



Weatherford

**CML MESSENGER SHUTTLE
COMPACT PHOTO DENSITY
COMPENSATED NEUTRON LOG**

COMPANY

SANDRIDGE ENERGY

WELL

SUTTON 1-9H

FIELD

CHEYENNE VALLEY

PROVINCE/COUNTY

NESS

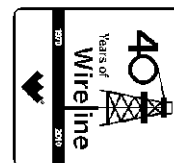
COUNTRY/STATE

USA / KANSAS

LOCATION

SHL: 200' FSL & 475' FEL

BHL: 330' FNL & 400' FEL



SEC

TWP
18S

RGE

25W

Other Services

MAI

Permit Number

CMI

Permanent Datum G.L., Elevation 2494 feet

Log Measured From DF

Drilling Measured From D.F. @ 20 FEET

Date

11-JUL-2012

Elevations:

KB 2514.00
DF 2514.00
GL 2494.00

feet

Run Number

ONE

Depth Driller

8869.00 feet

Depth Logger

8869.00 feet

First Reading

8790.00 feet

Last Reading

4990.00 feet

Casing Driller

4990.00 feet

Casing Logger

4990.00 feet

Bit Size

6.125

inches

Hole Fluid Type

WATER

Density / Viscosity

9.25 lb/USg 49.00 CP

PH / Fluid Loss

9.00 4.20 ml/30Min

Sample Source

FLOWLINE

Rm @ Measured Temp

0.70 @ 96.0 ohm-m

Rmf @ Measured Temp

0.56 @ 96.0 ohm-m

Rmc @ Measured Temp

0.84 @ 96.0 ohm-m

Source Rmf / Rmc

CALC CALC

Rm @ BHT

0.51 @131.0 ohm-m

Time Since Circulation

0 HOURS

Max Recorded Temp

131.00 deg F

Equipment Name

COMPACT

Equipment / Base

18006 OKC

Recorded By

D. ROWELL

Witnessed By

J. BORELL

S.O.# / AFE

3535169 / DC11946

W. SCOTT

BOREHOLE RECORD

Last Edited: 11-JUL-2012 09:08

Bit Size
inches

6.125

Depth From
feet

4990.00

Depth To
feet

8869.00

CASING RECORD

Type

Size
inches

Depth From
feet

Shoe Depth
feet

Weight
pounds/ft

SURFACE

9.625

0.00

1575.00

36.00

INTERMED

7.000

0.00

4990.00

26.00

REMARKS

WLS SOFTWARE VERSION 12.02.4401 USED.
200V COMPACT MEMORY LOGGING - SHUTTLE MESSENGER SYSTEM

HARDWARE: BHA: SMS, SLS, SSS, 3 JOINTS OF 3.5" IF GARAGE PIPE, SLL, SUL, 3.5" DP, SFV, 3.5" DP

MPD: ECCENTRALISED SINGLE MIS.D, SHA, SKJ (BOTTOM)

MDN: SKJ, SHA, ECCENTRALISED DOUBLE MIS.D (TOP)

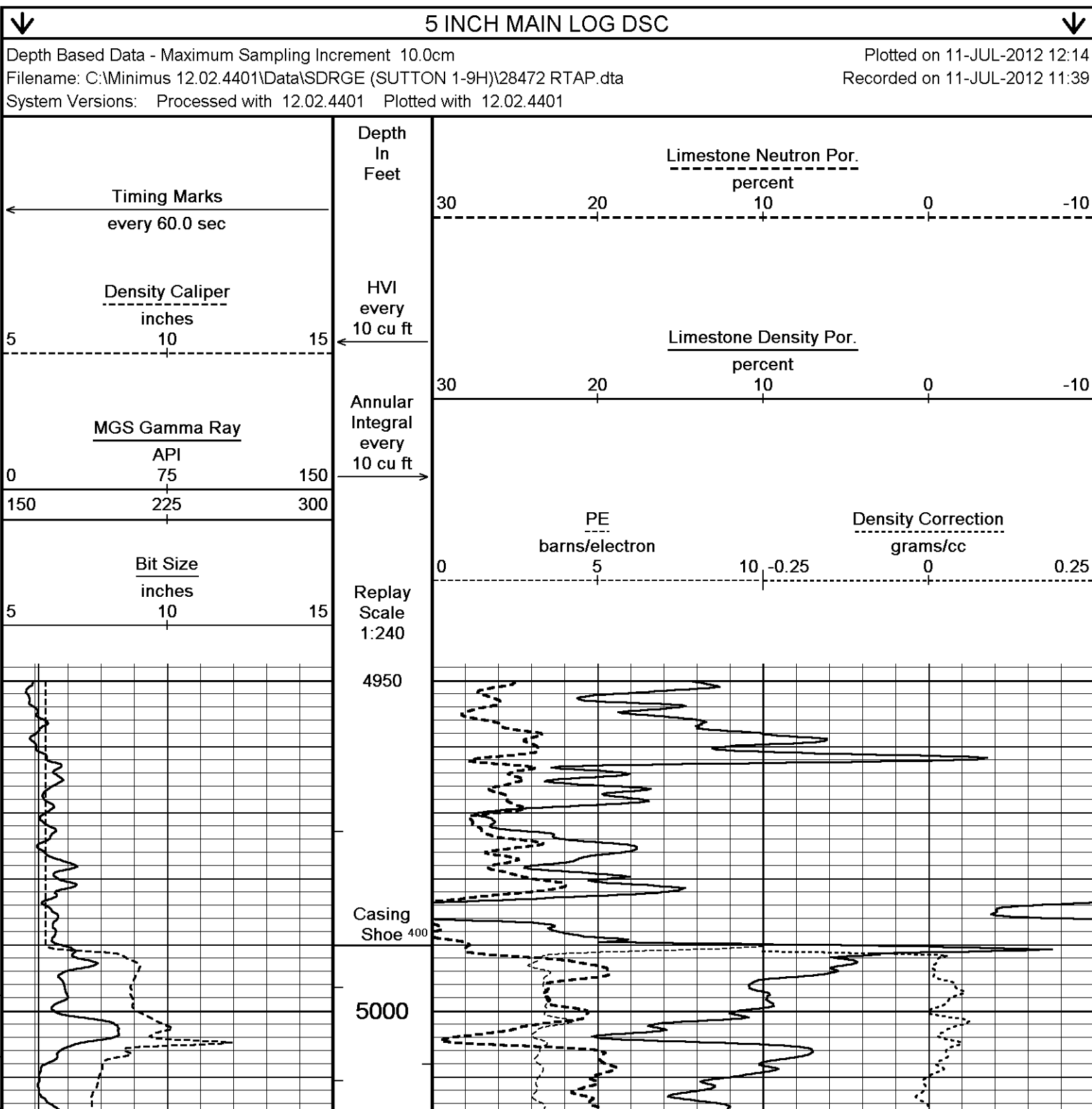
MAI: 0.5" STANDOFF- MIS.E INLINE STANDOFF (TOP), INDUCTION STANDOFF ASSEMBLY (BOTTOM)

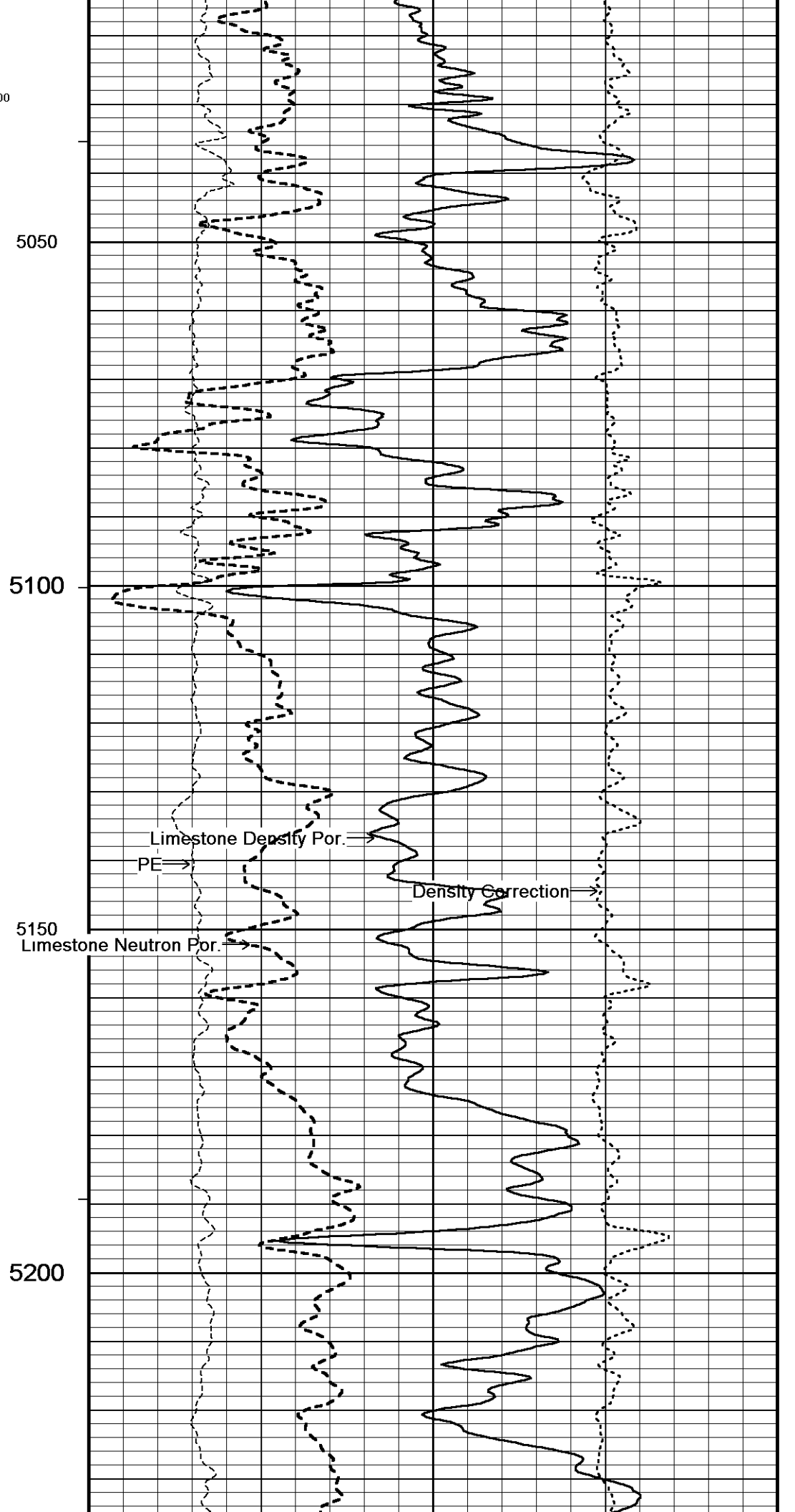
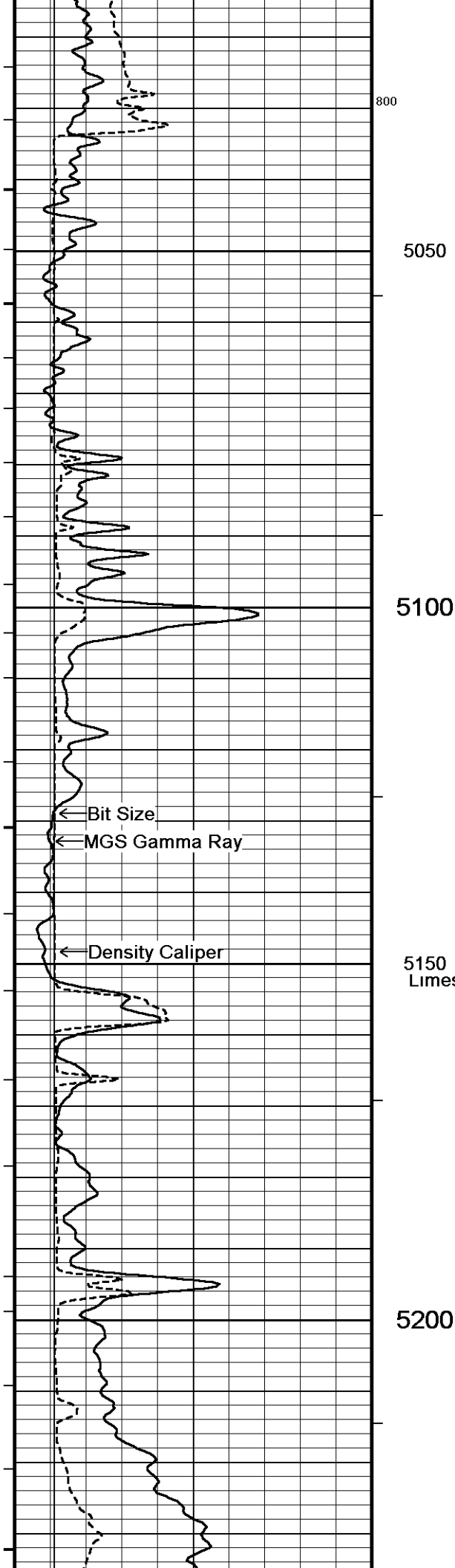
CMI: FULLY CENTRALIZED

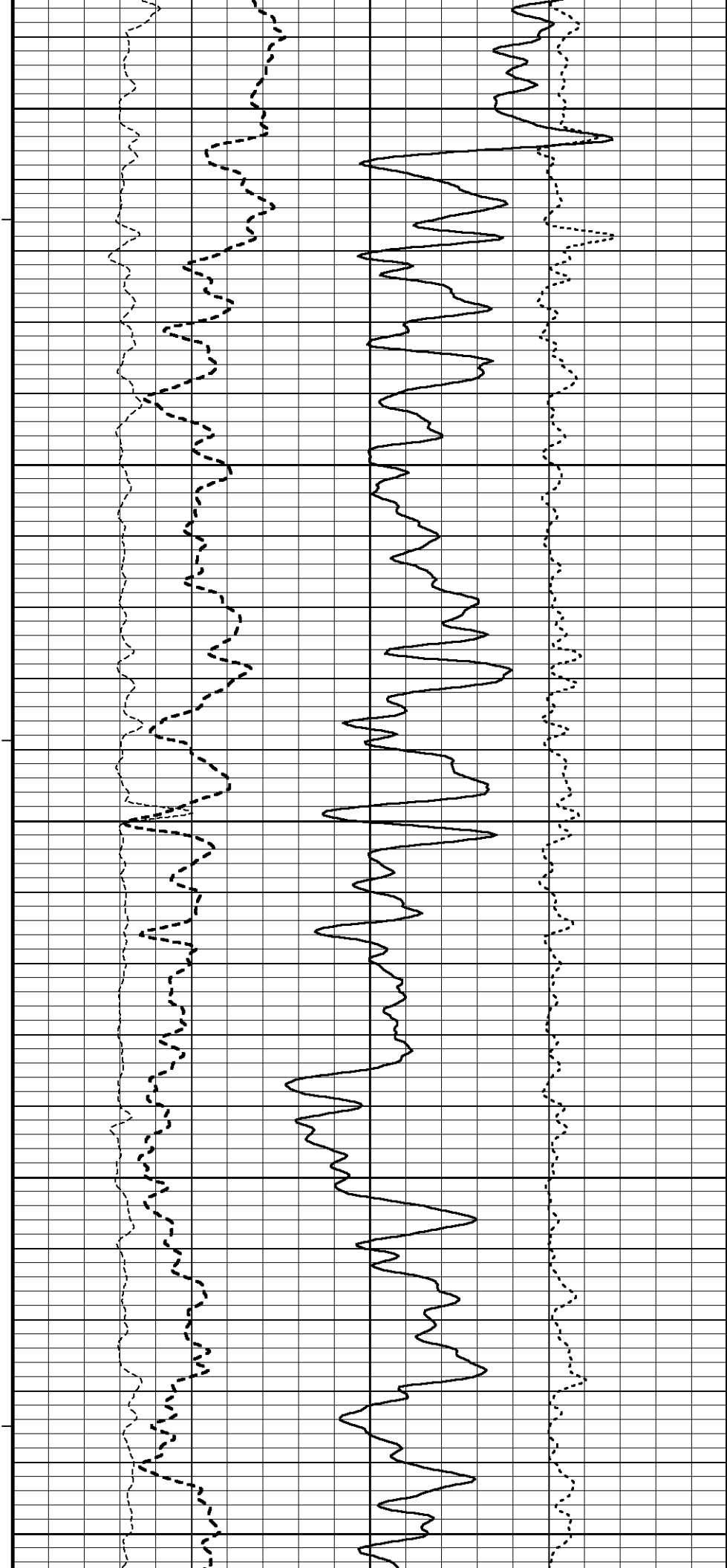
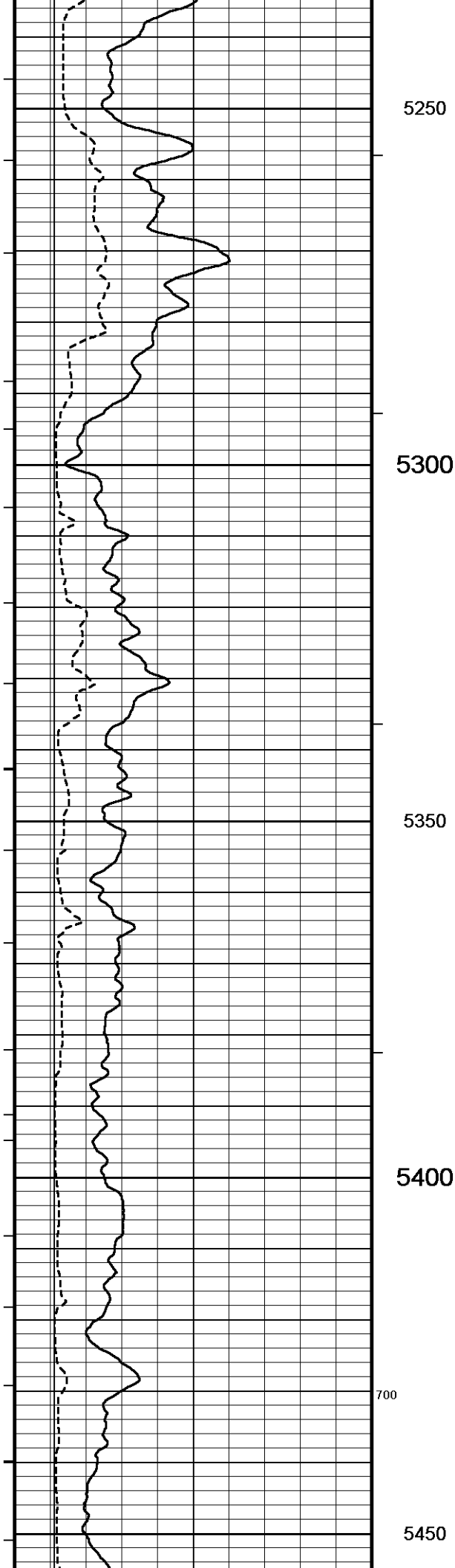
DEPTH MEASURED USING ADVANTAGE RIG DEPTH SYSTEM CORRECTED TO PIPE STRAP. VERIFIED WITH MWD LOGS.

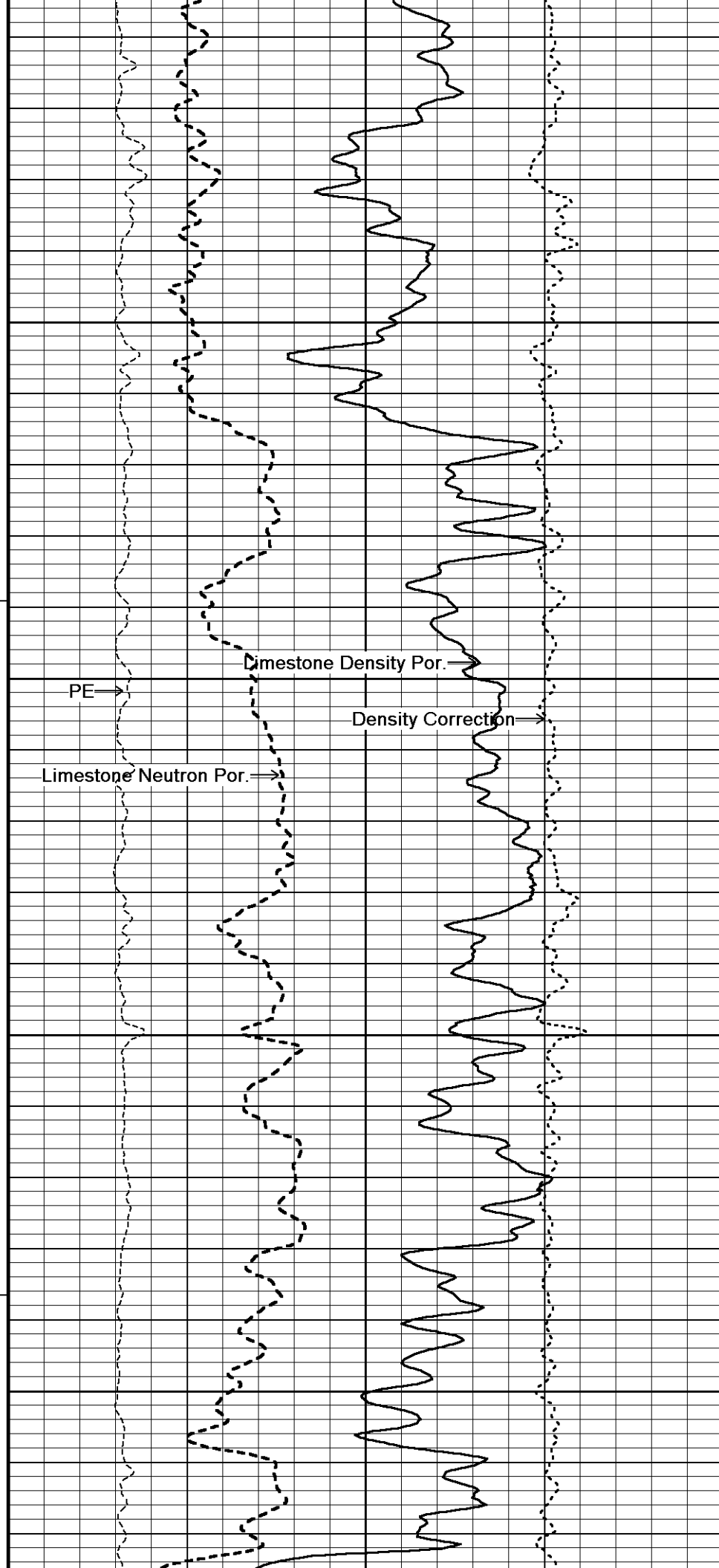
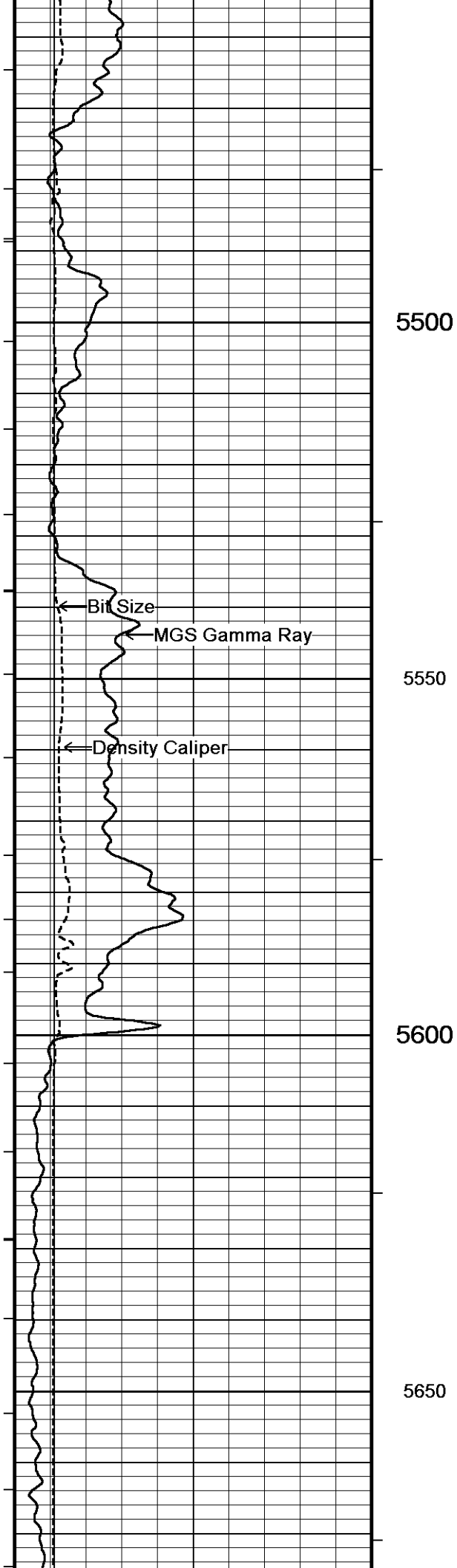
TOOLS DEPLOYED WITH END OF BHA AT : 8754 FT.
AFTER DEPLOYMENT LOGGING TOOL WAS AT:8854 FT.

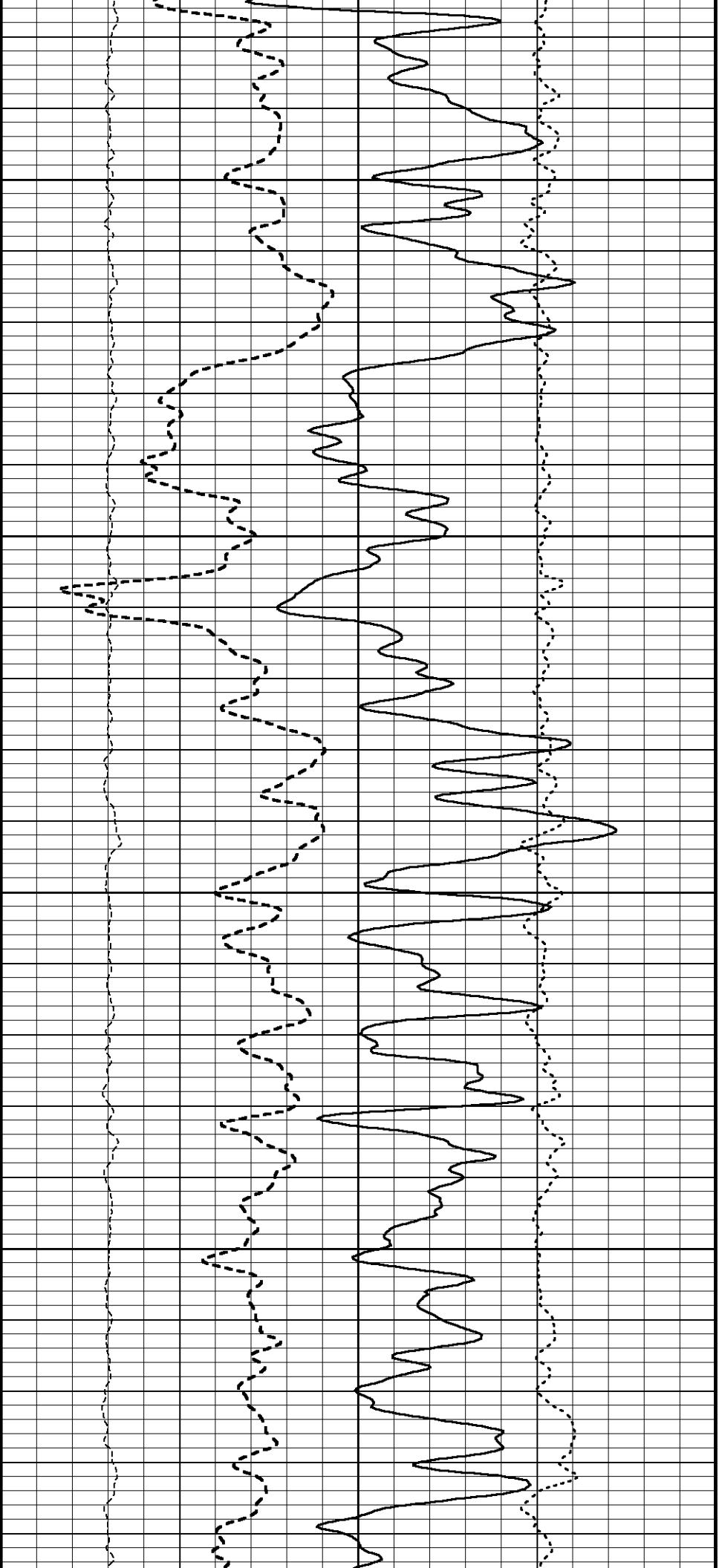
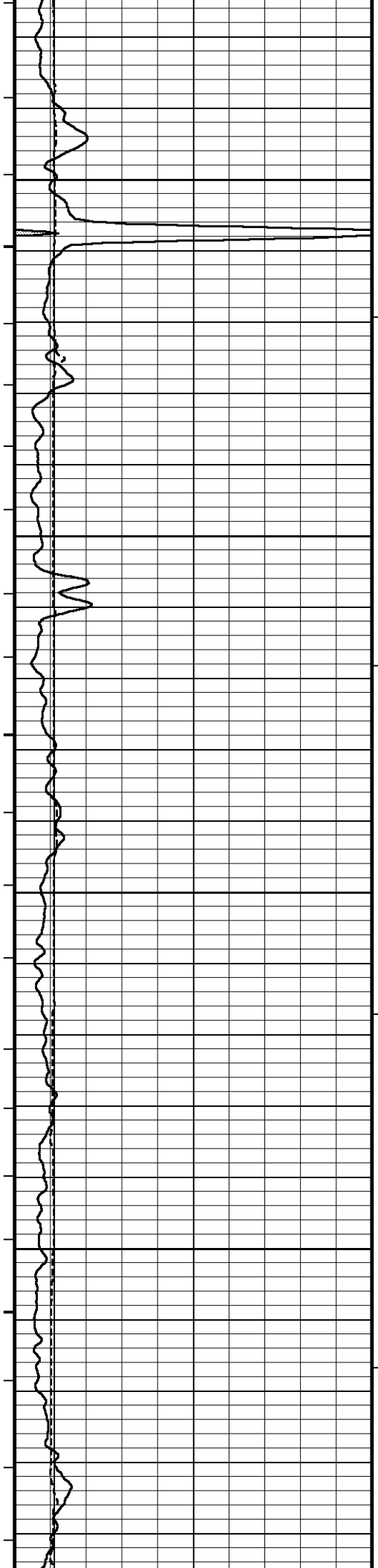
4.5 INCH PRODUCTION CASING WAS USED TO CALCULATE ANNULAR HOLE VOLUMES

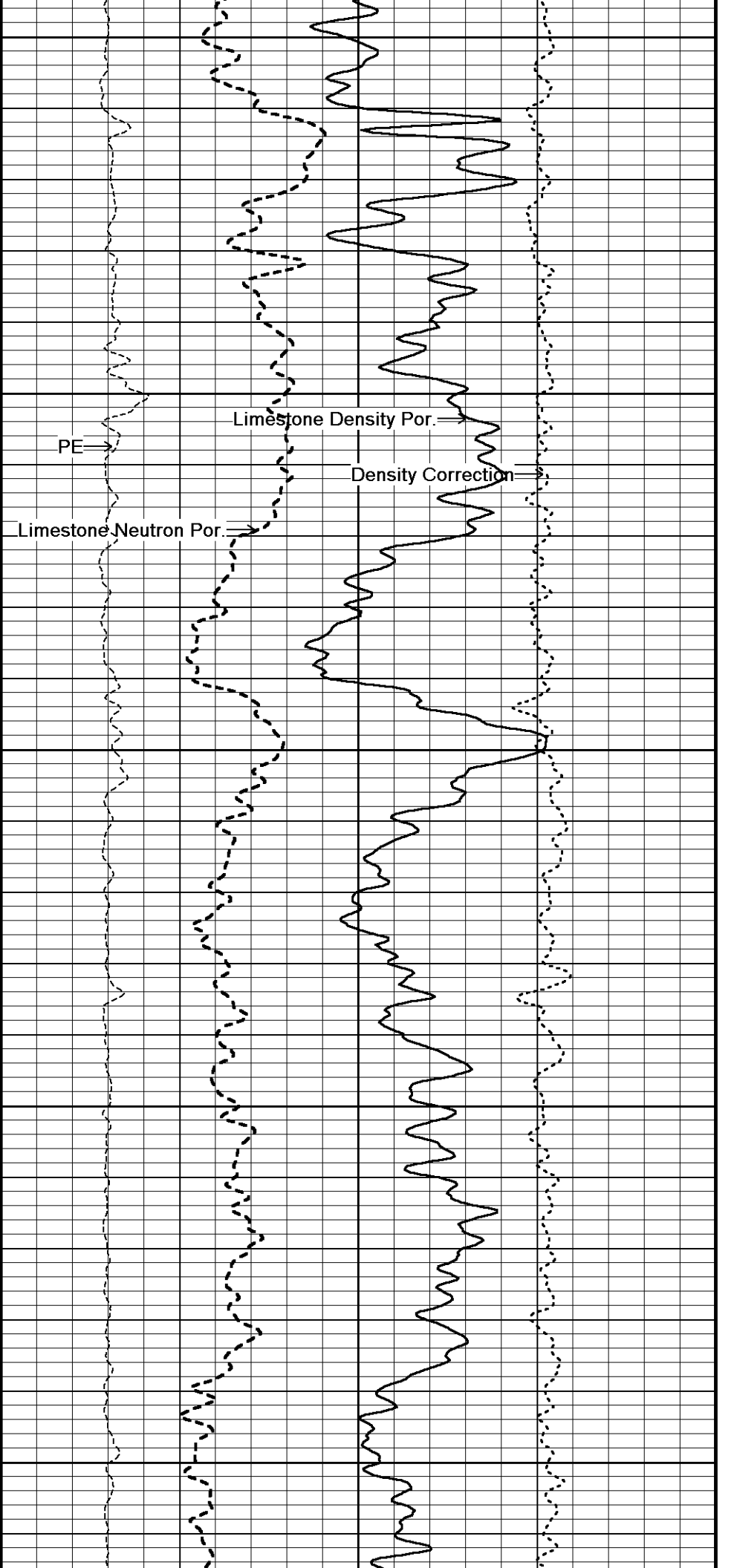
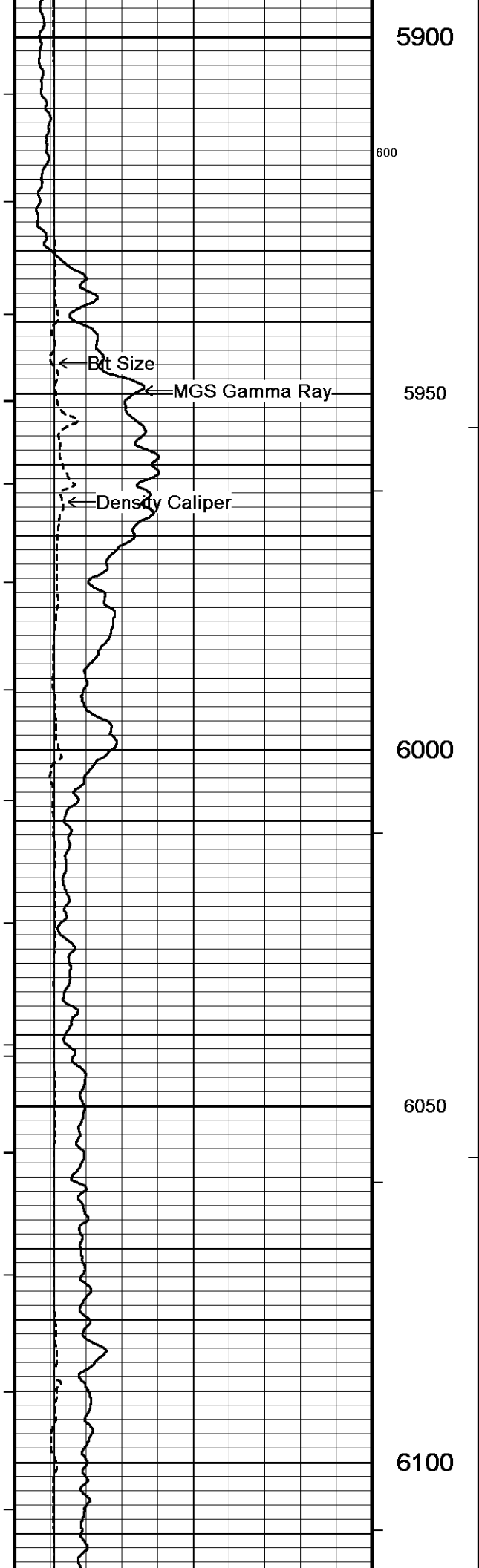


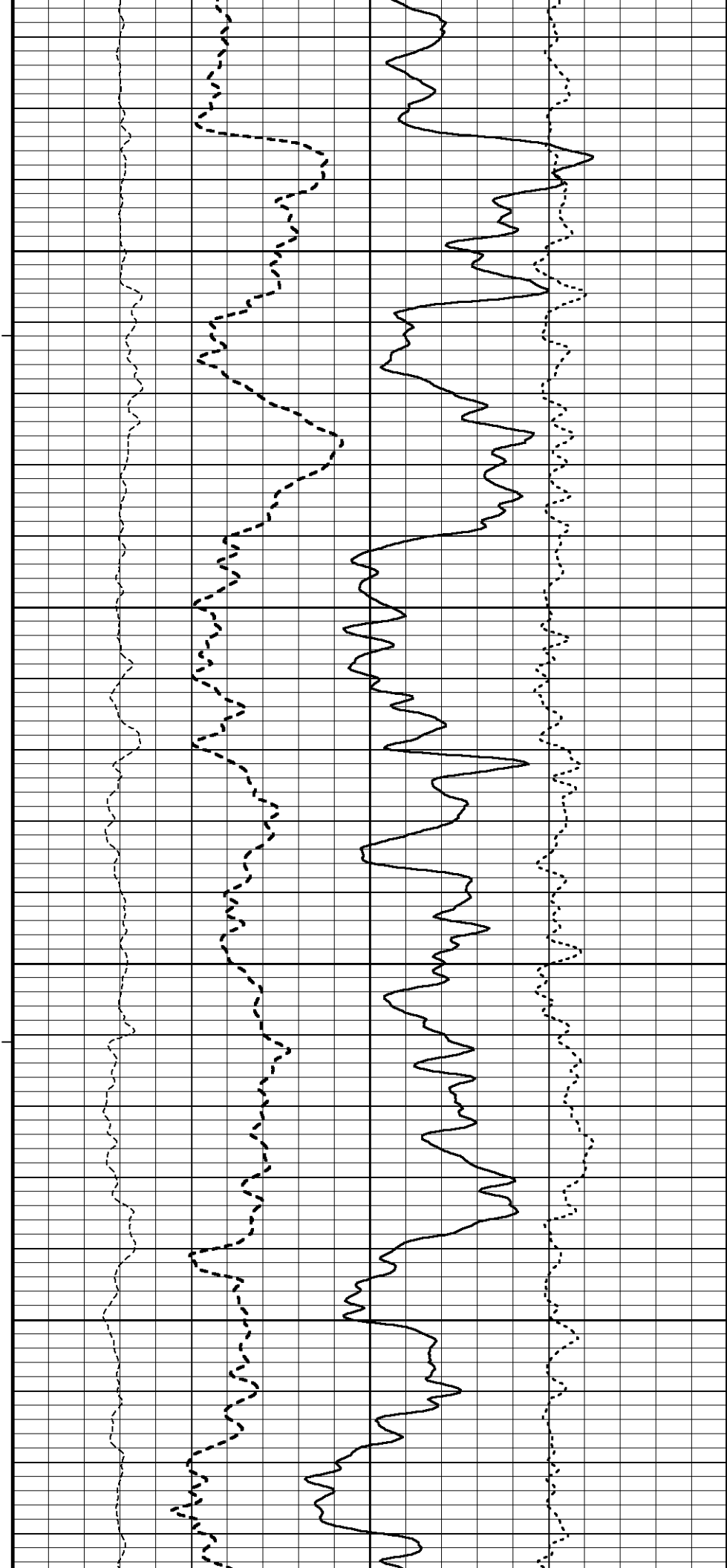
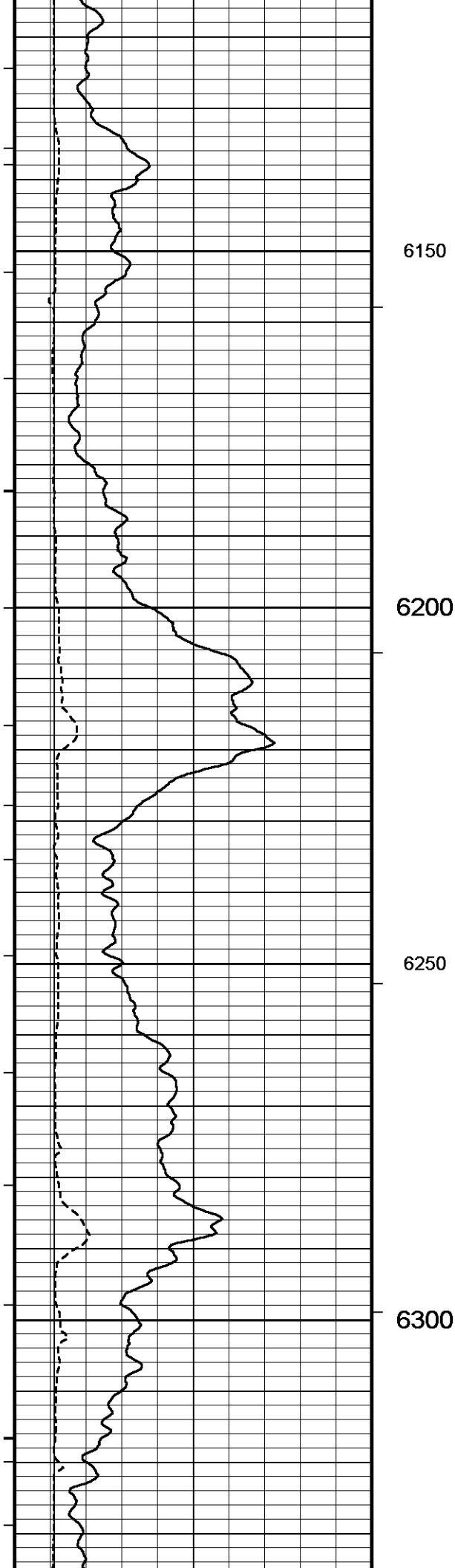


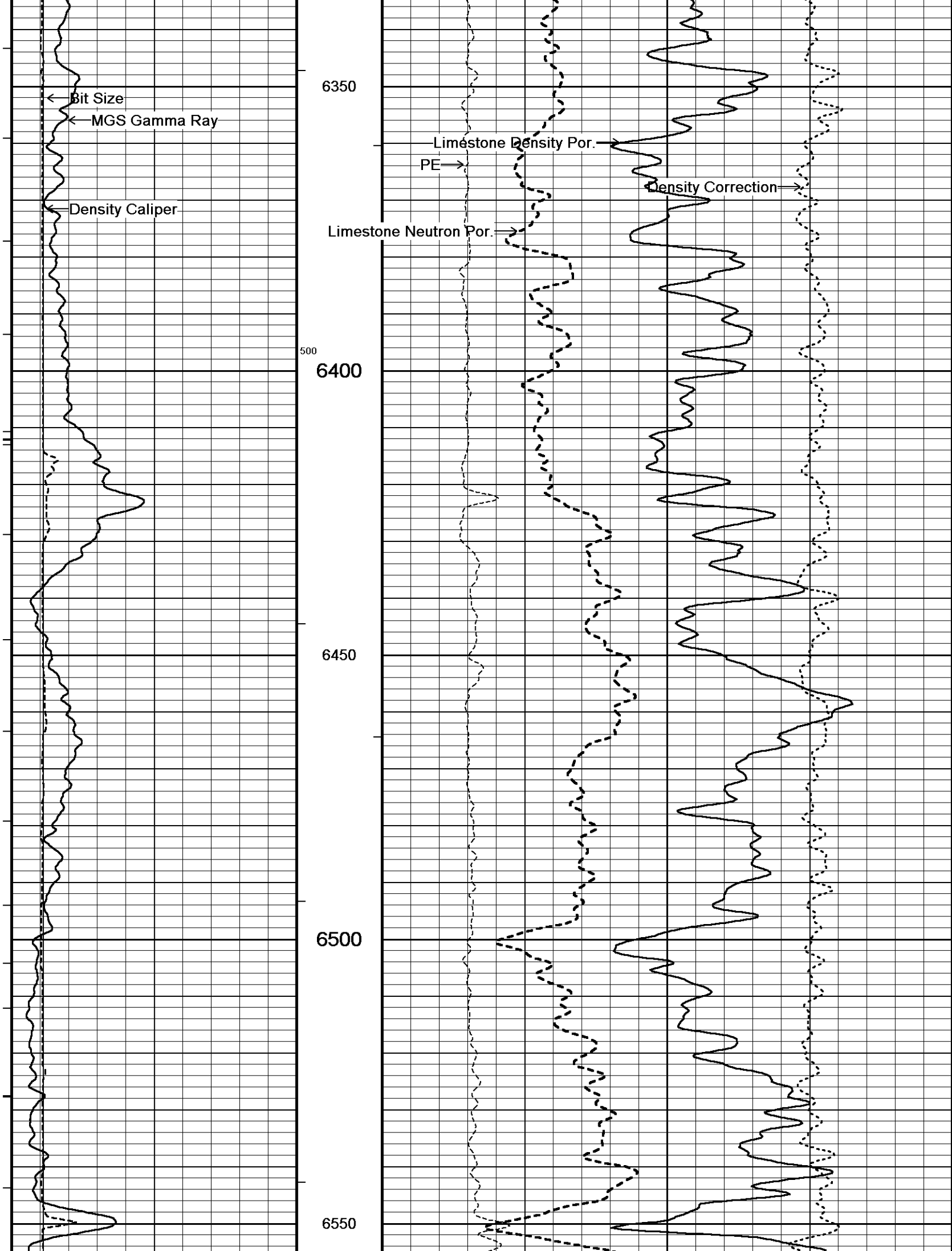


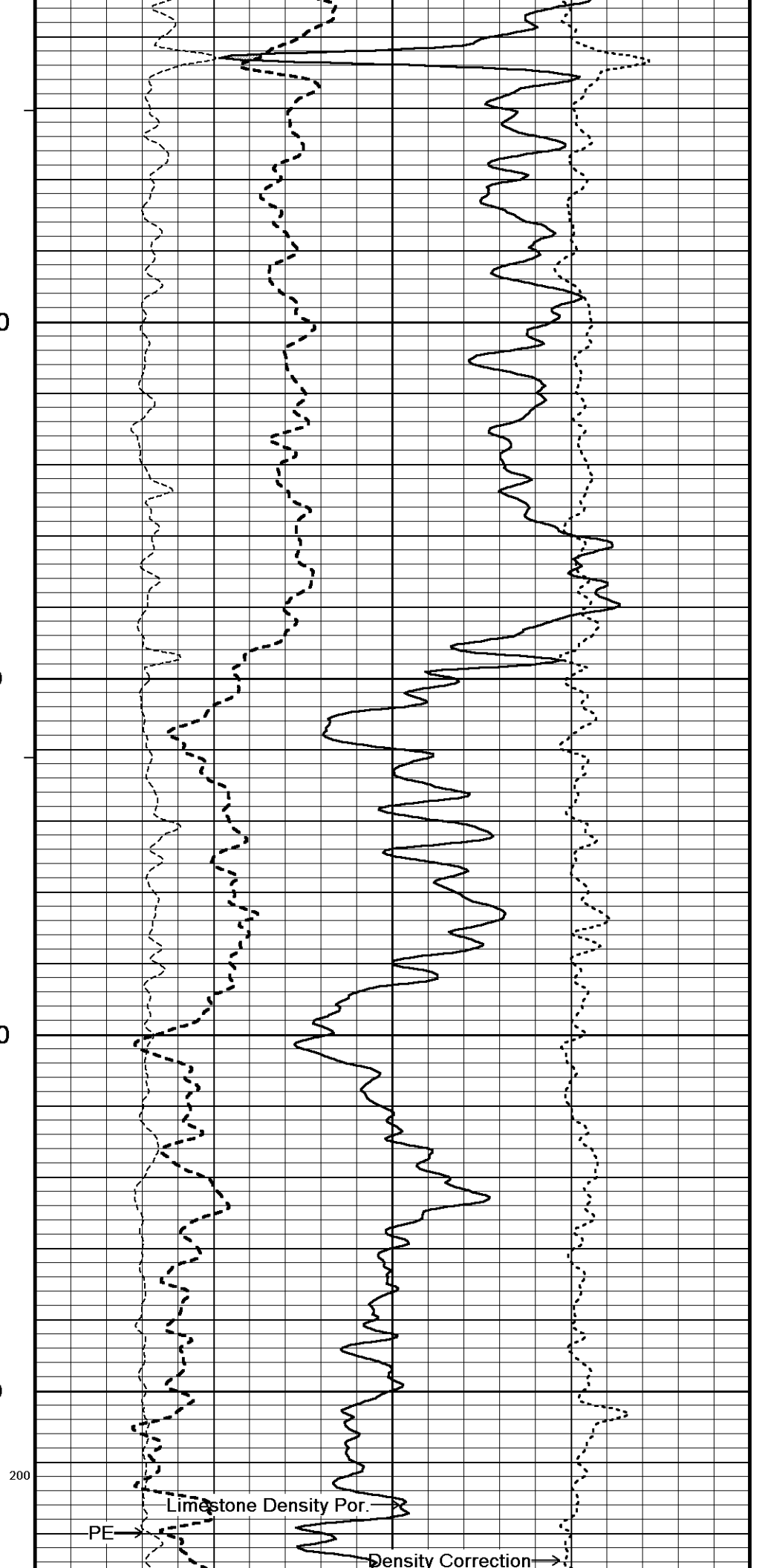
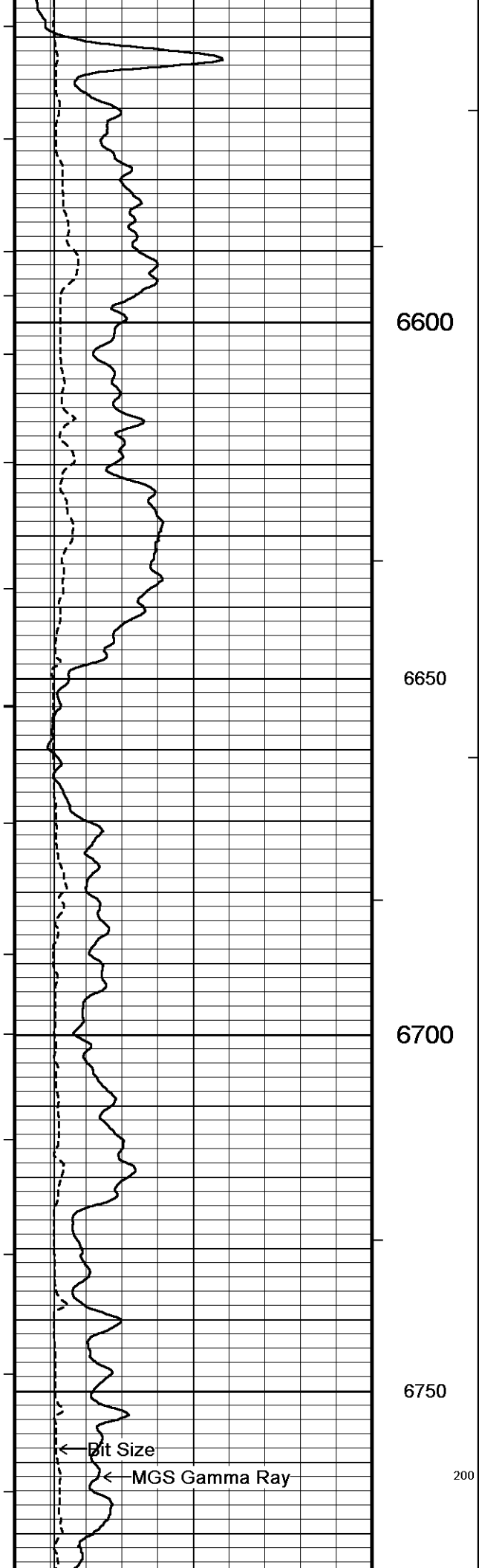


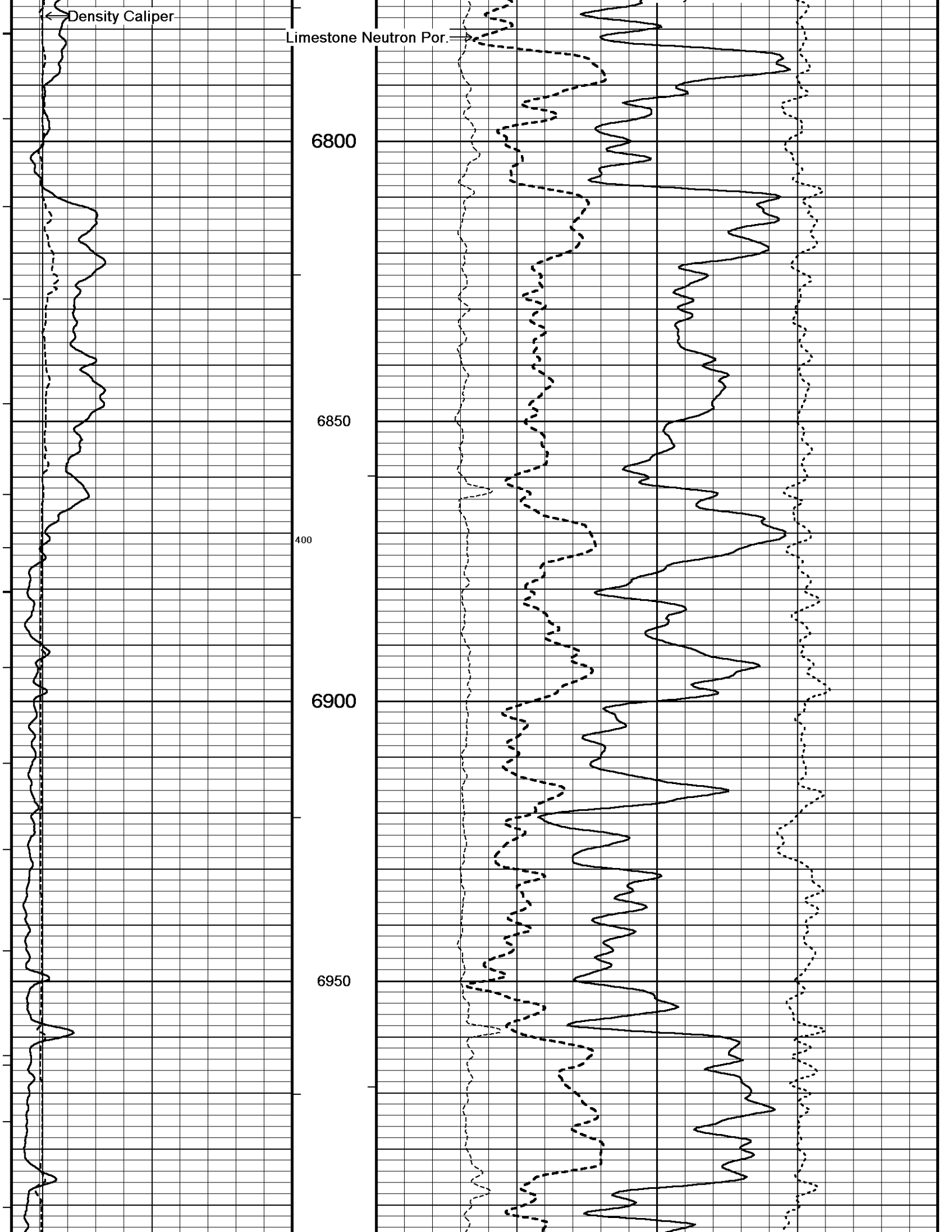


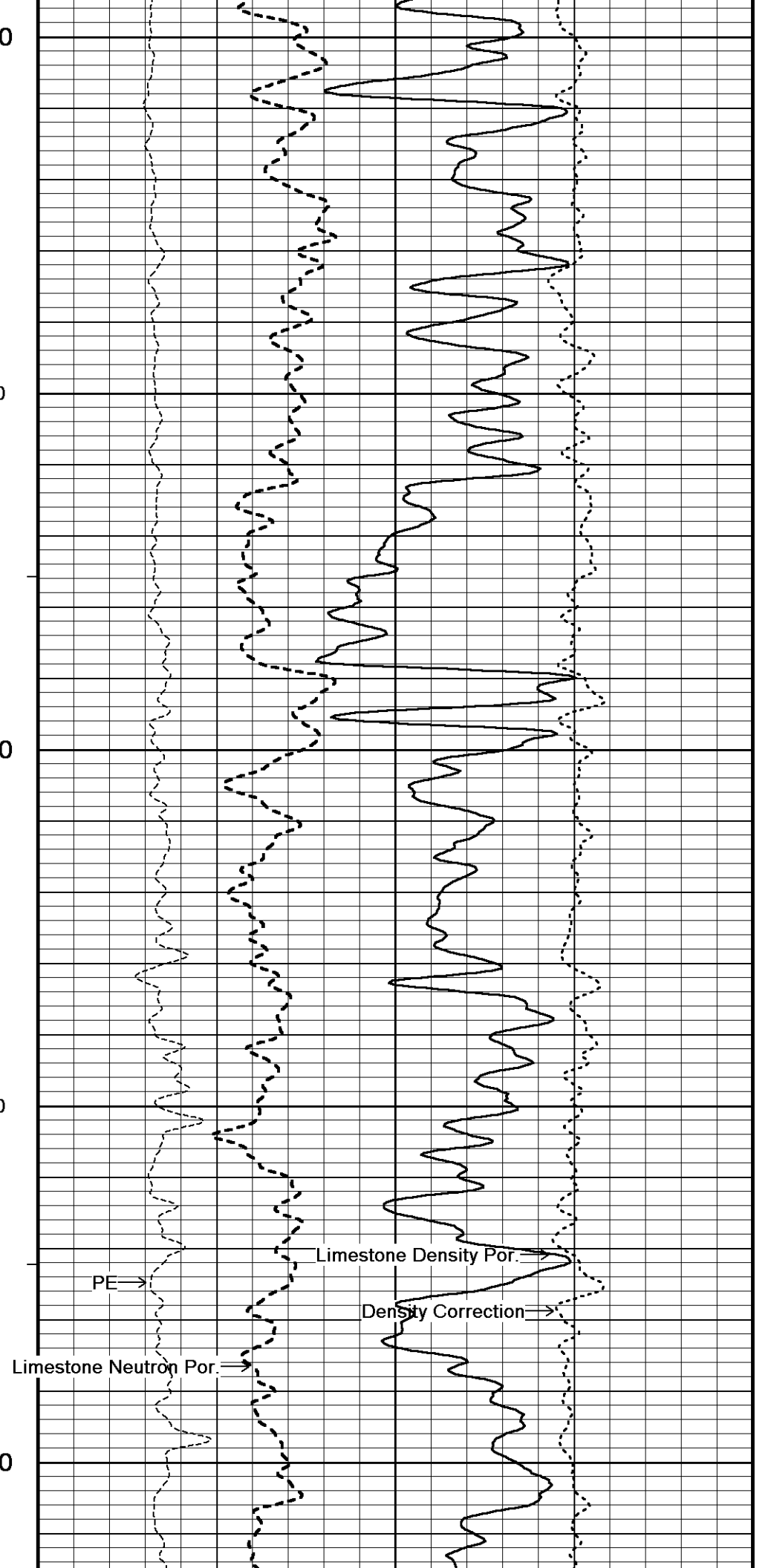
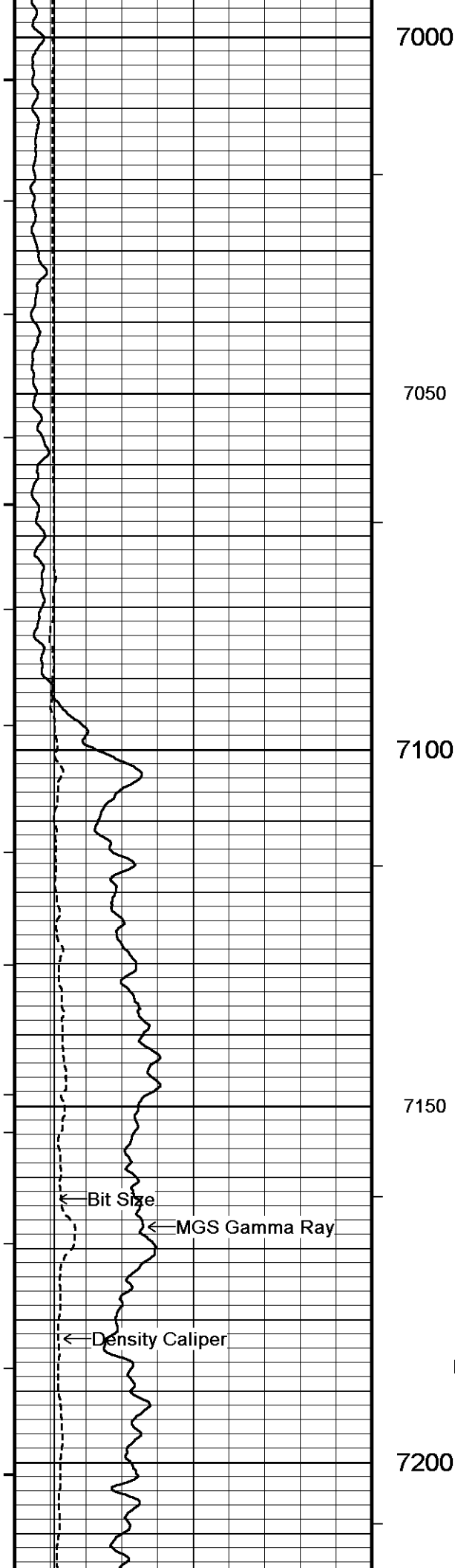


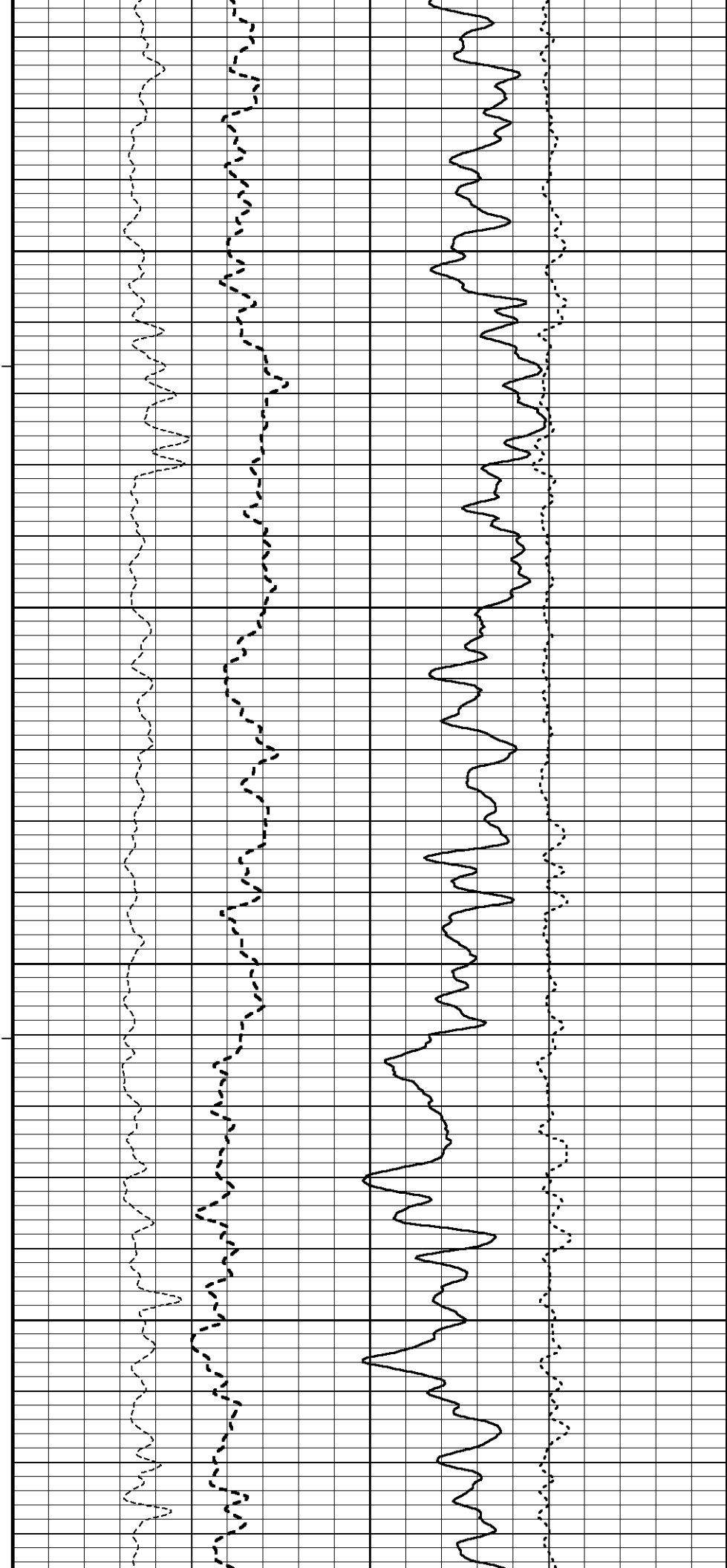
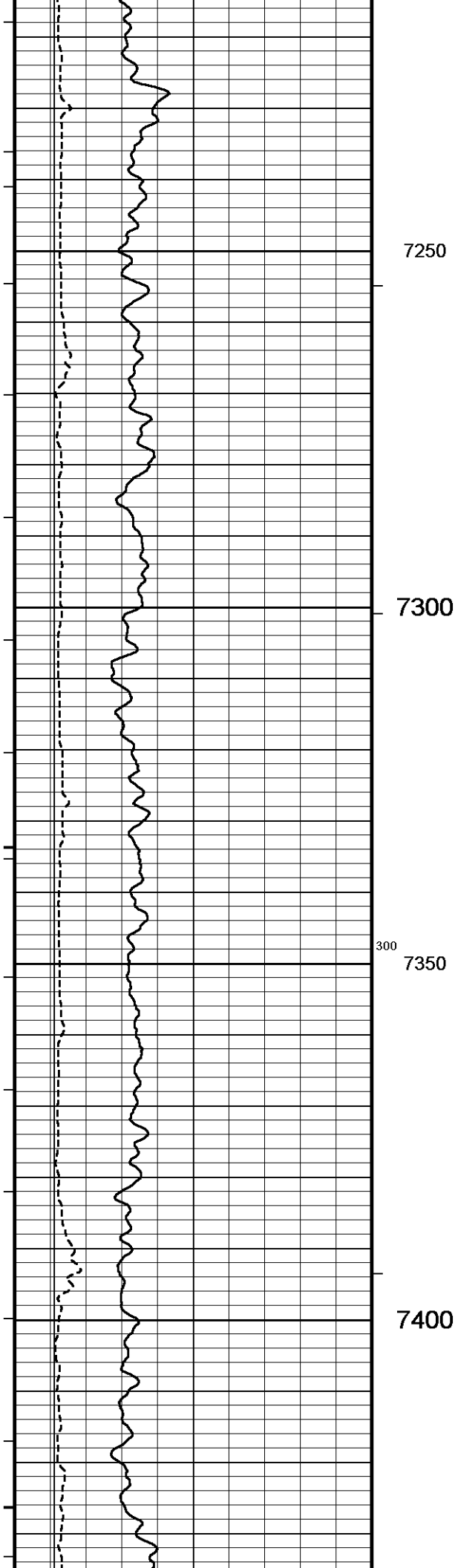


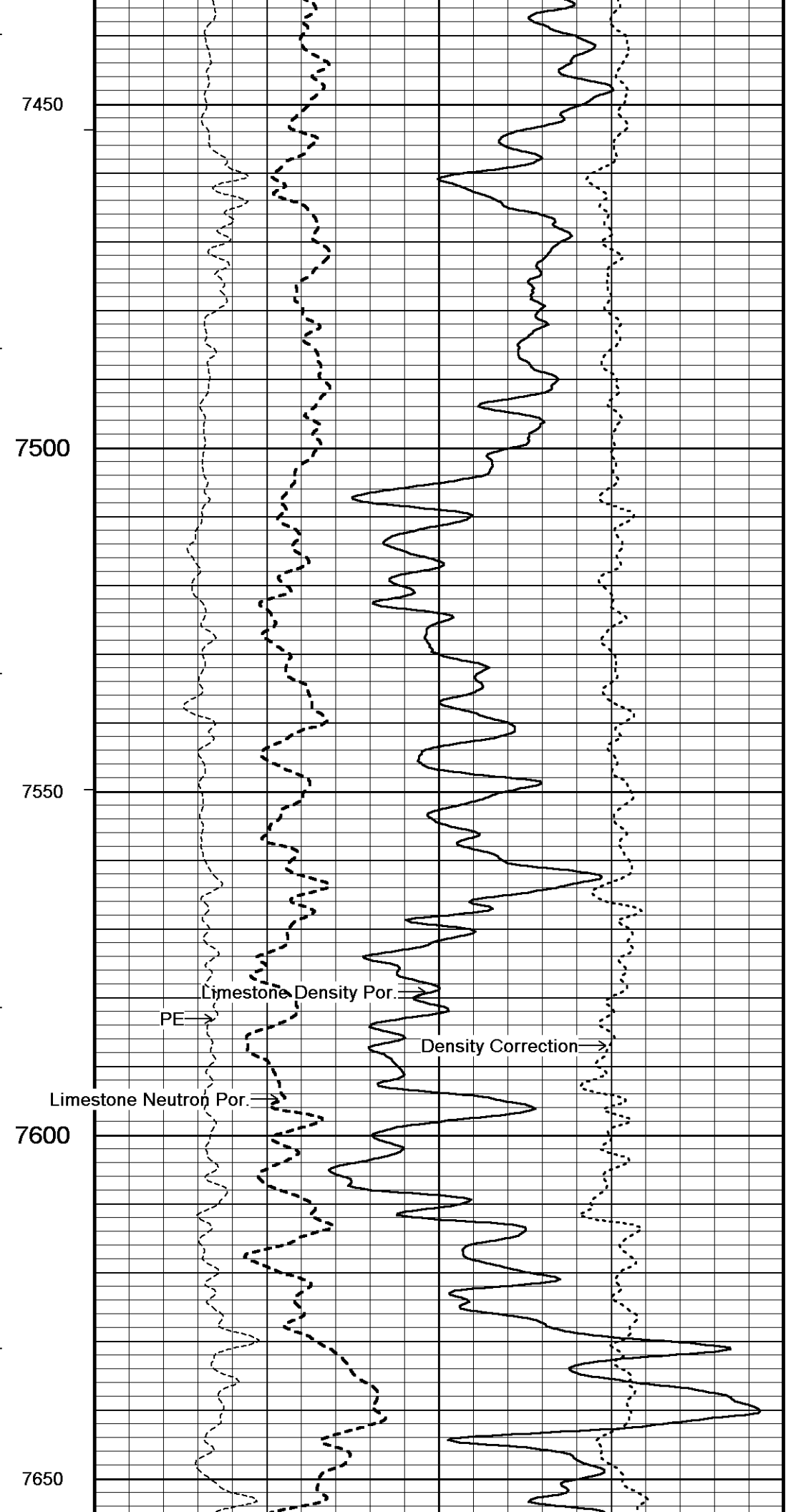
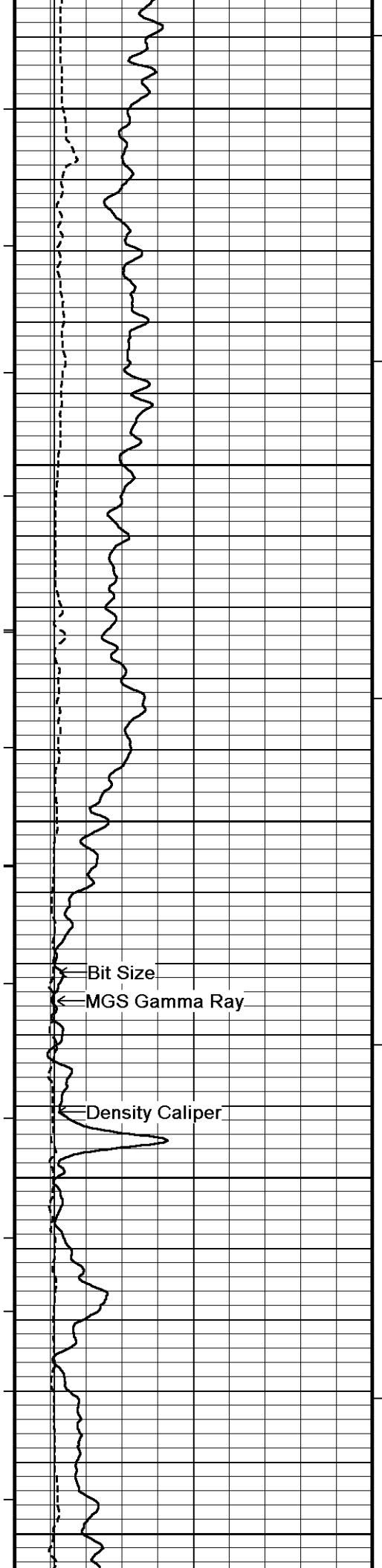


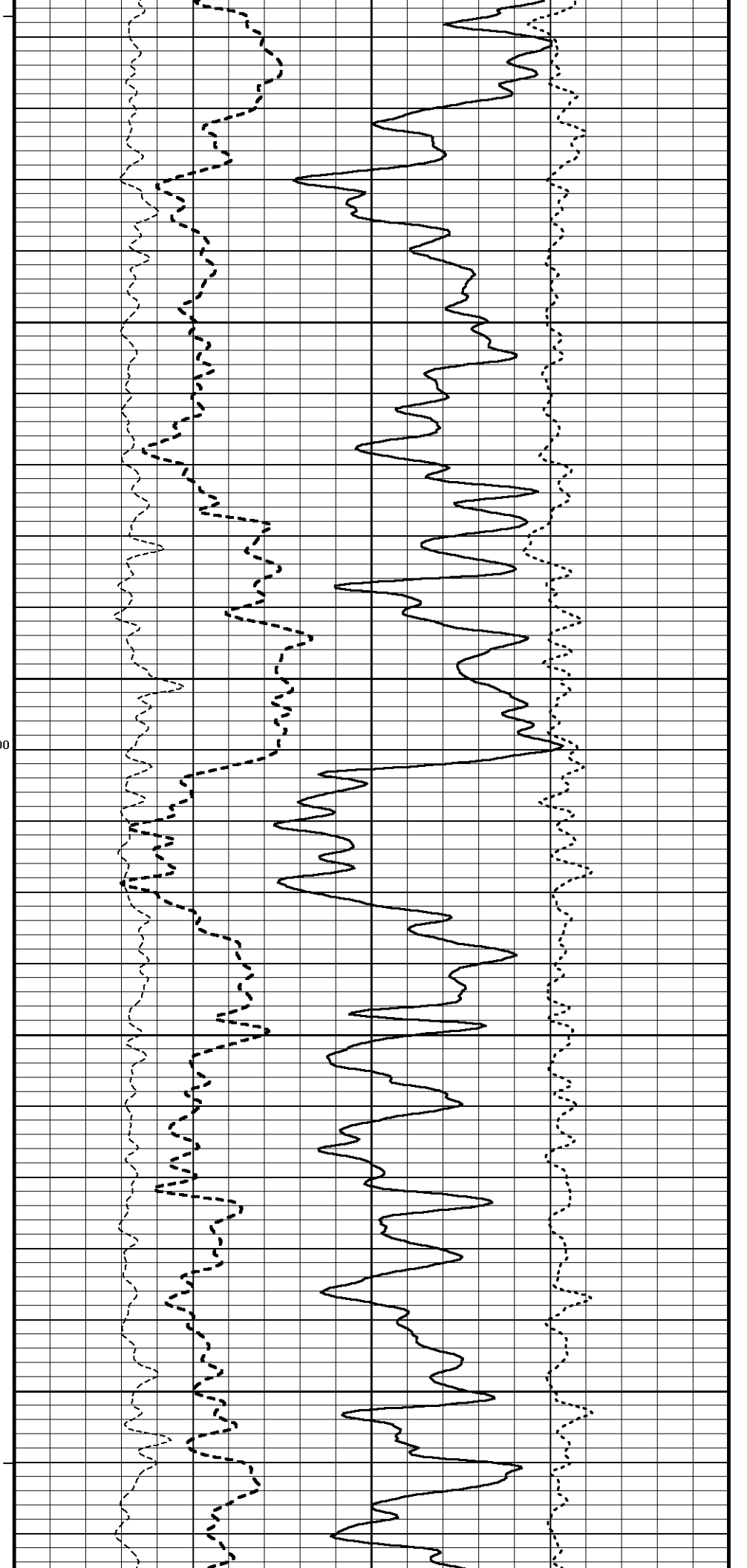
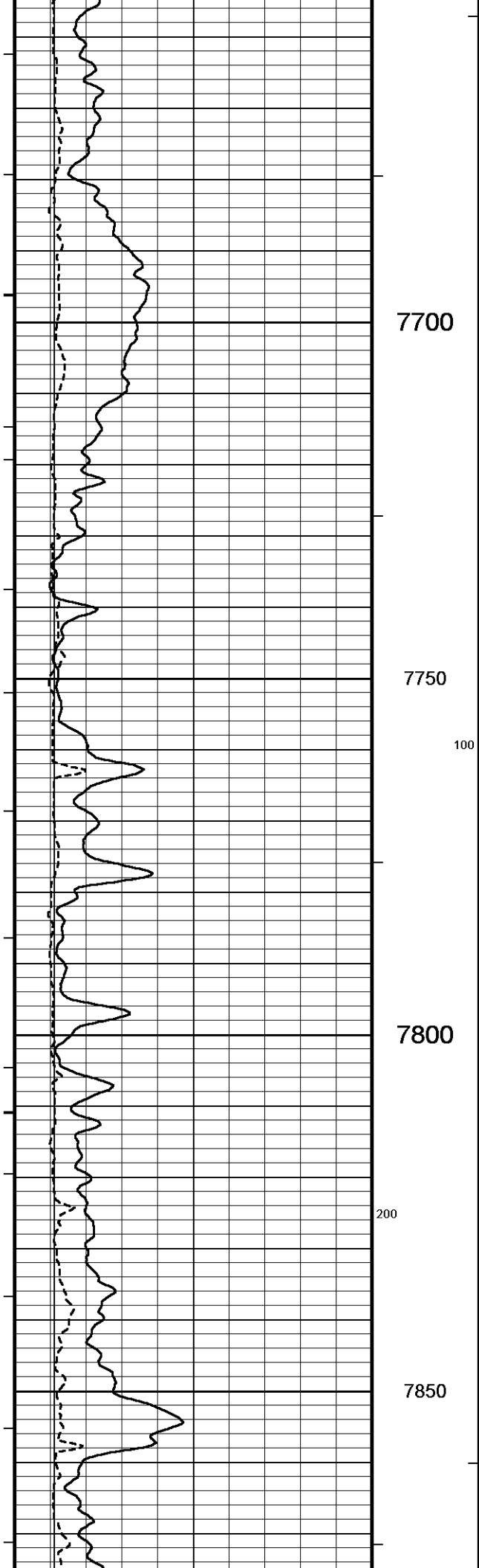


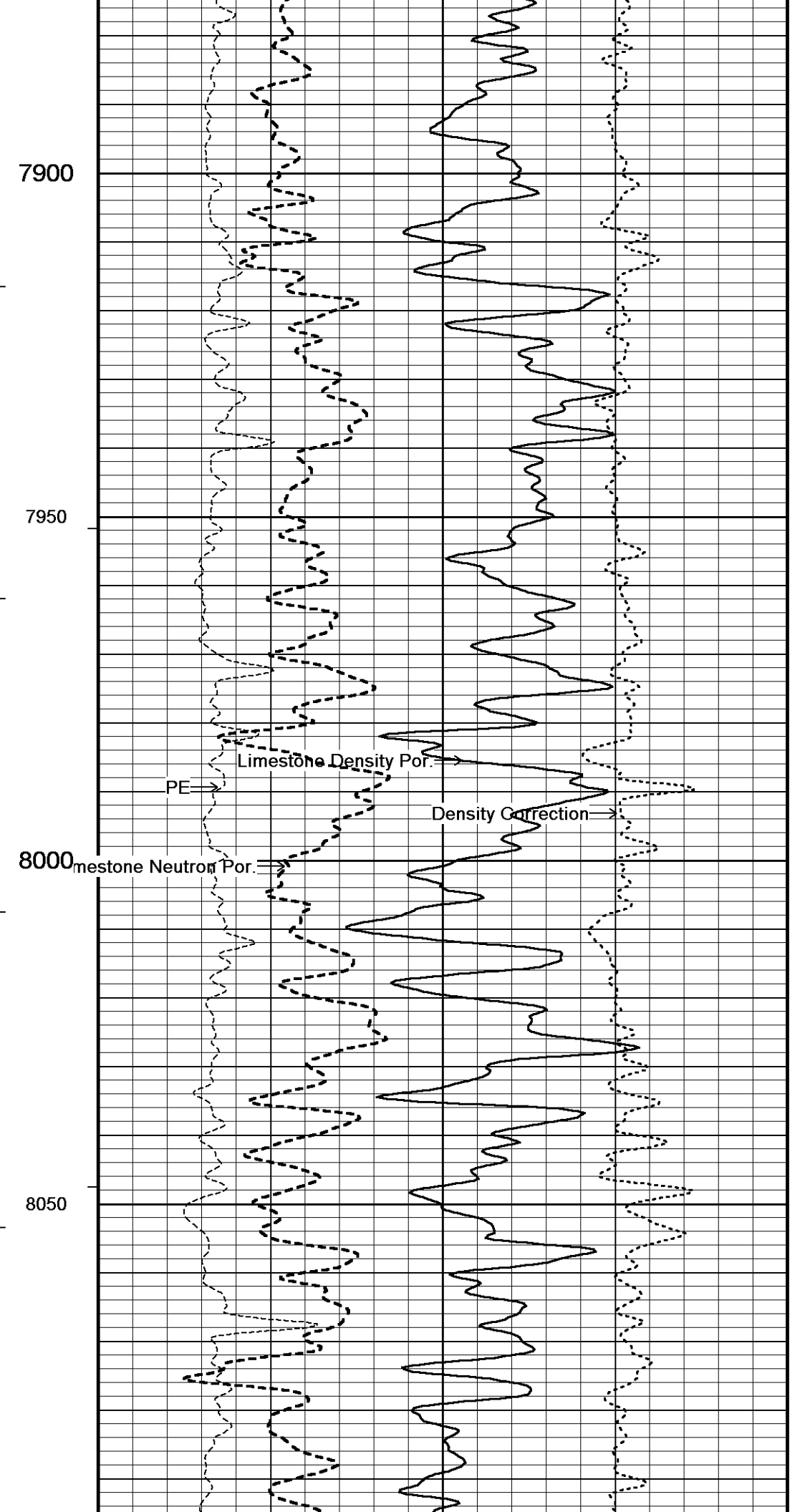
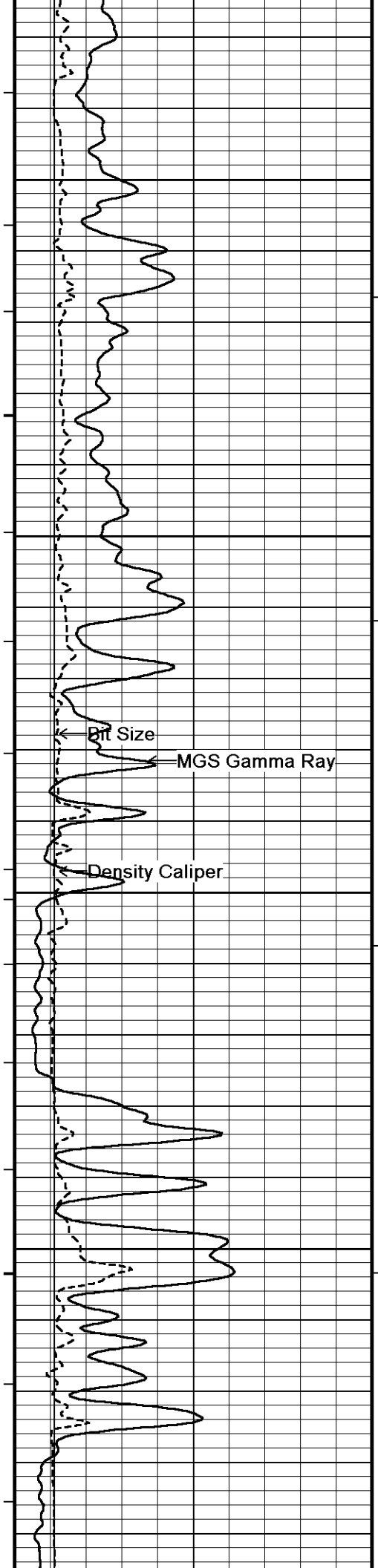


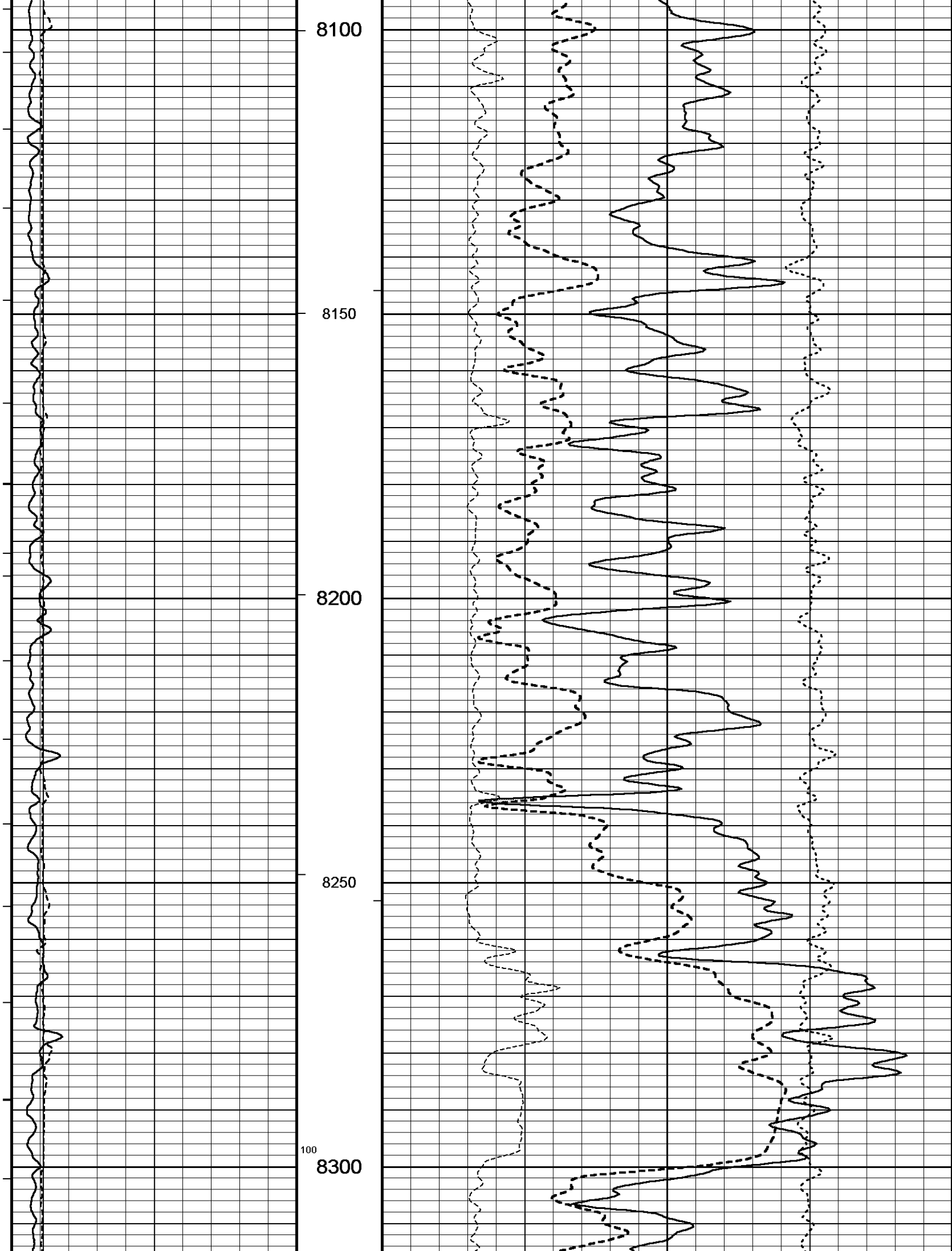


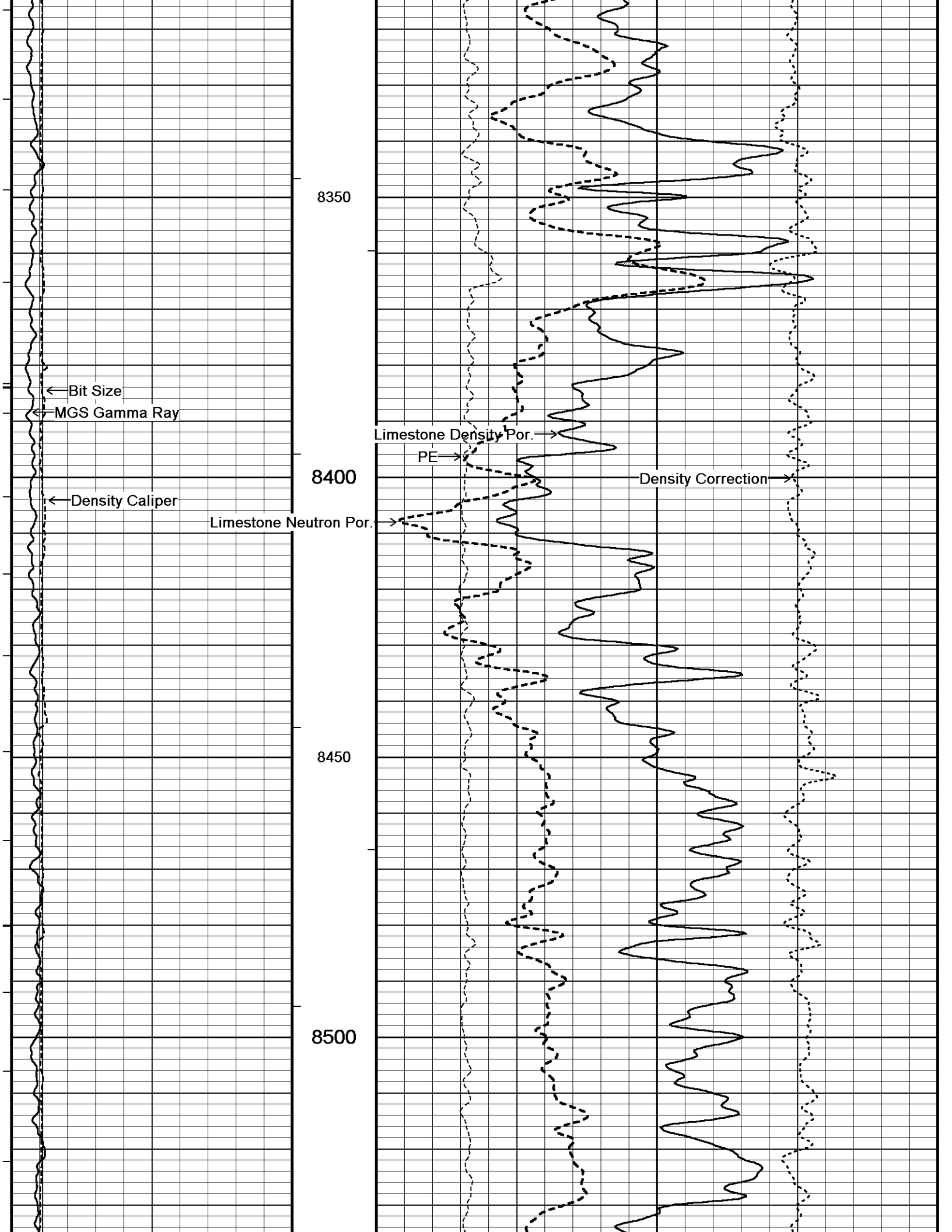


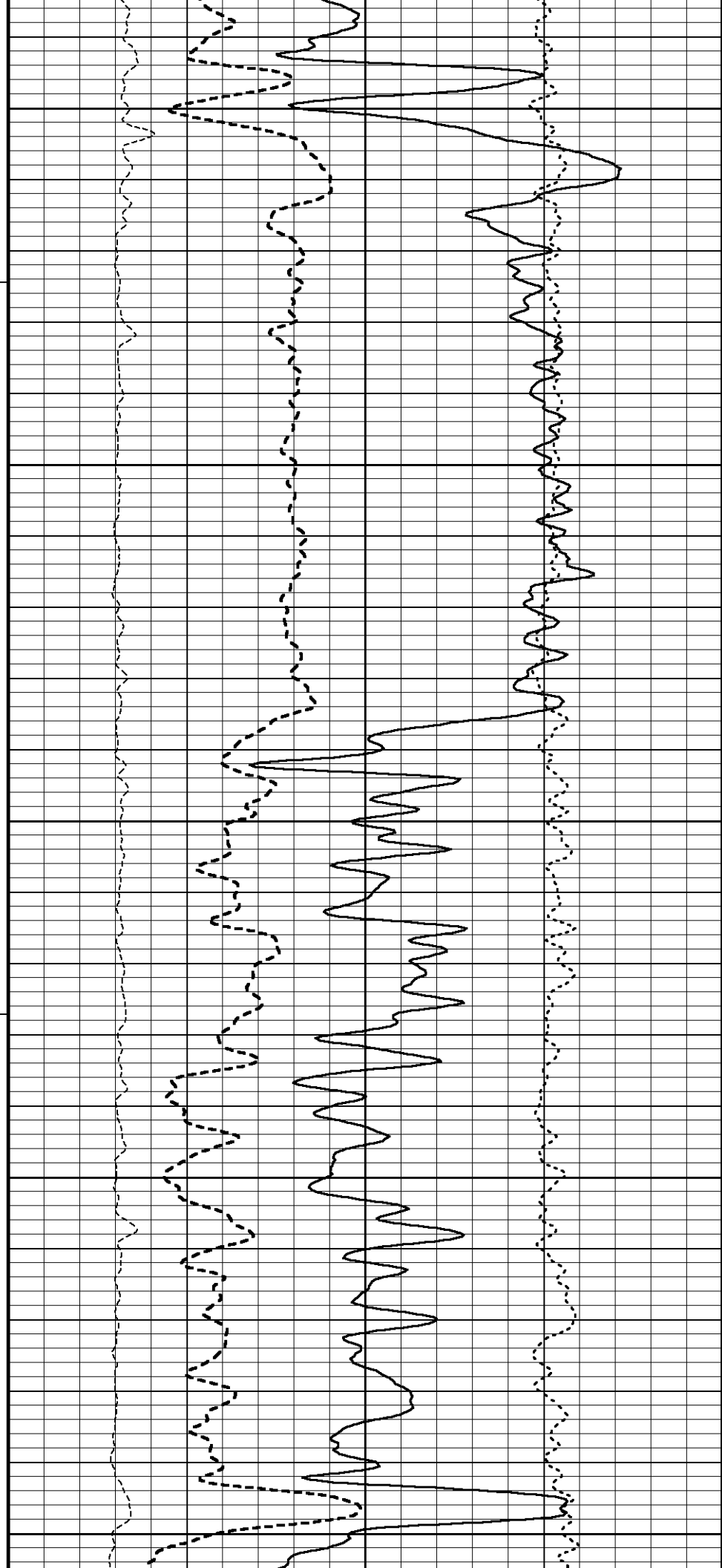
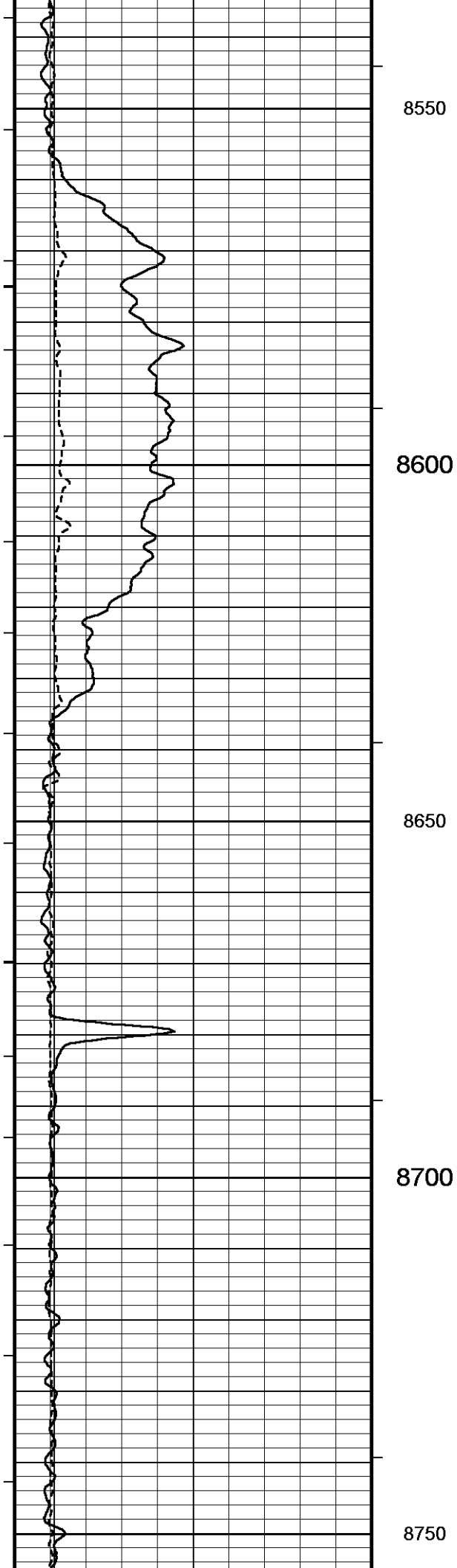


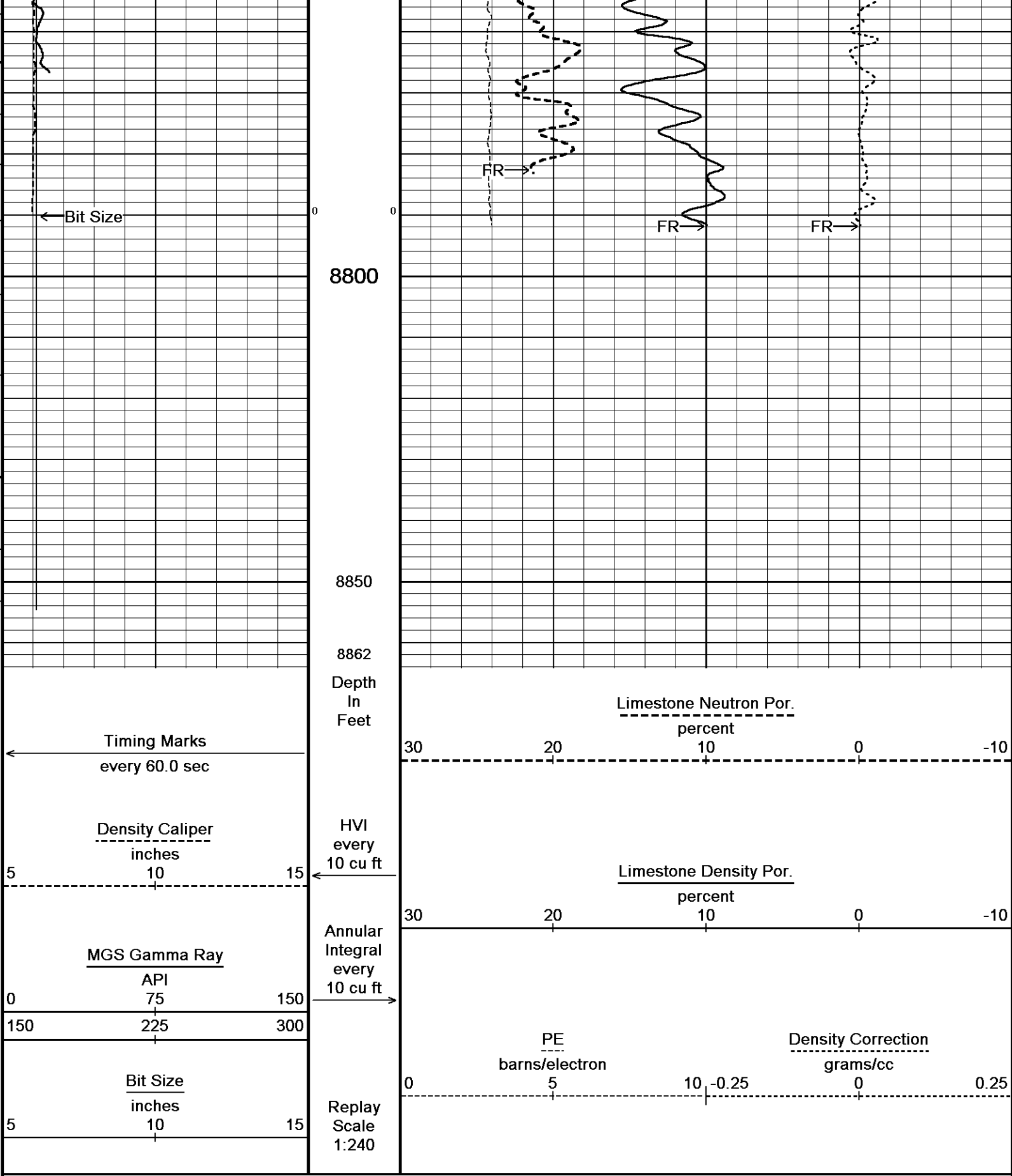










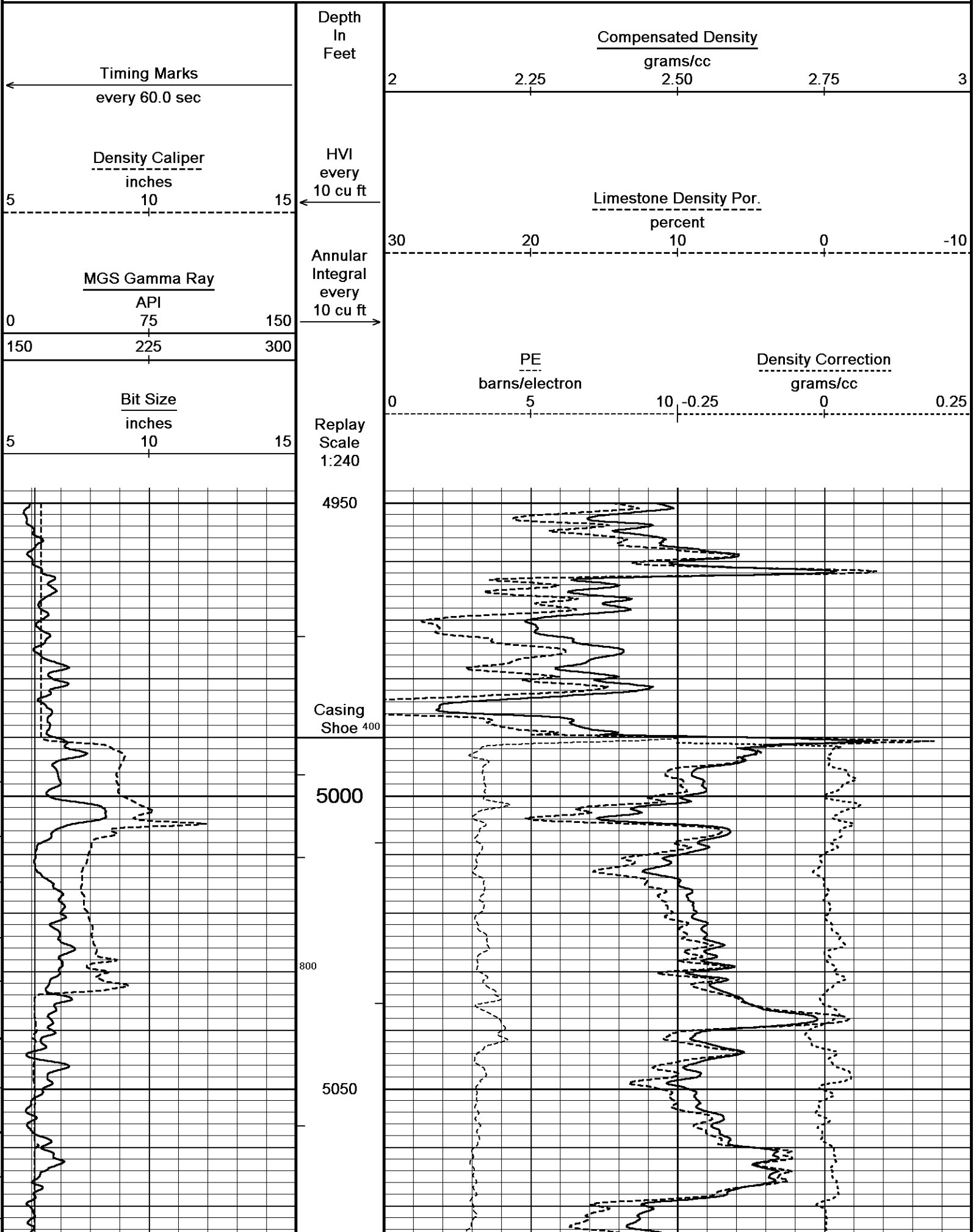


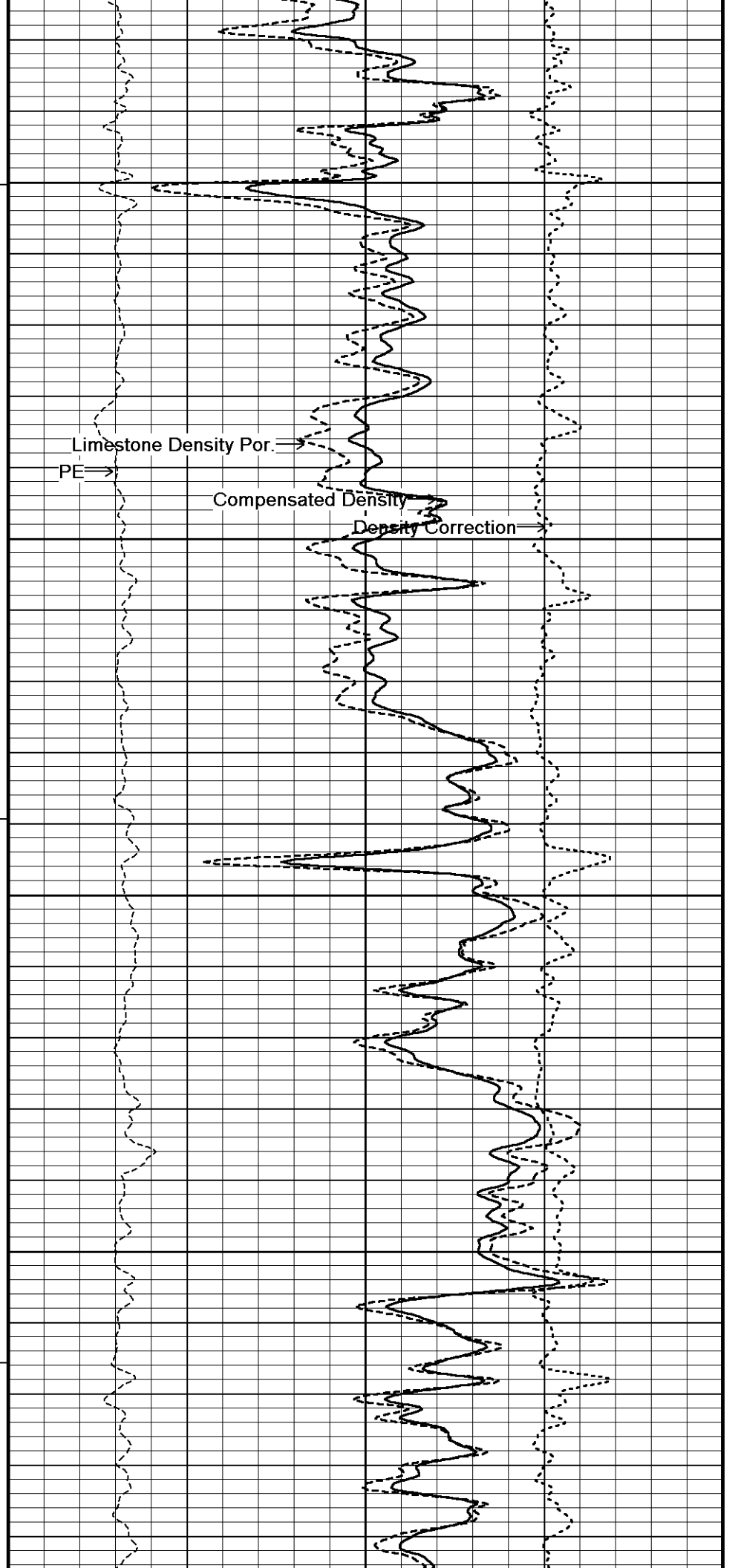
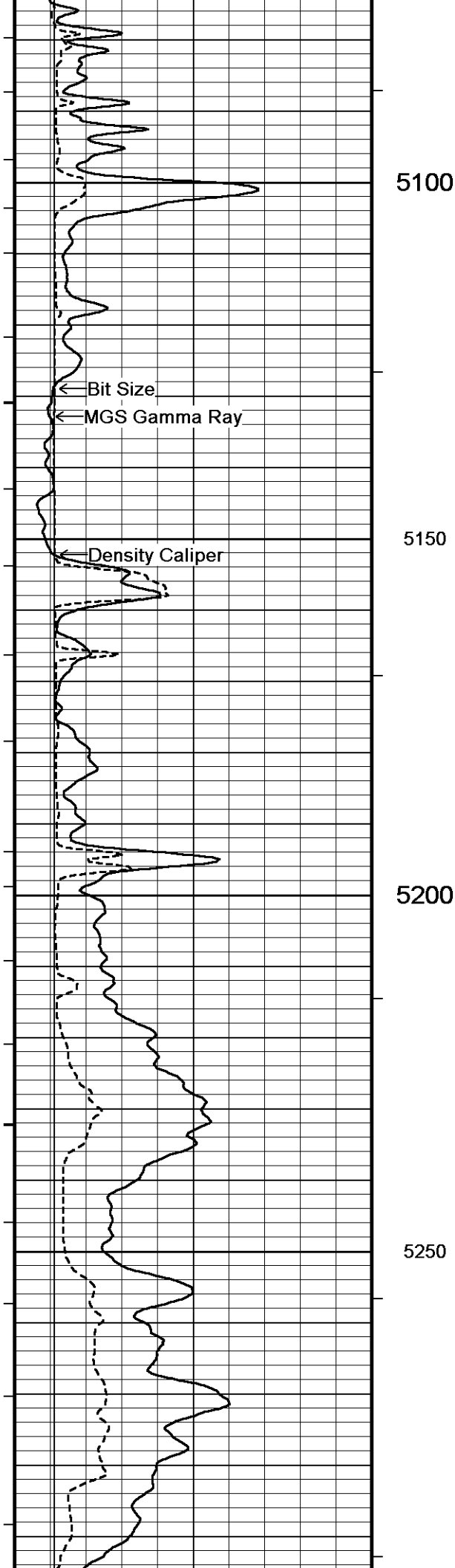
Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 12.02.4401\Data\SDRGE (SUTTON 1-9H)\28472 RTAP.dta
System Versions: Processed with 12.02.4401 Plotted with 12.02.4401

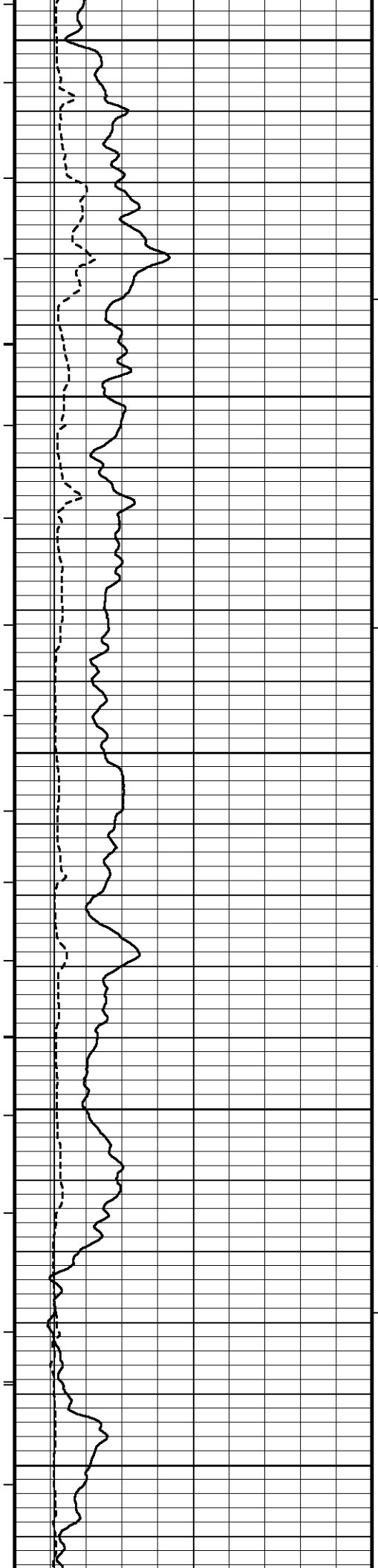
Plotted on 11-JUL-2012 12:14
Recorded on 11-JUL-2012 11:39

5 INCH MAIN LOG DSC

5 INCH BULK DENSITY LOG DSC







5300

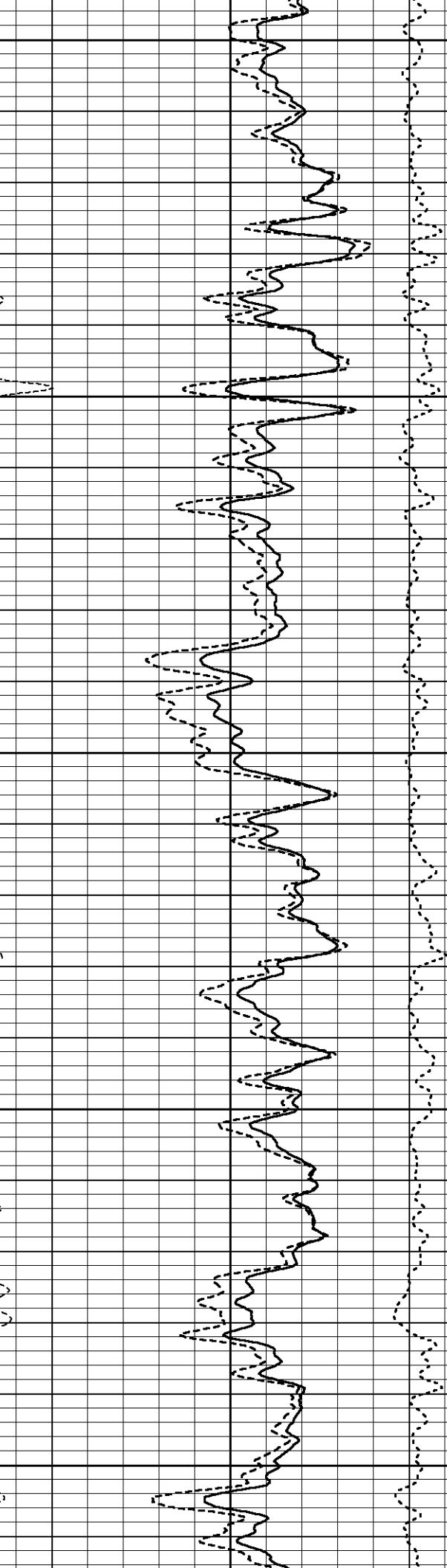
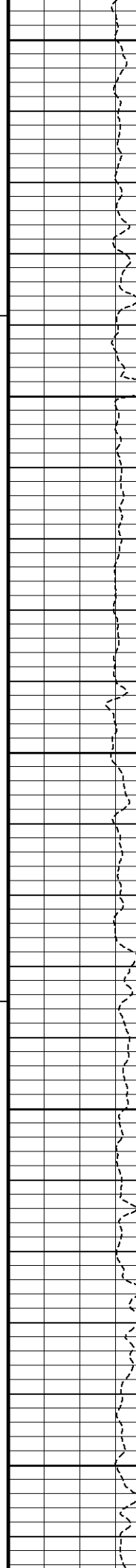
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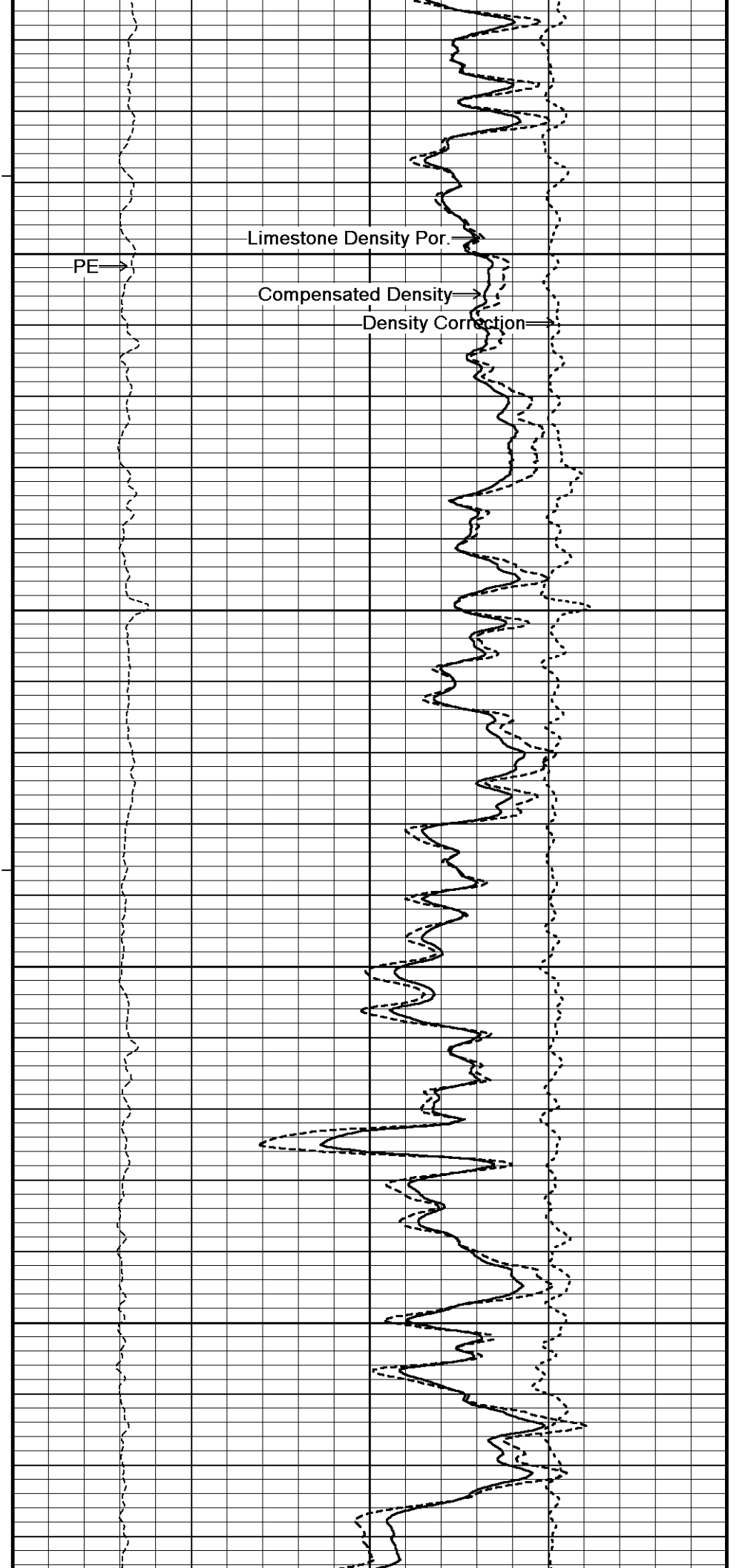
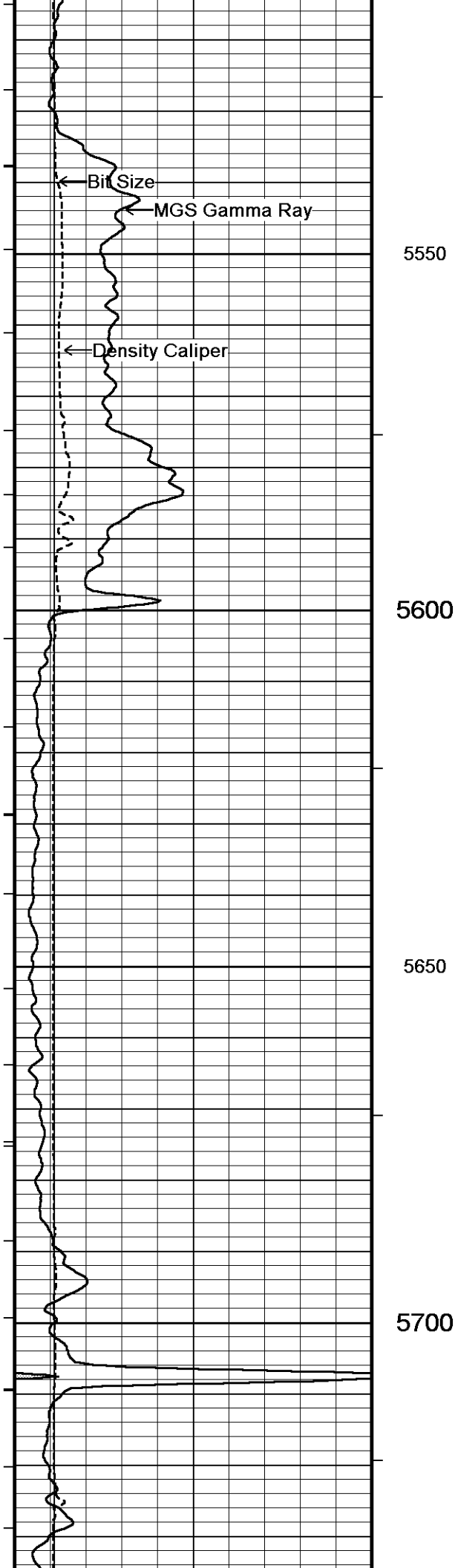
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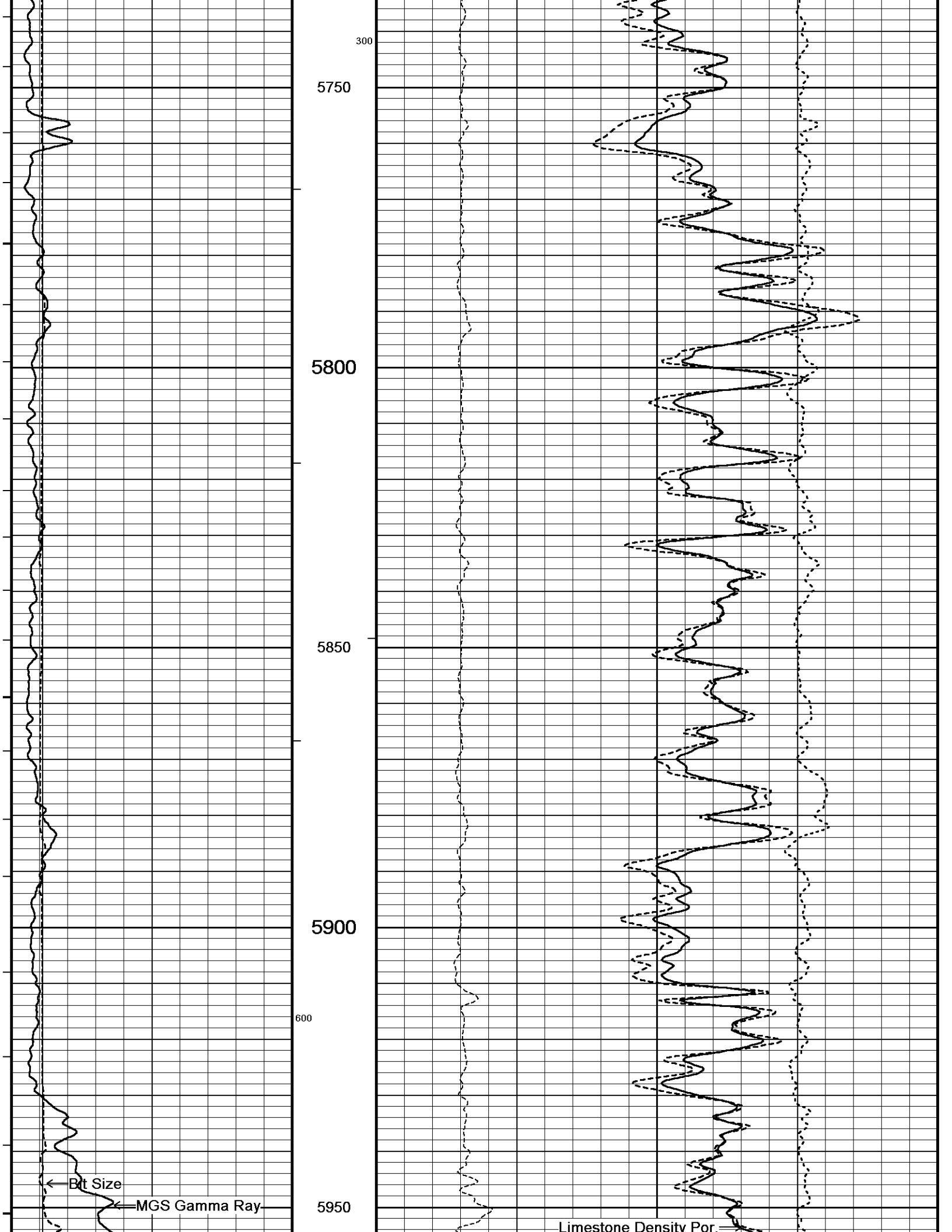
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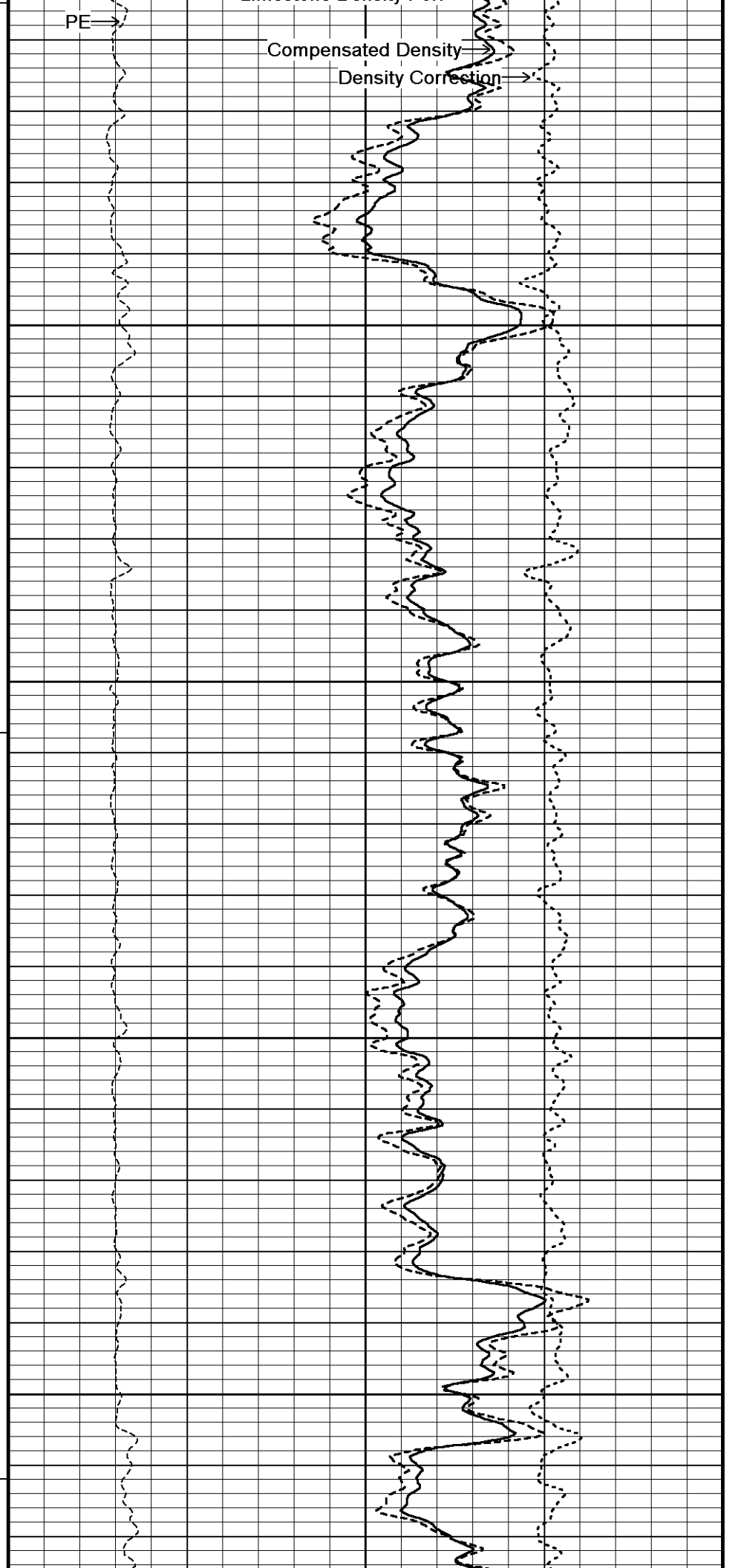
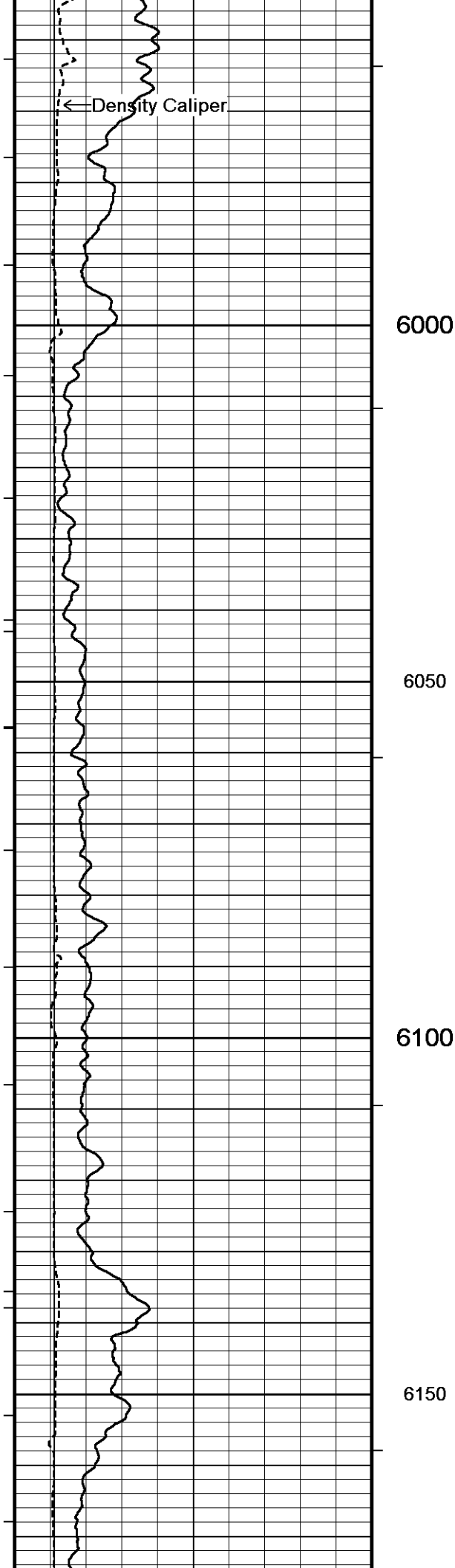
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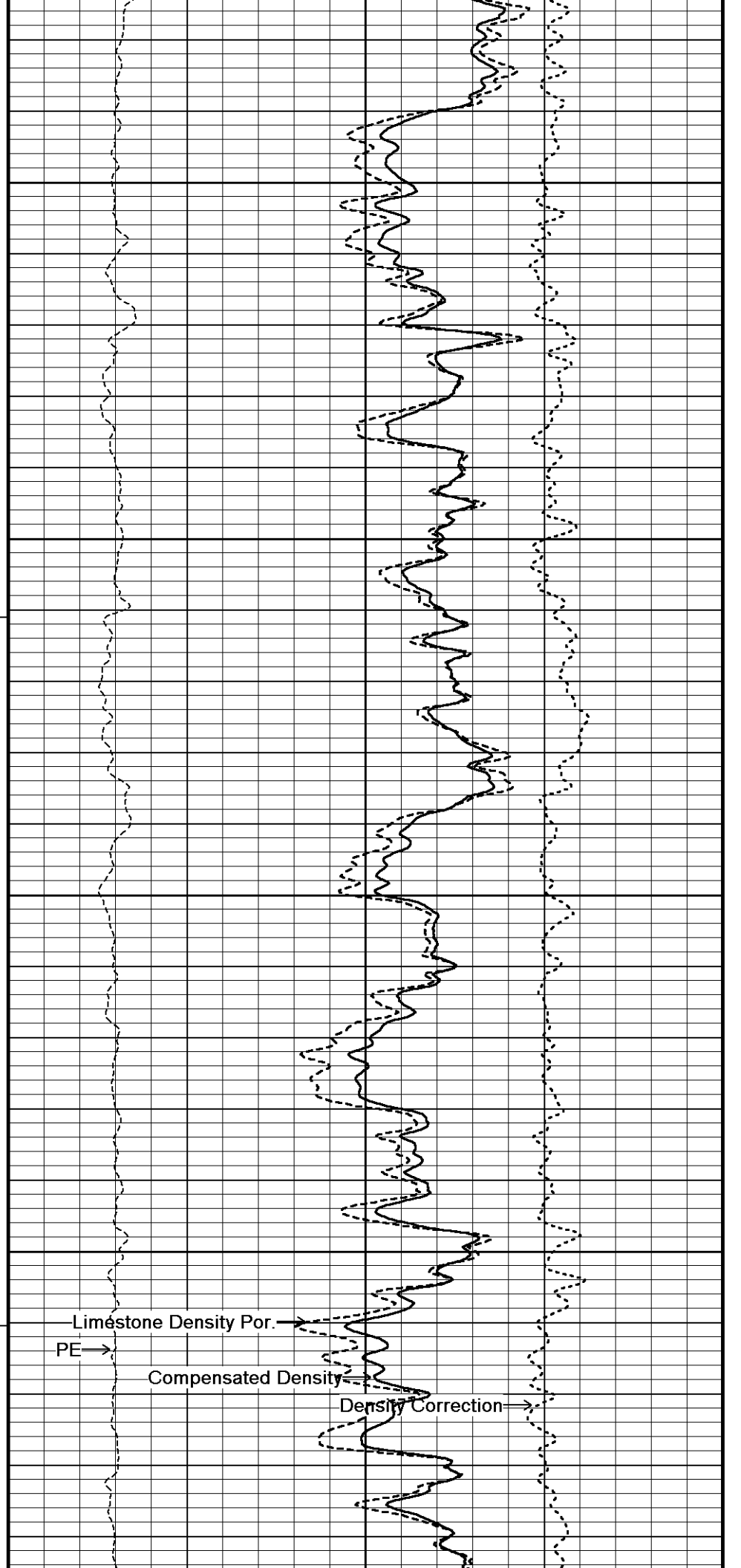
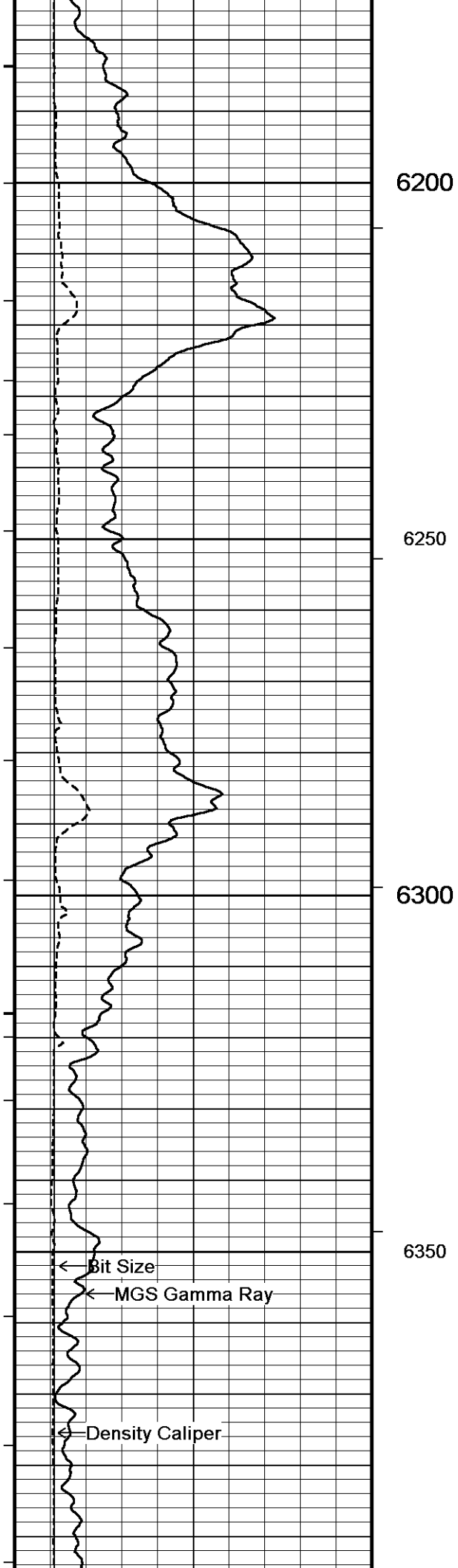
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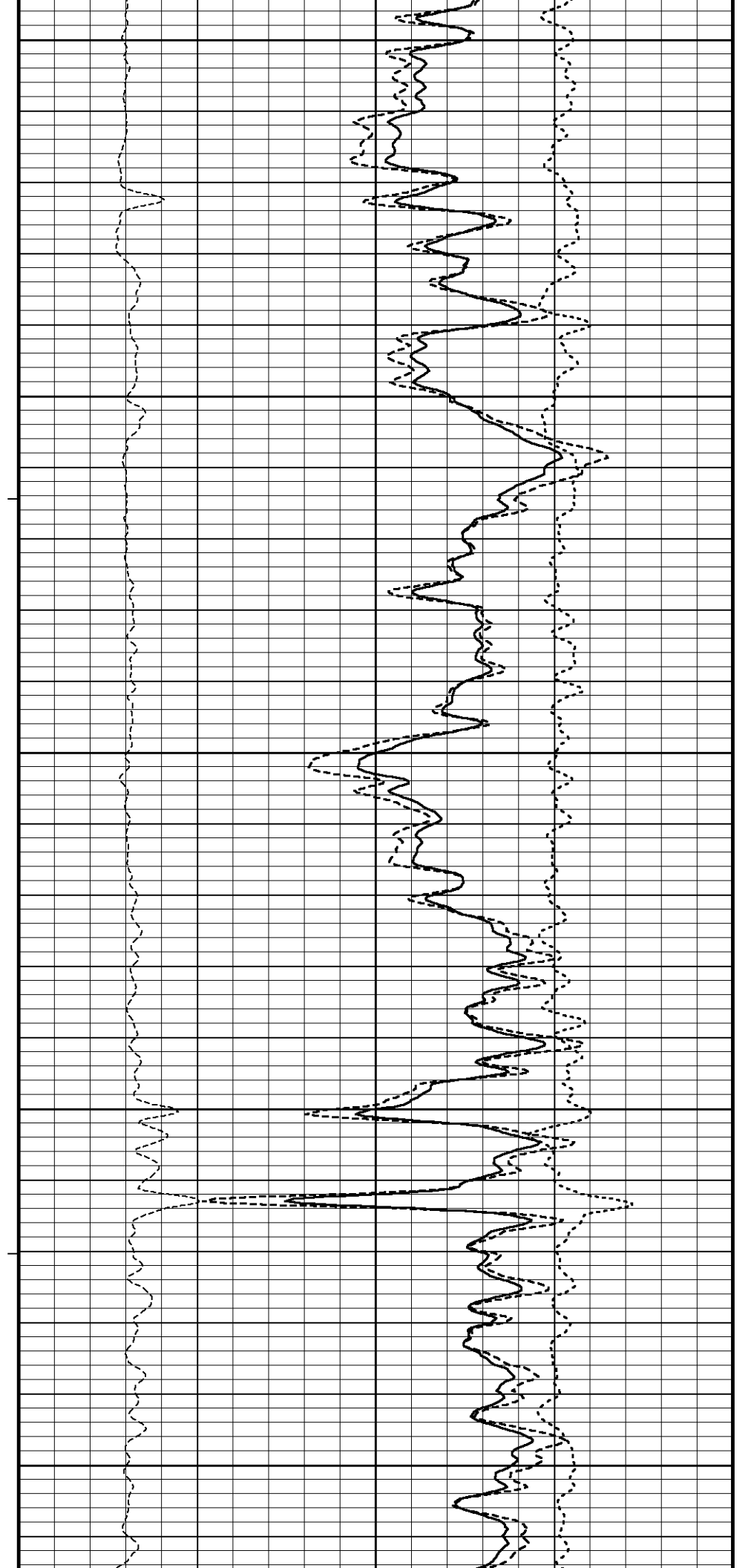
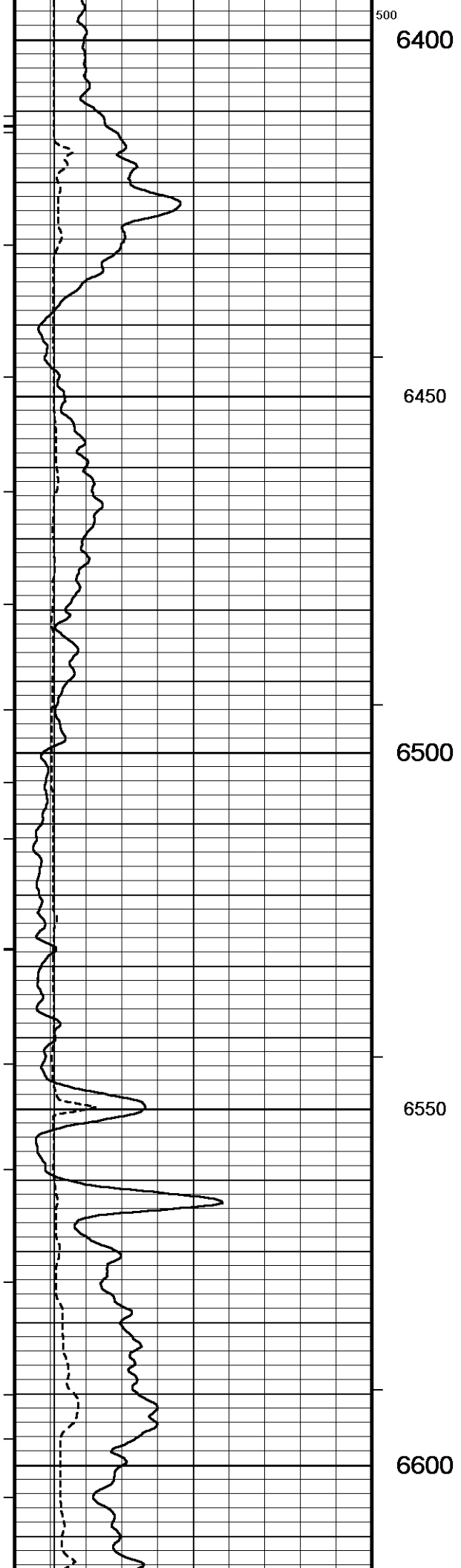


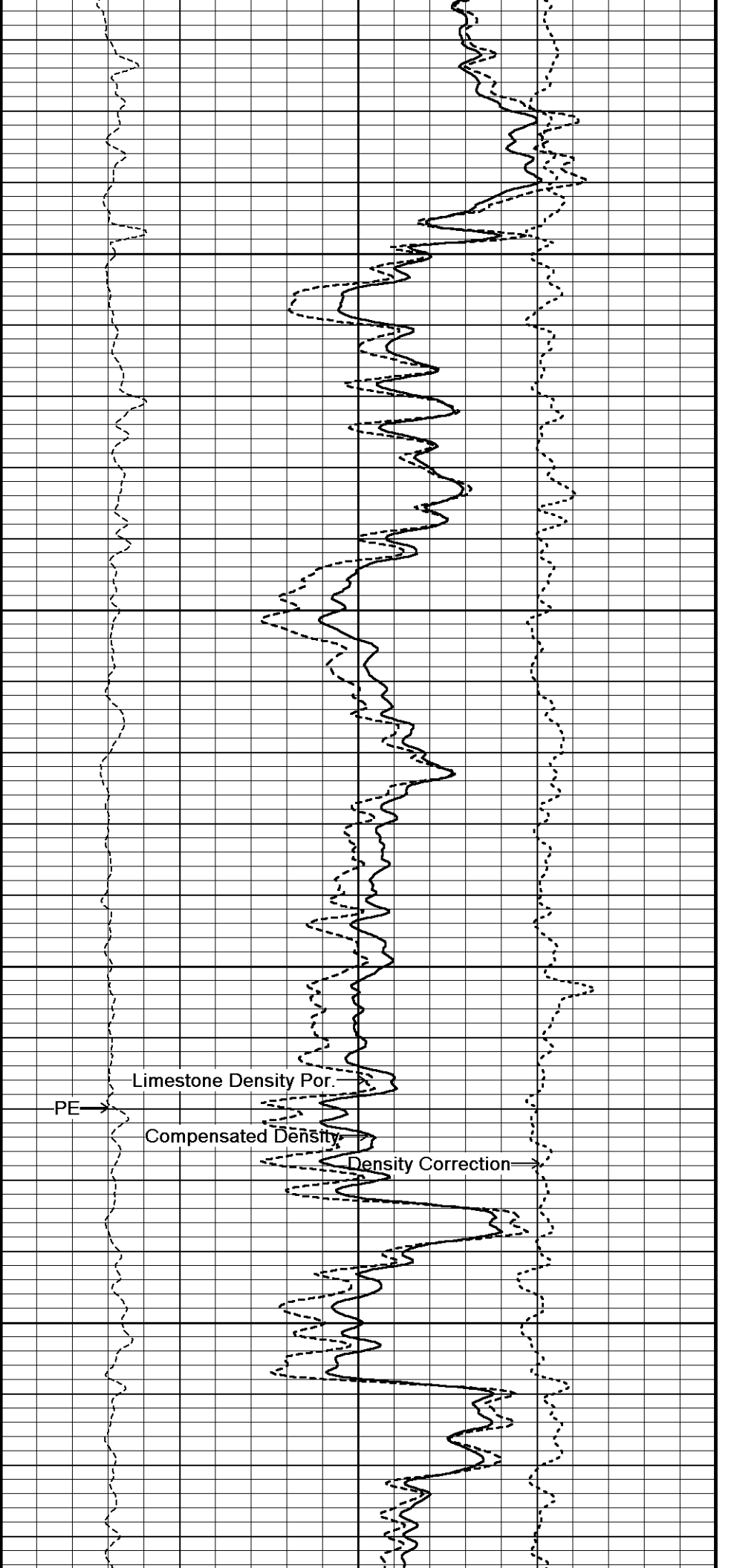
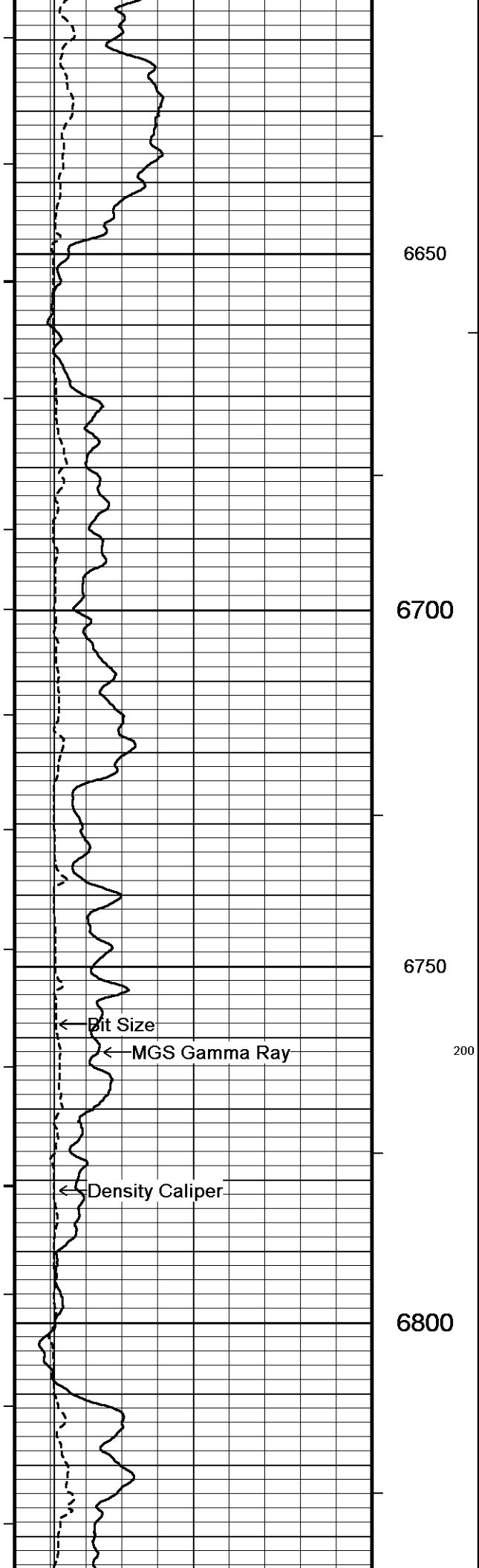


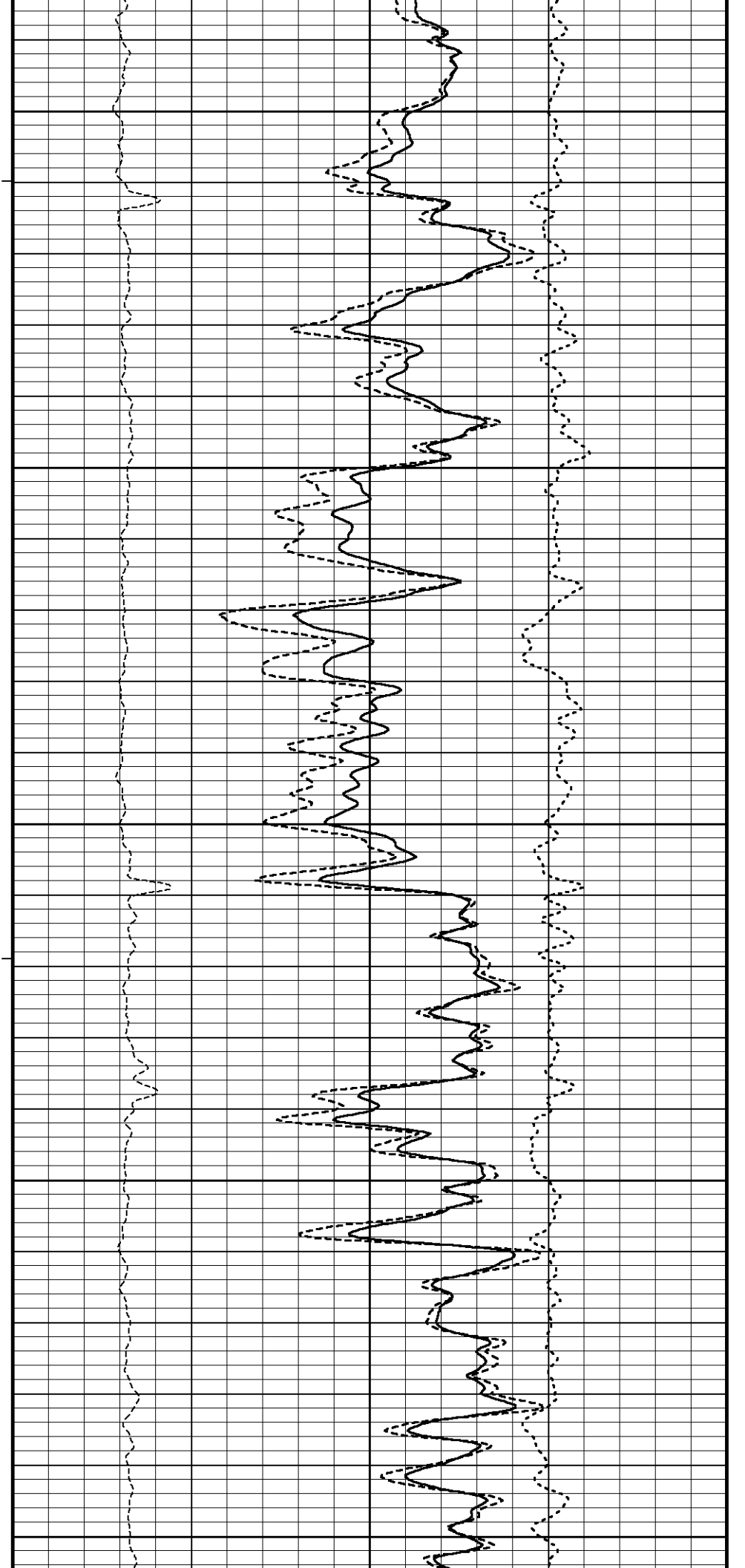
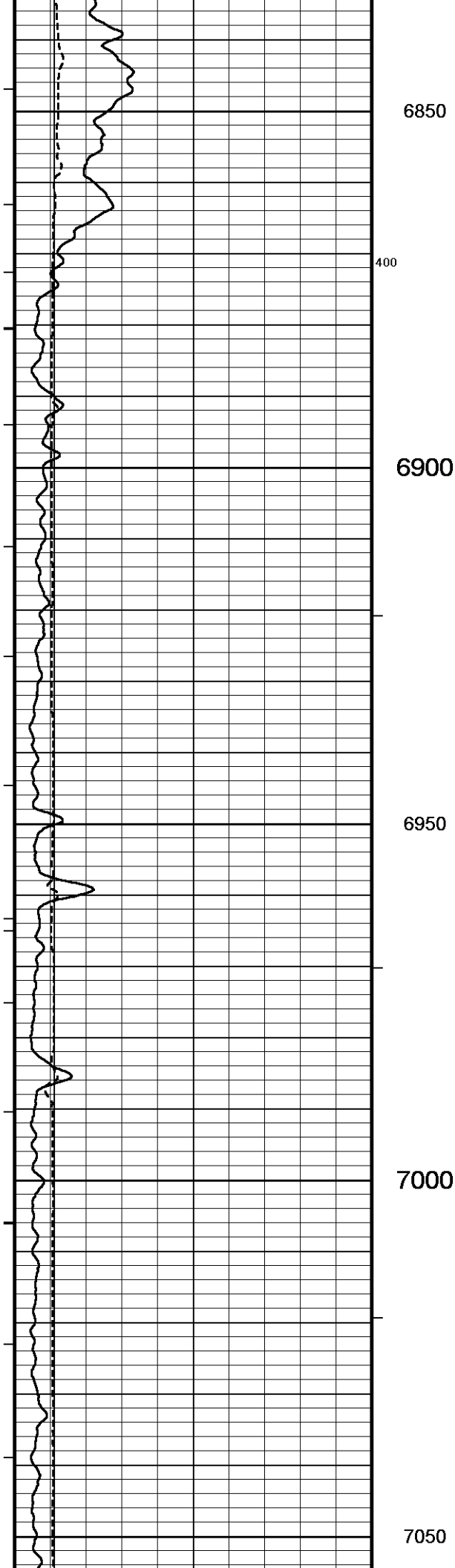


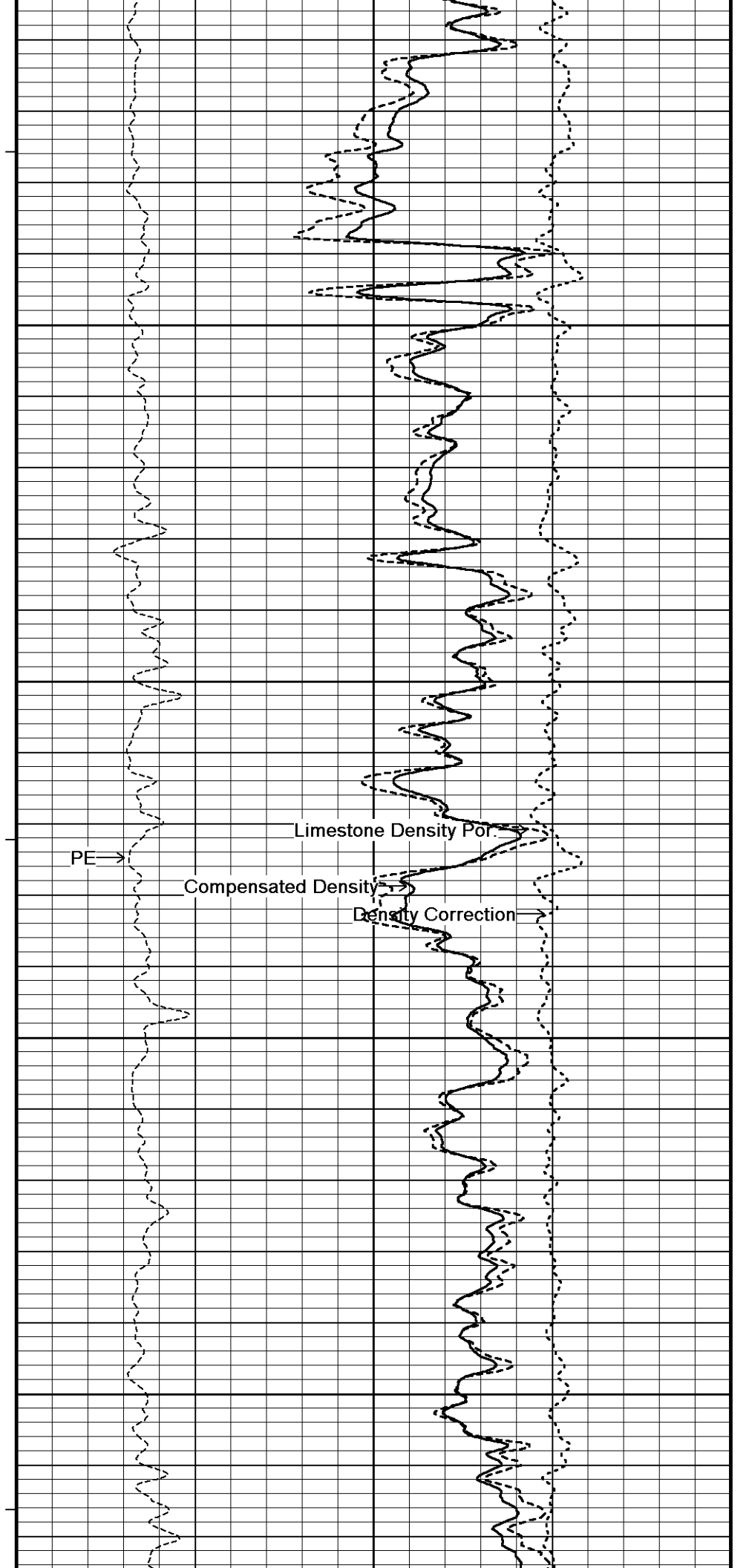
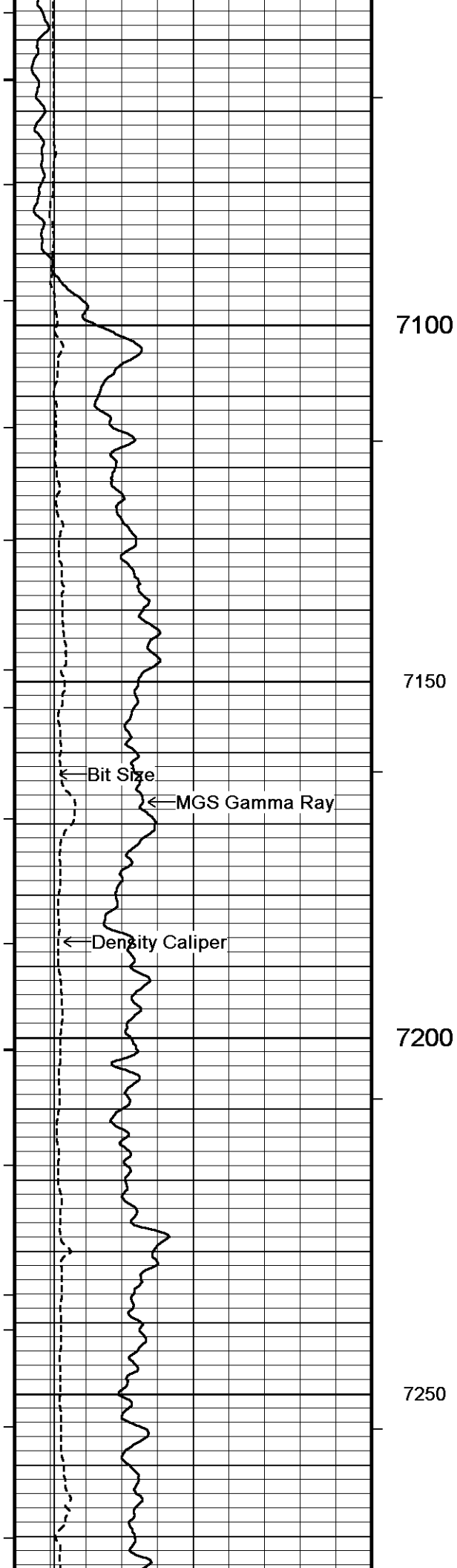


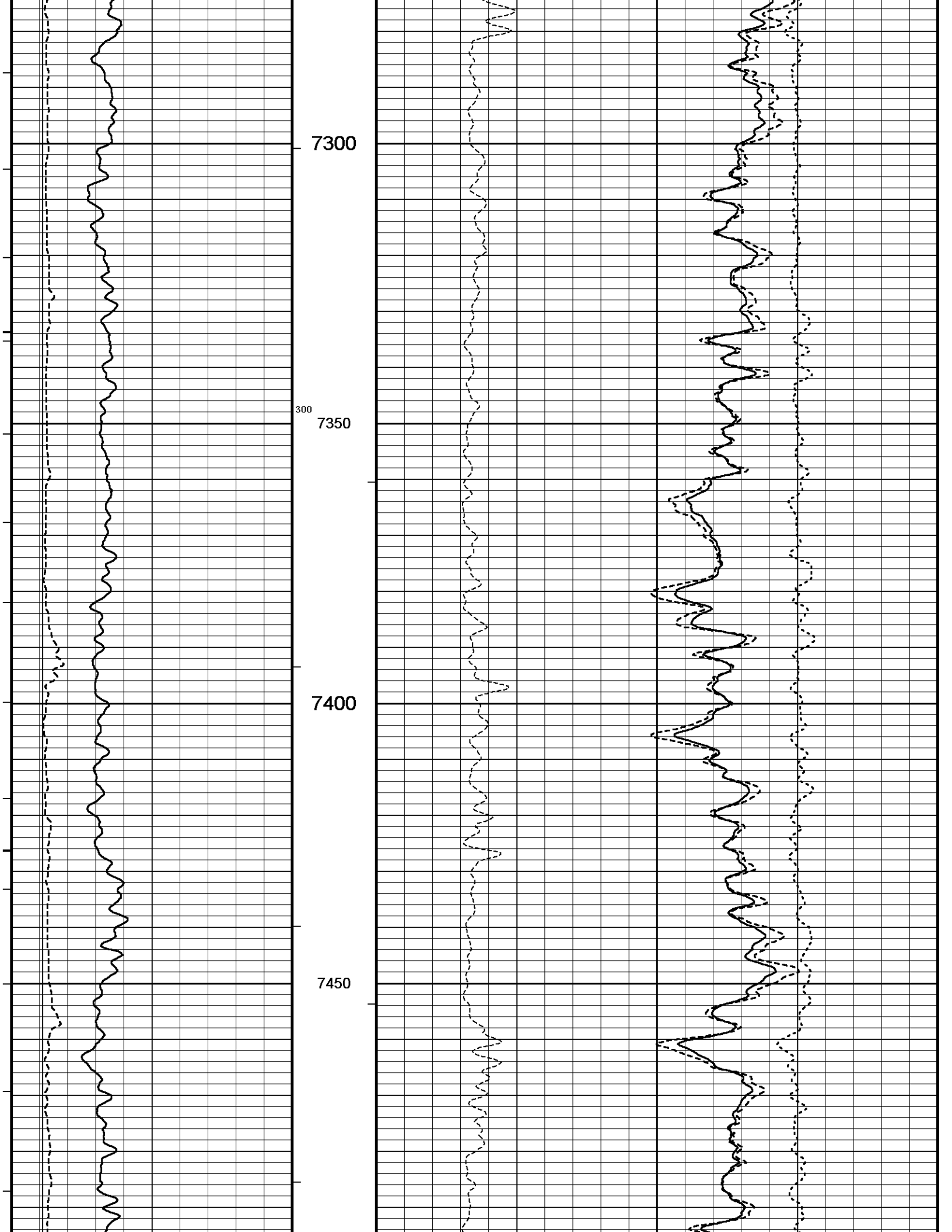


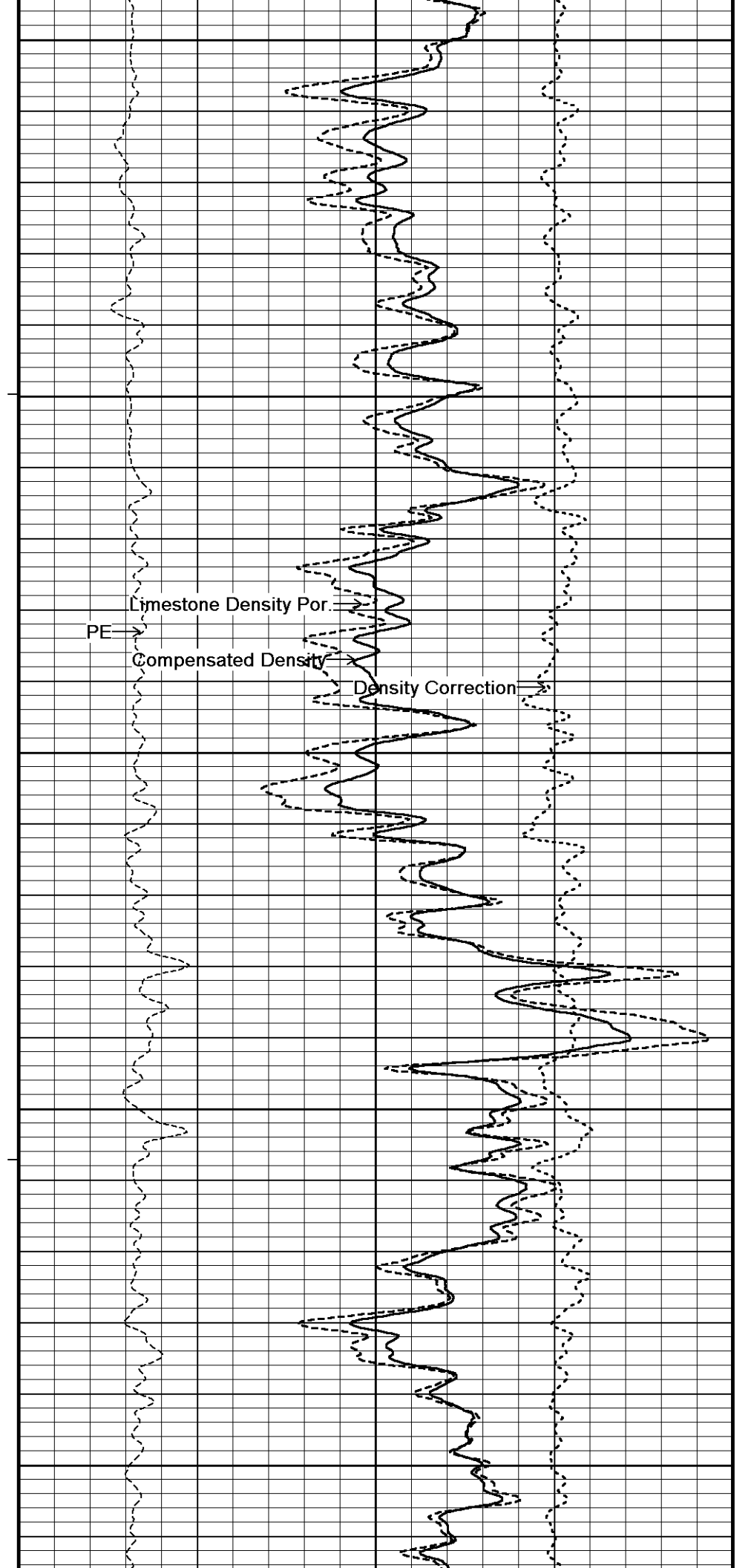
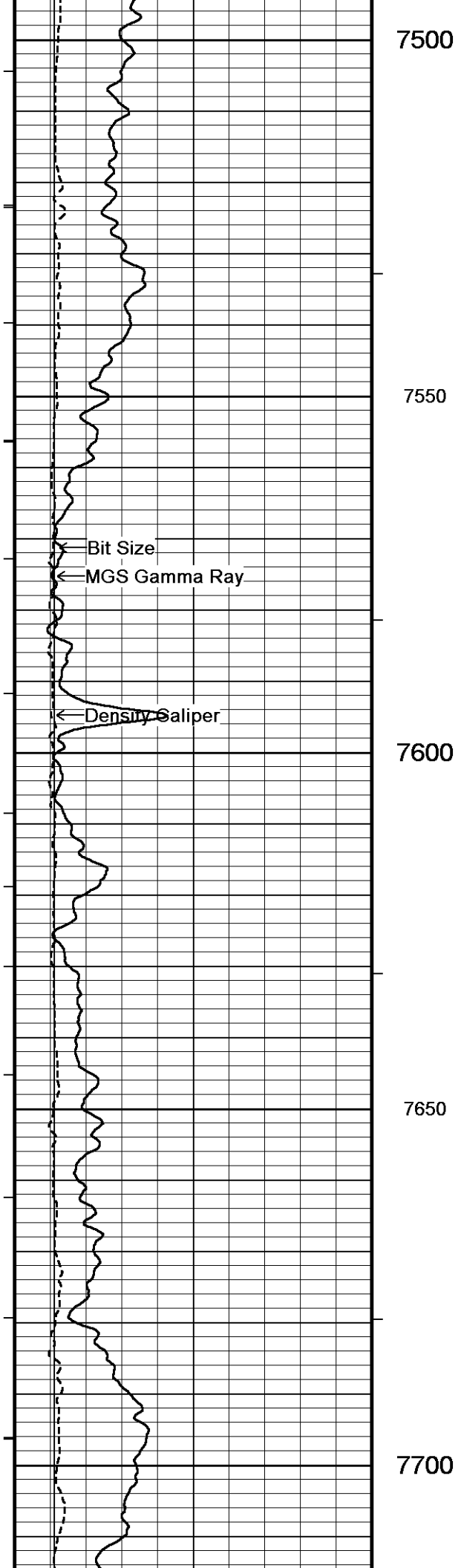


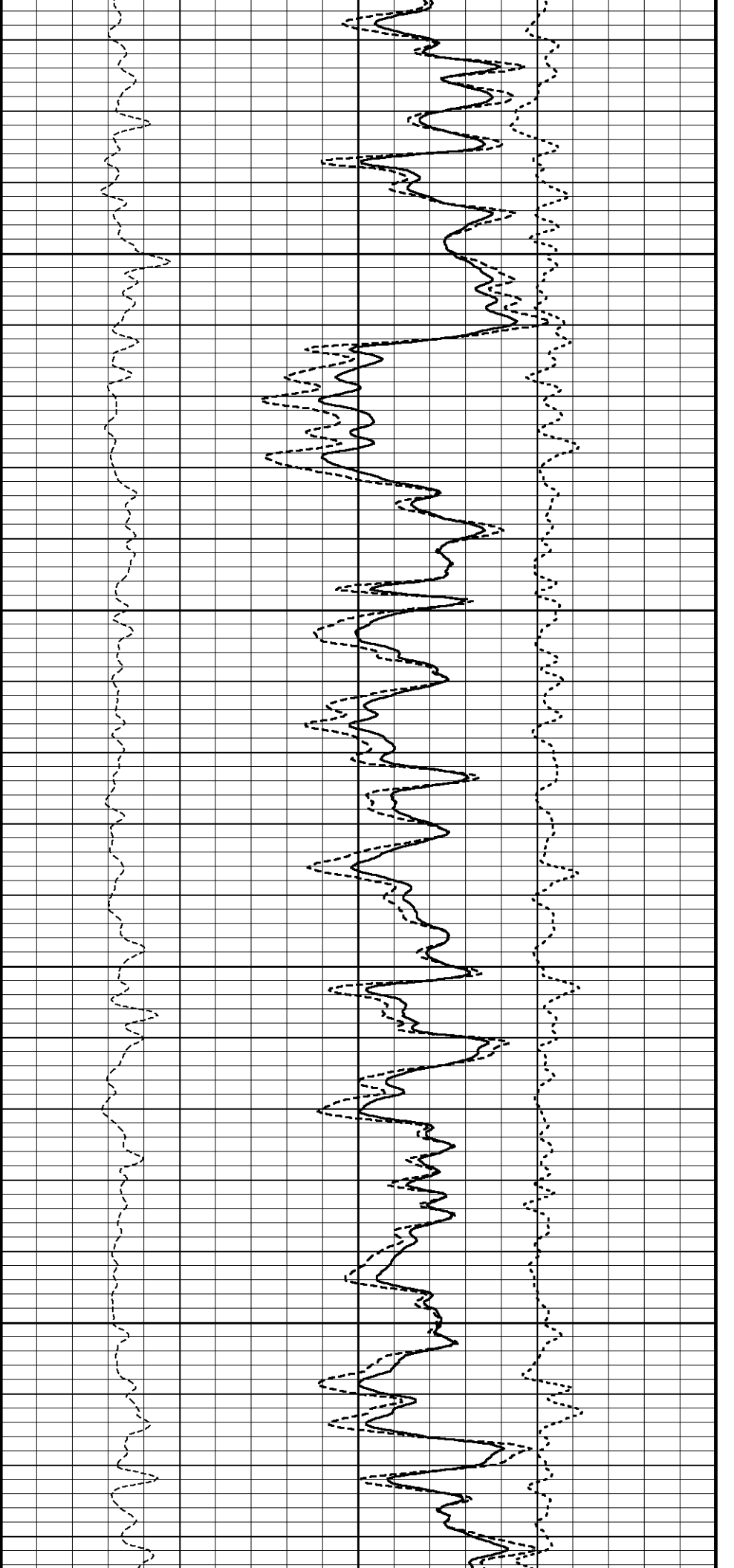
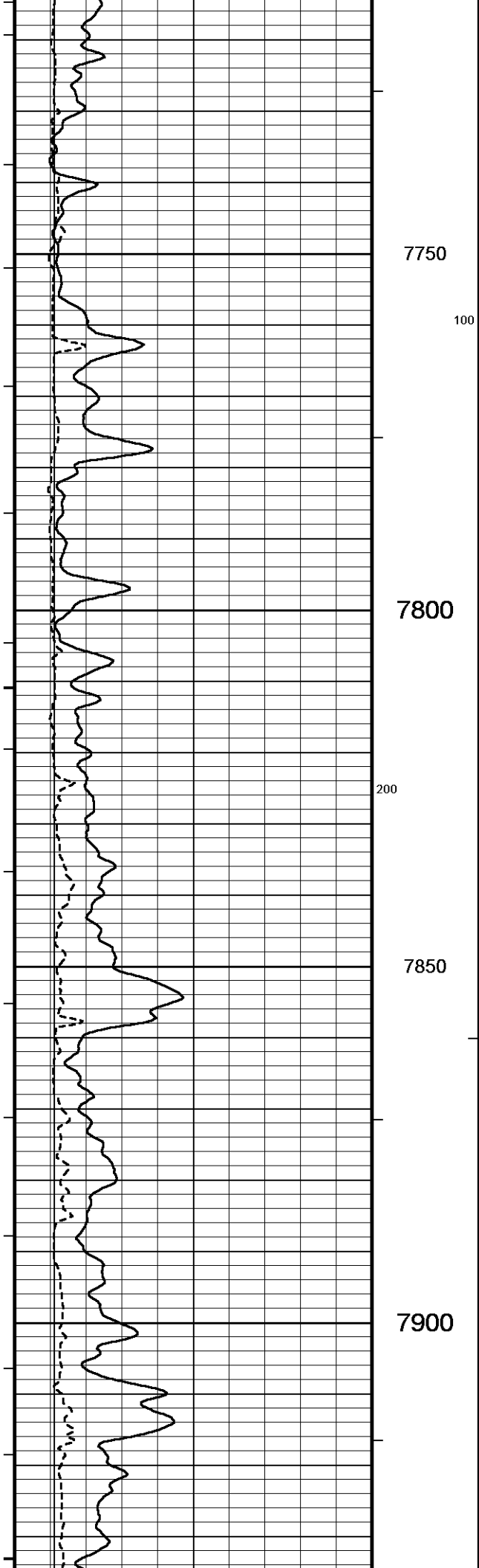


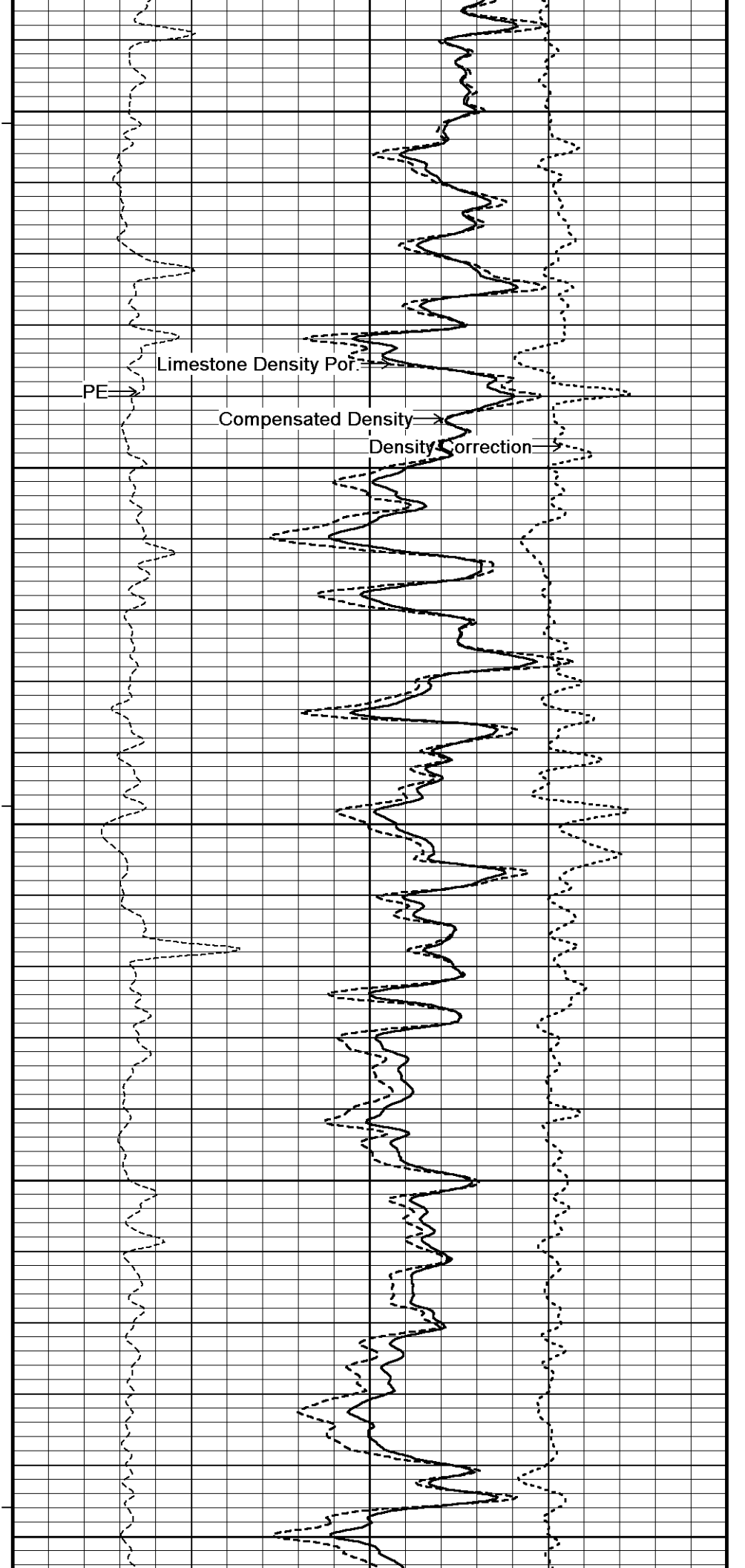
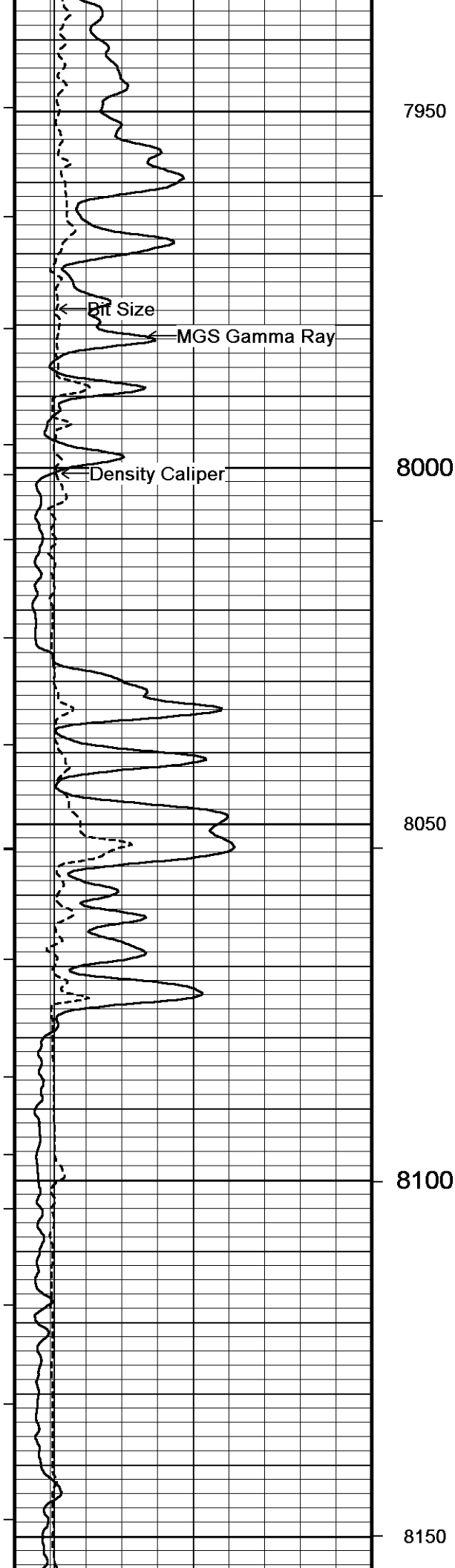


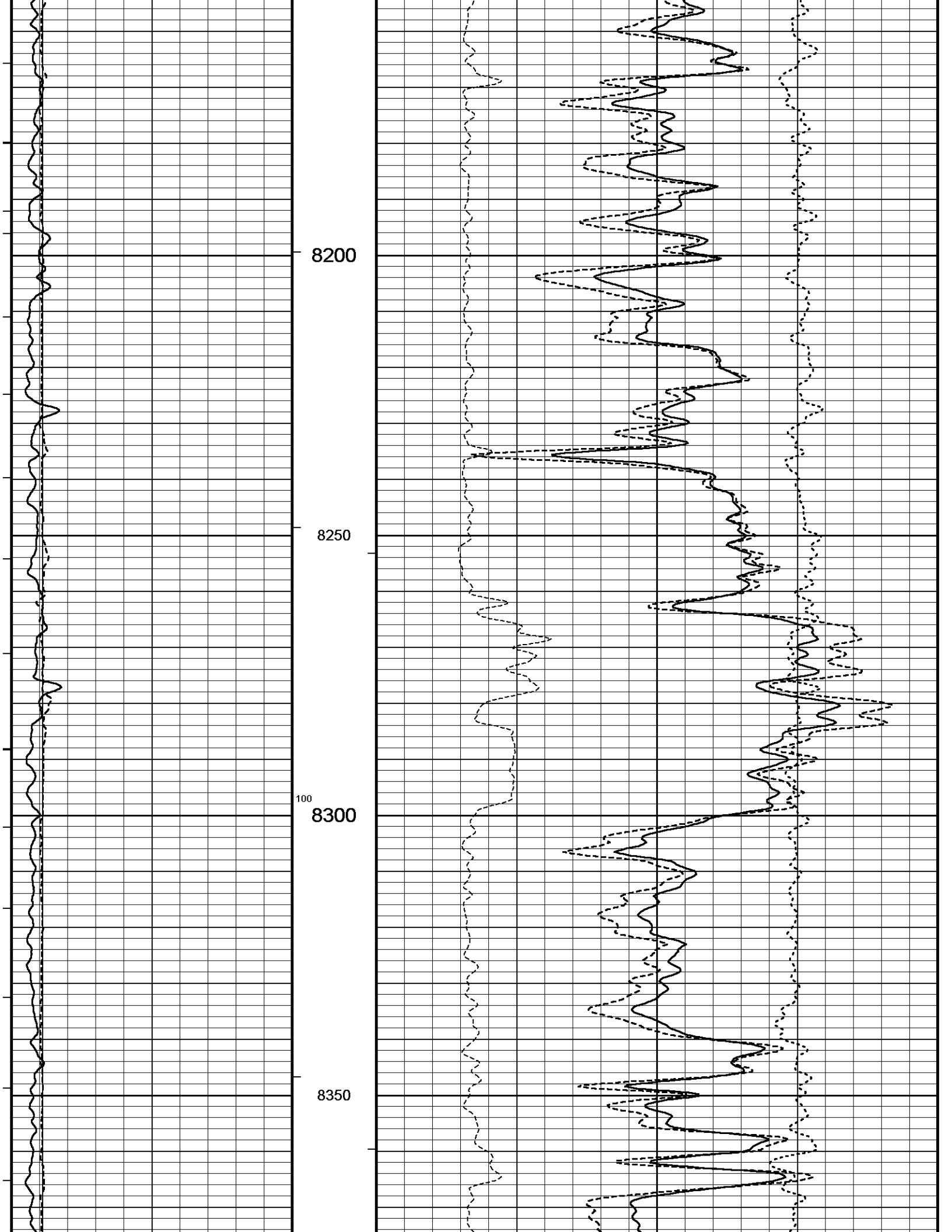


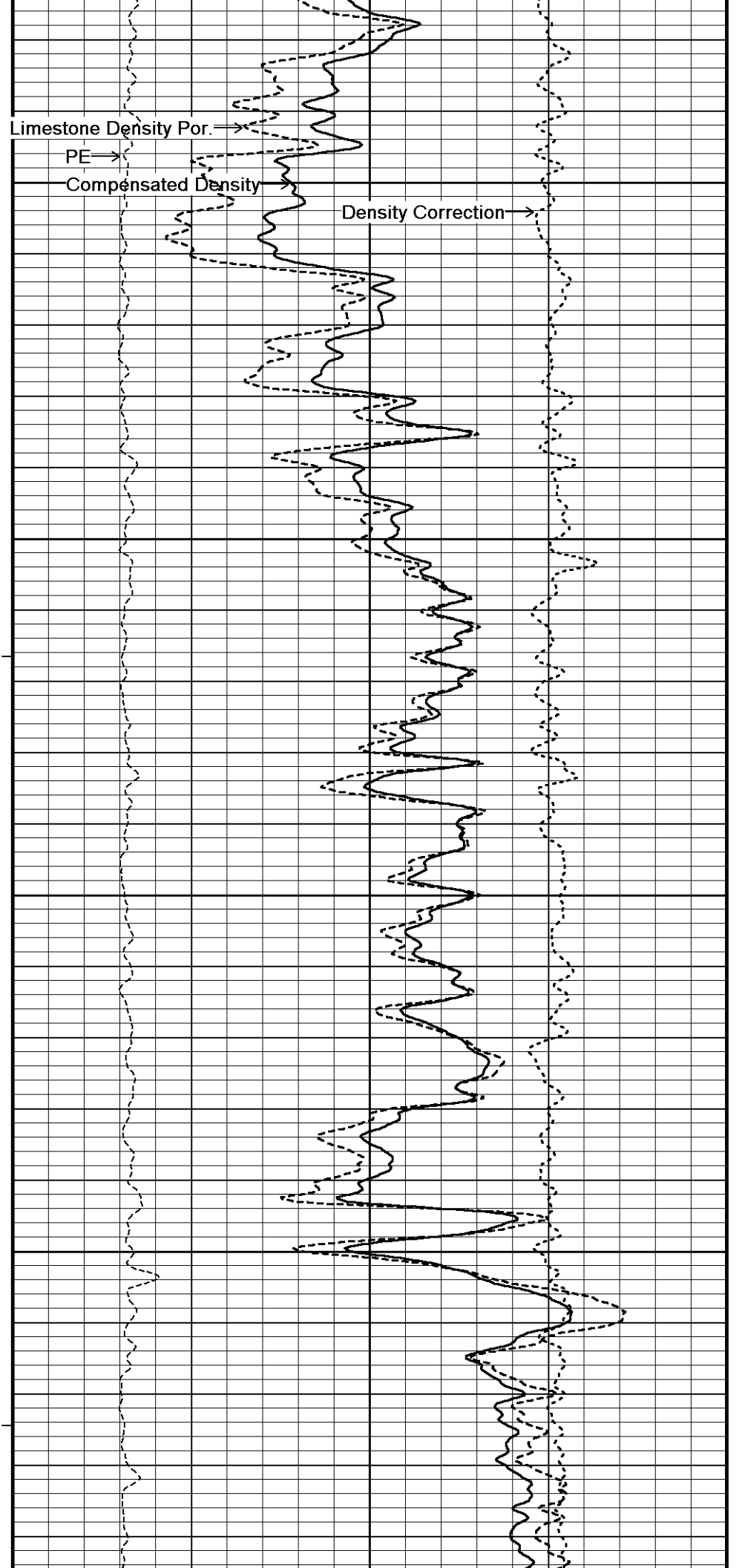
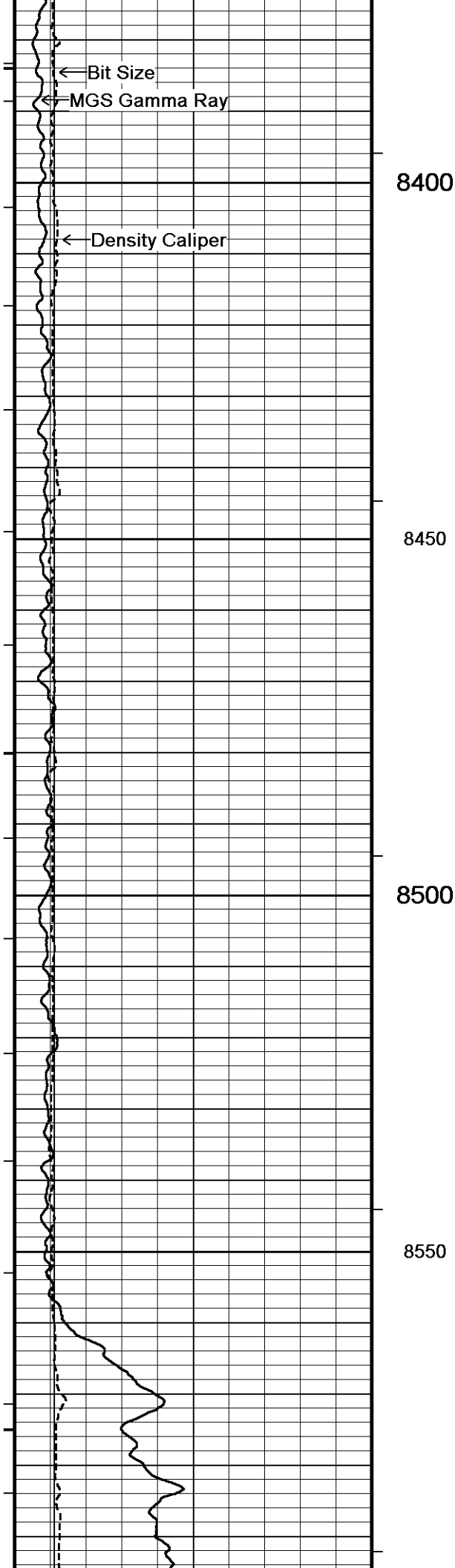


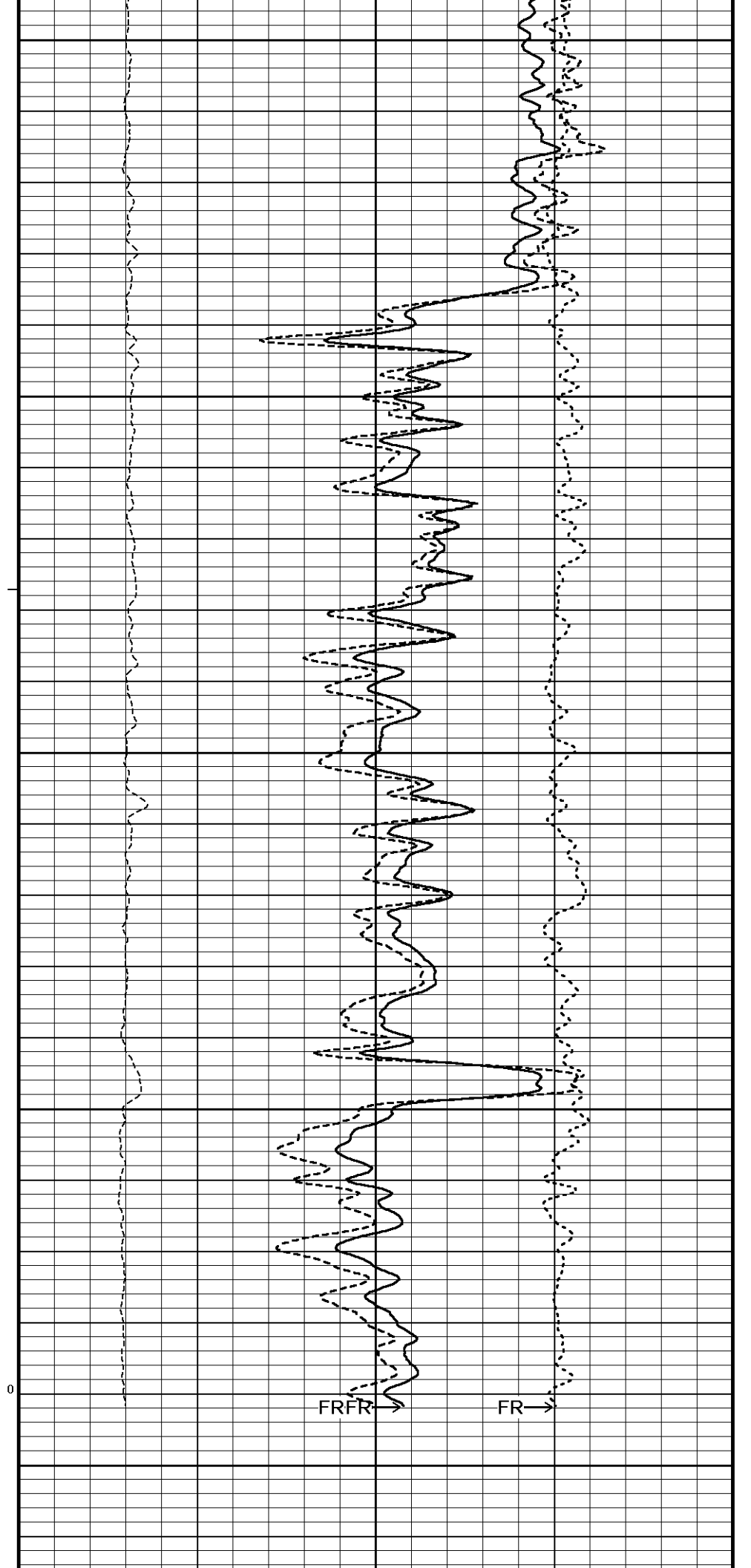
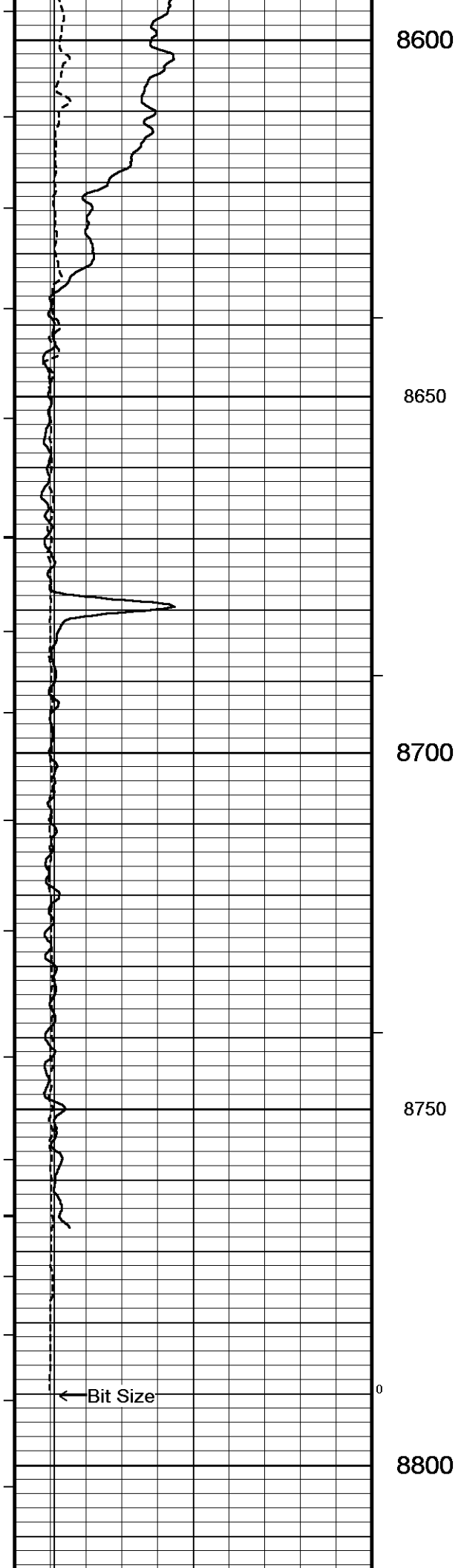


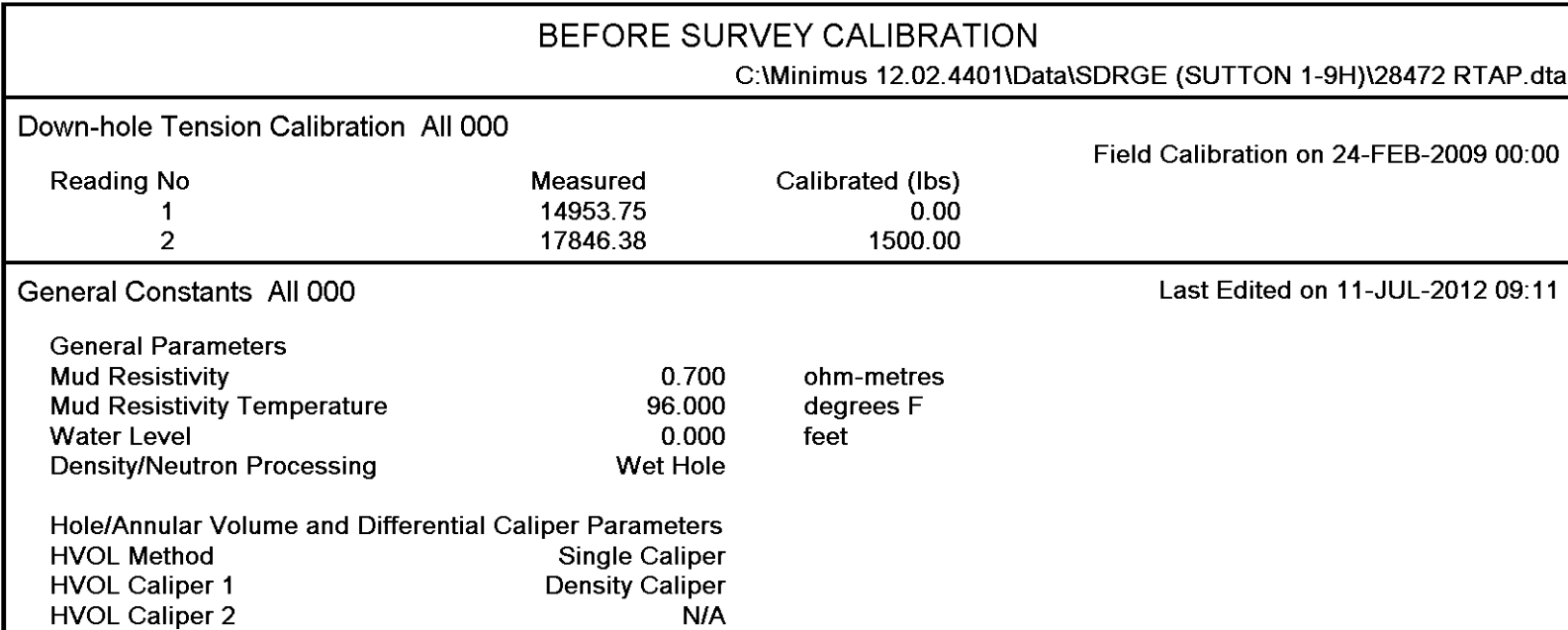












Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Limestone Density Por.	
Resistivity used	Array Ind. Six Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Down-hole Tension Calibration SMS 0			Field Calibration on 29-MAR-2011 00:00
Reading No	Measured	Calibrated (lbs)	
1	15152.07	0.00	
2	19175.97	2000.00	

Strain Gauge Constants SER-B.A 166			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.
0.0	0.000	0.000	0.000	0.000
2000.0	0.000	0.000	0.000	0.000
4000.0	0.000	0.000	0.000	0.000
6000.0	0.000	0.000	0.000	0.000
8000.0	0.000	0.000	0.000	0.000
10000.0	0.000	0.000	0.000	0.000

Gamma Calibration MGS-C.J 134			Field Calibration on 09-JUL-2012 13:41
	Measured	Calibrated (API)	
Background	50	35	
Calibrator (Gross)	1848	1296	
Calibrator (Net)	1798	1261	

Gamma Constants MGS-C.J 134			Last Edited on 11-JUL-2012 09:09	
Gamma Calibrator Number	46 blue			
Mud Density	1.11	gm/cc		
Caliper Source for Processing	Density Caliper			
Tool Position	Eccentred			
Concentration of KCl	0.00	kppm		

High Resolution Temperature Constants MGS-C.J 134			Last Edited on	
Pre-filter Length	11			

Neutron Calibration MDN-B.J 390				Base Calibration on 03-JUL-2012 15:10	
				Field Check on 09-JUL-2012 13:27	
Base Calibration					
		Measured		Calibrated (cps)	
	Near	Far		Near	Far
	2974	91		3714	110
Ratio	32.653			33.764	
Field Calibrator at Base					
				Calibrated (cps)	
				1236	1843
Ratio				0.671	
Field Check					
				Calibrated (cps)	
				1296	1889
Ratio				0.687	

Neutron Constants MDN-B.J 390			Last Edited on 04-JUL-2012 21:05	
Neutron Source Id	P31112B			
Neutron Jig Number	5917NC			
Epithermal Neutron	No			
Caliper Source for Processing	Density Caliper			

Stand-off	Density Sensor	0.00	inches
Mud Density		1.02	gm/cc
Limestone Sigma		7.10	cu
Sandstone Sigma		4.26	cu
Dolomite Sigma		4.70	cu
Formation Pressure Source	Constant Value		
Formation Pressure		1.80	kpsi
Temperature Source	MGS External Temperature		
Temperature		N/A	degrees F
Mud Salinity		15.61	kppm
Formation Fluid Salinity Source	Constant Value		
Formation Fluid Salinity		140.00	kppm
Barite Mud Correction	Not Applied		
Salinity Correction	Not Applied		

Magnetometer Parameters MIE-A.A 209				
Date Of Last Magnetometer Calibration		26-NOV-2010,12:01		
	X Magnetometer	Y Magnetometer	Z Magnetometer	
Slope	-1.000000	-1.001951	-1.007691	
Offset	0.007782	-0.016800	0.011730	

Magnetometer Constants MIE-A.A 209				Last Edited on
Magnetometer Calibrator Number		000		

Accelerometer Parameters MIE-A.A 209				
Date Of Last Accelerometer Calibration		25-NOV-2010,12:19		
	X Accelerometer	Y Accelerometer	Z Accelerometer	
Slope	-1.113214	-1.109979	-1.101653	
Offset	0.005467	0.005399	0.010368	

Accelerometer Constants MIE-A.A 209			Last Edited on 25-NOV-2010 12:25	
Accelerometer Calibrator Number		000		
Accelerometer Temperature Characterisation				
X Accelerometer				
Serial Number		826		
Calibration Date		01-Jan-1998		
	B0	B1	B2	B3
Bias(g)	0.00000e+000	2.32377e-005	-1.87334e-008	9.07324e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.71389e-004	4.55326e-007	4.58364e-010
Y Accelerometer				
Serial Number		617		
Calibration Date		11-May-2008		
	B0	B1	B2	B3
Bias(g)	0.00000e+000	1.76675e-005	6.93464e-010	2.98691e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.56882e-004	5.72598e-007	2.37496e-010
Z Accelerometer				
Serial Number		844		
Calibration Date		01-Jan-1998		
	B0	B1	B2	B3
Bias(g)	0.00000e+000	-1.21769e-005	-1.46867e-008	-6.44015e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.73539e-004	4.65657e-007	2.88996e-010

Caliper Calibration MIE-A.A 209				Base Calibration on 25-NOV-2010 07:56
				Field Calibration on
Base Calibration				
Reading No	Pads 1-5 Meas.	Pads 3-7 Meas.	Calibrator Size (in)	
1	26963	26793	5.96	
2	36961	37191	7.97	
3	46401	44863	9.84	
4	58072	58409	11.91	
5	0	0	0.00	
Reading No	Pad 2 Meas	Pad 4 Meas	Pad 6 Meas	Pad 8 Meas
				Calibrator Size (in)

Reading No	Pad 2 Meas.	Pad 4 Meas.	Pad 6 Meas.	Pad 8 Meas.	Calibrator Size (in)
1	24829	25688	24937	24692	5.96
2	33487	34230	33721	33433	7.97
3	40559	41186	42962	42856	9.84
4	51771	52426	51758	51697	11.91
5	0	0	0	0	0.00
Field Calibration					
	Measured Pads 1-5 Caliper(in) 0.00	Measured Pads 3-7 Caliper(in) 0.00		Actual Caliper(in) 0.00	
	Measured Pad 2 Caliper(in) 0.00	Measured Pad 4 Caliper(in) 0.00	Measured Pad 6 Caliper(in) 0.00	Measured Pad 8 Caliper(in) 0.00	Actual Caliper(in) 0.00
Caliper Constants MIE-A.A 209				Last Edited on 25-NOV-2010 07:57	
Caliper Difference for BRKT		0.120	inches		
Navigation Constants MIE-A.A 209				Last Edited on	
Magnetic Declination		0.00	degrees	East	
Imager Pad Check MIE-A.A 209				Field Check on 19-JUN-2012 14:55	
Pad 1	20/20 Buttons Verified	Pad 5	17/20 Buttons Verified		
Pad 2	24/24 Buttons Verified	Pad 6	19/24 Buttons Verified		
Pad 3	13/20 Buttons Verified	Pad 7	15/20 Buttons Verified		
Pad 4	22/24 Buttons Verified	Pad 8	21/24 Buttons Verified		
Compact Micro Imager Constants MIE-A.A 209				Last Edited on 19-JUN-2012 12:50	
Sonde Configuration		Imager Mode	degrees		
Arm-Pad Kit		Normal Pads (12.25 in)			
Centre Pad 1 Rotational Offset		0.00			
Image/Borehole Ovality Reference		Azimuth of Pad 1	degrees		
Non Active Buttons		Omit	feet		
Search Angle		0.00	feet		
Correlation Interval		3.28	mAmp		
Correlation Step		1.64	mAmp		
Current Offset		0.0000			
Squasher Start		11111111.0000			
Image Processing		11111111			
High Resolution Temperature Calibration MAI-B.J 389				Field Calibration on 19-OCT-2011 09:44	
		Measured	Calibrated(Deg F)		
Lower		10.00	50.00		
Upper		100.00	212.00		
High Resolution Temperature Constants MAI-B.J 389				Last Edited on	
Pre-filter Length		11			
Induction Calibration MAI-B.J 389				Base Calibration on 28-JUN-2012 13:12 Field Check on 09-JUL-2012 12:40	
Base Calibration					
Test Loop Calibration		Measured	Calibrated (mmho/m)		
Channel	Low	High	Low	High	
1	16.7	465.5	9.3	966.2	
2	6.4	384.0	7.6	821.4	
3	3.1	258.9	5.2	566.0	
4	1.8	133.7	2.6	279.2	
Array Temperature		78.1	Deg F		
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	15.4	3894.9	
2	0.0	0.0	29.9	3505.7	
3	0.0	0.0	29.8	3046.6	
4	0.0	0.0	19.9	2061.4	
Deep	0.0	0.0	19.4	2011.2	

Deep	0.0	0.0	42.8	4000.0	
Medium	0.0	0.0	42.9	5147.6	
Shallow					
Array Temperature		0.0		89.4	Deg F

Induction Constants MAI-B.J 389

Last Edited on 11-JUL-2012 09:10

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.	Borehole Temp. Unfilt.		
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	

Caliper Calibration MPD-C.J 393

Base Calibration on 03-JUL-2012 15:02

Field Calibration on 09-JUL-2012 13:30

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	16224	4.01
2	24448	5.96
3	32976	7.98
4	41152	9.86
5	50112	11.88
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.94	5.98

Photo Density Calibration MPD-C.J 393

Base Calibration on 03-JUL-2012 14:33

Field Check on 09-JUL-2012 12:46

Density Calibration

Base Calibration		Measured		Calibrated (sdu)	
	Near	Far	Near	Far	
Reference 1	54678	26470	59869	31110	
Reference 2	23479	2726	24557	2522	

Field Check at Base

1229.7	1344.0
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Field Check

Field Check

1228.6

1347.5

PE Calibration

Base Calibration

	WS	Measured WH	Ratio	Calibrated Ratio
Background	227	1110		
Reference 1	22306	54489	0.414	0.369
Reference 2	6605	23344	0.287	0.271

Field Check at Base

227.5 1110.5

Field Check

225.2 1104.7

Density Constants MPD-C.J 393

Last Edited on 11-JUL-2012 09:09

Density Source Id	p21137b	
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	1.11	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)	Depth (ft)	
2.71		
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	

DOWNHOLE EQUIPMENT

C:\Minimus 12.02.4401\Data\SDRGE (SUTTON 1-9H)\28472 RTAP.dta

Shuttle Mechanical Release (SMR A)

SMR-A 154 LG: 8.53 ft WT: 77.2 lb OD: 2.52 in

Shuttle Electrical Release

SER-B.A 166 LG: 6.90 ft WT: 50.7 lb OD: 2.24 in

MBS-G.A 200v Compact Battery Sub

MBS-G.A 119 LG: 17.06 ft WT: 123.5 lb OD: 2.24 in

SKJ-D Compact Knuckle Joint

SKJ-D 30 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

spacer sub

MLK-A 4 LG: 14.22 ft WT: 30.9 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint

SKJ-E.B 480 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Memory Sub E.B

MMS-E.B 175 LG: 5.20 ft WT: 37.5 lb OD: 2.24 in

MIS-E.B Compact Inline Standoff sub



MIS-E.B 577 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Tool Isolator sub.

MTI-B.A 62 LG: 1.54 ft WT: 13.2 lb OD: 2.24 in

Compact Short Gamma

MGS-C.J 134 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in

SKJ-E.A Compact Knuckle Joint

SKJ-E.A 185 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SHA-H Compact Swivel Head Adaptor

SHA-H 185 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

MIS-A.A Compact Inline Bowspring sub

MIS-A.A 277 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact Neutron

MDN-B.J 390 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper

MPD-C.J 393 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in

MIS-D.A Compact Inline Bowspring sub

MIS-D.A 596 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor

SHA-J.A 270 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint

SKJ-E.B 472 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-E.B Compact Inline Standoff sub

MIS-E.B 565 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor

SHA-J.A 451 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

MIS-D.A Compact Inline Bowspring sub

MIS-D.A 717 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact MMI Memory Section

MIM-A.A 231 LG: 4.65 ft WT: 26.5 lb OD: 2.24 in

Compact MMI Electrode Section

MIE-A.A 209 LG: 13.96 ft WT: 99.2 lb OD: 4.09 in

MIS-D.A Compact Inline Bowspring sub

MIS-D.A 718 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint

SKJ-E.B 469 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

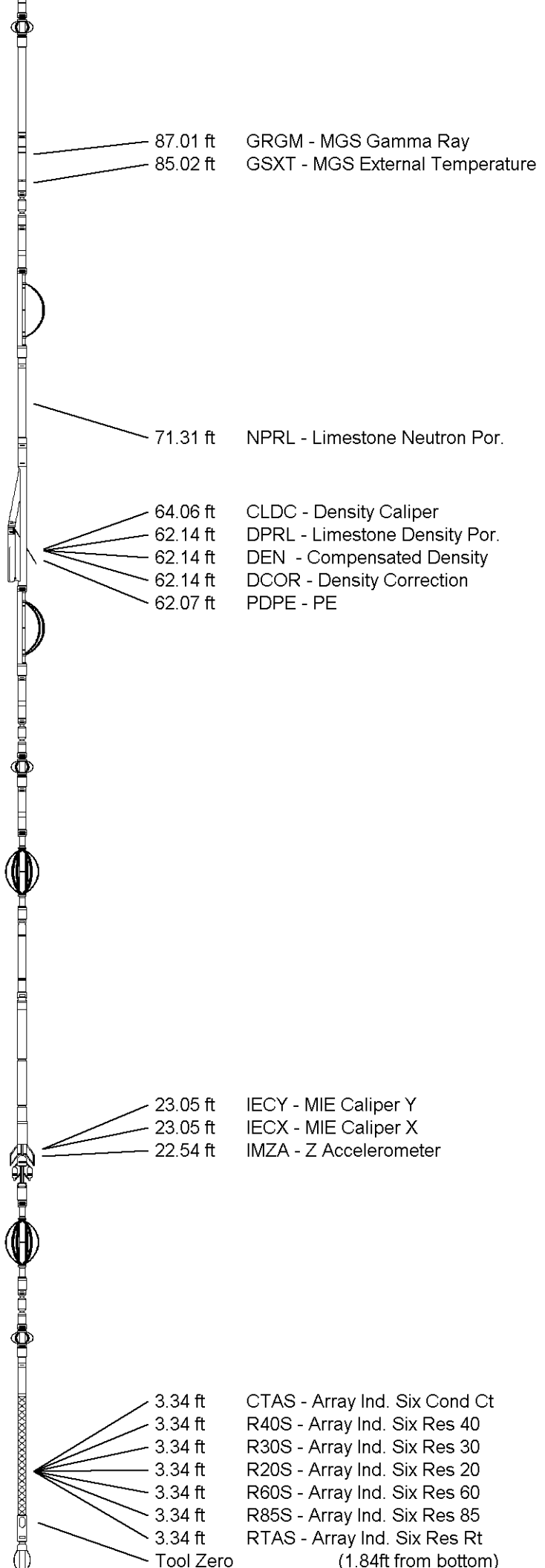
MIS-E.B Compact Inline Standoff sub

MIS-E.B 573 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Induction

MAI-B.J 389 LG: 12.52 ft WT: 48.5 lb OD: 2.24 in

Total Length: 149.55 ft Weight: 1038.4 lb





All measurements relative to tool zero.

COMPANY	SANDRIDGE ENERGY
WELL	SUTTON 1-9H
FIELD	CHEYENNE VALLEY
PROVINCE/COUNTY	NESS
COUNTRY/STATE	USA / KANSAS

Elevation Kelly Bushing	2514.00	feet	First Reading	8790.00	feet
Elevation Drill Floor	2514.00	feet	Depth Driller	8869.00	feet
Elevation Ground Level	2494.00	feet	Depth Logger	8869.00	feet



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