



Weatherford

**CML WELL SHUTTLE
COMPENSATED PHOTO-DENSITY
COMPENSATED NEUTRON LOG**

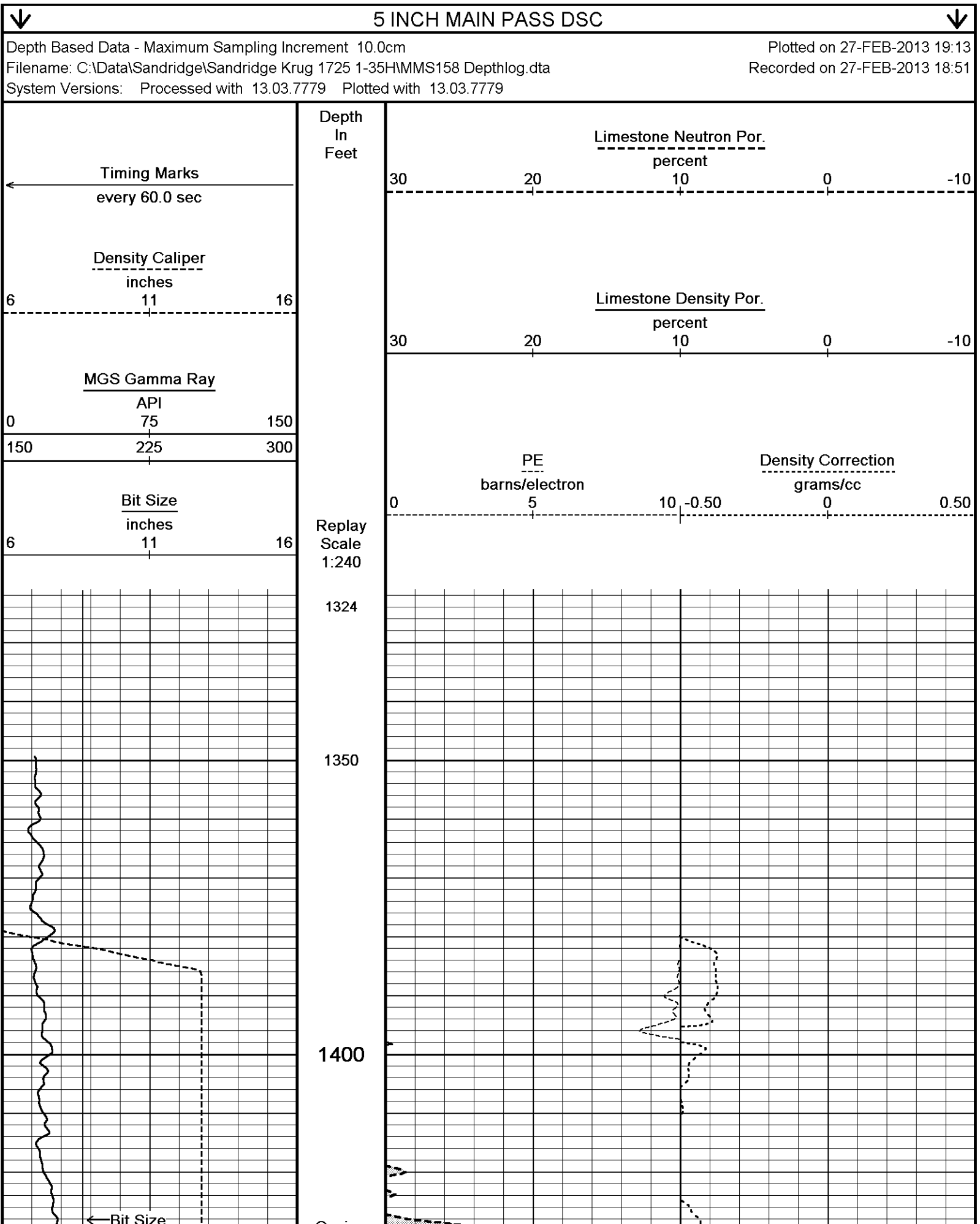
COMPANY	SANDRIDGE EXPLORATION & PRODUCTION				
WELL	KRUG 1725 1-35H				
FIELD	PROSPECT NESS				
PROVINCE/COUNTY	NESS				
COUNTRY/STATE	USA / KANSAS				
LOCATION	200' FSL & 1320' FWL				
SEC	TWP	RGE	Other Services		
35	17S	25W	MAI		
API Number	15-135-25528-01				
Permit Number					
Permanent Datum G.L., Elevation 2392 feet			Elevations:		
Log Measured From KB			KB		
Drilling Measured From K.B.			DF		
Date	26-FEB-2013		GL		
Run Number	ONE				
Depth Driller	6236.00		feet		
Depth Logger	6216.00		feet		
First Reading	6182.00		feet		
Last Reading	1434.00		feet		
Casing Driller	1434.00		feet		
Casing Logger	1434.00		feet		
Bit Size	8.750		inches		
Hole Fluid Type	WATER				
Density / Viscosity	9.40 lb/USg		40.00 CP		
PH / Fluid Loss	11.20		8.00 ml/30Min		
Sample Source	FLOWLINE				
Rm @ Measured Temp	0.55 @ 58.3		ohm-m		
Rmf @ Measured Temp	0.44 @ 58.3		ohm-m		
Rmc @ Measured Temp	0.66 @ 58.3		ohm-m		
Source Rmf / Rmc	CALC	CALC			
Rm @ BHT	0.26 @122.0		ohm-m		
Time Since Circulation	1 HOUR				
Max Recorded Temp	122.00		deg F		
Equipment Name	COMPACT				
Equipment / Base	18064		OKC		
Recorded By	C. GRIFFIN				
Witnessed By	W. SCOTT				
S.O.#/AFE	3539591 / DC12706				

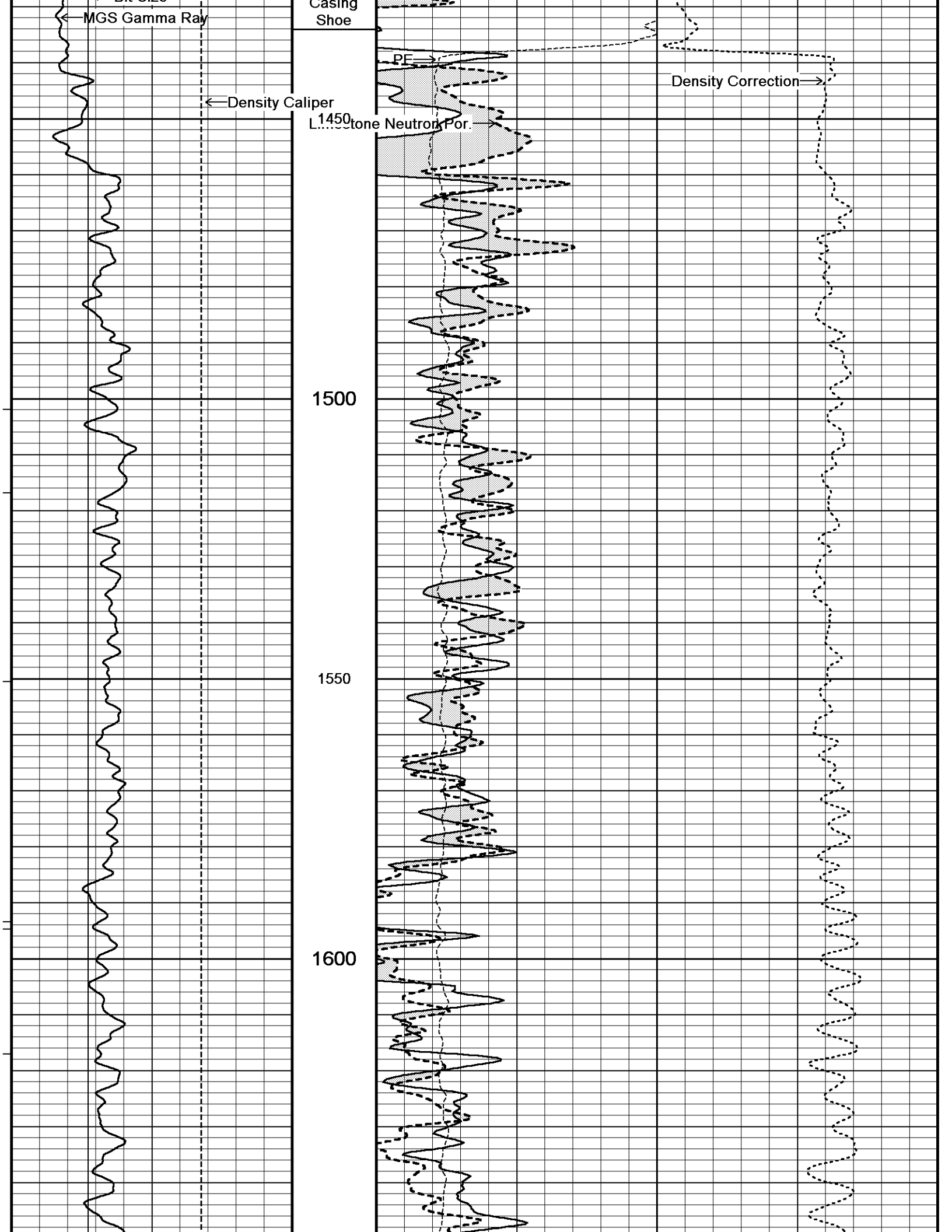
BOREHOLE RECORD					Last Edited: 27-FEB-2013 19:08
Bit Size inches		Depth From feet		Depth To feet	
8.750		1434.00		6236.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
INTERMED	12.750	0.00	1434.00	42.00	

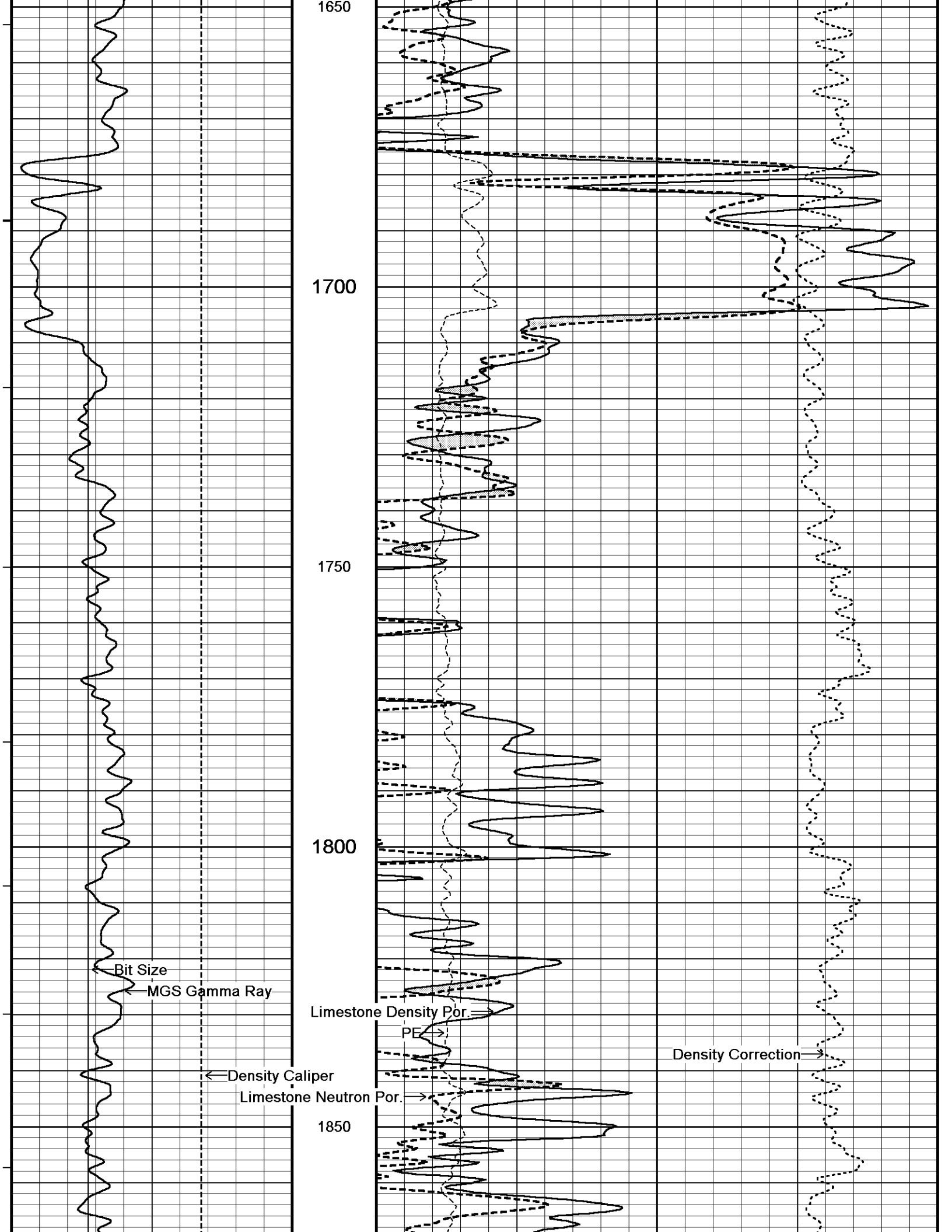
REMARKS
WLS SOFTWARE VERSION 13.03. USED. TOOLS RUN ON DRILLPIPE USING COMPACT WELL SHUTTLE DEPLOYMENT TECHNIQUE. DEPTH MEASURED USING ADVANTAGE RIG DEPTH CORRECTED TO PIPE TALLY. TOOLS DEPLOYED WITH MULE SHOE SITTING AT 6135 FT. AFTER DEPLOYMENT LOGGING TOOL WAS AT 6216 FT. 7" PRODUCTION CASING USED TO CALCULATE ANNULAR HOLE VOLUMES. *CALIPER BROKEN DOWNHOLE-NO CEMENT VOLUMES AVAILABLE* OPERATORS: J. TURNER, R. ROLLANS RIG: LARIAT 3

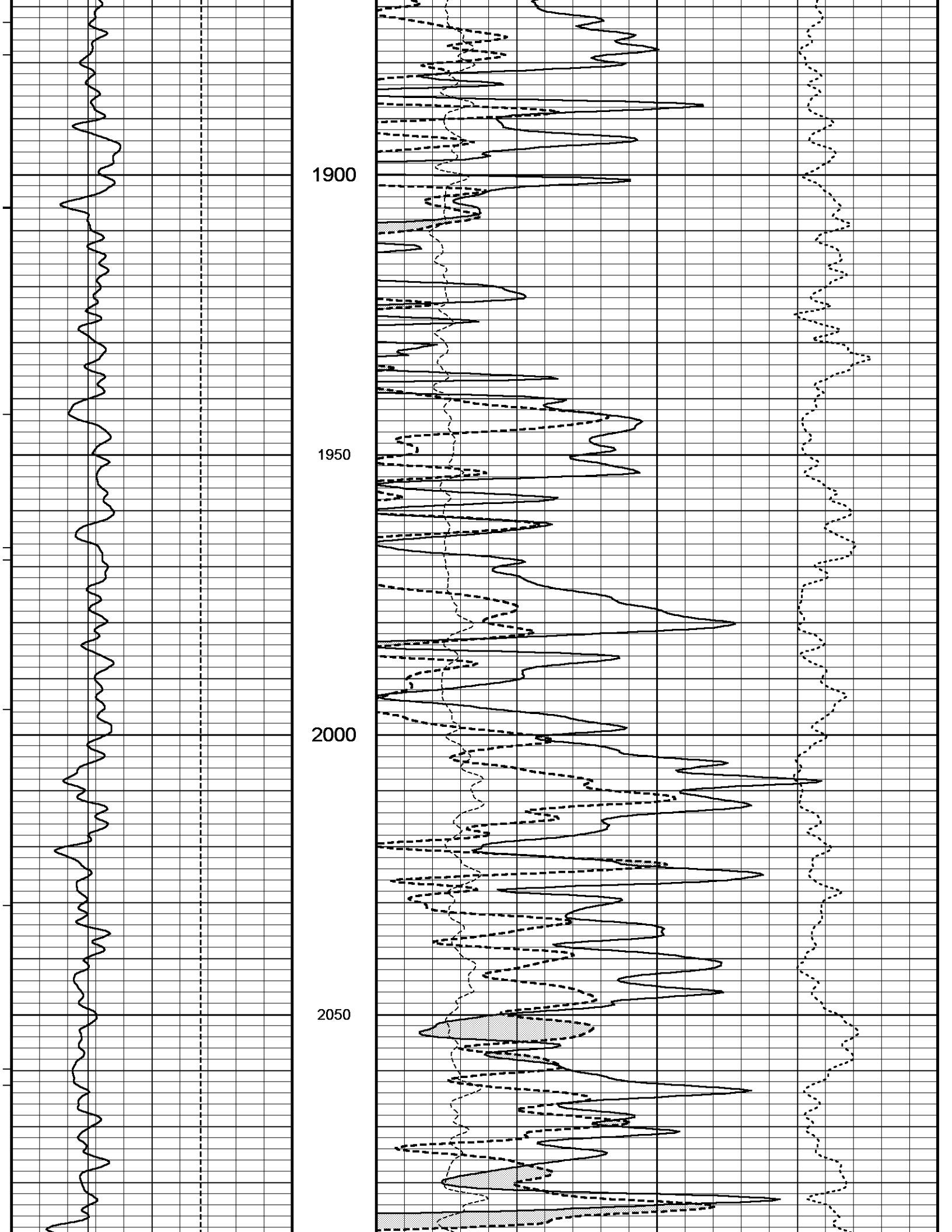
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for

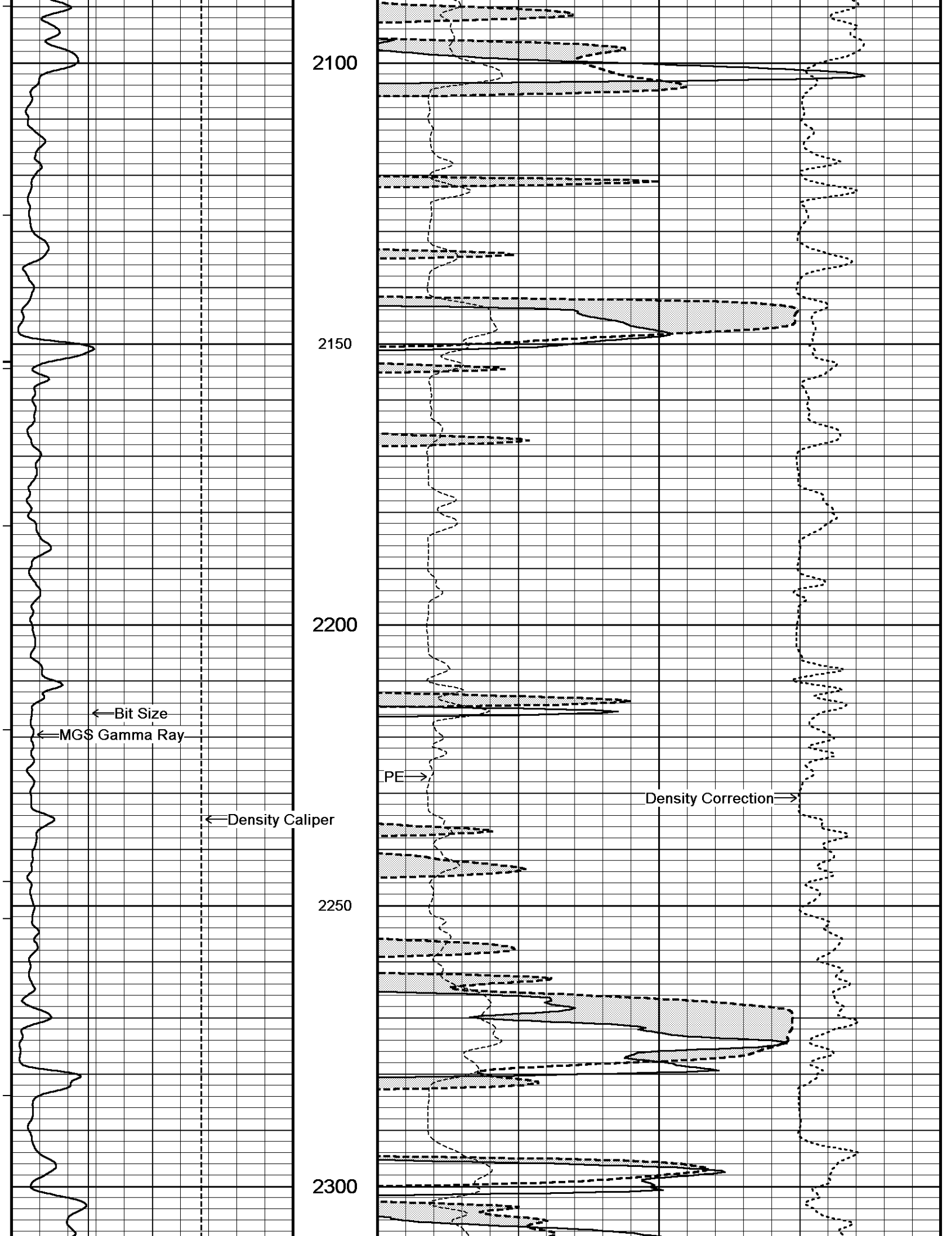
any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

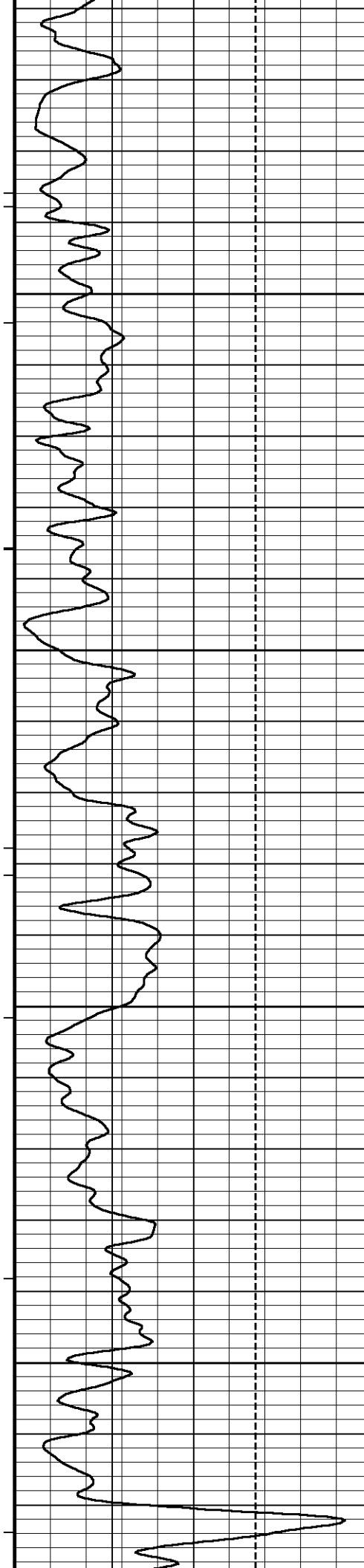










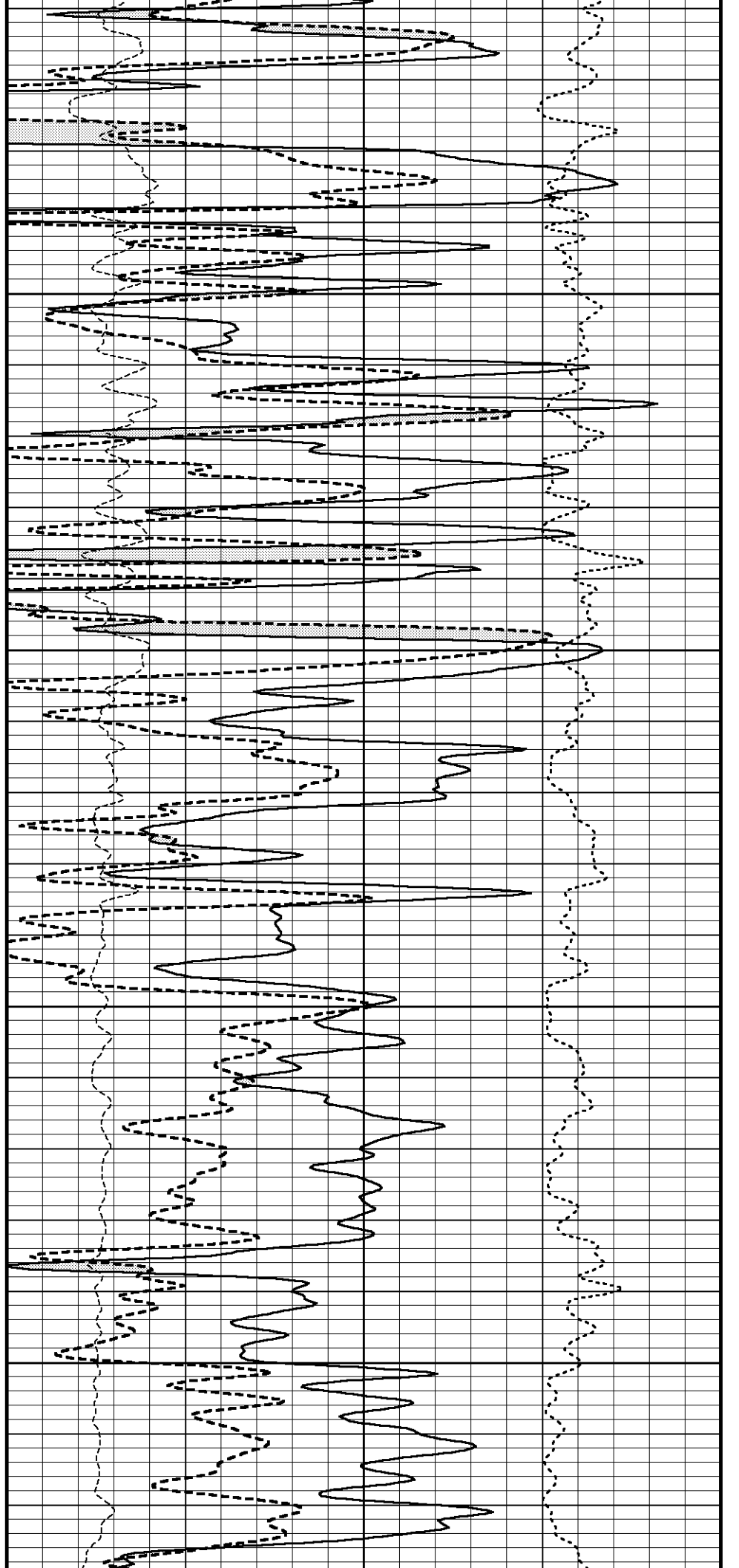


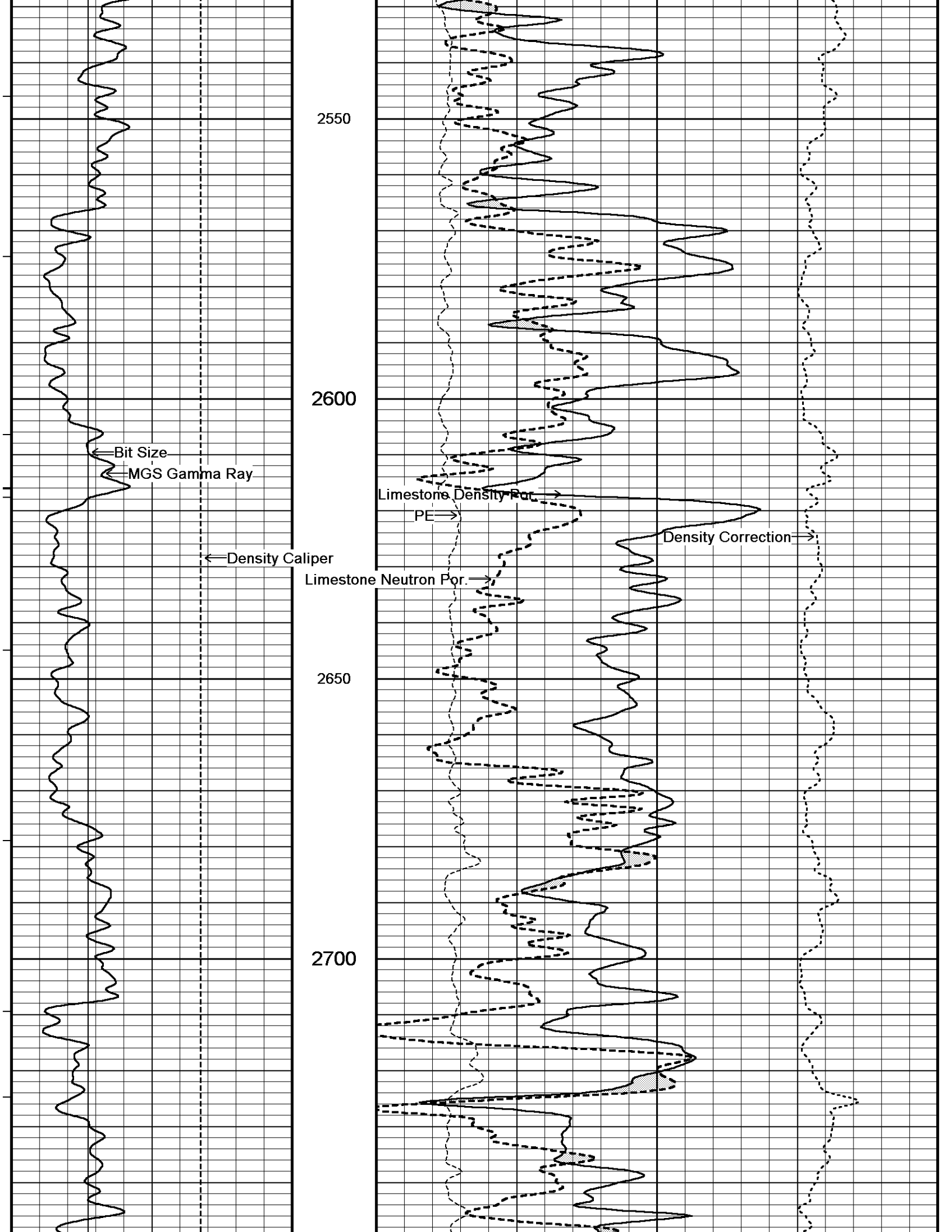
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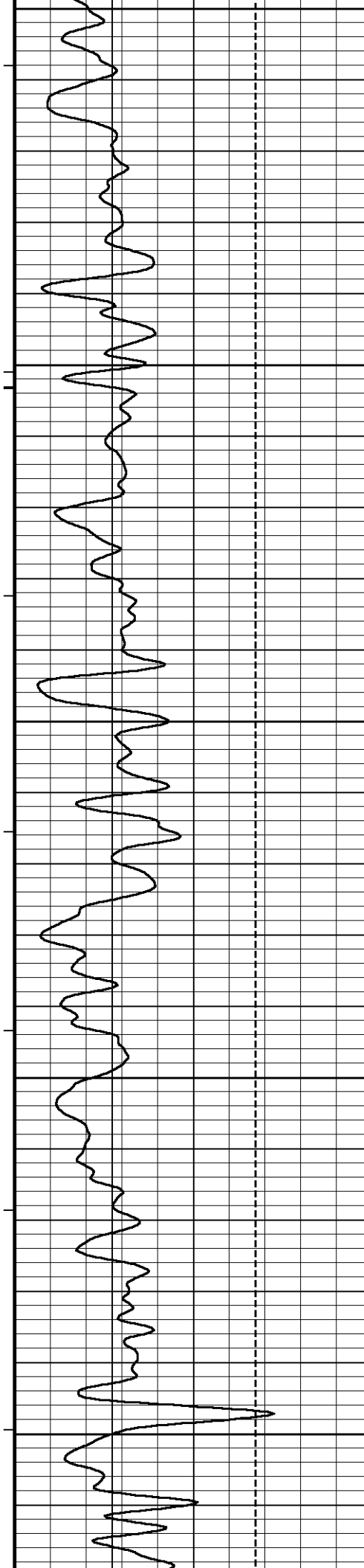
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2450

2500







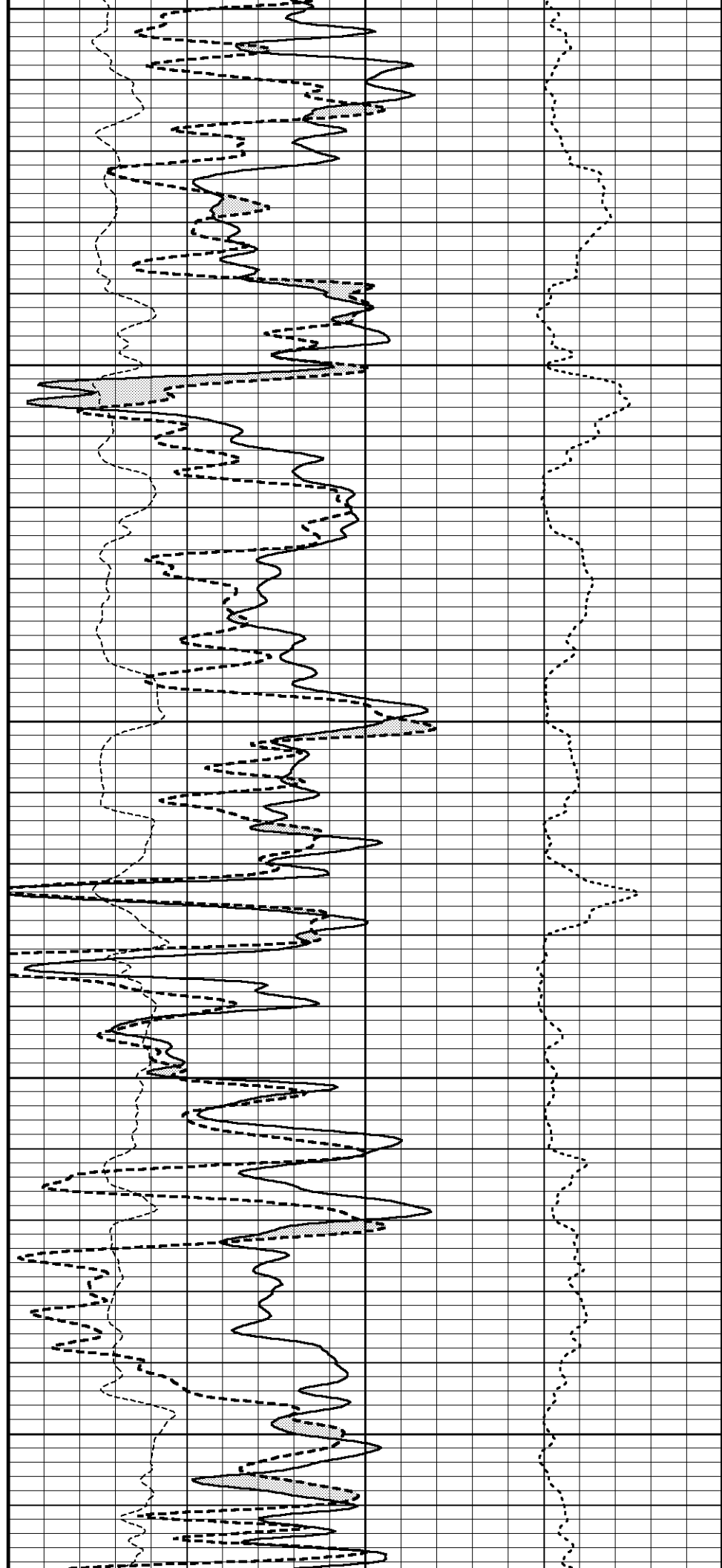
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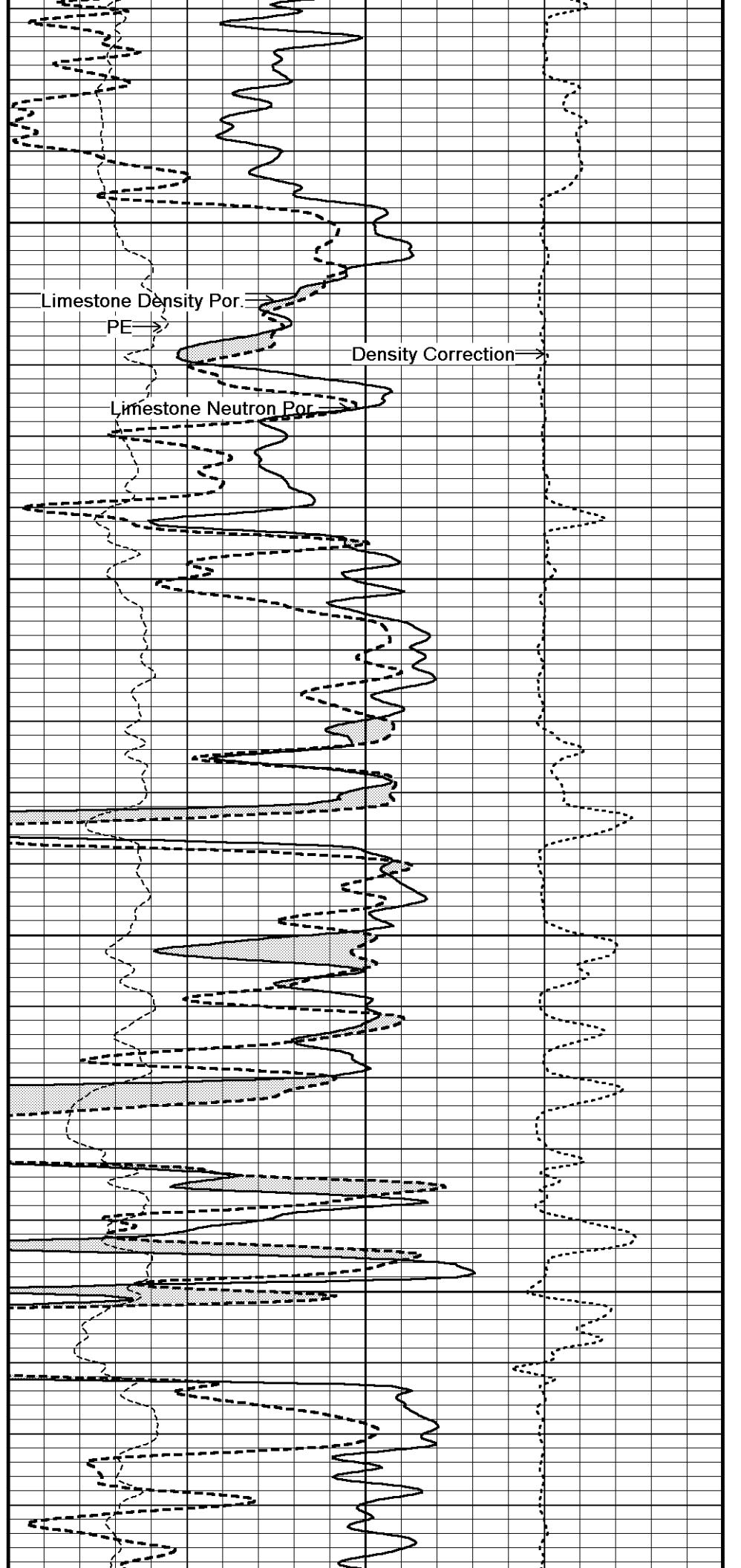
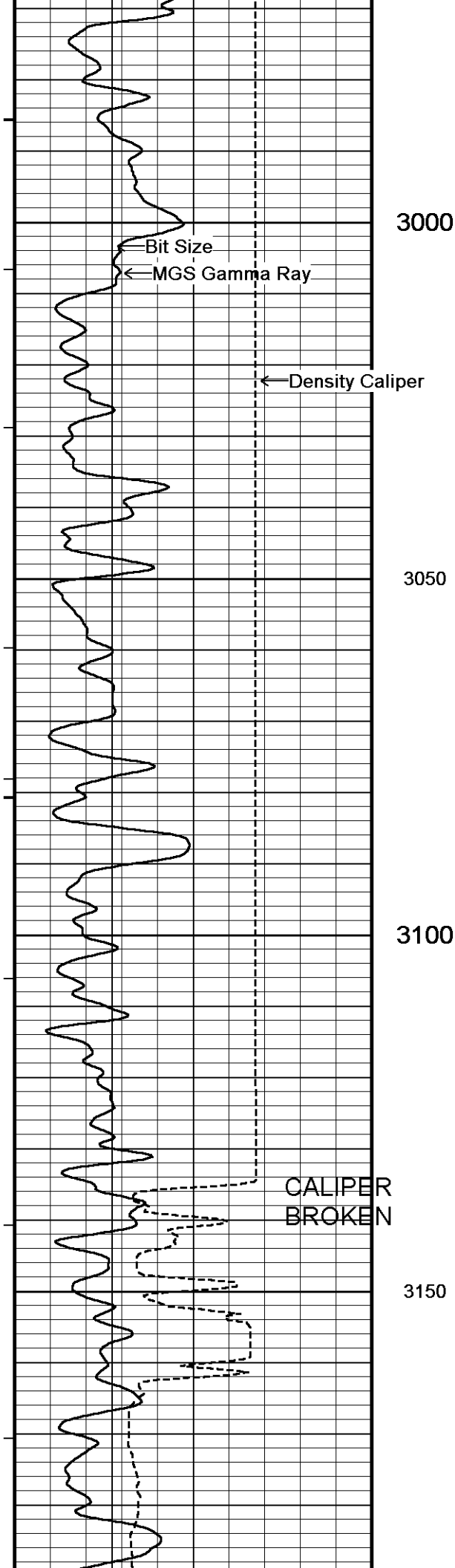
2800

2850

2900

2950





3200

3250

3300

3350

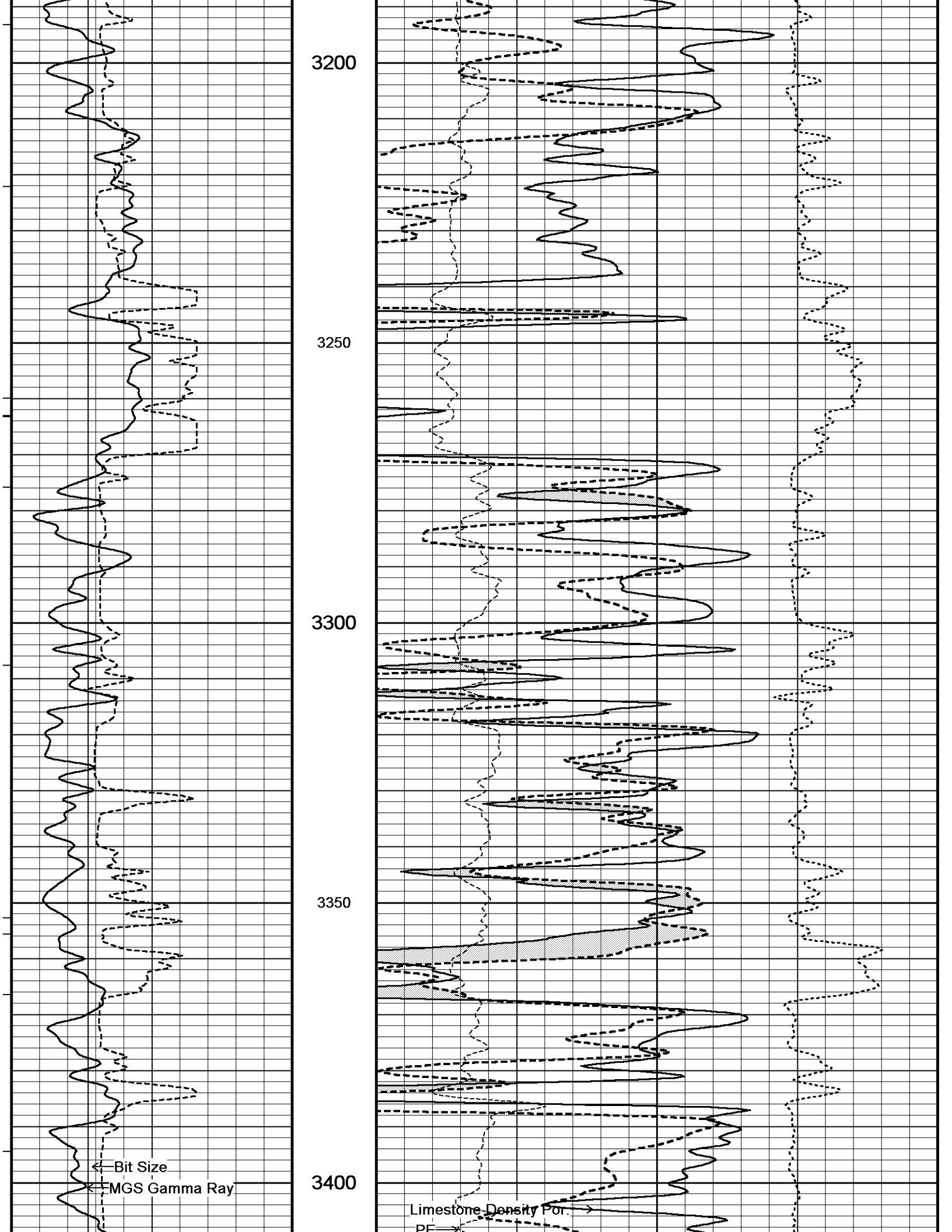
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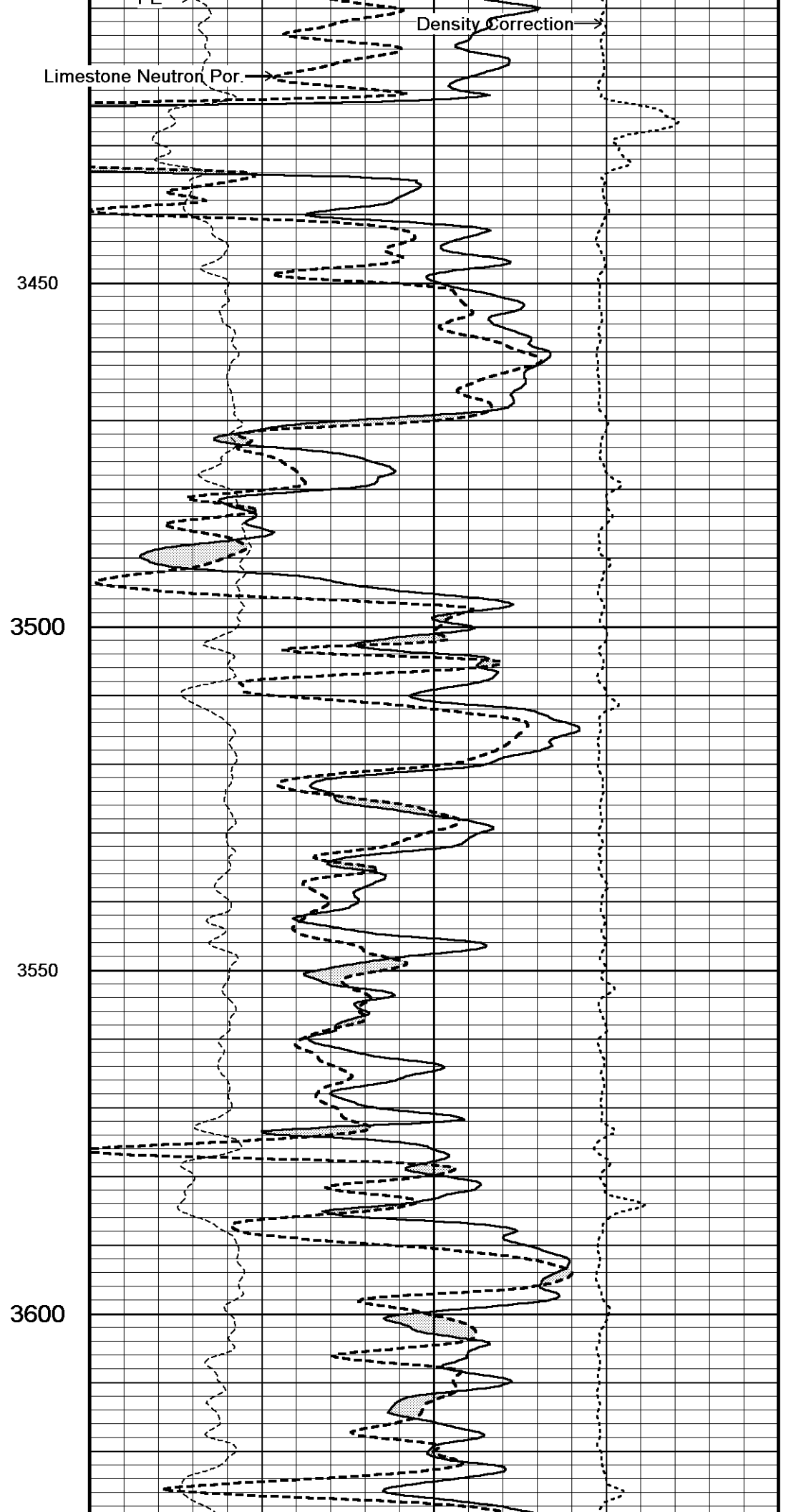
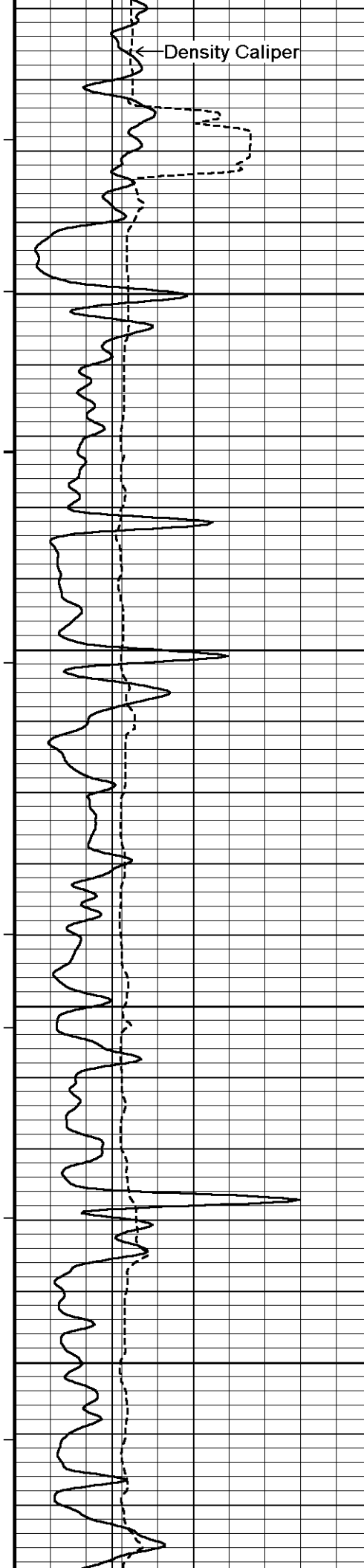
← Bit Size

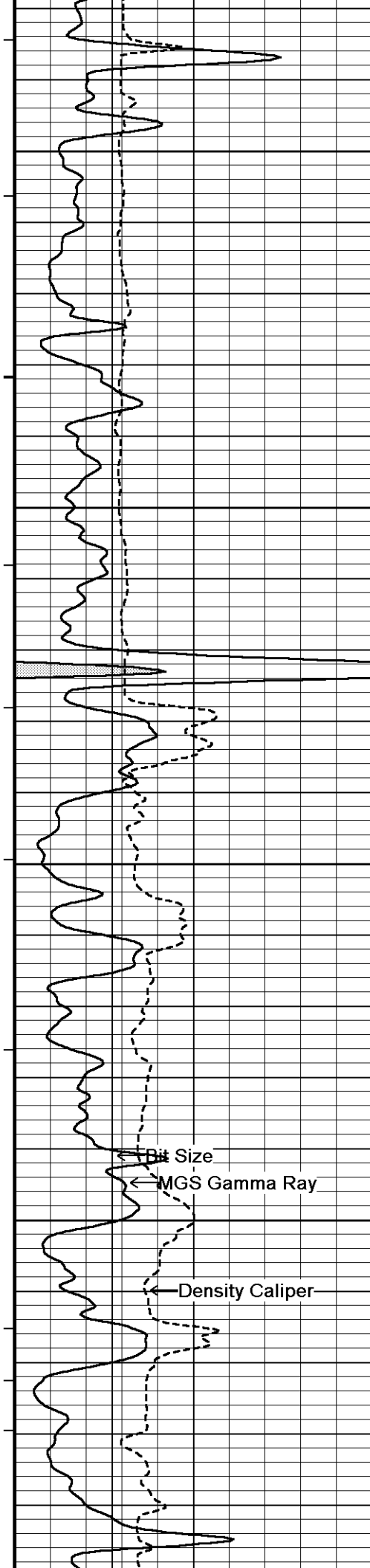
← MGS Gamma Ray

Limestone Density Por. →

PF →





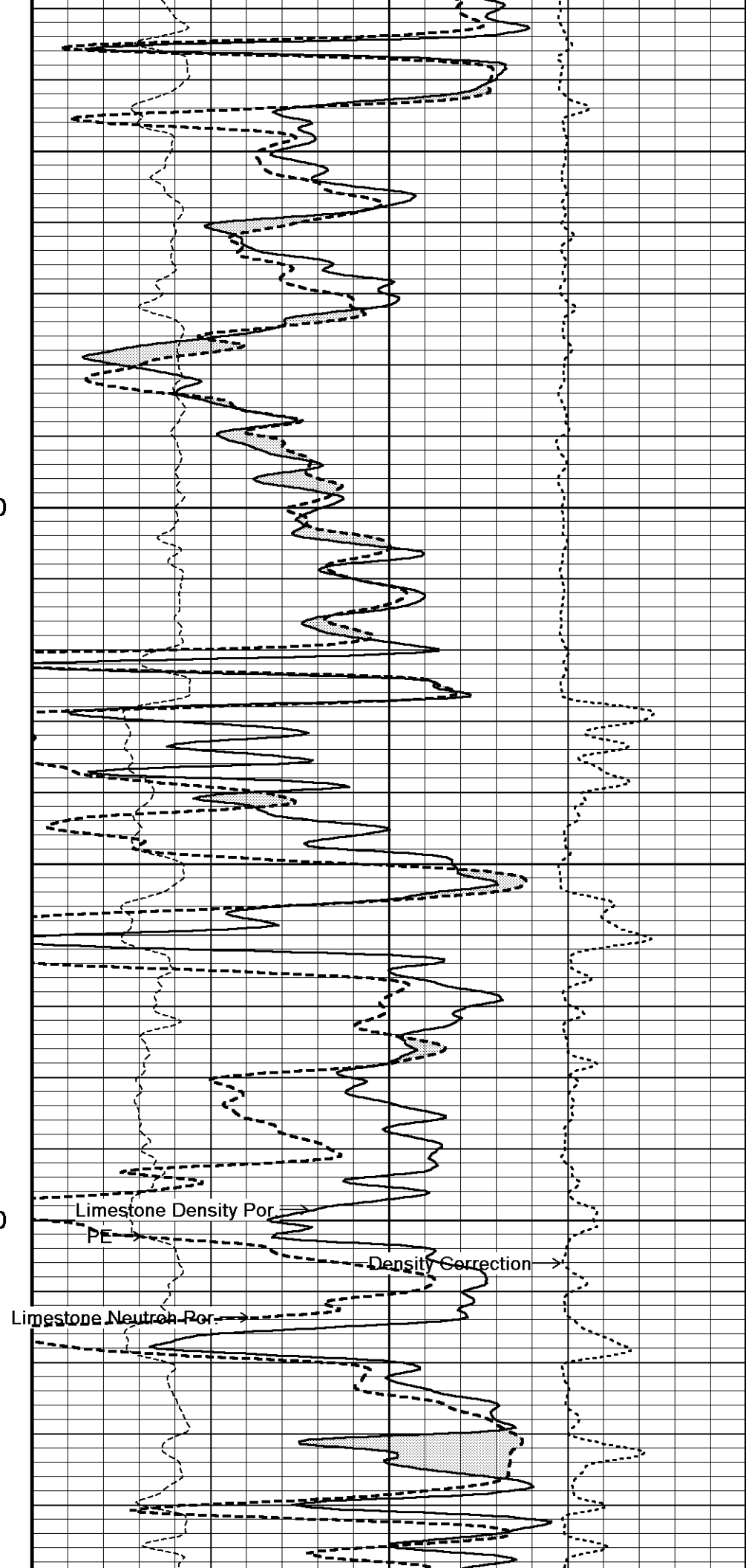


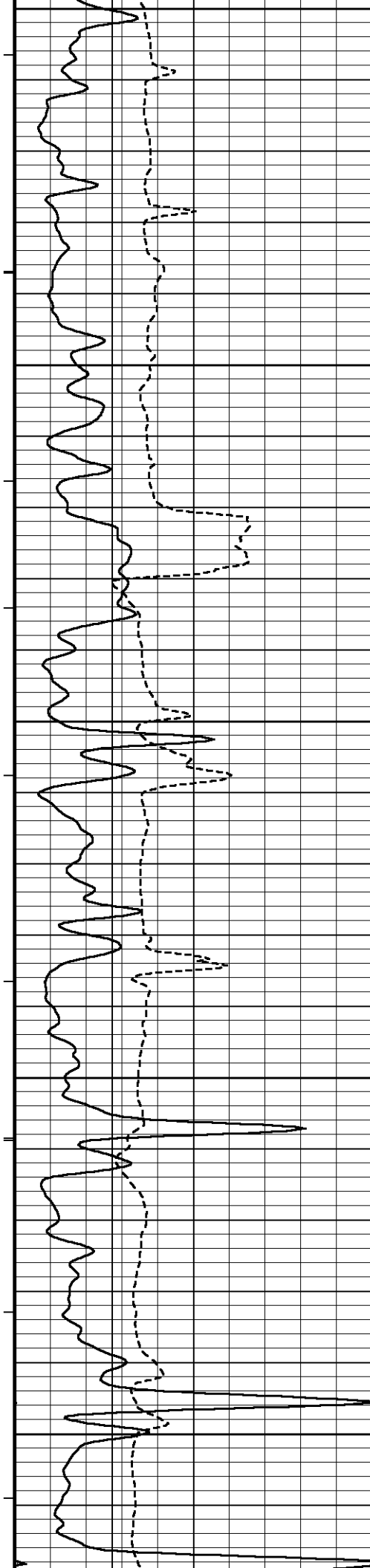
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3700

3750

3800





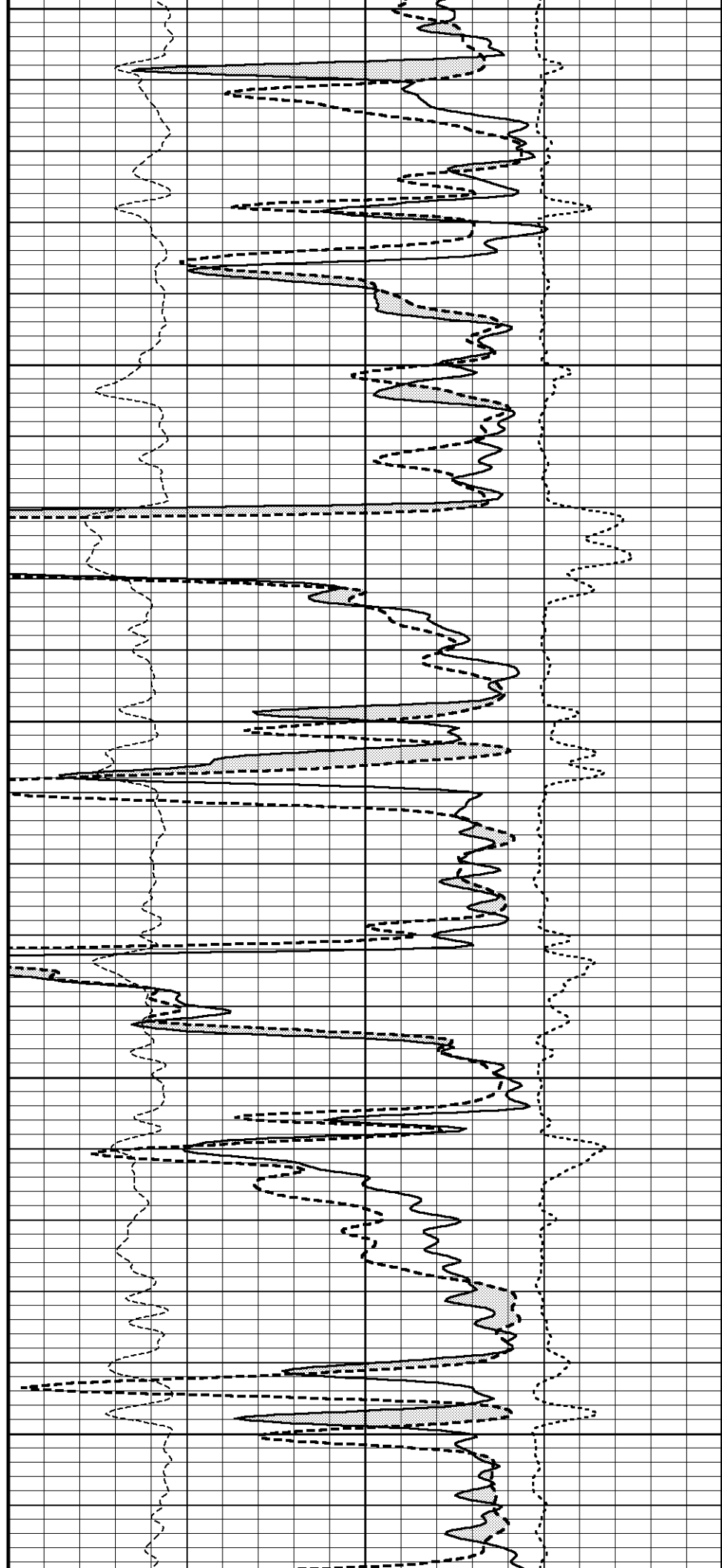
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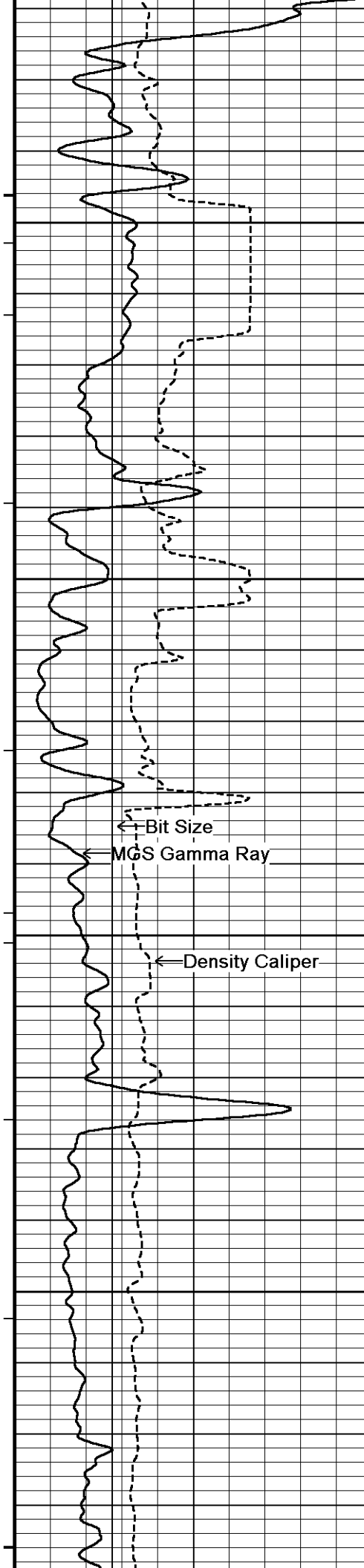
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3950

4000

4050



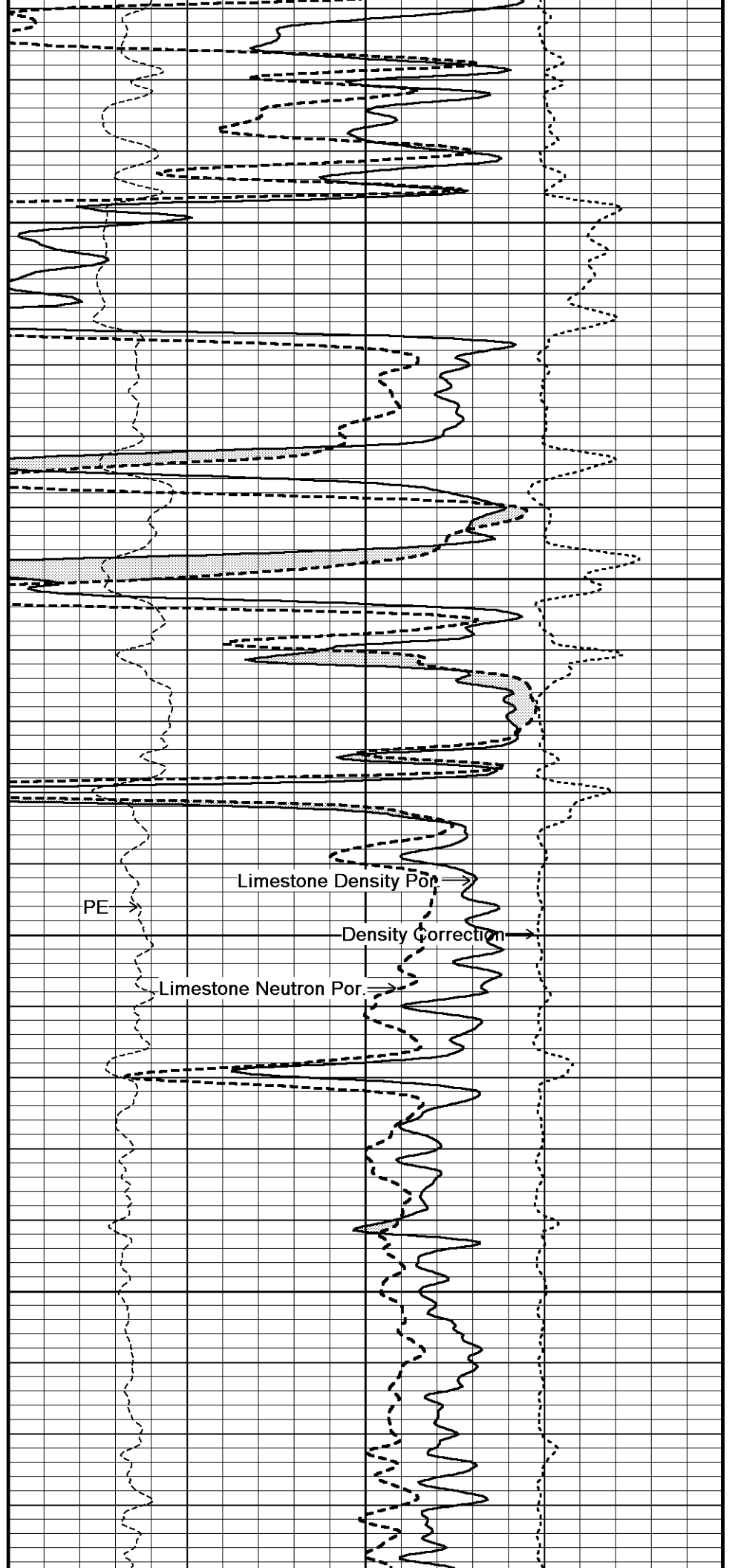


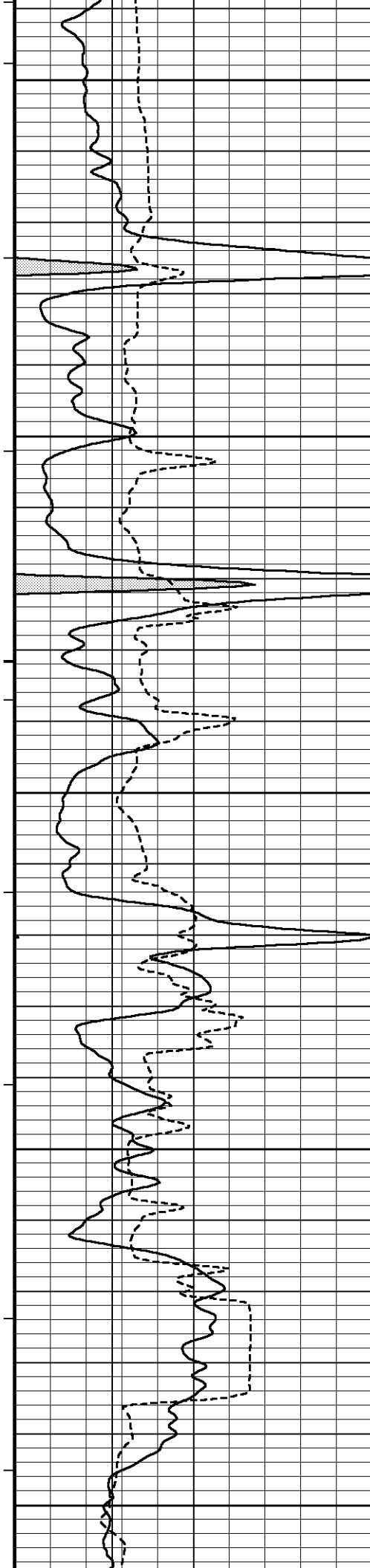
4100

4150

4200

4250





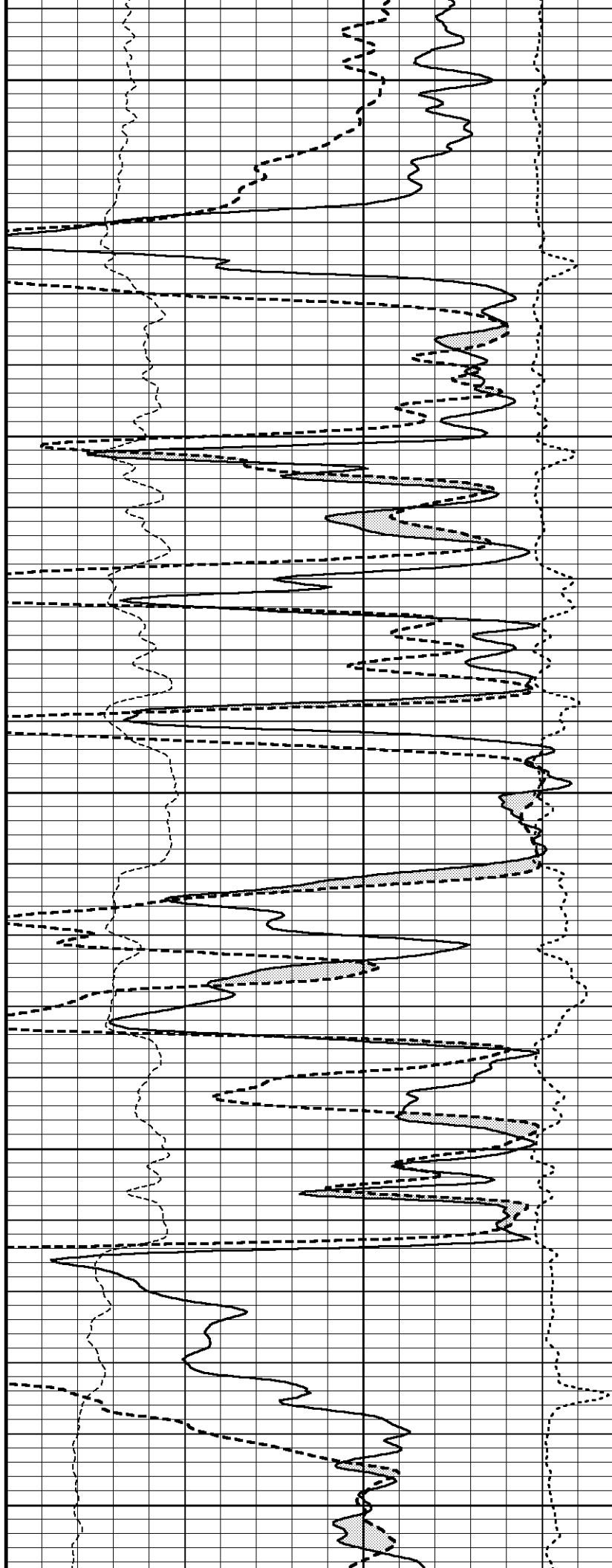
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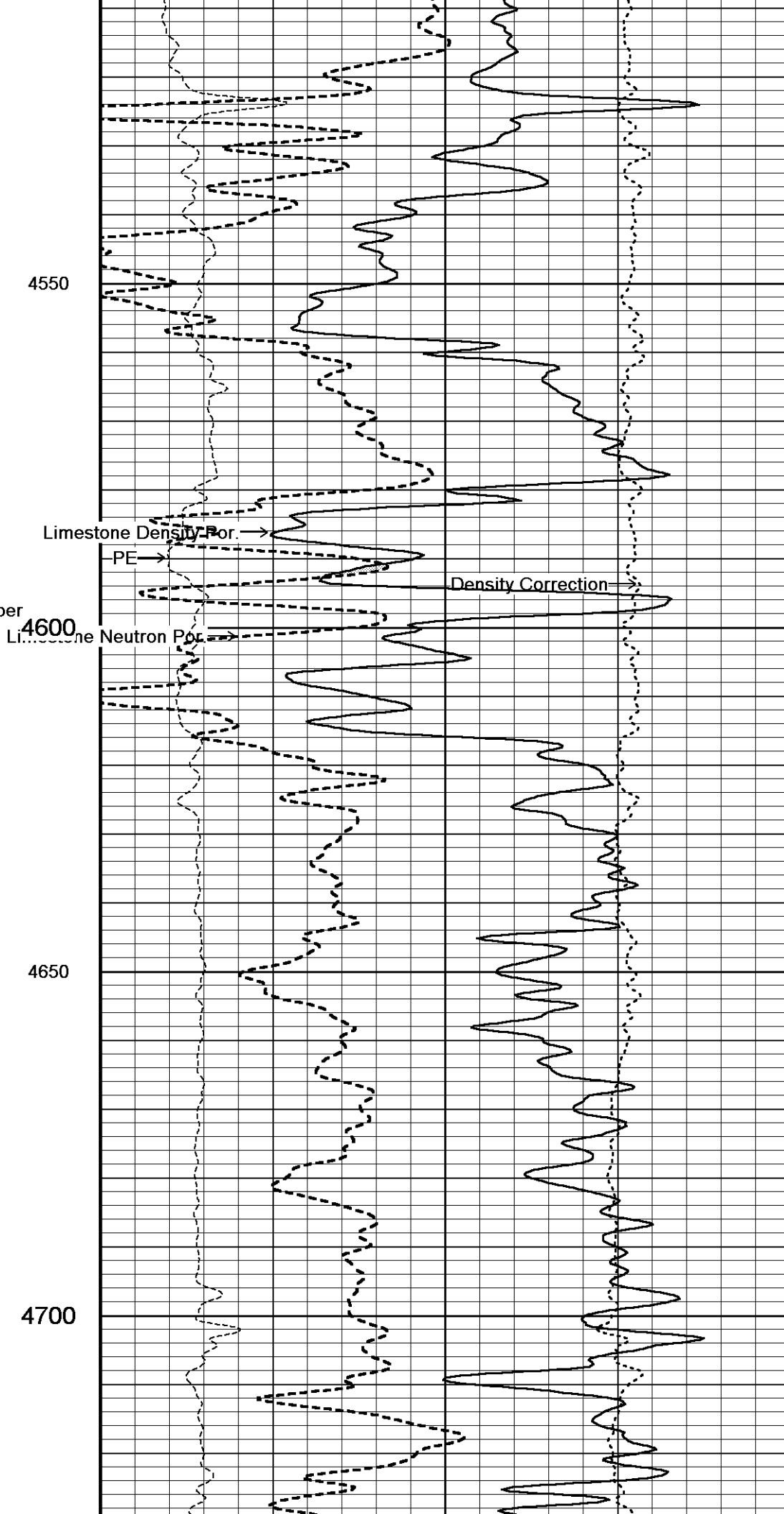
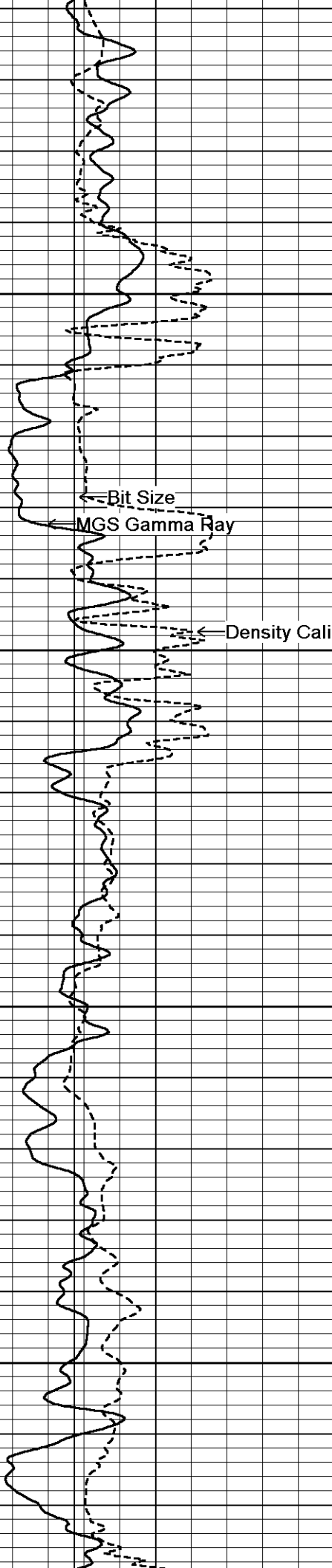
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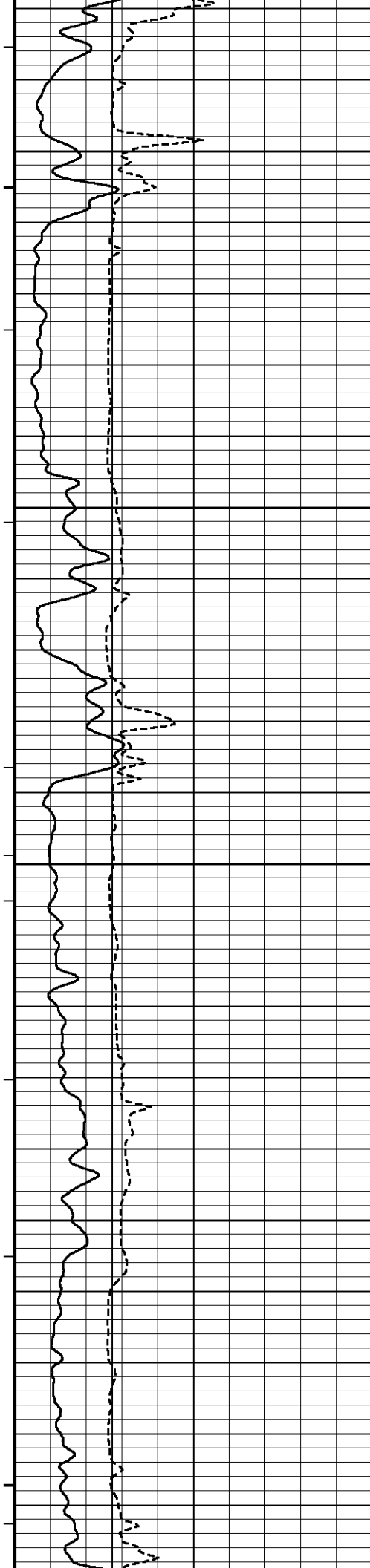
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4500





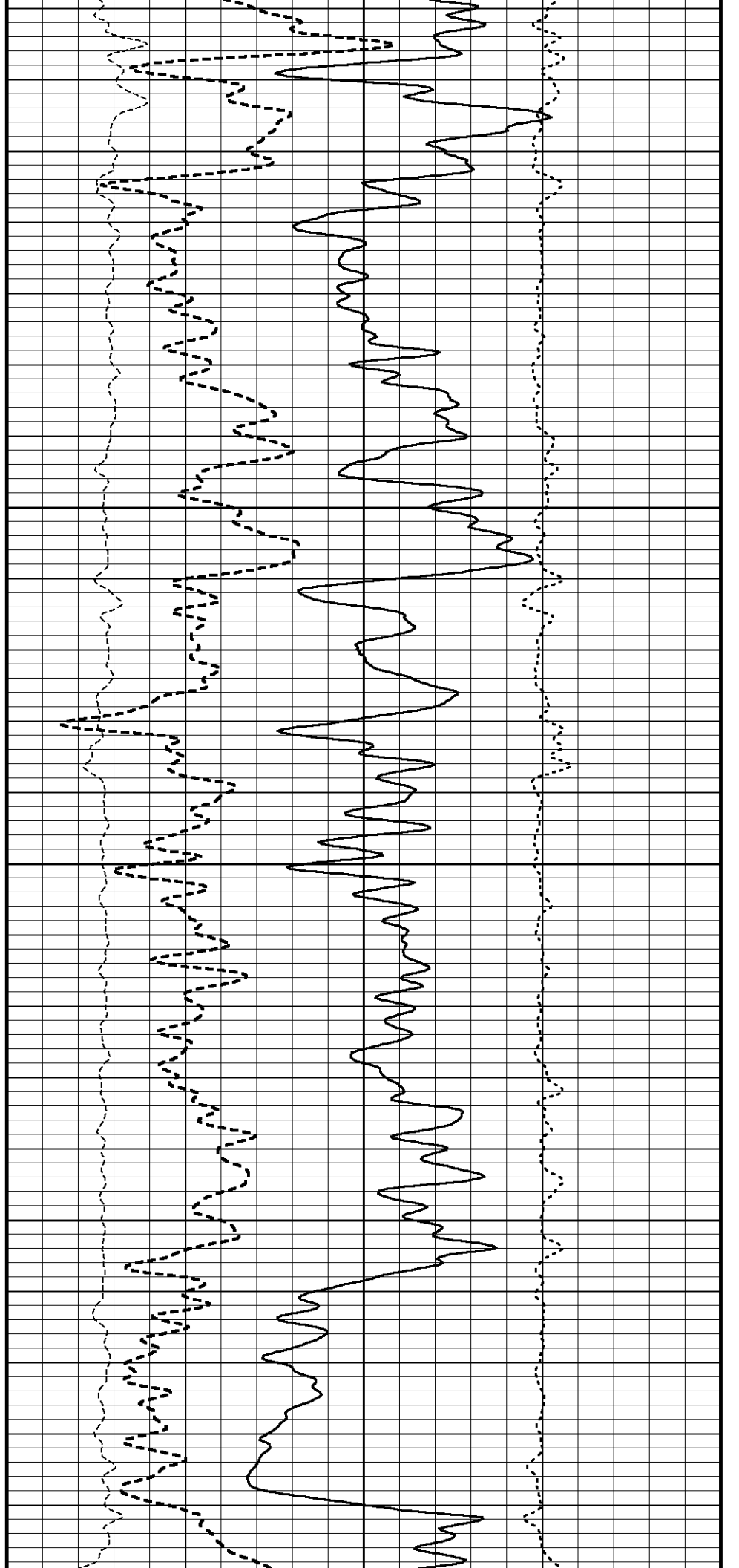


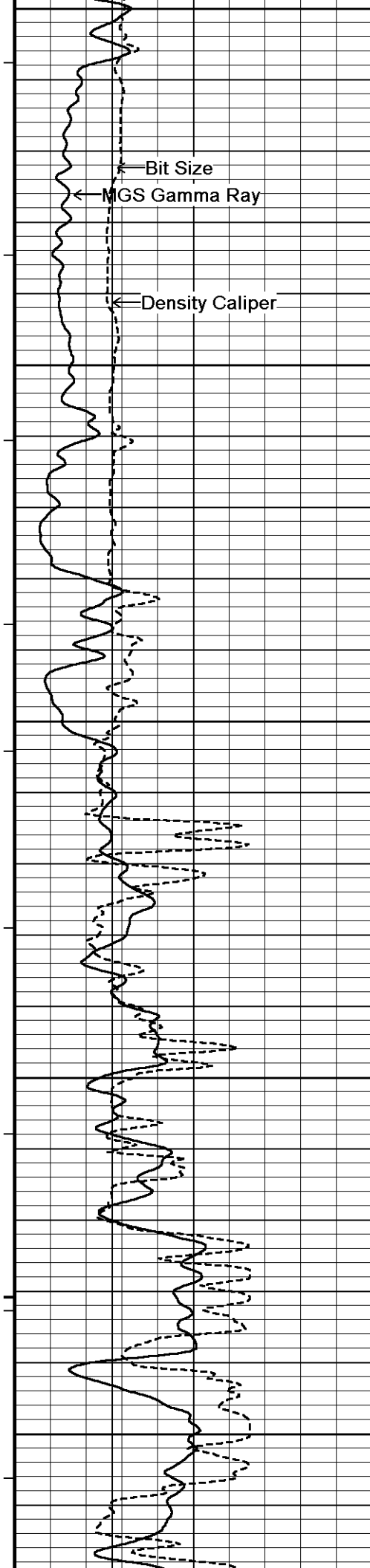
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4800

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4900





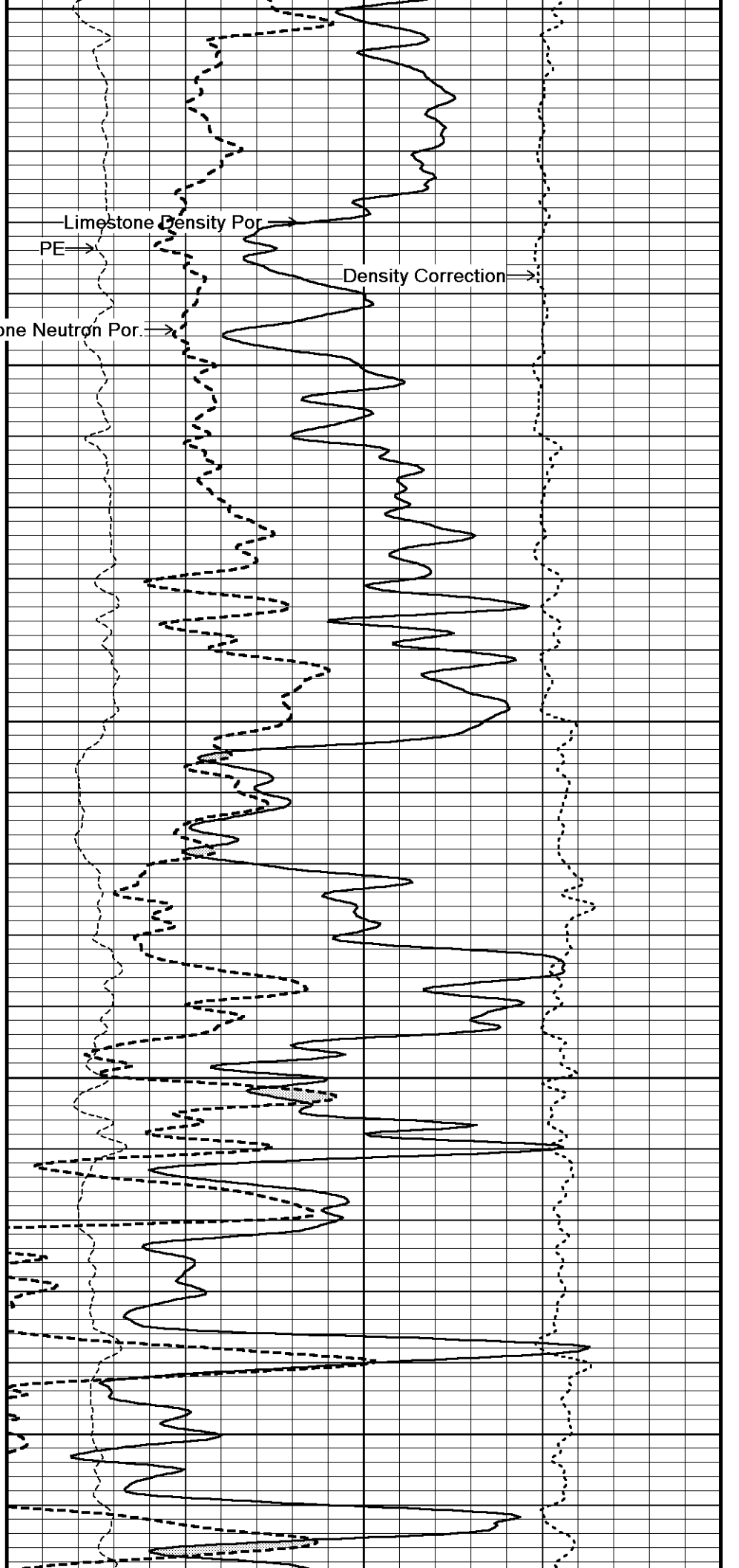
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5000

5050

5100

5150

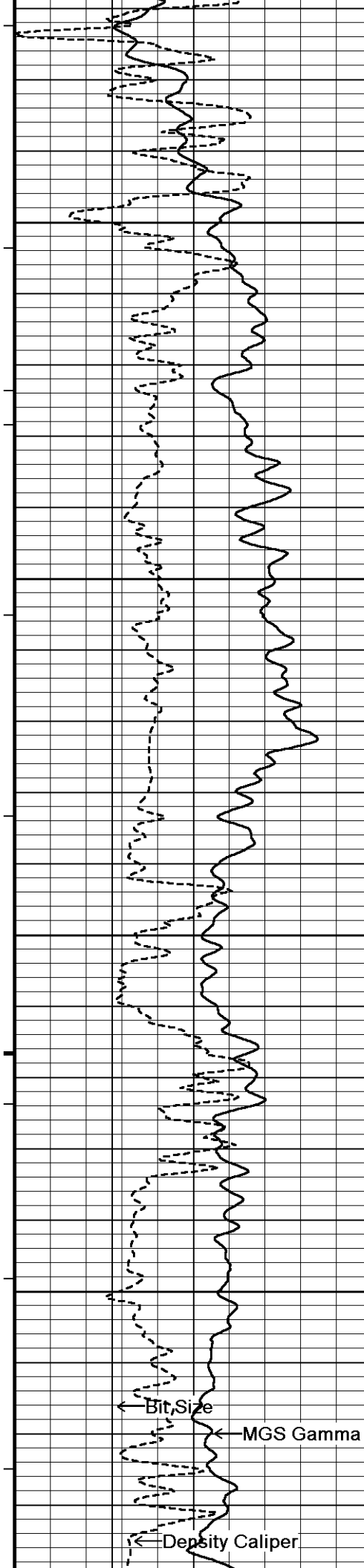


Limestone Density Por

PE

Limestone Neutron Por.

Density Correction



5200

5250

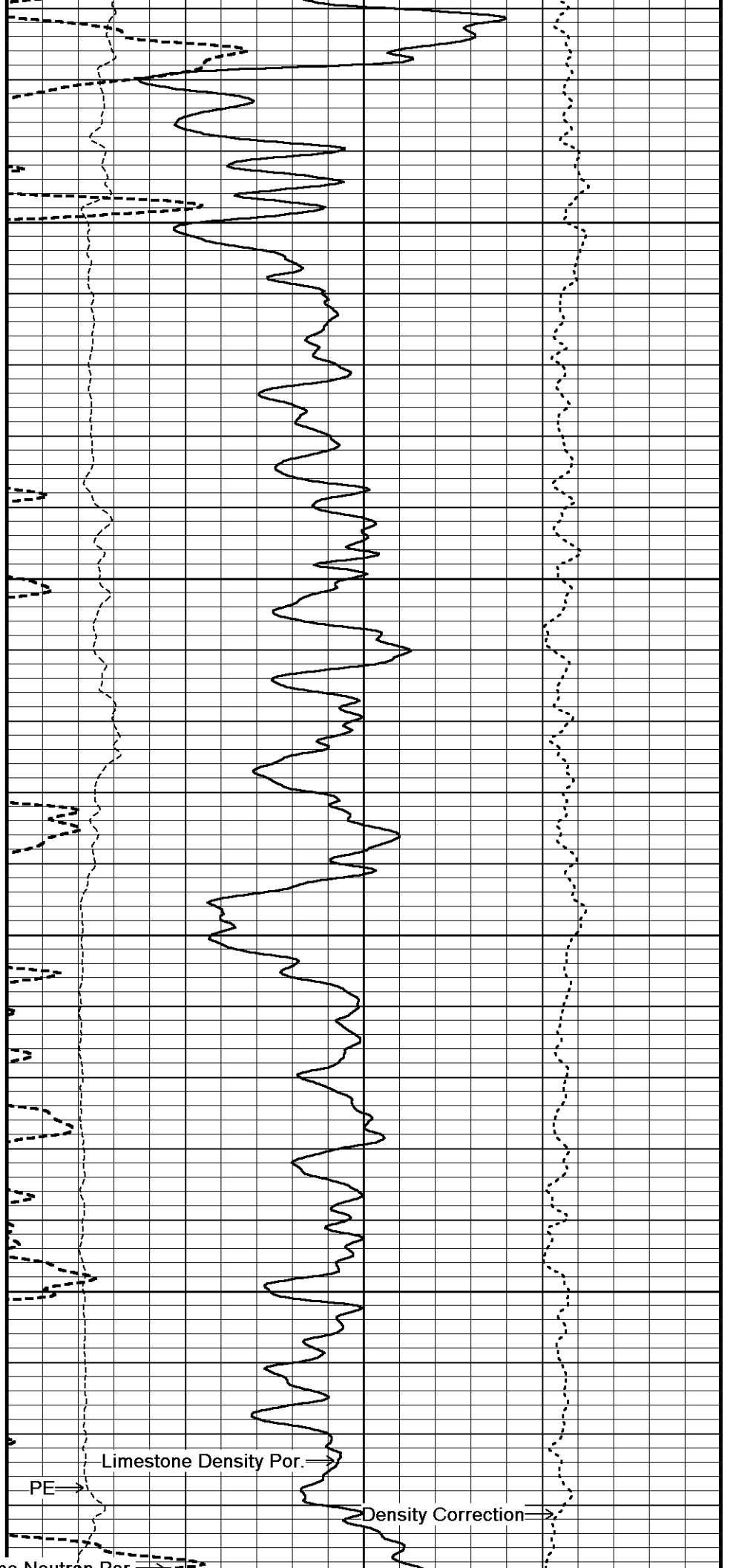
5300

5350

Bit Size

MGS Gamma Ray

Density Caliper



Limestone Density Por.

PE

Limestone Neutron Por.

Density Correction



Limestone Neogene

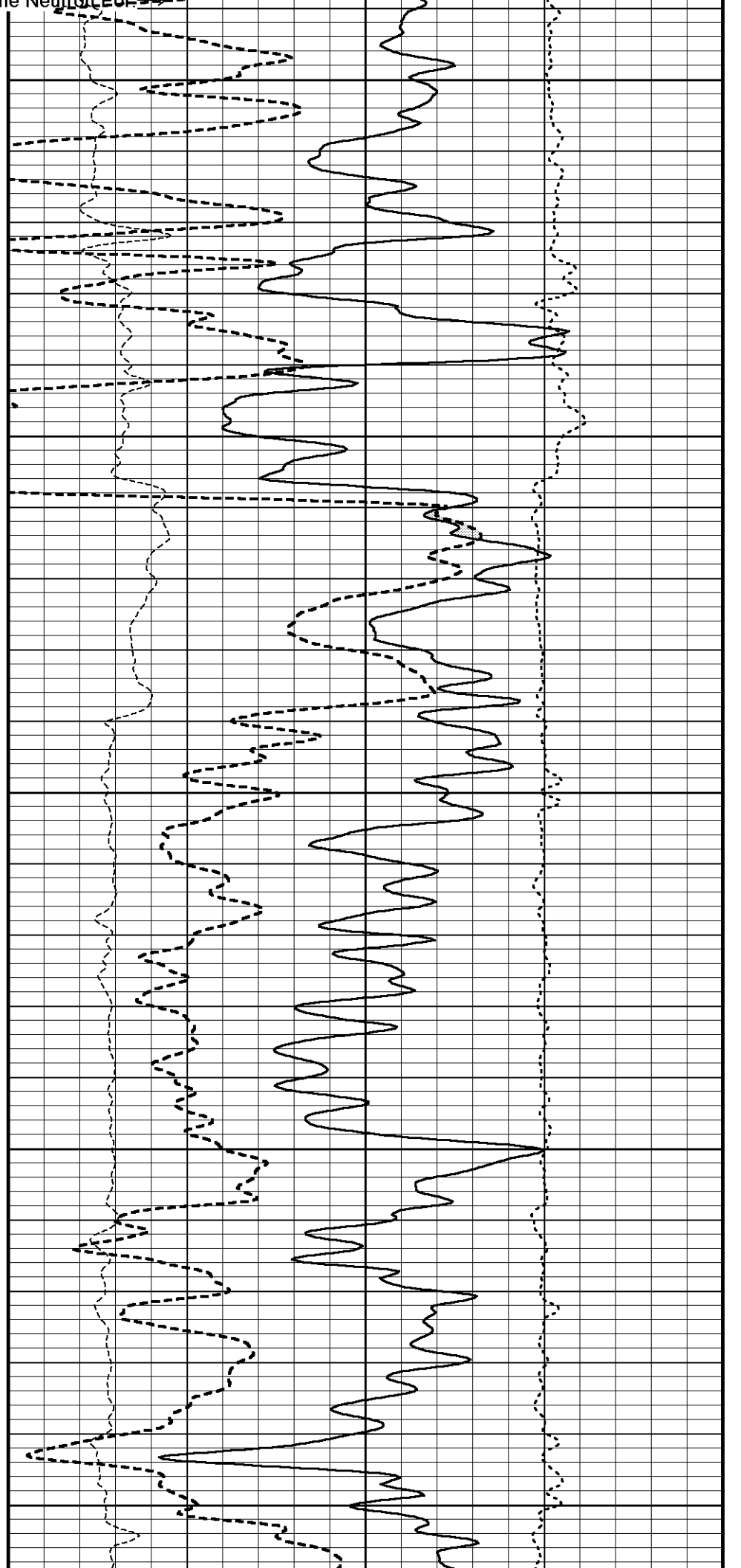
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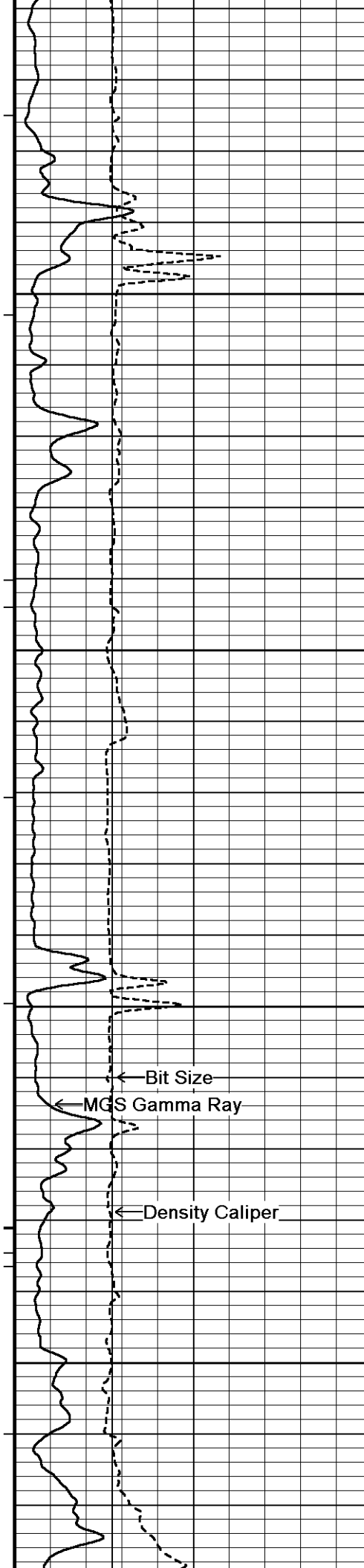
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5550

5600



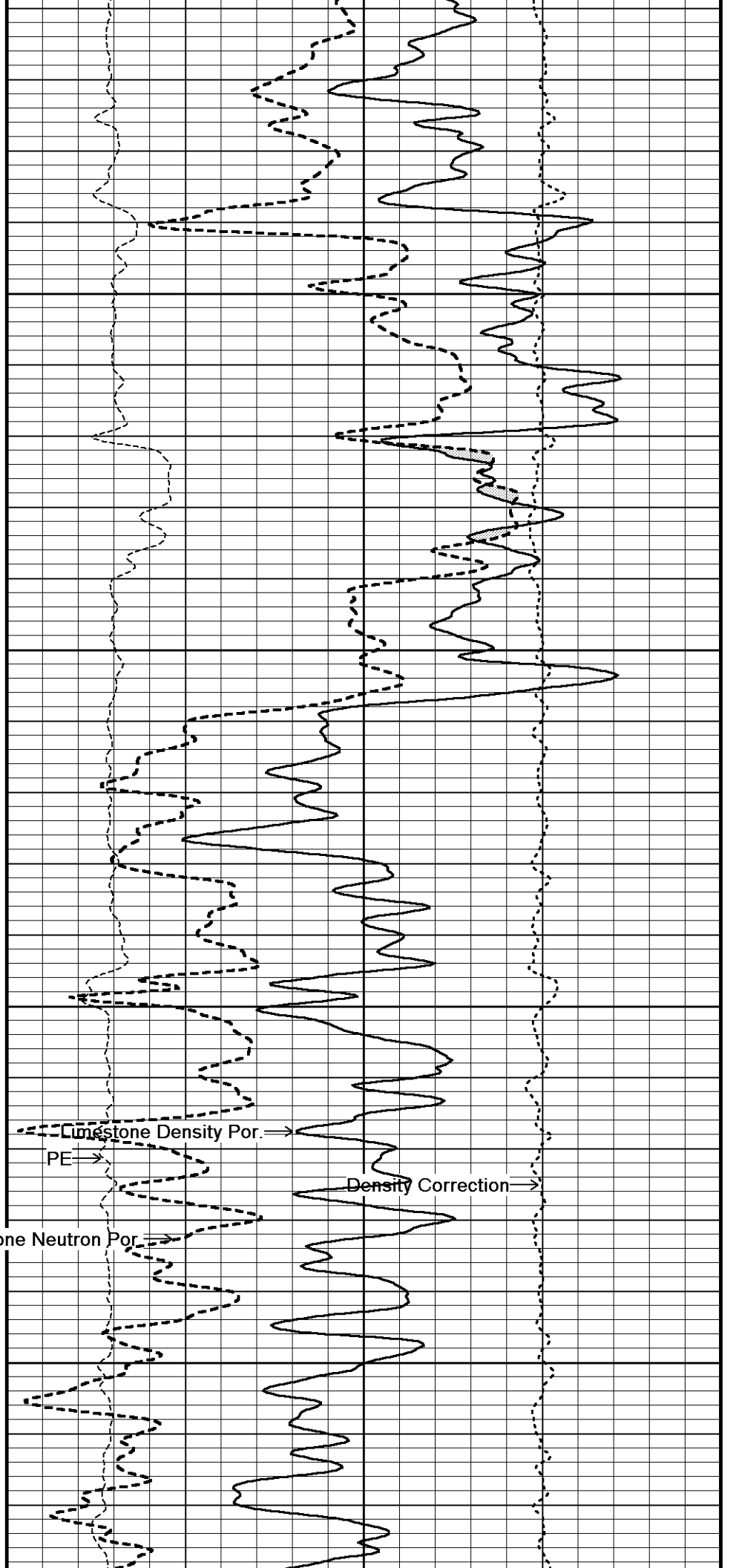


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5700

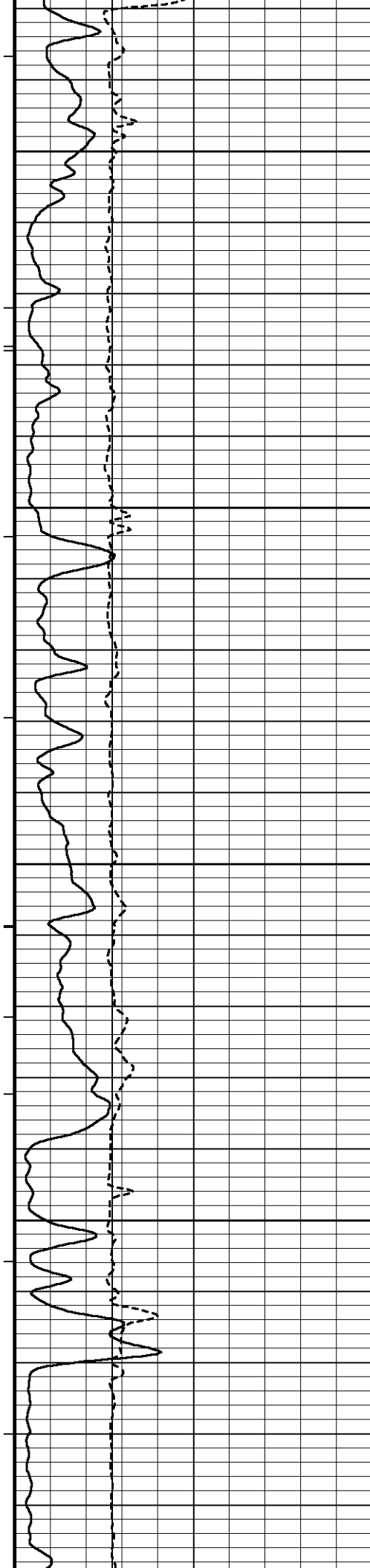
5750

5800



← Bit Size
← MGS Gamma Ray
← Density Caliper

Limestone Density Por. →
PE →
Limestone Neutron Por. →
Density Correction →

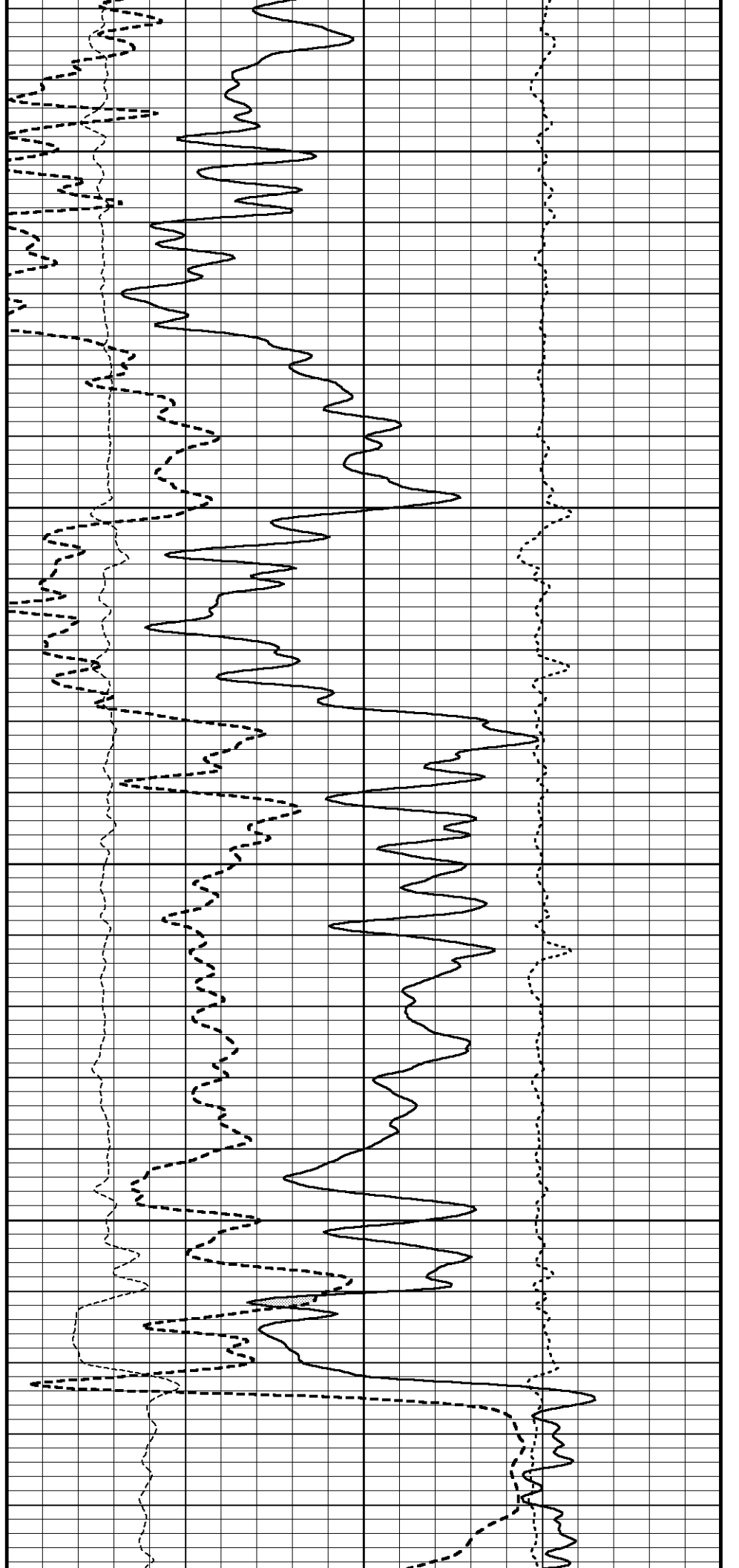


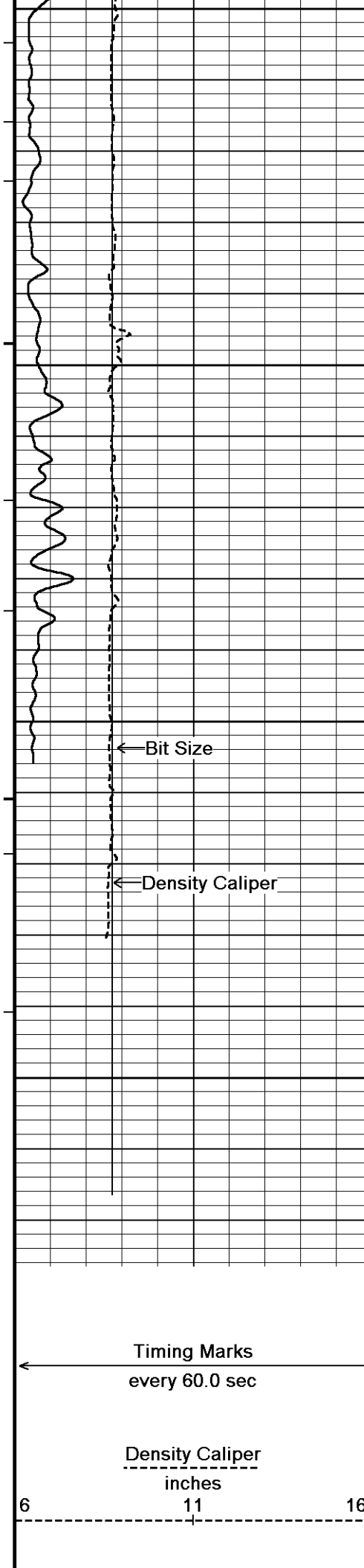
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5900

5950

6000





6050

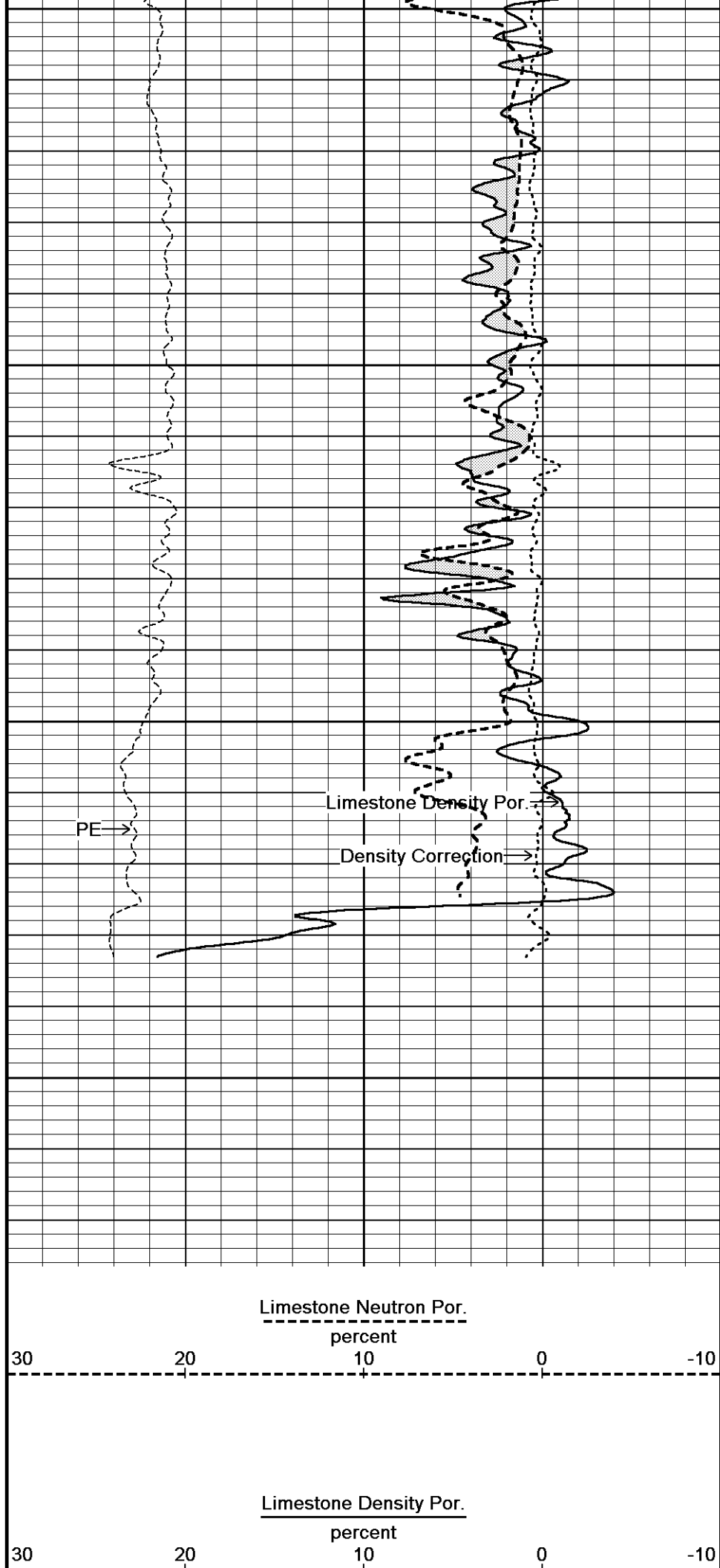
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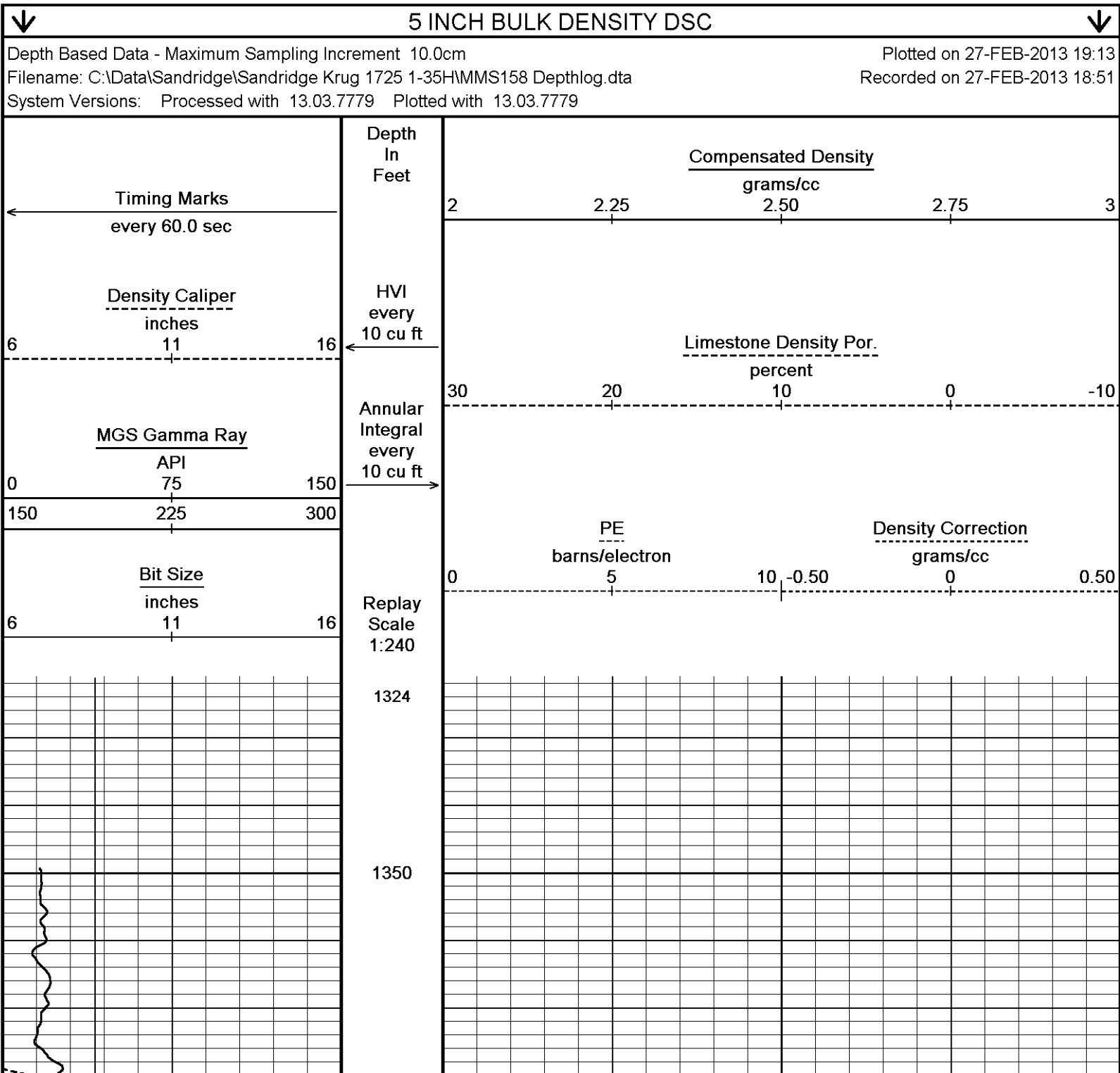
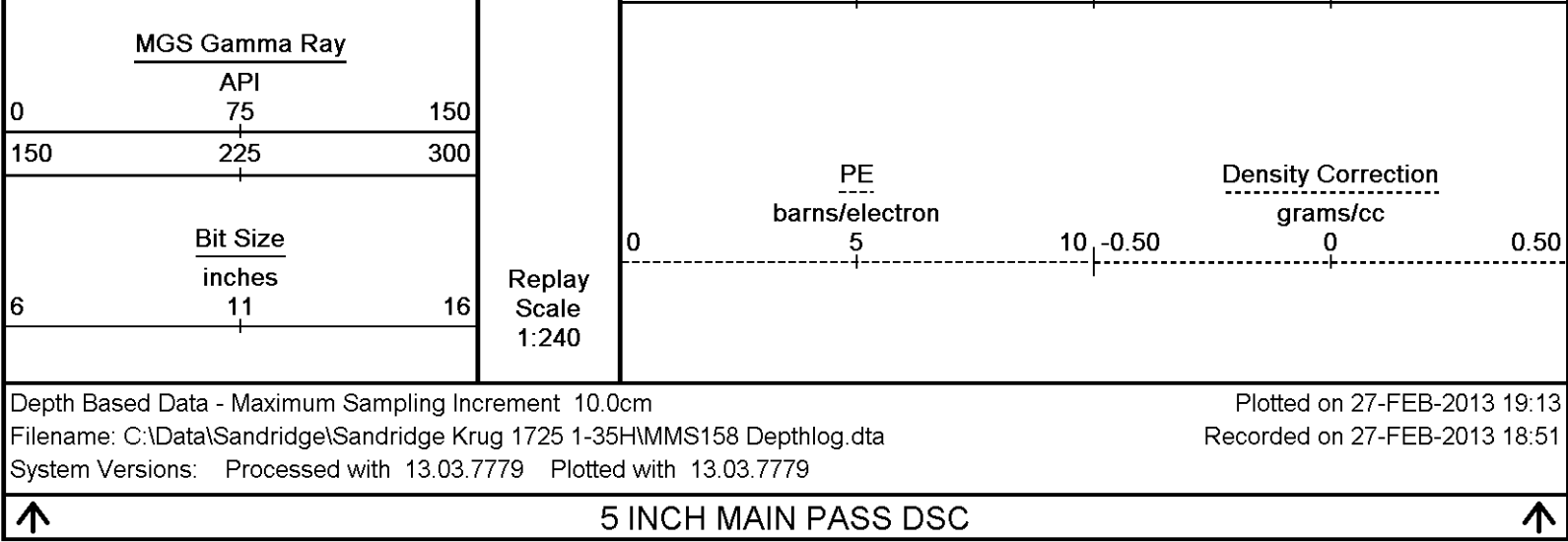
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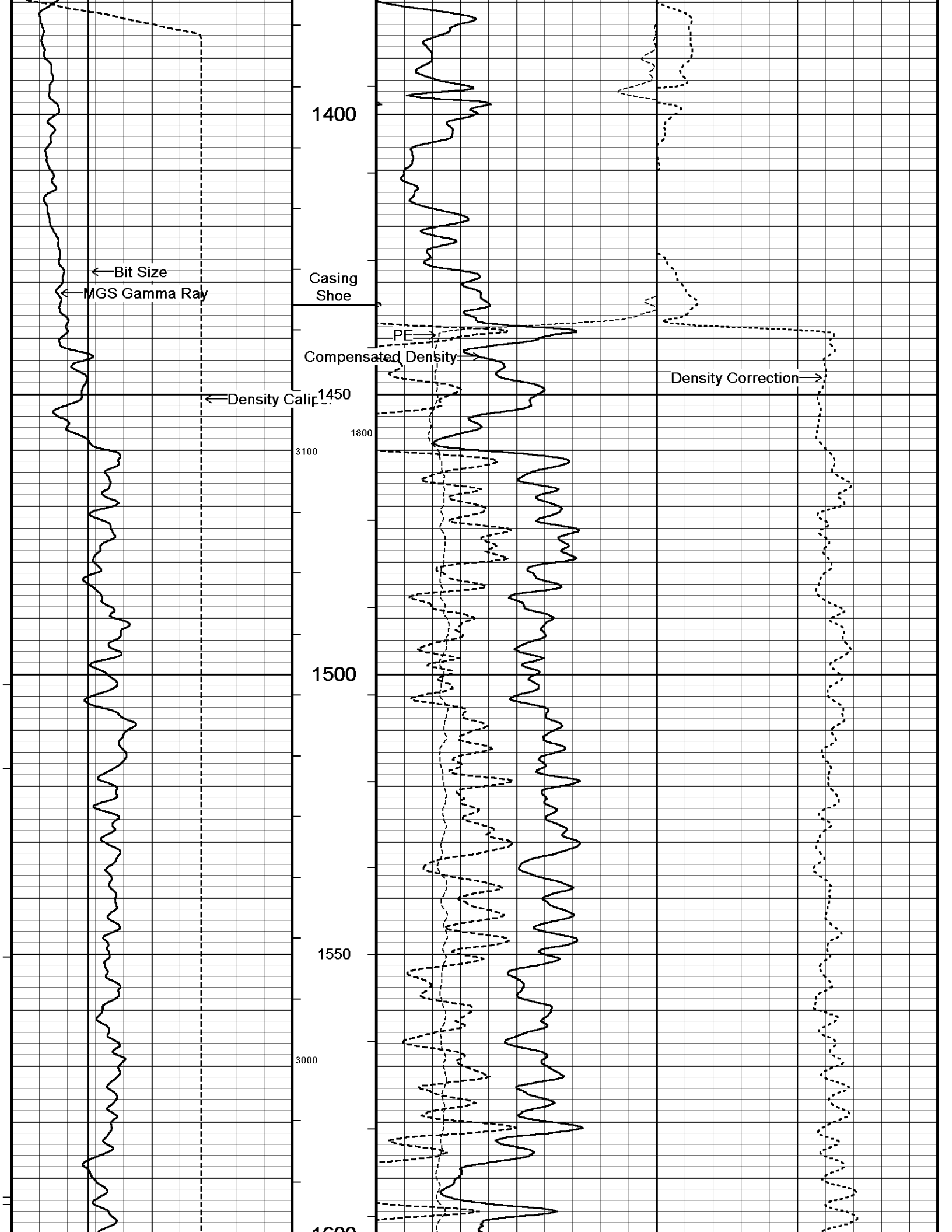
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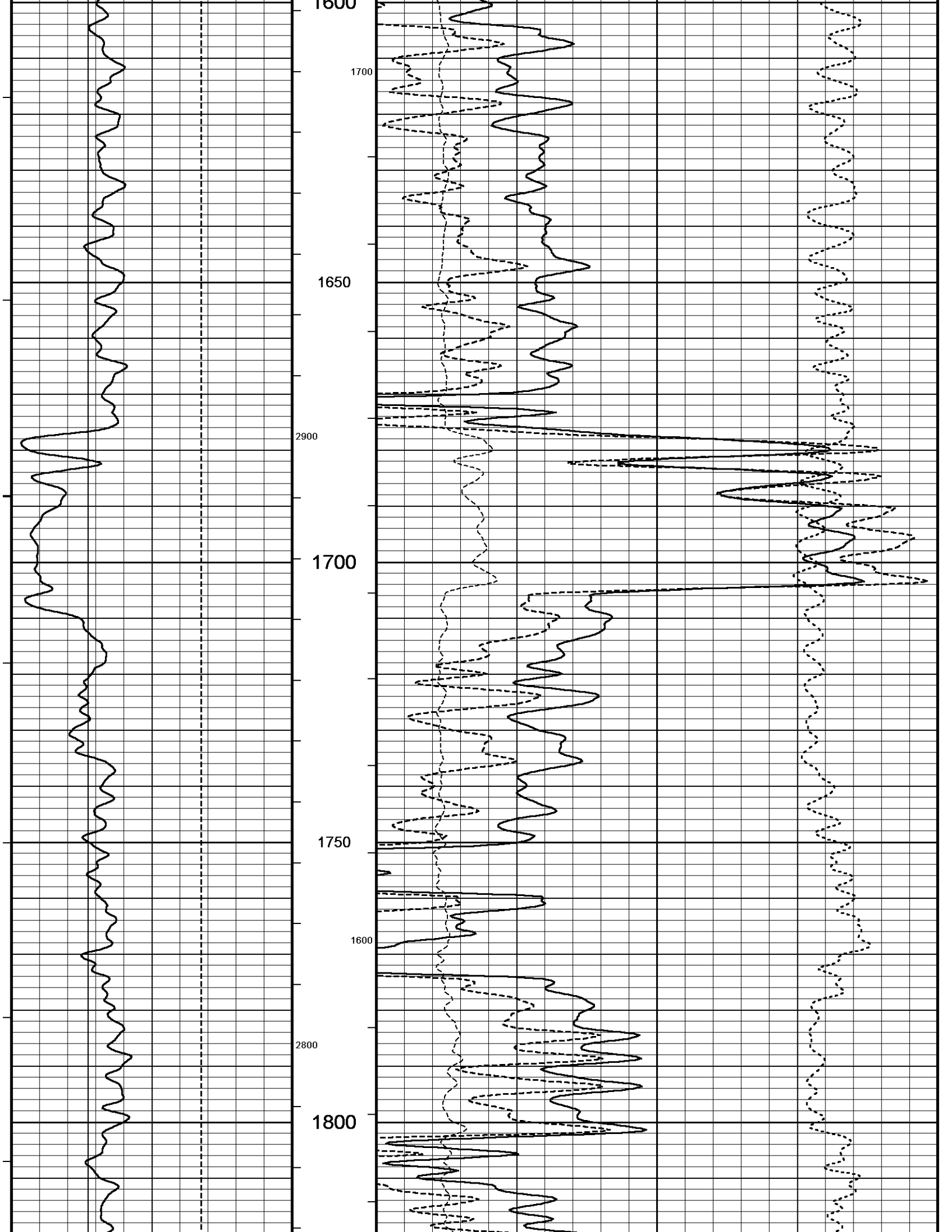
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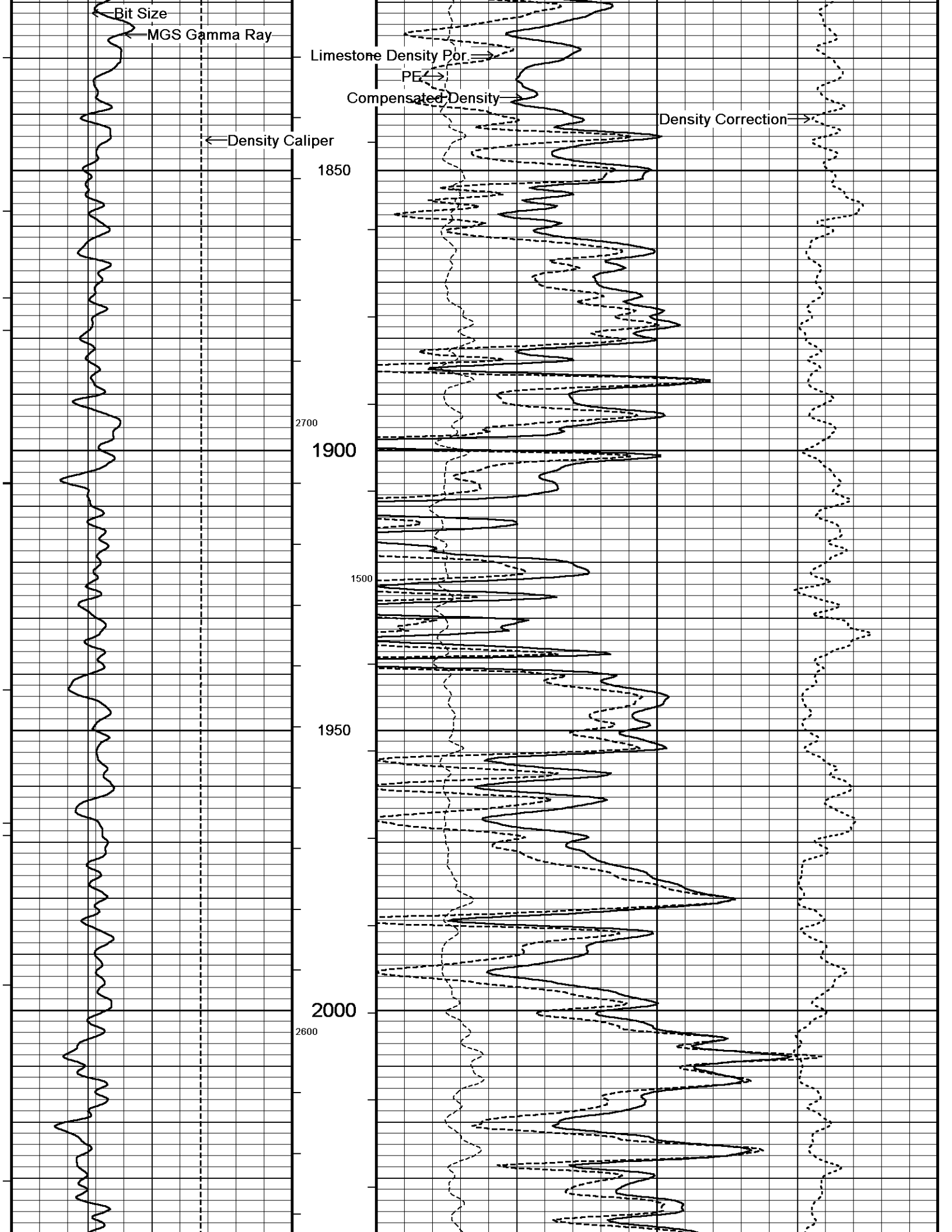
Depth
In
Feet

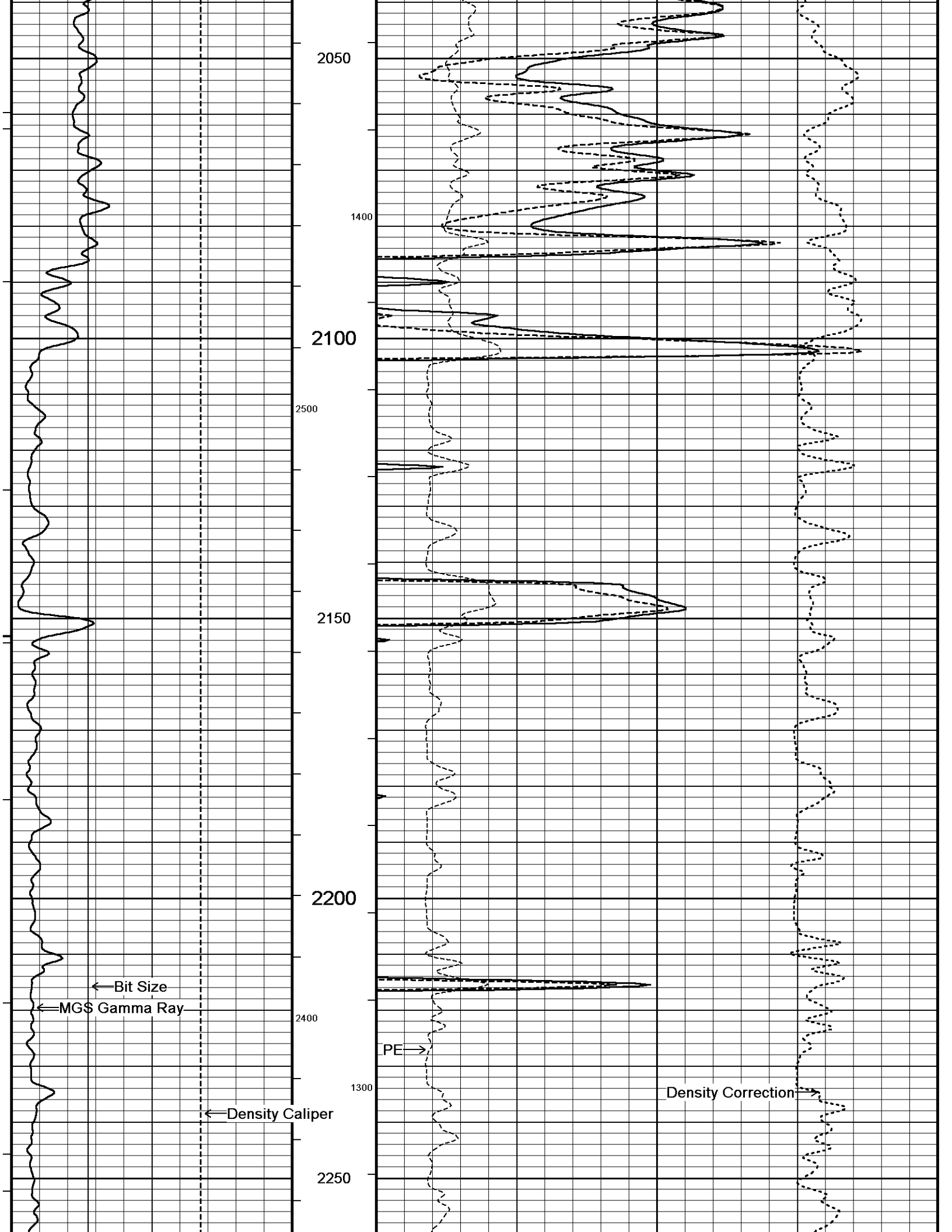


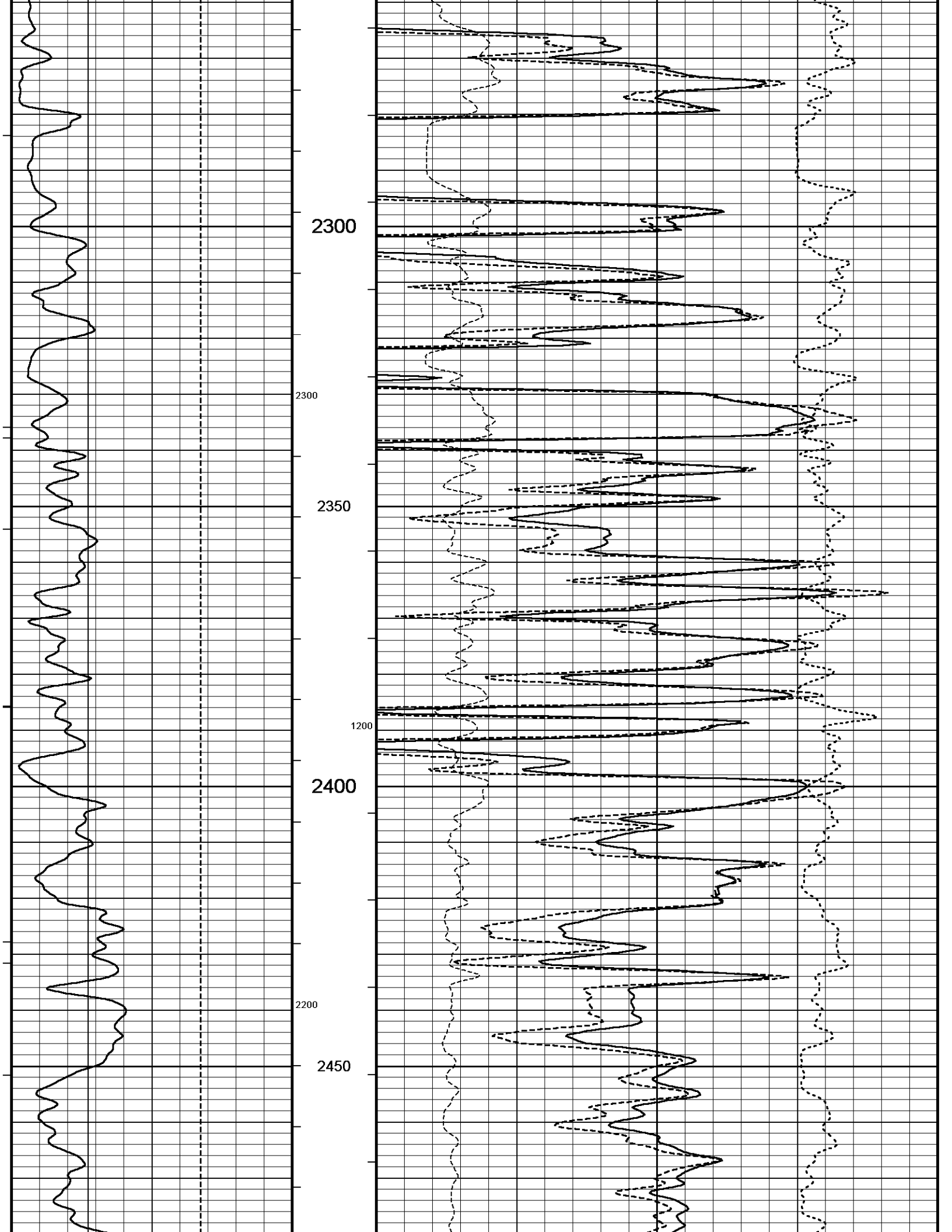


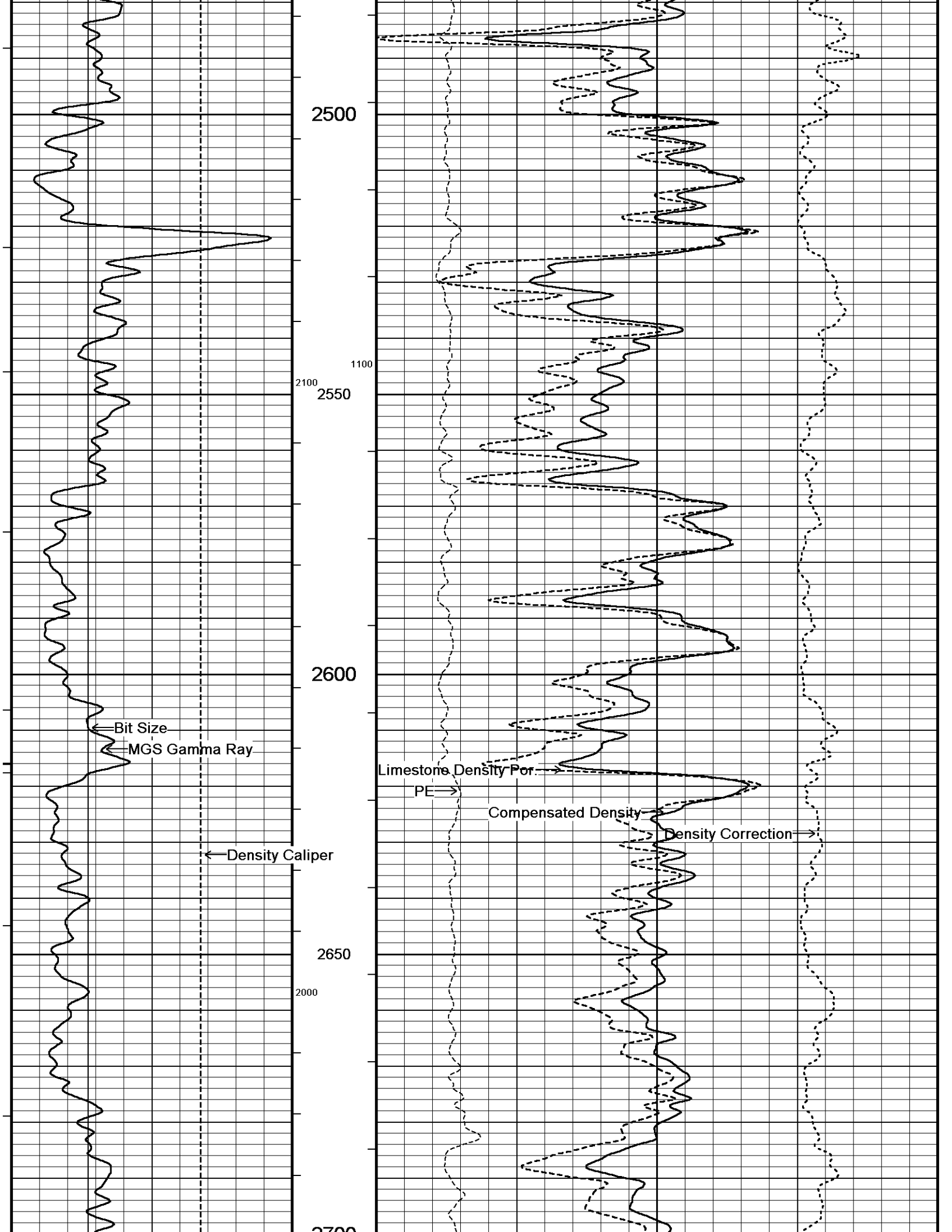


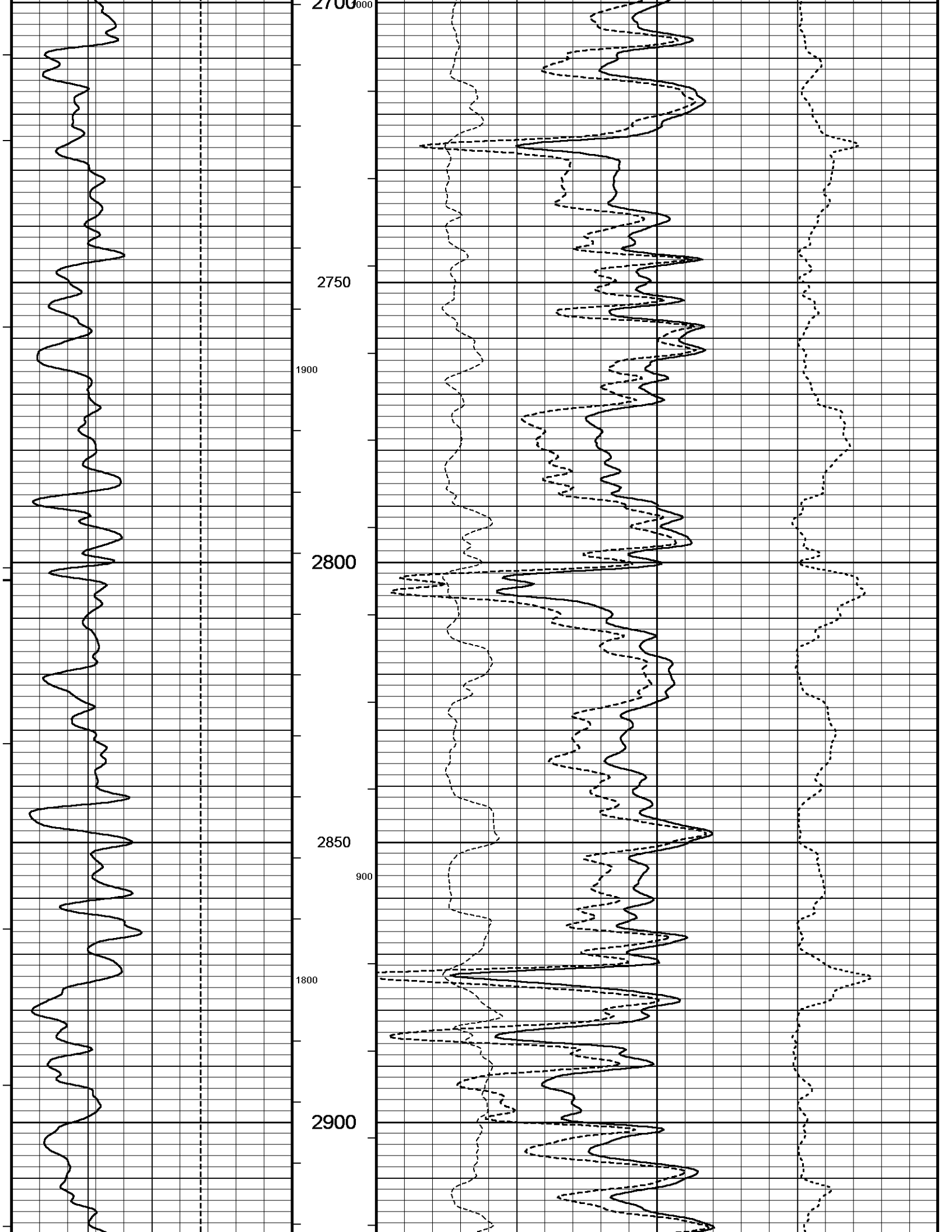


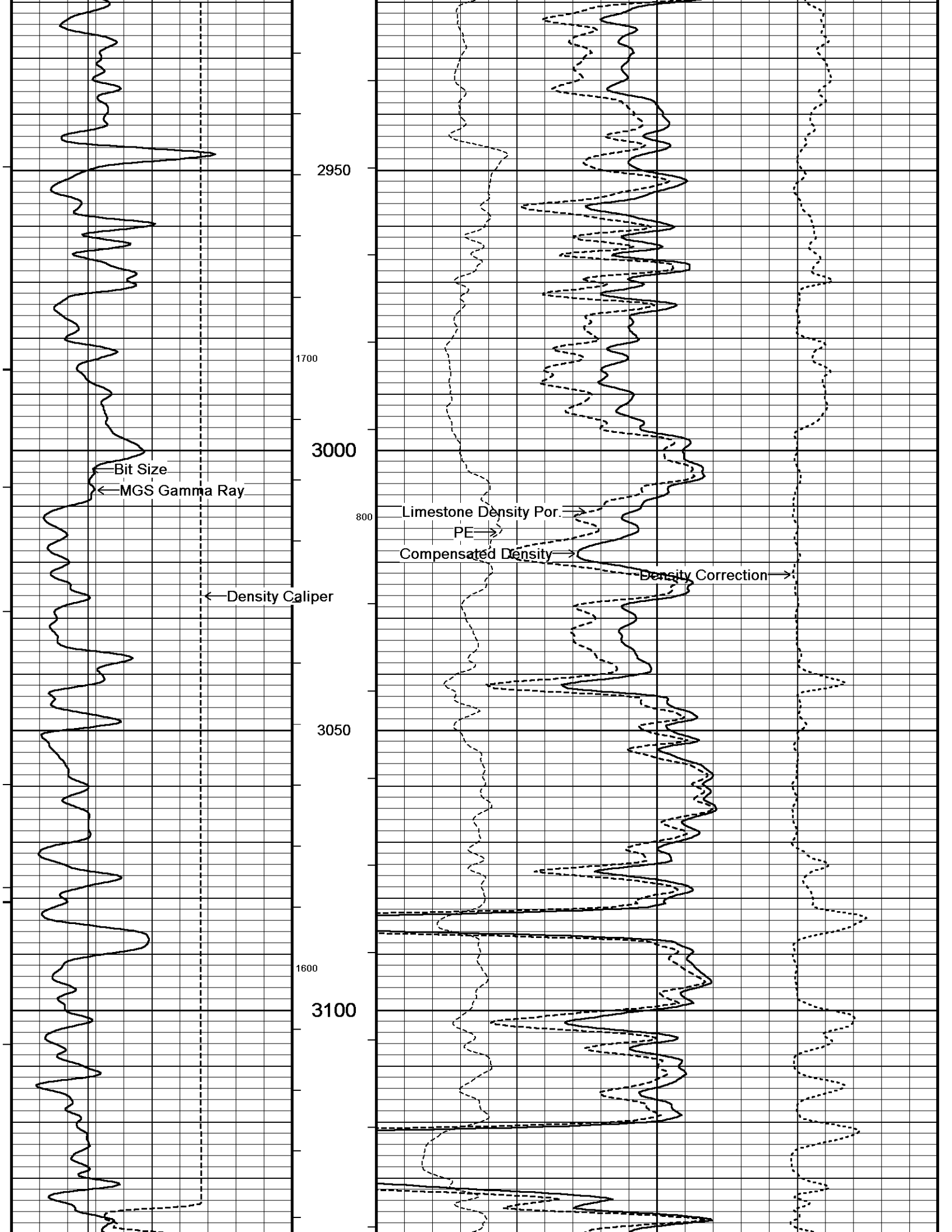


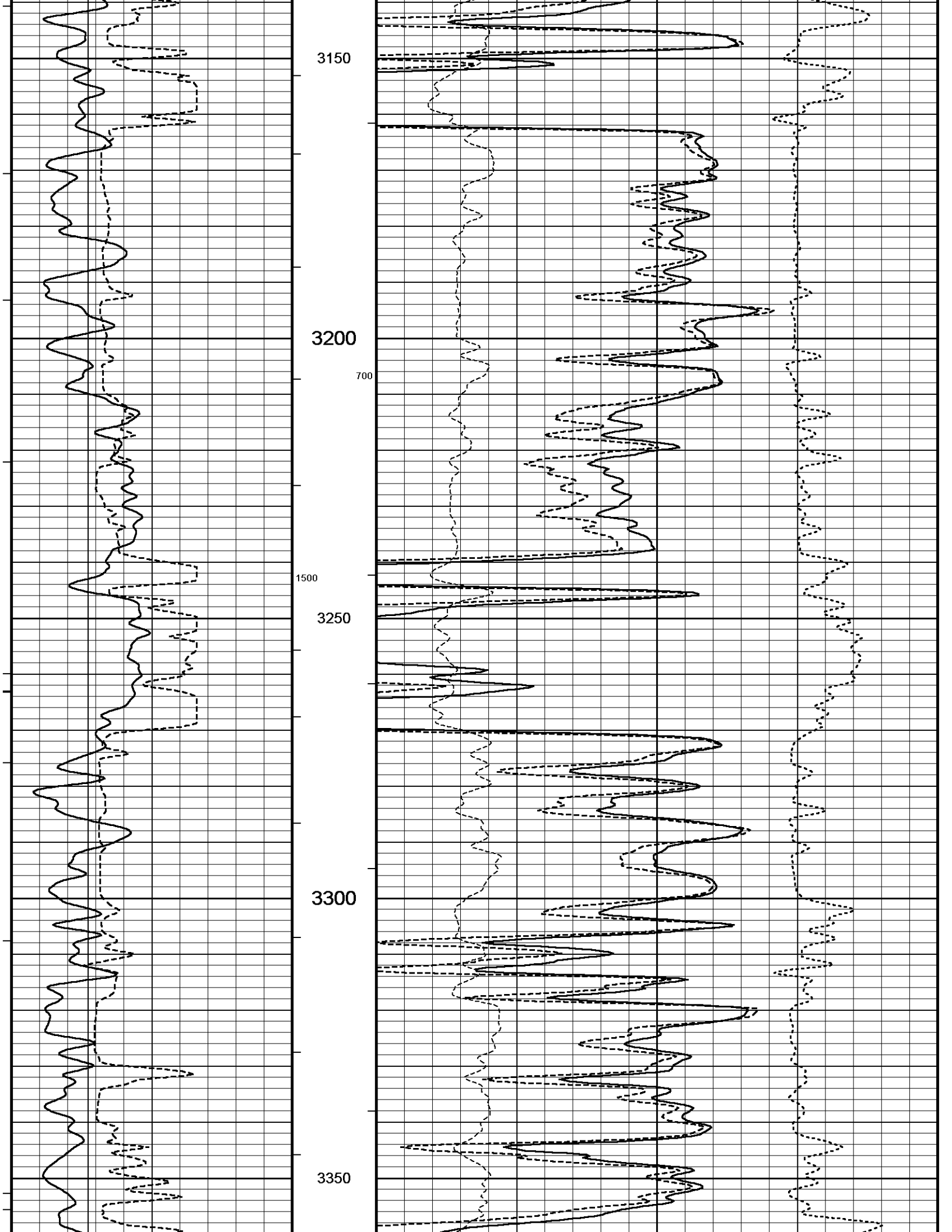


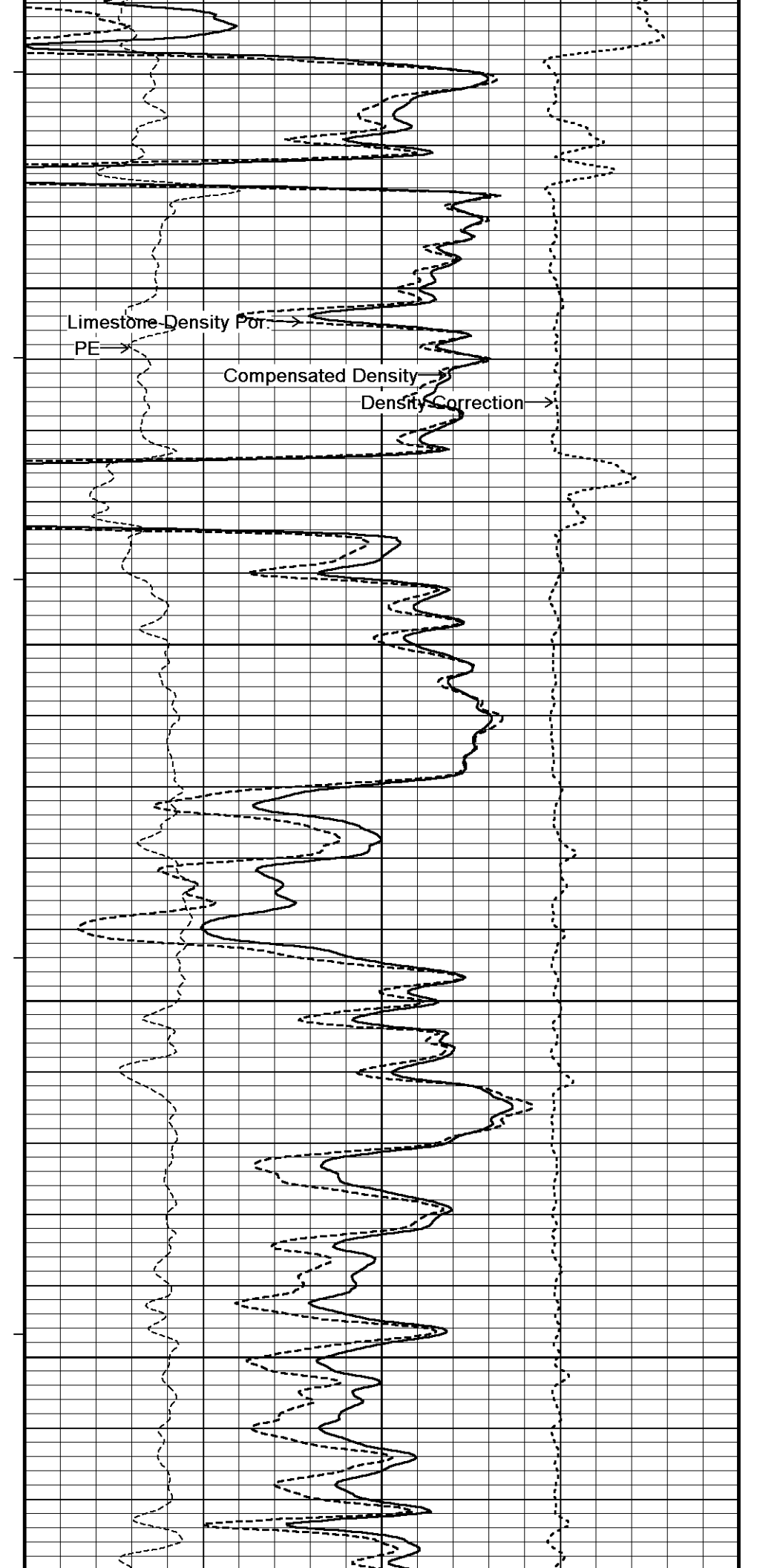
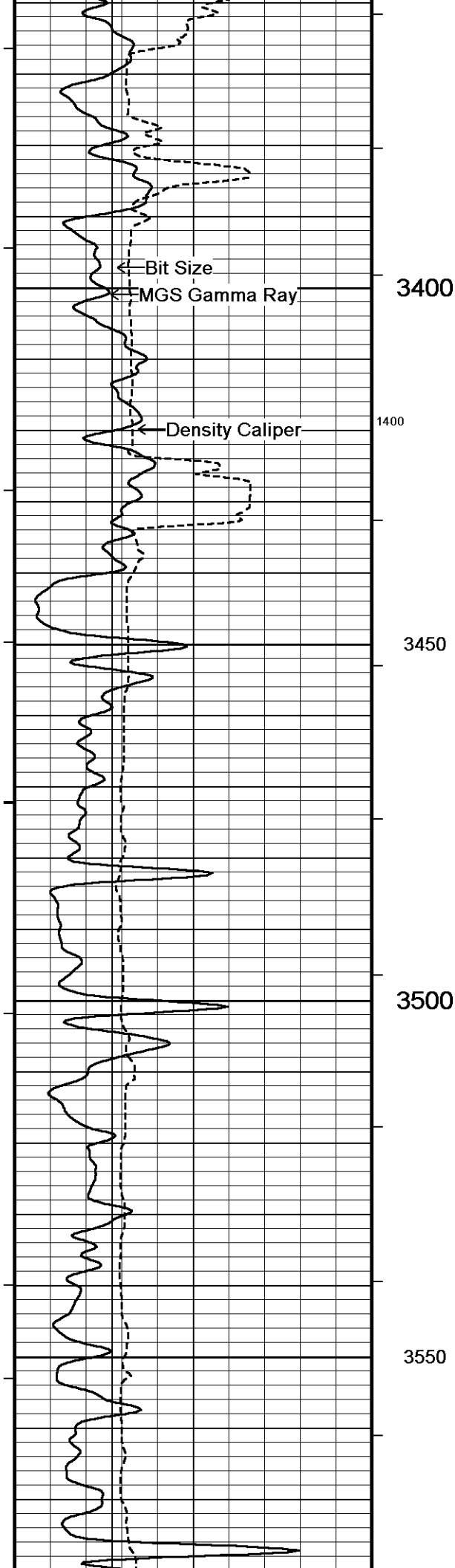


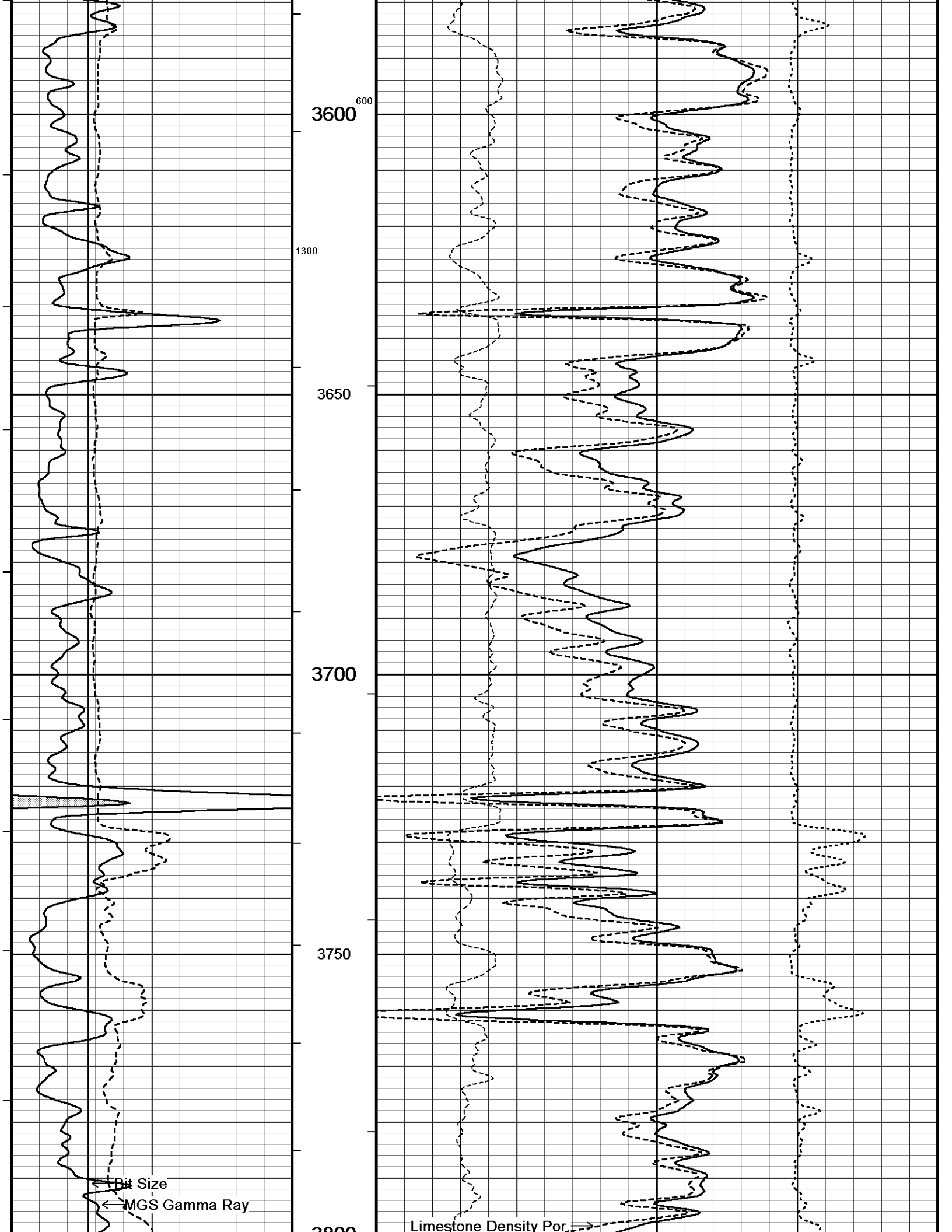


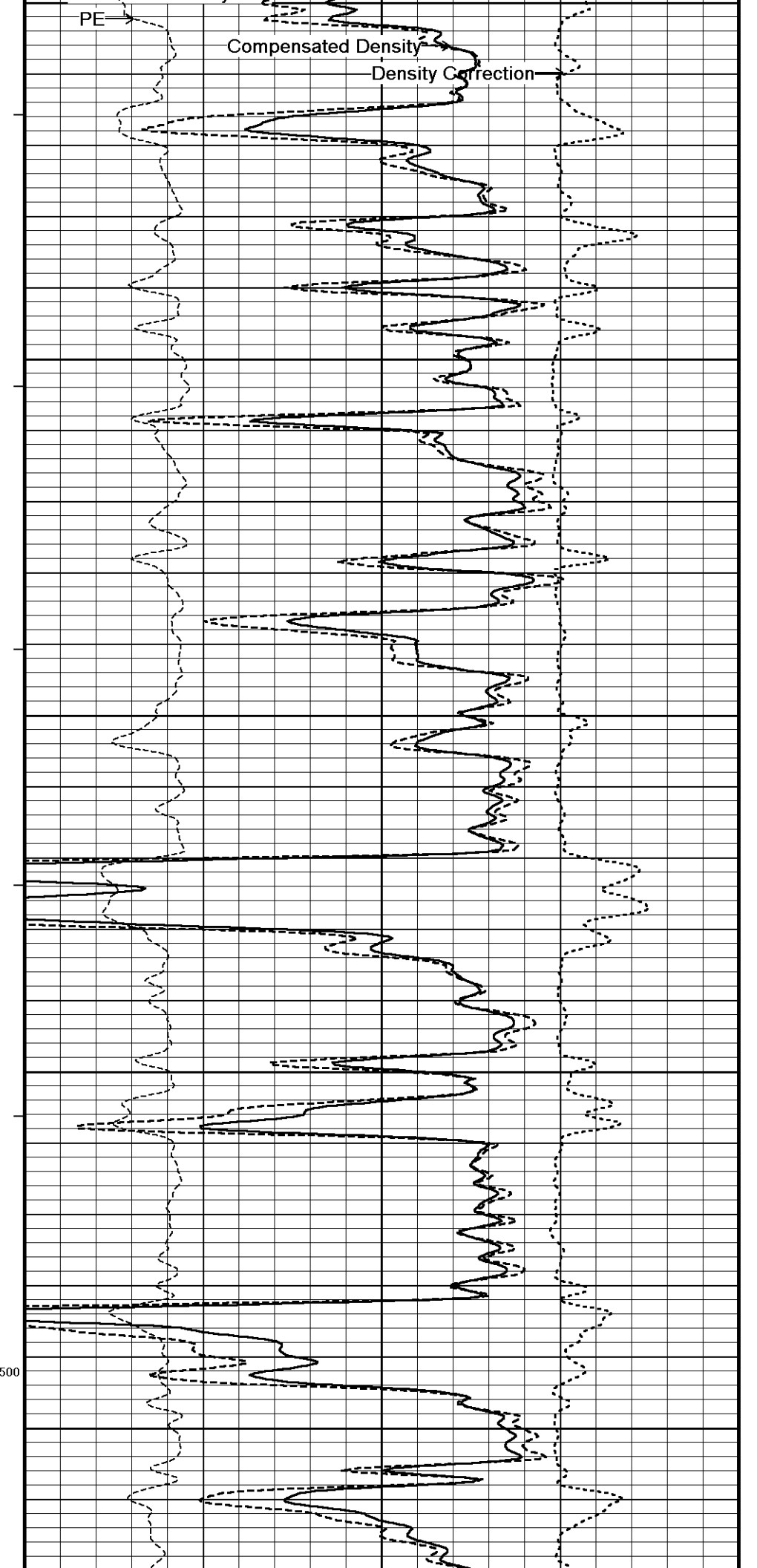
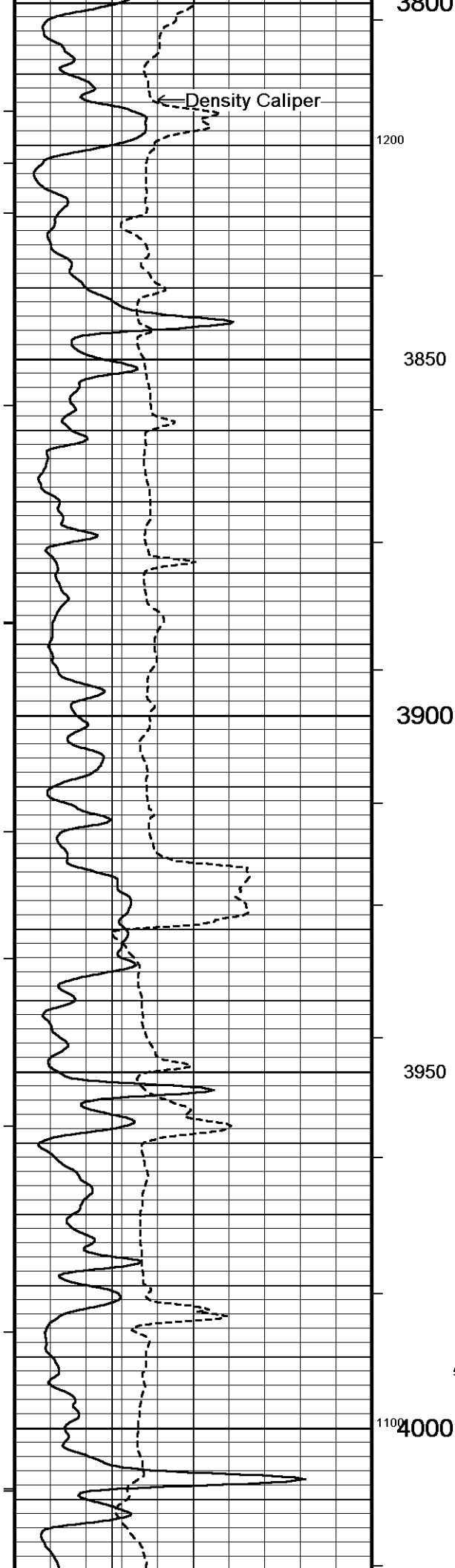


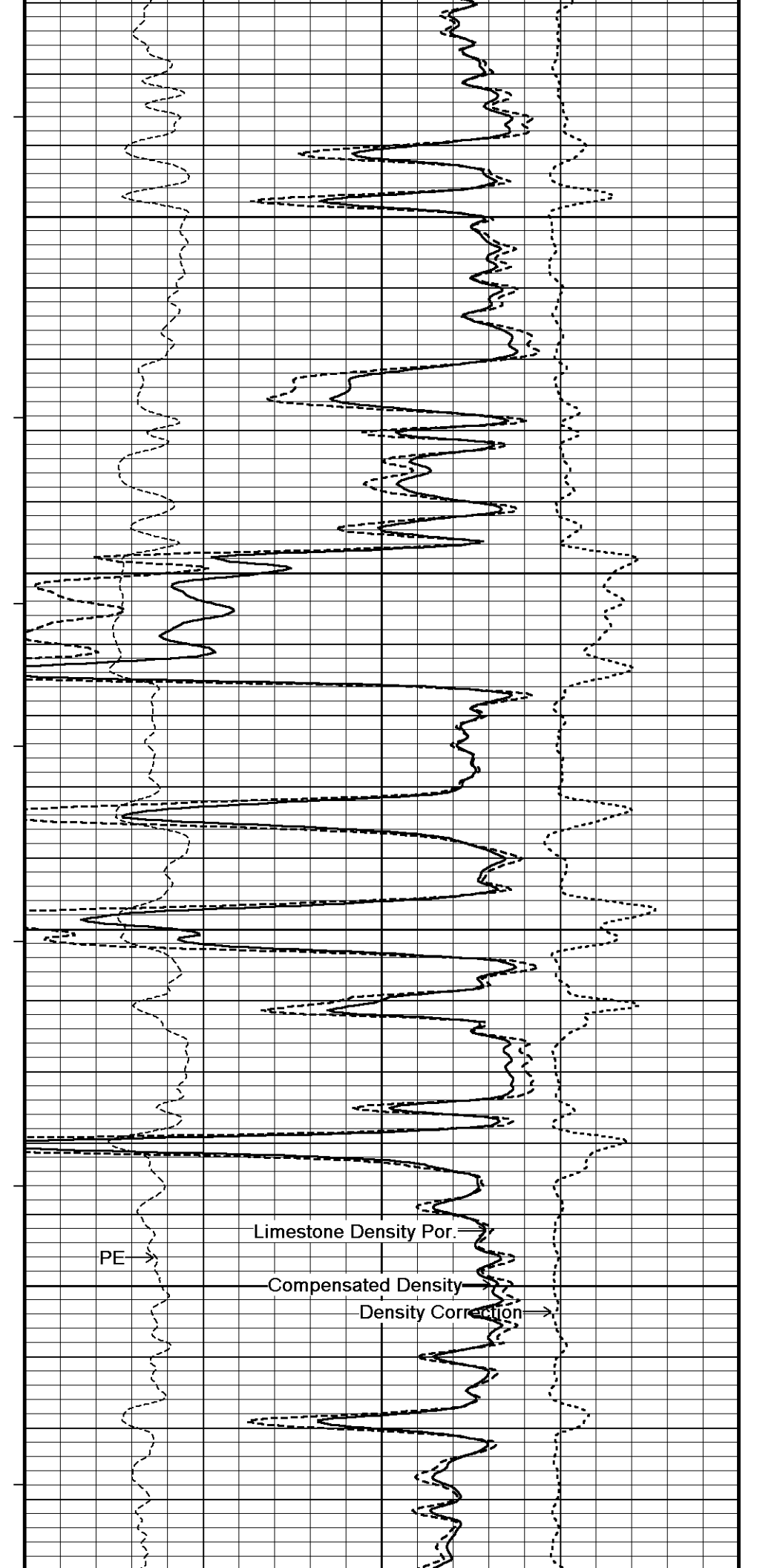
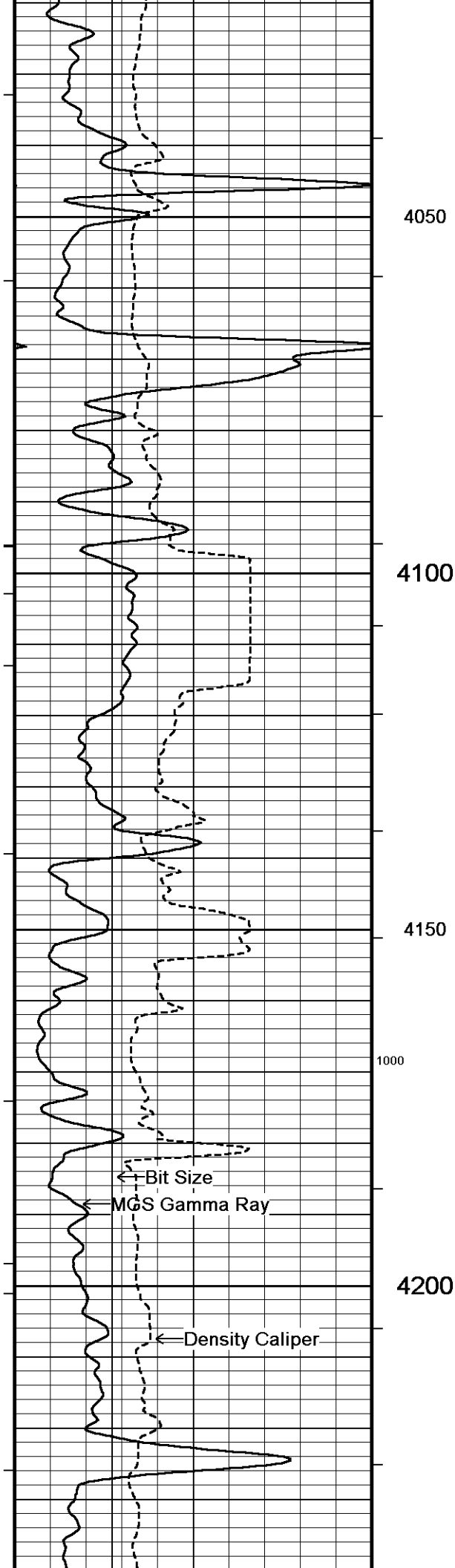


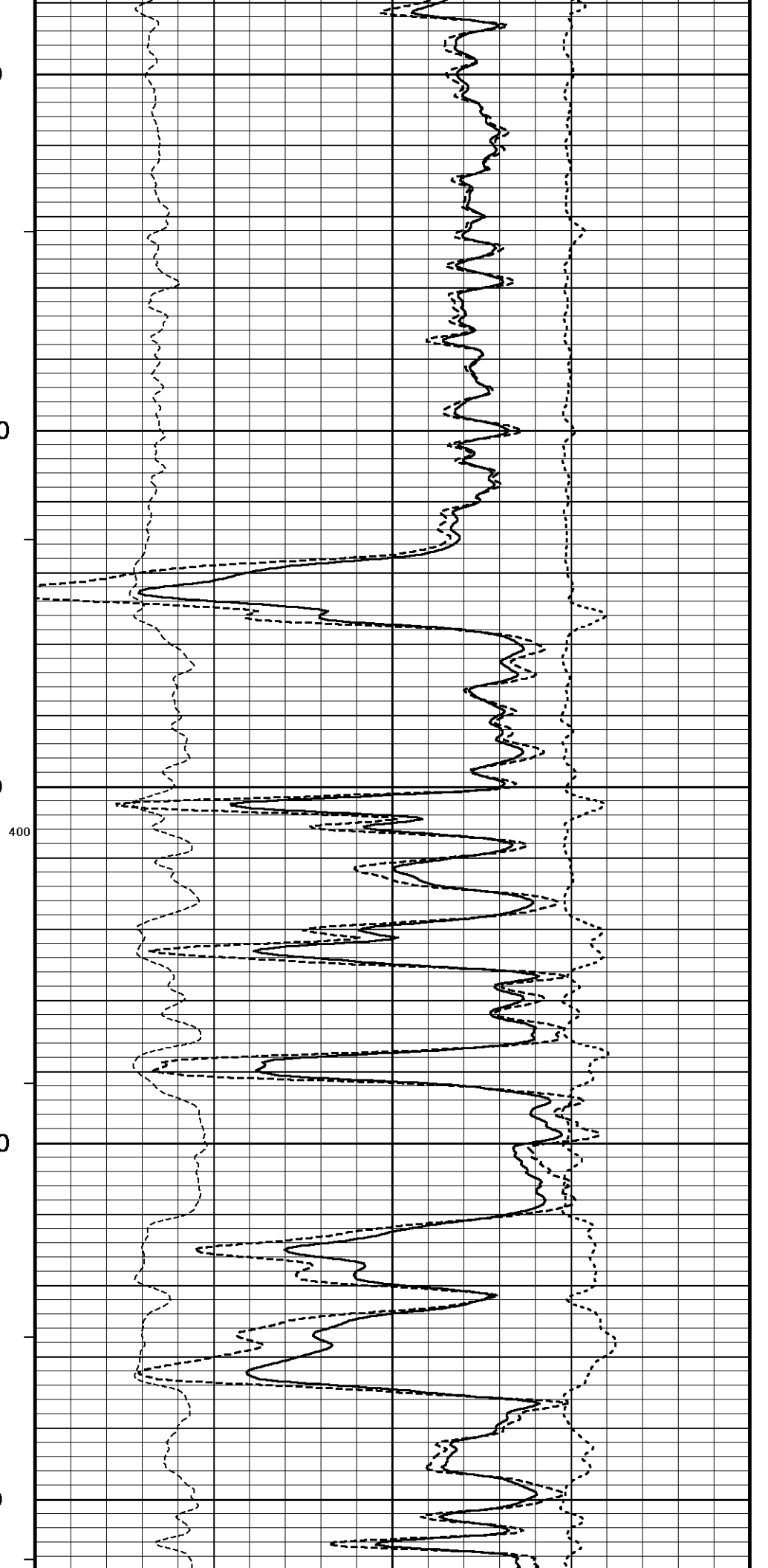
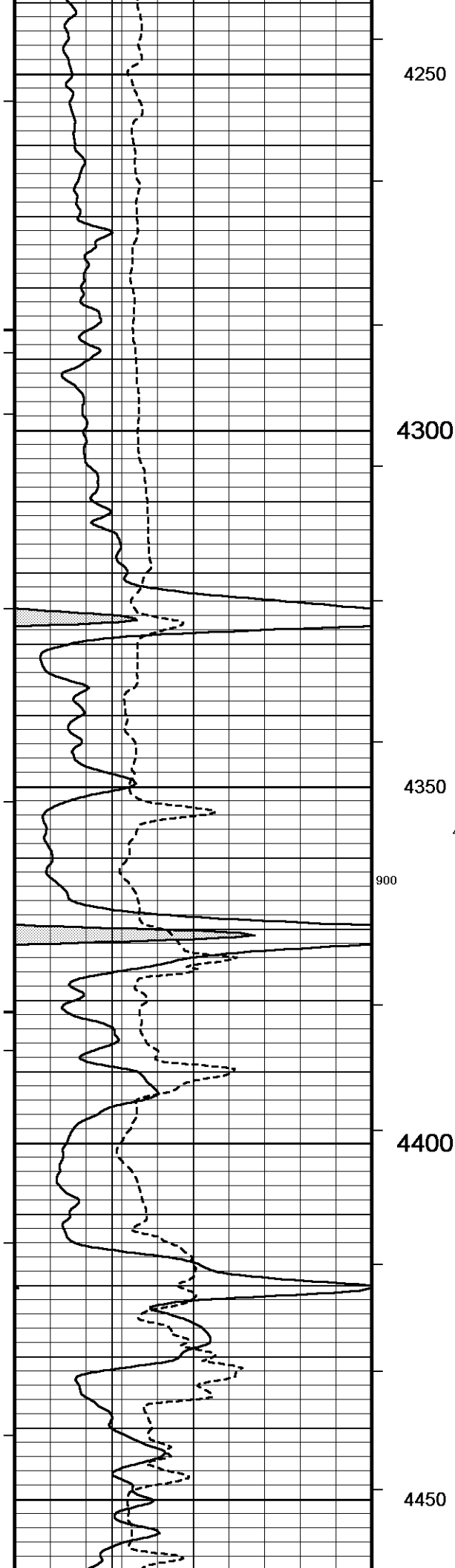


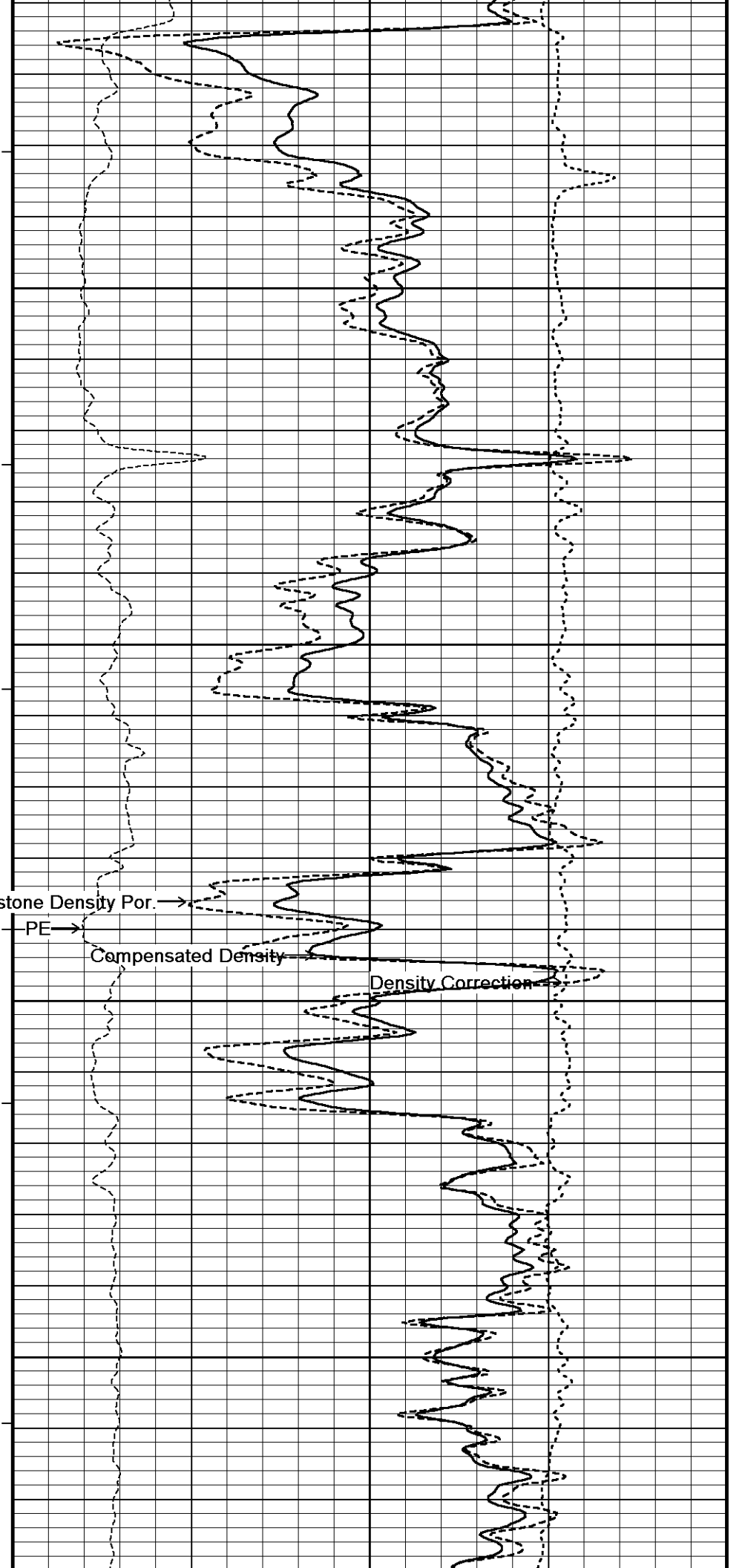
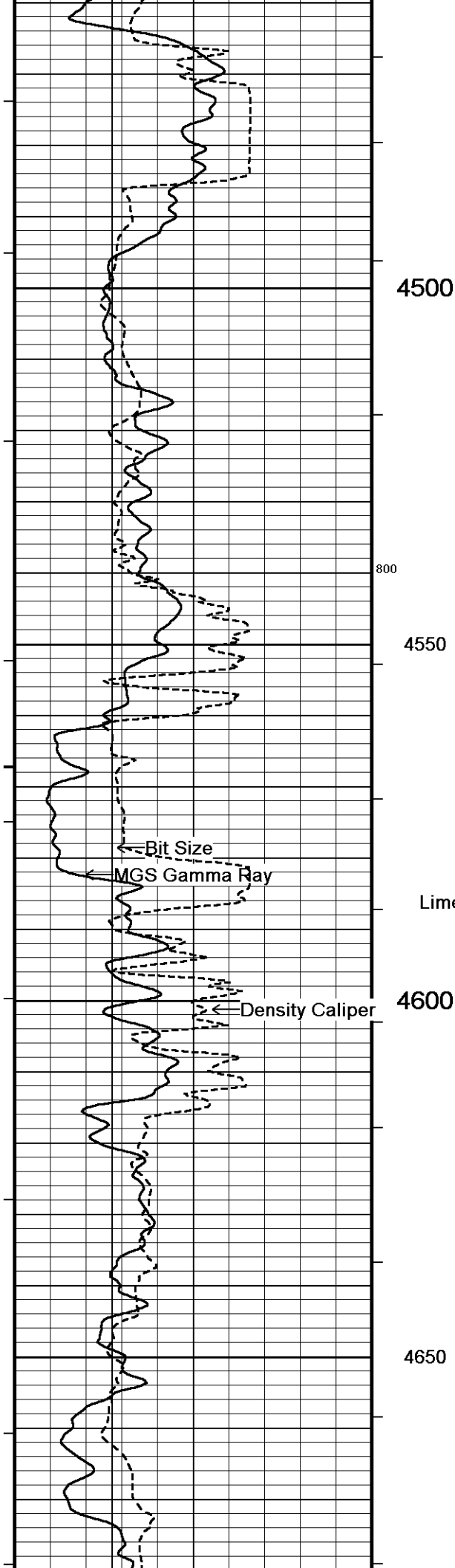


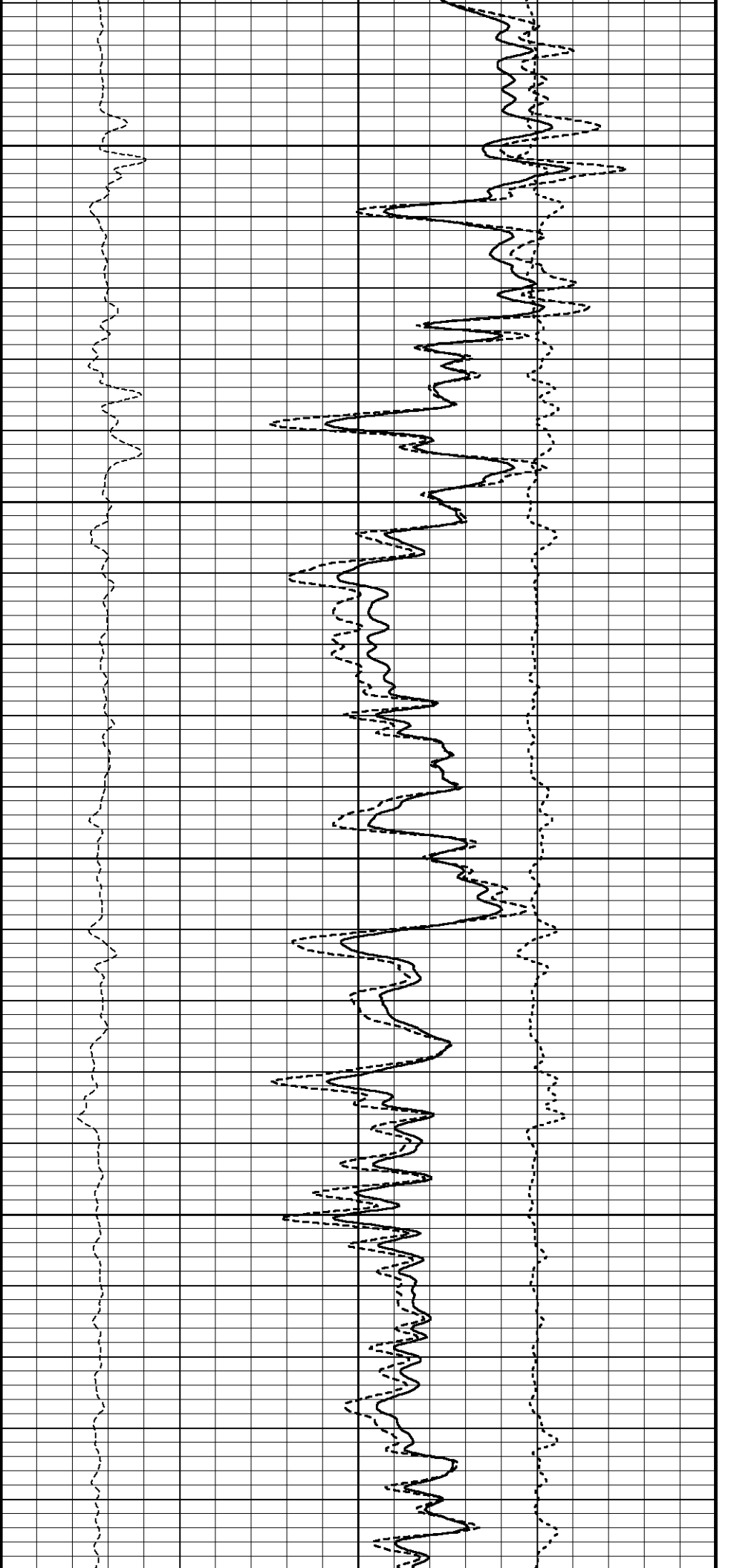
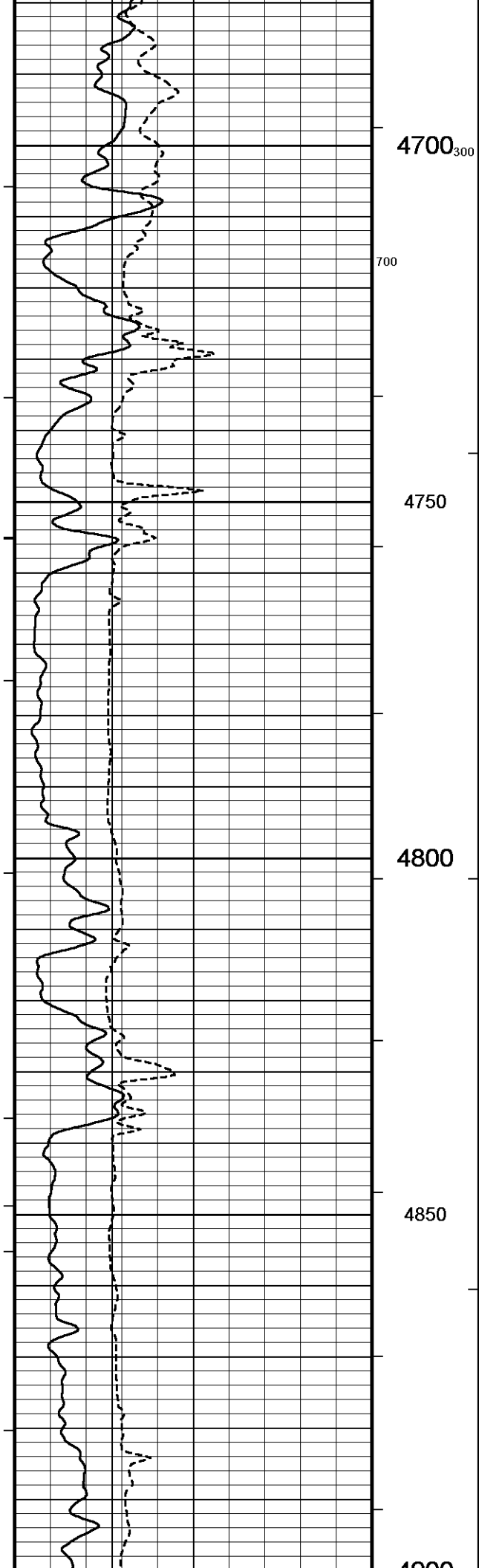


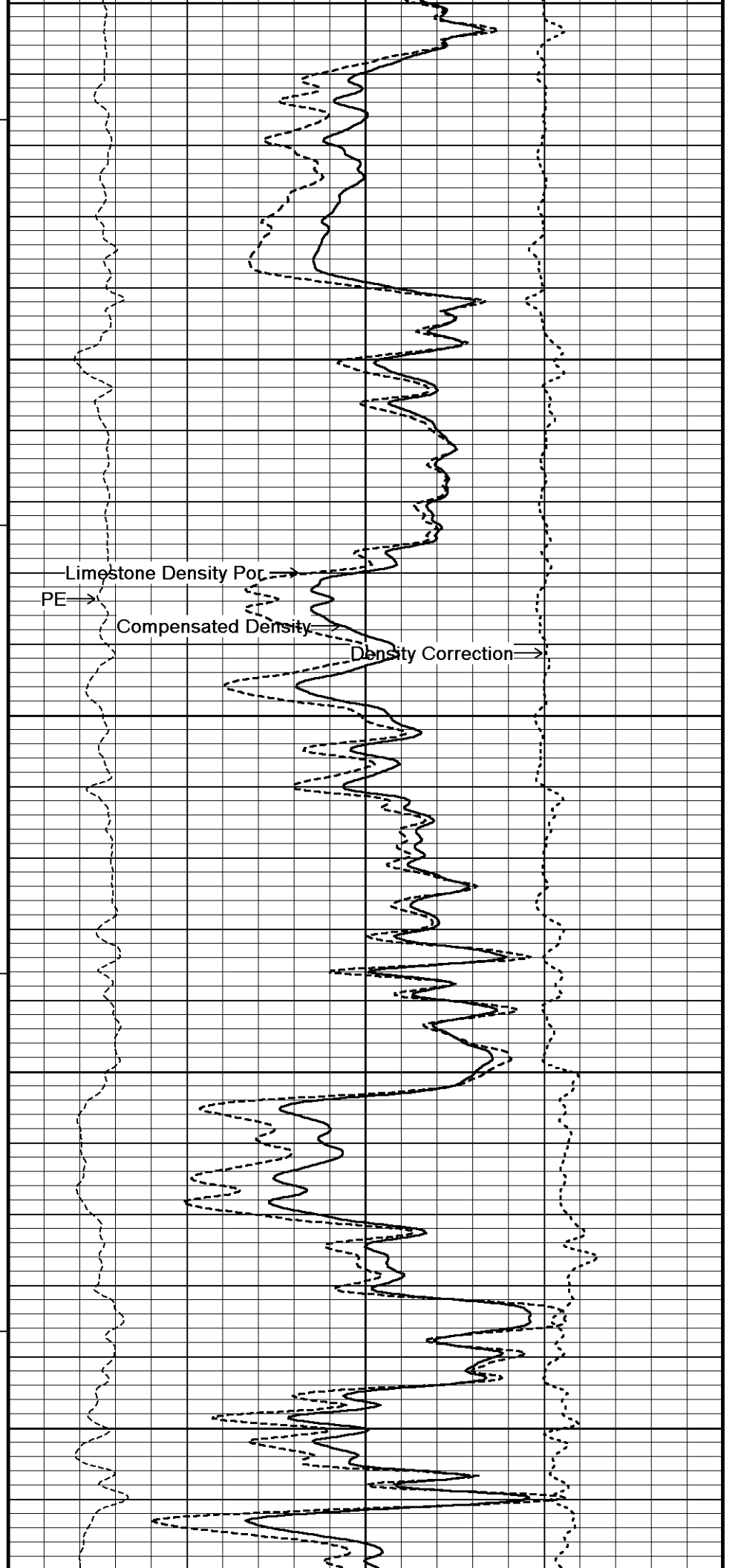
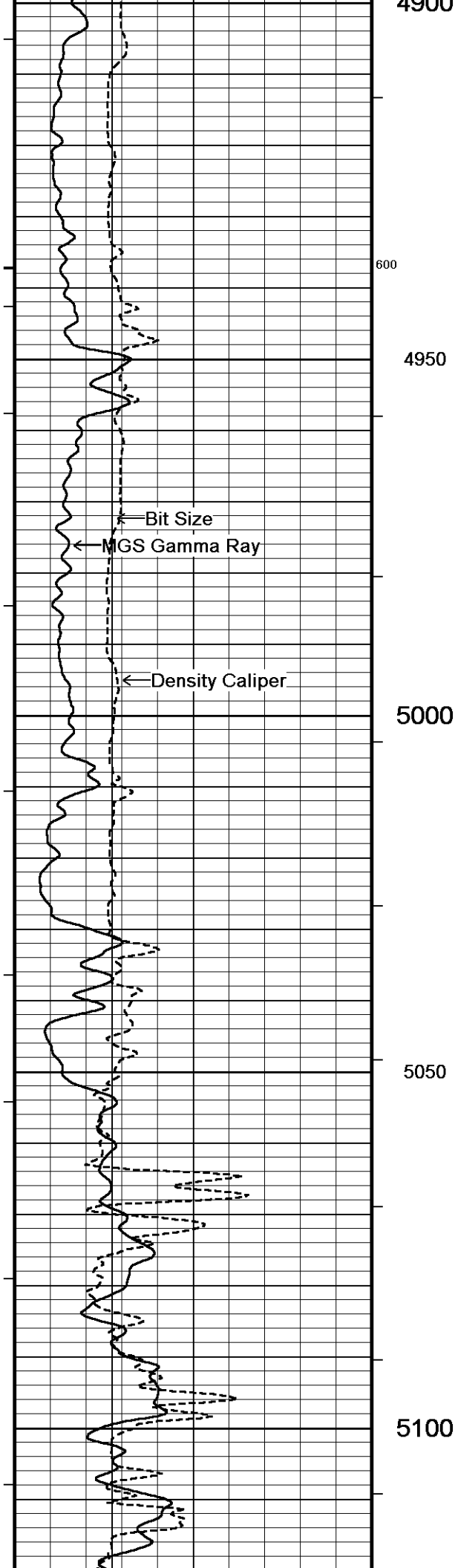


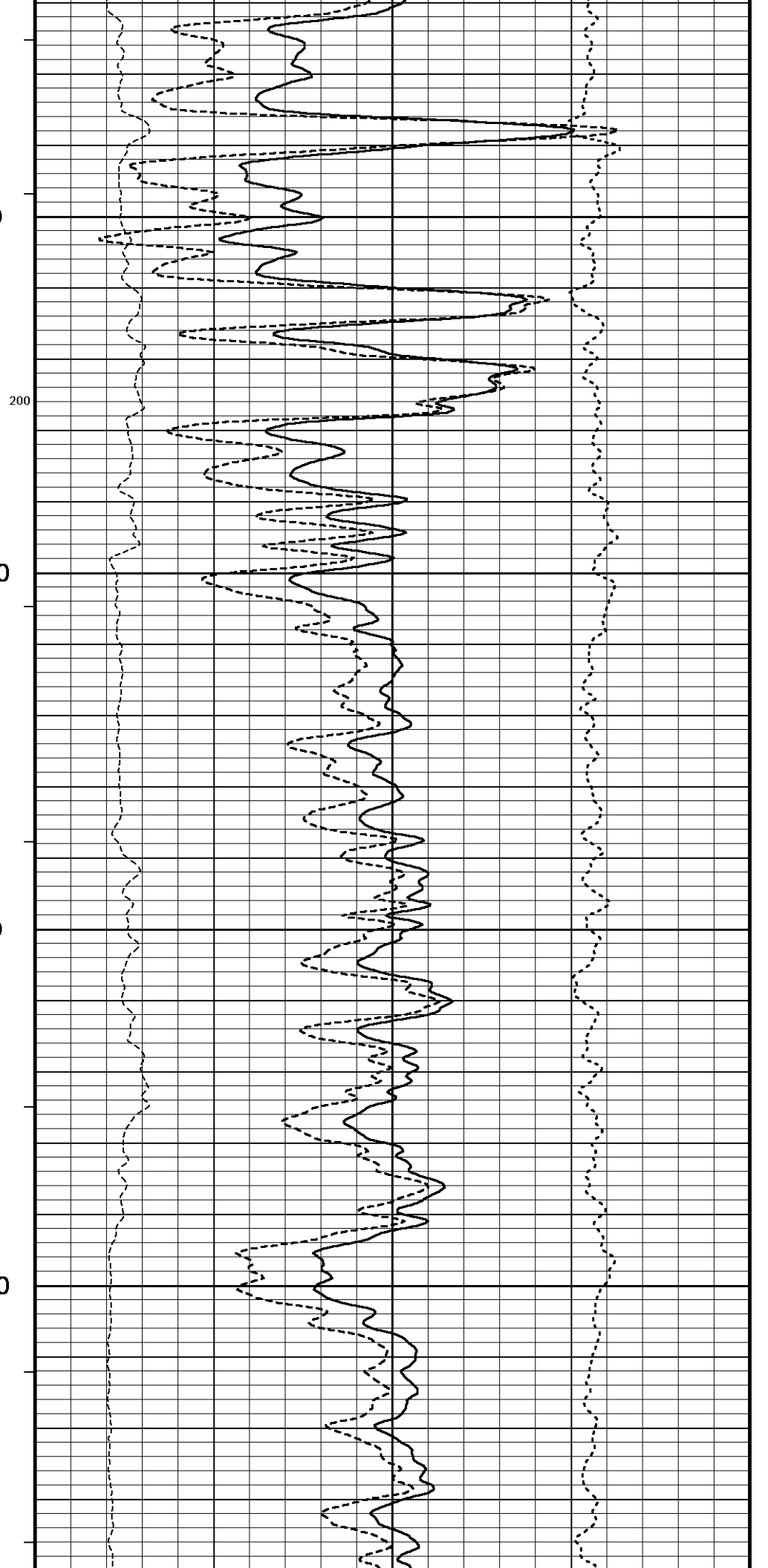
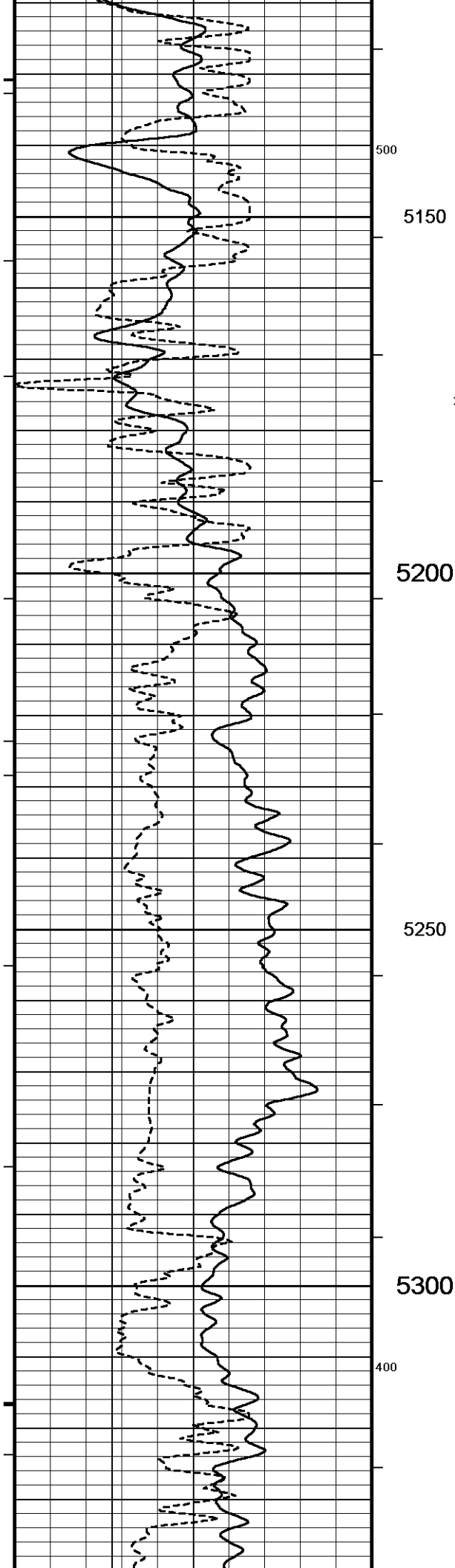


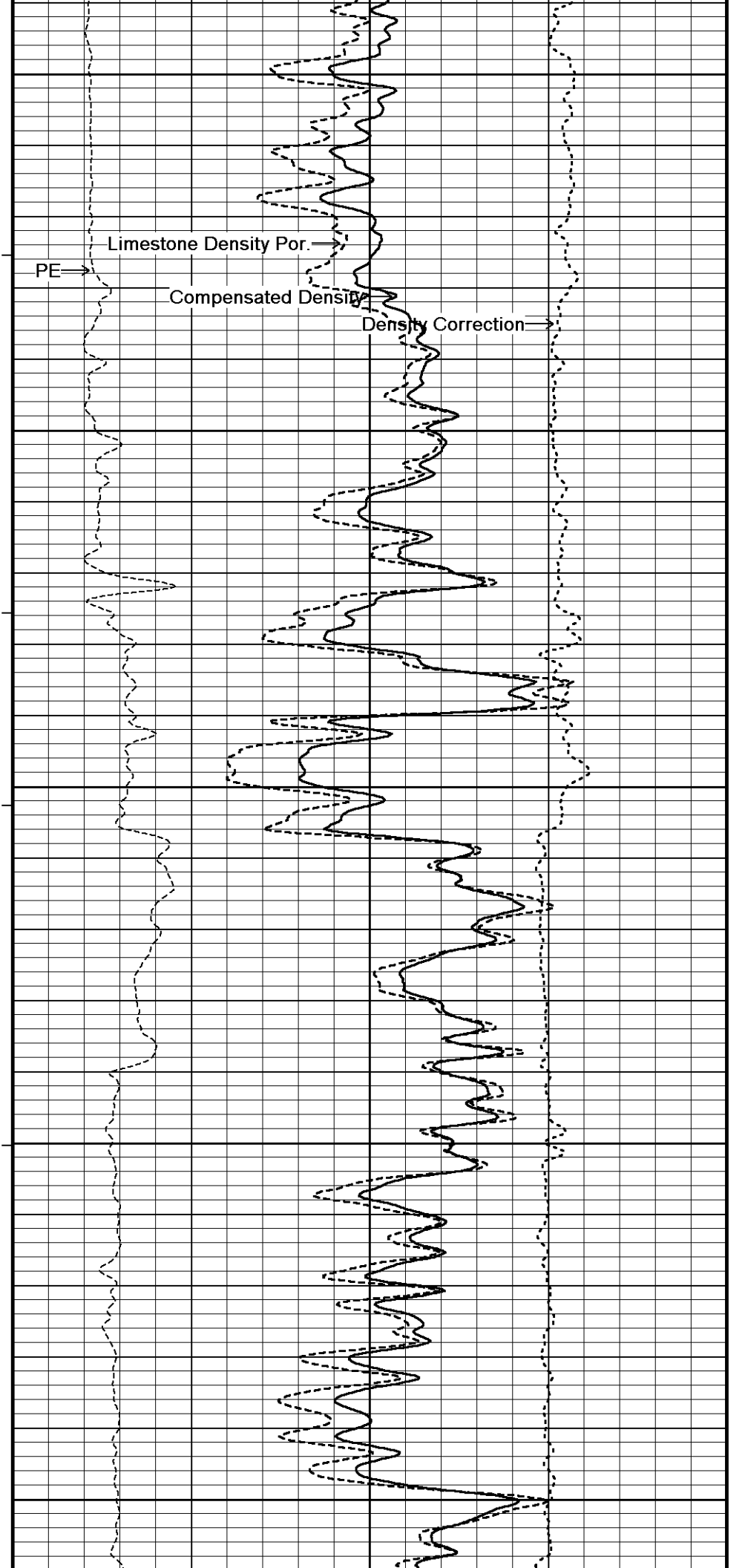
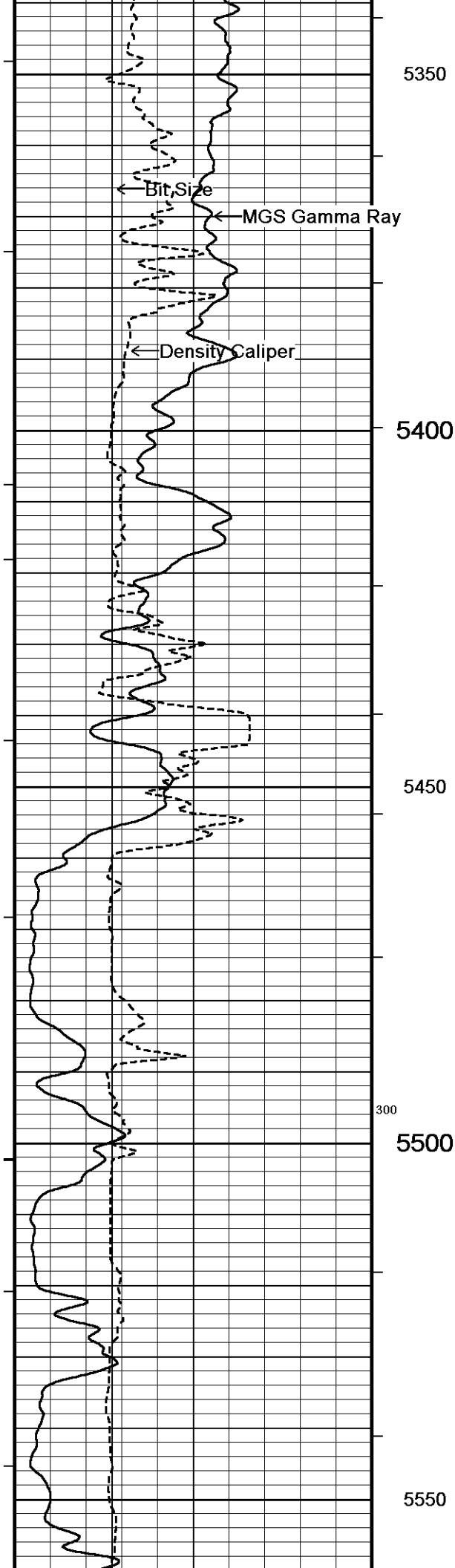


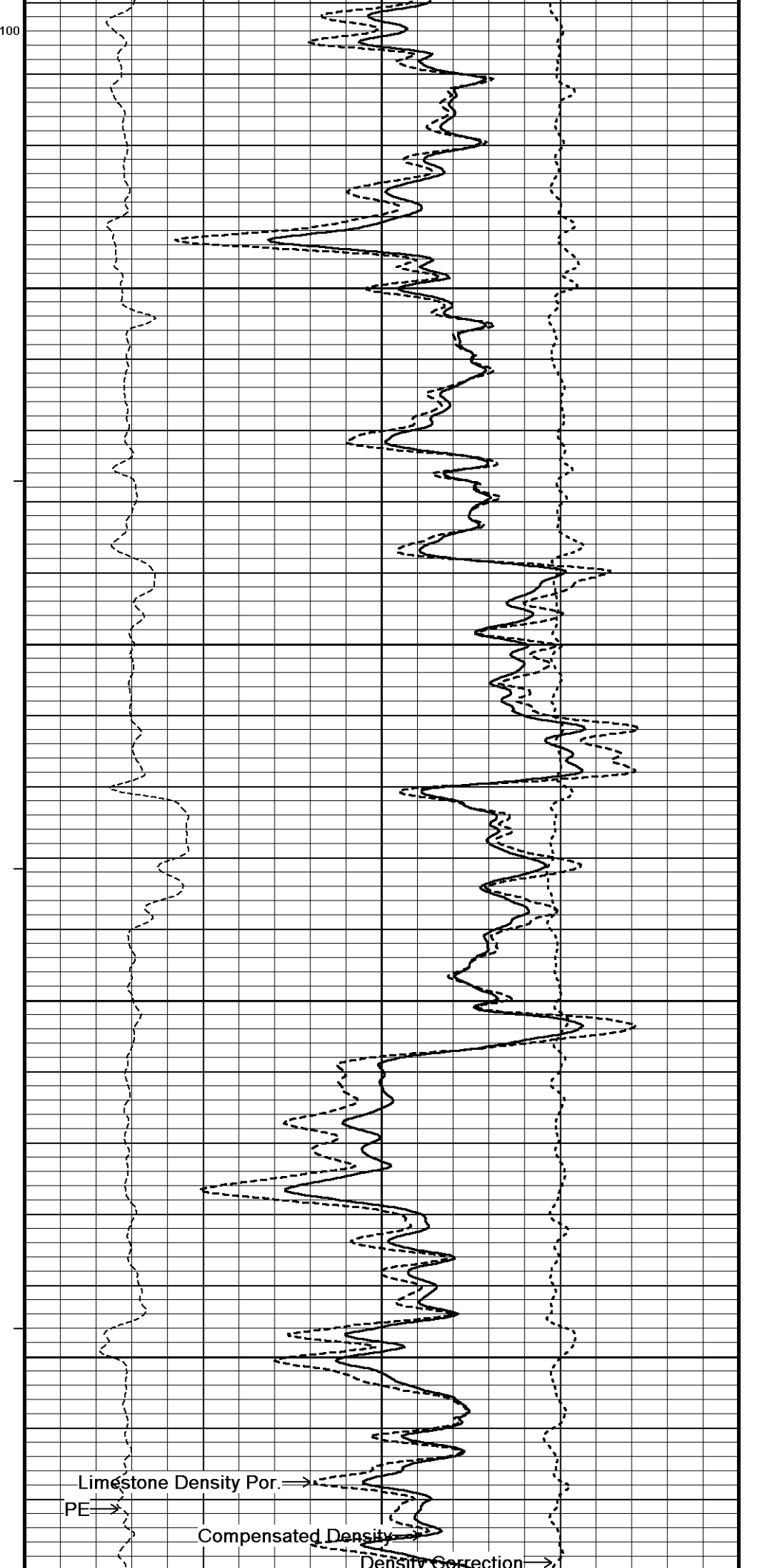
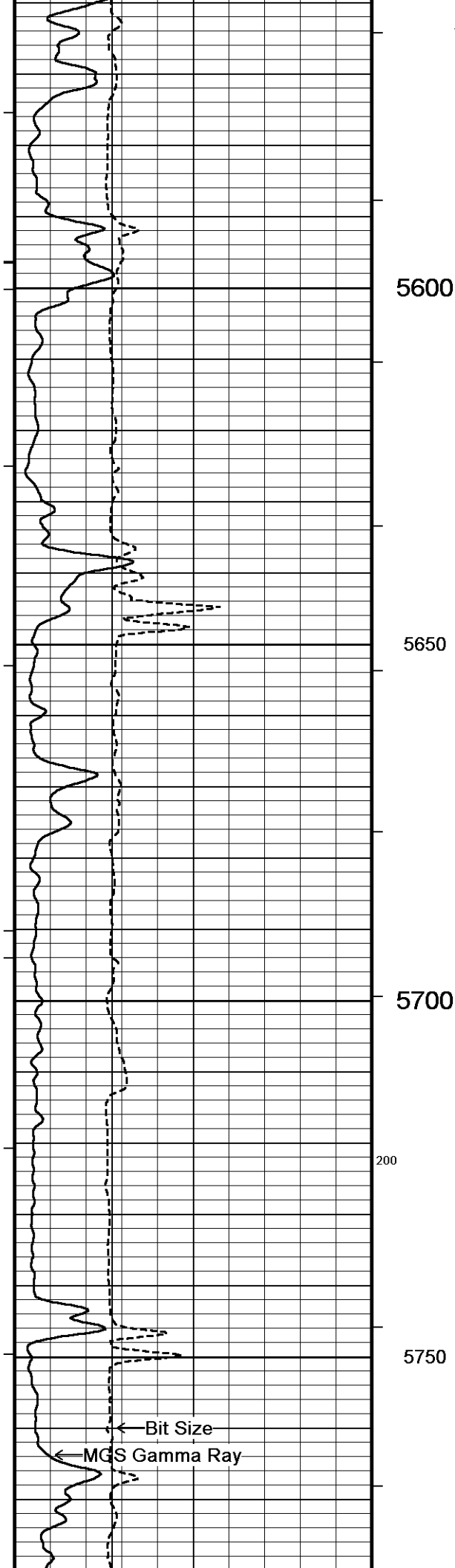


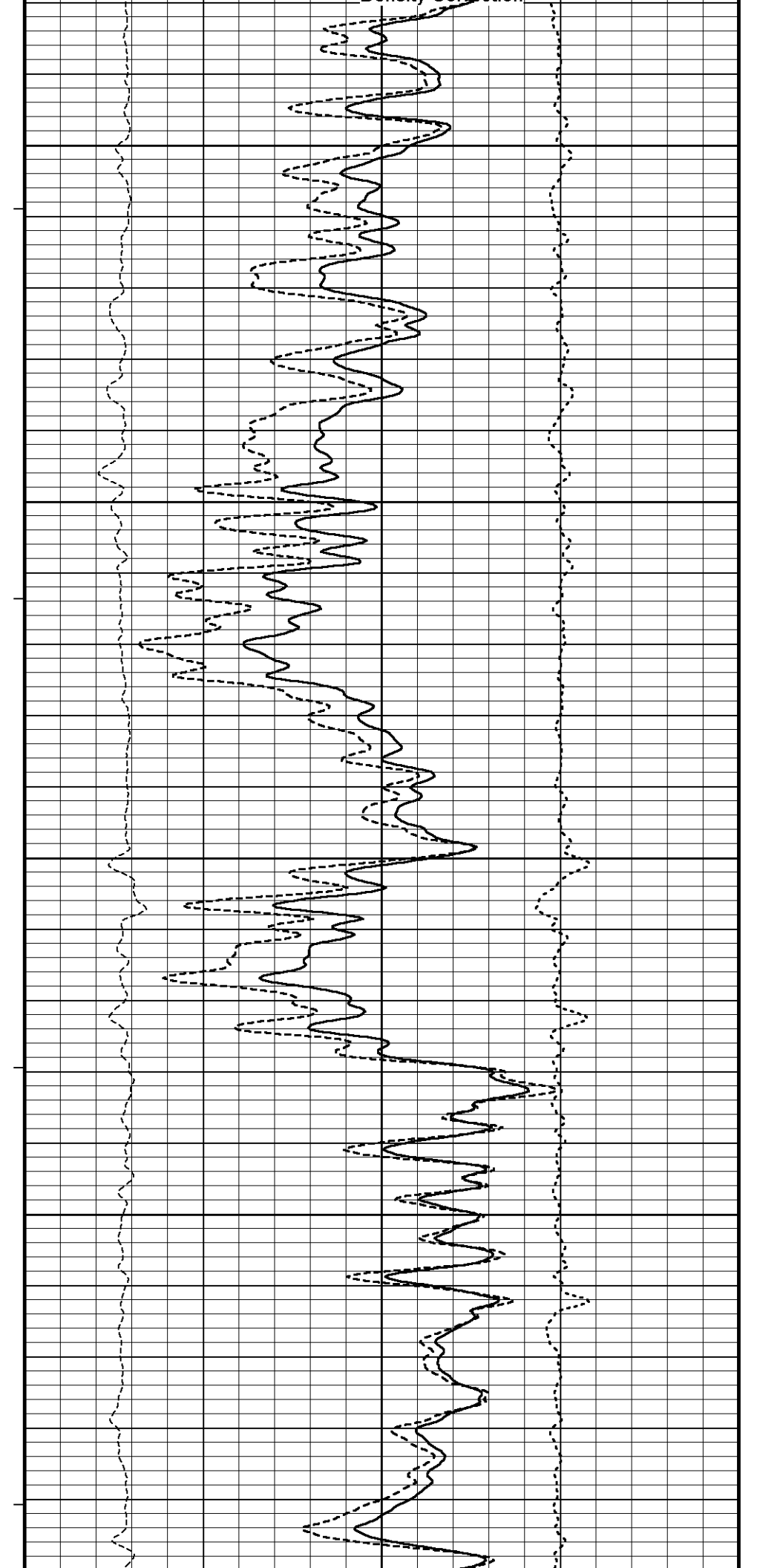
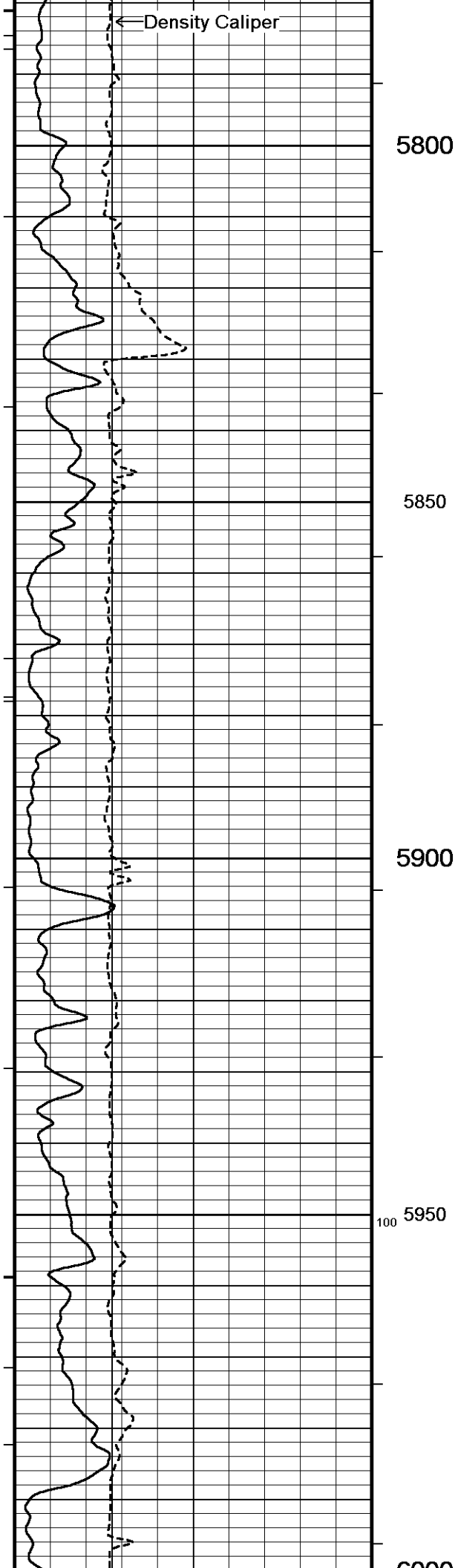


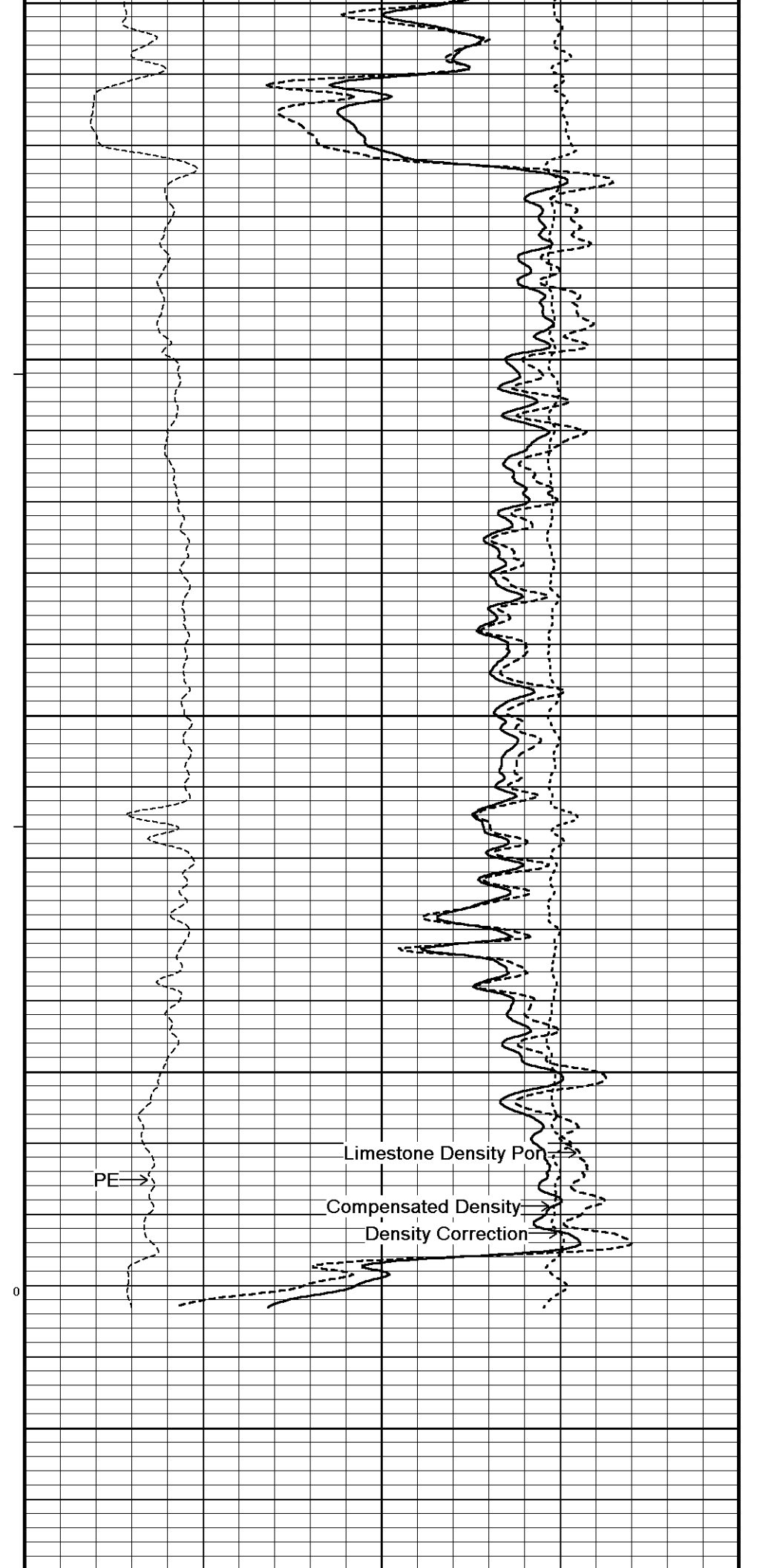
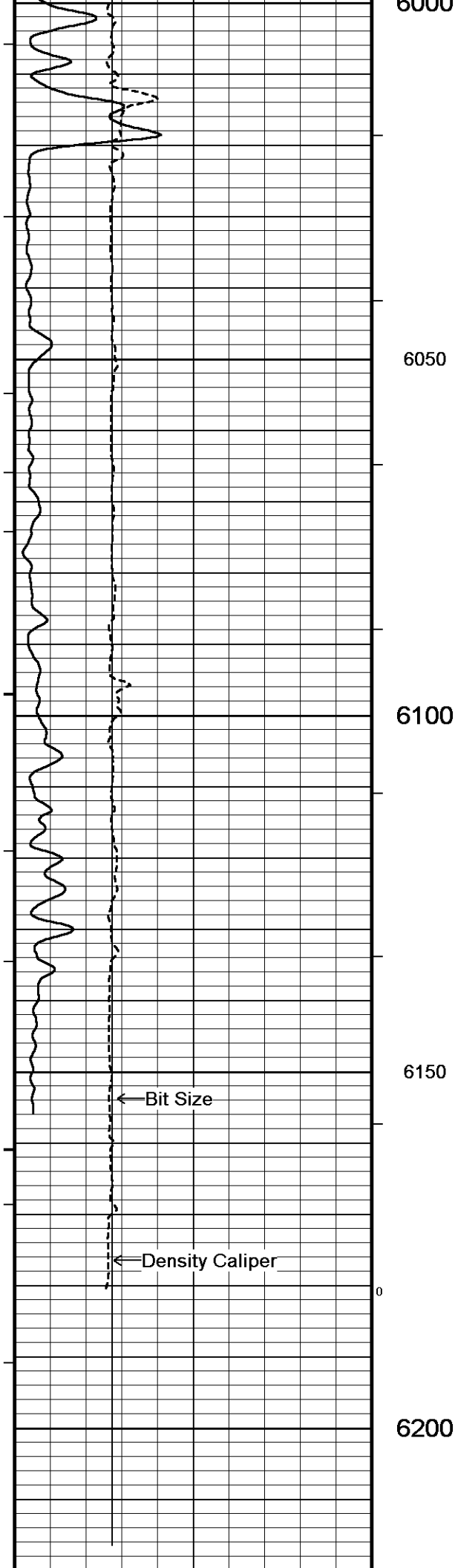


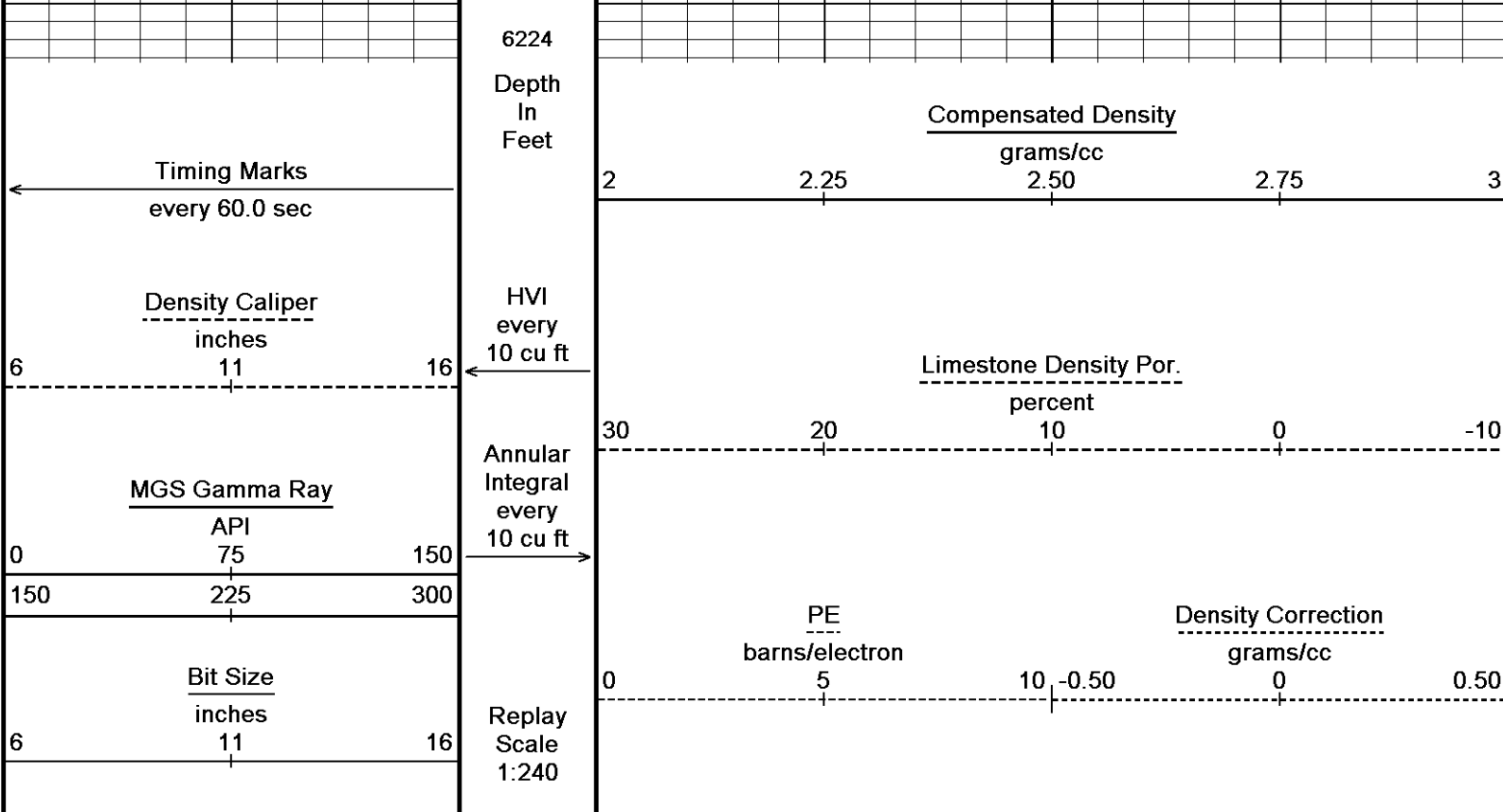












Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Data\Sandridge\Sandridge Krug 1725 1-35H\MMS158 Depthlog.dta
System Versions: Processed with 13.03.7779 Plotted with 13.03.7779

Plotted on 27-FEB-2013 19:13
Recorded on 27-FEB-2013 18:51

5 INCH BULK DENSITY DSC

BEFORE SURVEY CALIBRATION		
C:\Data\Sandridge\Sandridge Krug 1725 1-35H\MMS158 Depthlog.dta		
General Constants All 000		Last Edited on 27-FEB-2013,15:32
General Parameters		
Mud Resistivity	0.550	ohm-metres
Mud Resistivity Temperature	58.300	degrees F
Water Level	0.000	feet
Density/Neutron Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	7.000	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Deep Induction	
RWA Constant A	0.610	
RWA Constant M	2.150	
Down-hole Tension Calibration SMS 0		Field Calibration on 05-SEP-2012,13:01
Reading No	Measured	Calibrated (lbs)
1	15152.07	0.00
2	18386.74	2000.00
Strain Gauge Constants MMS-E.B 158		Last Edited on
Atmospheric Pressure	14.70	psi
Serial Number	0	
Calibration Date	000000000000	

Base Check Date									
Dead Weight Serial Number		0							
Dead Weight Gravitational Correction		1.0							
Temperature	75.0		150.0		250.0		350.0		degrees F
Pressure psia	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	
0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
2000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
4000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
6000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
8000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
10000.0	0.000		0.000		0.000		0.000		

Gamma Calibration MGS-C.J 133			Field Calibration on 22-FEB-2013 09:59
	Measured	Calibrated (API)	
Background	42	16	
Calibrator (Gross)	1839	712	
Calibrator (Net)	1797	696	

Gamma Constants MGS-C.J 133		Last Edited on 24-FEB-2013,08:17	
Gamma Calibrator Number	036		
Mud Density	1.01	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	

SP Calibration MGS-C.J 133			Field Calibration on 07-FEB-2013,10:52
	Measured	Calibrated (mV)	
Reference 1	-100.0	-100.0	
Reference 2	100.0	100.0	

High Resolution Temperature Calibration MGS-C.J 133			Field Calibration on 09-FEB-2013,12:46
	Measured	Calibrated(Deg F)	
Lower	0.00	0.00	
Upper	0.00	0.00	

High Resolution Temperature Constants MGS-C.J 133		Last Edited on 09-FEB-2013,12:46
Pre-filter Length	11	

Neutron Calibration MDN-B.J 423				Base Calibration on 20-FEB-2013 09:27	
				Field Check on 22-FEB-2013 10:05	
Base Calibration					
		Measured		Calibrated (cps)	
	Near	Far		Near	Far
	2823	86		3714	110
Ratio		32.681		33.764	
Field Calibrator at Base				Calibrated (cps)	
				2197	3245
Ratio				0.677	
Field Check				Calibrated (cps)	
				1336	1952
Ratio				0.685	

Neutron Constants MDN-B.J 423		Last Edited on 26-FEB-2013,09:13
Neutron Source Id	000	
Neutron Jig Number	000	
Epithermal Neutron	No	
Caliper Source for Processing	Bit Size	
Stand-off	0.00	inches
Mud Density	0.99	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	None	

Temperature	N/A	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	
FE Calibration MFE-B.A 247		Base Calibration on 20-FEB-2013 09:00 Field Check on 22-FEB-2013 09:46
Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	972.5	126.8
Base Check		279.3
Field Check		307.1
FE Constants MFE-B.A 247		Last Edited on 22-FEB-2013,09:43
Running Mode	No Sleeve	
MFE K Factor	0.1268	
Caliper Source for FE correction	Bit Size	
Caliper Value for FE correction	N/A	inches
Rm Source for FE correction	Temperature Corr	
Temp. for Rm Corr.	MGS External Temperature	
Stand-off	0.5	inches
High Resolution Temperature Calibration MAI-C.A 427		Field Calibration on 22-FEB-2013,09:43
	Measured	Calibrated(Deg F)
Lower	10.00	10.00
Upper	100.00	100.00
High Resolution Temperature Constants MAI-C.A 427		Last Edited on 22-FEB-2013,09:43
Pre-filter Length	11	
Induction Calibration MAI-C.A 427		Base Calibration on 27-JAN-2013,14:35 Field Check on 26-FEB-2013 09:06
Base Calibration		
Test Loop Calibration		
Channel	Low High	Low High
1	14.4 434.9	9.3 966.2
2	5.8 355.4	7.6 821.4
3	2.7 244.4	5.2 566.0
4	1.8 129.3	2.6 279.2
Array Temperature	22.9	Deg F
Channel	Base Check (mmho/m) Low High	Field Check (mmho/m) Low High
1		16.7 4139.1
2		31.8 3771.3
3		31.3 3211.2
4		20.1 2125.2
Deep		19.5 2021.0
Medium		45.9 4291.0
Shallow		46.9 5679.8
Array Temperature		31.1 Deg F
Induction Constants MAI-C.A 427		Last Edited on 27-FEB-2013,18:54
Induction Model	RtAP-WBM	
Caliper for Borehole Corr.	Density Caliper	
Hole Size for Borehole Correction	N/A	inches
Tool Centred	No	
Stand-off Type	Fins	
Stand-off	0.50	inches
Number of Fins on Stand-off	6.0000	
Stand-off Fin Angle	60.00	degrees
Stand-off Fin Width	0.5000	inches

Borehole Corr. Rm Source	Temperature Corr		
Temp. for Rm Corr.	MGS External Temperature		
Squasher Start	0.0020	mhos/metre	
Squasher Offset	N/A	mhos/metre	
Borehole Normalisation			
DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections			
Channel 1	0.00	mmhos/metre	
Channel 2	0.00	mmhos/metre	
Channel 3	0.00	mmhos/metre	
Channel 4	0.00	mmhos/metre	

Apparent Porosity and Water Saturation Constants			
Archie Constant (A)	1.00		
Cementation Exponent (M)	2.00		
Saturation Exponent (N)	2.00		
Saturation of Water for Apor	100.00	percent	
Resistivity of Water for Apor and Sw	0.05	ohm-m	
Resistivity of Mud Filtrate for Sw	0.00	ohm-m	
Source for Rt	0.00		
Source for Rxo	0.00		

Photo Density Calibration MPD-D.A 471

Base Calibration on 04-FEB-2013 13:31
Field Check on 26-FEB-2013 09:13

Density Calibration				
Base Calibration		Measured		Calibrated (sdu)
	Near	Far	Near	Far
Reference 1	54416	27473	59869	31110
Reference 2	22802	2732	24557	2522
Field Check at Base				
	1278.8	1479.3		
Field Check				
	1278.3	1468.6		

PE Calibration				
Base Calibration		Measured		Calibrated
	WS	WH	Ratio	Ratio
Background	247	1133		
Reference 1	24125	54197	0.450	0.369
Reference 2	7025	22646	0.315	0.271
Field Check at Base				
	247.3	1133.4		
Field Check				
	244.4	1133.0		

Density Constants MPD-D.A 471

Last Edited on 24-FEB-2013,08:18

Density Source Id	243	
Nylon Calibrator Number	633	
Aluminium Calibrator Number	633	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.01	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	

Matrix Density (gm/cc)
 2.71
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00

Depth (ft)
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00
 0.00

Caliper Calibration MPD-D.A 471

Base Calibration on 04-FEB-2013 23:20
 Field Calibration on 22-FEB-2013 09:54

Base Calibration

Reading No

Measured

Calibrator Size (in)

1

19168

3.99

2

28887

5.97

3

38925

7.99

4

48364

9.86

5

59511

11.93

6

N/A

N/A

Field Calibration

Measured Caliper (in)
 6.02

Actual Caliper (in)
 5.96

DOWNHOLE EQUIPMENT

C:\Data\Sandridge\Sandridge Krug 1725 1-35H\MMS158 Depthlog.dta

Shuttle Running Tool 3.5")

SRT-A.A 40 LG: 6.62 ft WT: 37.5 lb OD: 2.52 in

MBS-F.A 200v Compact Battery Sub

MBS-F.A 114 LG: 10.61 ft WT: 70.5 lb OD: 2.24 in

Compact Memory Sub E.B

MMS-E.B 158 LG: 5.20 ft WT: 37.5 lb OD: 2.24 in

Compact Tool Isolator sub.

MTI-B.A 63 LG: 1.54 ft WT: 13.2 lb OD: 2.24 in

Compact Short Gamma

MGS-C.J 133 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in

Compact Collar Locator

MCL-B.J 72 LG: 3.17 ft WT: 26.5 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint

SKJ-E.B 458 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor

SHA-J.A 432 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

MIS-A.A Compact Inline Bowspring sub

MIS-A.A 247 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact Neutron

MDN-B.J 423 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper

MPD-D.A 471 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in

MIS-D.A Compact Inline Bowspring sub

MIS-D.A 315 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in



42.89 ft

NPRL - Limestone Neutron Por.

35.65 ft

AVOL - Annular Volume

35.65 ft

HVOL - Hole Volume

35.65 ft

CLDC - Density Caliper

33.72 ft

DPRL - Limestone Density Por.

33.72 ft

DEN - Compensated Density

33.72 ft

DCOR - Density Correction

SHA-J.B Compact Swivel Head Adaptor
 SHA-J.B 595 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint
 SKJ-E.B 477 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

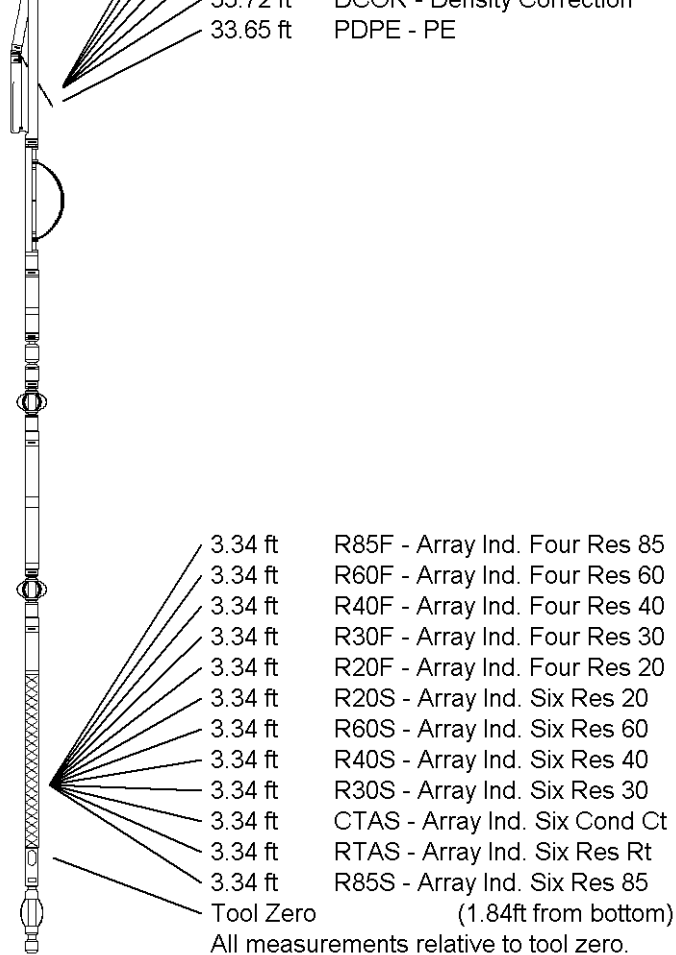
MIS-B Compact Inline Standoff sub
 MIS-B 102 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Focussed Electric
 MFE-B.A 247 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

MIS-B Compact Inline Standoff sub
 MIS-B 107 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Induction
 MAI-C.A 427 LG: 12.52 ft WT: 48.5 lb OD: 2.24 in

Total Length: 88.36 ft Weight: 637.1 lb



COMPANY	SANDRIDGE EXPLORATION & PRODUCTION
WELL	KRUG 1725 1-35H
FIELD	PROSPECT NESS
PROVINCE/COUNTY	NESS
COUNTRY/STATE	USA / KANSAS

Elevation Kelly Bushing	2412.00	feet	First Reading	6182.00	feet
Elevation Drill Floor	2412.00	feet	Depth Driller	6236.00	feet
Elevation Ground Level	2392.00	feet	Depth Logger	6216.00	feet



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