

Tucker

ENERGY SERVICES

PHASED INDUCTION
SHALLOW FOCUS SP LOG

Company VAL ENERGY, LLC Well EASTMAN UNIT V 1-16 OWWO Field FROG HOLLOW County COWLEY State KANSAS Country USA API No. 15-035-23740-00-01		File No : TUL-61371 Company : VAL ENERGY, LLC Well : EASTMAN UNIT V 1-16 OWWO Field : FROG HOLLOW County : COWLEY State : KANSAS Country : USA API No : 15-035-23740-00-01	
Location : 2640' FSL & 2310' FEL W/2 W/2 E2		LSD : Sect : 16 Twp : 32S Rge : 5E	
Permanent Datum:	GL	Elevations:	Services:
Drilling Measured From:	KB	KB 1345.00	CNT
Log Measured From:	KB	DF 1344.00	PIT
Above Permanent Datum:	9.00 Ft	GL 1336.00	LDT
Date	11-28-2018		MST
Run Number	0		
Depth--Driller	3703.0	Ft	
Depth--Logger	3700.0	Ft	
First Reading	3699.0	Ft	
Last Reading	219.0	Ft	
Casing--Driller	219.0	Ft	
Casing--Logger	219.0	Ft	
Bit Size	7.875	In	
Casing Size	8.625	In	
Hole Fluid Type	WBM		
Density	8.6		
Fluid Loss	12.8		
PH/Viscosity	10.0	60.0	
Sample Source	MEASURED		
RM@Measured Temp.	0.300 @ 83 F		
RMF@Measured Temp	0.260 @ 83 F		
RMG@Measured Temp.	0.350 @ 83 F		
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	0.240 @ 105 F		
Time Circulation Stopped	11-27-2018 11:00 pm		
Max Recorded Temp.	105 F		
Equipment/Base	TRK-126 TULSA		
Recorded By	B.BAILEY		
Witnessed By	J.GUICK		

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

Bitsize Intervals		Casing Strings			
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
7.875	3703.00	8.625	17.00	219.00	0.00

Run Number	0	
Date	11-28-2018	
Date/Time On Bottom	11-28-2018 2:26 am	
Depth to Fluid	0.0 Ft	
Salinity	0.000	
RMF@BHT	0.200 @ 105 F	
RMC@BHT	0.280 @ 105 F	

Run Number 0

Comments

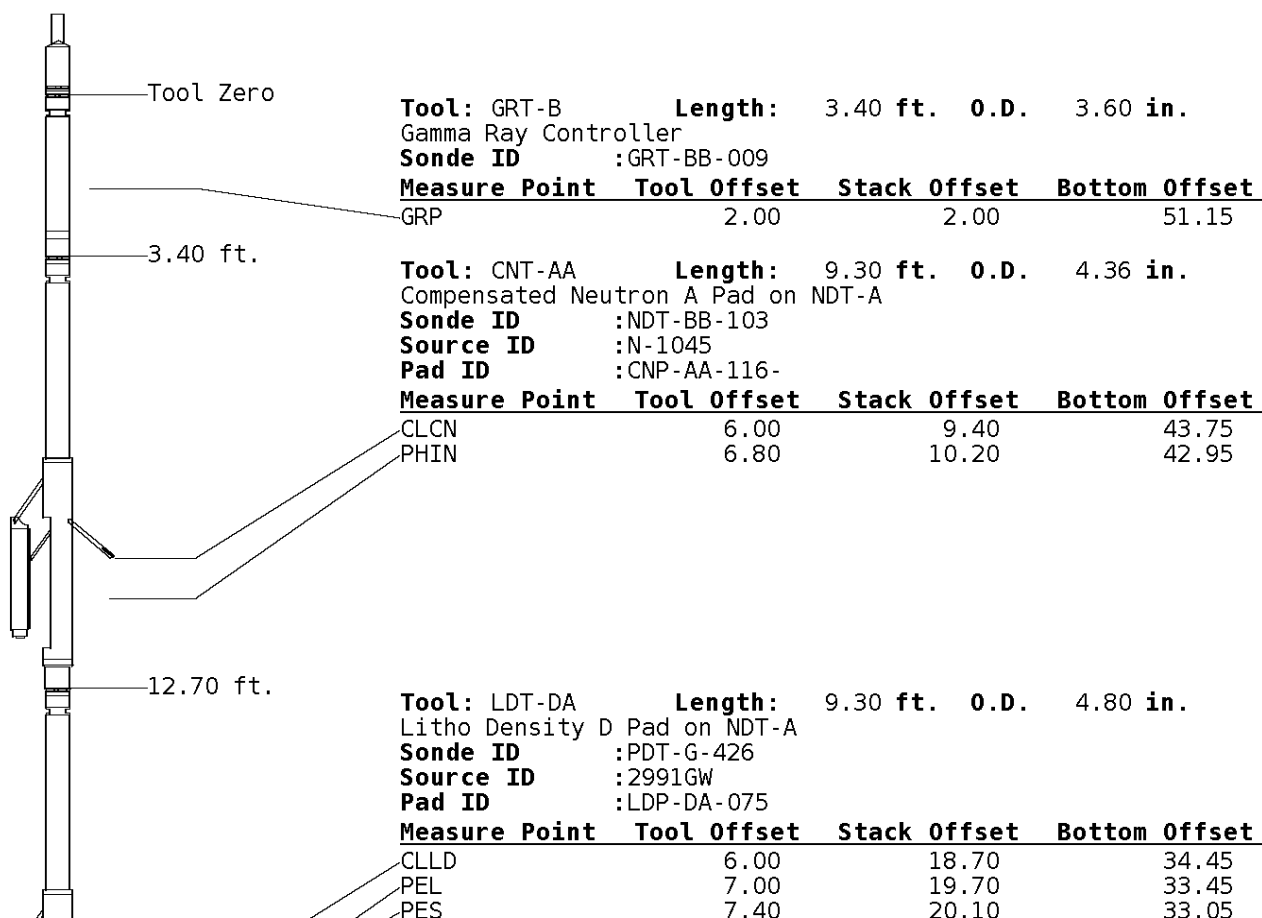
ALL PRESENTATION PER CUSTOMER REQUEST
 GRT,CNT,LDT,MLT,PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR & BOREHOLE VOLUME CALCULATED USING 5.5 PRODUCTION CASING
 PHIN IS CALIPER CORRECTED
 DETAIL IS PRESENTED FROM TD TO SCG

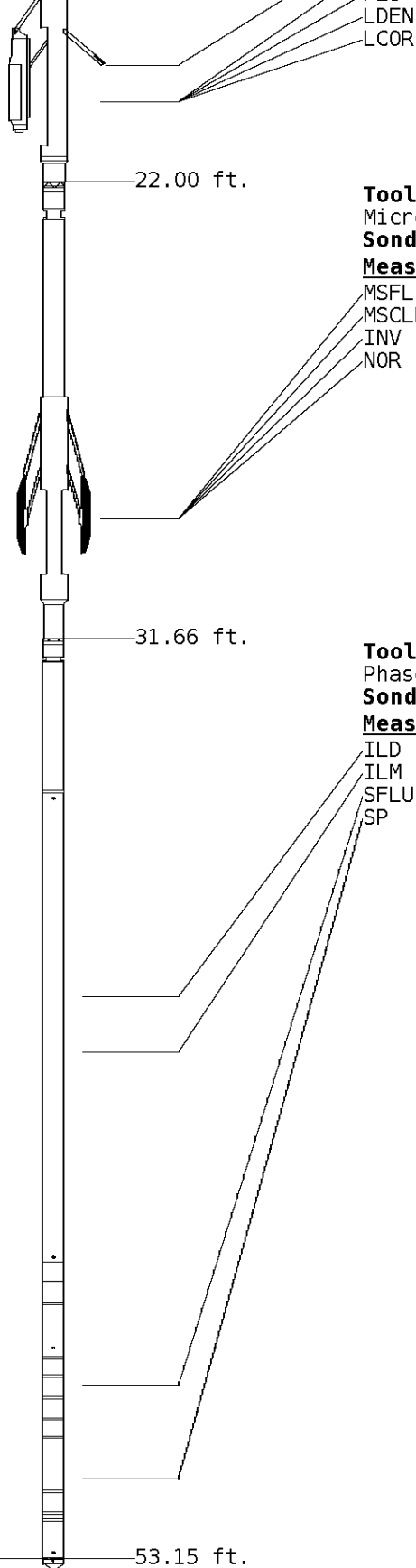
GRT; GRP,
 CNT; PHIN, CLCNIN
 LDT; PORL, LCORN, PECLN, LDENN, CLLDIN
 MLT; NOR_RF, INV_RF, MSCLPIN.
 PIT; ILD, ILM, SPU, SFLAEC, CIRD

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,D)
 Sonde ID :MST-DA-28

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-AC-043

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 eastman 1-16owwo_nov27_mst

Scale: 1:600 Format: DIL-600

Segment: V1.D1.S4 MAIN

Acquired: 2018-11/28 02:34 3.4.0-13756

Reference: 0

Processed: 2018-11/28 03:45 3.4.0-13756

TENSION
LBS

10000

0

DEEP INDUCTION
OHMM

0.0

500.0

0.0

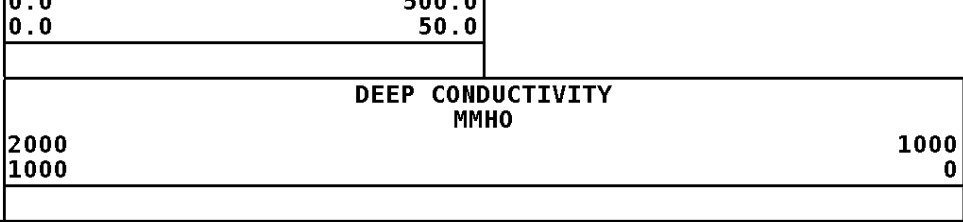
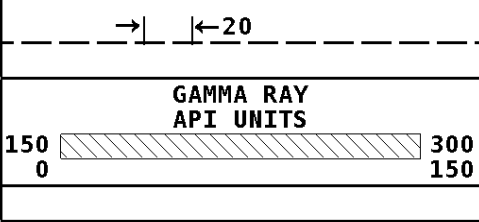
50.0

SPONTANEOUS POTENTIAL
mV

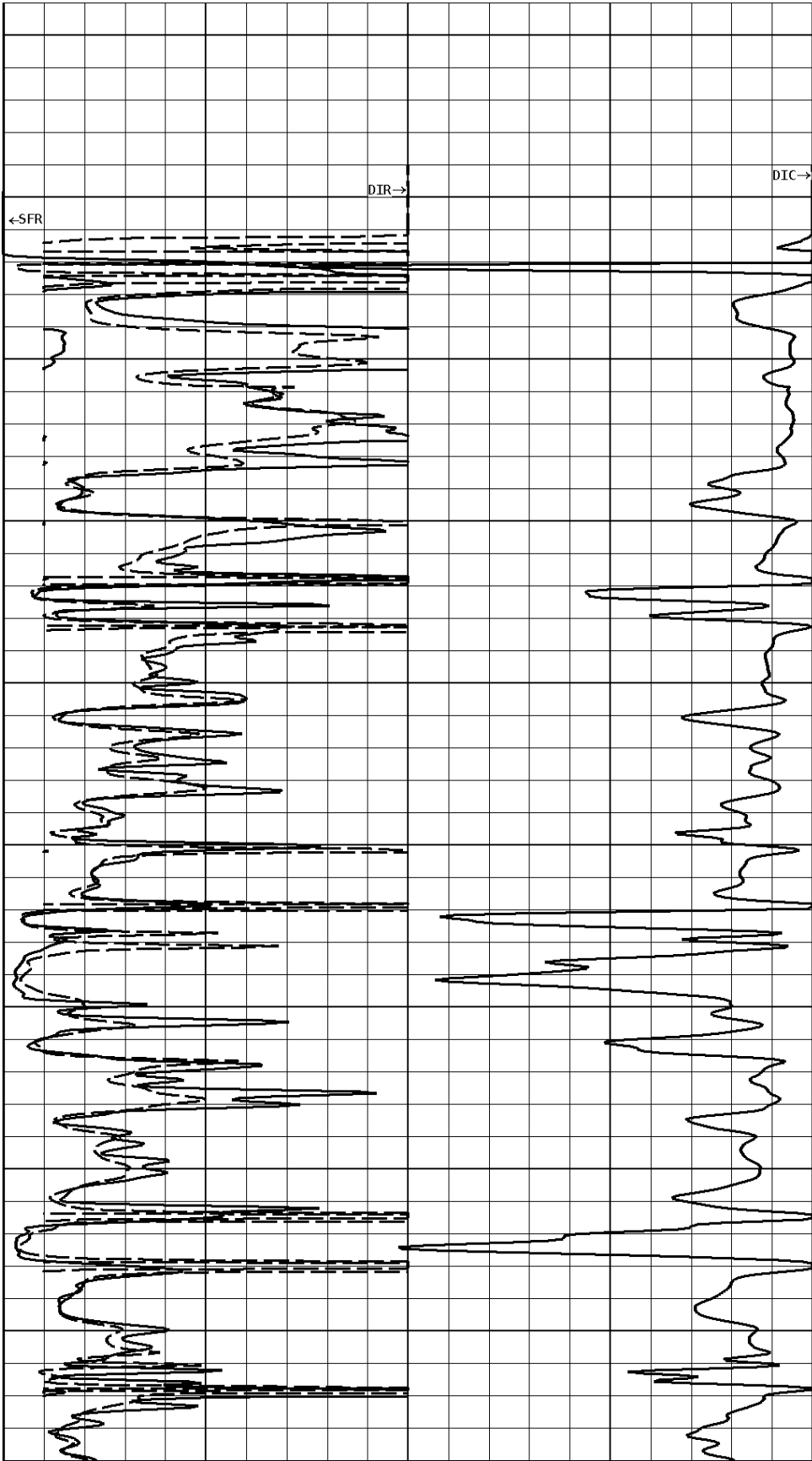
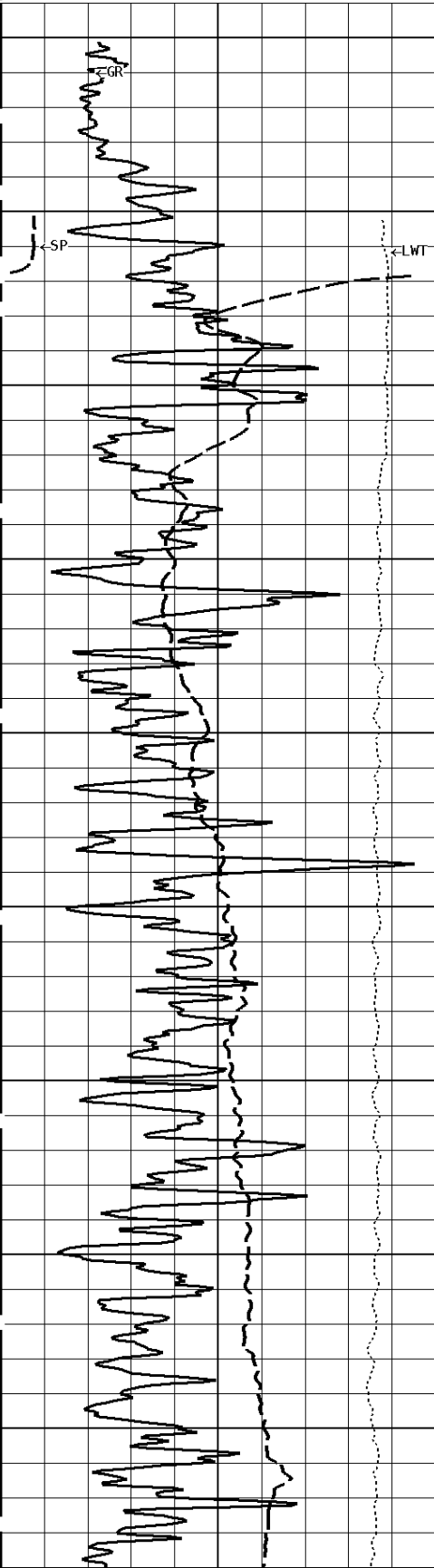
SHALLOW FOCUSED RESISTIVITY
OHMM

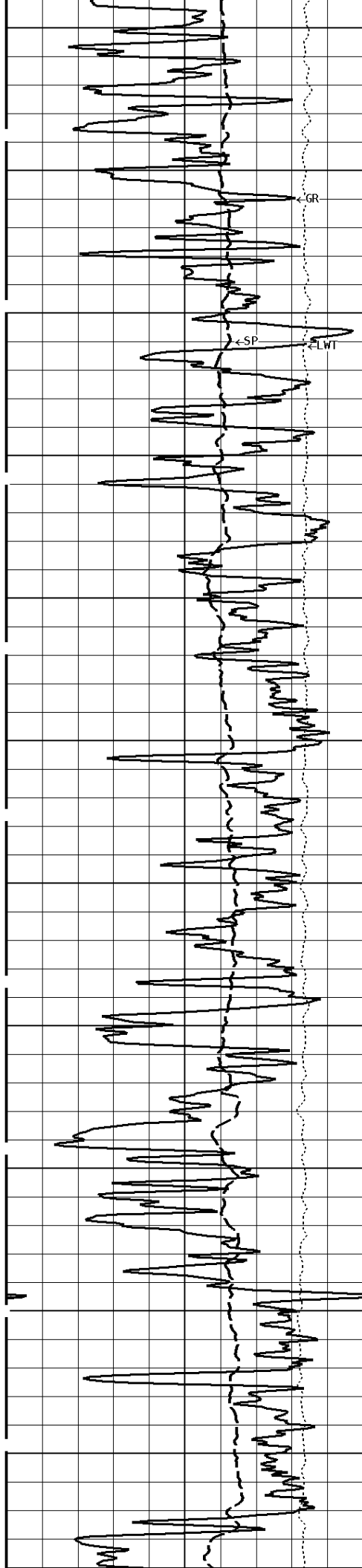
0.0

500.0



1:600 MAIN SECTION





600

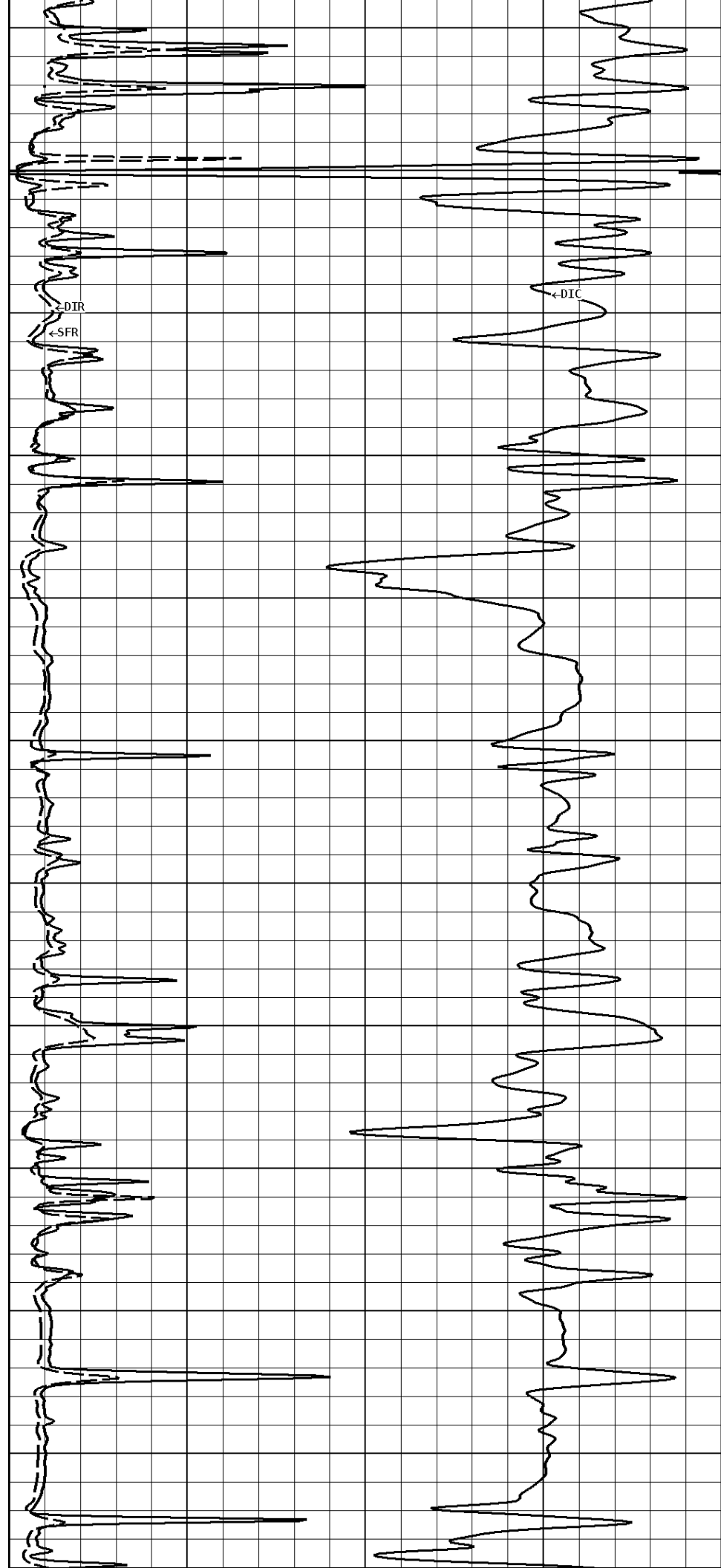
700

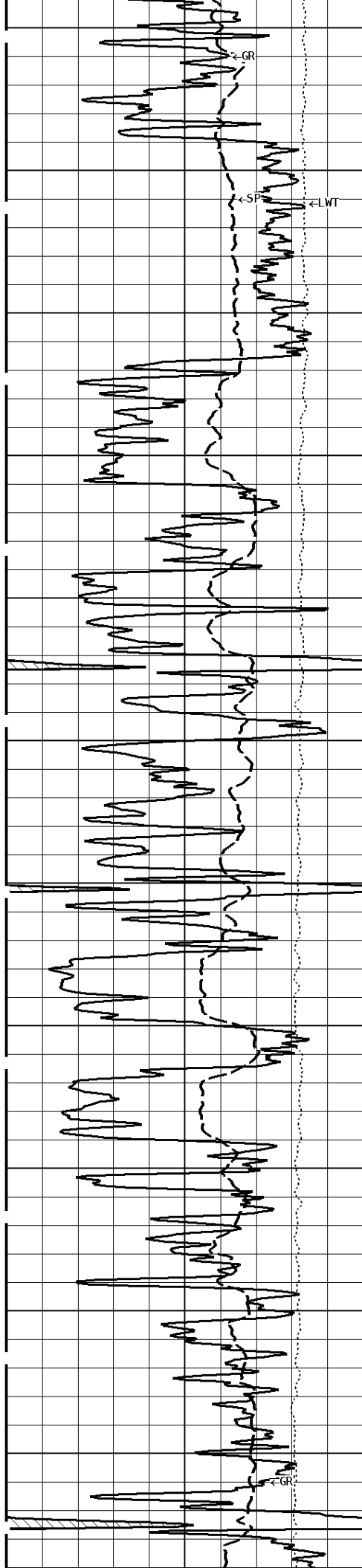
800

900

1000

1100





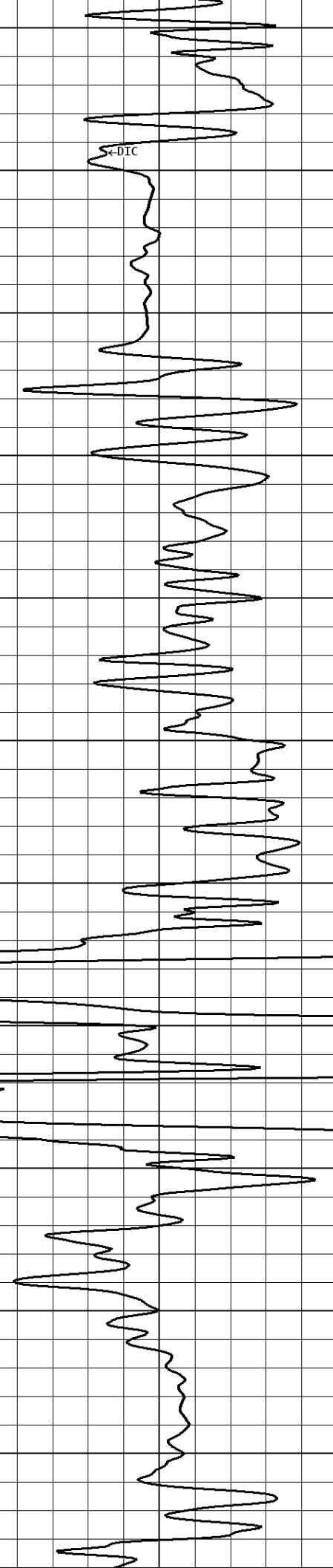
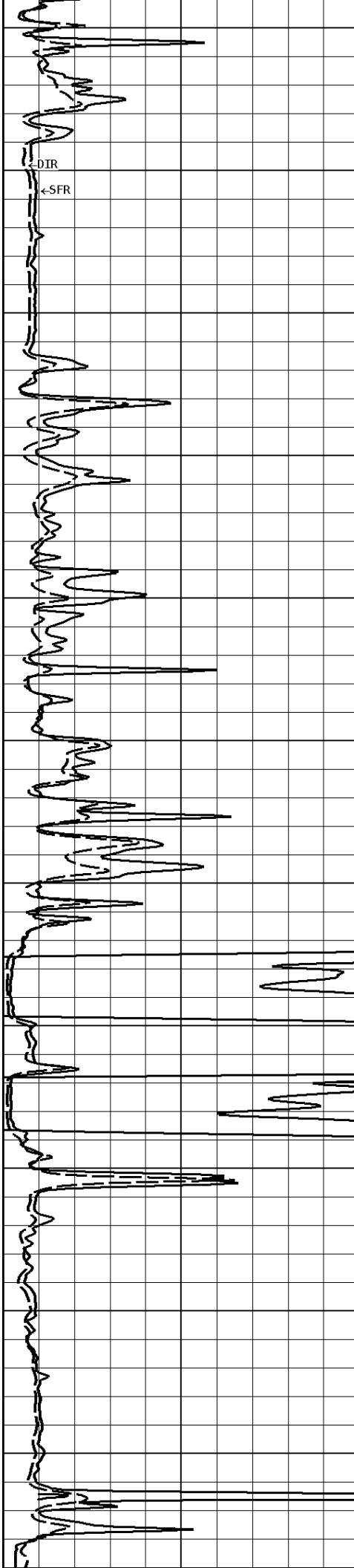
1200

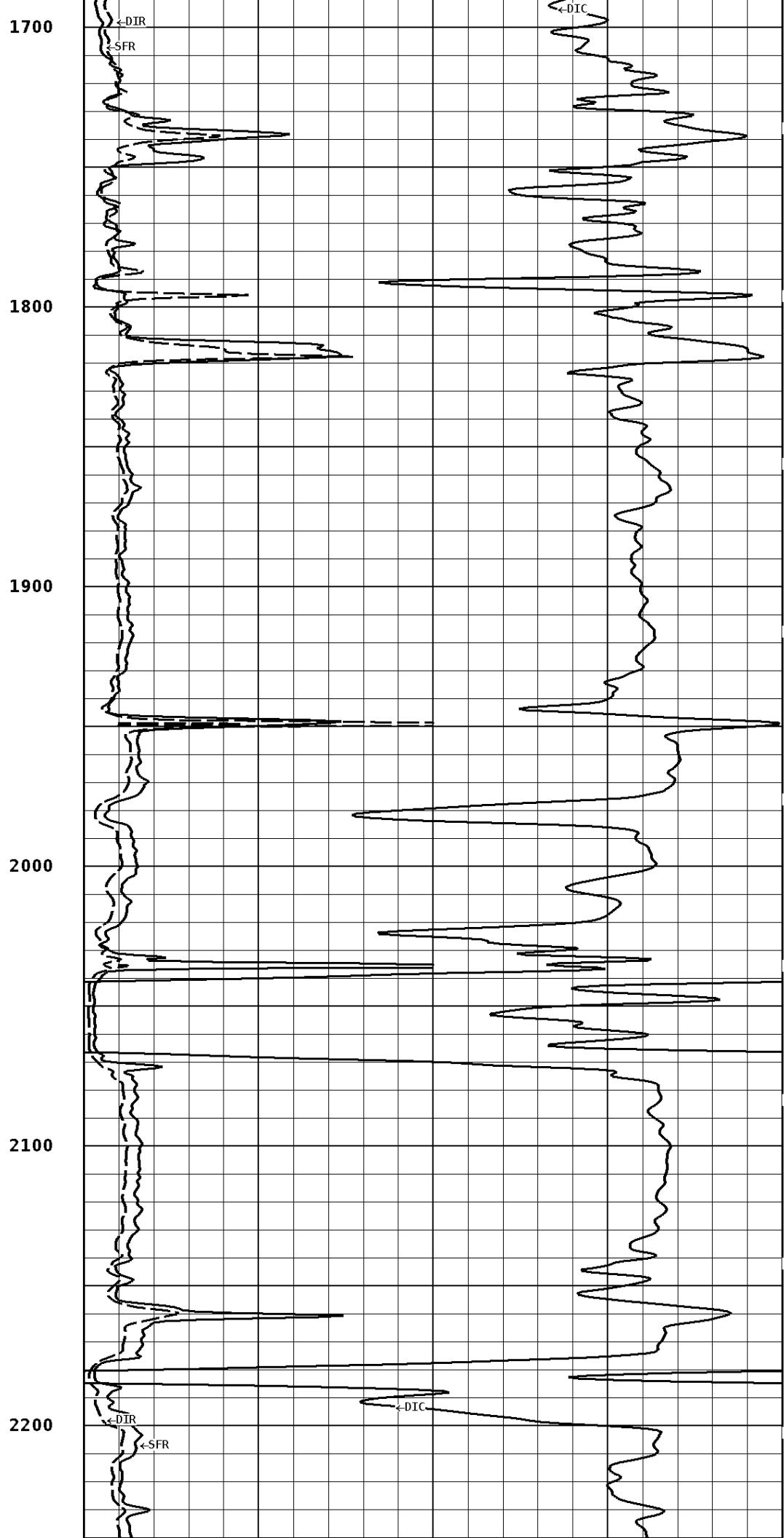
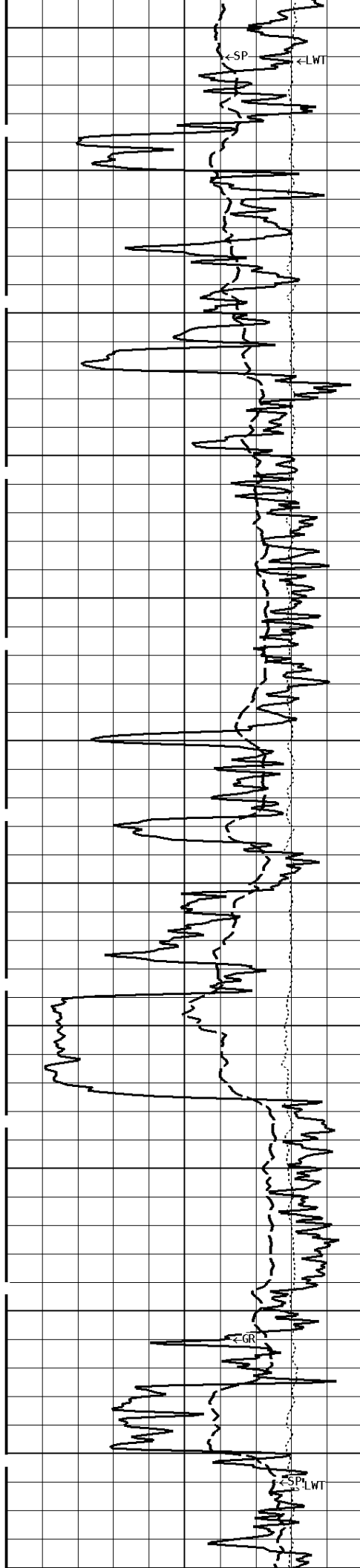
1300

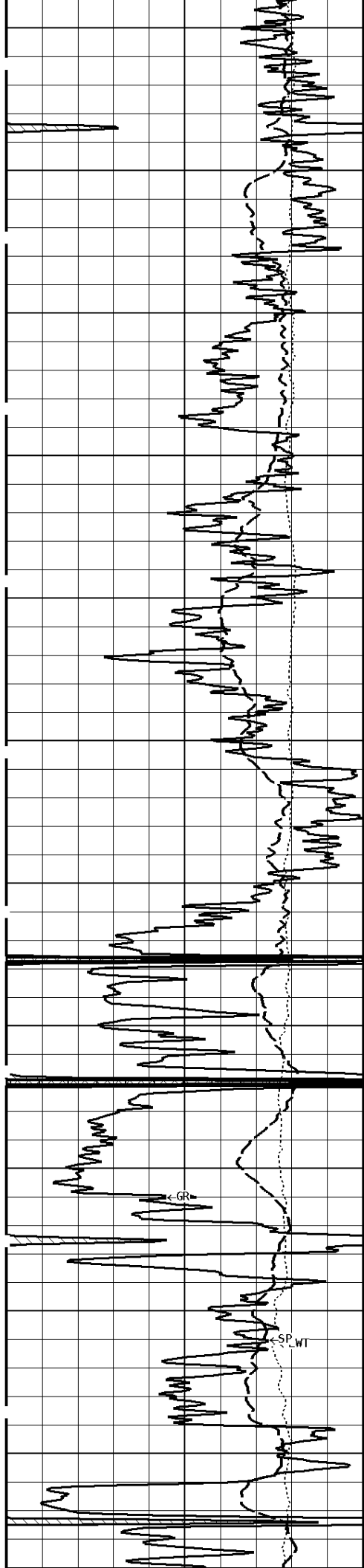
1400

1500

1600







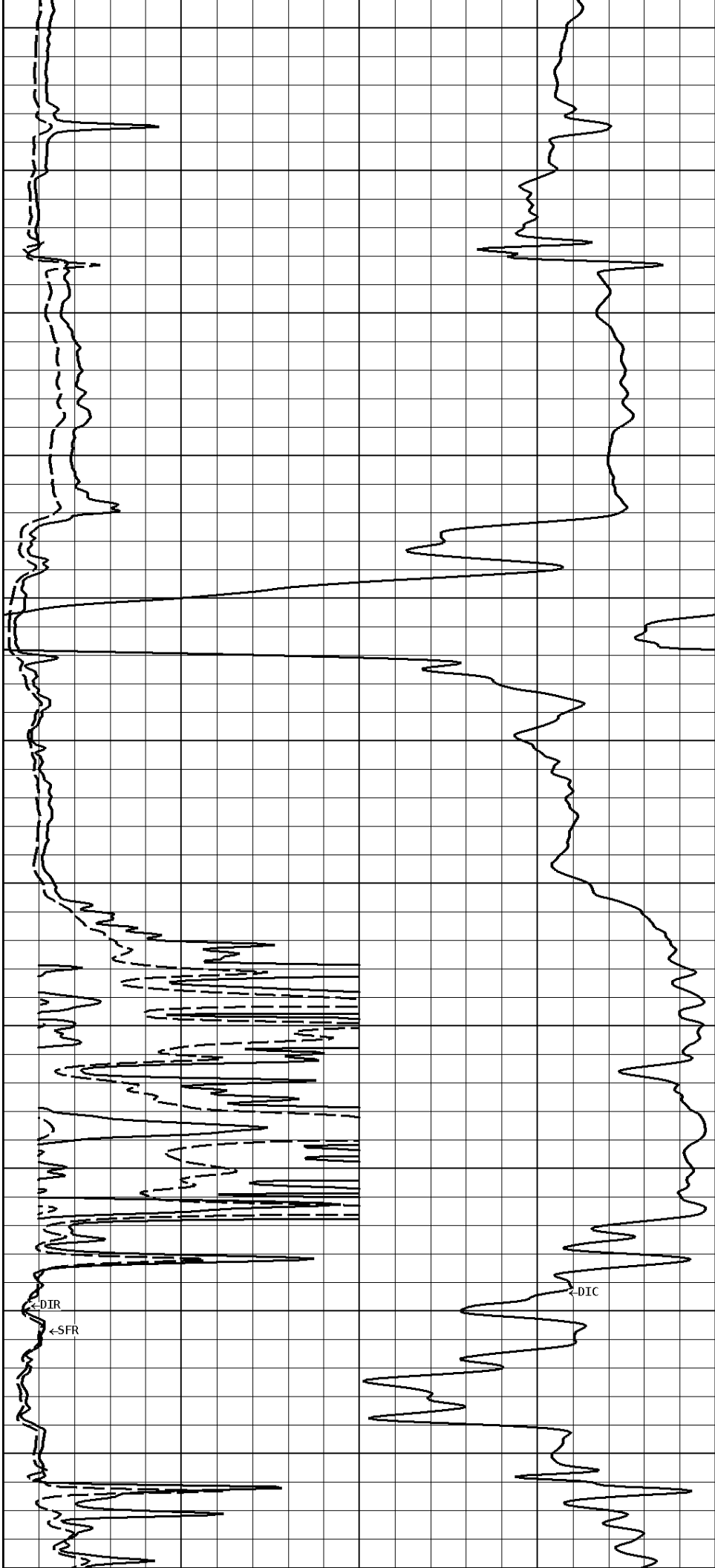
2300

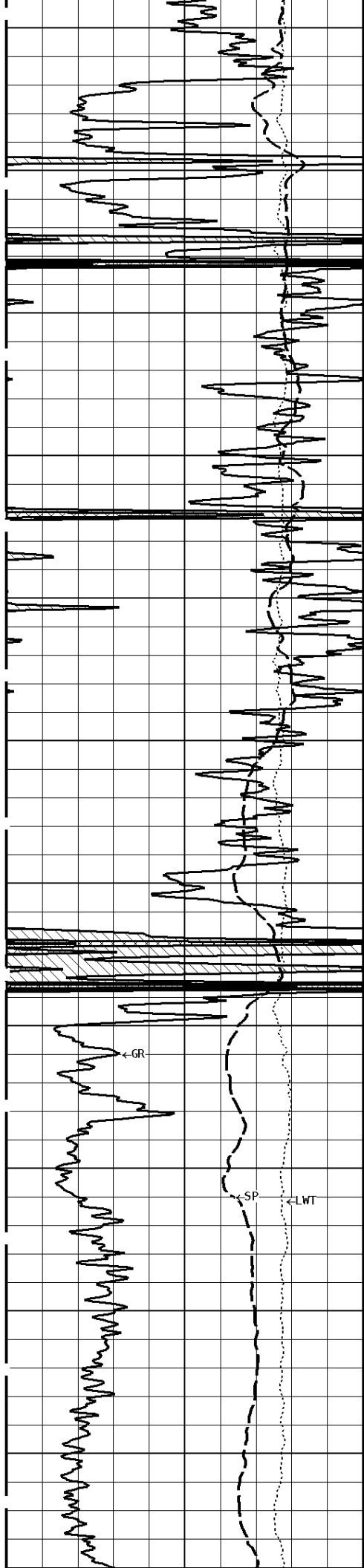
2400

2500

2600

2700





2800

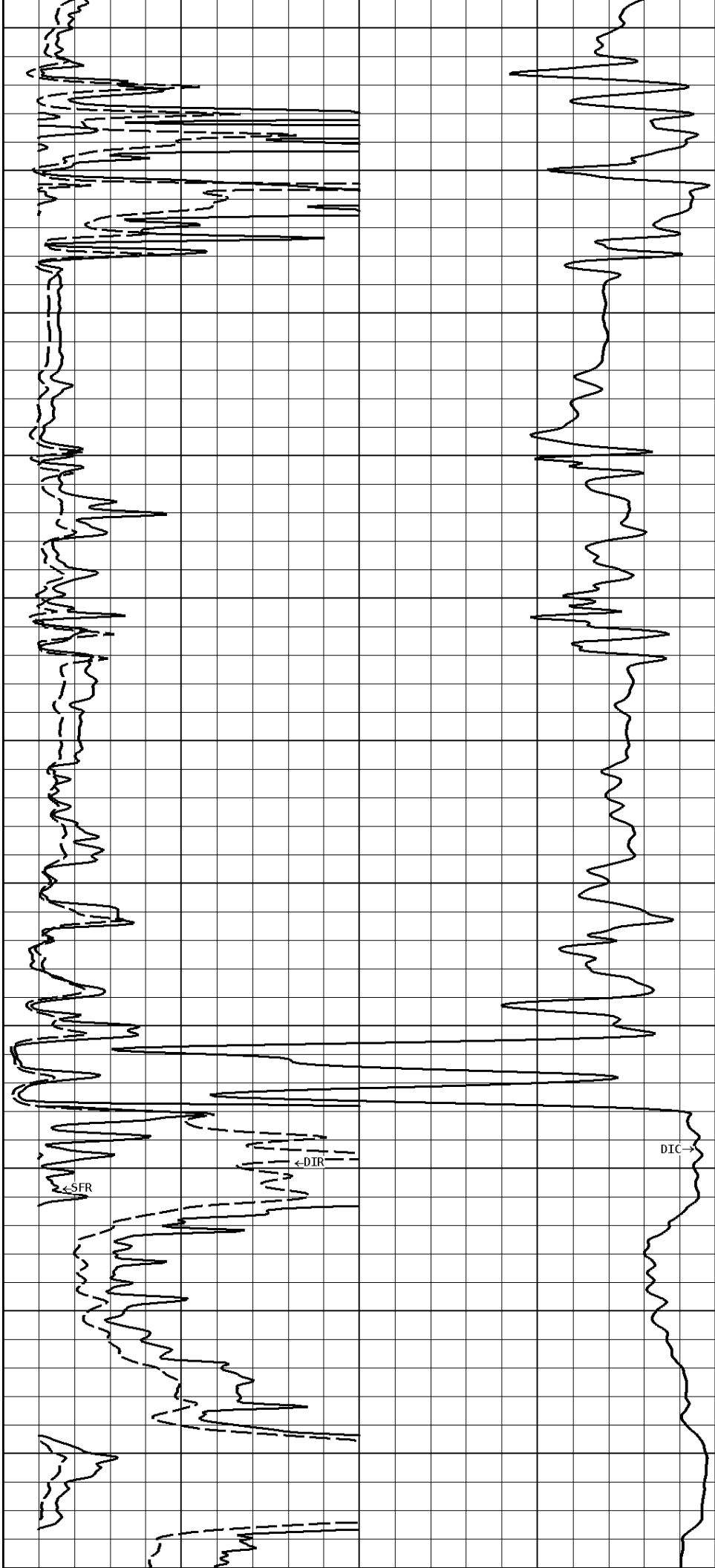
2900

3000

3100

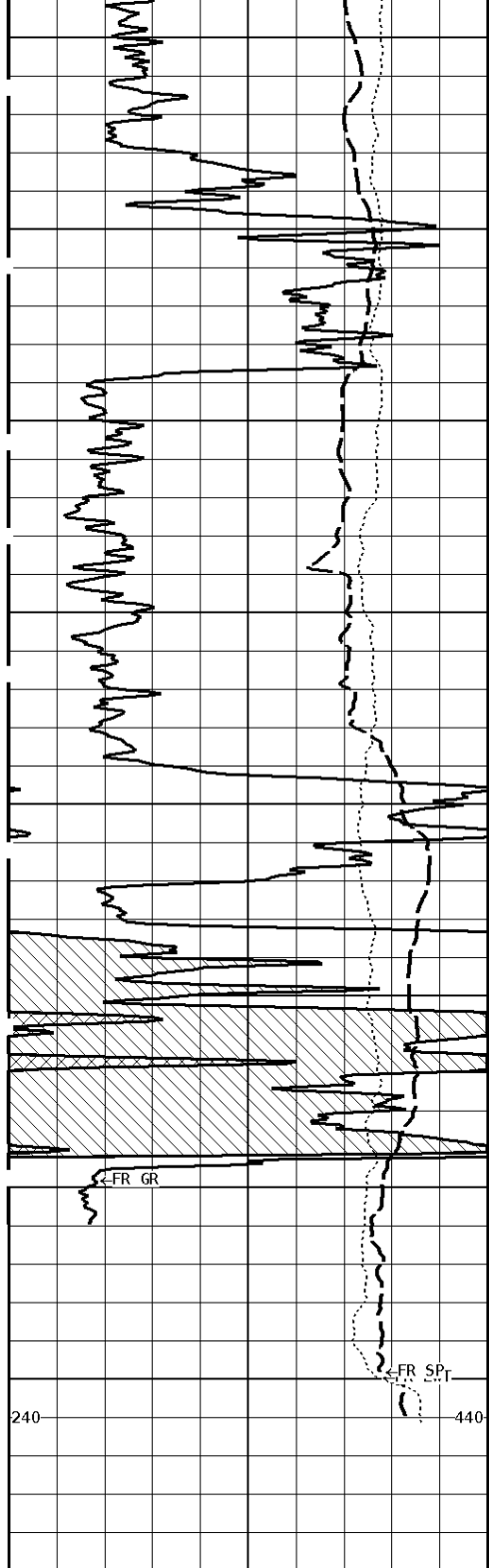
3200

3300



DTR

SFR



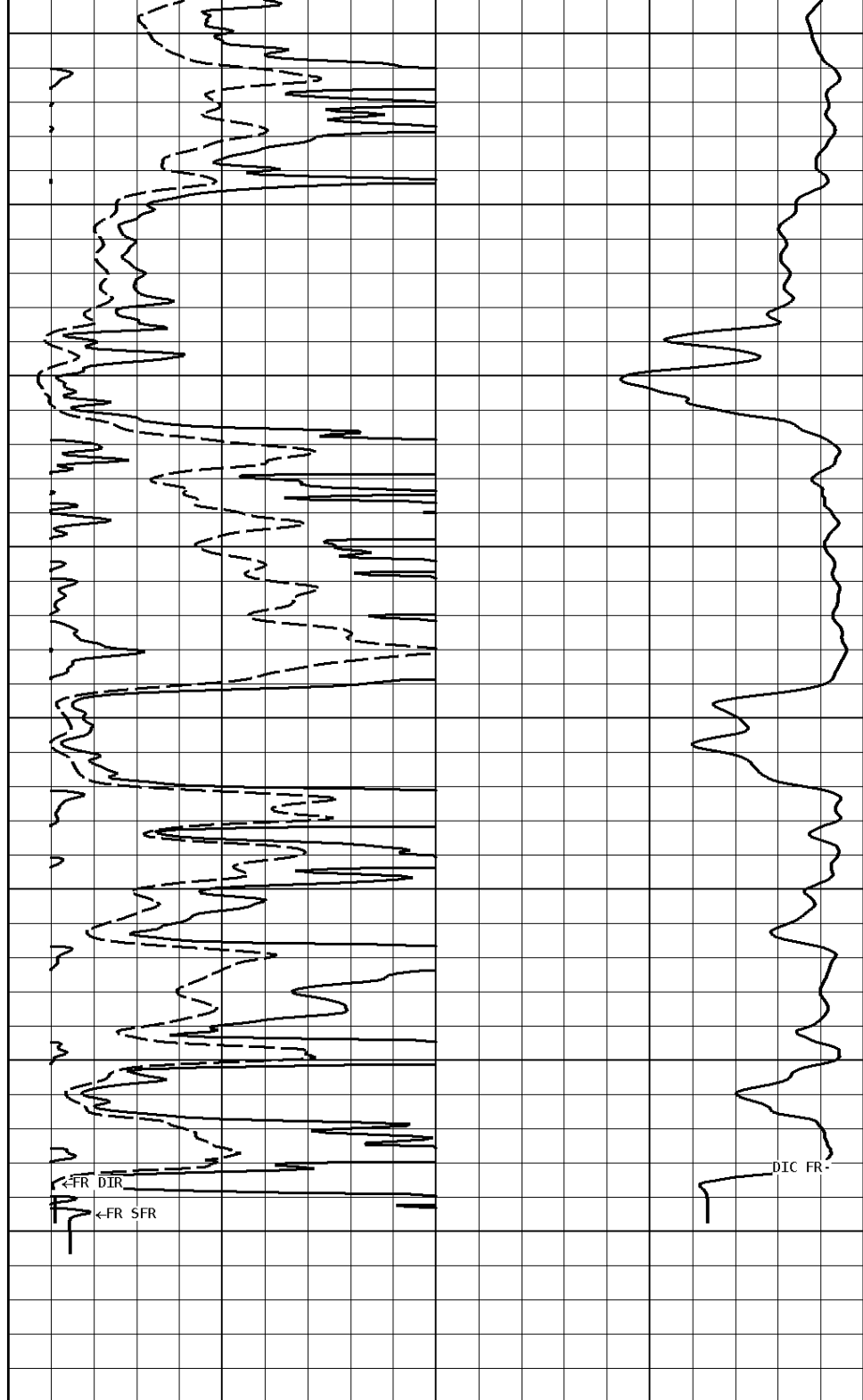
3400

3500

3600

3700

File #1.1.4



1:600 MAIN SECTION

GAMMA RAY
API UNITS

150 0 300 150

SPONTANEOUS POTENTIAL
mV

→ ← 20

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

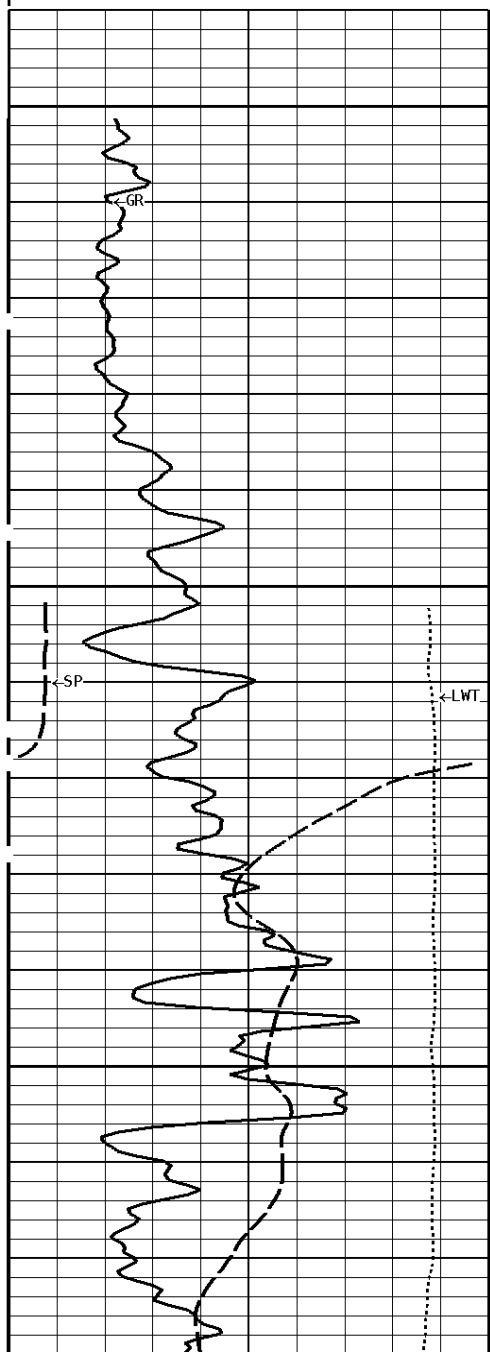
10000 0

0.0 50.0

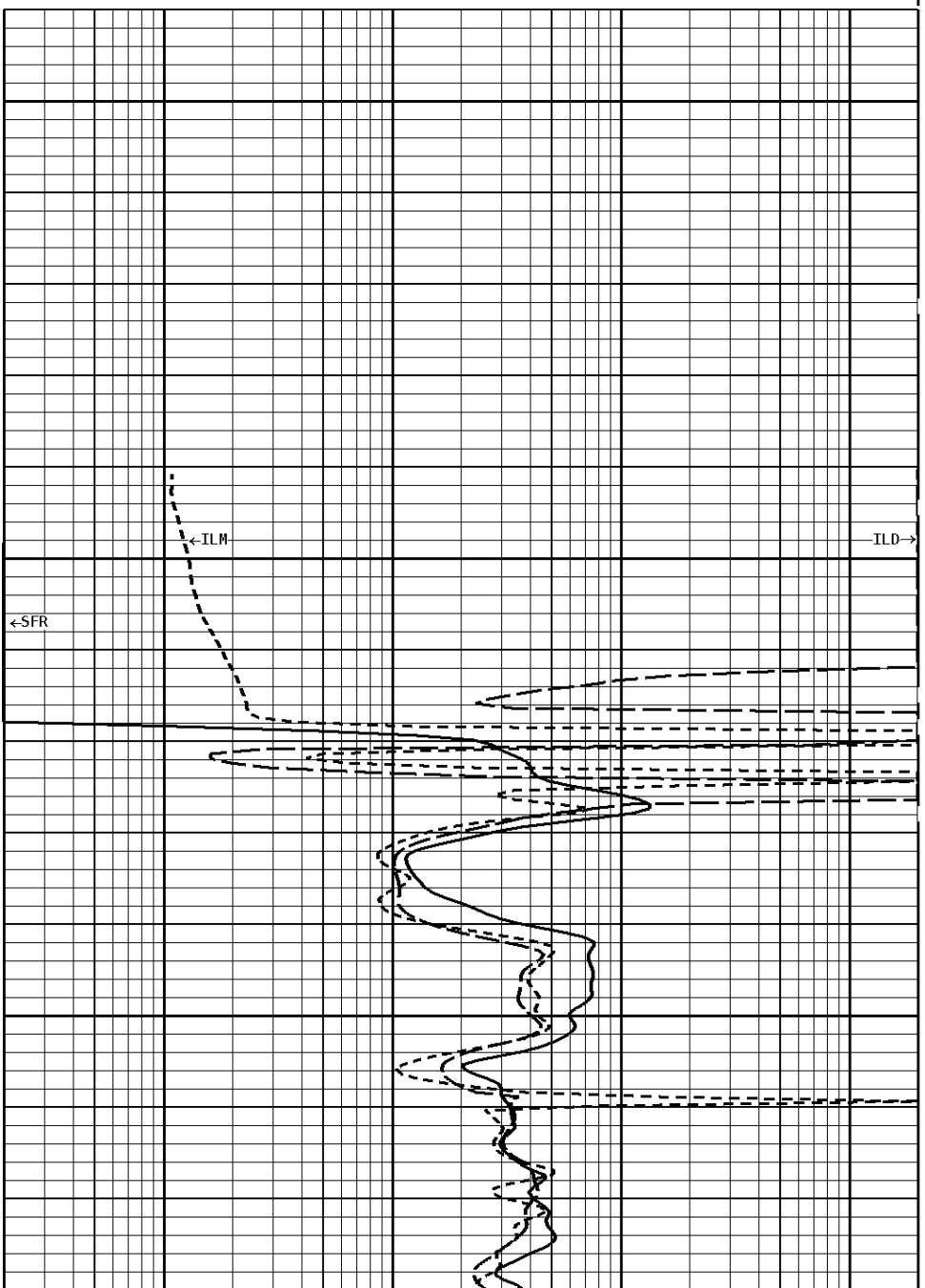
Well File: val eastman 1-16owwo nov27_mst Scale: 1:240 Format: DIL-240
Segment: V1.D1.S4 MAIN Acquired: 2018-11/28 02:34 3.4.0-13756
Reference: 0 Processed: 2018-11/28 03:45 3.4.0-13756

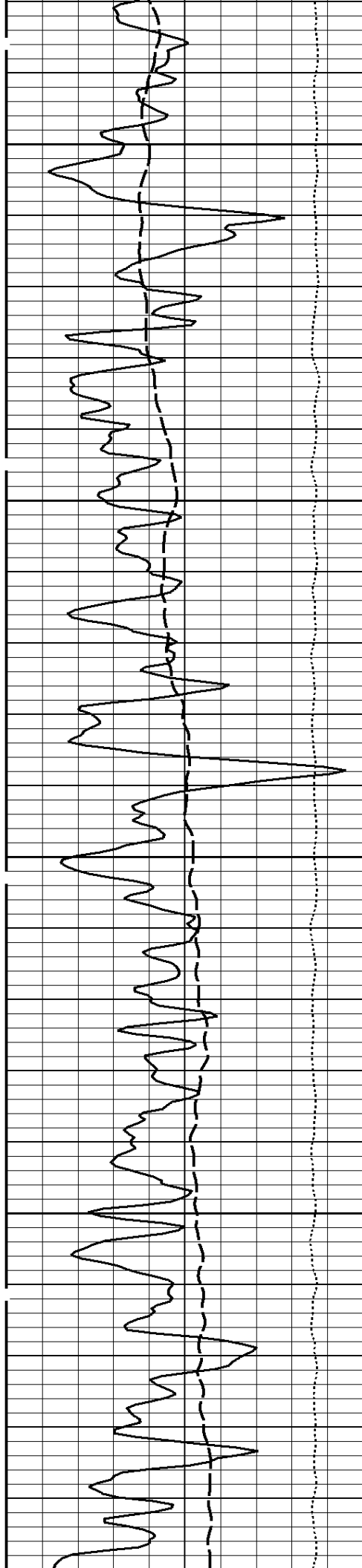
SPONTANEOUS POTENTIAL mV		DEEP INDUCTION OHMM	
→ ←20		0.2 2000.0	
TENSION LBS		MEDIUM INDUCTION OHMM	
10000 0		0.2 2000.0	
GAMMA RAY API UNITS		SHALLOW FOCUSED RESISTIVITY OHMM	
150 0 300 150		0.2 2000.0	

1:240 MAIN SECTION



200

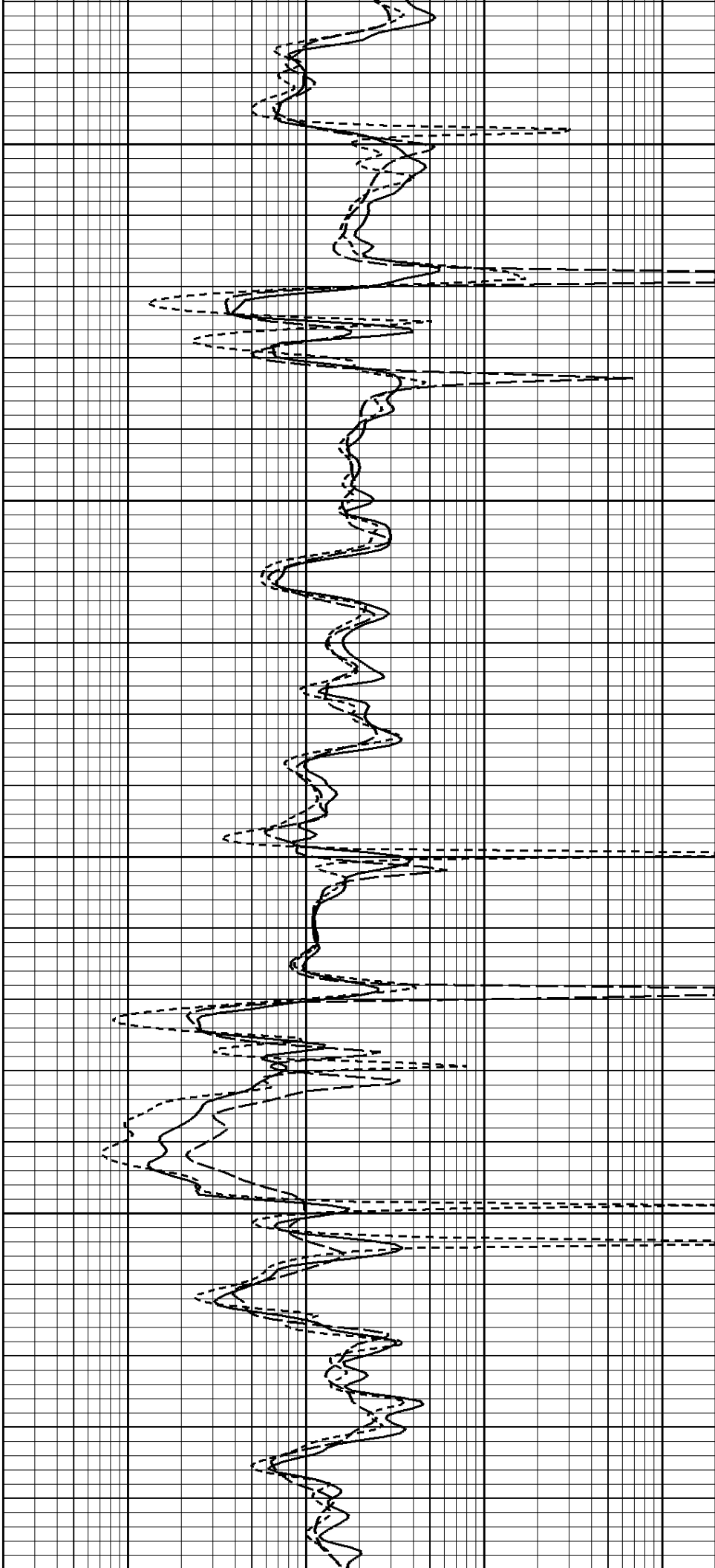




300

400

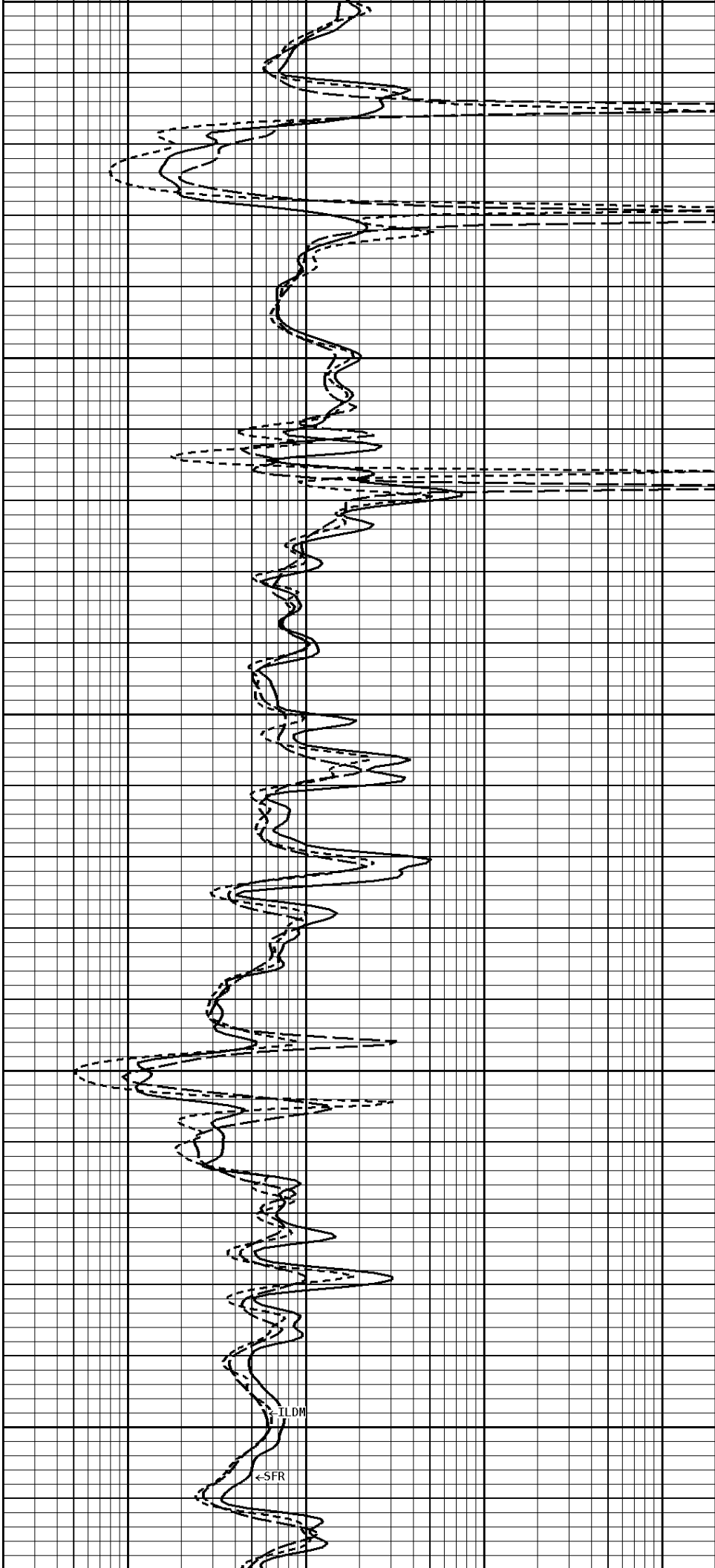
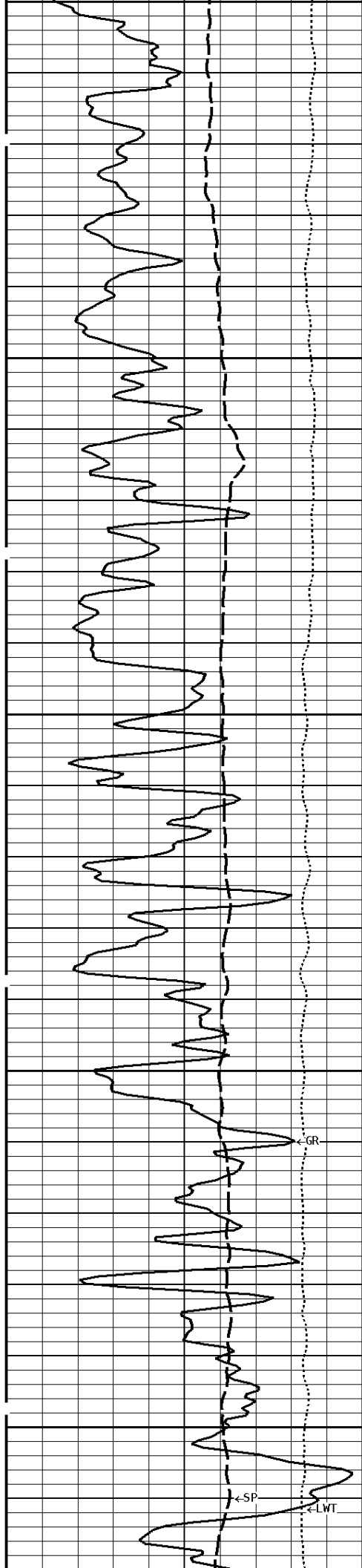
500



500

600

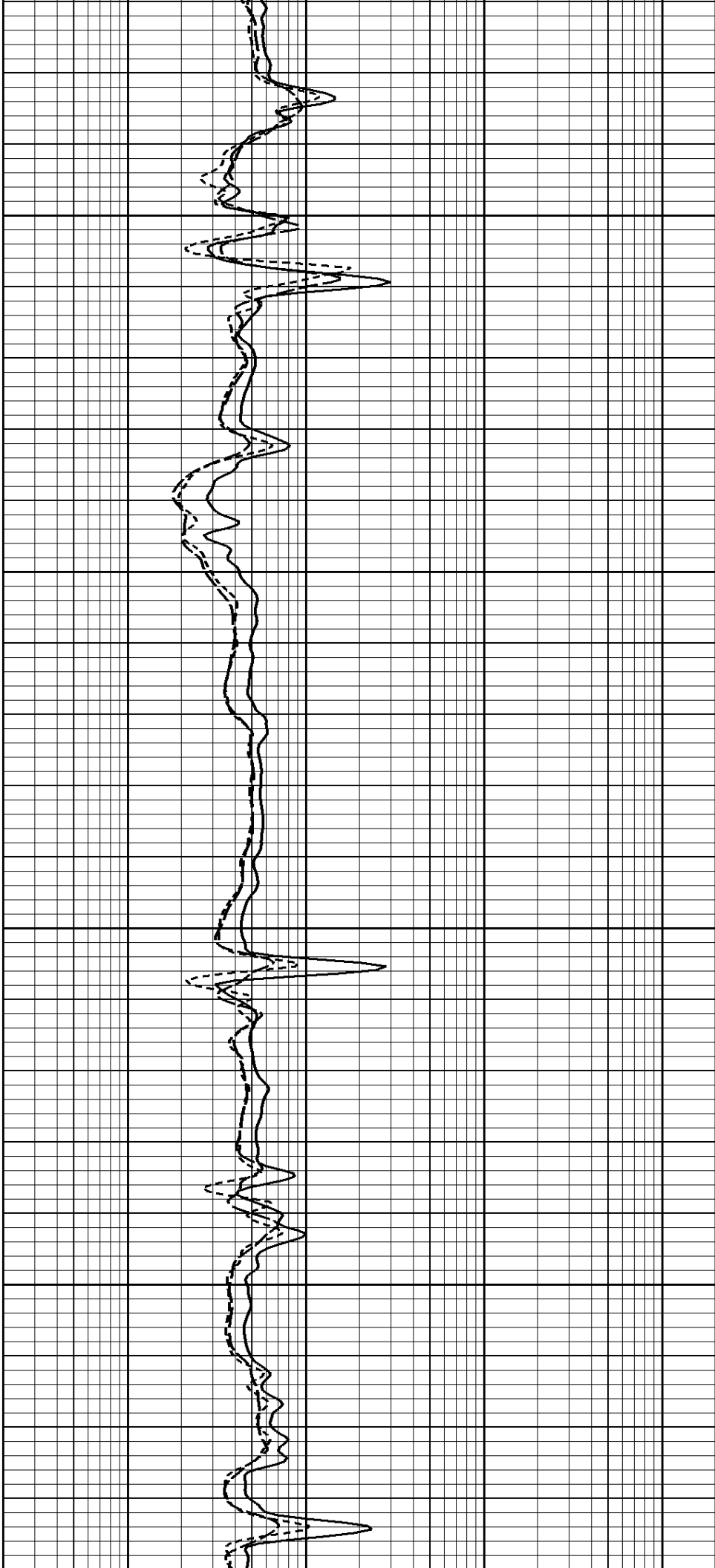
700

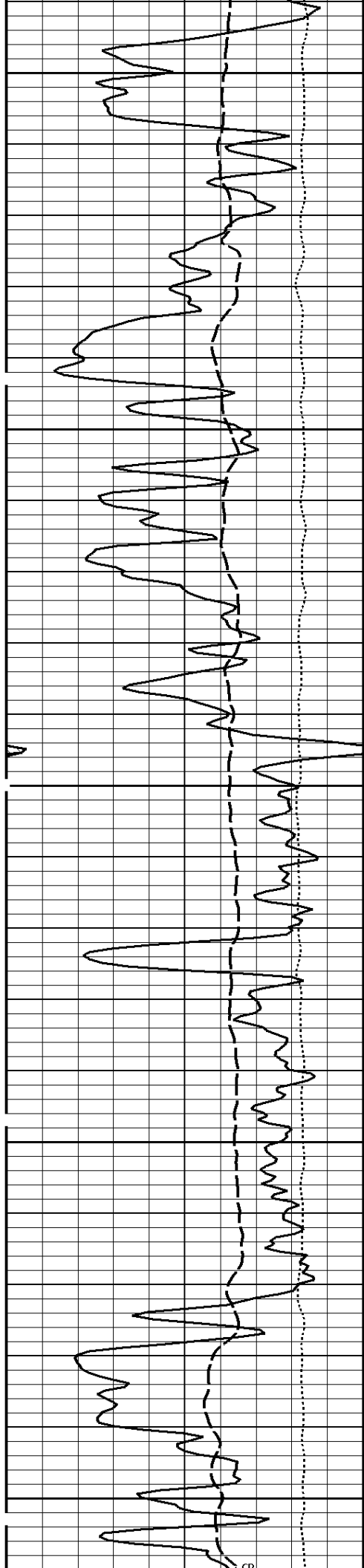




800

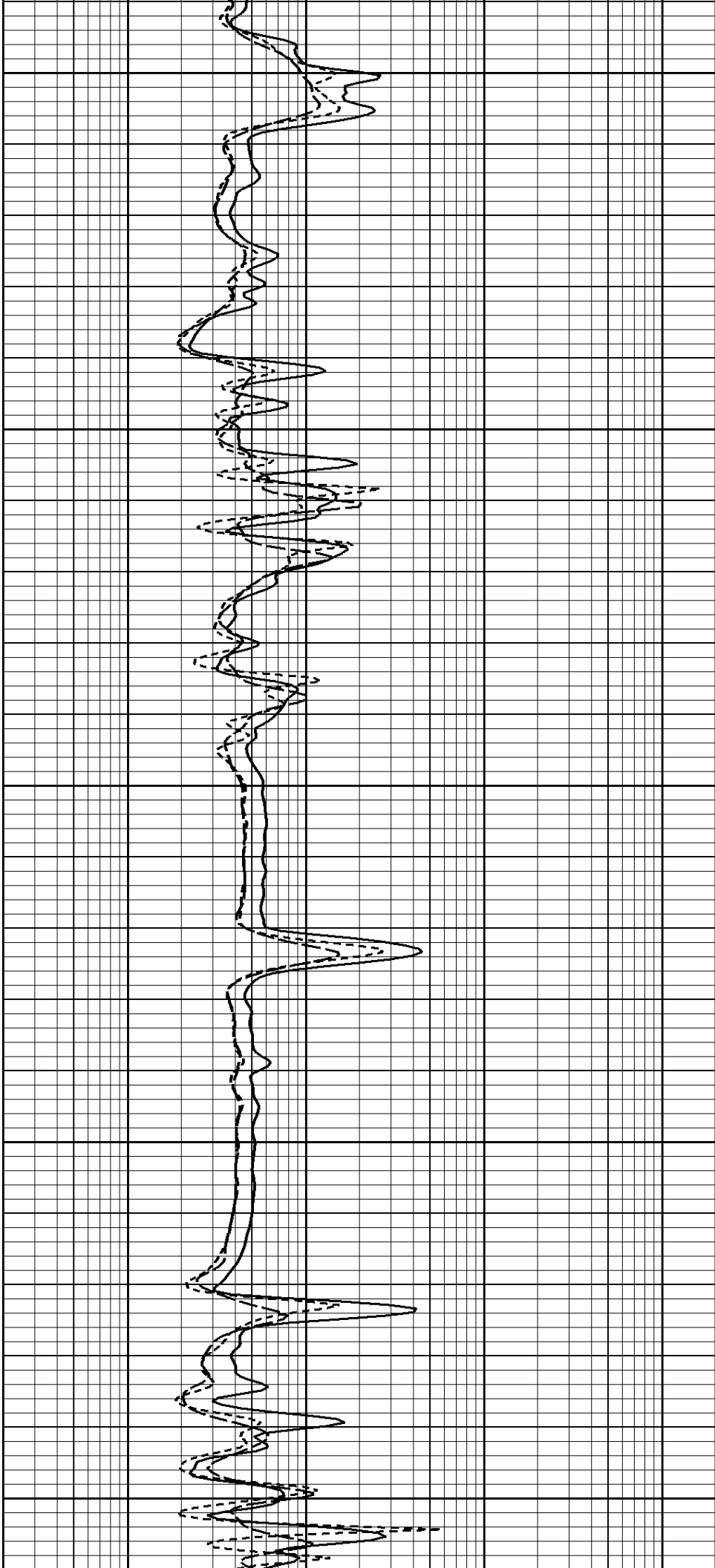
900

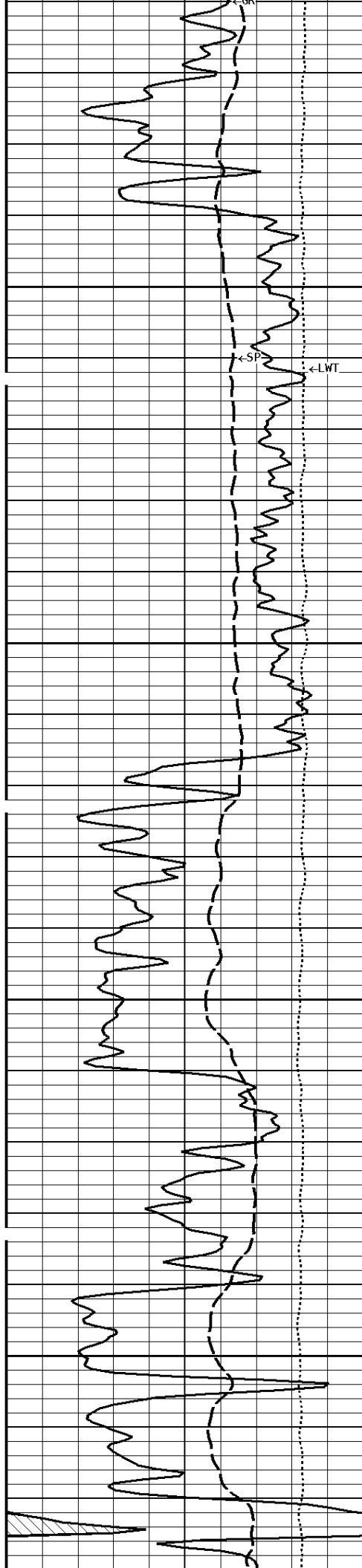




1000

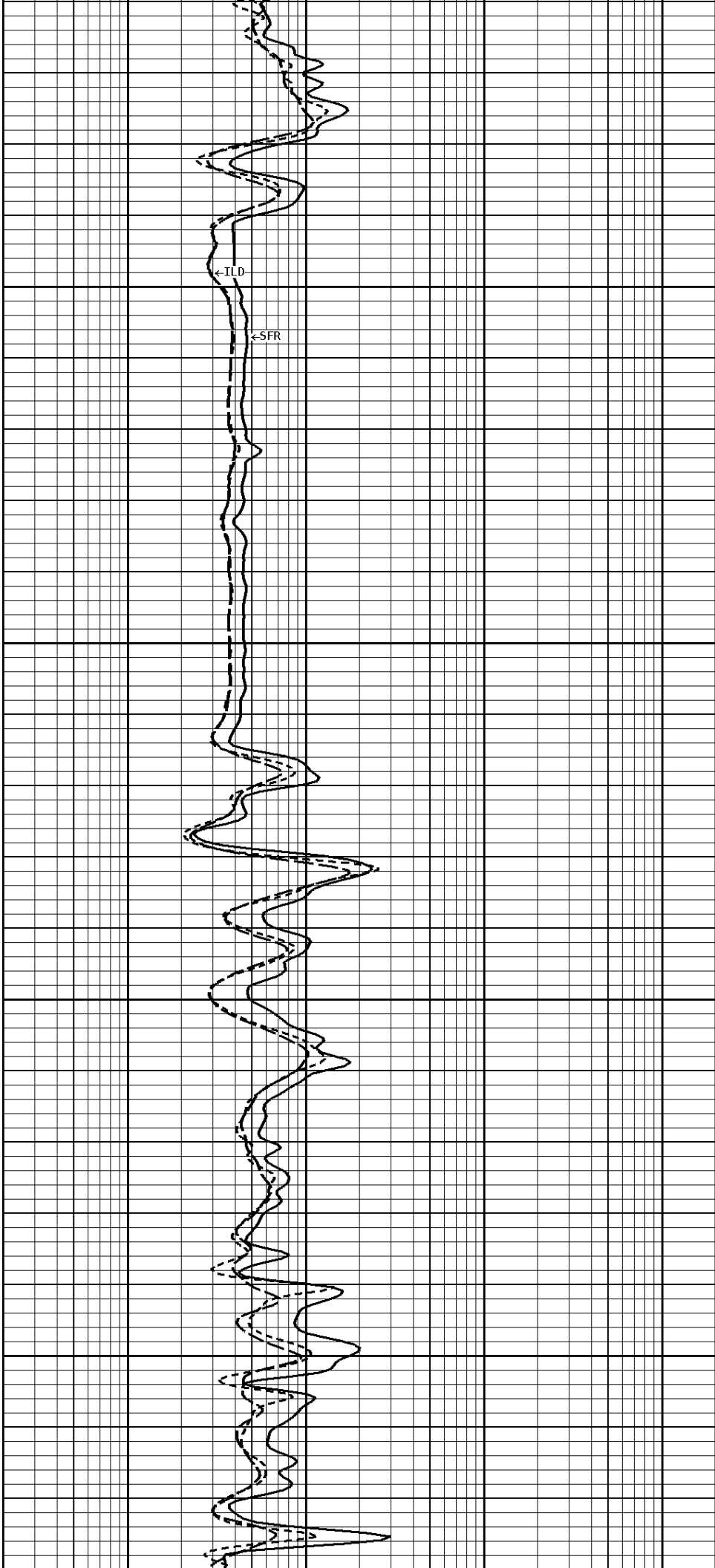
1100

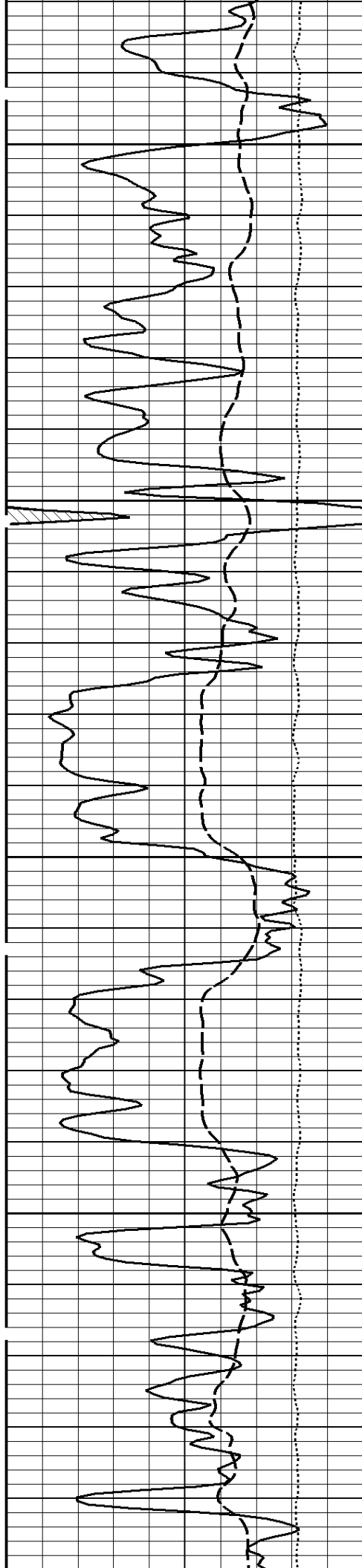




1200

1300

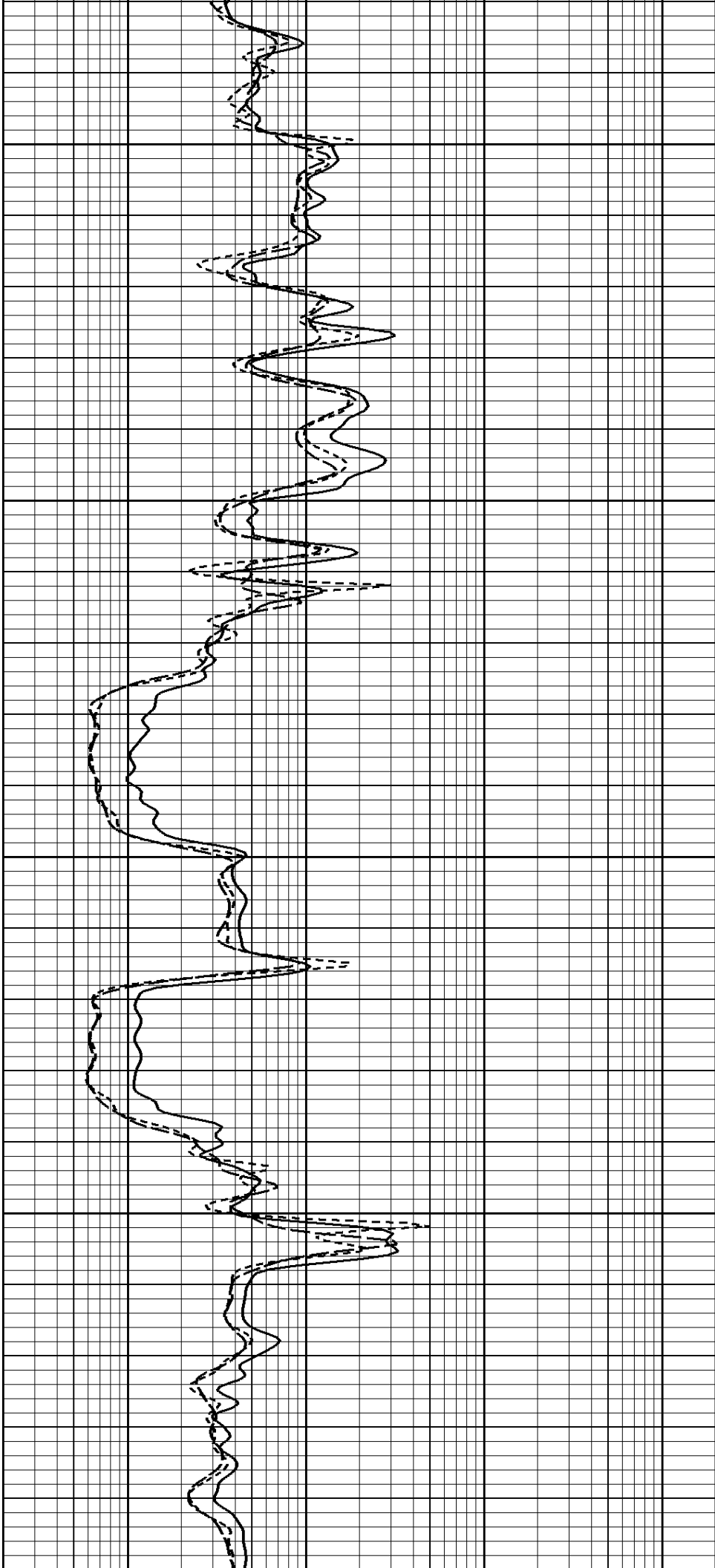


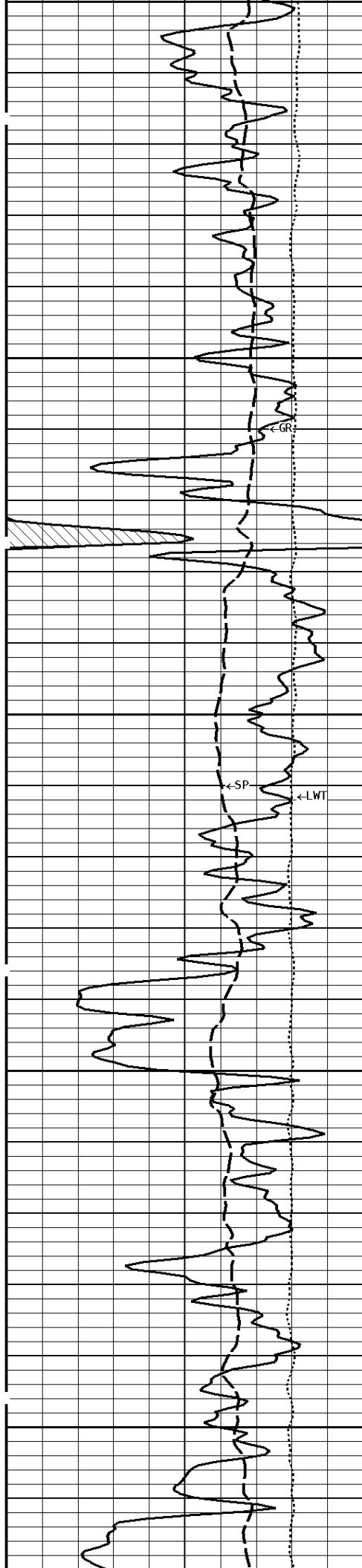


1400

1500

1600

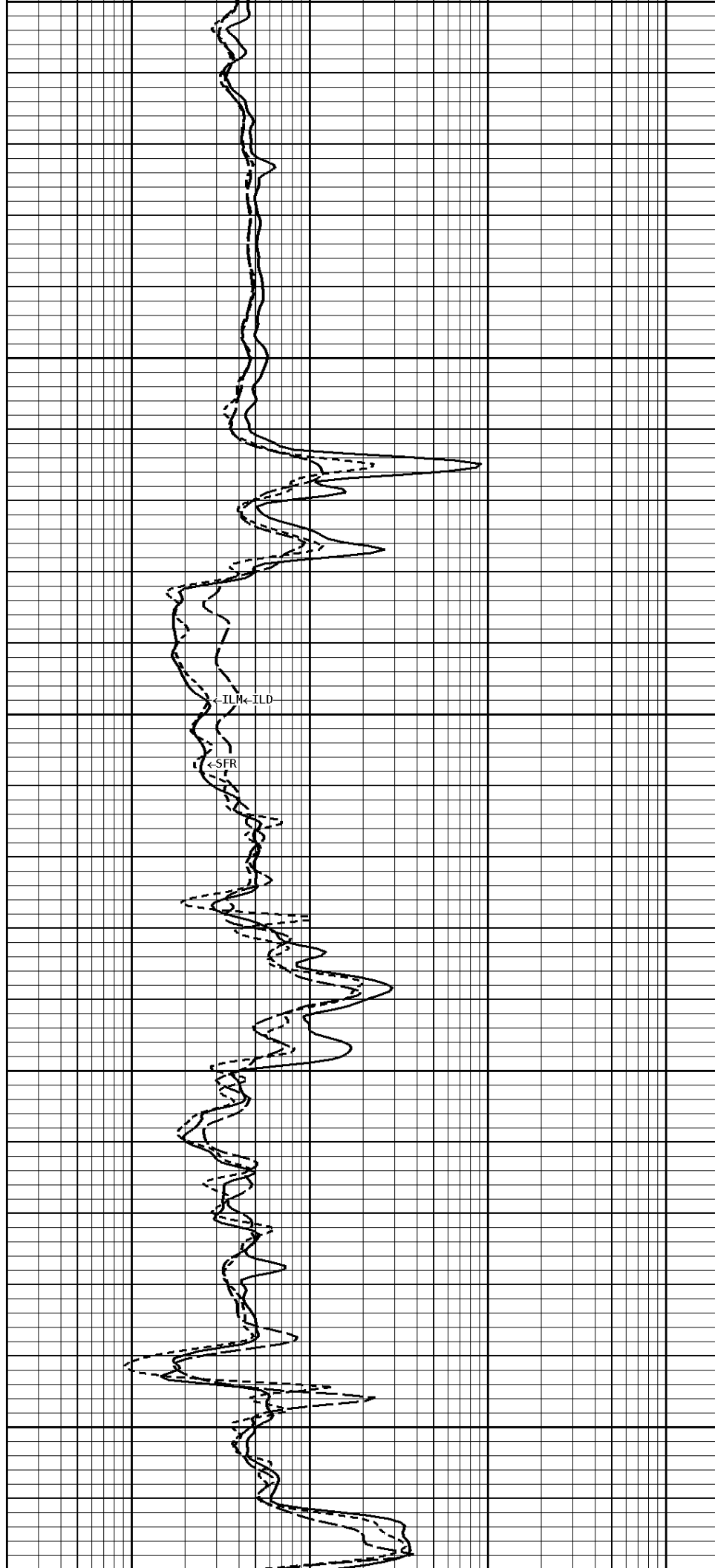


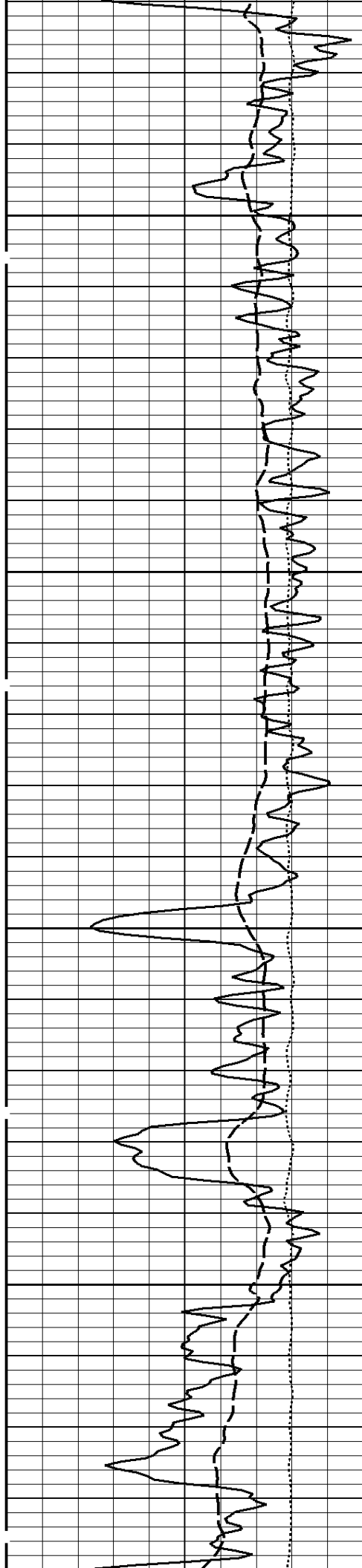


1600

1700

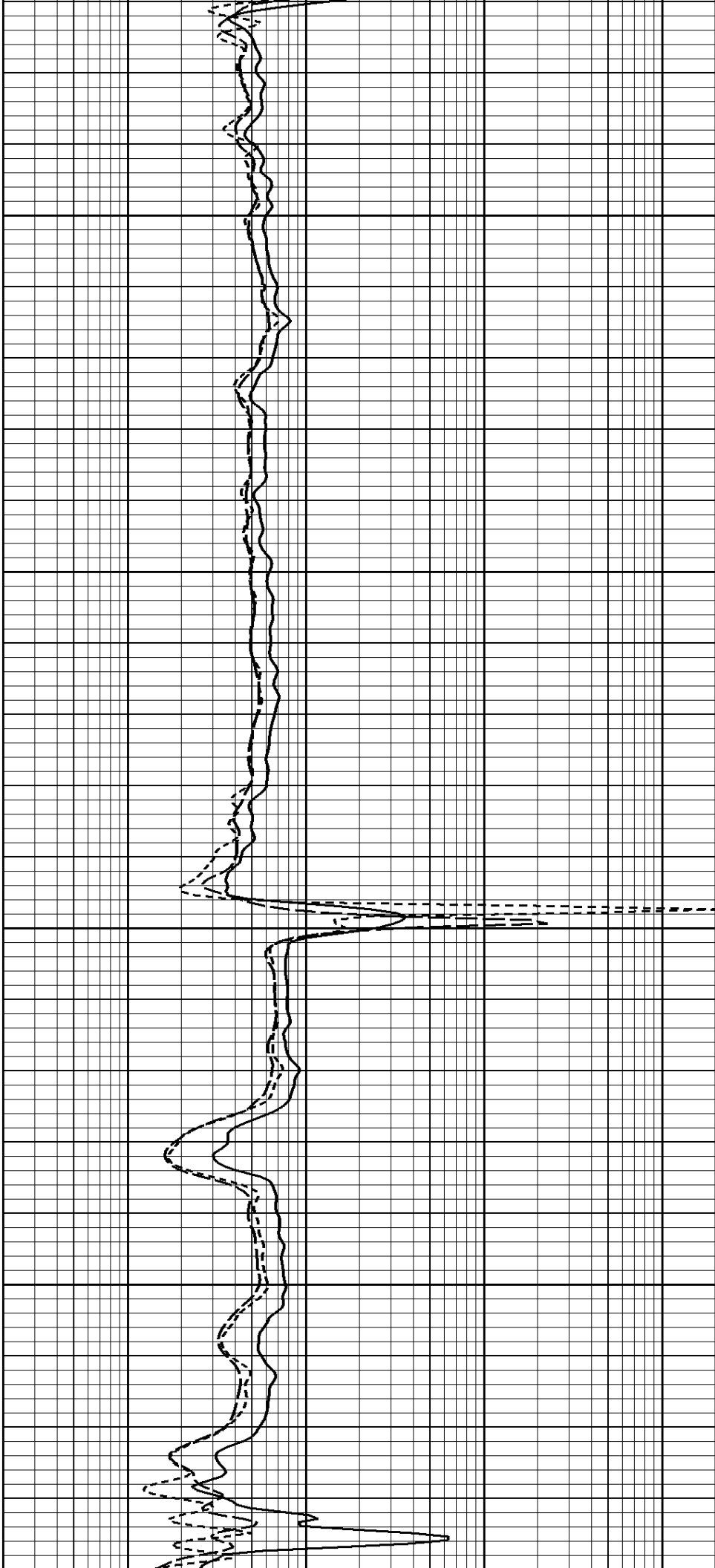
1800

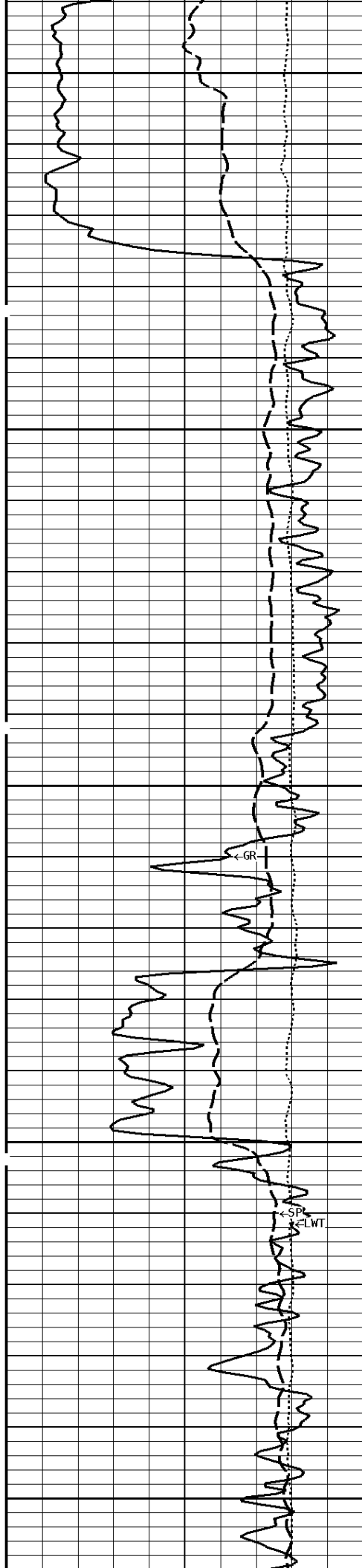




1900

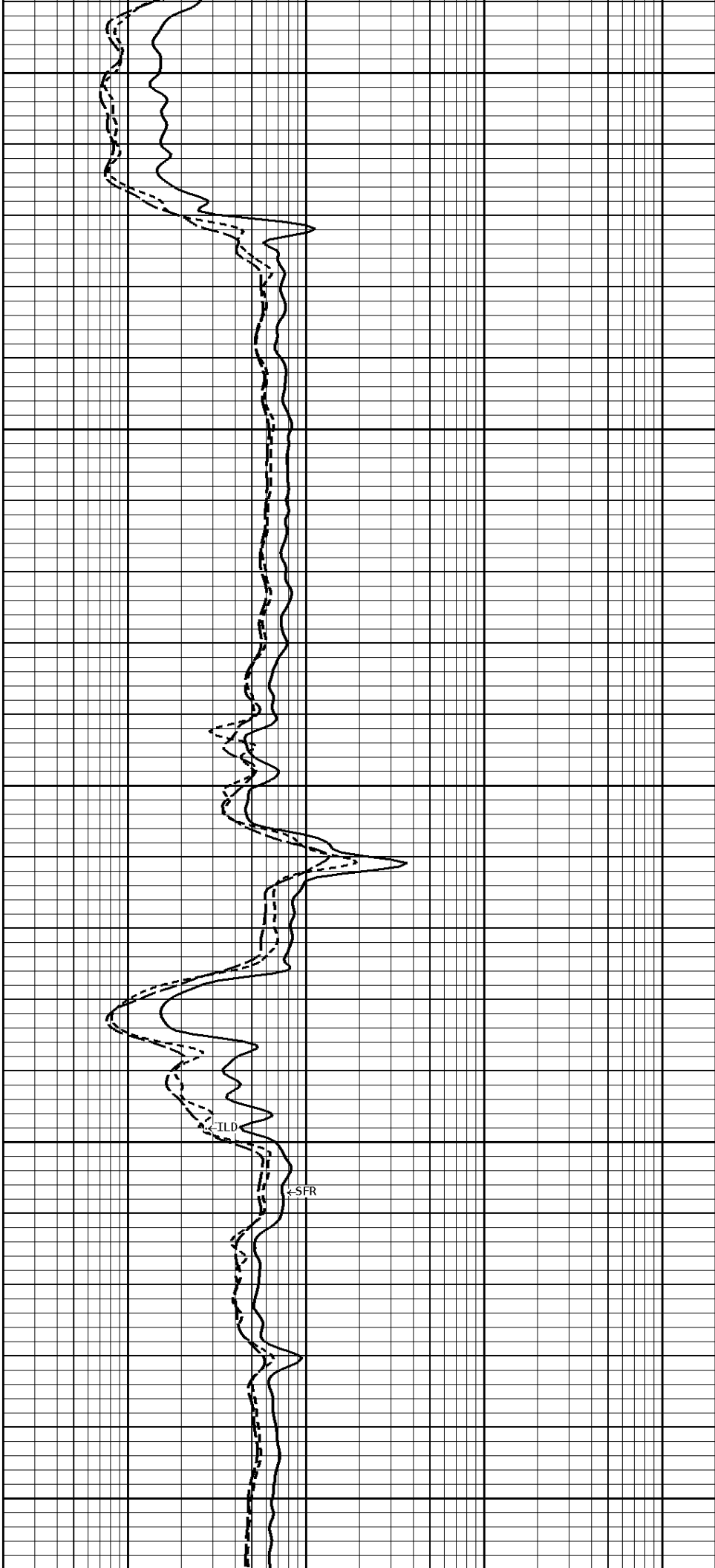
2000





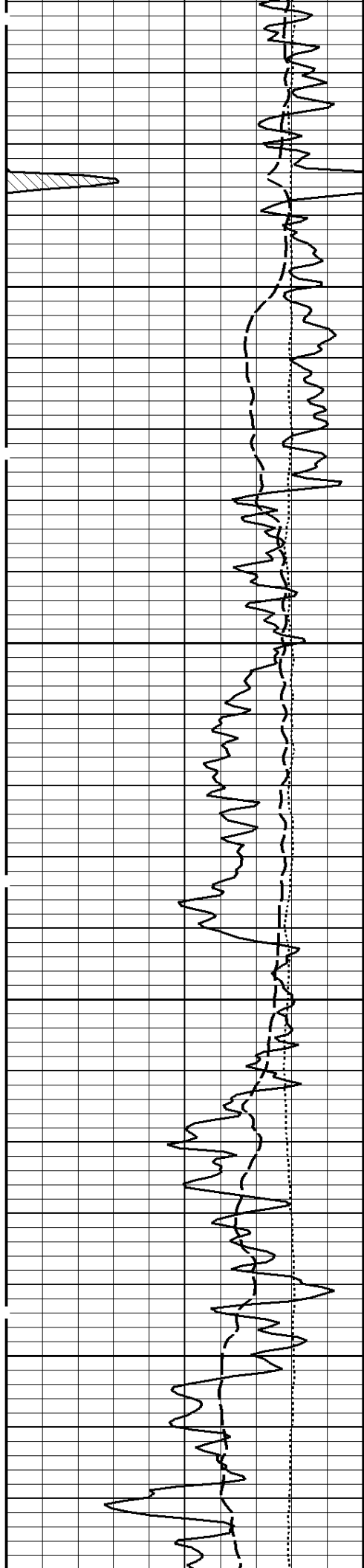
2100

2200



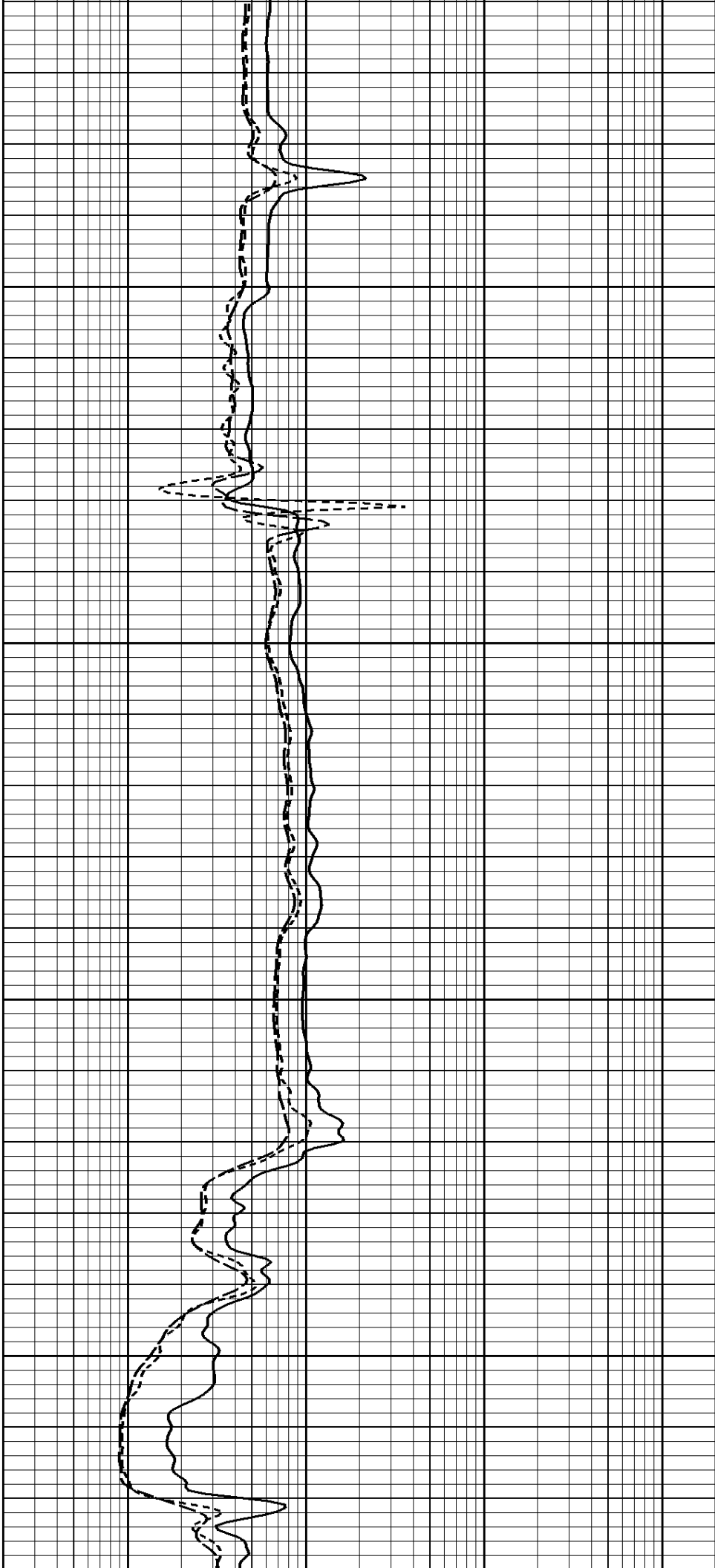
TL0

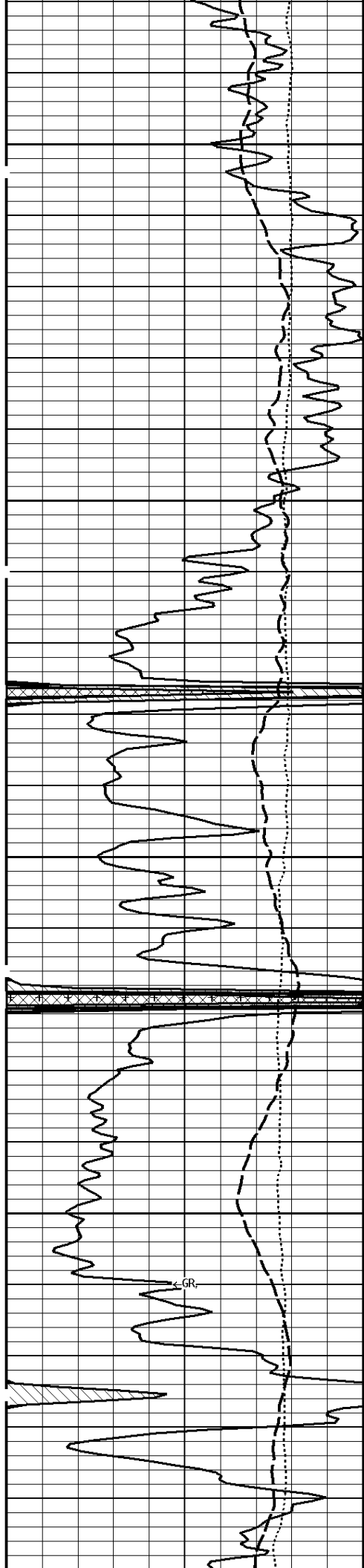
SFR



2300

2400

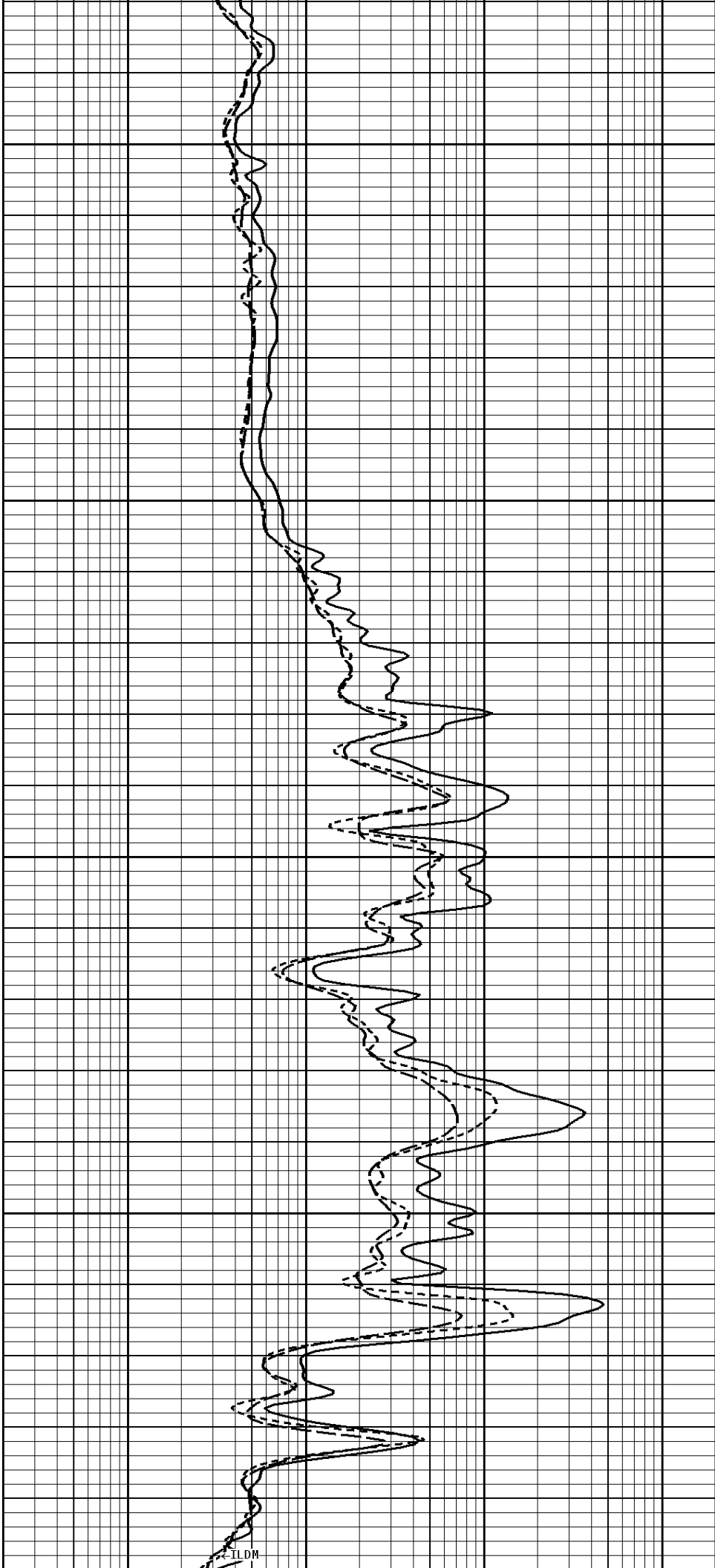


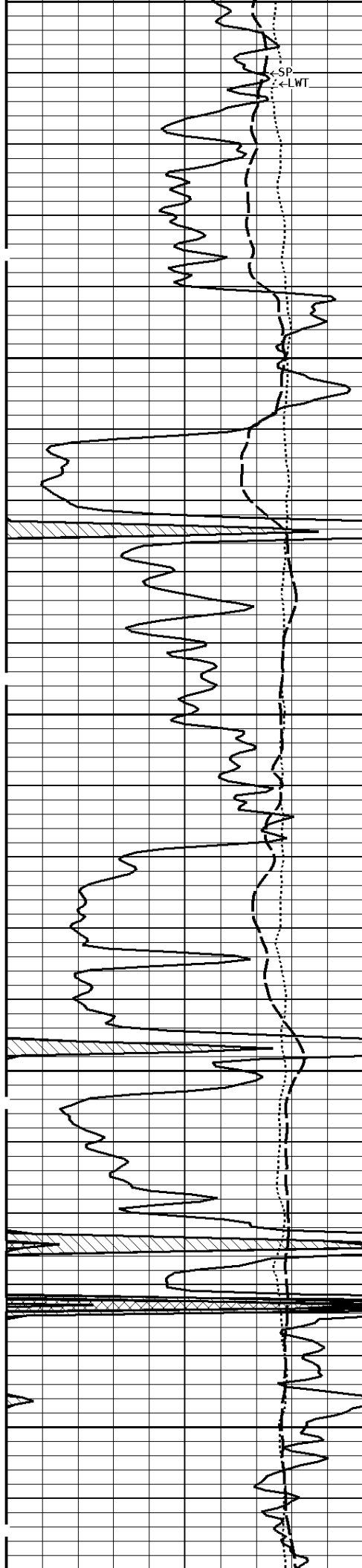


2500

2600

2700

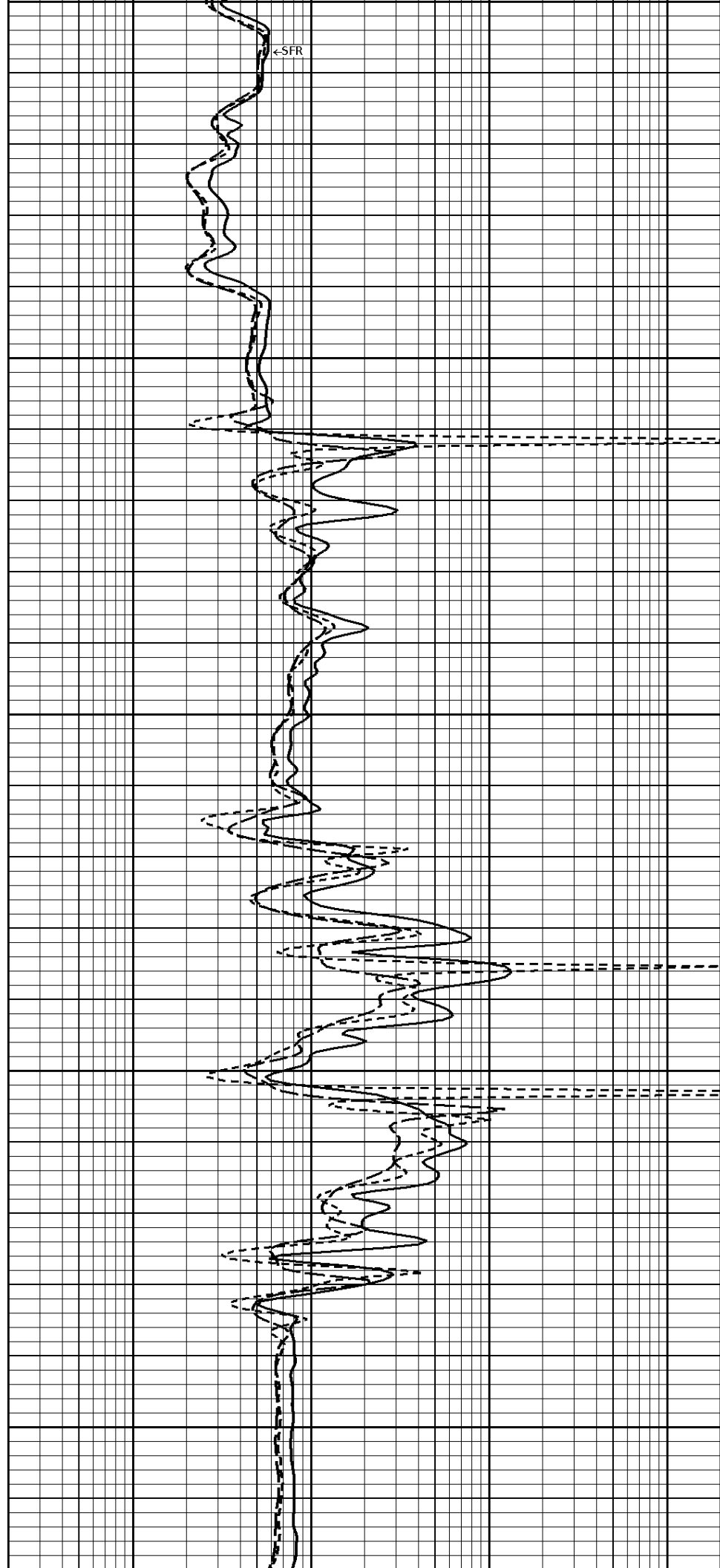


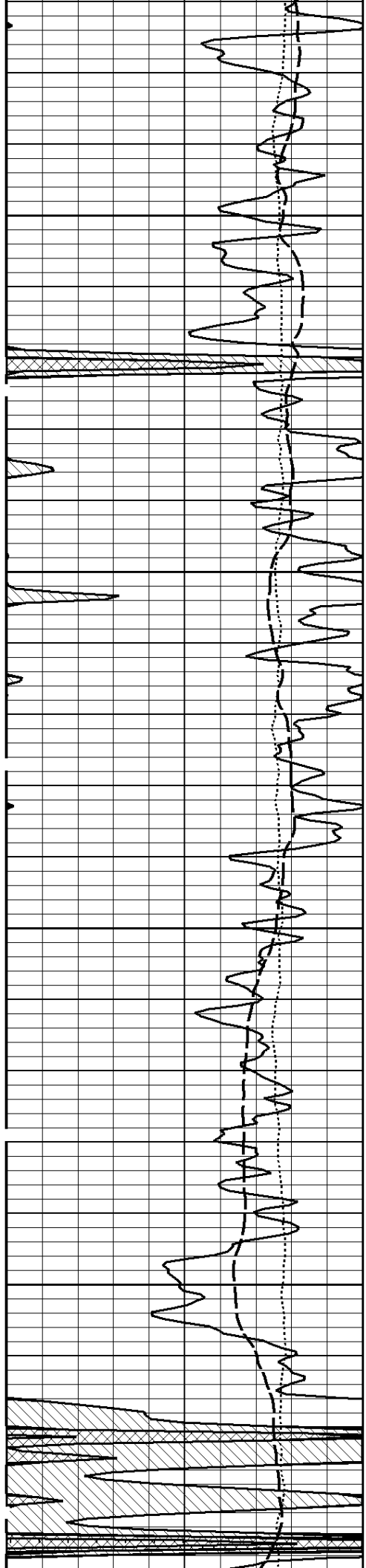


2700

2800

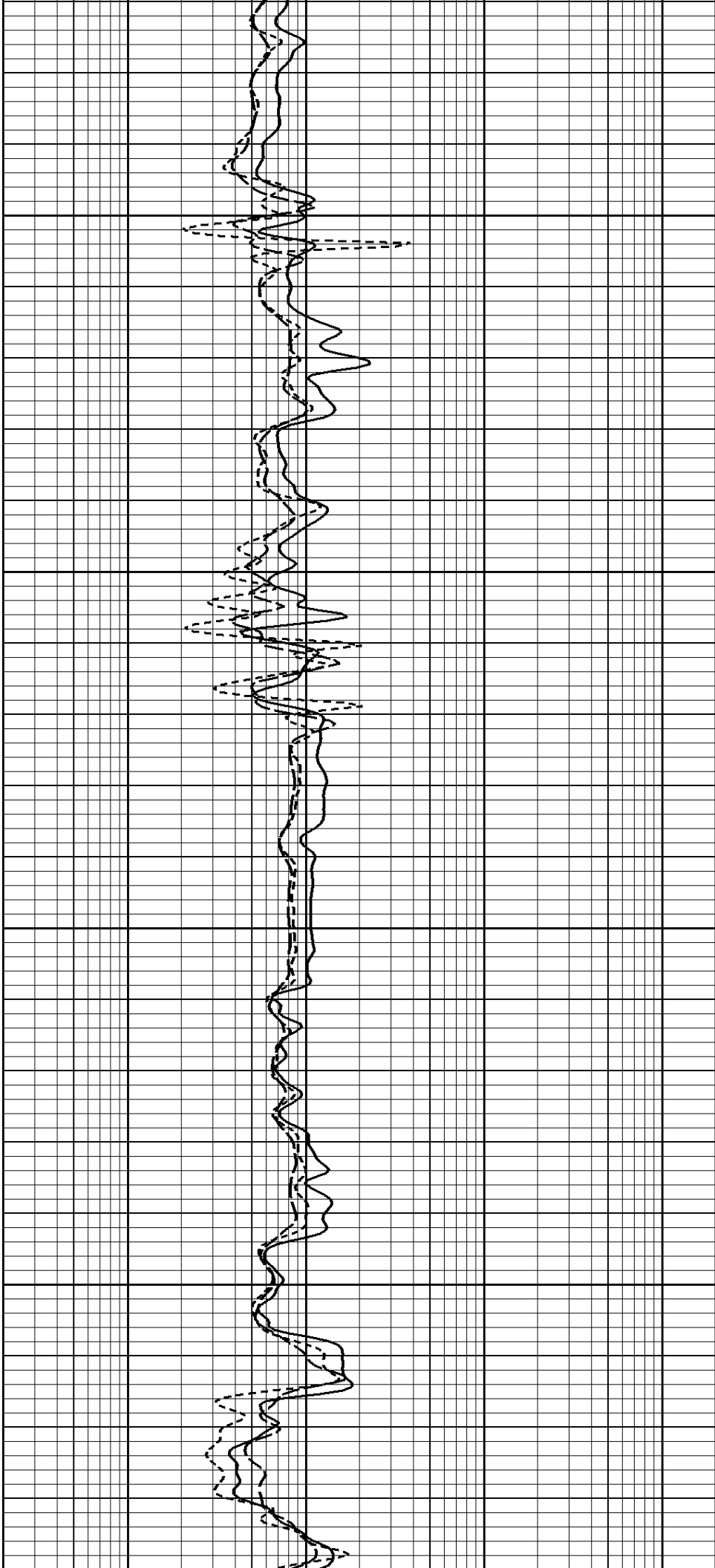
2900





3000

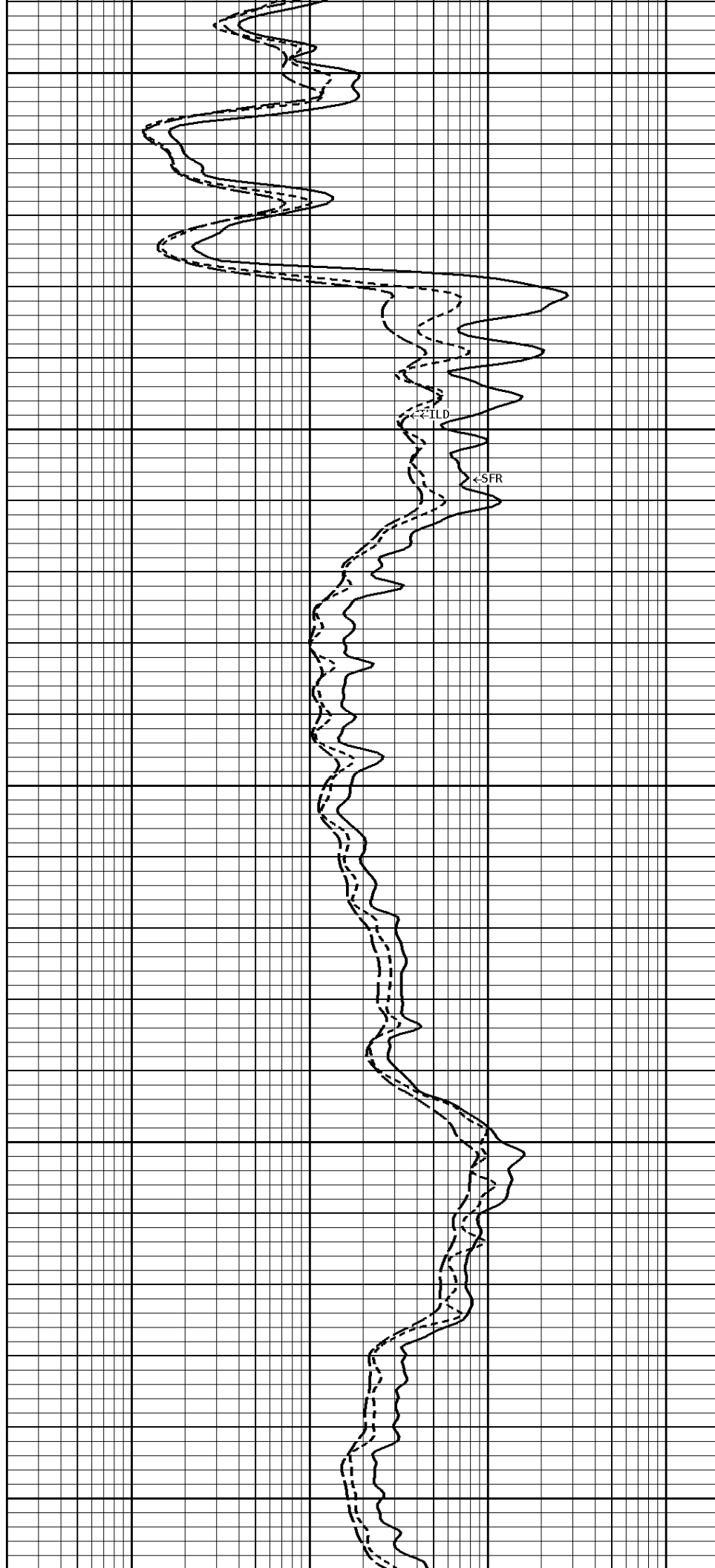
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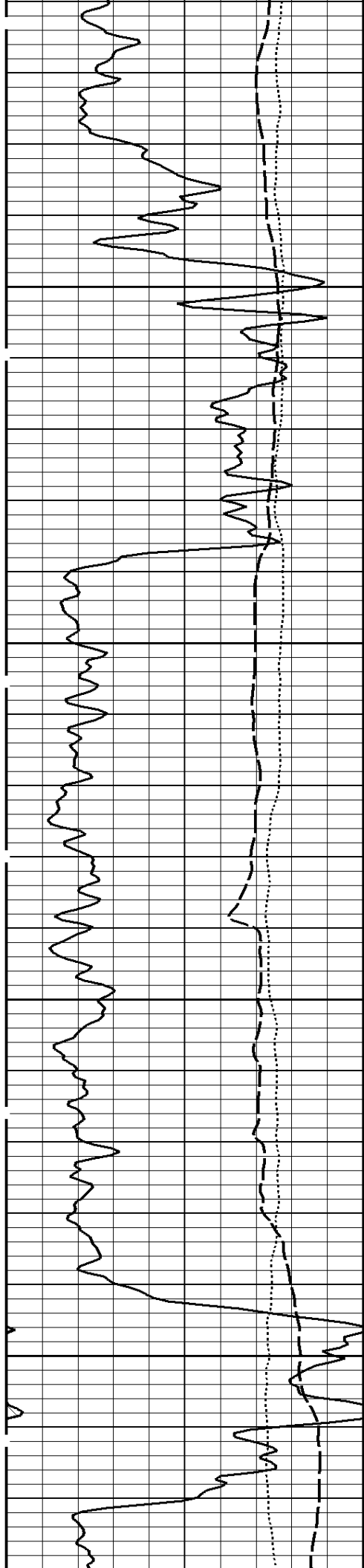




3200

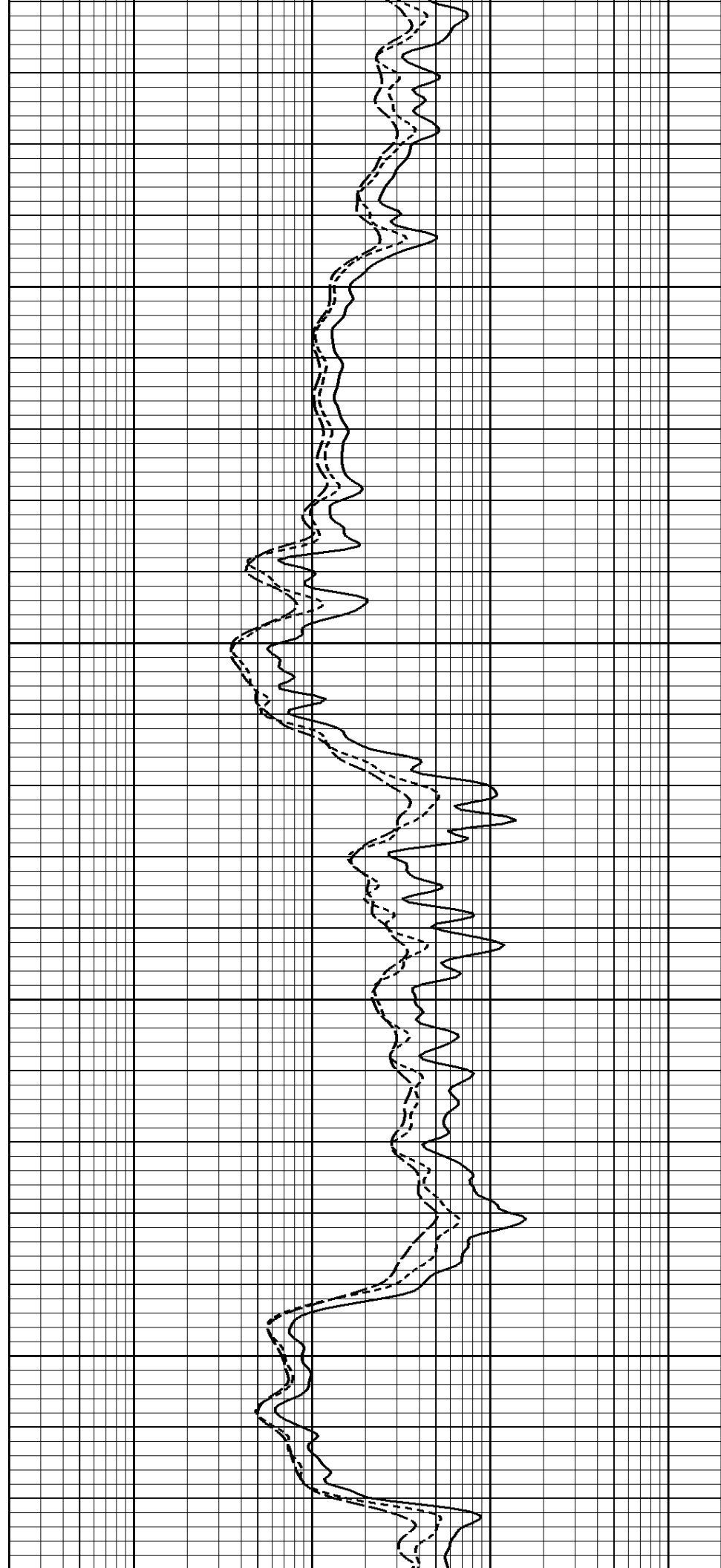
3300

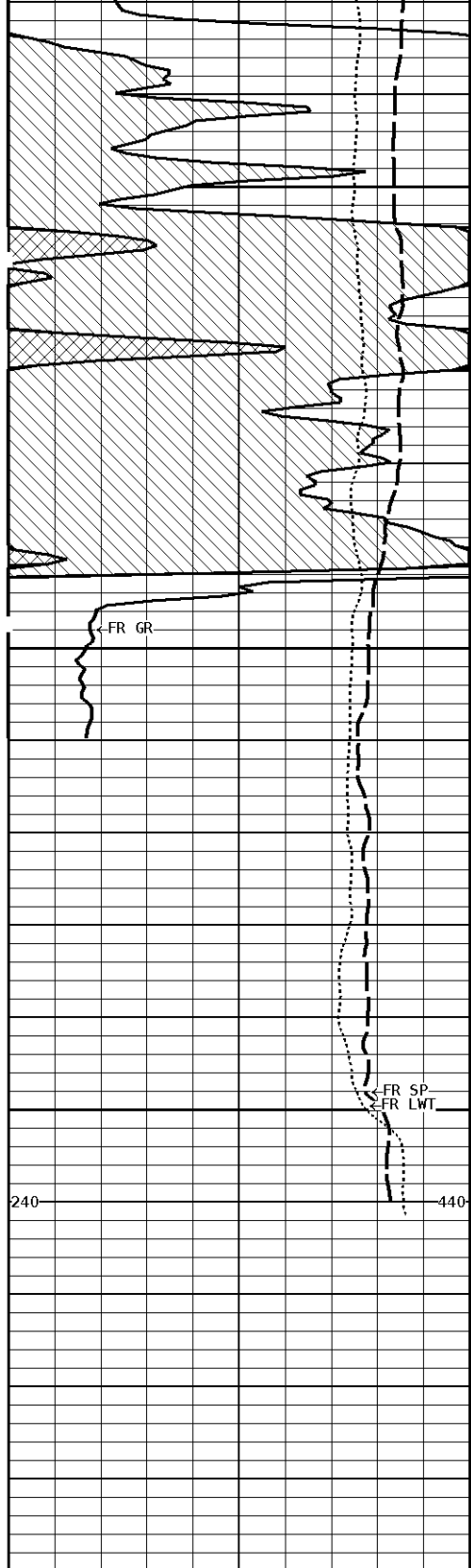




3400

3500

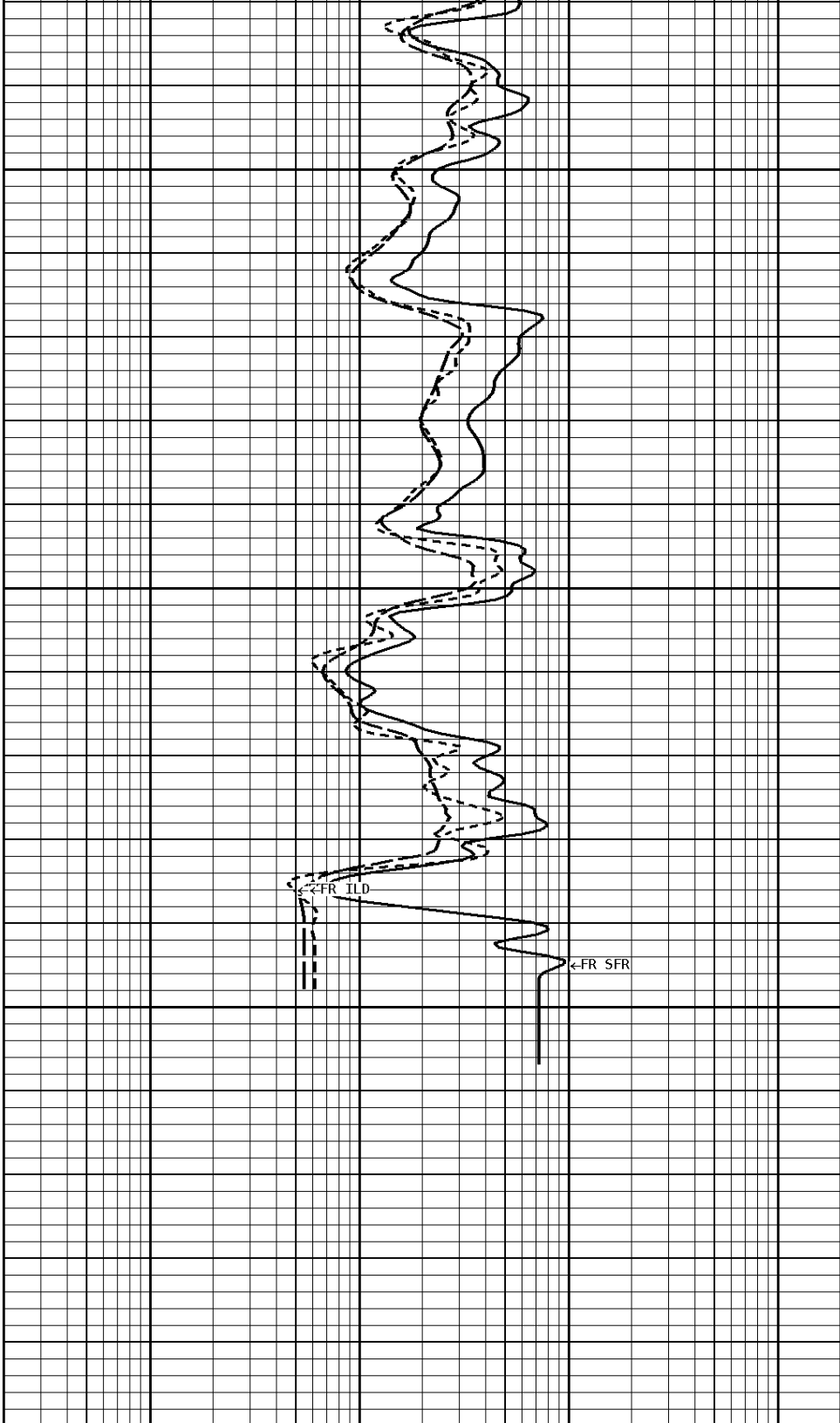




3600

3700

File #1.1.4



1:240 MAIN SECTION

GAMMA RAY
API UNITS

150 0 300 150

TENSION
LBS

10000 0

SPONTANEOUS POTENTIAL

SHALLOW FOCUSED RESISTIVITY
OHMM

0.2 2000.0

MEDIUM INDUCTION
OHMM

0.2 2000.0

DEEP INDUCTION

mV

→ | ← 20

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	3703.000	ft
Borehole Temperature	105.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	0.300	ohmm
Resistivity Of Mud Temperature	83.00	degF

* Calibration Summary *

Shop Calibration GRT-B						
Performed : 01-OCT-2018			Time : 10:33			
Sensor Suite : GR-GR5			ID : GRT-BB-009			
	Measured	Units	Calibrated	Units		
	Background	Jig	Jig			
GR	58	336	160			
	CPS					
Shop Calibration PIT-CA						
Performed : 11-SEP-2018			Time : 11:27			
Sensor Suite : P-IND-T			ID : PIT-AC-043			
Medium						
	Measured		Calibrated			
	R	X	R	X	Units	
Air	131492	129685	0.0	0.0	MMHOS	
Zero	131066	131062	-18.1	59.6	MMHOS	
Reference	244915	244454	4981.9	5059.6	MMHOS	
Loop	130404	210498	3515.7	3611.2	MMHOS	
Sonde Error			-0.5	-1.7	MMHOS	
Cond			4981.9	5059.6	MMHOS	
Deep						
	Measured		Calibrated			
	R	X	R	X	Units	
Air	131939	129230	0.0	-0.0	MMHOS	
Zero	131079	131067	-15.6	35.3	MMHOS	
Reference	220620	224092	1984.4	2035.3	MMHOS	
Loop	129308	206166	1595.4	1712.8	MMHOS	
Sonde Error			-0.6	-7.8	MMHOS	
Cond			1984.4	2035.3	MMHOS	
Temperature						
	Measured		Calibrated			
	Low	High	Low	High	Units	
	16980.0	56920.0	70.0	350.0	DEGF	
Performed : 11-SEP-2018			Time : 11:18			
Sensor Suite : SFL			ID : PIT-AC-043			
Internal						
	Measured		Calibrated			
	Zero	Reference	Zero	Reference	Units	
Im	32805.1	49015.6	0.0	7028.0	uA	
Ib	32766.6	49693.1	0.0	1750.0	mA	
MOM1	32710.5	56307.5	0.0	175.0	mV	
Equivalent SFL				43.97	OHMM	
Performed : 11-SEP-2018			Time : 11:16			
Sensor Suite : P-SP			ID : PIT-AC-043			
Internal						
	Measured		Calibrated			
	Zero	Reference	Zero	Reference	Units	
	32774.5	58935.9	0.0	1000.0	mV	



Company: VAL ENERGY, LLC

Well: EASTMAN UNIT V 1-16 OWWO

Well File: val_eastman_1-16owwo_nov27_mst

Scale: 1:1200 Format: DIL1200

Segment: V1.D1.S4 MAIN

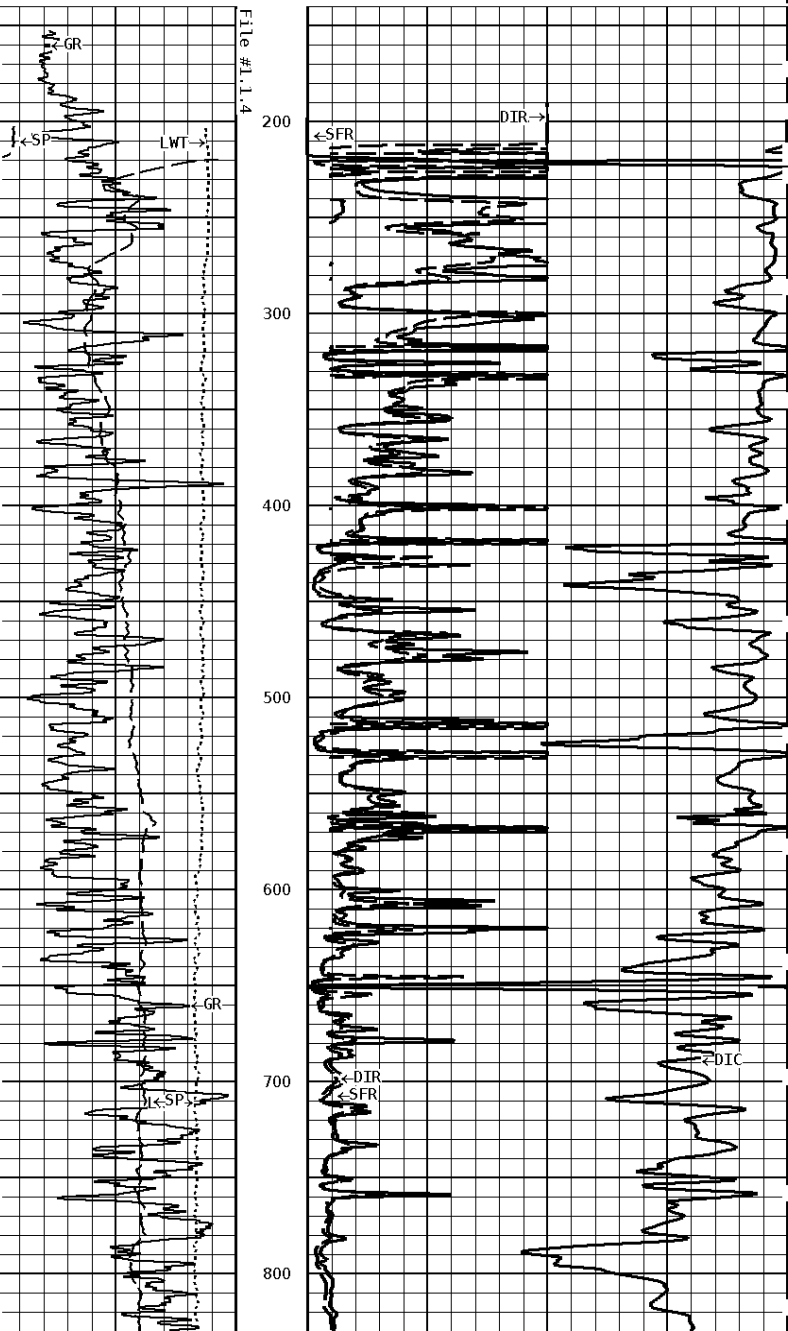
Acquired: 2018-11/28 02:34 3.4.0-13756

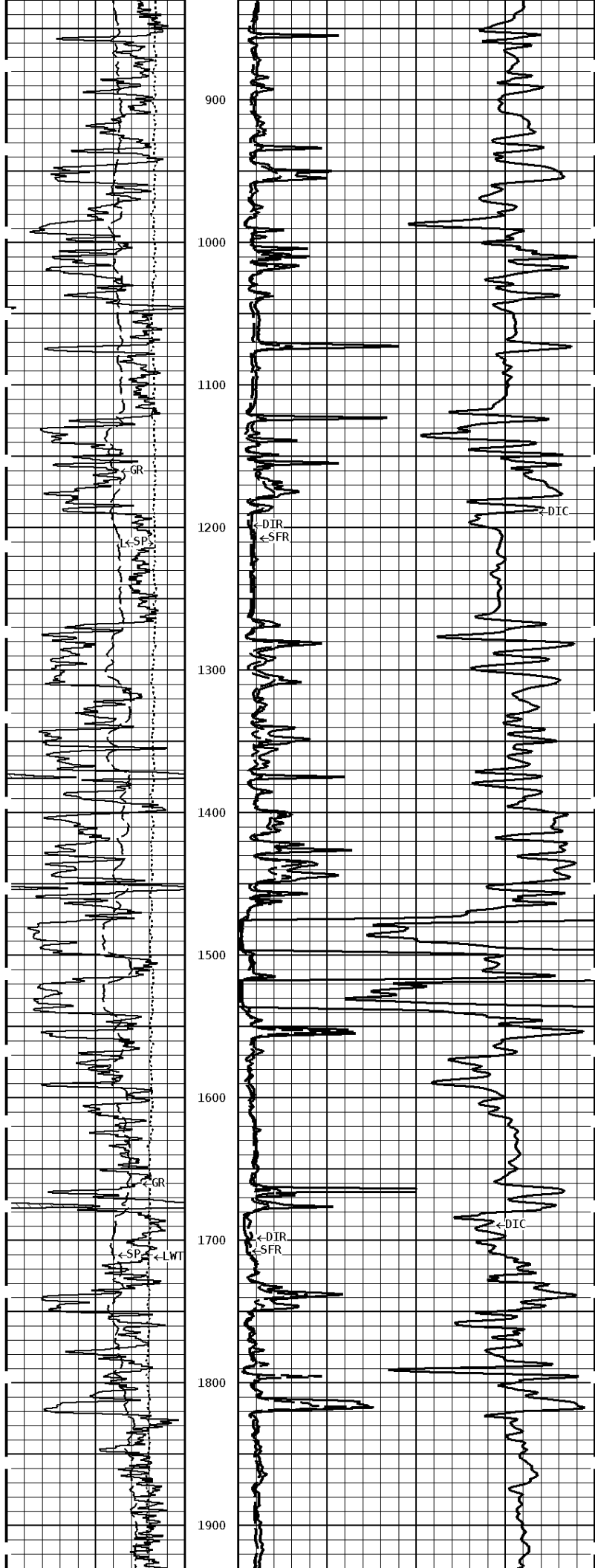
Reference: 0

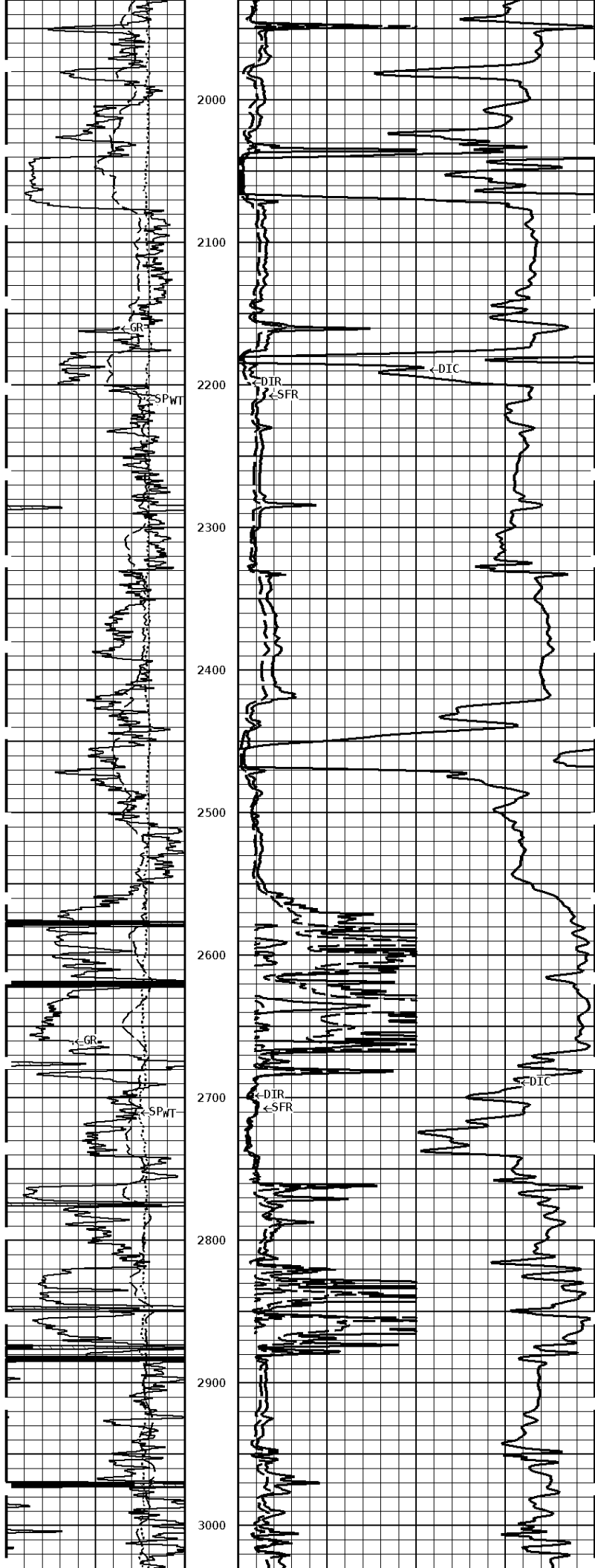
Processed: 2018-11/28 03:45 3.4.0-13756

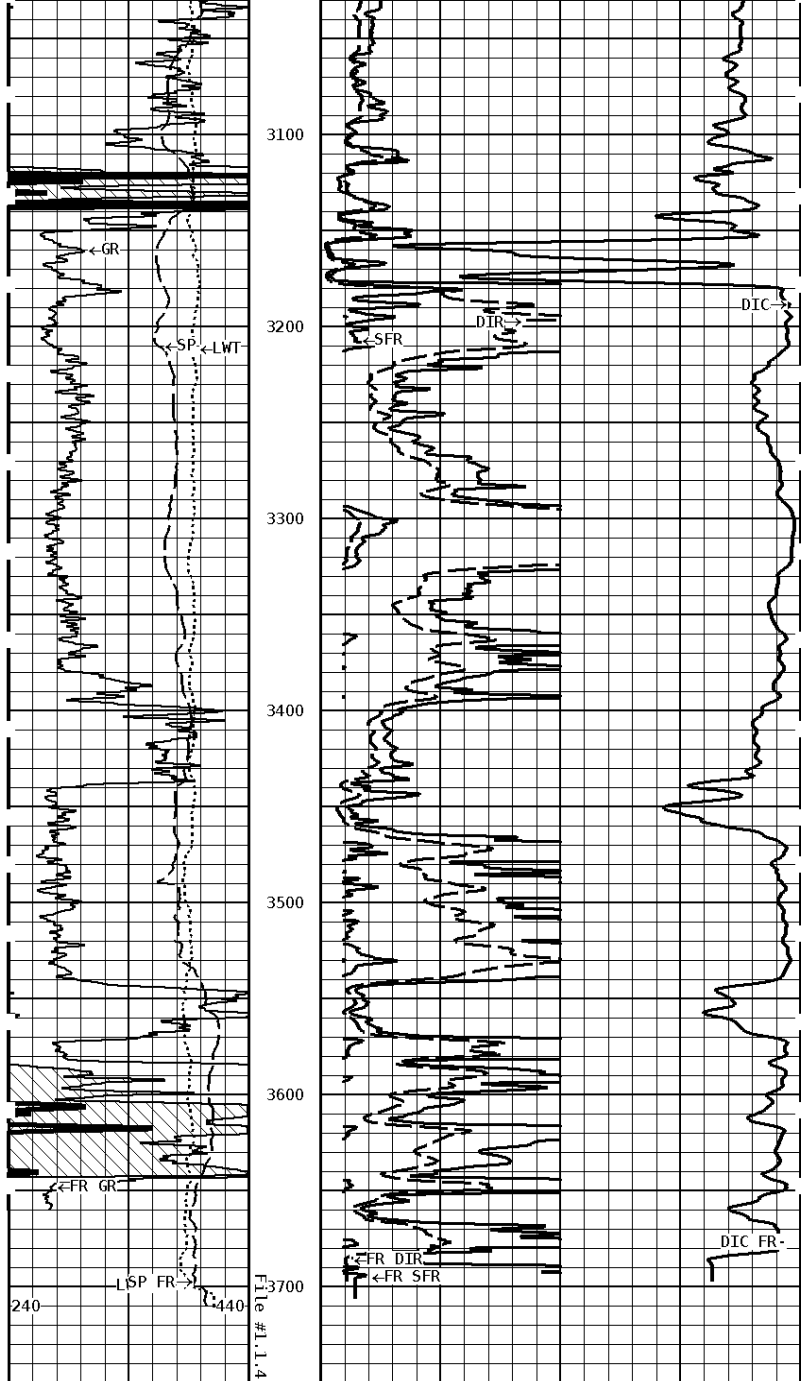
TENSION LBS 10000 0	DEEP INDUCTION OHMM 0.0 500.0 0.0 50.0
SPONTANEOUS POTENTIAL mV → ← 20	SHALLOW FOCUSED OHMM 0.0 500.0 0.0 50.0
GAMMA RAY API UNITS 150 300 0 150	DEEP CONDUCTIVITY MHMO 2000 1000 1000 0

1:1200 MAIN SECTION









1:1200 MAIN SECTION

GAMMA RAY API UNITS 150 0 300 150	DEEP CONDUCTIVITY MMHO 2000 1000 1000 0
SPONTANEOUS POTENTIAL mV → ← 20	SHALLOW FOCUSED OHMM 0.0 500.0 0.0 50.0
TENSION LBS 10000 0	DEEP INDUCTION OHMM 0.0 500.0 0.0 50.0



Tucker
 ENERGY SERVICES

Company: VAL ENERGY, LLC
 Well: EASTMAN UNIT V 1-16 OWWO
 Location: 2640' FSL & 2310' FEL
 Logged: 11-28-2018
 K.B. Elev: 1345.0 Ft

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