



Pioneer Energy Services

Dual Induction Log

API No.

15-155-21632-00-00

Company **Novy Oil & Gas, Inc.**

Well **Zwick #1**

Field **Sterling SW**

County **Reno** State **Kansas**

Location **660' FSL & 710' FEL**

Sec: **17** Twp: **22S** Rge: **8W**

Permanent Datum **Ground Level** Elevation **1695**

Log Measured From **Kelly Bushing** 10 Ft. Above Perm. Datum

Drilling Measured From **Kelly Bushing**

Other Services
CNL/CDL
MEL

Elevation
K.B. 1705
D.F. 1695
G.L. 1695

Date **2/1/2013**

Run Number **One**

Depth Driller **3650**

Depth Logger **3648**

Bottom Logged Interval **3647**

Top Log Interval **250**

Casing Driller **8.625 @ 265**

Casing Logger **263**

Bit Size **7.875**

Type Fluid in Hole **Chemical**

Salinity, ppm CL **12500**

Density / Viscosity **9.25 @ 49**

pH / Fluid Loss **9.0 @ 11.2**

Source of Sample **Flowline**

Rm @ Meas. Temp **0.65 @ 48**

Rmf @ Meas. Temp **0.49 @ 48**

Rmc @ Meas. Temp **0.88 @ 48**

Source of Rmf / Rmc **Charts**

Rm @ BHT **0.27 @ 115**

Operating Rig Time **4 Hours**

Max Rec. Temp. F **115**

Equipment Number **91**

Location **Hays**

Recorded By **D. Schmidt**

Witnessed By **Macklin Armstrong**

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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

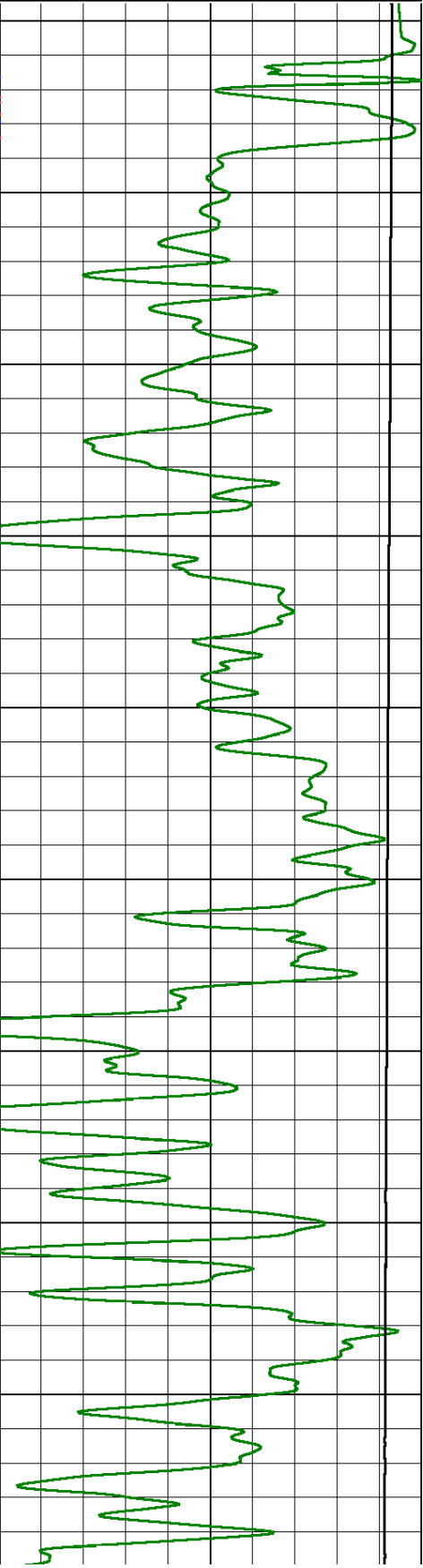
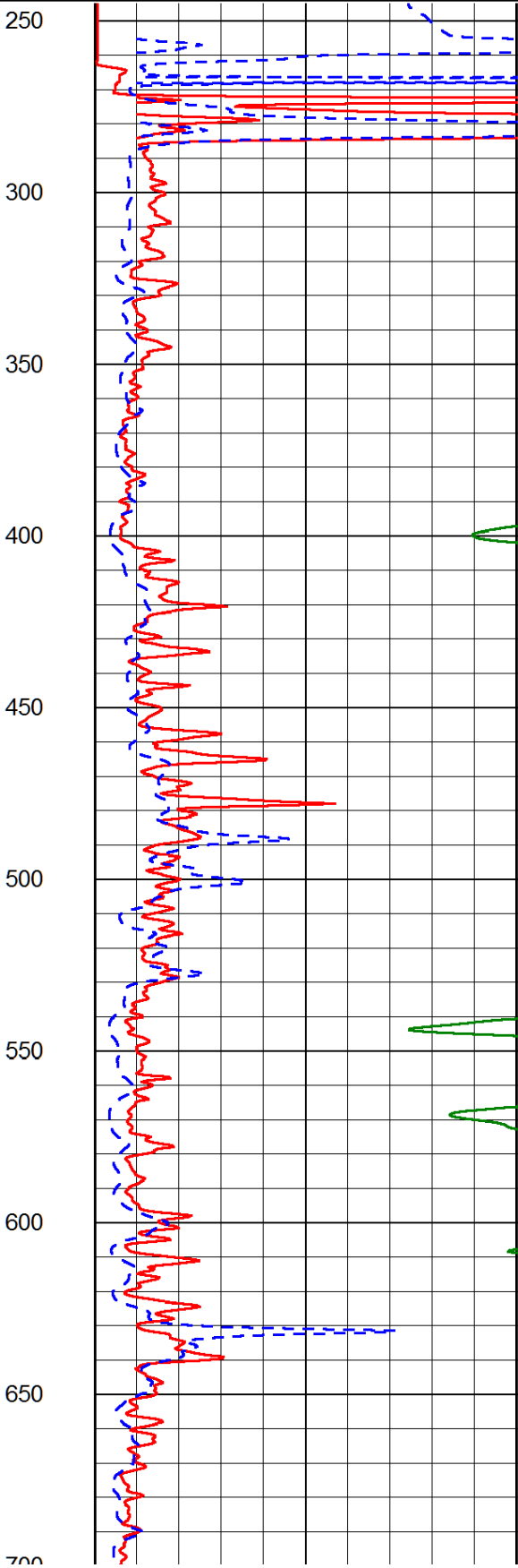
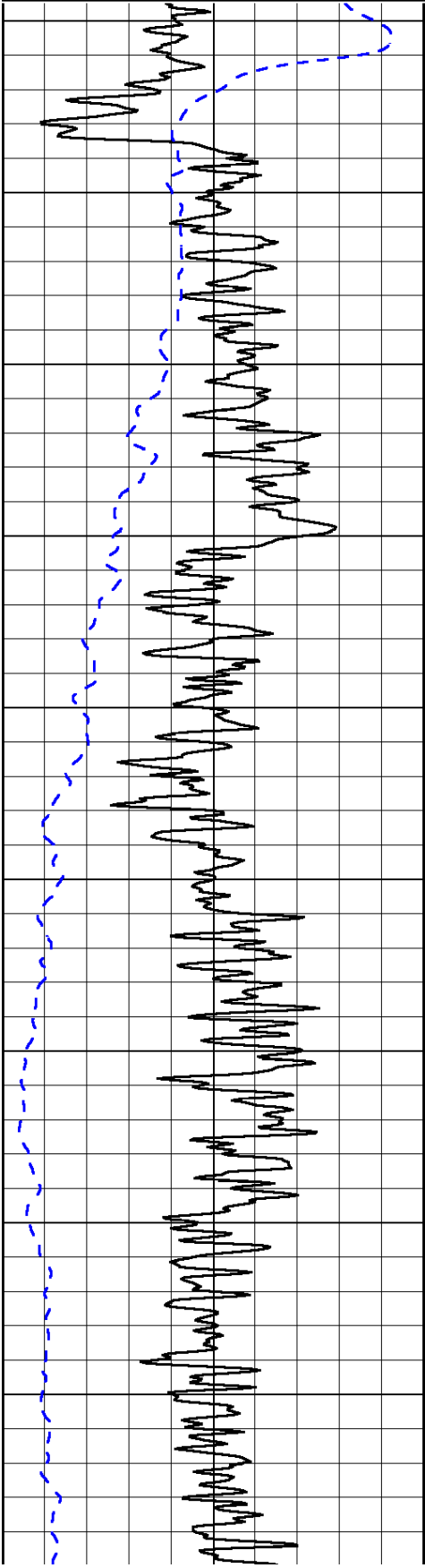
Thank you for using Log-Tech, Inc.
(785) 625-3858

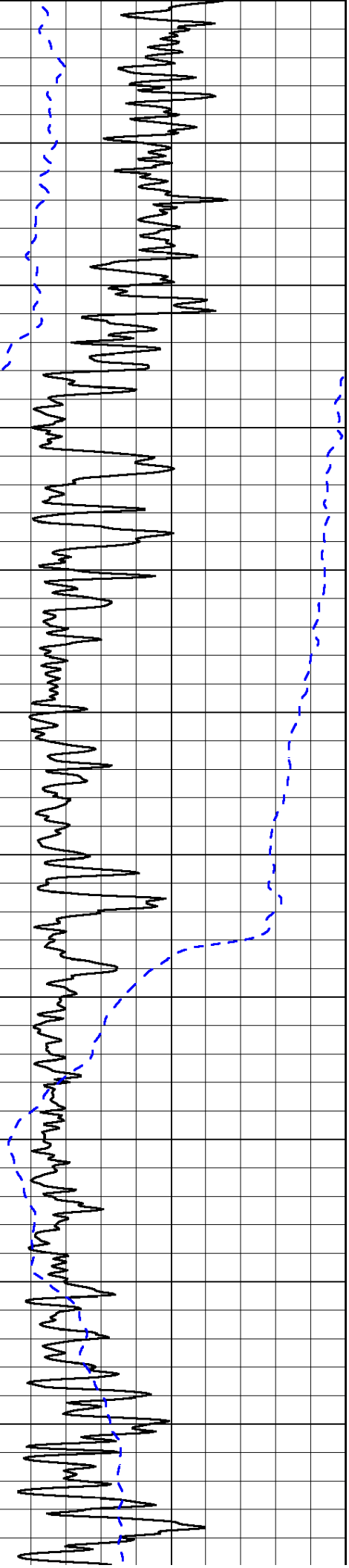
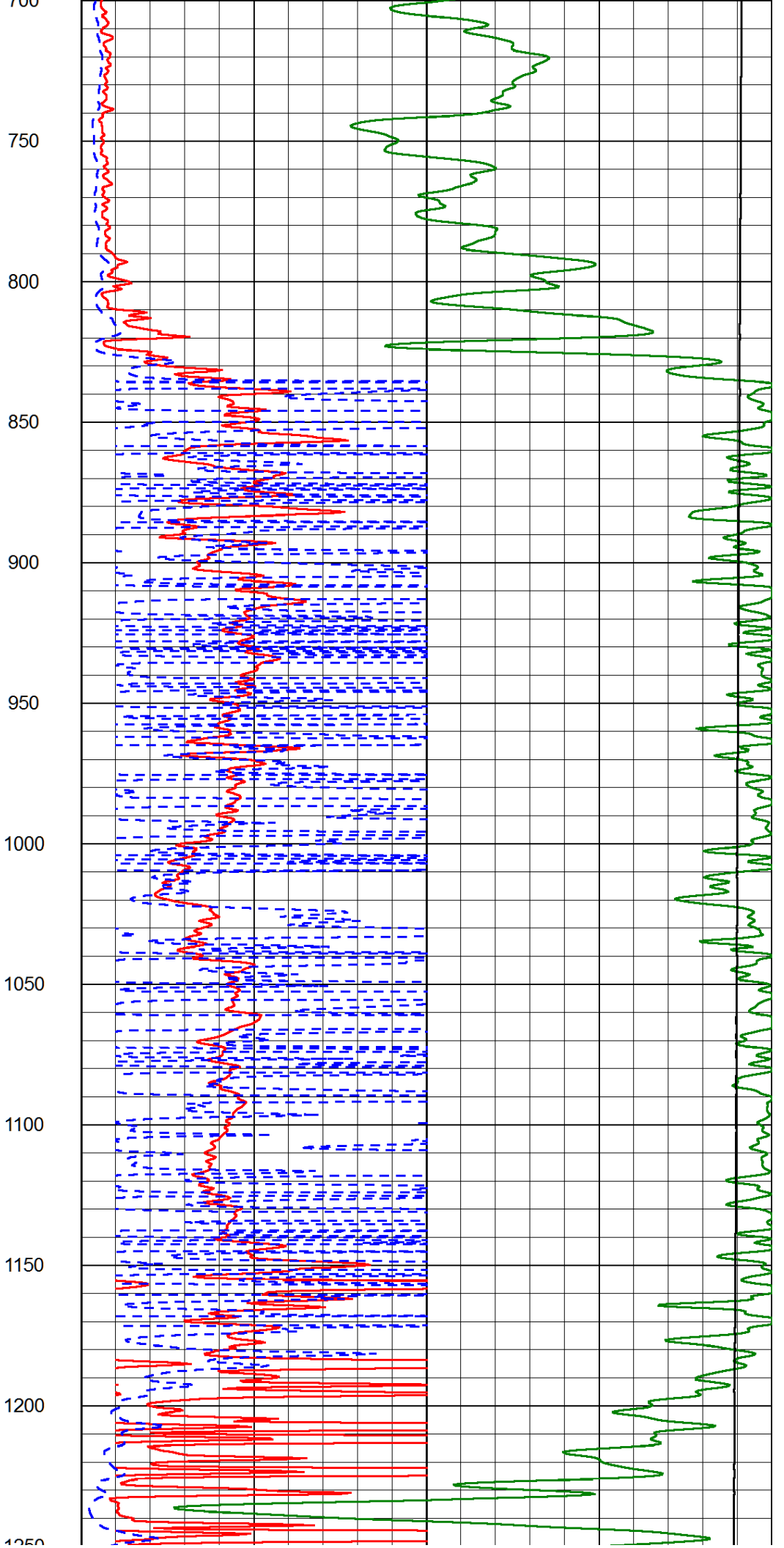
Sterling,
5 South to 82 Rd, 3/4 West to Bonesprings Rd, 3/4 South,
West into

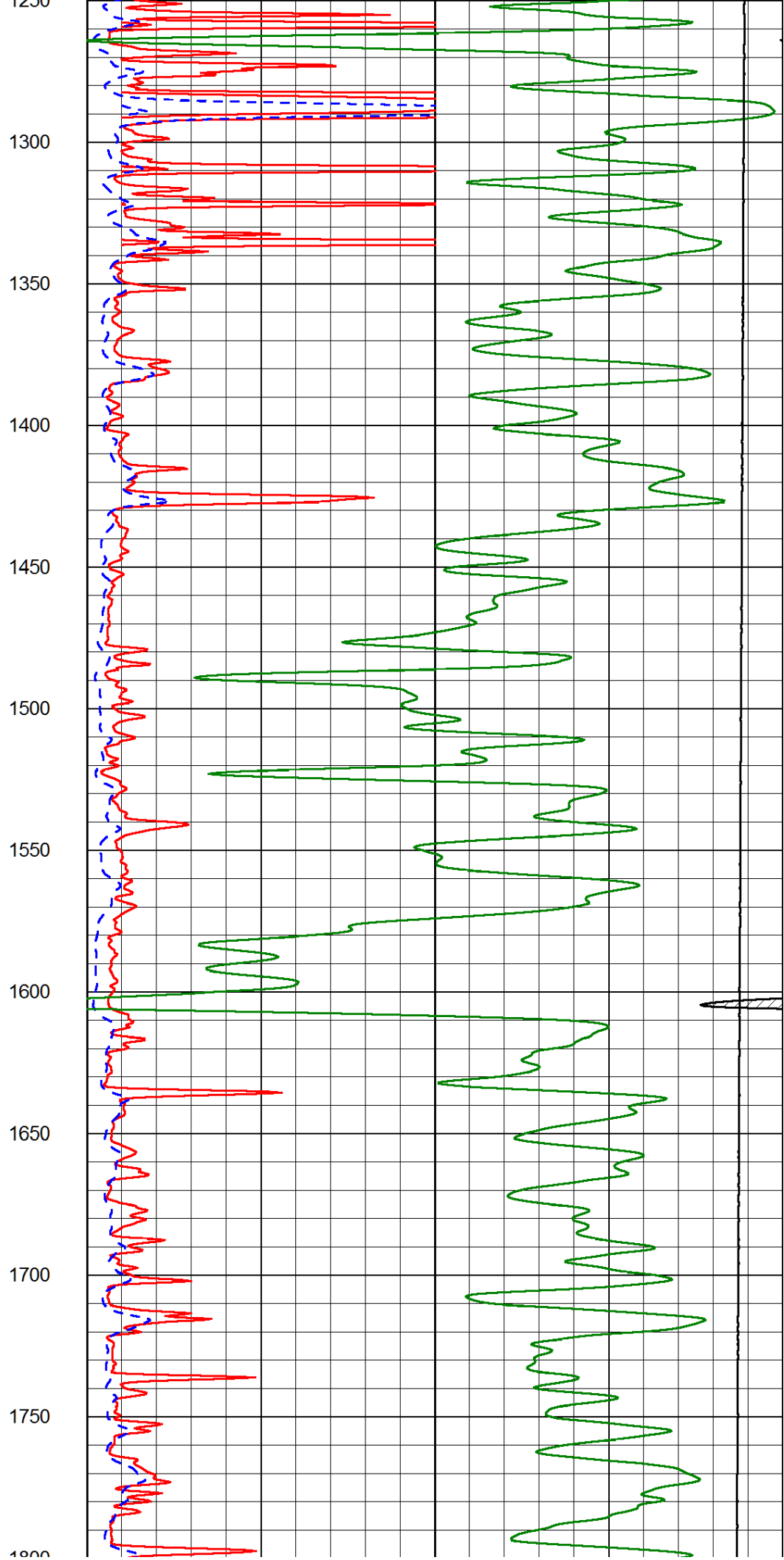
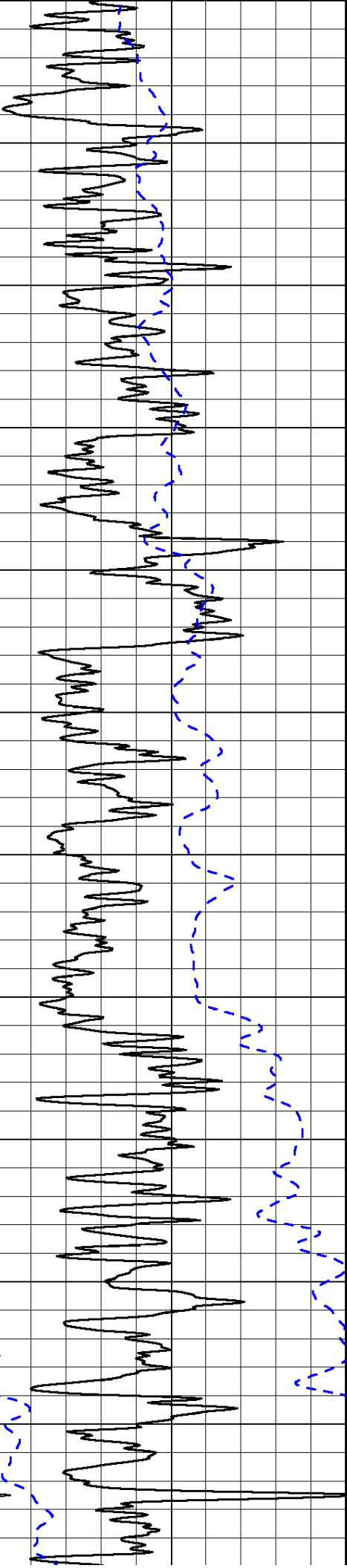
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Dataset Pathname: dil/novy
Presentation Format: dil2in
Dataset Creation: Fri Feb 01 20:48:39 2013
Charted by: Depth in Feet scaled 1:600

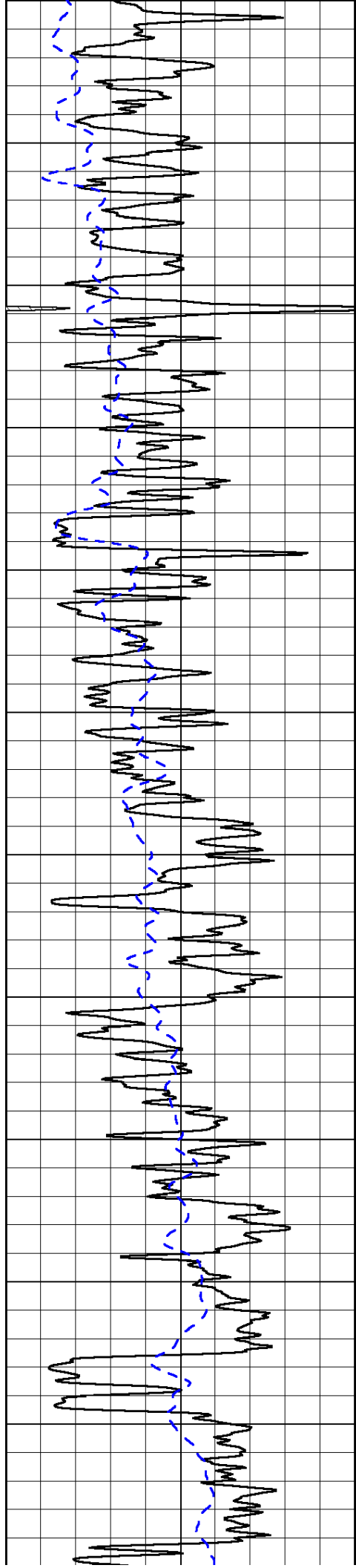
0	Gamma Ray (GAPI)	150
-200	SP (mV)	0

0	Shallow Resistivity (Ohm-m)	50
0	Deep Resistivity (Ohm-m)	50
1000	Conductivity (Ohm-m)	0
15000	Line Tension (lb)	0
Shallow Resistivity		
50	(Ohm-m)	500
50	Deep Resistivity (Ohm-m)	500

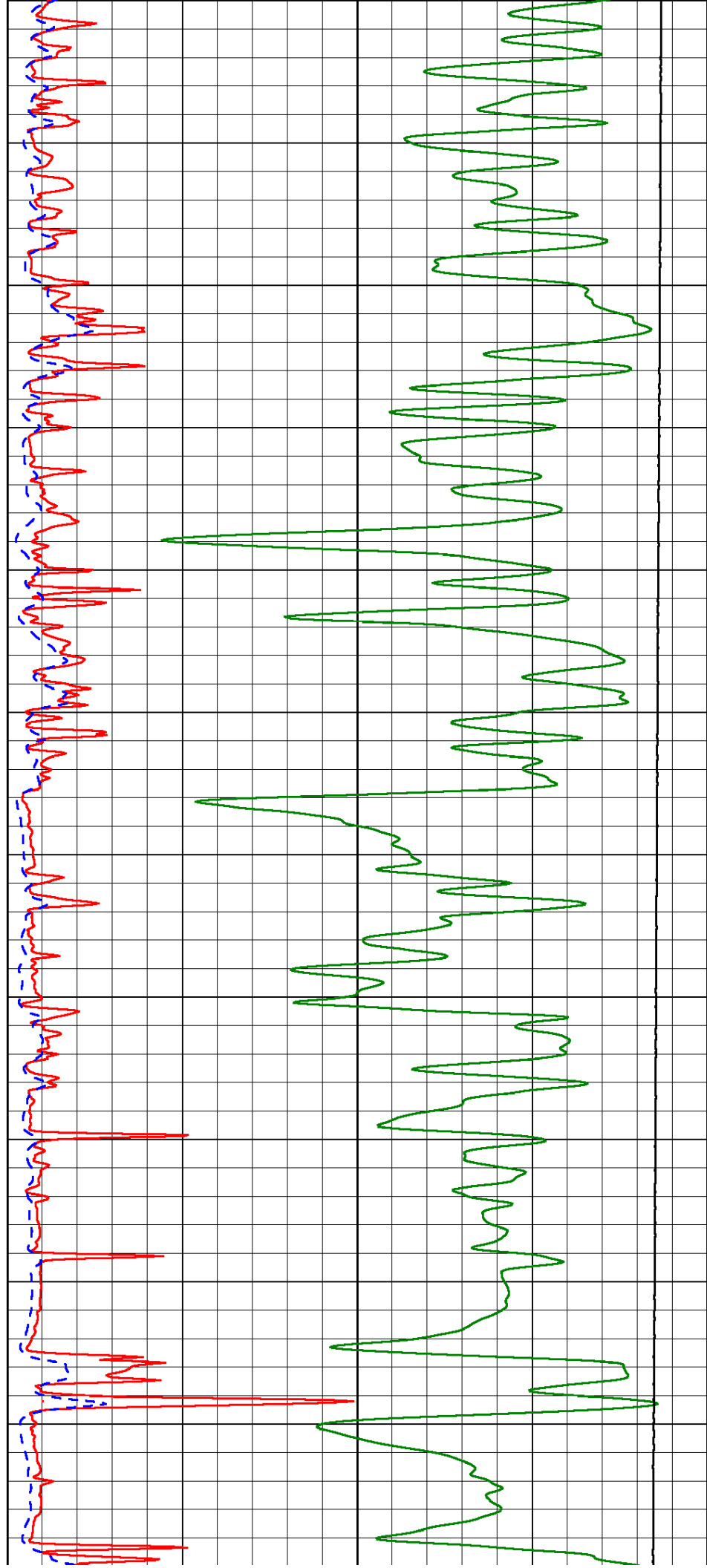


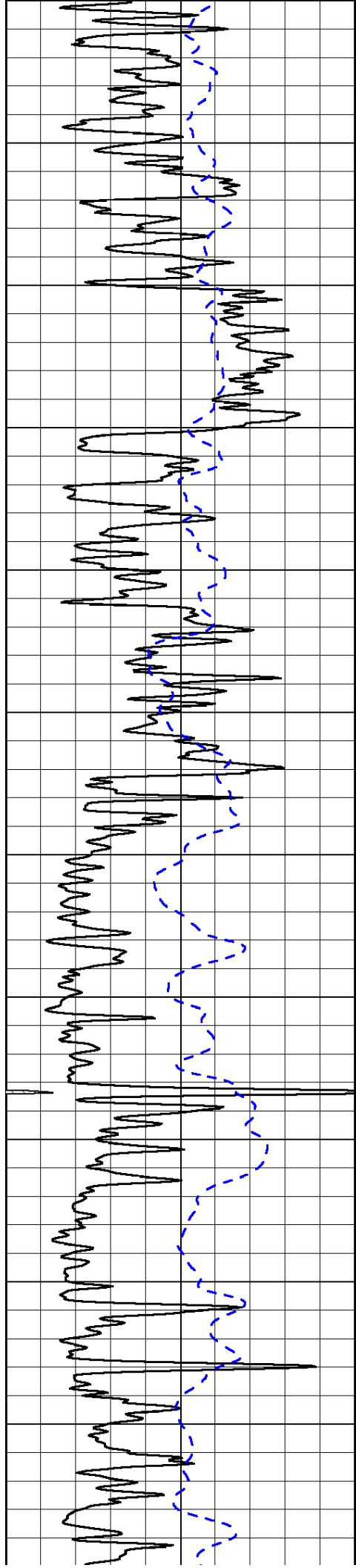
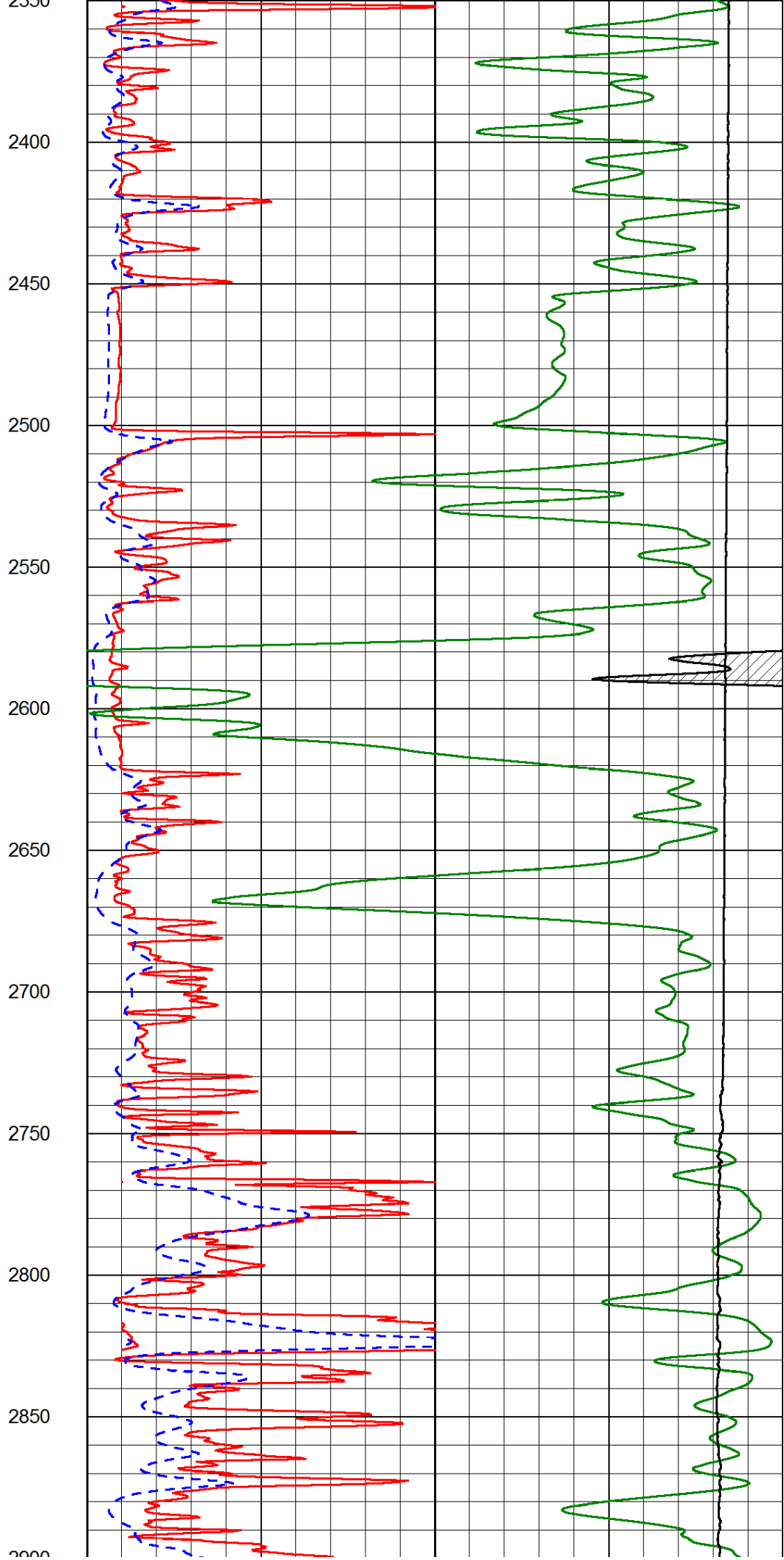


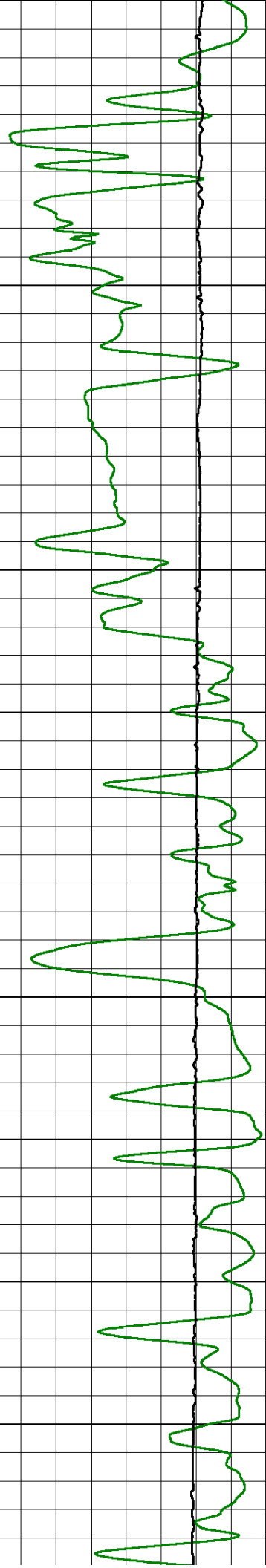
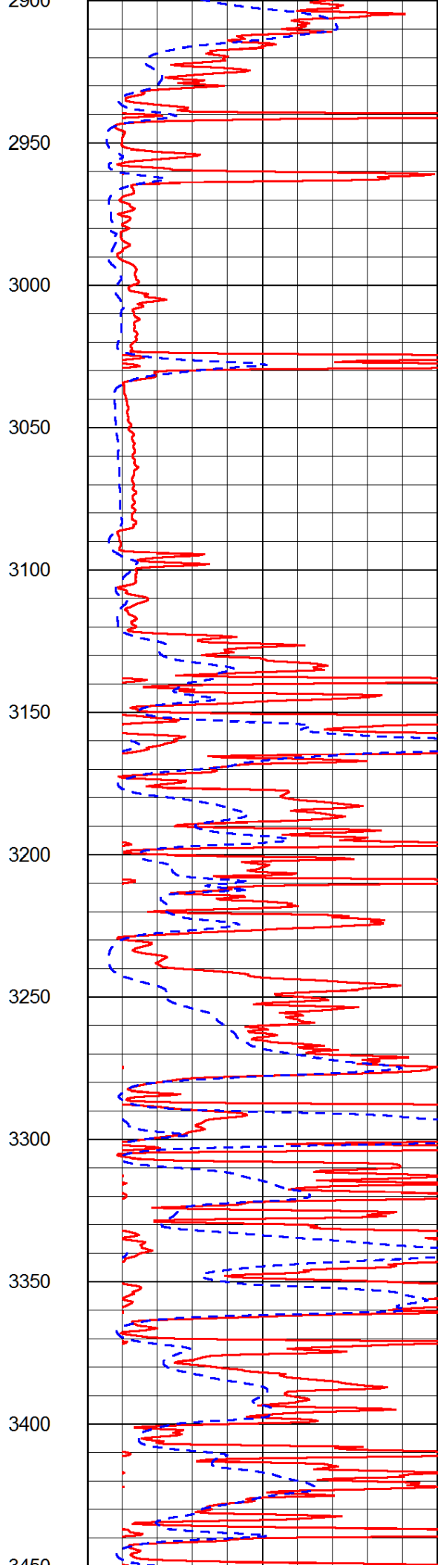
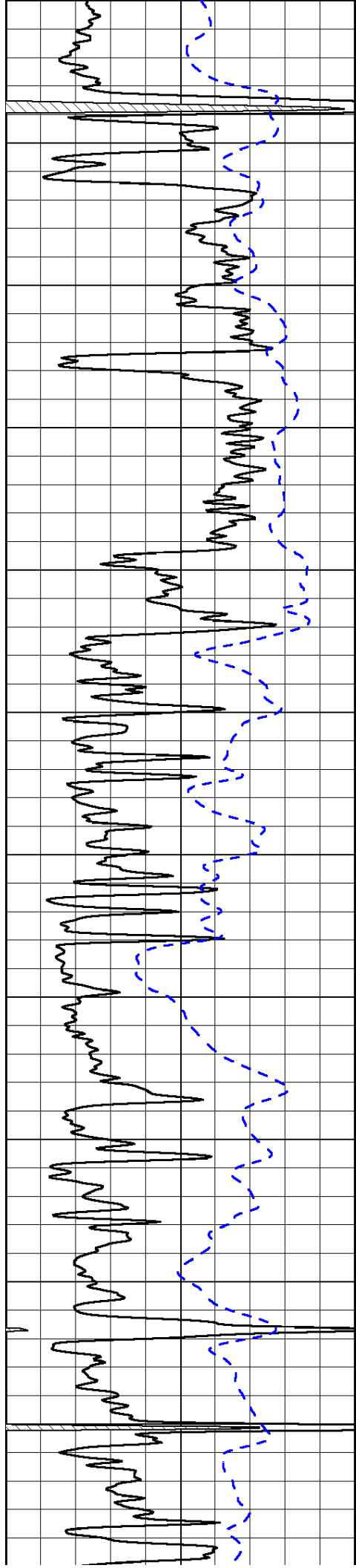


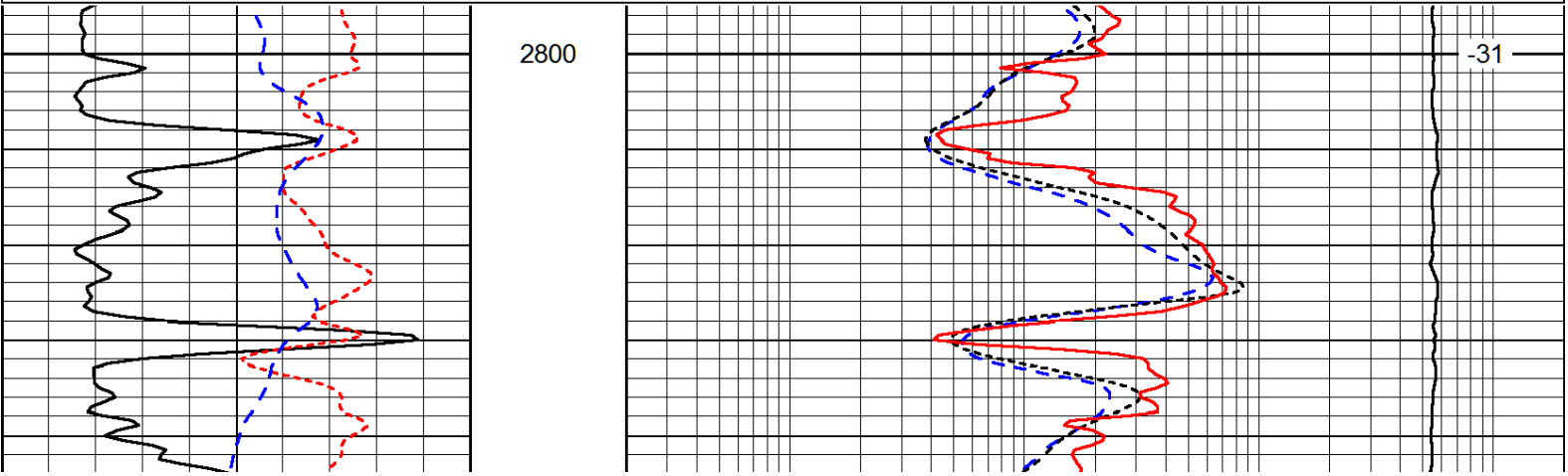
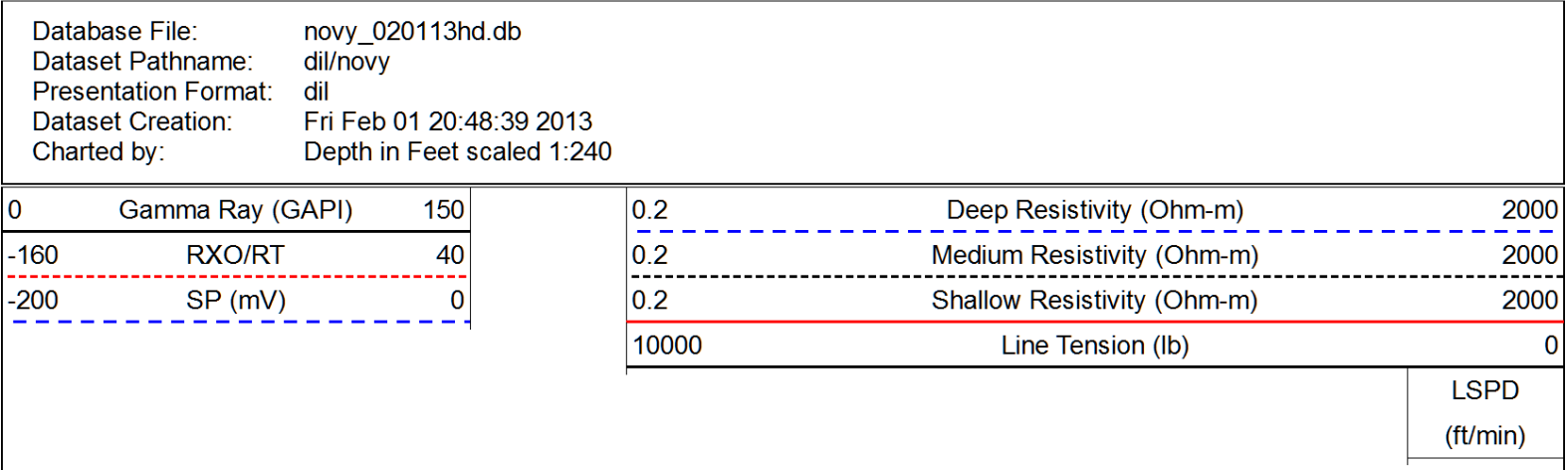
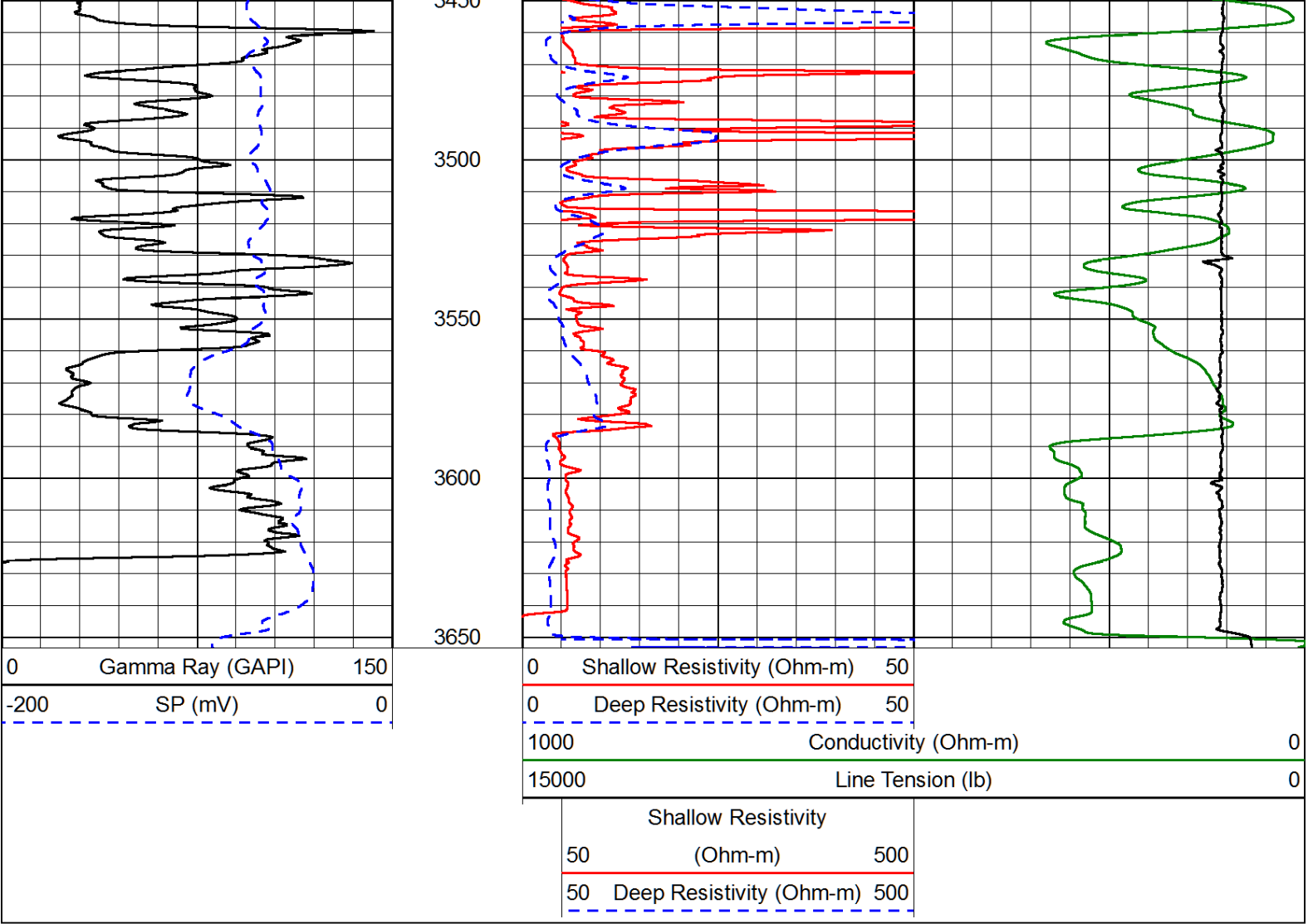


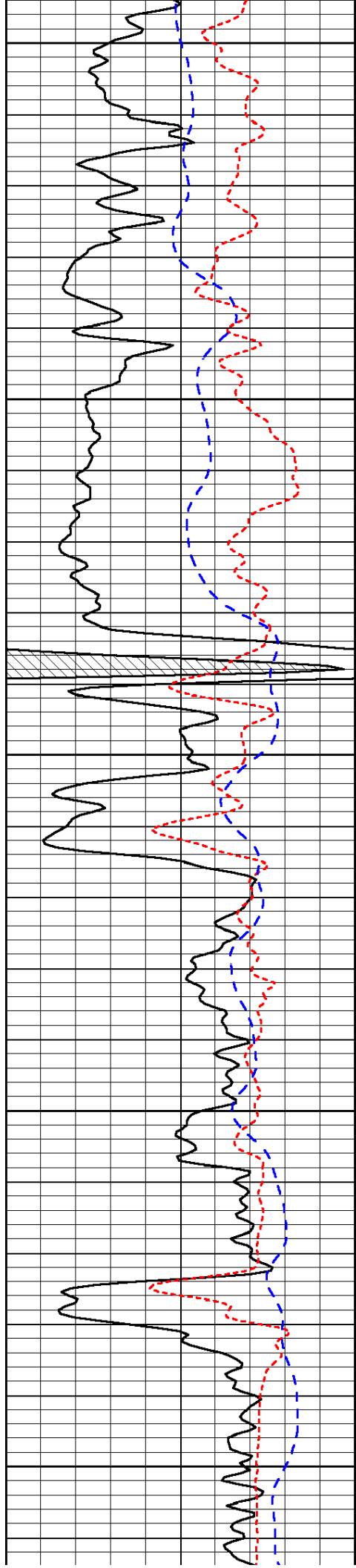
1800
1850
1900
1950
2000
2050
2100
2150
2200
2250
2300
2350











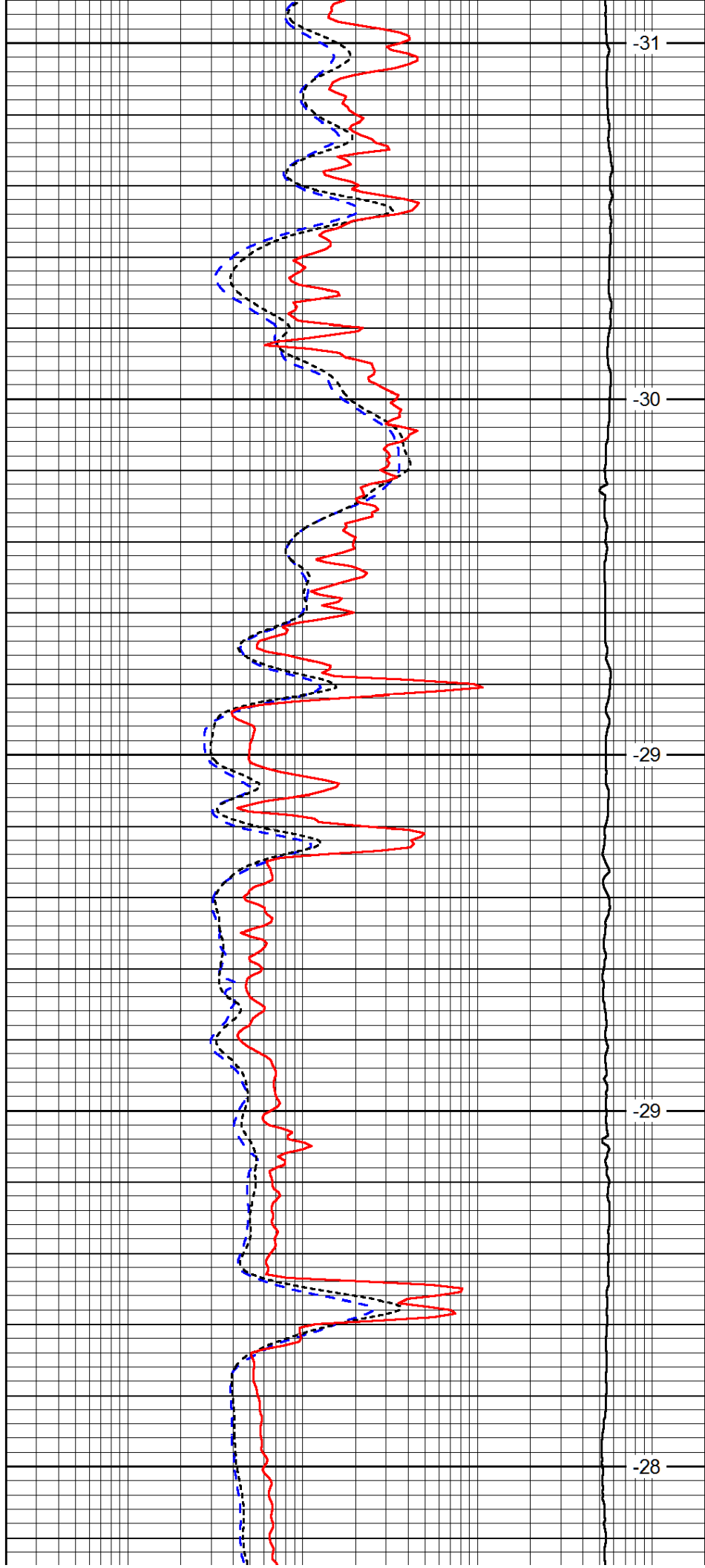
2850

2900

2950

3000

3050



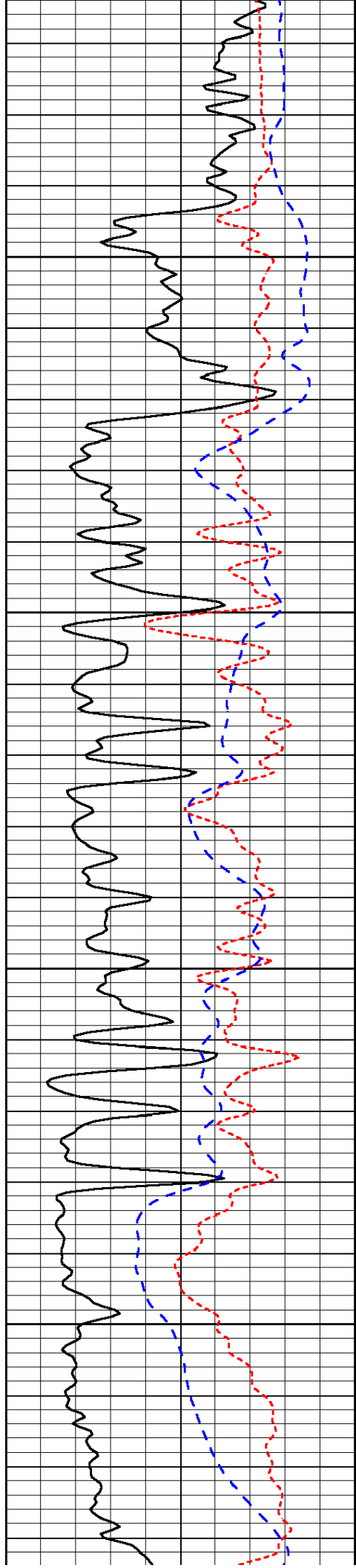
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-30

-29

-29

-28

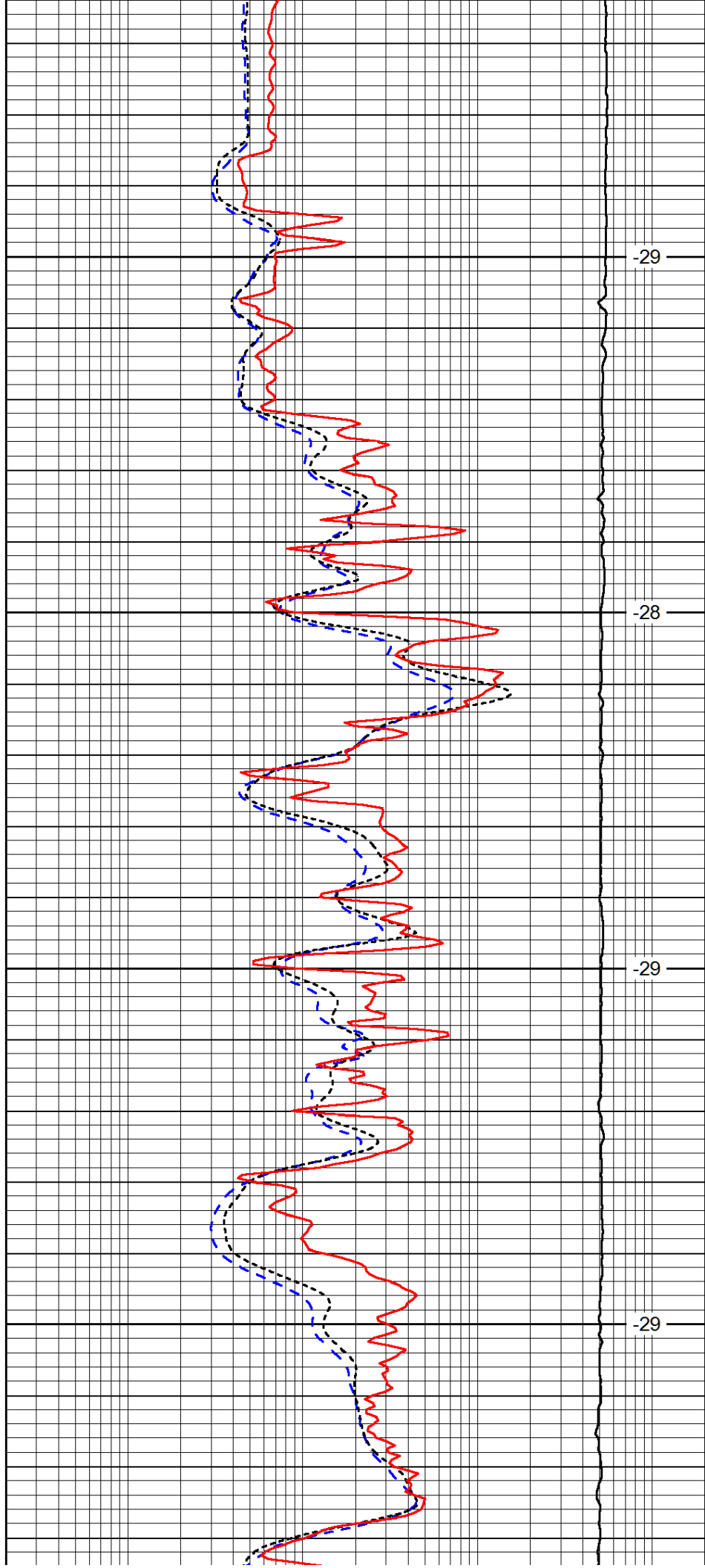


3100

3150

3200

3250

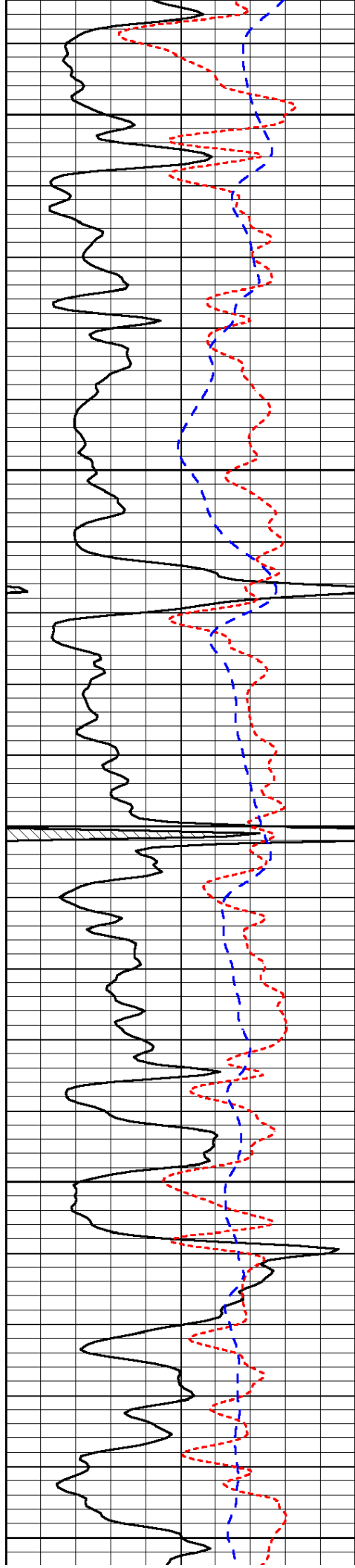


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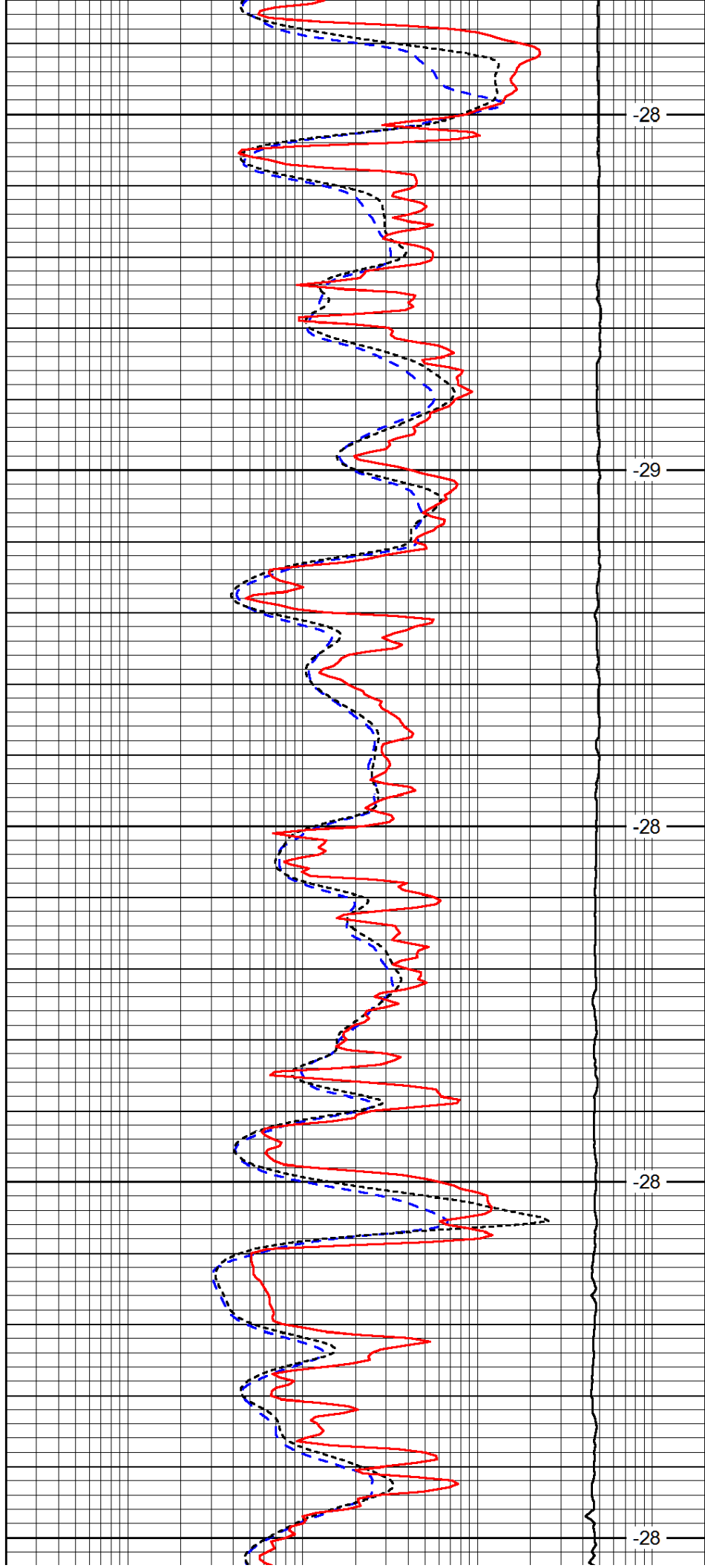
3300

3350

3400

3450

3500



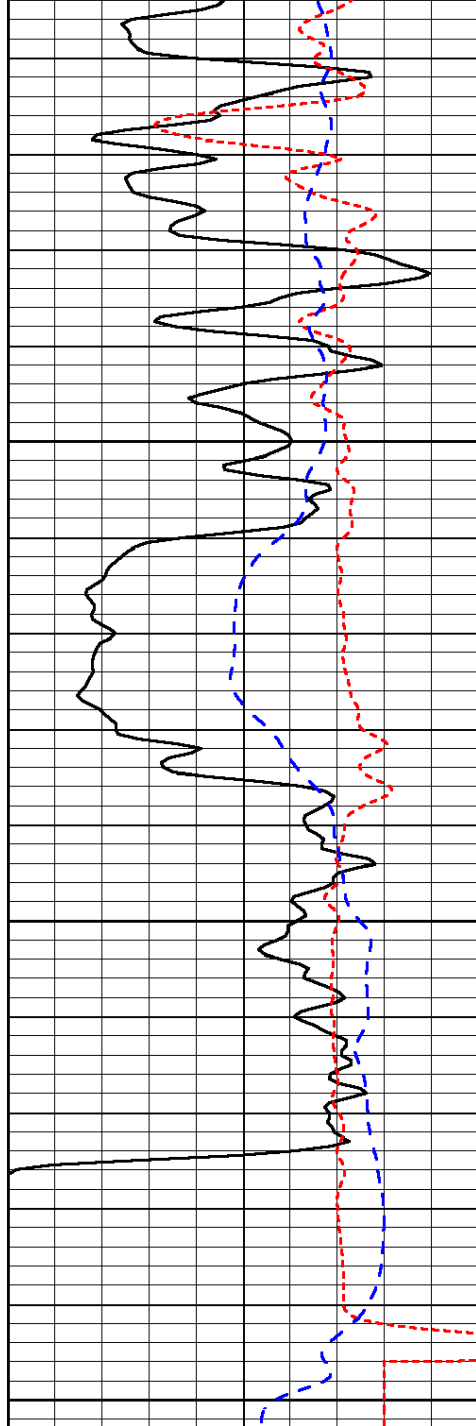
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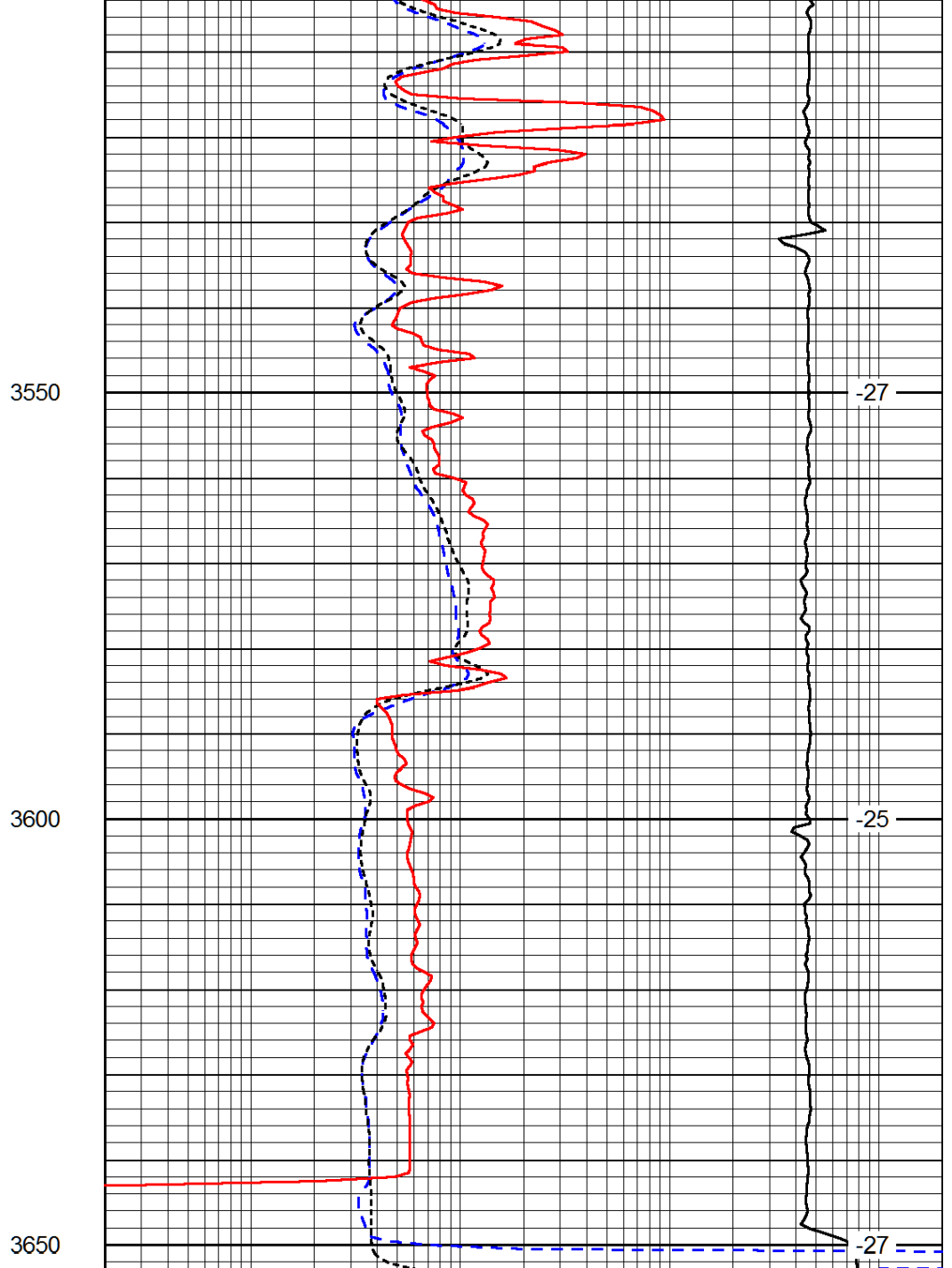
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0	Gamma Ray (GAPI)	150
-160	RXO/RT	40
-200	SP (mV)	0



0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	Shallow Resistivity (Ohm-m)	2000
10000	Line Tension (lb)	0

LSPD
(ft/min)