# DUAL INDUCTION LOG

Company SHAKESPEARE OIL COMPANY, INC.
Well OTTLEY #4-10
Field CHALK BUTTES
County LOGAN State KANSAS

Location: API # : 15-109-21667-0000
513' FSL & 1612' FEL
NE - SE - SW - SE
SEC 10 TWP 14S RGE 32W

Other Services
CDL/CNL/PE
MEL/SONIC

Permanent Datum GROUND LEVEL Elevation 2768
Log Measured From KELLY BUSHING 9' A.G.L.
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2777
D.F. 2775
G.L. 2768

Company SHAKESPEARE OIL COMPANY, INC.
Well OTTLEY #4-10
Field CHALK BUTTES
County LOGAN
State KANSAS

| | | | |
|---|---|---|---|
| Date | 6/1/23 | | |
| Run Number | ONE | | |
| Depth Driller | 5030 | | |
| Depth Logger | 5030 | | |
| Bottom Logged Interval | 5028 | | |
| Top Log Interval | 00 | | |
| Casing Driller | 8 5/8"@264' | | |
| Casing Logger | 264 | | |
| Bit Size | 7 7/8" | | |
| Type Fluid in Hole | CHEMICAL MUD | CHLORIDES 2,500 PPM | |
| Density / Viscosity | 9.2/63 | | |
| pH / Fluid Loss | 10.0/7.2 | | |
| Source of Sample | FLOWLINE | | |
| Rm @ Meas. Temp | 1.00@80F | | |
| Rmf @ Meas. Temp | .750@80F | | |
| Rmc @ Meas. Temp | 1.20@80F | | |
| Source of Rmf / Rmc | MEASUREMENT | | |
| Rm @ BHT | .640@125F | | |
| Time Circulation Stopped | 3 HOURS | | |
| Time Logger on Bottom | 6:30 A.M. | | |
| Maximum Recorded Temperature | 125F | | |
| Equipment Number | 922339 | | |
| Location | HAYS, KANSAS | | |
| Recorded By | JEFF LUEBBERS | | |
| Witnessed By | KENT MATSON | | |

<<< Fold Here >>>



Comments

15-109-21667-0000

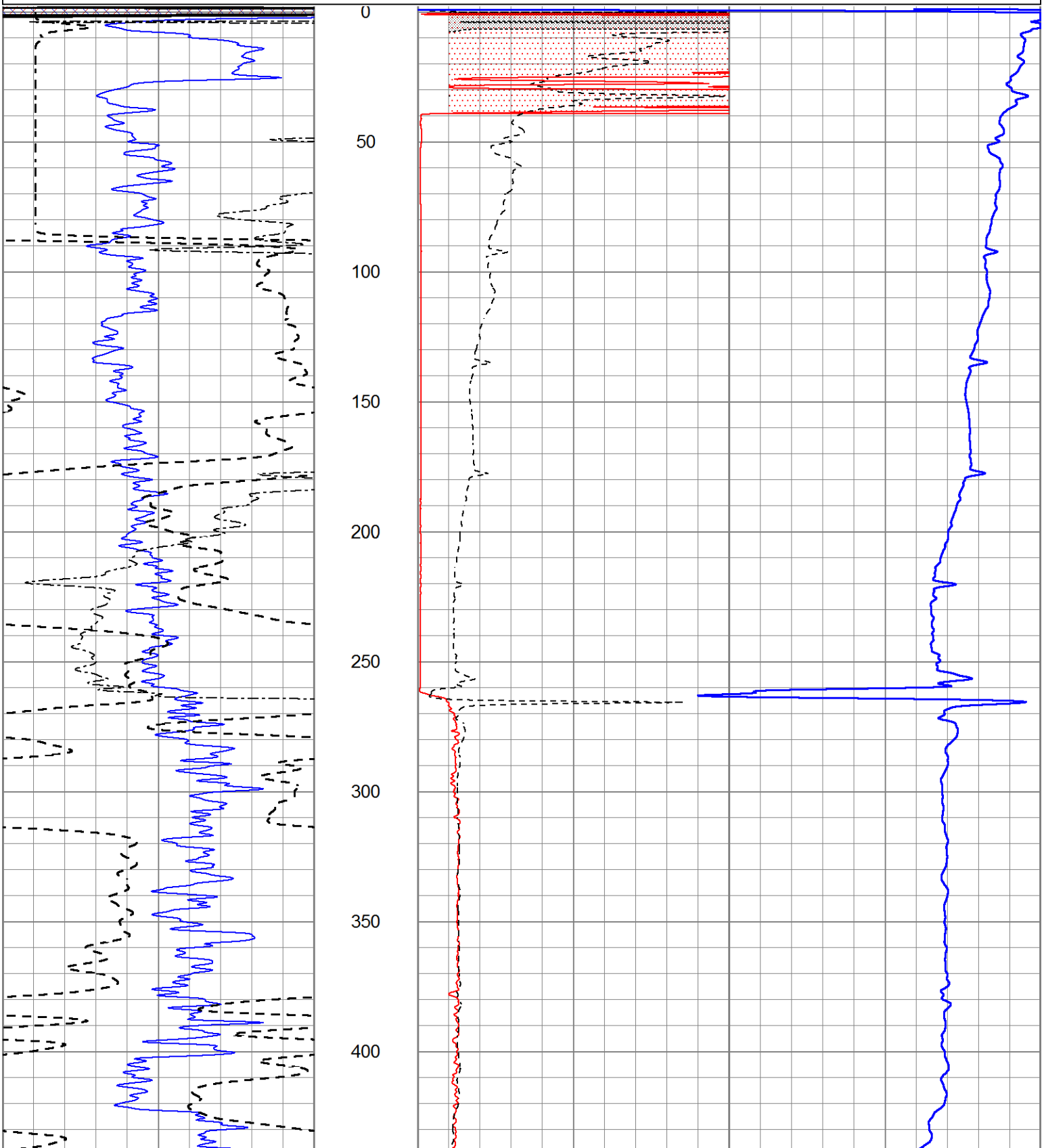
THANK YOU FOR USING ELI WIRELINE HAYS, KANSAS (785) 628-6395
DIRECTIONS
OAKLEY, KS., 19S. ON HWY 83, 1/2 W. INTO

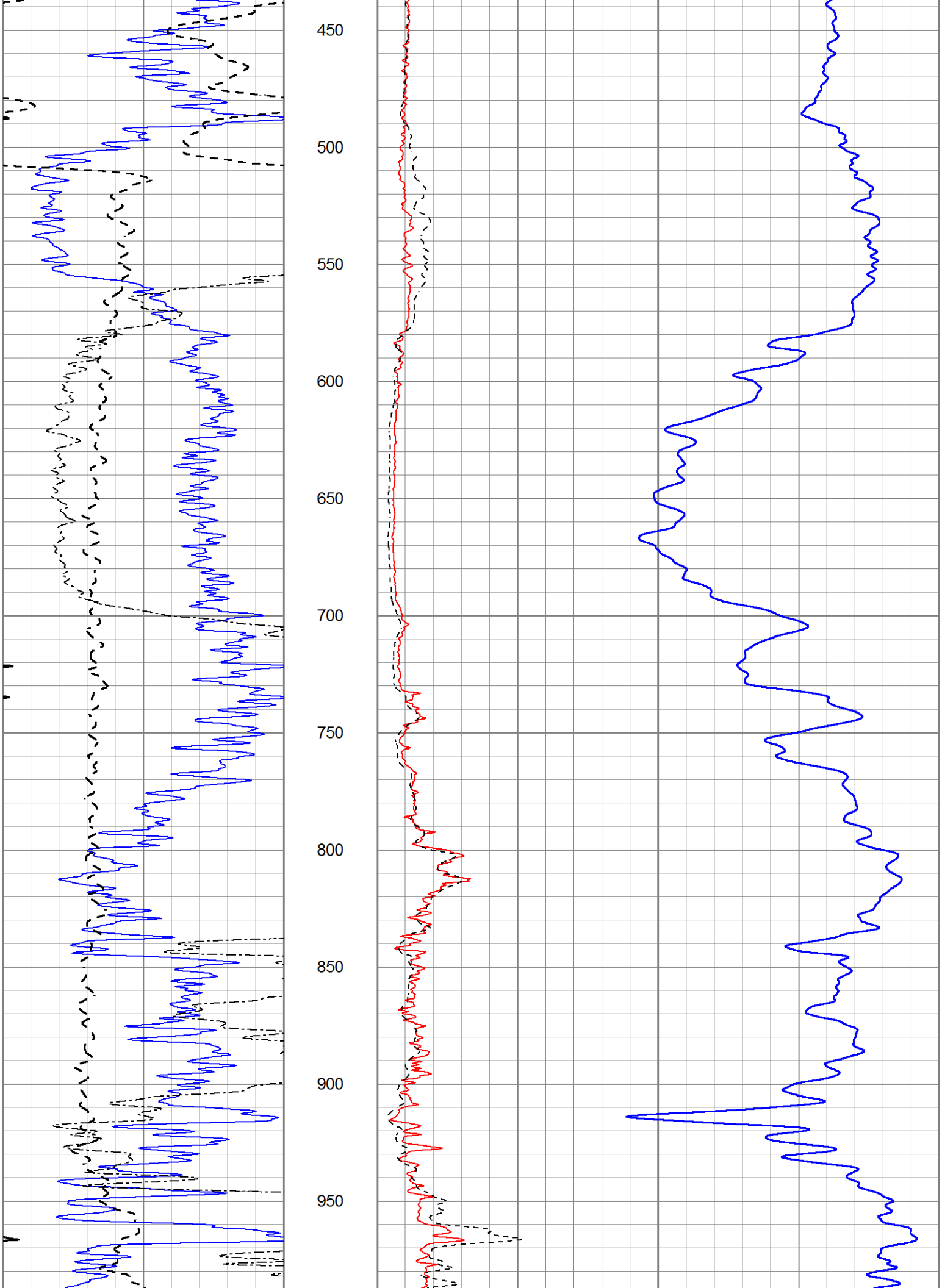
MAIN SECTION

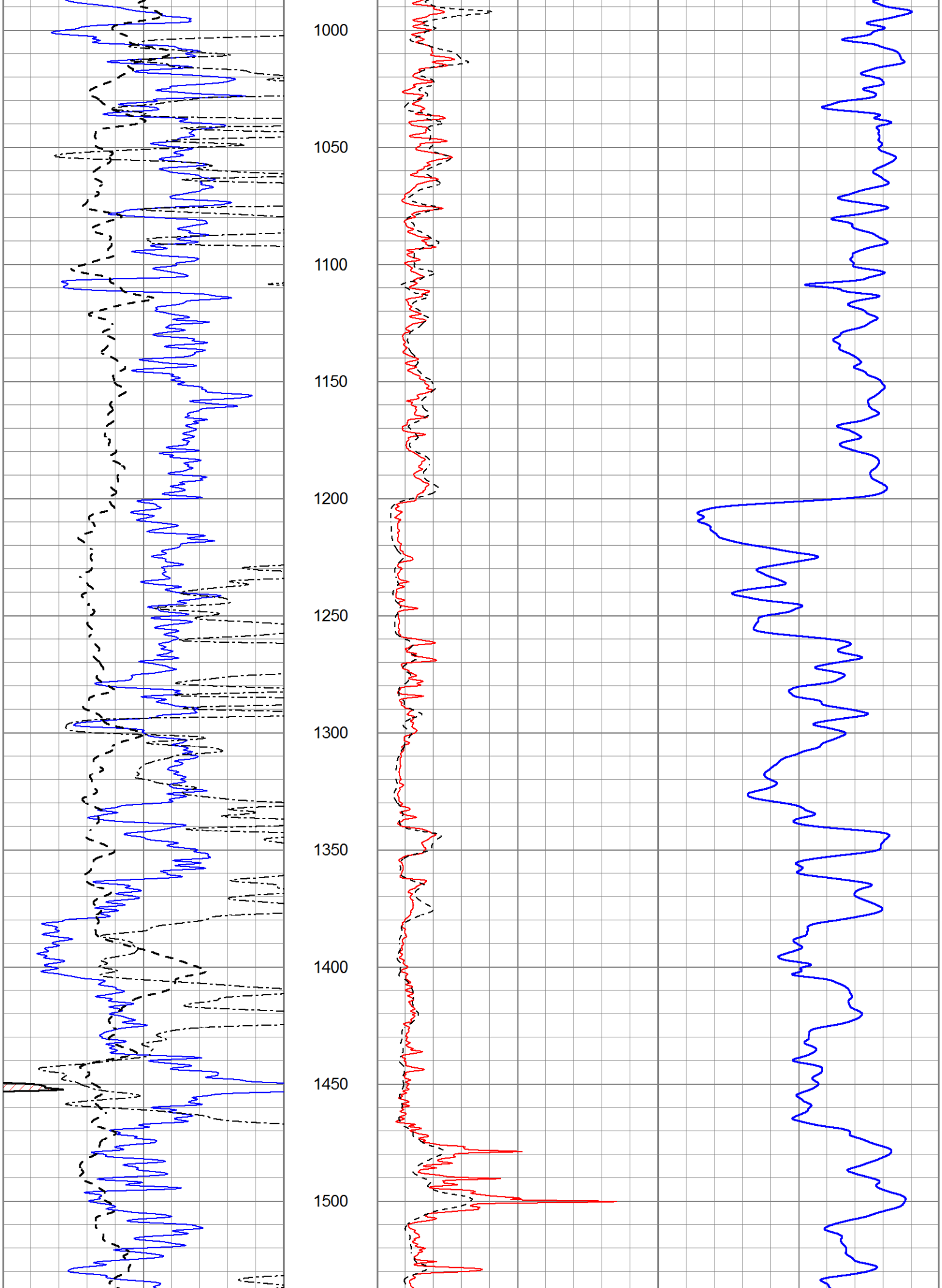
| | |
|---|---|
| Database File | 7891pe.db |
| Dataset Pathname | pass3.1M |
| Presentation Format | _dil2 |
| Dataset Creation | Thu Jun 01 08:39:50 2023 |
| Charted by | Depth in Feet scaled 1:600 |

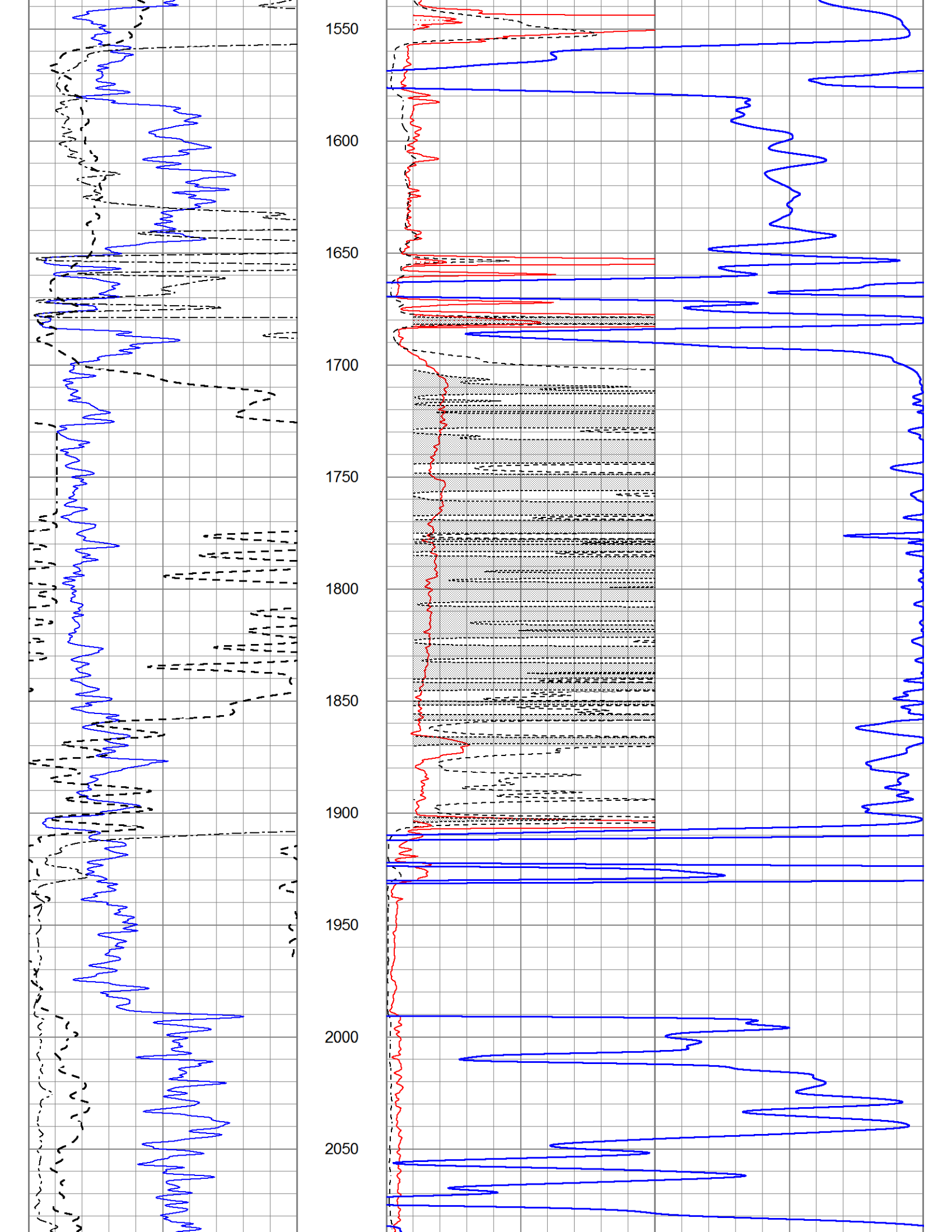
| | | |
|---|---|---|
| 0 | Gamma Ray (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| 0 | RWA (Ohm-m) | 1 |

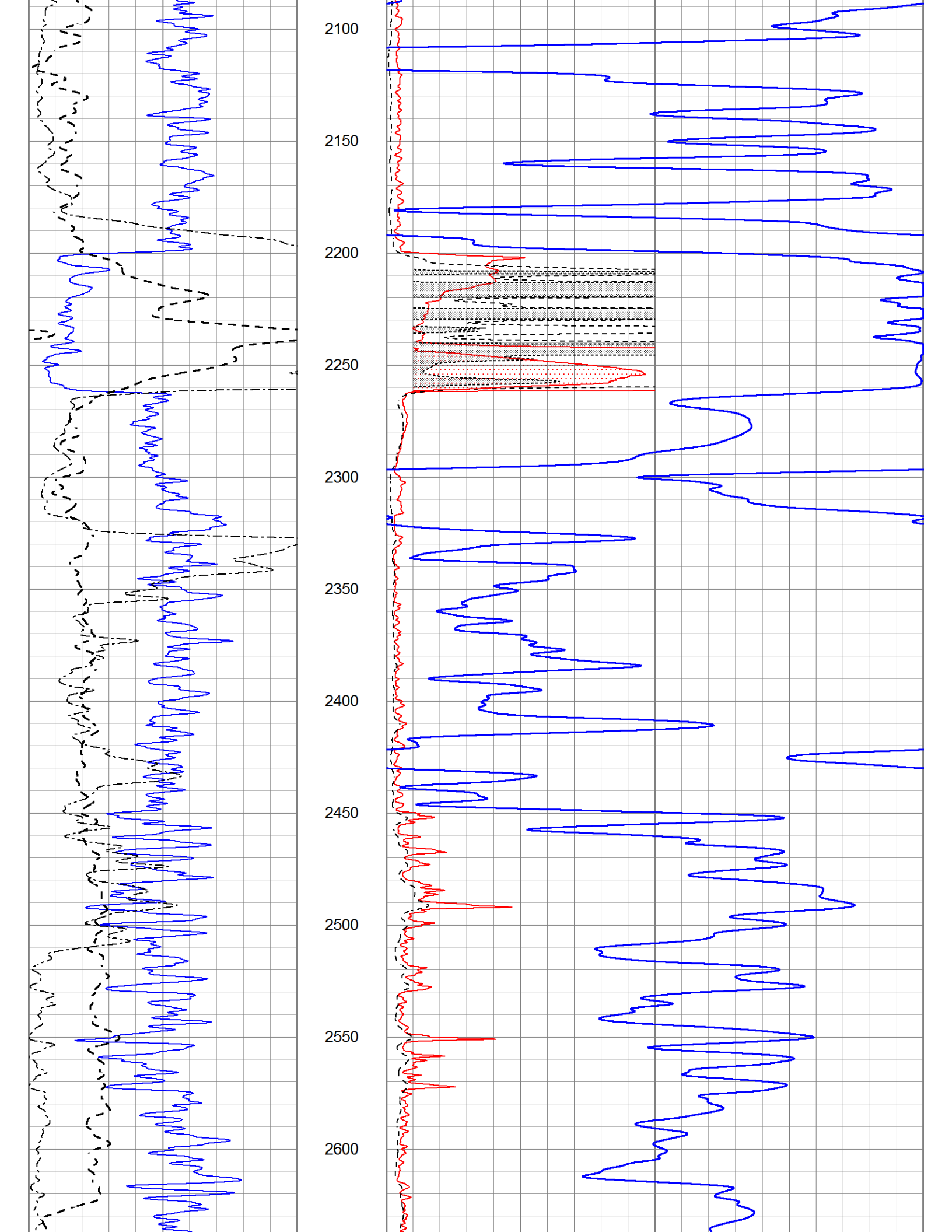
| | | |
|---|---|---|
| 1000 | CILD (mmho/m) | 0 |
| 0 | RLL3 (Ohm-m) | 50 |
| 0 | RILD (Ohm-m) | 50 |
| 50 | RILD X10 (Ohm-m) | 500 |
| 50 | RLL3 X10 (Ohm-m) | 500 |

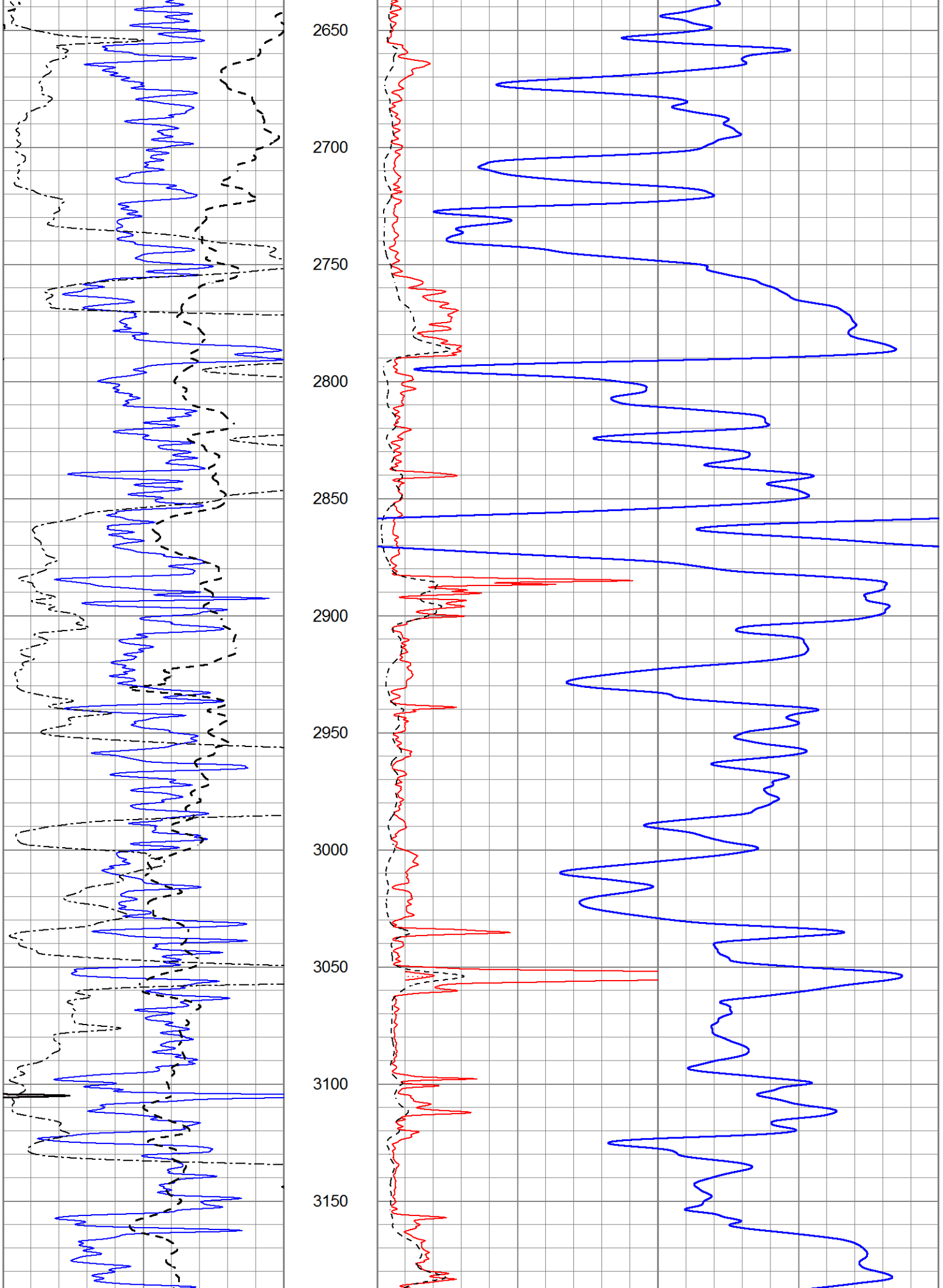


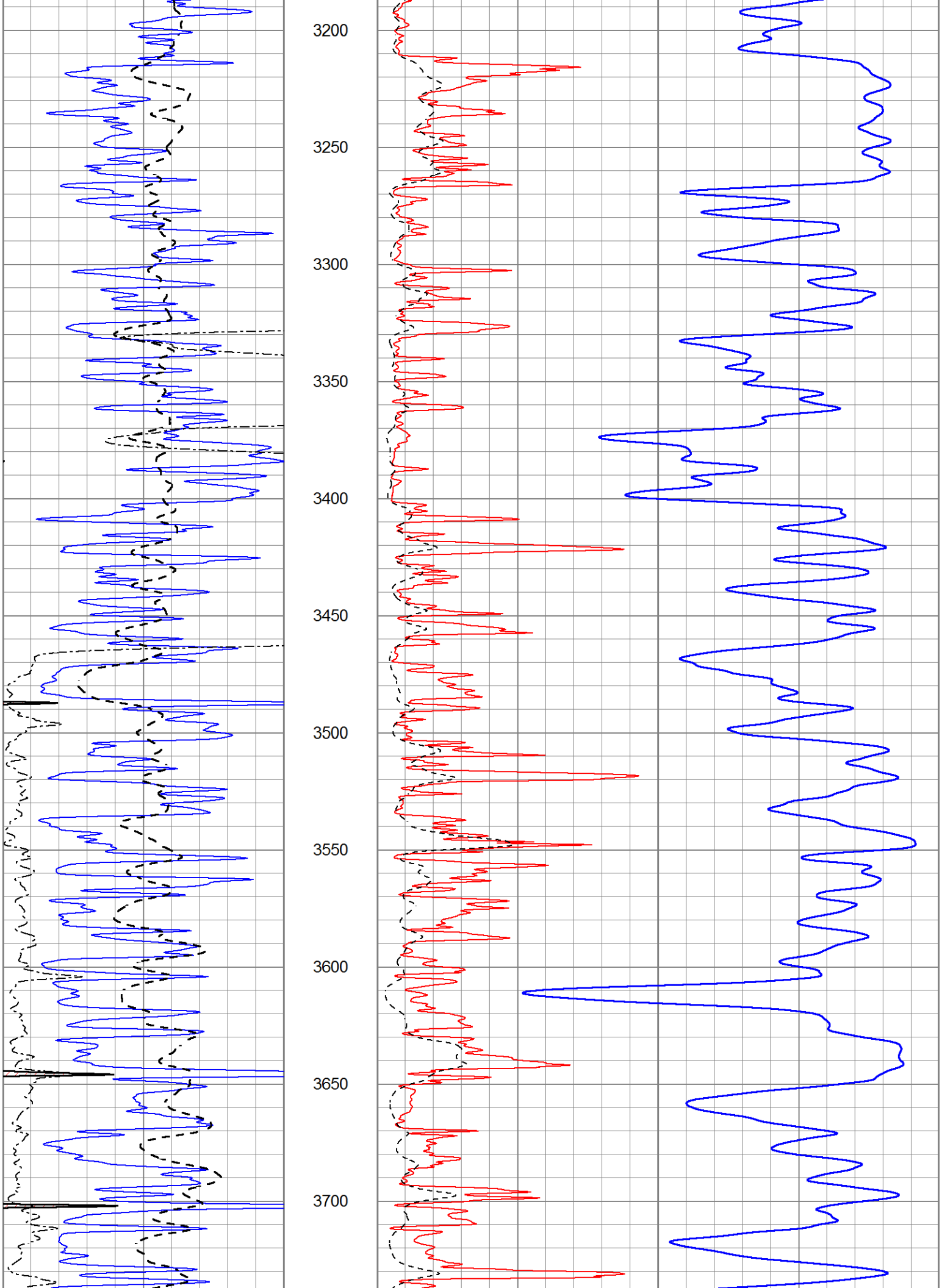

450
500
550
600
650
700
750
800
850
900
950

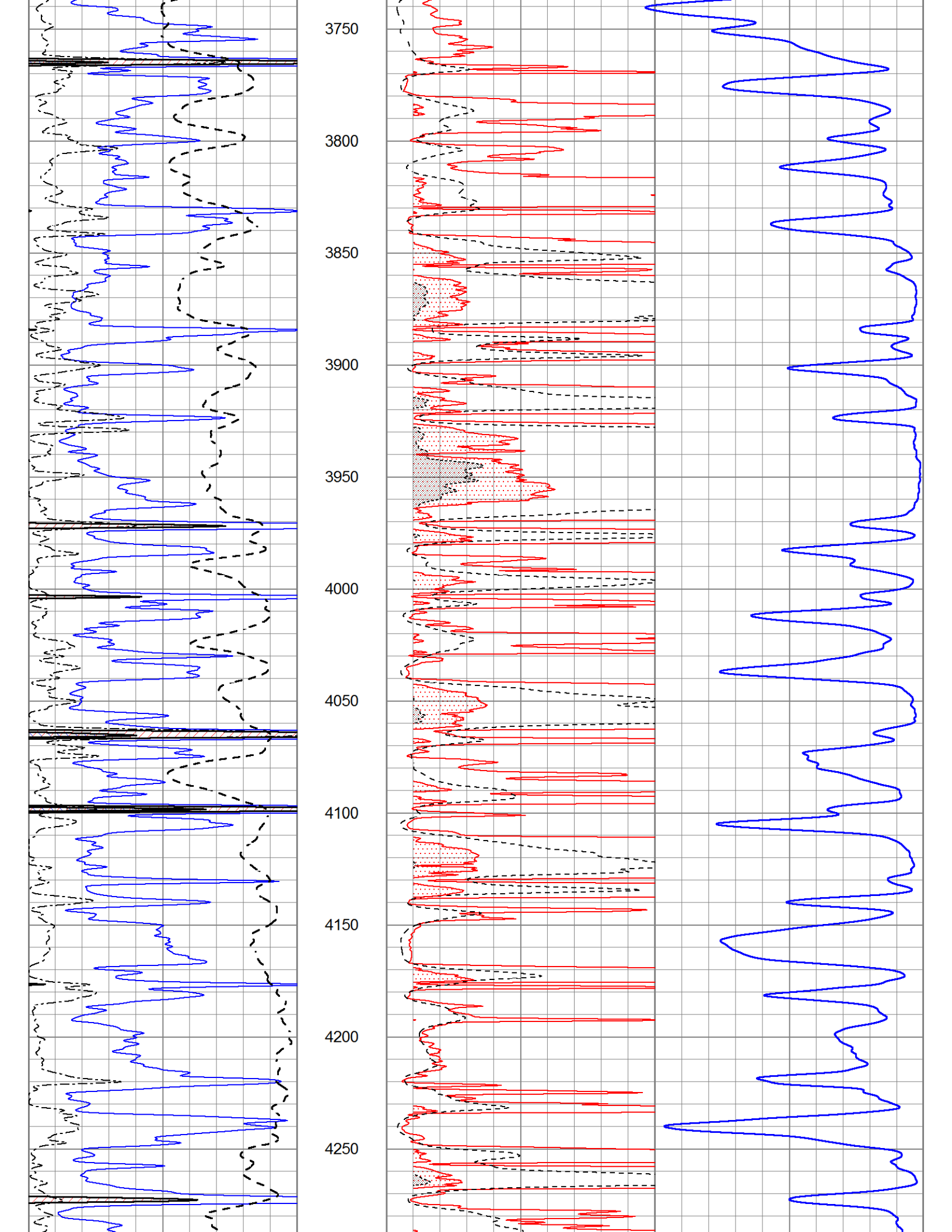

1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500

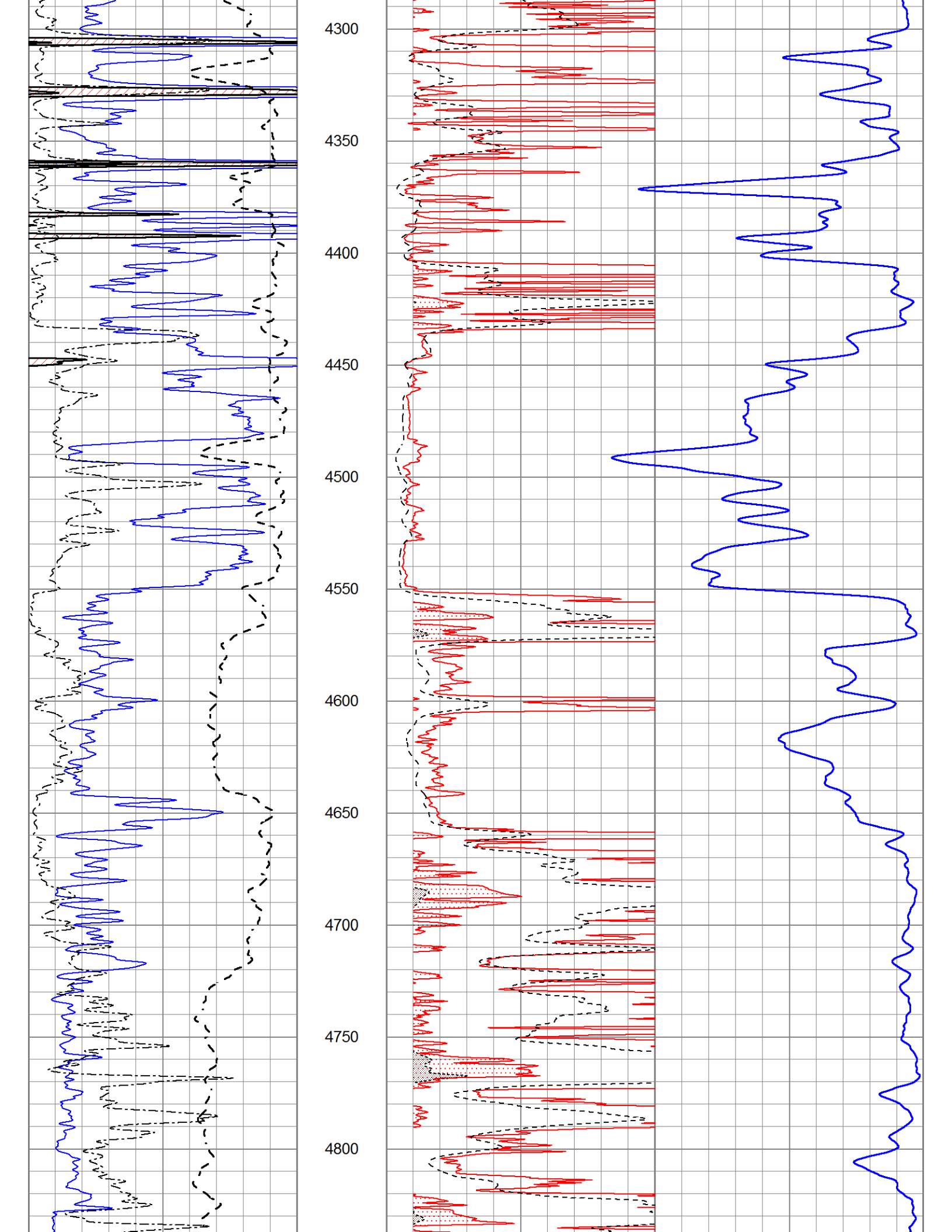

1550
1600
1650
1700
1750
1800
1850
1900
1950
2000
2050

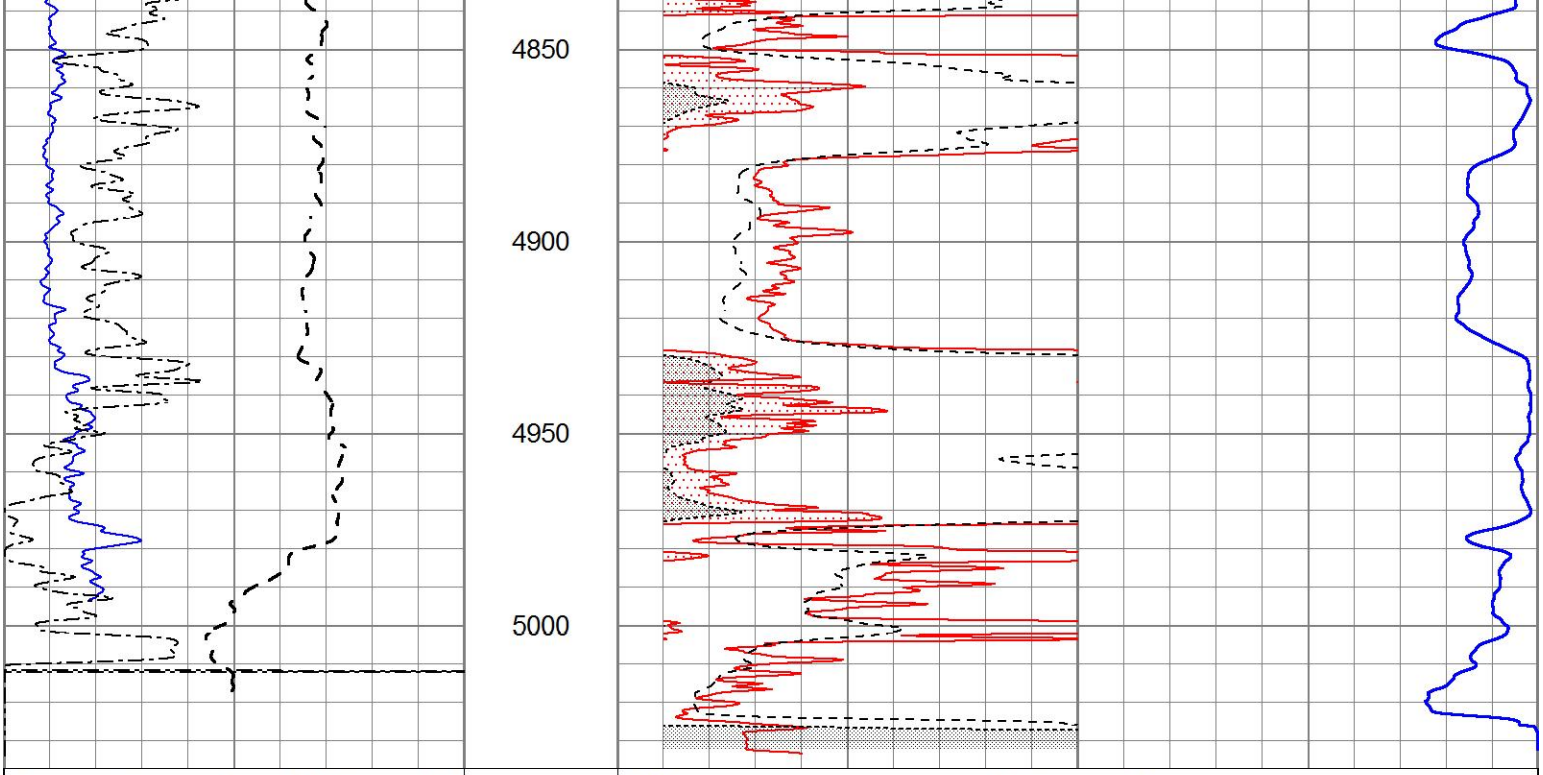

2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600


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


4300
4350
4400
4450
4500
4550
4600
4650
4700
4750
4800




| | | |
|---|---|---|
| 0 | Gamma Ray (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| 0 | RWA (Ohm-m) | 1 |

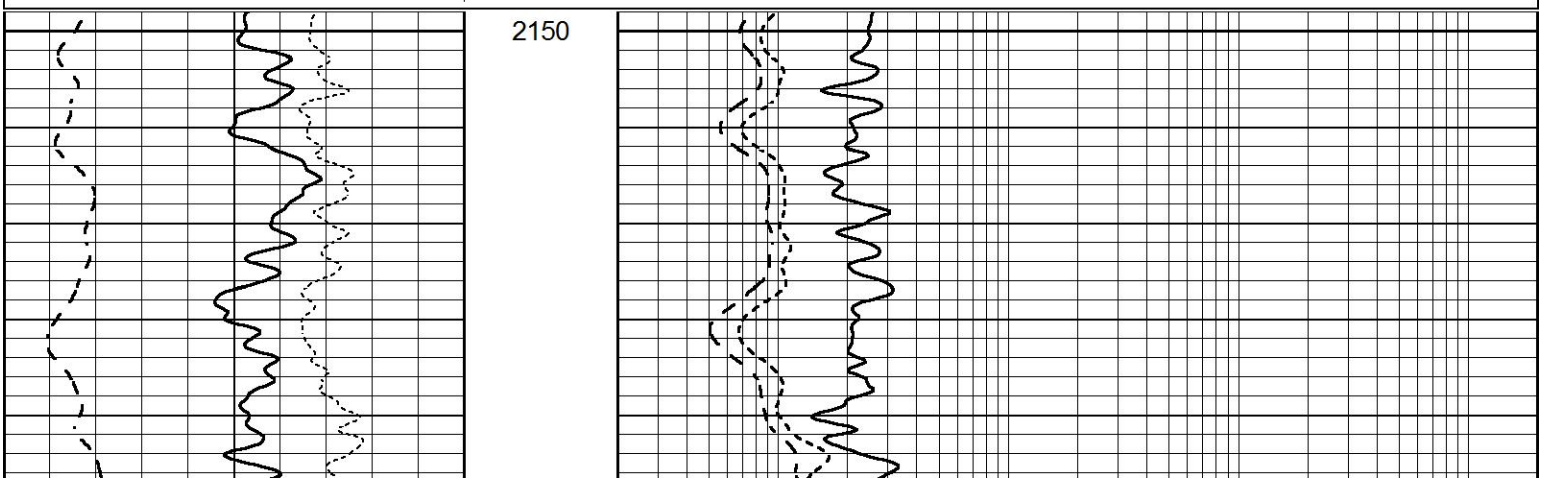
| | | |
|---|---|---|
| 1000 | CILD (mmho/m) | 0 |
| 0 | RLL3 (Ohm-m) | 50 |
| 0 | RILD (Ohm-m) | 50 |
| 50 | RILD X10 (Ohm-m) | 500 |
| 50 | RLL3 X10 (Ohm-m) | 500 |

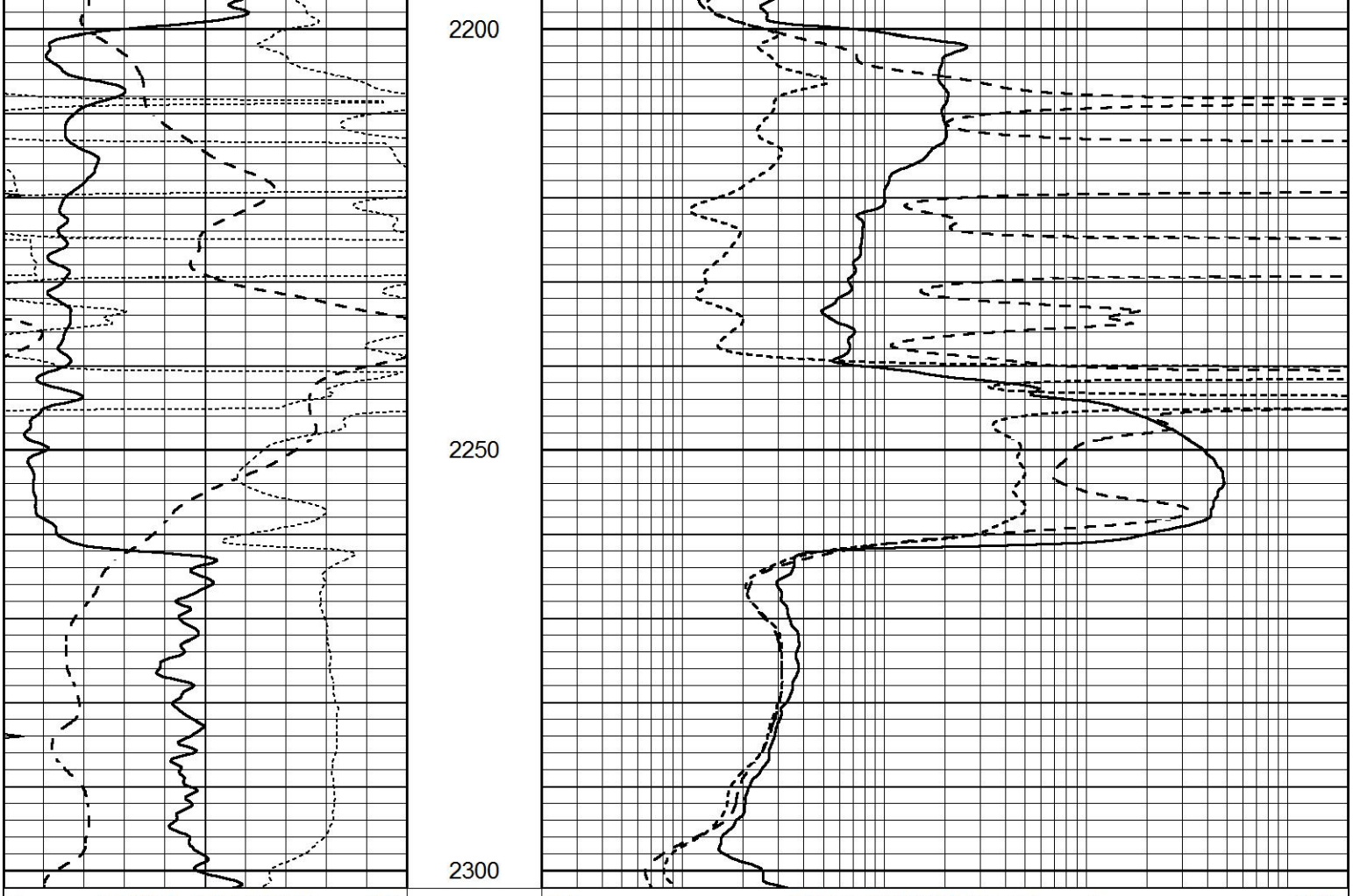
# ANHYDRITE

| | |
|---|---|
| Database File | 7891pe.db |
| Dataset Pathname | pass3.1A |
| Presentation Format | _dil |
| Dataset Creation | Thu Jun 01 08:43:33 2023 |
| 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 |






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

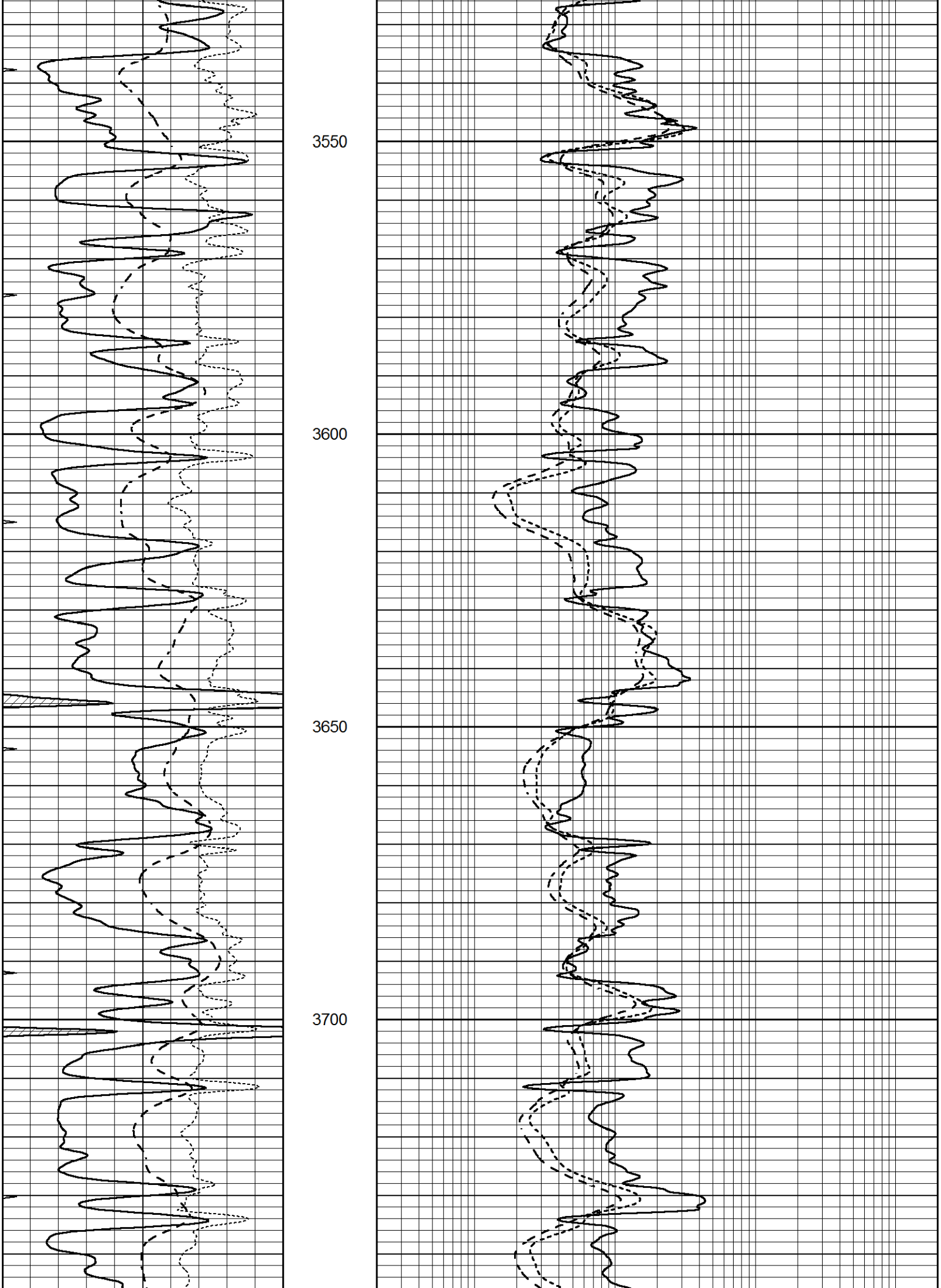
| | | |
|---|---|---|
| 0.2 | SHALLOW GUARD (Ohm-m) | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |

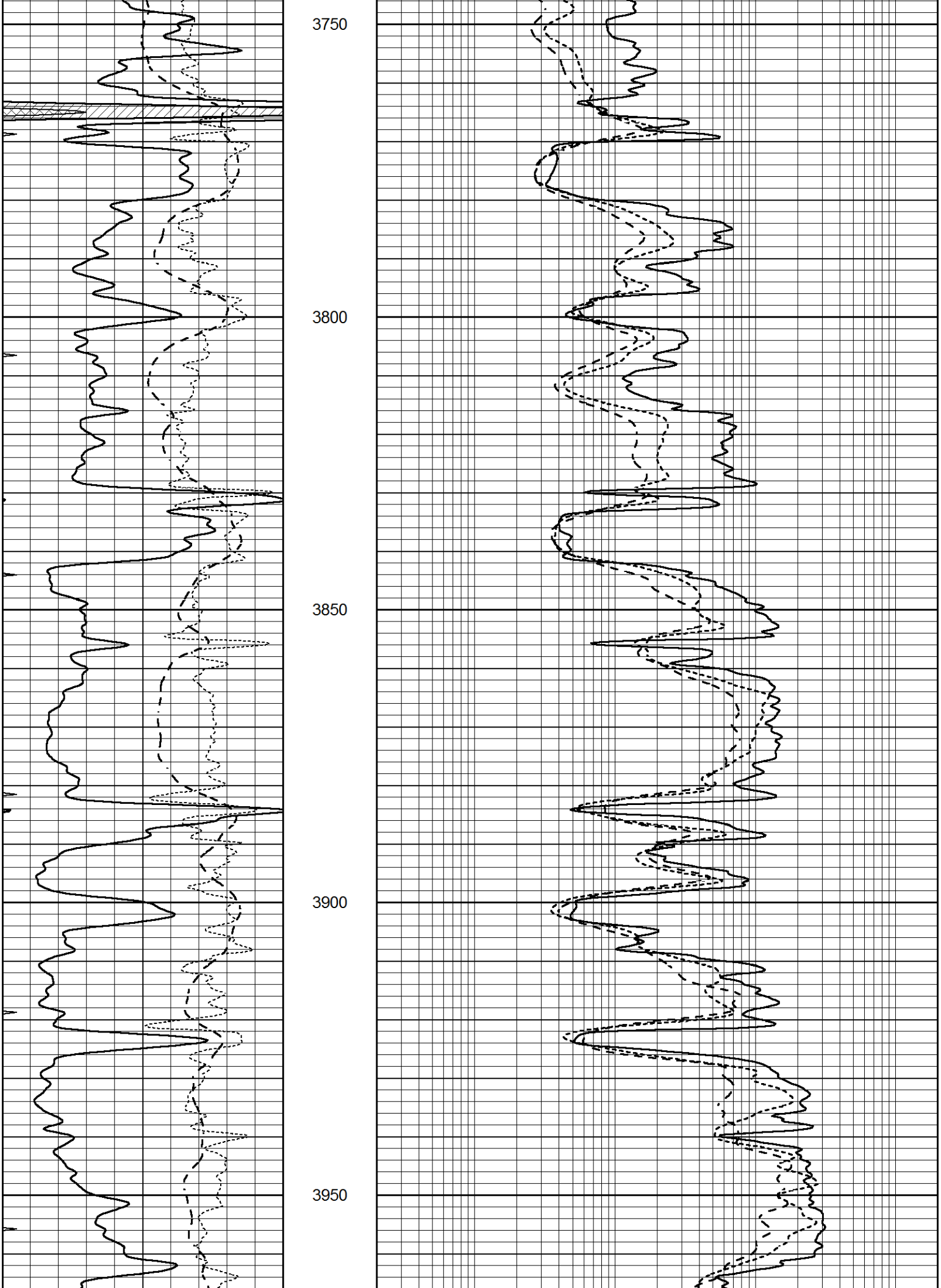
# MAIN SECTION

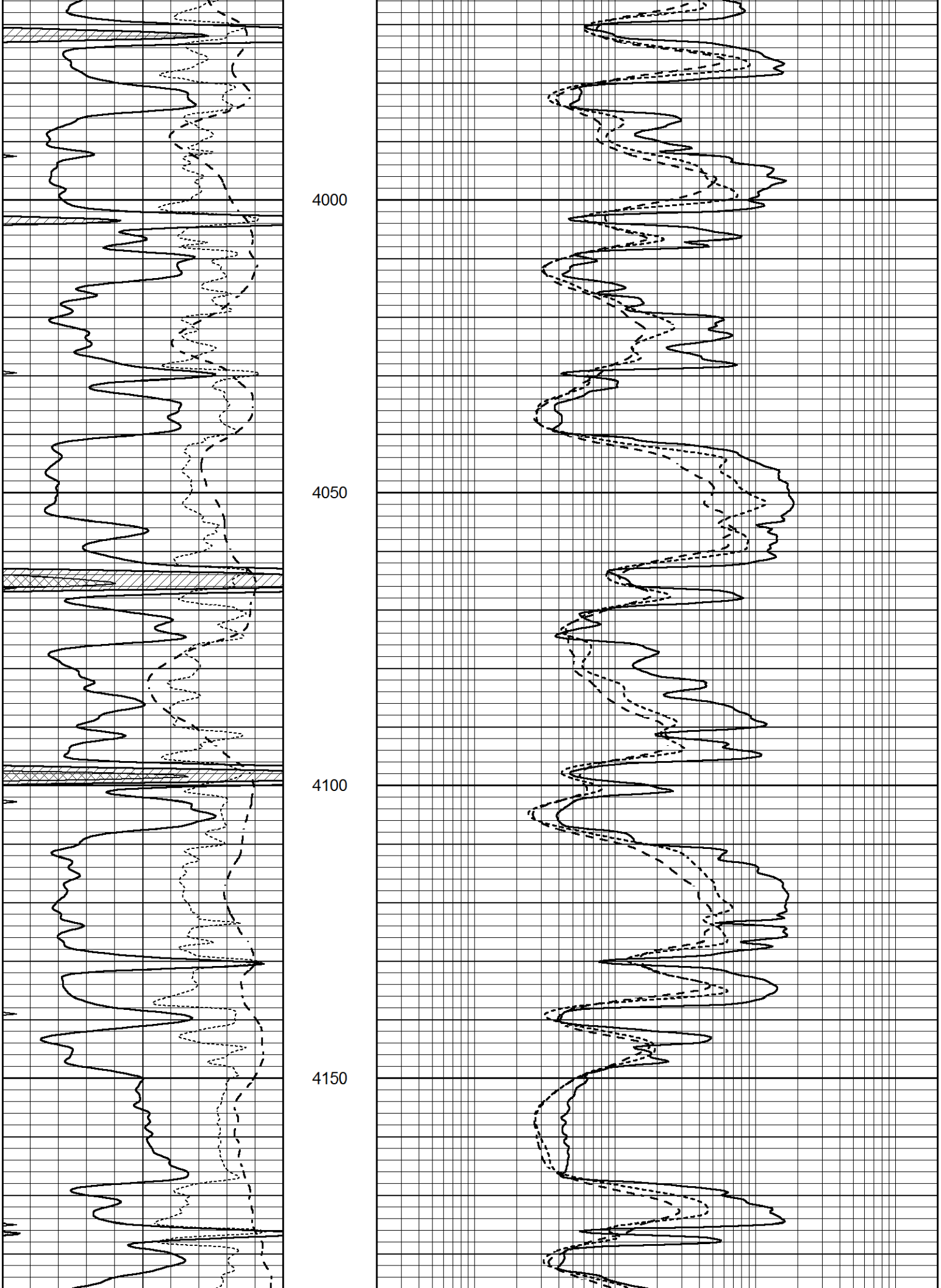
| | |
|---|---|
| Database File | 7891pe.db |
| Dataset Pathname | pass3.1M |
| Presentation Format | _dil |
| Dataset Creation | Thu Jun 01 08:39:50 2023 |
| Charted by | Depth in Feet scaled 1:240 |

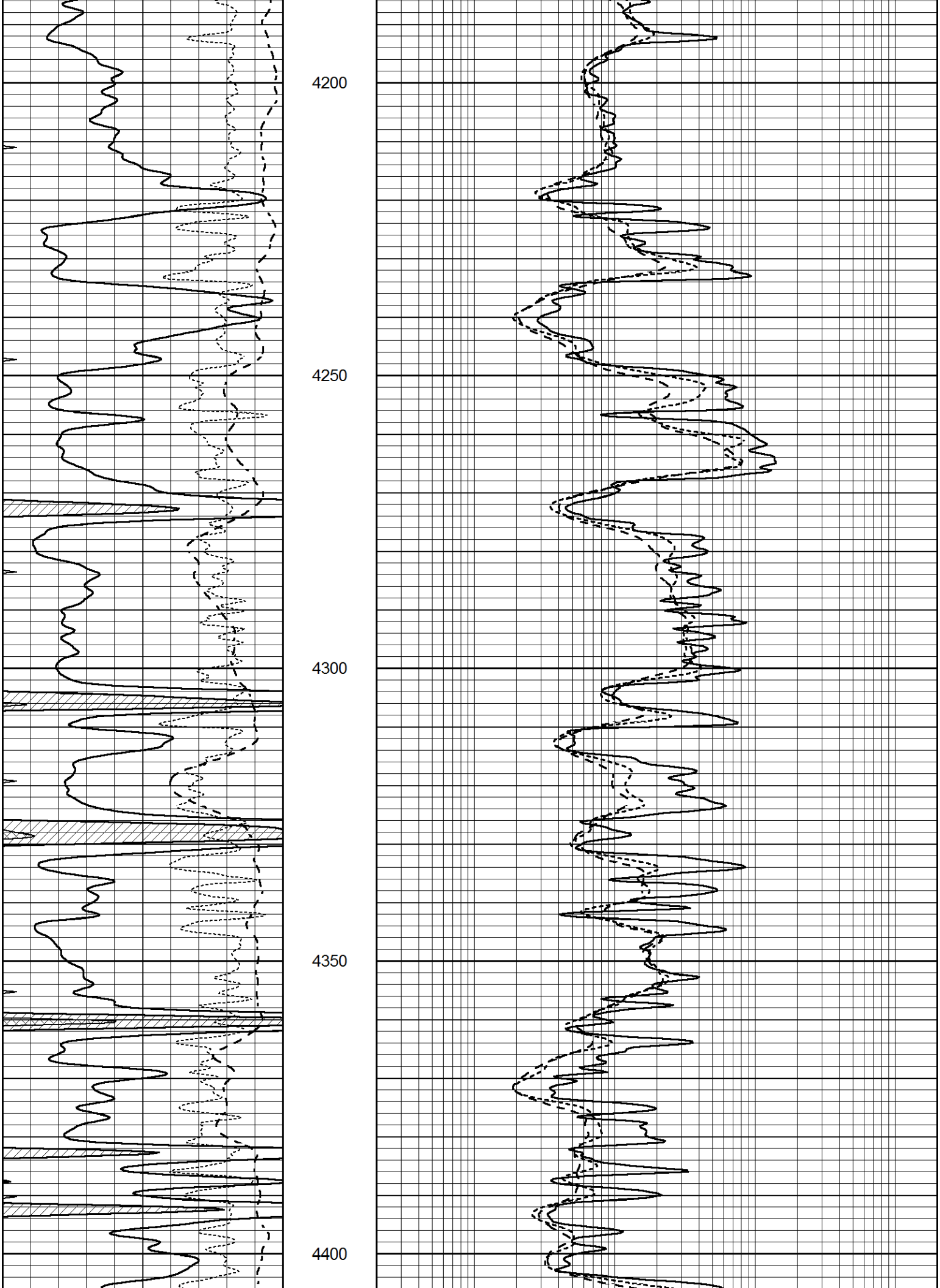
| | | |
|---|---|---|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 20 |

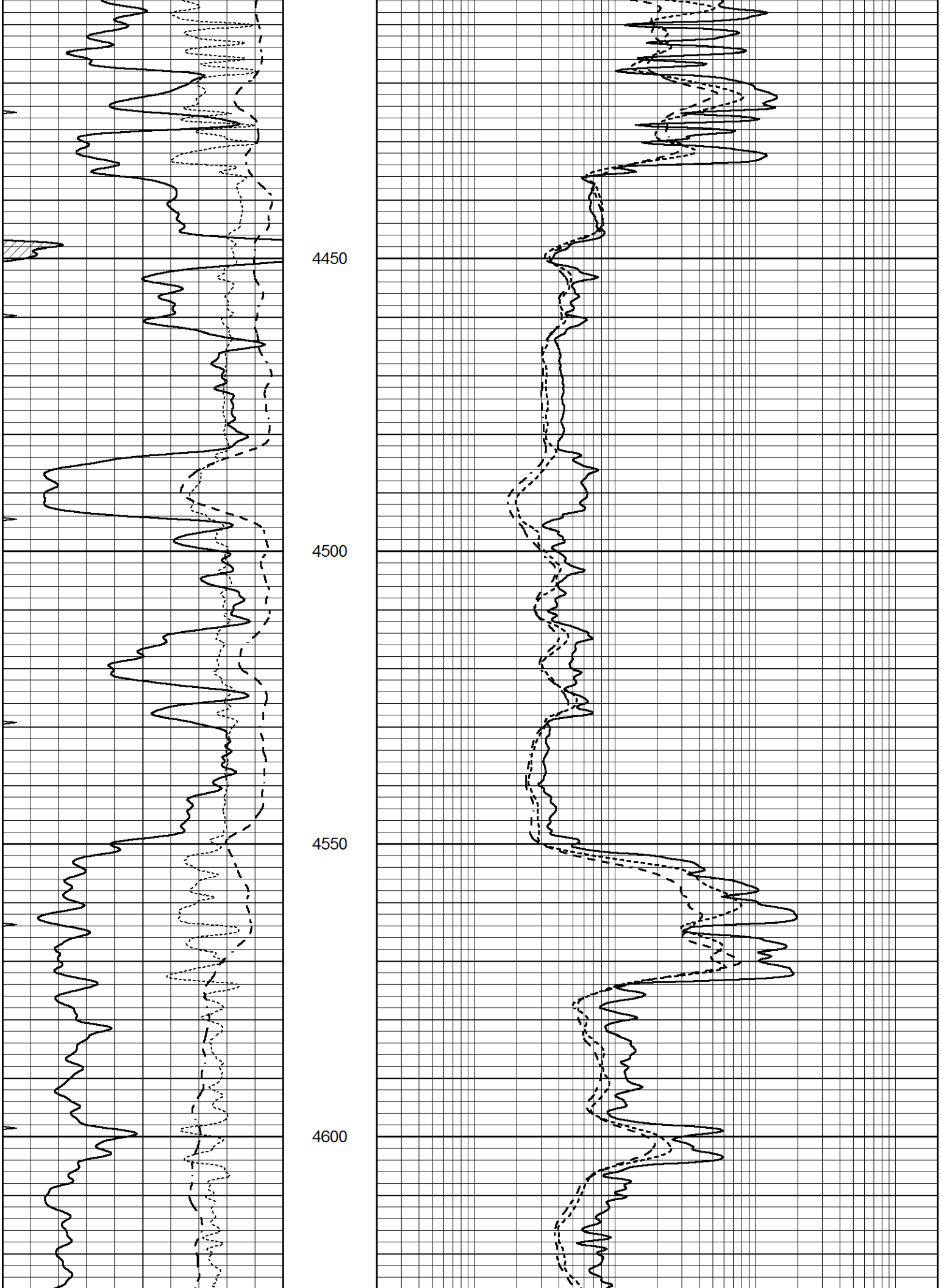
| | | |
|---|---|---|
| 0.2 | SHALLOW GUARD (Ohm-m) | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |

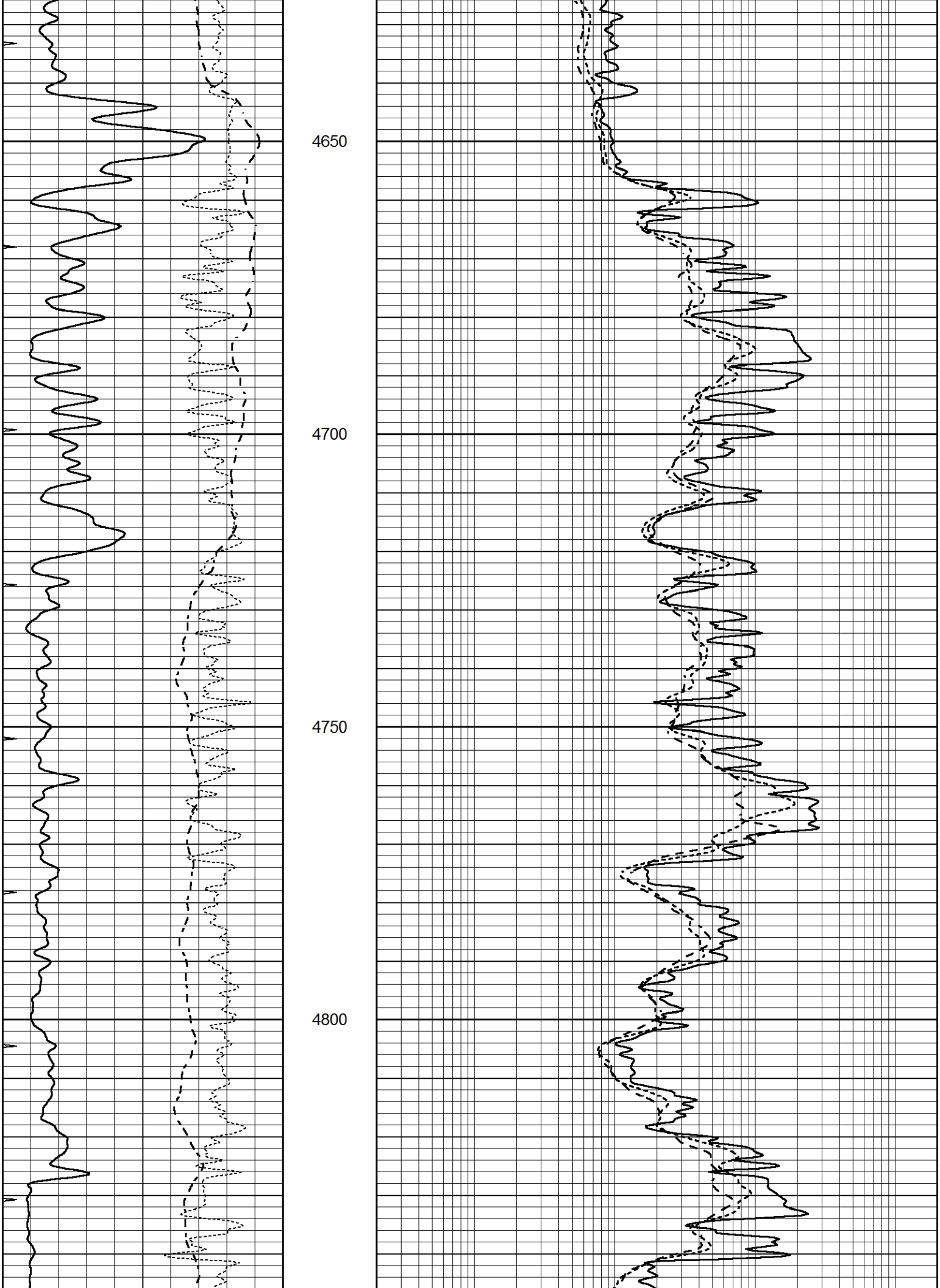

3550
3600
3650
3700

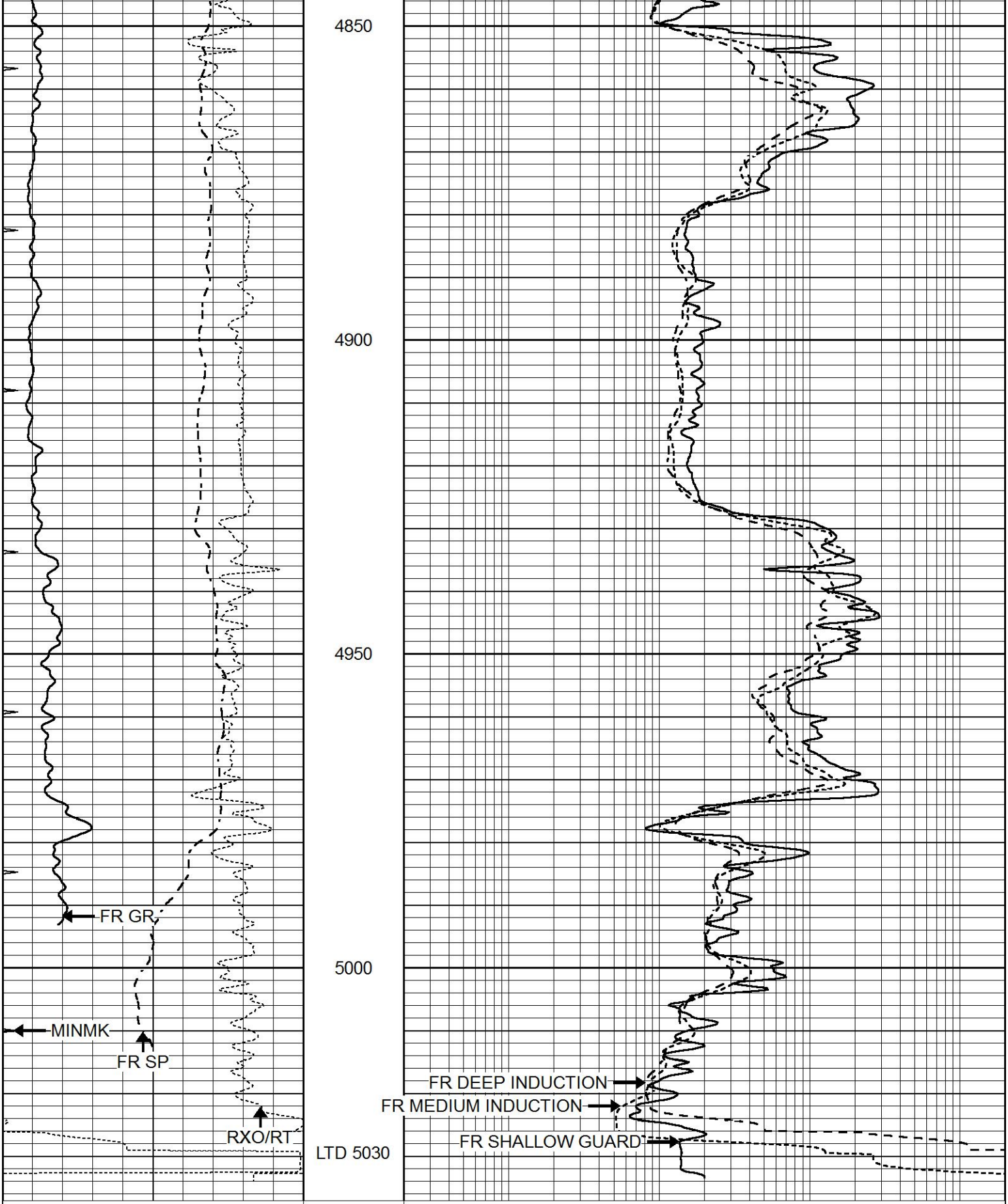

3750
3800
3850
3900
3950


4000
4050
4100
4150


4200
4250
4300
4350
4400


4450
4500
4550
4600


4650
4700
4750
4800




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

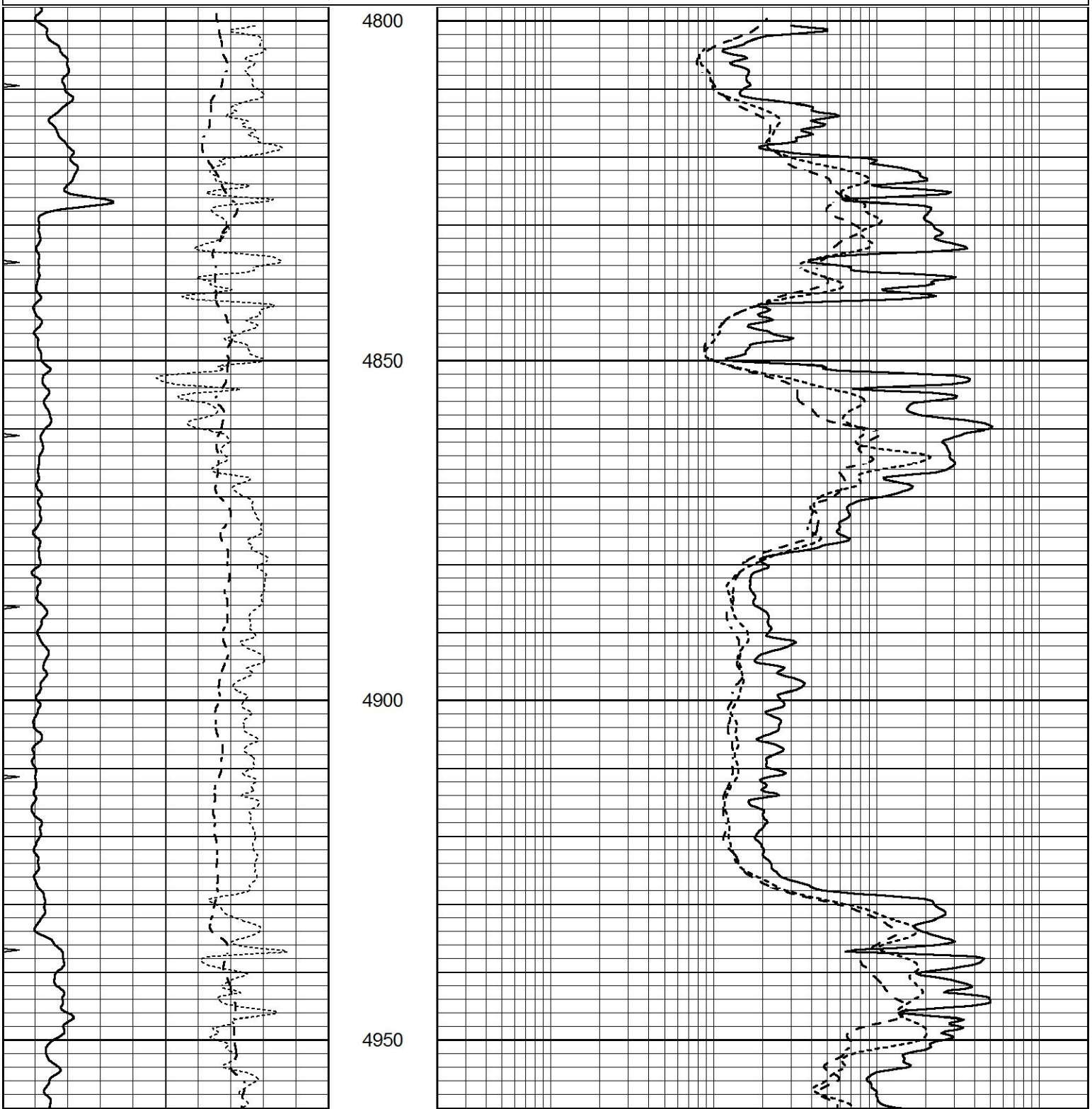
| | | |
|---|---|---|
| 0.2 | SHALLOW GUARD (Ohm-m) | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |

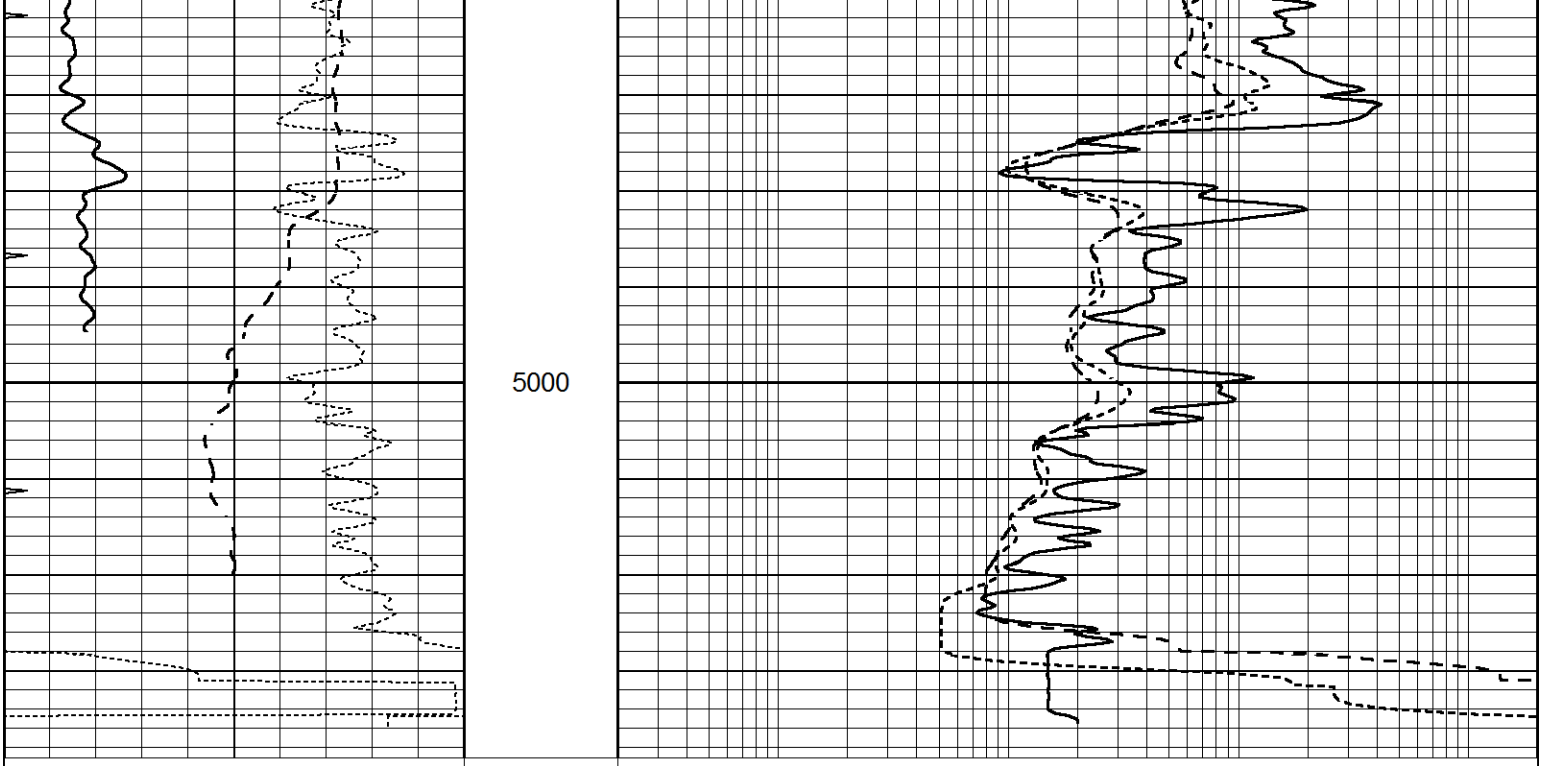
# REPEAT SECTION

| | |
|---|---|
| Database File | 7891pe.db |
| Dataset Pathname | pass2.1R |
| Presentation Format | _dil |
| Dataset Creation | Thu Jun 01 08:02:08 2023 |
| 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 |






| | | |
|---|---|---|
| 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 |

## Calibration Report

| | |
|---|---|
| Database File | 7891pe.db |
| Dataset Pathname | pass3.1M |
| Dataset Creation | Thu Jun 01 08:39:50 2023 |

## Dual Induction Calibration Report

| | |
|---|---|
| Serial-Model: | PROBE8-DILG |
| Surface Cal Performed: | Thu Jun 01 08:22:59 2023 |
| 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 | 640.000 | 14.000 |
| Medium | 0.029 | 0.796 | V | 0.000 | 464.000 | mmho/m | 600.000 | 4.000 |
| 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: 004 Model: PRB

Master Calibration — Performed Tue Aug 02 11:29:35 2022

| | Background | Magnesium | Aluminum | Aluminum+Fe | |
|---|---|---|---|---|---|
| Window 1 | 1154.2 | 10019.5 | 3137.9 | 2795.6 | cps |
| Window 2 | 1054.4 | 8597.6 | 2733.4 | 2469.5 | cps |
| Window 3 | 902.3 | 5241.4 | 1832.1 | 1719.3 | cps |
| Window 4 | 251.9 | 261.1 | 255.8 | 252.9 | cps |
| Long Space | 0.0 | 7543.2 | 1679.0 | 1415.0 | cps |
| Short Space | 4.4 | 2049.3 | 1321.7 | 1116.8 | cps |
| Rho | | 1.7100 | 2.5900 | 0.0000 | g/cc |
| Pe | | 2.0000 | 2.7500 | 5.7900 | |

| | | | | | |
|---|---|---|---|---|---|
| Rib Angle | : 43.7 | Rib Slope | : 0.957 | Density/Spine Ratio | : 0.562 |
| Spine Angle | : 73.7 | Spine Slope | : 3.426 | Spine Intercept | : -17.2 |

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: 070808PMC
Tool Model: NABORS

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: | 070558 | |
| Tool Model: | OPEN_GR | |
| Performed: | Tue May 30 23:16:26 2023 | |
| Calibrator Value: | 1.0 | GAPI |
| Background Reading: | 0.0 | cps |
| Calibrator Reading: | 1.0 | cps |
| Sensitivity: | 0.3000 | GAPI/cps |