



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

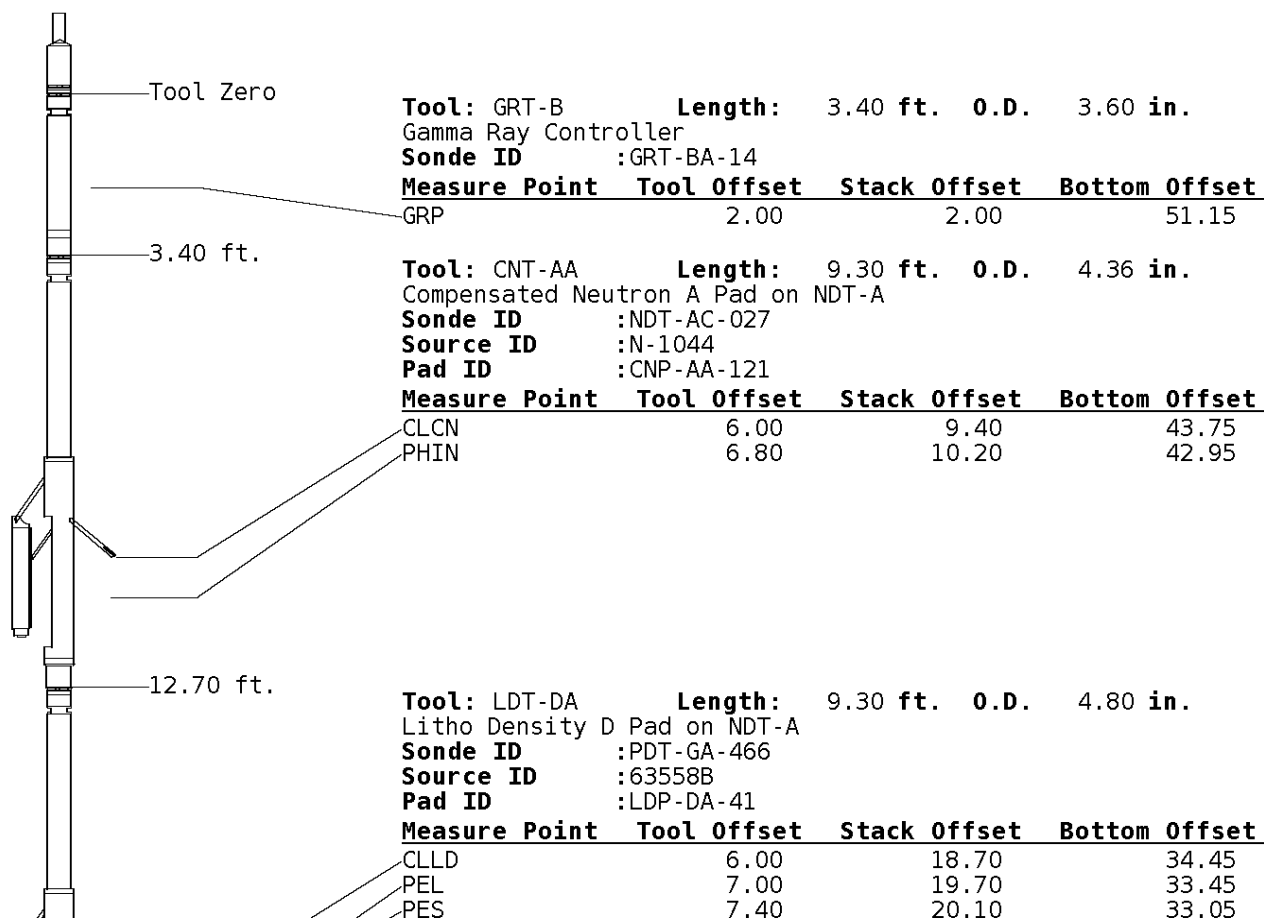
MICRO CALIPER STOPPED WORKING AT 1960'  
 CUSTOMER REQUESTED DETAIL TO 1600'

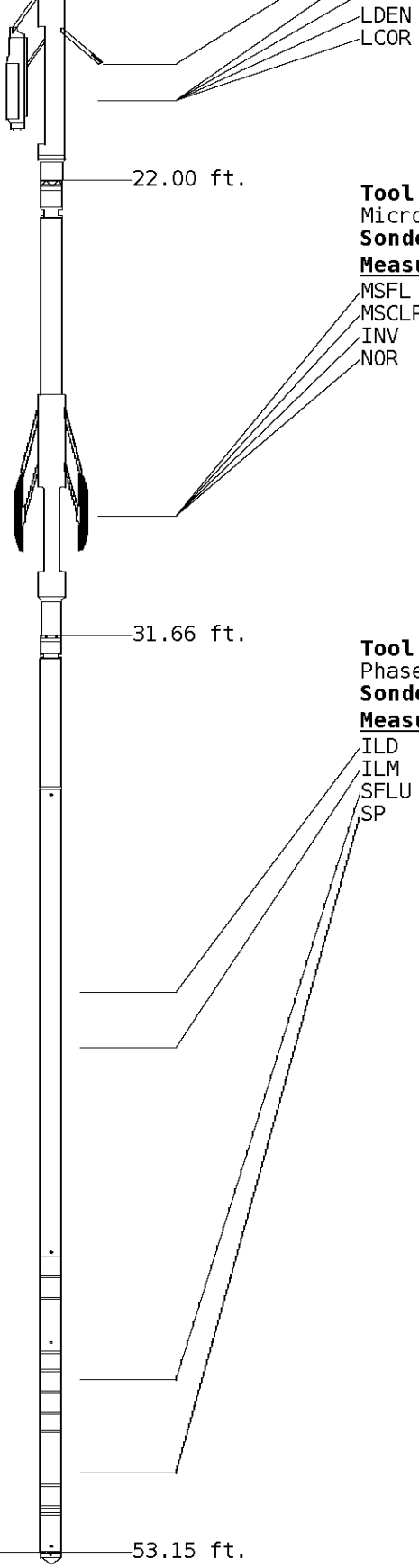
GRT: GRP, GRX  
 CNT: PHIN, CLCNIN, PHXN  
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN, PRXL, PECLX, LDENNX, LCORX  
 MLT: NOR\_RF, INV\_RF, MSCLPIN  
 PIT: ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS:  
 B.BAILEY  
 B.BROWN

### Tool String Schematic

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





7.20 19.90 33.25  
 7.20 19.90 33.25

**Tool:** MST-DA      **Length:** 9.66 ft.    **O.D.** 6.00 in.  
 Micro Spherically Focused (IC)  
**Sonde ID** :MST-DA-021

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

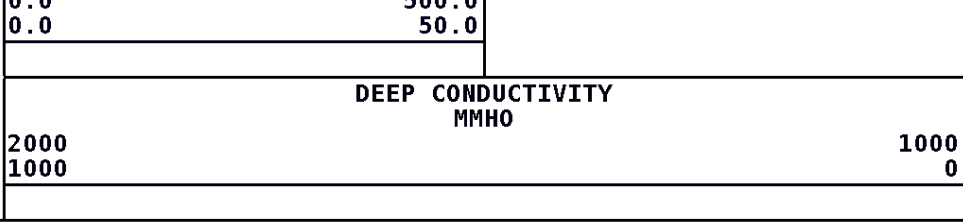
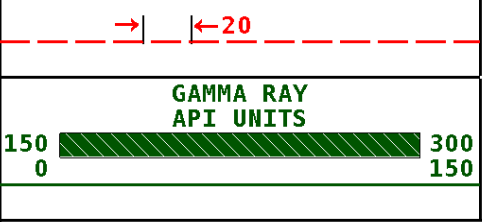
**Well File:** VAL ENERGY WERNER 4-310WVO MAY10 MSTK      **Scale:** 1:600      **Format:** DIL-600  
**Segment:** V1.D1.S5 Reprocess of MAIN      **Acquired:** 2018-05/10 07:28 3.4.0-13756  
**Reference:** 0      **Processed:** 2018-05/10 08:21 3.4.0-13756

**TENSION**  
**LBS**  
 10000      0

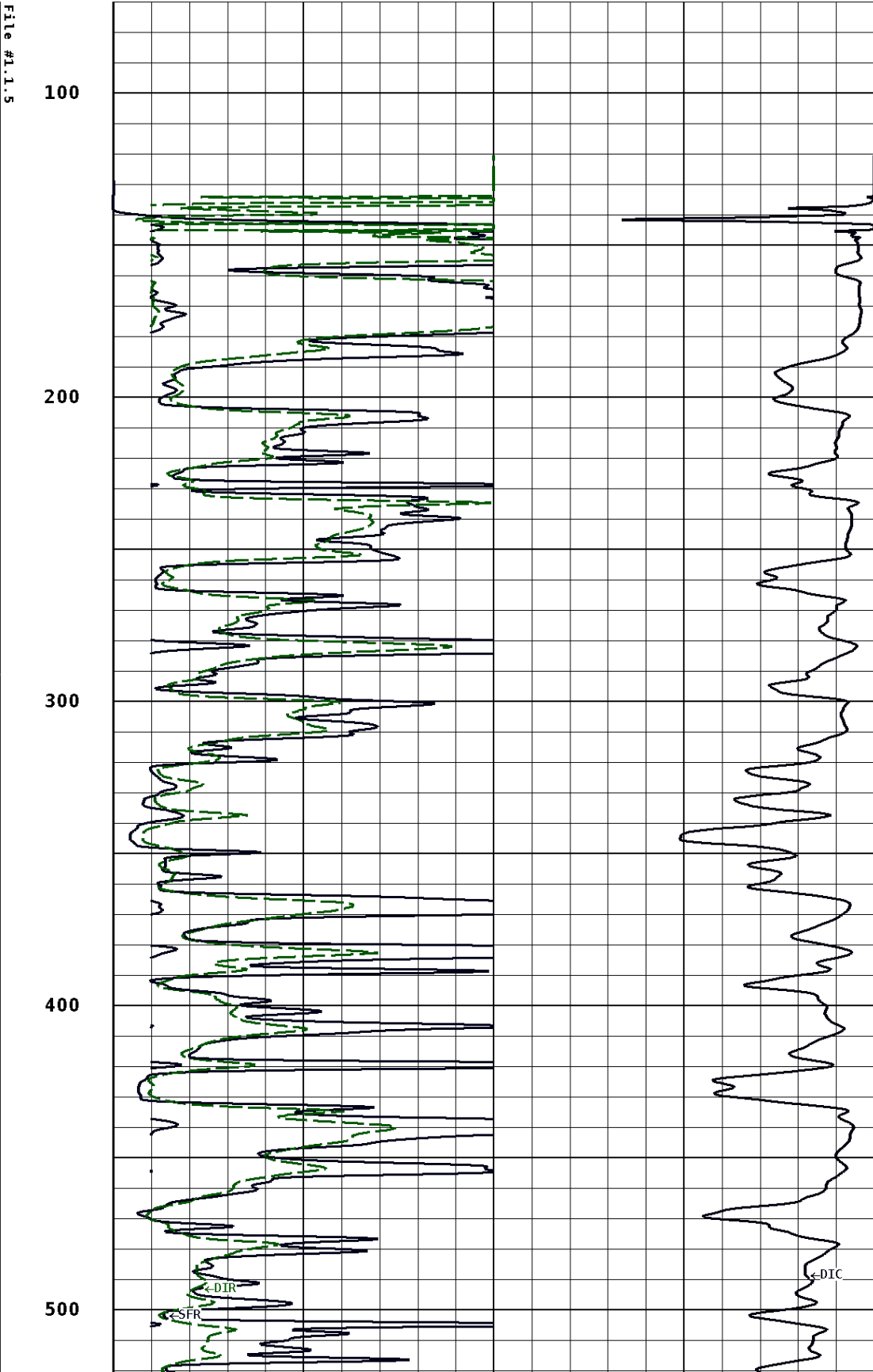
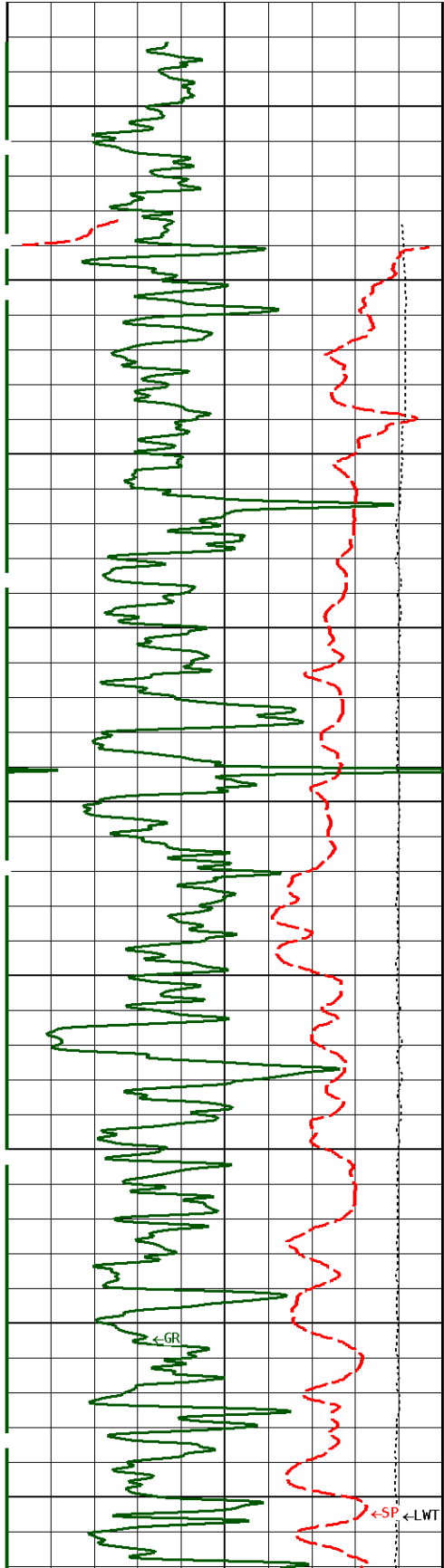
**DEEP INDUCTION**  
**OHMM**  
 0.0      500.0  
 0.0      50.0

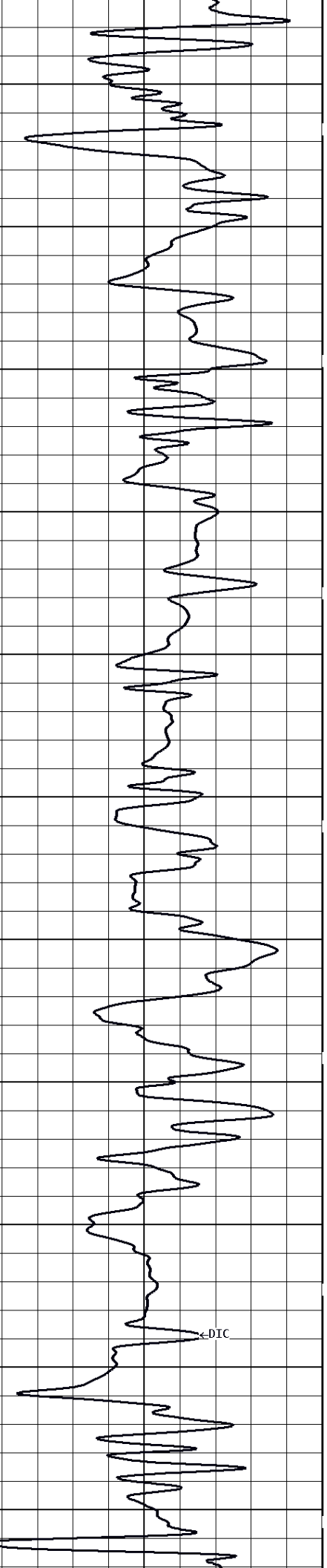
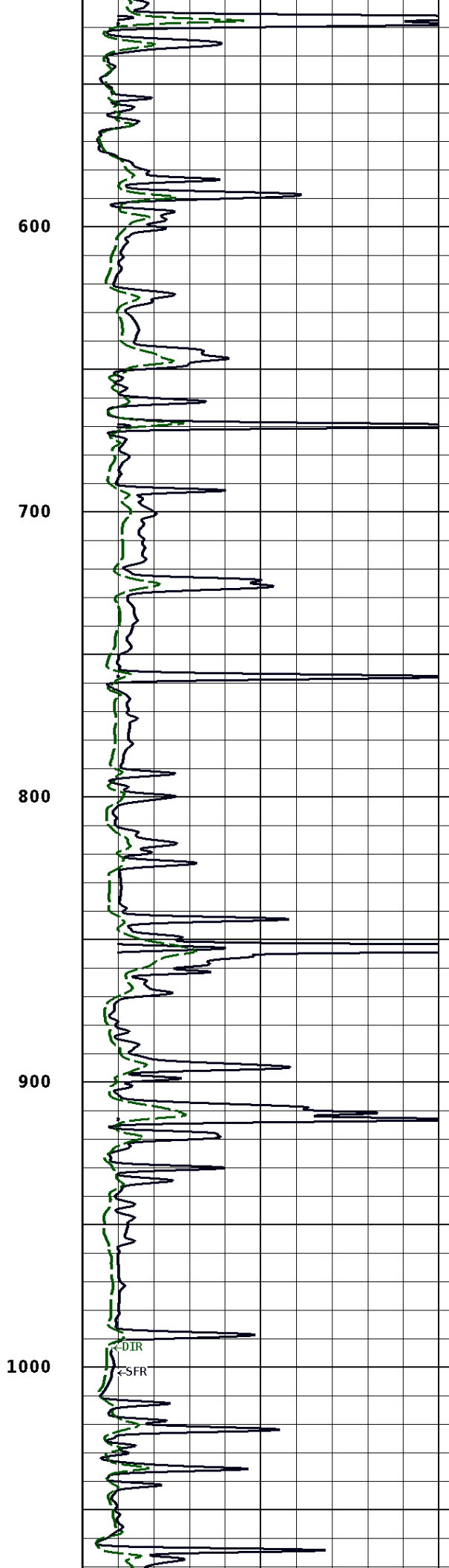
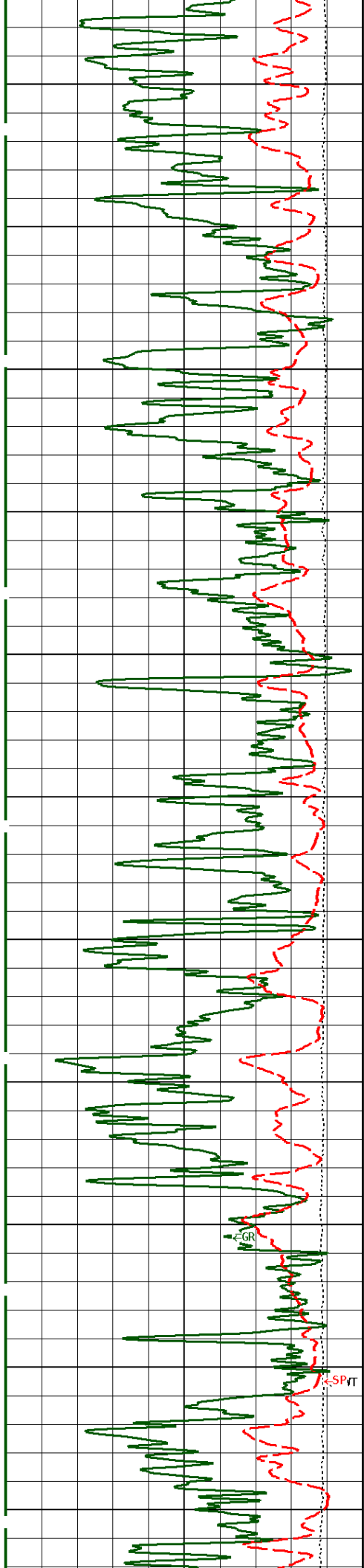
**SPONTANEOUS POTENTIAL**  
**mV**

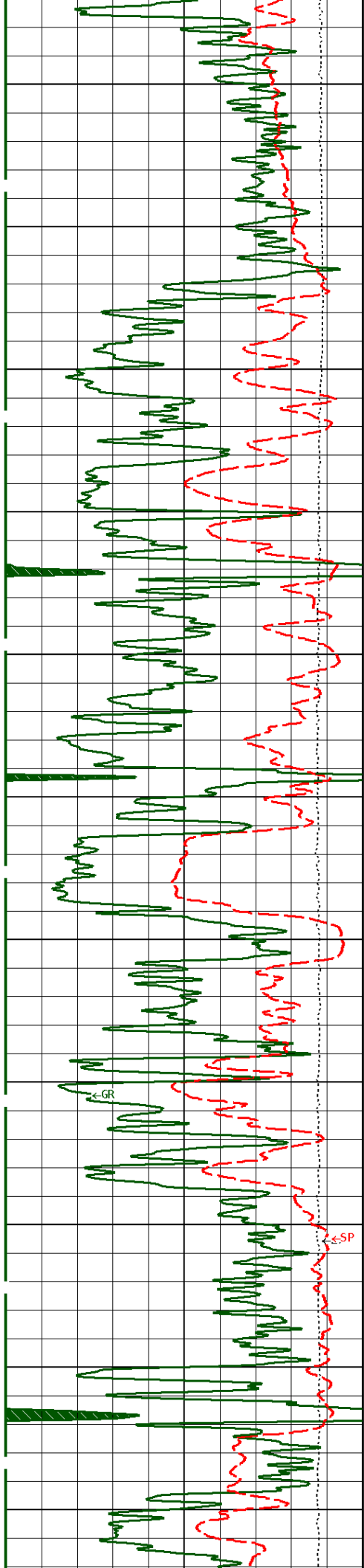
**SHALLOW FOCUSED RESISTIVITY**  
**OHMM**  
 0.0      500.0



## 1:600 MAIN SECTION







1100

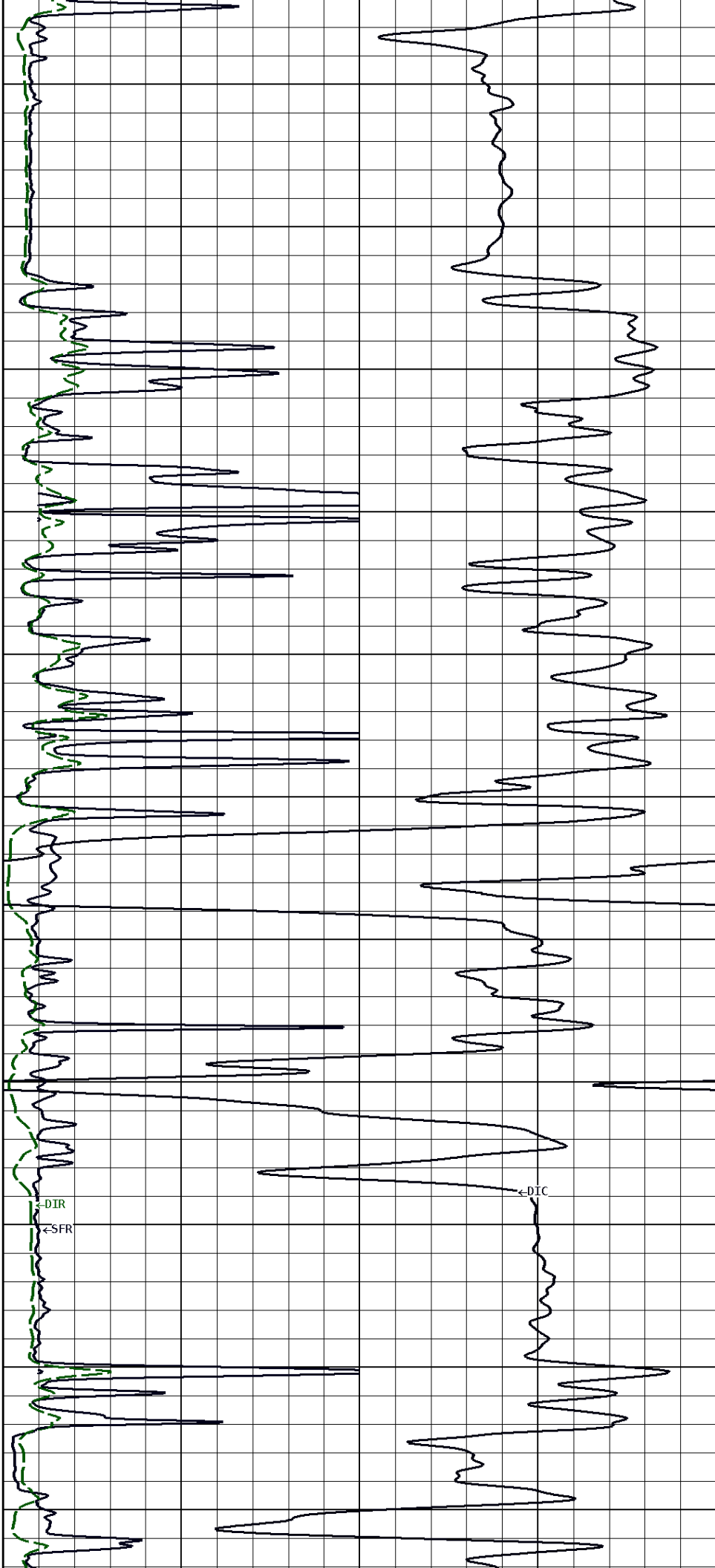
1200

1300

1400

1500

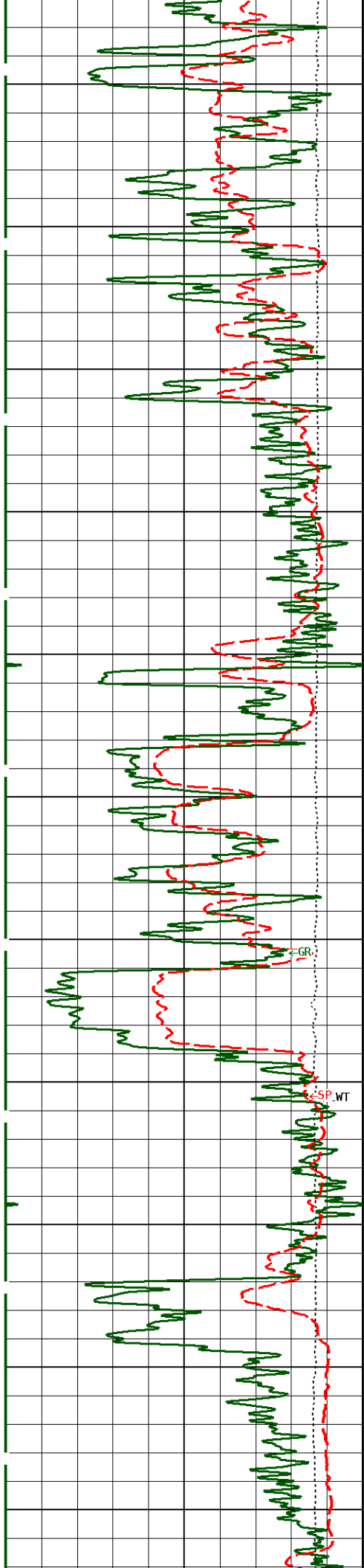
1600



DIR

CSFR

DIC



1700

1800

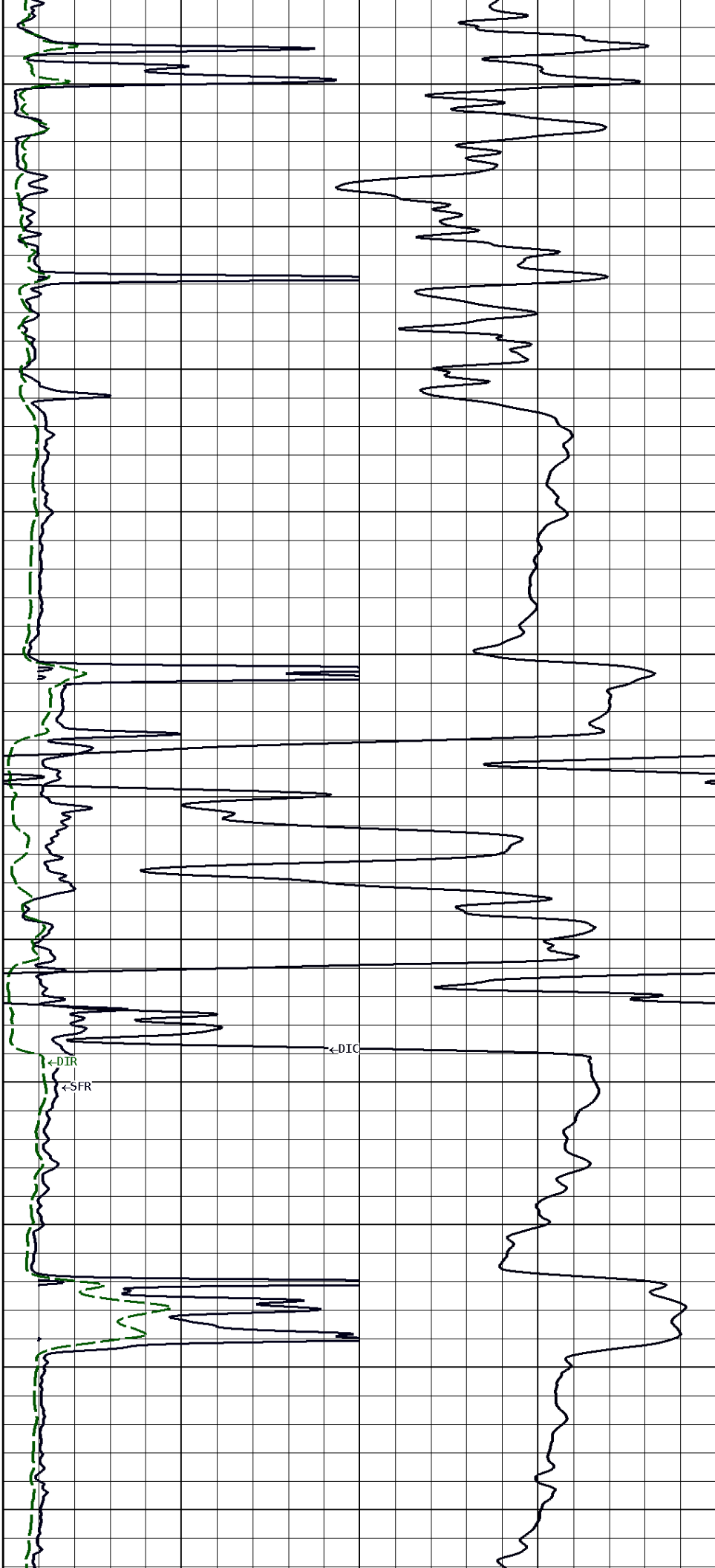
1900

2000

2100

←GR

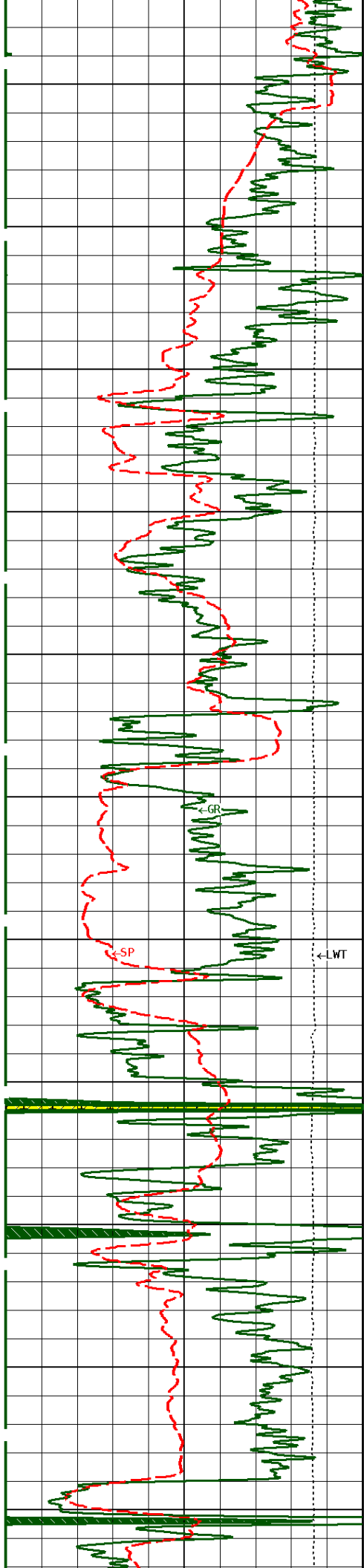
←SP.WT



←DIR

←SFR

←DIO



2200

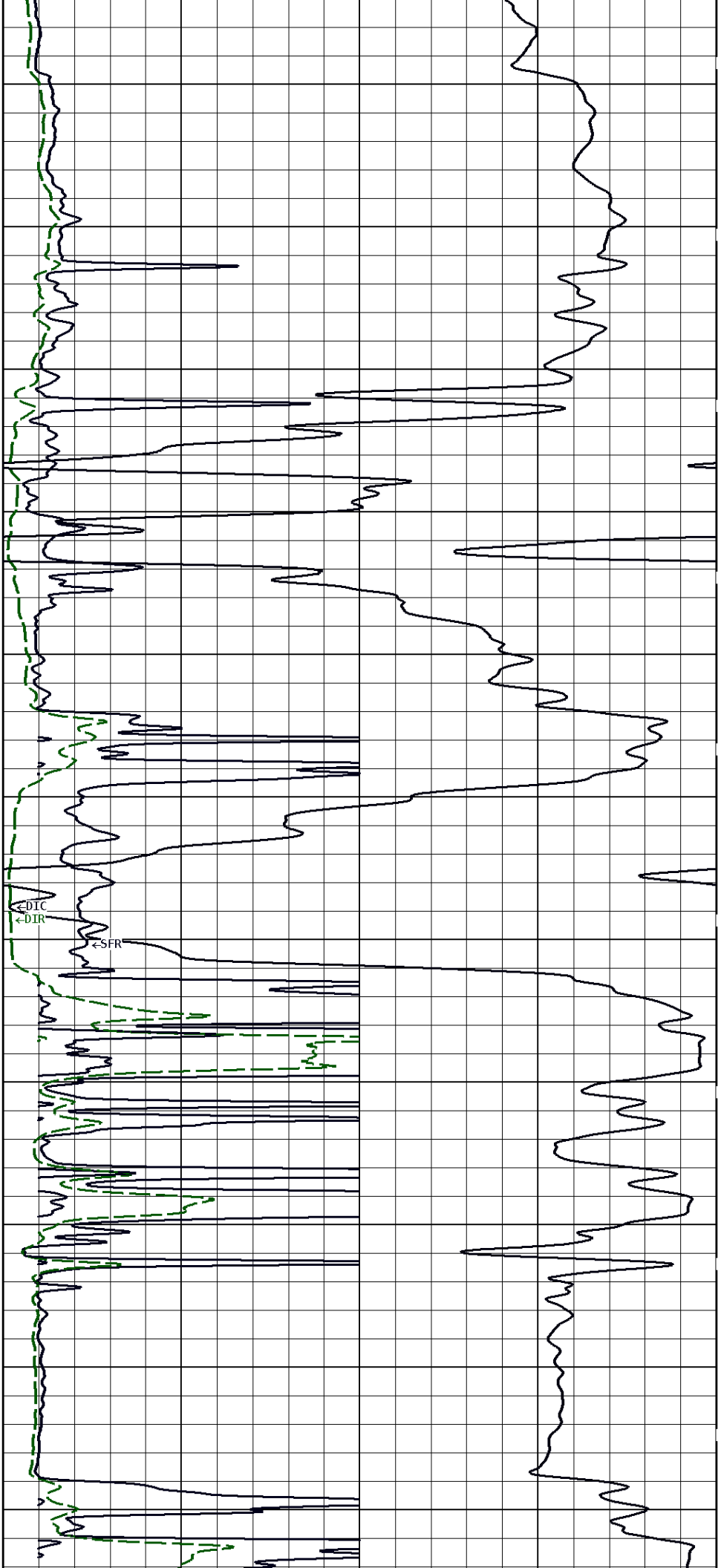
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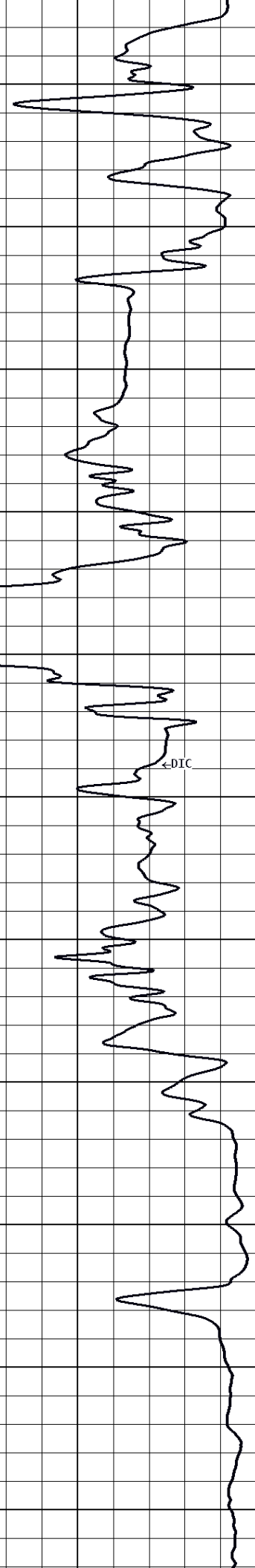
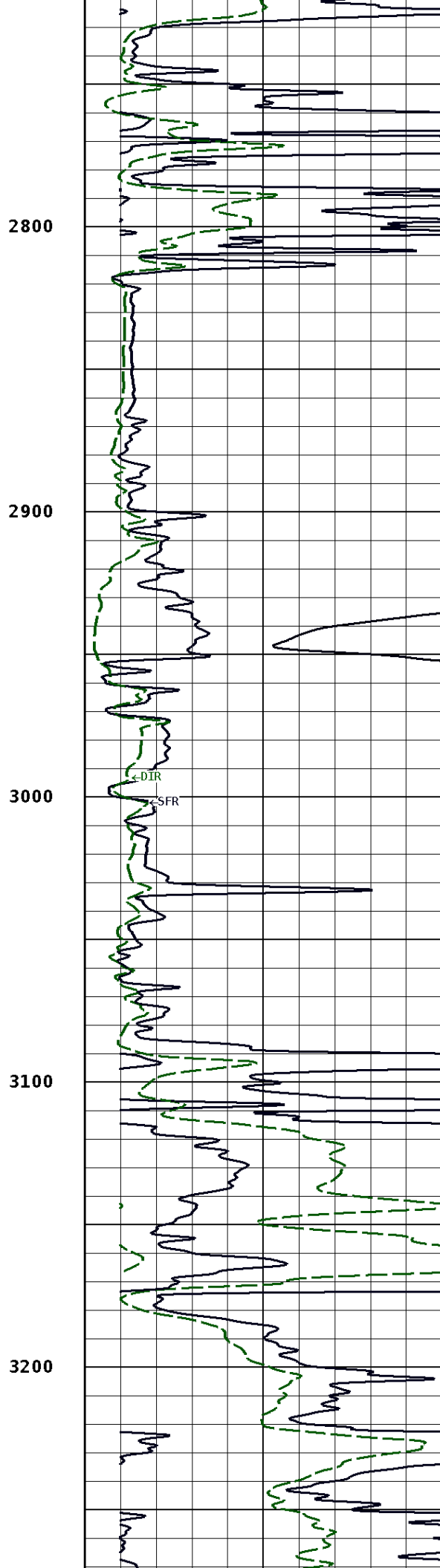
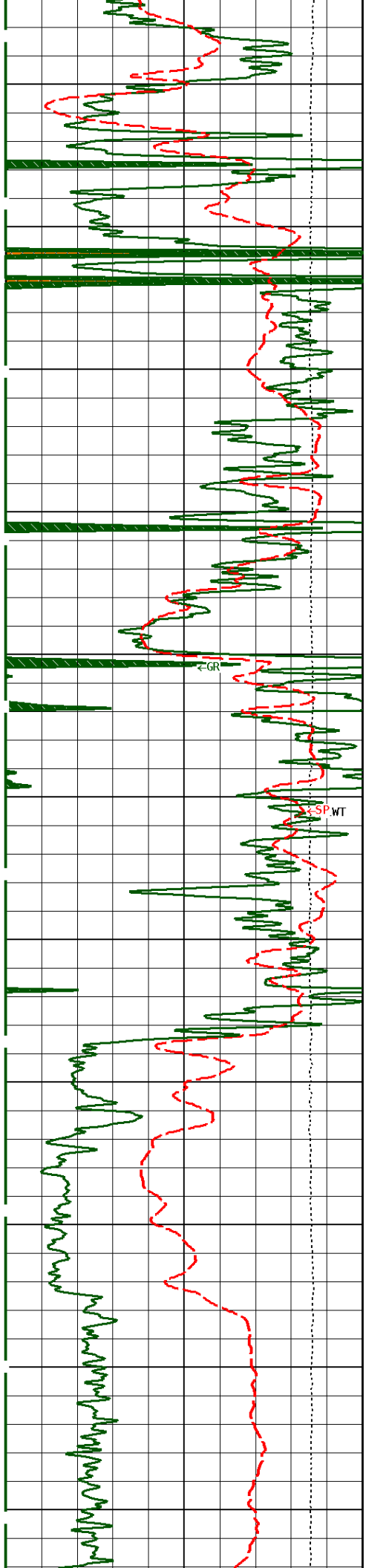
2400

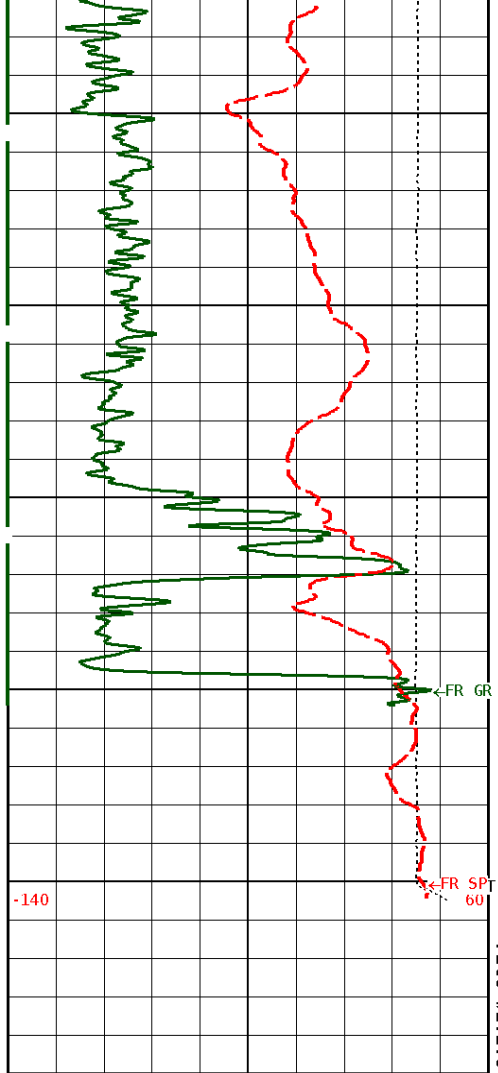
2500

2600

2700



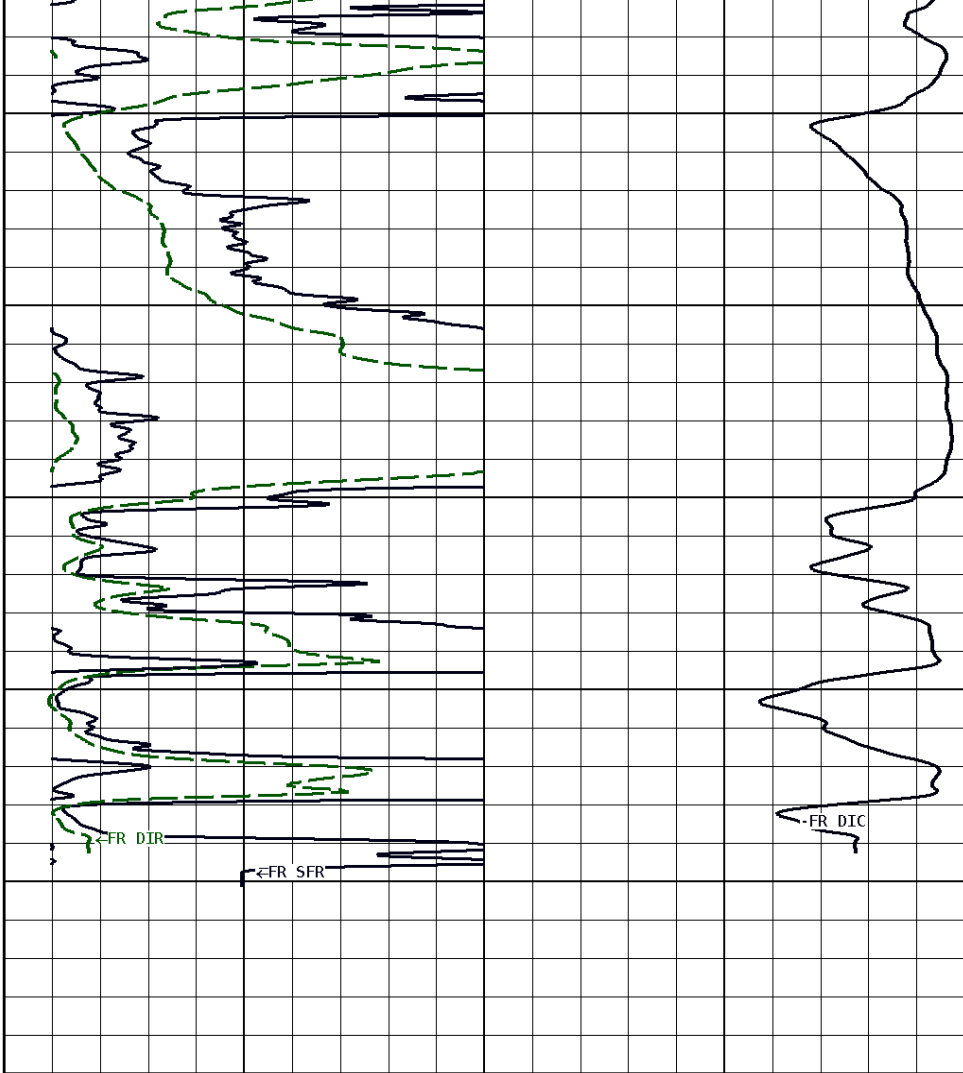




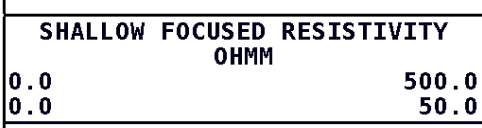
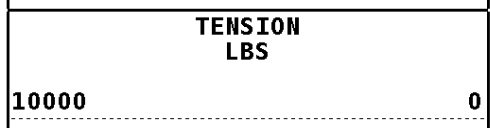
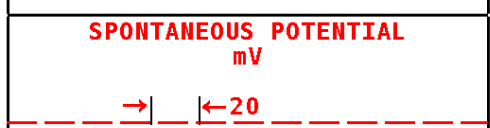
3300

3400

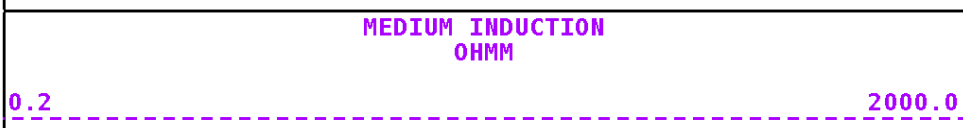
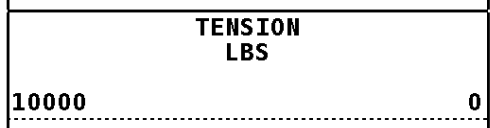
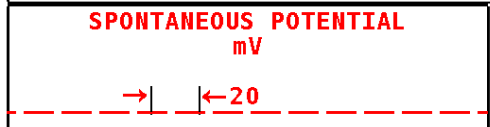
3502



**1:600 MAIN SECTION**



Well File: VAL ENERGY WERNER 4-310WVO MAY10\_MSTK Scale: 1:240 Format: DIL-240  
 Segment: V1.D1.S5 Reprocess of MAIN Acquired: 2018-05/10 07:28 3.4.0-13756  
 Reference: 0 Processed: 2018-05/10 08:21 3.4.0-13756



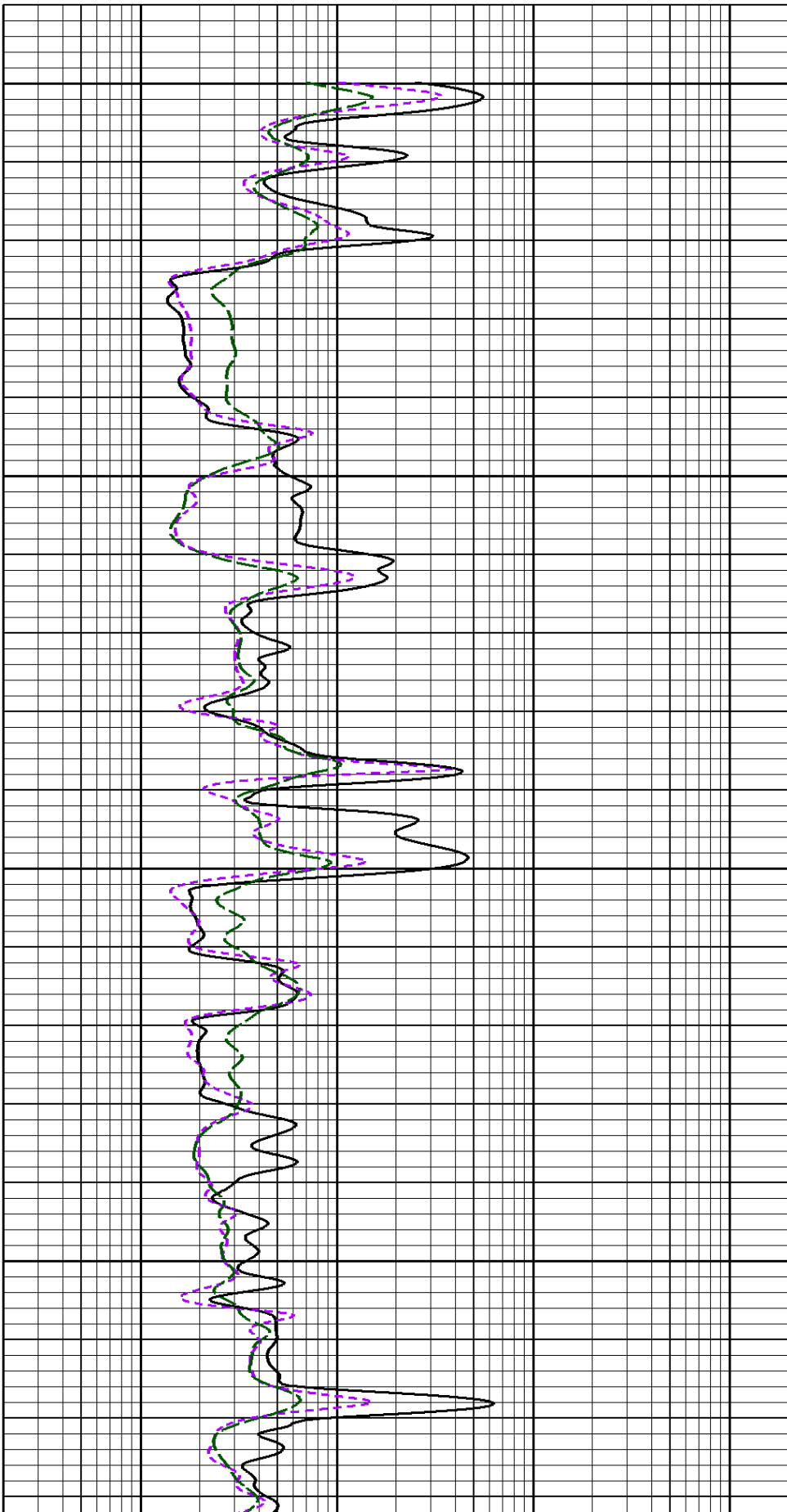
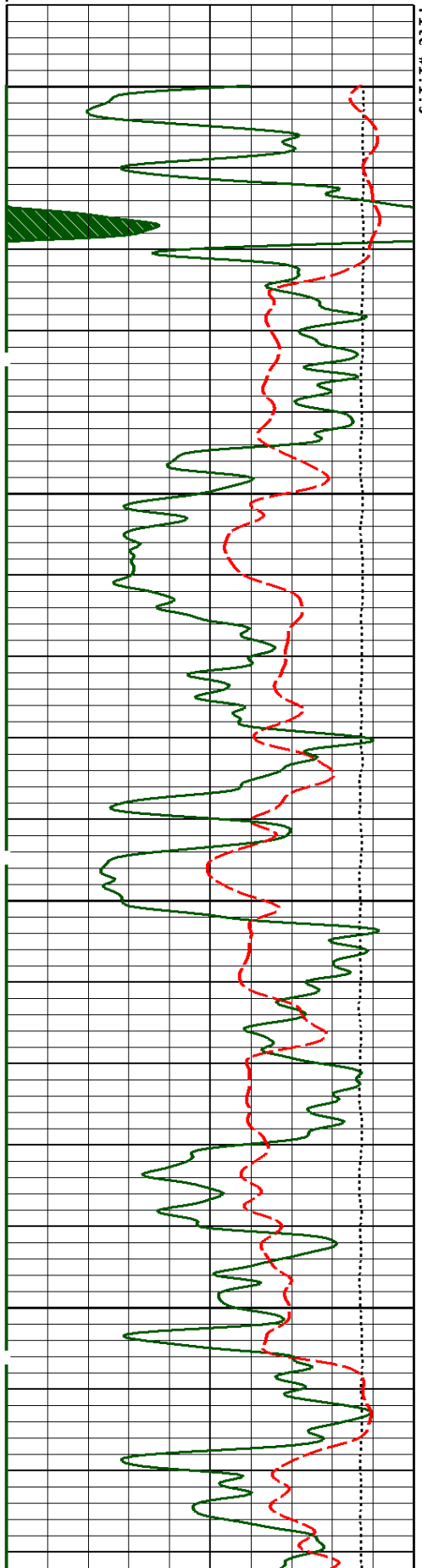


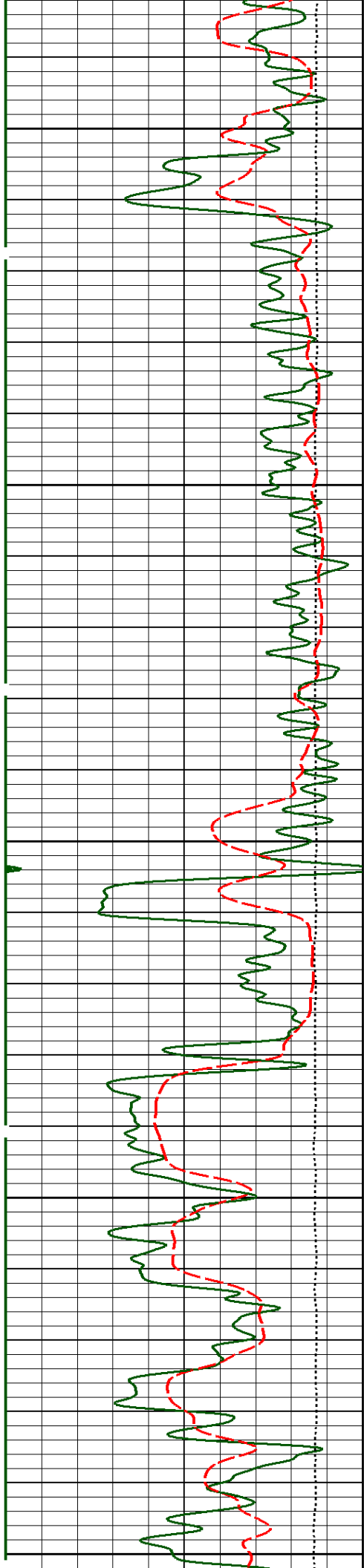
0.2

UHPM

2000.0

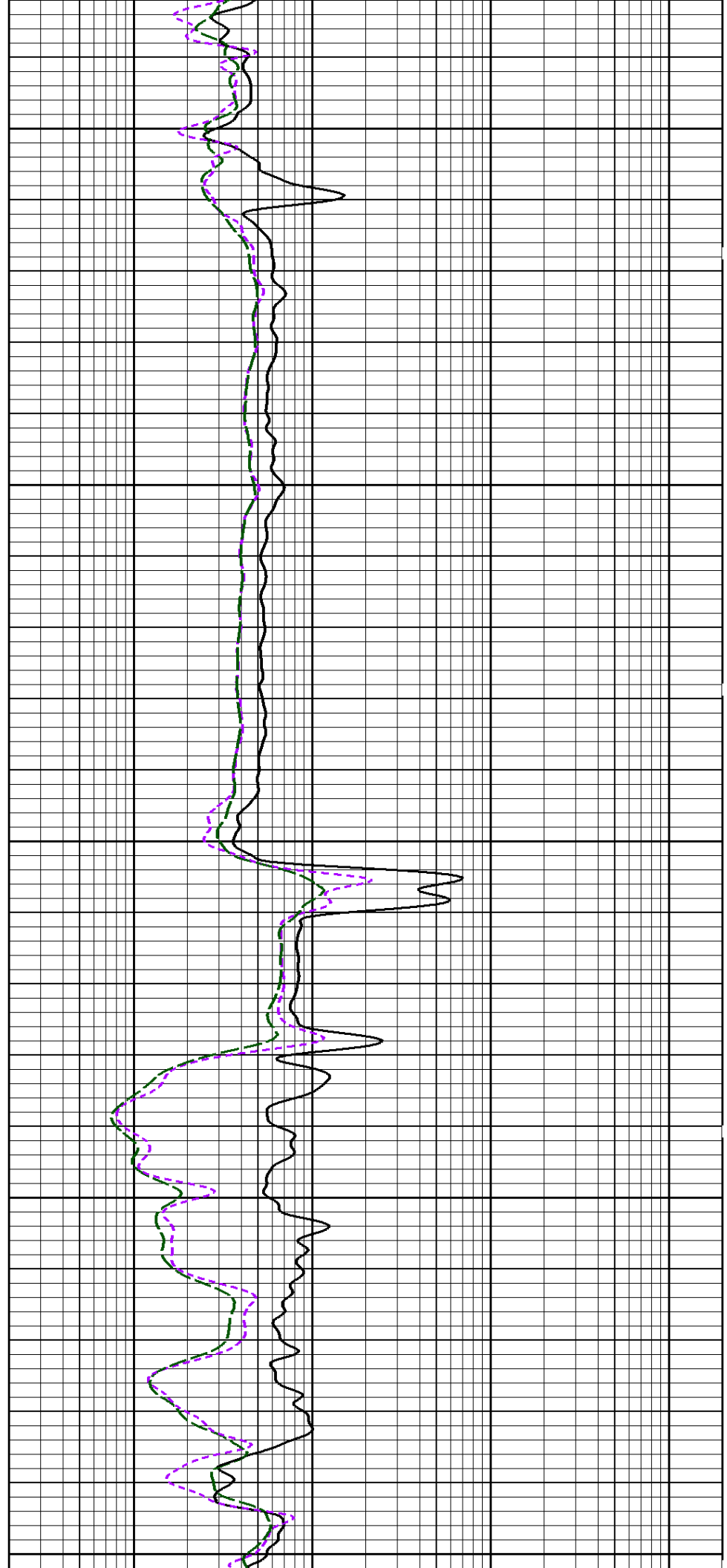
# 1:240 MAIN SECTION

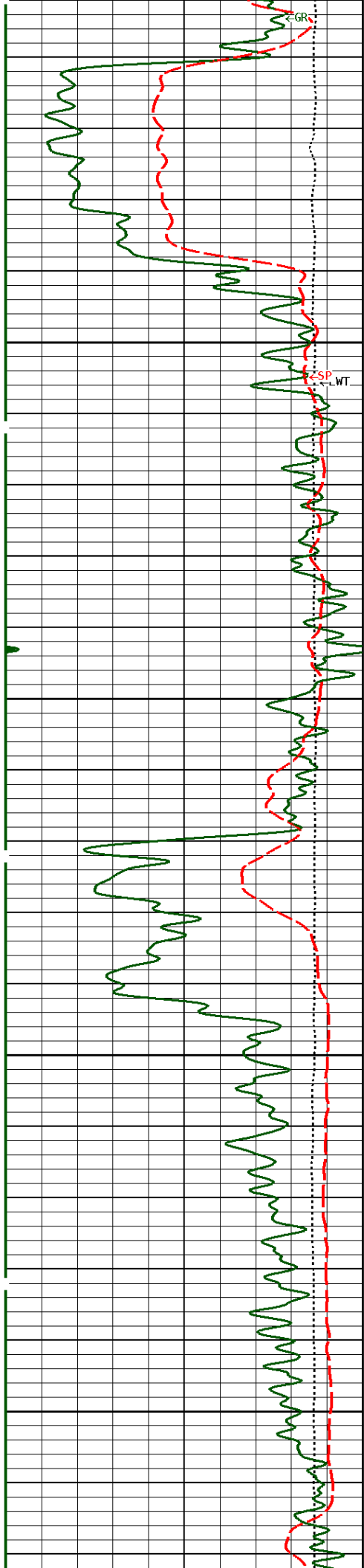




1800

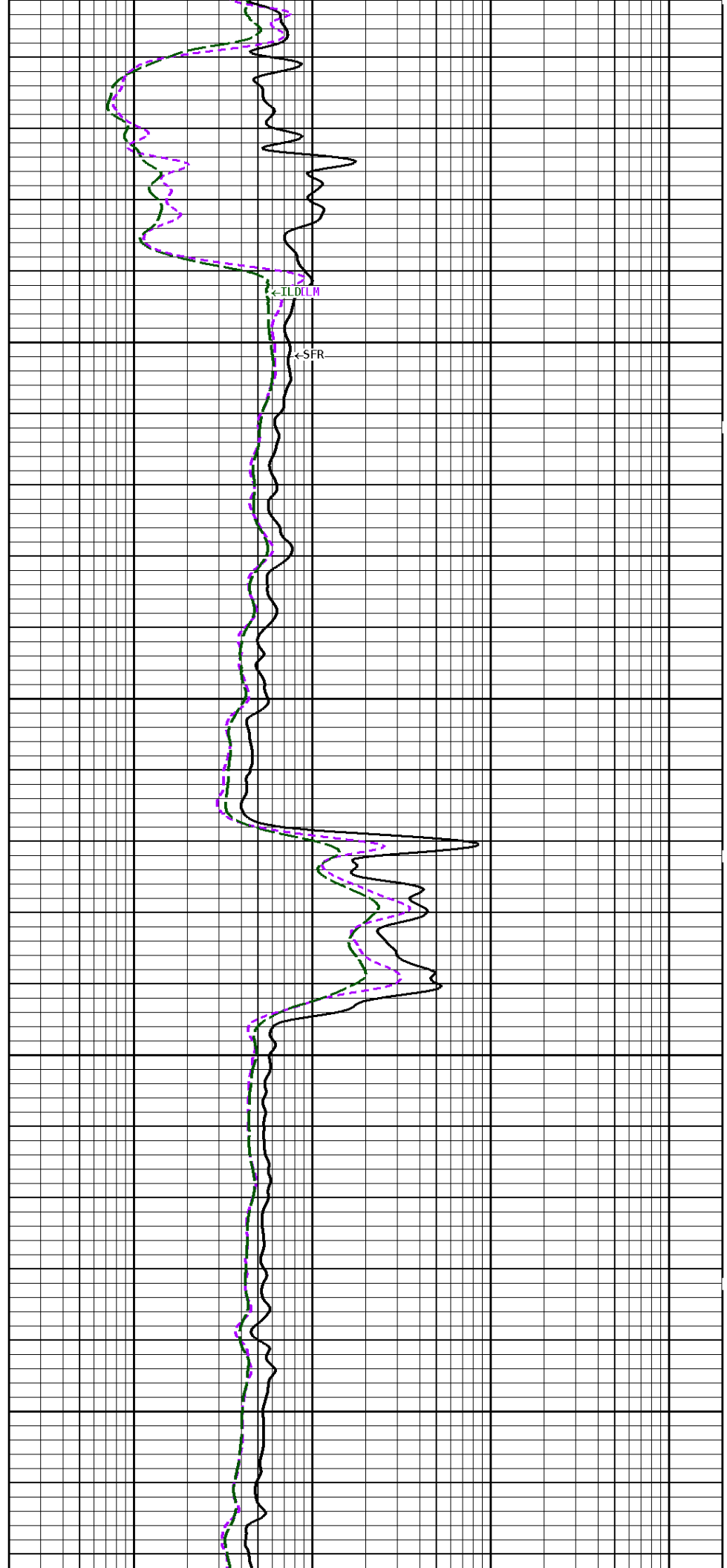
1900





2000

2100

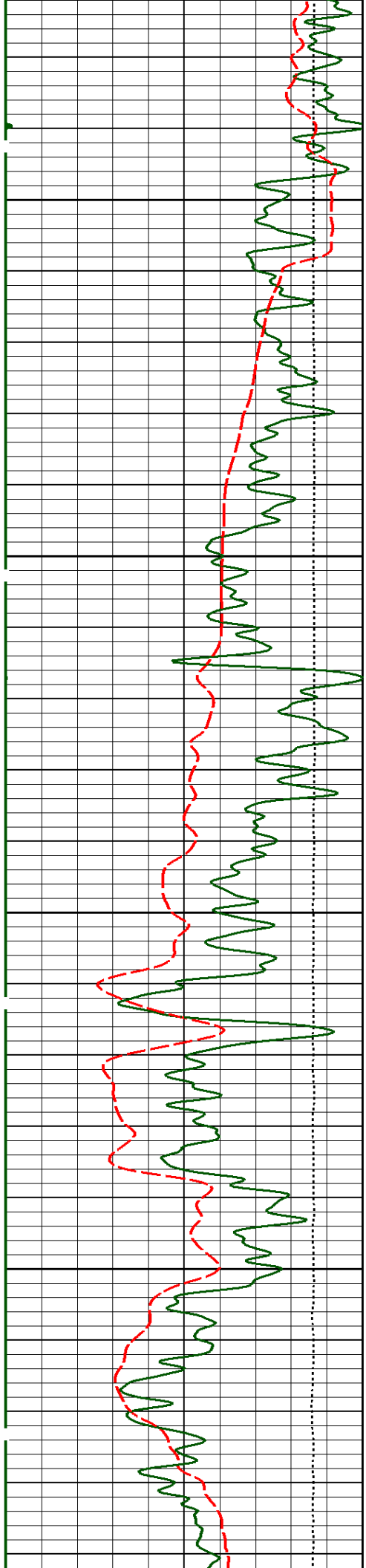


LIDLIM

LSP

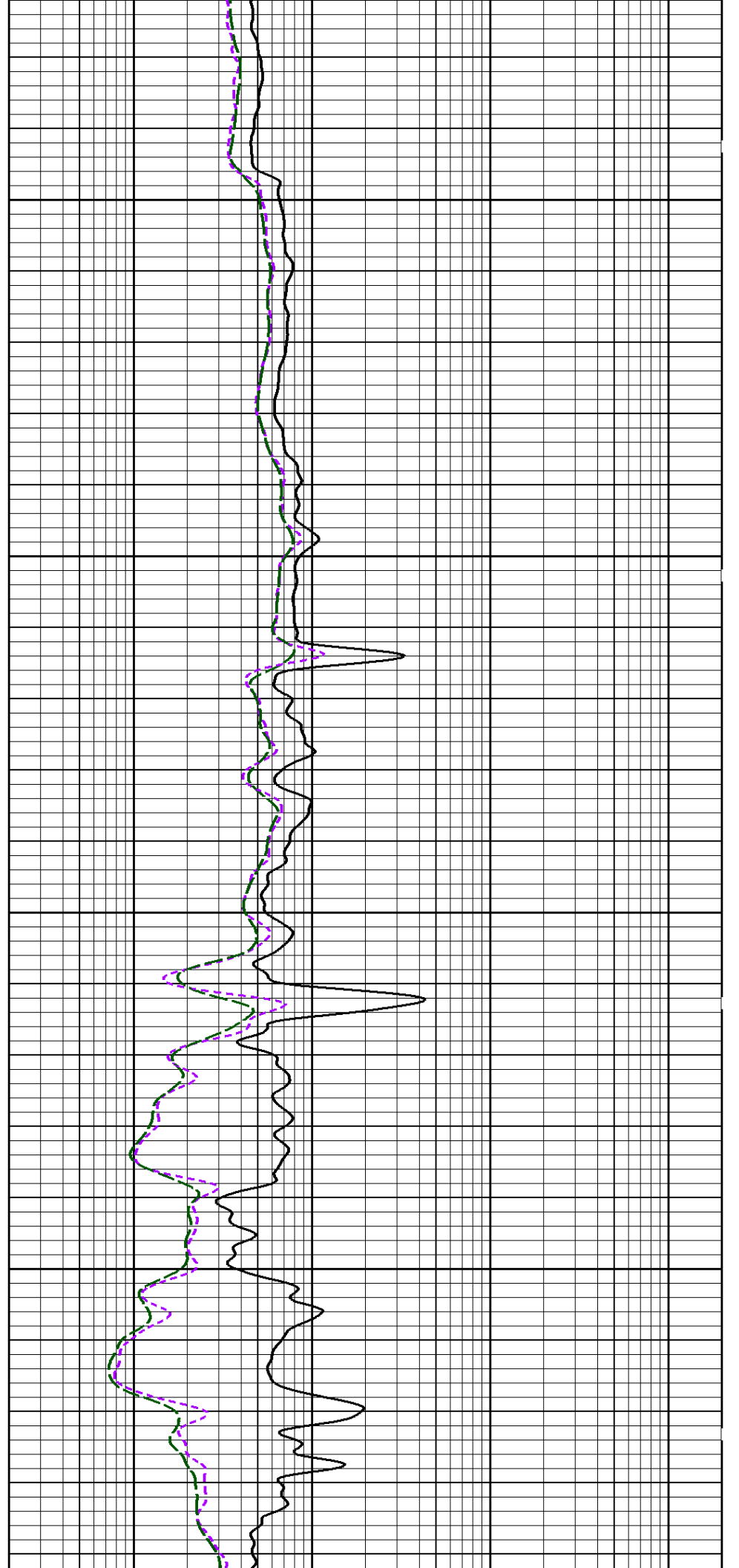
LWT

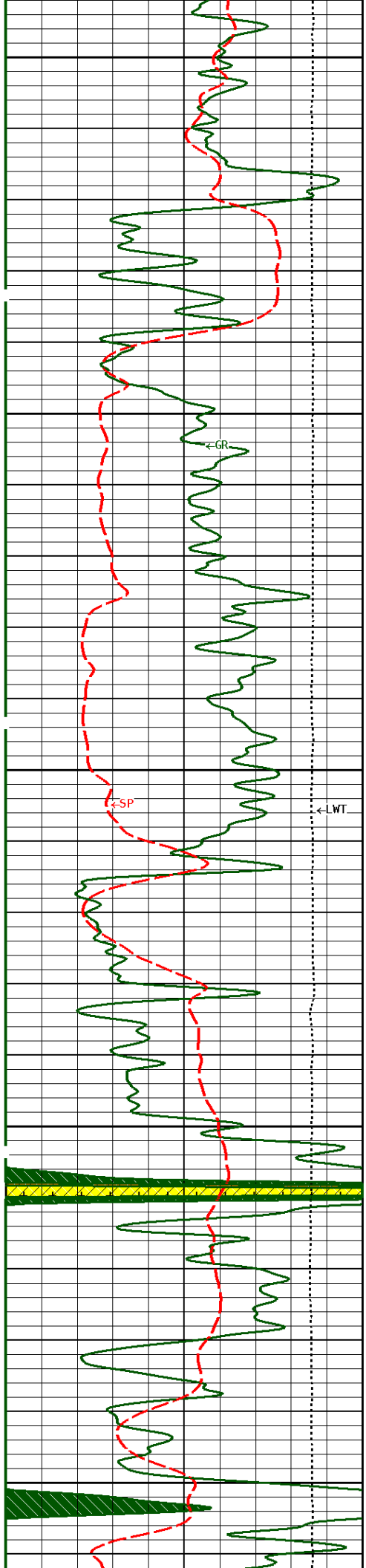
CGR



2200

2300

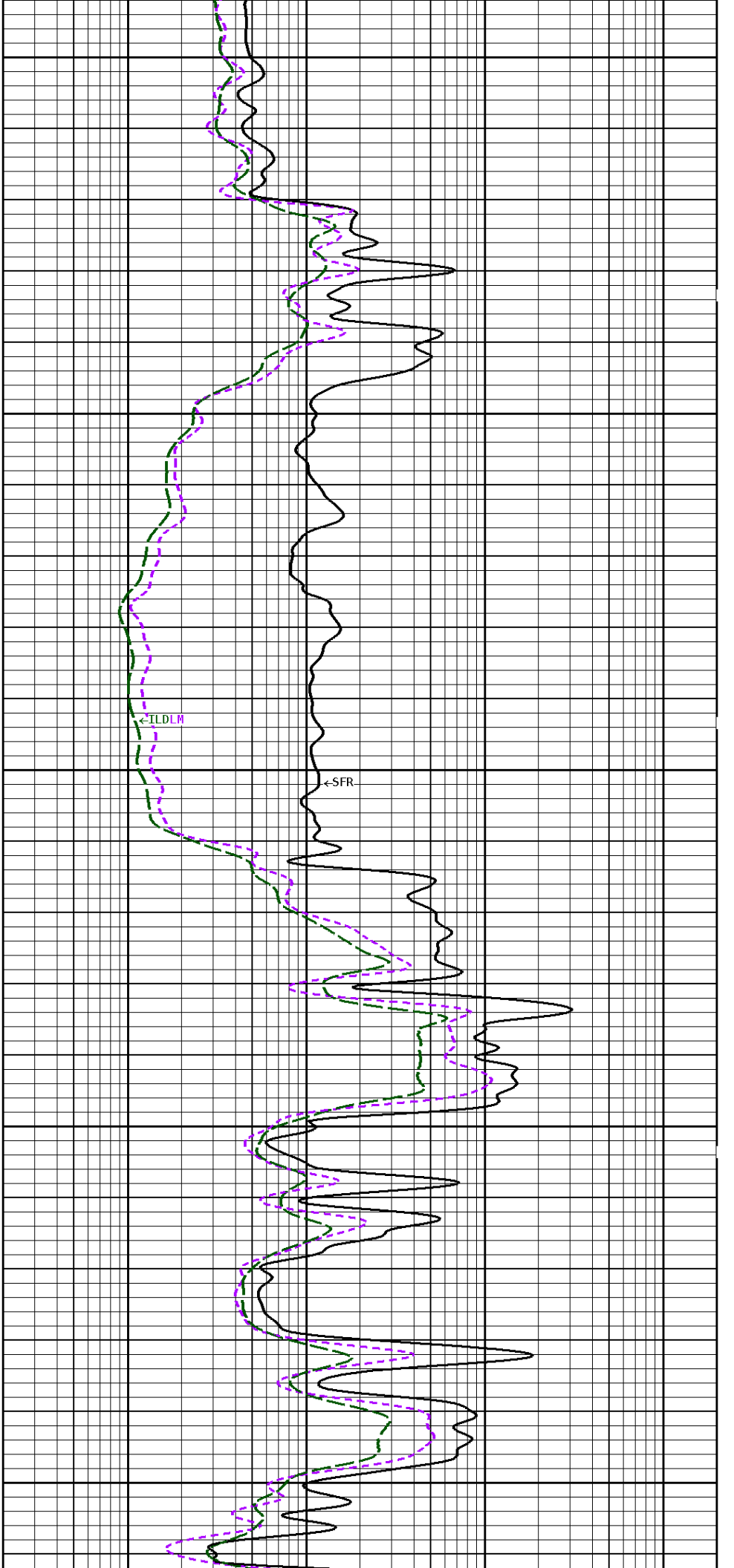




2400

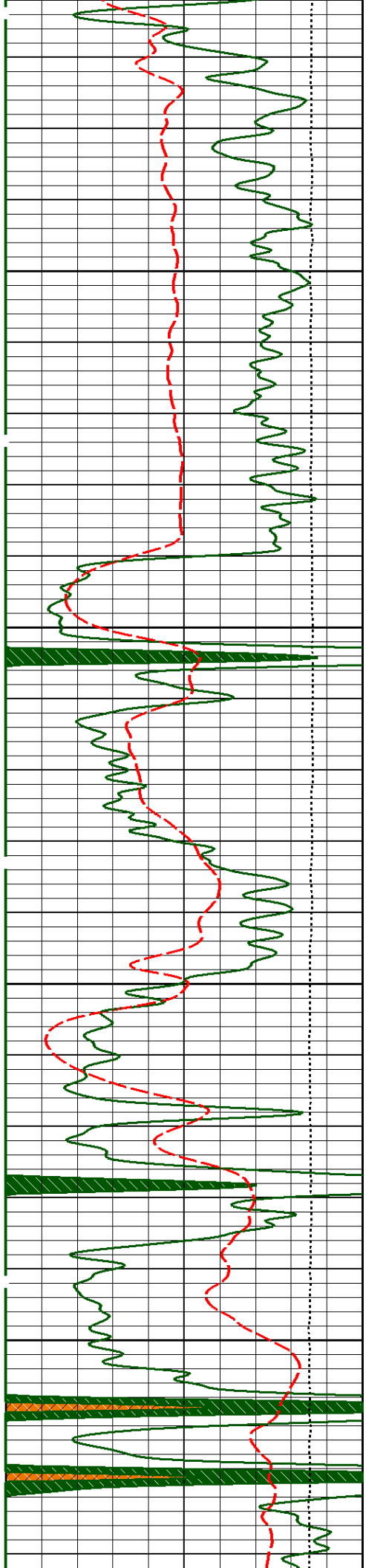
2500

2600



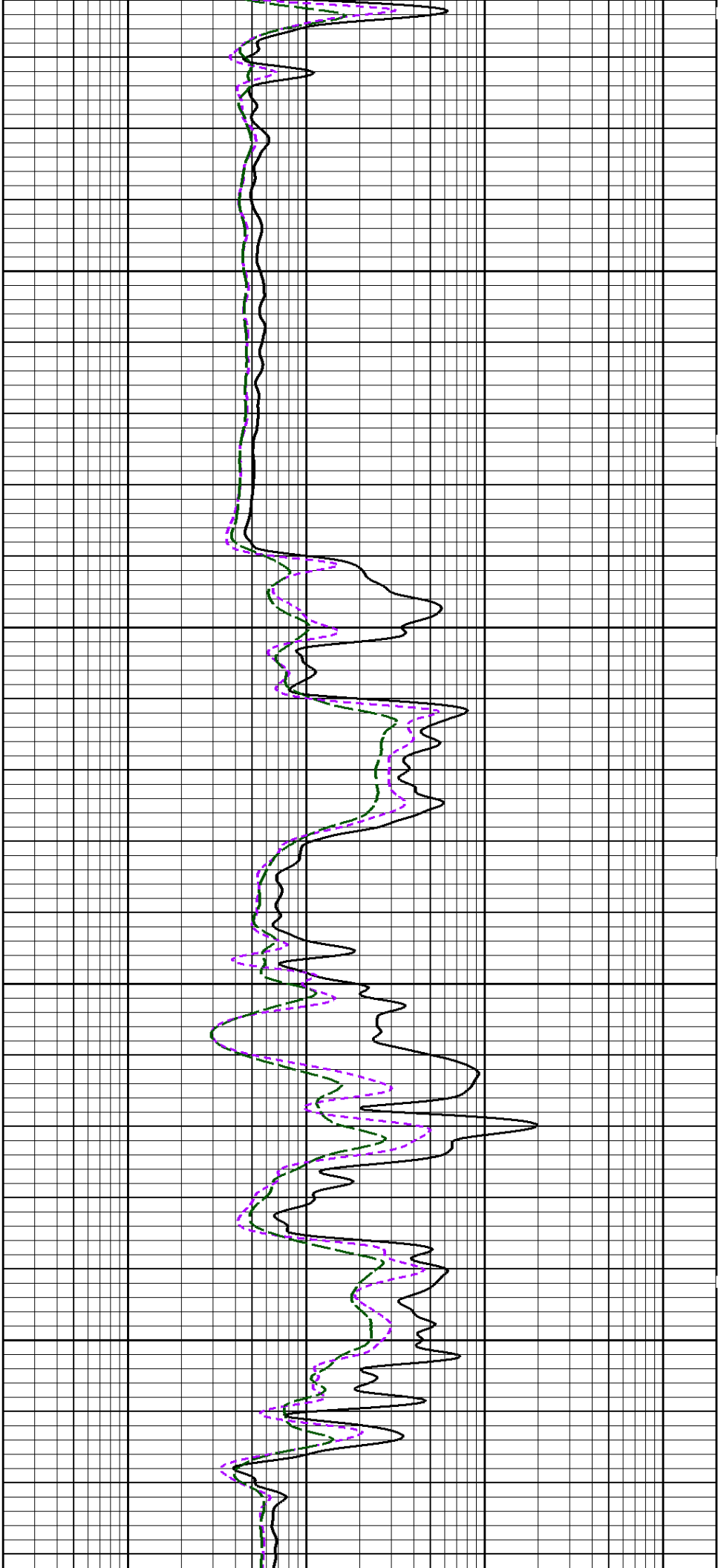
←SFR

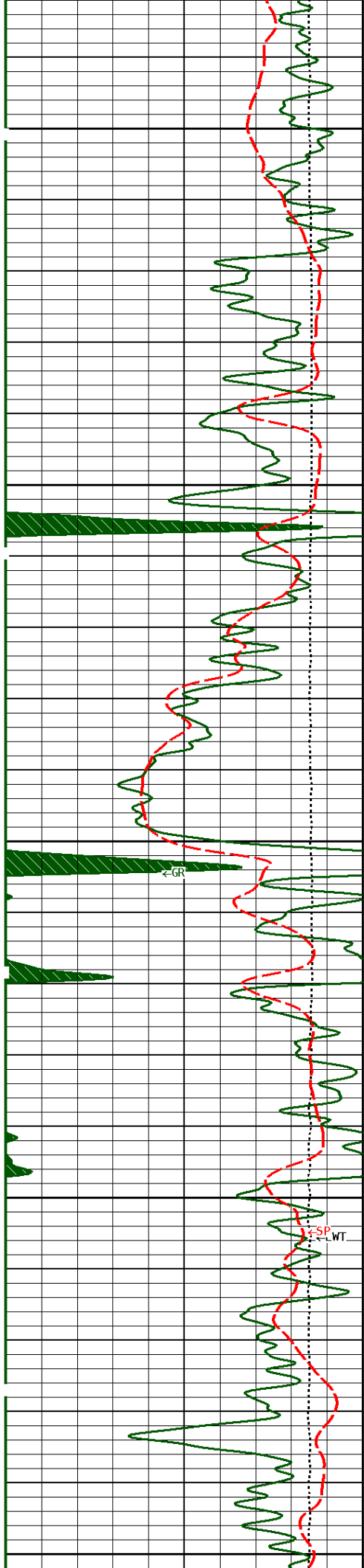
←JLDLM



2700

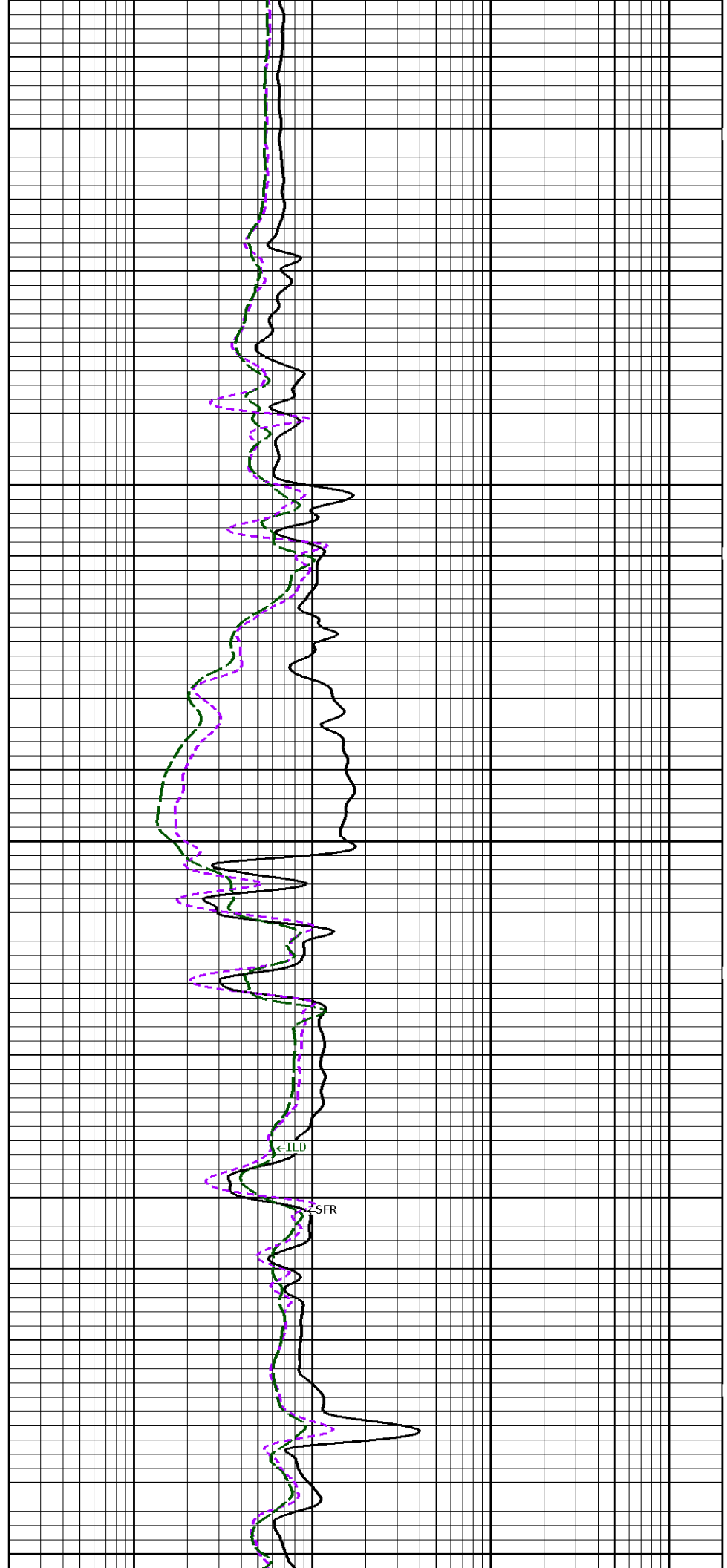
2800





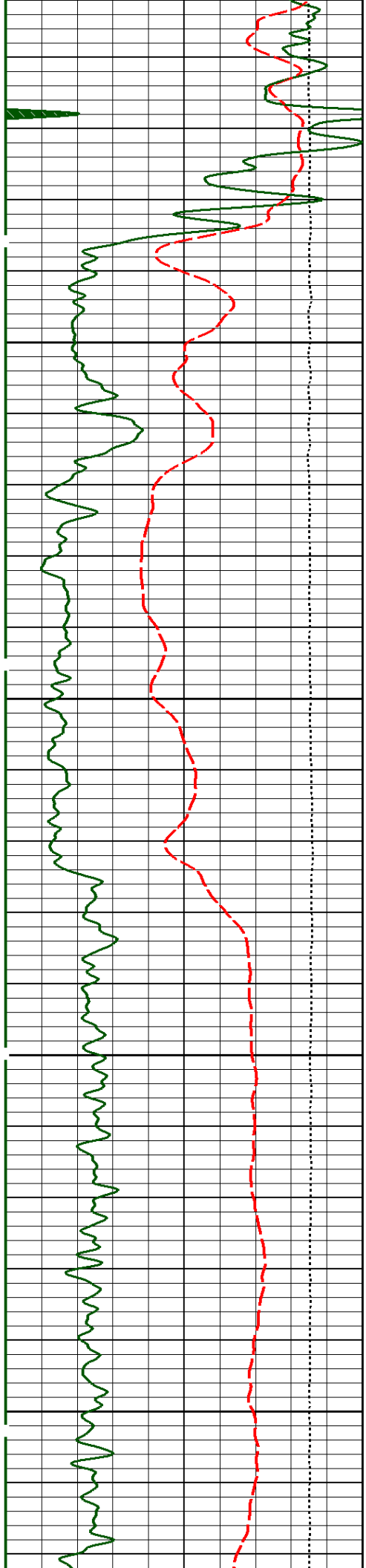
2900

3000



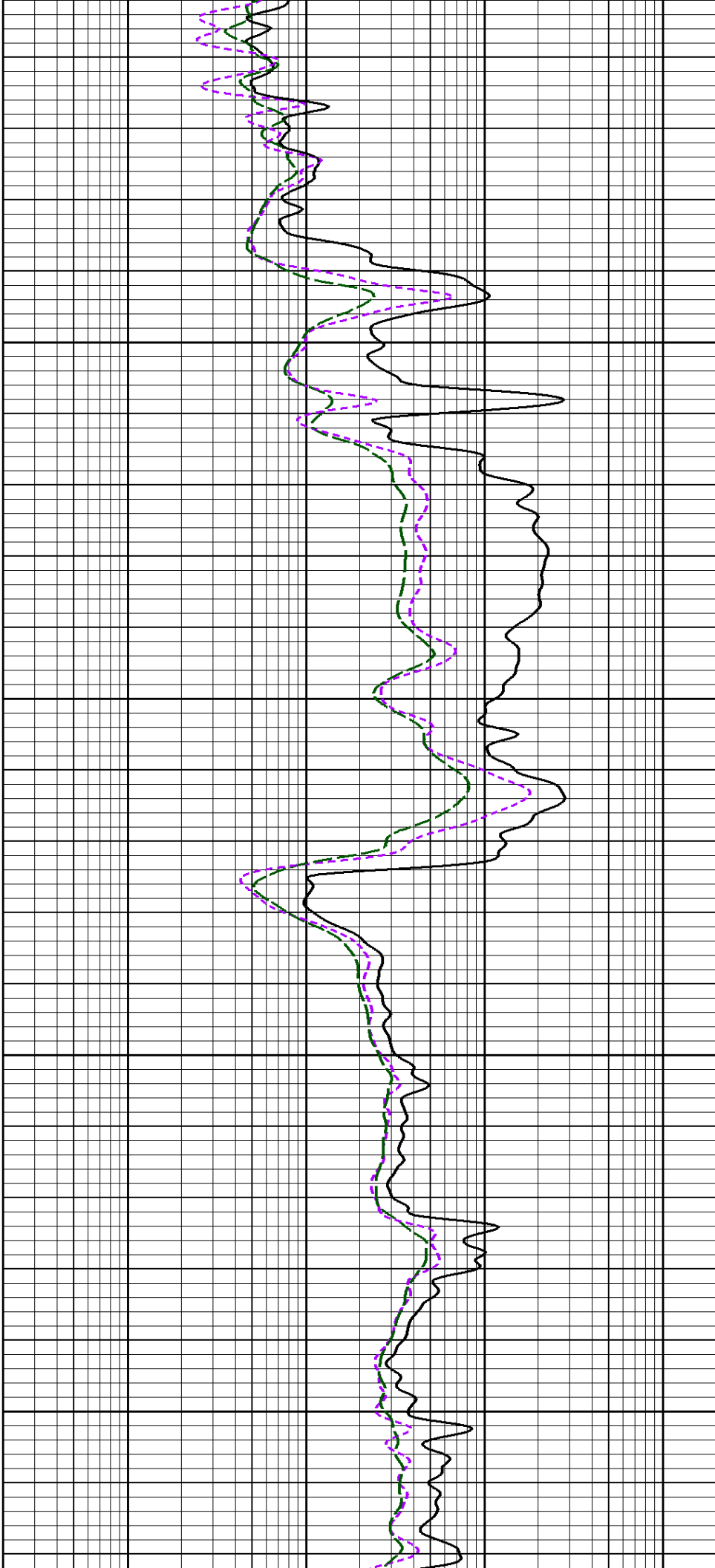
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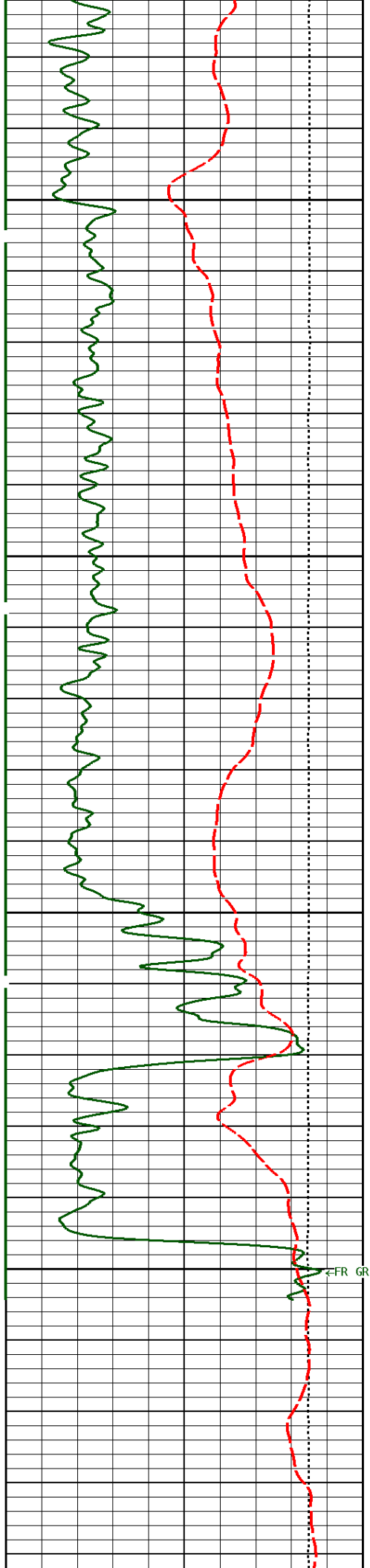
SFR



3100

3200

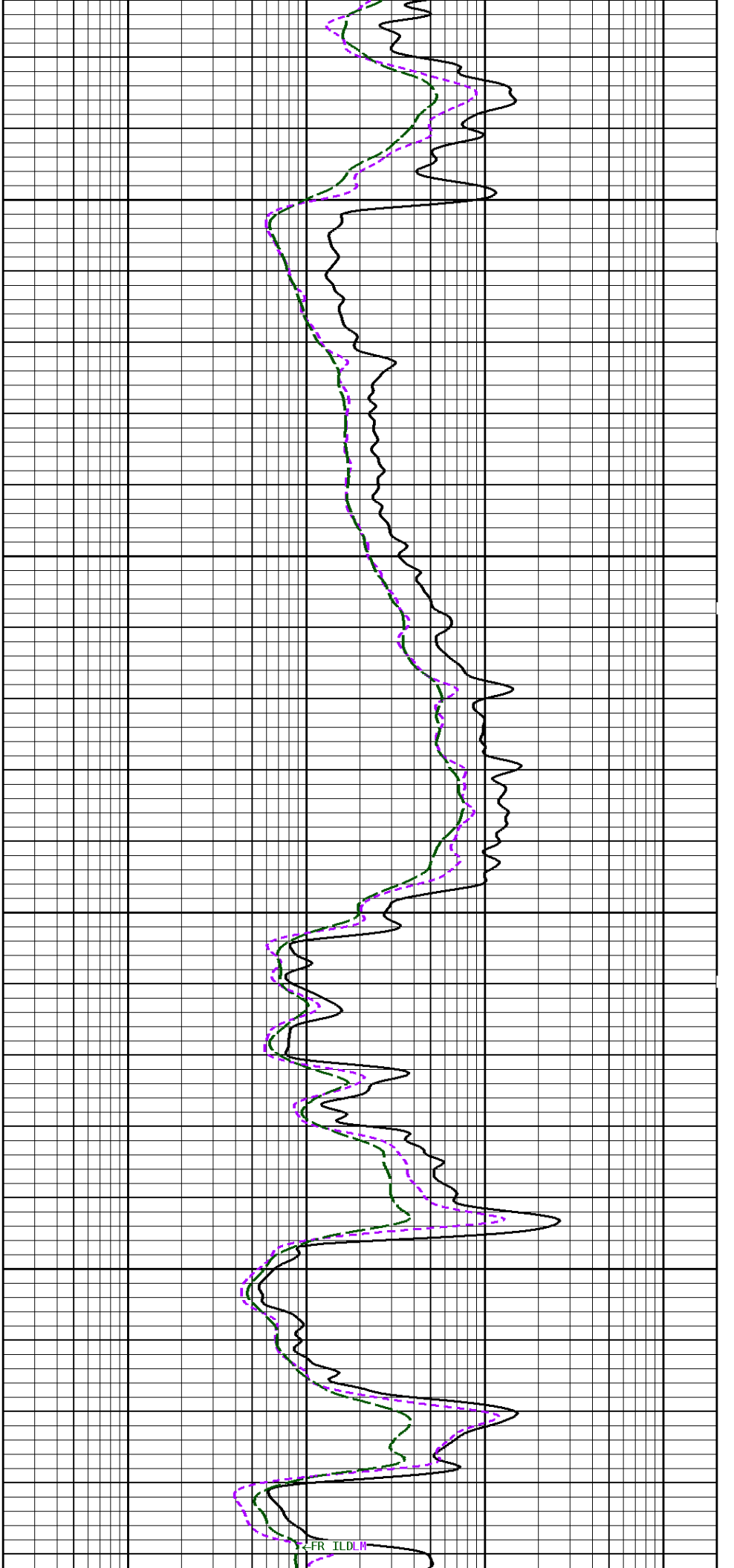




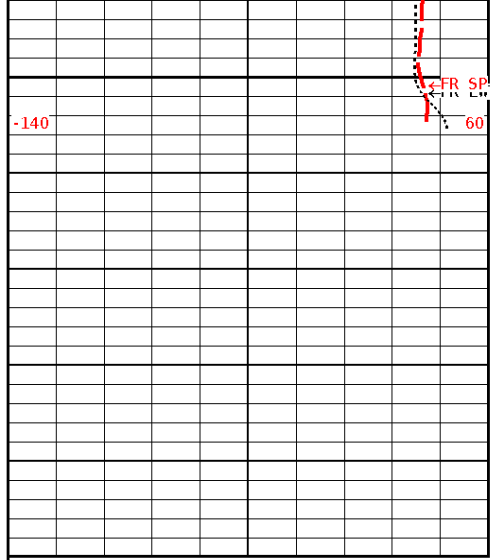
3300

3400

←FR GR

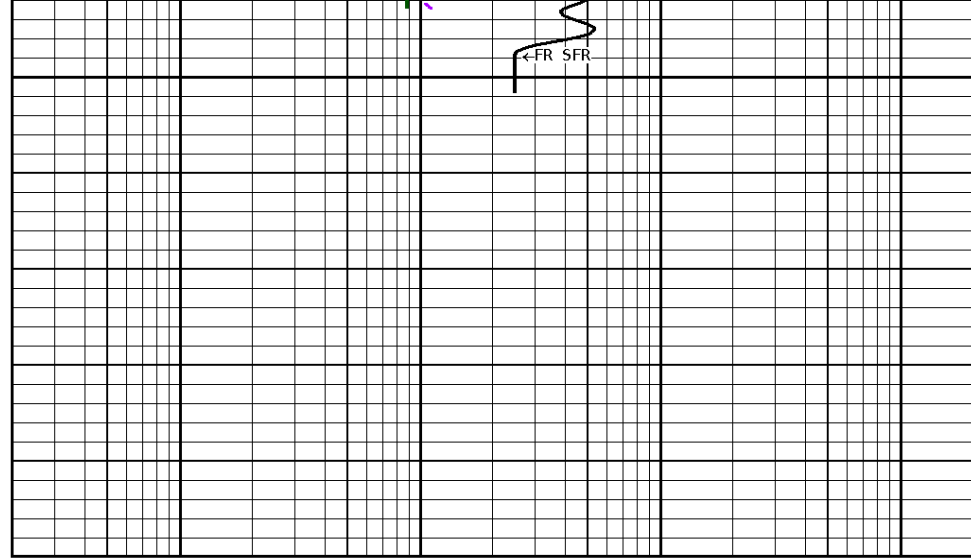


←FR ILDLN

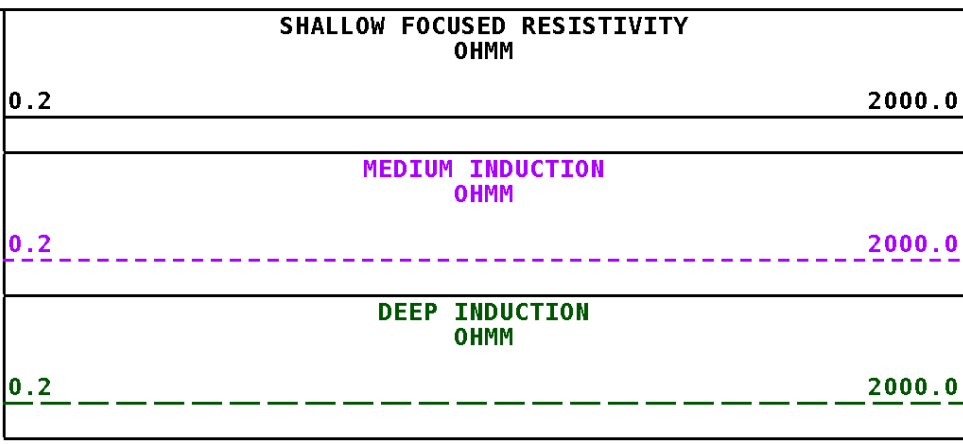
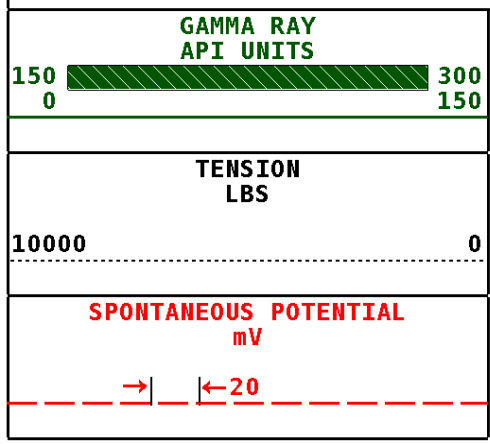


File #1.1.5

3500  
3502



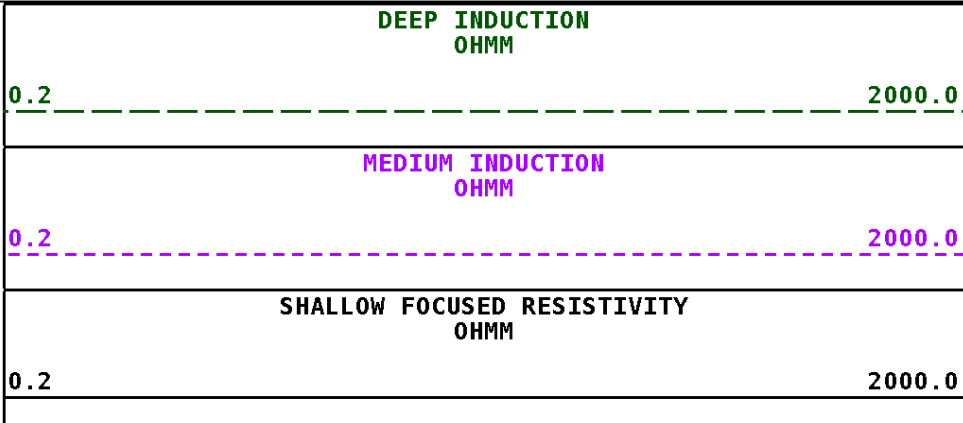
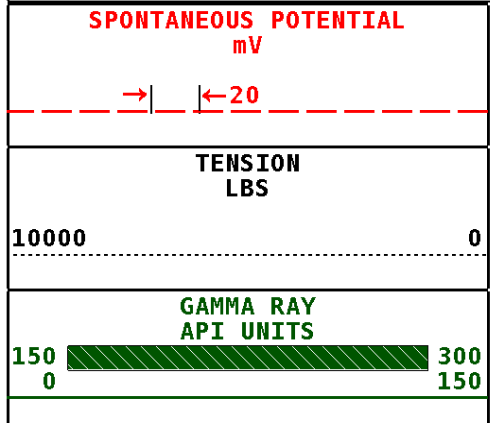
### 1:240 MAIN SECTION



**\* Borehole Zone Factors \***

Zone 1 9999.0 to 0.0 Feet		
Drill Bit Size	7.875	in
Casing Diameter	5.500	in
BHT Depth	3500.000	ft
Borehole Temperature	111.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	2.000	ohmm
Resistivity Of Mud Temperature	70.00	degF

Well File: VAL ENERGY WERNER 4-310WWO MAY10\_MSTK      Scale: 1:240      Format: DIL-240  
 Segment: V1.D1.S3 Reprocess of REPEAT      Acquired: 2018-05/10 07:15 3.4.0-13756  
 Reference: 0      Processed: 2018-05/10 07:25 3.4.0-13756

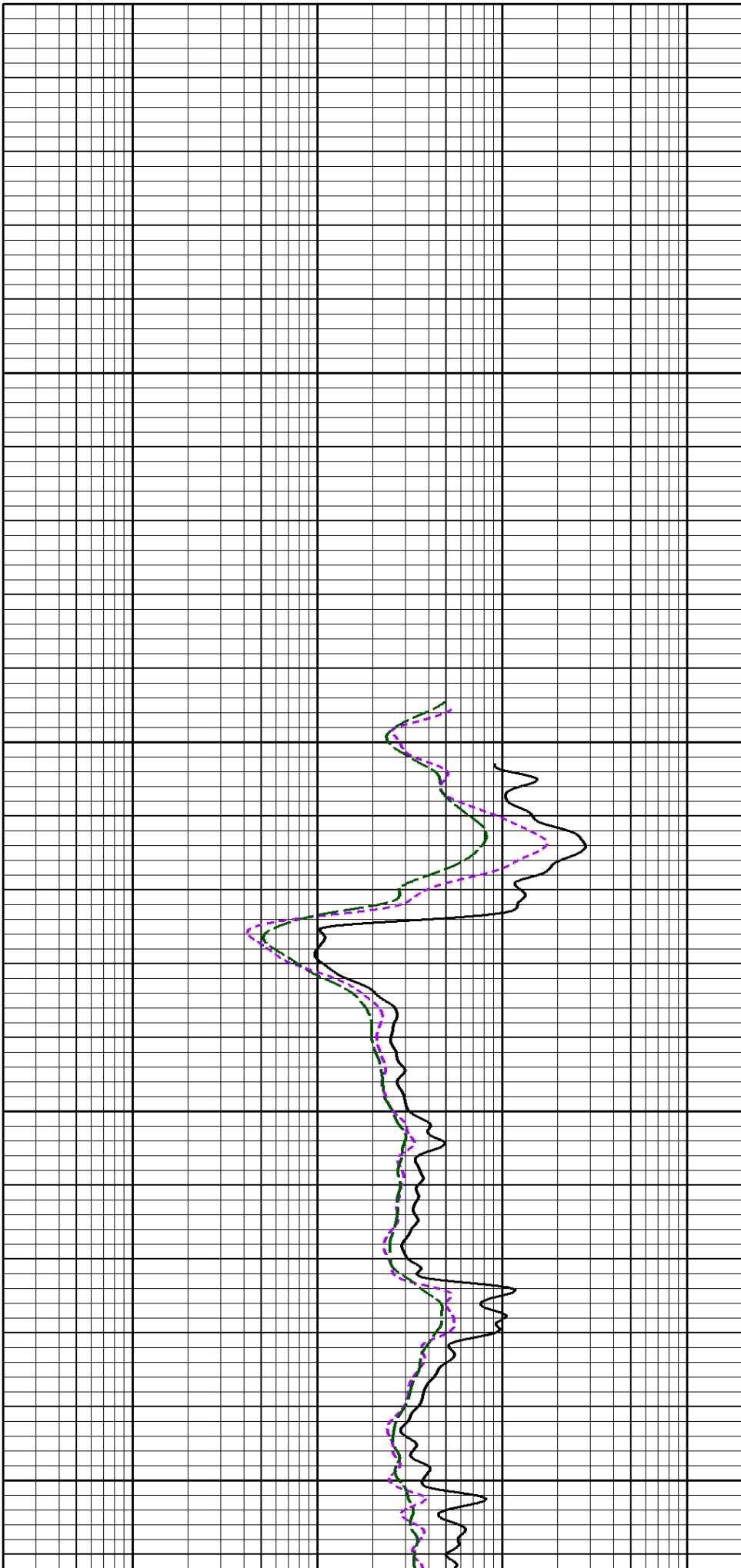
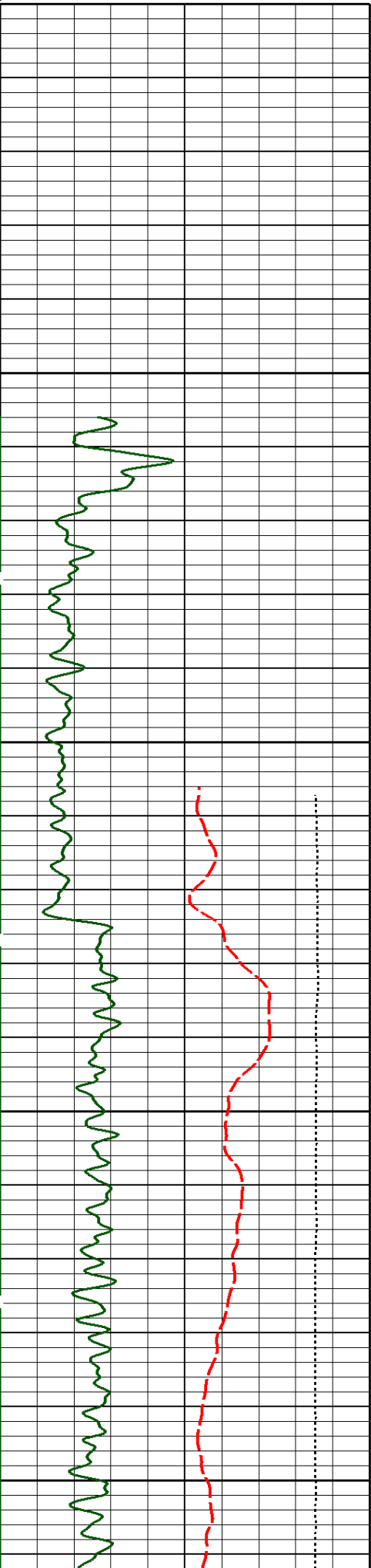


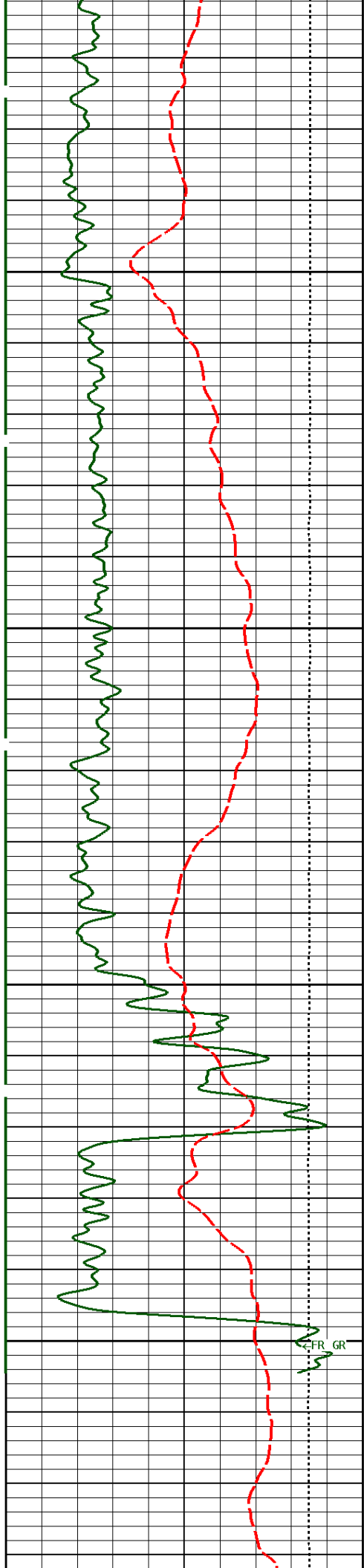
### 1:240 REPEAT SECTION

File #1.1.3

3100

3200

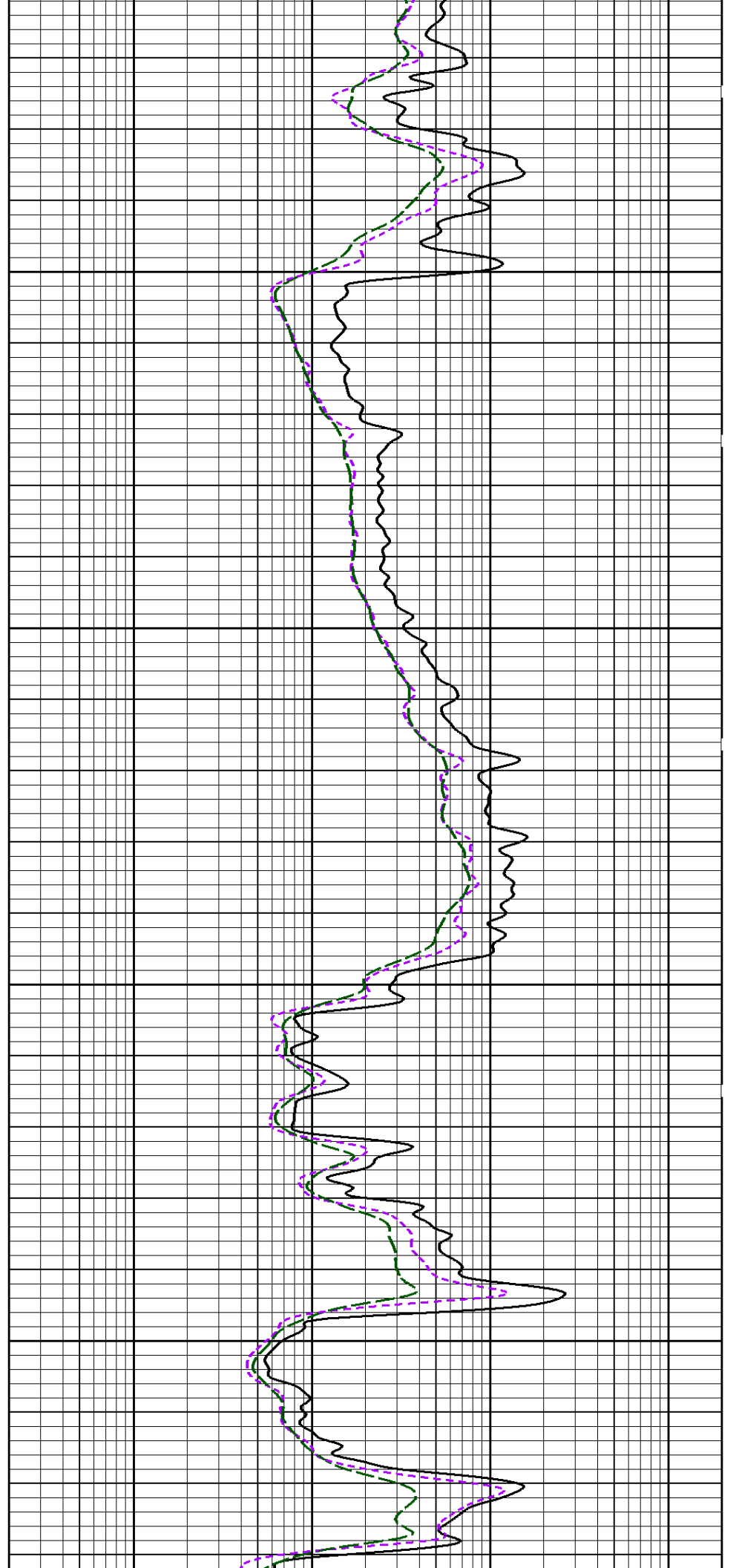


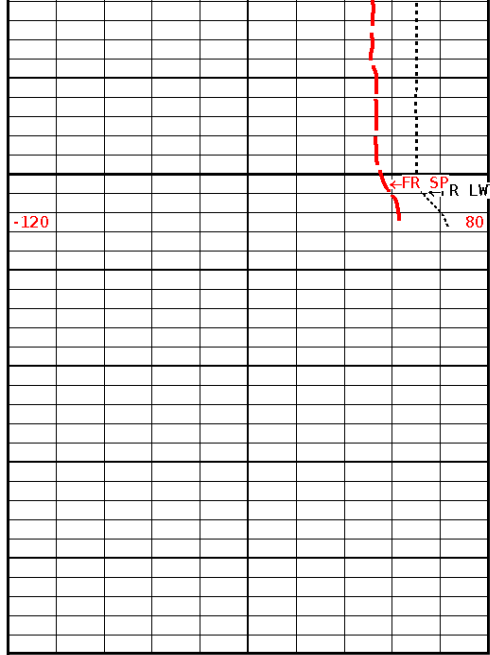


3300

3400

CFR GR

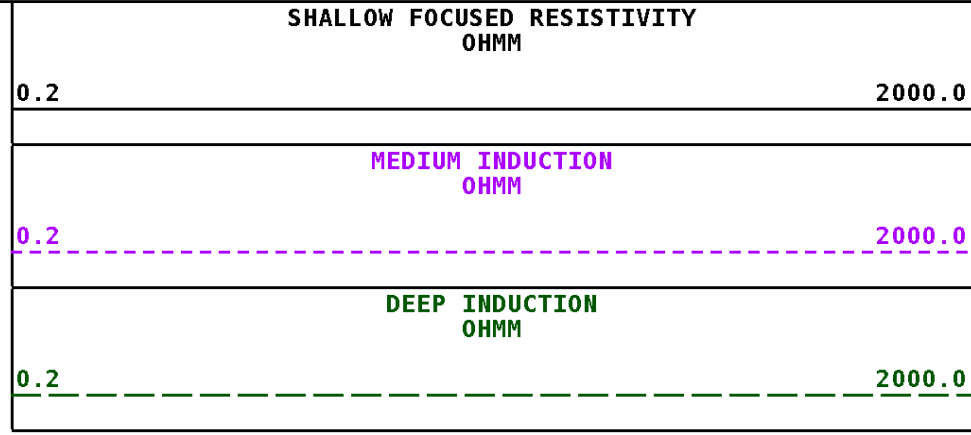
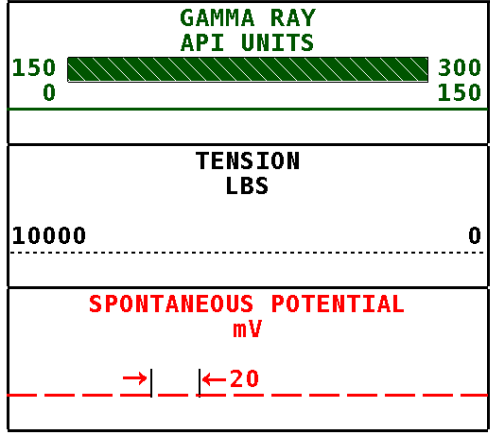




3500  
3502



**1:240 REPEAT SECTION**



**\* Borehole Zone Factors \***

Zone 1		99999.0	to	0.0	Feet
Drill Bit Size				7.875	in
Casing Diameter				5.500	in
BHT Depth				3500.000	ft
Borehole Temperature				111.0	degF
Temperature Gradient				1.00	DFHF
Resistivity Of Mud				2.000	ohmm
Resistivity Of Mud Temperature				70.00	degF

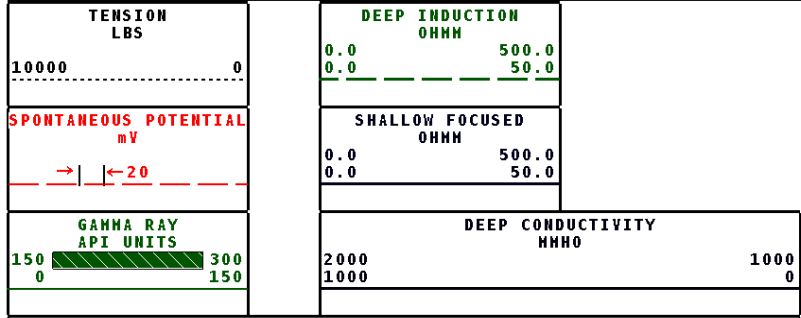
**\* Calibration Summary \***

Shop Calibration					
GRT-B					
Performed : 09-Feb-2018			Time : 11:37		
Sensor Suite : GR-GR5			ID : GRT-BA-14		
	Measured	Units	Calibrated	Units	
GR	Background	Jig	Jig		
	42	309	160	GRAPI	

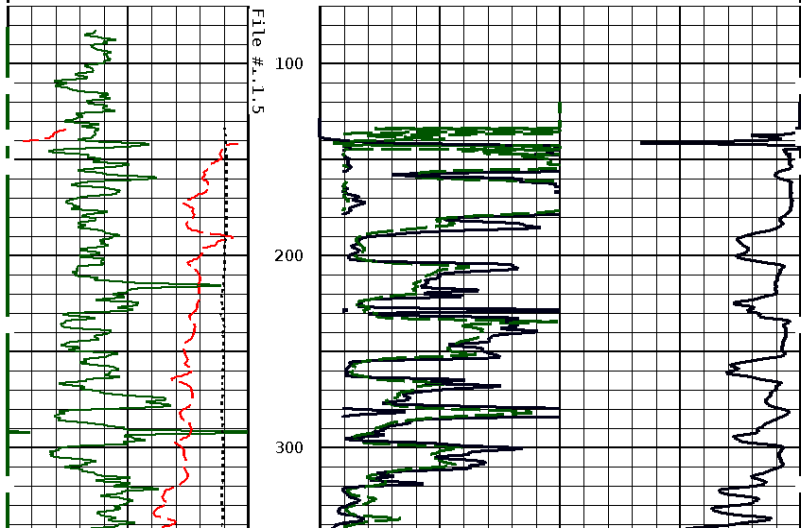
Shop Calibration					
PIT-CA					
Performed : 02-Mar-2018			Time : 10:18		
Sensor Suite : P-IND-T			ID : PIT-CA-069		
	Measured	Medium	Calibrated	Units	
	R	X	R	X	Units
	120175	121167	0.0	0.0	

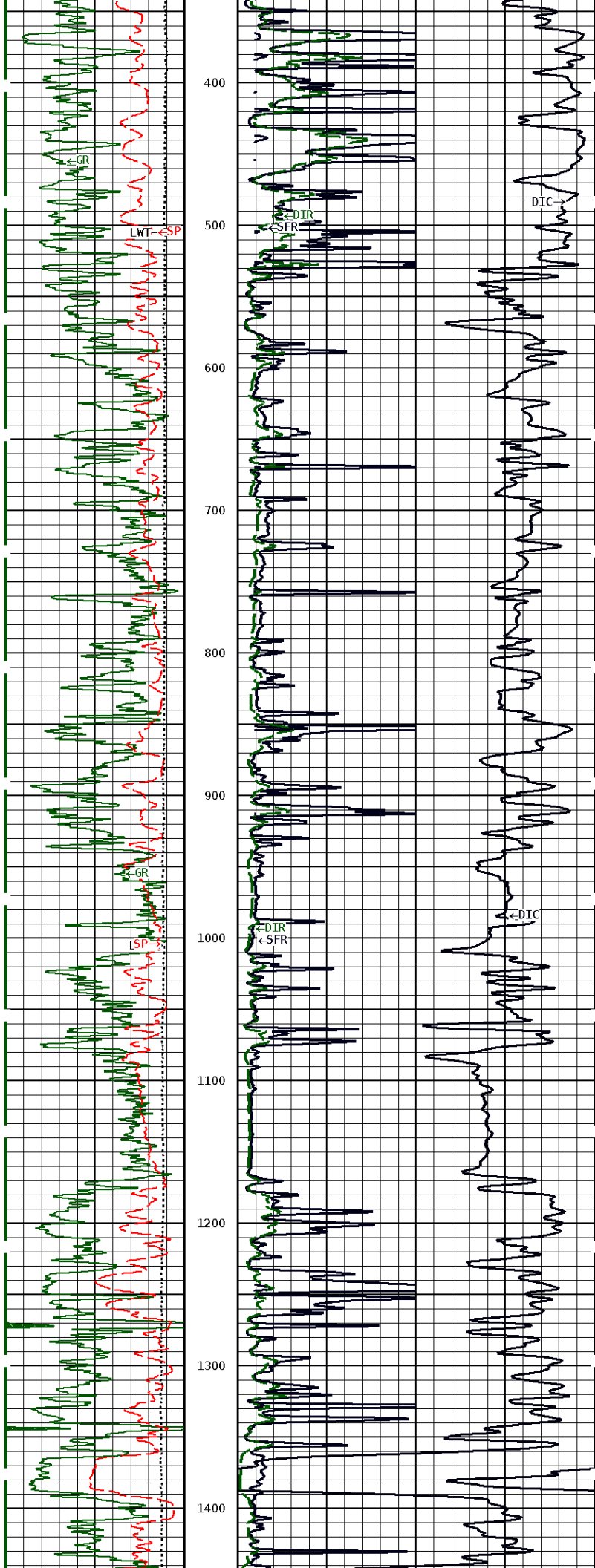
Air	130175	131167	-0.0	-0.0	MMHOS
Zero	131071	131067	42.2	-8.2	MMHOS
Reference	249263	248373	5042.2	4991.8	MMHOS
Loop	129045	219221	3705.4	3800.9	MMHOS
Sonde Error			0.4	-8.2	MMHOS
Cond			5042.2	4991.8	MMHOS
Deep					
	Measured		Calibrated		Units
	R	X	R	X	
Air	128286	131989	0.0	0.0	MMHOS
Zero	131062	131069	56.4	-22.2	MMHOS
Reference	234731	233611	2056.4	1977.8	MMHOS
Loop	127367	223347	1764.1	1799.6	MMHOS
Sonde Error			-1.4	-7.2	MMHOS
Cond			2056.4	1977.8	MMHOS
Temperature					
	Measured		Calibrated		Units
	Low	High	Low	High	
	16980.0	56920.0	70.0	350.0	DEGF
Performed : 02-Mar-2018			Time : 10:08		
Sensor Suite : SFL			ID : PIT-CA-069		
Internal					
	Measured		Calibrated		Units
	Zero	Reference	Zero	Reference	
Im	32769.8	49558.8	0.0	7028.0	uA
Ib	32765.9	49862.4	0.0	1750.0	mA
MOM1	32785.1	59407.5	0.0	175.0	mV
Equivalent SFL				43.97	OHMM
Performed : 02-Mar-2018			Time : 10:05		
Sensor Suite : P-SP			ID : PIT-CA-069		
Internal					
	Measured		Calibrated		Units
	Zero	Reference	Zero	Reference	
	32793.5	58829.7	0.0	1000.0	mV

Well File: VAL ENERGY WERNER 4-310WVO MAY10 MSTK Scale: 1:1200 Format: DIL1200  
 Segment: V1.D1.S5 Reprocess of MAIN Acquired: 2018-05/10 07:28 3.4.0-13756  
 Reference: 0 Processed: 2018-05/10 08:21 3.4.0-13756

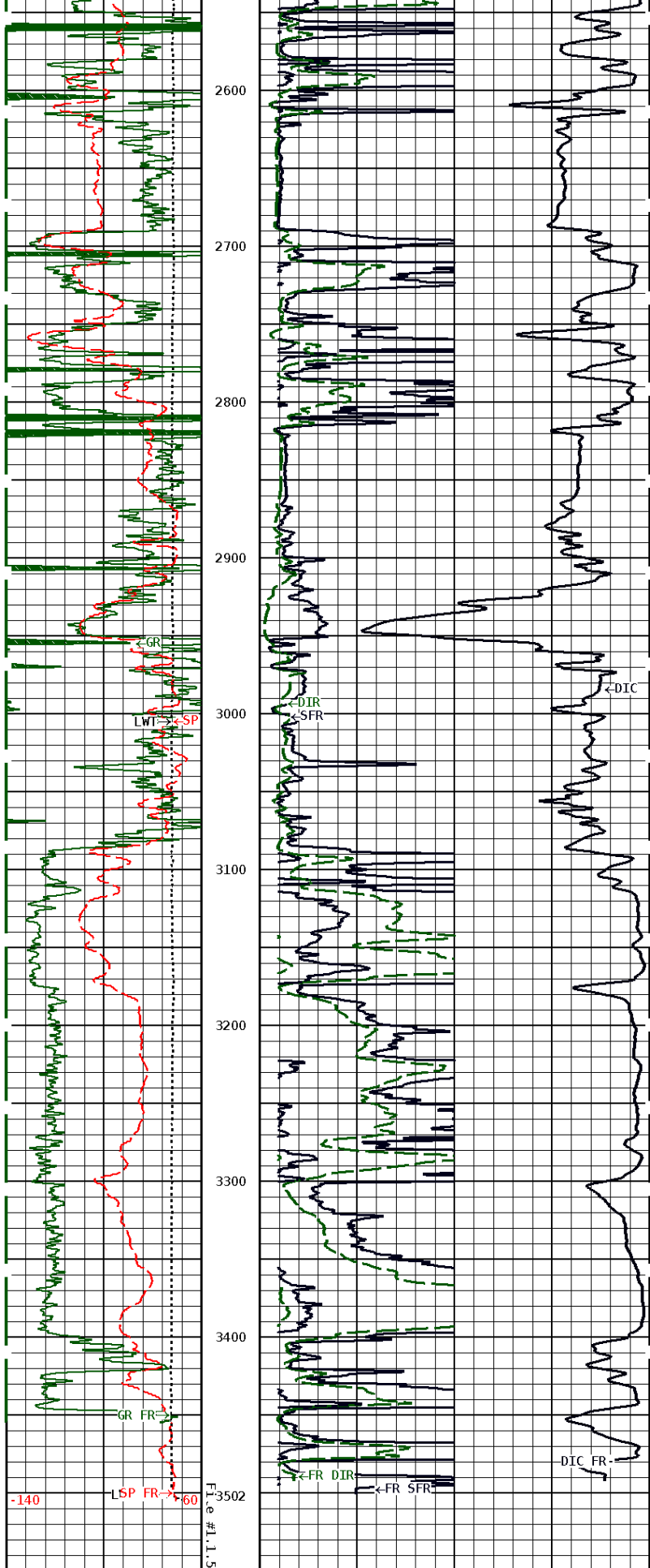


1:1200 MAIN SECTION









**1:1200 MAIN SECTION**

GAMMA RAY  
APT. UNITS

DEEP CONDUCTIVITY  
MHMO

150 0 300 150

SPONTANEOUS POTENTIAL

mV

→ | ← 20

TENSION  
LBS

10000 0

2000 1000 0

SHALLOW FOCUSED  
OHMM

0.0 500.0  
0.0 50.0

DEEP INDUCTION  
OHMM

0.0 500.0  
0.0 50.0



**Tucker**  
ENERGY SERVICES

Company: VAL ENERGY, INC  
Well: WERNER #4-31 OWWO  
Location: 1650' FWL & 2310' FNL  
Logged: 05-10-2018  
K.B. Elev: 1303.0 Ft