NABORS COMPLETION & PRODUCTION SERVICES CO.

# DUAL INDUCTION LOG

| | |
|---|---|
| Company | DEUTSCH OIL COMPANY |
| Well | HOEME TRUST #3-17 |
| Field | IUKA - CARMI |
| County | PRATT |
| State | KANSAS |

Company DEUTSCH OIL COMPANY
Well HOEME TRUST #3-17
Field IUKA - CARMI
County PRATT State KANSAS

Location: API # : 15-151-22426-0000
2970' FSL & 2970' FEL
SE - SE - NW
SEC 17 TWP 27S RGE 12W

Other Services: CDL/CNL, MEL

Permanent Datum: GROUND LEVEL Elevation 1858
Log Measured From: KELLY BUSHING 10' A.G.L.
Drilling Measured From: KELLY BUSHING

Elevation: K.B. 1868, D.F. 1866, G.L. 1858

| | | | |
|---|---|---|---|
| Date | 10/28/13 | | |
| Run Number | ONE | | |
| Depth Driller | 4452 | | |
| Depth Logger | 4450 | | |
| Bottom Logged Interval | 4448 | | |
| Top Log Interval | 00 | | |
| Casing Driller | 10 3/4"@297' | | |
| Casing Logger | 300 | | |
| Bit Size | 7 7/8" | | |
| Type Fluid in Hole | CHEMICAL MUD | CHLORIDES 6,000 PPM | |
| Density / Viscosity | 9.5/46 | | |
| pH / Fluid Loss | 9.0/10.0 | | |
| Source of Sample | FLOWLINE | | |
| Rm @ Meas. Temp | .650@80F | | |
| Rmf @ Meas. Temp | .488@80F | | |
| Rmc @ Meas. Temp | .780@80F | | |
| Source of Rmf / Rmc | MEASUREMENT | | |
| Rm @ BHT | .433@120F | | |
| Time Circulation Stopped | 2.5 HOURS | | |
| Time Logger on Bottom | 3:30 P.M. | | |
| Maximum Recorded Temperature | 120F | | |
| Equipment Number | 4854 | | |
| Location | HAYS, KANSAS | | |
| Recorded By | JEFF LUEBBERS | | |
| Witnessed By | KENT DEUTSCH | | |

<<< Fold Here >>>

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

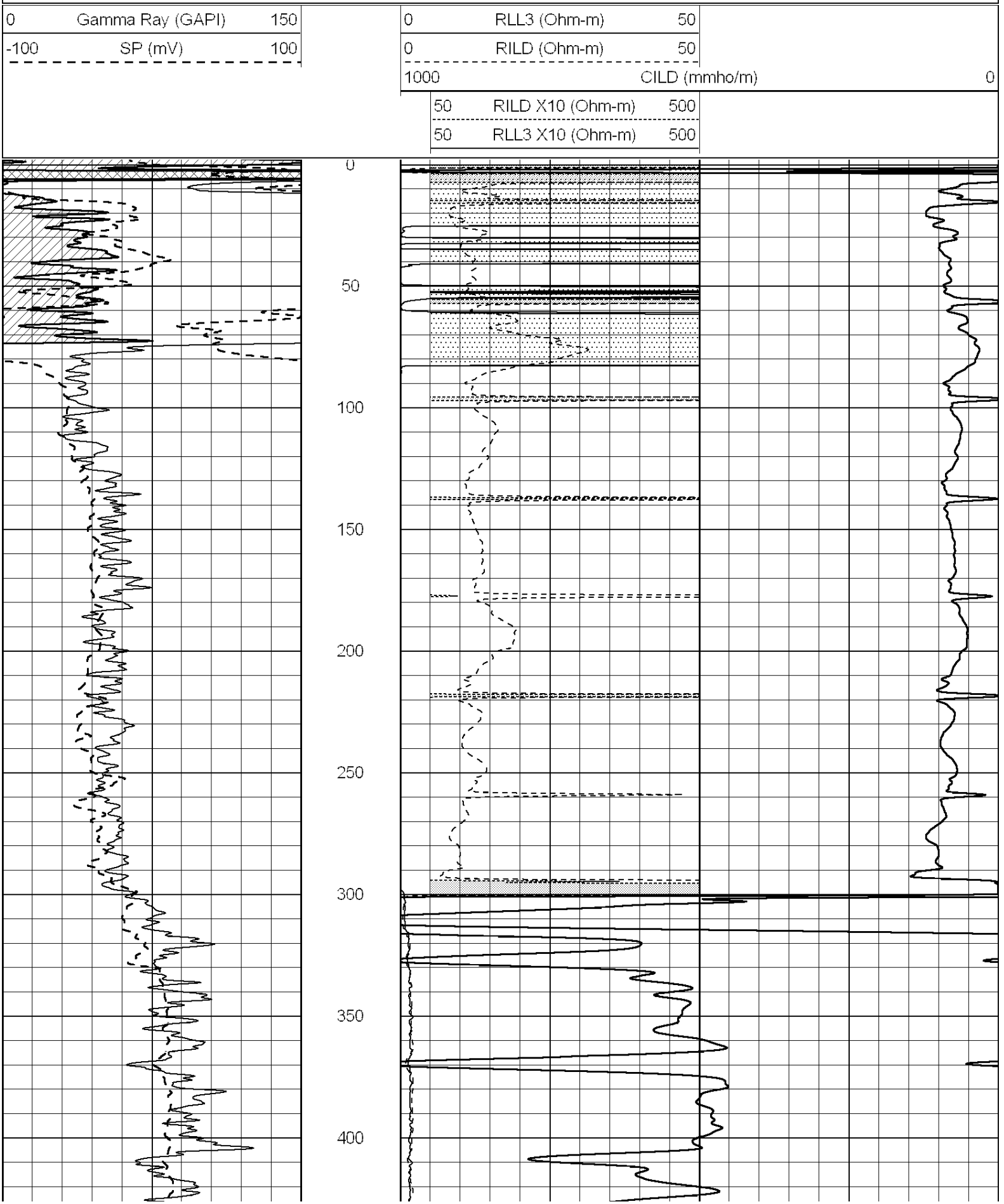
THANK YOU FOR USING "NABORS" HAYS, KANSAS (785) 628-6395
DIRECTIONS
PRATT, KS., 3 N.E. ON HWY 61 TO "ST. PAUL CHURCH", 1E., N. INTO

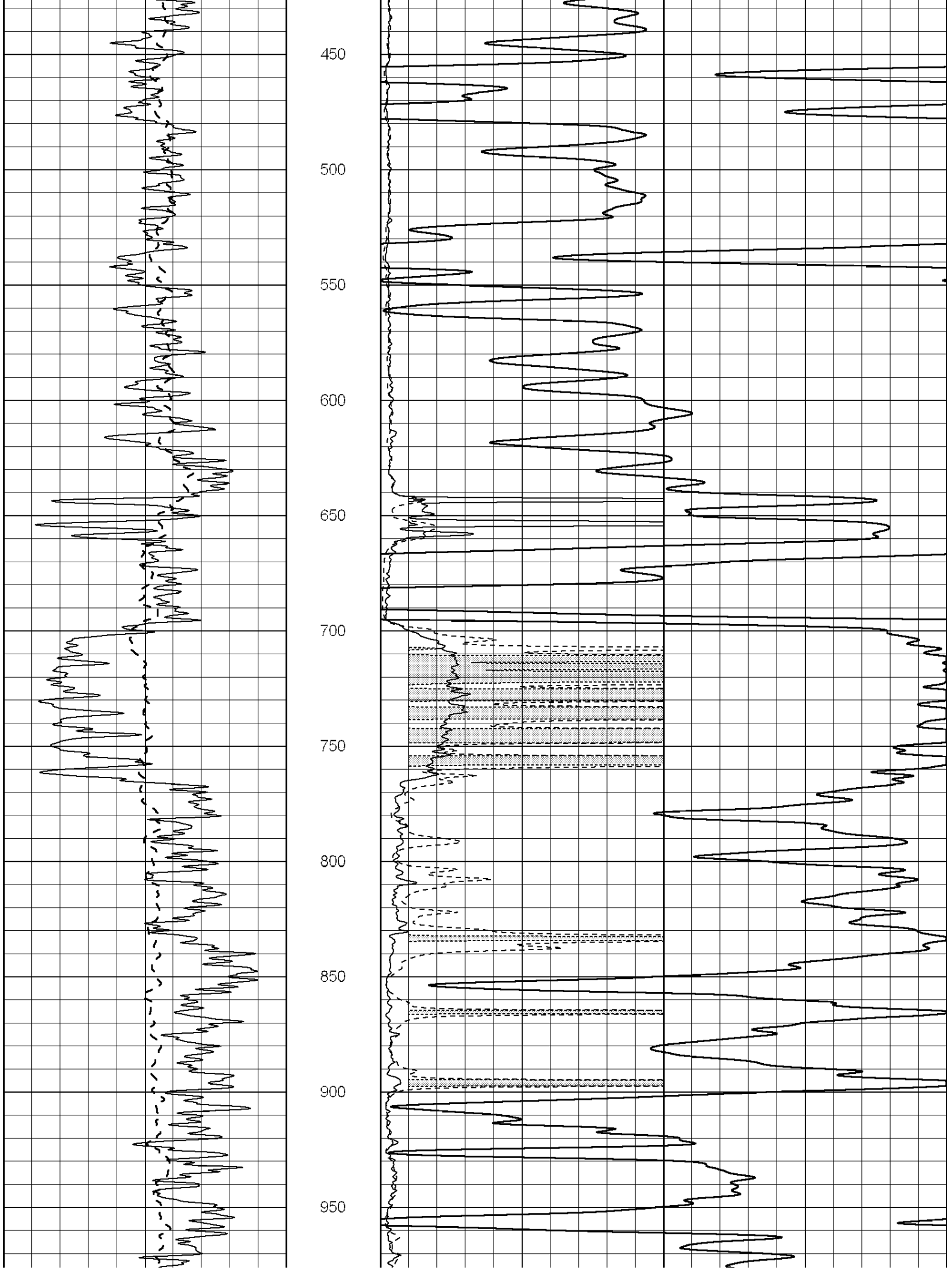
NABORS COMPLETION & PRODUCTION

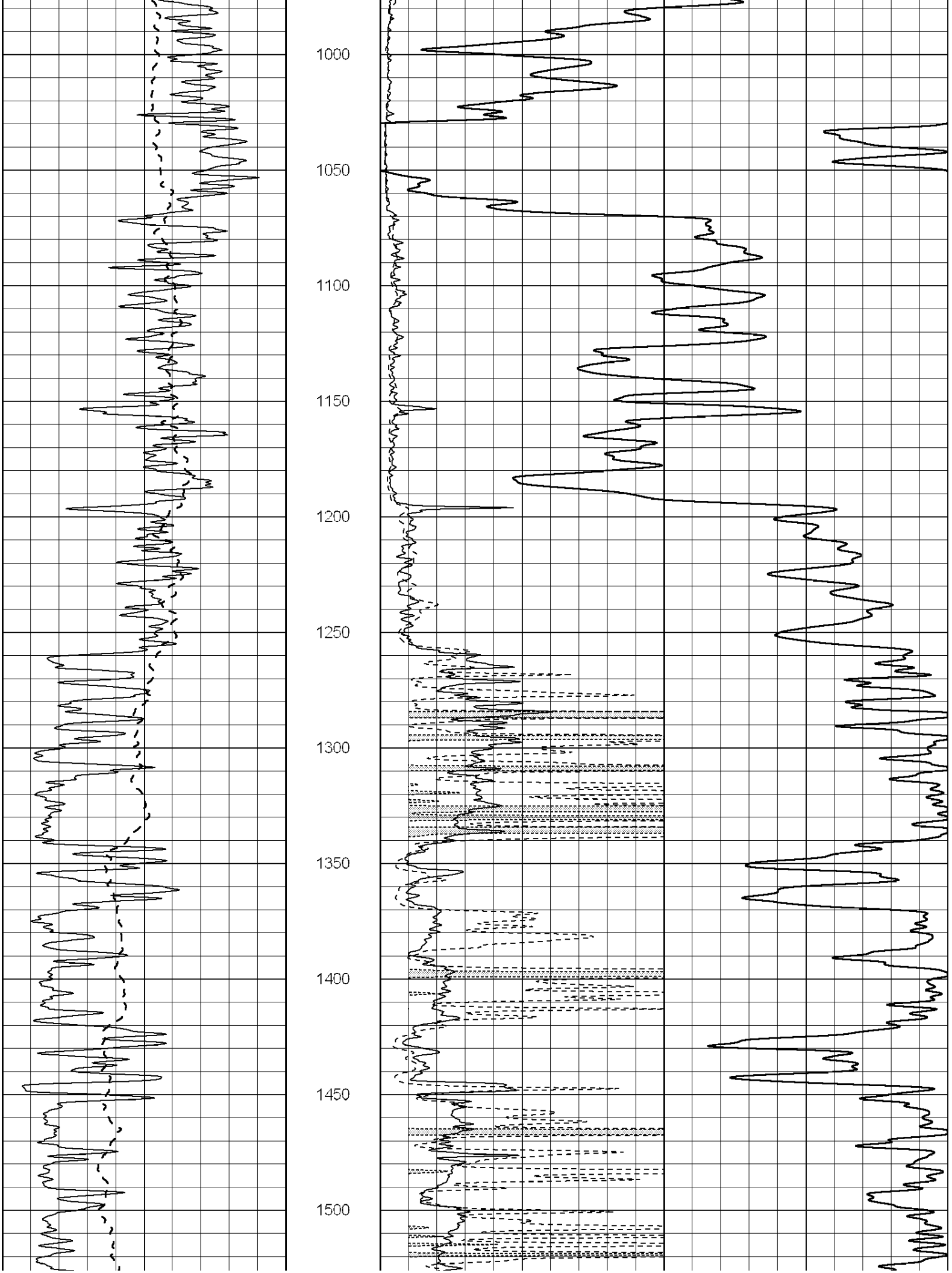
# MAIN SECTION

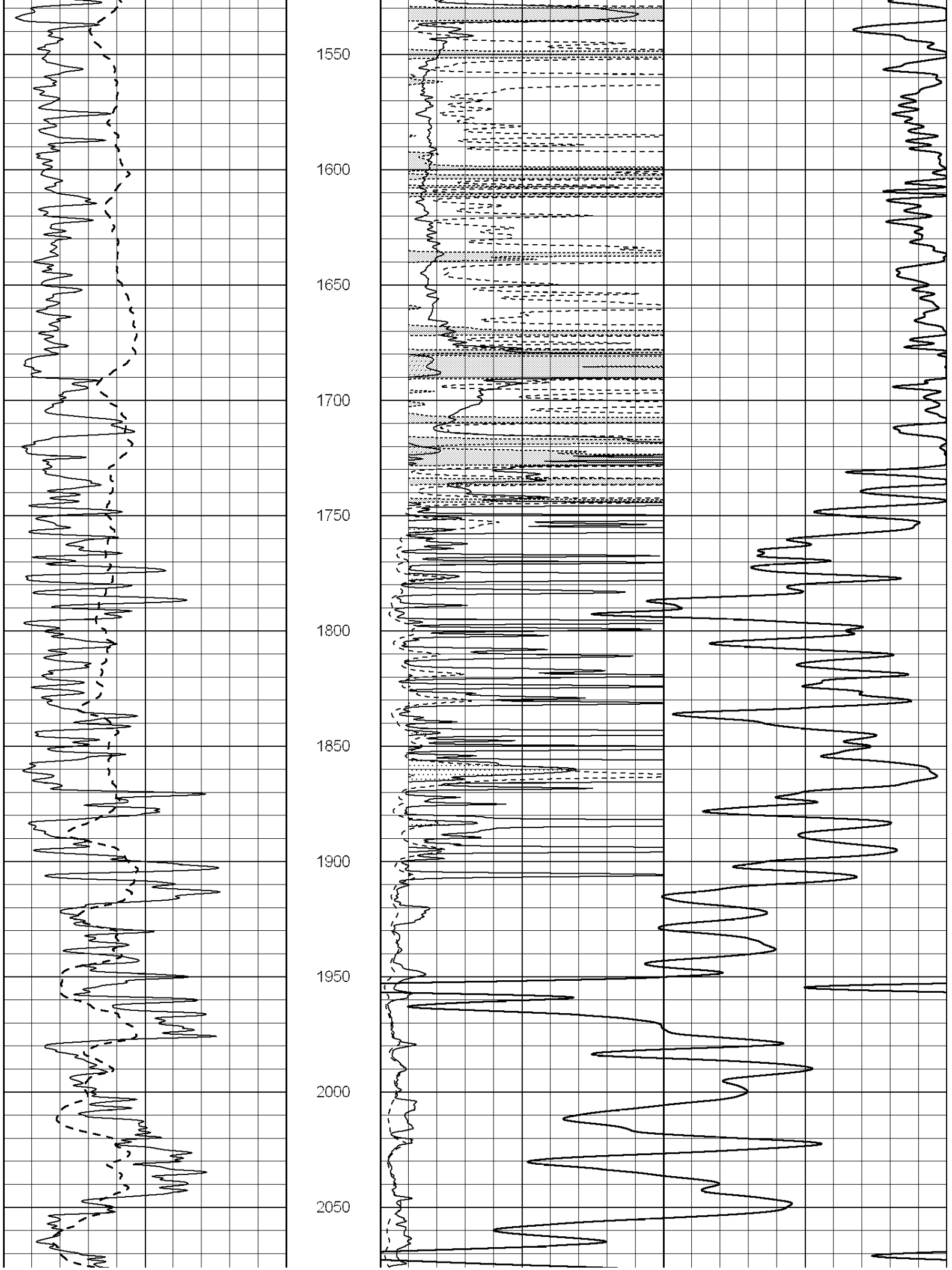
SERVICES CO.

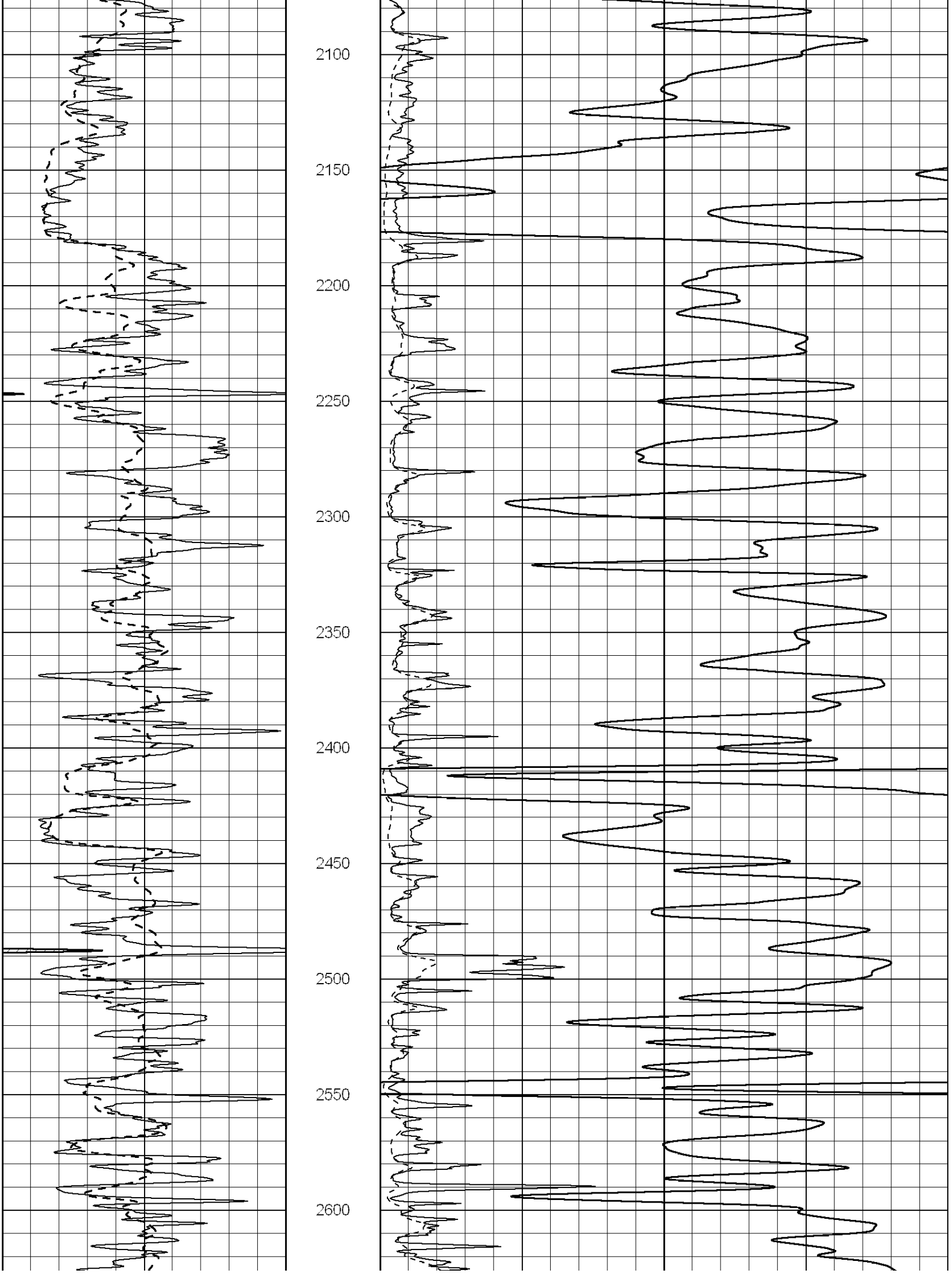
Database File: 011698ddn.db
Dataset Pathname: pass3.8
Presentation Format: dil2
Dataset Creation: Mon Oct 28 17:05:10 2013 by Calc SOC 120430
Charted by: Depth in Feet scaled 1:600

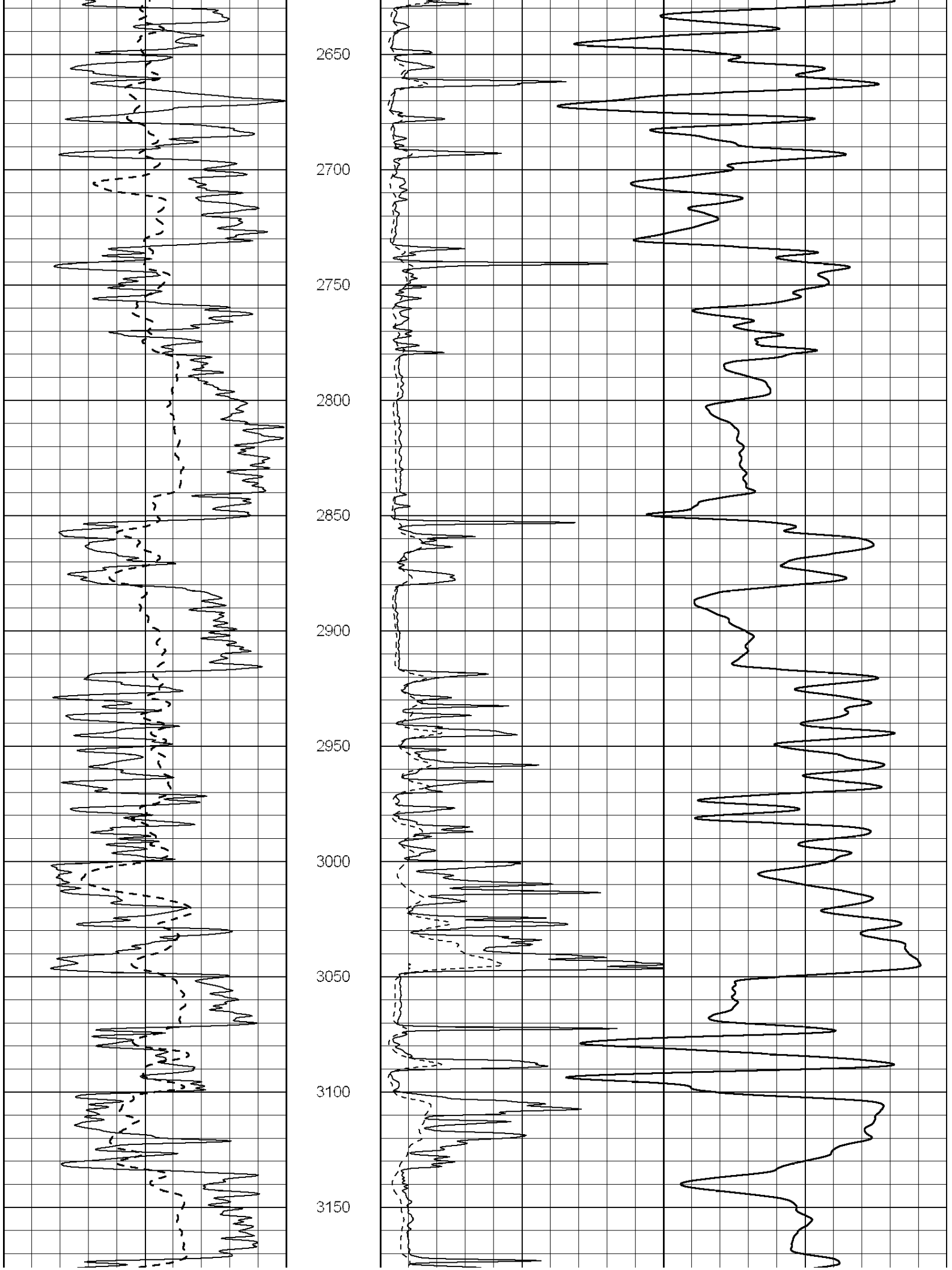


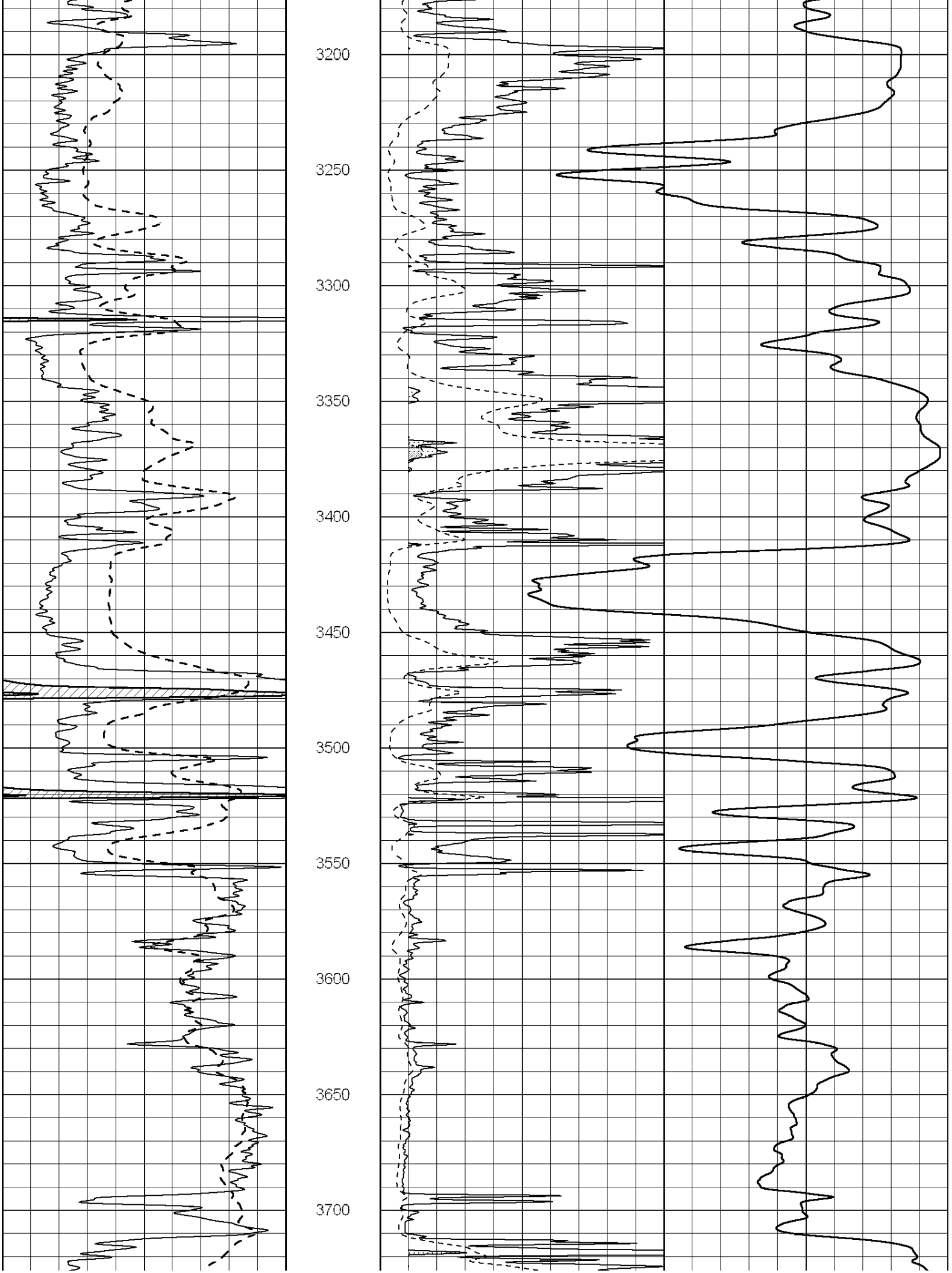

450
500
550
600
650
700
750
800
850
900
950

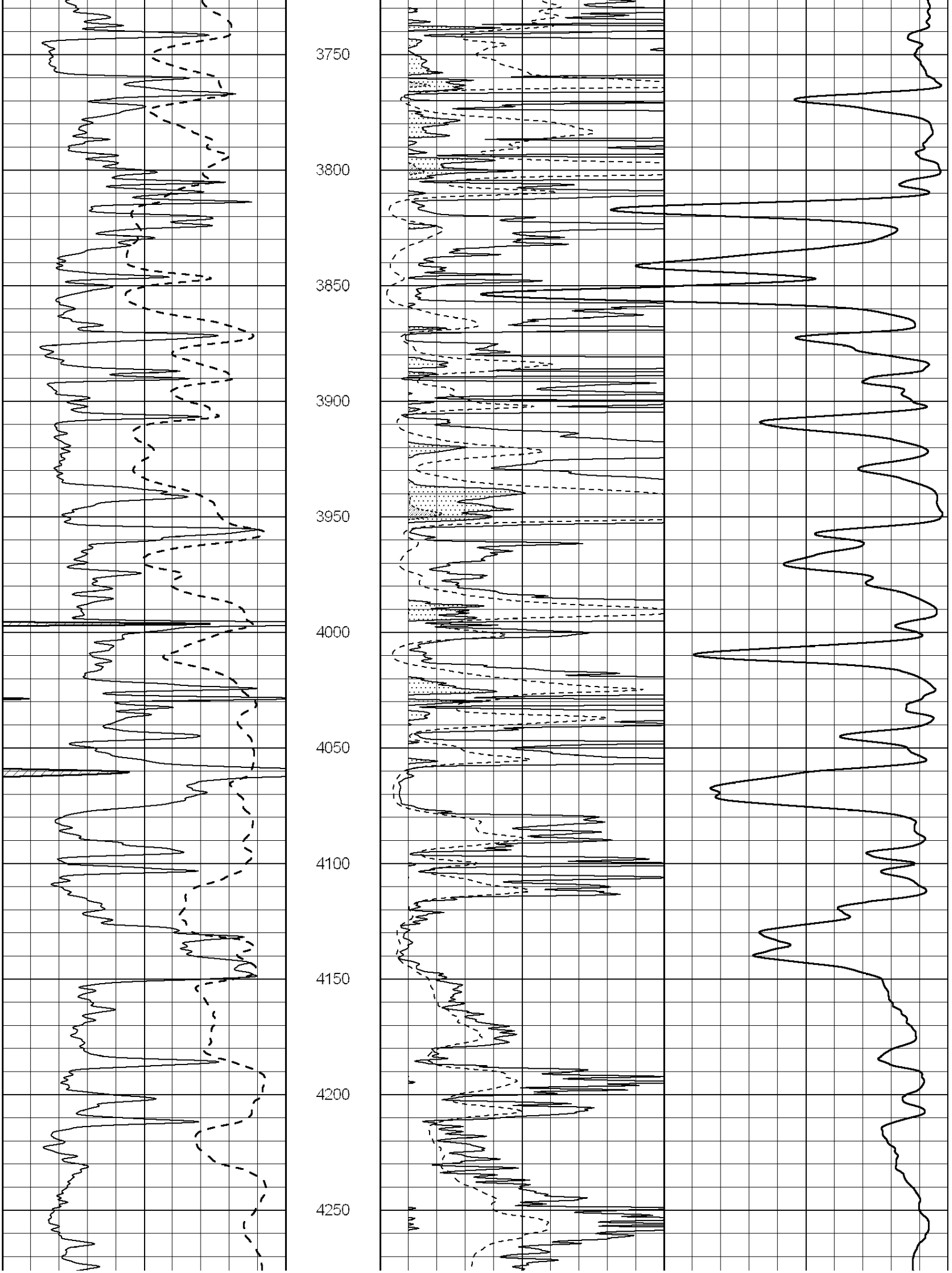

1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500

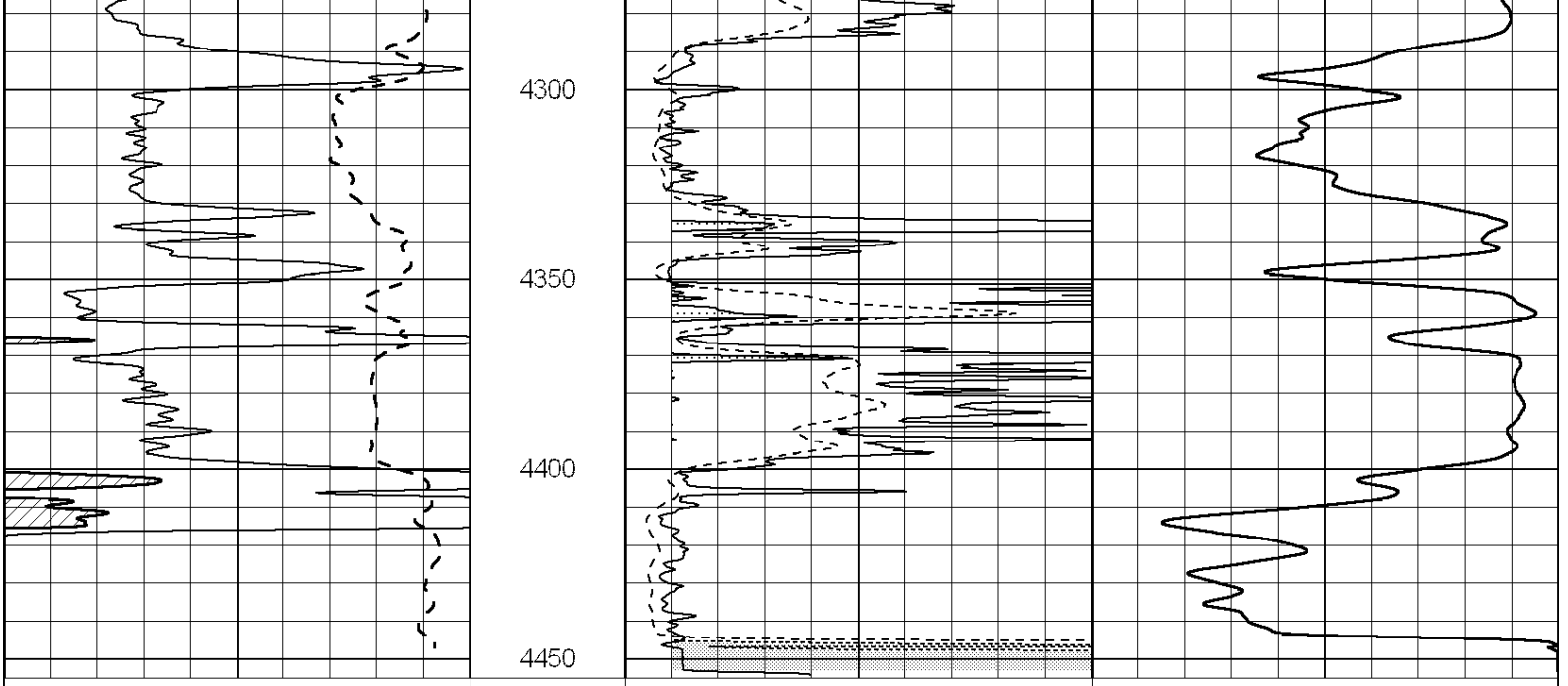

1550
1600
1650
1700
1750
1800
1850
1900
1950
2000
2050


2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600


2650
2700
2750
2800
2850
2900
2950
3000
3050
3100
3150


3200
3250
3300
3350
3400
3450
3500
3550
3600
3650
3700


3750
3800
3850
3900
3950
4000
4050
4100
4150
4200
4250



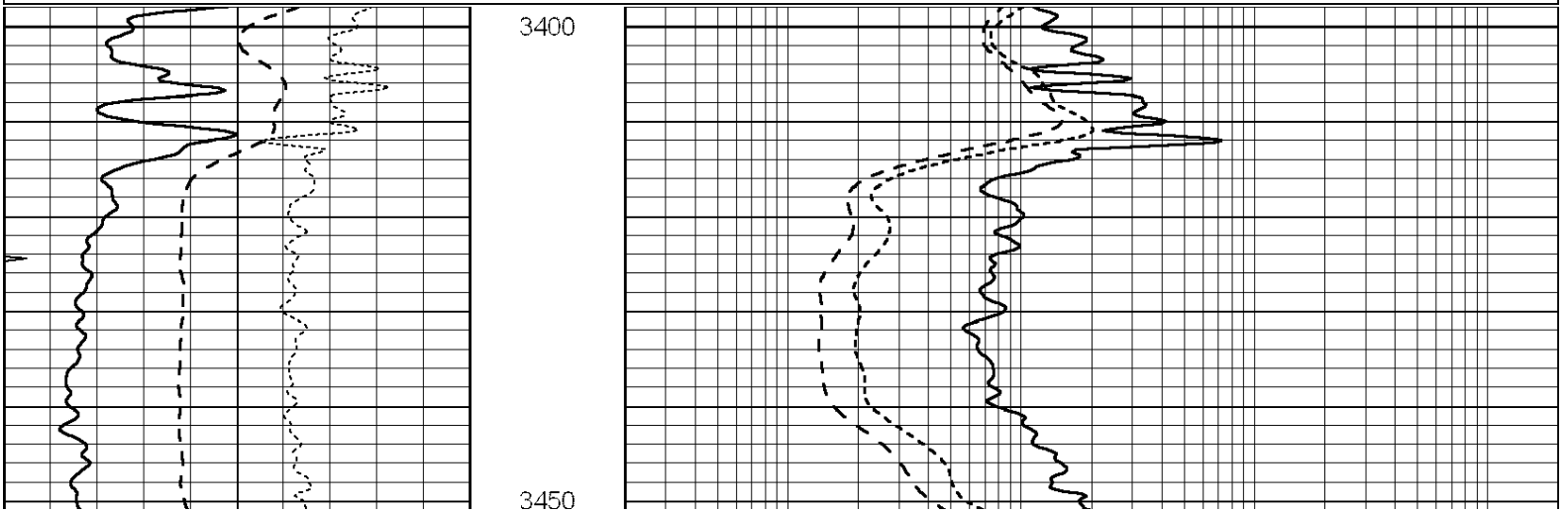

NABORS
COMPLETION & PRODUCTION SERVICES CO.

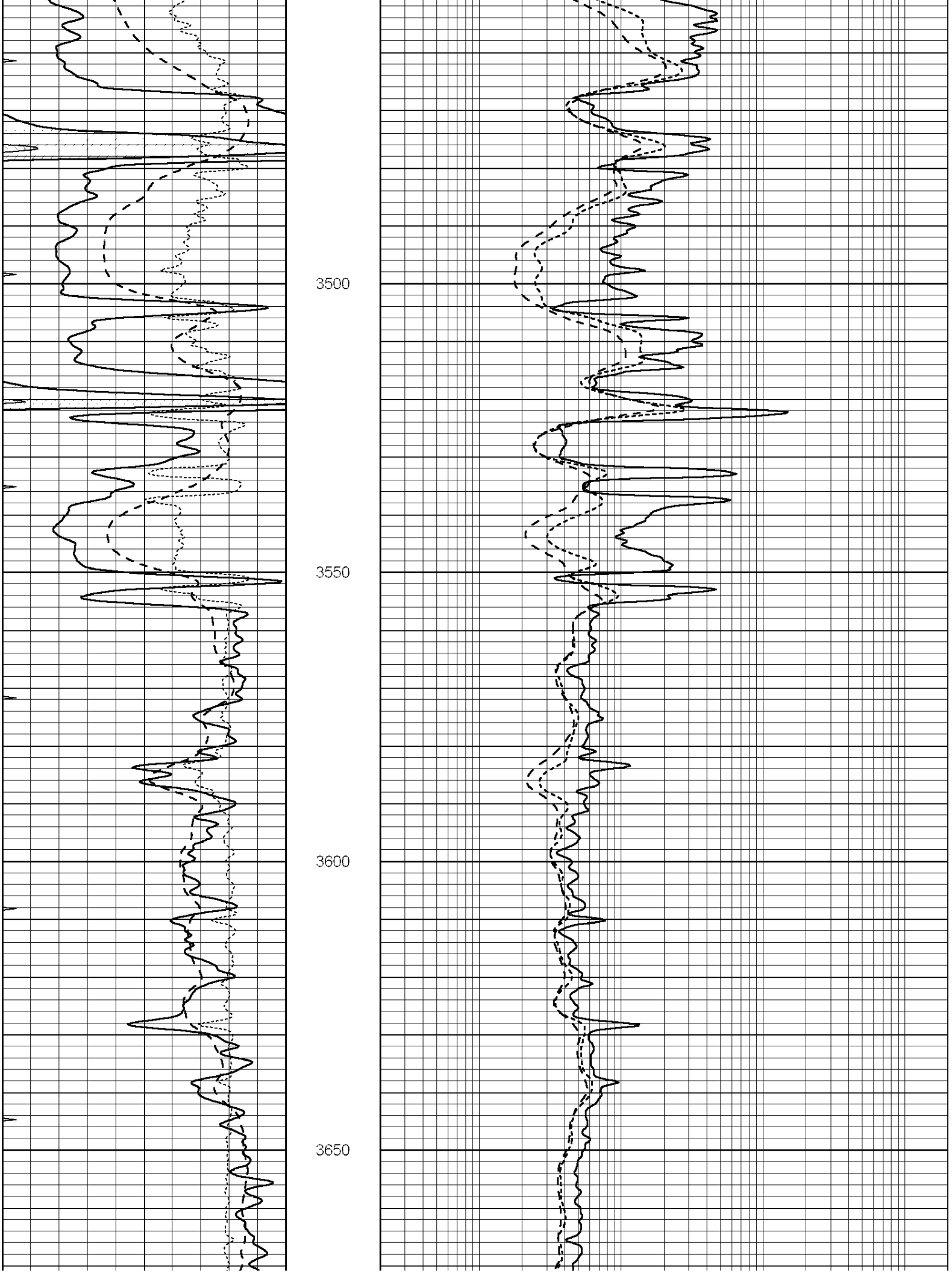
# MAIN SECTION

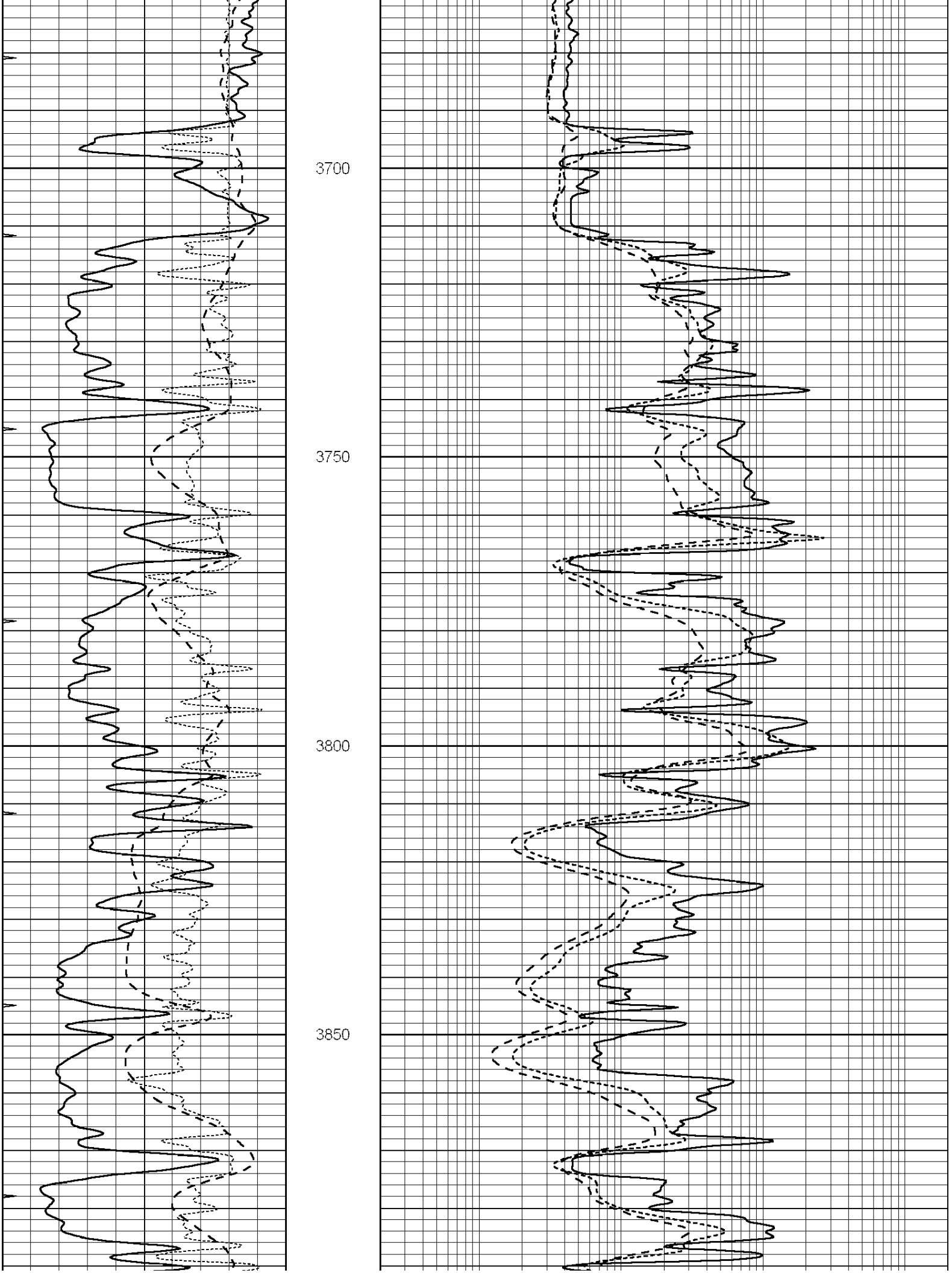
Database File: 011698ddn.db
Dataset Pathname: pass3.8
Presentation Format: dil
Dataset Creation: Mon Oct 28 17:05:10 2013 by Calc SOC 120430
Charted by: Depth in Feet scaled 1:240

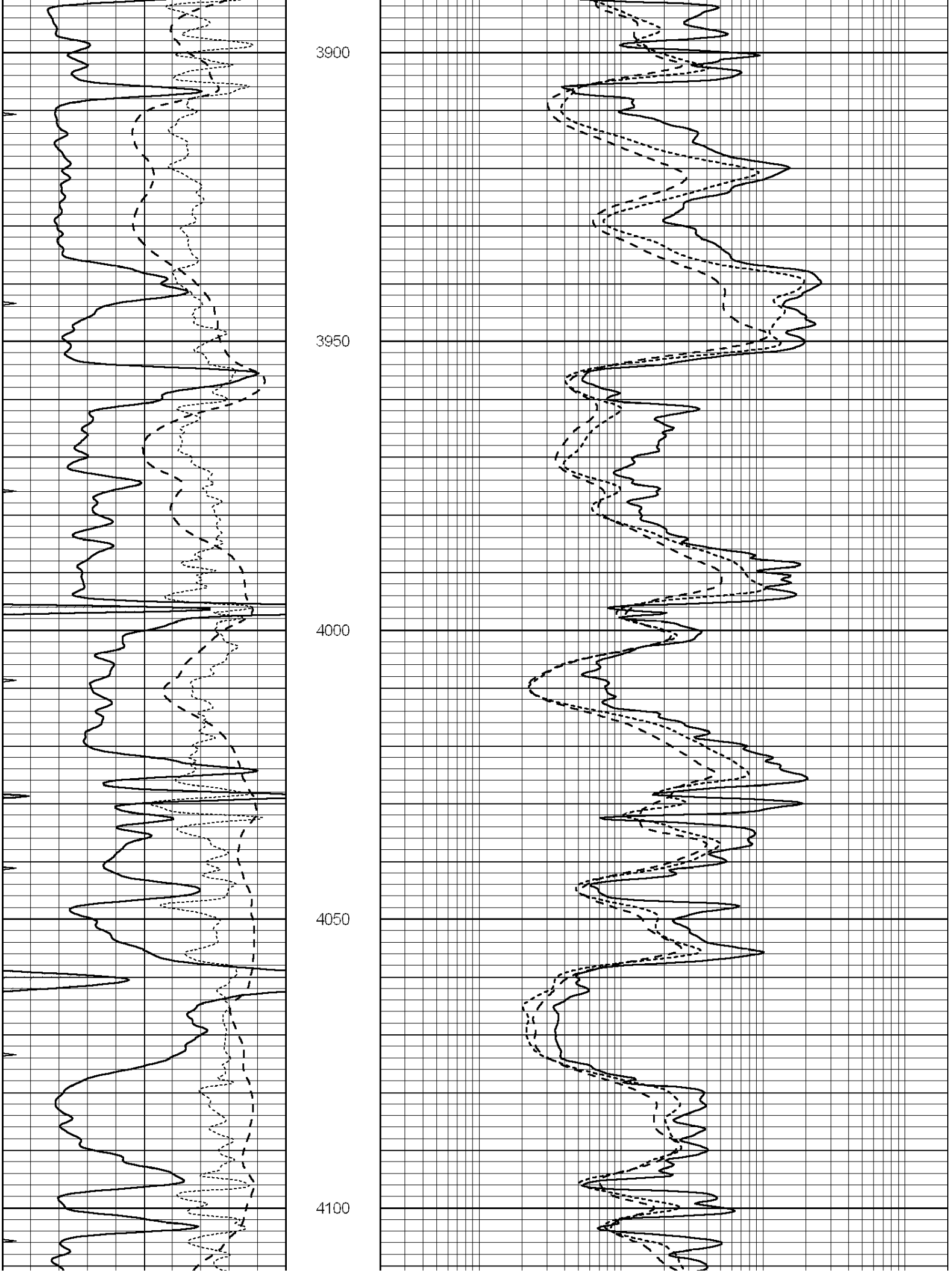
| | | |
|---|---|---|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 20 |

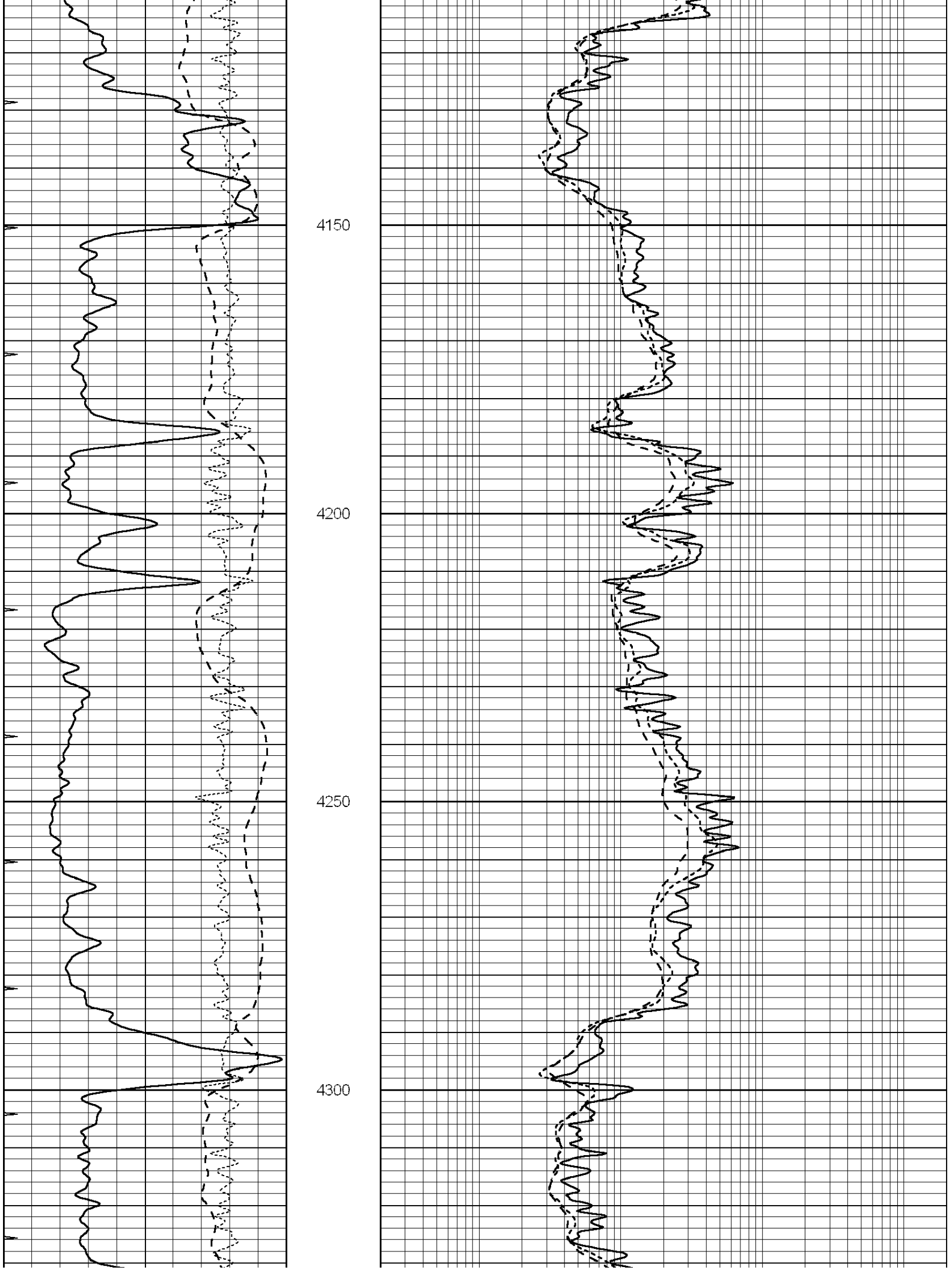
| | | |
|---|---|---|
| 0.2 | SHALLOW GUARD (Ohm-m) | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |

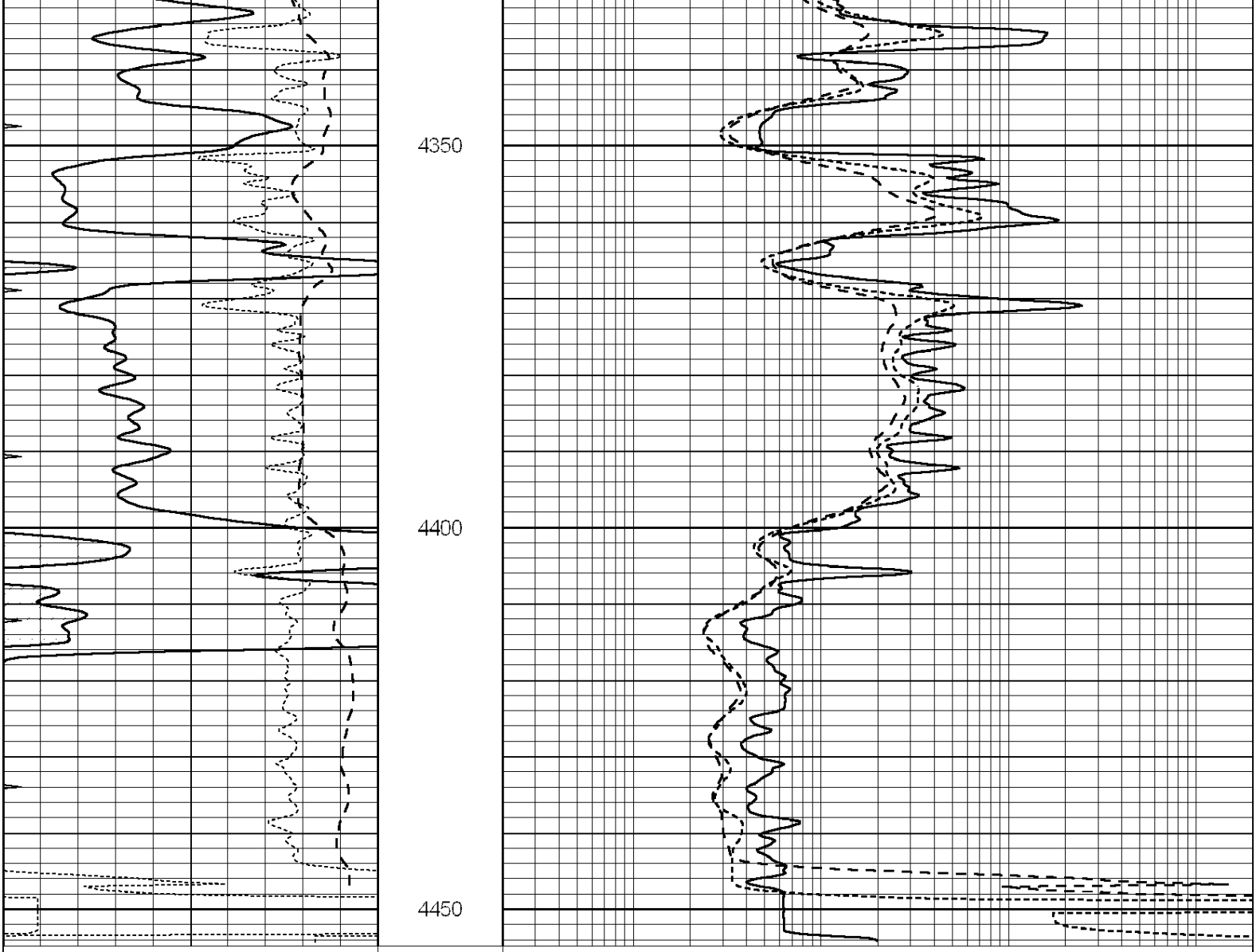



3500
3550
3600
3650


3700
3750
3800
3850


3900
3950
4000
4050
4100


4150
4200
4250
4300




| | | |
|---|---|---|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 20 |

| | | |
|---|---|---|
| 0.2 | SHALLOW GUARD (Ohm-m) | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |

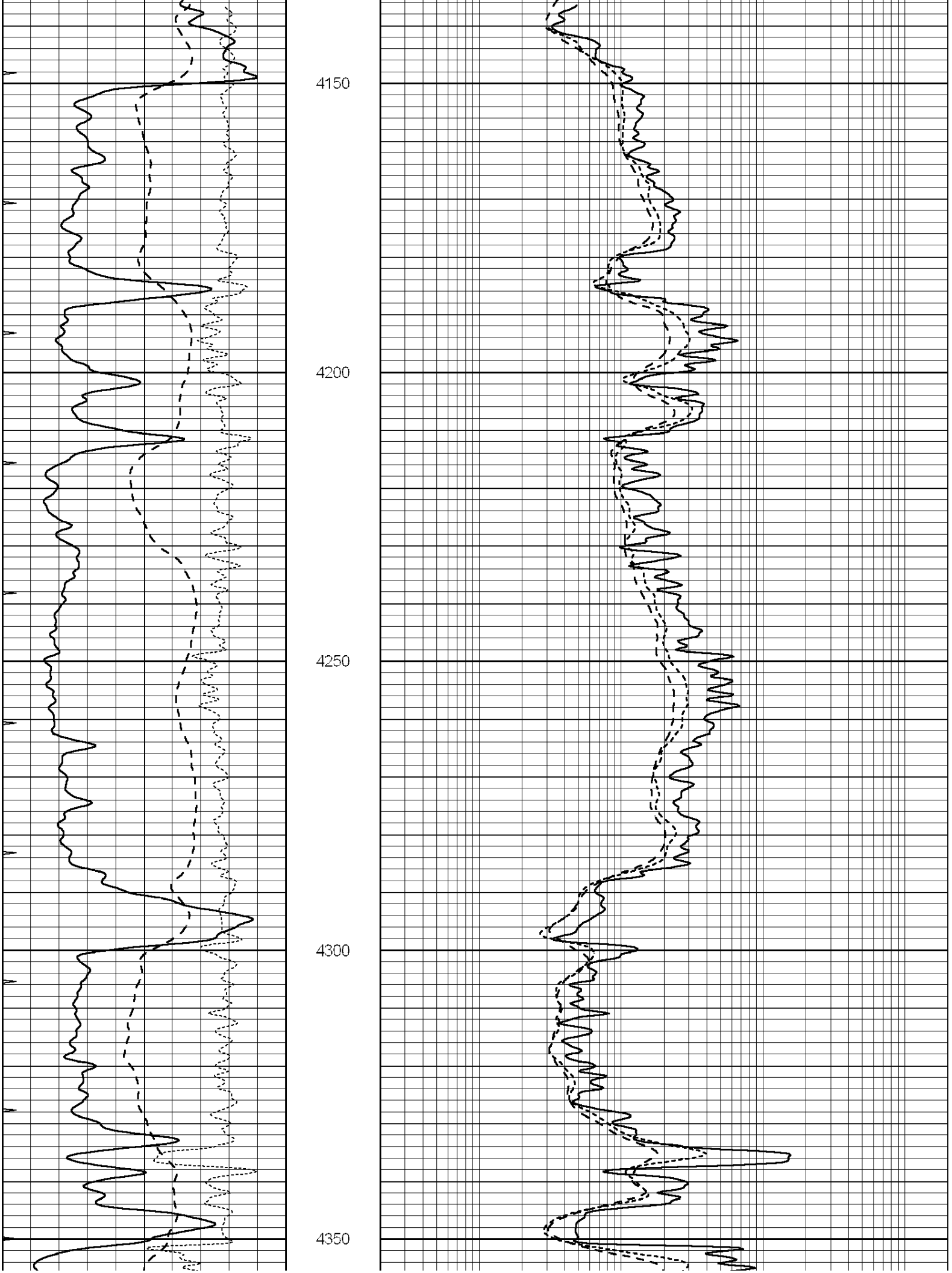
NABORS
COMPLETION & PRODUCTION SERVICES CO.

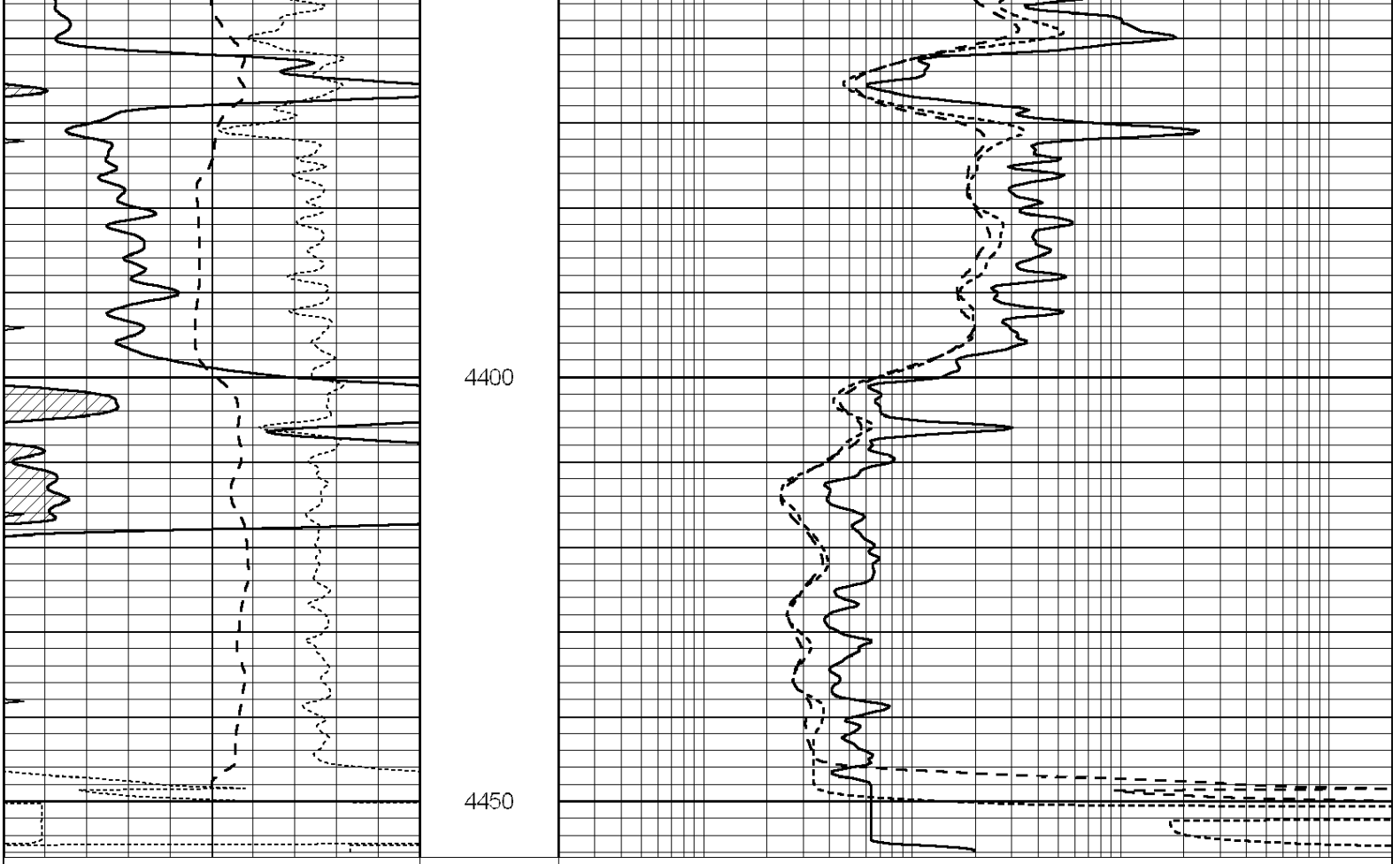
# REPEAT SECTION

| | |
|---|---|
| Database File: | 011698ddn.db |
| Dataset Pathname: | pass2.2 |
| Presentation Format: | _dil |
| Dataset Creation: | Mon Oct 28 17:19:48 2013 by Calc SOC 120430 |
| Charted by: | Depth in Feet scaled 1:240 |

| | | |
|---|---|---|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 20 |

| | | |
|---|---|---|
| 0.2 | SHALLOW GUARD (Ohm-m) | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |


4150
4200
4250
4300
4350




## Calibration Report

Database File: 011698ddn.db
Dataset Pathname: pass3.8
Dataset Creation: Mon Oct 28 17:05:10 2013 by Calc SOC 120430

### Dual Induction Calibration Report

| | |
|---|---|
| Serial-Model: | PROBE9-DILG |
| Surface Cal Performed: | Thu Oct 24 00:58:04 2013 |
| 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 | -12.000 |
| Medium | 0.039 | 0.728 | V | 0.000 | 464.000 | mmho/m | 640.000 | -17.000 |
| 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: Mon Oct 21 18:53:38 2013

| | | |
|---|---|---|
| Calibrator Value: | 1.0 | GAPI |
| Background Reading: | 0.0 | cps |
| Calibrator Reading: | 1.0 | cps |
| Sensitivity: | 0.3000 | GAPI/cps |