

COMPENSATED DENSITY NEUTRON LOG

Company	Pioneer Natural Resources	Company	Pioneer Natural Resources
Well	Jake 21-15 Tr	Well	Jake 21-15 Tr
Field	Purgatoire River	Field	Purgatoire River
County	Las Animas	County	Las Animas
State	Colorado	State	Colorado
Location:	API #: 05 071 09630 00	Other Services	SIL
SEC 15 TWP 32S RGE 66W	1248' FNL & 1856' FWL		
Permanent Datum	Ground Level	Elevation	7602'
Log Measured From	Kelly Bushing 4' AGL	K.B. 7606'	
Drilling Measured From	Kelly Bushing	D.F. -----	
		G.L. 7602'	
Date	8-12-11		
Run Number	One		
Depth Driller	1950'		
Depth Logger	1947'		
Bottom Logged Interval	1935'		
Top Log Interval	Surface Casing		
Casing Driller	8 5/8" @ 438'		
Casing Logger	436'		
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	4:30 A.M.		
Time Logger on Bottom	8:30 A.M.		
Maximum Recorded Temperature	82 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

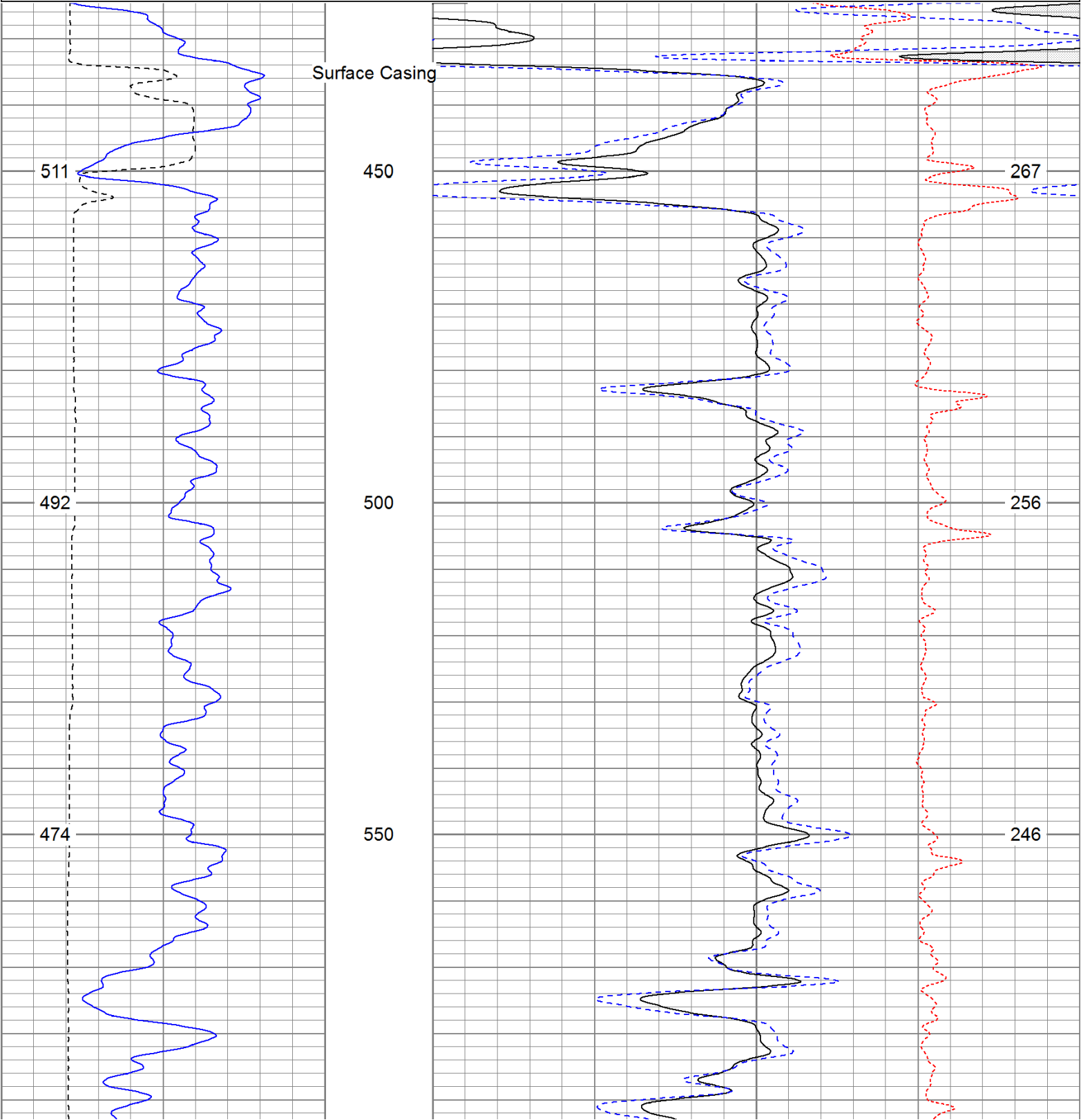
Density Porosity Presented On Sandstone Matrix.
ABHV Calculated For 5.5" Casing.
Neutron Porosity is invalid from 1640' to 1410' due to foam or gas.

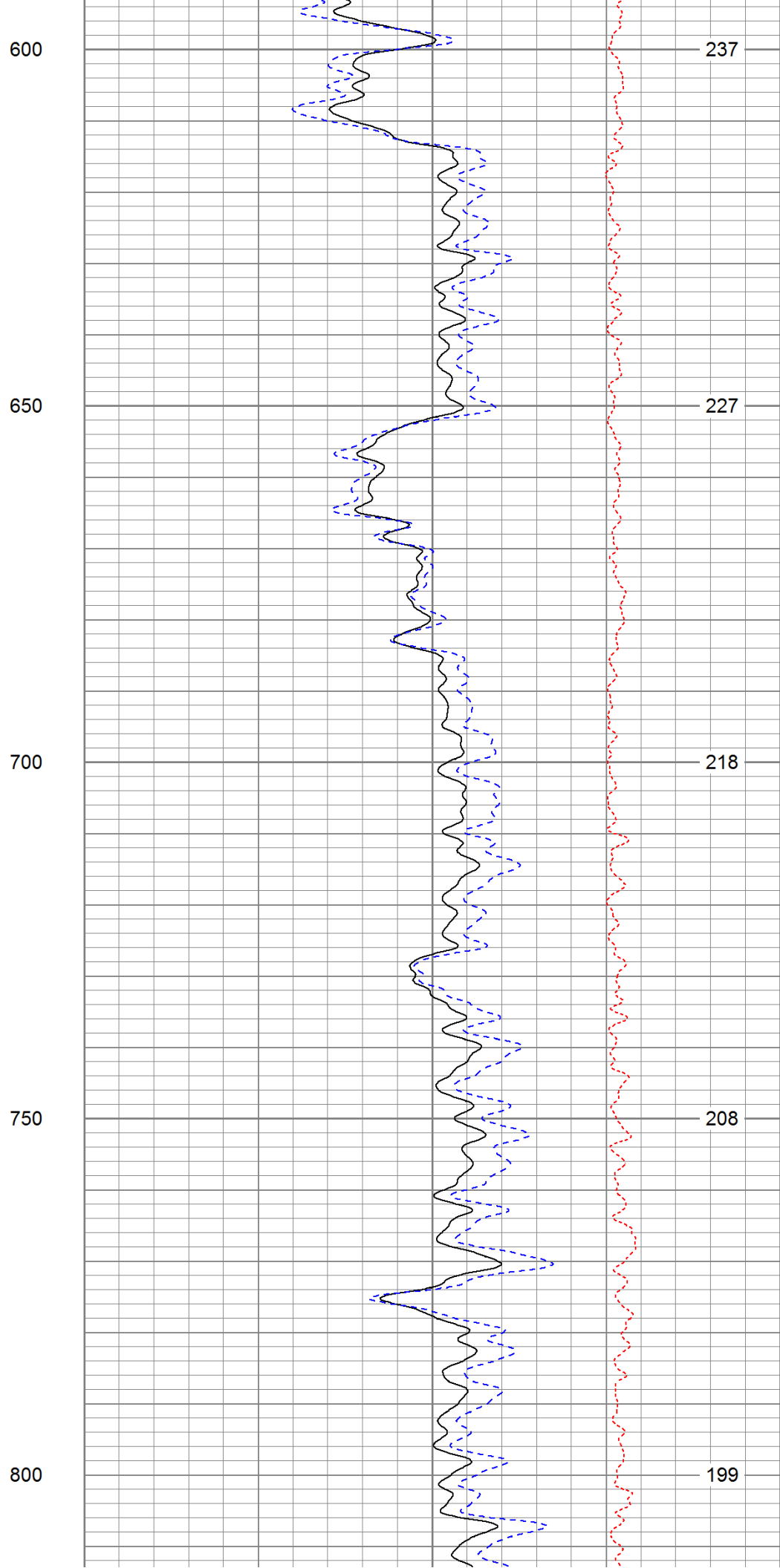
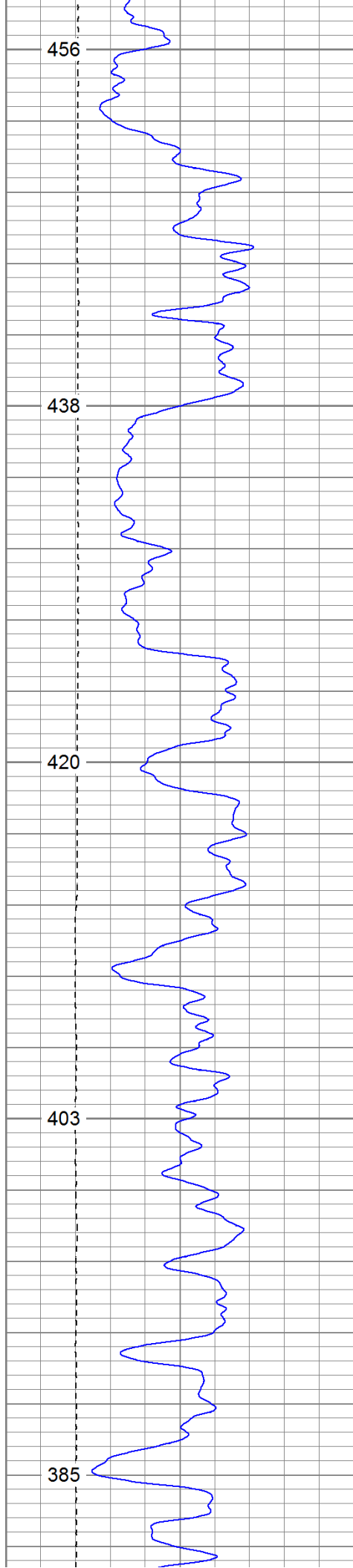
Directions:

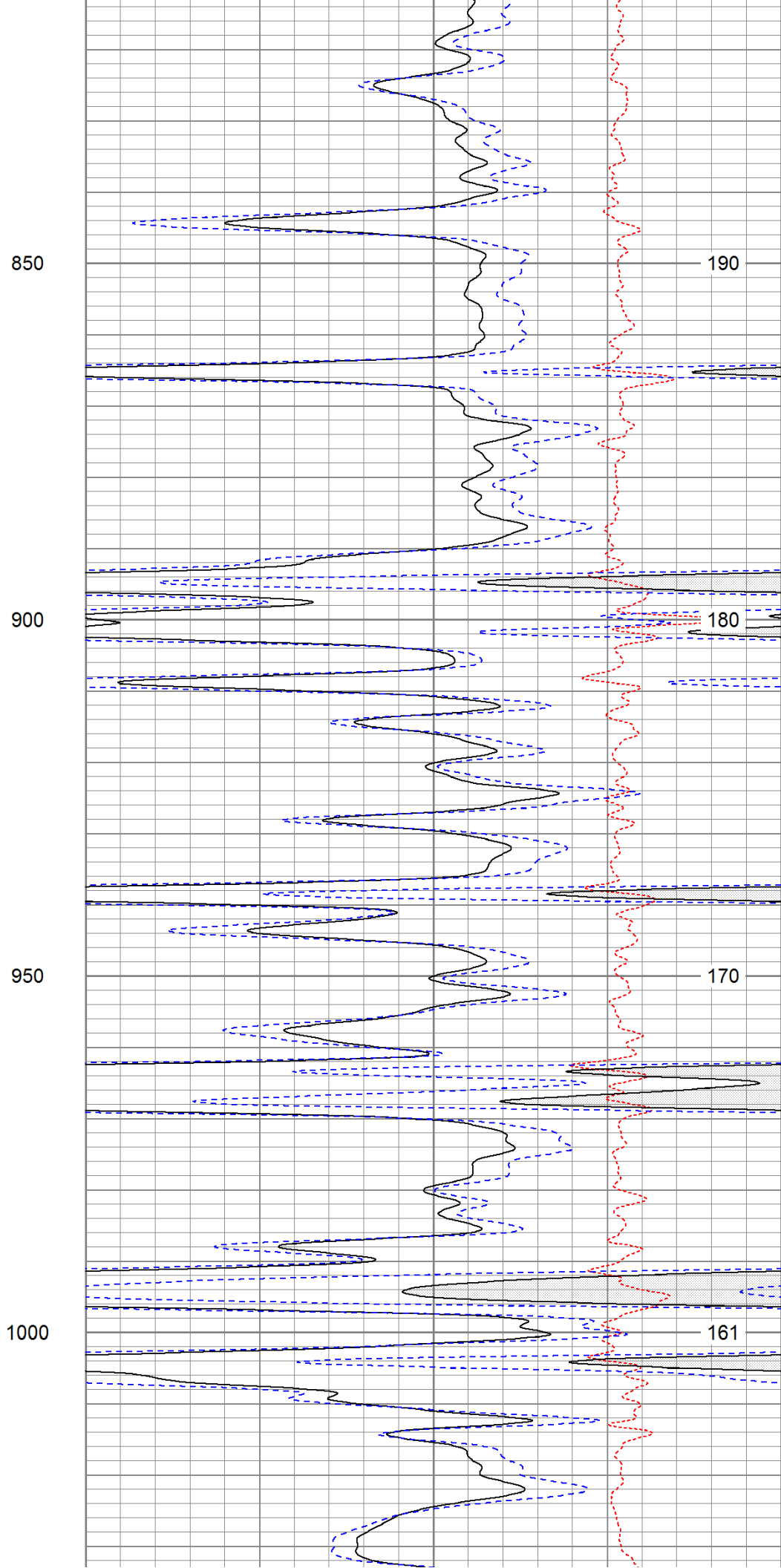
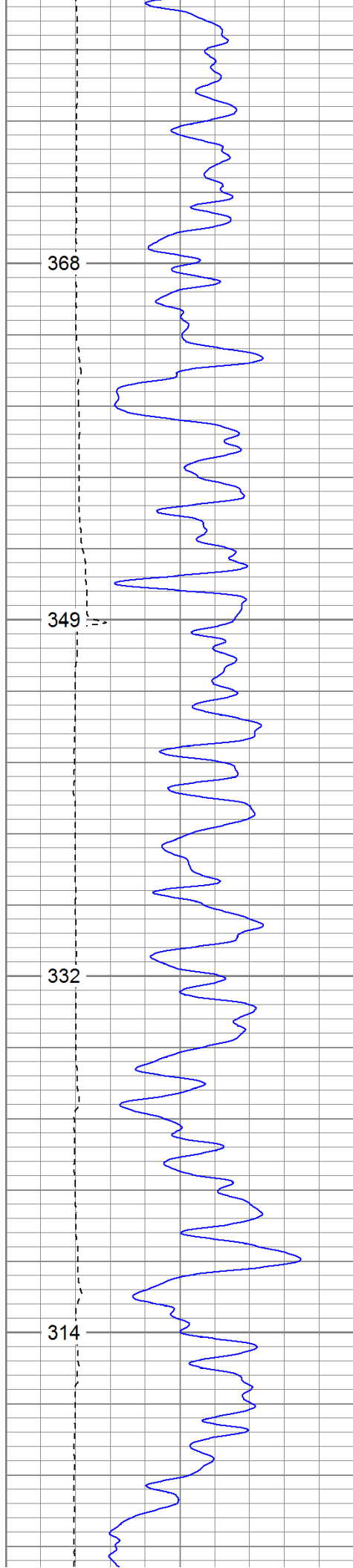
Bon Carbo, left at Post Office, follow main RD to Y @ C.R. 30.1 and State Wild Life Area,
Stay Straight, drive straight past Gourdins House, go thru gate with Hayden Ranch sign.
drive past a location, at Y stay left, next Y stay right, follow road and dead end on location.

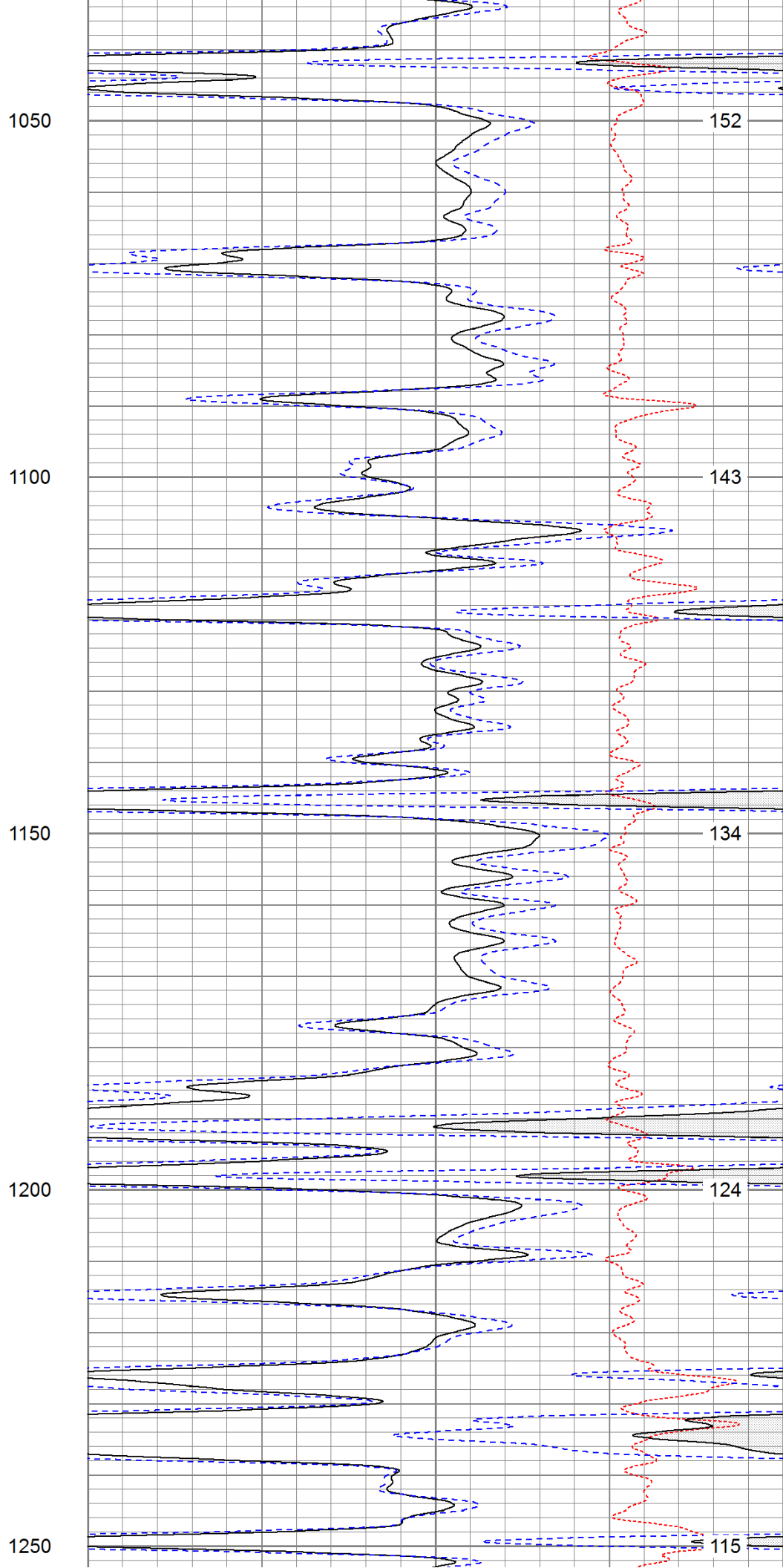
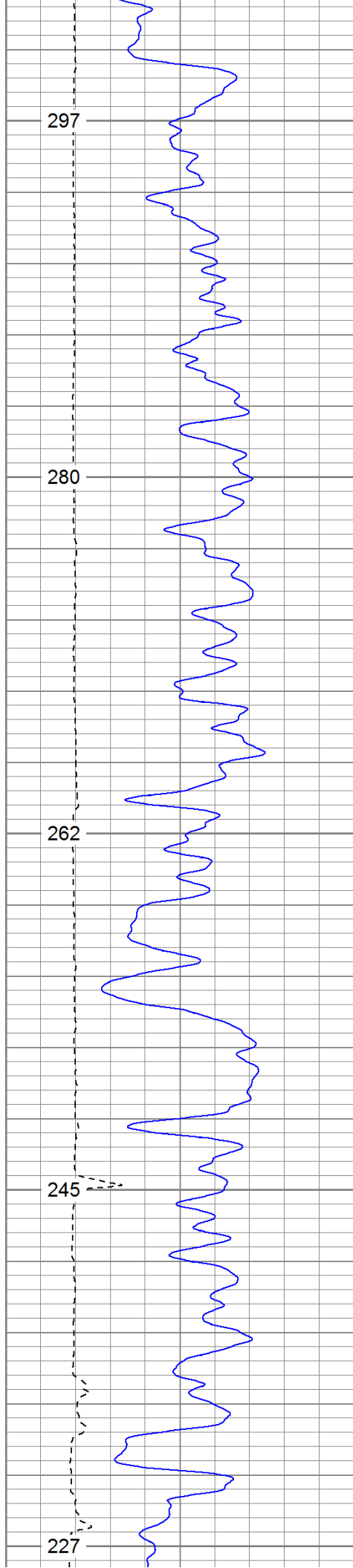
Database File: jaketr.db
Dataset Pathname: pass2.1
Presentation Format: cdl
Dataset Creation: Fri Aug 12 09:52:05 2011 by Calc Open-Cased 110302
Charted by: Depth in Feet scaled 1:240

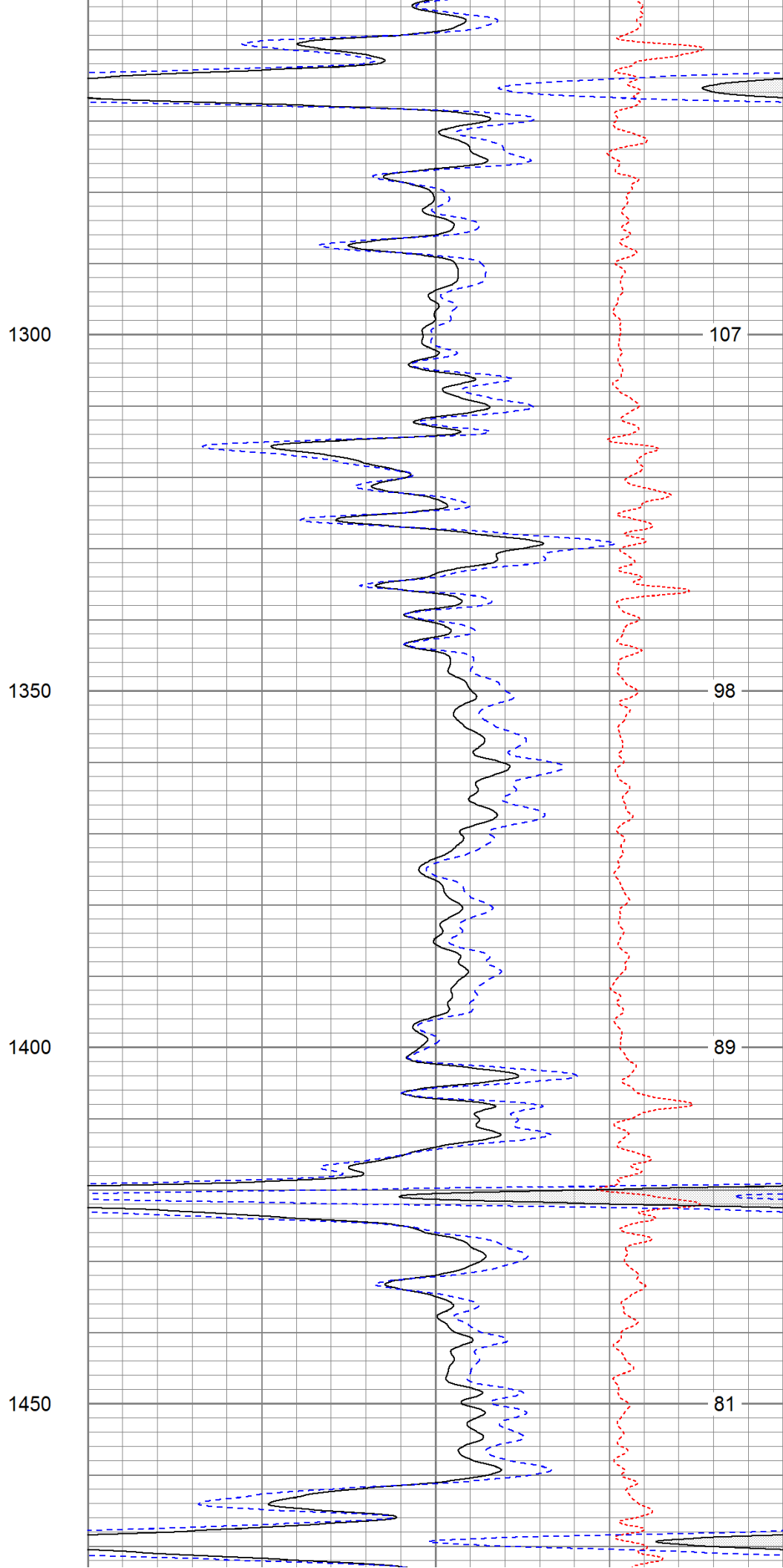
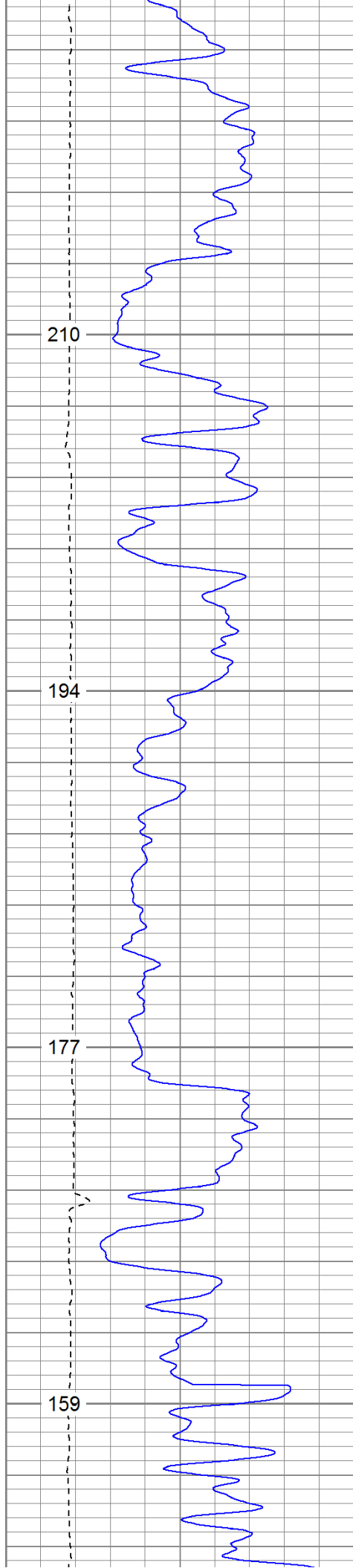
0	GR (GAPI)	200	2	RHOB (g/cc)		3
6	DCAL (in)	16	1	RHOB (g/cc)		2
TBHV (ft3)			30	DPOR (pu)		-10
				-0.5	RHOC (g/cc)	0.5
				7000	LTEN (lb)	0
						ABHV (ft3)

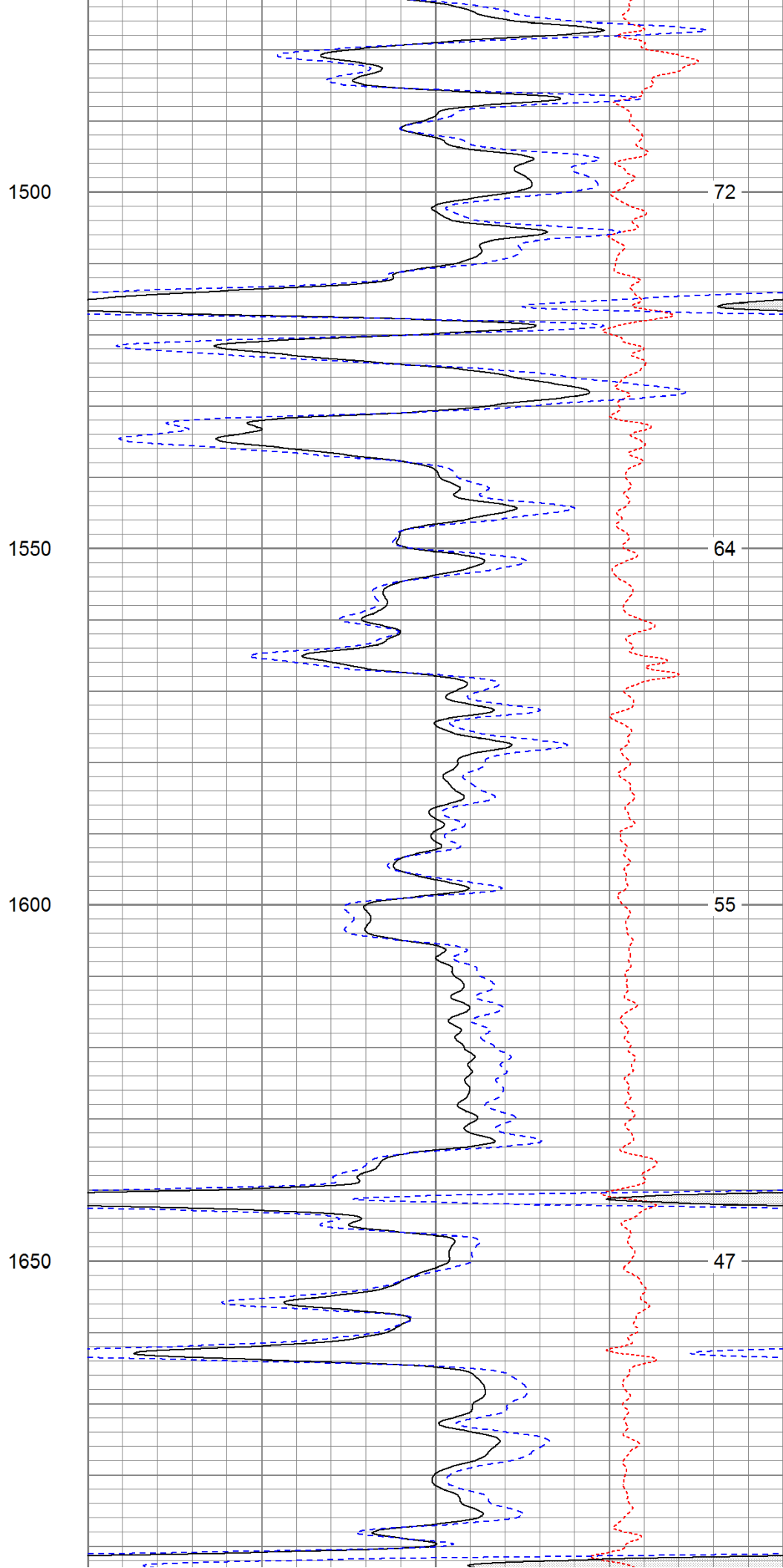
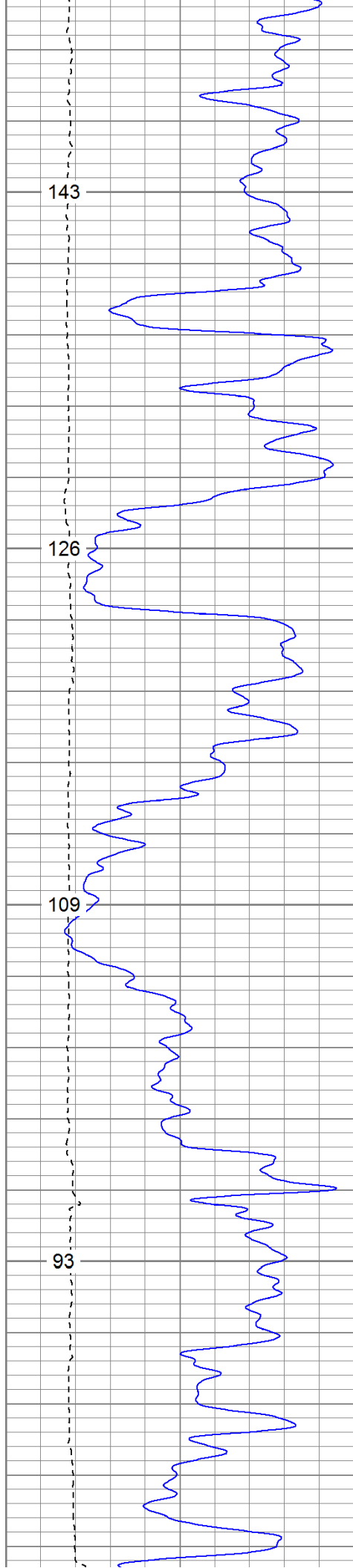


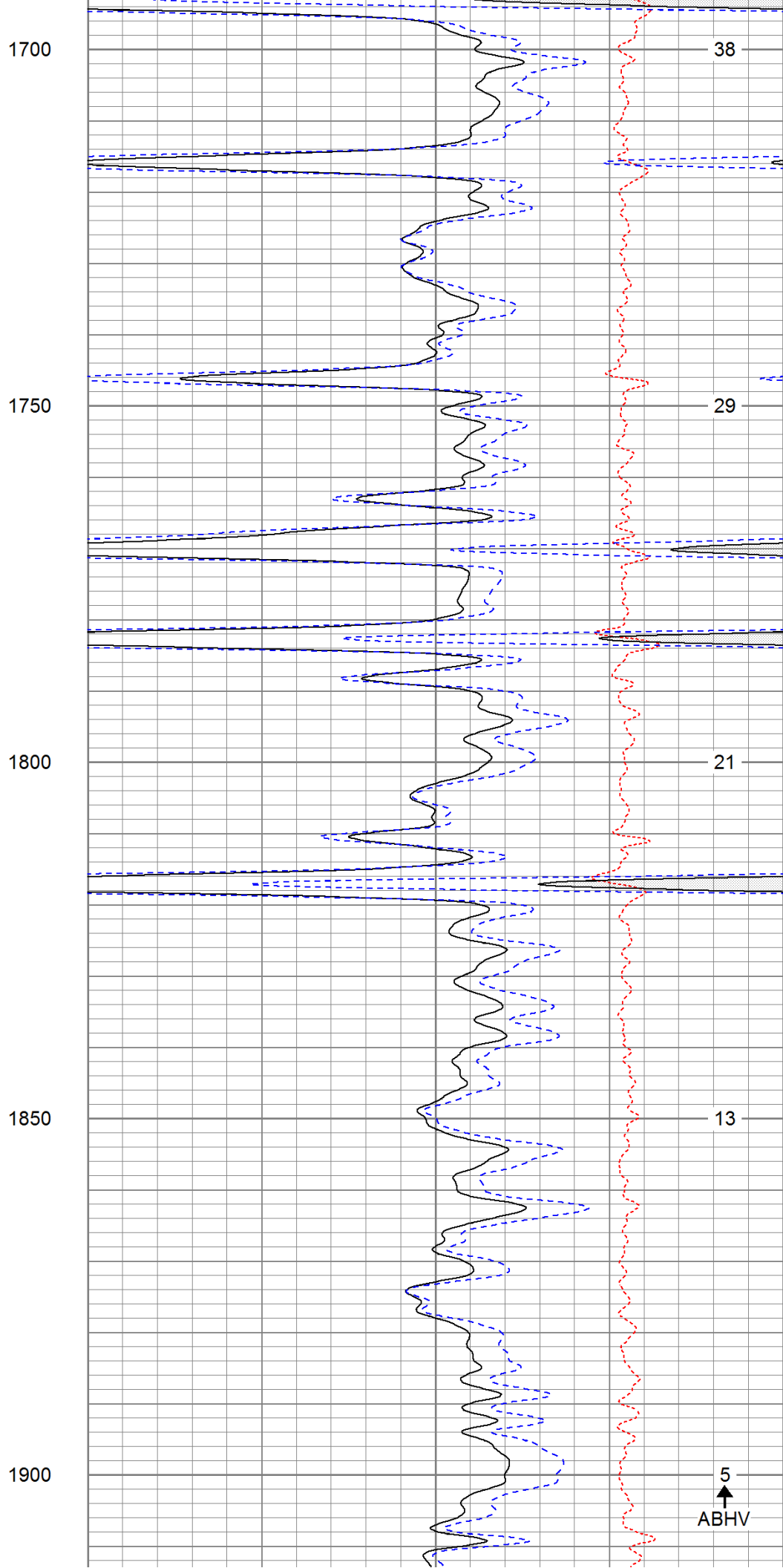
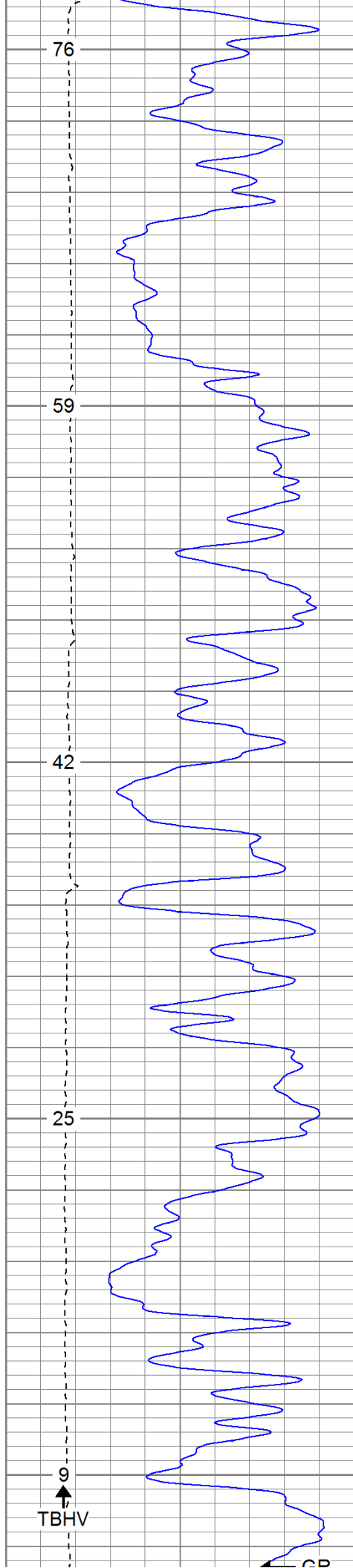


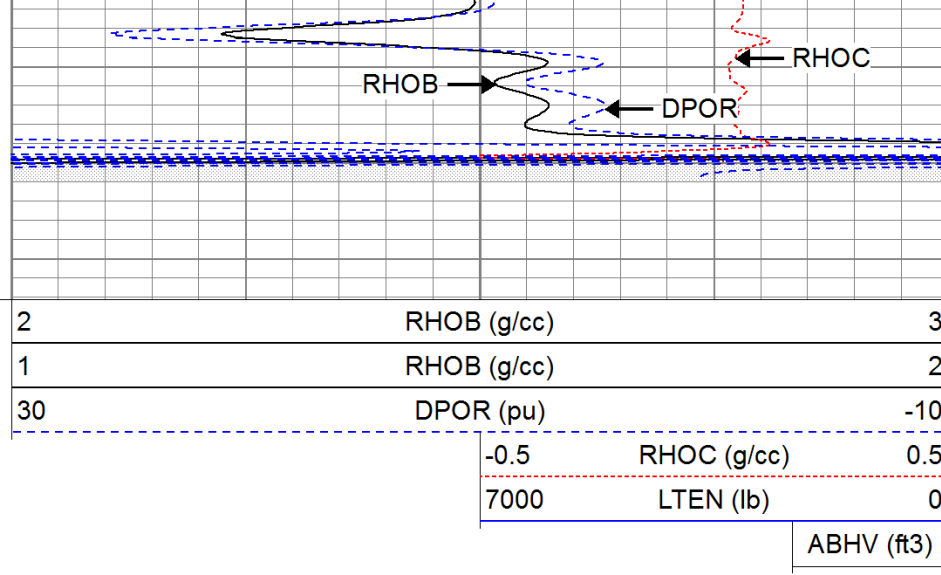
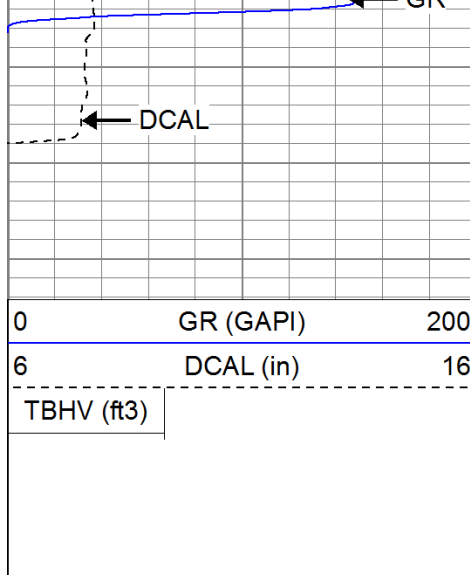






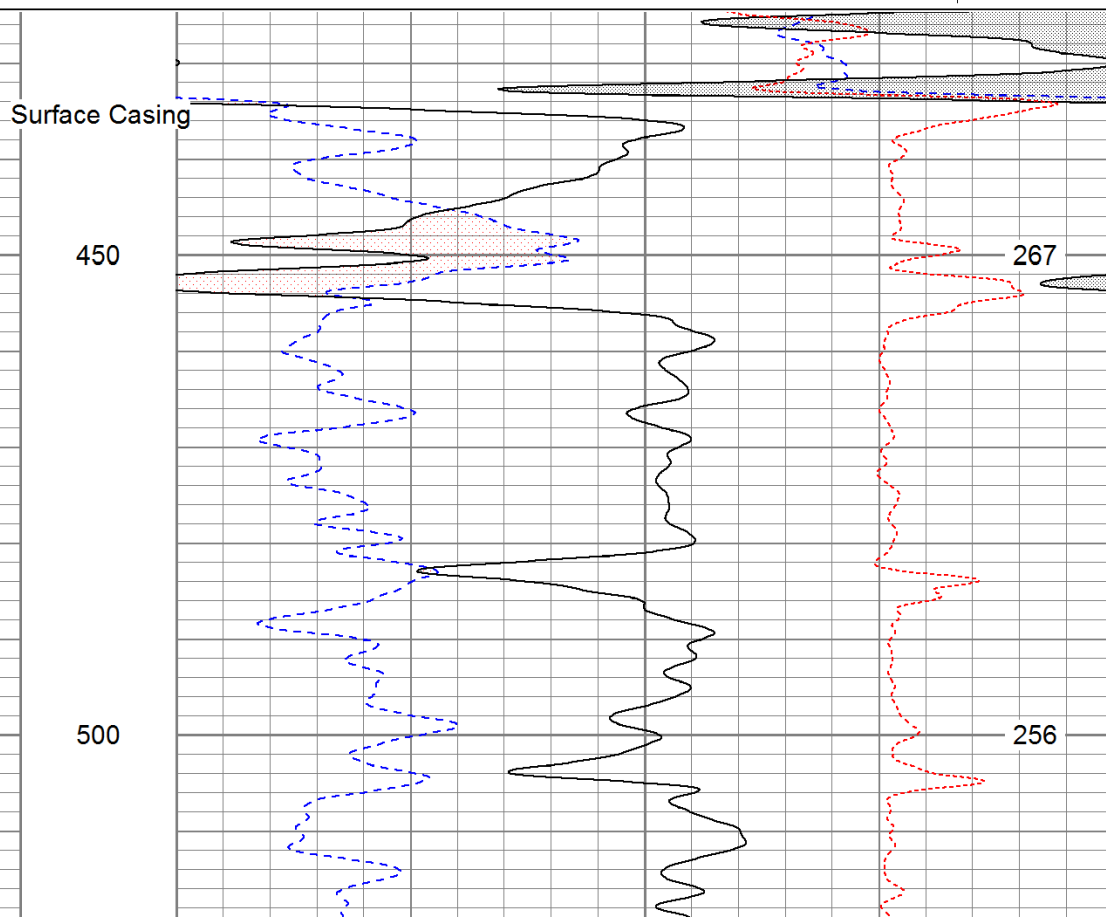
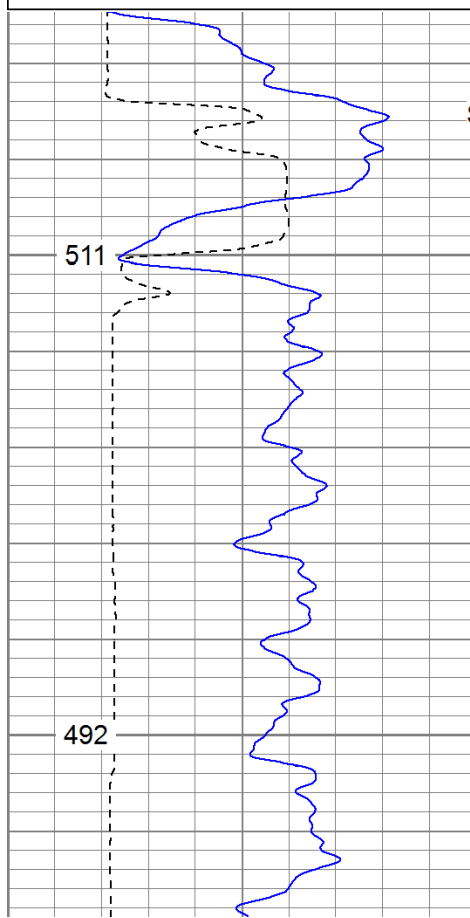
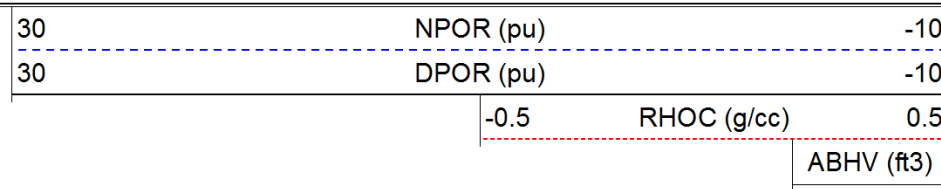
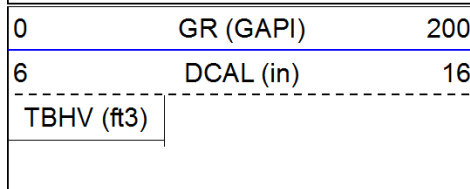


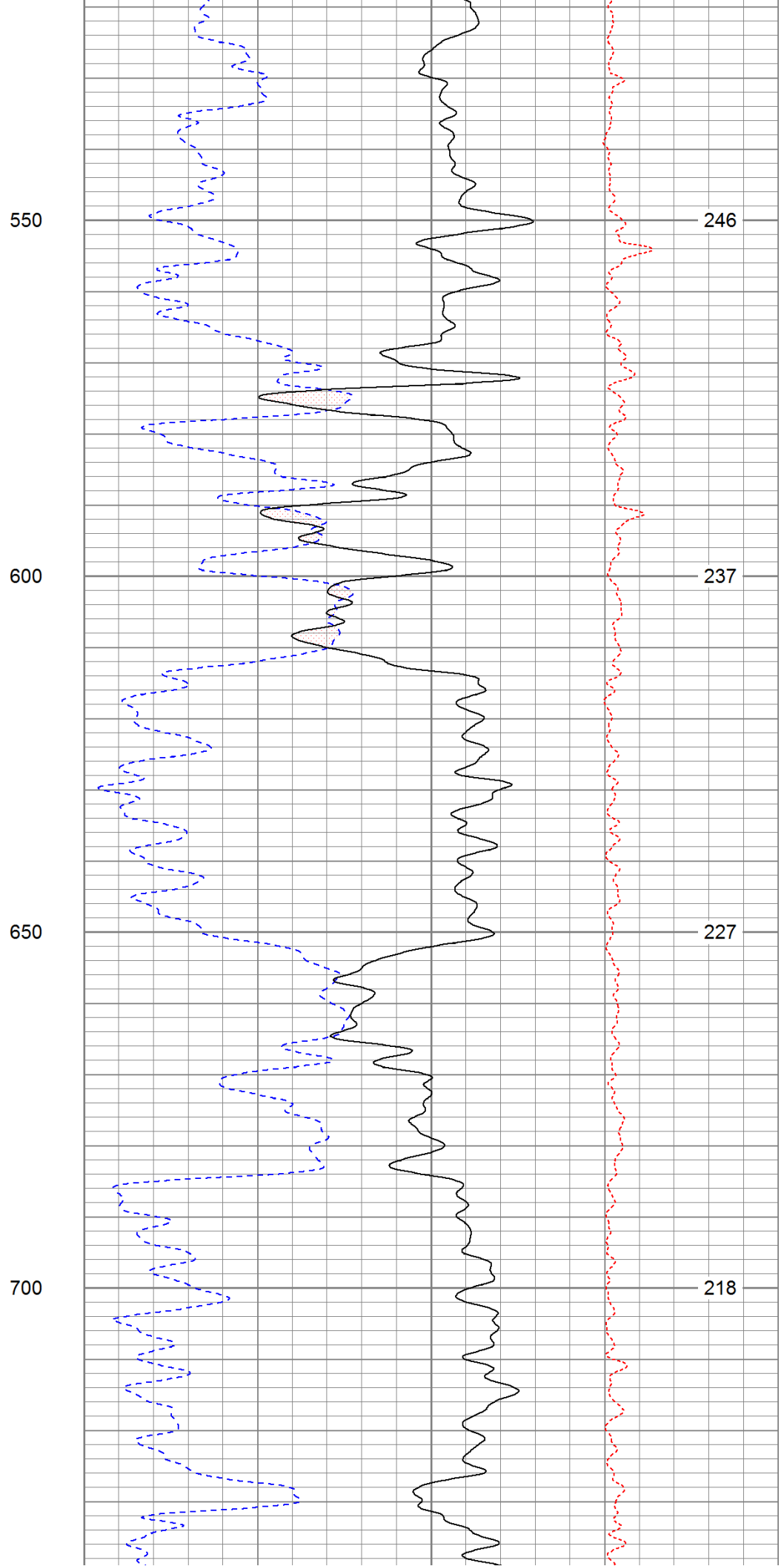
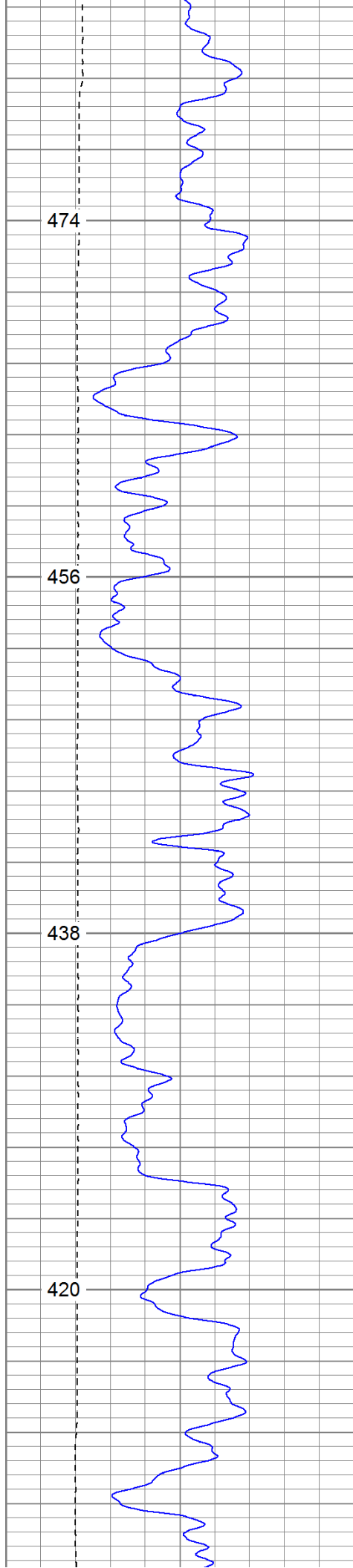


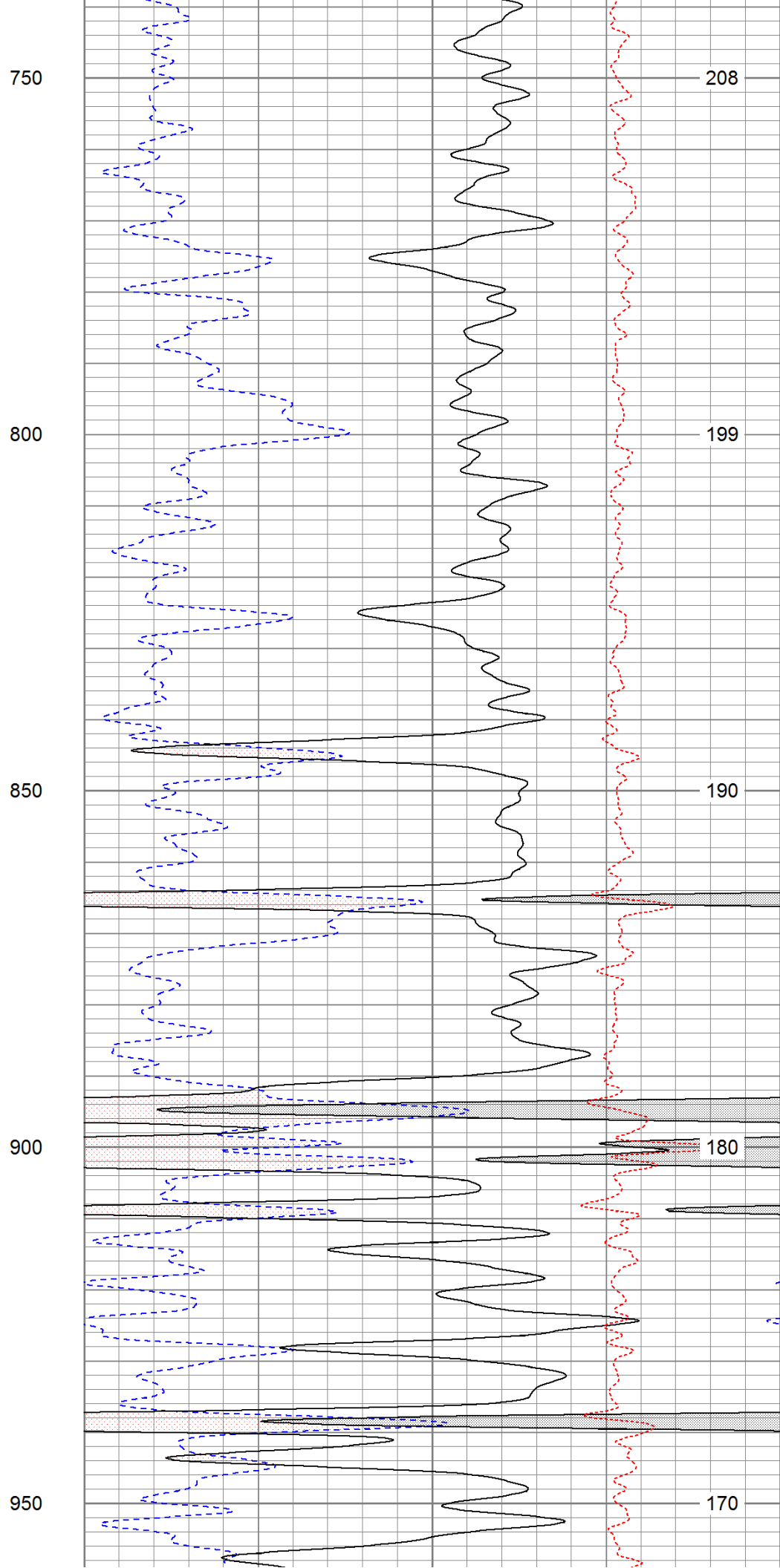
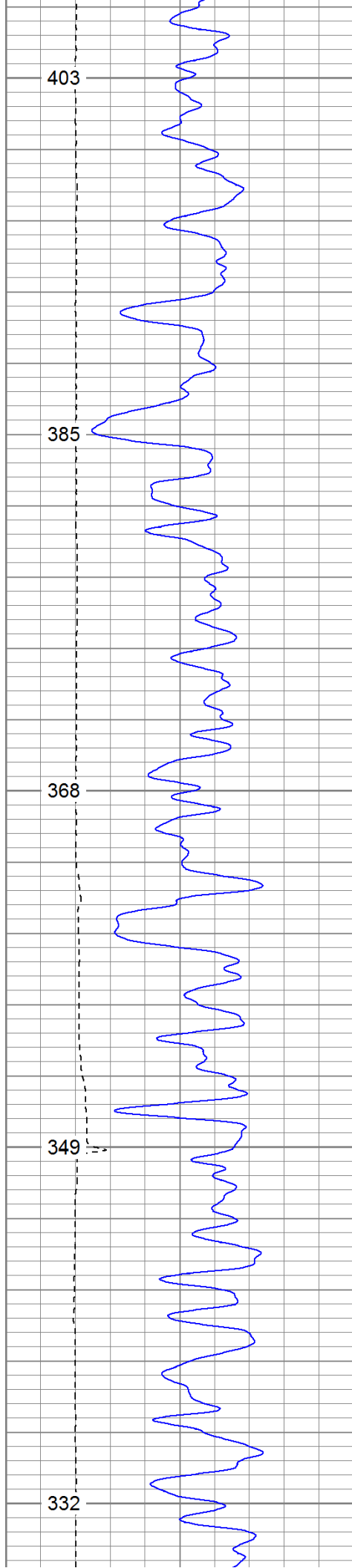


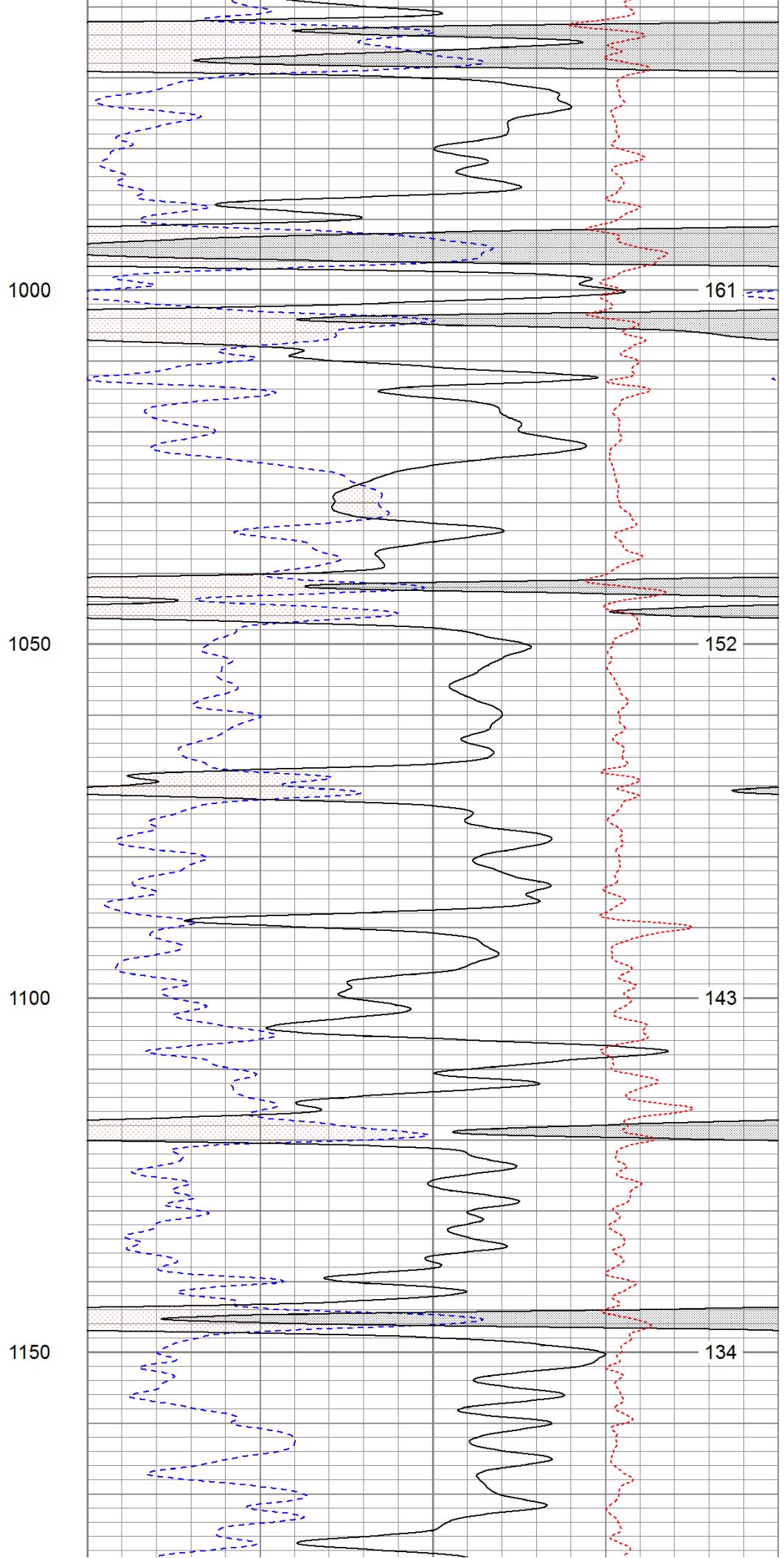
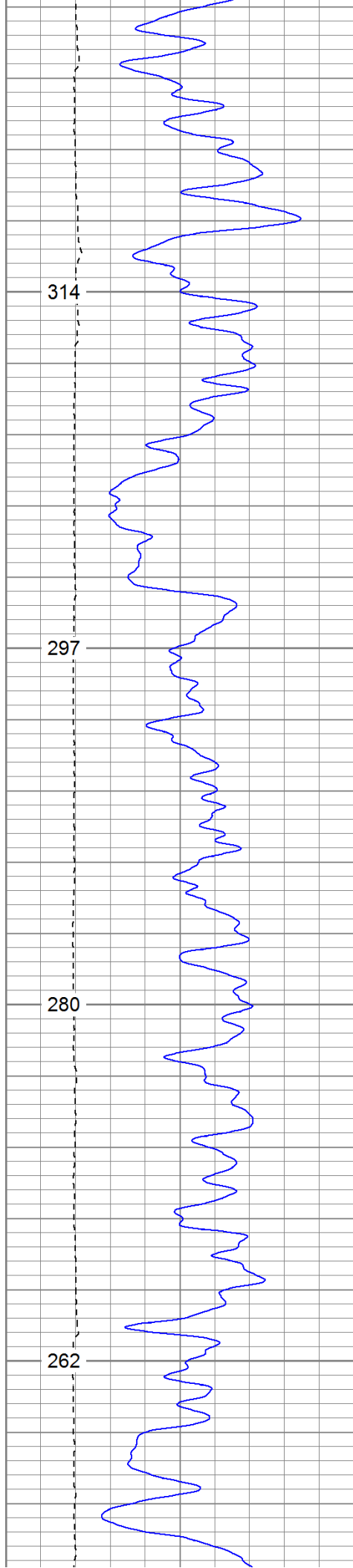
Main Pass

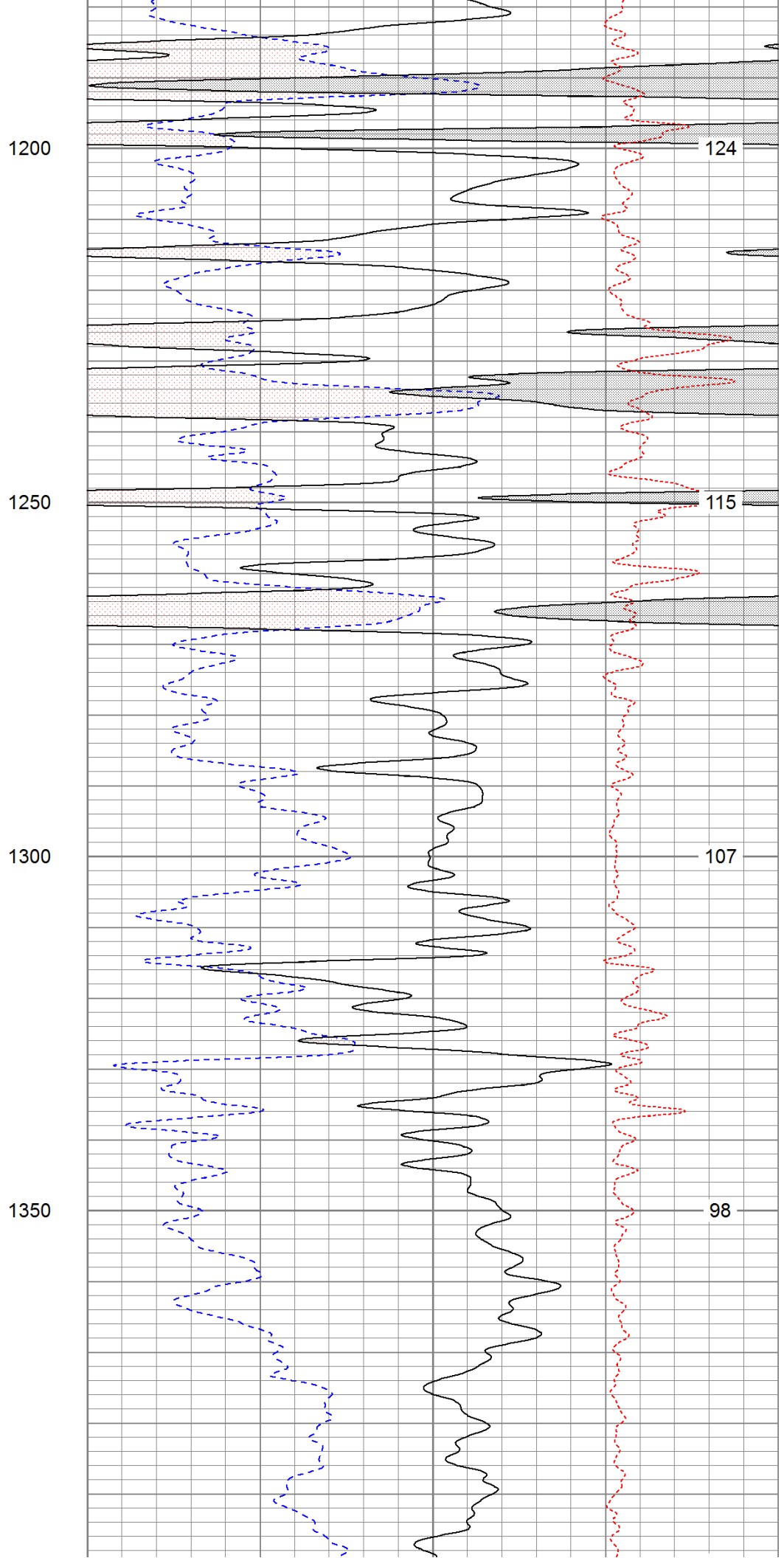
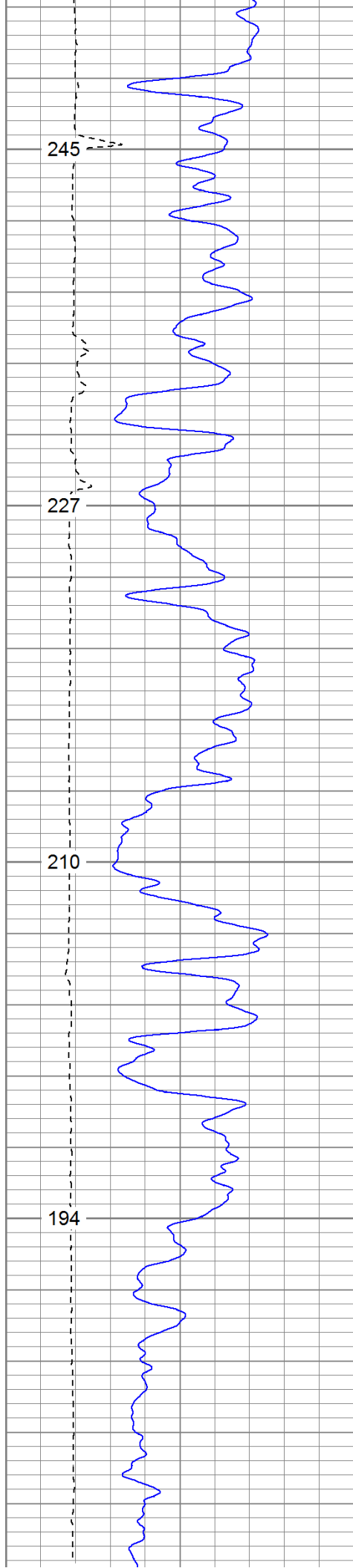
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 Dataset Pathname: pass2.1
 Presentation Format: cdnl
 Dataset Creation: Fri Aug 12 09:52:05 2011 by Calc Open-Cased 110302
 Charted by: Depth in Feet scaled 1:240

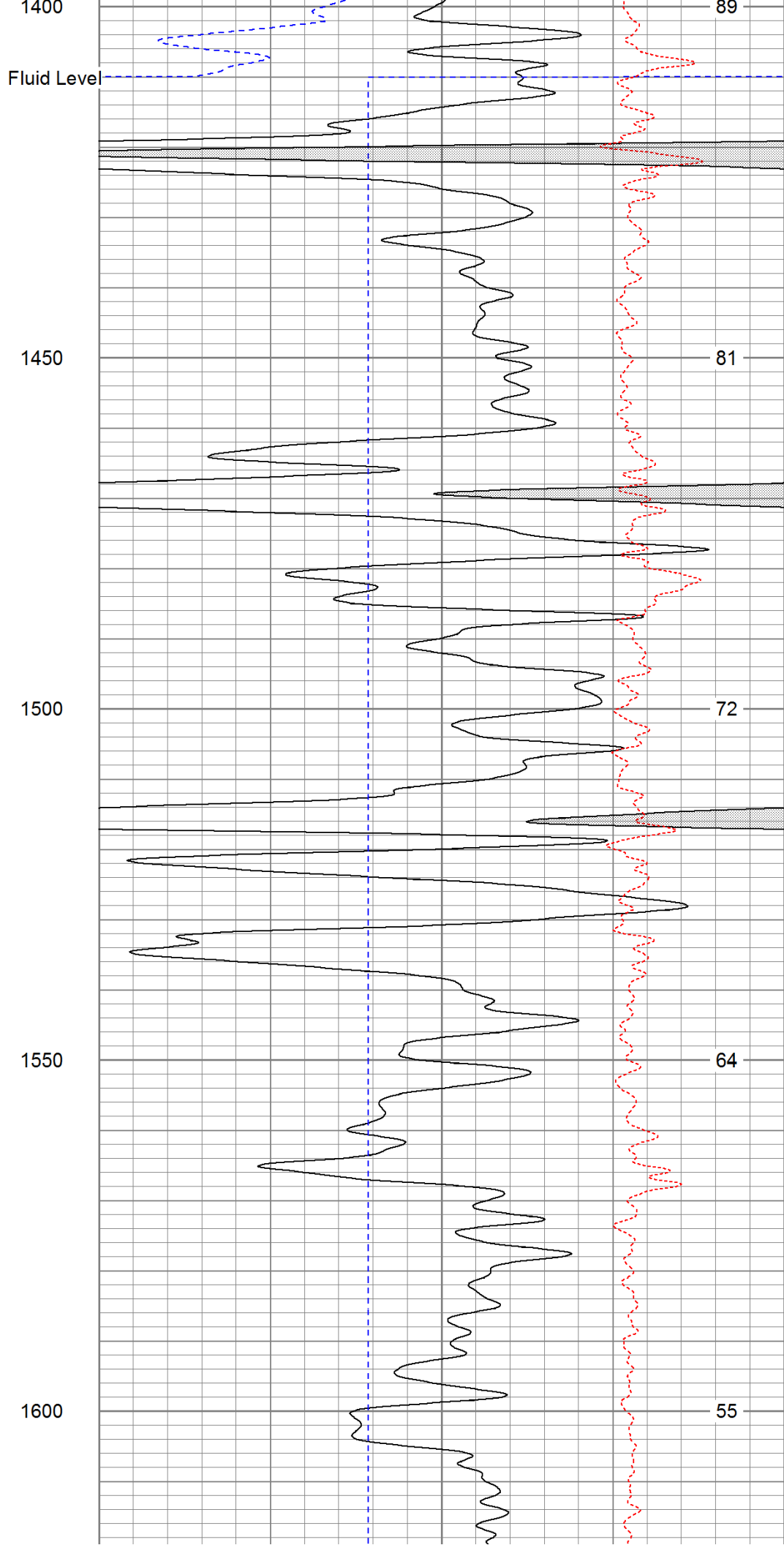
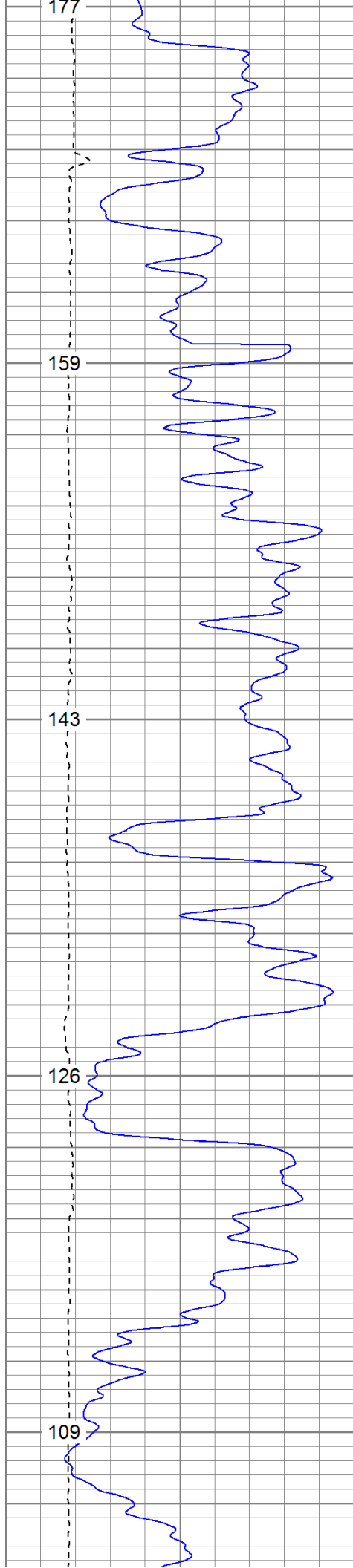


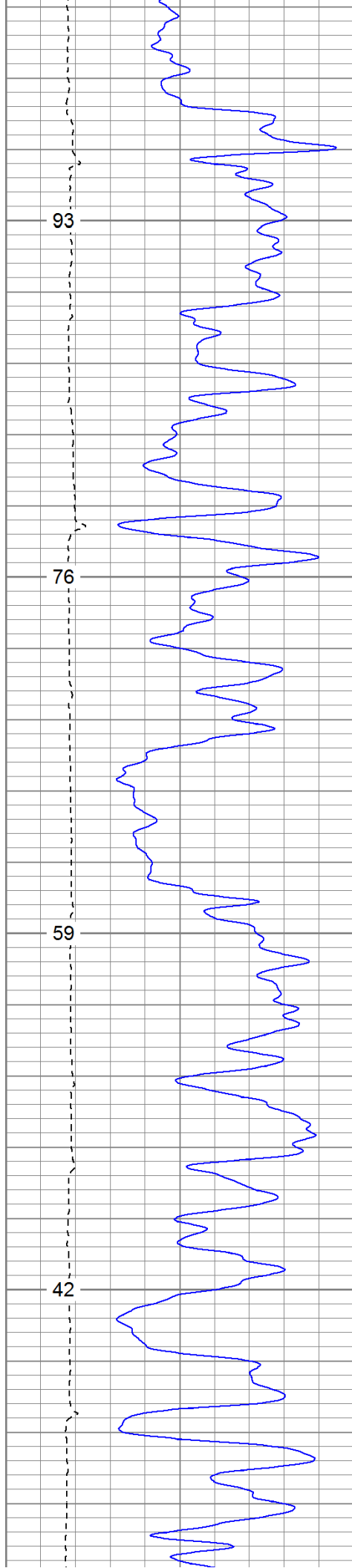












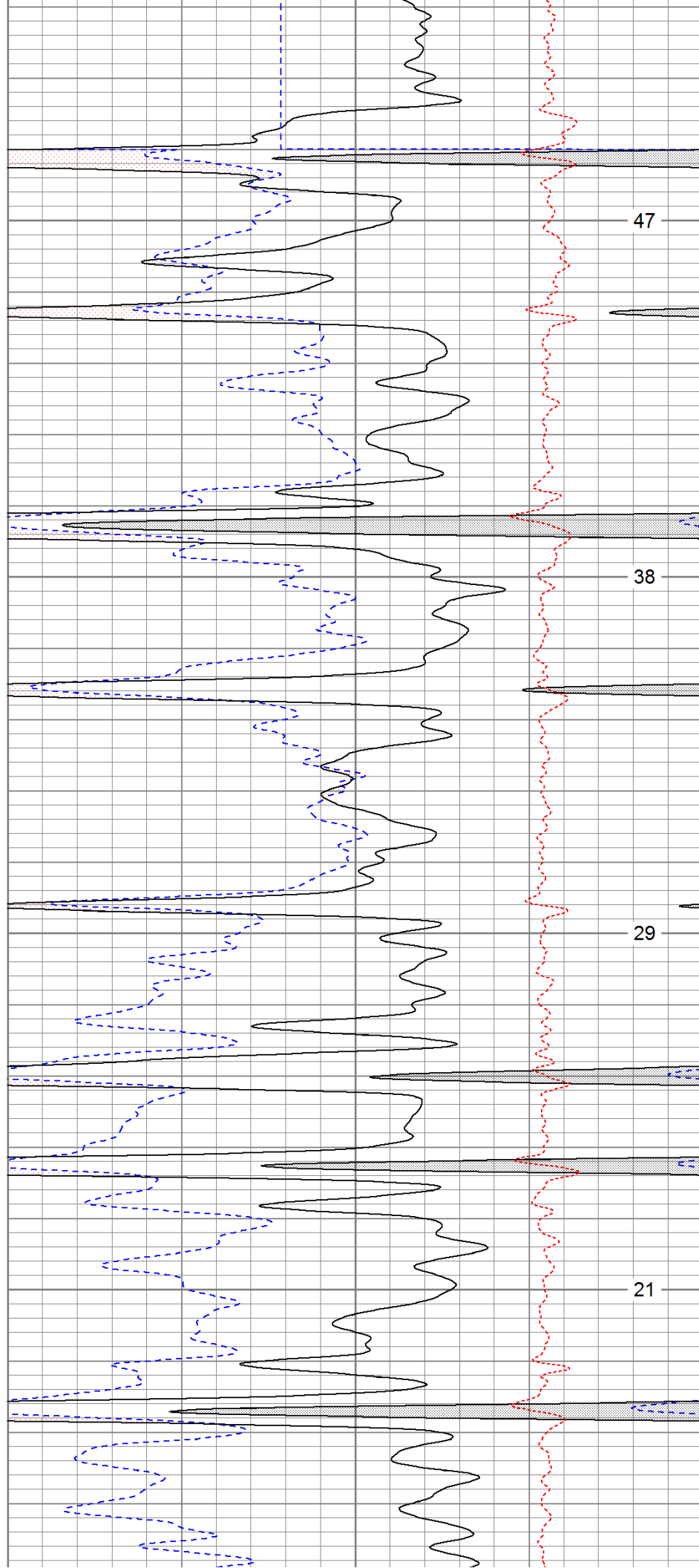
FOAM

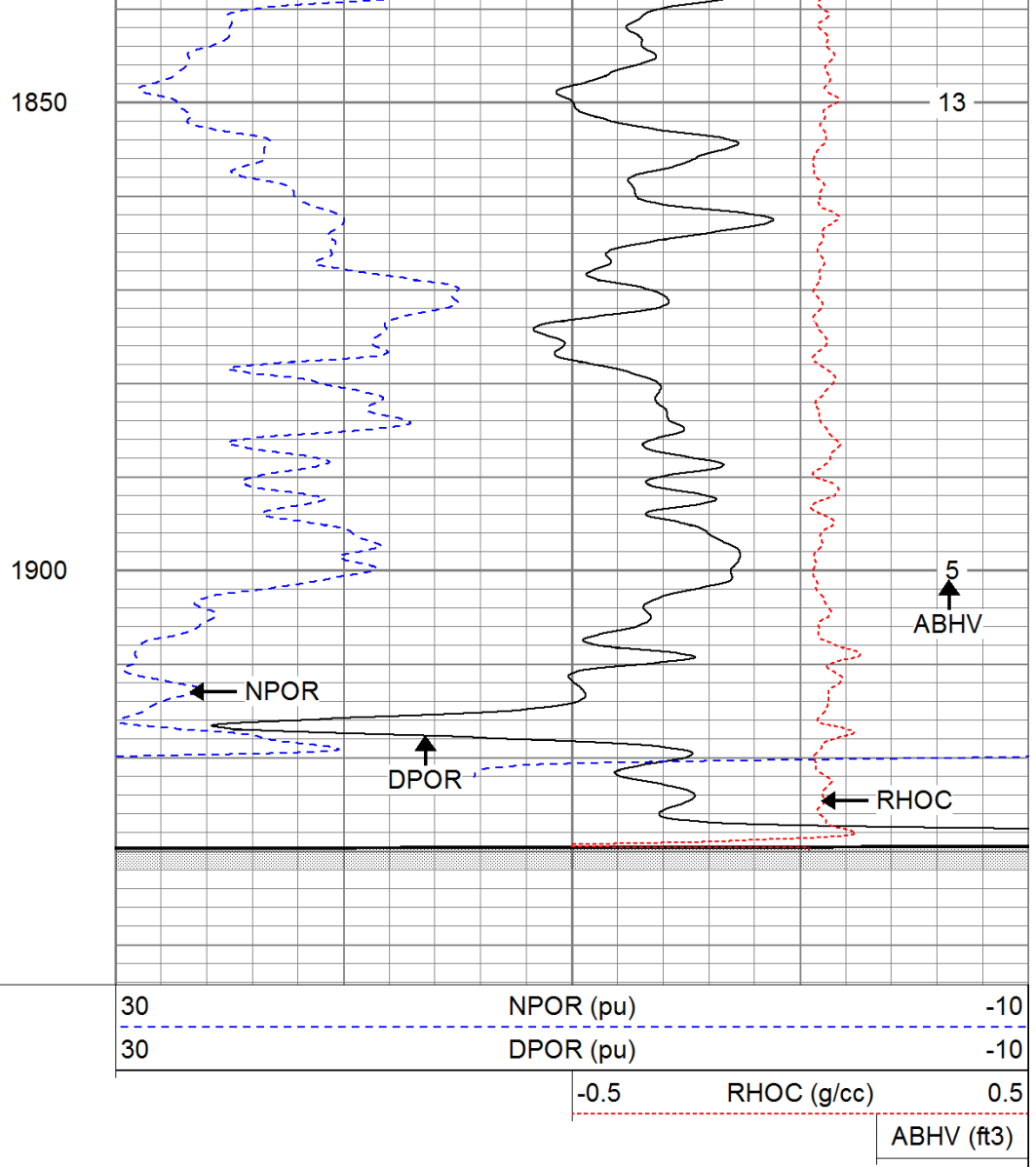
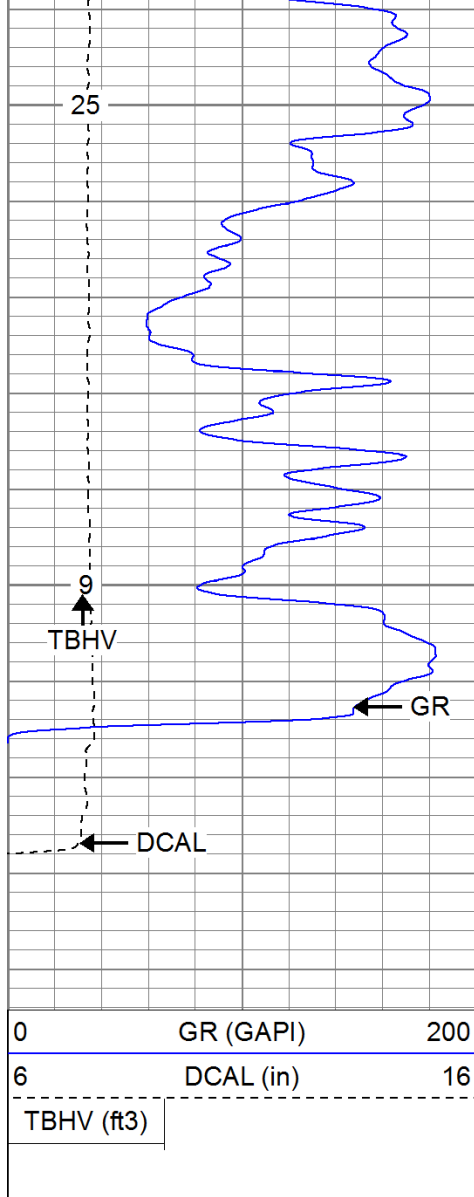
1650

1700

1750

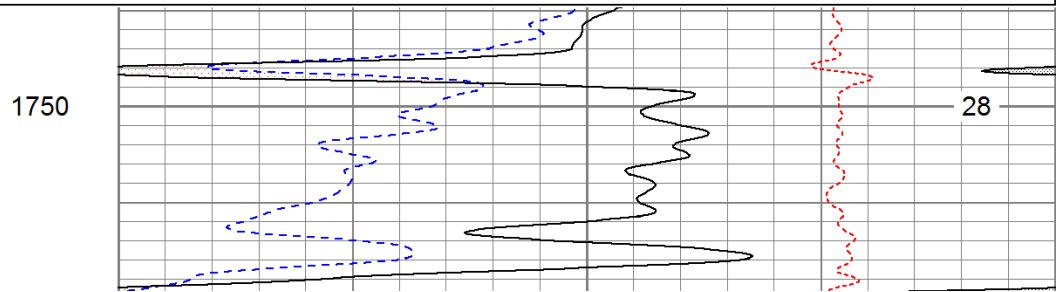
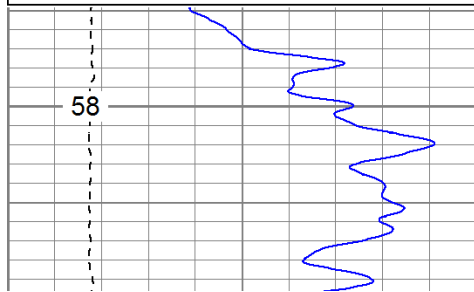
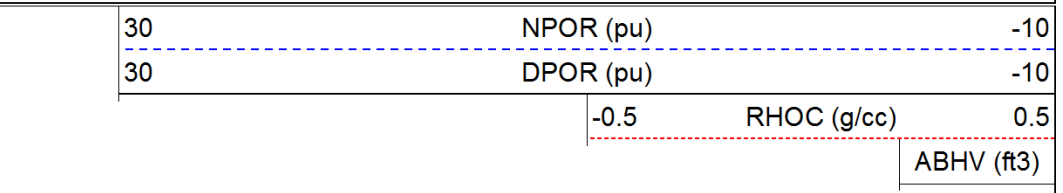
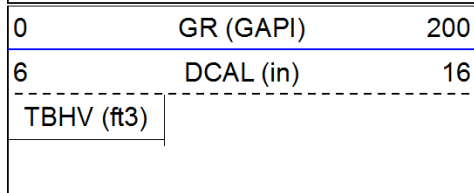
1800

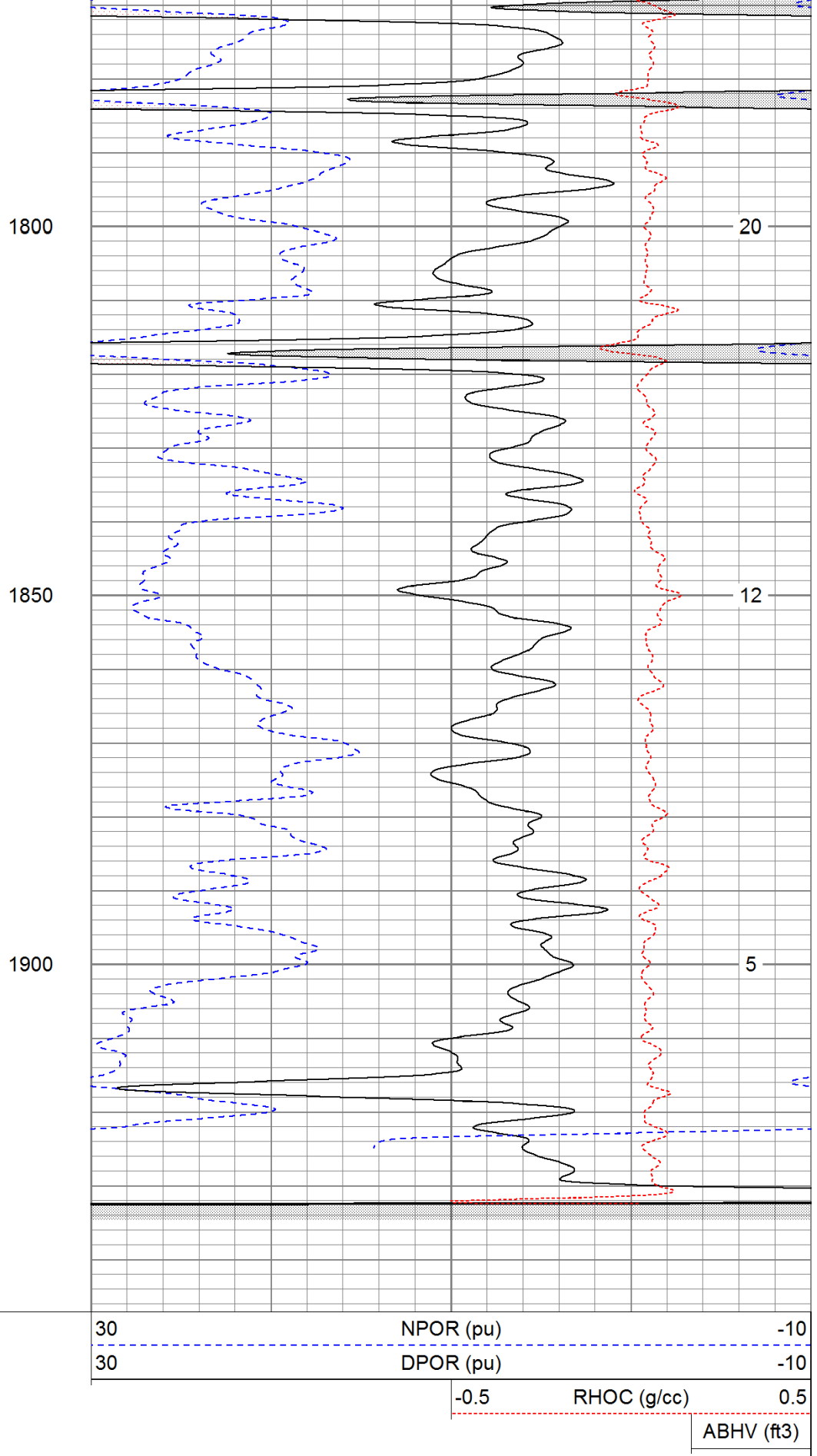
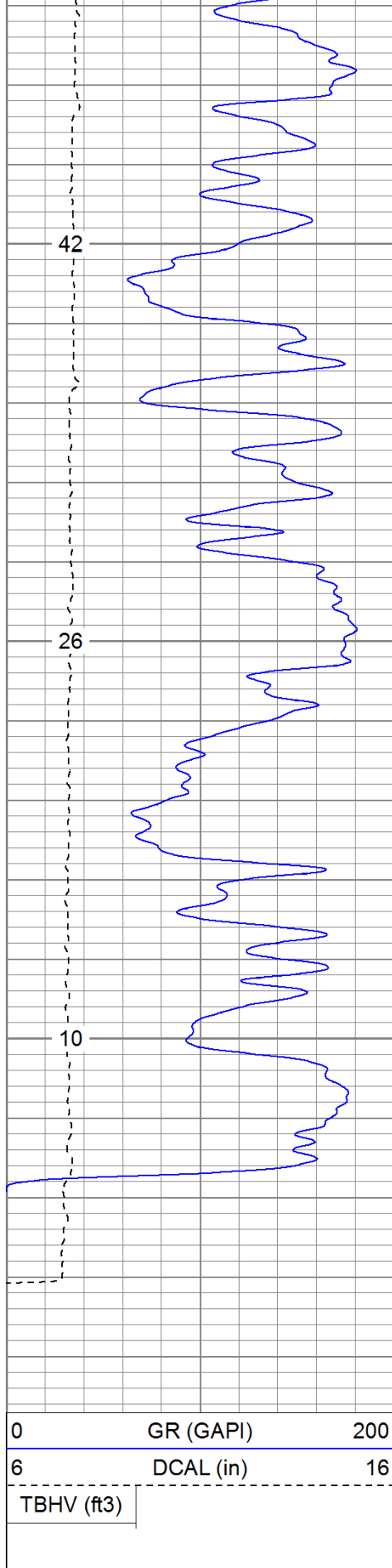




Repeat Pass

Database File: jaketr.db
 Dataset Pathname: pass1.1
 Presentation Format: cdnl
 Dataset Creation: Fri Aug 12 09:57:16 2011 by Calc Open-Cased 110302
 Charted by: Depth in Feet scaled 1:240





Database File: jaketr.db
Dataset Pathname: pass2.2
Presentation Format: cdlhr
Dataset Creation: Mon Aug 15 10:11:09 2011 by Calc Open-Cased 110302
Charted by: Depth in Feet scaled 1:120

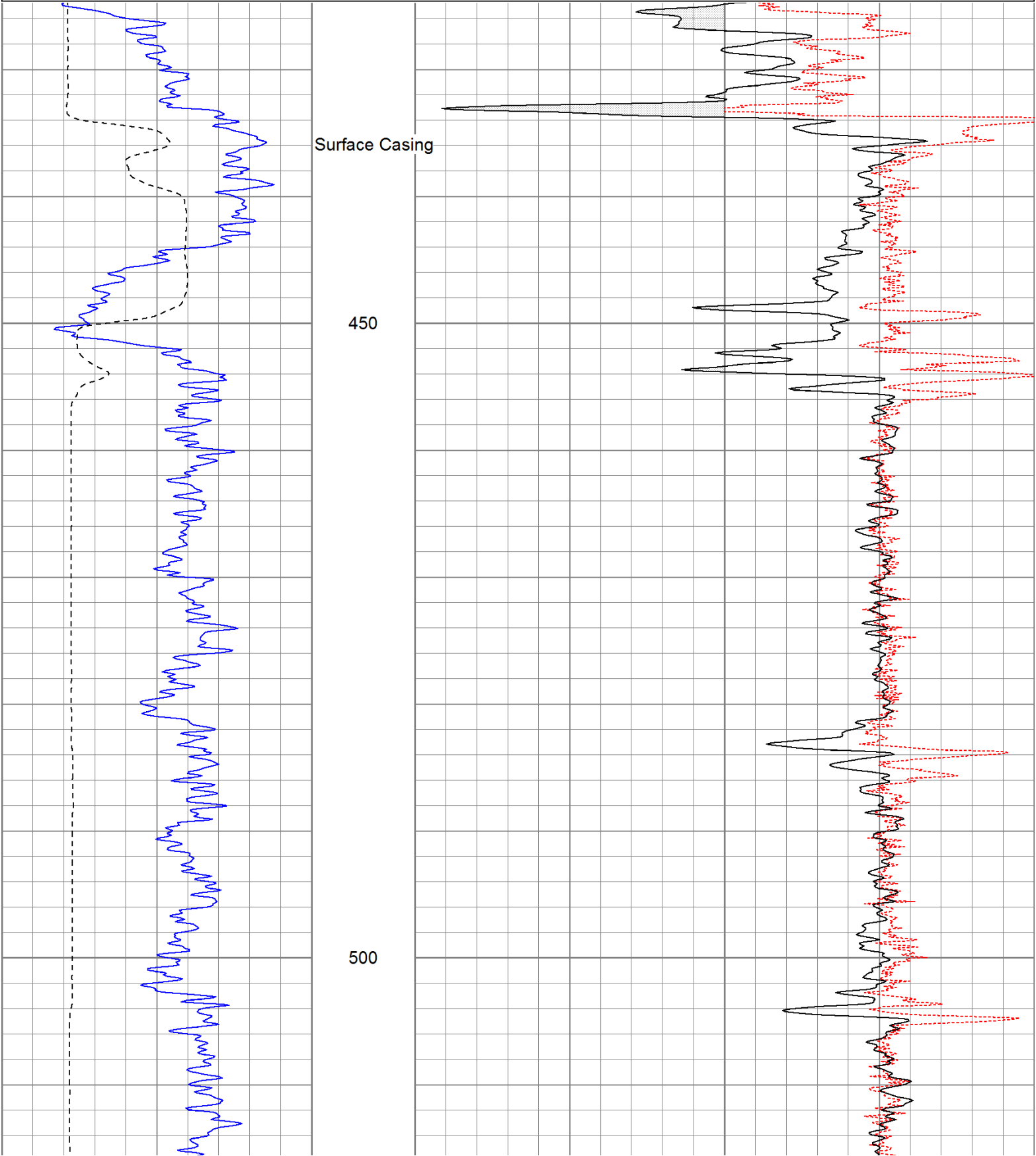
0	GR (GAPI)	200
6	DCAL (in)	16

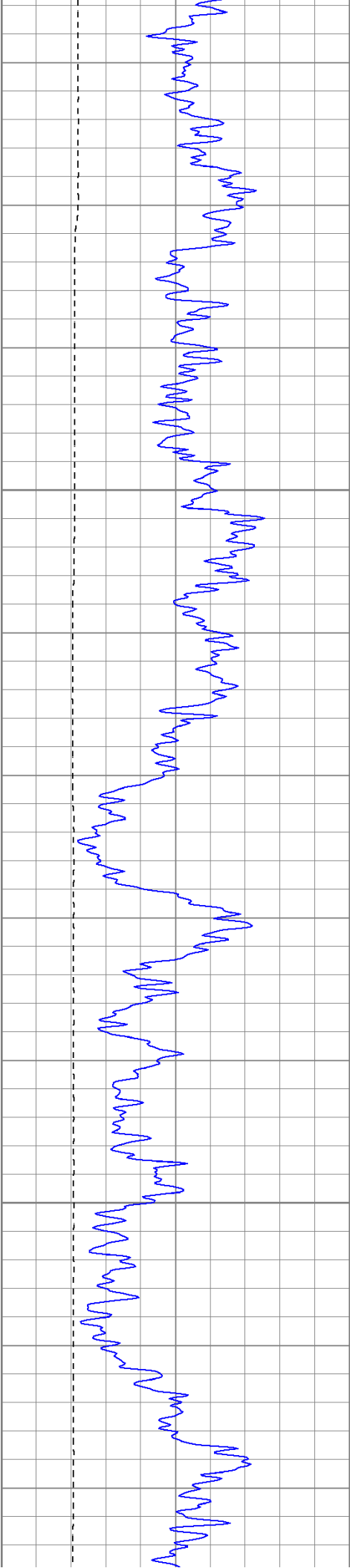
1	RHOB (g/cc)	3
-0.5	RHOC (g/cc)	0.5

Surface Casing

450

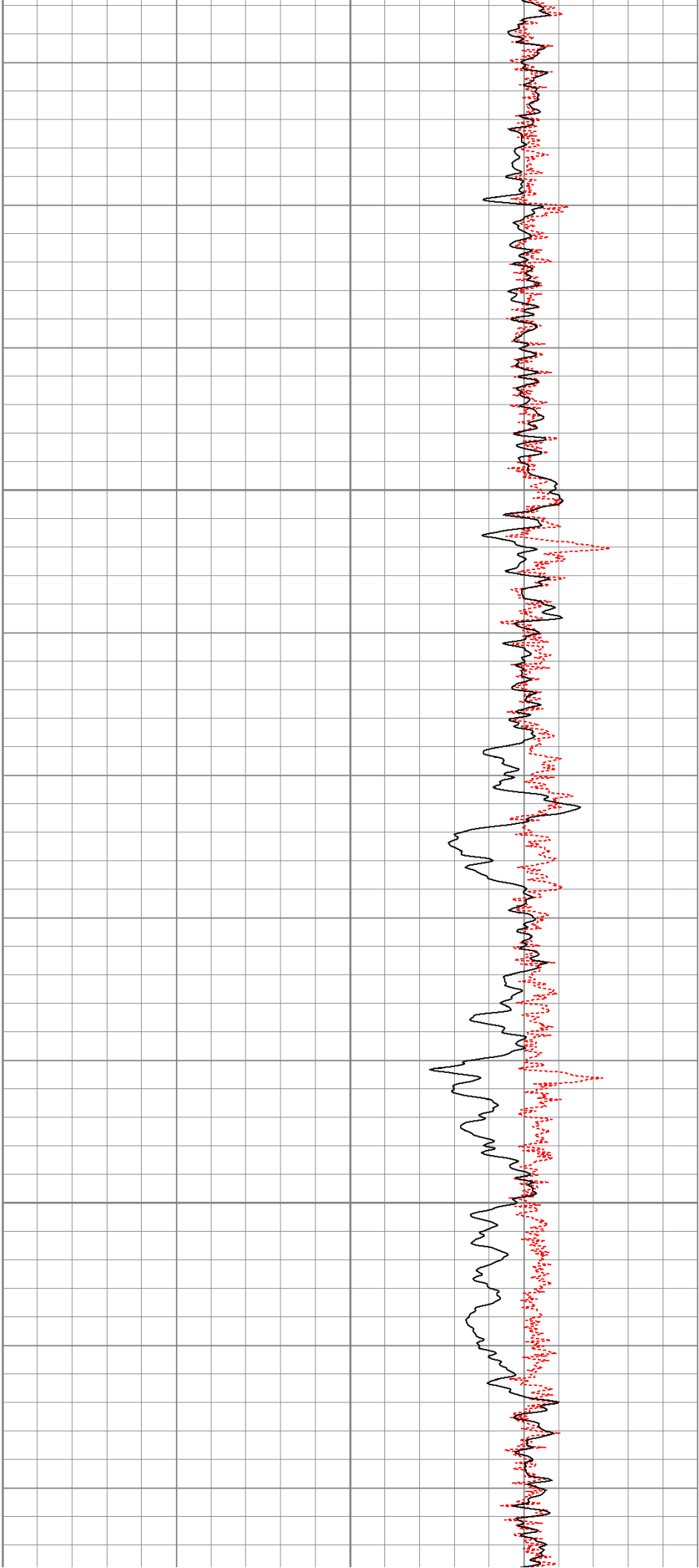
500

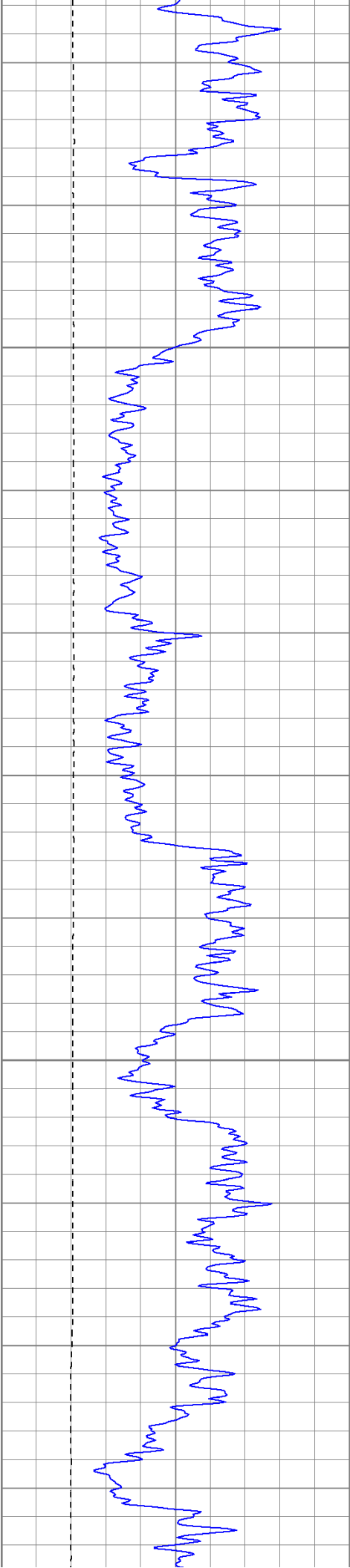




550

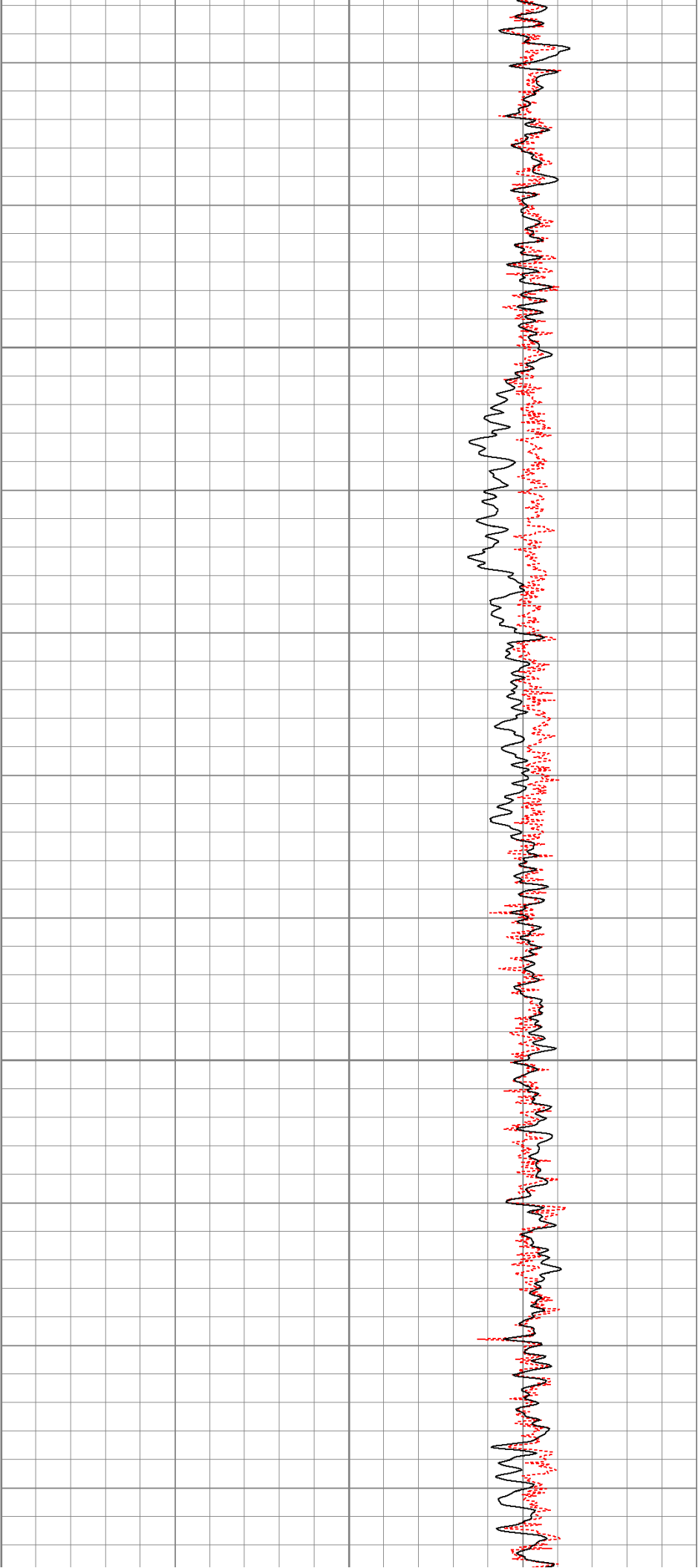
600

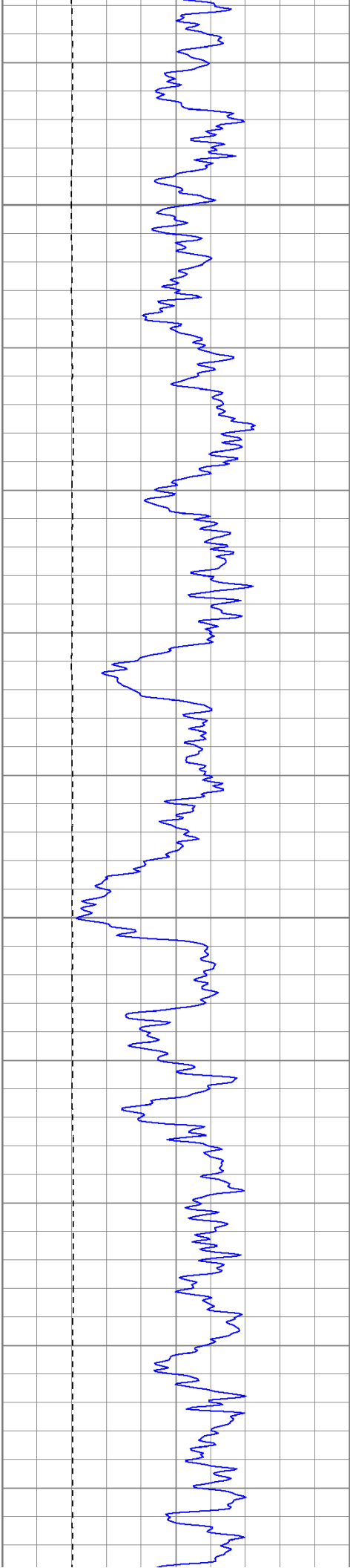




650

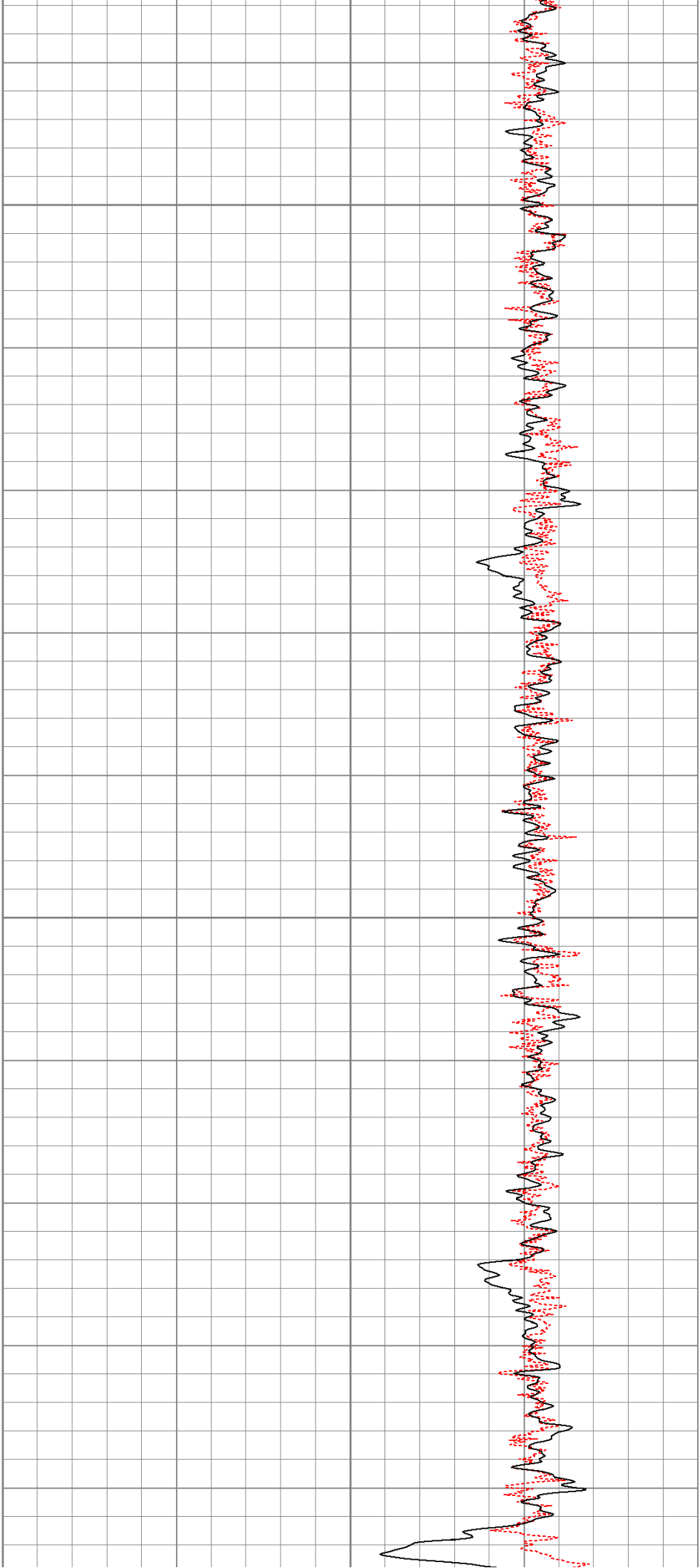
700

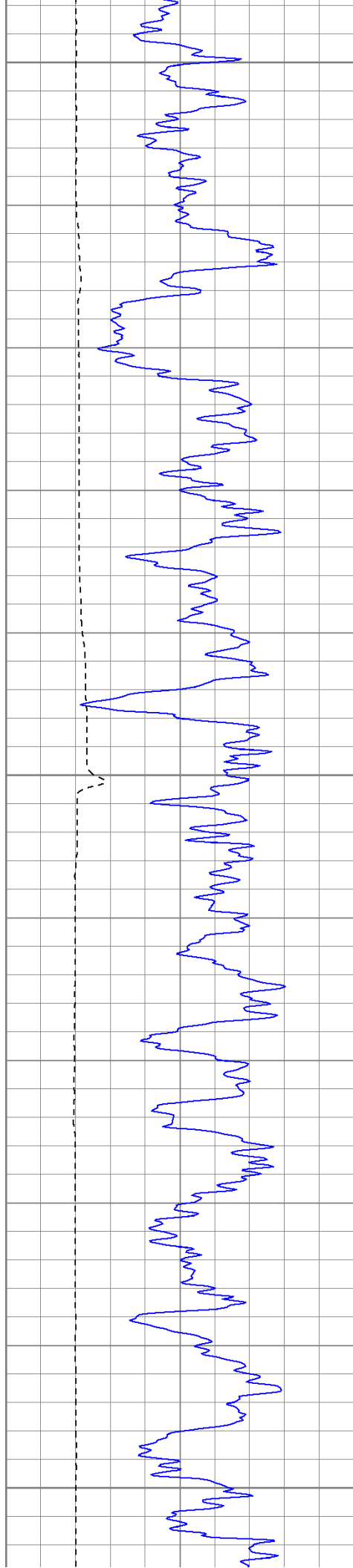




750

800

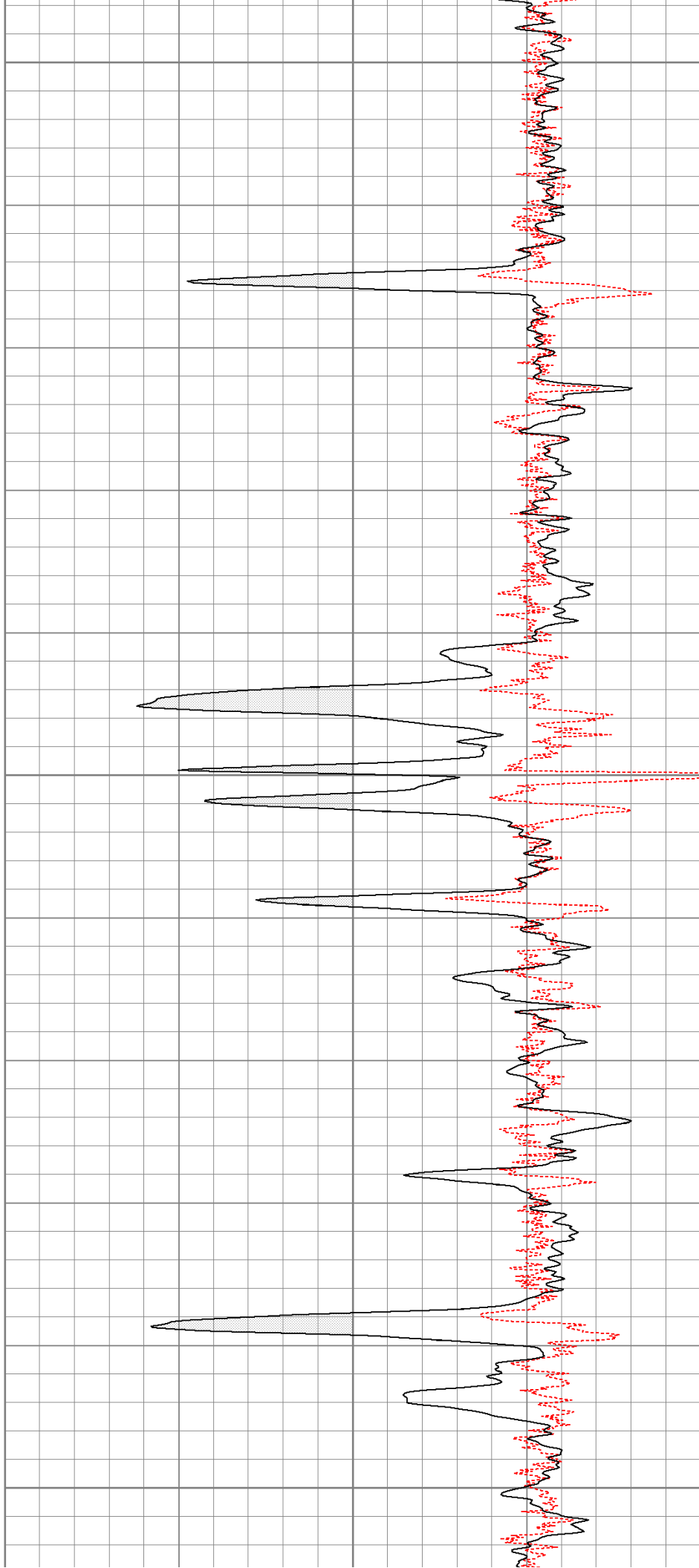


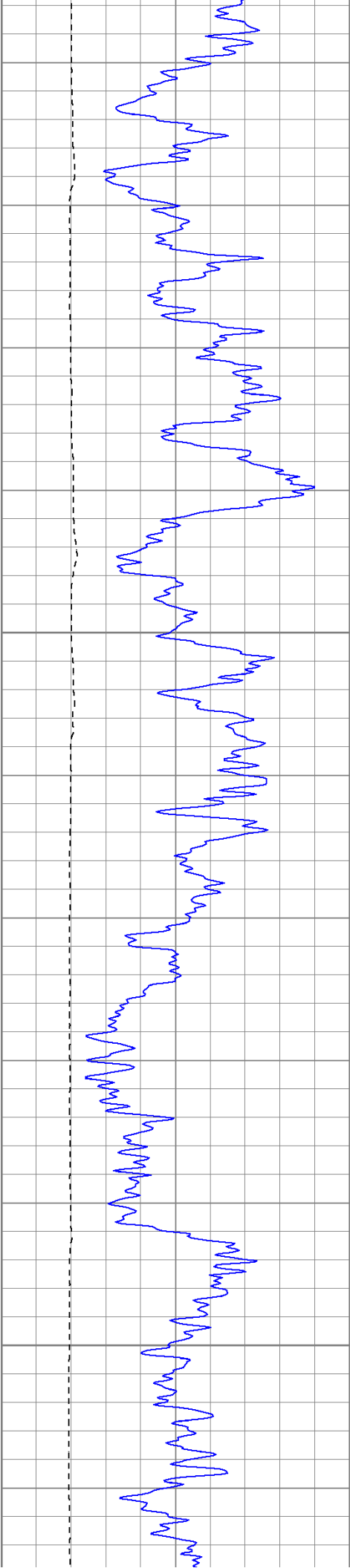


850

900

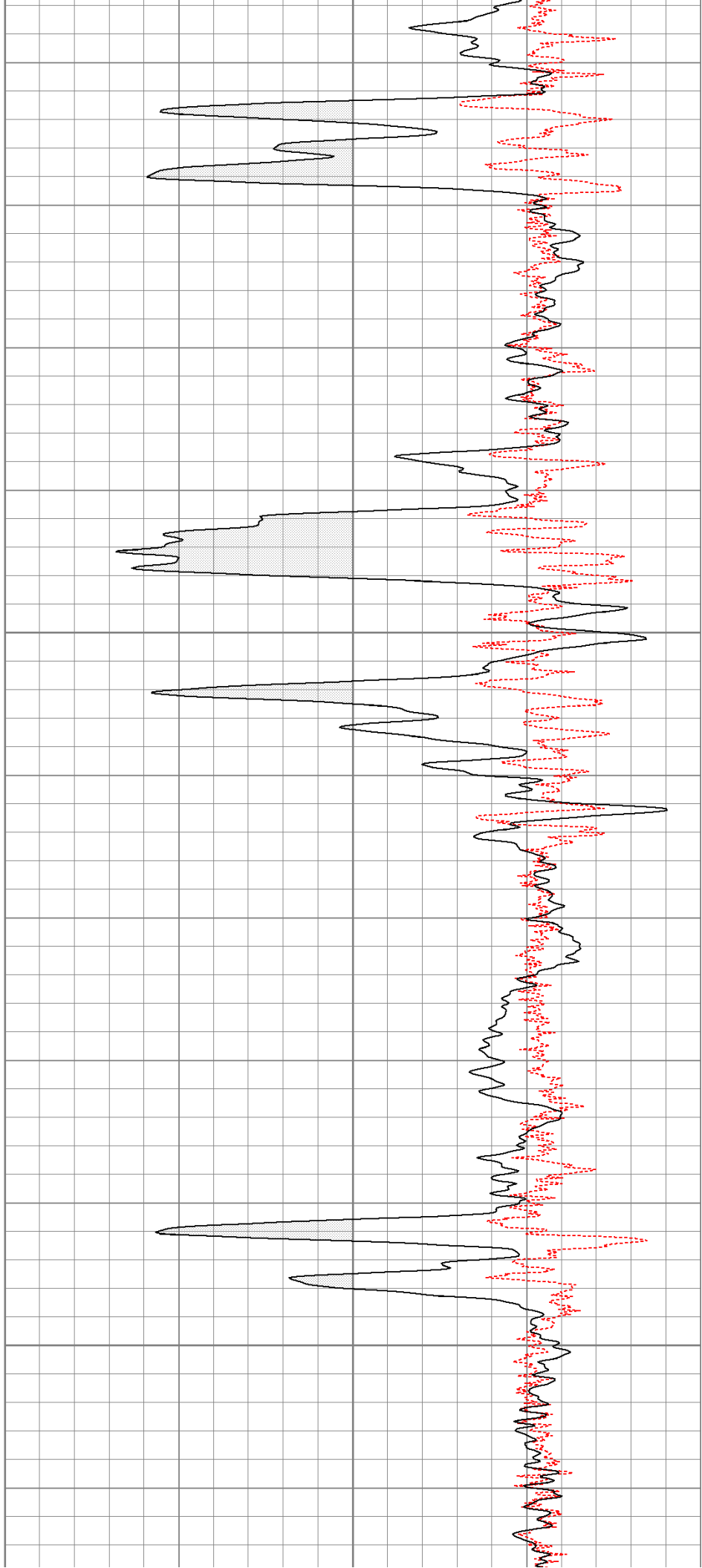
950

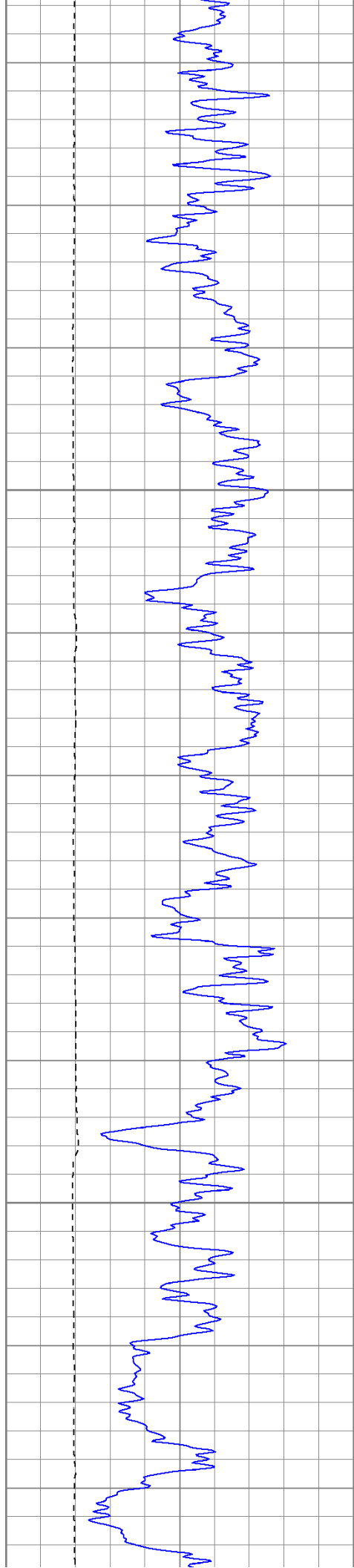




1000

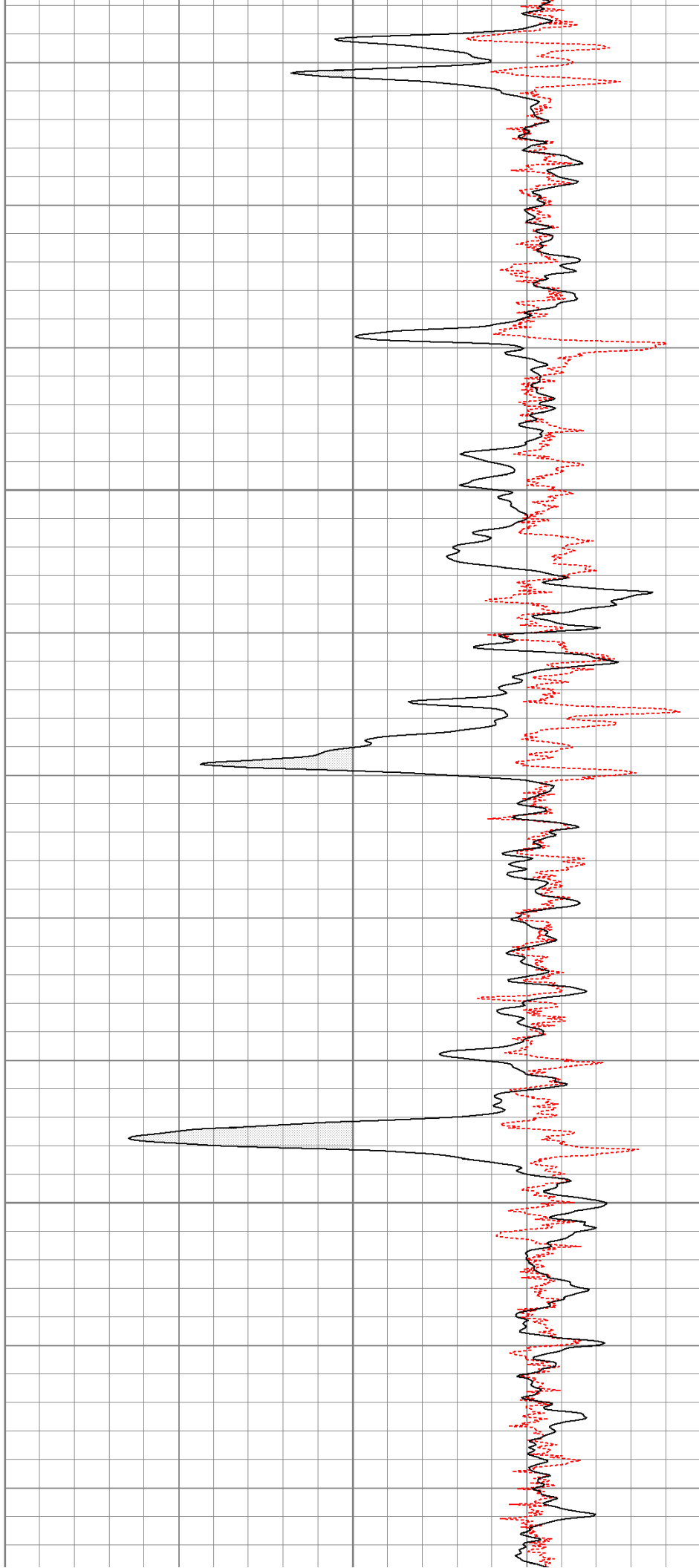
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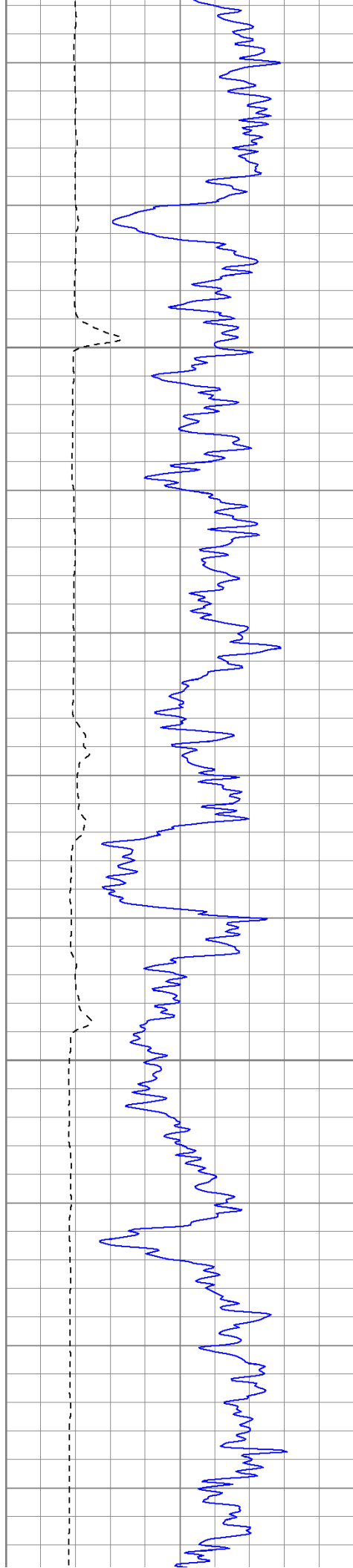




1100

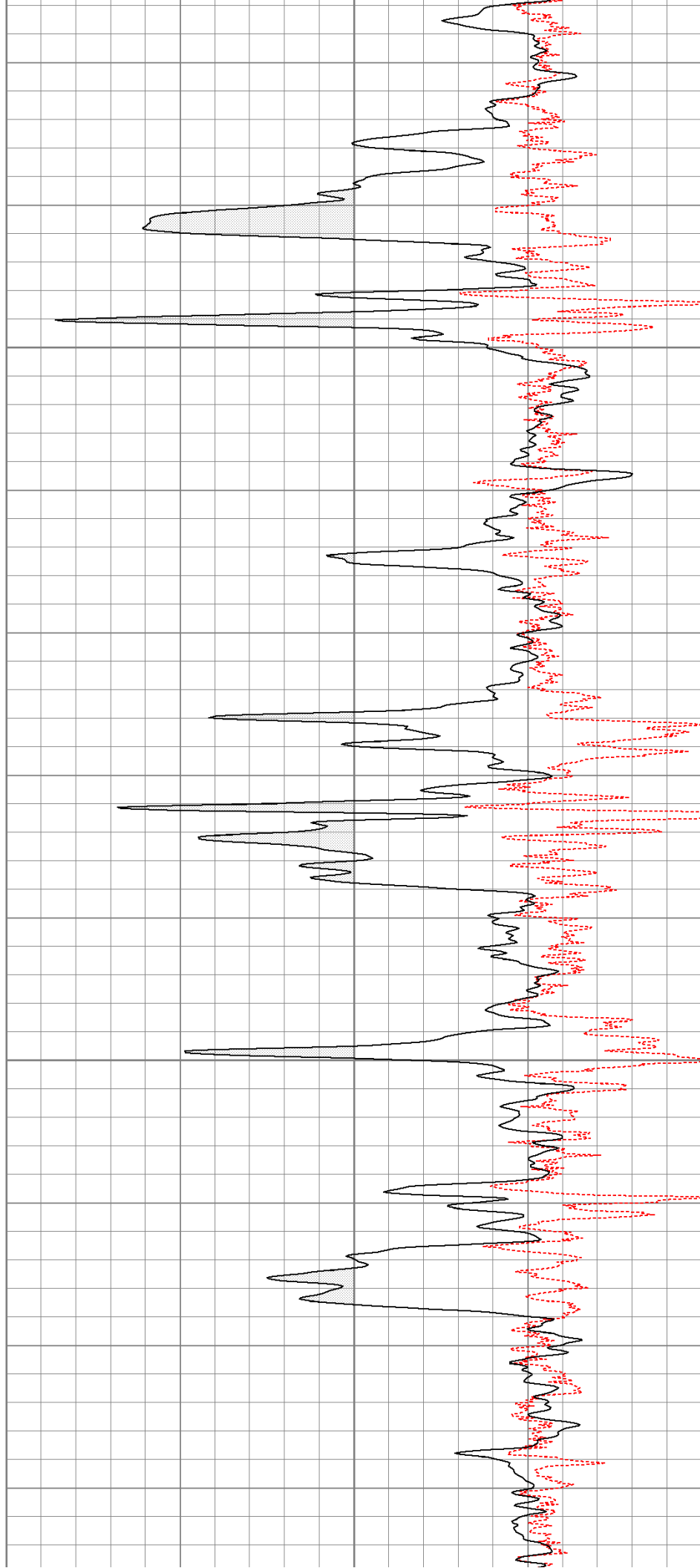
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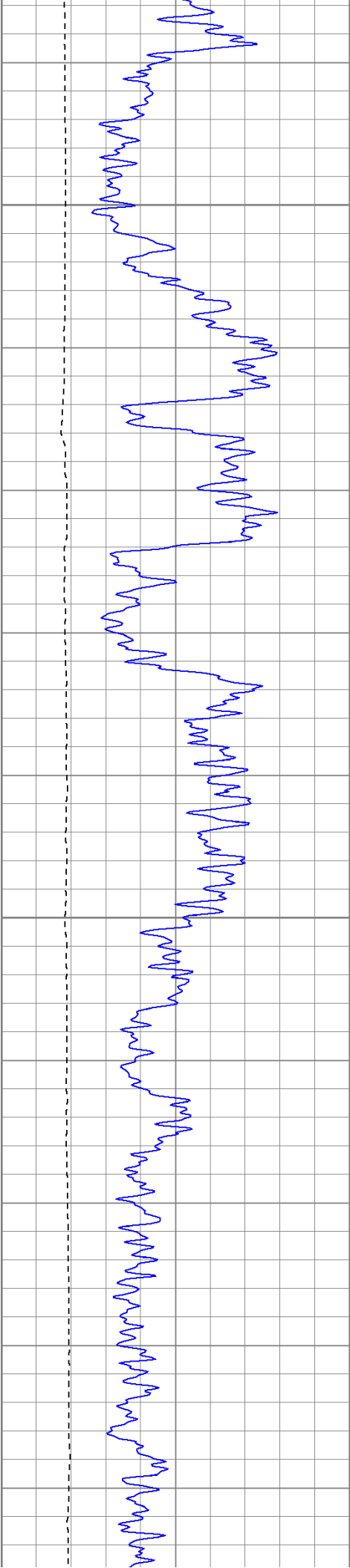




1200

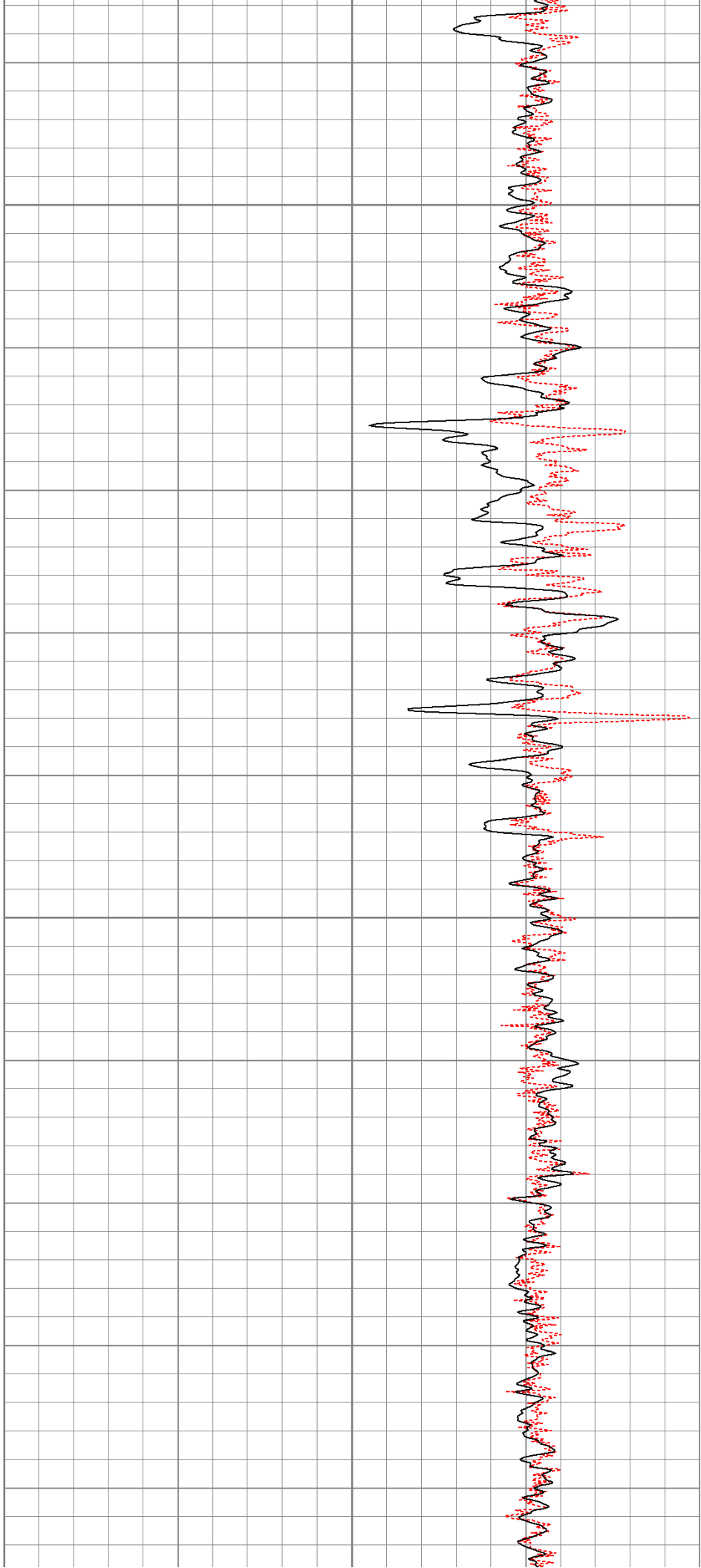
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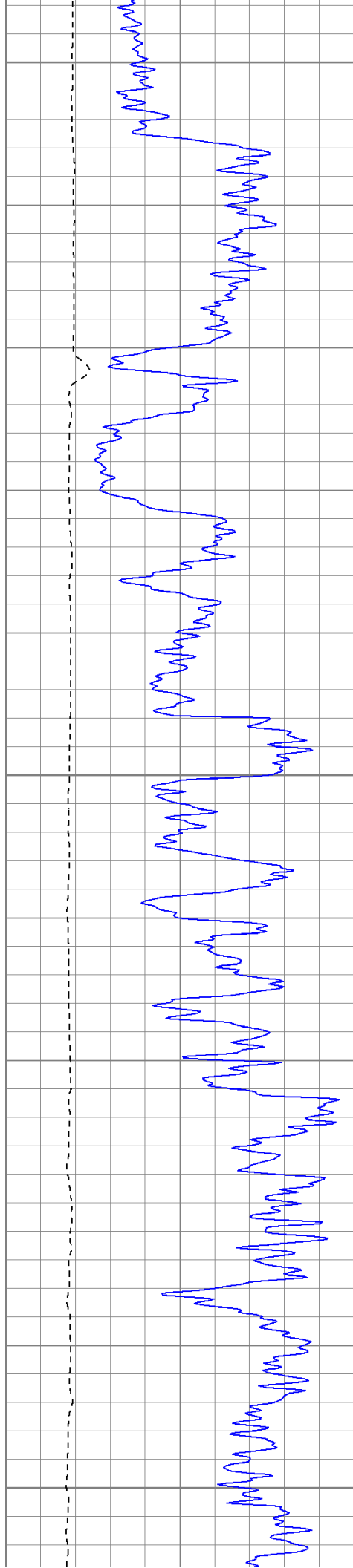




1300

1350

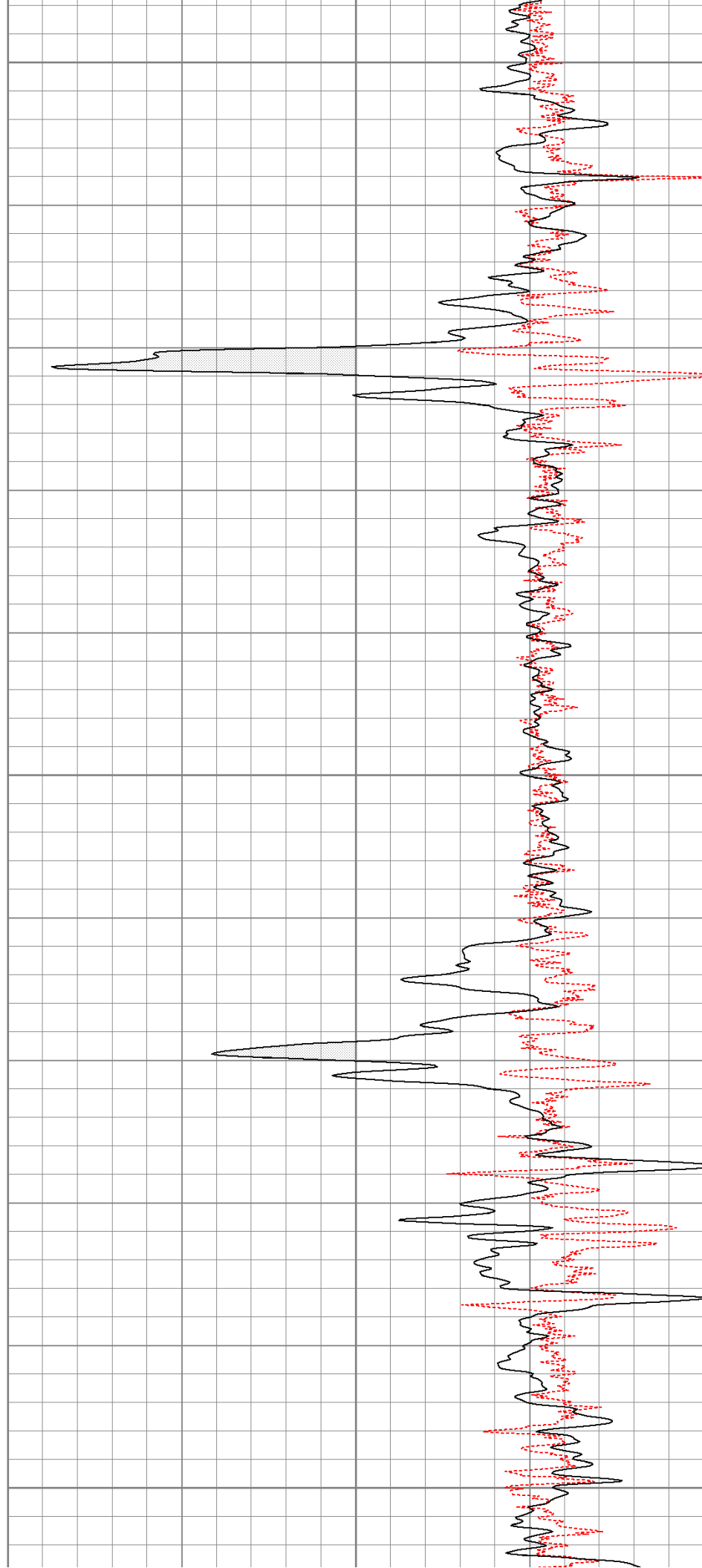


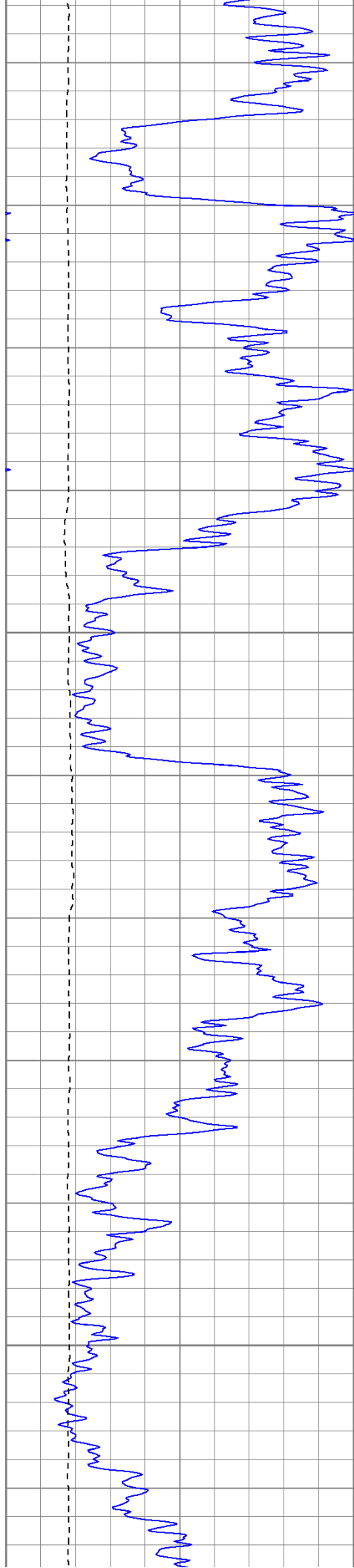


1400

1450

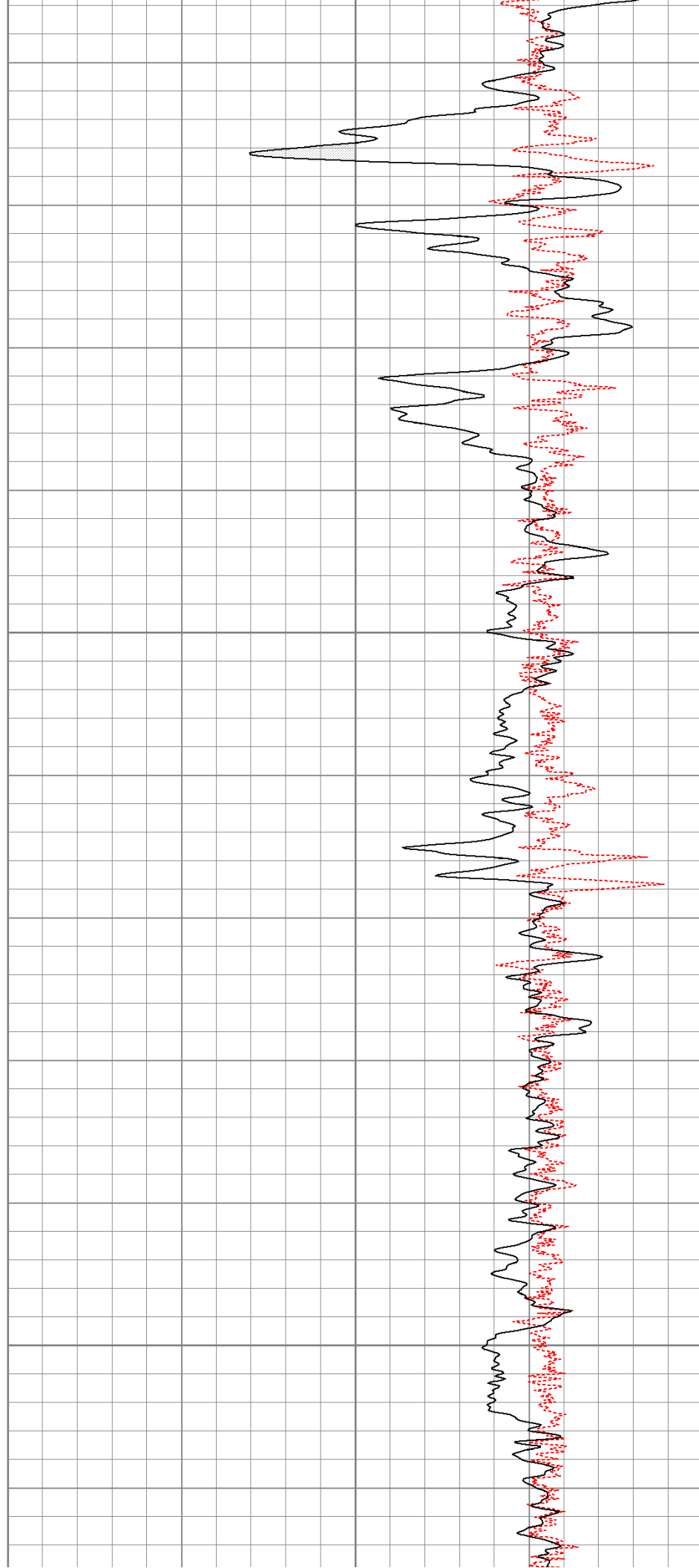
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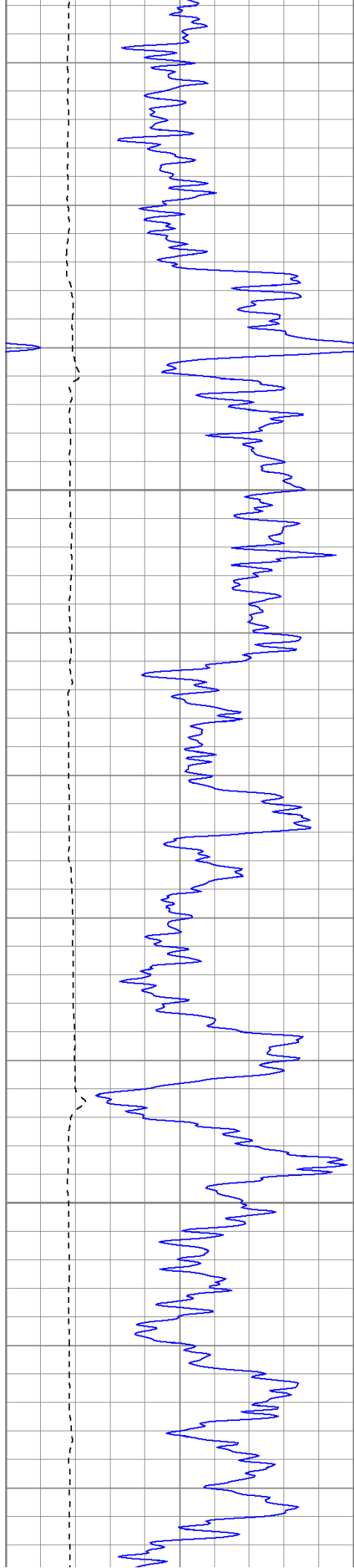




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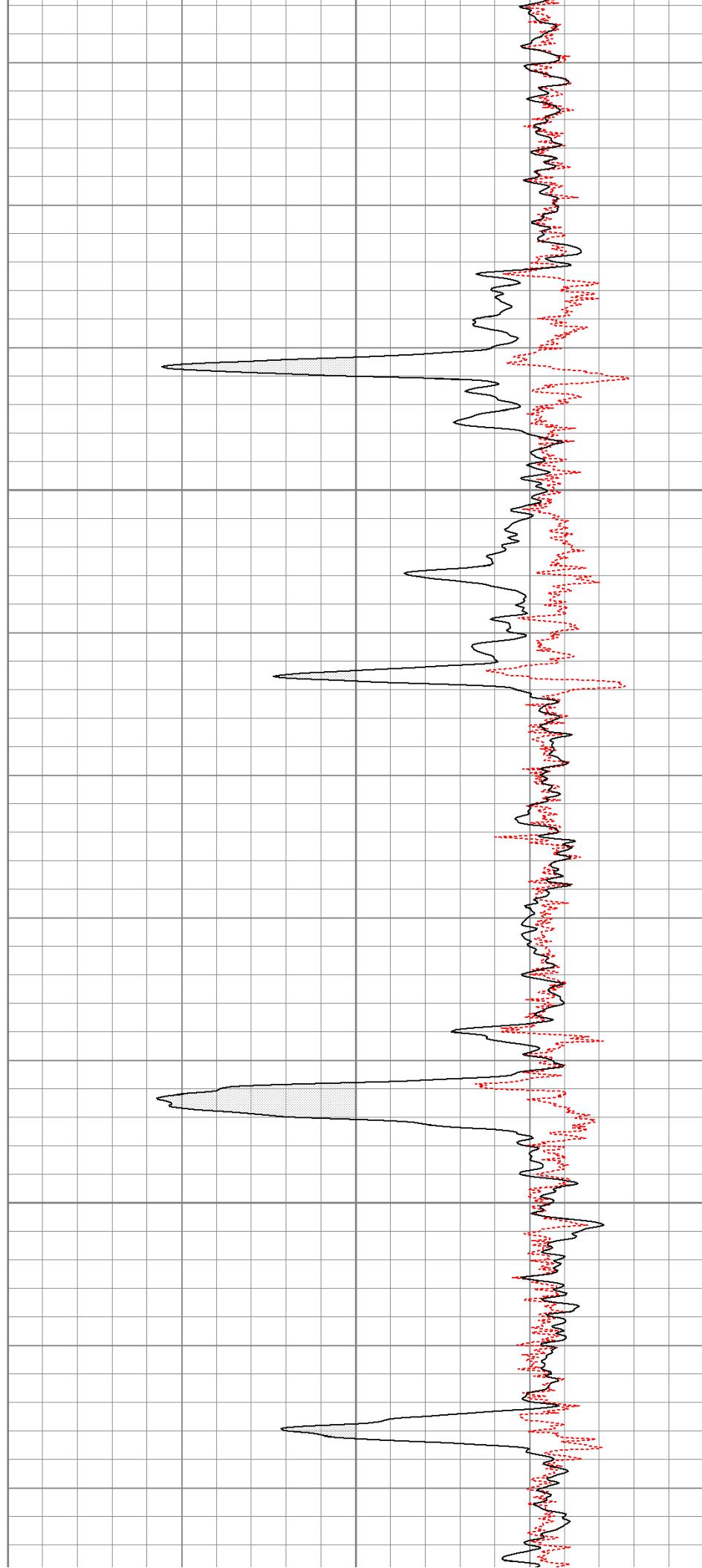
1600

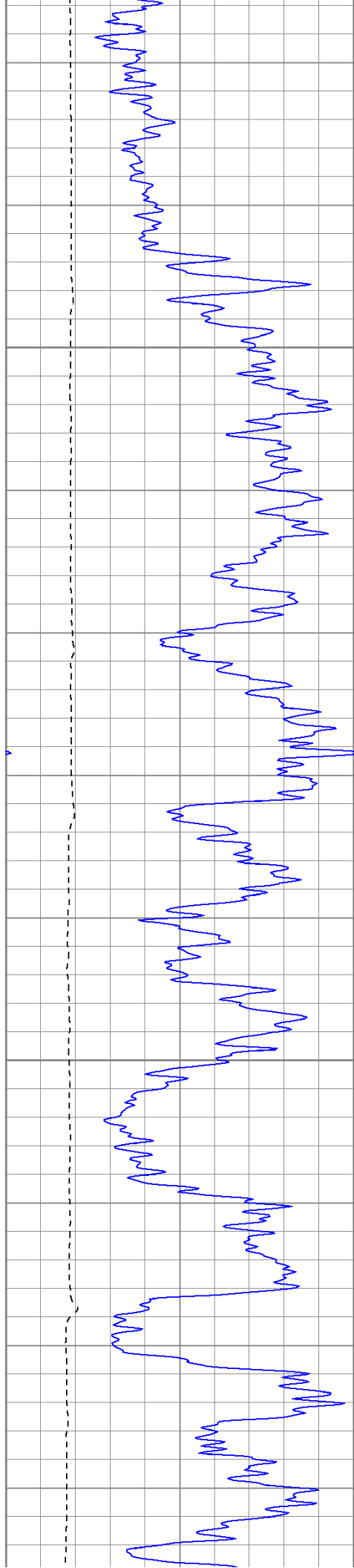




1650

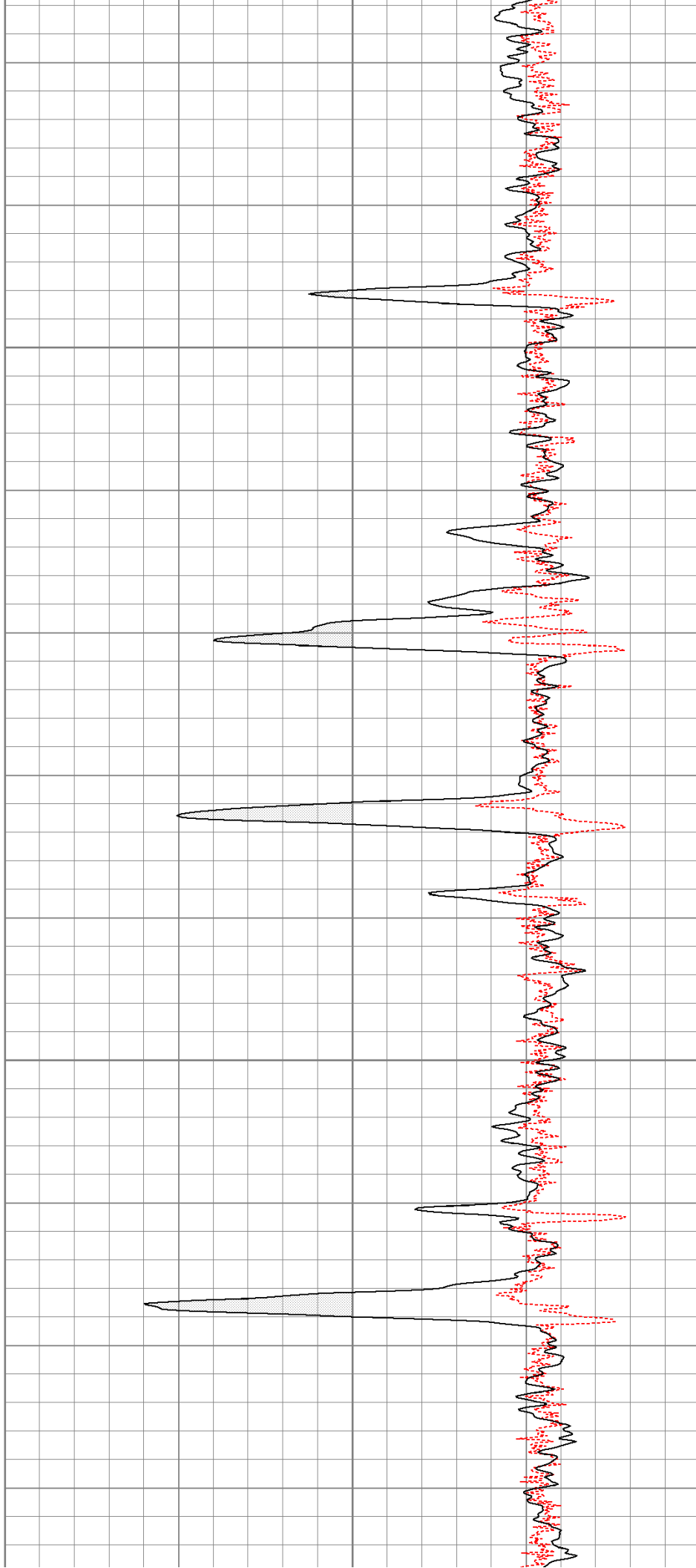
1700

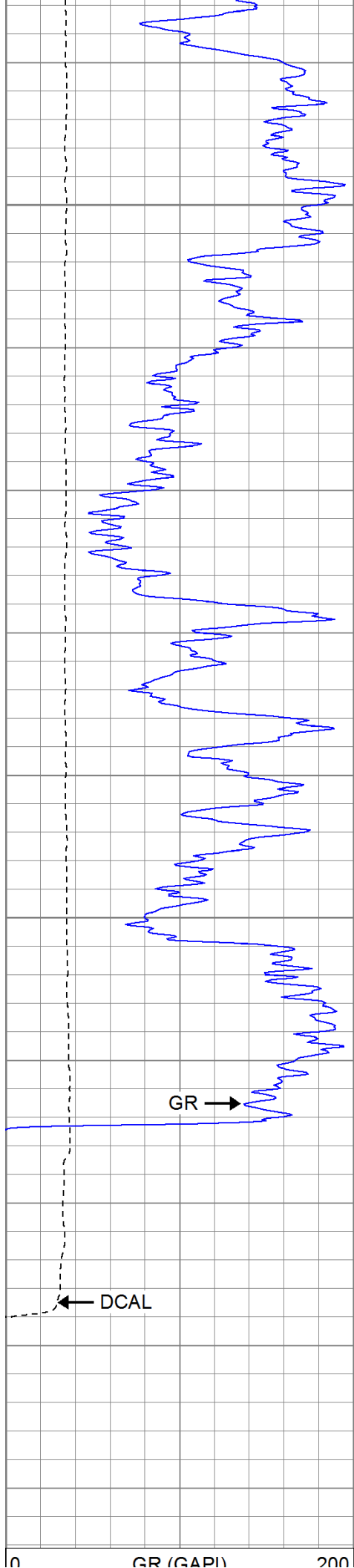




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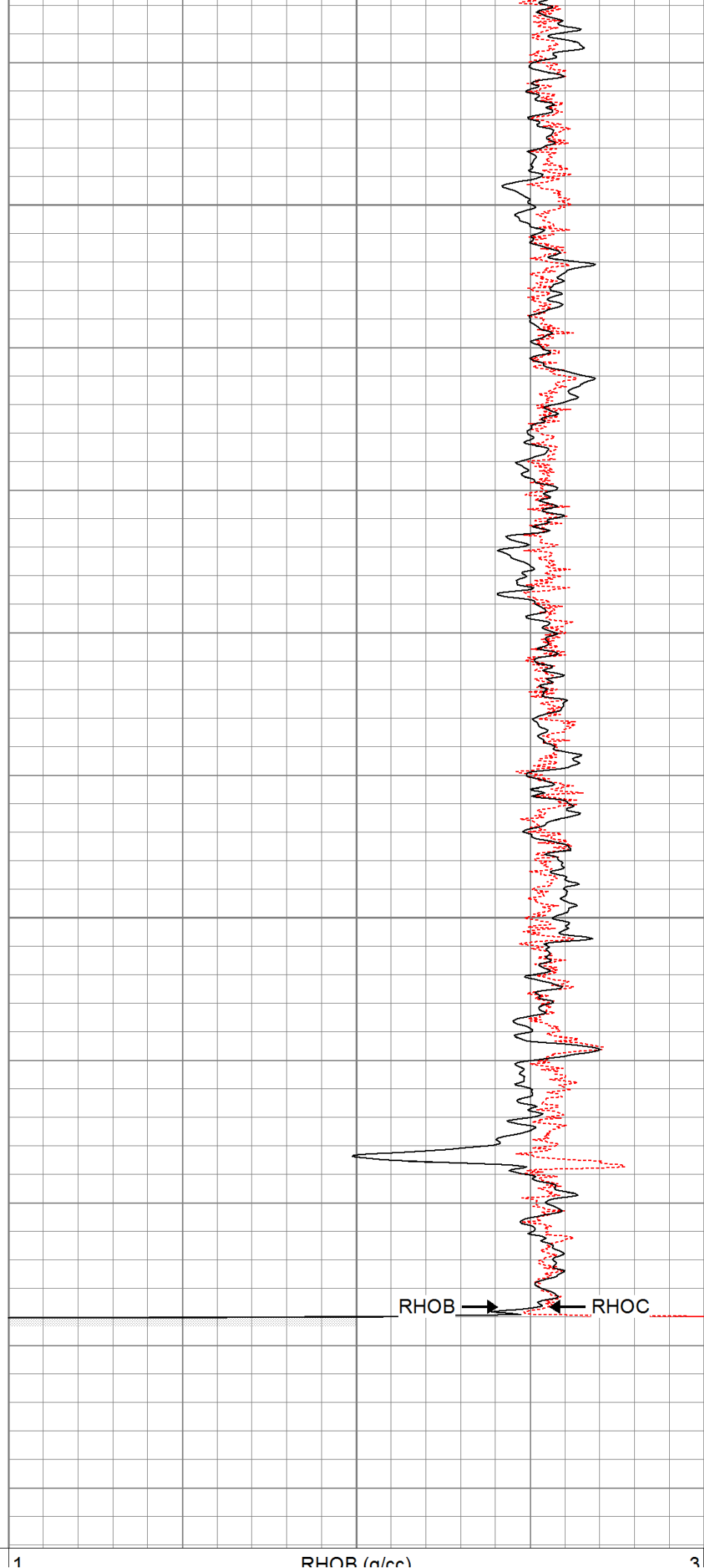
1800





1850





1900



6	DCAL (in)	16	-0.5	RHOC (g/cc)	0.5
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Calibration Report				
Database File:		jaketr.db		
Dataset Pathname:		pass1		
Dataset Creation:		Fri Aug 12 08:50:11 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	-3.000	
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	8.00	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			
	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:	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
LSD DCAL SSD	16.21		CDL-2.75POH (901) Probe	8.43	2.75	106.00
	15.94					
	15.69					
DIC	6.24		IEL-Probe (903)	13.46	2.75	93.00
SP	2.25	