



**COMPLETION
& PRODUCTION
SERVICES CO.**

**COMPENSATED
DENSITY/NEUTRON
LOG**

Company RITCHIE EXPLORATION, INC.
Well WIN 2C-3D #1
Field WILDCAT
County SCOTT
State KANSAS

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Well WIN 2C-3D #1
Field WILDCAT
County SCOTT State KANSAS

Location: API # : 15-171-21008-00-00
W2 - W2 - SW
1230' FSL & 40' FWL
SEC 2 TWP 16S RGE 31W
Permanent Datum GROUND LEVEL Elevation 2867
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING
Elevation
K.B. 2872
D.F. 2870
G.L. 2867

| | |
|------------------------------|---------------|
| Date | 12/16/13 |
| Run Number | ONE |
| Depth Driller | 4675 |
| Depth Logger | 4678 |
| Bottom Logged Interval | 4654 |
| Top Log Interval | 3400 |
| Casing Driller | 8 5/8" @ 230' |
| Casing Logger | 232' |
| Bit Size | 7 7/8" |
| Type Fluid in Hole | CHEMICAL MUD |
| Density / Viscosity | 9.2/55 |
| pH / Fluid Loss | 10.5/8.0 |
| Source of Sample | FLOWLINE |
| Rm @ Meas. Temp | 1.20 @ 82F |
| Rmt @ Meas. Temp | 0.90 @ 82F |
| Rmc @ Meas. Temp | 1.44 @ 82F |
| Source of Rmf / Rmc | MEASUREMENT |
| Rm @ BHT | 0.80 @ 122F |
| Time Circulation Stopped | 2 HOURS |
| Time Logger on Bottom | |
| Maximum Recorded Temperature | 122F |
| Equipment Number | 4010 |
| Location | HAYS, KANSAS |
| Recorded By | IAN MABB |
| Witnessed By | ADAM ELDANI |

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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.

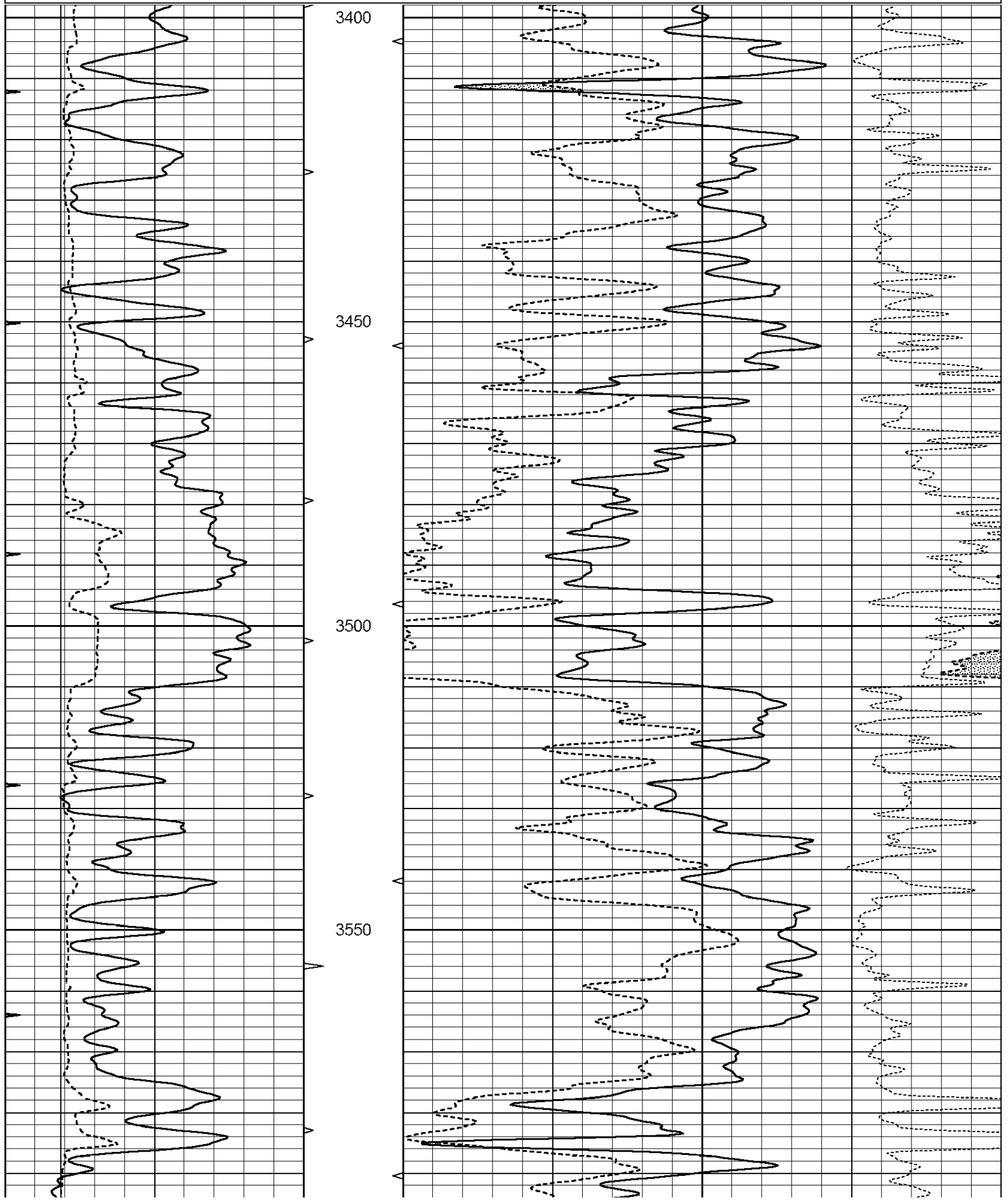
Comments

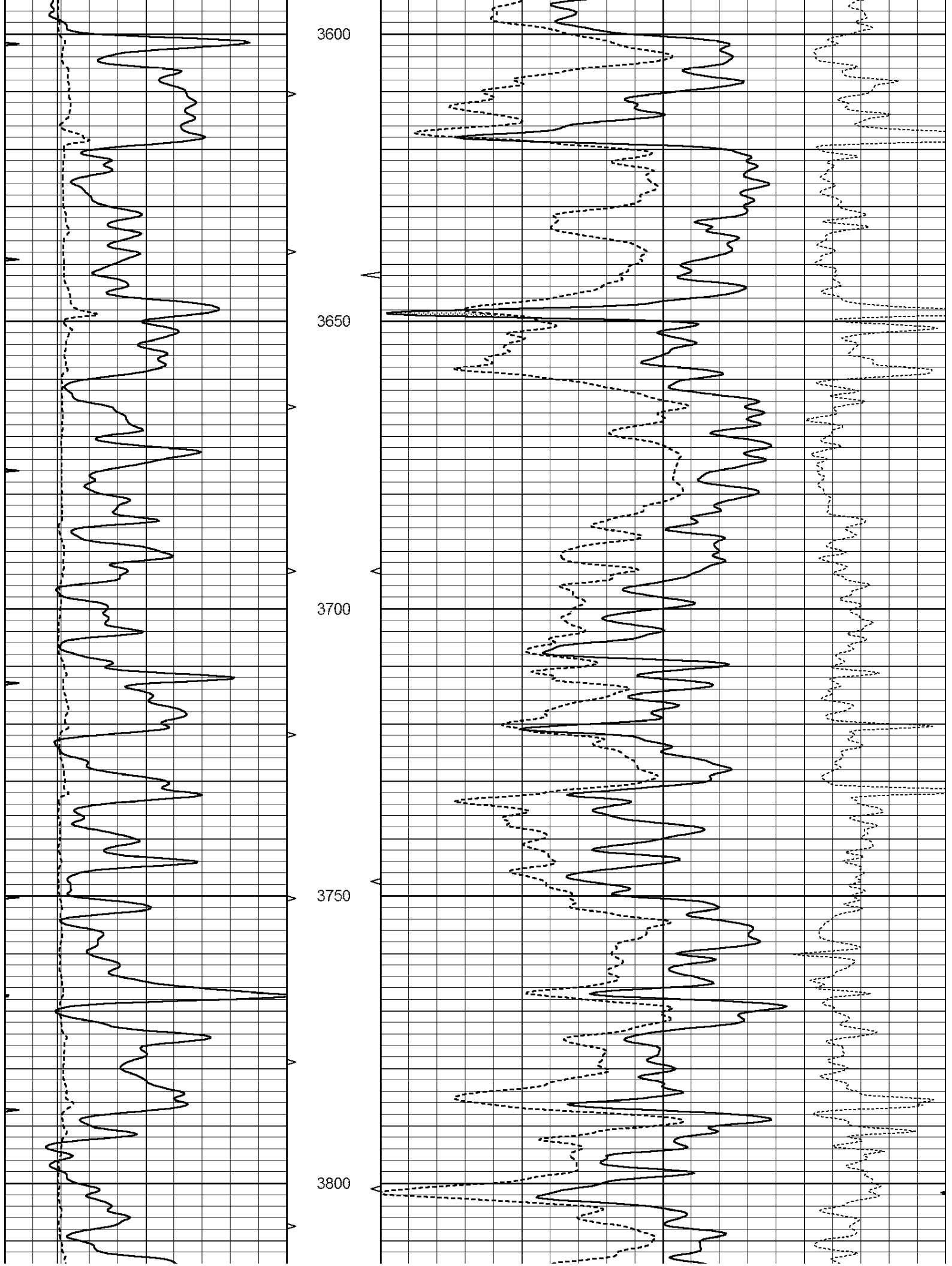
THANK YOU FOR USING NABORS, HAYS, KS. (785) 628-6395
DIRECTIONS:

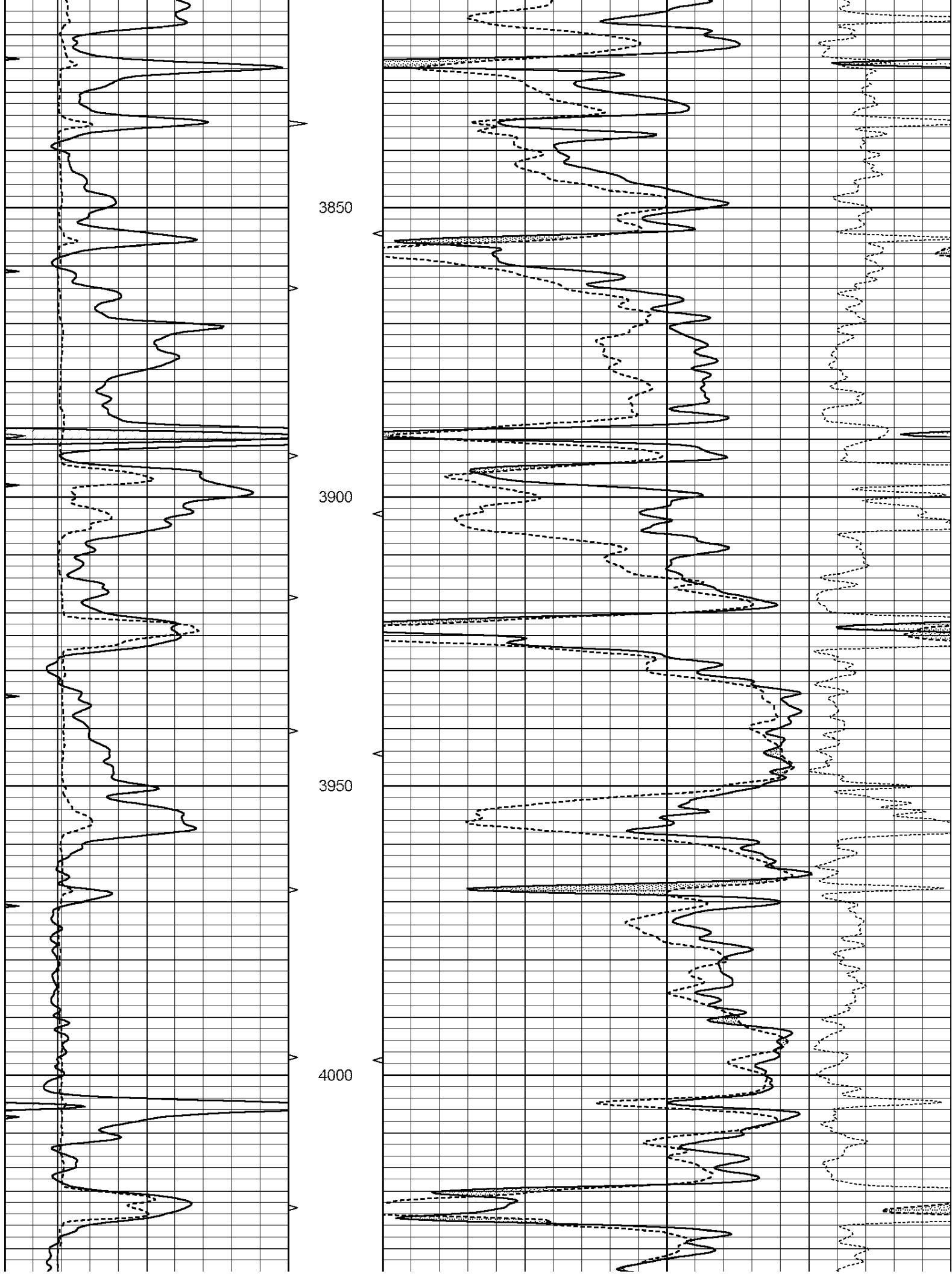
HEALY, KS. - 9 WEST TO TAOS RD. - NORTH TO 280 RD - EAST 1 MILE - NORTH ON UNION RD - EAST TO RD 290 - ABOUT A MILE EAST AND NORTHWEST INTO

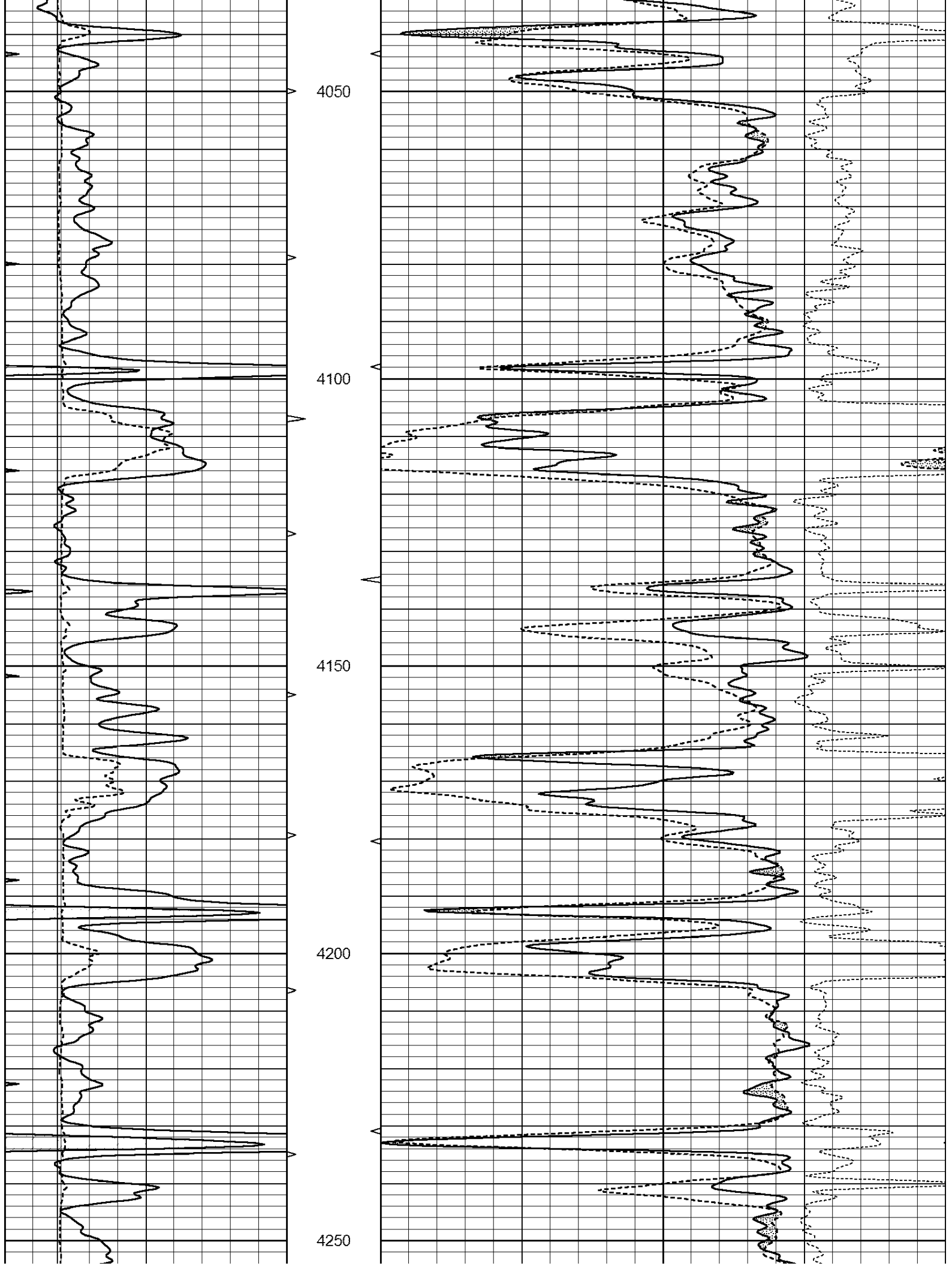
Database File: 22110ddn.db
Dataset Pathname: pass3.1
Presentation Format: den_neu
Dataset Creation: Mon Dec 16 22:00:49 2013 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:240

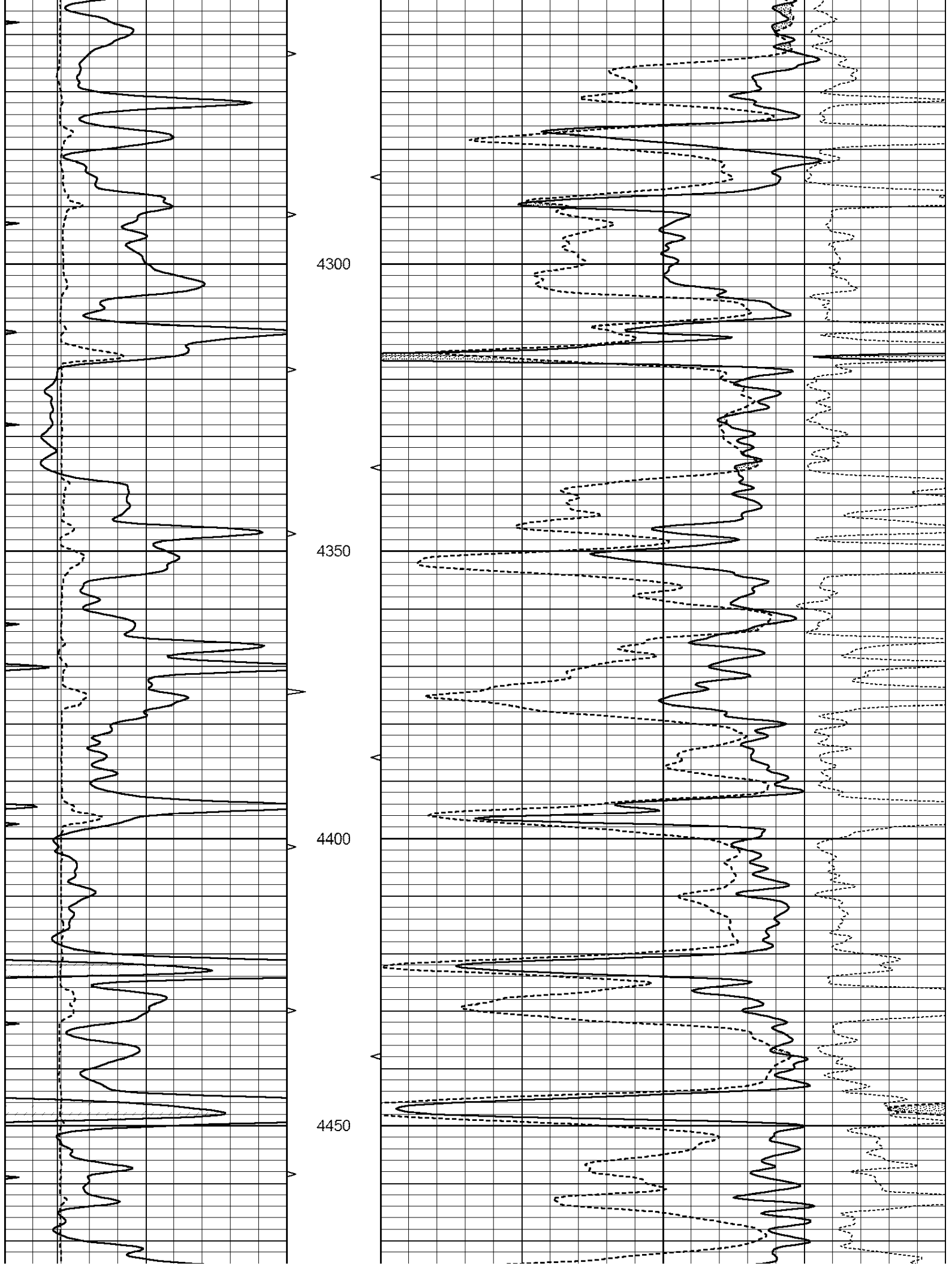
| | | | | | | |
|---|------------------|-----|----------|------|--------------------------|------|
| 0 | GAMMA RAY (GAPI) | 150 | ABHV | 30 | COMPENSATED DENSITY (pu) | -10 |
| 6 | CALIPER (in) | 16 | 10 (ft3) | 0 30 | COMPENSATED NEUTRON (pu) | -10 |
| 0 | MINMK | 20 | TBHV | | -0.25 CORRECTION (g/cc)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

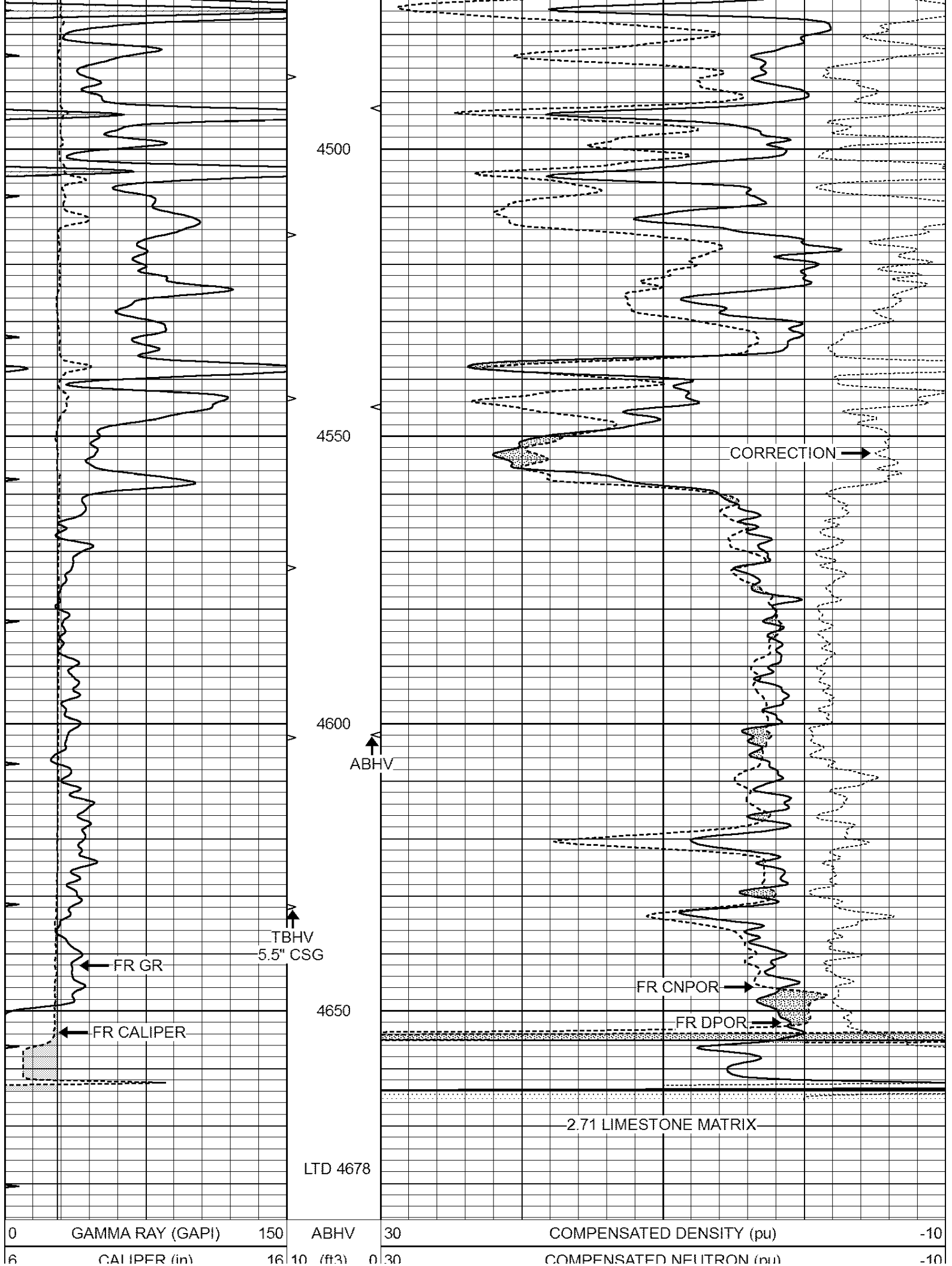












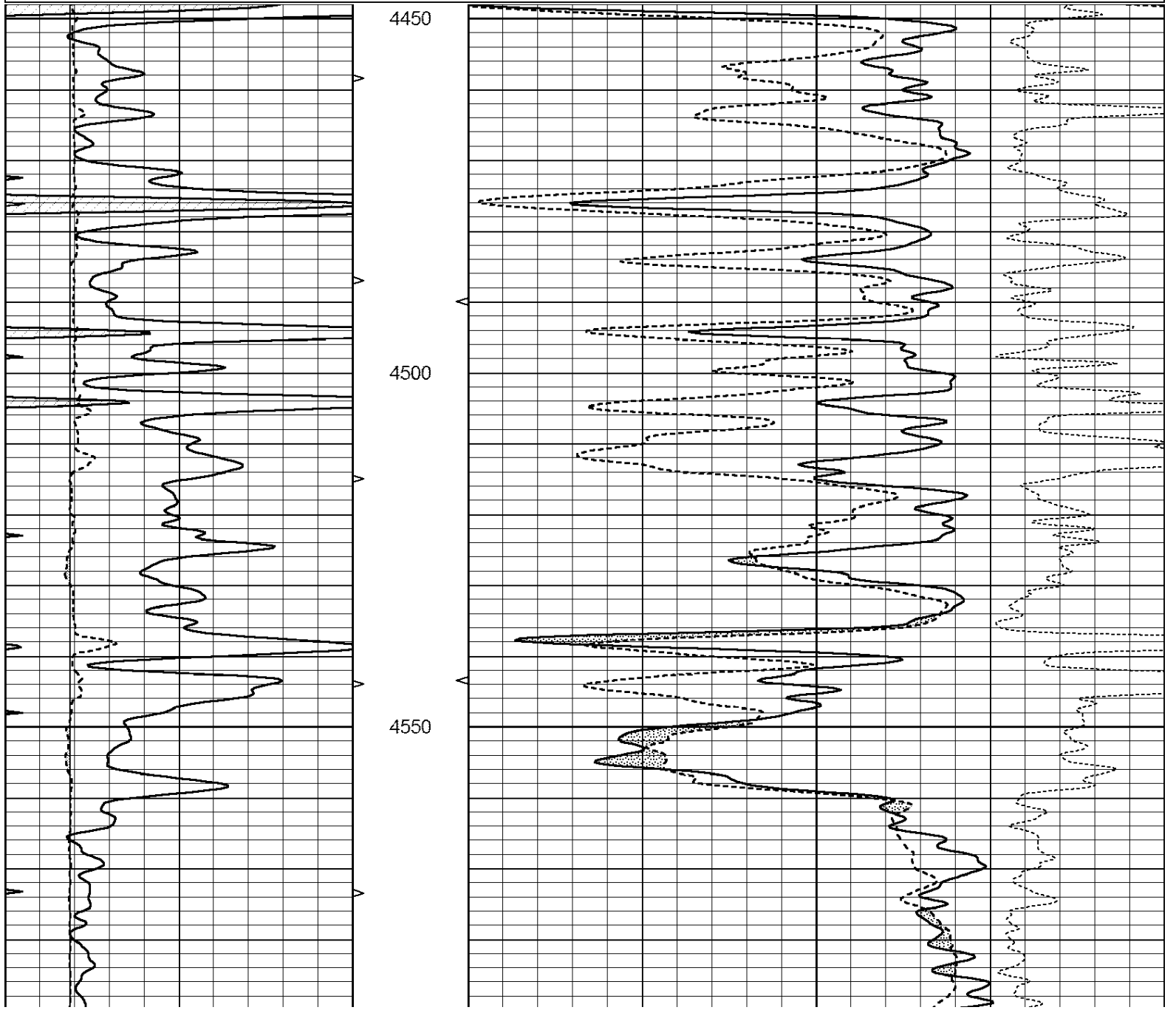
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|---|-------|----|------------|-------|-------------------|------|
| 0 | MINMK | 20 | TBHV | -0.25 | CORRECTION (g/cc) | 0.25 |
| | | | 0 (ft3) 10 | | | |

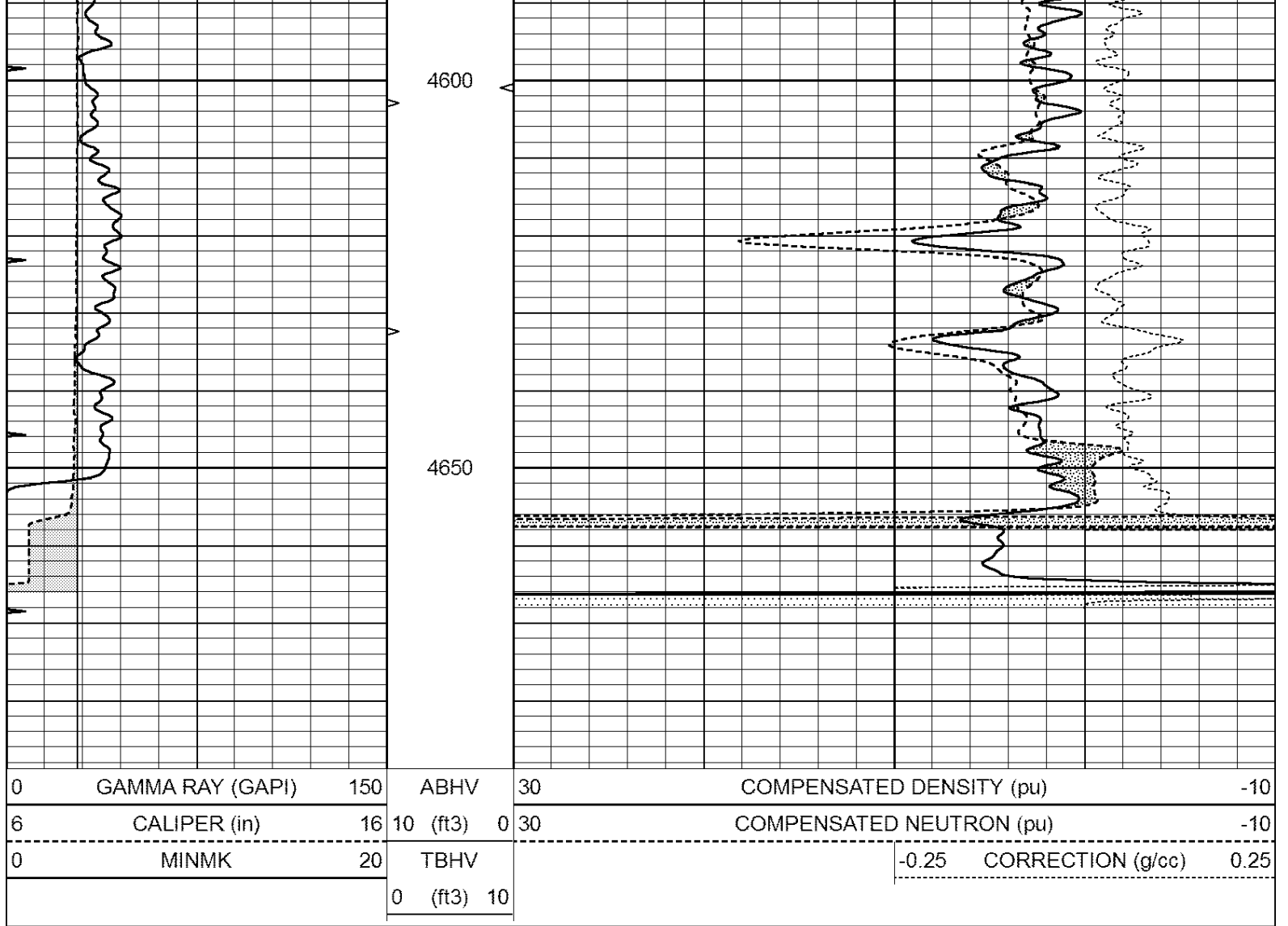


REPEAT SECTION

Database File: 22110ddn.db
 Dataset Pathname: pass2.3
 Presentation Format: den_neu
 Dataset Creation: Mon Dec 16 21:25:22 2013 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: 22110ddn.db
 Dataset Pathname: pass3.1
 Dataset Creation: Mon Dec 16 22:00:49 2013 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

| Loop: | Readings | | | | References | | Results | |
|-----------|----------|-------|---|-------|------------|--------|---------|---------|
| | Air | Loop | V | | 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 |
| | | 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: | 6I |
| 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 Long Space | cps cps | pu | pu |
| 2) | Short Space Long Space | cps cps | pu | |
| 3) | Short Space Long Space | cps cps | pu | |

POST-SURVEY VERIFICATION

| | Detector | Readings | Measured | Target |
|----|---------------------------|------------|----------|--------|
| 1) | Short Space Long Space | cps cps | pu | pu |
| 2) | Short Space Long Space | cps cps | pu | pu |
| 3) | Short Space Long Space | cps 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 | |