

# STEP

## energy services

### PHASED INDUCTION SHALLOW FOCUS SP LOG

|                                                                                                                                                                                                                                                                                |                       |                                                                                                                                                                                                                                 |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Company</b> VAL ENERGY, INC<br><b>Well</b> CRUMRINE #1-4<br><b>Field</b> THOMAS<br><b>County</b> KANSAS<br><b>State</b> USA<br><b>Country</b> 15-193-21051-0000<br><b>API No.</b>                                                                                           |                       | <b>File No</b> : TUL-70324<br><b>Company</b> : VAL ENERGY, INC<br><b>Well</b> : CRUMRINE #1-4<br><b>Field</b> :<br><b>County</b> : THOMAS<br><b>State</b> : KANSAS<br><b>Country</b> : USA<br><b>API No</b> : 15-193-21051-0000 |  |
| <b>Location</b> :<br>788' FSL & 1414' FWL<br>SW NW SE SW                                                                                                                                                                                                                       |                       | <b>LSD</b> : <b>Sect</b> : 4 <b>Twp</b> : 8S <b>Rge</b> : 36W                                                                                                                                                                   |  |
| <b>Permanent Datum:</b><br><b>Drilling Measured From:</b> GL KB <b>Elevations:</b> KB 3330.00      Ft <b>Services:</b> CNT      PIT<br><b>Log Measured From:</b> KB      DF 3329.00      Ft      LDT<br><b>Above Permanent Datum:</b> 5.00 Ft      GL 3325.00      Ft      MLT |                       |                                                                                                                                                                                                                                 |  |
| <b>Date</b>                                                                                                                                                                                                                                                                    | 08-06-2019            |                                                                                                                                                                                                                                 |  |
| <b>Run Number</b>                                                                                                                                                                                                                                                              | 1                     |                                                                                                                                                                                                                                 |  |
| <b>Depth--Driller</b>                                                                                                                                                                                                                                                          | 4880.0 Ft             |                                                                                                                                                                                                                                 |  |
| <b>Depth--Logger</b>                                                                                                                                                                                                                                                           | 4878.0 Ft             |                                                                                                                                                                                                                                 |  |
| <b>First Reading</b>                                                                                                                                                                                                                                                           | 4878.0 Ft             |                                                                                                                                                                                                                                 |  |
| <b>Last Reading</b>                                                                                                                                                                                                                                                            | 285.0 Ft              |                                                                                                                                                                                                                                 |  |
| <b>Casing--Driller</b>                                                                                                                                                                                                                                                         | 285.0 Ft              |                                                                                                                                                                                                                                 |  |
| <b>Casing--Logger</b>                                                                                                                                                                                                                                                          | 285.0 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>                                                                                                                                                                                                                                                              | 8.0                   |                                                                                                                                                                                                                                 |  |
| <b>PH/Viscosity</b>                                                                                                                                                                                                                                                            | 11.0      59.0        |                                                                                                                                                                                                                                 |  |
| <b>Sample Source</b>                                                                                                                                                                                                                                                           | MEASURED              |                                                                                                                                                                                                                                 |  |
| <b>RM@Measured Temp.</b>                                                                                                                                                                                                                                                       | 0.500 @ 70 F          |                                                                                                                                                                                                                                 |  |
| <b>RMF@Measured Temp</b>                                                                                                                                                                                                                                                       | 0.400 @ 70 F          |                                                                                                                                                                                                                                 |  |
| <b>RMG@Measured Temp.</b>                                                                                                                                                                                                                                                      | 0.600 @ 70 F          |                                                                                                                                                                                                                                 |  |
| <b>Source RMF/RMC</b>                                                                                                                                                                                                                                                          | CALCULATED/CALCULATED |                                                                                                                                                                                                                                 |  |
| <b>RM@BHT</b>                                                                                                                                                                                                                                                                  | 0.290 @ 125 F         |                                                                                                                                                                                                                                 |  |
| <b>Time Circulation Stopped</b>                                                                                                                                                                                                                                                | 08-06-2019 19:30      |                                                                                                                                                                                                                                 |  |
| <b>Max Recorded Temp.</b>                                                                                                                                                                                                                                                      | 125 F                 |                                                                                                                                                                                                                                 |  |
| <b>Equipment/Base</b>                                                                                                                                                                                                                                                          | 1022 TULSA, OK        |                                                                                                                                                                                                                                 |  |
| <b>Recorded By</b>                                                                                                                                                                                                                                                             | SHELDON TYLER         |                                                                                                                                                                                                                                 |  |
| <b>Witnessed By</b>                                                                                                                                                                                                                                                            | TIM PRIEST            |                                                                                                                                                                                                                                 |  |

The customer is hereby warned that by providing the log data herein, STEP Energy Services does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. STEP Energy Services 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 STEP Energy Services 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 STEP Energy Services 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             | 4880.00     | 8.625          | 32.00        | 285.00      | 0.00     |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |

|                            |                  |  |
|----------------------------|------------------|--|
| <b>Run Number</b>          | 1                |  |
| <b>Date</b>                | 08-06-2019       |  |
| <b>Date/Time On Bottom</b> | 08-06-2019 22:30 |  |
| <b>Depth to Fluid</b>      | 0.0 Ft           |  |
| <b>Salinity</b>            | 5800.000         |  |
| <b>RMF@BHT</b>             | 0.230 @ 125 F    |  |
| <b>RMC@BHT</b>             | 0.350 @ 125 F    |  |

ALL PRESENTATIONS AS PER CUSTOMER REQUEST  
 GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION  
 CALIPERS ORIENTED ON X-Y AXIS  
 2.71 G/CC USED TO CALCULATE POROSITY  
 ANNULAR HOLE VOLUME CALCULATED USING 5.5" PRODUCTION CASING  
 PHIN IS CALIPER CORRECTED

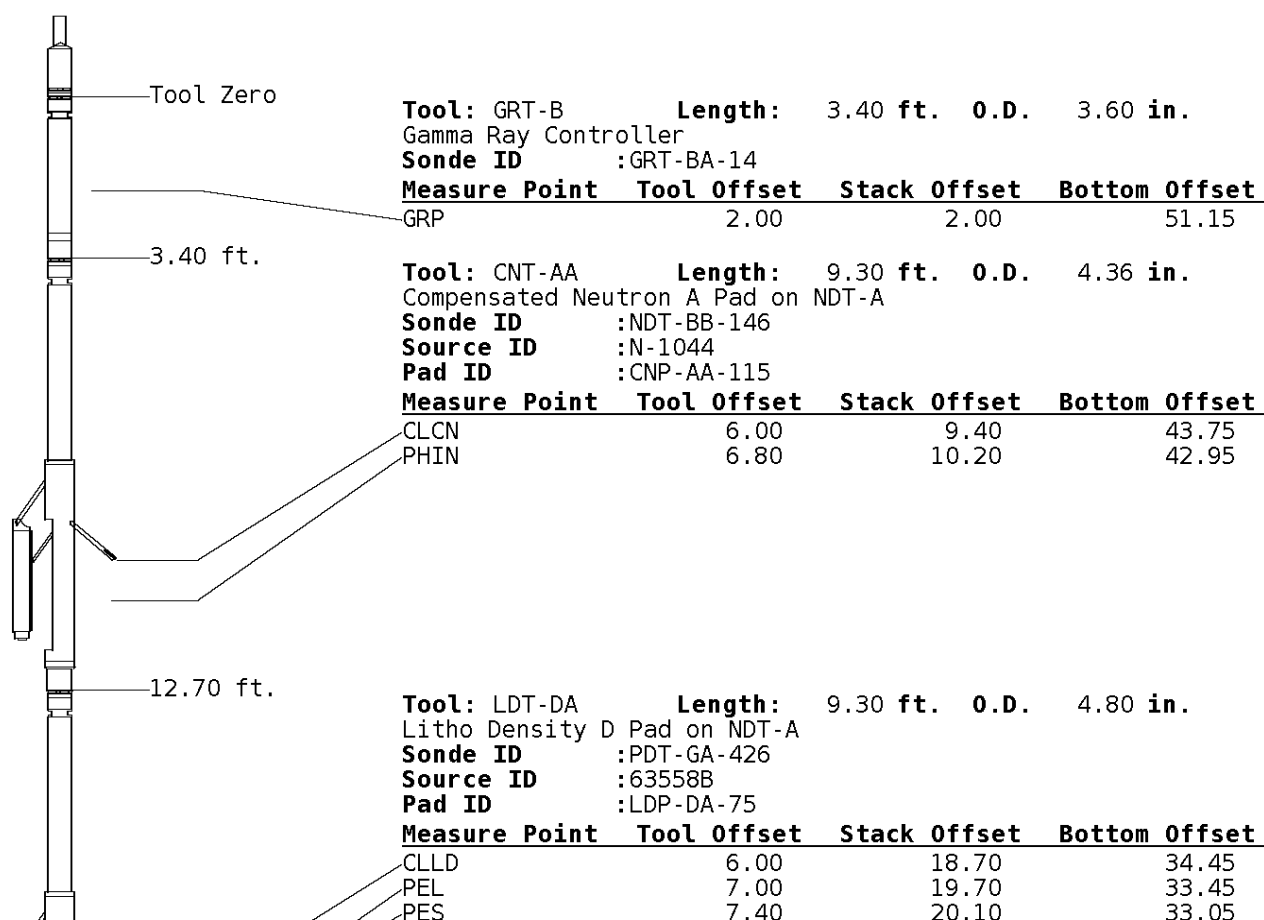
CUSTOMER REQUESTED DETAIL PULLED TO 3900'

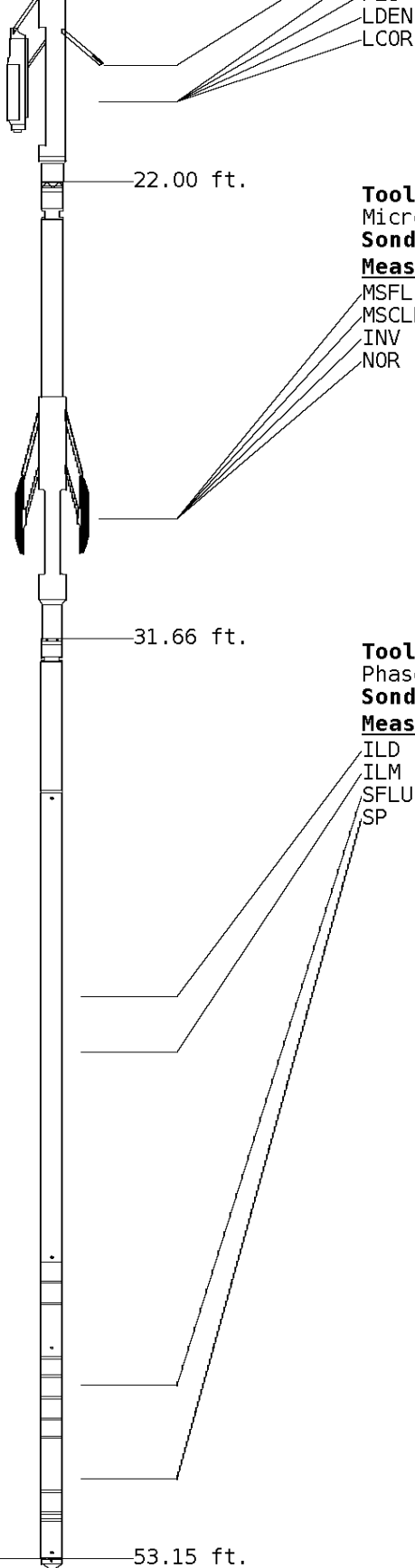
GRT: GRP, GRX  
 CNT: PHIN, CLCNIN, PHXN  
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN, PRXL, PECLX, LDENNX, LCORX  
 MLT: NOR\_RF, INV\_RF, MSCLPIN  
 PIT: ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS:  
 K.WARREN

## Tool String Schematic

**Total Tool Length** - 53.15 ft.  
**Maximum Outside diameter** - 6.00 in.  
**Net Weight in Air** - 943.00 lbs.





**Tool:** MST-DA      **Length:** 9.66 ft.    **O.D.** 6.00 in.  
 Micro Spherically Focused (IC)  
**Sonde ID** :MST-DA-024

| Measure Point | Tool Offset | Stack Offset | Bottom Offset |
|---------------|-------------|--------------|---------------|
| MSFL          | 7.60        | 29.60        | 23.55         |
| MSCLP         | 7.60        | 29.60        | 23.55         |
| INV           | 7.60        | 29.60        | 23.55         |
| NOR           | 7.60        | 29.60        | 23.55         |

**Tool:** PIT-CA      **Length:** 21.49 ft.    **O.D.** 3.62 in.  
 Phased Dual Induction w/ RM & D  
**Sonde ID** :PIT-CA-069

| Measure Point | Tool Offset | Stack Offset | Bottom Offset |
|---------------|-------------|--------------|---------------|
| ILD           | 8.92        | 40.58        | 12.56         |
| ILM           | 10.10       | 41.76        | 11.39         |
| SFLU          | 17.49       | 49.15        | 4.00          |
| SP            | 20.60       | 52.26        | 0.88          |

**Well File:** VAL ENERGY CRUMRINE 1-4 AUGUST6\_MSTK

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

**Segment:** V1.D1.S5 Reprocess of MAIN

**Acquired:** 2019-08/06 22:52 3.4.1-13968

**Reference:** 0

**Processed:** 2019-08/07 00:05 3.4.1-13968

**TENSION**  
LBS

10000

0

**DEEP INDUCTION**  
OHMM

0.0

500.0

0.0

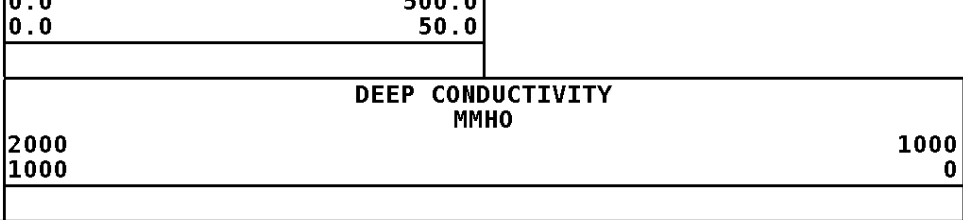
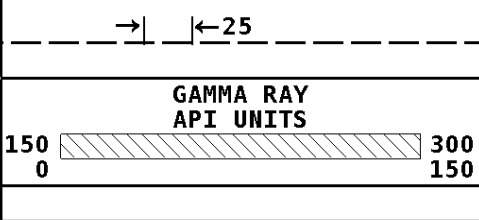
50.0

**SPONTANEOUS POTENTIAL**  
mV

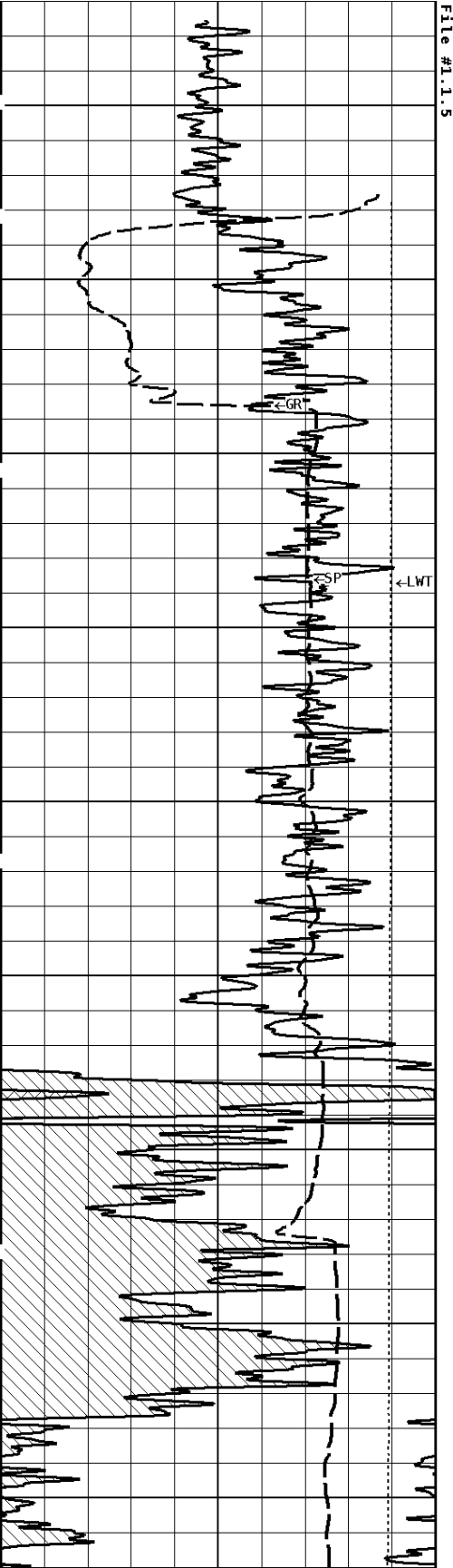
**SHALLOW FOCUSED RESISTIVITY**  
OHMM

0.0

500.0



1:600 MAIN SECTION

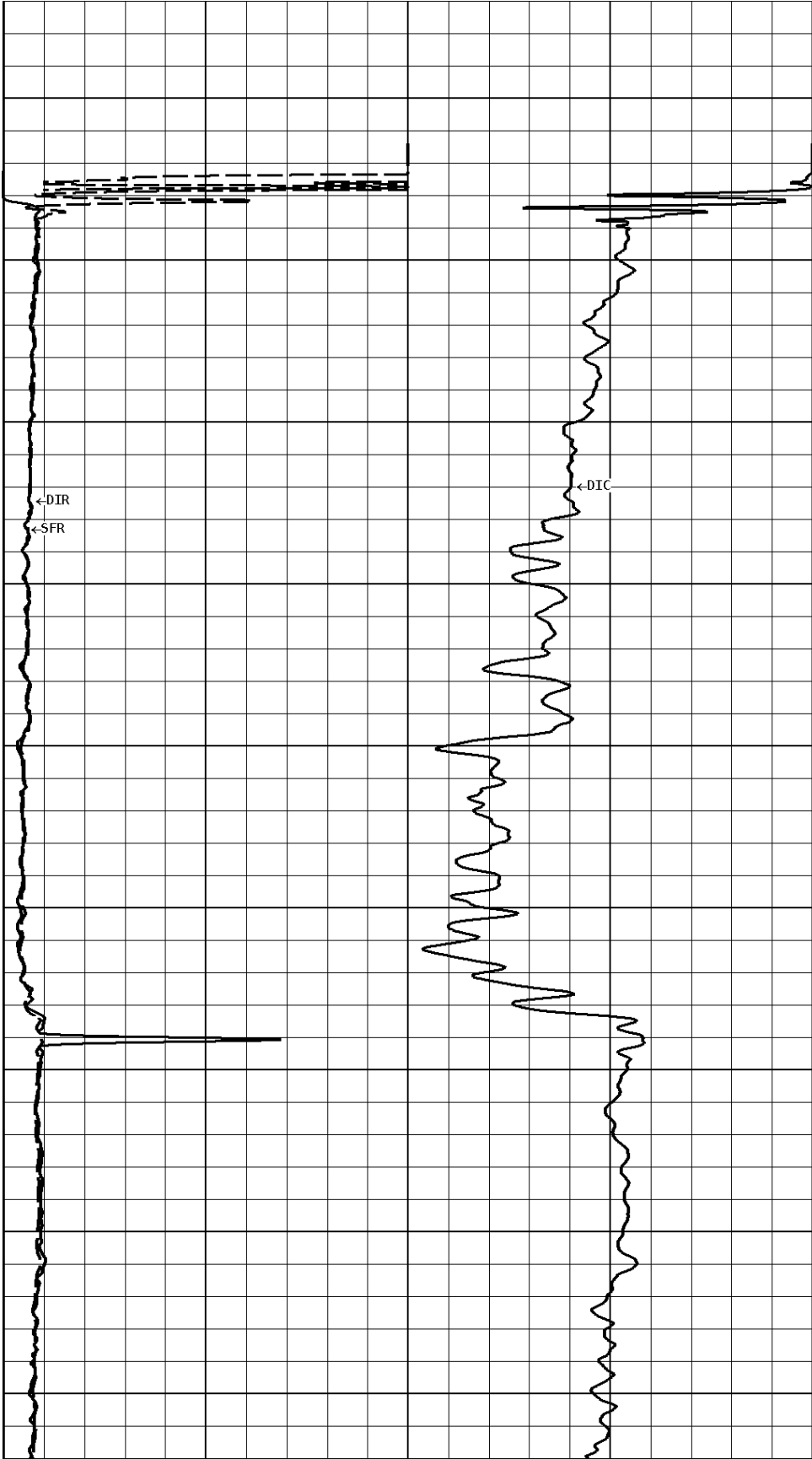


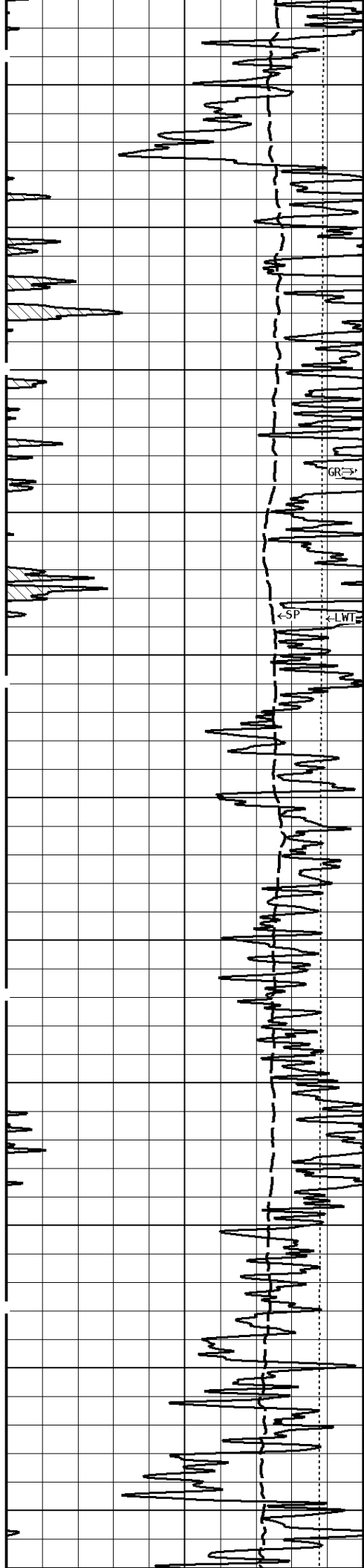
300

400

500

600





700

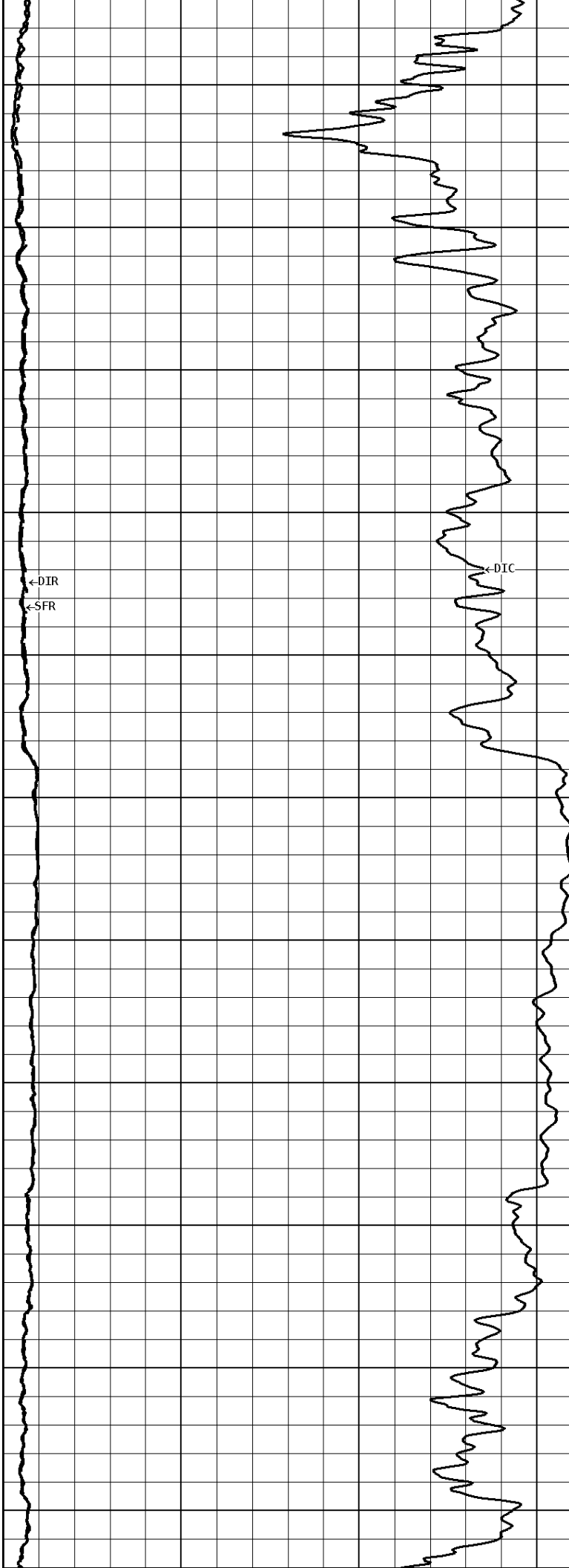
800

900

1000

1100

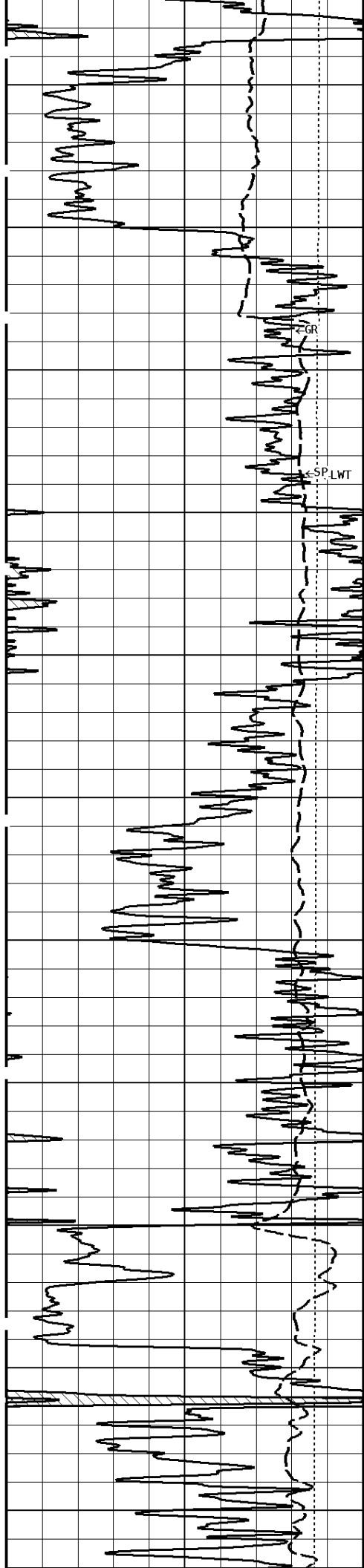
1200



←DIR

←SFR

←DIC



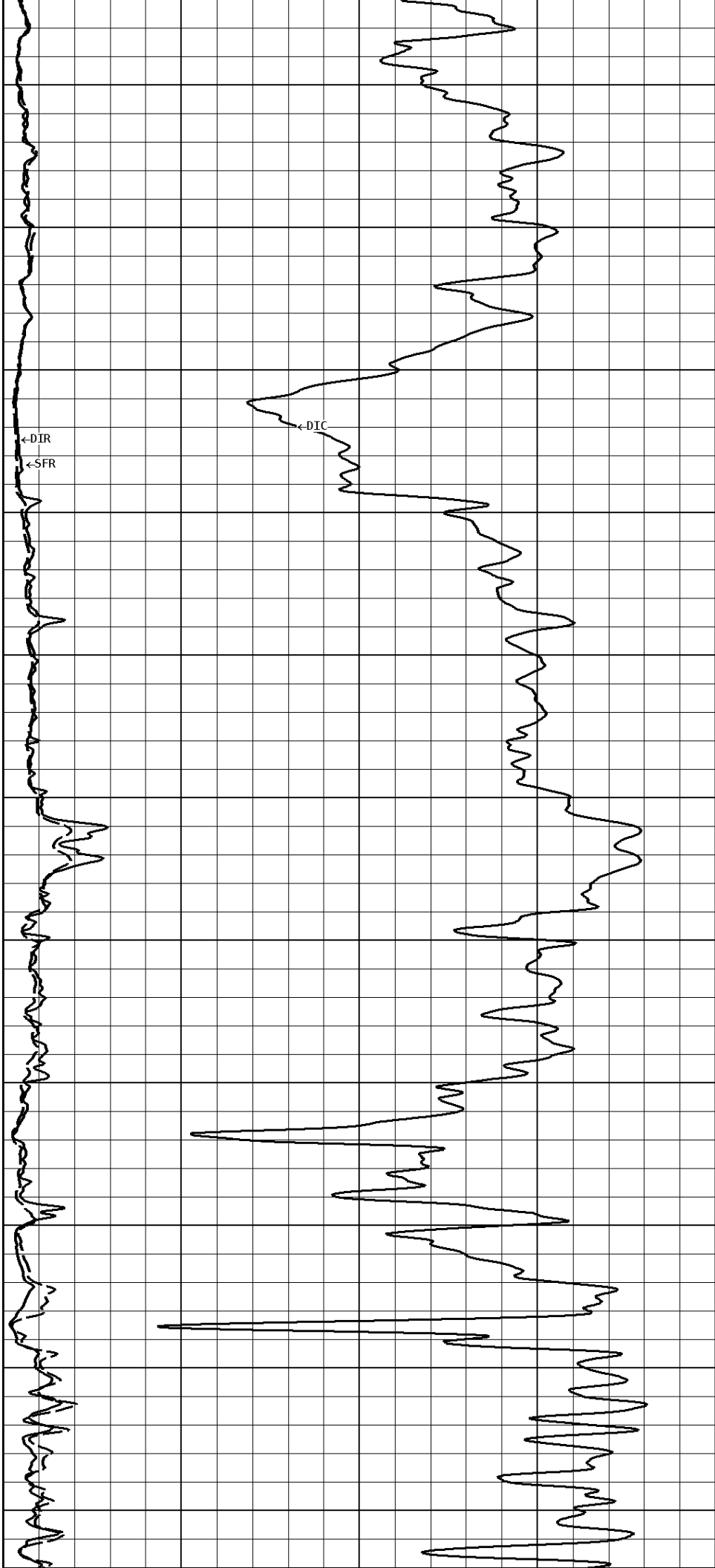
1300

1400

1500

1600

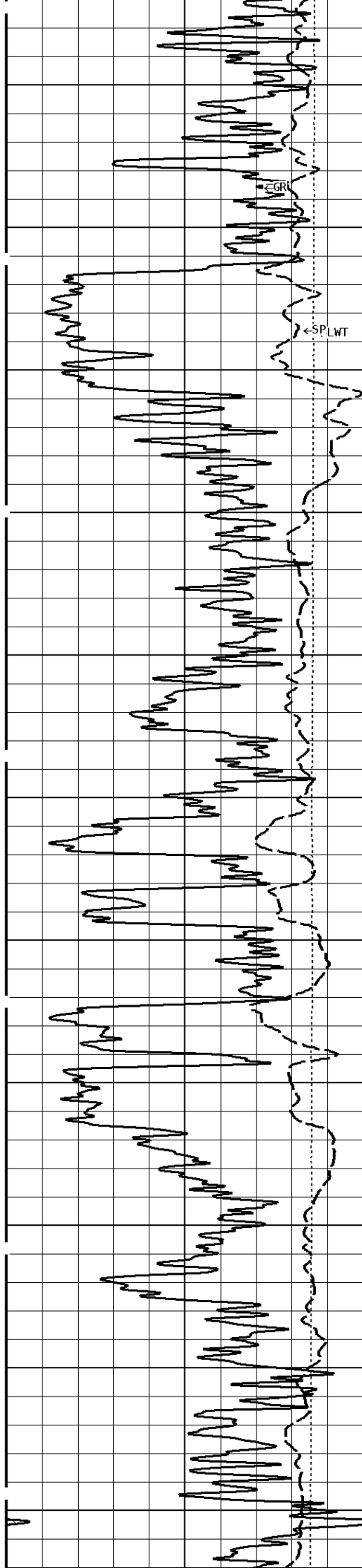
1700



←DIR

←SFR

←DIC



1800

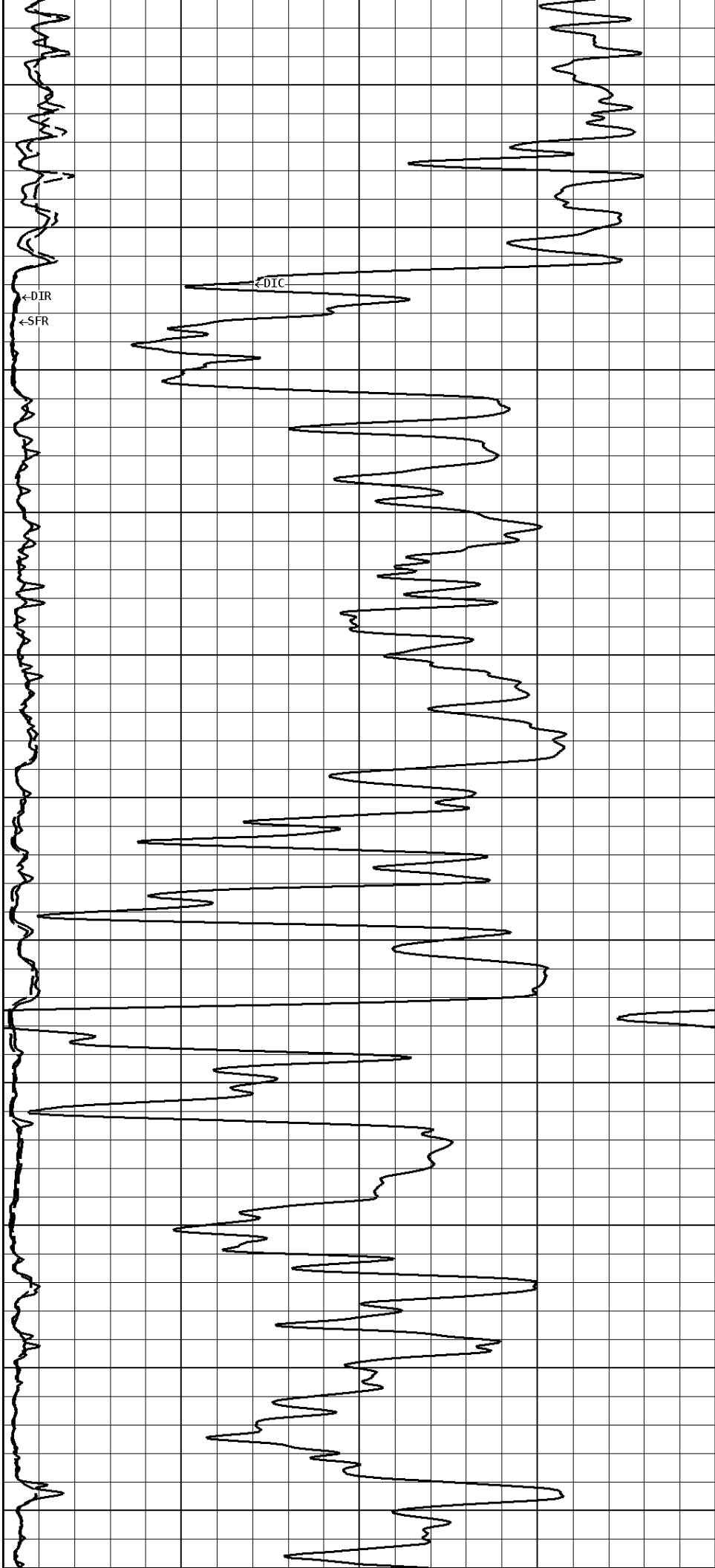
1900

2000

2100

2200

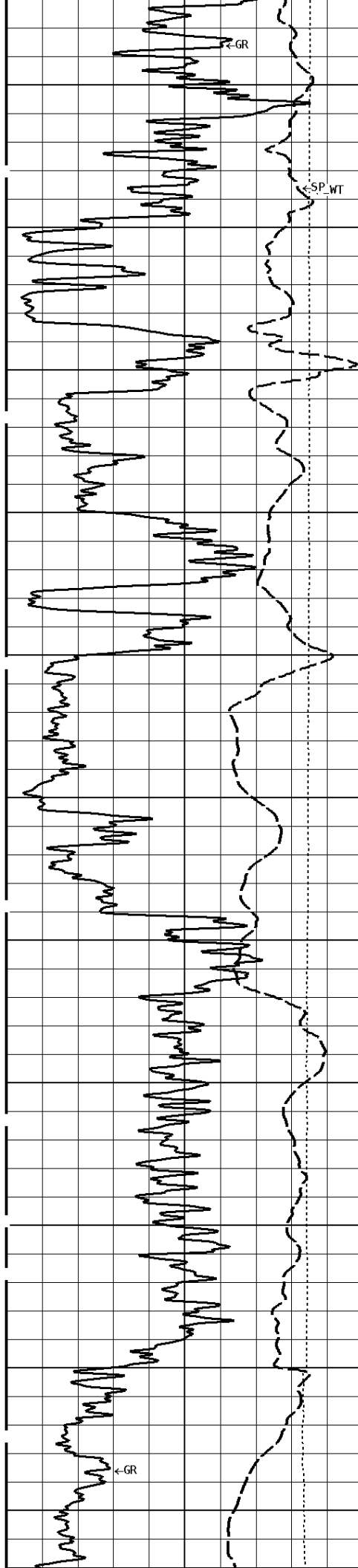
2300



←DIC

←DIR

←SFR



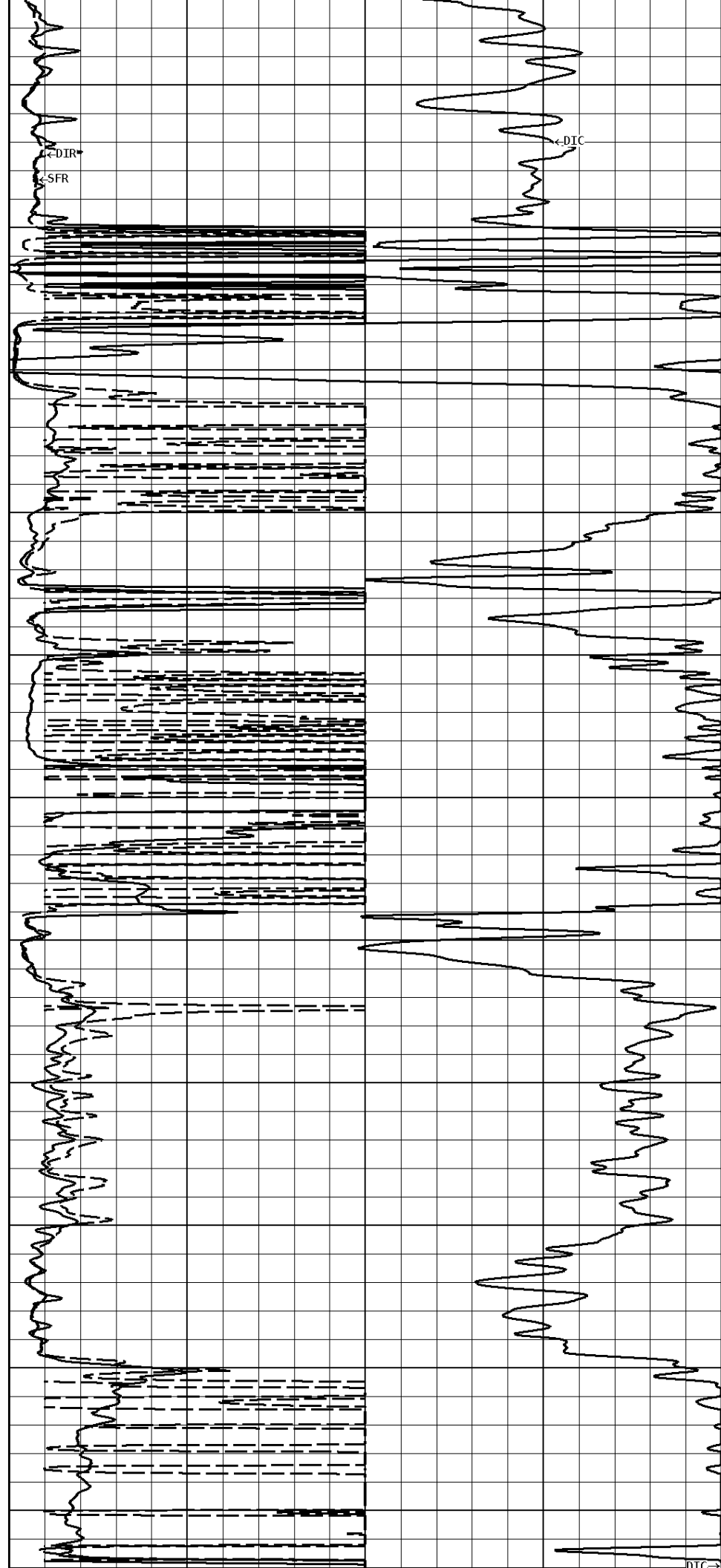
2400

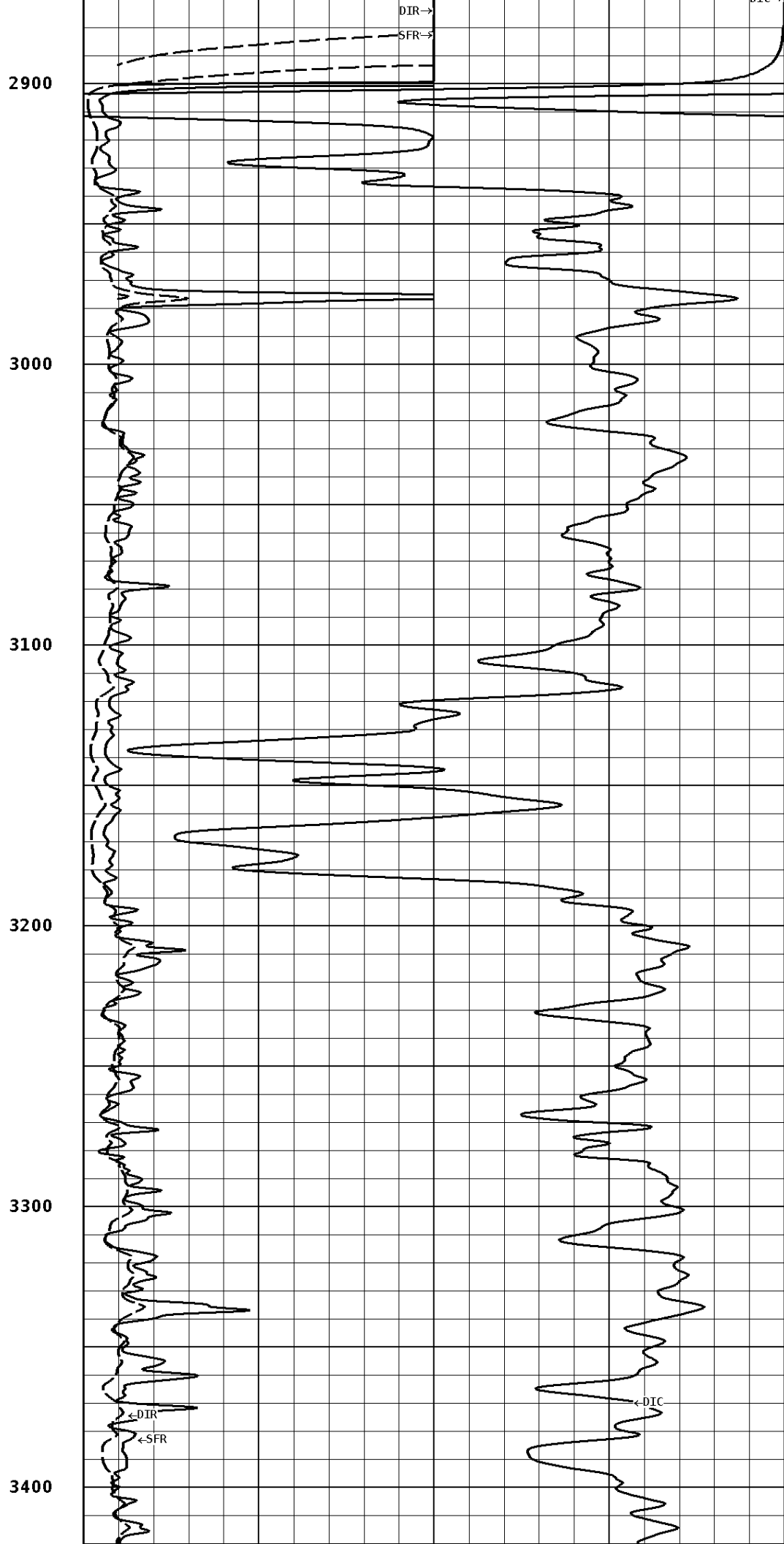
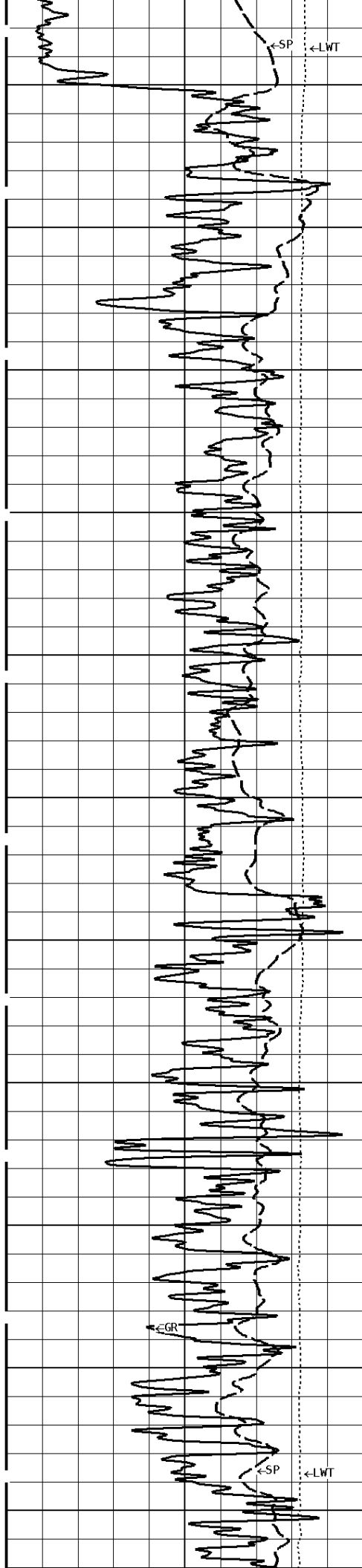
2500

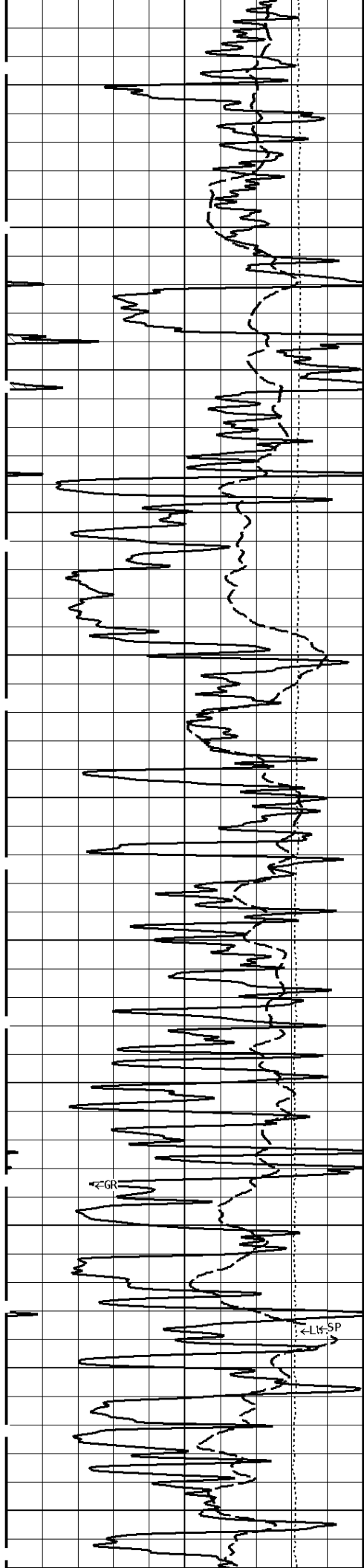
2600

2700

2800







3500

3600

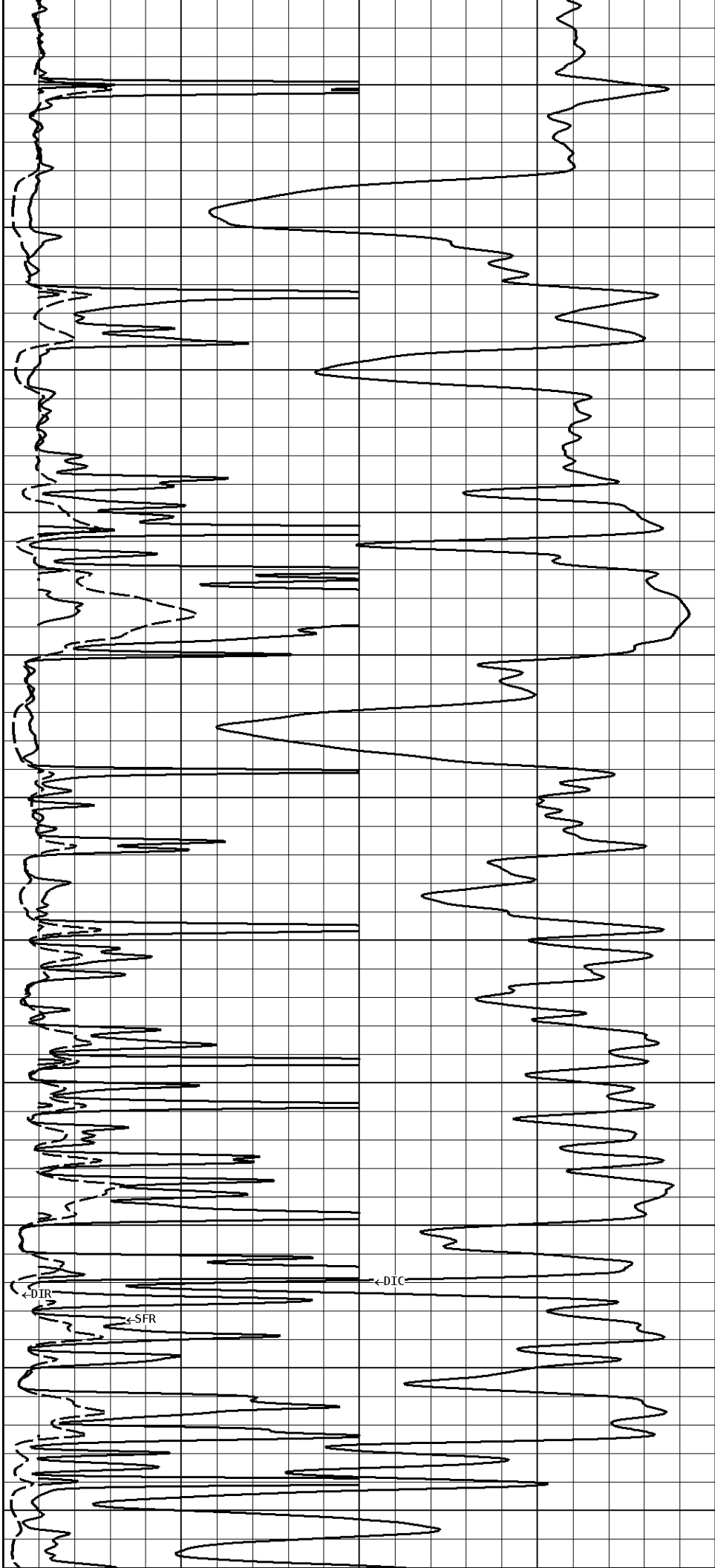
3700

3800

3900

←GR

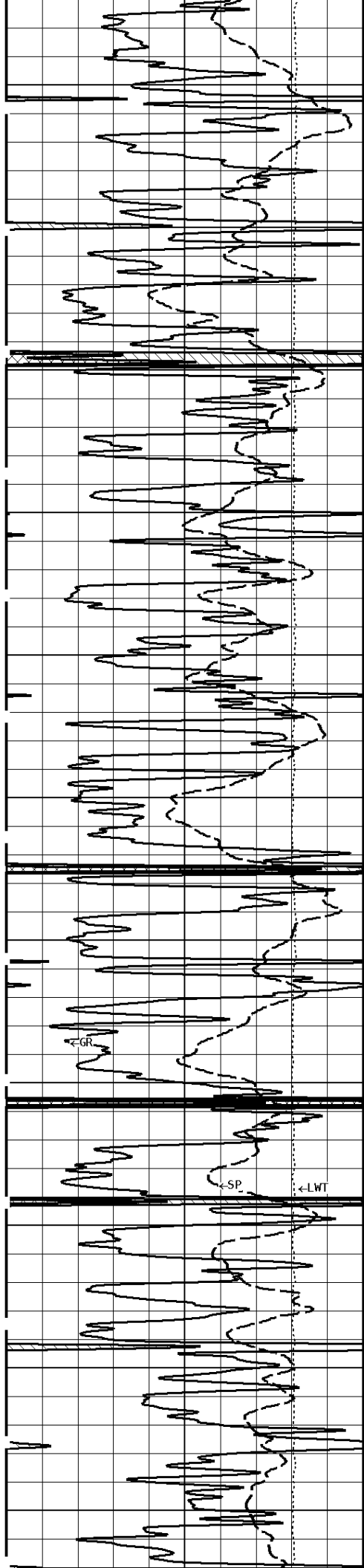
←LW-SP



←DTR

←SFR

←DIC



4000

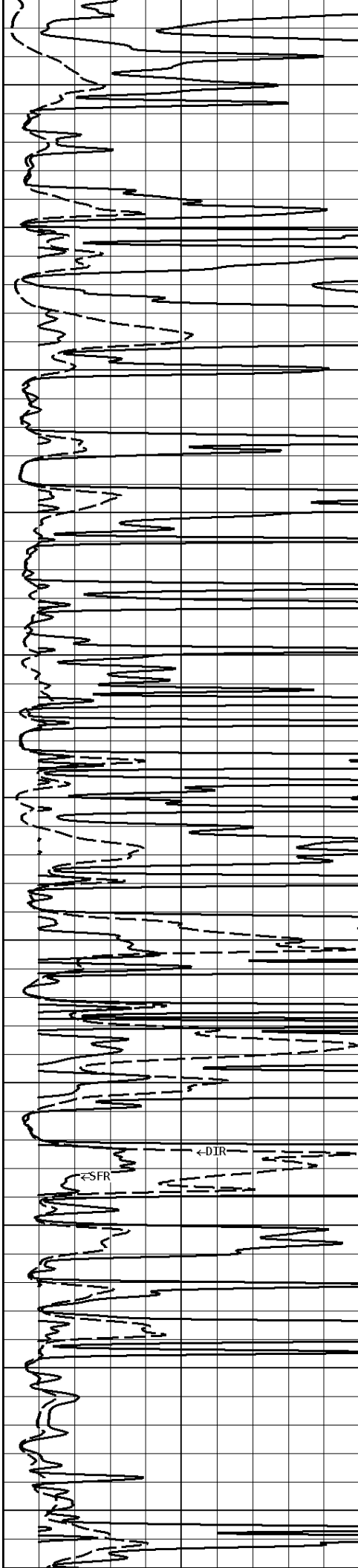
4100

4200

4300

4400

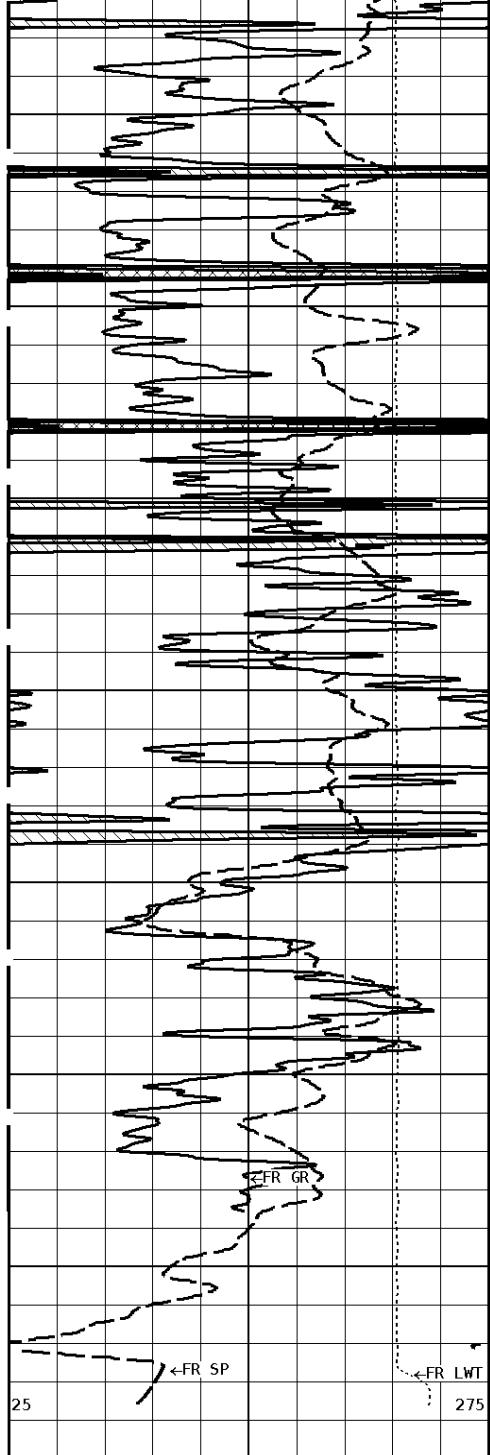
4500



←SFR

←DIR

←DTC



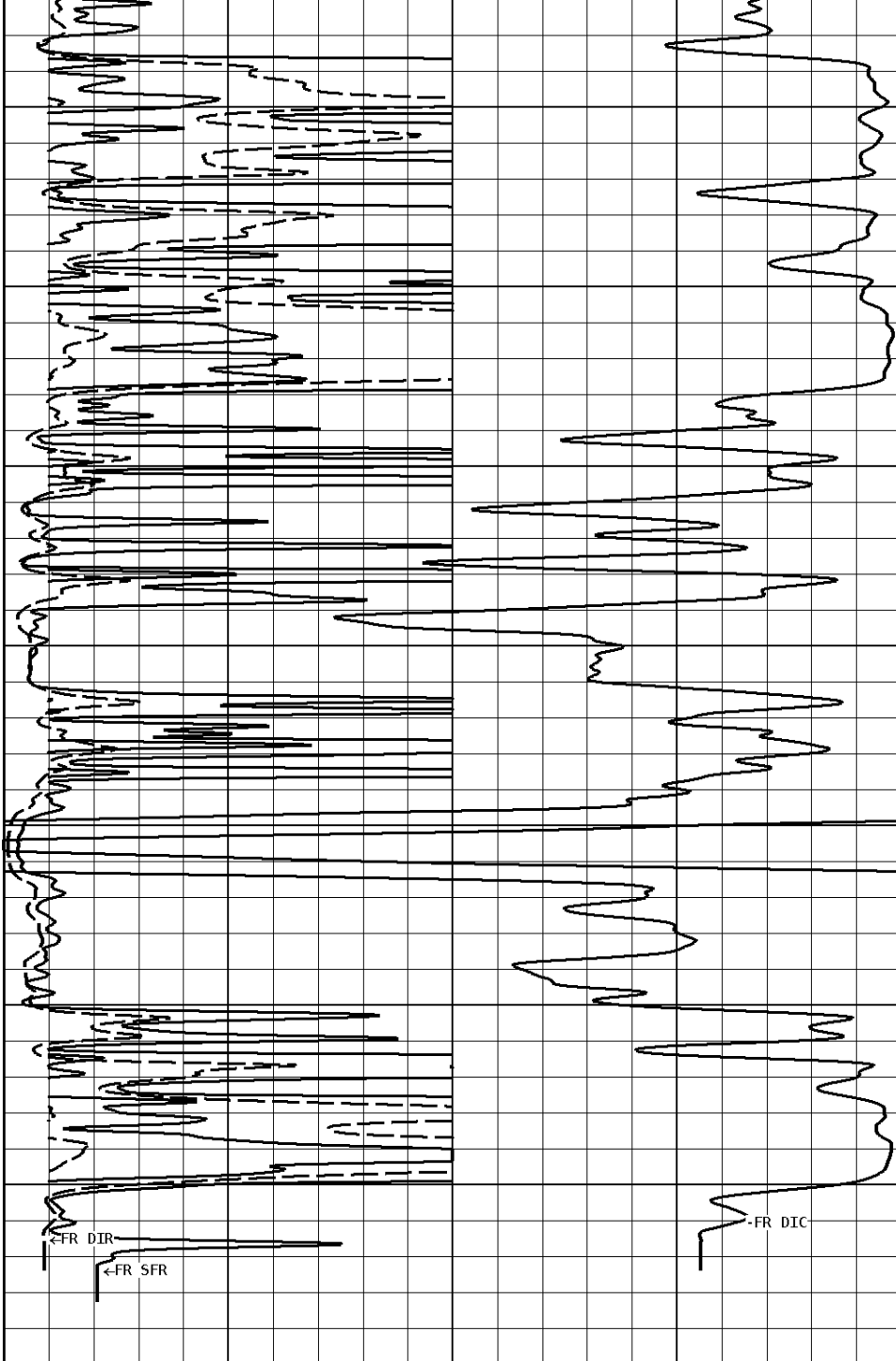
4600

4700

4800

4878

## 1:600 MAIN SECTION



←FR DIR

←FR SFR

←FR DIC

GAMMA RAY  
API UNITS

150 0 300 150

SPONTANEOUS POTENTIAL  
mV

→ | ←25

TENSION  
LBS

10000 0

DEEP CONDUCTIVITY  
MMHO

2000  
1000

1000  
0

SHALLOW FOCUSED RESISTIVITY  
OHMM

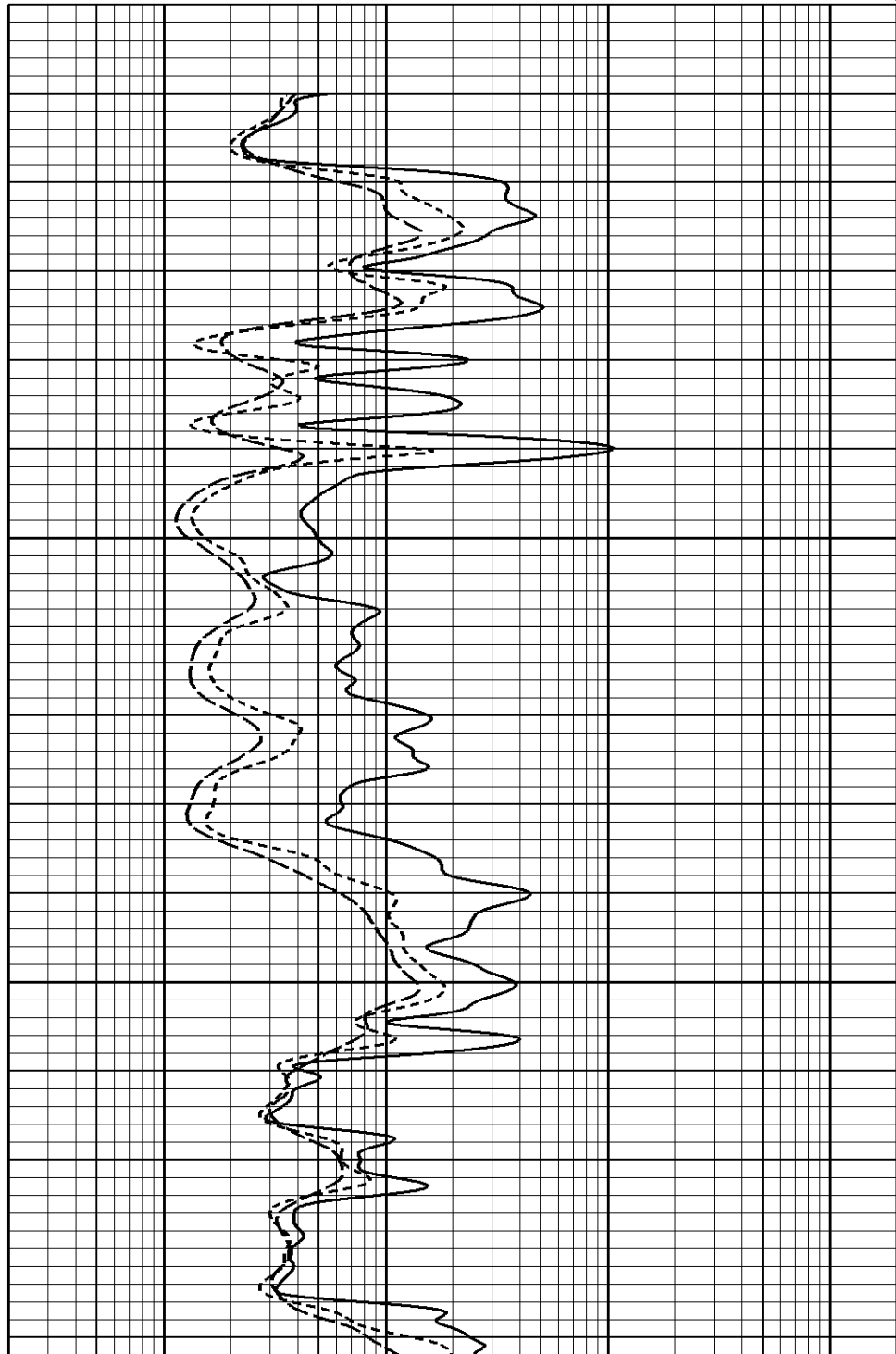
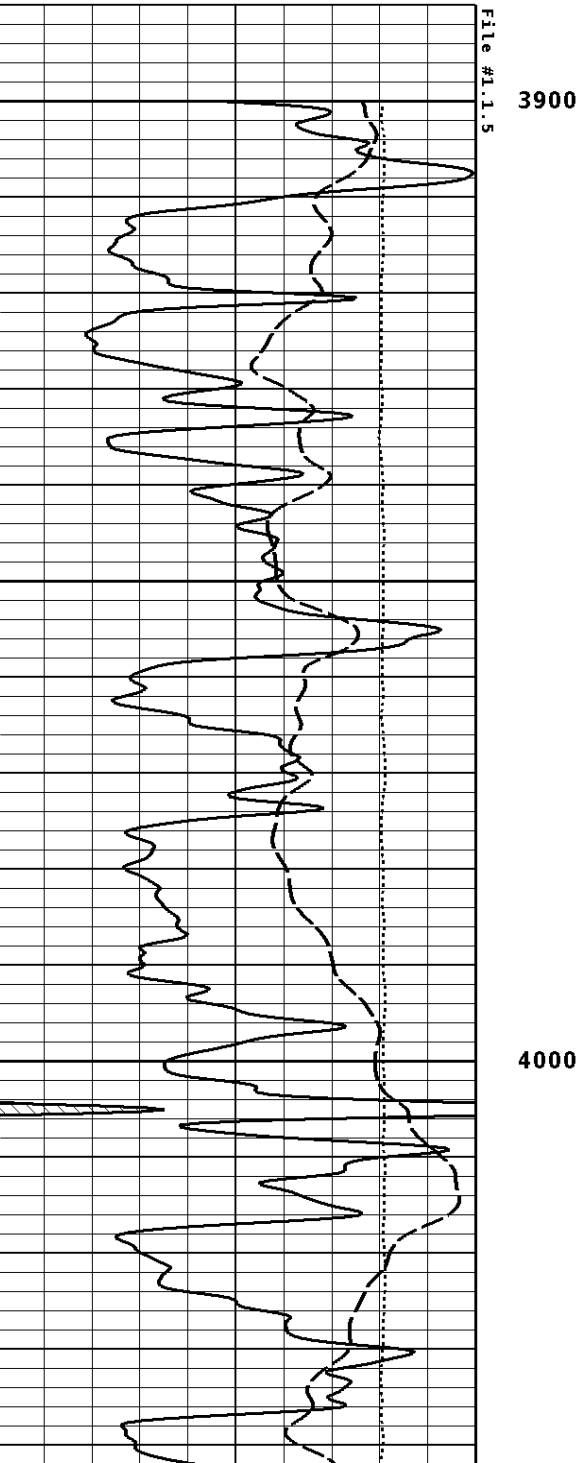
0.0 500.0  
0.0 50.0

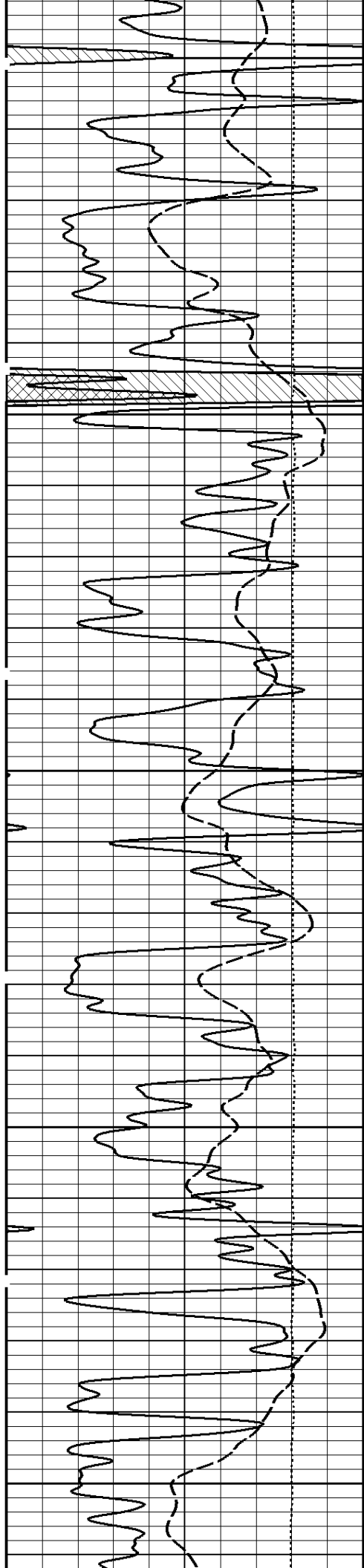
DEEP INDUCTION  
OHMM

0.0 500.0  
0.0 50.0

|                             |  |                                     |  |
|-----------------------------|--|-------------------------------------|--|
| SPONTANEOUS POTENTIAL<br>mV |  | DEEP INDUCTION<br>OHMM              |  |
| →   ← 25                    |  | 0.2 2000.0                          |  |
| TENSION<br>LBS              |  | MEDIUM INDUCTION<br>OHMM            |  |
| 10000 0                     |  | 0.2 2000.0                          |  |
| GAMMA RAY<br>API UNITS      |  | SHALLOW FOCUSED RESISTIVITY<br>OHMM |  |
| 150 0 300 150               |  | 0.2 2000.0                          |  |

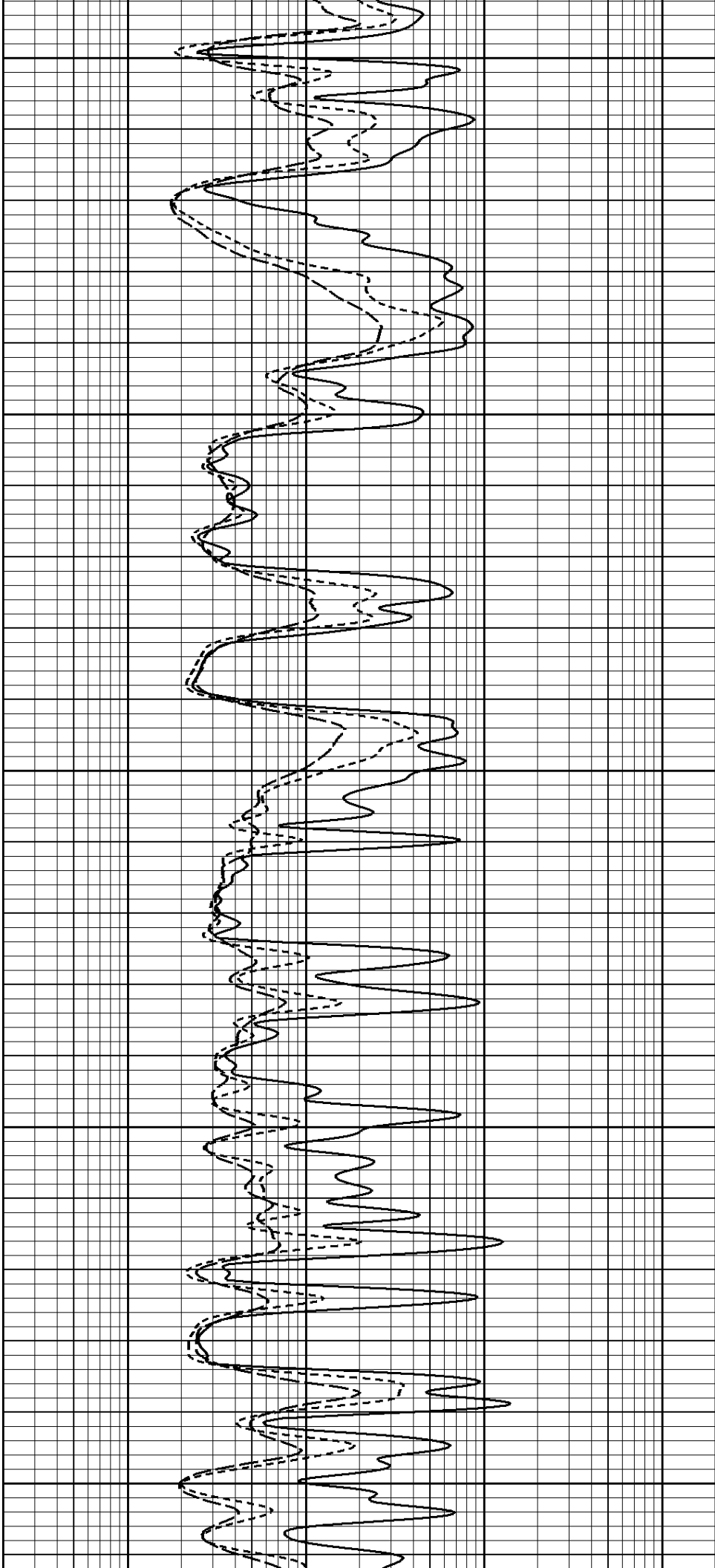
1:240 MAIN SECTION

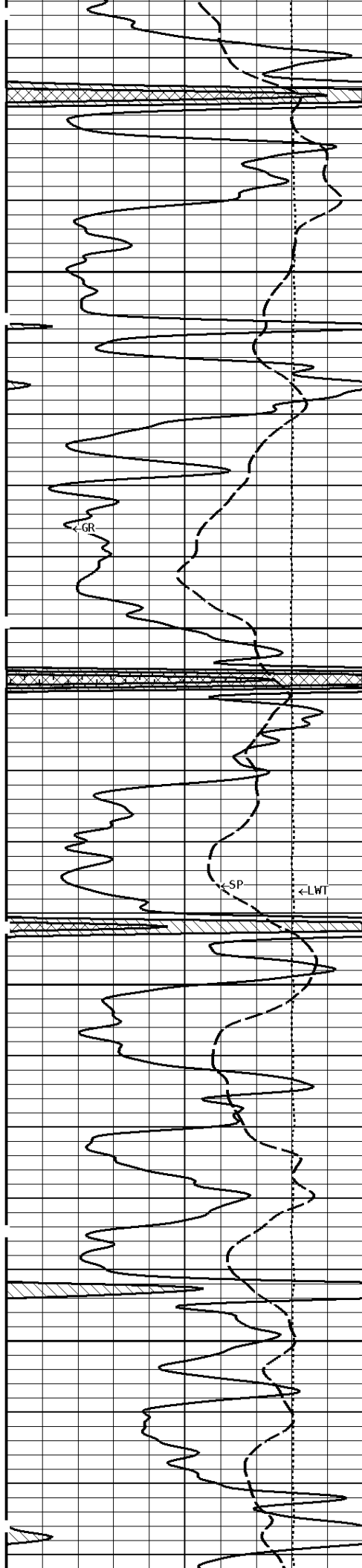




4100

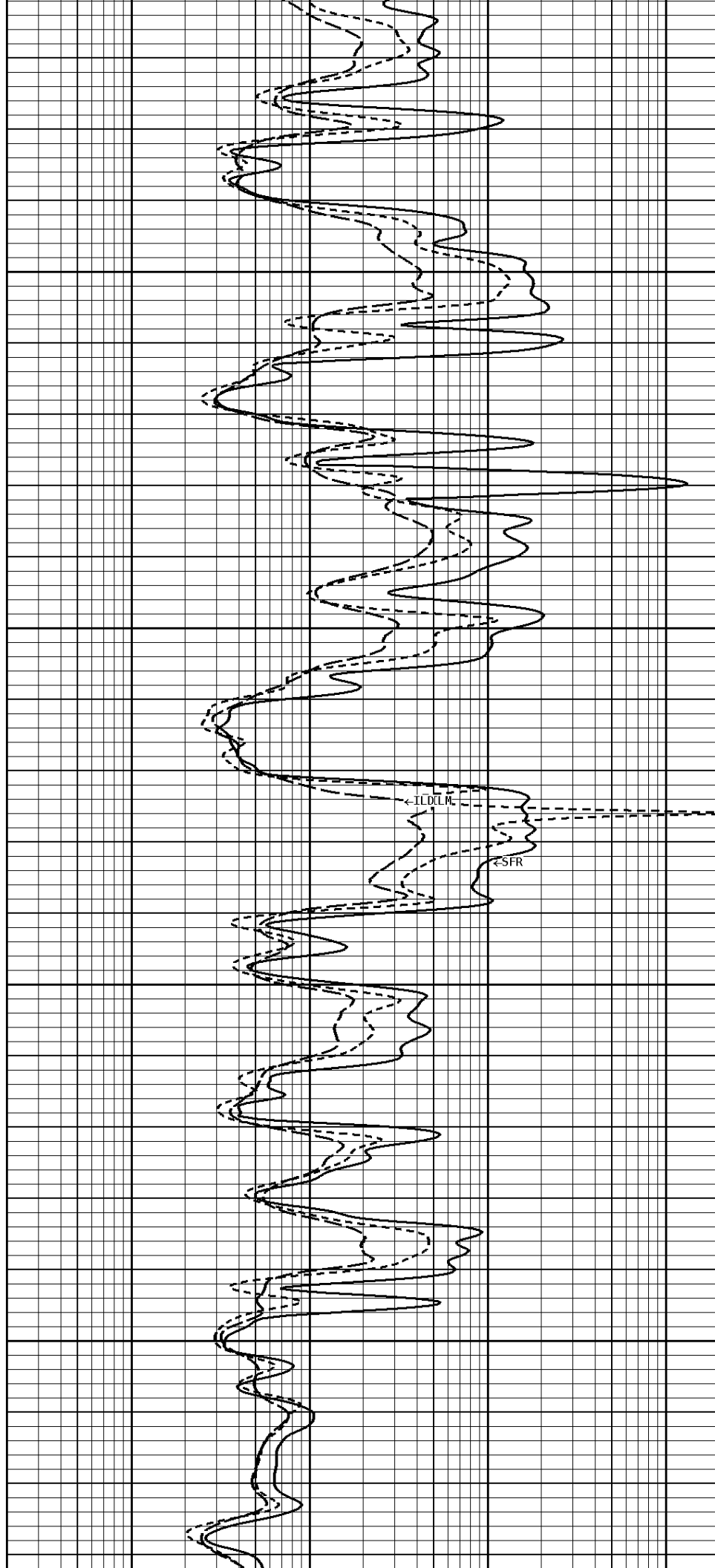
4200

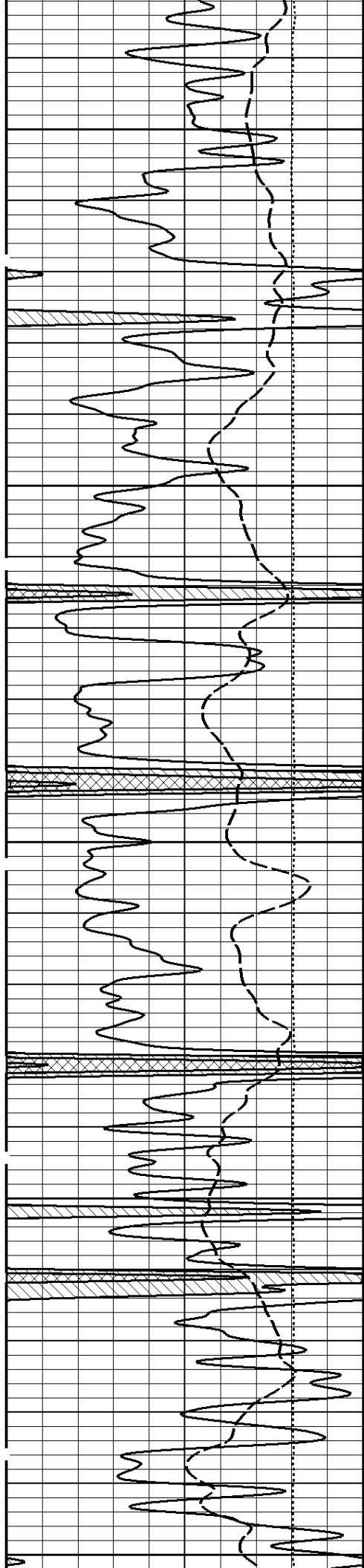




4300

4400

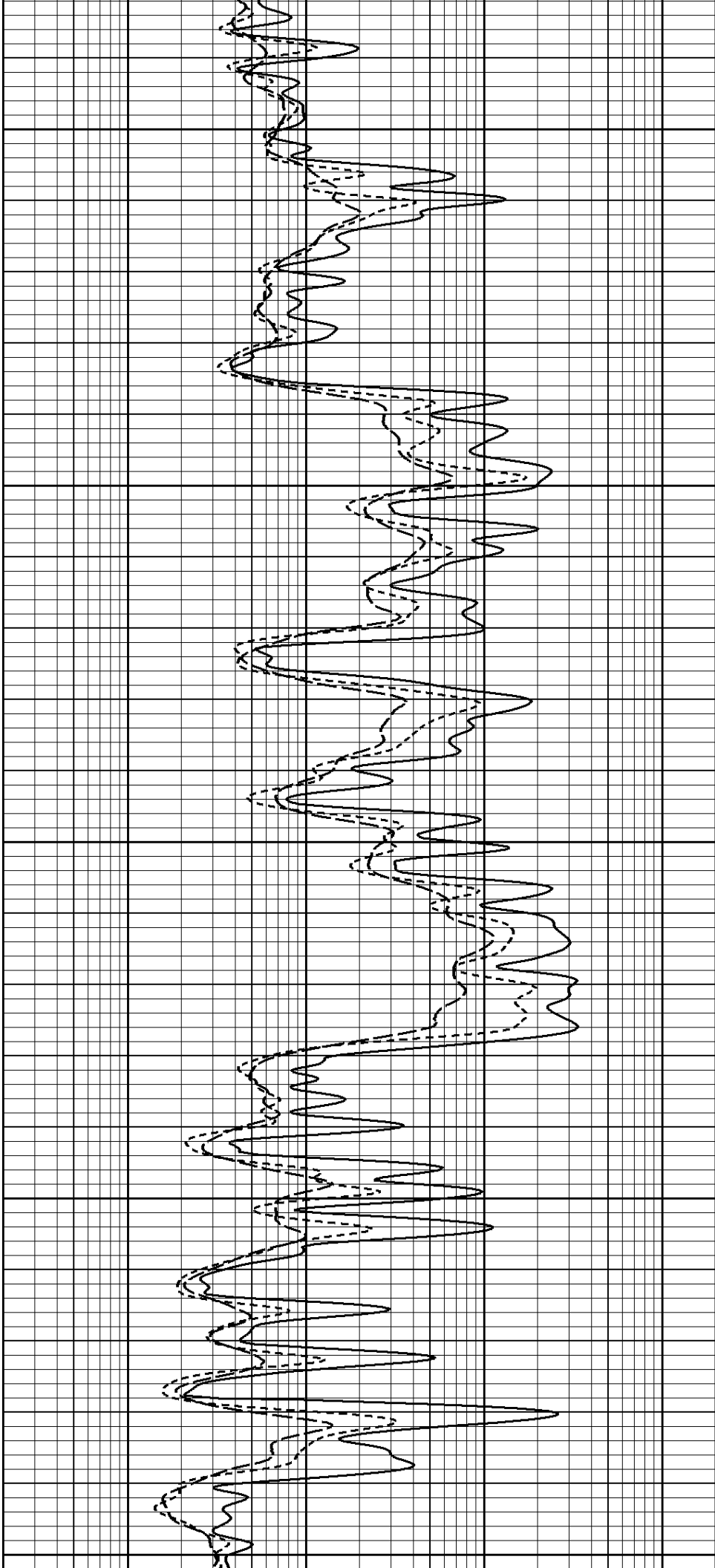


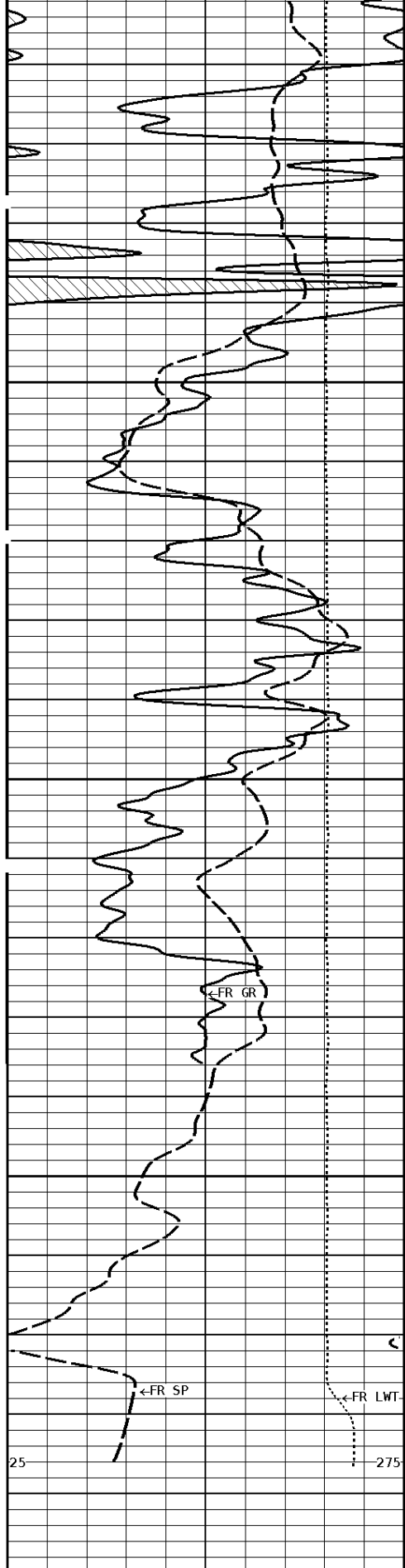


4500

4600

4700

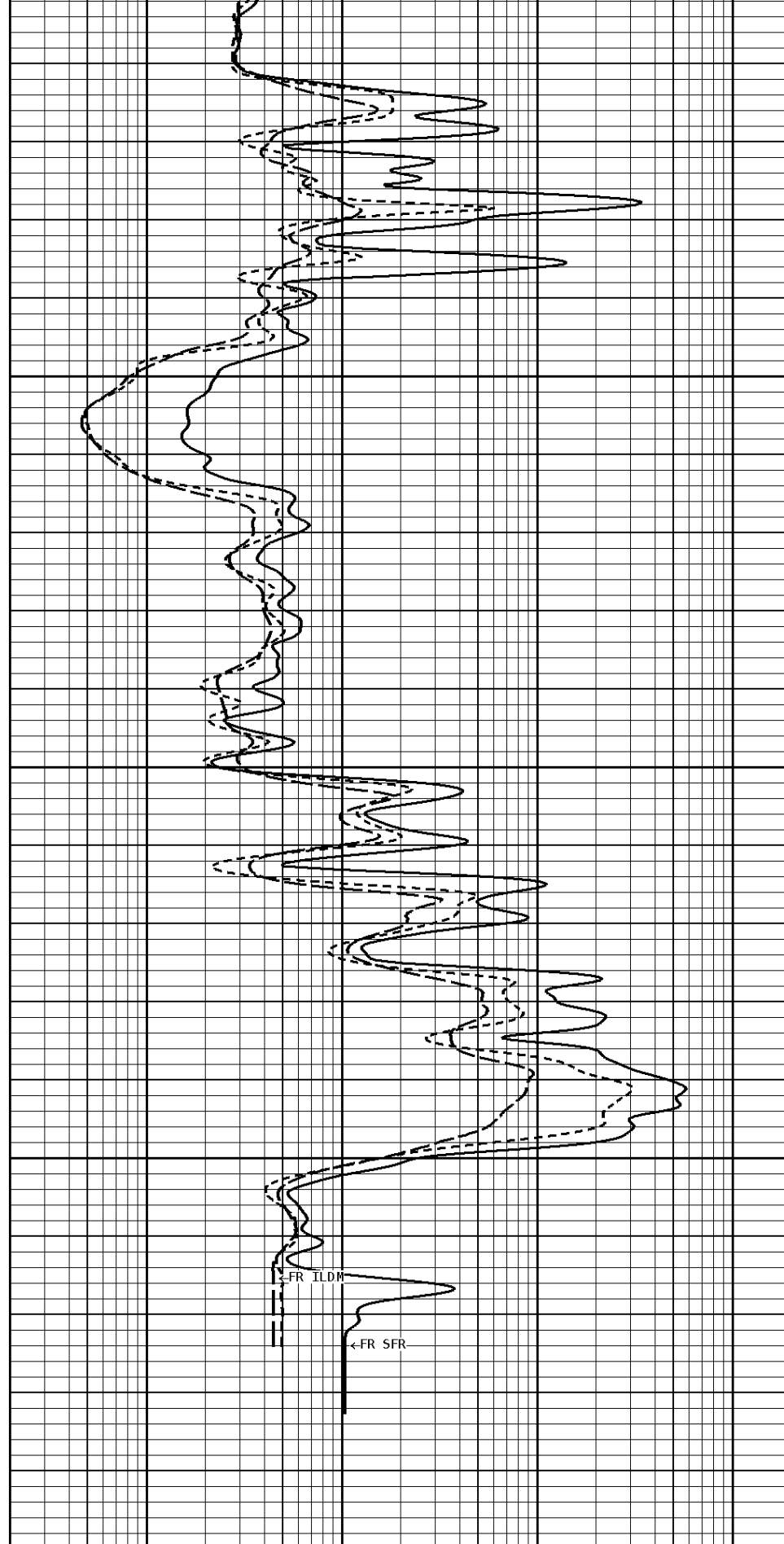




4800

4878

# 1:240 MAIN SECTION



GAMMA RAY  
API UNITS

SHALLOW FOCUSED RESISTIVITY  
OHMM

|                                                                                                                                                                                                                                                                                                                                                                           |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <div style="display: flex; justify-content: space-between;"> <span>150</span> <span>300</span> </div> <div style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); width: 100%; height: 10px; margin: 2px 0;"></div> <div style="display: flex; justify-content: space-between;"> <span>0</span> <span>150</span> </div> |  |
| <b>TENSION</b><br>LBS                                                                                                                                                                                                                                                                                                                                                     |  |
| <div style="display: flex; justify-content: space-between;"> <span>10000</span> <span>0</span> </div> <hr style="border-top: 1px dashed black;"/>                                                                                                                                                                                                                         |  |
| <b>SPONTANEOUS POTENTIAL</b><br>mV                                                                                                                                                                                                                                                                                                                                        |  |
| <div style="display: flex; justify-content: space-around;"> <span>→</span> <span>←25</span> </div> <hr style="border-top: 1px dashed black;"/>                                                                                                                                                                                                                            |  |

|                                                                                                                                                      |        |
|------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 0.2                                                                                                                                                  | 2000.0 |
| <b>MEDIUM INDUCTION</b><br>OHMM                                                                                                                      |        |
| <div style="display: flex; justify-content: space-between;"> <span>0.2</span> <span>2000.0</span> </div> <hr style="border-top: 1px dashed black;"/> |        |
| <b>DEEP INDUCTION</b><br>OHMM                                                                                                                        |        |
| <div style="display: flex; justify-content: space-between;"> <span>0.2</span> <span>2000.0</span> </div> <hr style="border-top: 1px dashed black;"/> |        |

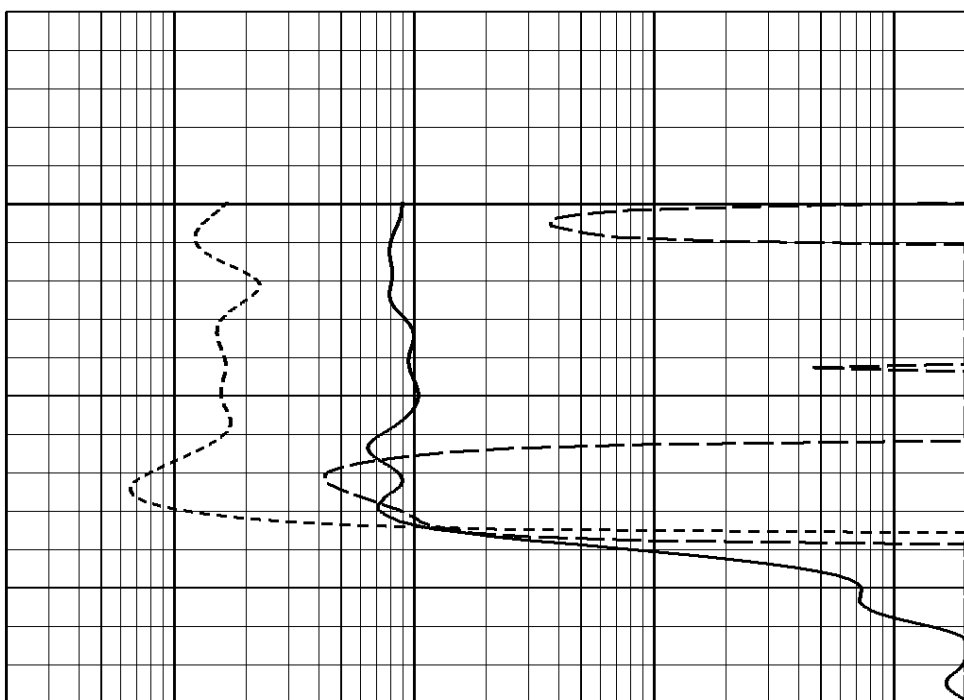
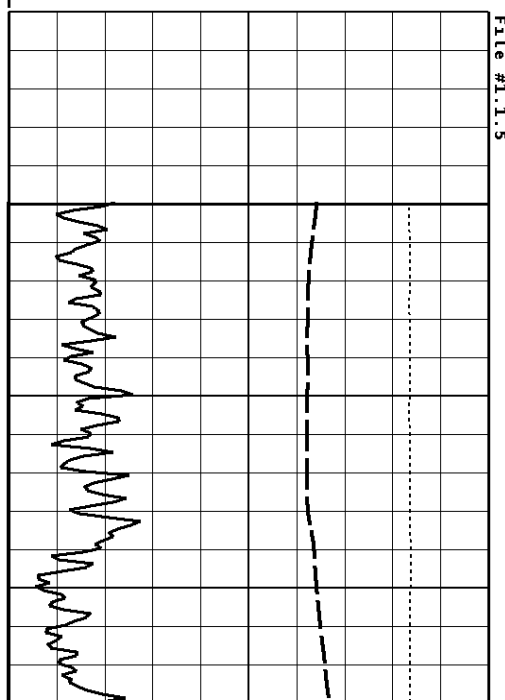
\* Borehole Zone Factors \*

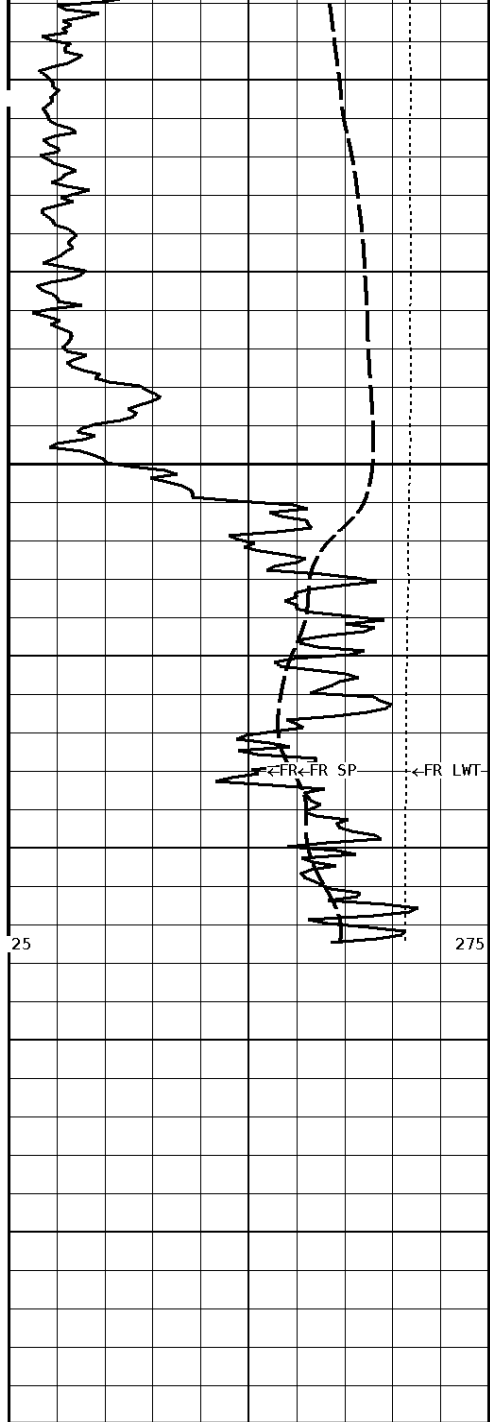
|                                               |          |      |
|-----------------------------------------------|----------|------|
| <b>Zone 1    99999.0    to    0.0    Feet</b> |          |      |
| Drill Bit Size                                | 7.875    | in   |
| Casing Diameter                               | 5.500    | in   |
| BHT Depth                                     | 4880.000 | ft   |
| Borehole Temperature                          | 125.0    | degF |
| Temperature Gradient                          | 1.00     | DFHF |
| Resistivity Of Mud                            | 2.000    | ohmm |
| Resistivity Of Mud Temperature                | 70.00    | degF |

|                                                        |                                                |                        |
|--------------------------------------------------------|------------------------------------------------|------------------------|
| <b>Well File:</b> VAL ENERGY CRUMRINE 1-4 AUGUST6_MSTK | <b>Scale:</b> 1:120                            | <b>Format:</b> DIL-120 |
| <b>Segment:</b> V1.D1.S5 Reprocess of MAIN             | <b>Acquired:</b> 2019-08/06 22:52 3.4.1-13968  |                        |
| <b>Reference:</b> 0                                    | <b>Processed:</b> 2019-08/07 00:05 3.4.1-13968 |                        |

|                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SPONTANEOUS POTENTIAL</b><br>mV                                                                                                                                                                                                                                                                                                                                        |  | <b>DEEP INDUCTION</b><br>OHMM                                                                                                                        |
| <div style="display: flex; justify-content: space-around;"> <span>→</span> <span>←25</span> </div> <hr style="border-top: 1px dashed black;"/>                                                                                                                                                                                                                            |  | <div style="display: flex; justify-content: space-between;"> <span>0.2</span> <span>2000.0</span> </div> <hr style="border-top: 1px dashed black;"/> |
| <b>TENSION</b><br>LBS                                                                                                                                                                                                                                                                                                                                                     |  | <b>MEDIUM INDUCTION</b><br>OHMM                                                                                                                      |
| <div style="display: flex; justify-content: space-between;"> <span>10000</span> <span>0</span> </div> <hr style="border-top: 1px dashed black;"/>                                                                                                                                                                                                                         |  | <div style="display: flex; justify-content: space-between;"> <span>0.2</span> <span>2000.0</span> </div> <hr style="border-top: 1px dashed black;"/> |
| <b>GAMMA RAY</b><br>API UNITS                                                                                                                                                                                                                                                                                                                                             |  | <b>SHALLOW FOCUSED RESISTIVITY</b><br>OHMM                                                                                                           |
| <div style="display: flex; justify-content: space-between;"> <span>150</span> <span>300</span> </div> <div style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); width: 100%; height: 10px; margin: 2px 0;"></div> <div style="display: flex; justify-content: space-between;"> <span>0</span> <span>150</span> </div> |  | <div style="display: flex; justify-content: space-between;"> <span>0.2</span> <span>2000.0</span> </div> <hr style="border-top: 1px dashed black;"/> |

1:120 ENHANCED INDUCTION

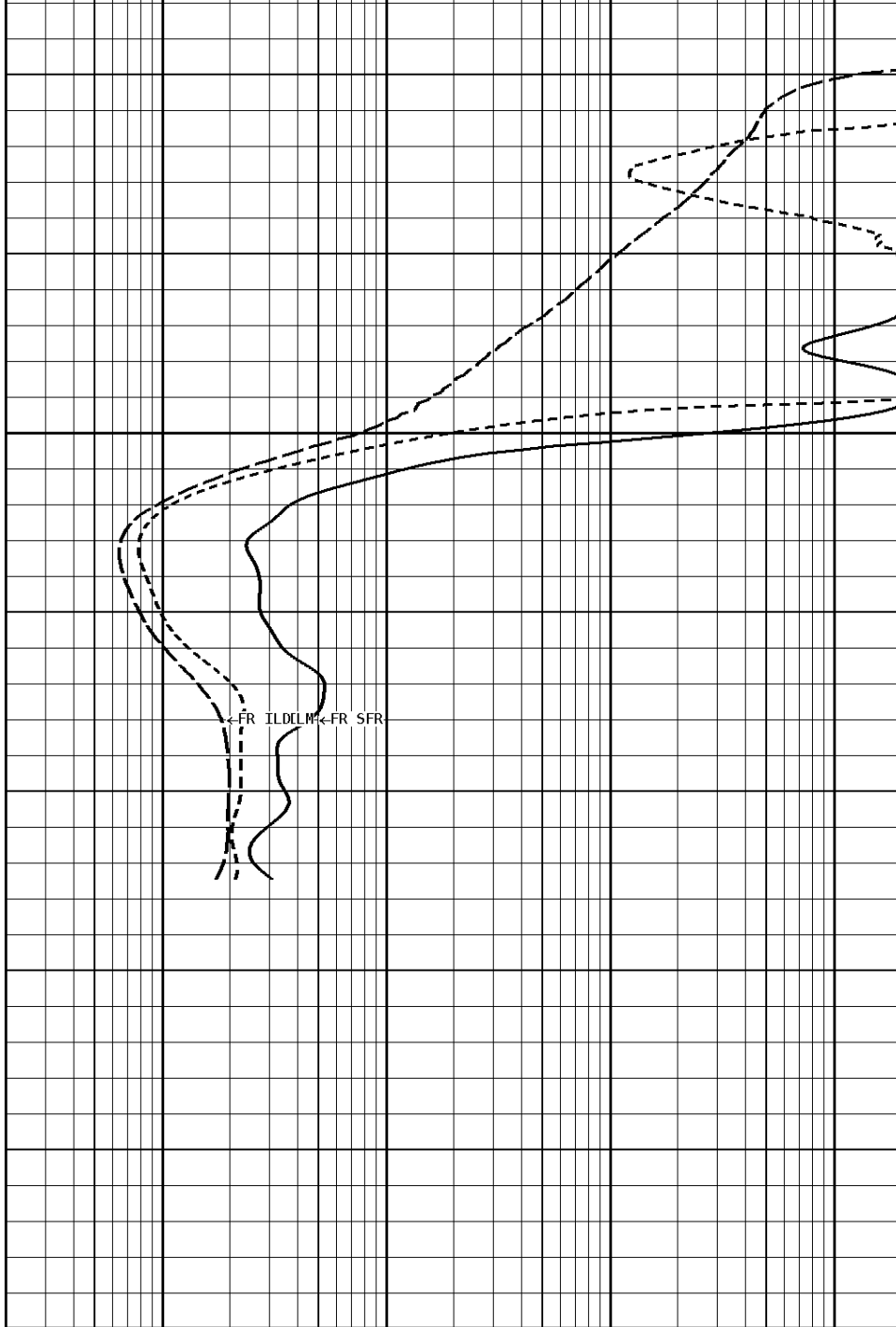
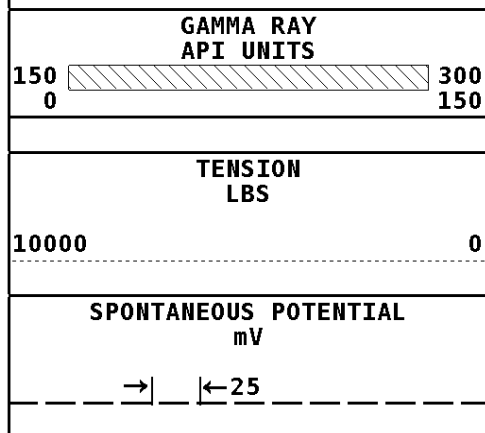




2900

2916

## 1:120 ENHANCED INDUCTION



\* Borehole Zone Factors \*

Zone 1 00000.0 to 0.0 Feet

|                                |  |             |
|--------------------------------|--|-------------|
| Zone 1 99999.0 to 0.0 Feet     |  |             |
| Drill Bit Size                 |  | 7.875 in    |
| Casing Diameter                |  | 5.500 in    |
| BHT Depth                      |  | 4880.000 ft |
| Borehole Temperature           |  | 125.0 degF  |
| Temperature Gradient           |  | 1.00 DFHF   |
| Resistivity Of Mud             |  | 2.000 ohmm  |
| Resistivity Of Mud Temperature |  | 70.00 degF  |

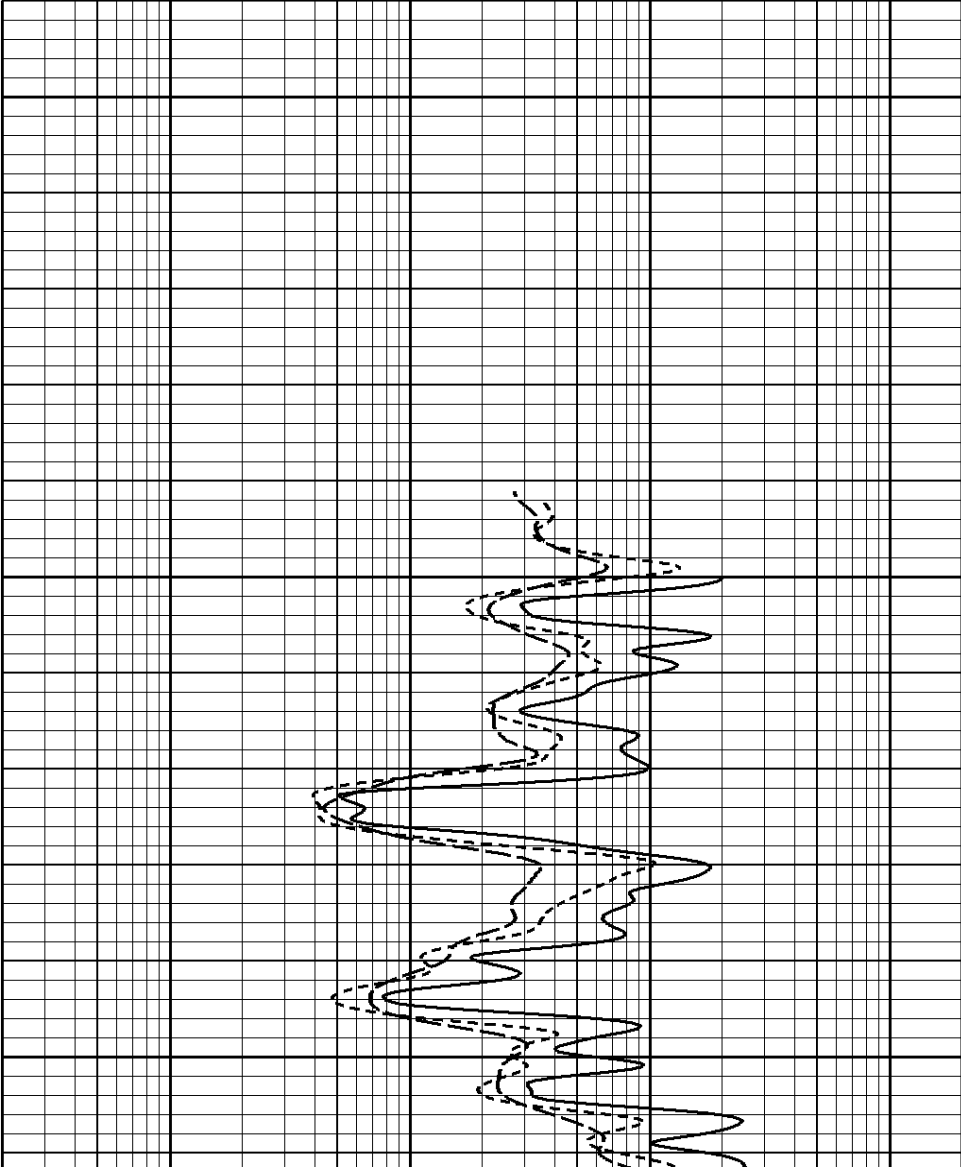
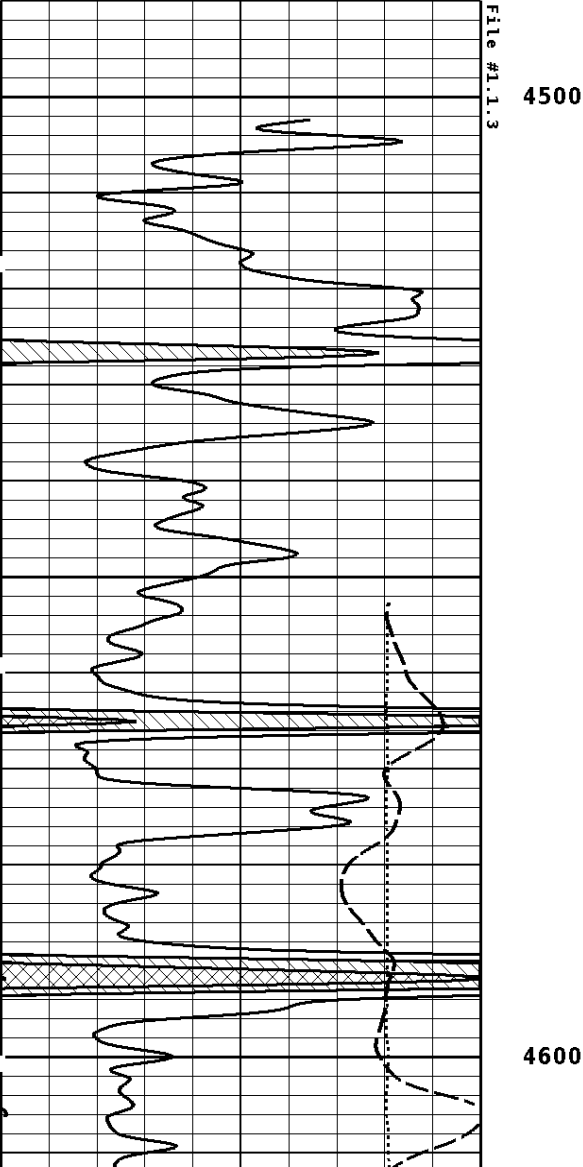
Well File: VAL ENERGY CRUMRINE 1-4 AUGUST6\_MSTK
Segment: V1.D1.S3 Reprocess of REPEAT
Reference: 0

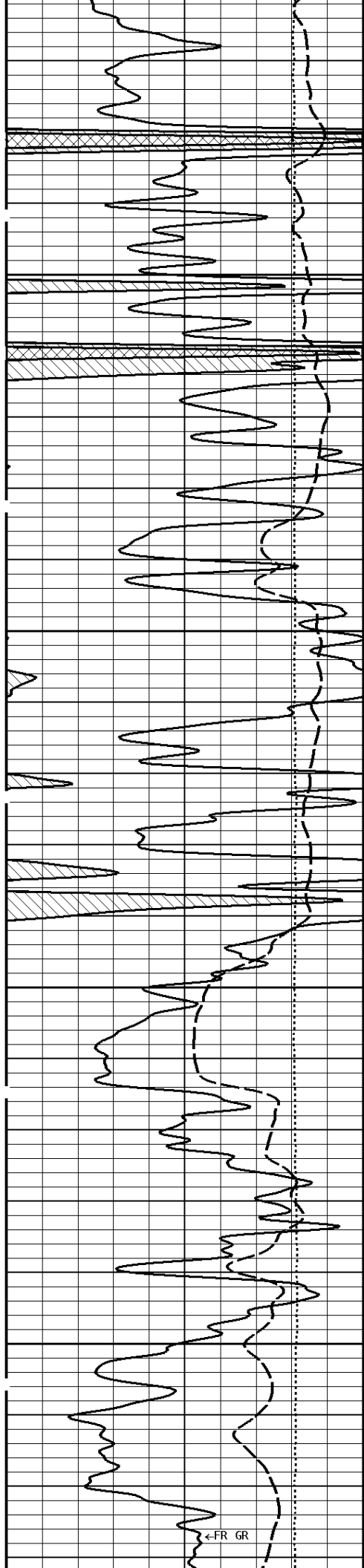
Scale: 1:240
Acquired: 2019-08/06 22:38 3.4.1-13968
Processed: 2019-08/06 22:48 3.4.1-13968

Format: DIL-240

|                                                        |  |                                                                    |
|--------------------------------------------------------|--|--------------------------------------------------------------------|
| <b>SPONTANEOUS POTENTIAL</b><br>mV<br><div>→ ←25</div> |  | <b>DEEP INDUCTION</b><br>OHMM<br><div>0.22000.0</div>              |
| <b>TENSION</b><br>LBS<br><div>100000</div>             |  | <b>MEDIUM INDUCTION</b><br>OHMM<br><div>0.22000.0</div>            |
| <b>GAMMA RAY</b><br>API UNITS<br><div>1500300150</div> |  | <b>SHALLOW FOCUSED RESISTIVITY</b><br>OHMM<br><div>0.22000.0</div> |

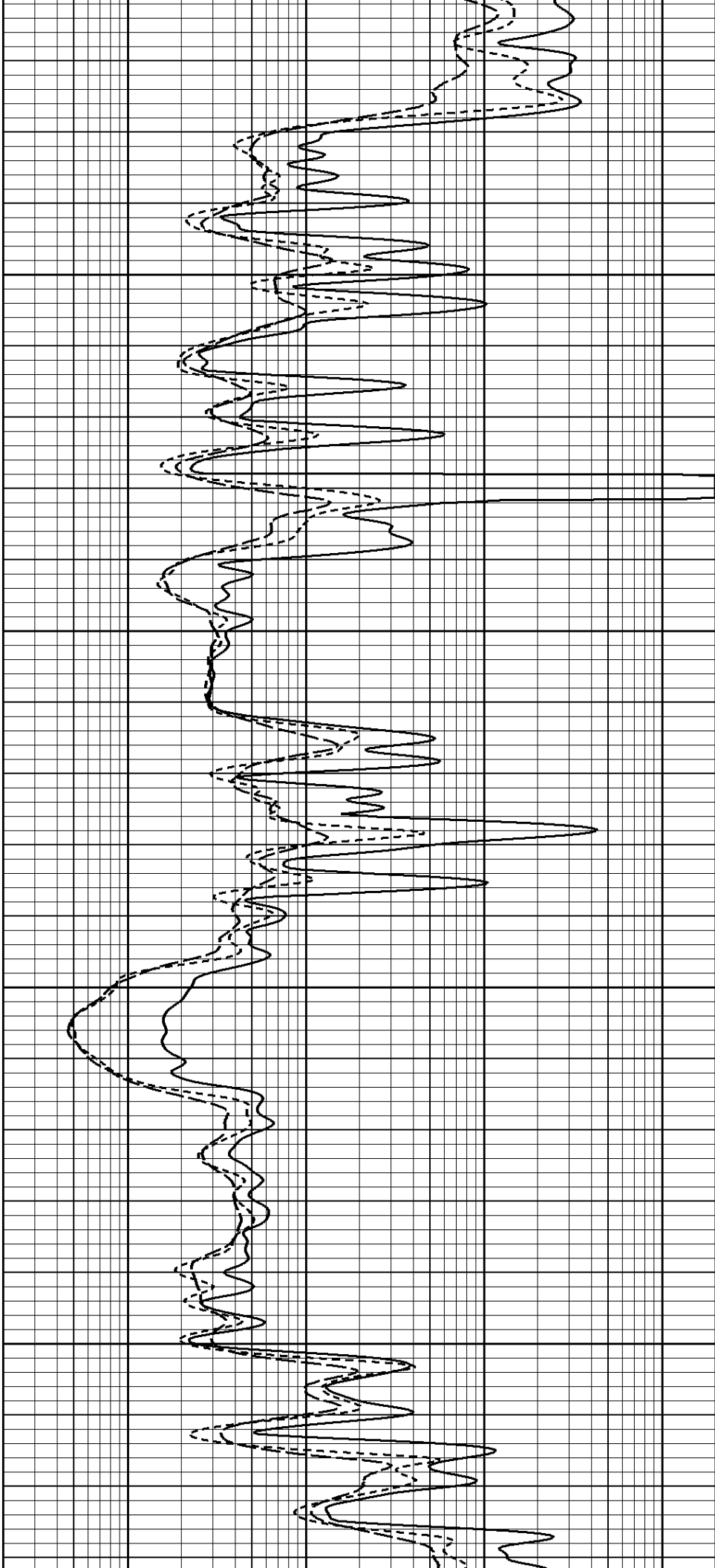
1:240 REPEAT SECTION

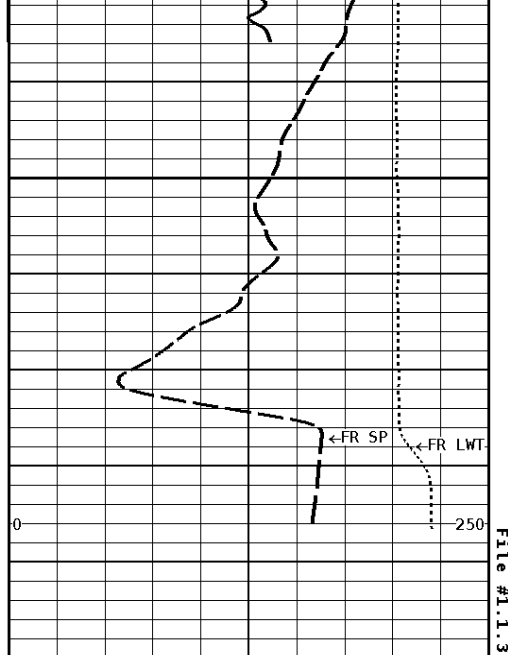




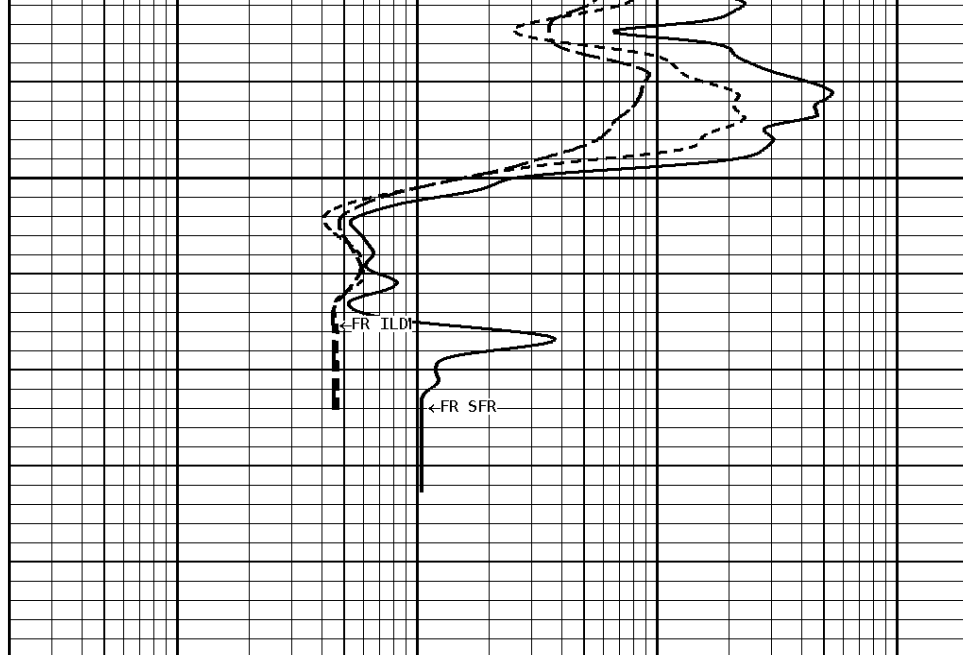
4700

4800





4878



## 1:240 REPEAT SECTION

| GAMMA RAY<br>API UNITS      |     |
|-----------------------------|-----|
| 150                         | 300 |
| 0                           | 150 |
| TENSION<br>LBS              |     |
| 10000                       | 0   |
| SPONTANEOUS POTENTIAL<br>mV |     |
| →                           | ←25 |

| 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                      | 4880.000 | ft   |  |
| Borehole Temperature           | 125.0    | degF |  |
| Temperature Gradient           | 1.00     | DFHF |  |
| Resistivity Of Mud             | 2.000    | ohmm |  |
| Resistivity Of Mud Temperature | 70.00    | degF |  |

### \* Calibration Summary \*

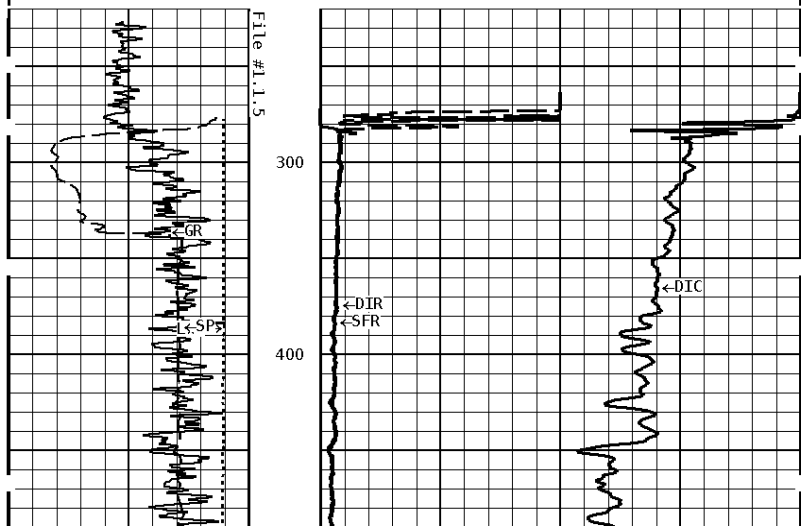
| Shop Calibration<br>GRT-B  |            |        |                 |       |  |
|----------------------------|------------|--------|-----------------|-------|--|
| Performed : 16-May-2019    |            |        | Time : 10:26    |       |  |
| Sensor Suite : GR-GR5      |            |        | ID : GRT-BA-14  |       |  |
|                            | Measured   | Units  | Calibrated      | Units |  |
| GR                         | Background | Jig    | Jig             |       |  |
|                            | 64         | 323    | 160             | GRAPI |  |
| Shop Calibration<br>PIT-CA |            |        |                 |       |  |
| Performed : 10-May-2019    |            |        | Time : 12:41    |       |  |
| Sensor Suite : P-IND-T     |            |        | ID : PIT-CA-069 |       |  |
|                            | Measured   | Medium | Calibrated      | Units |  |
|                            | R          | X      | R               | X     |  |

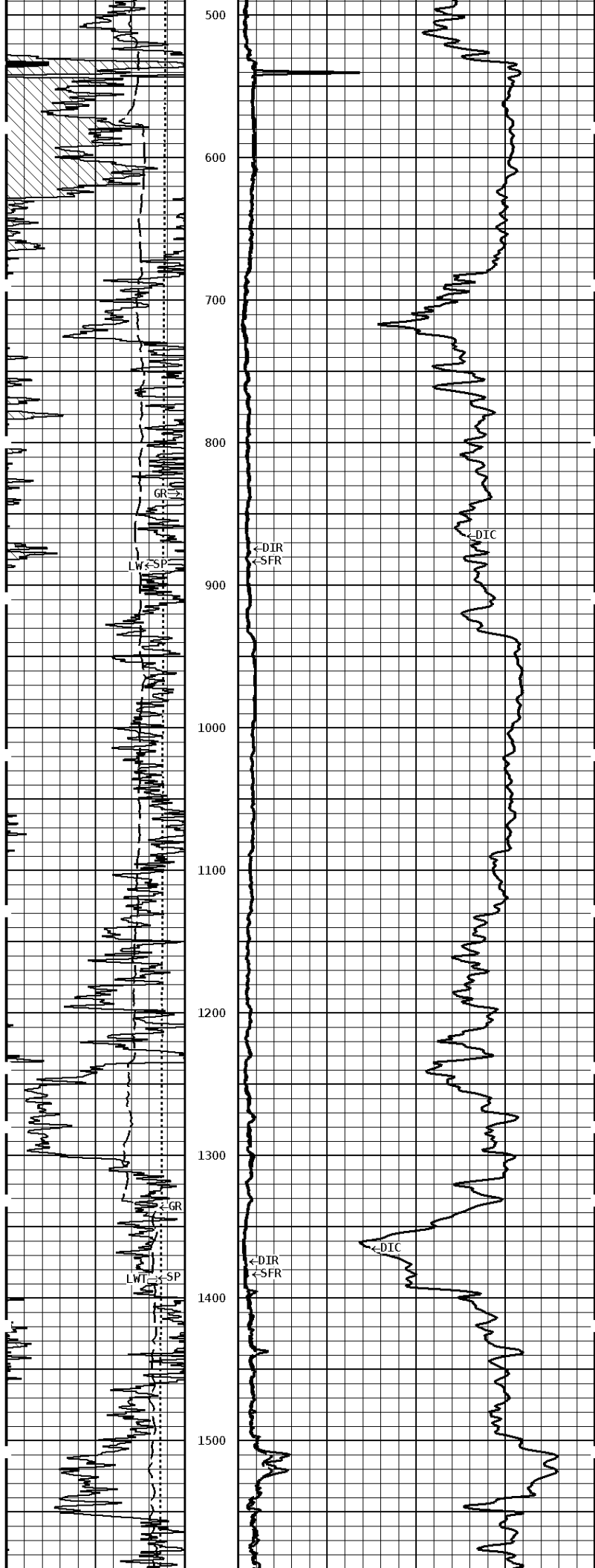
|                         |          |           |                 |           |       |
|-------------------------|----------|-----------|-----------------|-----------|-------|
| Air                     | 130176   | 131174    | 0.1             | 0.0       | MMHOS |
| Zero                    | 131068   | 131070    | 42.1            | -8.1      | MMHOS |
| Reference               | 249686   | 249128    | 5042.1          | 4991.9    | MMHOS |
| Loop                    | 130809   | 217169    | 3668.9          | 3615.4    | MMHOS |
| Sonde Error             |          |           | 0.7             | -8.2      | MMHOS |
| Cond                    |          |           | 5042.1          | 4991.9    | MMHOS |
| Deep                    |          |           |                 |           |       |
|                         | Measured |           | Calibrated      |           |       |
|                         | R        | X         | R               | X         | Units |
| Air                     | 128272   | 132045    | -0.0            | -0.1      | MMHOS |
| Zero                    | 131066   | 131073    | 56.3            | -22.1     | MMHOS |
| Reference               | 235111   | 234256    | 2056.3          | 1977.9    | MMHOS |
| Loop                    | 129176   | 221230    | 1746.0          | 1711.2    | MMHOS |
| Sonde Error             |          |           | -0.7            | -5.8      | MMHOS |
| Cond                    |          |           | 2056.3          | 1977.9    | MMHOS |
| Temperature             |          |           |                 |           |       |
|                         | Measured |           | Calibrated      |           |       |
|                         | Low      | High      | Low             | High      | Units |
|                         | 16980.0  | 56920.0   | 70.0            | 350.0     | DEGF  |
| Performed : 10-May-2019 |          |           | Time : 12:32    |           |       |
| Sensor Suite : SFL      |          |           | ID : PIT-CA-069 |           |       |
| Internal                |          |           |                 |           |       |
|                         | Measured |           | Calibrated      |           |       |
|                         | Zero     | Reference | Zero            | Reference | Units |
| Im                      | 32771.0  | 49574.9   | 0.0             | 7028.0    | uA    |
| Ib                      | 32764.7  | 49879.2   | 0.0             | 1750.0    | mA    |
| MOM1                    | 32784.7  | 59428.5   | 0.0             | 175.0     | mV    |
| Equivalent SFL          |          |           |                 | 43.97     | OHMM  |
| Performed : 10-May-2019 |          |           | Time : 12:29    |           |       |
| Sensor Suite : P-SP     |          |           | ID : PIT-CA-069 |           |       |
| Internal                |          |           |                 |           |       |
|                         | Measured |           | Calibrated      |           |       |
|                         | Zero     | Reference | Zero            | Reference | Units |
|                         | 32795.0  | 58829.0   | 0.0             | 1000.0    | mV    |

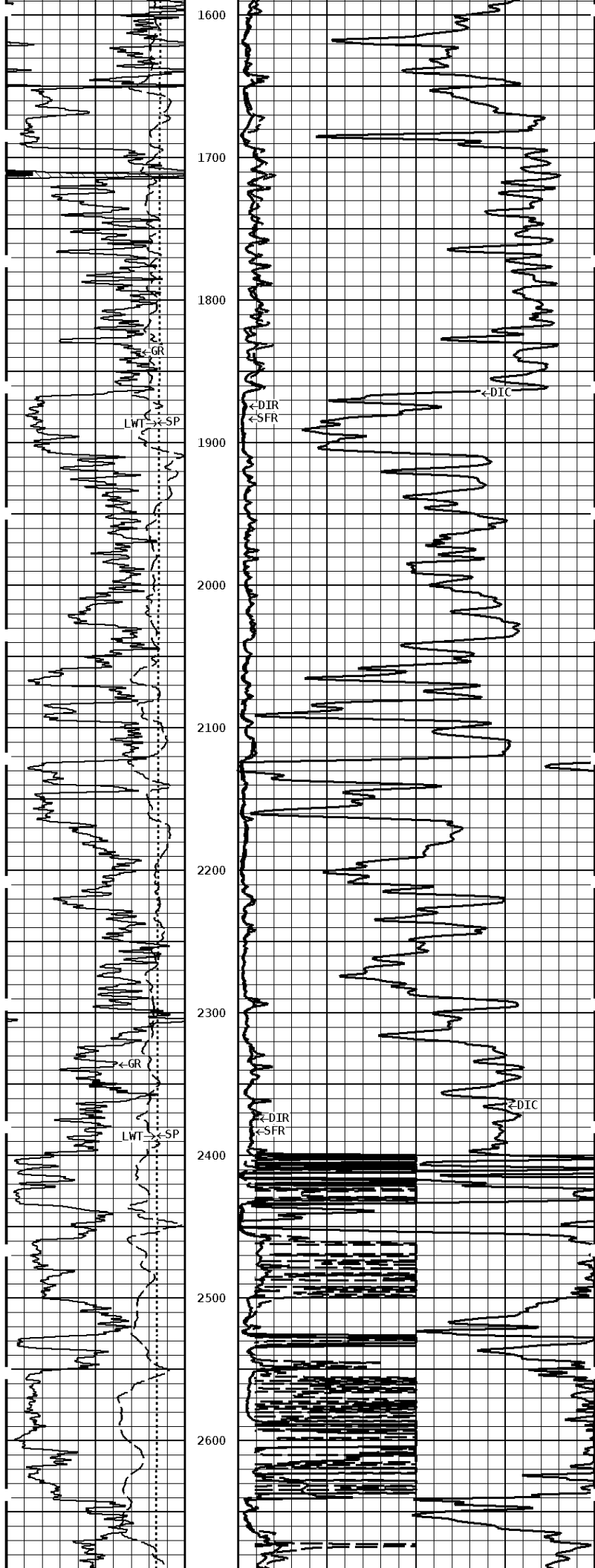
Well File: VAL ENERGY CRUMRINE 1-4 AUGUST6\_MSTK Scale: 1:1200 Format: DIL1200  
Segment: V1.D1.S5 Reprocess of MAIN Acquired: 2019-08/06 22:52 3.4.1-13968  
Reference: 0 Processed: 2019-08/07 00:05 3.4.1-13968

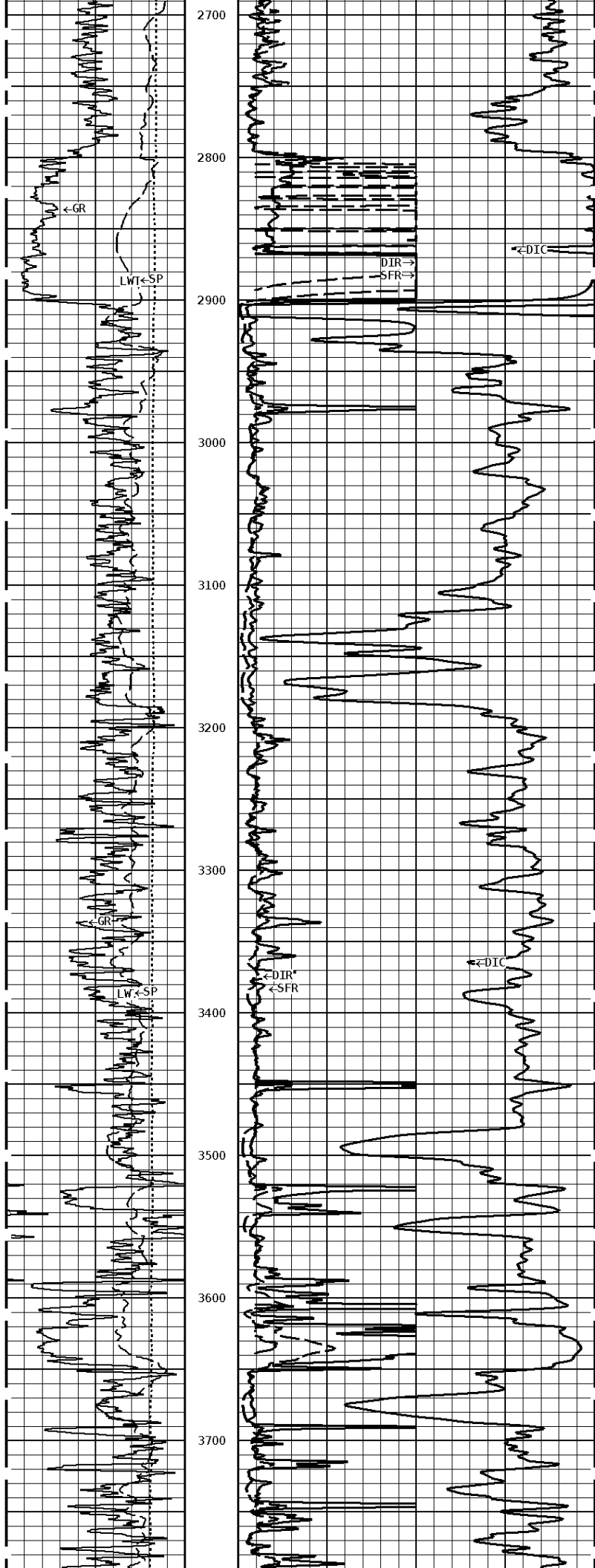
|                                         |                           |          |
|-----------------------------------------|---------------------------|----------|
| TENSION<br>LBS<br>10000 0               | DEEP INDUCTION<br>OHMM    |          |
|                                         | 0.0 500.0                 | 0.0 50.0 |
| SPONTANEOUS POTENTIAL<br>mV<br>→   ← 25 | SHALLOW FOCUSED<br>OHMM   |          |
|                                         | 0.0 500.0                 | 0.0 50.0 |
| GAMMA RAY<br>API UNITS<br>150 0 300 150 | DEEP CONDUCTIVITY<br>MHMO |          |
|                                         | 2000 1000                 | 1000 0   |

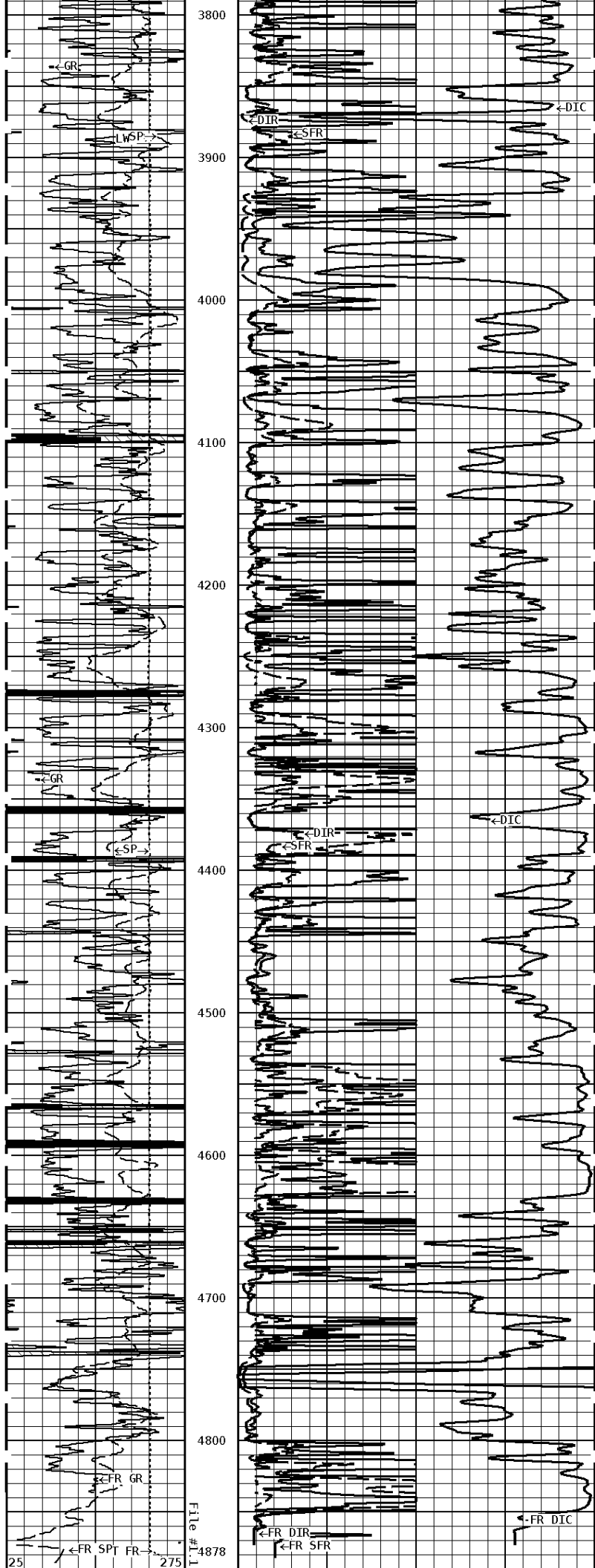
# 1:1200 MAIN SECTION











# 1:1200 MAIN SECTION

|                                                                                                                                           |  |                                                         |  |
|-------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------|--|
| <b>GAMMA RAY</b><br><b>API UNITS</b><br>150  300<br>0 150 |  | <b>DEEP CONDUCTIVITY</b><br>HHH<br>2000 1000<br>1000 0  |  |
| <b>SPONTANEOUS POTENTIAL</b><br>mV<br>→   ← 25                                                                                            |  | <b>SHALLOW FOCUSED</b><br>OHMM<br>0.0 500.0<br>0.0 50.0 |  |
| <b>TENSION</b><br>LBS<br>10000 0                                                                                                          |  | <b>DEEP INDUCTION</b><br>OHMM<br>0.0 500.0<br>0.0 50.0  |  |



Company: VAL ENERGY, INC  
Well: CRUMRINE #1-4  
Location: 788' FSL & 1414' FWL  
Logged: 08-06-2019  
K.B. Elev: 3330.0 Ft