



**SUPERIOR**  
**Hays,**  
**Kansas**

**COMPENSATED**  
**NEUTRON / DENSITY**  
**PE LOG**

Company O'BRIEN RESOURCES, LLC.  
 Well HAYES 27 #1  
 Field WILDCAT  
 County GOVE  
 State KANSAS

Company O'BRIEN RESOURCES, LLC.  
 Well HAYES 27 #1  
 Field WILDCAT  
 County GOVE State KANSAS

Location: 330' FSL & 107'4' FWL  
 API # : 15-063-21986-0000  
 SEC 27 TWP 14S RGE 30W  
 Permanent Datum GROUND LEVEL Elevation 2750  
 Log Measured From KELLY BUSHING 5' A.G.L.  
 Drilling Measured From KELLY BUSHING  
 Other Services  
 DIL  
 MEL/SON  
 Elevation  
 K.B. 2755  
 D.F. 2753  
 G.L. 2750

|                              |                   |                     |  |
|------------------------------|-------------------|---------------------|--|
| Date                         | 7/7/12            |                     |  |
| Run Number                   | ONE               |                     |  |
| Depth Driller                | 4625              |                     |  |
| Depth Logger                 | 4626              |                     |  |
| Bottom Logged Interval       | 4602              |                     |  |
| Top Log Interval             | 3500              |                     |  |
| Casing Driller               | 8 5/8" @ 220      |                     |  |
| Casing Logger                | 218               |                     |  |
| Bit Size                     | 7 7/8             |                     |  |
| Type Fluid in Hole           | CHEMICAL MUD      | CHLORIDES: 1600 PPM |  |
| Density / Viscosity          | 9.3/60            |                     |  |
| pH / Fluid Loss              | 9.0/8.4           |                     |  |
| Source of Sample             | FLOWLINE          |                     |  |
| Rim @ Meas. Temp             | 1.0 @ 89F         |                     |  |
| Rmf @ Meas. Temp             | .75 @ 89F         |                     |  |
| Rmc @ Meas. Temp             | 1.20 @ 89F        |                     |  |
| Source of Rmf / Rmc          | MEASURED          |                     |  |
| Rim @ BHT                    | .72 @ 122F        |                     |  |
| Time Circulation Stopped     | 2 HOURS           |                     |  |
| Time Logger on Bottom        |                   |                     |  |
| Maximum Recorded Temperature | 122F              |                     |  |
| Equipment Number             | 680               |                     |  |
| Location                     | HAYS, KS.         |                     |  |
| Recorded By                  | JASON CAPPELLUCCI |                     |  |
| Witnessed By                 | SEAN DEENIHAN     |                     |  |

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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 SUPERIOR WELL SERVICE (785) 628-6395  
 DIRECTIONS  
 GOVE, KS. - 10 S. TO RD I. - 9 W. - 1 S. - E. INTO

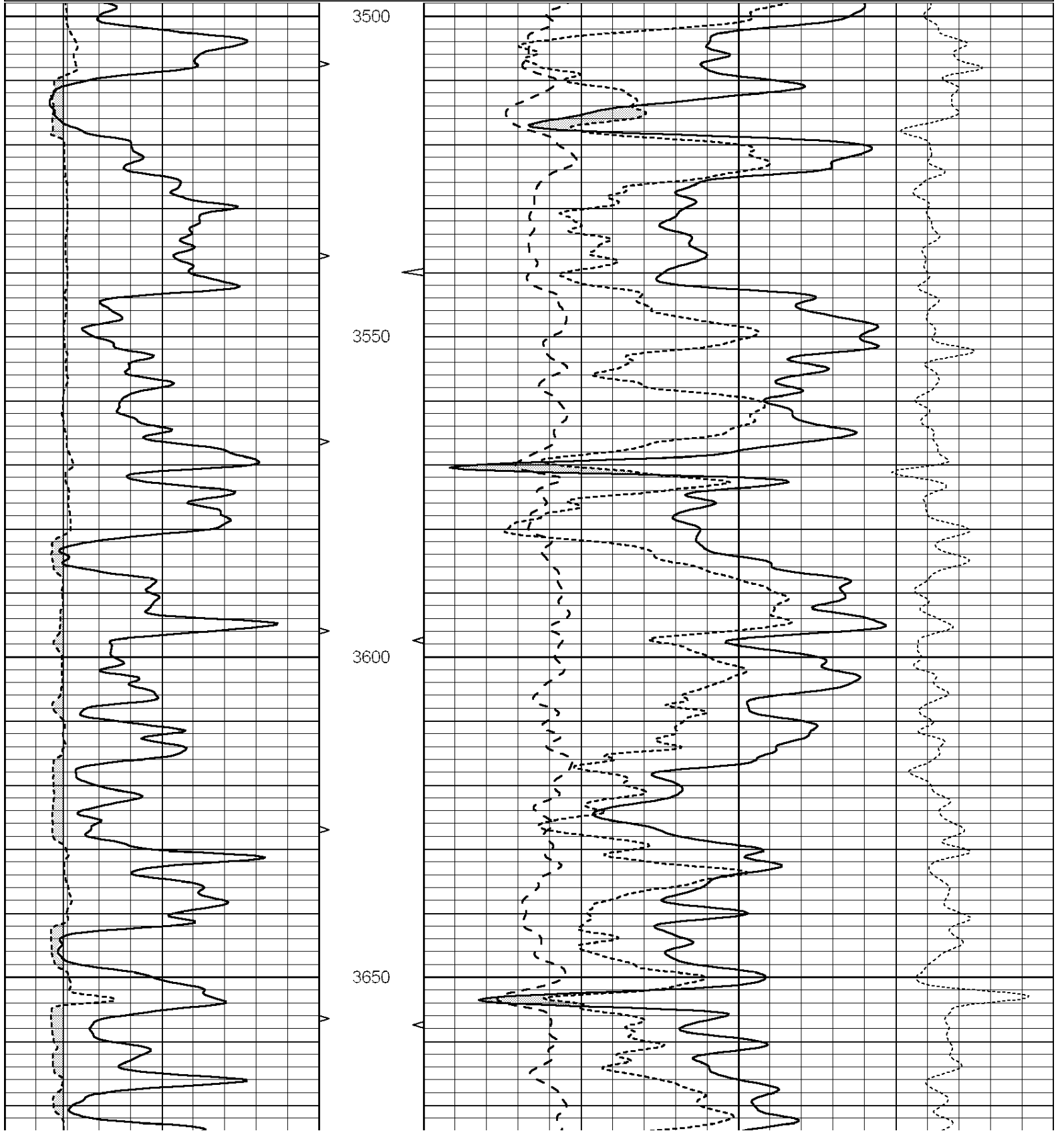


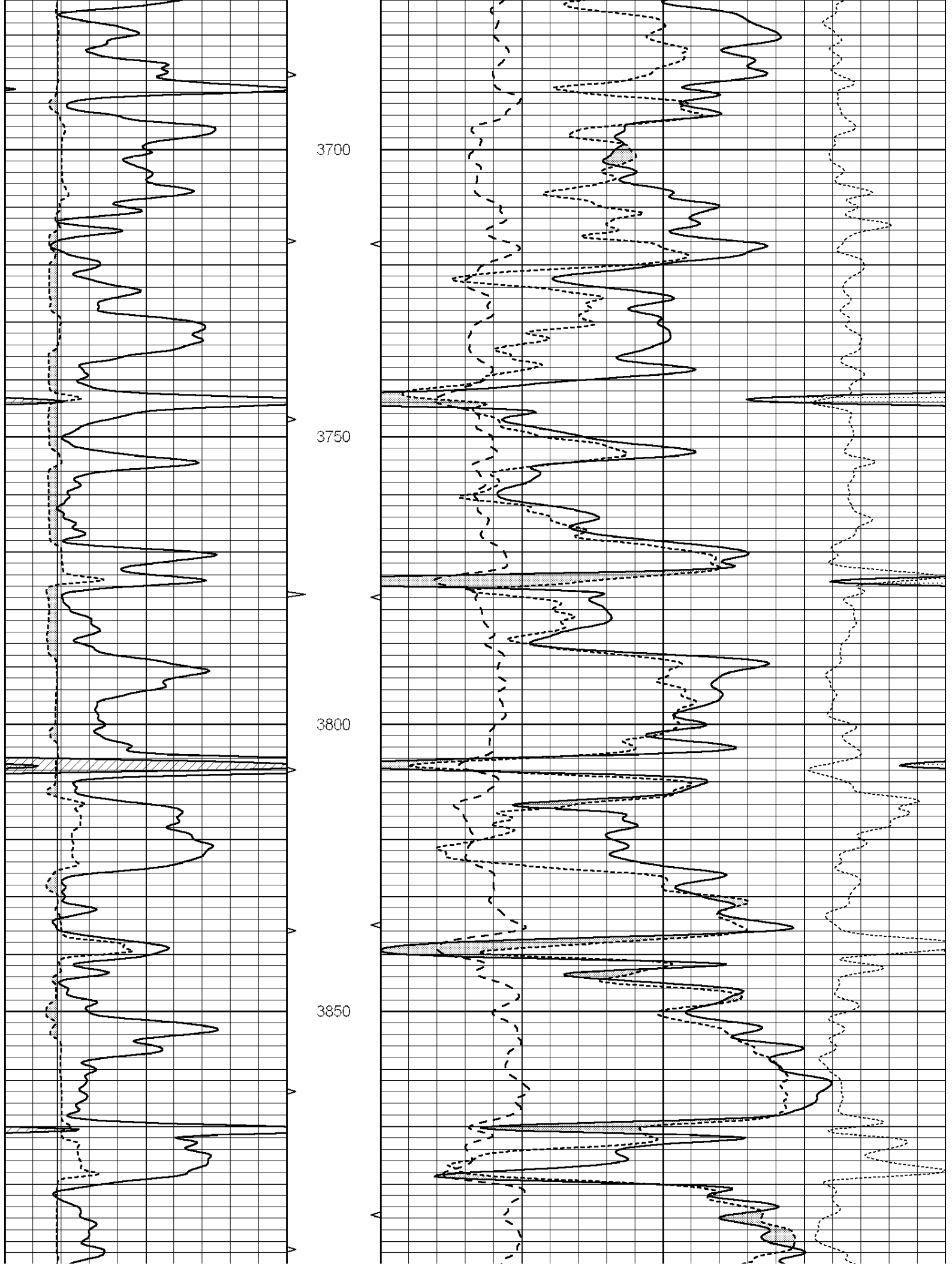
**SUPERIOR**  
**Hays,**  
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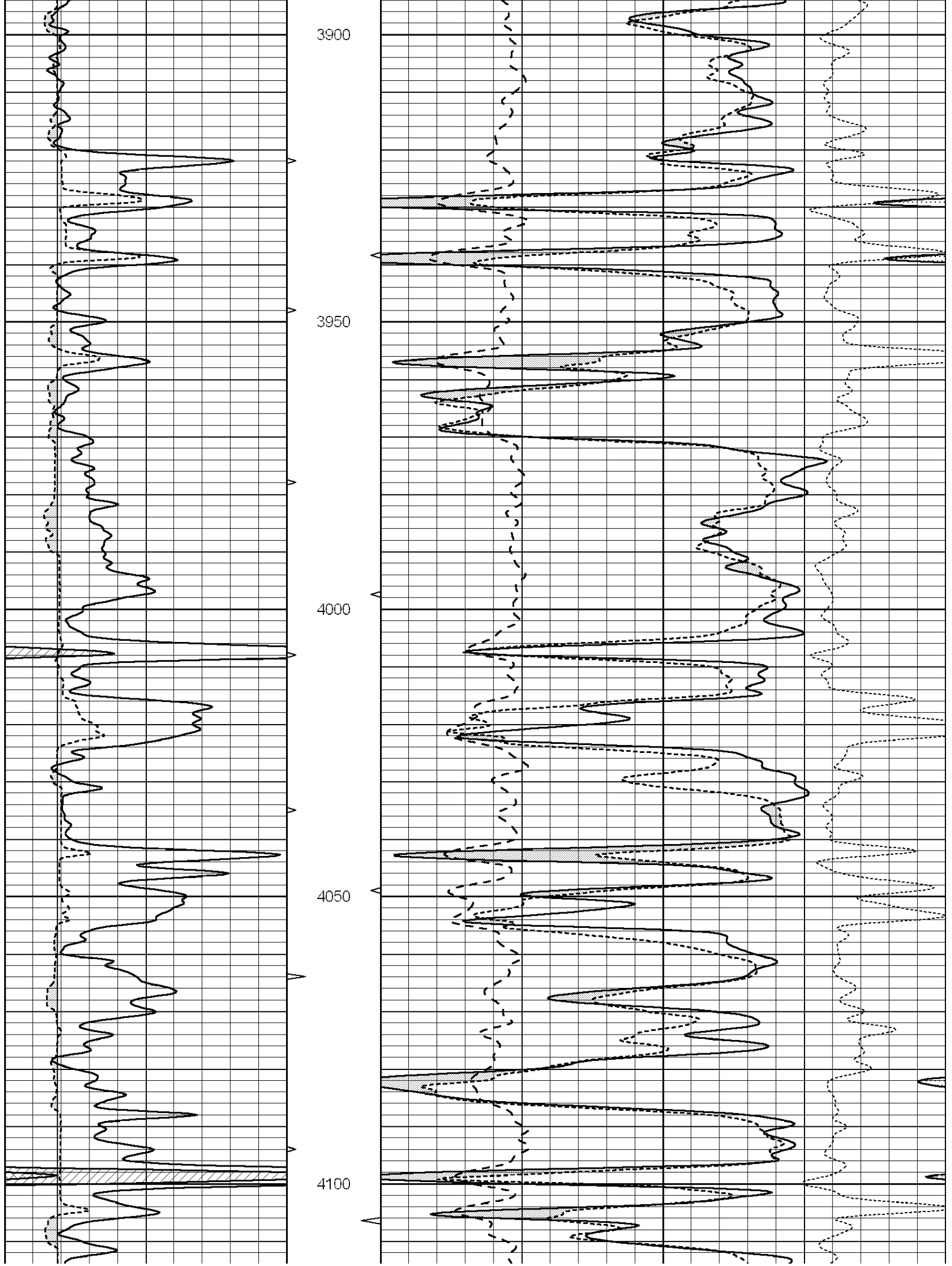
**MAIN SECTION**

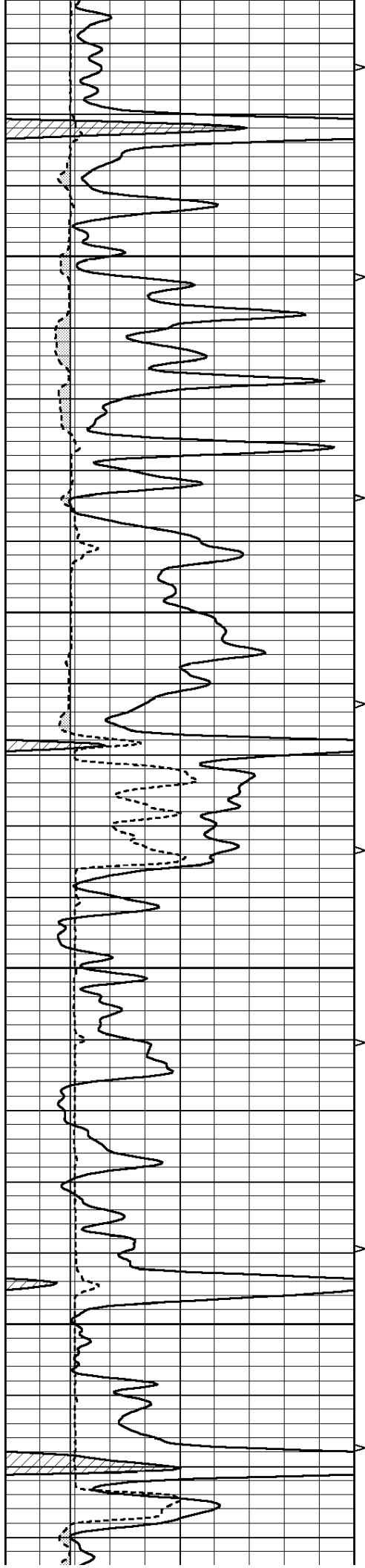
Database File: 009460pe.db  
 Dataset Pathname: pass3.1  
 Presentation Format: \_ldt\_neu  
 Dataset Creation: Sat Jul 07 08:11:19 2012 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

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







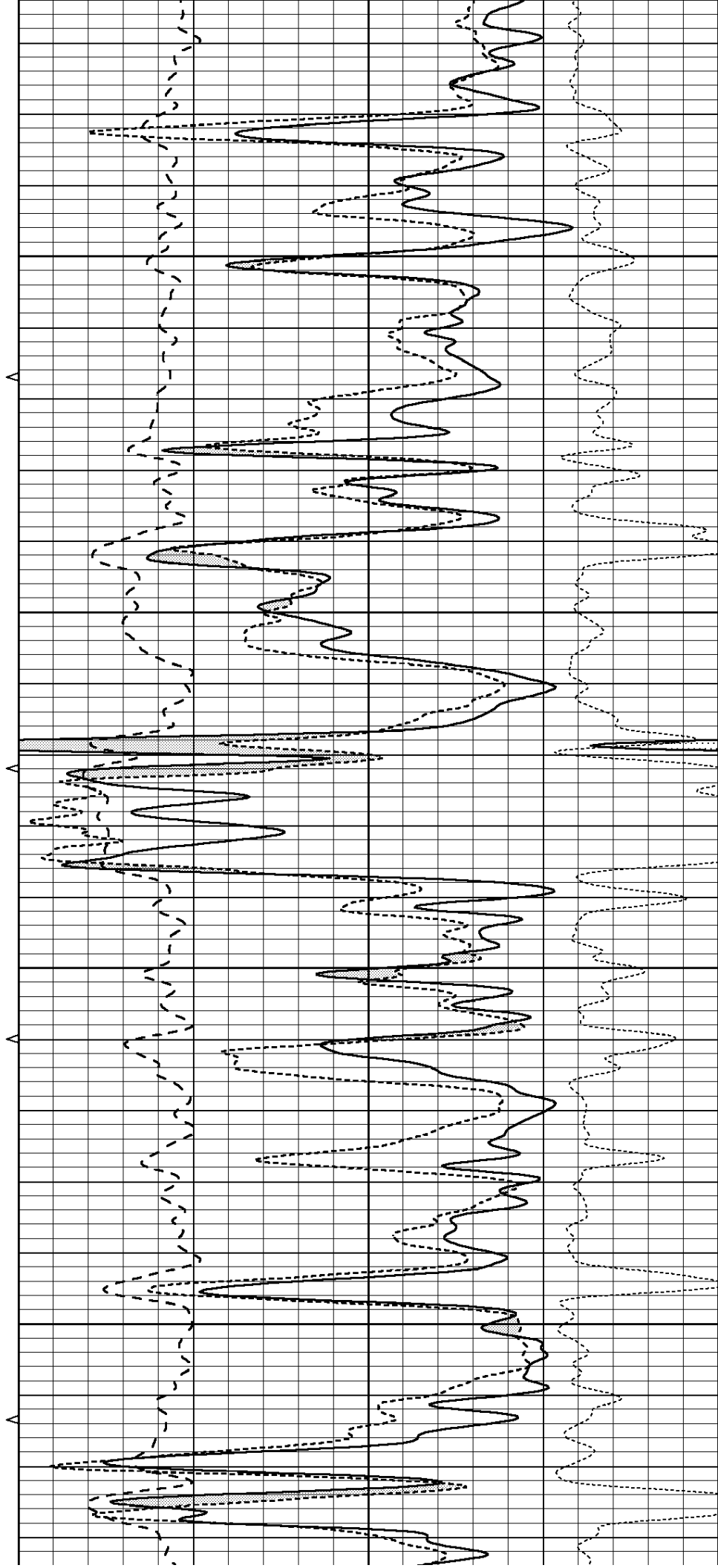


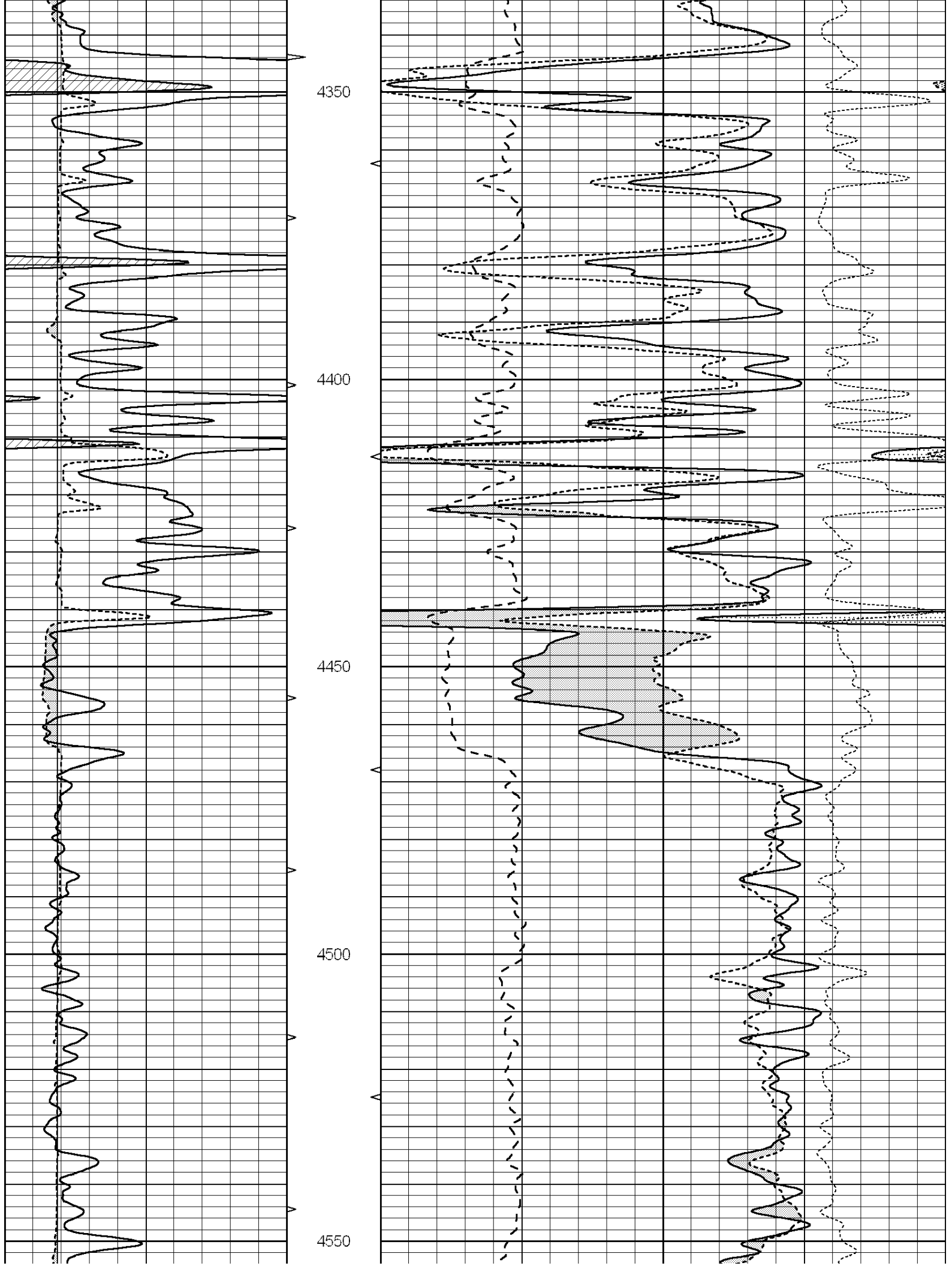
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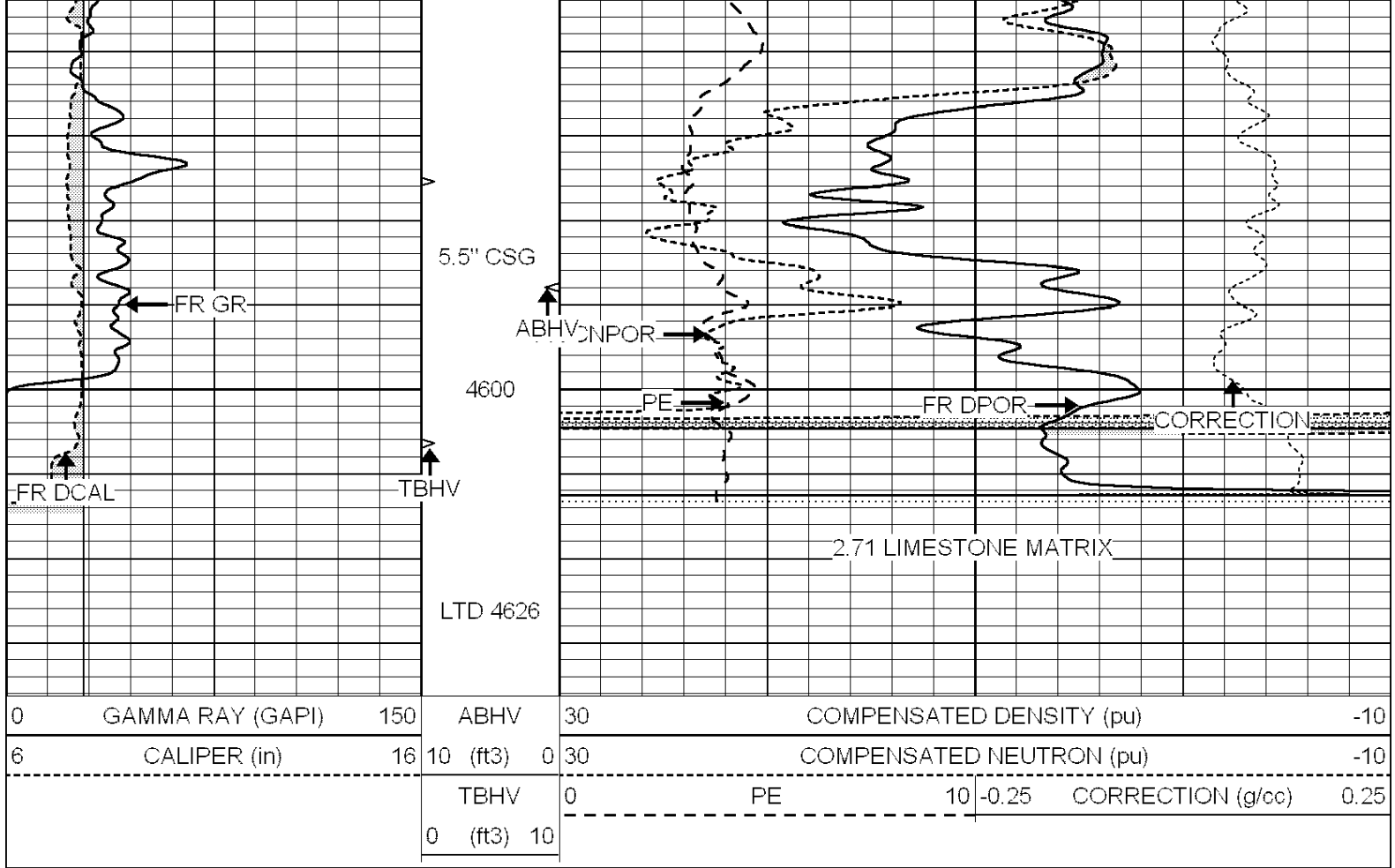
4200

4250

4300





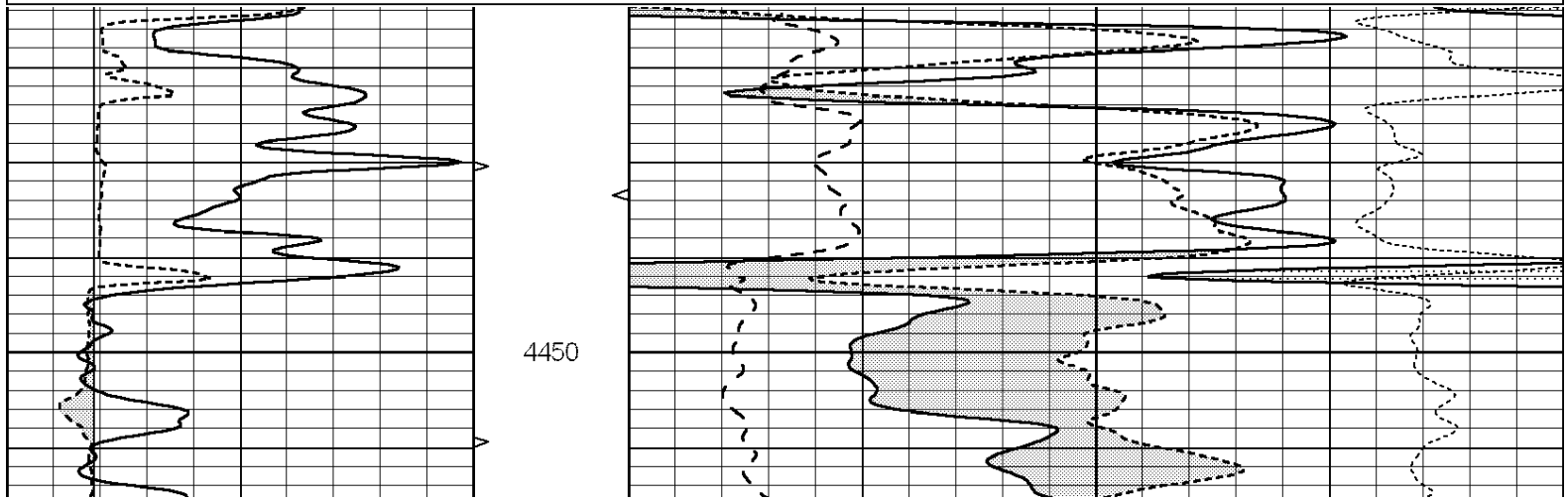


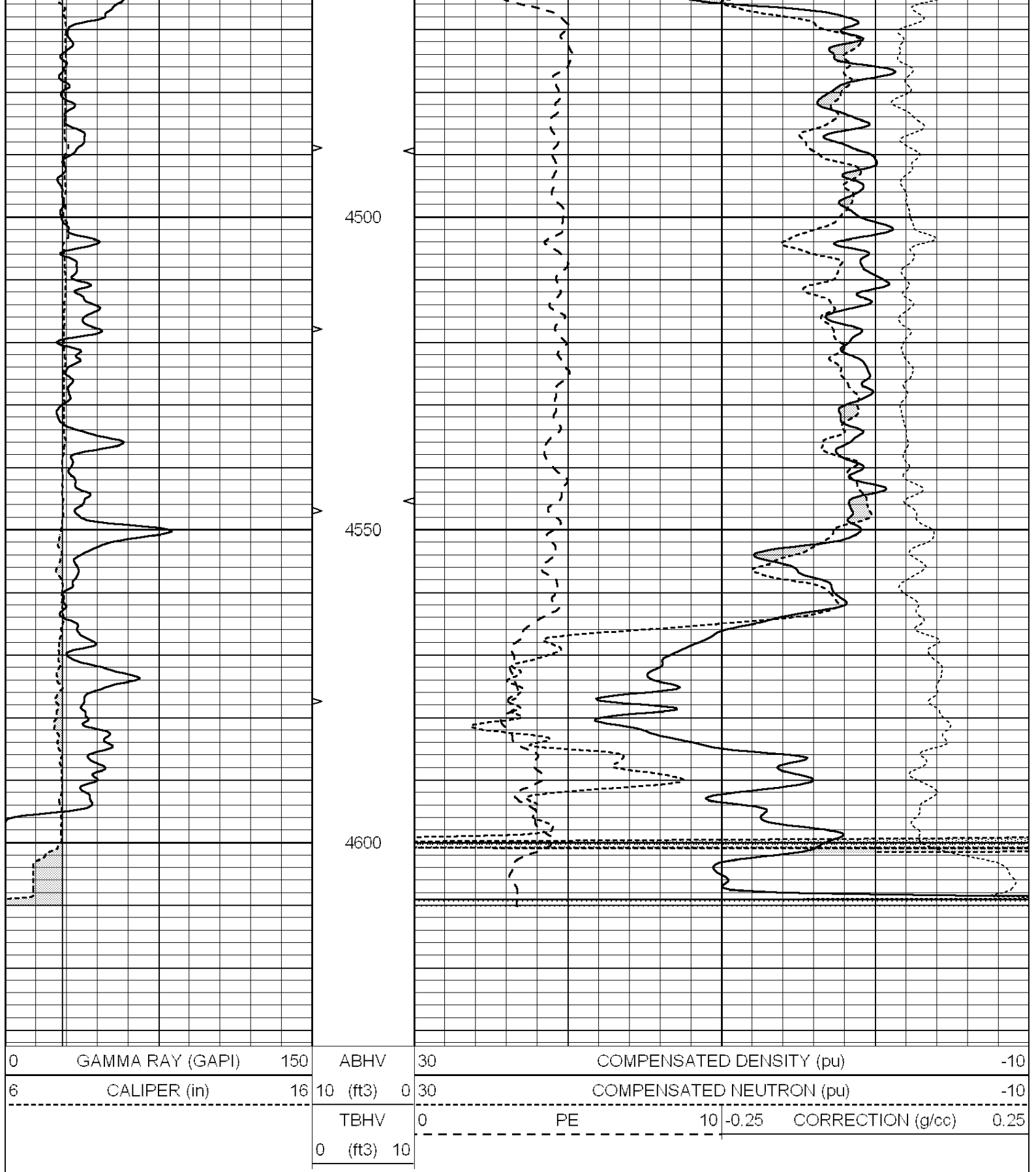
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Hays,  
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# REPEAT SECTION

Database File: 009460pe.db  
 Dataset Pathname: pass2.1  
 Presentation Format: \_ldt\_neu  
 Dataset Creation: Sat Jul 07 08:13:34 2012 by Calc Open-Cased 090629  
 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               |      |
|   |                  |     | TBHV     | 0    | PE                       | 10 -0.25          |      |
|   |                  |     | 0 (ft3)  | 10   |                          | CORRECTION (g/cc) | 0.25 |





Calibration Report

Database File: 009460pe.db  
 Dataset Pathname: pass2.1  
 Dataset Creation: Sat Jul 07 08:13:34 2012 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model:

PROBE8-DILG

Surface Cal Performed:  
 Downhole Cal Performed:  
 After Survey Verification Performed:

Fri Aug 01 06:33:19 2008  
 Mon Jul 28 11:08:27 2008  
 Mon Jul 28 11:08:27 2008

| Surface Calibration |       |       |   |  |            |         |        |         |         |
|---------------------|-------|-------|---|--|------------|---------|--------|---------|---------|
| Readings            |       |       |   |  | References |         |        | Results |         |
| Loop:               | Air   | Loop  |   |  | Air        | Loop    |        | m       | b       |
| Deep                | 0.015 | 0.648 | V |  | 0.000      | 400.000 | mmho/m | 632.616 | -9.730  |
| Medium              | 0.029 | 0.796 | V |  | 0.000      | 464.000 | mmho/m | 605.049 | -17.680 |
| Internal:           | Zero  | Cal   |   |  | Zero       | Cal     |        | m       | b       |
| Deep                | 0.017 | 0.657 | V |  | 0.000      | 400.000 | mmho/m | 625.153 | -10.619 |
| Medium              | 0.016 | 0.757 | V |  | 0.000      | 464.000 | mmho/m | 625.992 | -9.739  |

| Downhole Calibration |       |        |        |  |            |          |        |         |       |
|----------------------|-------|--------|--------|--|------------|----------|--------|---------|-------|
| Readings             |       |        |        |  | References |          |        | Results |       |
|                      | Zero  | Cal    |        |  | Zero       | Cal      |        | m'      | b'    |
| Deep                 | 0.000 | 0.000  | mmho/m |  | 2.011      | 405.777  | mmho/m | 1.000   | 0.000 |
| Medium               | 0.000 | 0.000  | mmho/m |  | 7.590      | 503.393  | mmho/m | 1.000   | 0.000 |
| LL3                  |       | 7.500  | V      |  |            | 1500.000 | Ohm-m  |         |       |
|                      |       | 0.000  | V      |  |            | 20.000   | Ohm-m  |         |       |
|                      |       | -7.200 | V      |  |            | 3800.000 | 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: 001 Model: PRB  
 Performed Thu Sep 17 09:57:21 2009

| Litho Density Calibration |            |  |             |  |          |  |                     |  |         |
|---------------------------|------------|--|-------------|--|----------|--|---------------------|--|---------|
|                           | Background |  | Magnesium   |  | Aluminum |  | Sandstone           |  |         |
| Window 1                  | 2056.0     |  | 9796.8      |  | 3673.1   |  | 10821.3             |  |         |
| Window 2                  | 1920.0     |  | 8541.1      |  | 3303.5   |  | 9307.2              |  |         |
| Window 3                  | 1563.1     |  | 4735.7      |  | 2212.8   |  | 5017.5              |  |         |
| Window 4                  | 466.0      |  | 466.1       |  | 465.6    |  | 471.5               |  |         |
| Long Space                | 0.0        |  | 6621.1      |  | 1383.5   |  | 7387.2              |  |         |
| Short Space               | 2.5        |  | 2361.7      |  | 1523.2   |  | 2534.0              |  |         |
| Rho                       |            |  | 1.7100      |  | 2.5900   |  | 1.3800              |  |         |
| Pe                        |            |  |             |  | 2.5700   |  | 1.5500              |  |         |
| Rib Angle                 | : 44.4     |  | Rib Slope   |  | : 0.978  |  | Density/Spine Ratio |  | : 0.541 |
| Spine Angle               | : 74.4     |  | Spine Slope |  | : 3.570  |  | Spine Intercept     |  | : -18.9 |

| Caliper  |           |  |  |           |  |  |              |  |  |
|----------|-----------|--|--|-----------|--|--|--------------|--|--|
|          | Readings  |  |  | Reference |  |  |              |  |  |
| Low Ref  | 3.1       |  |  | 8.4       |  |  |              |  |  |
| High Ref | 4.3       |  |  | 14.3      |  |  |              |  |  |
|          | Gain: 4.6 |  |  |           |  |  | Offset: -7.7 |  |  |

Compensated Neutron Calibration Report

Serial Number: 61  
 Tool Model: G

## CALIBRATION

| Detector    | Readings | Target   | Normalization |
|-------------|----------|----------|---------------|
| Short Space | 1.00 cps | 1.00 cps | 1.0000        |
| Long Space  | 1.00 cps | 1.00 cps | 1.0000        |

## Gamma Ray Calibration Report

|                     |                          |
|---------------------|--------------------------|
| Serial Number:      | #8                       |
| Tool Model:         | OPEN                     |
| Performed:          | Mon Jun 13 16:56:43 2011 |
| Calibrator Value:   | 150.0 GAPI               |
| Background Reading: | 0.0 cps                  |
| Calibrator Reading: | 175.0 cps                |
| Sensitivity:        | 0.8371 GAPI/cps          |