

**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL
INDUCTION
LOG**

Company EDISON OPERATING CO., LLC
Well ARMBRISTER #1-1
Field ELLIS
County TREGO State KANSAS

Company EDISON OPERATING CO., LLC
Well ARMBRISTER #1-1
Field ELLIS
County TREGO
State KANSAS

Location: API #: 15-195-22779
825' FNL & 2310' FWL
SEC 1 TWP 13S RGE 21W
Permanent Datum GROUND LEVEL Elevation 2171
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
CDL/CNL/PE
SONIC/MEL
Elevation
K.B. 2176
D.F.
G.L. 2171

| | |
|------------------------------|--------------|
| Date | 10-6-12 |
| Run Number | ONE |
| Depth Driller | 3900 |
| Depth Logger | 3900 |
| Bottom Logged Interval | 3898 |
| Top Log Interval | 00 |
| Casing Driller | 260 |
| Casing Logger | 259 |
| Bit Size | 7.875 |
| Type Fluid in Hole | CHEMICAL MUD |
| Density / Viscosity | 9.3 / 55 |
| pH / Fluid Loss | 10.5 / 7.6 |
| Source of Sample | FLOWLINE |
| Rim @ Meas. Temp | 1.10 @ 60F |
| Rmf @ Meas. Temp | 0.83 @ 60F |
| Rmc @ Meas. Temp | 1.32 @ 60F |
| Source of Rmf / Rmc | MEASURED |
| Rim @ BHT | .580 @ 114F |
| Time Circulation Stopped | 2 HOURS |
| Time Logger on Bottom | 1.45 A.M. |
| Maximum Recorded Temperature | 114F |
| Equipment Number | 860 |
| Location | HAYS, KS. |
| Recorded By | RUPP |
| Witnessed By | ADAM KENNEDY |

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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

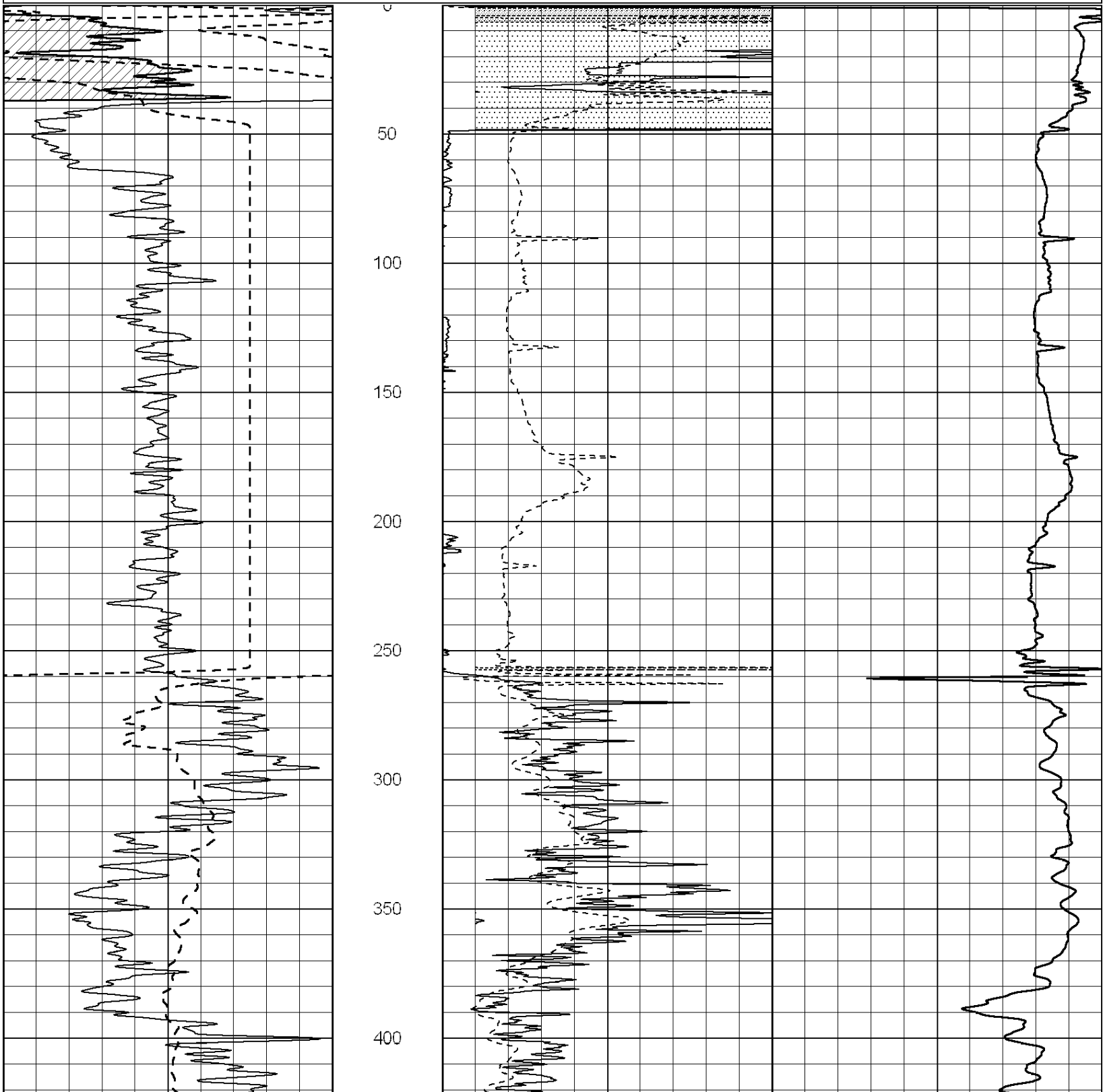
NABORS COMPLETION & PRODUCTION CO.
THANK YOU FOR YOUR BUSINESS
DIRECTIONS: ELLIS W TO RD. #400, 2N TO RD. M, 1/2E, S INTO.

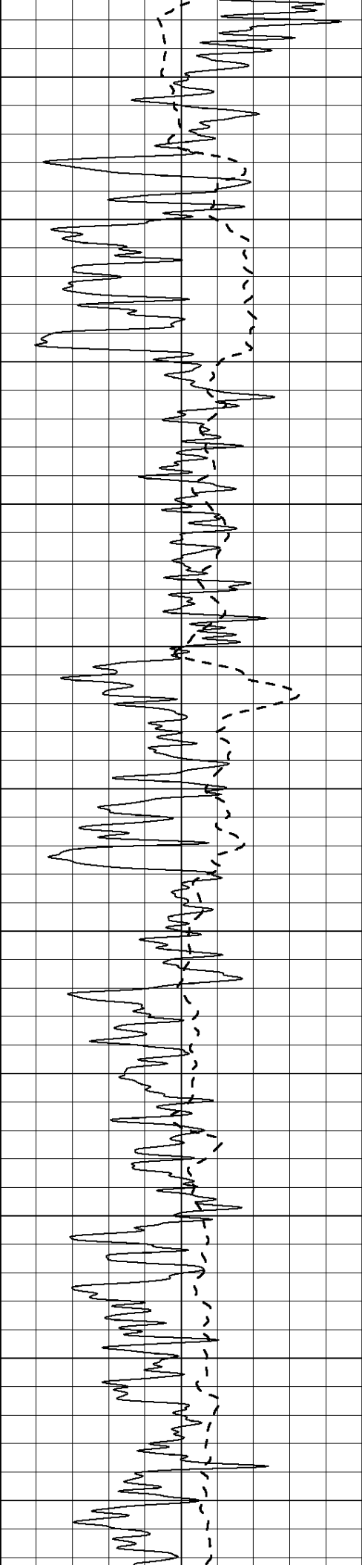


MAIN SECTION

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 Dataset Pathname: pass3.1A
 Presentation Format: dil2
 Dataset Creation: Sat Oct 06 02:55:33 2012
 Charted by: Depth in Feet scaled 1:600

| | | | | | |
|---|------------------|-----|------|------------------------|-----|
| 0 | Gamma Ray (GAPI) | 150 | 0 | RLL3 (Ohm-m) | 50 |
| | | | 0 | Deep Induction (Ohm-m) | 50 |
| | | | 1000 | CILD (mmho/m) | 0 |
| | | | 50 | RILD X10 (Ohm-m) | 500 |
| | | | 50 | RLL3 X10 (Ohm-m) | 500 |





450

500

550

600

650

700

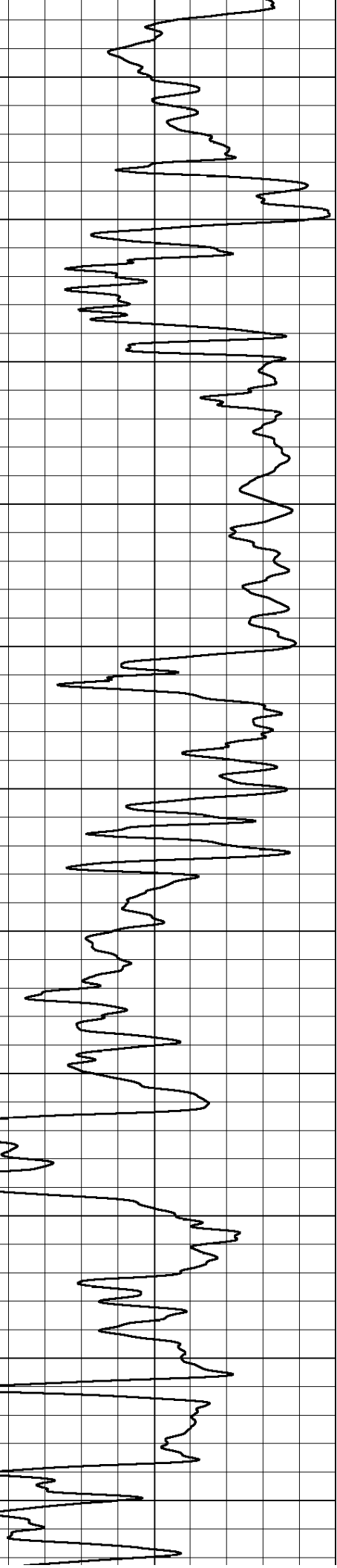
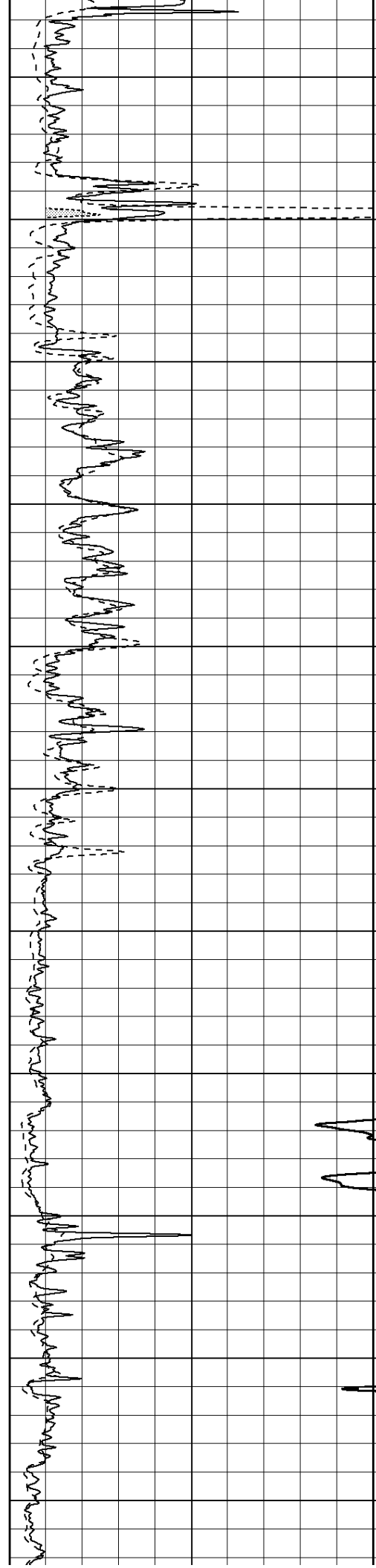
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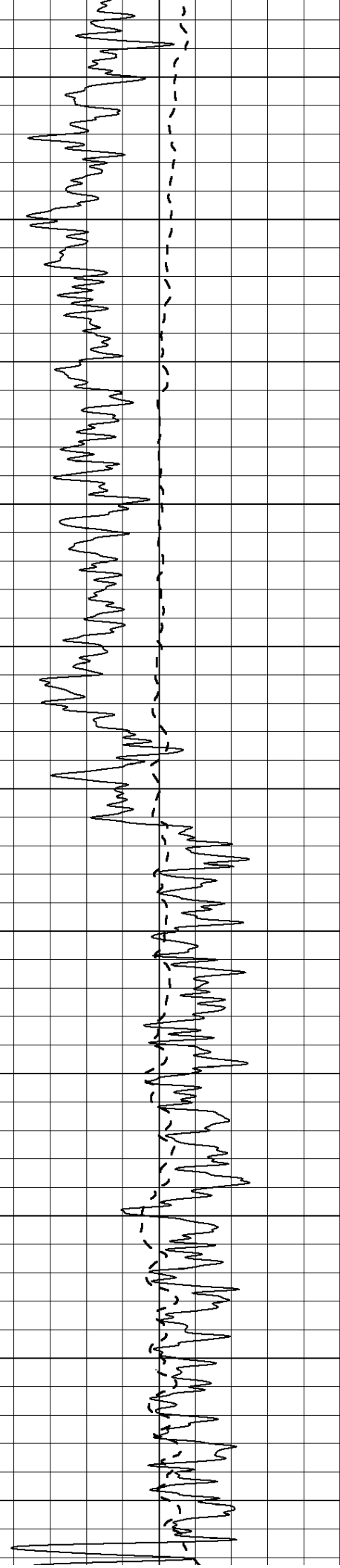
800

850

900

950





1000

1050

1100

1150

1200

1250

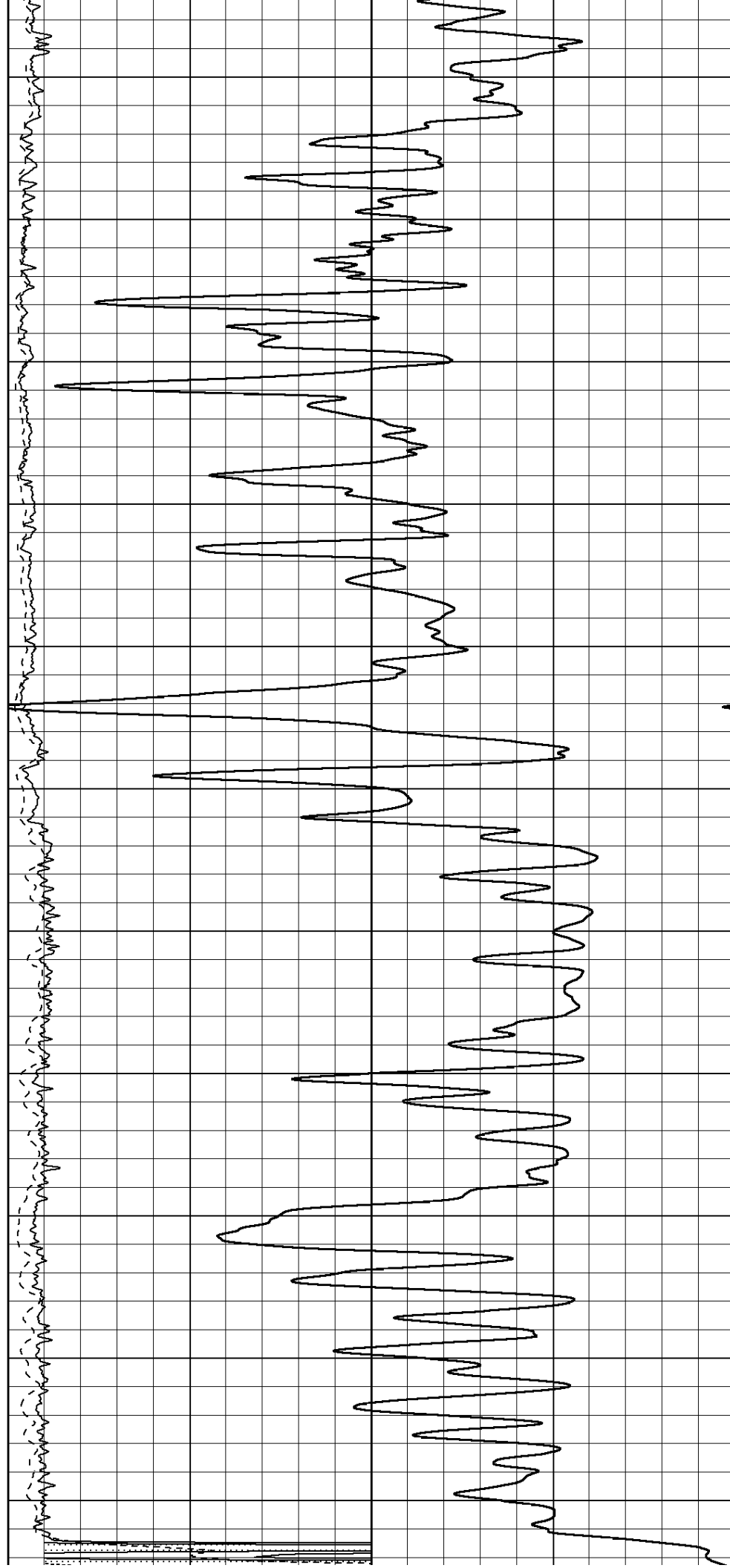
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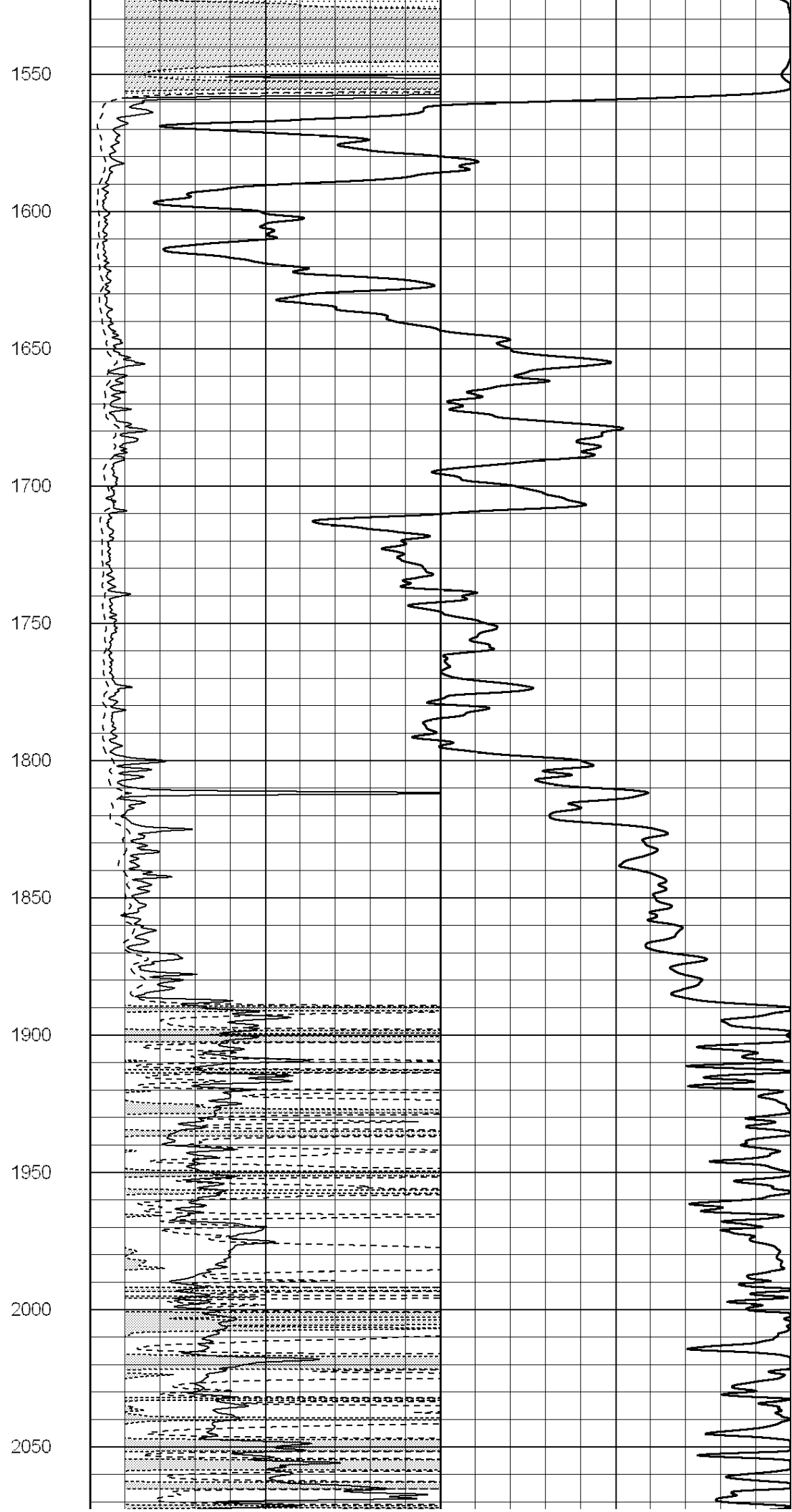
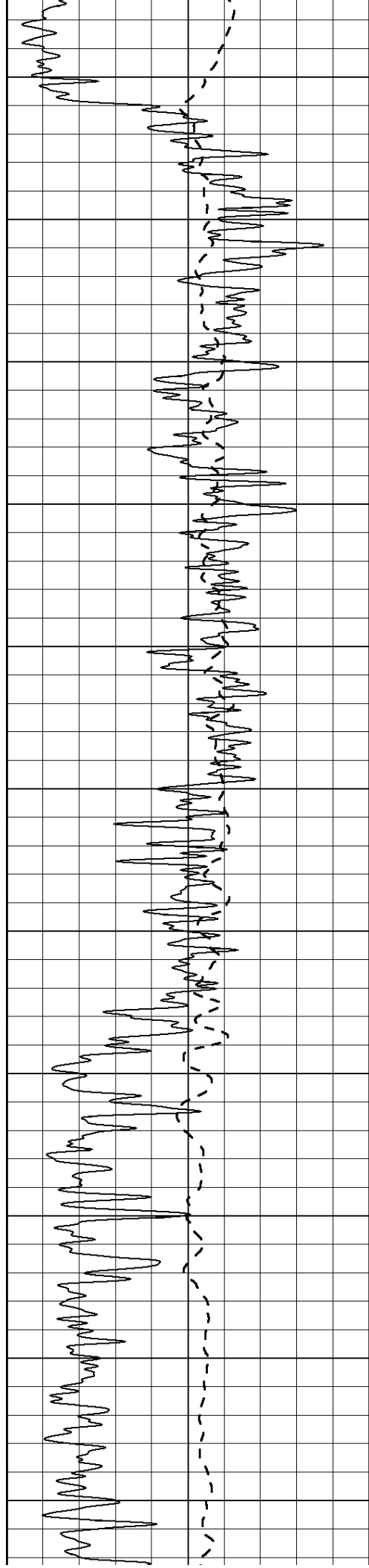
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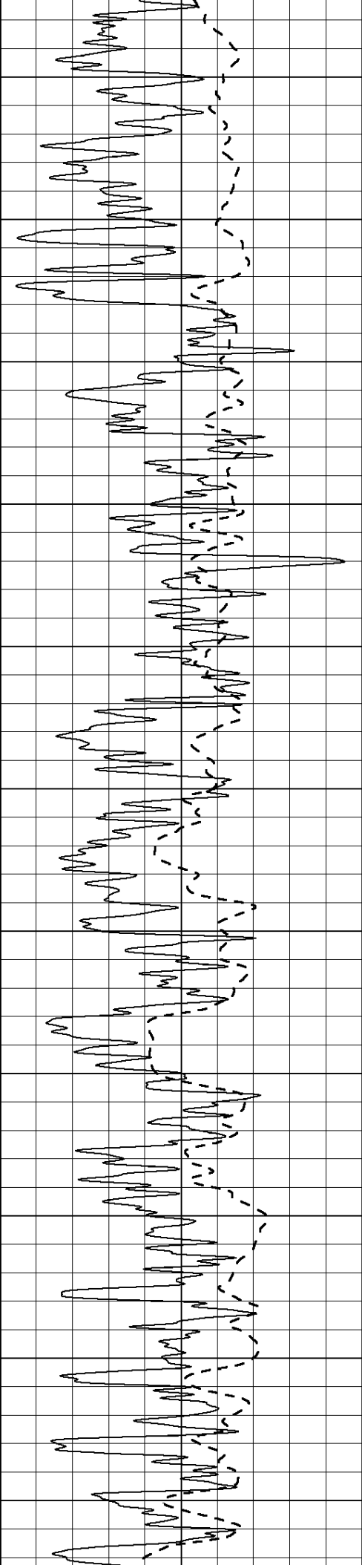
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1450

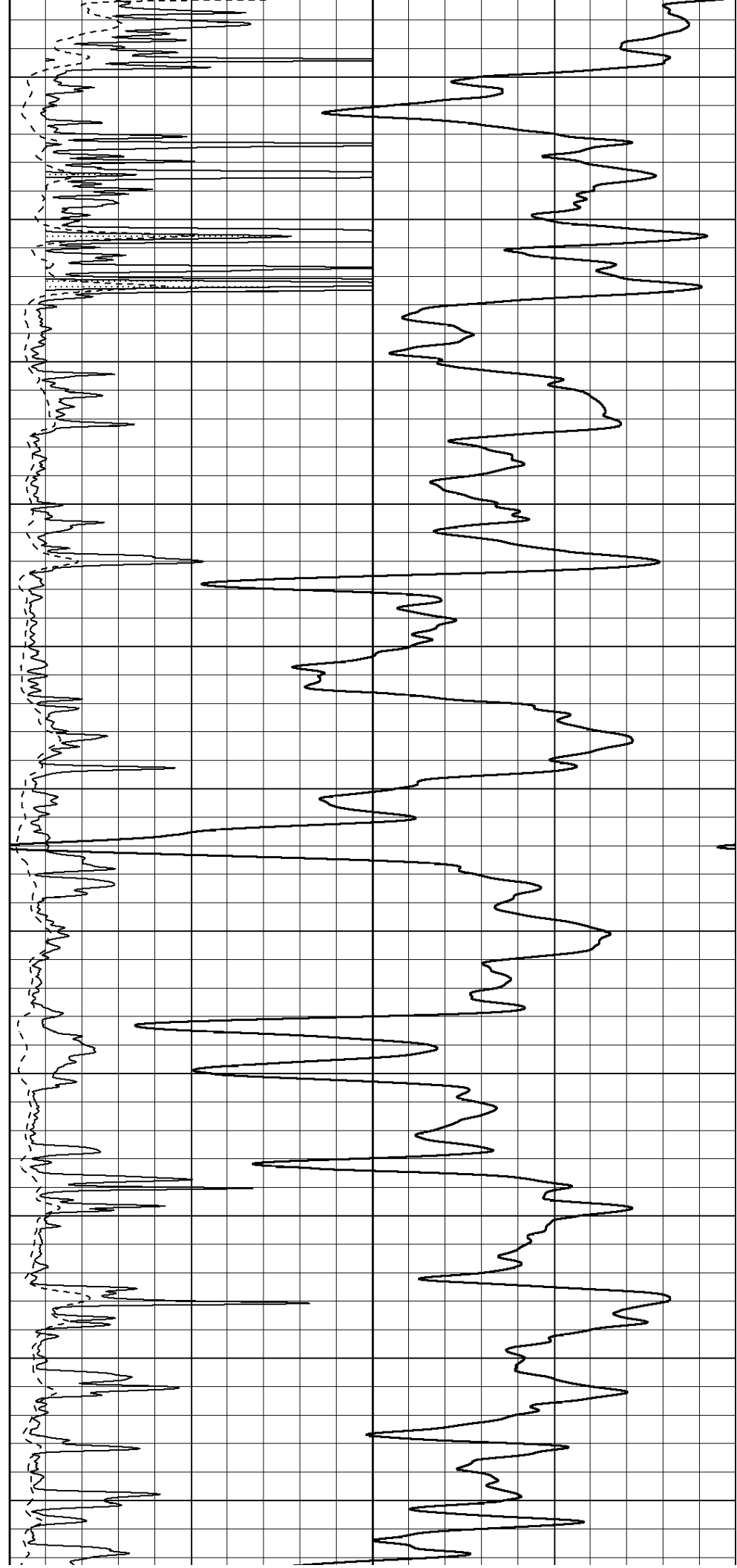
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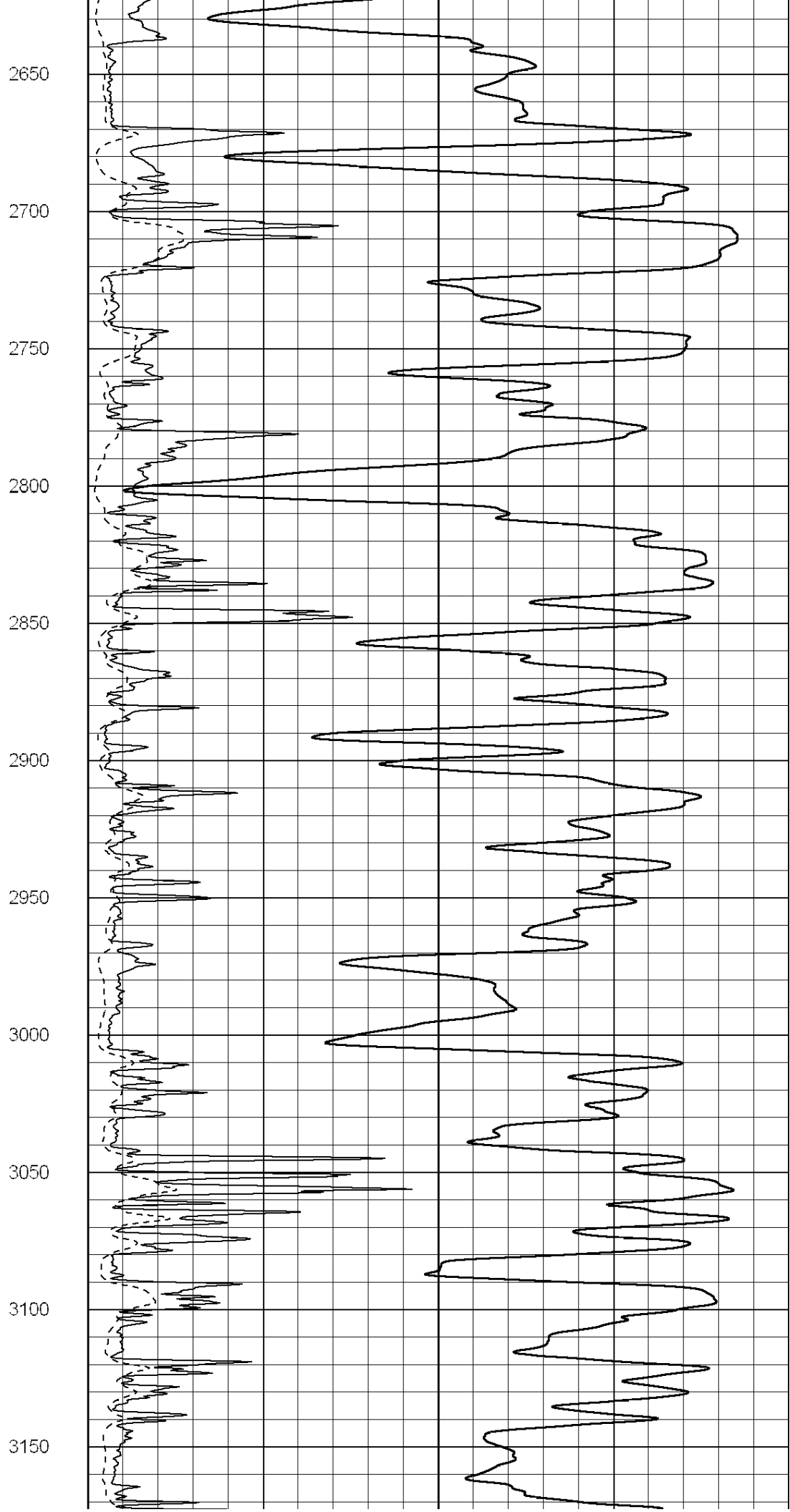
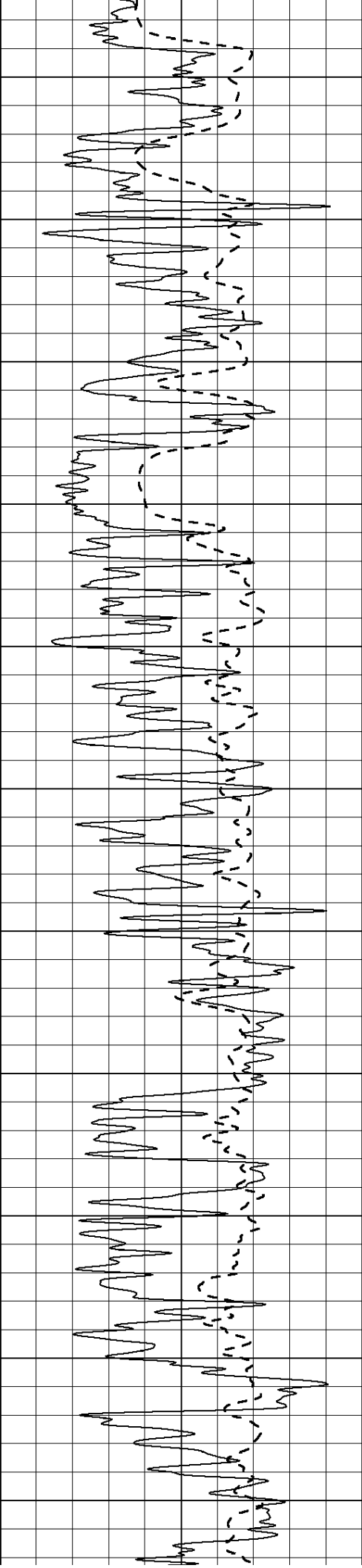


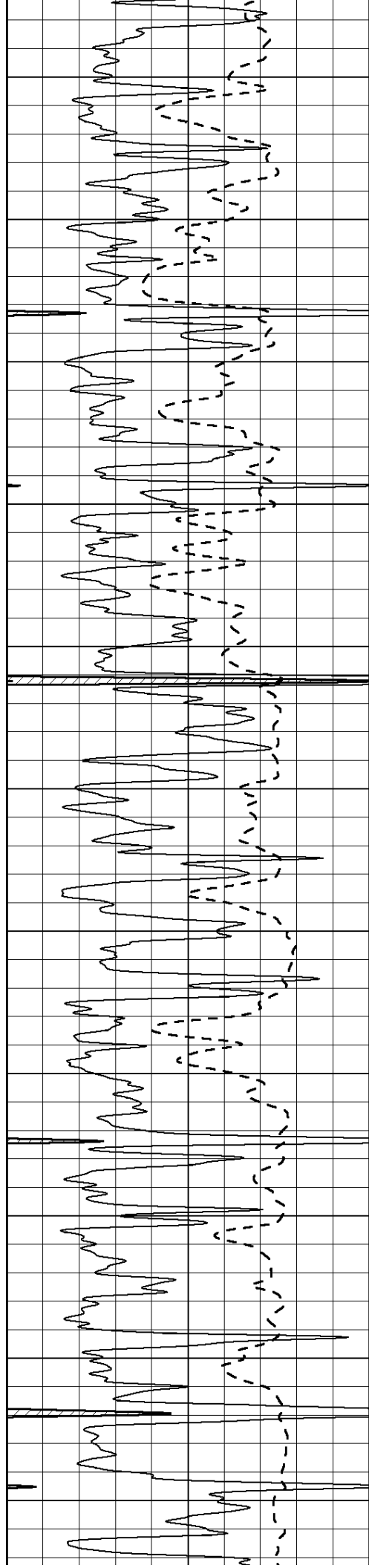




2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600







3200

3250

3300

3350

3400

3450

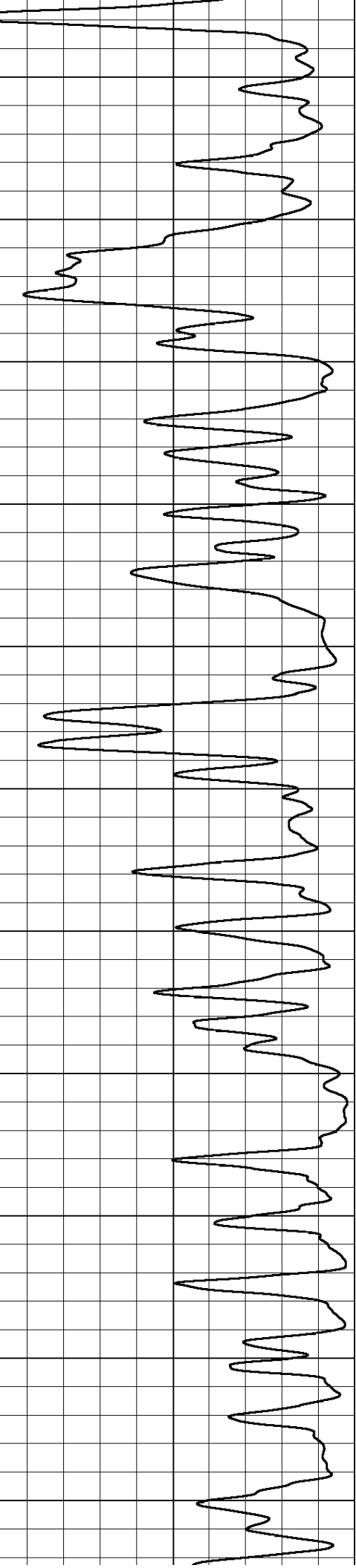
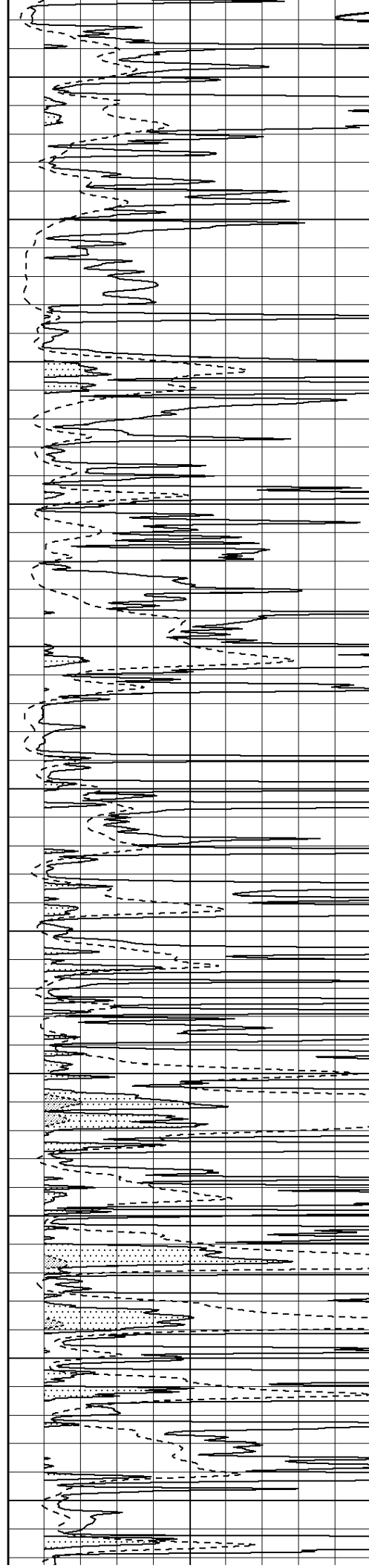
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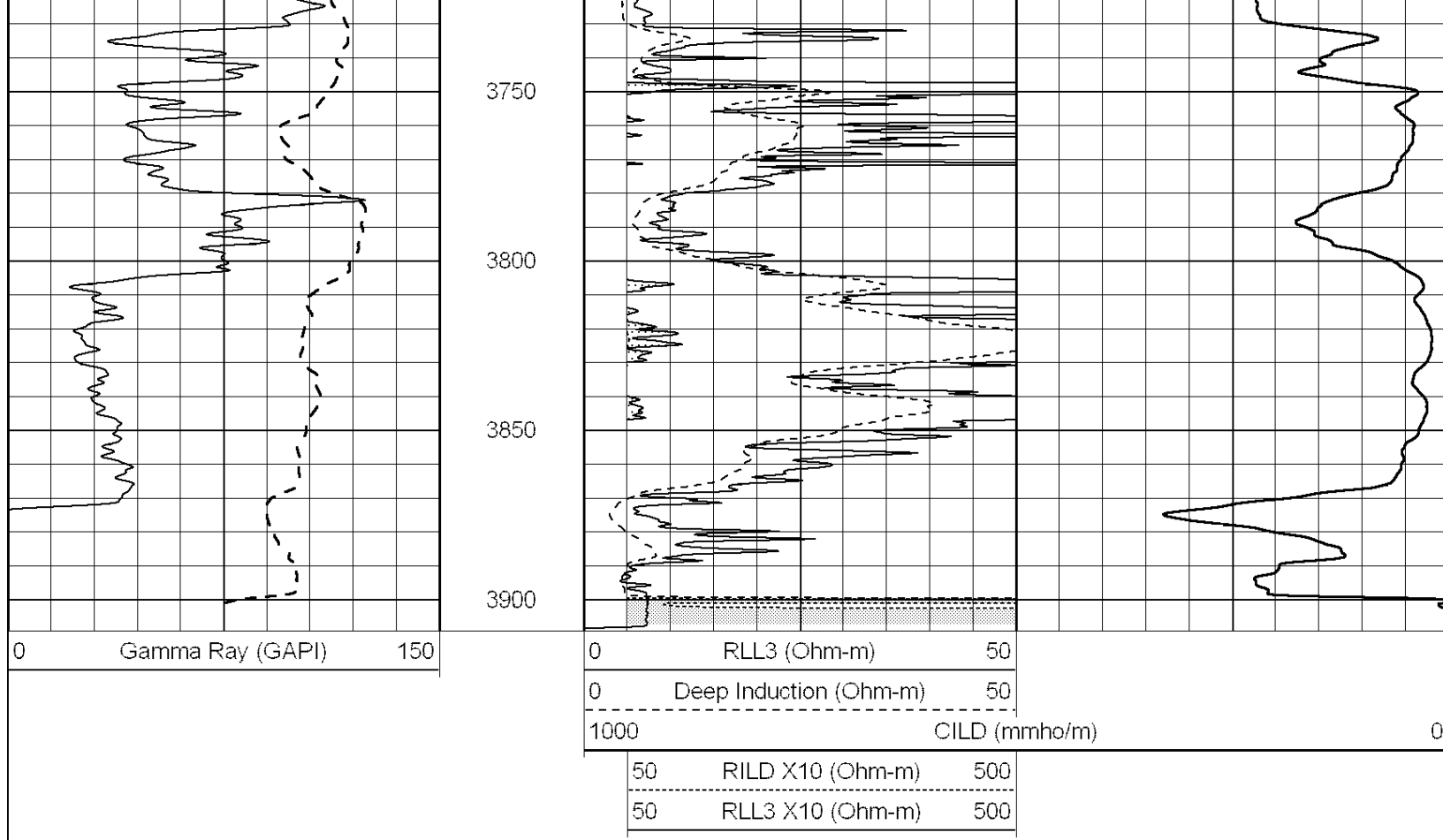
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3600

3650

3700

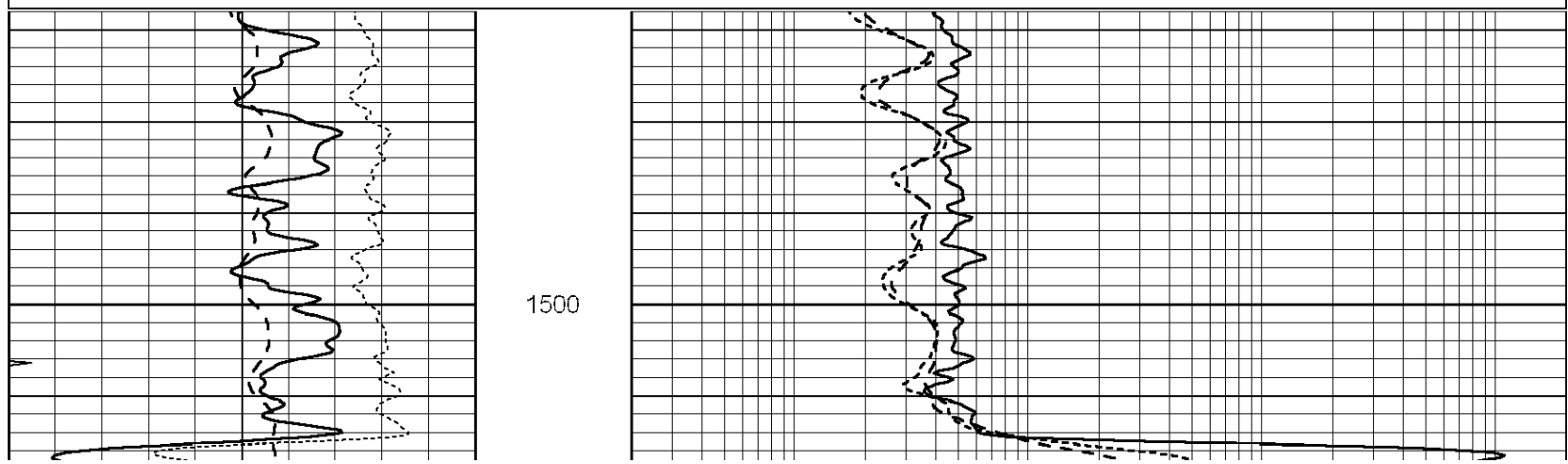


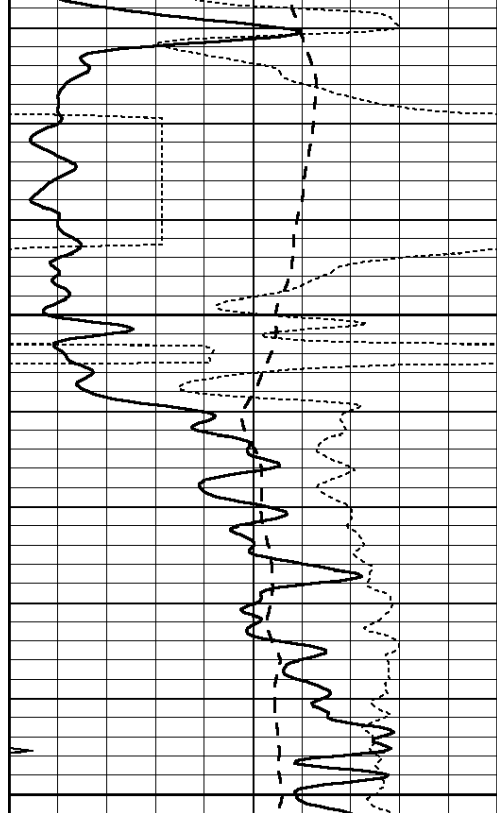


MAIN SECTION

Database File: 009928pdn.db
 Dataset Pathname: pass3.1A
 Presentation Format: dil
 Dataset Creation: Sat Oct 06 02:55:33 2012
 Charted by: Depth in Feet scaled 1:240

| | | | | | |
|------|------------------|-----|-----|--------------------------|------|
| 0 | GAMMA RAY (GAPI) | 150 | 0.2 | RLL3 (Ohm-m) | 2000 |
| -100 | SP (mV) | 100 | 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| -250 | RxoRt | 50 | 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |
| 0 | MINMK | 20 | | | |

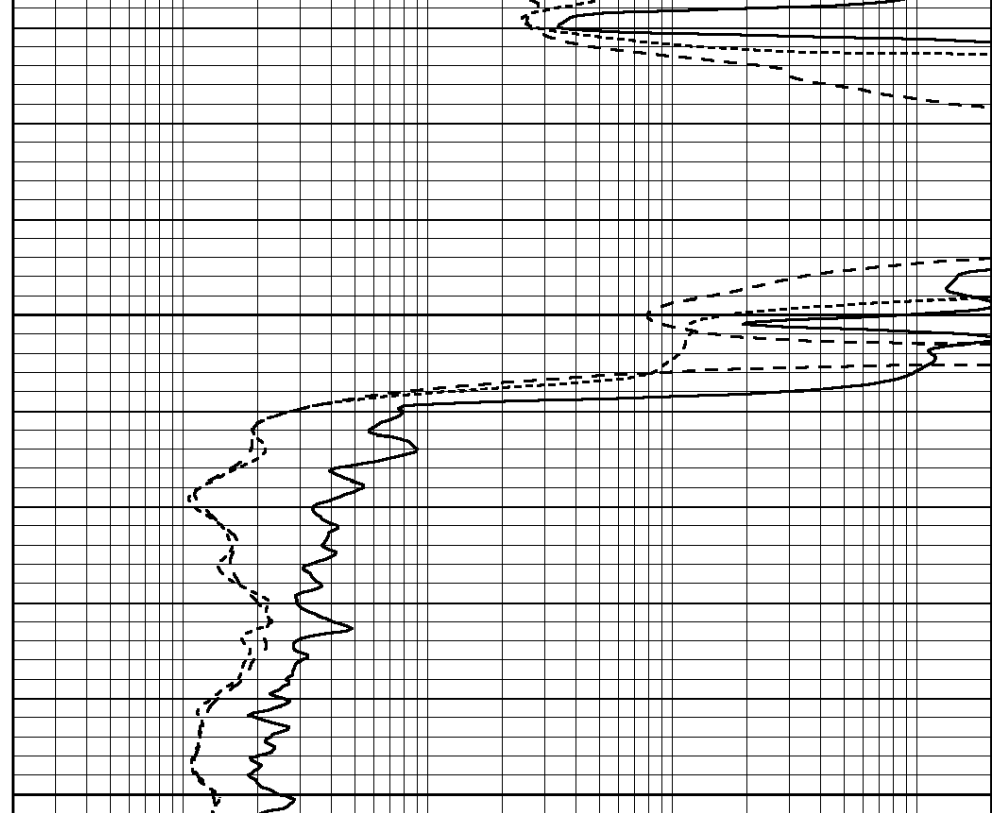




1550

1600

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



| | | |
|-----|--------------------------|------|
| 0.2 | RLL3 (Ohm-m) | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |

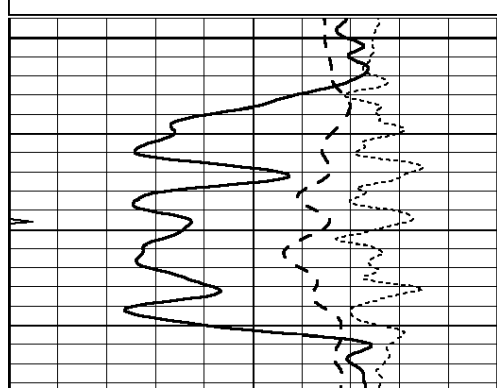


MAIN SECTION

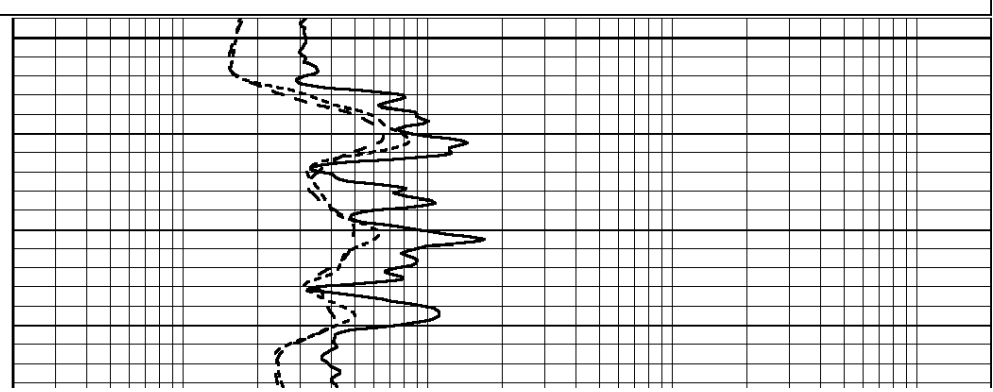
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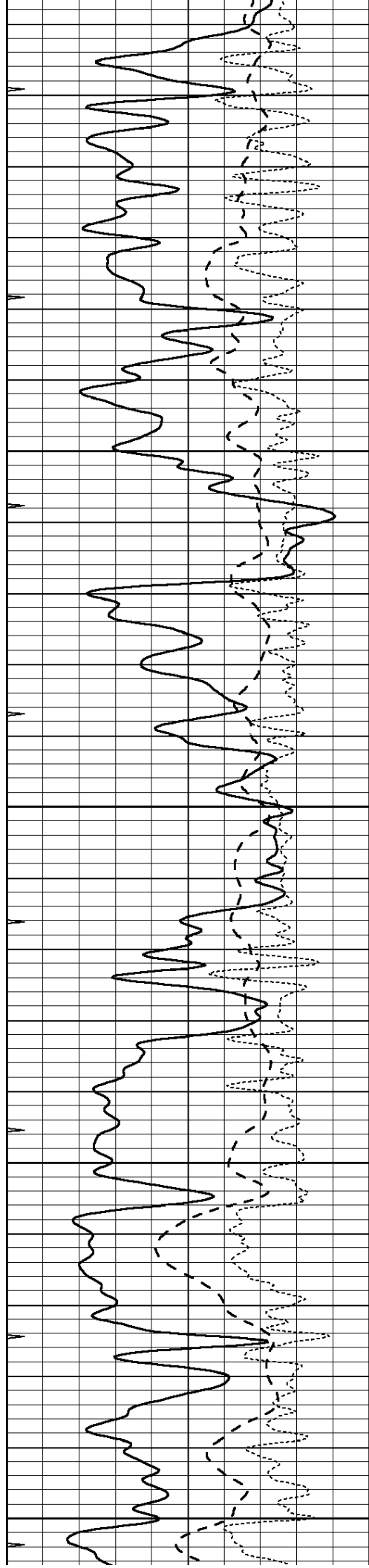
| | | |
|------|------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | RxoRt | 50 |
| 0 | MINMK | 20 |

| | | |
|-----|--------------------------|------|
| 0.2 | RLL3 (Ohm-m) | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |



3000





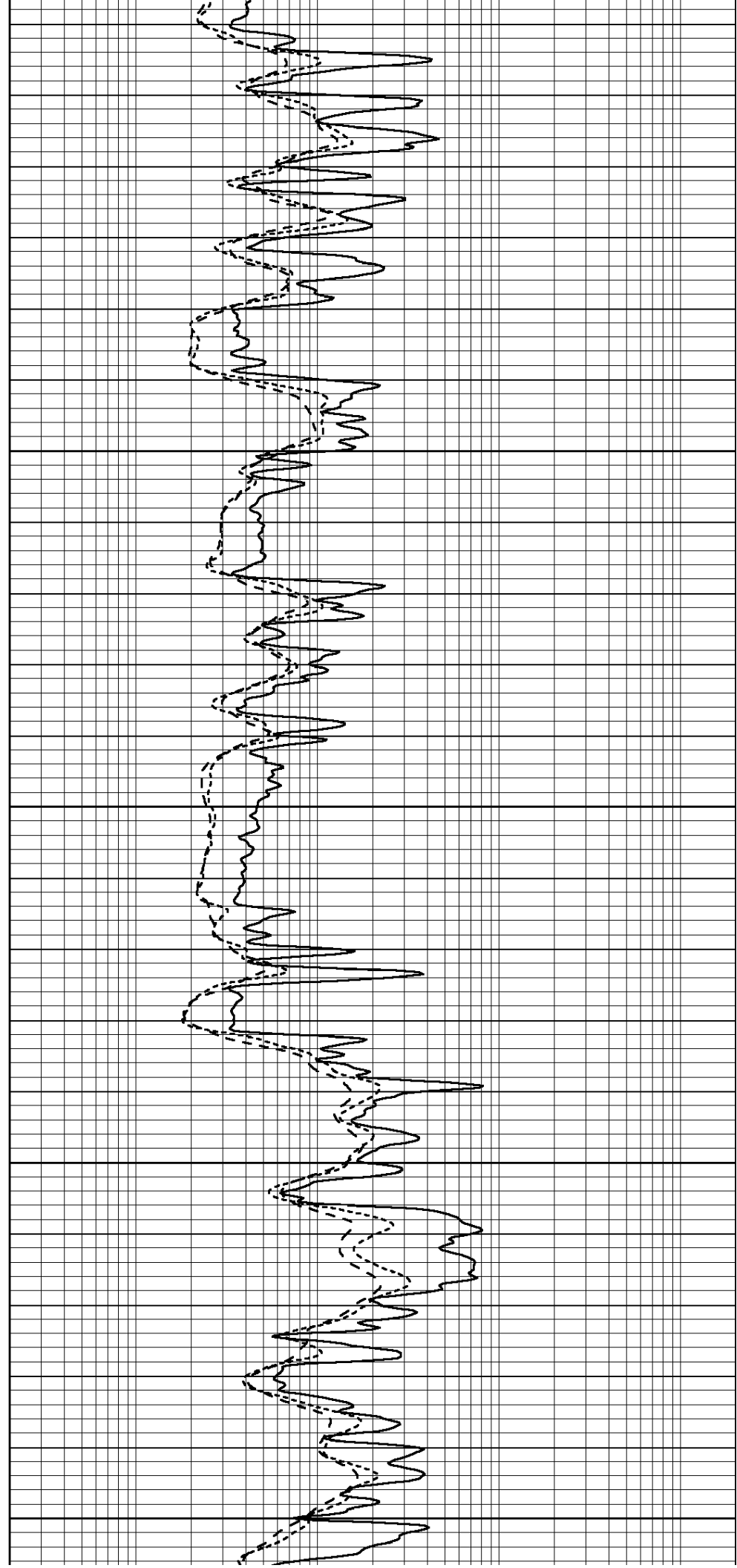
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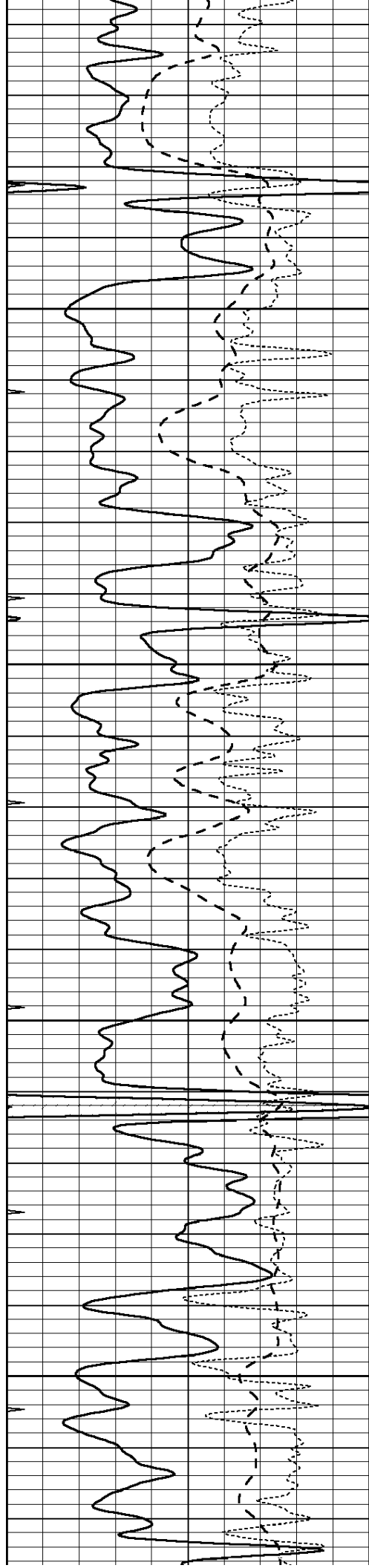
3100

3150

3200

3250



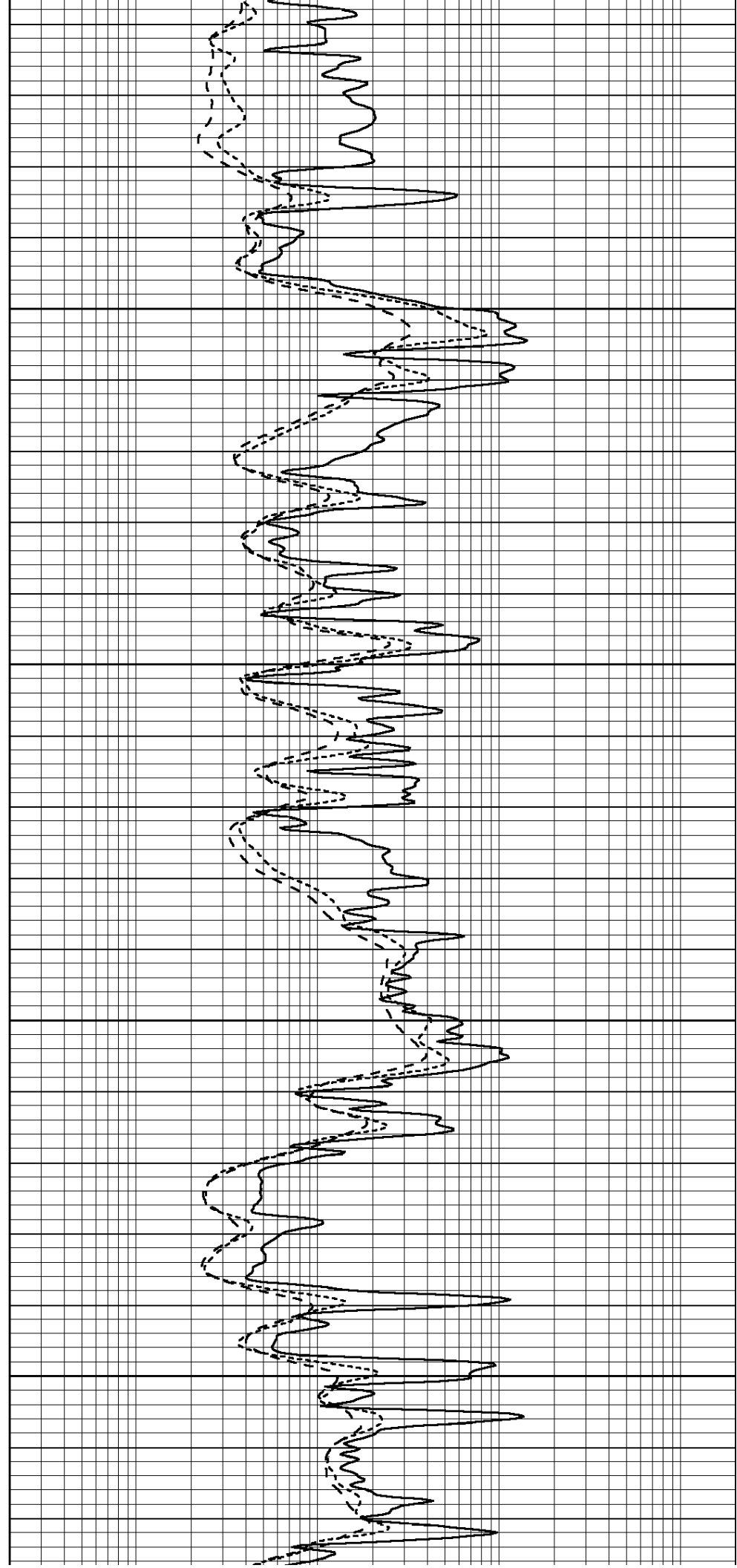


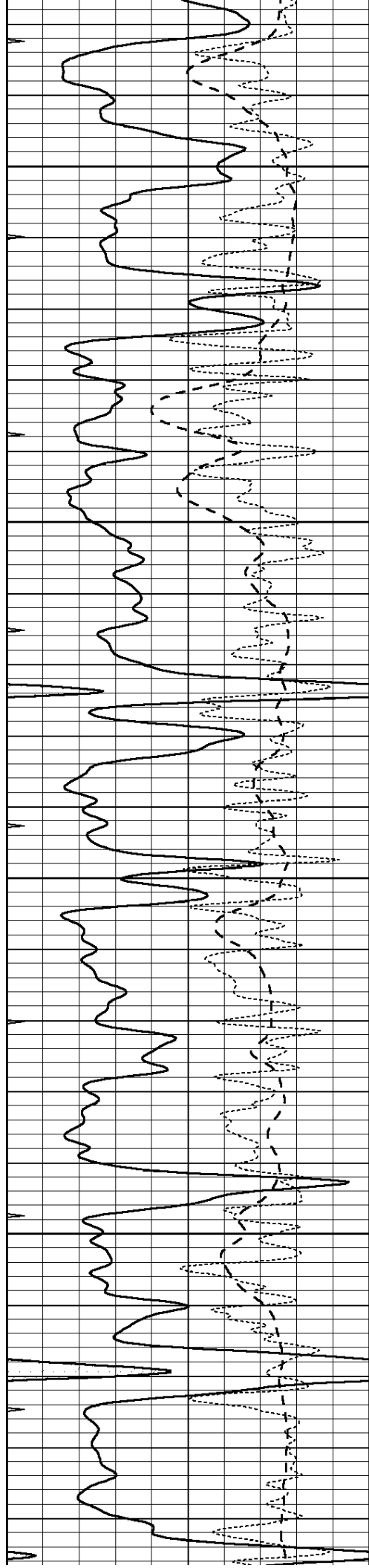
3300

3350

3400

3450



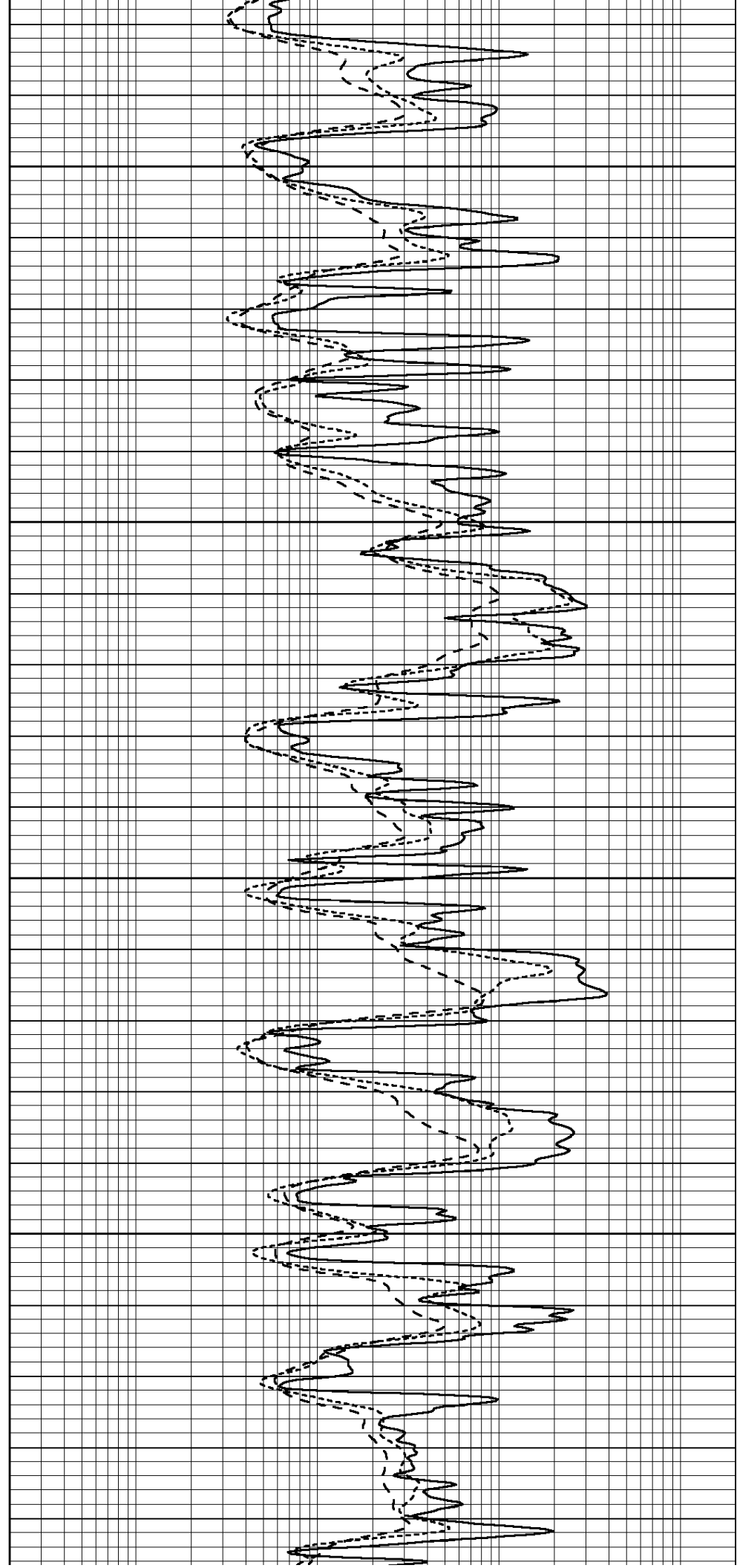


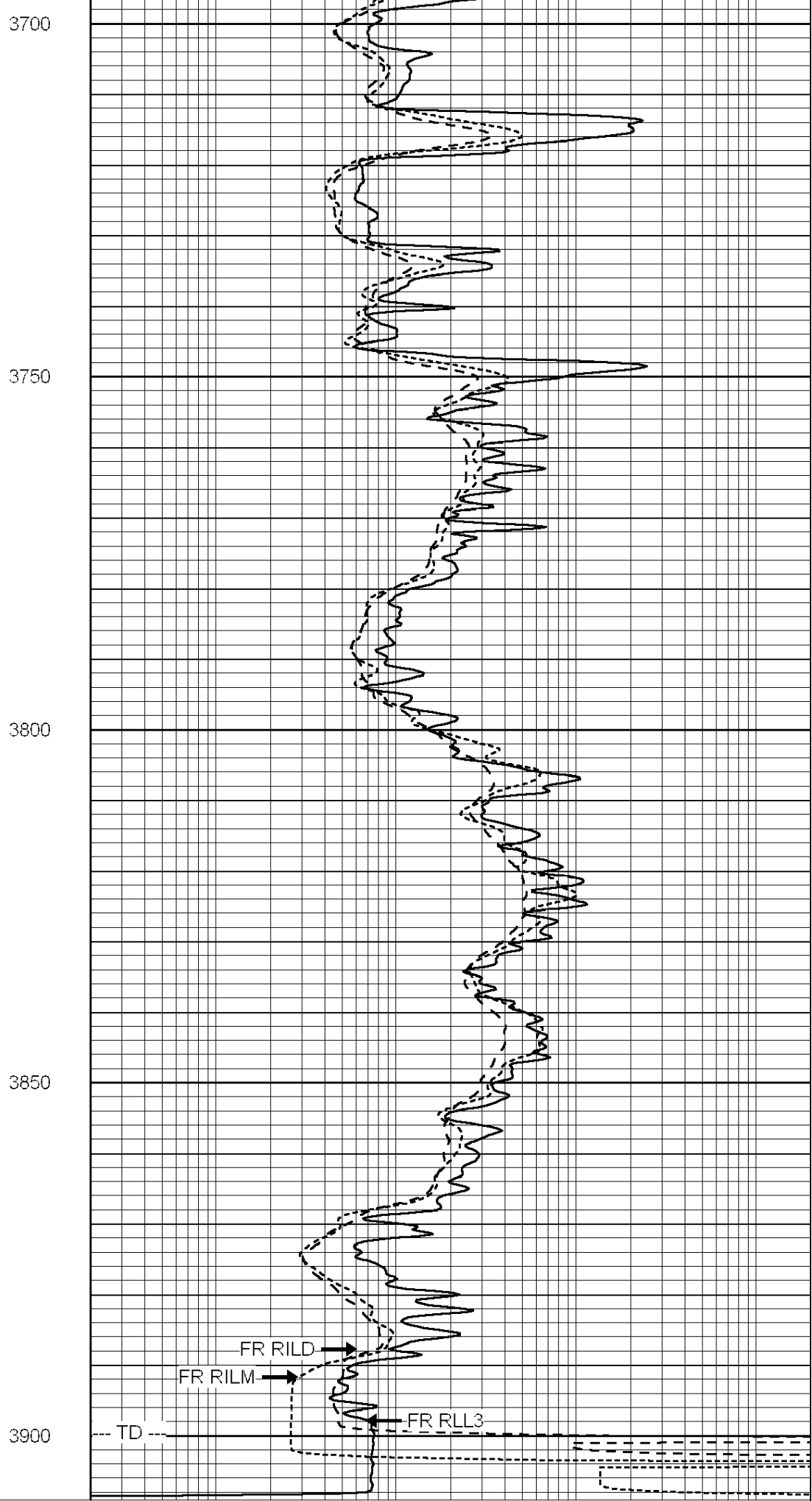
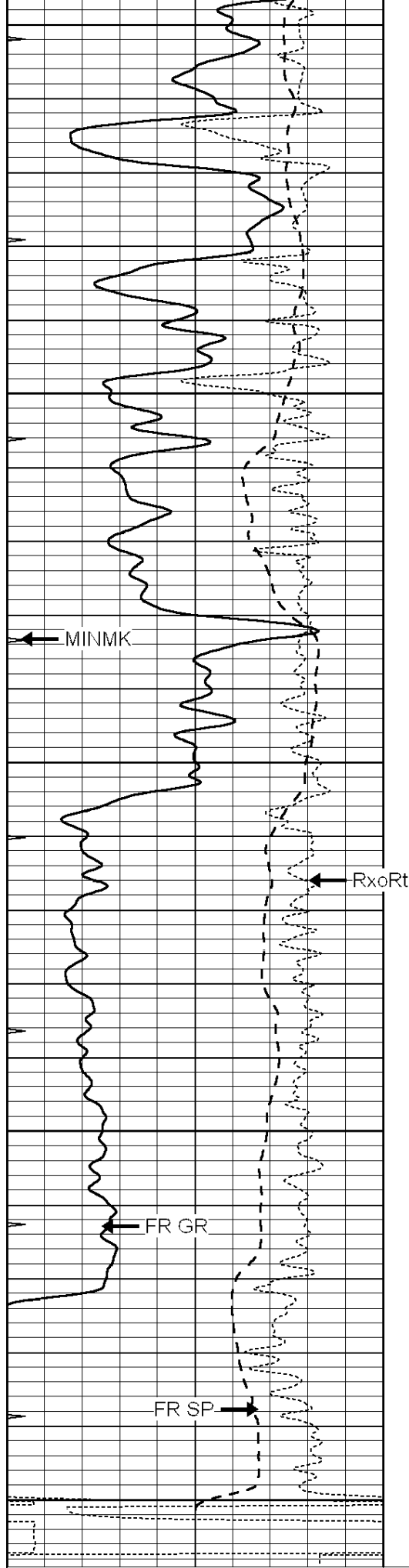
3500

3550

3600

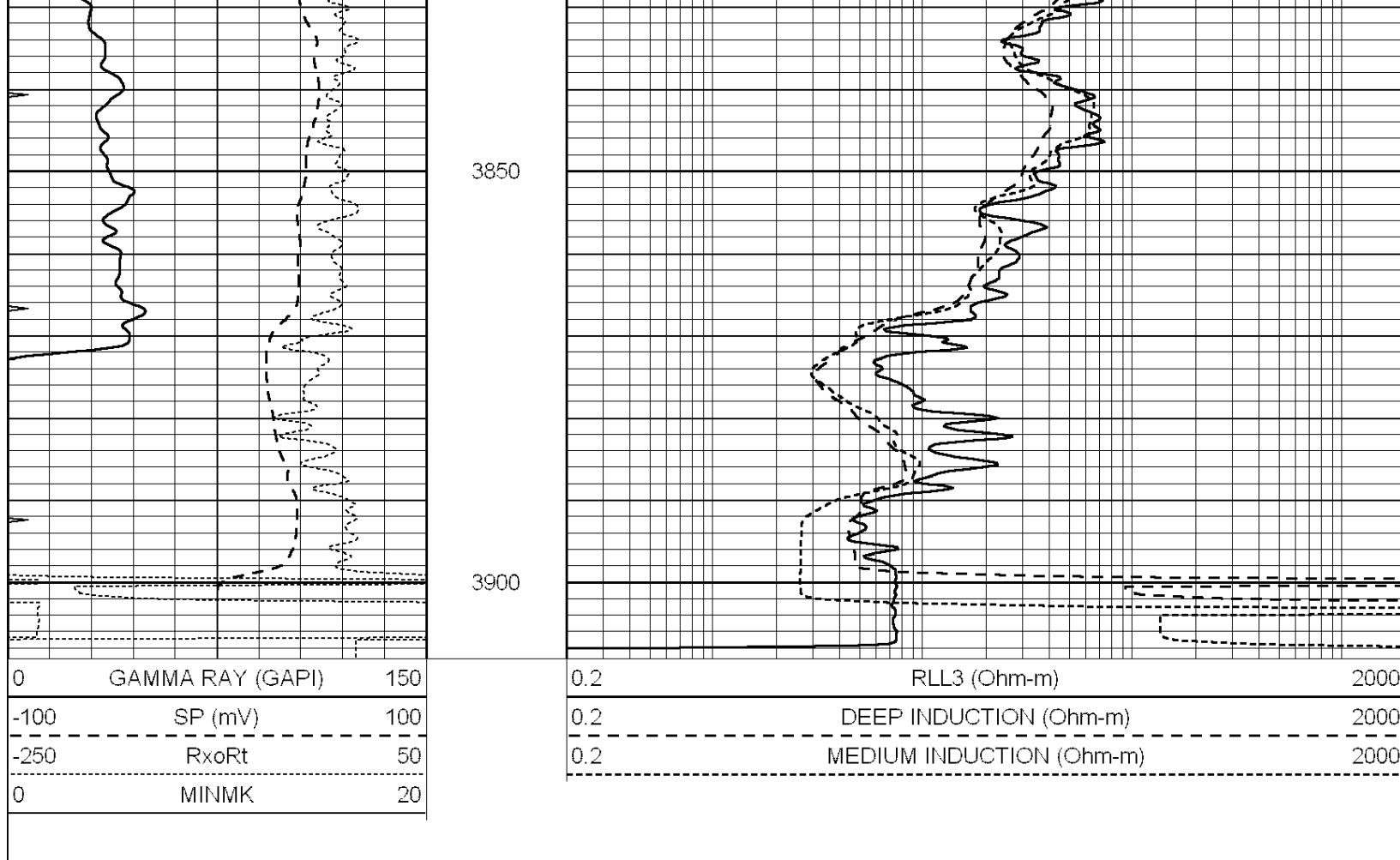
3650





0 GAMMA RAY (GAPI) 150
 -100 SP (mV) 100

0.2 RLL3 (Ohm-m) 2000
 0.2 DEEP INDUCTION (Ohm-m) 2000



Calibration Report

Database File: 009928pdn.db
 Dataset Pathname: pass3.1A
 Dataset Creation: Sat Oct 06 02:55:33 2012

Dual Induction Calibration Report

Serial-Model: DIL5-GEAR
 Performed: Sat Oct 06 00:10:41 2012

| Loop: | Readings | | | References | | | Results | |
|-----------|----------|-------|---|------------|---------|--------|---------|---------|
| | Air | Loop | | Air | Loop | | m | b |
| Deep | 0.004 | 0.654 | V | 0.000 | 400.000 | mmho/m | 490.000 | -14.000 |
| Medium | -0.005 | 0.737 | V | 0.000 | 462.500 | mmho/m | 510.000 | -11.000 |
| Internal: | Zero | Cal | | Zero | Cal | | m | b |
| Deep | 0.006 | 0.655 | V | 0.000 | 400.000 | mmho/m | 615.668 | -3.483 |
| Medium | 0.010 | 0.747 | V | 0.000 | 462.500 | mmho/m | 627.607 | -6.064 |

Litho Density Calibration Report

Serial: 002 Model: PRB
 Performed Mon Apr 02 17:56:53 2012

Litho Density Calibration

| | Background | Magnesium | Aluminum | Sandstone | |
|----------|------------|-----------|----------|-----------|-----|
| Window 1 | 872.3 | 7266.3 | 2292.6 | 7931.5 | cps |
| Window 2 | 822.9 | 5957.5 | 1958.0 | 6389.6 | cps |
| Window 3 | 670.4 | 3219.9 | 1211.9 | 3388.2 | cps |
| Window 4 | 201.6 | 201.1 | 202.3 | 204.6 | cps |

| | | | | | |
|-------------|-----|--------|--------|--------|------|
| Long Space | 0.0 | 5134.6 | 1135.0 | 5566.6 | cps |
| Short Space | 1.1 | 994.2 | 674.4 | 1059.2 | cps |
| Rho | | 1.7100 | 2.5960 | 1.3800 | g/cc |
| Pe | | | 2.5700 | 1.5500 | |

| | | | | | |
|-------------|--------|-------------|---------|---------------------|---------|
| Rib Angle | : 45.6 | Rib Slope | : 1.020 | Density/Spine Ratio | : 0.569 |
| Spine Angle | : 75.6 | Spine Slope | : 3.888 | Spine Intercept | : -18.3 |

| | | | | |
|----------|-----------|-----------|--------------|--|
| Caliper | | | | |
| Low Ref | Readings | Reference | | |
| High Ref | 4.3 | 8.4 | | |
| | 6.1 | 14.0 | | |
| | Gain: 3.0 | | Offset: -4.4 | |

Compensated Neutron Calibration Report

| | |
|----------------|--------|
| Serial Number: | NUE_2I |
| 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 |

Gamma Ray Calibration Report

| | |
|---------------------|--------------------------|
| Serial Number: | GR5 |
| Tool Model: | OPEN |
| Performed: | Sat Oct 06 01:43:28 2012 |
| Calibrator Value: | 1.0 GAPI |
| Background Reading: | 0.0 cps |
| Calibrator Reading: | 1.0 cps |
| Sensitivity: | 0.7500 GAPI/cps |