



# NABORS

**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**COMPENSATED  
DENSITY / NEUTRON  
PE LOG**

|                              |                                                                                                   |                     |                                     |
|------------------------------|---------------------------------------------------------------------------------------------------|---------------------|-------------------------------------|
| Company                      | EAGLE CREEK CORPORATION                                                                           |                     |                                     |
| Well                         | DECKER #1-20                                                                                      |                     |                                     |
| Field                        | WILDCAT                                                                                           |                     |                                     |
| County                       | SCOTT                                                                                             | State               | KANSAS                              |
| Location:                    | API # : 15-171-21018-0000<br>2355' FSL & 1556' FEL<br>NE - NE - NW - SE<br>SEC 20 TWP 17S RGE 34W |                     | Other Services<br>DIL/MEL<br>SONIC  |
| Permanent Datum              | GROUND LEVEL                                                                                      | Elevation           | 3081                                |
| Log Measured From            | KELLY BUSHING 9' A.G.L.                                                                           |                     |                                     |
| Drilling Measured From       | KELLY BUSHING                                                                                     | Elevation           | K.B. 3090<br>D.F. 3088<br>G.L. 3081 |
| Date                         | 1/26/14                                                                                           |                     |                                     |
| Run Number                   | ONE                                                                                               |                     |                                     |
| Depth Driller                | 4950                                                                                              |                     |                                     |
| Depth Logger                 | 4954                                                                                              |                     |                                     |
| Bottom Logged Interval       | 4930                                                                                              |                     |                                     |
| Top Log Interval             | 3400                                                                                              |                     |                                     |
| Casing Driller               | 8 5/8" @ 277'                                                                                     |                     |                                     |
| Casing Logger                | 274                                                                                               |                     |                                     |
| Bit Size                     | 7 7/8"                                                                                            |                     |                                     |
| Type Fluid in Hole           | CHEMICAL MUD                                                                                      | CHLORIDES 6,500 PPM |                                     |
| Density / Viscosity          | 9.4/60                                                                                            |                     |                                     |
| pH / Fluid Loss              | 10.5/8.8                                                                                          |                     |                                     |
| Source of Sample             | FLOWLINE                                                                                          |                     |                                     |
| Rim @ Meas. Temp             | .600 @ 70F                                                                                        |                     |                                     |
| Rinf @ Meas. Temp            | .450 @ 70F                                                                                        |                     |                                     |
| Rinc @ Meas. Temp            | .720 @ 70F                                                                                        |                     |                                     |
| Source of Rinf / Rinc        | MEASUREMENT                                                                                       |                     |                                     |
| Rim @ BHT                    | .336 @ 125F                                                                                       |                     |                                     |
| Time Circulation Stopped     | 2.5 HOURS                                                                                         |                     |                                     |
| Time Logger on Bottom        | 6:30 P.M.                                                                                         |                     |                                     |
| Maximum Recorded Temperature | 125F                                                                                              |                     |                                     |
| Equipment Number             | 4854                                                                                              |                     |                                     |
| Location                     | HAYS, KANSAS                                                                                      |                     |                                     |
| Recorded By                  | JEFF LUEBBERS                                                                                     |                     |                                     |
| Witnessed By                 | MIKE MAUNE                                                                                        | DAVE CALLEWAERT     |                                     |

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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 "NABORS" HAYS, KANSAS (785) 628-6395  
DIRECTIONS

MODOC, KS., 2 1/2W. ON HWY 96 TO (SCOTT/WICHITA CO.LINE), 4N.TO "RD. 190", 2E., TO DIRT TRAIL,  
1N. TO "T", 1/4W. IN PASTURE, N. INTO

Database File:

22242pe.db

Dataset Pathname:

pass3.7

Presentation Format:

ldt\_neu

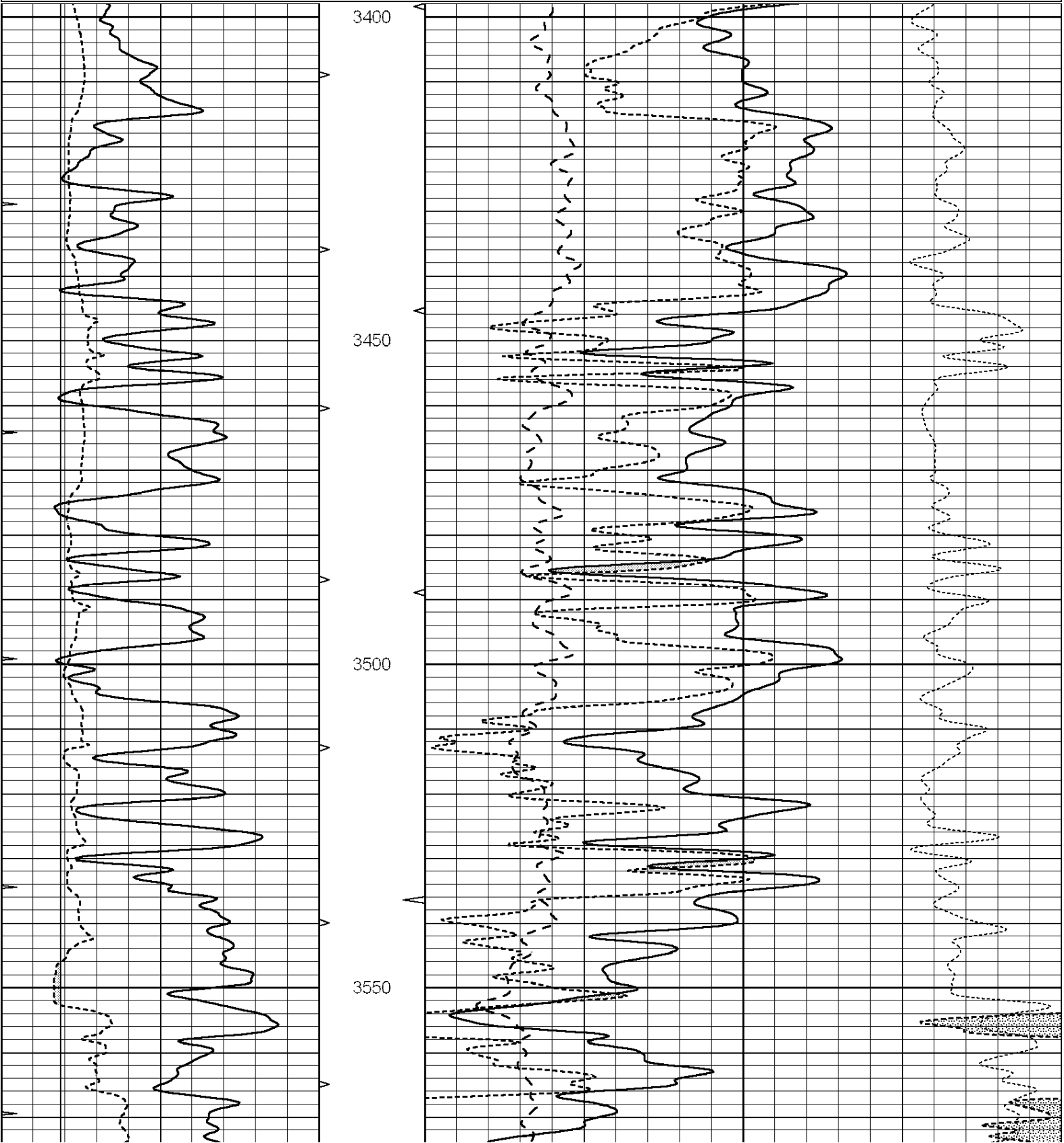
Dataset Creation:

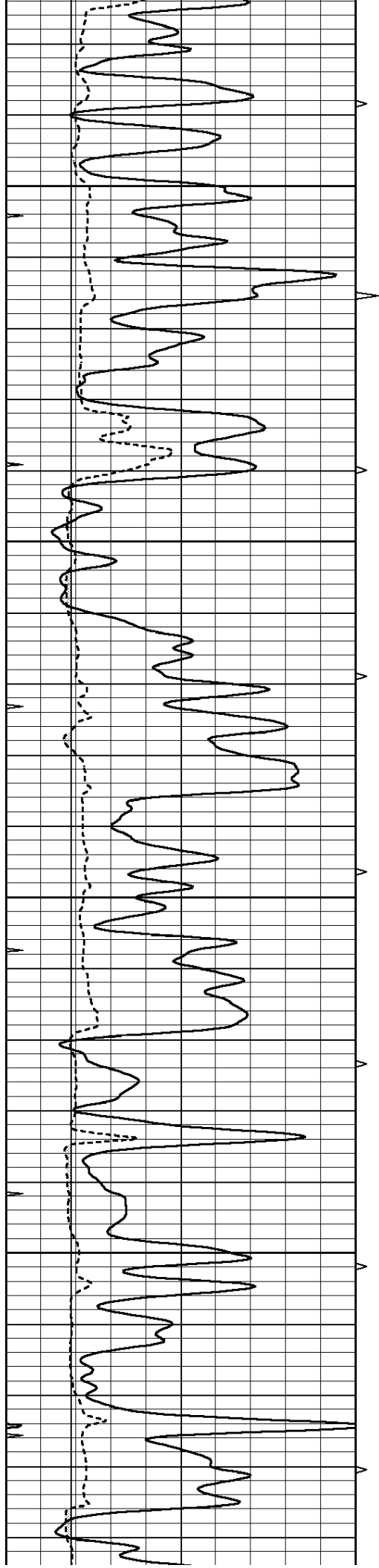
Sun Jan 26 20:11:29 2014 by Calc SOC 120430

Charted by:

Depth in Feet scaled 1:240

|   |                  |     |          |    |                          |                          |       |                   |      |
|---|------------------|-----|----------|----|--------------------------|--------------------------|-------|-------------------|------|
| 0 | GAMMA RAY (GAPI) | 150 | ABHV     | 30 | COMPENSATED DENSITY (pu) |                          |       | -10               |      |
| 6 | CALIPER (in)     | 16  | 10 (ft3) | 0  | 30                       | COMPENSATED NEUTRON (pu) |       |                   | -10  |
| 0 | MINMK            | 20  | TBHV     | 0  | PE                       | 10                       | -0.25 | CORRECTION (g/cc) | 0.25 |
|   |                  |     | 0 (ft3)  | 10 |                          |                          |       |                   |      |



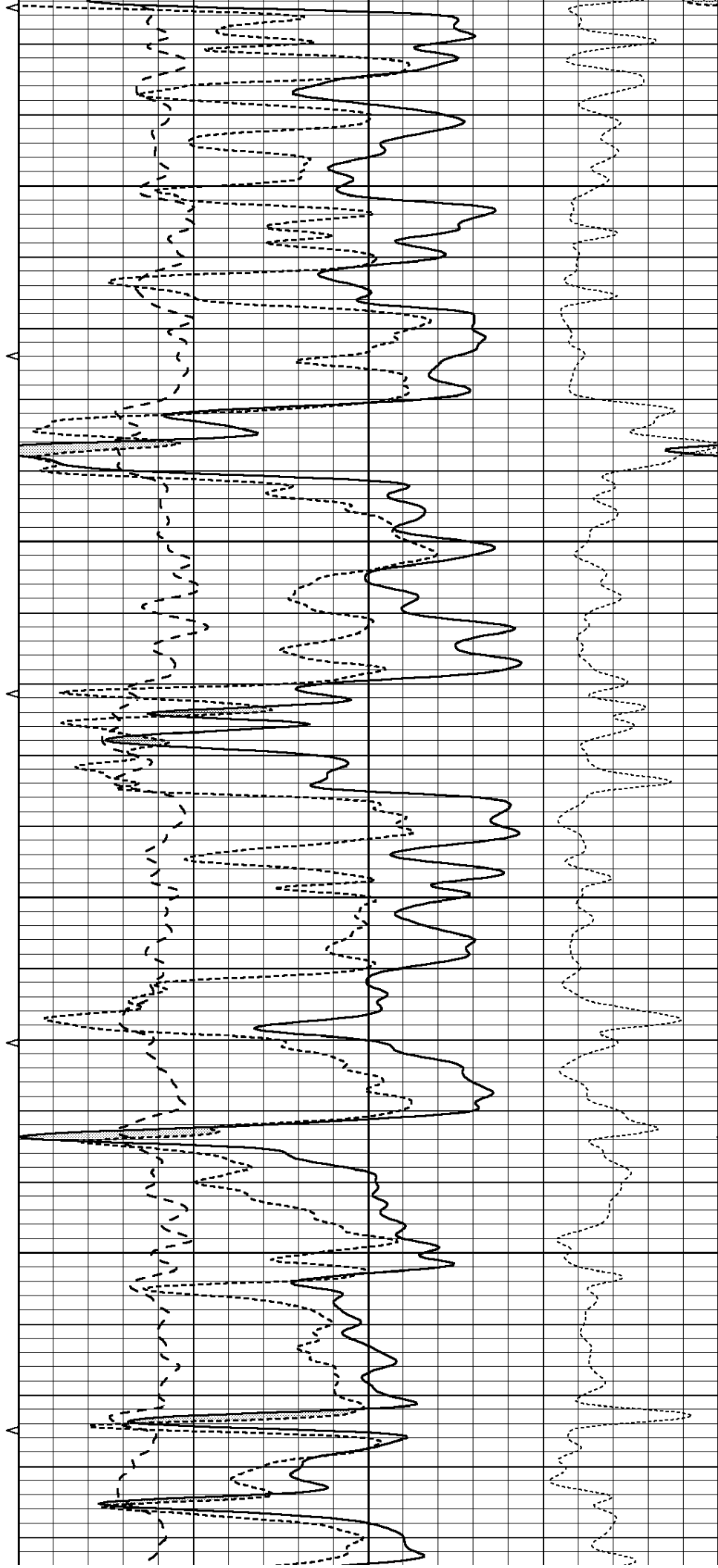


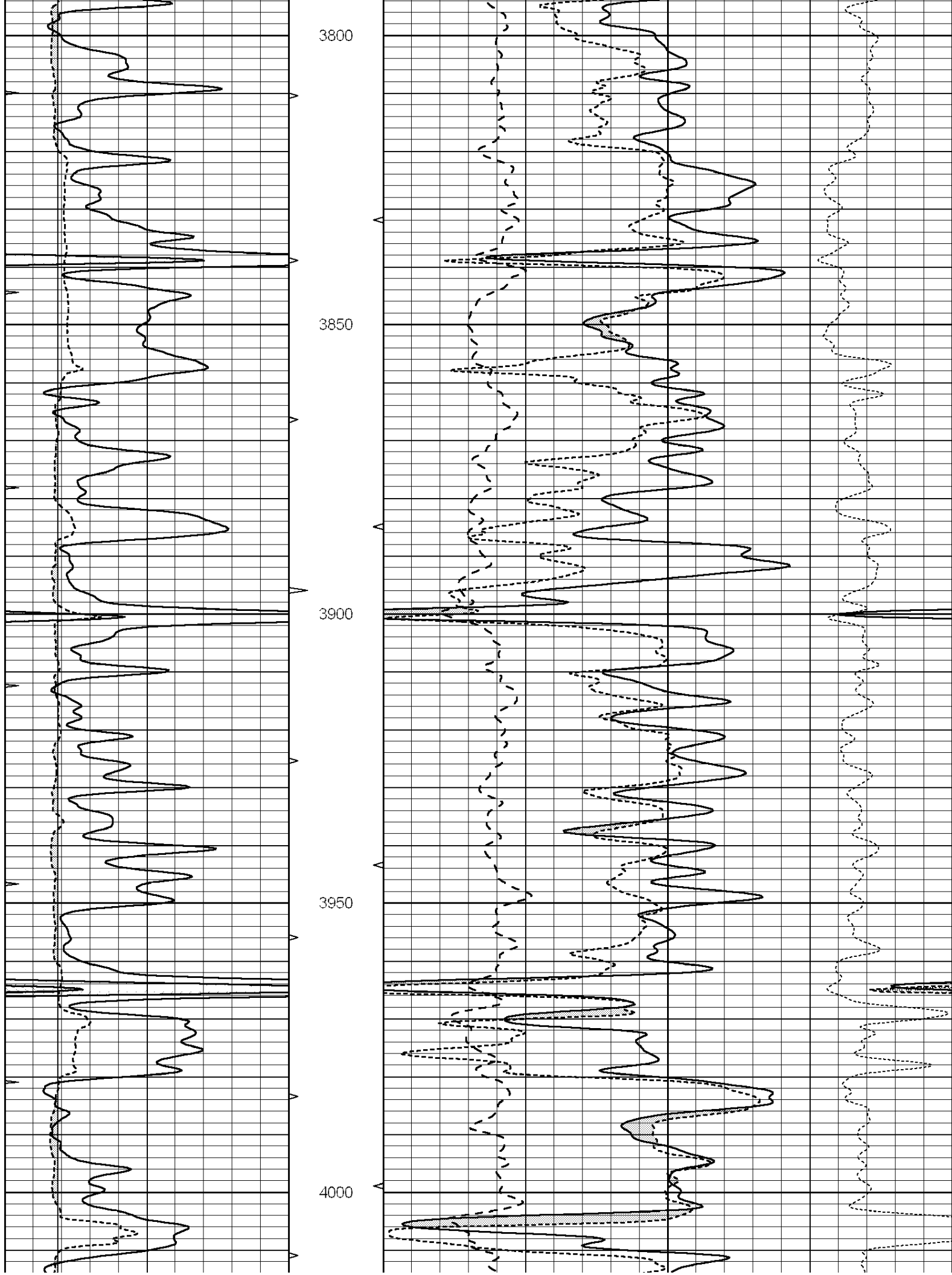
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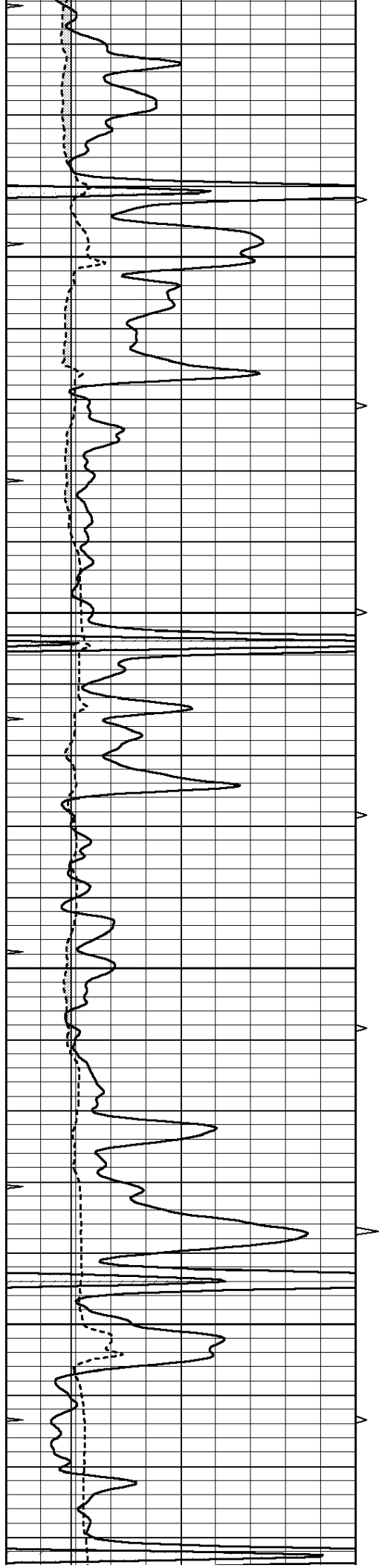
3650

3700

3750





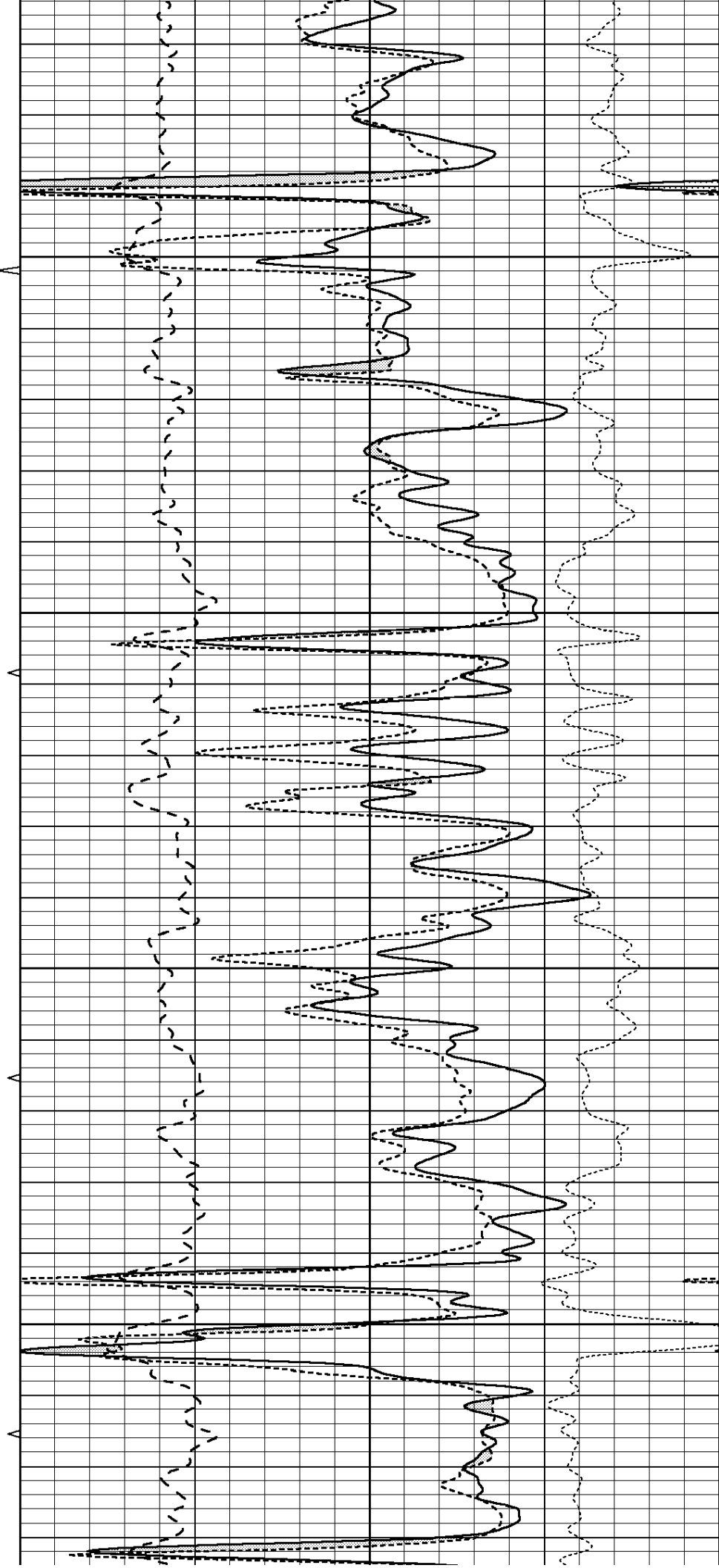


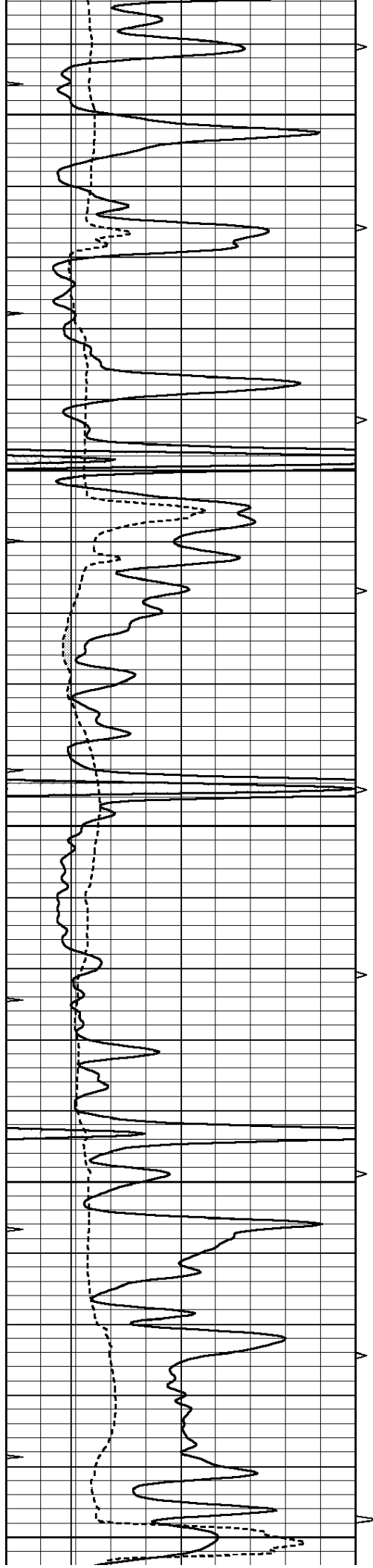
4050

4100

4150

4200





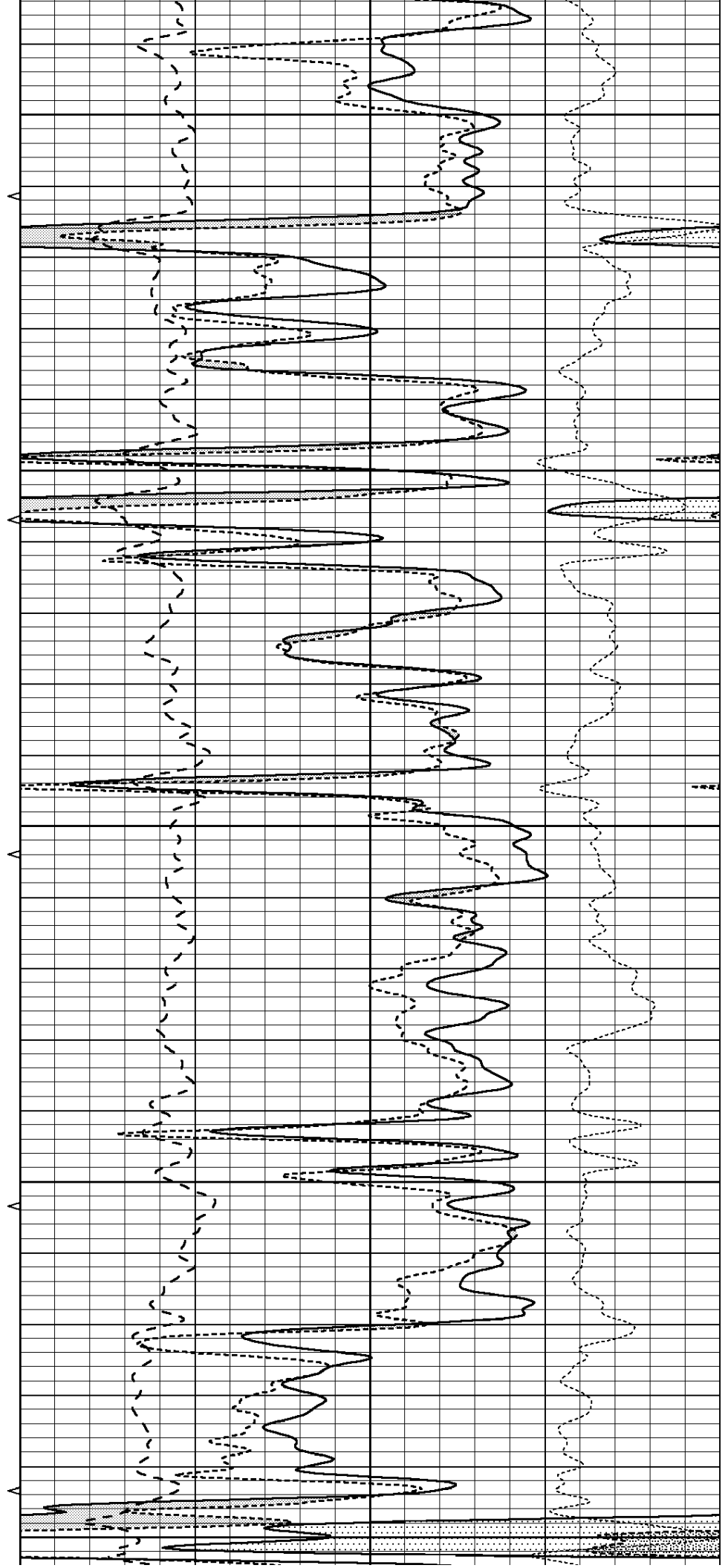
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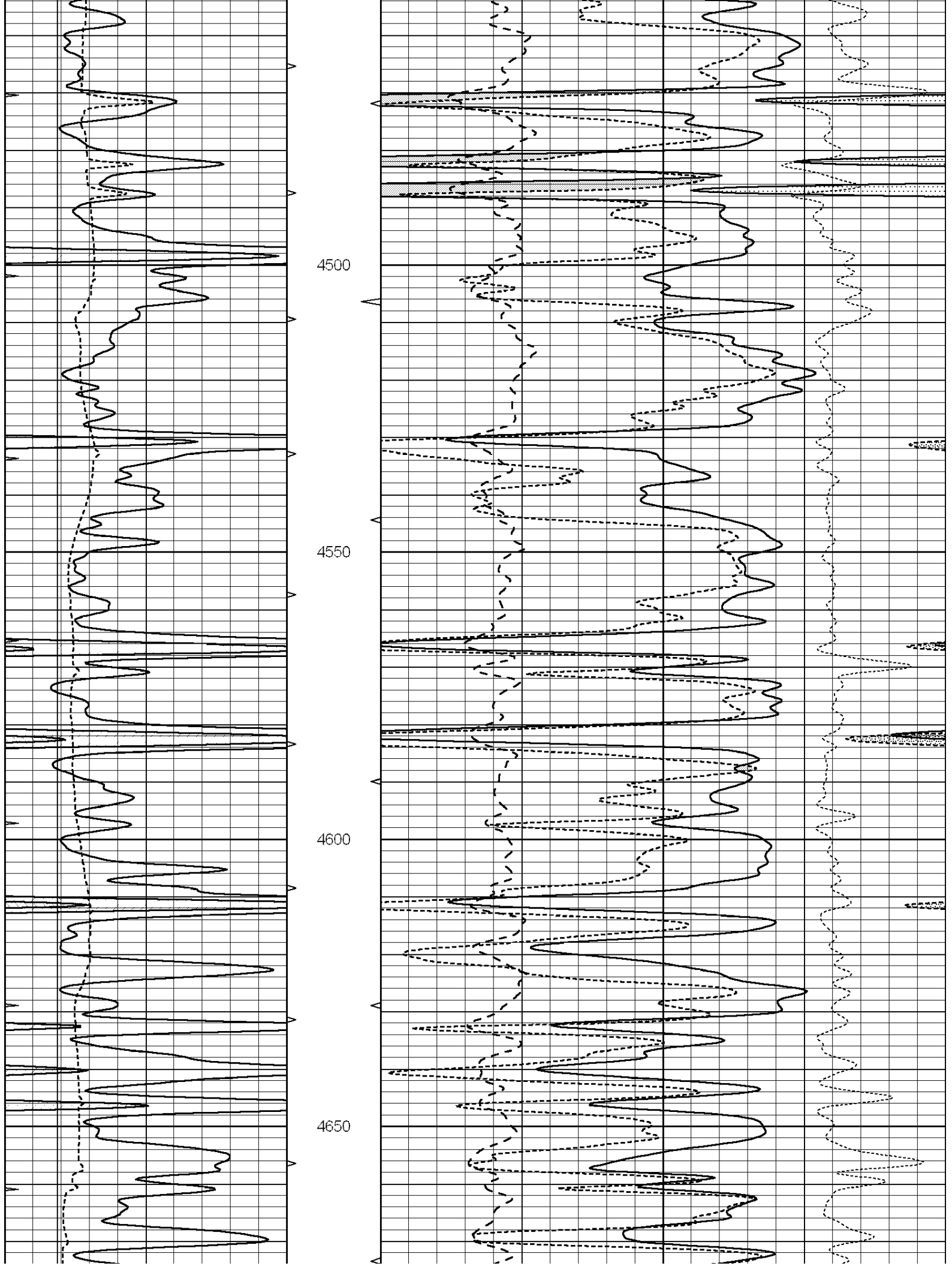
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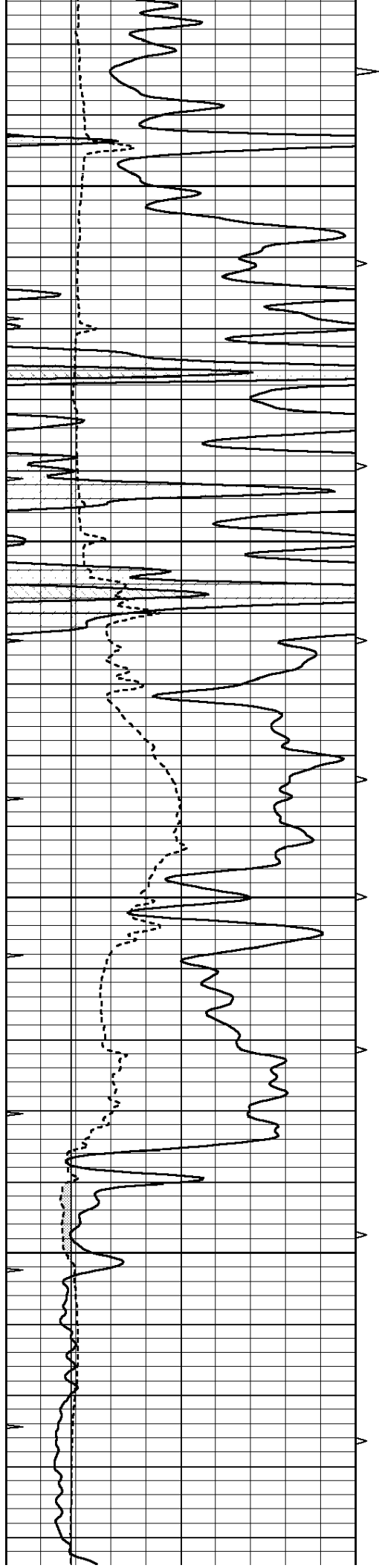
4350

4400

4450







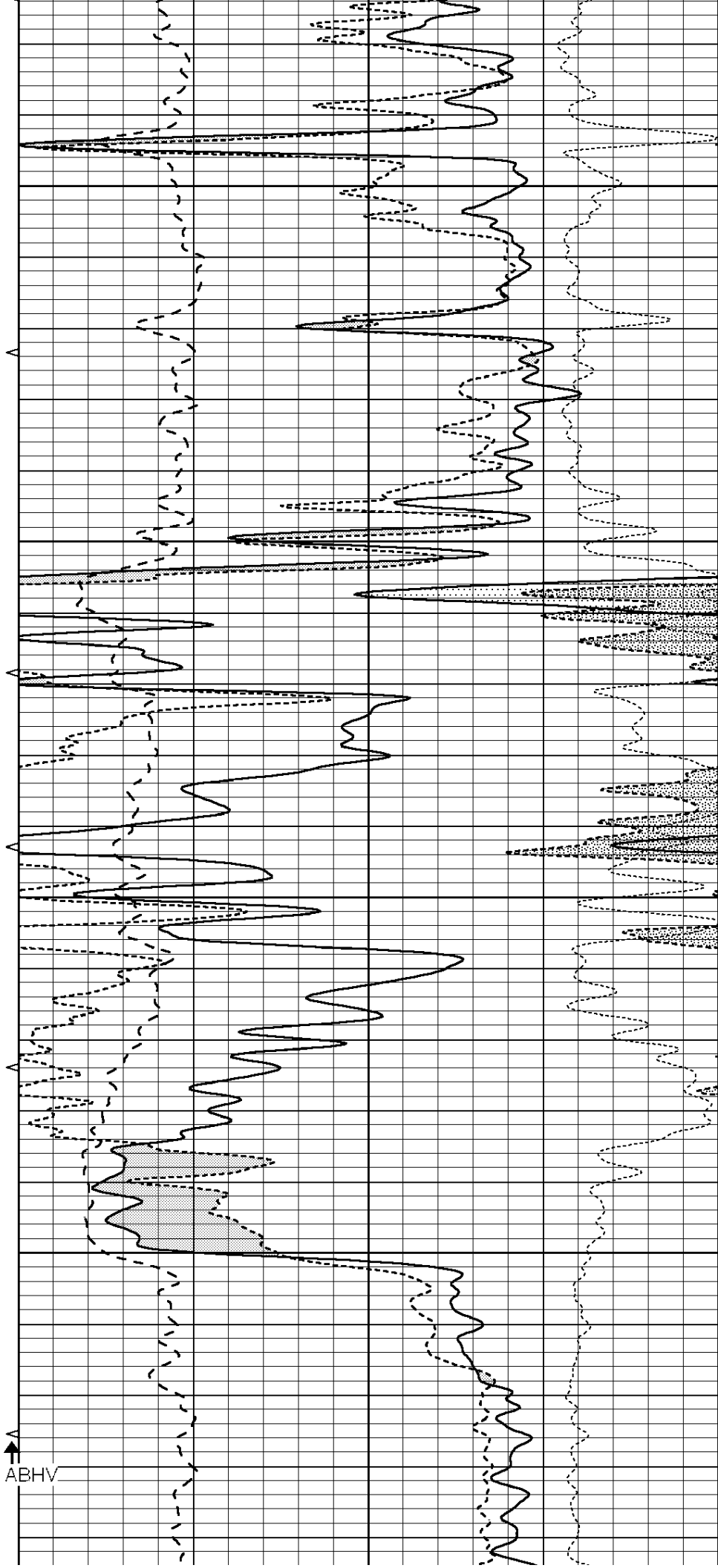
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4750

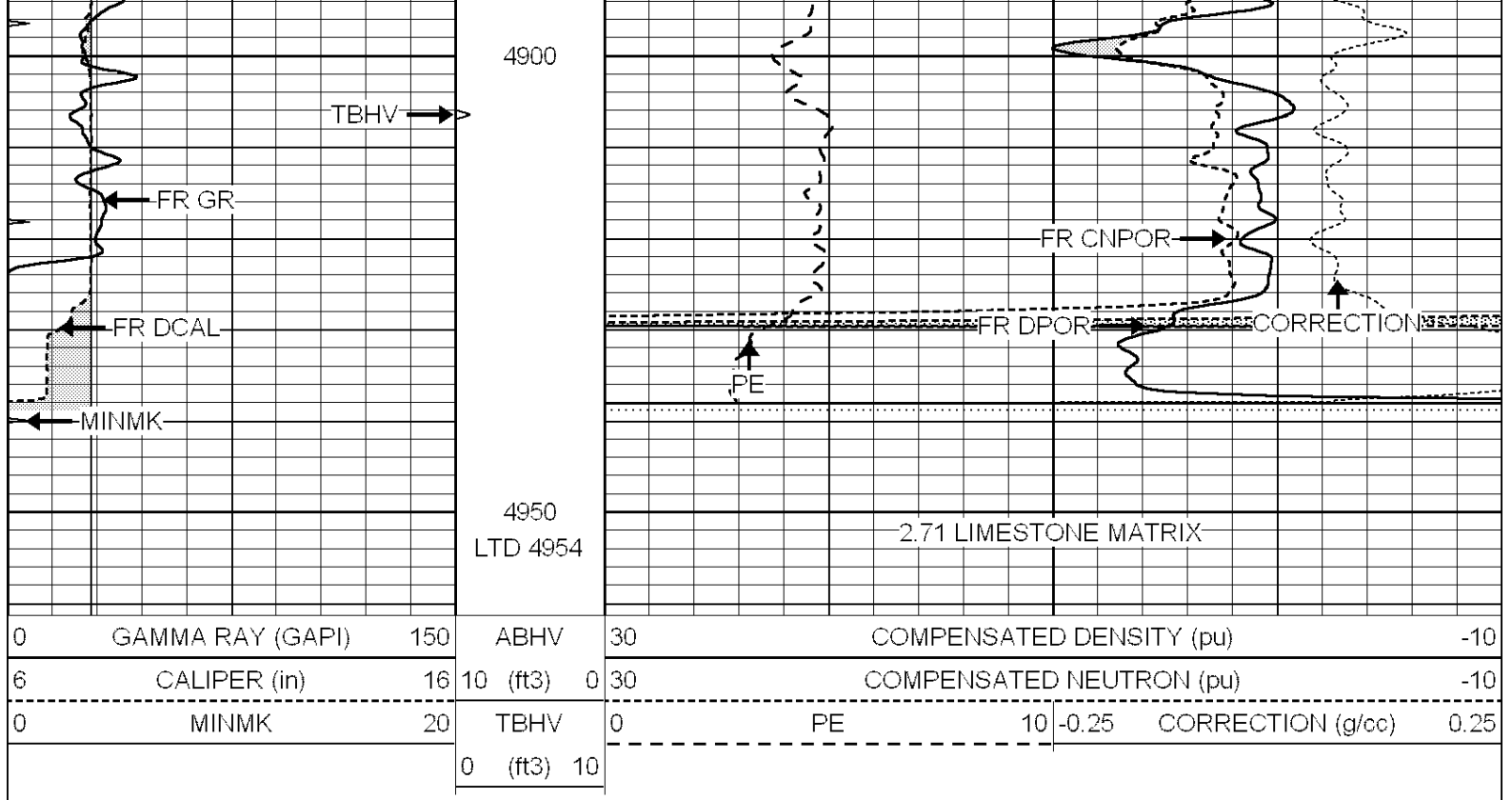
4800

4850

5.5" ABHV



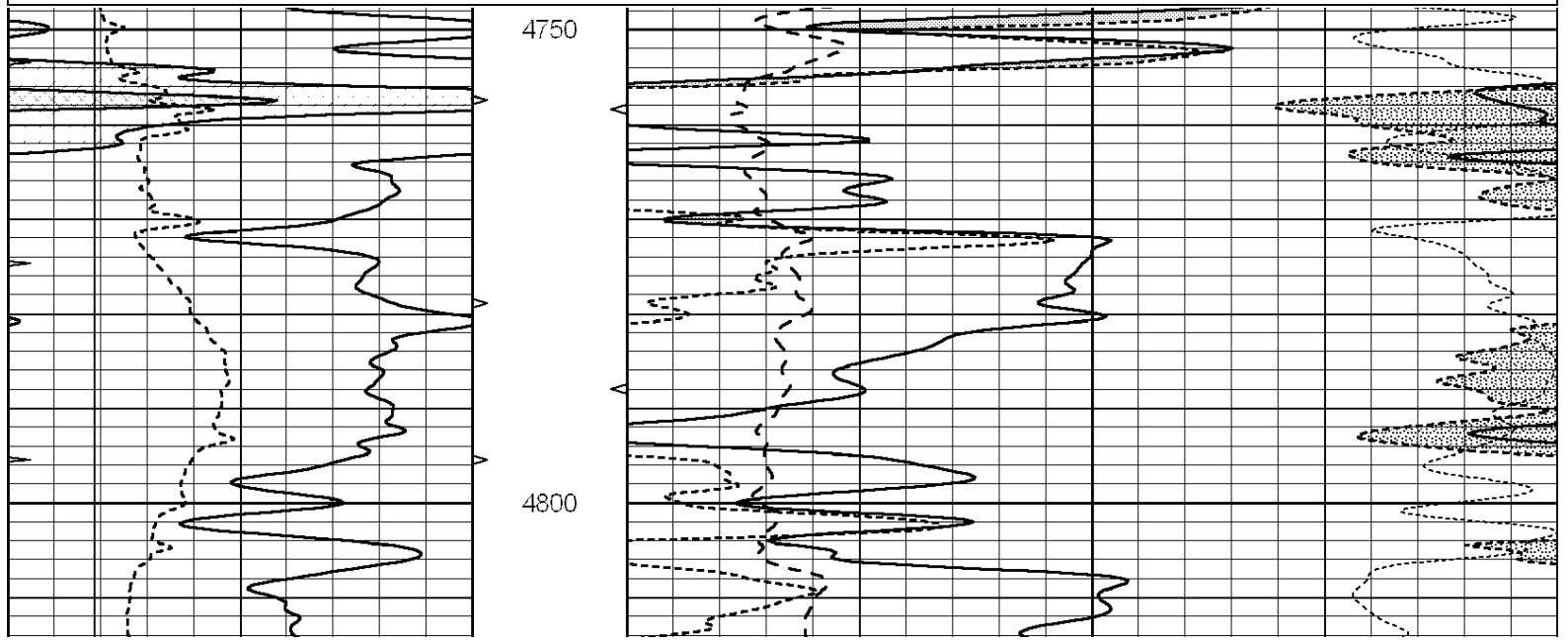
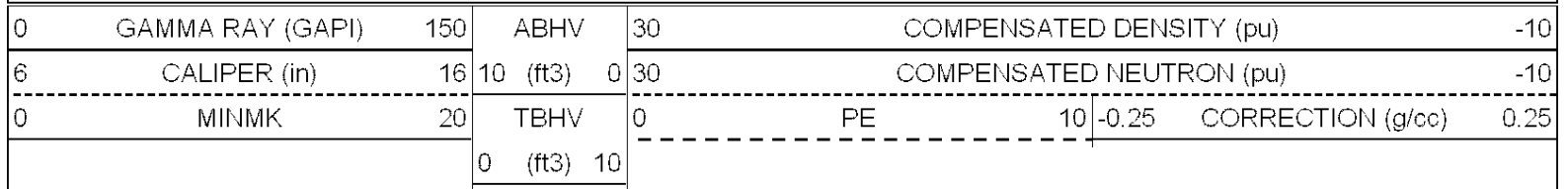


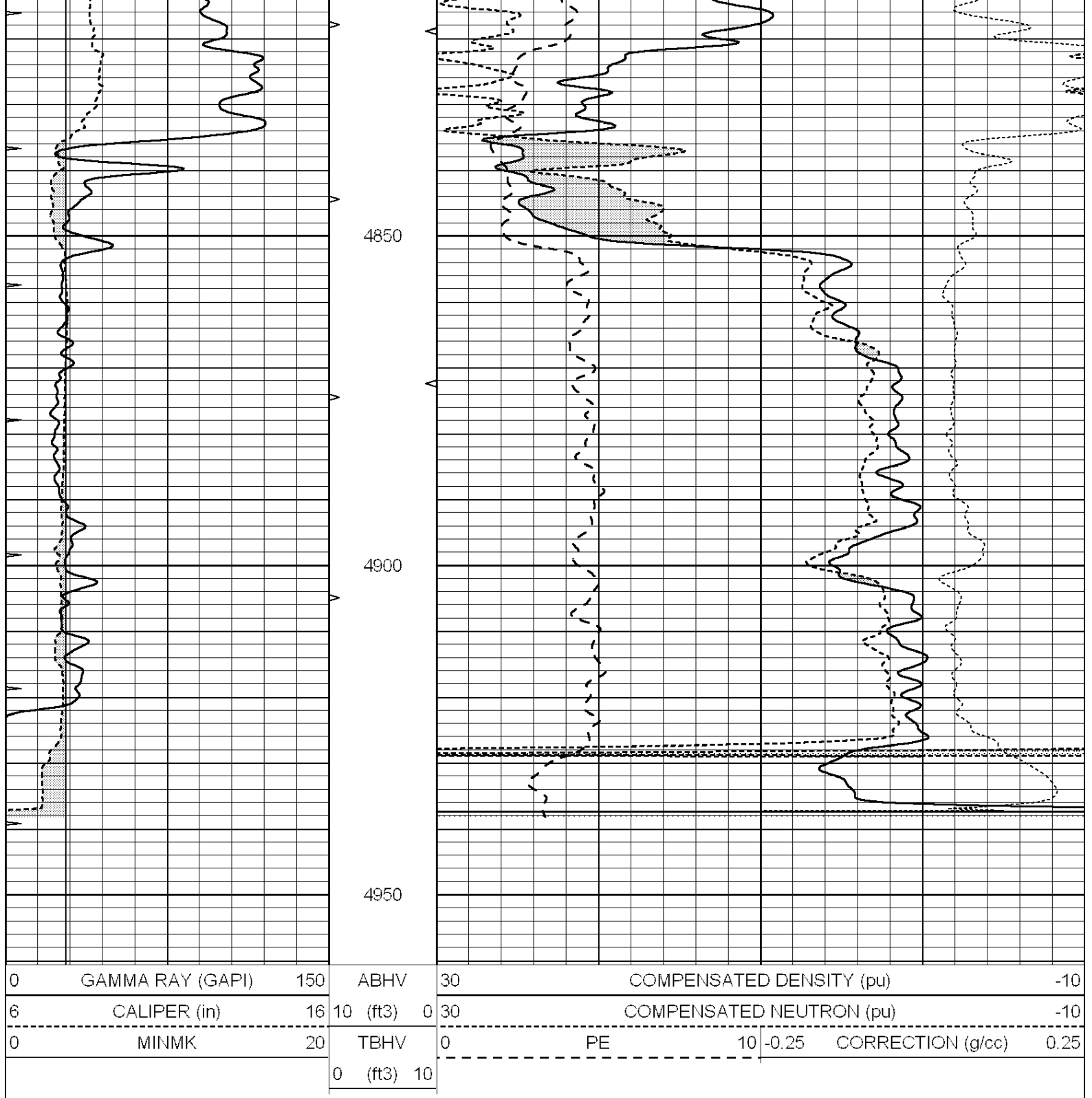


**NABORS**  
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# REPEAT SECTION

Database File: 22242pe.db  
Dataset Pathname: pass2.6  
Presentation Format: ldt\_neu  
Dataset Creation: Sun Jan 26 20:14:40 2014 by Calc SOC 120430  
Charted by: Depth in Feet scaled 1:240





### Calibration Report

Database File: 22242pe.db  
 Dataset Pathname: pass3.7  
 Dataset Creation: Sun Jan 26 20:11:29 2014 by Calc SOC 120430

### Dual Induction Calibration Report

|                                      |                          |
|--------------------------------------|--------------------------|
| Serial-Model:                        | PROBE9-DILG              |
| Surface Cal Performed:               | Sun Jan 19 14:29:10 2014 |
| Downhole Cal Performed:              | Mon Jul 28 12:02:56 2008 |
| After Survey Verification Performed: | Mon Jul 28 12:02:56 2008 |

Surface Calibration

Readings

References

Results

| Loop:     | Air    | Loop  |   | Air   | Loop    |        | m       | b      |
|-----------|--------|-------|---|-------|---------|--------|---------|--------|
| Deep      | -0.014 | 0.629 | V | 0.000 | 400.000 | mmho/m | 650.000 | -4.000 |
| Medium    | 0.039  | 0.728 | V | 0.000 | 464.000 | mmho/m | 660.000 | -8.000 |
| Internal: | Zero   | Cal   |   | Zero  | Cal     |        | m       | b      |
| Deep      | 0.011  | 0.610 | V | 0.000 | 400.000 | mmho/m | 667.135 | -7.256 |
| Medium    | 0.005  | 0.712 | V | 0.000 | 464.000 | mmho/m | 655.677 | -3.102 |

| Downhole Calibration |       |        |            |         |          |         |       |       |
|----------------------|-------|--------|------------|---------|----------|---------|-------|-------|
| Readings             |       |        | References |         |          | Results |       |       |
|                      | Zero  | Cal    |            | Zero    | Cal      |         | m'    | b'    |
| Deep                 | 0.000 | 0.000  | mmho/m     | 14.508  | 388.384  | mmho/m  | 1.000 | 0.000 |
| Medium               | 0.000 | 0.000  | mmho/m     | 166.367 | 504.400  | mmho/m  | 1.000 | 0.000 |
| LL3                  |       | 7.500  | V          |         | 1400.000 | Ohm-m   |       |       |
|                      |       | 0.000  | V          |         | 20.000   | Ohm-m   |       |       |
|                      |       | -7.200 | V          |         | 4000.000 | mmho-m  |       |       |

| After Survey Verification |       |       |         |       |       |         |       |       |
|---------------------------|-------|-------|---------|-------|-------|---------|-------|-------|
| Readings                  |       |       | Targets |       |       | Results |       |       |
|                           | Zero  | Cal   |         | Zero  | Cal   |         | m'    | b'    |
| Deep                      | 0.000 | 0.000 | mmho/m  | 0.000 | 0.000 | mmho/m  | 0.000 | 0.000 |
| Medium                    | 0.000 | 0.000 | mmho/m  | 0.000 | 0.000 | mmho/m  | 0.000 | 0.000 |
| LL3                       |       | 1.000 | Ohm-m   |       | 1.000 | Ohm-m   |       |       |
|                           |       | 0.000 | Ohm-m   |       | 0.000 | Ohm-m   |       |       |
|                           |       | 1.000 | mmho-m  |       | 1.000 | mmho-m  |       |       |

| Litho Density Calibration Report |  |  |  |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|--|--|--|
| Serial: 004N      Model: PRB     |  |  |  |  |  |  |  |  |

| Master Calibration |            |             |         | Performed Mon Jun 03 09:36:56 2013 |  |           |  |      |
|--------------------|------------|-------------|---------|------------------------------------|--|-----------|--|------|
|                    | Background | Magnesium   |         | Aluminum                           |  | Sandstone |  |      |
| Window 1           | 1417.6     | 10391.4     |         | 3464.6                             |  | 11537.5   |  | cps  |
| Window 2           | 1295.0     | 8959.7      |         | 3050.1                             |  | 9816.4    |  | cps  |
| Window 3           | 1105.1     | 5464.2      |         | 2051.0                             |  | 5838.8    |  | cps  |
| Window 4           | 315.0      | 317.7       |         | 312.9                              |  | 319.8     |  | cps  |
| Long Space         | 0.0        | 7664.6      |         | 1755.0                             |  | 8521.3    |  | cps  |
| Short Space        | 1.8        | 1582.4      |         | 1040.8                             |  | 1699.4    |  | cps  |
| Rho                |            | 1.7100      |         | 2.5900                             |  | 1.3800    |  | g/cc |
| Pe                 |            | 0.0000      |         | 2.5700                             |  | 1.5500    |  |      |
| Rib Angle          | : 44.1     | Rib Slope   | : 0.970 | Density/Spine Ratio                |  | : 0.574   |  |      |
| Spine Angle        | : 74.1     | Spine Slope | : 3.519 | Spine Intercept                    |  | : -17.0   |  |      |

| Before Survey Verification |     |        |  | Performed Wed Dec 31 18:00:00 1969 |  |        |  |      |
|----------------------------|-----|--------|--|------------------------------------|--|--------|--|------|
|                            |     |        |  |                                    |  |        |  |      |
| Window 1                   | 0.0 | 0.0    |  | 0.0                                |  | 0.0    |  | cps  |
| Window 2                   | 0.0 | 0.0    |  | 0.0                                |  | 0.0    |  | cps  |
| Window 3                   | 0.0 | 0.0    |  | 0.0                                |  | 0.0    |  | cps  |
| Window 4                   | 0.0 | 0.0    |  | 0.0                                |  | 0.0    |  | cps  |
| Long Space                 | 0.0 | 0.0    |  | 0.0                                |  | 0.0    |  | cps  |
| Short Space                | 0.0 | 0.0    |  | 0.0                                |  | 0.0    |  | cps  |
| Measured Rho               |     | 0.0000 |  | 0.0000                             |  | 0.0000 |  | g/cc |
| Measured Correction        |     | 0.0000 |  | 0.0000                             |  | 0.0000 |  | g/cc |
| Measured Pe                |     |        |  | 0.0000                             |  | 0.0000 |  |      |

| After Survey Verification |  |  |  | Performed Wed Dec 31 18:00:00 1969 |  |  |  |  |
|---------------------------|--|--|--|------------------------------------|--|--|--|--|
|---------------------------|--|--|--|------------------------------------|--|--|--|--|

|                     |     |        |        |        |      |
|---------------------|-----|--------|--------|--------|------|
| Window 1            | 0.0 | 0.0    | 0.0    | 0.0    | cps  |
| Window 2            | 0.0 | 0.0    | 0.0    | 0.0    | cps  |
| Window 3            | 0.0 | 0.0    | 0.0    | 0.0    | cps  |
| Window 4            | 0.0 | 0.0    | 0.0    | 0.0    | cps  |
| Long Space          | 0.0 | 0.0    | 0.0    | 0.0    | cps  |
| Short Space         | 0.0 | 0.0    | 0.0    | 0.0    | cps  |
| Measured Rho        |     | 0.0000 | 0.0000 | 0.0000 | g/cc |
| Measured Correction |     | 0.0000 | 0.0000 | 0.0000 | g/cc |
| Measured Pe         |     |        | 0.0000 | 0.0000 |      |

Compensated Neutron Calibration Report

|                |        |
|----------------|--------|
| Serial Number: | 070808 |
| Tool Model:    | Probe  |

| PRE-SURVEY VERIFICATION |          |          |        |  |
|-------------------------|----------|----------|--------|--|
| Detector                | Readings | Measured | Target |  |
| Short Space             | cps      |          |        |  |
| Long Space              | cps      | pu       | pu     |  |

| POST-SURVEY VERIFICATION |          |          |        |  |
|--------------------------|----------|----------|--------|--|
| Detector                 | Readings | Measured | Target |  |
| Short Space              | cps      |          |        |  |
| Long Space               | cps      | pu       | pu     |  |

Gamma Ray Calibration Report

|                     |                          |          |
|---------------------|--------------------------|----------|
| Serial Number:      | 070559                   |          |
| Tool Model:         | OPEN_GR                  |          |
| Performed:          | Thu Dec 19 09:01:02 2013 |          |
| Calibrator Value:   | 1.0                      | GAPI     |
| Background Reading: | 0.0                      | cps      |
| Calibrator Reading: | 1.0                      | cps      |
| Sensitivity:        | 0.2800                   | GAPI/cps |