



**NABORS**

**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**COMPENSATED  
DENSITY/NEUTRON  
LOG**

|                              |                           |                    |                     |
|------------------------------|---------------------------|--------------------|---------------------|
| Company                      | L.D. DRILLING, INC.       | Company            | L.D. DRILLING, INC. |
| Well                         | #1-9 LINN "A"             | Well               | #1-9 LINN "A"       |
| Field                        |                           | Field              |                     |
| County                       | NESS                      | County             | NESS                |
| State                        | KANSAS                    | State              | KANSAS              |
| Location:                    | AP1 # : 15-135-25714-0000 | Other Services     |                     |
|                              | 1850' FSL & 2310' FWL     | DIL                |                     |
|                              | SEC 9 TWP 20S RGE 21W     |                    |                     |
| Permanent Datum              | GROUND LEVEL              | Elevation          |                     |
| Log Measured From            | KELLY BUSHING 5' A.G.L.   | K.B. 2283          |                     |
| Drilling Measured From       | KELLY BUSHING             | D.F. 2281          |                     |
|                              |                           | G.L. 2278          |                     |
| Date                         | 1/10/14                   |                    |                     |
| Run Number                   | ONE                       |                    |                     |
| Depth Driller                | 4560                      |                    |                     |
| Depth Logger                 | 4562                      |                    |                     |
| Bottom Logged Interval       | 4538                      |                    |                     |
| Top Log Interval             | 3600                      | 1200 - 900         |                     |
| Casing Driller               | 8 5/8" @ 719              |                    |                     |
| Casing Logger                | 720                       |                    |                     |
| Bit Size                     | 7 7/8"                    |                    |                     |
| Type Fluid in Hole           | CHEMICAL MUD              | CHLORIDES 8000 PPM |                     |
| Density / Viscosity          | 9.146                     |                    |                     |
| pH / Fluid Loss              | 9.0/9.6                   |                    |                     |
| Source of Sample             | FLOWLINE                  |                    |                     |
| Rm @ Meas. Temp              | 0.70 @ 78F                |                    |                     |
| Rmt @ Meas. Temp             | 0.53 @ 78F                |                    |                     |
| Rmc @ Meas. Temp             | 0.84 @ 78F                |                    |                     |
| Source of Rmt / Rmc          | MEASUREMENT               |                    |                     |
| Rm @ BHT                     | 0.49 @ 121F               |                    |                     |
| Time Circulation Stopped     | 2 HOURS                   |                    |                     |
| Time Logger on Bottom        |                           |                    |                     |
| Maximum Recorded Temperature | 121F                      |                    |                     |
| Equipment Number             | 4010                      |                    |                     |
| Location                     | HAYS, KANSAS              |                    |                     |
| Recorded By                  | JASON CAPPELLUCCI         |                    |                     |
| Witnessed By                 | KIM SHOEMAKER             |                    |                     |

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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, KS. (785) 628-6395  
DIRECTIONS:  
BAZINE, KS. - 2 1/2 EAST TO CHRIST PILOT ME HILL - 8 SOUTH TO RD 40 - 1/2 WEST  
NORTH INTO

Database File:

22119ddn.db

Dataset Pathname:

pass3.3

Presentation Format:

den\_neu

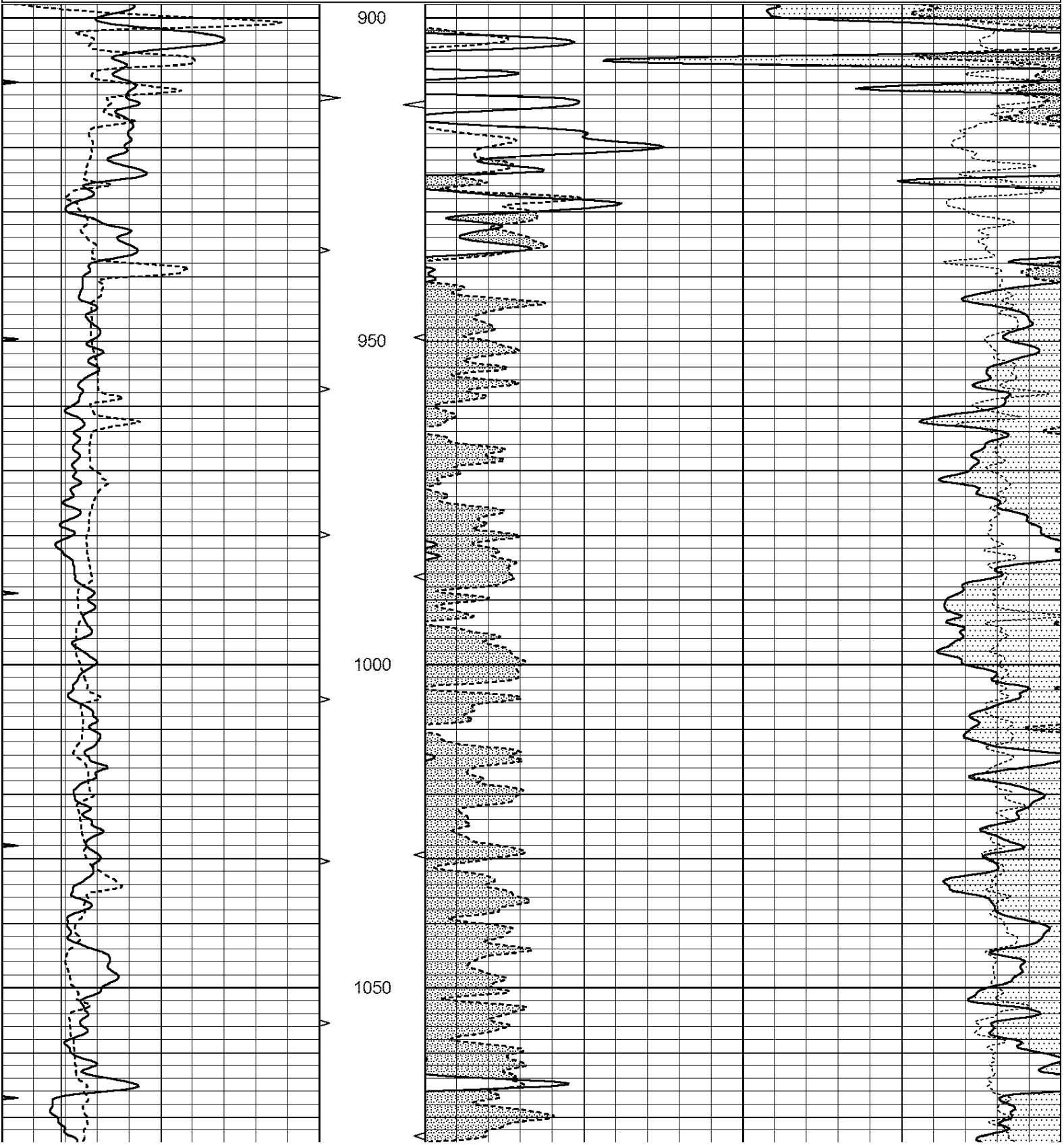
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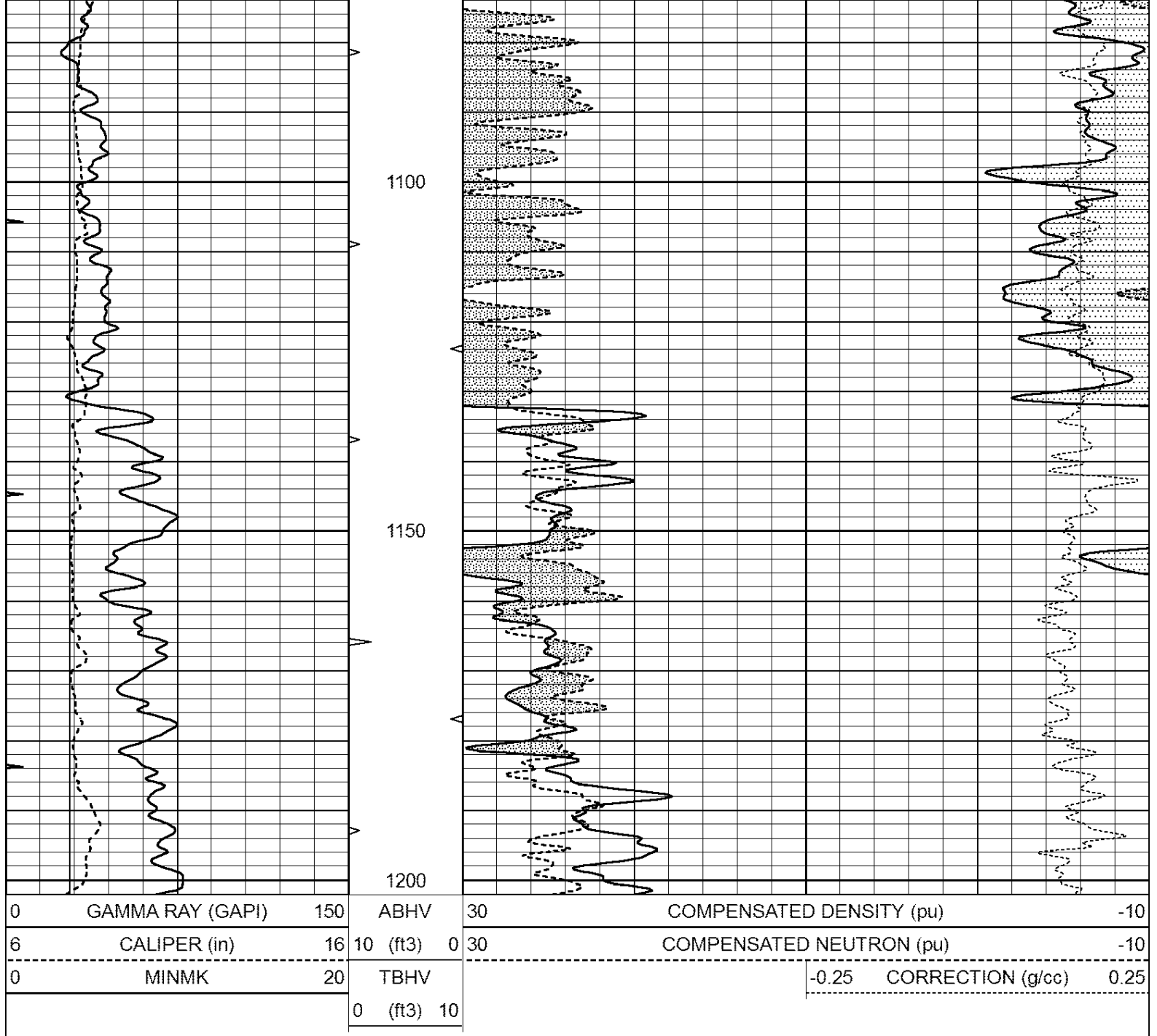
Fri Jan 10 17:52:12 2014 by Calc Open-Cased 090629

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  |
| 0 | MINMK            | 20  | TBHV     |      | -0.25 CORRECTION (g/cc)  | 0.25 |
|   |                  |     | 0 (ft3)  | 10   |                          |      |





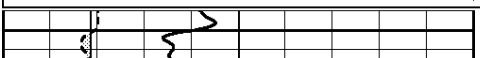


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# MAIN SECTION

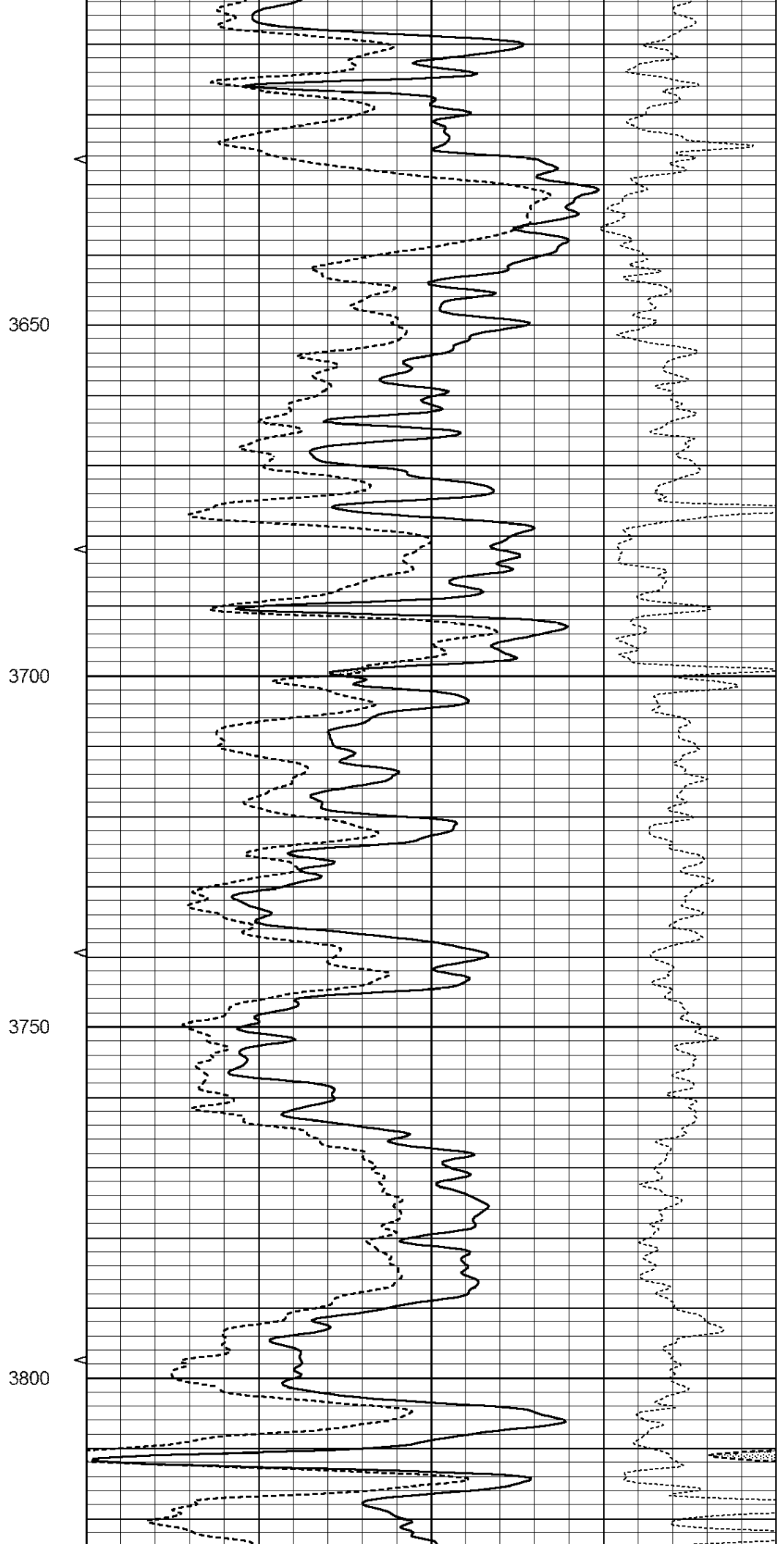
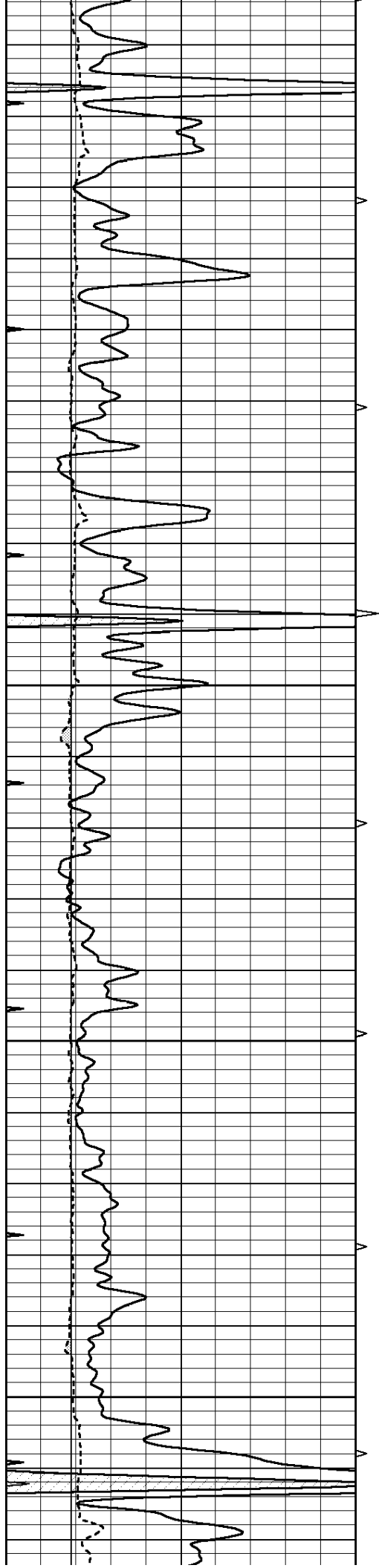
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 Dataset Pathname: pass3.1  
 Presentation Format: den\_neu  
 Dataset Creation: Fri Jan 10 17:18:02 2014 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

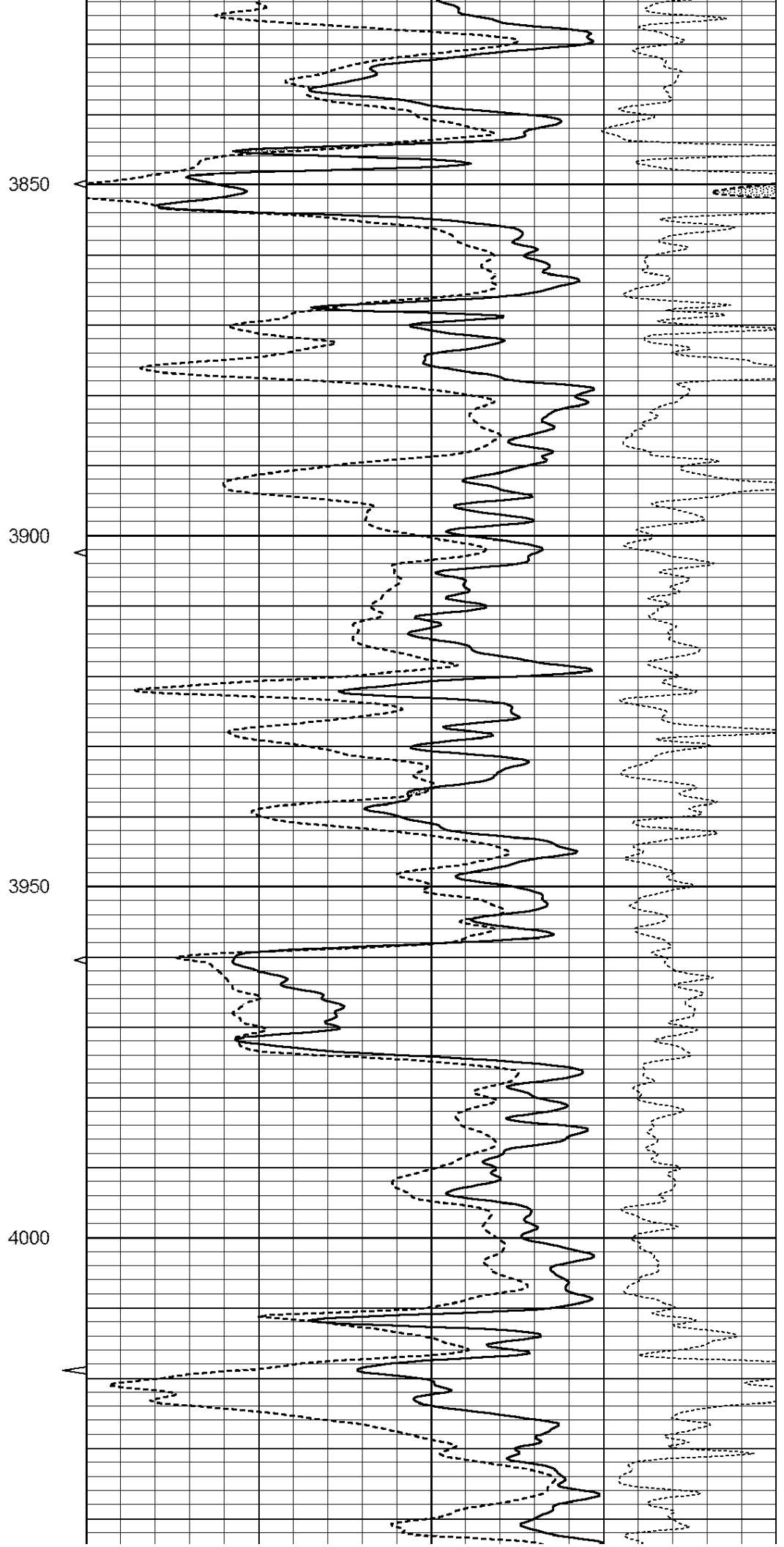
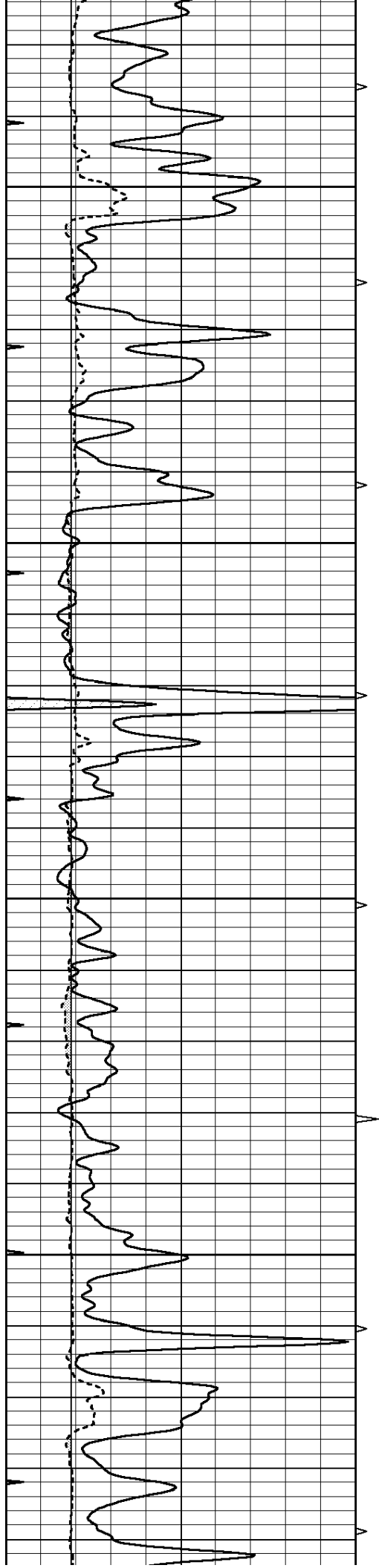
|   |                  |     |          |      |                          |      |
|---|------------------|-----|----------|------|--------------------------|------|
| 0 | GAMMA RAY (GAPI) | 150 | ABHV     | 30   | COMPENSATED DENSITY (pu) | -10  |
| 6 | CALIPER (in)     | 16  | 10 (ft3) | 0 30 | COMPENSATED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

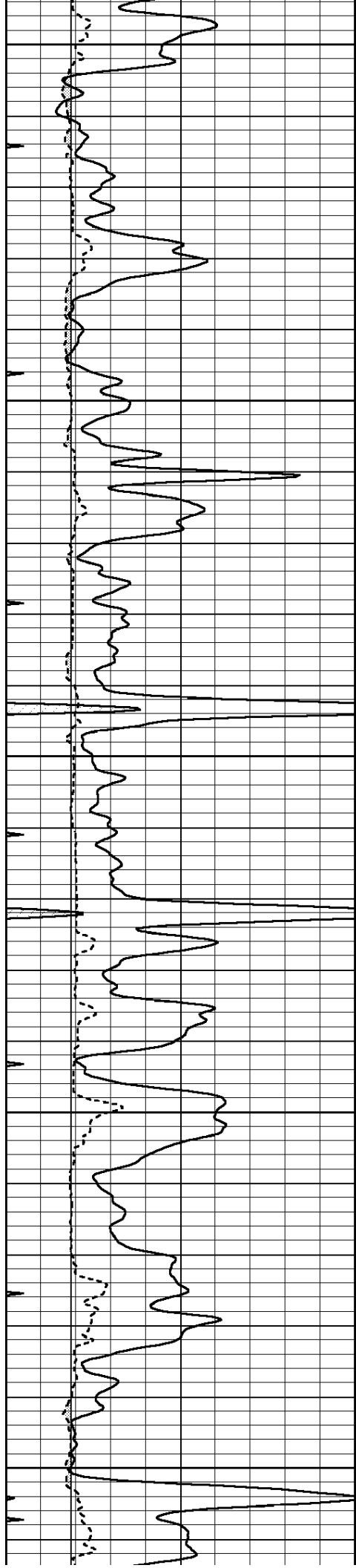


3600









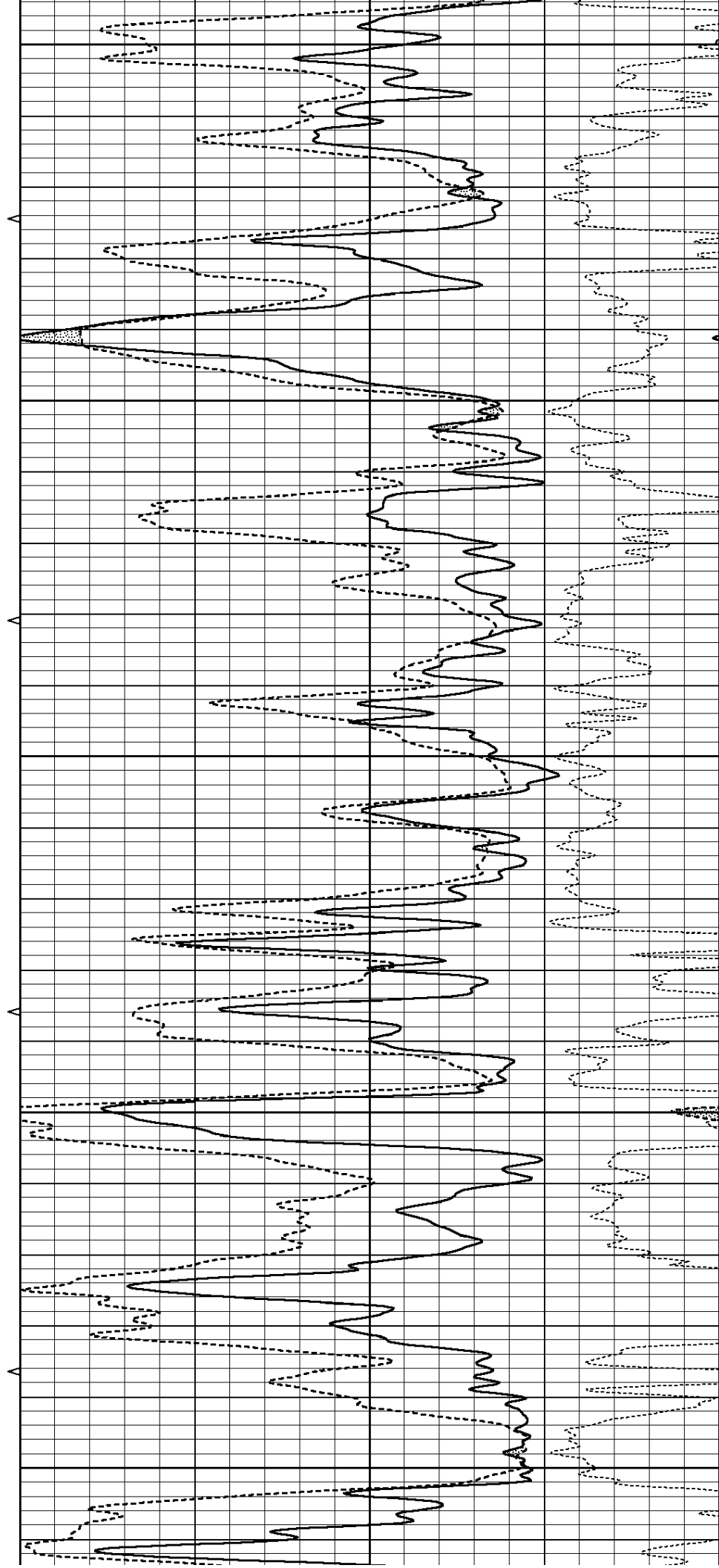
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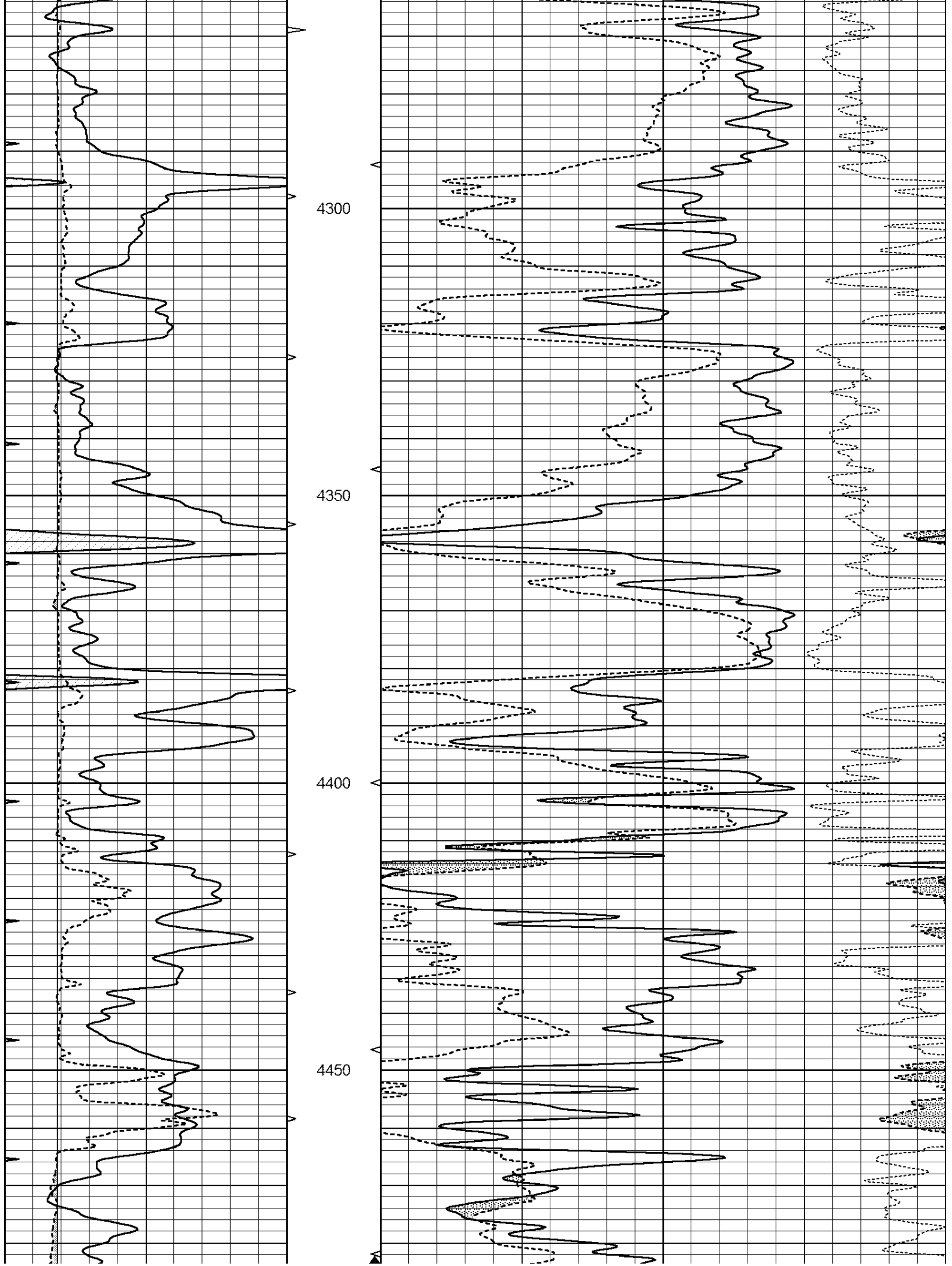
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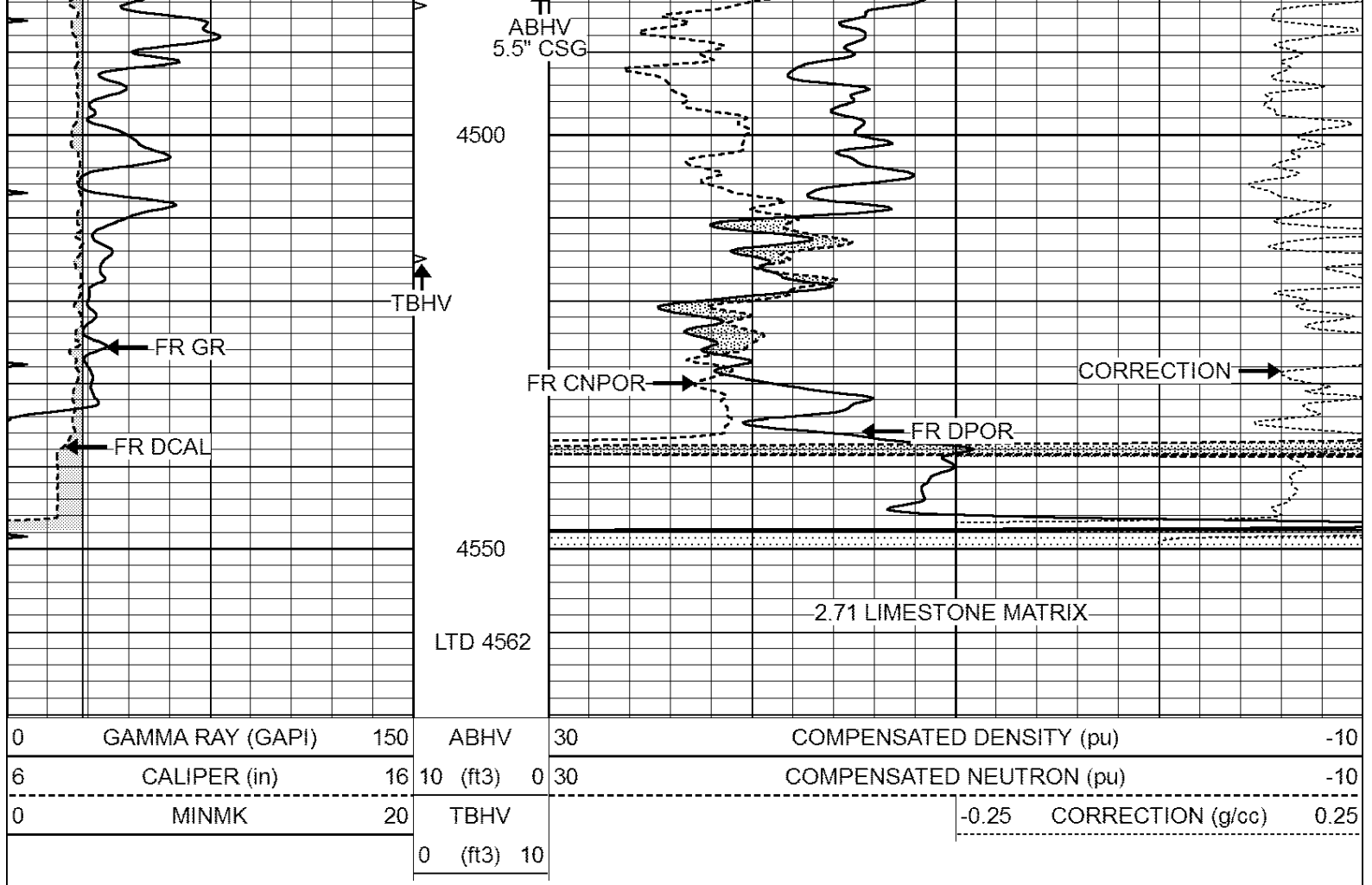
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4200

4250



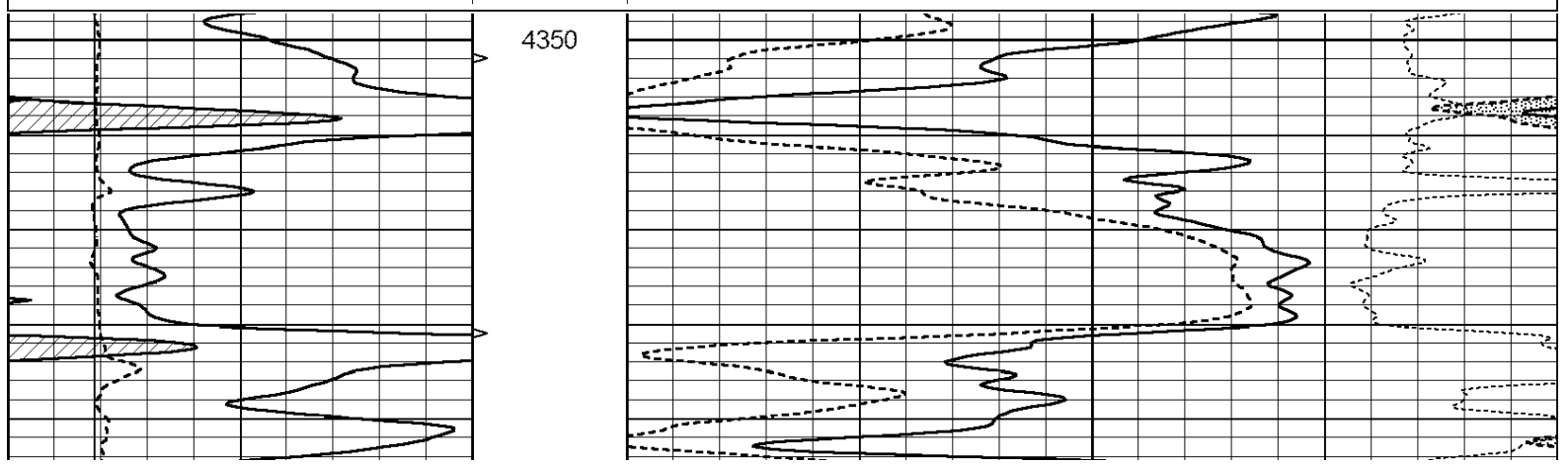


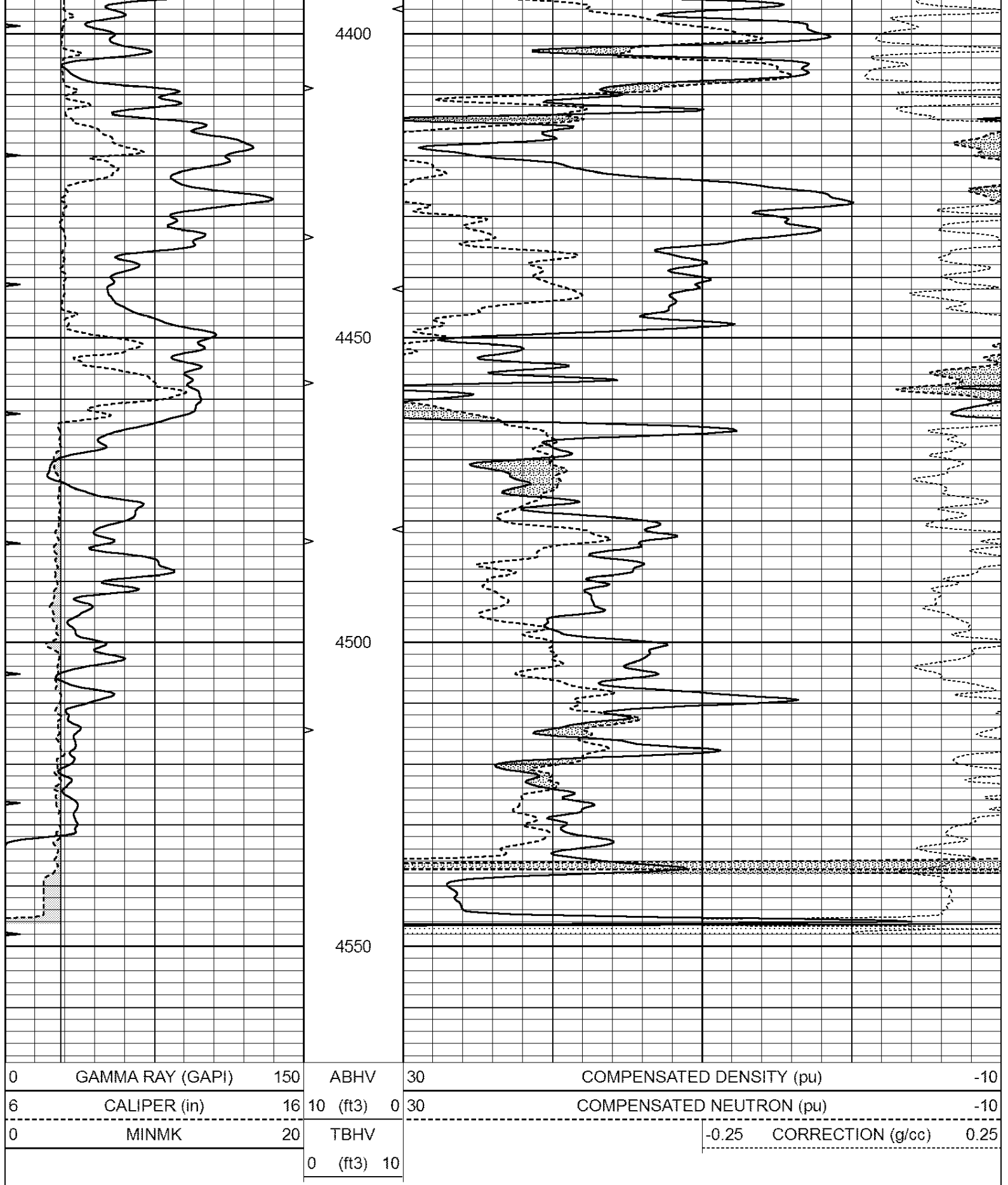


# REPEAT SECTION

Database File: 22119ddn.db  
 Dataset Pathname: pass2.1  
 Presentation Format: den\_neu  
 Dataset Creation: Fri Jan 10 17:09:29 2014 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  |
| 0 | MINMK            | 20  | TBHV     |      | -0.25 CORRECTION (g/cc)  | 0.25 |
|   |                  |     | 0 (ft3)  | 10   |                          |      |





### Calibration Report

Database File: 22119ddn.db  
Dataset Pathname: pass2.1  
Dataset Creation: Fri Jan 10 17:09:29 2014 by Calc Open-Cased 090629

## Dual Induction Calibration Report

Serial-Model: PROBE8-DILG  
 Surface Cal Performed: Fri Aug 01 06:33:19 2008  
 Downhole Cal Performed: Mon Jul 28 11:08:27 2008  
 After Survey Verification Performed: 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 |         |       |

## Compensated Density Calibration Report

Serial-Model: GEAR4-GEARHART  
 Source / Verifier: 143 / 143  
 Master Calibration Performed: Wed Sep 18 03:03:09 2013  
 Before Survey Verification Performed:  
 After Survey Verification Performed:

## Master Calibration

|                     | Density |      | Far Detector                |   | Near Detector |     |
|---------------------|---------|------|-----------------------------|---|---------------|-----|
| Magnesium           | 1.710   | g/cc | 1075.98                     |   | 532.39        | cps |
| Aluminum            | 2.560   | g/cc | 286.51                      |   | 422.88        | cps |
| Spine Angle = 80.13 |         |      | Density/Spine Ratio = 0.633 |   |               |     |
|                     | Size    |      | Reading                     |   |               |     |
| Small Ring          | 8.00    | in   | 3.21                        | V |               |     |
| Large Ring          | 14.00   | in   | 5.46                        | V |               |     |

## Before Survey Verification

| Target | Measured |
|--------|----------|
| g/cc   | g/cc     |
| g/cc   | g/cc     |

|                                        |             |                          |          |          |     |               |
|----------------------------------------|-------------|--------------------------|----------|----------|-----|---------------|
| After Survey Verification              |             |                          |          |          |     |               |
| Target                                 |             |                          | Measured |          |     |               |
| g/cc                                   |             |                          | g/cc     |          |     |               |
| g/cc                                   |             |                          | g/cc     |          |     |               |
| g/cc                                   |             |                          | g/cc     |          |     |               |
| Compensated Neutron Calibration Report |             |                          |          |          |     |               |
| Serial Number:                         |             |                          | 6l       |          |     |               |
| 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        |
| PRE-SURVEY VERIFICATION                |             |                          |          |          |     |               |
| Detector                               |             | Readings                 |          | Measured |     | Target        |
| 1)                                     | Short Space | cps                      |          |          |     |               |
|                                        | Long Space  | cps                      |          | pu       | pu  |               |
| 2)                                     | Short Space | cps                      |          |          |     |               |
|                                        | Long Space  | cps                      |          | pu       |     |               |
| 3)                                     | Short Space | cps                      |          |          |     |               |
|                                        | Long Space  | cps                      |          | pu       |     |               |
| POST-SURVEY VERIFICATION               |             |                          |          |          |     |               |
| Detector                               |             | Readings                 |          | Measured |     | Target        |
| 1)                                     | Short Space | cps                      |          |          |     |               |
|                                        | Long Space  | cps                      |          | pu       | pu  |               |
| 2)                                     | Short Space | cps                      |          |          |     |               |
|                                        | Long Space  | cps                      |          | pu       | pu  |               |
| 3)                                     | Short Space | cps                      |          |          |     |               |
|                                        | Long Space  | cps                      |          | pu       | pu  |               |
| Gamma Ray Calibration Report           |             |                          |          |          |     |               |
| Serial Number:                         |             | GR6                      |          |          |     |               |
| Tool Model:                            |             | OPEN                     |          |          |     |               |
| Performed:                             |             | Fri Nov 29 08:34:37 2013 |          |          |     |               |
| Calibrator Value:                      |             | 150.0                    | GAPI     |          |     |               |
| Background Reading:                    |             | 0.0                      | cps      |          |     |               |
| Calibrator Reading:                    |             | 276.0                    | cps      |          |     |               |
| Sensitivity:                           |             | 0.6035                   | GAPI/cps |          |     |               |