

# STEP

**PHASED INDUCTION**  
**SHALLOW FOCUS SP LOG**

## energy services

<b>Company</b> VAL ENERGY, INC. <b>Well</b> GARISON #1-25 <b>Field</b> NA <b>County</b> COWLEY <b>State</b> KANSAS <b>Country</b> USA <b>API No.</b> 15-035-24705-0000	<b>File No</b> : TUL-70312 <b>Company</b> : VAL ENERGY, INC. <b>Well</b> : GARISON #1-25 <b>Field</b> : NA <b>County</b> : COWLEY <b>State</b> : KANSAS <b>Country</b> : USA <b>API No</b> : 15-035-24705-0000
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**Location** :  
660' FNL & 660' FEL  
NE NE

**LSD** :                      **Sect** : 25                      **Twp** : 33S                      **Rge** : 5E

<b>Permanent Datum:</b>	GL		<b>Elevations:</b>		<b>Services:</b>
<b>Drilling Measured From:</b>	KB		KB 1322.00	Ft	CNT    PIT
<b>Log Measured From:</b>	KB		DF 1321.00	Ft	LDT
<b>Above Permanent Datum:</b>	9.00 Ft		GL 1313.00	Ft	MLT

<b>Date</b>	06-26-2019	
<b>Run Number</b>	1	
<b>Depth--Driller</b>	3535.0	Ft
<b>Depth--Logger</b>	3535.0	Ft
<b>First Reading</b>	3535.0	Ft
<b>Last Reading</b>	222.0	Ft
<b>Casing--Driller</b>	222.0	Ft
<b>Casing--Logger</b>	222.0	Ft
<b>Bit Size</b>	7.875	In
<b>Casing Size</b>	8.625	In
<b>Hole Fluid Type</b>	WBM	
<b>Density</b>	9.4	
<b>Fluid Loss</b>	10.8	
<b>PH/Viscosity</b>	9.5	44.0
<b>Sample Source</b>	MEASURED	
<b>RM@Measured Temp.</b>	2.000	@ 70 F
<b>RMF@Measured Temp</b>	1.600	@ 70 F
<b>RMG@Measured Temp.</b>	2.400	@ 70 F
<b>Source RMF/RMC</b>	CALCULATED/CALCULATED	
<b>RM@BHT</b>	1.320 @ 110 F	
<b>Time Circulation Stopped</b>	06-26-2019 06:15	
<b>Max Recorded Temp.</b>	110 F	
<b>Equipment/Base</b>	1022 TULSA, OK	
<b>Recorded By</b>	SHELDON TYLER	
<b>Witnessed By</b>	JOE BAKER	

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	3535.00	8.625	32.00	222.00	0.00

<b>Run Number</b>	1	
<b>Date</b>	06-26-2019	
<b>Date/Time On Bottom</b>	06-26-2019 09:15	
<b>Depth to Fluid</b>	0.0	Ft
<b>Salinity</b>	1100.000	
<b>RMF@BHT</b>	1.060	@ 110 F
<b>RMC@BHT</b>	1.580	@ 110 F

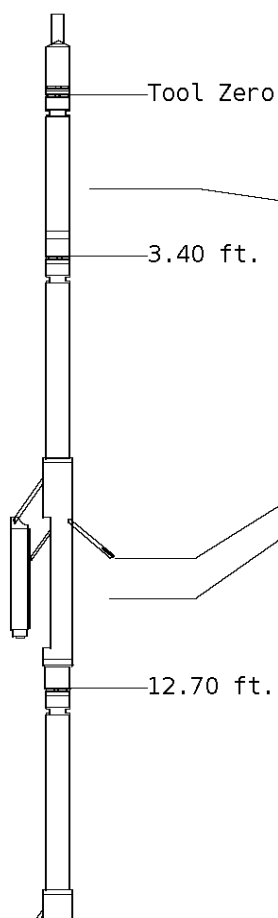
ALL PRESENTATIONS AS PER CUSTOMER REQUEST  
 GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION  
 CALIPERS ORIENTED ON X-Y AXIS  
 2.71 G/CC USED TO CALCULATE POROSITY  
 ANNULAR HOLE VOLUME CALCULATED USING 5.5" PRODUCTION CASING  
 PHIN IS CALIPER CORRECTED

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.BROWN  
 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:** GRT-B      **Length:** 3.40 ft.    **O.D.** 3.60 in.  
 Gamma Ray Controller  
**Sonde ID** : GRT-BB-006

Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	51.15

**Tool:** CNT-AA      **Length:** 9.30 ft.    **O.D.** 4.36 in.  
 Compensated Neutron A Pad on NDT-A  
**Sonde ID** : NDT-BB-146  
**Source ID** : N-1044  
**Pad ID** : CNP-AA-115

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	9.40	43.75
PHIN	6.80	10.20	42.95

**Tool:** LDT-DA      **Length:** 9.30 ft.    **O.D.** 4.80 in.  
 Litho Density D Pad on NDT-A  
**Sonde ID** : NDT-AE-003  
**Source ID** : 63558B  
**Pad ID** : LDP-DA-50

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.00	18.70	34.45
PEL	7.00	19.70	33.45
PES	7.40	20.10	33.05



LDEN 7.20 19.90 33.25  
 LCOR 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-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

LWT 53.15 ft.

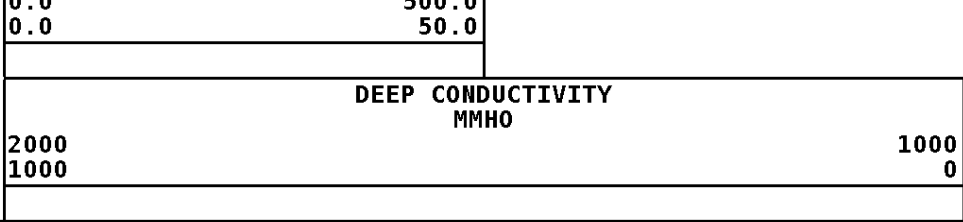
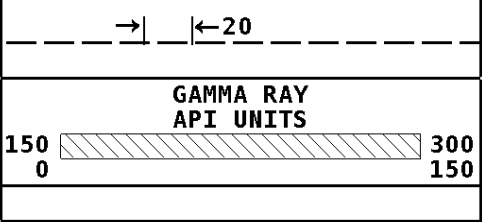
**Well File:** VAL ENERGY GARISON 1-25\_JUNE26\_MSTK      **Scale:** 1:600      **Format:** DIL-600  
**Segment:** V1.D1.S6 Reprocess of MAIN      **Acquired:** 2019-06/26 09:23 3.4.1-13968  
**Reference:** 0      **Processed:** 2019-06/26 10:22 3.4.1-13968

<b>TENSION</b> LBS	0
10000	0

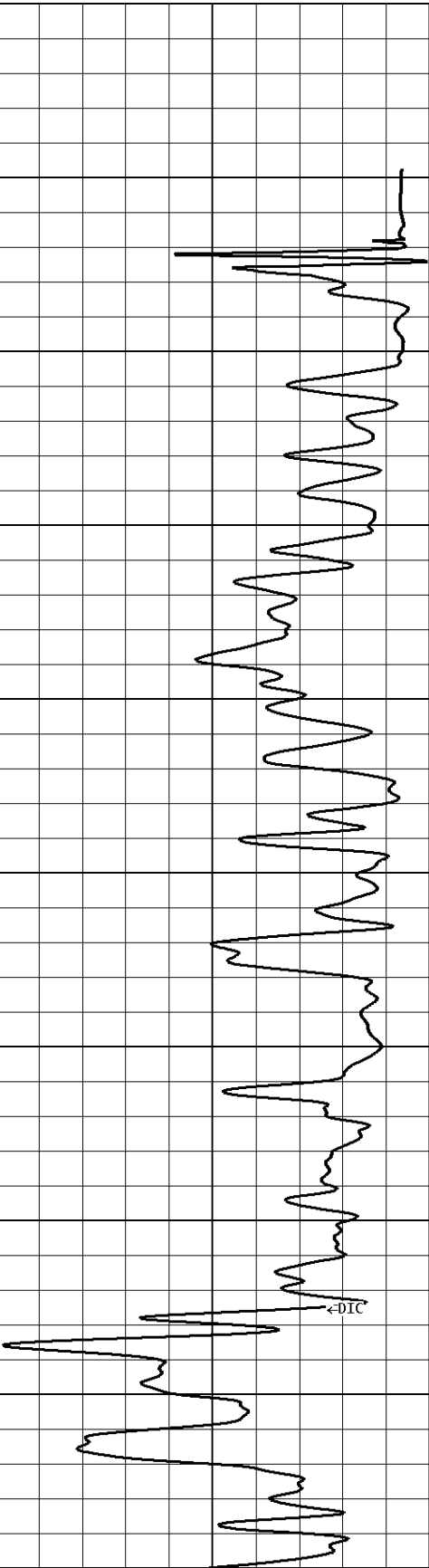
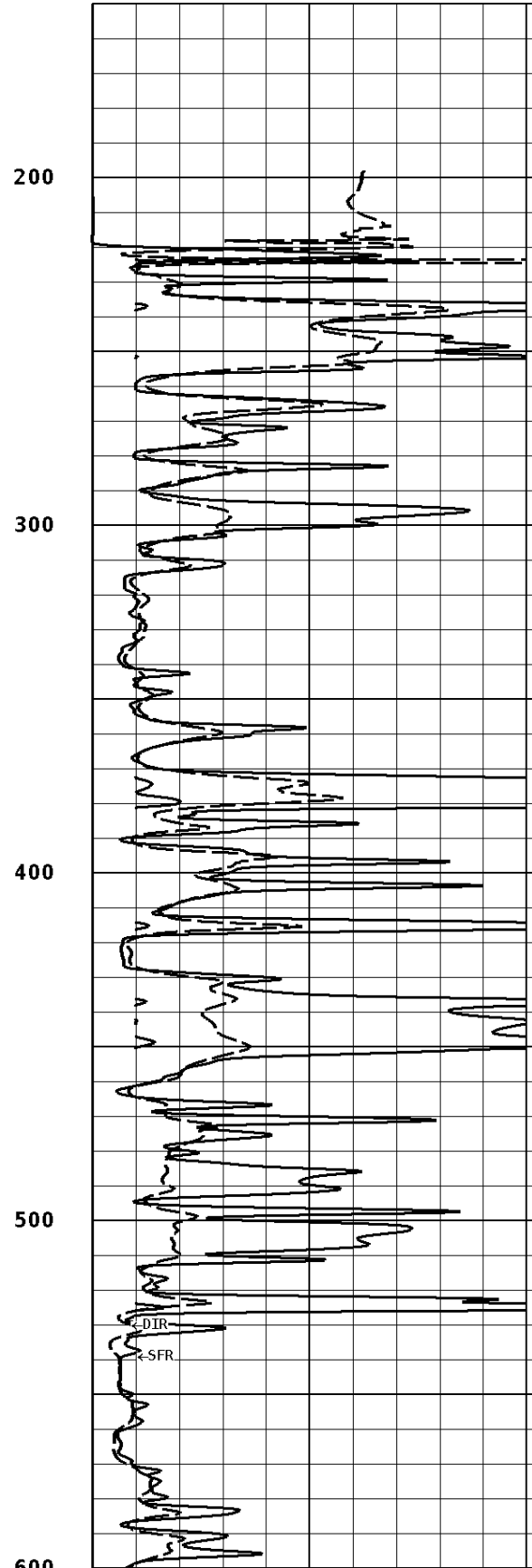
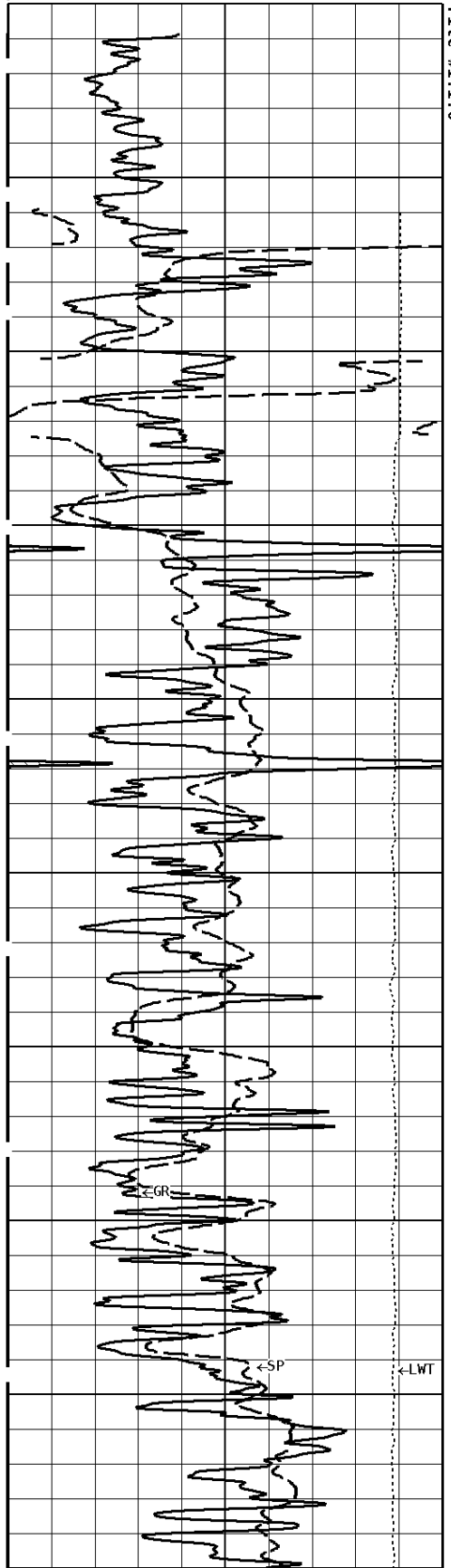
<b>DEEP INDUCTION</b> OHMM	500.0
0.0	50.0

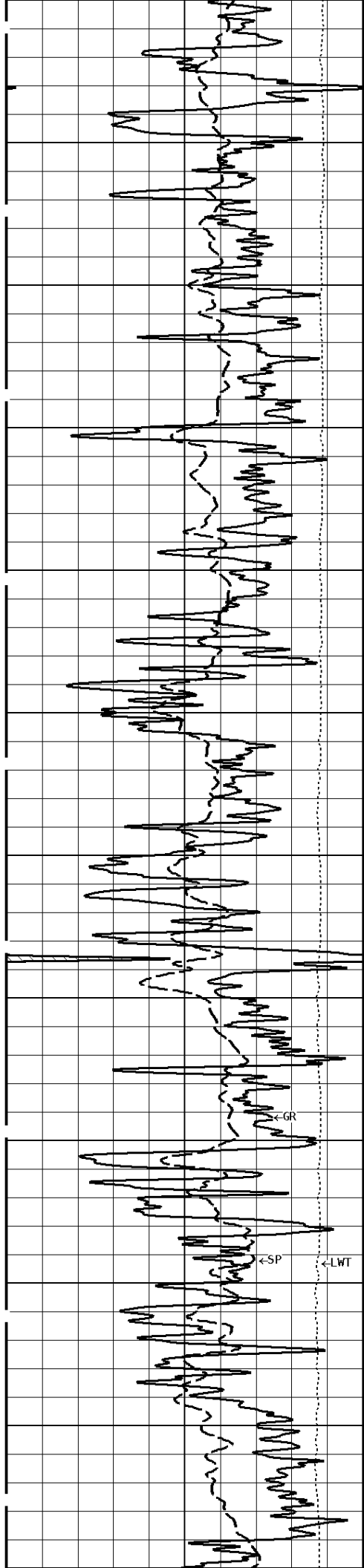
<b>SPONTANEOUS POTENTIAL</b> mV	0.0
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<b>SHALLOW FOCUSED RESISTIVITY</b> OHMM	500.0
0.0	500.0

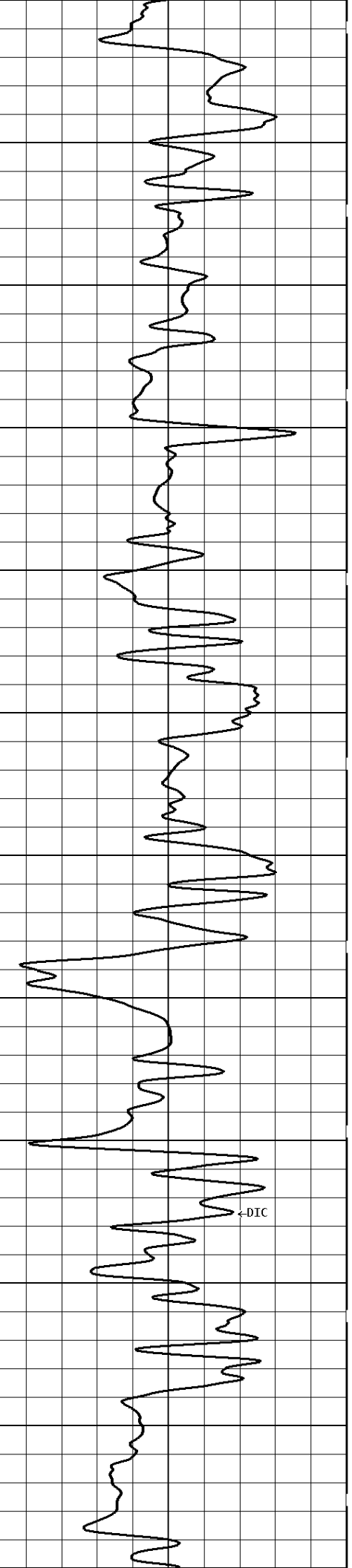
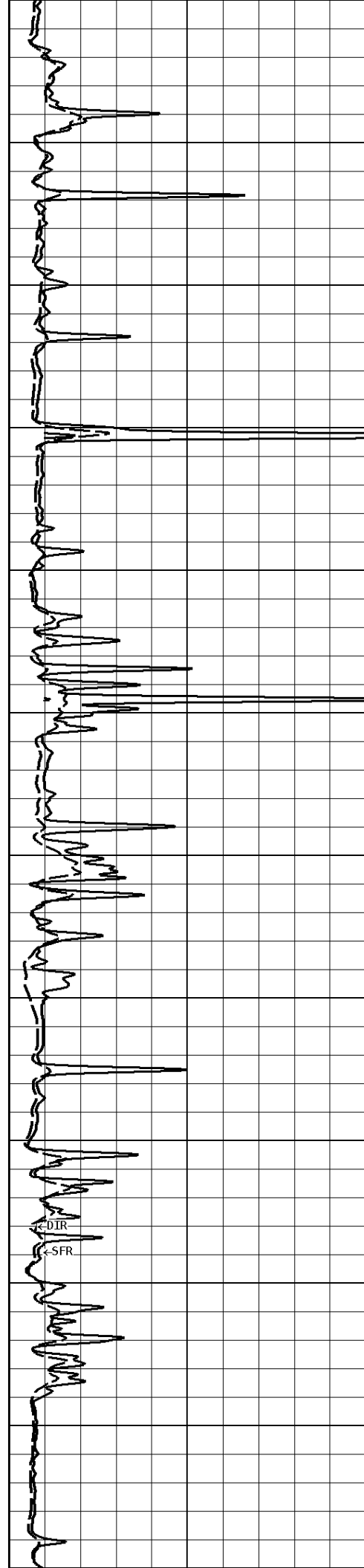


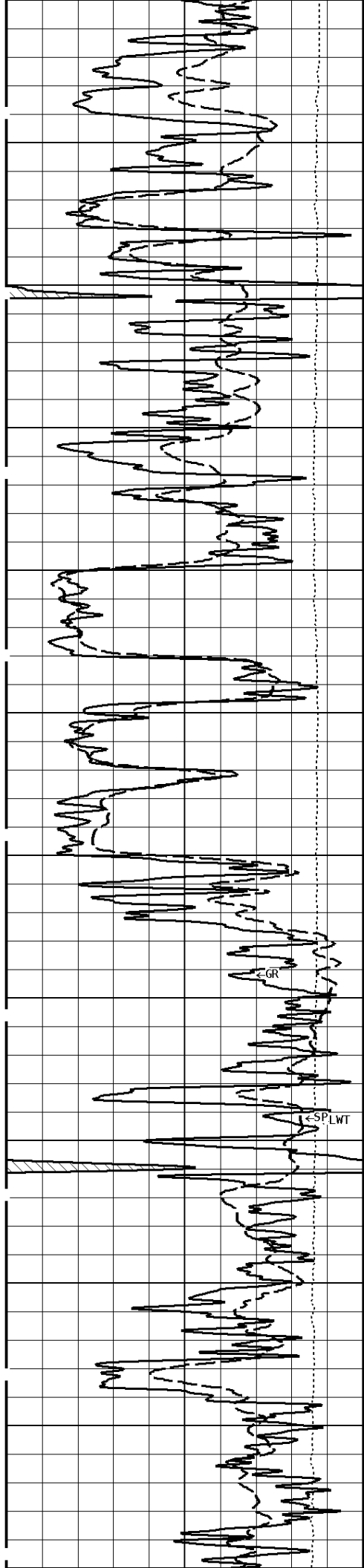
**1:600 MAIN SECTION**





600  
700  
800  
900  
1000  
1100





1200

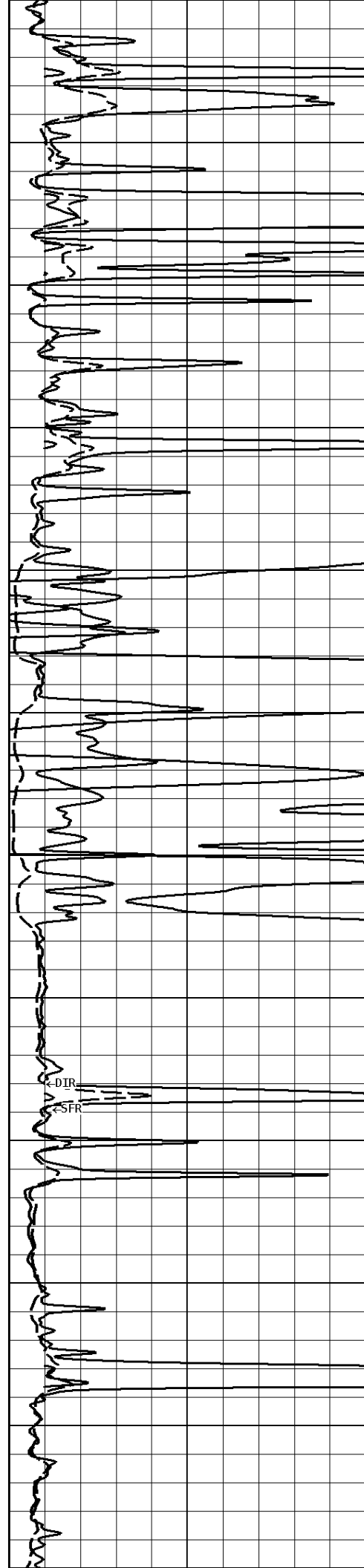
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1400

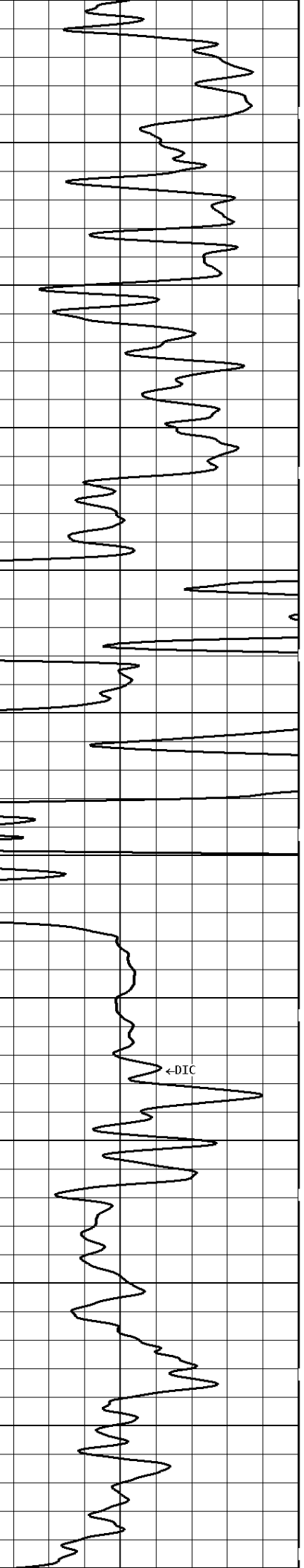
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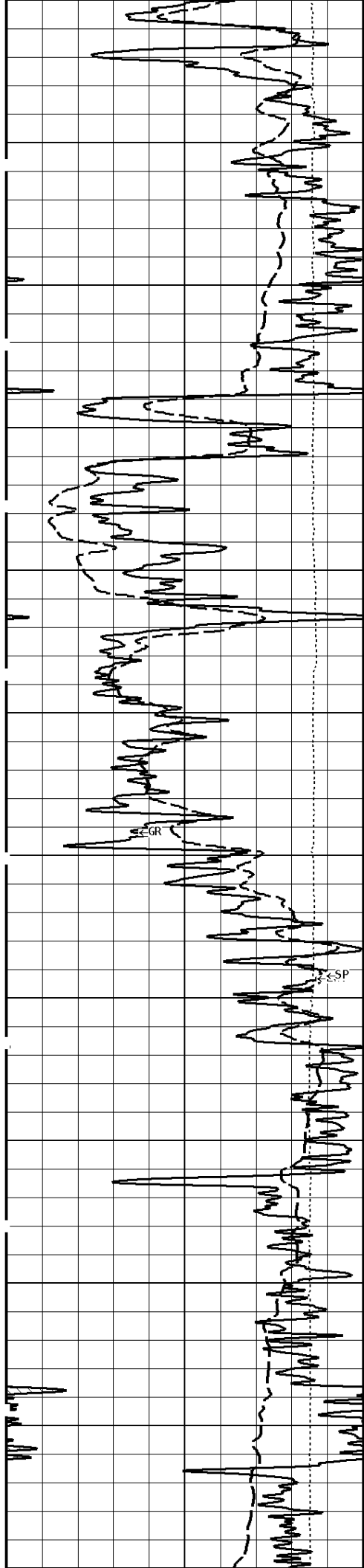
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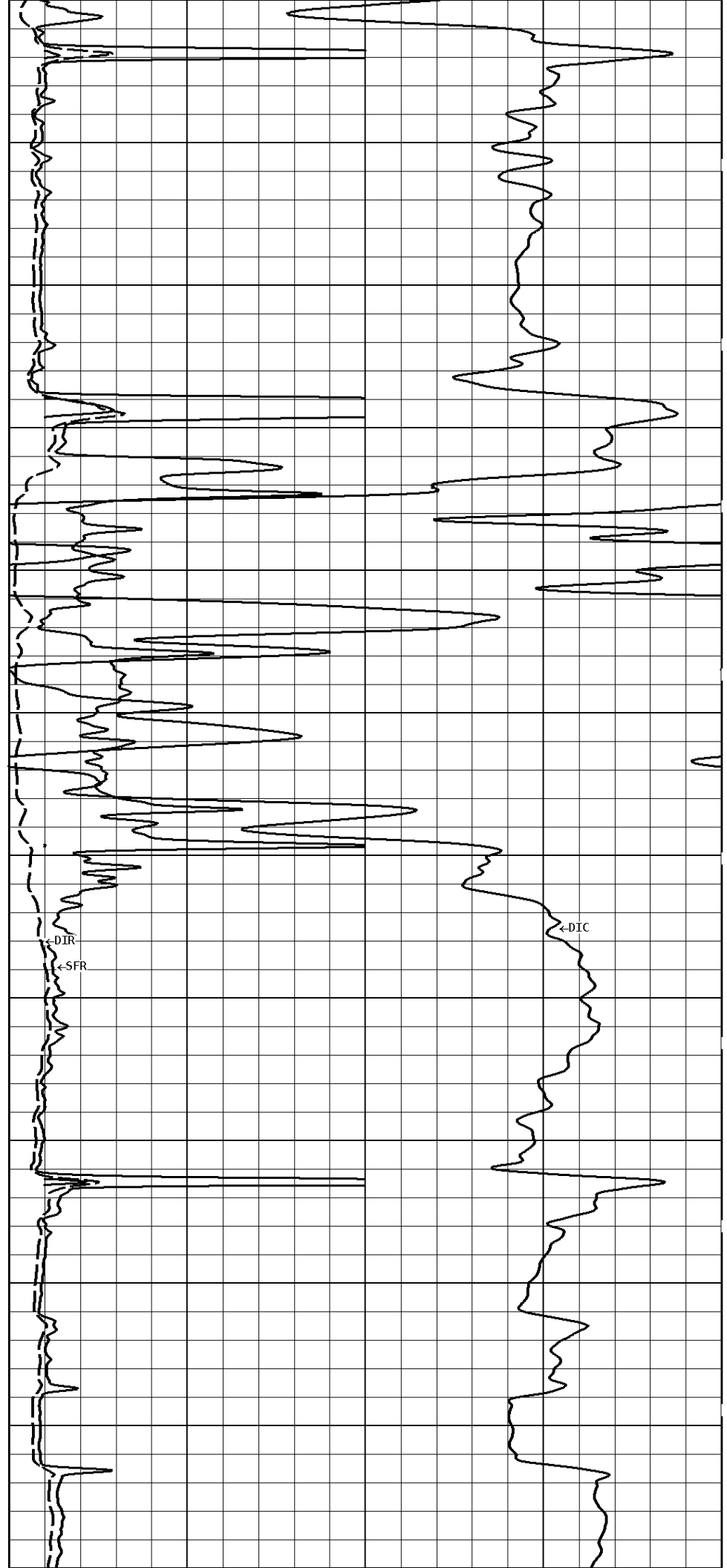
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←SFR

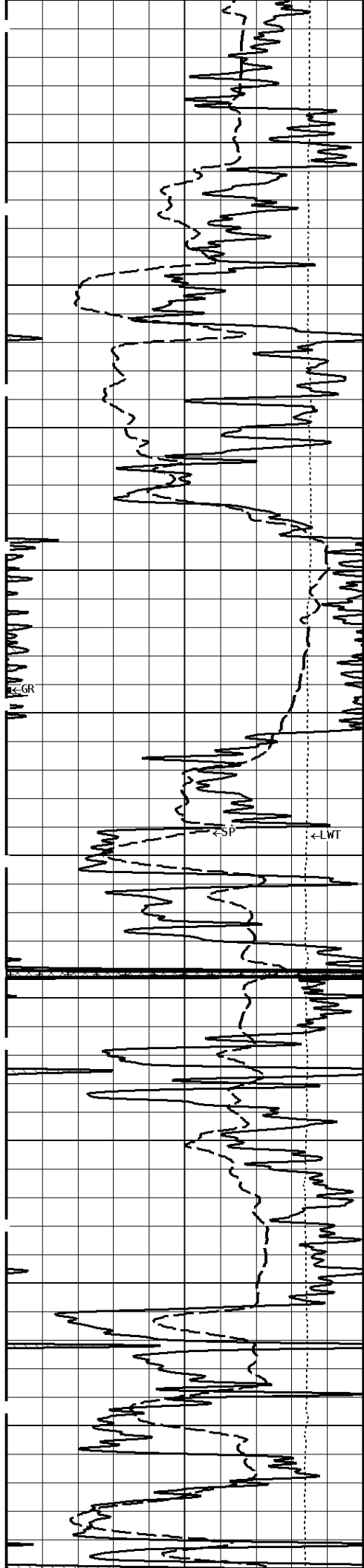


←DIC



1700  
1800  
1900  
2000  
2100  
2200





2300

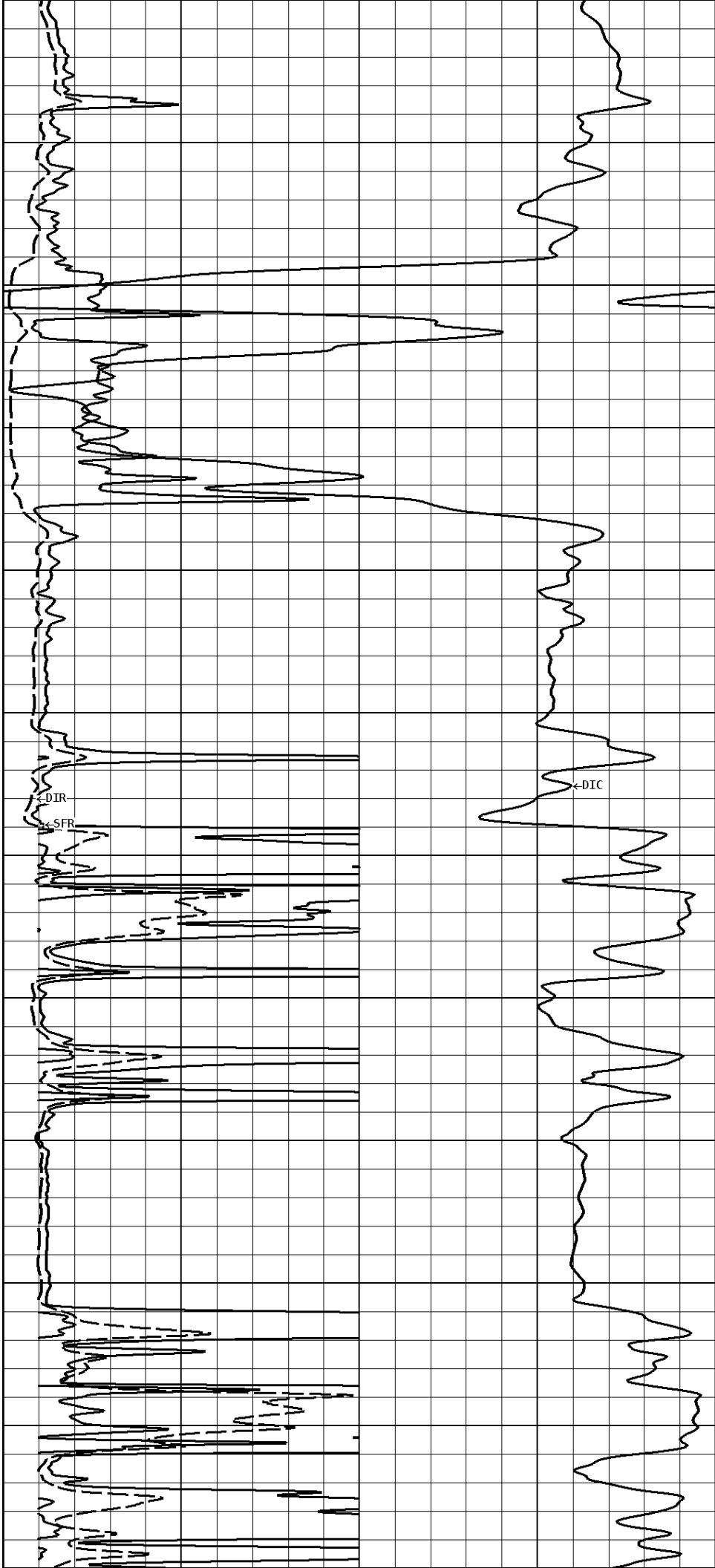
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2500

2600

2700

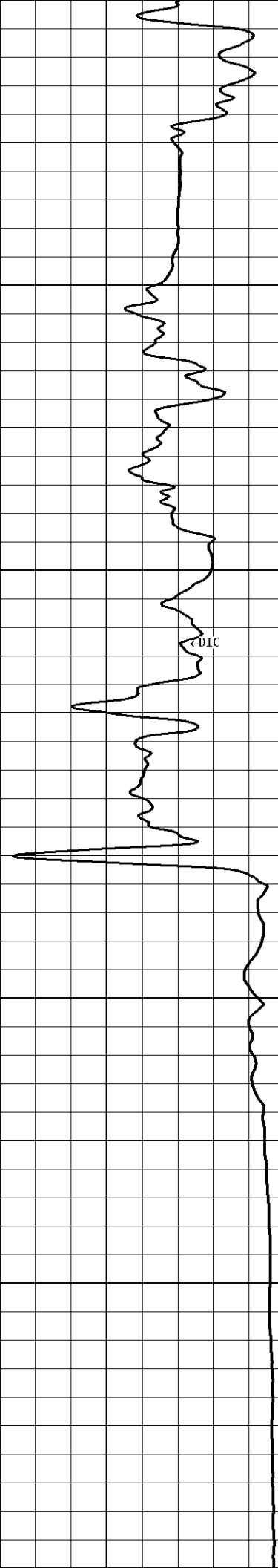
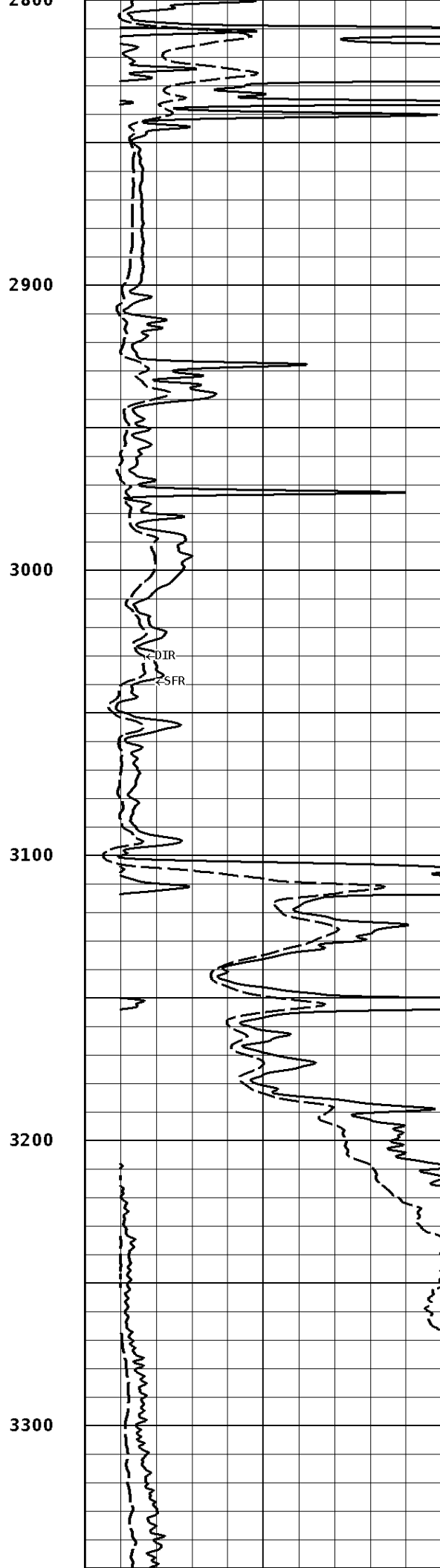
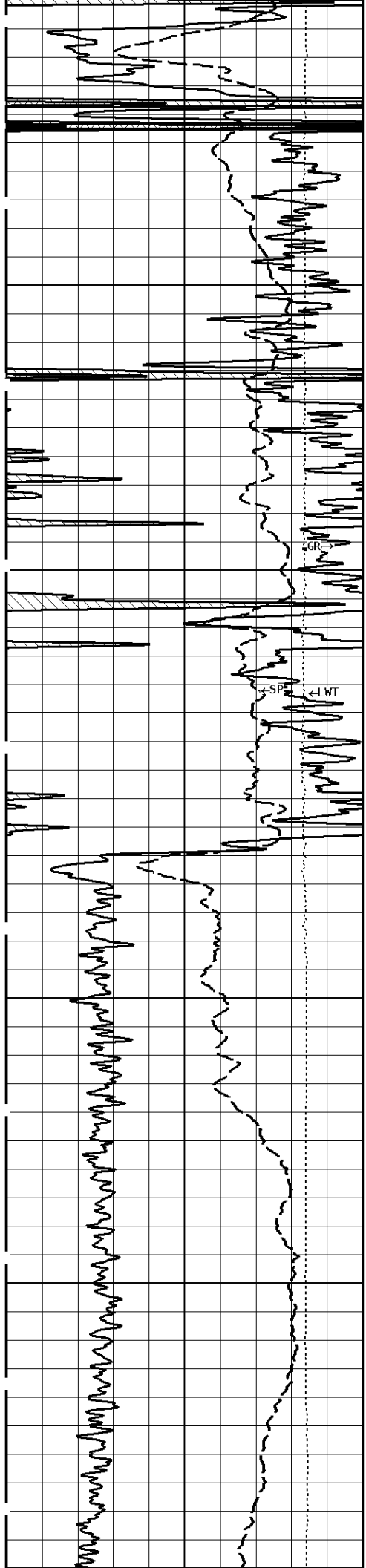
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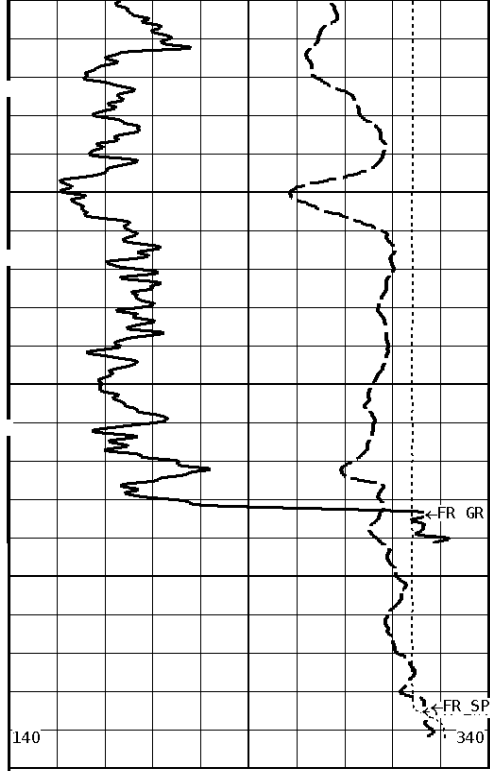


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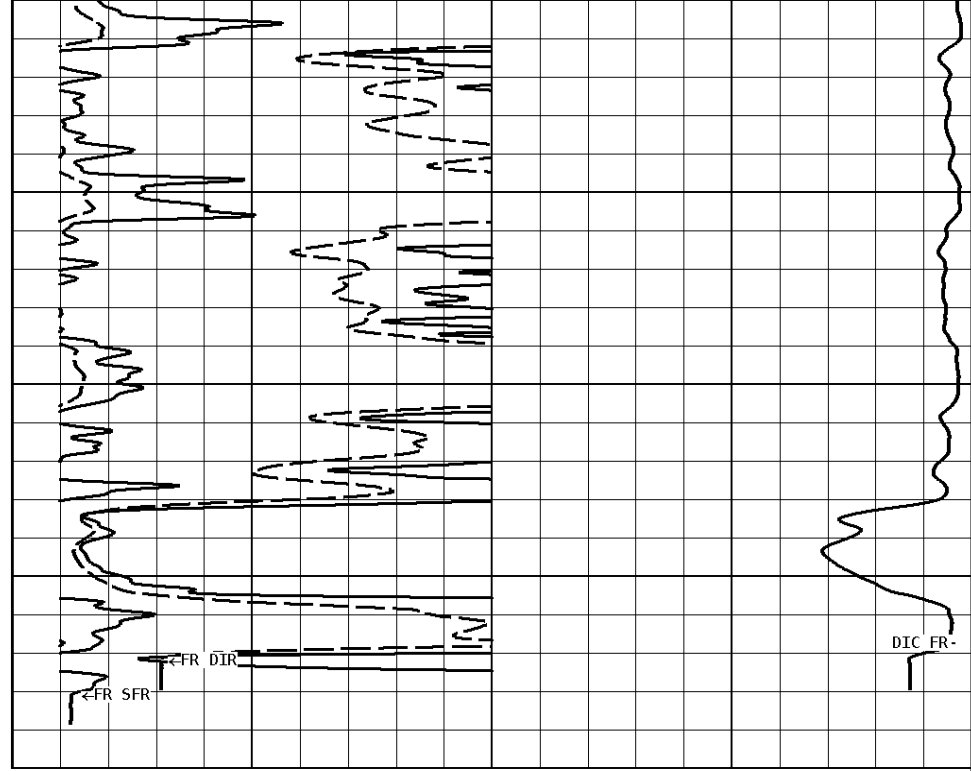
←SFR

←DIC

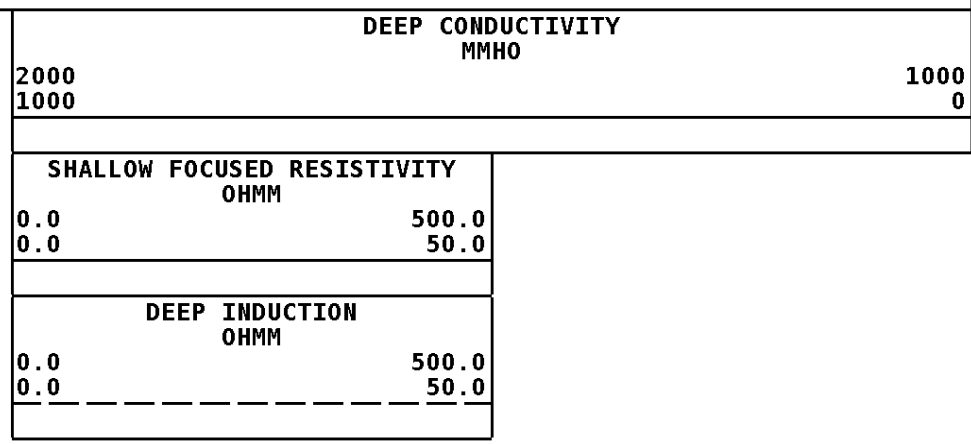
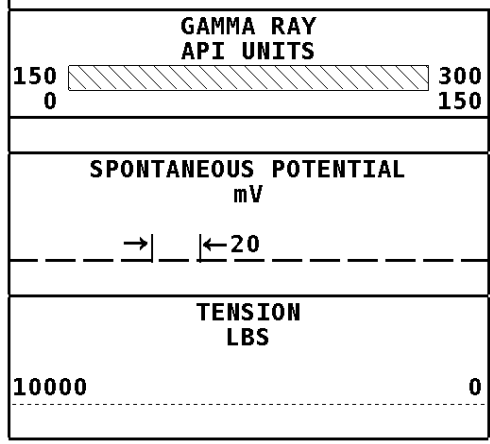




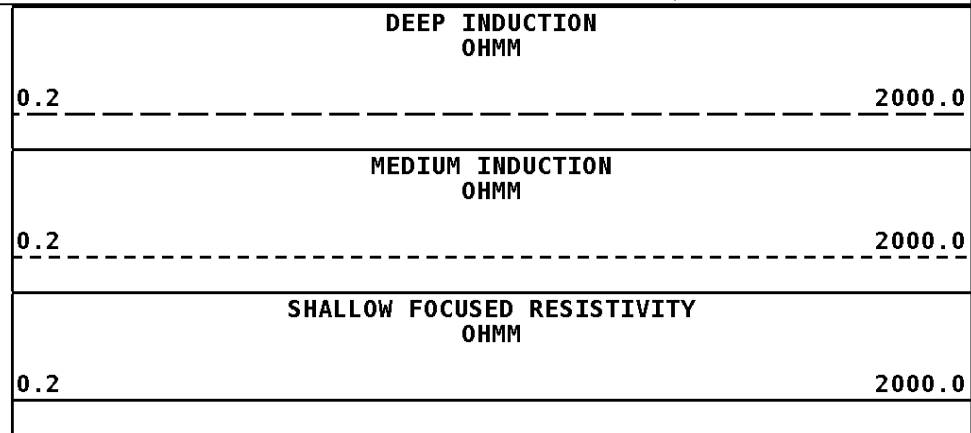
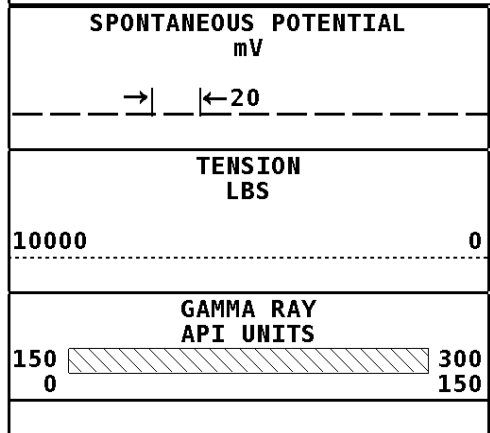
3400  
3500  
3535



**1:600 MAIN SECTION**

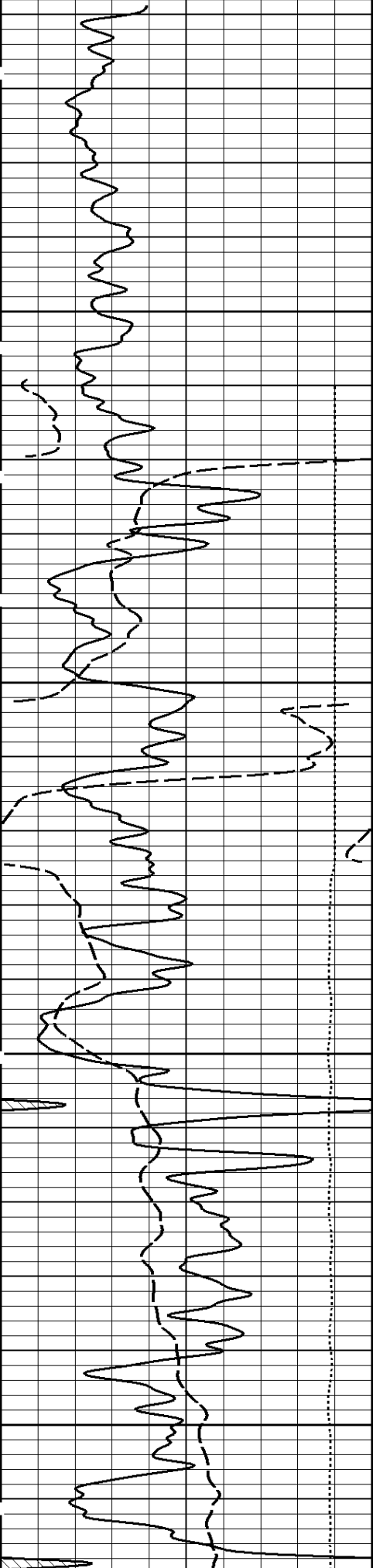


Well File: VAL ENERGY GARISON 1-25 JUNE26 MSTK Scale: 1:240 Format: DIL-240  
 Segment: V1.D1.S6 Reprocess of MAIN Acquired: 2019-06/26 09:23 3.4.1-13968  
 Reference: 0 Processed: 2019-06/26 10:22 3.4.1-13968



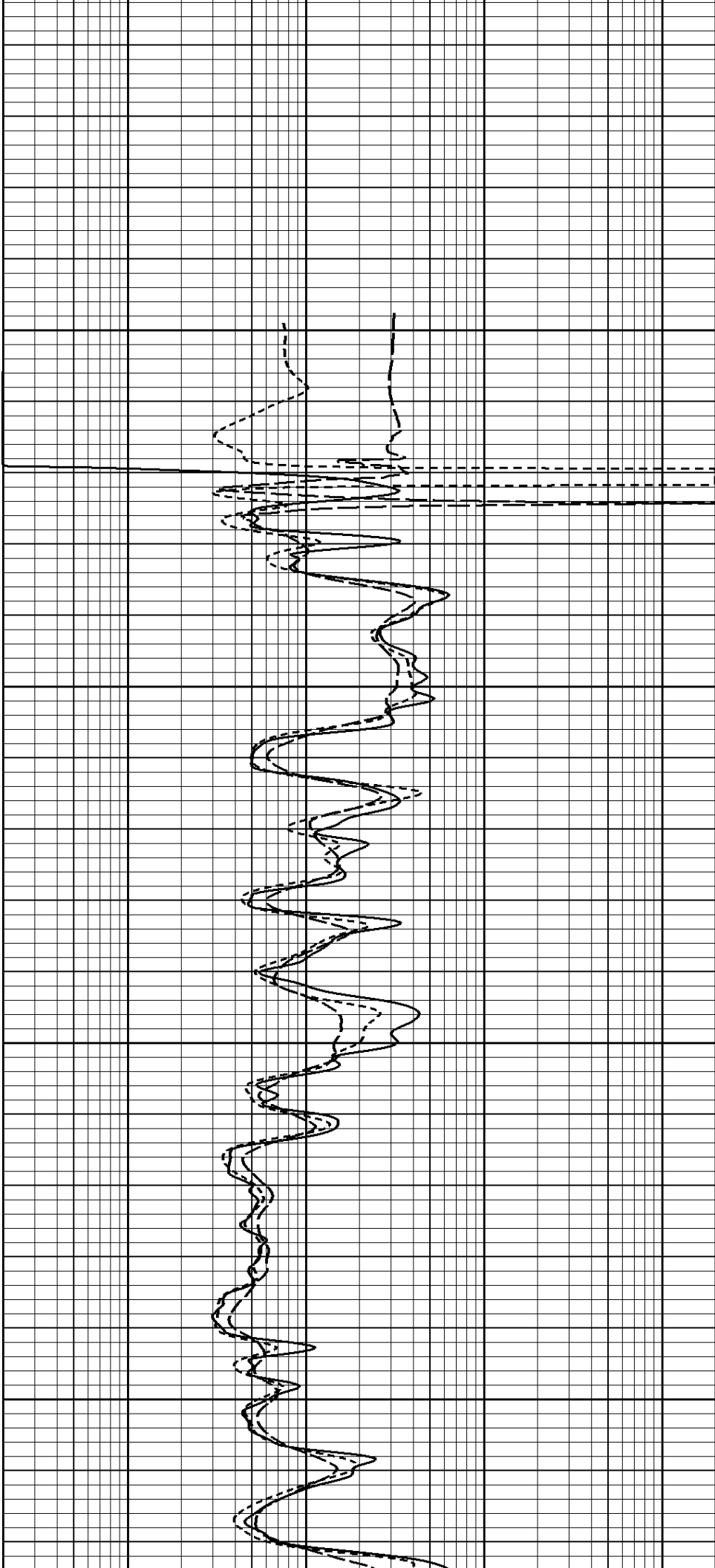
**1:240 MAIN SECTION**

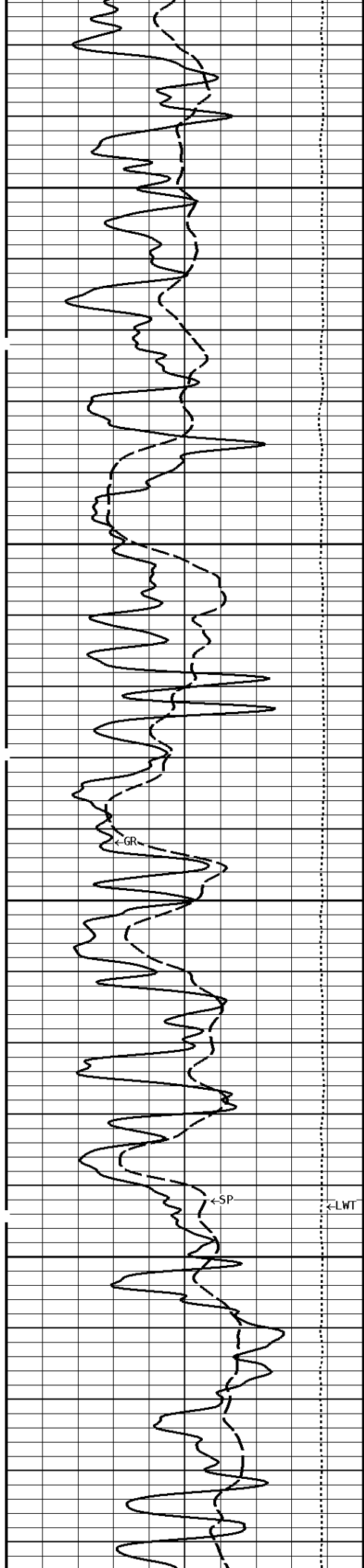
e #1.1.6



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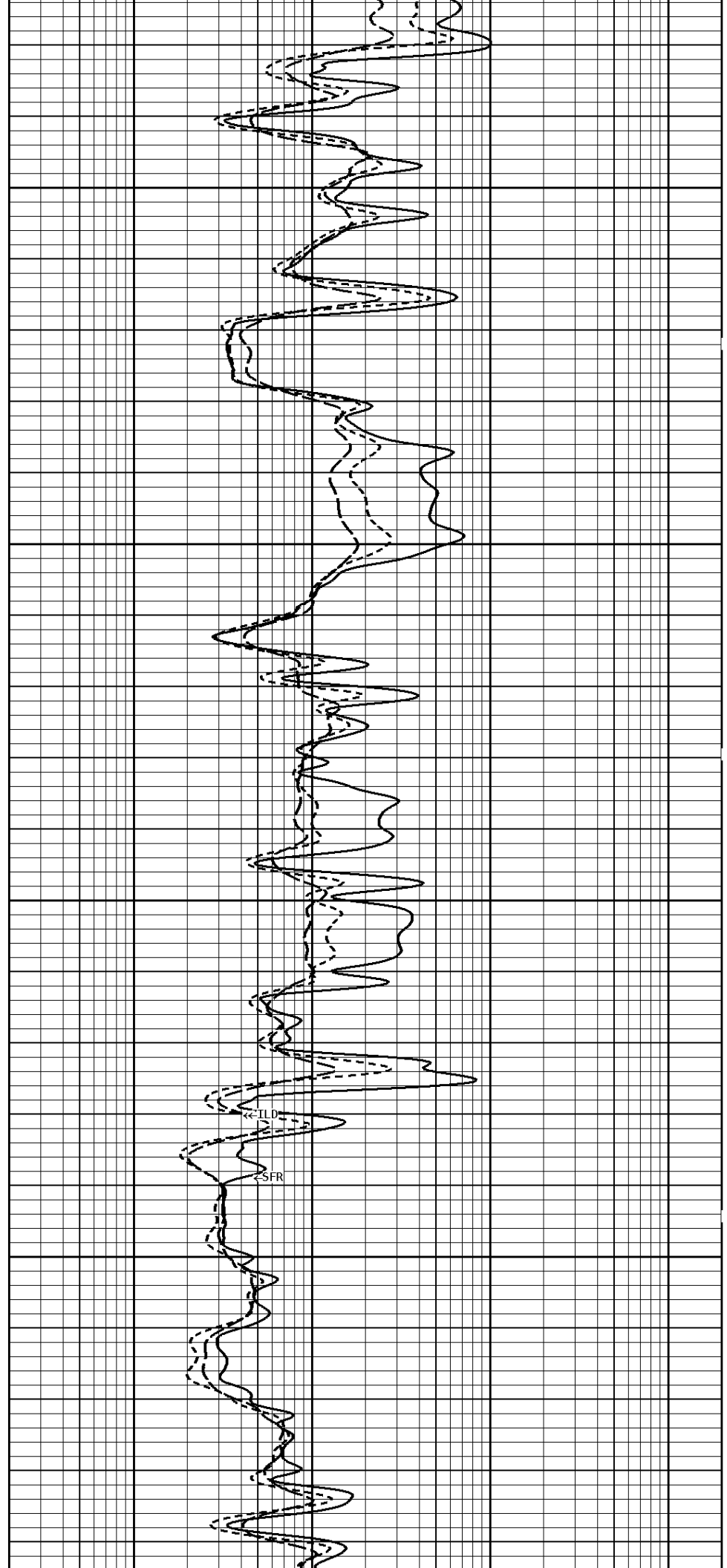
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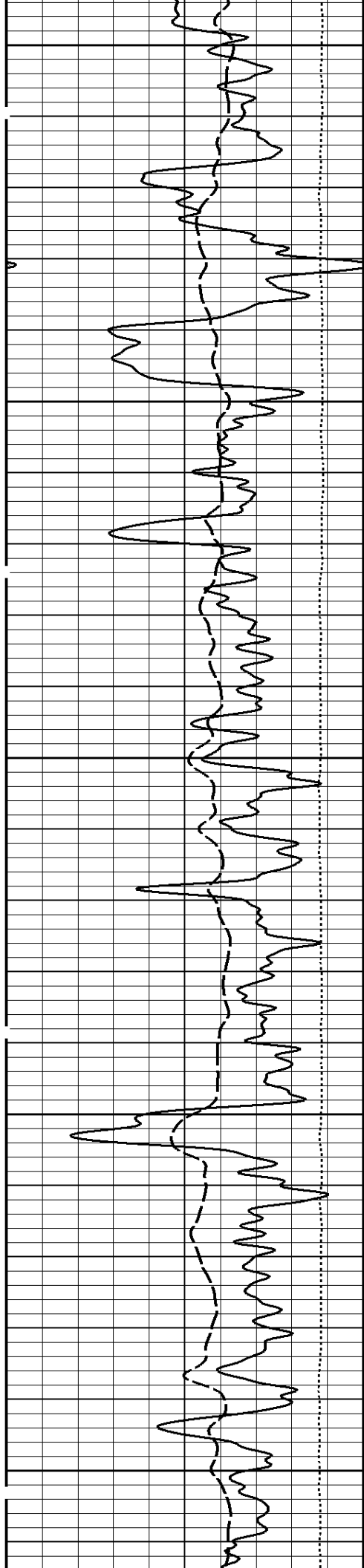
400

500



ILD

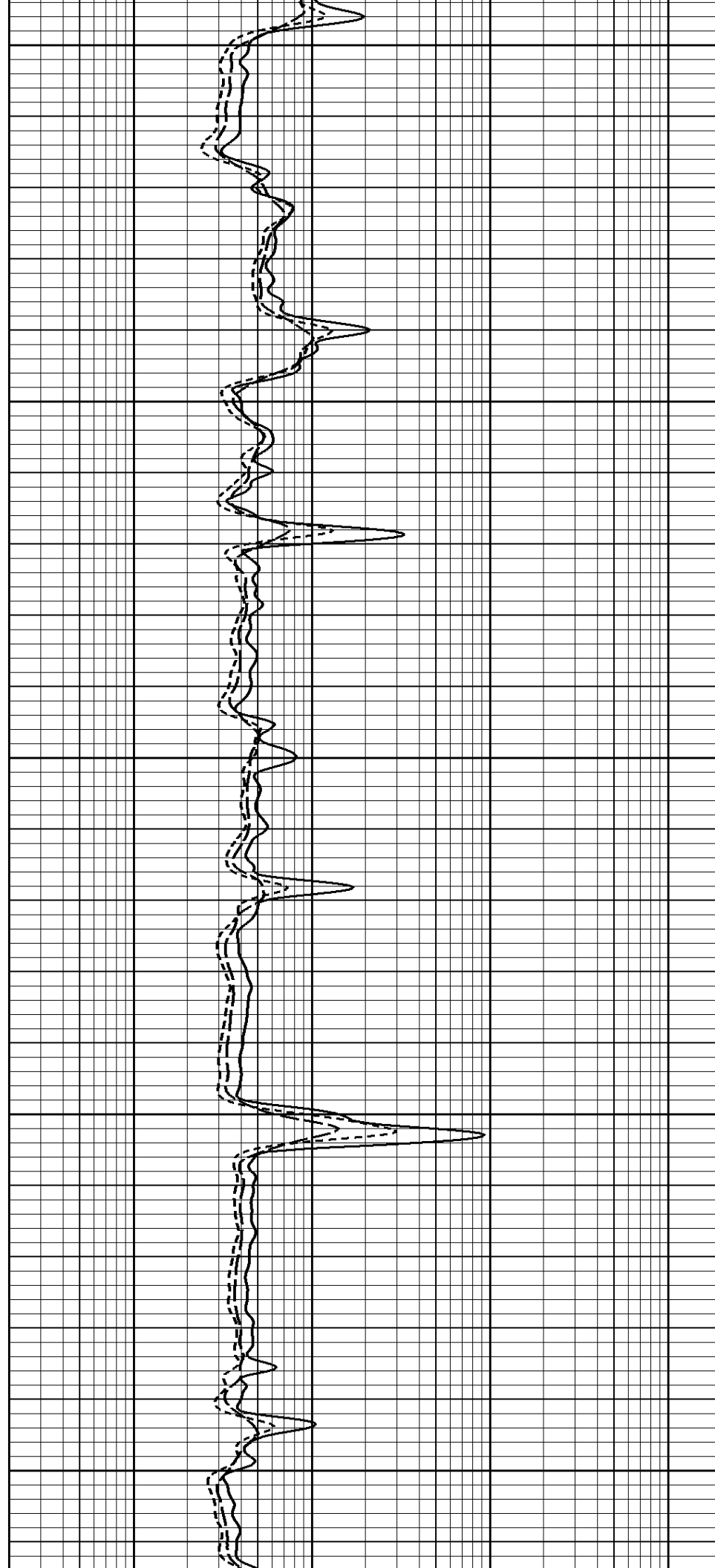
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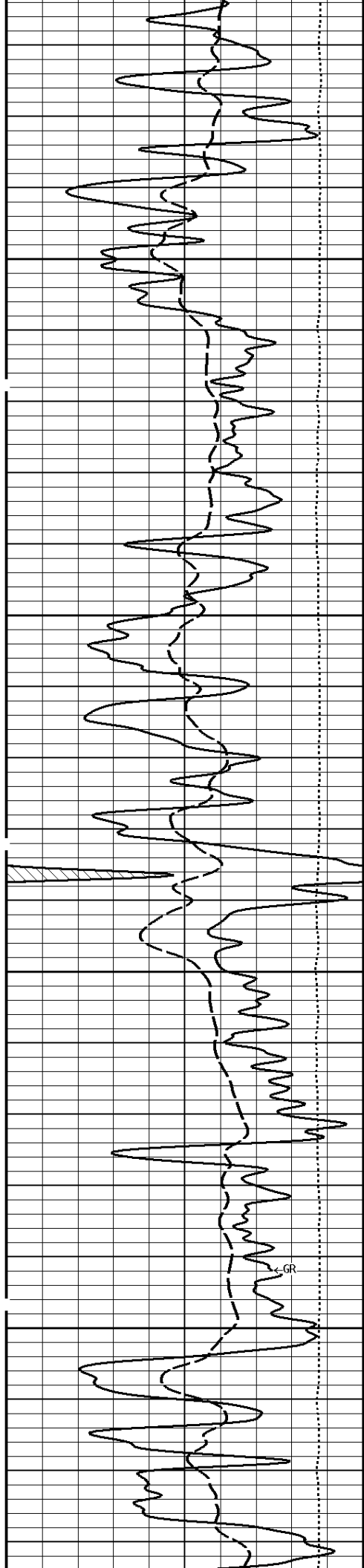


600

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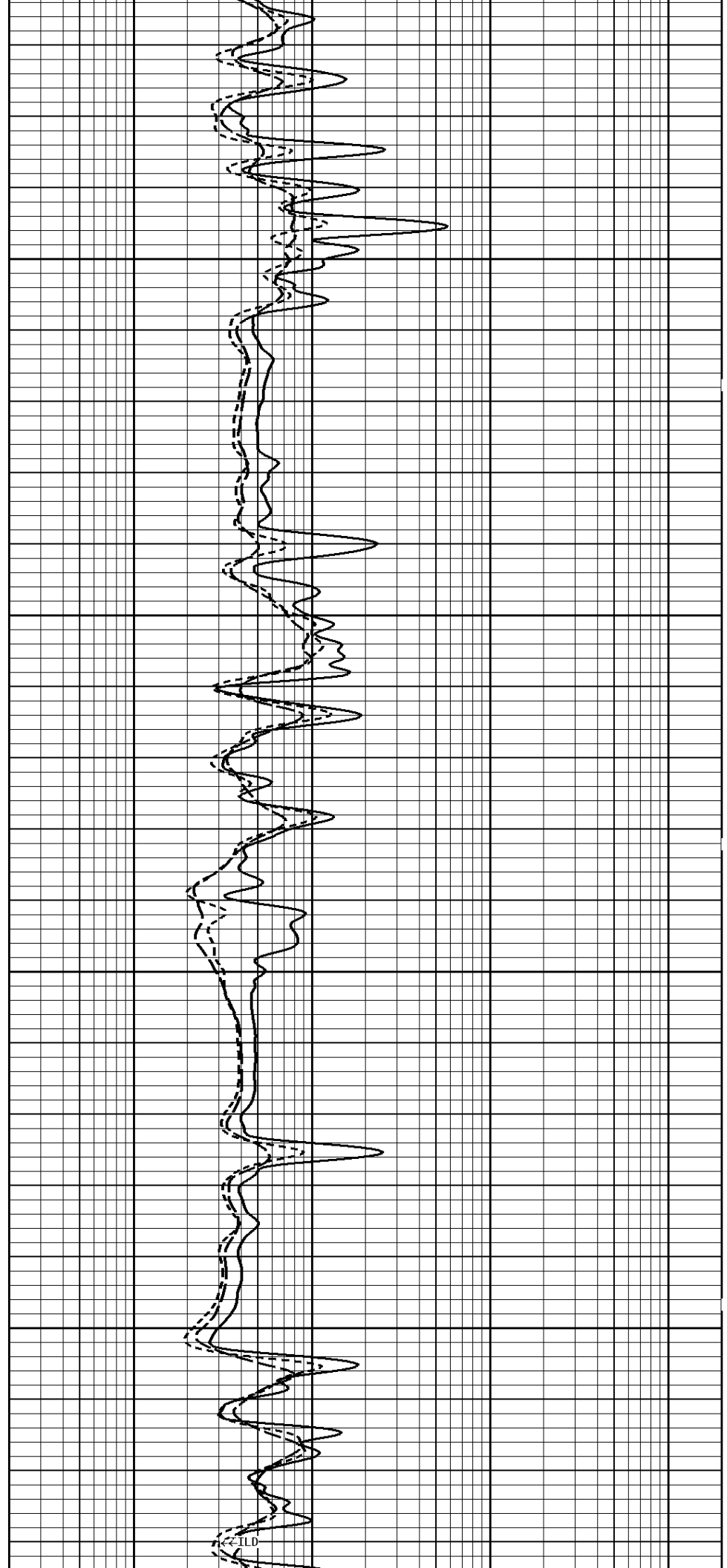
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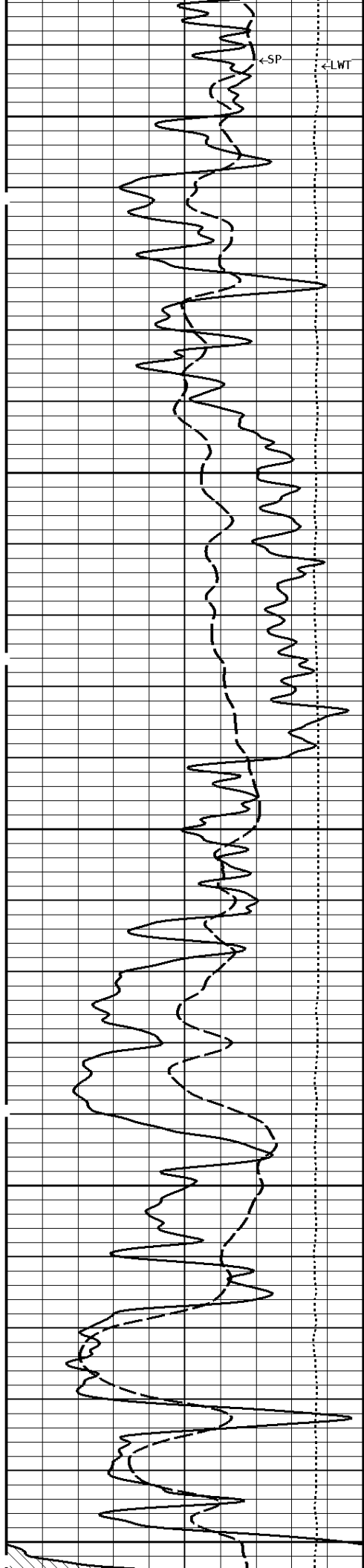




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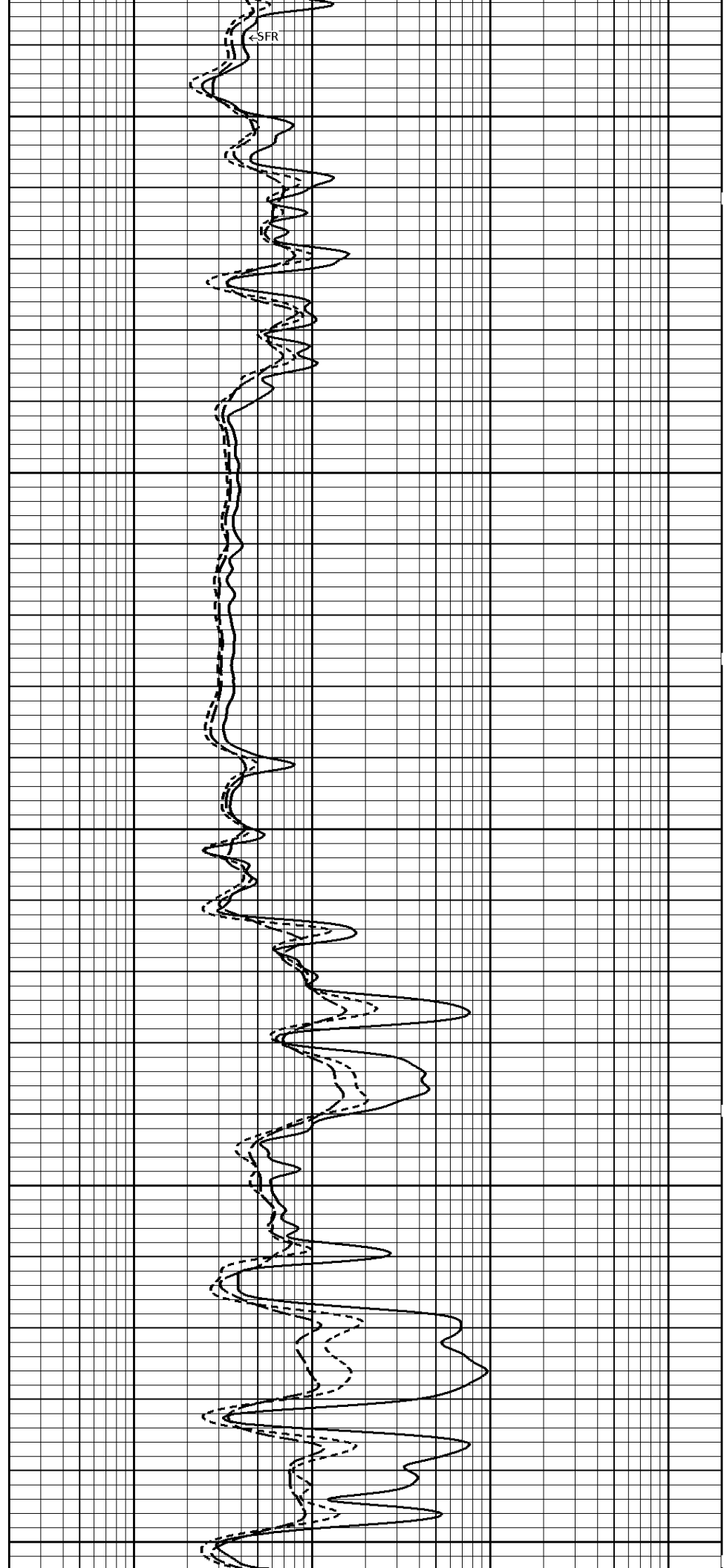
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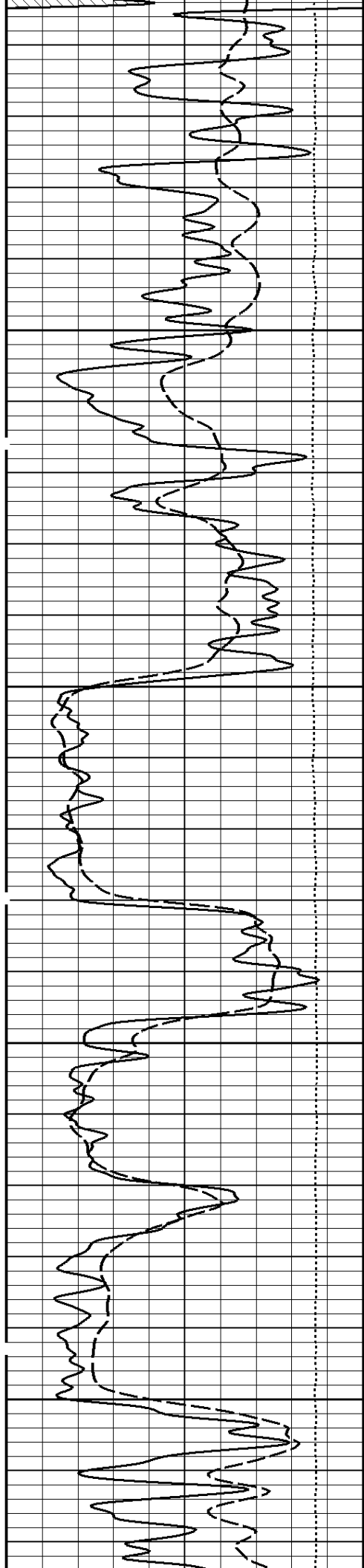




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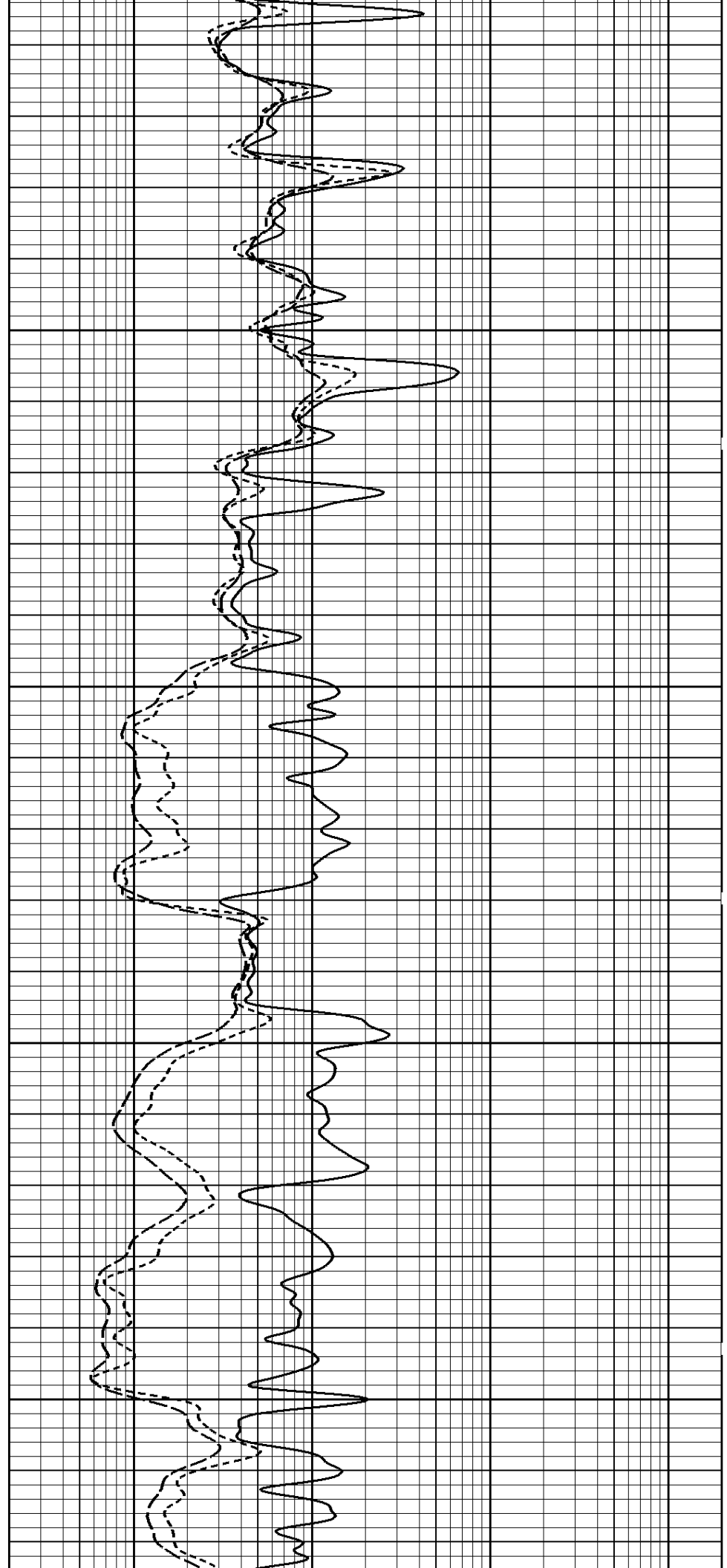
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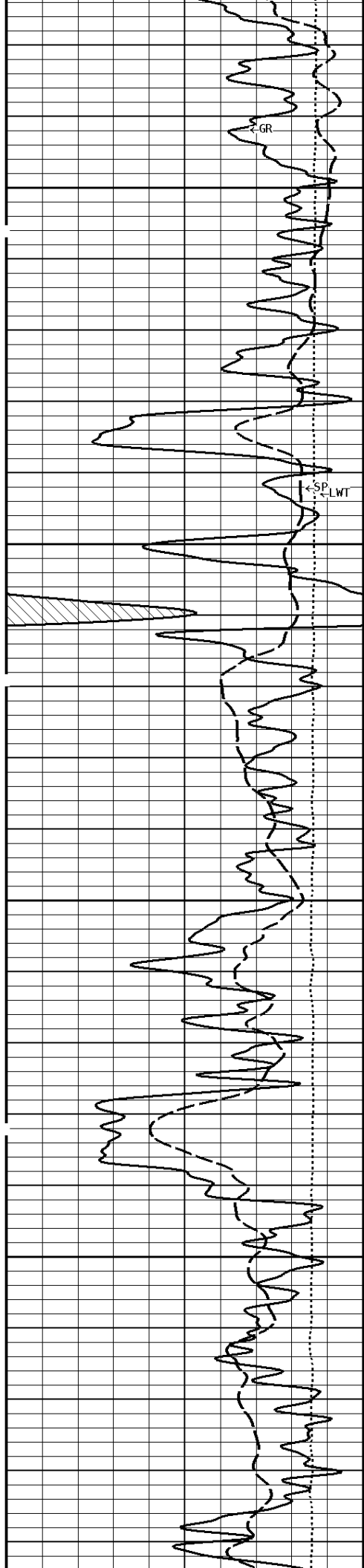




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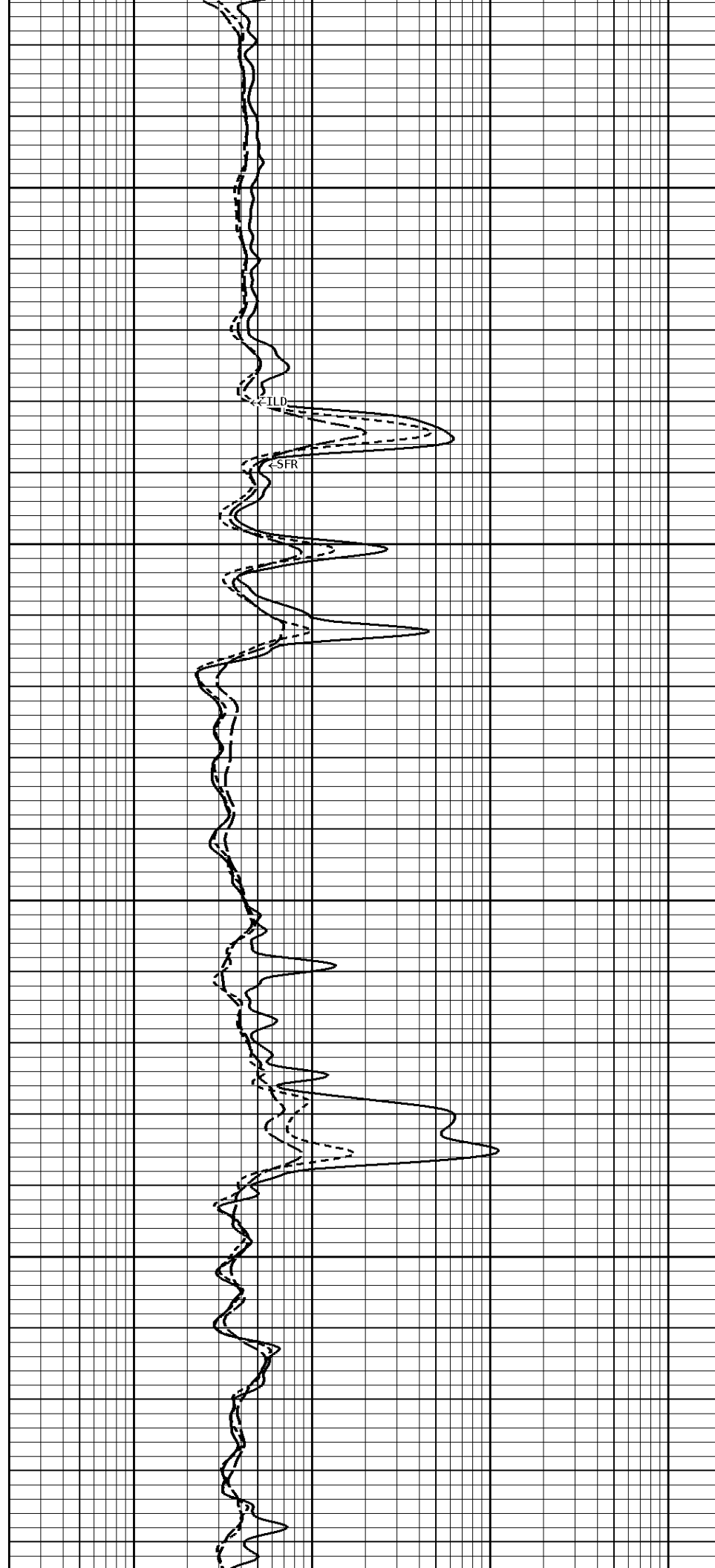
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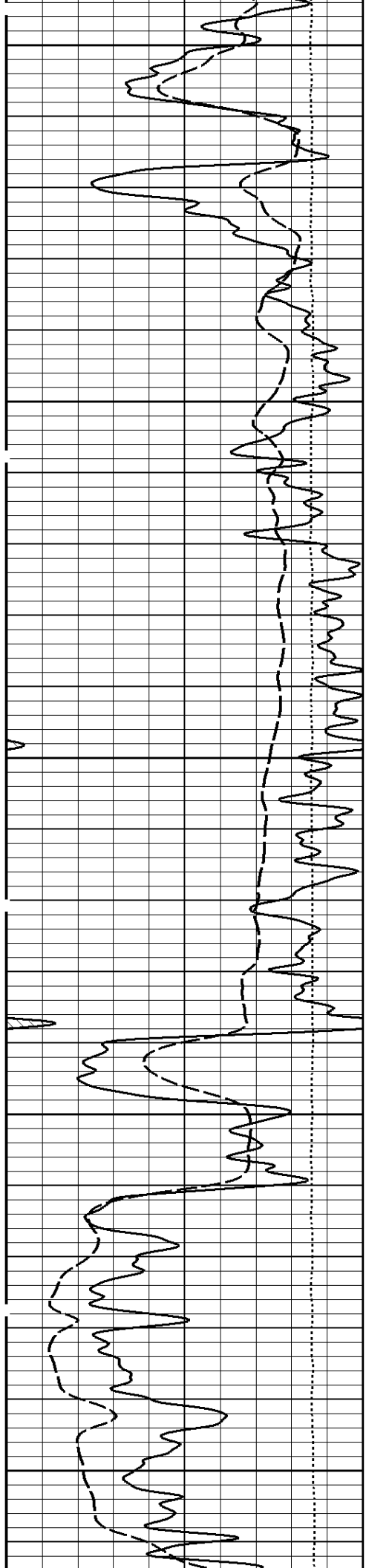
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1600



TLD

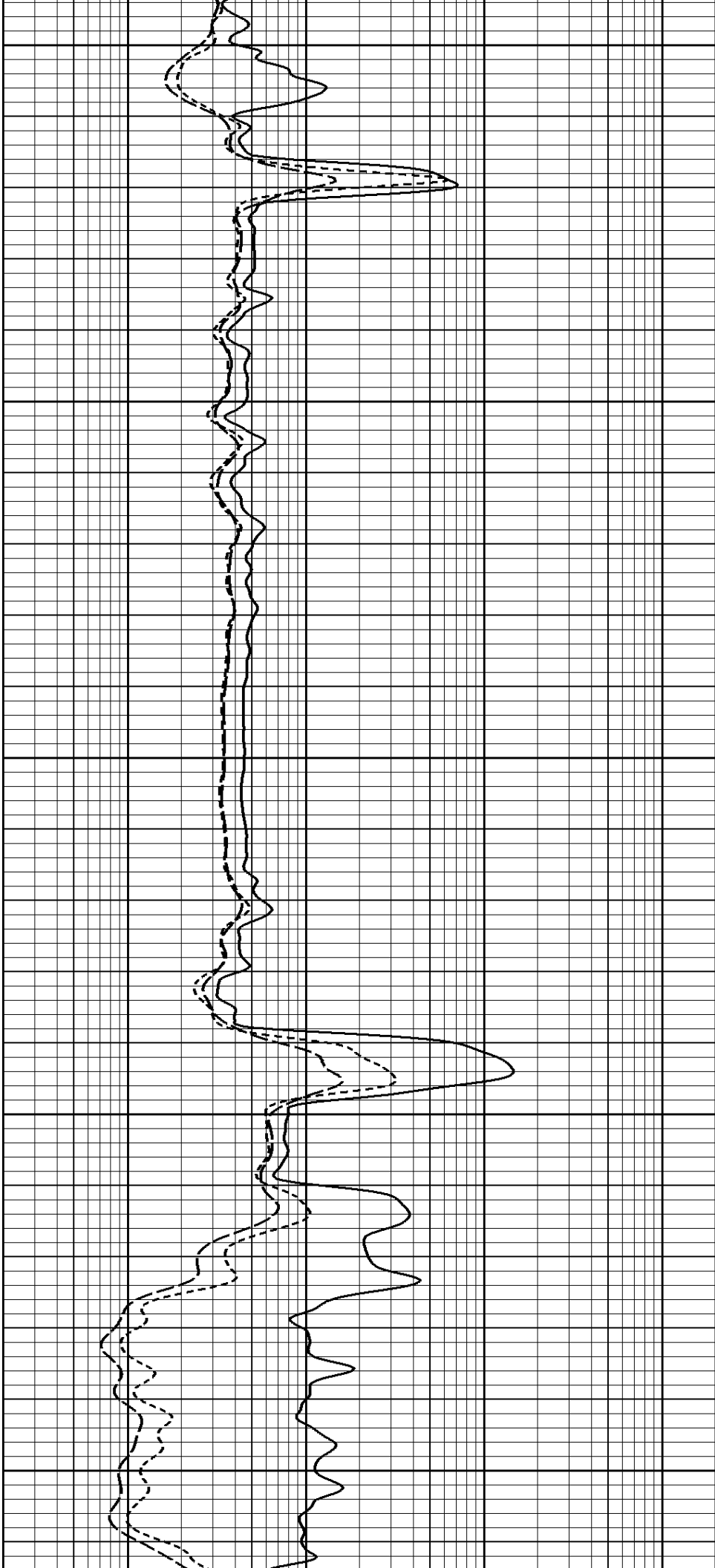
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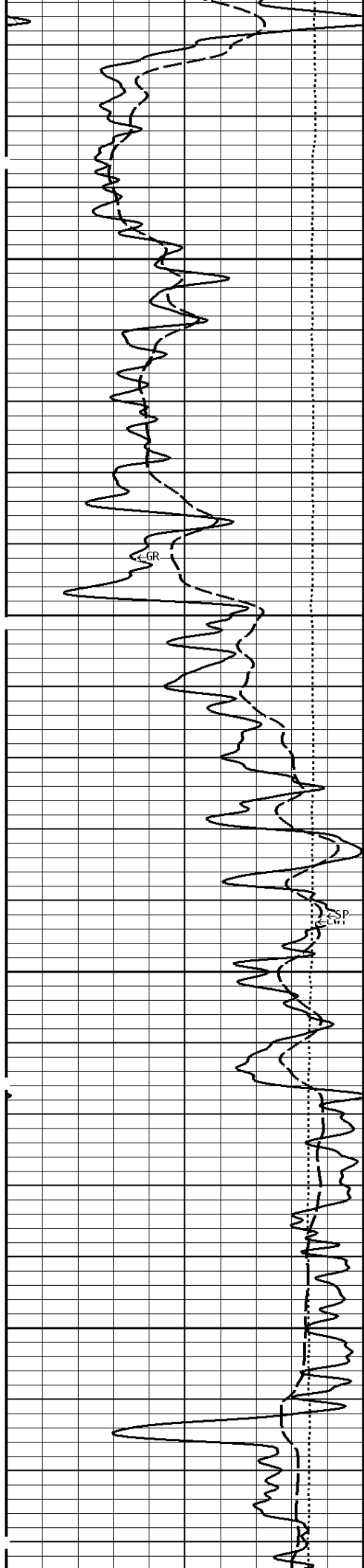


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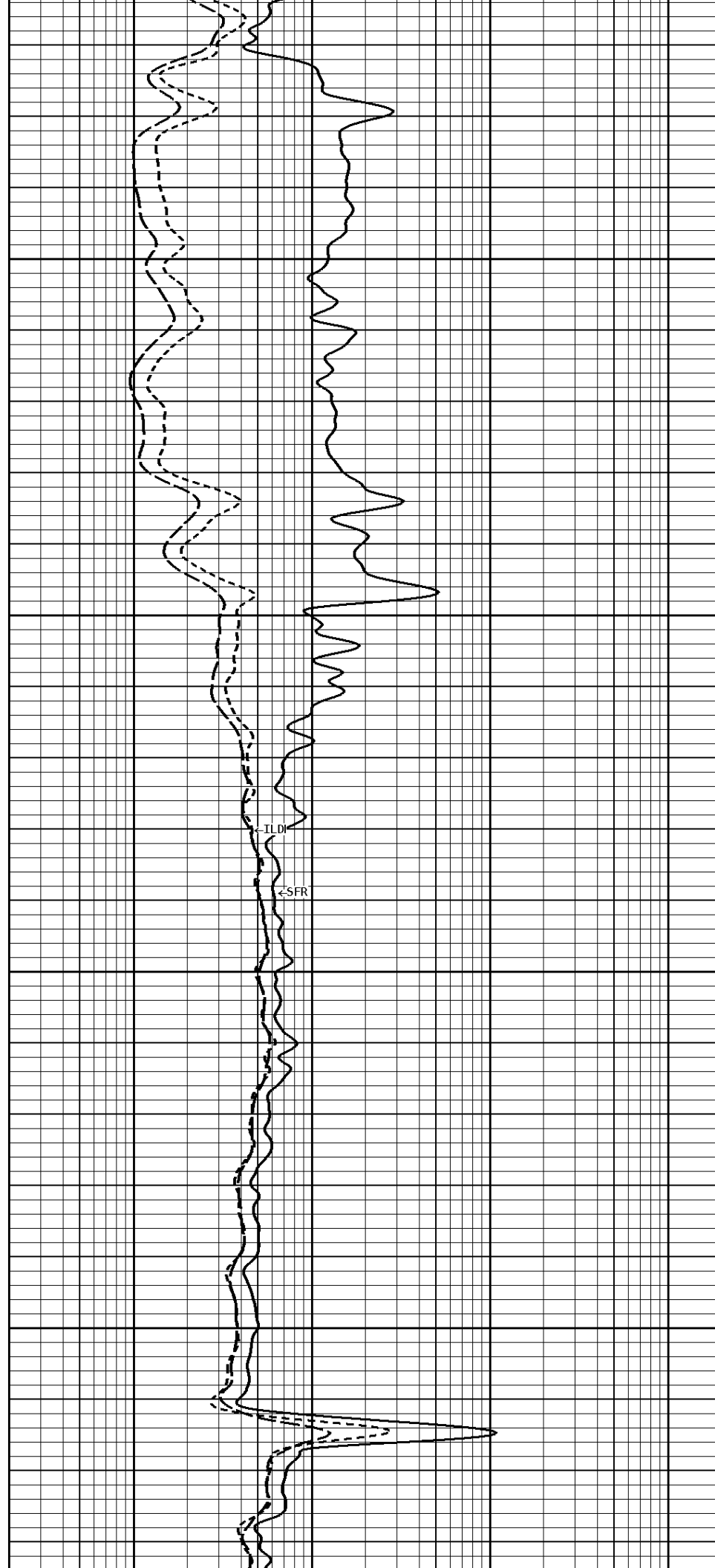
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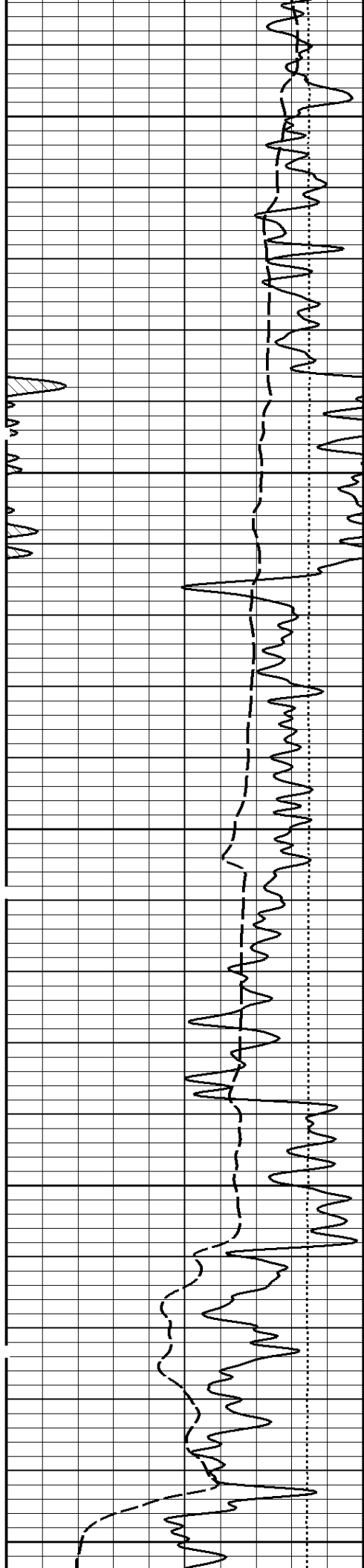




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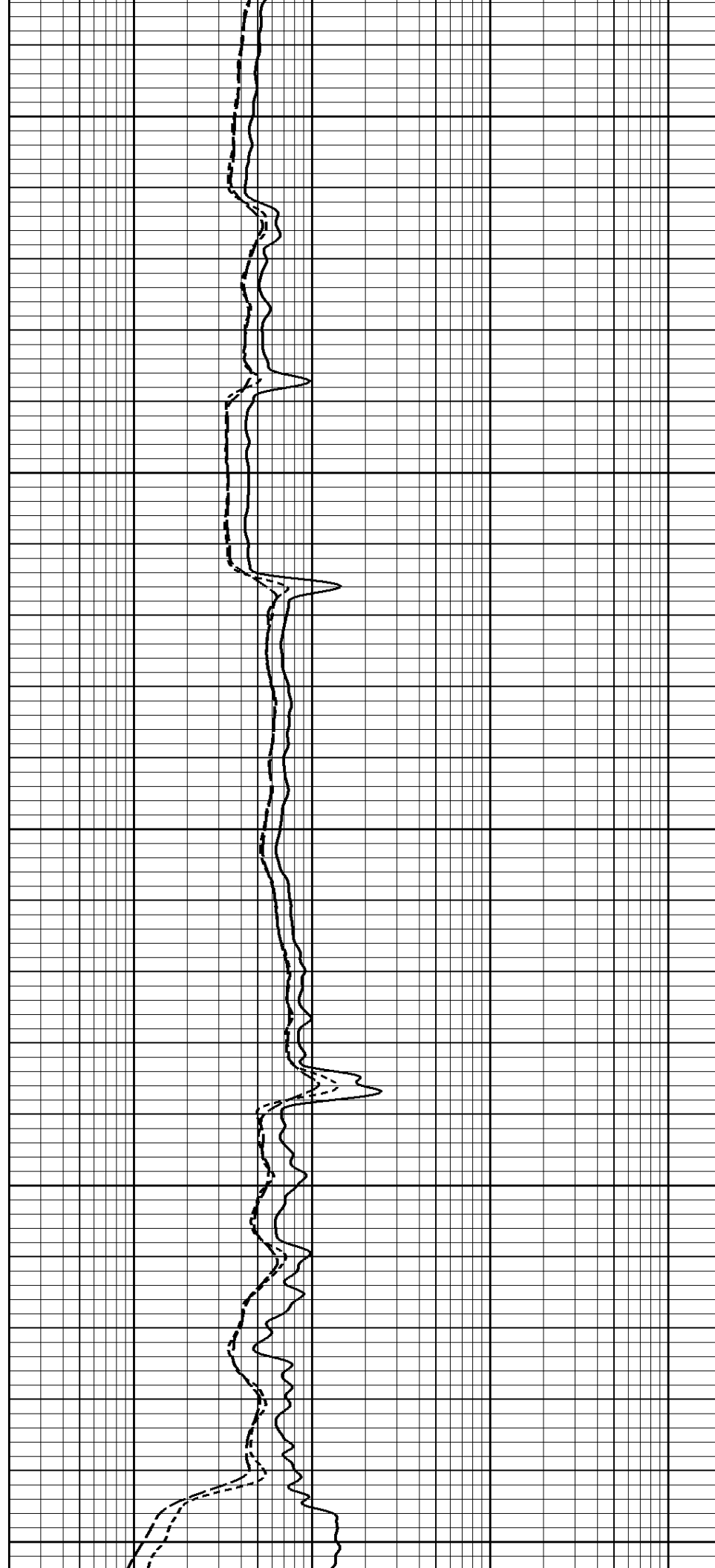
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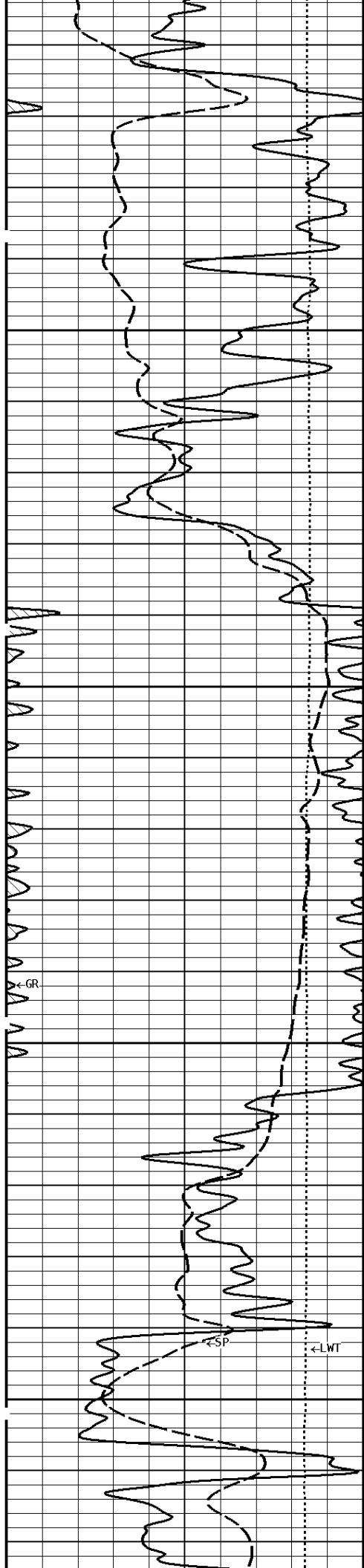




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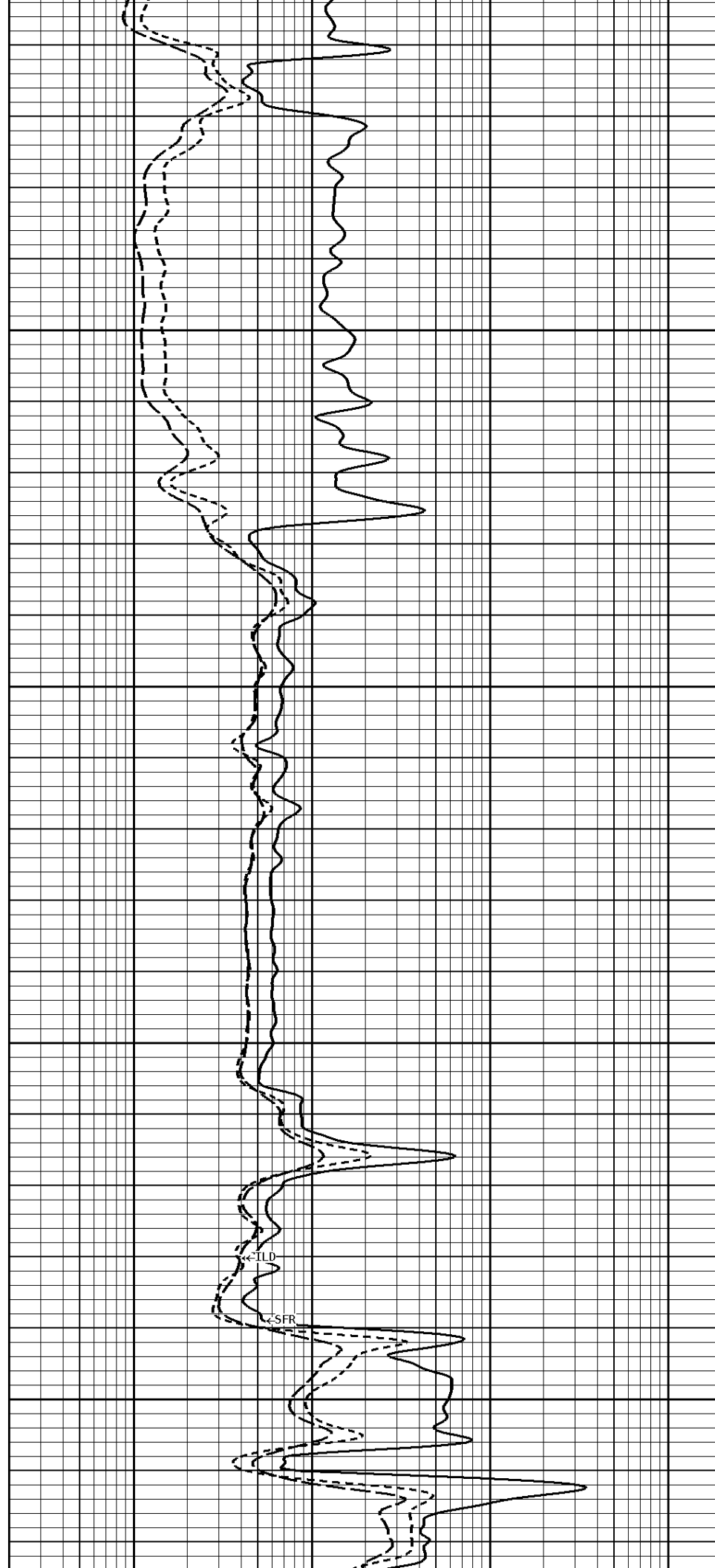
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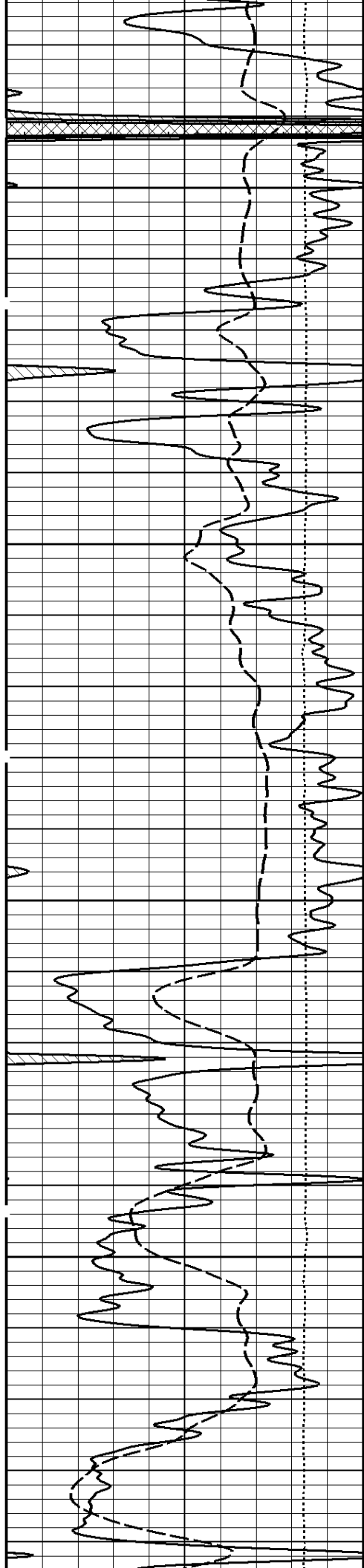




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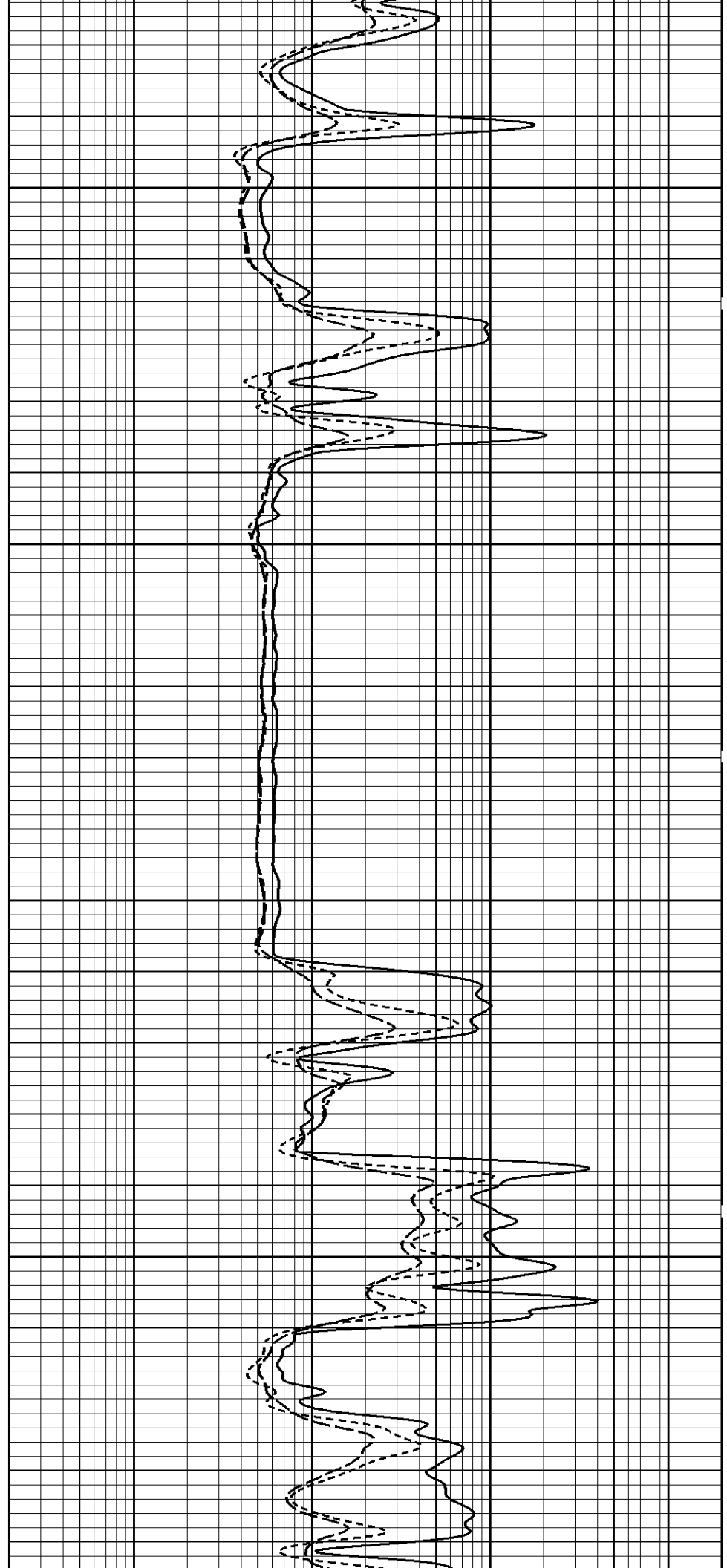
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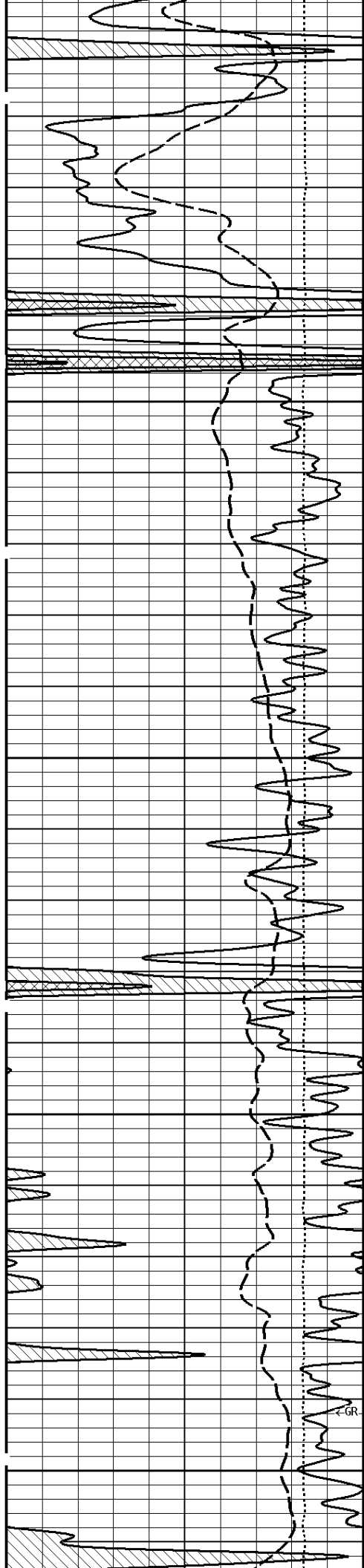




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2700

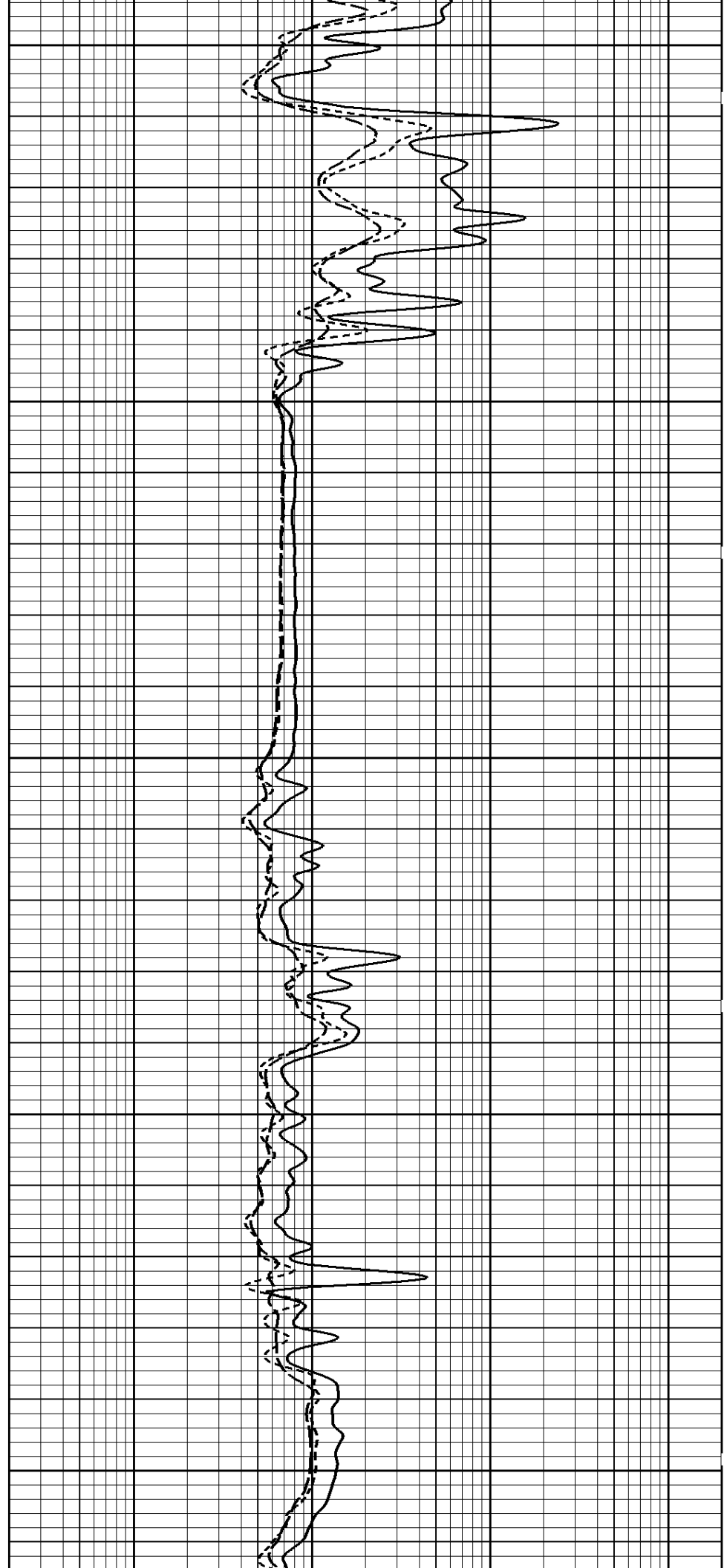


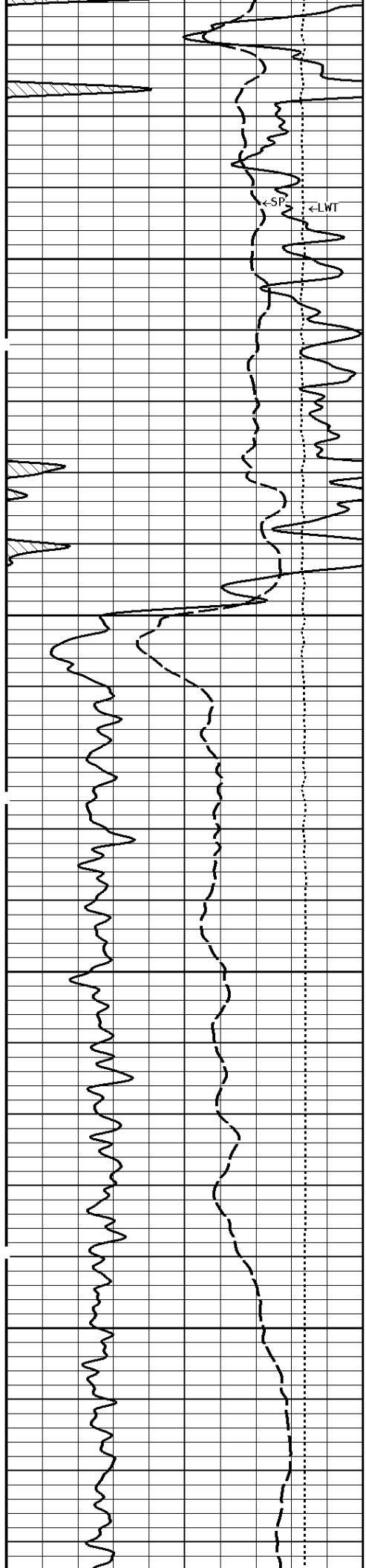


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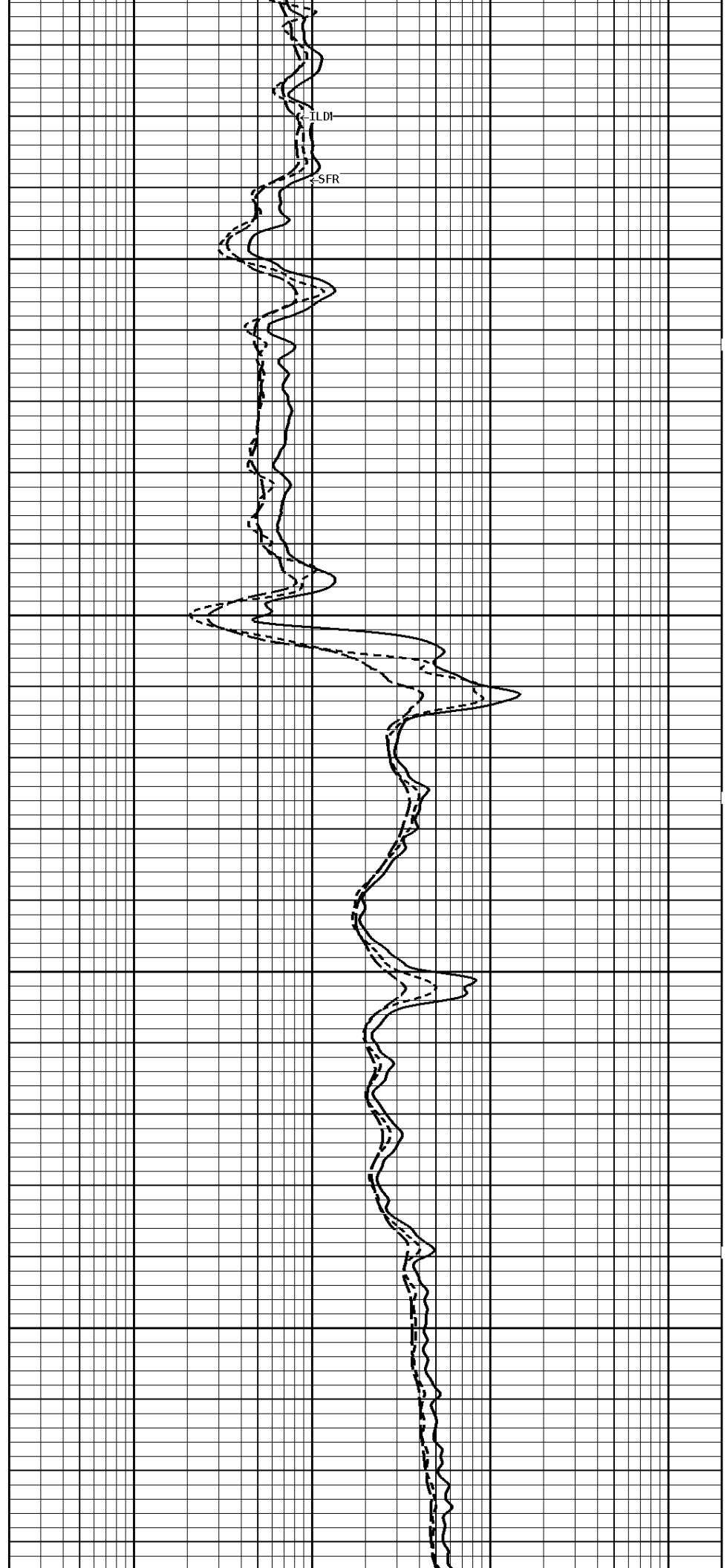
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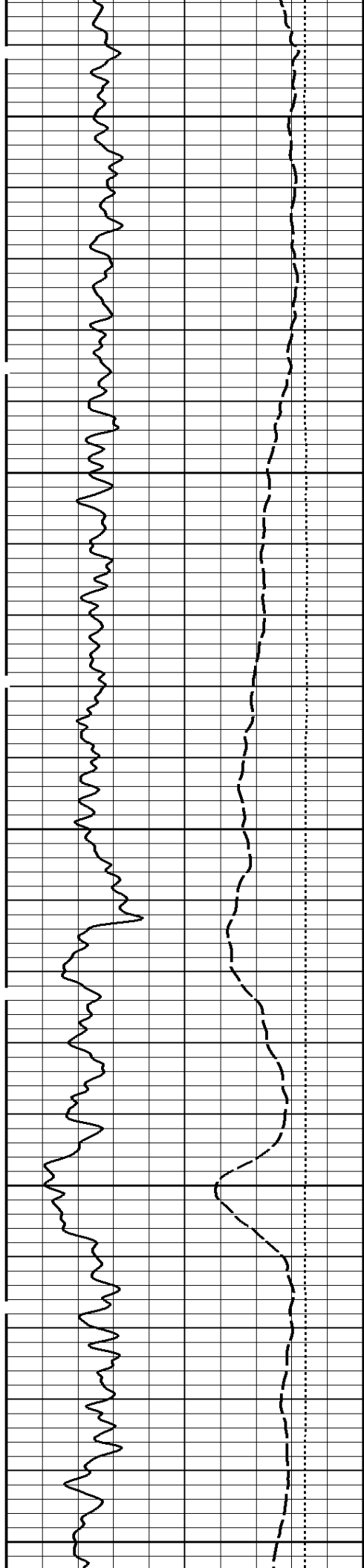




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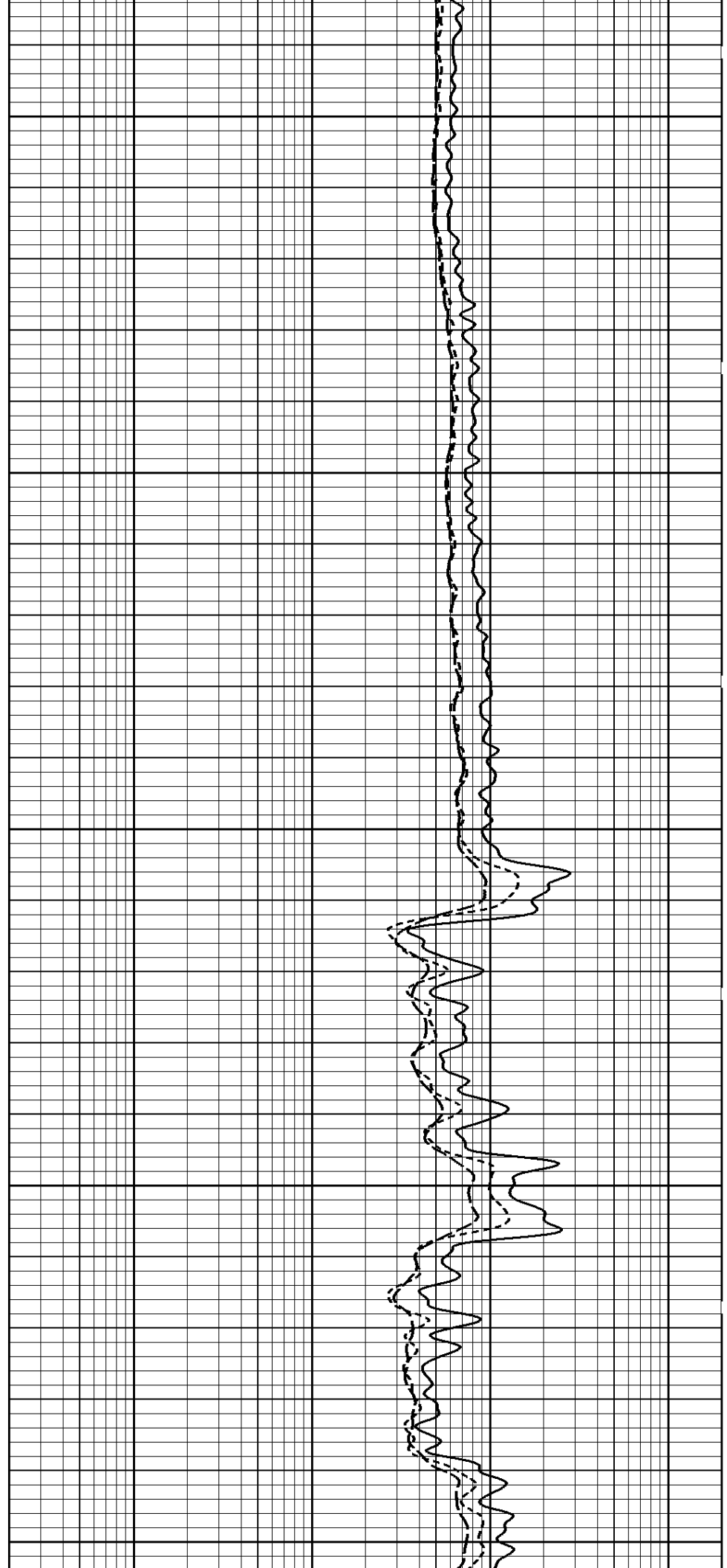
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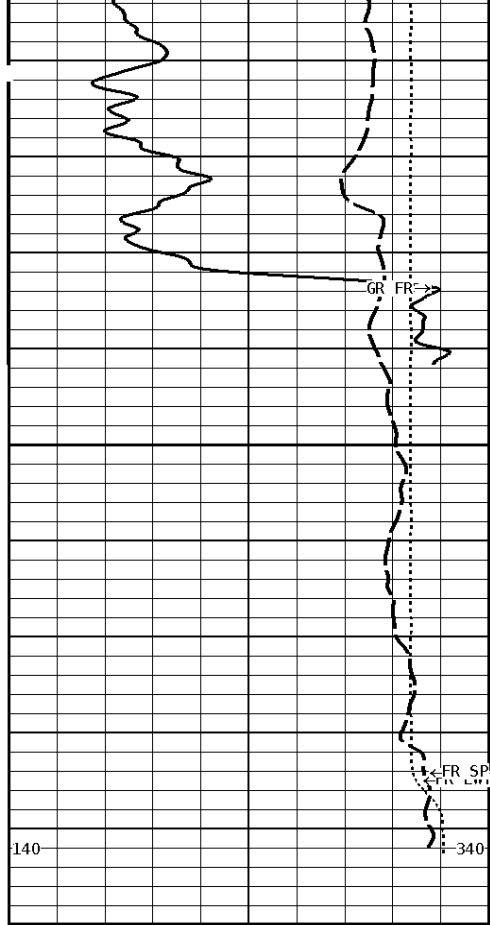




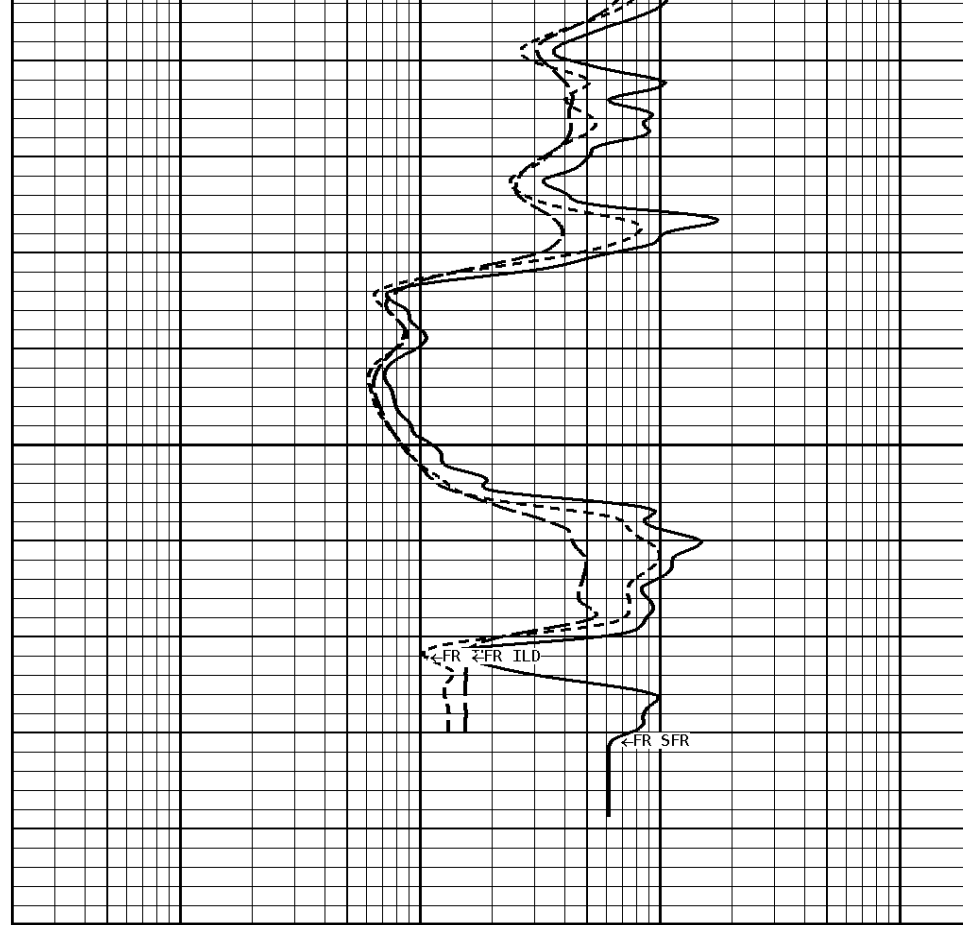
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3400

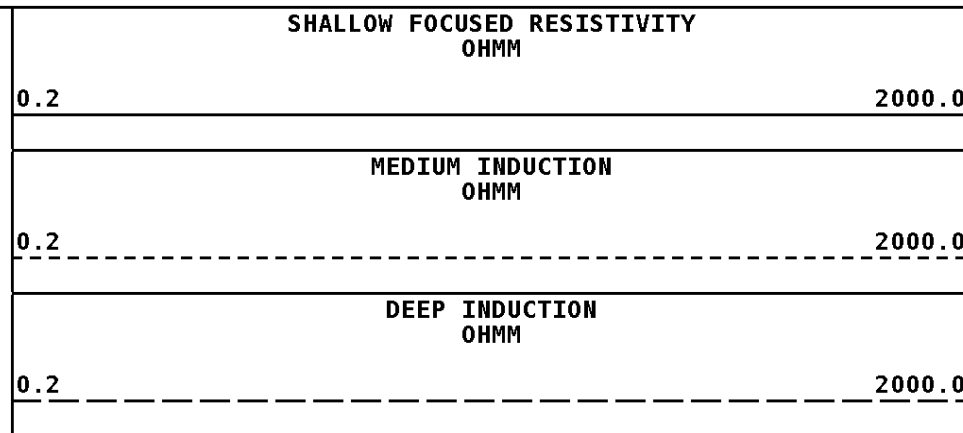
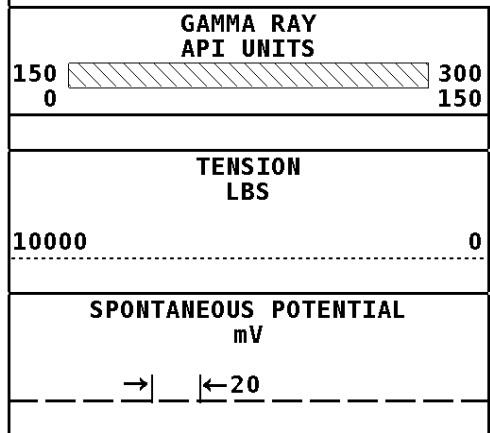




3500  
3535  
File #1.1.6  
140  
340



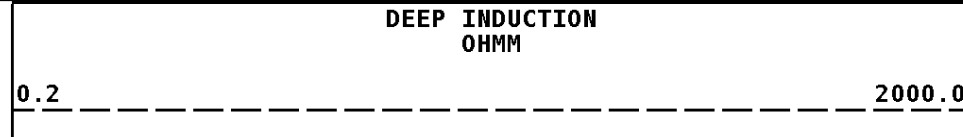
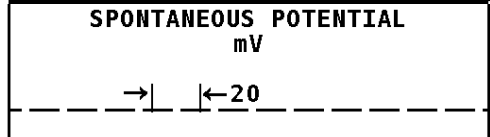
**1:240 MAIN SECTION**



**\* Borehole Zone Factors \***

Zone 1 99999.0 to 0.0 Feet	
Drill Bit Size	7.875 in
Casing Diameter	5.500 in
BHT Depth	3535.000 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 GARISON 1-25 JUNE26\_MSTK      Scale: 1:240      Format: DIL-240  
 Segment: V1.D1.S3 Reprocess of REPEAT      Acquired: 2019-06/26 09:13 3.4.1-13968  
 Reference: 0      Processed: 2019-06/26 10:23 3.4.1-13968



TENSION  
LBS

10000 0

GAMMA RAY  
API UNITS

150 0 300 150

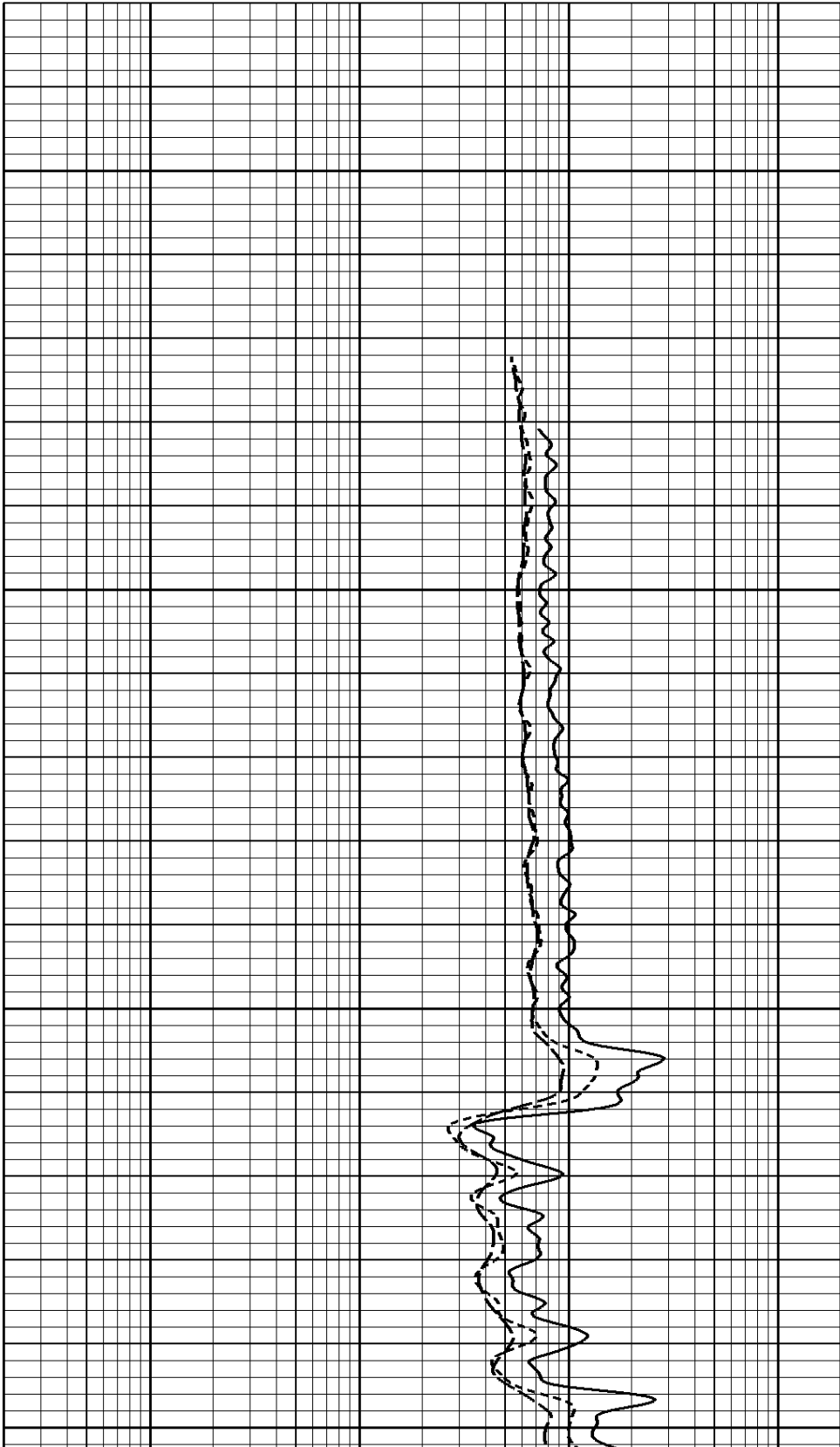
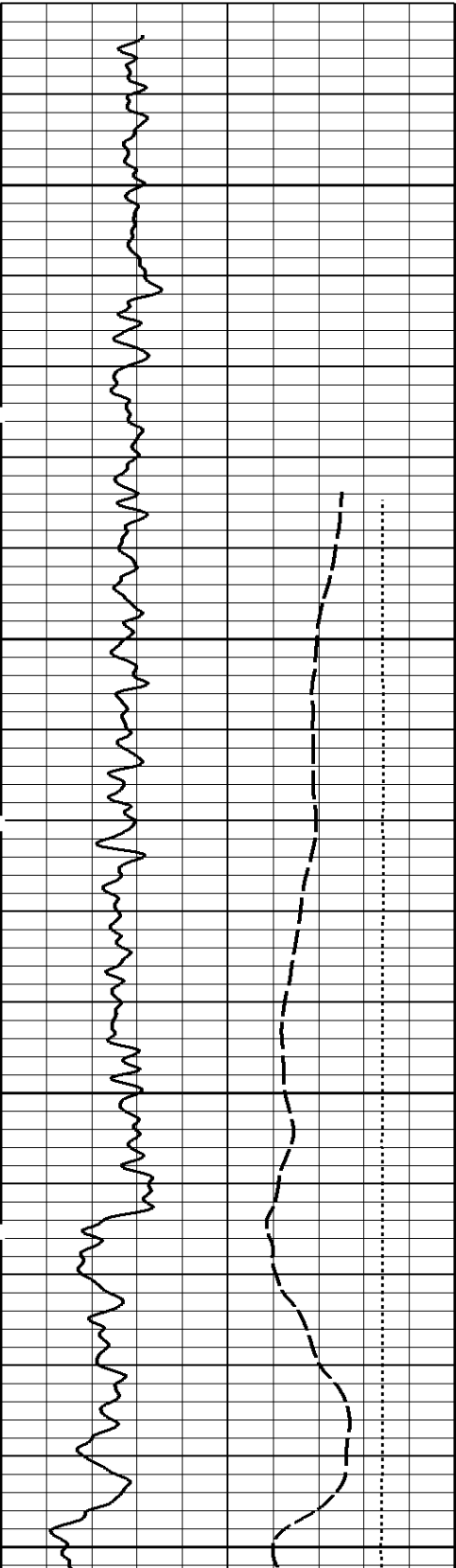
MEDIUM INDUCTION  
OHMM

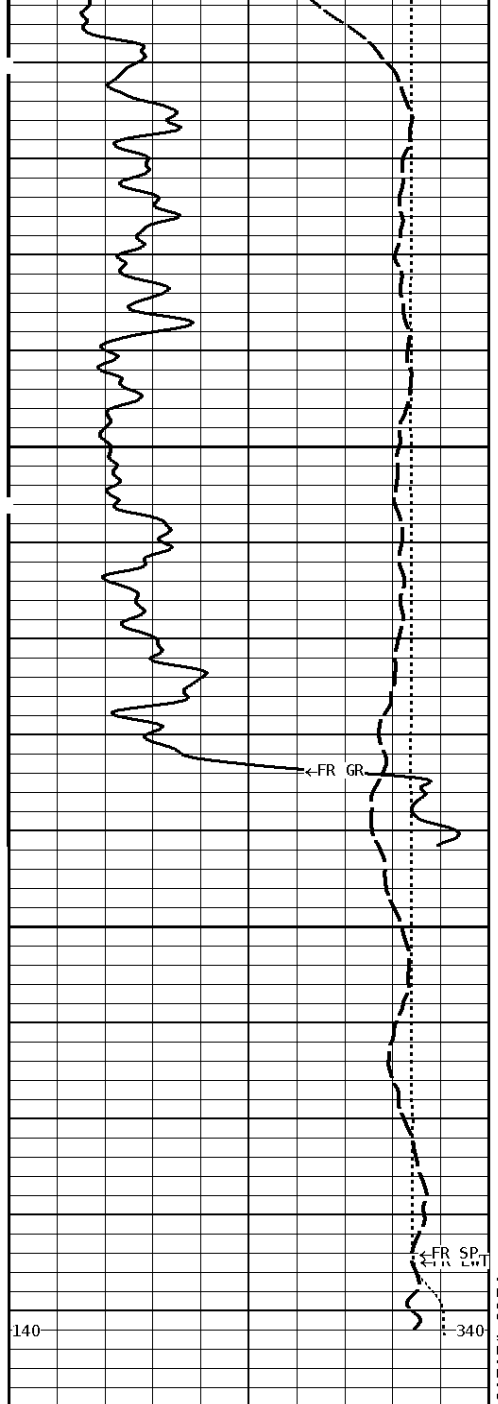
0.2 2000.0

SHALLOW FOCUSED RESISTIVITY  
OHMM

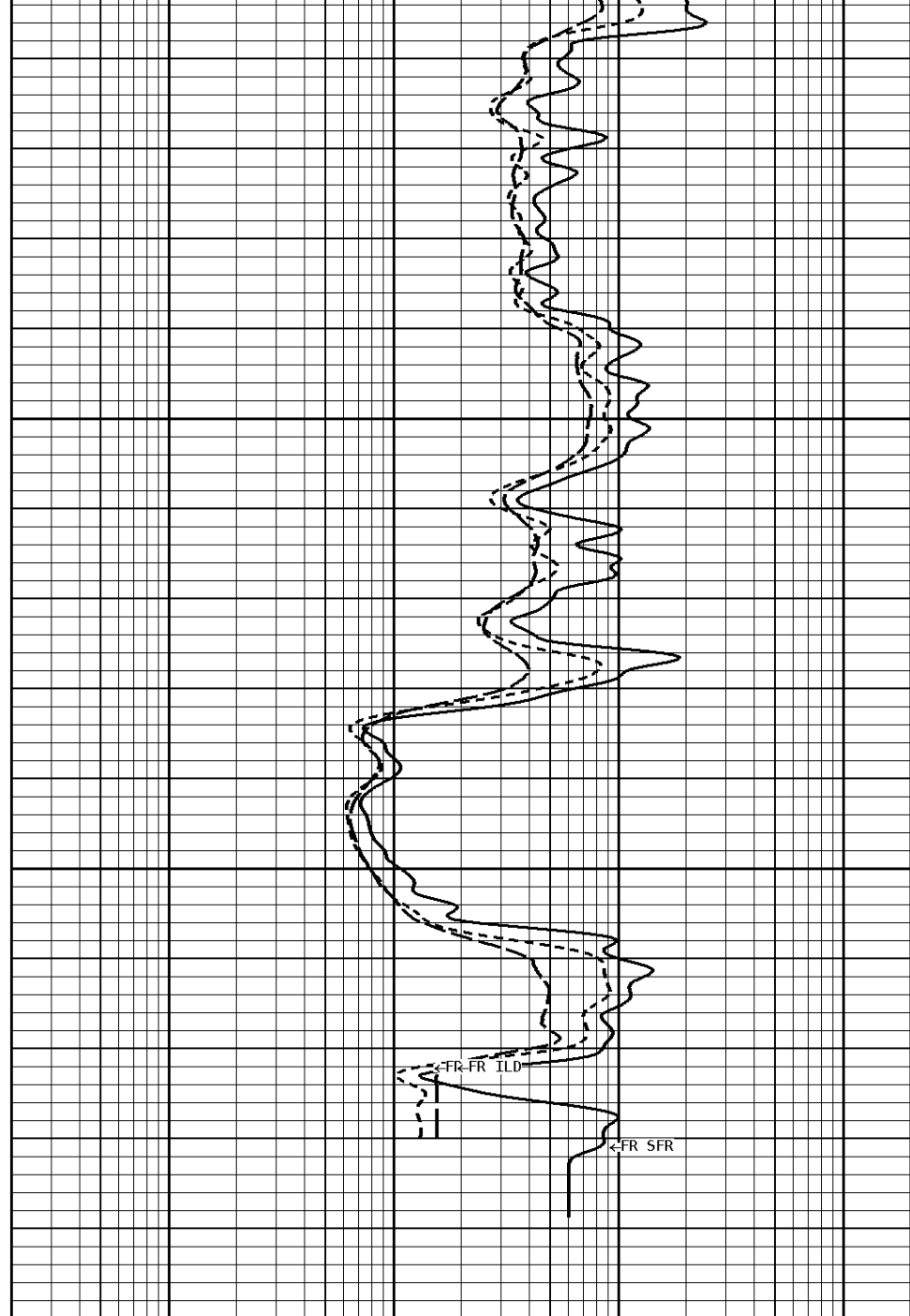
0.2 2000.0

1:240 REPEAT SECTION

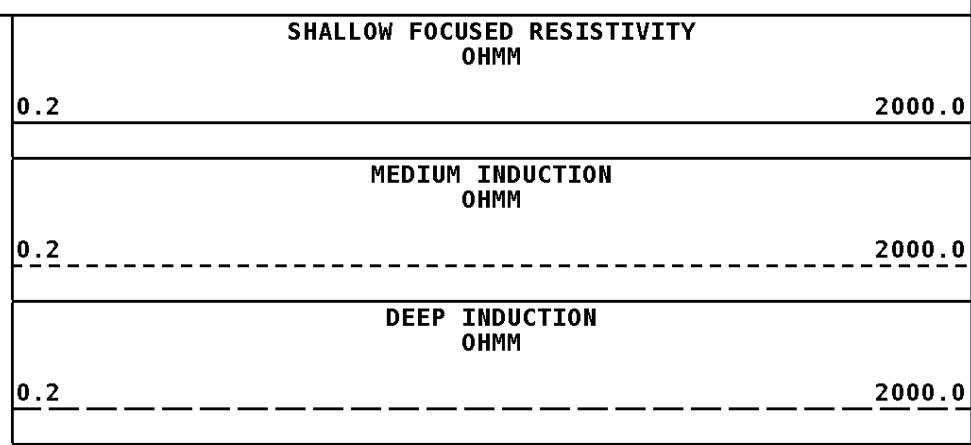
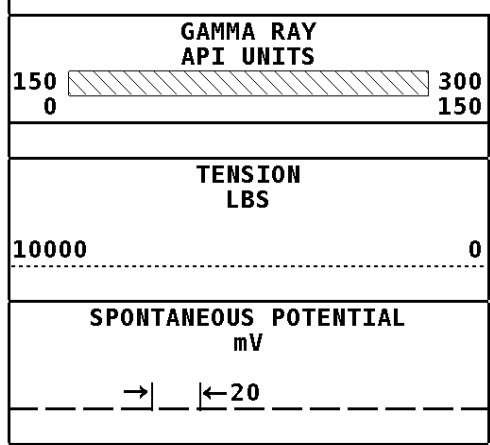




3500  
3535



**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	3535.000	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 : 16-May-2019			Time : 10:48			
Sensor Suite : GR-GR5			ID : GRT-BB-006			
	Measured	Units	Calibrated	Units		
GR	Background	Jig	Jig	GRAPI		
	68	335	160			
Shop Calibration						
PIT-CA						
Performed : 10-May-2019			Time : 12:41			
Sensor Suite : P-IND-T			ID : PIT-CA-069			
Medium						
	Measured		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		Units	
	R	X	R	X		
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		Units	
	Low	High	Low	High		
	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		Units	
	Zero	Reference	Zero	Reference		
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		Units	
	Zero	Reference	Zero	Reference		
	32795.0	58829.0	0.0	1000.0	mV	

**Well File:** VAL ENERGY GARISON 1-25 JUNE26 MSTK **Scale:** 1:1200 **Format:** DIL1200  
**Segment:** V1.D1.S6 Reprocess of MAIN **Acquired:** 2019-06/26 09:23 3.4.1-13968  
**Reference:** 0 **Processed:** 2019-06/26 10:22 3.4.1-13968

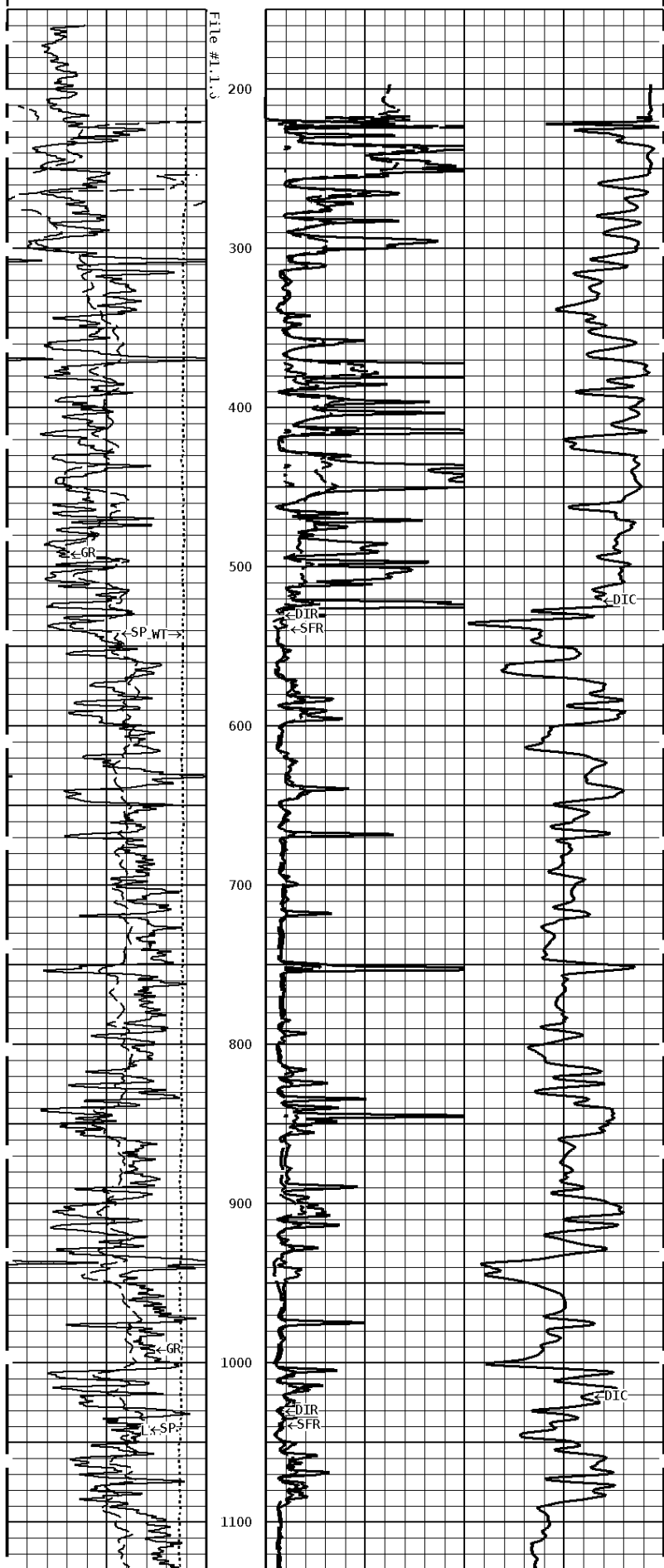
<b>TENSION</b> LBS	0
10000	0
-----	
<b>SPONTANEOUS POTENTIAL</b> mV	
→   ← 20	
-----	
<b>GAMMA RAY</b>	

<b>DEEP INDUCTION</b> OHMM	0.0	500.0
	0.0	50.0
-----		
<b>SHALLOW FOCUSED</b> OHMM	0.0	500.0
	0.0	50.0
-----		
<b>DEEP CONDUCTIVITY</b>		

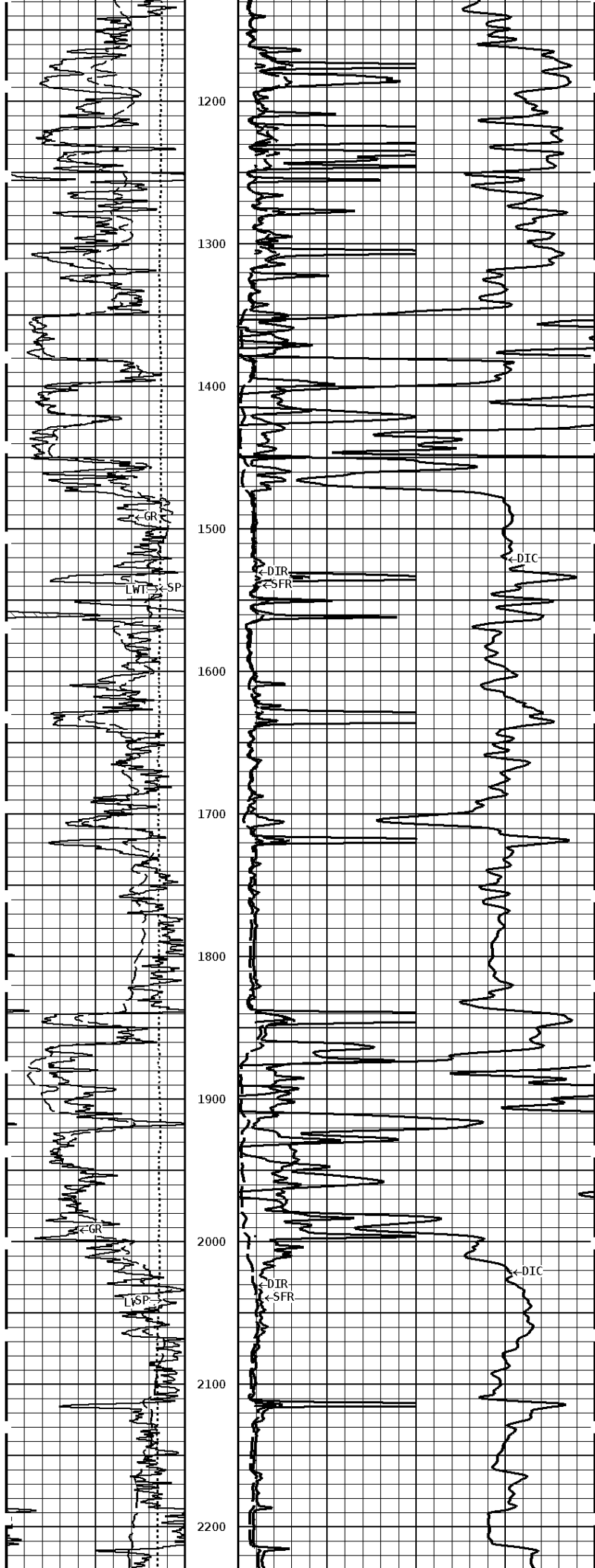
150 300  
0 150  
API UNITS

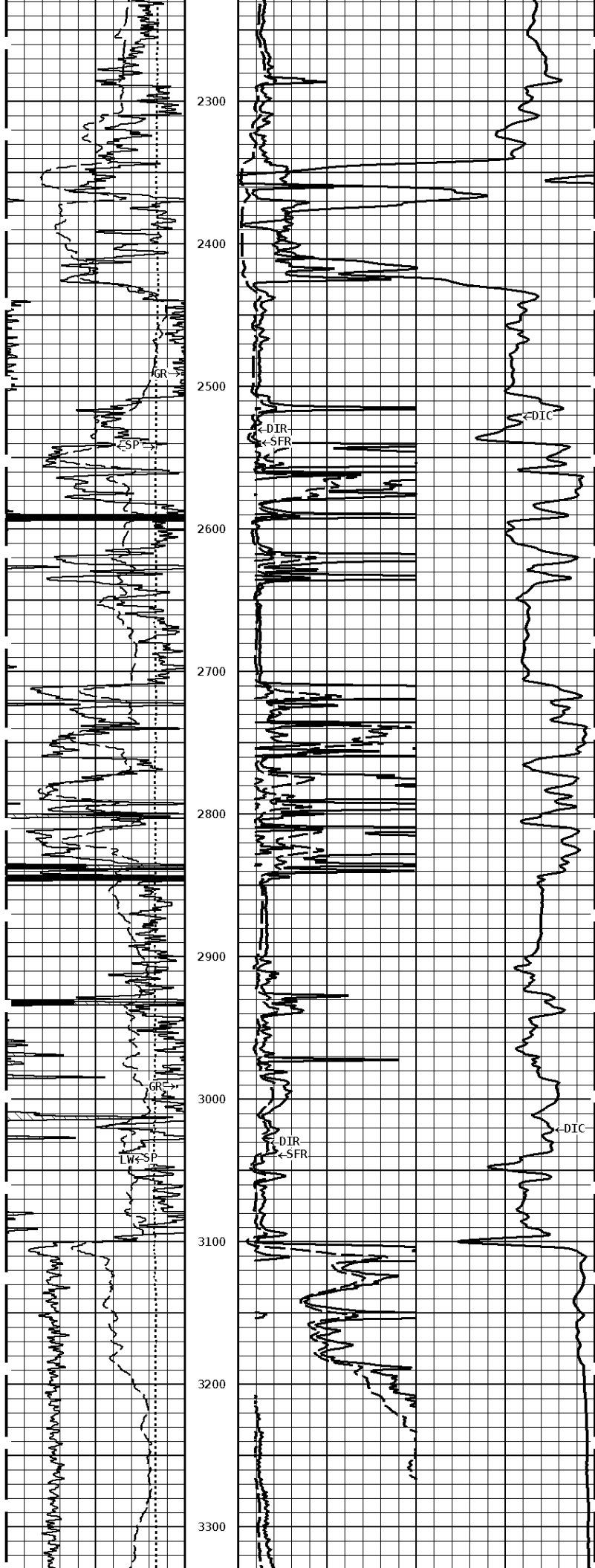
2000 1000  
1000 0  
MHMO

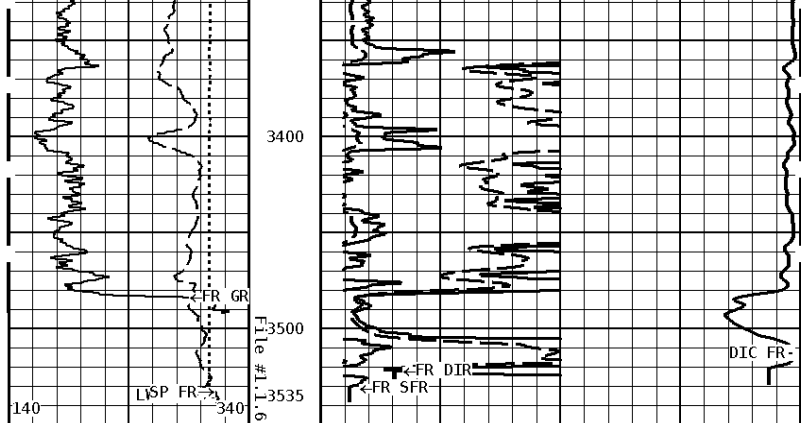
1:1200 MAIN SECTION



File #1.1.3







1:1200 MAIN SECTION

<b>GAMMA RAY API UNITS</b>	
150	300
0	150
<b>SPONTANEOUS POTENTIAL mV</b>	
→	← 20
<b>TENSION LBS</b>	
10000	0

<b>DEEP CONDUCTIVITY MMHO</b>	
2000	1000
1000	0
<b>SHALLOW FOCUSED OHMM</b>	
0.0	500.0
0.0	50.0
<b>DEEP INDUCTION OHMM</b>	
0.0	500.0
0.0	50.0



Company: VAL ENERGY, INC.  
 Well: GARISON #1-25  
 Location: 660' FNL & 660' FEL  
 Logged: 06-26-2019  
 K.B. Elev: 1322.0 Ft