



Pioneer Energy Services

# Dual Induction Log

API No.	15-135-25,853-00-00	
Company	AMERICAN WARRIOR, INC	
Well	WIEDEMAN NO. 2-20	
Field	HINNERGARDT	
County	NESS	State
		KANSAS
Location	335' FSL & 1,940' FEL	
Sec: 20	Twp: 19S	Rge: 21W
Permanent Datum	GROUND LEVEL	Elevation 2285
Log Measured From	KELLY BUSHING	8 Ft. Above Perm. Datum
Drilling Measured From	KELLY BUSHING	
		Other Services CNL/CDL
		Elevation K.B. 2293 D.F. 2285 G.L. 2285

Date	4/13/2015
Run Number	ONE
Depth Driller	4428
Depth Logger	4426
Bottom Logged Interval	4425
Top Log Interval	200
Casing Driller	8.625 @ 223
Casing Logger	222
Bit Size	7.875
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	7100
Density / Viscosity	9.3 52
pH / Fluid Loss	11.0 9.2
Source of Sample	Flowline
Rm @ Meas. Temp	.62 @ 68
Rmf @ Meas. Temp	.47 @ 68
Rmc @ Meas. Temp	.84 @ 68
Source of Rmf / Rmc	Charts
Rm @ BHT	.35 @ 120
Operating Rig Time	2 1/2 HOURS
Max Rec. Temp. F	120
Equipment Number	108
Location	HAYS
Recorded By	J. LONG
Witnessed By	MARC DOWNING

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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

Thank you for using Pioneer Energy Services  
785.625.3858

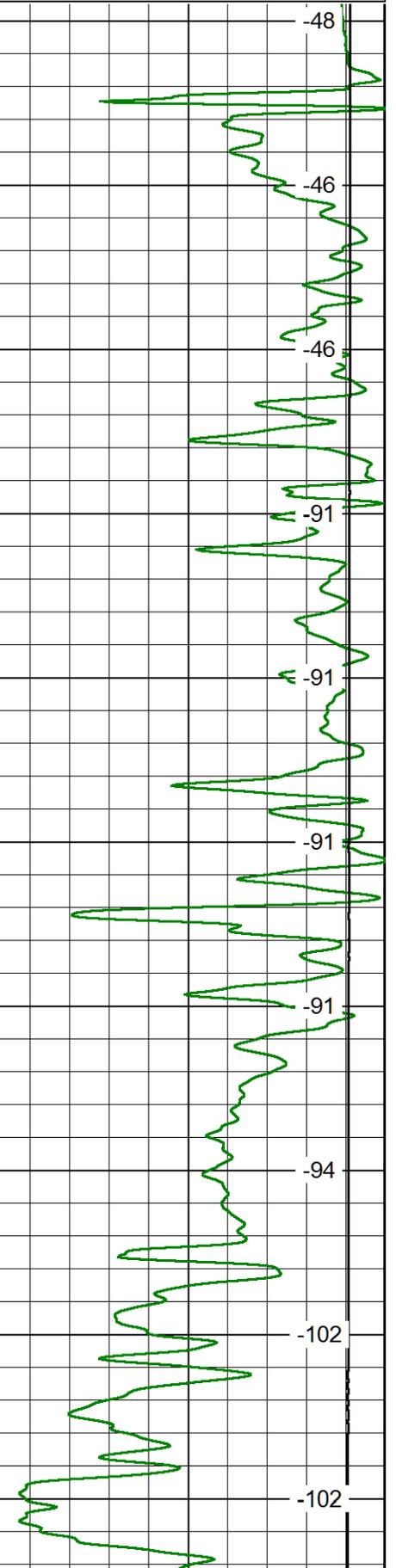
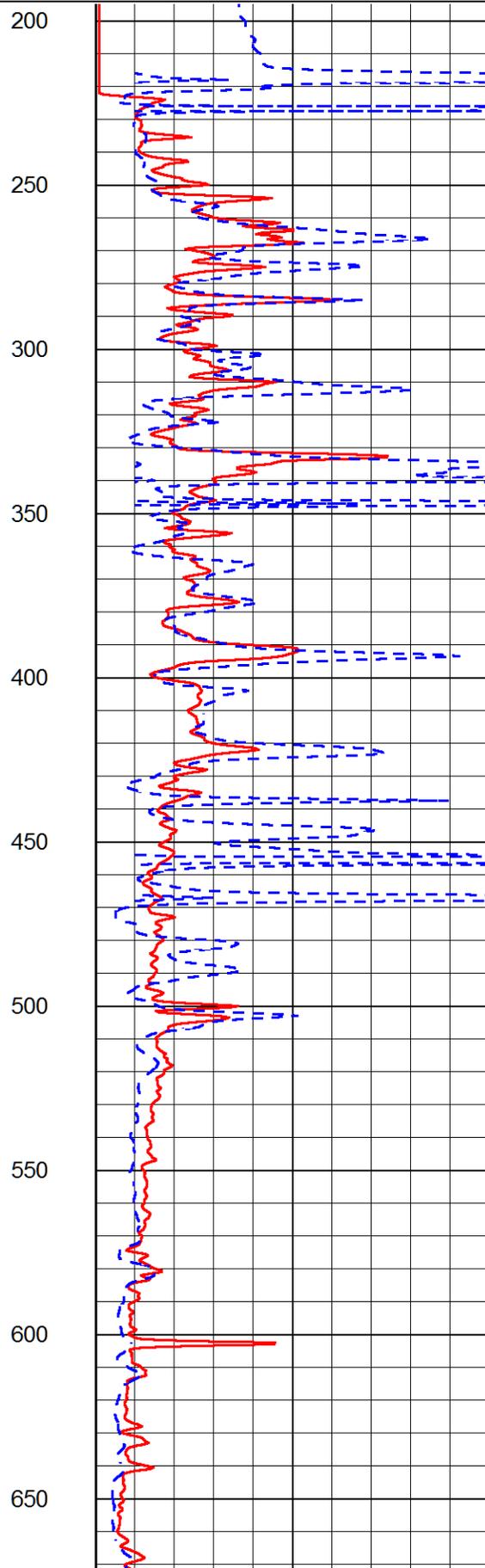
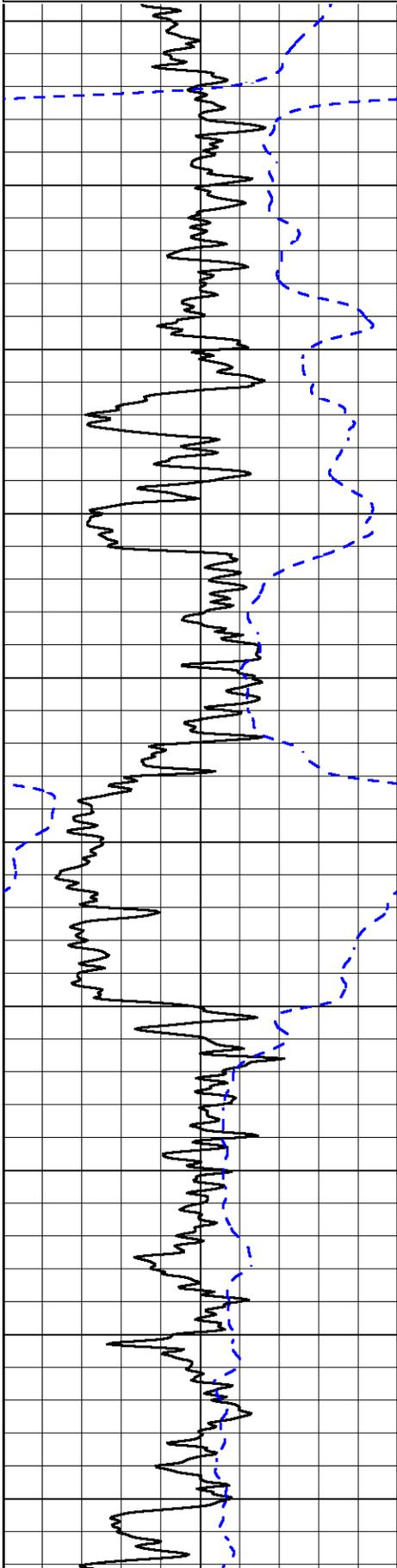
ALEXANDER, WEST TO GG ROAD, SOUTH TO 100 ROAD, 1 WEST TO FF ROAD,  
2 SOUTH TO 80 ROAD, 1/4 WEST, NORTH INTO

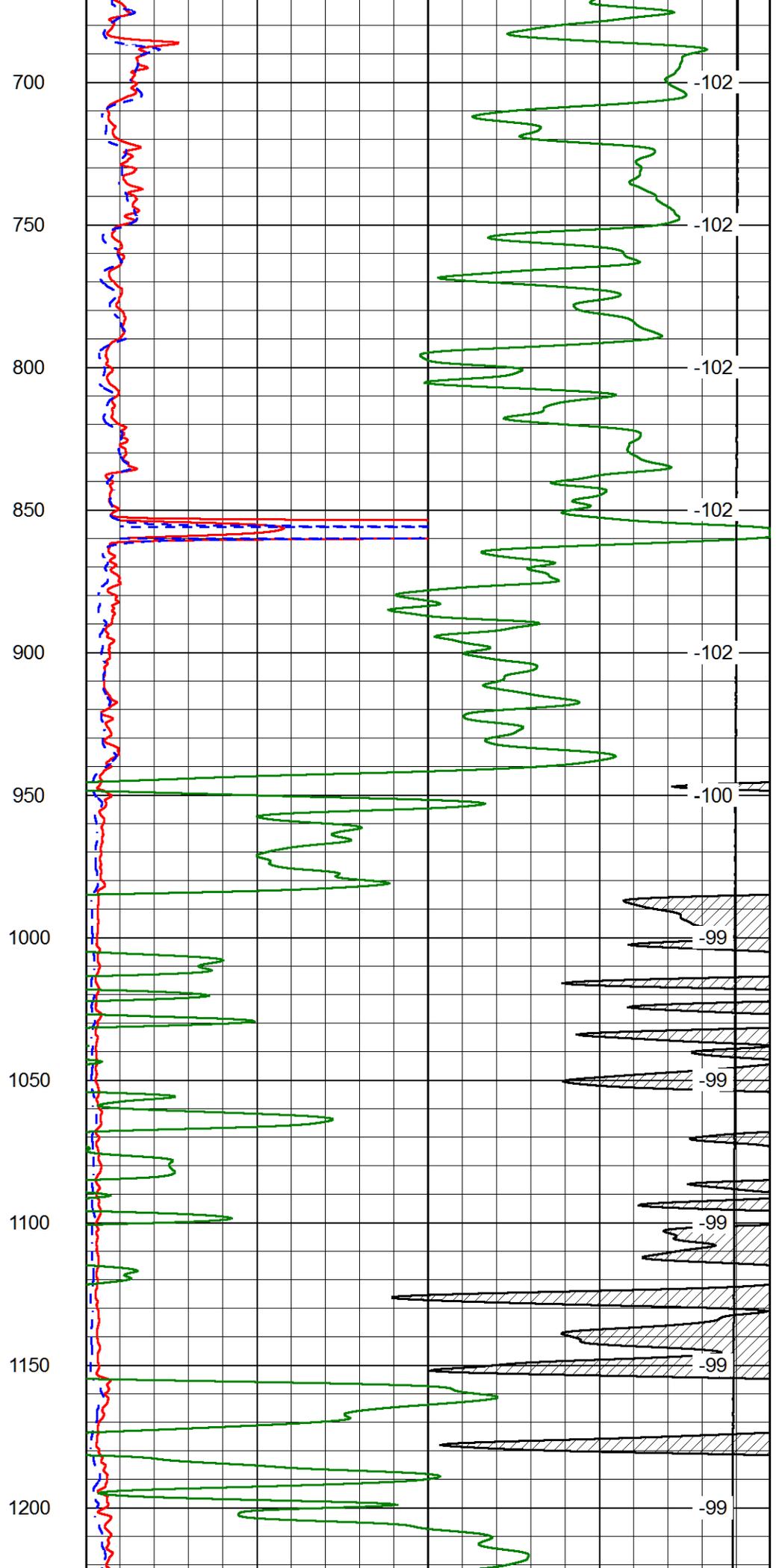
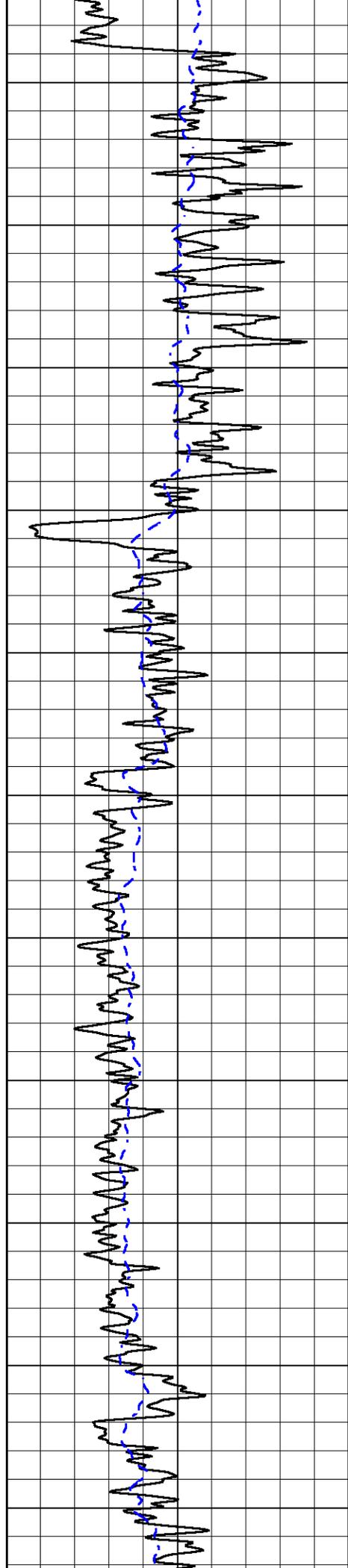
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Presentation Format	dil2in
Dataset Creation	Mon Apr 13 02:23:55 2015
Charted by	Depth in Feet scaled 1:600

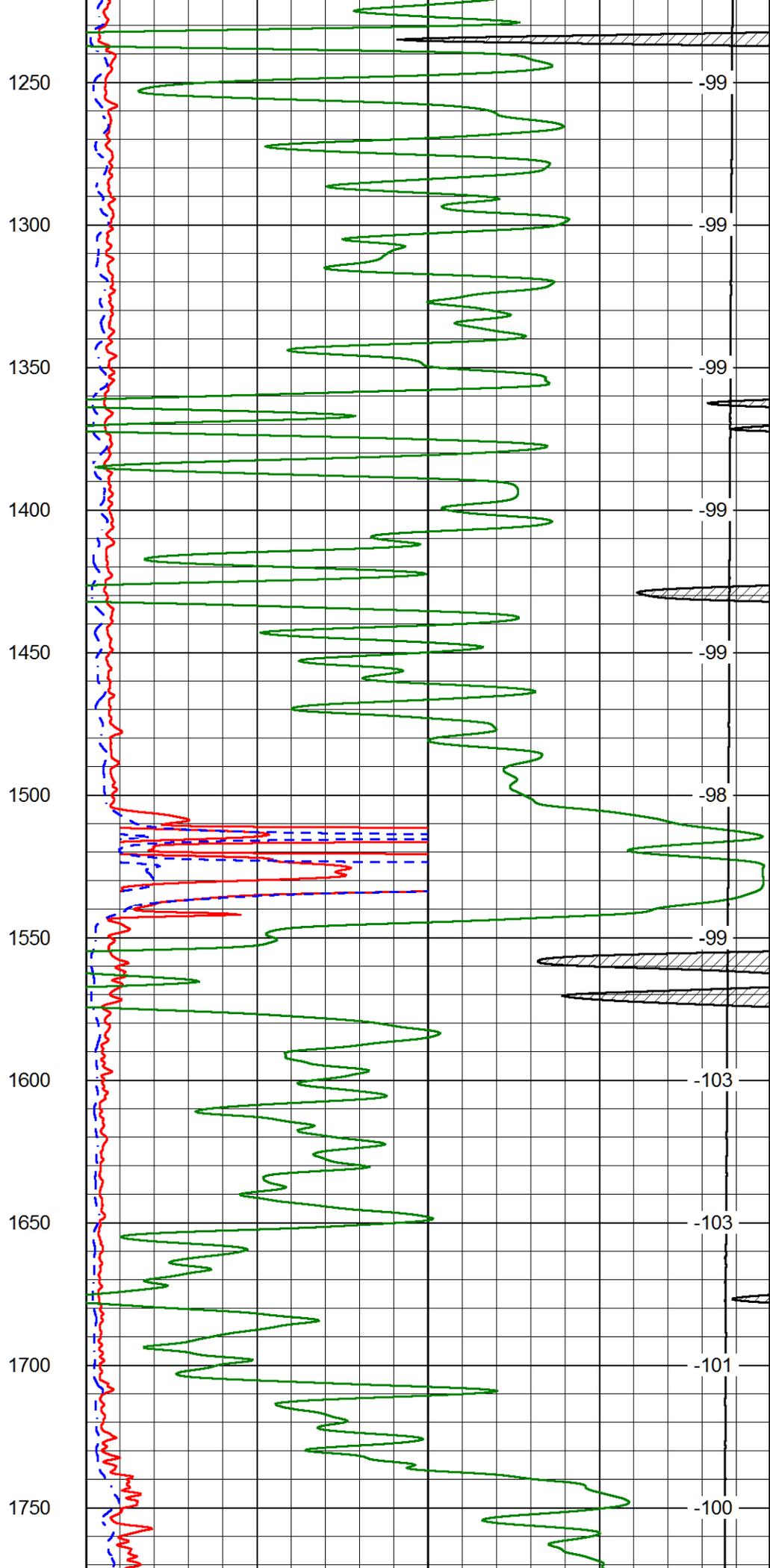
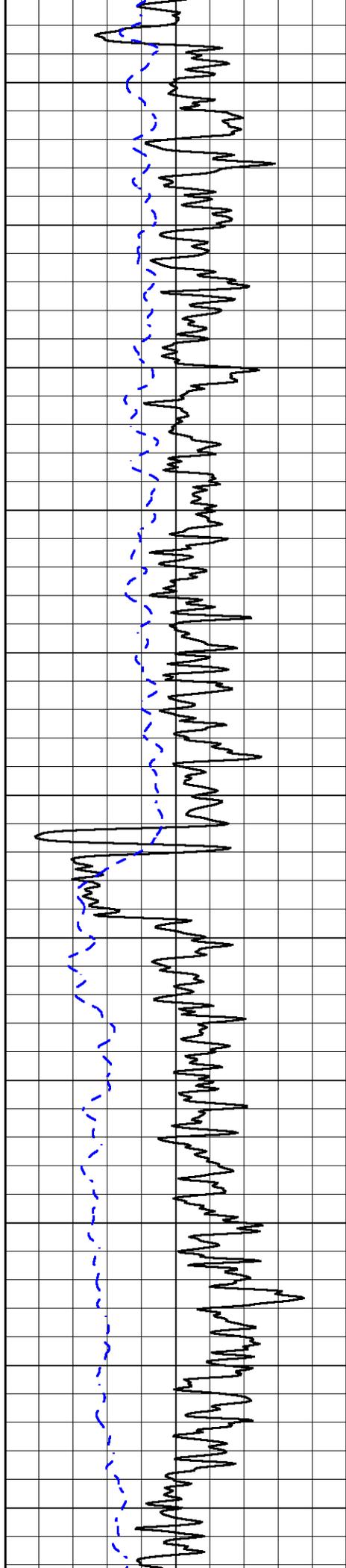
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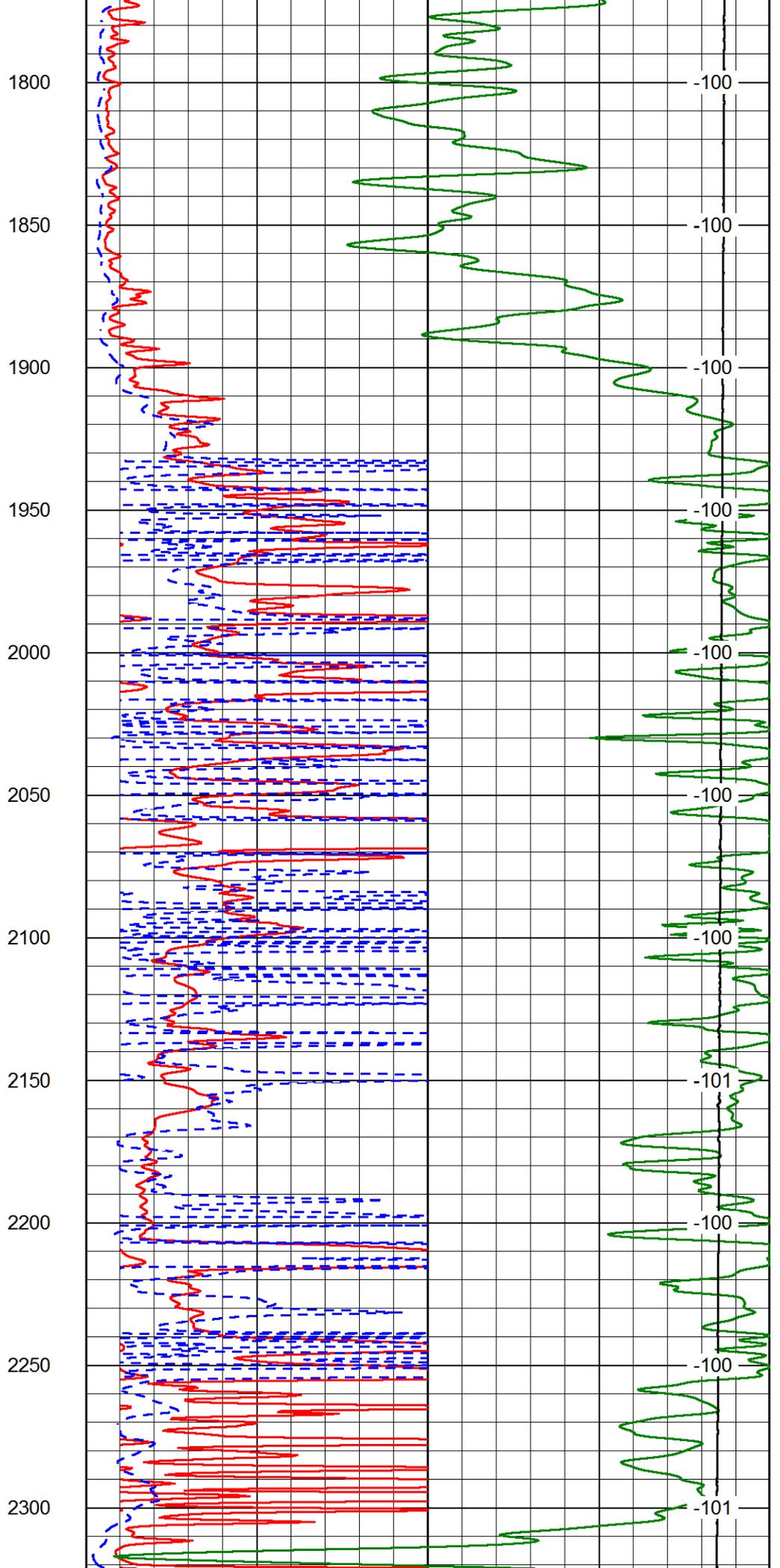
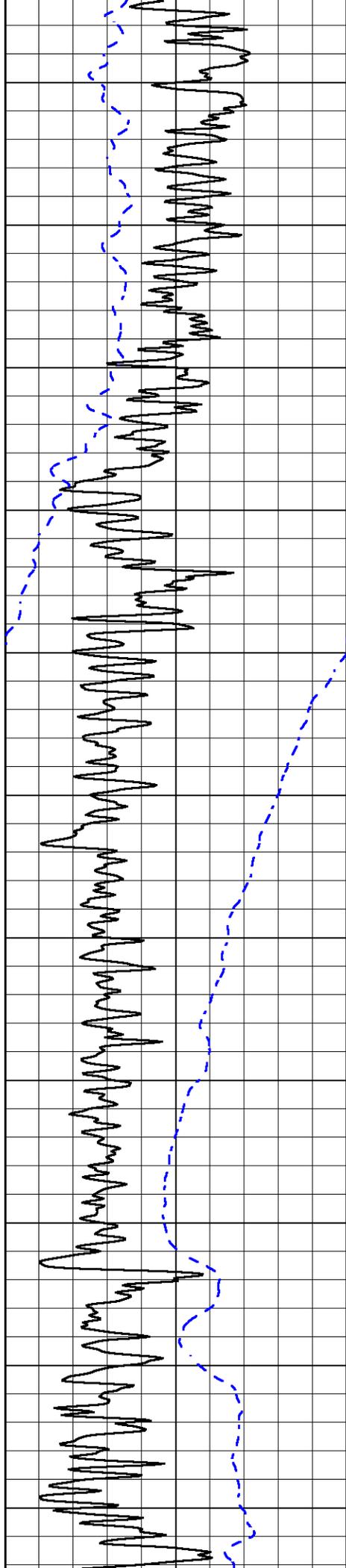
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15000	Line Tension	0
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0	Deep Resistivity	50
50	Shallow Resistivity	500
50	Deep Resistivity	500

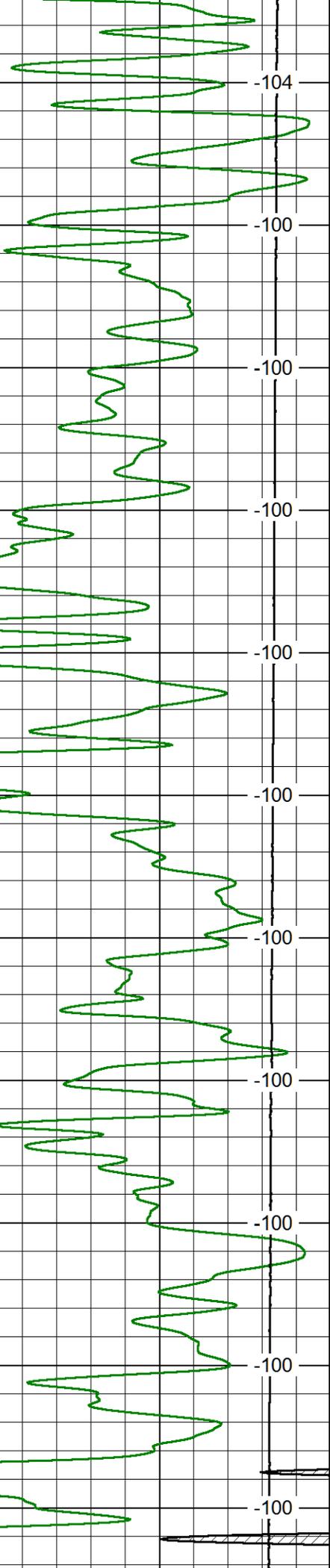
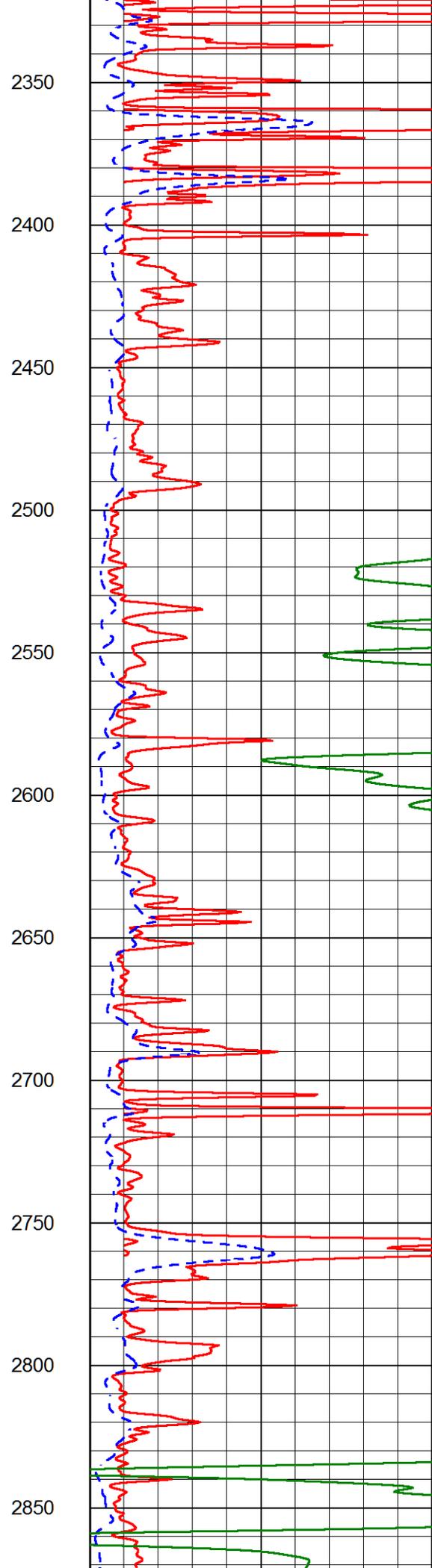
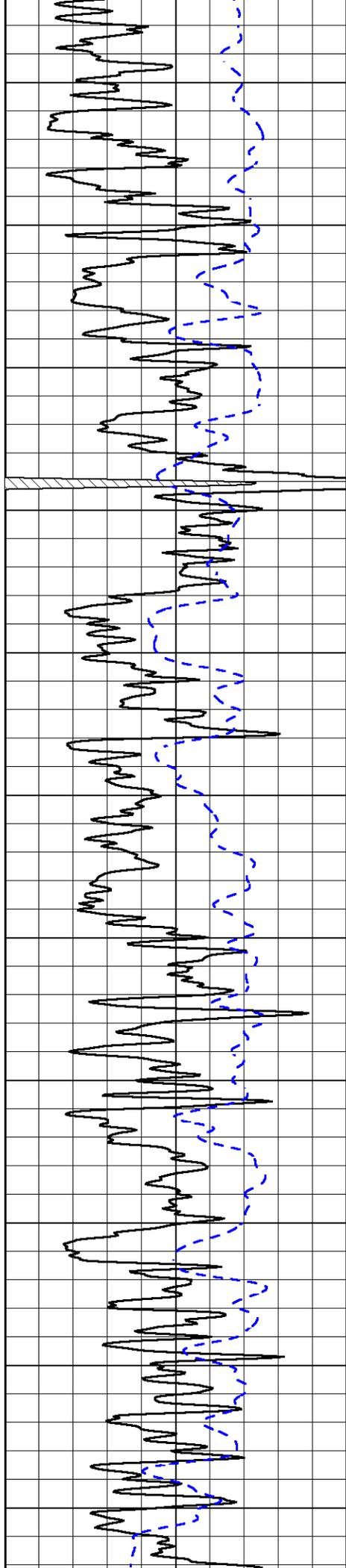
LSPD

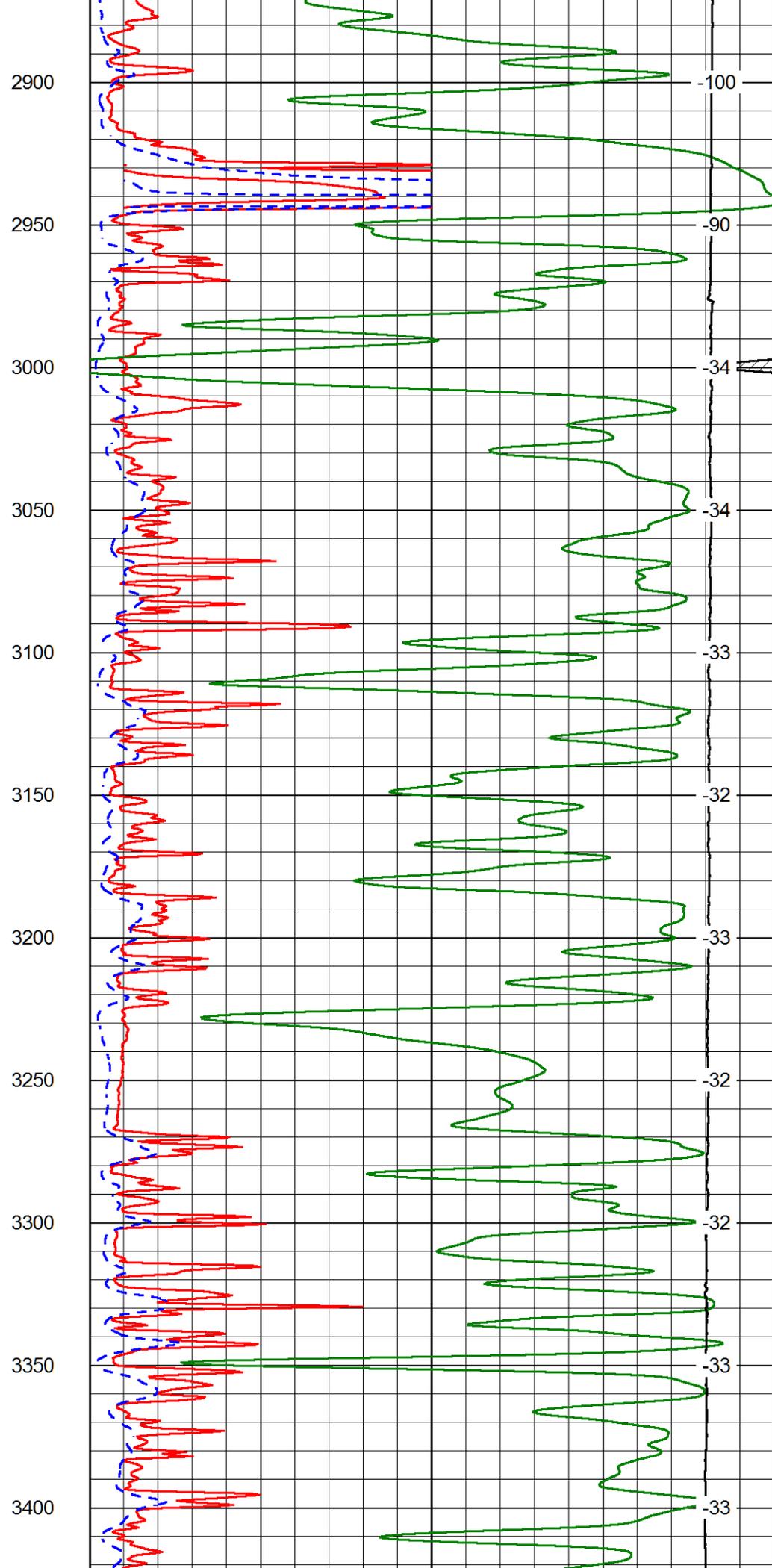
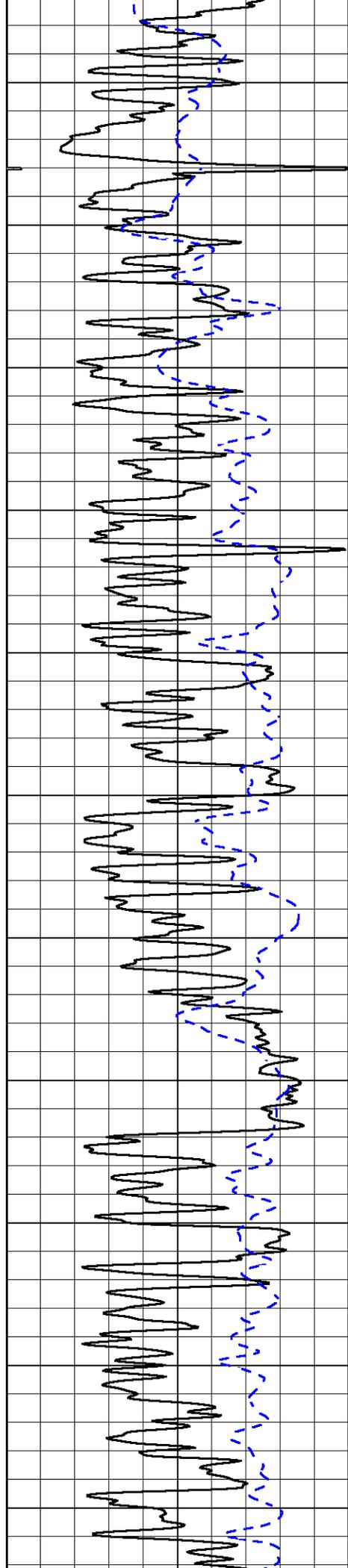


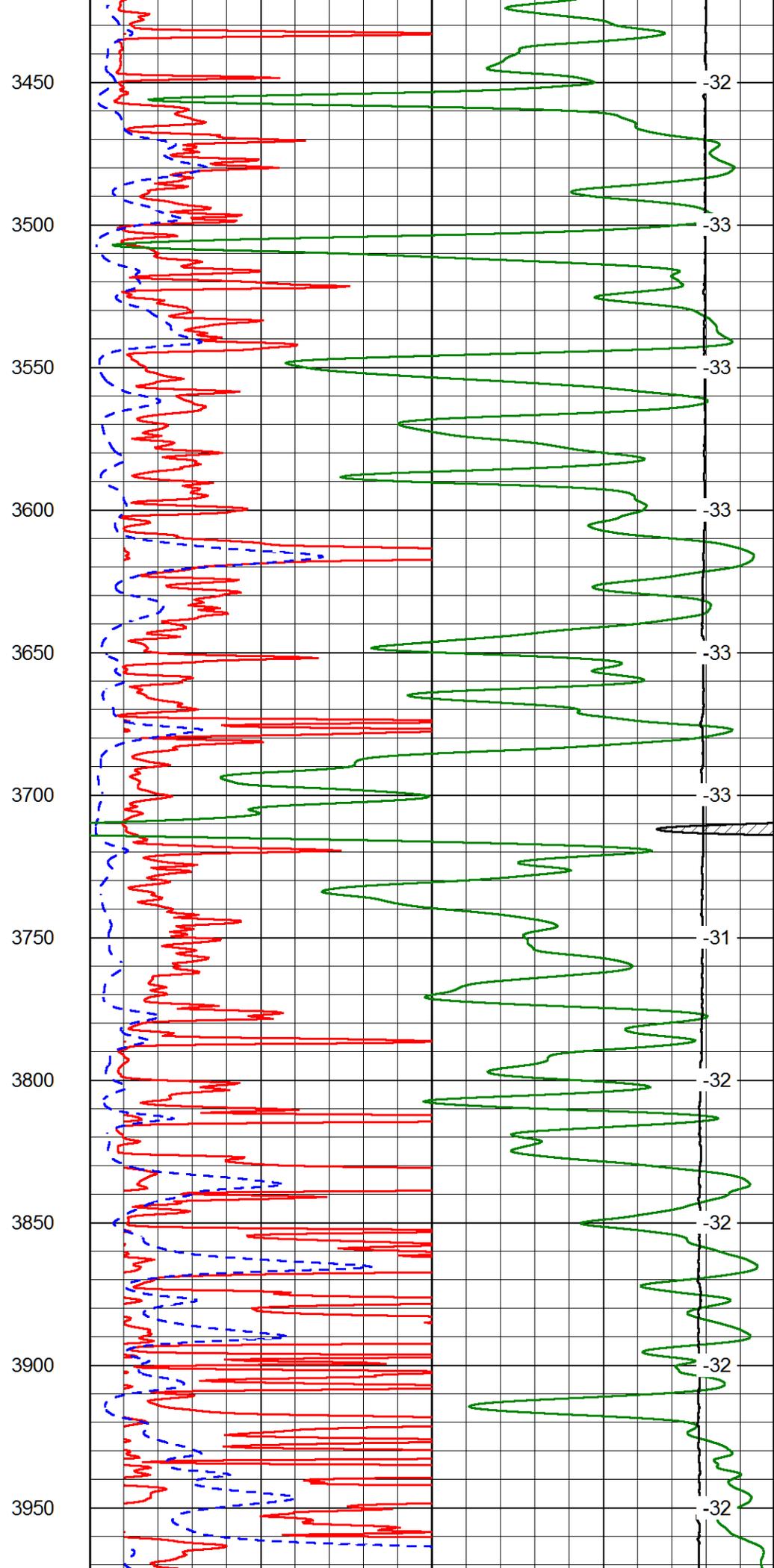
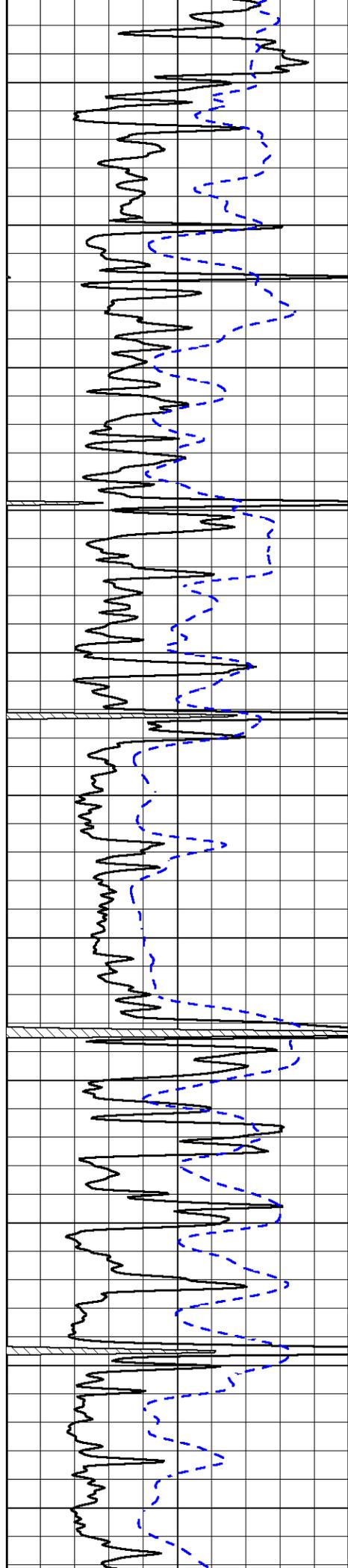


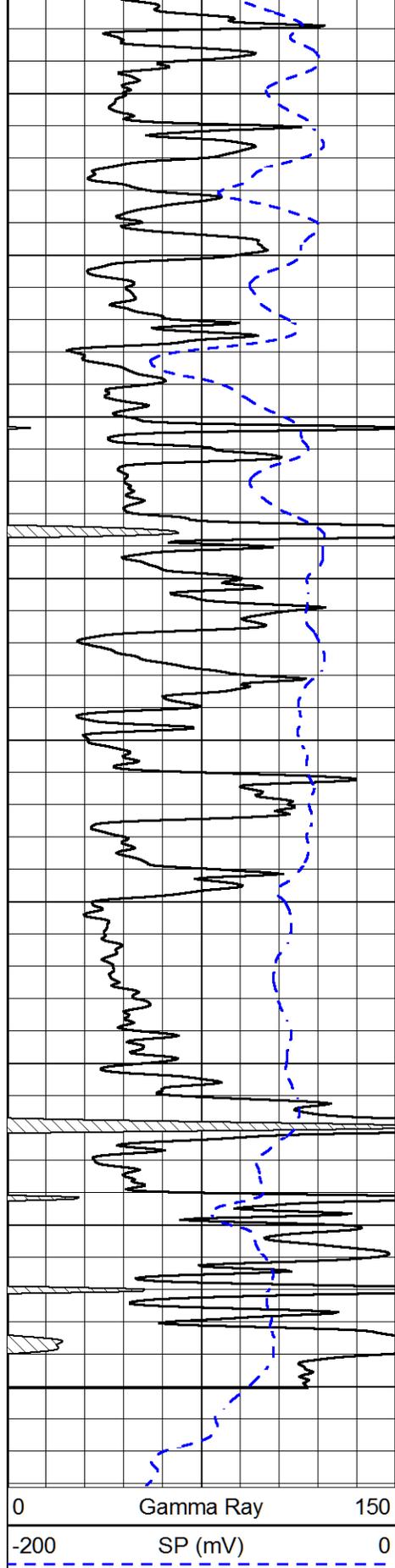




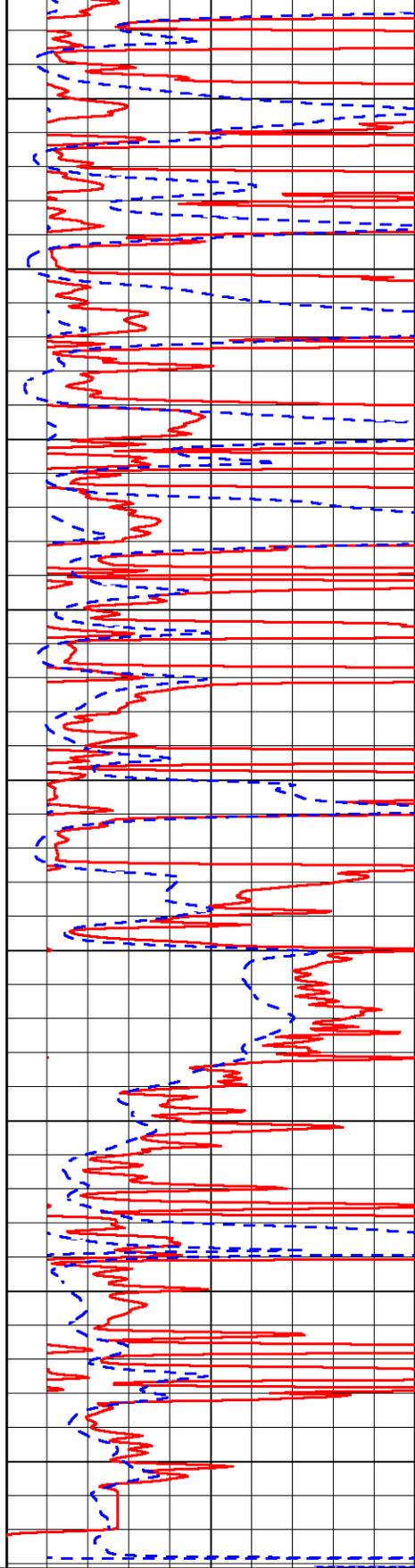








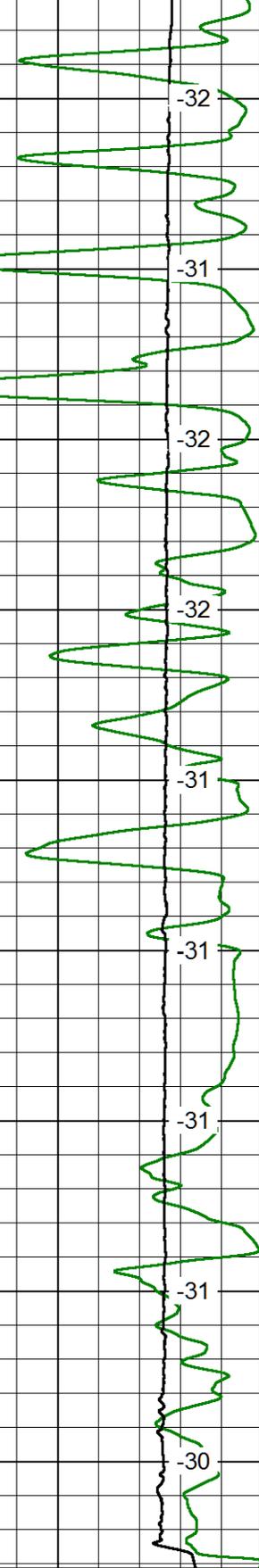
4000  
4050  
4100  
4150  
4200  
4250  
4300  
4350  
4400



1000  
15000

Conductivity

Line Tension



-32  
-31  
-32  
-32  
-31  
-31  
-31  
-31  
-31  
-30

0  
-200  
Gamma Ray  
SP (mV)  
150  
0

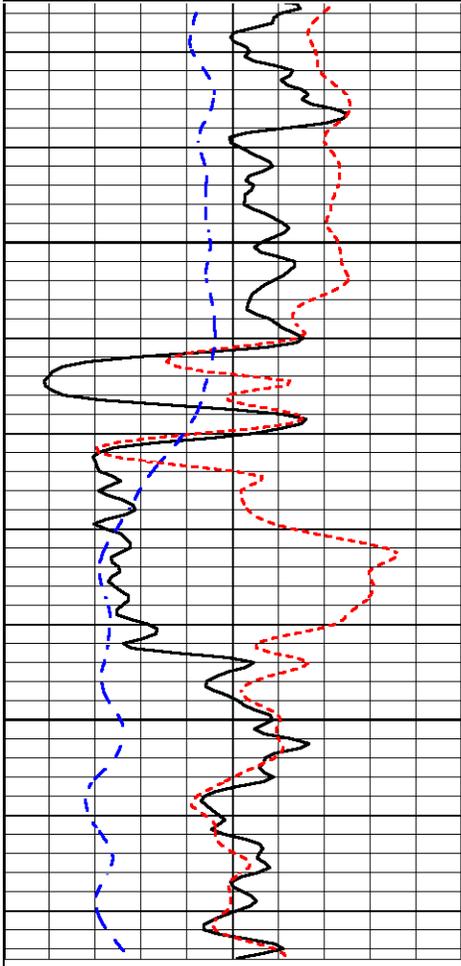
0	Shallow Resistivity	50	LSPD
0	Deep Resistivity	50	
50	Shallow Resistivity	500	
50	Deep Resistivity	500	

Database File amwarrior\_wiedeman\_2-20hd.db  
 Dataset Pathname dil/awstck  
 Presentation Format dil  
 Dataset Creation Mon Apr 13 02:23:55 2015  
 Charted by Depth in Feet scaled 1:240

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-160	RxoRt	40
-200	SP (mV)	0

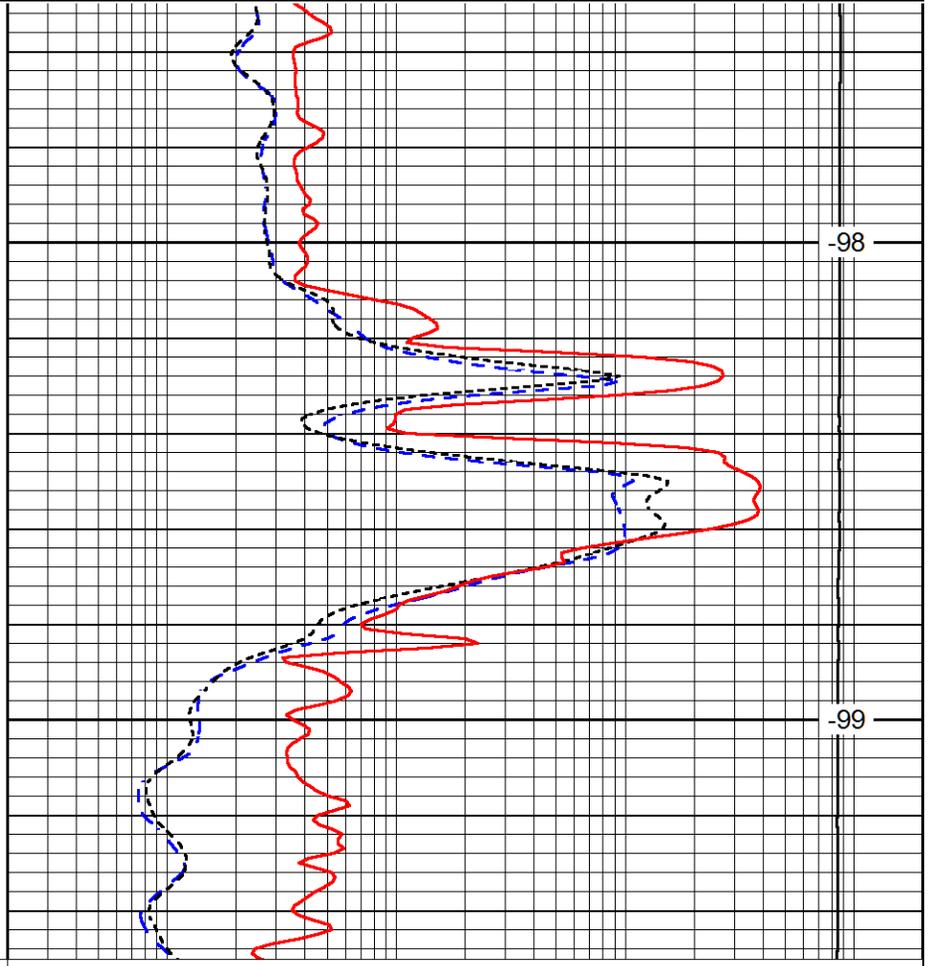
0.2	Deep Resistivity	2000
0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
10000	Line Tension	0

LSPD



1500

1550



-98

-99

0	Gamma Ray	150
-160	RxoRt	40
-200	SP (mV)	0

0.2	Deep Resistivity	2000
0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
10000	Line Tension	0

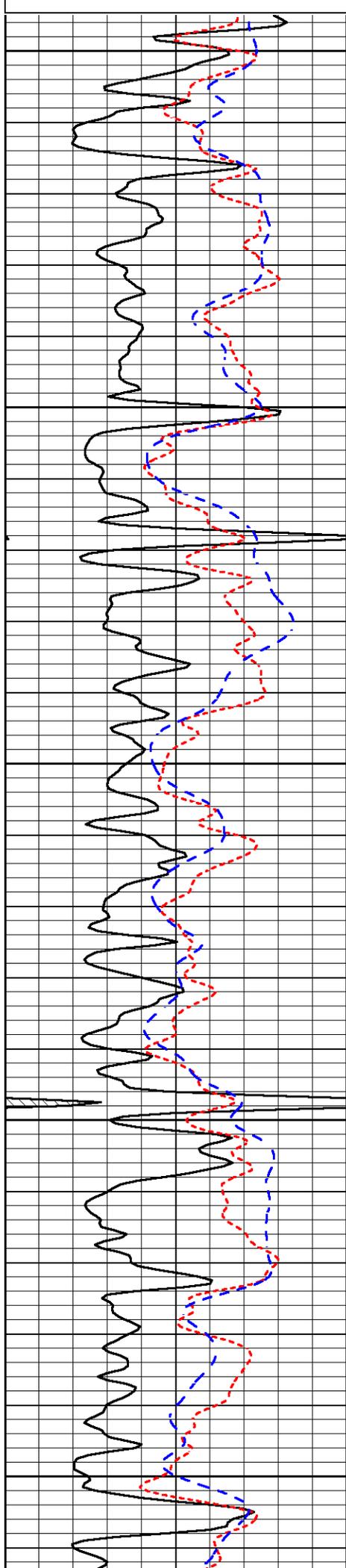
LSPD

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0	Gamma Ray	150
-160	RxoRt	40
-200	SP (mV)	0

0.2	Deep Resistivity	2000
0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
10000	Line Tension	0

LSPD



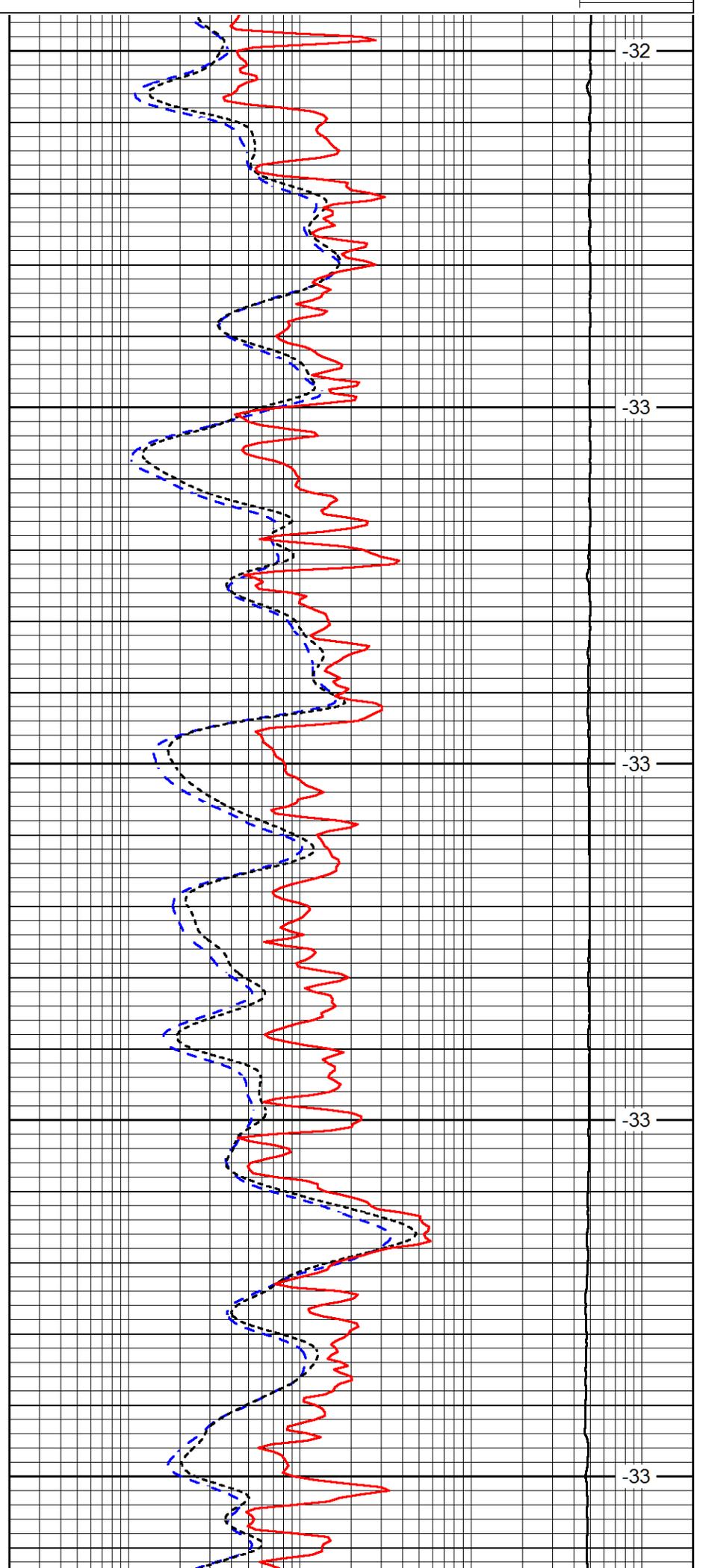
3450

3500

3550

3600

3650



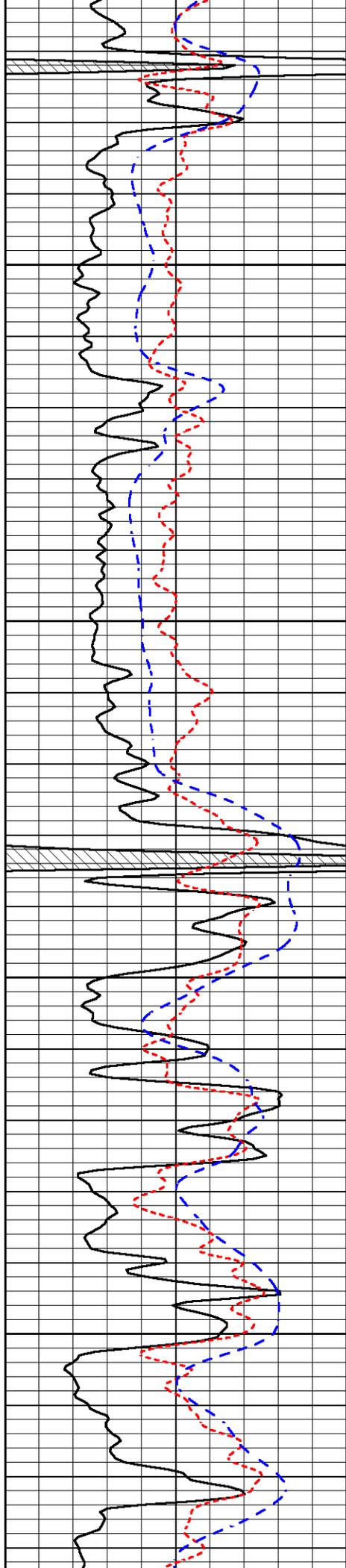
-32

-33

-33

-33

-33

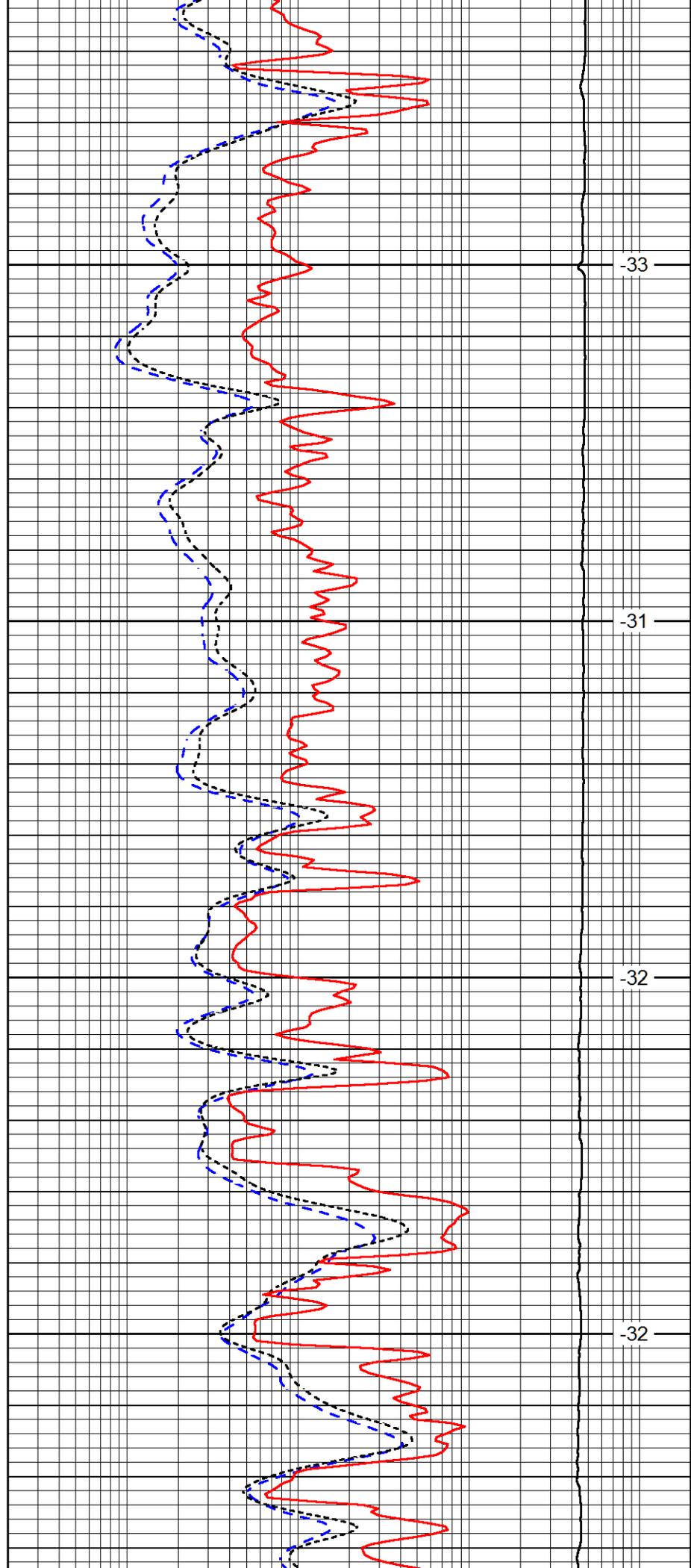


3700

3750

3800

3850

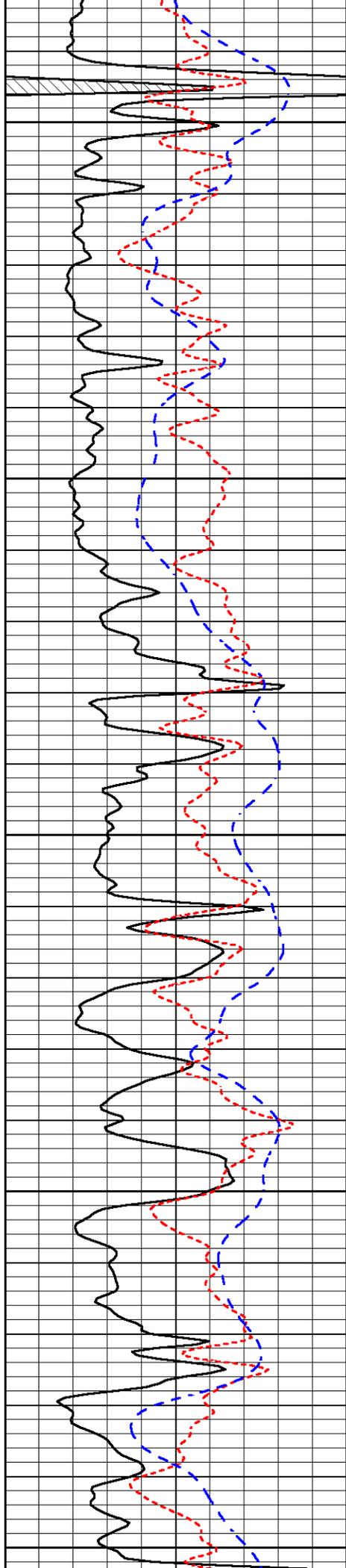


-33

-31

-32

-32



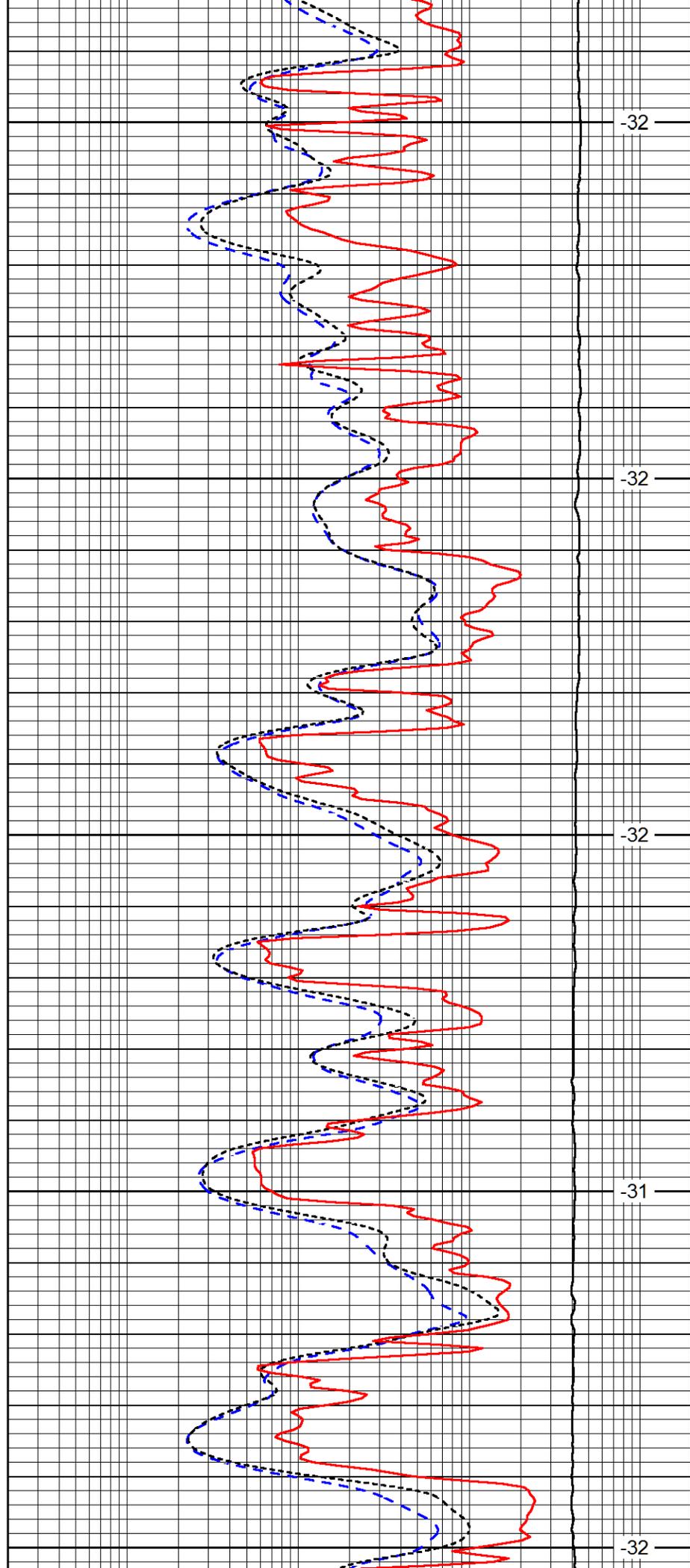
3900

3950

4000

4050

4100



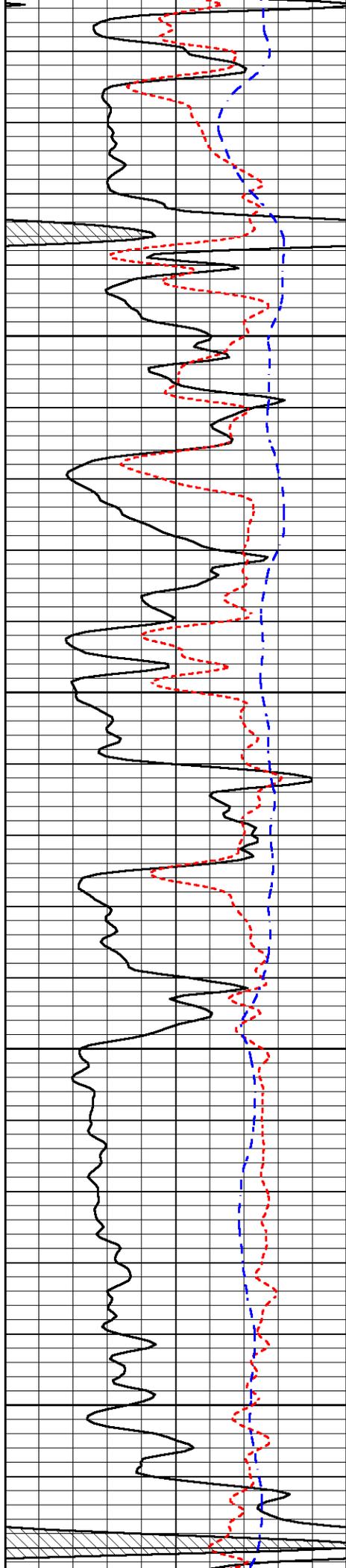
-32

-32

-32

-31

-32

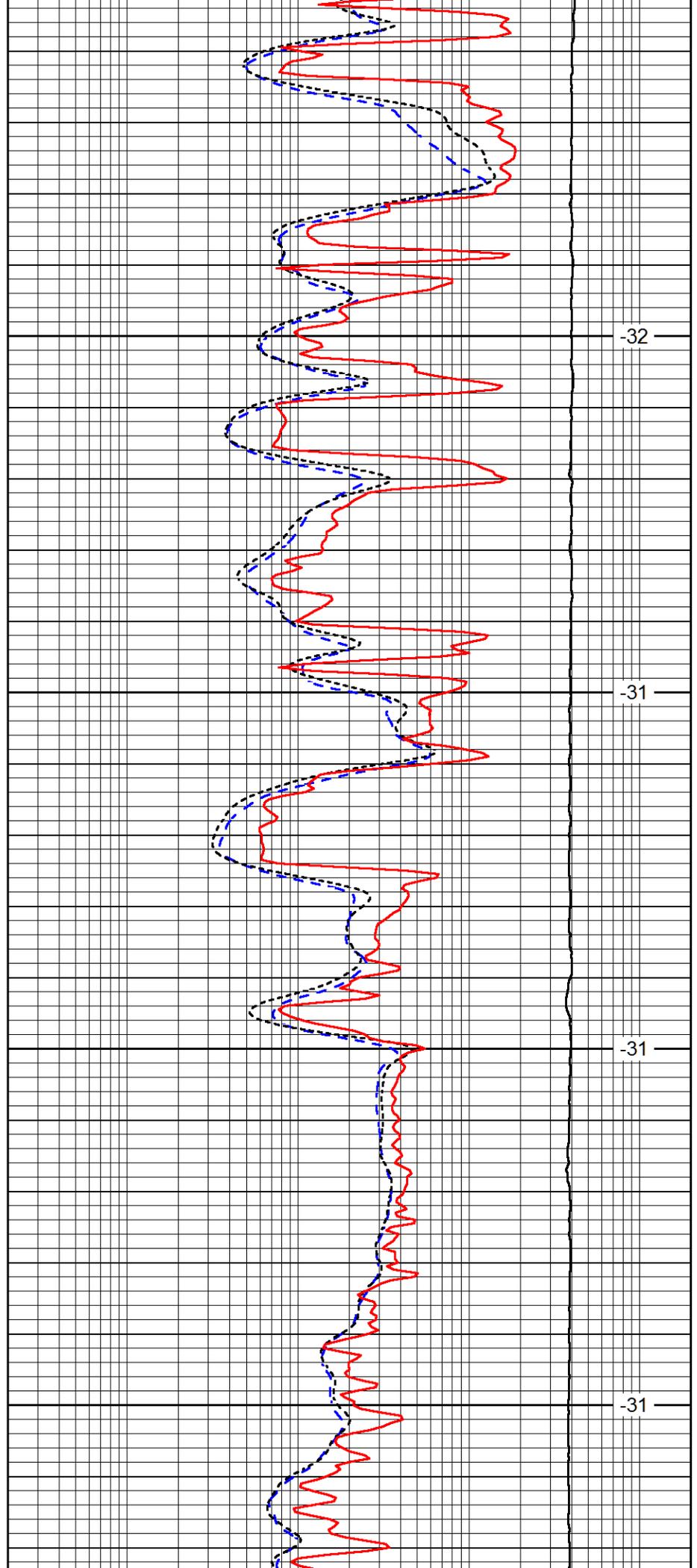


4150

4200

4250

4300

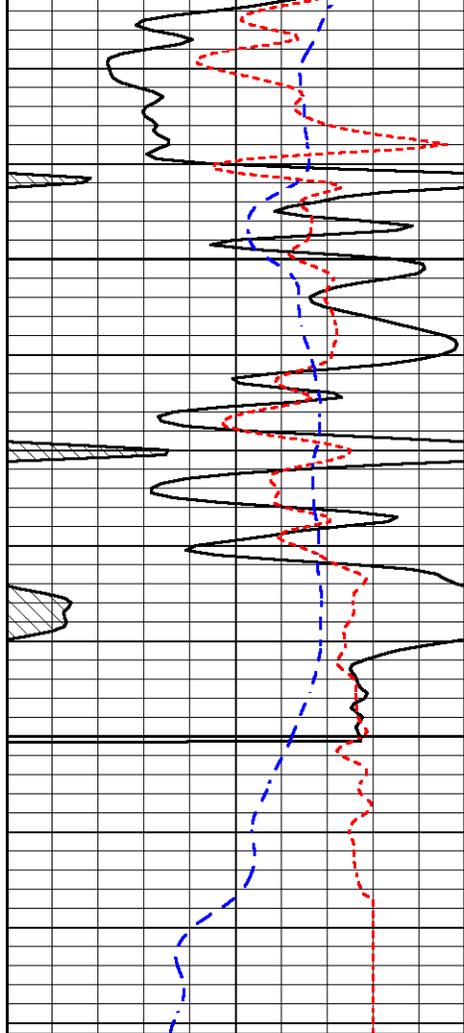


-32

-31

-31

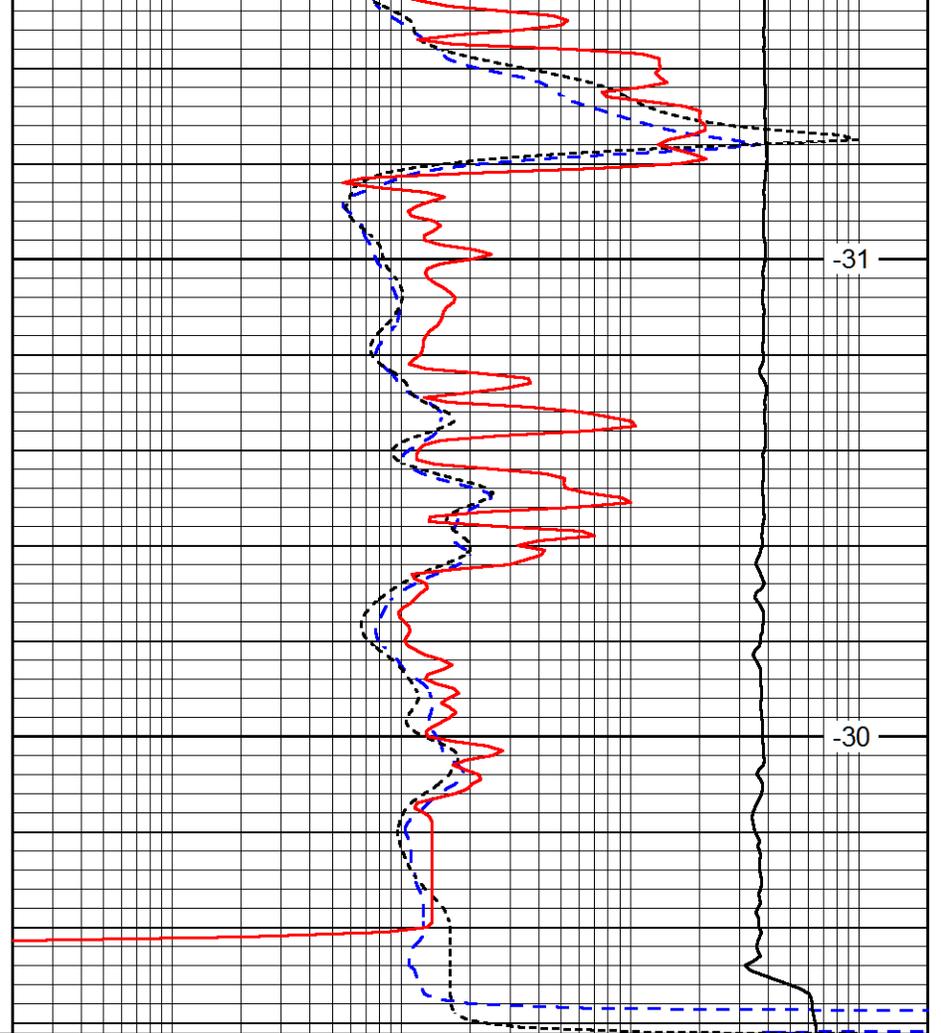
-31



4350

4400

0	Gamma Ray	150
-160	RxoRt	40
-200	SP (mV)	0



-31

-30

0.2	Deep Resistivity	2000
0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
10000	Line Tension	0

LSPD