



# Tucker

ENERGY SERVICES

PHASED INDUCTION

SHALLOW FOCUS SP LOG

|                                                                                                                                                                                     |                       |                                                                                                                                                                                                                                |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| <b>Company</b> VAL ENERGY INC.<br><b>Well</b> K&N #1-10<br><b>Field</b> KENNEDY<br><b>County</b> COWLEY<br><b>State</b> KANSAS<br><b>Country</b> USA<br><b>API No.</b> 15-035-24648 |                       | <b>File No</b> : TUL-60781<br><b>Company</b> : VAL ENERGY INC.<br><b>Well</b> : K&N #1-10<br><b>Field</b> : KENNEDY<br><b>County</b> : COWLEY<br><b>State</b> : KANSAS<br><b>Country</b> : USA<br><b>API No</b> : 15-035-24648 |    |
| <b>Location</b> :<br>480' FNL & 2300' FWL<br>SW NE NE NW                                                                                                                            |                       | <b>LSD</b> : <b>Sect</b> : 10 <b>Twp</b> : 30S <b>Rge</b> : 5E                                                                                                                                                                 |    |
| <b>Permanent Datum:</b>                                                                                                                                                             | GL                    | <b>Elevations:</b>                                                                                                                                                                                                             |    |
| <b>Drilling Measured From:</b>                                                                                                                                                      | KB                    | KB 1342.00                                                                                                                                                                                                                     | Ft |
| <b>Log Measured From:</b>                                                                                                                                                           | KB                    | DF 1341.00                                                                                                                                                                                                                     | Ft |
| <b>Above Permanent Datum:</b>                                                                                                                                                       | 8.00 Ft               | GL 1334.00                                                                                                                                                                                                                     | Ft |
| <b>Date</b>                                                                                                                                                                         | 10-07-2015            |                                                                                                                                                                                                                                |    |
| <b>Run Number</b>                                                                                                                                                                   | 1                     |                                                                                                                                                                                                                                |    |
| <b>Depth--Driller</b>                                                                                                                                                               | 3303.0                | Ft                                                                                                                                                                                                                             |    |
| <b>Depth--Logger</b>                                                                                                                                                                | 3302.0                | Ft                                                                                                                                                                                                                             |    |
| <b>First Reading</b>                                                                                                                                                                | 3302.0                | Ft                                                                                                                                                                                                                             |    |
| <b>Last Reading</b>                                                                                                                                                                 | 219.0                 | Ft                                                                                                                                                                                                                             |    |
| <b>Casing--Driller</b>                                                                                                                                                              | 219.0                 | Ft                                                                                                                                                                                                                             |    |
| <b>Casing--Logger</b>                                                                                                                                                               | 219.0                 | Ft                                                                                                                                                                                                                             |    |
| <b>Bit Size</b>                                                                                                                                                                     | 7.875                 | In                                                                                                                                                                                                                             |    |
| <b>Casing Size</b>                                                                                                                                                                  | 8.625                 | In                                                                                                                                                                                                                             |    |
| <b>Hole Fluid Type</b>                                                                                                                                                              | WBM                   |                                                                                                                                                                                                                                |    |
| <b>Density</b>                                                                                                                                                                      | 9.3                   |                                                                                                                                                                                                                                |    |
| <b>Fluid Loss</b>                                                                                                                                                                   | 9.2                   |                                                                                                                                                                                                                                |    |
| <b>PH/Viscosity</b>                                                                                                                                                                 | 10.5                  | 54.0                                                                                                                                                                                                                           |    |
| <b>Sample Source</b>                                                                                                                                                                | MEASURED              |                                                                                                                                                                                                                                |    |
| <b>RM@Measured Temp.</b>                                                                                                                                                            | 2.000                 | @ 80 F                                                                                                                                                                                                                         |    |
| <b>RMF@Measured Temp</b>                                                                                                                                                            | 1.700                 | @ 80 F                                                                                                                                                                                                                         |    |
| <b>RMC@Measured Temp.</b>                                                                                                                                                           | 2.300                 | @ 80 F                                                                                                                                                                                                                         |    |
| <b>Source RMF/RMC</b>                                                                                                                                                               | CALCULATED/CALCULATED |                                                                                                                                                                                                                                |    |
| <b>RM@BHT</b>                                                                                                                                                                       | 1.400                 | @ 108 F                                                                                                                                                                                                                        |    |
| <b>Time Circulation Stopped</b>                                                                                                                                                     | 10-07-2015 12:30 pm   |                                                                                                                                                                                                                                |    |
| <b>Max Recorded Temp.</b>                                                                                                                                                           | 110                   | F                                                                                                                                                                                                                              |    |
| <b>Equipment/Base</b>                                                                                                                                                               | T-126                 | TULSA                                                                                                                                                                                                                          |    |
| <b>Recorded By</b>                                                                                                                                                                  | S.K. DAVIS            |                                                                                                                                                                                                                                |    |
| <b>Witnessed By</b>                                                                                                                                                                 | T. ALLAN              |                                                                                                                                                                                                                                |    |

The customer is hereby warned that by providing the log data herein, T. E. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. E. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. E. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. E. S. for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

| Bitsize Intervals |             | Casing Strings |              |             |          |
|-------------------|-------------|----------------|--------------|-------------|----------|
| Size (In)         | Bottom (Ft) | Size (In)      | Weight (Lbs) | Bottom (Ft) | Top (Ft) |
| 7.875             | 3302.00     | 8.625          | 15.00        | 219.00      | 0.00     |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |

|                     |                    |  |
|---------------------|--------------------|--|
| Run Number          | 1                  |  |
| Date                | 10-07-2015         |  |
| Date/Time On Bottom | 10-07-2015 3:15 pm |  |
| Depth to Fluid      | 0.0 Ft             |  |
| Salinity            | 2000.000           |  |
| RMF@BHT             | 1.200 @ 108 F      |  |
| RMC@BHT             | 1.700 @ 108 F      |  |

Run Number 1

Comments

ALL PRESENTATION PER CUSTOMER REQUEST  
 GRT,CNT,LDT,PIT RUN IN COMBINATION  
 CALIPERS ORIENTED ON X-Y AXIS  
 2.71 G/CC USED TO CALCULATE POROSITY  
 ANNULAR & BOREHOLE VOLUME CALCULATED USING 5.5 PRODUCTION CASING  
 PHIN IS CALIPER CORRECTED  
 DETAIL IS PRESENTED FROM TD TO 2000'

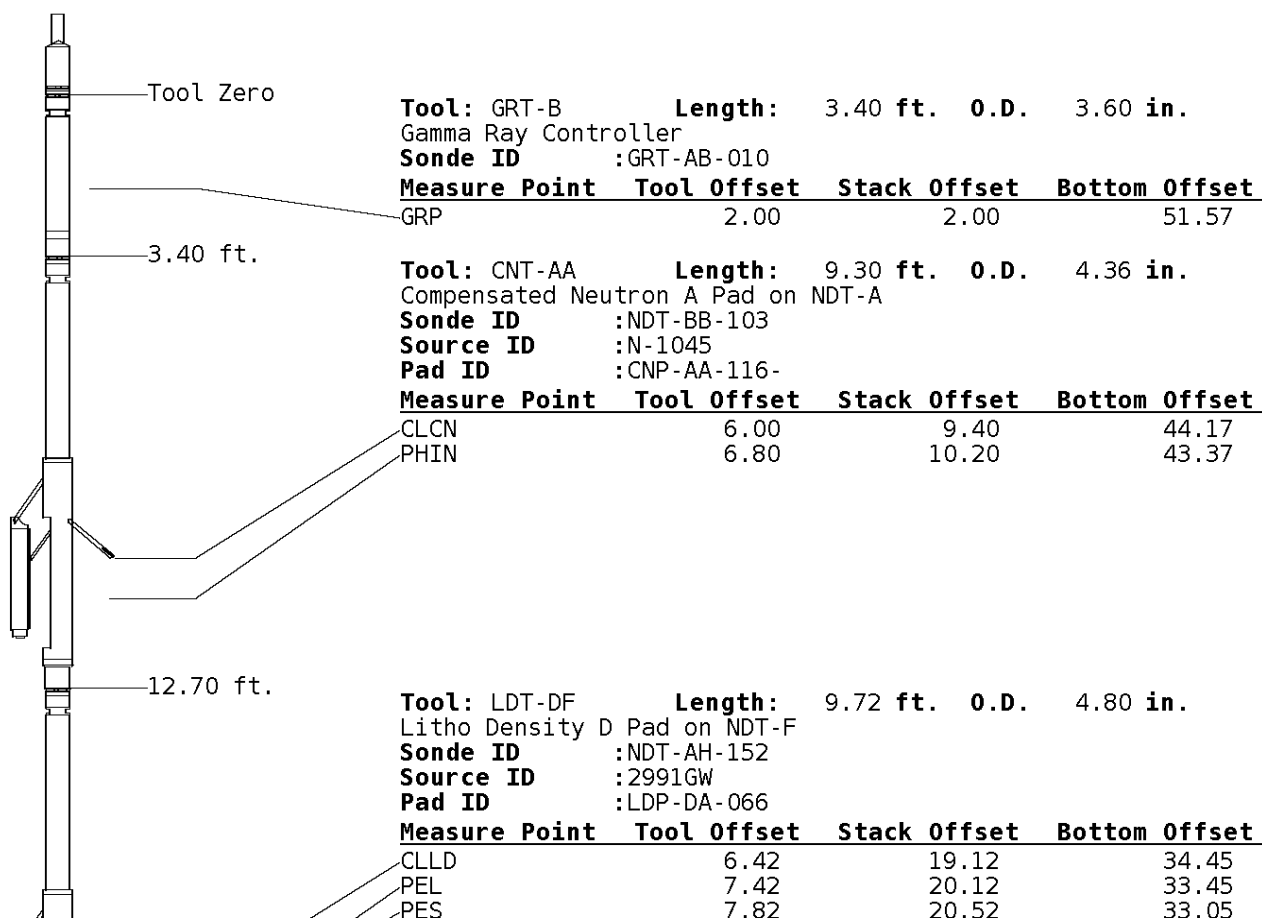
GRT; GRP,  
 CNT; PHIN, CLCNIN  
 LDT; PORL, LCORN, PECLN, LDENN, CLLDIN  
 MLT; NOR.RF, INV.RF, MSCLPIN.  
 PIT; ILD, ILM, SPU, SFLAEC, CIRD

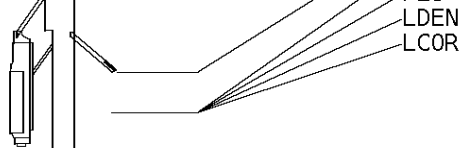
OPERATORS;

C. GONZALES  
 J. KLINE

## Tool String Schematic

**Total Tool Length** - 53.57 ft.  
**Maximum Outside diameter** - 6.00 in.  
**Net Weight in Air** - 943.00 lbs.



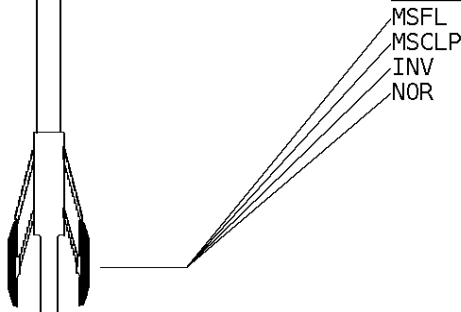


|      |       |       |
|------|-------|-------|
| 7.62 | 20.32 | 33.25 |
| 7.62 | 20.32 | 33.25 |

22.42 ft.

**Tool:** MST-DA      **Length:** 9.66 ft.   **O.D.** 6.00 in.  
 Micro Spherically Focused (IC)  
**Sonde ID** :MST-DA-057

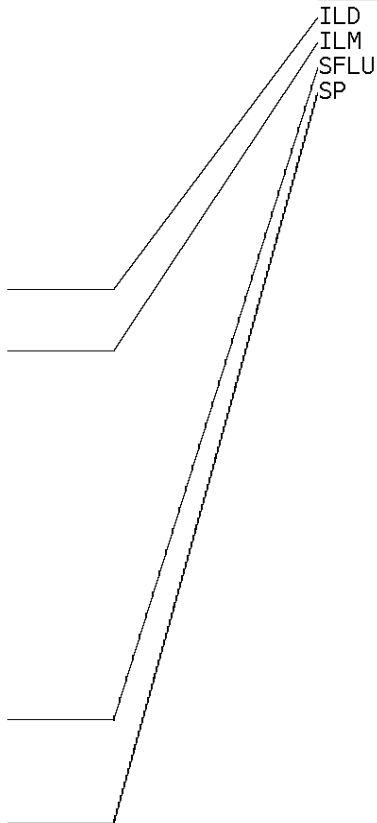
| Measure Point | Tool Offset | Stack Offset | Bottom Offset |
|---------------|-------------|--------------|---------------|
| MSFL          | 7.60        | 30.02        | 23.55         |
| MSCLP         | 7.60        | 30.02        | 23.55         |
| INV           | 7.60        | 30.02        | 23.55         |
| NOR           | 7.60        | 30.02        | 23.55         |



32.08 ft.

**Tool:** PIT-CA      **Length:** 21.49 ft.   **O.D.** 3.62 in.  
 Phased Dual Induction w/ RM & D  
**Sonde ID** :PIT-CA-077

| Measure Point | Tool Offset | Stack Offset | Bottom Offset |
|---------------|-------------|--------------|---------------|
| ILD           | 8.92        | 41.00        | 12.56         |
| ILM           | 10.10       | 42.18        | 11.39         |
| SFLU          | 17.49       | 49.57        | 4.00          |
| SP            | 20.60       | 52.68        | 0.88          |



LWT 53.57 ft.

**Well File:** val-kn-1-10-mstk-oct-7

**Scale:** 1:600      **Format:** DIL-600

**Segment:** V1.D1.S12 FINAL MN

**Acquired:** Not Available

**Reference:** 0

**Processed:** Not Available

**TENSION**  
LBS

10000 0

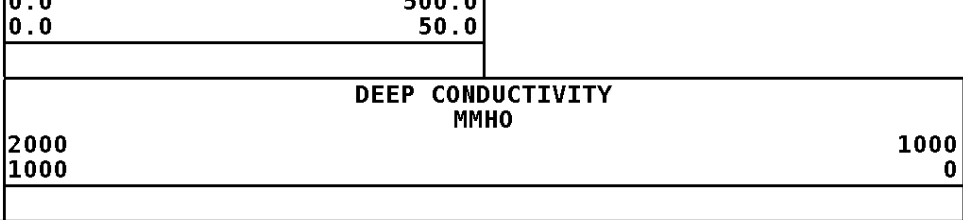
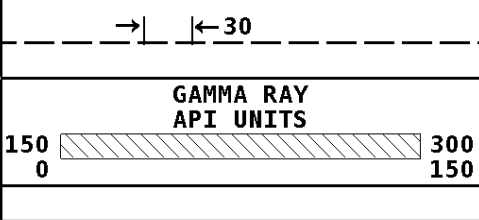
**DEEP INDUCTION**  
OHMM

0.0 500.0  
0.0 50.0

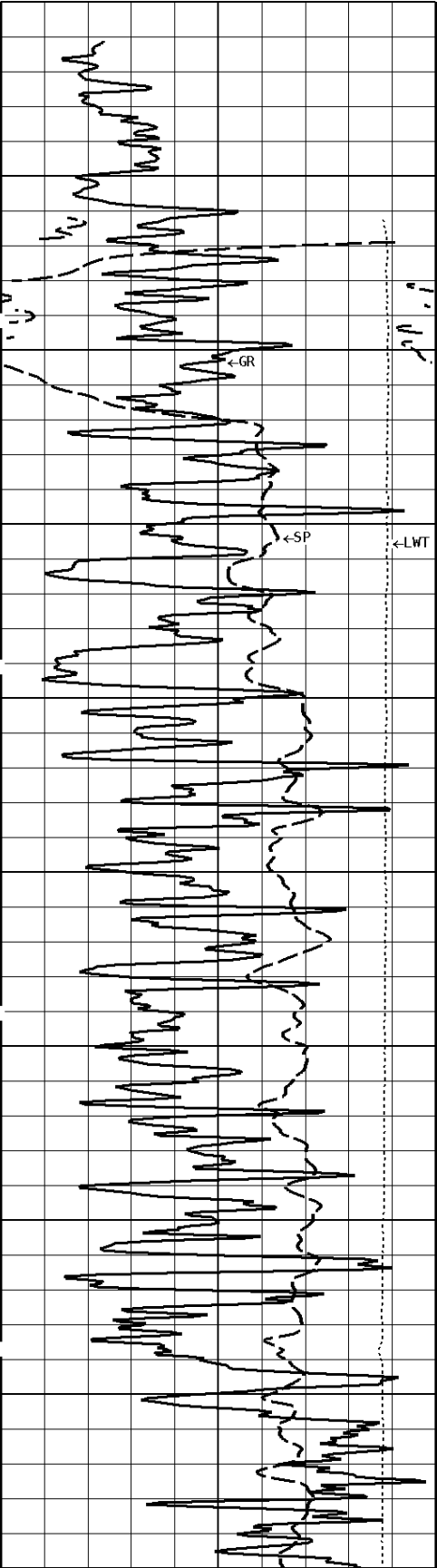
**SPONTANEOUS POTENTIAL**  
mV

**SHALLOW FOCUSED RESISTIVITY**  
OHMM

0.0 500.0



1:600 MAIN SECTION



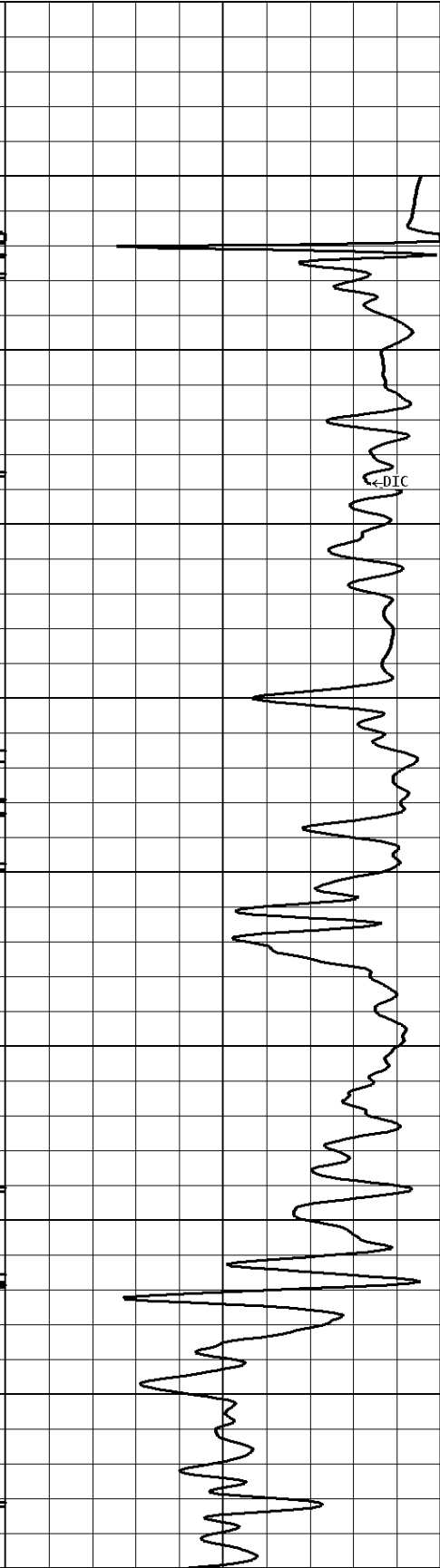
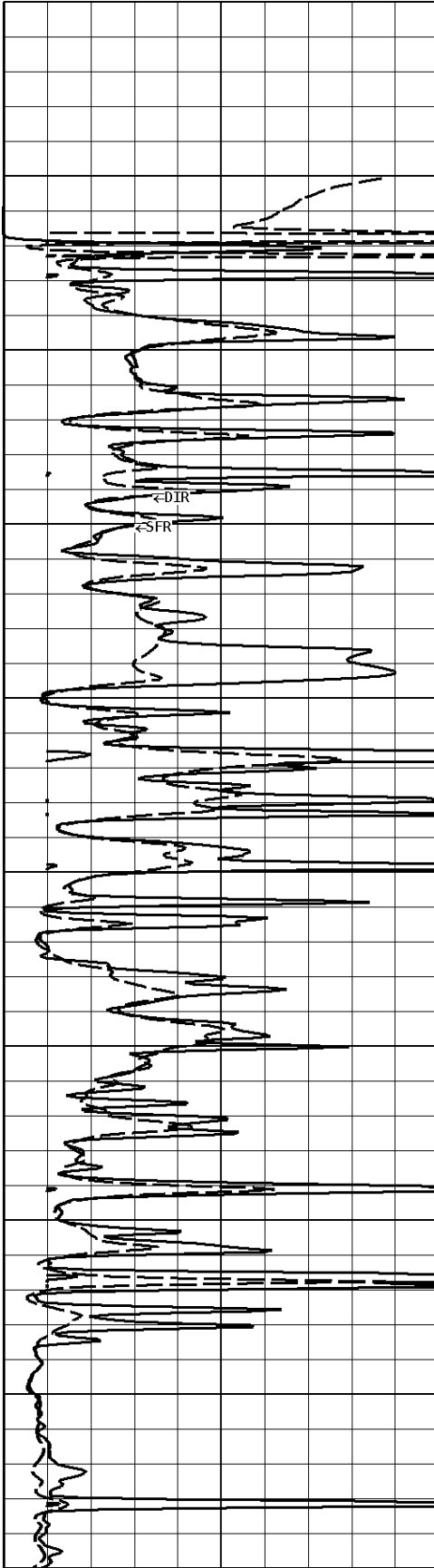
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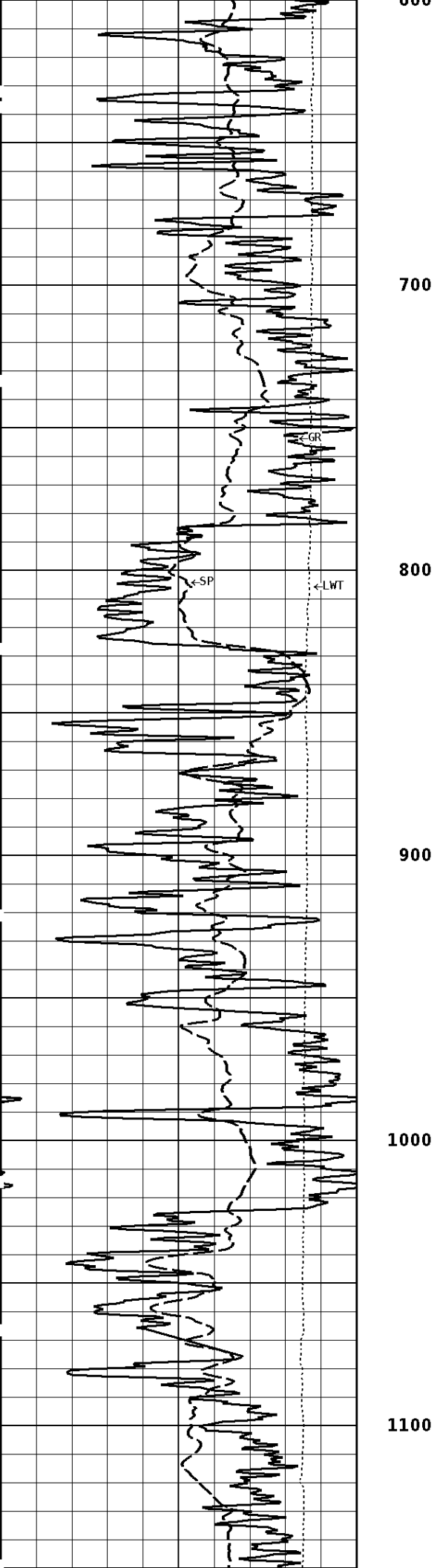
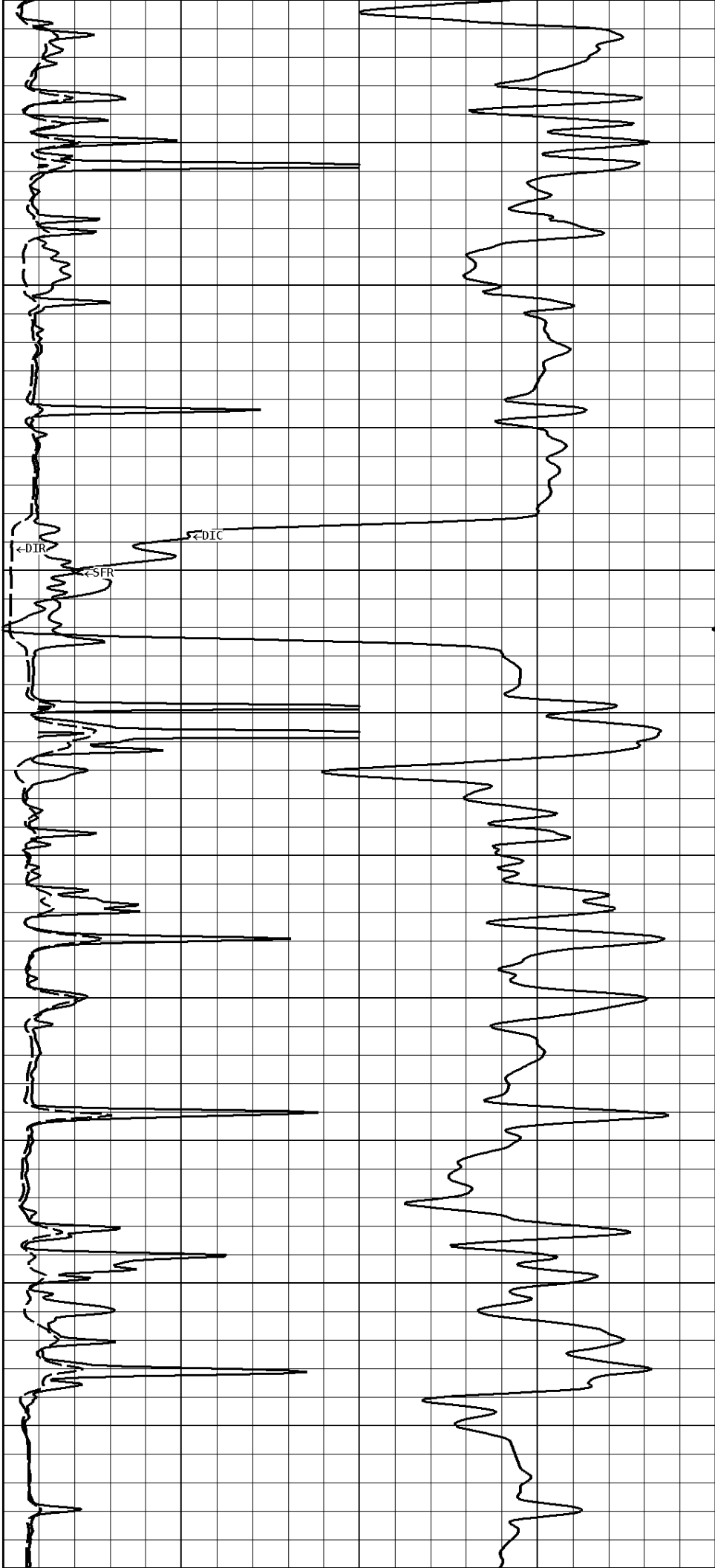
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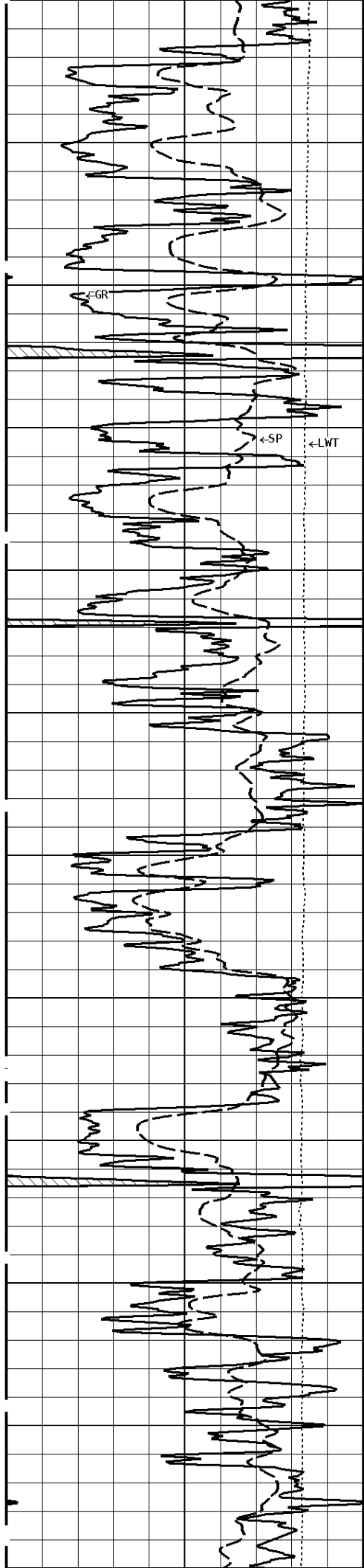
400

500

600







1200

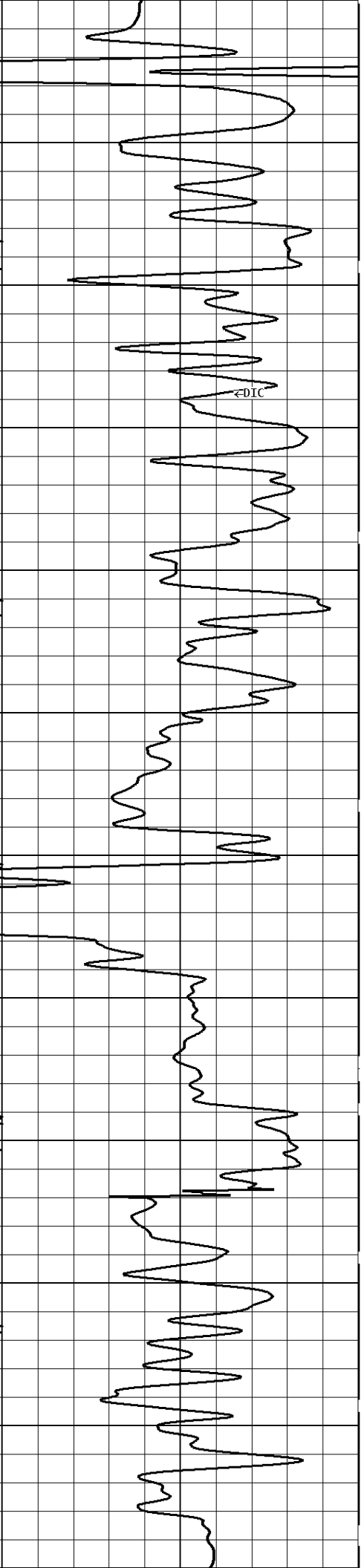
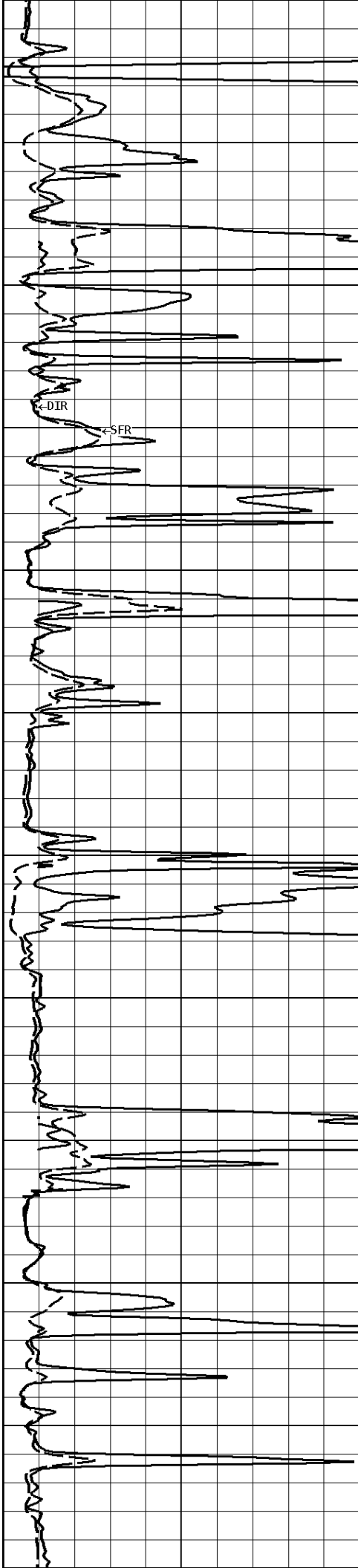
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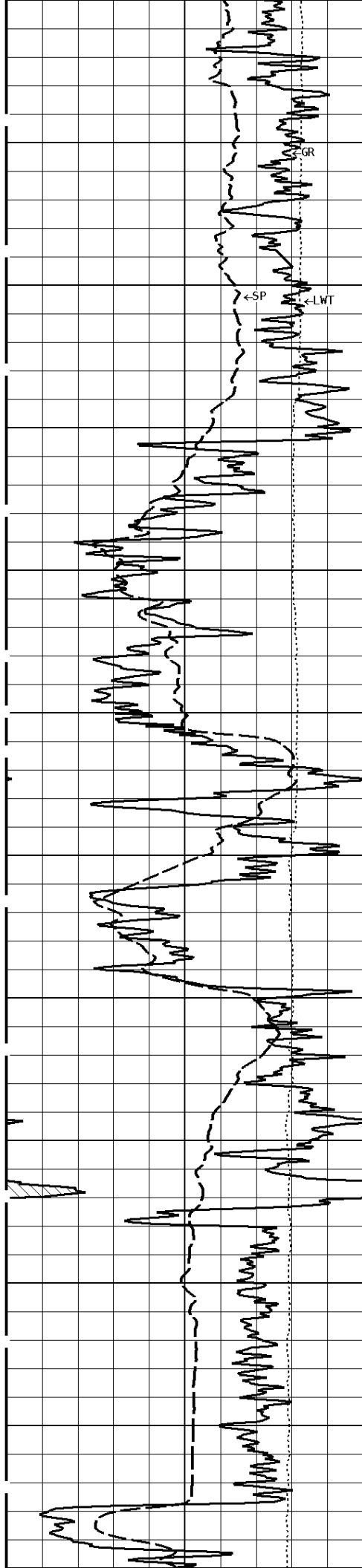
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1500

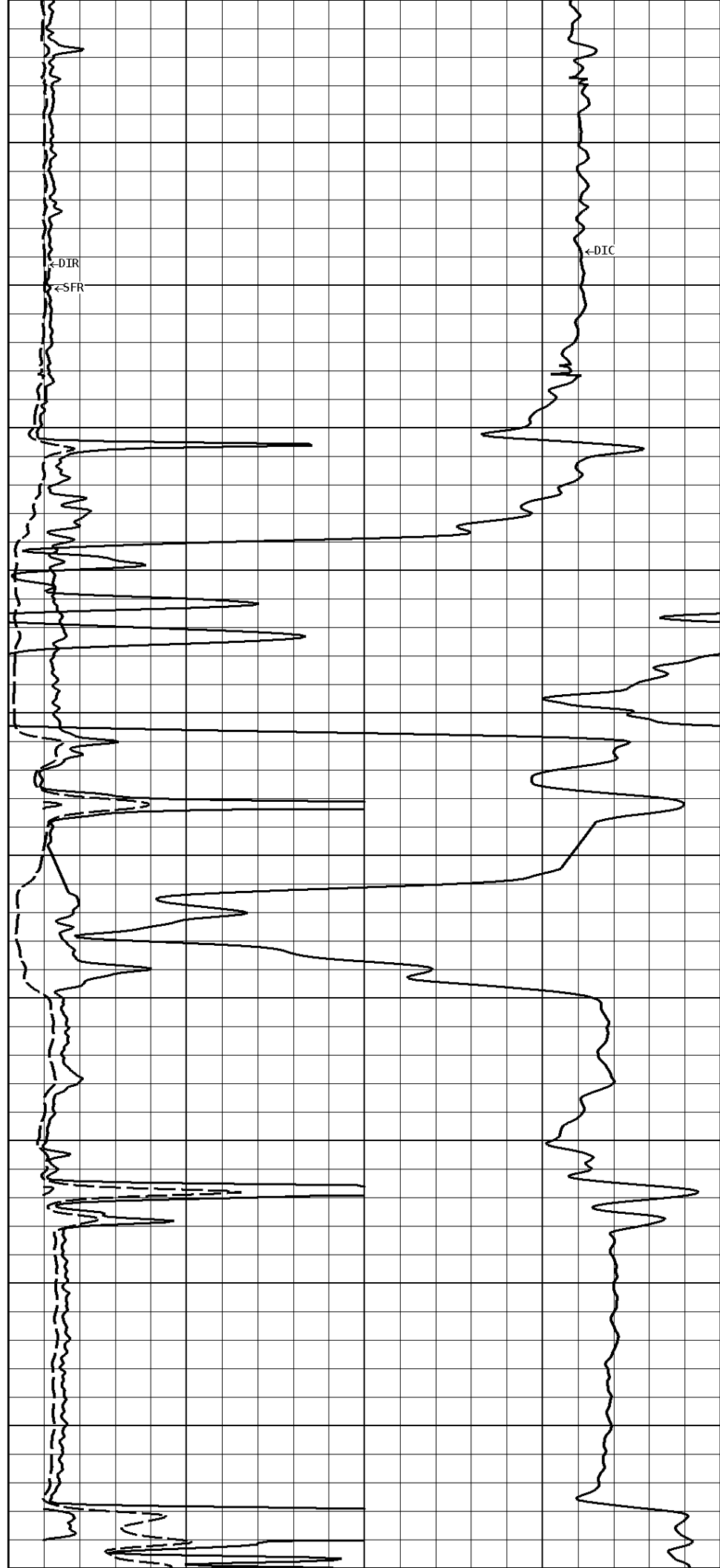
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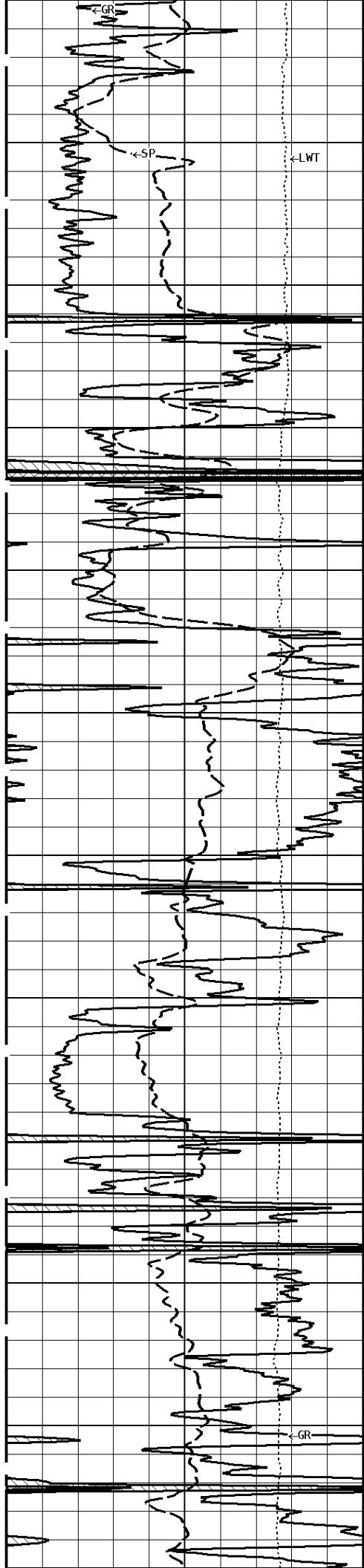
1700





1700  
1800  
1900  
2000  
2100  
2200





2300

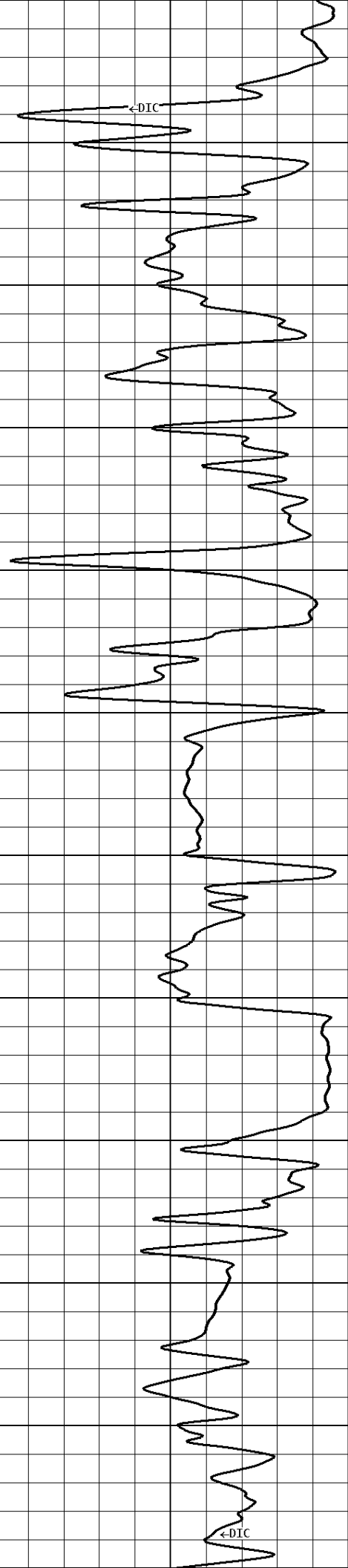
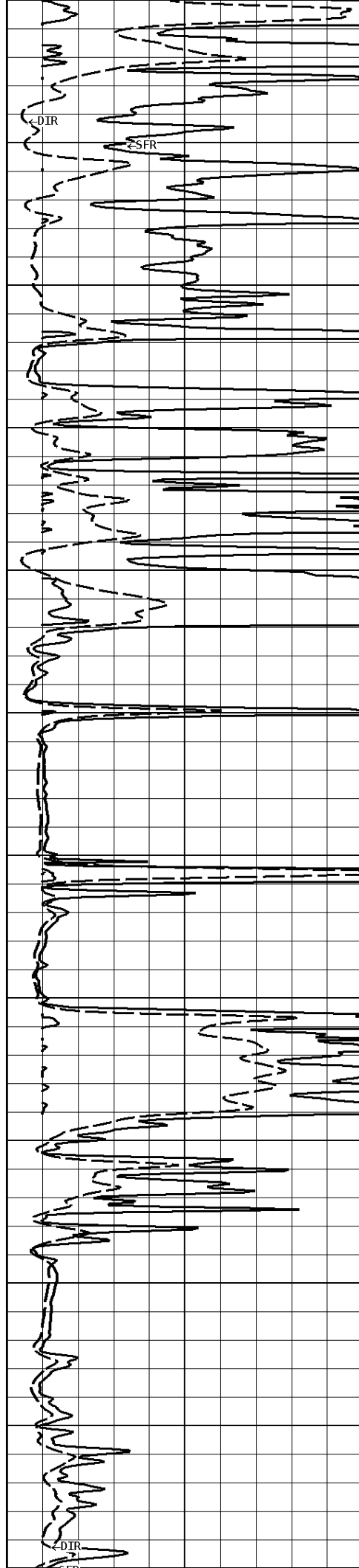
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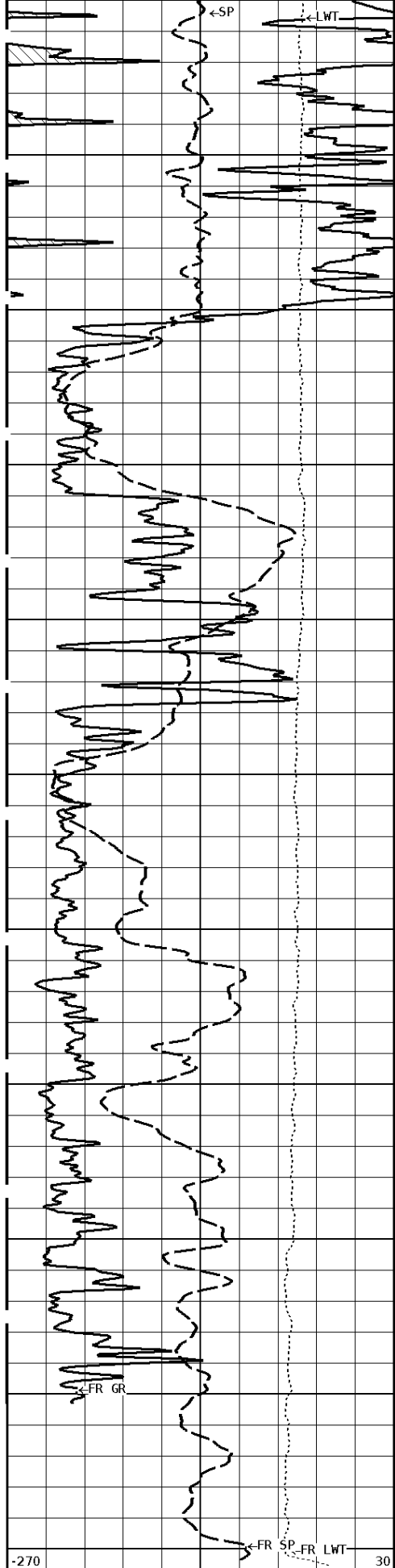
2500

2600

2700

2800



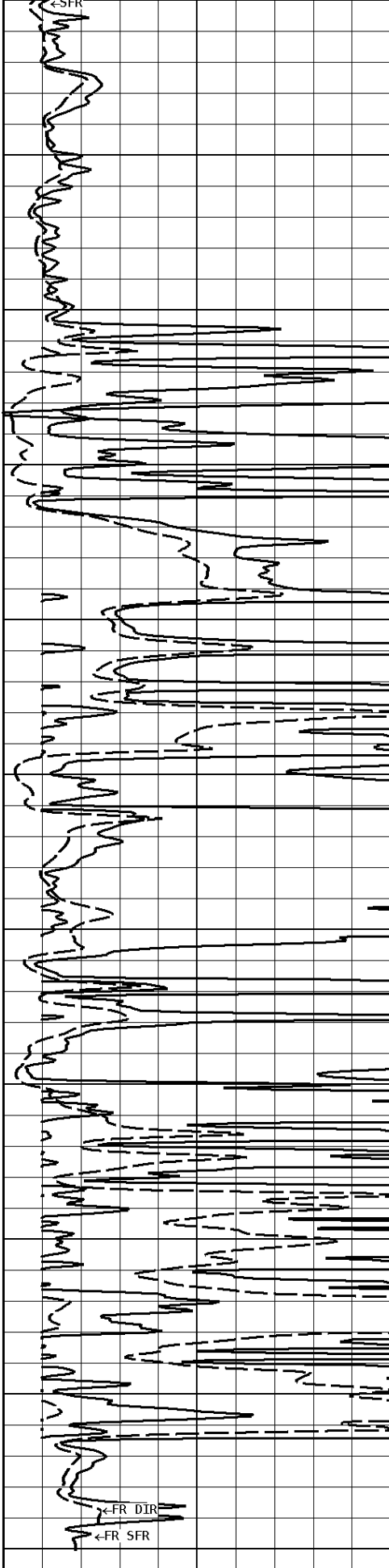


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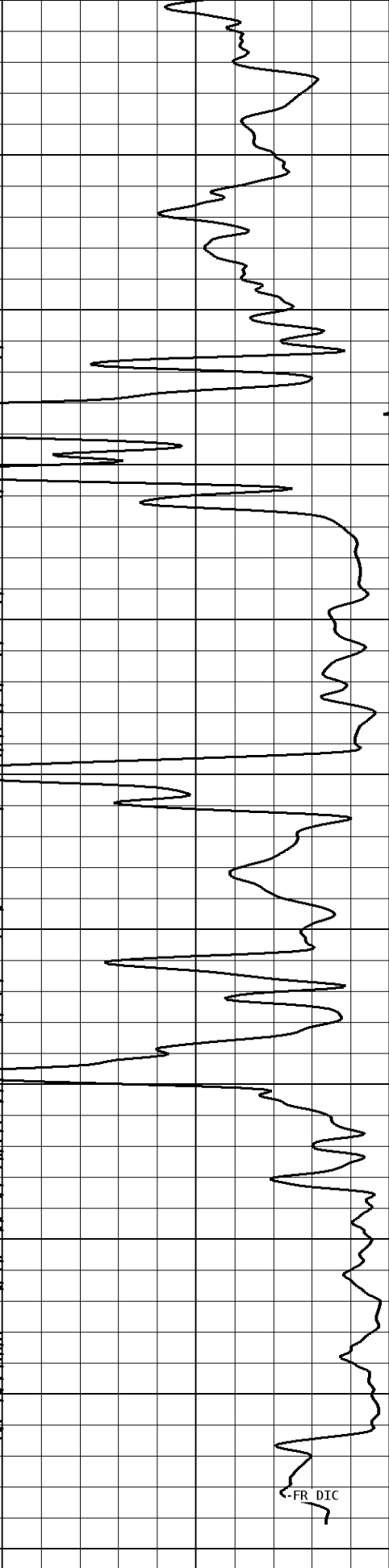
30

File #1.1.12

2800  
2900  
3000  
3100  
3200  
3300

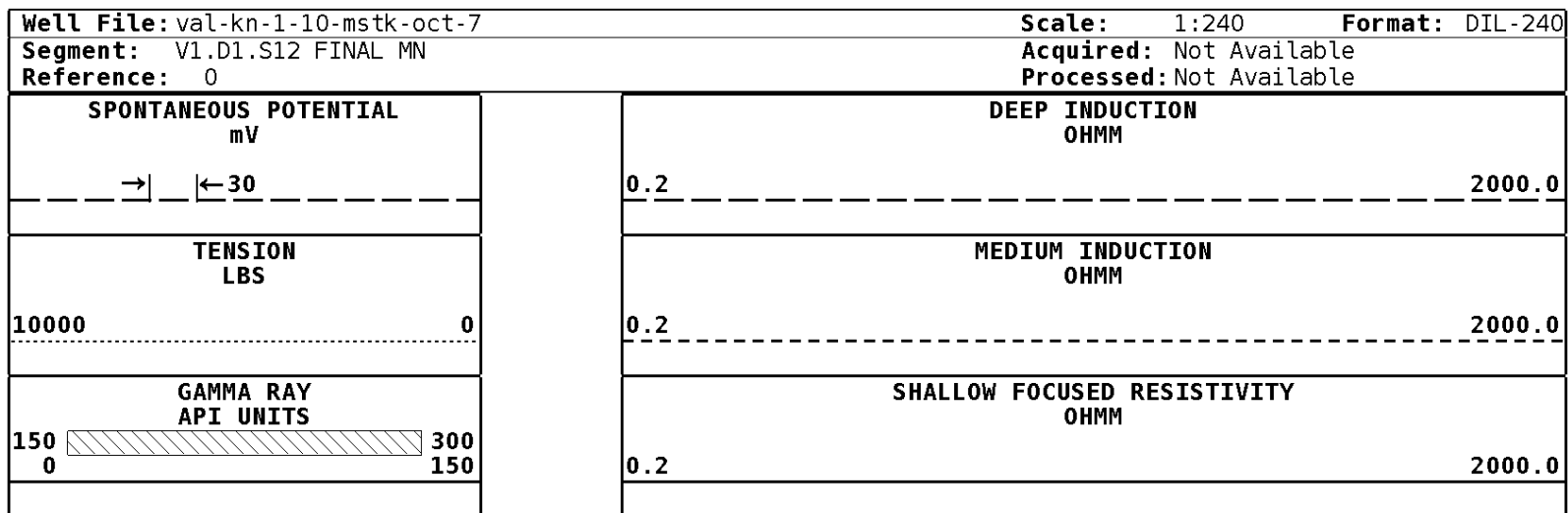
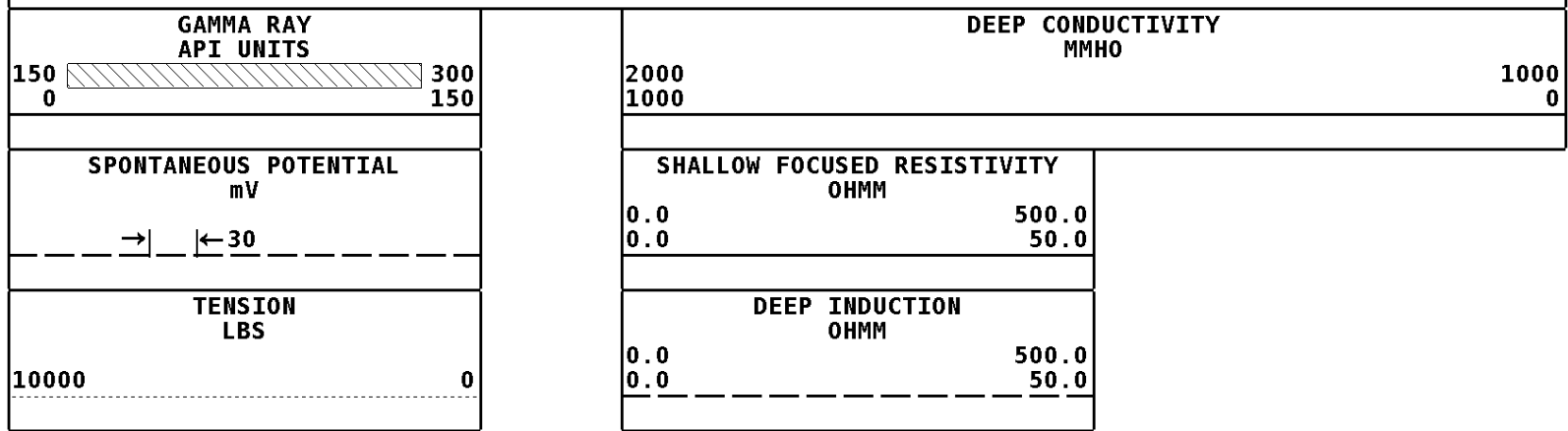


←FR DIR  
←FR SFR

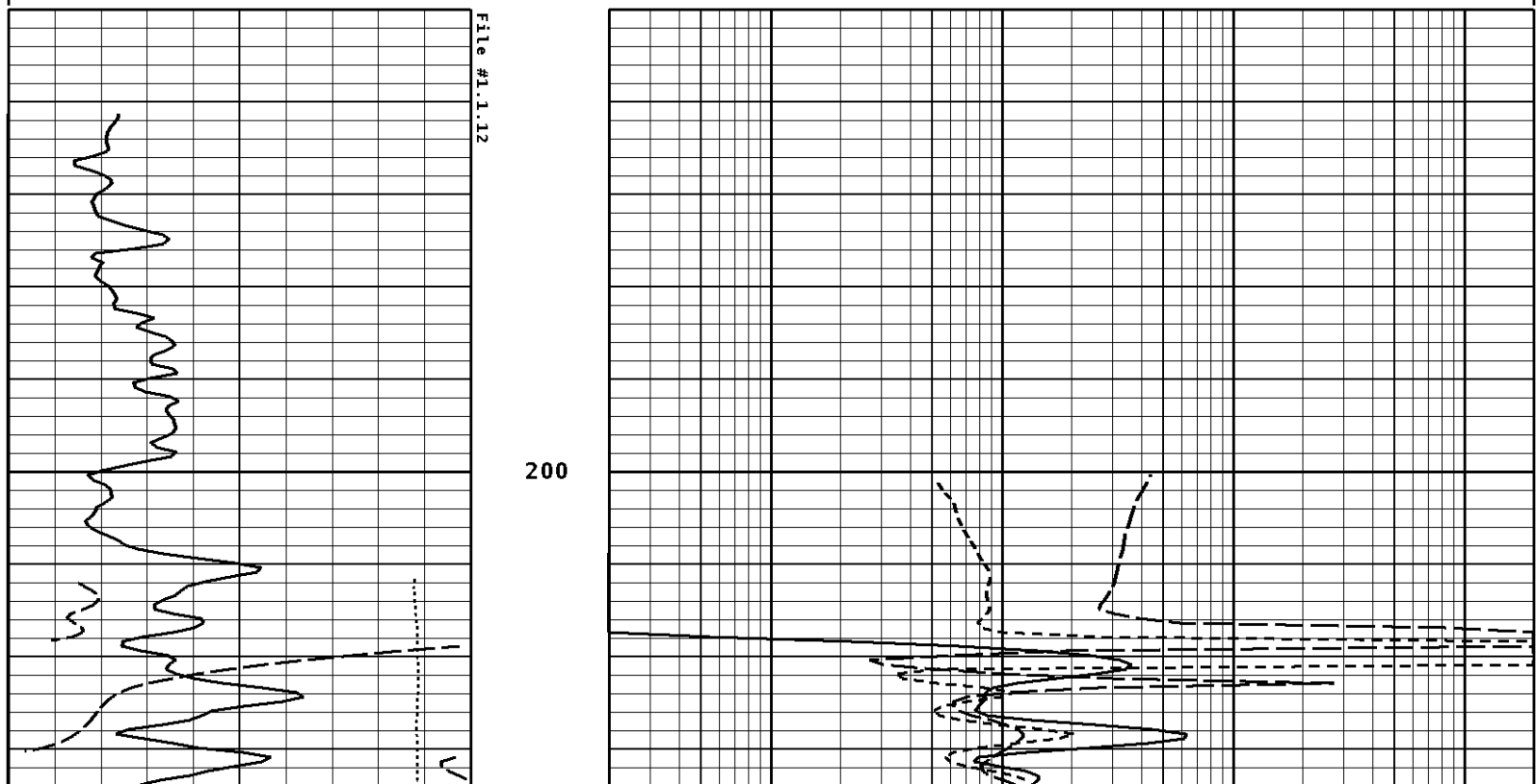


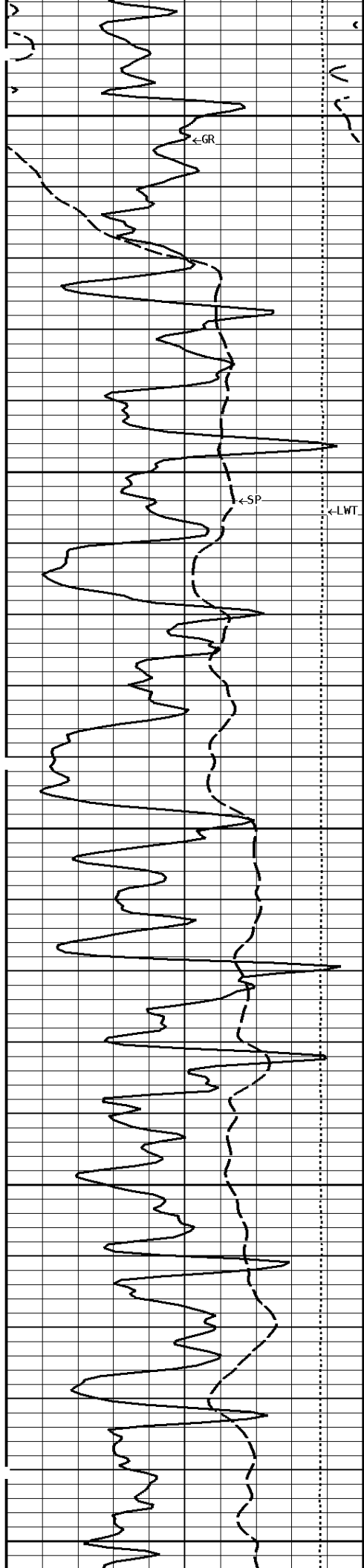
←FR DTC

# 1:600 MAIN SECTION



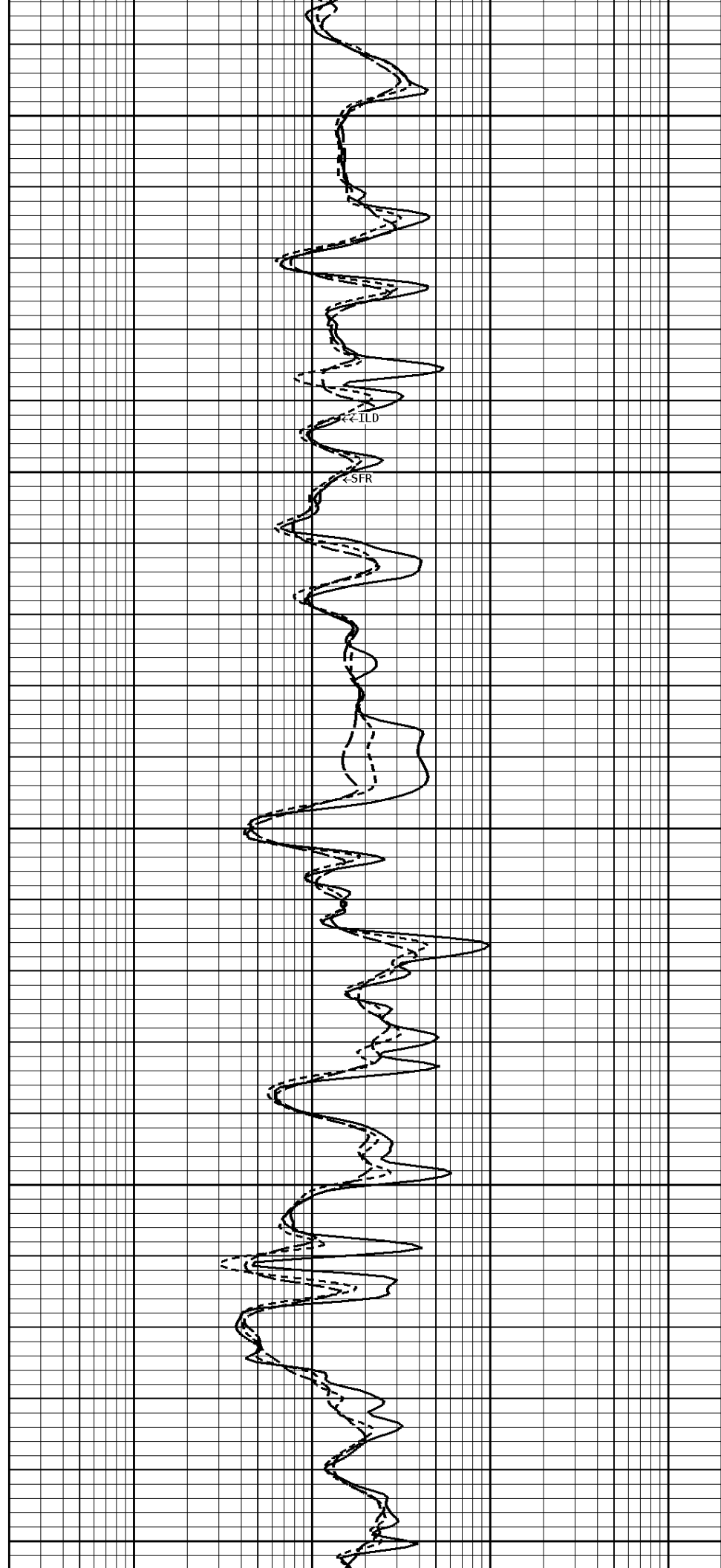
# 1:240 MAIN SECTION

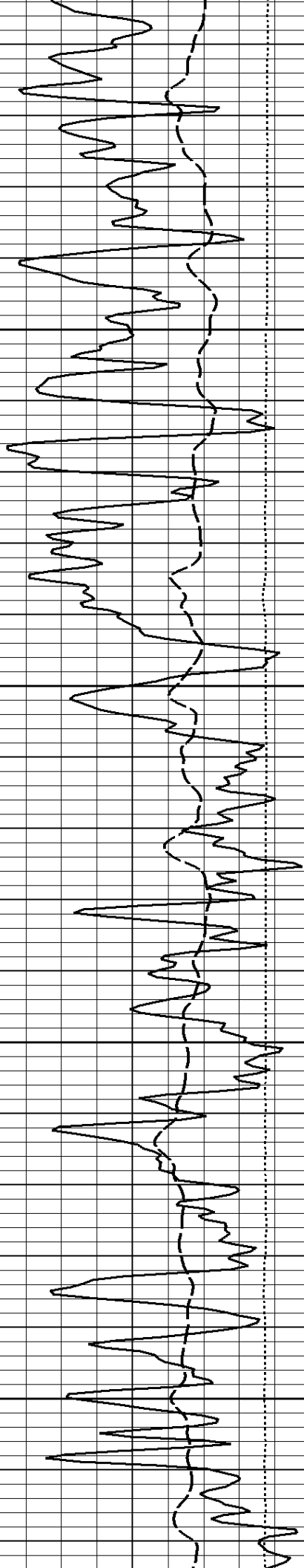




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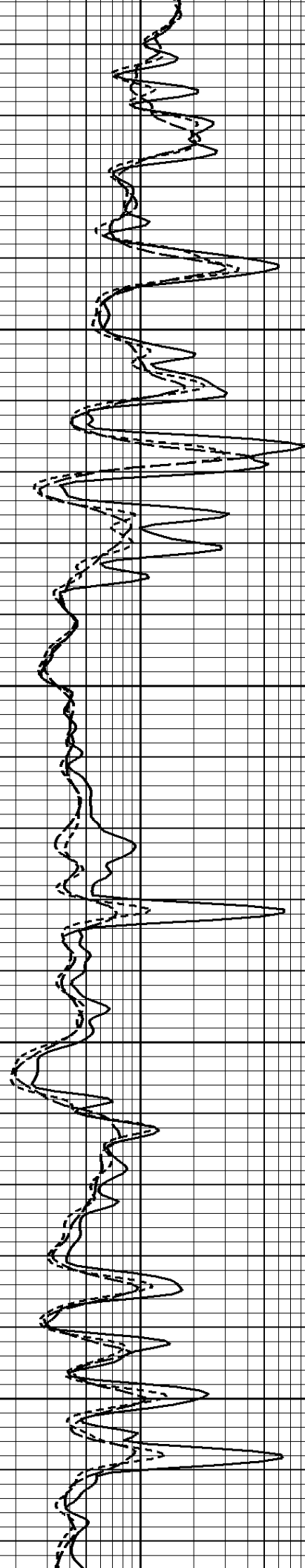
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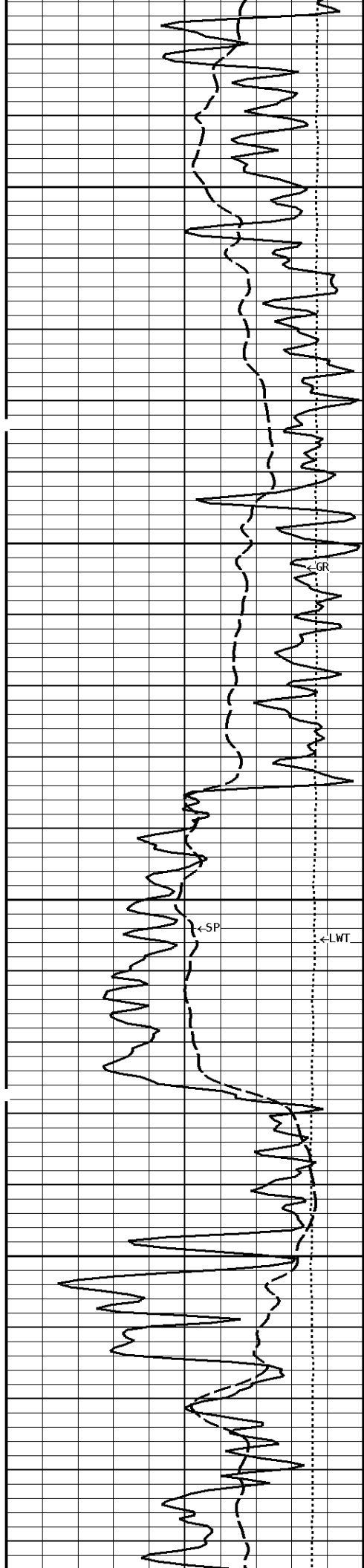




500

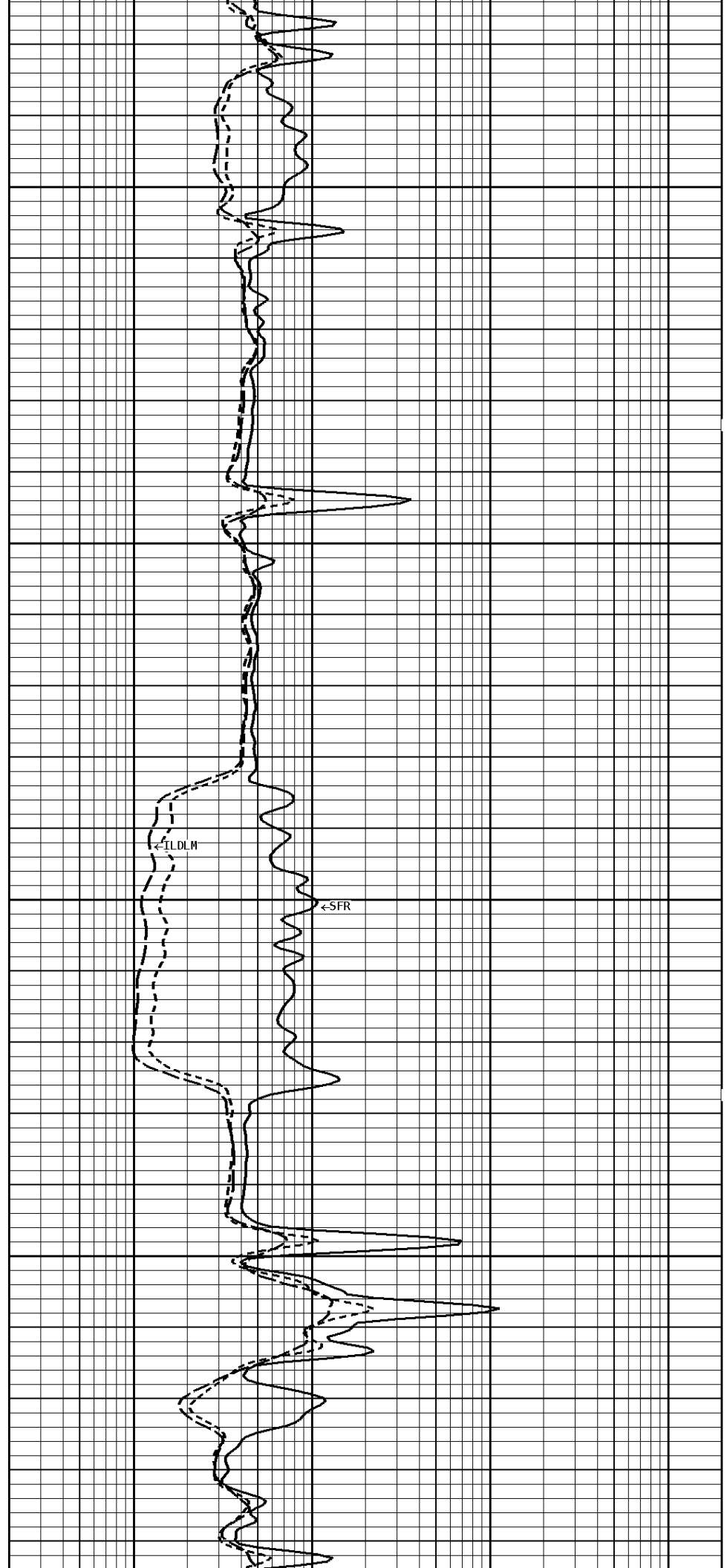
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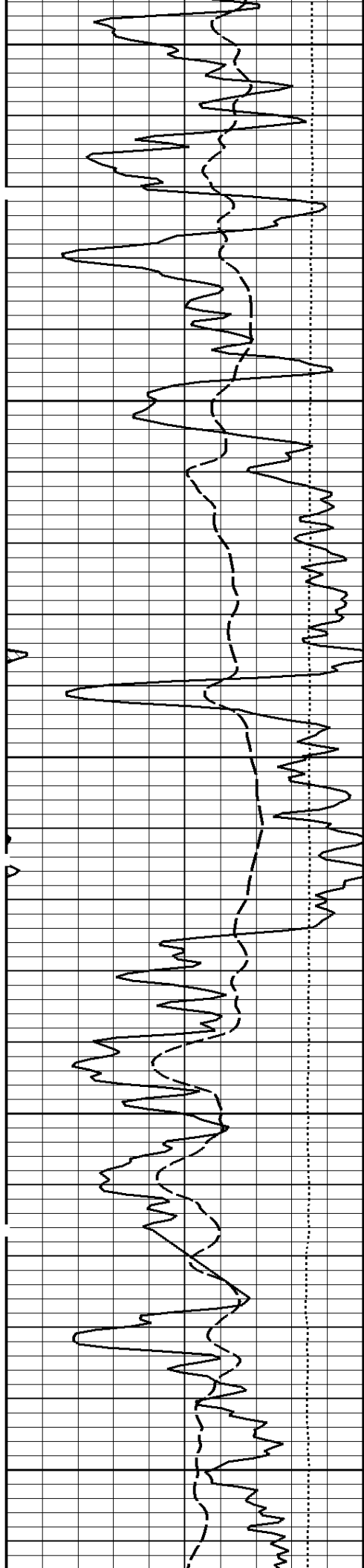




700

800

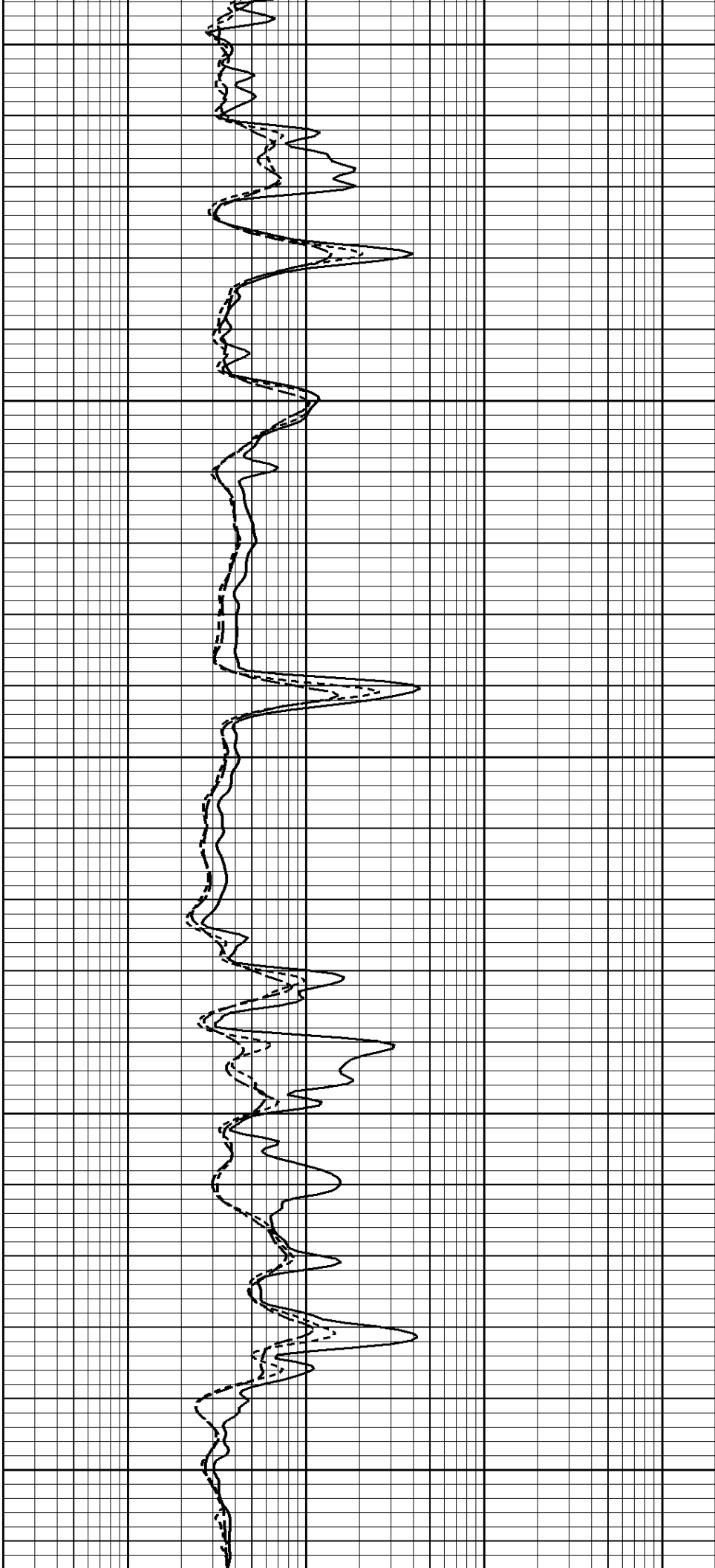


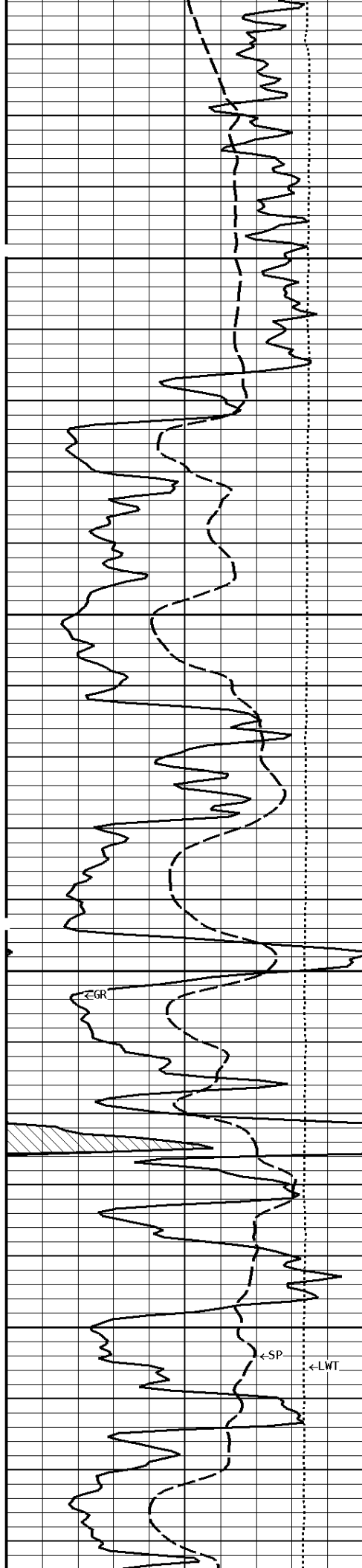


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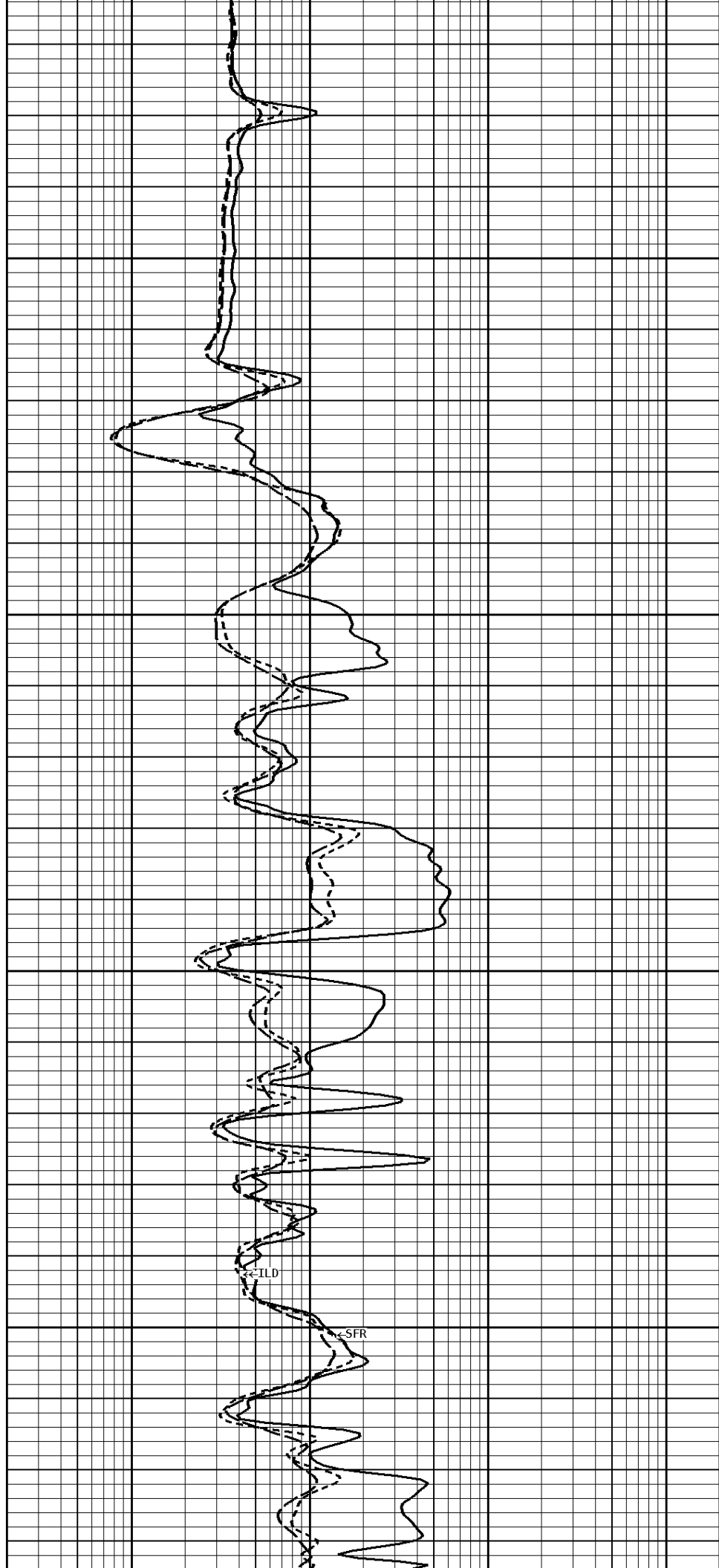
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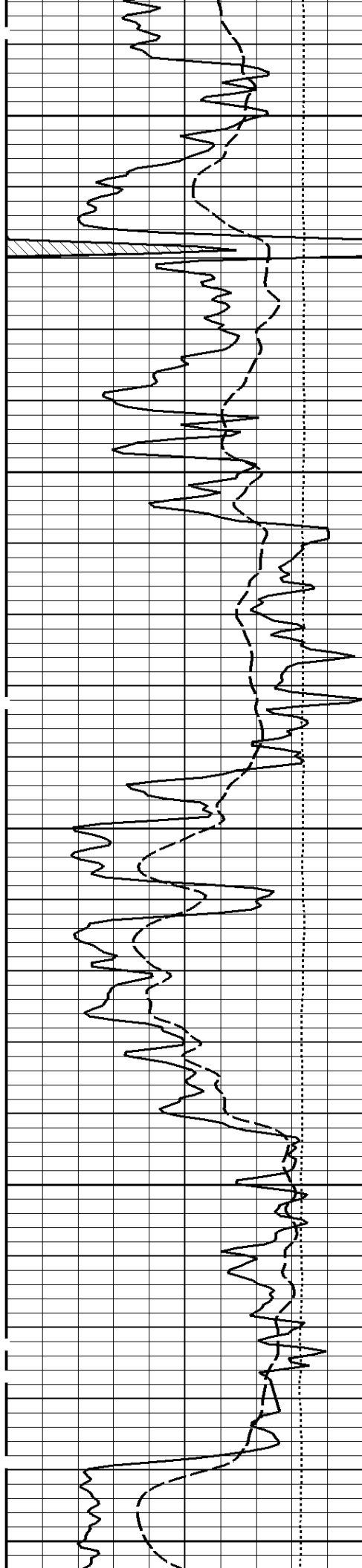




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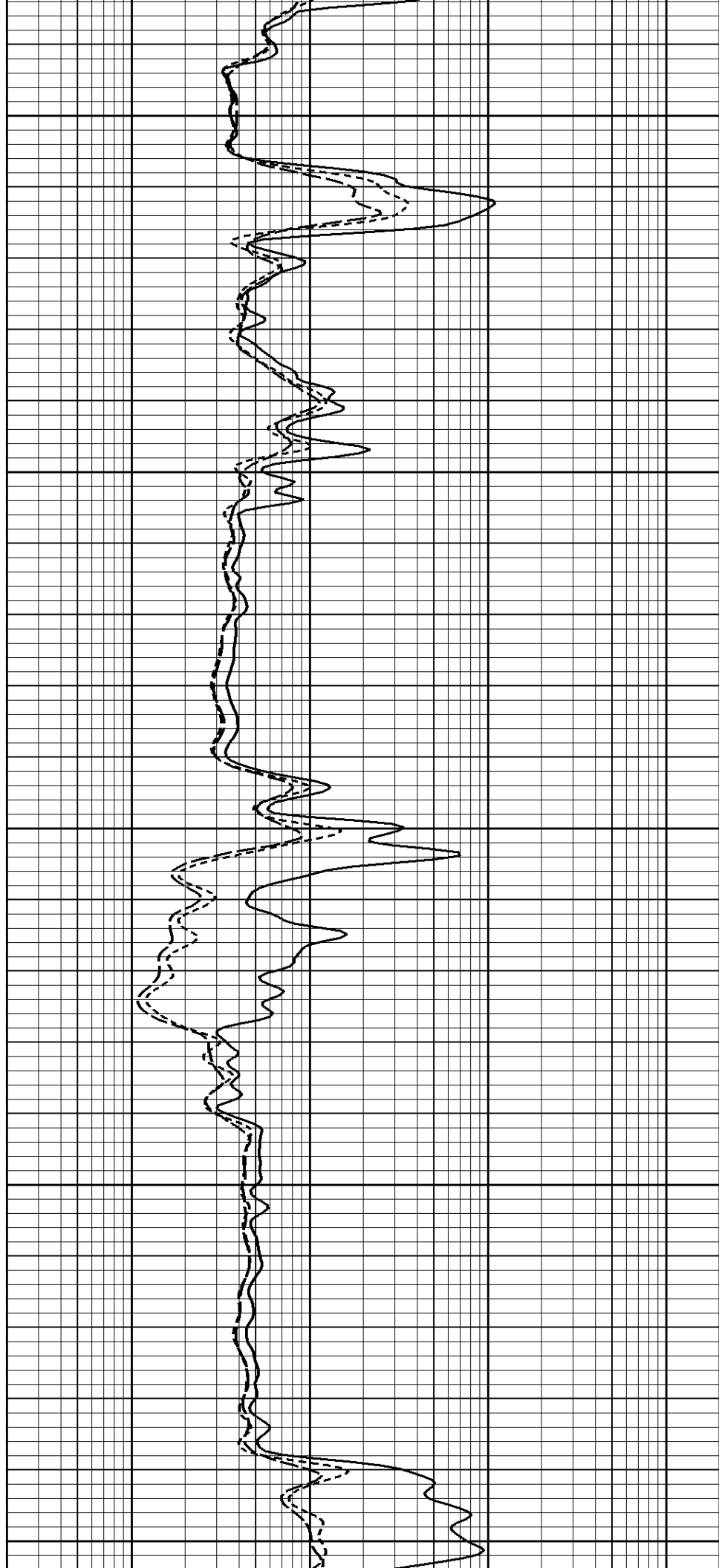
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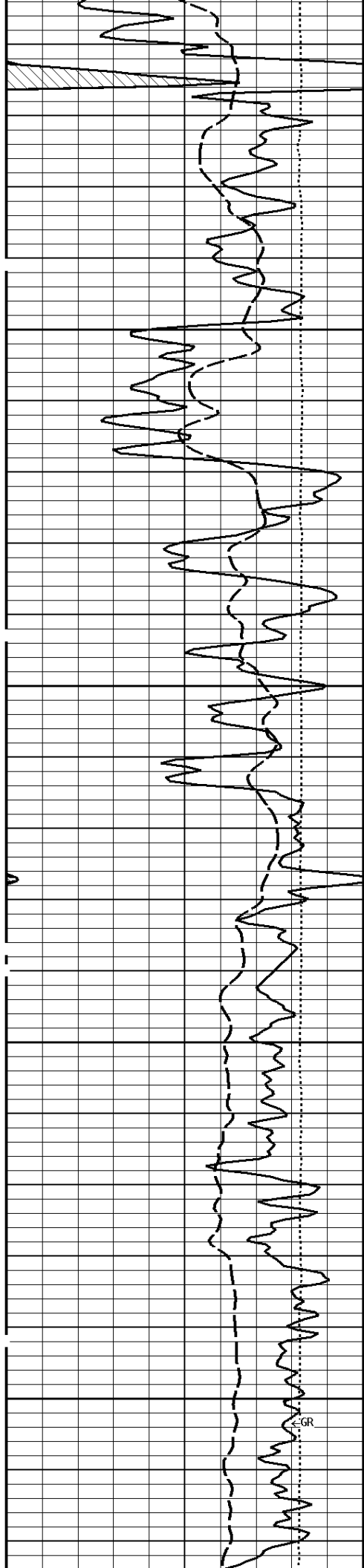




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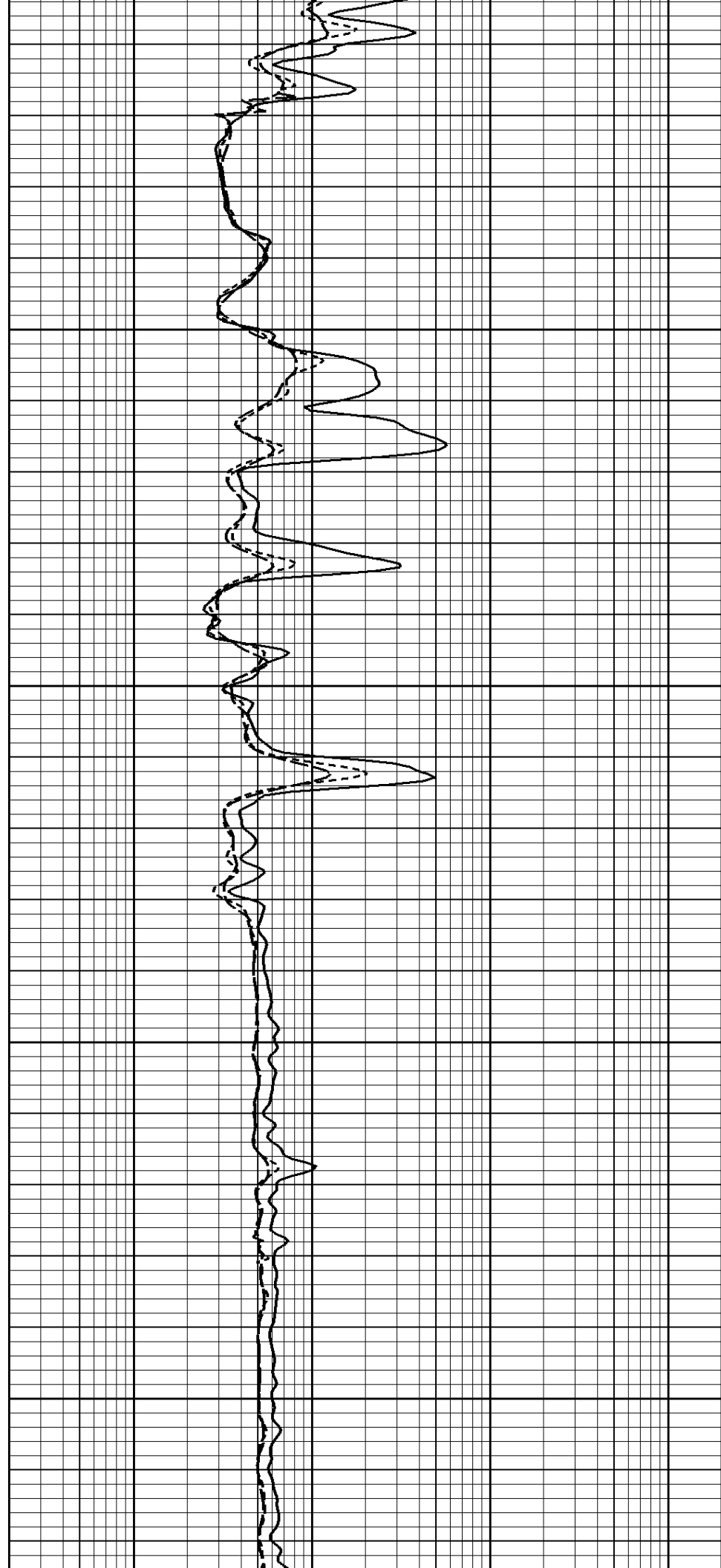
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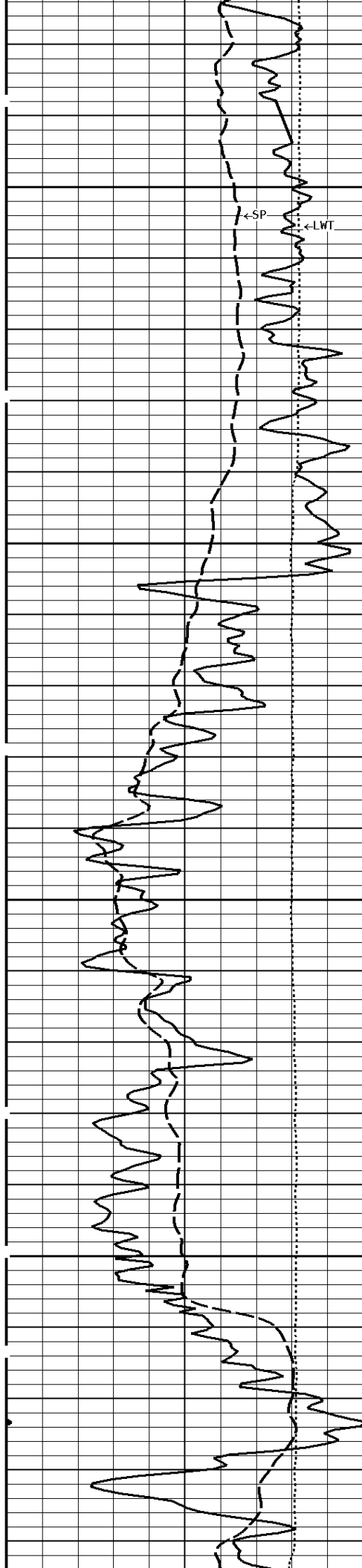




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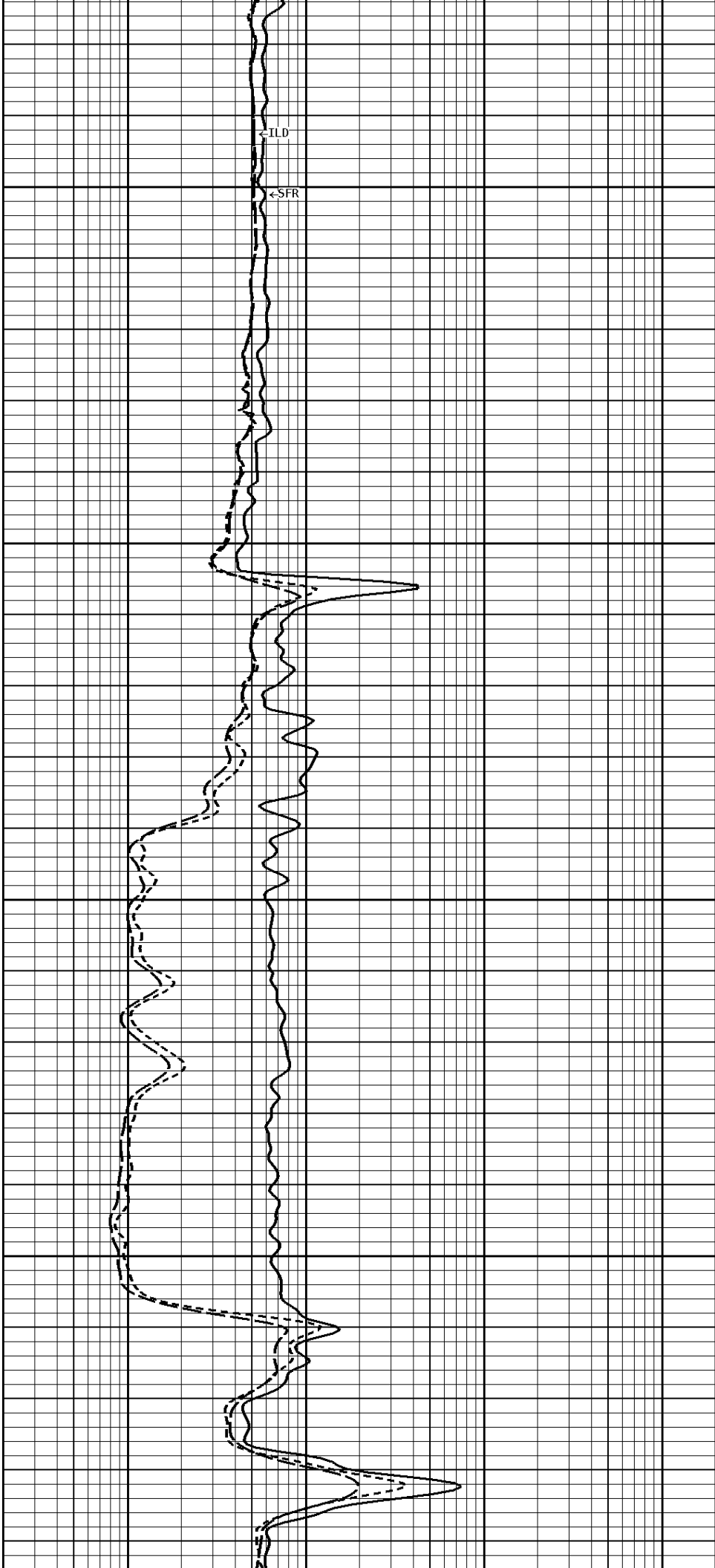
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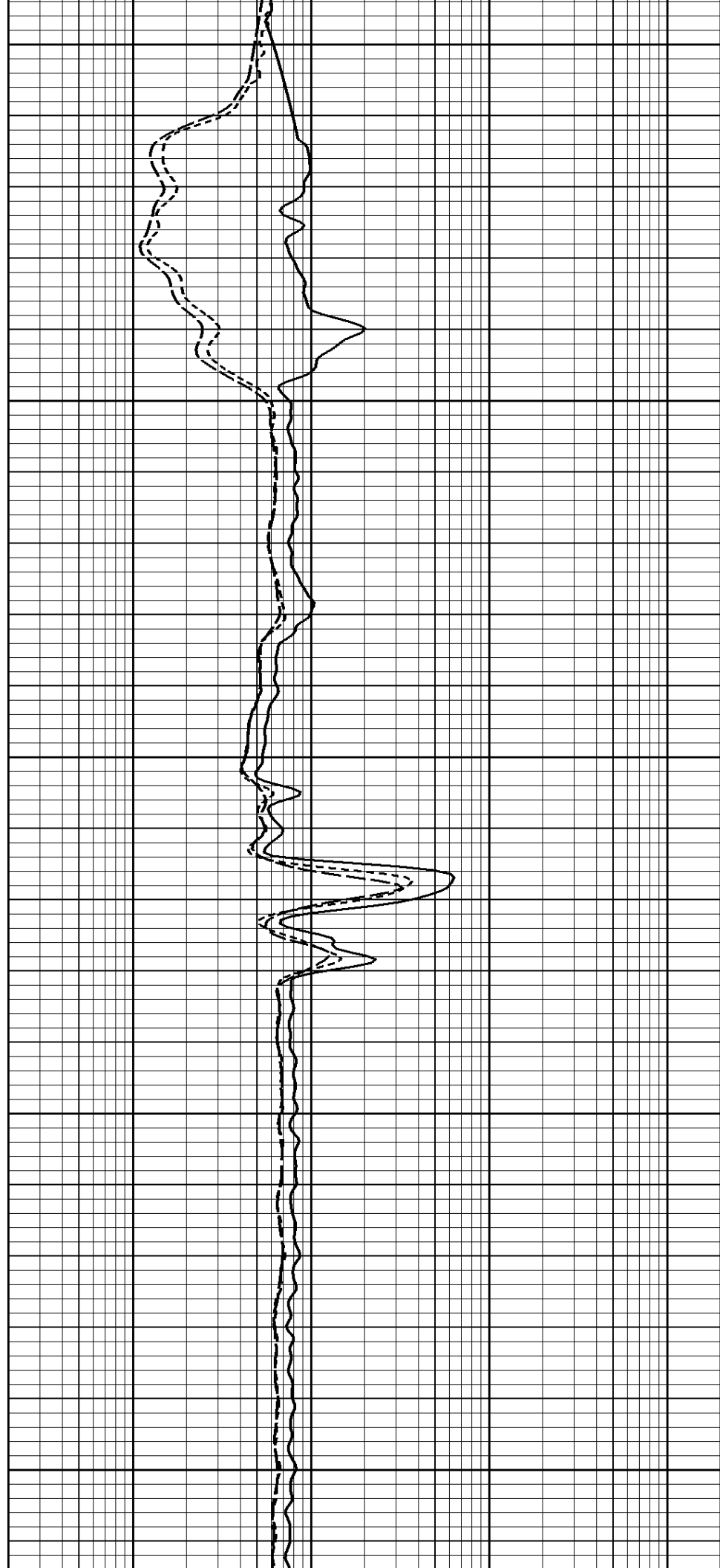
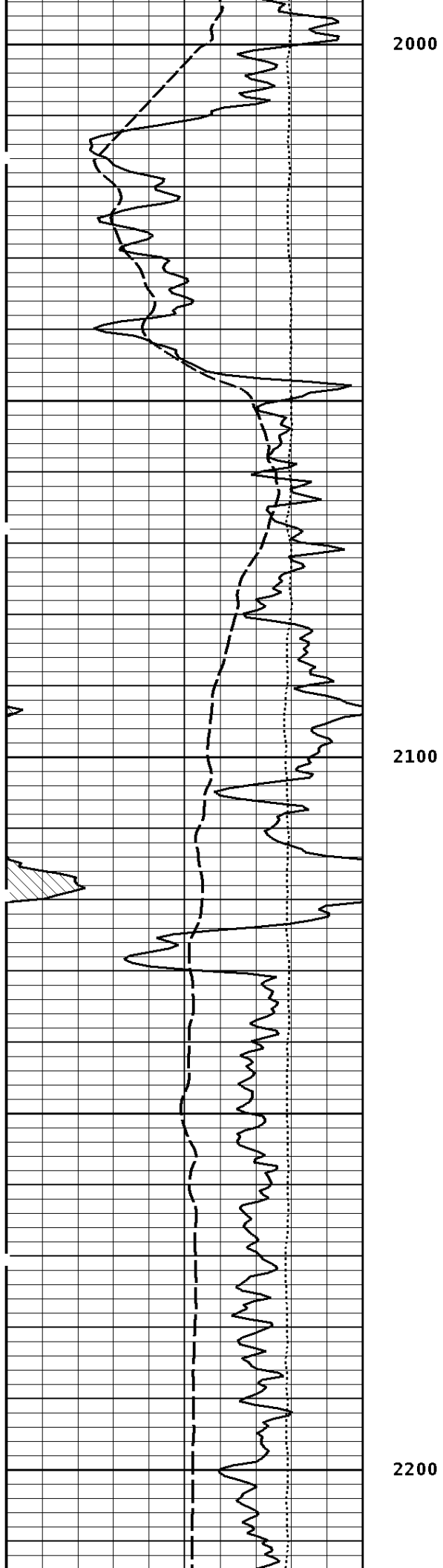
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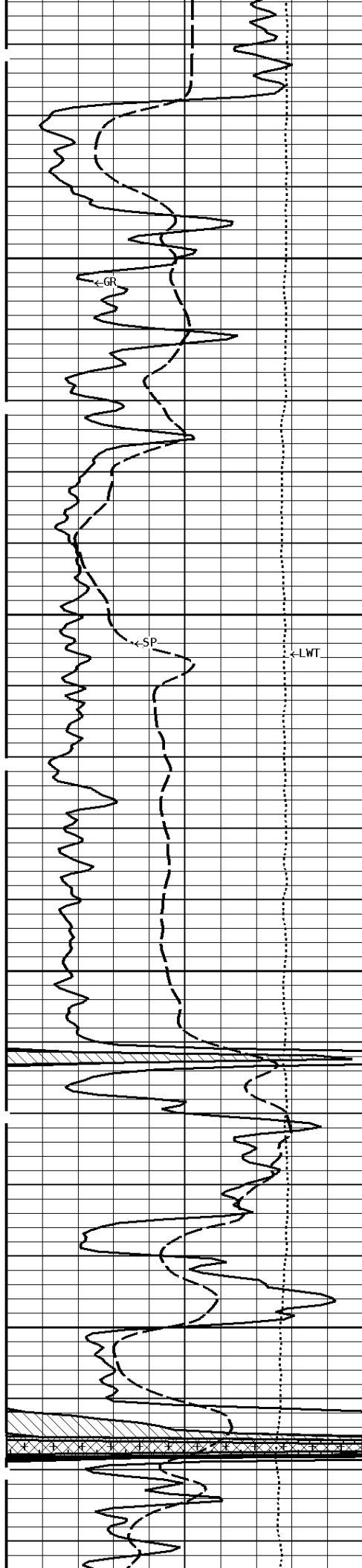
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ILD

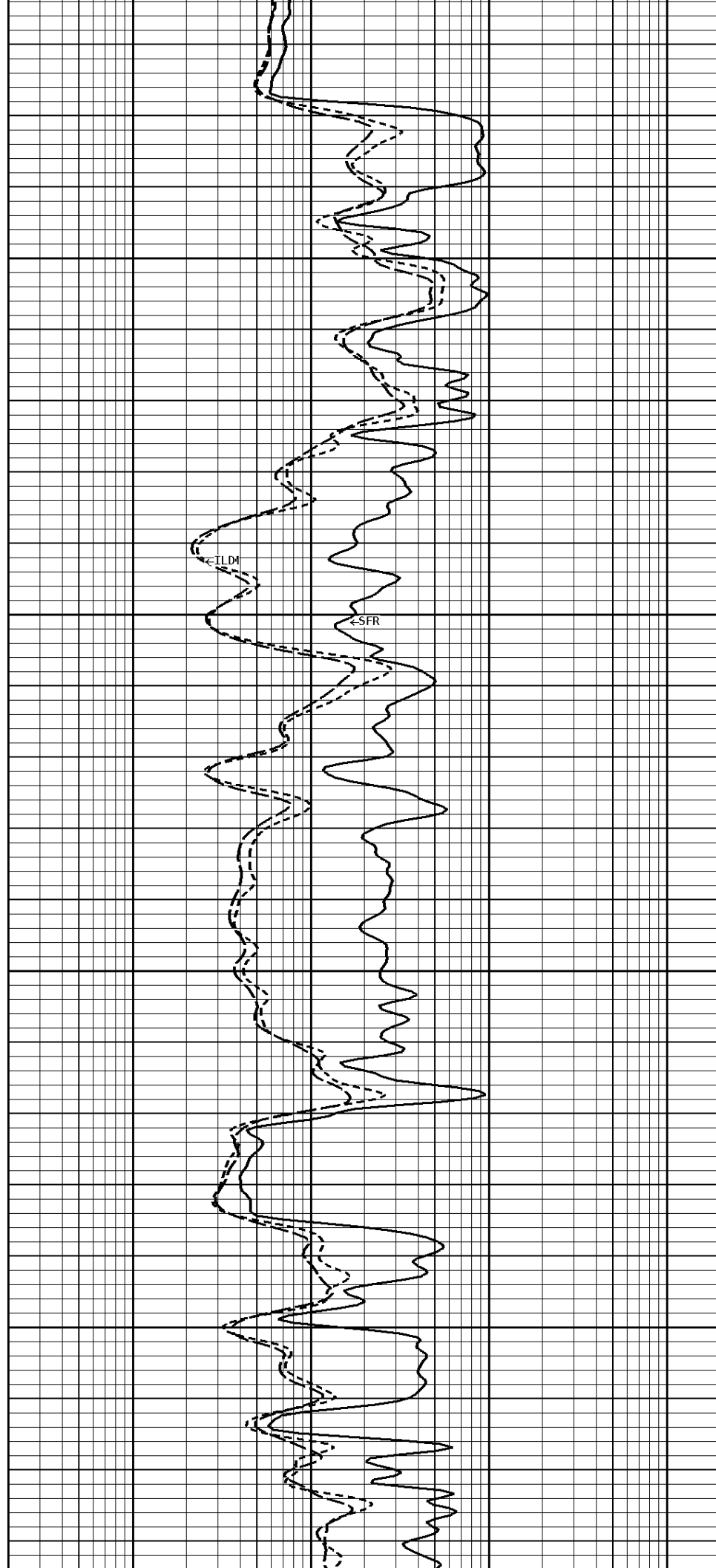
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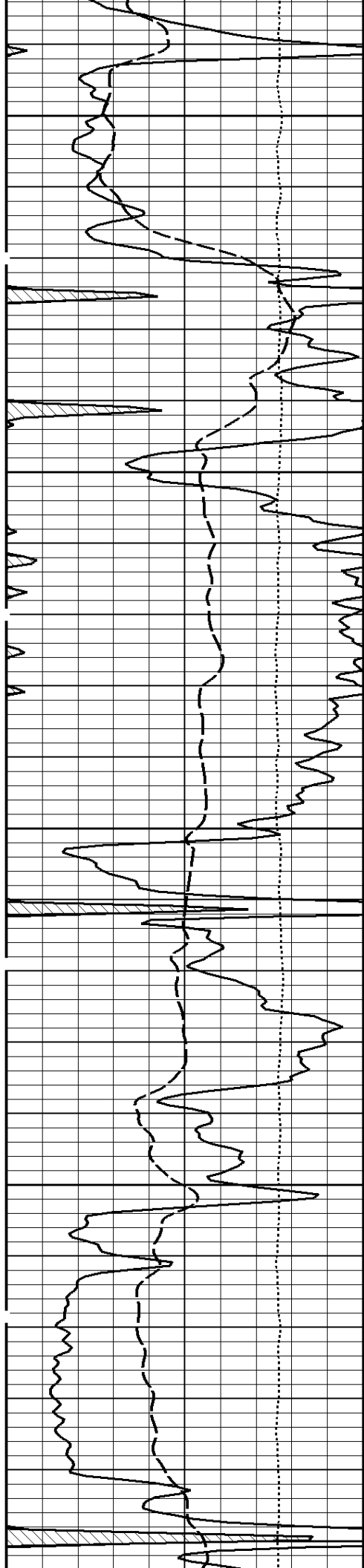




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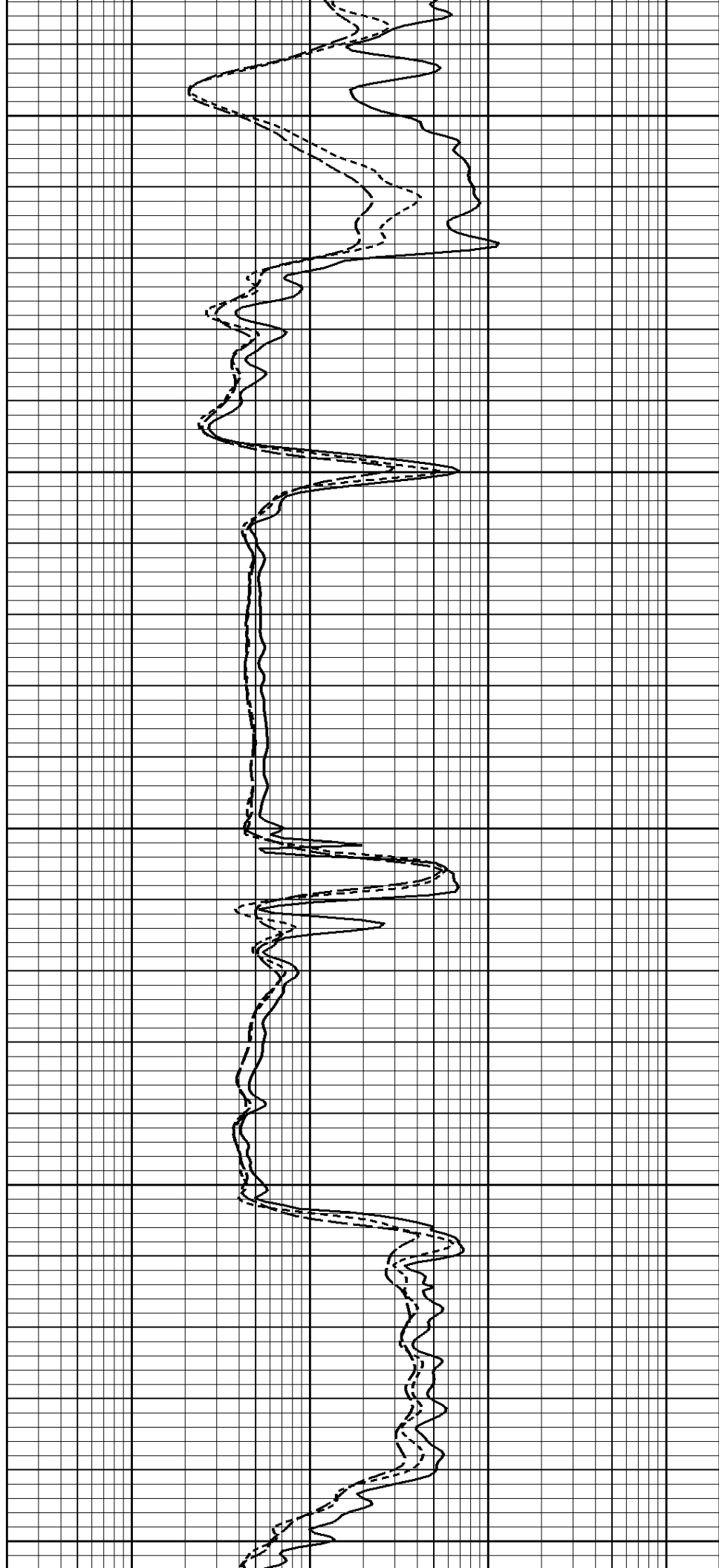
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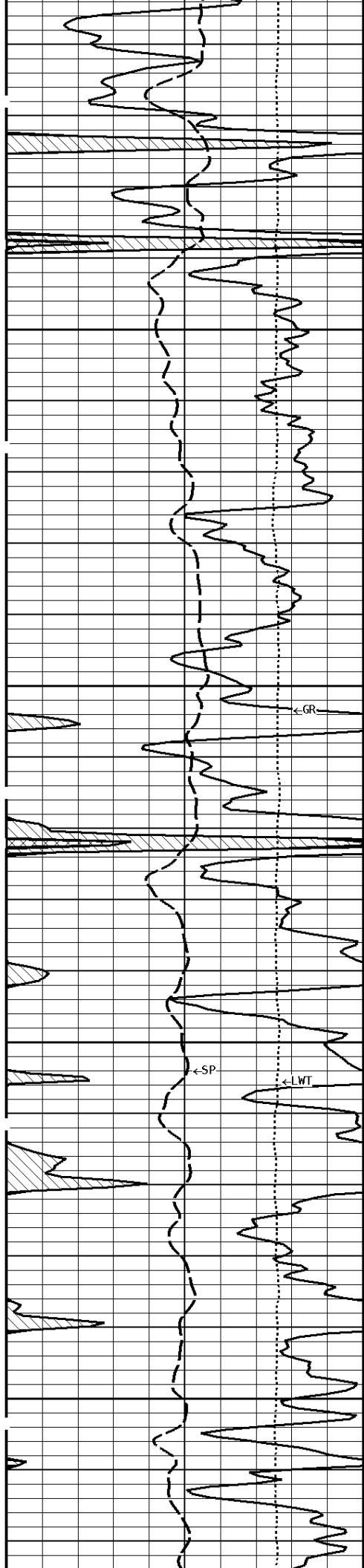




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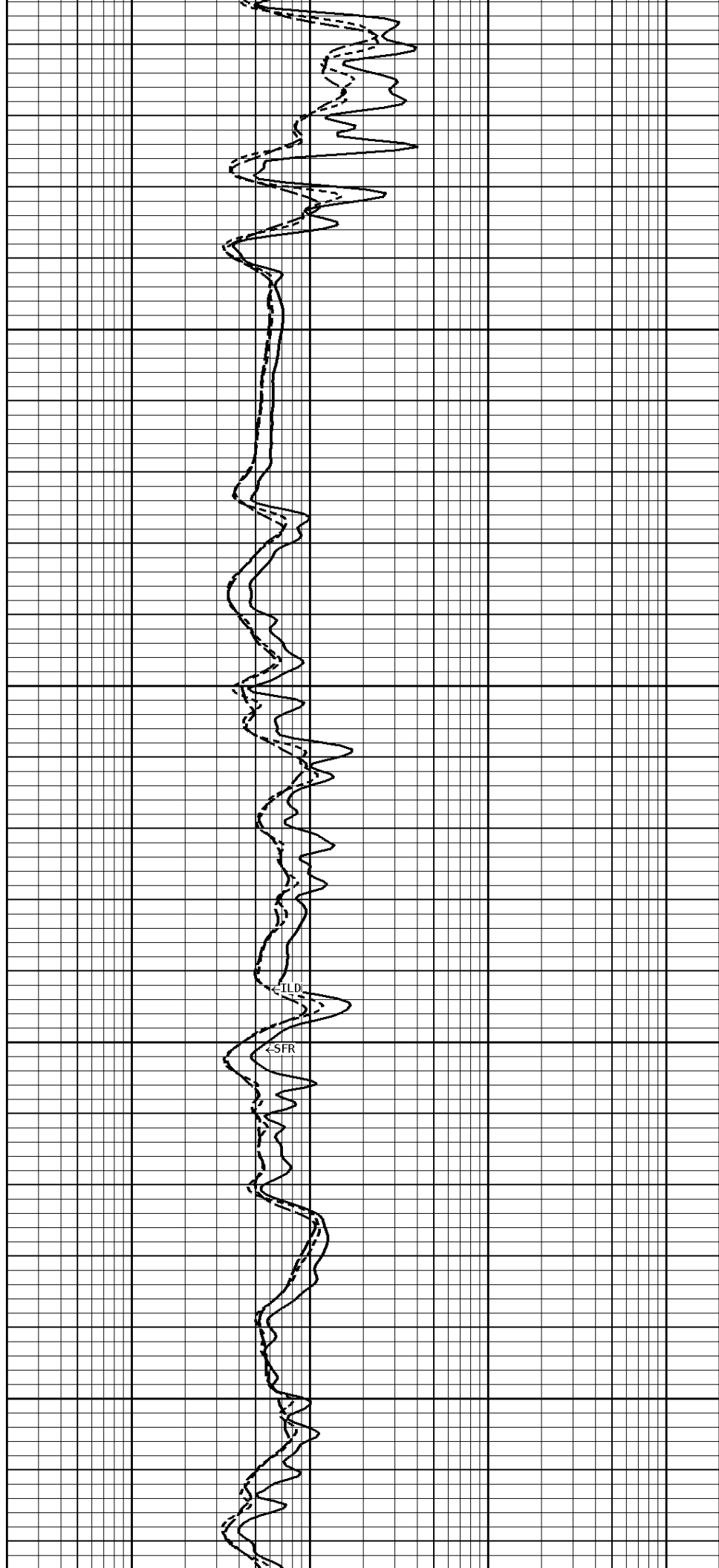
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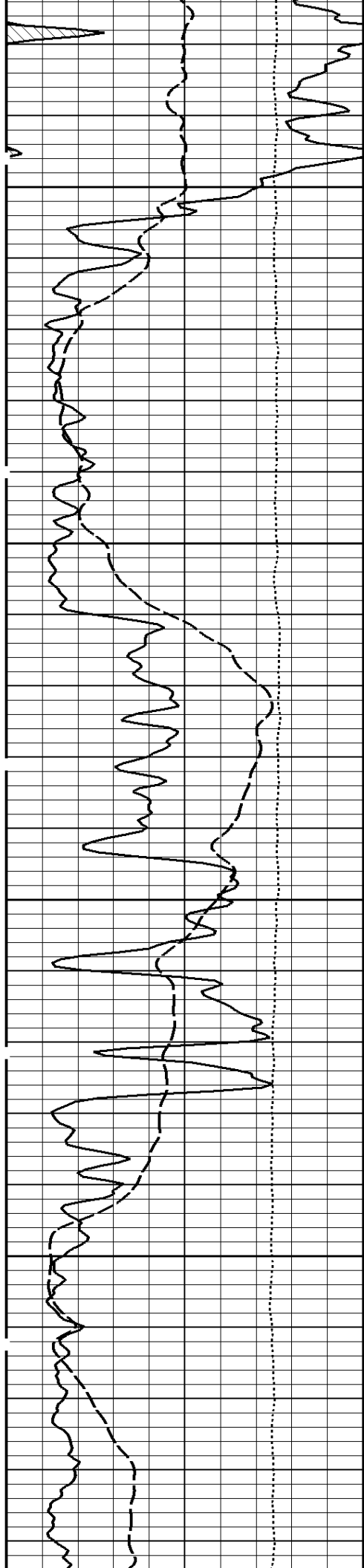




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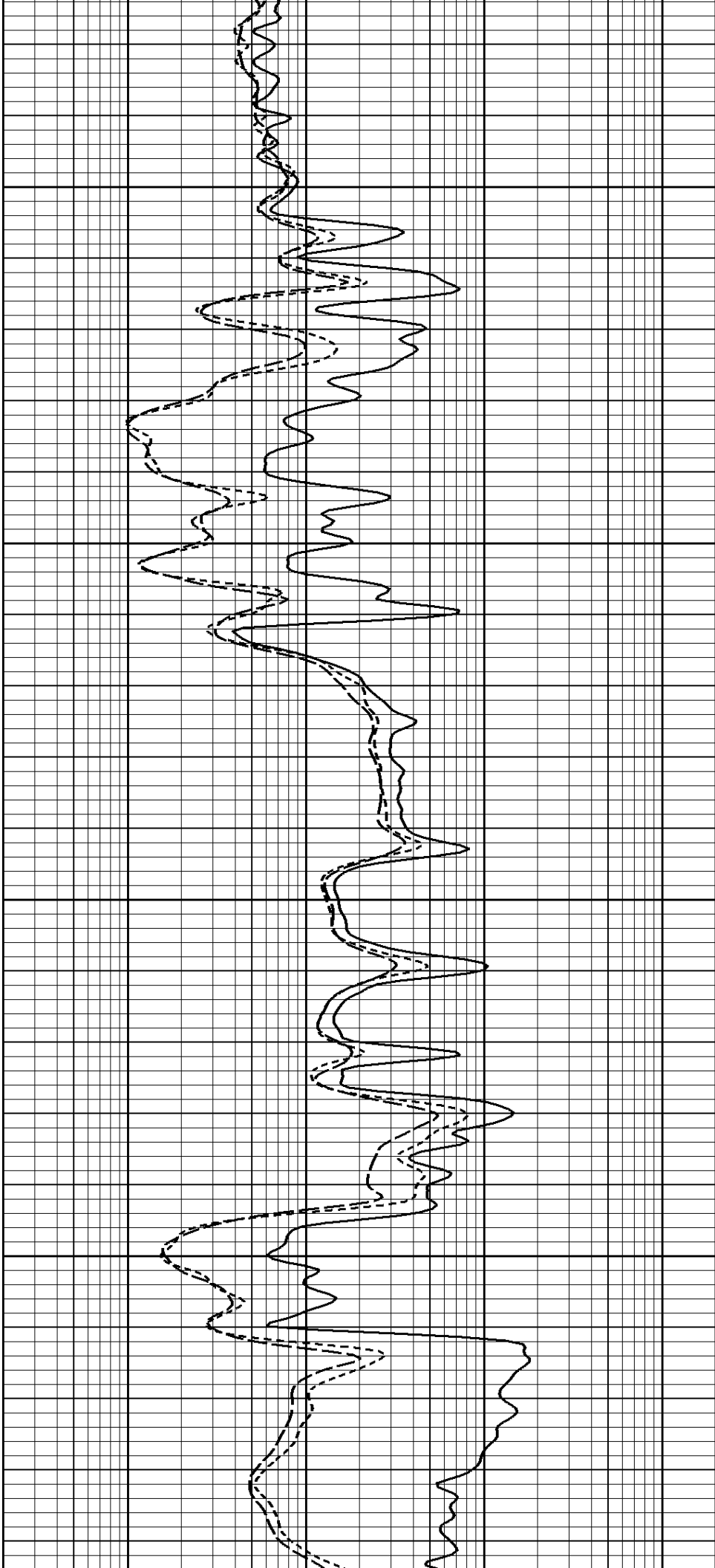
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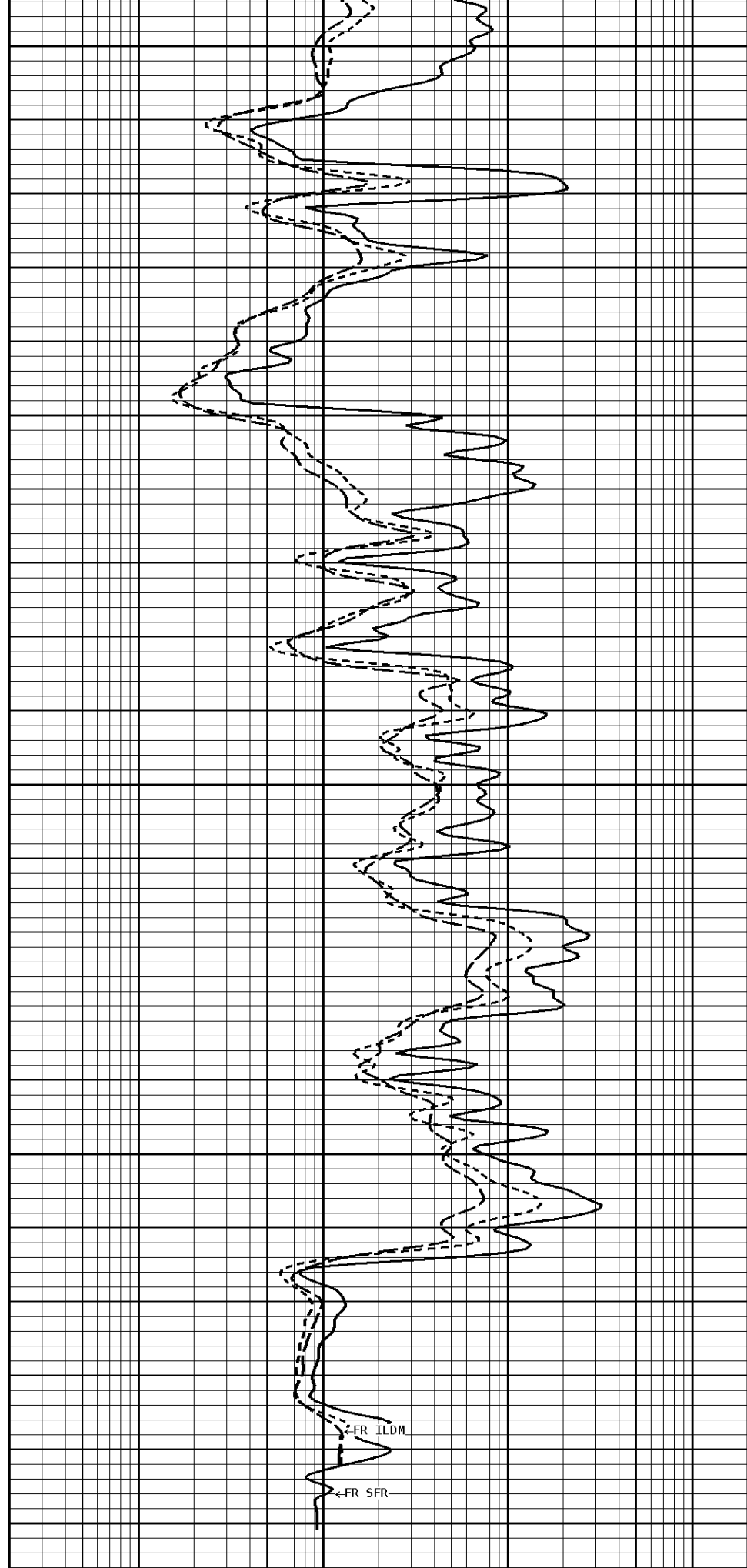
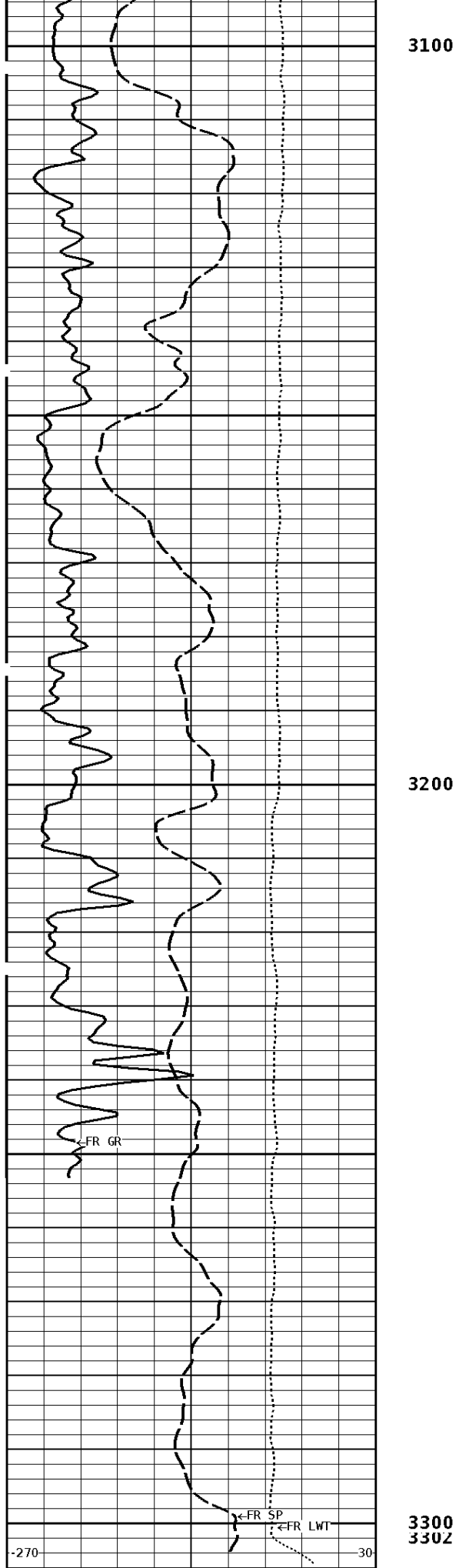


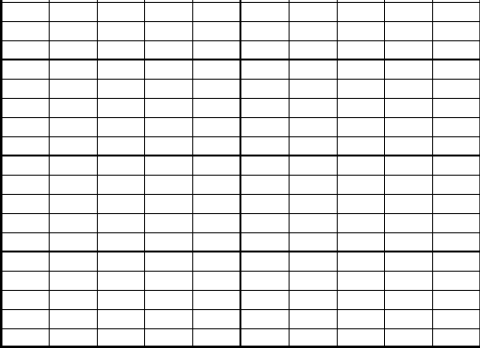


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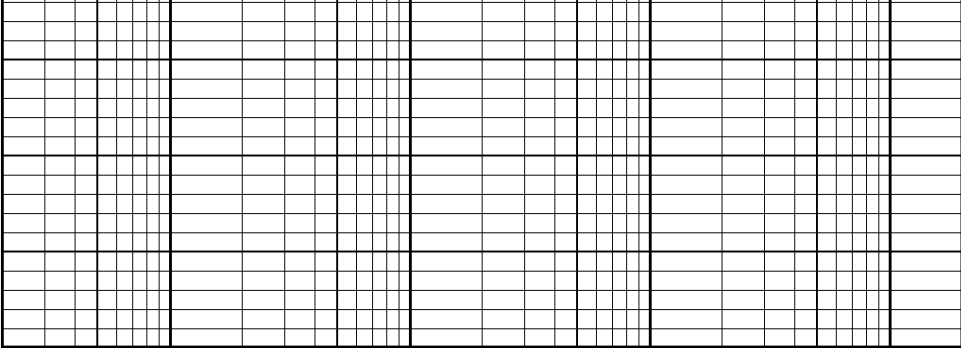
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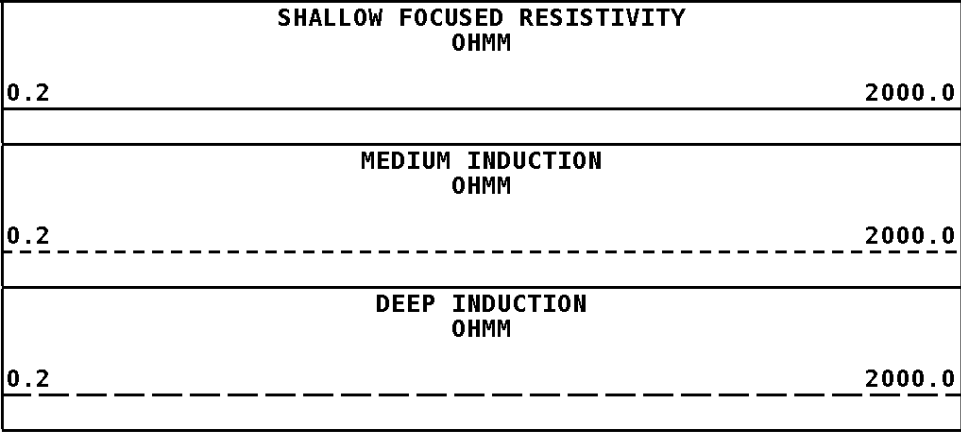
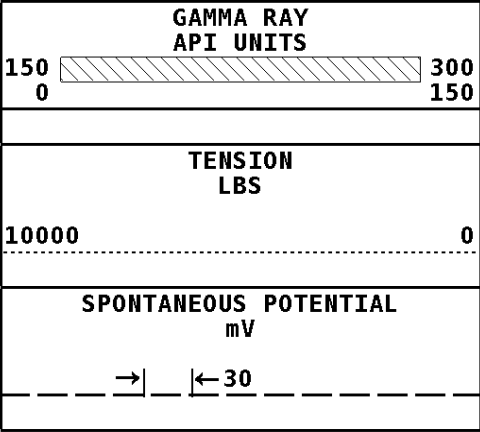




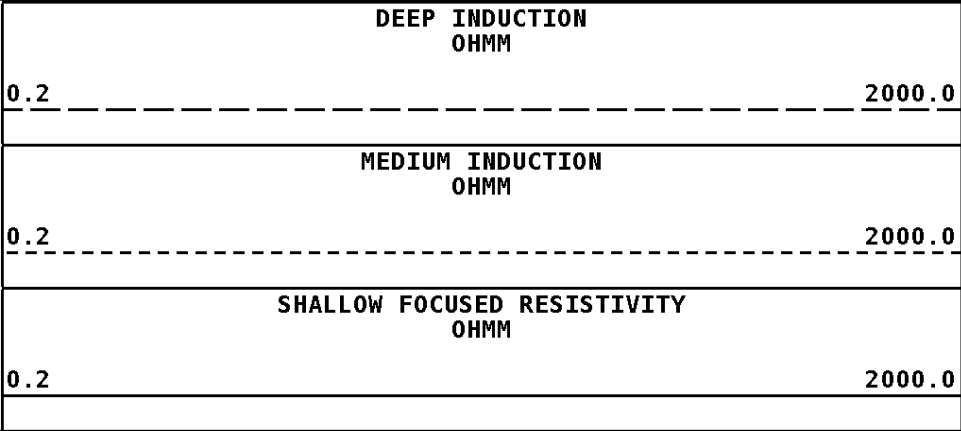
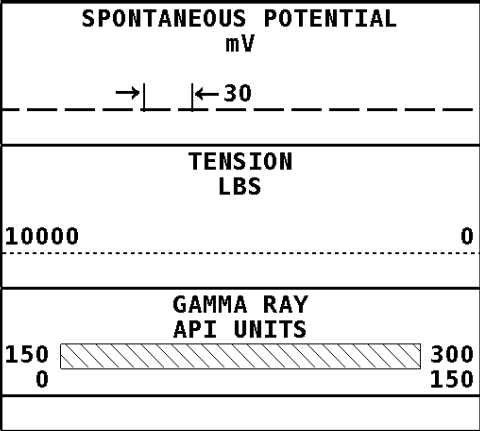
File #1.1.12



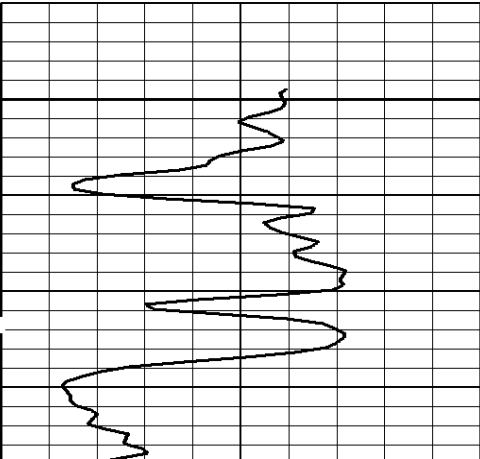
1:240 MAIN SECTION



Well File: val-kn-1-10-mstk-oct-7 Scale: 1:240 Format: DIL-240  
Segment: V1.D1.S5 RP Acquired: 2015-10/07 15:03 3.4.0-13544  
Reference: 0 Processed: 2015-10/07 17:56 3.4.0-13544

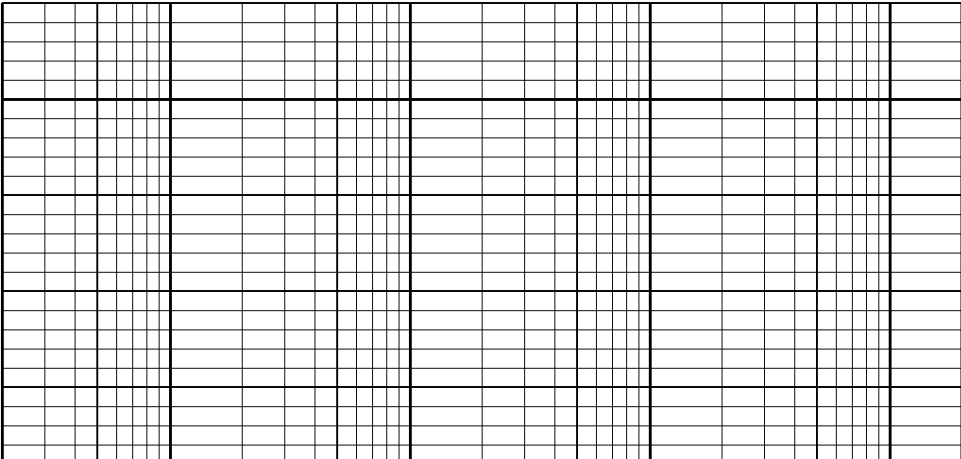


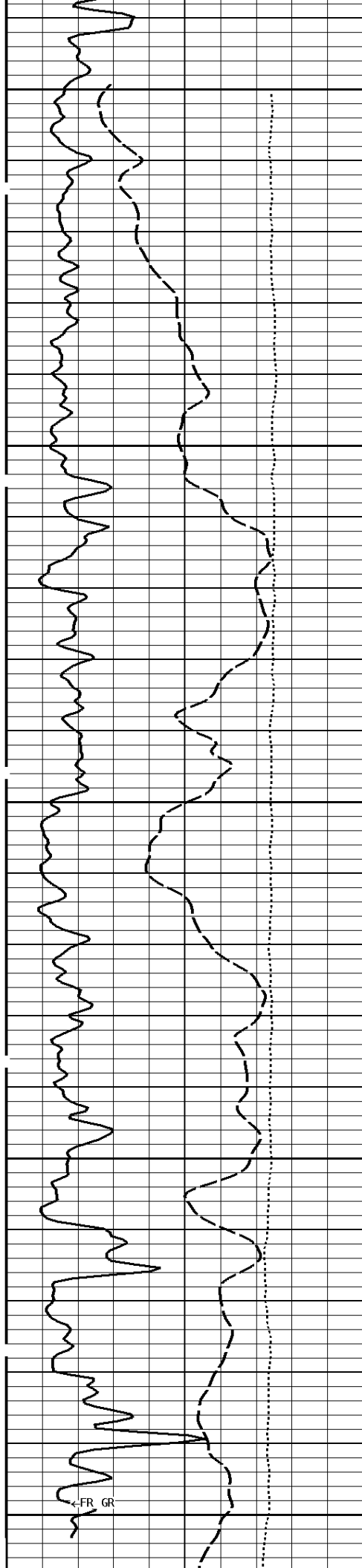
1:240 REPEAT SECTION



File #1.1.5

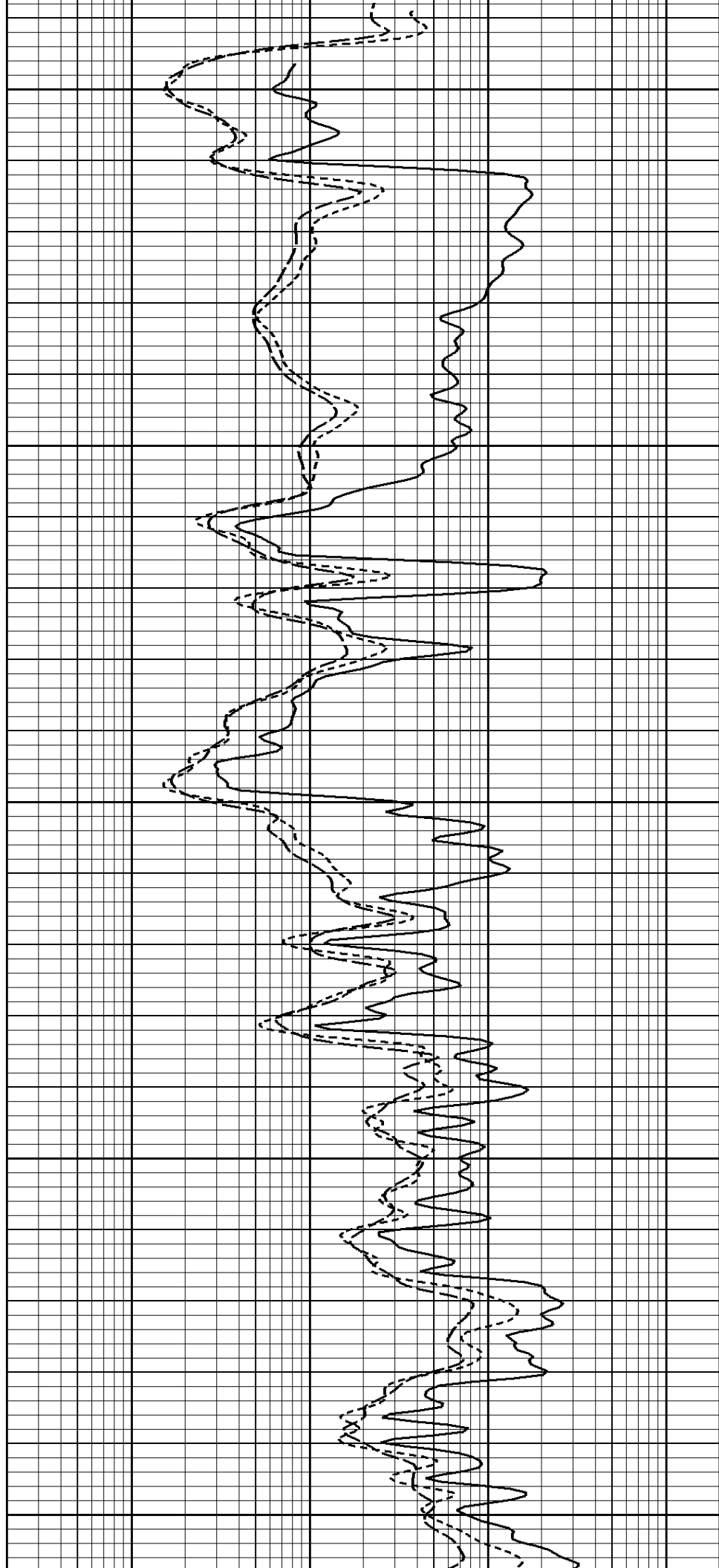
3000

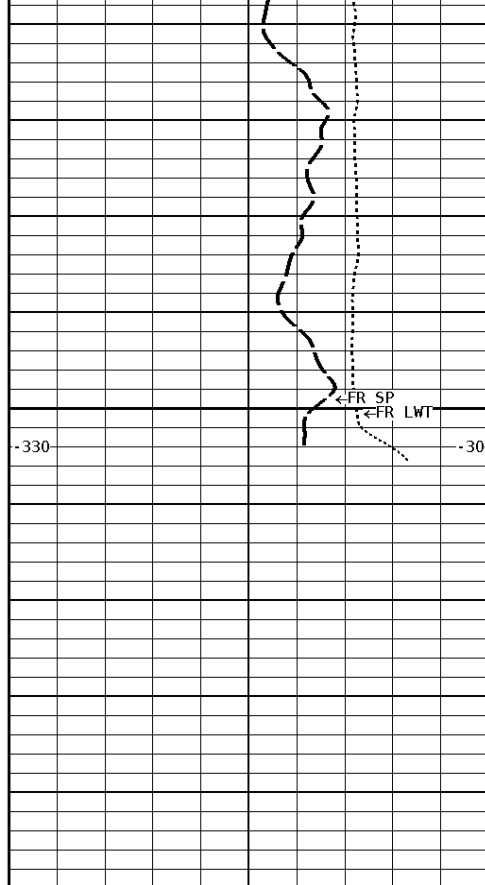




3100

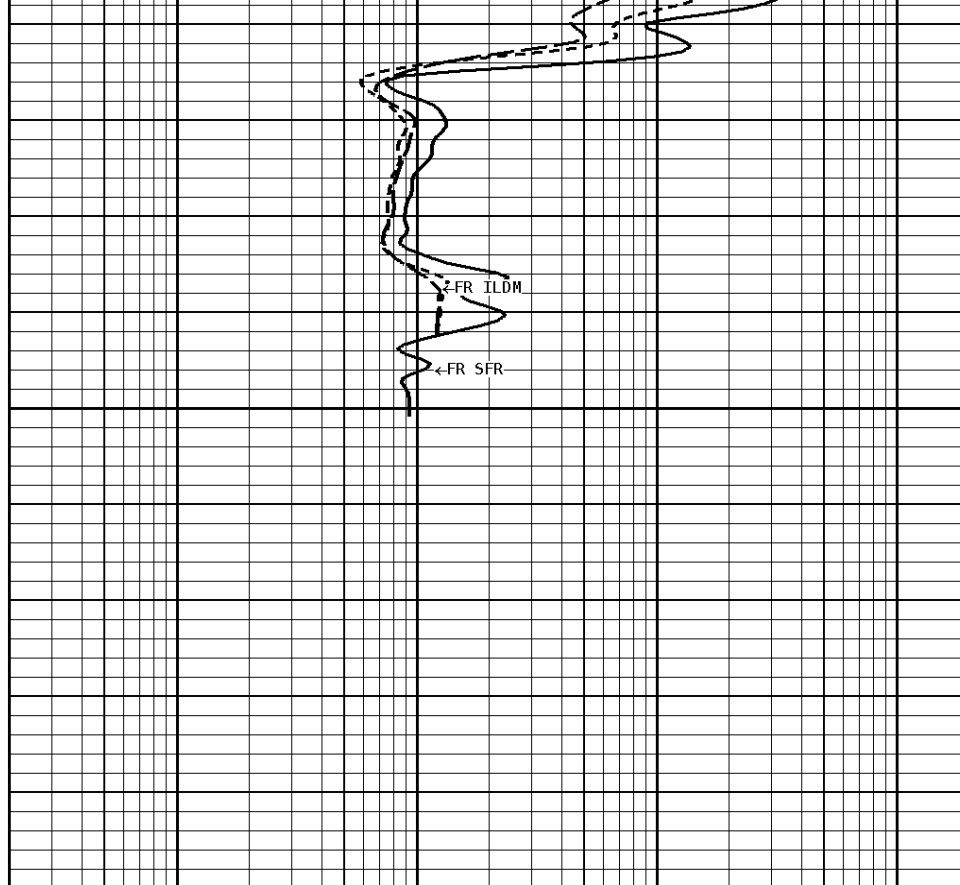
3200





3300  
3302

File #1.1.5



## 1:240 REPEAT SECTION

| GAMMA RAY<br>API UNITS      |      |
|-----------------------------|------|
| 150                         | 300  |
| 0                           | 150  |
| TENSION<br>LBS              |      |
| 10000                       | 0    |
| SPONTANEOUS POTENTIAL<br>mV |      |
| →                           | ← 30 |

| SHALLOW FOCUSED RESISTIVITY<br>OHMM |        |
|-------------------------------------|--------|
| 0.2                                 | 2000.0 |
| MEDIUM INDUCTION<br>OHMM            |        |
| 0.2                                 | 2000.0 |
| DEEP INDUCTION<br>OHMM              |        |
| 0.2                                 | 2000.0 |

### \* Borehole Zone Factors \*

| Zone 1 99999.0 to 0.0 Feet     |          |      |
|--------------------------------|----------|------|
| Drill Bit Size                 | 7.875    | in   |
| Casing Diameter                | 5.500    | in   |
| BHT Depth                      | 3302.000 | ft   |
| Borehole Temperature           | 110.0    | degF |
| Temperature Gradient           | 1.00     | DFHF |
| Resistivity Of Mud             | 2.000    | ohmm |
| Standoff                       | 1.5      |      |
| Resistivity Of Mud Temperature | 80.00    | degF |

### \* Calibration Summary \*

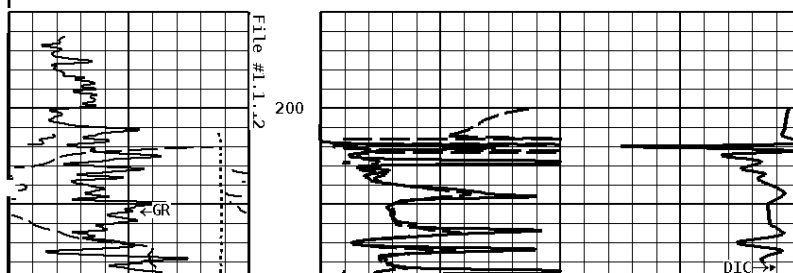
| Shop Calibration<br>GRT-B |       |                 |       |
|---------------------------|-------|-----------------|-------|
| Performed : 02-JUN-2014   |       | Time : 09:56    |       |
| Sensor Suite : GR-GR5     |       | ID : GRT-AB-010 |       |
| Measured                  | Units | Calibrated      | Units |
| Background                | Jig   | Jig             |       |

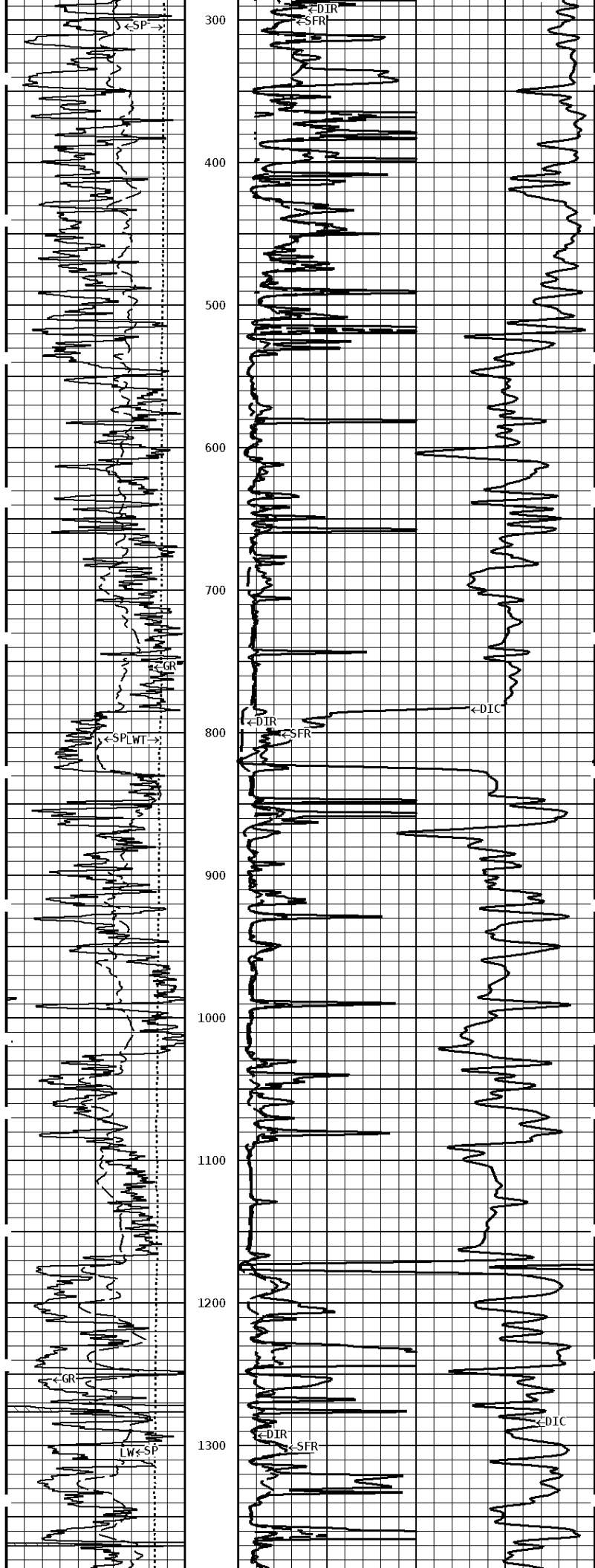
|                                                                                                                                      |          |           |            |           |       |
|--------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|------------|-----------|-------|
| GR                                                                                                                                   | 53       | 341       | CPS        | 175       | GRAPI |
| <b>Shop Calibration</b><br><b>PIT-CA</b><br>Performed : 01-Sep-2015      Time : 10:52<br>Sensor Suite : P-IND-T      ID : PIT-CA-077 |          |           |            |           |       |
| Medium                                                                                                                               |          |           |            |           |       |
|                                                                                                                                      | Measured |           | Calibrated |           | Units |
|                                                                                                                                      | R        | X         | R          | X         |       |
| Air                                                                                                                                  | 130255   | 130731    | -2.9       | -3.6      | MMHOS |
| Zero                                                                                                                                 | 131075   | 131068    | 26.5       | 4.6       | MMHOS |
| Reference                                                                                                                            | 257436   | 259660    | 5026.5     | 5004.6    | MMHOS |
| Loop                                                                                                                                 | 127852   | 223481    | 3508.4     | 3697.9    | MMHOS |
| Sonde Error                                                                                                                          |          |           | -7.7       | -3.0      | MMHOS |
| Cond                                                                                                                                 |          |           | 5026.5     | 5004.6    | MMHOS |
| Deep                                                                                                                                 |          |           |            |           |       |
|                                                                                                                                      | Measured |           | Calibrated |           | Units |
|                                                                                                                                      | R        | X         | R          | X         |       |
| Air                                                                                                                                  | 130066   | 130185    | 0.2        | -0.8      | MMHOS |
| Zero                                                                                                                                 | 131063   | 131079    | 17.2       | 9.3       | MMHOS |
| Reference                                                                                                                            | 236755   | 238868    | 2017.2     | 2009.3    | MMHOS |
| Loop                                                                                                                                 | 127770   | 222393    | 1667.7     | 1753.5    | MMHOS |
| Sonde Error                                                                                                                          |          |           | -9.2       | -4.7      | MMHOS |
| Cond                                                                                                                                 |          |           | 2017.2     | 2009.3    | MMHOS |
| Temperature                                                                                                                          |          |           |            |           |       |
|                                                                                                                                      | Measured |           | Calibrated |           | Units |
|                                                                                                                                      | Low      | High      | Low        | High      |       |
|                                                                                                                                      | 16980.0  | 56920.0   | 70.0       | 350.0     | DEGF  |
| Performed : 01-Sep-2015      Time : 10:42<br>Sensor Suite : SFL      ID : PIT-CA-077                                                 |          |           |            |           |       |
| Internal                                                                                                                             |          |           |            |           |       |
|                                                                                                                                      | Measured |           | Calibrated |           | Units |
|                                                                                                                                      | Zero     | Reference | Zero       | Reference |       |
| Im                                                                                                                                   | 32797.0  | 48922.0   | 0.0        | 7028.0    | uA    |
| Ib                                                                                                                                   | 32771.0  | 49369.2   | 0.0        | 1750.0    | mA    |
| MOM1                                                                                                                                 | 32800.3  | 57385.8   | 0.0        | 175.0     | mV    |
| Equivalent SFL                                                                                                                       |          |           |            | 43.97     | OHMM  |
| Performed : 01-Sep-2015      Time : 10:39<br>Sensor Suite : P-SP      ID : PIT-CA-077                                                |          |           |            |           |       |
| Internal                                                                                                                             |          |           |            |           |       |
|                                                                                                                                      | Measured |           | Calibrated |           | Units |
|                                                                                                                                      | Zero     | Reference | Zero       | Reference |       |
|                                                                                                                                      | 32767.0  | 58954.1   | 0.0        | 1000.0    | mV    |

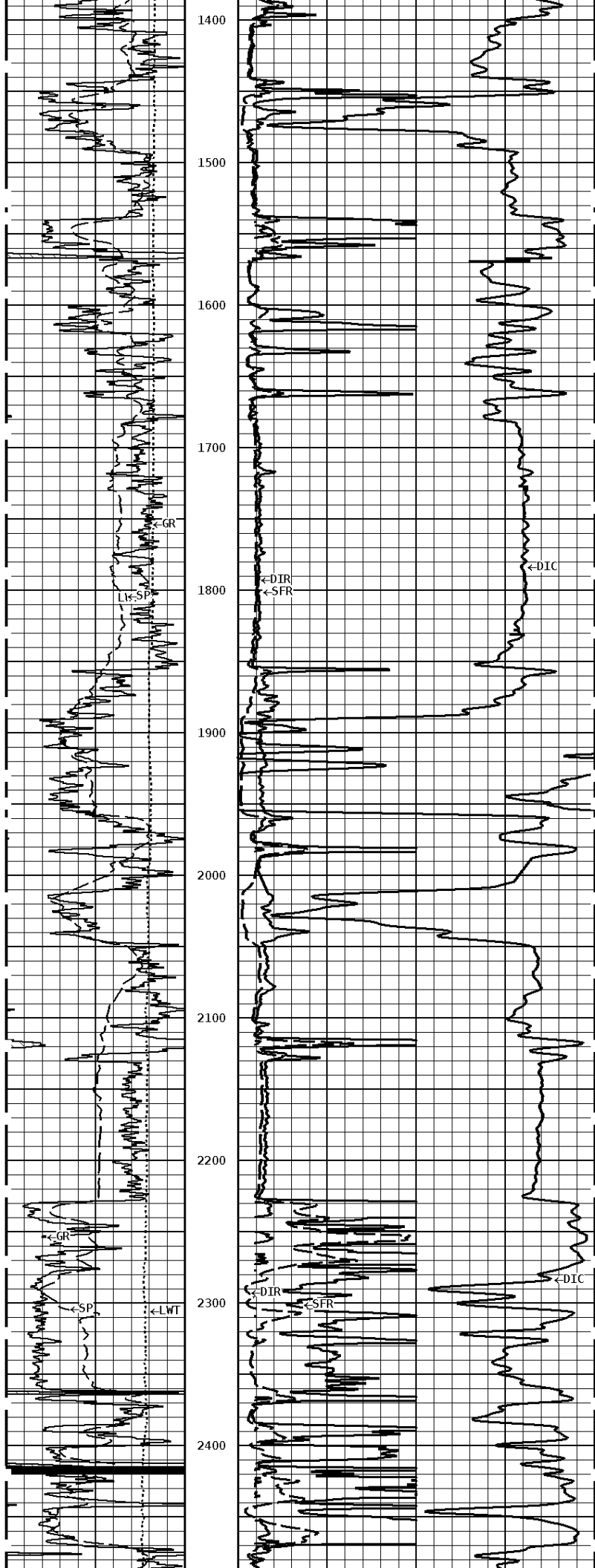
|                                          |                                 |                        |
|------------------------------------------|---------------------------------|------------------------|
| <b>Well File:</b> val-kn-1-10-mstk-oct-7 | <b>Scale:</b> 1:1200            | <b>Format:</b> DIL1200 |
| <b>Segment:</b> V1.D1.S12 FINAL MN       | <b>Acquired:</b> Not Available  |                        |
| <b>Reference:</b> 0                      | <b>Processed:</b> Not Available |                        |

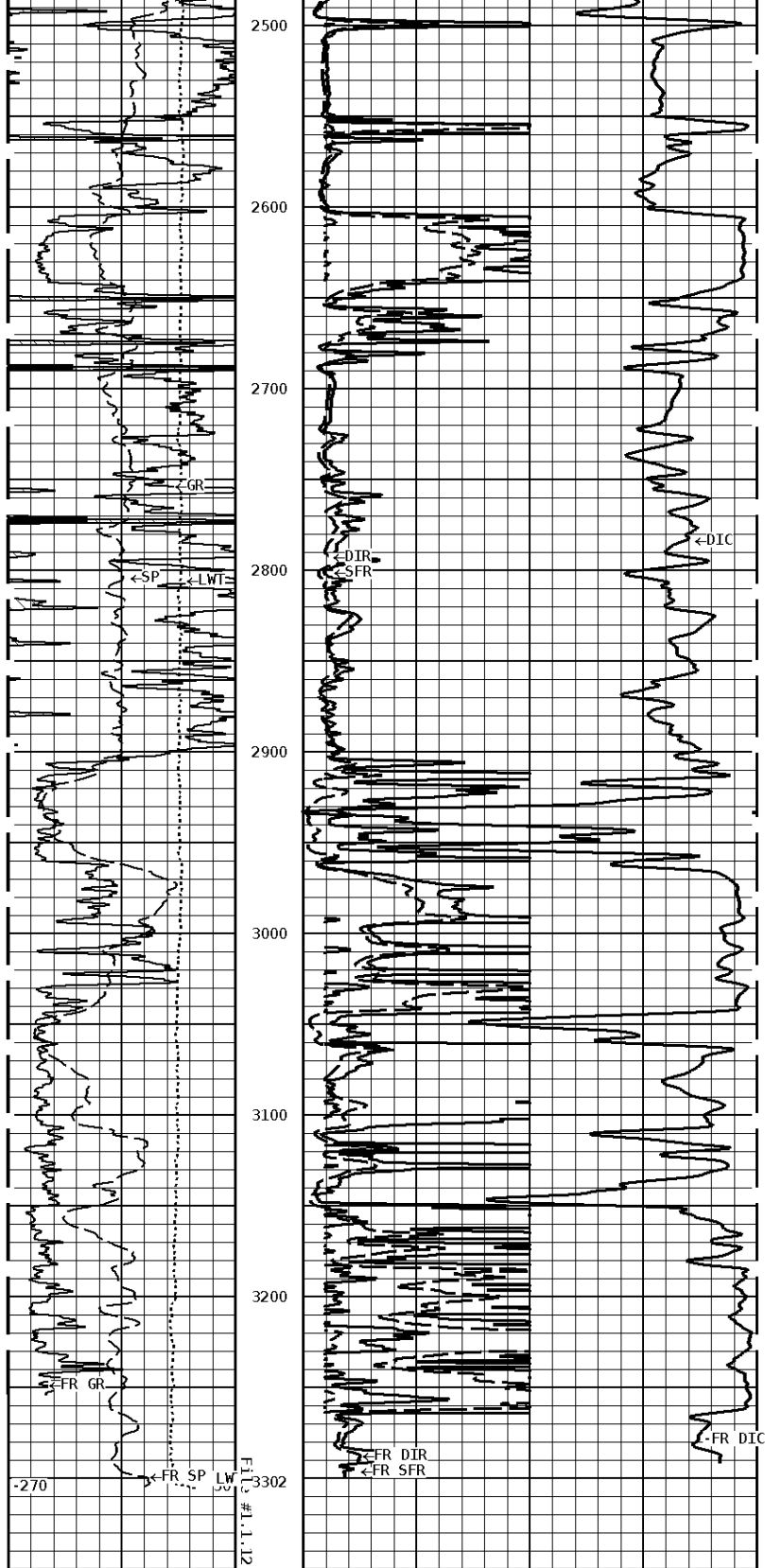
|                                                          |                                                                |
|----------------------------------------------------------|----------------------------------------------------------------|
| <b>TENSION</b><br><b>LBS</b><br>10000 0                  | <b>DEEP INDUCTION</b><br><b>OHMM</b><br>0.0 500.0<br>0.0 50.0  |
| <b>SPONTANEOUS POTENTIAL</b><br><b>mV</b><br>→   ← 30    | <b>SHALLOW FOCUSED</b><br><b>OHMM</b><br>0.0 500.0<br>0.0 50.0 |
| <b>GAMMA RAY</b><br><b>API UNITS</b><br>150 300<br>0 150 | <b>DEEP CONDUCTIVITY</b><br><b>MHO</b><br>2000 1000<br>1000 0  |

# 1:1200 MAIN SECTION

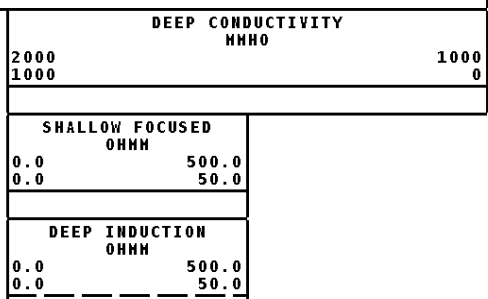
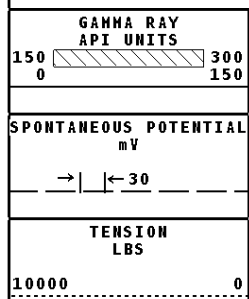








1:1200 MAIN SECTION





***Tucker***  
***ENERGY SERVICES***

Company: VAL ENERGY INC.

Well: K&N #1-10

Location: 480' FNL & 2300' FWL

Logged: 10-07-2015

K.B. Elev: 1342.0 Ft