



Pioneer Energy Services

Dual Induction Log

15-135-25532-00-00

API No.

Company **Cobalt Energy, LLC**
 Well **Craig A # 1-27**
 Field **McDonald Northeast**
 County **Ness** State **Kansas**

Location **1860' FSL & 1190' FEL**

Other Services
CNL/CDL

Sec: **27** Twp: **18 S** Rge: **24 W**

Permanent Datum **Ground Level** Elevation **2283**
 Log Measured From **Kelly Bushing** **5** Ft. Above Perm. Datum
 Drilling Measured From **Kelly Bushing**

Elevation **2288**
 D.F. **2283**
 G.L. **2283**

Date	3/07/2013
Run Number	One
Depth Driller	4400
Depth Logger	4402
Bottom Logged Interval	4401
Top Log Interval	200
Casing Driller	8.625 @ 220
Casing Logger	219
Bit Size	7.875
Type Fluid in Hole	Chemical
Salinity, ppm CL	5500
Density / Viscosity	9.5 50
pH / Fluid Loss	9.5 8.4
Source of Sample	Flowline
Rm @ Meas. Temp	0.44 @ 50
Rmf @ Meas. Temp	0.33 @ 50
Rmc @ Meas. Temp	0.59 @ 50
Source of Rmf / Rmc	Charts
Rm @ BHT	0.18 @ 122
Operating Rig Time	3 Hours
Max Rec. Temp. F	122
Equipment Number	91
Location	Hays
Recorded By	Y. Ruiz
Witnessed By	Rocky Milford
	D. Schmidt

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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
www.pioneerenergy.com
 785 625 3858
 Ness City,
 2 1/2 West to P Rd, 1/4 North,
 West and South Into

Database File: c:\warrior\data\cobalt_craig a # 1-27\cobalt_030713hd.db
 Dataset Pathname: DIL\colstk
 Presentation Format: dil2in
 Dataset Creation: Thu Mar 07 03:23:42 2013
 Charted by: Depth in Feet scaled 1:600

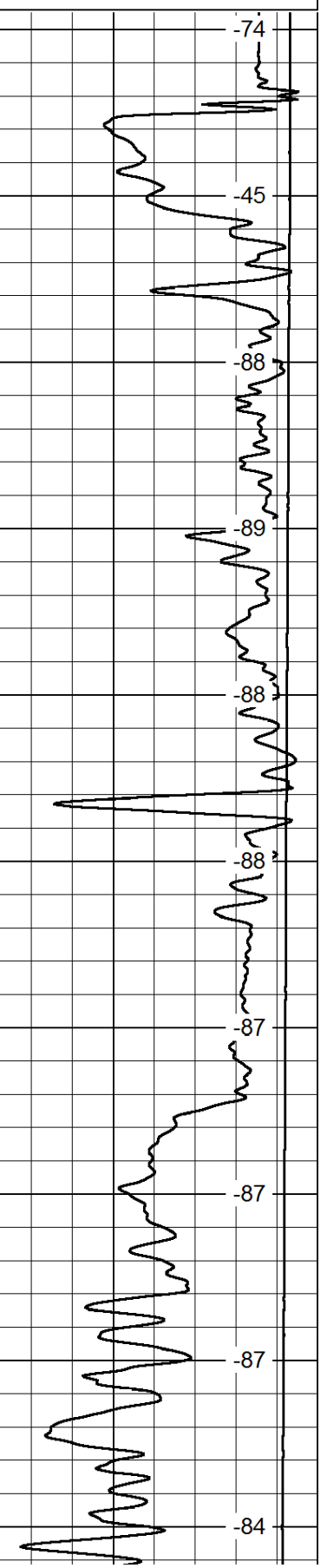
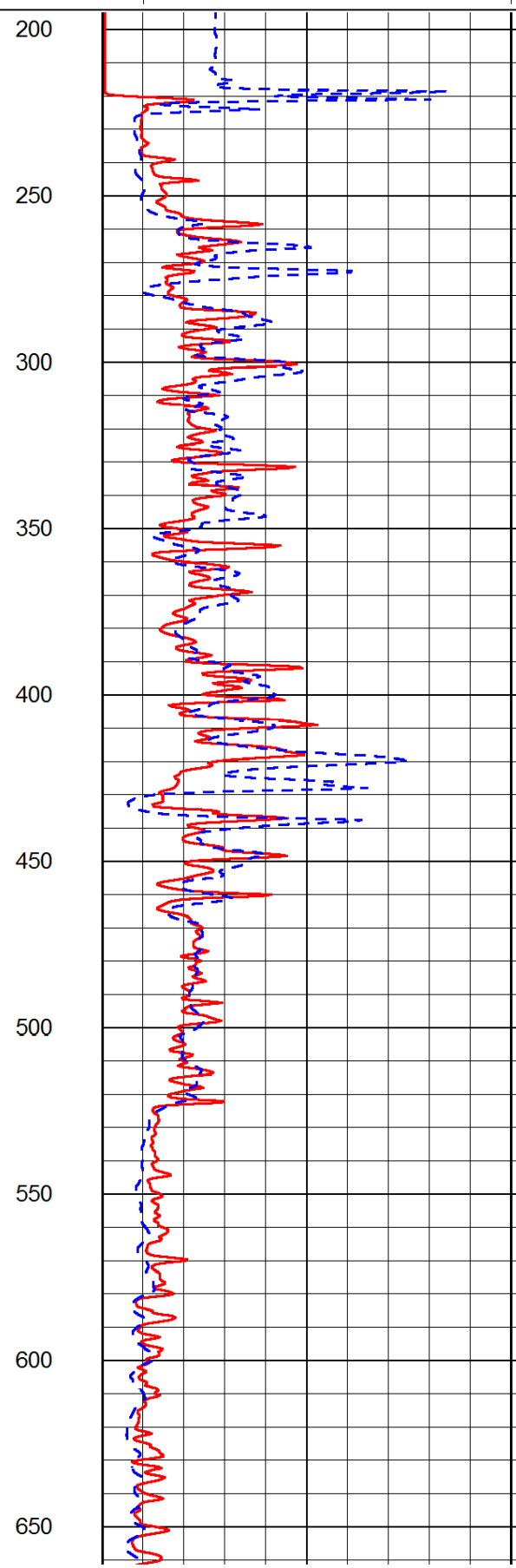
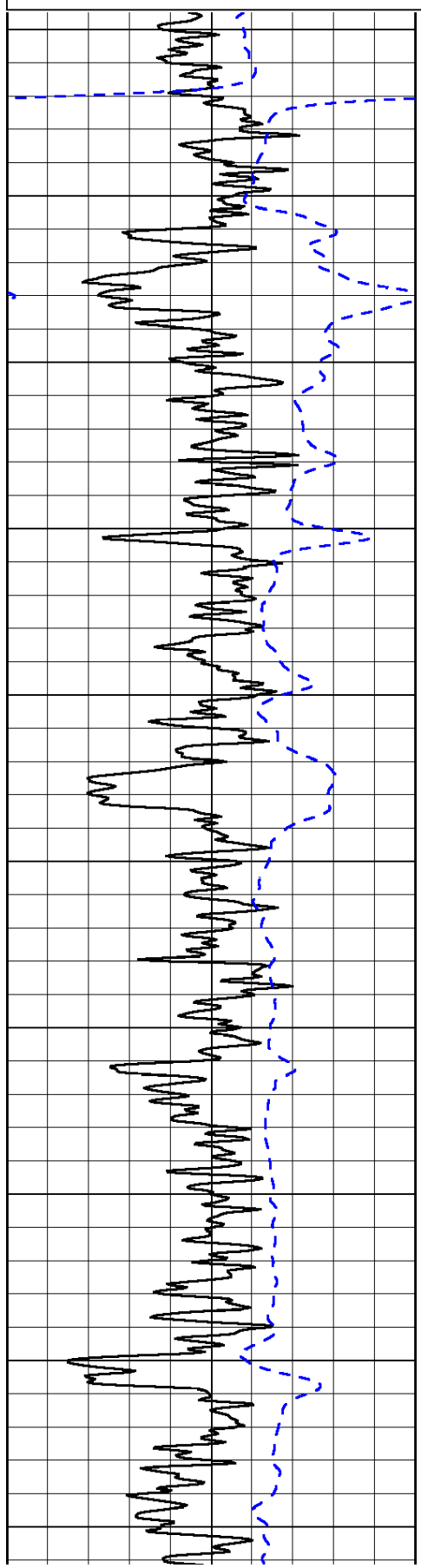
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-200	SP (mV)	0

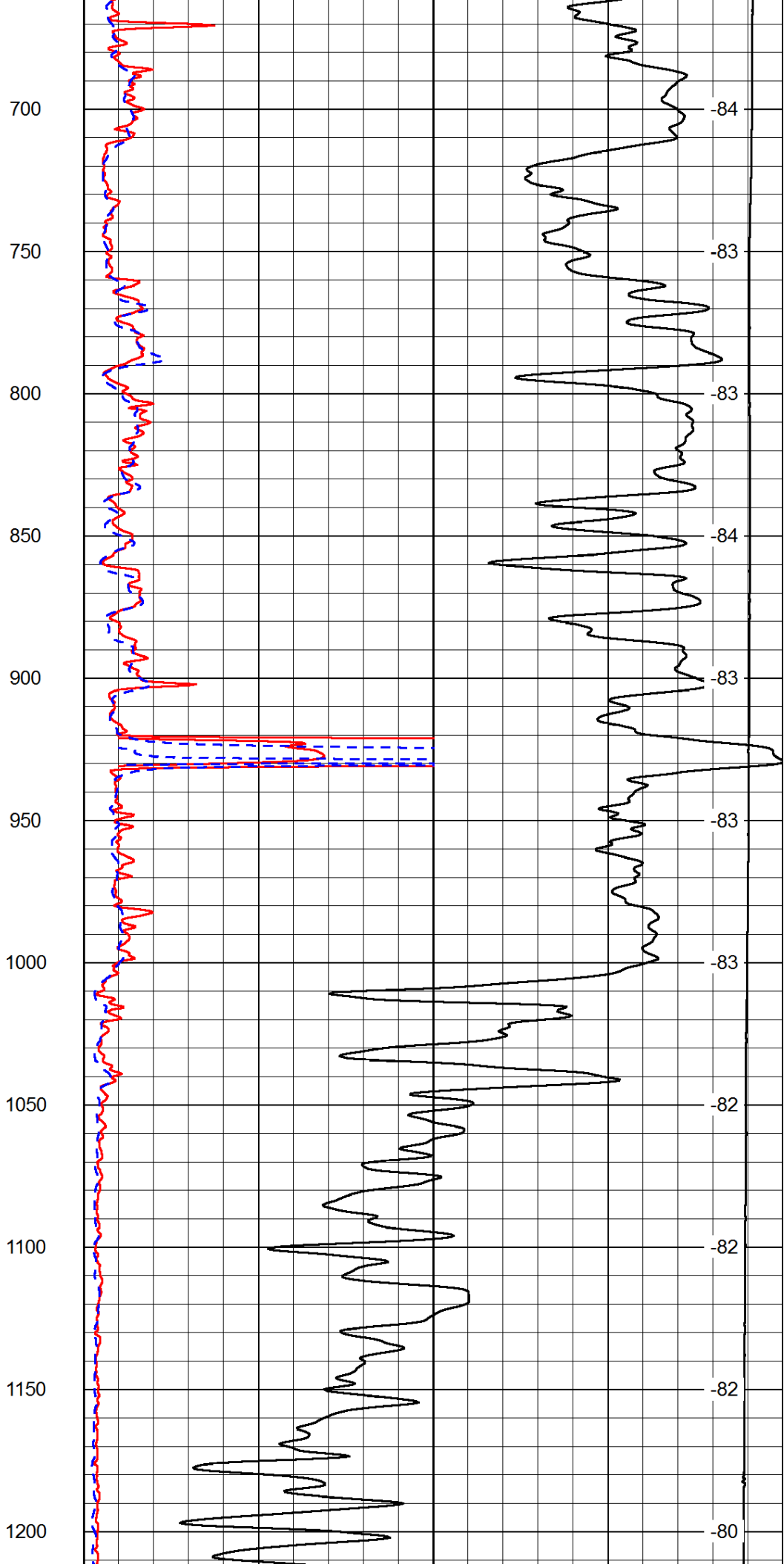
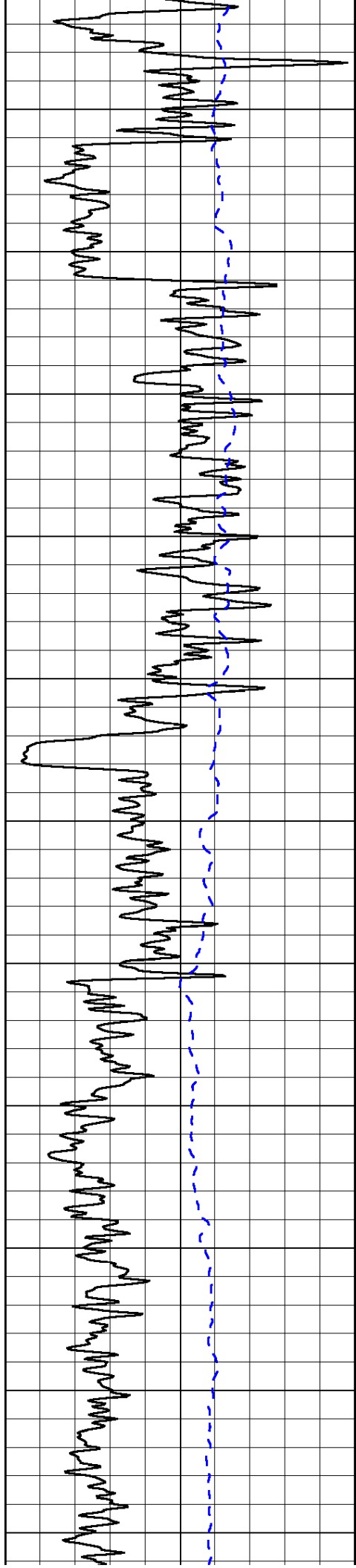
0	Shallow Resistivity	50
0	Deep Resistivity	50

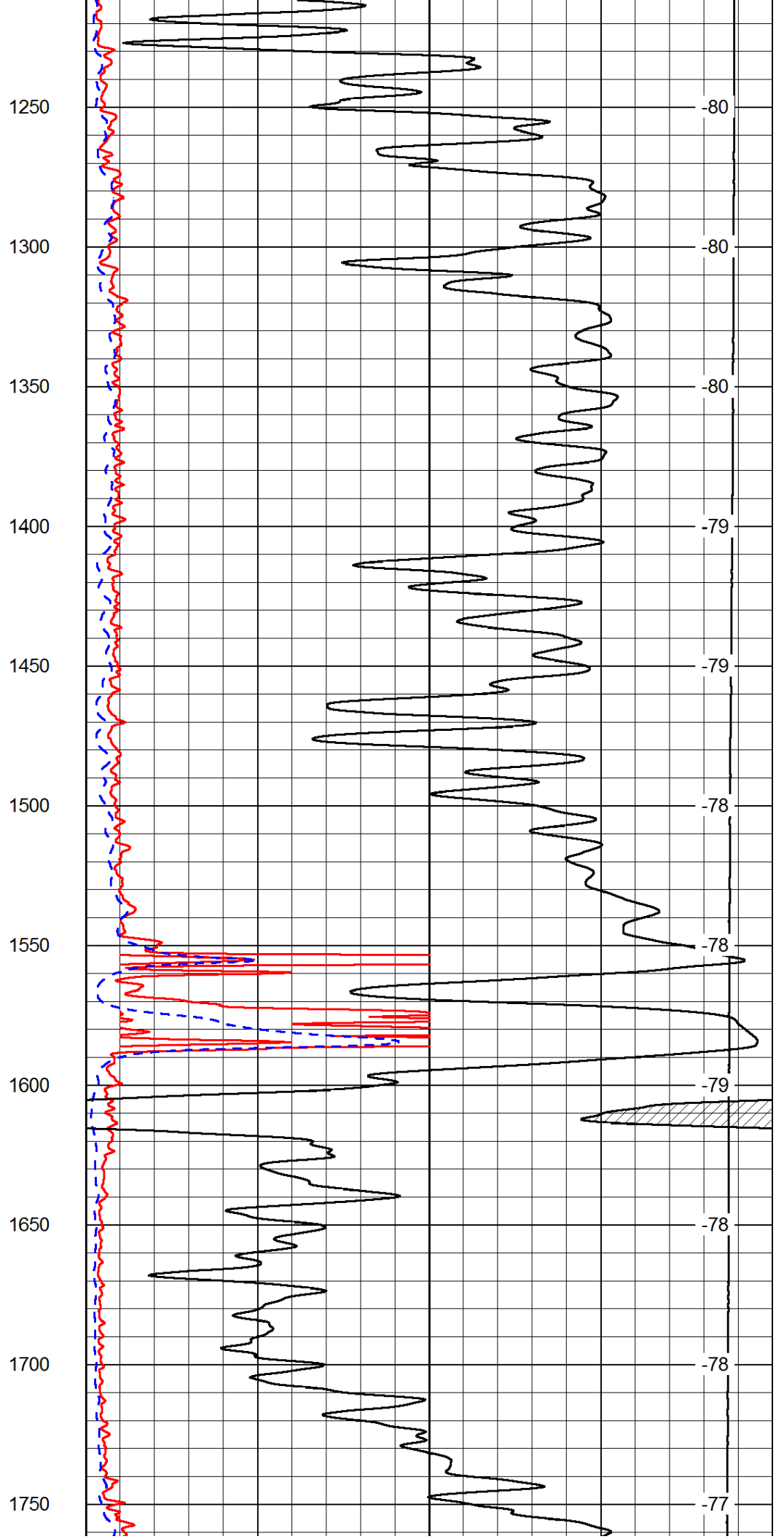
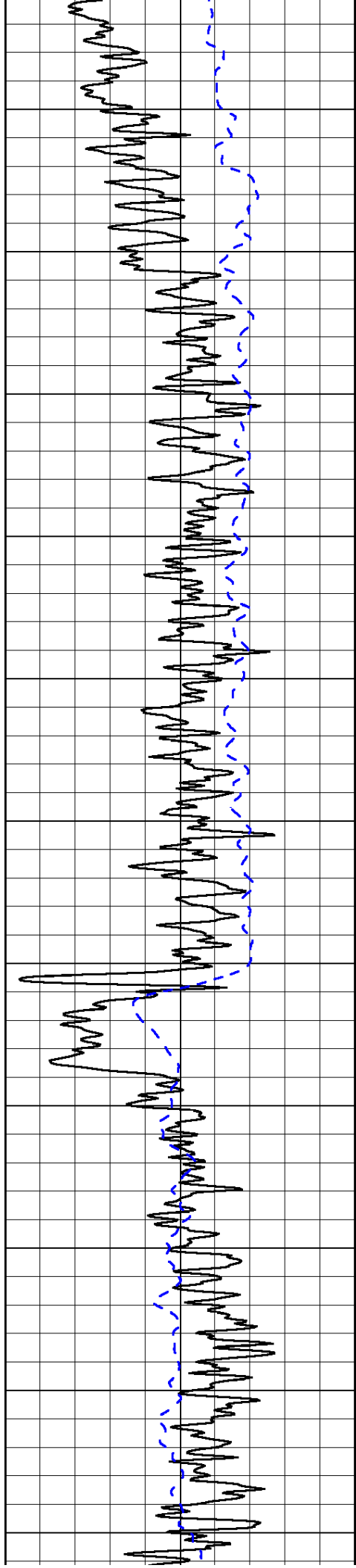
LSPD

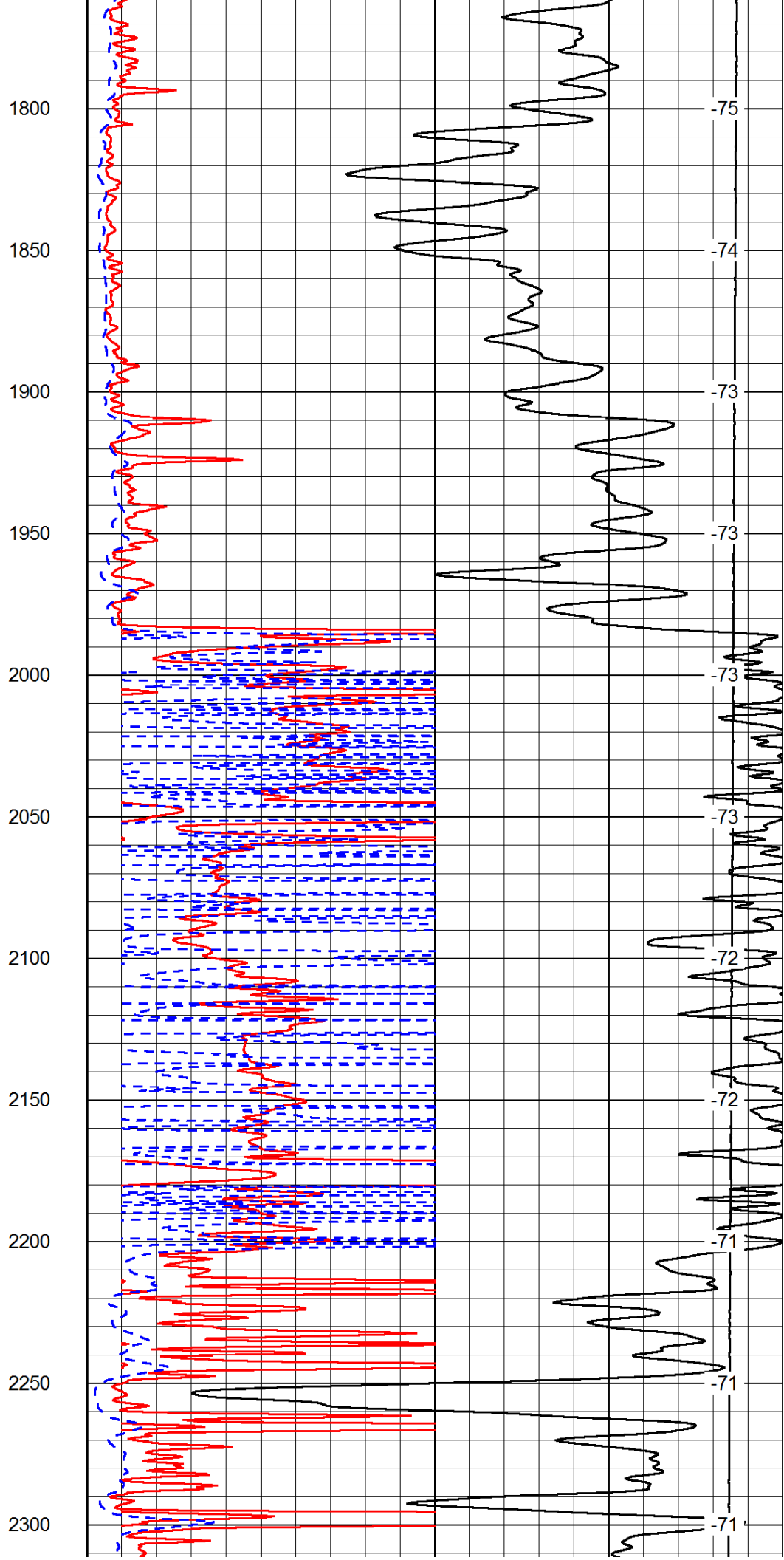
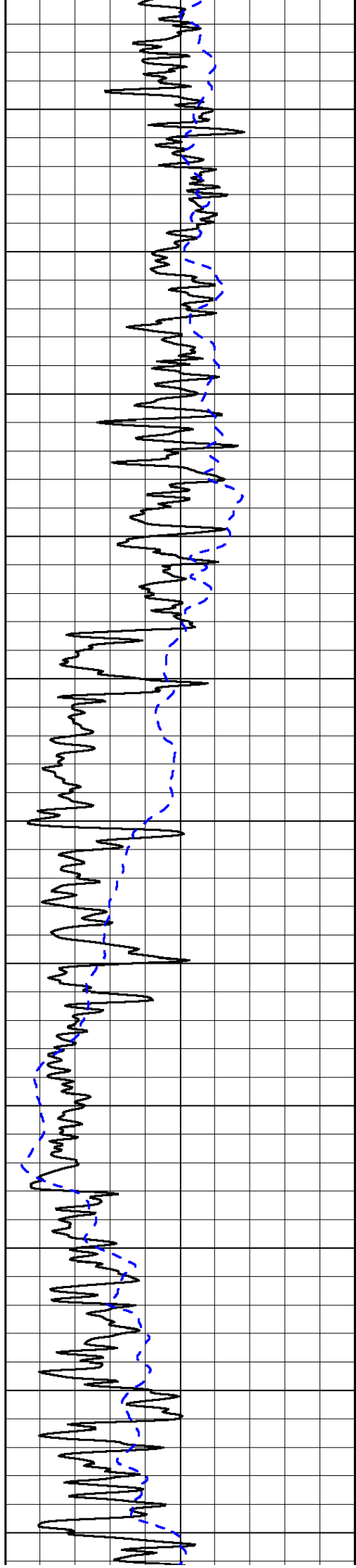
1000	Conductivity	0
15000	Line Tension	0

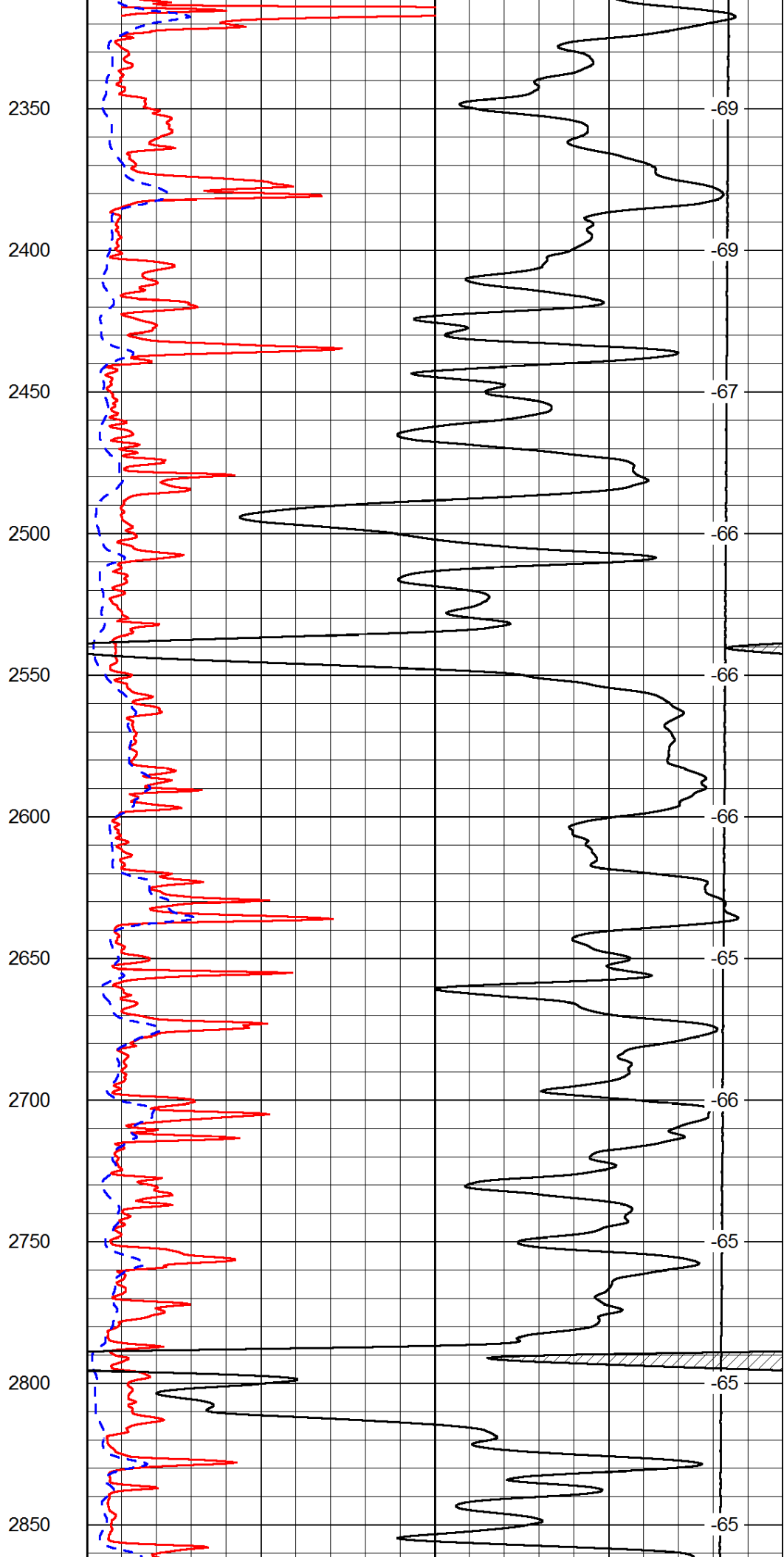
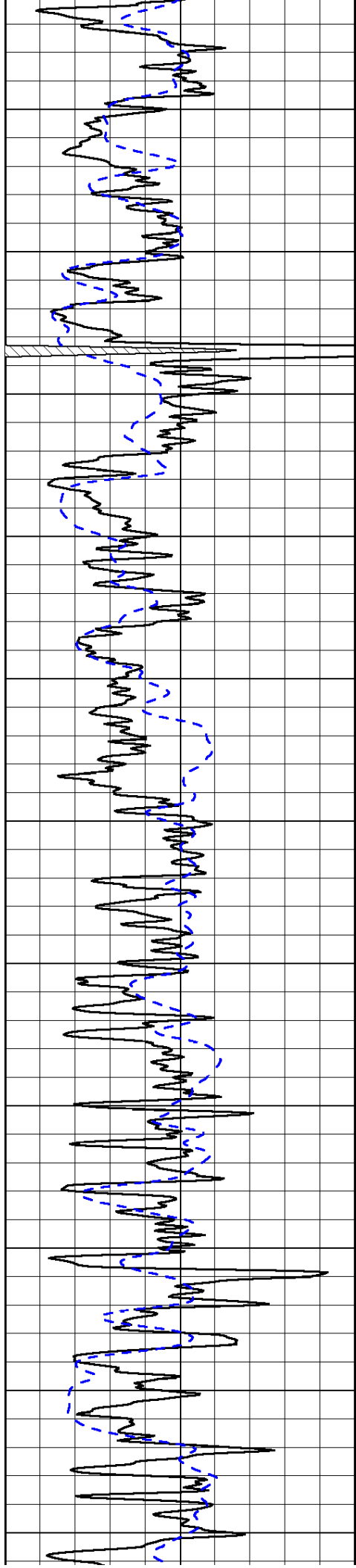
50	Shallow Resistivity	500
50	Deep Resistivity	500

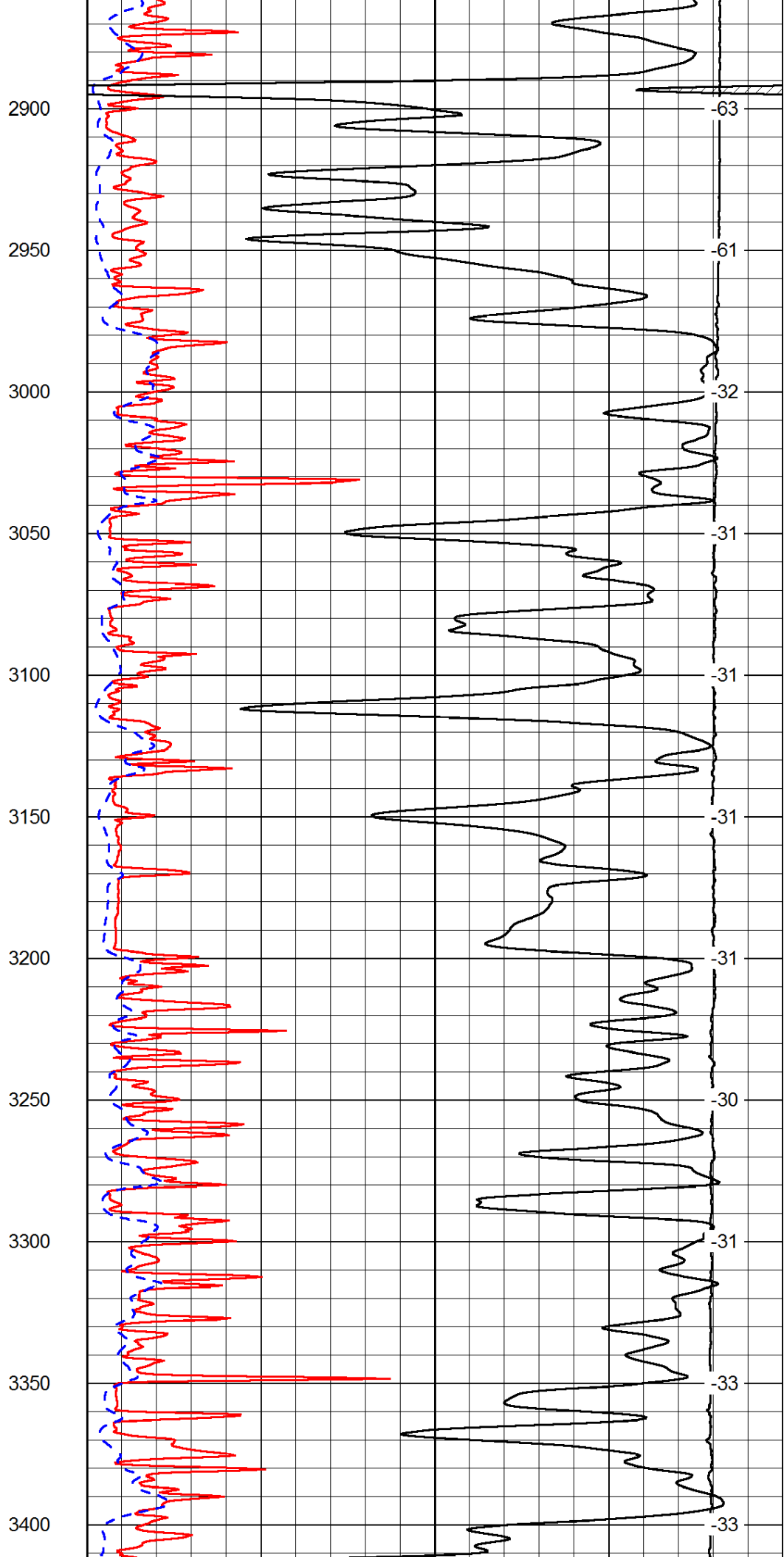
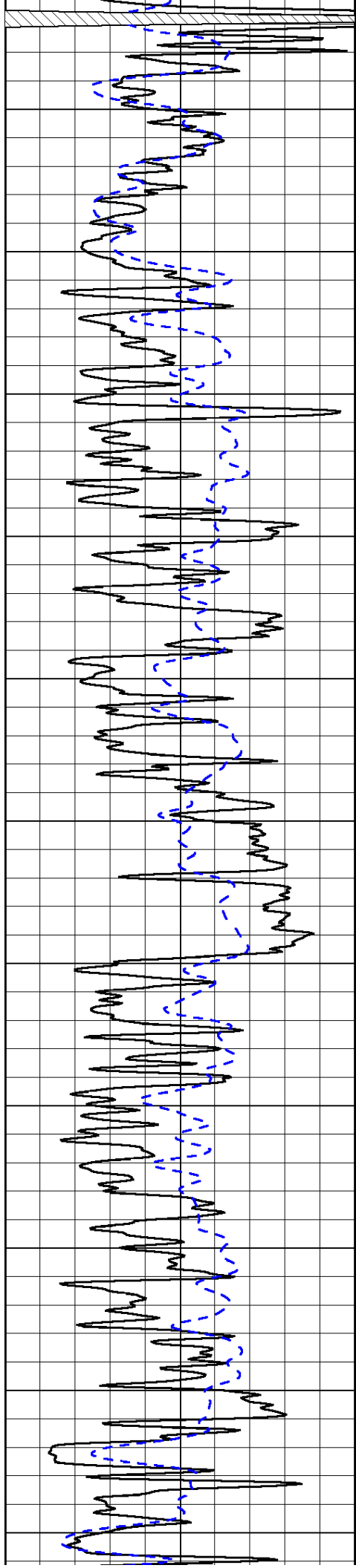


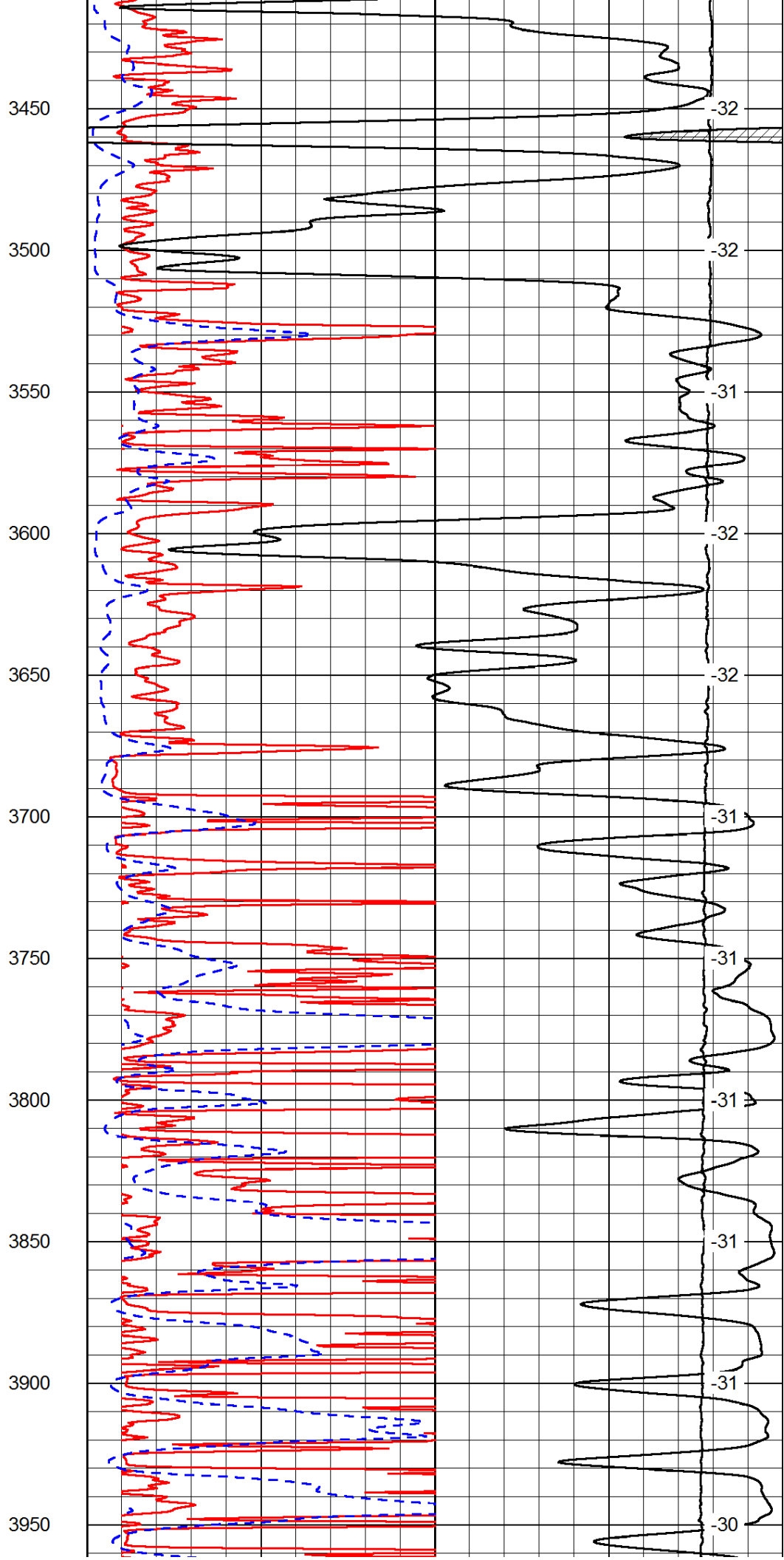
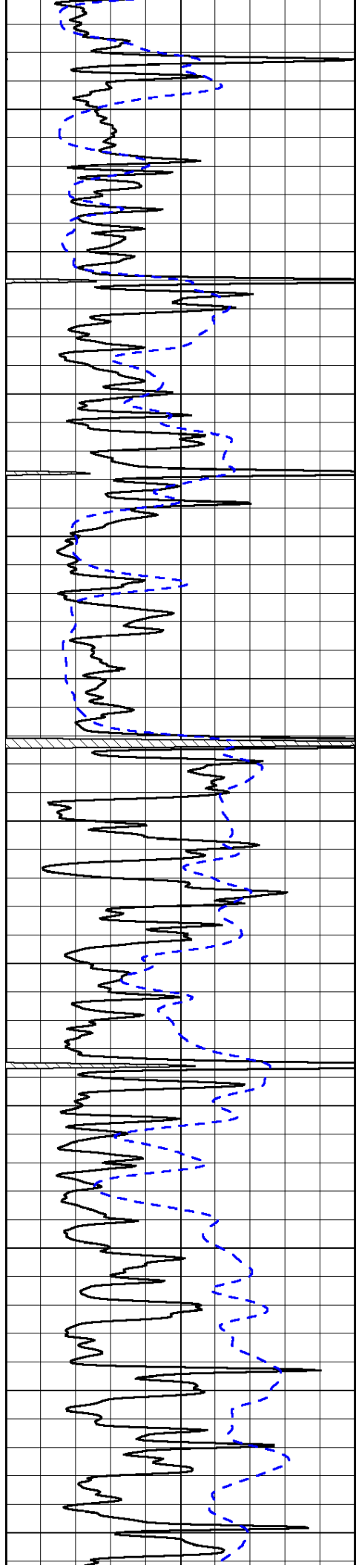


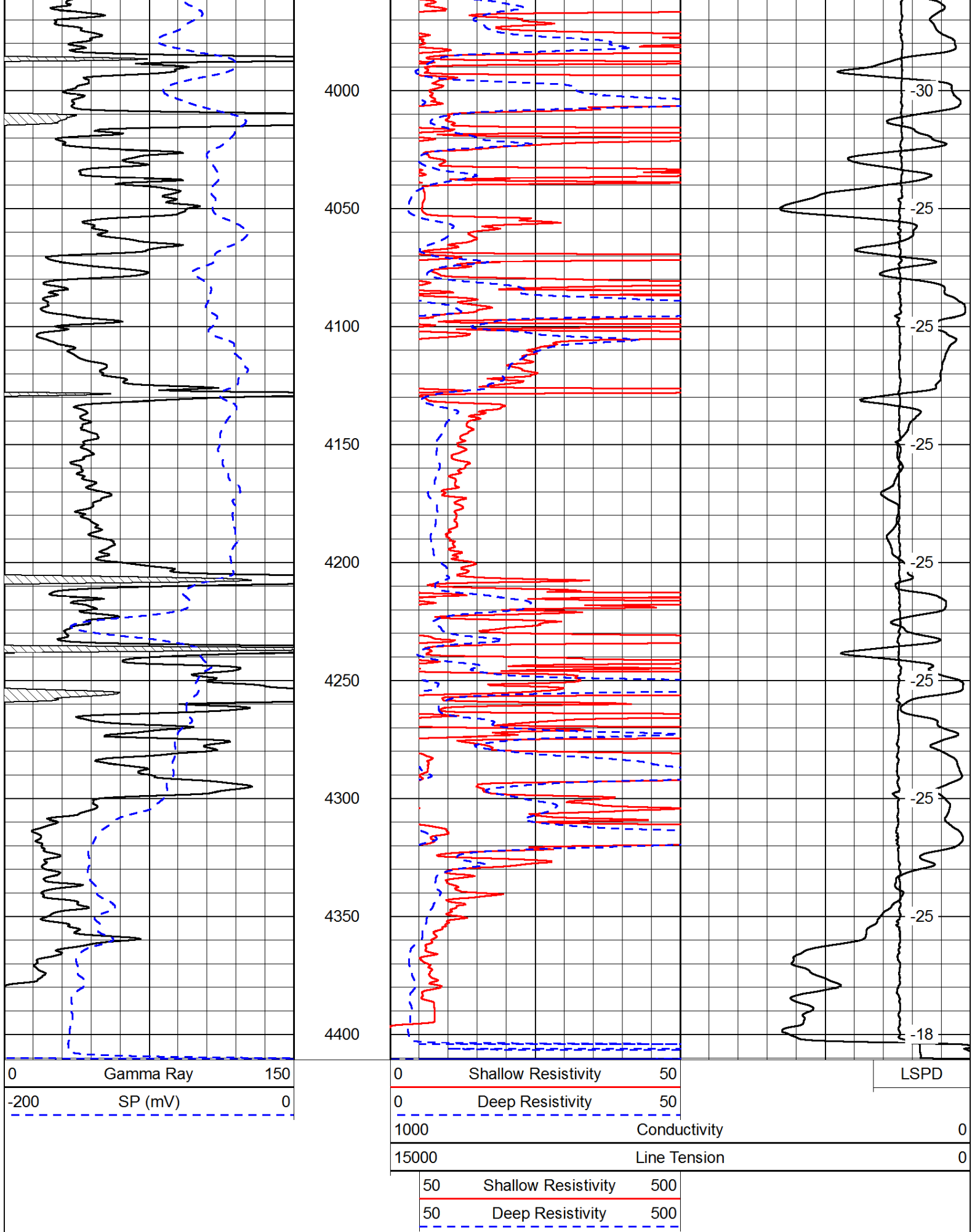










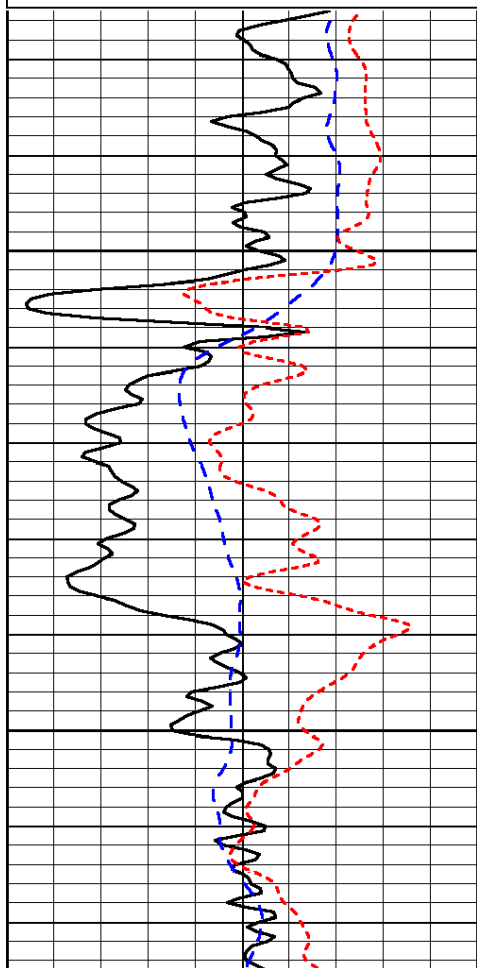


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 Presentation Format: dil
 Dataset Creation: Thu Mar 07 03:23:42 2013
 Charted by: Depth in Feet scaled 1:240

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-200	SP (mV)	0
-160	RxoRt	40

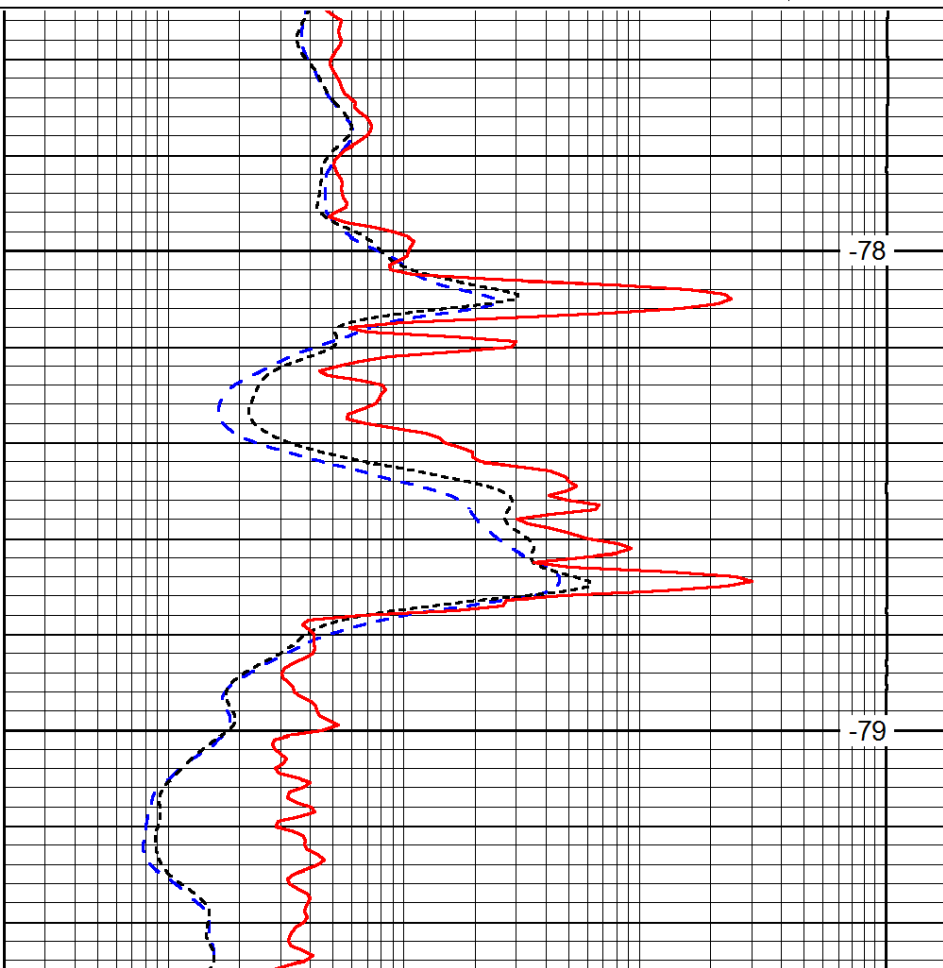
0.2	Deep Resistivity	2000
0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
15000	Line Tension	0

LSPD



1550

1600



-78

-79

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

0.2	Deep Resistivity	2000
0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
15000	Line Tension	0

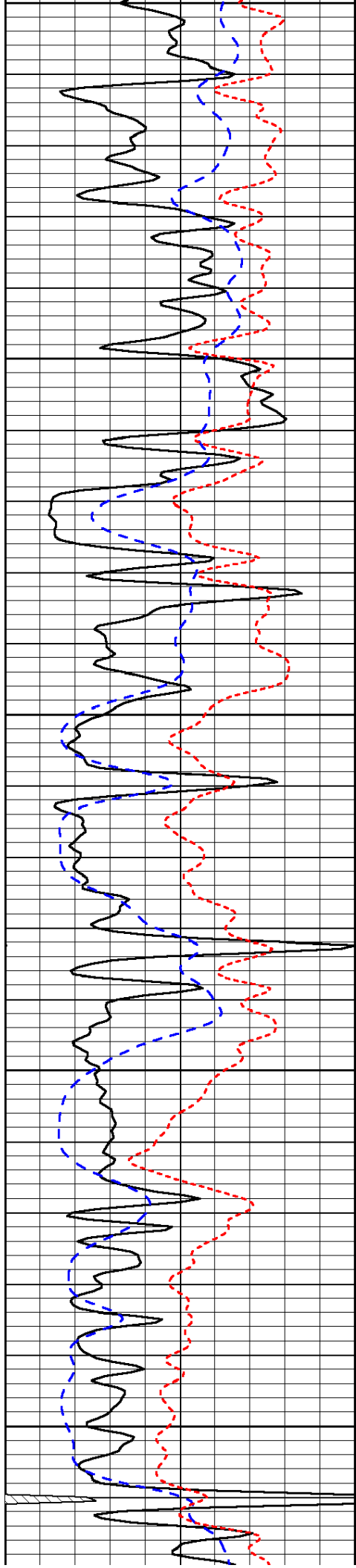
LSPD

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0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
15000	Line Tension	0

LSPD



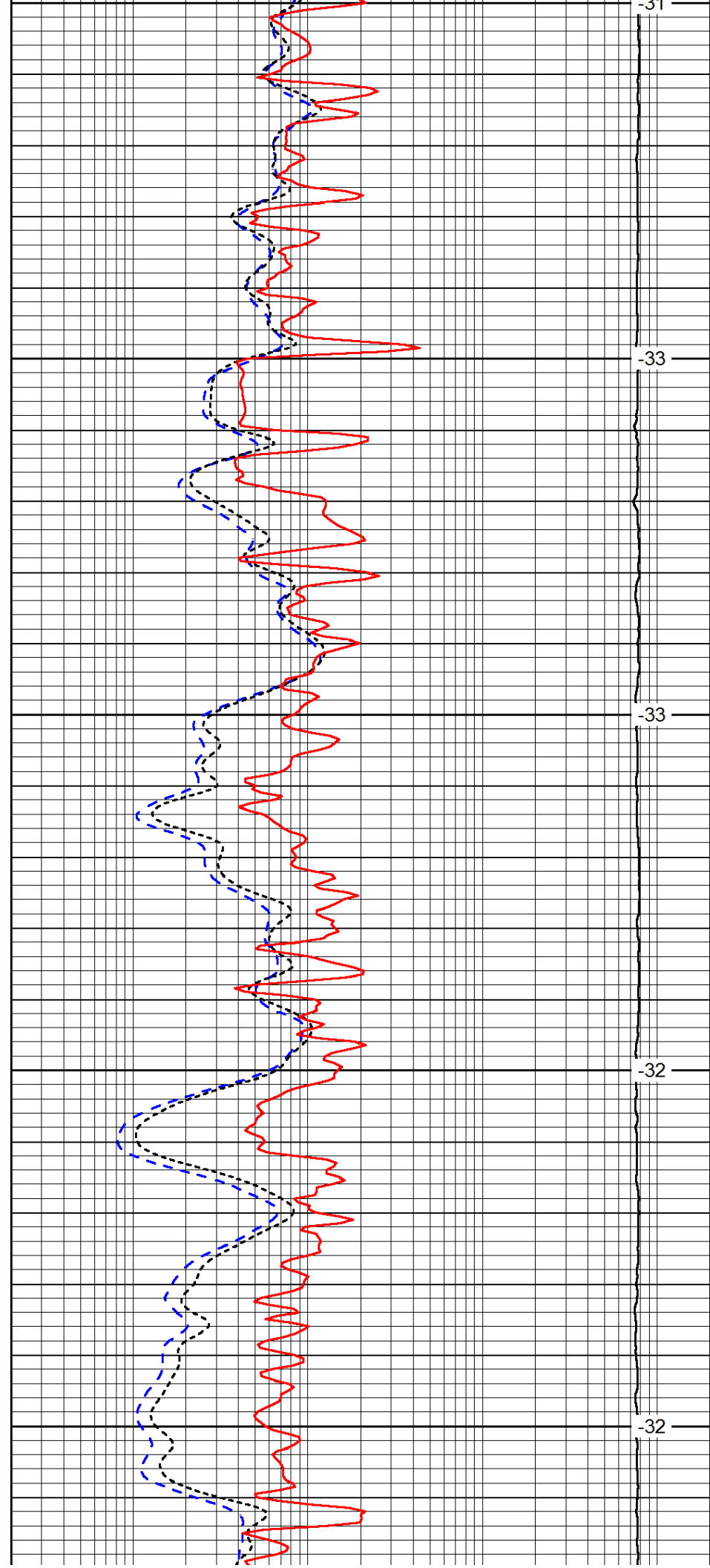
3300

3350

3400

3450

3500



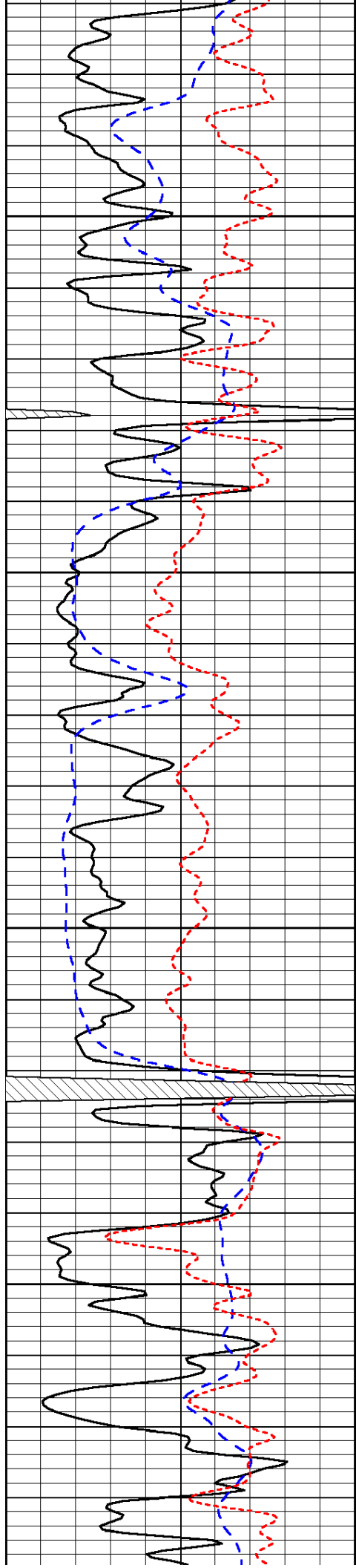
-31

-33

-33

-32

-32

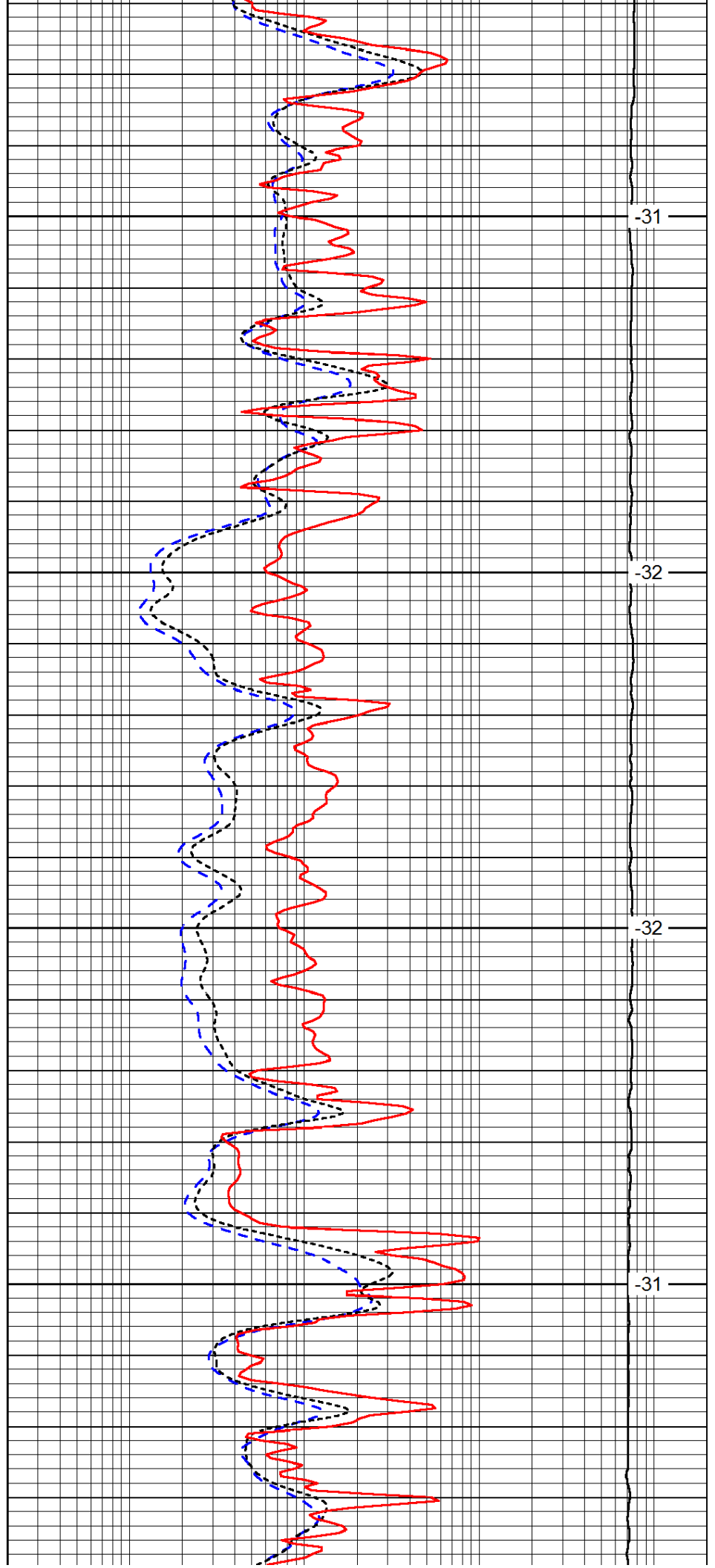


3550

3600

3650

3700

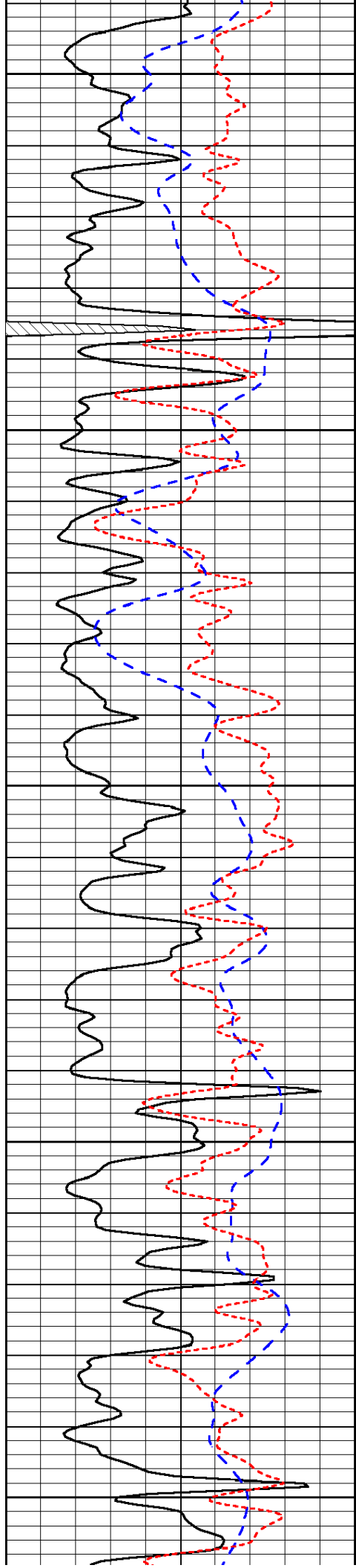


-31

-32

-32

-31



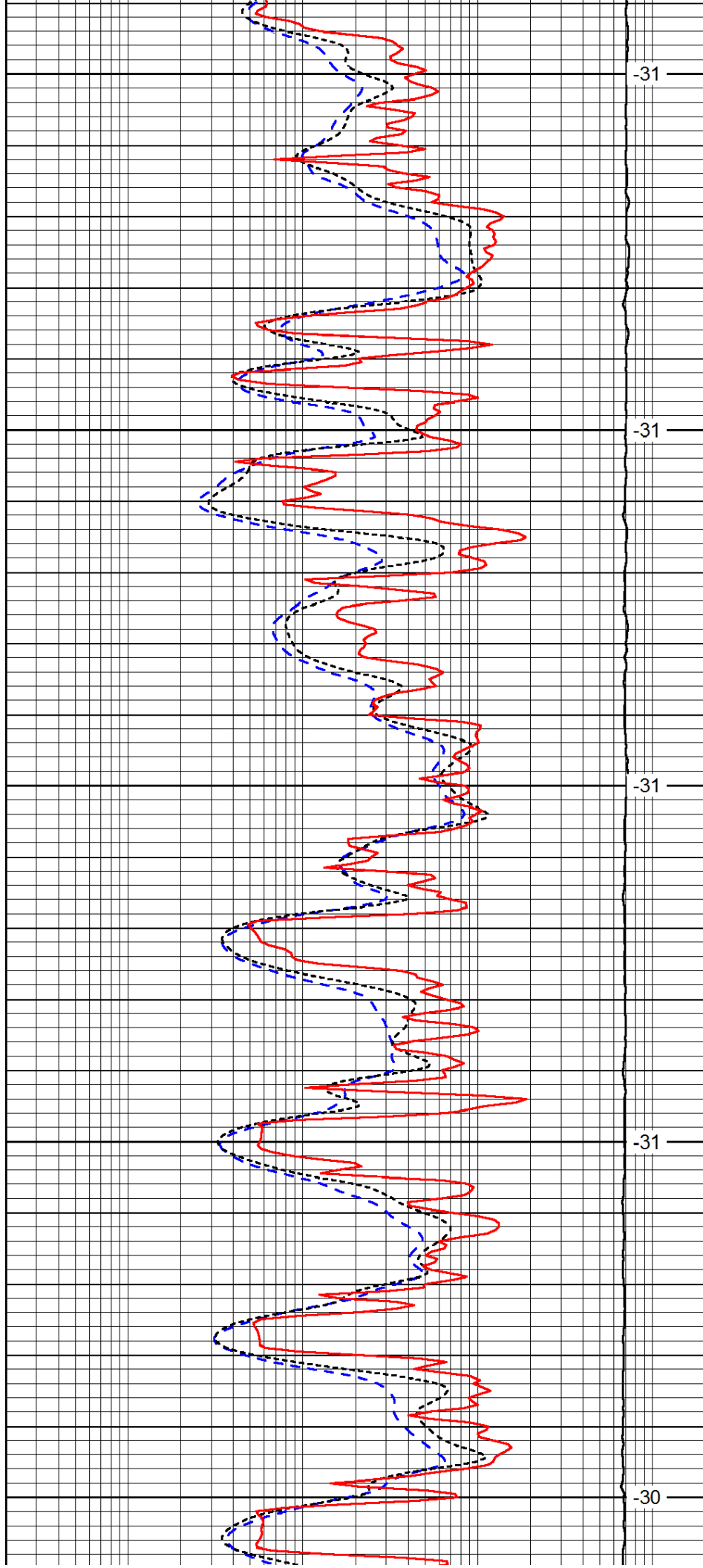
3750

3800

3850

3900

3950



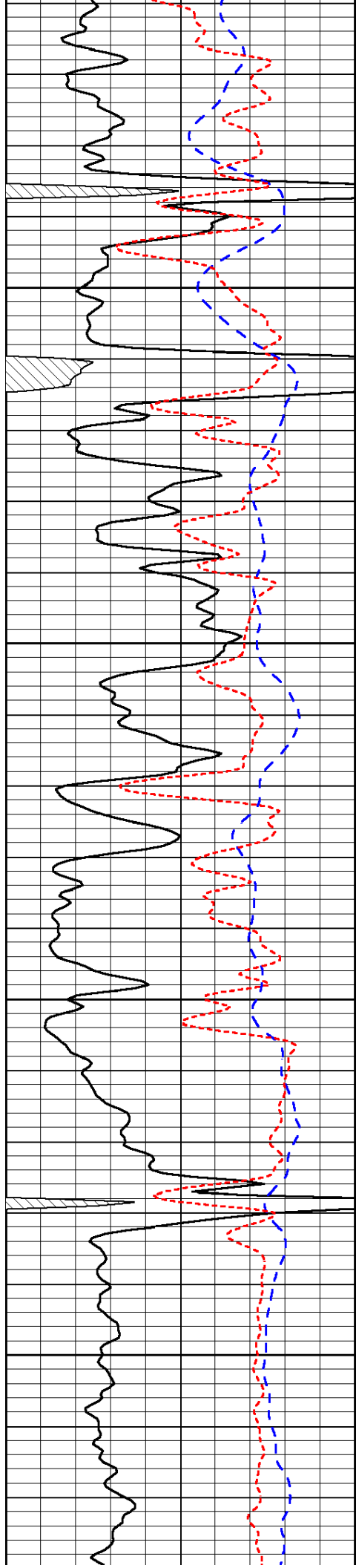
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-31

-31

-31

-30

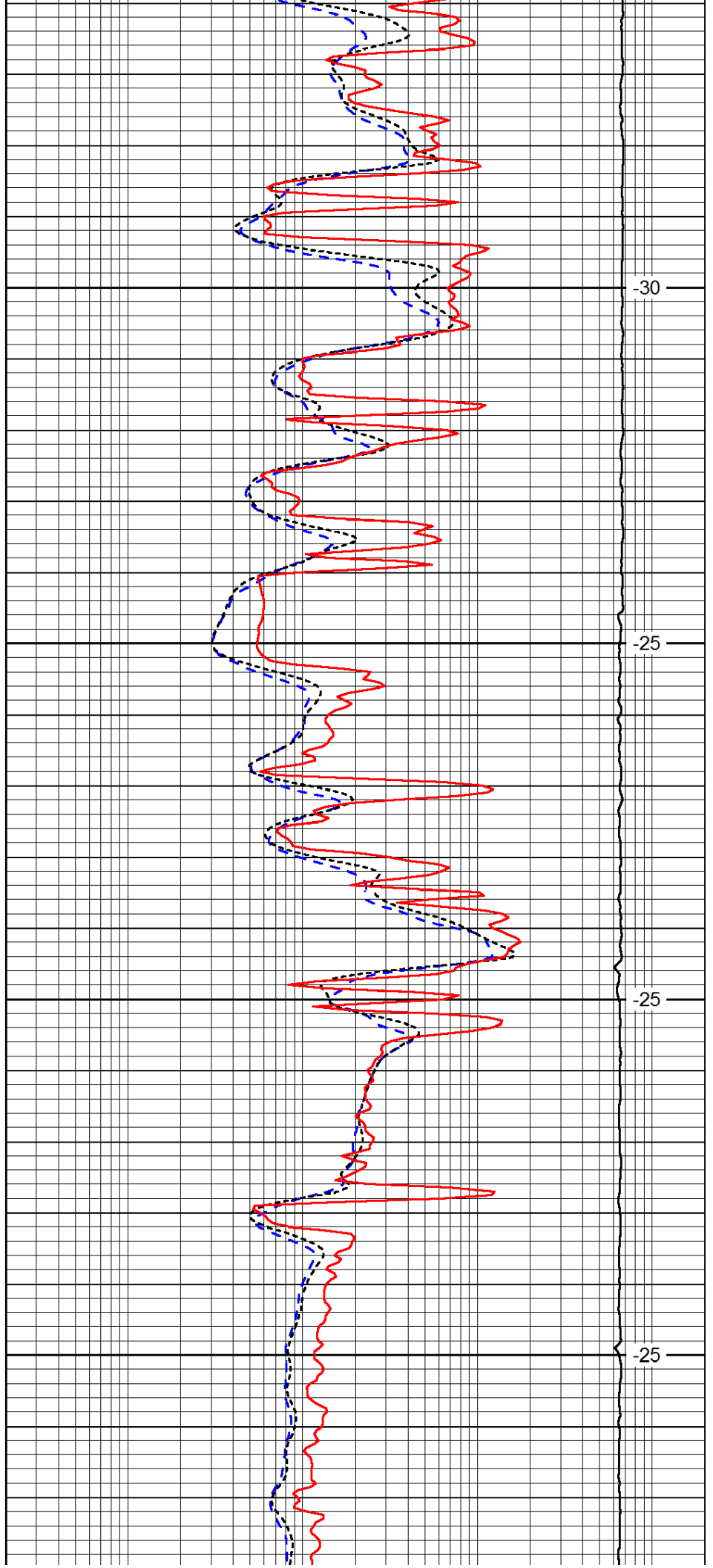


4000

4050

4100

4150

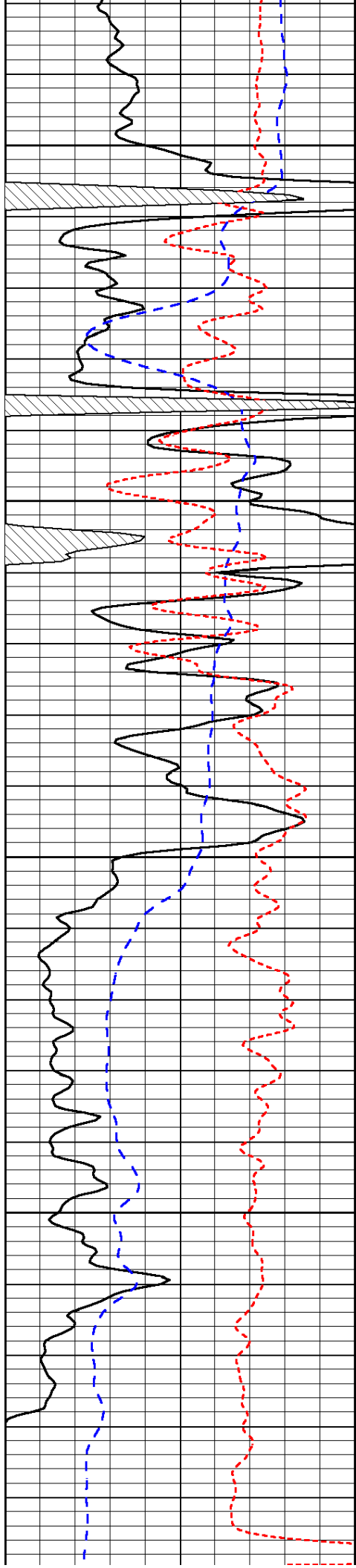


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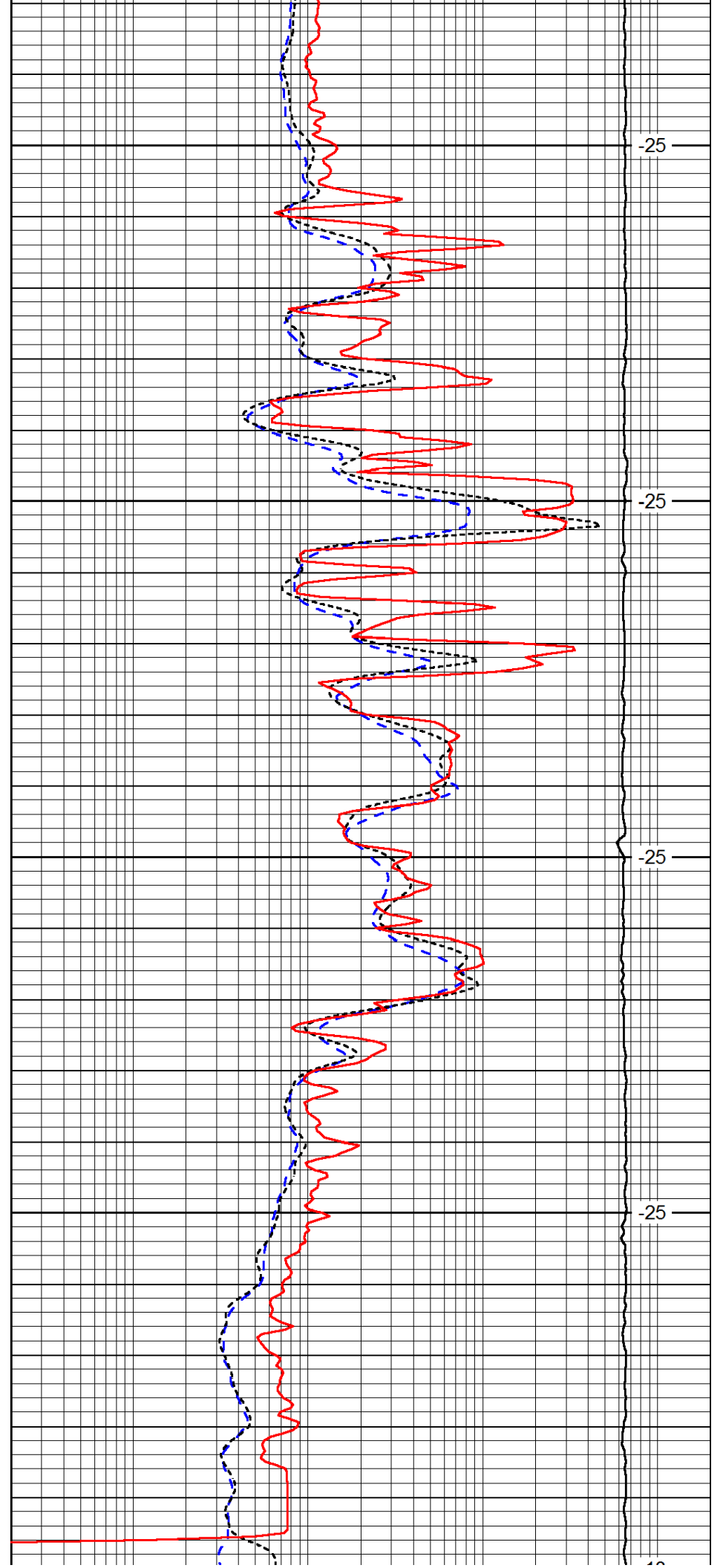
4200

4250

4300

4350

4400



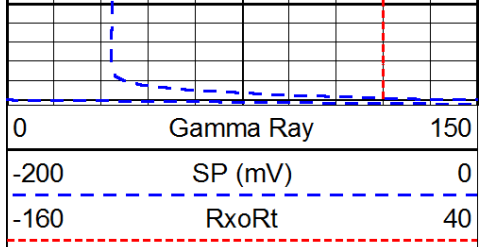
-25

-25

-25

-25

-25



4400

