



Pioneer Energy Services

Dual Induction Log

API No.

15-017-20919-00-00

Company Range Oil Comapny, Inc.

Well Madden Unit #3

Field Pather Ranch SW

County Chase State Kansas

Location

NW SW SE NW
2140' FNL / 1530' FWL

Sec: 31

Twp: 19S

Rge: 6E

Elevation

Permanent Datum Ground Level Elevation 1460
Log Measured From Kelly Bushing 6 Ft. Above Perm. Datum
Drilling Measured From Kelly Bushing

Other Services
CNL/CDL
MEL
K.B. 1466
D.F.
G.L. 1460

Date 11/23/14

Run Number Two

Depth Driller 2300

Depth Logger 2298

Bottom Logged Interval 2297

Top Log Interval 200

Casing Driller 8.625 @ 218

Casing Logger 215

Bit Size 7.875

Type Fluid in Hole Chemical

Salinity, ppm CL 1300

Density / Viscosity 9.3 48

pH / Fluid Loss 9.5 9.4

Source of Sample Flowline

Rm @ Meas. Temp 0.80 @ 60

Rmf @ Meas. Temp 0.60 @ 60

Rmc @ Meas. Temp 1.08 @ 60

Source of Rmf / Rmc Charts

Rm @ BHT 0.48 @ 99

Operating Rig Time 4 Hours

Max Rec. Temp. F 99

Equipment Number 15

Location Hays

Recorded By R. Barnhart

Witnessed By Ken Wallace

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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

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(785) 625-3858

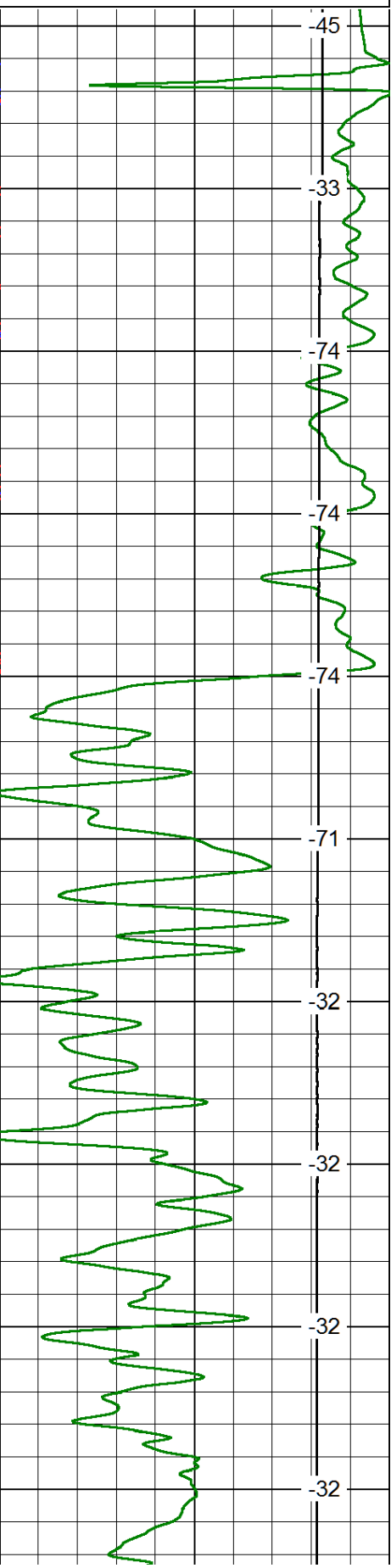
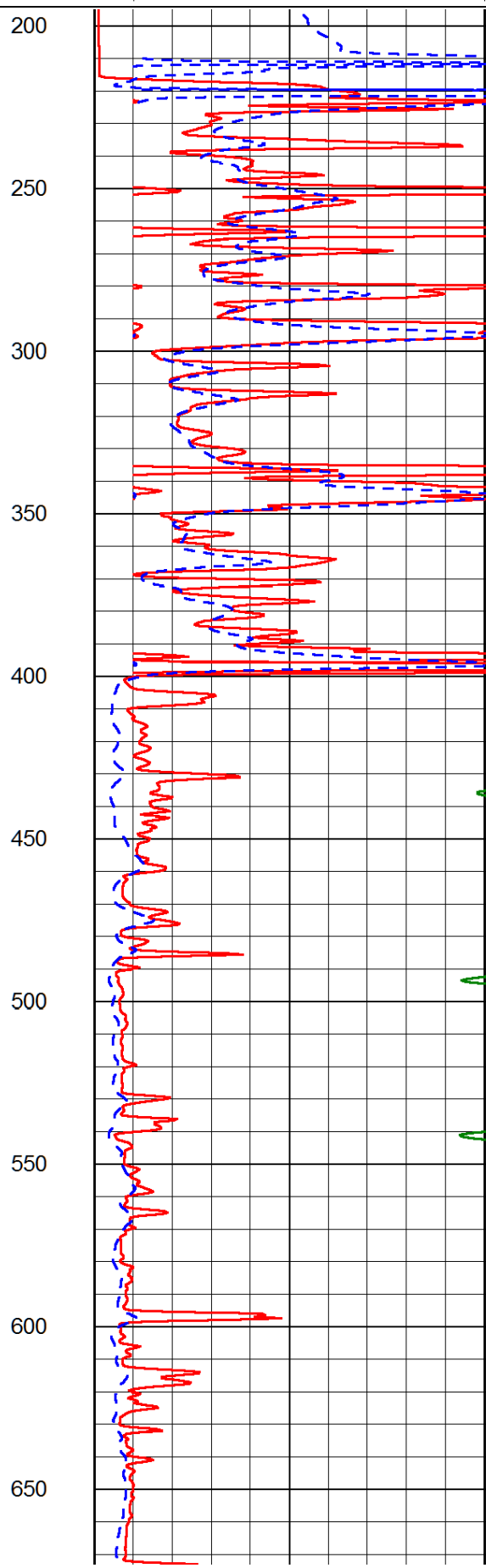
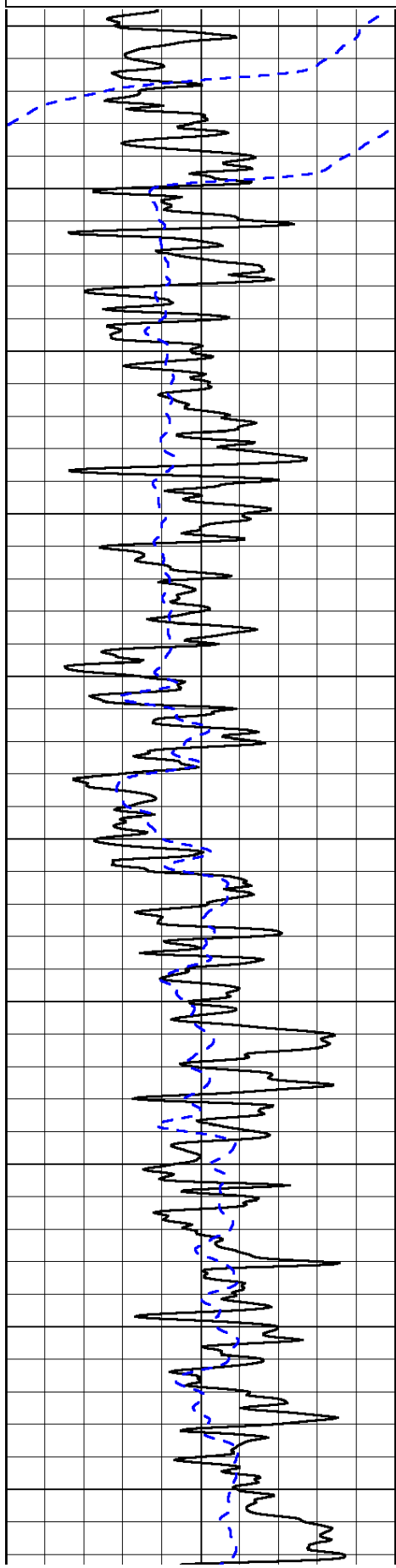
Marion, KS:
Hwy 77 & 150: 8.2E, S into

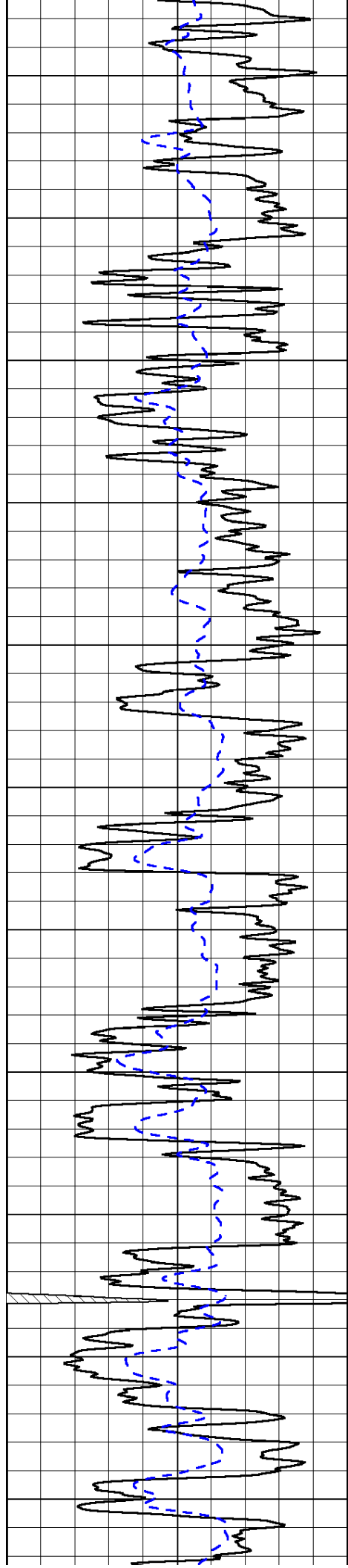
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Dataset Pathname: dil/rngmain
Presentation Format: dil2in
Dataset Creation: Sun Nov 23 10:16:58 2014
Charted by: Depth in Feet scaled 1:600

0	Gamma Ray	150
-200	SP (mV)	0

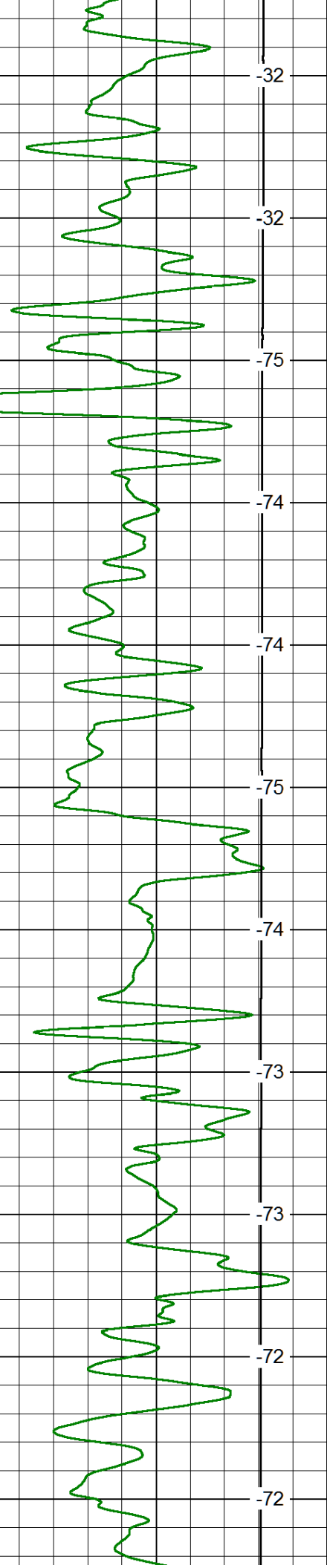
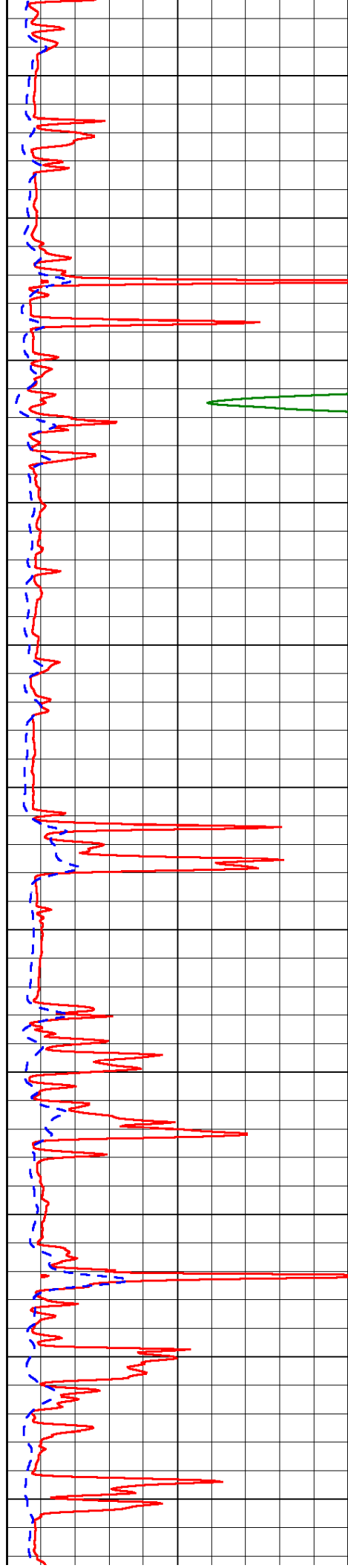
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0	Deep Resistivity	50
1000	Conductivity	0
15000	Line Tension	0

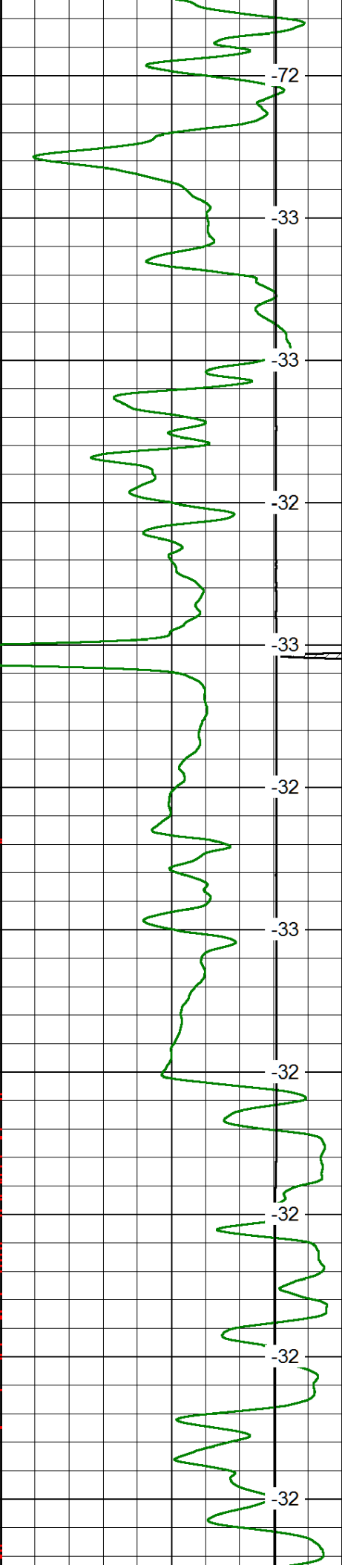
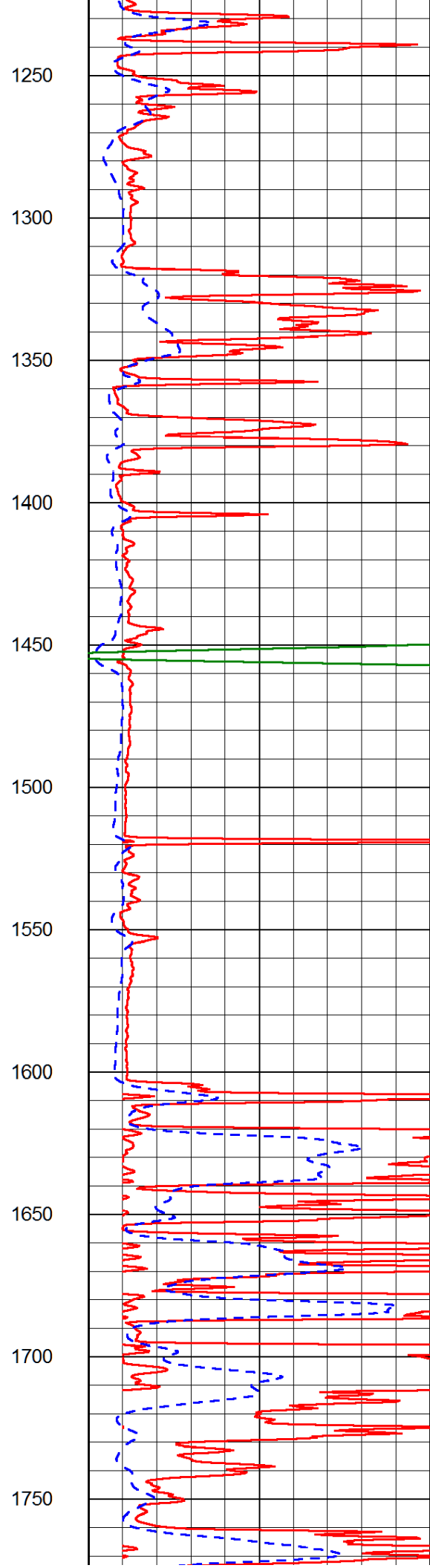
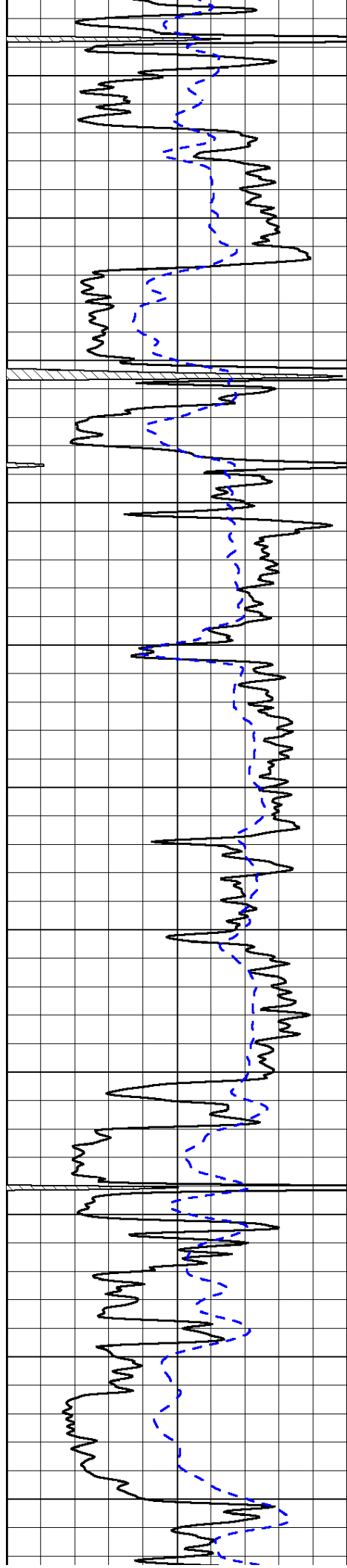
LSPD
0
0

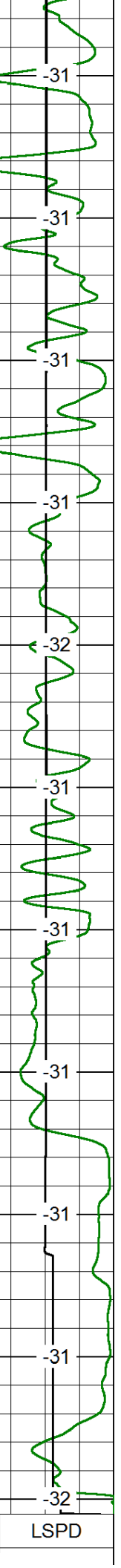
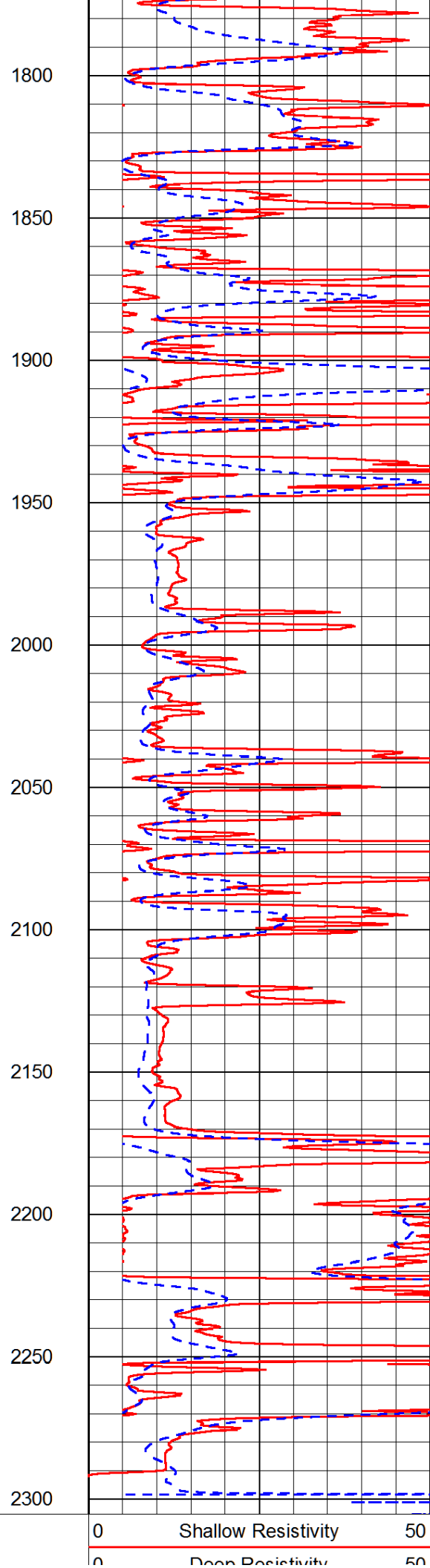
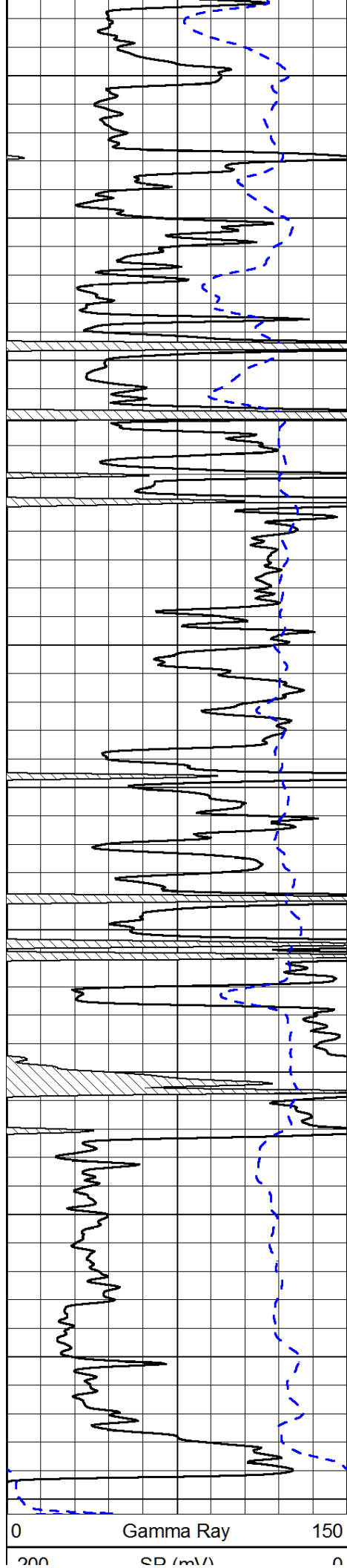




700
750
800
850
900
950
1000
1050
1100
1150
1200







-200	SP (mV)	0

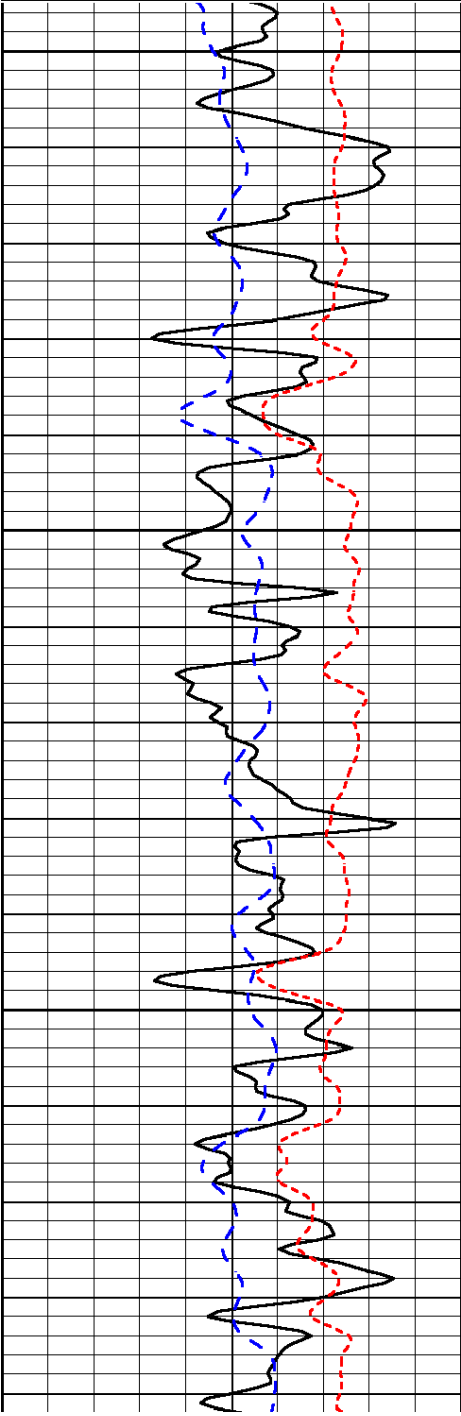
0	Deep Resistivity	50
1000	Conductivity	0
15000	Line Tension	0
50	Shallow Resistivity	500
50	Deep Resistivity	500

Database File:	range_hd.db
Dataset Pathname:	dil/rngmain
Presentation Format:	dil
Dataset Creation:	Sun Nov 23 10:16:58 2014
Charted by:	Depth in Feet scaled 1:240

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

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

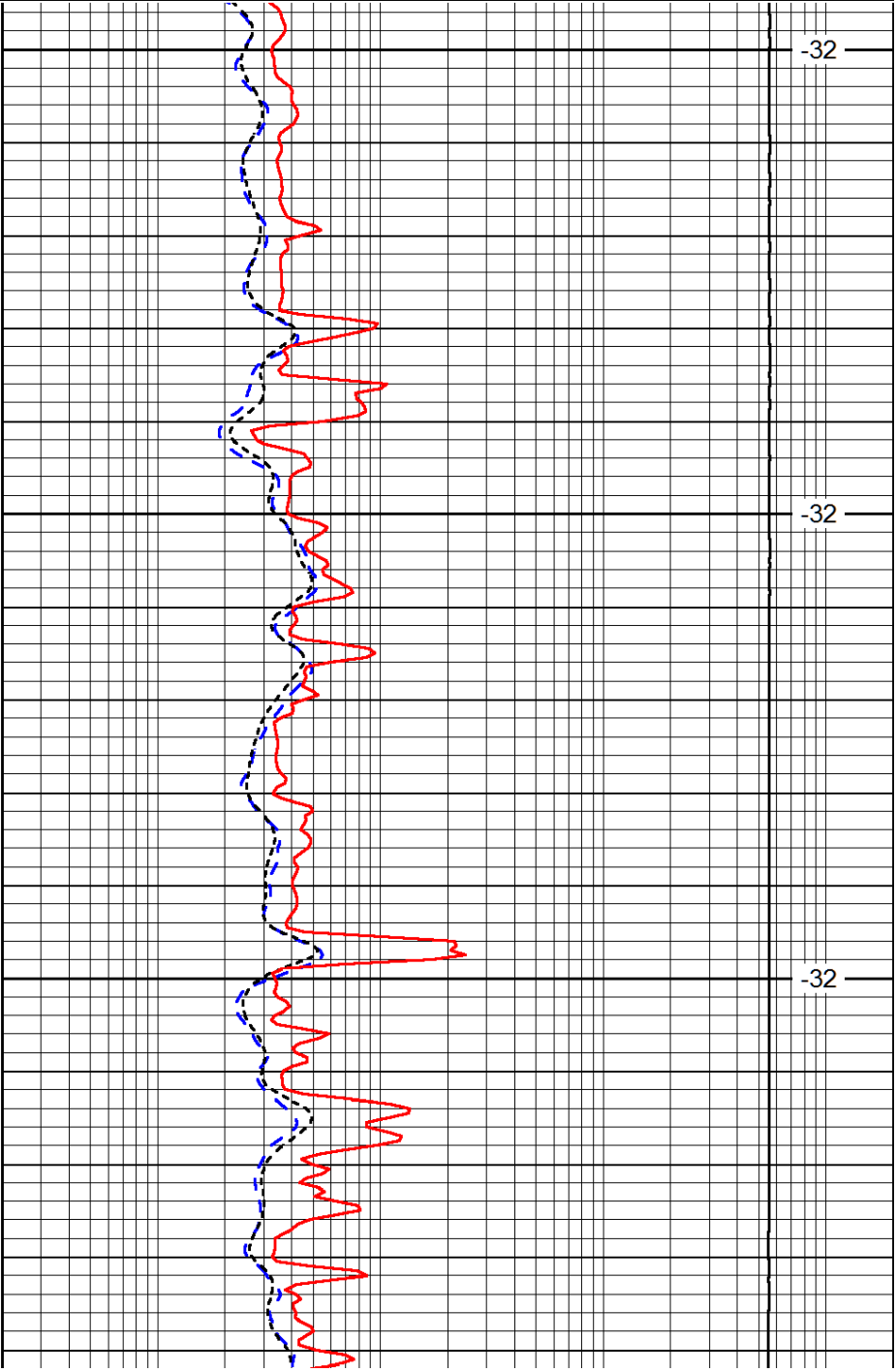
LSPD



500

550

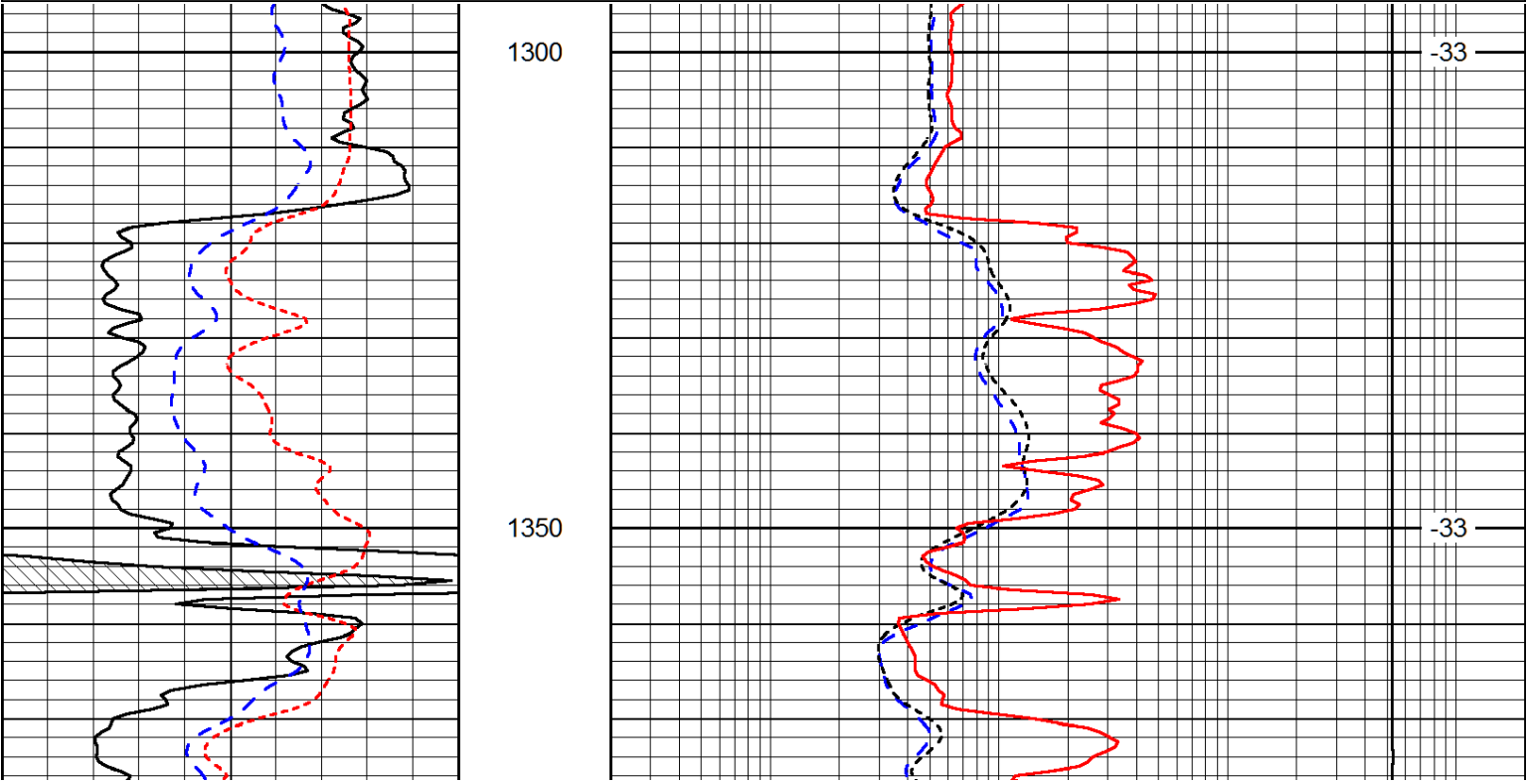
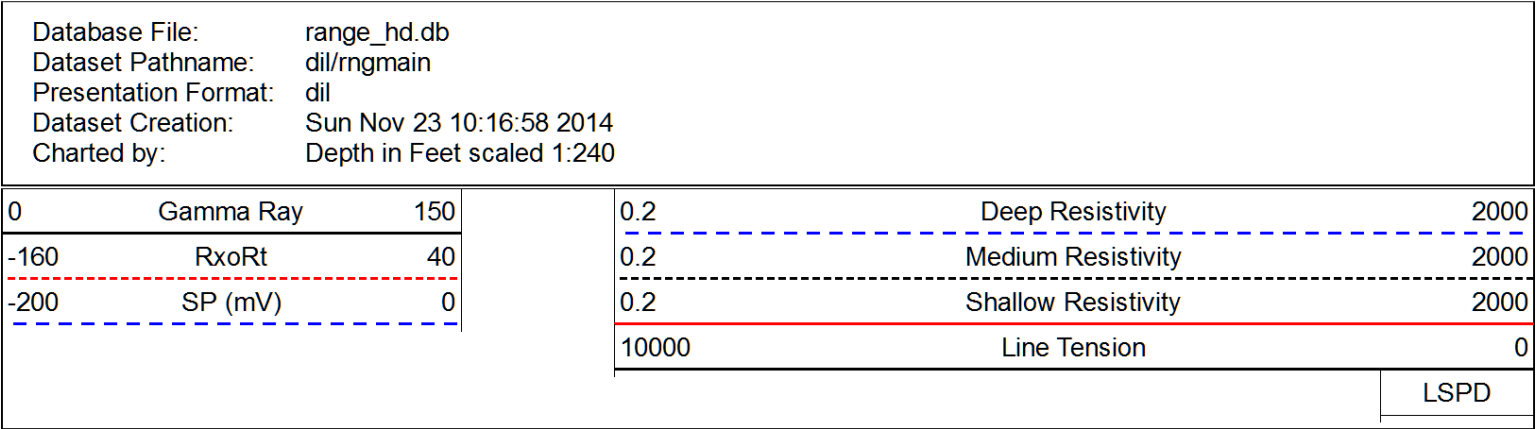
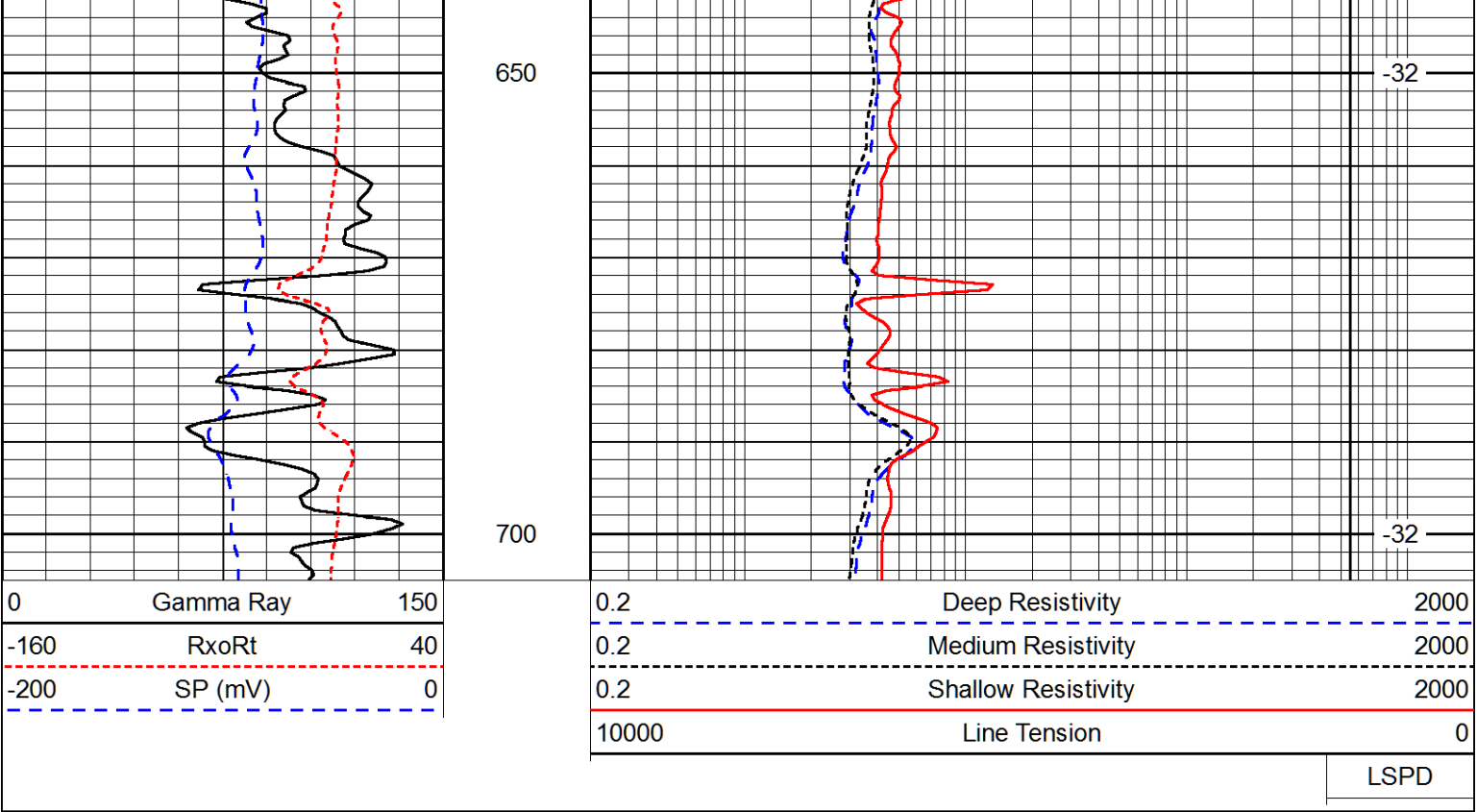
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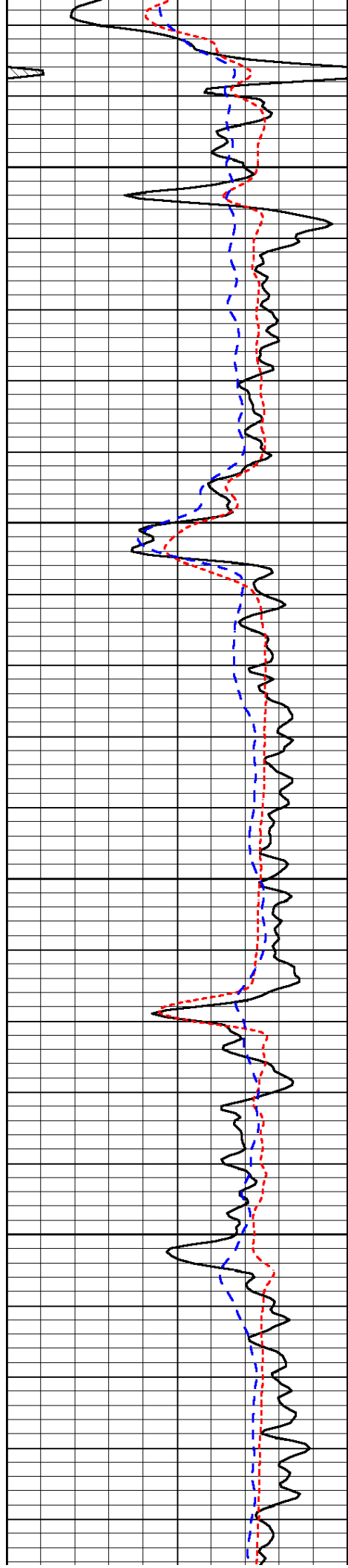


-32

-32

-32



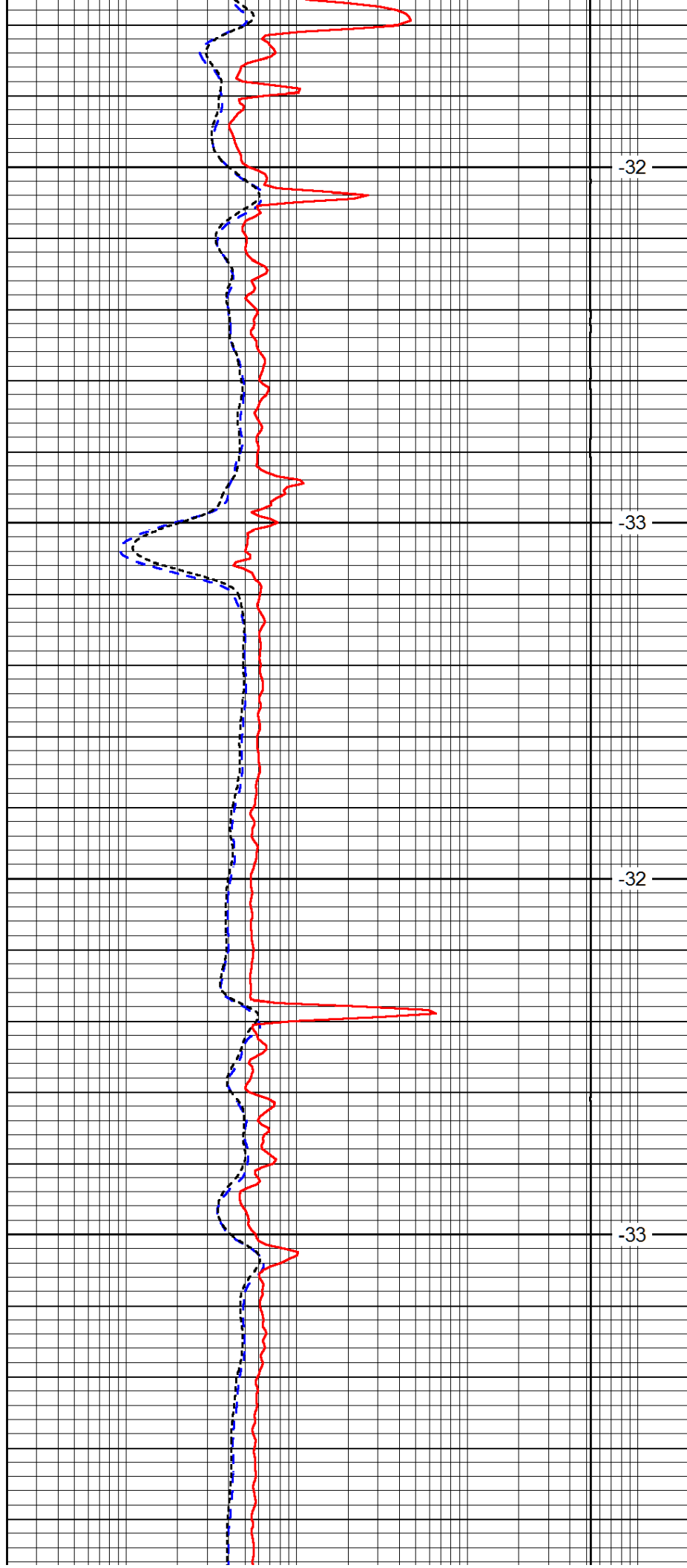


1400

1450

1500

1550

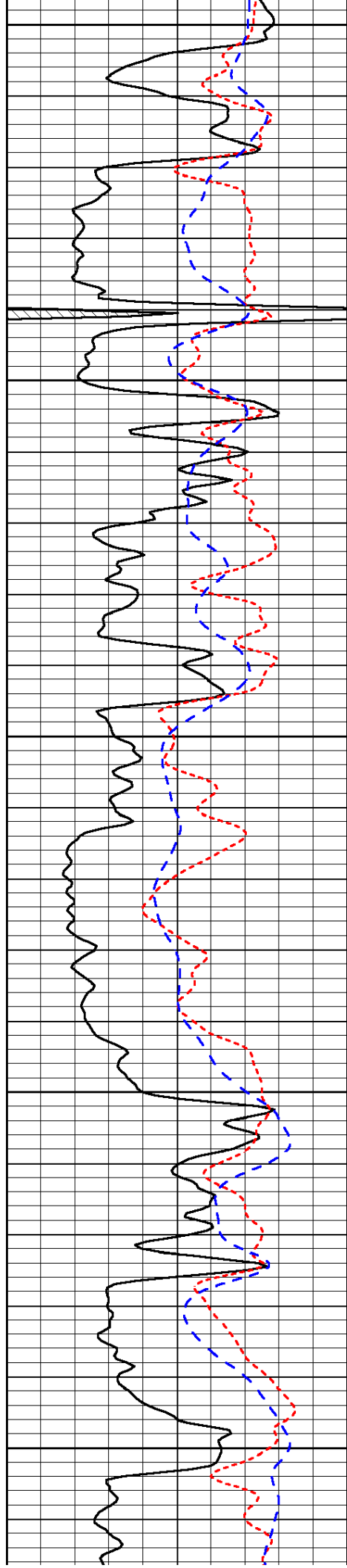


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-32

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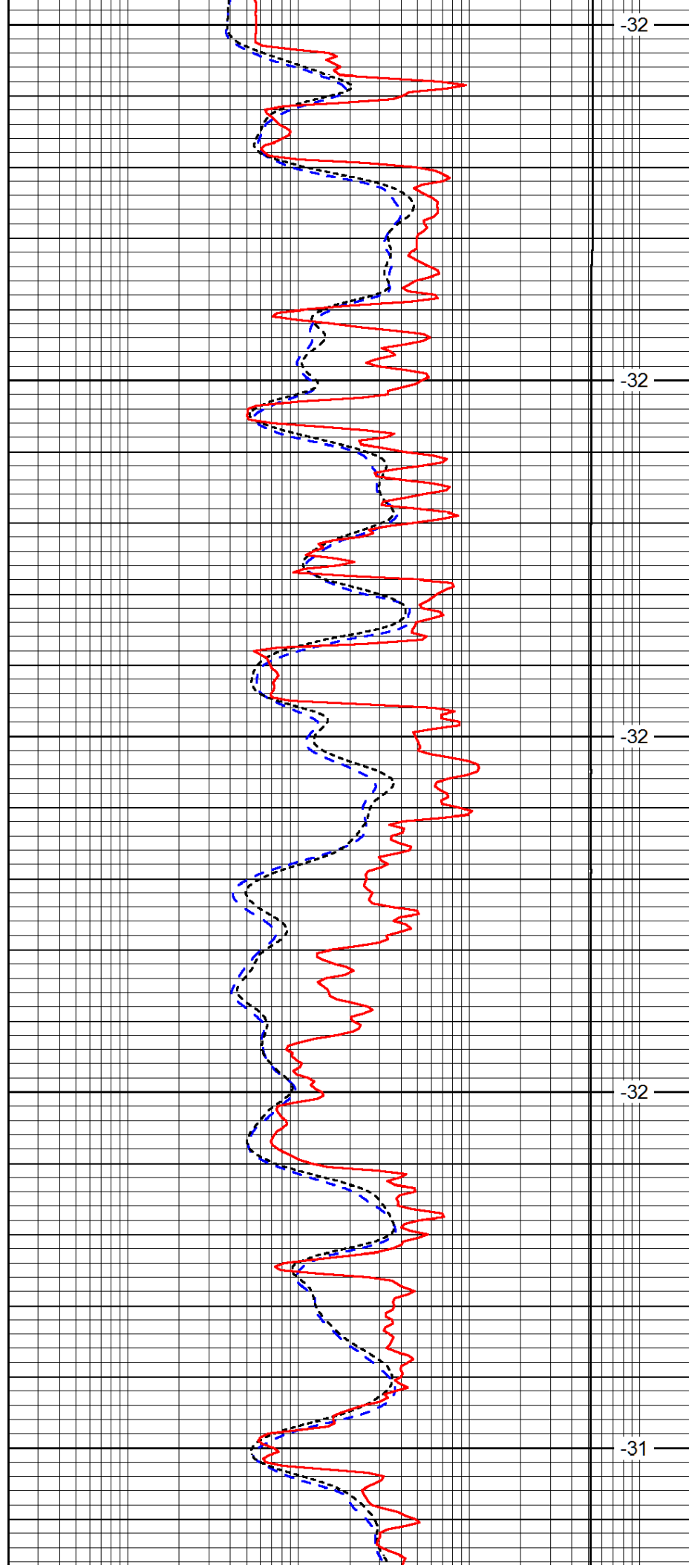
1600

1650

1700

1750

1800



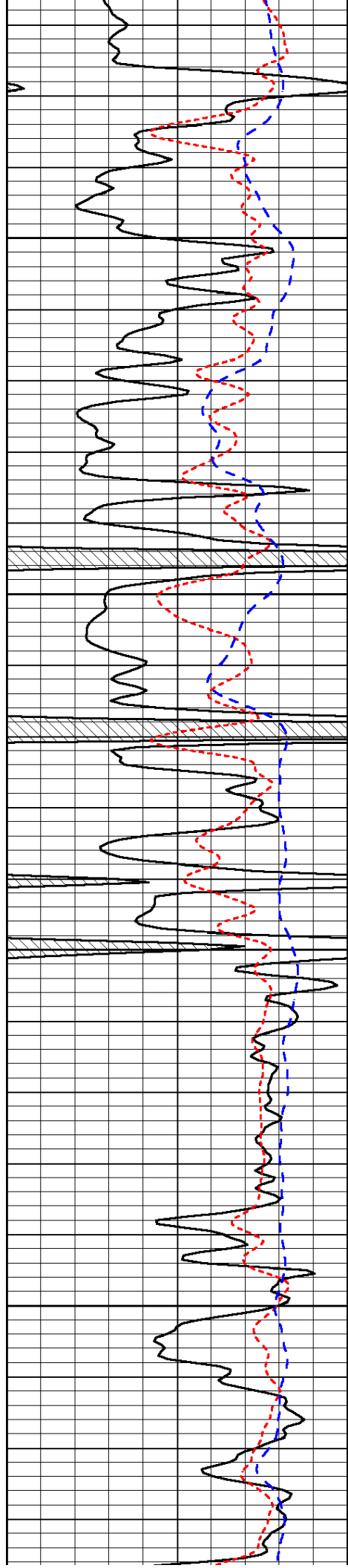
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-32

-32

-31

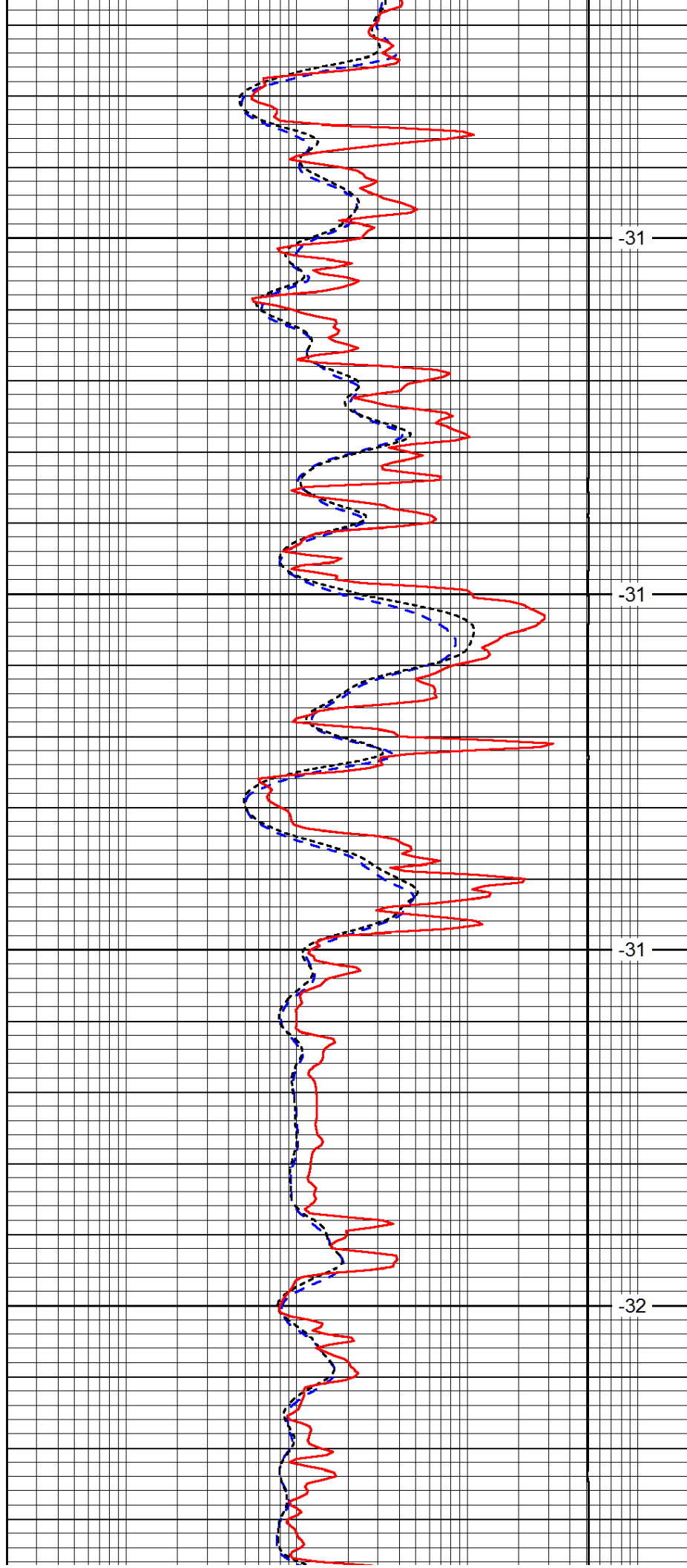


1850

1900

1950

2000

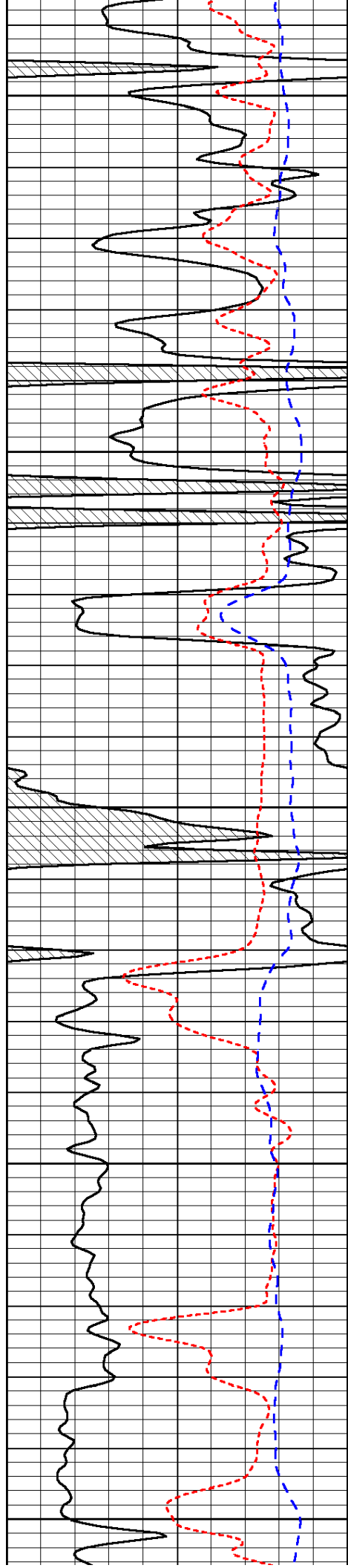


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-32



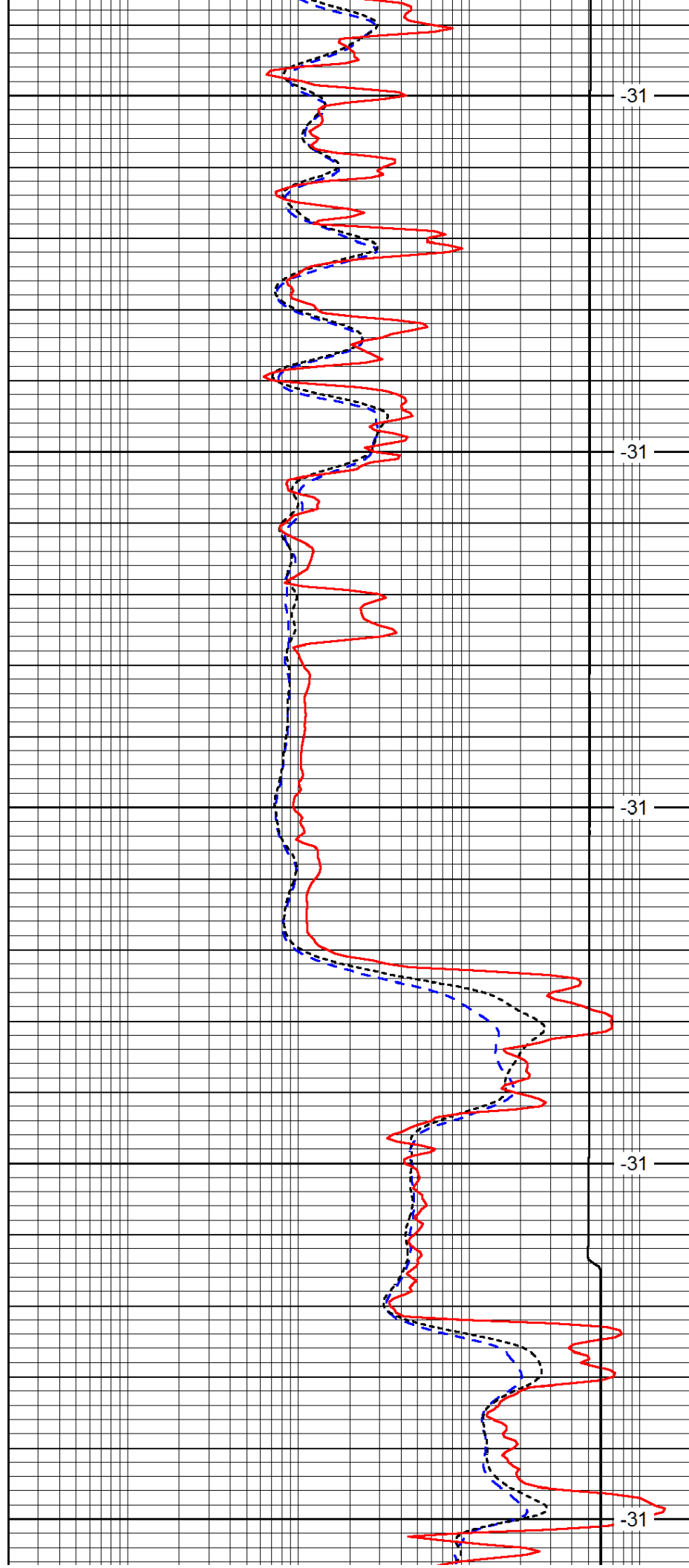
2050

2100

2150

2200

2250



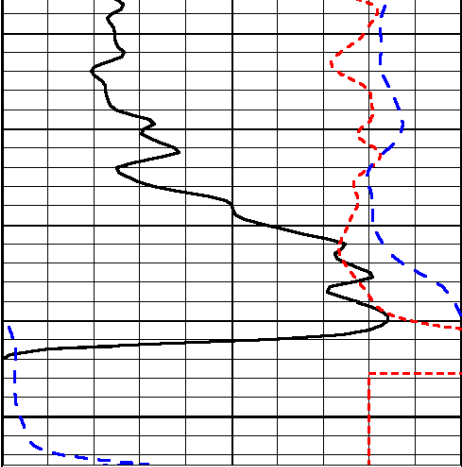
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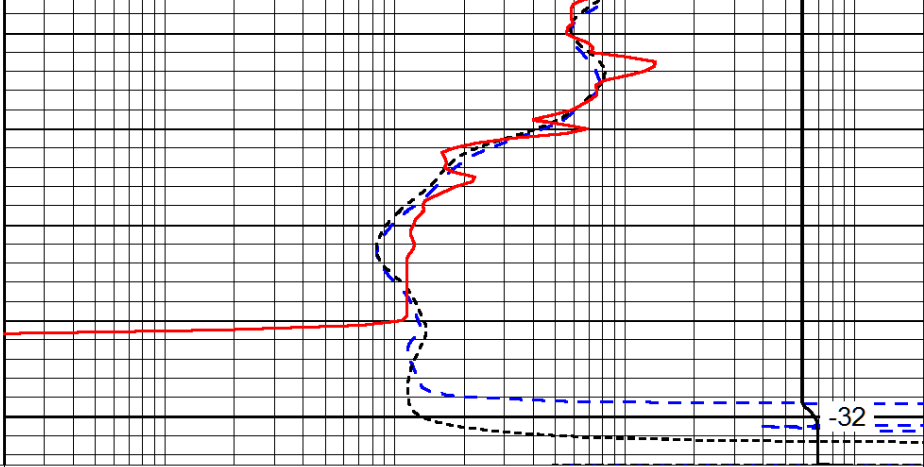
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-31



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

2300



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

LSPD