



SUPERIOR  
Hays,  
Kansas

## DUAL INDUCTION LOG

|                              |                           |                     |                                     |
|------------------------------|---------------------------|---------------------|-------------------------------------|
| Company                      | TENGASCO, INC.            | Company             | TENGASCO, INC.                      |
| Well                         | ZERGER "A" #1             | Well                | ZERGER "A" #1                       |
| Field                        | WEBSTER                   | Field               | WEBSTER                             |
| County                       | ROOKS                     | County              | ROOKS                               |
| State                        | KANSAS                    | State               | KANSAS                              |
| Location:                    | AP1 # : 15-163-24014-0000 | Other Services      | CDL/CNL/PE<br>MEL                   |
| Permanent Datum              | GROUND LEVEL              | Elevation           | 1992                                |
| Log Measured From            | KELLY BUSHING 7' A.G.L.   | Elevation           | K.B. 1999<br>D.F. 1997<br>G.L. 1992 |
| Drilling Measured From       | KELLY BUSHING             |                     |                                     |
| SEC 21 TWP 8S RGE 19W        |                           |                     |                                     |
| Date                         | 4/7/12                    |                     |                                     |
| Run Number                   | ONE                       |                     |                                     |
| Depth Driller                | 3530                      |                     |                                     |
| Depth Logger                 | 3532                      |                     |                                     |
| Bottom Logged Interval       | 3530                      |                     |                                     |
| Top Log Interval             | 00                        |                     |                                     |
| Casing Driller               | 8 5/8"@262'               |                     |                                     |
| Casing Logger                | 262                       |                     |                                     |
| Bit Size                     | 7 7/8"                    |                     |                                     |
| Type Fluid in Hole           | CHEMICAL MUD              | CHLORIDES 3,000 PPM |                                     |
| Density / Viscosity          | 9.1/56                    |                     |                                     |
| pH / Fluid Loss              | 10.0/7.4                  |                     |                                     |
| Source of Sample             | FLOWLINE                  |                     |                                     |
| Rm @ Meas. Temp              | 1.50@70F                  |                     |                                     |
| Rmt @ Meas. Temp             | 1.13@70F                  |                     |                                     |
| Rmc @ Meas. Temp             | 1.80@70F                  |                     |                                     |
| Source of Rmt / Rmc          | MEASUREMENT               |                     |                                     |
| Rm @ BHT                     | .938@112F                 |                     |                                     |
| Time Circulation Stopped     | 2 HOURS                   |                     |                                     |
| Time Logger on Bottom        | 1:00 P.M.                 |                     |                                     |
| Maximum Recorded Temperature | 112F                      |                     |                                     |
| Equipment Number             | 4010                      |                     |                                     |
| Location                     | HAYS, KANSAS              |                     |                                     |
| Recorded By                  | JEFF LUEBBERS             |                     |                                     |
| Witnessed By                 | CLAYTON ERICKSON          | KEITH KARLIN        |                                     |

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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 SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395  
DIRECTIONS  
ZURICH, KS. 7 1/2N. ON BLKTOP, W. INTO



SUPERIOR  
Hays,  
Kansas

# MAIN SECTION

Database File: 408621pe.db  
Dataset Pathname: pass3.8  
Presentation Format: dil2  
Dataset Creation: Sat Apr 07 15:02:14 2012  
Charted by: Depth in Feet scaled 1:600

|      |                  |     |
|------|------------------|-----|
| 0    | Gamma Ray (GAPI) | 150 |
| -100 | SP (mV)          | 100 |

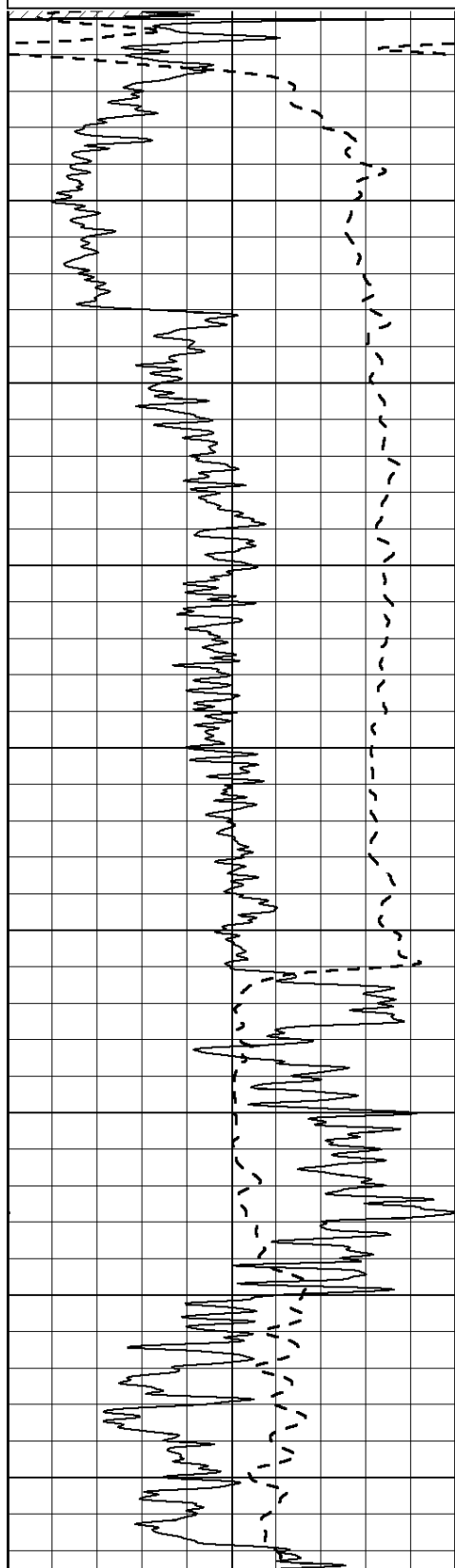
|   |              |    |
|---|--------------|----|
| 0 | RLL3 (Ohm-m) | 50 |
|---|--------------|----|

|   |              |    |
|---|--------------|----|
| 0 | RILD (Ohm-m) | 50 |
|---|--------------|----|

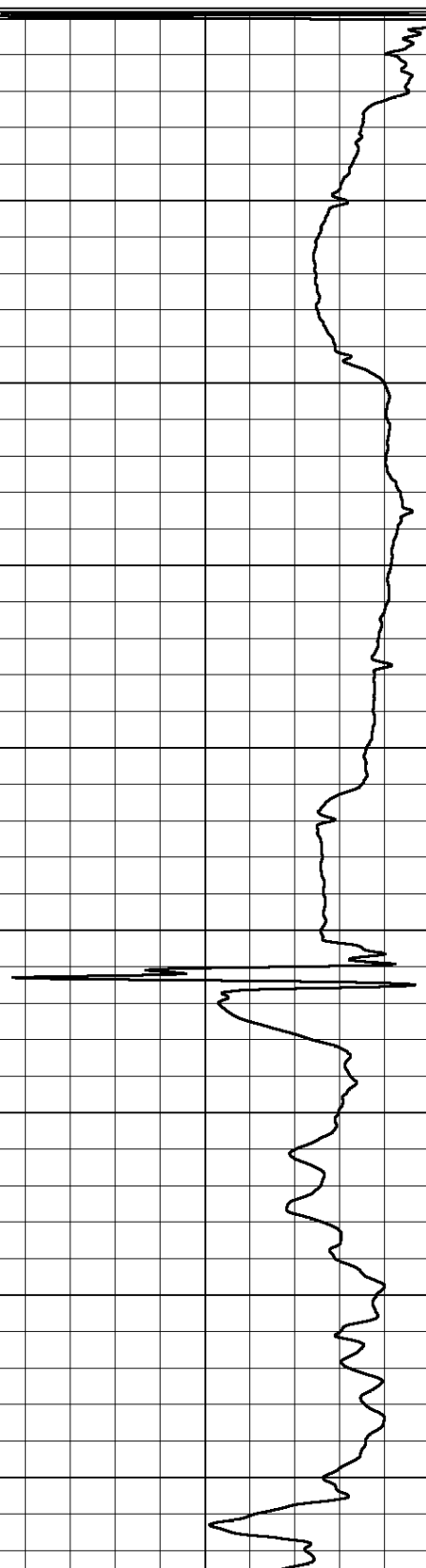
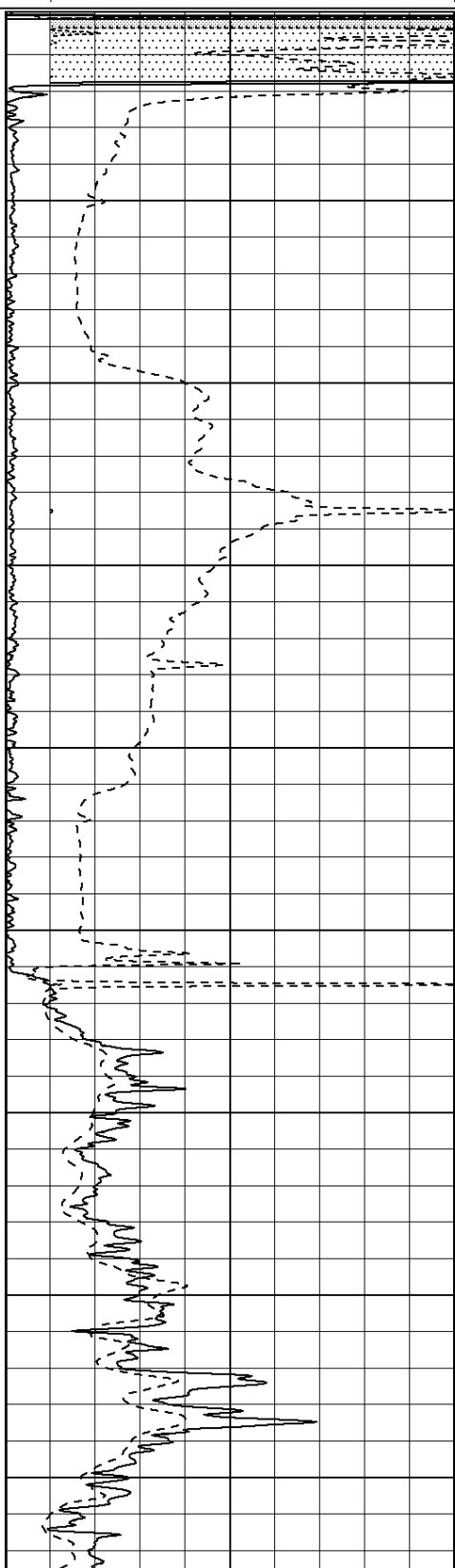
|      |               |   |
|------|---------------|---|
| 1000 | CILD (mmho/m) | 0 |
|------|---------------|---|

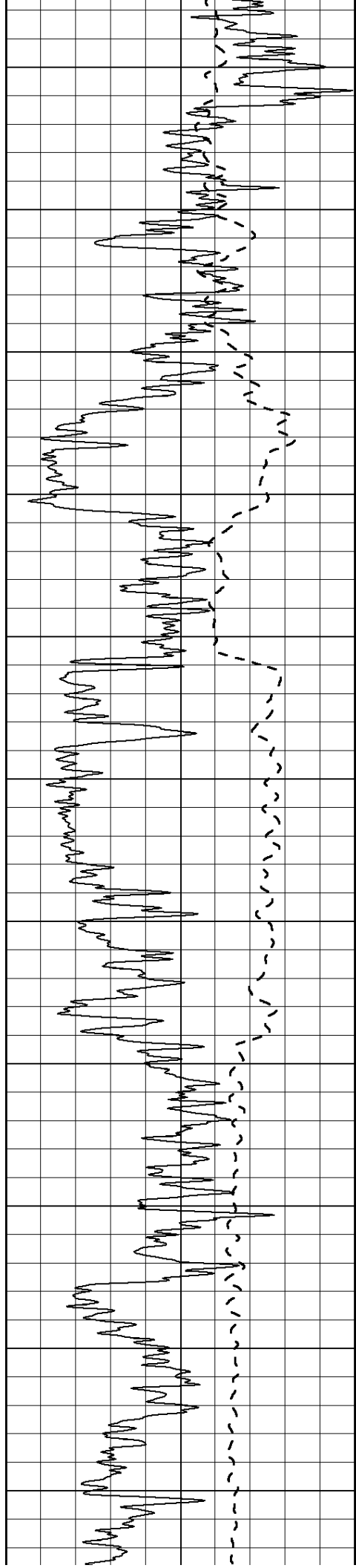
|    |                  |     |
|----|------------------|-----|
| 50 | RILD X10 (Ohm-m) | 500 |
|----|------------------|-----|

|    |                  |     |
|----|------------------|-----|
| 50 | RLL3 X10 (Ohm-m) | 500 |
|----|------------------|-----|



0  
50  
100  
150  
200  
250  
300  
350  
400





450

500

550

600

650

700

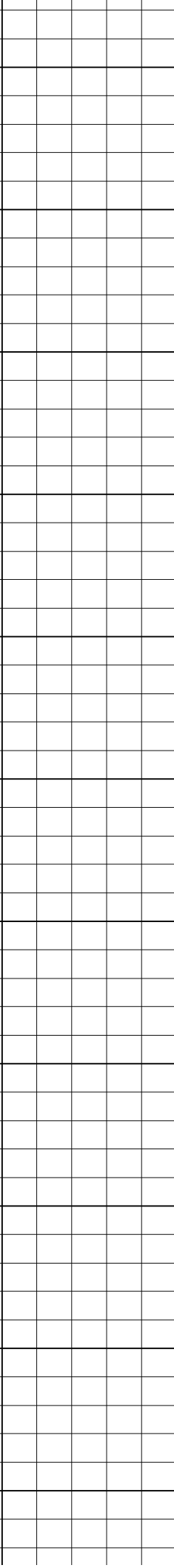
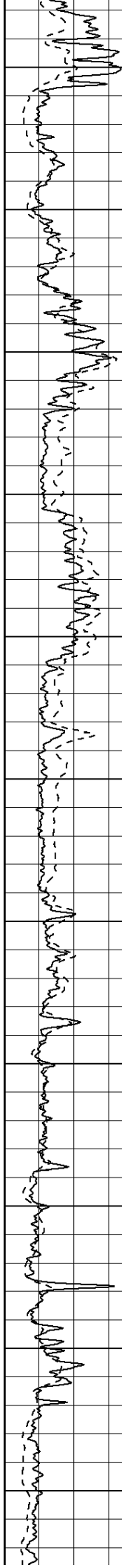
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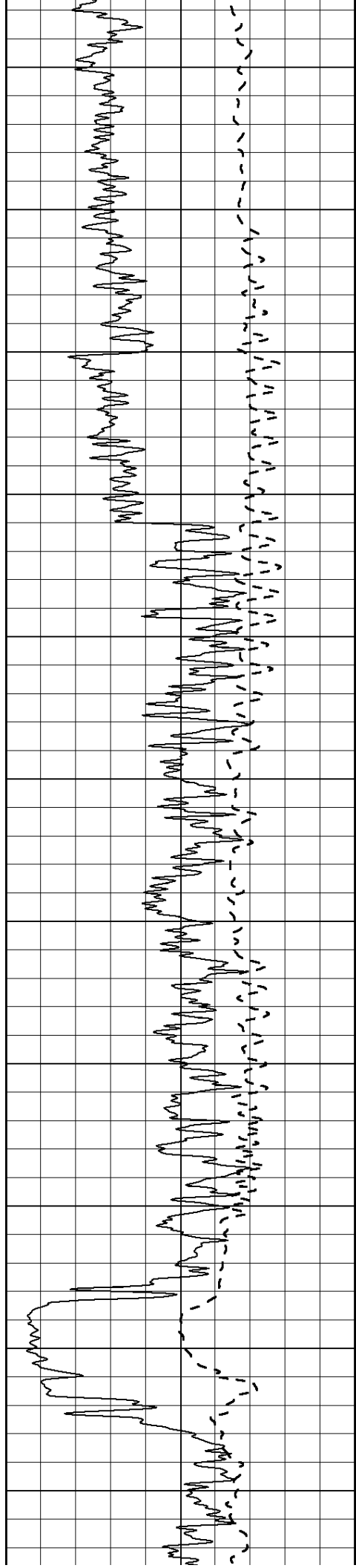
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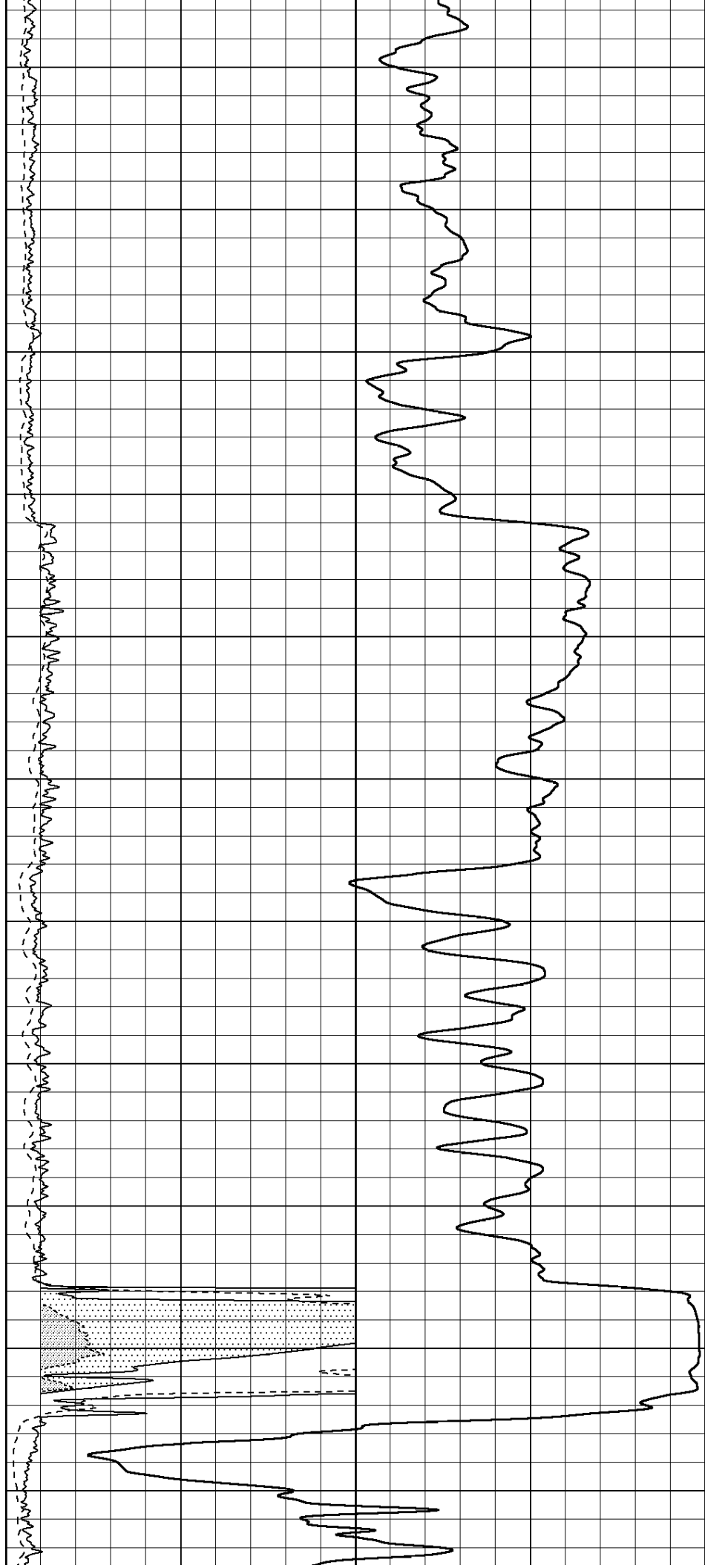
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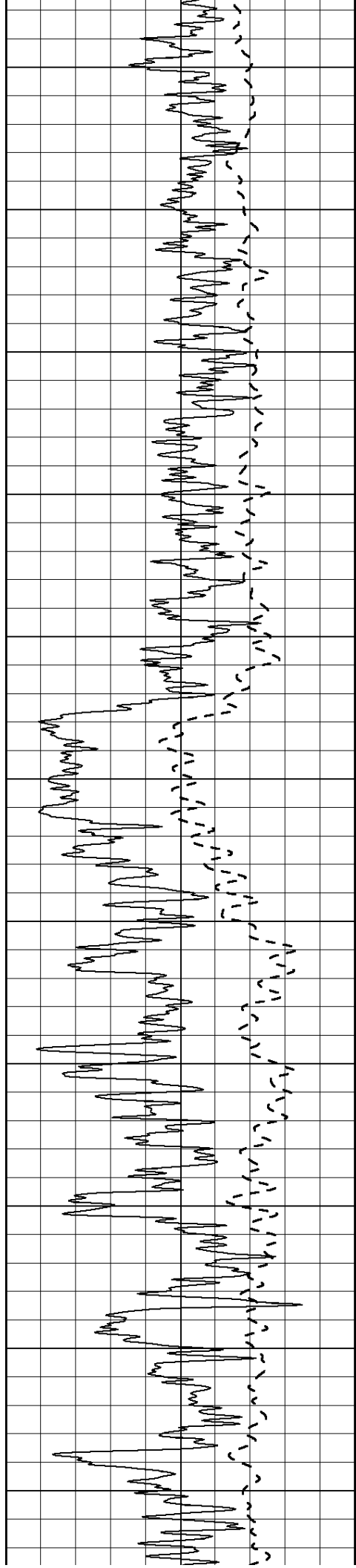
950





1000  
1050  
1100  
1150  
1200  
1250  
1300  
1350  
1400  
1450  
1500





1550

1600

1650

1700

1750

1800

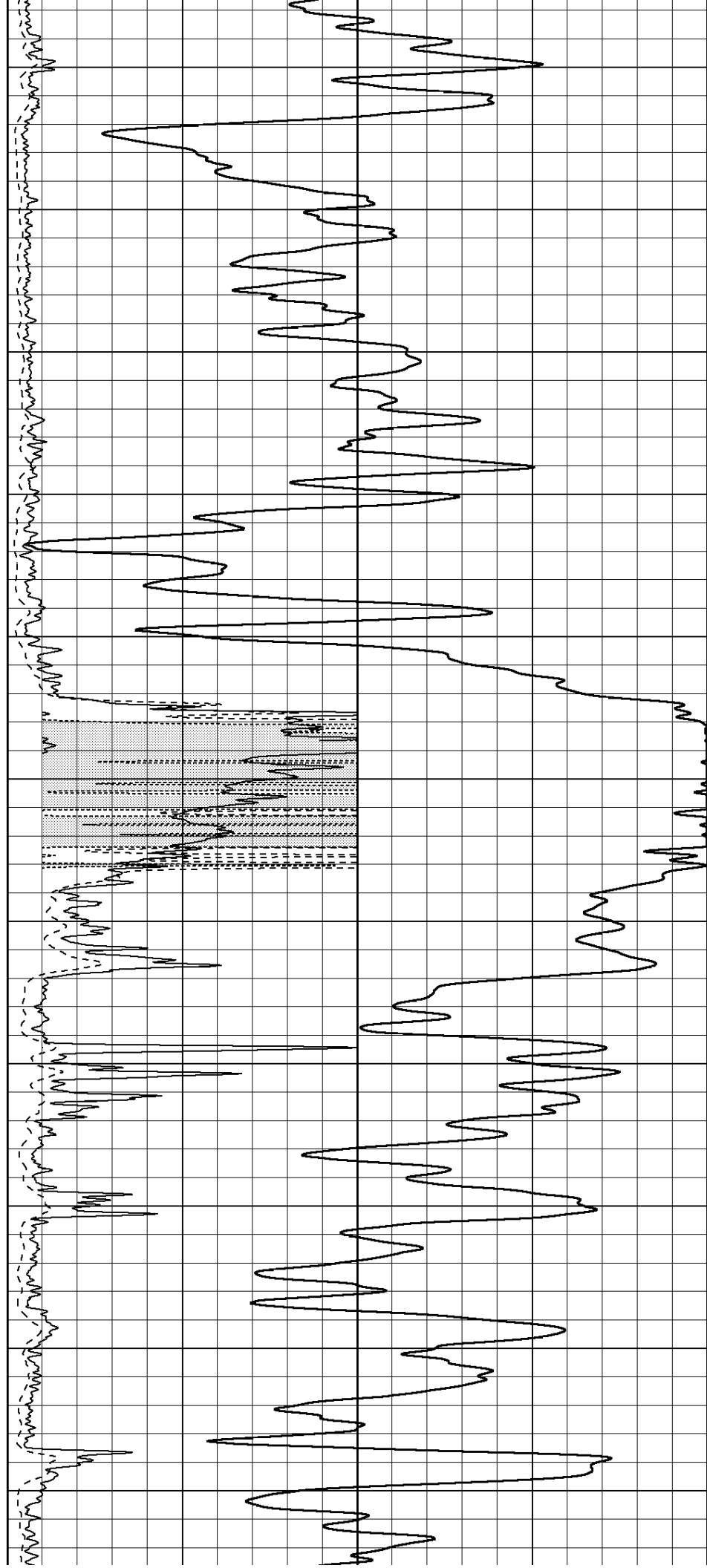
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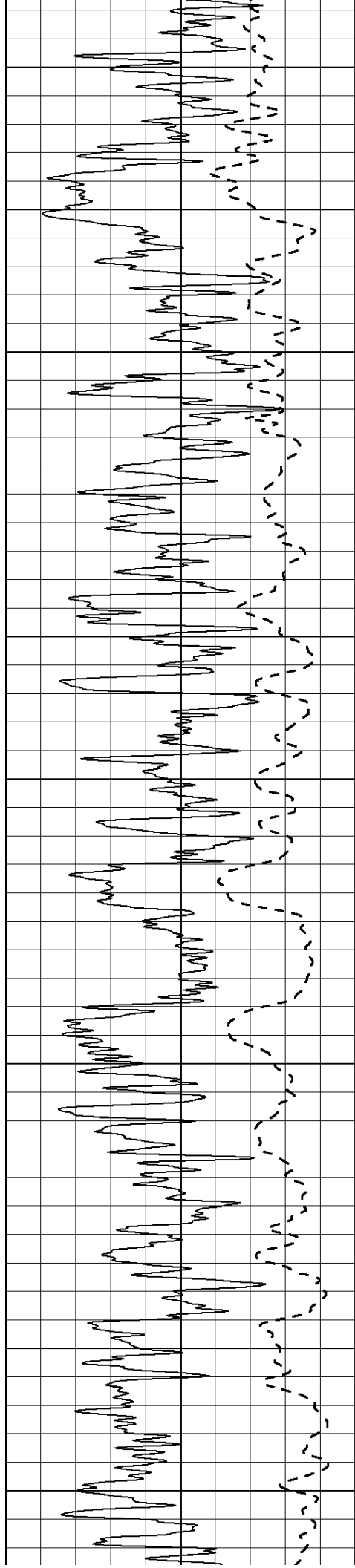
1900

1950

2000

2050





2100

2150

2200

2250

2300

2350

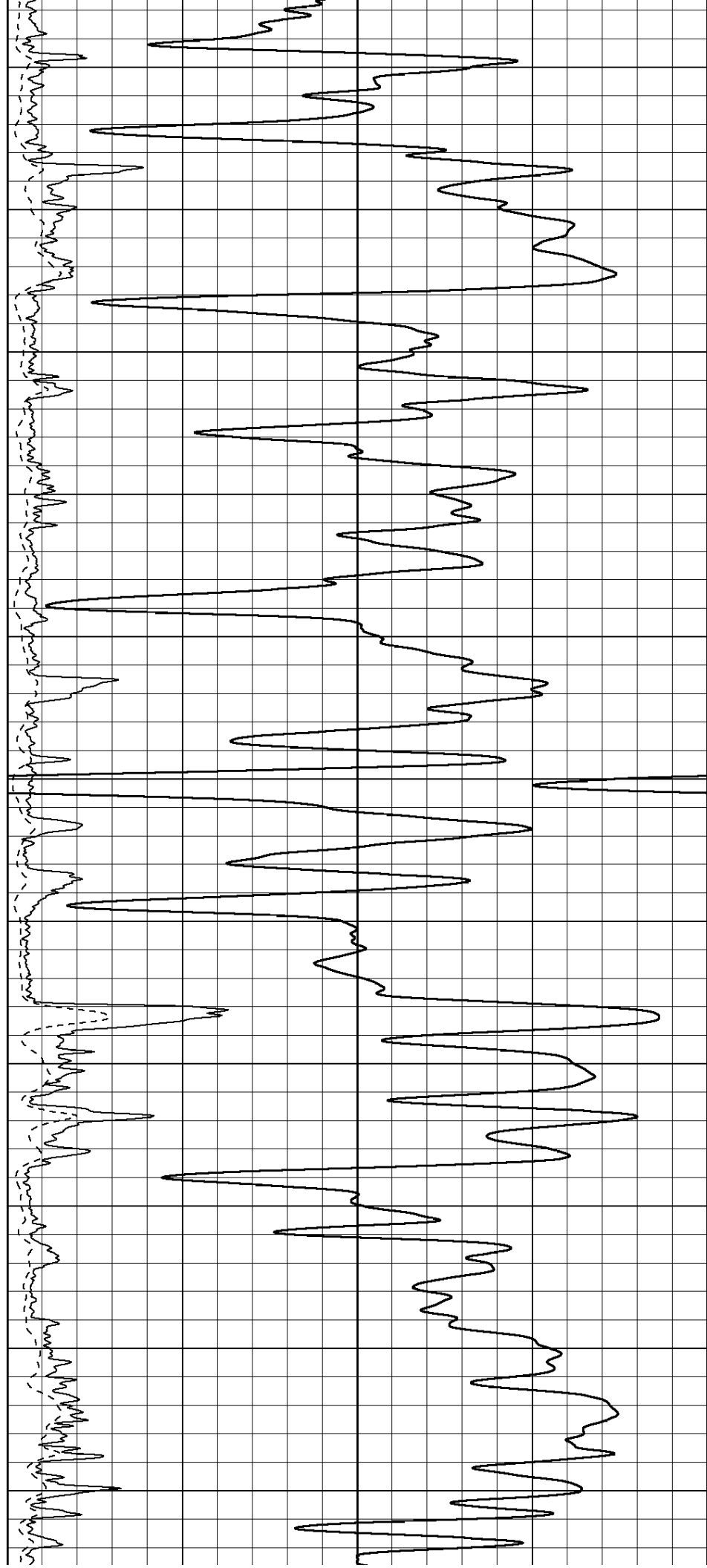
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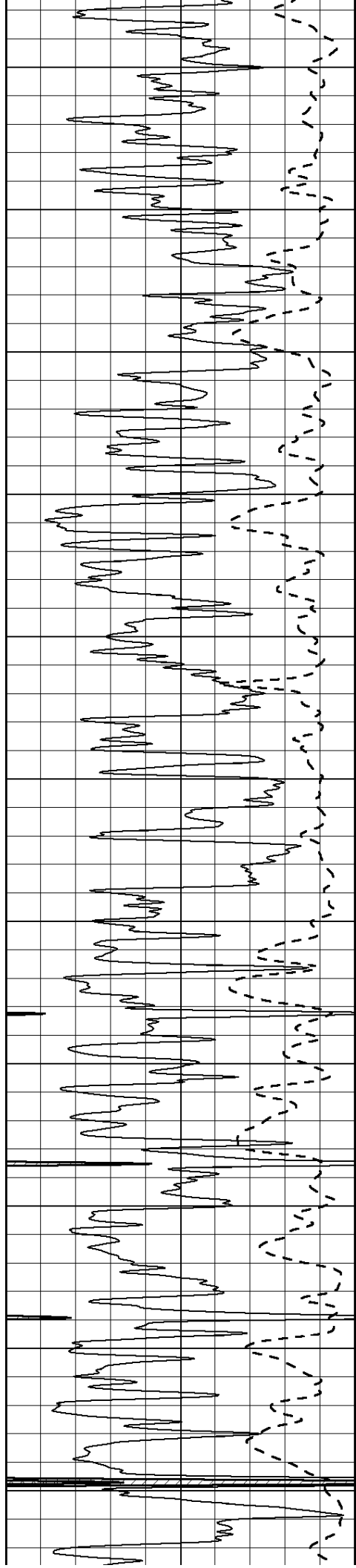
2450

2500

2550

2600





2650

2700

2750

2800

2850

2900

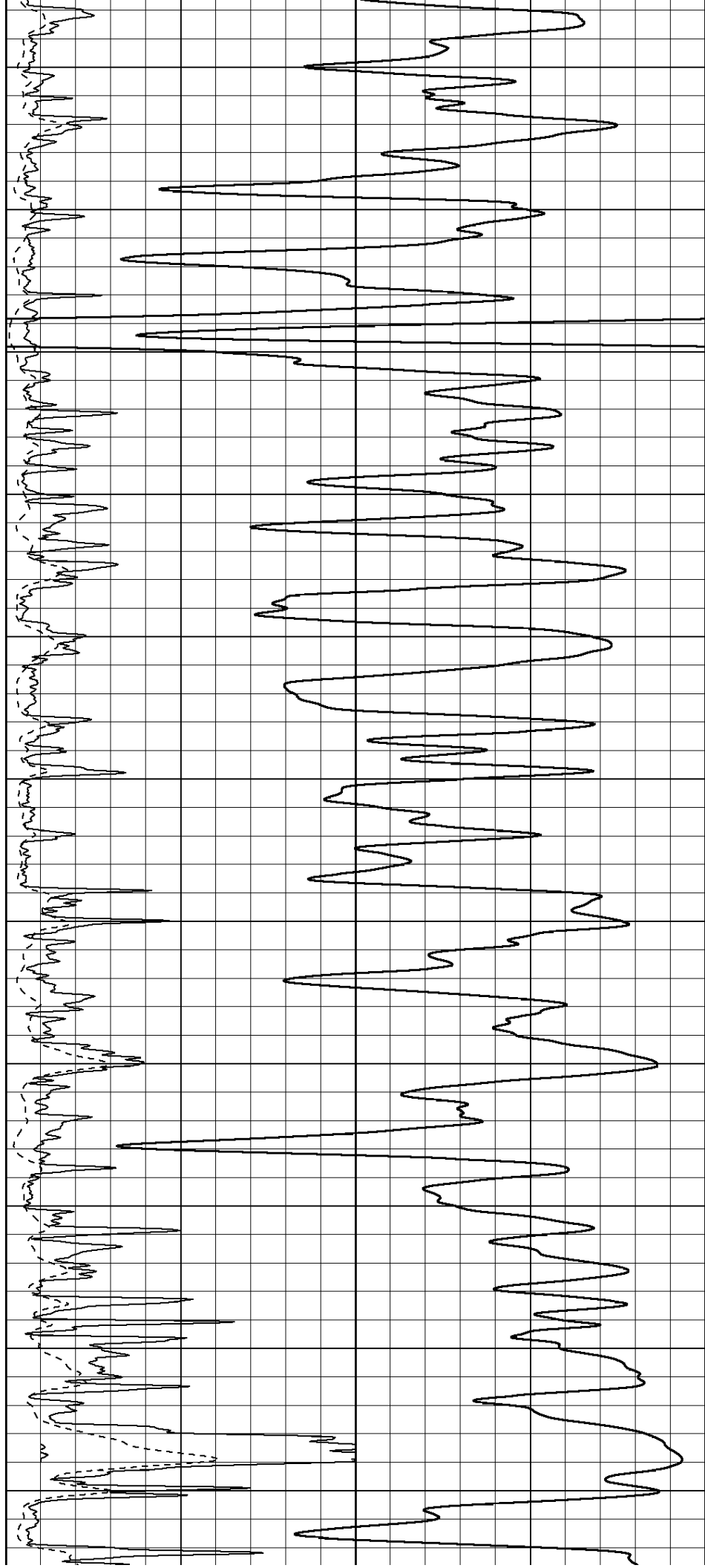
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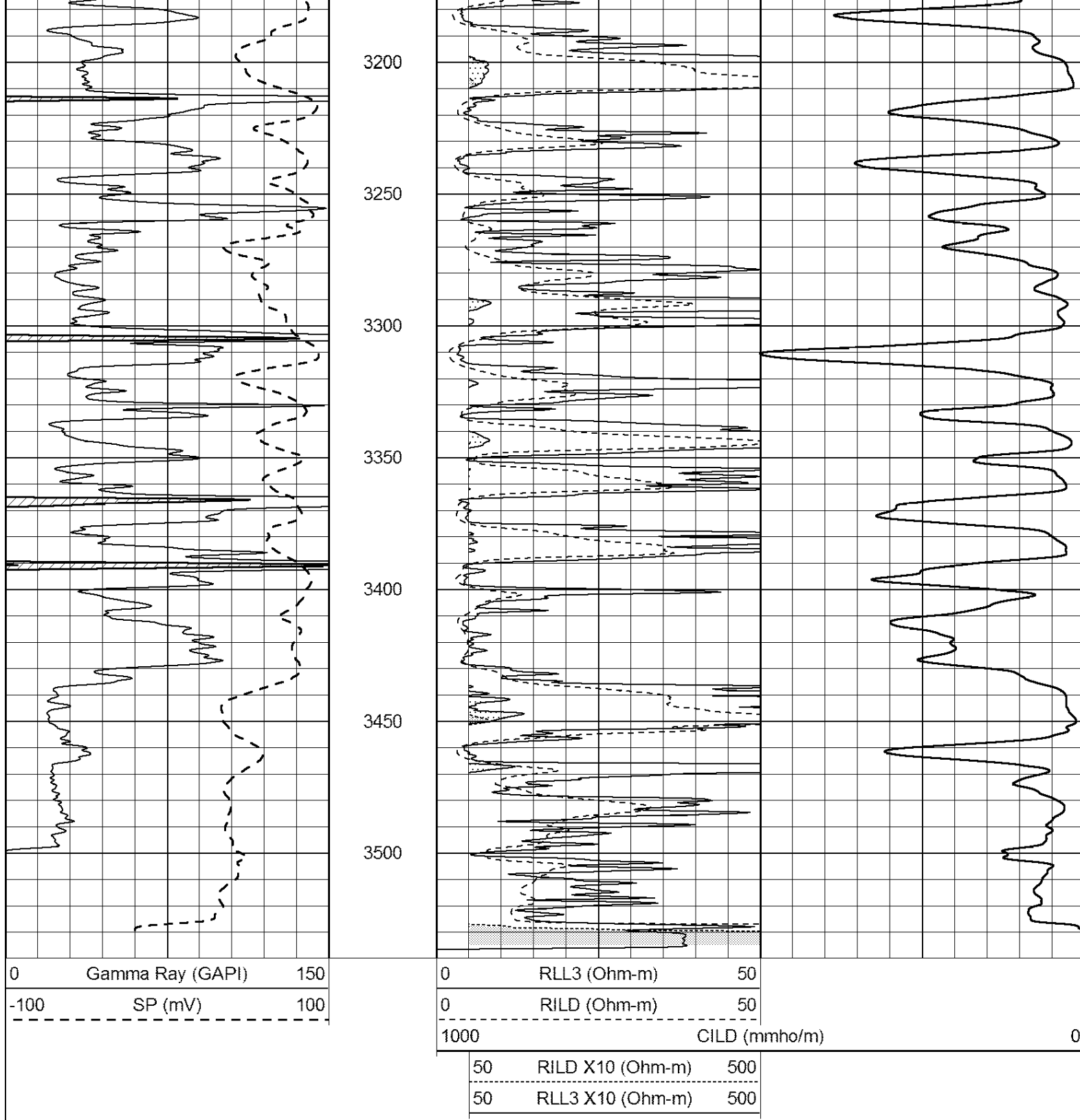
3000

3050

3100

3150





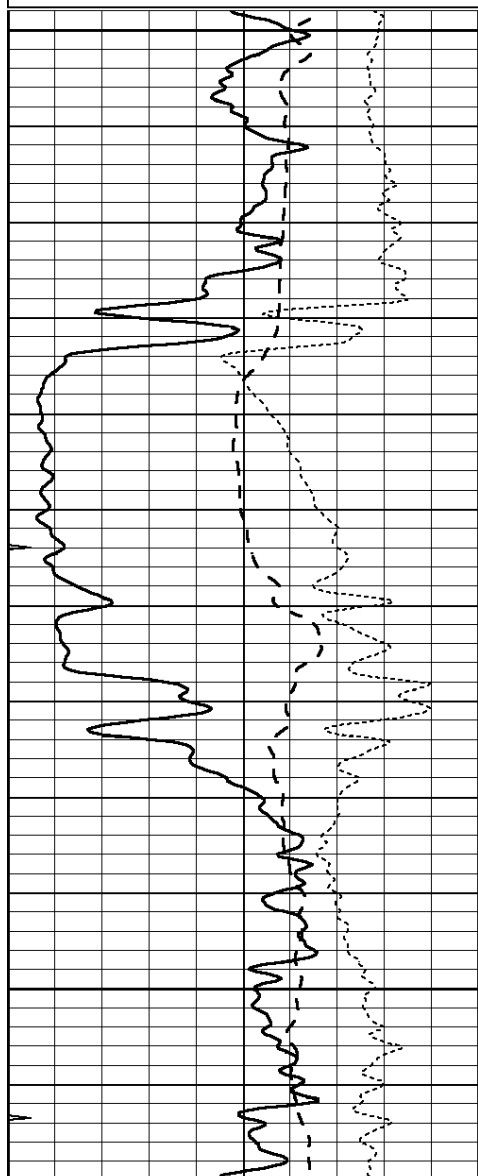
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# ANHYDRITE

Database File: 408621pe.db  
 Dataset Pathname: pass3.6  
 Presentation Format: dil  
 Dataset Creation: Sat Apr 07 14:28:49 2012 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:240

|      |         |     |
|------|---------|-----|
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt  | 50  |
| 0    | MINMK   | 20  |

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

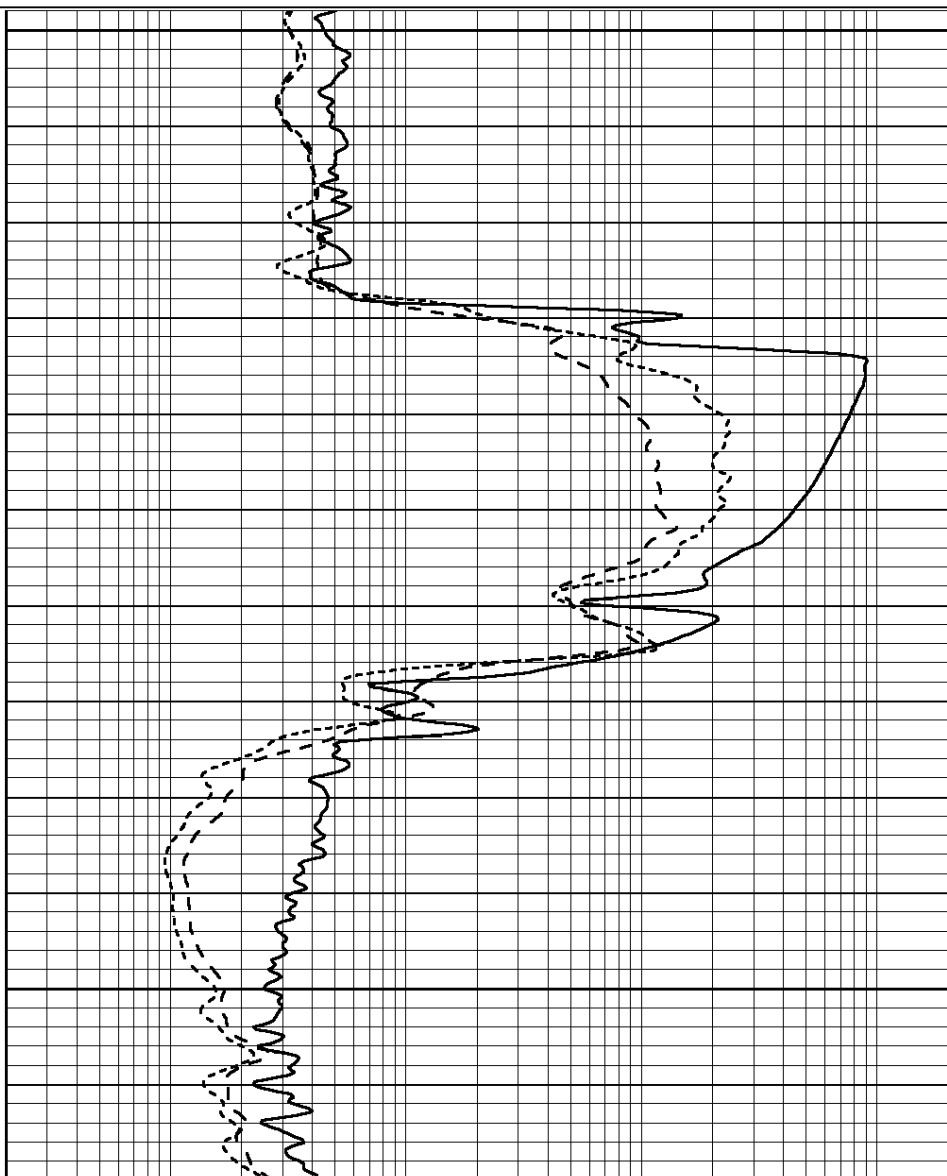


|      |                  |     |
|------|------------------|-----|
| 0    | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV)          | 100 |
| -250 | Rxo/Rt           | 50  |
| 0    | MINMK            | 20  |

1400

1450

1500



|     |                          |      |
|-----|--------------------------|------|
| 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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# MAIN SECTION

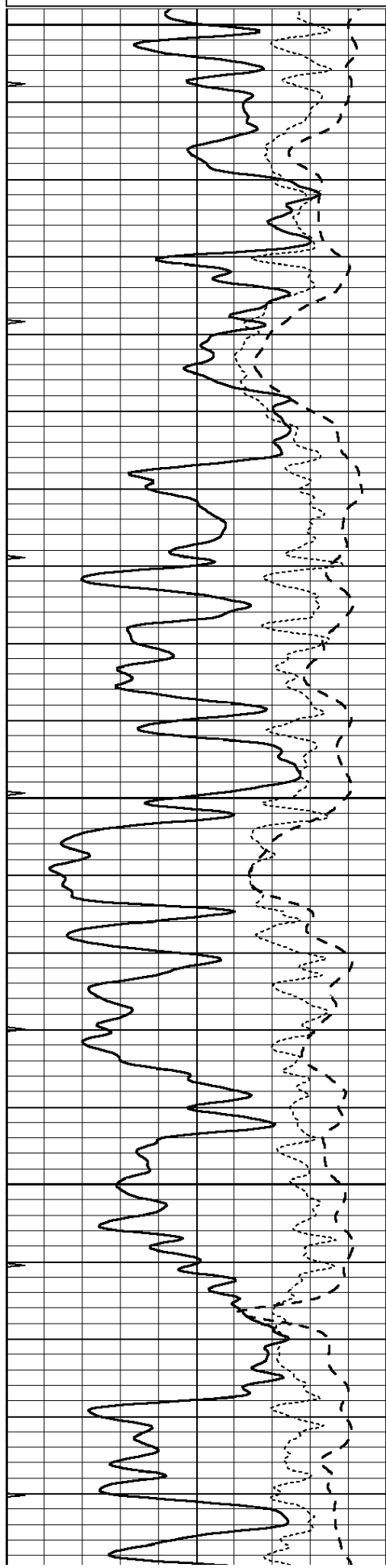
Database File: 408621pe.db  
Dataset Pathname: pass3.8  
Presentation Format: dil  
Dataset Creation: Sat Apr 07 15:02:14 2012  
Charted by: Depth in Feet scaled 1:240

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

|      |         |     |
|------|---------|-----|
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt  | 50  |
| 0    | MINMK   | 20  |

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

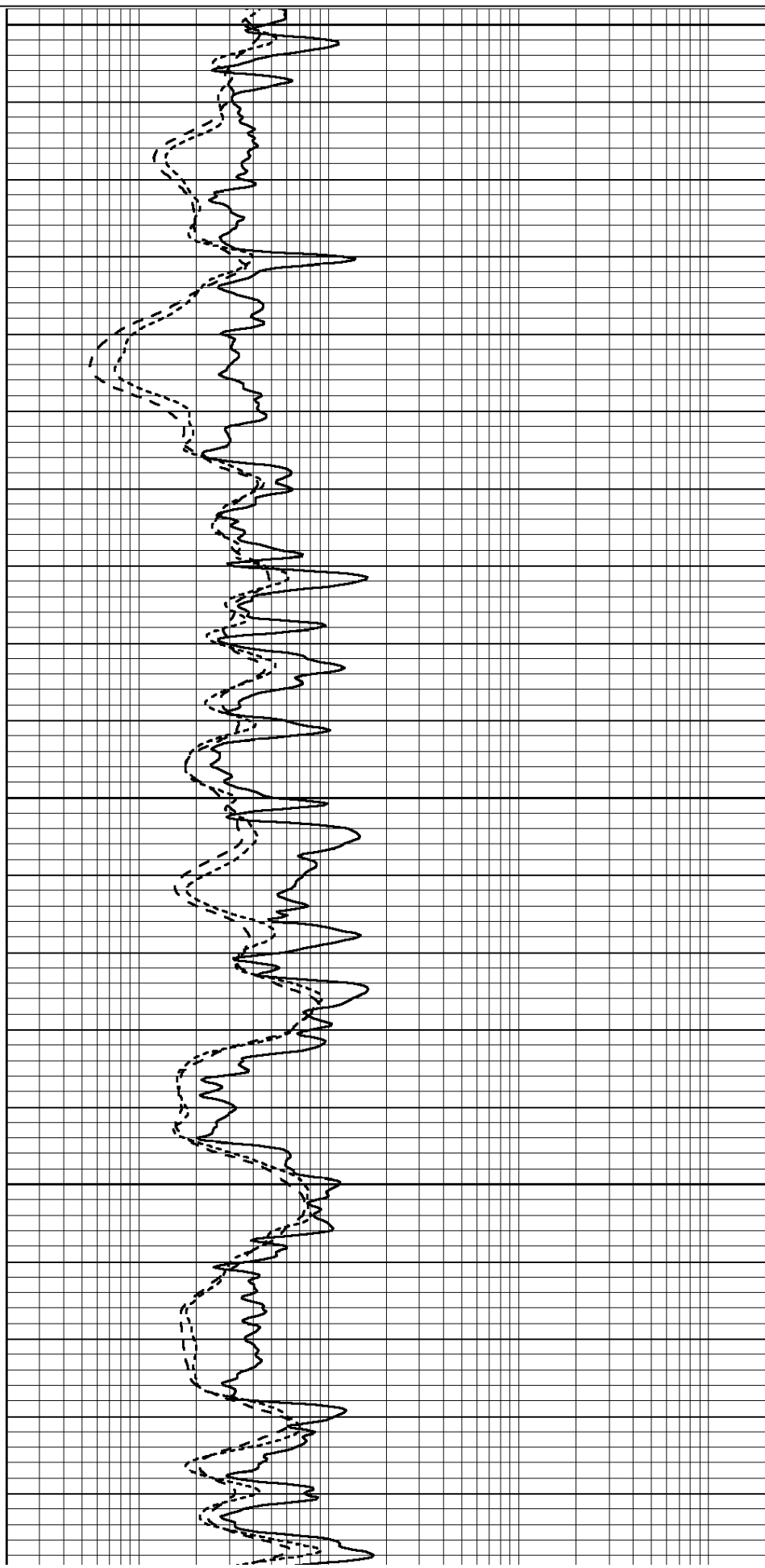


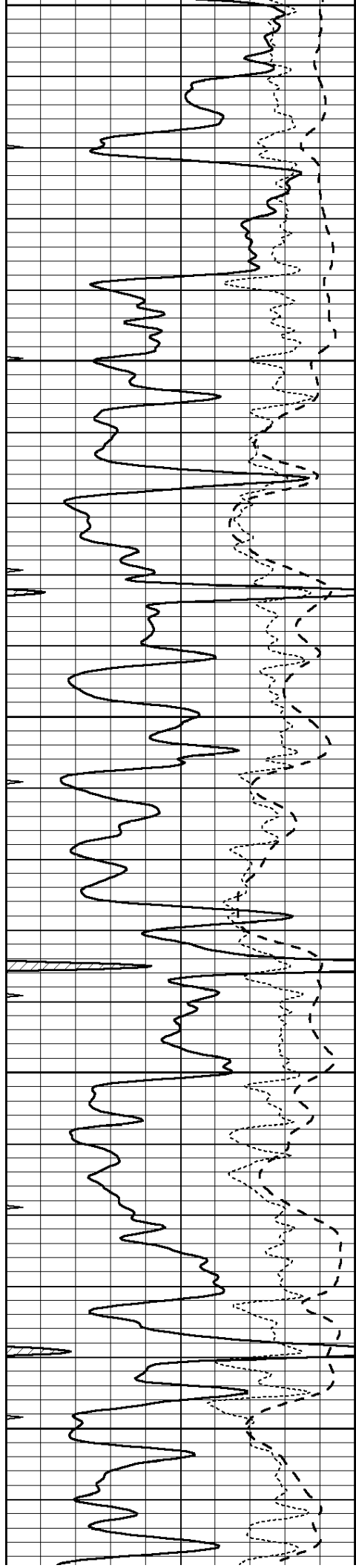
2700

2750

2800

2850





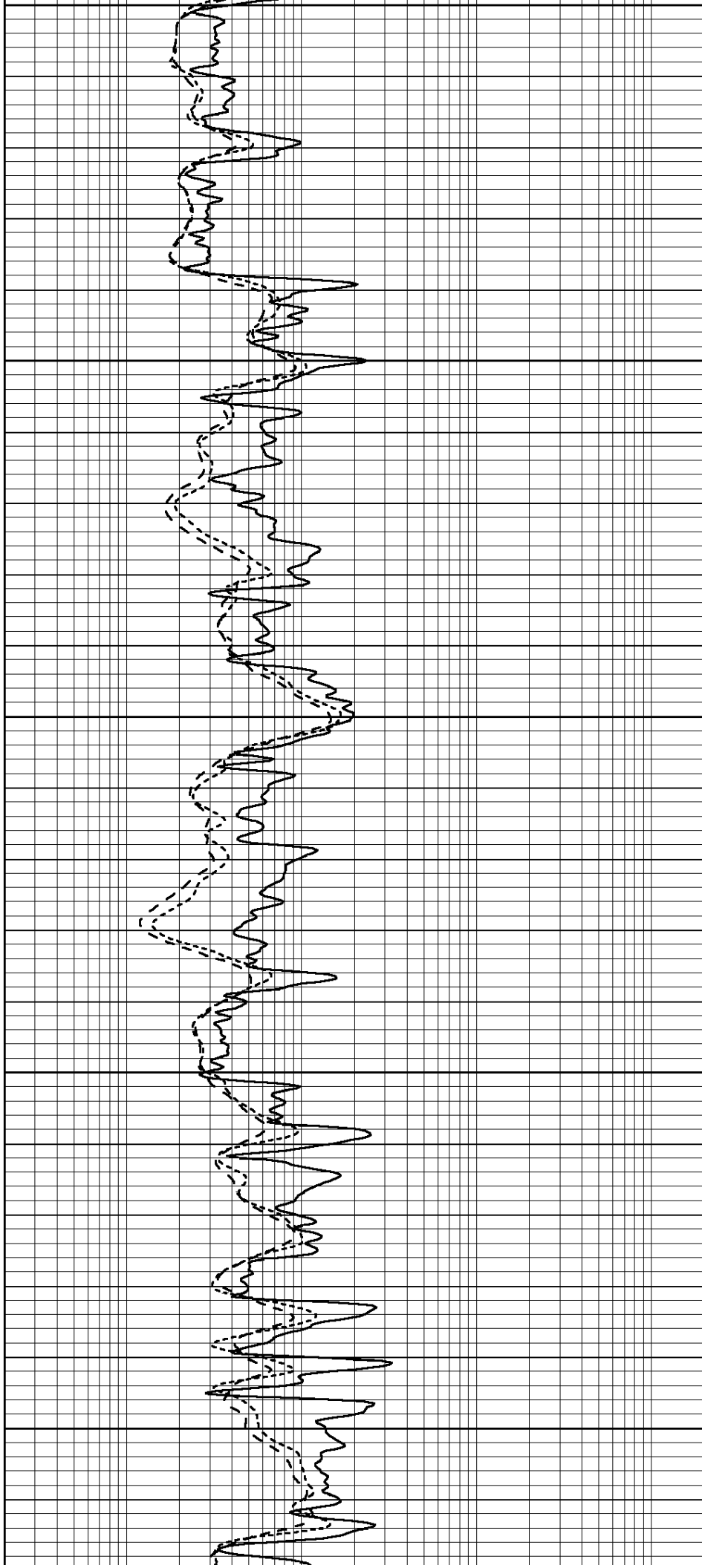
2900

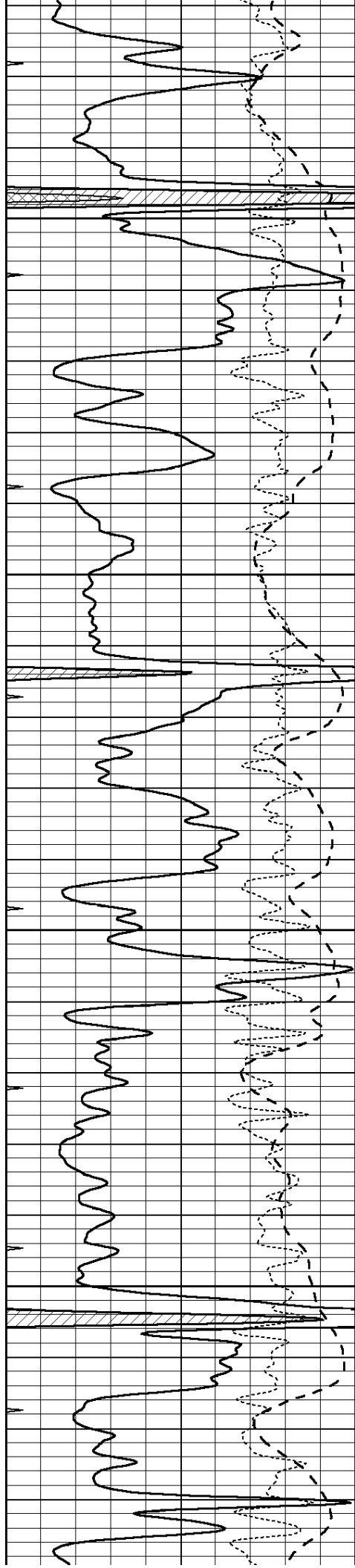
2950

3000

3050

3100



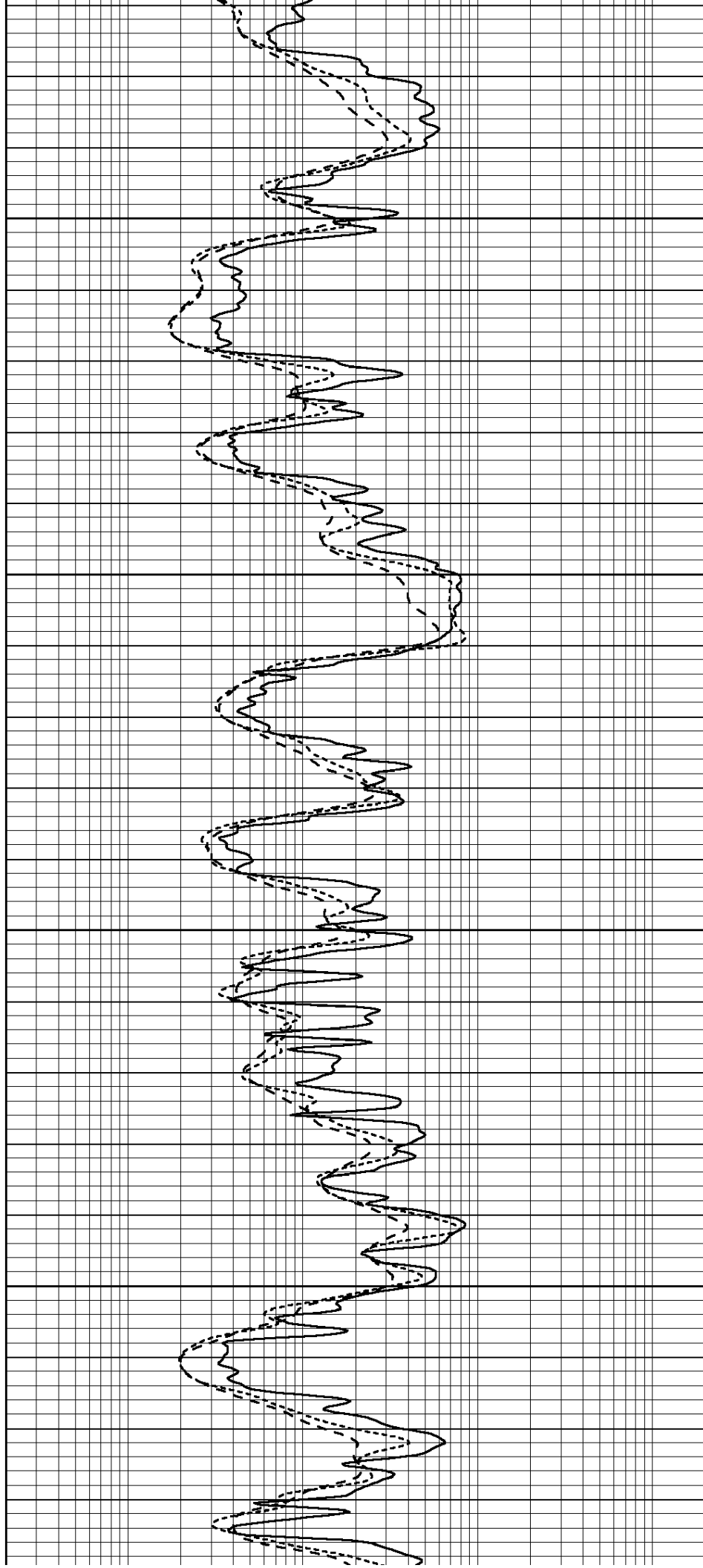


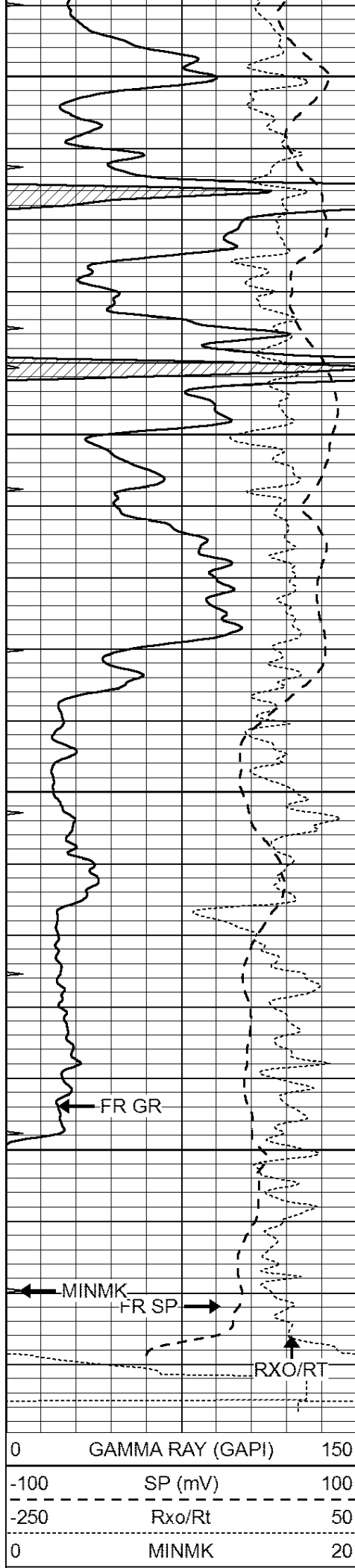
3150

3200

3250

3300





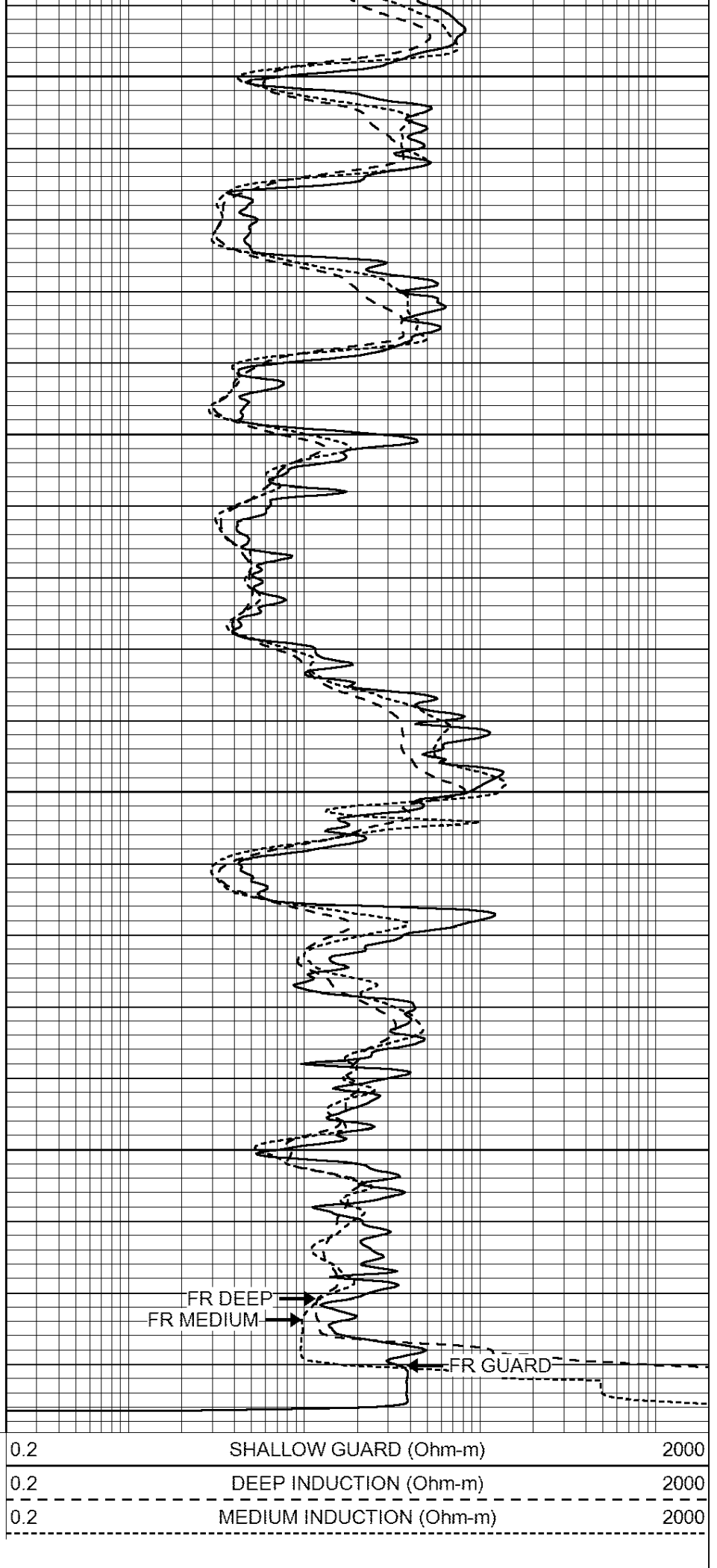
3350

3400

3450

3500

LTD 3532





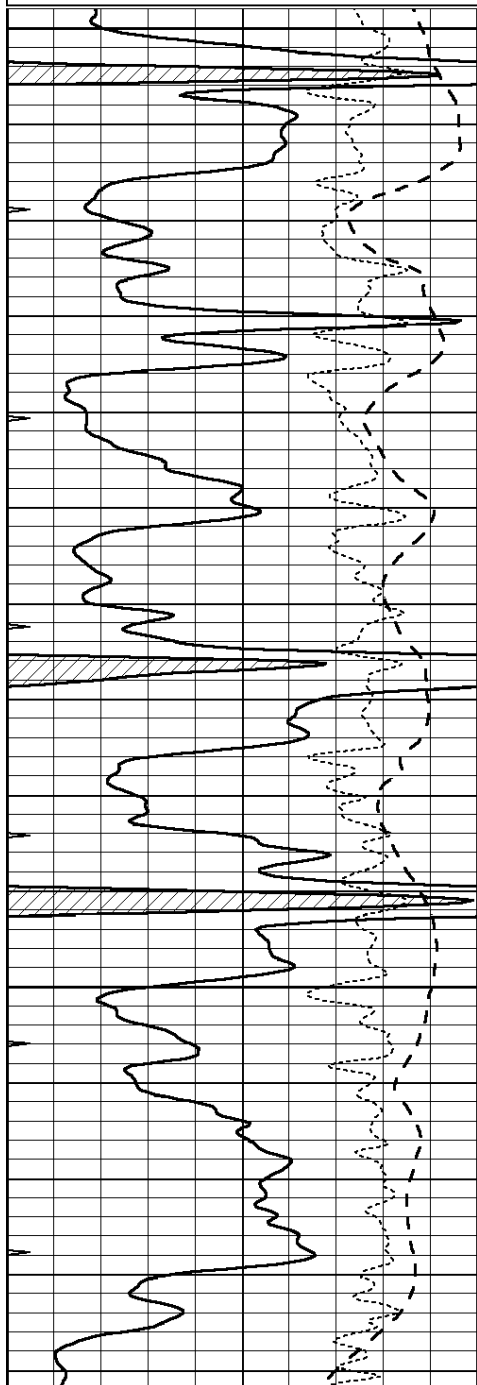
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# REPEAT SECTION

Database File: 408621pe.db  
Dataset Pathname: pass2.5  
Presentation Format: dil  
Dataset Creation: Sat Apr 07 14:38:26 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  |

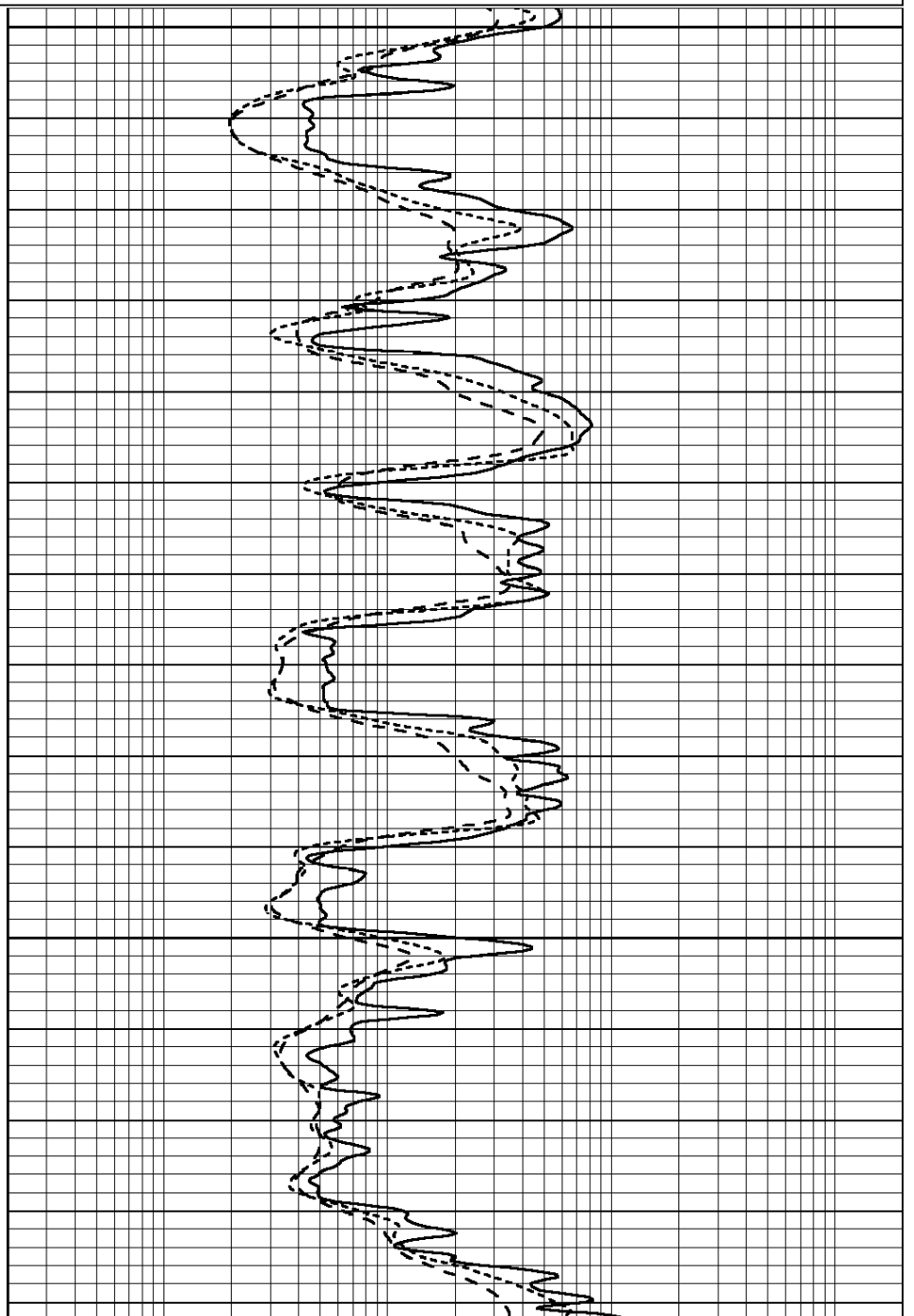
|     |                          |      |
|-----|--------------------------|------|
| 0.2 | SHALLOW GUARD (Ohm-m)    | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m)   | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |

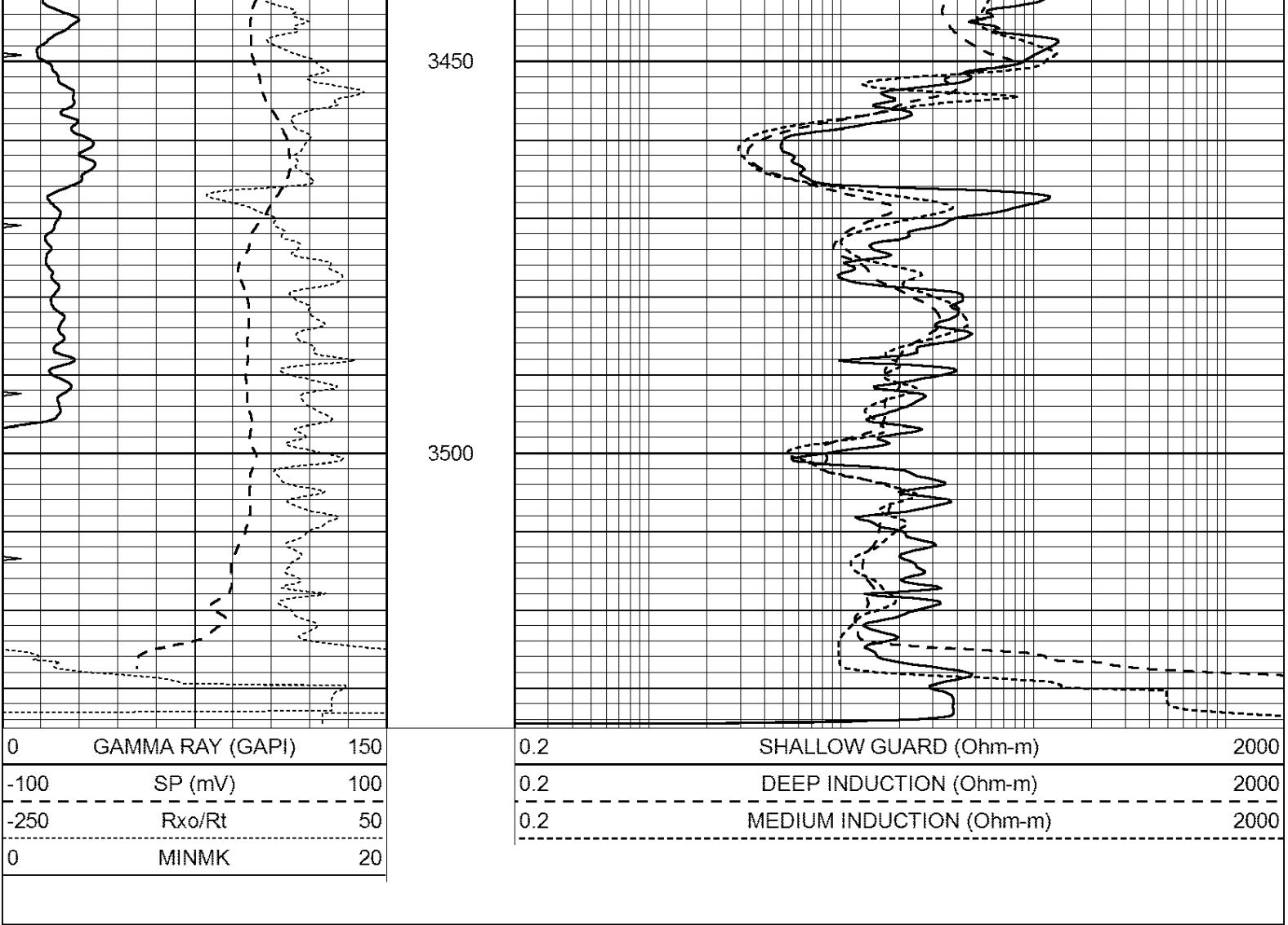


3300

3350

3400





|                                    |        |                          |            |                                       |          |        |           |         |
|------------------------------------|--------|--------------------------|------------|---------------------------------------|----------|--------|-----------|---------|
| Calibration Report                 |        |                          |            |                                       |          |        |           |         |
| Database File:                     |        | 408621pe.db              |            |                                       |          |        |           |         |
| Dataset Pathname:                  |        | pass3.8                  |            |                                       |          |        |           |         |
| Dataset Creation:                  |        | Sat Apr 07 15:02:14 2012 |            |                                       |          |        |           |         |
| Dual Induction Calibration Report  |        |                          |            |                                       |          |        |           |         |
| Serial-Model:<br>Performed:        |        |                          |            | DIL4-GEAR<br>Wed Apr 04 10:04:38 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   | 4.000   |
| Medium                             | -0.003 | 0.769                    | V          | 0.000                                 | 462.500  | mmho/m | 560.000   | 5.500   |
|                                    |        |                          |            |                                       |          |        |           |         |
| 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                                | 2.0       | 7.6                      |             |                     |         |
| High Ref                               | 4.0       | 15.0                     |             |                     |         |
|                                        | Gain: 3.6 |                          | Offset: 0.5 |                     |         |
| 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:                             |           | Sat Mar 24 18:51:25 2012 |             |                     |         |
| Calibrator Value:                      |           | 1.0                      | GAPI        |                     |         |
| Background Reading:                    |           | 0.0                      | cps         |                     |         |
| Calibrator Reading:                    |           | 1.0                      | cps         |                     |         |
| Sensitivity:                           |           | 0.3000                   | GAPI/cps    |                     |         |