



# DUAL INDUCTION LOG

Company DOUBLE D'S, LLC.

Well CECIL #2

Field

County ELLIS

State KANSAS

Location:

API # : 15-051-26946-0000

2135' FNL & 2265' FWL

SEC 30 TWP 15S RGE 18W

Permanent Datum GROUND LEVEL Elevation 1965  
Log Measured From KELLY BUSHING 8' A.G.L  
Drilling Measured From KELLY BUSHING

Other Services  
CDL/CNL  
MEL  
Elevation  
K.B. 1973  
D.F. 1971  
G.L. 1965

Date

4/20/19

Run Number

ONE

Depth Driller

3765

Depth Logger

3765

Bottom Logged Interval

3763

Top Log Interval

00

Casing Driller

8 5/8" @ 1140

Casing Logger

1140

Bit Size

7 7/8

Type Fluid in Hole

CHEMICAL MUD

CHLORIDES 5000 PPM

Density / Viscosity

9.3/54

pH / Fluid Loss

10.0/7.8

Source of Sample

FLOWLINE

Rm @ Meas. Temp

.95 @ 78F

Rmf @ Meas. Temp

.71 @ 78F

Rmc @ Meas. Temp

1.14 @ 78F

Source of Rmf / Rmc

MEASUREMENT

Rm @ BHT

.65 @ 114F

Time Circulation Stopped

2 HOURS

Time Logger on Bottom

////

Maximum Recorded Temperature

114F

Equipment Number

3802

Location

HAYS, KANSAS

Recorded By

JASON CAPELLUCCI

Witnessed By

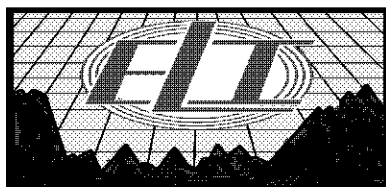
MARC DOWNING

<<< 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 ELI WIRELINE SERVICES, HAYS, KS. ( 785 ) 628-6395  
DIRECTIONS  
HAYS, KS. - SOUTH TO SMOKY HILL RIVER RD. - 2 WEST TO J CORP SAND PIT  
1/2 SOUTH INTO

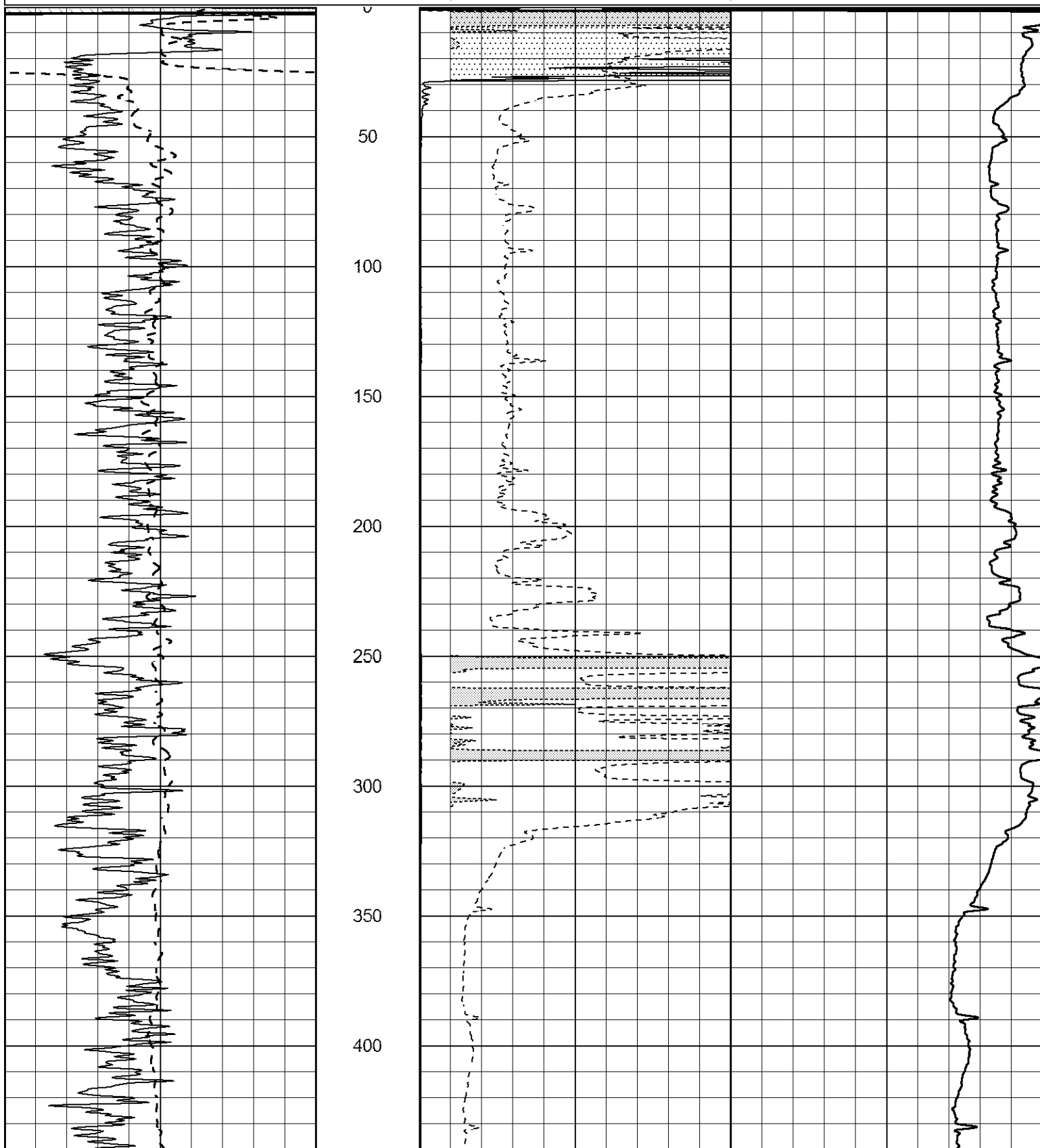


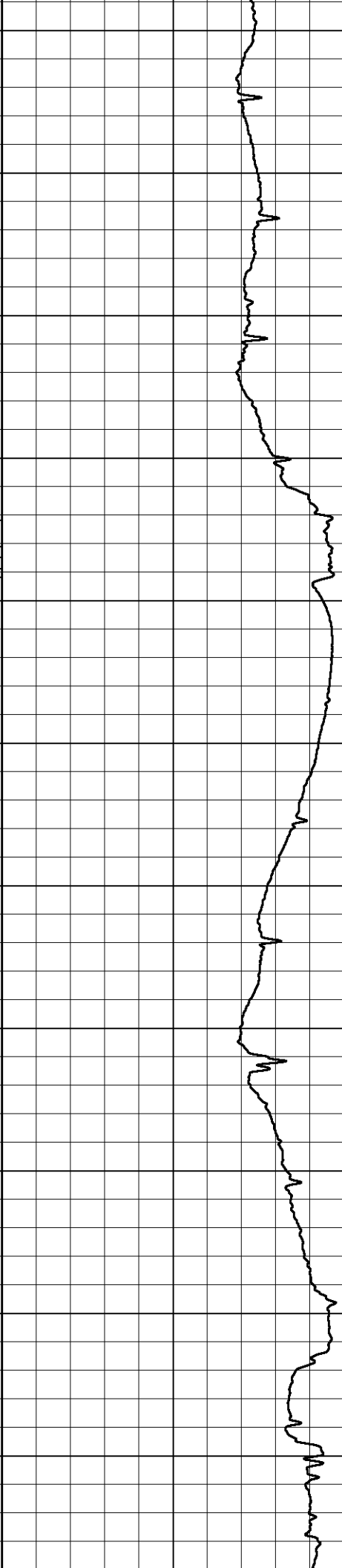
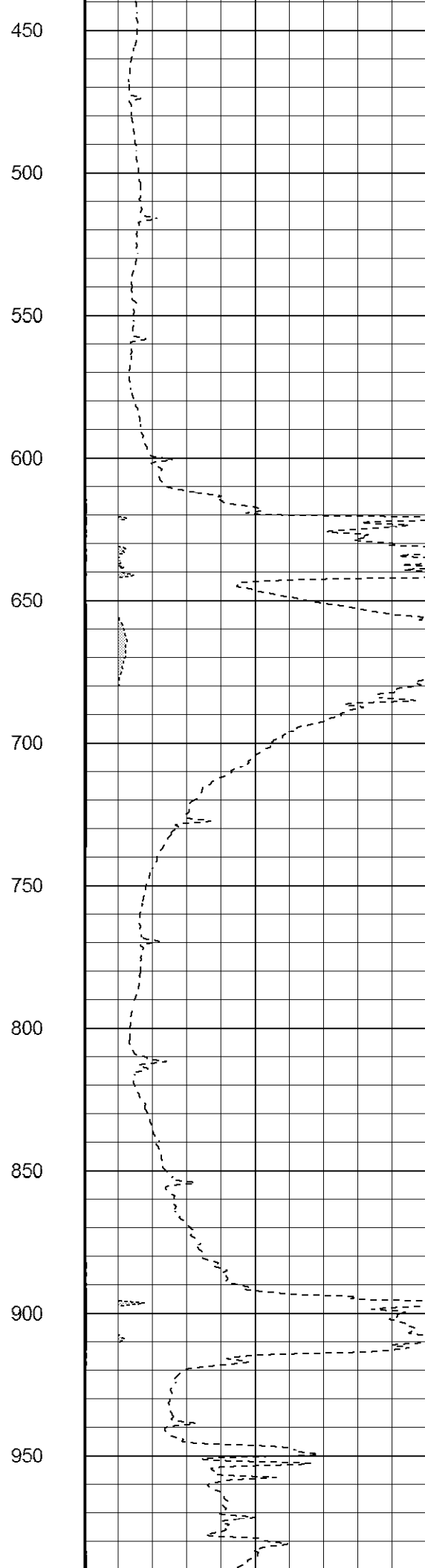
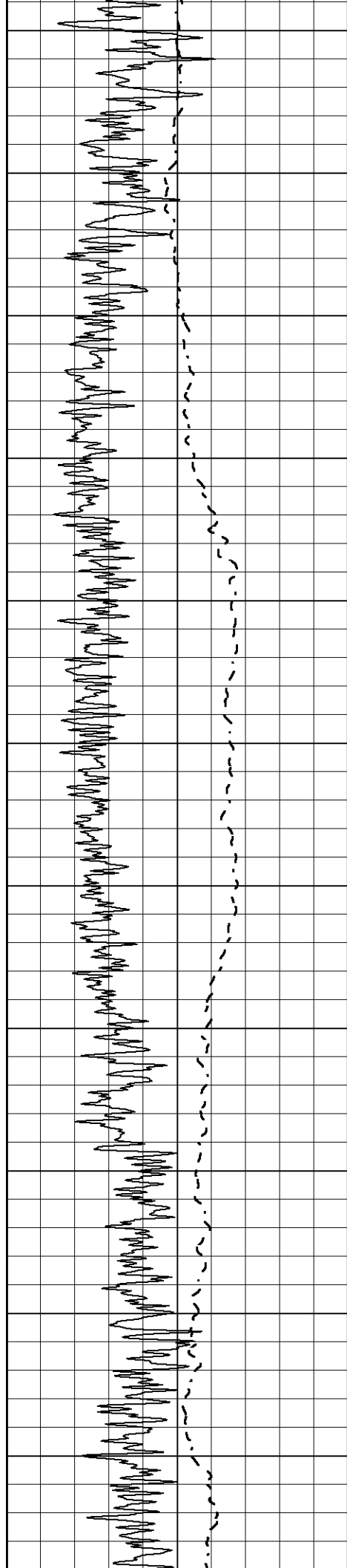
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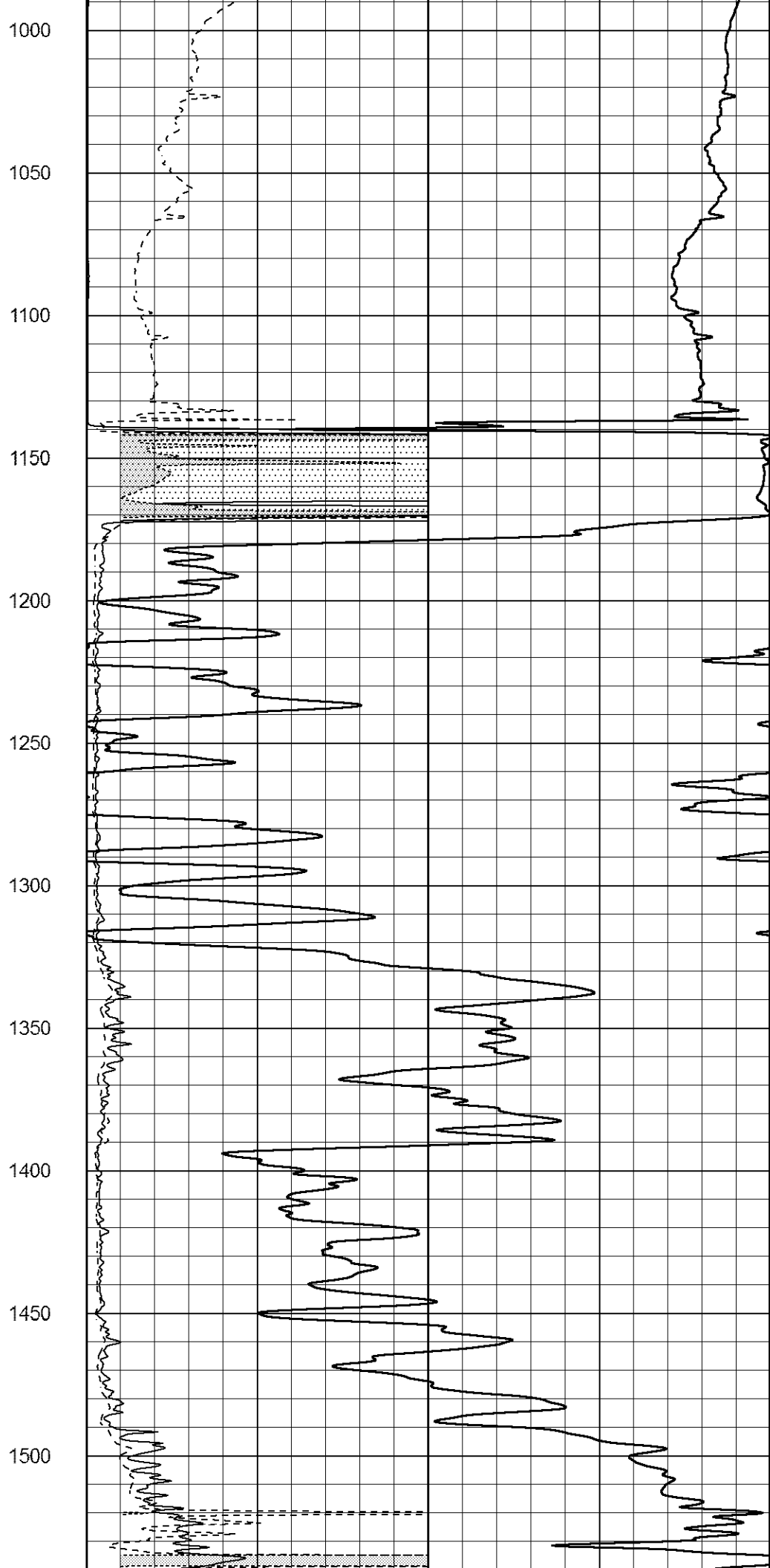
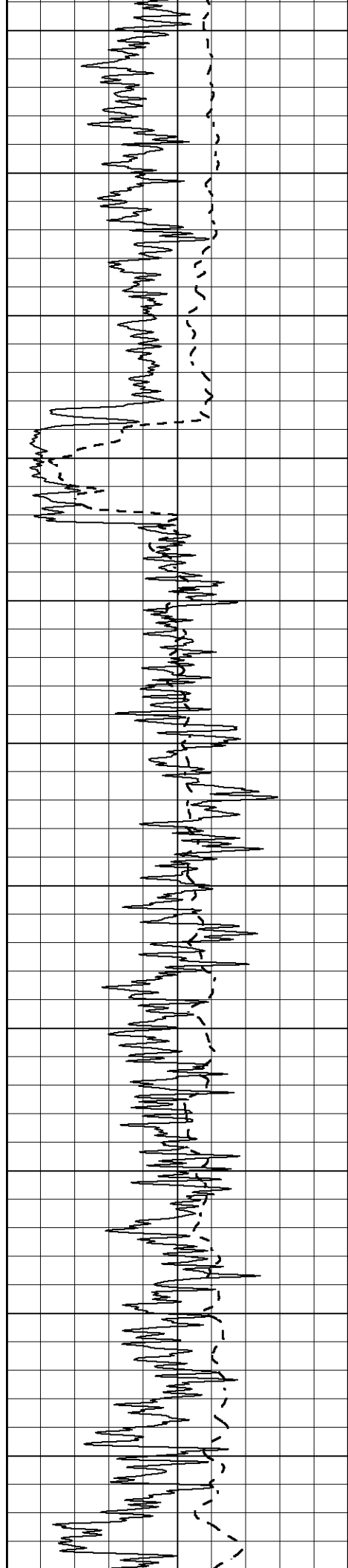
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Dataset Pathname pass3.3  
Presentation Format \_dil2  
Dataset Creation Sat Apr 20 19:38:36 2019  
Charted by Depth in Feet scaled 1:600

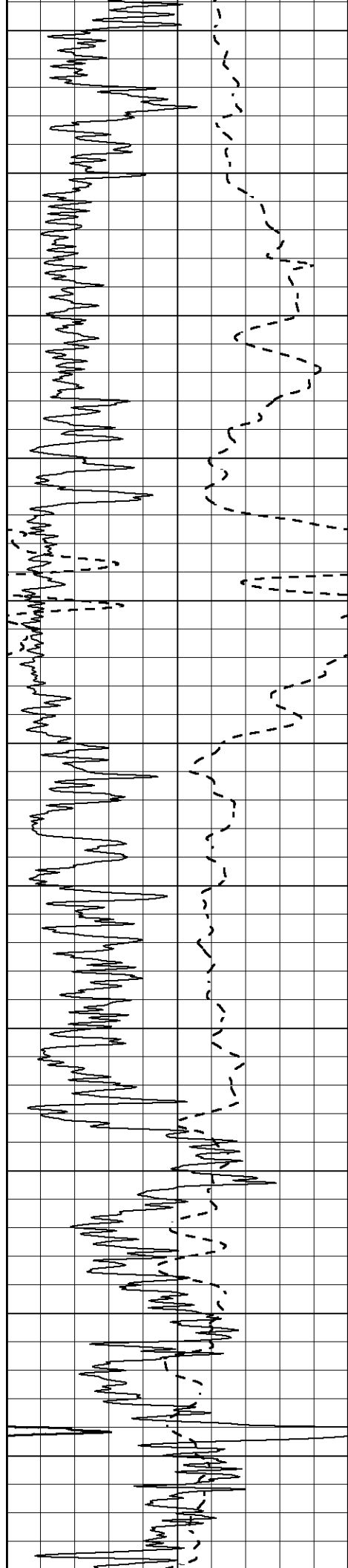
0 Gamma Ray (GAPI) 150  
-100 SP (mV) 100  
-----

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









1550

1600

1650

1700

1750

1800

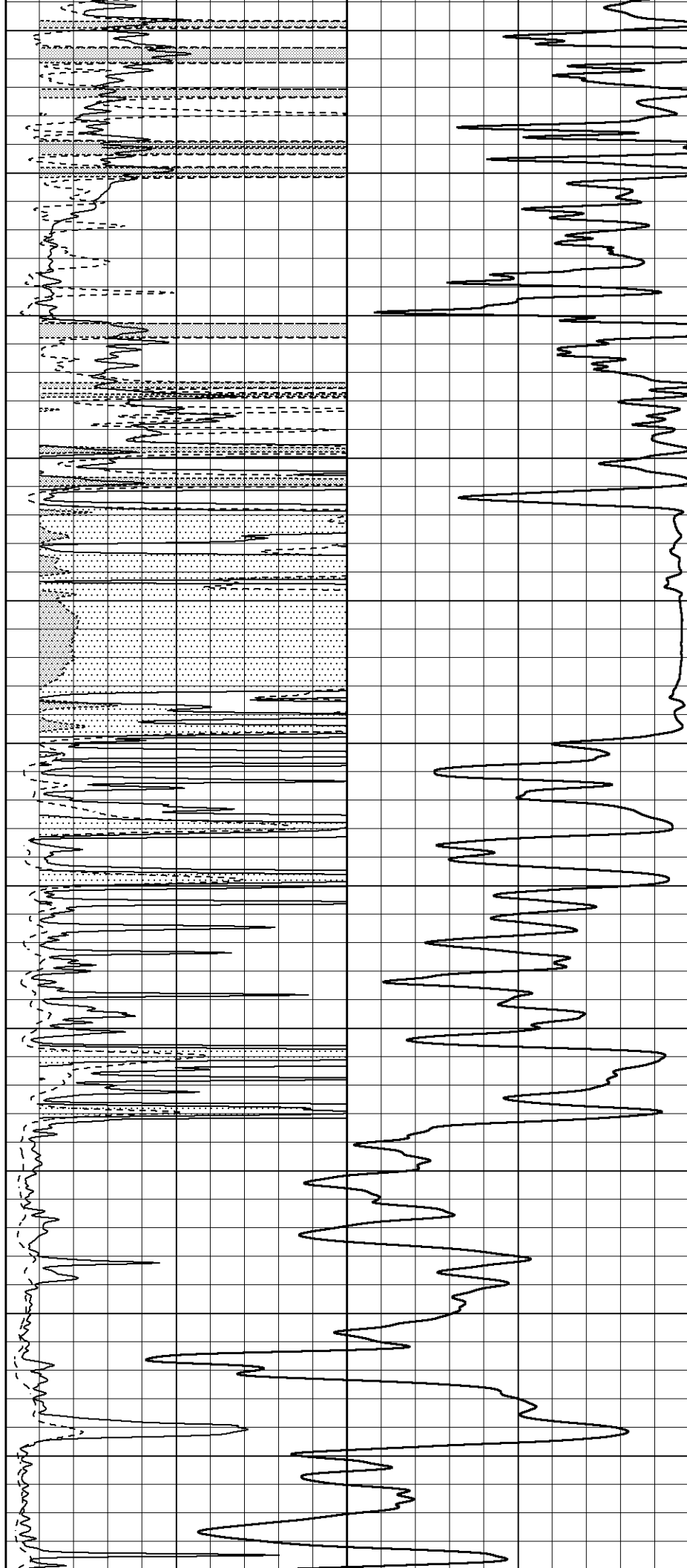
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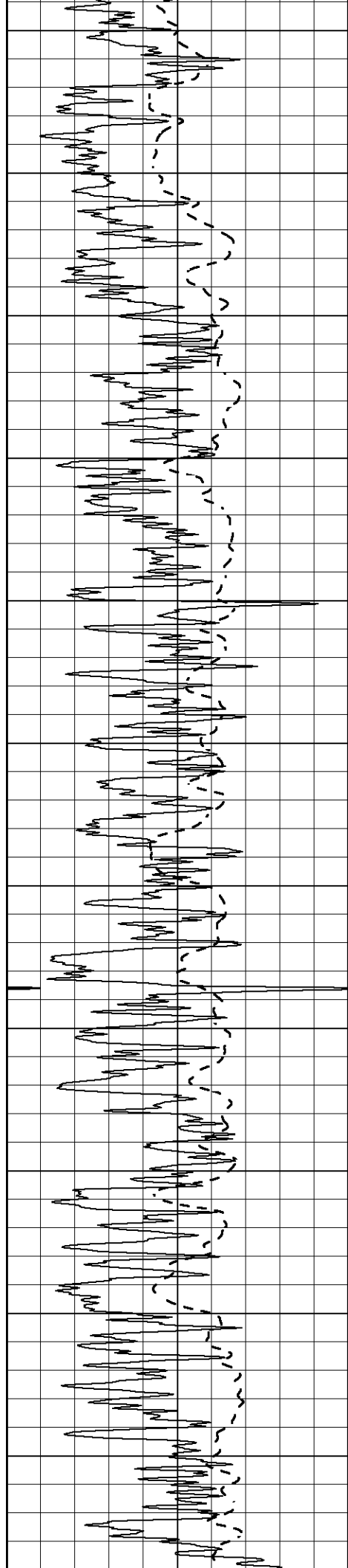
1900

1950

2000

2050





2100

2150

2200

2250

2300

2350

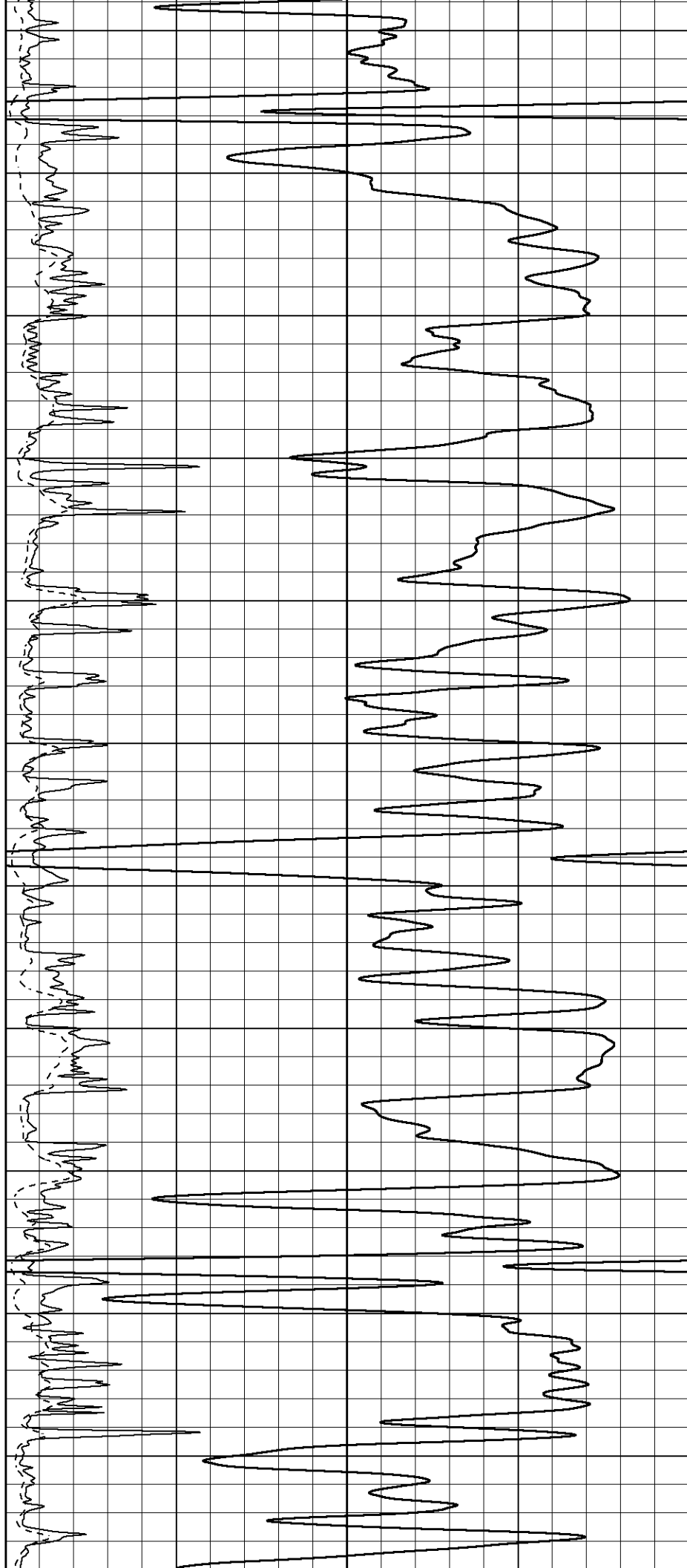
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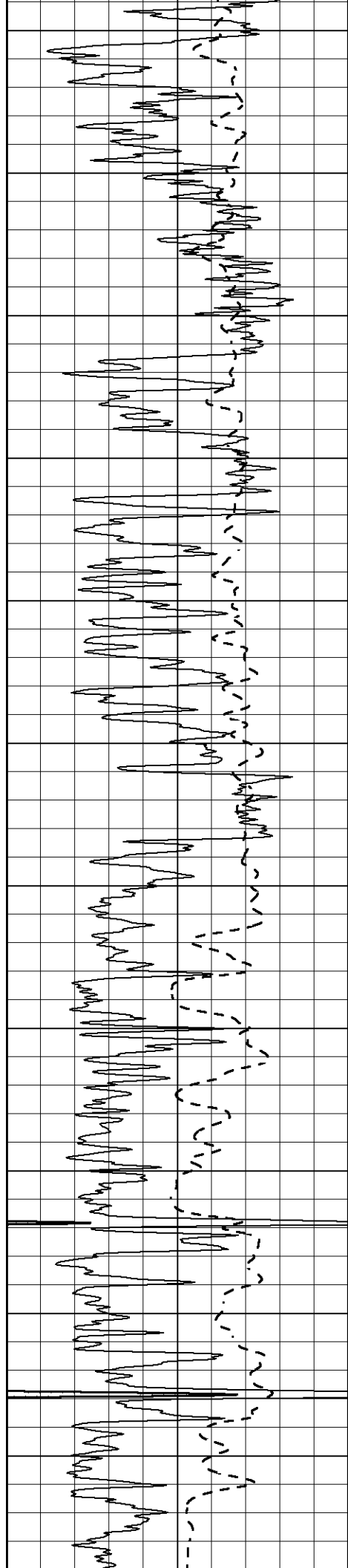
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2500

2550

2600





2650

2700

2750

2800

2850

2900

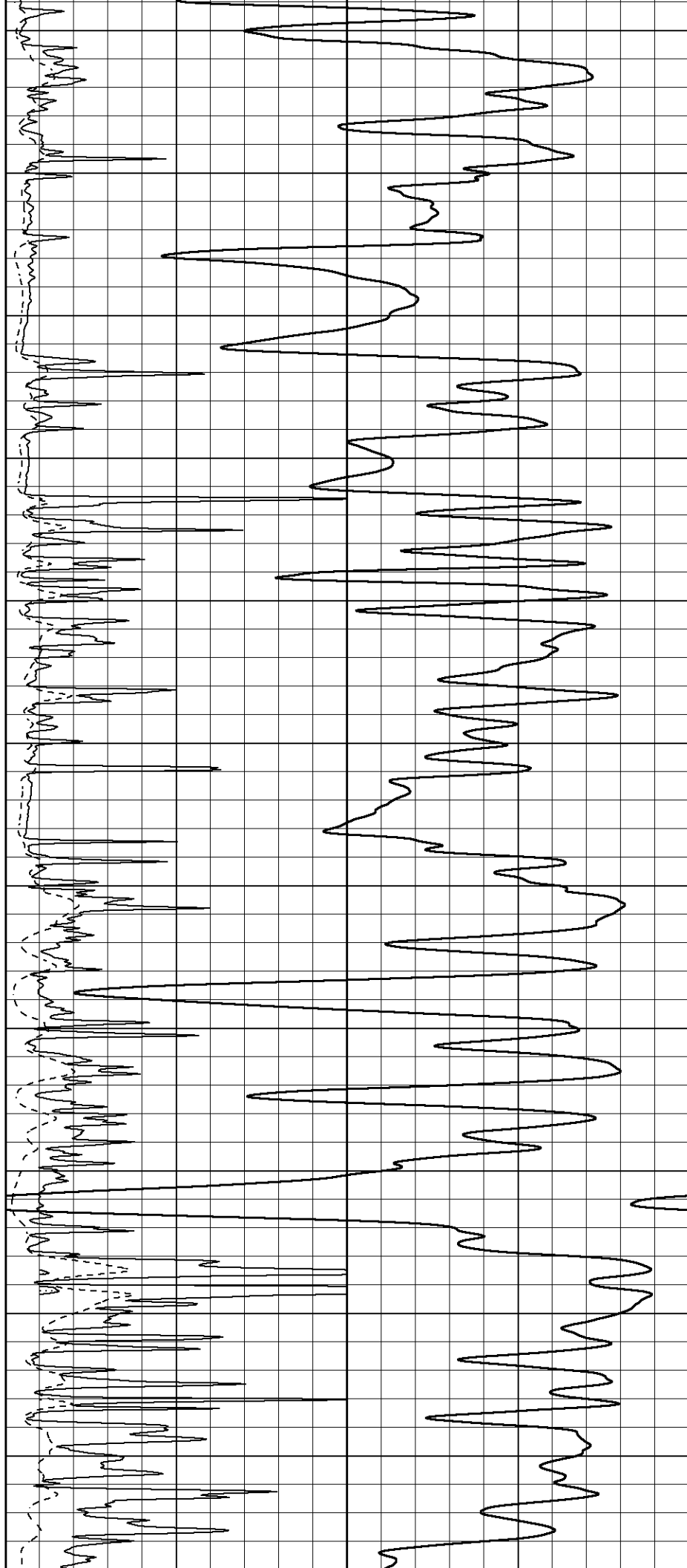
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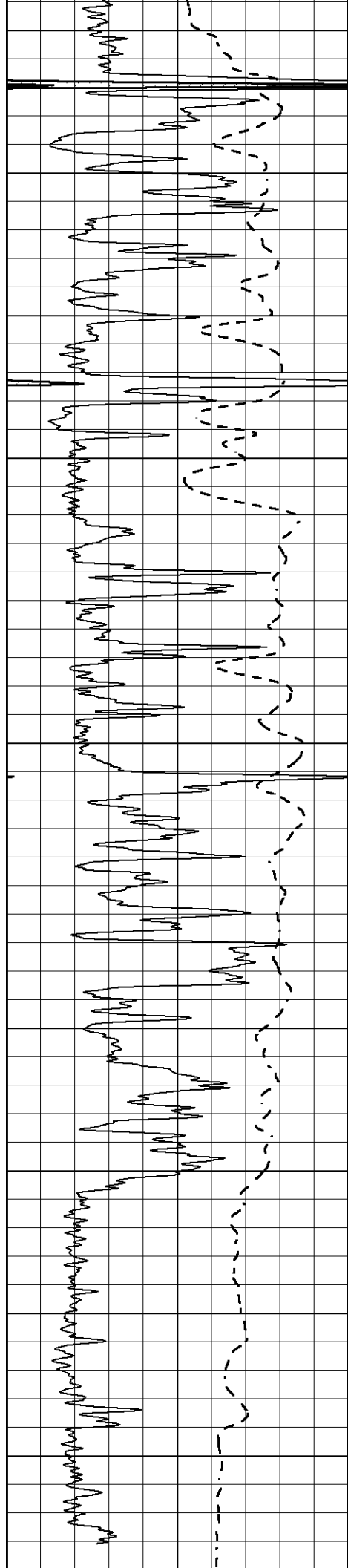
3000

3050

3100

3150





3200

3250

3300

3350

3400

3450

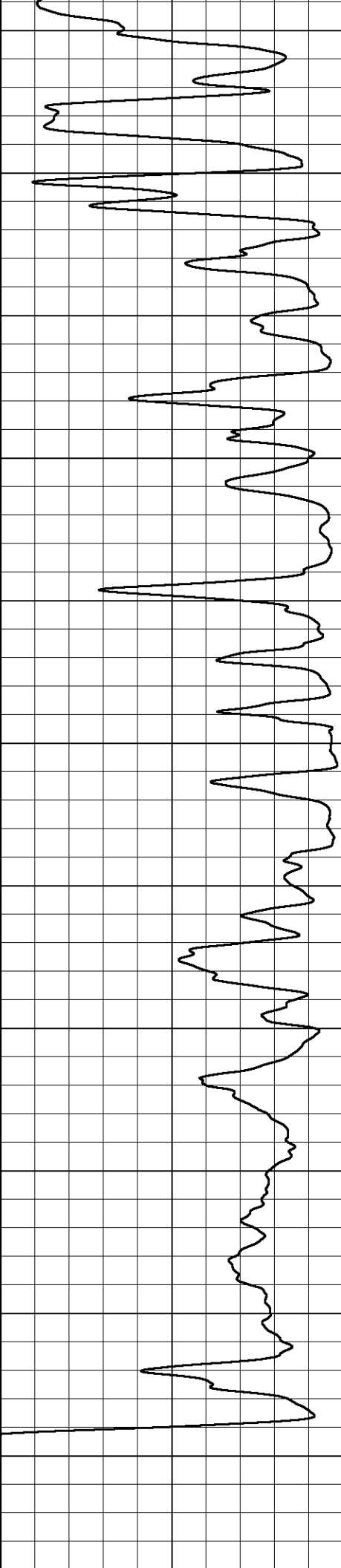
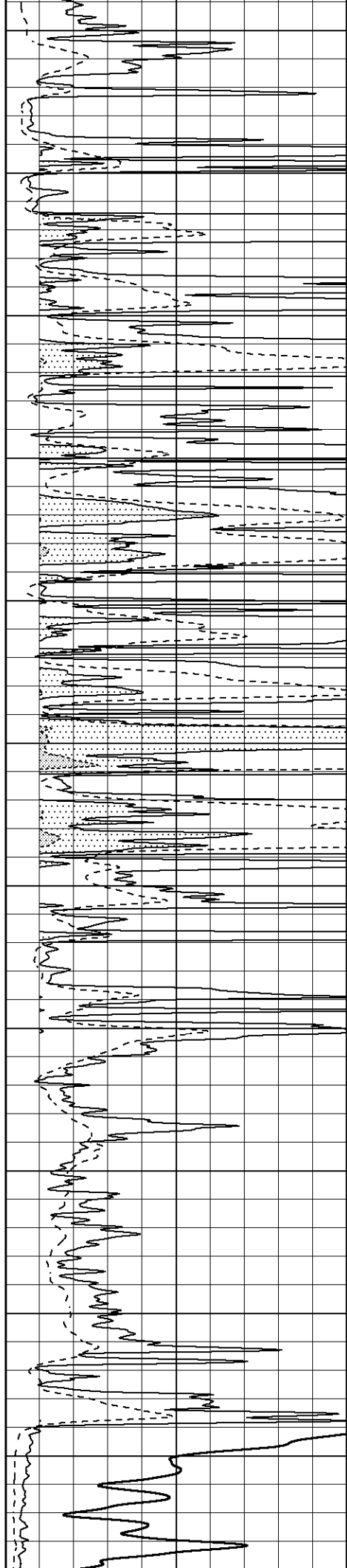
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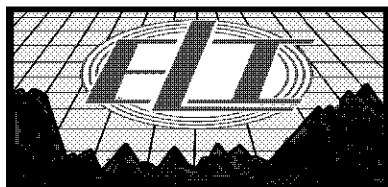
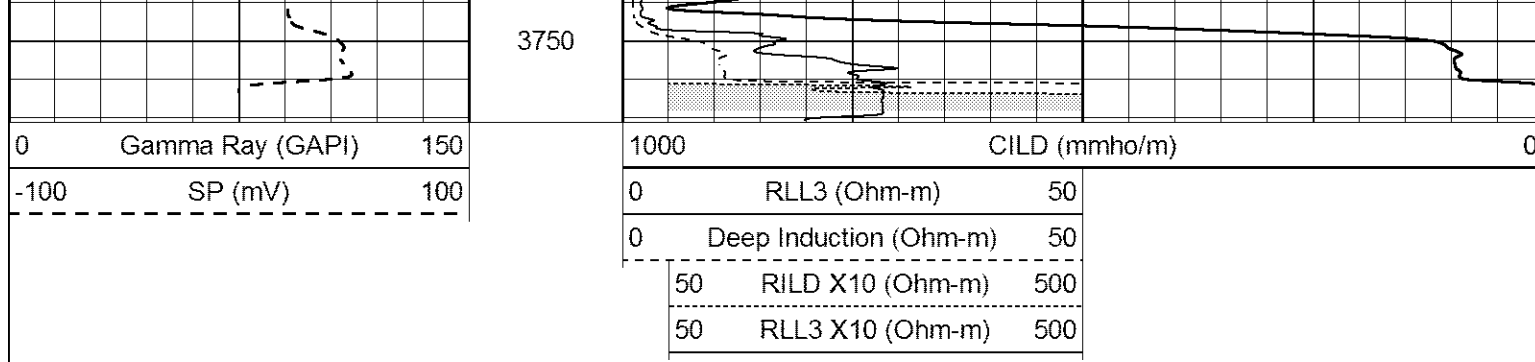
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3600

3650

3700

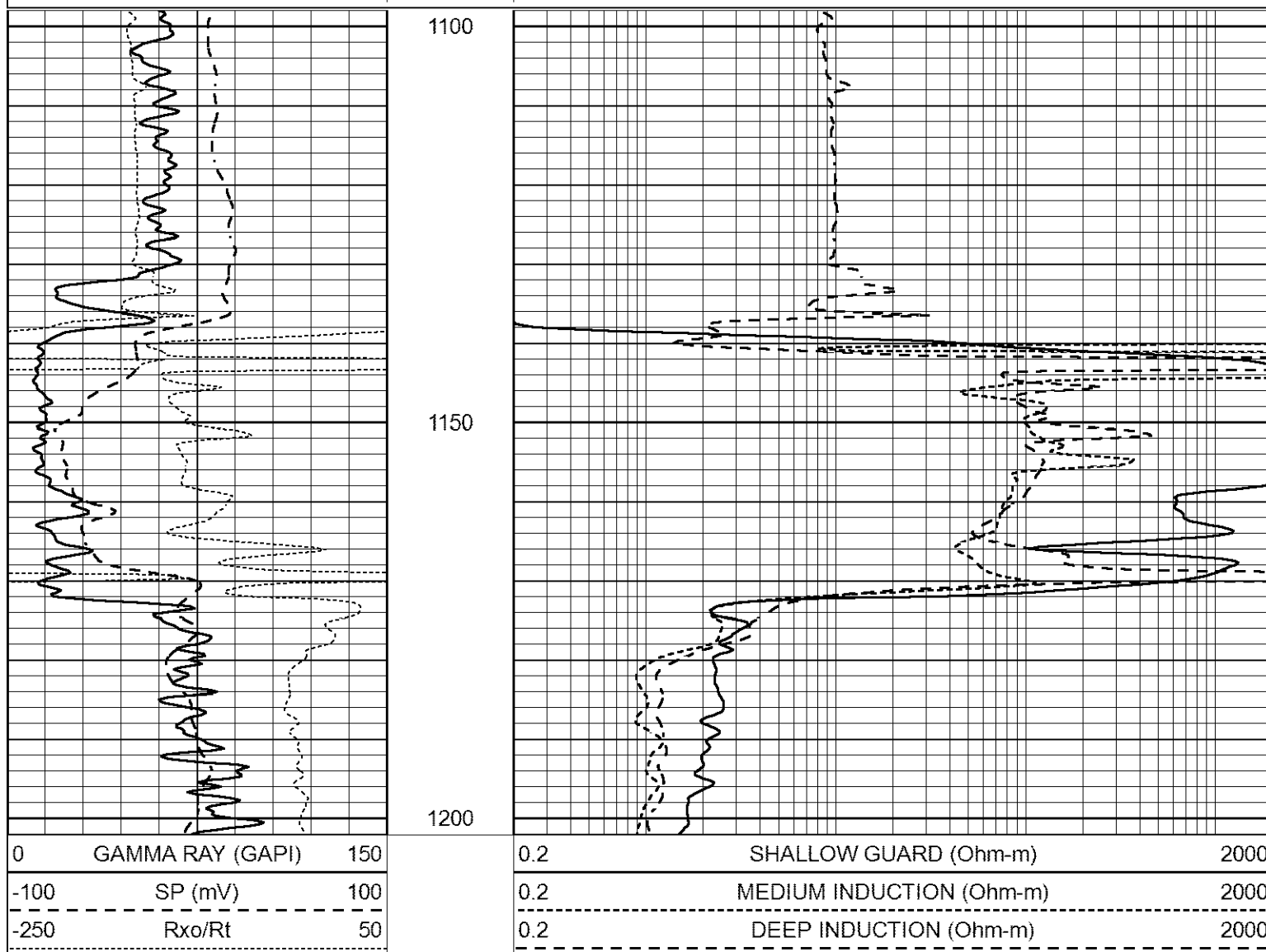


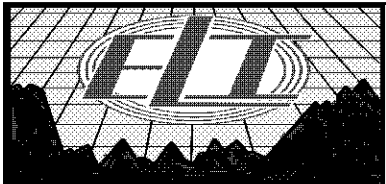


# ANHYDRITE

Database File      3633ddn8.db  
 Dataset Pathname      pass3.2  
 Presentation Format      \_dil  
 Dataset Creation      Sat Apr 20 19:37:32 2019  
 Charted by      Depth in Feet scaled 1:240

|                                  |                                             |  |
|----------------------------------|---------------------------------------------|--|
| 0      GAMMA RAY (GAPI)      150 | 0.2      SHALLOW GUARD (Ohm-m)      2000    |  |
| -100      SP (mV)      100       | 0.2      MEDIUM INDUCTION (Ohm-m)      2000 |  |
| -250      Rxo/Rt      50         | 0.2      DEEP INDUCTION (Ohm-m)      2000   |  |

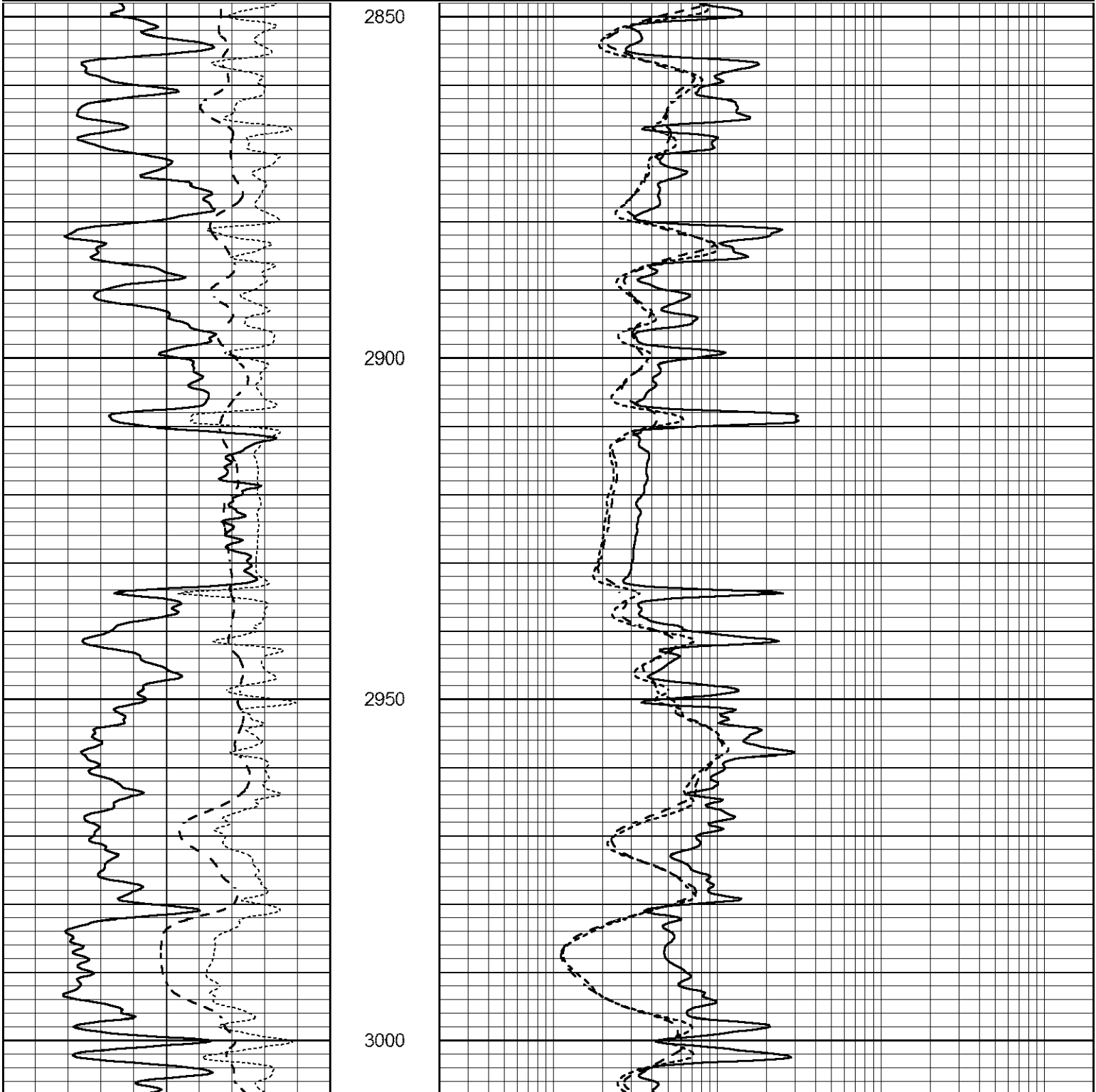


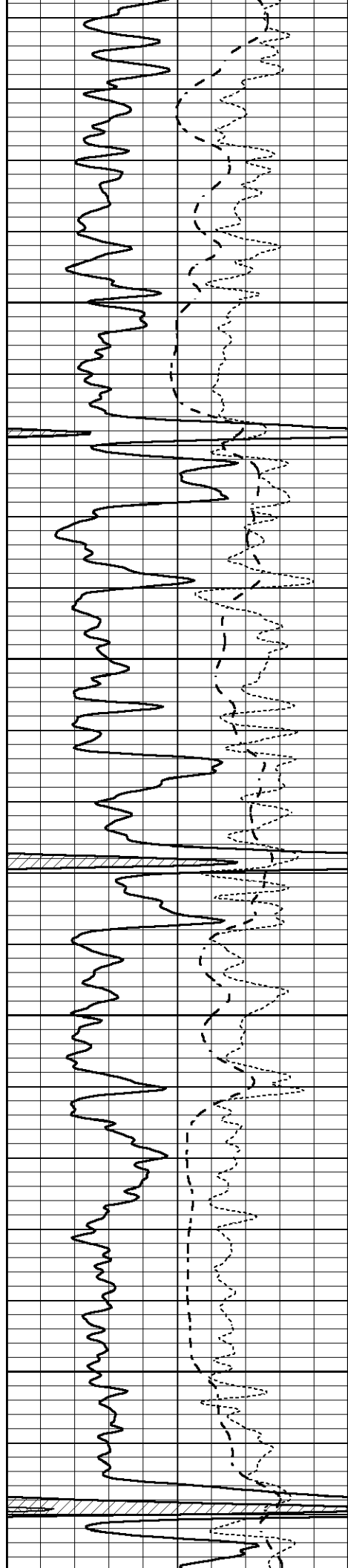


# MAIN SECTION

Database File 3633ddn8.db  
Dataset Pathname pass3.1  
Presentation Format \_dil  
Dataset Creation Sat Apr 20 18:59:04 2019  
Charted by Depth in Feet scaled 1:240

|      |                  |     |     |                          |      |
|------|------------------|-----|-----|--------------------------|------|
| 0    | GAMMA RAY (GAPI) | 150 | 0.2 | SHALLOW GUARD (Ohm-m)    | 2000 |
| -100 | SP (mV)          | 100 | 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |
| -250 | Rxo/Rt           | 50  | 0.2 | DEEP INDUCTION (Ohm-m)   | 2000 |



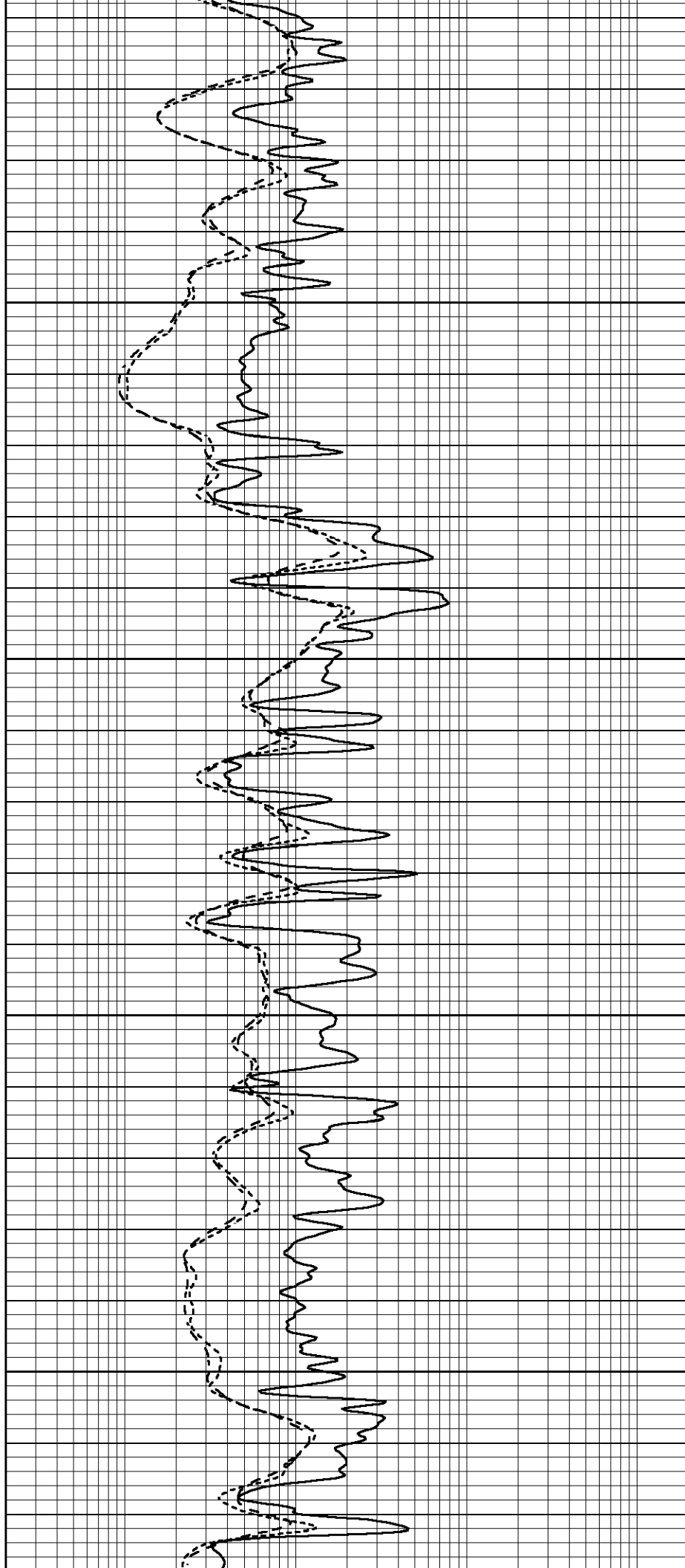


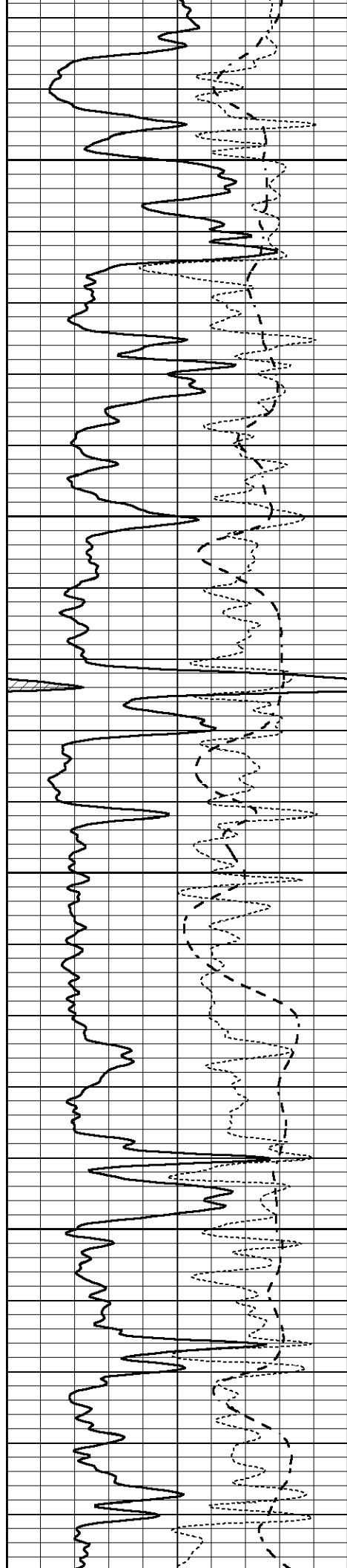
3050

3100

3150

3200



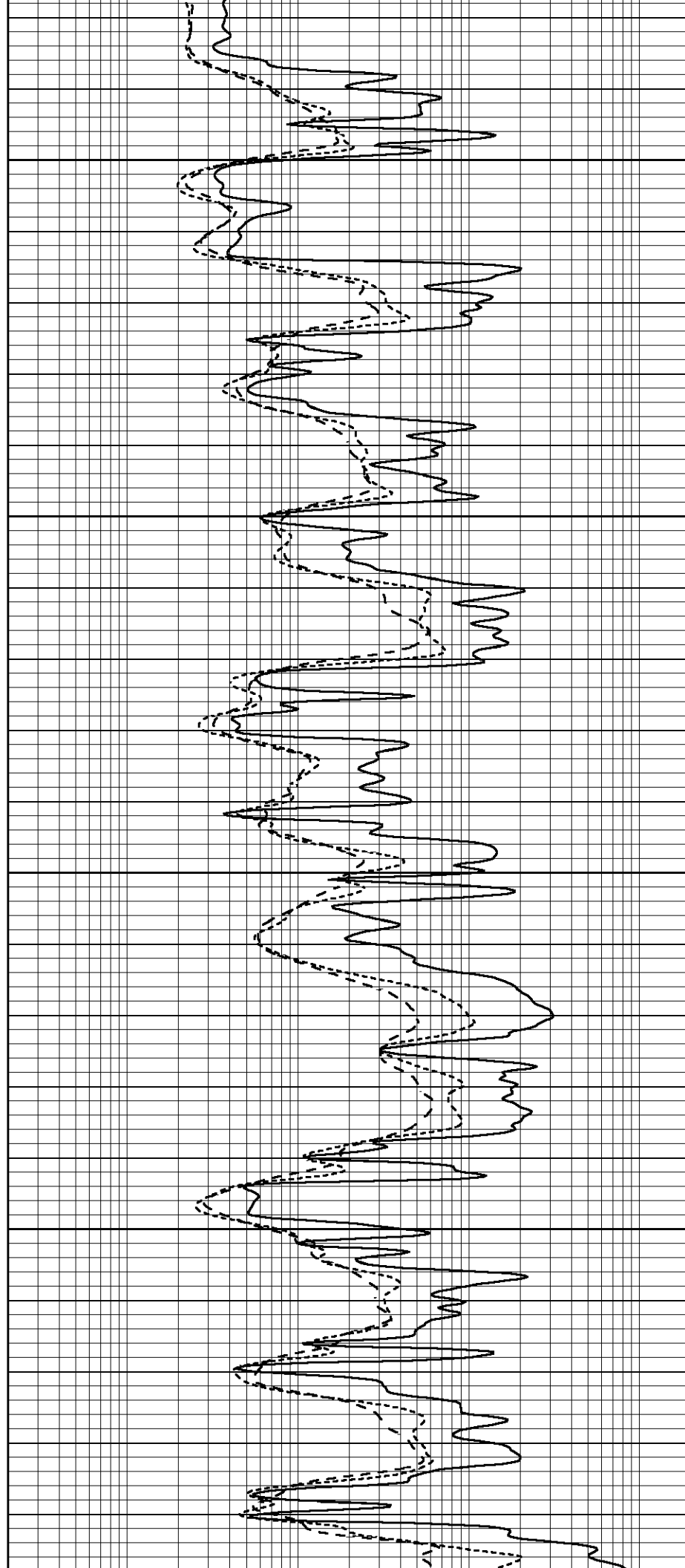


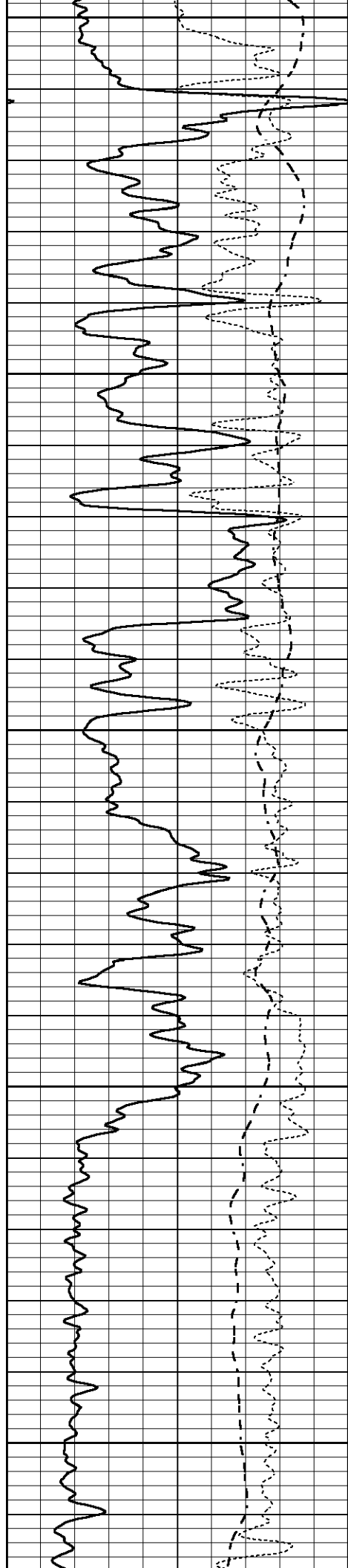
3250

3300

3350

3400





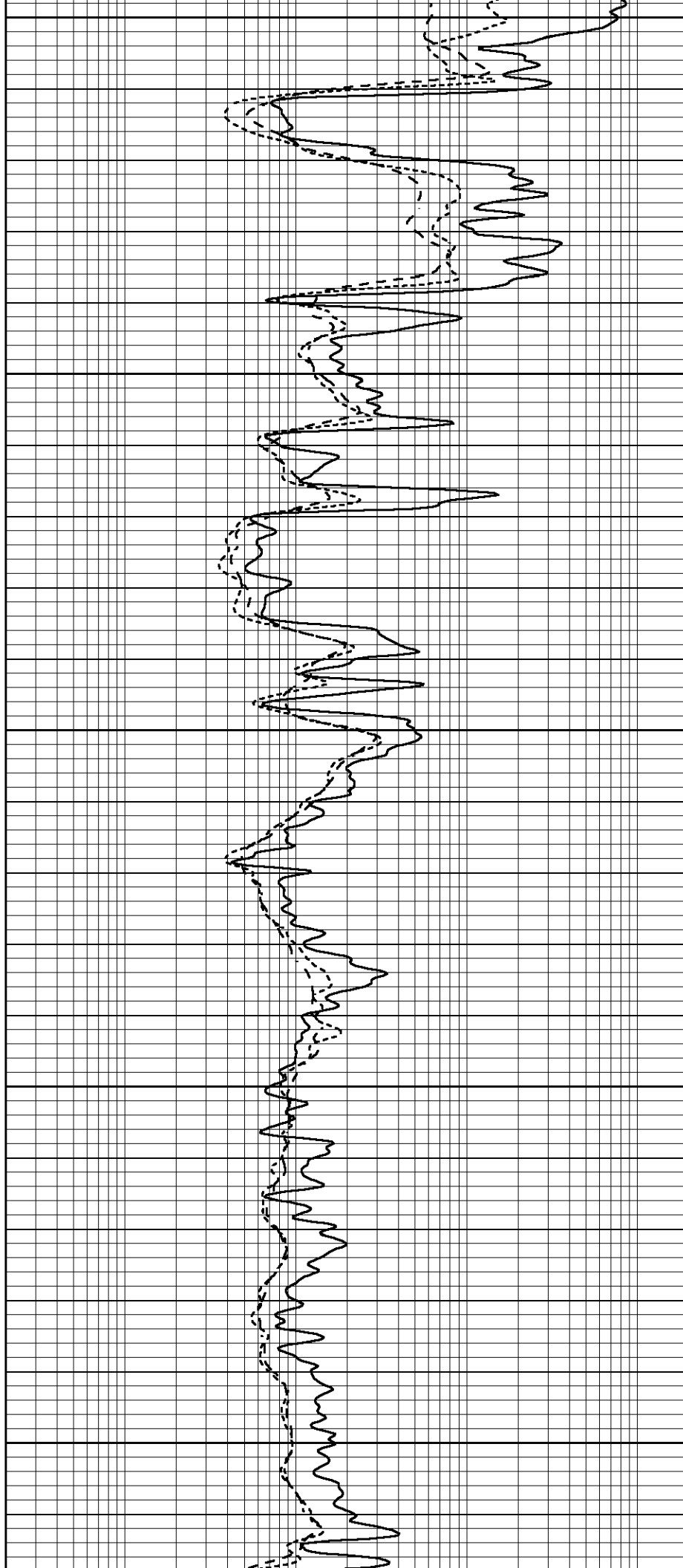
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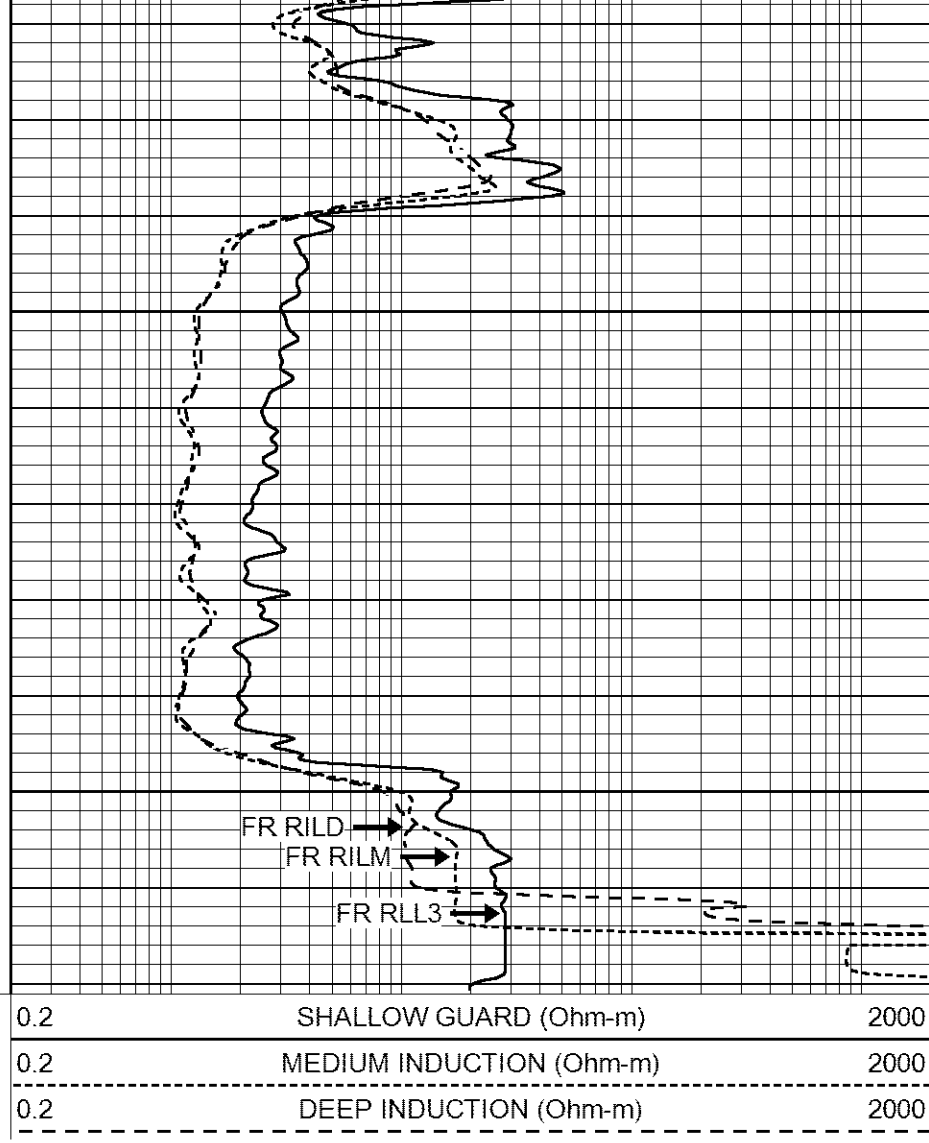
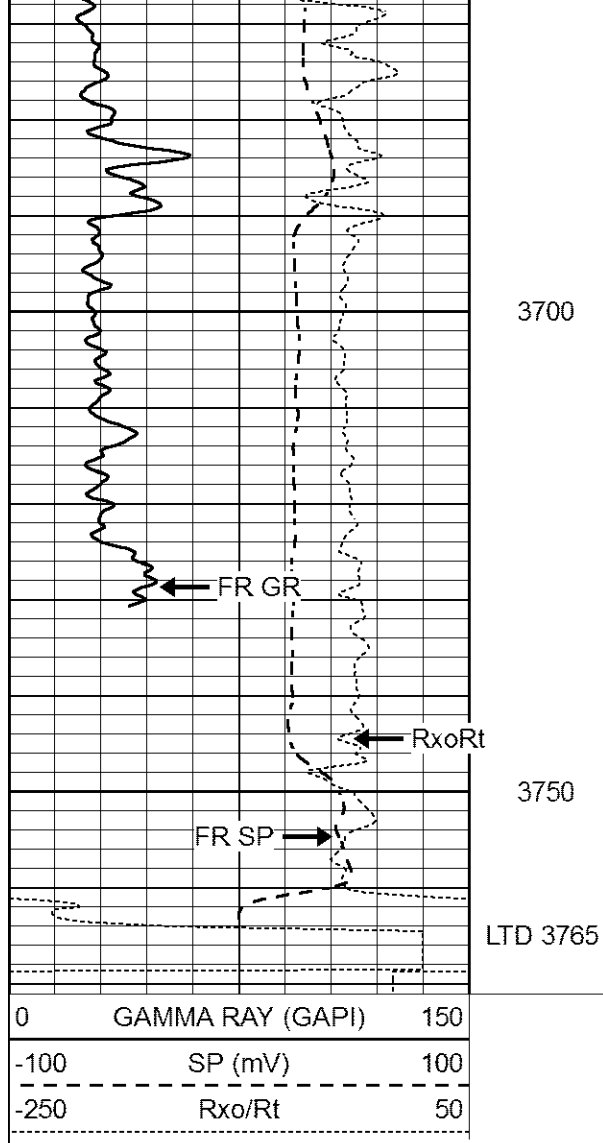
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3550

3600

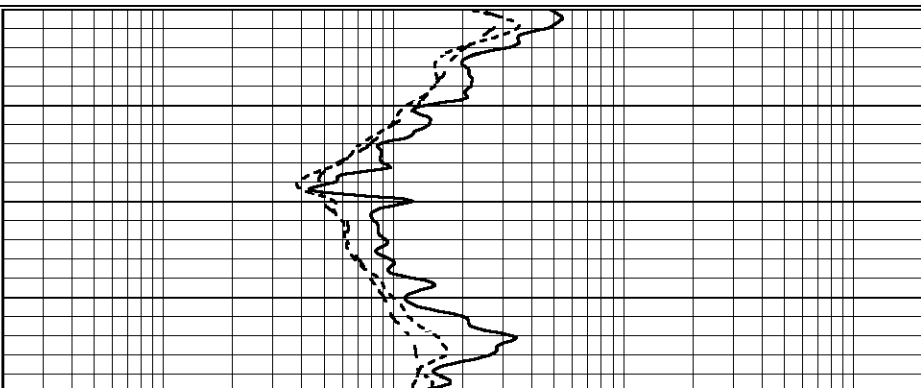
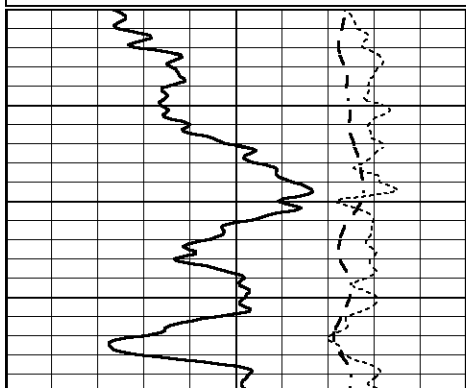
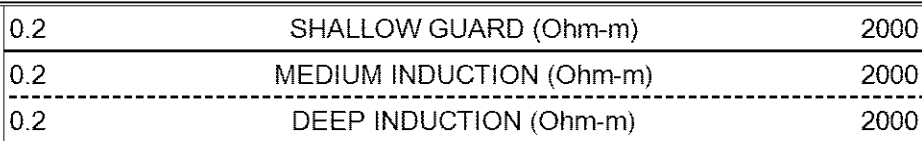
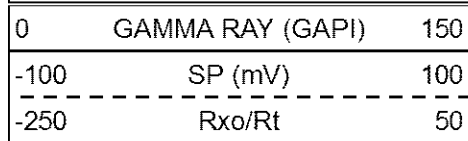
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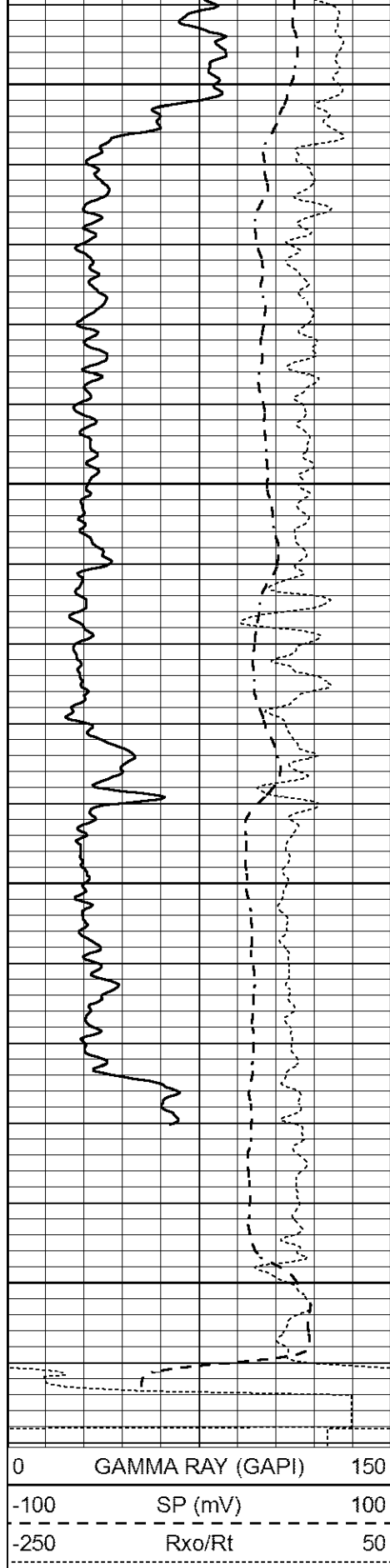




## REPEAT SECTION

Database File 3633ddn8.db  
 Dataset Pathname pass2.1  
 Presentation Format \_dil  
 Dataset Creation Sat Apr 20 18:44:27 2019  
 Charted by Depth in Feet scaled 1:240



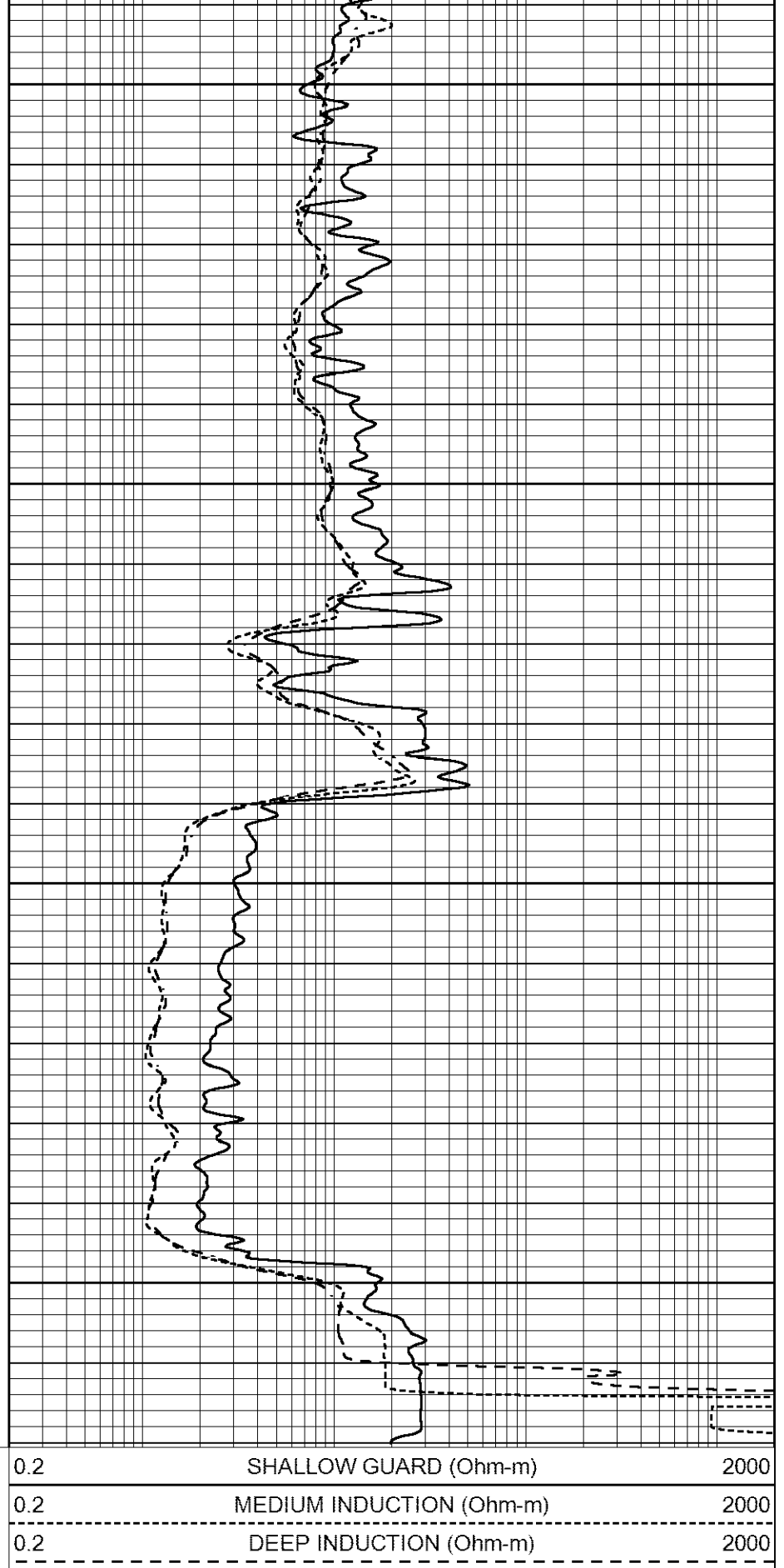


3600

3650

3700

3750



### Calibration Report

Database File 3633ddn8.db  
 Dataset Pathname pass2.1  
 Dataset Creation Sat Apr 20 18:44:27 2019

## Dual Induction Calibration Report

Serial-Model: FW1410-55-Probe  
 Surface Cal Performed: Tue Feb 19 11:44:18 2019  
 Downhole Cal Performed: Tue Feb 19 11:44:24 2019  
 After Survey Verification Performed: Tue Feb 19 11:44:27 2019

## Surface Calibration

| Readings  |        |       |   | References |         |        | Results |        |
|-----------|--------|-------|---|------------|---------|--------|---------|--------|
| Loop:     | Air    | Loop  |   | Air        | Loop    |        | m       | b      |
| Deep      | 0.011  | 0.656 | V | 1.000      | 400.000 | mmho/m | 618.595 | -5.524 |
| Medium    | -0.000 | 0.731 | V | 1.000      | 464.000 | mmho/m | 632.856 | 1.197  |
| Internal: | Zero   | Cal   |   | Zero       | Cal     |        | m       | b      |
| Deep      | 0.007  | 0.649 | V | 0.000      | 400.000 | mmho/m | 623.784 | -4.595 |
| Medium    | 0.004  | 0.743 | V | 0.000      | 464.000 | mmho/m | 627.284 | -2.251 |

## Downhole Calibration

| Readings |        |         |        | References |          |        | Results |        |
|----------|--------|---------|--------|------------|----------|--------|---------|--------|
|          | Zero   | Cal     |        | Zero       | Cal      |        | m'      | b'     |
| Deep     | -0.824 | 395.917 | mmho/m | -0.976     | 397.550  | mmho/m | 1.004   | -0.149 |
| Medium   | 3.565  | 471.327 | mmho/m | 3.468      | 471.590  | mmho/m | 1.001   | -0.099 |
| LL3      |        | 7.503   | V      |            | 1500.000 | Ohm-m  |         |        |
|          |        | 0.001   | V      |            | 20.000   | Ohm-m  |         |        |
|          |        | -7.481  | V      |            | 3745.000 | mmho-m |         |        |

## After Survey Verification

| Readings |       |       |        | Targets |          |        | Results |       |
|----------|-------|-------|--------|---------|----------|--------|---------|-------|
|          | Zero  | Cal   |        | Zero    | Cal      |        | m'      | b'    |
| Deep     | 0.000 | 0.000 | mmho/m | -0.824  | 395.917  | mmho/m | 1.000   | 0.000 |
| Medium   | 0.000 | 0.000 | mmho/m | 3.565   | 471.327  | mmho/m | 1.000   | 0.000 |
| LL3      |       | 0.000 | Ohm-m  |         | 1500.000 | Ohm-m  |         |       |
|          |       | 0.000 | Ohm-m  |         | 20.000   | Ohm-m  |         |       |
|          |       | 0.000 | mmho-m |         | 3745.000 | mmho-m |         |       |

## Litho Density Calibration Report

Serial: 140704  
 Model: V4\_10P  
 Source Number: 74GBq-19

## Master Calibration

Performed: Fri Jan 18 10:53:52 2019

|              | Background | Aluminum | Magnesium |      |
|--------------|------------|----------|-----------|------|
| Window 1     | 563.20     | 5403.39  | 24190.50  | cps  |
| Window 2     | 44.78      | 1243.51  | 6049.93   | cps  |
| Window 4     | 247.62     | 1222.40  | 5239.60   | cps  |
| Window 5     | 568.17     | 8975.27  | 17094.80  | cps  |
| Window 6     | 44.48      | 1484.88  | 2922.28   | cps  |
| Window 8     | 270.82     | 2877.34  | 5377.89   | cps  |
| Bulk Density | -          | 2.6020   | 1.6830    | g/cc |
| Pe           | -          | 3.0000   | 2.5070    | b/e  |

LS Alpha: : -1.8641      SS Alpha: : -0.7692      LS CPE: : 1.1004  
 LS Beta: : 127931.7253      SS Beta: : 20075.8142      SS CPE: : 1.5209

## Before Survey Background Counts Verification

Performed: Wed Dec 31 18:00:00 1969

Window 1      0.00      cps

|          |      |     |
|----------|------|-----|
| Window 1 | 0.00 | cps |
| Window 2 | 0.00 | cps |
| Window 4 | 0.00 | cps |
| Window 5 | 0.00 | cps |
| Window 6 | 0.00 | cps |
| Window 8 | 0.00 | cps |

|                                             |      |                                     |
|---------------------------------------------|------|-------------------------------------|
| After Survey Background Counts Verification |      | Performed: Wed Dec 31 18:00:00 1969 |
| Window 1                                    | 0.00 | cps                                 |
| Window 2                                    | 0.00 | cps                                 |
| Window 4                                    | 0.00 | cps                                 |
| Window 5                                    | 0.00 | cps                                 |
| Window 6                                    | 0.00 | cps                                 |
| Window 8                                    | 0.00 | cps                                 |

|                                  |          |                                     |
|----------------------------------|----------|-------------------------------------|
| Lithodensity Caliper Calibration |          | Performed: Fri Jan 18 10:53:52 2019 |
| Results                          | Readings | References (in)                     |
| Low                              | High     | Low High Gain Offset                |
| 90.2                             | 3611.6   | 8.0 14.0 0.0 7.8                    |

|                                    |           |            |
|------------------------------------|-----------|------------|
| Before Survey Caliper Verification |           | Performed: |
|                                    | Reference | Reading    |
| Caliper (in)                       |           |            |

|                                   |           |            |
|-----------------------------------|-----------|------------|
| After Survey Caliper Verification |           | Performed: |
|                                   | Reference | Reading    |
| Caliper (in)                      |           |            |

Compensated Neutron Calibration Report

|                |           |
|----------------|-----------|
| Serial Number: | 080621PMC |
| 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:    | 7                        |
| Tool Model:       | Probe1                   |
| Performed:        | Tue Feb 19 11:45:10 2019 |
| Calibrator Value: | 1.0 GAPI                 |

Background Reading:

0.0

cps

Calibrator Reading:

1.0

cps

Sensitivity:

0.4300

GAPI/cps