



Pioneer Energy Services

# Dual Induction Log

15-063-22, 155-00-00

API No.

Company **Cobalt Energy, LLC**

Well **Zerr 'A' #1-18**

Field **Q-B West**

County **Gove** State **Kansas**

Location **1262' FSL & 1403' FEL**

Sec: **18** Twp: **11S** Rge: **26W**

Permanent Datum **Ground Level** Elevation **2657**

Log Measured From **Kelly Bushing** 11 Ft. Above Perm. Datum

Drilling Measured From **Kelly Bushing**

Other Services  
CNL/CDL  
MEL

Elevation  
K.B. 2668  
D.F. 2657  
G.L. 2657

Date **11/29/2013**

Run Number **One**

Depth Driller **4615**

Depth Logger **4620**

Bottom Logged Interval **4619**

Top Log Interval **250**

Casing Driller **8.625 @ 275**

Casing Logger **275**

Bit Size **7.875**

Type Fluid in Hole **Chemical**

Salinity, ppm CL **2,900**

Density / Viscosity **9.4 64**

pH / Fluid Loss **10.0 6.0**

Source of Sample **Flowline**

Rm @ Meas. Temp **.68 @ 42**

Rmf @ Meas. Temp **.51 @ 42**

Rmc @ Meas. Temp **.92 @ 42**

Source of Rmf / Rmc **Charts**

Rm @ BHT **.23 @ 122**

Operating Rig Time **4 Hours**

Max Rec. Temp. F **122**

Equipment Number **17**

Location **Hays**

Recorded By **C. Desai**

Witnessed By **Bob Stolzie**

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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

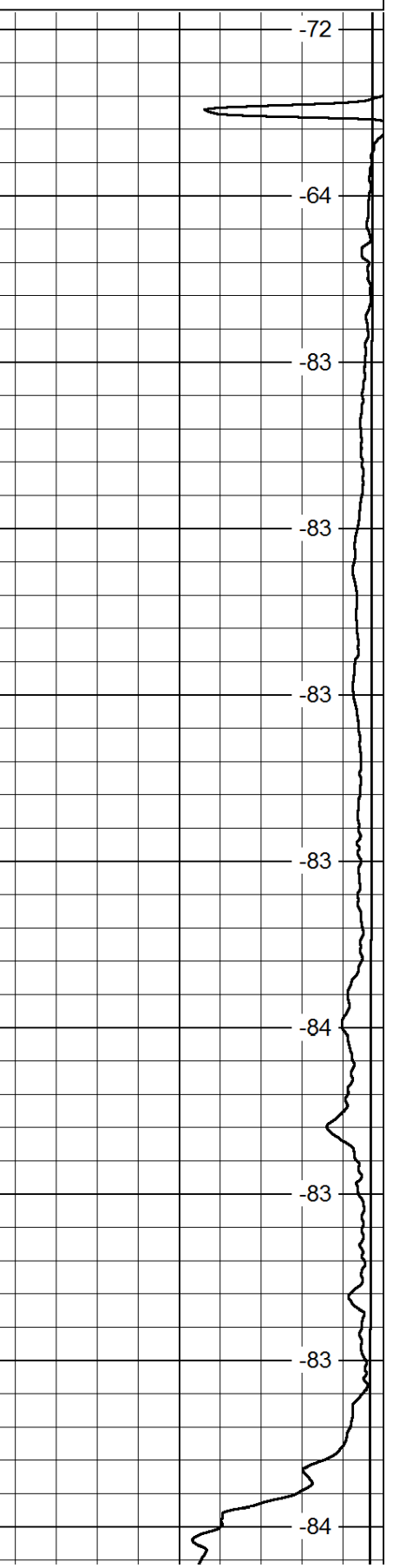
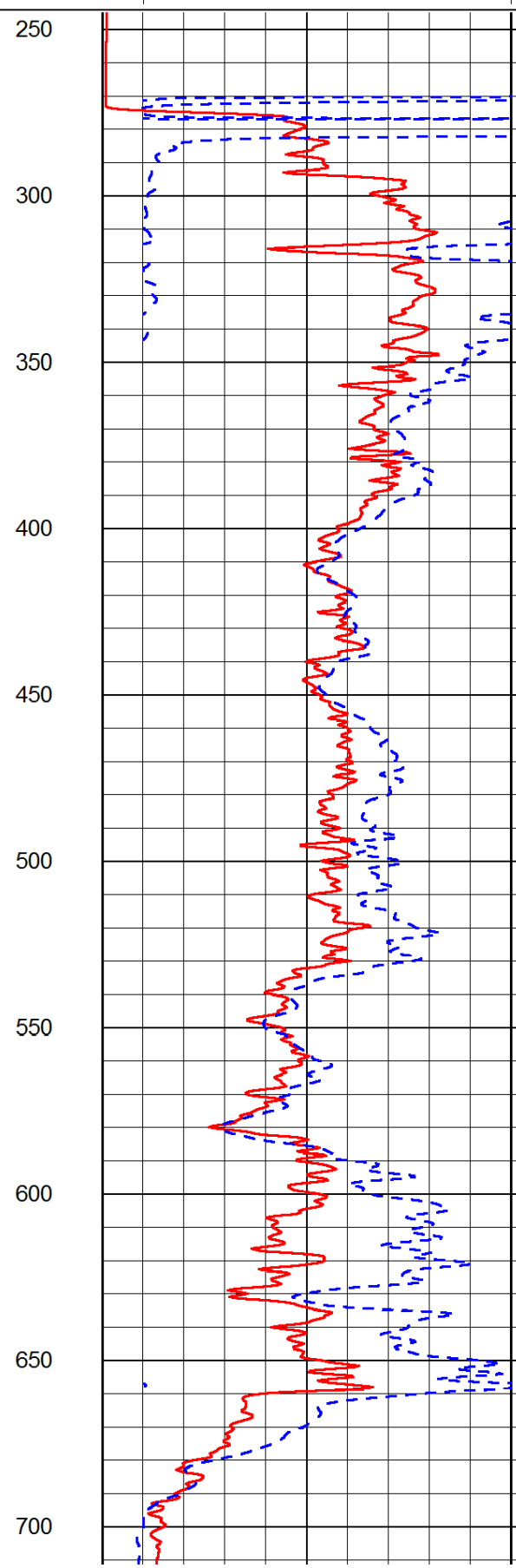
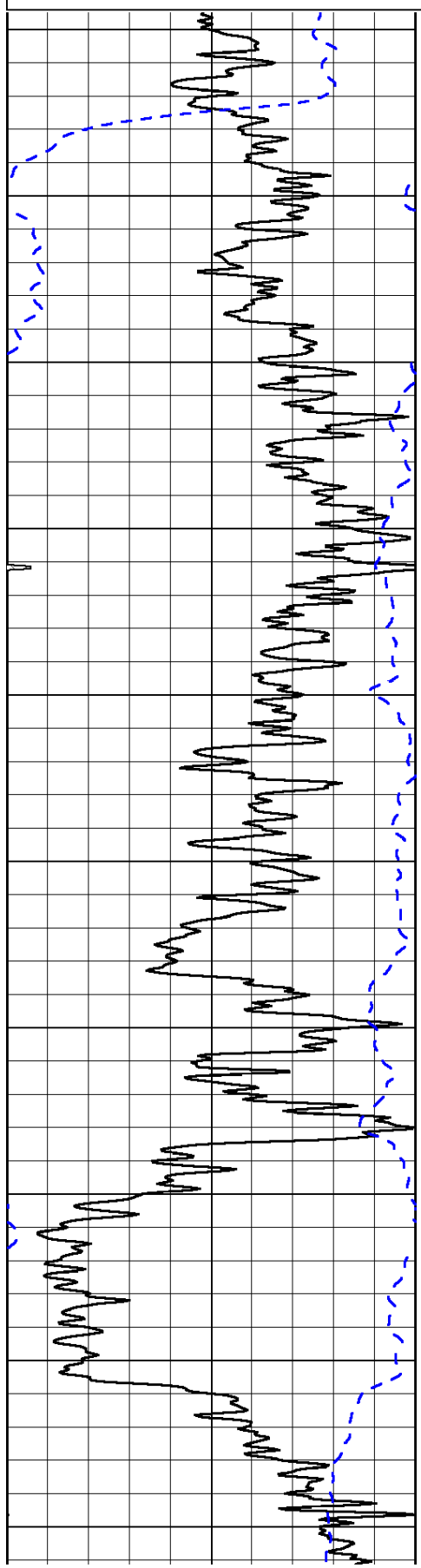
Quinter KS, N to Stop Sign,  
1 N to BB Rd, 1/4 W, N Into

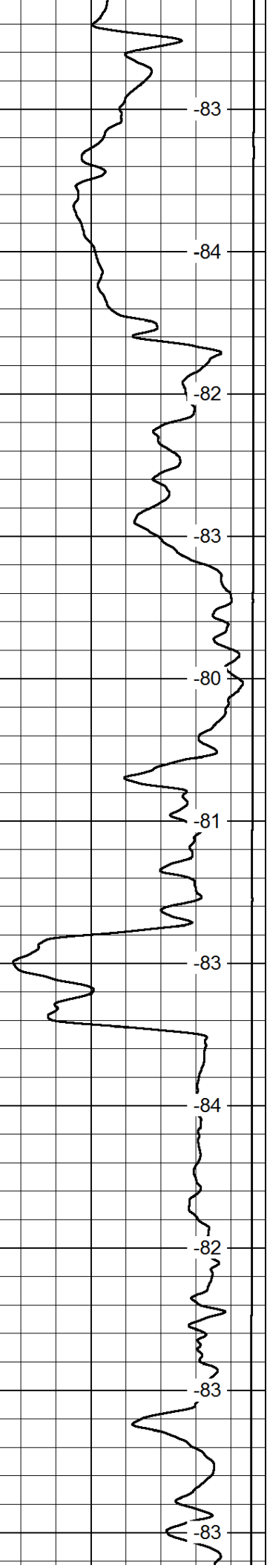
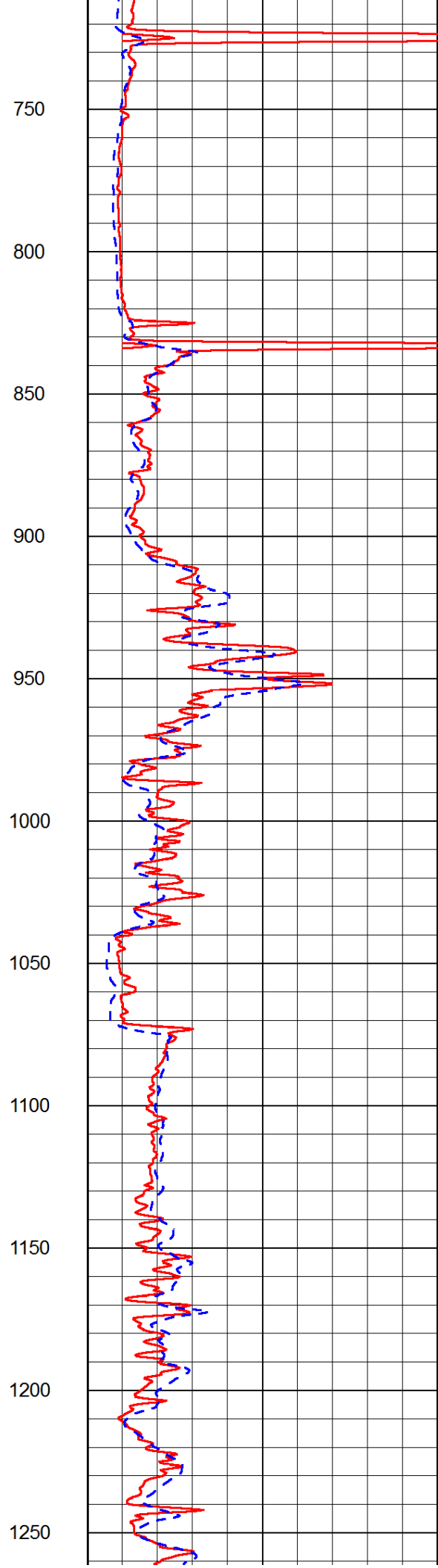
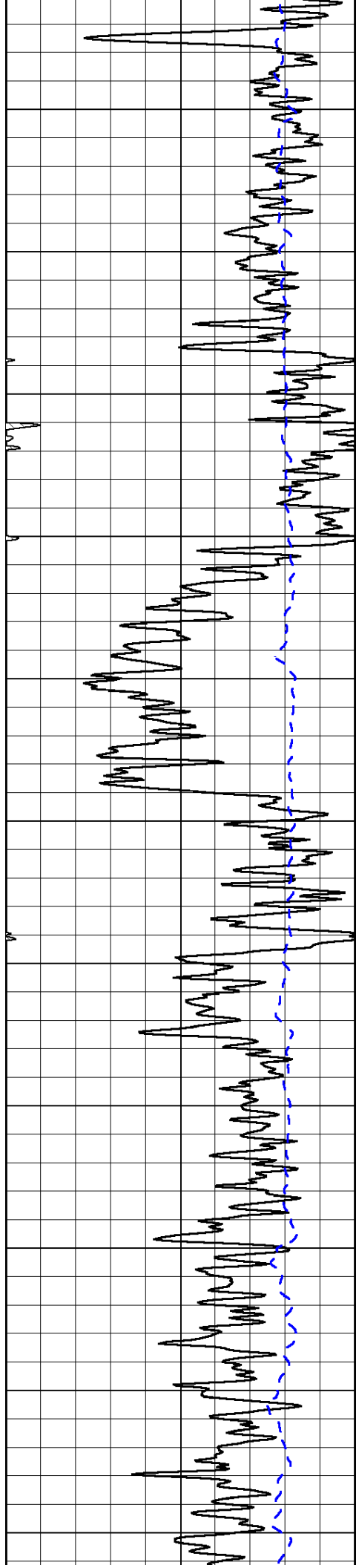
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Charted by: Depth in Feet scaled 1:600

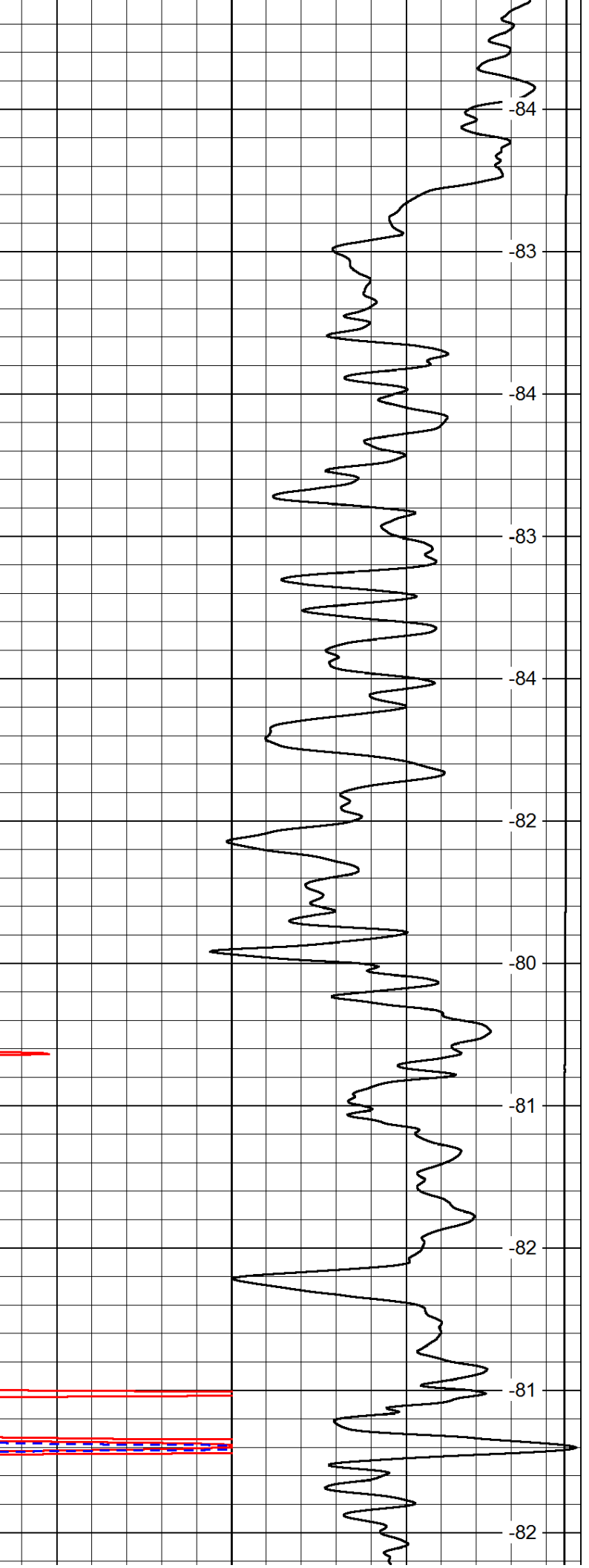
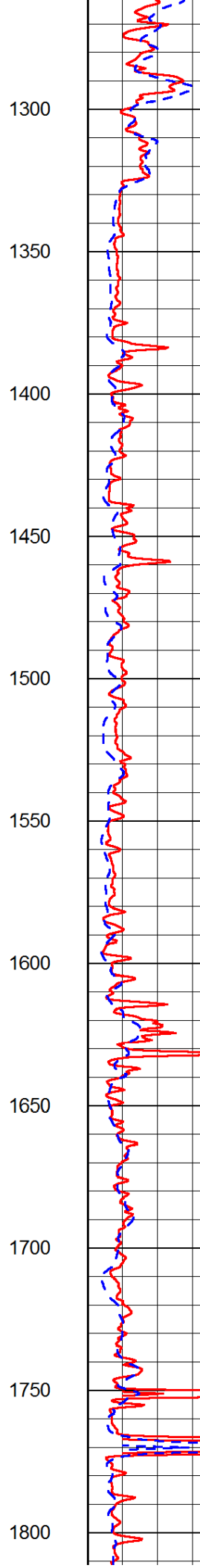
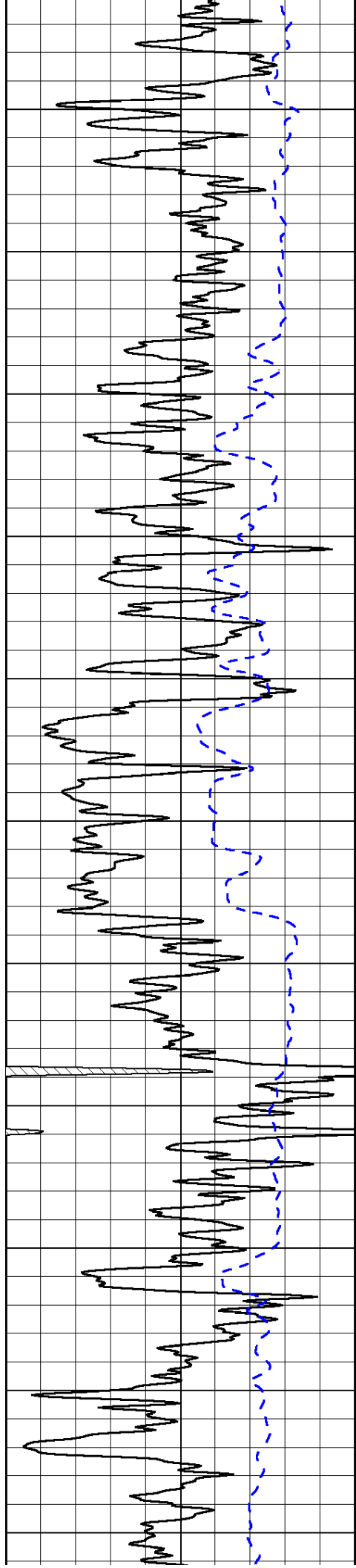
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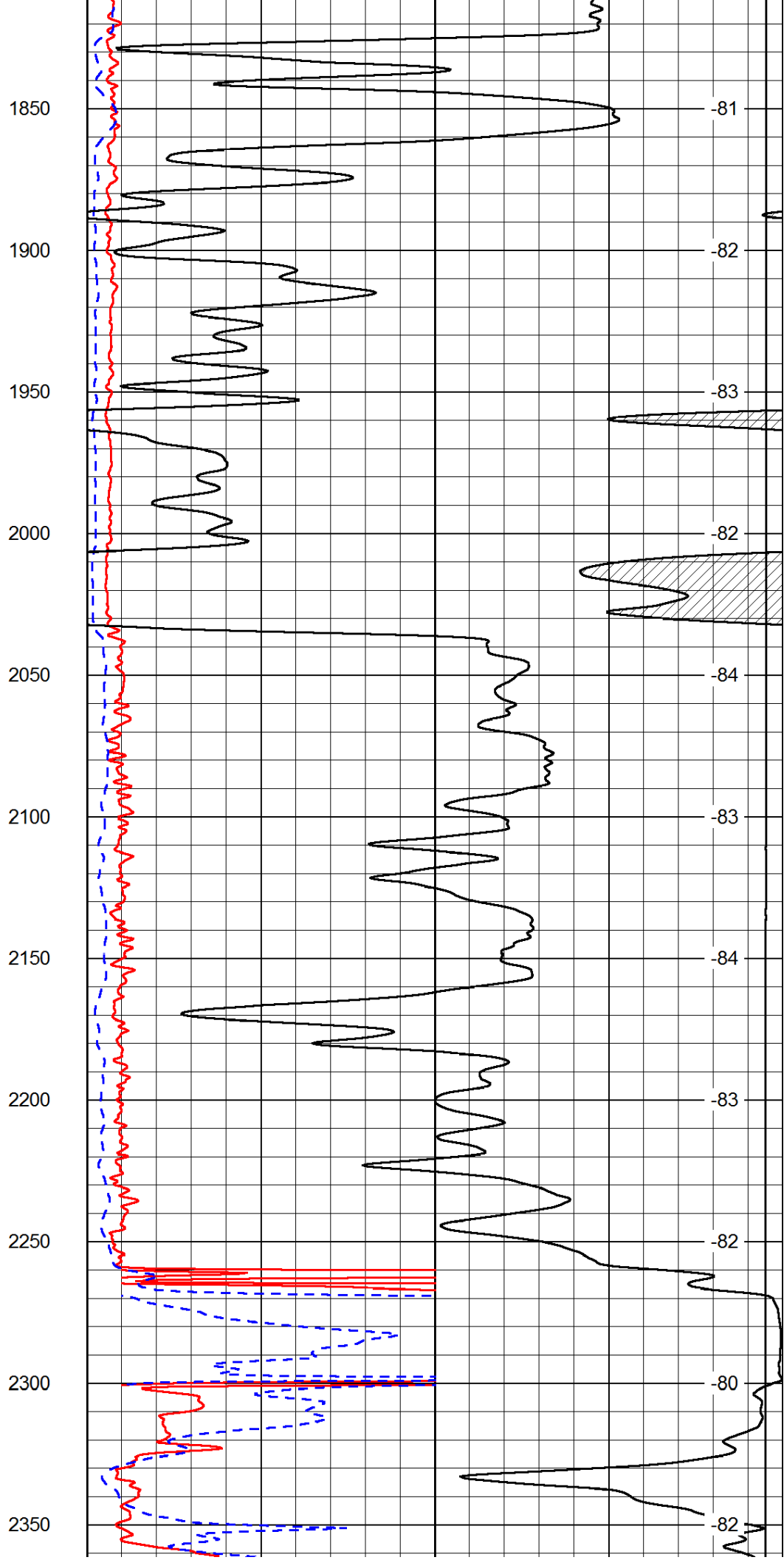
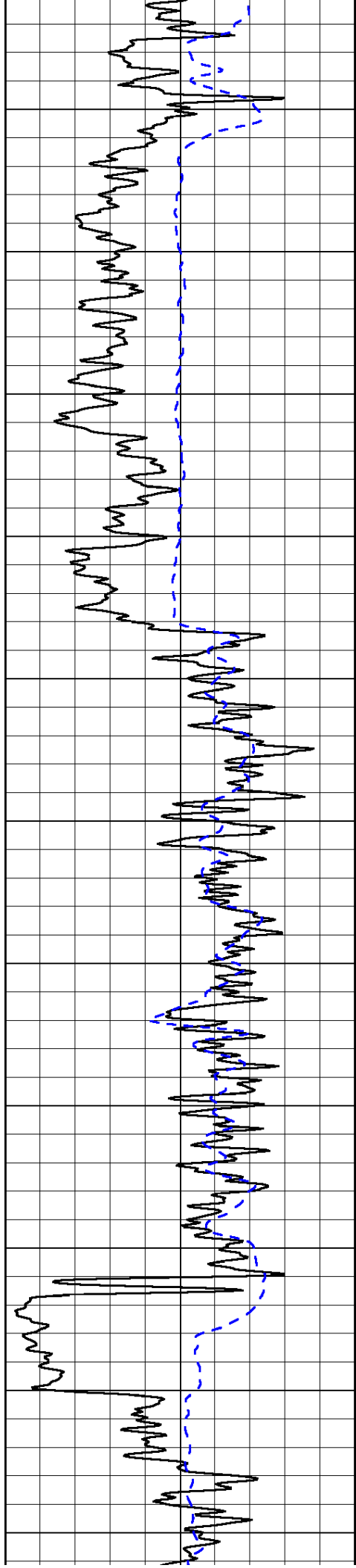
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0	Deep Resistivity	50
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15000	Line Tension	0
50	Shallow Resistivity	500
50	Deep Resistivity	500

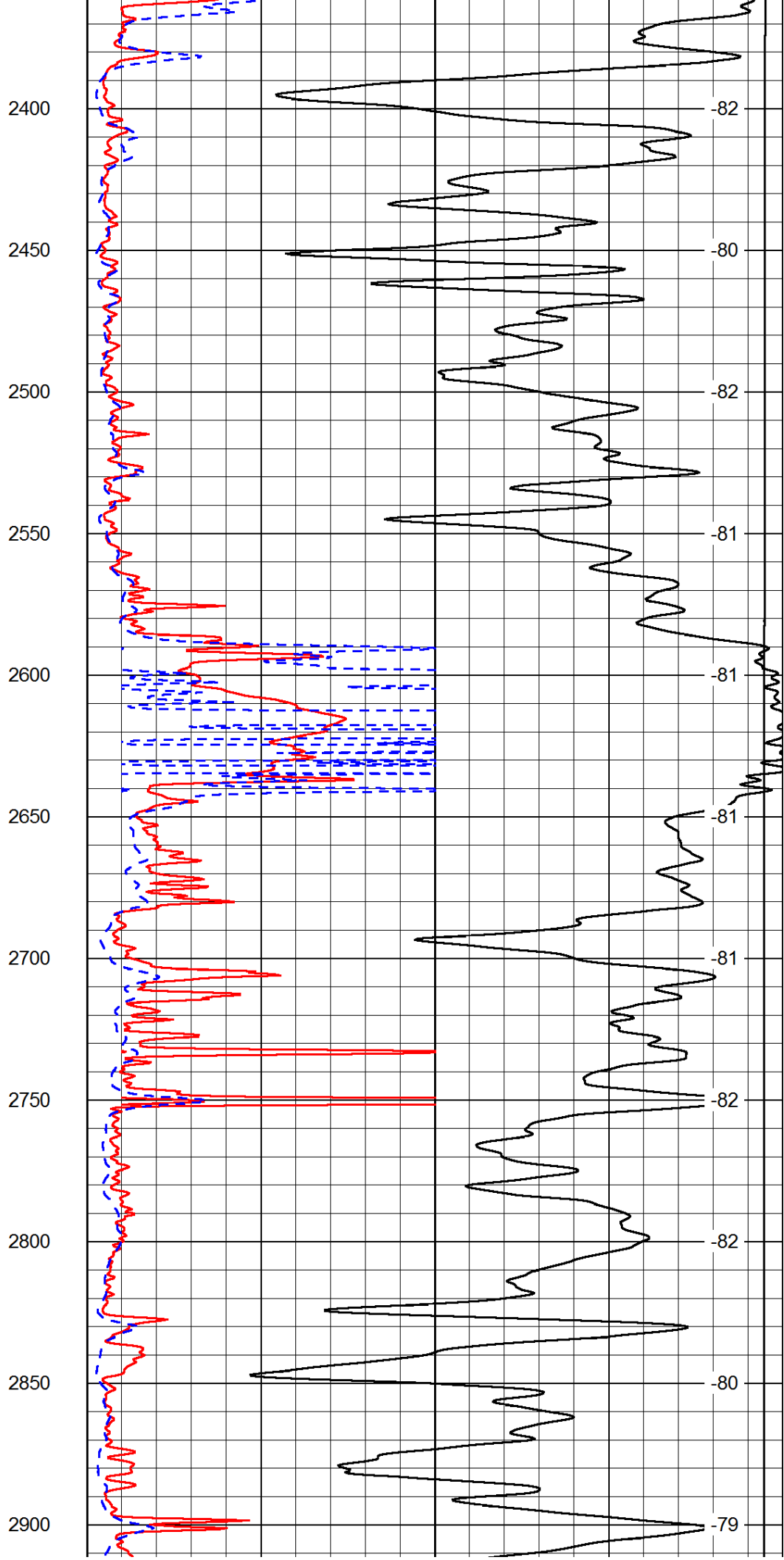
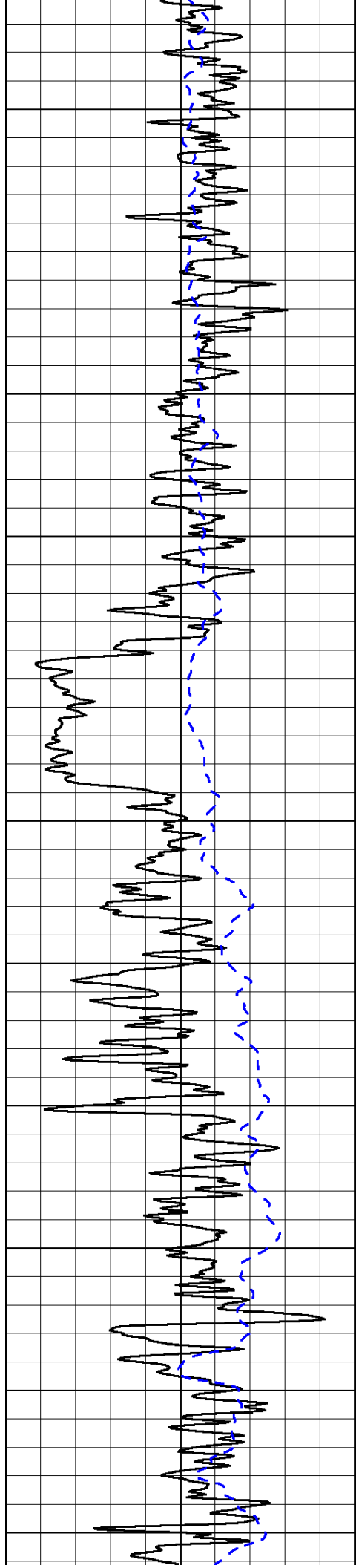
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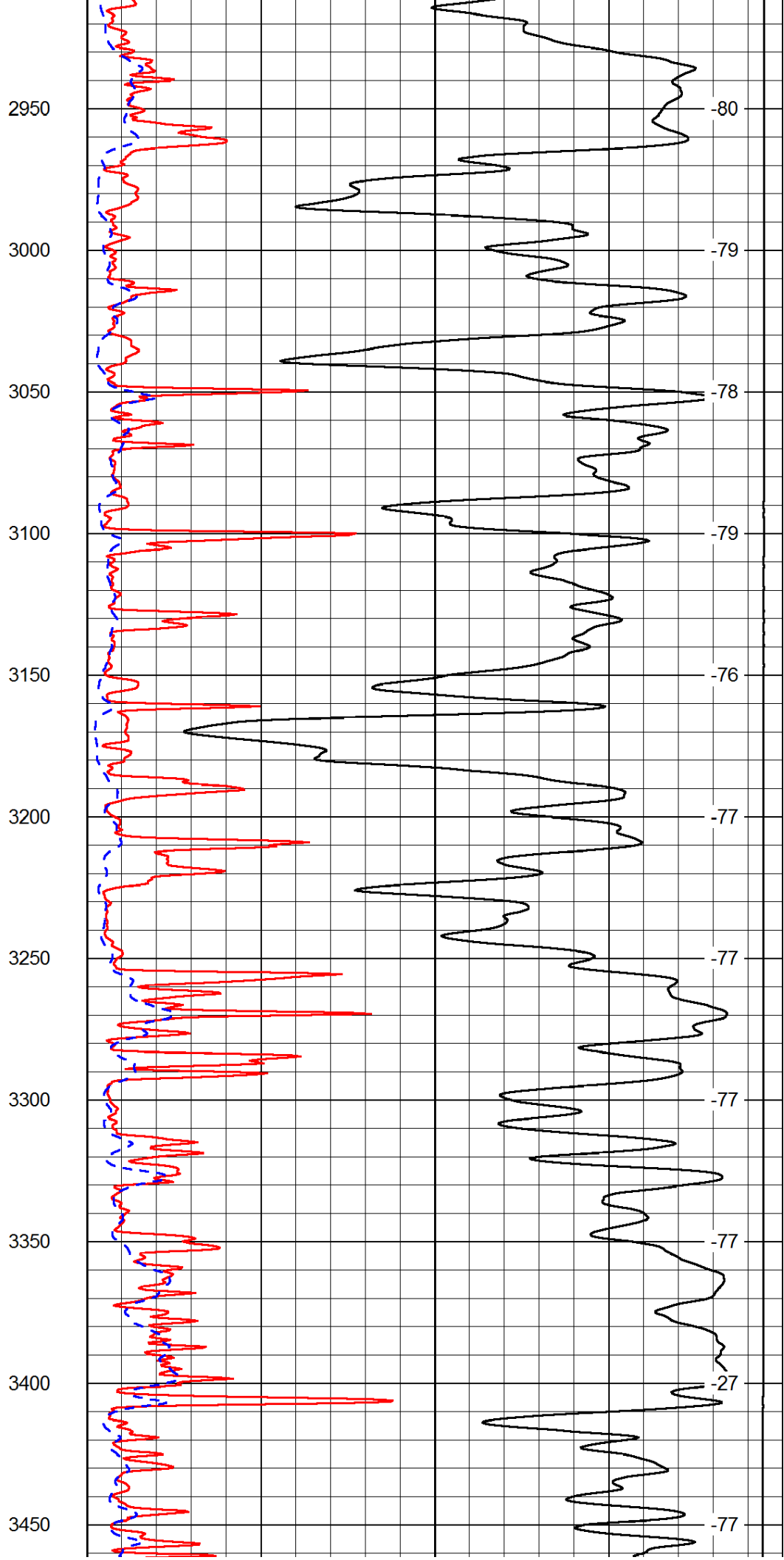
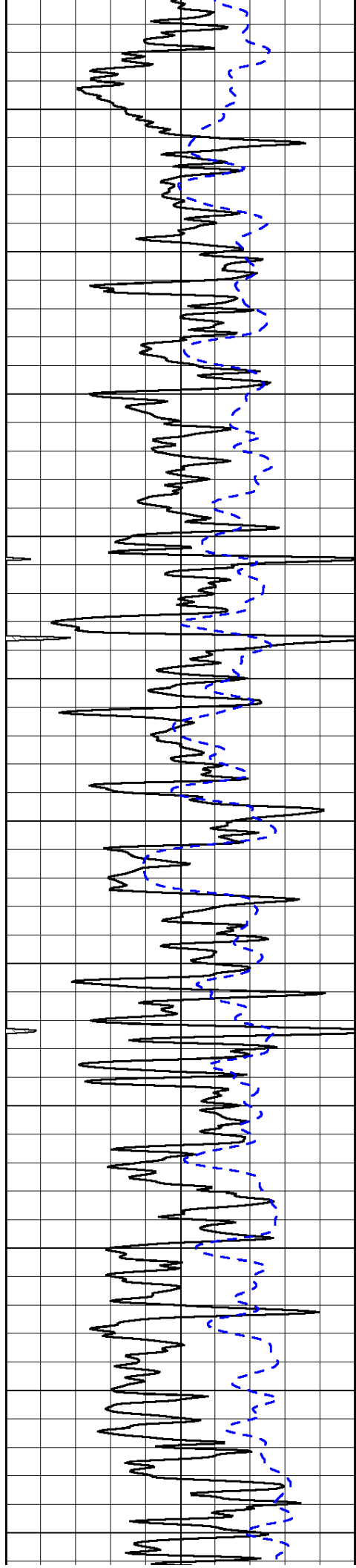


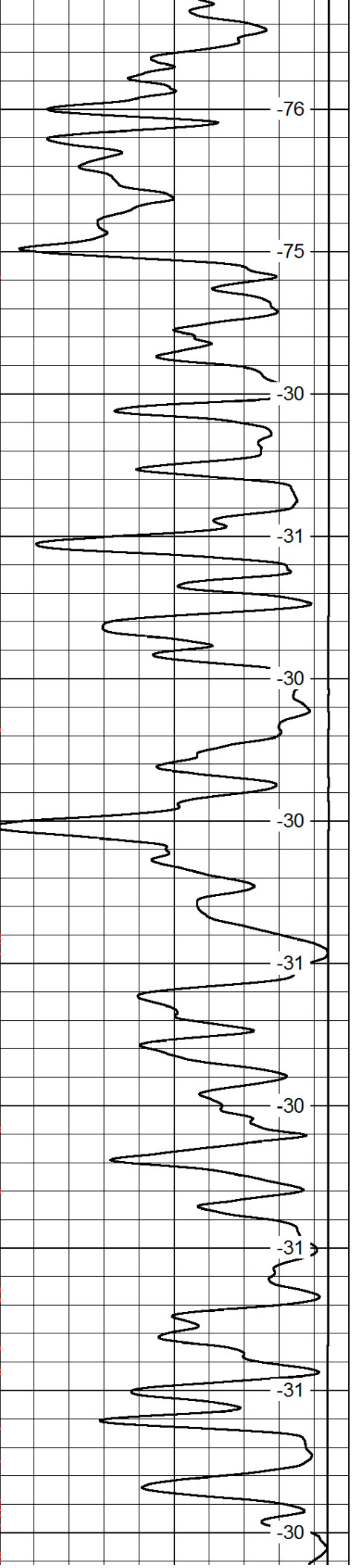
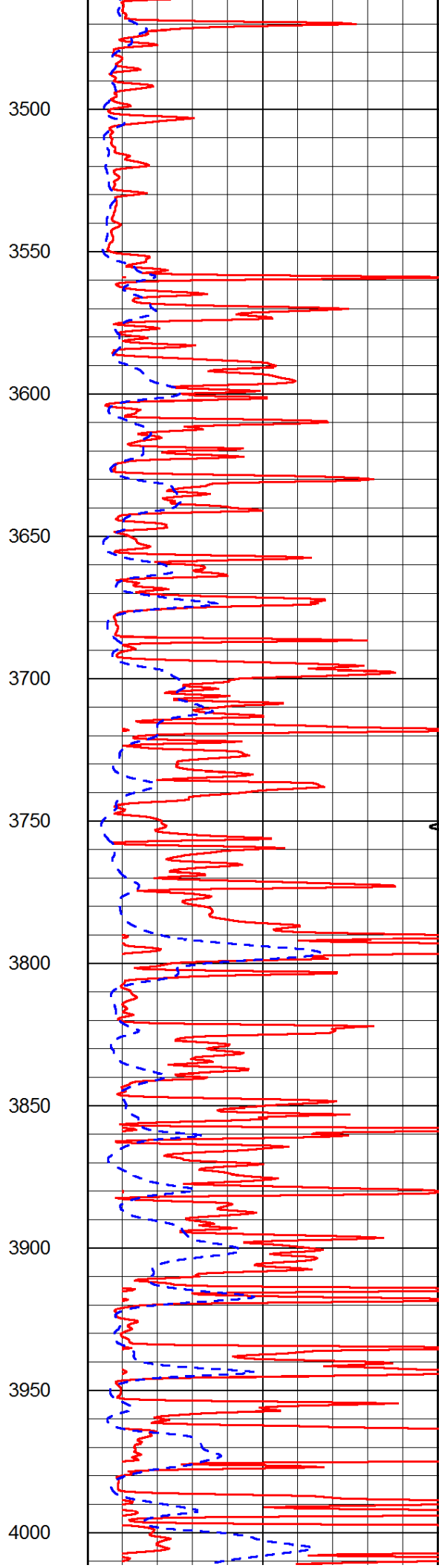
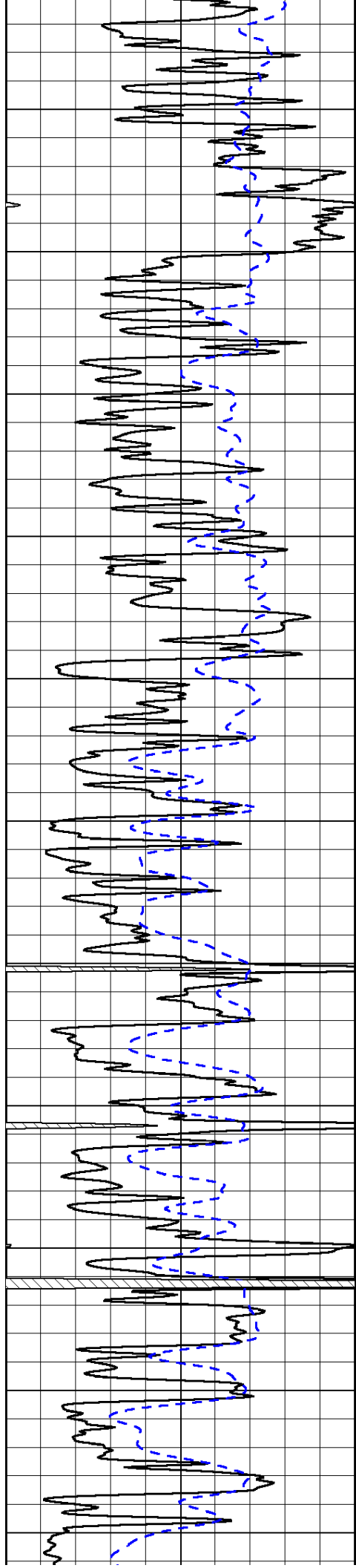


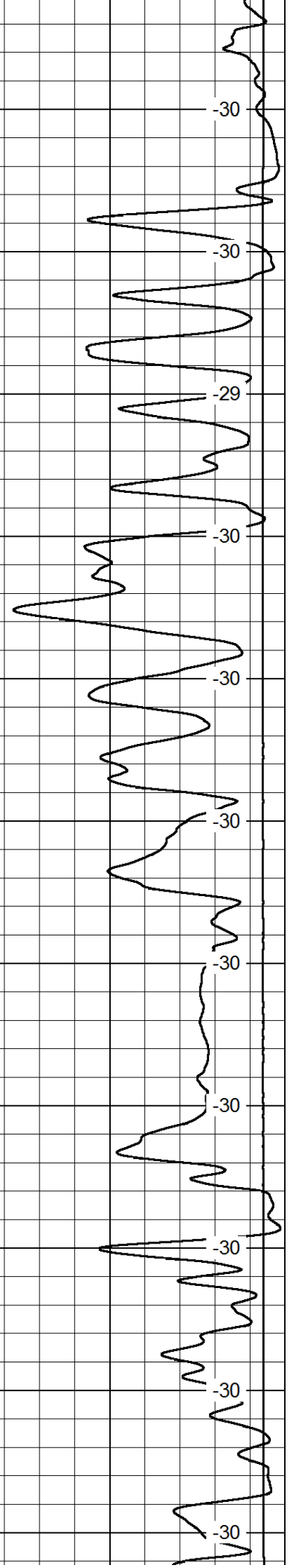
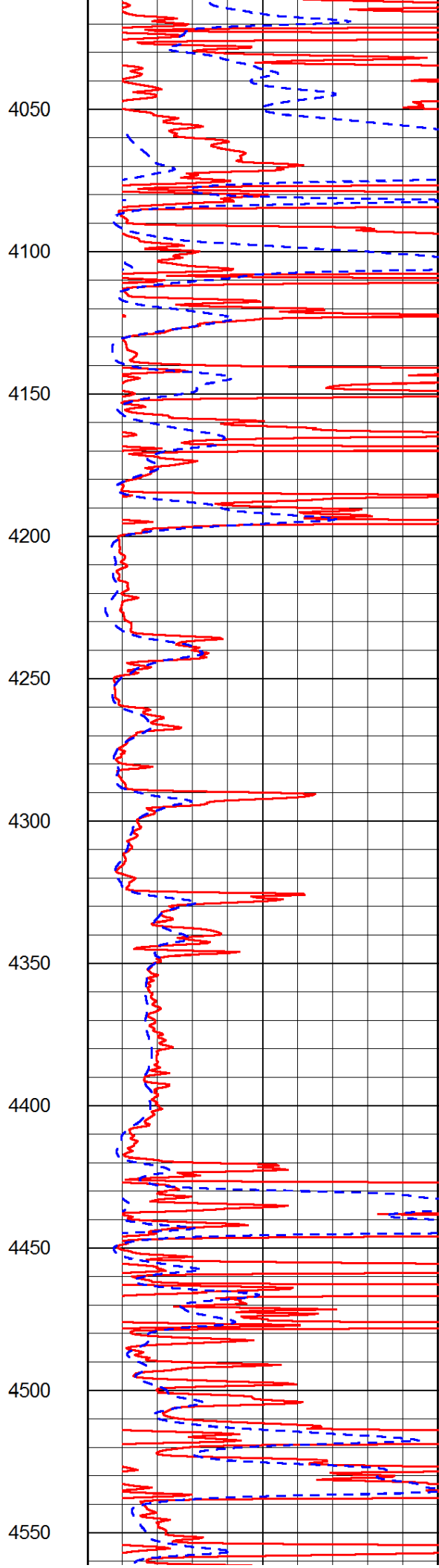
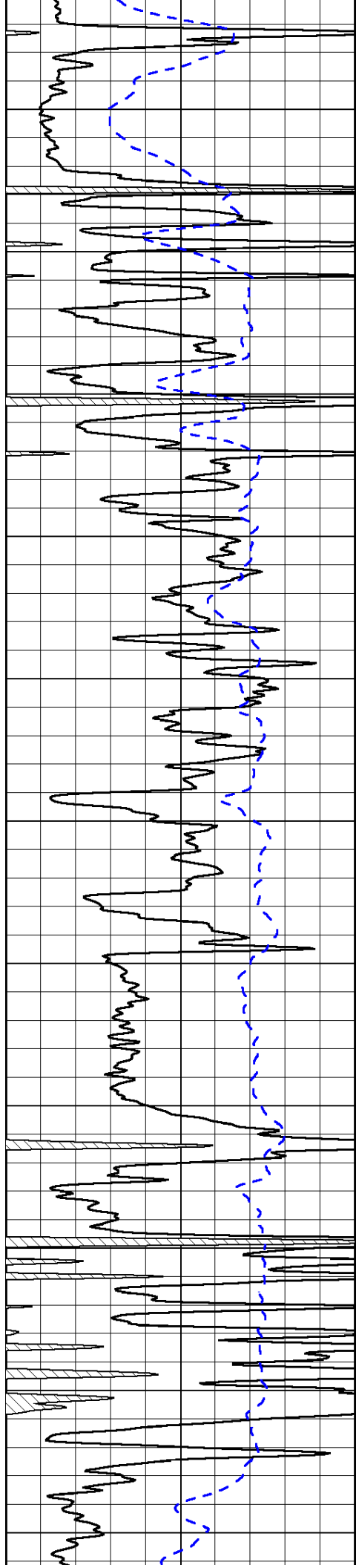


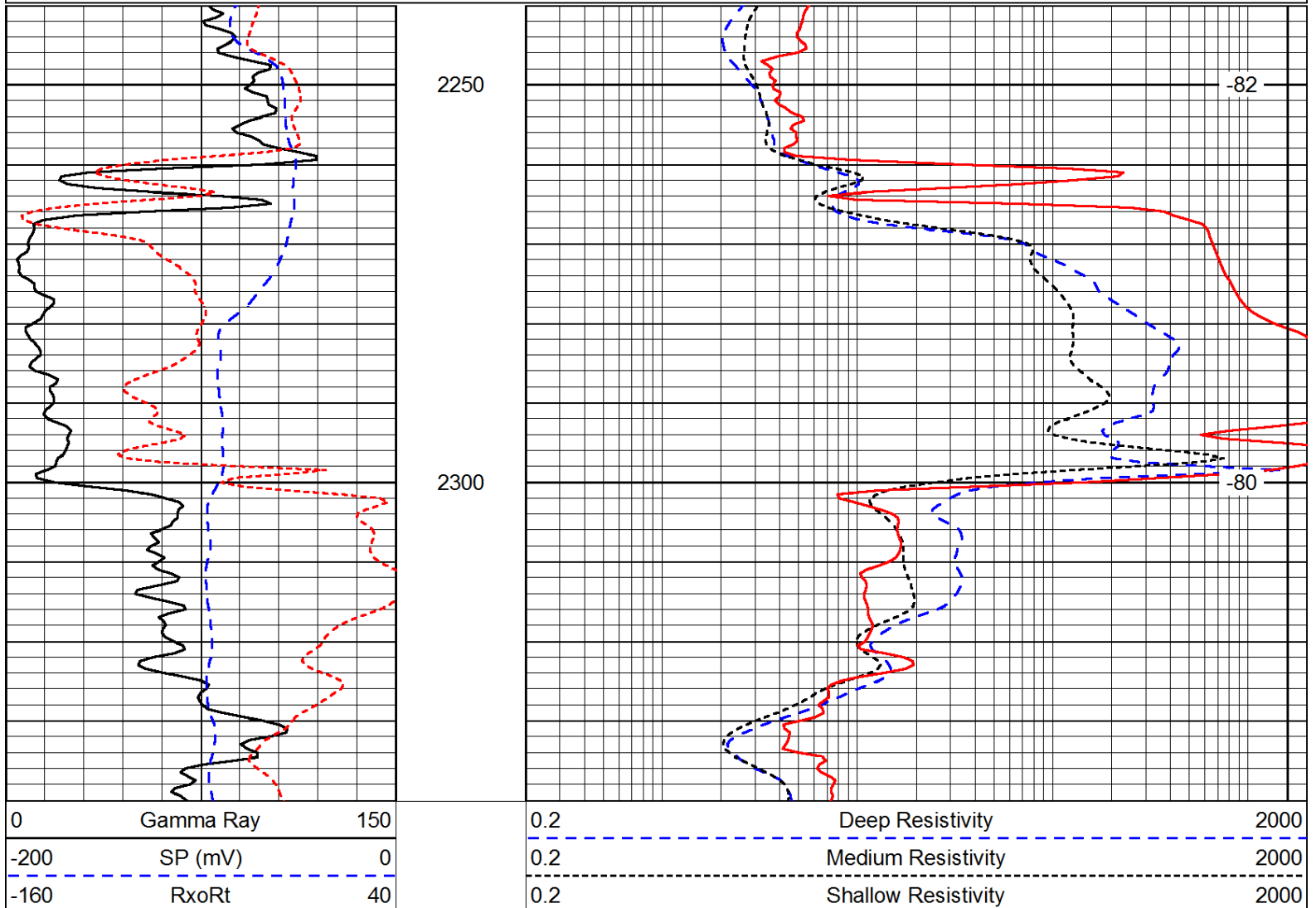
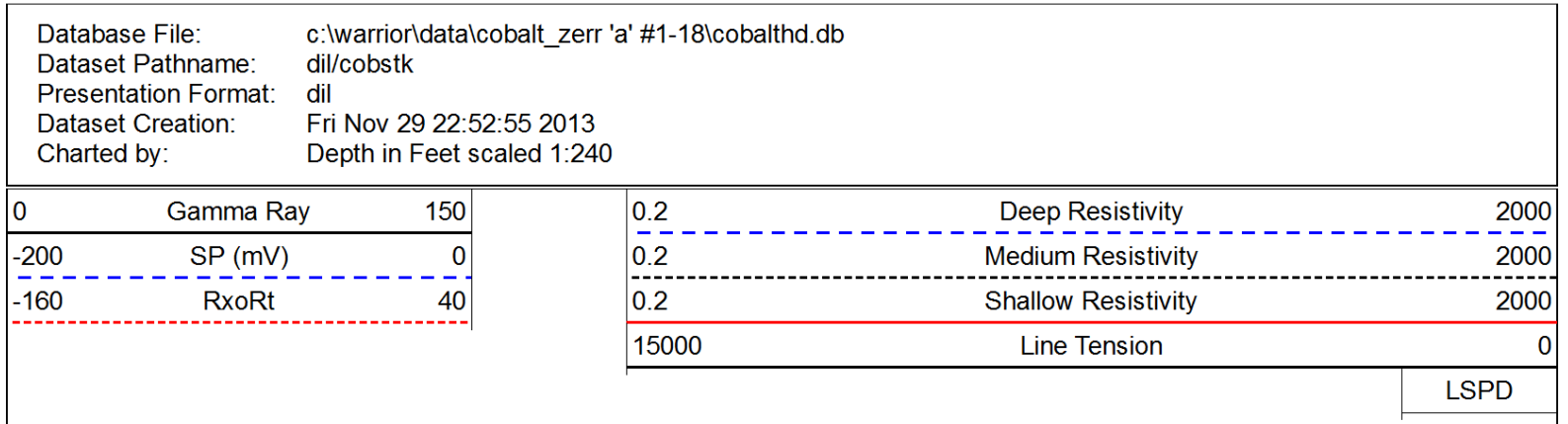
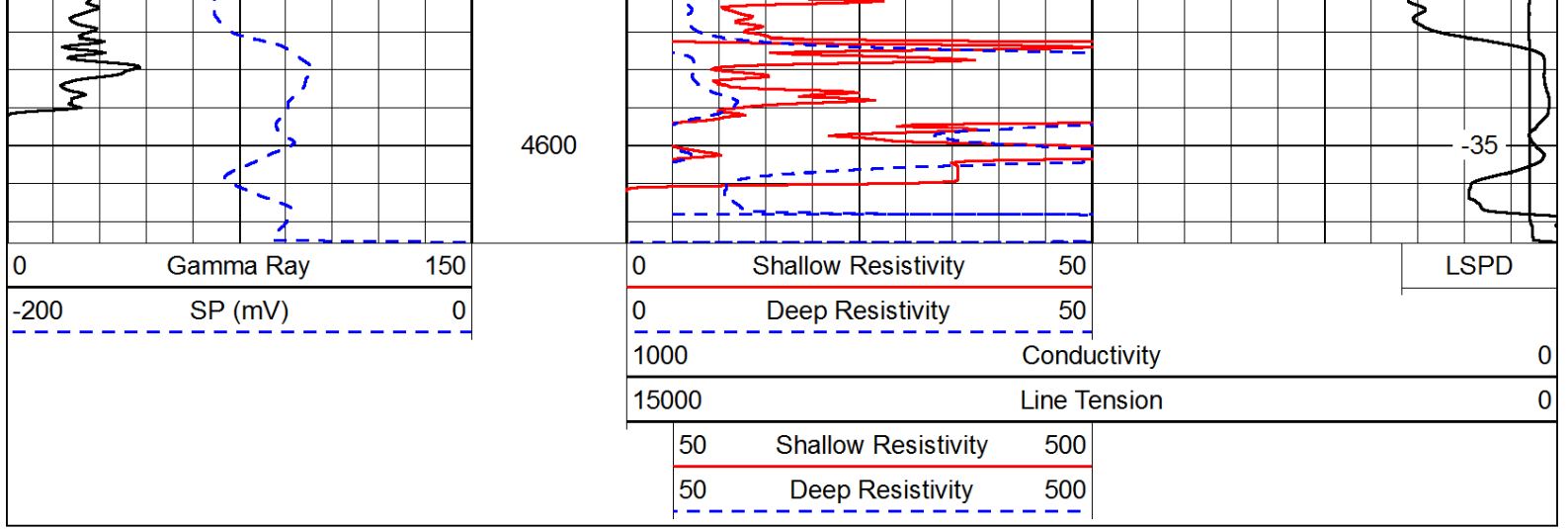












15000

Line Tension

0

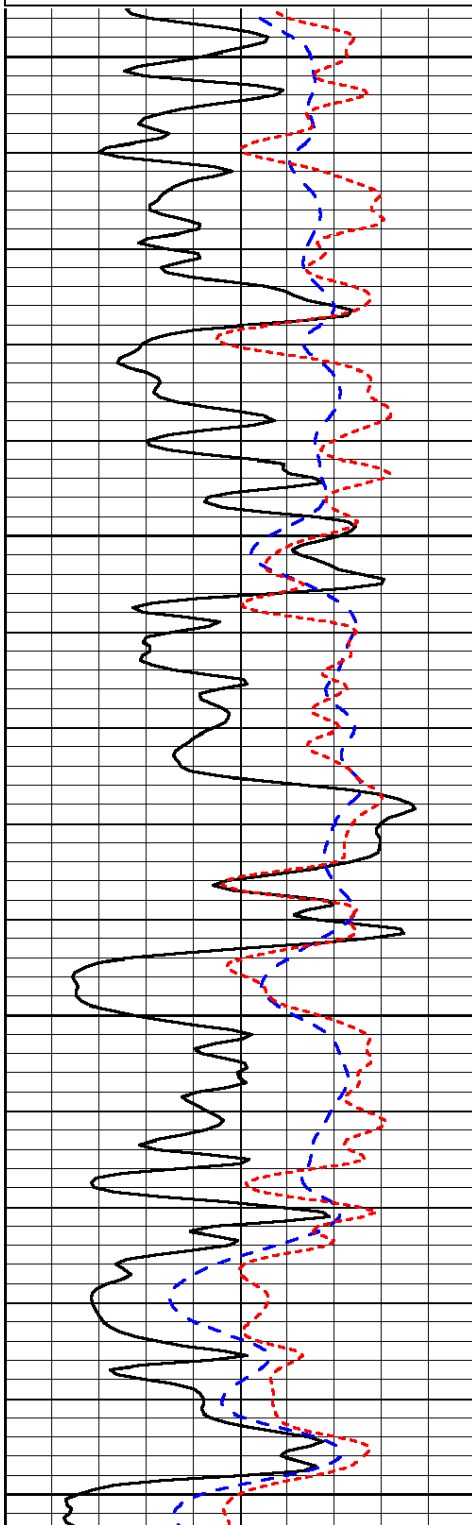
LSPD

Database File: c:\warrior\data\cobalt\_zerr 'a' #1-18\cobalthd.db  
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 Presentation Format: dil  
 Dataset Creation: Fri Nov 29 22:52:55 2013  
 Charted by: Depth in Feet scaled 1:240

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

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

LSPD

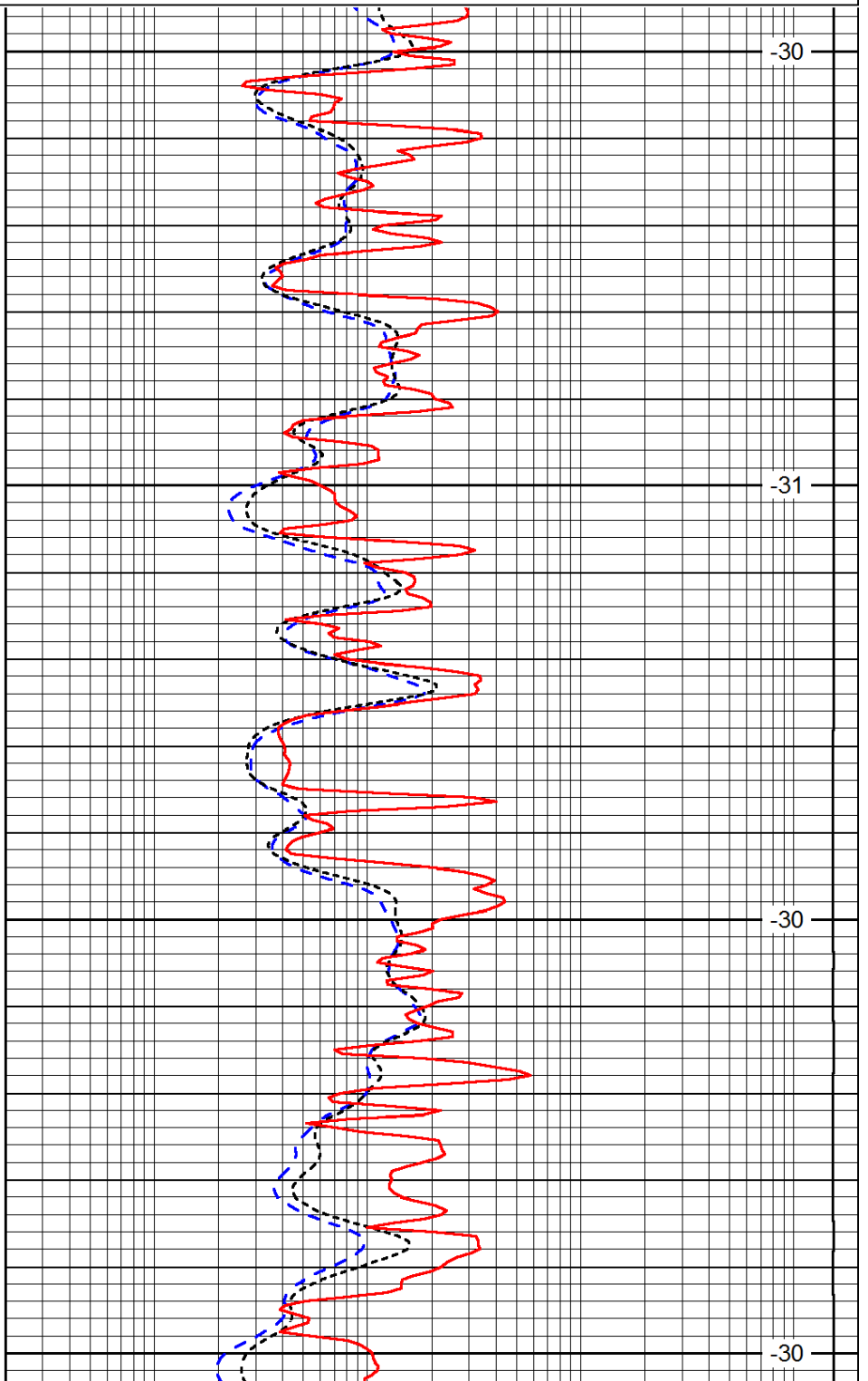


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3650

3700

3750

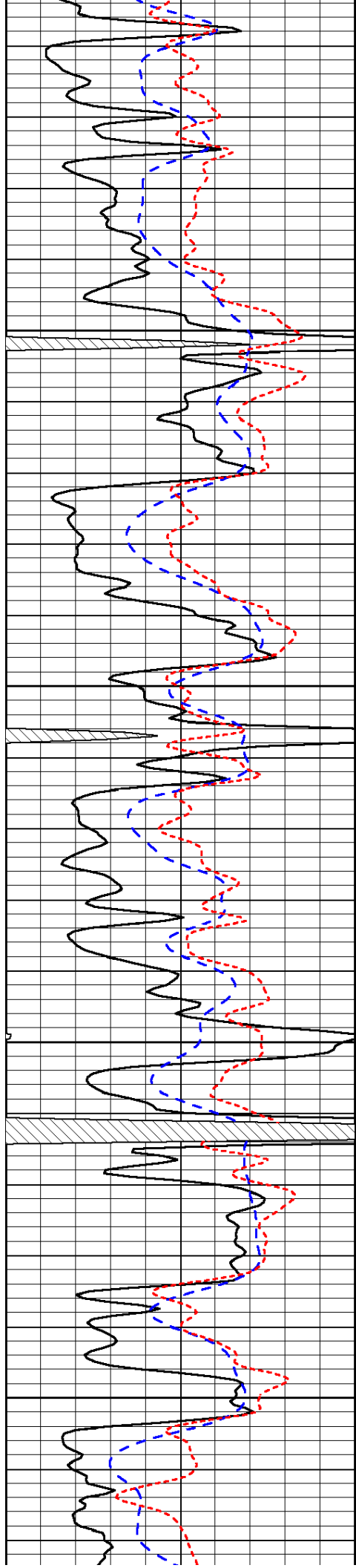


-30

-31

-30

-30

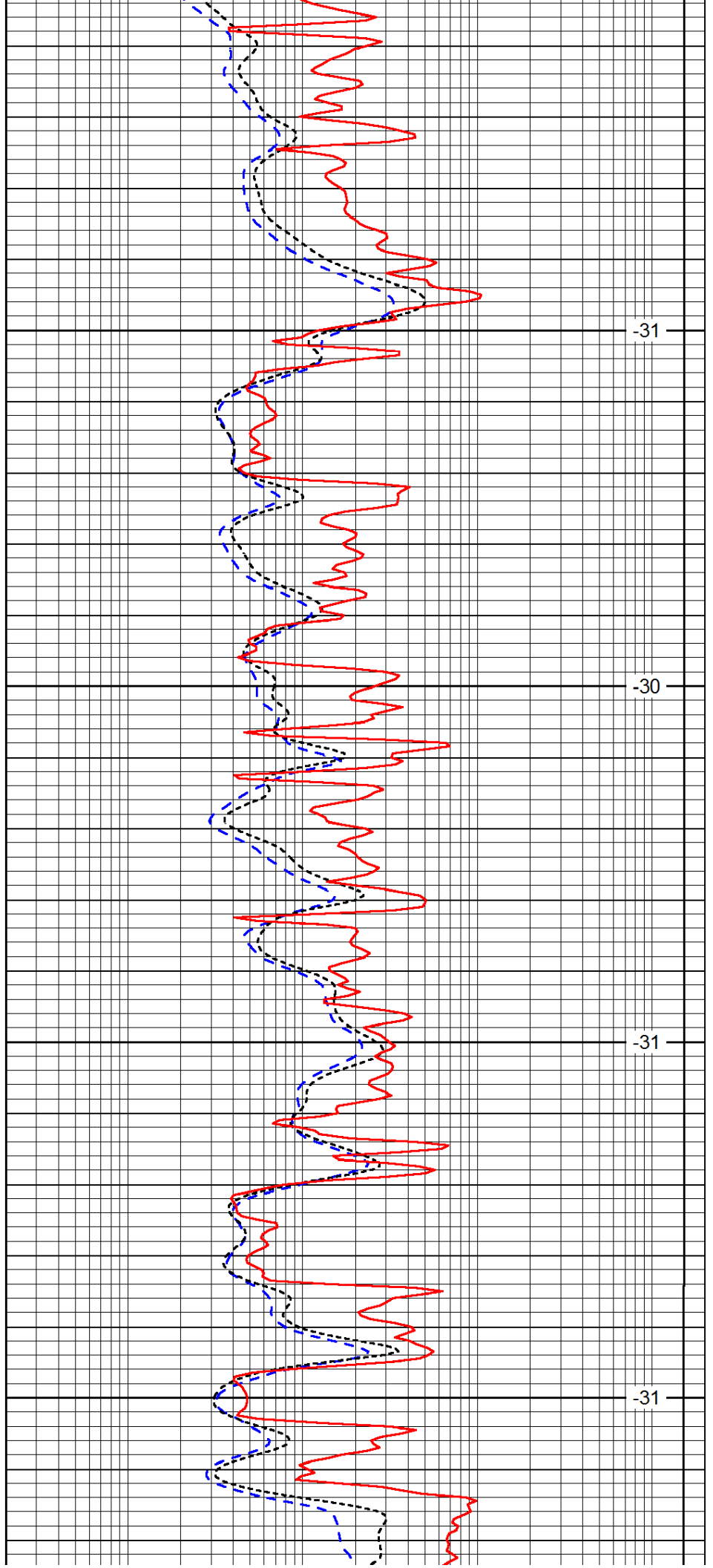


3800

3850

3900

3950

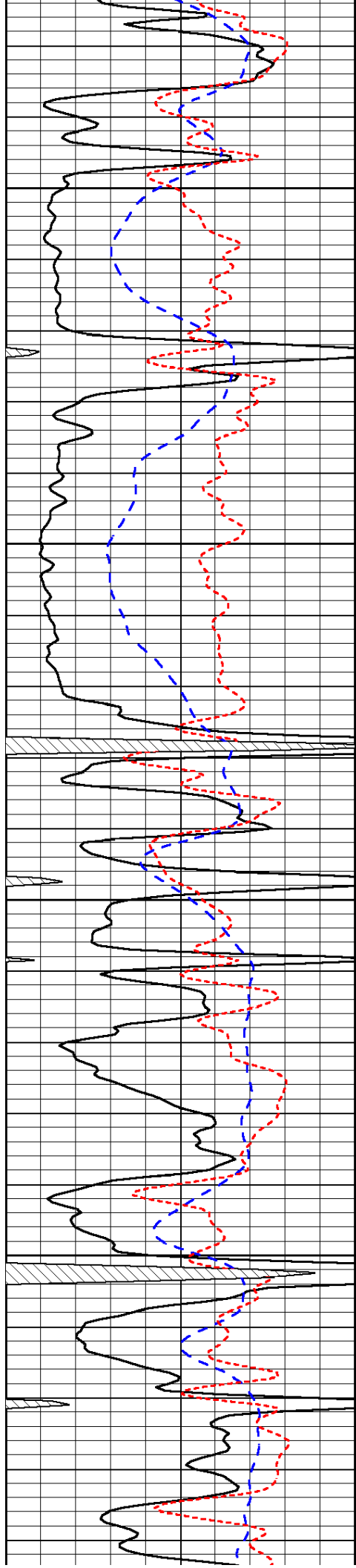


-31

-30

-31

-31

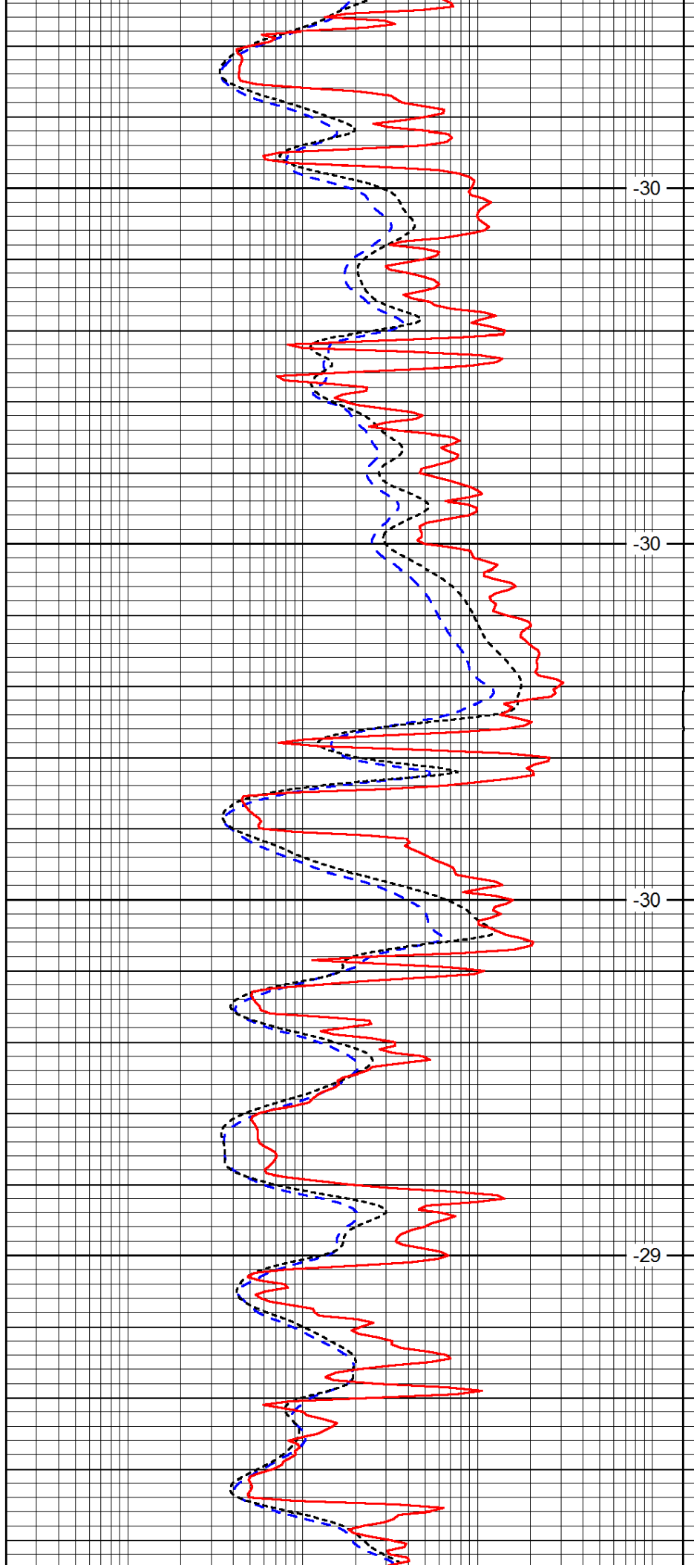


4000

4050

4100

4150

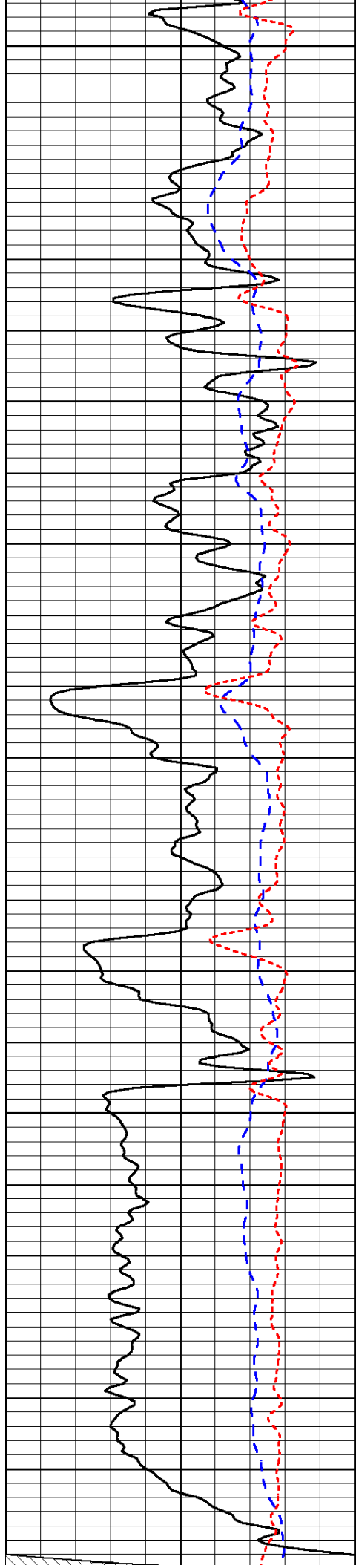


-30

-30

-30

-29



4200

4250

4300

4350

4400

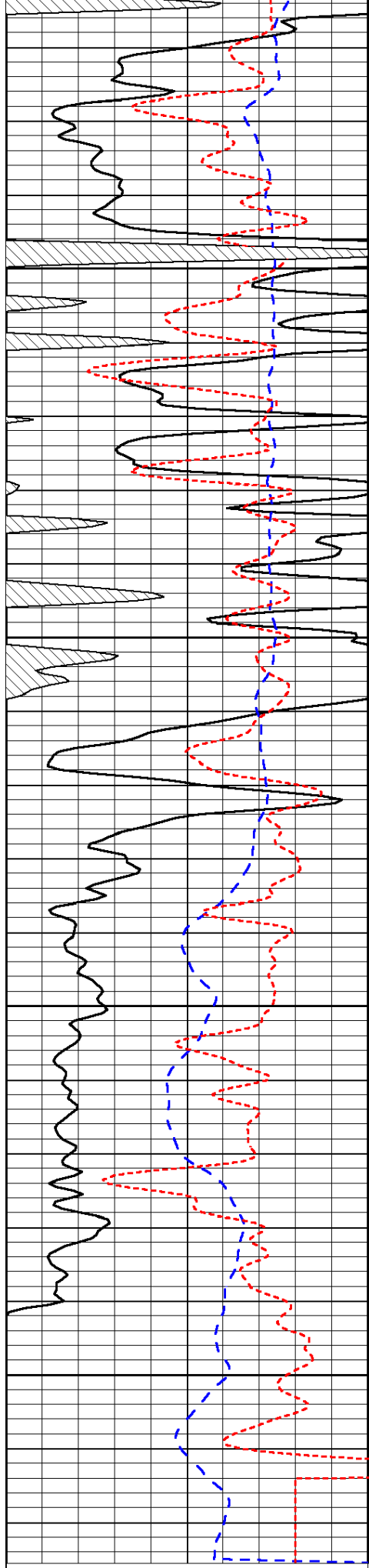
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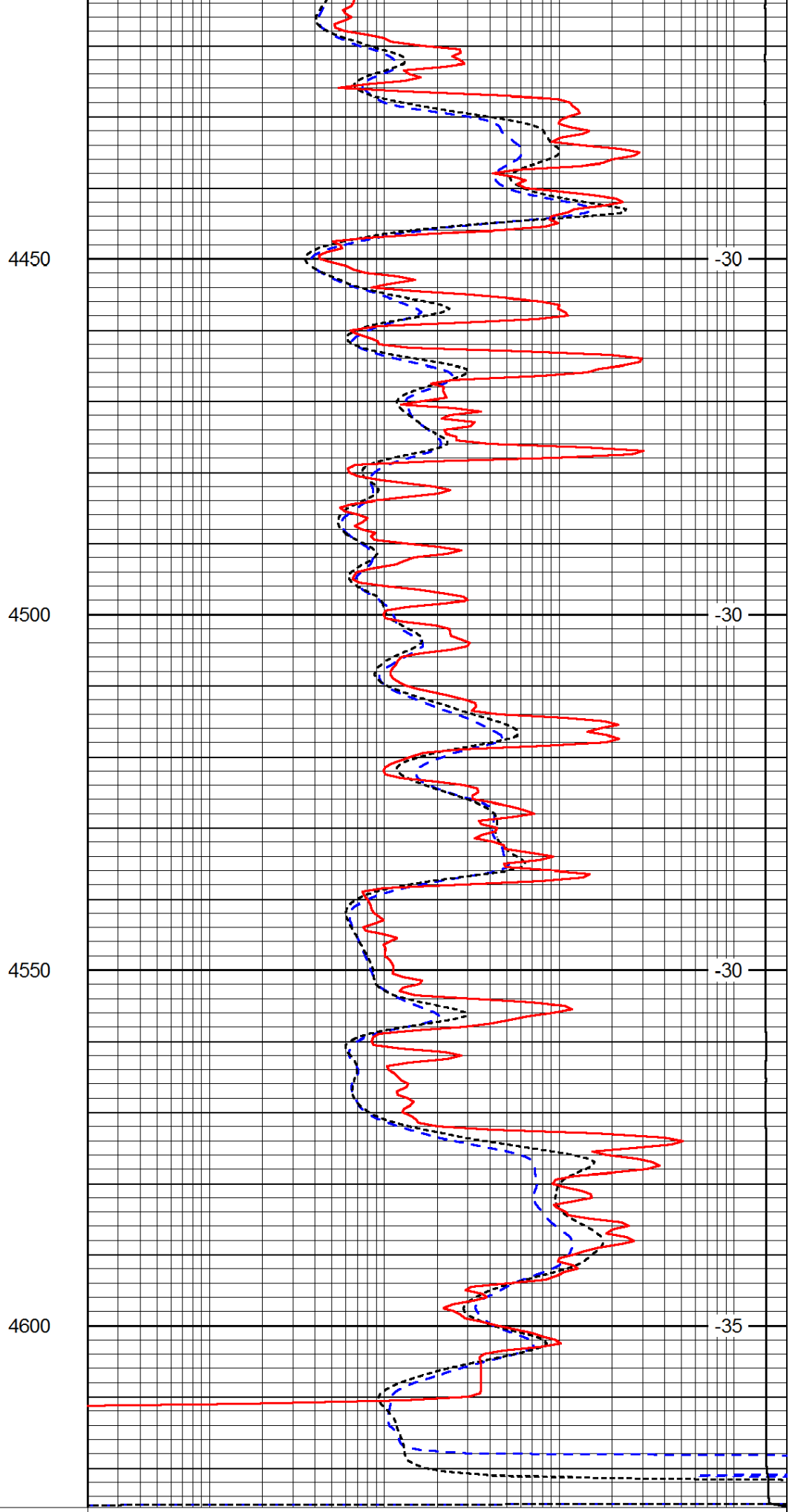
-30

-30

-30



0 Gamma Ray 150  
-200 SP (mV) 0



0.2 Deep Resistivity 2000  
0.2 Medium Resistivity 2000

-160	RxoRt	40
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0.2	Shallow Resistivity	2000
15000	Line Tension	0
		LSPD