Confidentiality Requested:
☐ Yes ☑ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1244679

Form ACO-1
August 2013
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 34811
Name: Kansas Petroleum Resources, LLC
Address 1: 200 E. 1ST STREET, STE 307
Address 2:
City: WICHITA State: KS Zip: 67202 + __ __ __ __
Contact Person: Rod Andersen
Phone: (316) 204-3359
CONTRACTOR: License # 33793
Name: H2 Drilling LLC
Wellsite Geologist: Rod Andersen
Purchaser:

Designate Type of Completion:

☑ New Well ☐ Re-Entry ☐ Workover

☑ Oil ☐ WSW ☐ SWD ☐ SIOW
☐ Gas ☐ D&A ☐ ENHR ☐ SIGW
☐ OG ☐ GSW ☐ Temp. Abd.
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:

Operator:
Well Name:
Original Comp. Date: Original Total Depth:

☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ ENHR Permit #:
☐ GSW Permit #:

7/2/2014	7/9/2014	9/20/2014
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-015-24031-00-00
Spot Description:
__ - NW - SW - NW Sec. 18 Twp. 23 S. R. 4 ☑ East ☐ West
1650 Feet from ☑ North / ☐ South Line of Section
330 Feet from ☐ East / ☑ West Line of Section

Footages Calculated from Nearest Outside Section Corner:
☐ NE ☑ NW ☐ SE ☐ SW

GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Butler
Lease Name: Ensz Well #: 1
Field Name: Paulson
Producing Formation: Mississippian
Elevation: Ground: 1436 Kelly Bushing: 1446
Total Vertical Depth: 2900 Plug Back Total Depth: 2750
Amount of Surface Pipe Set and Cemented at: 220 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)

Chloride content: 3000 ppm Fluid volume: 200 bbls
Dewatering method used: Evaporated

Location of fluid disposal if hauled offsite:

Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. ☐ East ☐ West
County: Permit #:

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

☐ **Confidentiality Requested**
Date:
☐ **Confidential Release Date:**
☑ **Wireline Log Received**
☐ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☑ **I** ☐ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 04/06/2015

1244679

Operator Name: Kansas Petroleum Resources, LLC Lease Name: Ensz Well #: 1

Sec. 18 Twp. 23 S. R. 4 ☑ East ☐ West County: Butler

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Duel Porosity
Dual Induction
Microlog

☐ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Lansing	1924	-478
Mississippian	2353	-1018
Viola	2704	-1258
Arbuckle	2784	-1338

CASING RECORD ☑ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12.25	8.625	23	220	Class A	150	Cacl gel
Production	7.875	5.5	14	2873	Thick Set	150	Kol seal

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate ___ Protect Casing ___ Plug Back TD ___ Plug Off Zone	-			
	-			

Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☑ No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)*	Depth
2	2767-2812	no treatment	
	Cast Iron Bridge Plug @ 2750		
3	2464-2524	250 gals HCL	

TUBING RECORD: Size: Set At: Packer At: Liner Run: ☐ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	0	0	0		

DISPOSITION OF GAS: ☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION: ☐ Open Hole ☑ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)* ☐ Other *(Specify)*

PRODUCTION INTERVAL: 2464-2524

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

Confidentiality Requested:
☐ Yes ☑ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1
July 2014
Form must be Typed
Form must be Signed
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WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

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Name: Kansas Petroleum Resources, LLC
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City: Wichita State: KS Zip: 67202 + __ __ __ __
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Phone: (316) 204-3359
CONTRACTOR: License # 33793
Name: H 2 Drilling
Wellsite Geologist: Rod Andersen
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Designate Type of Completion:

☑ New Well ☐ Re-Entry ☐ Workover

☐ Oil ☐ WSW ☐ SWD ☐ SIOW
☐ Gas ☐ D&A ☐ ENHR ☐ SIGW
☐ OG ☐ GSW ☐ Temp. Abd.
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:

Operator:
Well Name:
Original Comp. Date: Original Total Depth:

☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ ENHR Permit #:
☐ GSW Permit #:

Spud Date or Recompletion Date | Date Reached TD | Completion Date or Recompletion Date

API No. 15 - 015-24031-00-00
Spot Description:
__ - NW - SW - NW Sec. 18 Twp. 23 S. R. 4 ☑ East ☐ West
1,650 Feet from ☑ North / ☐ South Line of Section
330 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☑ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Butler
Lease Name: Ensz Well #: 1
Field Name: Paulson
Producing Formation: Mississippian
Elevation: Ground: 1446 Kelly Bushing: 1436
Total Vertical Depth: 2900 Plug Back Total Depth: 2750
Amount of Surface Pipe Set and Cemented at: 220 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)

Chloride content: ppm Fluid volume: bbls
Dewatering method used: evaporate and fill
Location of fluid disposal if hauled offsite:
Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. ☐ East ☐ West
County: Permit #:

INSTRUCTIONS: The original form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. If confidentiality is requested and approved, side two of this form will be held confidential for a period of 2 years. Rules 82-3-130, 82-3-106 and 82-3-107 apply. Drill Stem Test, Cement Tickets and Geological Well Report must be attached.

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature:
Title: Date:

KCC Office Use ONLY

☐ **Confidentiality Requested**
Date:
☐ **Confidential Release Date:**
☐ **Wireline Log Received**
☐ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☐ **I** ☐ **II** ☐ **III** **Approved by:** **Date:**

Operator Name: Kansas Petroleum Resources, LLC Lease Name: Ensz Well #: 1

Sec. 18 Twp. 23 S. R. 4 ☑ East ☐ West County: Butler

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:
Dual Induction, Dual Porosity

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Lansing	1924	-478
Kansas City	2352	-906
Mississippian	2464	-1018
Hunton	2628	-1182
Viola	2704	-1258
Arbuckle	2784	-1338

CASING RECORD ☐ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12.25	8.625	23	220	Class A	150	cacl,gel
Production	7.875	5.5	14	2873	Thick Set	150	Kol seal

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose: ____ Perforate ____ Protect Casing ____ Plug Back TD ____ Plug Off Zone	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives

Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☐ No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)*	Depth
2	2767-2812	no treatment	
	Cast Iron Bridge Plug @ 2750		
3	2464-2524		

TUBING RECORD: Size: Set At: Packer At: Liner Run: ☐ Yes ☑ No

Date of First, Resumed Production, SWD or ENHR.
none as yet

Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: ☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION: ☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)* _____

PRODUCTION INTERVAL:

Mail to: KCC - Conservation Division, 266 N Main St, Ste 220, Wichita, KS 67202-1513

Tucker ENERGY SERVICES

COMPENSATED NEUTRON

PEL DENSITY MICRO LOG

Company HAMILTON INVESTMENTS LLC.
Well ENSZ #1
Field PAULSON
County BUTLER
State KANSAS
Country USA
API No. 15-015-24031

File No : TUL- 59692
Company : HAMILTON INVESTMENTS LLC.
Well : ENSZ #1
Field : PAULSON
County : BUTLER
State : KANSAS
Country : USA
API No : 15-015-24031

Location :
1650' FNL & 330' FWL
NW SW NW

LSD : **Sect :** 18 **Twp :** 23S **Rge :** 4E

Permanent Datum:	GL	**Elevations:**		**Services:**	
Drilling Measured From:	KB	**KB** 1446.00	Ft	SPEC	MLT
Log Measured From:	KB	**DF** 1445.00	Ft	CNT	PIT
Above Permanent Datum:	10.00 Ft	**GL** 1436.00	Ft	LDT	

Date	07-09-2014			
Run Number	1			
Depth--Driller	2900.0 Ft			
Depth--Logger	2903.0 Ft			
First Reading	2880.0 Ft			
Last Reading	220.0 Ft			
Casing--Driller	220.0 Ft			
Casing--Logger	220.0 Ft			
Bit Size	7.875 In			
Casing Size	8.625 In			
Hole Fluid Type	WBM			
Density	9.5			
Fluid Loss	8.0			
PH/Viscosity	9.0	47.0		
Sample Source	MEASURED			
RM@Measured Temp.	5.000 @ 80 F			
RMF@Measured Temp	4.250 @ 80 F			
RMC@Measured Temp.	5.750 @ 80 F			
Source RMF/RMC	CALCULATED	CALCULATED		
RM@BHT	3.480 @ 118 F			
Time Circulation Stopped				
Max Recorded Temp.	120 F			
Equipment/Base	T-126	TULSA		
Recorded By	S.K. DAVIS			
Witnessed By	J. MOORIS			

Bitsize Intervals

Size (In)	Bottom (Ft)
7.875	2903.00

Casing Strings

Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
8.625	24.00	220.00	0.00

Run Number	1
Date	07-09-2014
Date/Time On Bottom	07-09-2014 7:45 pm
Depth to Fluid	0.0 Ft
Salinity	1000.000
RMF@BHT	2.960 @ 118 F
RMC@BHT	4.000 @ 118 F

Run Number 1

Comments

ALL PRESENTATIONS AS PER CUSTOMER REQUEST
GRT, CNT, LDT, MLT, CST, AND PIT RUN IN COMBINATION
CALIPERS ORIENTED ON X-Y AXIS
2.68 G/CC USED TO CALCULATE POROSITY
ANNULAR HOLE VOLUME CALCULATED USING 5.50" PRODUCTION CASING
PHIN IS CALIPER CORRECTED
DOLOMITE REPLAY OVER REPEAT

GRT: GRP, SPGCGR, S-KK, S-UK, S-TK
CNT: PHIN, CLCNIN.
LDT: PORL, LCORN, PECLN, LDENN, CLLDIN.
MLT: NOR_RF, INV_RF, MSCLPIN.
PIT: ILD, ILM, SFLAEC, CIRD, SPU

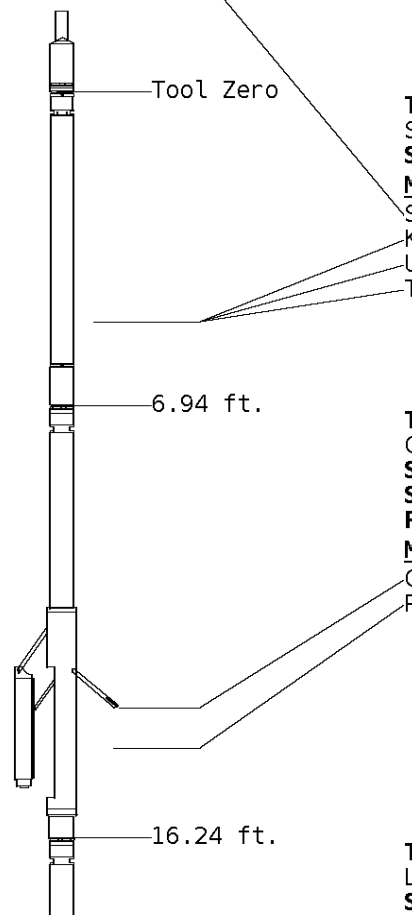
OPERATORS:

C. GONZALES

J. THOMAS

Tool String Schematic

Total Tool Length - 57.11 **ft.**
Maximum Outside diameter - 6.00 **in.**
Net Weight in Air - 974.00 **lbs.**



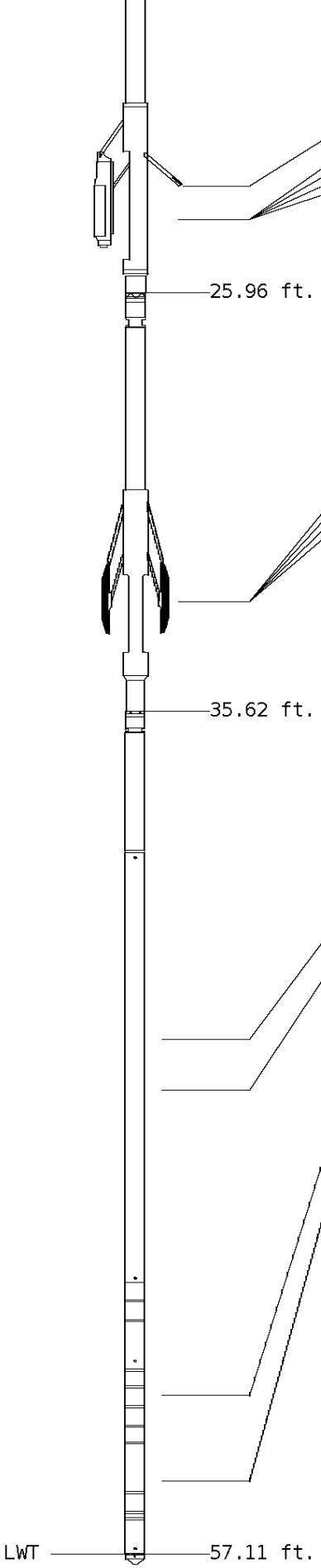
Tool: GRT-FA **Length:** 6.94 **ft.** **O.D.** 3.62 **in.**
Spectral Gamma Controller
Sonde ID :GRT-FA-074

Measure Point	Tool Offset	Stack Offset	Bottom Offset
SP	-4.42	-4.42	61.53
K	5.17	5.17	51.94
U	5.17	5.17	51.94
T	5.17	5.17	51.94

Tool: CNT-AA **Length:** 9.30 **ft.** **O.D.** 4.36 **in.**
Compensated Neutron A Pad on NDT-A
Sonde ID :NDT-BB-103
Source ID :N-1045
Pad ID :CNP-AA-024

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	12.94	44.17
PHIN	6.80	13.74	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	22.66	34.45
PEL	7.42	23.66	33.45
PES	7.82	24.06	33.05
LDEN	7.62	23.86	33.25
LCOR	7.62	23.86	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	33.56	23.55
MSCLP	7.60	33.56	23.55
INV	7.60	33.56	23.55
NOR	7.60	33.56	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	44.55	12.56
ILM	10.10	45.72	11.39
SFLU	17.49	53.11	4.00
SP	20.60	56.22	0.88

Well File: ham-ens-1-specmstk-jul-9 **Scale:** 1:240 **Format:** NLD-240
Segment: V1.D1.S7 MAIN **Acquired:** 2014-07/09 20:36 3.3.0-12594
Reference: 0 **Processed:** 2014-07/09 21:54 3.3.0-12594

CALIPER MICRO
INCHES (IN)

16 26
6 16

BIT SIZE
INCHES (IN)
6 16

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

NORMAL
OHMM
0 40

INVERSE
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

TENSION
LBS
10000 0

Volume
Calcite

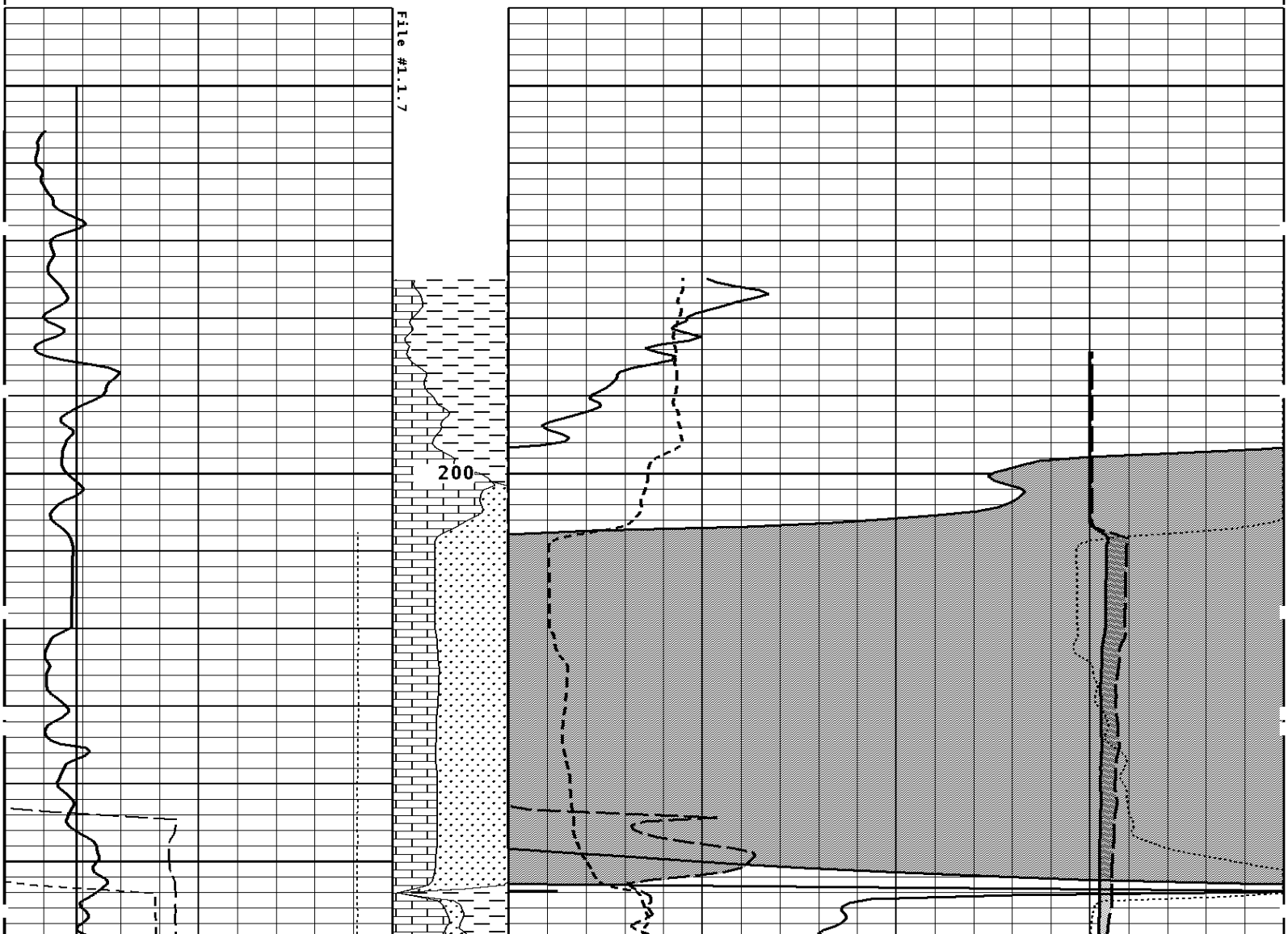
DENSITY POROSITY (2.65g/cc)
PERCENT
70 30
30 -10
-10 -50

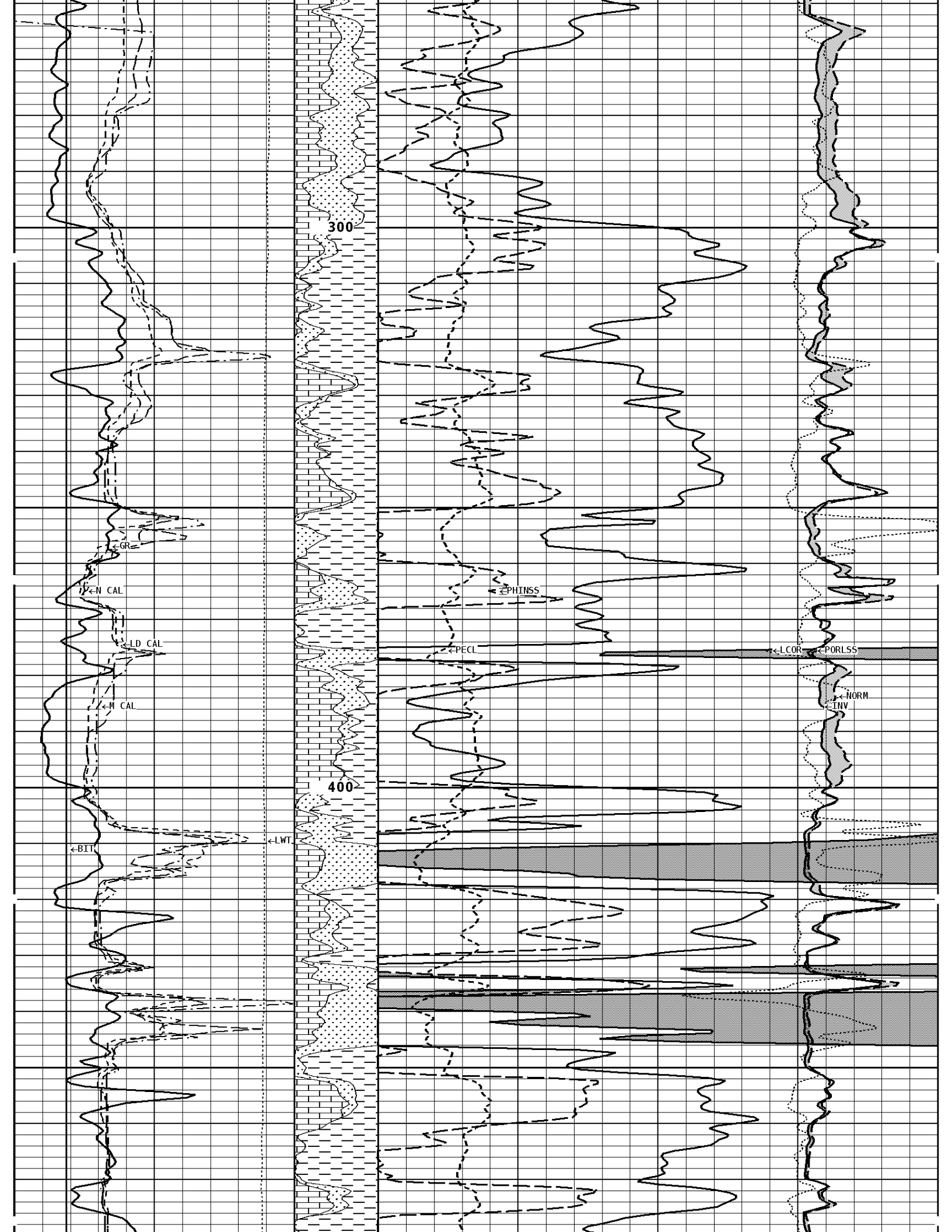
GAMMA RAY
API UNITS
200 400
0 200

Volume
Dolo/Shale

NEUTRON POROSITY (SANDSTONE)
PERCENT
30 -10

1:240 MAIN SECTION

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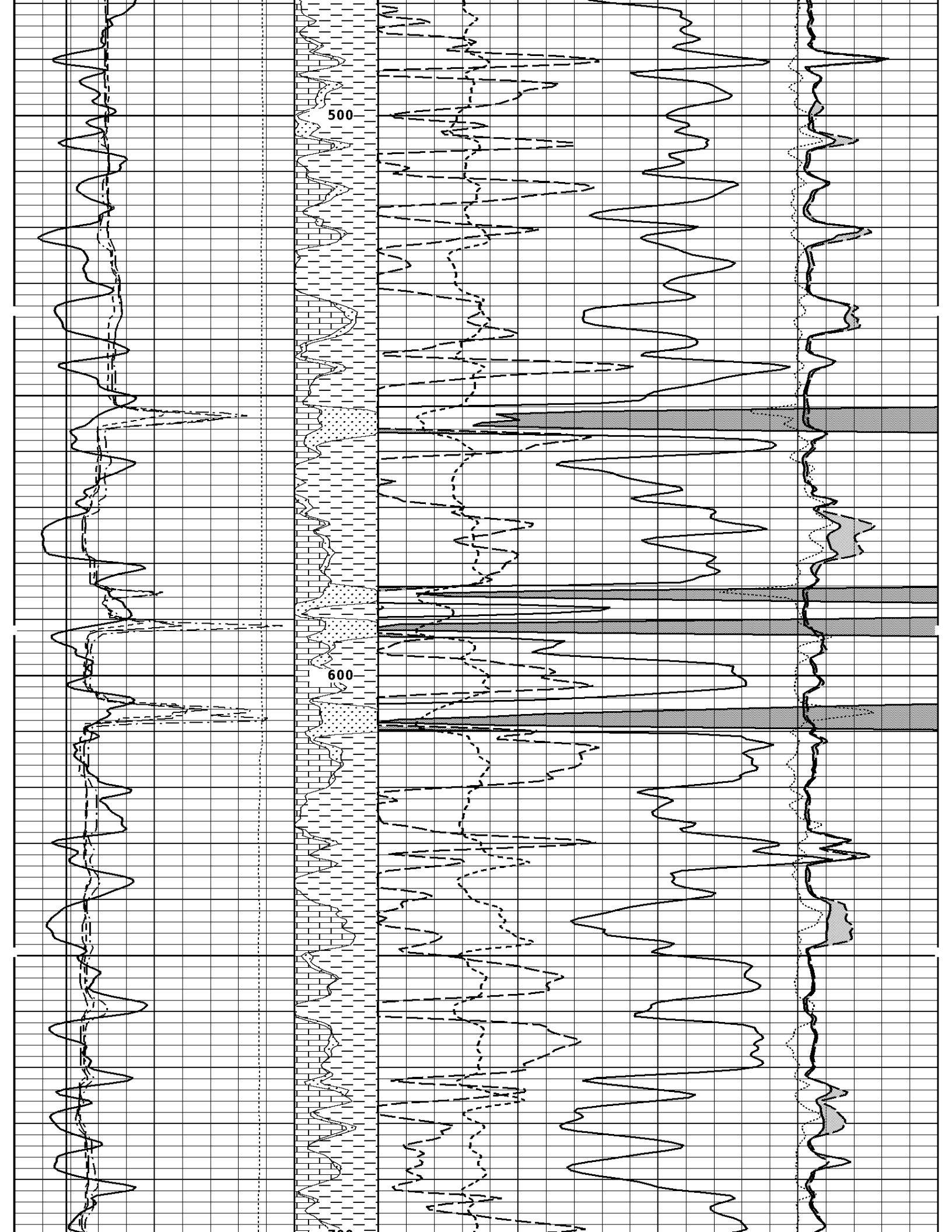
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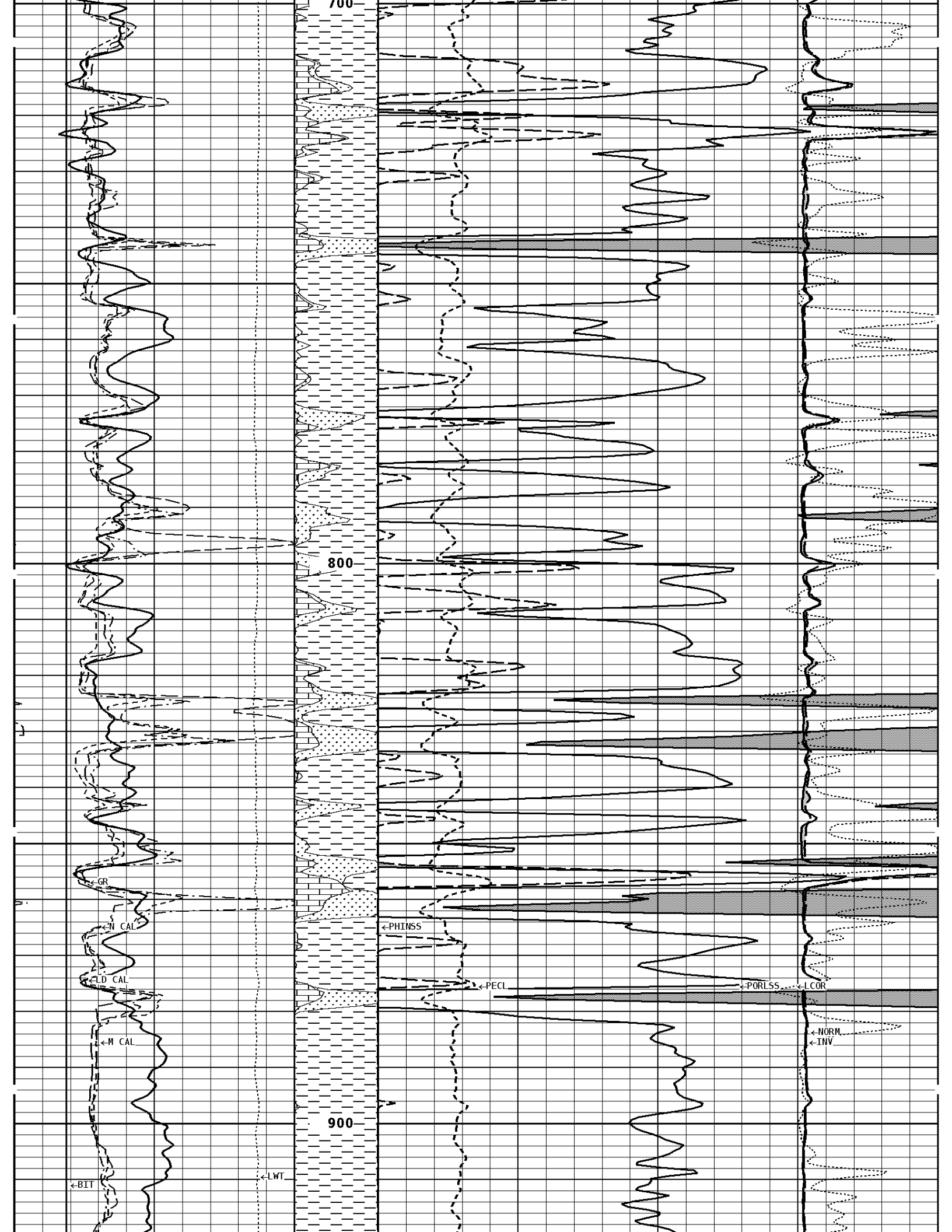
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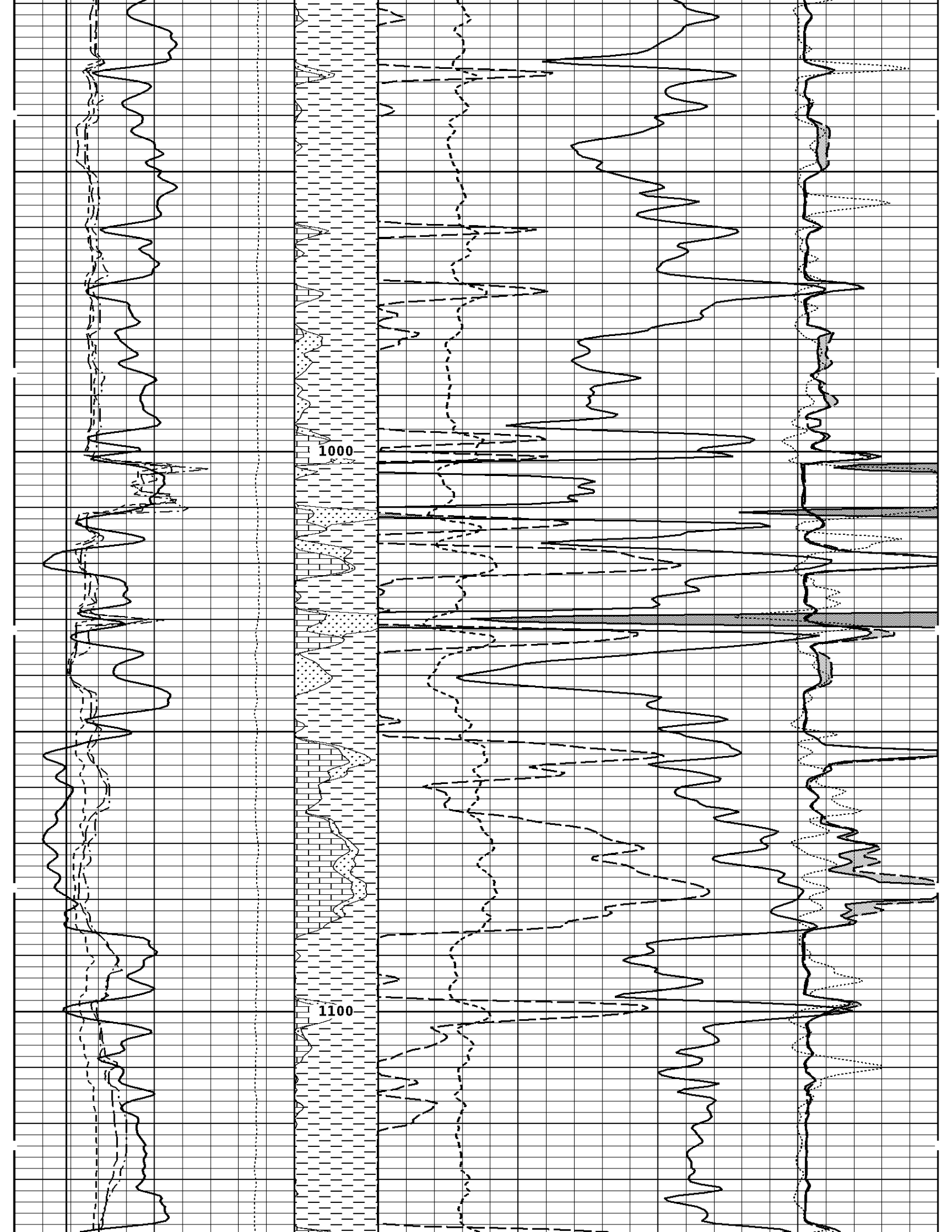
←INV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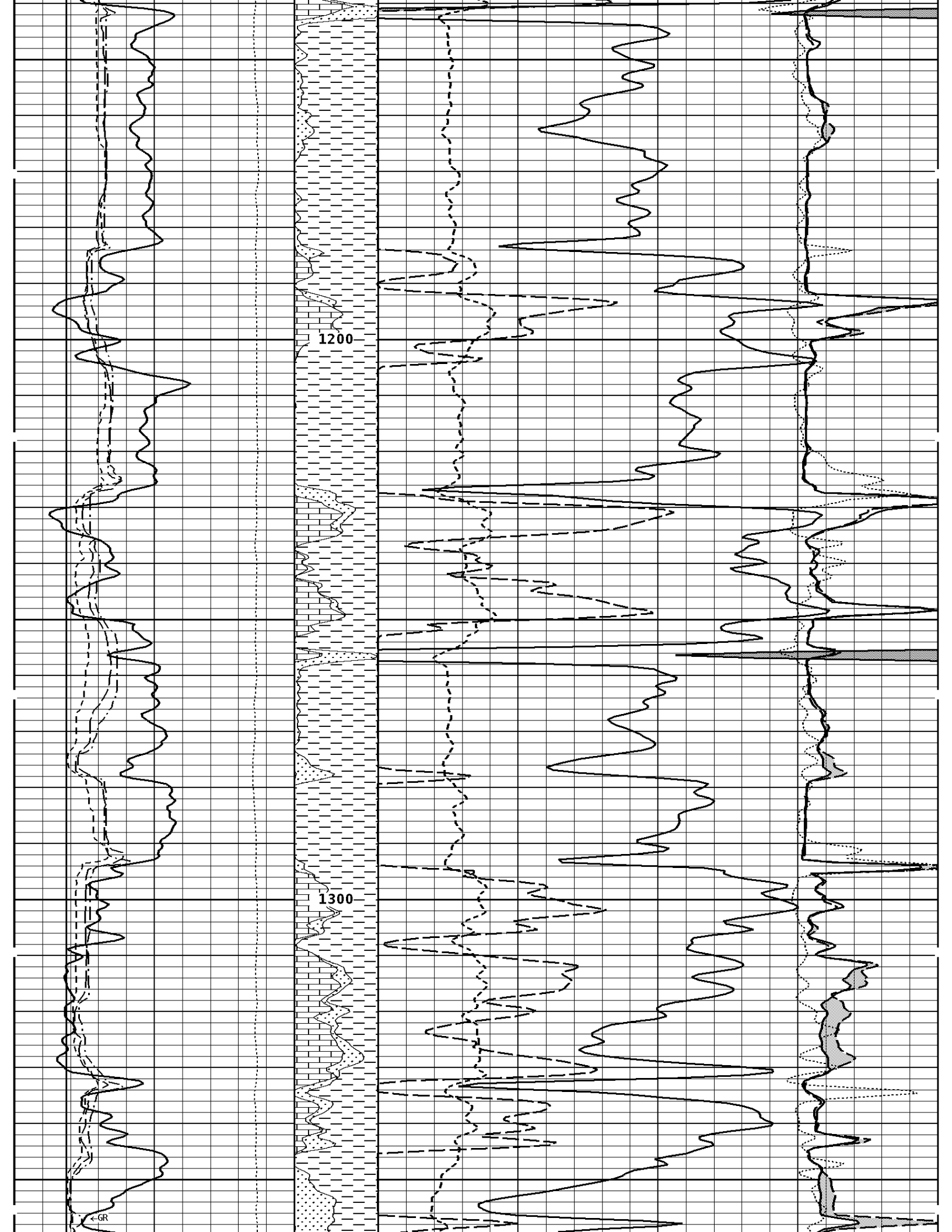
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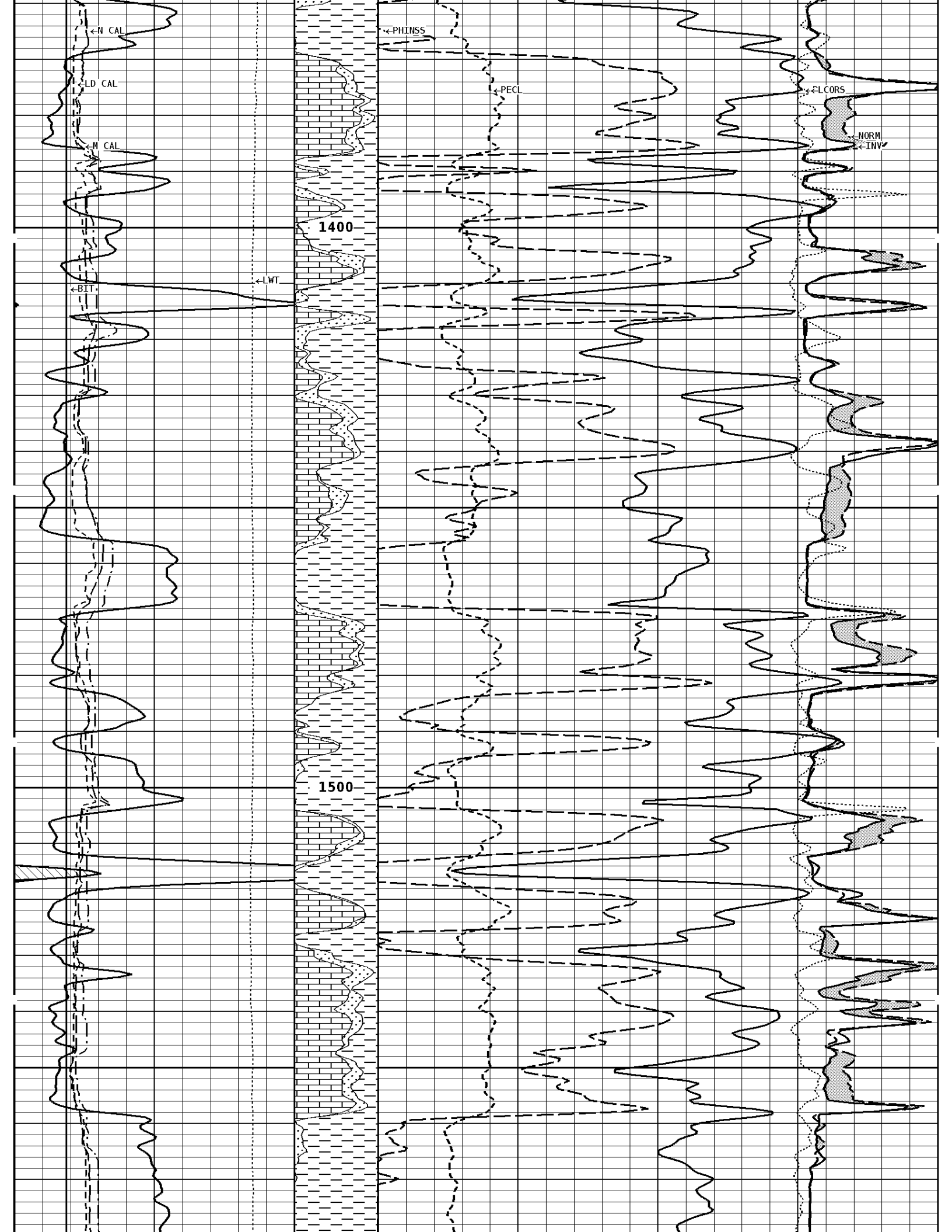
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M CAL
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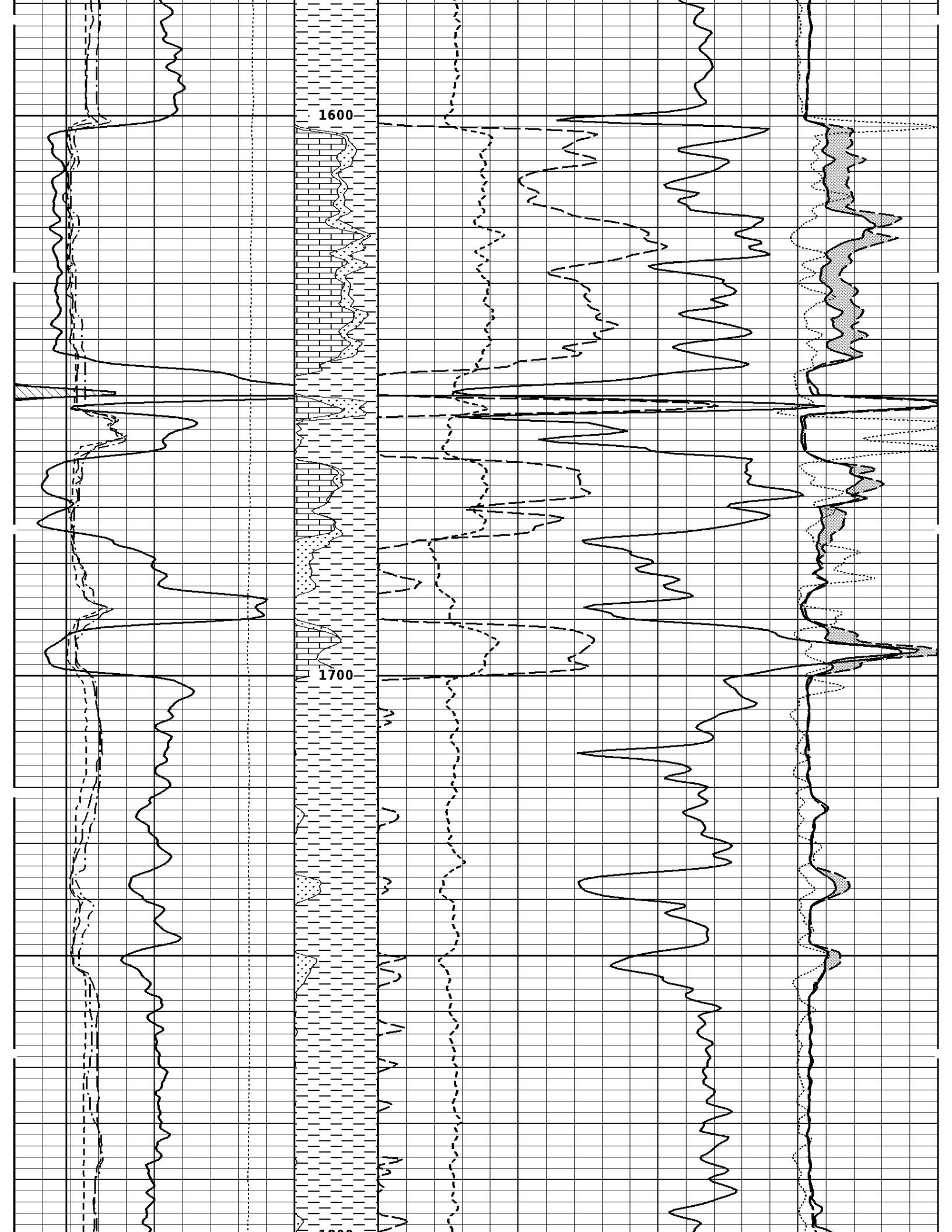
LCORS
NORM
INV
1400
1500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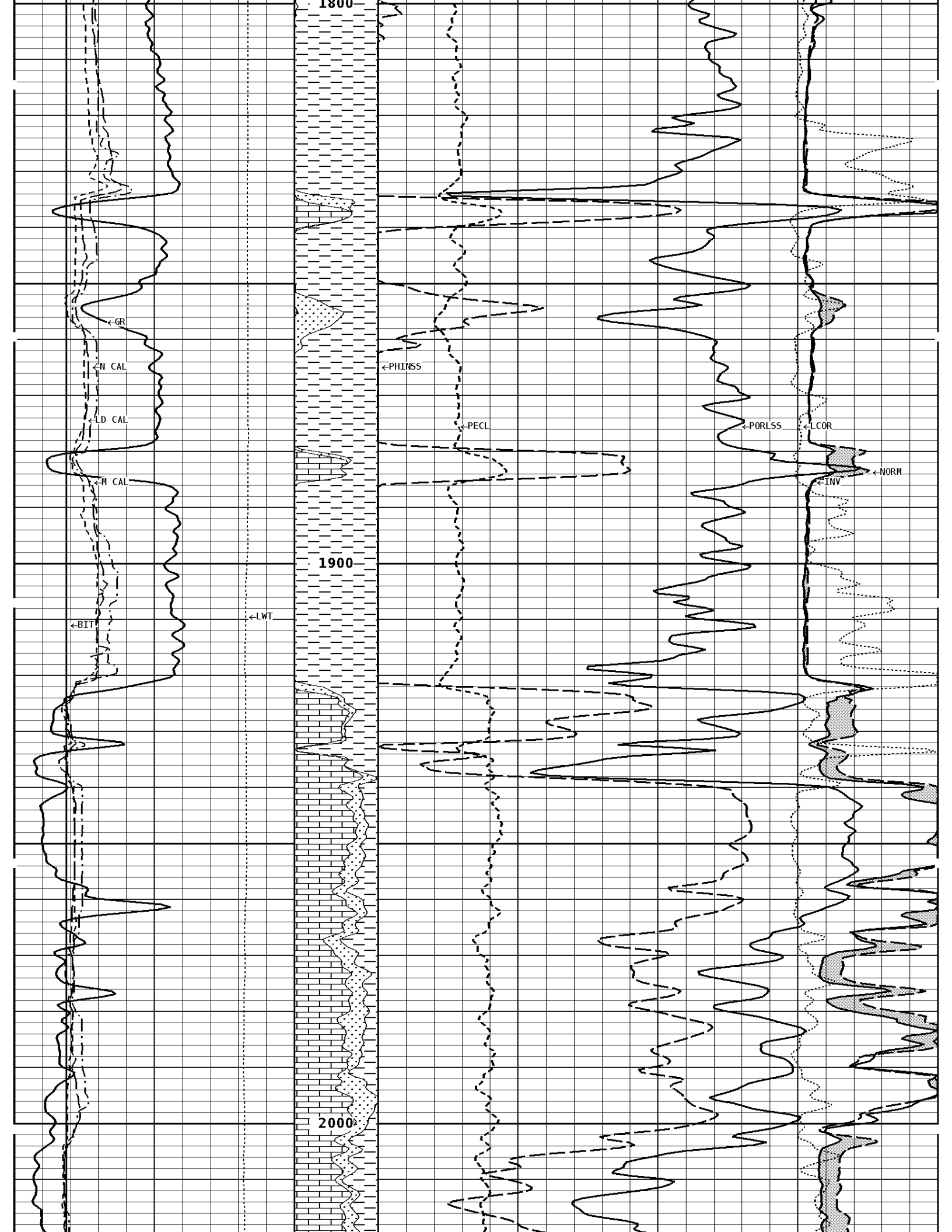
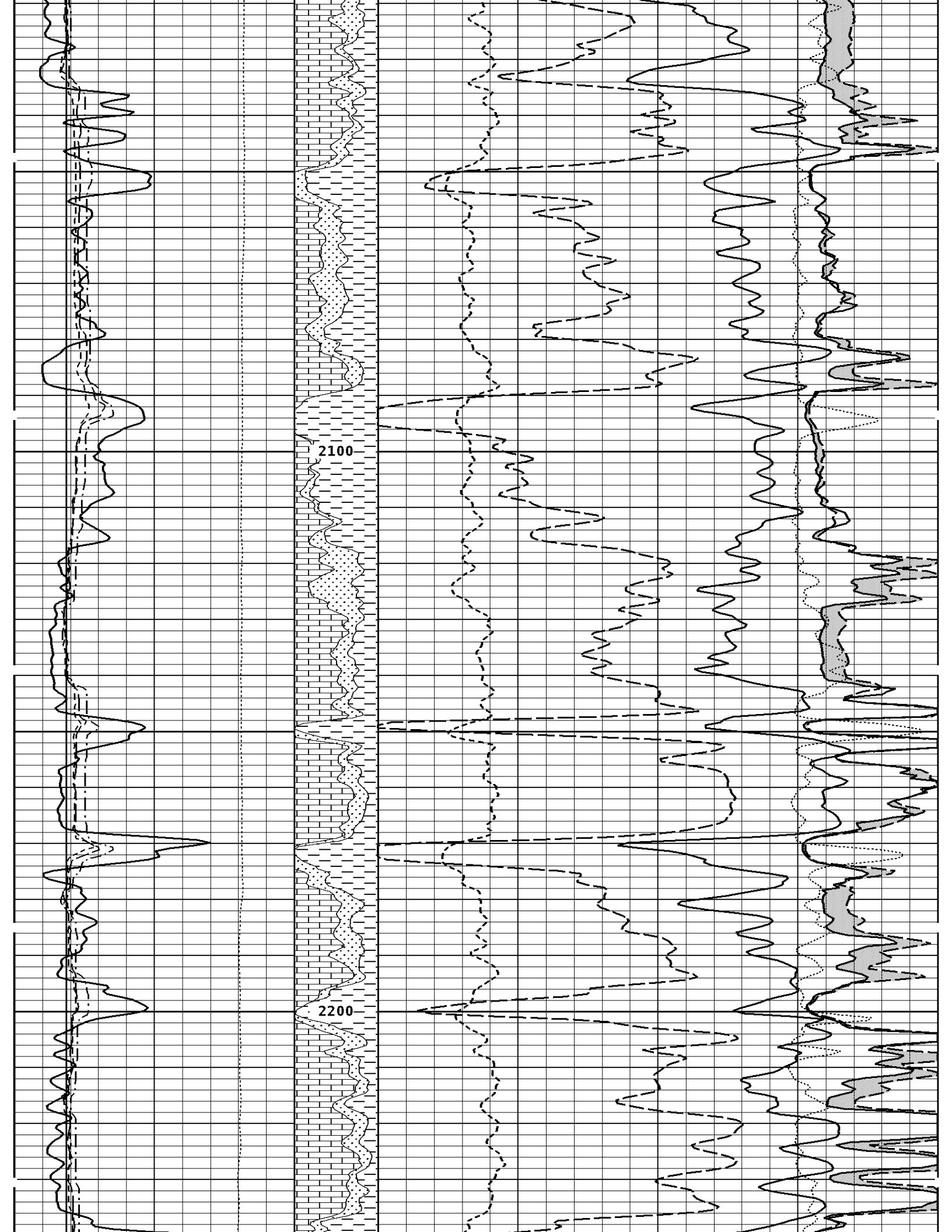
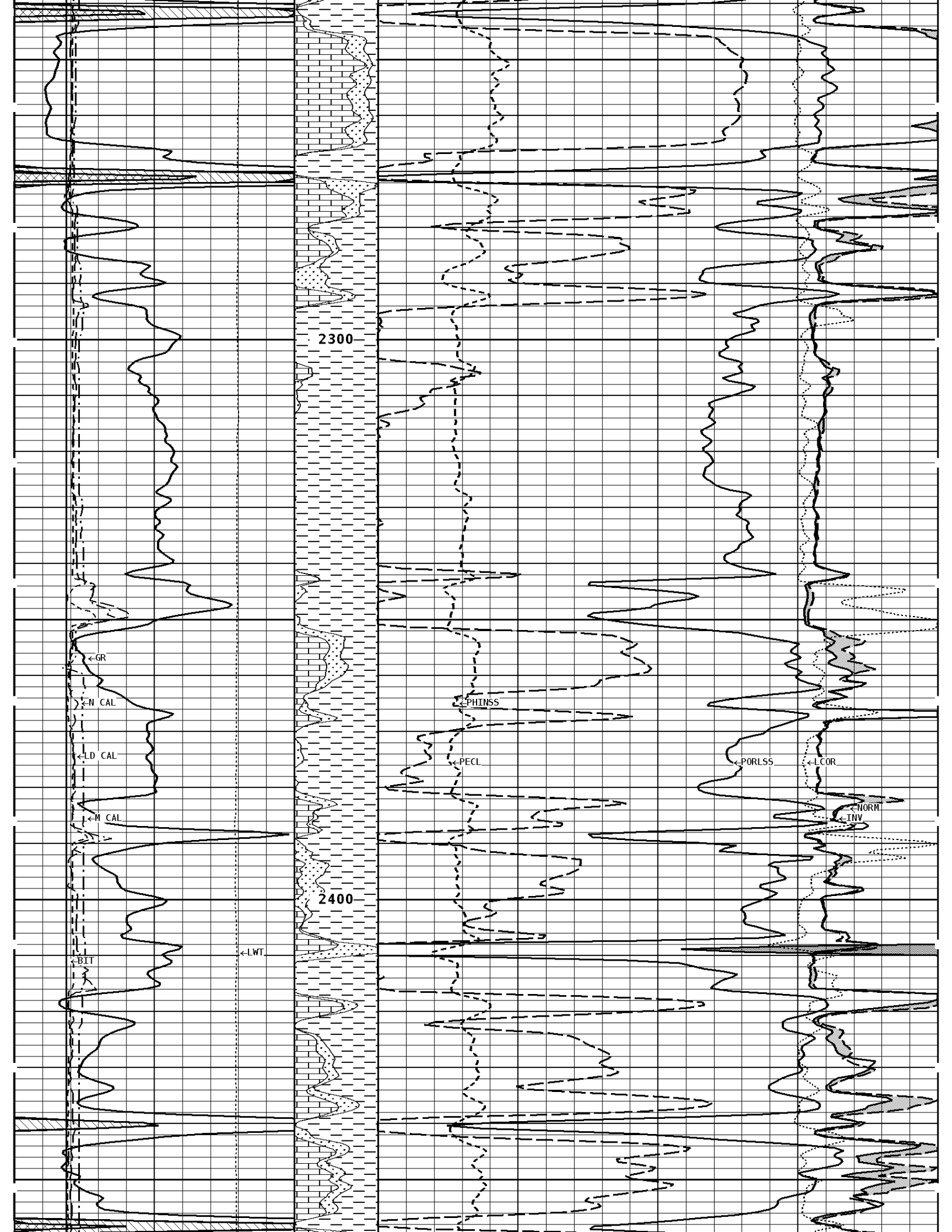
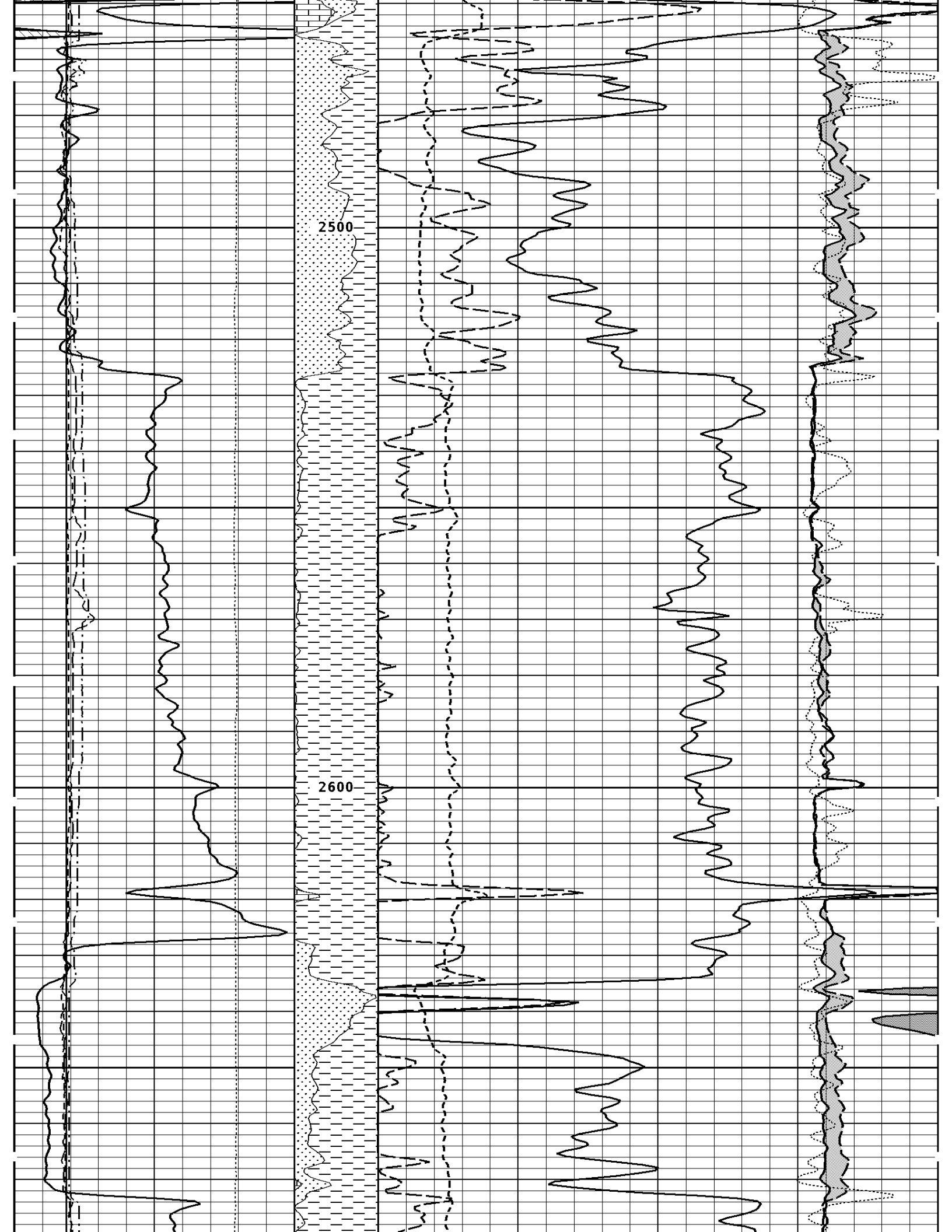
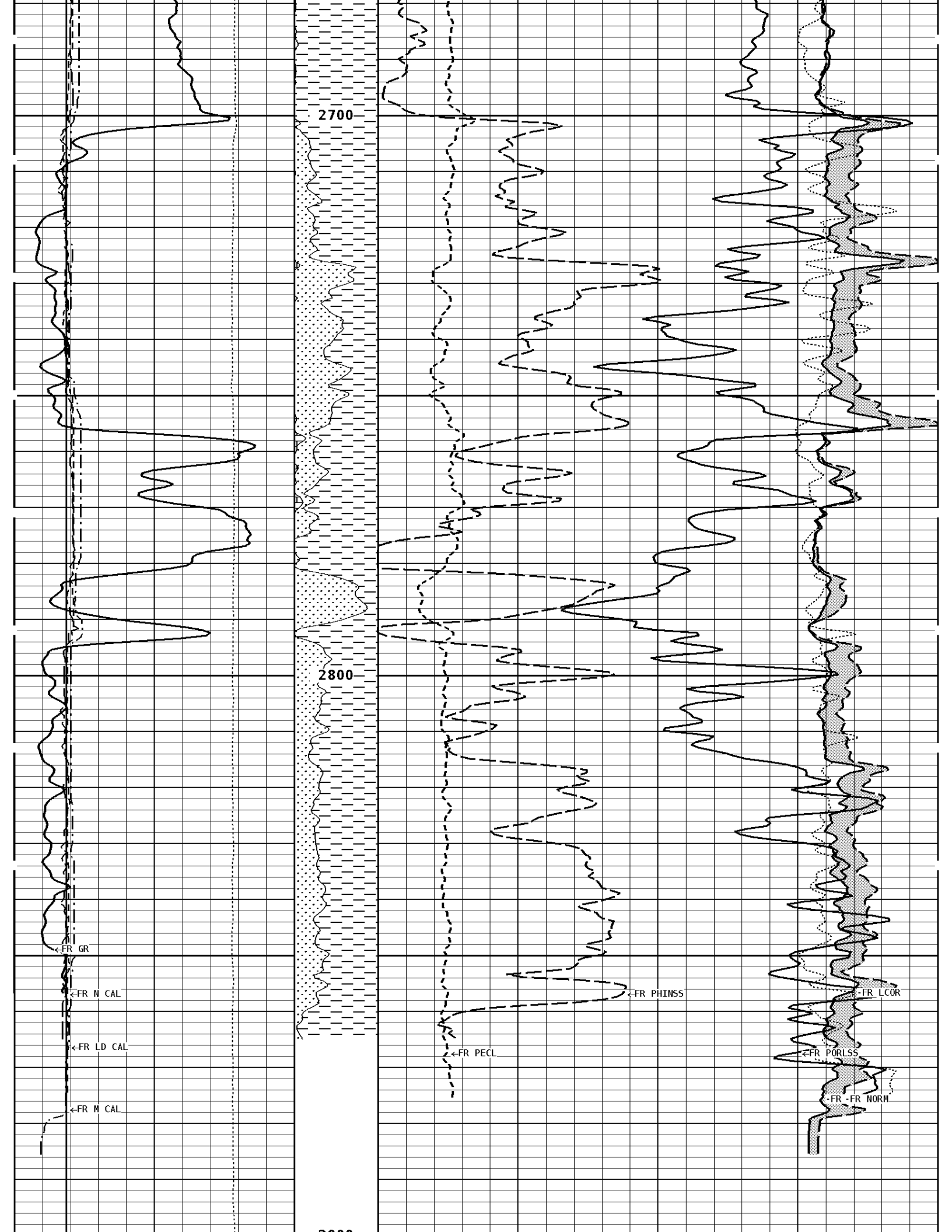
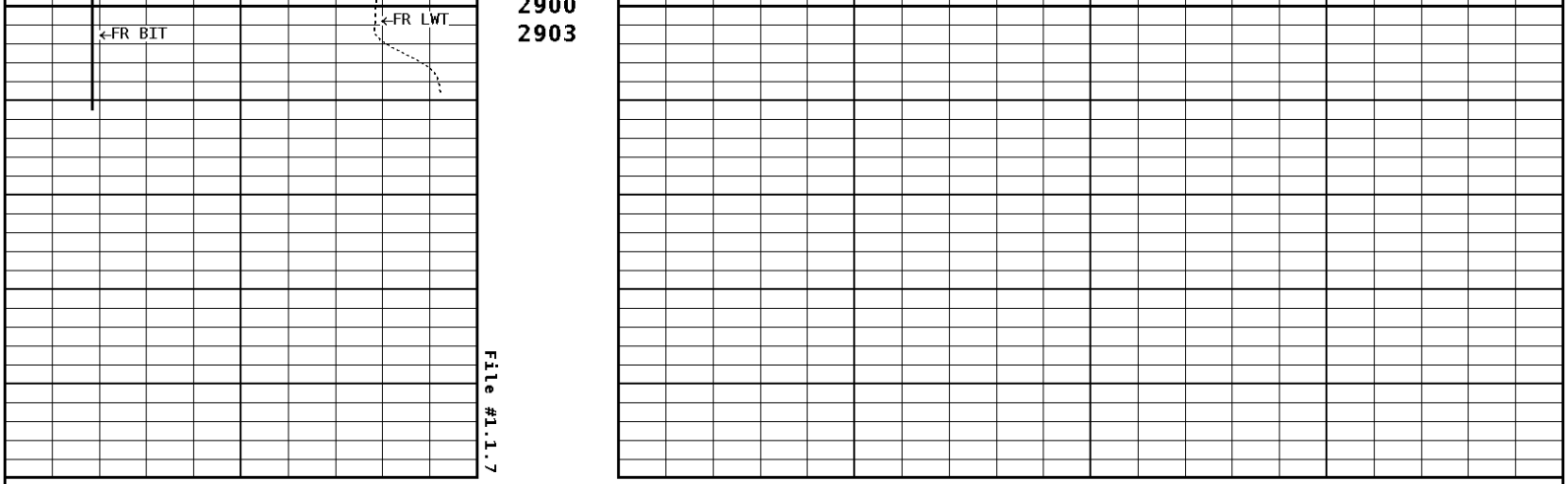

1800
GR
N CAL
LD CAL
M CAL
BIT
LWT
PHINSS
PECL
PORLSS
LCOR
NORM
INV
1900
2000


2100
2200


2300
2400
←GR
←N CAL
←LD CAL
←M CAL
←BIT
←LWT
←PHINSS
←PECL
←PORLSS
←LCOR
←NORM
←INV


2500
2600


2700
2800
←FR GR
←FR N CAL
←FR LD CAL
←FR M CAL
←FR PHINSS
←FR PECL
-FR_LCOR
←FR PORLSS
-FR -FR NORM



1:240 MAIN SECTION

GAMMA RAY API UNITS	Volume Dolo/Shale	NEUTRON POROSITY (SANDSTONE) PERCENT
200 400 0 200		30 -10

TENSION LBS	Volume Calcite	DENSITY POROSITY (2.65g/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

Matrix Density	2.68	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Sandstone	
Drill Bit Size	7.875	in
Casing Diameter	5.500	in
Casing Thickness	0.250	in
Casing Correction (PHI N)	Disable	

Well File: ham-ens-1-specmstk-jul-9 **Scale:** 1:240 **Format:** NLD-240
Segment: V1.D1.S4 RP **Acquired:** 2014-07/09 19:42 3.3.0-12594
Reference: 0 **Processed:** 2014-07/09 21:54 3.3.0-12594

CALIPER MICRO INCHES (IN)
16 26 6 16

BIT SIZE
INCHES (IN)
6 16

NORMAL
OHMM
0 40

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

INVERSE
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

TENSION
LBS
10000 0

Volume
Calcite

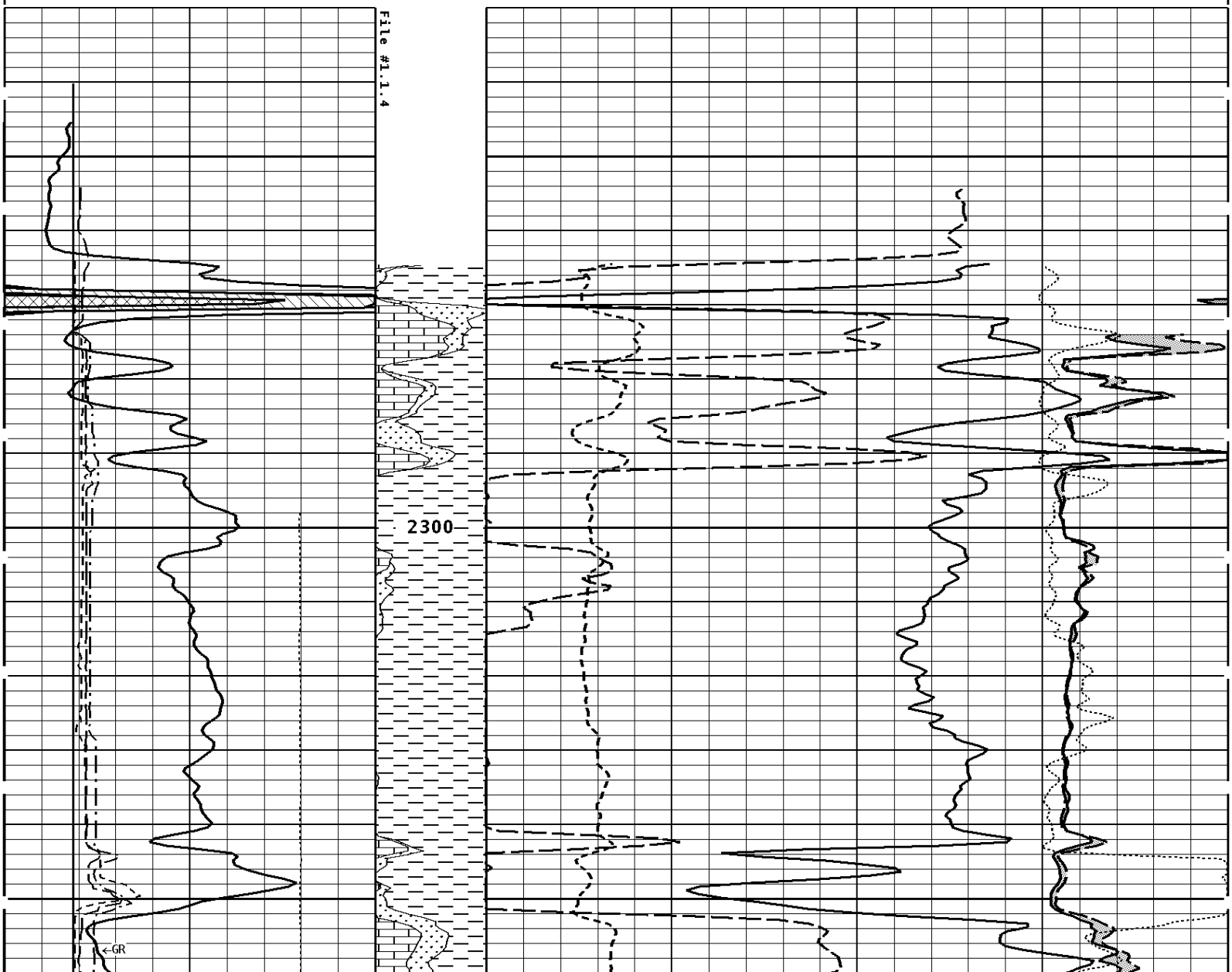
DENSITY POROSITY (2.65g/cc)
PERCENT
70 30
30 -10
-10 -50

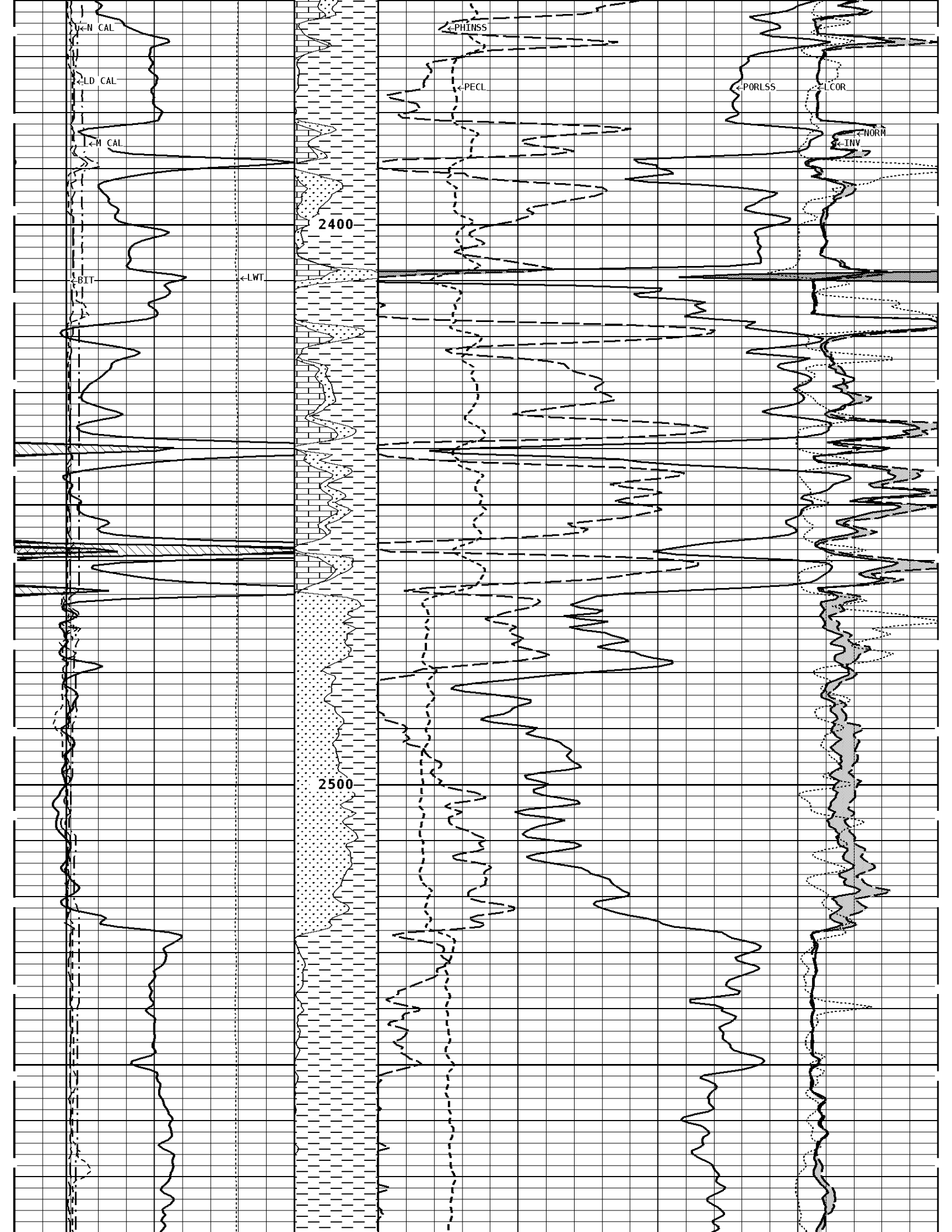
GAMMA RAY
API UNITS
200 400
0 200

Volume
Dolo/Shale

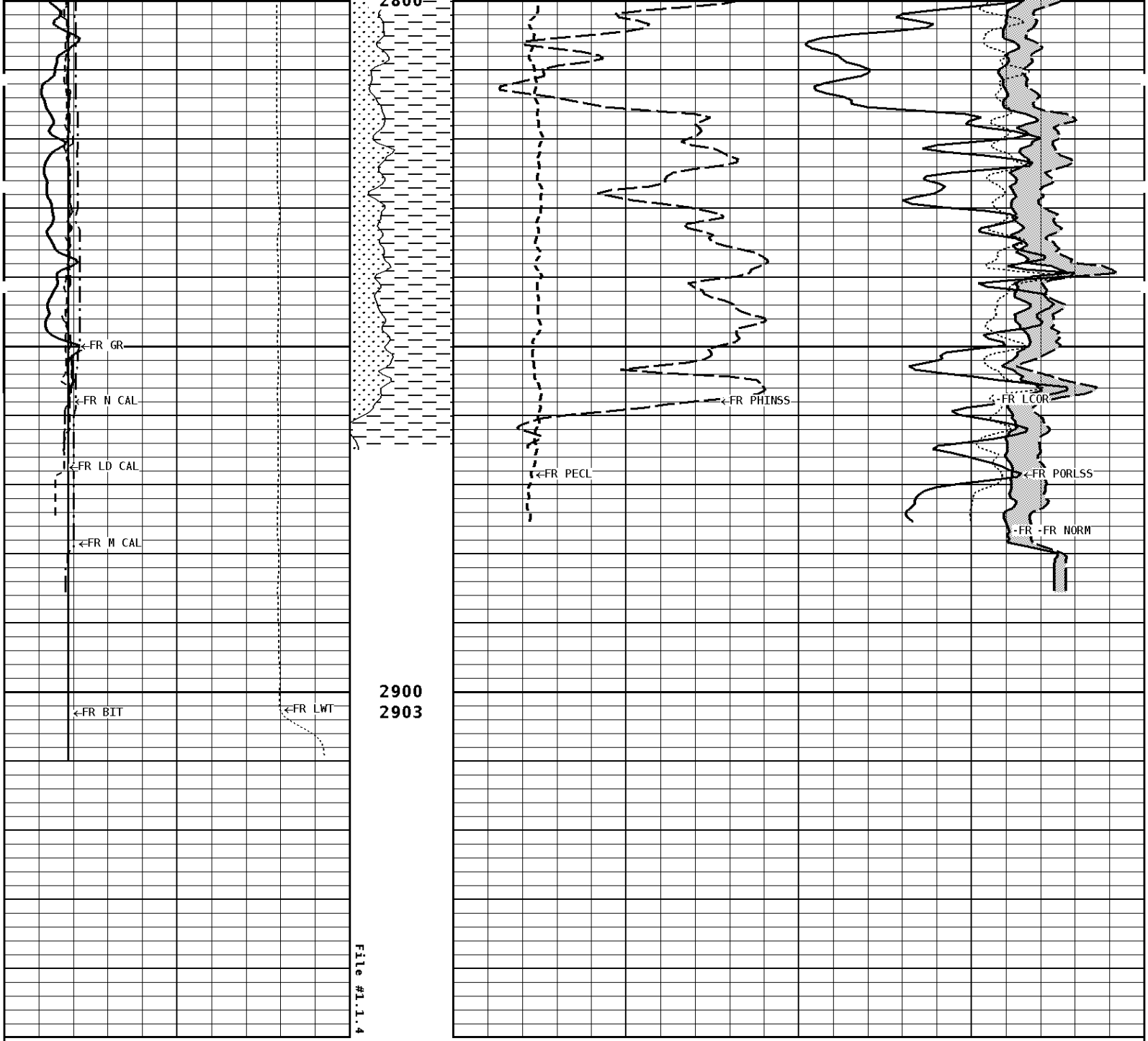
NEUTRON POROSITY (SANDSTONE)
PERCENT
30 -10

1:240 REPEAT SECTION




N CAL
LD CAL
M CAL
BIT
LWT
PHINSS
PECL
PORLSS
LCOR
NORM
INV
2400
2500


2600
2700
2800



1:240 REPEAT SECTION

GAMMA RAY **API UNITS** 200 — 400 0 — 200	Volume Dolo/Shale	**NEUTRON POROSITY (SANDSTONE)** **PERCENT** 30 — -10
TENSION **LBS** 10000 — 0	Volume Calcite	**DENSITY POROSITY (2.65g/cc)** **PERCENT** 70 — 30 30 — -10 -10 — -50
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		**INVERSE** **OHMM**

6 16

BIT SIZE
INCHES (IN)
6 16

CALIPER MICRO
INCHES (IN)
16 26
6 16

0 40

NORMAL
OHMM
0 40

*** Borehole Zone Factors ***

Zone 1 99999.0 to 0.0 Feet

Matrix Density	2.68	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Sandstone	
Drill Bit Size	7.875	in
Casing Diameter	5.500	in
Casing Thickness	0.250	in
Casing Correction (PHI N)	Disable	

Well File: ham-ens-1-specmstk-jul-9 **Scale:** 1:240 **Format:** NLD-240
Segment: V1.D1.S6 DOL RP **Acquired:** 2014-07/09 19:42 3.3.0-12594
Reference: 0 **Processed:** 2014-07/09 21:55 3.3.0-12594

CALIPER MICRO
INCHES (IN)
16 26
6 16

BIT SIZE
INCHES (IN)
6 16

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

NORMAL
OHMM
0 40

INVERSE
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

TENSION
LBS
10000 0

Volume
Calcite

DENSITY POROSITY (2.87g/cc)
PERCENT
70 30
30 -10
-10 -50

GAMMA RAY
API UNITS
200 400
0 200

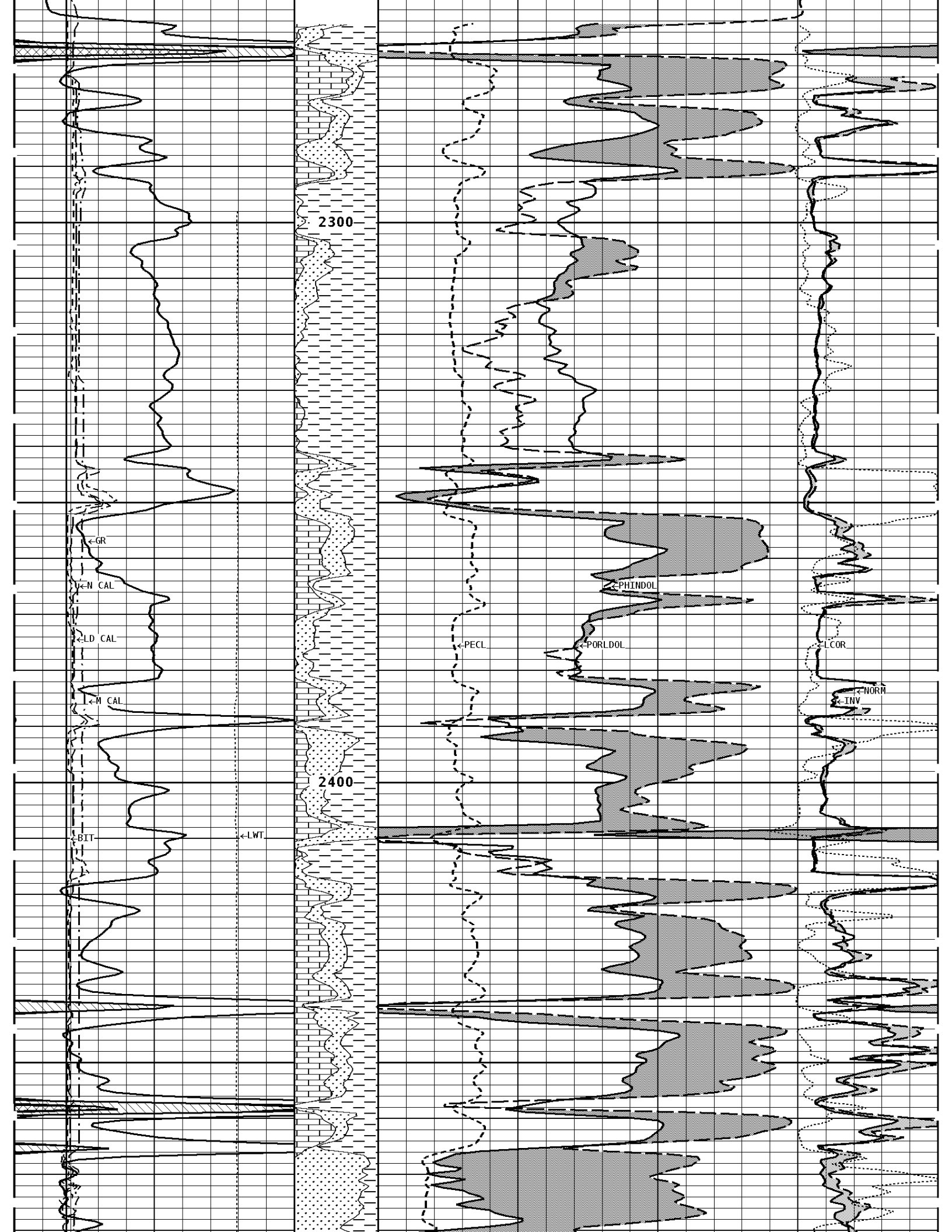
Volume
Dolo/Shale

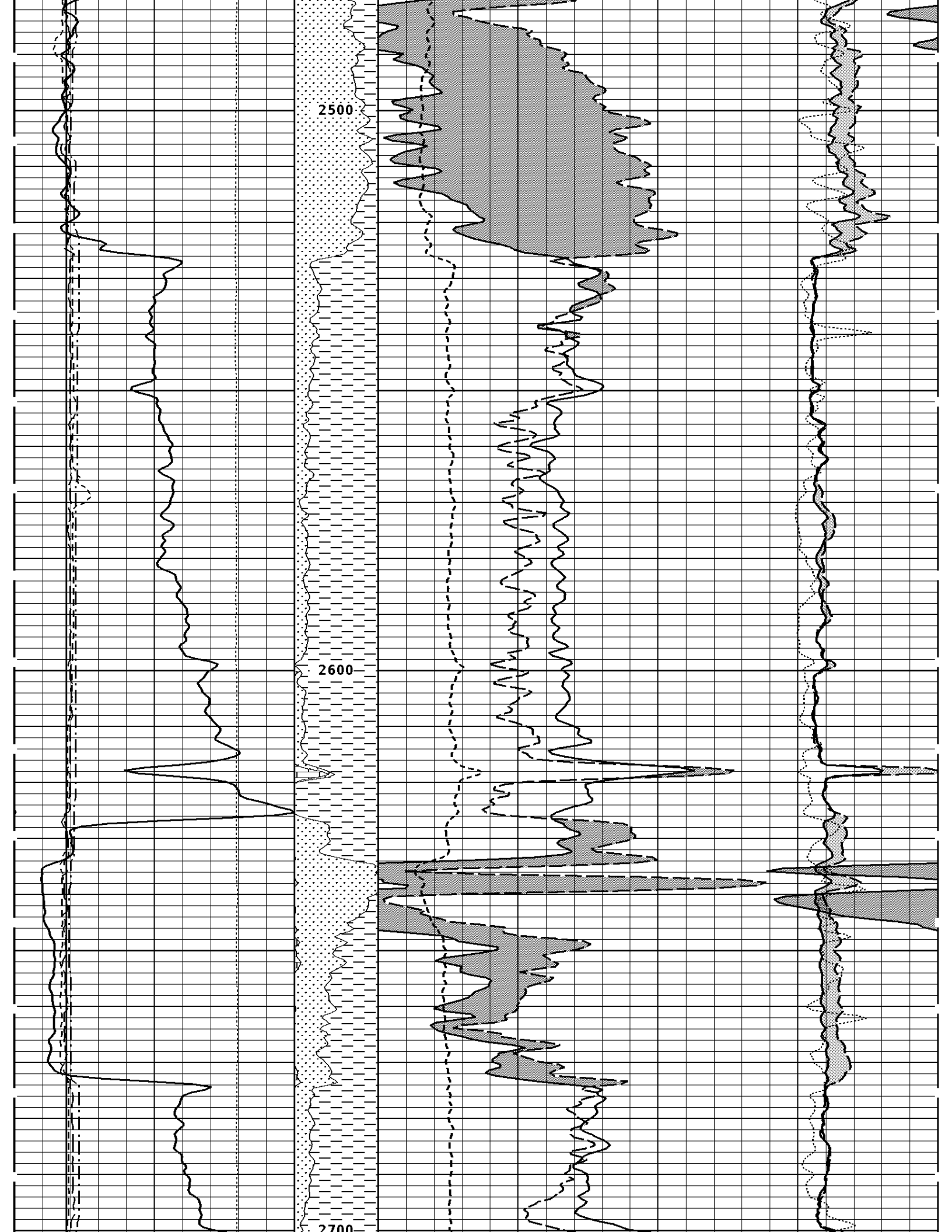
NEUTRON POROSITY (DOLOMITE)
PERCENT
30 -10

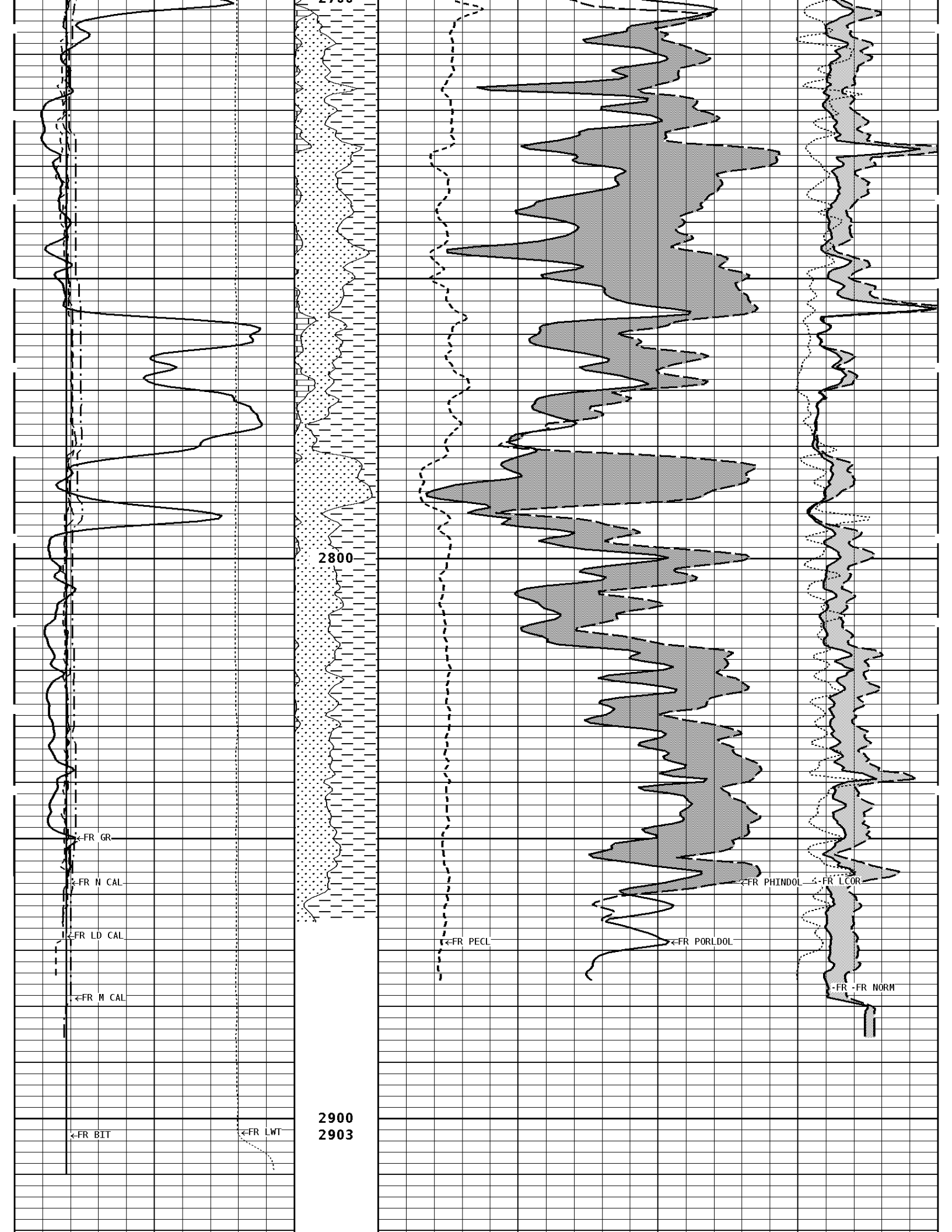
1:240 MAIN SECTION

DOLOMITE PLAYBACK

File #1.1.6


2300
GR
N CAL
LD CAL
M CAL
2400
BIT
LWT
PHINDOL
PECL
PORLDOL
LCOR
NORM
INV


2500
2600
2700


2800
2900
2903
←FR GR
←FR N CAL
←FR LD CAL
←FR M CAL
←FR BIT
←FR LWT
←FR PECL
←FR PHINDOL
←FR PORLDOL
←FR LCOR
←FR NORM

File #1.1.6

1:240 MAIN SECTION

DOLOMITE PLAYBACK

GAMMA RAY API UNITS	Volume Dolo/Shale	NEUTRON POROSITY (DOLOMITE) PERCENT
200 400 0 200		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	7.875	in
Casing Diameter	5.500	in
Casing Thickness	0.250	in
Casing Correction (PHI N)	Disable	

Well File: ham-ens-1-specmstk-jul-9 **Scale:** 1:240 **Format:** LDT-240
Segment: V1.D1.S7 MAIN **Acquired:** 2014-07/09 20:36 3.3.0-12594
Reference: 0 **Processed:** 2014-07/09 21:54 3.3.0-12594

BIT SIZE INCHES (IN)
6 16

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

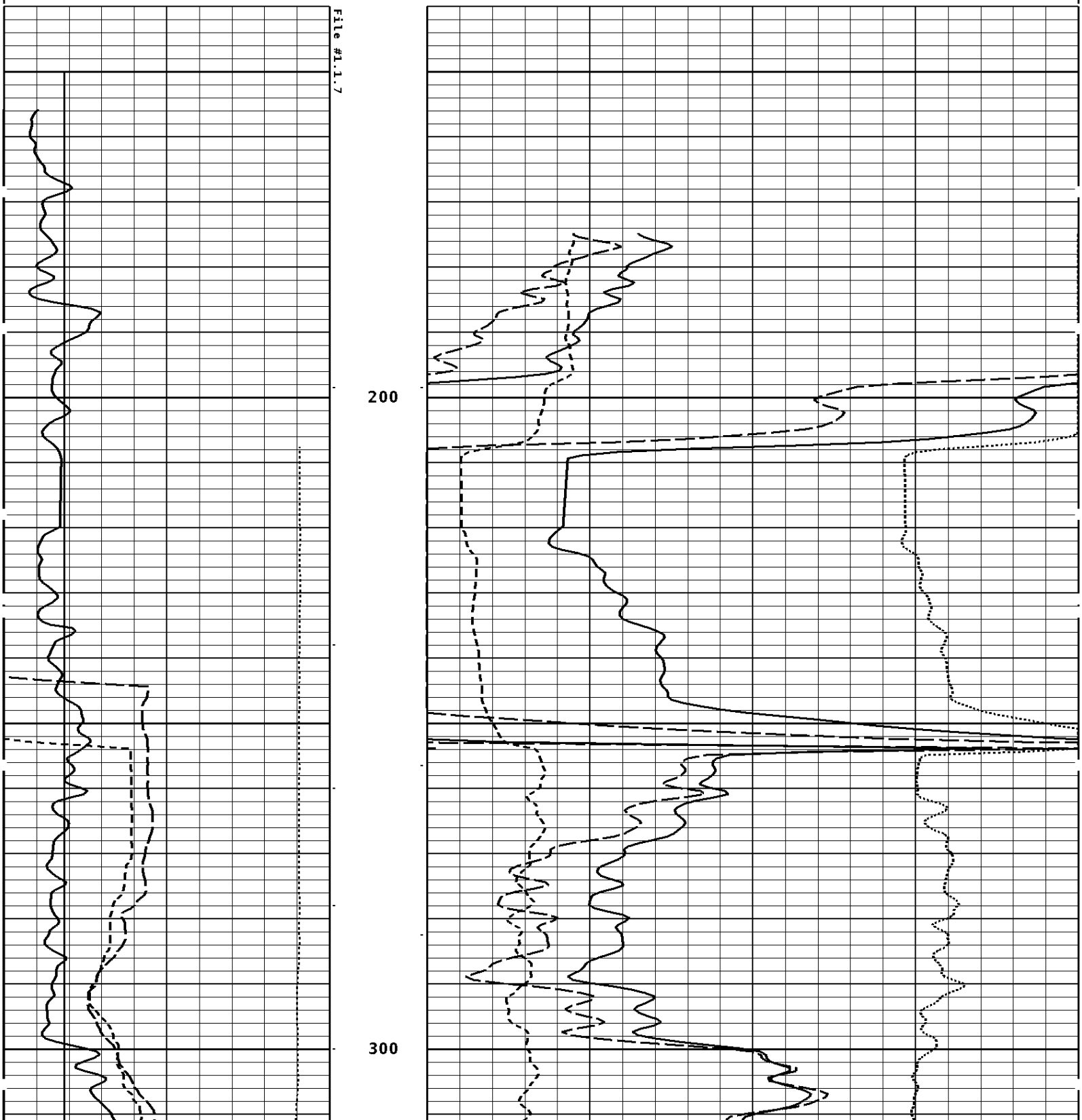
DENSITY (X) CALIPER INCHES (IN)	PE CROSS-SECTION BARNS/ELECTRON	DENSITY CORRECTION G/CC
16 26 6 16	0 10	-0.25 0.25

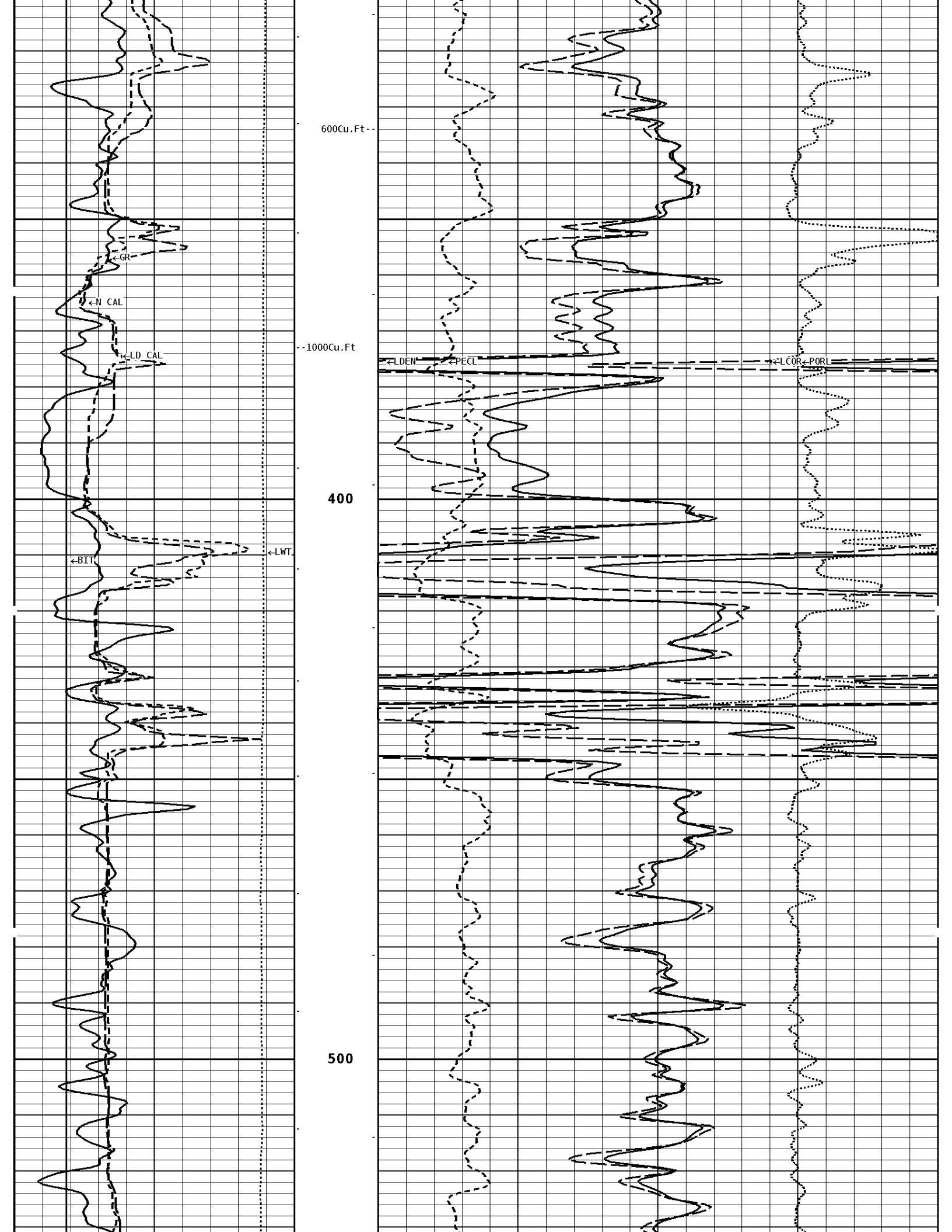
TENSION LBS		COMPENSATED BULK DENSITY G/CC	
10000	0	3.0	4.0
		2.0	3.0
		1.0	2.0

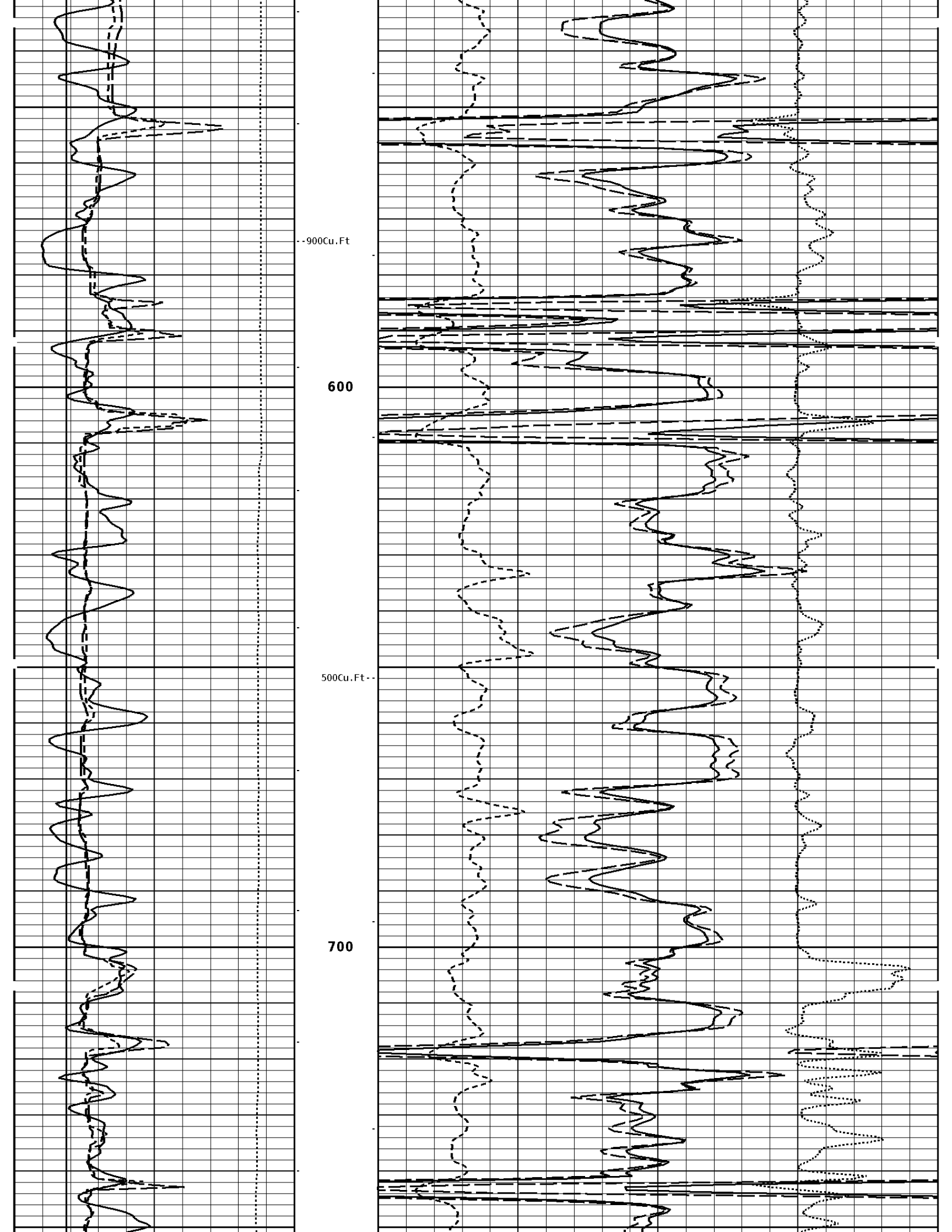
GAMMA RAY API UNITS		-BHV AHV- CU.FT	DENSITY POROSITY (2.71g/cc) PERCENT	
200	400		70	30
0	200		30	-10
			-10	-50

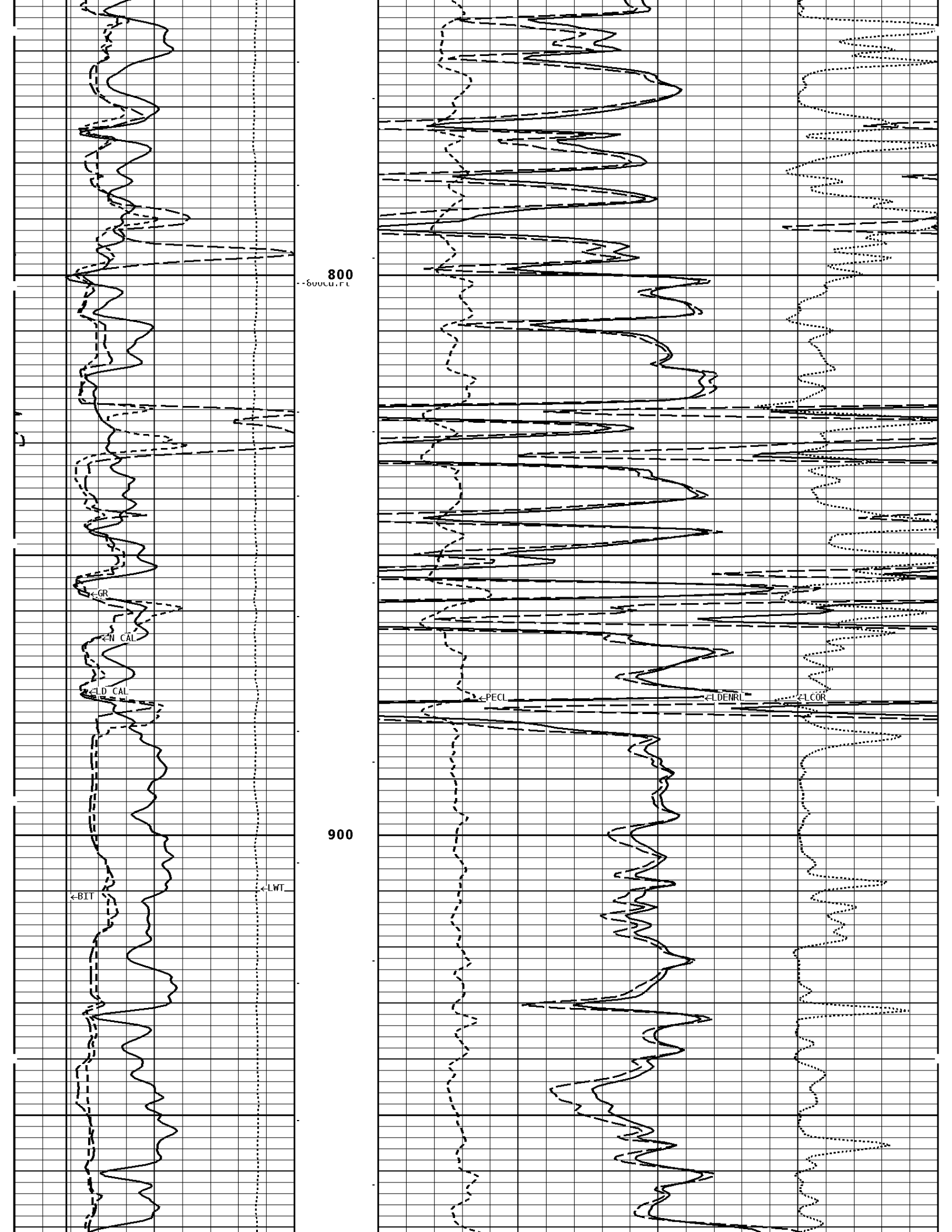
1:240 MAIN SECTION

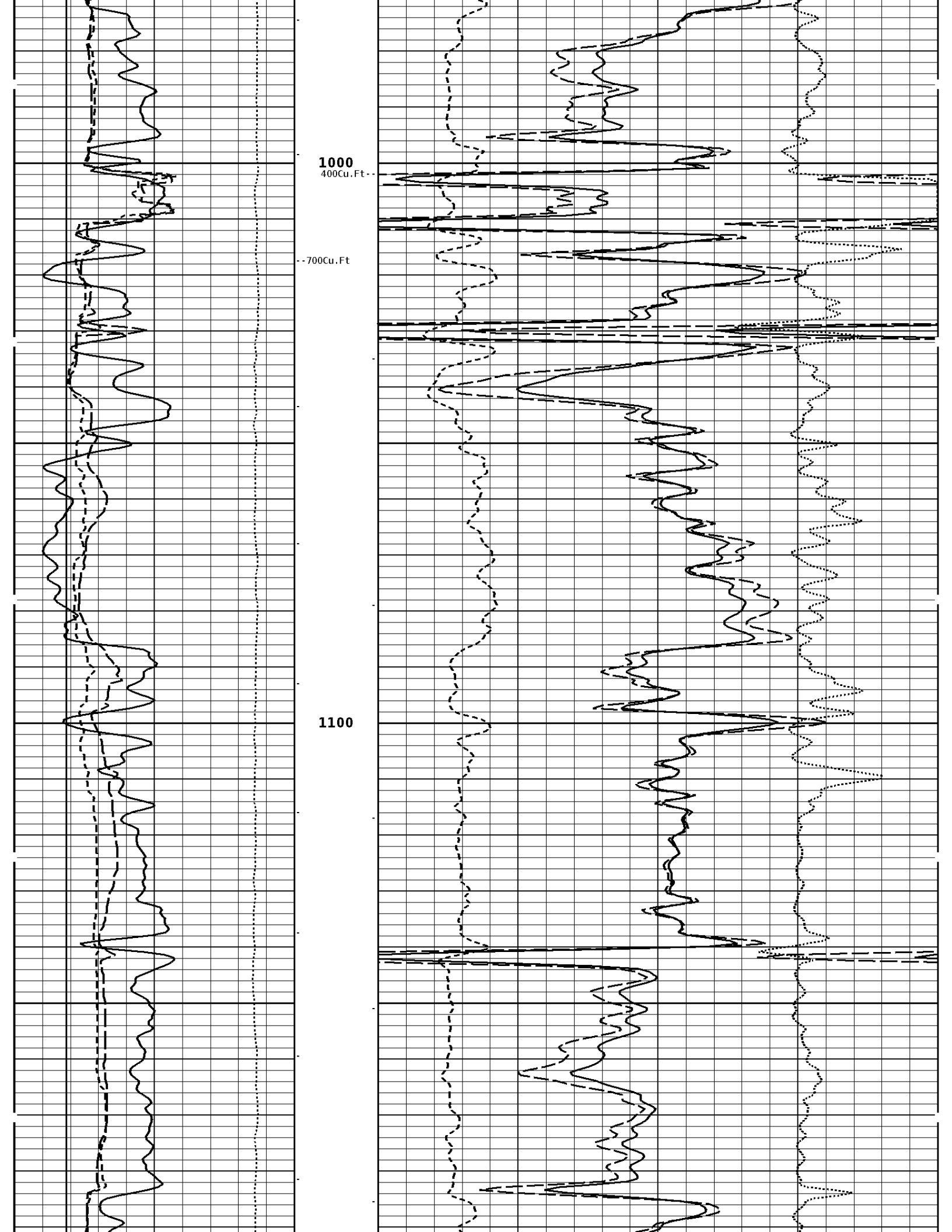
BULK DENSITY

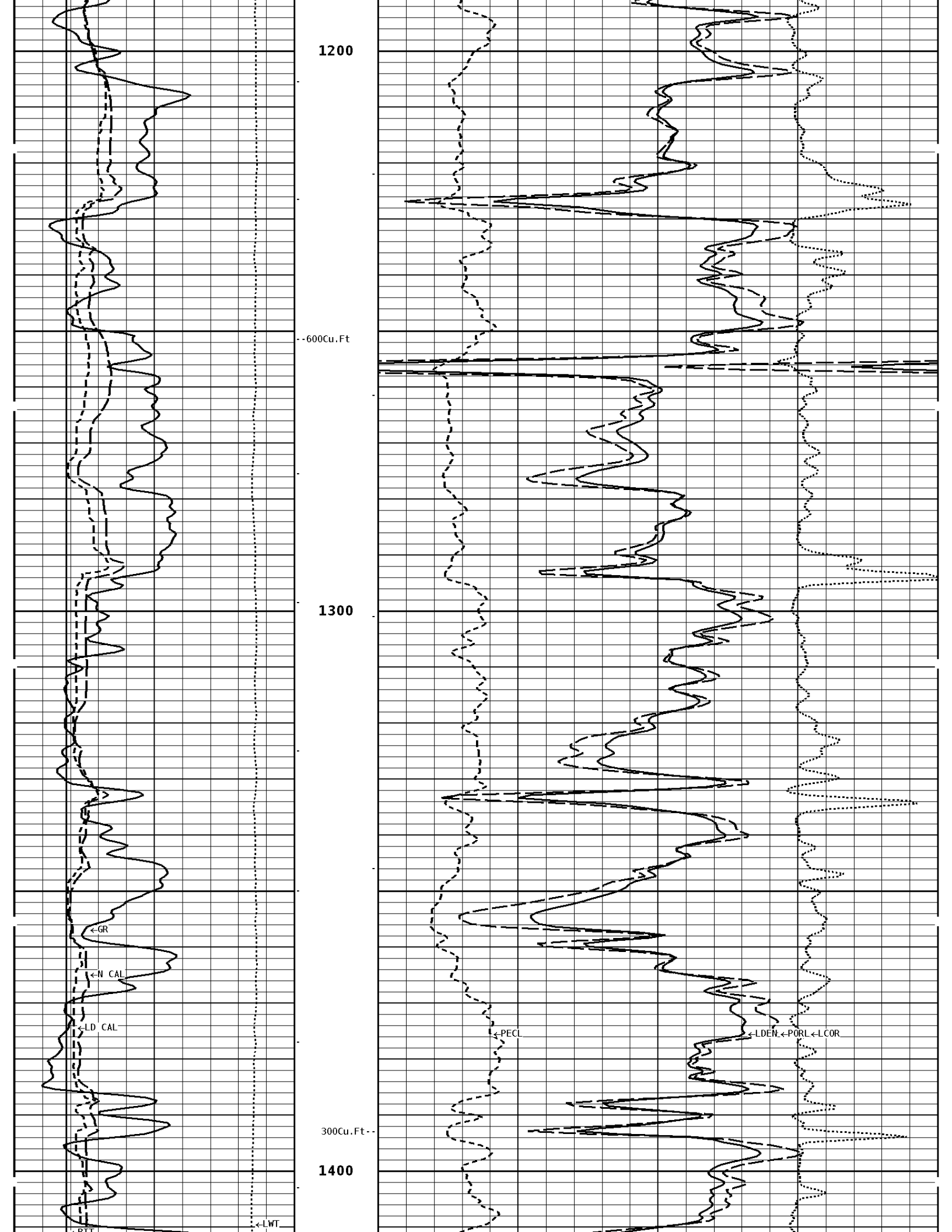


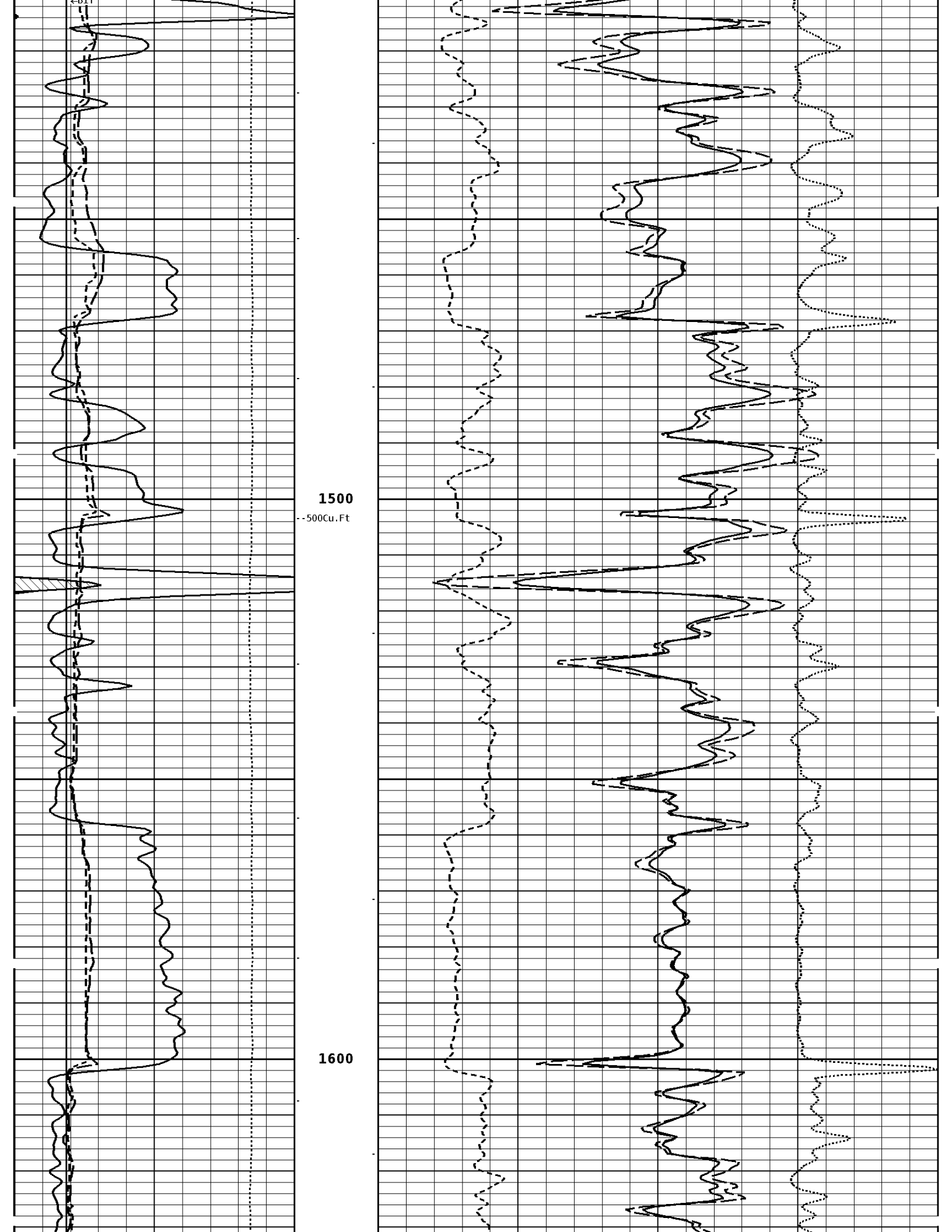

600Cu.Ft
←GR
←N_CAL
1000Cu.Ft
←LD_CAL
←LDEN
←PECL
←LCOR
←PORL
400
←BIT
←LWT
500

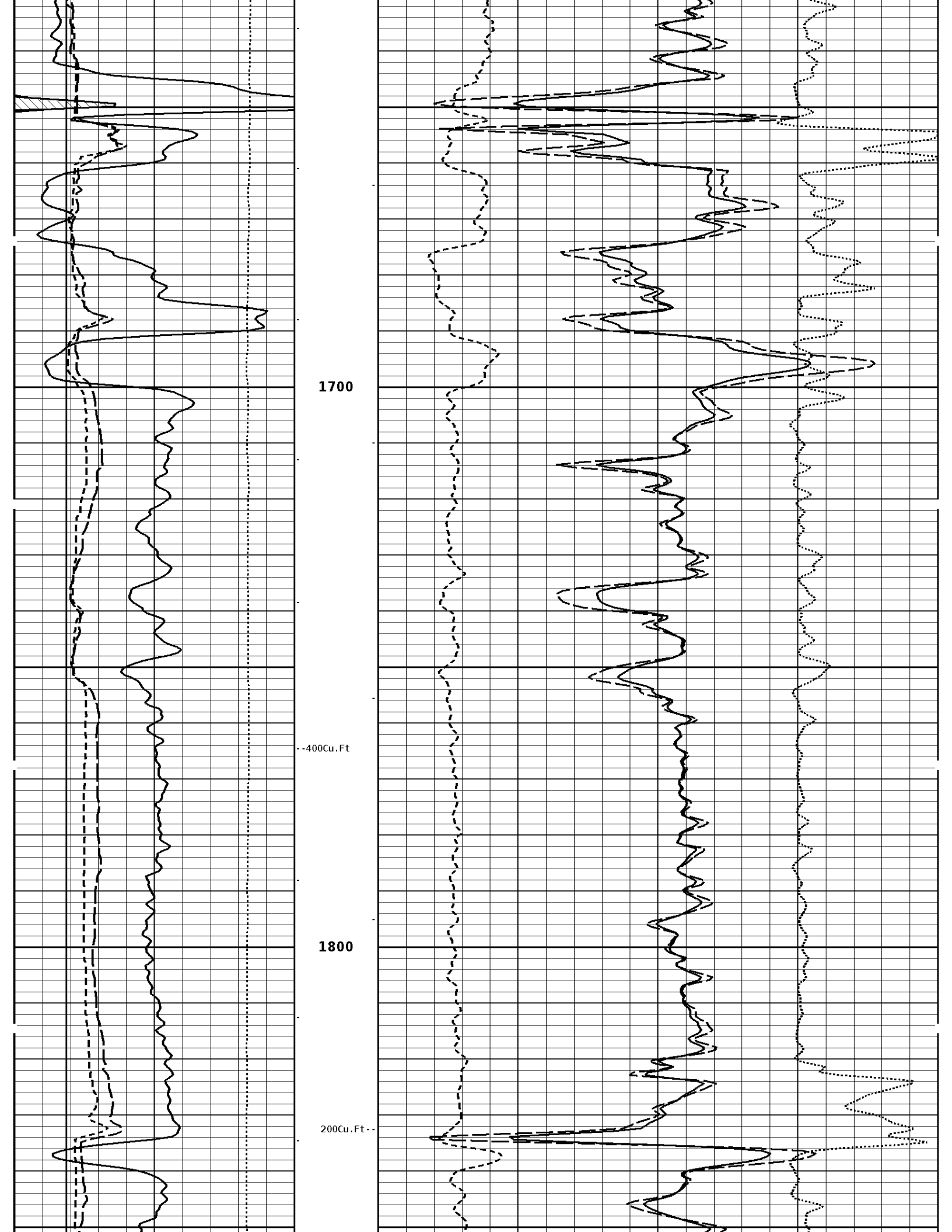

--900Cu.Ft
600
500Cu.Ft--
700

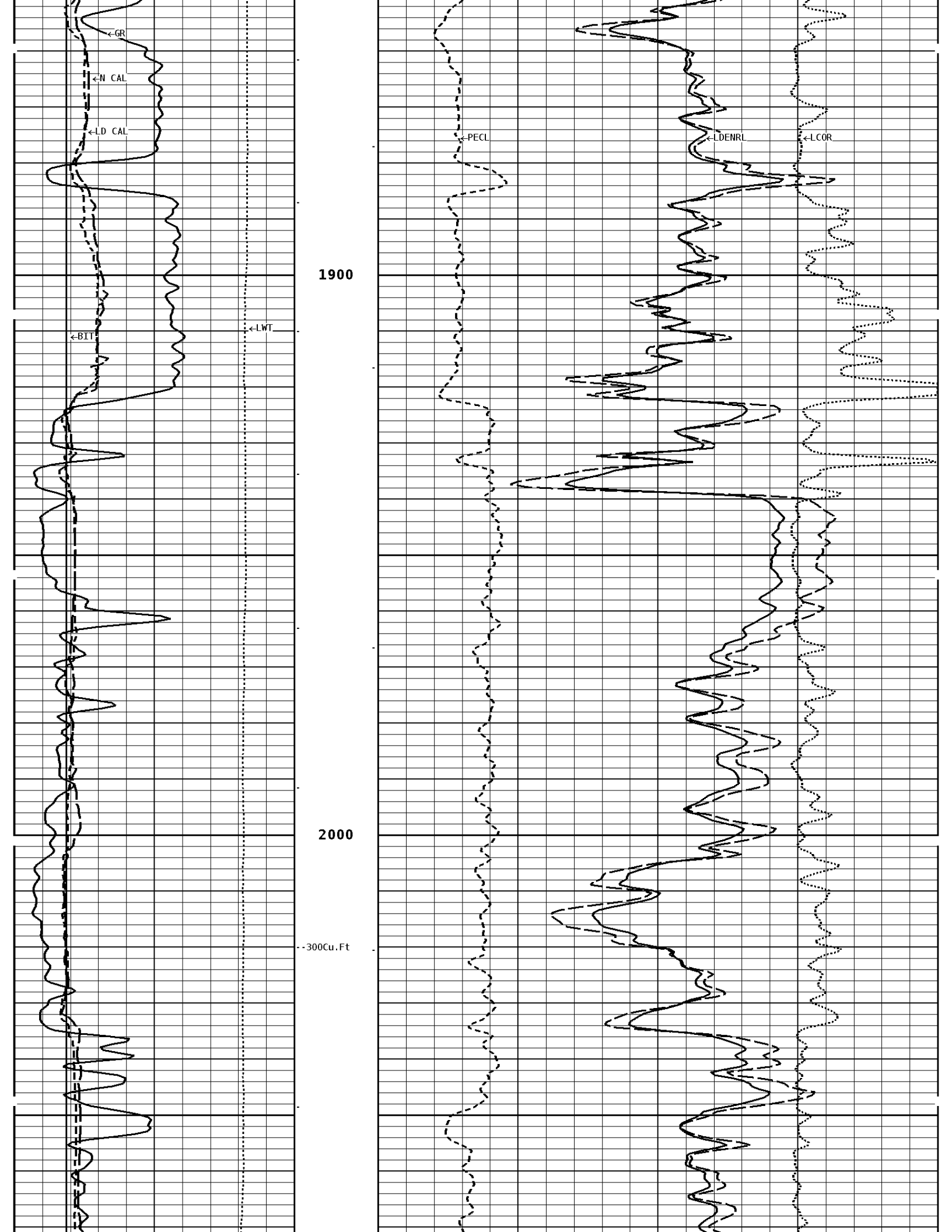

800
GR
N CAL
LD CAL
PECL
LDENRL
LCOR
900
BIT
LWT

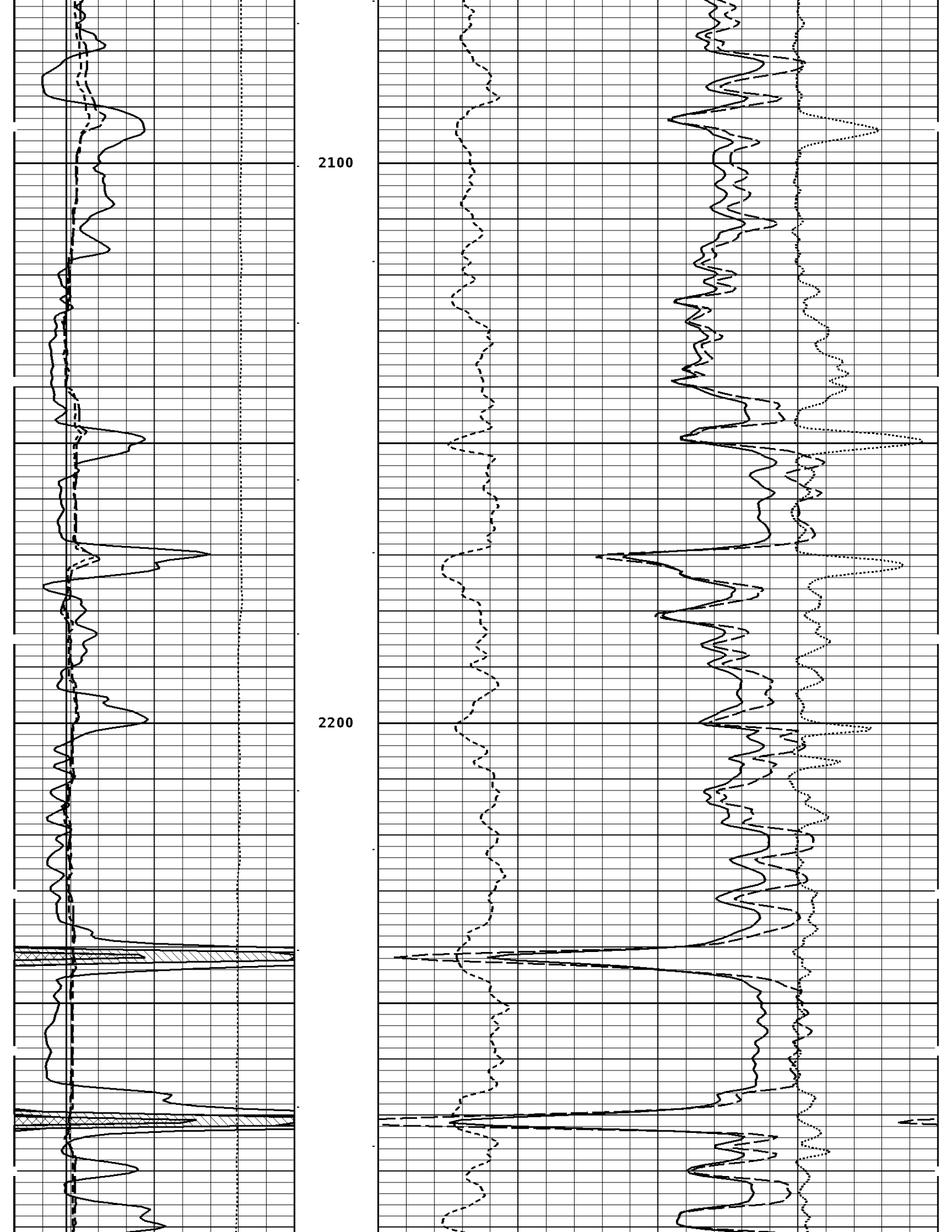

1000
400Cu.Ft
700Cu.Ft
1100

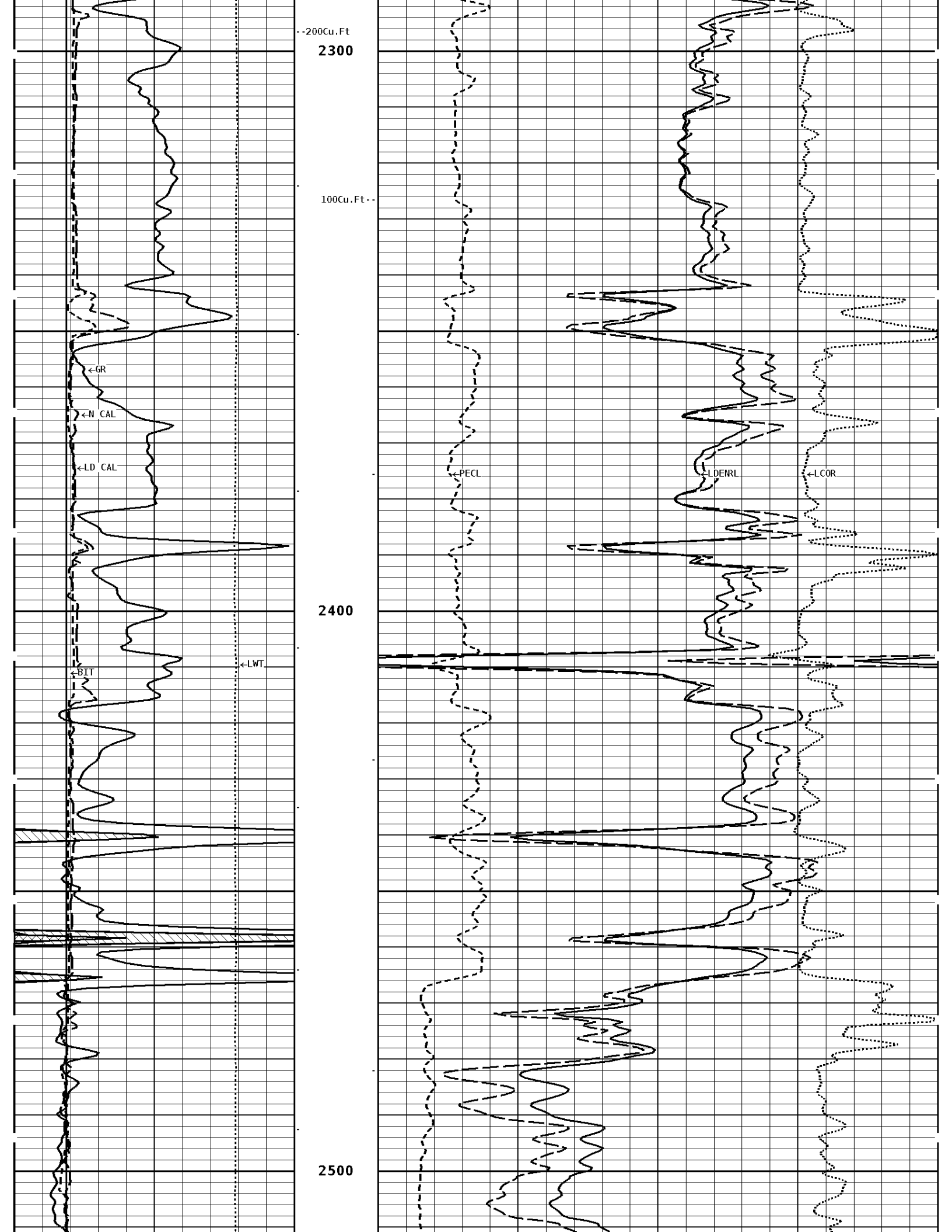

1200
--600Cu.Ft
1300
←GR
←N CAL
←LD CAL
←PECL
←LDEN ←PORL ←LCOR
300Cu.Ft--
1400
←LWT

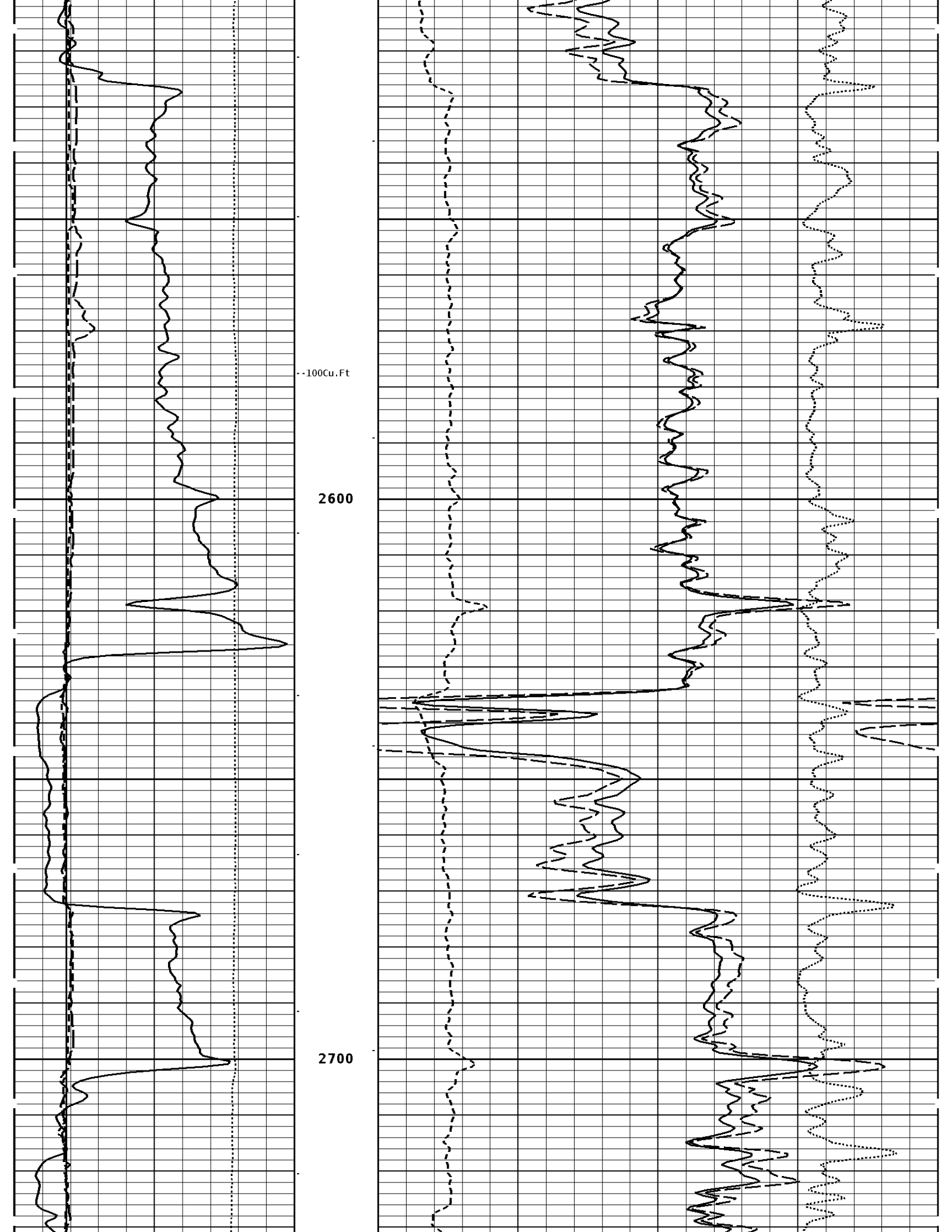

1500
--500Cu.Ft
1600

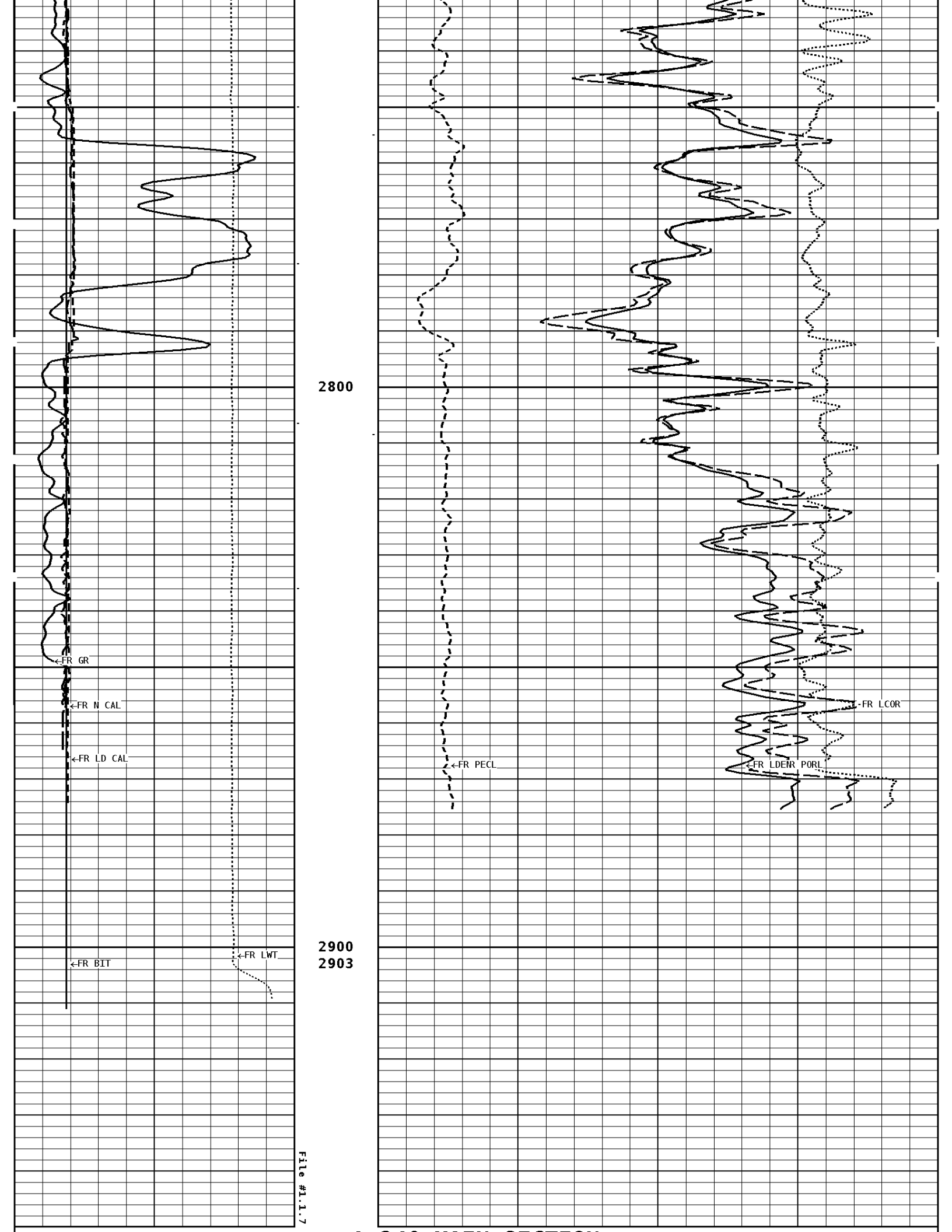

1700
--400Cu.Ft
1800
200Cu.Ft--


←GR
←N CAL
←LD CAL
←BIT
←LWT
1900
2000
300Cu.Ft
←PECL
←LDENRL
←LCOR


2100
2200


--200Cu.Ft
2300
100Cu.Ft--
←GR
←N CAL
←LD CAL
←PECL
←LDENRL
←LCOR
2400
←BIT
←LWT
2500


--100Cu.Ft
2600
2700


2800
2900
2903
←FR GR
←FR N CAL
←FR LD CAL
←FR BIT
←FR LWT
←FR PECL
←FR LCOR
←FR LDENR PORL
File #1.1.7

1:240 MAIN SECTION
BULK DENSITY

GAMMA RAY API UNITS	-BHV AHV- CU.FT	DENSITY POROSITY (2.71g/cc) PERCENT
200 400 / 0 200		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	2.68	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Sandstone	
Drill Bit Size	7.875	in
Casing Diameter	5.500	in
Casing Correction (PHI N)	Disable	

* Calibration Summary *

Shop Calibration
GRT-FA

Performed : 22-JUL-2013 Time : 18:20
Sensor Suite : SPGCWIN ID : GRT-FA-074

	K	U	Th
Label Values	72.3 kBq 12.8 %	2.3 kBq 10.8 ppm	8.5 kBq 121.6 ppm
Measured	11.9 %	40.2 ppm	80.7 ppm
Calibrated	12.8 %	10.8 ppm	121.6 ppm

Window	Background	Jig	Calibrated
1	55	811	684
2	13	205	178
3	7	130	100
4	5	101	93
5	3	59	46
6	3	68	60
7	1	17	11
8	1	16	17
9	1	10	12

Performed : 22-JUL-2013 Time : 18:02
Sensor Suite : SPGCGR ID : GRT-FA-074

	Background	Measured Jig	Units	Calibrated Jig	Units
GR	123	1040	CPS	160	GRAPI

Shop Calibration
CNT-AA

Performed : 02-Jul-2014 Time : 09:45

Sensor Suite : CALI-BCN ID : NDT-BB-103

	Jig - Measured Ring#1	Ring#2	Jig - Calibrated Ring#1	Ring#2	Units
CL # 1	9.1	14.0	6.0	12.0	IN.

Performed : 02-Jul-2014 Time : 09:26
Sensor Suite : BHC NEUT ID : CNP-AA-024
Source ID : N-1045

	Tank Measured	Calibrated	Verification Jig	Units
N/F	3.9117	3.6893	3.6916	
Porosity	24.0	20.5	20.5	%

Shop Calibration
LDT-DF

Performed : 02-JUL-2014 Time : 10:36
Sensor Suite : CALI-LTH ID : PDT-GA-464

	Jig - Measured Ring#1	Ring#2	Jig - Calibrated Ring#1	Ring#2	Units
CL # 1	7.8	11.2	6.0	12.0	IN.

Performed : 02-JUL-2014 Time : 10:16
Sensor Suite : BHCPELNG ID : LDP-DA-067
Source ID : 2991GW

Short Space

	BKGD	Al	Mg	Al+Fe	Units
LSW1	65	1018	1652	669	CPS
LSW2	67	1203	1920	868	CPS
LSW3	244	2792	4522	2373	CPS
LSW4	301	2601	3808	2298	CPS
LSW5	41	73	78	69	CPS
LSW6	63	67	69	68	CPS
LSW7	49	51	52	52	CPS
LSW8	12	13	15	13	CPS
QS	0.132	0.129	0.140	0.138	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC

Long Space

	BKGD	Al	Mg	Al+Fe	Units
LLW1	109	1140	4661	694	CPS
LLW2	137	2050	8151	1498	CPS
LLW3	455	3843	14763	3311	CPS
LLW4	504	1835	5918	1668	CPS
LLW5	55	63	114	61	CPS
LLW6	162	155	149	159	CPS
LLW7	101	98	96	100	CPS
LLW8	3	6	16	5	CPS
QL	0.232	0.225	0.219	0.225	
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 Ring#1	Ring#2	Jig - Calibrated Ring#1	Ring#2	Units
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 Zero	Reference	Units	Calibrated Zero	Reference	Units
INV-V	288.8	30429.7		0.00	1536.00	MV
NOR-V	165.4	30363.3		0.00	1636.00	MV
IN-C	163.6	30670.3		0.00	15.46	UA
INV-R					32.14	OHMM
NOR-R					58.31	OHMM

Performed : 12-May-2014 Time : 11:15
Sensor Suite : MSTDAMSF ID : MST-DA-057

Internal

	Measured Zero	Reference	Units	Calibrated Zero	Reference	Units
MSFC	20.2	42595.3		0.00	1522.00	UA

MSFB	32762.1	52824.9	0.00	1522.00	MA
MOM1	0.0	42313.5	0.00	1522.00	MV
MSFRA				43.30	OHMM

Tucker ENERGY SERVICES

Company: HAMILTON INVESTMENTS LLC.

Well: ENSZ #1

Location: 1650' FNL & 330' FWL

Logged: 07-09-2014

K.B. Elev: 1446.0 Ft