



Pioneer Energy Services

Dual Induction Log

API No.

15-065-23,947-00-00

Company H&C Oil Operating, Inc.

Well Michele No.13-1

Field Keith

County Graham State

Kansas

Location 1650' FSL & 2310' FWL

Sec: 13 Twp: 9S Rge: 25W

Other Services
CNL/CDL
MEL

Permanent Datum Ground Level Elevation 2543
Log Measured From Kelly Bushing 5 Ft. Above Perm. Datum
Drilling Measured From Kelly Bushing

Date 7/3/2013

Run Number One

Depth Driller 4170

Depth Logger 4172

Bottom Logged Interval 4171

Top Log Interval 250

Casing Driller 8.625 @ 258

Casing Logger 257

Bit Size 7.875

Type Fluid in Hole Chemical

Salinity,ppm CL 1,800

Density / Viscosity 9.1 60

pH / Fluid Loss 10.0 7.2

Source of Sample Flowline

Rm @ Meas. Temp 1.45 @ 75

Rmf @ Meas. Temp 1.09 @ 75

Rmc @ Meas. Temp 1.96 @ 75

Source of Rmf / Rmc Charts

Rm @ BHT .92 @ 118

Operating Rig Time 4 Hours

Max Rec. Temp. F 118

Equipment Number 17

Location Hays

Recorded By C. Desaire

Witnessed By Mike Bair

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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

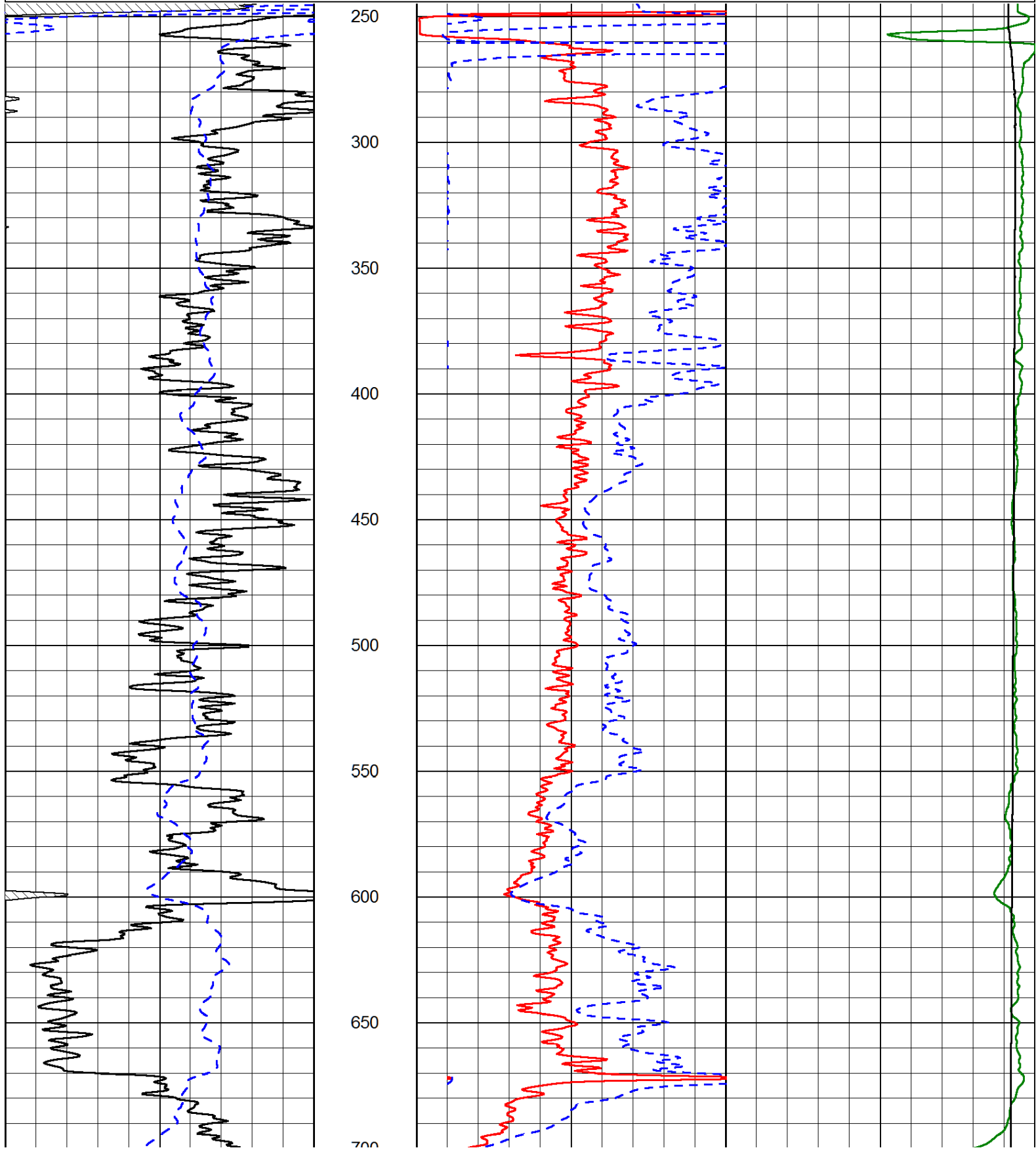
Thank you for using Log-Tech, Inc.
(785) 625-3858

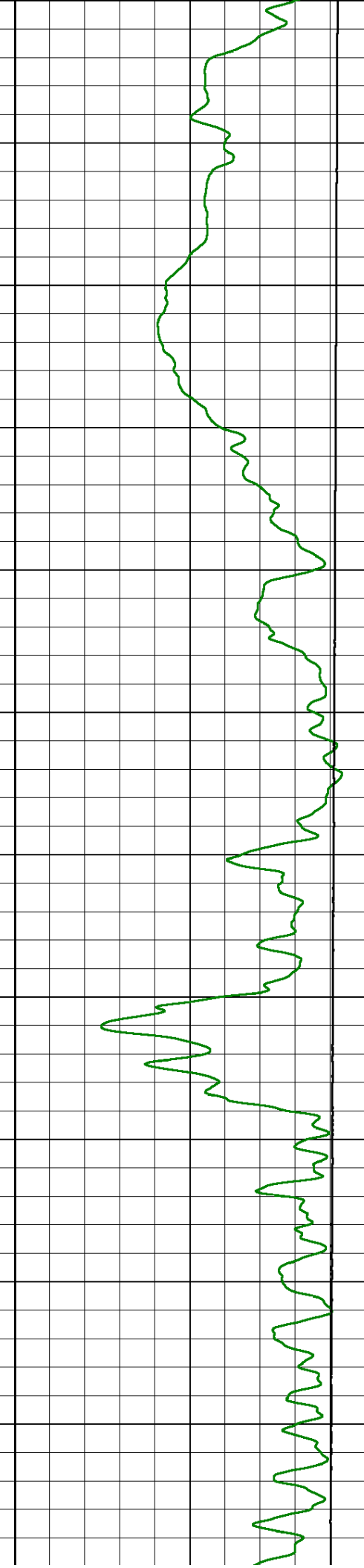
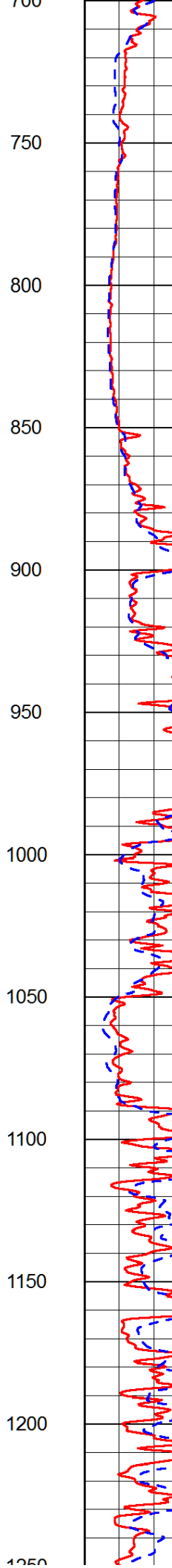
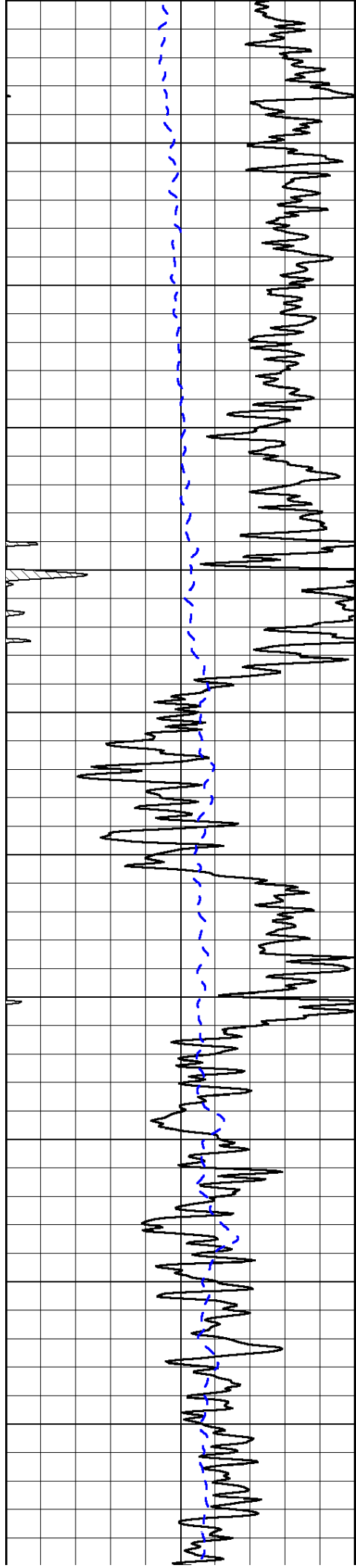
Wakeeney KS, N to H Rd, 11 W to 150 Rd,
3 N, 1/2 E, 3/4 S Into

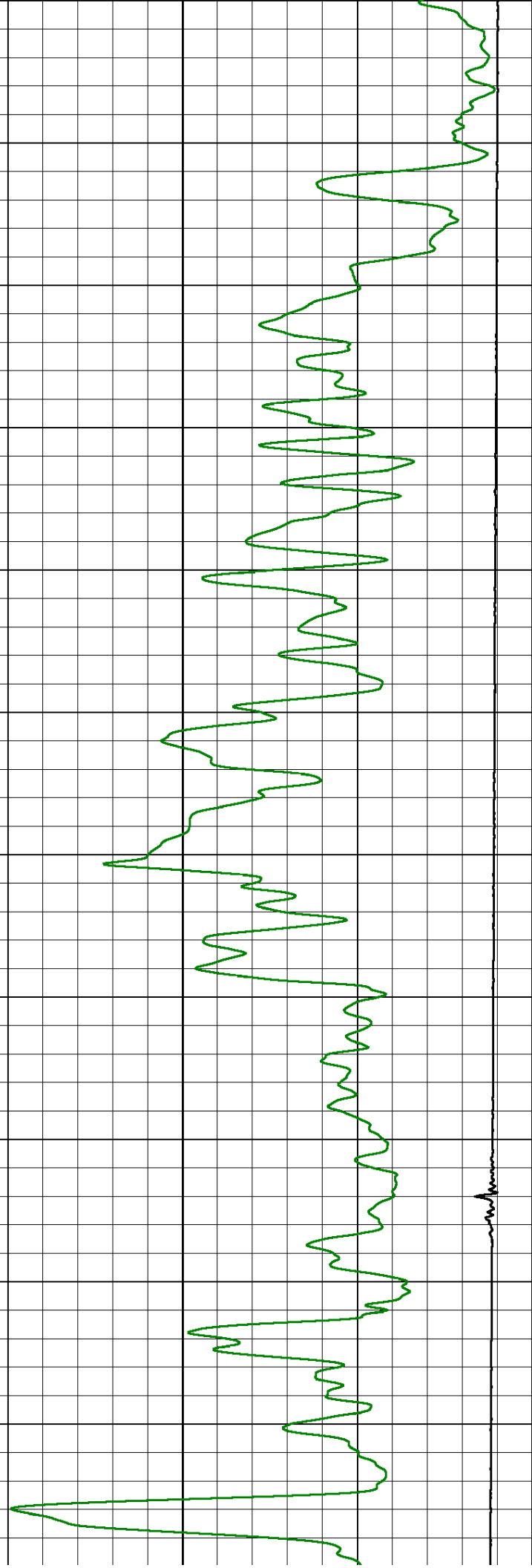
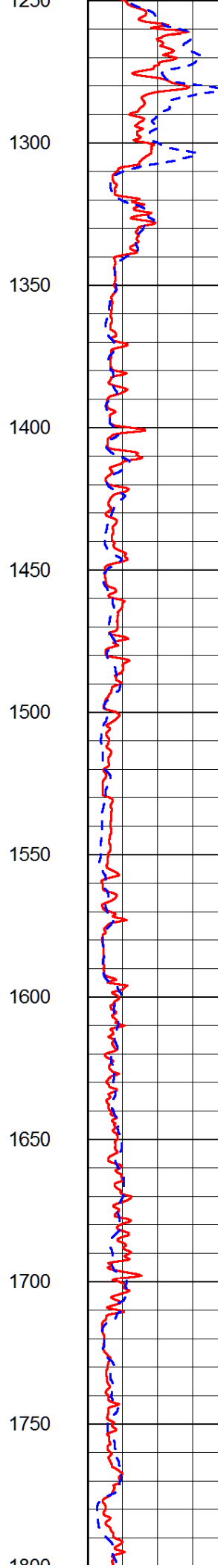
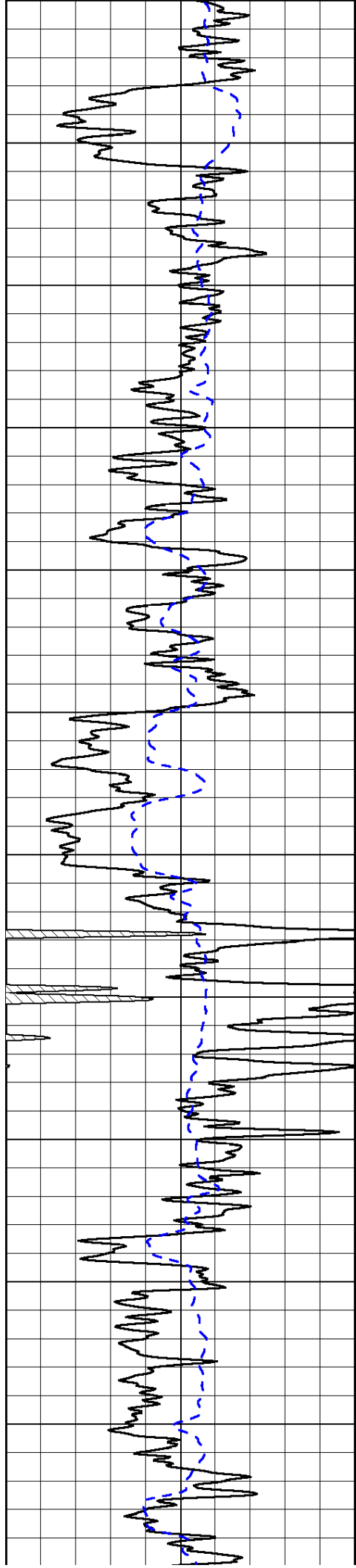
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Presentation Format: dil2in
Dataset Creation: Wed Jul 03 17:20:37 2013
Charted by: Depth in Feet scaled 1:600

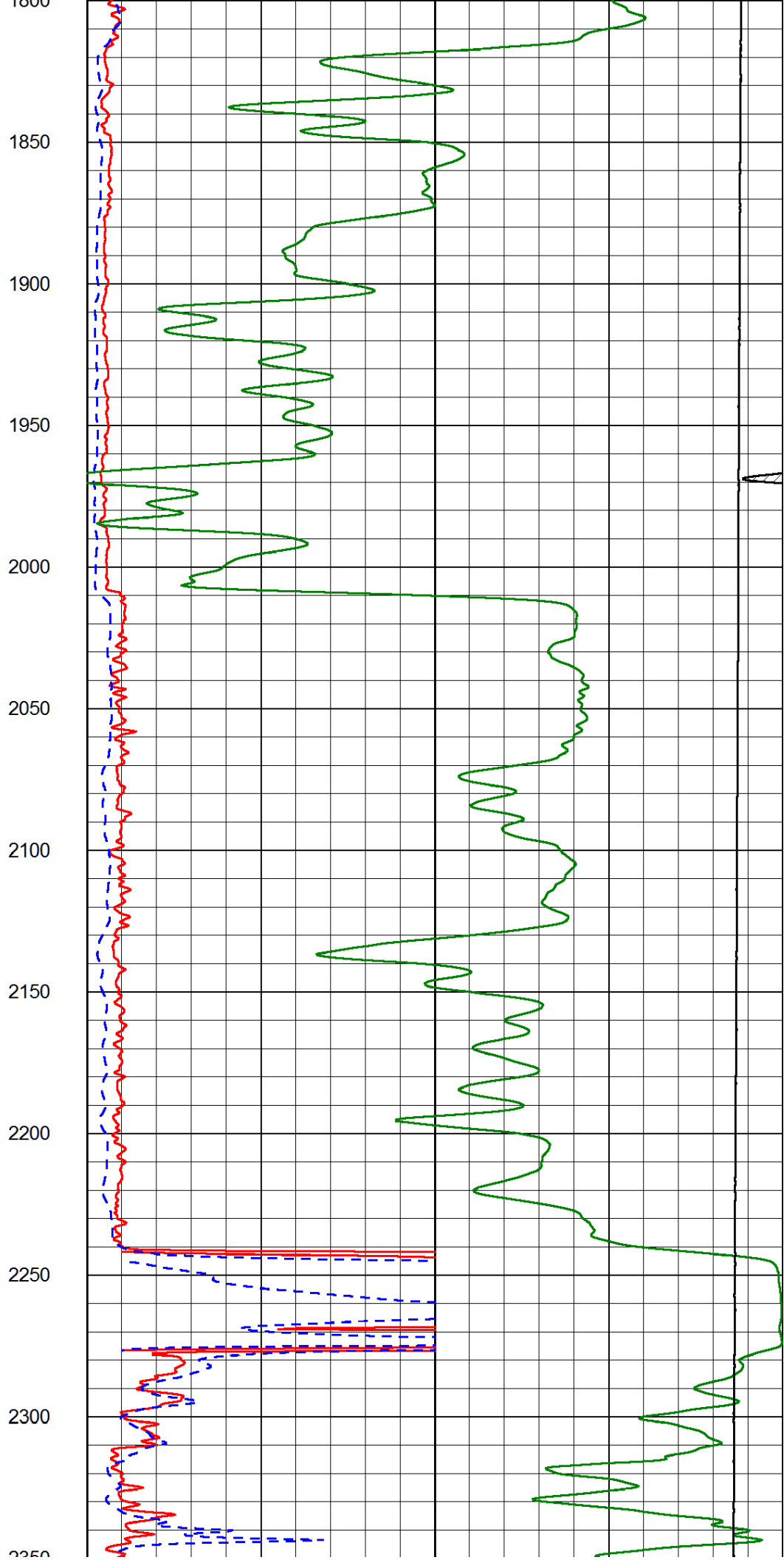
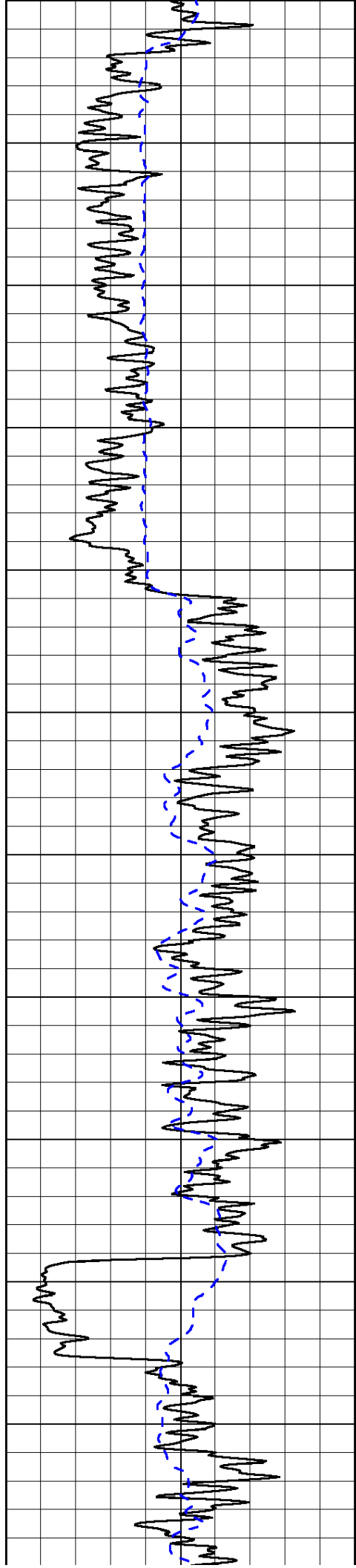
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-200	SP (mV)	0

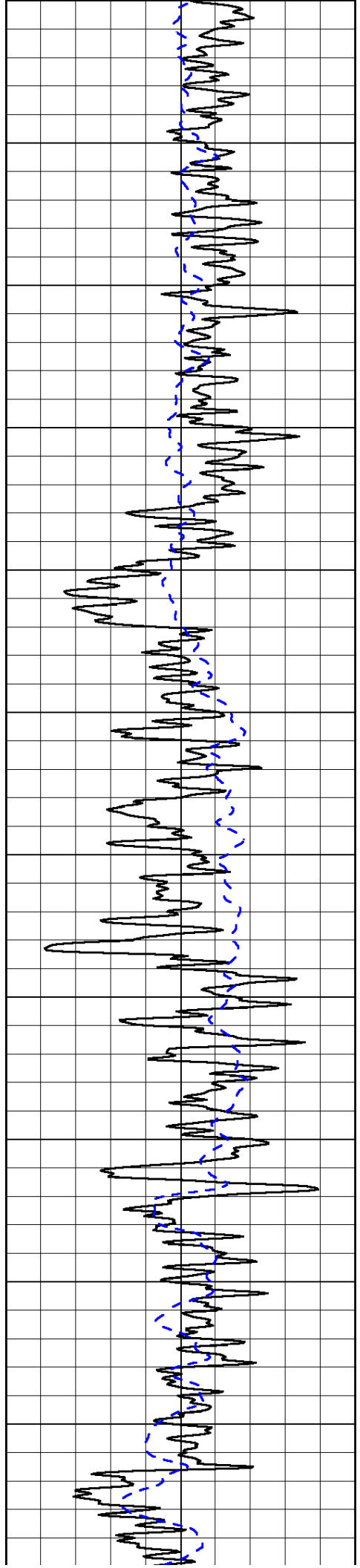
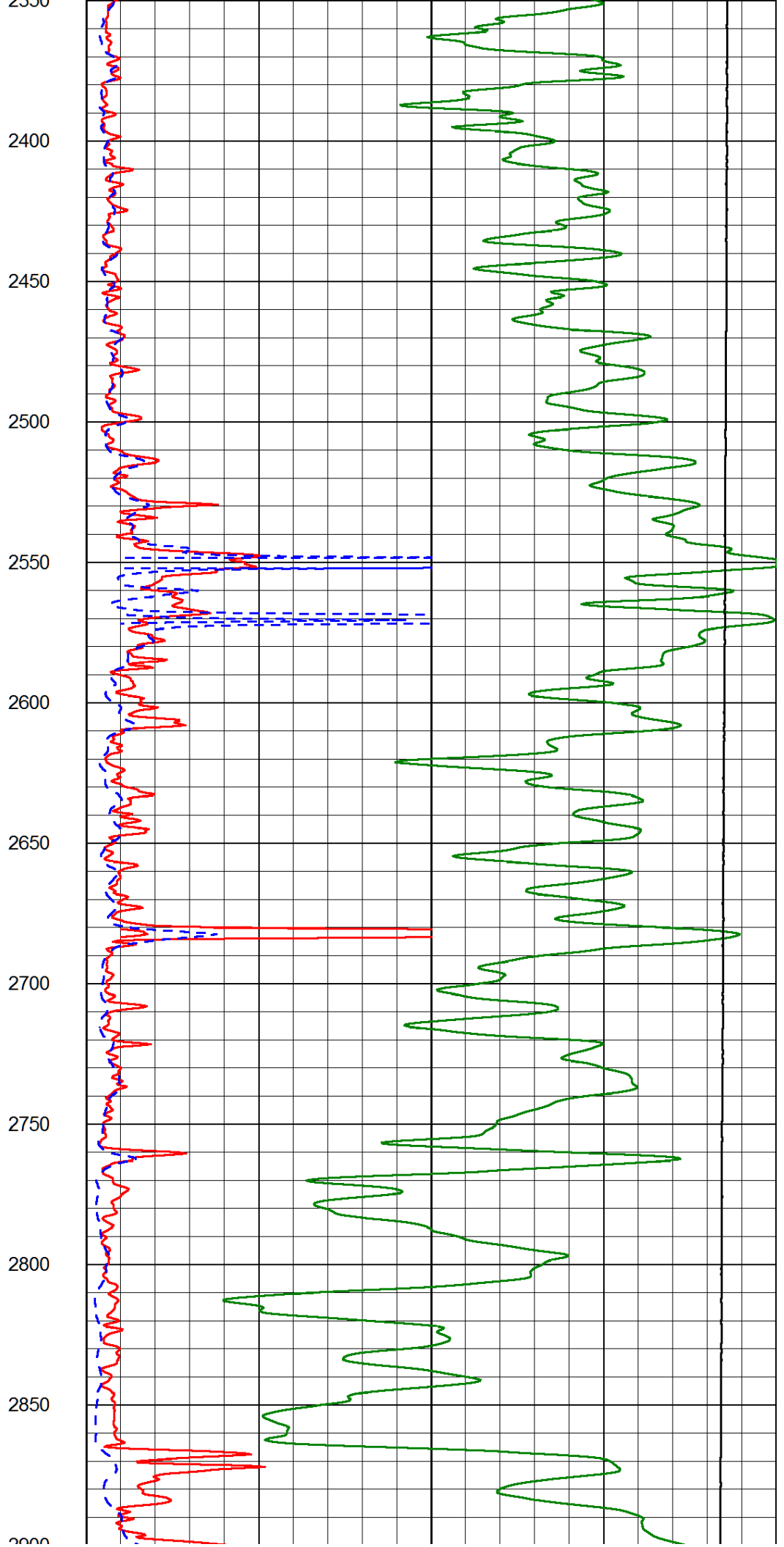
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0	Deep Resistivity (Ohm-m)	50
1000	Conductivity (Ohm-m)	0
15000	Line Tension (lb)	0

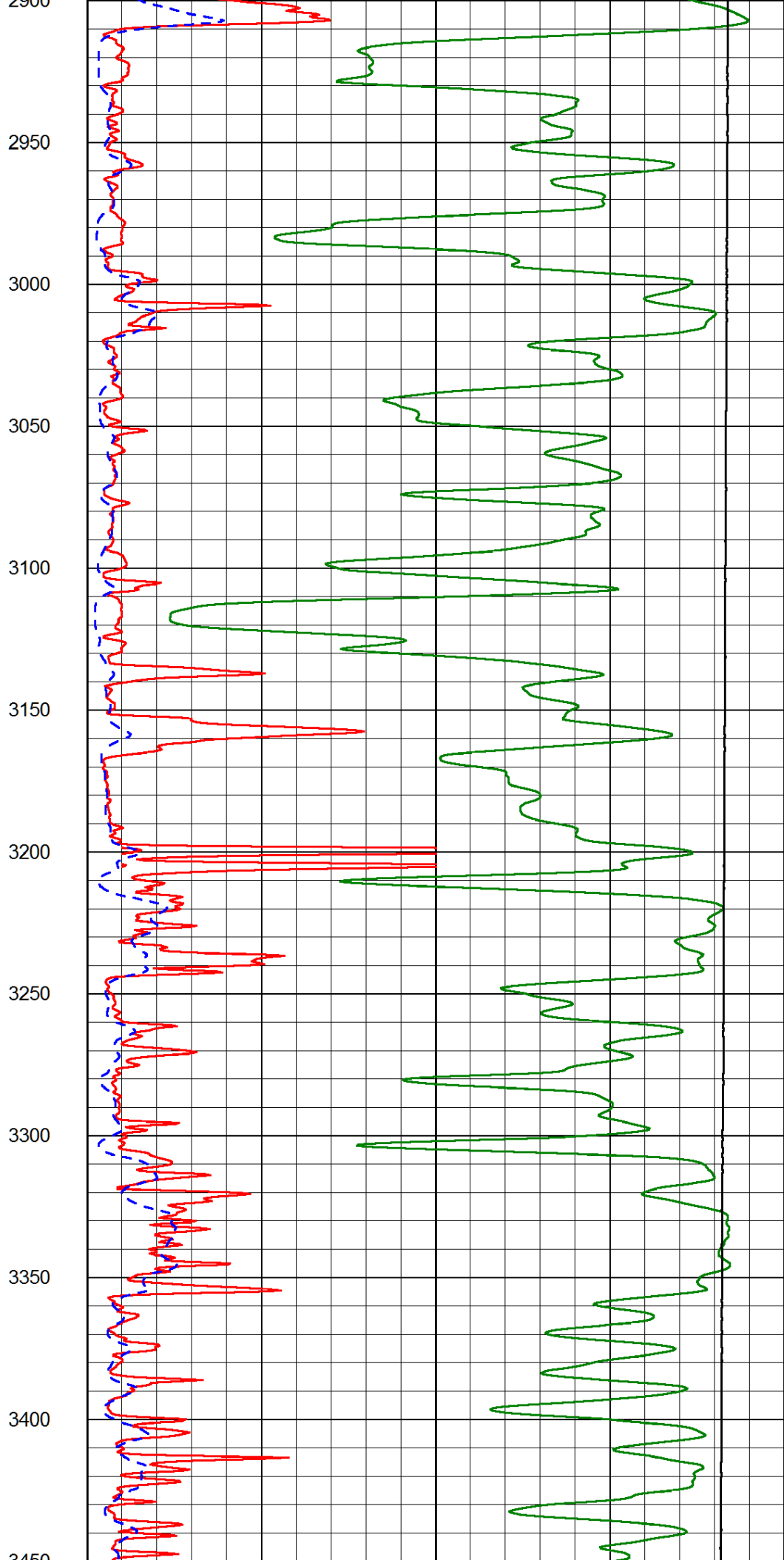
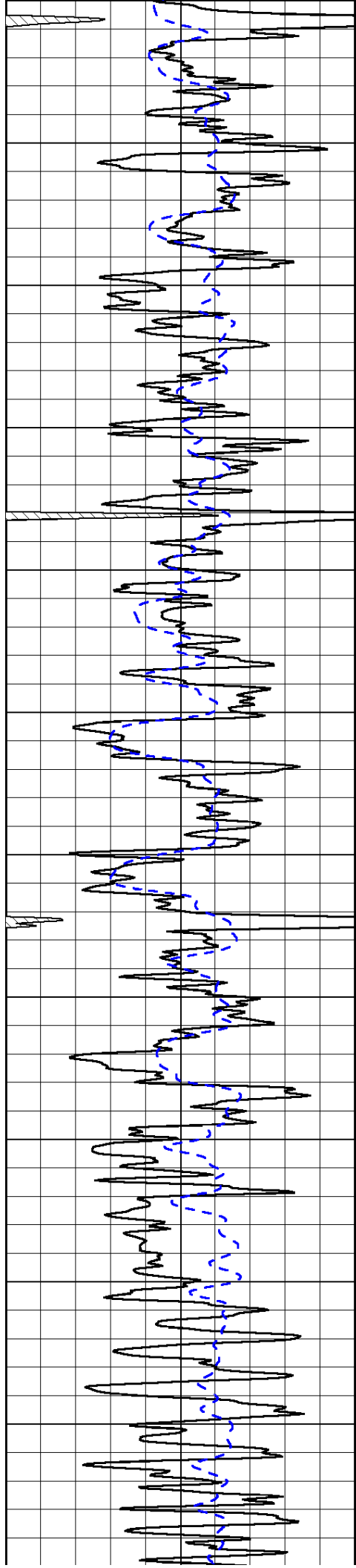


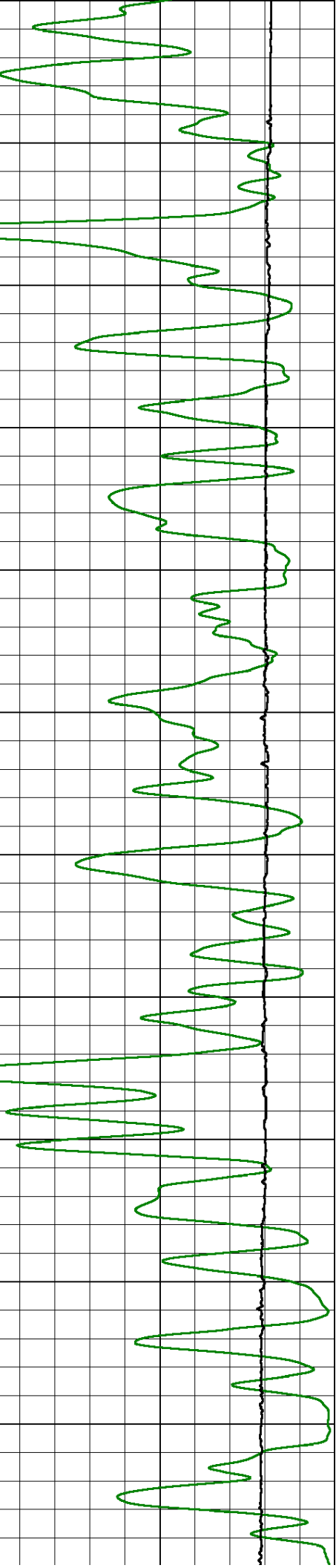
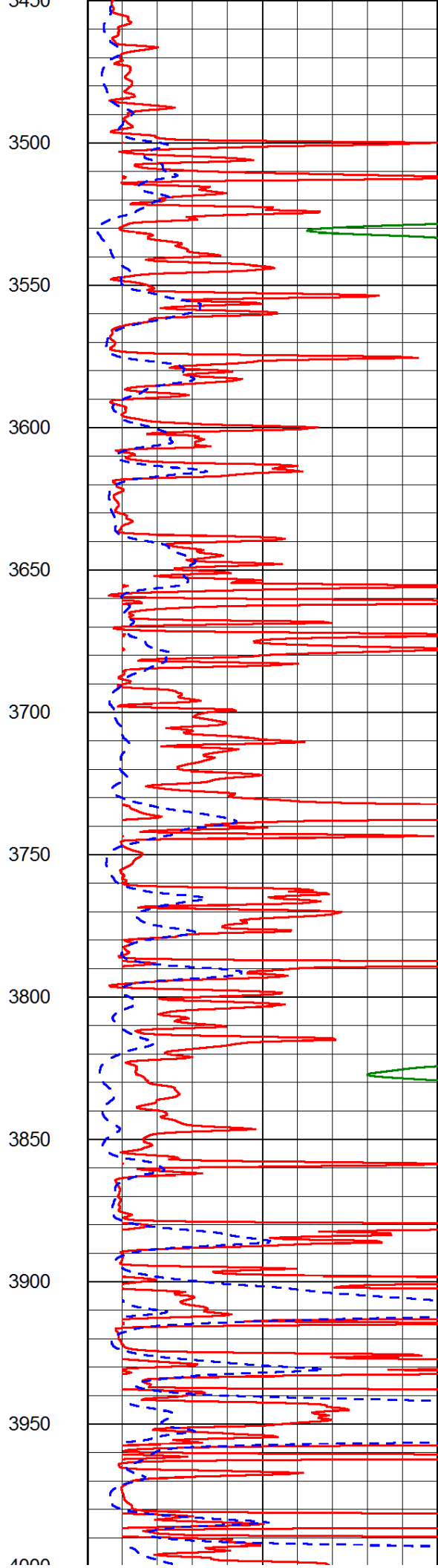
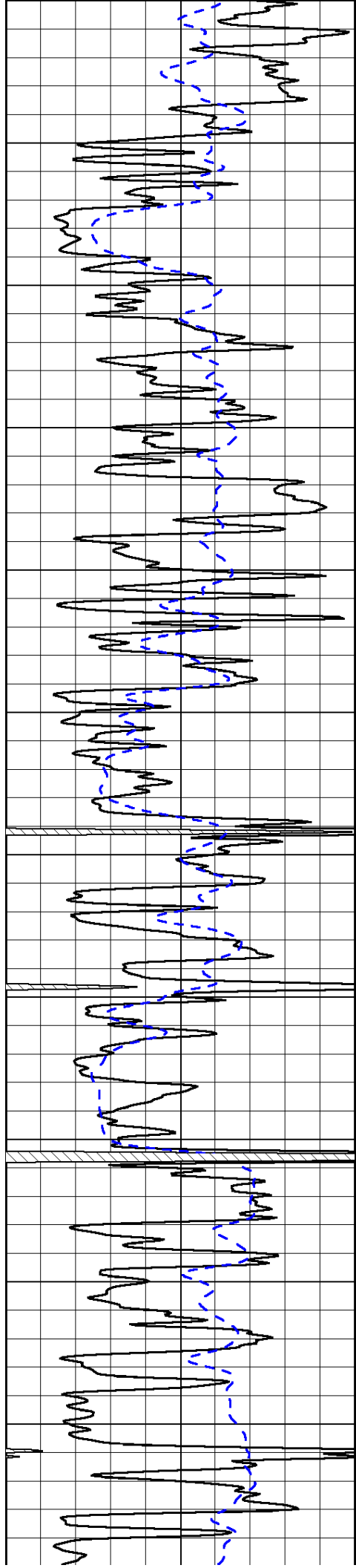


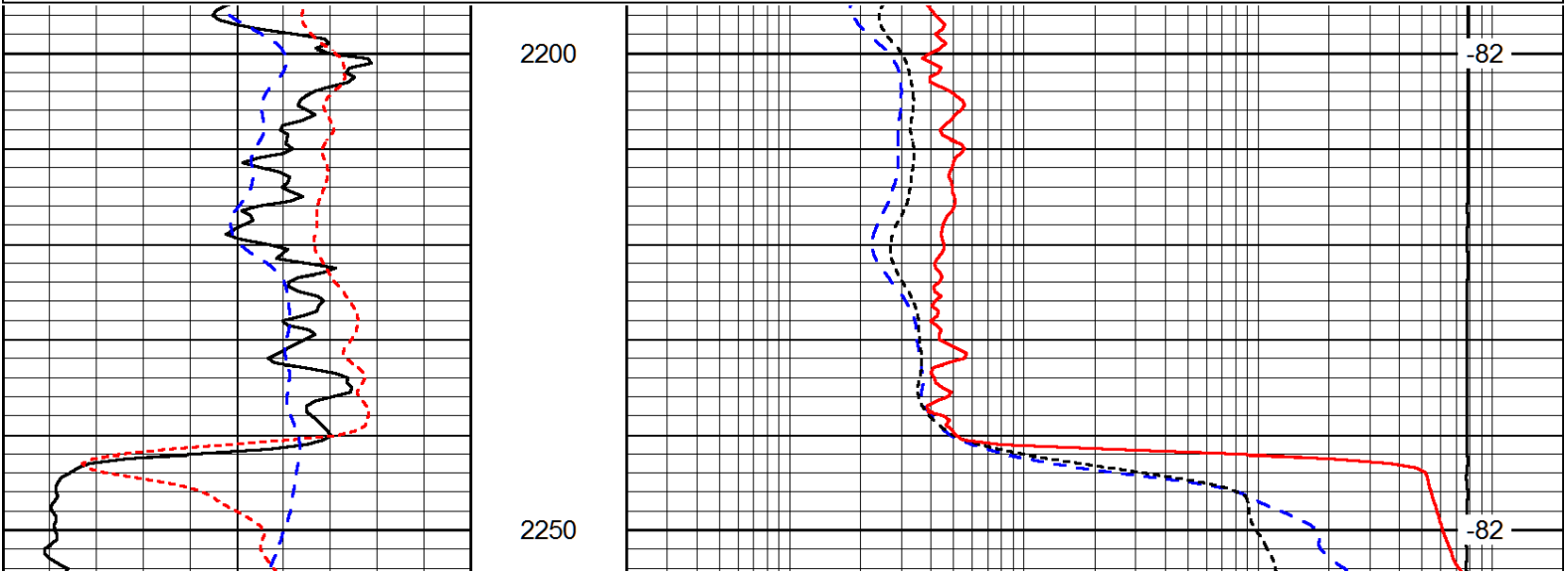
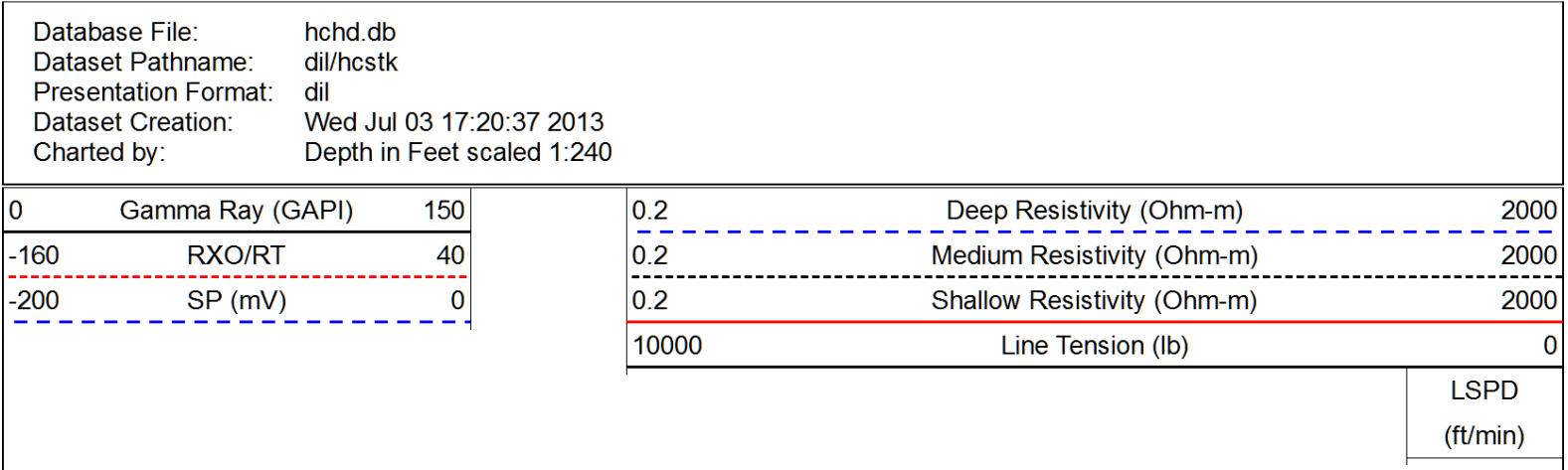
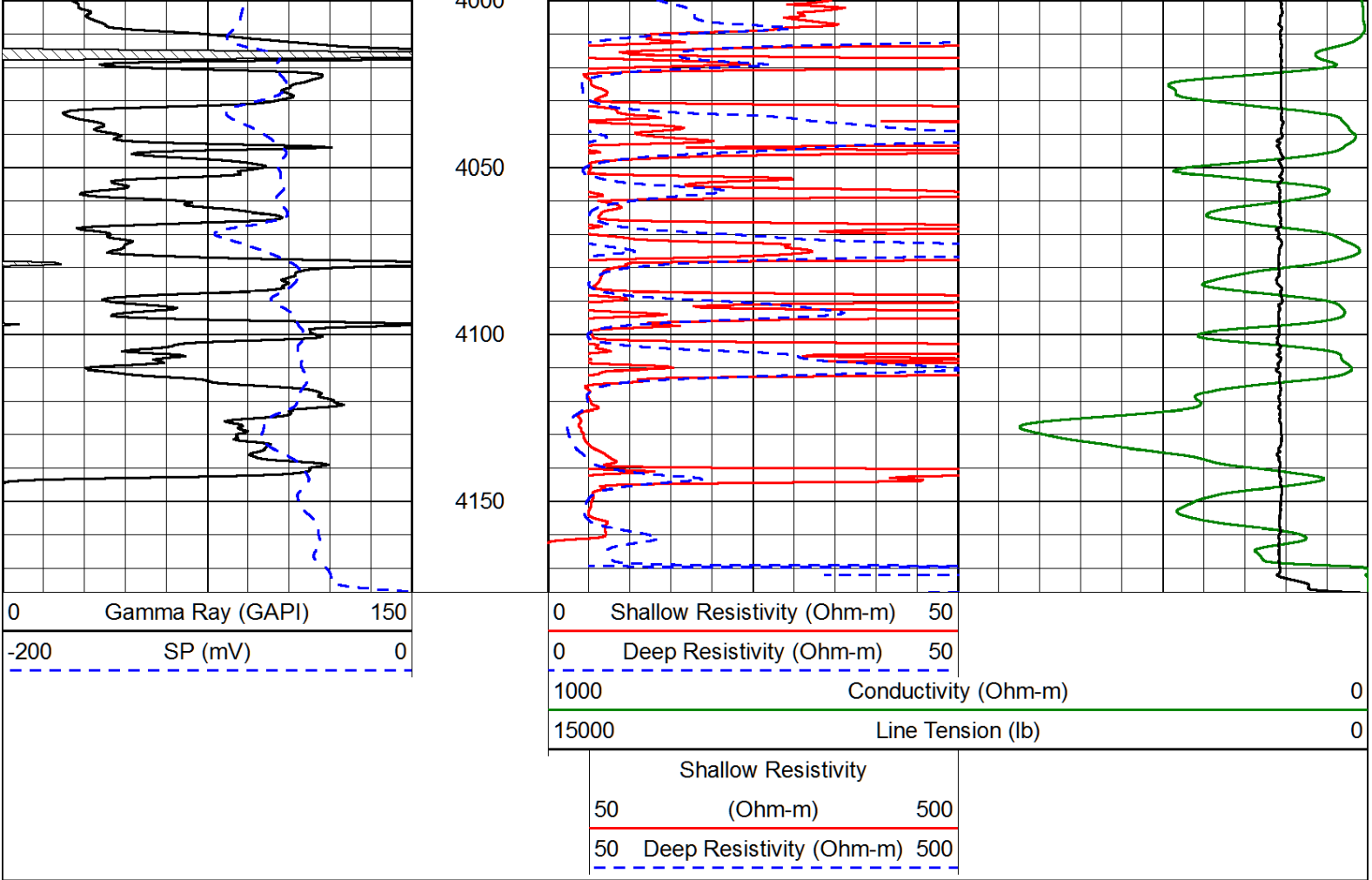


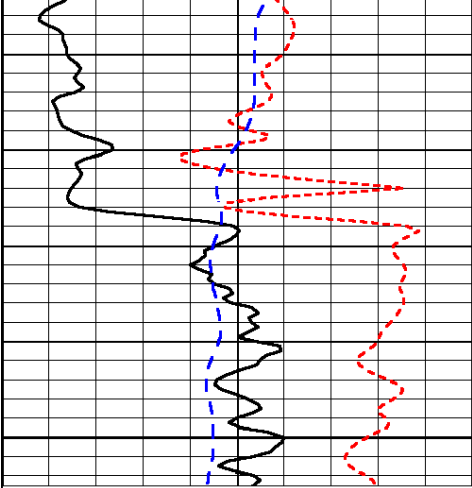






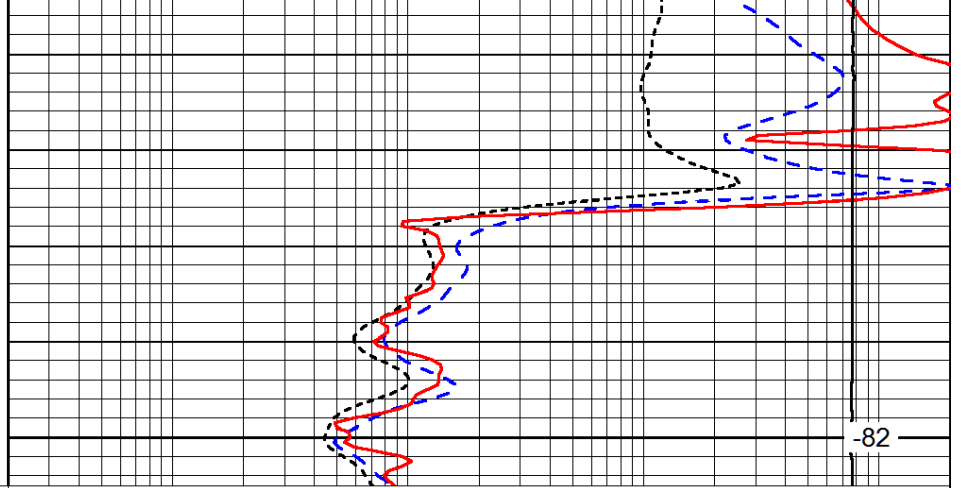






2300

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



-82

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

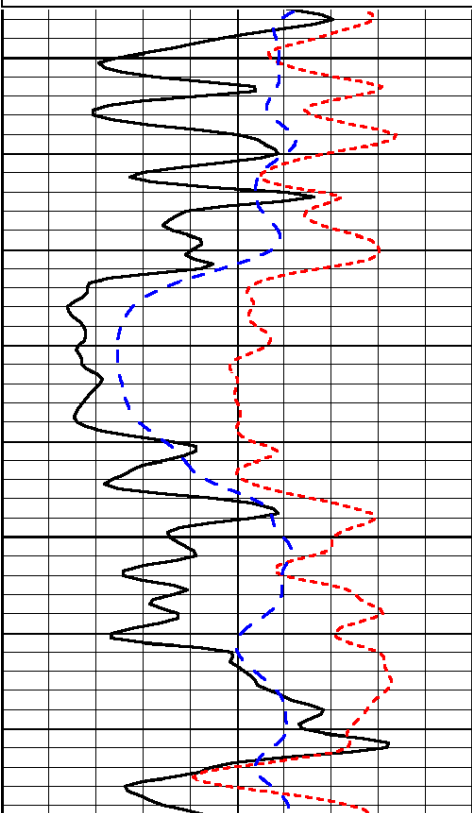
LSPD
(ft/min)

Database File: hchd.db
Dataset Pathname: dil/hcstk
Presentation Format: dil
Dataset Creation: Wed Jul 03 17:20:37 2013
Charted by: Depth in Feet scaled 1:240

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

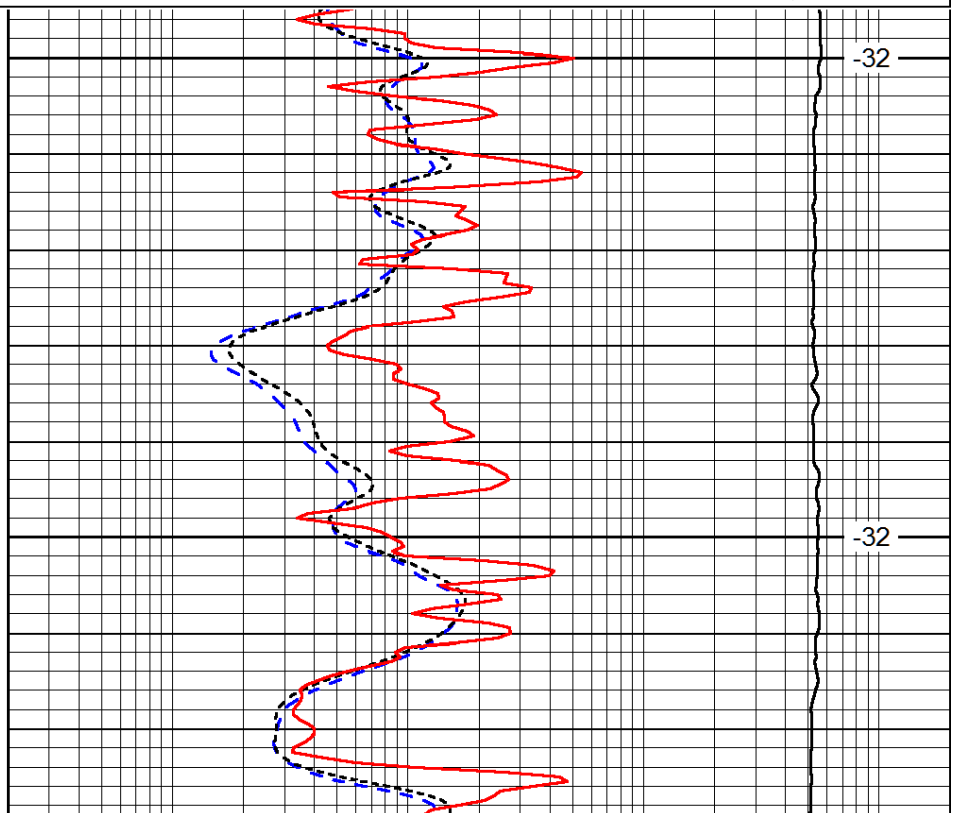
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LSPD
(ft/min)



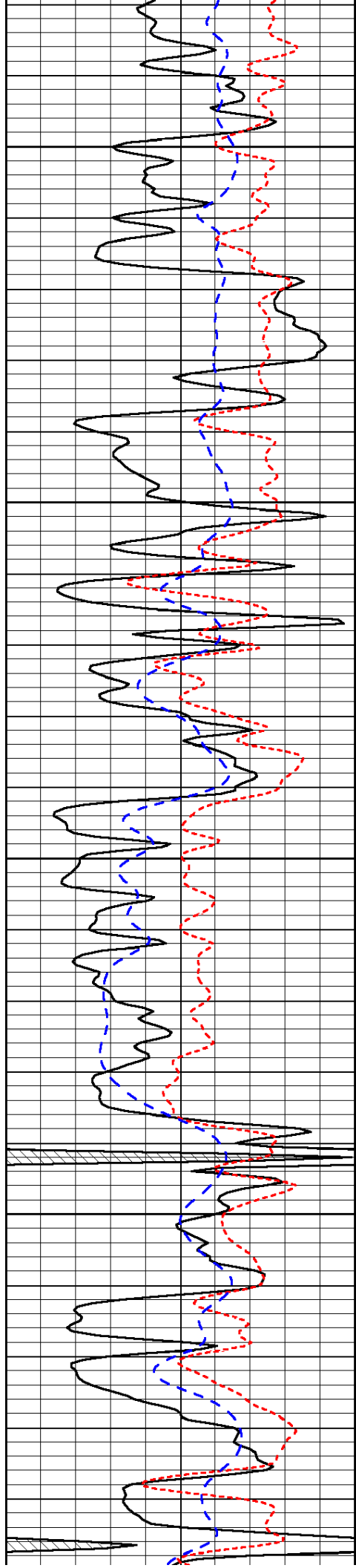
3500

3550



-32

-32



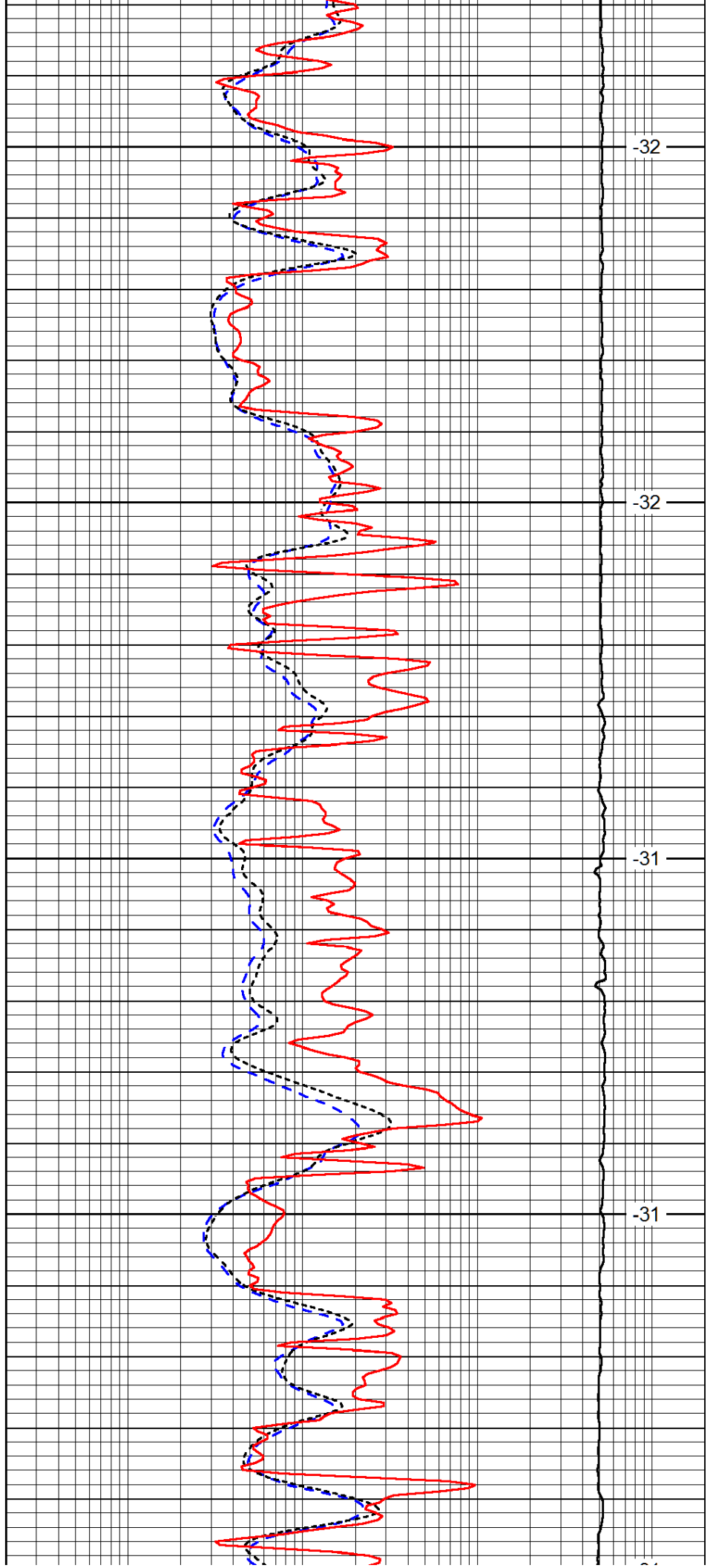
3600

3650

3700

3750

3800



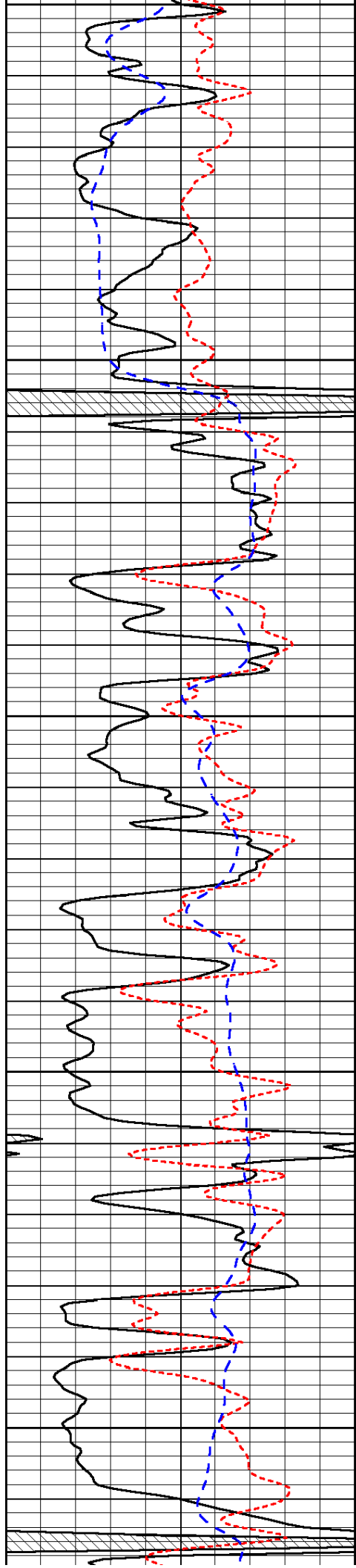
-32

-32

-31

-31

-30



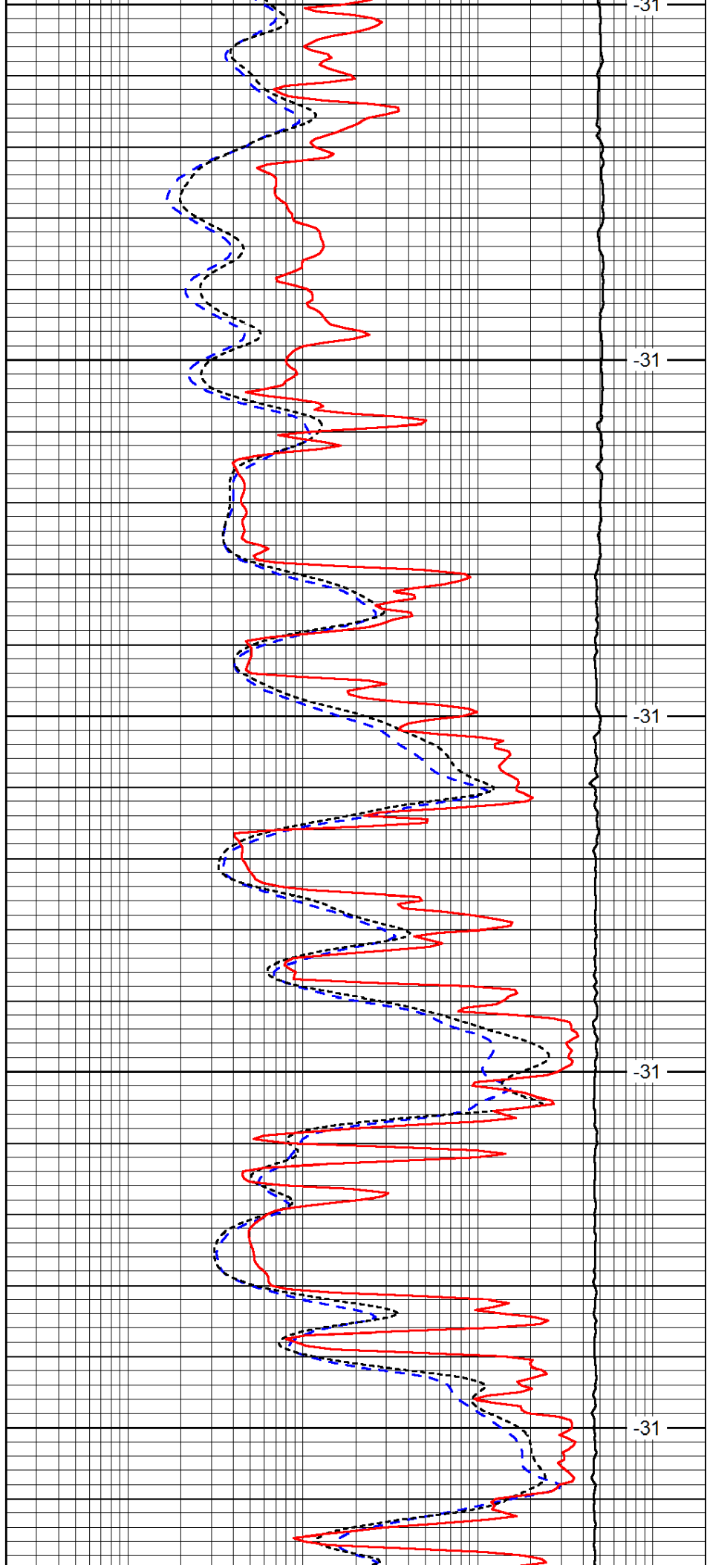
3800

3850

3900

3950

4000



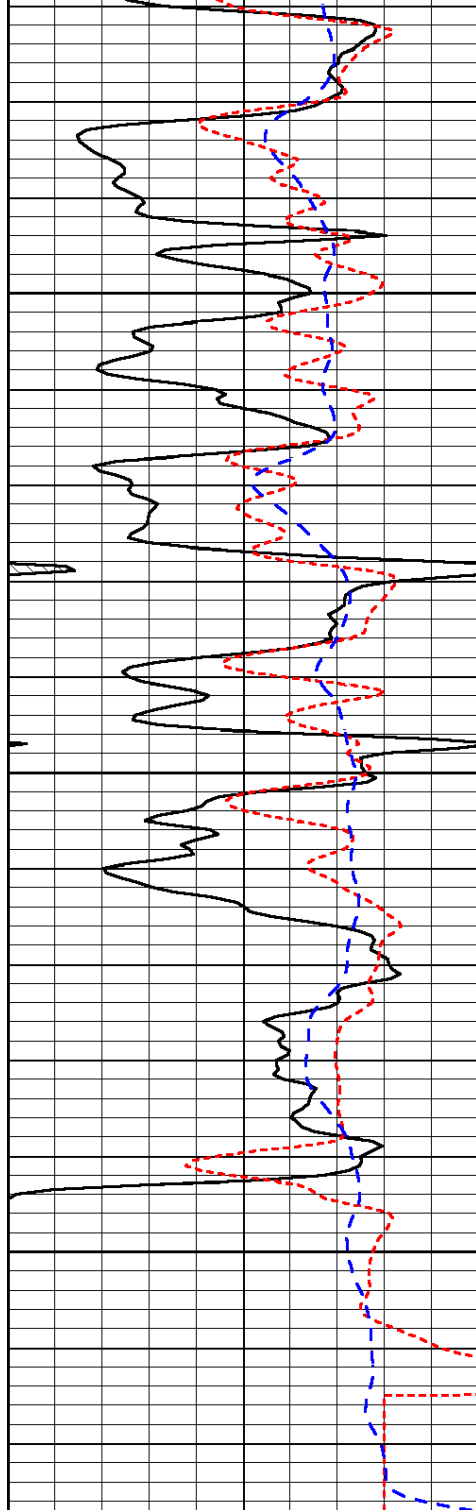
-31

-31

-31

-31

-31

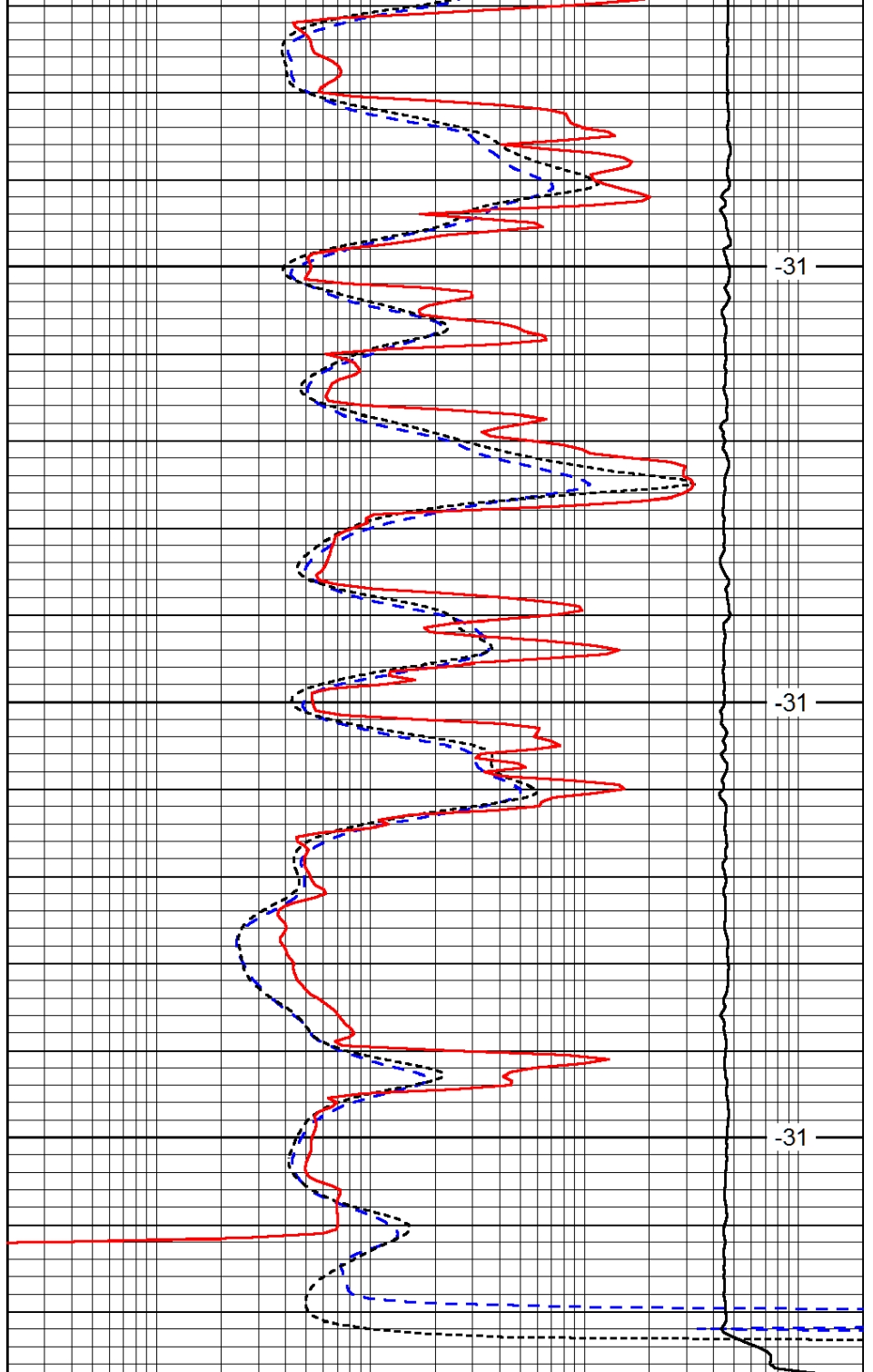


0	Gamma Ray (GAPI)	150
-160	RXO/RT	40
-200	SP (mV)	0

4050

4100

4150



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

LSPD
(ft/min)