



**COMPENSATED  
DENSITY / NEUTRON  
LOG**

Company YOUNGER ENERGY COMPANY  
Well MOSIER - BAUER UNIT #1  
Field HURRAY NORTH  
County PAWNEE  
State KANSAS

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Field HURRAY NORTH  
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Location: API # : 15-145-21820-0000  
2250' FSL & 2550' FWL  
SE - NE - NE - SW  
SEC 27 TWP 21S RGE 15W  
Permanent Datum GROUND LEVEL Elevation 1957  
Log Measured From KELLY BUSHING 13 A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services DIL/MEL  
Elevation  
K.B. 1970  
D.F. 1968  
G.L. 1957

|                              |               |                     |  |
|------------------------------|---------------|---------------------|--|
| Date                         | 8/5/16        |                     |  |
| Run Number                   | ONE           |                     |  |
| Depth Driller                | 4010          |                     |  |
| Depth Logger                 | 4012          |                     |  |
| Bottom Logged Interval       | 3988          |                     |  |
| Top Log Interval             | 3200          |                     |  |
| Casing Driller               | 8 5/8"@955'   |                     |  |
| Casing Logger                | 955           |                     |  |
| Bit Size                     | 7 7/8"        |                     |  |
| Type Fluid in Hole           | CHEMICAL MUD  | CHLORIDES 6,000 PPM |  |
| Density / Viscosity          | 9.0/65        |                     |  |
| pH / Fluid Loss              | 8.8/10.0      |                     |  |
| Source of Sample             | FLOWLINE      |                     |  |
| Rim @ Meas. Temp             | .600@80F      |                     |  |
| Rmf @ Meas. Temp             | .450@80F      |                     |  |
| Rmc @ Meas. Temp             | .720@80F      |                     |  |
| Source of Rmf / Rmc          | MEASUREMENT   |                     |  |
| Rim @ BHT                    | .414@116F     |                     |  |
| Time Circulation Stopped     | 3 HOURS       |                     |  |
| Time Logger on Bottom        | 2:00 A.M.     |                     |  |
| Maximum Recorded Temperature | 116F          |                     |  |
| Equipment Number             | 922339        |                     |  |
| Location                     | HAYS, KANSAS  |                     |  |
| Recorded By                  | JEFF LUEBBERS |                     |  |
| Witnessed By                 | KEITH REAVIS  |                     |  |

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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**

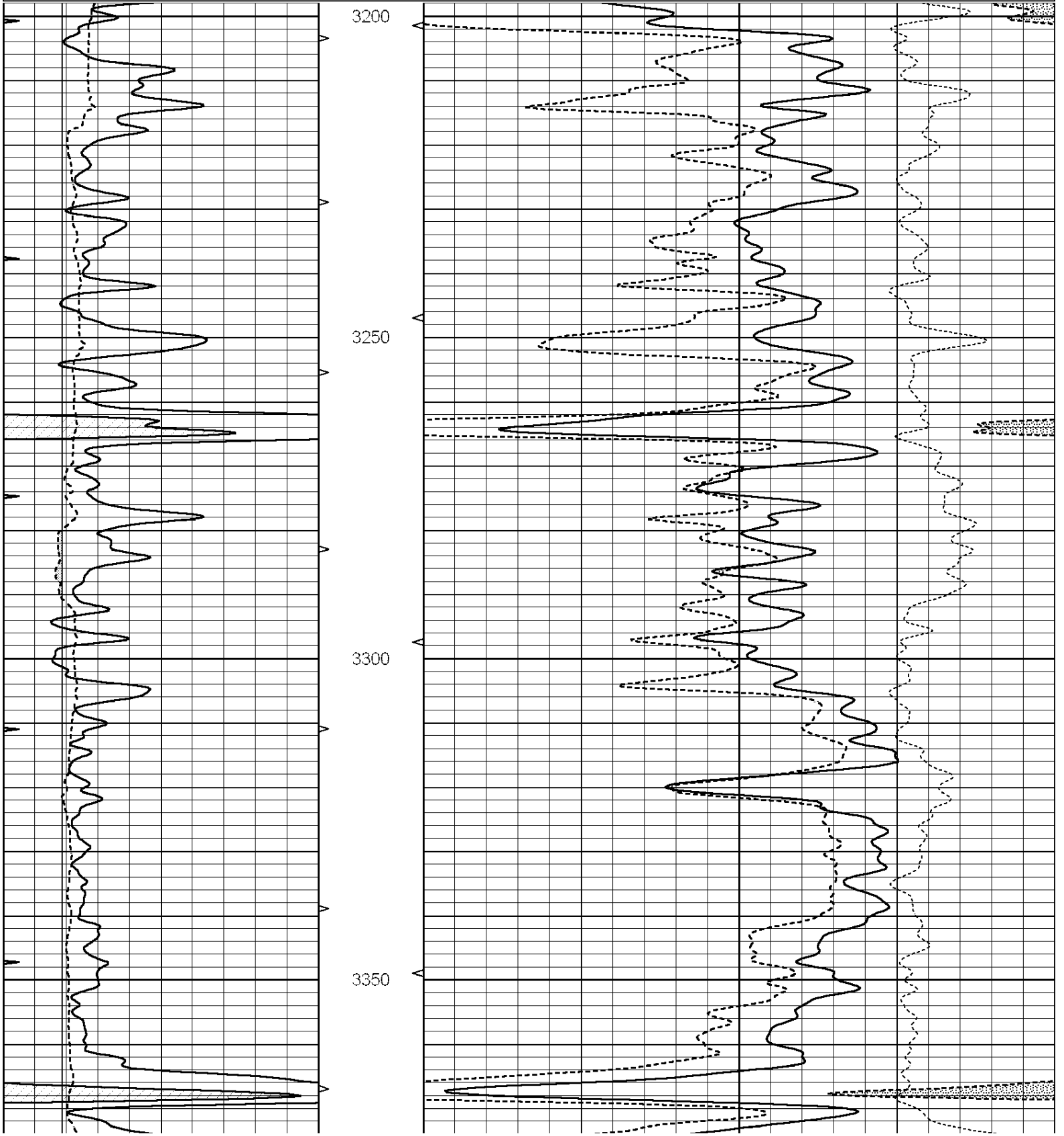
THANK YOU FOR USING ELI WIRELINE HAYS, KANSAS (785) 628-6395  
DIRECTIONS  
LARNED, KS., S. TO (K-19) 7E. TO "40TH AVE.", 2N. TO "RD. N", 1/2E., N. INTO

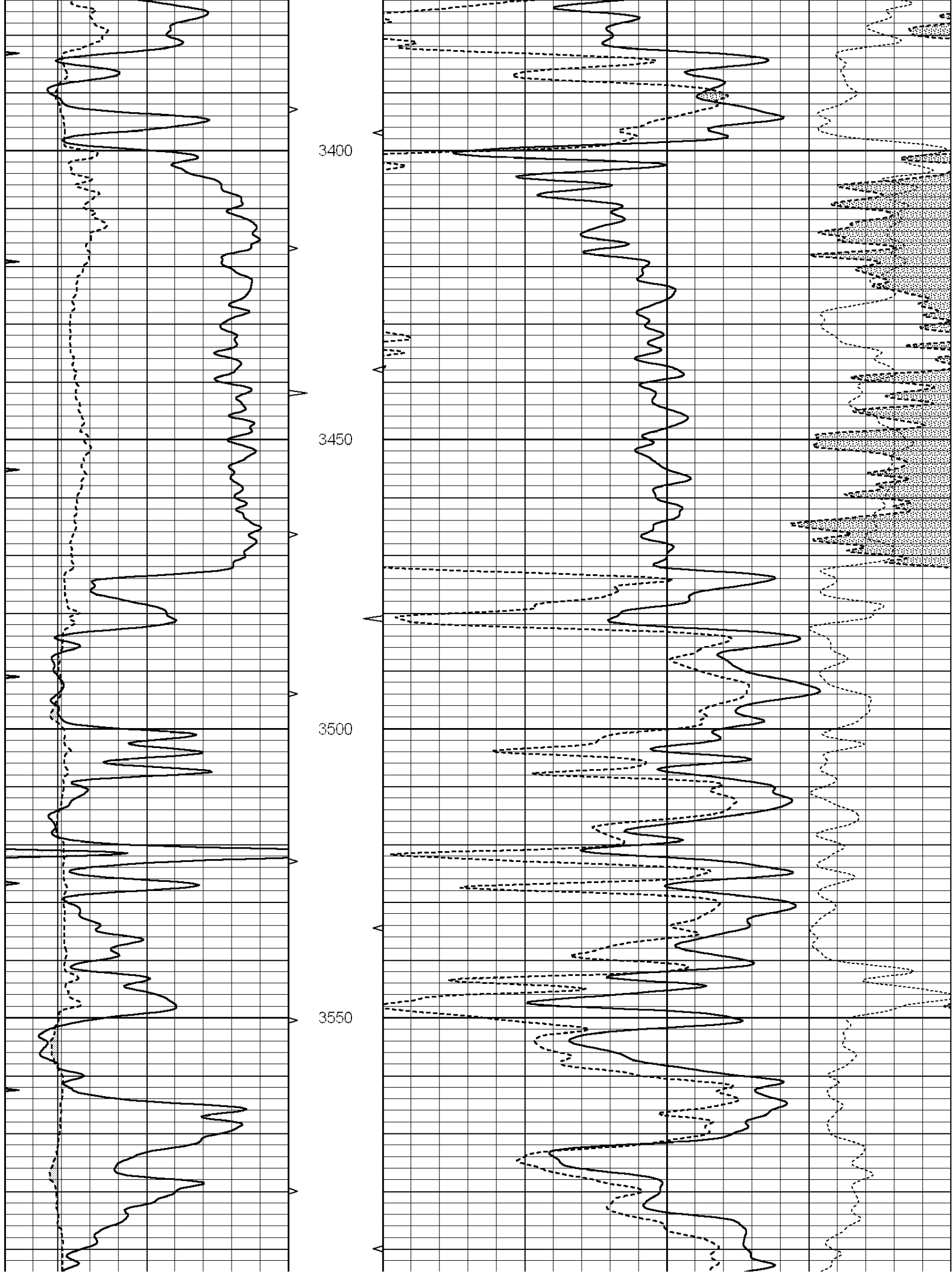


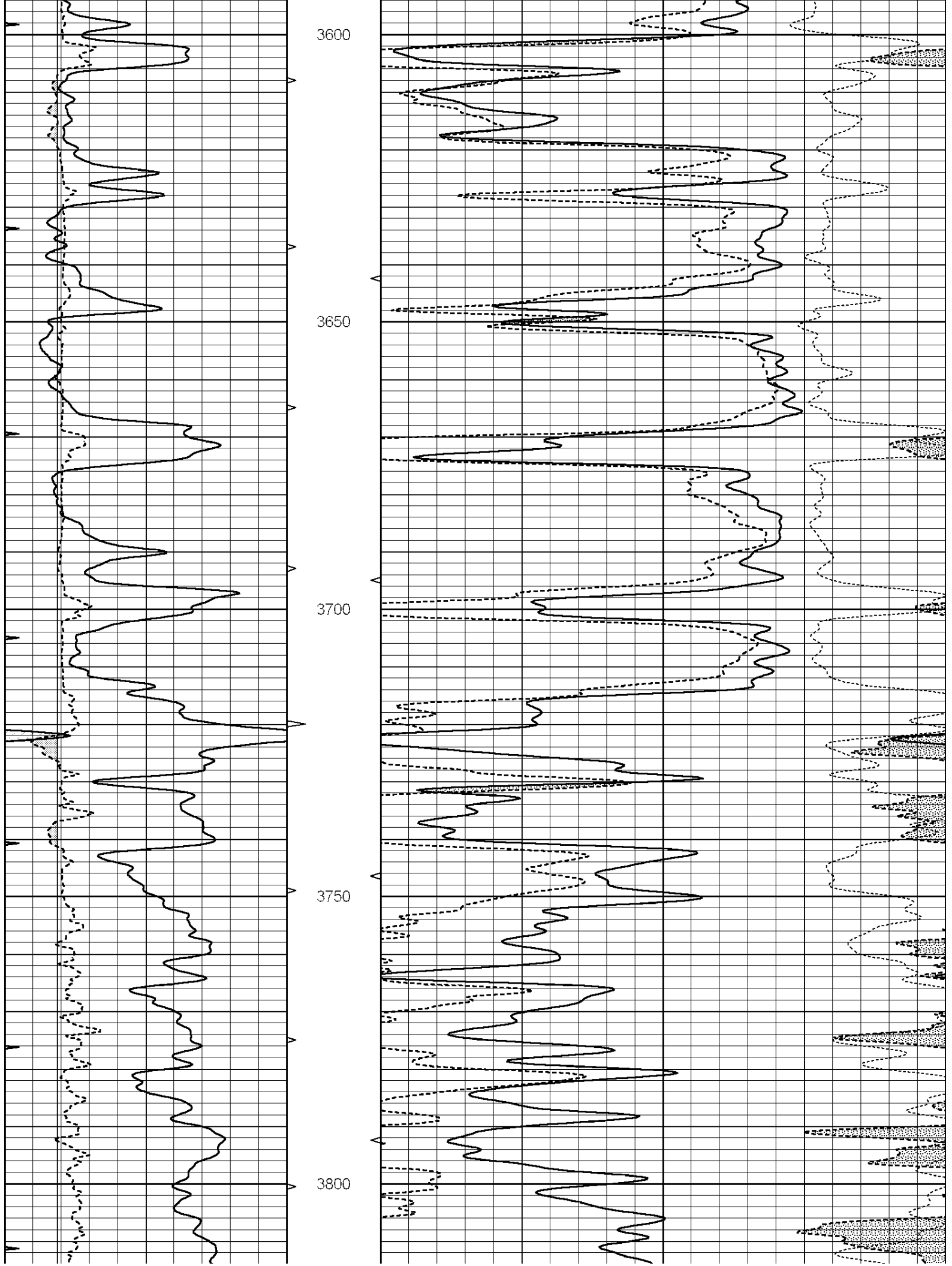
# MAIN SECTION

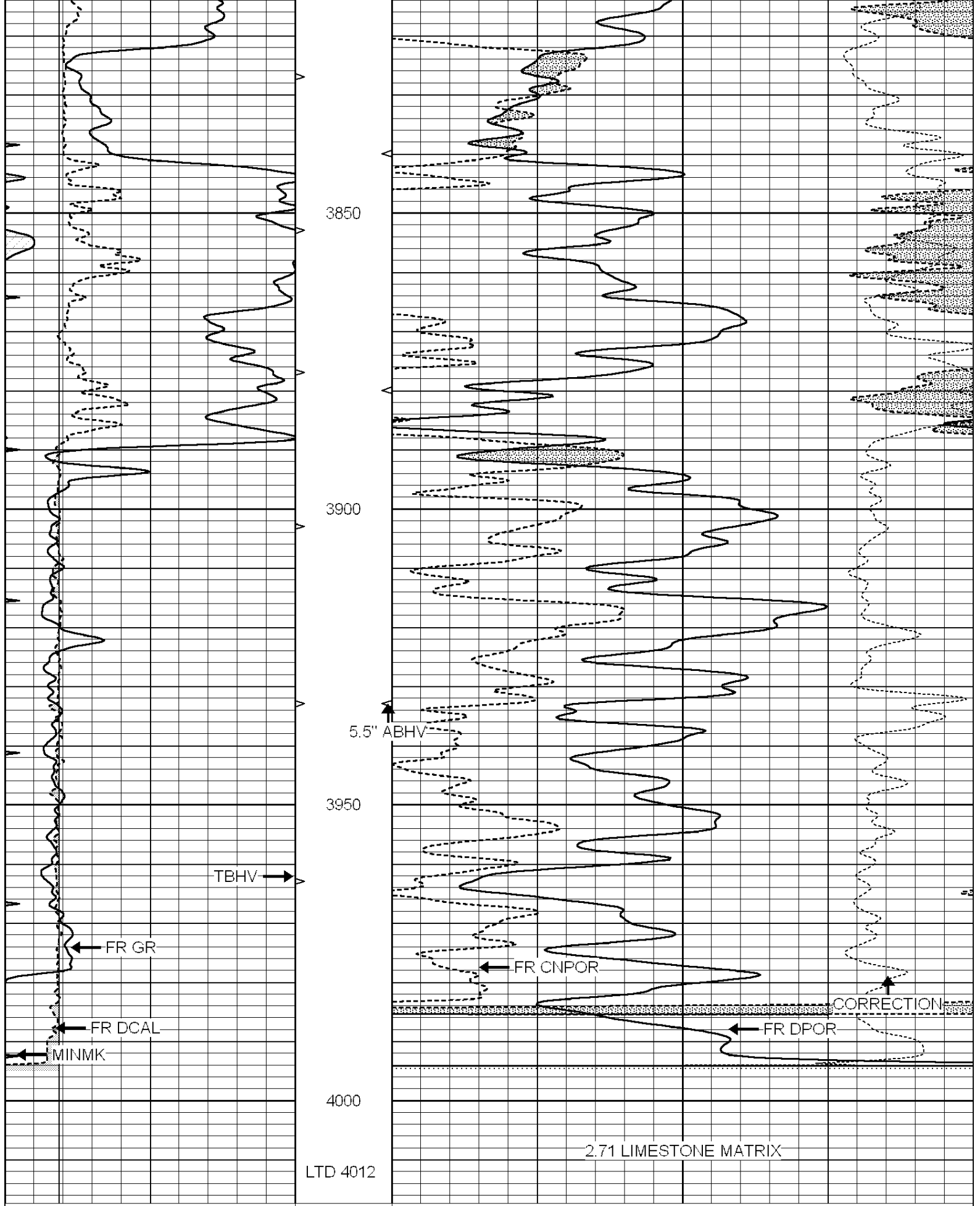
Database File: 30755ddn.db  
 Dataset Pathname: pass3.3  
 Presentation Format: den\_neu  
 Dataset Creation: Fri Aug 05 03:29:55 2016 by Calc SOC 120430  
 Charted by: Depth in Feet scaled 1:240

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





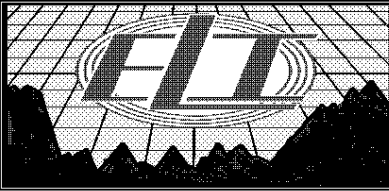




LTD 4012

2.71 LIMESTONE MATRIX

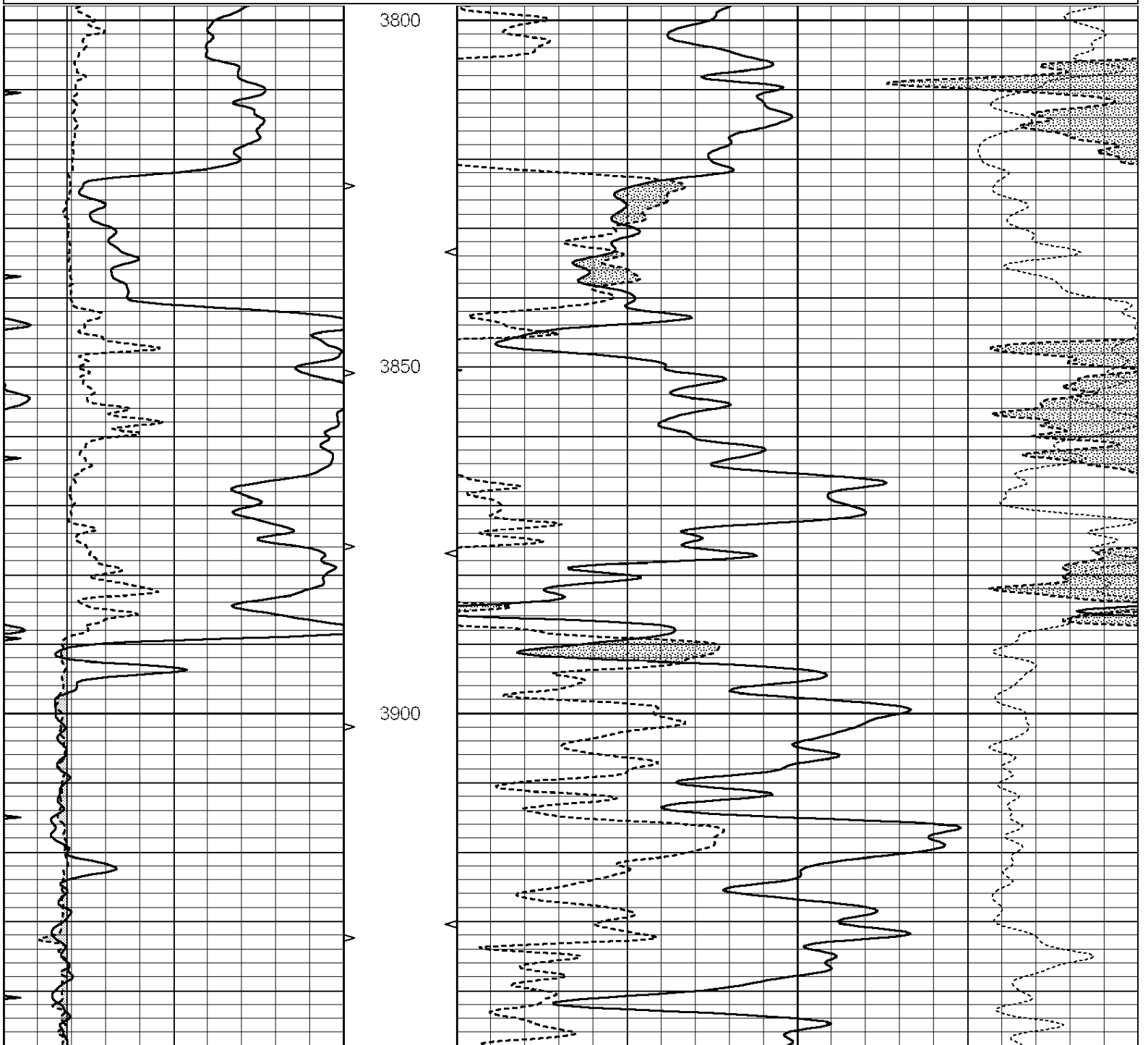
|   |                  |     |          |      |                          |                        |
|---|------------------|-----|----------|------|--------------------------|------------------------|
| 0 | GAMMA RAY (GAPI) | 150 | ABHV     | 30   | COMPENSATED DENSITY (pu) | -10                   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

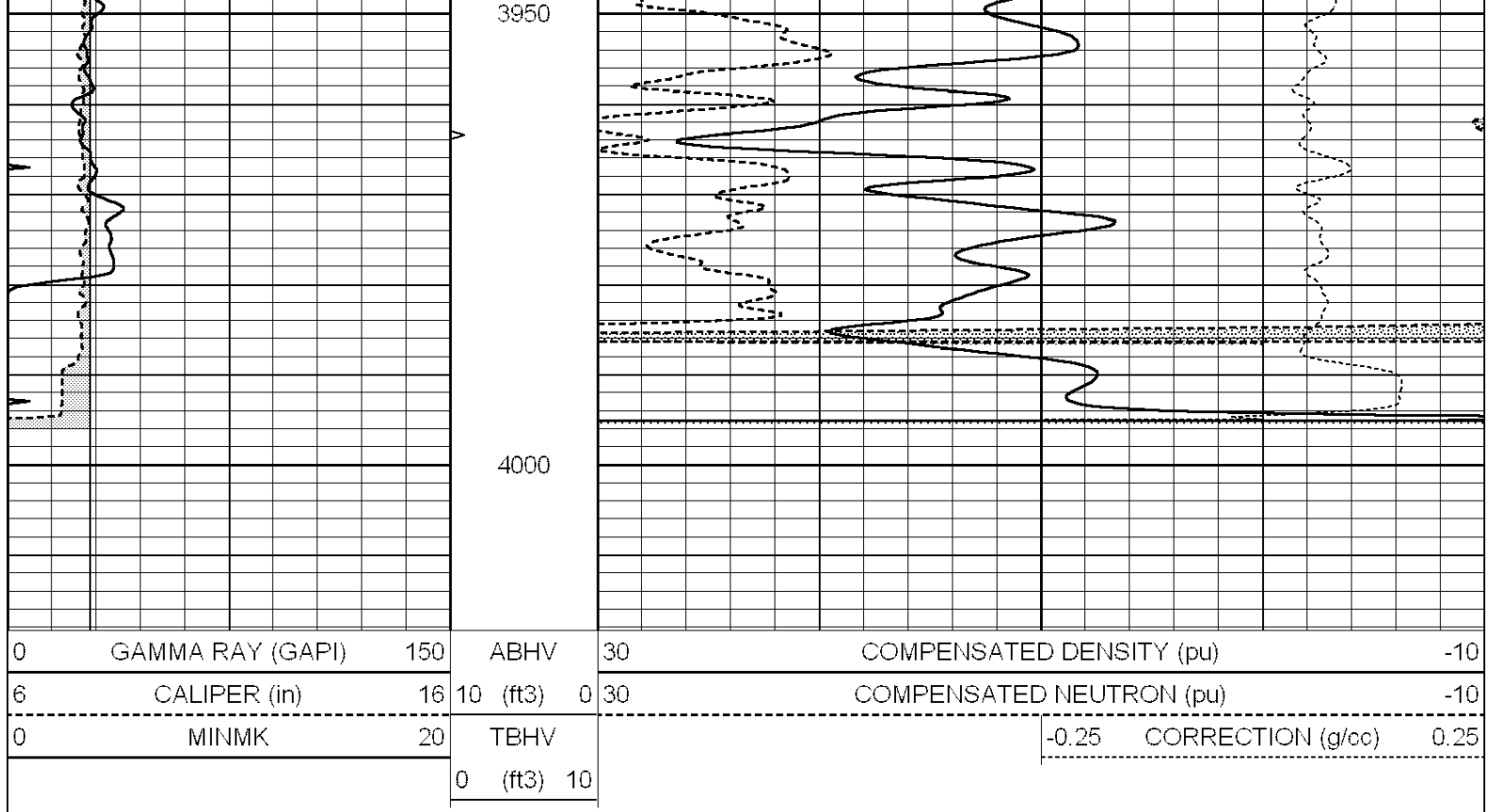


# REPEAT SECTION

Database File: 30755ddn.db  
 Dataset Pathname: pass2.2  
 Presentation Format: den\_neu  
 Dataset Creation: Fri Aug 05 02:52:40 2016 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     |      | -0.25 CORRECTION (g/cc)  | 0.25 |
|   |                  |     | 0 (ft3)  | 10   |                          |      |





### Calibration Report

Database File: 30755ddn.db  
 Dataset Pathname: pass3.3  
 Dataset Creation: Fri Aug 05 03:29:55 2016 by Calc SOC 120430

### Dual Induction Calibration Report

Serial-Model: PROBE7-DILG  
 Surface Cal Performed: Fri Jul 22 21:44:44 2016  
 Downhole Cal Performed: Mon Jul 28 12:02:56 2008  
 After Survey Verification Performed: Mon Jul 28 12:02:56 2008

#### Surface Calibration

| Loop:     | Readings |       |   |       | References |        | Results |         |
|-----------|----------|-------|---|-------|------------|--------|---------|---------|
|           | Air      | Loop  | V |       | Air        | Loop   | m       | b       |
| Deep      | -0.014   | 0.629 | V | 0.000 | 400.000    | mmho/m | 625.000 | -7.000  |
| Medium    | 0.039    | 0.728 | V | 0.000 | 464.000    | mmho/m | 675.000 | -50.000 |
| 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    | V      |         | 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 Fri May 30 11:01:00 2014

|             | Background | Magnesium   | Aluminum | Sandstone           |         |
|-------------|------------|-------------|----------|---------------------|---------|
| Window 1    | 1378.8     | 10804.6     | 3492.0   | 12453.4             | cps     |
| Window 2    | 1262.4     | 9313.5      | 3076.7   | 10594.7             | cps     |
| Window 3    | 1077.6     | 5668.7      | 2076.0   | 6314.8              | cps     |
| Window 4    | 306.4      | 313.0       | 306.4    | 315.6               | cps     |
| Long Space  | 0.0        | 8051.0      | 1814.3   | 9332.3              | cps     |
| Short Space | 1.9        | 1706.1      | 1146.0   | 1707.6              | cps     |
| Rho         |            | 1.7100      | 2.5900   | 1.3800              | g/cc    |
| Pe          |            | 0.0000      | 2.5700   | 1.5500              |         |
| Rib Angle   | : 45.0     | Rib Slope   | : 1.002  | Density/Spine Ratio | : 0.571 |
| Spine Angle | : 75.0     | Spine Slope | : 3.745  | Spine Intercept     | : -18.9 |

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      |          |        |

Long Space

cps

pu

pu

POST-SURVEY VERIFICATION

Detector

Readings

Measured

Target

Short Space  
Long Space

cps  
cps

pu

pu

Gamma Ray Calibration Report

Serial Number: 070558  
Tool Model: OPEN\_GR  
Performed: Fri Aug 05 02:18:33 2016

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
Calibrator Reading: 1.0 cps

Sensitivity: 0.2800 GAPI/cps