



# Microresistivity Log

Pioneer Energy Services

API No.

15-135-25,627-00-00

Company American Warrior, Inc.

Well Joseph No. 1 - 22

Field Chif

County Ness

State

Kansas

Location

1352' FNL & 1292' FWL

Sec: 22

Twp: 19 S

Rge: 25 W

Permanent Datum Ground Level  
Log Measured From Kelly Bushing  
Drilling Measured From Kelly Bushing

Elevation 2462  
K.B. 2473  
D.F. 2462  
G.L. 2462

Other Services  
CNL/CDL  
DIL

Date

7/18/2013

Run Number

Two

Depth Driller

4600

Depth Logger

4600

Bottom Logged Interval

4599

Top Log Interval

3600

Casing Driller

8.625 @ 225

Casing Logger

225

Bit Size

7.875

Type Fluid in Hole

Chemical

Salinity, ppm CL

4300

Density / Viscosity

9.5 54

pH / Fluid Loss

9.5 11.2

Source of Sample

Flowline

Rm @ Meas. Temp

.58 @ 84

Rmf @ Meas. Temp

.44 @ 84

Rmc @ Meas. Temp

.78 @ 84

Source of Rmf / Rmc

Charts

Rm @ BHT

.40 @ 122

Operating Rig Time

4 1/2 Hours

Max Rec. Temp. F

122

Equipment Number

108

Location

Hays

Recorded By

D. Martin

Witnessed By

Kevin Timson

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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.

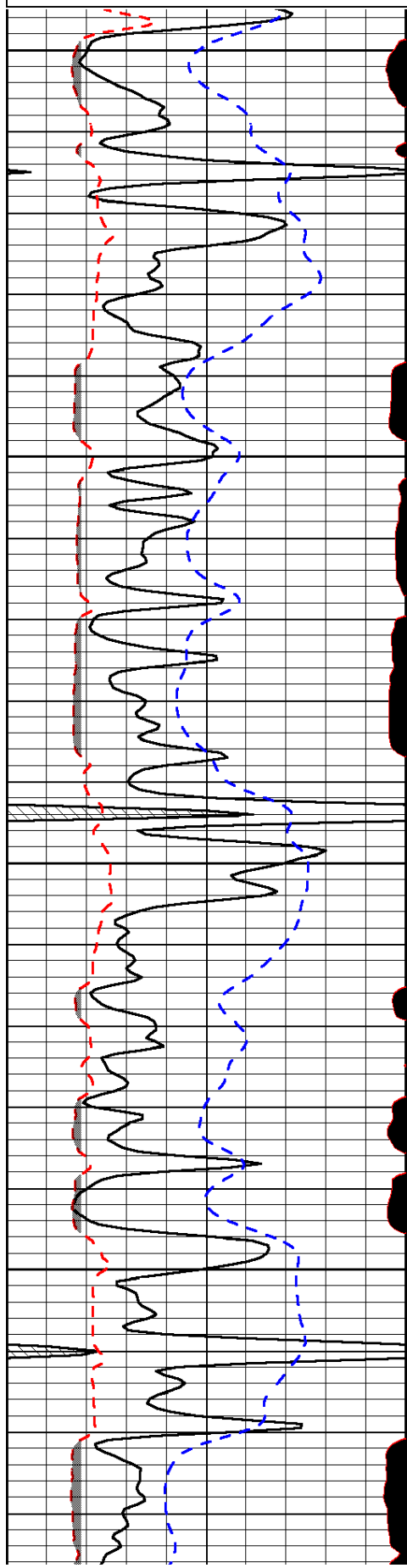
## Comments

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

Ness City, KS  
W to Laird Elevator, 1/2 W to J Rd.,  
4 S, W Into

Database File: amwarr\_joseph\_1-22hd.db  
Dataset Pathname: DIL/amwstk  
Presentation Format: micro  
Dataset Creation: Thu Jul 18 14:55:48 2013  
Charted by: Depth in Feet scaled 1:240

|                                         |                  |       |
|-----------------------------------------|------------------|-------|
| Charted by: Depth in Feet scaled 1:2.15 |                  |       |
| 0                                       | Gamma Ray (GAPI) | 150   |
| 6                                       | MCAL (in)        | 16    |
| 2.875                                   | Mud Cake (in)    | 7.875 |
| -200                                    | SP (mV)          | 0     |



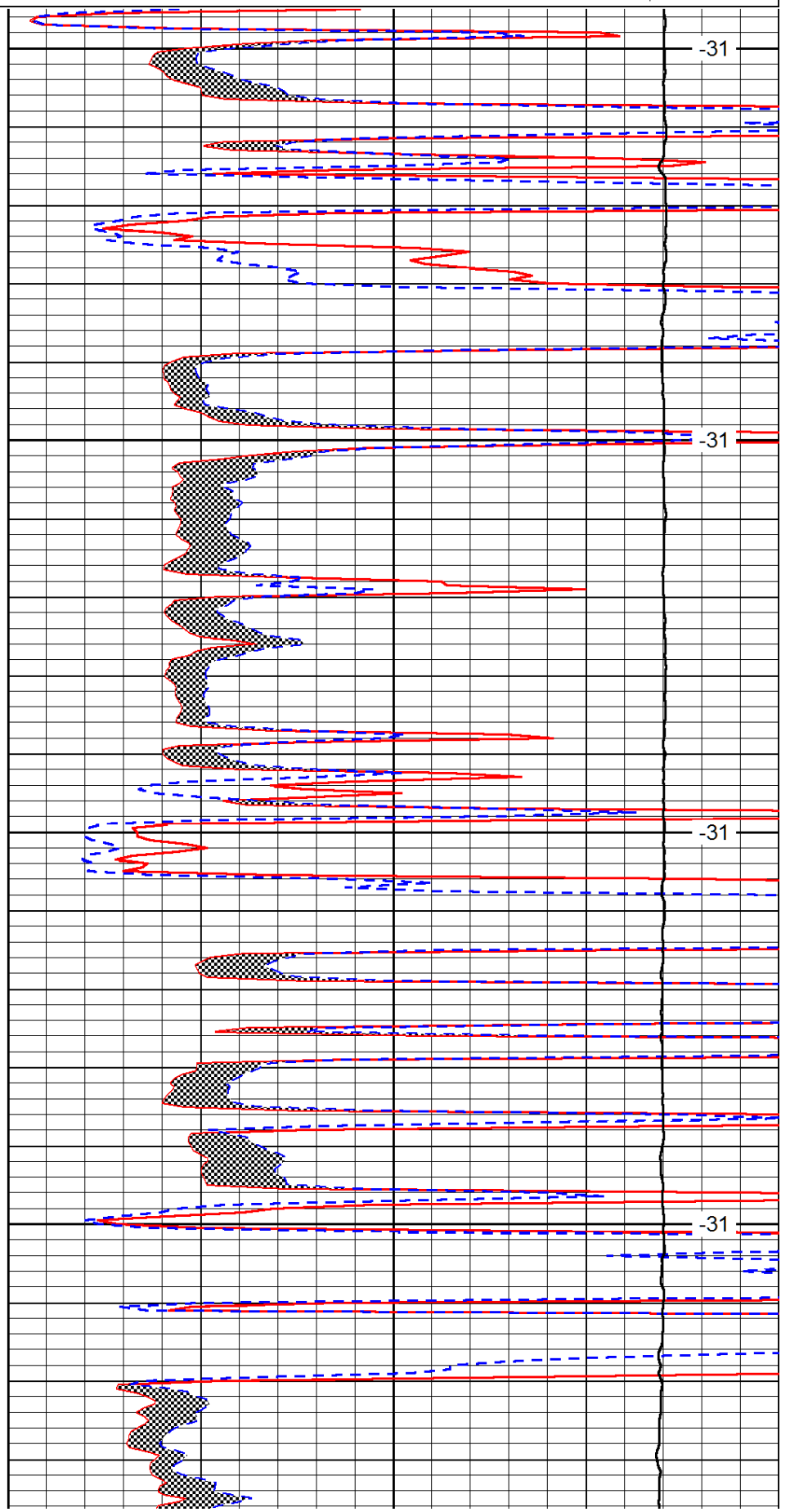
3600

3650

3700

3750

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

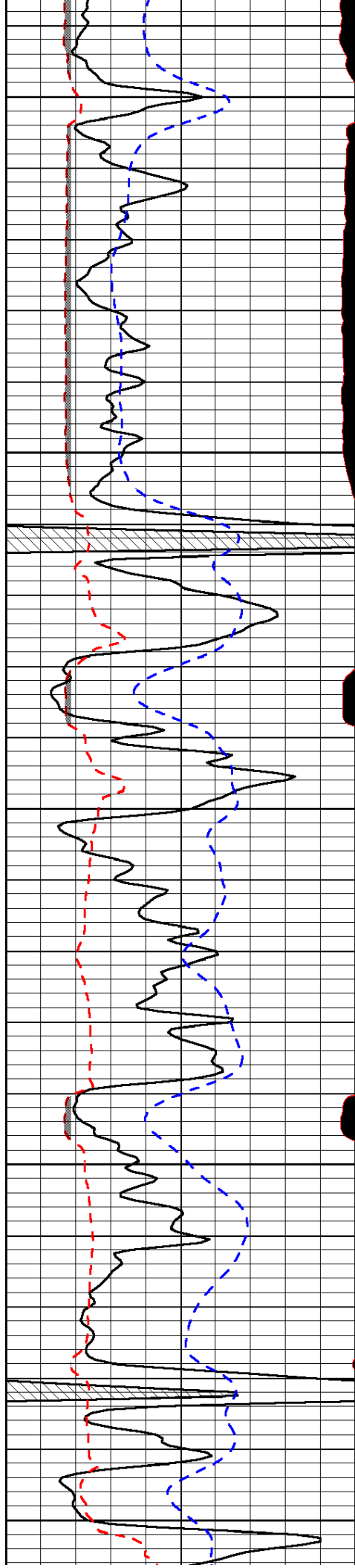


-31

-31

-31

-31



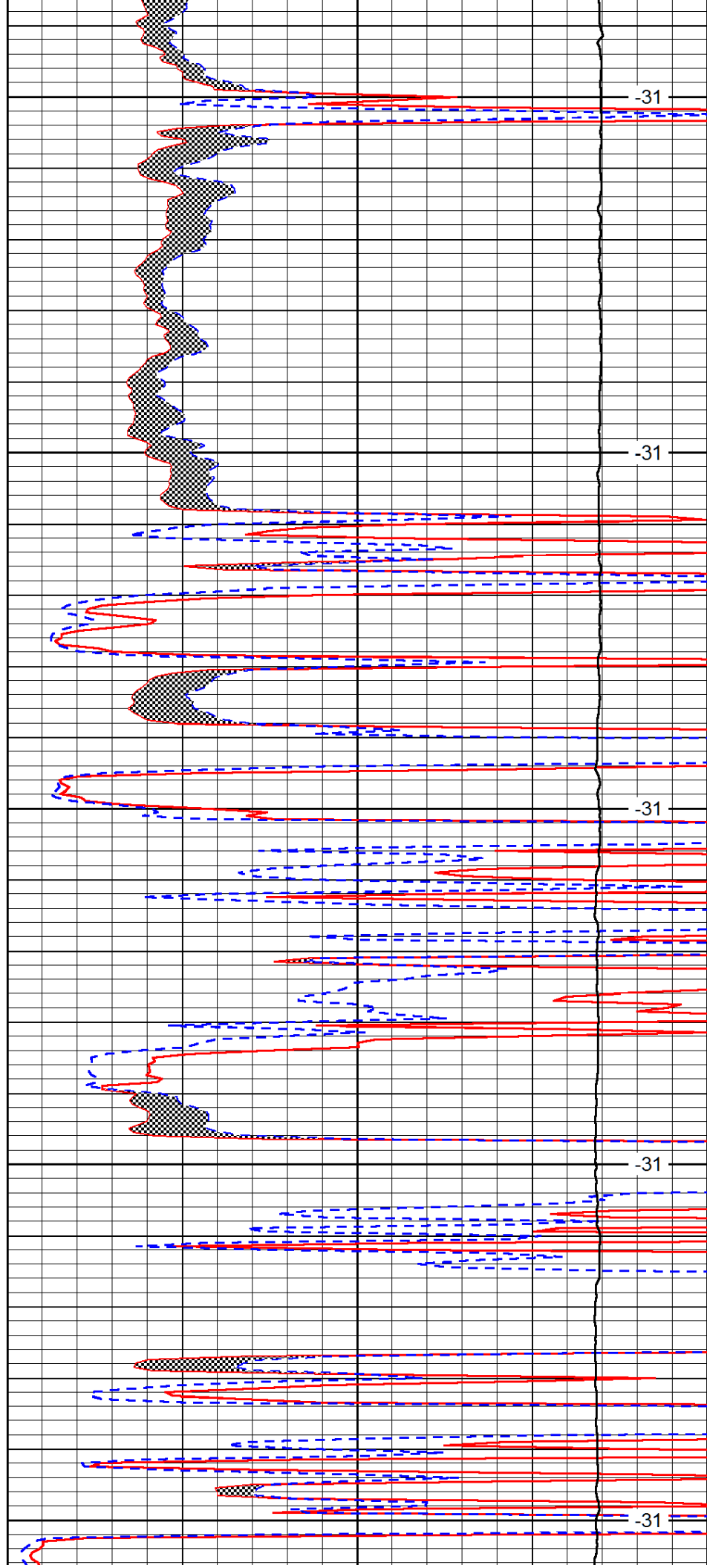
3800

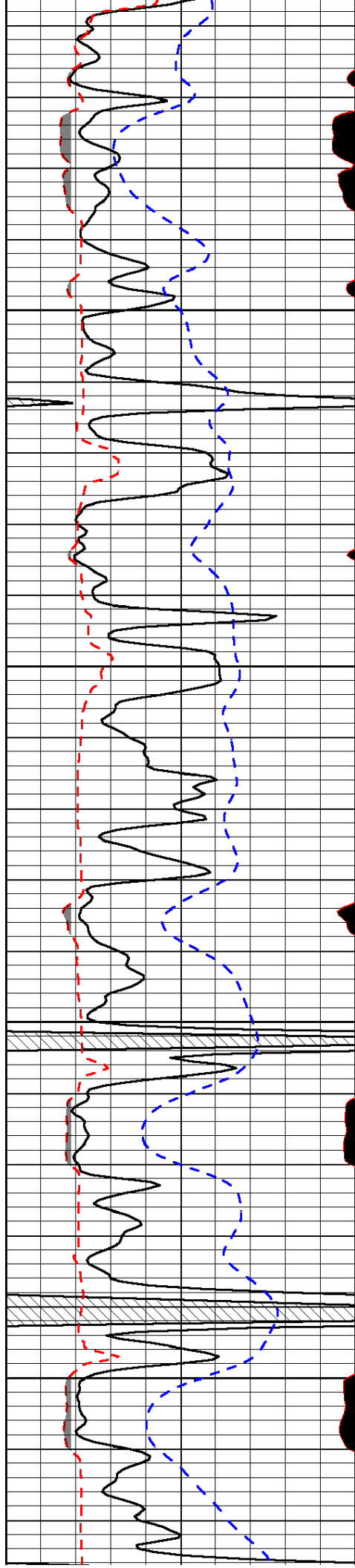
3850

3900

3950

4000



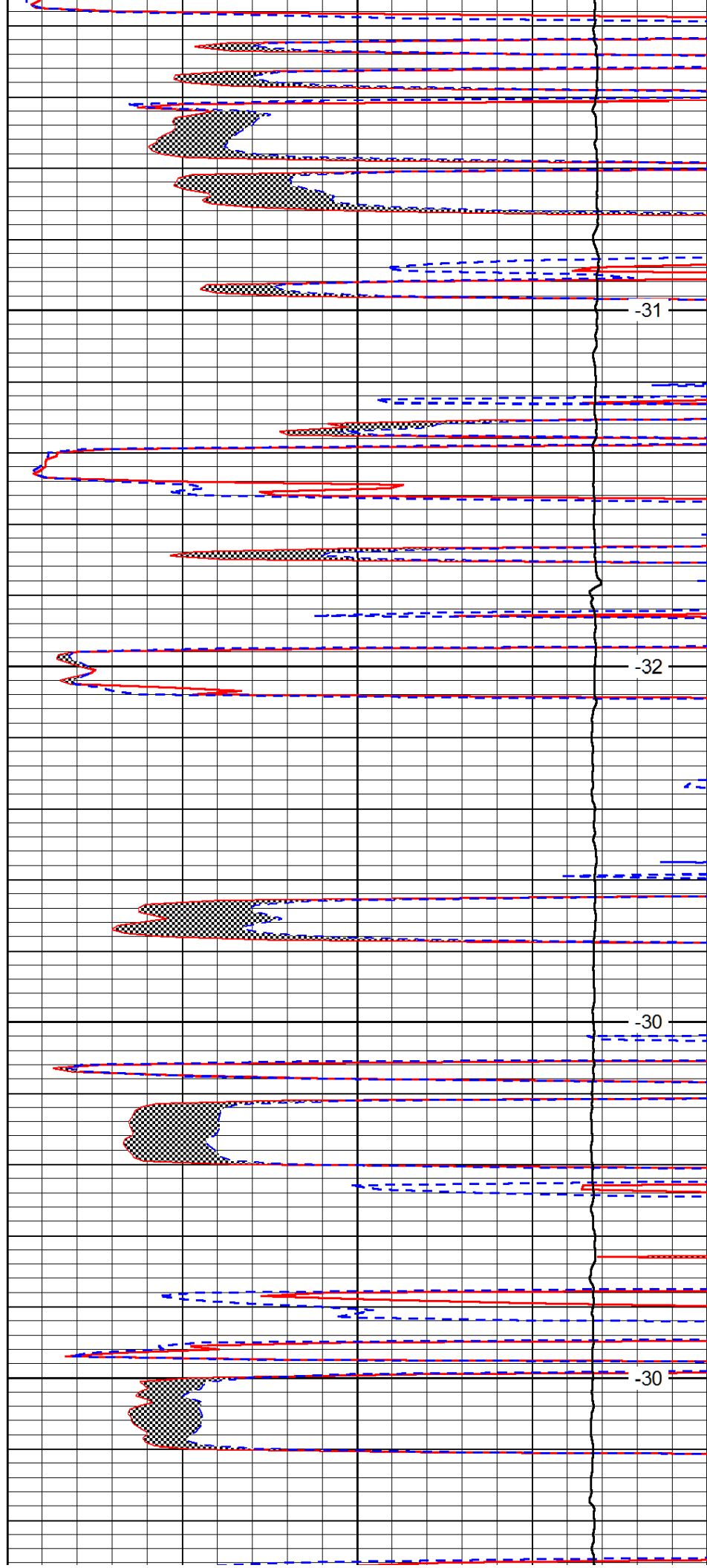


4050

4100

4150

4200

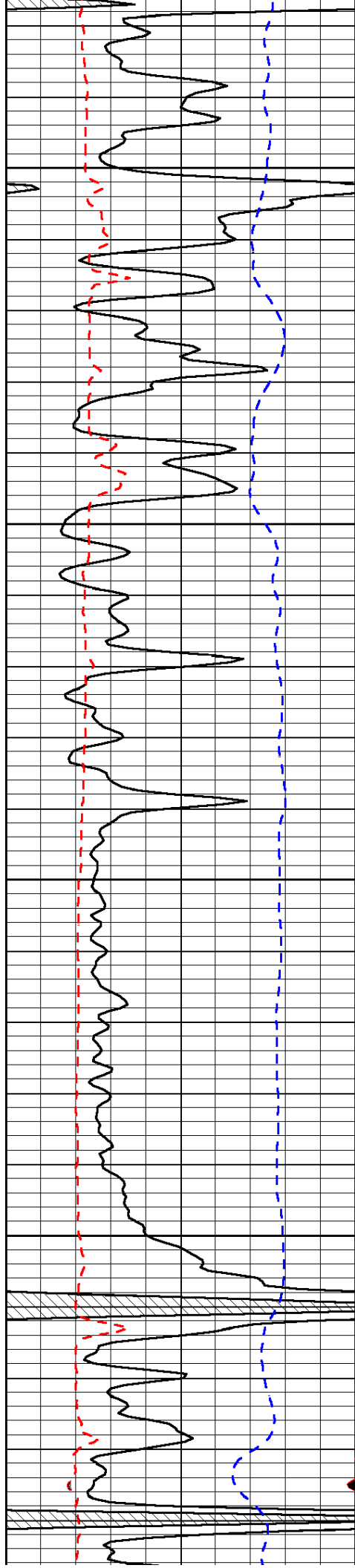


-31

-32

-30

-30

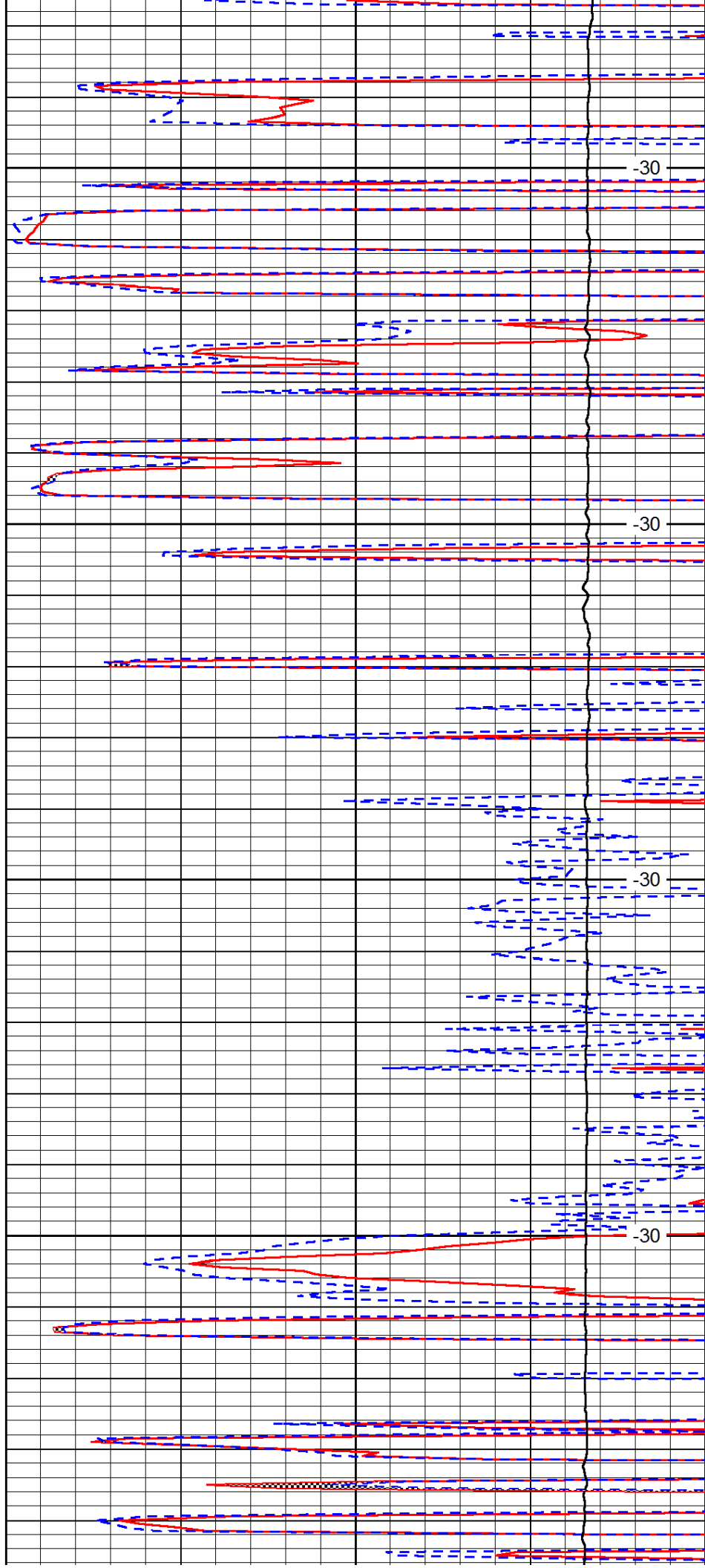


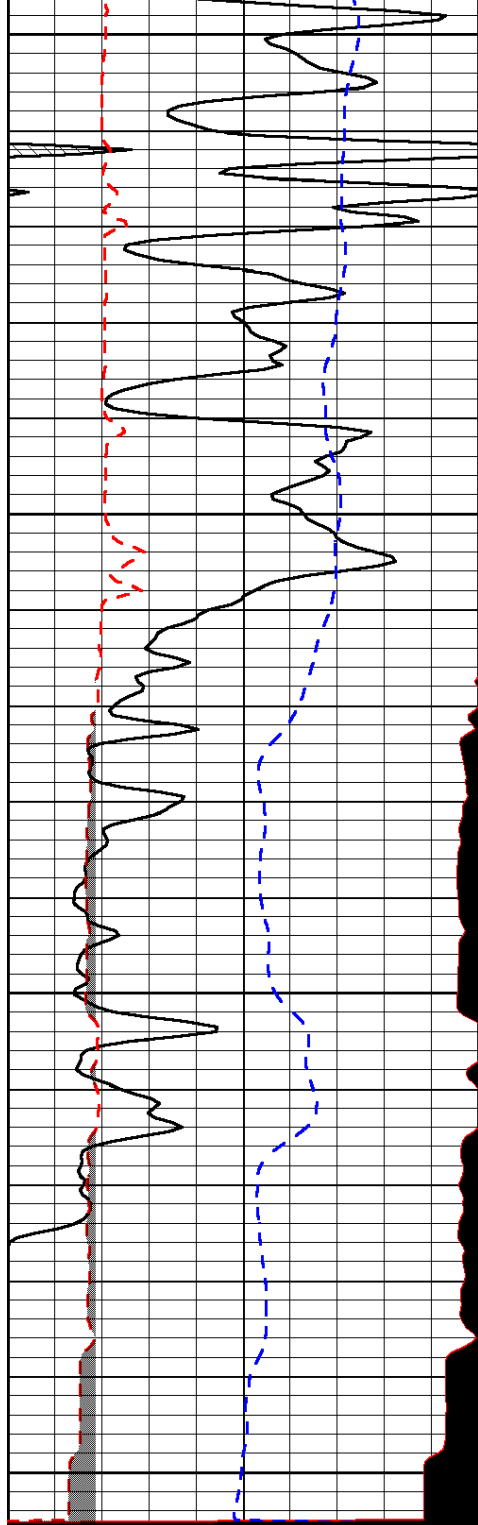
4250

4300

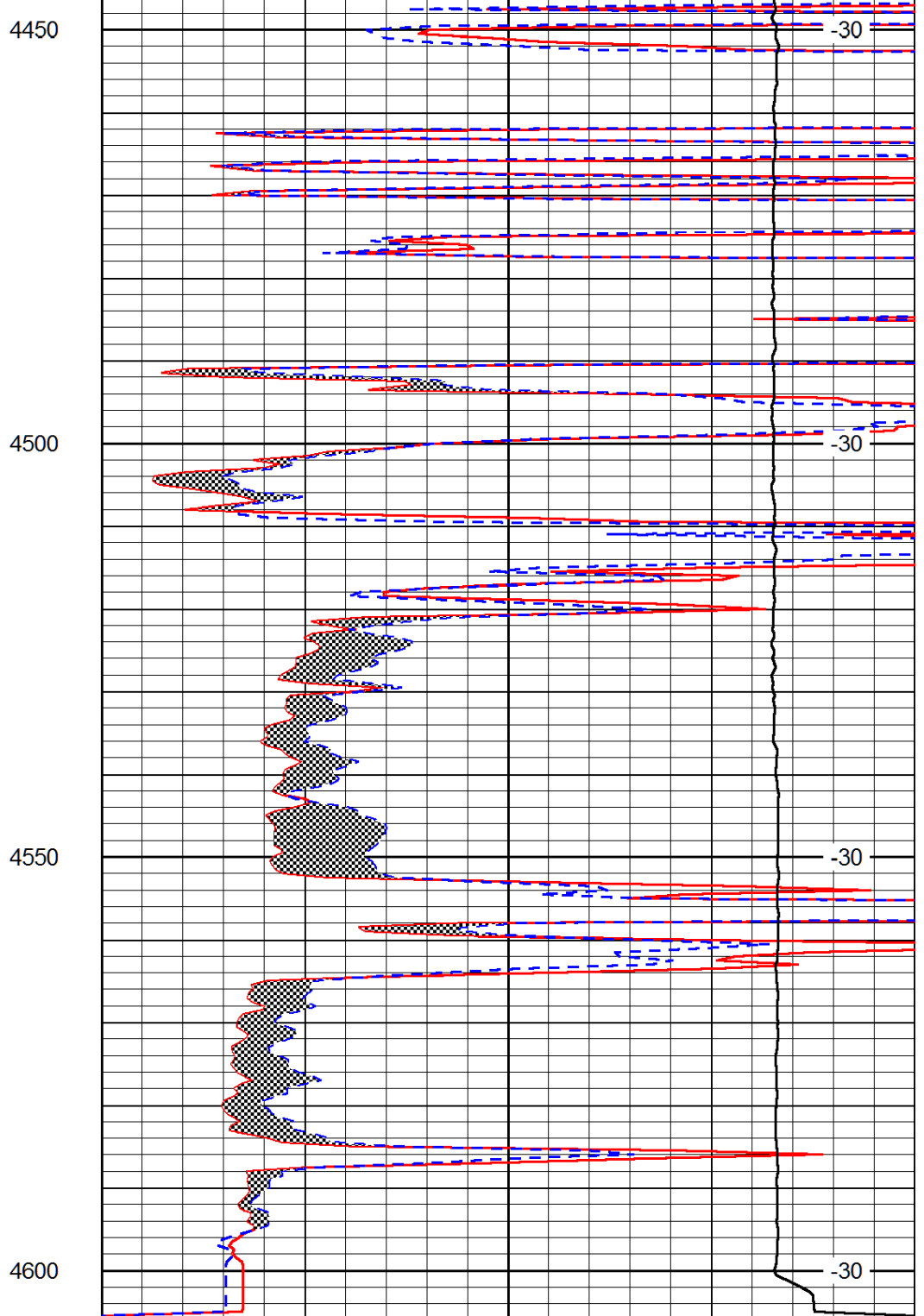
4350

4400





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LSPD  
(ft/min)