SUPERIOR WELL SERVICES

SUPERIOR
Hays,
Kansas

# DUAL INDUCTION LOG

| | |
|---|---|
| Company | MAI OIL OPERATIONS, INC. |
| Well | DRISCOLL #5 |
| Field | HALL - GURNEY |
| County | RUSSELL |
| State | KANSAS |

Company MAI OIL OPERATIONS, INC.
Well DRISCOLL #5
Field HALL - GURNEY
County RUSSELL State KANSAS
Location: API # : 15-167-23798-0000
1875' FNL & 2625' FEL
SW - NW - SW - NE
SEC 4 TWP 15S RGE 14W

Other Services
CDL/CNL
MEL

Permanent Datum GROUND LEVEL Elevation 1759
Log Measured From KELLY BUSHING 8' A.G.L.
Drilling Measured From KELLY BUSHING

Elevation
K.B. 1767
D.F. 1765
G.L. 1759

| | | | |
|---|---|---|---|
| Date | 5/6/12 | | |
| Run Number | ONE | | |
| Depth Driller | 3295 | | |
| Depth Logger | 3293 | | |
| Bottom Logged Interval | 3291 | | |
| Top Log Interval | 00 | | |
| Casing Driller | 8 5/8"@377' | | |
| Casing Logger | 377 | | |
| Bit Size | 7 7/8" | | |
| Type Fluid in Hole | CHEMICAL MUD | CHLORIDES 6,000 PPM | |
| Density / Viscosity | 9.1/52 | | |
| pH / Fluid Loss | 9.5/8.2 | | |
| Source of Sample | FLOWLINE | | |
| Rm @ Meas. Temp | .650@74F | | |
| Rmf @ Meas. Temp | .488@74F | | |
| Rmc @ Meas. Temp | .780@74F | | |
| Source of Rmf / Rmc | MEASUREMENT | | |
| Rm @ BHT | .437@110F | | |
| Time Circulation Stopped | 2 HOURS | | |
| Time Logger on Bottom | 4:15 P.M. | | |
| Maximum Recorded Temperature | 110F | | |
| Equipment Number | 4010 | | |
| Location | HAYS, KANSAS | | |
| Recorded By | JEFF LUEBBERS | | |
| Witnessed By | KURT TALBOTT | KENT WILLSON | |

<<< 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

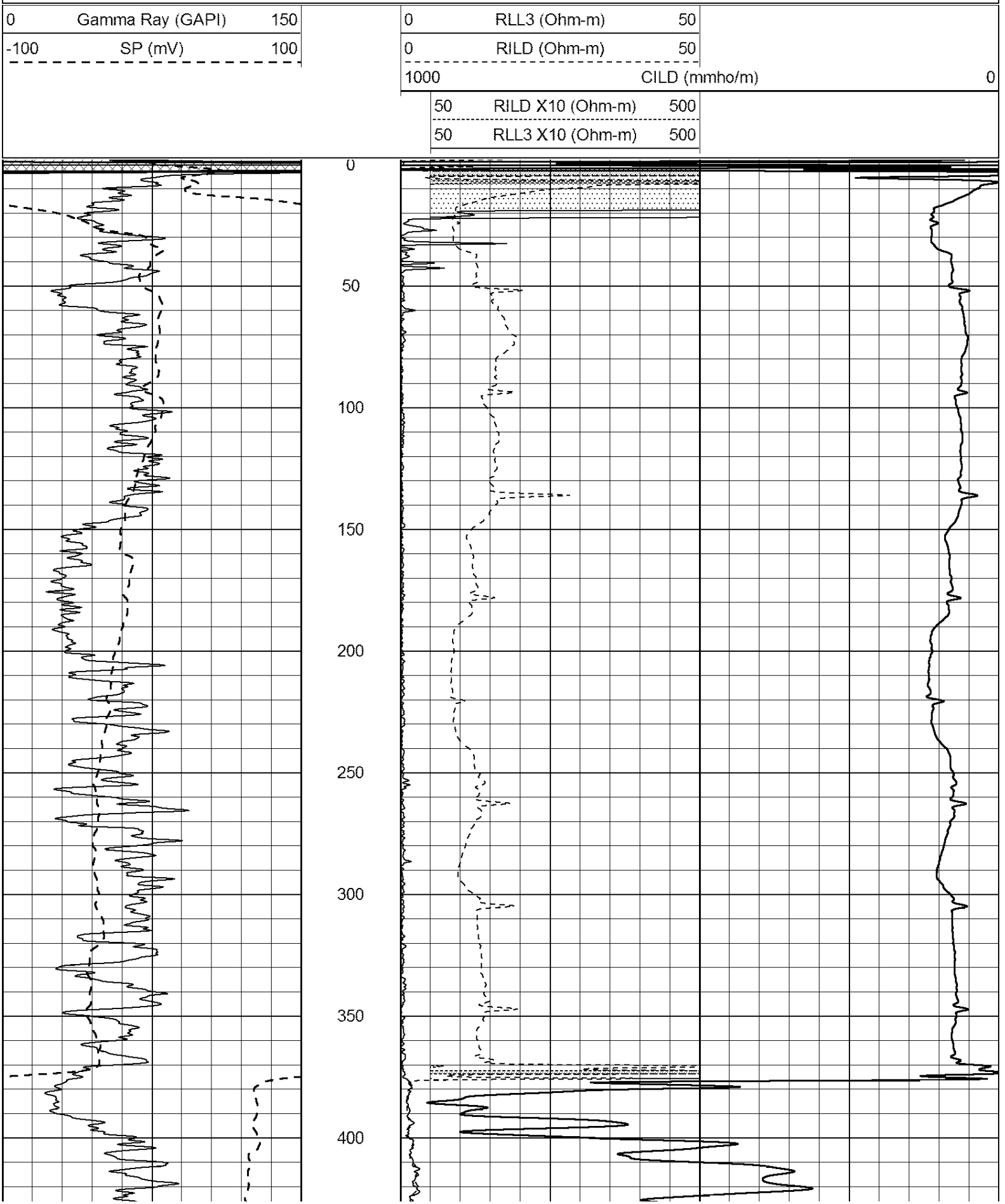
THANK YOU FOR USING SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395
DIRECTIONS
RUSSELL, KS. & I-70, 6S. ON HWY 281 TO "WALTERS RD." (JUST PAST RIVER BRIDGE) 1 1/2W., N. INTO

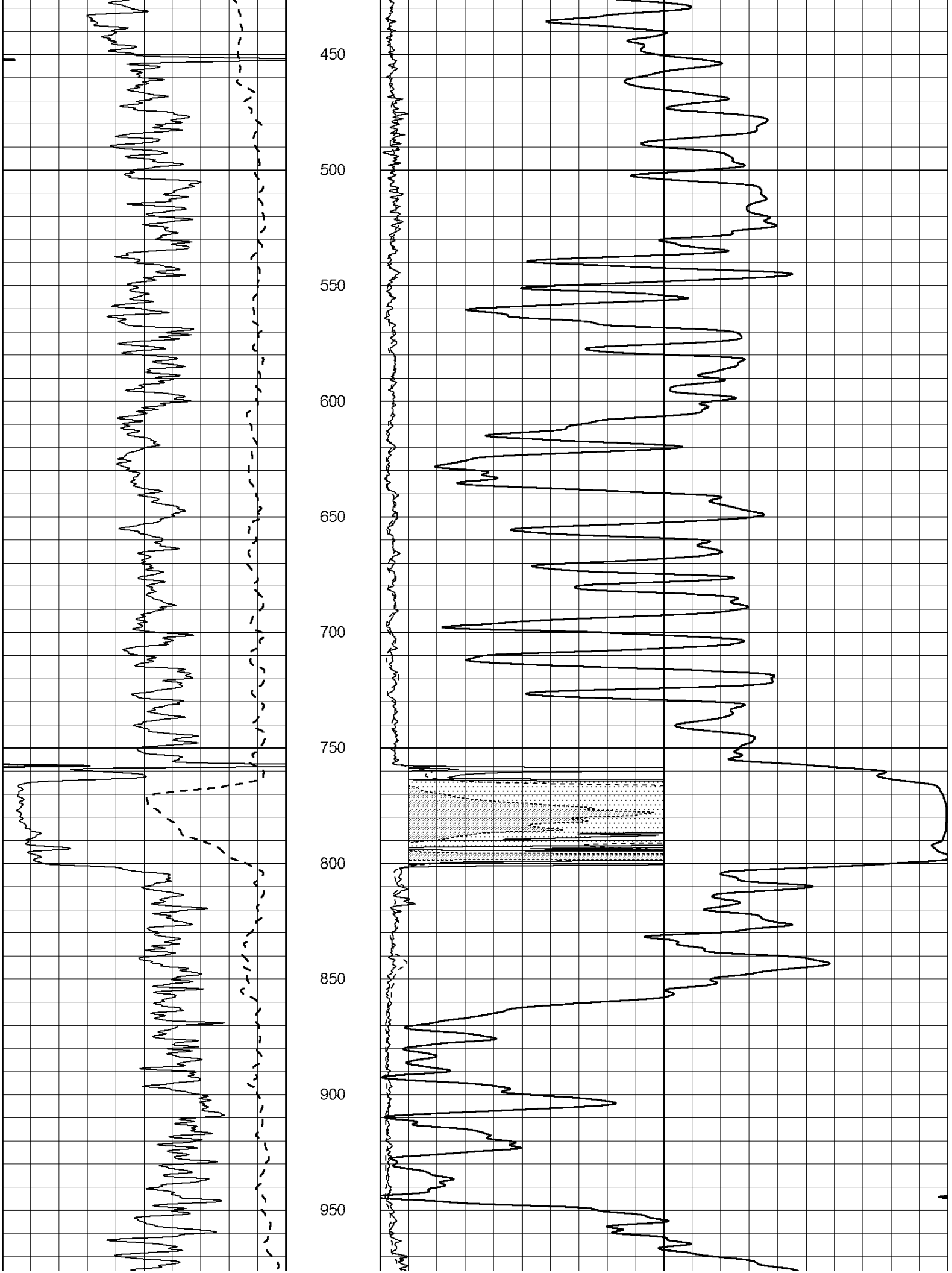
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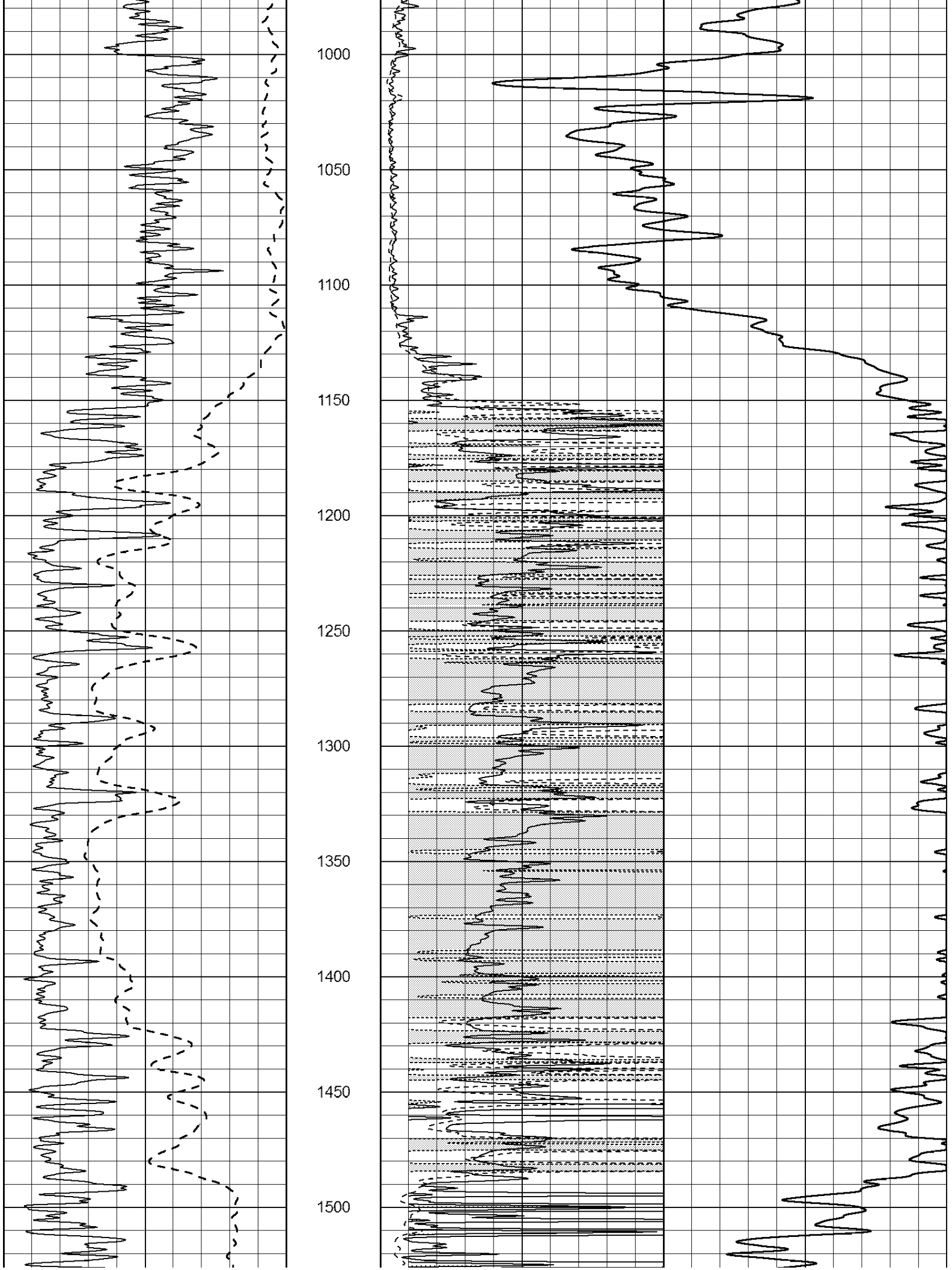
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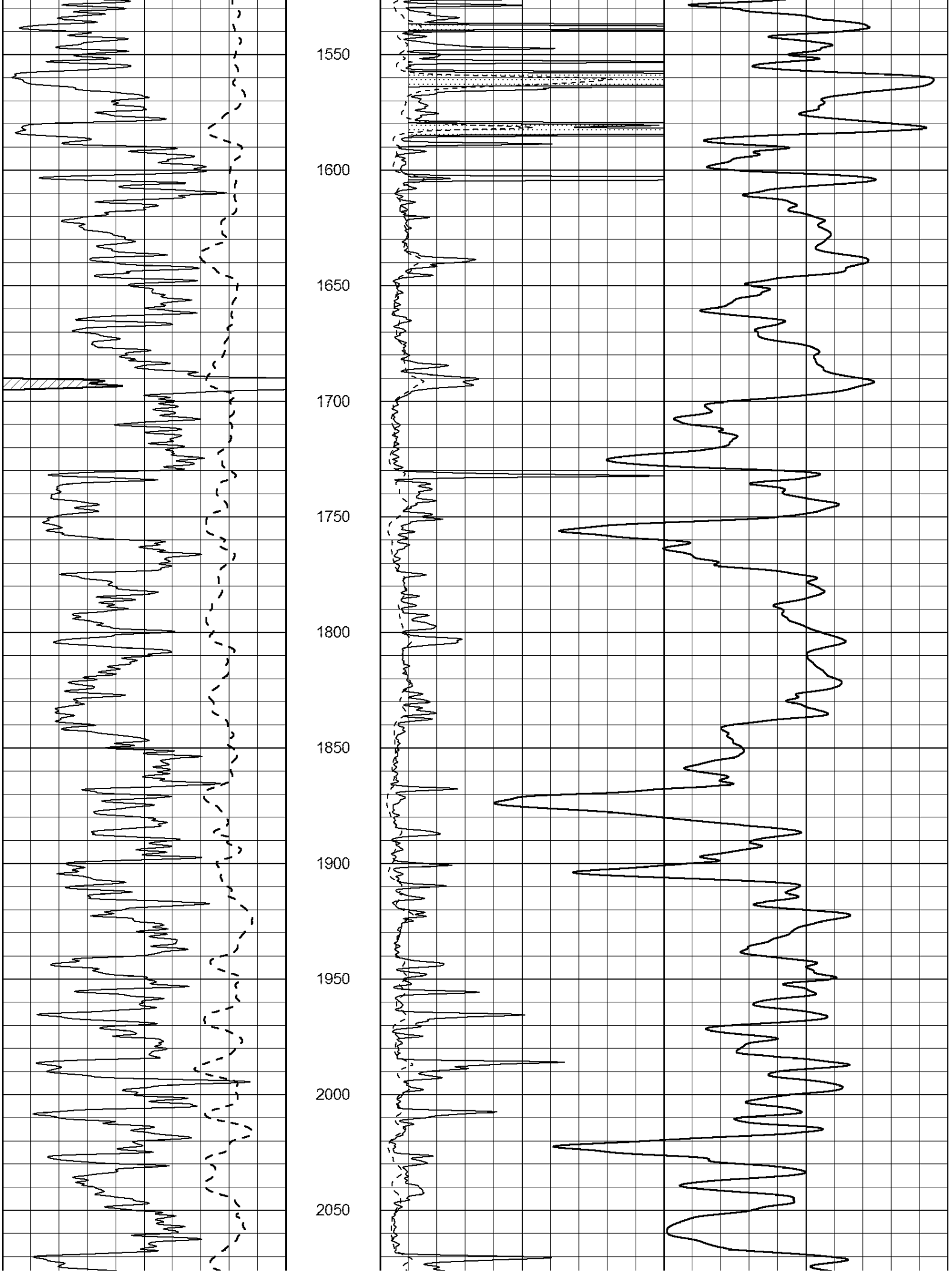
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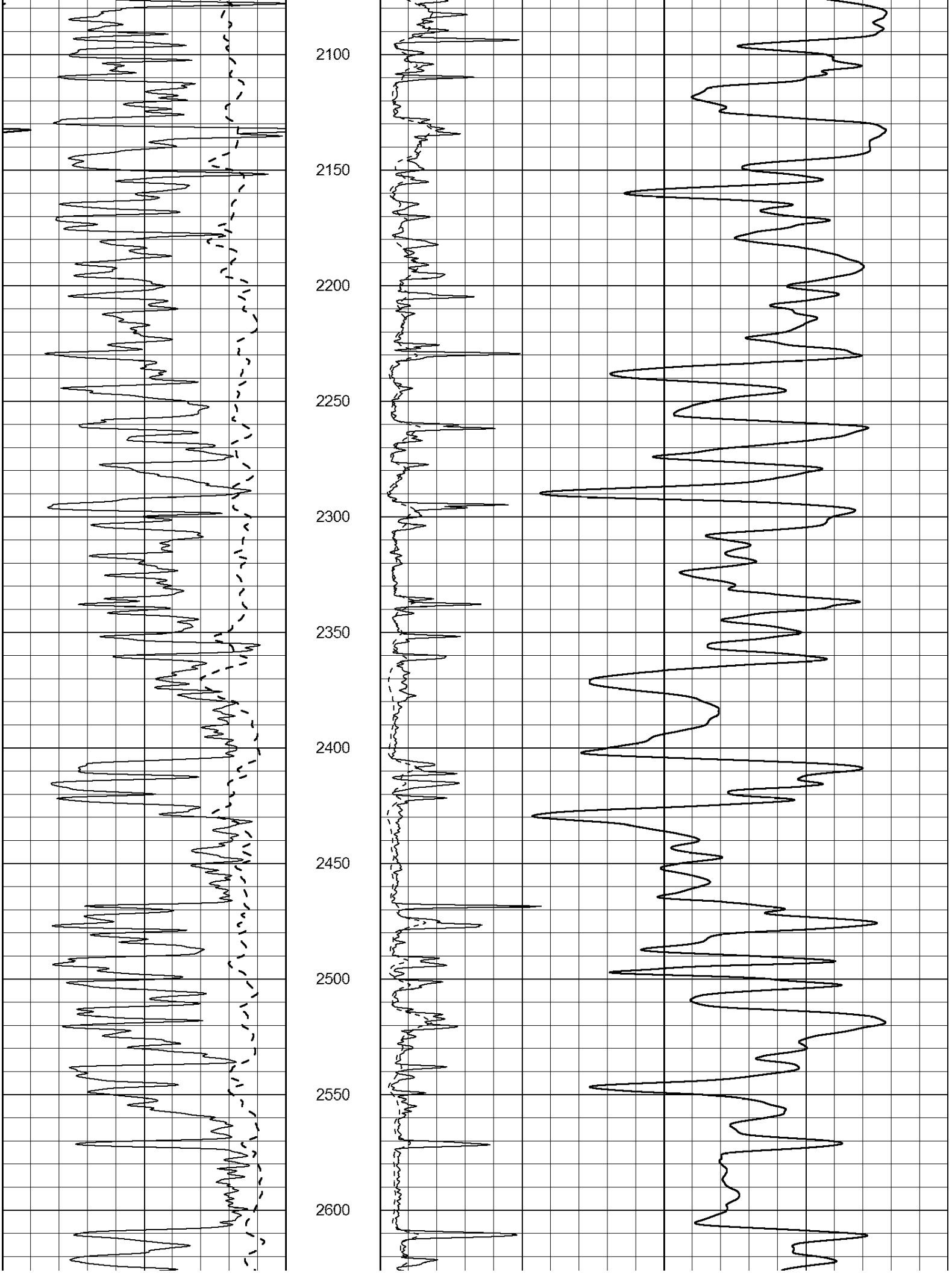
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Presentation Format: dil2
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Charted by: Depth in Feet scaled 1:600

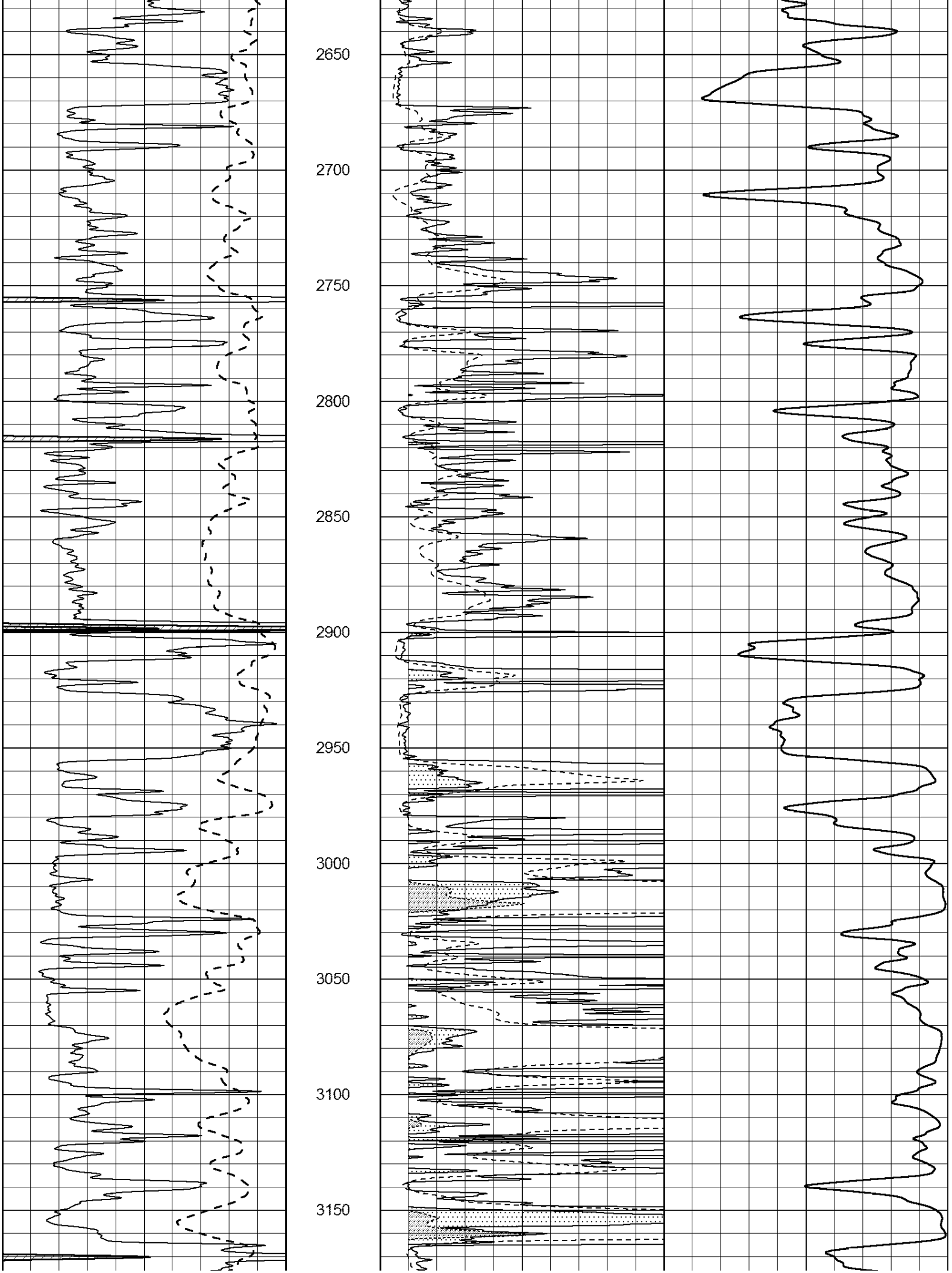


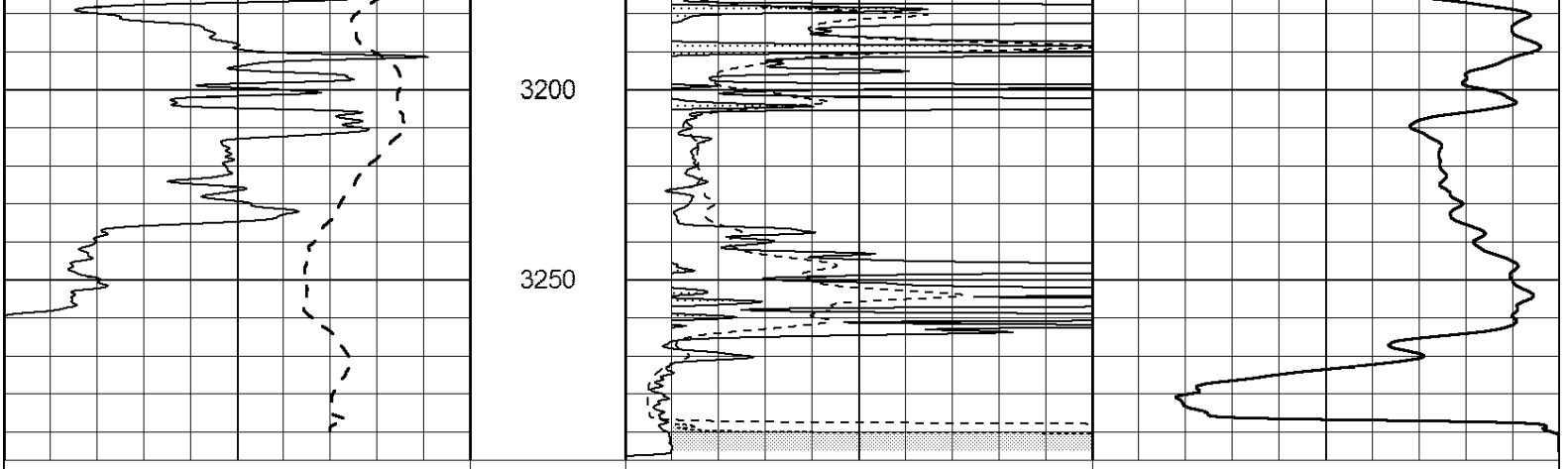

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SUPERIOR WELL SERVICES

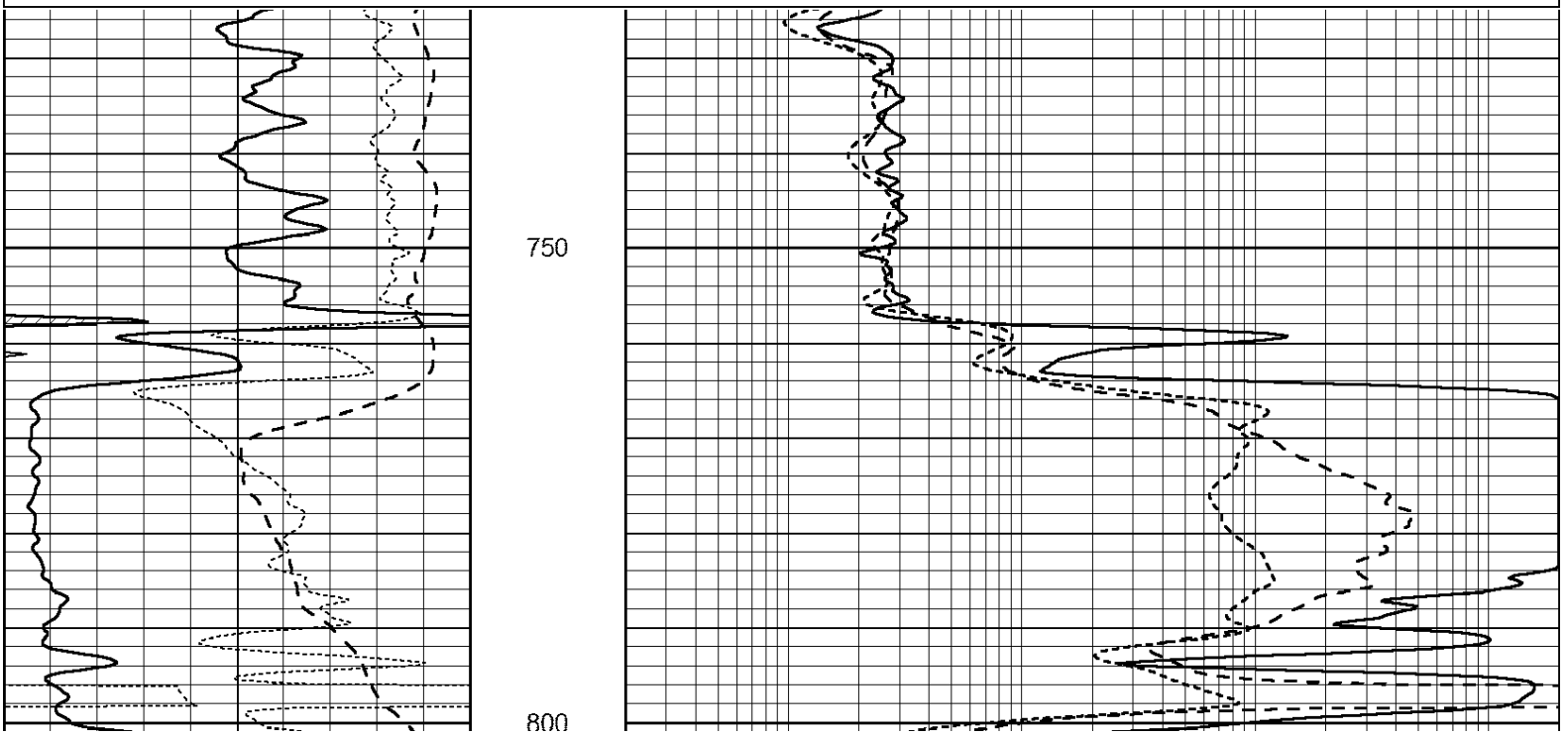
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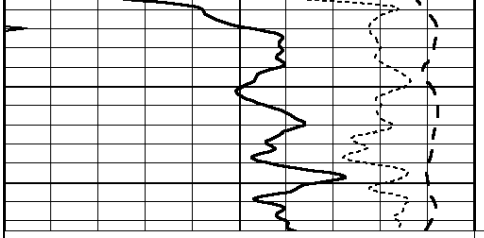
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| Presentation Format: | dil |
| Dataset Creation: | Sun May 06 17:27:27 2012 by Calc Open-Cased 110302 |
| Charted by: | Depth in Feet scaled 1:240 |

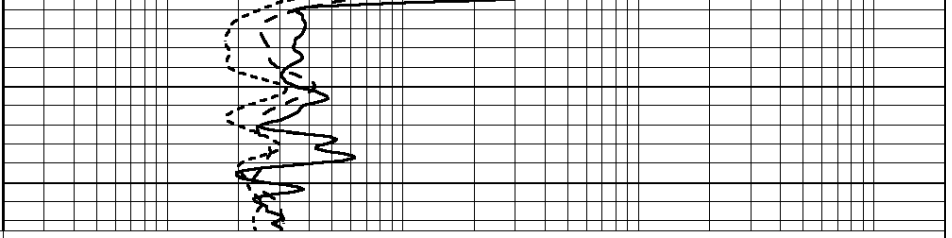
| | | |
|---|---|---|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 20 |

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

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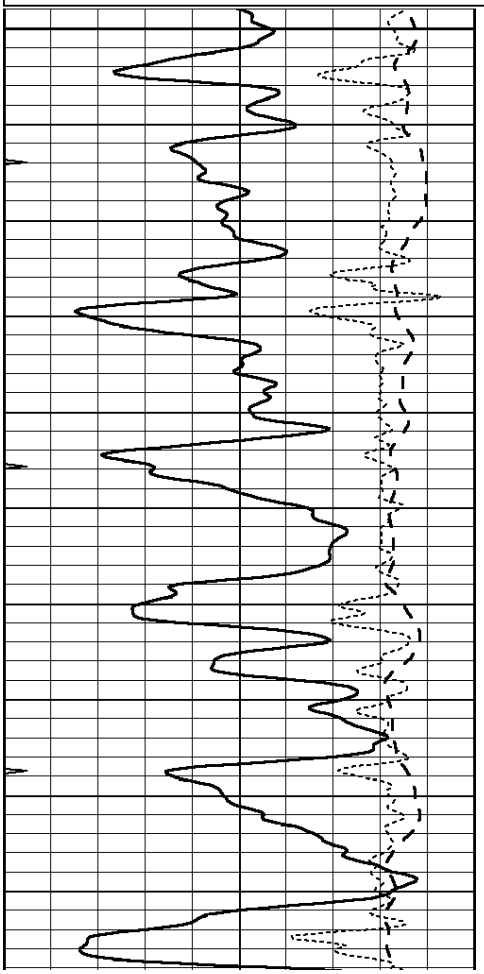
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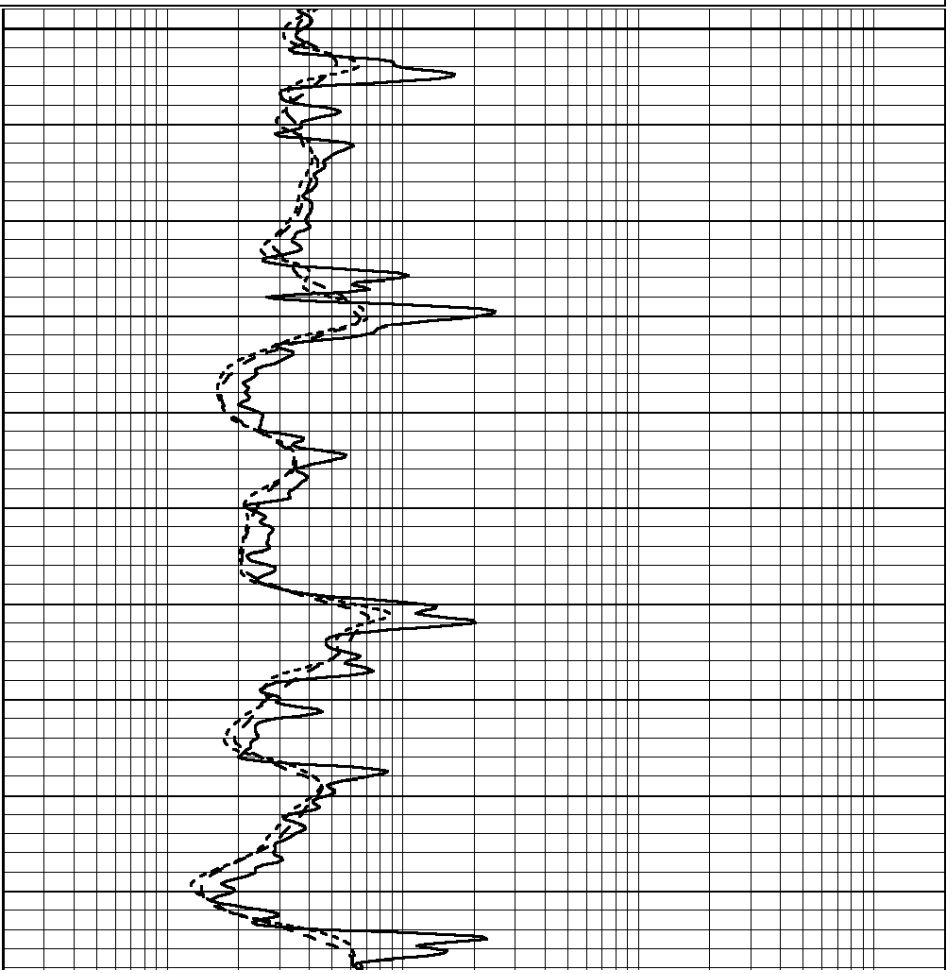
# MAIN SECTION

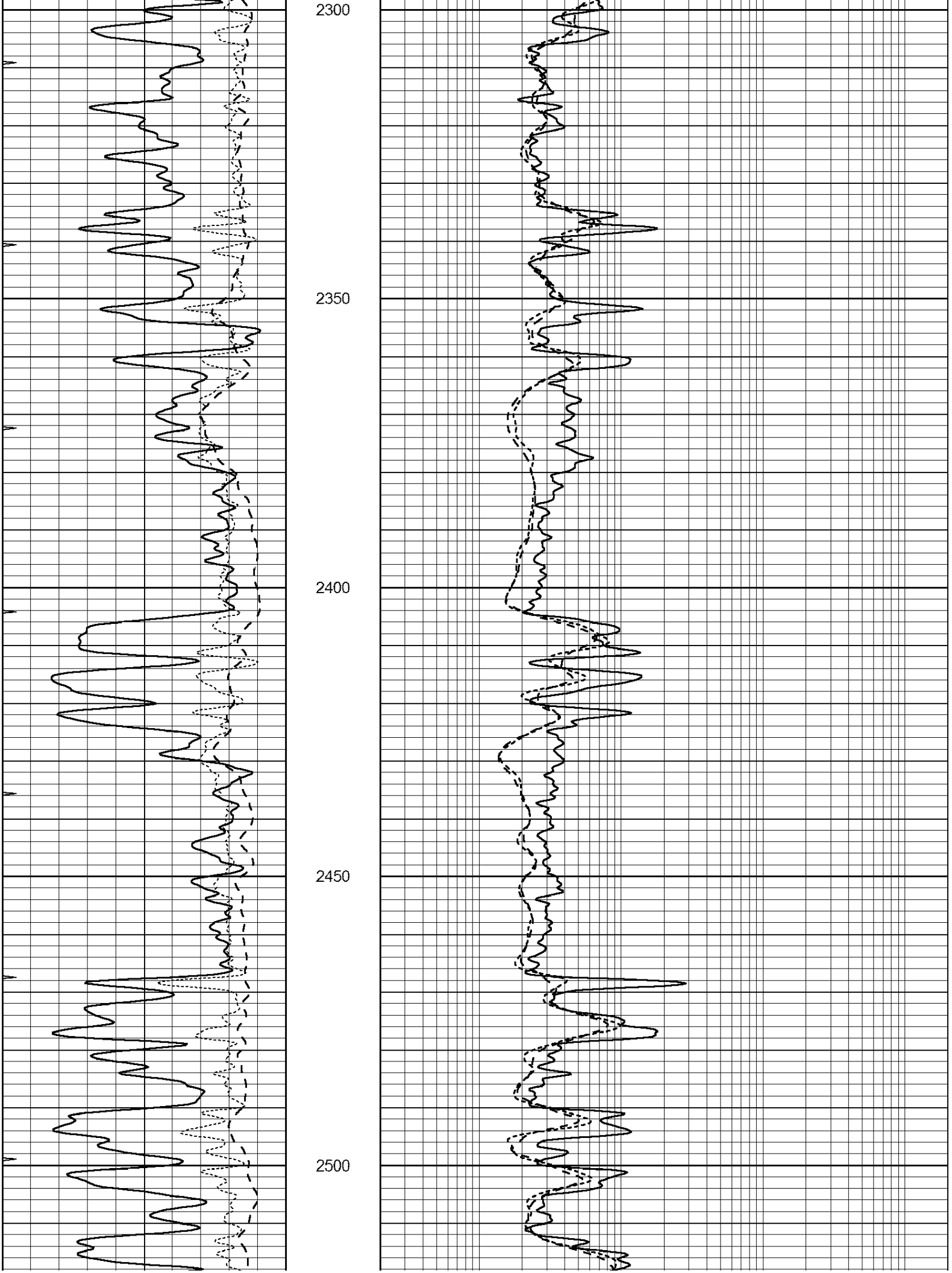
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|---|---|
| Database File: | 408763ddn.db |
| Dataset Pathname: | pass3.7 |
| Presentation Format: | dil |
| Dataset Creation: | Sun May 06 17:27:04 2012 by Calc Open-Cased 110302 |
| Charted by: | Depth in Feet scaled 1:240 |

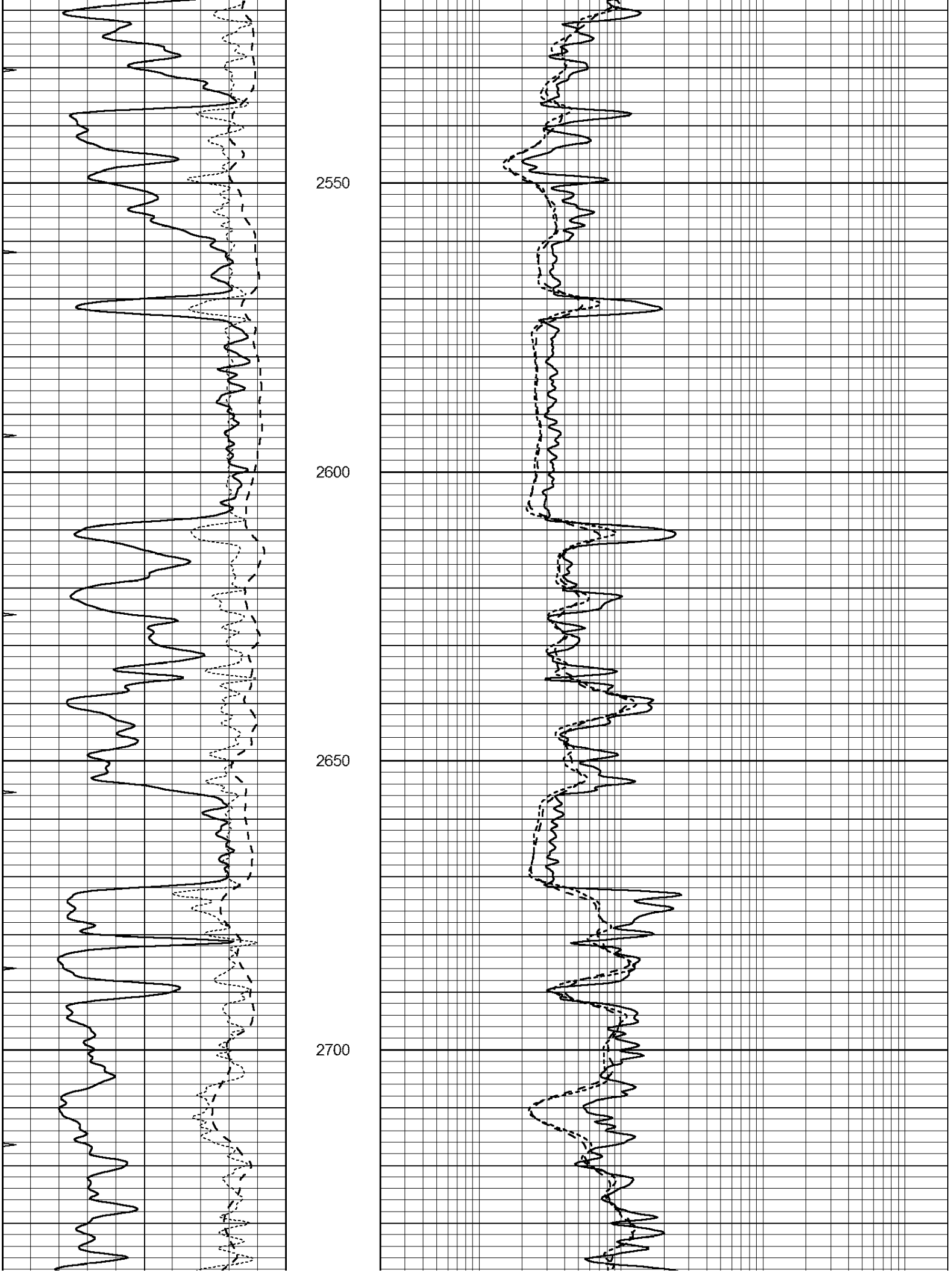
| | | |
|---|---|---|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 20 |

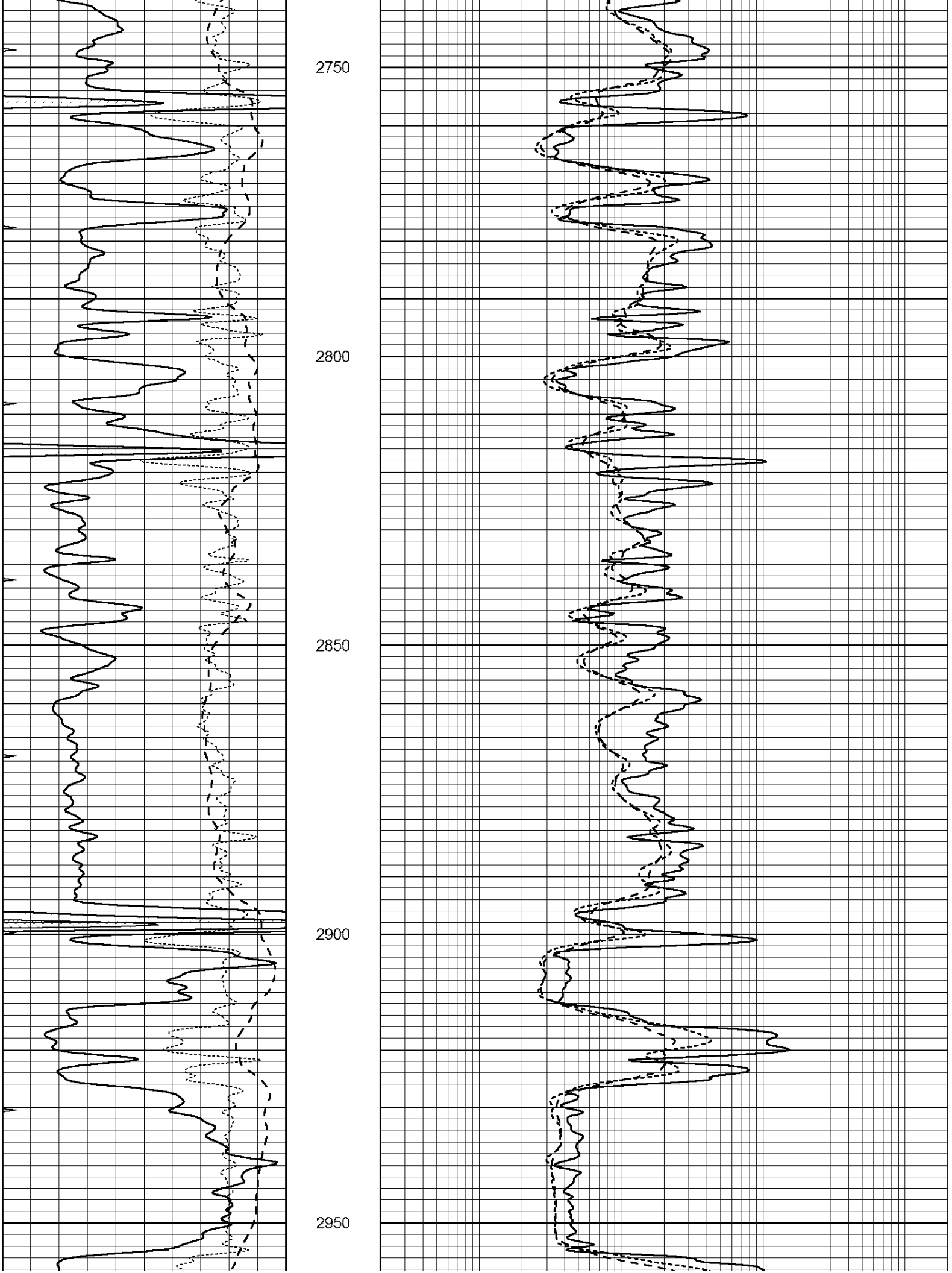
| | | |
|---|---|---|
| 0.2 | SHALLOW GUARD (Ohm-m) | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |

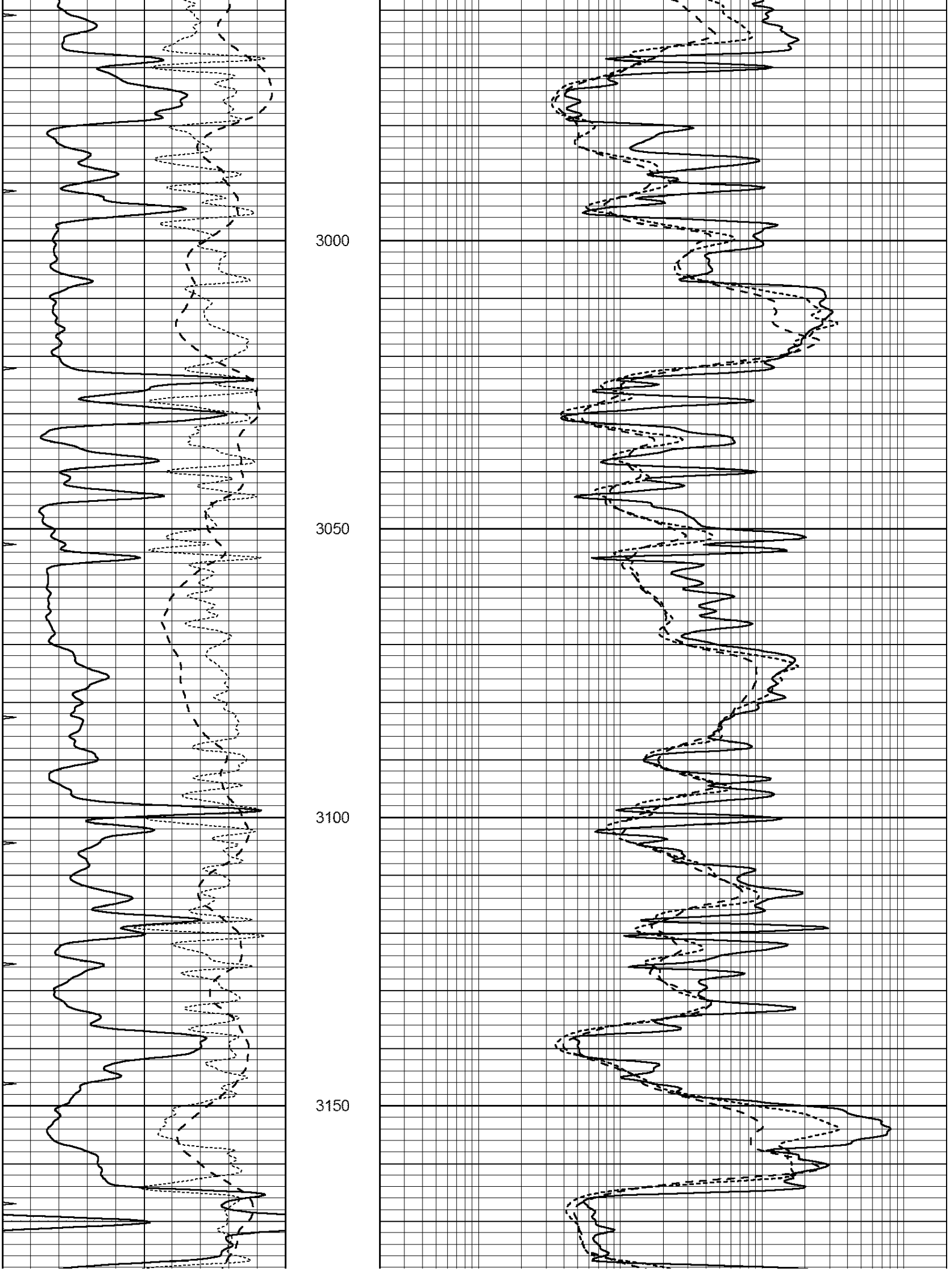


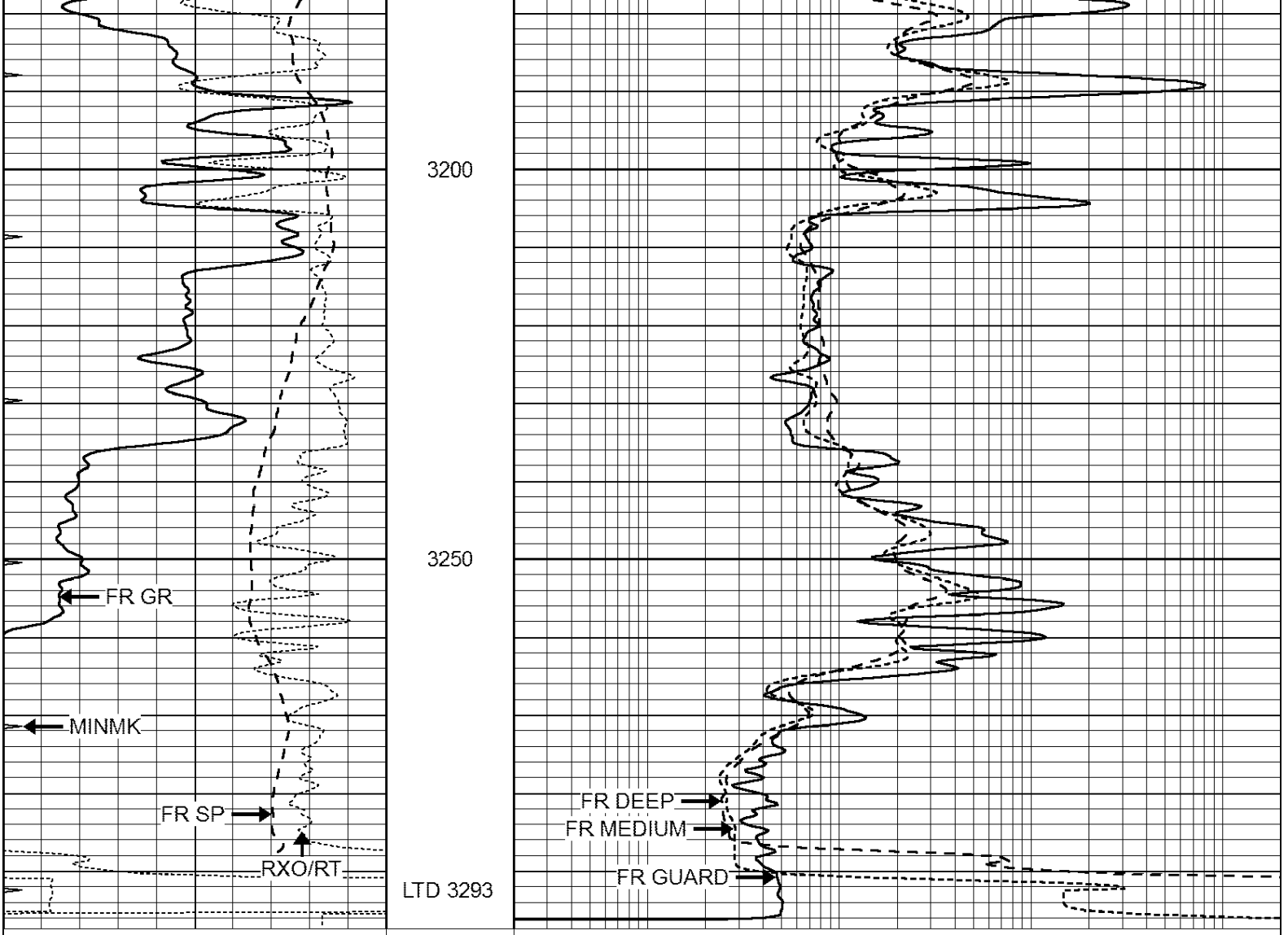




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|---|---|---|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 20 |

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

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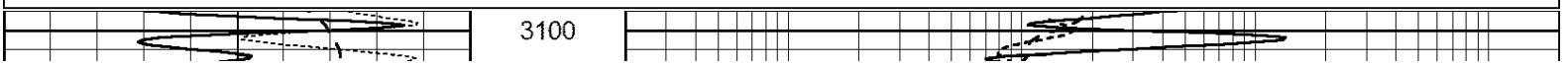
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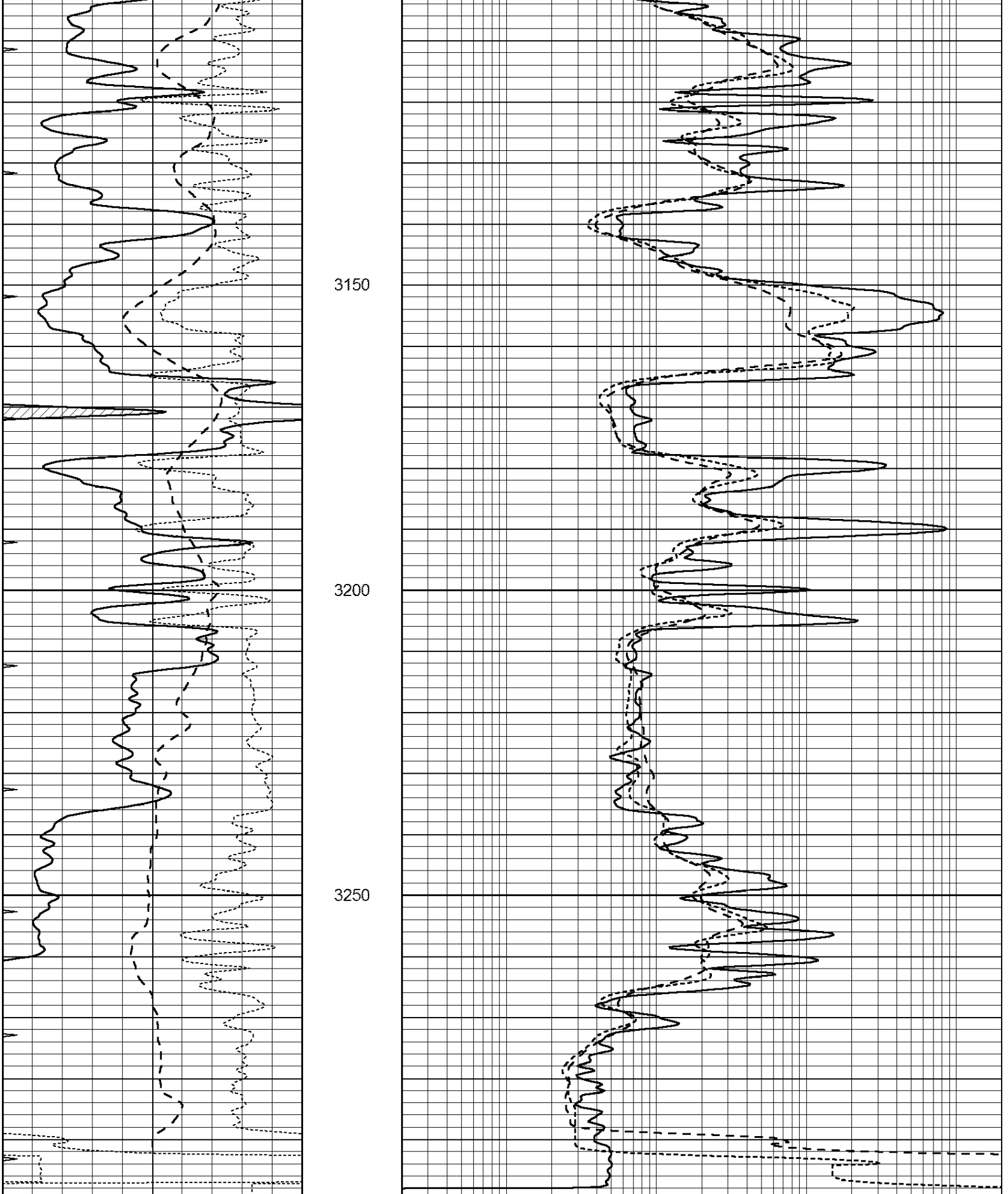
# REPEAT SECTION

| | |
|---|---|
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| Presentation Format: | dil |
| Dataset Creation: | Sun May 06 17:03:11 2012 by Calc Open-Cased 110302 |
| 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: 408763ddn.db
Dataset Pathname: pass3.7
Dataset Creation: Sun May 06 17:27:04 2012 by Calc Open-Cased 110302

## Dual Induction Calibration Report

Serial-Model: DIL4-GEAR
Performed: Sun May 06 15:02:25 2012

| | Readings | | | References | | | Results | |
|---|---|---|---|---|---|---|---|---|
| Loop: | Air | Loop | | Air | Loop | | m | b |
| Deep | 0.008 | 0.666 | V | 0.000 | 400.000 | mmho/m | 570.000 | -5.000 |
| Medium | -0.003 | 0.769 | V | 0.000 | 462.500 | mmho/m | 560.000 | -3.500 |
| Internal: | Zero | Cal | | Zero | Cal | | m | b |
| Deep | 0.013 | 0.651 | V | 0.000 | 400.000 | mmho/m | 627.541 | -8.365 |
| Medium | 0.020 | 0.754 | V | 0.000 | 462.500 | mmho/m | 630.311 | -12.549 |

## Litho Density Calibration Report

Serial: 003N Model: PRB
Performed Tue Sep 08 14:14:44 2009

### Litho Density Calibration

| | Background | Magnesium | Aluminum | Sandstone | |
|---|---|---|---|---|---|
| Window 1 | 2042.6 | 12312.8 | 4225.8 | 13758.4 | cps |
| Window 2 | 1855.8 | 10134.7 | 3624.2 | 11113.1 | cps |
| Window 3 | 1639.4 | 6760.2 | 2716.3 | 7260.3 | cps |
| Window 4 | 466.4 | 469.2 | 466.1 | 476.5 | cps |
| Long Space | 0.0 | 8278.9 | 1768.4 | 9257.4 | cps |
| Short Space | 2.2 | 2377.3 | 1544.1 | 2574.2 | cps |
| Rho | | 1.7100 | 2.5900 | 1.3800 | g/cc |
| Pe | | | 2.5700 | 1.5500 | |

| | | | | | |
|---|---|---|---|---|---|
| Rib Angle | : 44.4 | Rib Slope | : 0.979 | Density/Spine Ratio | : 0.549 |
| Spine Angle | : 74.4 | Spine Slope | : 3.577 | Spine Intercept | : -18.8 |

### Caliper

| | Readings | Reference |
|---|---|---|
| Low Ref | 3.4 | 7.9 |
| High Ref | 5.5 | 15.0 |

Gain: 3.4 Offset: -3.5

## 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: | Sun May 06 15:02:07 2012 | |
| Calibrator Value: | 1.0 | GAPI |
| Background Reading: | 0.0 | cps |
| Calibrator Reading: | 1.0 | cps |
| Sensitivity: | 0.3000 | GAPI/cps |