



Microresistivity Log

Pioneer Energy Services

API No.

15-153-20918-00-00

Company Murfin Drilling Company, Inc.

Well Culwell "D" # 1-30

Field Brumm North

County Rawlins State Kansas

Location 2000' FSL & 2020' FWL

Sec: 30

Twp: 1 S

Rge: 36 W

Other Services
CNL/CDL
DIL/BHCS

Permanent Datum

Log Measured From Kelly Bushing

Elevation 3275
10 Ft. Above Perm. Datum

K.B. 3285
D.F. 3275
G.L. 3275

Date

02/11/2013

Run Number

Two

Depth Driller

4770

Depth Logger

4770

Bottom Logged Interval

4769

Top Log Interval

3550

Casing Driller

13.375 @ 254

Casing Logger

248

Bit Size

17.250

Type Fluid in Hole

Chemical

Salinity, ppm CL

800

Density / Viscosity

9.3 67

pH / Fluid Loss

10.0 5.6

Source of Sample

Flowline

Rm @ Meas. Temp

.68 @ 44

Rmf @ Meas. Temp

.51 @ 44

Rmc @ Meas. Temp

.92 @ 44

Source of Rmf / Rmc

Charts

Rm @ BHT

.24 @ 126

Operating Rig Time

5 Hours

Max Rec. Temp. F

126

Equipment Number

91

Location

Hays

Recorded By

D.Schmidt

Witnessed By

Jeff Christian

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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.

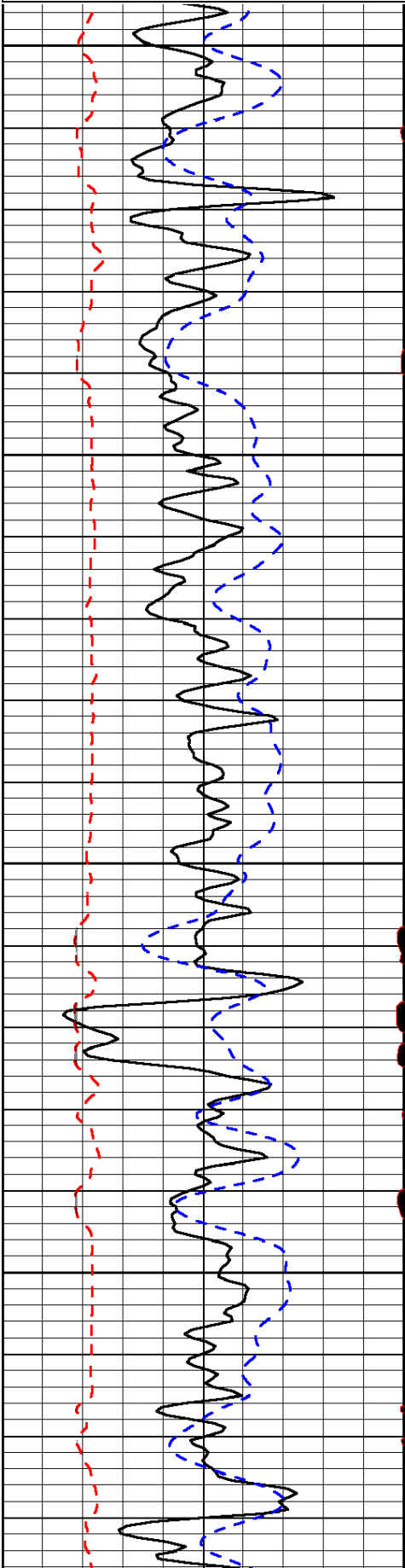
Comments

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

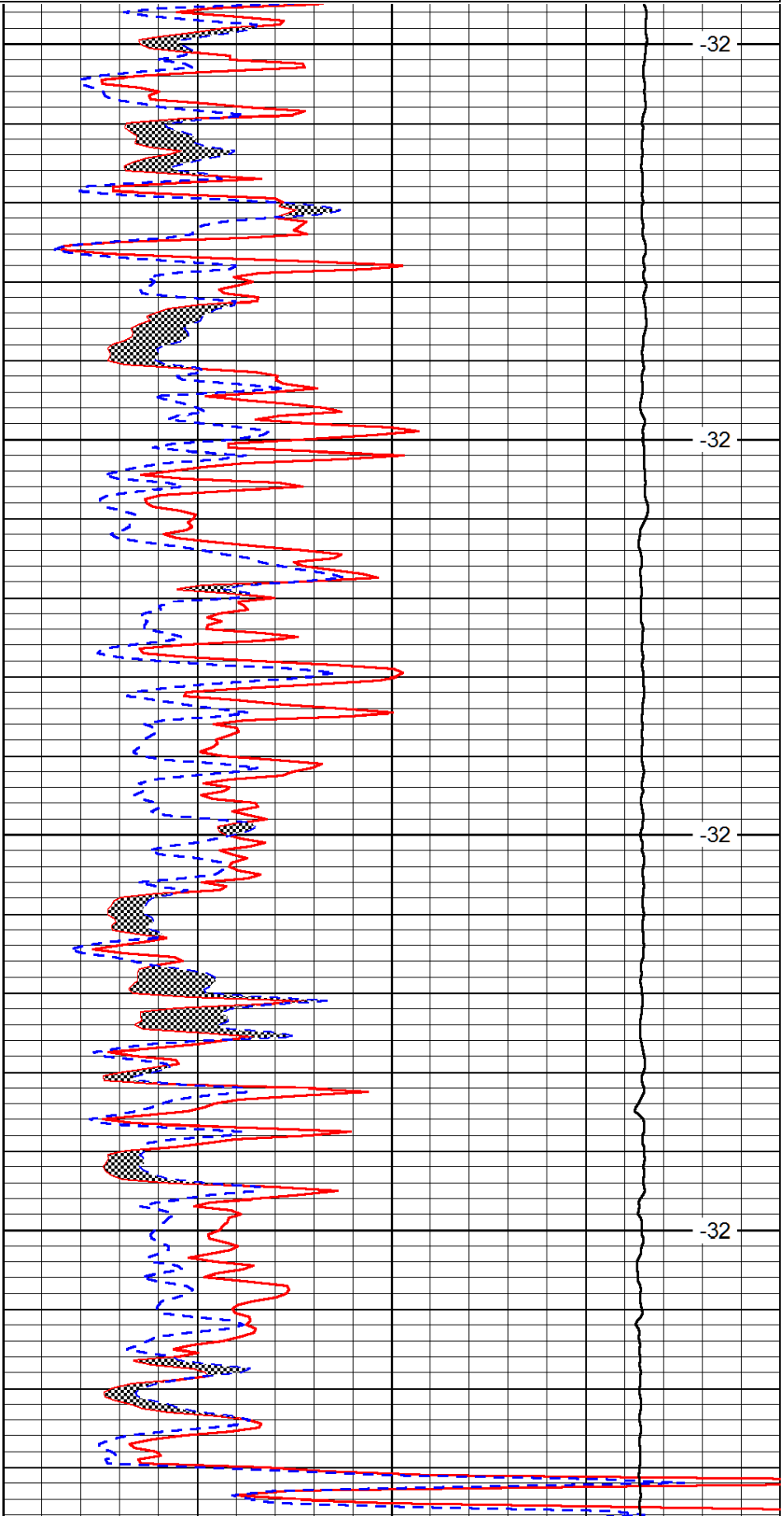
McDonald,
10 North to Z RD, 1 1/2 West,
North into

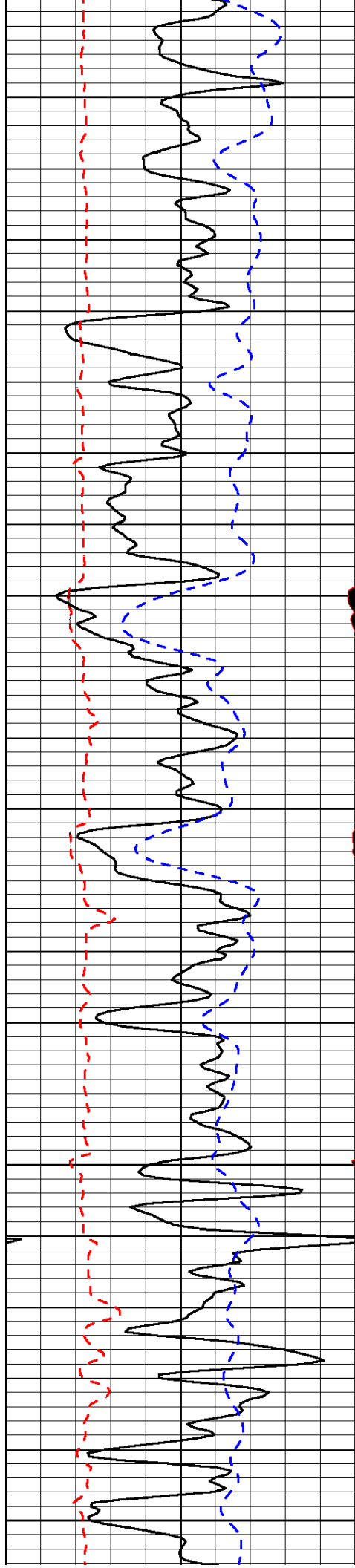
Database File: murfin_021113hd.db
Dataset Pathname: dil/mrfstack
Presentation Format: micro
Dataset Creation: Mon Feb 11 16:27:40 2013
Charted by: Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	Mud Cake (in)	7.875
-200	SP (mV)	0



0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0
	LSPD (ft/min)	





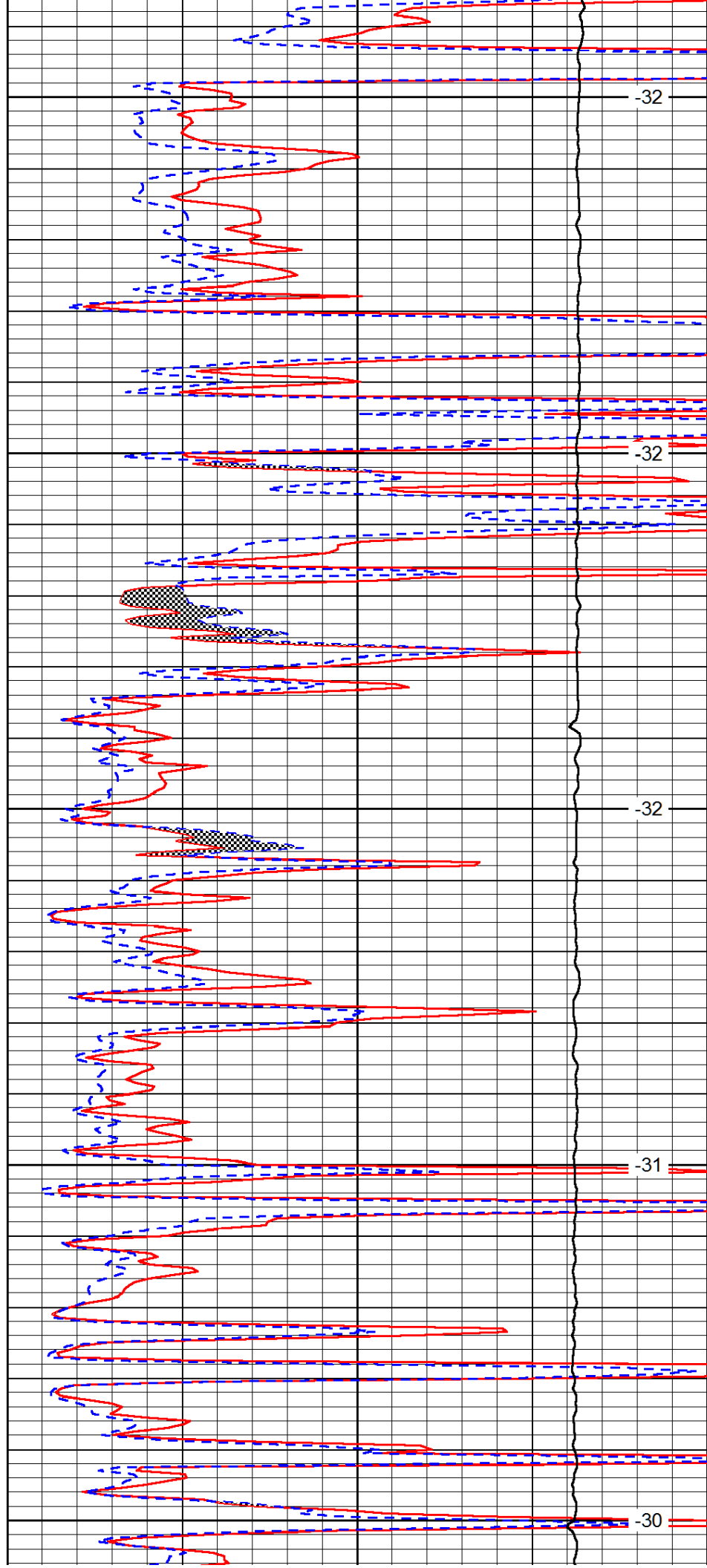
3750

3800

3850

3900

3950



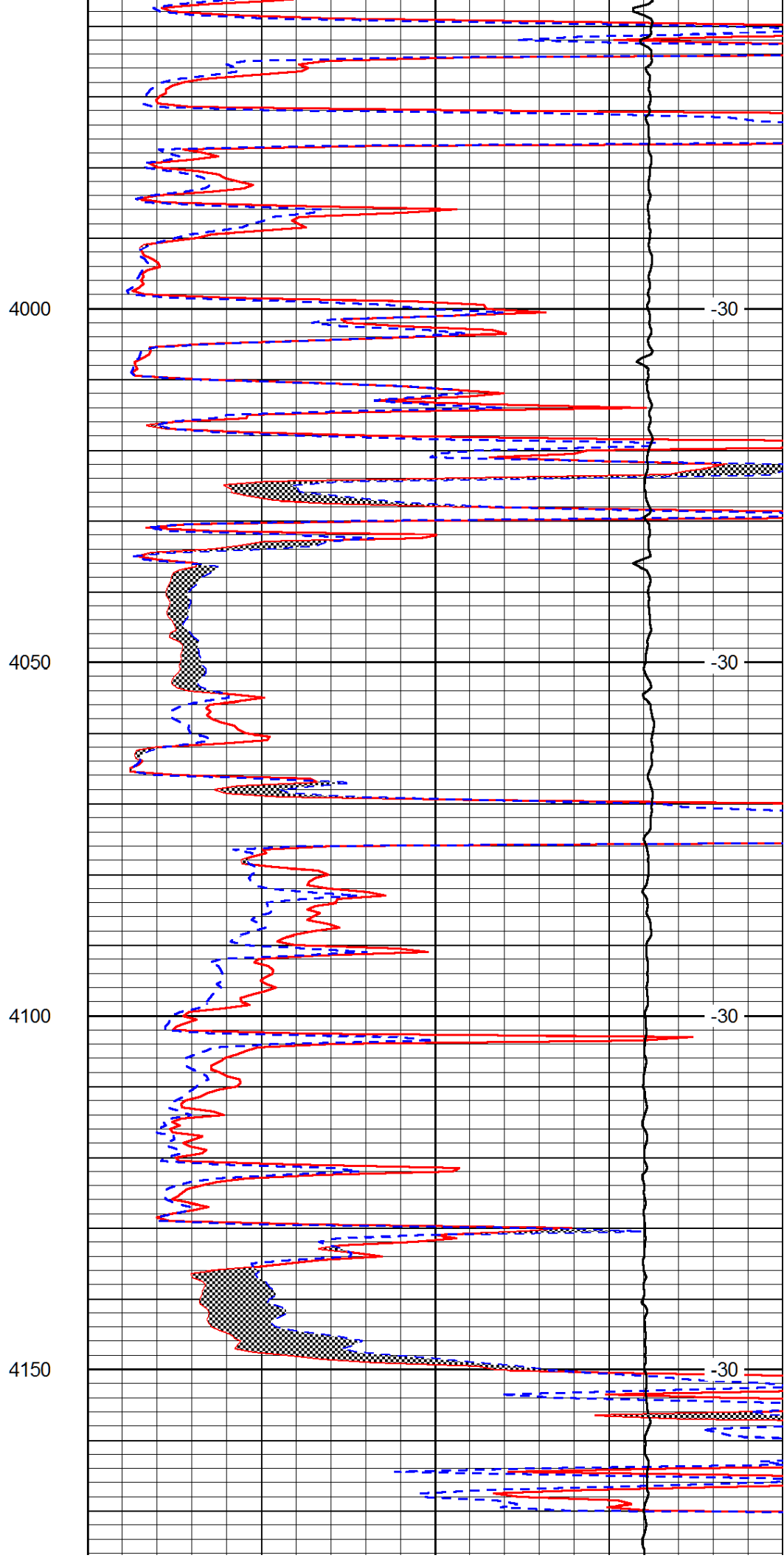
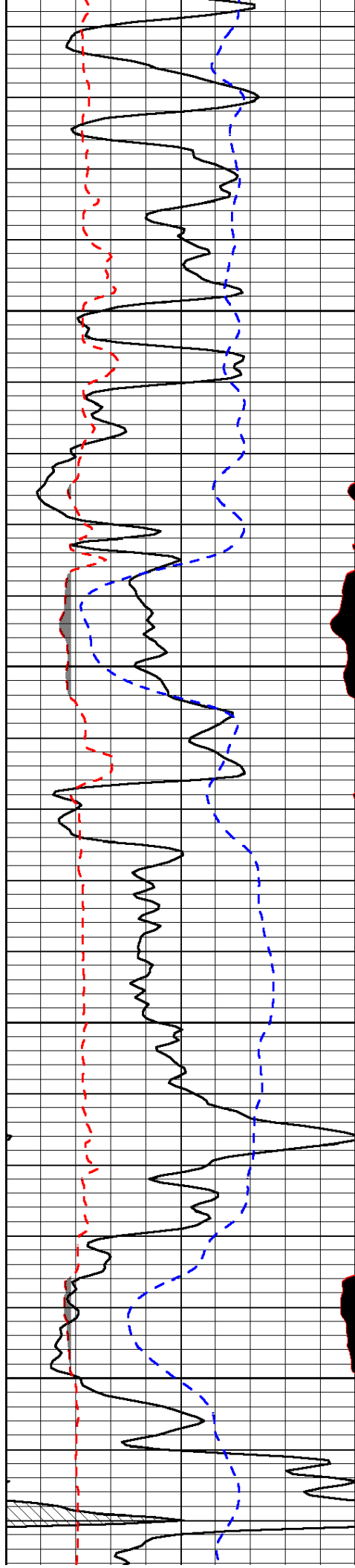
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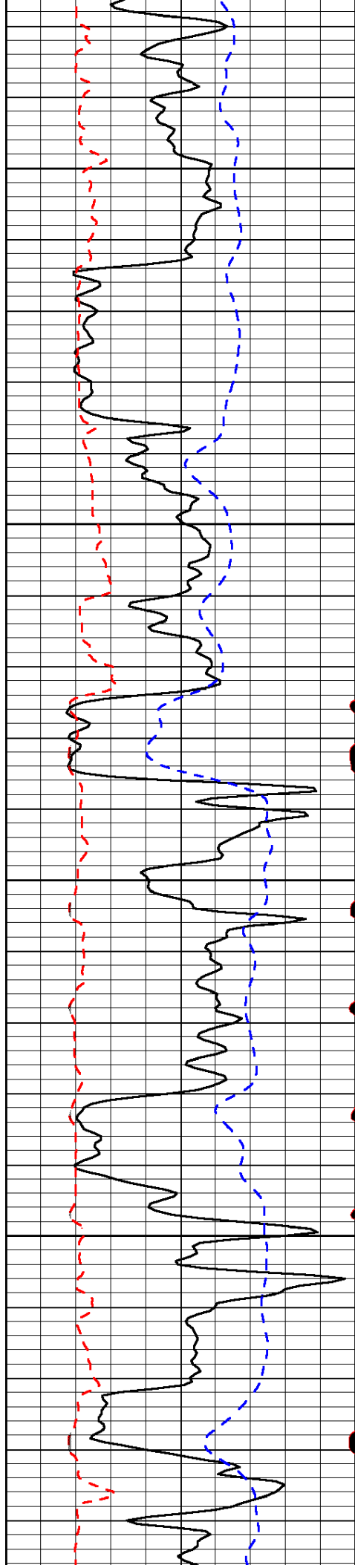
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-32

-31

-30



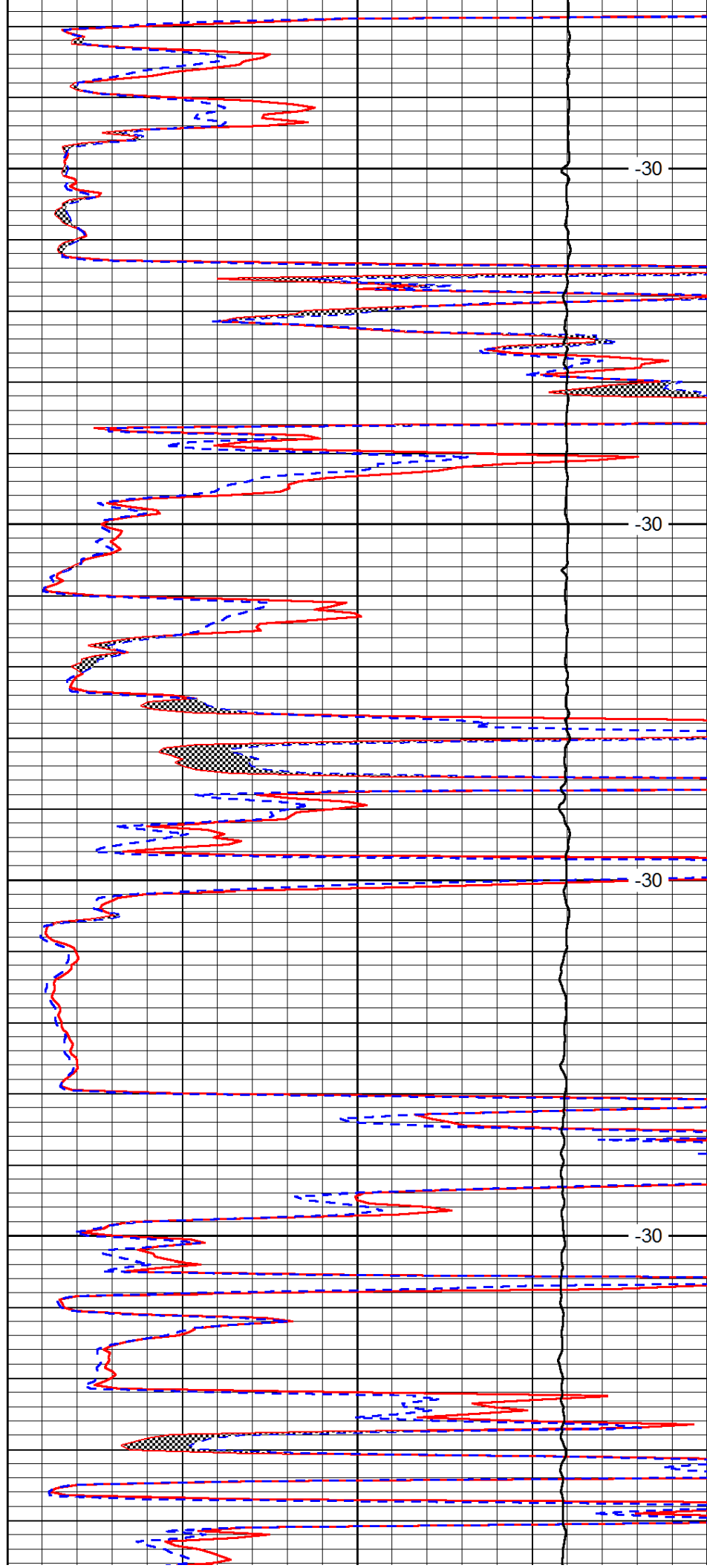


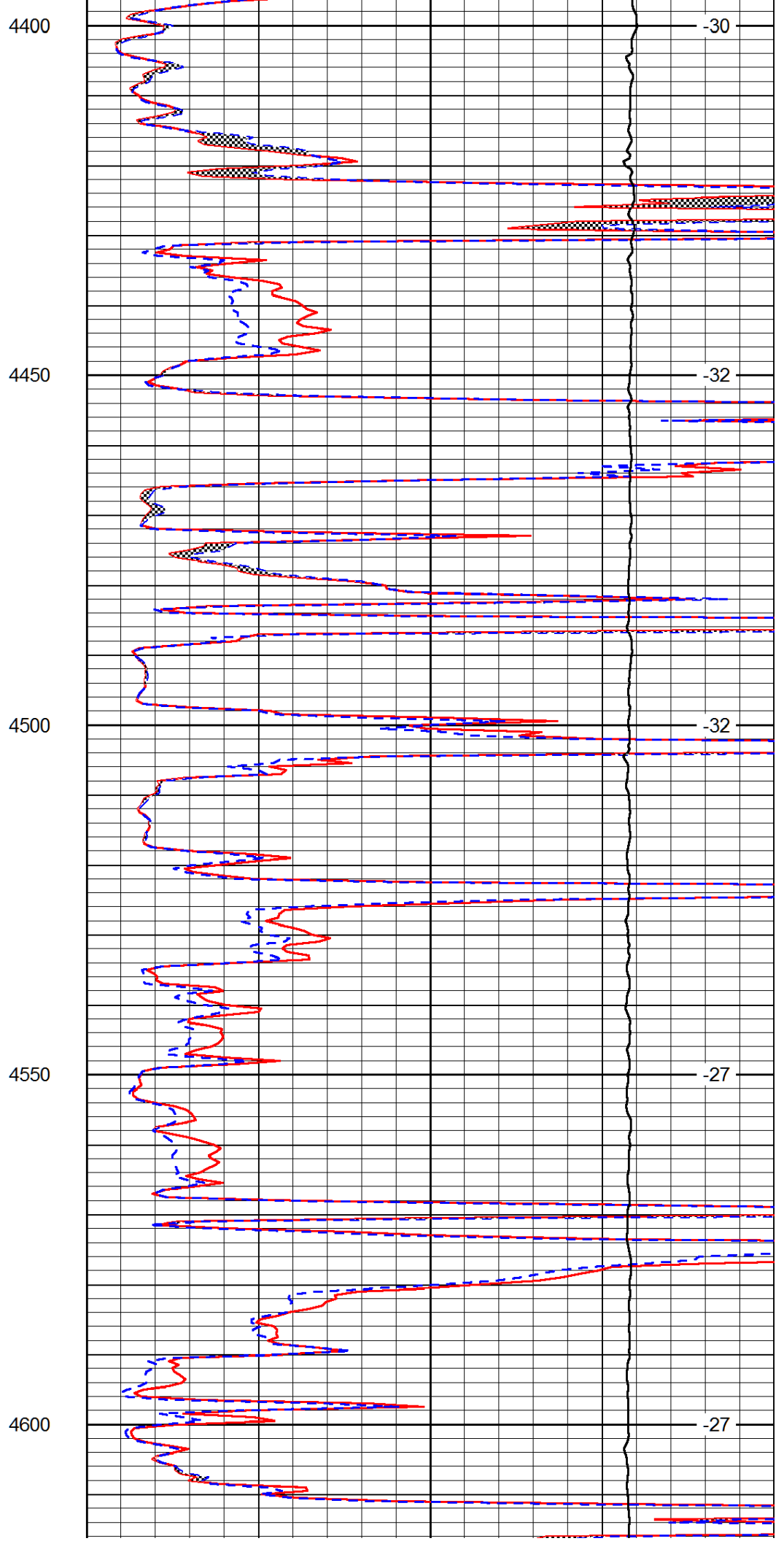
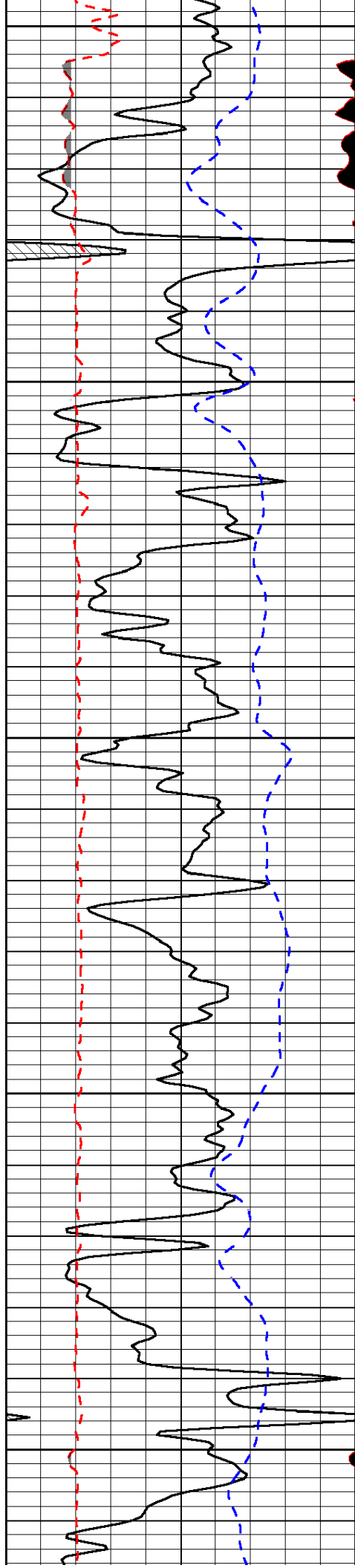
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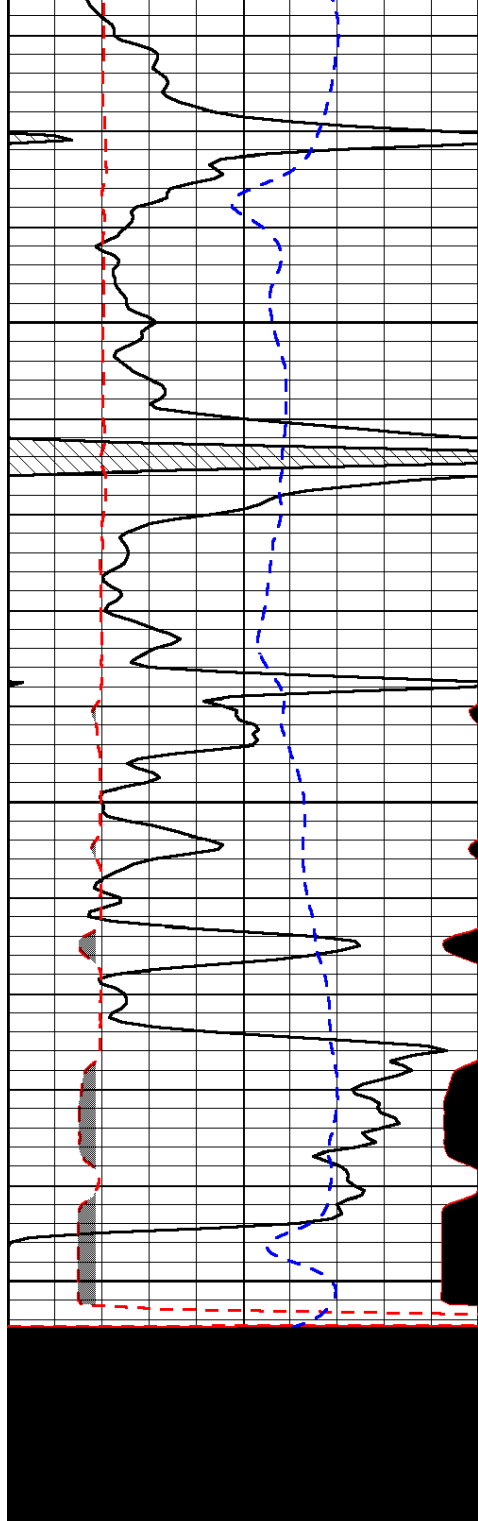
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4350





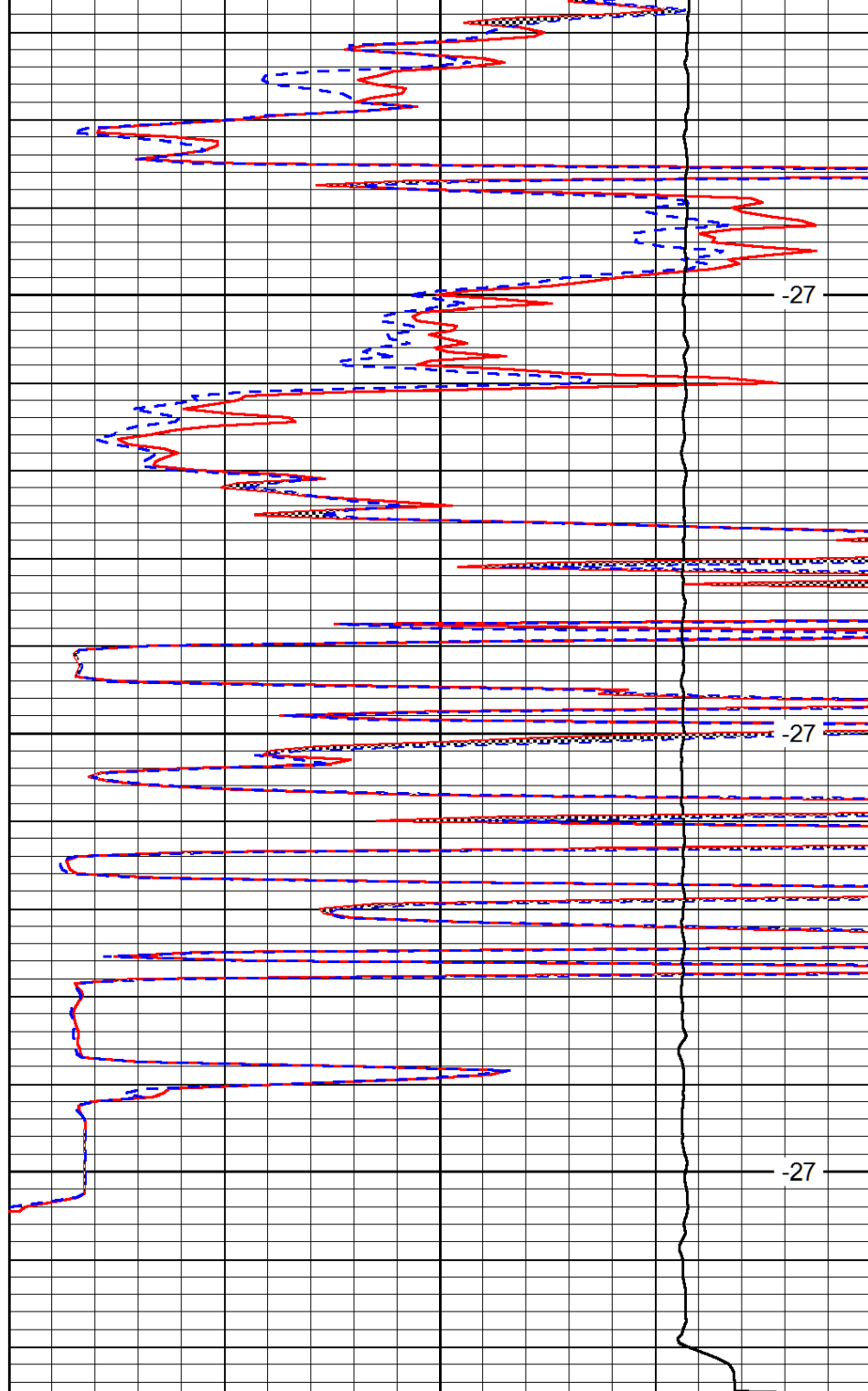


0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	Mud Cake (in)	7.875
-200	SP (mV)	0

4650

4700

4750



0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0

LSPD
(ft/min)