



# PIONEER

Pioneer Energy Services

## Microresistivity Log

API No.

15-145-21694-00-00

Company Mid-Con Operating, LLC

Well Hagerman #13-10

Field Oro

County Pawnee

State

Kansas

Location

2310' FNL & 990' FWL

Sec: 10

Twp: 20S

Rge: 19W

Elevation

K.B. 2247  
D.F. 2234  
G.L. 2234

Other Services  
CNL/CDL  
DIL

Permanent Datum Ground Level Elevation 2234  
Log Measured From Kelly Bushing 13 Ft. Above Perm. Datum  
Drilling Measured From Kelly Bushing

Date

10/23/2012

Run Number

Two

Depth Driller

4509

Depth Logger

4508

Bottom Logged Interval

4507

Top Log Interval

3000

Casing Driller

8.625 @ 507

Casing Logger

520

Bit Size

7.875

Type Fluid in Hole

Chemical

Salinity, ppm CL

3000

Density / Viscosity

9.2 50

pH / Fluid Loss

9.5 8.0

Source of Sample

Flowline

Rm @ Meas. Temp

0.60 @ 72

Rmf @ Meas. Temp

0.45 @ 72

Rmc @ Meas. Temp

0.81 @ 72

Source of Rmf / Rmc

Charts

Rm @ BHT

0.35 @ 123

Operating Rig Time

5 Hours

Max Rec. Temp. F

123

Equipment Number

91

Location

Hays

Recorded By

D. Schmidt

Witnessed By

Chris Bean

<<< Fold Here >>>

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

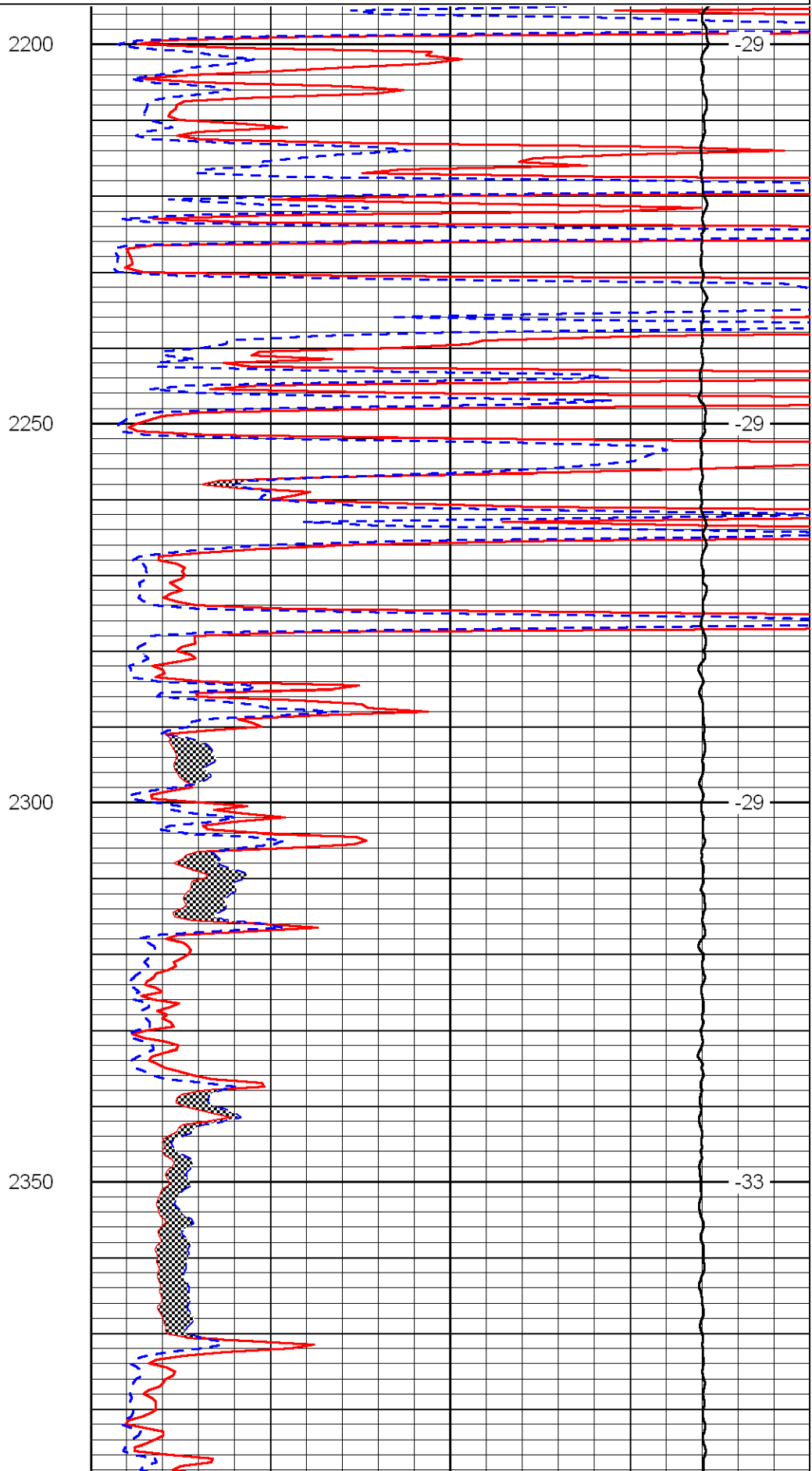
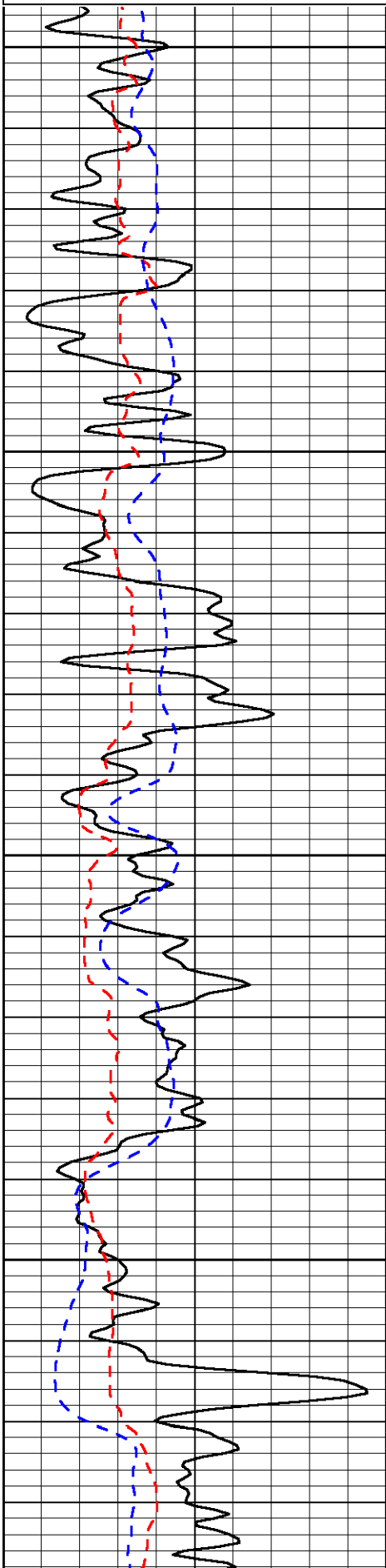
Thank you for using Log-Tech, Inc.  
(785) 625-3858

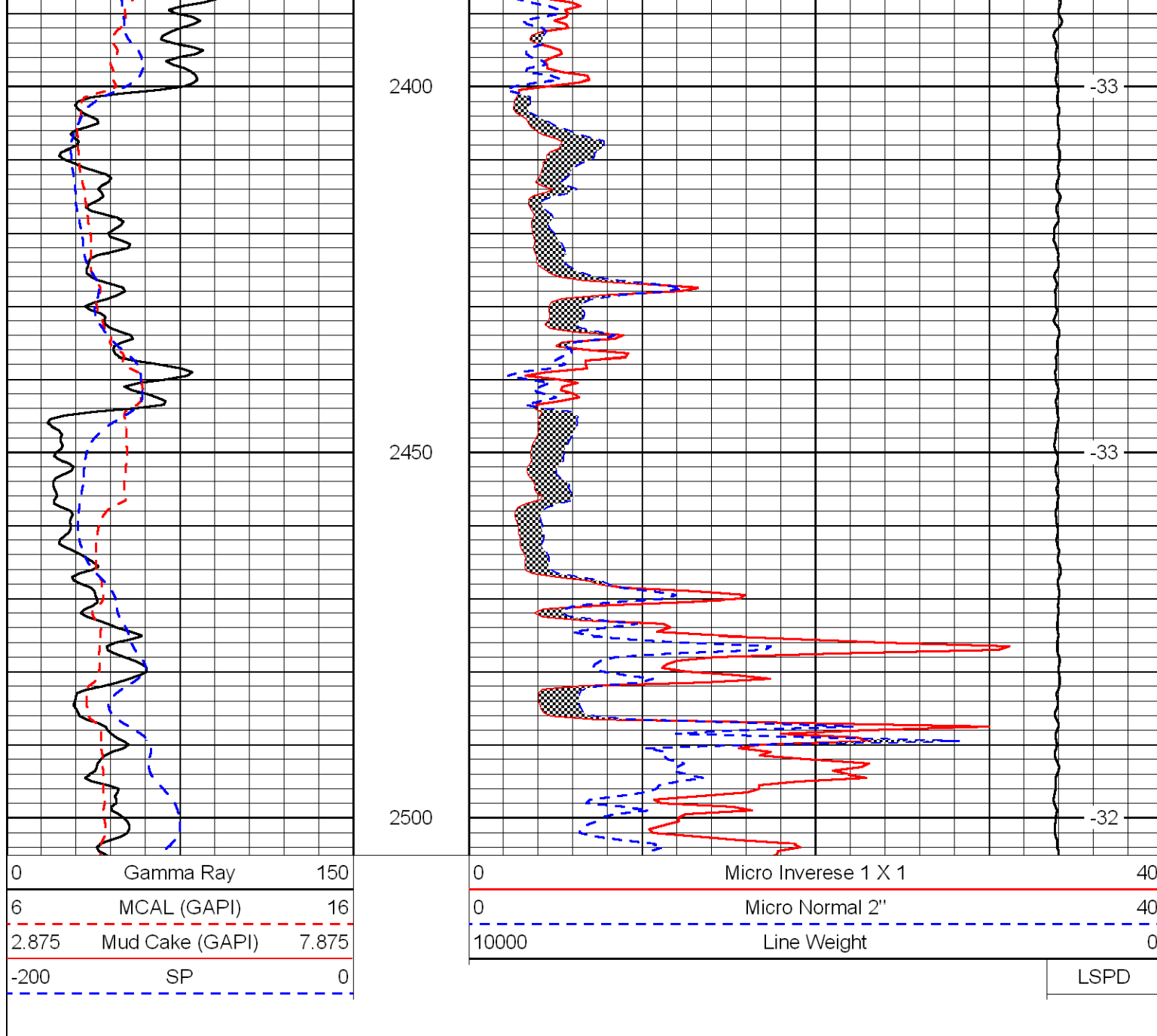
Rush Center,  
10 South to Pawnee County X Rd, 6 West, 1/2 North,  
East into

Database File: midcon\_102312hd.db  
Dataset Pathname: dil/mcstack  
Presentation Format: micro  
Dataset Creation: Wed Oct 24 00:33:48 2012  
Charted by: Depth in Feet scaled 1:240

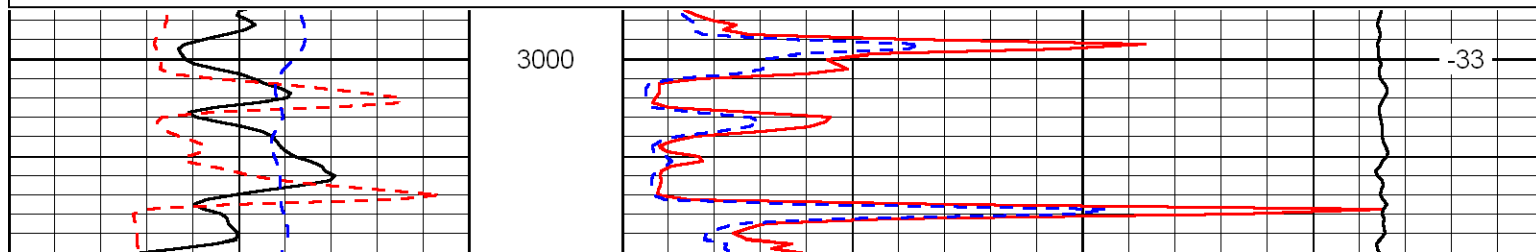
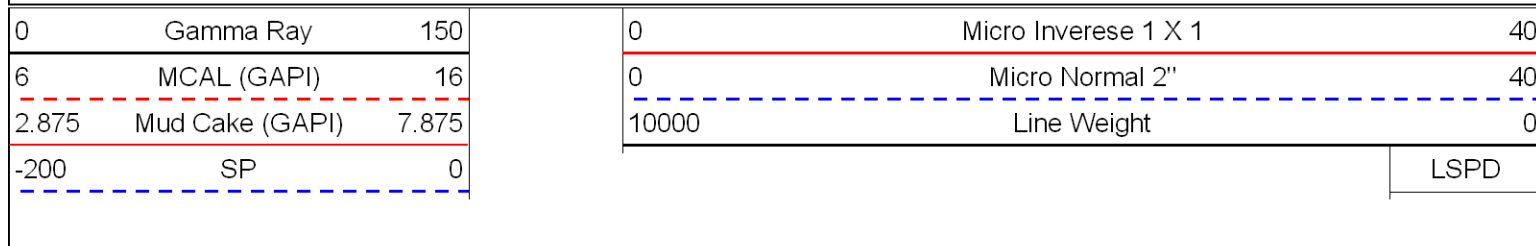
|       |                 |       |
|-------|-----------------|-------|
| 0     | Gamma Ray       | 150   |
| 6     | MCAL (GAPI)     | 16    |
| 2.875 | Mud Cake (GAPI) | 7.875 |
| -200  | SP              | 0     |

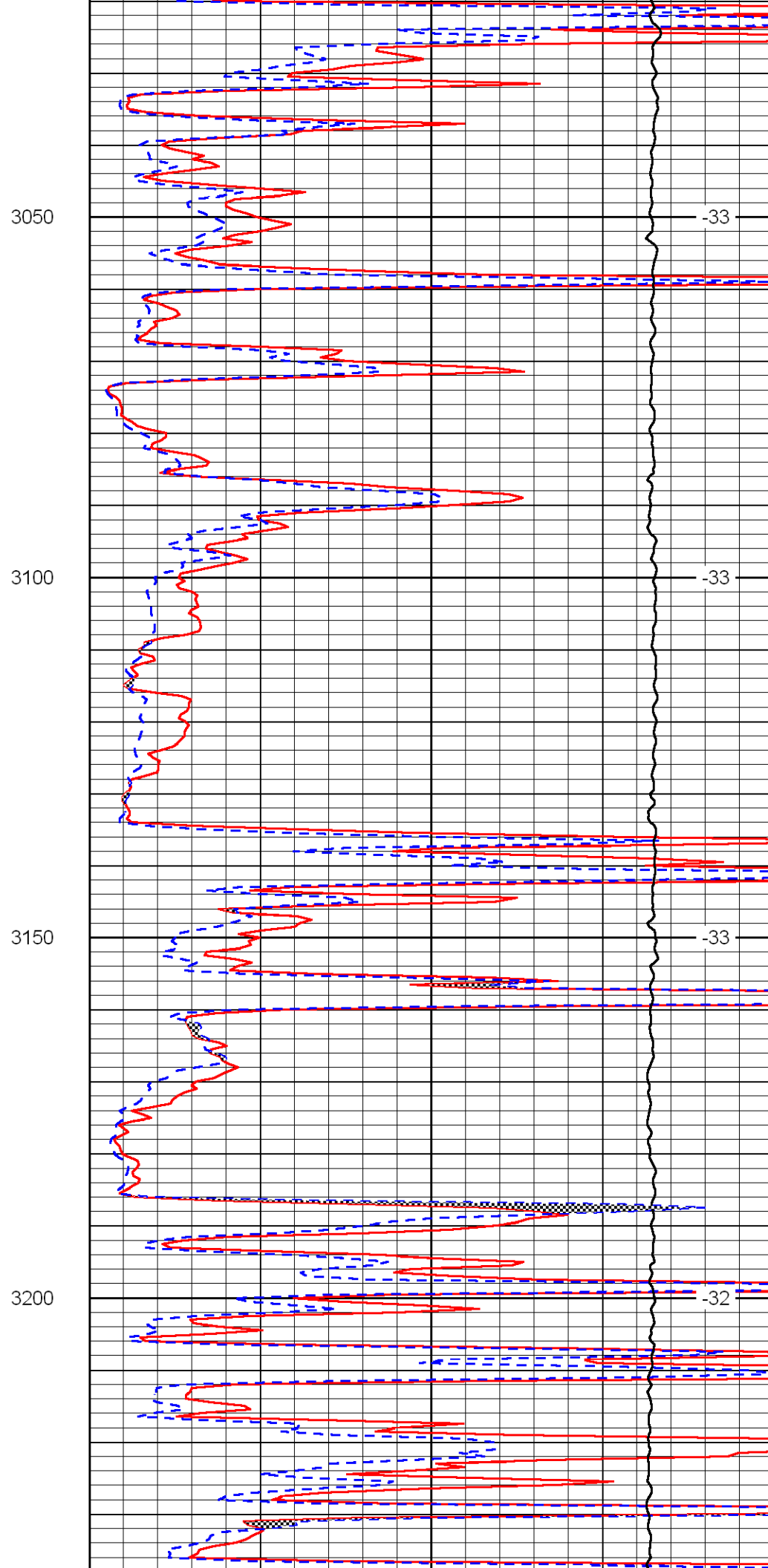
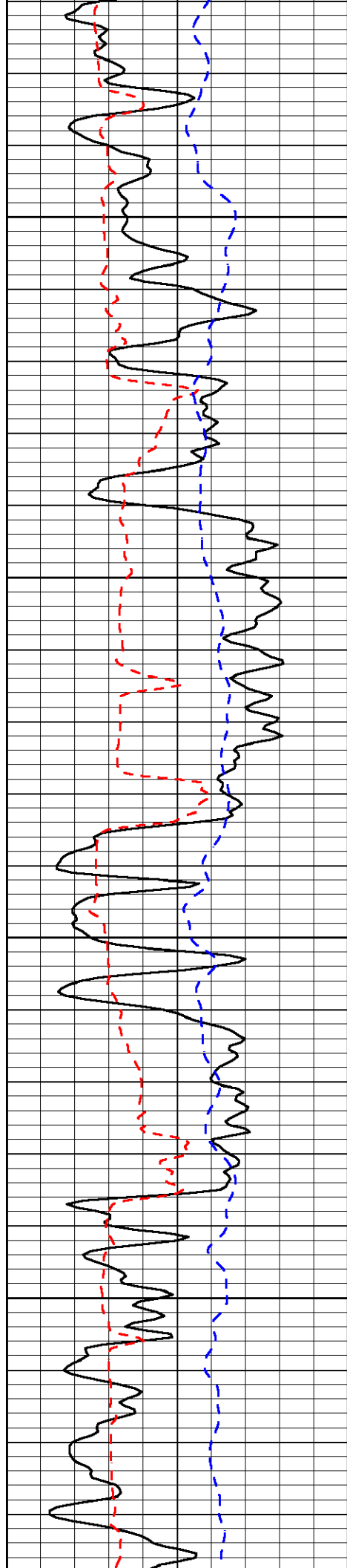
|       |                     |      |
|-------|---------------------|------|
| 0     | Micro Inverse 1 X 1 | 40   |
| 0     | Micro Normal 2"     | 40   |
| 10000 | Line Weight         | 0    |
|       |                     | LSPD |

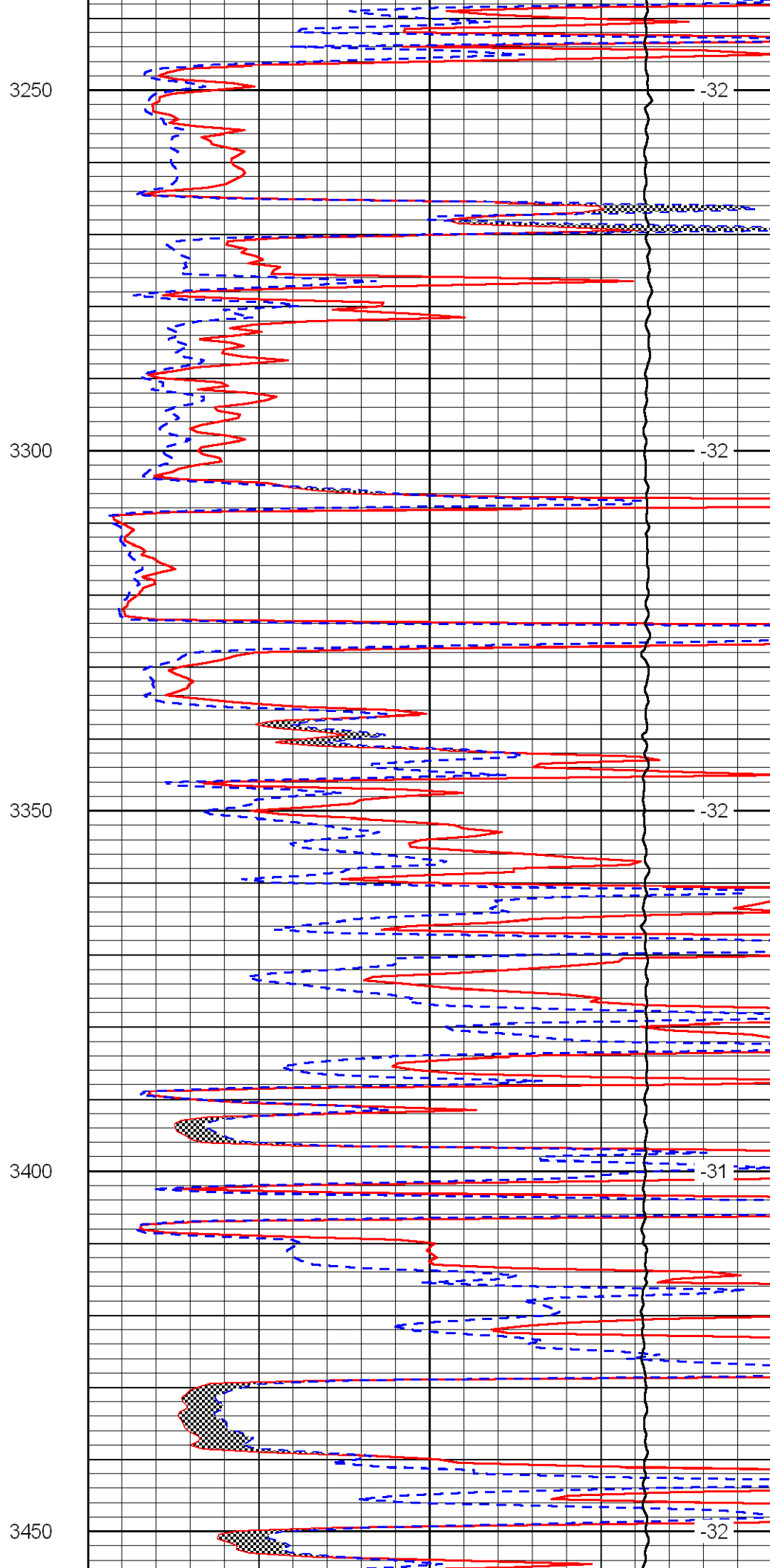
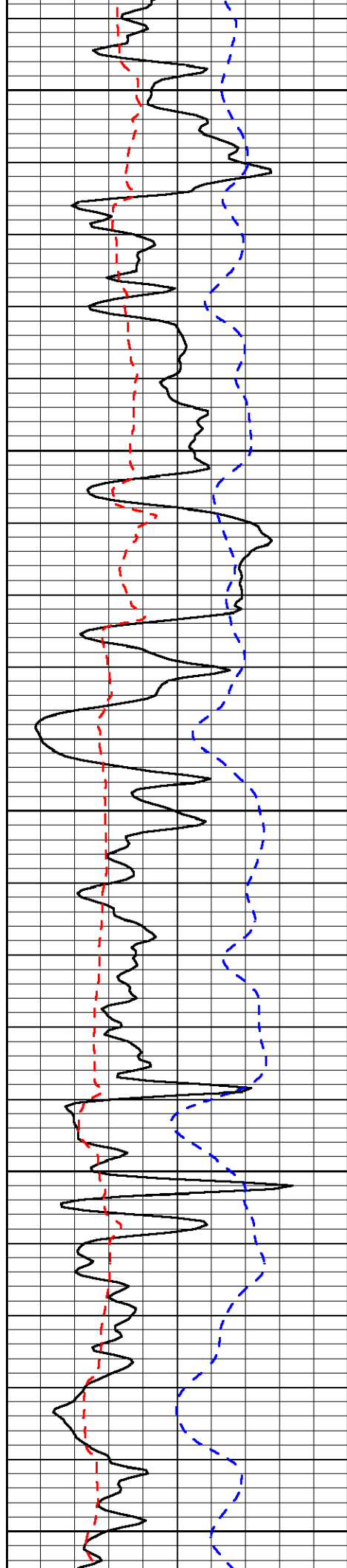


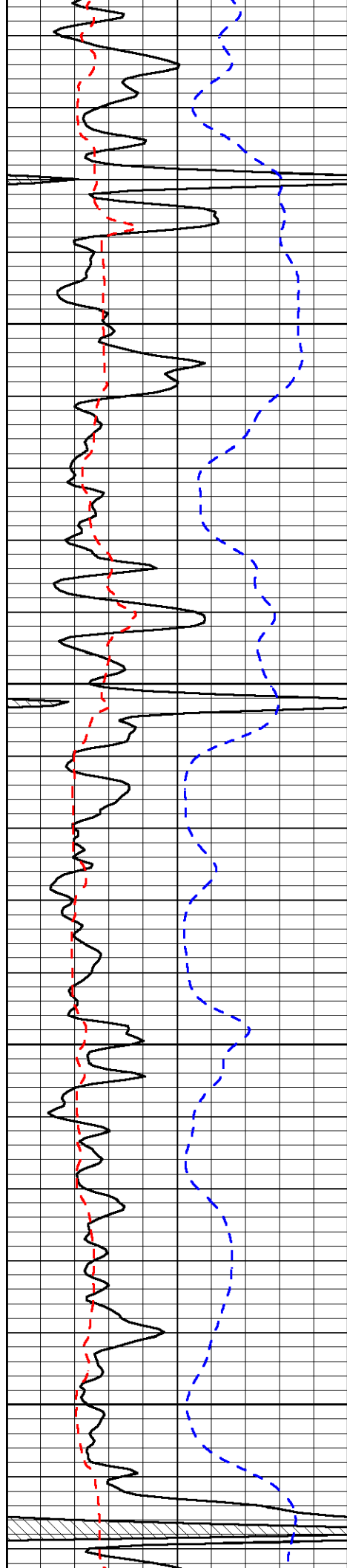


Database File: midcon\_102312hd.db  
 Dataset Pathname: dil/mcstack  
 Presentation Format: micro  
 Dataset Creation: Wed Oct 24 00:33:48 2012  
 Charted by: Depth in Feet scaled 1:240







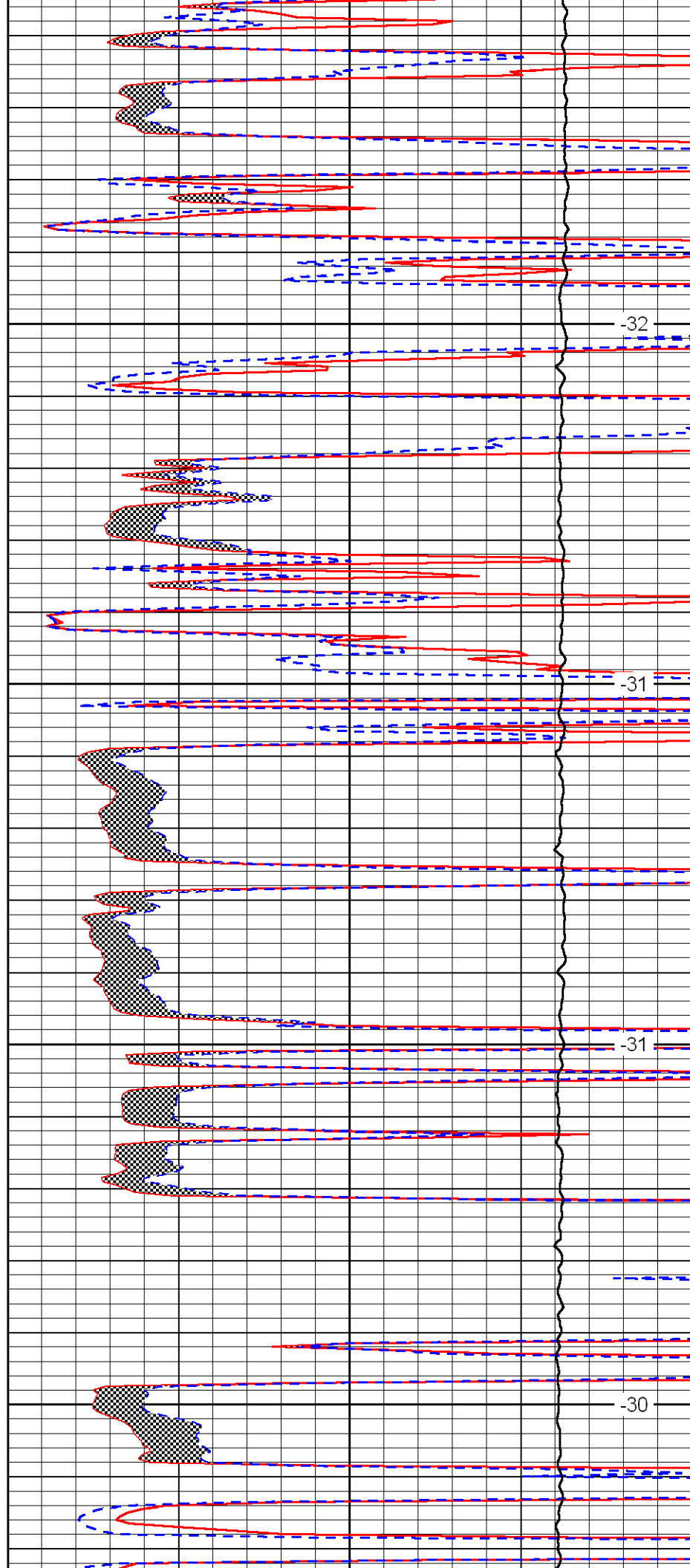


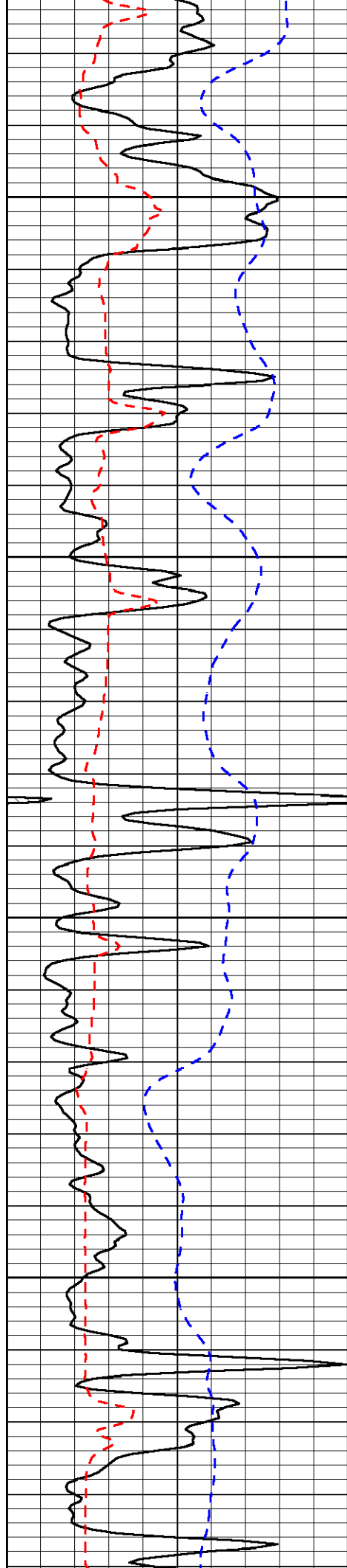
3500

3550

3600

3650



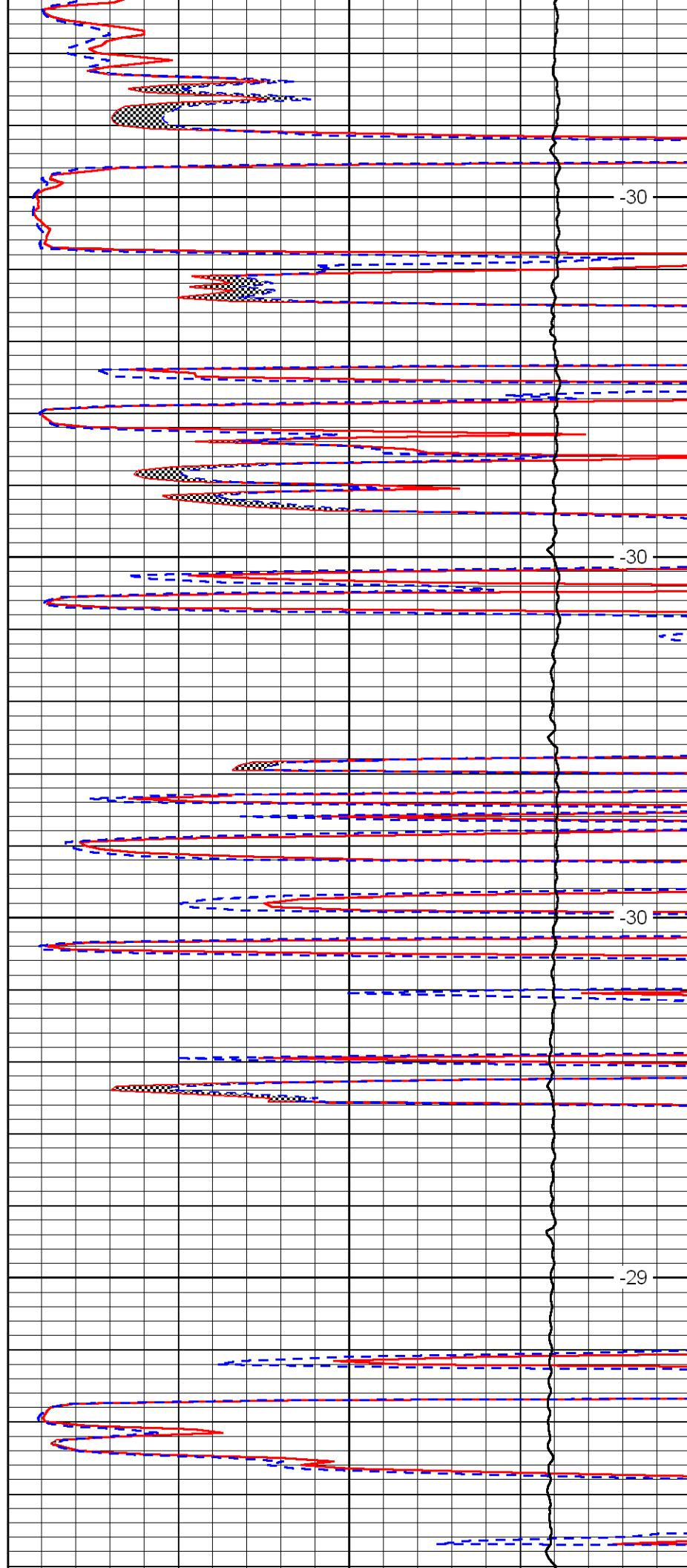


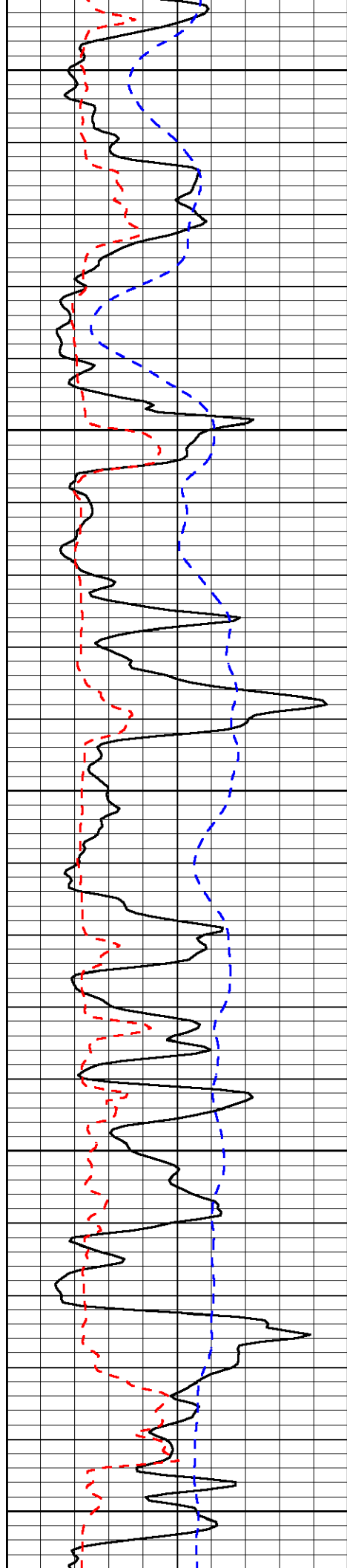
3700

3750

3800

3850





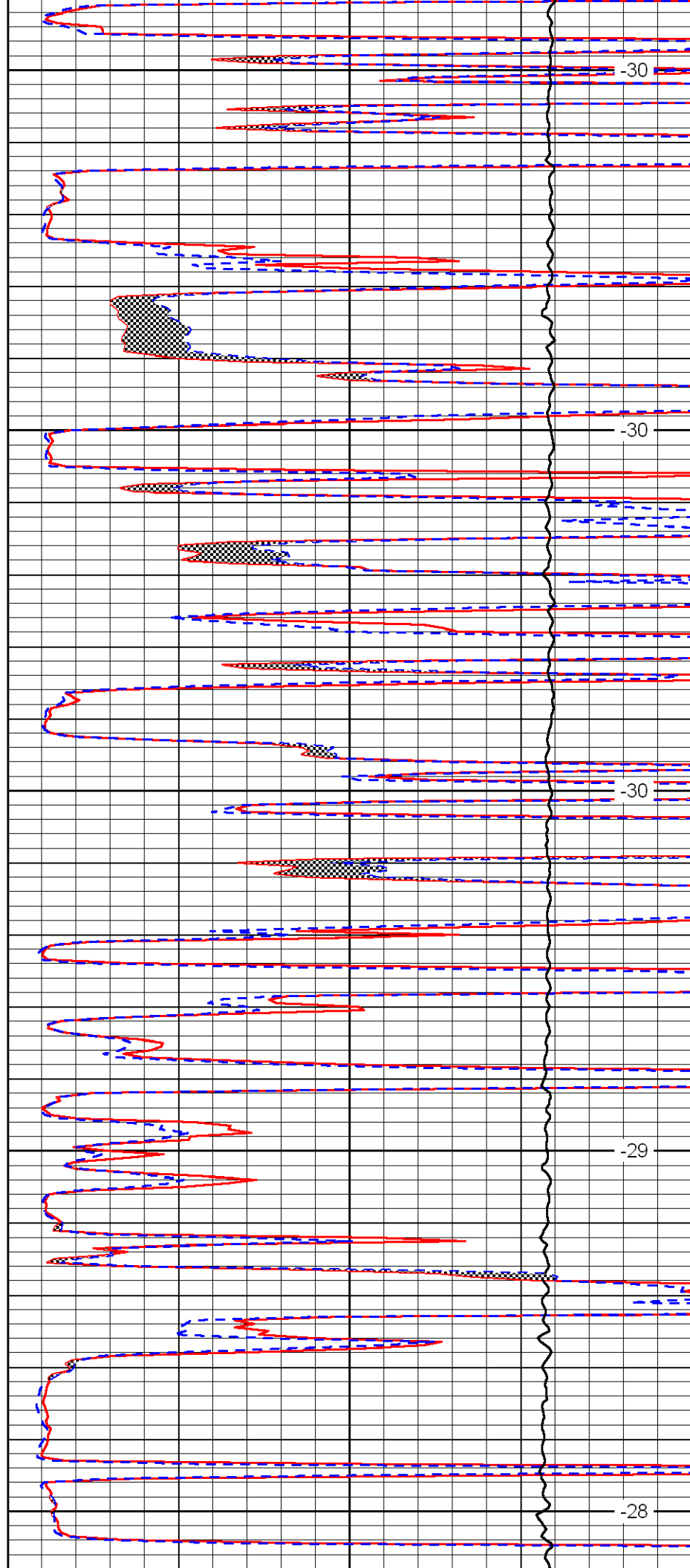
3900

3950

4000

4050

4100



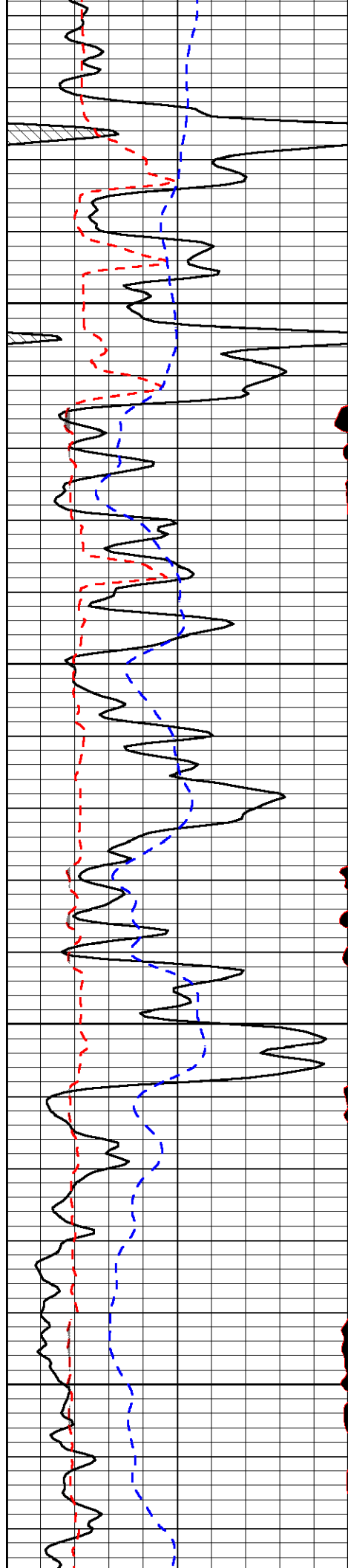
-30

-30

-30

-29

-28

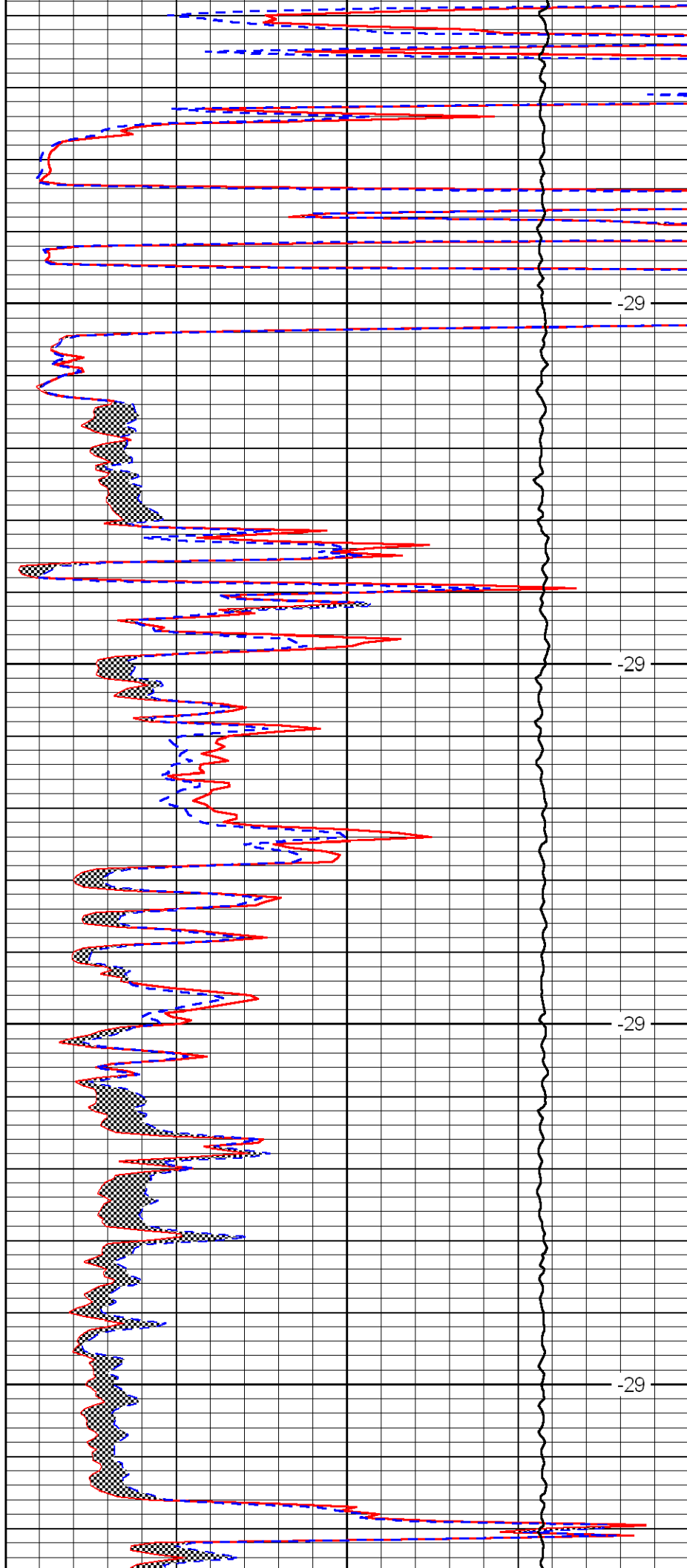


4150

4200

4250

4300

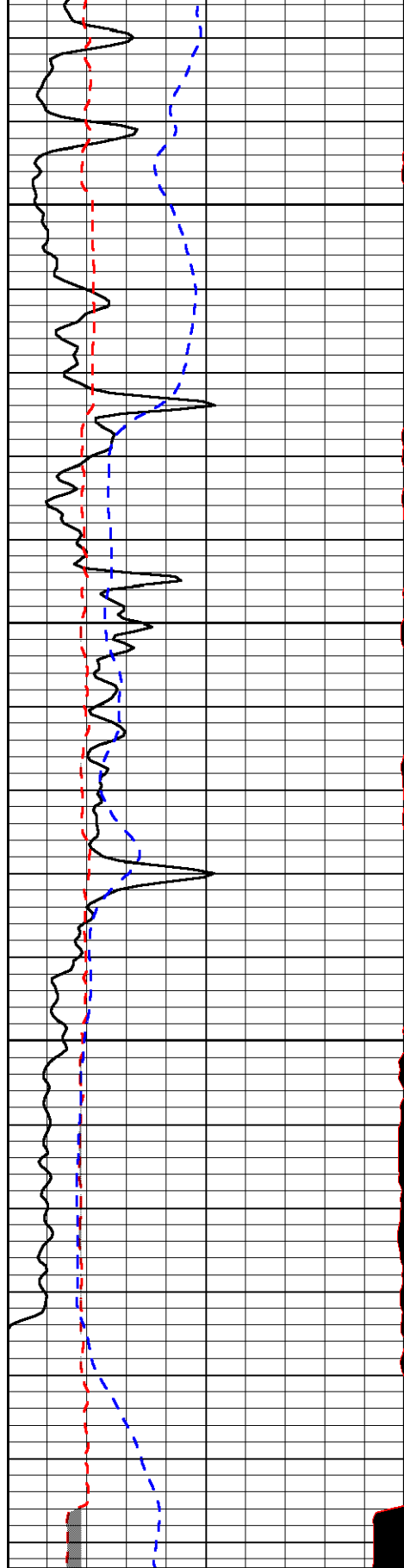


-29

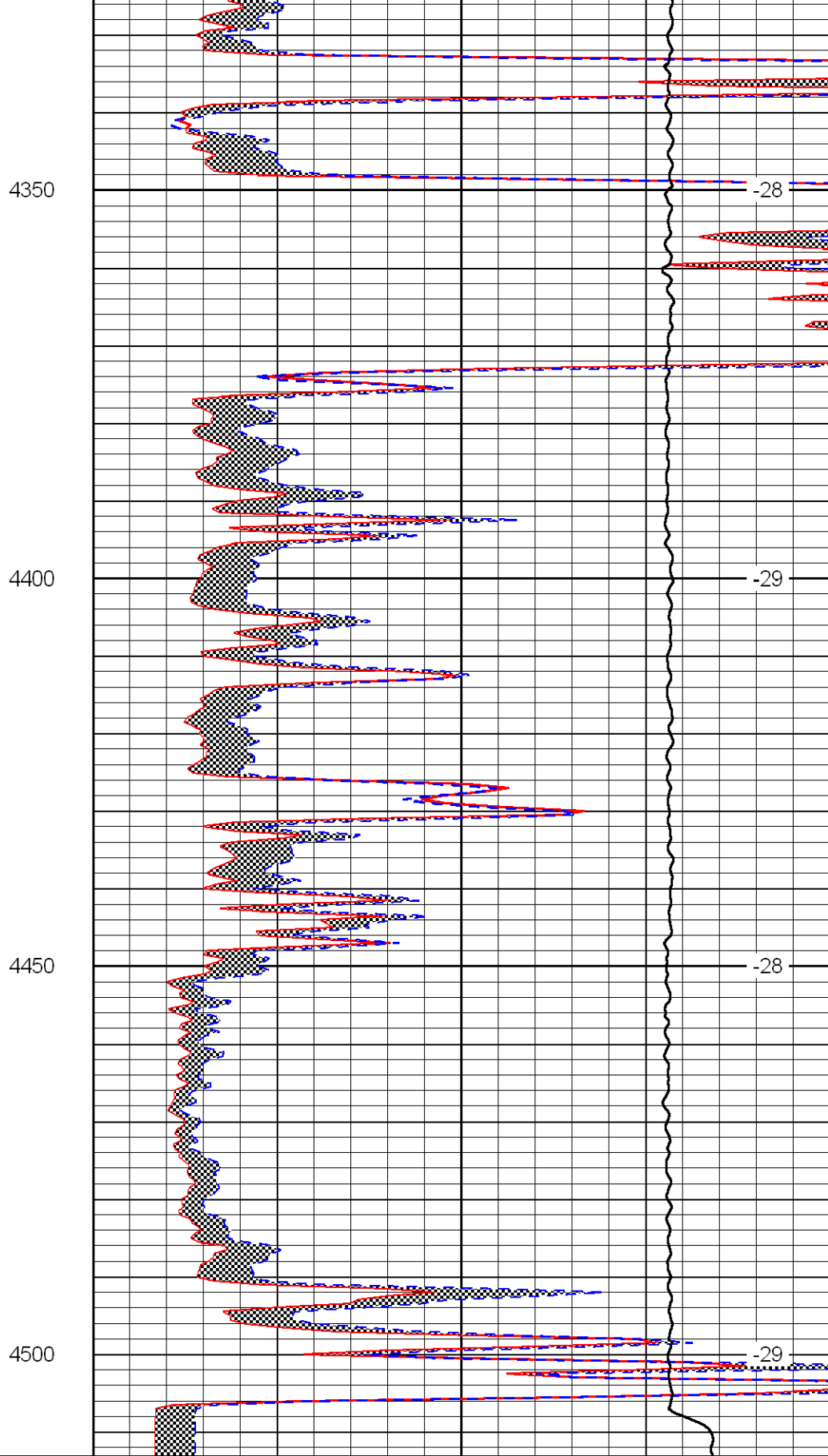
-29

-29

-29



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



|       |                     |    |
|-------|---------------------|----|
| 0     | Micro Inverse 1 X 1 | 40 |
| 0     | Micro Normal 2''    | 40 |
| 10000 | Line Weight         | 0  |
|       | LSPD                |    |