



ALL PRESENTATIONS AS PER CUSTOMER REQUEST  
 GRT, CNT, LDT, MLT, CST, AND PIT RUN IN COMBINATION  
 CALIPERS ORIENTED ON X-Y AXIS  
 2.71 G/CC USED TO CALCULATE POROSITY  
 ANNULAR HOLE VOLUME CALCULATED USING 5.50" PRODUCTION CASING  
 PHIN IS CALIPER CORRECTED  
 DETAIL SECTION FROM TD TO 2600'  
 ANHYDRATE SECTION FROM 1350' TO 950'

GRT: GRP.  
 CNT: PHIN, CLCNIN.  
 LDT: PORL, LCORN, PECLN, LDENN, CLLDIN.  
 MLT: NOR\_RF, INV\_RF, MSCLPIN.  
 CST: PORS, ITT, CDTF, TT1, TT2, TT3, TT4.  
 PIT: ILD, ILM, SFLAEC, CIRD, SPU

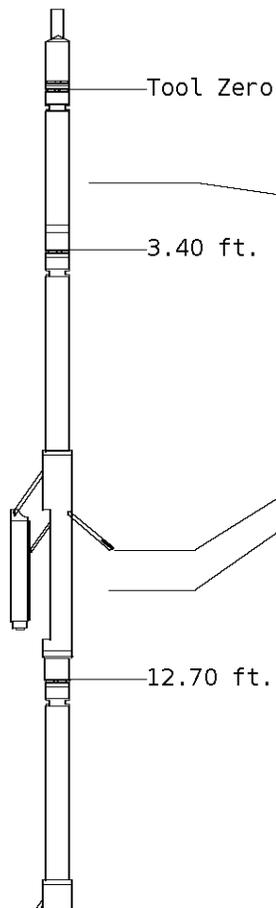
OPERATORS:

C. GONZALES

J. THOMAS

## Tool String Schematic

**Total Tool Length** - 67.37 ft.  
**Maximum Outside diameter** - 6.00 in.  
**Net Weight in Air** - 1171.00 lbs.



**Tool:** GRT-B      **Length:** 3.40 ft.    **O.D.** 3.60 in.  
 Gamma Ray Controller

**Sonde ID** :GRT-BB-107

Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	65.37

**Tool:** CNT-AA      **Length:** 9.30 ft.    **O.D.** 4.36 in.  
 Compensated Neutron A Pad on NDT-A

**Sonde ID** :NDT-BD-133

**Source ID** :N-1045

**Pad ID** :CNP-AA-024

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	9.40	57.97
PHIN	6.80	10.20	57.17

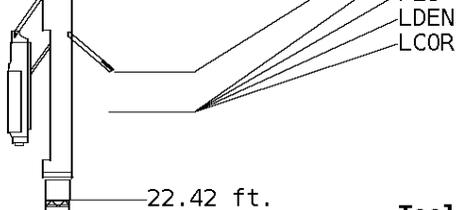
**Tool:** LDT-DF      **Length:** 9.72 ft.    **O.D.** 4.80 in.  
 Litho Density D Pad on NDT-F

**Sonde ID** :PDT-GA-466

**Source ID** :2991GW

**Pad ID** :LDP-DA-065

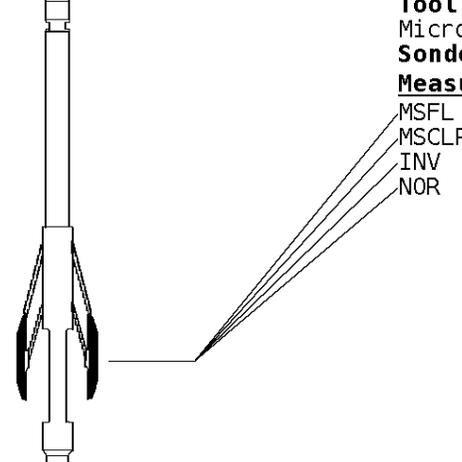
Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.42	19.12	48.25
PEL	7.42	20.12	47.25
PES	7.82	20.52	46.85



7.62                    20.32                    47.05  
 7.62                    20.32                    47.05

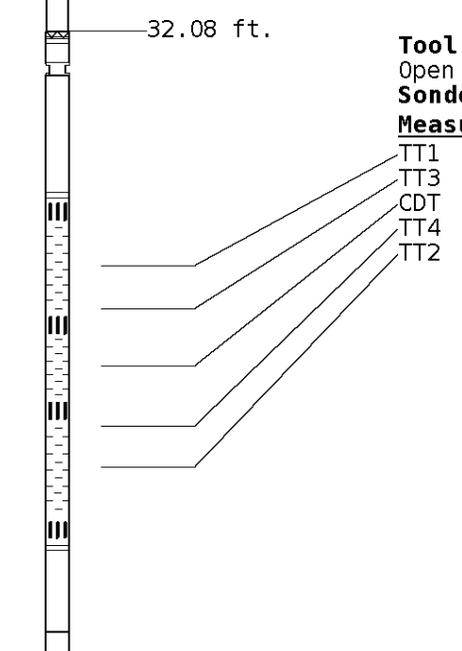
**Tool:** MST-DA                    **Length:** 9.66 ft.   **O.D.** 6.00 in.  
 Micro Spherically Focused (IC)  
**Sonde ID** :MST-DA-057

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	30.02	37.35
MSCLP	7.60	30.02	37.35
INV	7.60	30.02	37.35
NOR	7.60	30.02	37.35



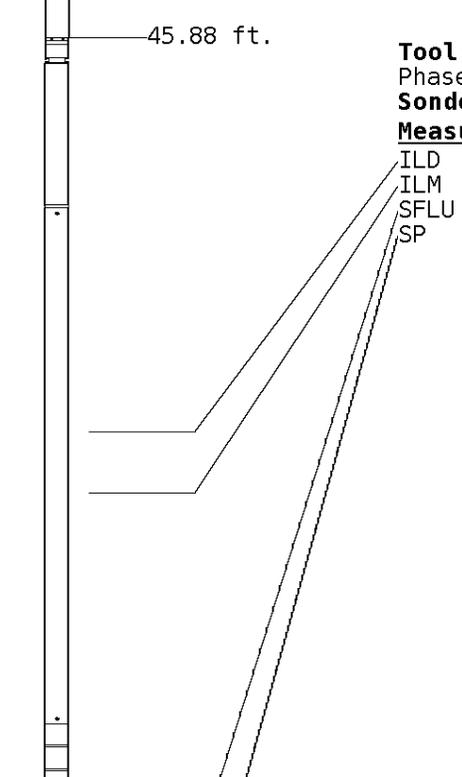
**Tool:** CST-AD                    **Length:** 13.80 ft.   **O.D.** 3.60 in.  
 Open Hole Sonic  
**Sonde ID** :CST-AB-25

Measure Point	Tool Offset	Stack Offset	Bottom Offset
TT1	4.80	36.88	30.49
TT3	5.80	37.88	29.49
CDT	7.30	39.38	27.99
TT4	8.80	40.88	26.49
TT2	9.80	41.88	25.49



**Tool:** PIT-CA                    **Length:** 21.49 ft.   **O.D.** 3.62 in.  
 Phased Dual Induction w/ RM & D  
**Sonde ID** :PIT-AB-005

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	54.80	12.56
ILM	10.10	55.98	11.39
SFLU	17.49	63.37	4.00
SP	20.60	66.48	0.88



LWT ——— 67.37 ft.

Well File: lang-reif-31-3-quint-may-20

Scale: 1:600

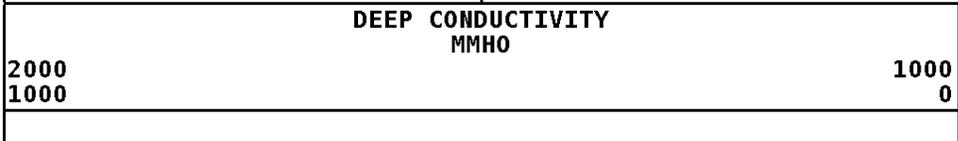
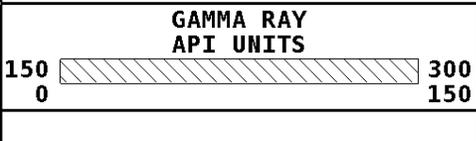
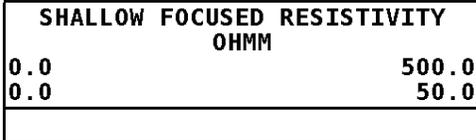
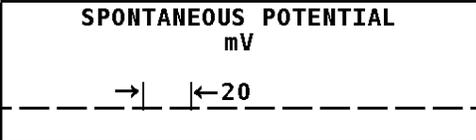
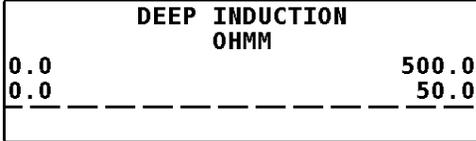
Format: DIL-600

Segment: V1.D1.S6 MAIN

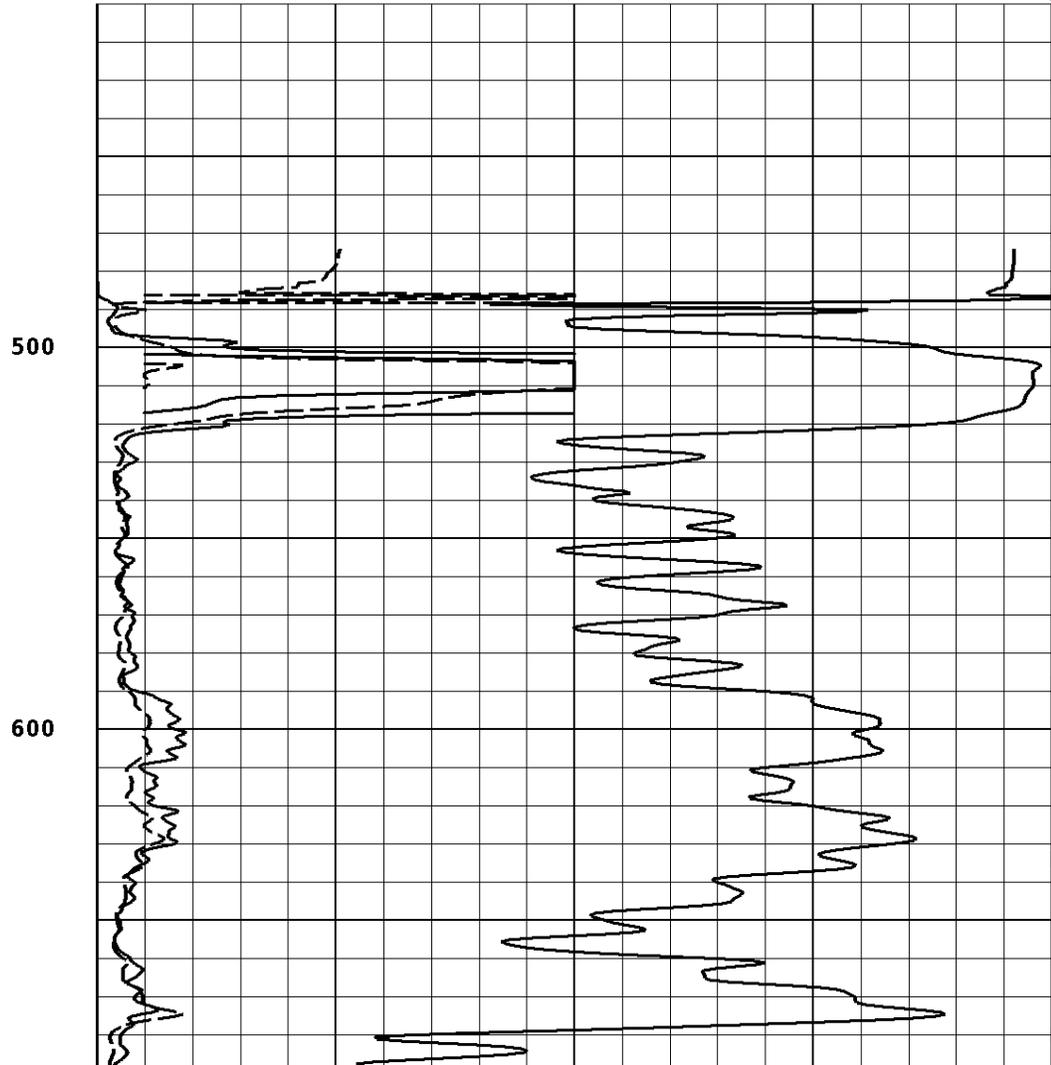
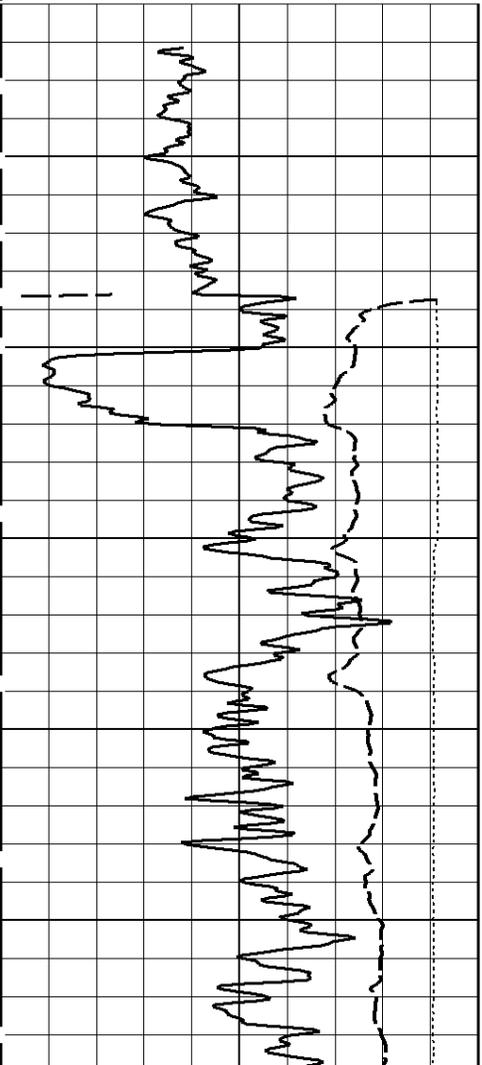
Acquired: 2014-05/20 16:23 3.3.0-12594

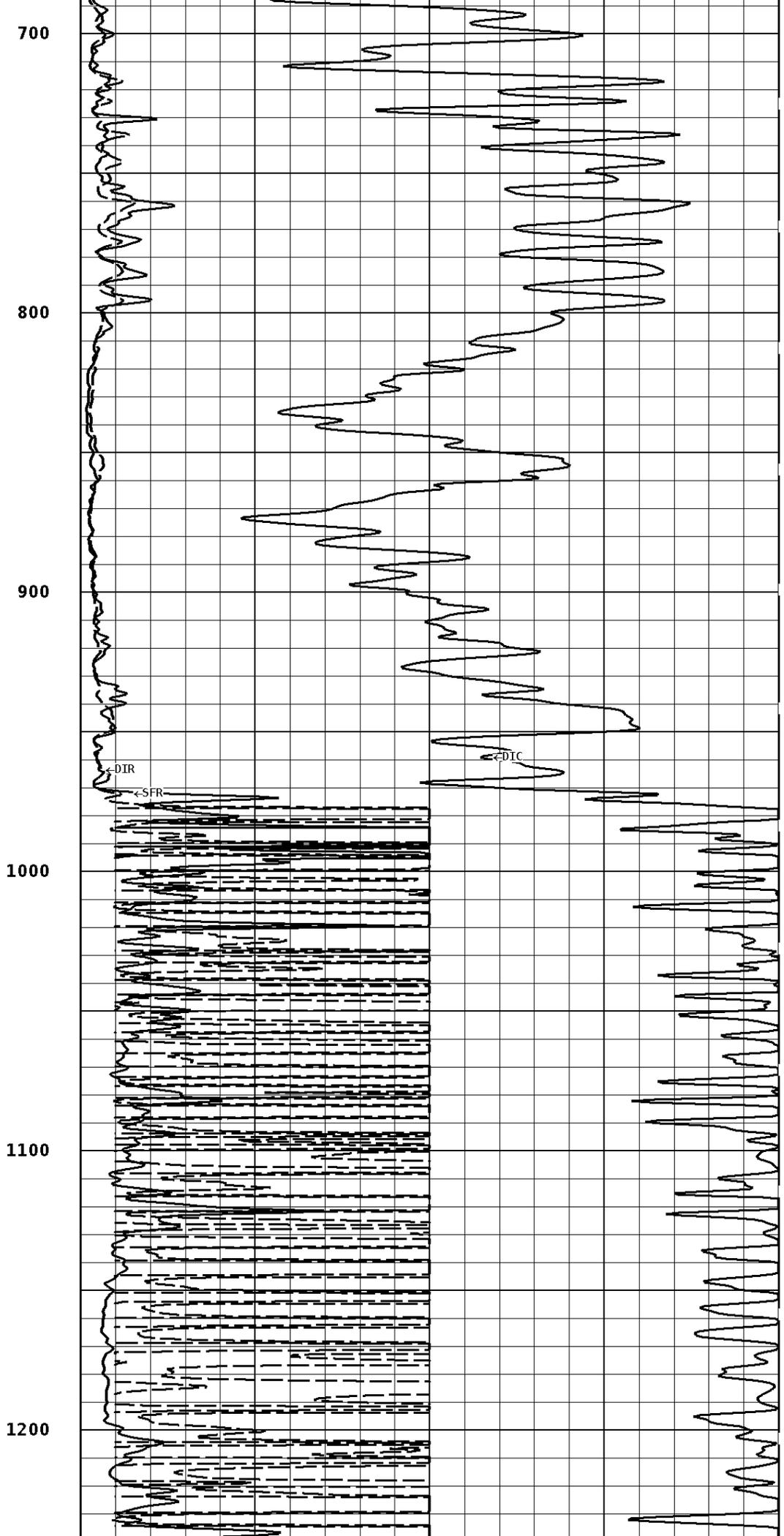
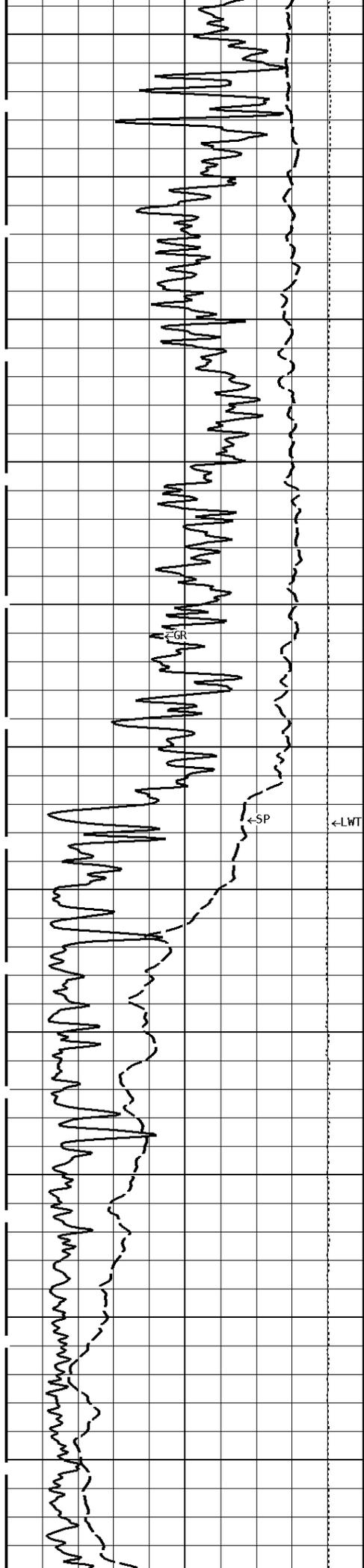
Reference: 0

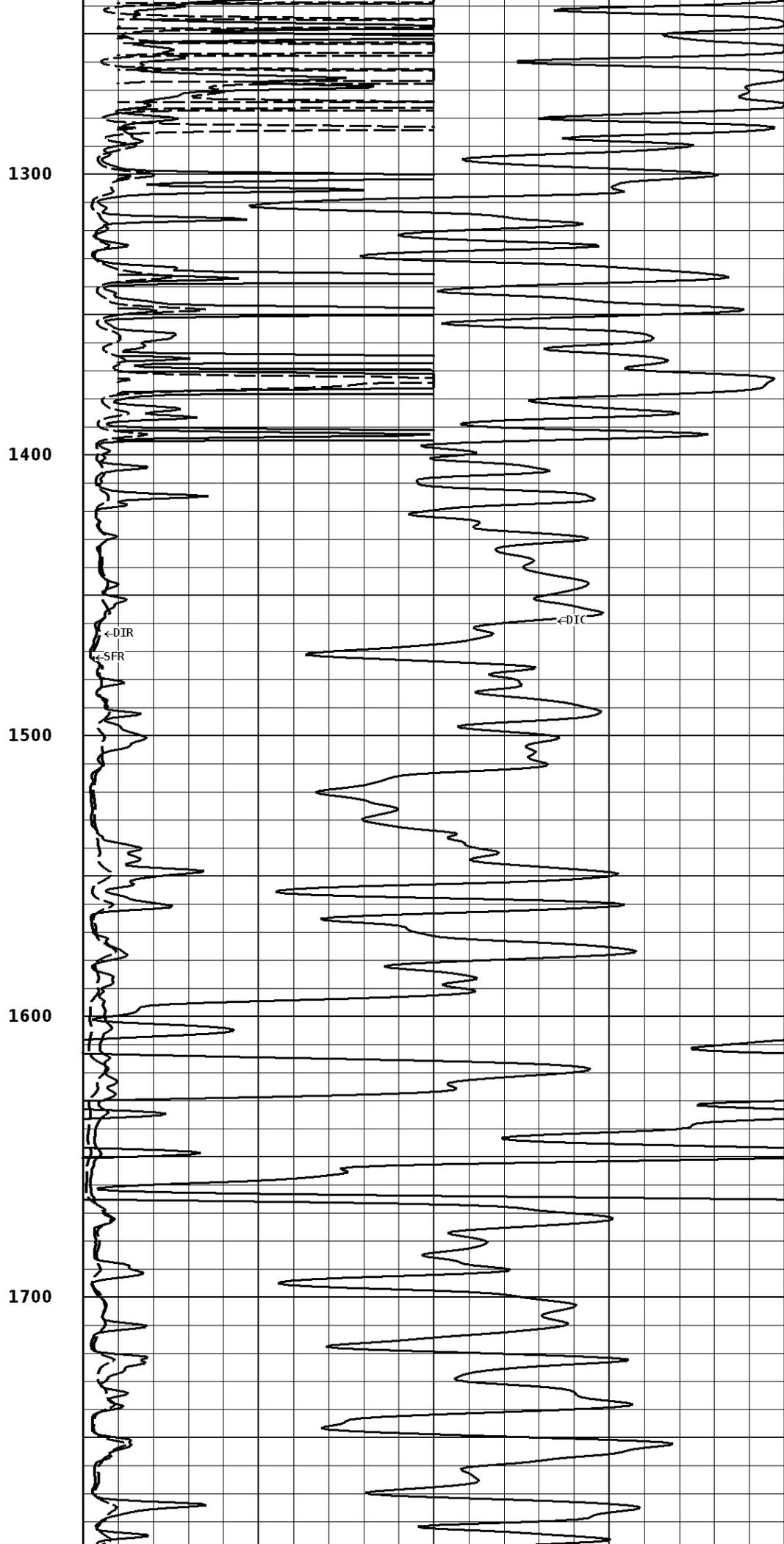
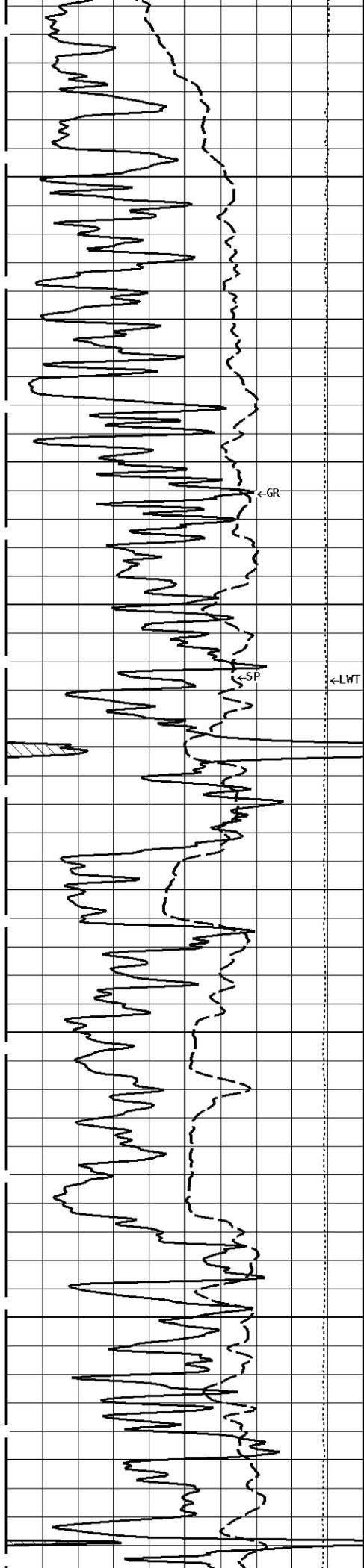
Processed: 2014-05/20 17:54 3.3.0-12594



**1:600 MAIN SECTION**







1800

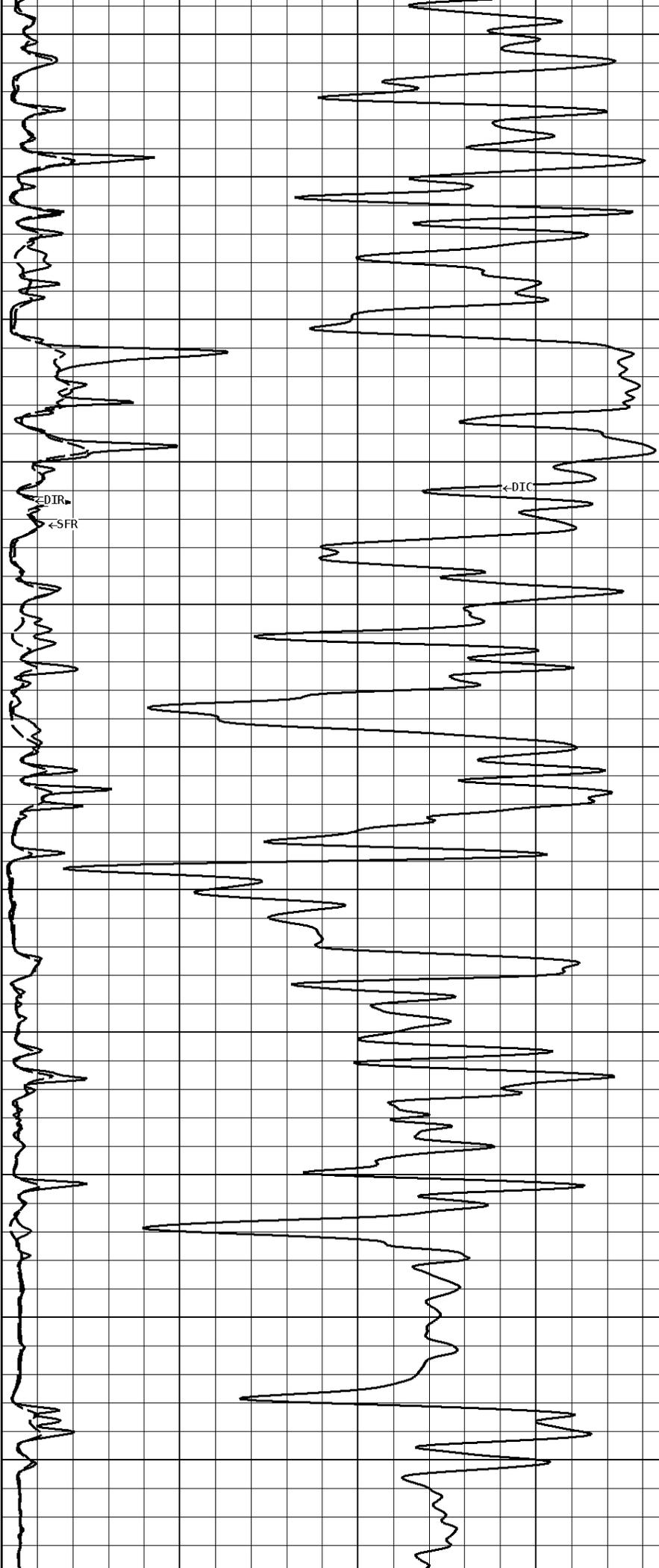
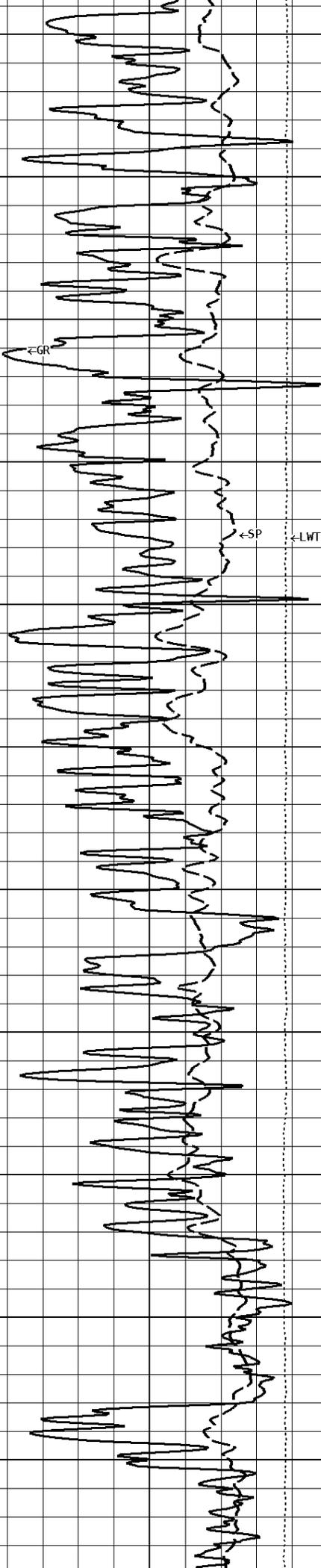
1900

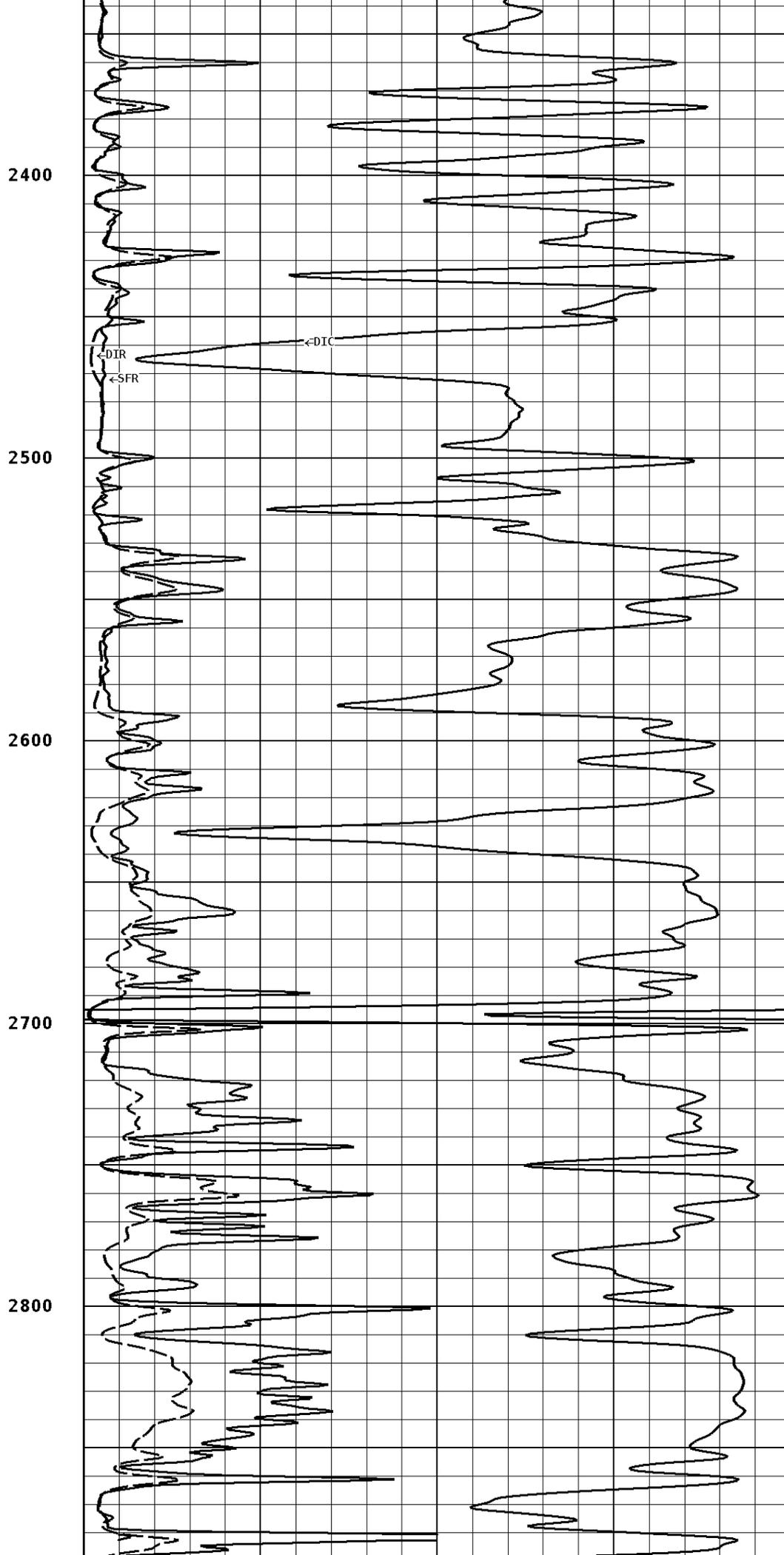
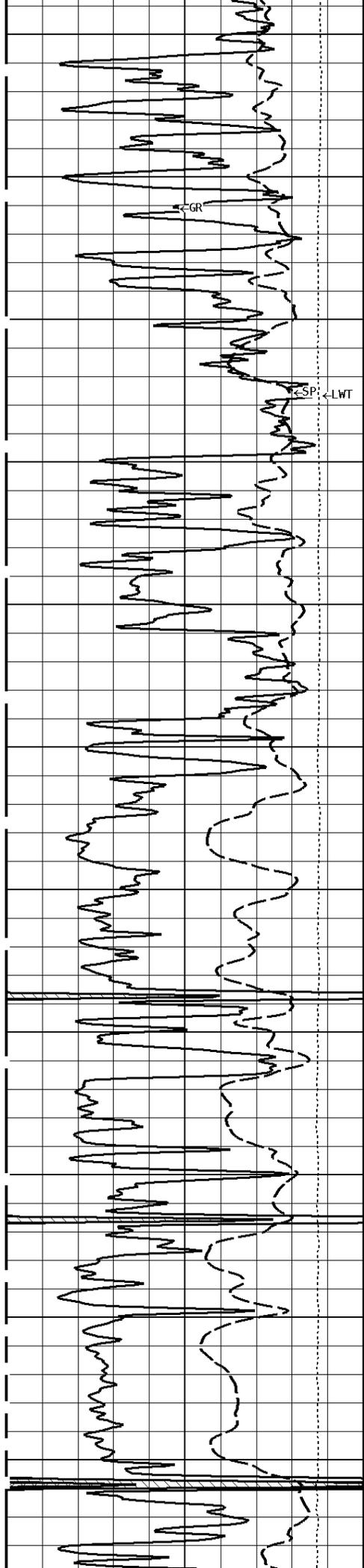
2000

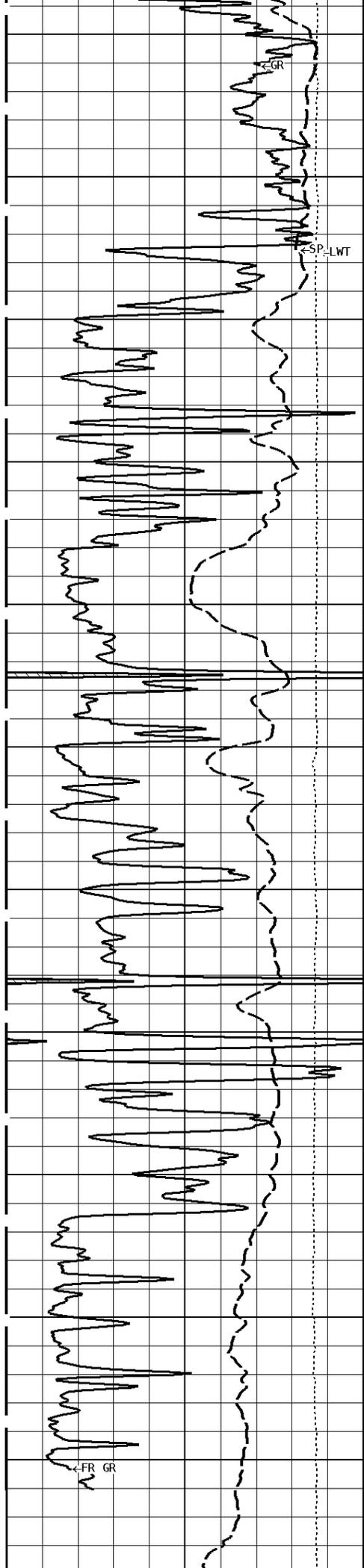
2100

2200

2300







2900

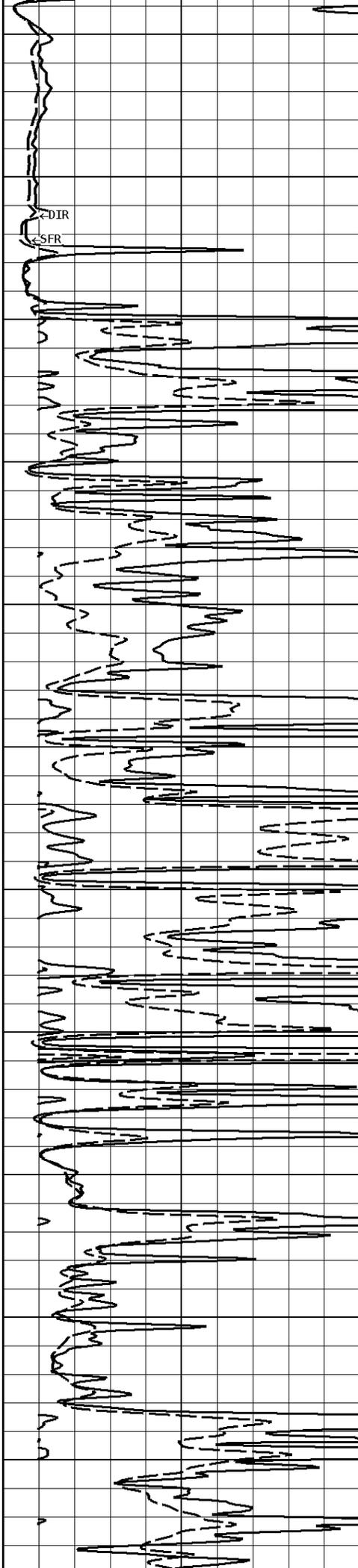
3000

3100

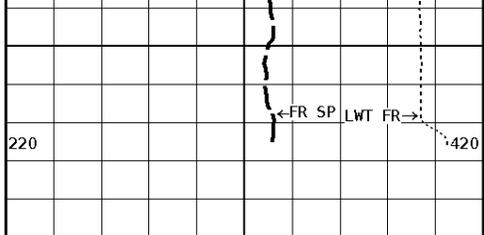
3200

3300

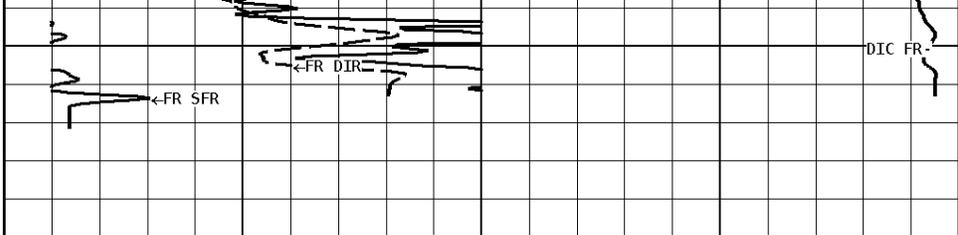
3400



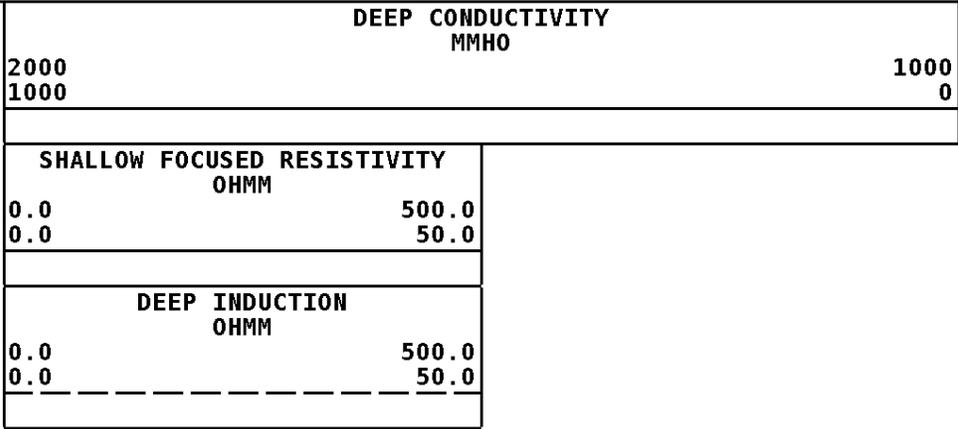
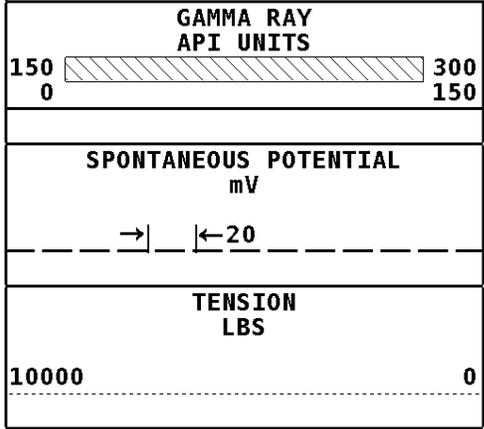
DIC



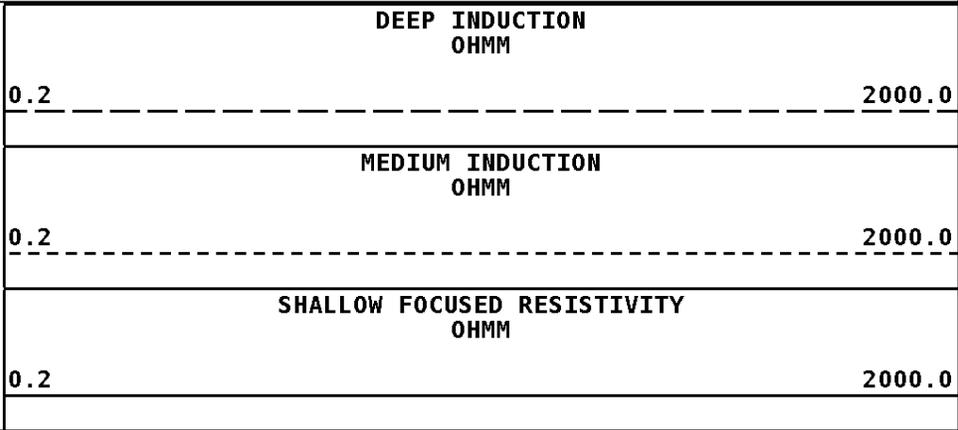
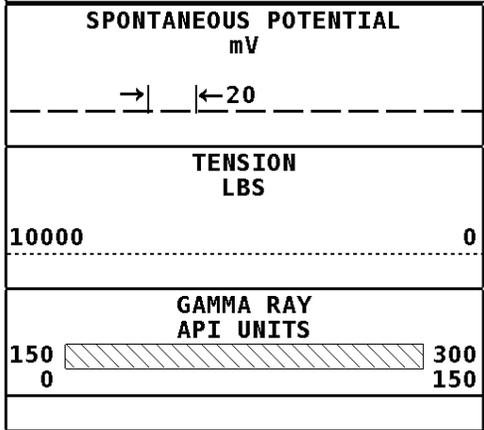
3470



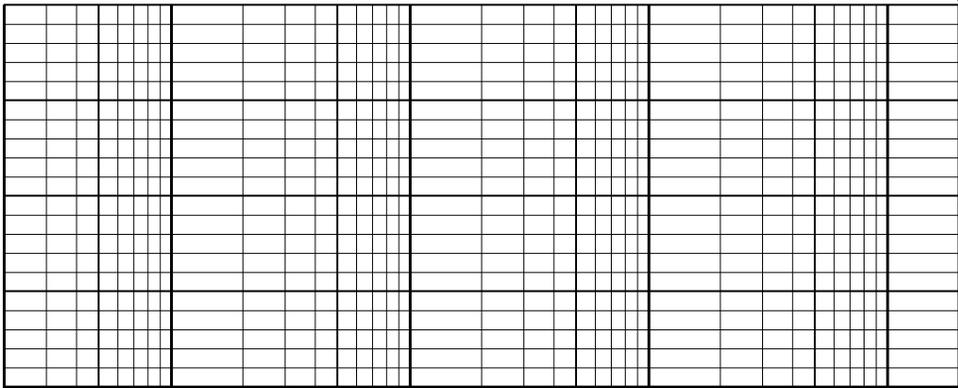
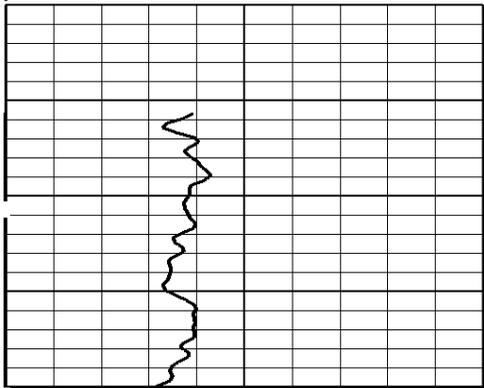
### 1:600 MAIN SECTION

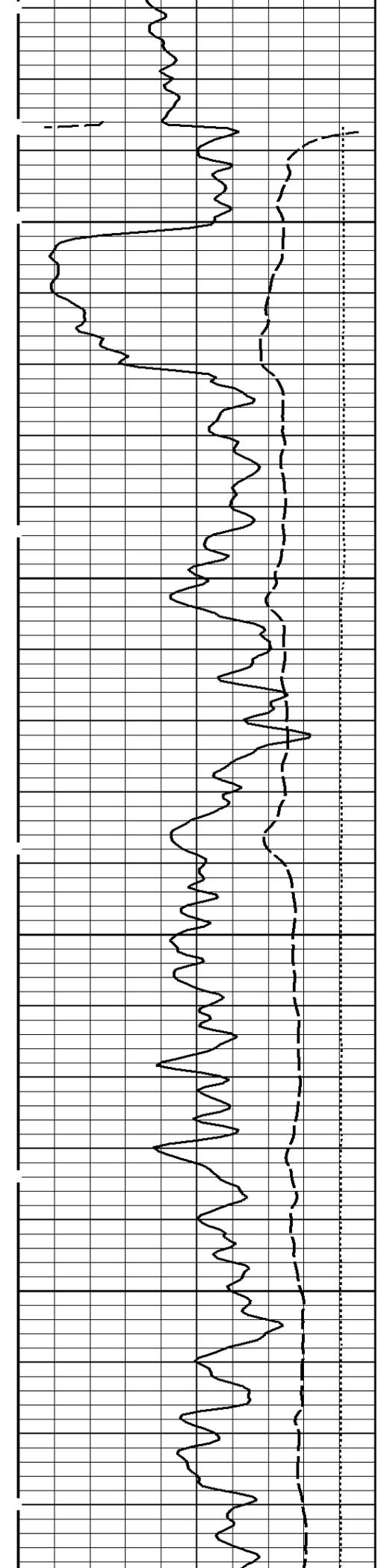


Well File: lang-reif-31-3-quint-may-20 Scale: 1:240 Format: DIL-240  
 Segment: V1.D1.S6 MAIN Acquired: 2014-05/20 16:23 3.3.0-12594  
 Reference: 0 Processed: 2014-05/20 17:54 3.3.0-12594



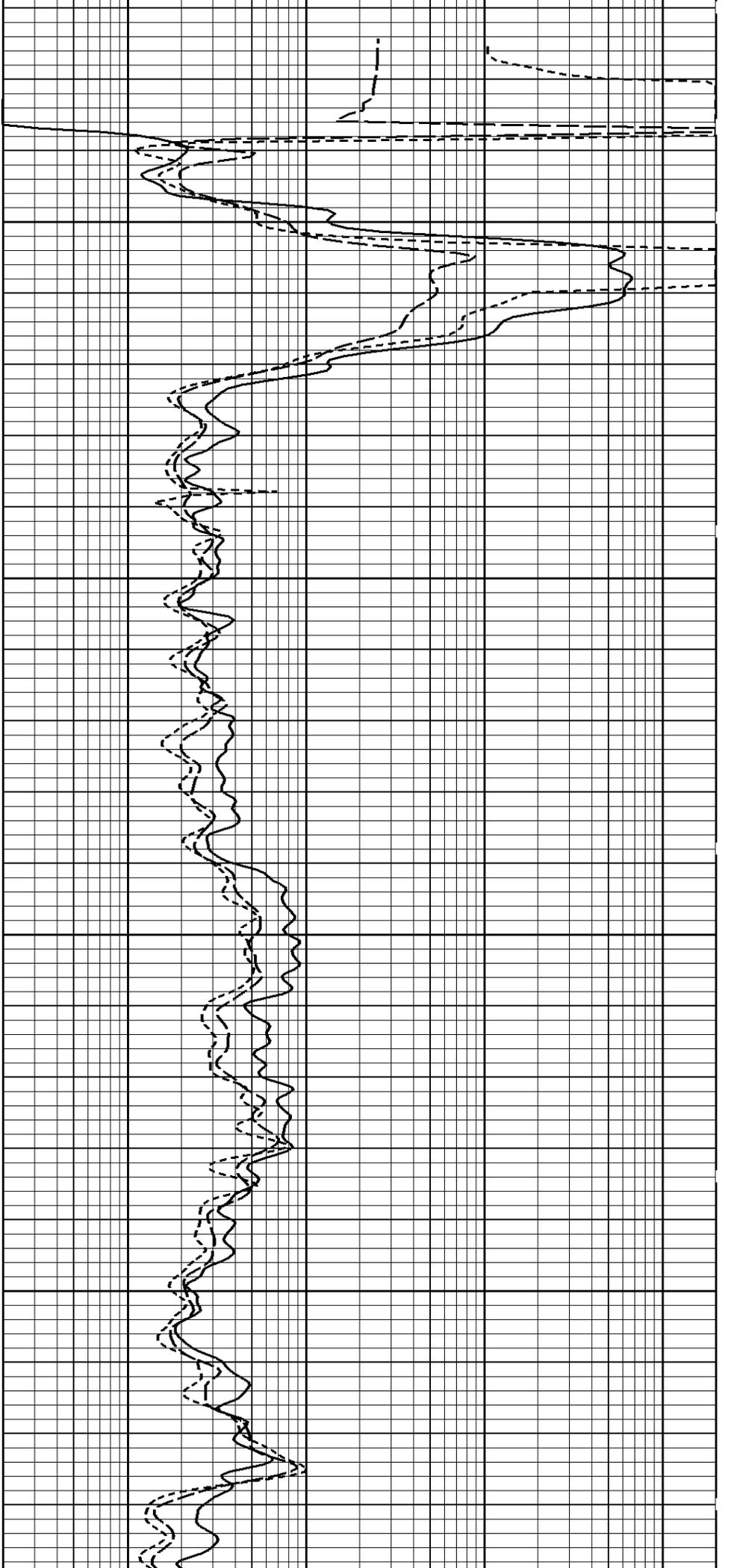
### 1:240 MAIN SECTION

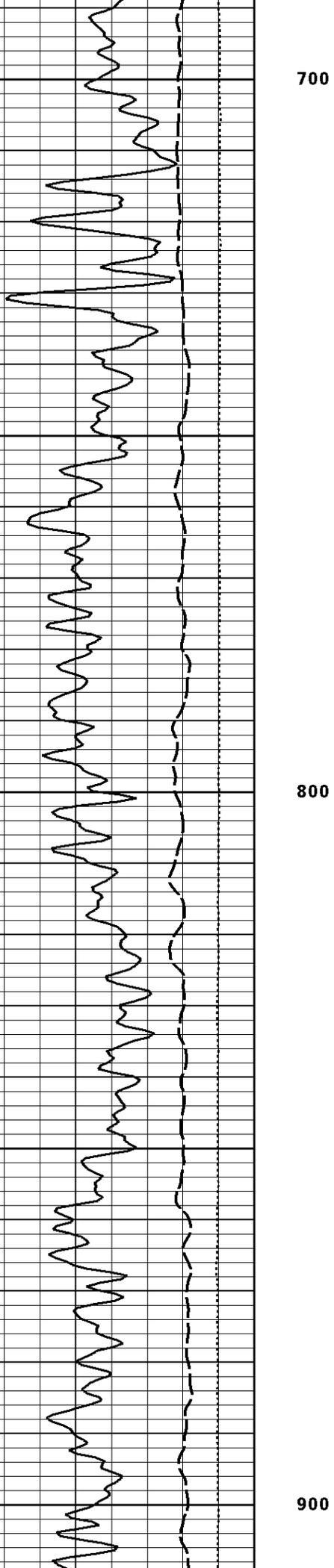




500

600

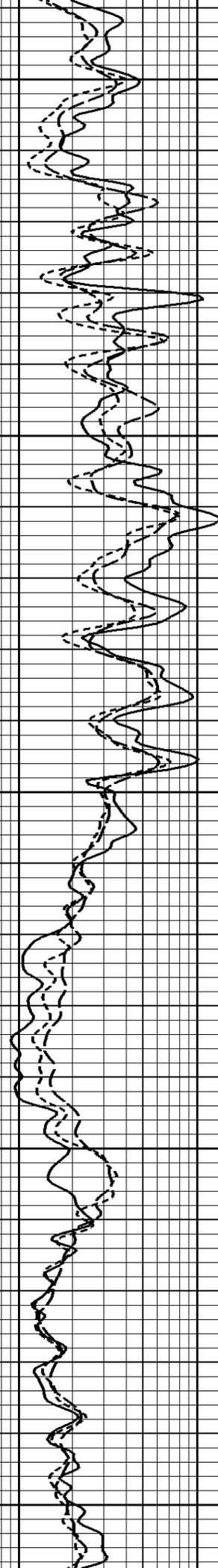


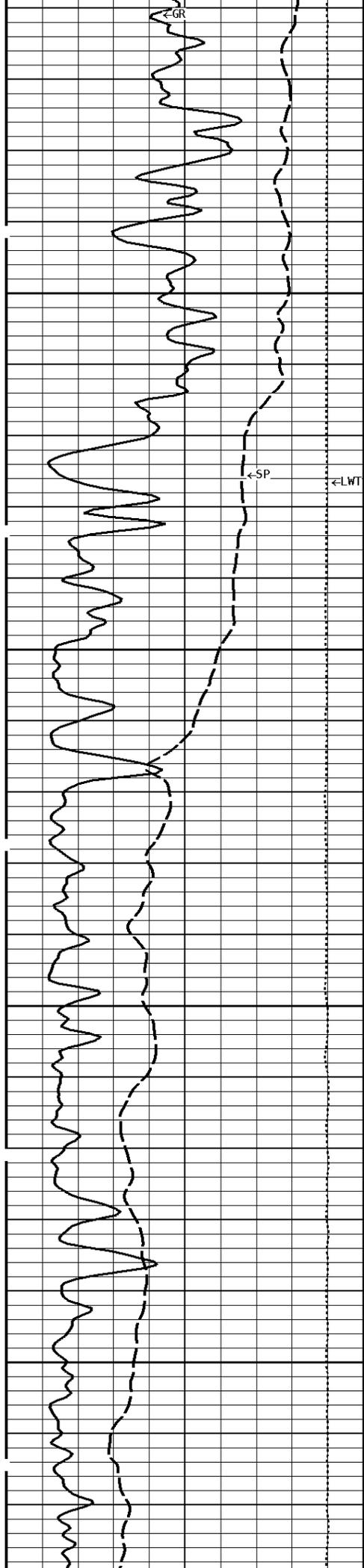


700

800

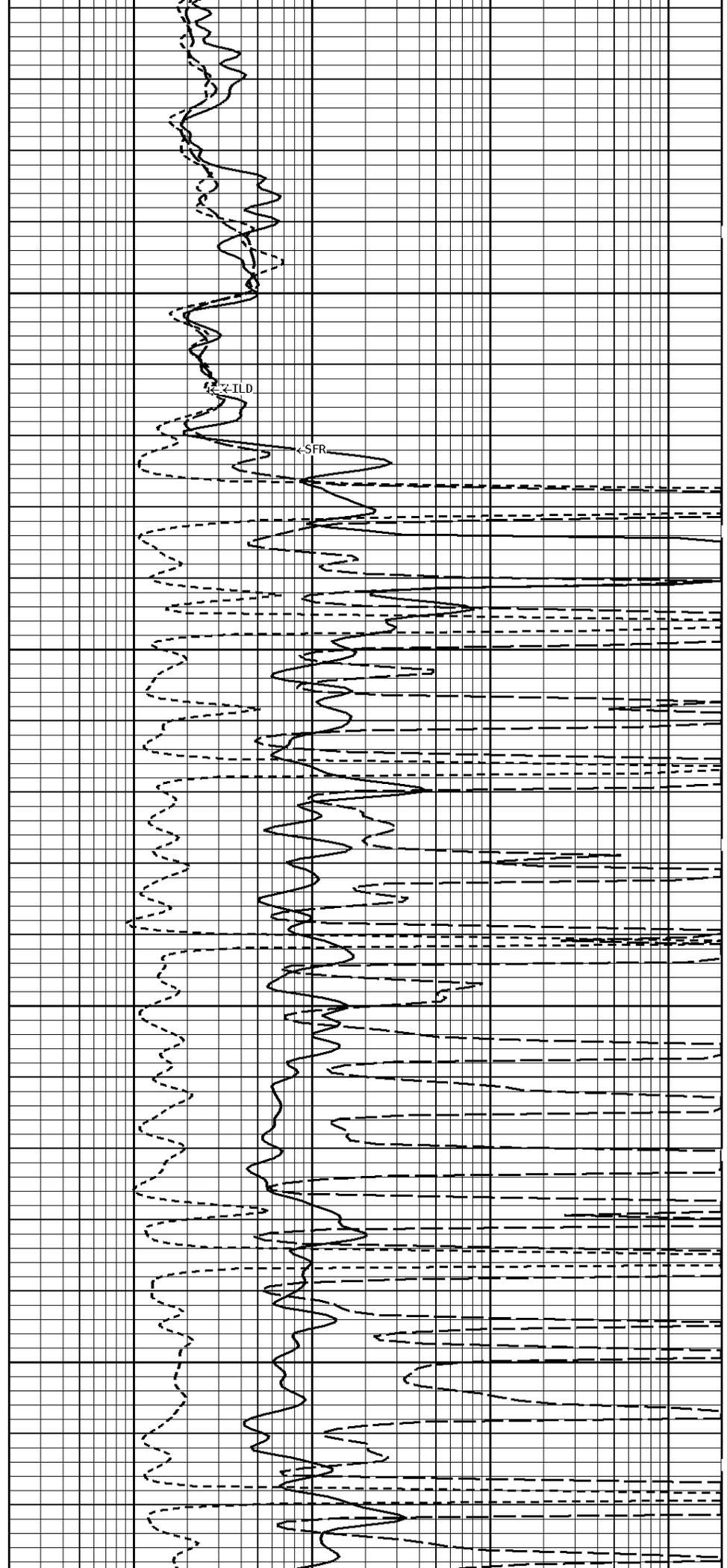
900

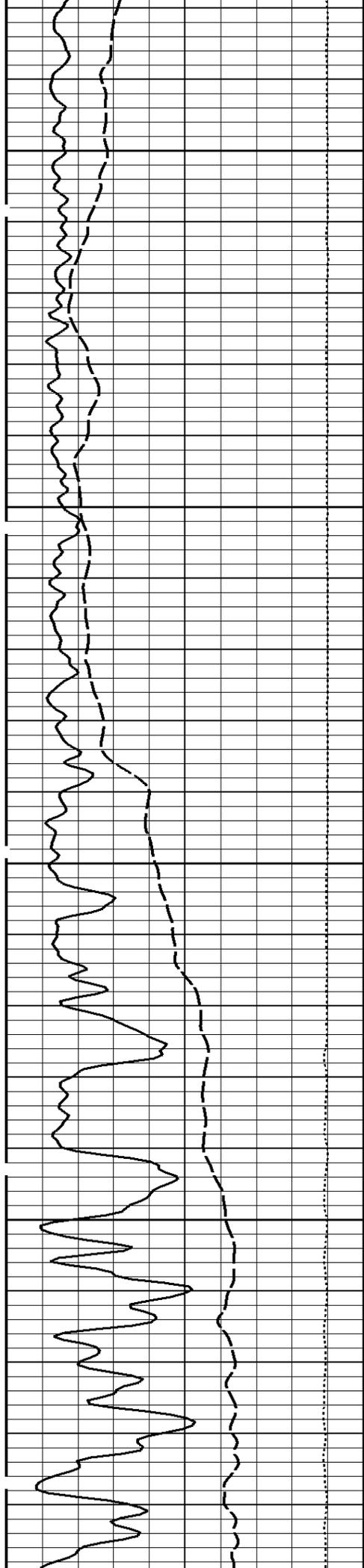




1000

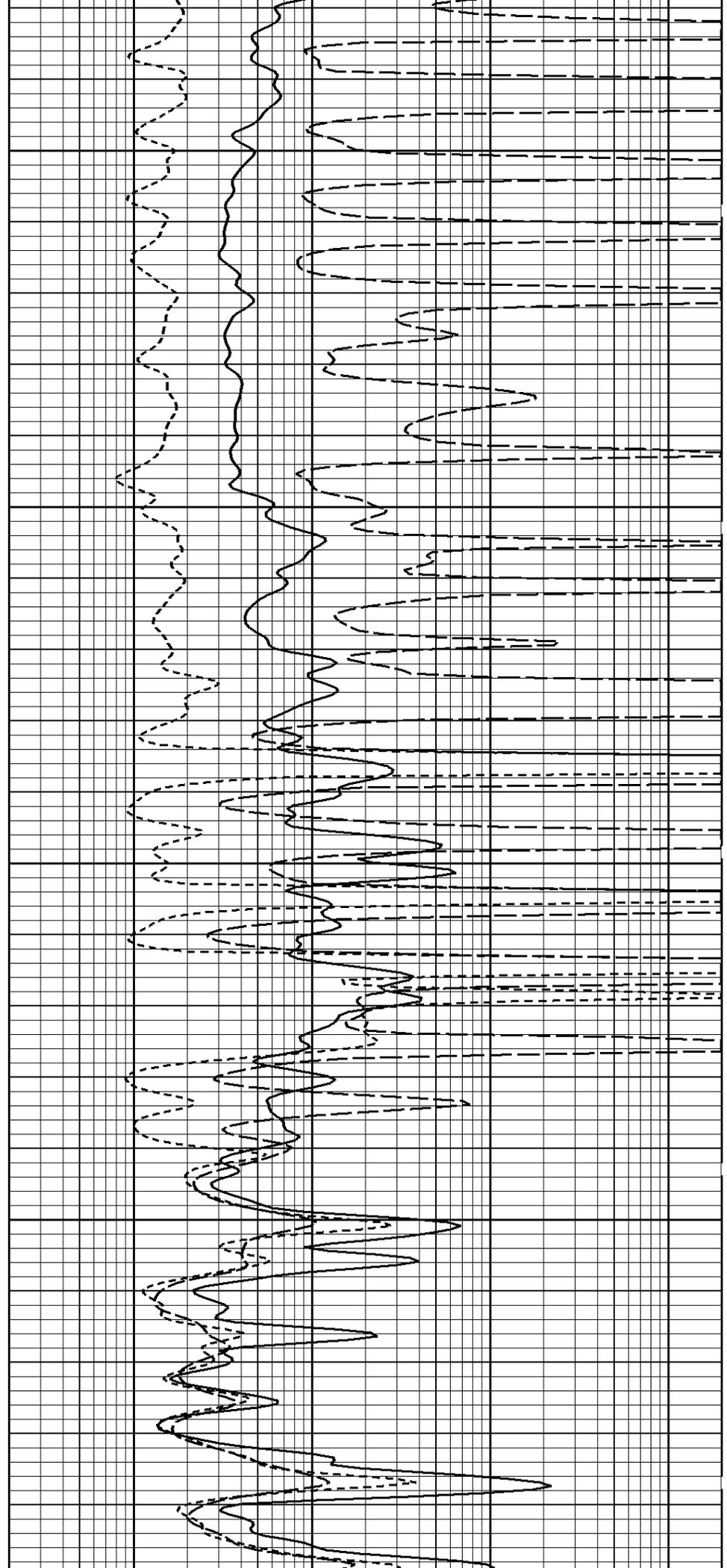
1100

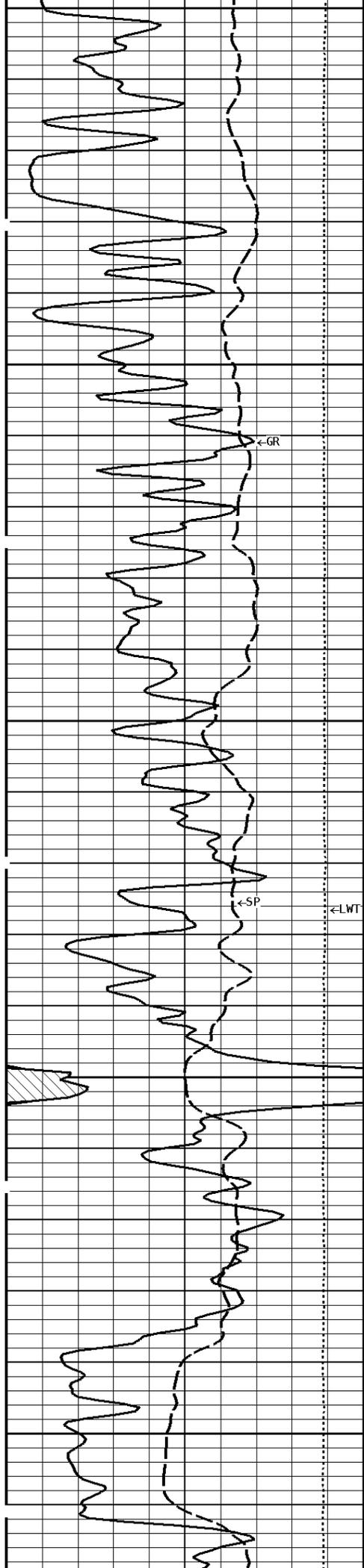




1200

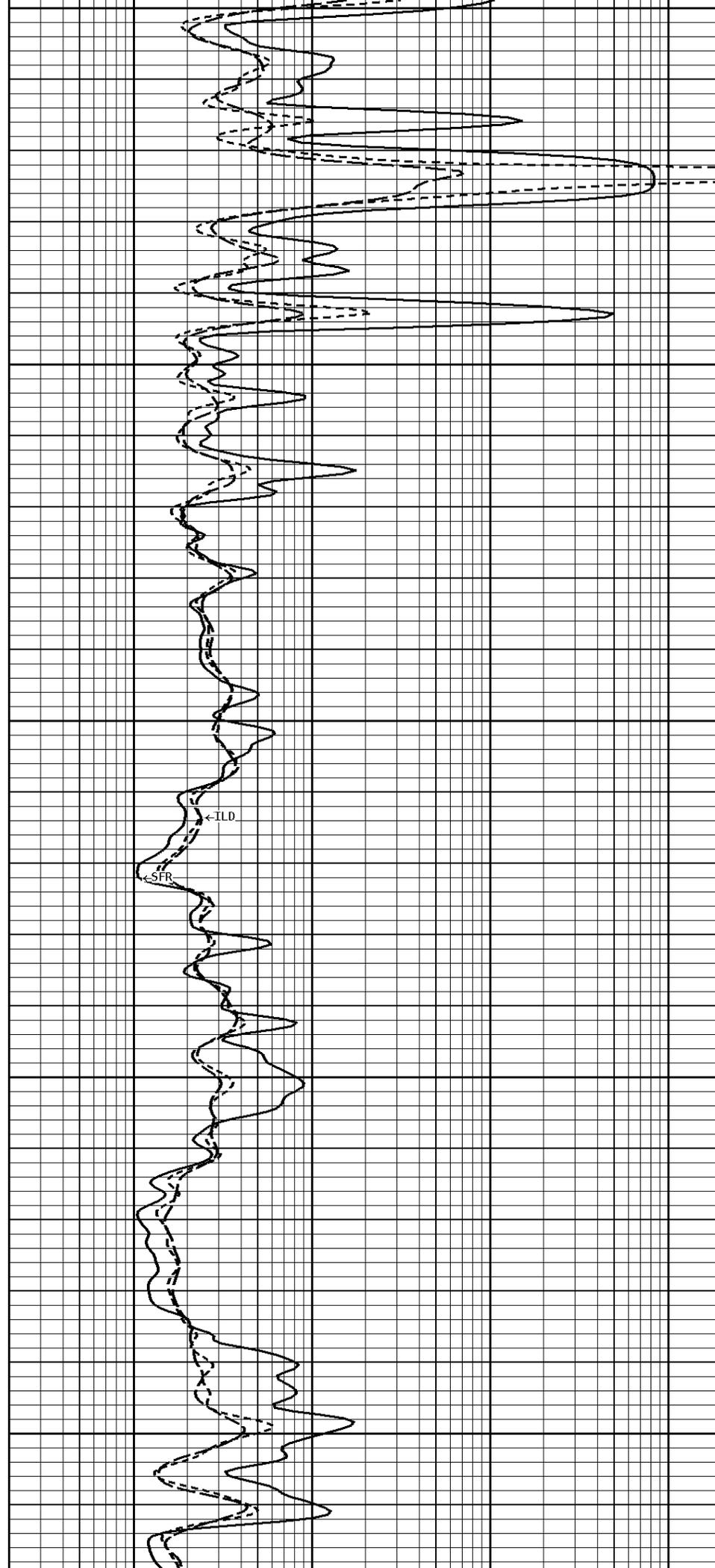
1300

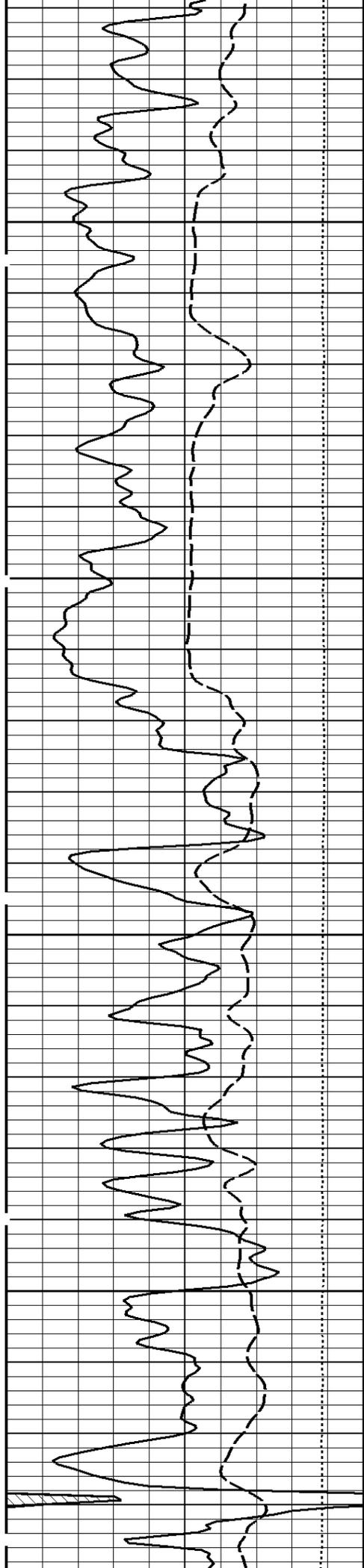




1400

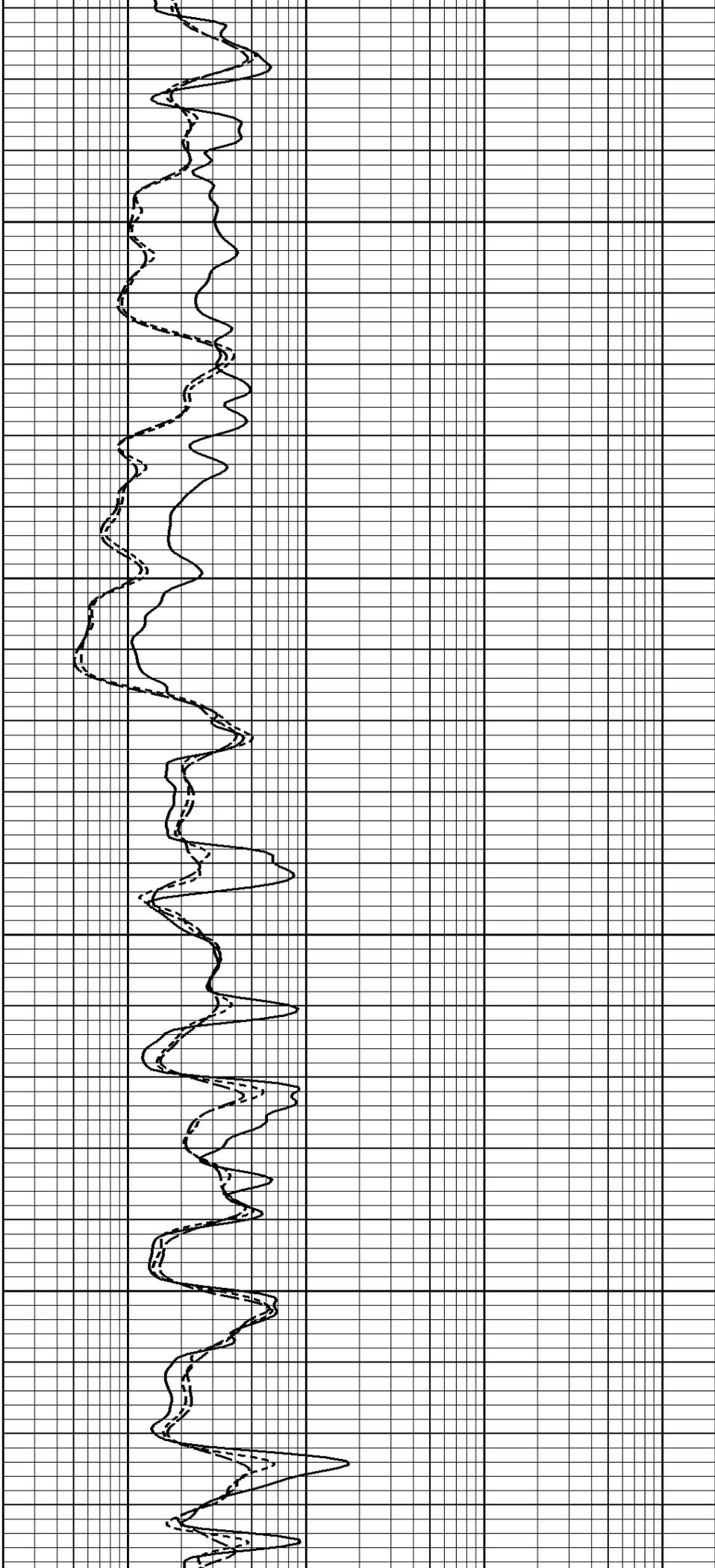
1500





1600

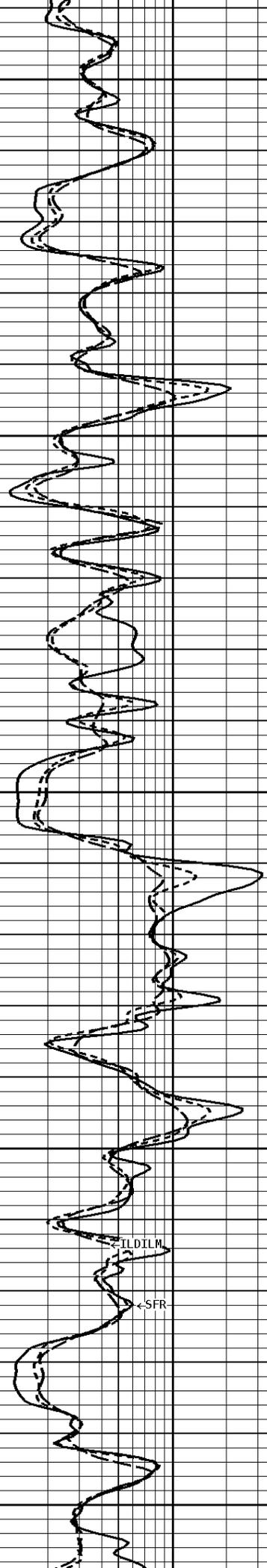
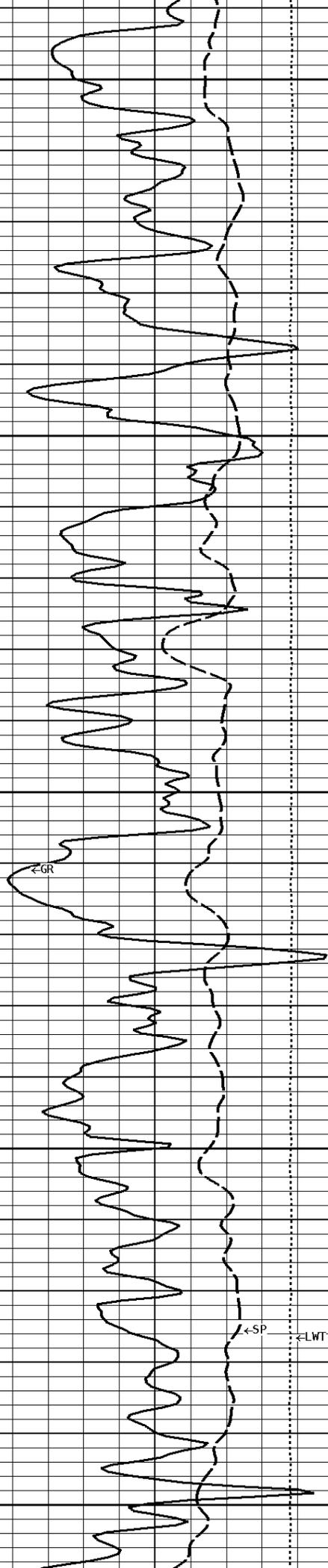
1700

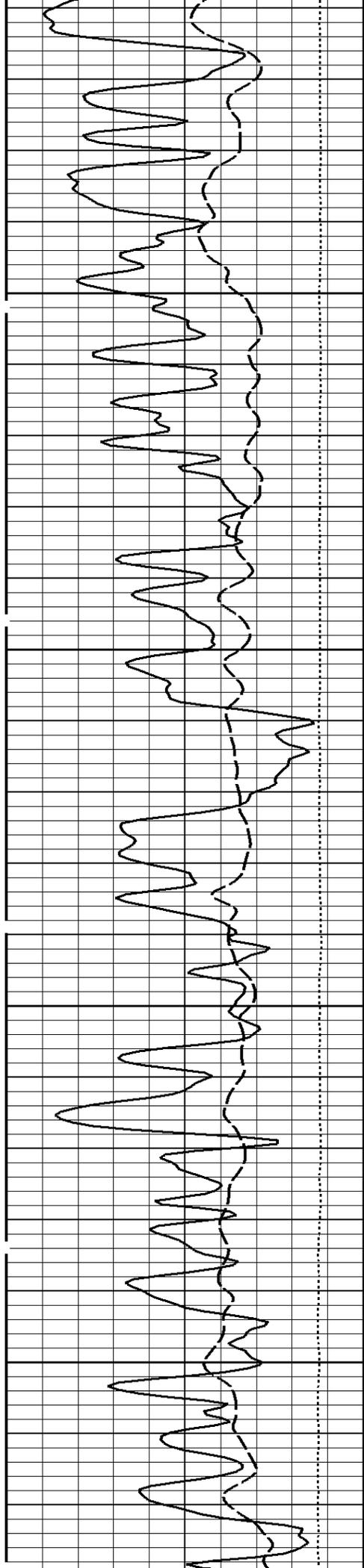


1800

1900

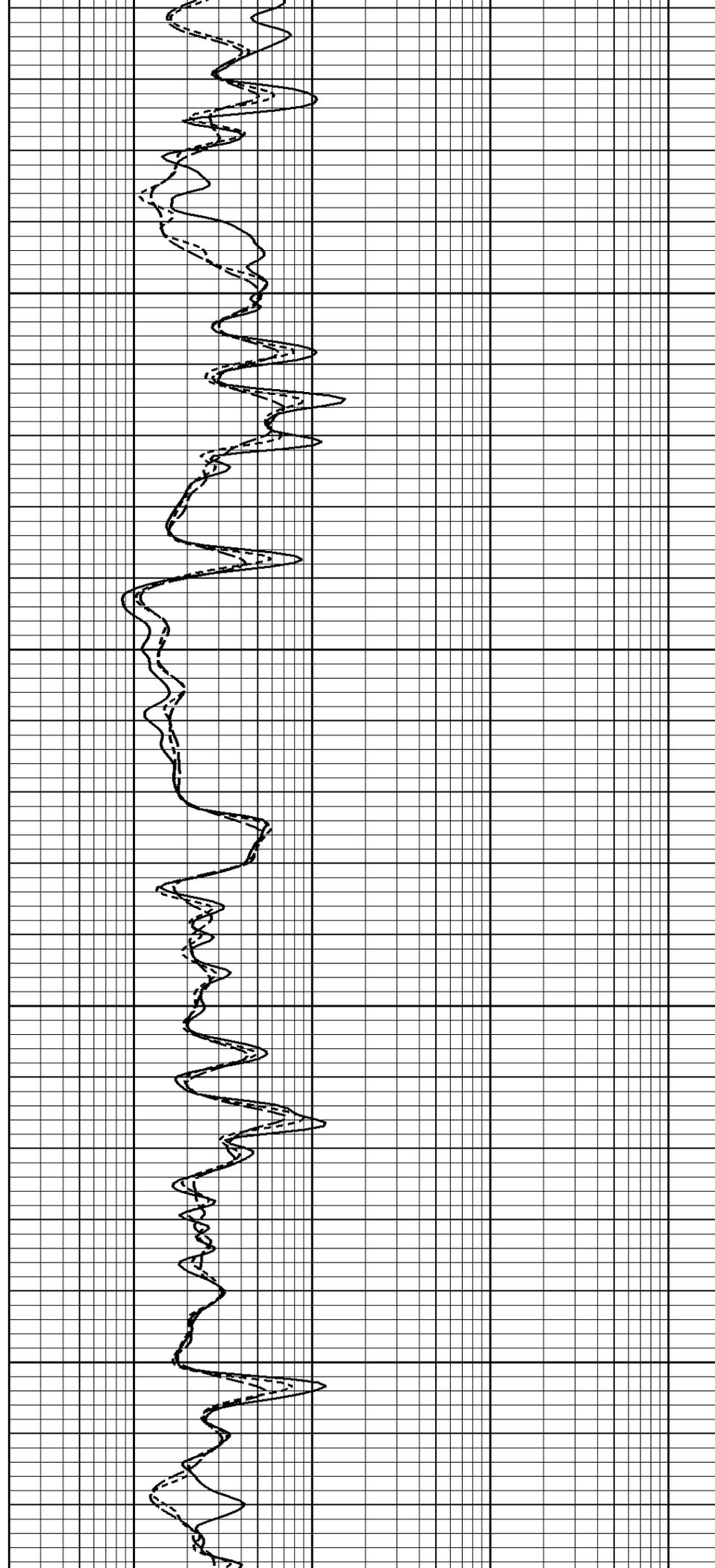
2000

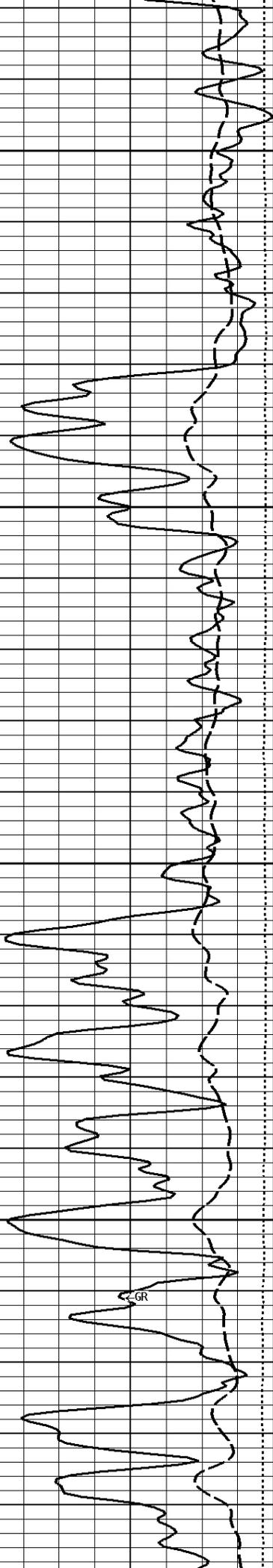




2100

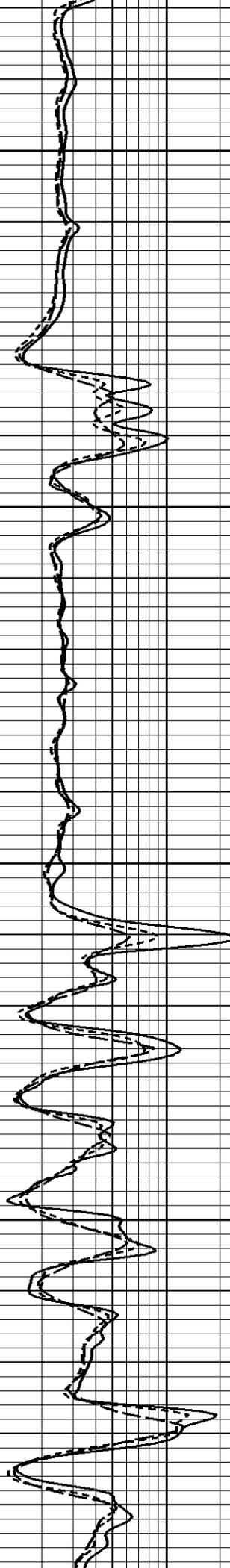
2200

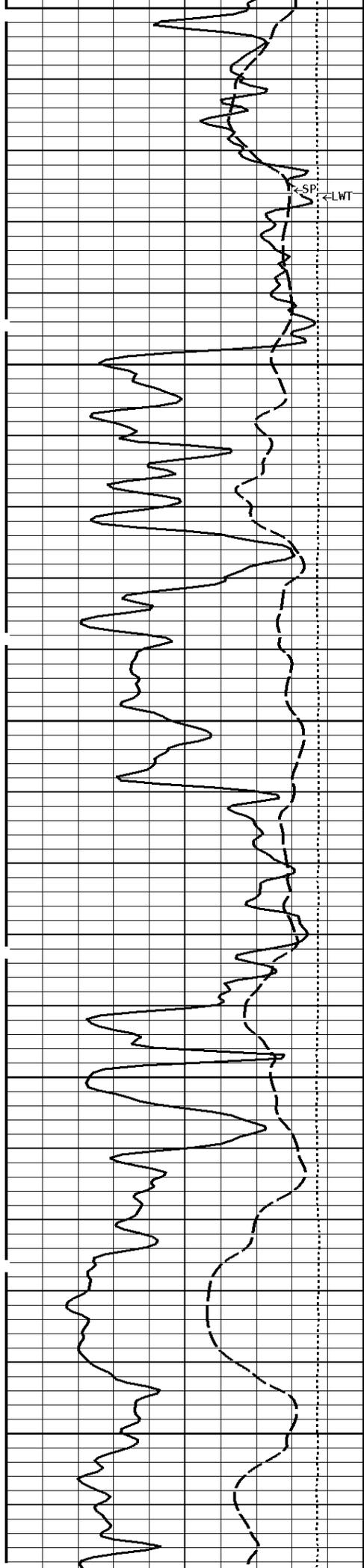




2300

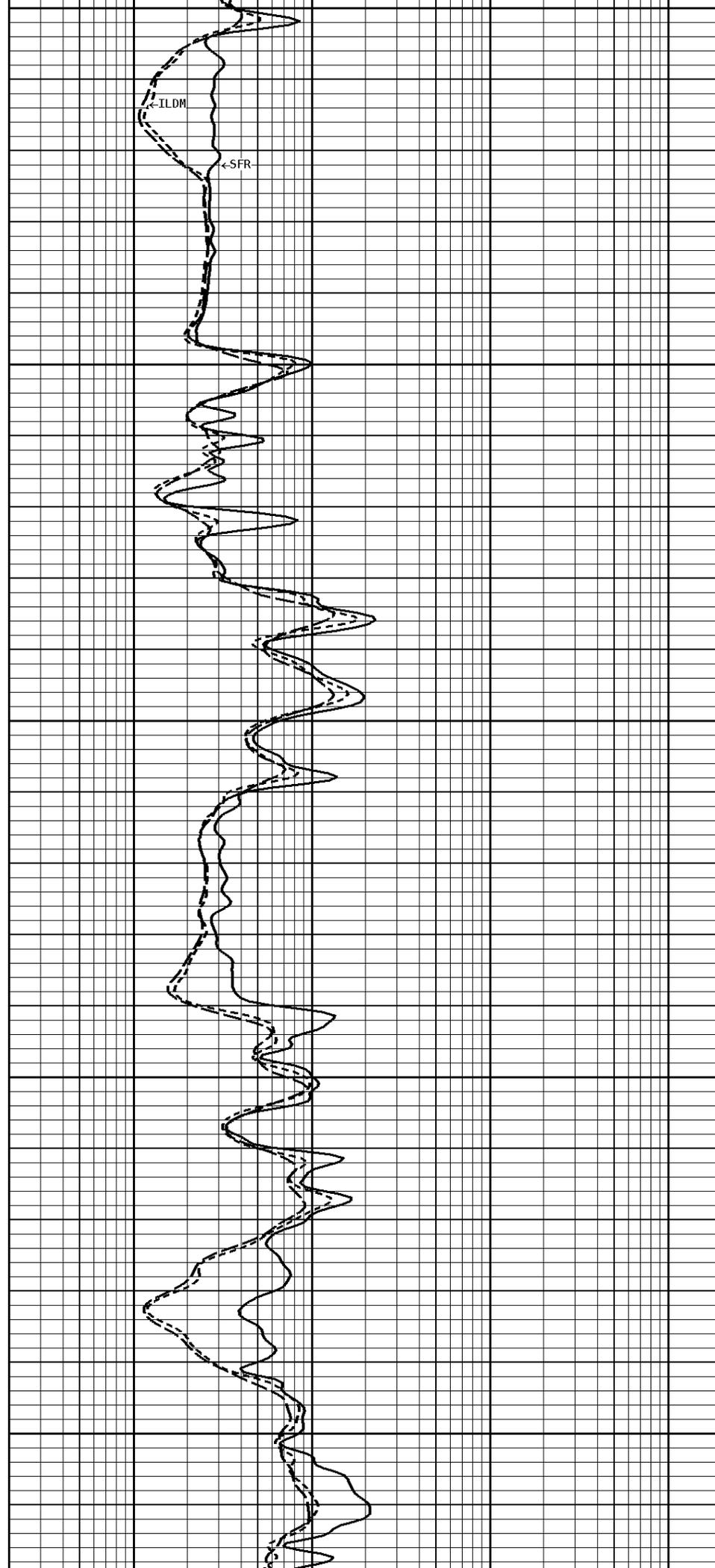
2400

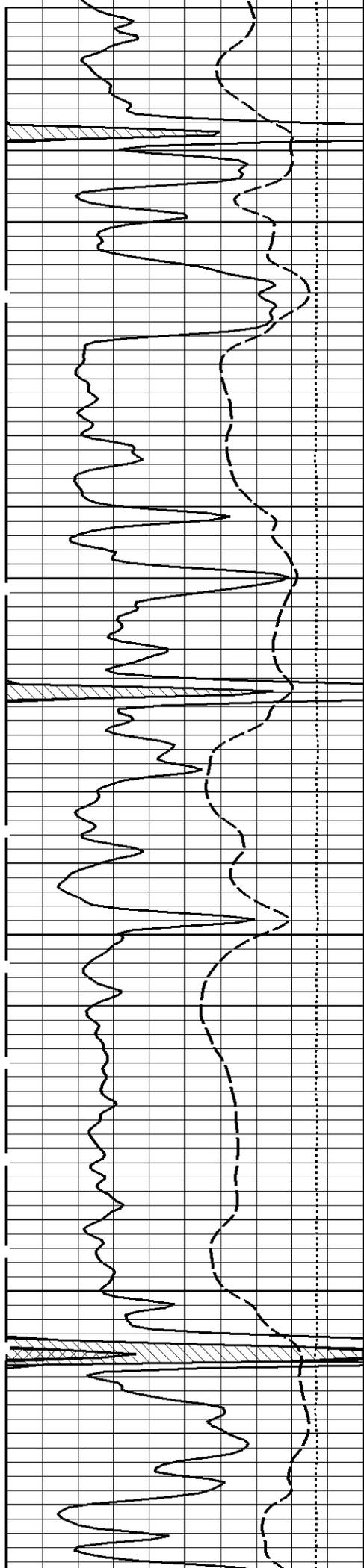




2500

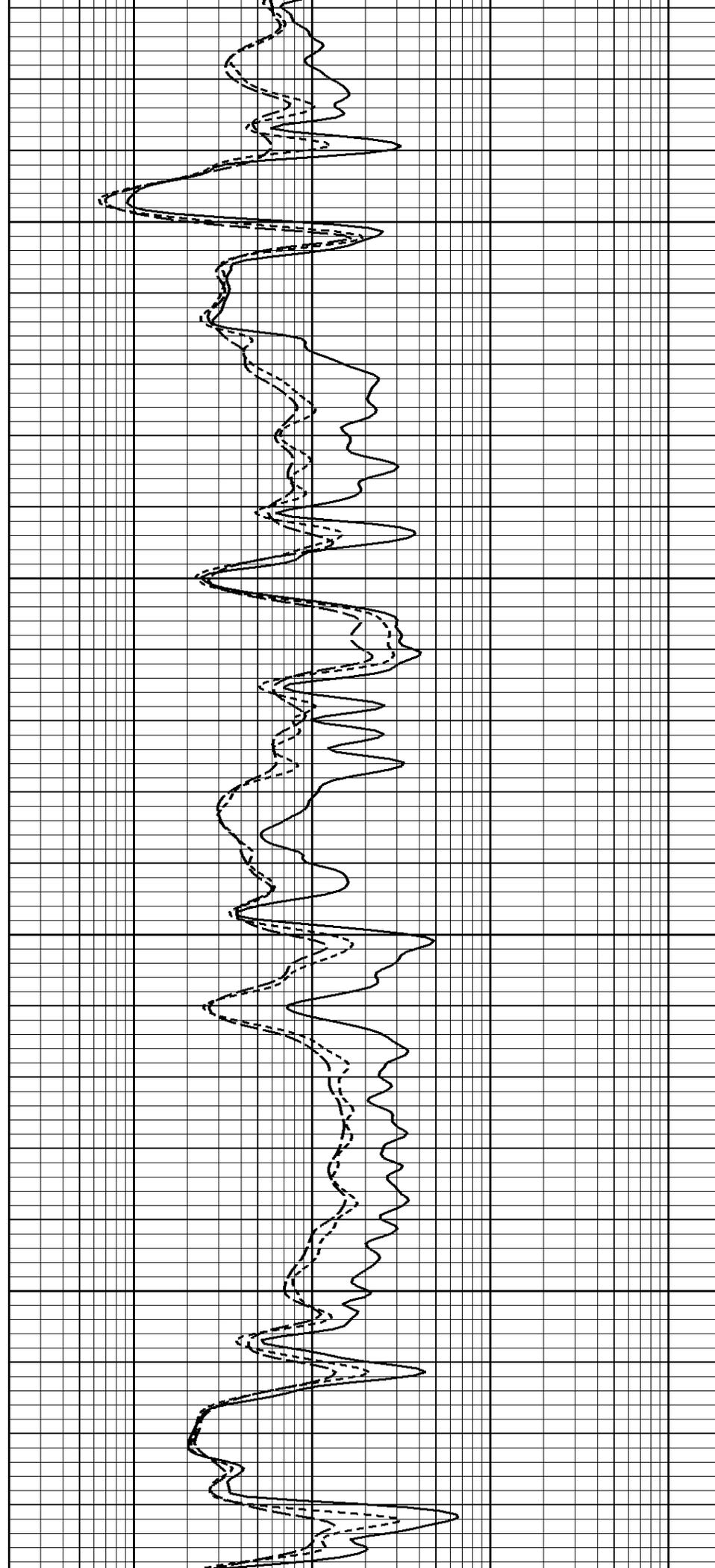
2600

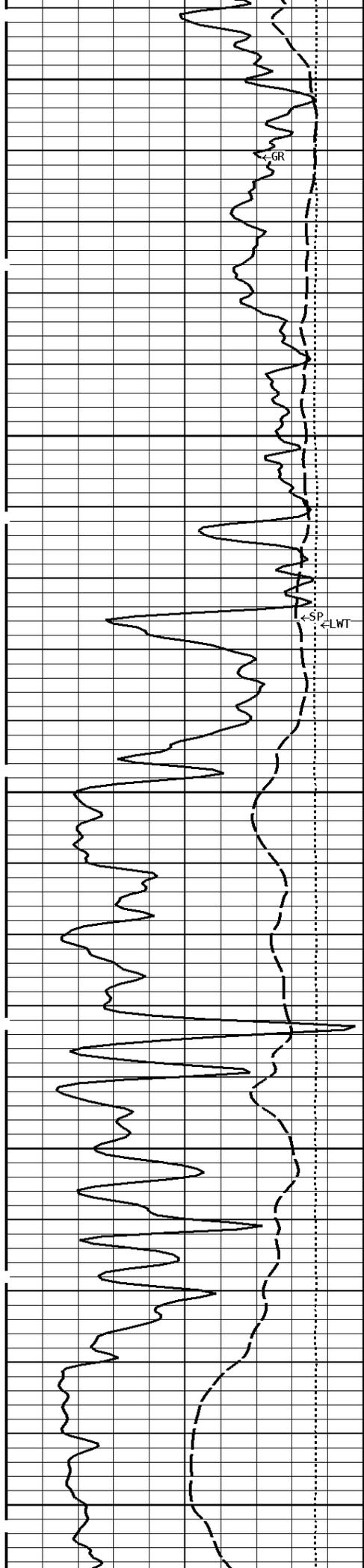




2700

2800

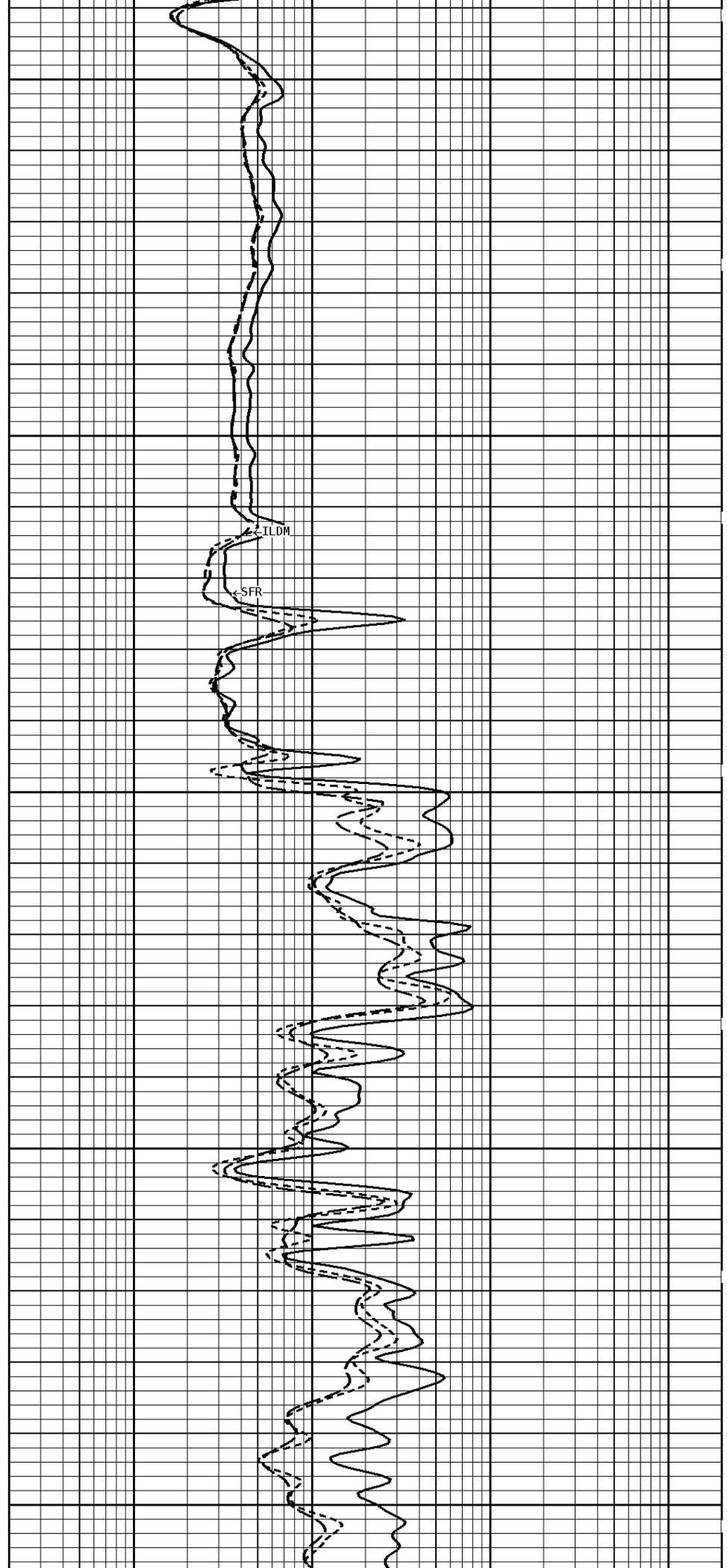


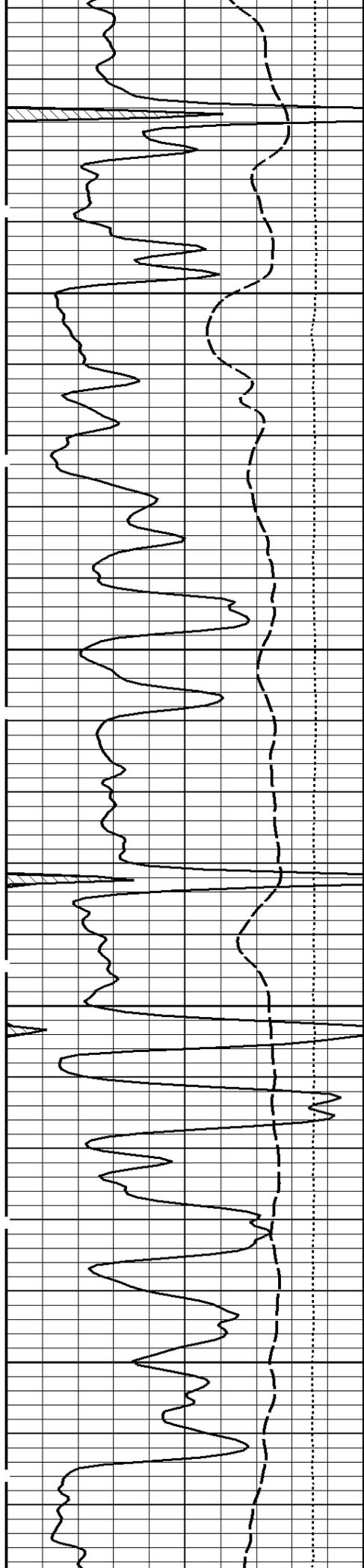


2900

3000

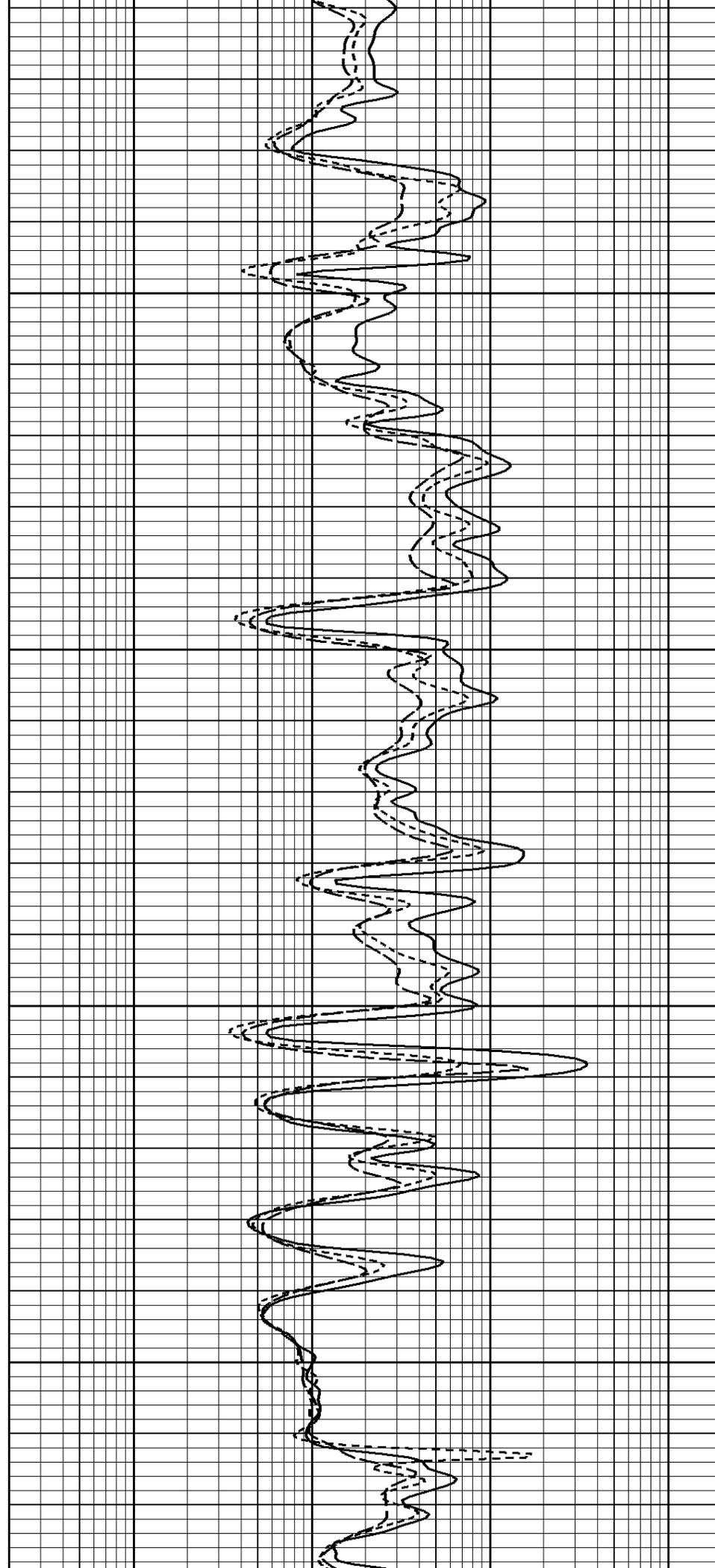
3100

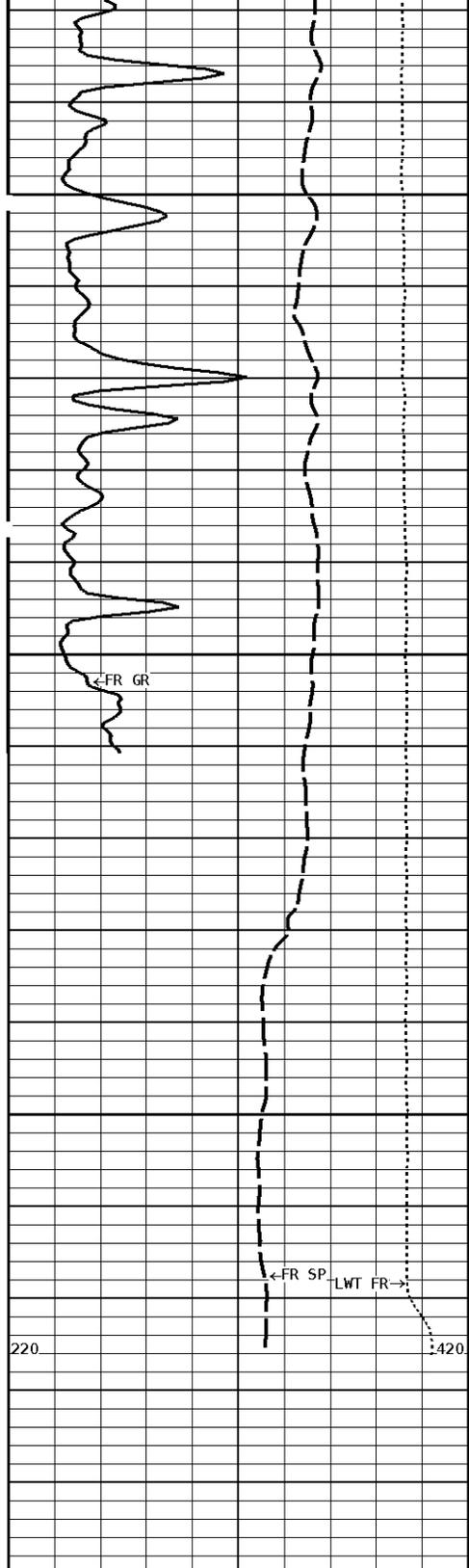




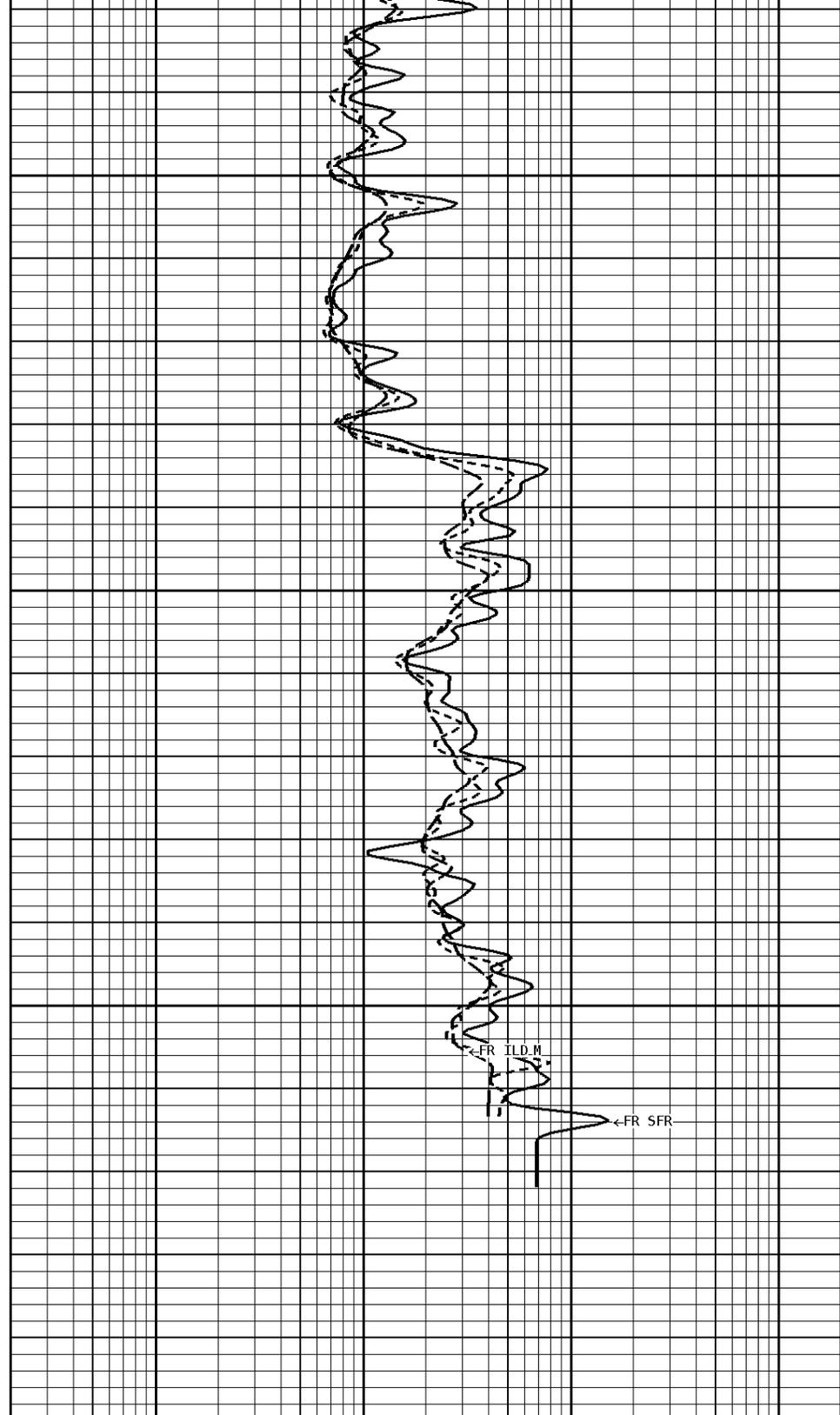
3200

3300

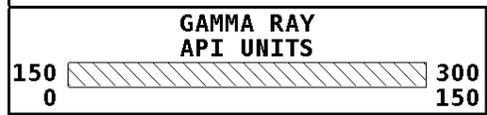




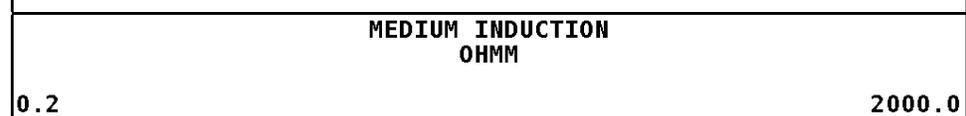
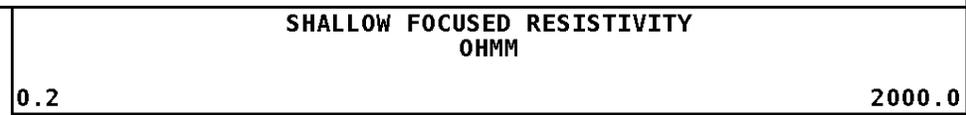
File #1.1.6



1:240 MAIN SECTION



SPONTANEOUS POTENTIAL



DEEP INDUCTION

mV

→ | ← 20

OHMM

0.2

2000.0

\* 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	_____	3470.000 ft
Borehole Temperature	_____	115.0 degF
Temperature Gradient	_____	1.00 DFHF
Resistivity Of Mud	_____	0.500 ohm/m
Standoff	_____	1.5
Resistivity Of Mud Temperature	_____	80.00 degF

Well File: lang-reif-31-3-quint-may-20

Scale: 1:240

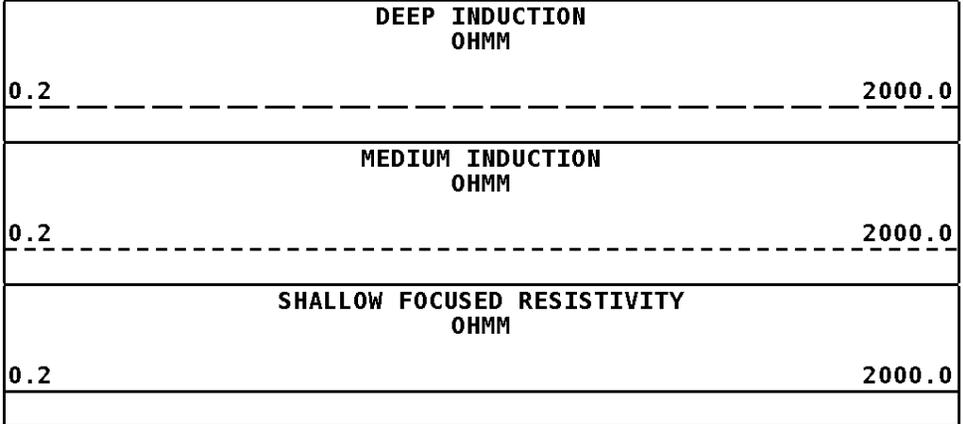
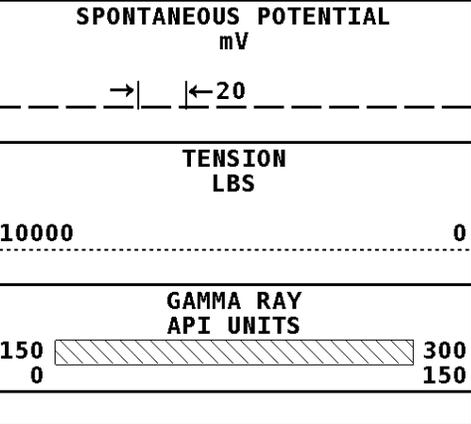
Format: DIL-240

Segment: V1.D1.S4 RP

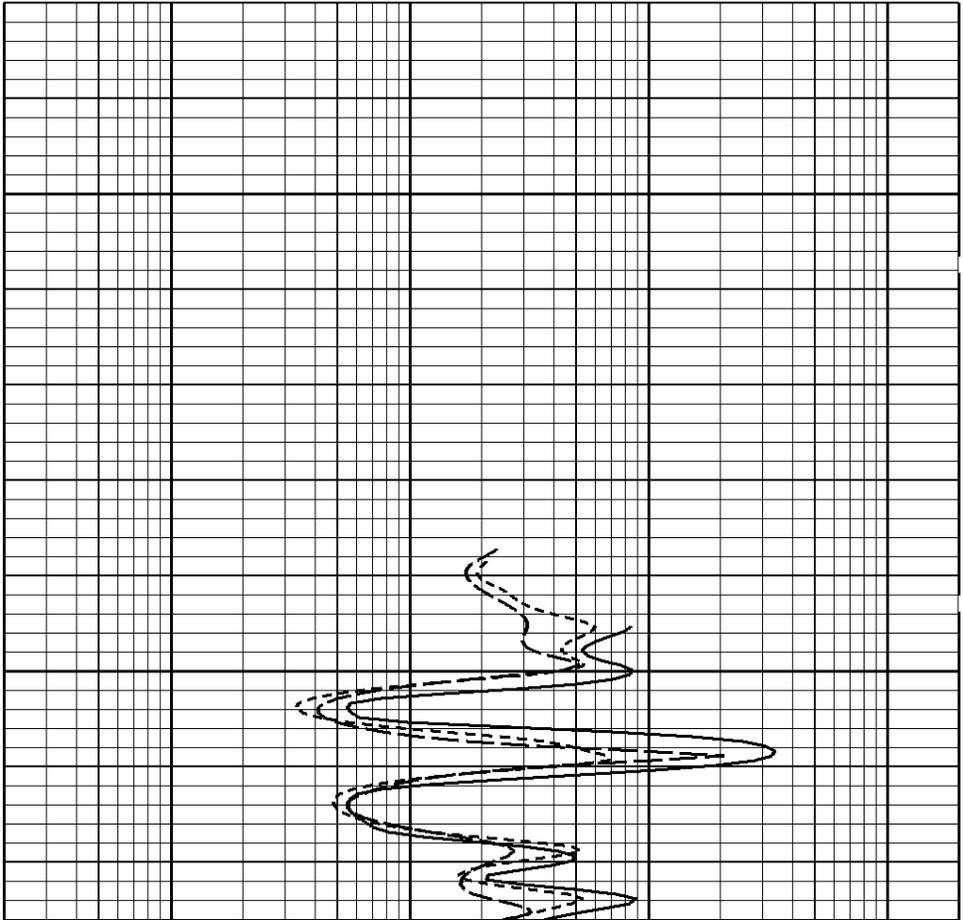
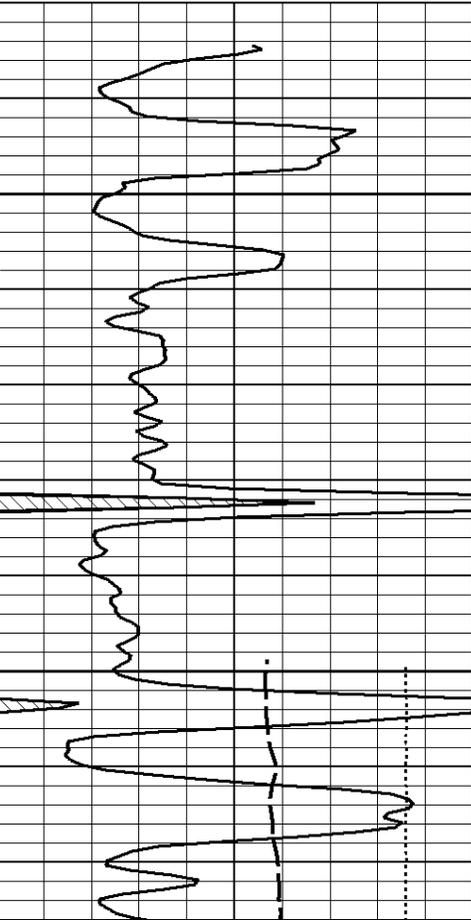
Acquired: 2014-05/20 16:09 3.3.0-12594

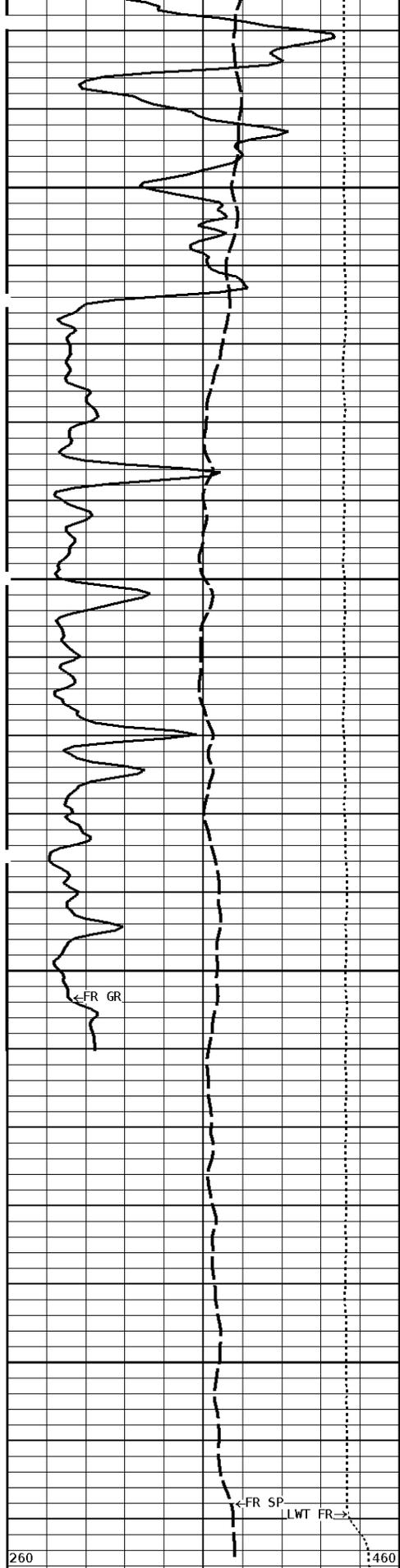
Reference: 0

Processed: 2014-05/20 17:54 3.3.0-12594



1:240 REPEAT SECTION





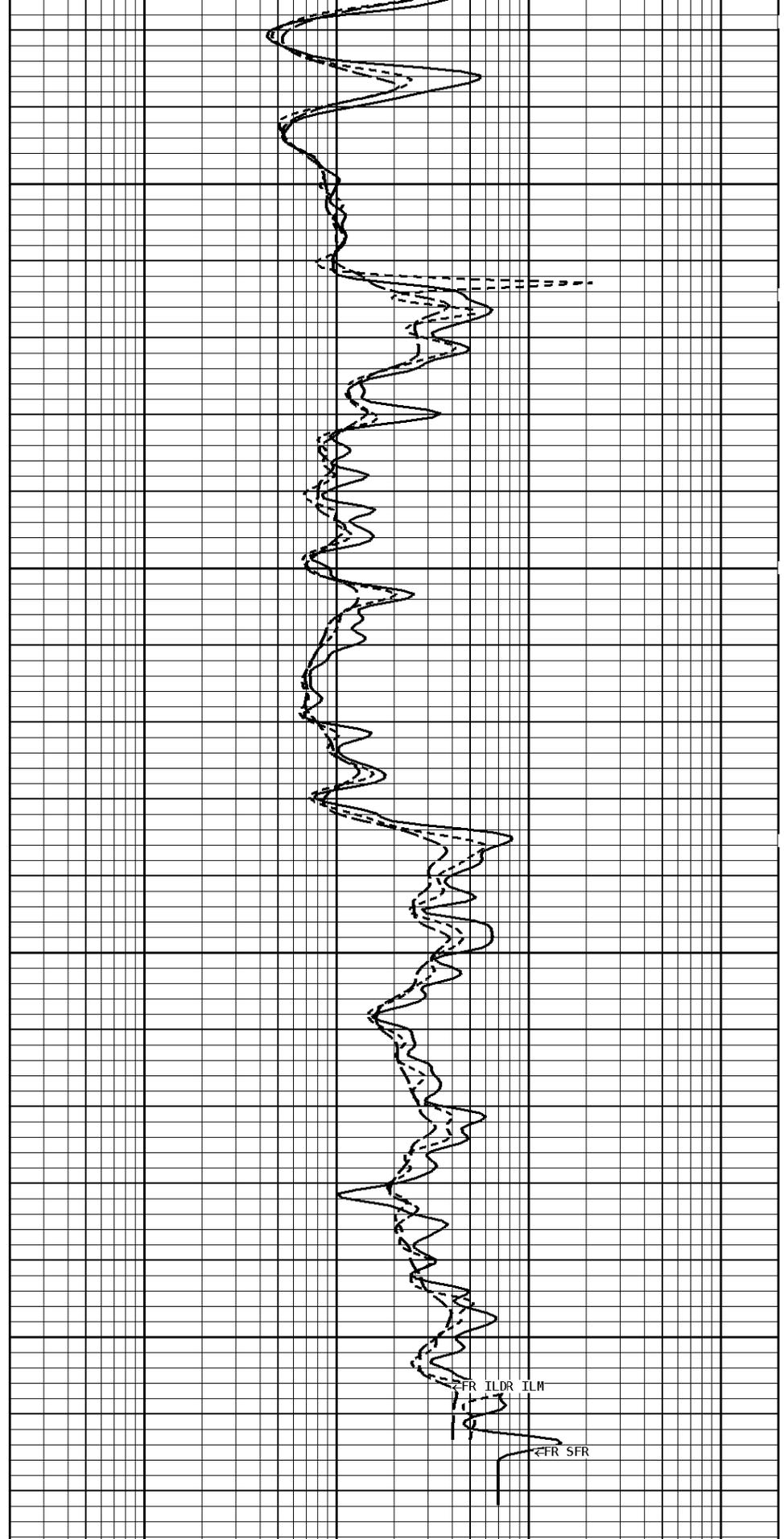
3300

3400

3470

260 460

File #1.



FR ILDR ILM

FR SFR

# 1:240 REPEAT SECTION

<b>GAMMA RAY API UNITS</b>
<b>TENSION LBS</b>
<b>SPONTANEOUS POTENTIAL mV</b>

<b>SHALLOW FOCUSED RESISTIVITY OHMM</b>
0.2 <span style="float: right;">2000.0</span>
<b>MEDIUM INDUCTION OHMM</b>
0.2 <span style="float: right;">2000.0</span>
<b>DEEP INDUCTION OHMM</b>
0.2 <span style="float: right;">2000.0</span>

**\* Borehole Zone Factors \***

<b>Zone 1</b>	<b>99999.0 to</b>	<b>0.0 Feet</b>
Drill Bit Size	7.875	in
Casing Diameter	5.500	in
BHT Depth	3470.000	ft
Borehole Temperature	115.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	0.500	ohm/m
Standoff	1.5	
Resistivity Of Mud Temperature	80.00	degF

**\* Calibration Summary \***

<b>Shop Calibration</b>					
<b>GRT-B</b>					
Performed : 21-APR-2014		Time : 11:21			
Sensor Suite : GR-GR5		ID : GRT-BB-107			
	Measured	Units	Calibrated	Units	
GR	Background	Jig	Jig	GRAPI	
	75	381 CPS	175		
<b>Shop Calibration</b>					
<b>PIT-CA</b>					
Performed : 20-JAN-2014		Time : 12:16			
Sensor Suite : P-IND-T		ID : PIT-AB-005			
	Measured		Calibrated		
	R	X	R	X	Units
Air	130436	130973	0.3	0.3	MMHOS
Zero	131064	131069	27.2	2.3	MMHOS
Reference	250278	251098	5142.2	4745.2	MMHOS
Loop	127822	217880	3591.7	3538.5	MMHOS
Sonde Error			-1.6	-2.1	MMHOS
Cond			5142.2	4745.2	MMHOS
	Measured		Calibrated		
	R	X	R	X	Units
Air	128989	131106	-3.7	-3.9	MMHOS
Zero	131083	131072	40.1	-10.7	MMHOS
Reference	232597	234445	2030.7	1916.3	MMHOS
Loop	125792	219397	1633.8	1702.6	MMHOS
Sonde Error			-3.5	-9.0	MMHOS
Cond			2030.7	1916.3	MMHOS
	Temperature				
	Measured		Calibrated		
	Low	High	Low	High	Units
	16980.0	56920.0	70.0	350.0	DEGF
Performed : 20-Jan-2014		Time : 12:07			
Sensor Suite : SFL		ID : PIT-AB-005			

Internal					
	Measured		Calibrated		Units
	Zero	Reference	Zero	Reference	
Im	32773.9	49477.8	0.0	7028.0	uA
Ib	32760.9	48718.2	0.0	1750.0	mA
MOM1	32720.3	56560.2	0.0	175.0	mV
Equivalent SFL				43.97	OHMM

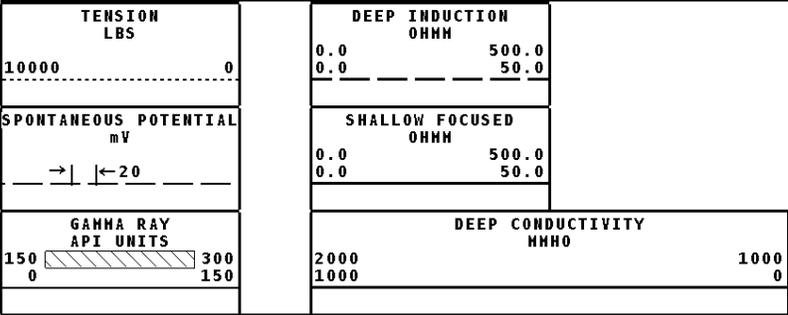
  

Performed : 20-Jan-2014	Time : 12:05
Sensor Suite : P-SP	ID : PIT-AB-005

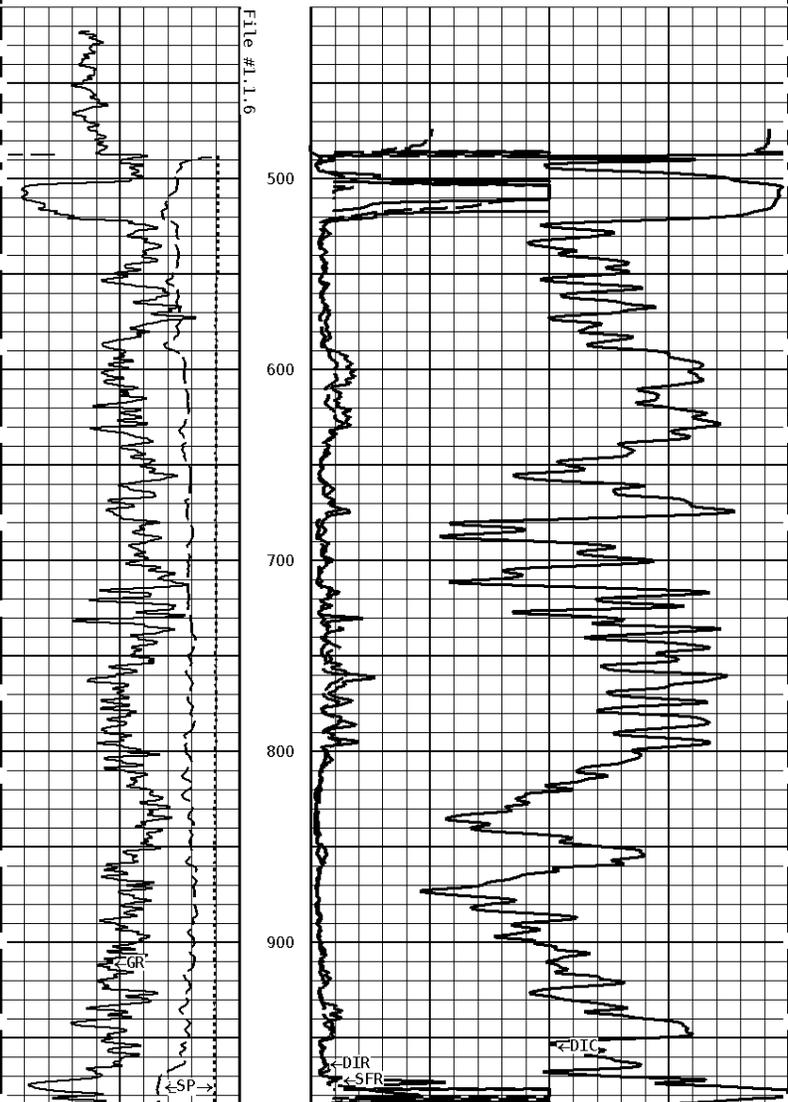
  

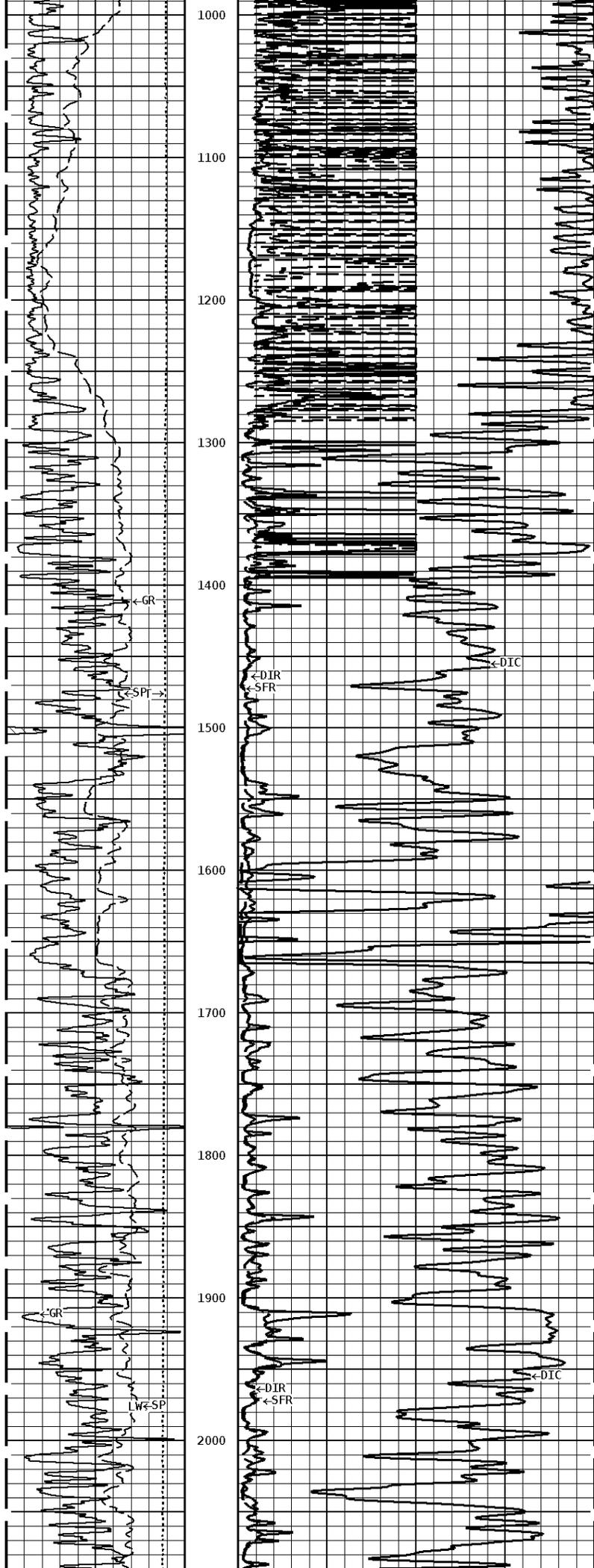
Internal					
	Measured		Calibrated		Units
	Zero	Reference	Zero	Reference	
	32770.1	58920.2	0.0	1000.0	mV

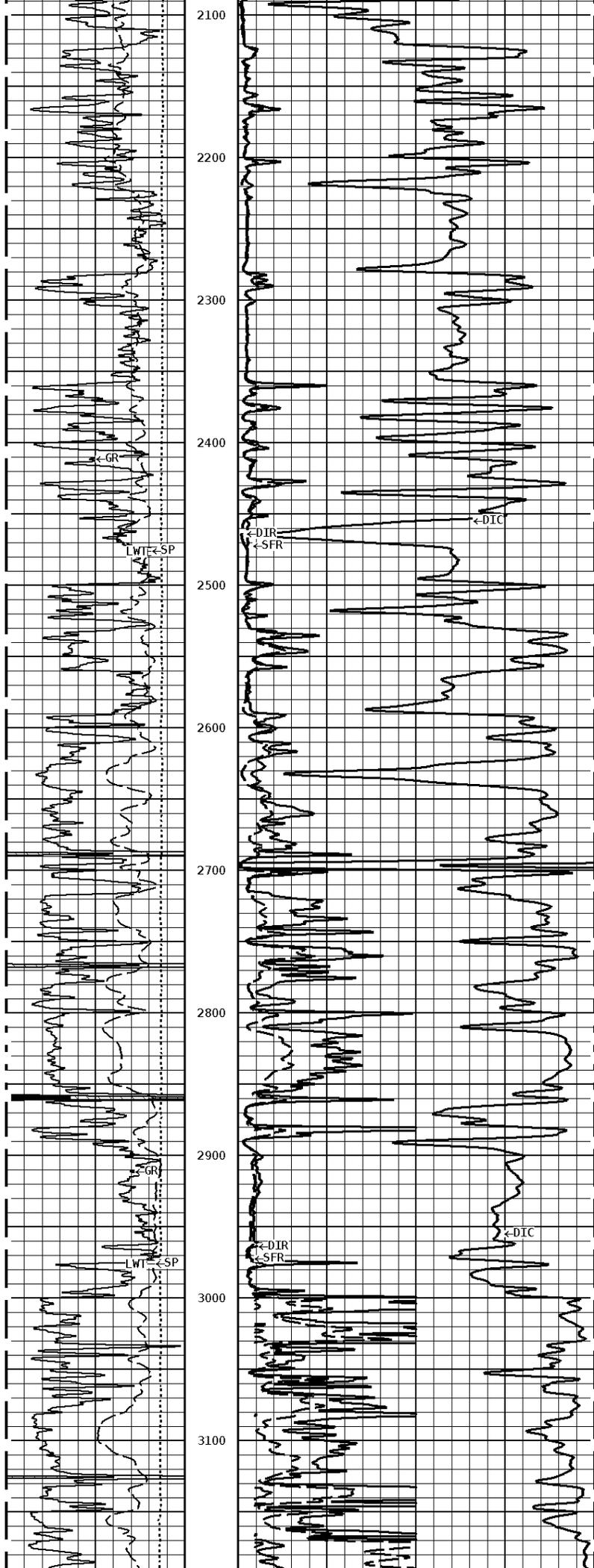
Well File: lang-reif-31-3-quint-may-20      Scale: 1:1200      Format: DIL1200  
 Segment: V1.D1.S6 MAIN      Acquired: 2014-05/20 16:23 3.3.0-12594  
 Reference: 0      Processed: 2014-05/20 17:54 3.3.0-12594



1:1200 MAIN SECTION







2100  
2200  
2300  
2400  
2500  
2600  
2700  
2800  
2900  
3000  
3100

← GR

LWT<SP

← DIR

← SFR

← DIC

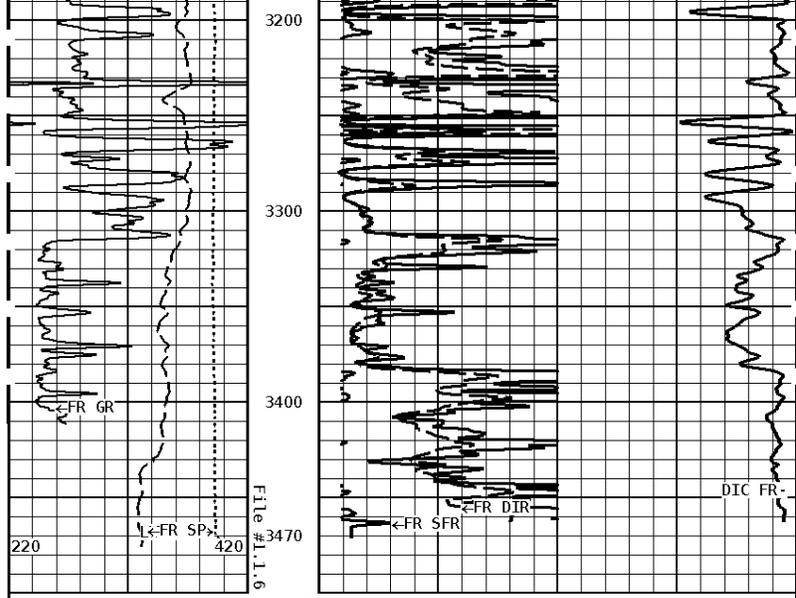
← GR

LWT<SP

← DIR

← SFR

← DIC



**1:1200 MAIN SECTION**

<p><b>GAMMA RAY API UNITS</b></p> <p>150 0 300 150</p>	<p><b>DEEP CONDUCTIVITY MHMO</b></p> <p>2000 1000 1000 0</p>
<p><b>SPONTANEOUS POTENTIAL mV</b></p> <p>→   ← 20</p>	<p><b>SHALLOW FOCUSED OHMM</b></p> <p>0.0 500.0 0.0 50.0</p>
<p><b>TENSION LBS</b></p> <p>10000 0</p>	<p><b>DEEP INDUCTION OHMM</b></p> <p>0.0 500.0 0.0 50.0</p>



Company: LANGSTON D.S.  
 Well: REIF A & B #31-3  
 Location: 825' FSL & 2970' FEL  
 Logged: 05-20-2014  
 K.B. Elev: 1765.0 Ft