

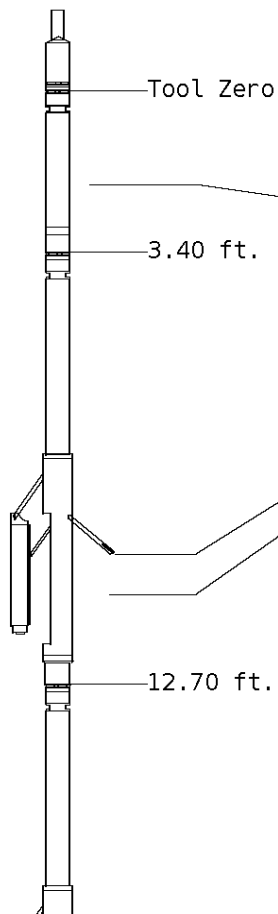
ALL PRESENTATIONS AS PER CUSTOMER REQUEST.
 GRT, CNT, LDT, MLT, AND PIT RUN IN COMBINATION.
 CALIPERS ORIENTED ON X-Y AXIS.
 2.71 G/CC USED TO CALCULATED POROSITY.
 ANNULAR HOLE VOLUME CALCULATED USING 4.50" PRODUCTION CASING.

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

OPERATORS:
 M. BURKE
 B. COLWILL

Tool String Schematic

Total Tool Length - 53.57 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-BC-41

Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	51.57

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

Sonde ID :NDT-BB-129

Source ID :N-1046

Pad ID :CNP-AA-112

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	9.40	44.17
PHIN	6.80	10.20	43.37

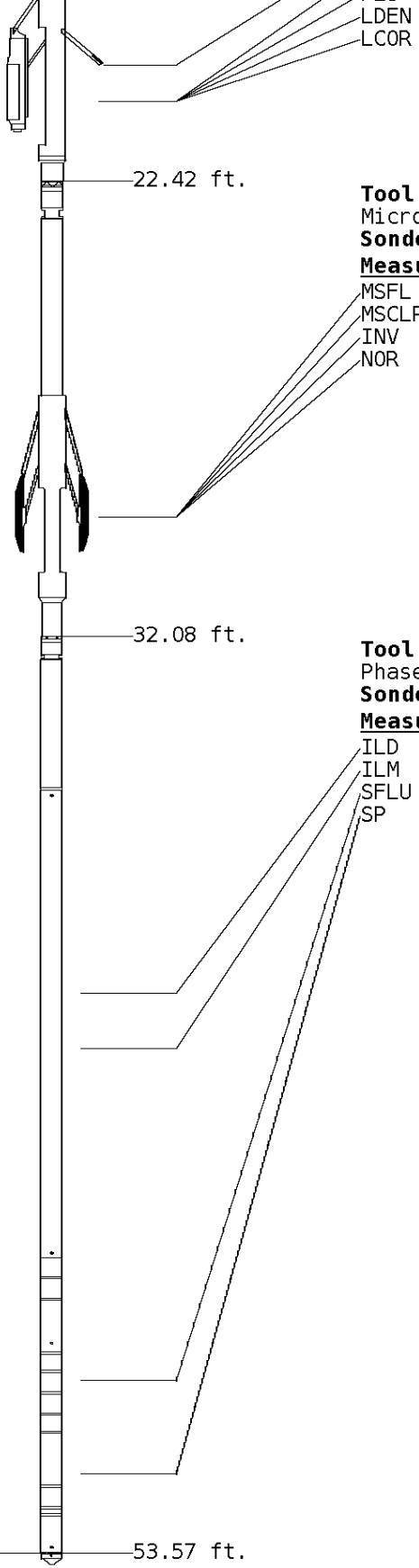
Tool: LDT-DF **Length:** 9.72 ft. **O.D.** 4.80 in.
 Litho Density D Pad on NDT-F

Sonde ID :PDT-GA-464

Source ID :2991GW

Pad ID :LDP-DA-067

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.42	19.12	34.45
PEL	7.42	20.12	33.45
PES	7.82	20.52	33.05



7.62	20.32	33.25
7.62	20.32	33.25

Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
 Micro Spherically Focused (IC)
Sonde ID :MLT-DA-21

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-AC-022

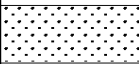


Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	41.00	12.56
ILM	10.10	42.18	11.39
SFLU	17.49	49.57	4.00
SP	20.60	52.68	0.88

Well File: Mcgow-ful-1-2-mstk-may25	Scale: 1:240
Segment: V1.D1.S5 MN	Acquired: 2012-05/25 15:21 3.2.0-10367
Reference: 0	Processed: 2012-05/25 16:32 3.2.0-10367

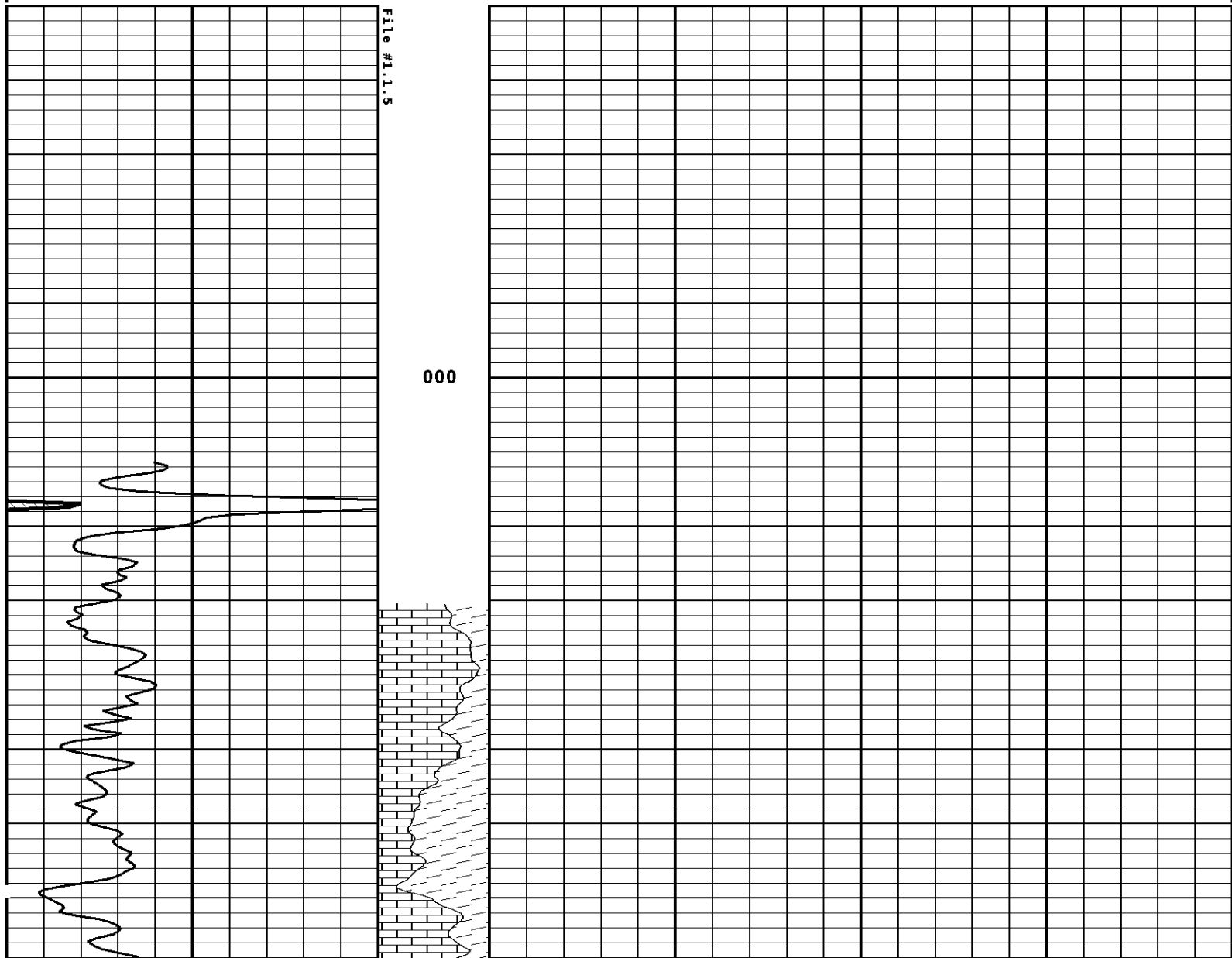
CALIPER MICRO INCHES (IN)	
16	26
6	16

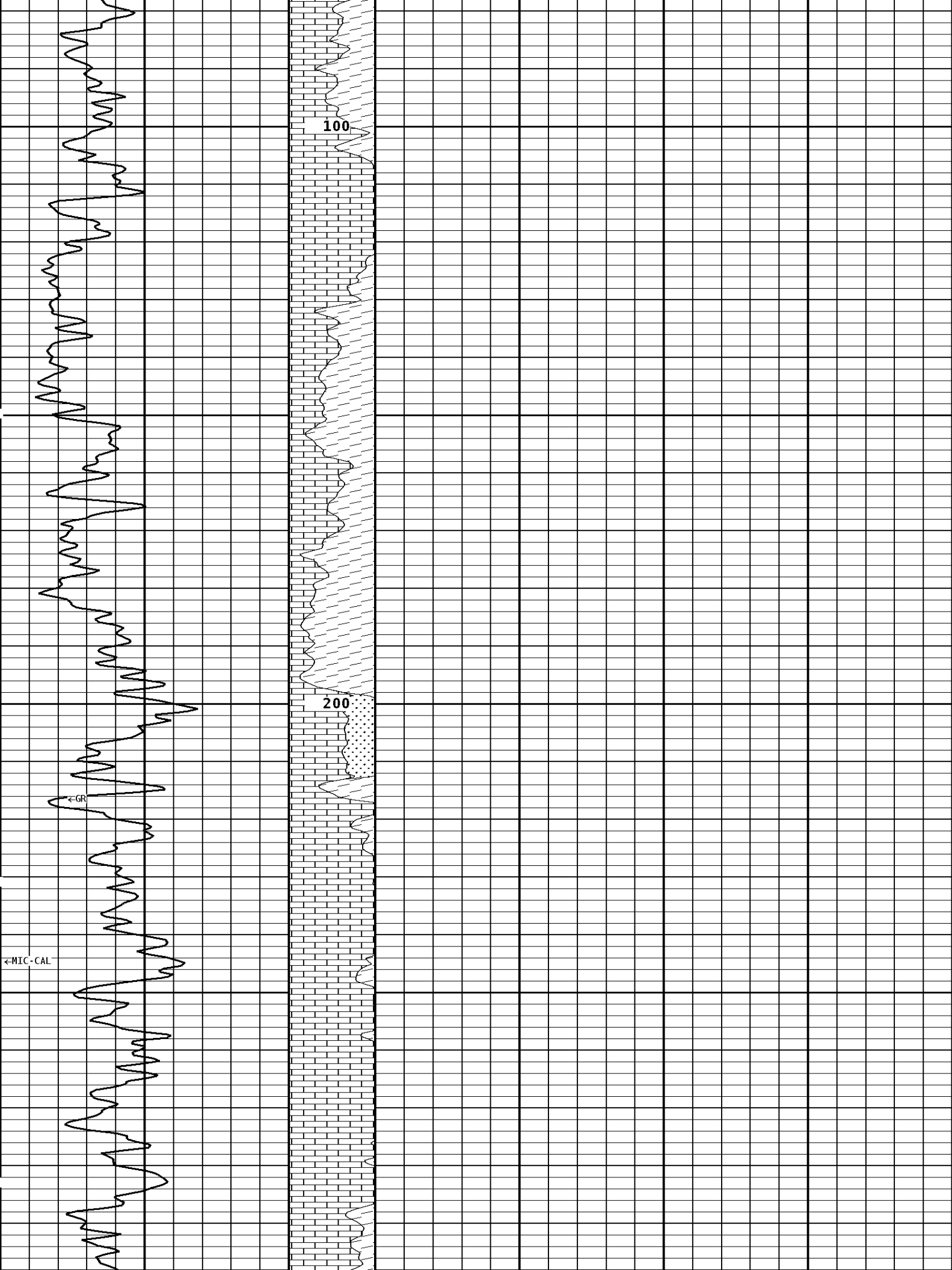
TENSION LBS

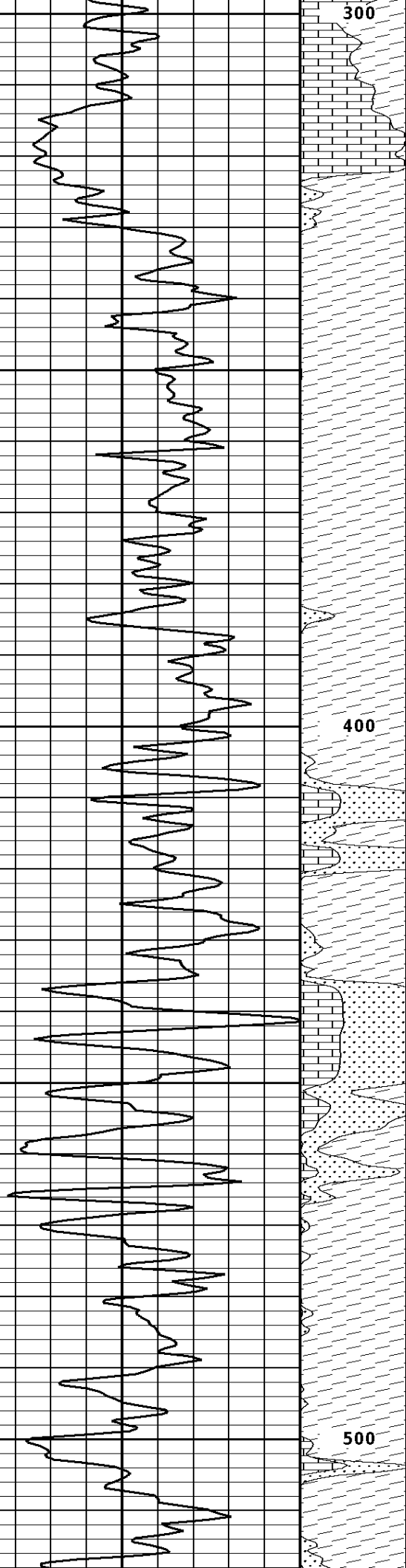
MICRO-INVERSE OHMM

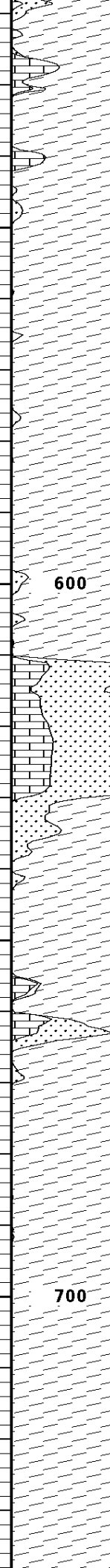
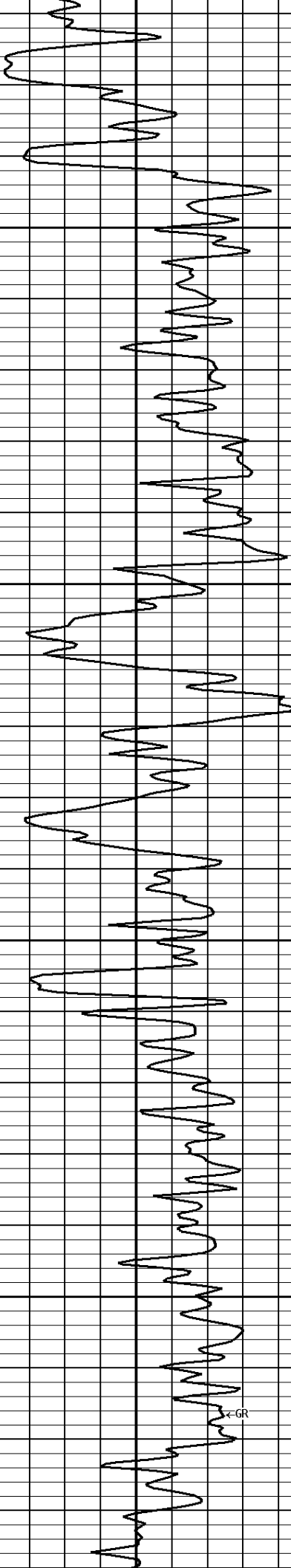
10000	0			0	40
BIT SIZE INCHES (IN)				MICRO-NORMAL OHMM	
6	16			0	40
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARNs/ELECTRON	DENSITY CORRECTION G/CC	
16	26		0	10	-0.25
6	16				0.25
NEUTRON (Y) CALIPER INCHES (IN)		Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)		
16	26		70		30
6	16		30		-10
			-10		-50
GAMMA RAY API UNITS		Volume DoLo/Shale	DENSITY POROSITY PERCENT (2.71 g/cc)		
150	300		70		30
0	150		30		-10
			-10		-50

1:240 MAIN SECTION





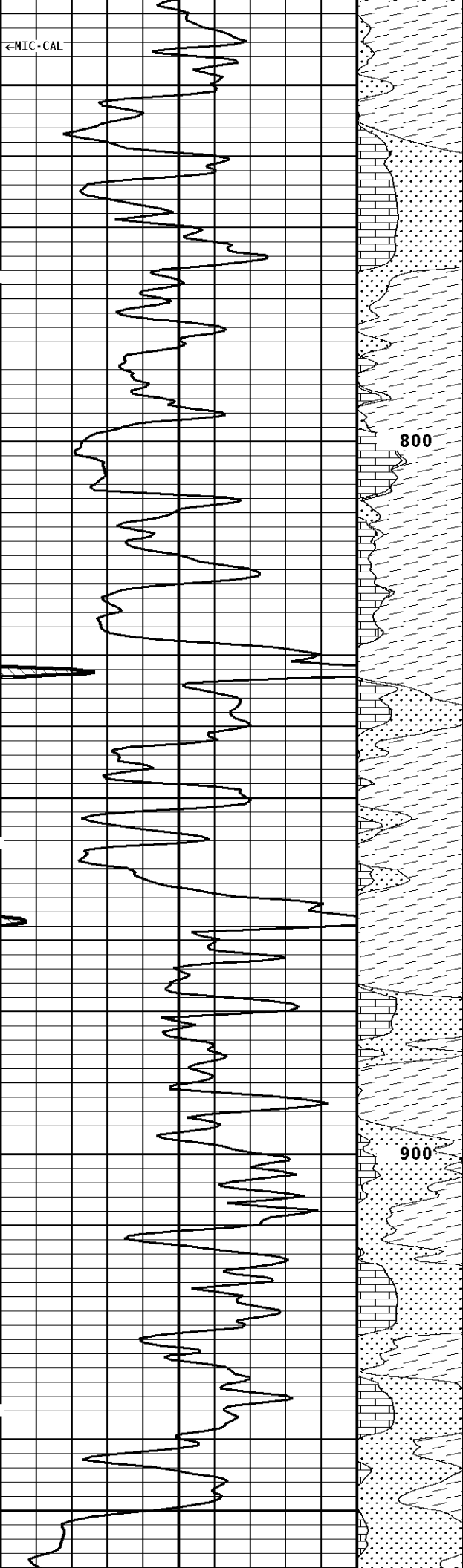


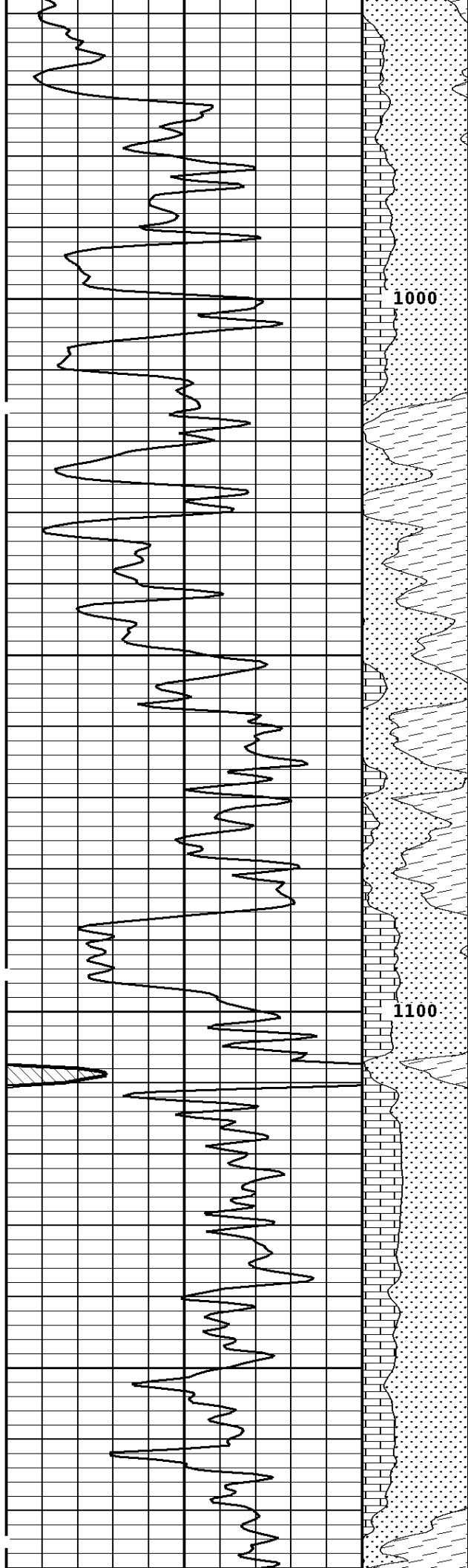


600

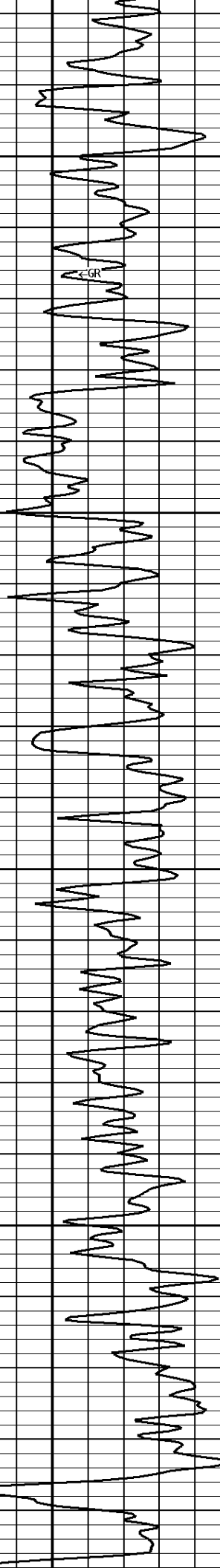
700

6



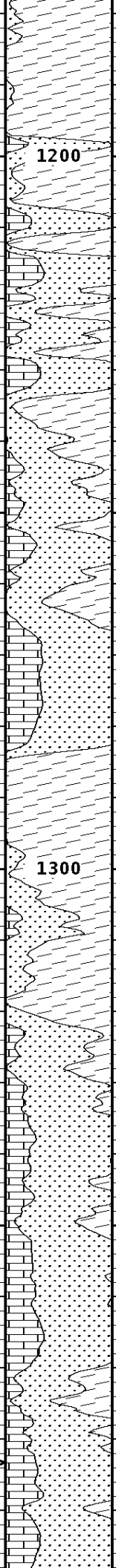


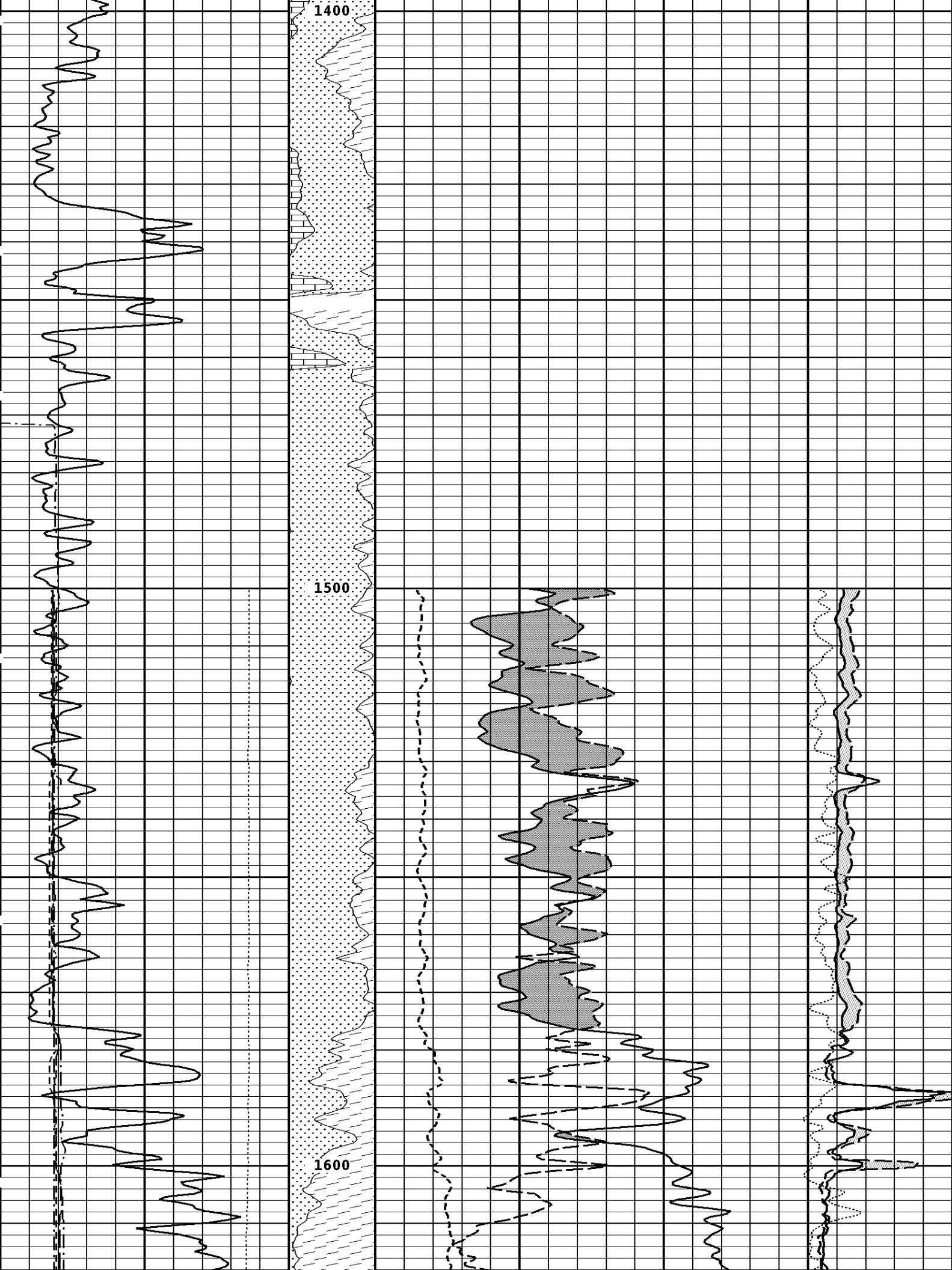
←MIC-CAL

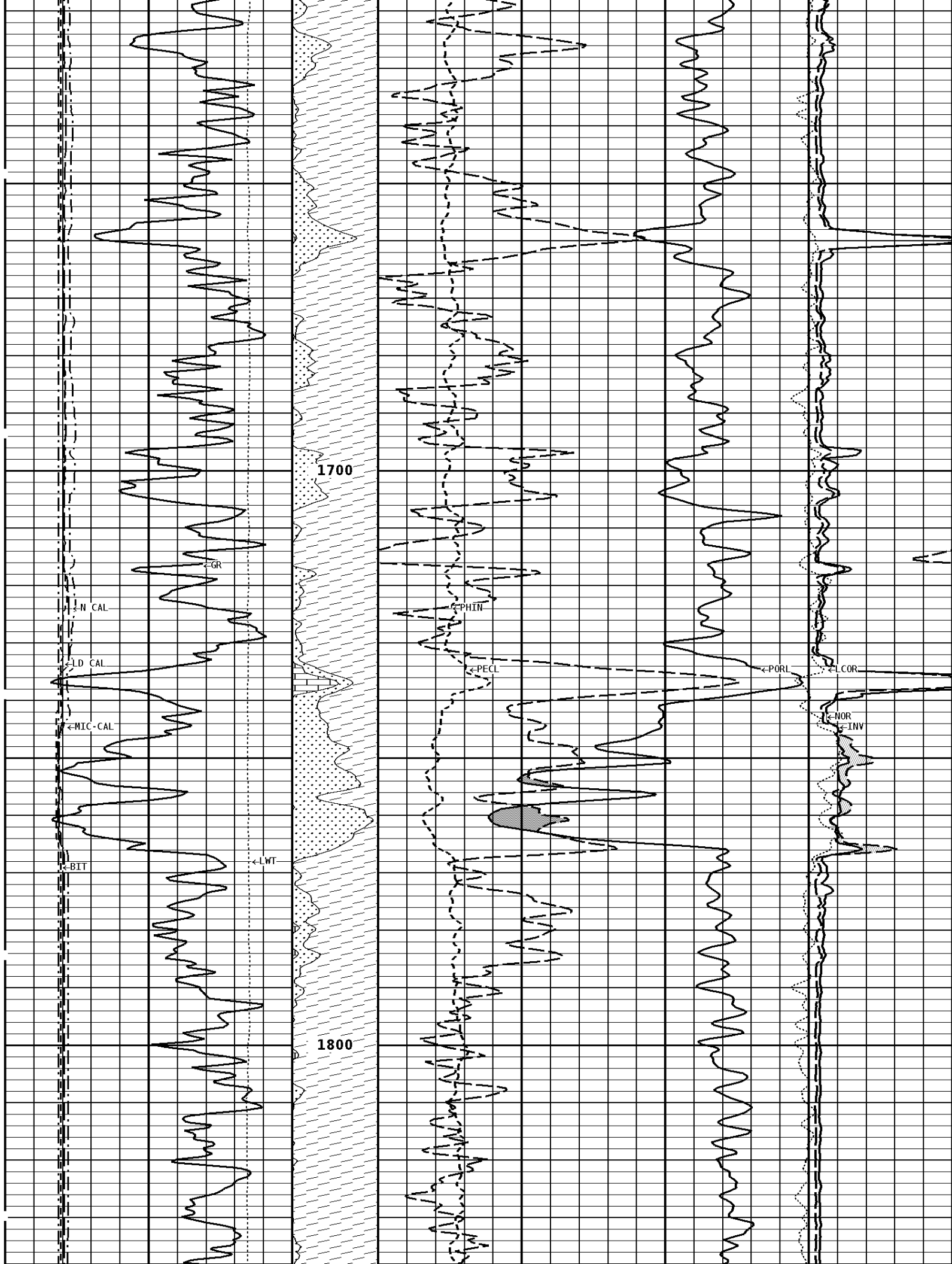


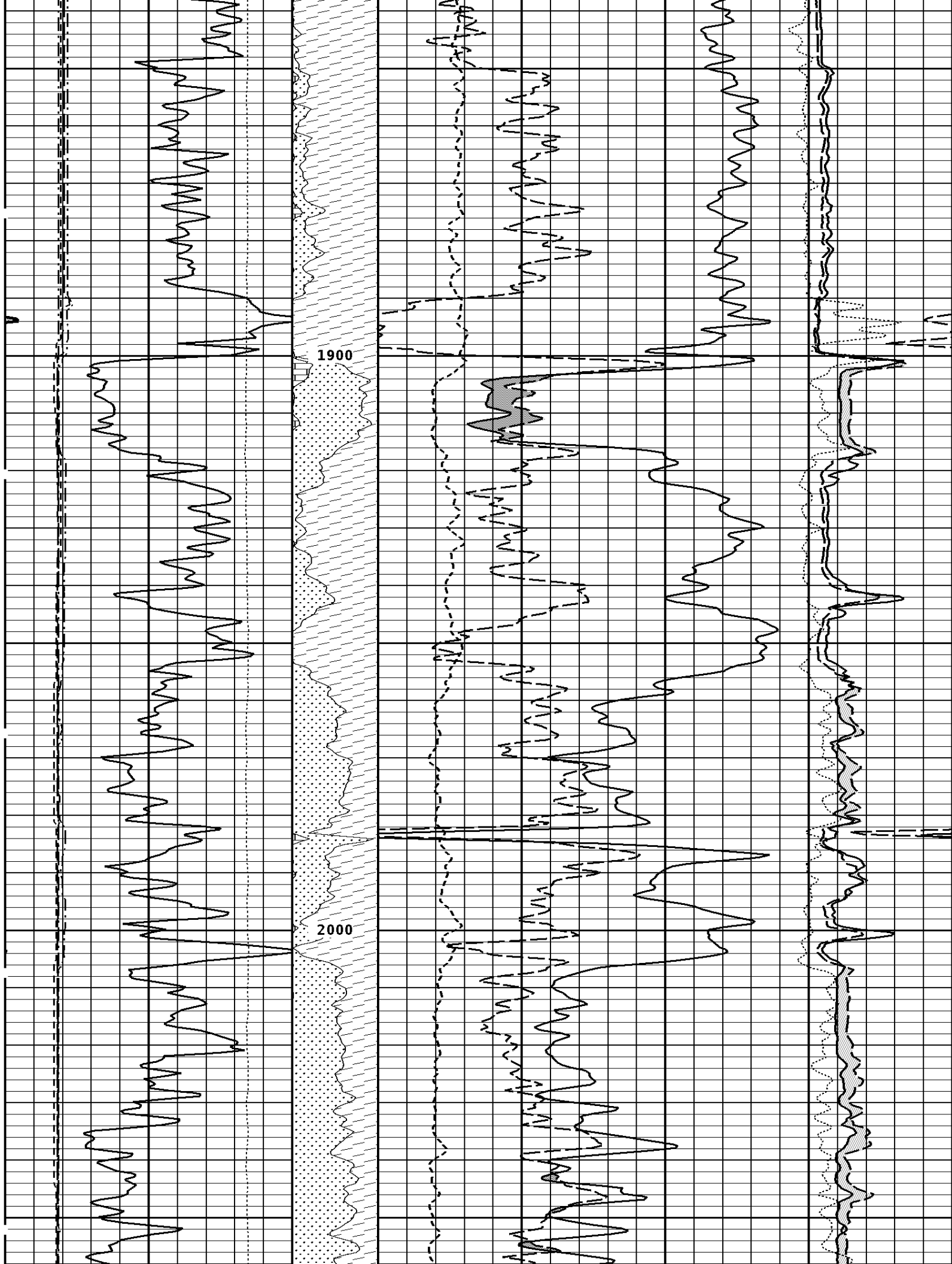
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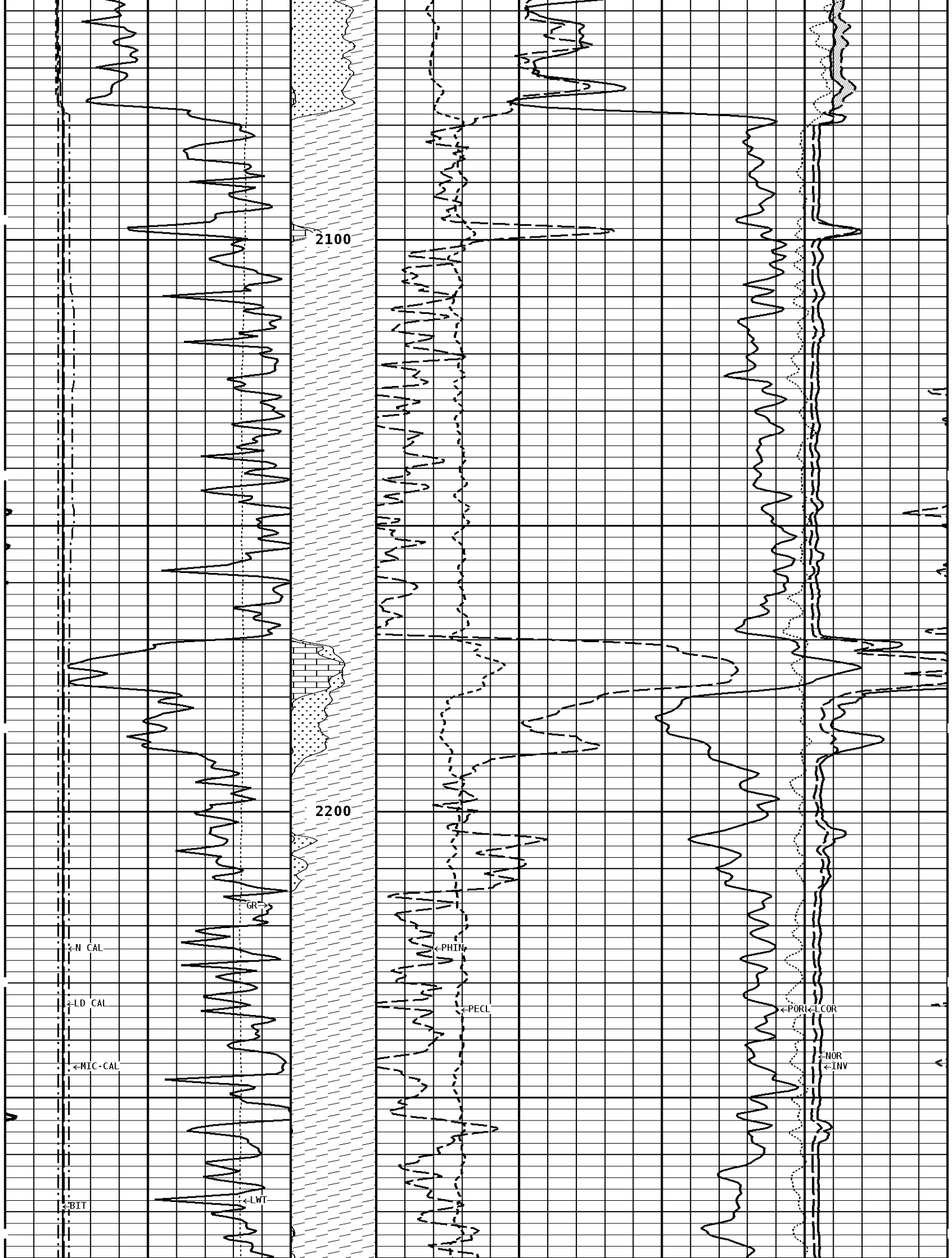
1300











2100

2200

GR

N CAL

LD CAL

MIC-CAL

BIT

PHIN

PECL

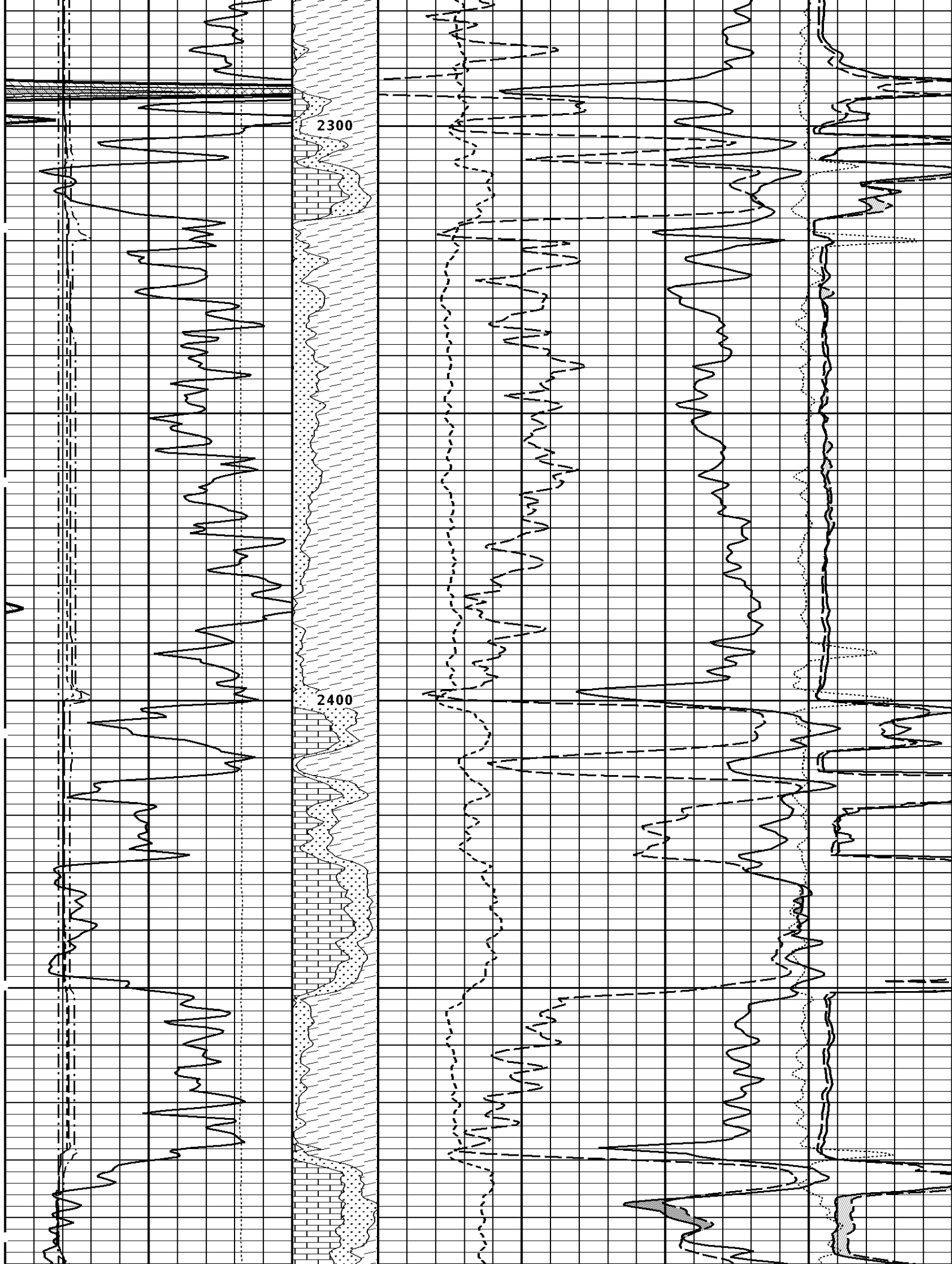
LWT

POR

COR

NOR

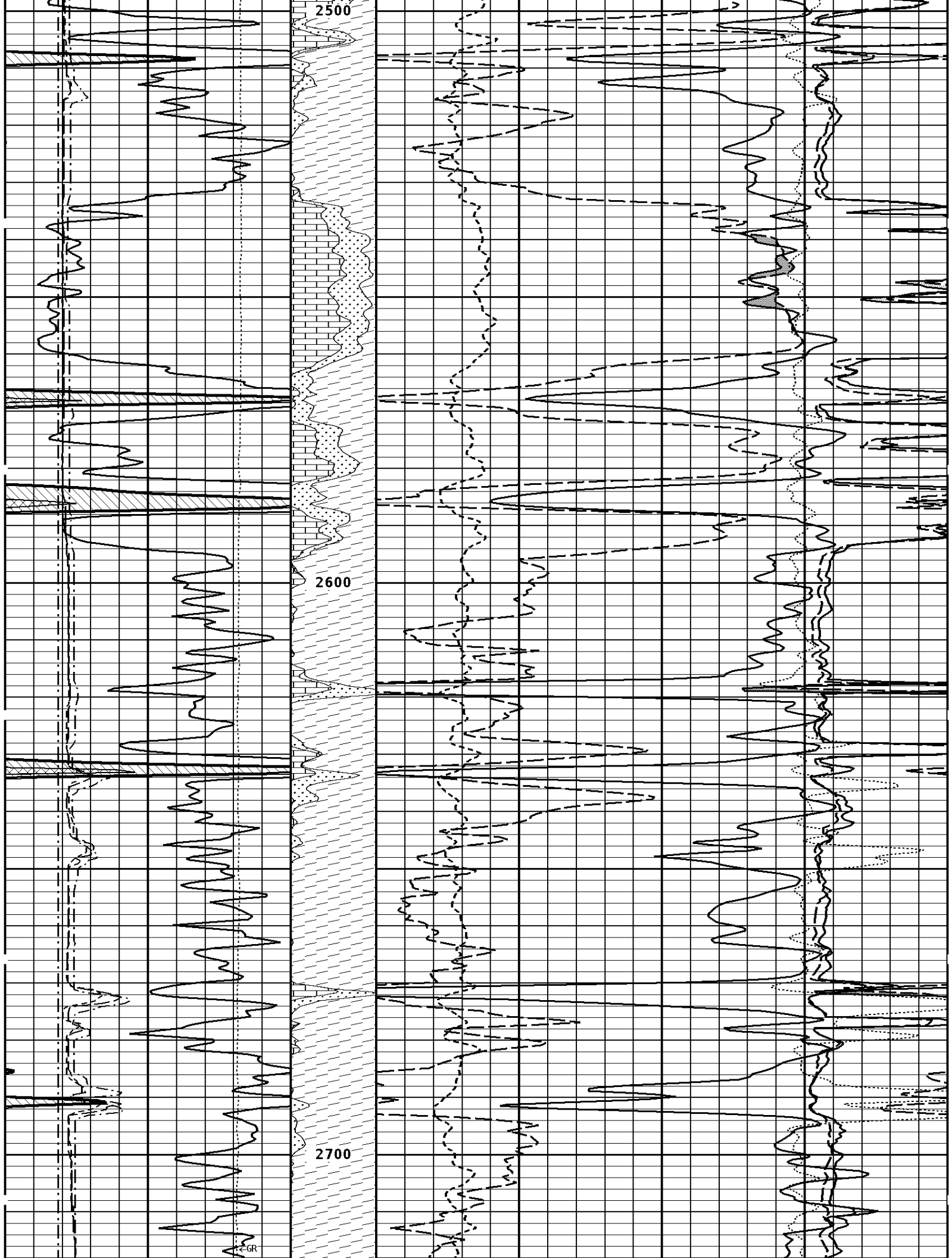
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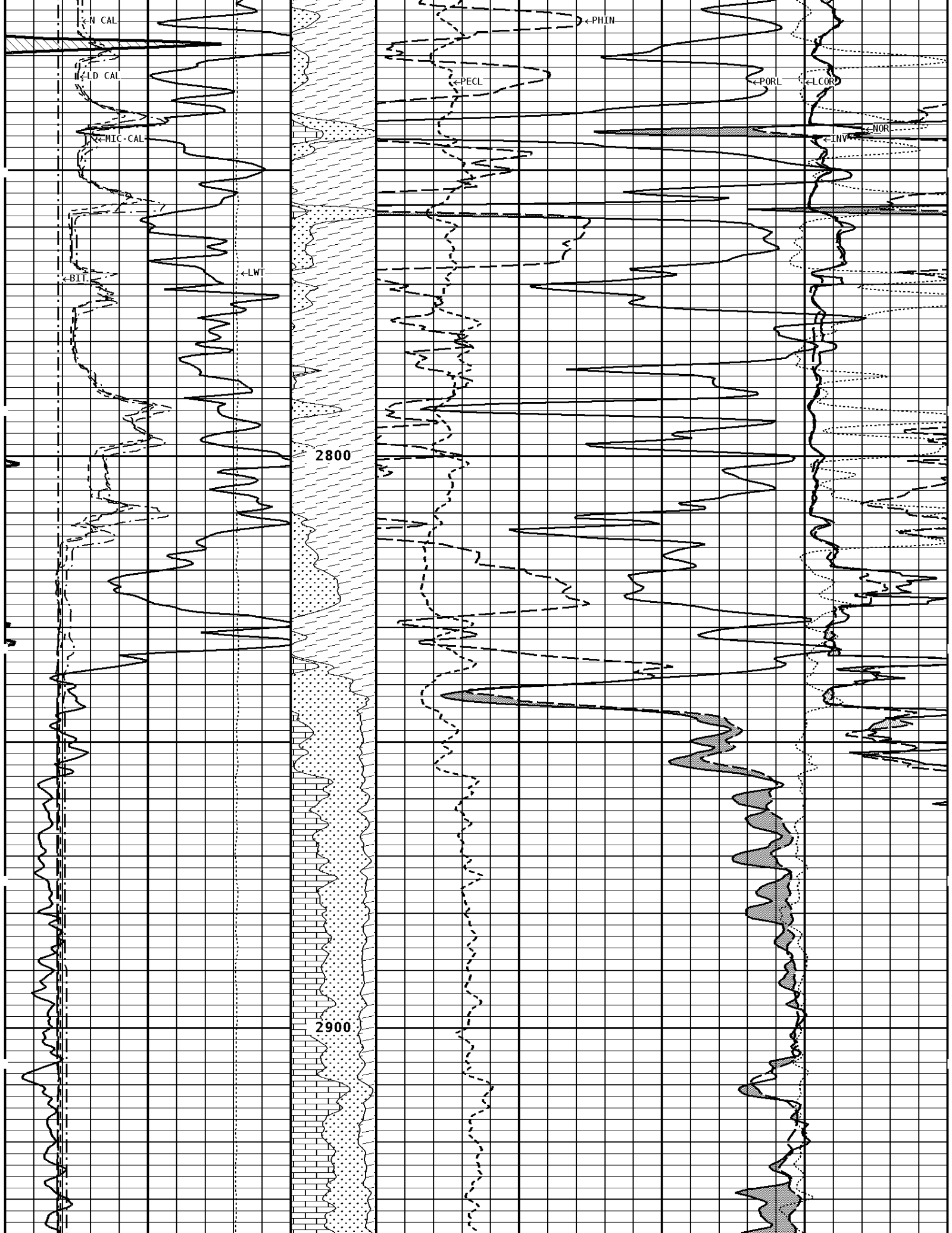
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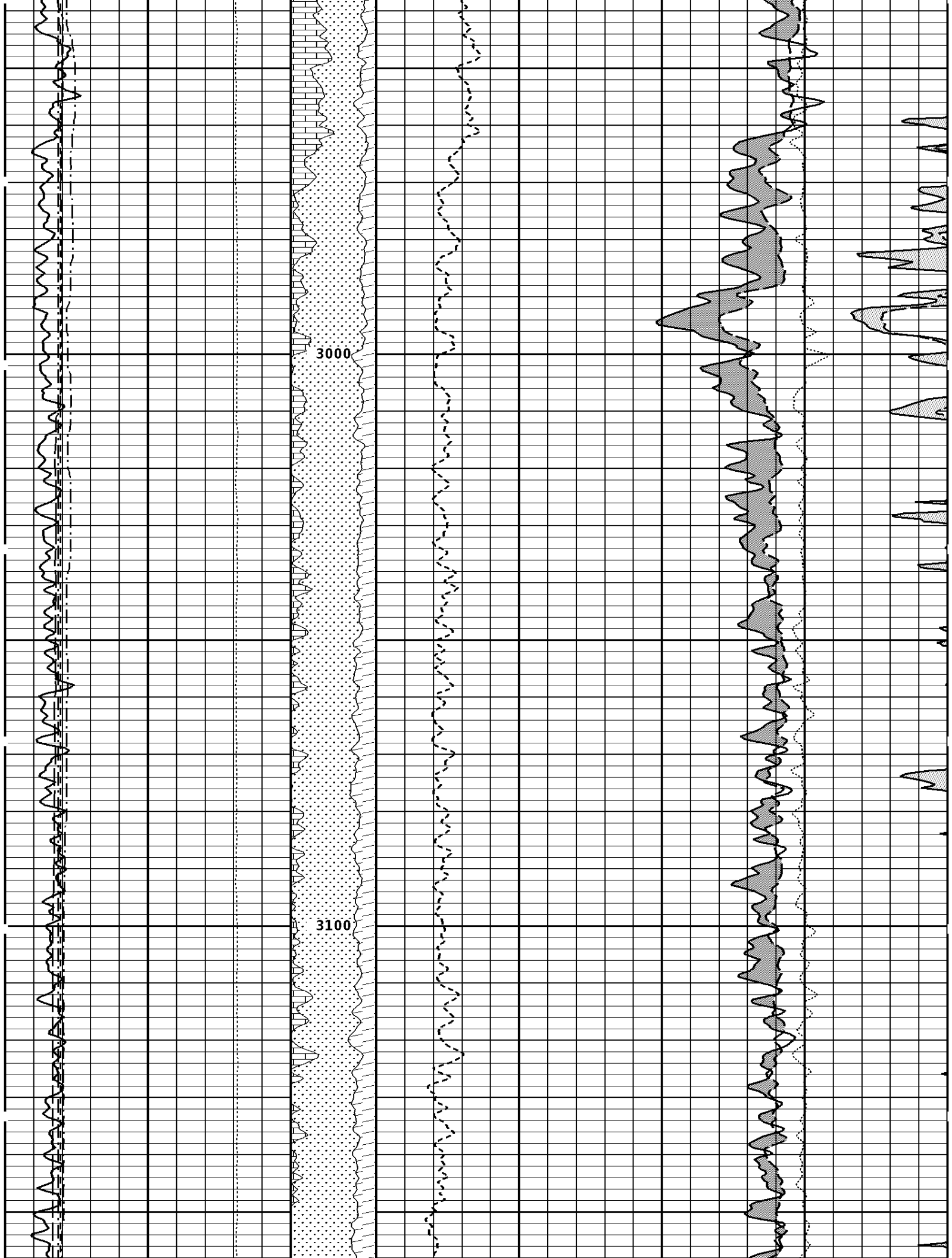
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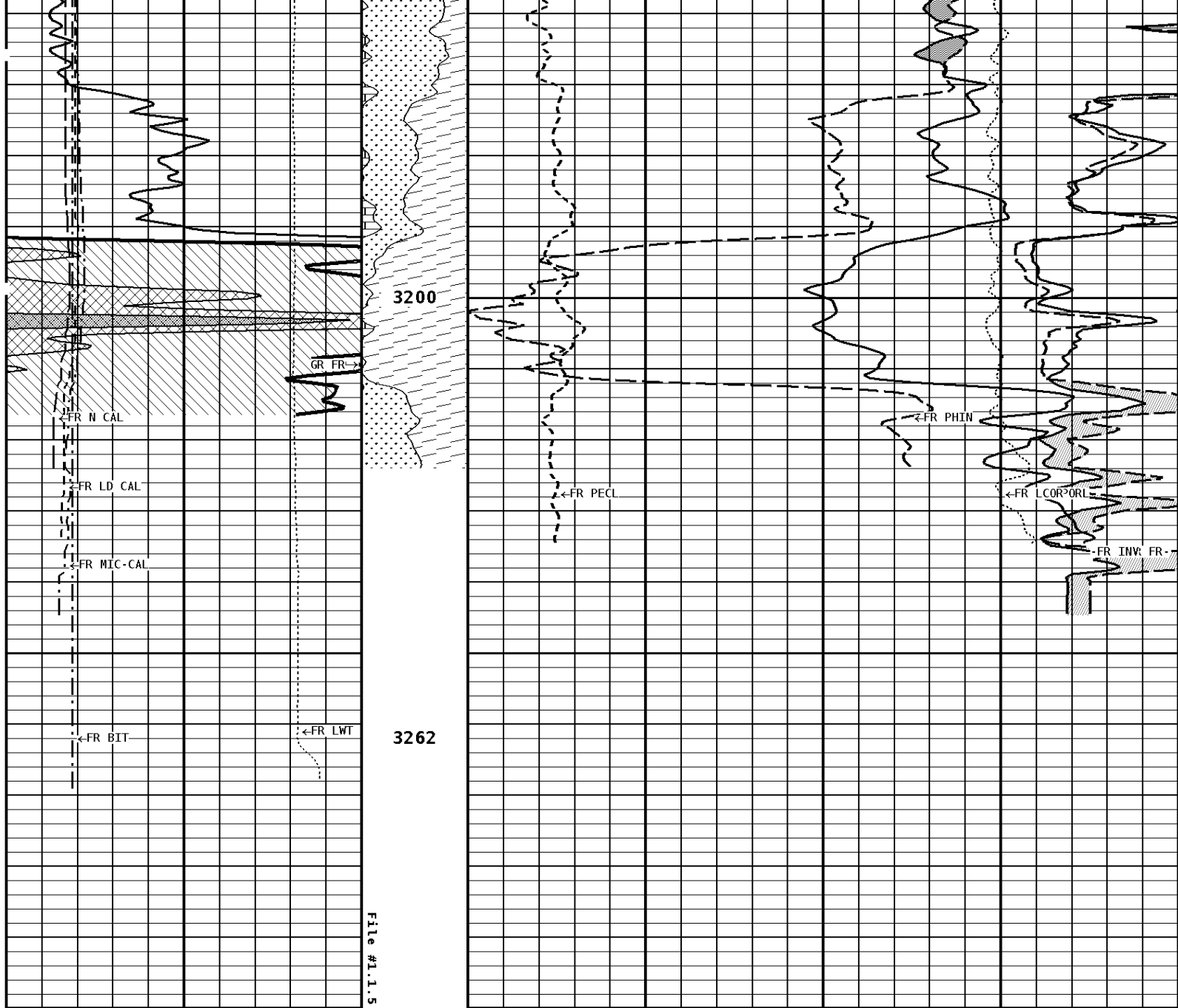
2700



GR







1:240 MAIN SECTION

GAMMA RAY API UNITS 150 0 300 150		Volume Dolo/Shale 70 30 -10	DENSITY POROSITY PERCENT (2.71 g/cc) 30 -10 -50	
NEUTRON (Y) CALIPER INCHES (IN) 16 6 26 16		Volume Calcite 70 30 -10	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX) 30 -10 -50	
DENSITY (X) CALIPER INCHES (IN) 16 6 26 16		Volume Quartz 0	PE CROSS-SECTION BARN/ ELECTRON 10	DENSITY CORRECTION G/CC -0.25 0.25
BIT SIZE INCHES (IN) 6 16		MICRO-NORMAL OHMH 0 40		

TENSION LBS	
10000	0
CALIPER MICRO INCHES (IN)	
16	26
6	16

MICRO-INVERSE OHMM	
0	40

* 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 _____	4.500 in
Casing Correction (PHI N) _____	Disable

Well File: Mcgow-ful-1-2-mstk-may25	Scale: 1:240
Segment: V1.D1.S4 RP	Acquired: 2012-05/25 15:07 3.2.0-10367
Reference: 0	Processed: 2012-05/25 16:32 3.2.0-10367

CALIPER MICRO INCHES (IN)	
16	26
6	16

TENSION LBS	
10000	0

BIT SIZE INCHES (IN)	
6	16

MICRO-INVERSE OHMM	
0	40

MICRO-NORMAL OHMM	
0	40

DENSITY (X) CALIPER INCHES (IN)	
16	26
6	16

Volume Quartz	PE CROSS-SECTION BARNS/ELECTRON
0	10

DENSITY CORRECTION G/CC	
-0.25	0.25

NEUTRON (Y) CALIPER INCHES (IN)	
16	26
6	16

Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)
70	30
30	-10
-10	-50

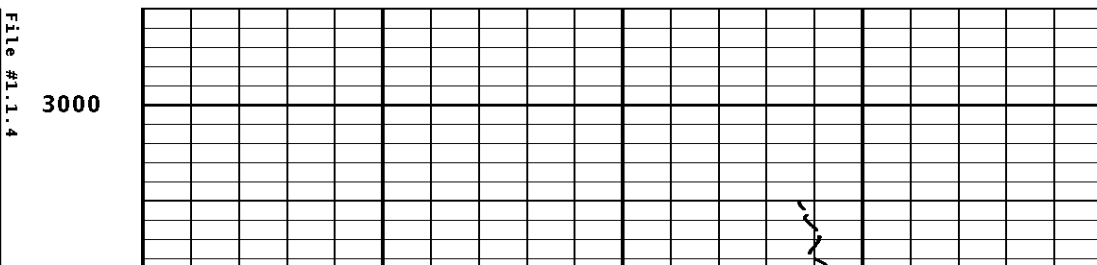
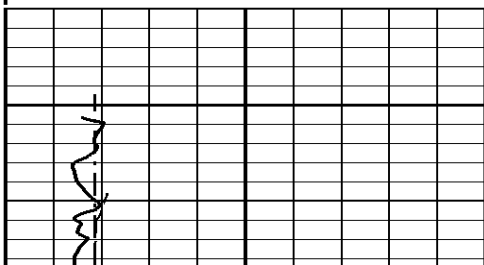
DENSITY POROSITY PERCENT (2.71 g/cc)	
70	30
30	-10
-10	-50

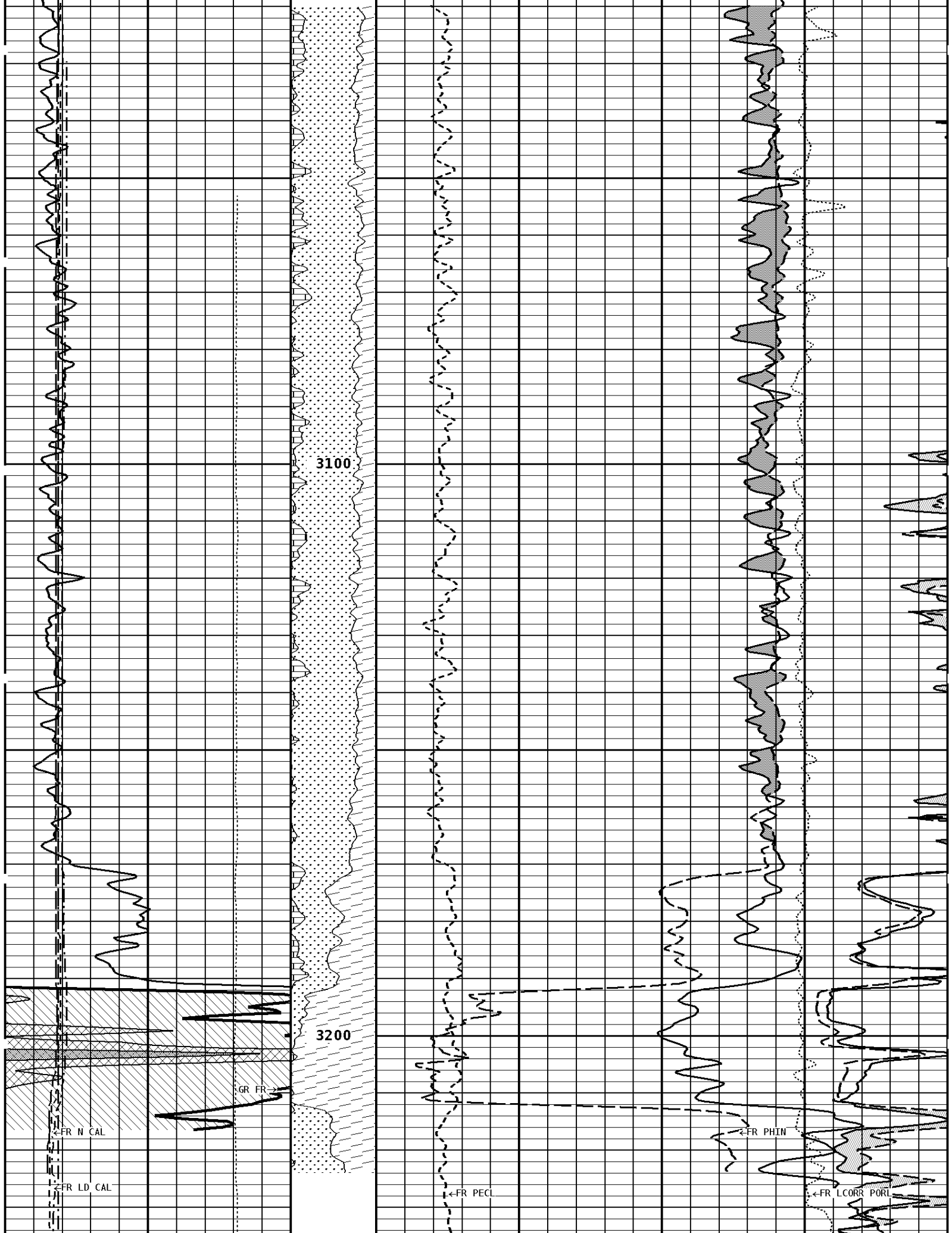
GAMMA RAY API UNITS	
150	300
0	150

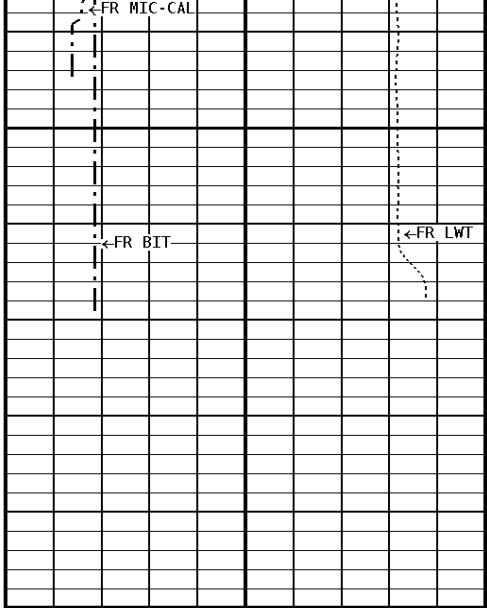
Volume Dolo/Shale	DENSITY POROSITY PERCENT (2.71 g/cc)
70	30
30	-10
-10	-50

DENSITY POROSITY PERCENT (2.71 g/cc)	
70	30
30	-10
-10	-50

1:240 REPEAT SECTION







3262

1:240 REPEAT SECTION

GAMMA RAY API UNITS 150 300 0 150		Volume Dolo/Shale 70 30 -10	DENSITY POROSITY PERCENT (2.71 g/cc) 30 -10 -50	
NEUTRON (Y) CALIPER INCHES (IN) 16 26 6 16		Volume Calcite 70 30 -10	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX) 30 -10 -50	
DENSITY (X) CALIPER INCHES (IN) 16 26 6 16		Volume Quartz 0	PE CROSS-SECTION BARN/ELECTRON 10	DENSITY CORRECTION G/CC -0.25 0.25
BIT SIZE INCHES (IN) 6 16				MICRO-NORMAL OHMH 0 40
TENSION LBS 10000 0				MICRO-INVERSE OHMH 0 40
CALIPER MICRO INCHES (IN) 16 26 6 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 _____	4.500 in
Casing Correction (PHI N) _____	Disable

TENSION
LBS

10000

0

BIT SIZE
INCHES (IN)

6

16

DENSITY (X) CALIPER
INCHES (IN)

16 26
6 16

NEUTRON (Y) CALIPER
INCHES (IN)

16 26
6 16

GAMMA RAY
API UNITS

150 300
0 150

- BHV AHV -
CU. FT

PE CROSS-SECTION
BARNS/ELECTRON

0 10 -0.25 0.25

DENSITY CORRECTION
G/CC

DENSITY POROSITY
PERCENT (2.71 g/cc)

70 30
30 -10
-10 -50

COMPENSATED BULK DENSITY
G/CC

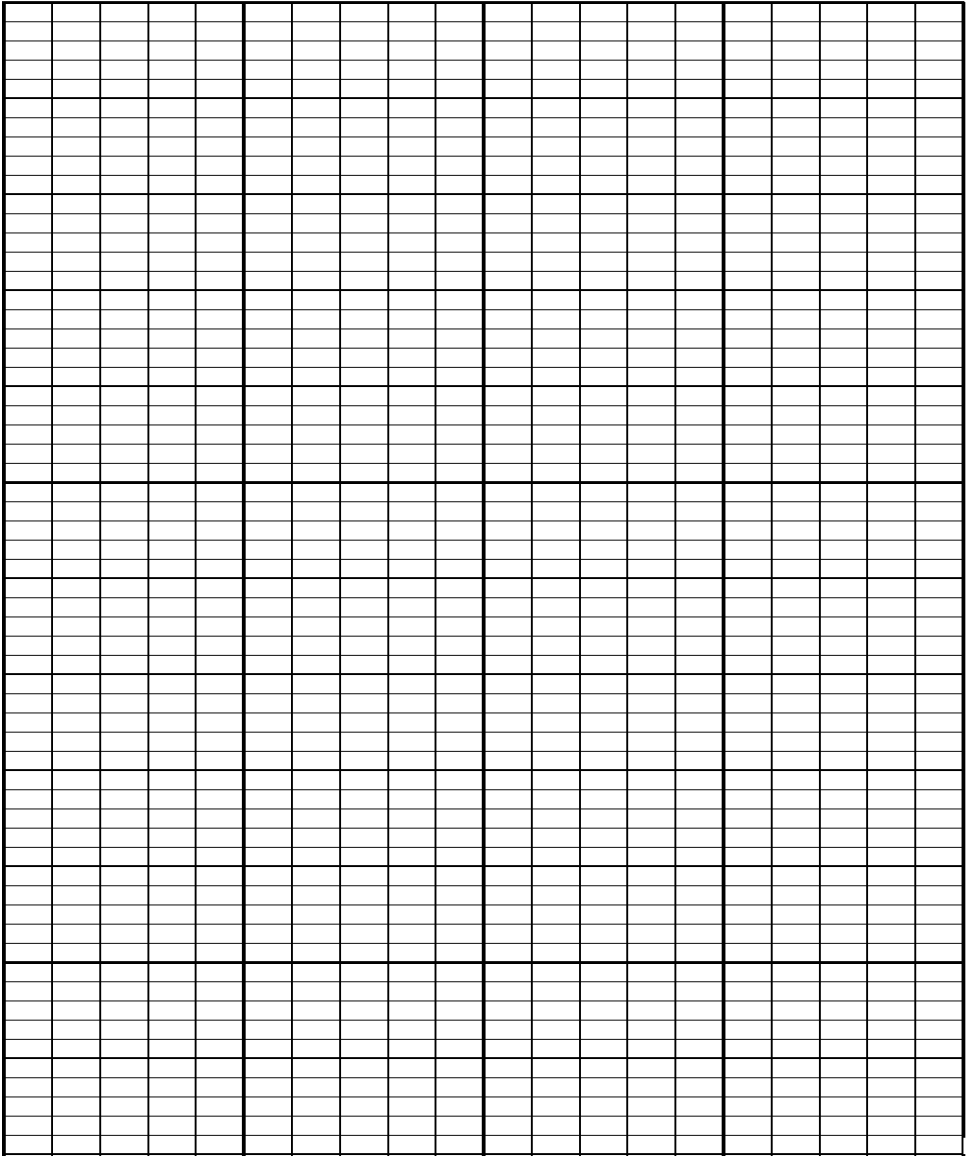
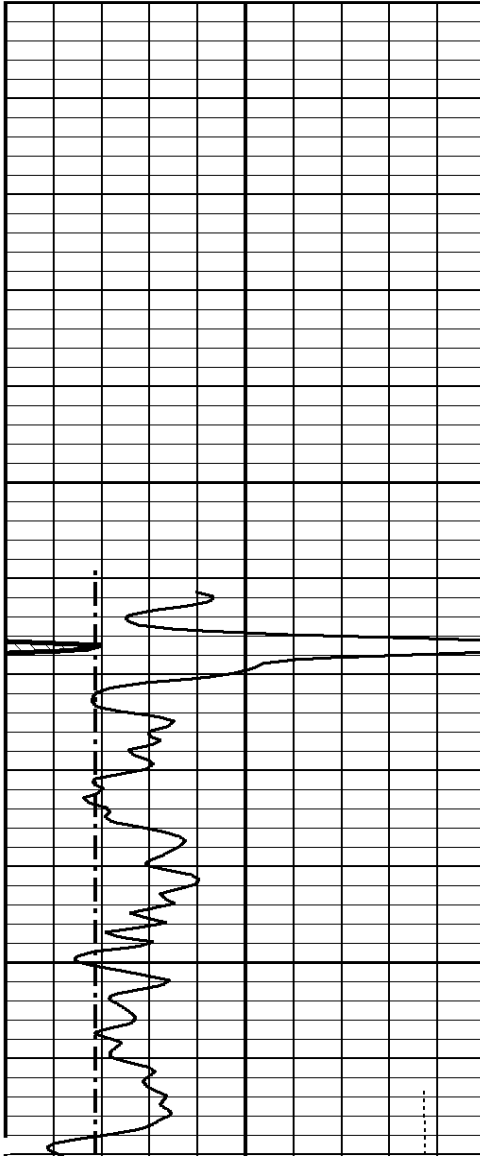
3.0 4.0
2.0 3.0
1.0 2.0

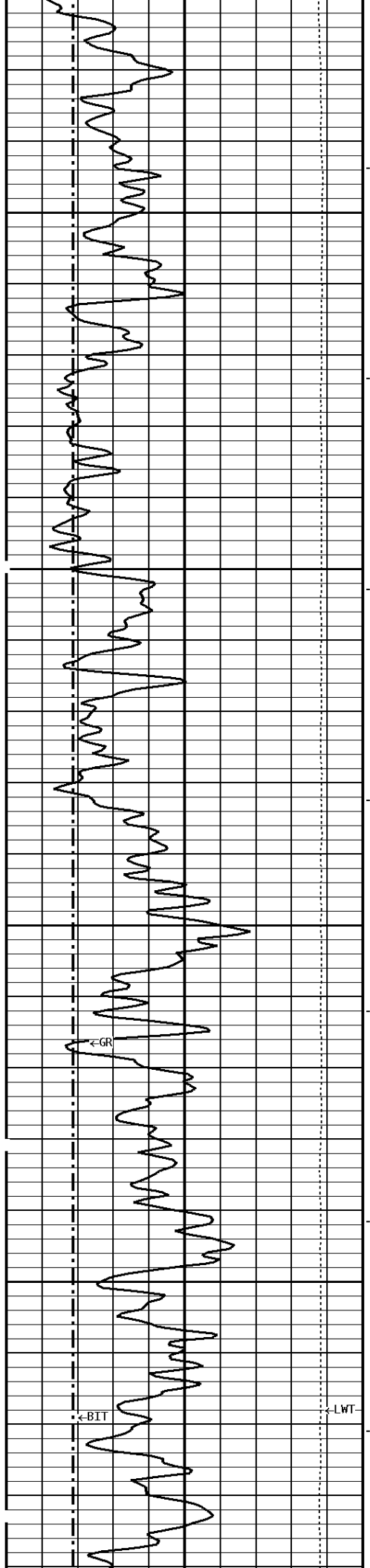
1:240 MAIN SECTION BULK DENSITY

File #1.1.5

000

--1100Cu.Ft





100

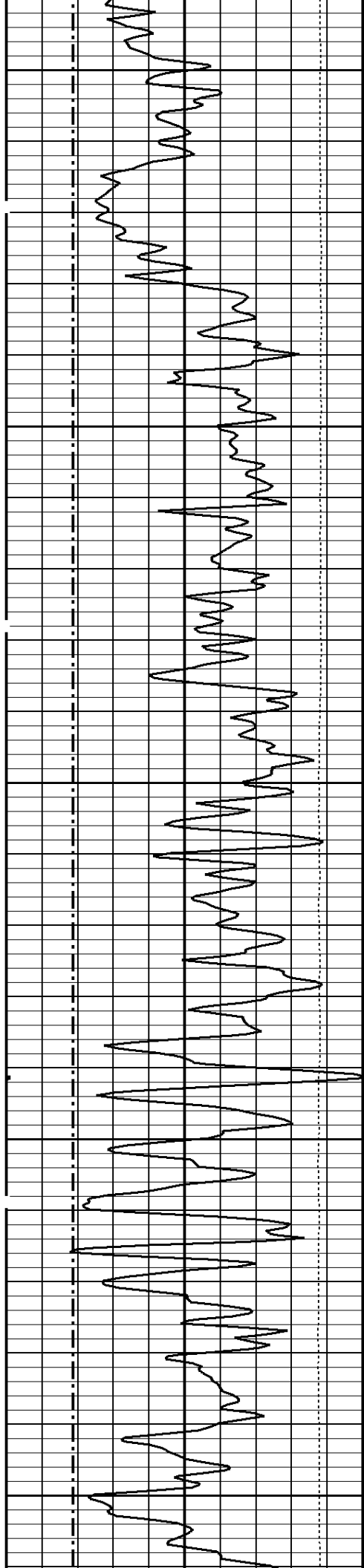
200

← GR

← BIT

← LWT

700 Cu. Ft.

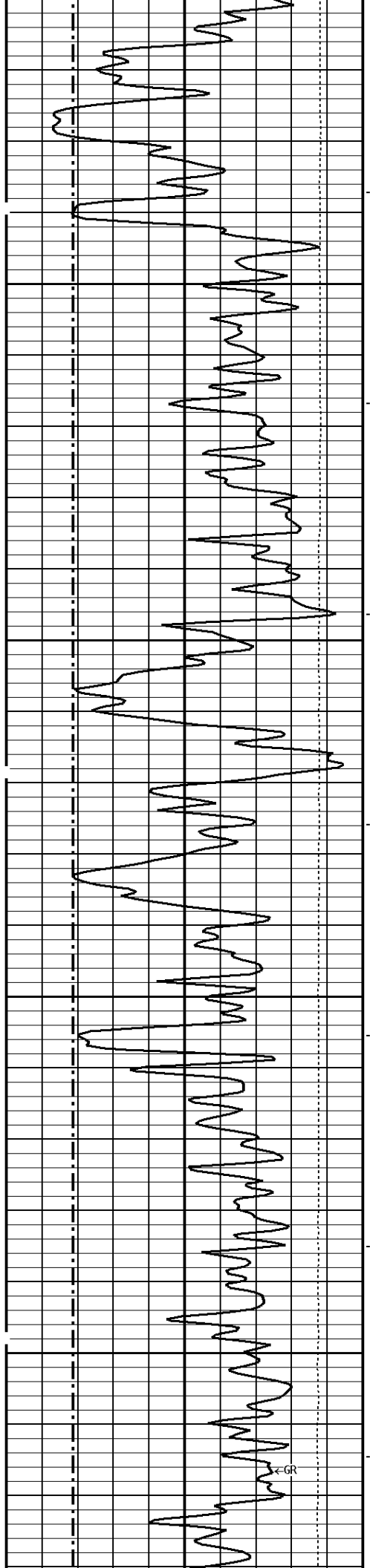


300

1000 Cu.Ft

400

500

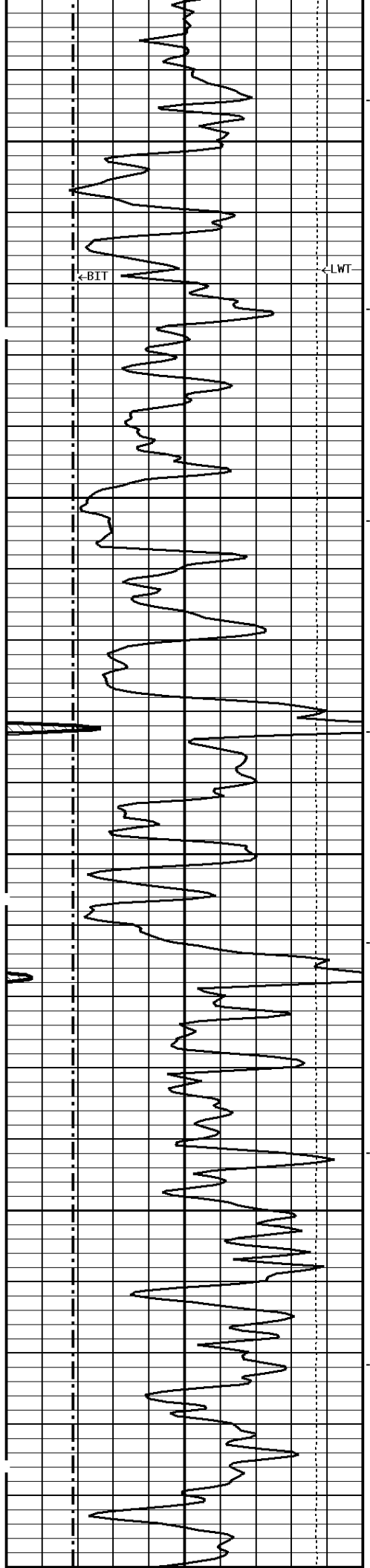


600

--900Cu. Ft

700

600Cu. Ft--



800

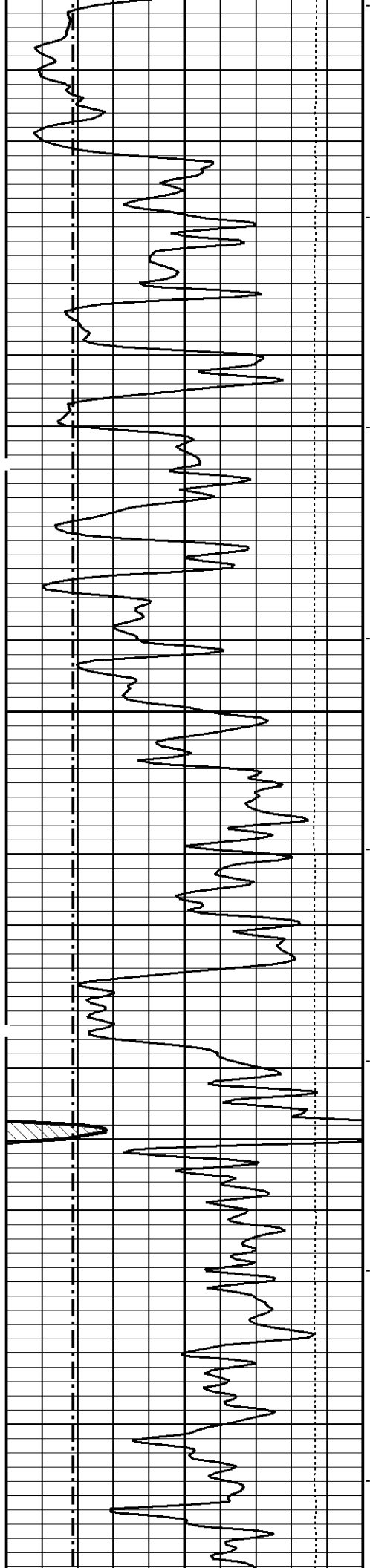
900

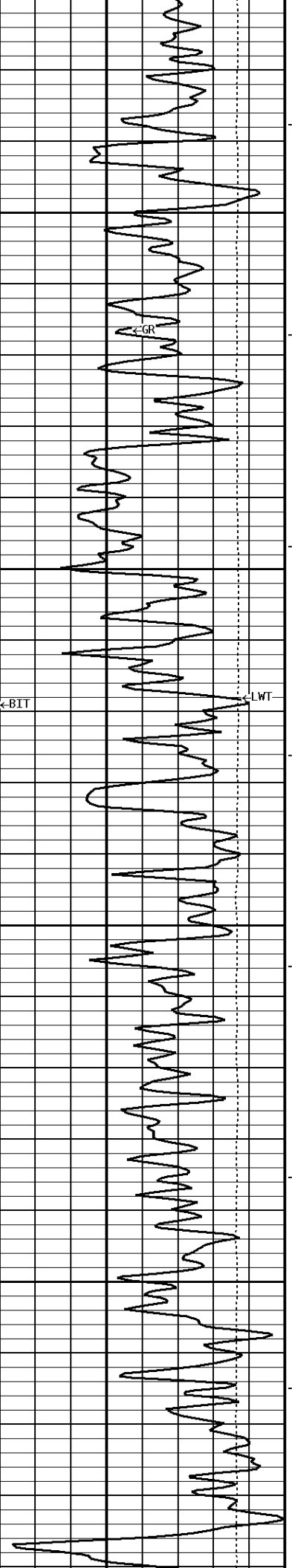
--800Cu. Ft

1000

1100

500Cu. Ft--





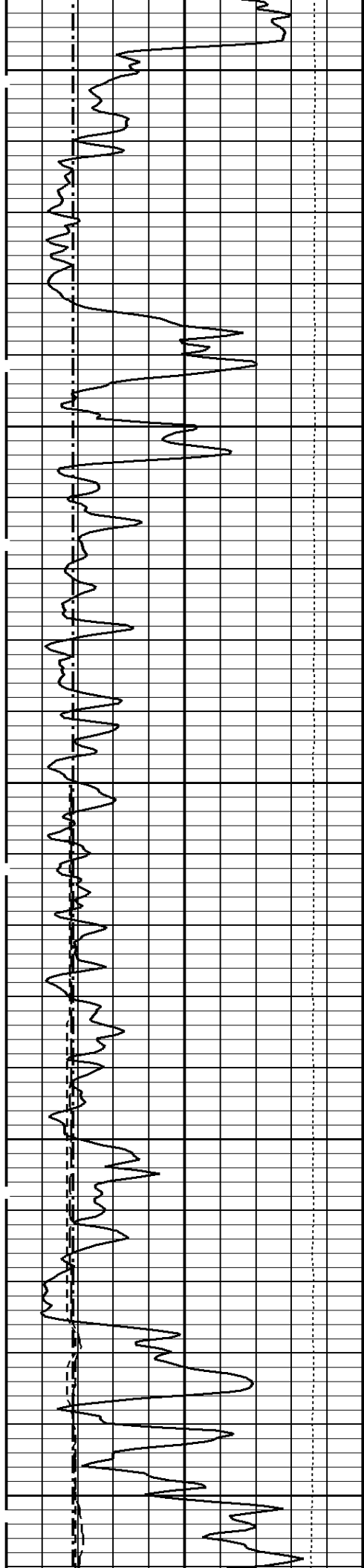
1200

--700Cu. Ft

←BIT

←LWT

1300



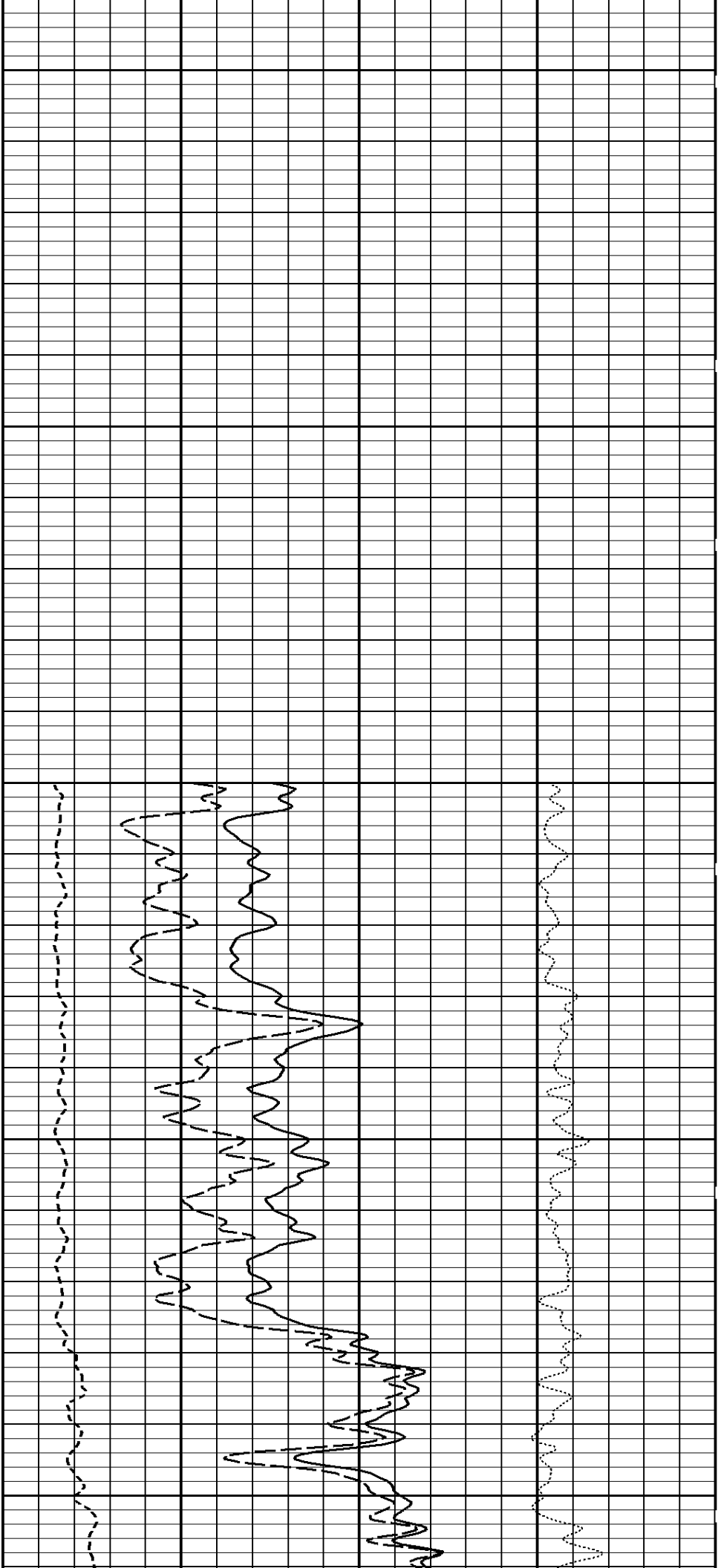
1400

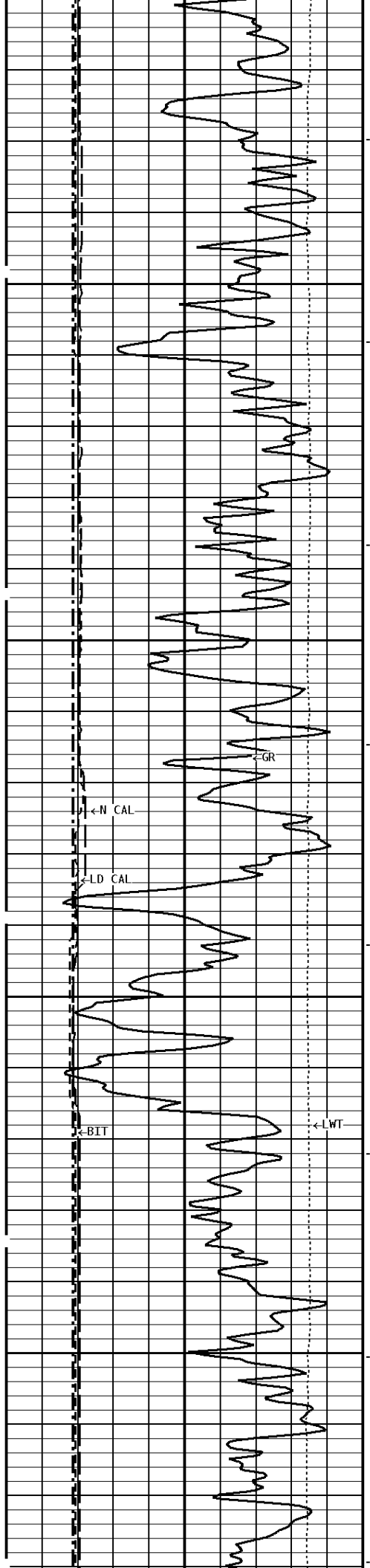
1500

600 Cu. Ft

1600

400 Cu. Ft

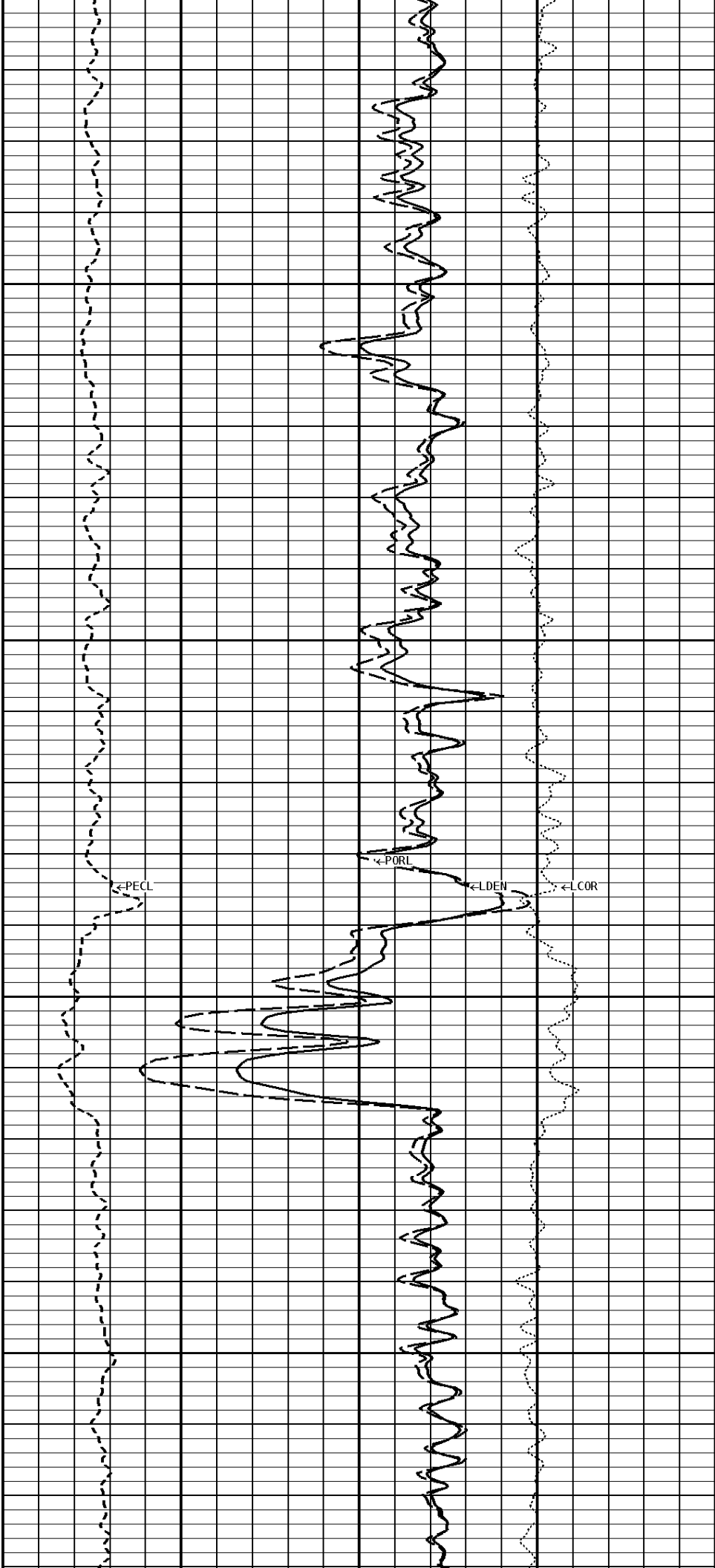


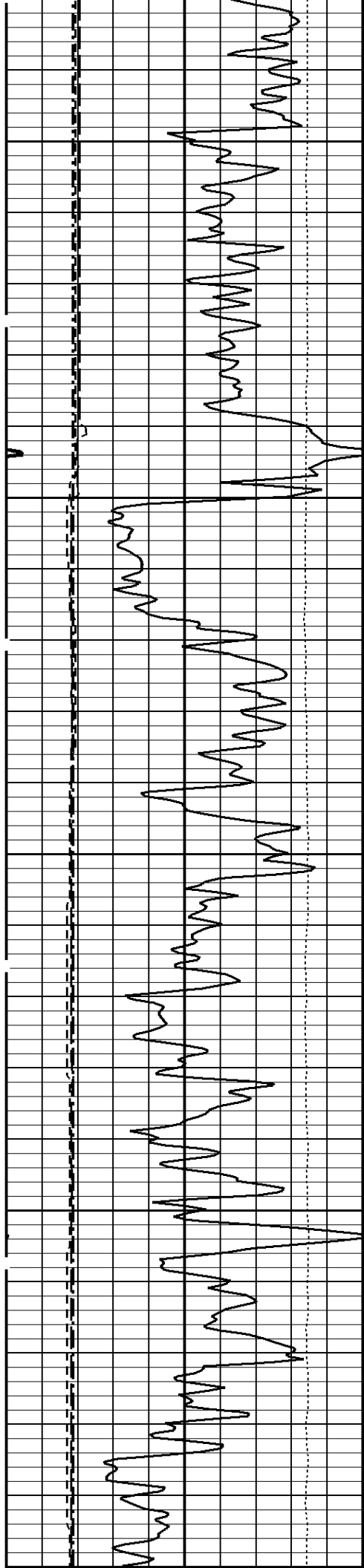


1700

1800

--500Cu. Ft

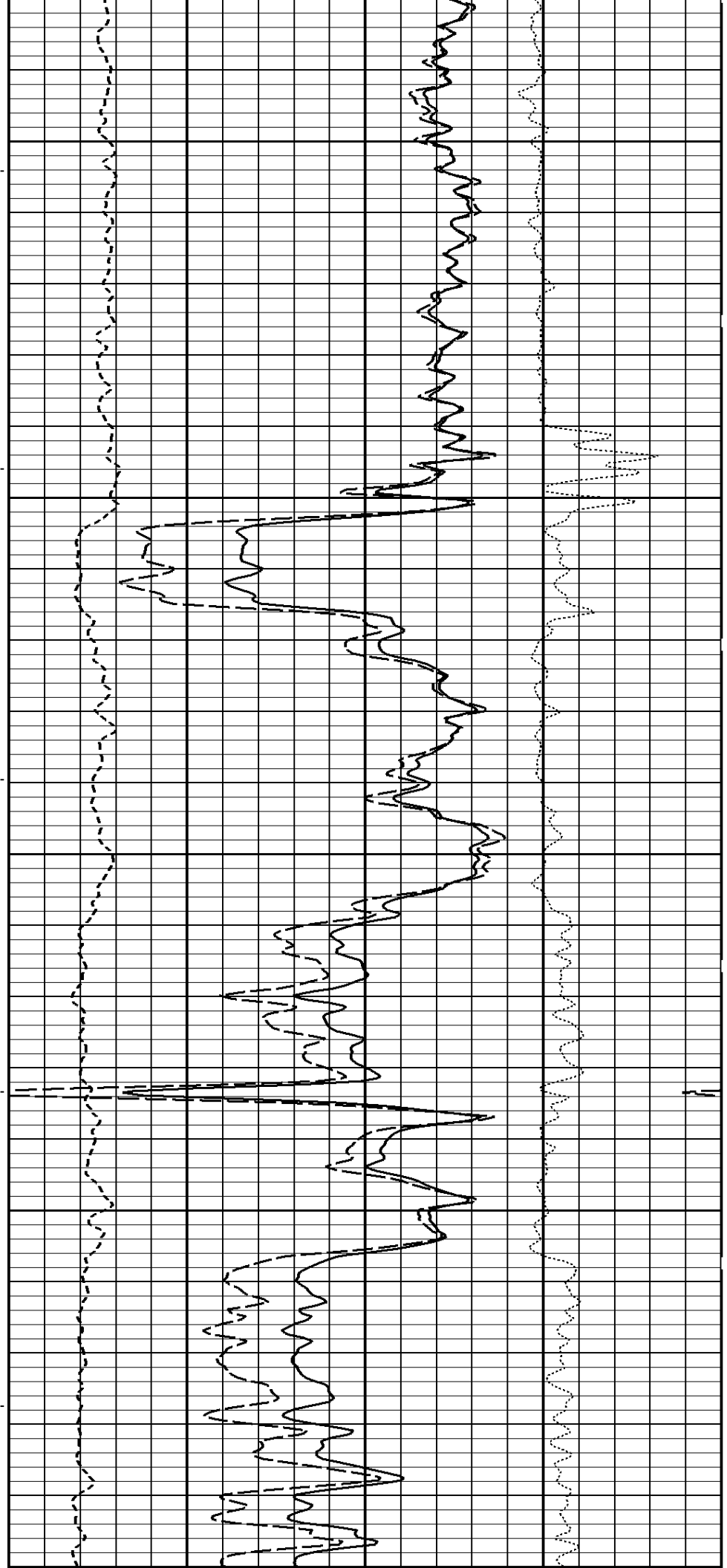


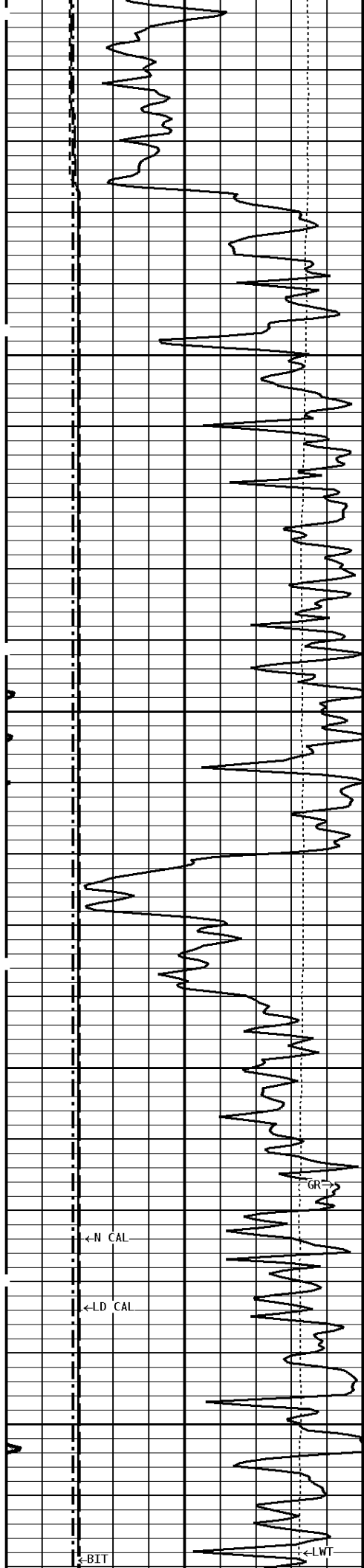


1900

2000

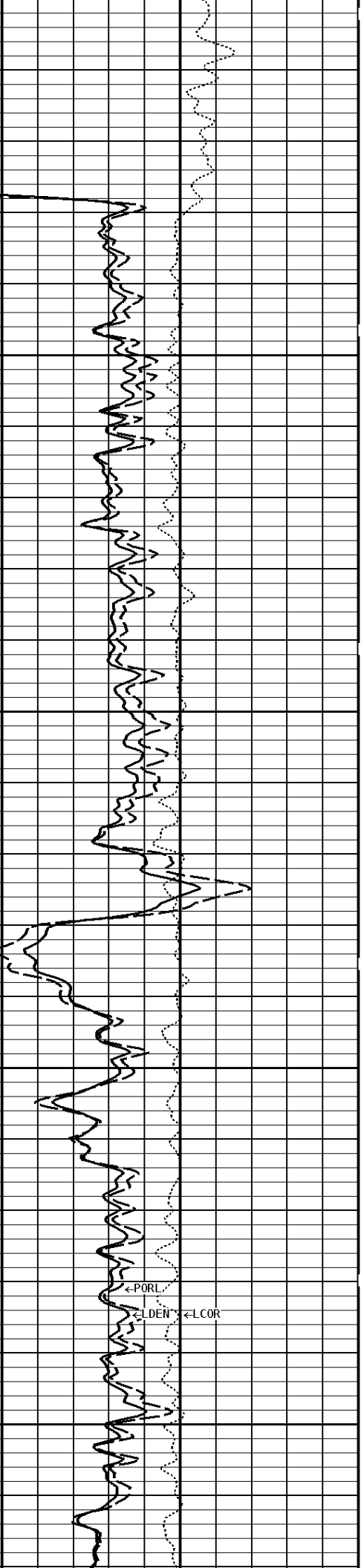
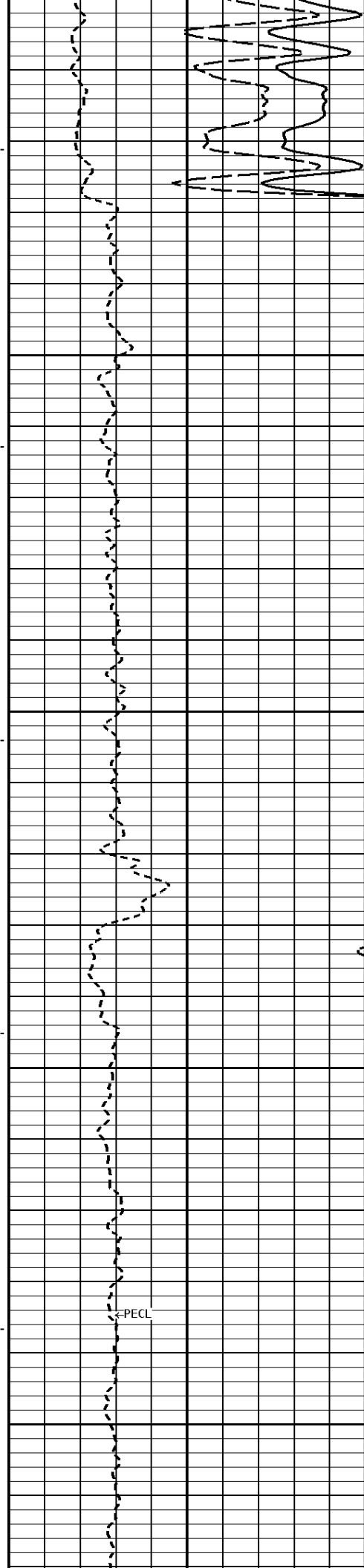
300 Cu. Ft.

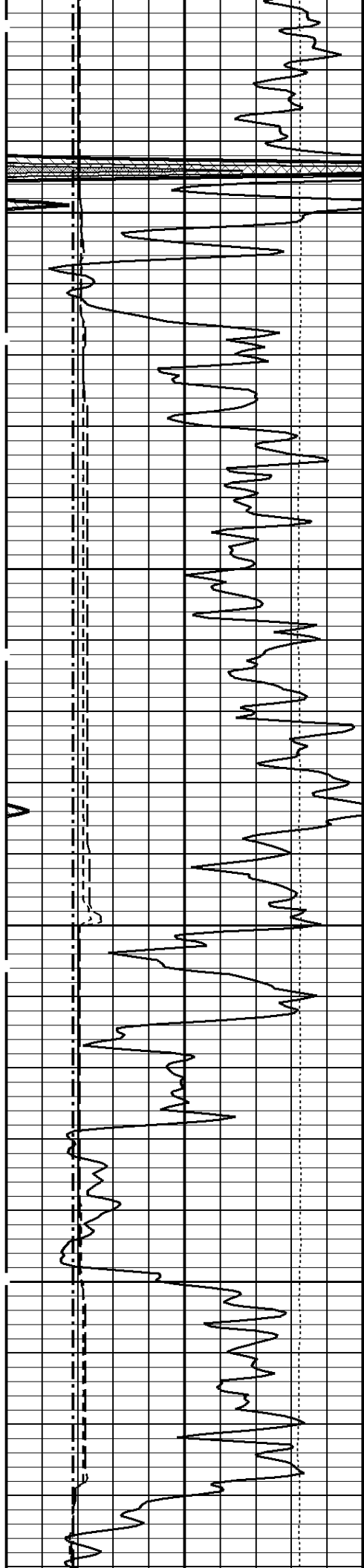




2100
--400Cu. Ft

2200

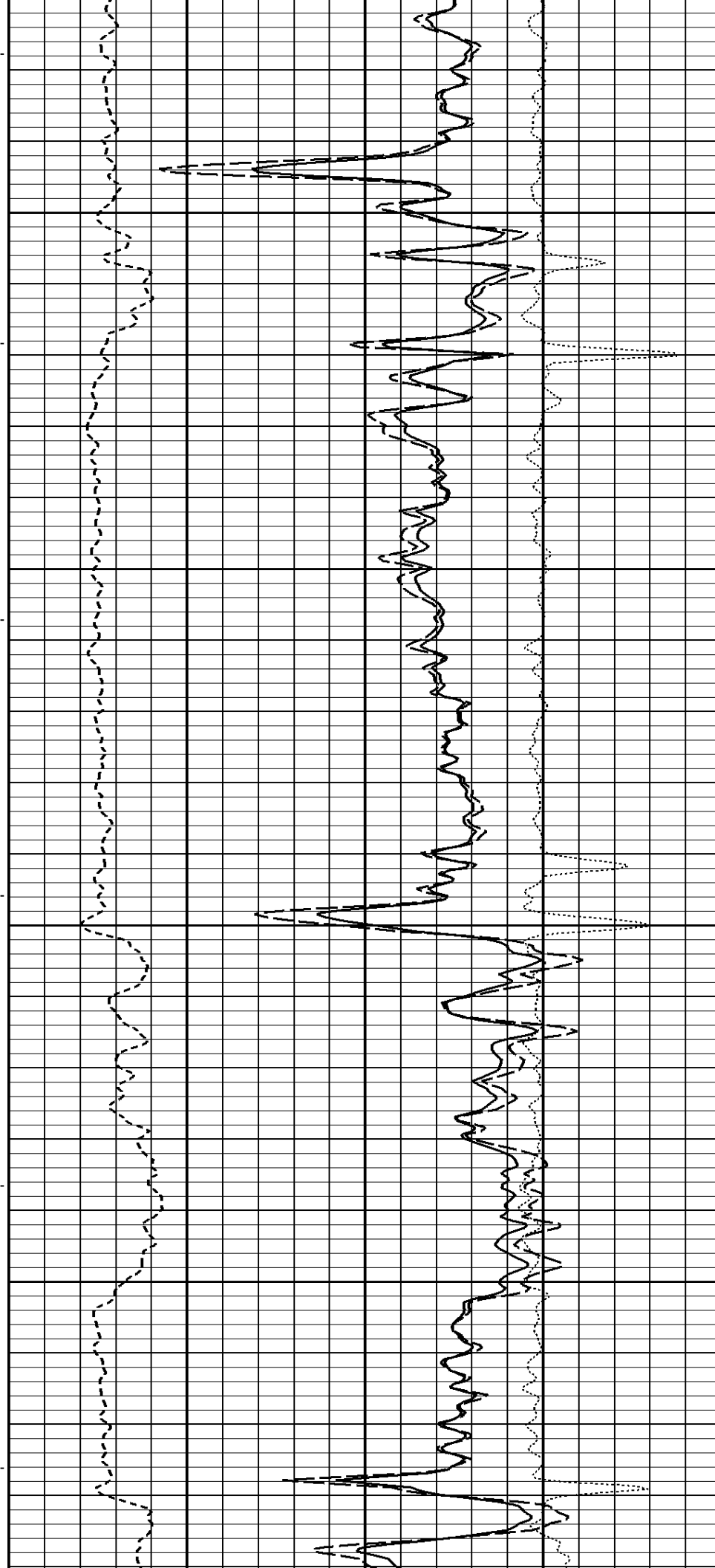


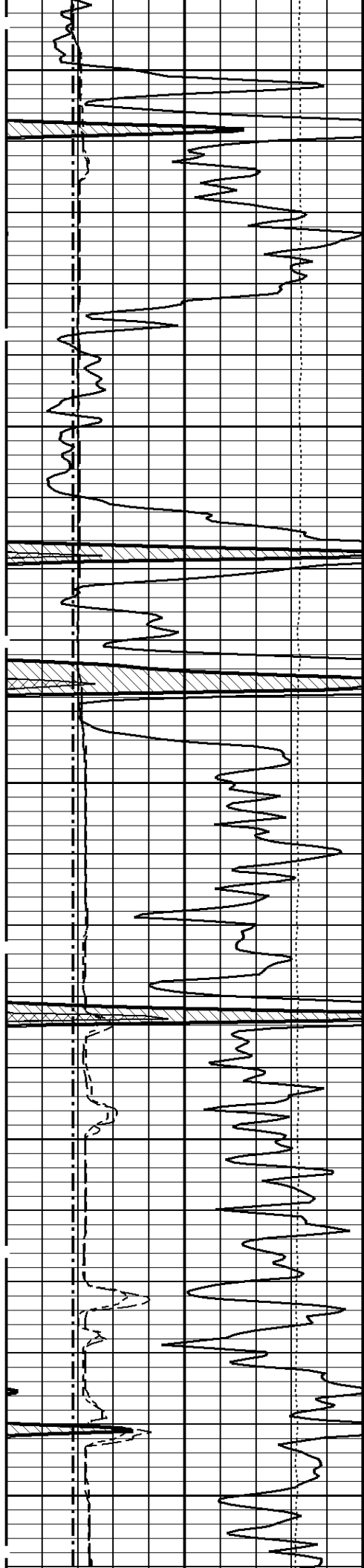


2300

300 Cu. Ft

200 Cu. Ft



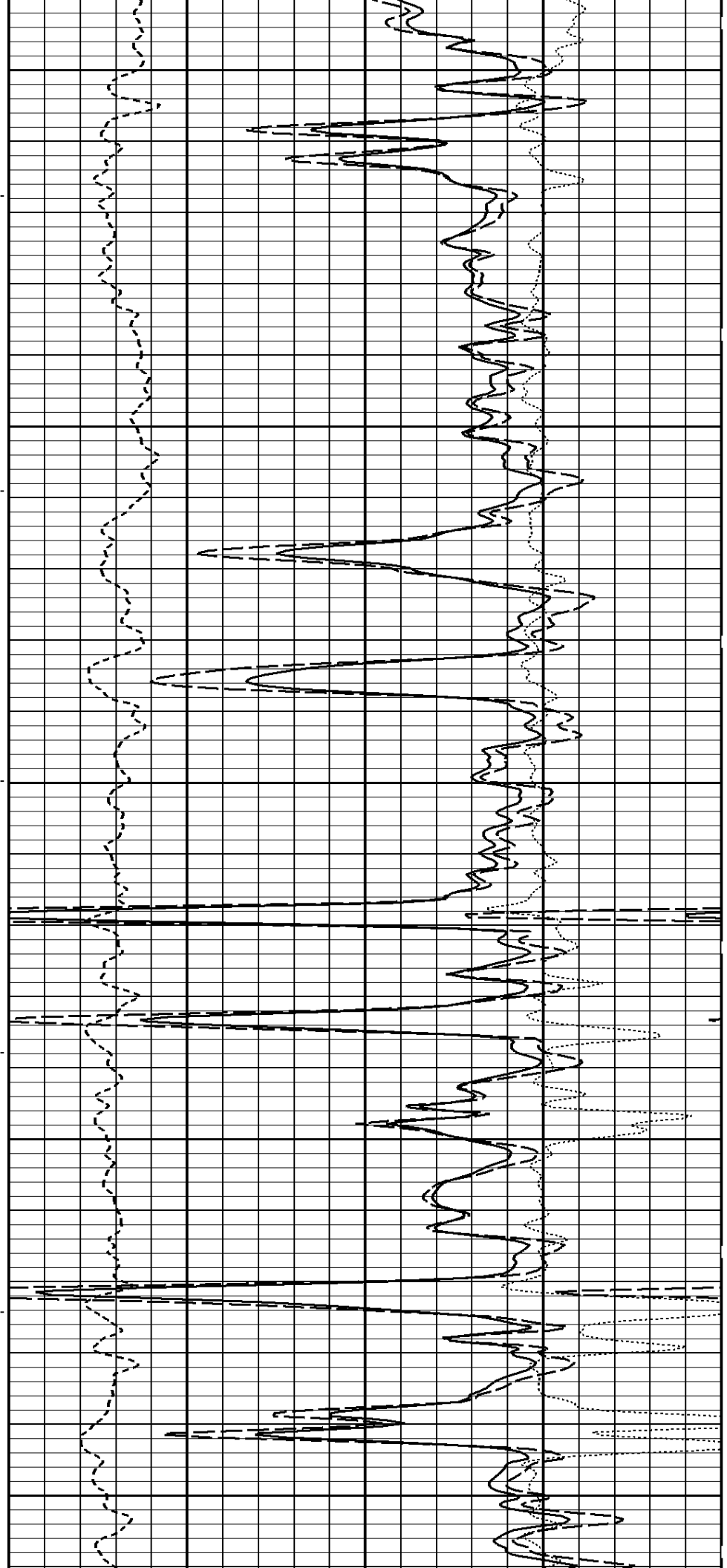


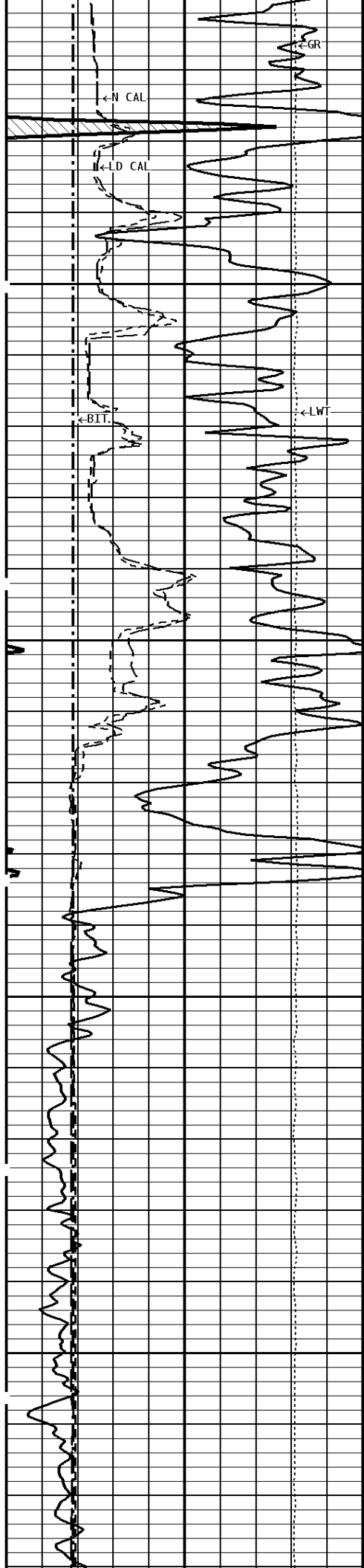
2500

2600

--200Cu. Ft

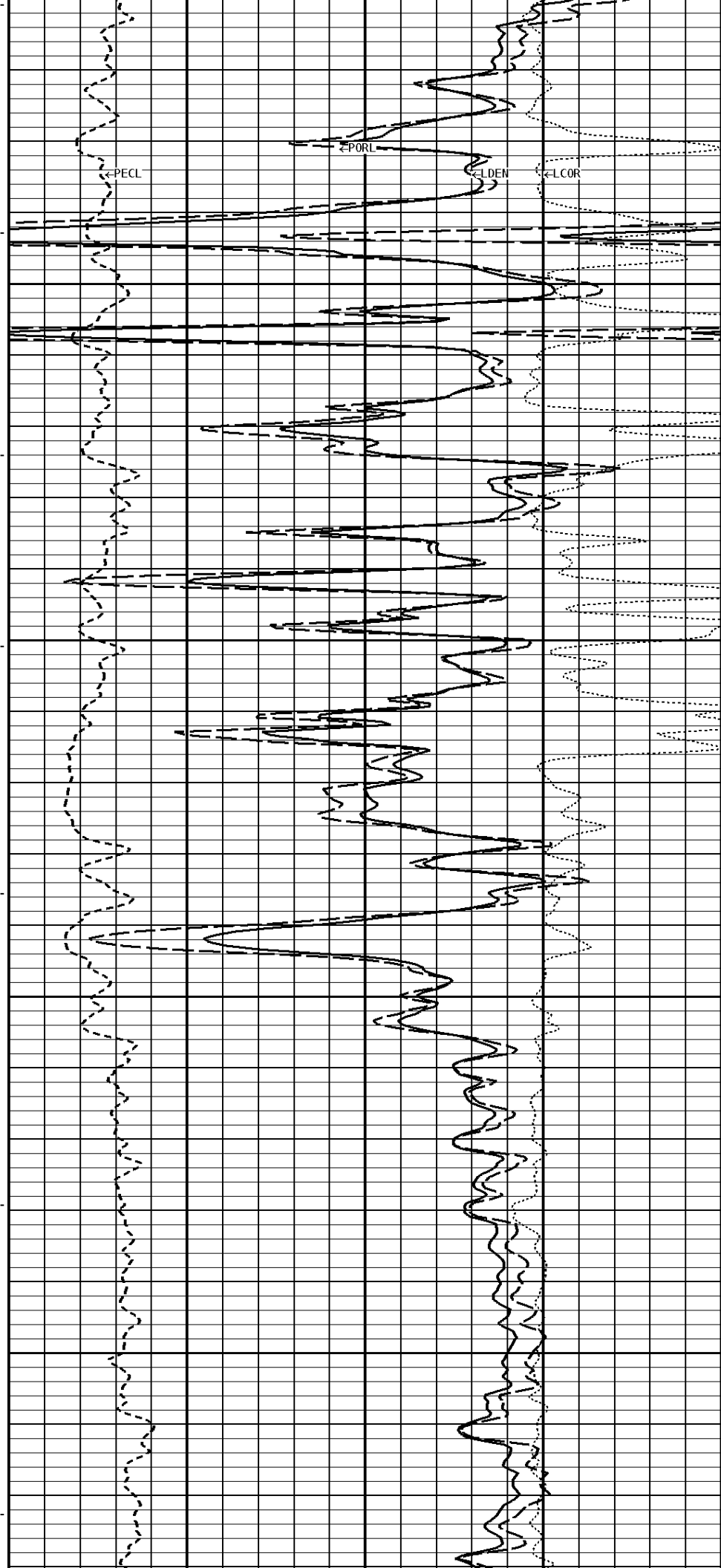
2700





2800_t

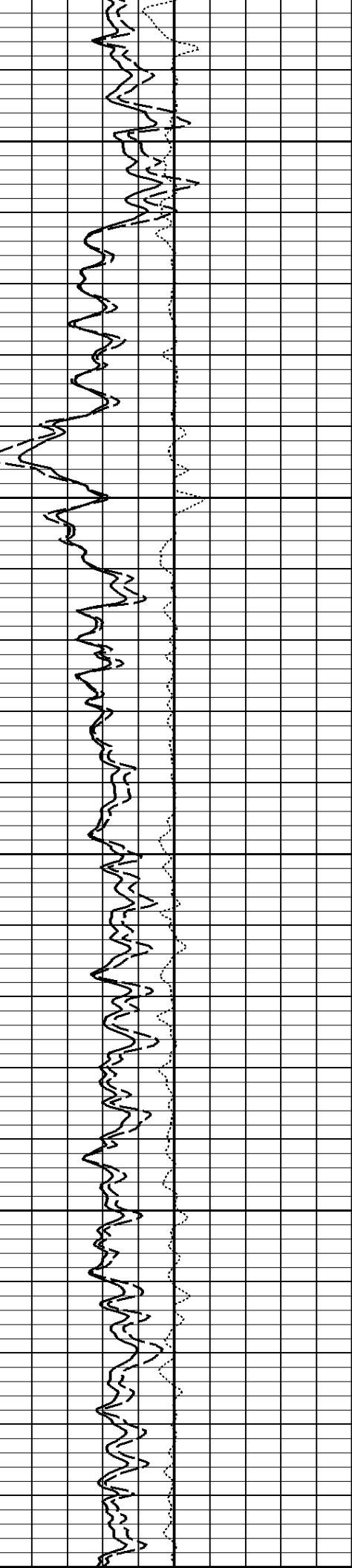
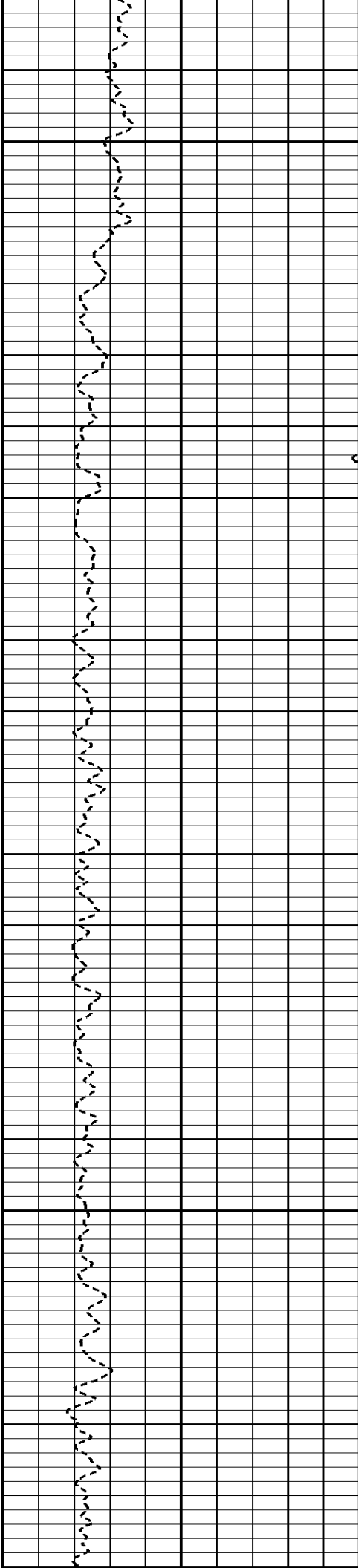
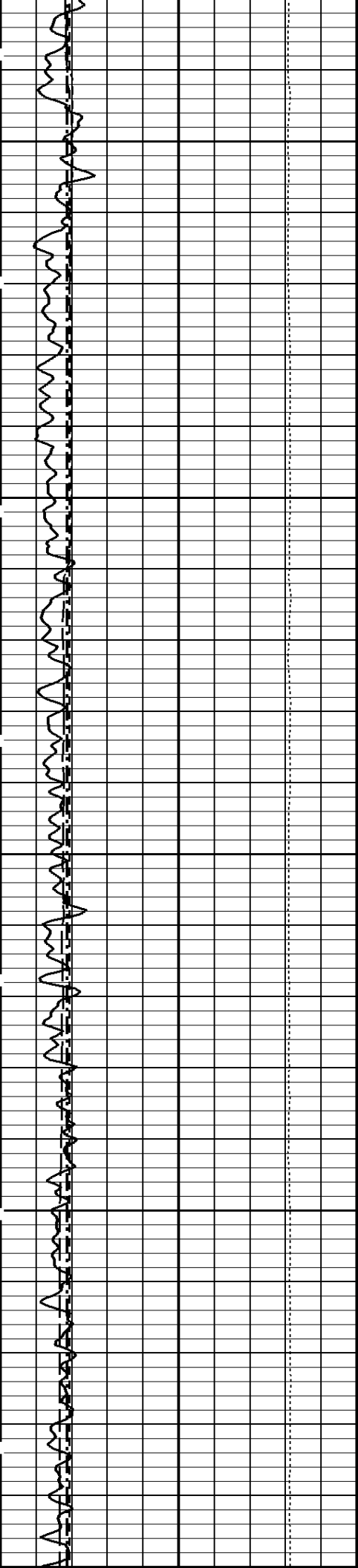
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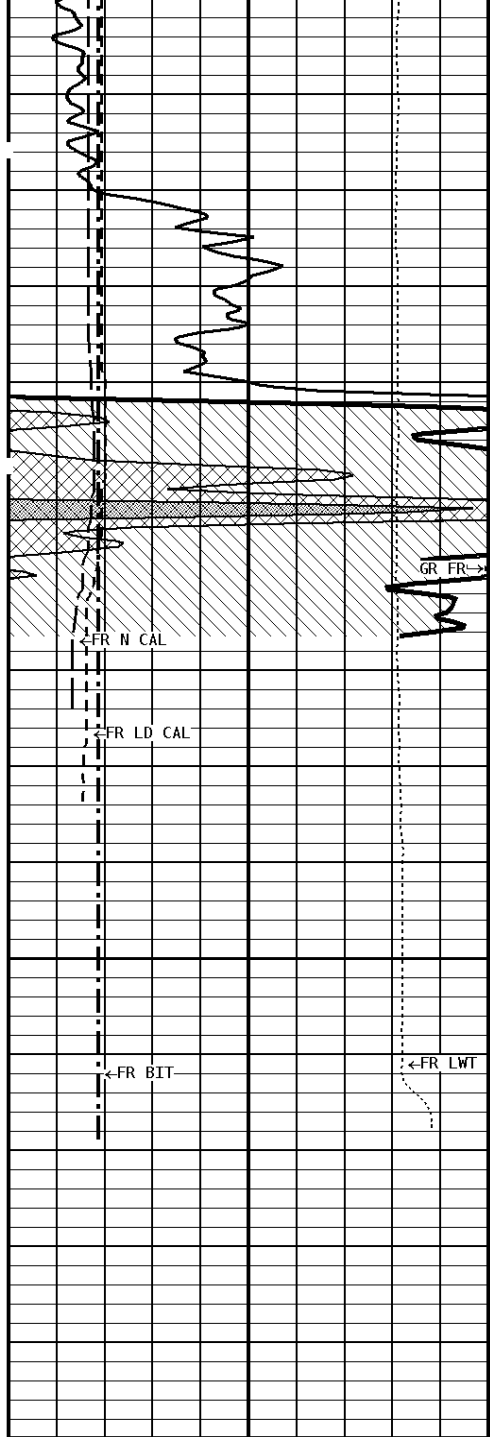


--100Cu. Ft

3000

3100

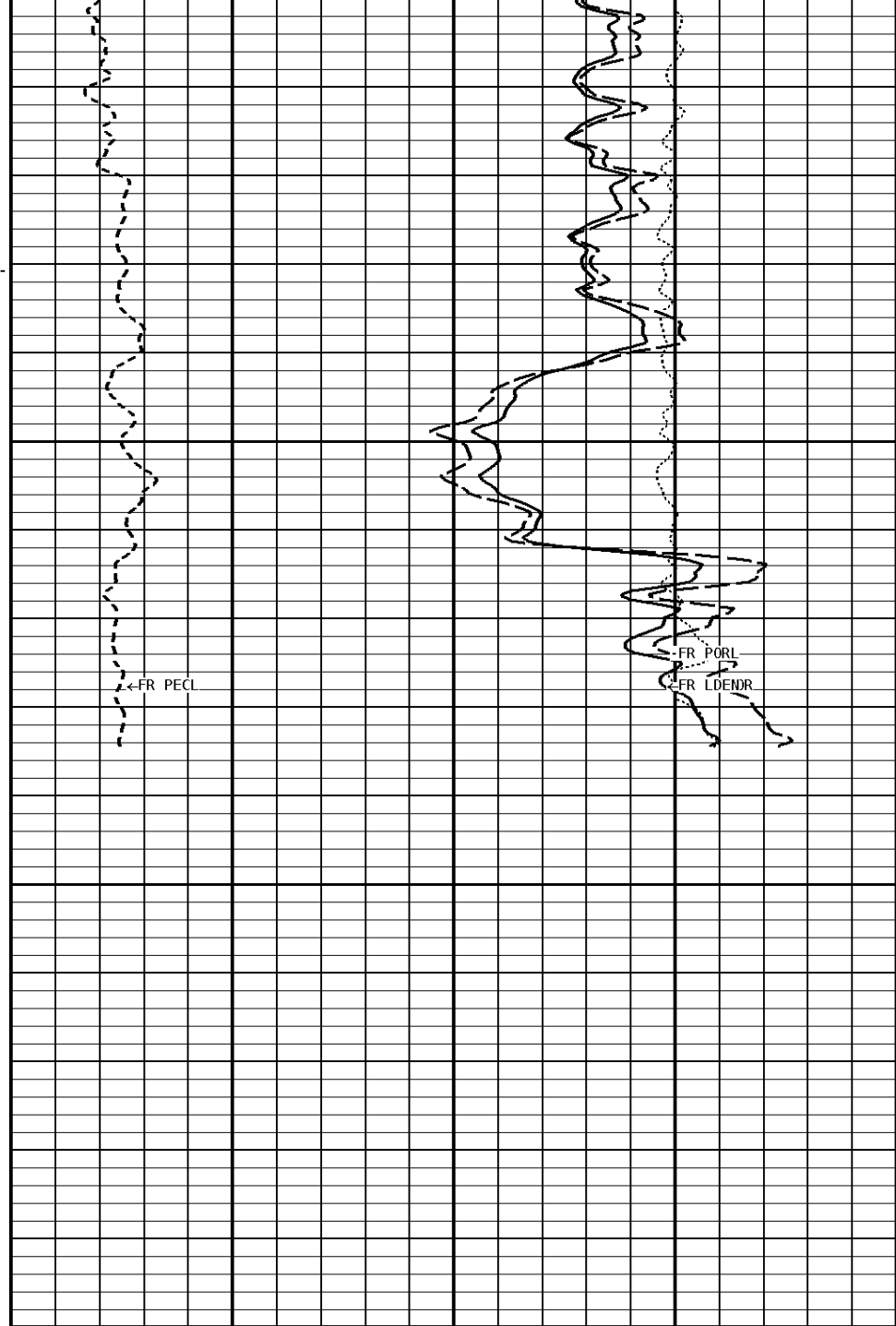




3200

3262

File # 1.1.5



1:240 MAIN SECTION BULK DENSITY

GAMMA RAY API UNITS
<div style="display: flex; align-items: center; justify-content: center;"> 150 <div style="width: 100%; height: 15px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></div> 300 </div>
<div style="display: flex; justify-content: space-between;"> 0 150 </div>

- BHV AHV -
CU. FT

COMPENSATED BULK DENSITY G/CC
3.0
2.0
1.0
4.0
3.0
2.0

NEUTRON (Y) CALIPER INCHES (IN)
<div style="display: flex; justify-content: space-between;"> 16 26 </div>
<div style="display: flex; justify-content: space-between;"> 6 16 </div>

DENSITY POROSITY PERCENT (2.71 g/cc)
70
30
-10
30
-10
-50

DENSITY (X) CALIPER INCHES (IN)
<div style="display: flex; justify-content: space-between;"> 16 26 </div>
<div style="display: flex; justify-content: space-between;"> 6 16 </div>

PE CROSS-SECTION BARN/ELECTRON
0
10

DENSITY CORRECTION G/CC
-0.25
0.25

BIT SIZE

BIT SIZE
INCHES (IN)

6 ----- 16

TENSION
LBS

10000 ----- 0

*** 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	_____	4.500			in
Casing Correction (PHI N)	_____	Disable			

*** Calibration Summary ***

Shop Calibration GRT-B					
Performed : 04-APR-2011			Time : 19:28		
Sensor Suite : GR-GR5			ID : GRT-BC-41		
	Measured	Units	Calibrated	Units	
GR	Background	Jig	Jig	GRAPI	
	46	346	175		

Shop Calibration CNT-AA					
Performed : 02-NOV-2011			Time : 12:06		
Sensor Suite : CALI-BCN			ID : NDT-BB-129		
	Jig - Measured		Jig - Calibrated		Units
CL # 1	Ring#1	Ring#2	Ring#1	Ring#2	IN.
	9.1	14.0	6.0	12.0	

Shop Calibration LDT-DF					
Performed : 10-Apr-2012			Time : 10:12		
Sensor Suite : BHC NEUT			ID : CNP-AA-112		
Source ID : N-1046					
	Measured	Tank	Verification	Units	
N/F	4.0434	Calibrated	Jig		
Porosity	26.3	3.6893	3.6865	20.5	%

Shop Calibration LDT-DF					
Performed : 01-DEC-2011			Time : 03:53		
Sensor Suite : CALI-LTH			ID : PDT-GA-464		
	Jig - Measured		Jig - Calibrated		Units
CL # 1	Ring#1	Ring#2	Ring#1	Ring#2	IN.
	7.8	11.6	6.0	12.0	

Shop Calibration LDT-DF					
Performed : 20-APR-2012			Time : 11:56		
Sensor Suite : BHCPELNG			ID : LDP-DA-067		
Source ID : 2991GW					
Short Space					
	BKGD	Al	Mg	Al+Fe	Units
LSW1	67	1159	1900	752	CPS
LSW2	69	1357	2186	970	CPS
LSW3	252	3100	4982	2630	CPS
LSW4	315	2887	4164	2545	CPS
LSW5	41	74	112	68	CPS
LSW6	71	77	70	77	CPS
LSW7	52	55	52	55	CPS
LSW8	8	11	21	11	CPS
QS	0.157	0.162	0.141	0.166	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC

Shop Calibration LDT-DF					
Long Space					
	BKGD	Al	Mg	Al+Fe	Units
LLW1	94	1332	5519	794	CPS

LLW2	104	2448	9300	1752	CPS
LLW3	395	4393	16440	3770	CPS
LLW4	508	2040	6822	1847	CPS
LLW5	57	68	199	66	CPS
LLW6	169	166	140	168	CPS
LLW7	106	102	95	104	CPS
LLW8	3	6	43	5	CPS
QL	0.228	0.238	0.190	0.233	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC

**Shop Calibration
MST-DA**

Performed : 02-NOV-2011 Time : 12:14
 Sensor Suite : CALI-MSN ID : MLT-DA-21

CL # 1	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	IN.
	6.5	11.1	6.0	12.0	

Performed : 27-SEP-2011 Time : 23:19
 Sensor Suite : MSTDA-NI ID : MLT-DA-21

	Internal					
	Measured			Calibrated		
	Zero	Reference	Units	Zero	Reference	Units
INV-V	0.0	29798.9		0.00	1546.00	MV
NOR-V	5.3	30095.1		0.00	1546.00	MV
IN-C	0.0	60566.2		0.00	15.46	UA
INV-R					32.34	OHMM
NOR-R					55.11	OHMM

Performed : 27-SEP-2011 Time : 23:19
 Sensor Suite : MSTDAMSF ID : MLT-DA-21

	Internal					
	Measured			Calibrated		
	Zero	Reference	Units	Zero	Reference	Units
MSFC	15.0	42144.9		0.00	1522.00	UA
MSFB	29116.0	30973.0		0.00	1522.00	MA
MOM1	0.0	43106.2		0.00	1522.00	MV
MSFRA					43.30	OHMM