



PIONEER

Pioneer Energy Services

Dual Induction Log

API No.

15-065-23859-00-00

Company **H & C Oil Operating, Inc.**

Well **Billips #27-1**

Field **Mickleson**

County **Graham** State

Kansas

Location

**NE NW NW
330' FNL / 990' FWL**

Sec: **27**

Twp: **8S**

Rge: **22W**

Permanent Datum **Ground Level** Elevation **2166**
Log Measured From **Kelly Bushing** 5 Ft. Above Perm. Datum
Drilling Measured From **Kelly Bushing**

Other Services
CNL / CDL
MEL
Elevation
K.B. 2171
D.F. 2166
G.L. 2166

Date **9/28/2012**

Run Number **One**

Depth Driller **3830**

Depth Logger **3832**

Bottom Logged Interval **3831**

Top Log Interval **200**

Casing Driller **8.625 @ 232**

Casing Logger **228**

Bit Size **7.875**

Type Fluid in Hole **Chemical**

Salinity, ppm CL **900**

Density / Viscosity **9.2 60**

pH / Fluid Loss **10.5 6.8**

Source of Sample **Flowline**

Rm @ Meas. Temp **1.20 @ 73**

Rmf @ Meas. Temp **0.90 @ 73**

Rmc @ Meas. Temp **1.62 @ 73**

Source of Rmf / Rmc **Charts**

Rm @ BHT **0.77 @ 114**

Operating Rig Time **4 Hours**

Max Rec. Temp. F **114**

Equipment Number **15**

Location **Hays**

Recorded By **R. Barnhart**

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 Log-Tech, Inc.
(785) 625-3858

Bogue, KS:
1S, 3 1/2W, S into

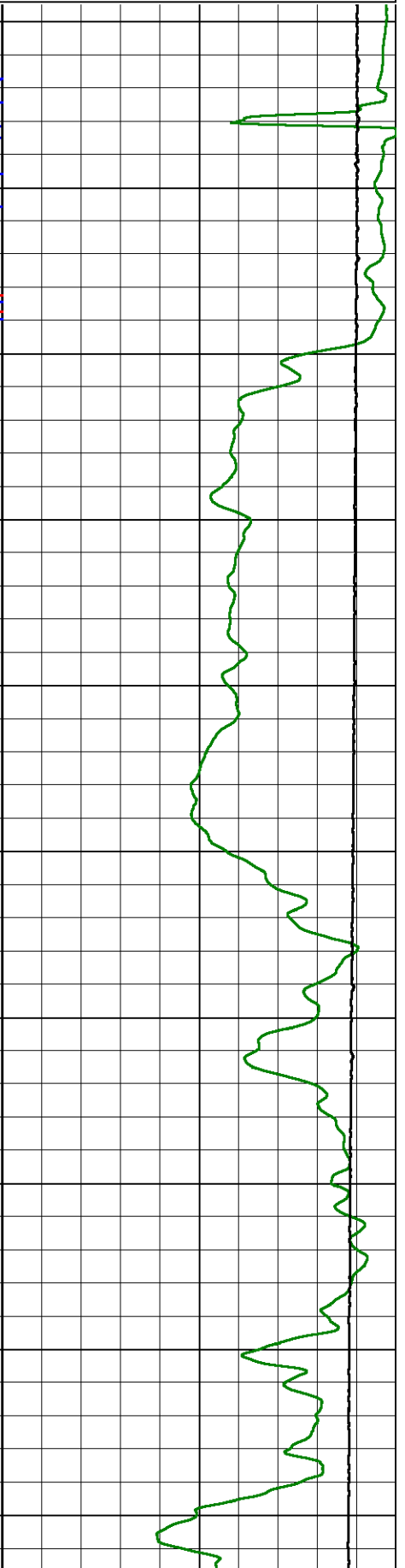
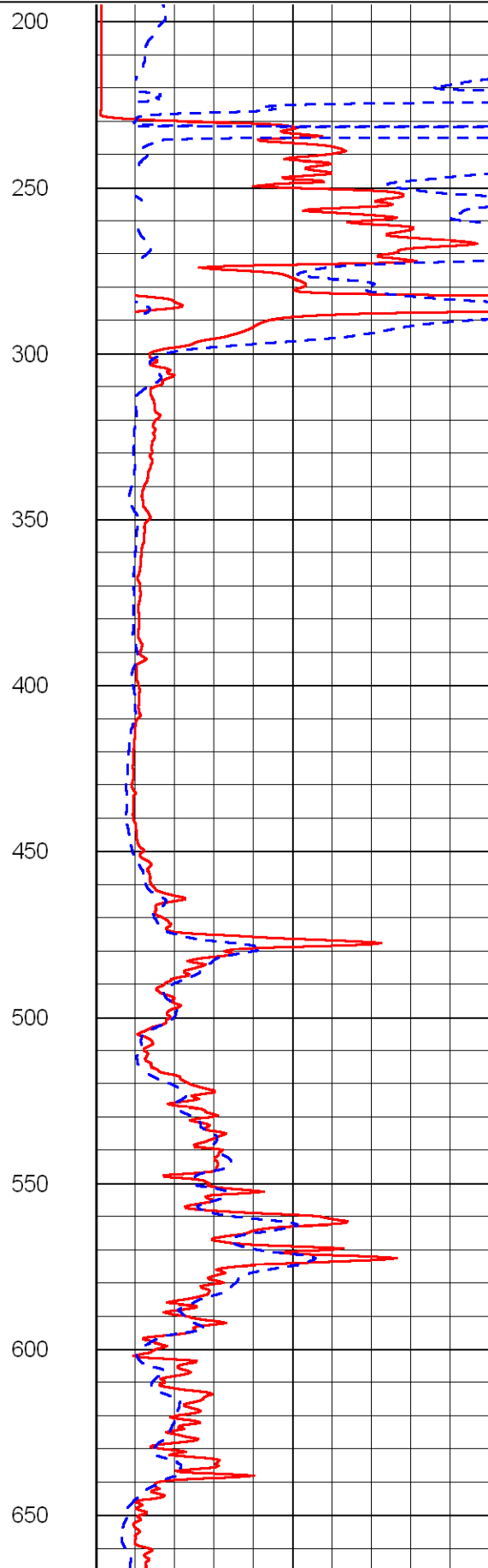
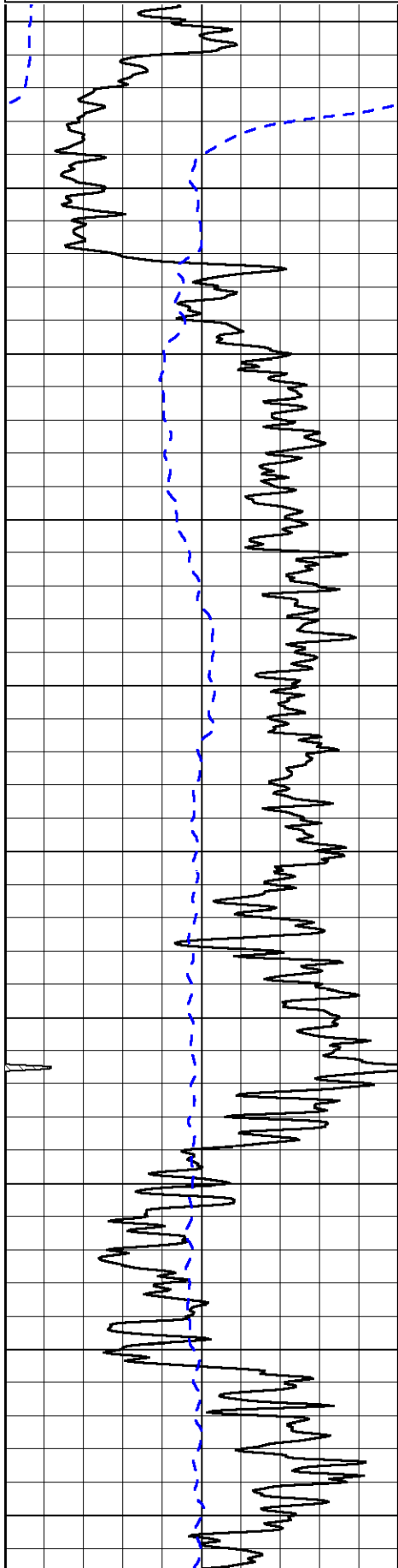
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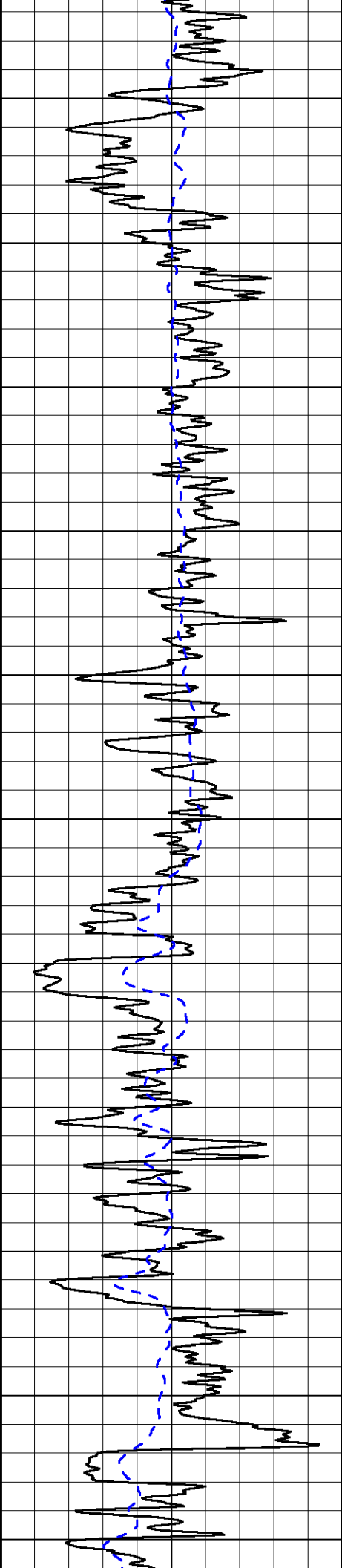
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0	Shallow Resistivity	50
0	Deep Resistivity	50

1000	Conductivity	0
15000	Line Tension	0

50	Shallow Resistivity	500
50	Deep Resistivity	500





700

750

800

850

900

950

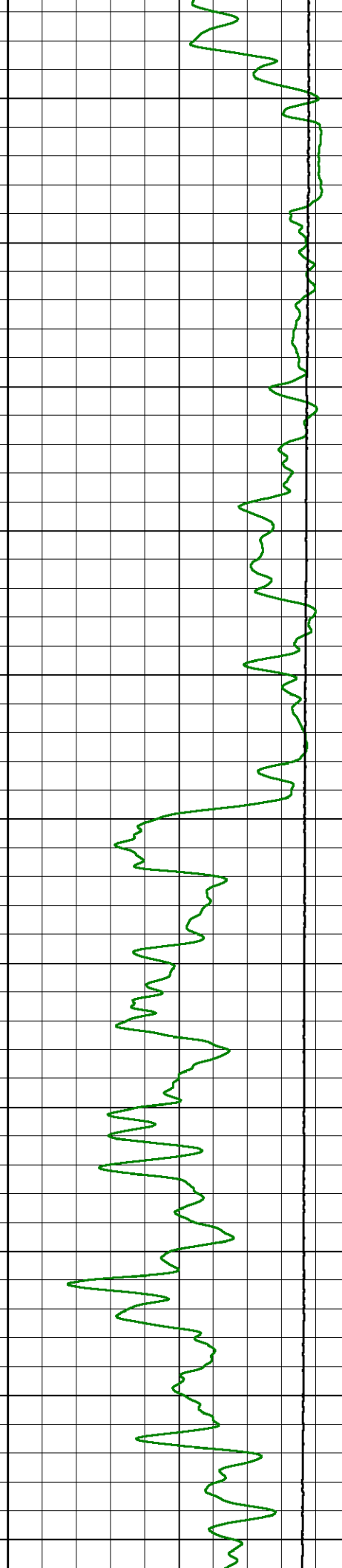
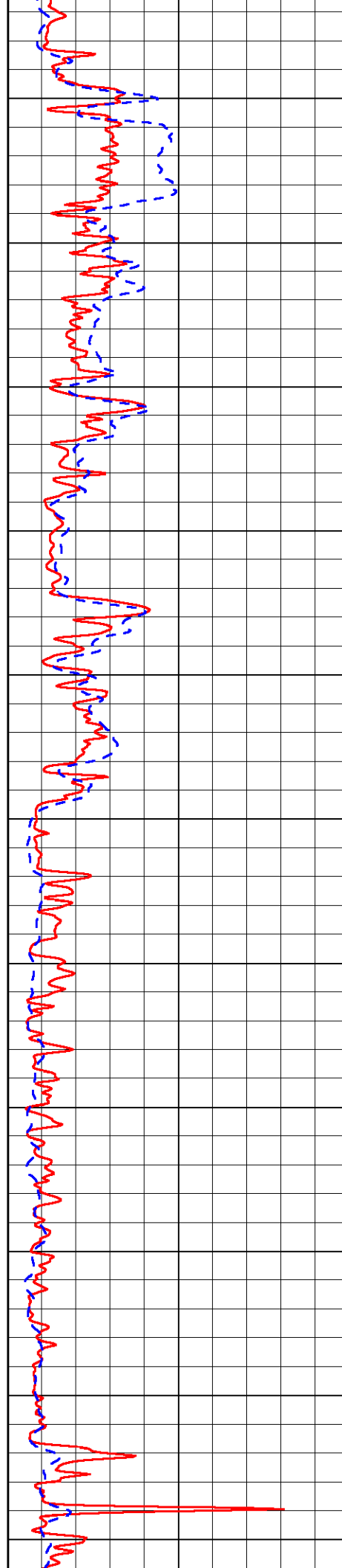
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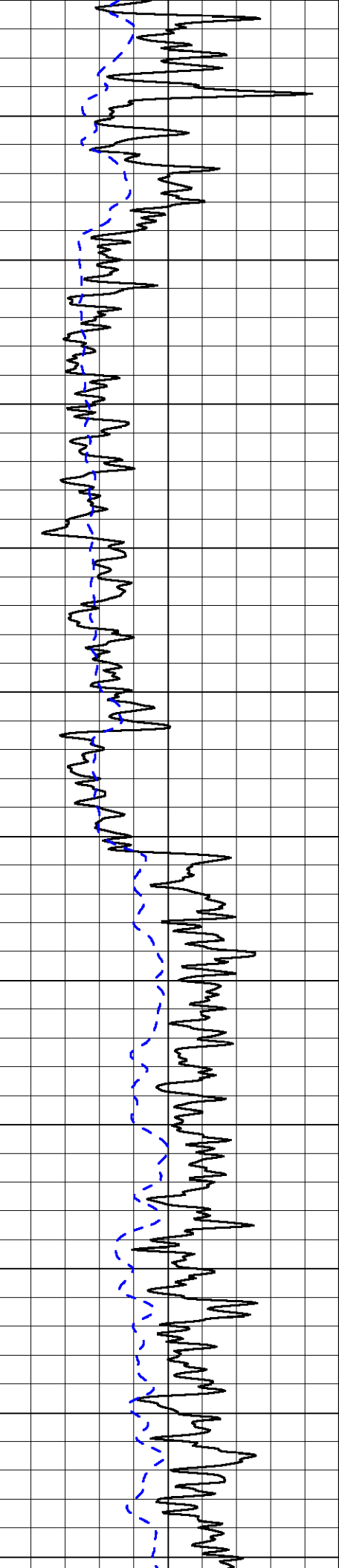
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1100

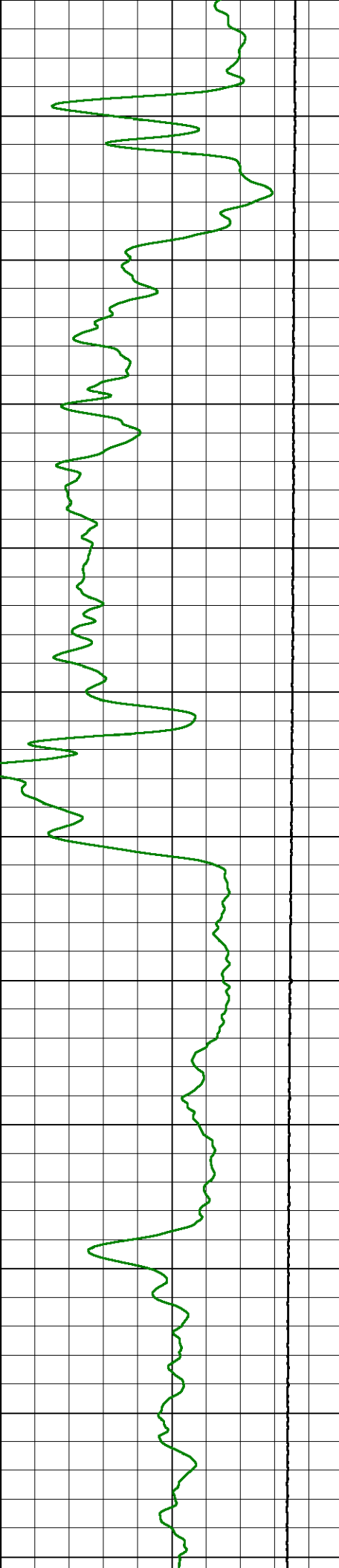
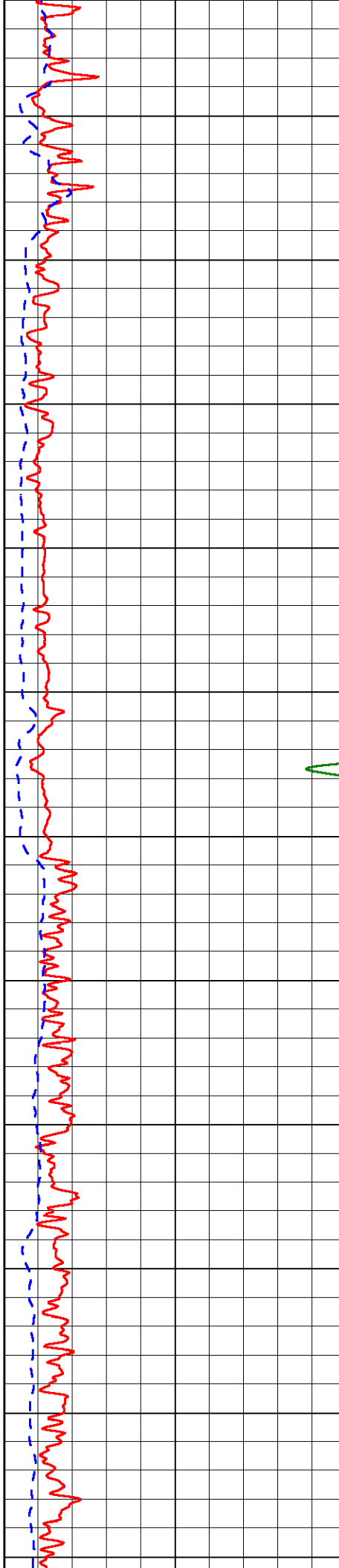
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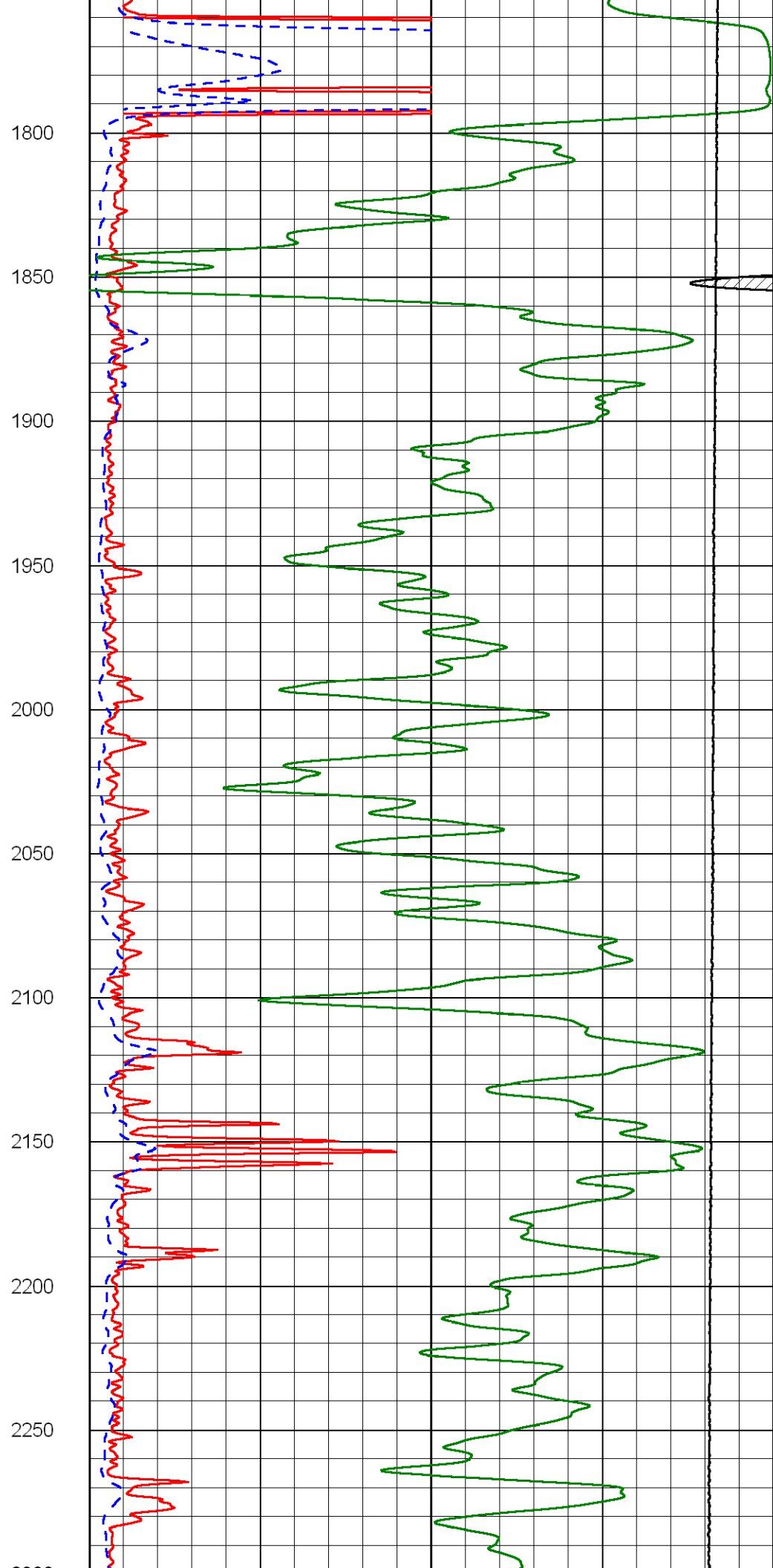
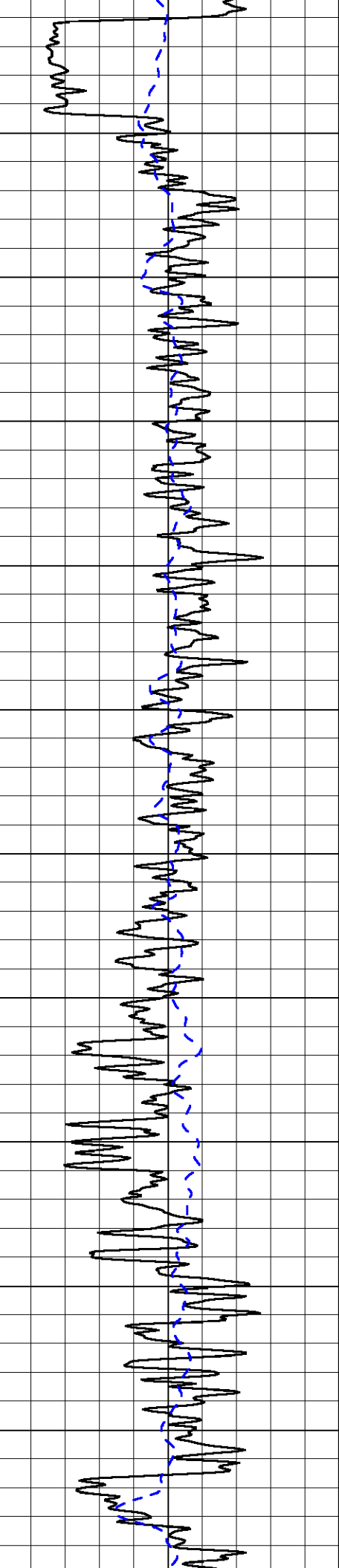
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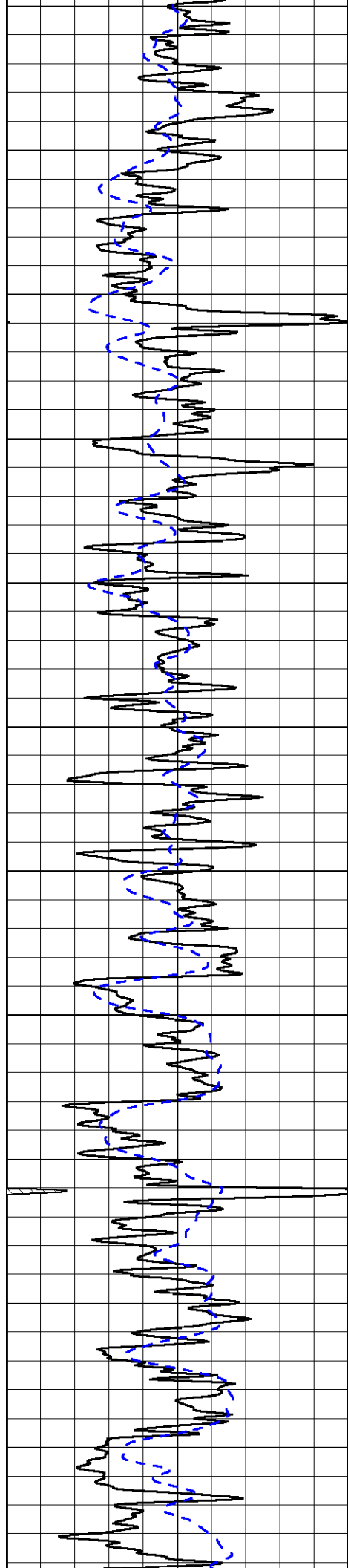




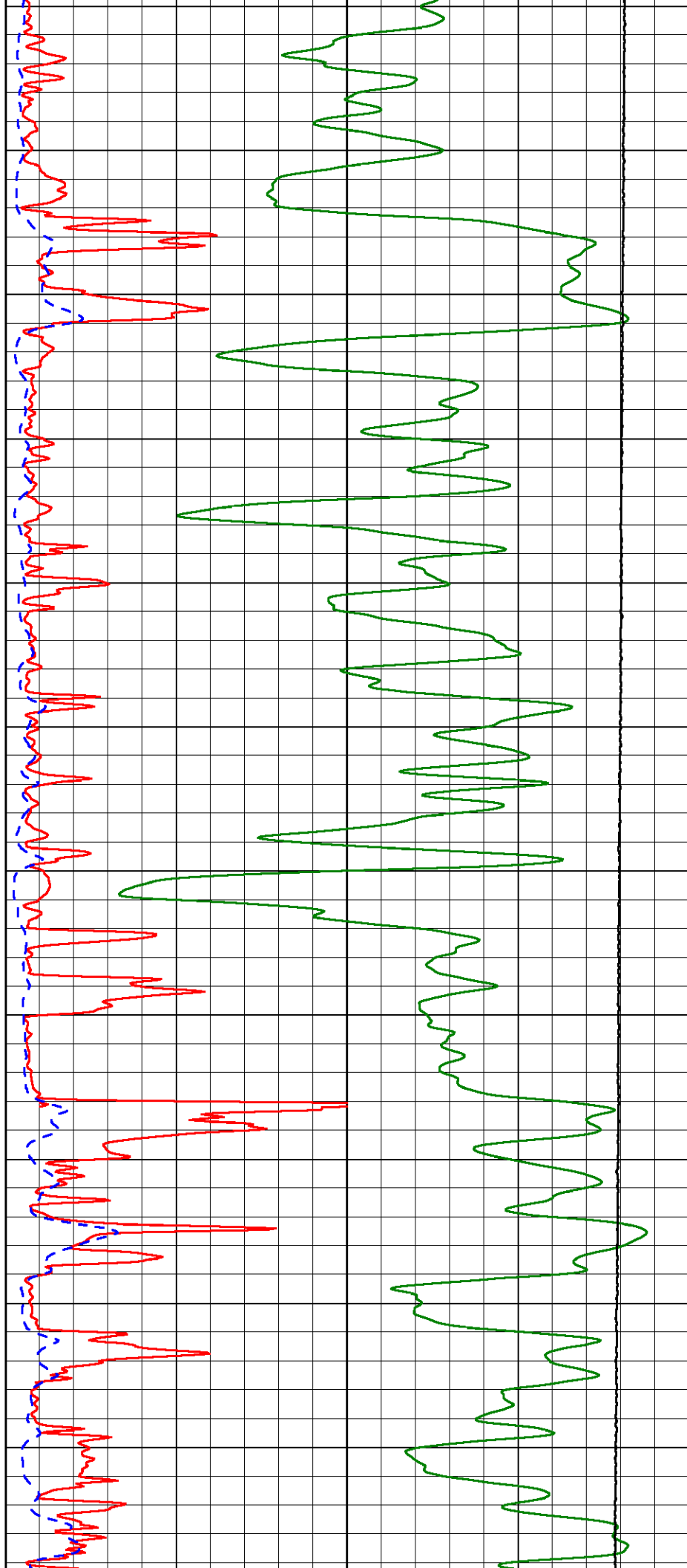
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1500
1550
1600
1650
1700
1750

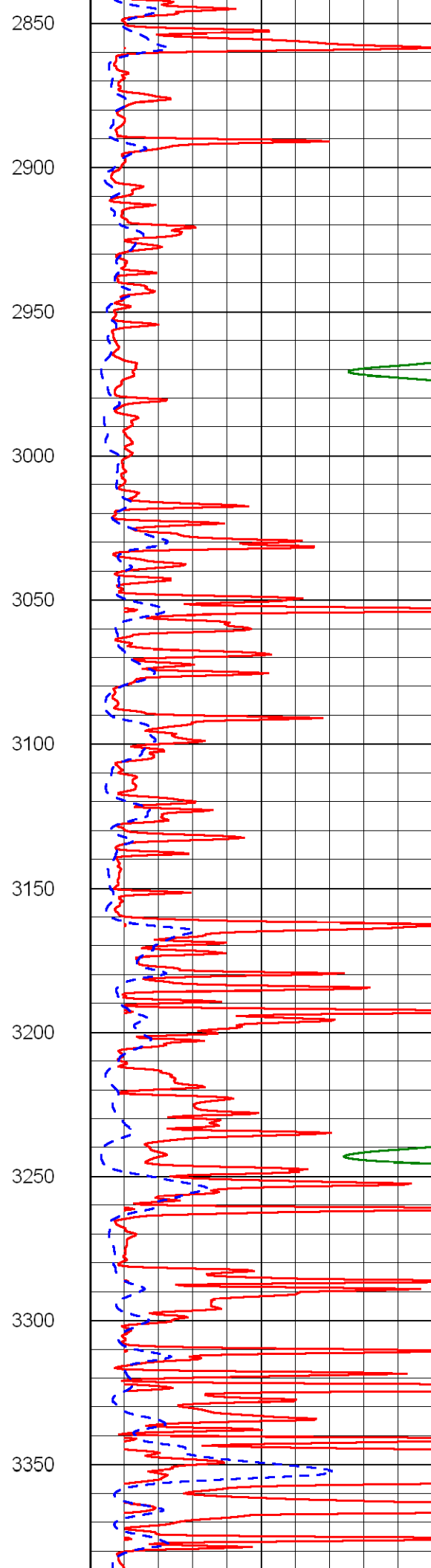
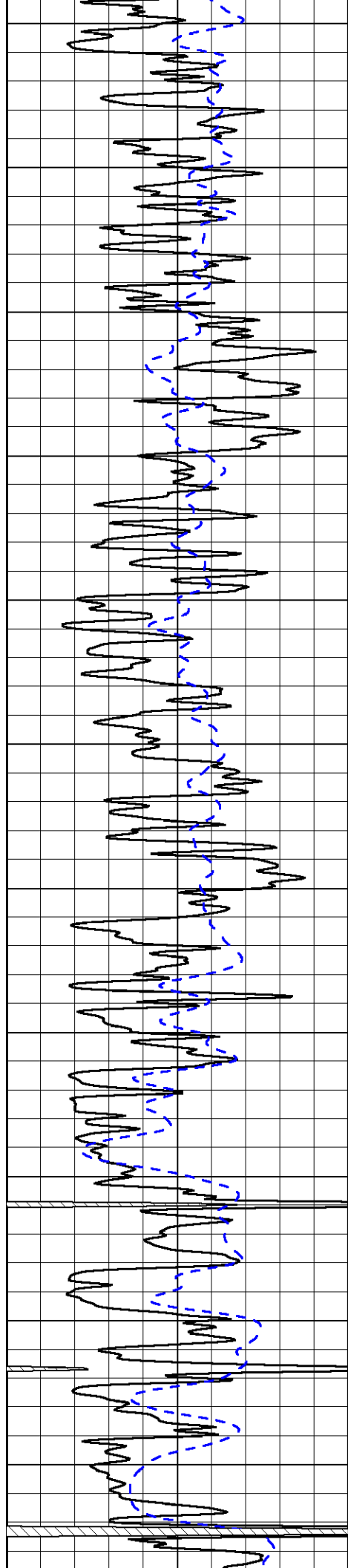


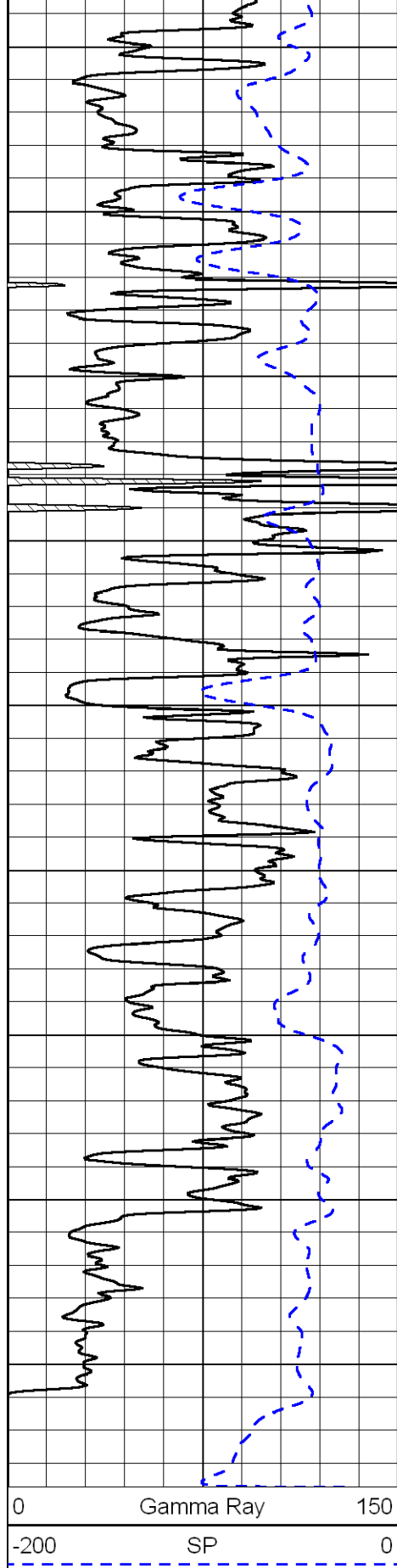




2300
2350
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2450
2500
2550
2600
2650
2700
2750
2800







3400

3450

3500

3550

3600

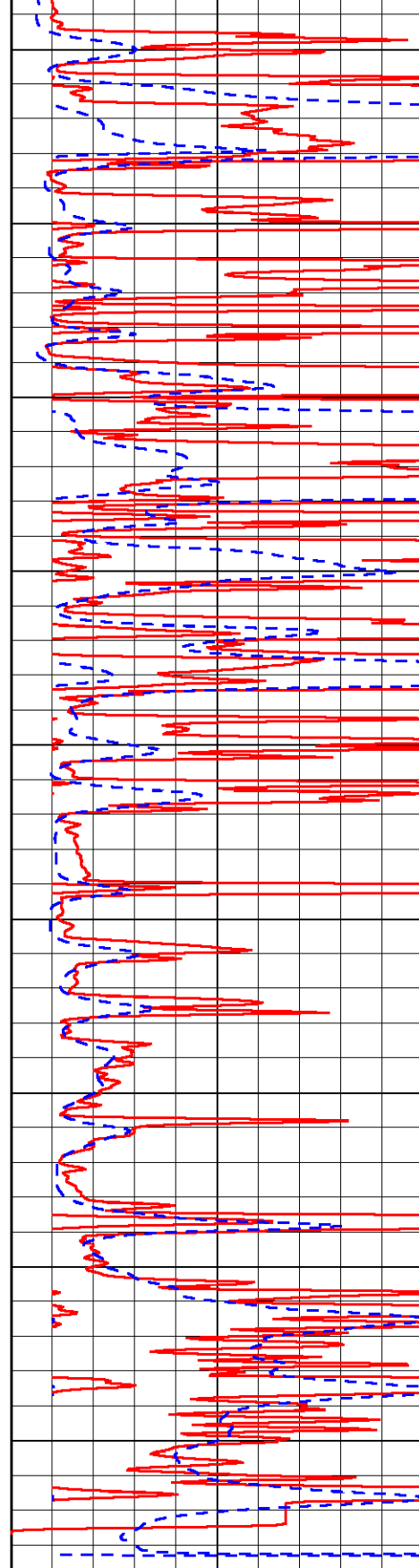
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3700

3750

3800

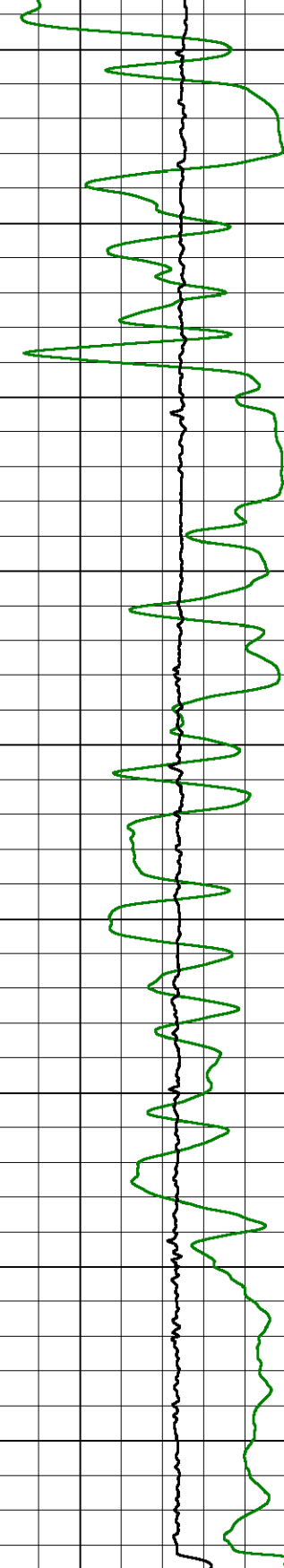
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-200 SP 0



0 Shallow Resistivity 50
0 Deep Resistivity 50

1000 Conductivity 0
15000 Line Tension 0

50 Shallow Resistivity 500
50 Deep Resistivity 500

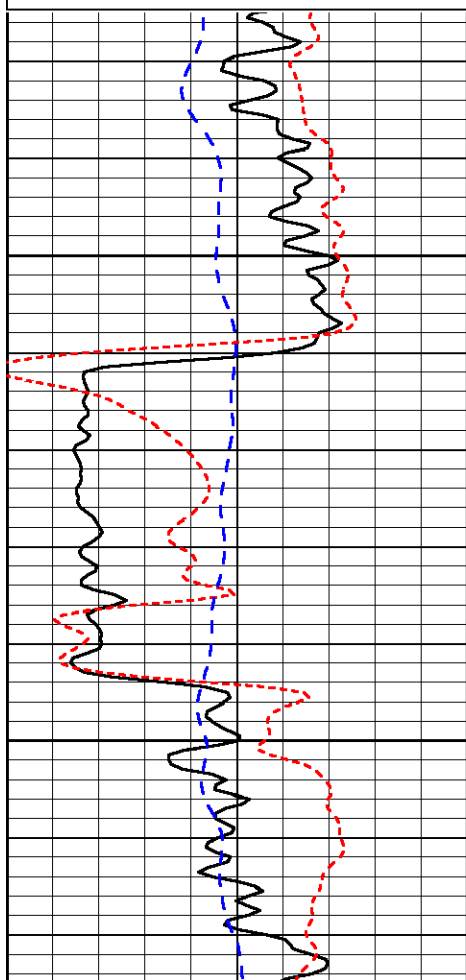


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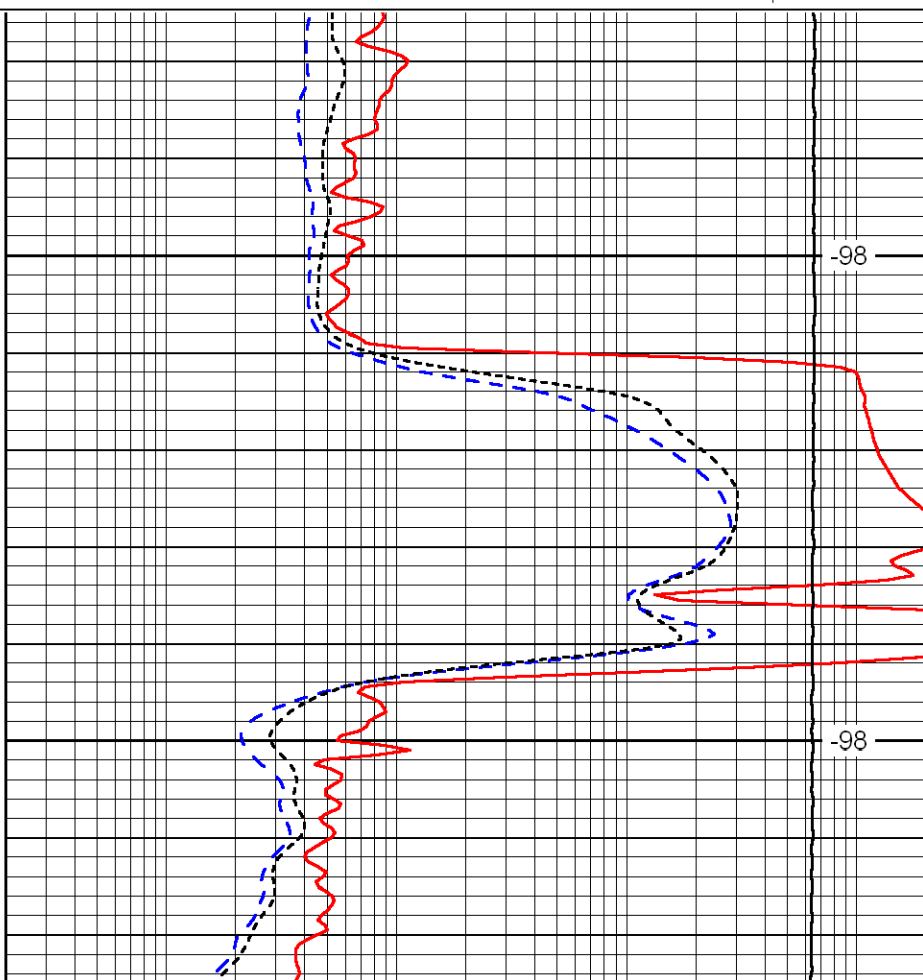
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0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
10000	Line Tension	0

LSPD



1750

1800



-98

-98

0	Gamma Ray	150
-160	RXO/RT	40
-200	SP	0

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

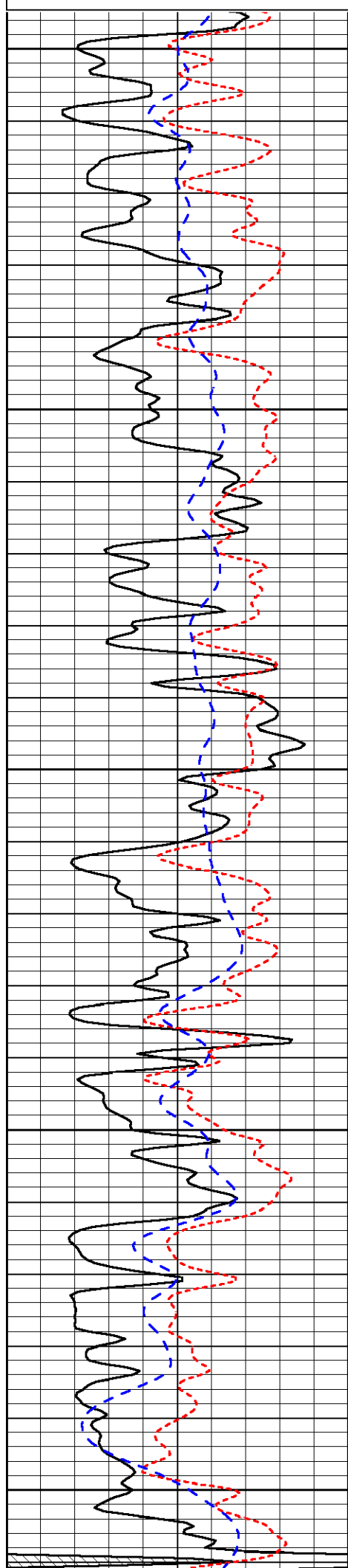
LSPD

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Dataset Creation: Fri Sep 28 06:15:26 2012
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-200	SP	0

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

LSPD



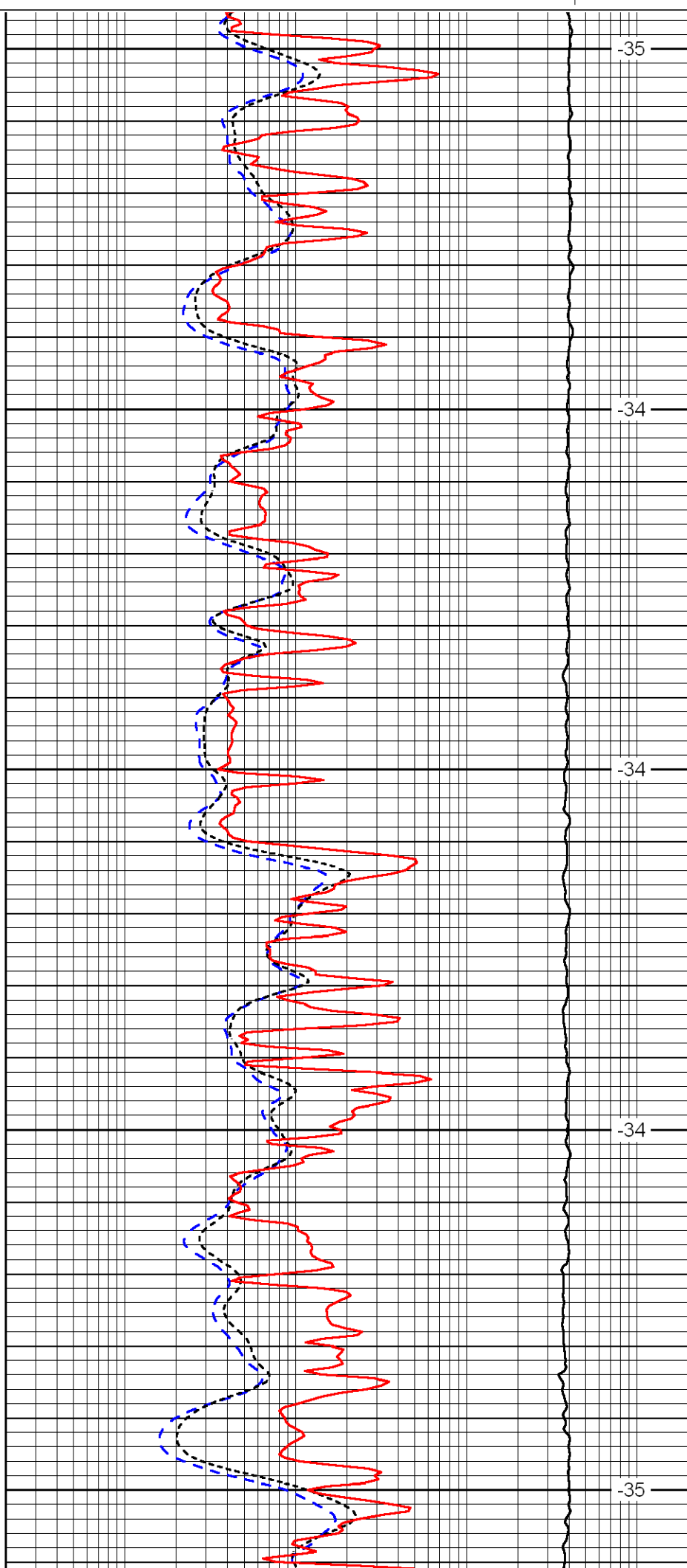
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3100

3150

3200

3250



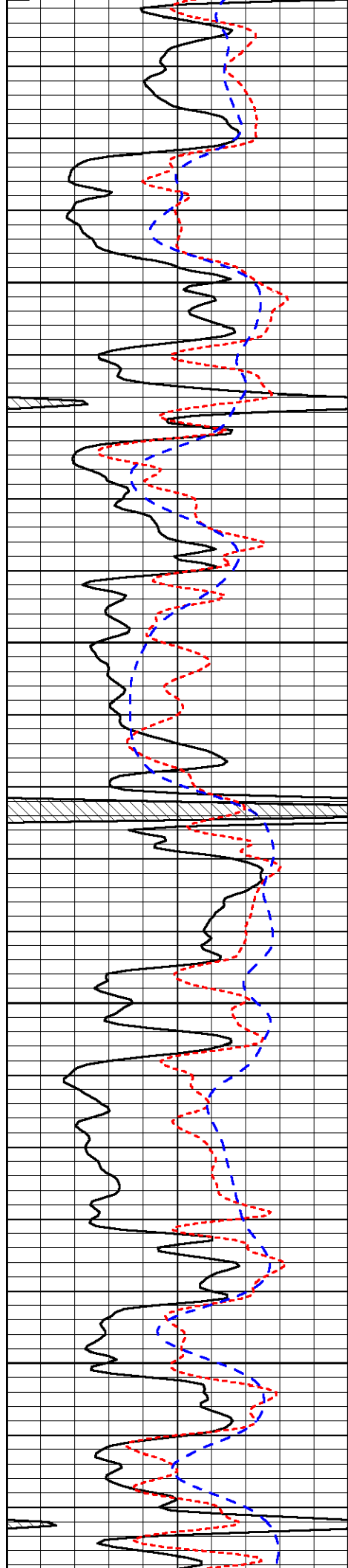
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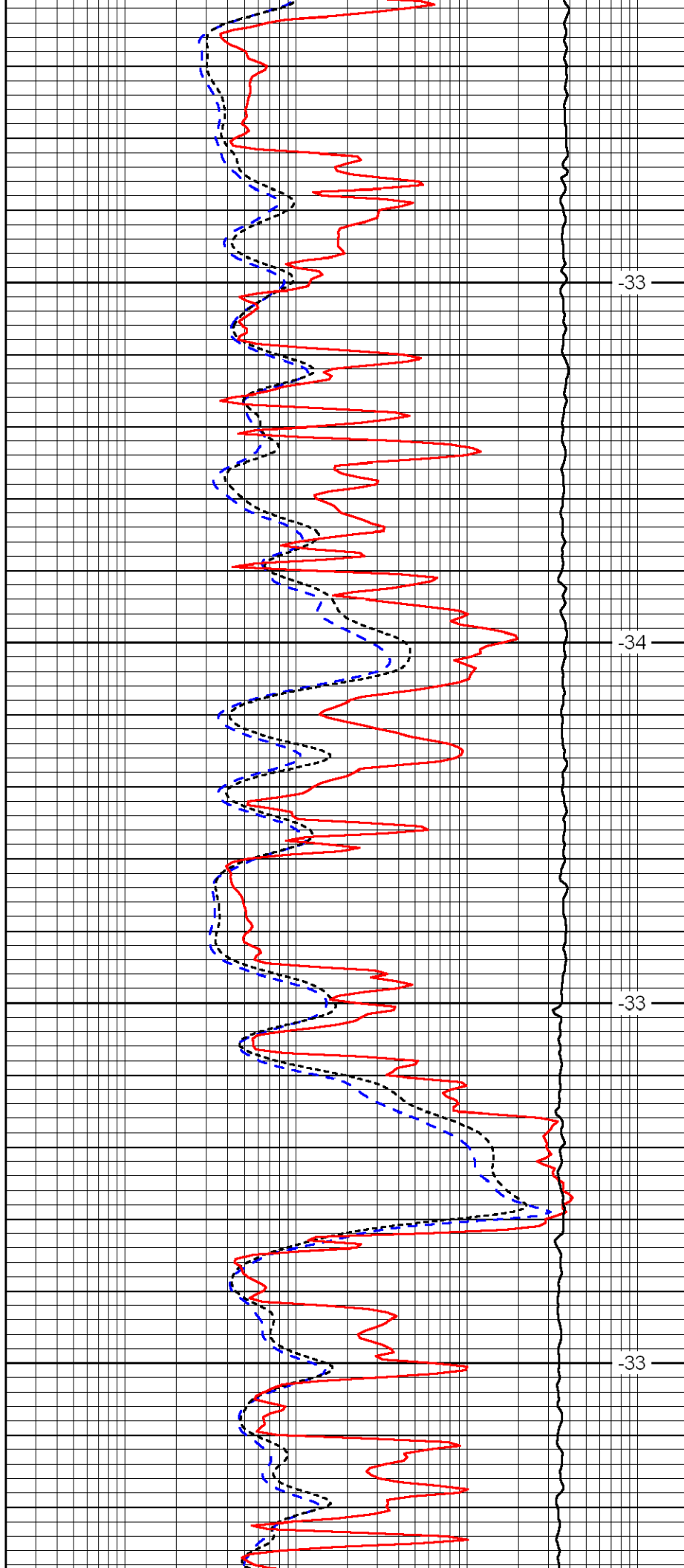


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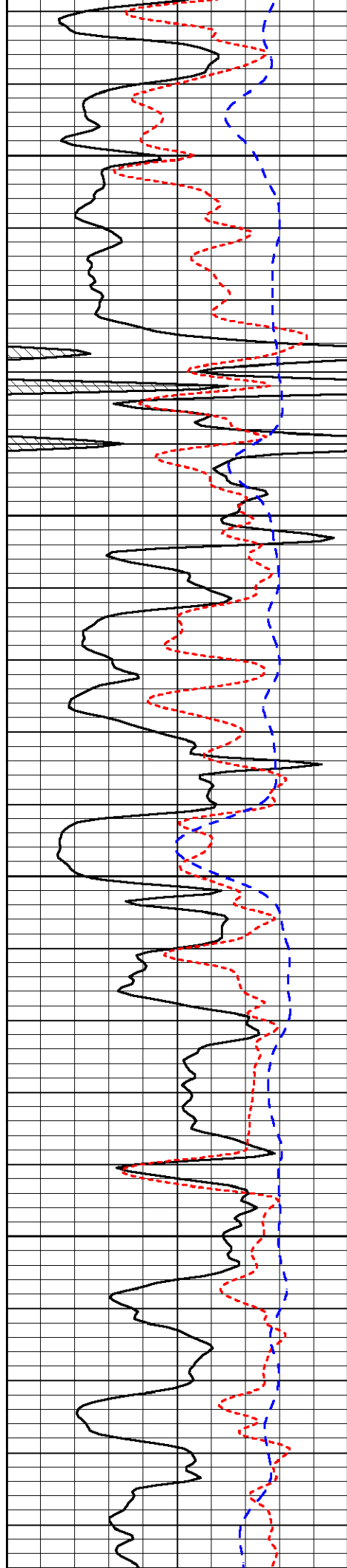


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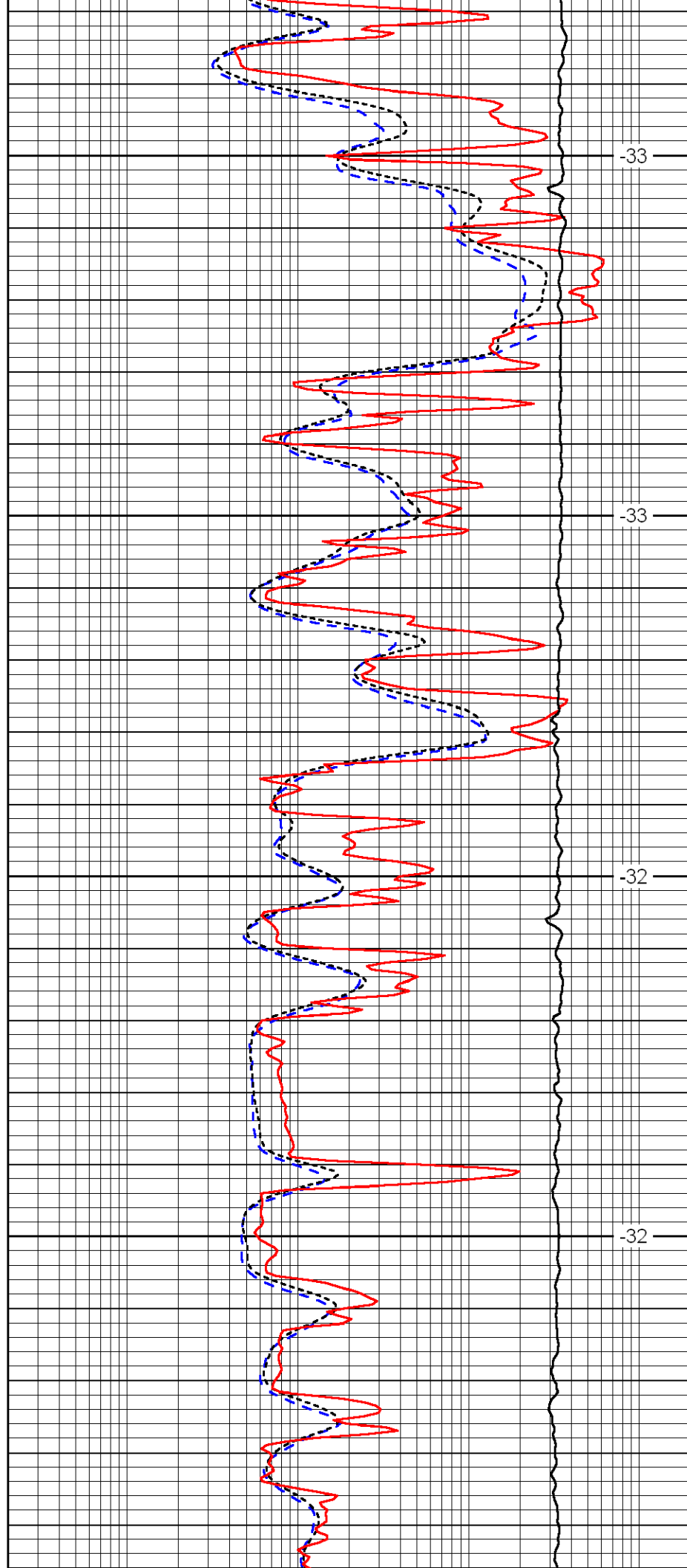


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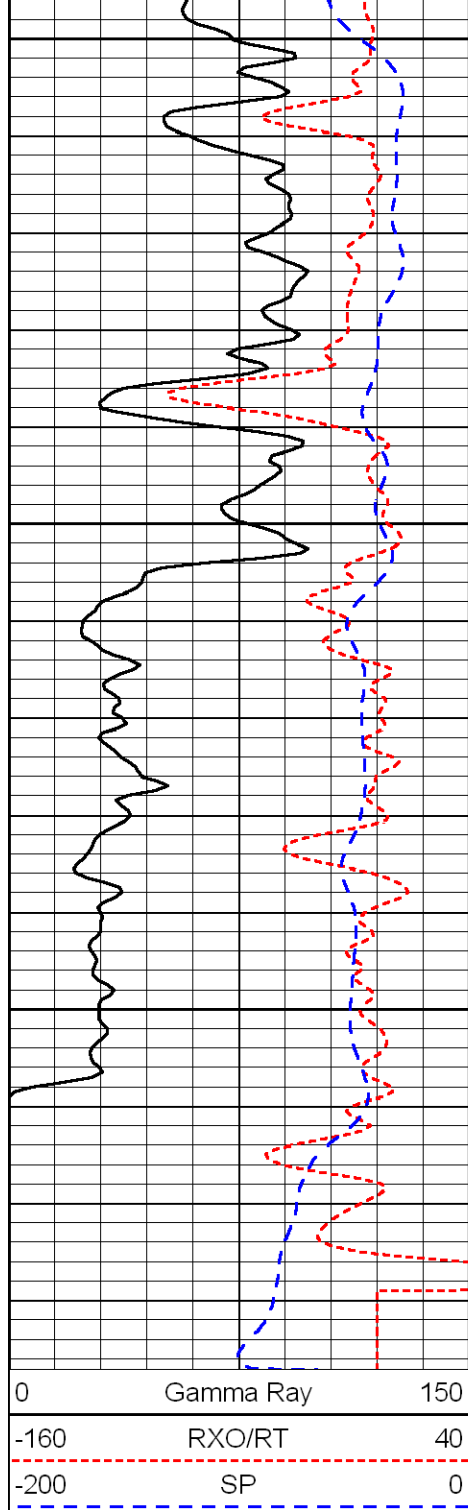


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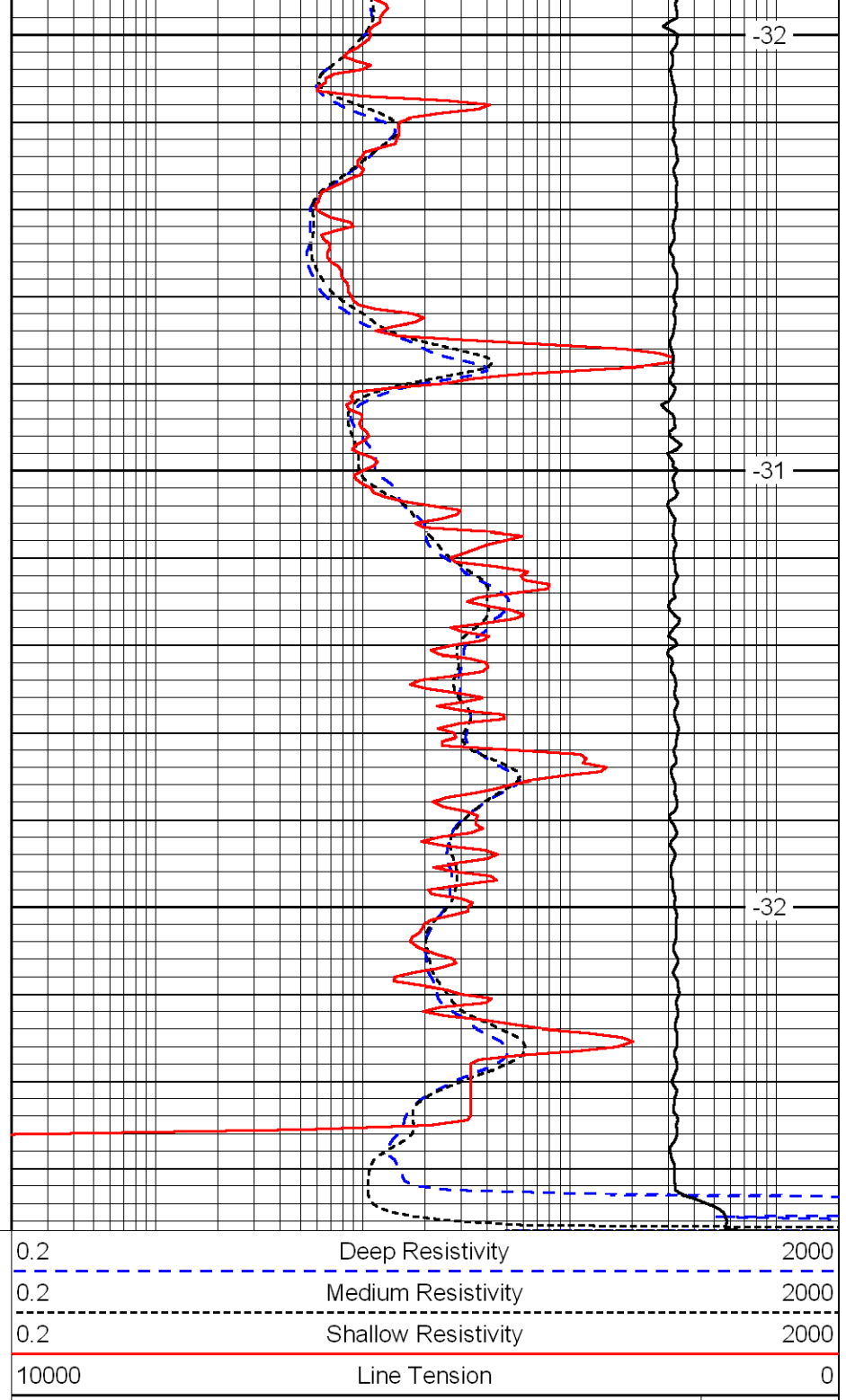


3700

3750

3800

0	Gamma Ray	150
-160	RXO/RT	40
-200	SP	0



-32

-31

-32

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

LSPD