

Tucker

ENERGY SERVICES

COMPOSITE LOG

Company MTM PETROLEUM INC. Well HUFFORD #1-23		File No : TUL-59782 Company : MTM PETROLEUM INC. Well : HUFFORD #1-23	
Field KINGMAN County KANSAS State USA Country : USA API No. 15-095-22287		Location : 2310' FSL & 330' FEL NE NE SE	
LSD :		Sect : 23 Twp : 30S Rge : 7W	
Permanent Datum:	GL	Elevations:	
Drilling Measured From:	KB	KB 1488.00 Ft	
Log Measured From:	KB	DF 1487.00 Ft	
Above Permanent Datum:	10.00 Ft	GL 1478.00 Ft	
Date	2014-08-19		
Run Number	1		
Depth--Driller	4282.0 Ft		
Depth--Logger	4282.0 Ft		
First Reading	4282.0 Ft		
Last Reading	225.0 Ft		
Casing--Driller	225.0 Ft		
Casing--Logger	225.0 Ft		
Bit Size	7.875 In		
Casing Size	8.625 In		
Hole Fluid Type	WBM		
Density	9.2		
Fluid Loss	8.8		
PH/Viscosity	10.5	50.0	
Sample Source	MEASURED		
RMF@Measured Temp.	1.500 @ 80 F		
RMF@Measured Temp	1.280 @ 80 F		
RMF@Measured Temp.	1.730 @ 80 F		
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	0.990 @ 125 F		
Time Circulation Stopped	2014-08-19 05:00		
Max Recorded Temp.	127 F		
Equipment/Base	T-126	TULSA	
Recorded By	S.K. DAVIS		
Witnessed By	A. YOUNG / N. MILLER		

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	4282.00	8.625	24.00	225.00	0.00

Run Number	1	
Date	2014-08-19	
Date/Time On Bottom	2014-08-19 09:00	
Depth to Fluid	0.0 Ft	
Salinity	4000.000	
RMF@BHT	0.840 @ 125 F	
RMC@BHT	1.140 @ 125 F	

Run Number 1

Comments

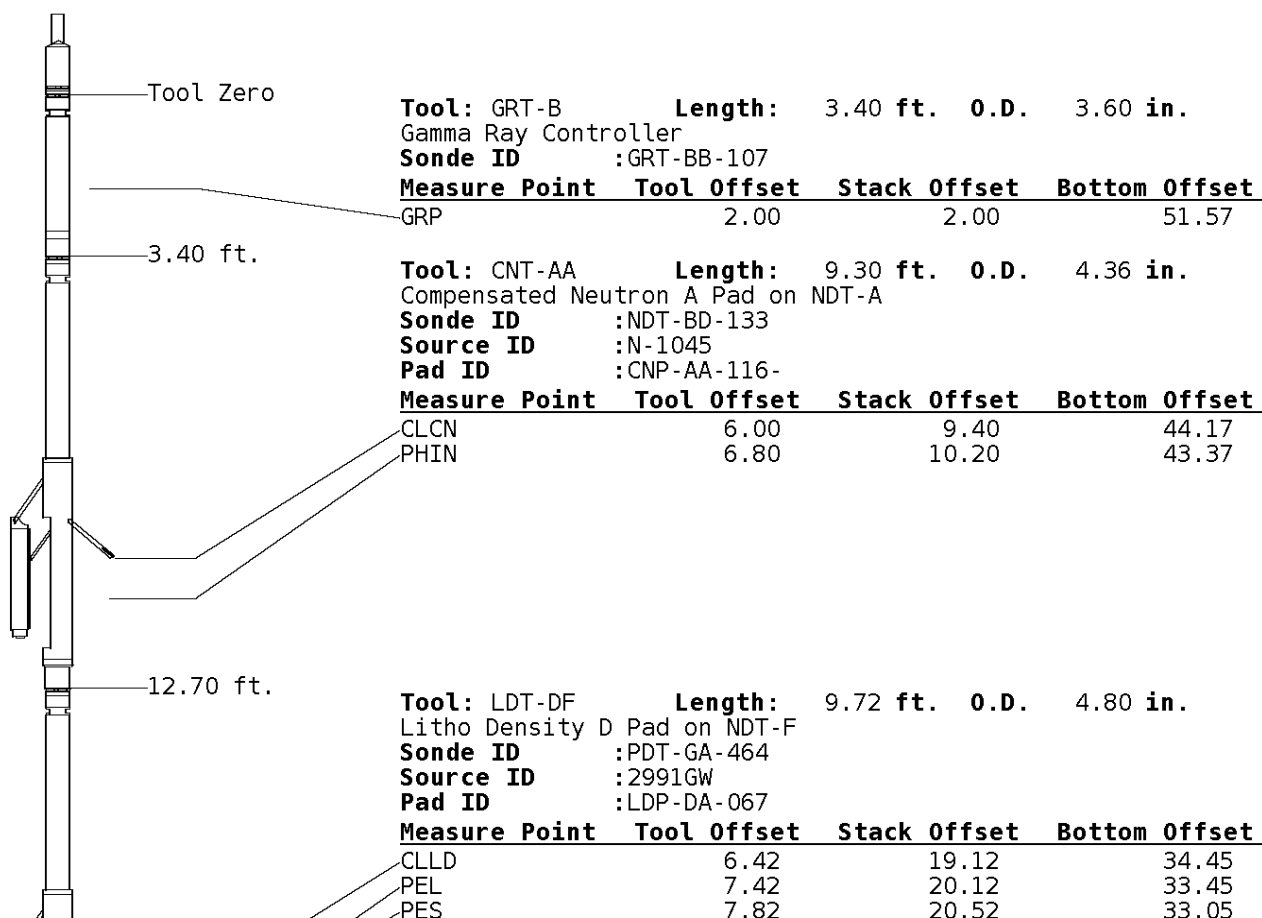
ALL PRESENTATION PER CUSTOMER REQUEST
 GRT,CNT,LDT,PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR & BOREHOLE VOLUME CALCULATED USING 5.5 PRODUCTION CASING
 PHIN IS CALIPER CORRECTED
 DETAIL SECTION FROM TD TO 3000'
 ANHYDRITE SECTION FROM 1150' TO 750'

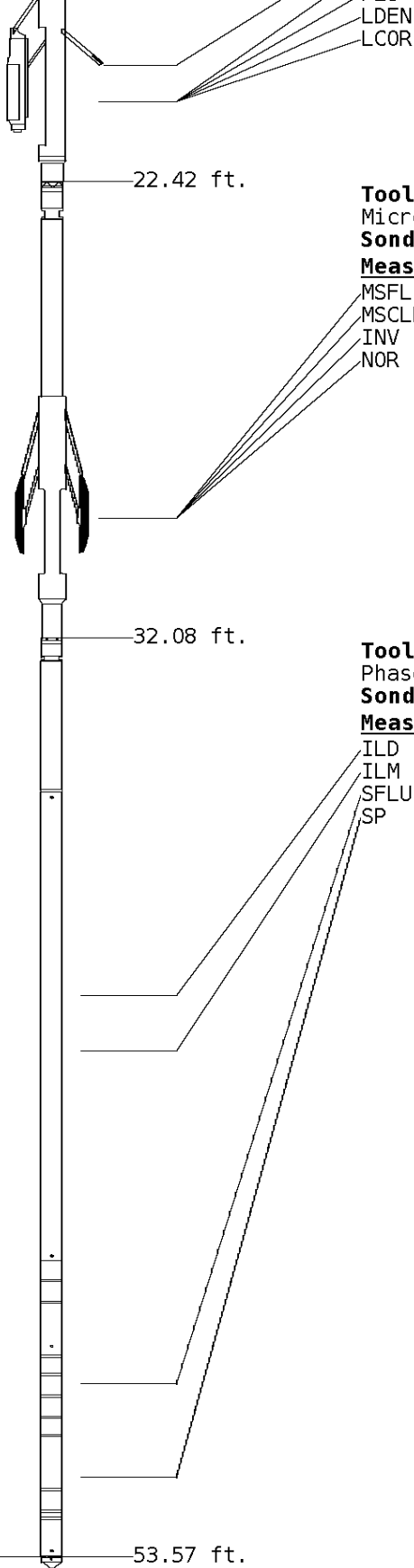
GRT; GRP,
 CNT; PHIN, CLCNIN
 LDT; PORL, LCORN, PECLN, LDENN, CLLDIN
 MLT; NOR.RF, INV.RF, MSCLPIN.
 PIT; ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS;
 M. DRUEPPEL
 C. GONZALES

Tool String Schematic

Total Tool Length - 53.57 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 943.00 lbs.





LDEN 7.62 20.32 33.25
LCOR 7.62 20.32 33.25

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	23.55
MSCLP	7.60	30.02	23.55
INV	7.60	30.02	23.55
NOR	7.60	30.02	23.55

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	41.00	12.56
ILM	10.10	42.18	11.39
SFLU	17.49	49.57	4.00
SP	20.60	52.68	0.88

Well File: mtm-huff-1-23-mstk-aug-19

Scale: 1:240 **Format:** COMSAT

Segment: V1.D1.S7 Accordion Shift main 10 td

Acquired: 2014-08/19 09:07 3.3.0-12594

Reference: 0

Processed: 2014-08/19 10:22 3.3.0-12594

**CALIPER MICRO
INCHES (IN)**

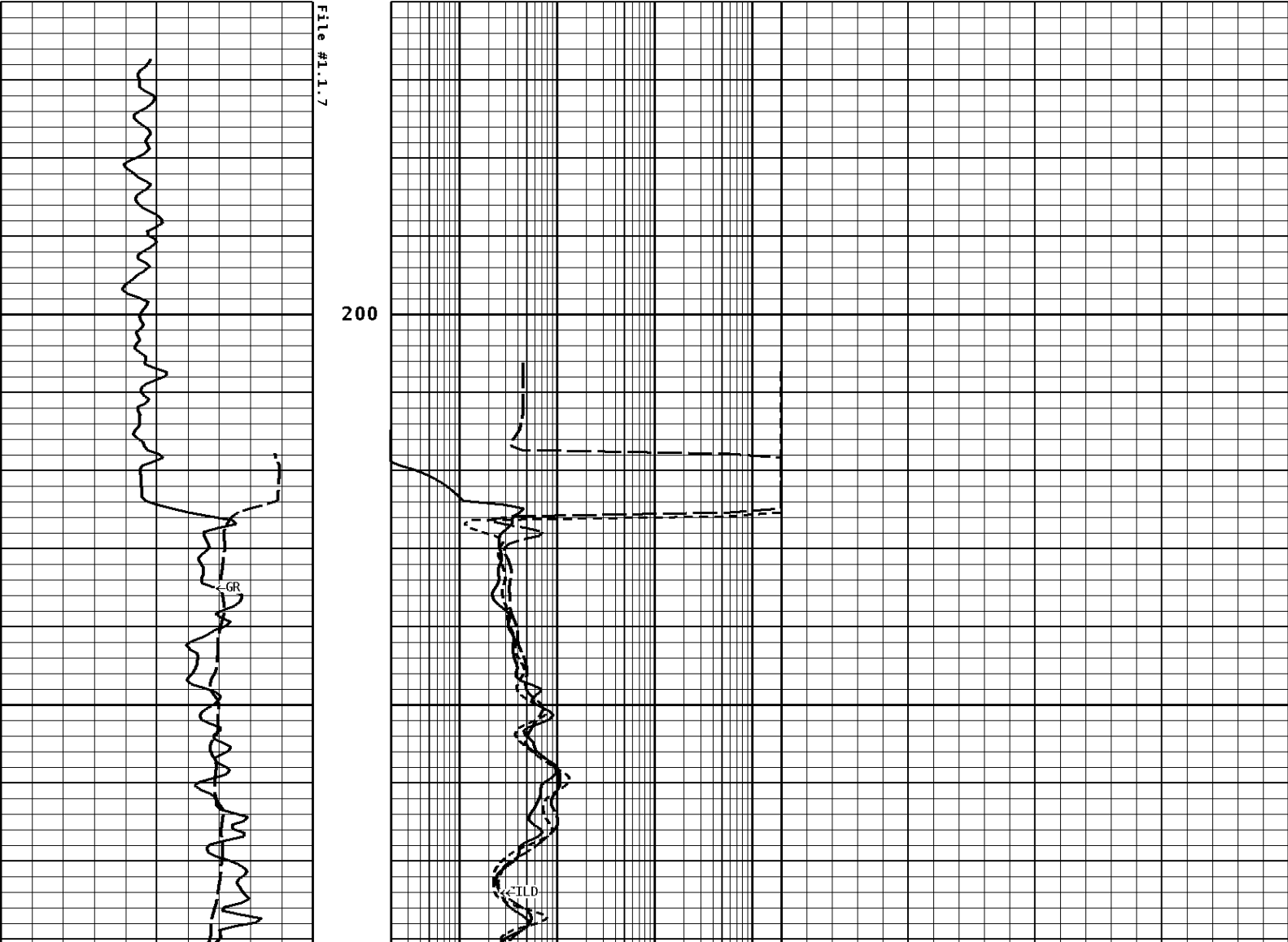
16 26
6 16

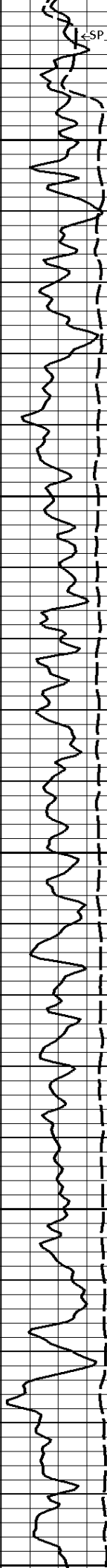
**BIT SIZE
INCHES (IN)**

**NORMAL
OHMM**

6	16				0	40
NEUTRON (Y) CALIPER INCHES (IN)					INVERSE OHMM	
16	26				0	40
6	16					
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz		DENSITY CORRECTION G/CC		
16	26					
6	16			-0.75		0.25
TENSION LBS		Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM	PE CROSS-SECTION BARNS/ELECTRON		
10000	0		0.2	2000.0	0	20
SPONTANEOUS POTENTIAL mV		Volume DoLo/Shale	DEEP INDUCTION OHMM	DENSITY POROSITY (2.71g/cc) PERCENT		
→ ← 35			0.2	2000.0	70	30
					30	-10
					-10	-50
GAMMA RAY API UNITS		BHV AHV CU.FT	MEDIUM INDUCTION OHMM	NEUTRON POROSITY (LIMESTONE) PERCENT		
150	300		0.2	2000.0	30	-10
0	150					

1:240 MAIN SECTION



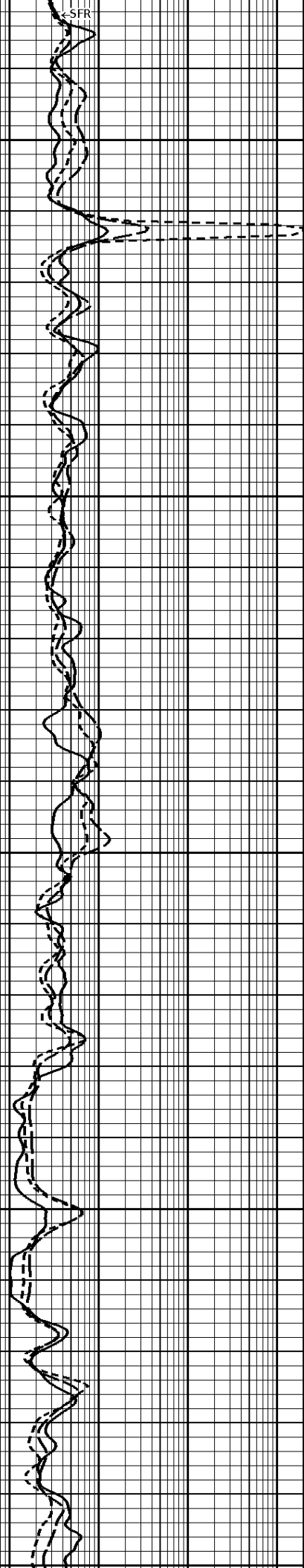


←SP

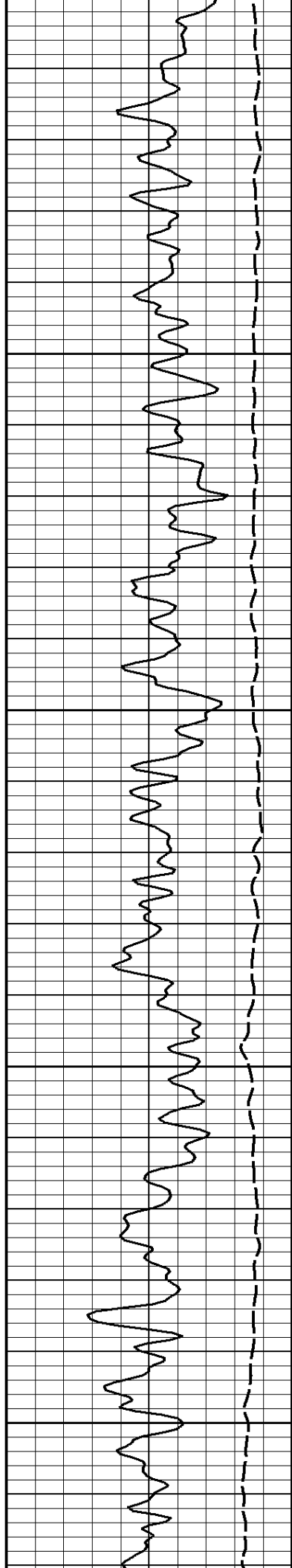
300

400

500

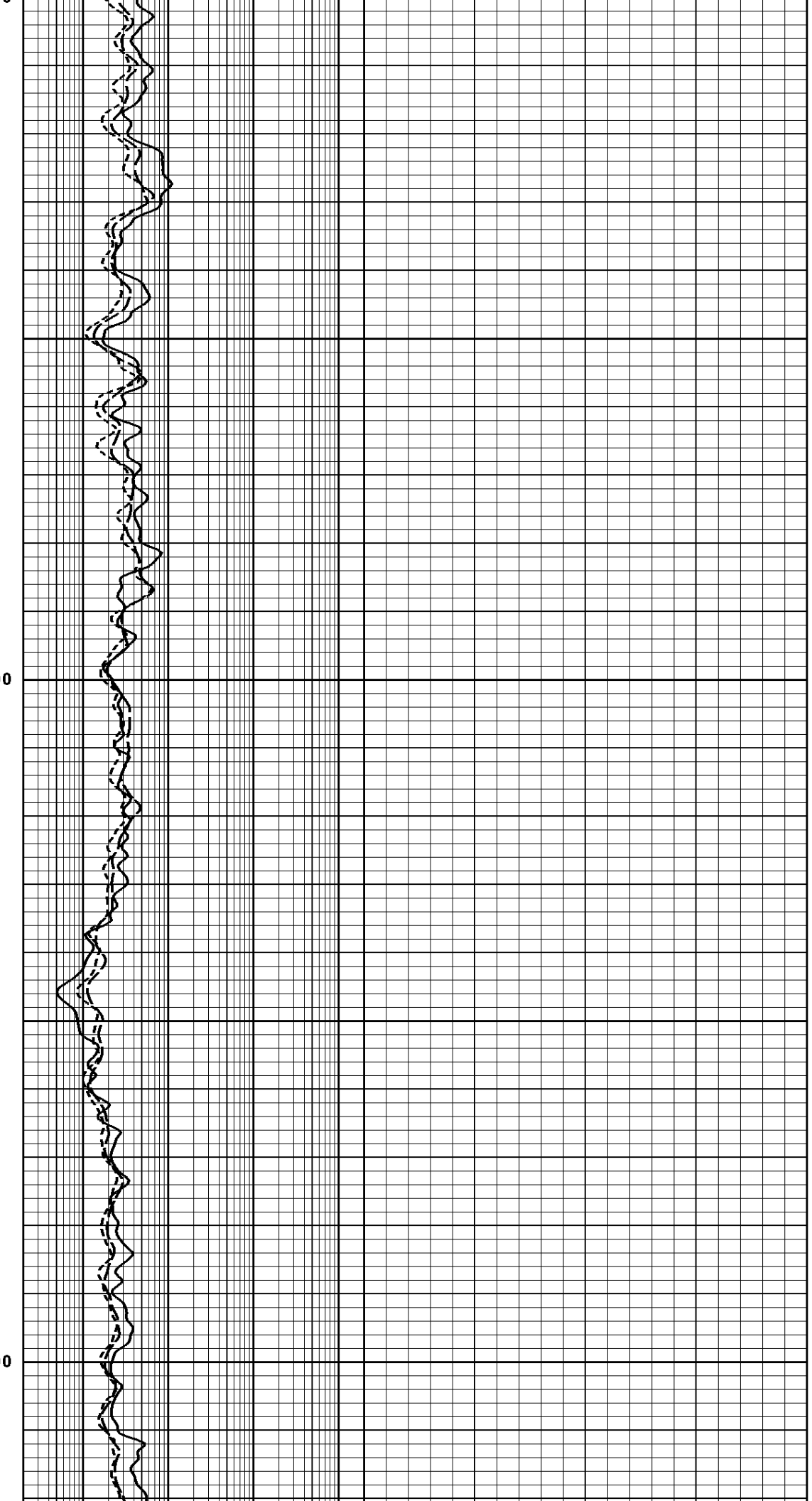


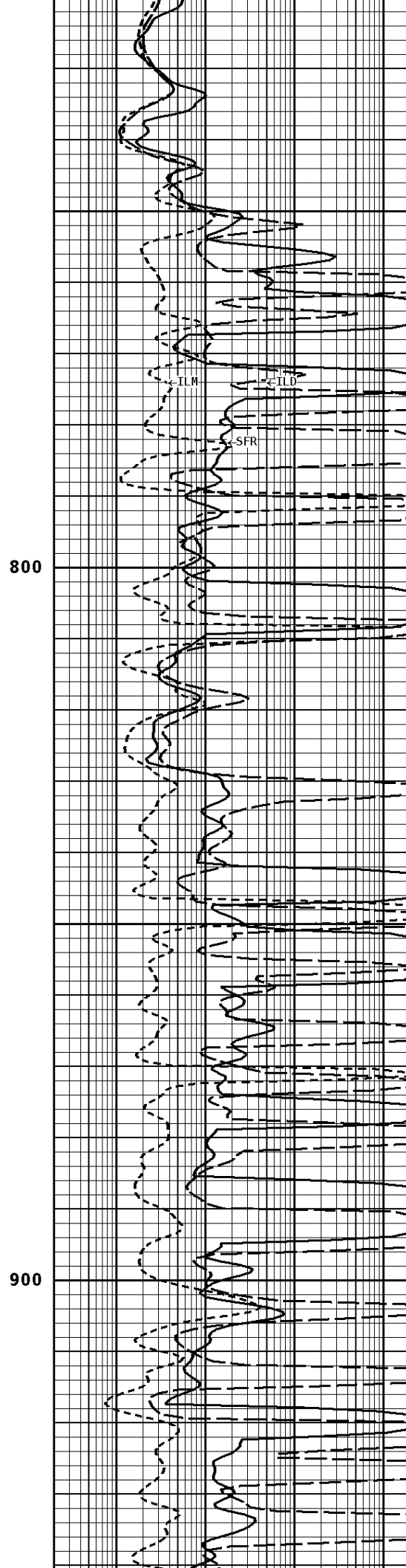
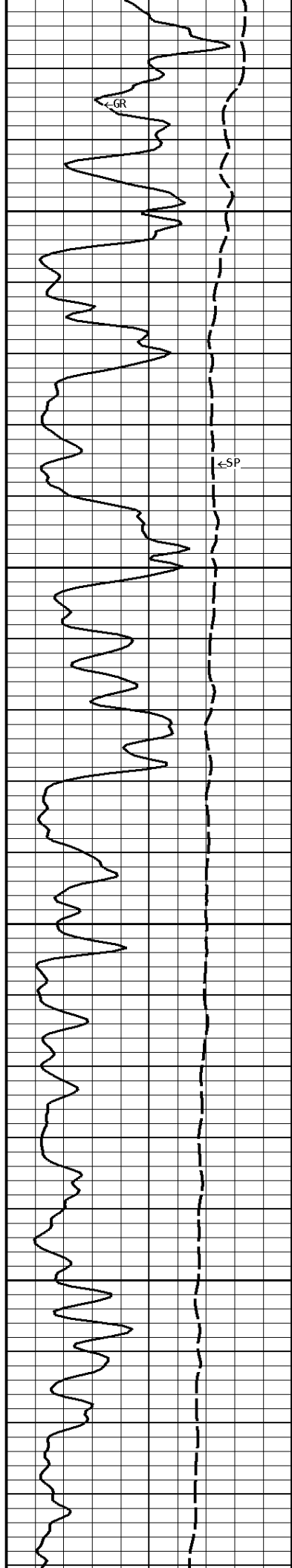
←SFR

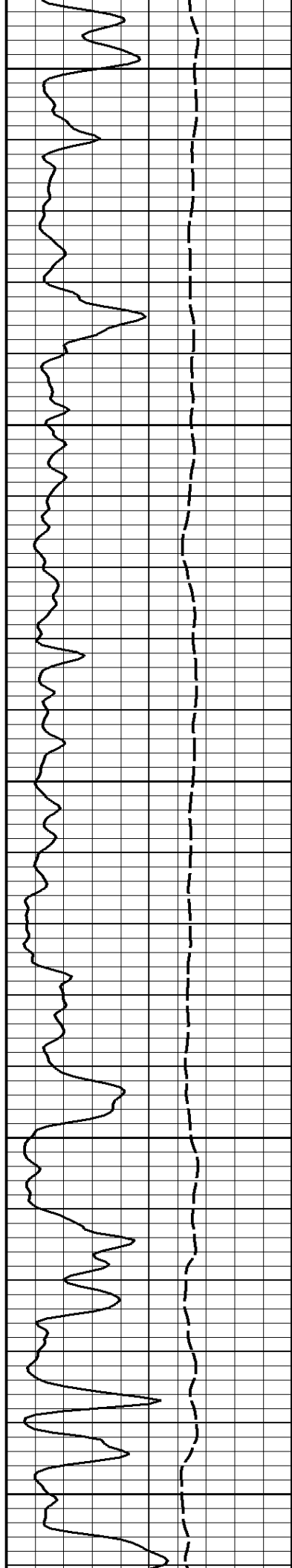


600

700

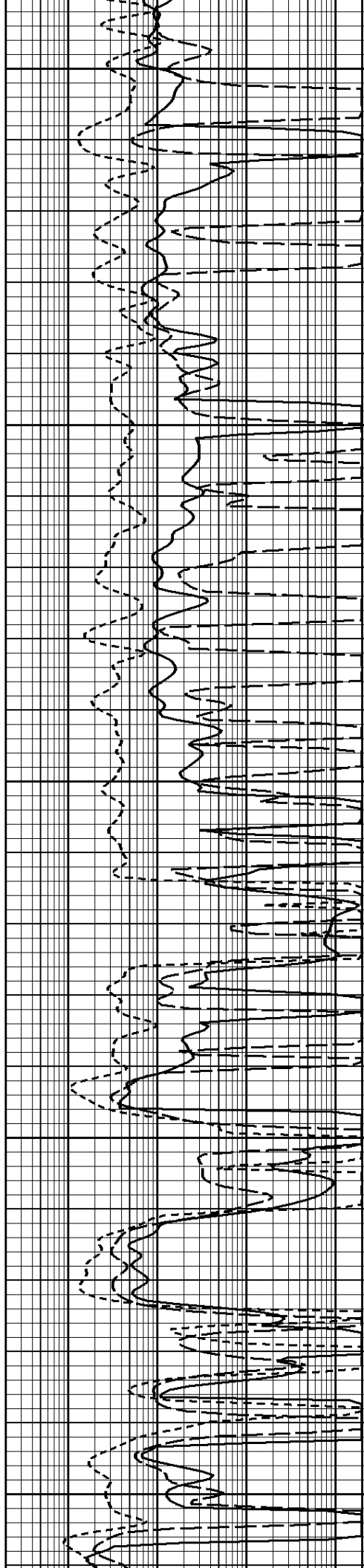


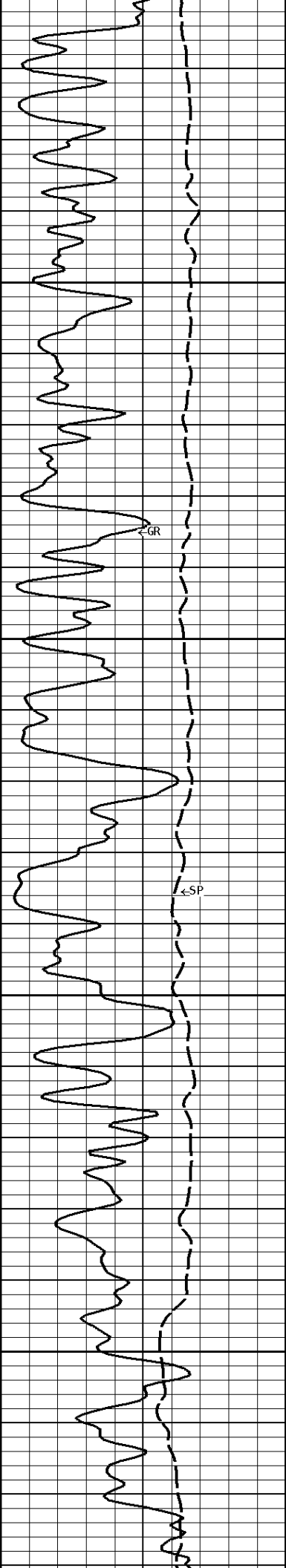




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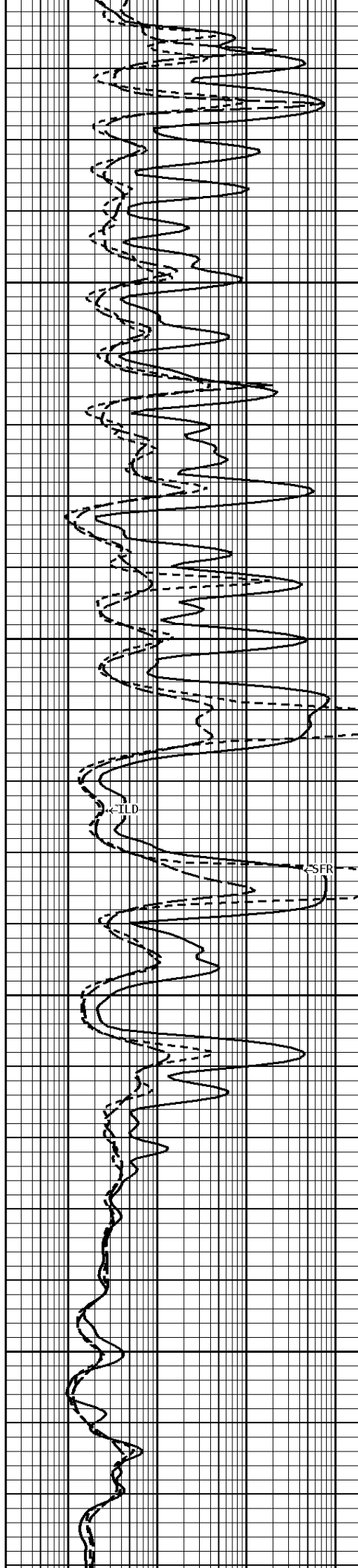
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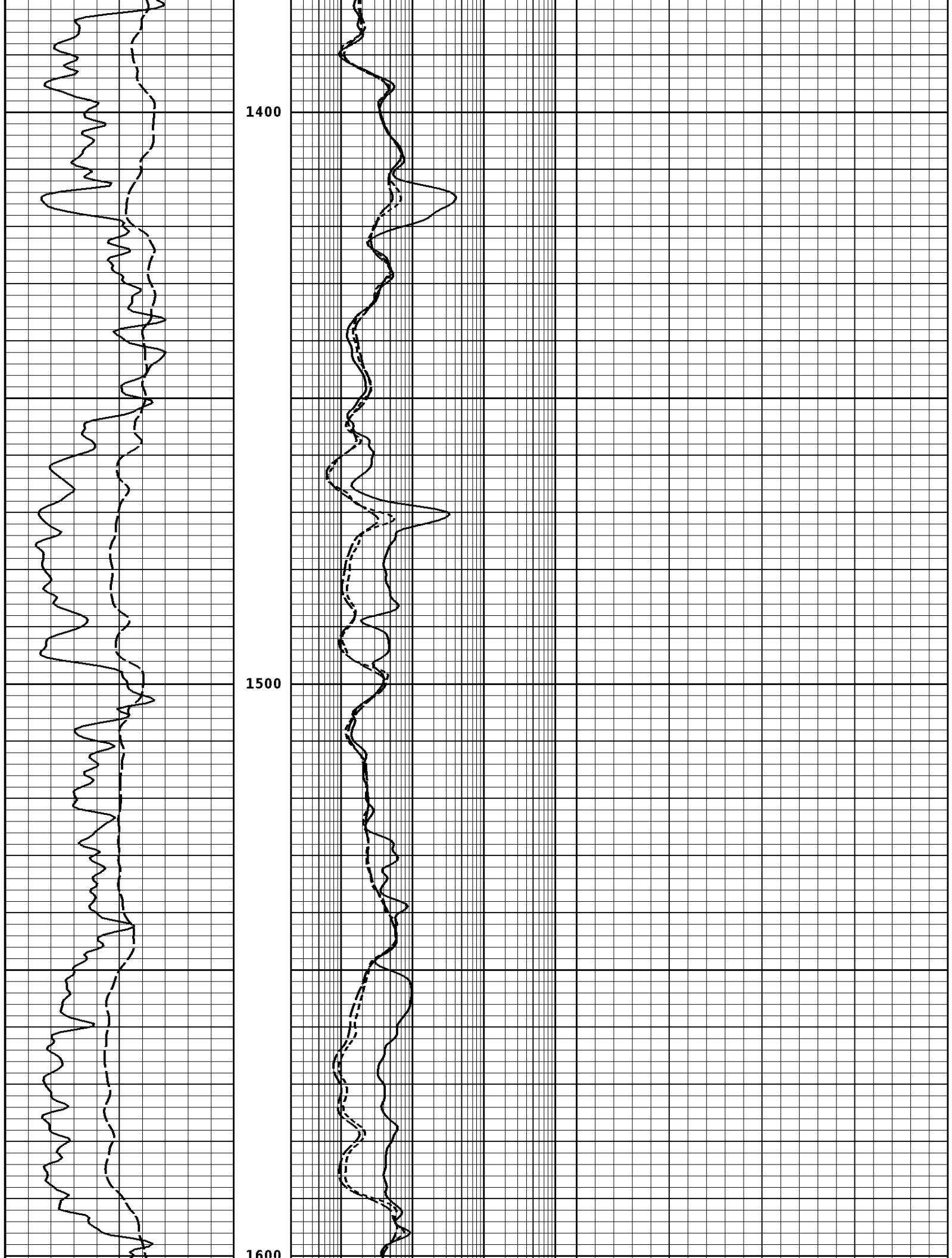


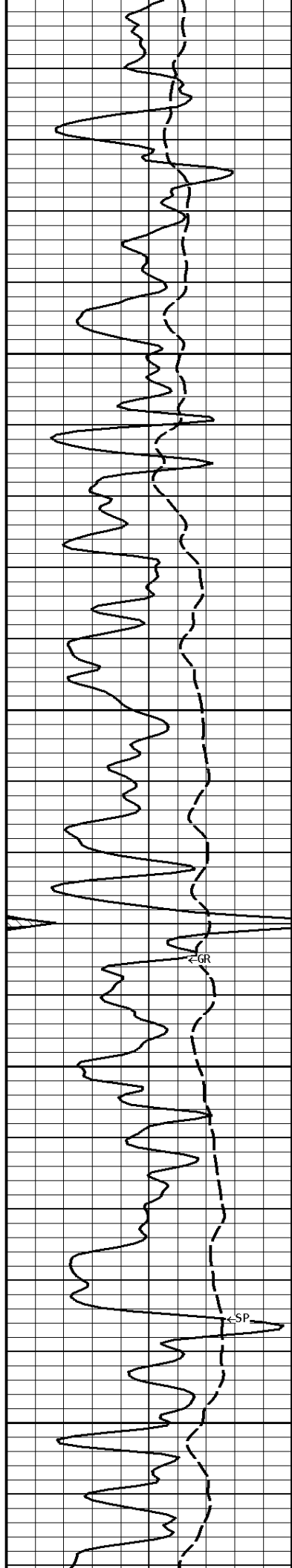


1200

1300

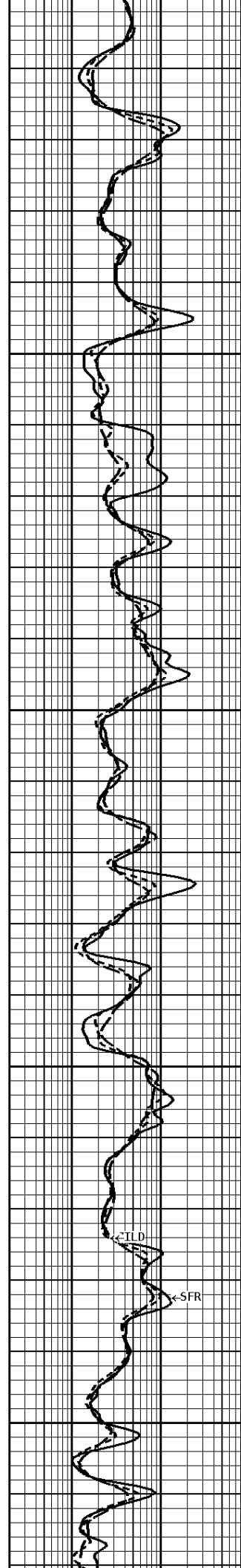


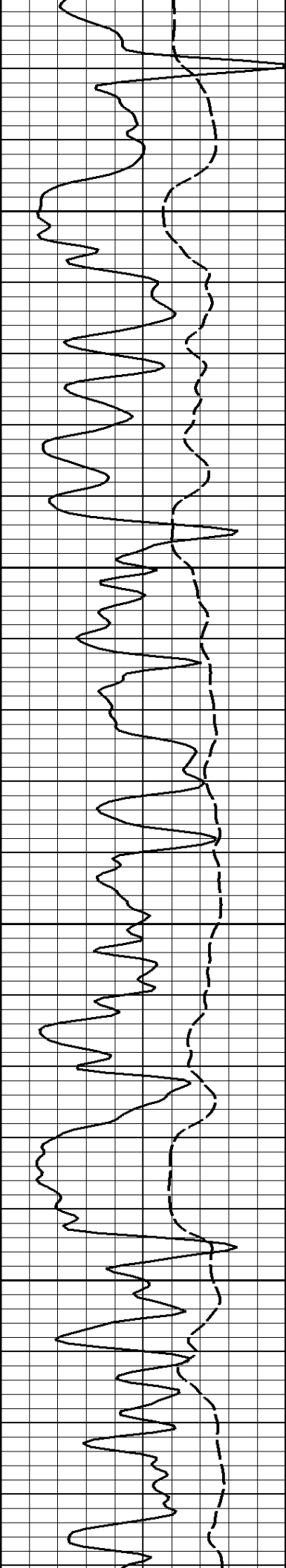




1700

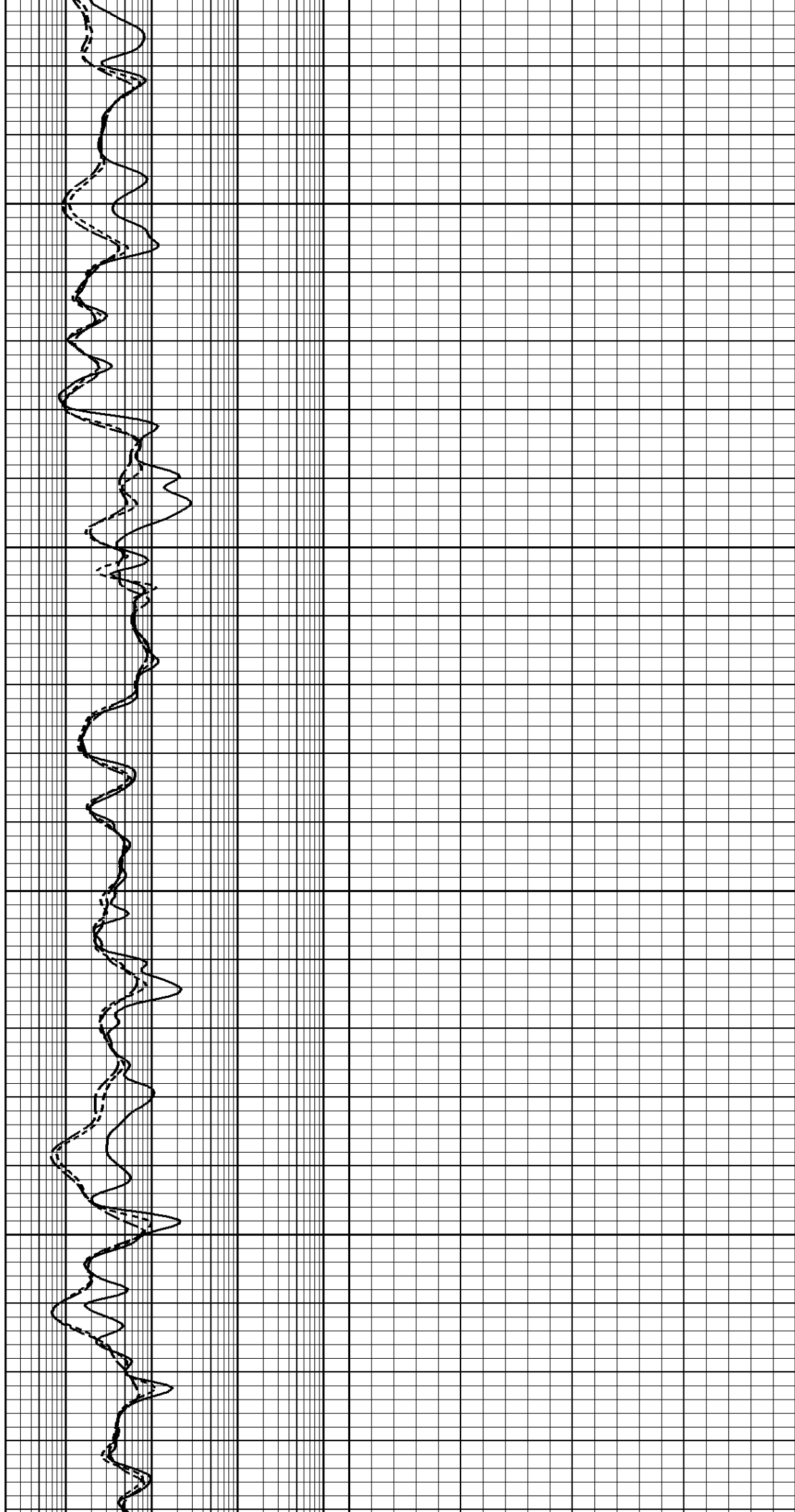
1800





1900

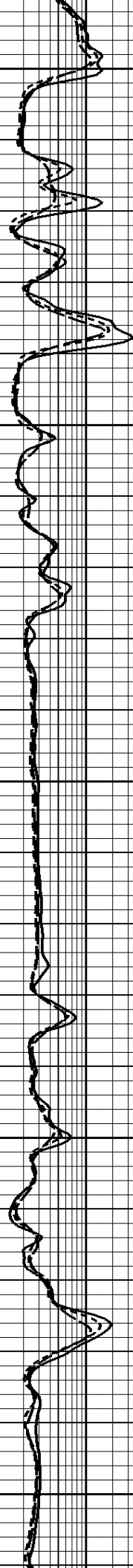
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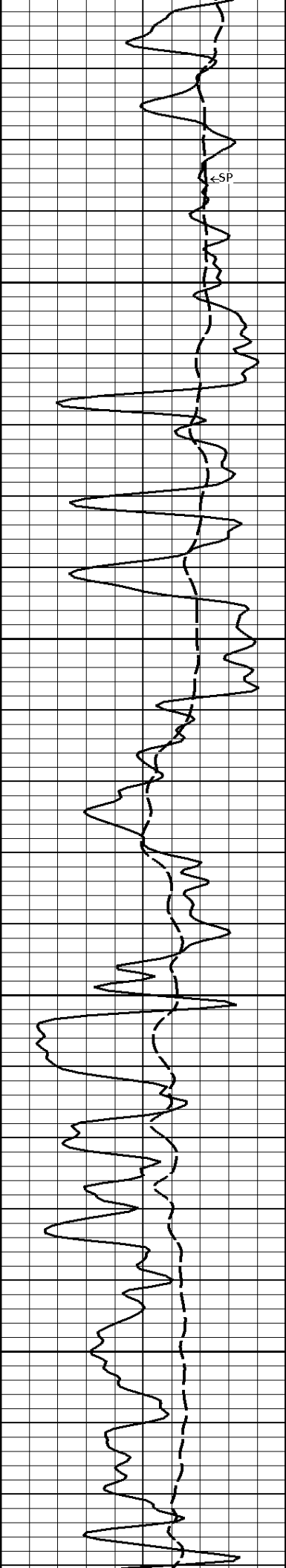




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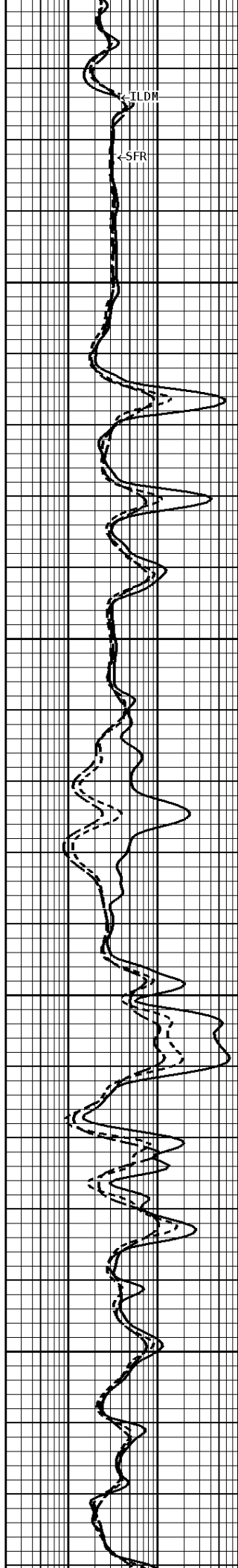
2200

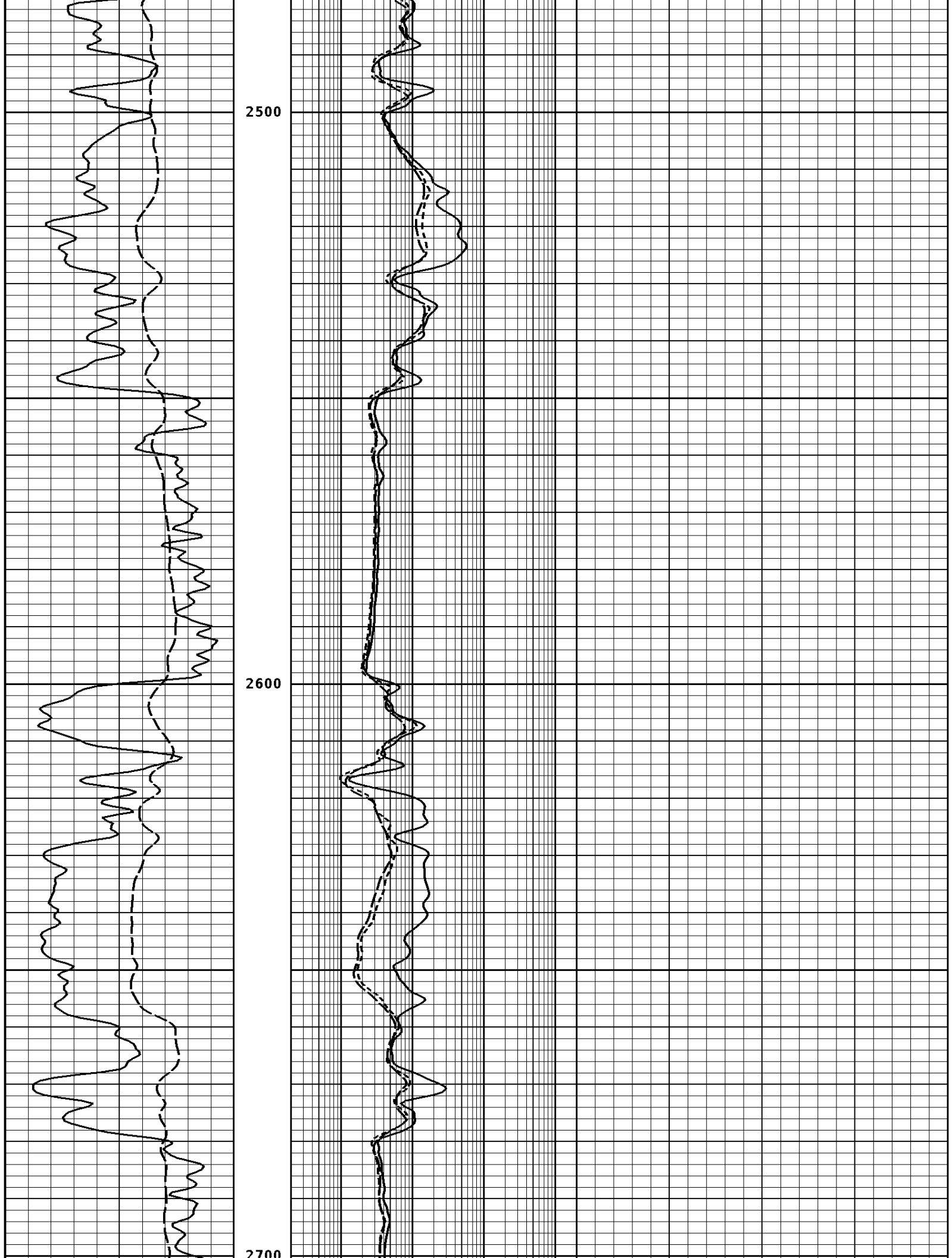


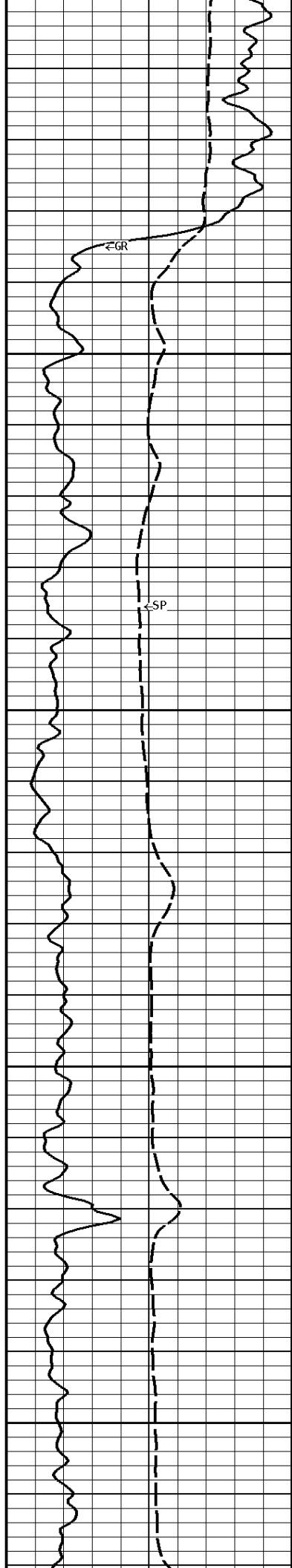


2300

2400

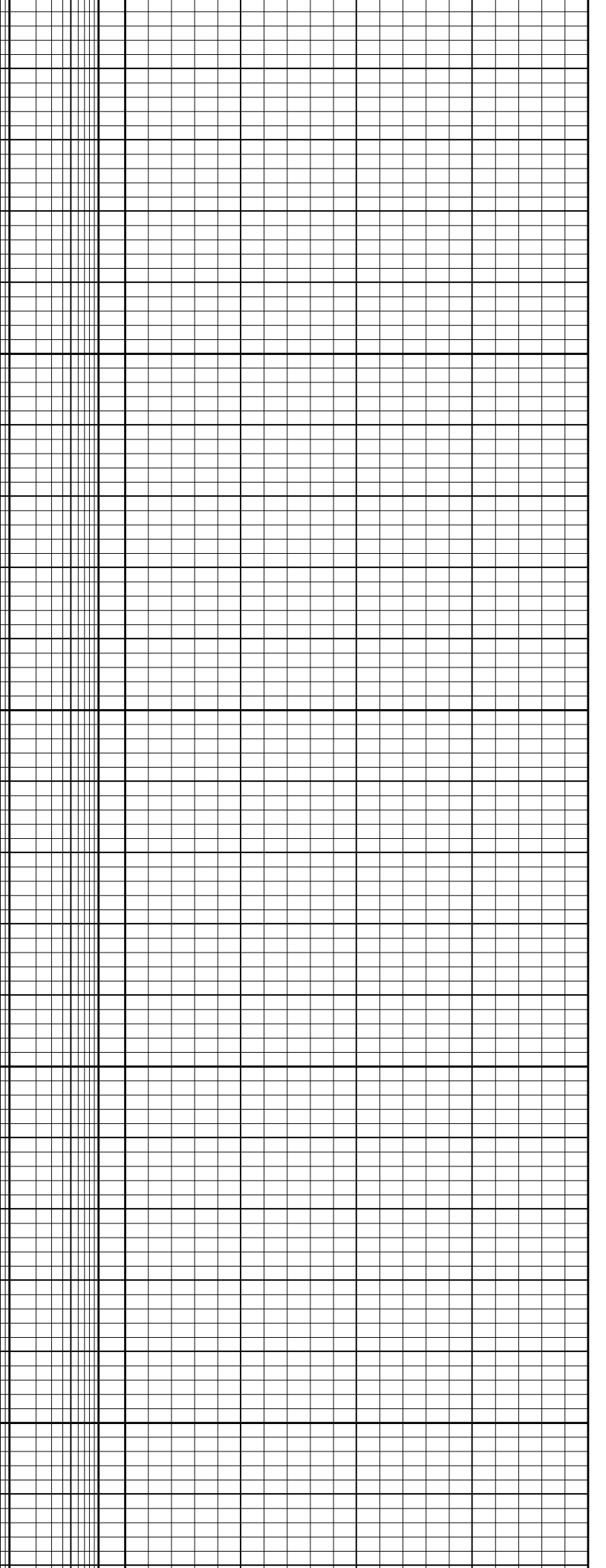
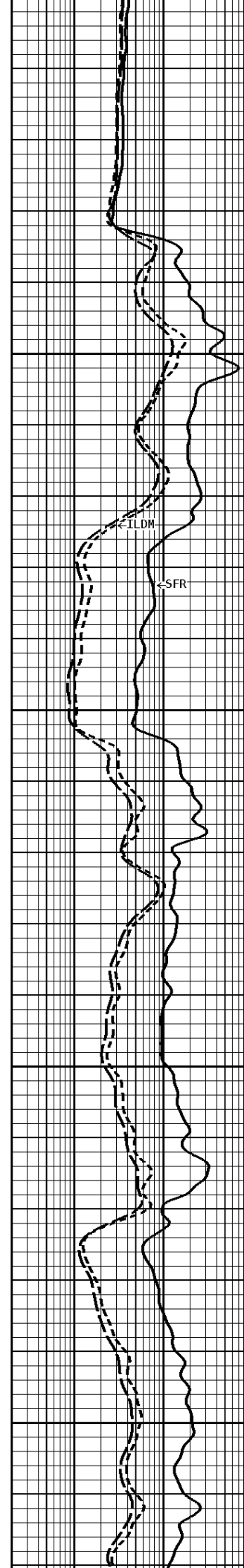


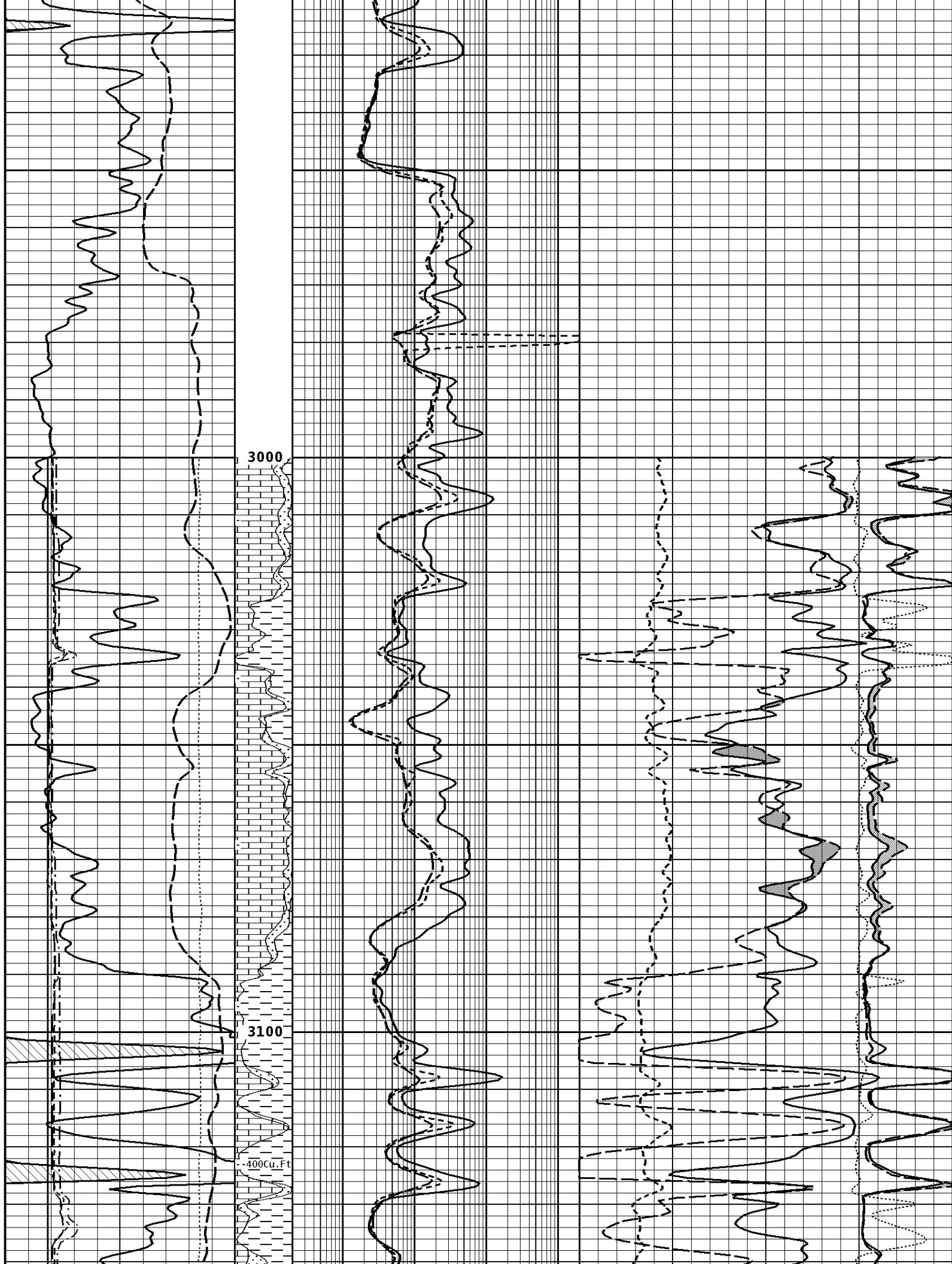


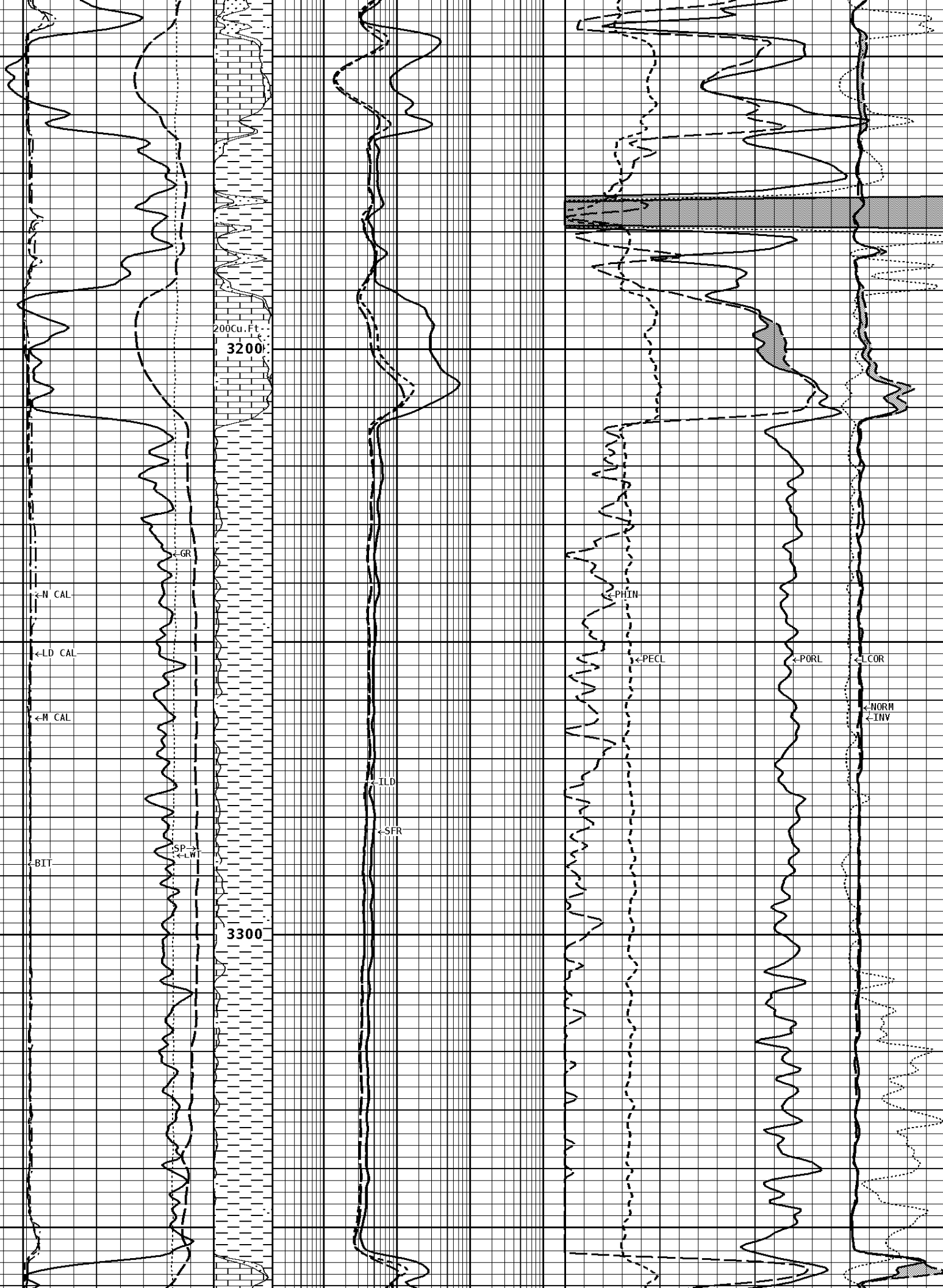


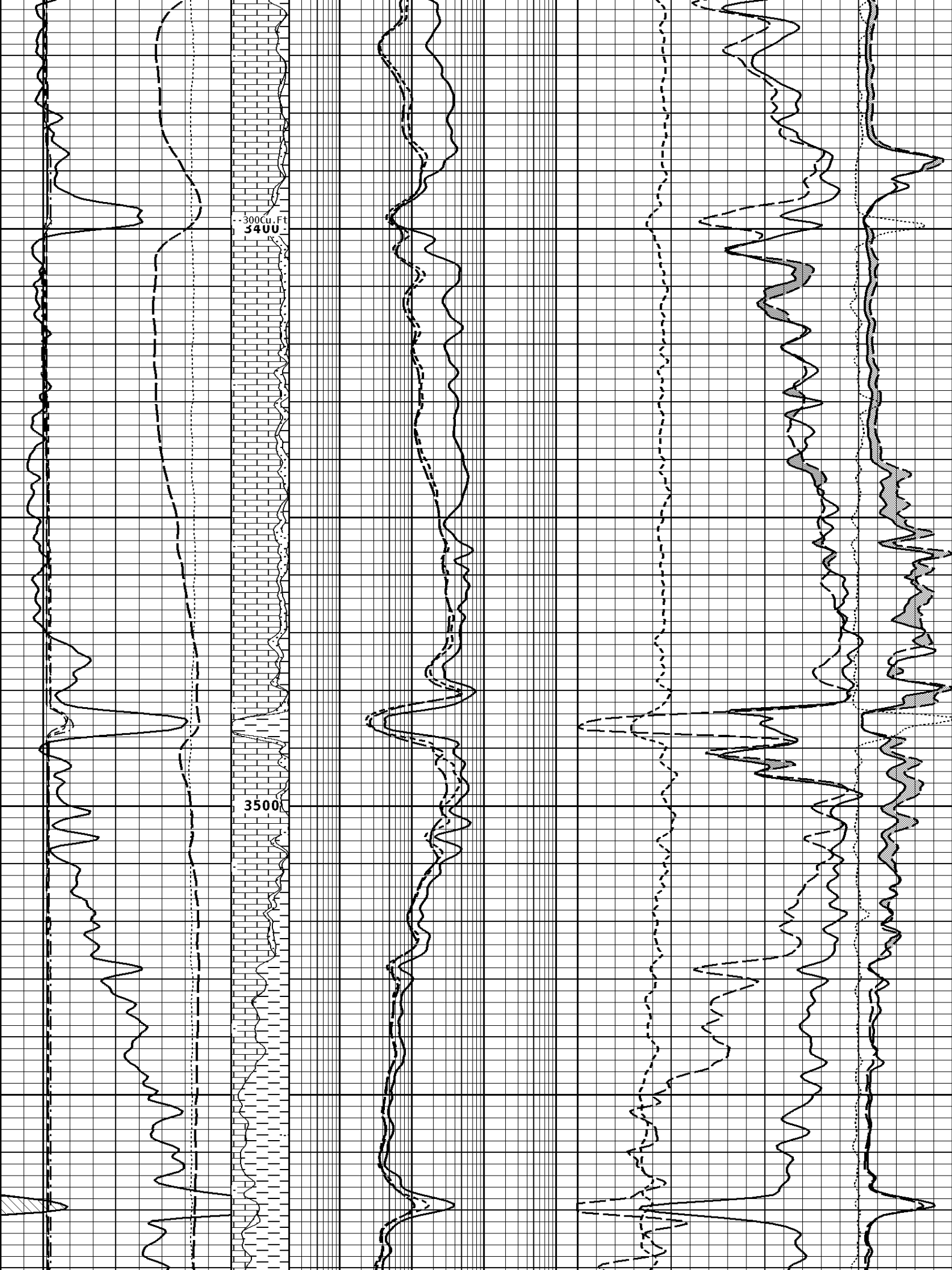
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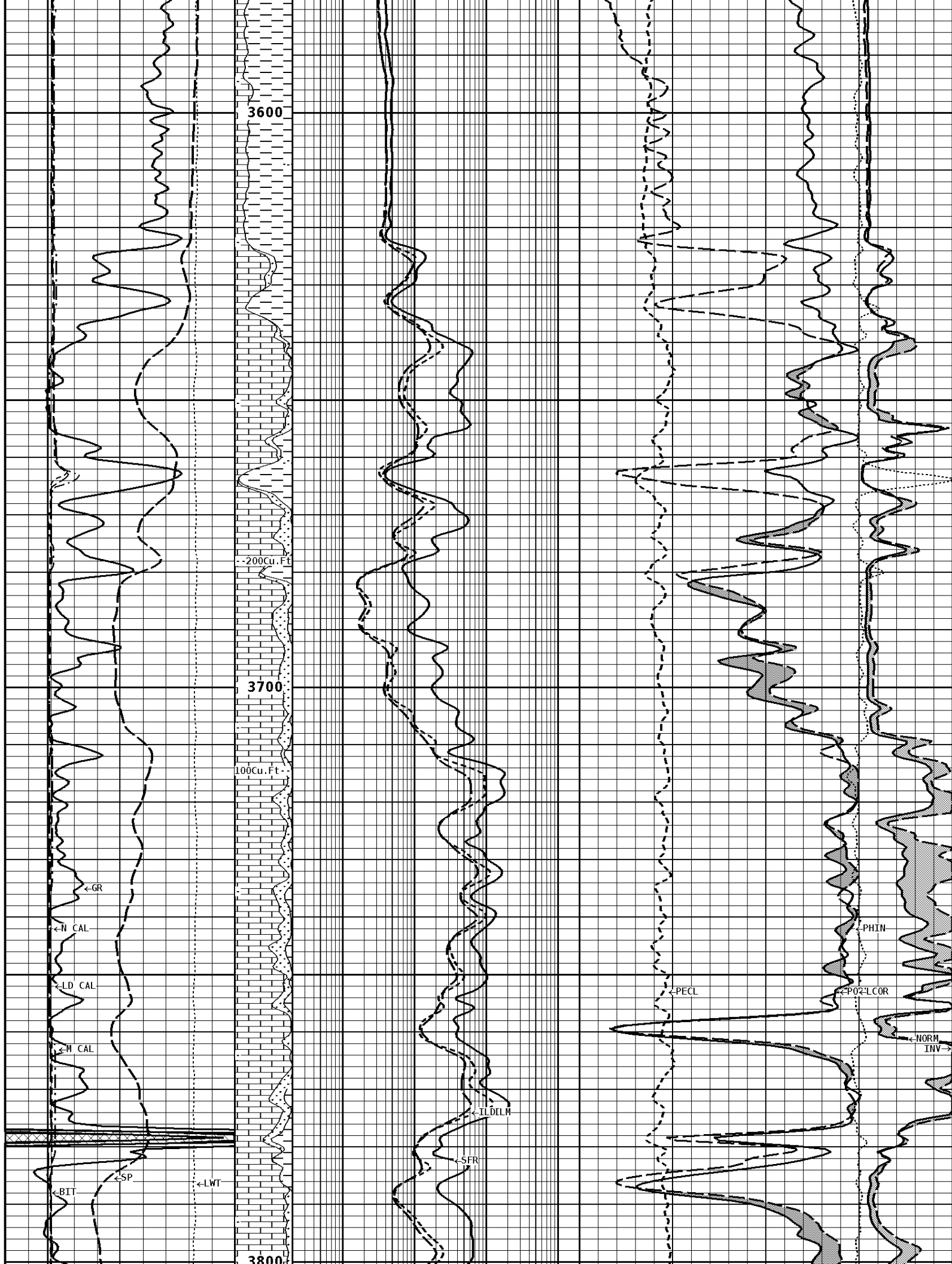
2900

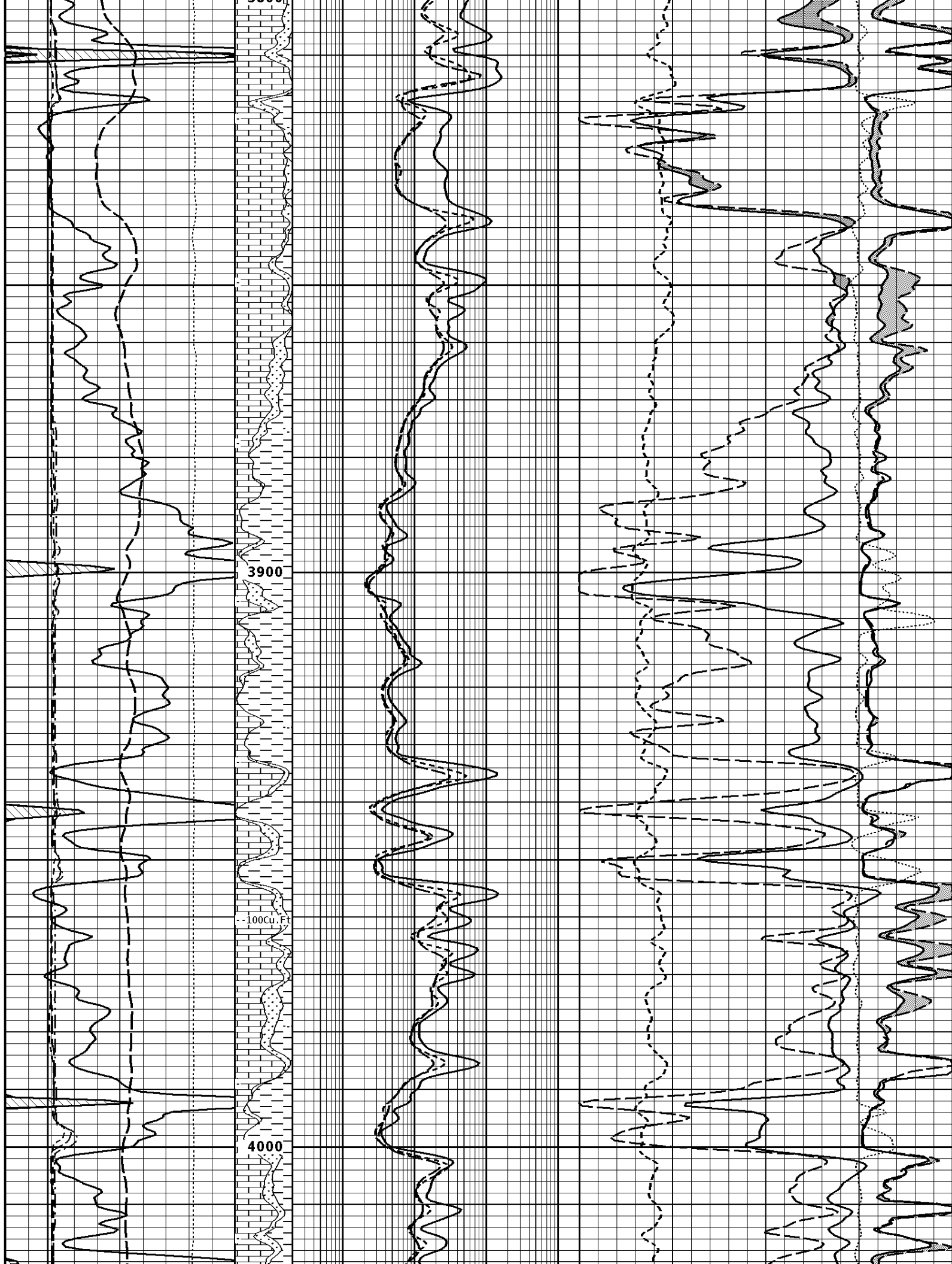


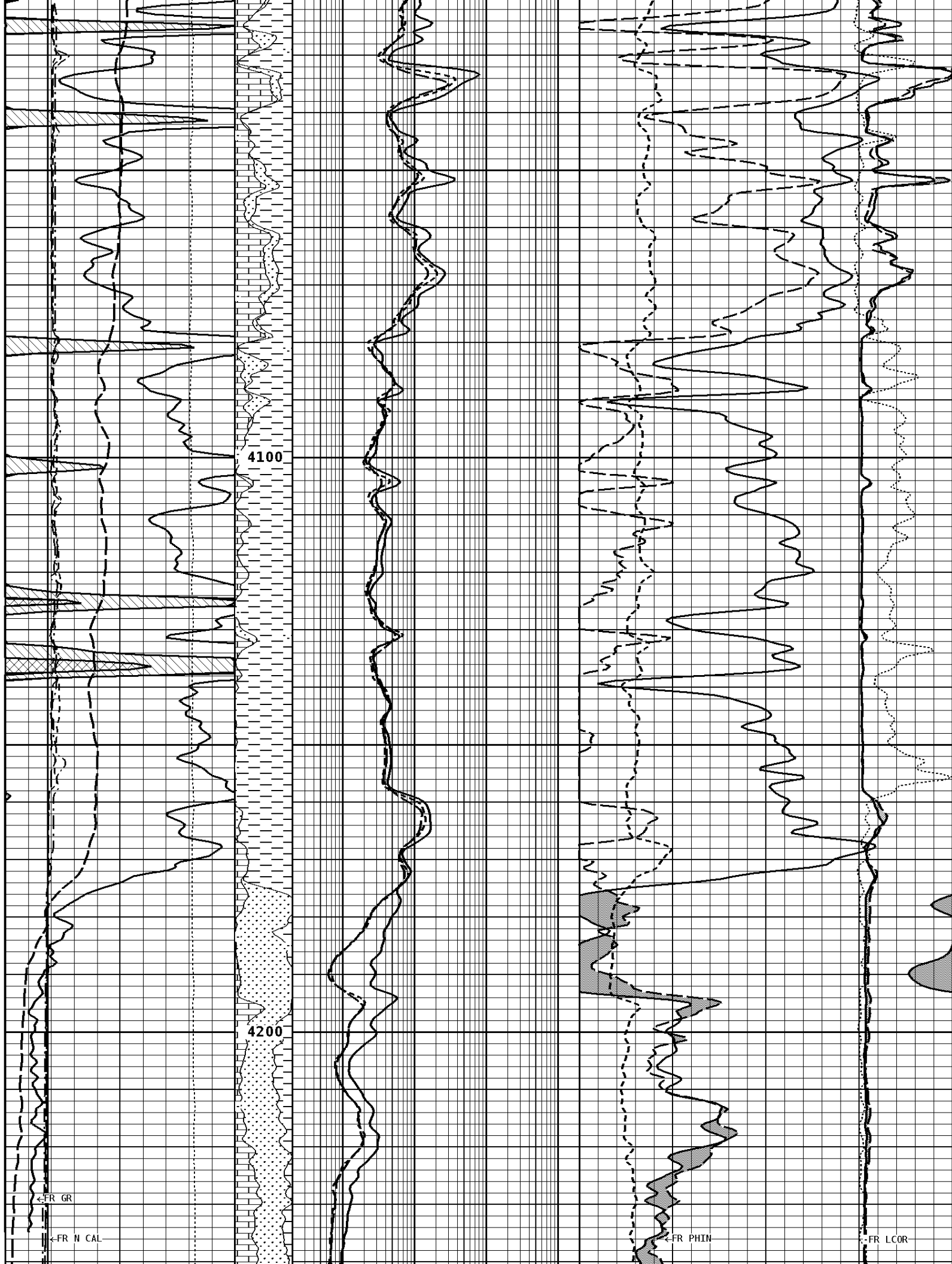


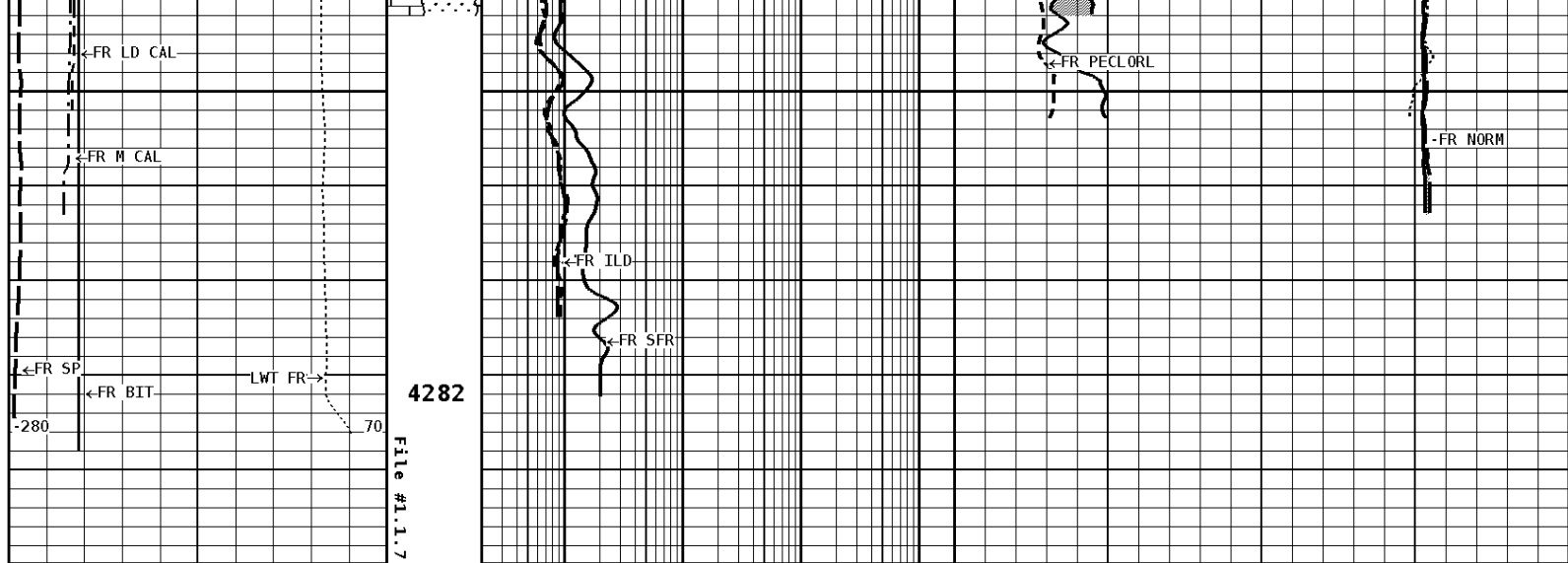




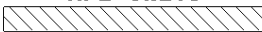








1:240 MAIN SECTION

GAMMA RAY API UNITS 150  300 0 150	BHV AHV- CU.FT	MEDIUM INDUCTION OHMM 0.2 ----- 2000.0	NEUTRON POROSITY (LIMESTONE) PERCENT 30 ----- -10
SPONTANEOUS POTENTIAL mV → ← 35	Volume Dolo/Shale ----- ----- -----	DEEP INDUCTION OHMM 0.2 ----- 2000.0	DENSITY POROSITY (2.71g/cc) PERCENT 70 30 -10 -50
TENSION LBS 10000 ----- 0	Volume Calcite 	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 ----- 2000.0	PE CROSS-SECTION BARNs/ELECTRON 0 ----- 20
DENSITY (X) CALIPER INCHES (IN) 16 6 ----- 26 16	Volume Quartz 		DENSITY CORRECTION G/CC -0.75 ----- 0.25
NEUTRON (Y) CALIPER INCHES (IN) 16 6 ----- 26 16			INVERSE OHMM 0 ----- 40
BIT SIZE INCHES (IN) 6 ----- 16			NORMAL OHMM 0 ----- 40
CALIPER MICRO INCHES (IN) 16 6 ----- 26 16			

* Borehole Zone Factors *

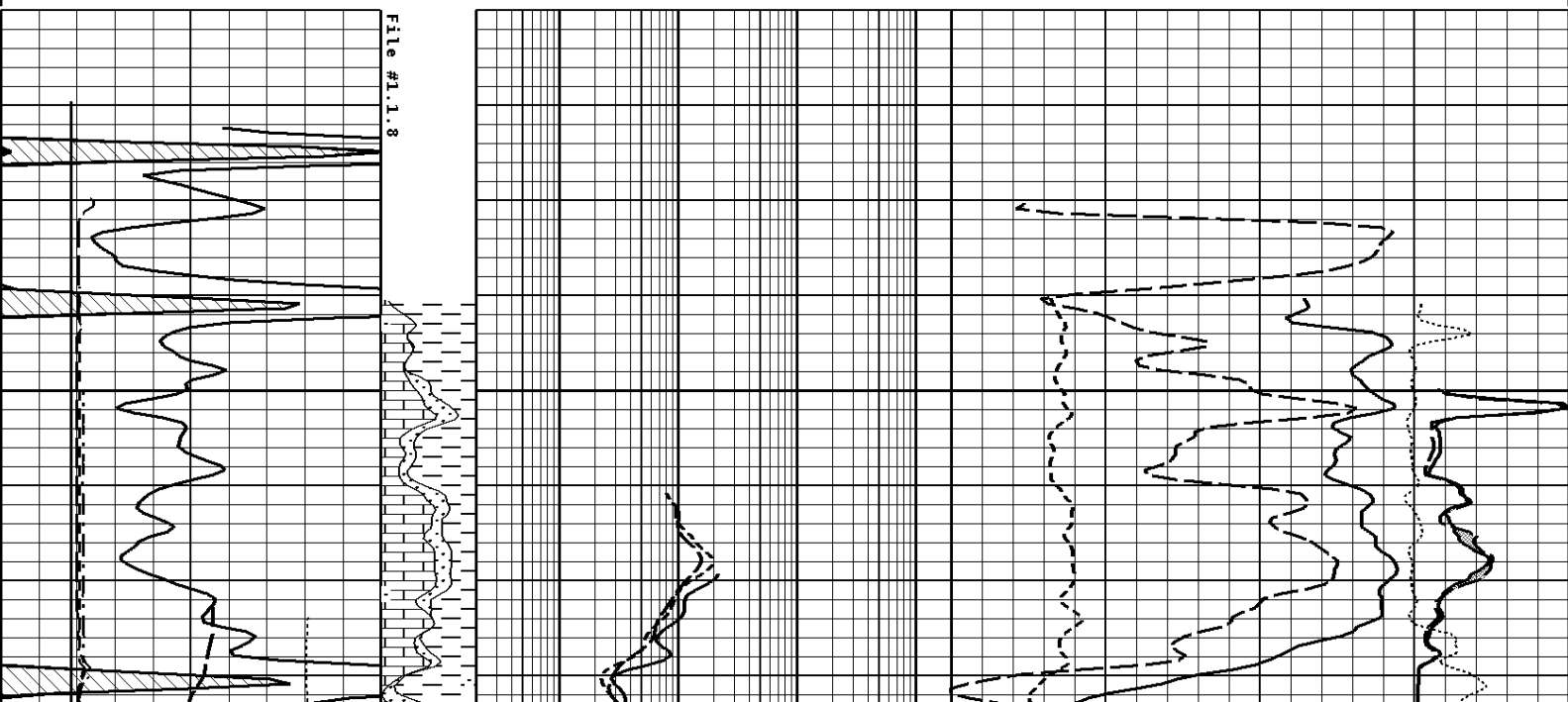
Zone 1 99999.0 to 0.0 Feet		
Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	7.875	in
Casing Diameter	5.500	in
Casing Thickness	0.250	in
Casing Correction (PHI N)	Disable	
Hole Substance	Fluid	
BHT Depth	4292.000	ft
Borehole Temperature	125.0	degF

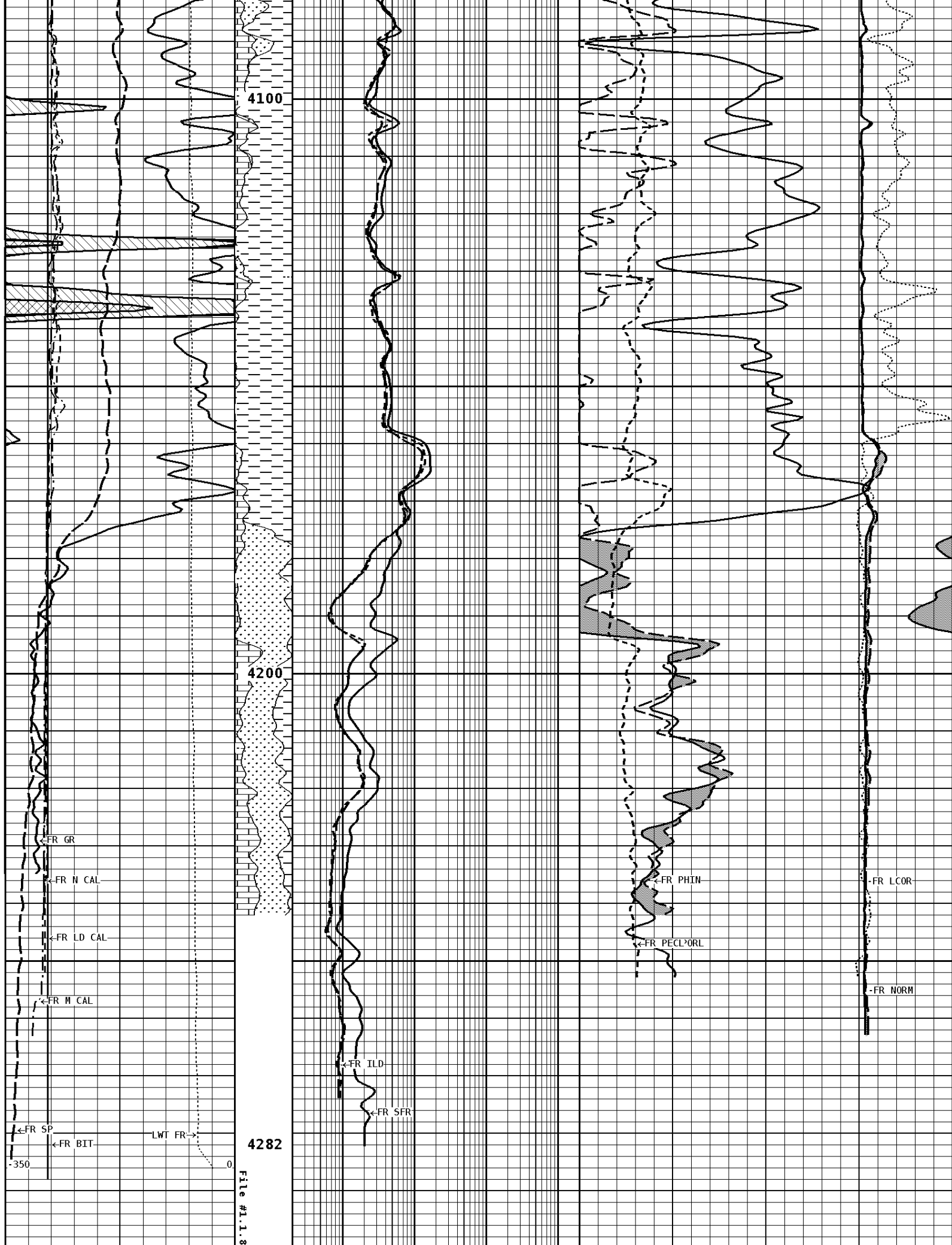
Bottom Hole Temperature	125.8	Deg
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	1.500	ohm/m
MSTNG Normal Correction	-0.50	ohm/m
MSTNG Inverse Correction	0.00	ohm/m

Well File: mtm-huff-1-23-mstk-aug-19	Scale: 1:240	Format: COMSAT
Segment: V1.D1.S8 Accordion Shift re match main	Acquired: 2014-08/19 08:53 3.3.0-12594	
Reference: 0	Processed: 2014-08/19 10:21 3.3.0-12594	

CALIPER MICRO INCHES (IN) 16 6		26 16		
BIT SIZE INCHES (IN) 6		16		
NEUTRON (Y) CALIPER INCHES (IN) 16 6		26 16		
DENSITY (X) CALIPER INCHES (IN) 16 6		26 16	DENSITY CORRECTION G/CC -0.75 0.25	
TENSION LBS 10000 0		Volume Quartz 	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 2000.0 0 20	
SPONTANEOUS POTENTIAL mV → ← 35		Volume Calcite 	PE CROSS-SECTION BARNES/ELECTRON	
GAMMA RAY API UNITS 150 0 300 150		Volume Dolo/Shale 	DEEP INDUCTION OHMM 0.2 2000.0 70 30 -10 30 -50	
		Volume BHV AHV CU.FT 	DENSITY POROSITY (2.71g/cc) PERCENT	
			MEDIUM INDUCTION OHMM 0.2 2000.0 30 -10	
			NEUTRON POROSITY (LIMESTONE) PERCENT	

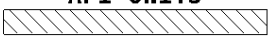
1:240 REPEAT SECTION





1-240 REPEAT SECTION

11240 REPEAT SECTION

GAMMA RAY API UNITS 150  300 0 150		BHV AHV CU. FT	MEDIUM INDUCTION OHMM 0.2 ----- 2000.0	NEUTRON POROSITY (LIMESTONE) PERCENT 30 ----- -10
SPONTANEOUS POTENTIAL mV → ← 35		Volume Dolo/Shale	DEEP INDUCTION OHMM 0.2 ----- 2000.0	DENSITY POROSITY (2.71g/cc) PERCENT 70 30 -10 ----- -50
TENSION LBS 10000 ----- 0		Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 ----- 2000.0	PE CROSS-SECTION BARNs/ELECTRON 0 ----- 20
DENSITY (X) CALIPER INCHES (IN) 16 6 ----- 26 16		Volume Quartz		DENSITY CORRECTION G/CC -0.75 ----- 0.25
NEUTRON (Y) CALIPER INCHES (IN) 16 6 ----- 26 16				INVERSE OHMM 0 ----- 40
BIT SIZE INCHES (IN) 6 ----- 16				NORMAL OHMM 0 ----- 40
CALIPER MICRO INCHES (IN) 16 6 ----- 26 16				

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet			
Matrix Density		2.71	g/cc
Fluid Density		1.00	g/cc
Formation Matrix		Limestone	
Drill Bit Size		7.875	in
Casing Diameter		5.500	in
Casing Thickness		0.250	in
Casing Correction (PHI N)		Disable	
Hole Substance		Fluid	
BHT Depth		4292.000	ft
Borehole Temperature		125.0	degF
Temperature Gradient		1.00	DFHF
Resistivity Of Mud		1.500	ohm/m
MSTNG Normal Correction		-0.50	ohm/m
MSTNG Inverse Correction		0.00	ohm/m

* Calibration Summary *

Shop Calibration					
GRT-B					
Performed : 21-APR-2014			Time : 11:21		
Sensor Suite : GR-GR5			ID : GRT-BB-107		
	Measured	Units	Calibrated	Units	
	Background	Jig	Jig		
GR	75	381	175	GRAPI	
		CPS			
Shop Calibration					
CNT-AA					
Performed : 04-AUG-2014			Time : 11:39		
Sensor Suite : CALI-BCN			ID : NDT-BD-133		
	Jig - Measured		Jig - Calibrated	Units	

	Jig	Measured	Jig	Calibrated	Units
CL # 1	Ring#1	Ring#2	Ring#1	Ring#2	
	9.3	13.8	6.0	12.0	IN.
Performed : 04-Aug-2014			Time : 11:49		
Sensor Suite : BHC NEUT			ID : CNP-AA-116-		
Source ID : N-1045					
	Tank		Verification		Units
	Measured	Calibrated	Jig		
N/F	3.8438	3.6893	3.6954		
Porosity	22.9	20.5	20.6		%

Shop Calibration					
LDT-DF					
Performed : 04-AUG-2014			Time : 09:37		
Sensor Suite : CALI-LTH			ID : PDT-GA-464		
	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	7.8	11.2	6.0	12.0	IN.

Performed : 04-Aug-2014			Time : 09:57		
Sensor Suite : BHCPELNG			ID : LDP-DA-067		
Source ID : 2991GW					
Short Space					
	BKGD	Al	Mg	Al+Fe	Units
LSW1	63	1046	1691	691	CPS
LSW2	68	1207	1925	882	CPS
LSW3	241	2775	4479	2374	CPS
LSW4	294	2582	3786	2296	CPS
LSW5	44	74	79	70	CPS
LSW6	59	66	66	66	CPS
LSW7	47	50	51	51	CPS
LSW8	11	14	16	14	CPS
QS	0.122	0.139	0.125	0.133	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC
Long Space					
	BKGD	Al	Mg	Al+Fe	Units
LLW1	89	1212	5025	742	CPS
LLW2	101	2059	8176	1531	CPS
LLW3	376	3788	14527	3290	CPS
LLW4	484	1807	5811	1640	CPS
LLW5	52	62	111	61	CPS
LLW6	160	157	149	159	CPS
LLW7	103	98	95	99	CPS
LLW8	3	5	15	5	CPS
QL	0.216	0.229	0.222	0.233	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC

Shop Calibration					
MST-DA					
Performed : 12-May-2014			Time : 11:19		
Sensor Suite : CALI-MSN			ID : MST-DA-057		
	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	7.1	11.4	6.0	12.0	IN.

Performed : 12-May-2014			Time : 11:13		
Sensor Suite : MSTDA-NI			ID : MST-DA-057		
Internal					
	Measured			Calibrated	
	Zero	Reference	Units	Zero	Reference
INV-V	288.8	30429.7		0.00	1536.00
NOR-V	165.4	30363.3		0.00	1636.00
IN-C	163.6	30670.3		0.00	15.46
INV-R					32.14
NOR-R					58.31
					OHMM
					OHMM

Shop Calibration					
PIT-CA					
Performed : 20-MAY-2014			Time : 12:16		
Sensor Suite : P-IND-T			ID : PIT-AB-005		
Medium					
	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
Deep					
	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-MAY-2014 Time : 12:07 Sensor Suite : SFL ID : PIT-AB-005					
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
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-MAY-2014 Time : 12:05 Sensor Suite : P-SP ID : PIT-AB-005					
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
	32770.1	58920.2	0.0	1000.0	mV



Tucker
ENERGY SERVICES

Company: MTM PETROLEUM INC.
Well: HUFFORD #1-23
Location: 2310' FSL & 330' FEL
Logged: 2014-08-19
K.B. Elev: 1488.0 Ft