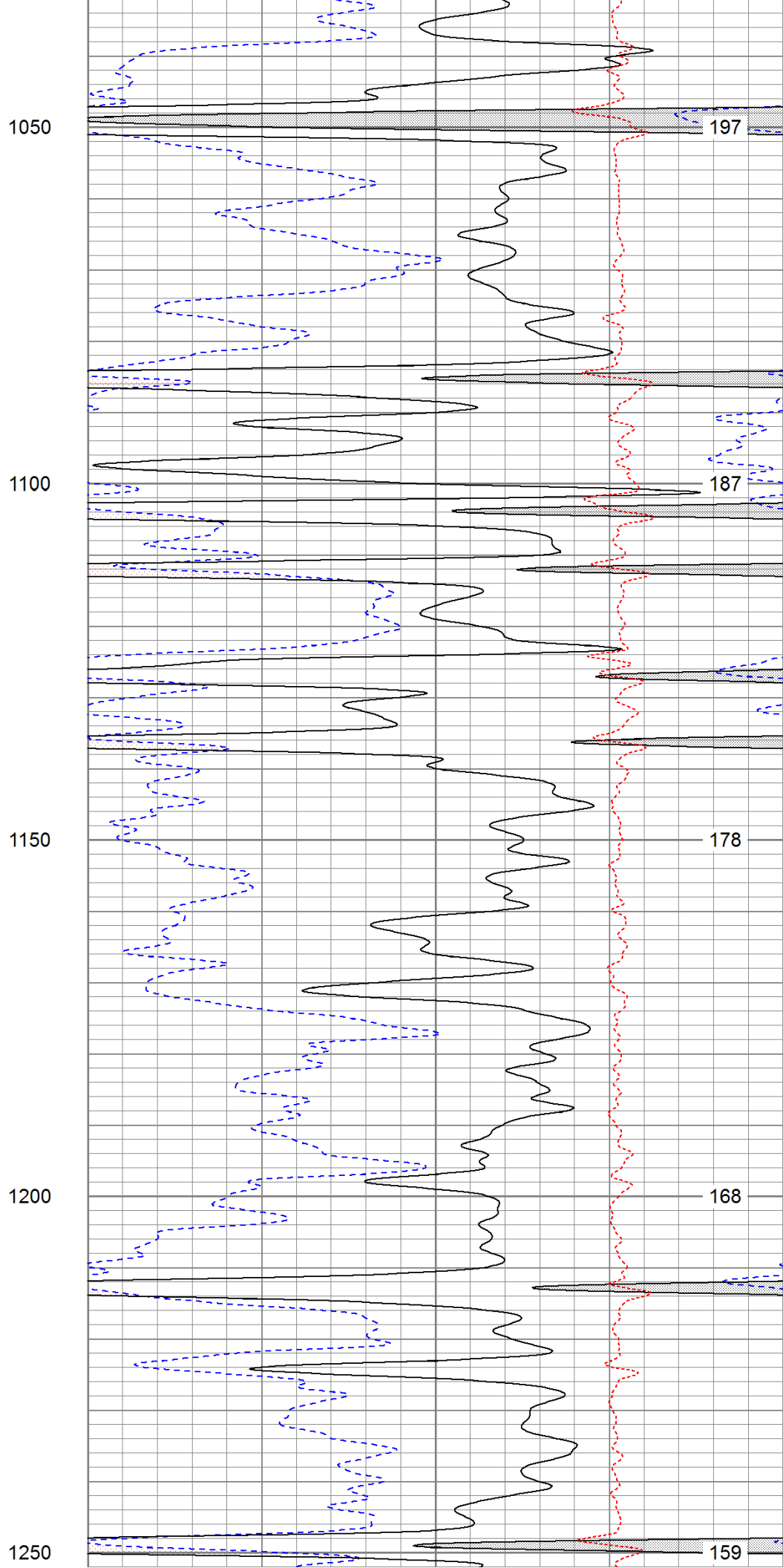
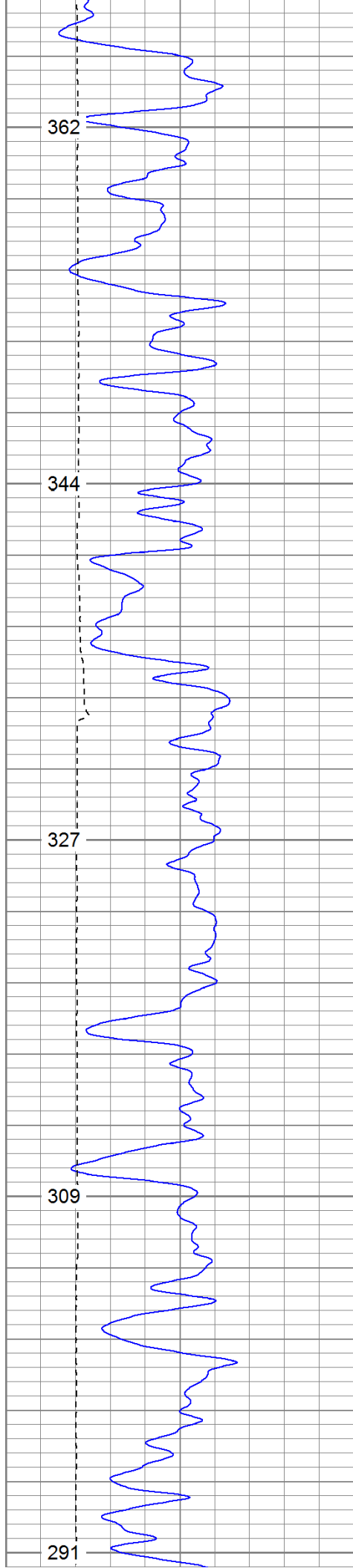
# Main Pass

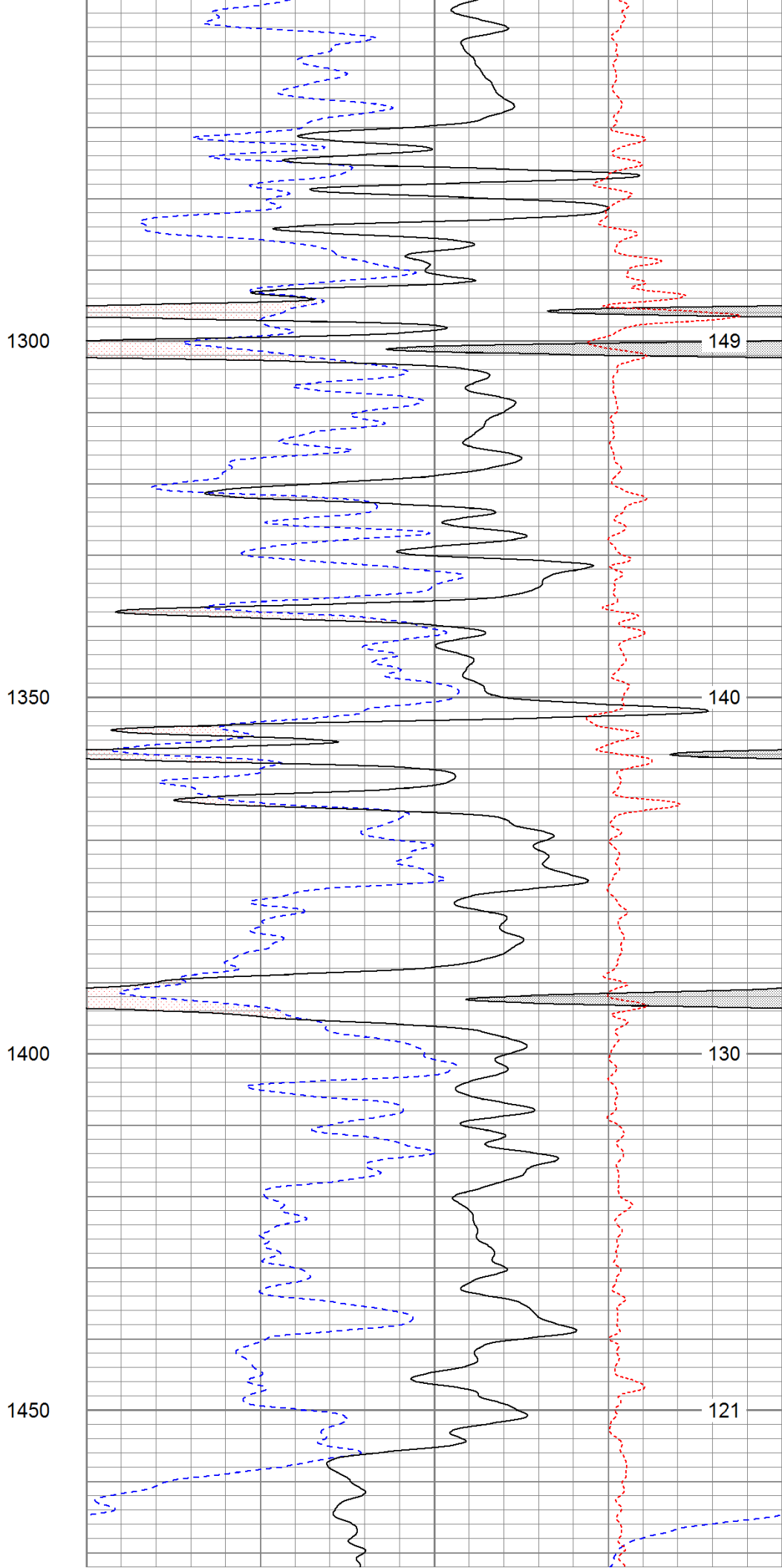
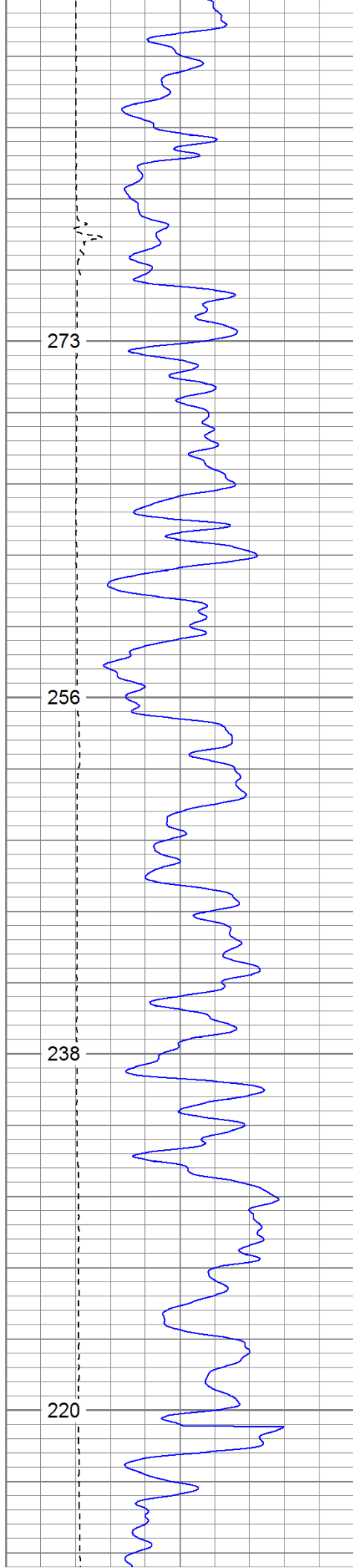
Database File: icehouse.db  
 Dataset Pathname: pass2.1  
 Presentation Format: cdnl  
 Dataset Creation: Sat Jul 16 01:46:56 2011 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:240

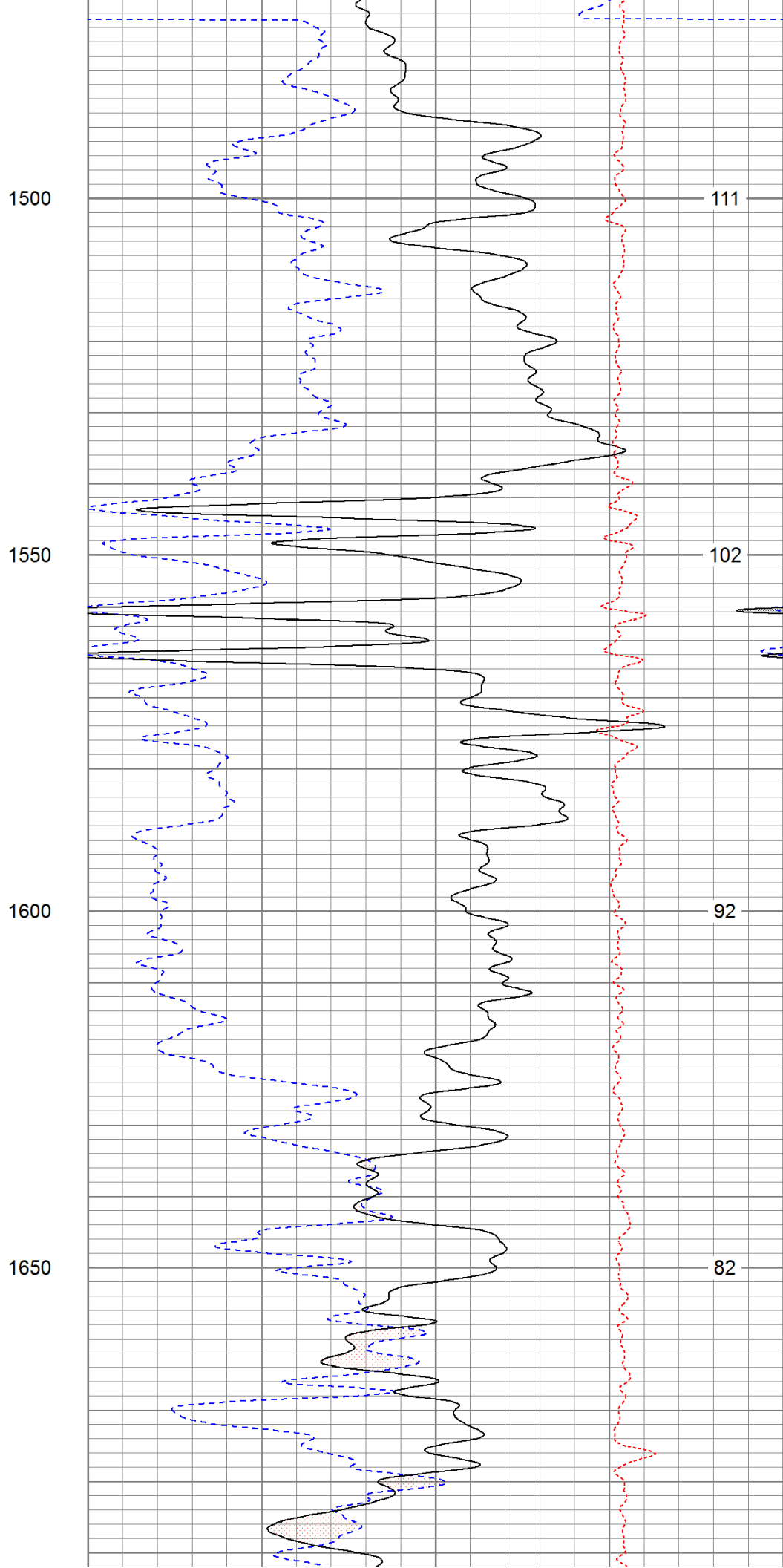
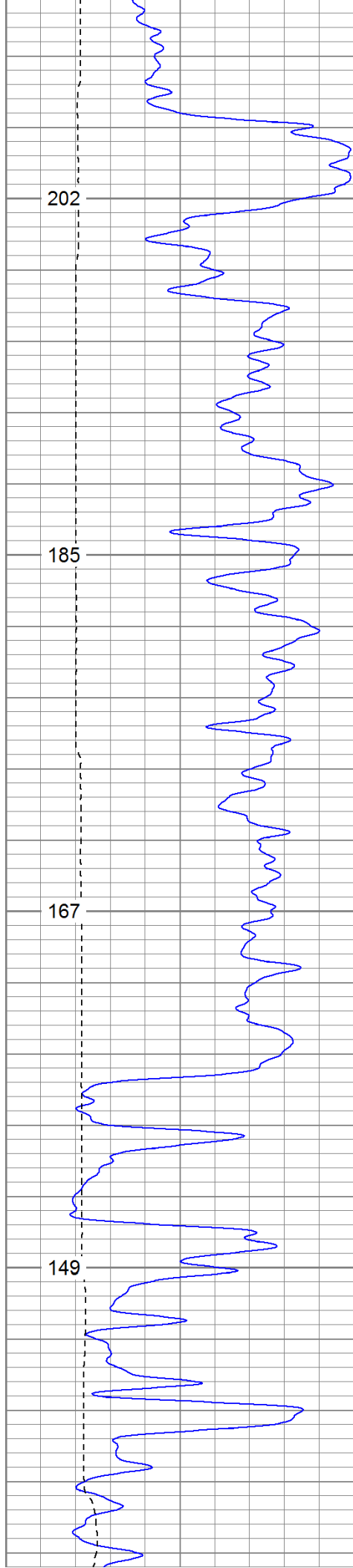


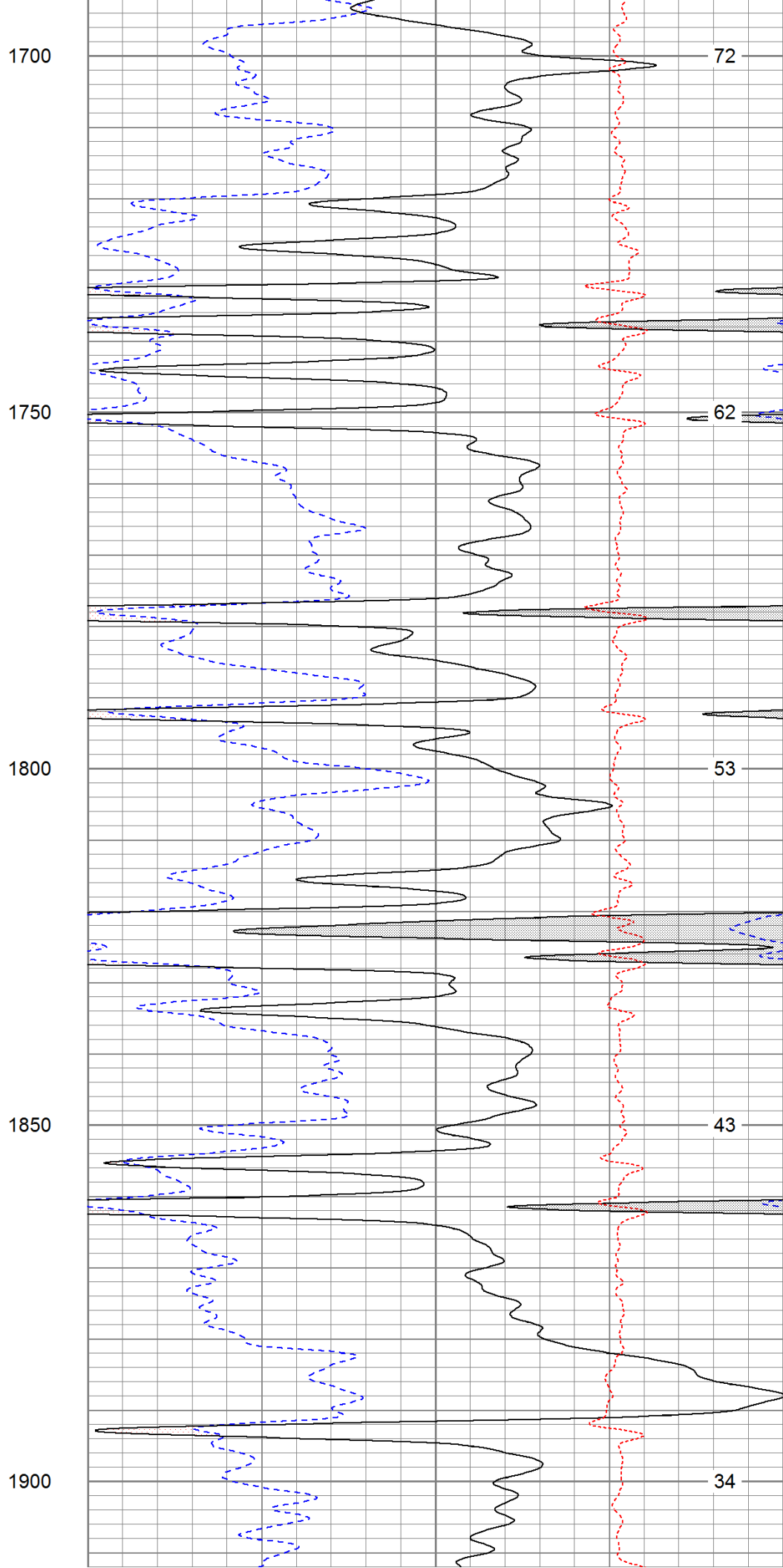
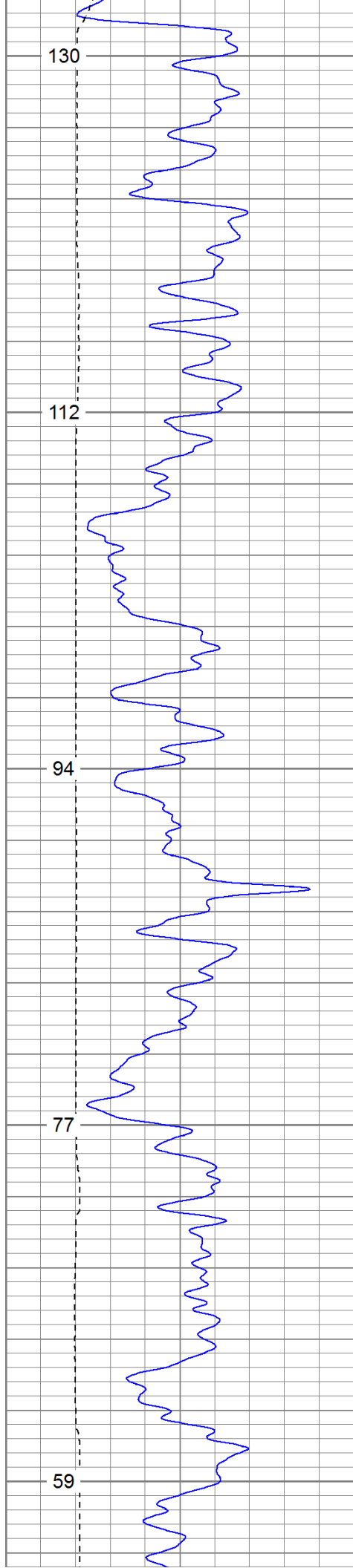


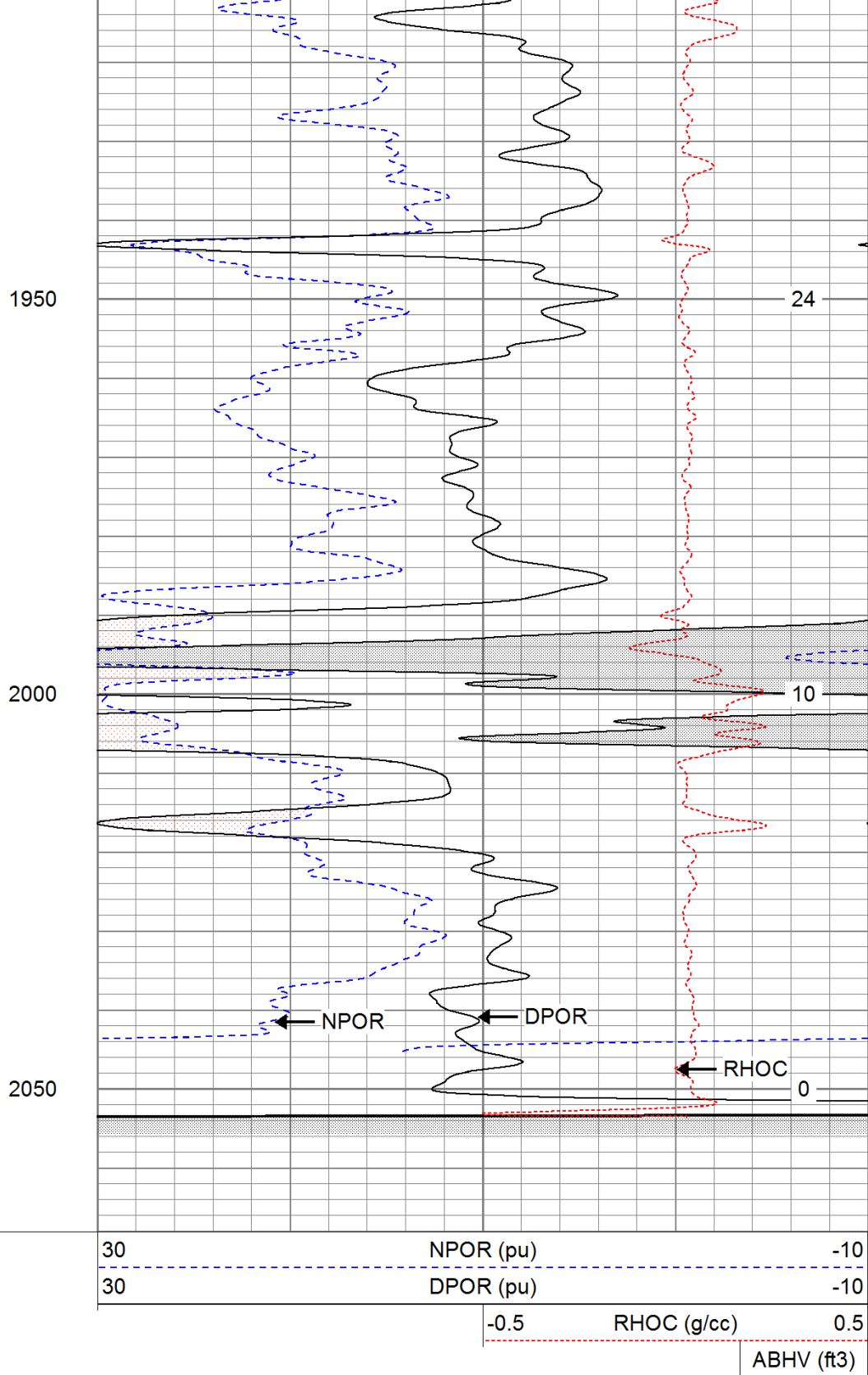
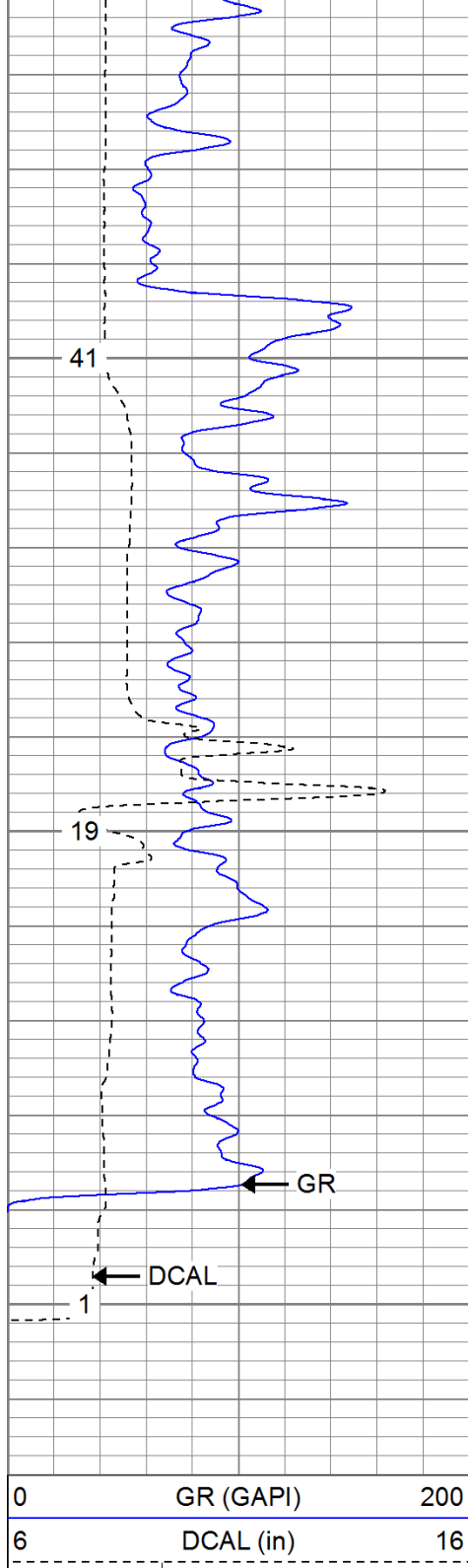




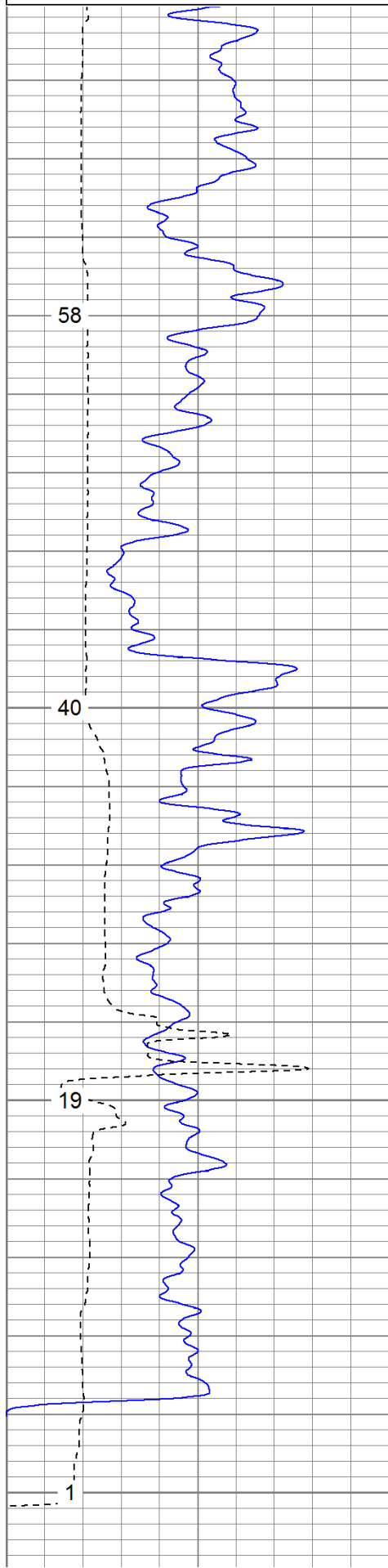




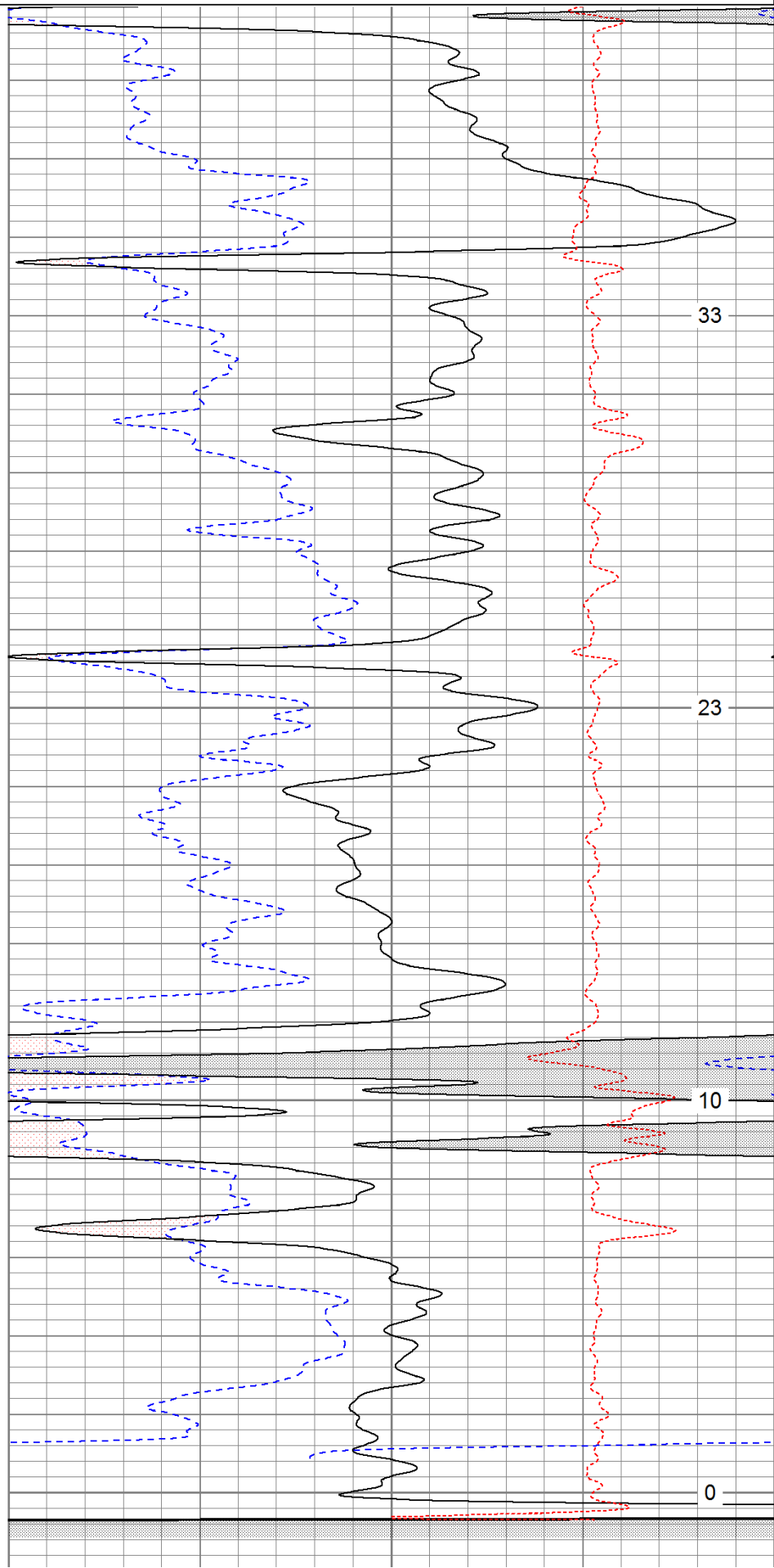




0	GR (GAPI)	200
6	DCAL (in)	16
TBHV (ft3)		



30	NPOR (pu)	-10
30	DPOR (pu)	-10
-0.5	RHOC (g/cc)	0.5
ABHV (ft3)		



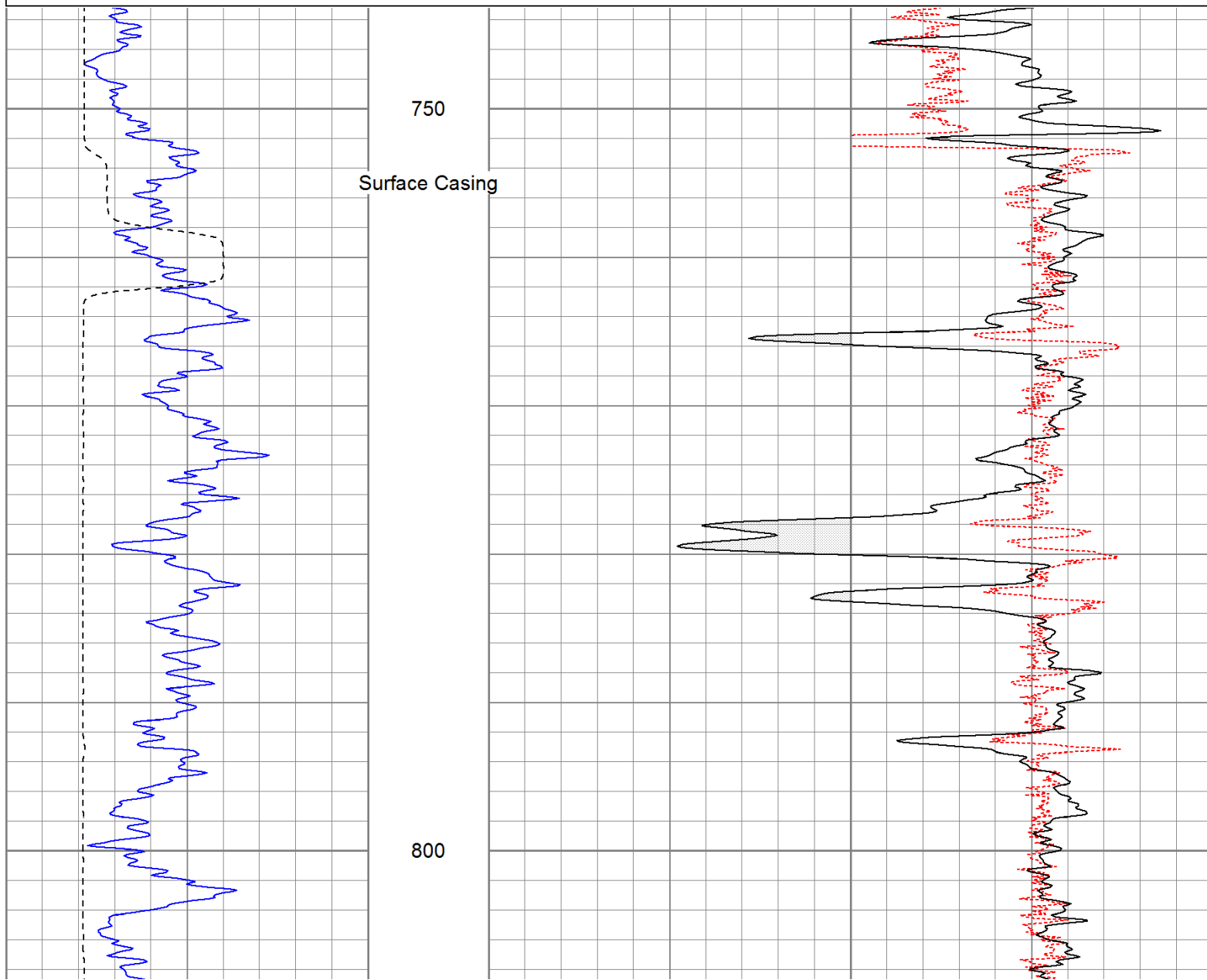
0	GR (GAPI)	200	30	NPOR (pu)	-10
6	DCAL (in)	16	30	DPOR (pu)	-10
TBHV (ft3)			-0.5	RHOC (g/cc)	0.5
				ABHV (ft3)	



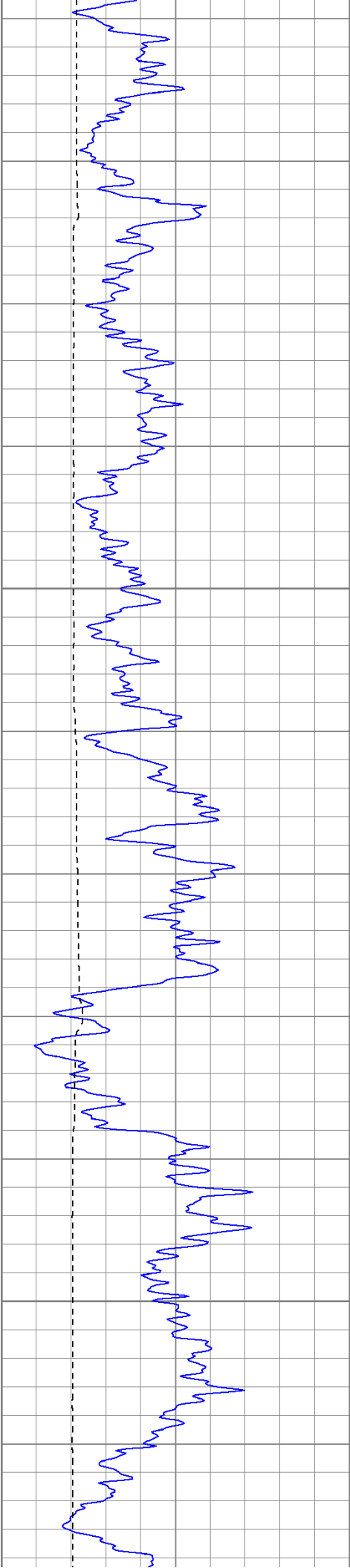
# High Resolution Pass

Database File: icehouse.db  
 Dataset Pathname: pass2.2  
 Presentation Format: cdlhr  
 Dataset Creation: Wed Jul 20 10:57:20 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

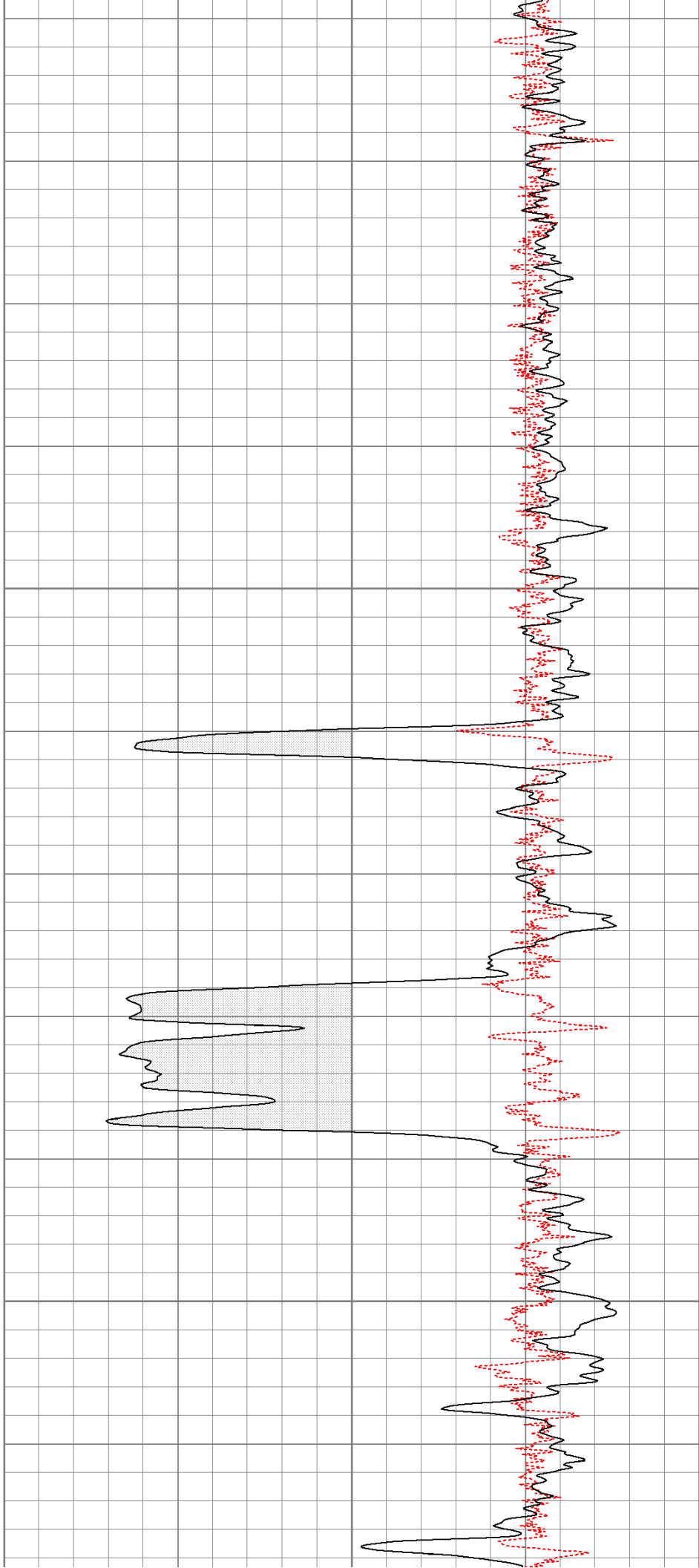






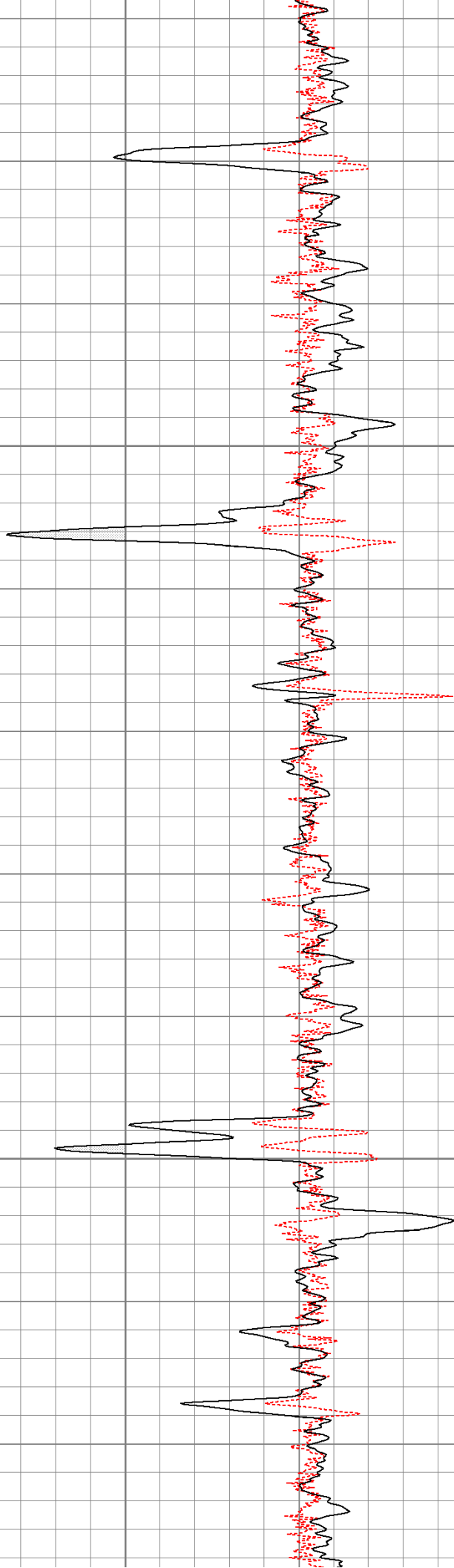
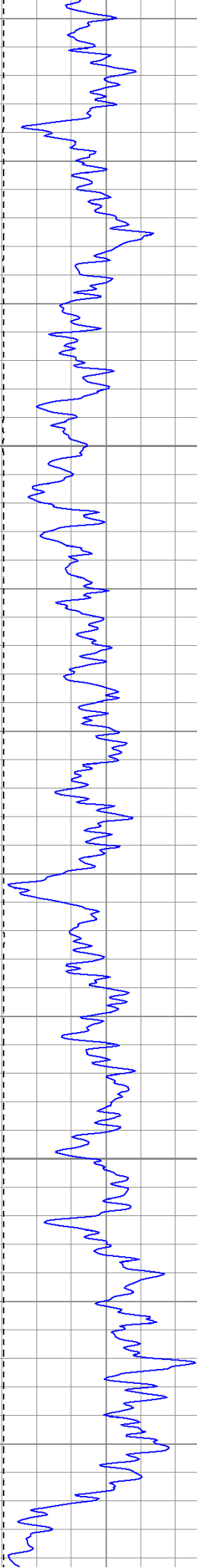
850

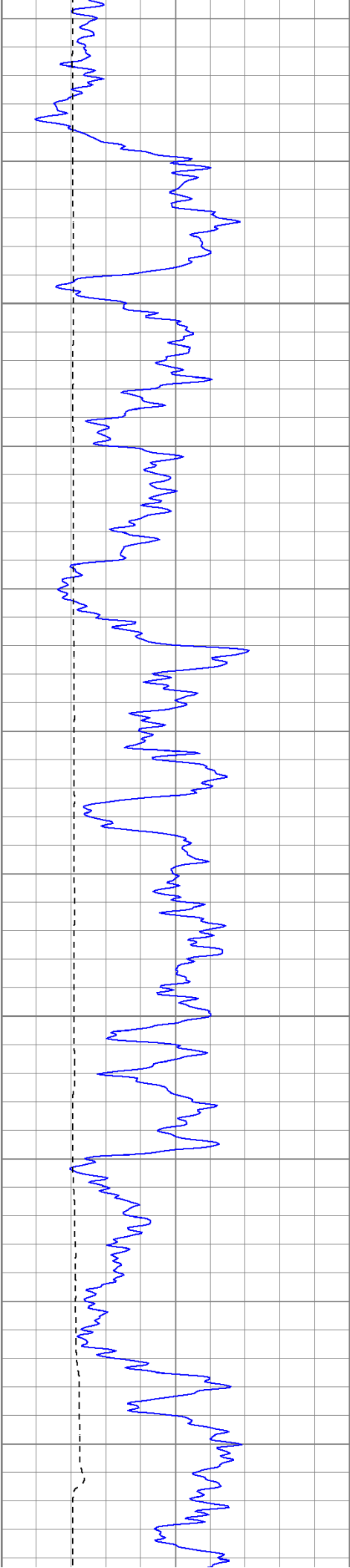
900



950

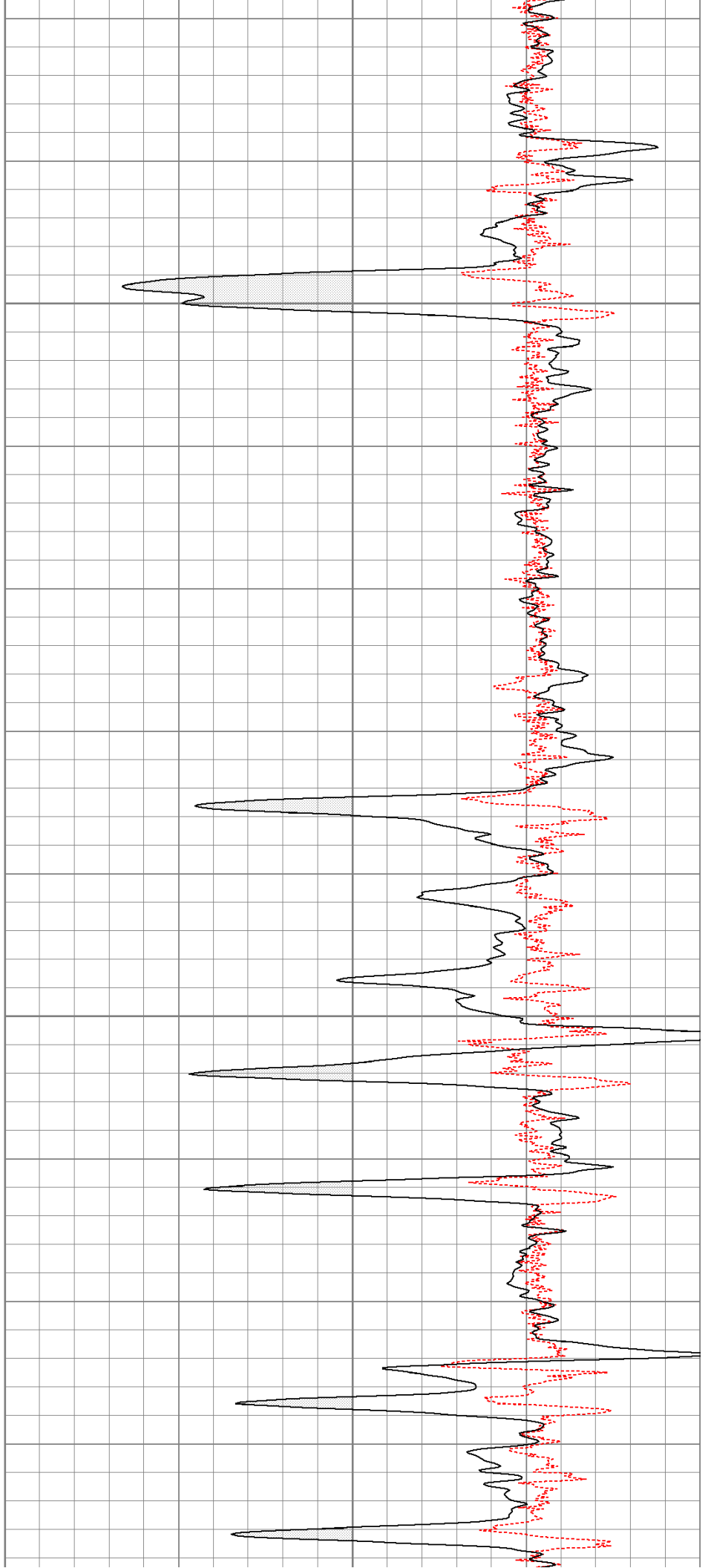
1000

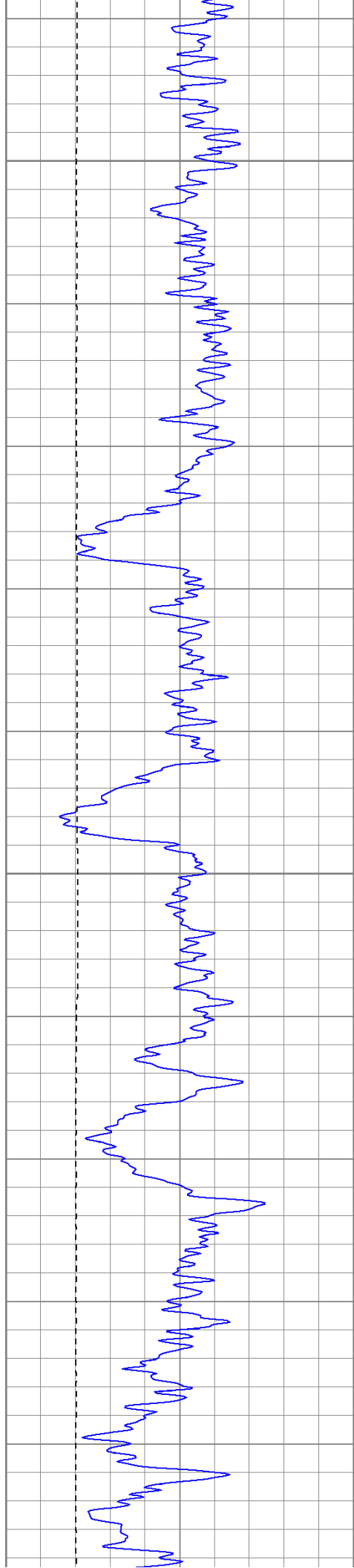




1050

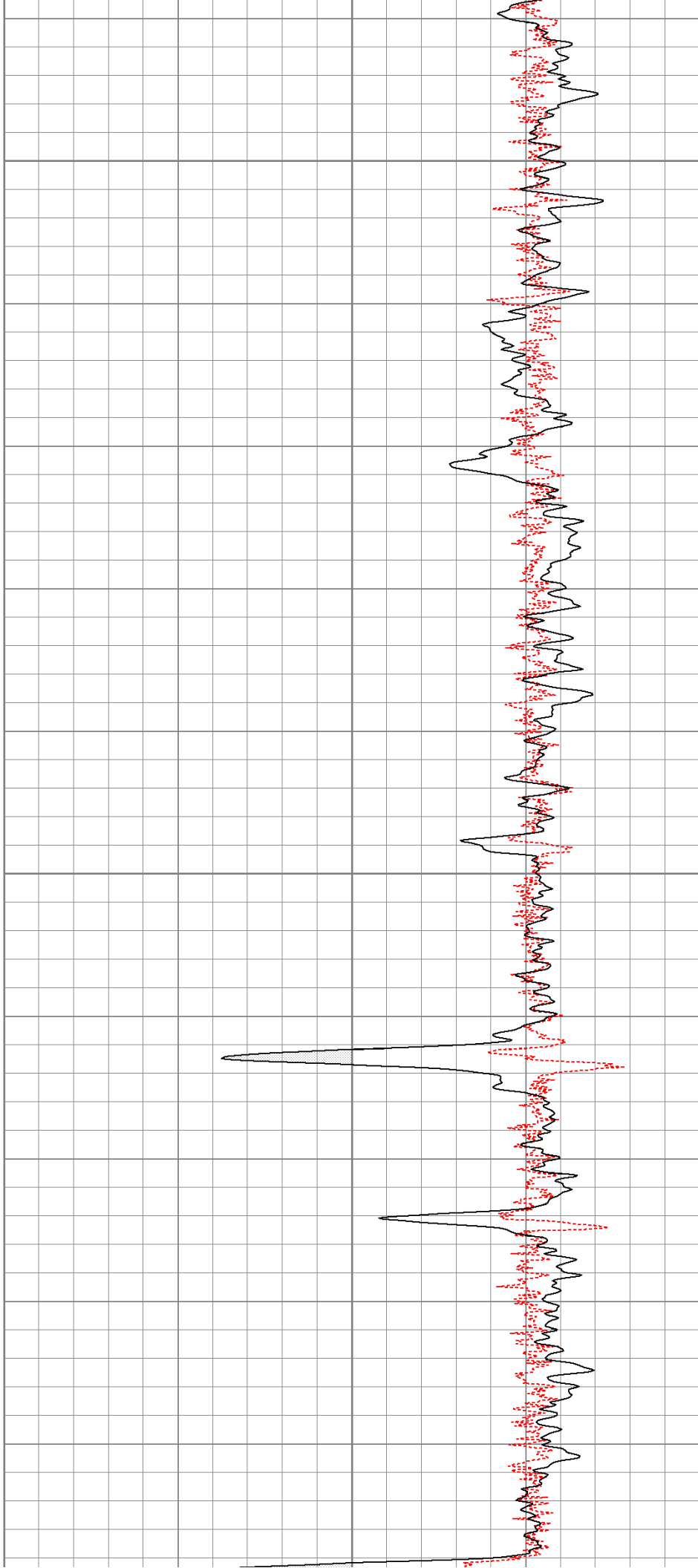
1100

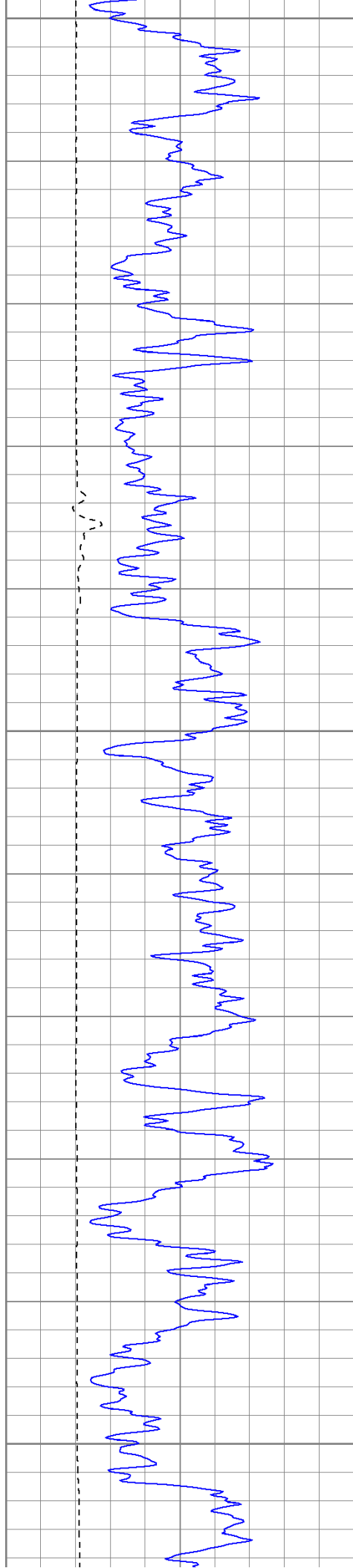




1150

1200

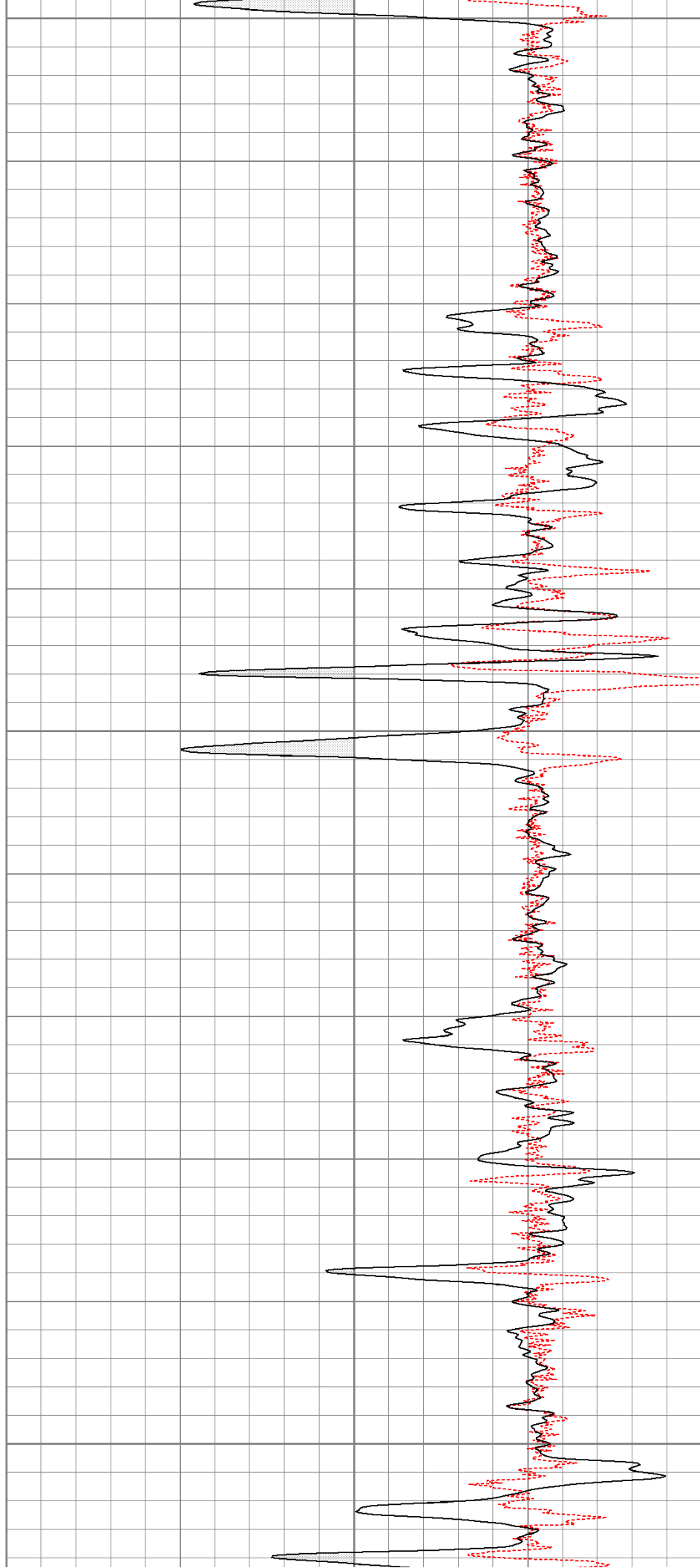


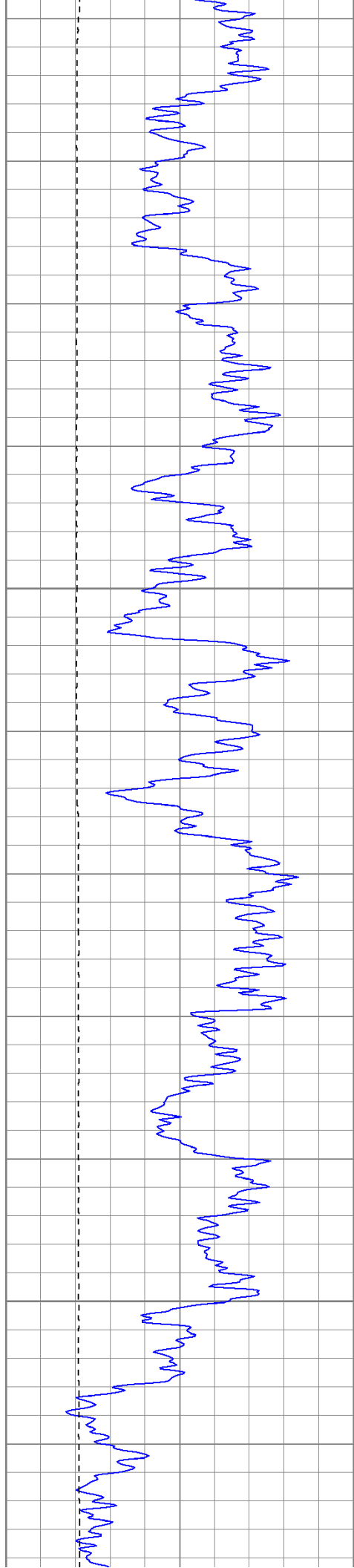


1250

1300

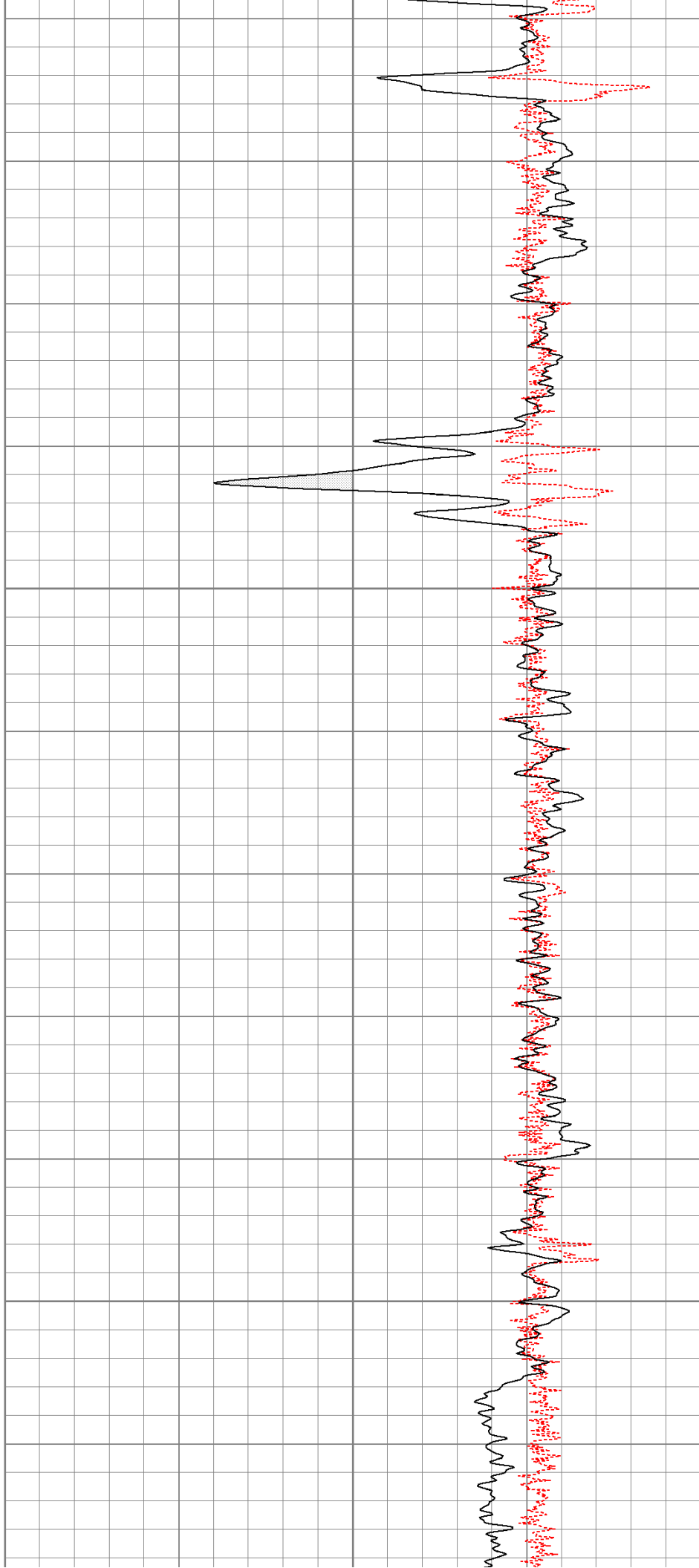
1350

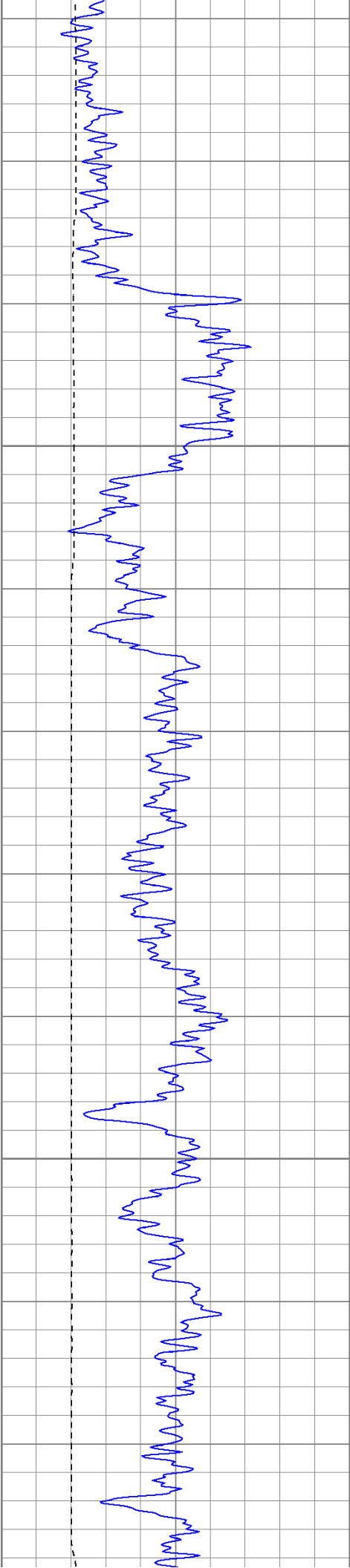




1400

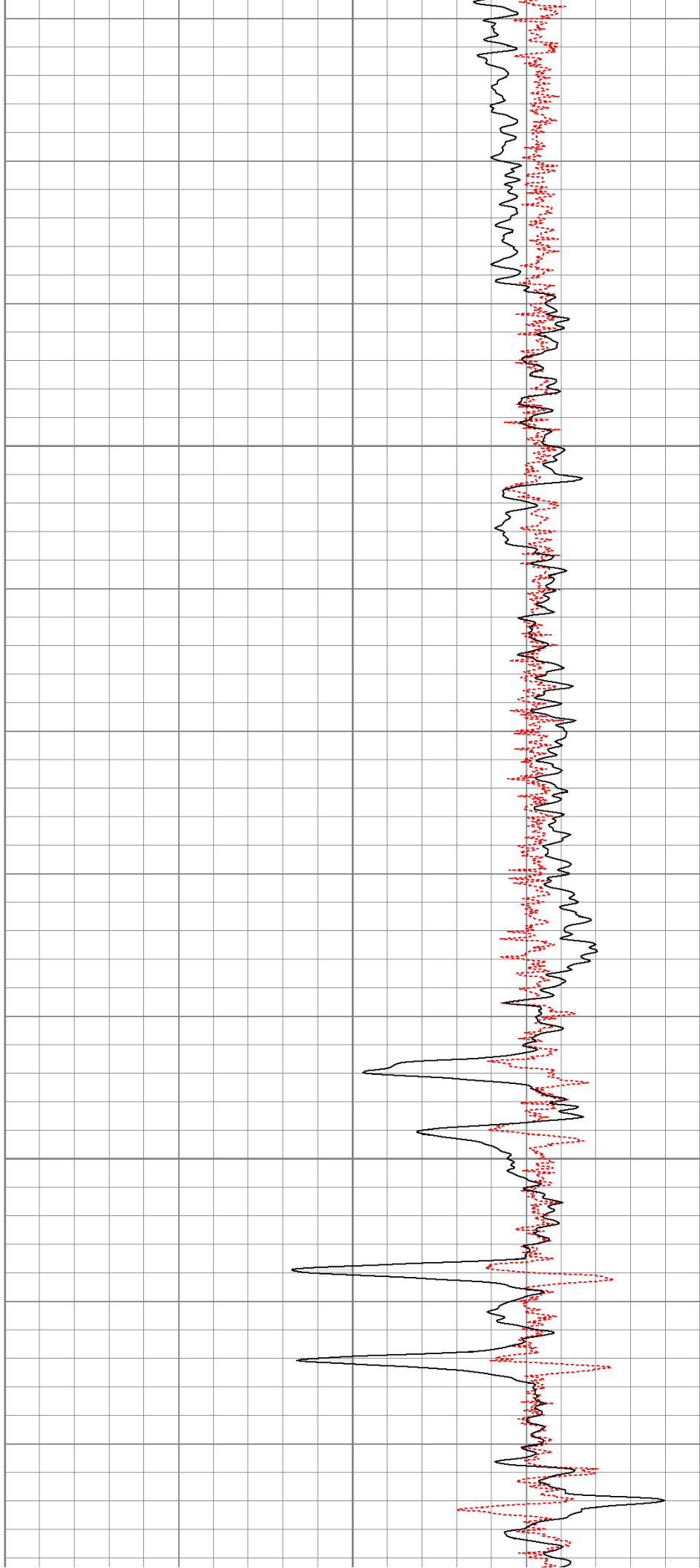
1450

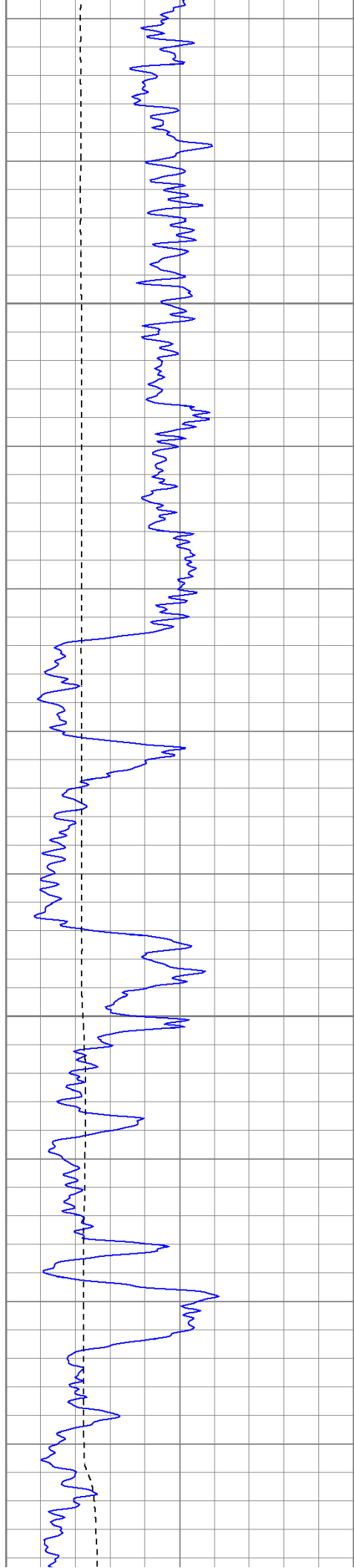




1500

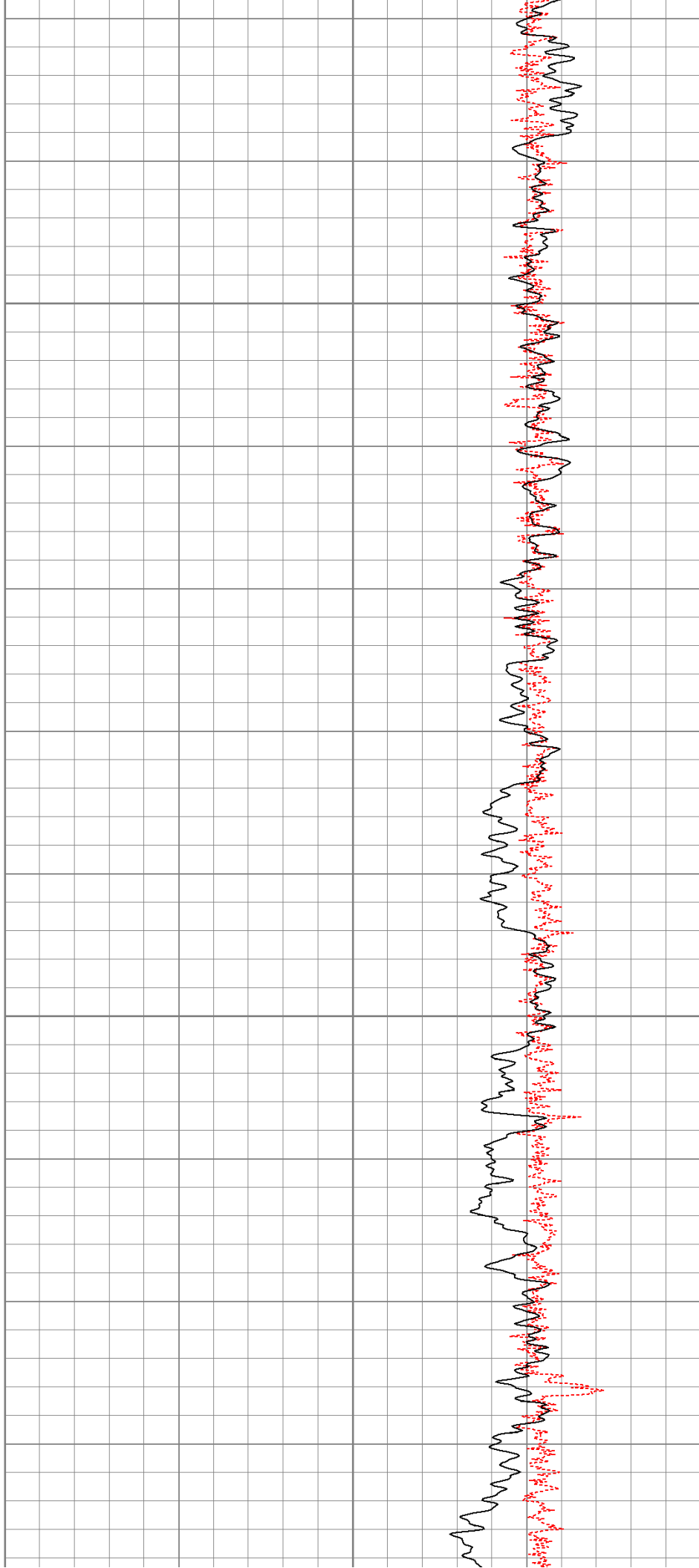
1550



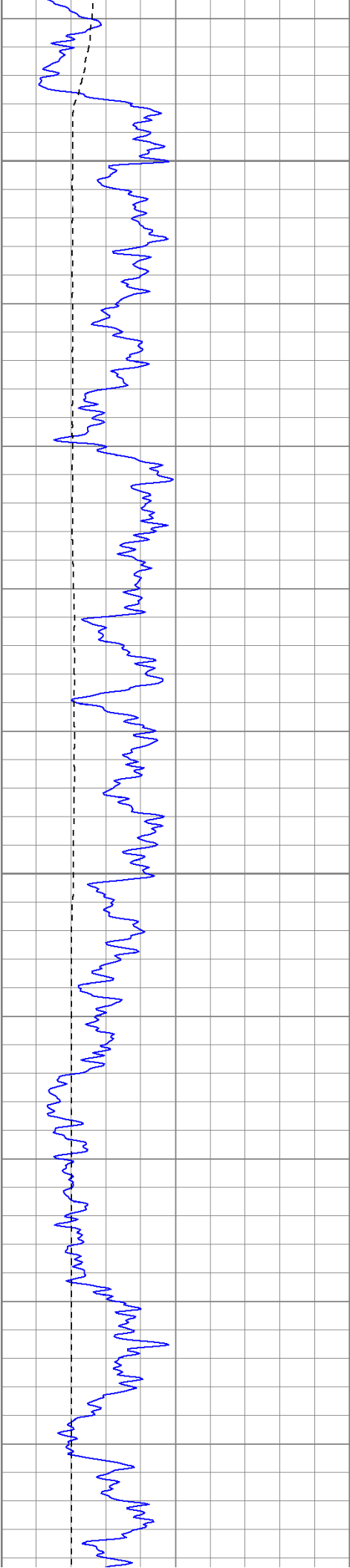


1600

1650

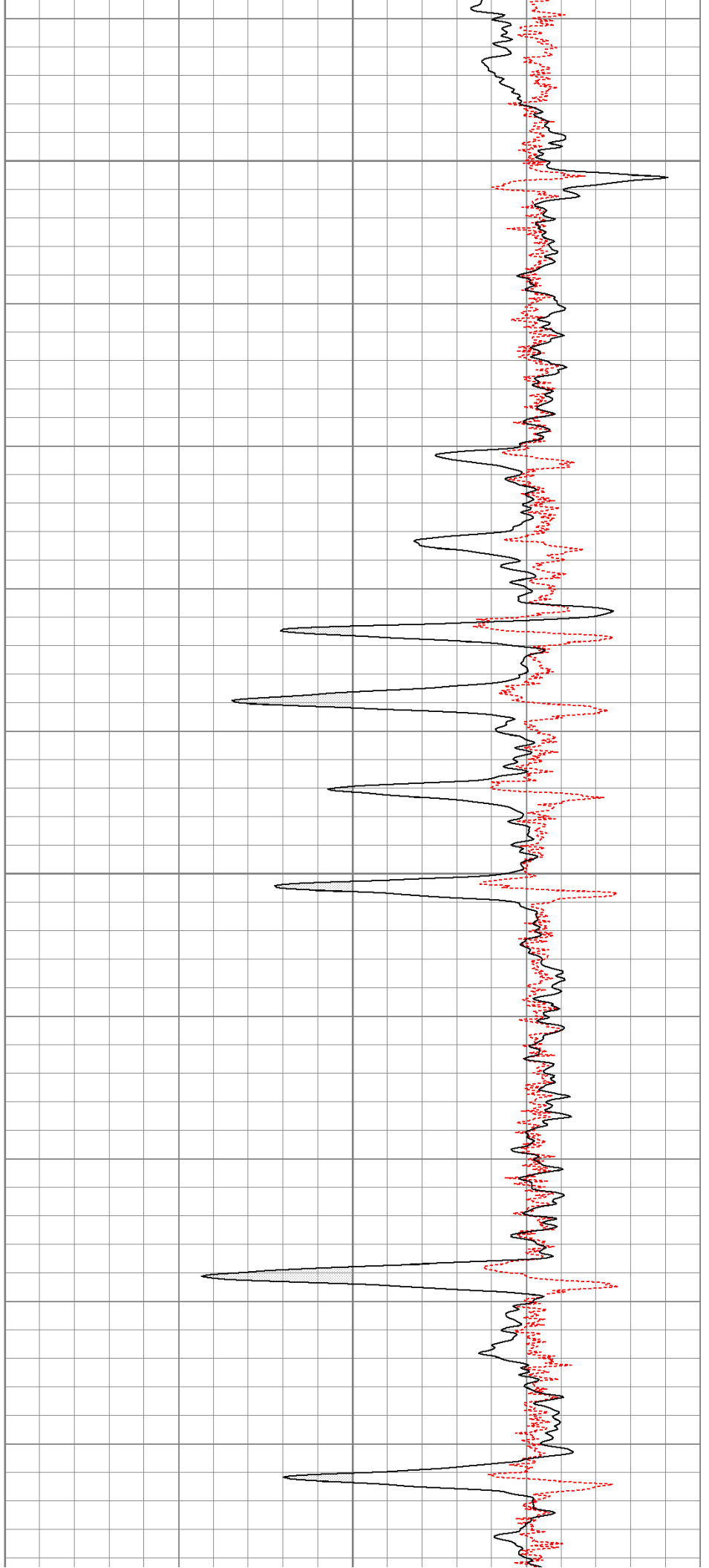






1700

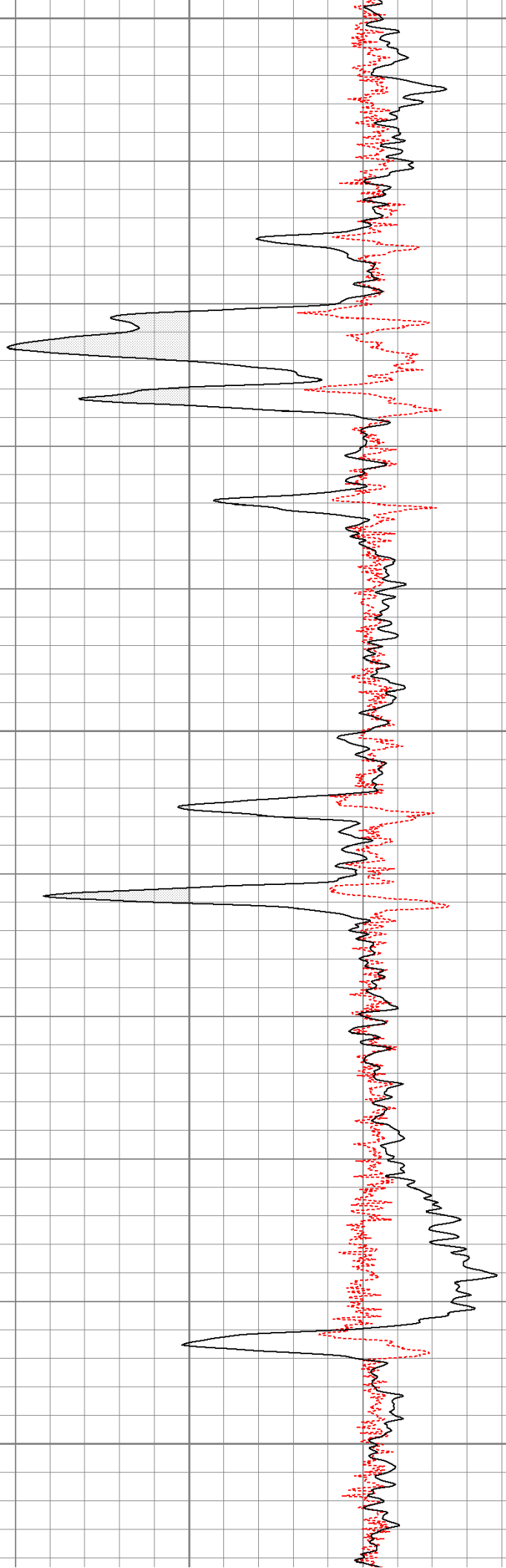
1750

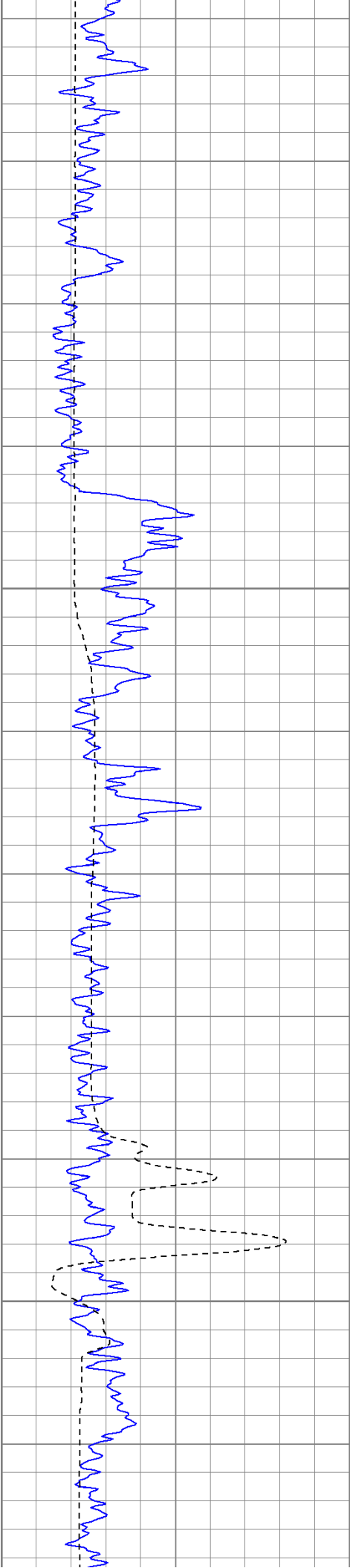


1800

1850

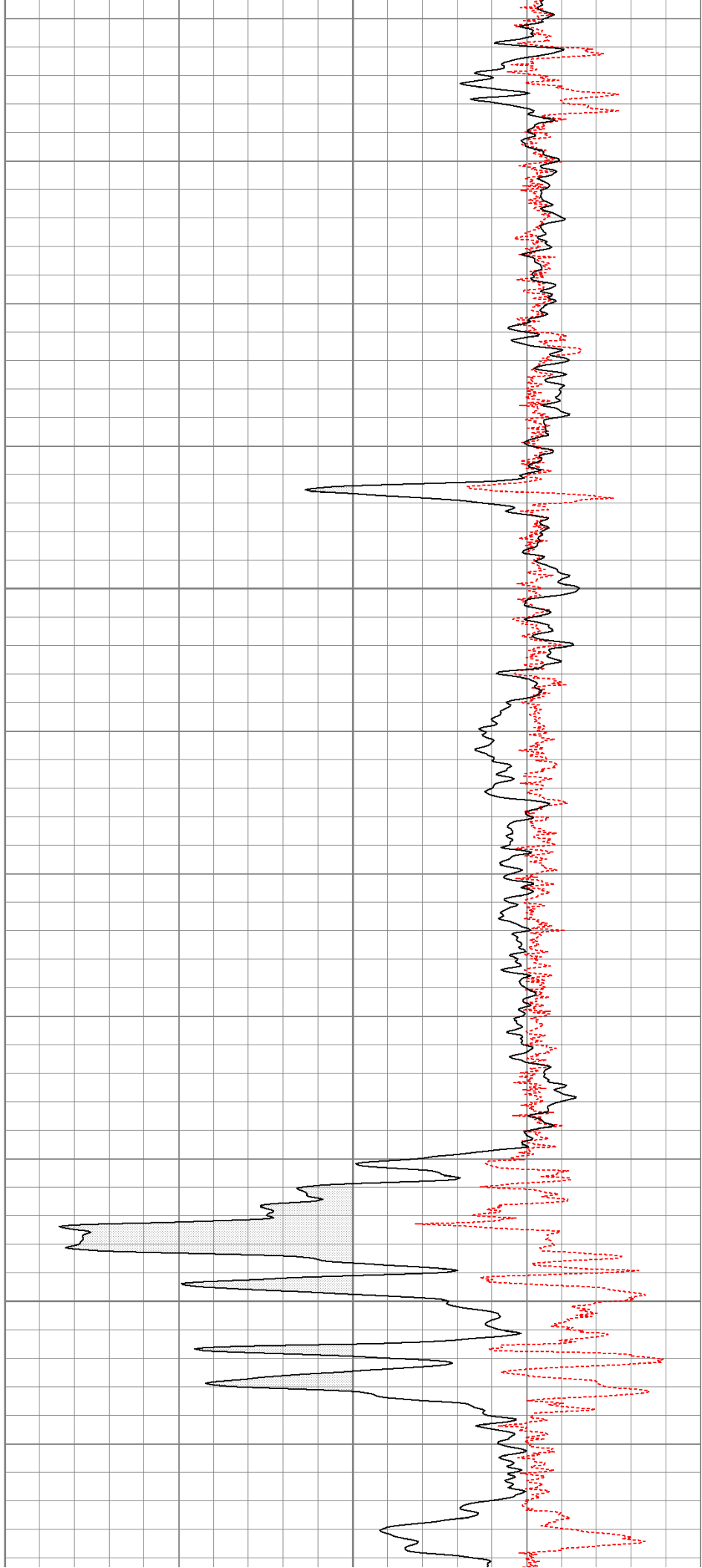
1900

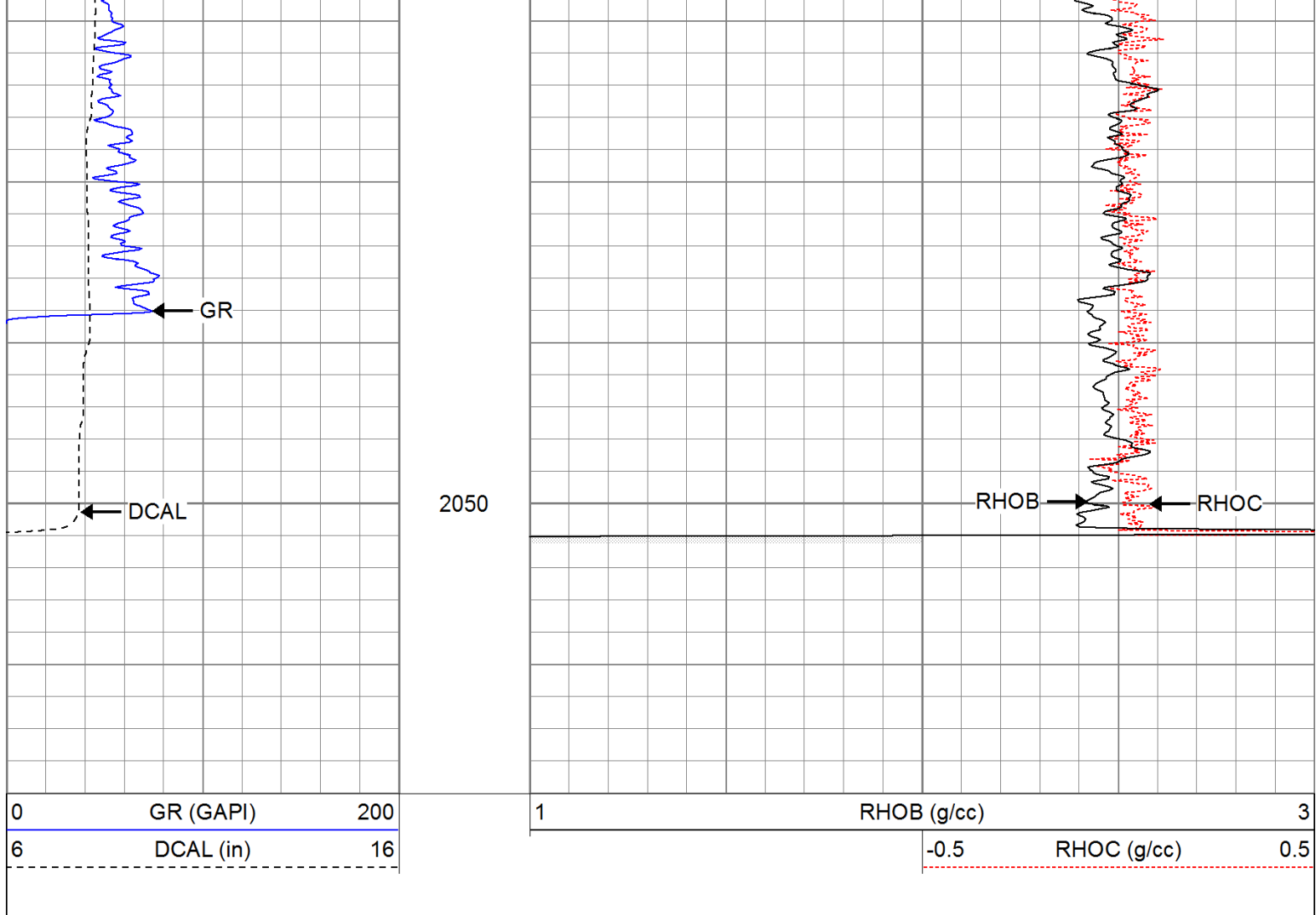




1950

2000





### Calibration Report

Database File: icehouse.db  
 Dataset Pathname: pass1  
 Dataset Creation: Sat Jul 16 00:52:02 2011 by Log Open-Cased 110302

### Induction Tool Calibration Report

Serial Number: 903  
 Tool Model: Probe  
 Downhole Cal Performed: Sat Jun 18 15:02:12 2011  
 Surface Cal Performed: Sat Jun 18 17:40:00 2011  
 After Survey Verification Performed:

Surface Calibration:	Air	Loop	
Conductivity Reference:	0.000	500.000	mmho
Conductivity Reading:	-0.045	0.642	V
Internal Reference:	Zero	Cal	
Conductivity Reference:	0.000	500.000	mmho
Conductivity Reading:	0.006	0.641	V

Downhole Calibration:	Internal Zero	Internal Cal	
Conductivity Reference:	-0.702	499.904	mmho
Conductivity Reading:	-0.082	503.319	V
Short Normal Reference:	0.000	20.000	Ohm-m
Short Normal Reading:	0.006	0.233	V

Results:	Gain	Offset
Loop Conductivity:	728.211	32.770
Downhole Correction:	0.994	-0.621
Short Normal Resistivity:	88.245	-2.000

After Survey Verification	Internal Zero	Internal Cal	
Conductivity Reading:	0.000	0.000	V
Conductivity Result:	0.000	0.000	mmho
Short Normal Reading:	0.000	0.000	V
Short Normal Result:	0.000	0.000	Ohm-m
Compensated Density Calibration Report			
Serial-Model:	901-2.75POH		
Source / Verifier:	/		
Master Calibration Performed:	Wed Jun 08 09:11:26 2011		
Before Survey Verification Performed:			
After Survey Verification Performed:			
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	8.15 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		
Tool Model:	2.75POH		
Performed:	Wed Jun 08 13:12:55 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:	Tue Jun 14 18:09:29 2011		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.7000	GAPI/cps	

[illegible]