Tucker ENERGY SERVICES

COMPENSATED NEUTRON

PEL DENSITY MICRO LOG

Company DEXXON, INC.
Well REDWOOD ROYALTY #1
Field GRANT
County HARPER
State KANSAS
Country USA
API No. 15-077-22173

File No : TUL-61448
Company : DEXXON, INC.
Well : REDWOOD ROYALTY #1
Field : GRANT
County : HARPER
State : KANSAS
Country : USA
API No : 15-077-22173

Location :
330' FNL & 1320' FEL
N2 N2 NE

LSD : **Sect :** 29 **Twp :** 31S **Rge :** 07W

Permanent Datum:	GL	**Elevations:**		**Services:**	
Drilling Measured From:	GL	**KB** 1514.00	Ft	CNT	WOT
Log Measured From:	GL	**DF** 1513.00	Ft	LDT	PIT
Above Permanent Datum:	13.00 Ft	**GL** 1501.20	Ft	MLT	

Date	08-28-2018						
Run Number	1						
Depth--Driller	4860.0	Ft					
Depth--Logger	4865.0	Ft					
First Reading	4835.0	Ft					
Last Reading	2400.0	Ft					
Casing--Driller	250.0	Ft					
Casing--Logger	250.0	Ft					
Bit Size	8.750	In					
Casing Size	9.625	In					
Hole Fluid Type	WBM						
Density	9.5						
Fluid Loss	8.8						
PH/Viscosity	11.5	70.0					
Sample Source	MEASURED						
RM@Measured Temp.	0.580 @ 80 F						
RMF@Measured Temp	0.490 @ 80 F						
RMC@Measured Temp.	0.670 @ 80 F						
Source RMF/RMC	CALCULATED	CALCULATED					
RM@BHT	0.370 @ 130 F						
Time Circulation Stopped							
Max Recorded Temp.	130 F						
Equipment/Base	1022	TULSA					
Recorded By	R. FRANKLIN						
Witnessed By	G. PILGRIM						

Casing Strings

Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
9.625	0.00	250.00	0.00

Bitsize Intervals

Size (In)	Bottom (Ft)
8.750	4860.00

Run Number	1		
Date	08-28-2018		
Date/Time On Bottom	08-28-2018 09:15		
Depth to Fluid	0.0	Ft	
Salinity	4500.000		
RMF@BHT	0.310 @ 130	F	
RMC@BHT	0.420 @ 130	F	

Run Number 1

Comments

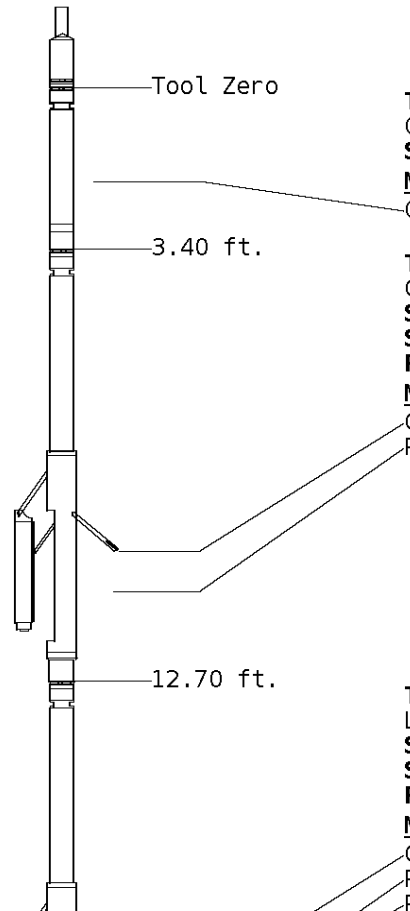
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
GRT, CNT, LDT, MLT, NAV AND PIT RUN IN COMBINATION
CALIPERS ORIENTED ON X-Y AXIS
2.71 G/CC USED TO CALCULATE POROSITY
ANNULAR HOLE VOLUME CALCULATED USING 7.0" PRODUCTION CASING
PHIN IS CALIPER CORRECTED

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
WOT: INC, AZM, RB

OPERATORS:
B. BROWN
K. WARREN

Tool String Schematic

Total Tool Length - 58.84 **ft.**
Maximum Outside diameter - 6.00 **in.**
Net Weight in Air - 1031.00 **lbs.**



Tool: GRT-B **Length:** 3.40 **ft.** **O.D.** 3.60 **in.**
Gamma Ray Controller
Sonde ID :GRT-BA-121

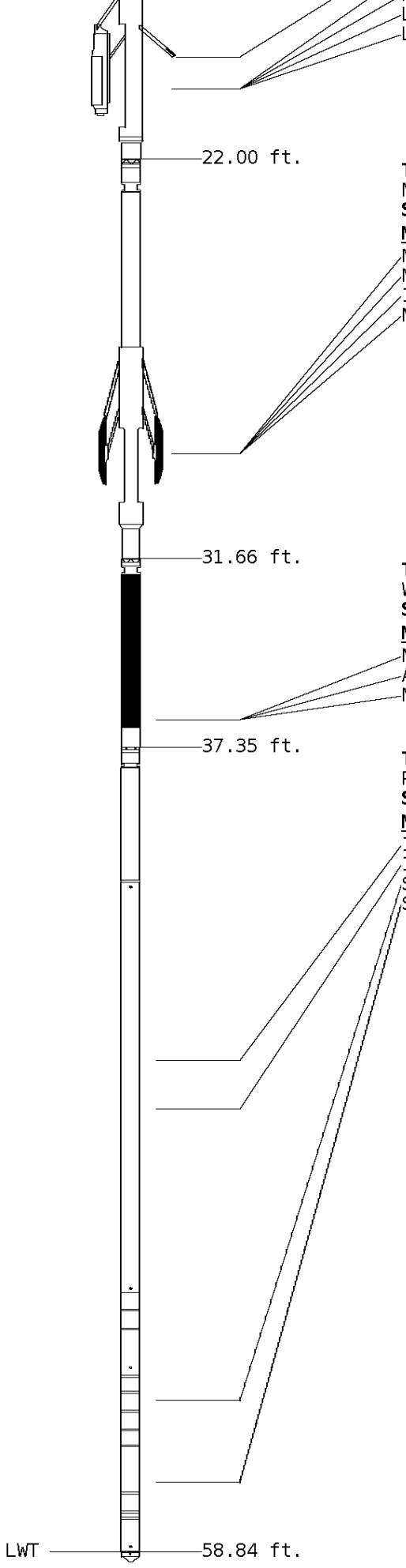
Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	56.84

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	49.44
PHIN	6.80	10.20	48.64

Tool: LDT-DA **Length:** 9.30 **ft.** **O.D.** 4.80 **in.**
Litho Density D Pad on NDT-A
Sonde ID :NDT-FA-420
Source ID :63558B
Pad ID :LDP-DA-038

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.00	18.70	40.14
PEL	7.00	19.70	39.14
PES	7.40	20.10	38.74



LDEN	7.20	19.90	38.94
LCOR	7.20	19.90	38.94

Tool: MST-DA **Length:** 9.66 **ft.** **O.D.** 6.00 **in.**
Micro Spherically Focused (IC)
Sonde ID :MST-DA-021

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	29.60	29.24
MSCLP	7.60	29.60	29.24
INV	7.60	29.60	29.24
NOR	7.60	29.60	29.24

Tool: WOT-AE **Length:** 5.69 **ft.** **O.D.** 3.50 **in.**
Well Orientation Tool
Sonde ID :WOT-AE-018

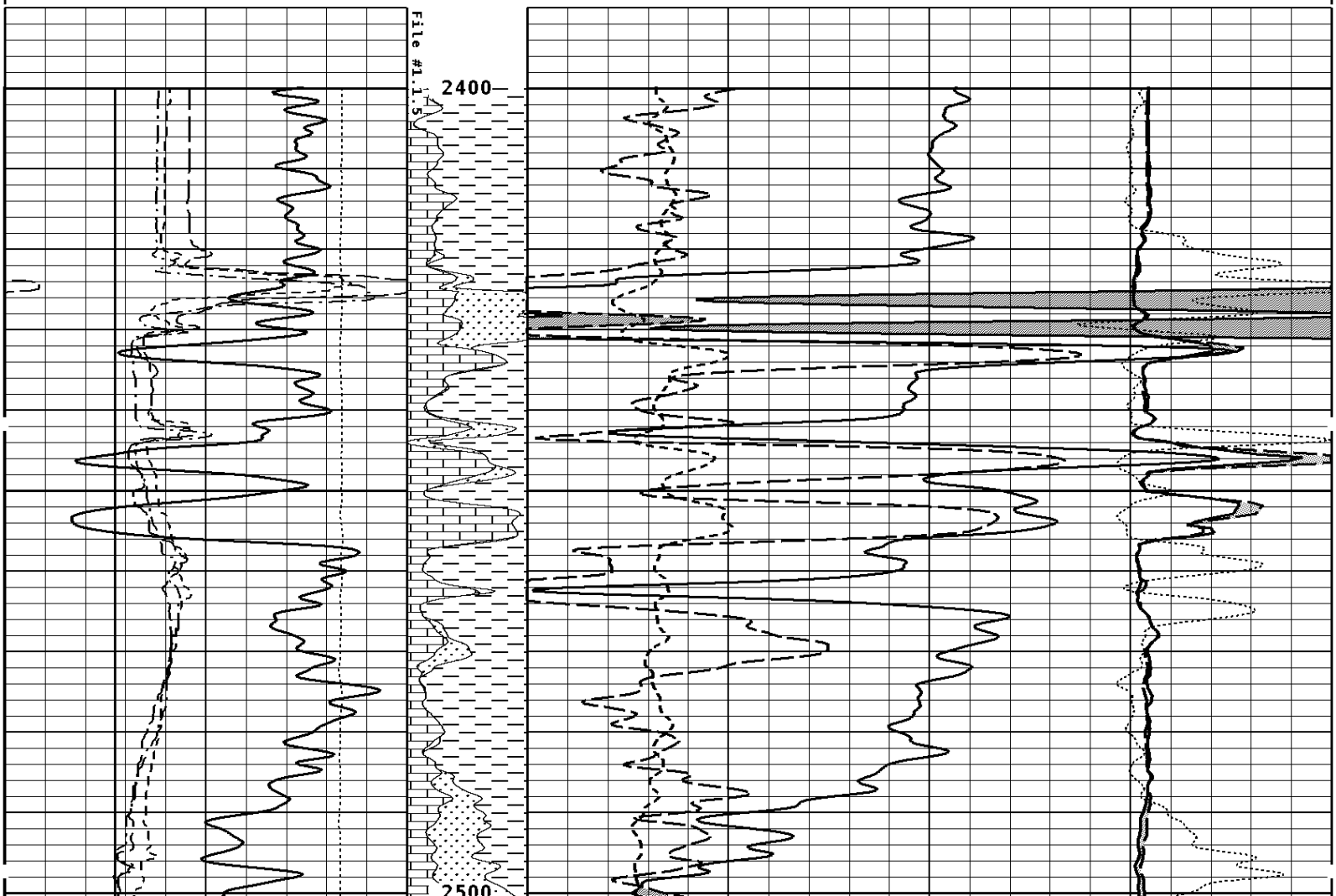
Measure Point	Tool Offset	Stack Offset	Bottom Offset
NAVTEMPE	3.00	34.66	24.18
ACCXE, ACCYE, ACCZE	3.00	34.66	24.18
MAGXE, MAGYE, MAGZE	3.00	34.66	24.18

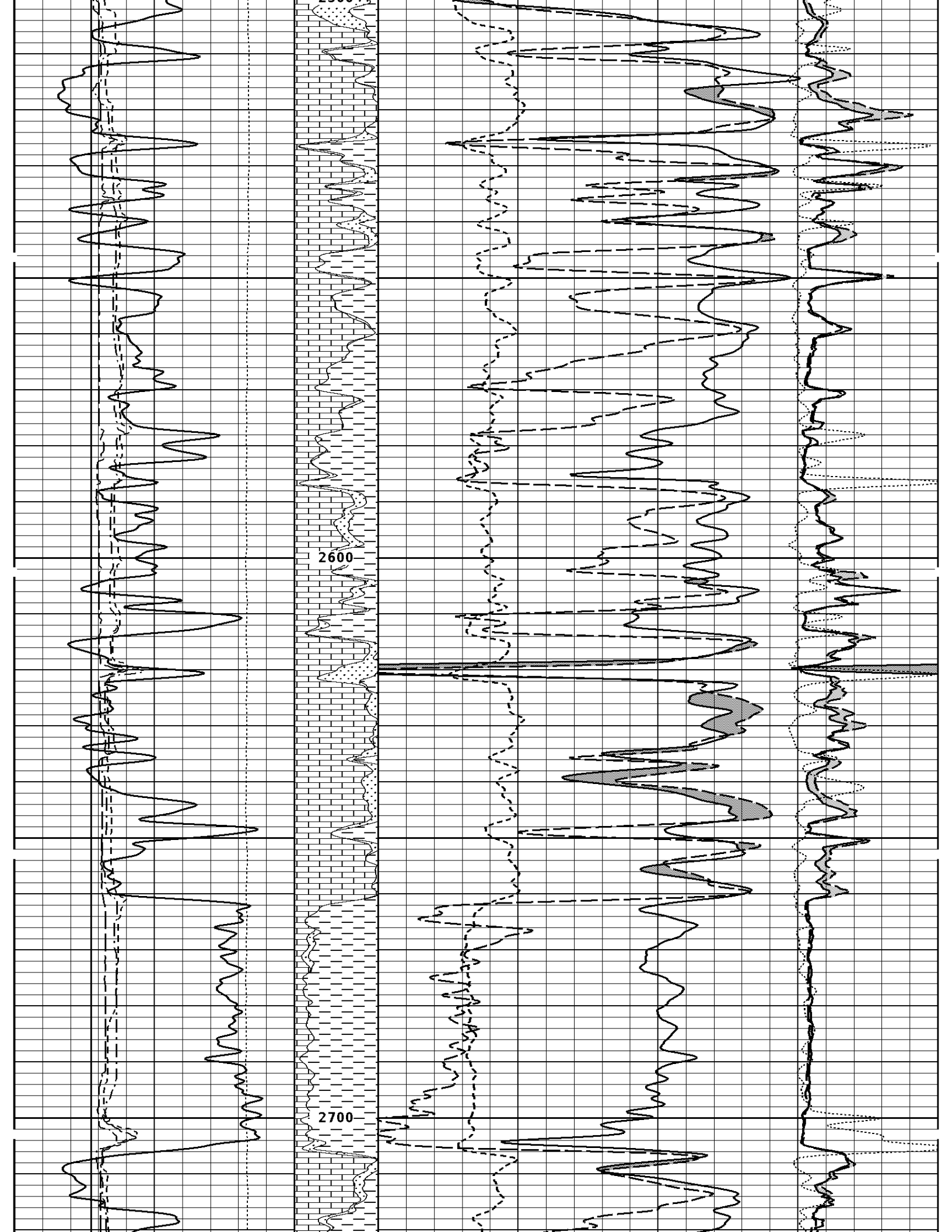
Tool: PIT-CA **Length:** 21.49 **ft.** **O.D.** 3.62 **in.**
Phased Dual Induction w/ RM & D
Sonde ID :PIT-CA-069

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	46.27	12.56
ILM	10.10	47.45	11.39
SFLU	17.49	54.84	4.00
SP	20.60	57.95	0.88

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

1:240 MAIN SECTION

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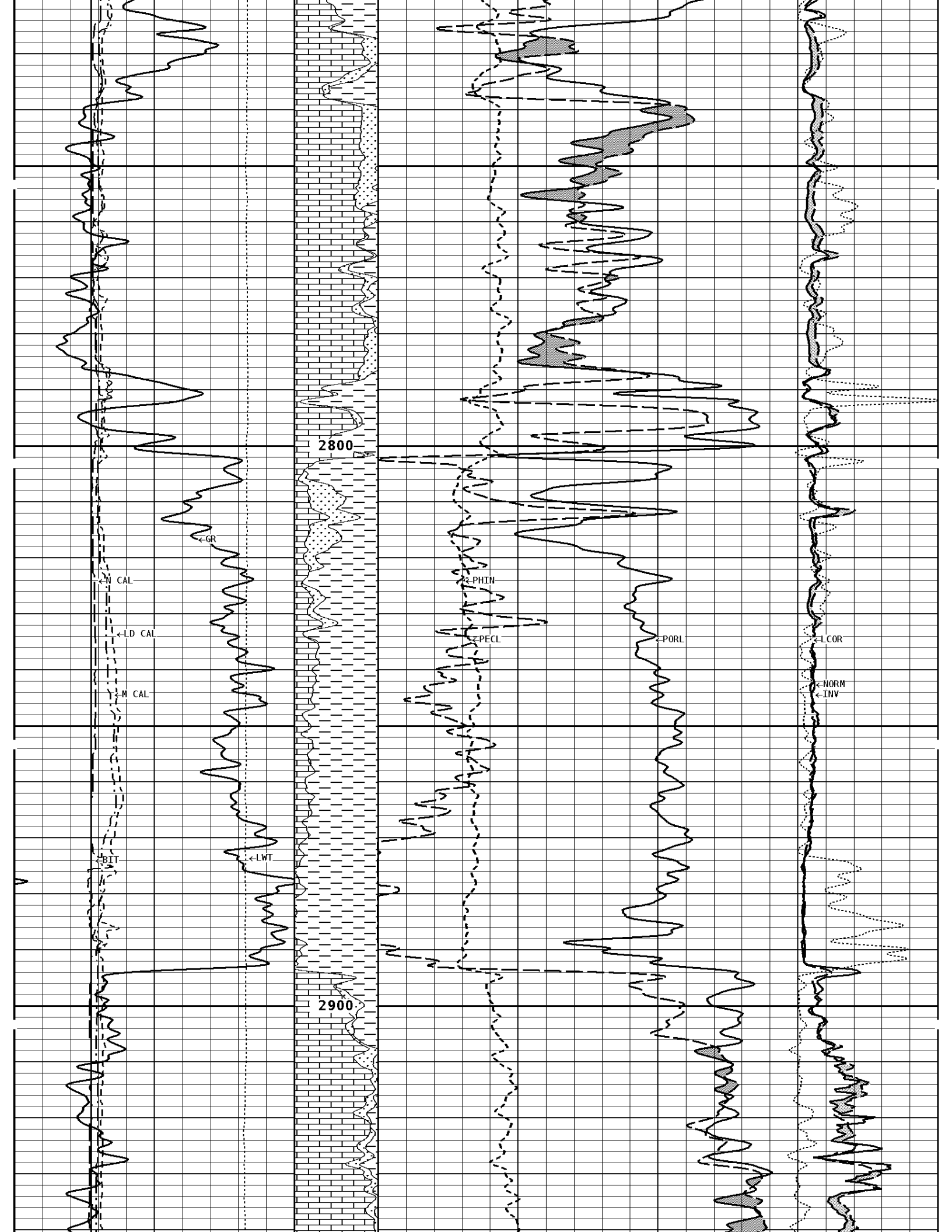
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M CAL
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LWT
PHIN
PECL
PORL
LCOR
NORM
INV
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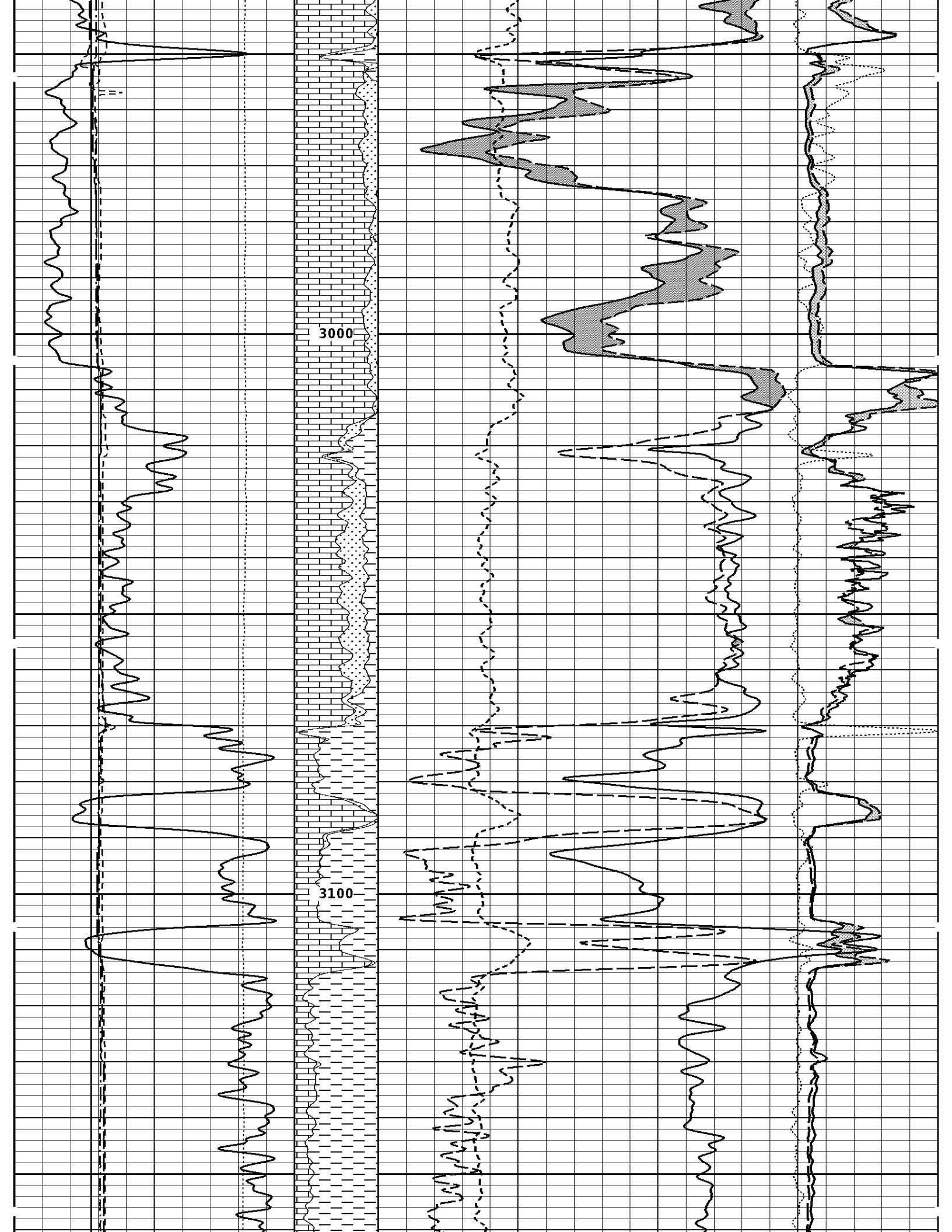
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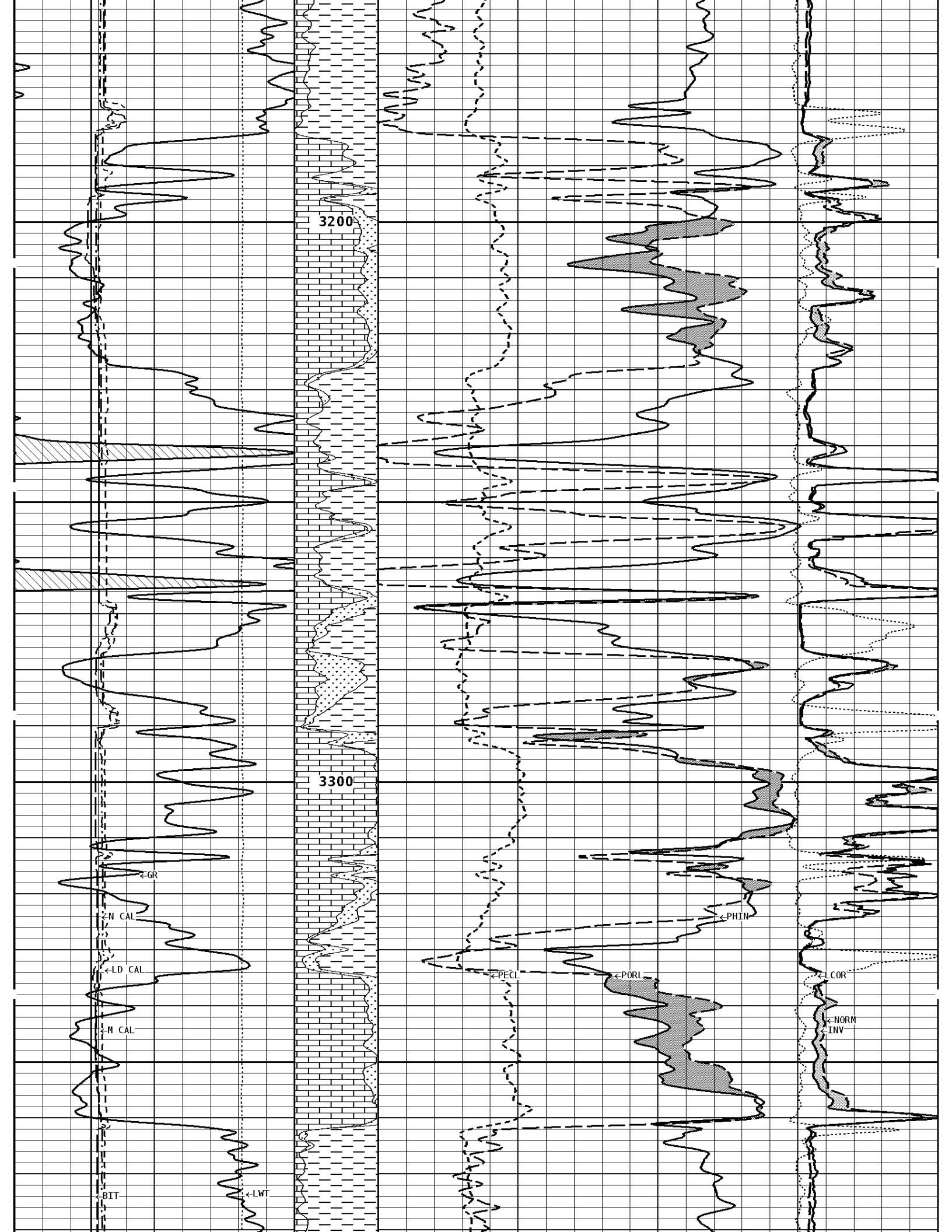
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M CAL
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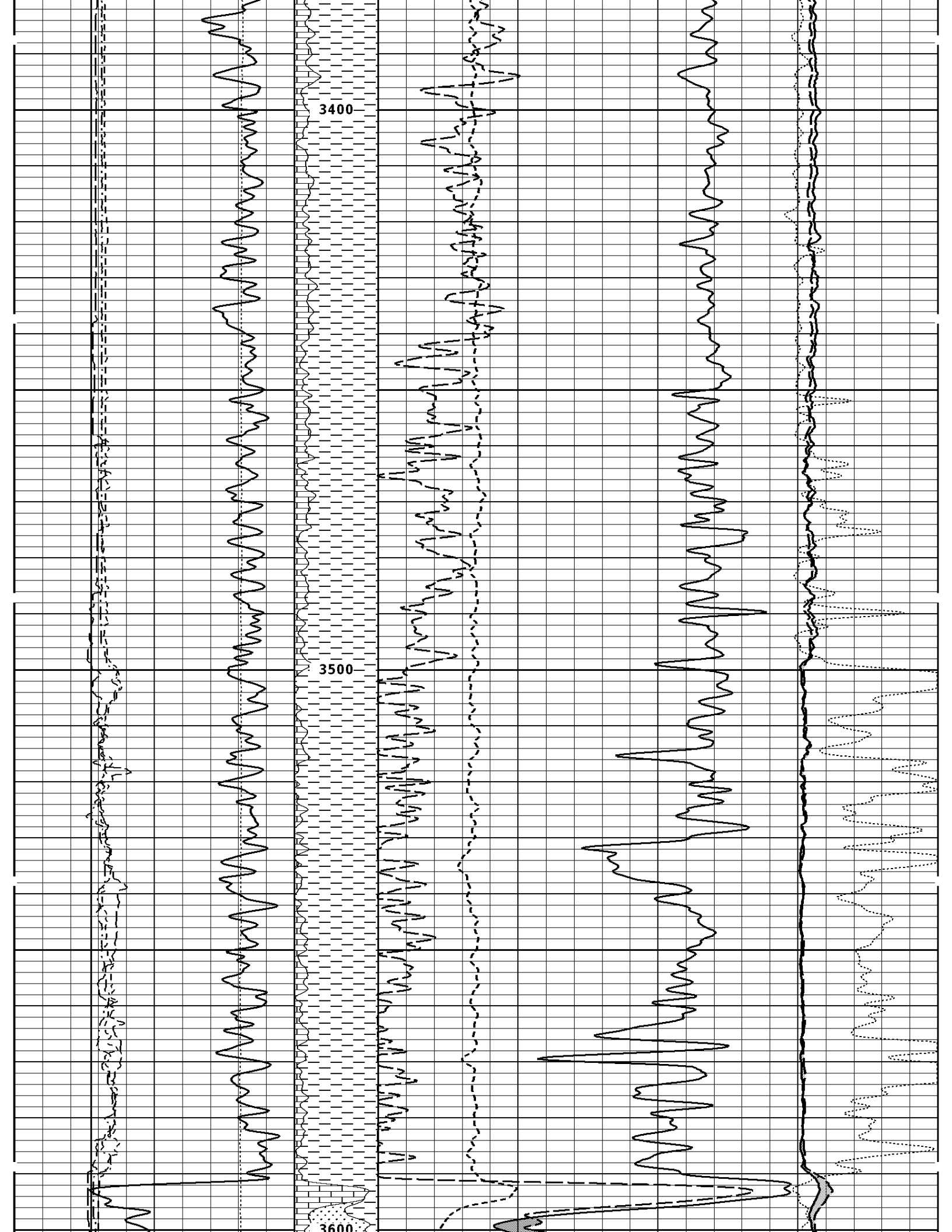
PHIN
PECL
PORL
LCOR
NORM
INV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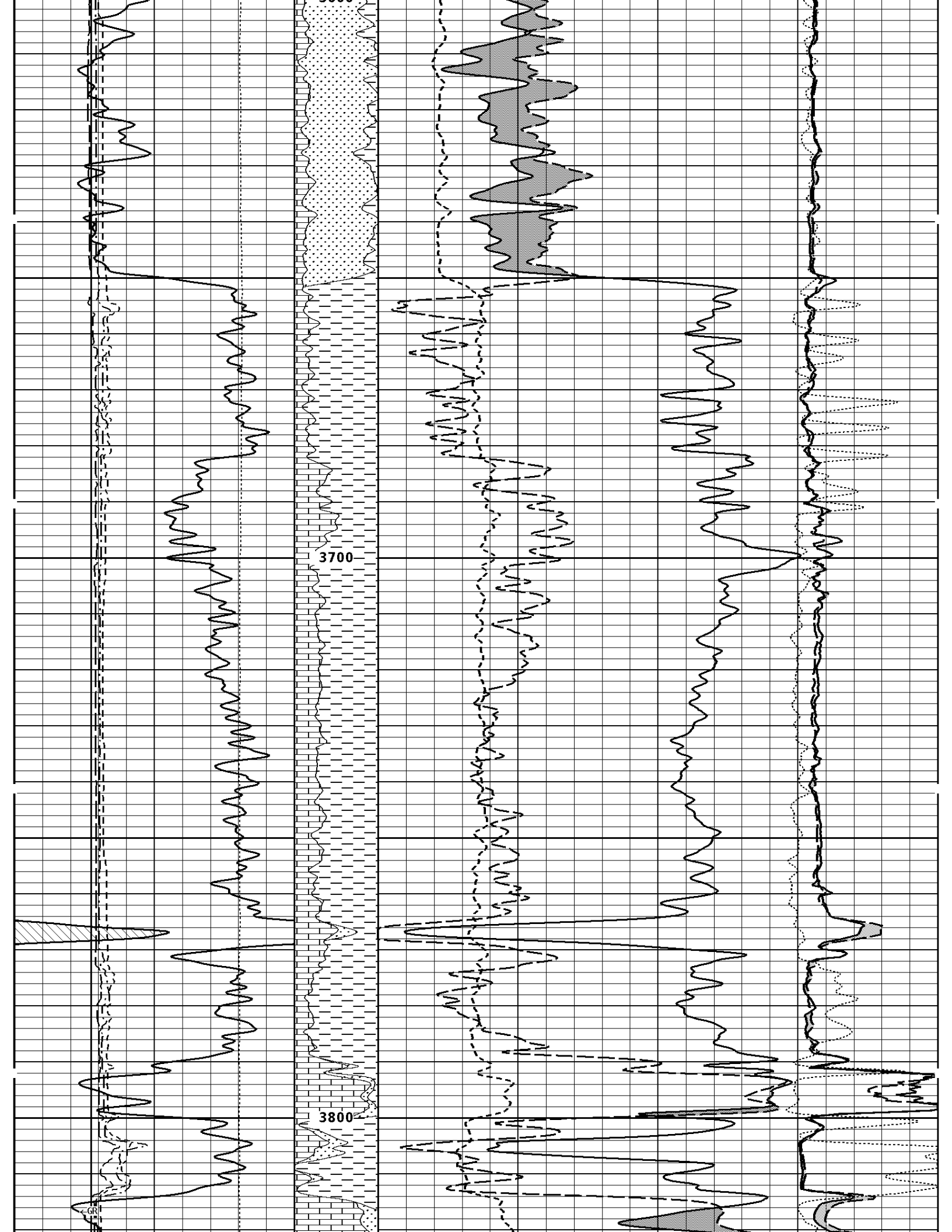
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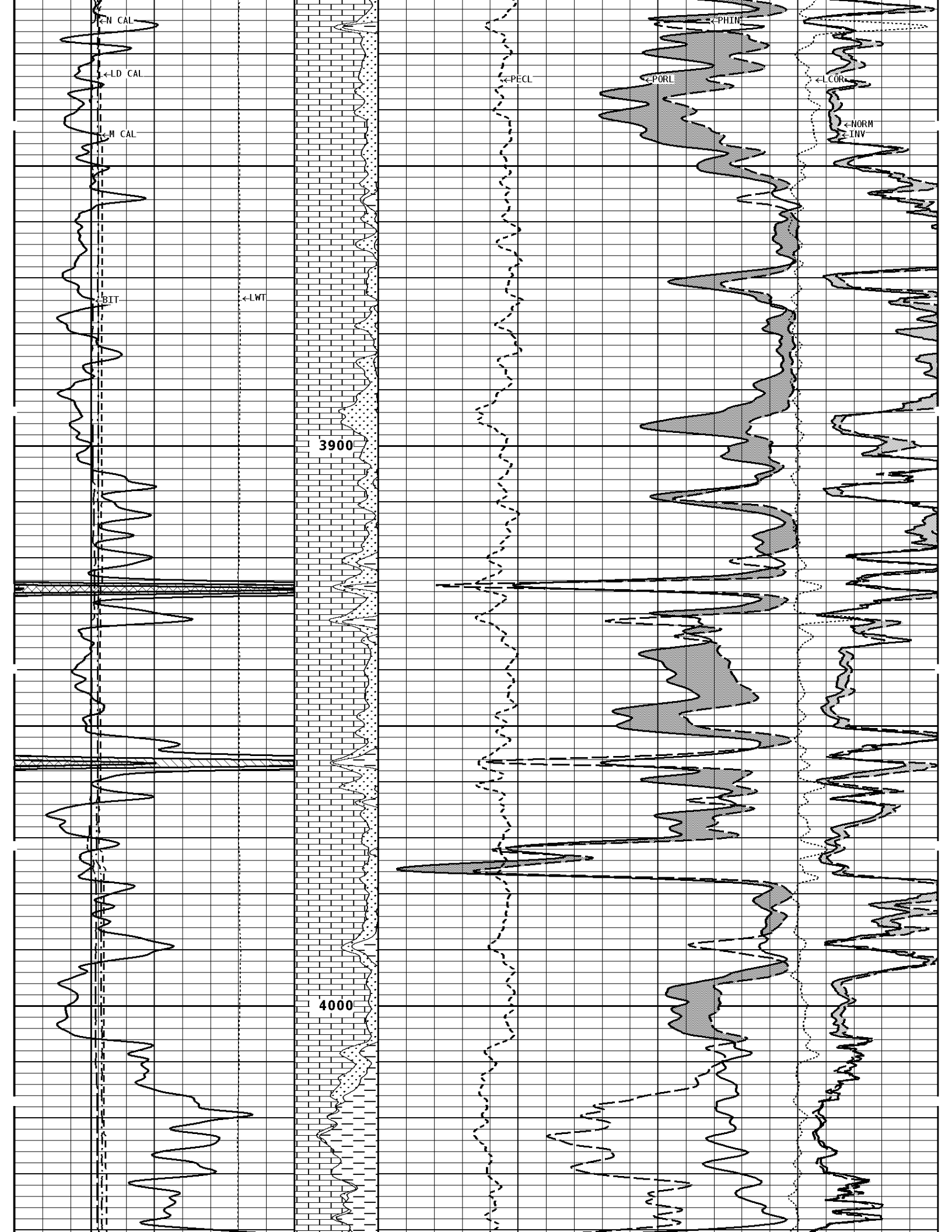
3800
GR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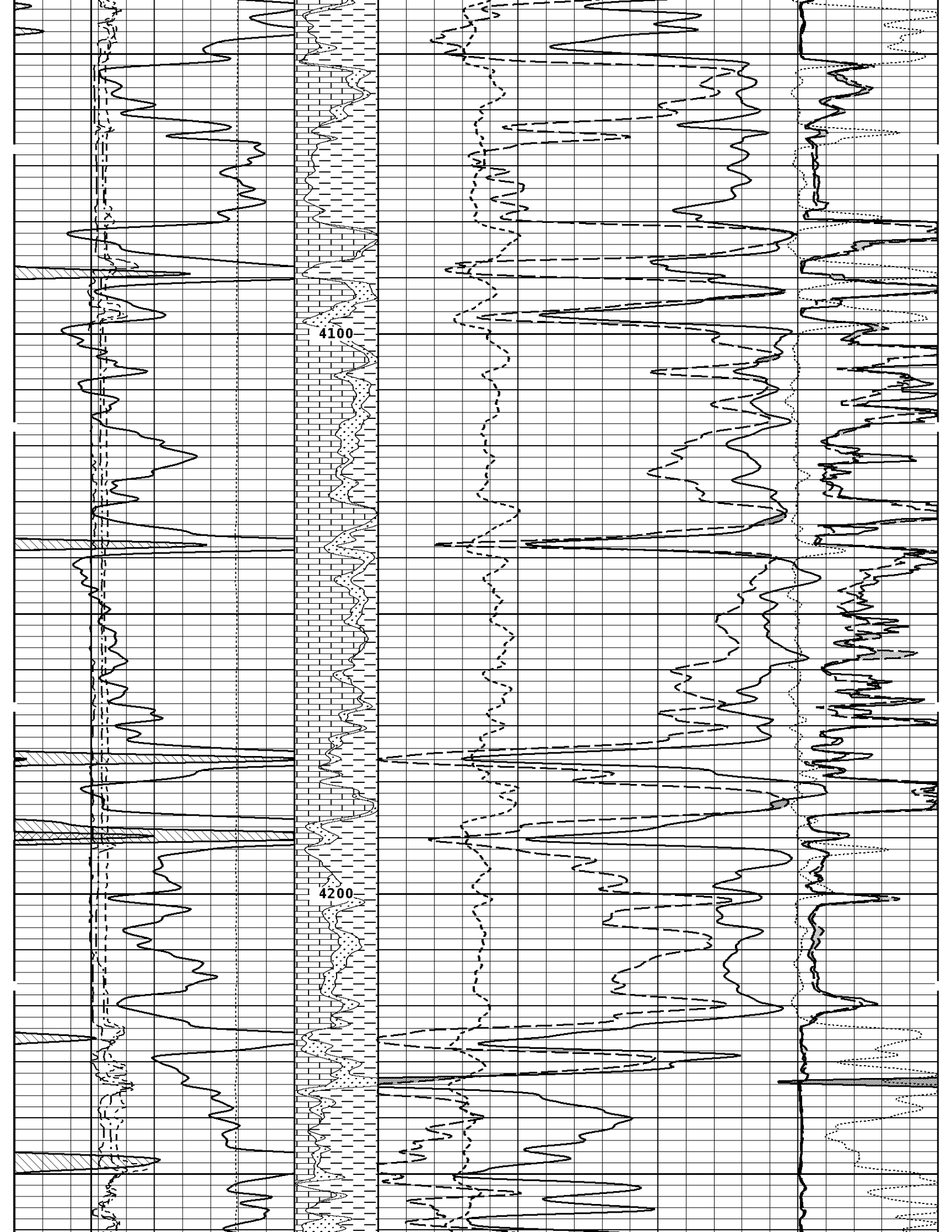
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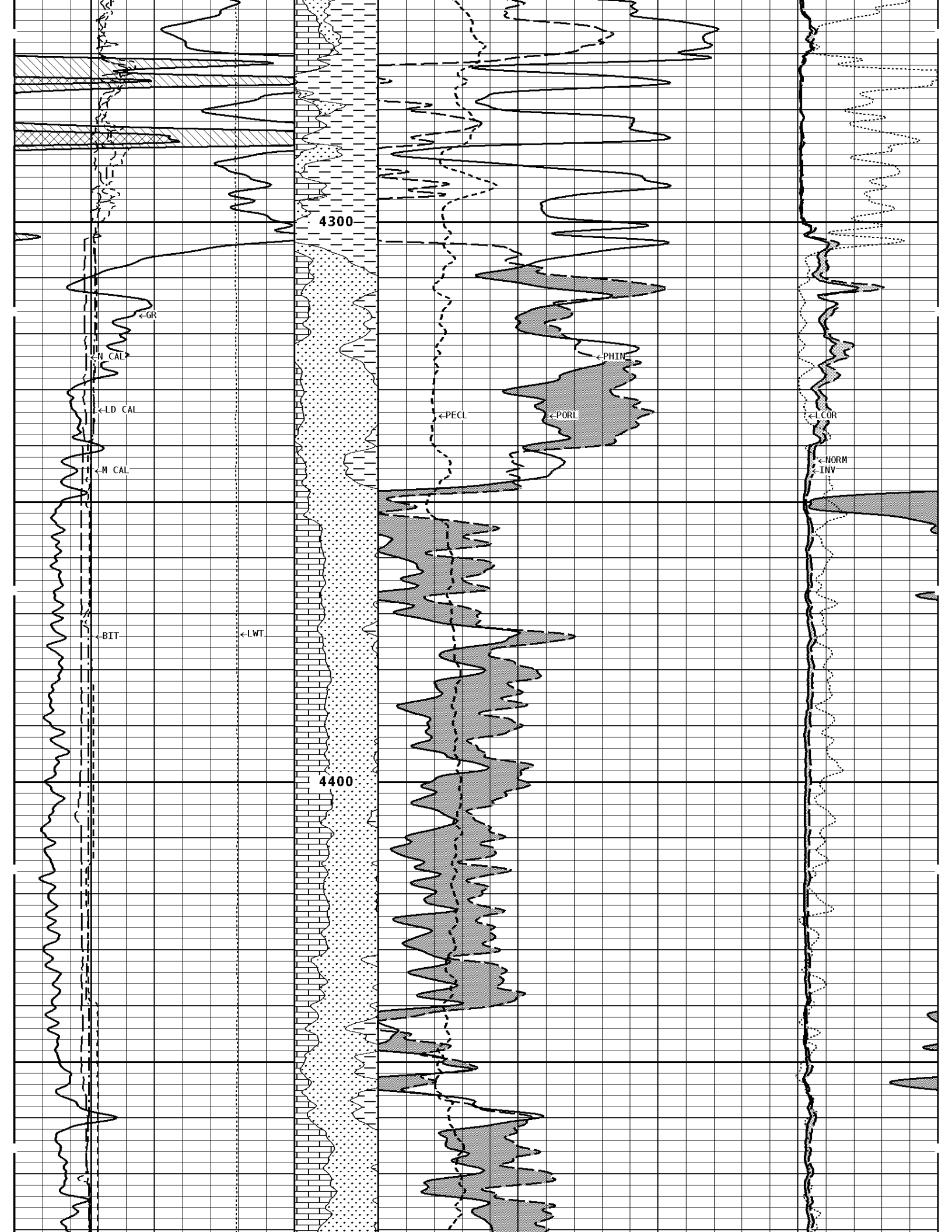
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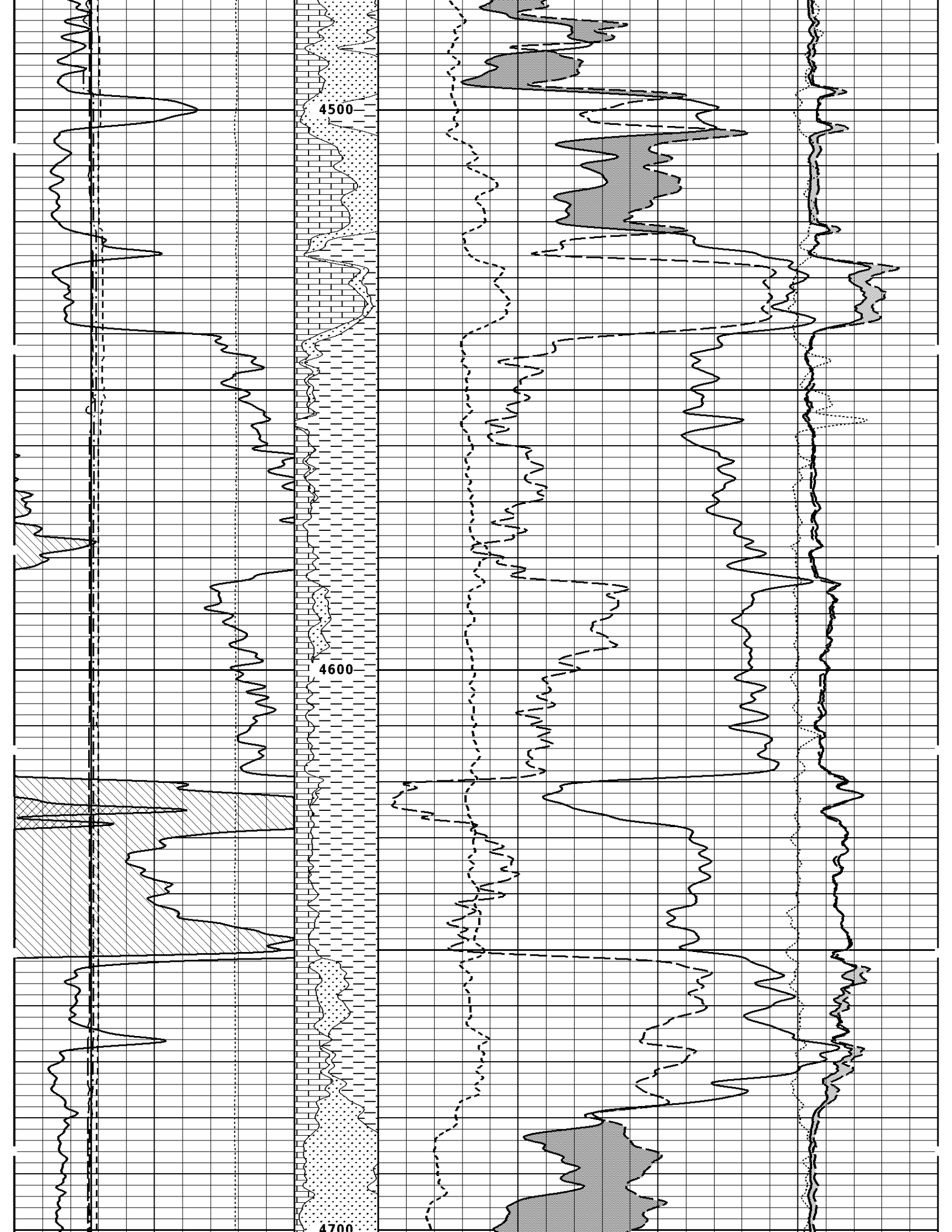
PORL
LCOR
NORM
INV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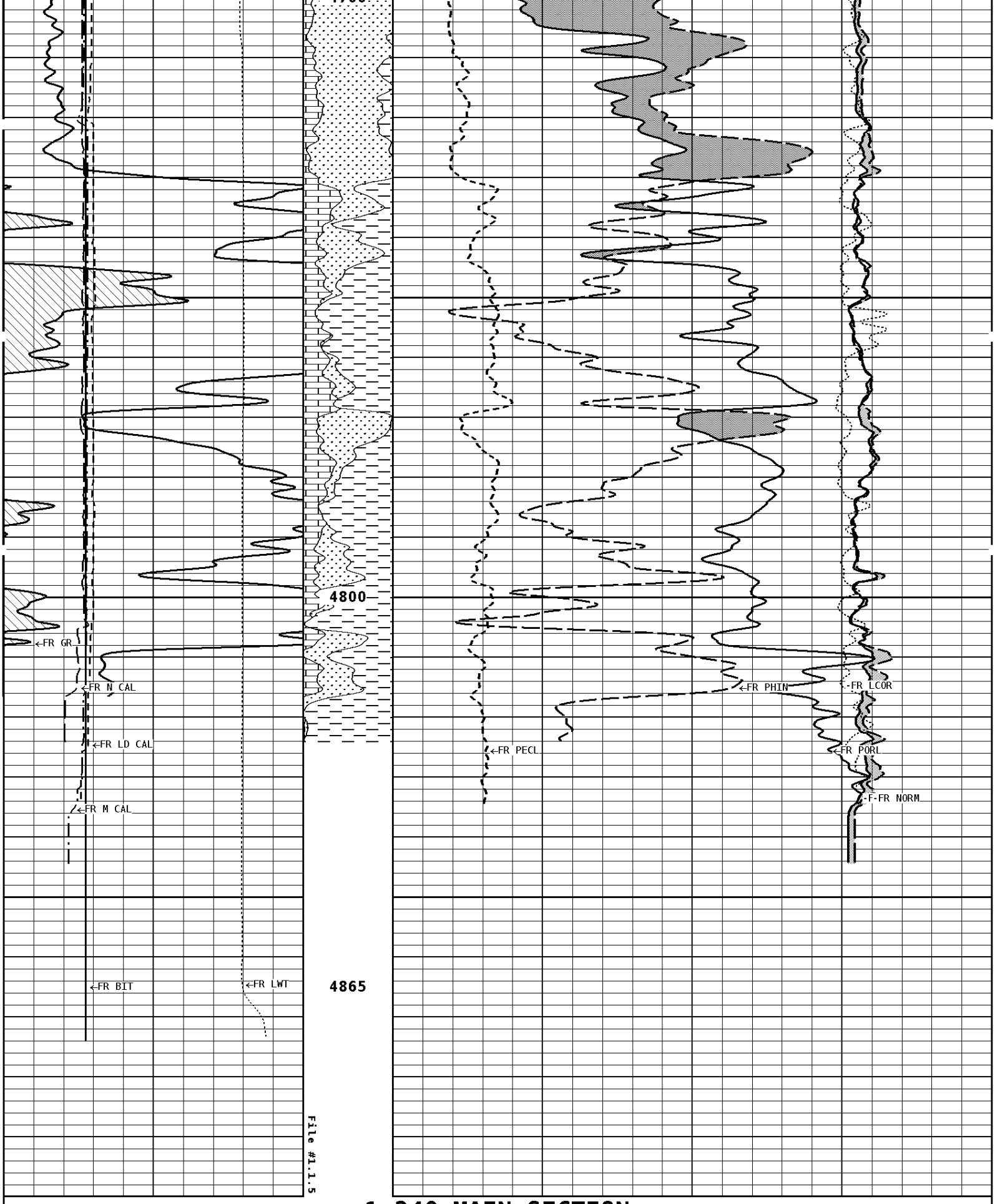
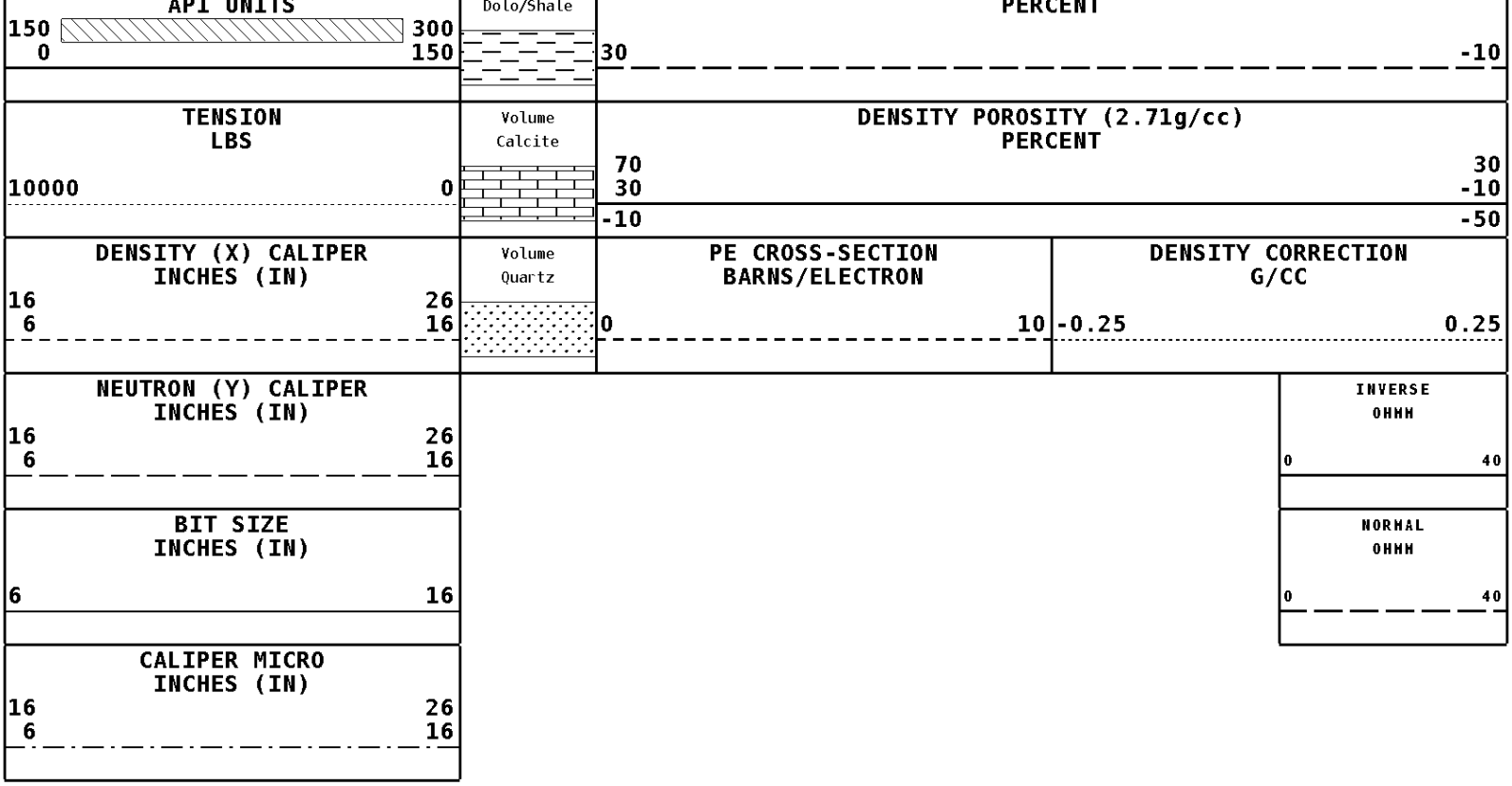


1:240 MAIN SECTION

GAMMA RAY	Volume	NEUTRON POROSITY (LIMESTONE)
API UNITS		PERCENT

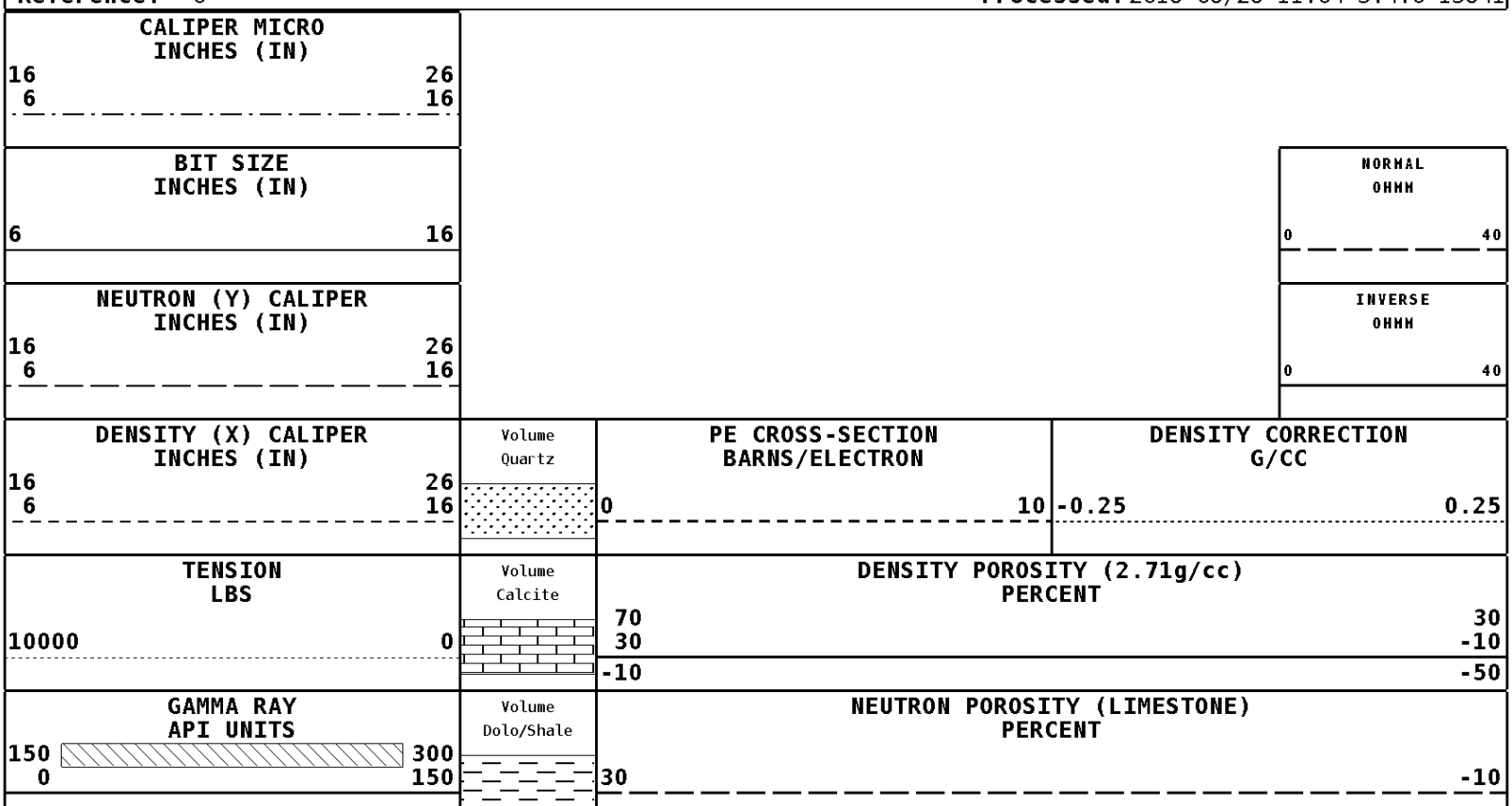


*** Borehole Zone Factors ***

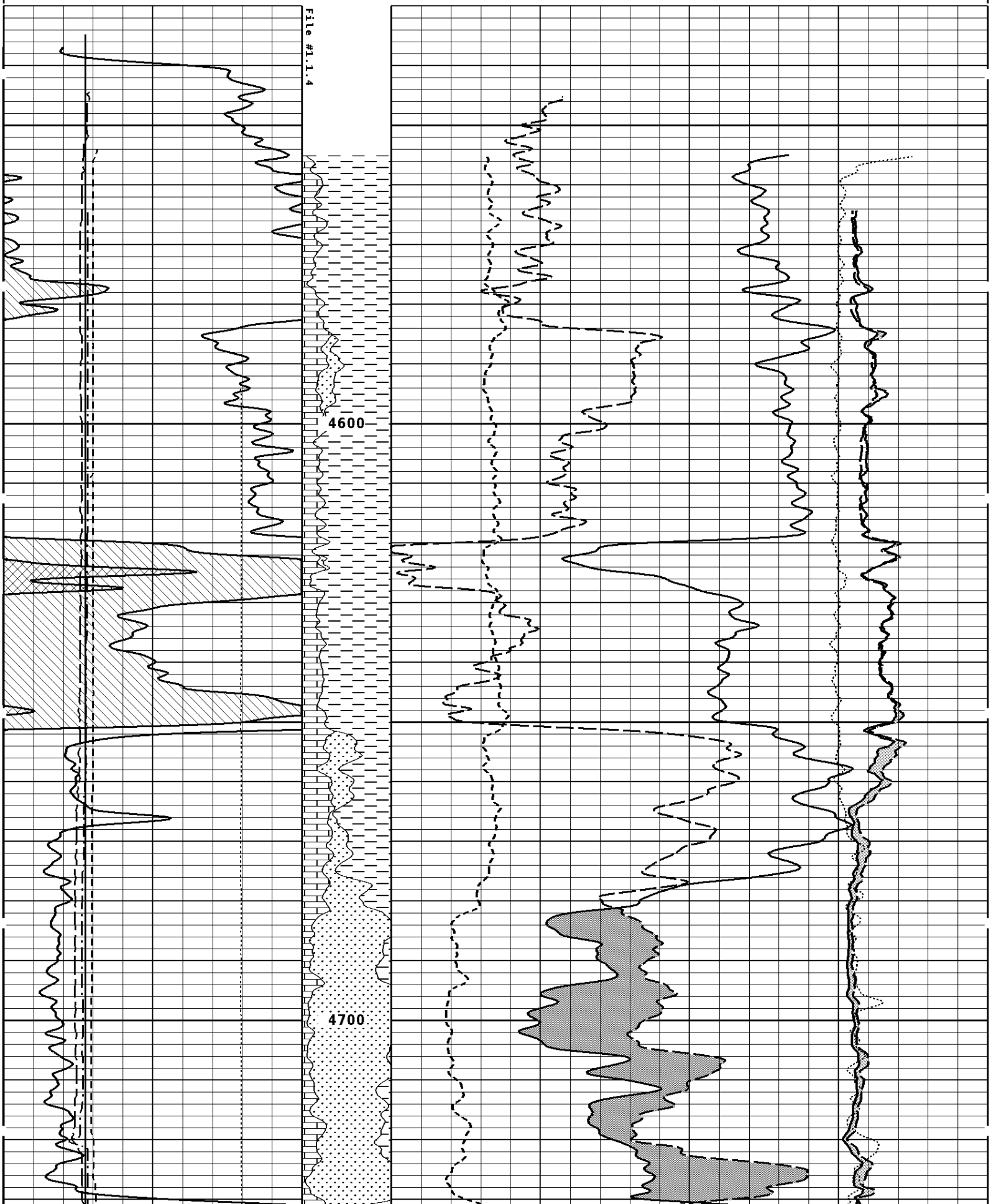
Zone 1 99999.0 to 0.0 Feet

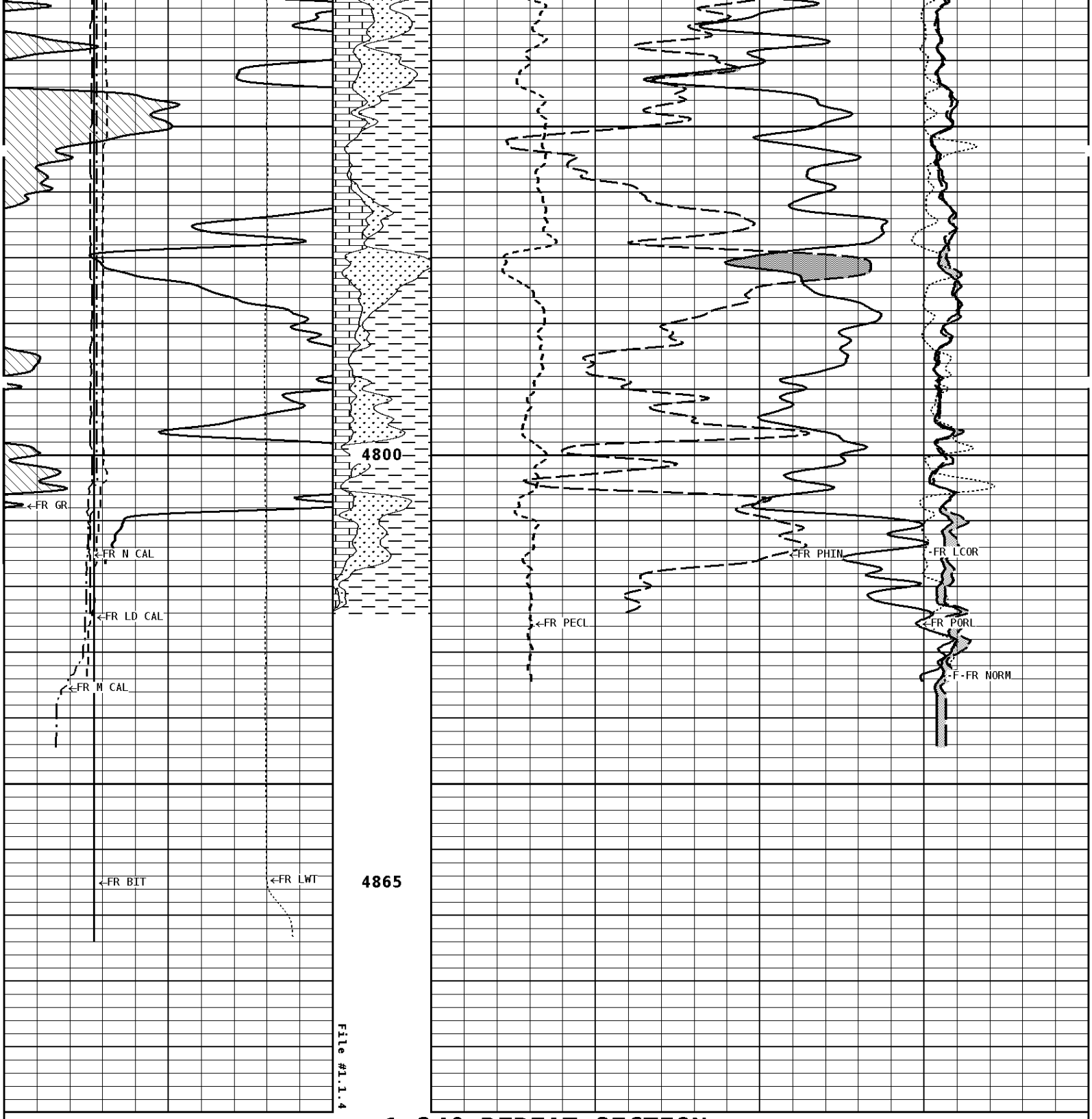
Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	8.750	in
Casing Diameter	7.000	in
Casing Thickness	0.250	in
Casing Correction (PHI N)	Disable	

Well File: DEXXON_REDWOOD_R_1_AUG_28_MSTKNAV **Scale:** 1:240 **Format:** NLD-240
Segment: V1.D1.S4 REPEAT **Acquired:** 2018-08/28 09:25 3.4.0-13841
Reference: 0 **Processed:** 2018-08/28 11:04 3.4.0-13841



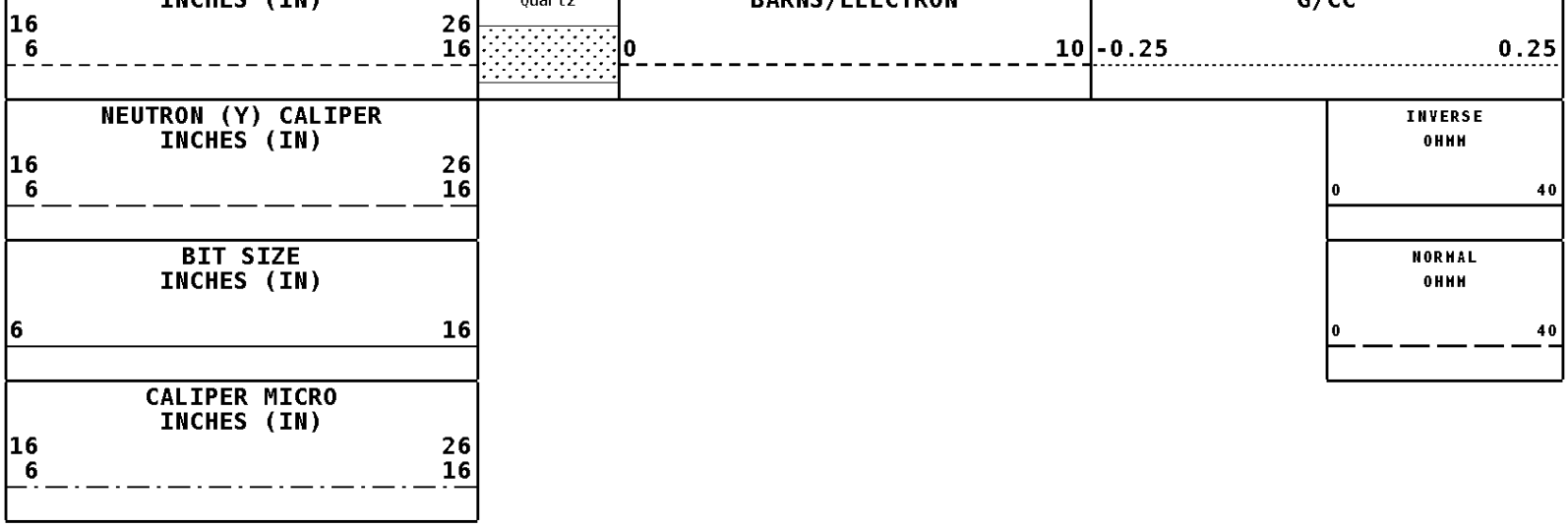
1:240 REPEAT SECTION





1:240 REPEAT SECTION

GAMMA RAY API UNITS	Volume Dolo/Shale	NEUTRON POROSITY (LIMESTONE) PERCENT
150 300 0 150		30 -10
TENSION LBS	**Volume Calcite**	**DENSITY POROSITY (2.71g/cc) PERCENT**
10000 0		70 30 30 -10 -10 -50
DENSITY (X) CALIPER INCHES (IN)	**Volume Quartz**	**PE CROSS-SECTION BARNS/ELECTRON** / **DENSITY CORRECTION G/CC**

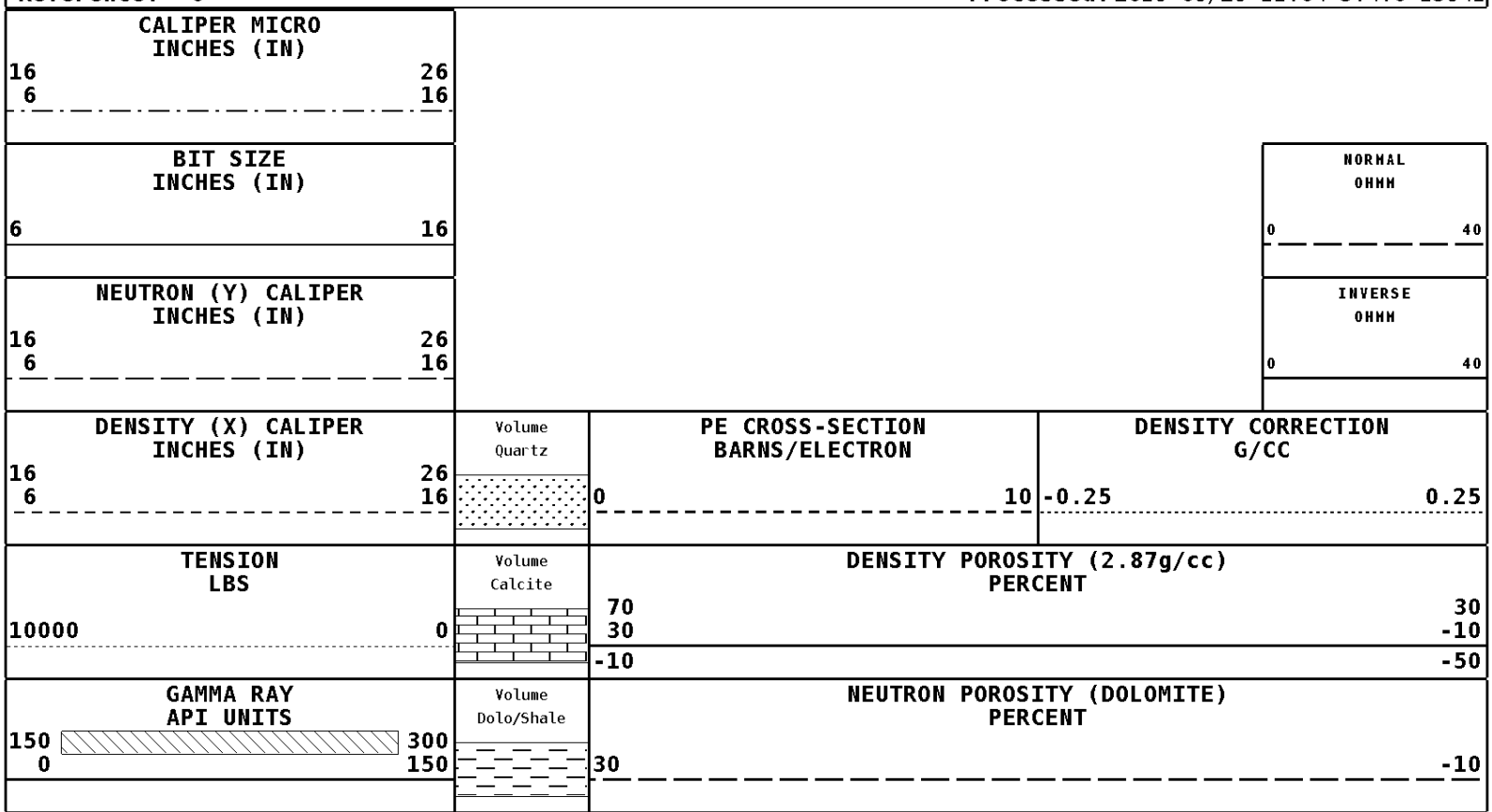


*** Borehole Zone Factors ***

Zone 1 99999.0 to 0.0 Feet

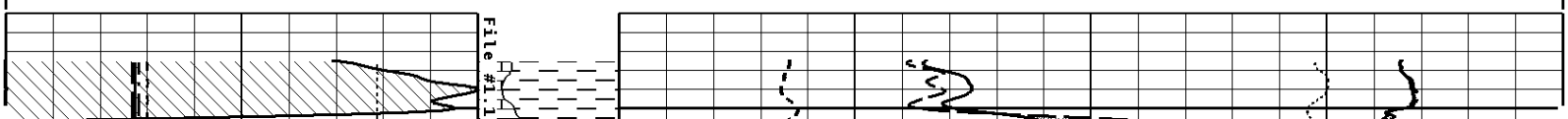
Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	8.750	in
Casing Diameter	7.000	in
Casing Thickness	0.250	in
Casing Correction (PHI N)	Disable	

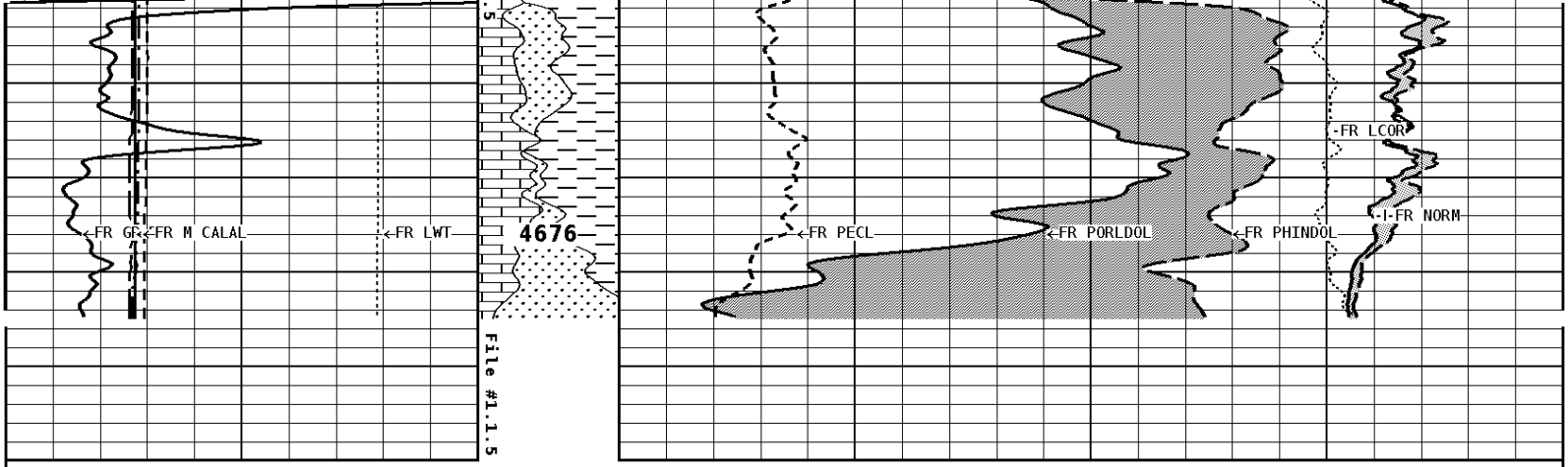
Well File: DEXXON_REDWOOD_R_1_AUG_28_MSTKNAV **Scale:** 1:240 **Format:** NLD-240
Segment: V1.D1.S5 MAIN **Acquired:** 2018-08-28 09:39 3.4.0-13841
Reference: 0 **Processed:** 2018-08-28 11:04 3.4.0-13841



1:240 MAIN SECTION

DOLOMITE PLAYBACK





1:240 MAIN SECTION

DOLOMITE PLAYBACK

GAMMA RAY API UNITS	Volume Dolo/Shale	NEUTRON POROSITY (DOLOMITE) PERCENT
150 300 0 150		30 -10
TENSION LBS	**Volume Calcite**	**DENSITY POROSITY (2.87g/cc) PERCENT**
10000 0		70 30 30 -10 -10 -50
DENSITY (X) CALIPER INCHES (IN)	**Volume Quartz**	**PE CROSS-SECTION BARNS/ELECTRON** / **DENSITY CORRECTION G/CC**
16 26 6 16		0 10 / -0.25 0.25
NEUTRON (Y) CALIPER INCHES (IN)		**INVERSE OHMM**
16 26 6 16		0 40
BIT SIZE INCHES (IN)		**NORMAL OHMM**
6 16		0 40
CALIPER MICRO INCHES (IN)		
16 26 6 16		

*** Borehole Zone Factors ***

Zone 1 99999.0 to 0.0 Feet

Fluid Density	1.00	g/cc
Drill Bit Size	8.750	in
Casing Diameter	7.000	in
Casing Thickness	0.250	in
Casing Correction (PHI N)	Disable	

Well File: DEXXON_REDWOOD_R_1_AUG_28_MSTKNAV **Scale:** 1:240 **Format:** LDT-240
Segment: V1.D1.S5 MAIN **Acquired:** 2018-08/28 09:39 3.4.0-13841
Reference: 0 **Processed:** 2018-08/28 11:04 3.4.0-13841

BIT SIZE INCHES (IN)
6 16

NEUTRON (Y) CALIPER INCHES (IN)
16 26

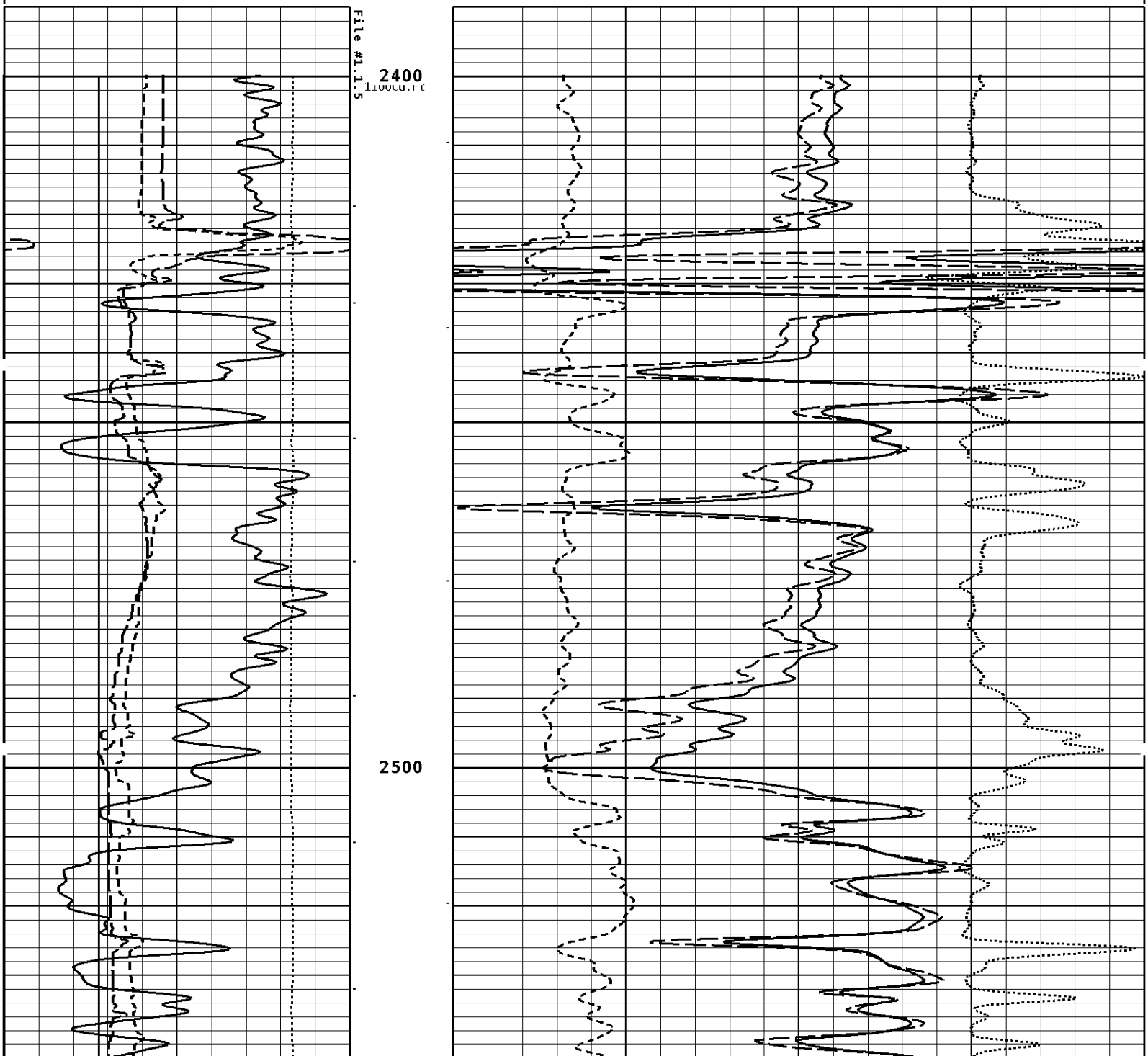
6		16
DENSITY (X) CALIPER INCHES (IN)		
16 6		26 16
TENSION LBS		
10000		0
GAMMA RAY API UNITS		
150 0		300 150

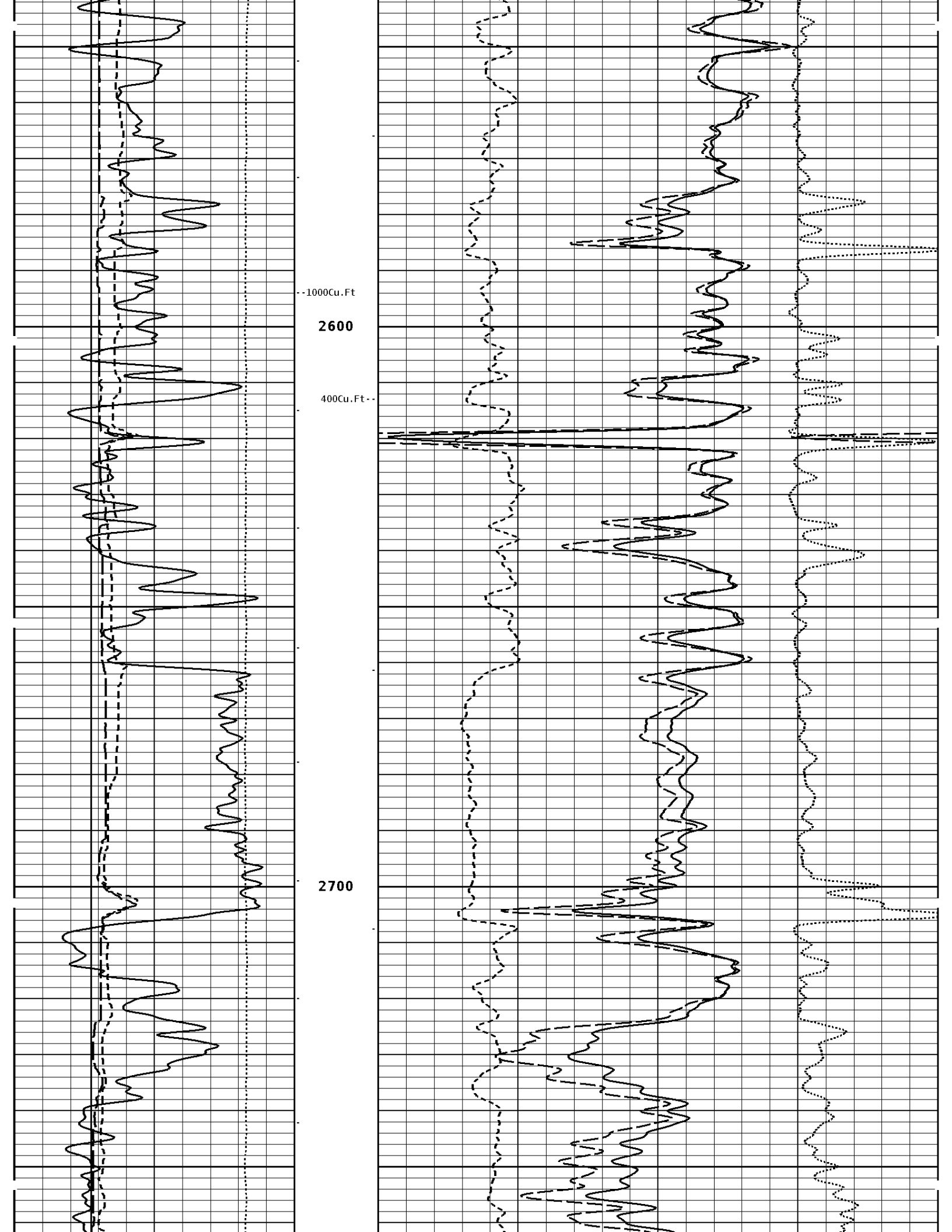
PE CROSS-SECTION BARNS/ELECTRON		DENSITY CORRECTION G/CC
0		10 -0.25 0.25
COMPENSATED BULK DENSITY G/CC		
3.0 2.0 1.0		4.0 3.0 2.0
DENSITY POROSITY (2.71g/cc) PERCENT		
70 30 -10		30 -10 -50

-BHV AHV-
CU.FT

1:240 MAIN SECTION

BULK DENSITY

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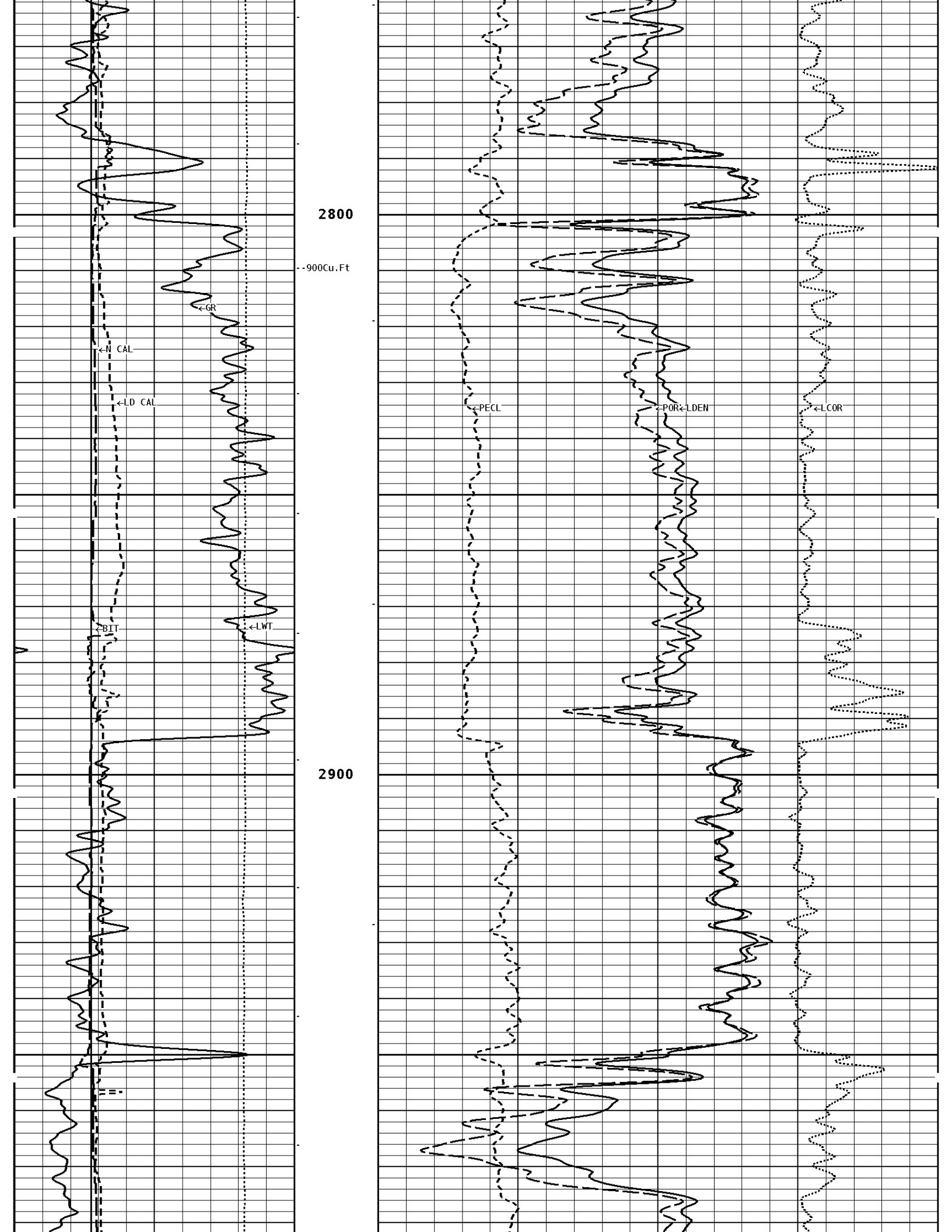
2600
400Cu.Ft
2700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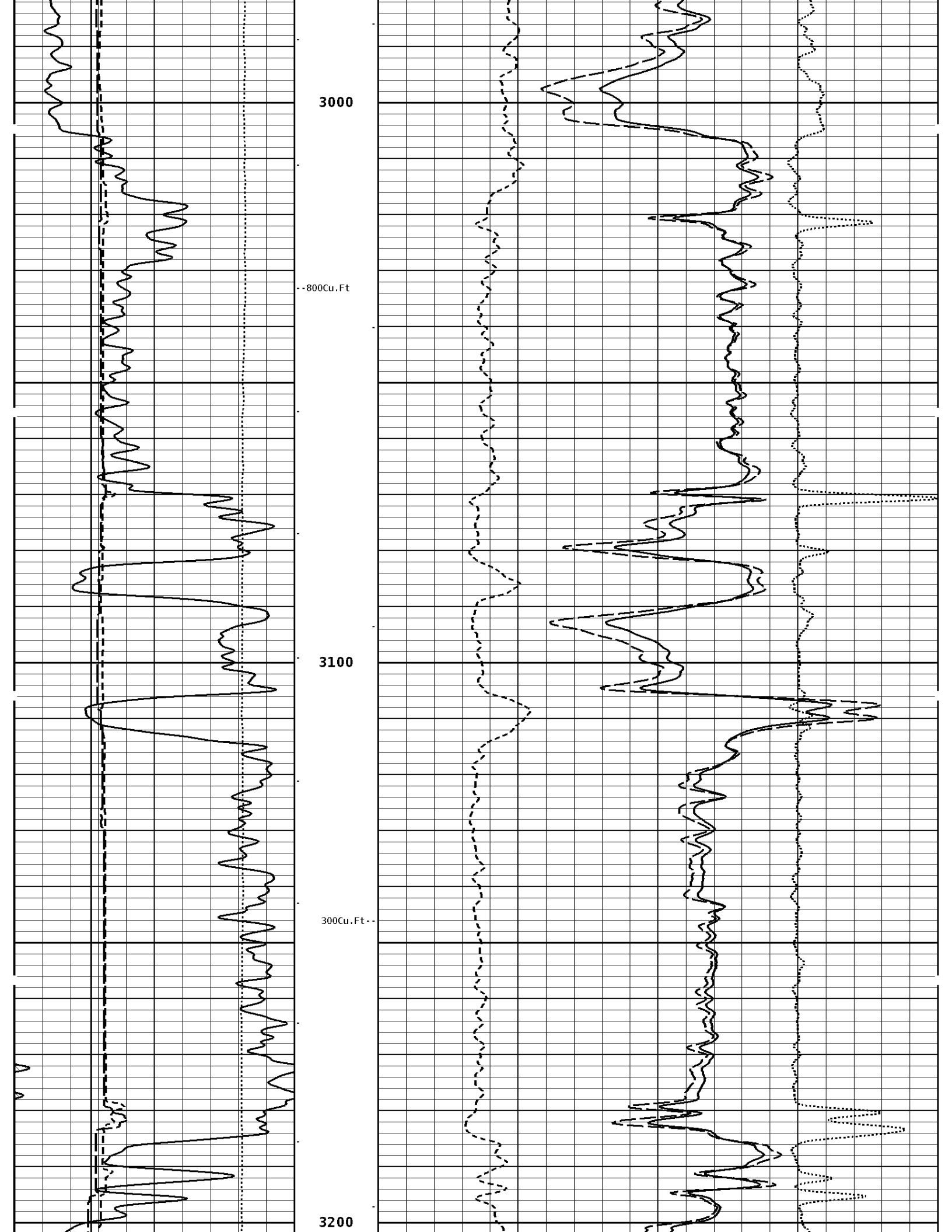
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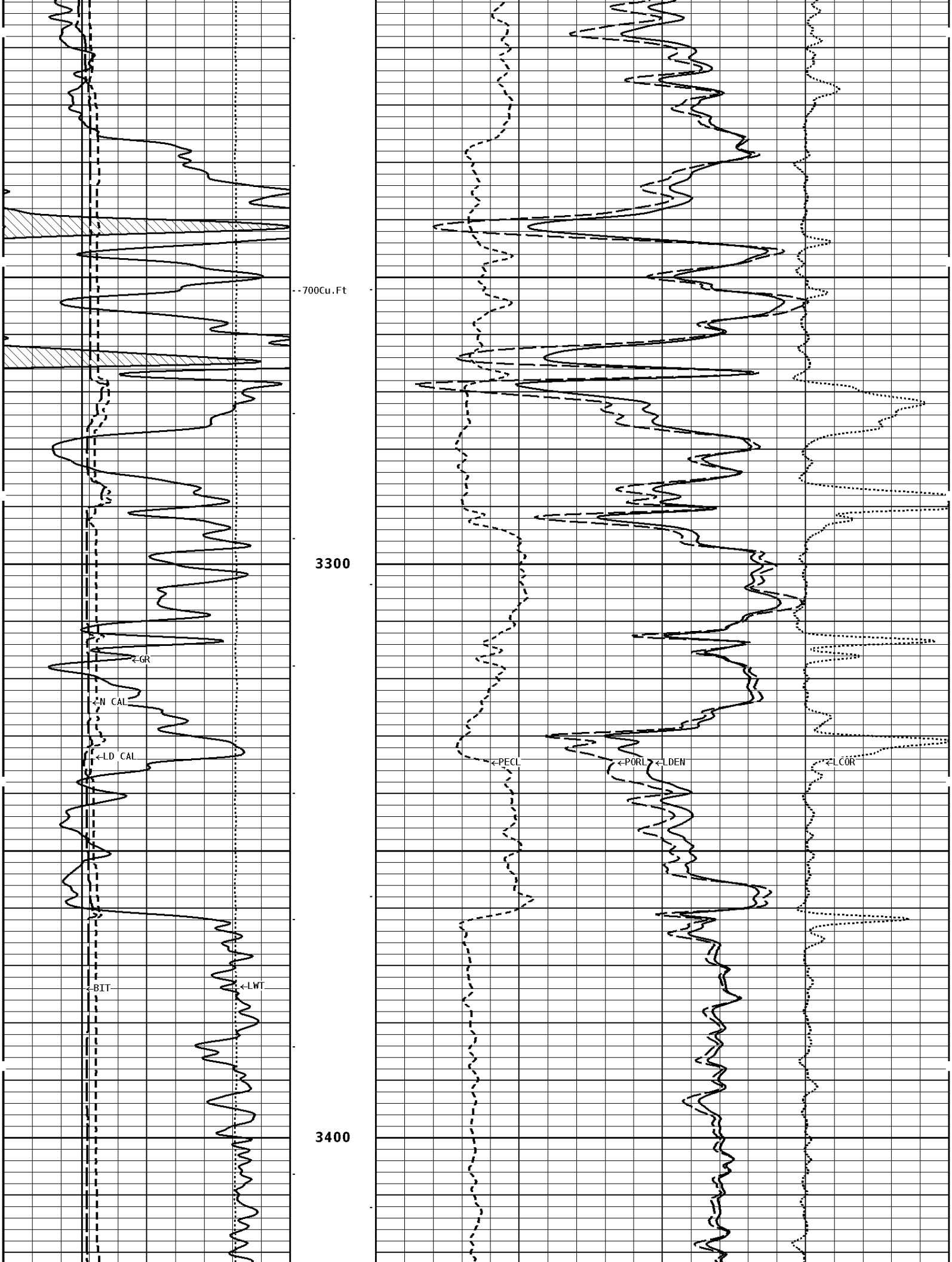
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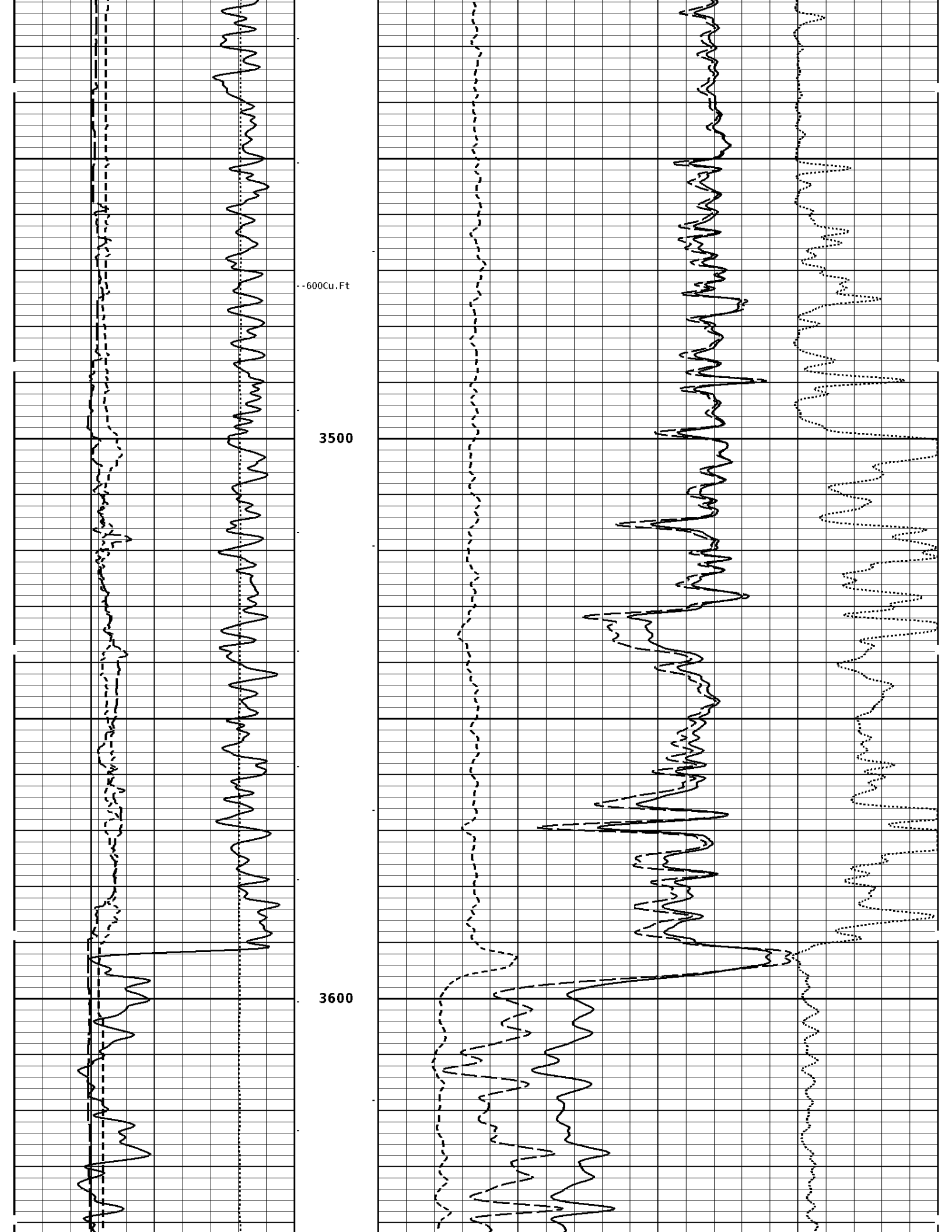
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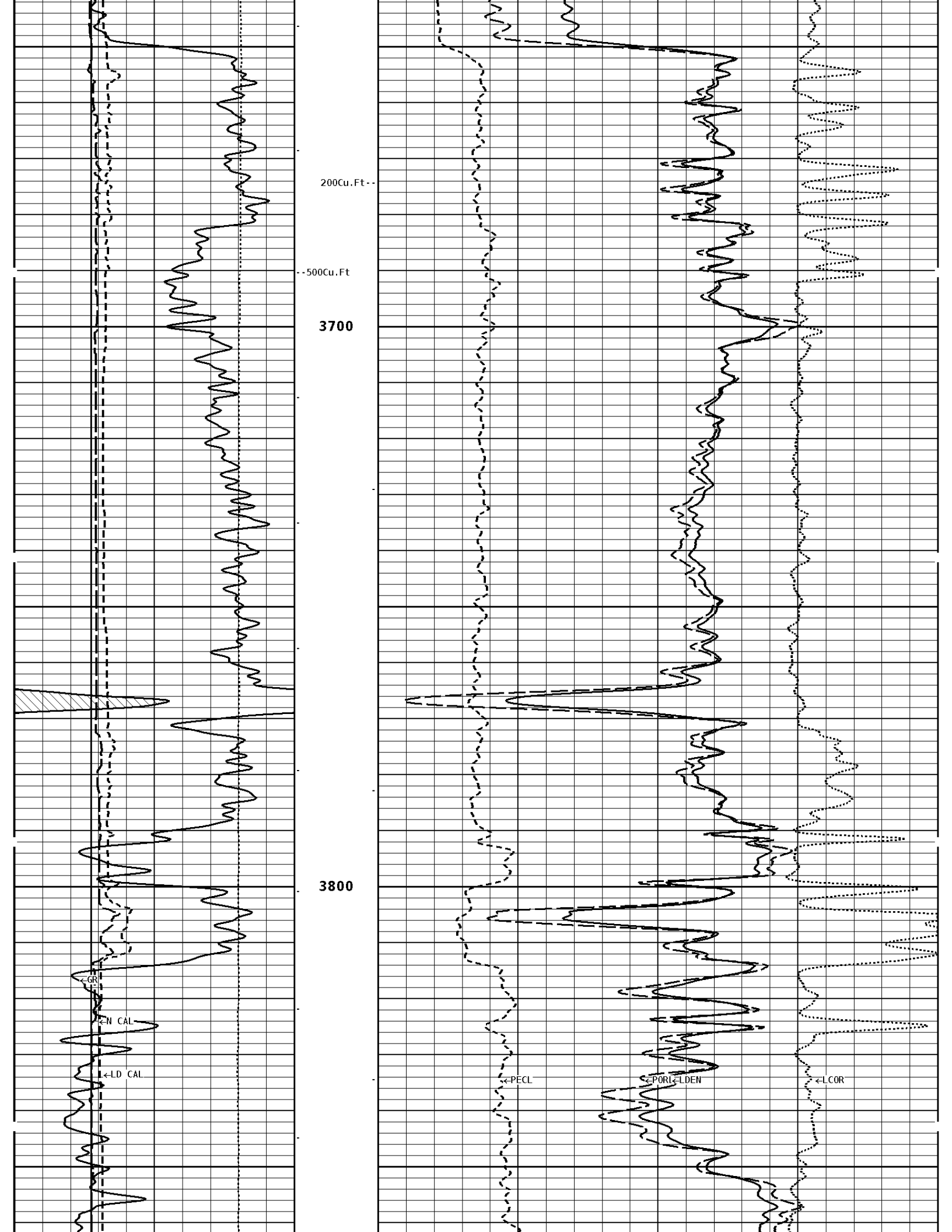
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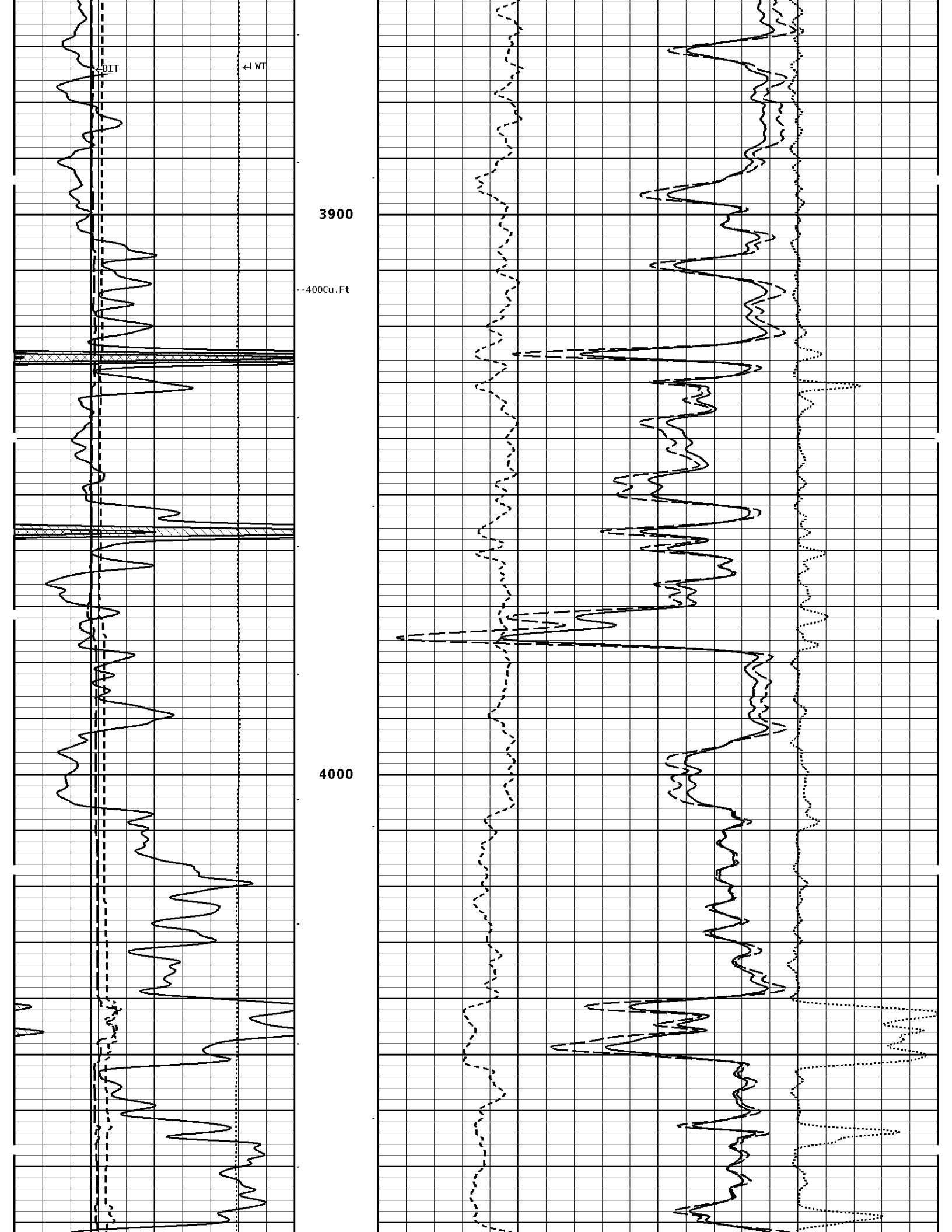
←PORL
←LDEN
←LCOR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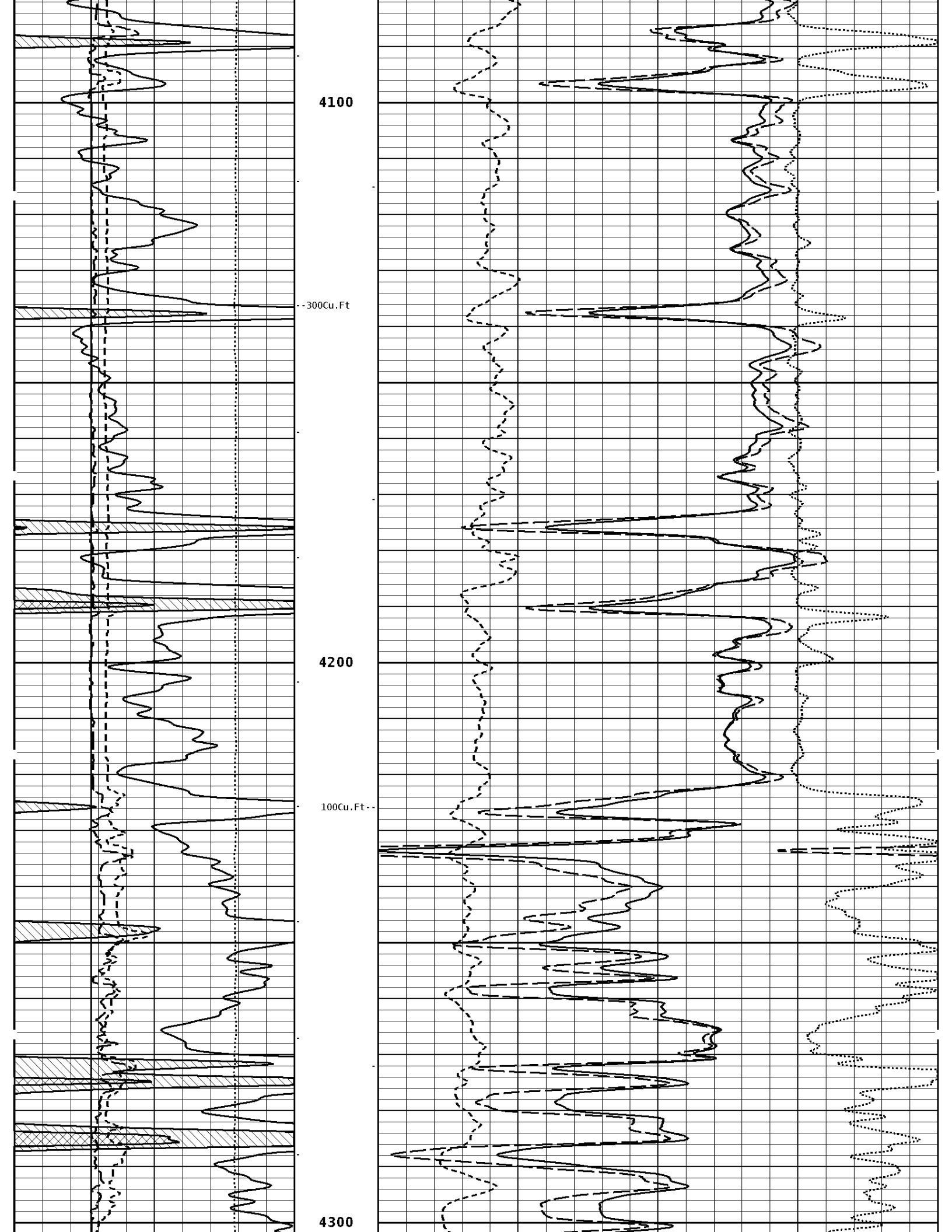
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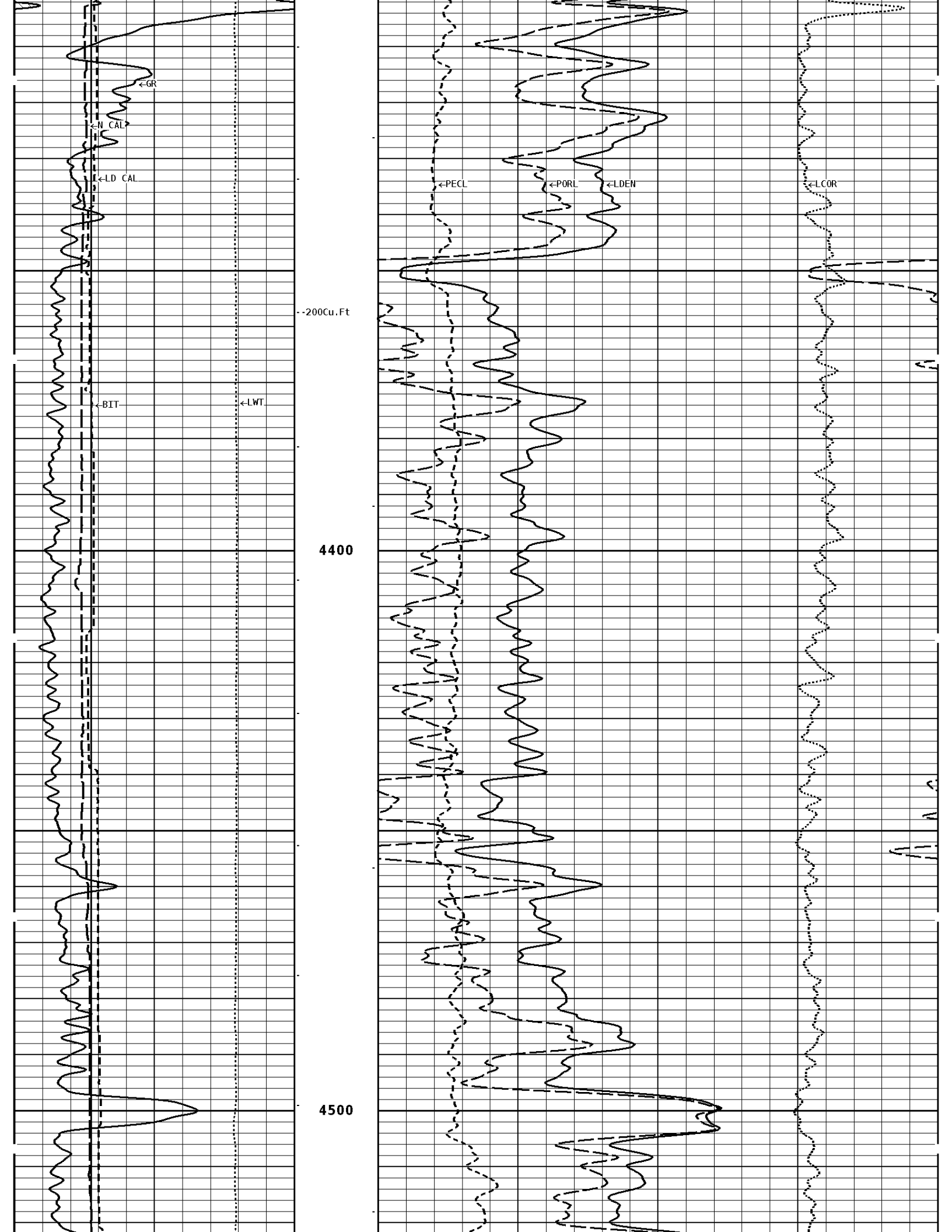
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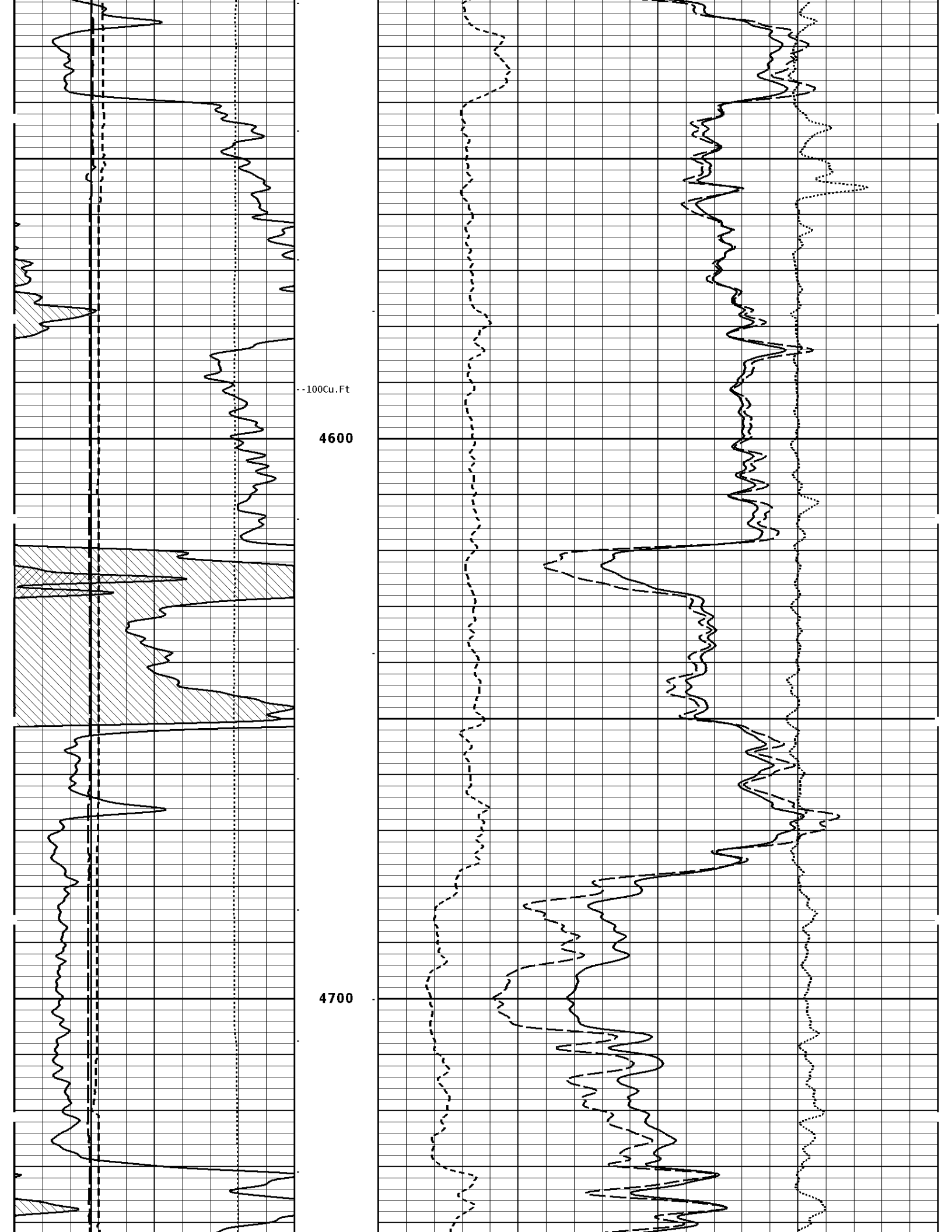
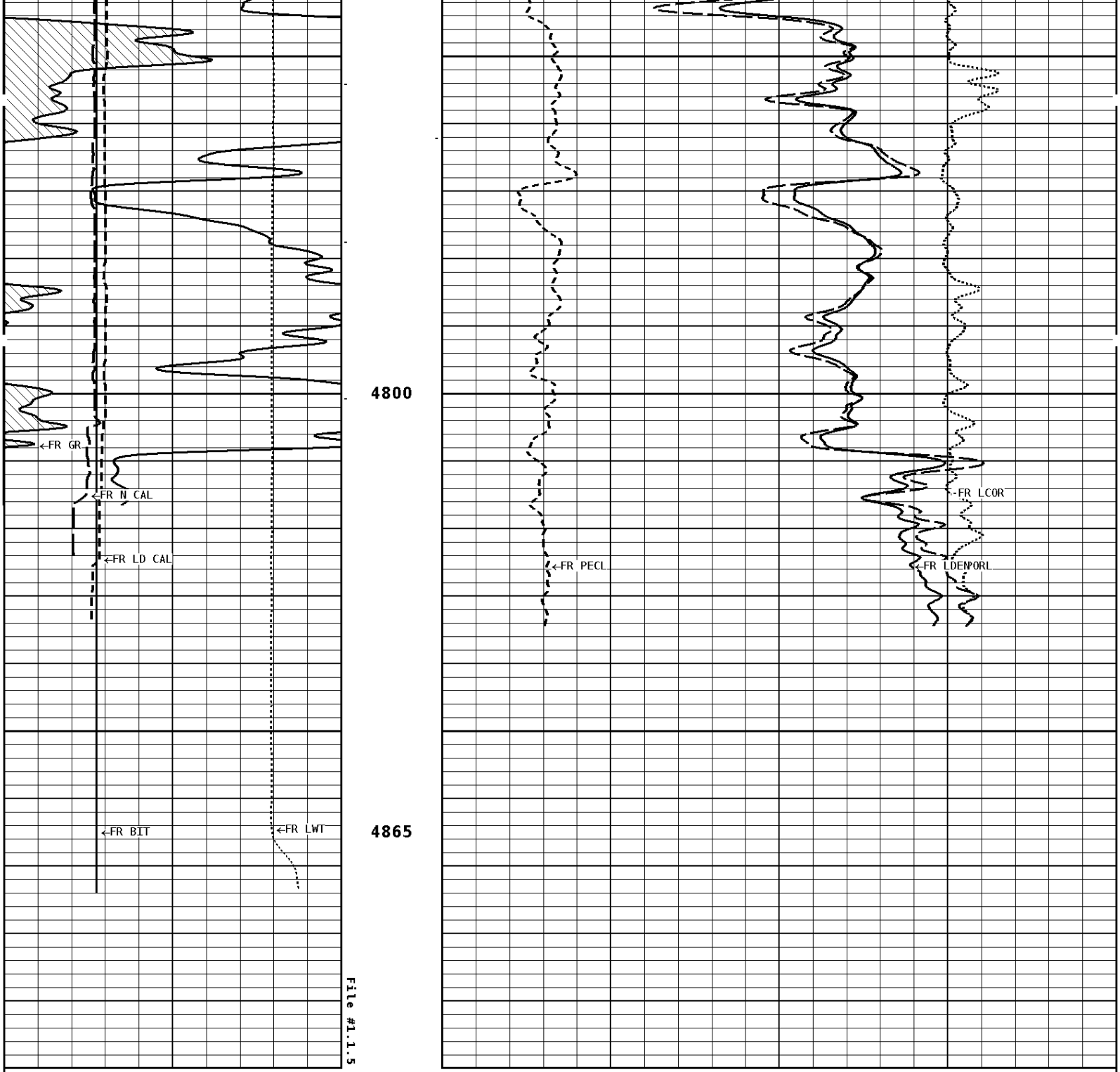
←PECL
←PORL
←LDEN
←LCOR


--100Cu.Ft
4600
4700



File #1.1.5

1:240 MAIN SECTION

BULK DENSITY

GAMMA RAY API UNITS	-BHV AHV- CU.FT	DENSITY POROSITY (2.71g/cc) PERCENT
150 300 0 150		70 30 30 -10 -10 -50
TENSION LBS		**COMPENSATED BULK DENSITY G/CC**
10000 0		3.0 4.0 2.0 3.0 1.0 2.0
DENSITY (X) CALIPER INCHES (IN)		**PE CROSS-SECTION BARNS/ELECTRON** / **DENSITY CORRECTION G/CC**
16 26 6 16		0 10 / -0.25 0.25

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

BIT SIZE INCHES (IN)	
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	8.750	in
Casing Diameter	7.000	in
Casing Correction (PHI N)	Disable	

* Calibration Summary *

Shop Calibration
GRT-B

Performed : 12-Feb-2018 Time : 11:30
Sensor Suite : GR-GR5 ID : GRT-BA-121

	Measured		Units	Calibrated	Units
	Background	Jig		Jig	
GR	44	309	CPS	160	GRAPI

Shop Calibration
CNT-AA

Performed : 13-AUG-2018 Time : 11:01
Sensor Suite : CALI-BCN ID : NDT-BB-146

	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	9.4	14.1	6.0	12.0	IN.

Performed : 13-Aug-2018 Time : 11:07
Sensor Suite : BHC NEUT ID : CNP-AA-115
Source ID : N-1044

	Tank		Verification	Units
	Measured	Calibrated	Jig	
N/F	4.1663	3.6893	3.6886	
Porosity	28.5	20.5	20.5	%

Shop Calibration
LDT-DA

Performed : 13-AUG-2018 Time : 09:50
Sensor Suite : CALI-LTH ID : NDT-FA-420

	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	7.3	11.6	6.0	12.0	IN.

Performed : 13-Aug-2018 Time : 10:10
Sensor Suite : BHCPELNG ID : LDP-DA-038
Source ID : 63558B

Short Space

	BKGD	Al	Mg	Al+Fe	Units
LSW1	60	1212	1947	783	CPS
LSW2	66	1426	2255	1039	CPS
LSW3	237	3283	5292	2819	CPS
LSW4	284	2872	4182	2562	CPS
LSW5	31	56	65	53	CPS
LSW6	75	81	79	79	CPS
LSW7	49	51	53	51	CPS
LSW8	3	6	7	6	CPS
QS	0.214	0.220	0.204	0.216	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC

Long Space

	BKGD	Al	Mg	Al+Fe	Units
LLW1	94	1612	6588	963	CPS

LLW2	107	2545	9708	1896	CPS
LLW3	401	4483	16733	3876	CPS
LLW4	497	2061	6674	1869	CPS
LLW5	58	69	138	67	CPS
LLW6	162	157	147	157	CPS
LLW7	98	99	95	98	CPS
LLW8	6	10	24	10	CPS
QL	0.245	0.229	0.215	0.232	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC

Shop Calibration
MST-DA

Performed : 09-FEB-2018 Time : 11:28
Sensor Suite : CALI-MSN ID : MST-DA-021

	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	8.2	12.5	6.0	12.0	IN.

Performed : 09-FEB-2018 Time : 11:11
Sensor Suite : MSTDA-NI ID : MST-DA-021

Internal

	Measured			Calibrated		
	Zero	Reference	Units	Zero	Reference	Units
INV-V	0.0	30239.2		0.00	1546.00	MV
NOR-V	3.9	30805.8		0.00	1646.00	MV
IN-C	0.0	29403.5		0.00	15.46	UA
INV-R					32.34	OHMM
NOR-R					58.67	OHMM

Performed : 09-FEB-2018 Time : 11:28
Sensor Suite : MSTDAMSF ID : MST-DA-021

Internal

	Measured			Calibrated		
	Zero	Reference	Units	Zero	Reference	Units
MSFC	35.0	62277.7		0.00	1522.00	UA
MSFB	13098.0	44123.4		0.00	1522.00	MA
MOM1	0.0	64536.5		0.00	1522.00	MV
MSFRA					43.30	OHMM

Tucker ENERGY SERVICES

Company: DEXXON, INC.
Well: REDWOOD ROYALTY #1
Location: 330' FNL & 1320' FEL
Logged: 08-28-2018
K.B. Elev: 1514.0 Ft