



SUPERIOR  
Hays,  
Kansas

## DUAL INDUCTION LOG

|                              |                                                                      |                                     |                            |
|------------------------------|----------------------------------------------------------------------|-------------------------------------|----------------------------|
| Company                      | CHIEFTAIN OIL COMPANY, INC.                                          |                                     |                            |
| Well                         | NEWTON #2                                                            |                                     |                            |
| Field                        | TRAFFAS                                                              |                                     |                            |
| County                       | BARBER                                                               |                                     |                            |
| State                        | KANSAS                                                               |                                     |                            |
| Company                      | CHIEFTAIN OIL COMPANY, INC.                                          |                                     |                            |
| Well                         | NEWTON #2                                                            |                                     |                            |
| Field                        | TRAFFAS                                                              |                                     |                            |
| County                       | BARBER                                                               |                                     |                            |
| State                        | KANSAS                                                               |                                     |                            |
| Location:                    | API #: 15-007-23645-0000<br>700' FNL & 630' FWL<br>NE - SW - NW - NW |                                     | Other Services<br>CDUCN/PE |
| Permanent Datum              | GROUND LEVEL                                                         | Elevation                           | 1601                       |
| Log Measured From            | KELLY BUSHING 10' A.G.L.                                             | K.B. 1611<br>D.F. 1609<br>G.L. 1601 |                            |
| Drilling Measured From       | KELLY BUSHING                                                        |                                     |                            |
| Date                         | 2/23/11                                                              |                                     |                            |
| Run Number                   | ONE                                                                  |                                     |                            |
| Depth Driller                | 5170                                                                 |                                     |                            |
| Depth Logger                 | 5173                                                                 |                                     |                            |
| Bottom Logged Interval       | 5171                                                                 |                                     |                            |
| Top Log Interval             | 00                                                                   |                                     |                            |
| Casing Driller               | 8 5/8" @ 336'                                                        |                                     |                            |
| Casing Logger                | 336                                                                  |                                     |                            |
| Bit Size                     | 7 7/8"                                                               |                                     |                            |
| Type Fluid in Hole           | CHEMICAL MUD                                                         | CHLORIDES                           | 3,800 PPM                  |
| Density / Viscosity          | 9.3/6.8                                                              |                                     |                            |
| PH / Fluid Loss              | 9.0/6.8                                                              |                                     |                            |
| Source of Sample             | FLOWLINE                                                             |                                     |                            |
| Rm @ Meas. Temp              | .900 @ 73F                                                           |                                     |                            |
| Rmf @ Meas. Temp             | .675 @ 73F                                                           |                                     |                            |
| Rmc @ Meas. Temp             | 1.08 @ 73F                                                           |                                     |                            |
| Source of Rmf / Rmc          | MEASUREMENT                                                          |                                     |                            |
| Rm @ BHT                     | .517 @ 127F                                                          |                                     |                            |
| Time Circulation Stopped     | 3 HOURS                                                              |                                     |                            |
| Time Logger on Bottom        | 12:45 P.M.                                                           |                                     |                            |
| Maximum Recorded Temperature | 127F                                                                 |                                     |                            |
| Equipment Number             | 0836                                                                 |                                     |                            |
| Location                     | HAYS, KANSAS                                                         |                                     |                            |
| Recorded By                  | JEFF LUEBBERS                                                        |                                     |                            |
| Witnessed By                 | BOB STOLTZLE                                                         |                                     |                            |

<<< 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

MEDICINE LOGDE, KS. 7 1/2E. ON HWY 160 TO "CEDAR HILLS RD.", 3S. TO "COLLEGE HILL RD.", JOG 100 FT. W., THEN 2 MORE S. ON "CEDAR HILLS RD." TO "T", E. INTO BLUE GATE FOLLOW TRAIL E. & S. AND THEN BACK WEST



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## MAIN SECTION

Database File: 006296pe.db  
Dataset Pathname: pass3.4  
Presentation Format: dil2  
Dataset Creation: Wed Feb 23 14:36:01 2011 by Calc Open-Cased 090629  
Charted by: Depth in Feet scaled 1:600

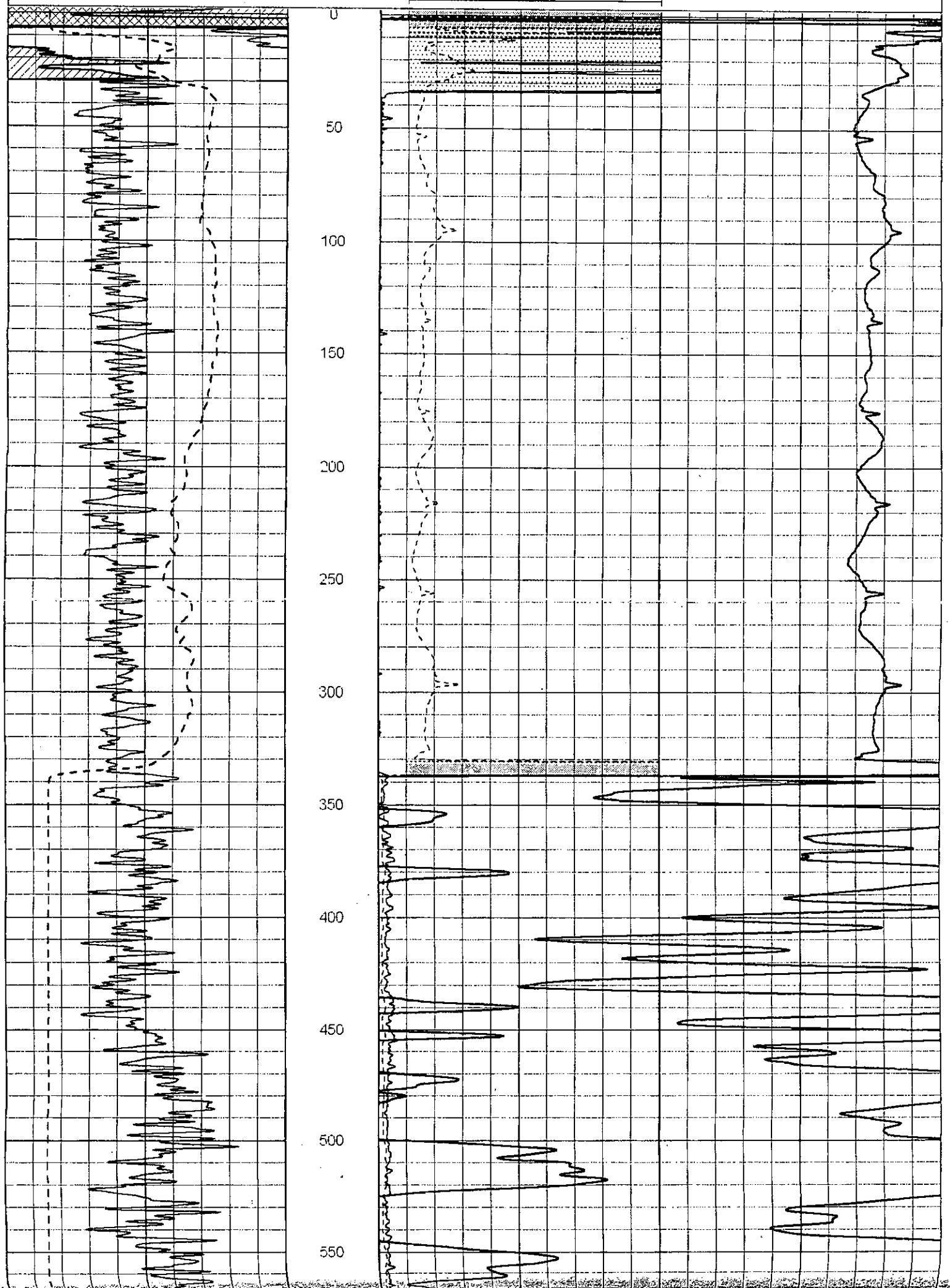
0.000000 GammaRay (GAPI) 2.000000 150.000000 0.000000 RUC (OH-M) 2.000000 150.000000

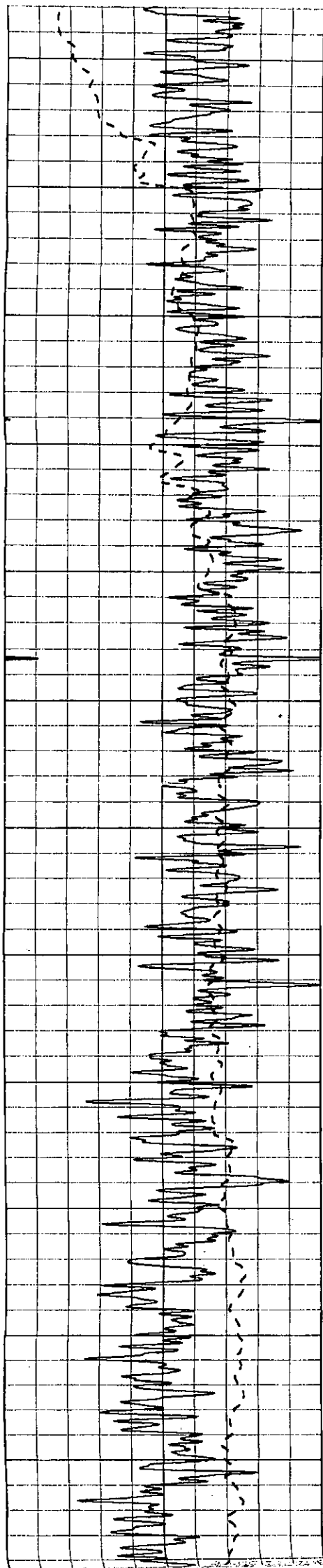
1000

CILD (mmho/m)

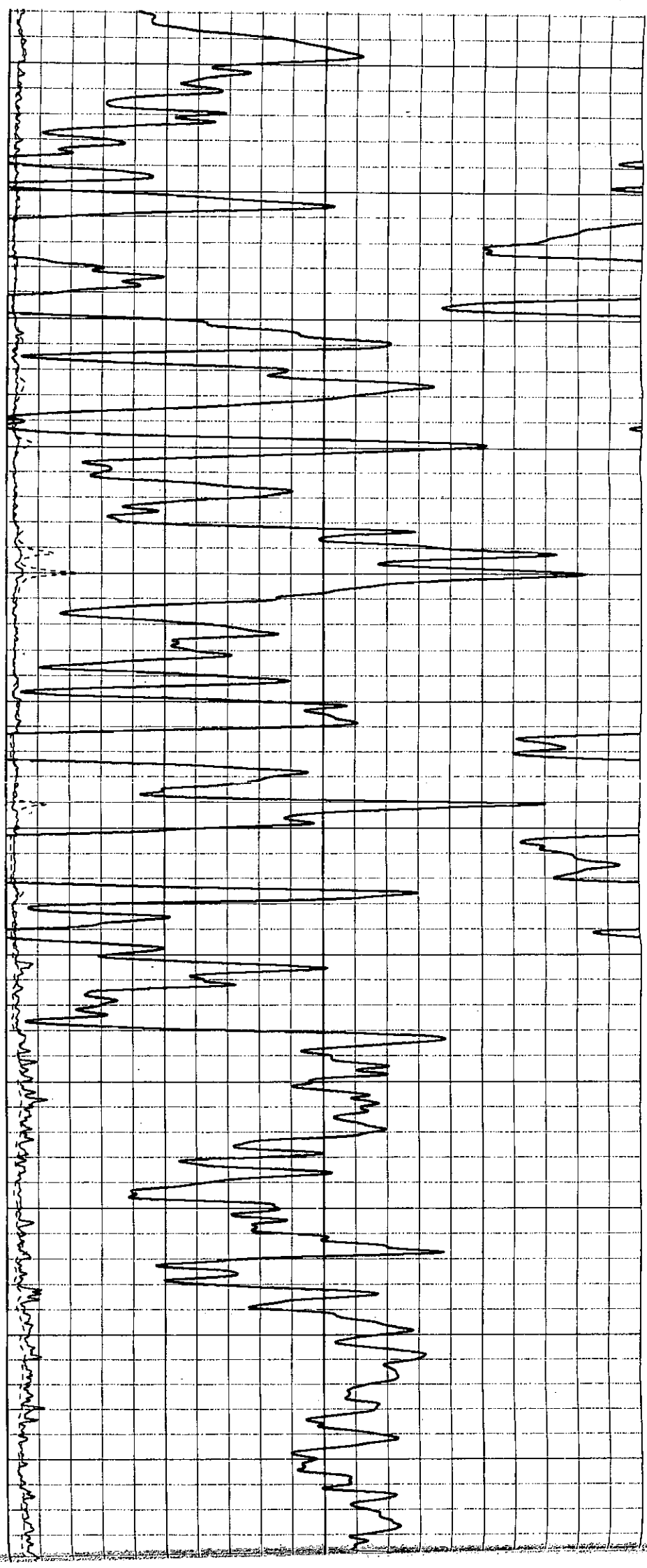
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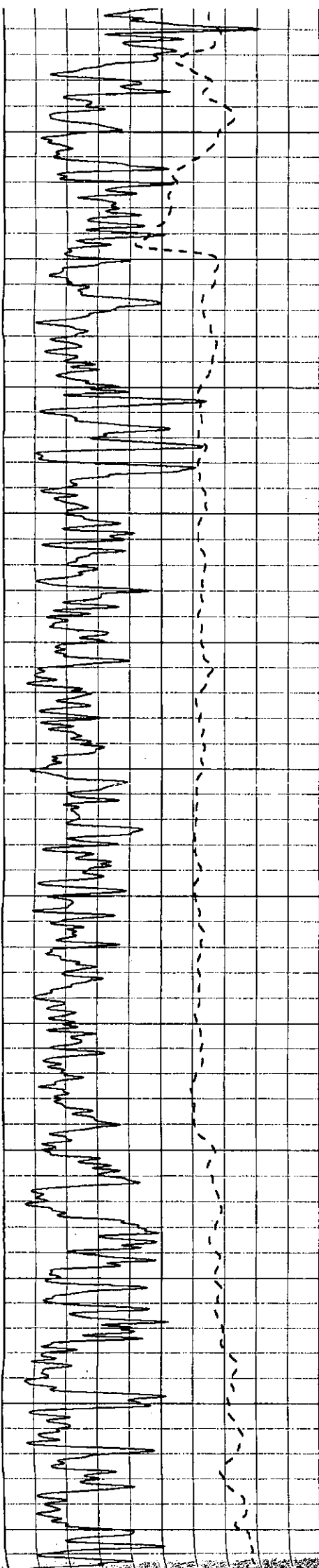
|    |                  |     |
|----|------------------|-----|
| 50 | RILD X10 (Ohm-m) | 500 |
| 50 | RLL3 X10 (Ohm-m) | 500 |



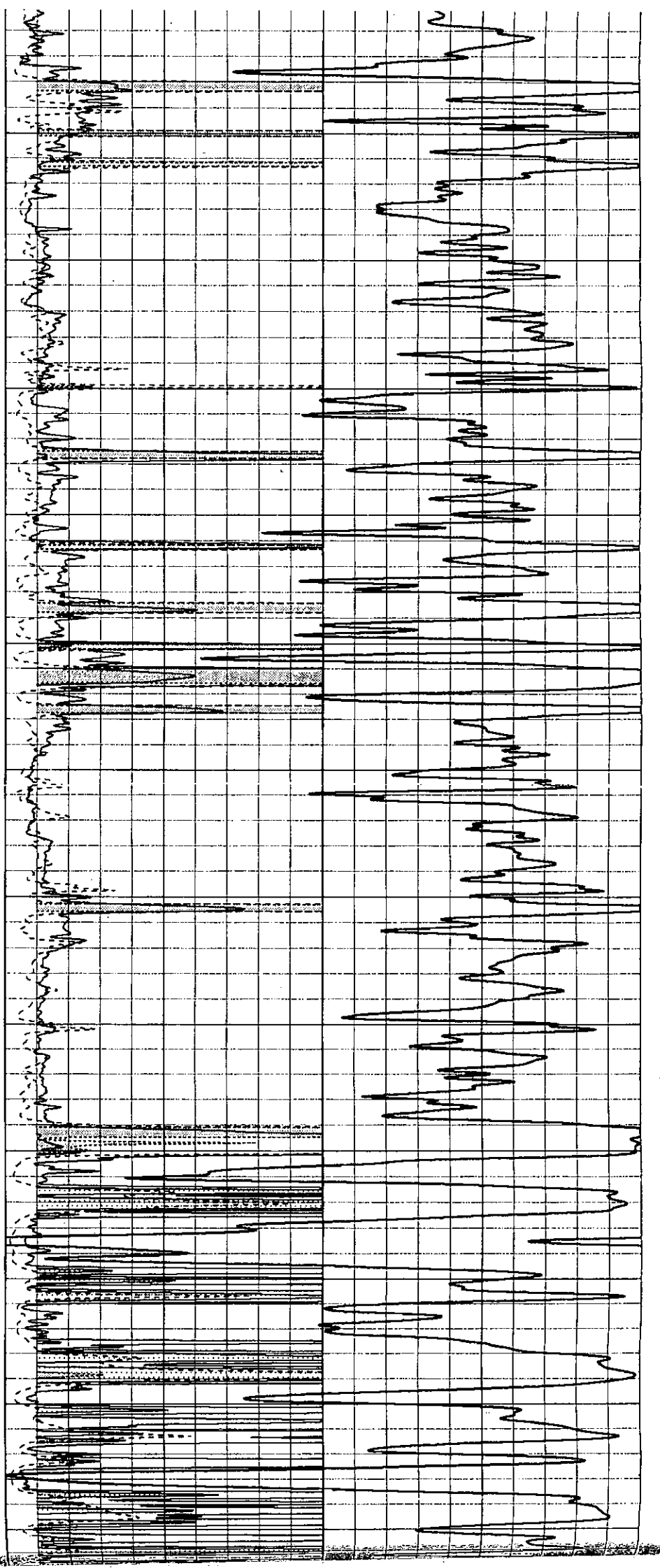


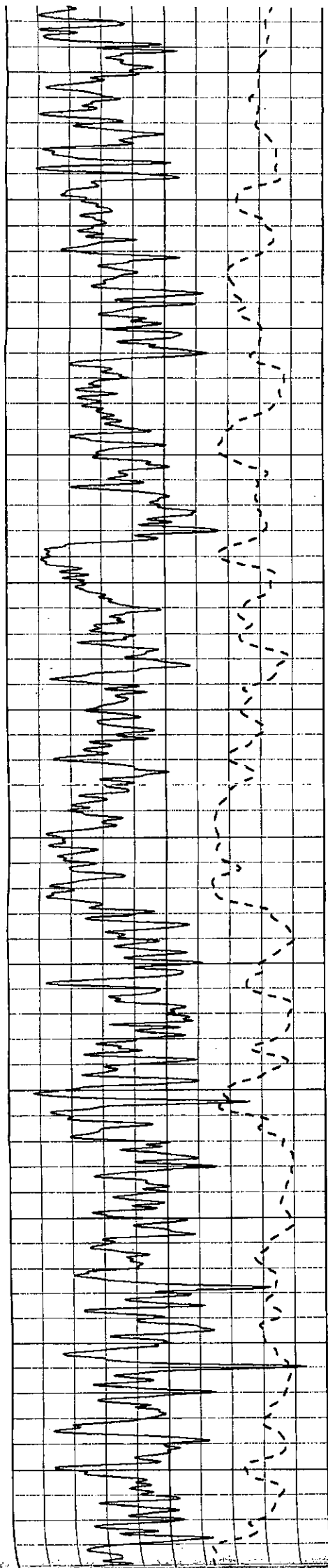
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800  
850  
900  
950  
1000  
1050  
1100  
1150



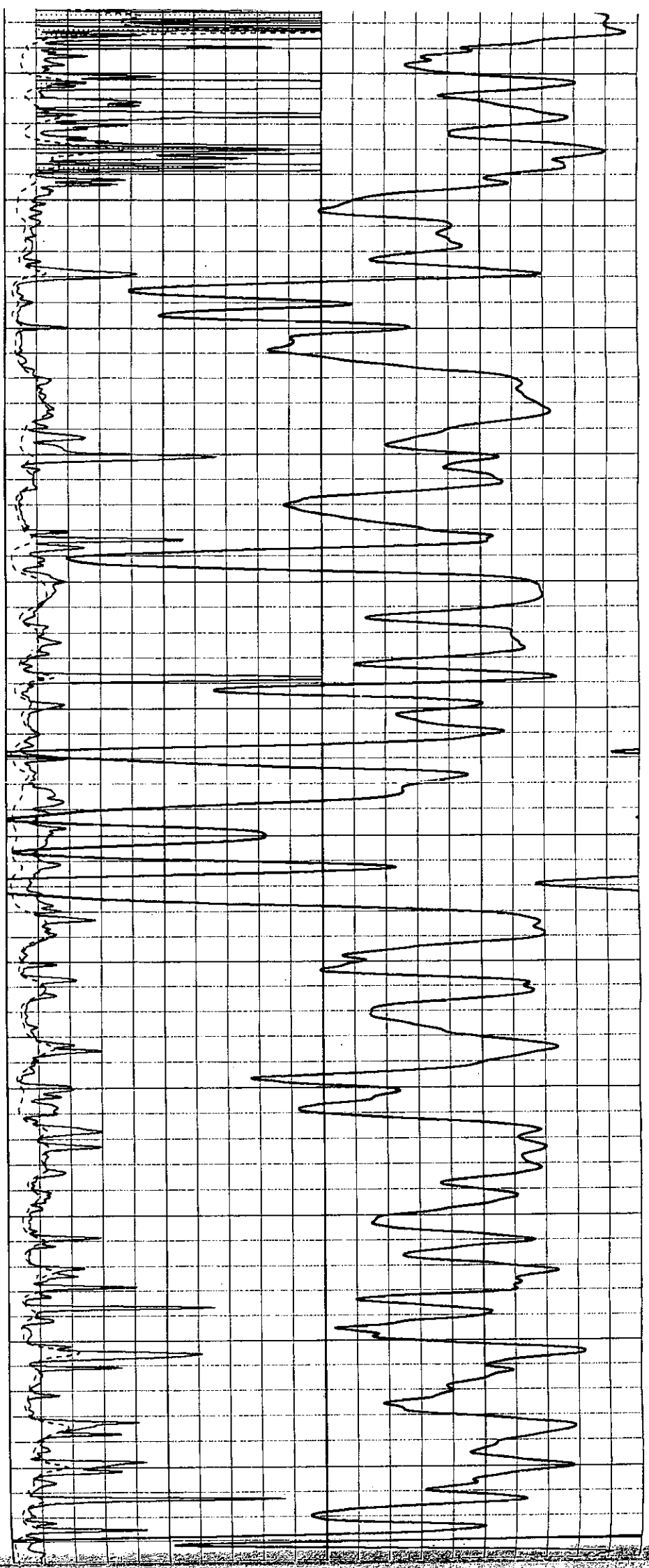


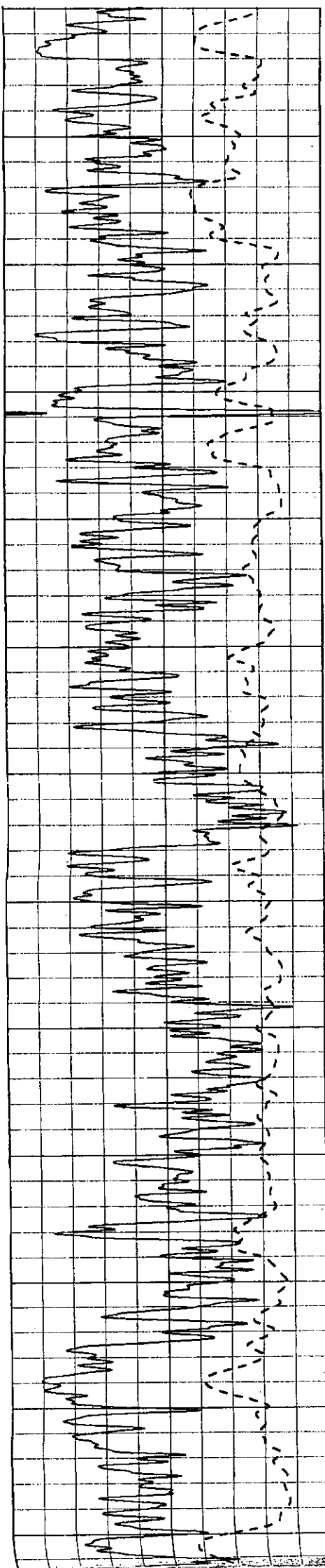
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1500  
1550  
1600  
1650  
1700  
1750  
1800



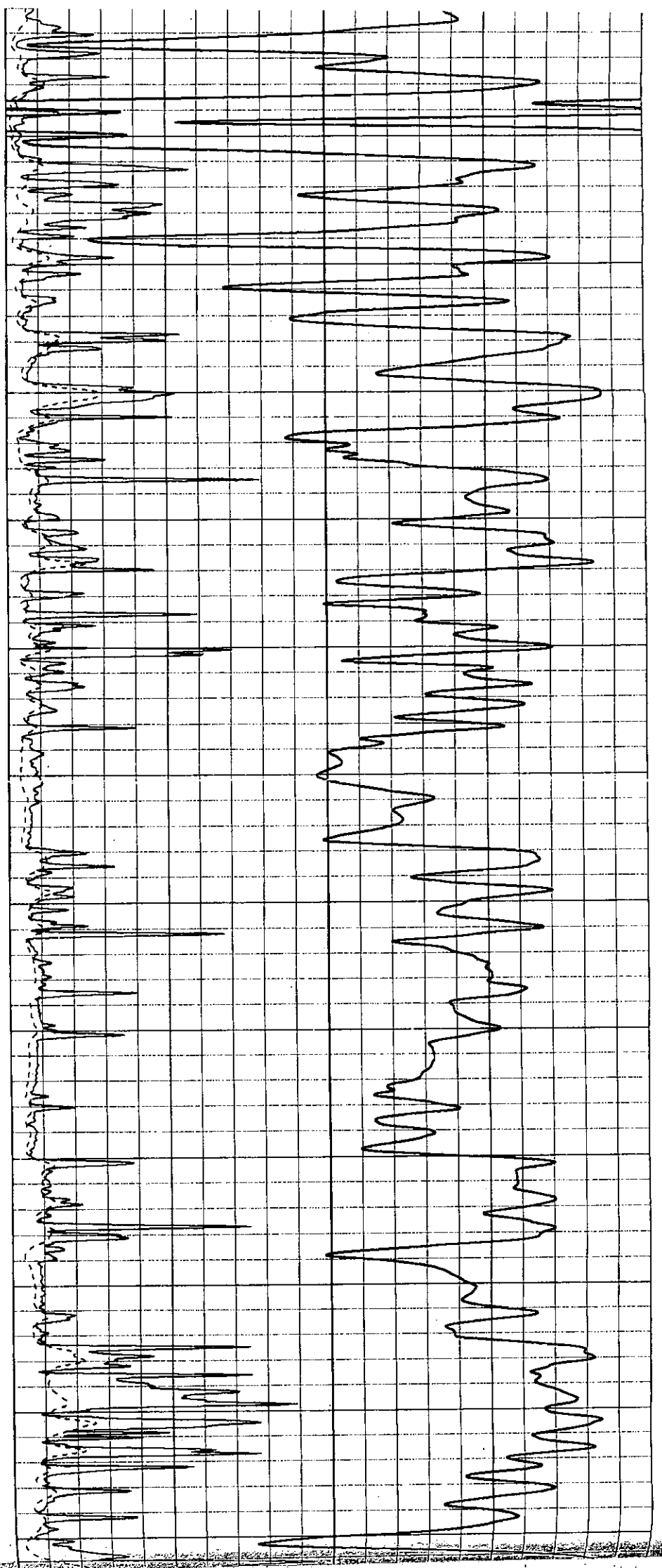


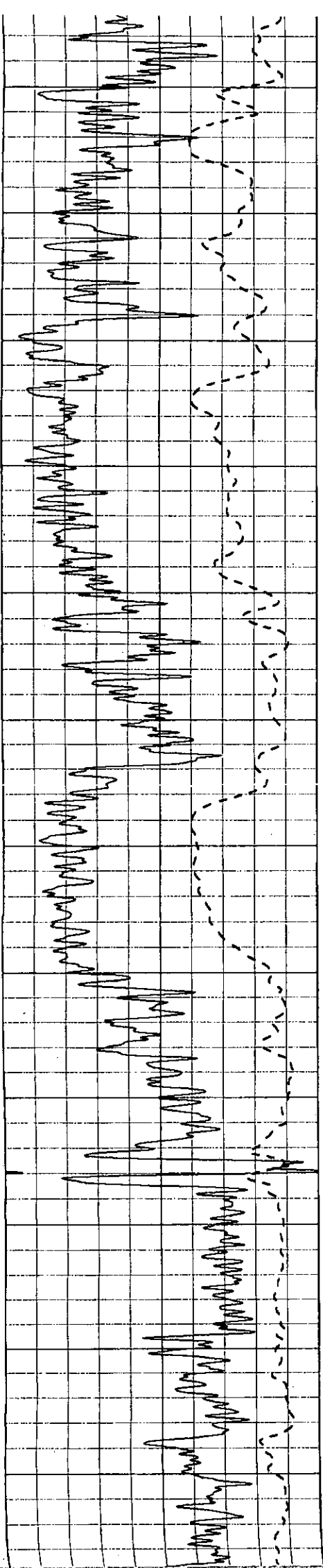
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2200  
2250  
2300  
2350  
2400



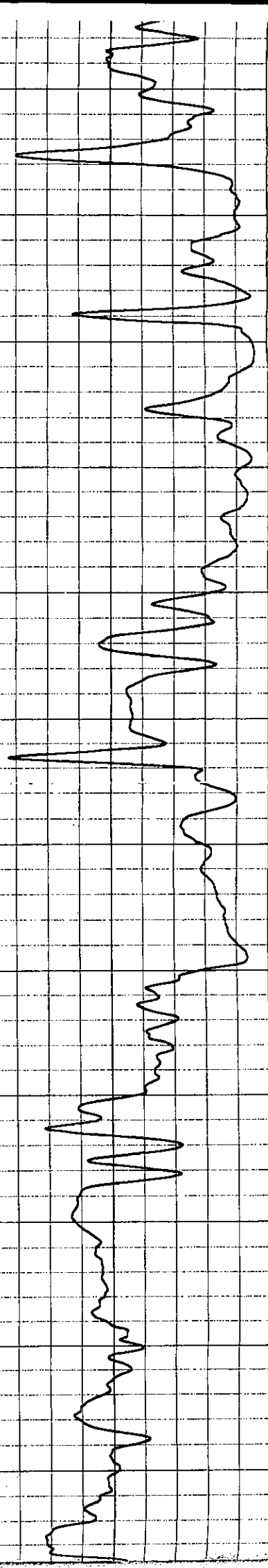
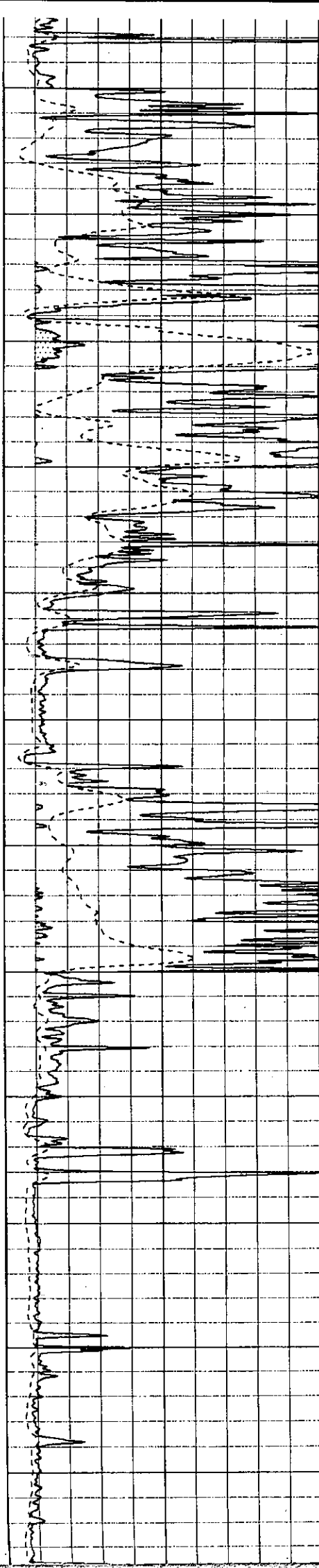


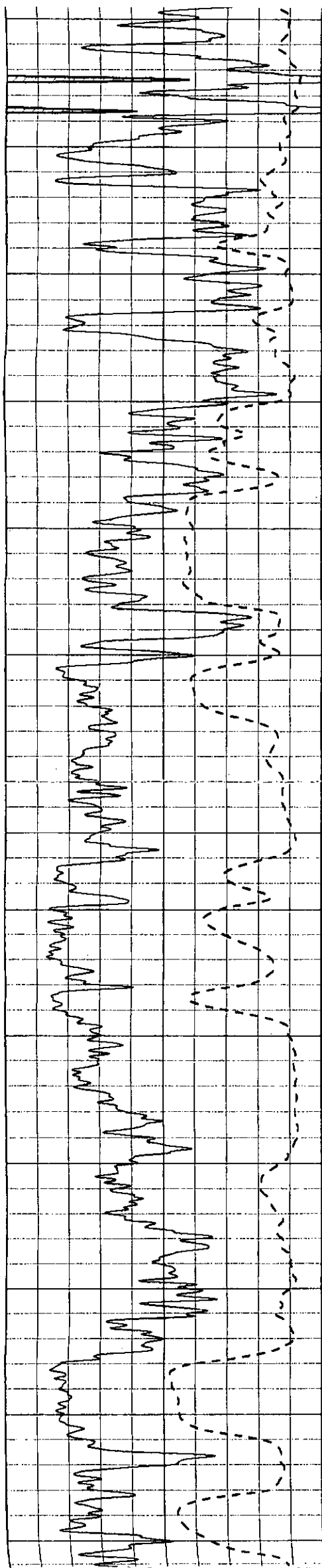
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2600  
2650  
2700  
2750  
2800  
2850  
2900  
2950  
3000  
3050



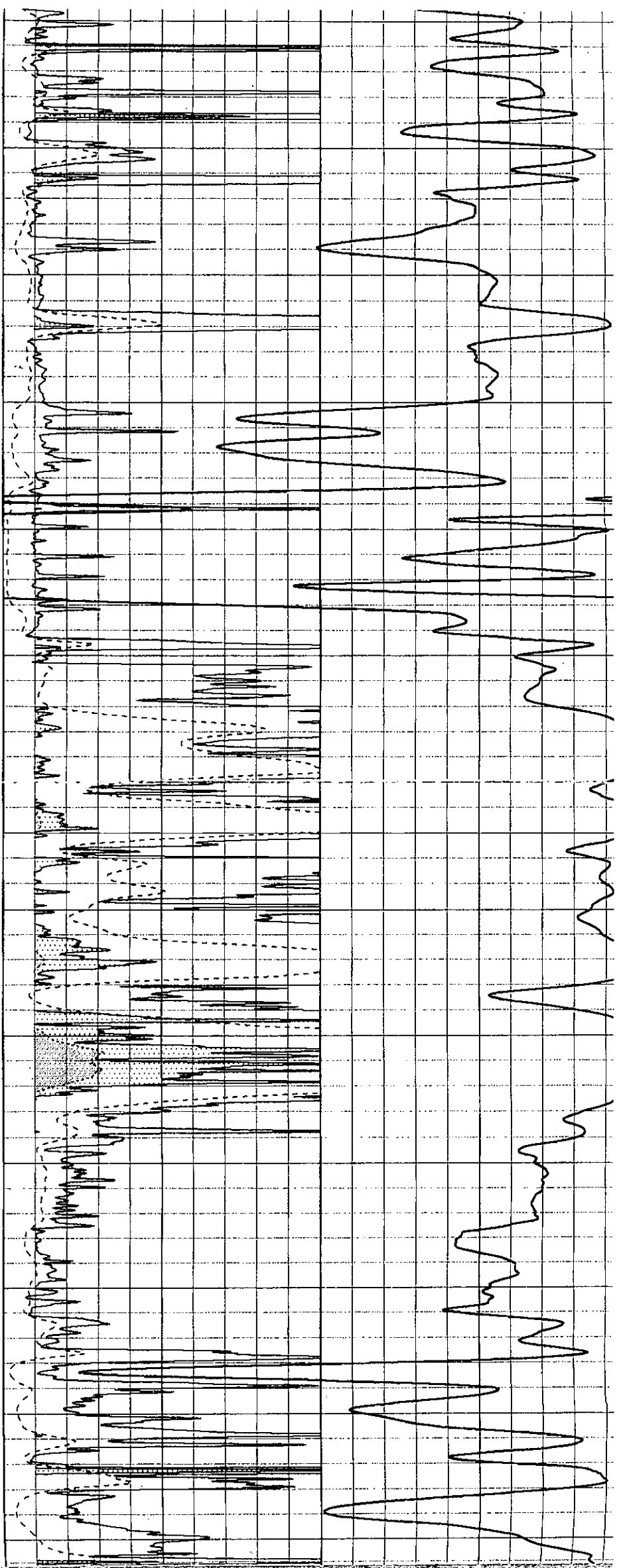


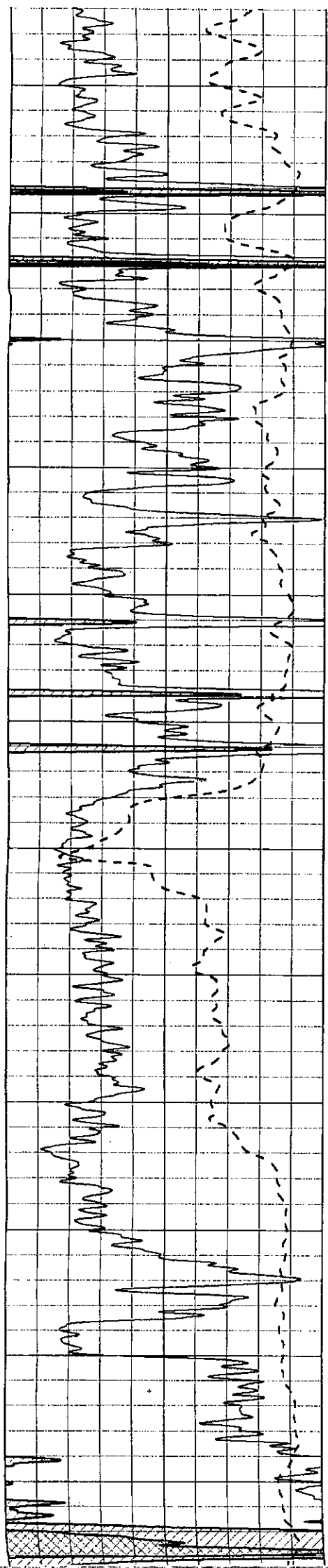
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3400  
3450  
3500  
3550  
3600  
3650



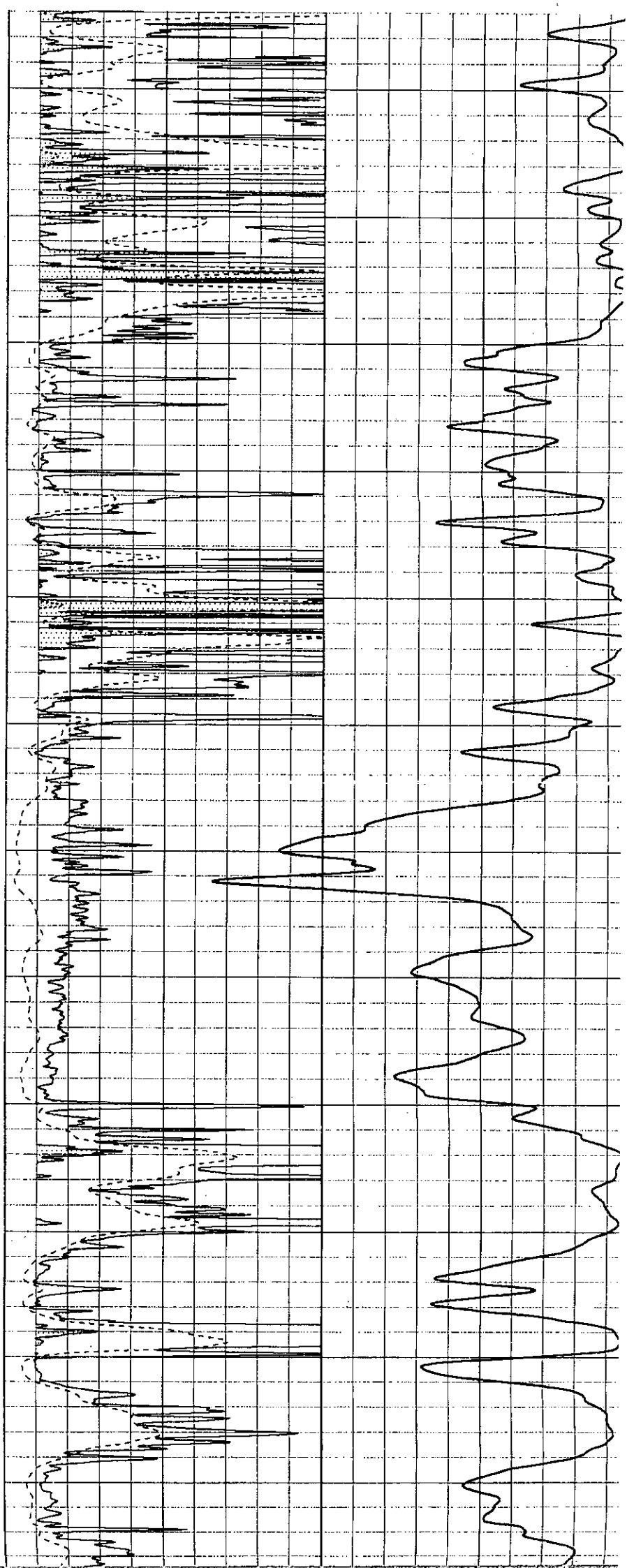


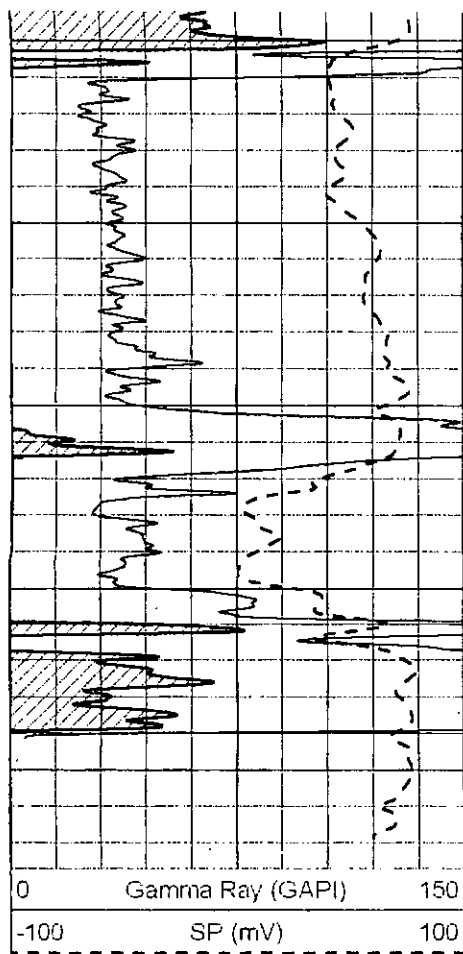
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4000  
4050  
4100  
4150  
4200  
4250  
4300



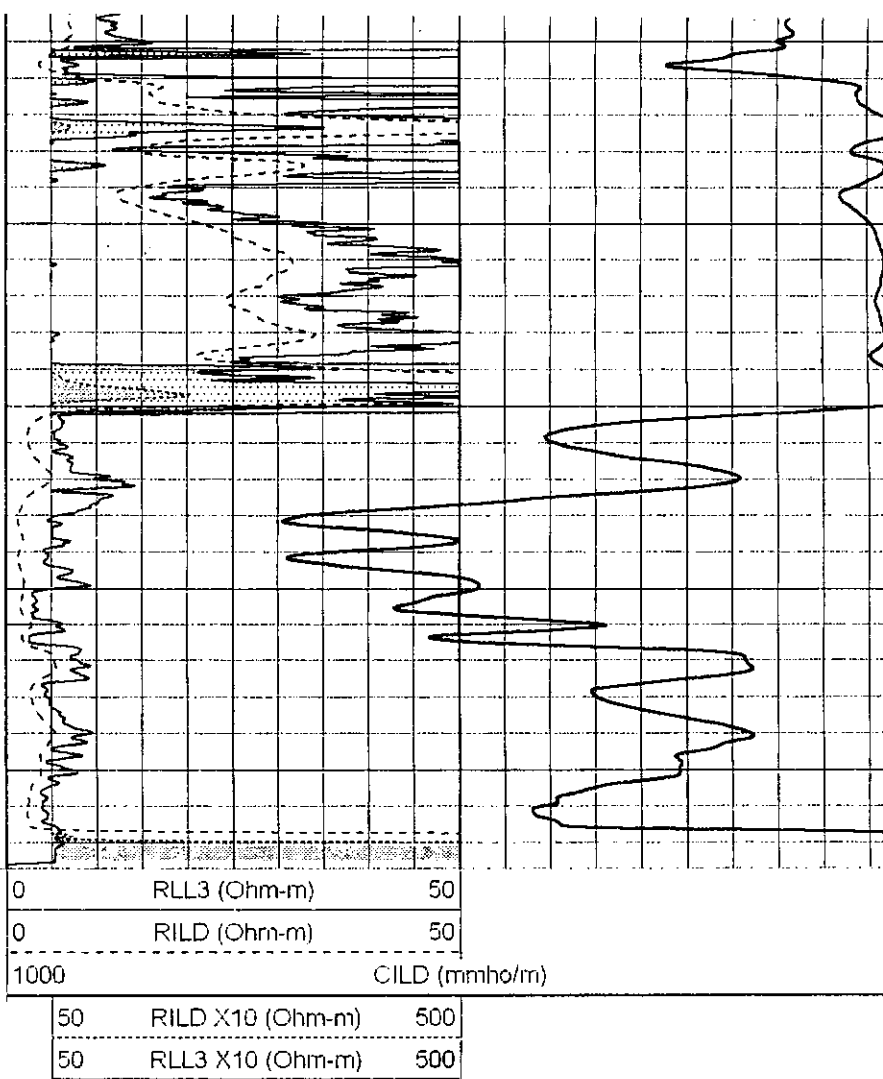


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4450  
4500  
4550  
4600  
4650  
4700  
4750  
4800  
4850  
4900





4950  
5000  
5050  
5100  
5150



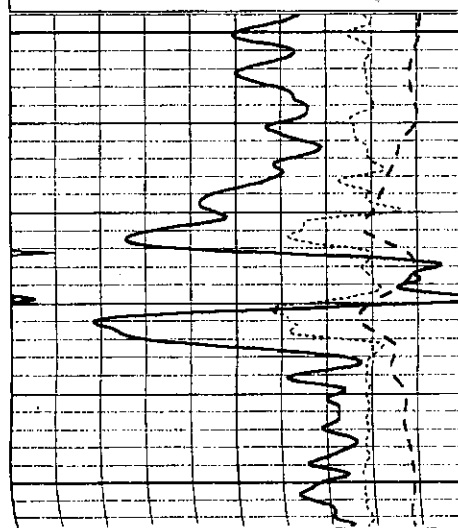
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# MAIN SECTION

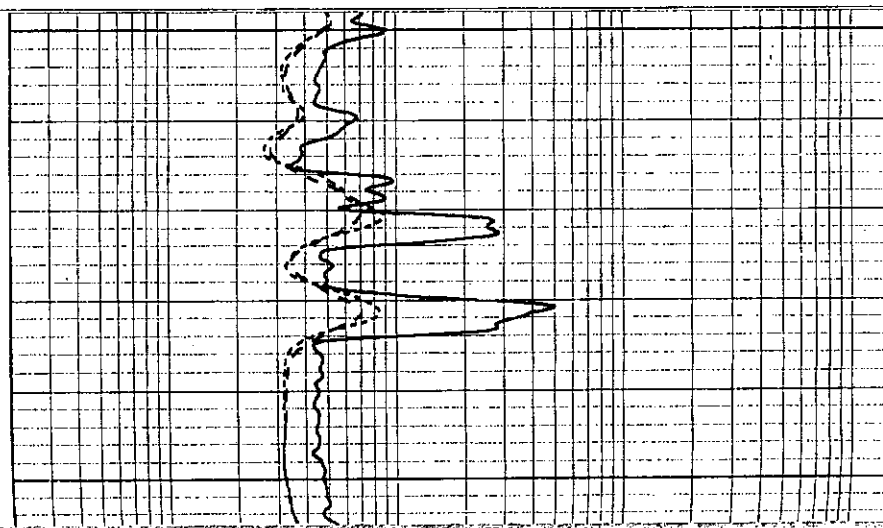
Database File: 006296pe.db  
Dataset Pathname: pass3.4  
Presentation Format: dil  
Dataset Creation: Wed Feb 23 14:36:01 2011 by Calc Open-Cased 090629  
Charted by: Depth in Feet scaled 1:240

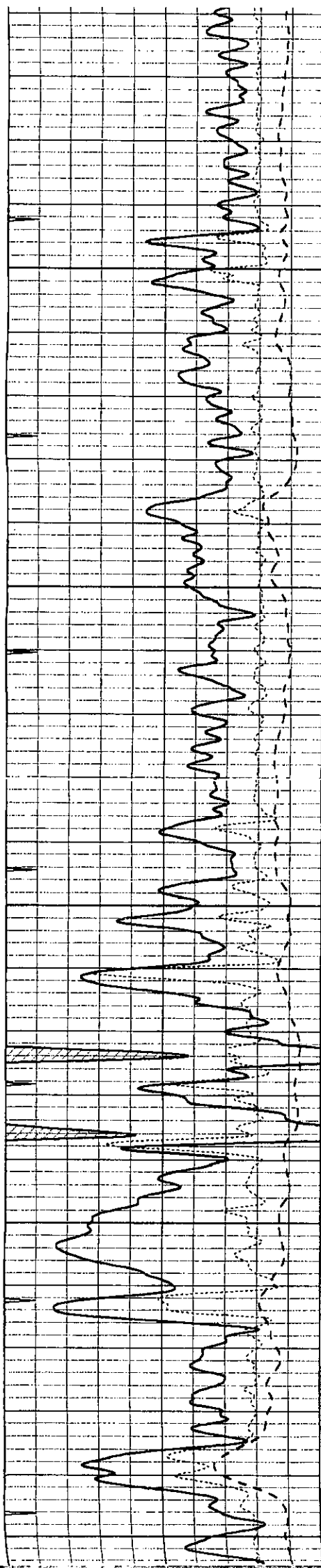
|      |                  |     |
|------|------------------|-----|
| 0    | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV)          | 100 |
| -250 | Rxo/Rt           | 50  |
| 0    | MINMK            | 10  |

|     |                          |    |
|-----|--------------------------|----|
| 0.2 | SHALLOW GUARD (Ohm-m)    | 20 |
| 0.2 | DEEP INDUCTION (Ohm-m)   | 20 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 20 |



3500  
3550





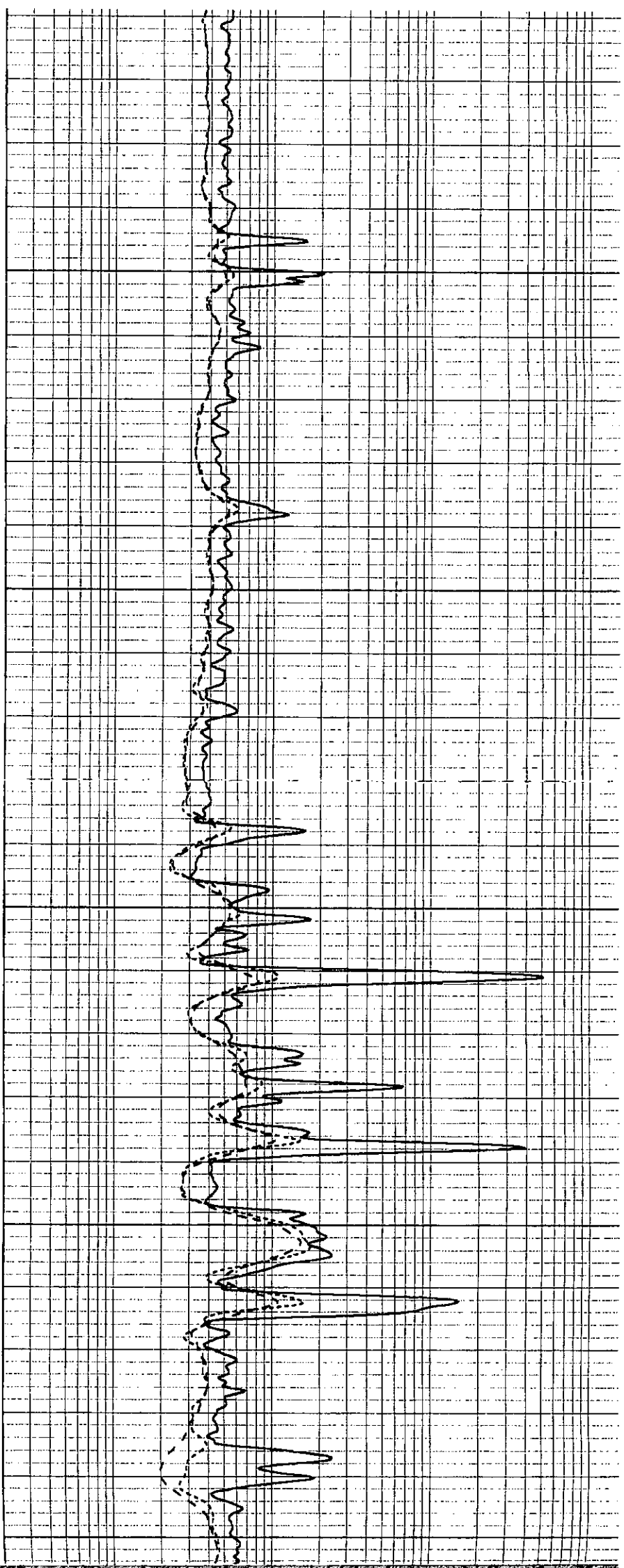
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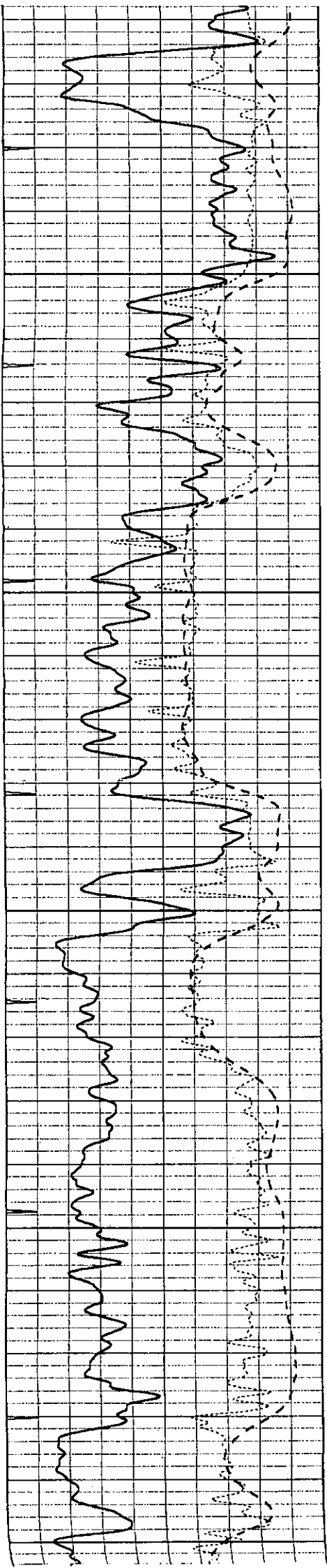
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3700

3750

3800





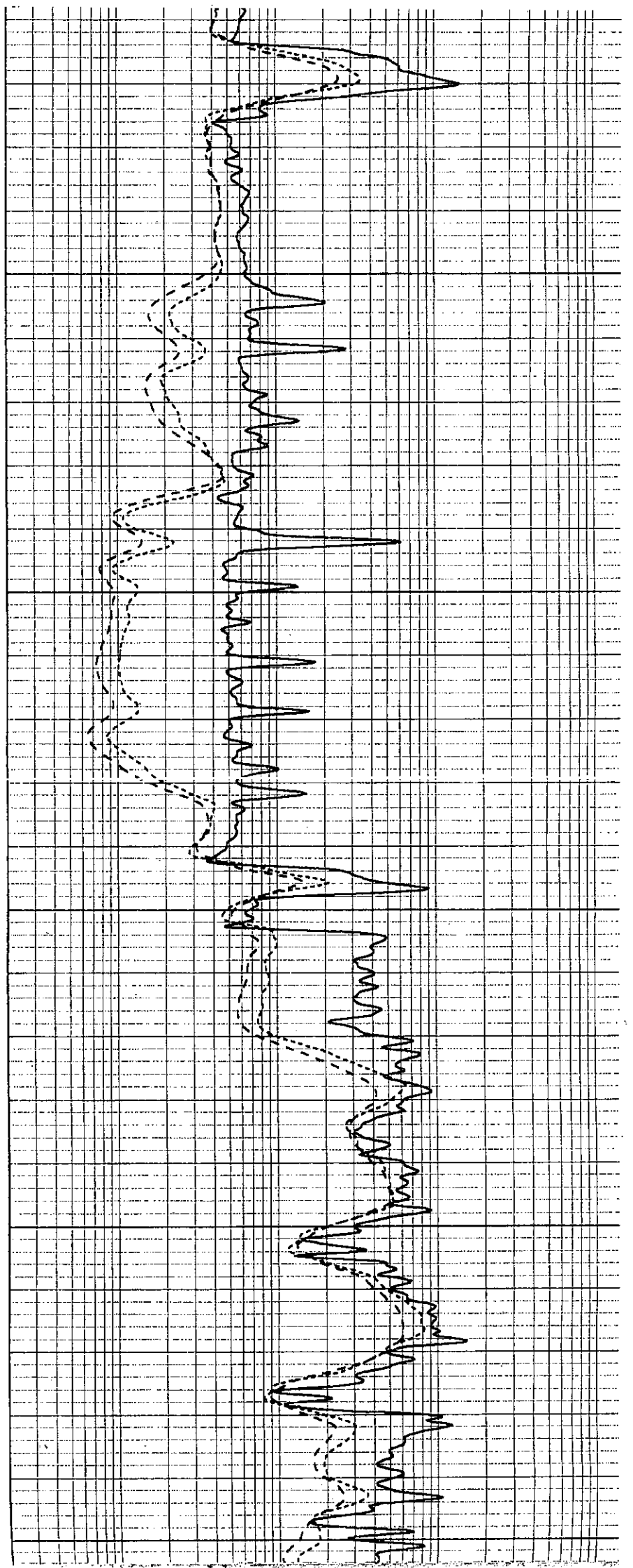
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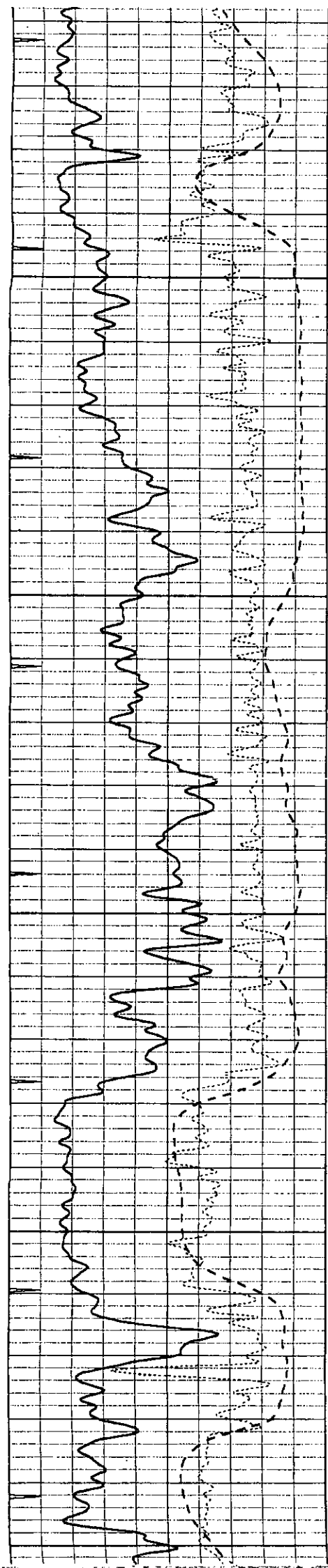
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3950

4000

4050





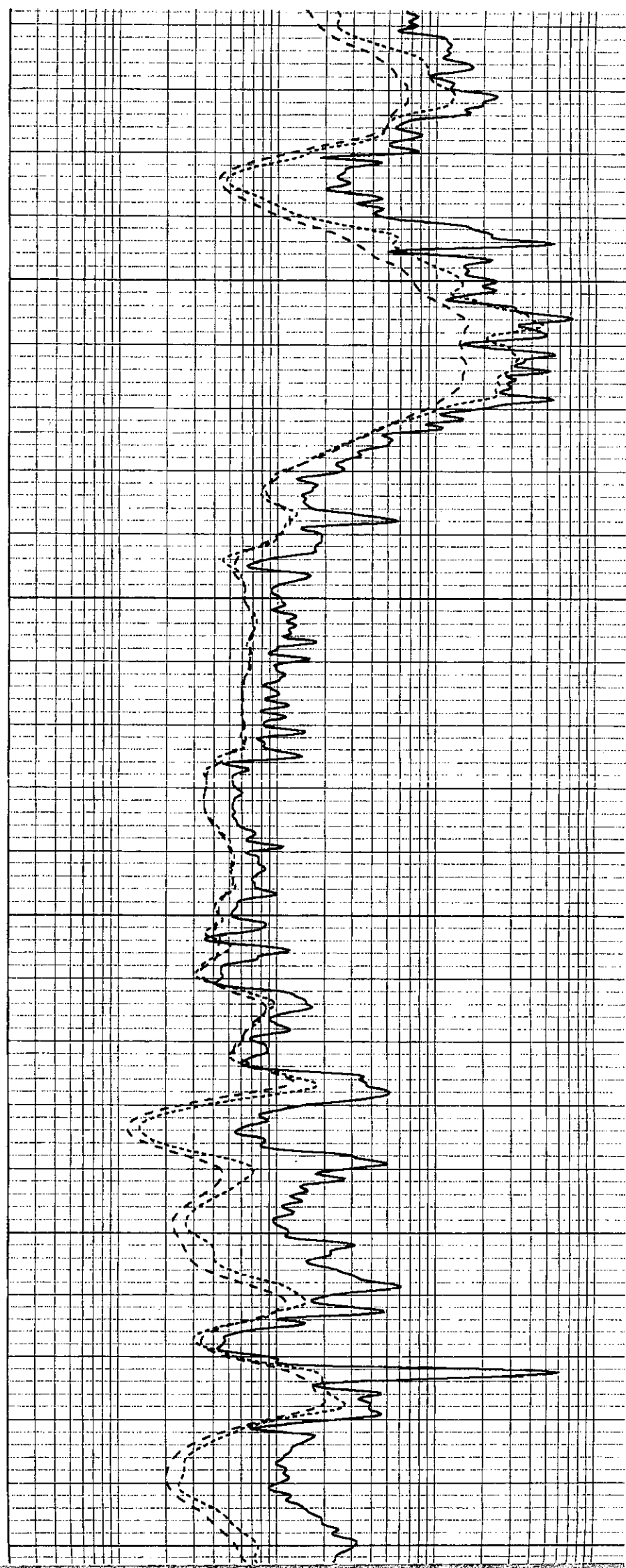
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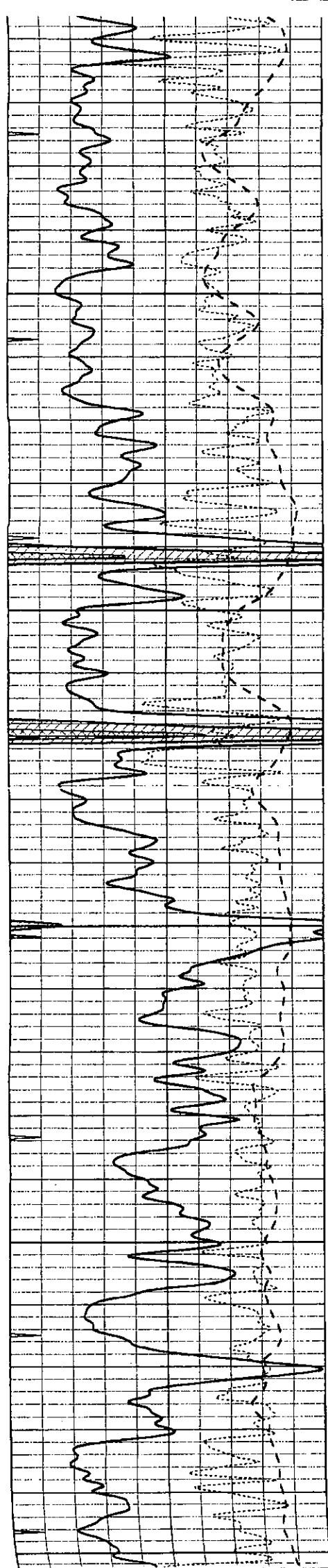
4150

4200

4250

4300





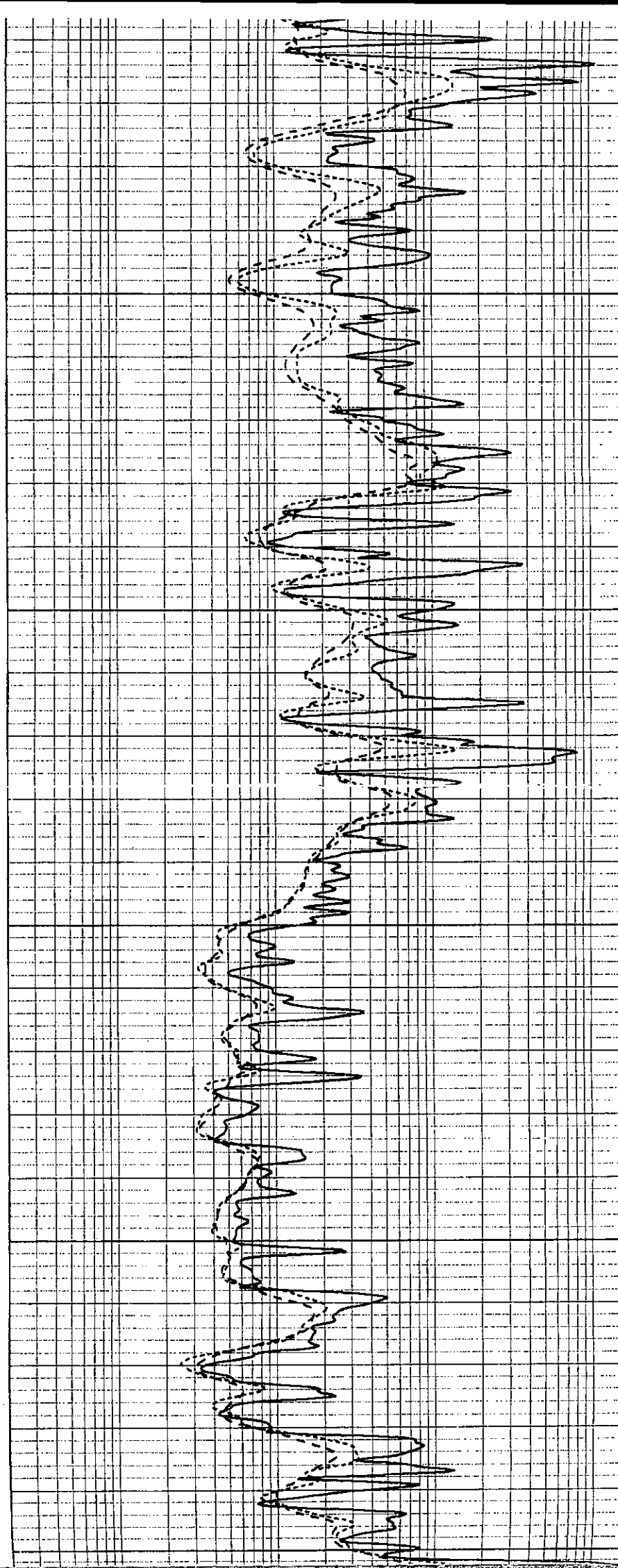
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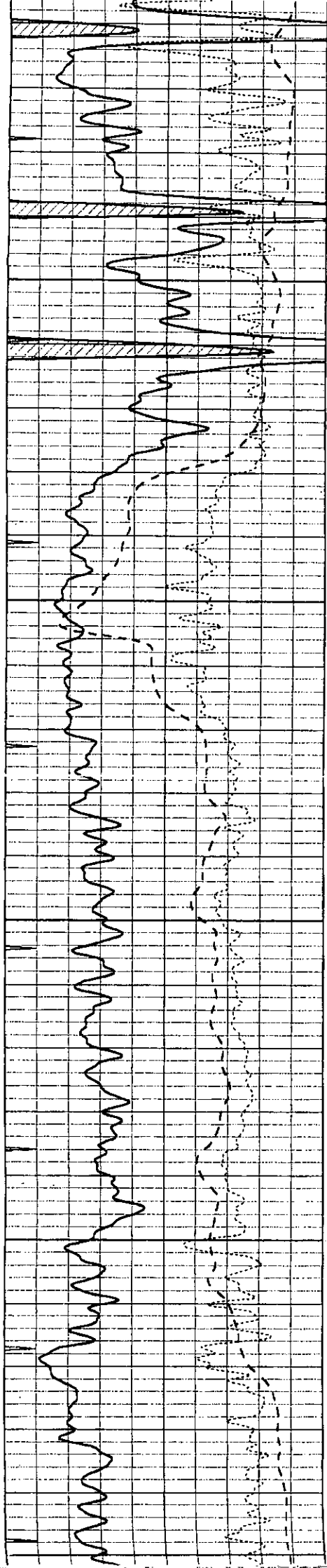
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4450

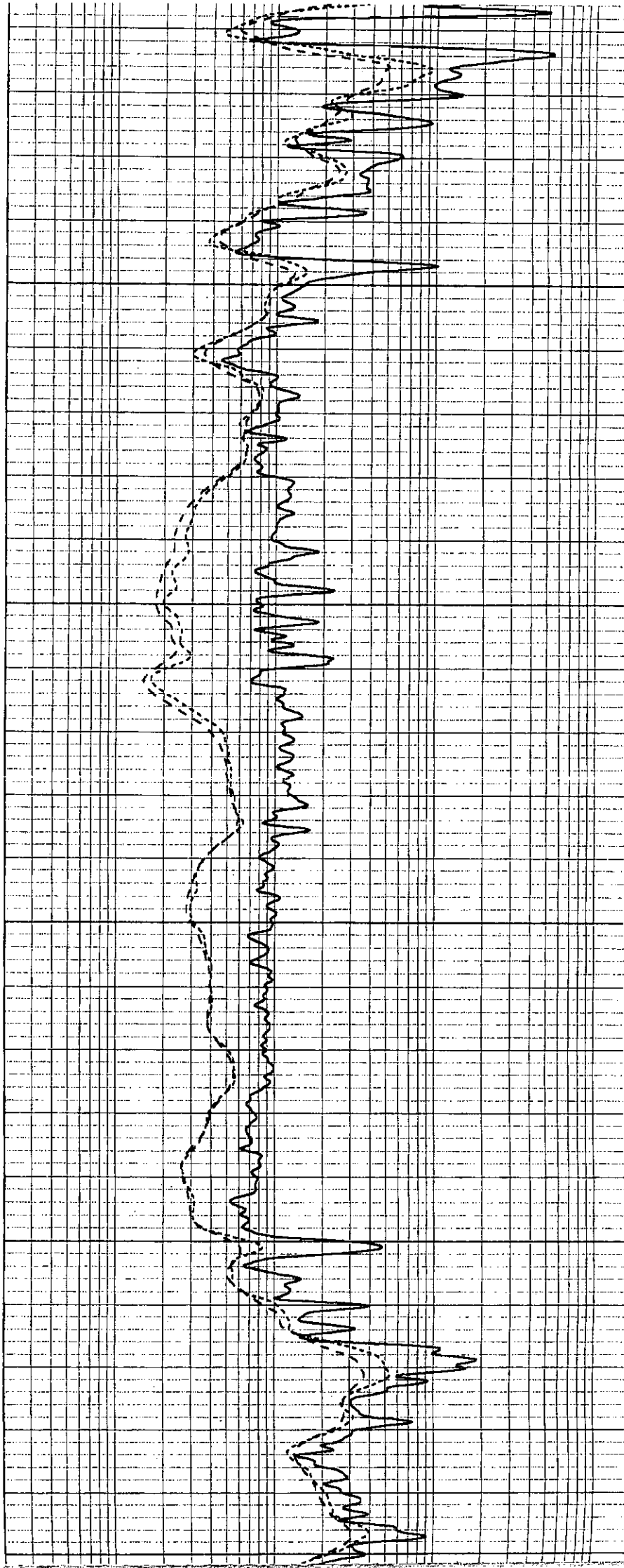
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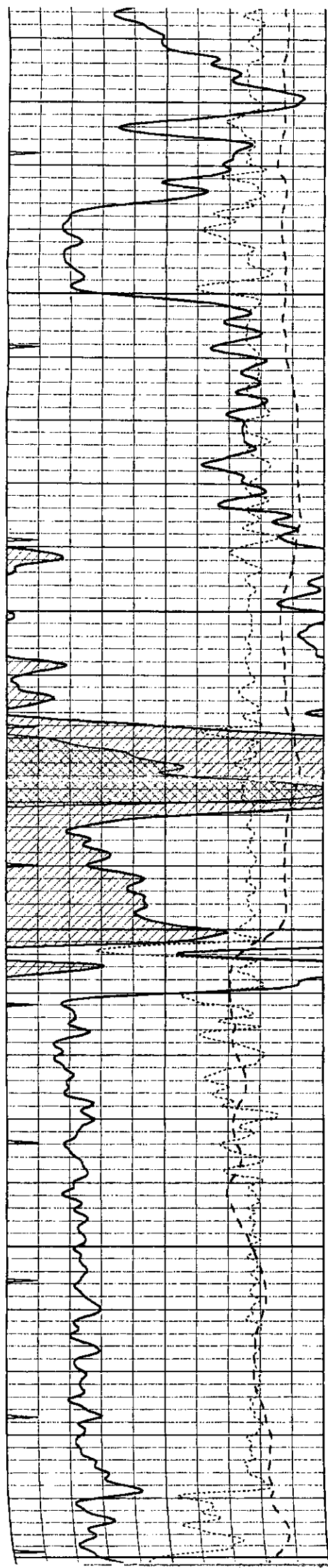
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4650  
4700  
4750  
4800





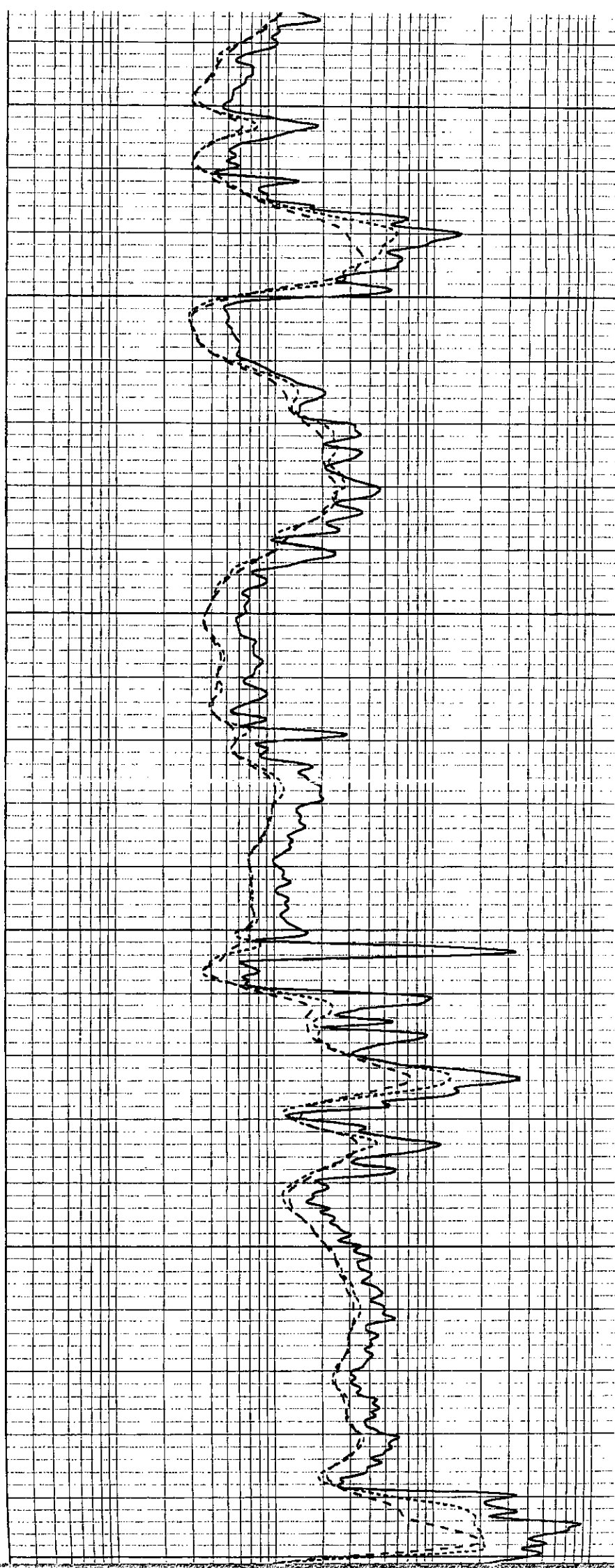
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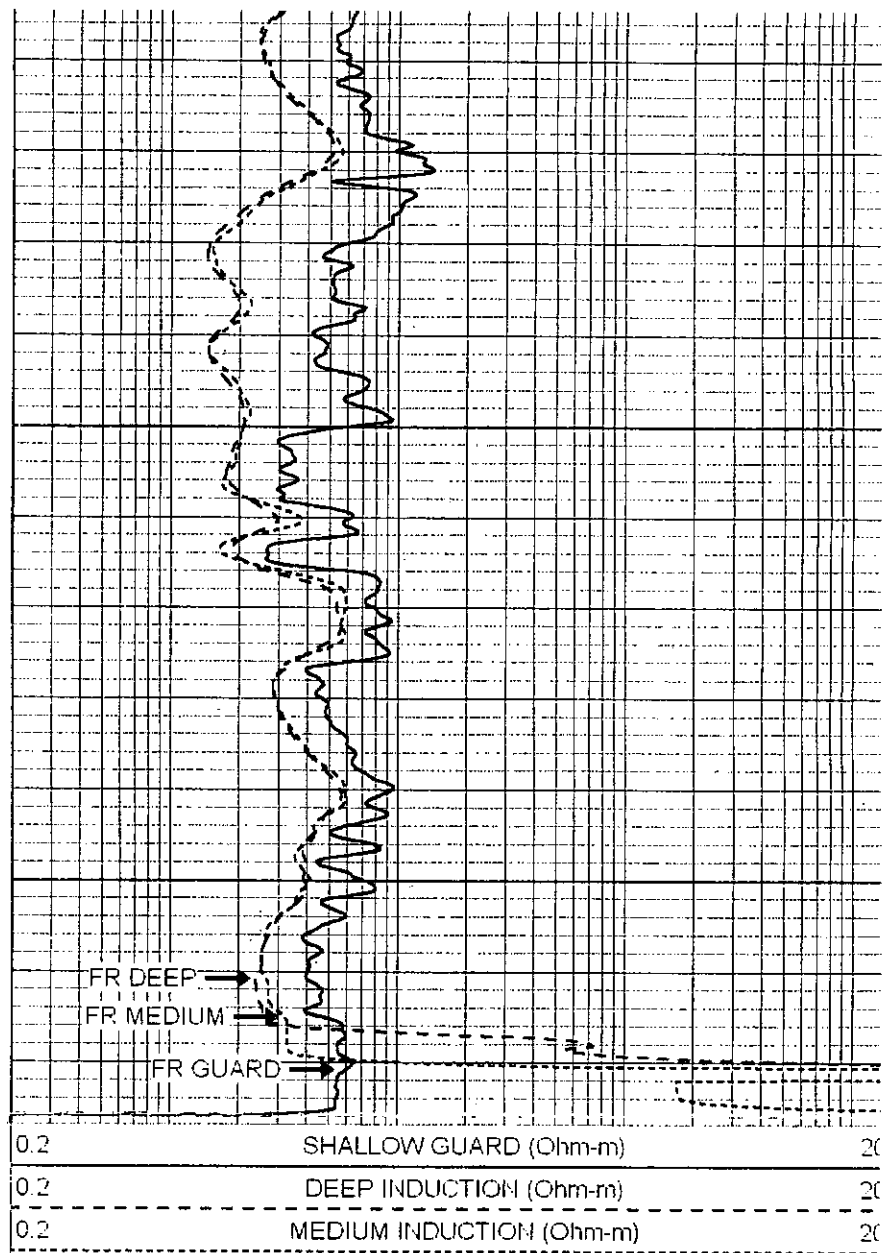
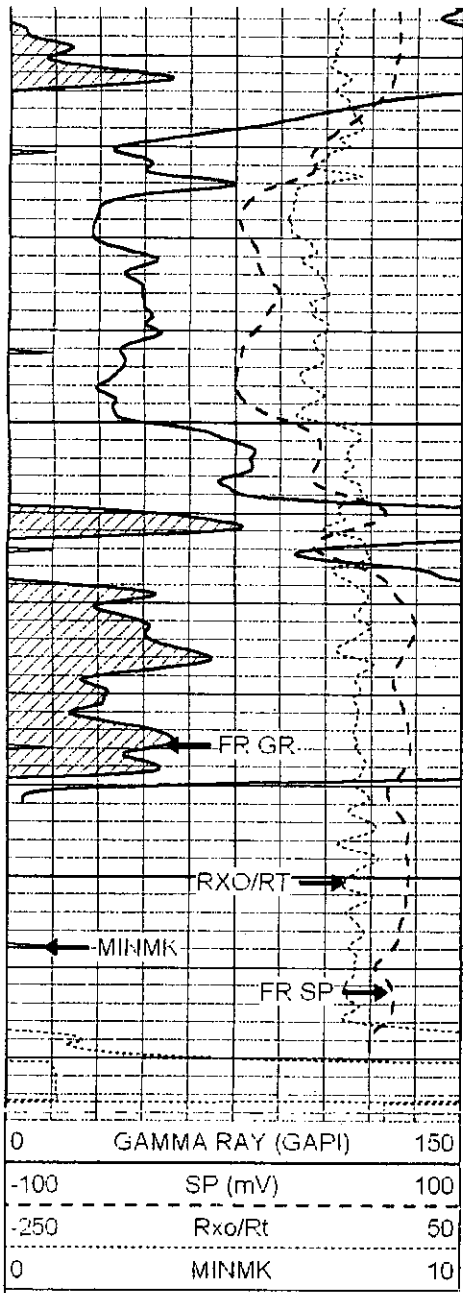
4900

4950

5000

5050





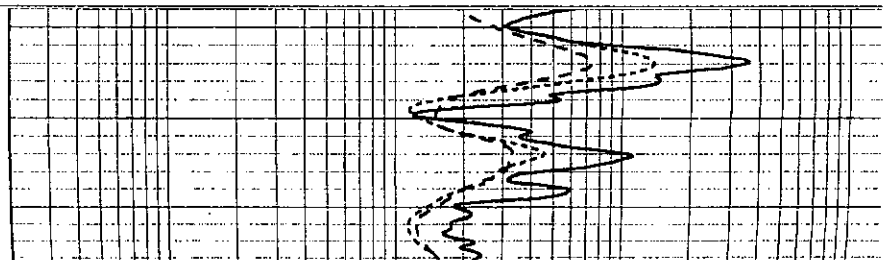
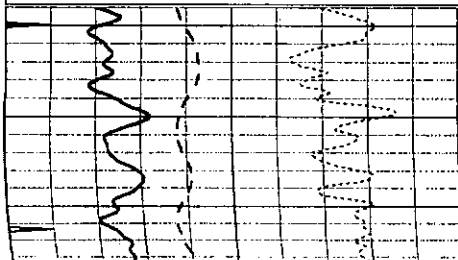
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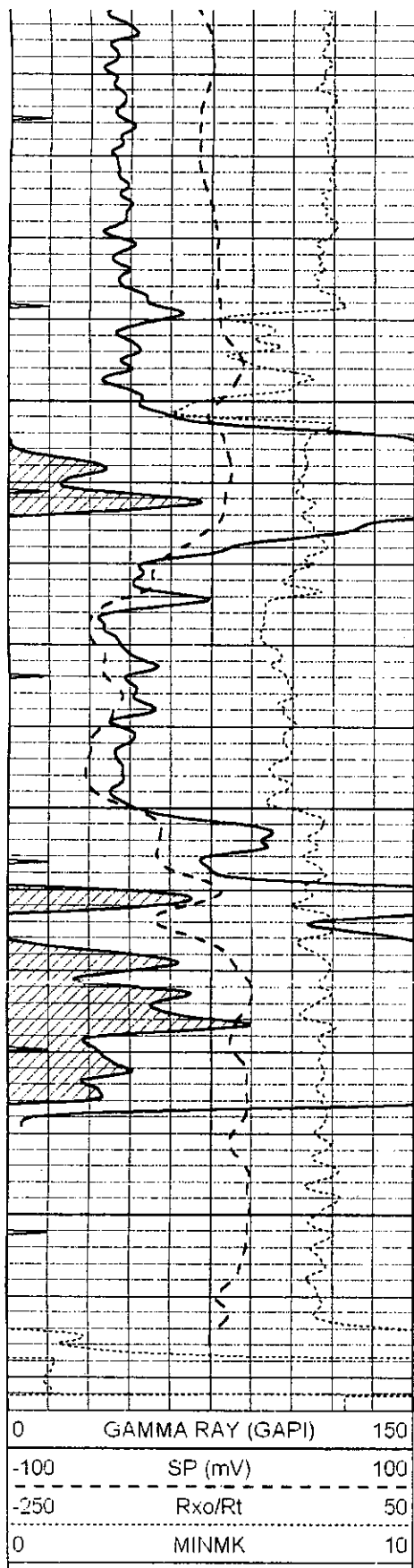
# REPEAT SECTION

Database File: 006296pe.db  
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 Presentation Format: dii  
 Dataset Creation: Wed Feb 23 14:07:26 2011 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

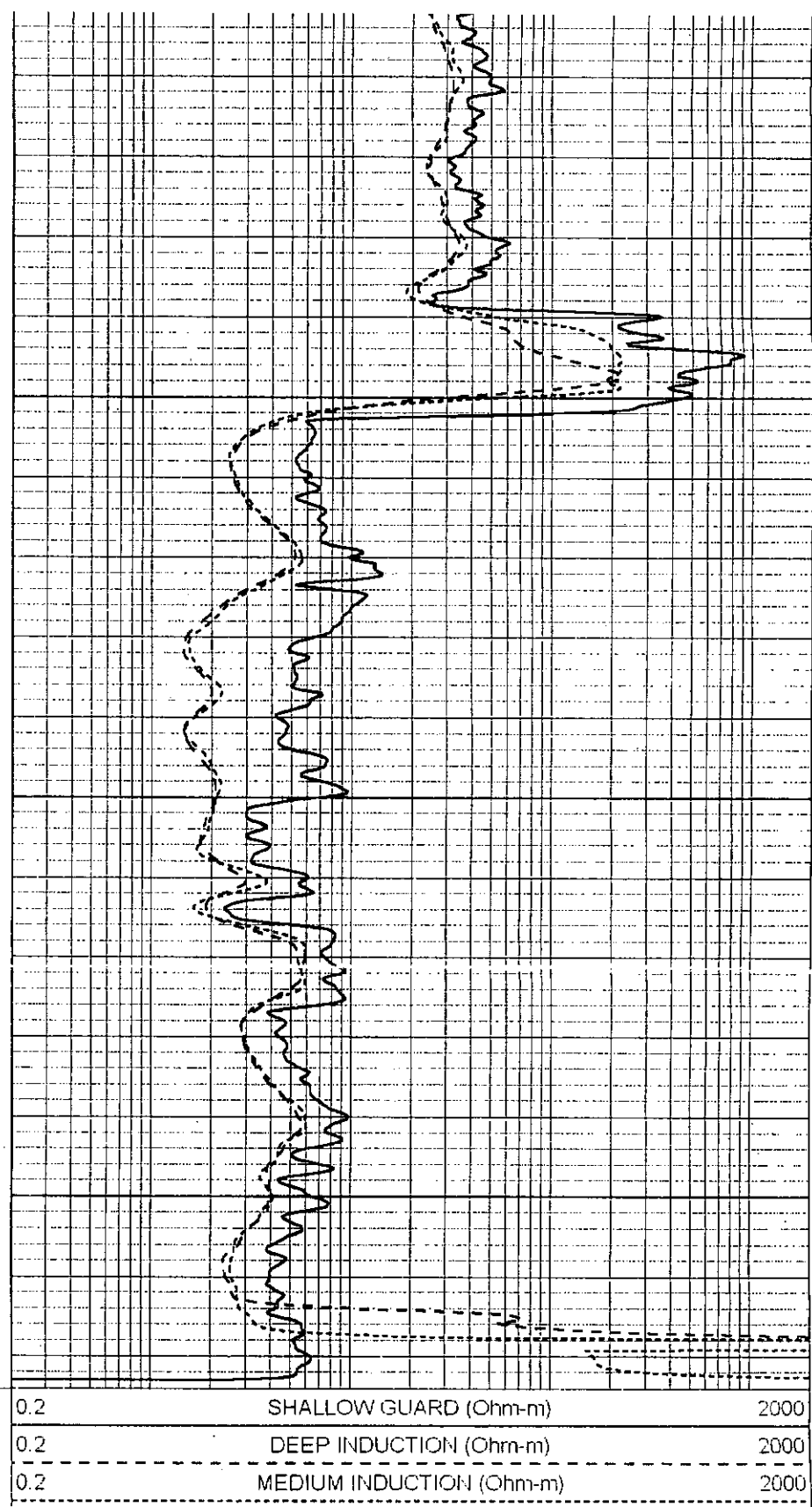
|      |                  |     |
|------|------------------|-----|
| 0    | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV)          | 100 |
| -250 | Rxo/Rt           | 50  |
| 0    | MINMK            | 10  |

|     |                          |    |
|-----|--------------------------|----|
| 0.2 | SHALLOW GUARD (Ohm-m)    | 20 |
| 0.2 | DEEP INDUCTION (Ohm-m)   | 20 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 20 |





5050  
5100  
5150



| Calibration Report                |     |                                                    |            |      |   |         |  |
|-----------------------------------|-----|----------------------------------------------------|------------|------|---|---------|--|
| Database File:                    |     | 006296pe.db                                        |            |      |   |         |  |
| Dataset Pathname:                 |     | pass3.4                                            |            |      |   |         |  |
| Dataset Creation:                 |     | Wed Feb 23 14:36:01 2011 by Calc Open-Cased 090629 |            |      |   |         |  |
| Dual Induction Calibration Report |     |                                                    |            |      |   |         |  |
| Serial-Model:                     |     | DIL6-GEAR                                          |            |      |   |         |  |
| Performed:                        |     | Wed Feb 23 12:08:28 2011                           |            |      |   |         |  |
| Readings                          |     |                                                    | References |      |   | Results |  |
| Loop                              | Air | Loop                                               | Air        | Loop | m | b       |  |

| Internal: | Zero  | Cal   |   | Zero  | Cal   |        | m     | b     |
|-----------|-------|-------|---|-------|-------|--------|-------|-------|
| Deep      | 0.000 | 1.000 | V | 0.000 | 1.000 | mmho/m | 1.000 | 0.000 |
| Medium    | 0.000 | 1.000 | V | 0.000 | 1.000 | mmho/m | 1.000 | 0.000 |

Litho Density Calibration Report  
Serial: 006 Model: PRB  
Performed Sun Aug 15 09:48:41 2010

Litho Density Calibration

|             | Background | Magnesium   | Aluminum | Sandstone           |         |
|-------------|------------|-------------|----------|---------------------|---------|
| Window 1    | 1686.6     | 11612.8     | 3932.0   | 12718.8             | cps     |
| Window 2    | 1531.4     | 9204.7      | 3267.8   | 9851.9              | cps     |
| Window 3    | 1198.3     | 4733.6      | 1952.5   | 4920.6              | cps     |
| Window 4    | 317.3      | 321.2       | 325.9    | 303.6               | cps     |
| Long Space  | 0.0        | 7673.3      | 1736.4   | 8320.4              | cps     |
| Short Space | 1.7        | 2548.5      | 1657.2   | 2628.8              | cps     |
| Rho         |            | 1.7100      | 2.5900   | 1.3800              | g/cc    |
| Pe          |            |             | 2.5700   | 1.5500              |         |
| Rib Angle   | : 43.8     | Rib Slope   | : 0.961  | Density/Spine Ratio | : 0.569 |
| Spine Angle | : 73.8     | Spine Slope | : 3.453  | Spine Intercept     | : -18.1 |

Caliper

|          | Readings | Reference    |
|----------|----------|--------------|
| Low Ref  | 4.3      | 7.6          |
| High Ref | 6.3      | 14.0         |
| Gain:    | 3.2      | Offset: -5.9 |

Compensated Neutron Calibration Report

Serial Number: NEU\_4I  
Tool Model: G

CALIBRATION

| Detector    | Readings   | Target      | Normalization |
|-------------|------------|-------------|---------------|
| Short Space | 996.00 cps | 1000.00 cps | 1.0000        |
| Long Space  | 977.00 cps | 1000.00 cps | 1.0000        |

Gamma Ray Calibration Report

Serial Number: GR4  
Tool Model: OPEN  
Performed: Wed Feb 23 13:00:10 2011

Calibrator Value: 200.0 GAPI

Background Reading: 0.0 cps  
Calibrator Reading: 189.0 cps

Sensitivity: 1.5000 GAPI/cps