COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG

Weatherford®

COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	VANDERPOOL #2-5
FIELD	UNNAMED
PROVINCE/COUNTY	MEADE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	2755' FSL & 1101' FWL

SEC	TWP	RGE	Other Services
5	34S	28W	MAI/MFE

API Number 15-119-21323
Permit Number

Permanent Datum G.L., Elevation 2360 feet
Log Measured From KB
Drilling Measured From K.B. @ 12 FEET

Elevations:	feet
KB	2372.00
DF	2370.00
GL	2360.00

Date	05-AUG-2012				
Run Number	ONE				
Depth Driller	6400.00	feet			
Depth Logger	6392.00	feet			
First Reading	6373.00	feet			
Last Reading	3000.00	feet			
Casing Driller	1493.00	feet			
Casing Logger	1488.00	feet			
Bit Size	7.875	inches			
Hole Fluid Type	CHEMICAL				
Density / Viscosity	1.08 g/c3		68.00 CP		
PH / Fluid Loss	10.50		5.20 ml/30Min		
Sample Source	FLOWLINE				
Rm @ Measured Temp	1.01 @102.0	ohm-m			
Rmf @ Measured Temp	0.81 @102.0	ohm-m			
Rmc @ Measured Temp	1.20 @102.0	ohm-m			
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	0.79 @131.0	ohm-m			
Time Since Circulation	4 HOURS				
Max Recorded Temp	131.00	deg F			
Equipment Name	COMPACT				
Equipment / Base	13057		LIB		
Recorded By	R. HOFFMAN				
Witnessed By	AUSTIN GARNER			ROGER PEARSON	
S.O. # / JOB #	3534569			LB12-203	

BOREHOLE RECORD

Last Edited: 05-AUG-2012 20:49

Bit Size inches	Depth From feet	Depth To feet
7.875	1488.00	6392.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	1488.00	24.00

REMARKS

Tools Ran: MCG, MML, MDN, MPD, MFE, MAI.
Hardware Used: MDN Dual Eccentralizer used. MPD 8 inch profile plate used. MFE and MAI 0.5 inch standoffs used.
2.71 g/cc Limestone Density Matrix used to calculate porosity.
All intervals logged and scaled per customer's request.
Tight pulls, washouts and borehole rugosity will affect data quality.
Total hole volume from TD to Surface casing = 1951 cu. ft.
Annular volume with 4.5 inch production casing TD to 3000ft = 399 cu. ft.
Service order: #3534569
Rig: Duke Drilling Rig #6
Engineer: R. Hoffman
Operator(s): B. Reeves

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 05-AUG-2012 20:49
Filename: C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5 Main.dta
Recorded on 05-AUG-2012 18:21
System Versions: Logged with 13.02.6600 Processed with 13.02.6600 Plotted with 13.02.6600

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

Limestone Neutron Por.
percent
30 20 10 0 -10

Limestone Density Por.
percent
30 20 10 0 -10

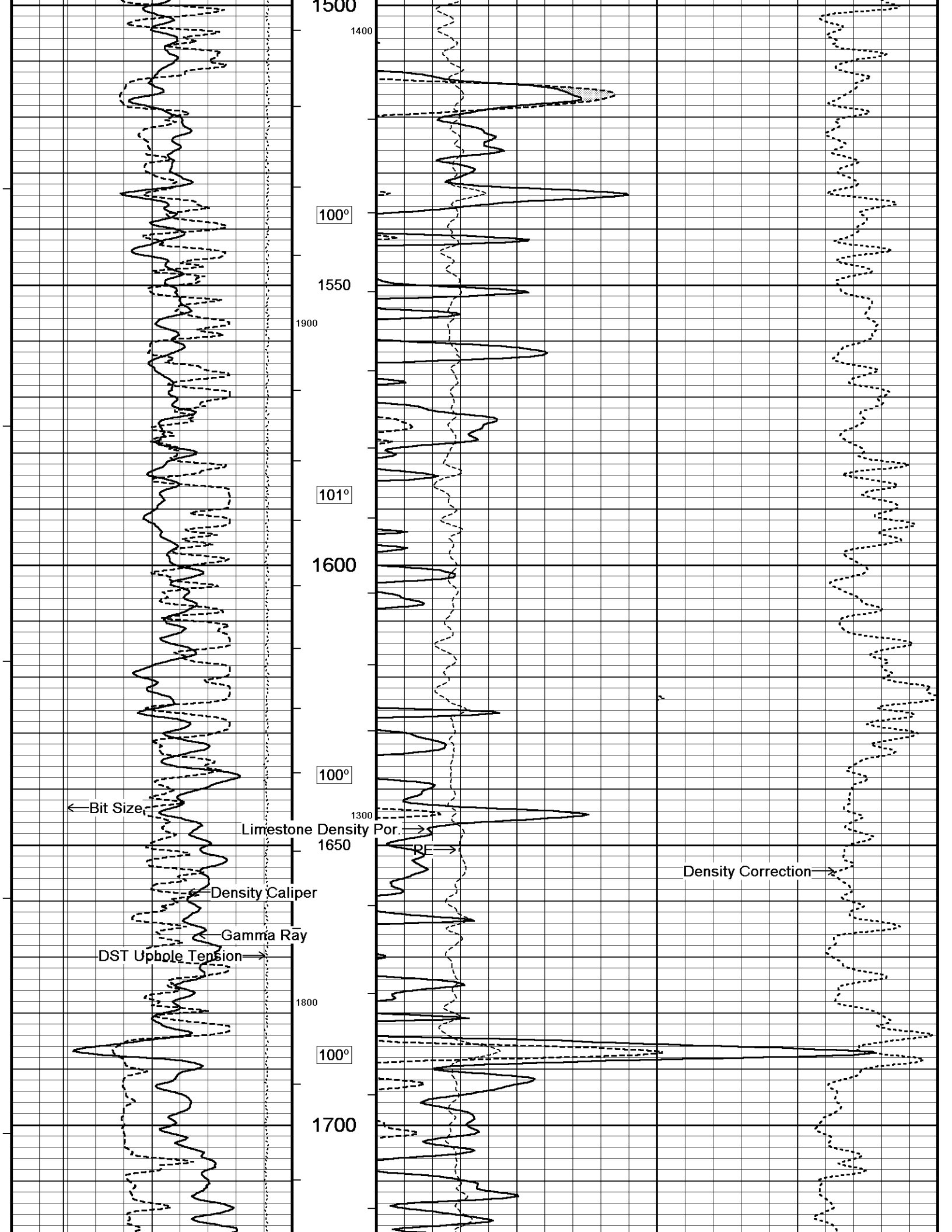
PE
barns/electron
0 5 10

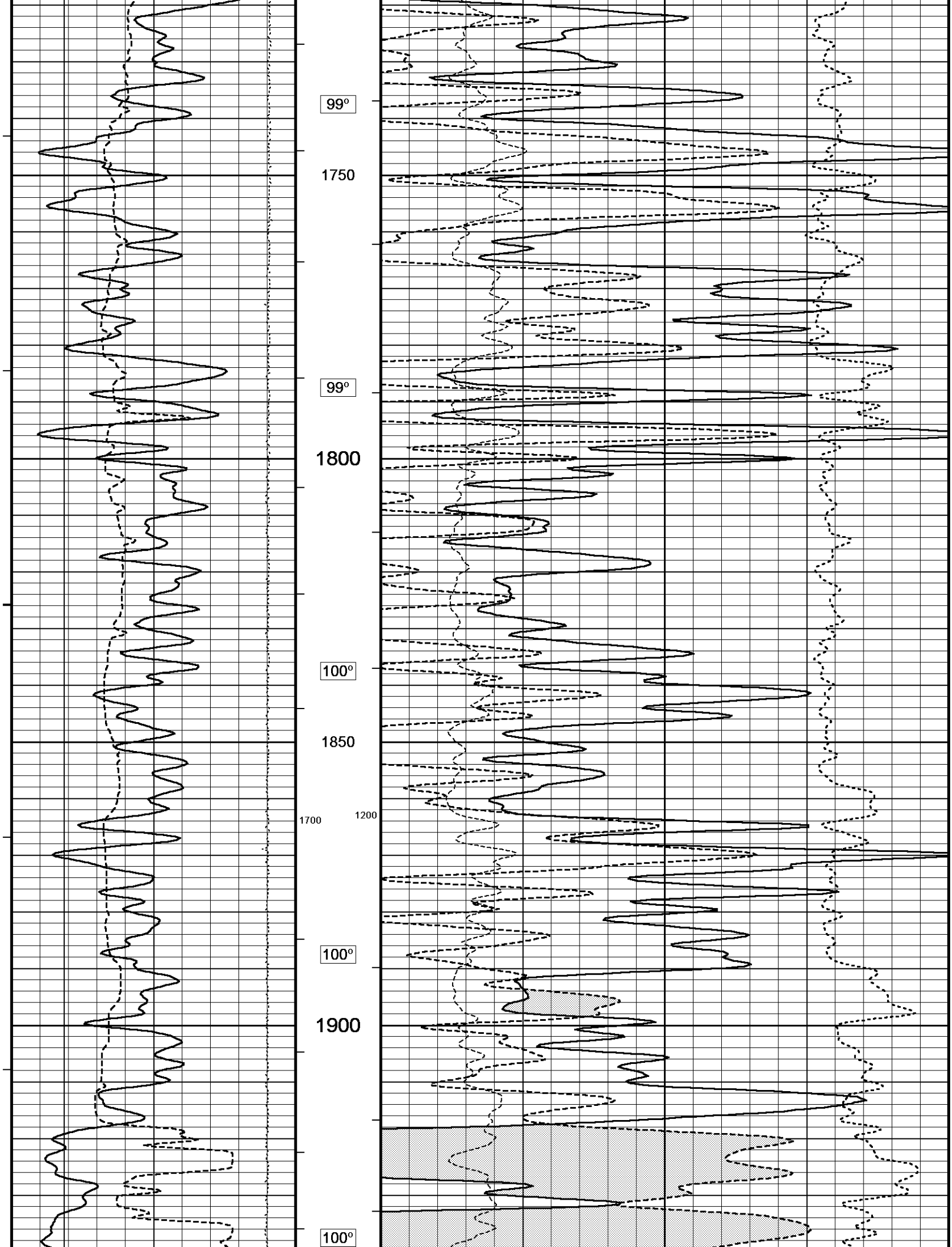
Density Correction
grams/cc
-0.25 0 0.25

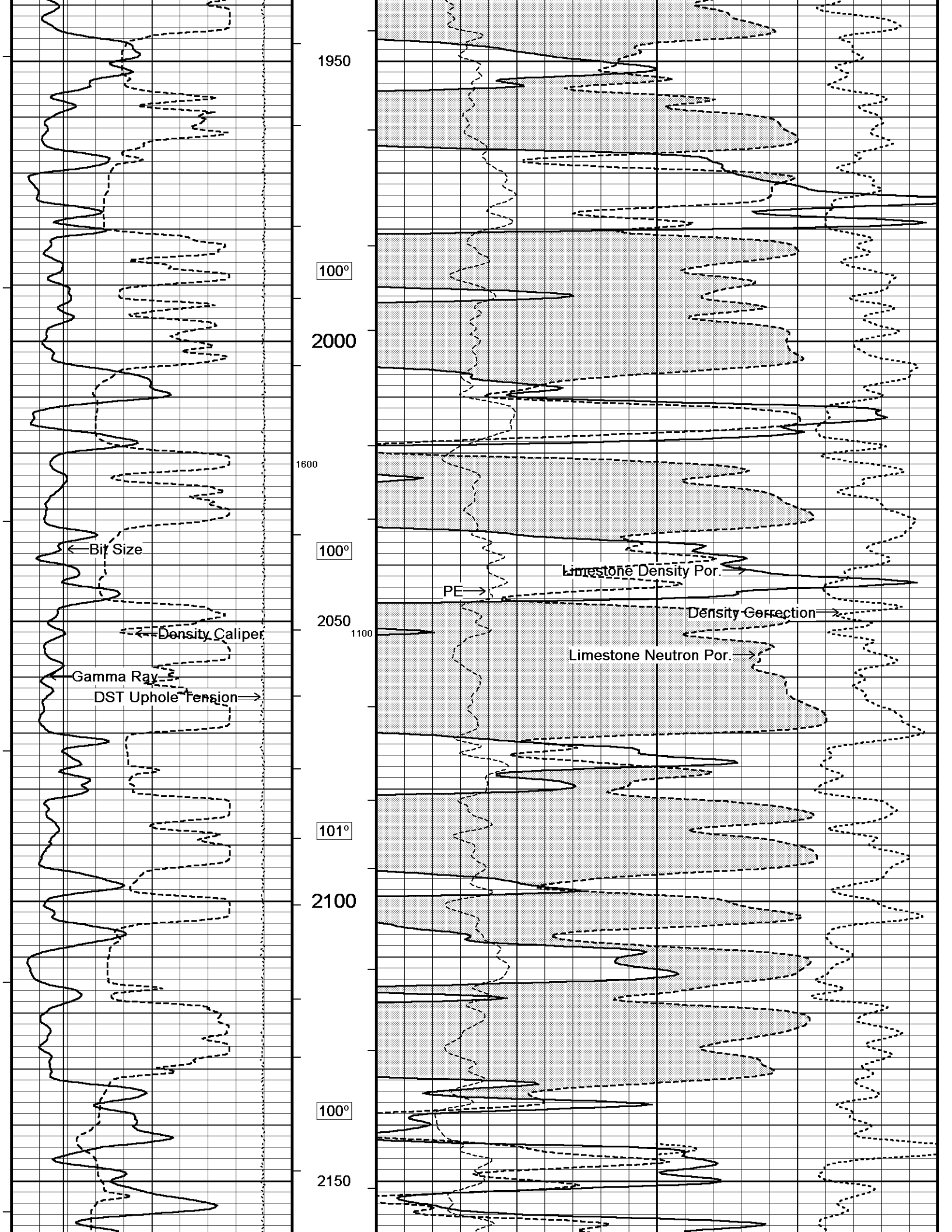
1404

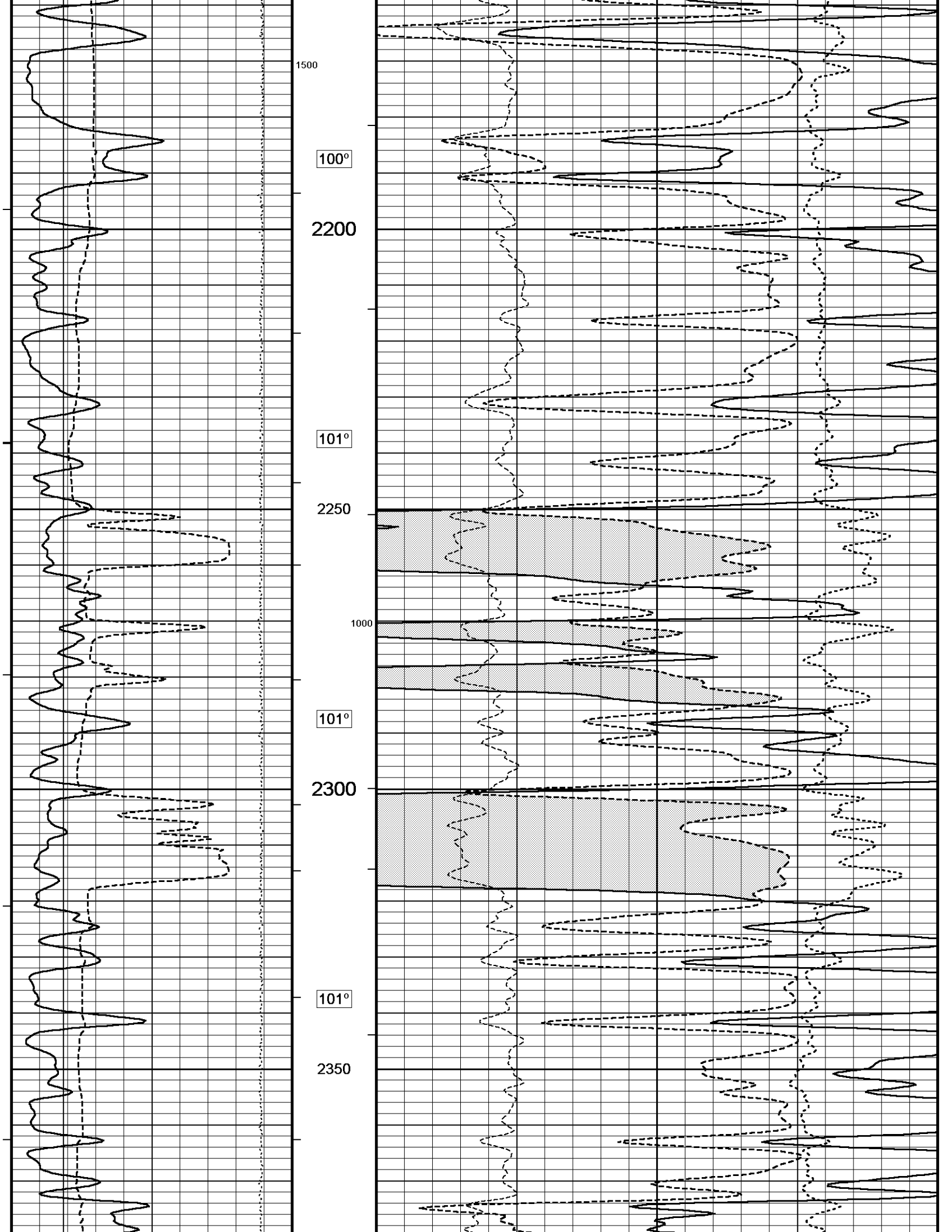
1450

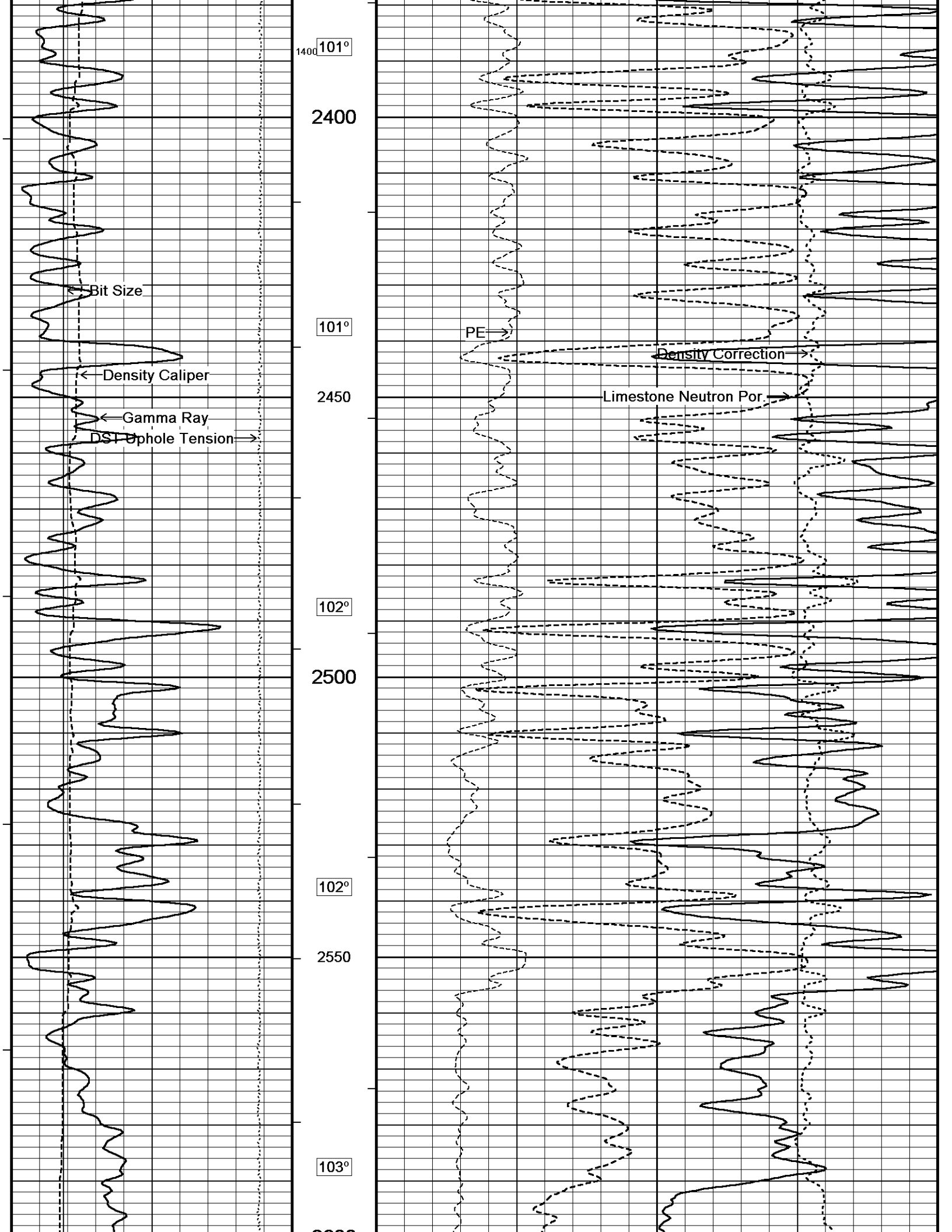
Casing Shoe
99

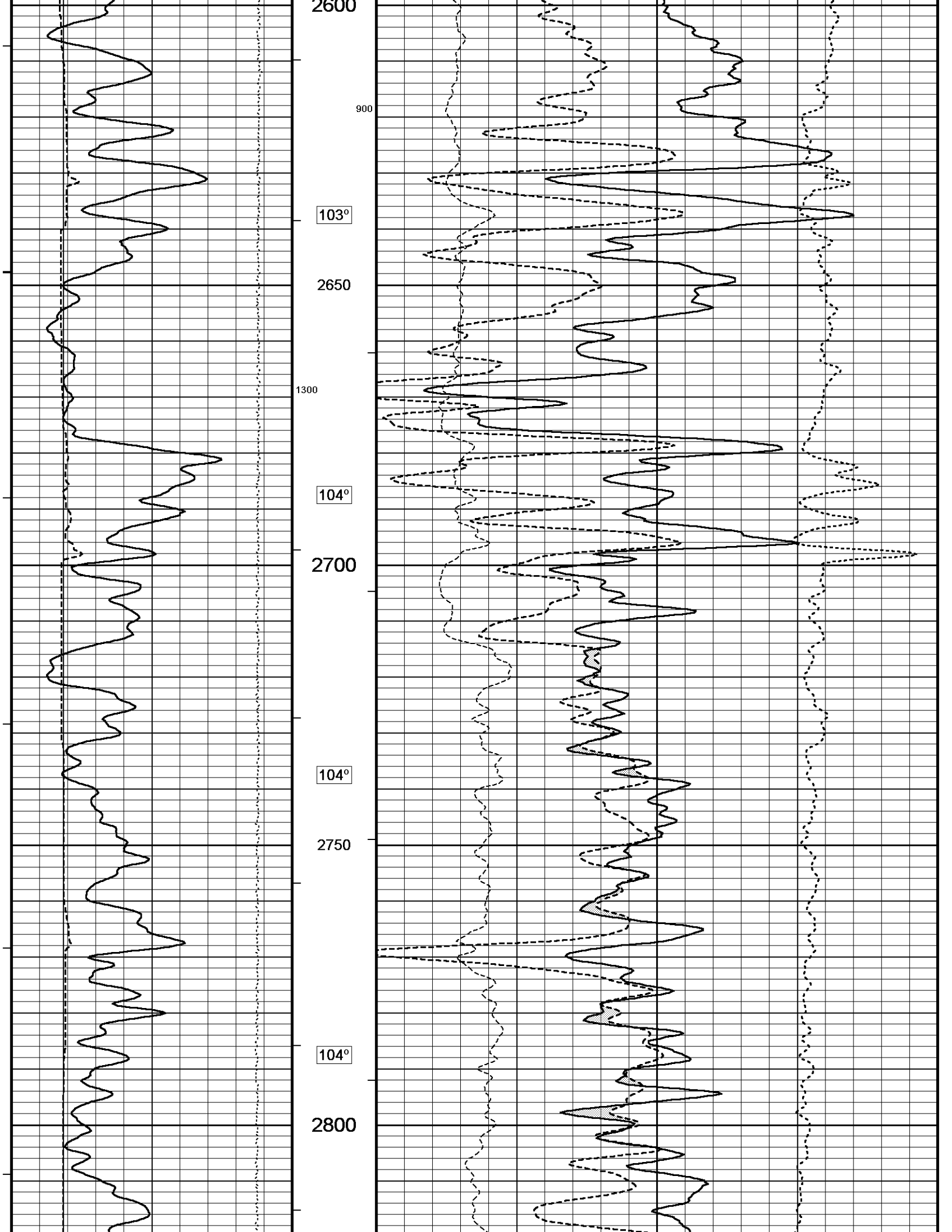

1500
1400
100°
1550
1900
101°
1600
100°
1300
1650
1800
100°
1700
Bit Size
Limestone Density Por
RE
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension

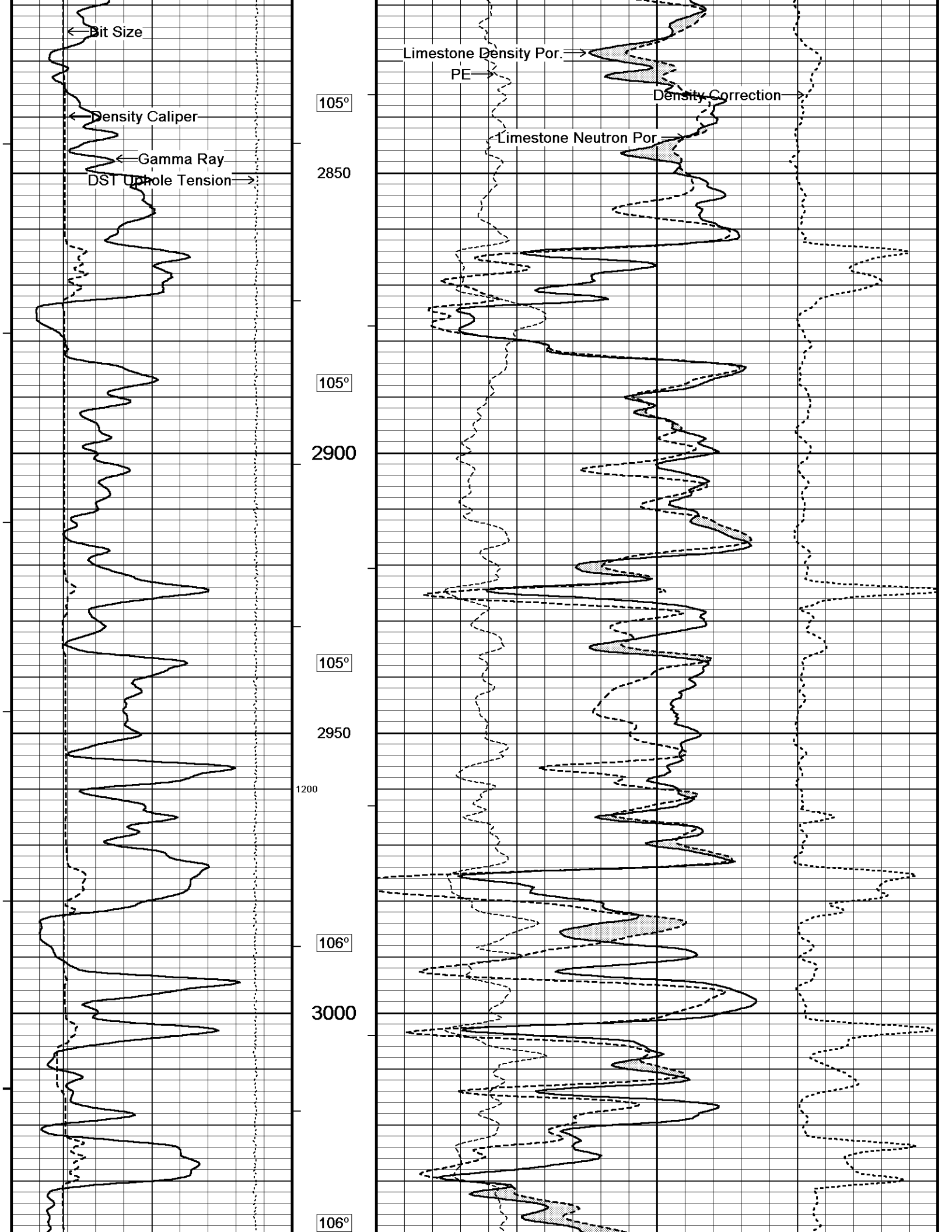

99°
1750
99°
1800
100°
1850
1700
1200
100°
1900
100°

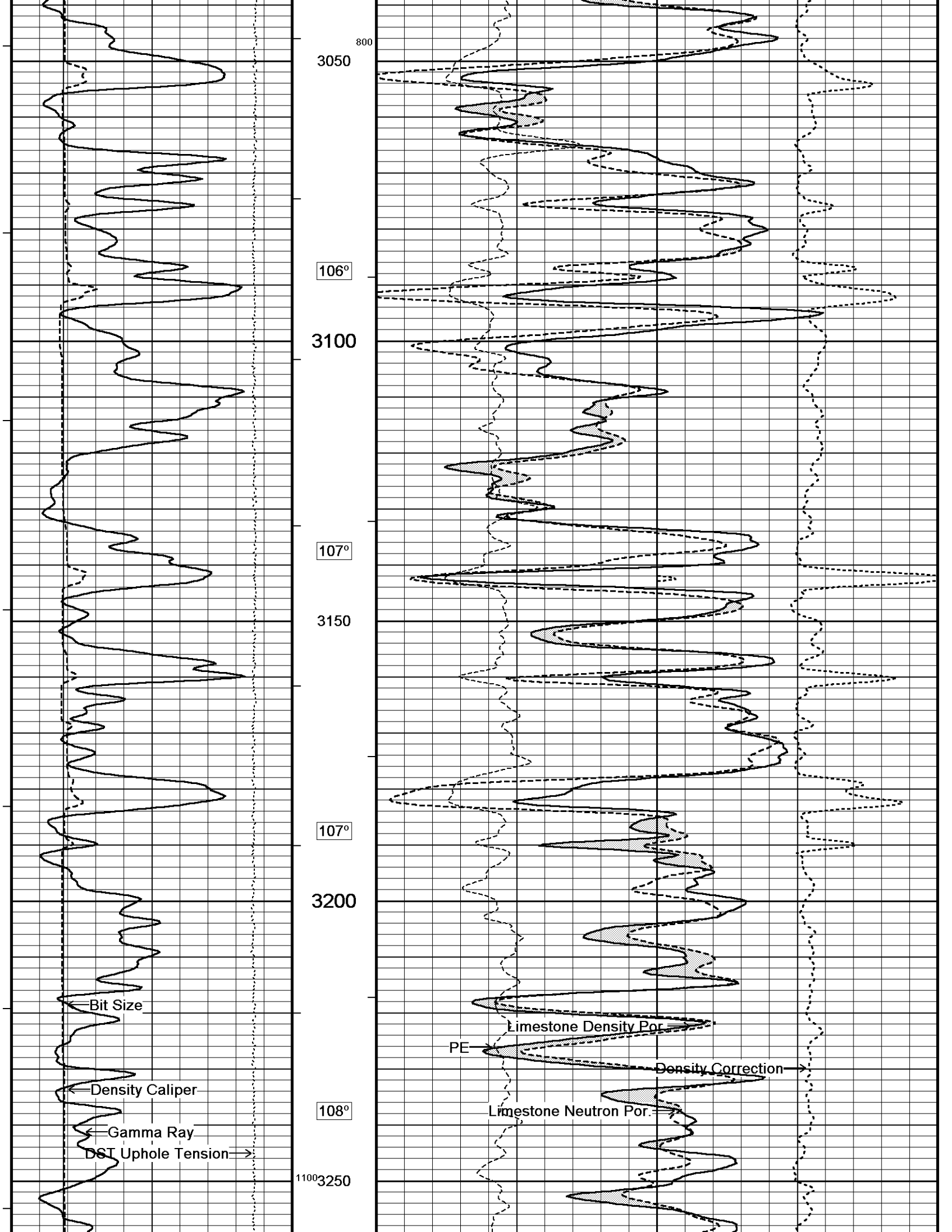

1950
100°
2000
1600
100°
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
2050
1100
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.
101°
2100
100°
2150

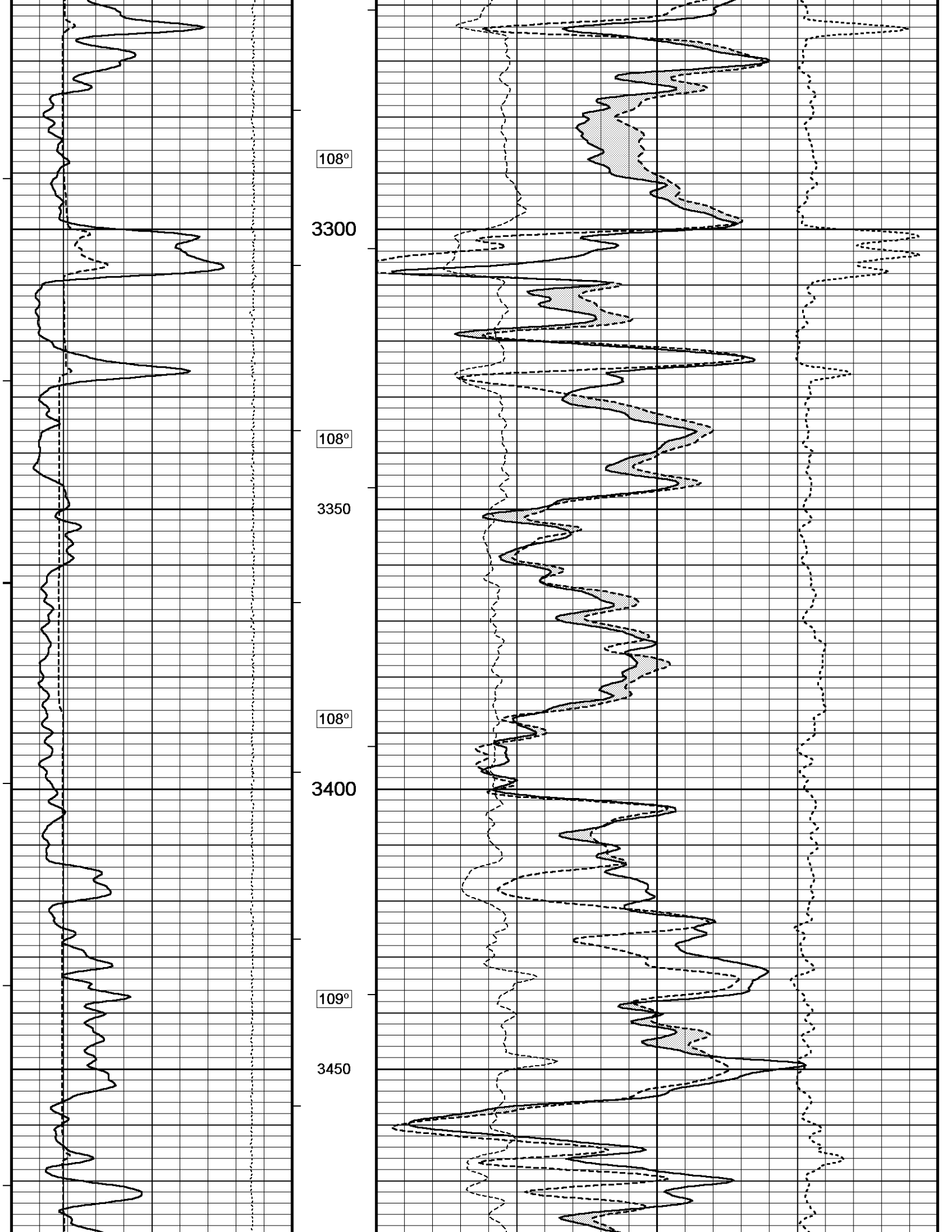

1500
100°
2200
101°
2250
1000
101°
2300
101°
2350

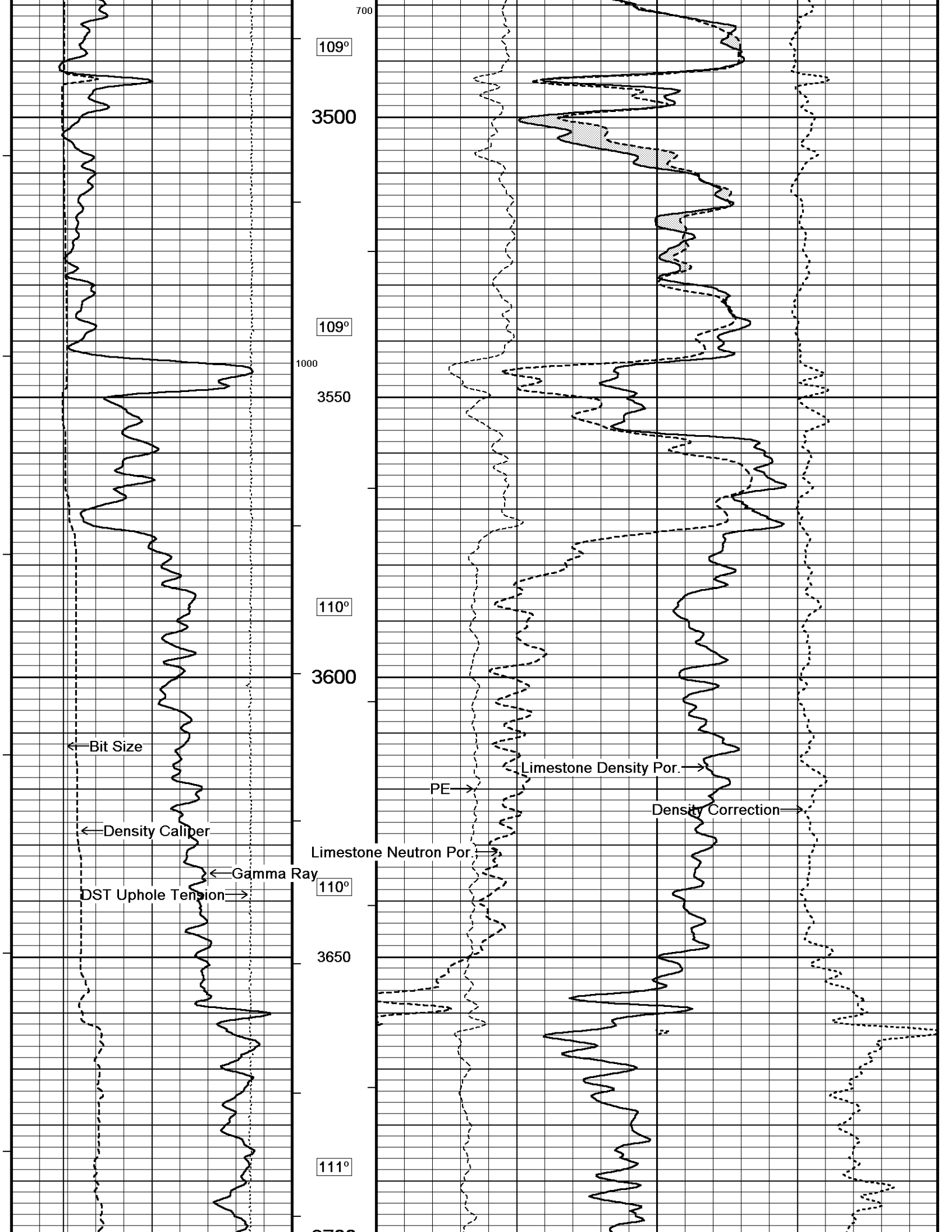

1400
101°
2400
Bit Size
101°
PE
Density Correction
Density Caliper
2450
Limestone Neutron Por
Gamma Ray
DST Uphole Tension
102°
2500
102°
2550
103°

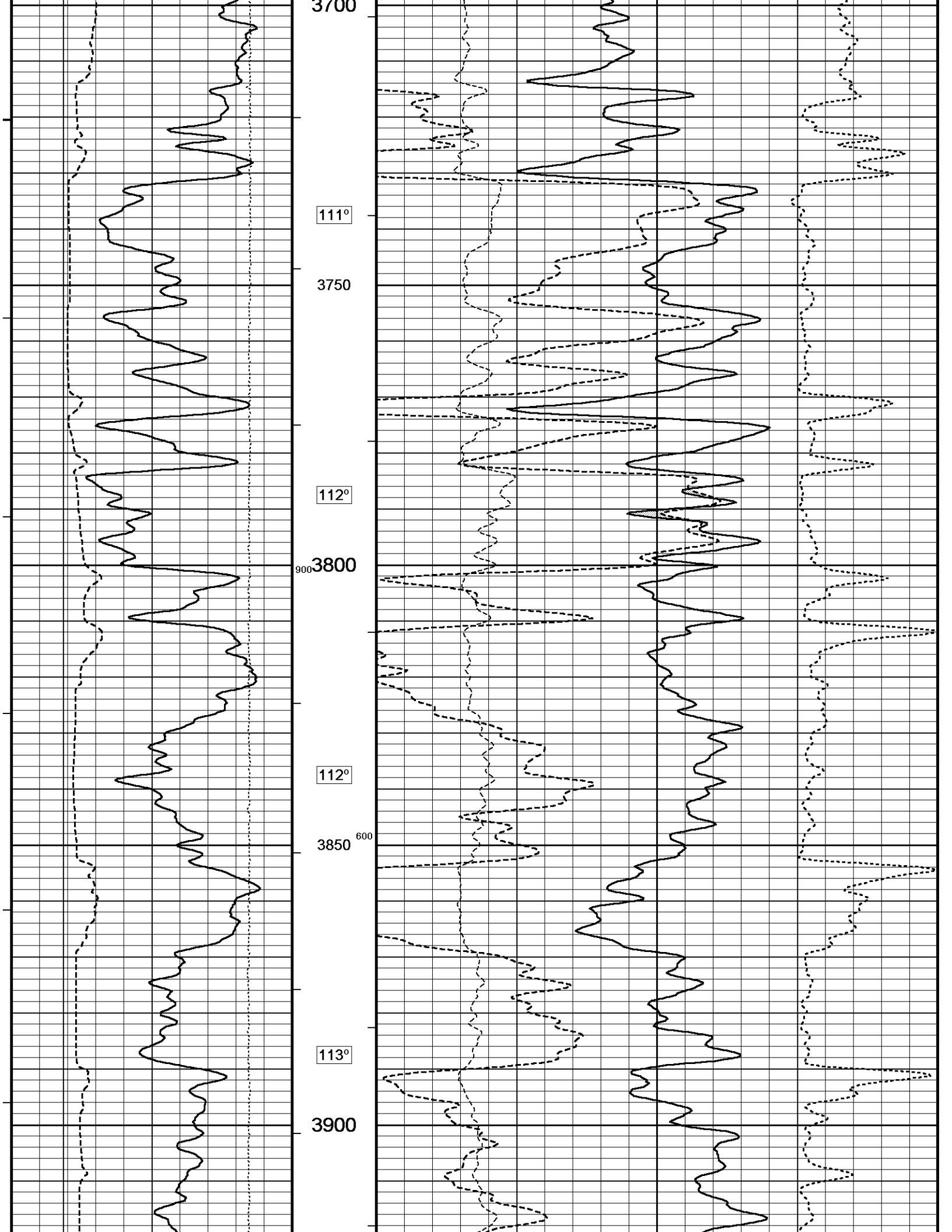

2600
900
103°
2650
1300
104°
2700
104°
2750
104°
2800

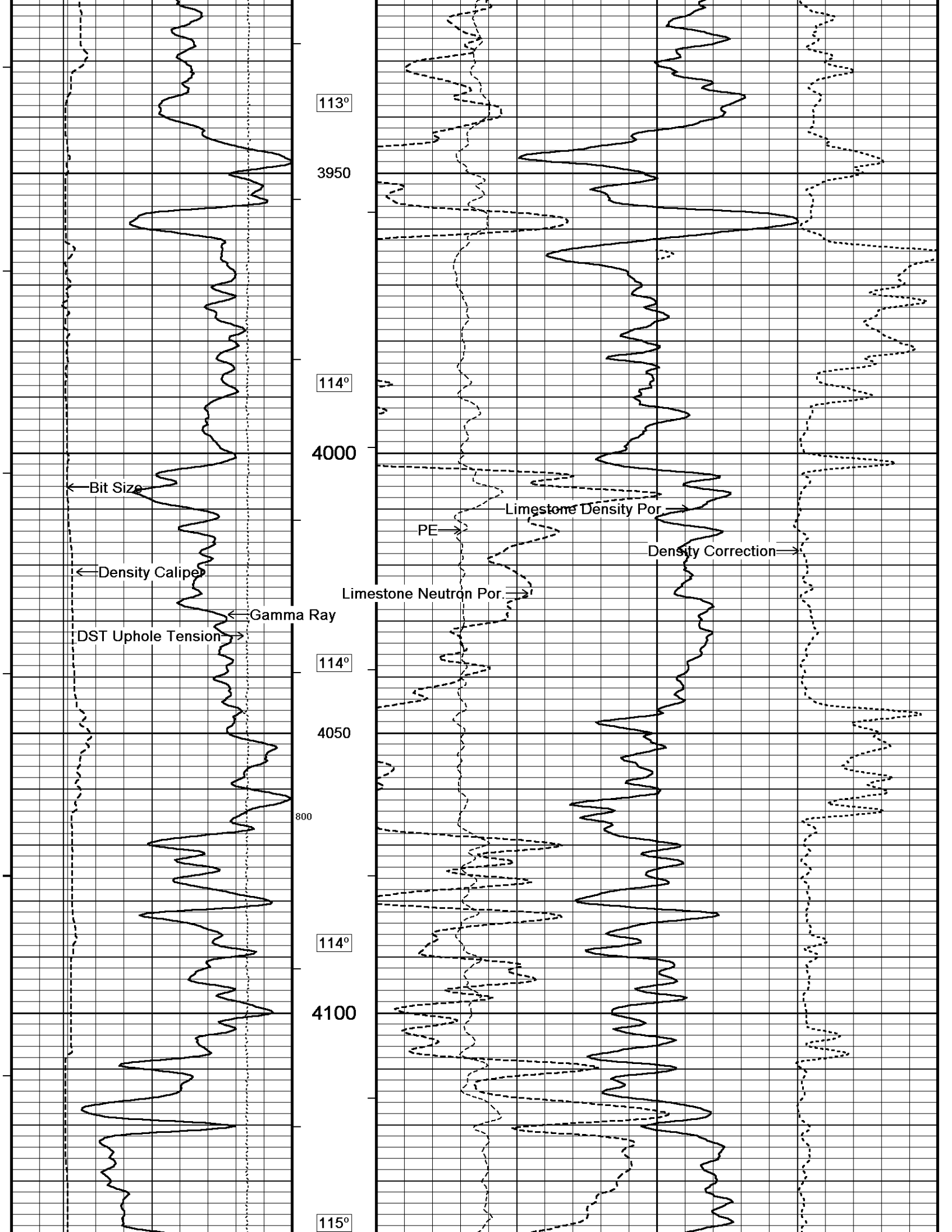

Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por
105°
2850
105°
2900
105°
2950
1200
106°
3000
106°

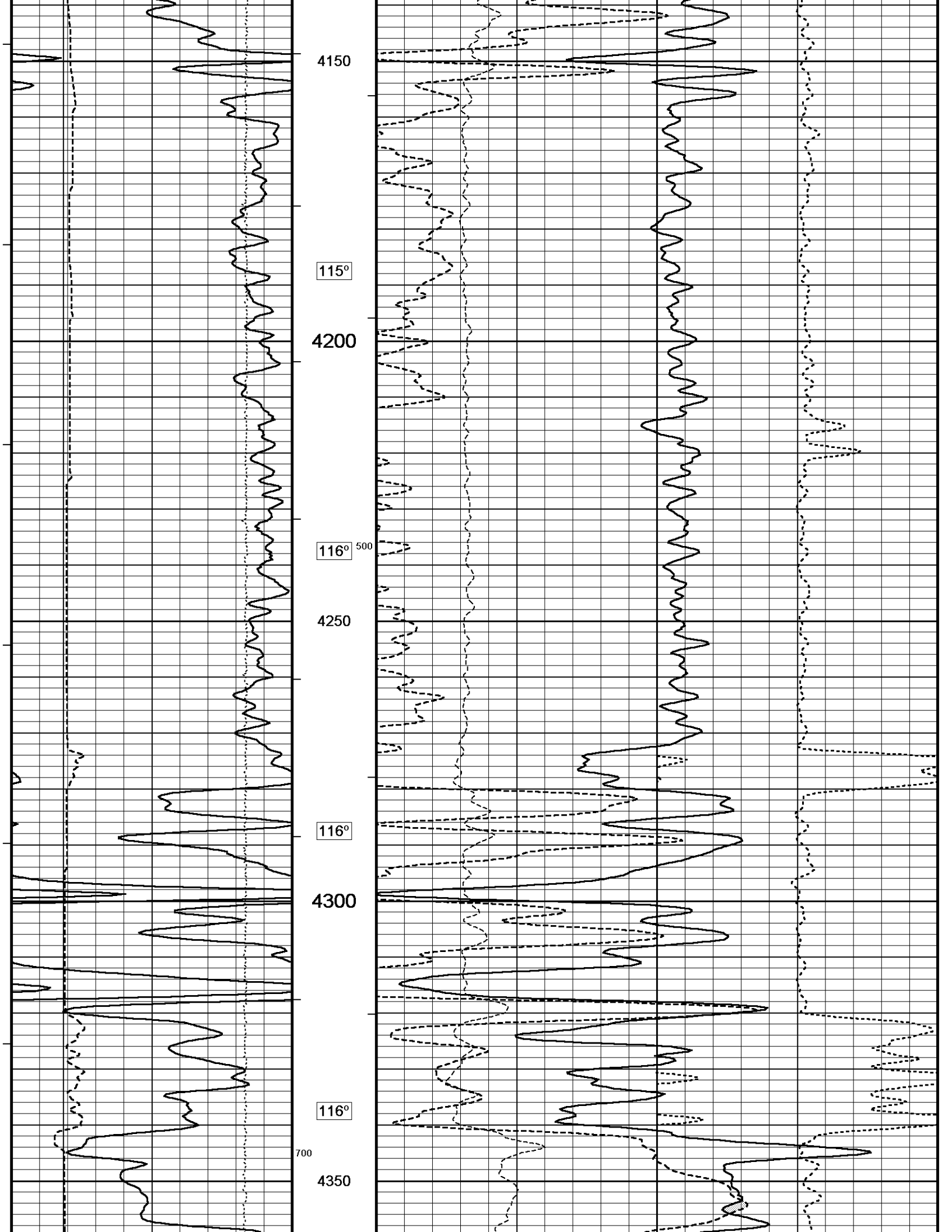

800
3050
106°
3100
107°
3150
107°
3200
108°
1100 3250
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.

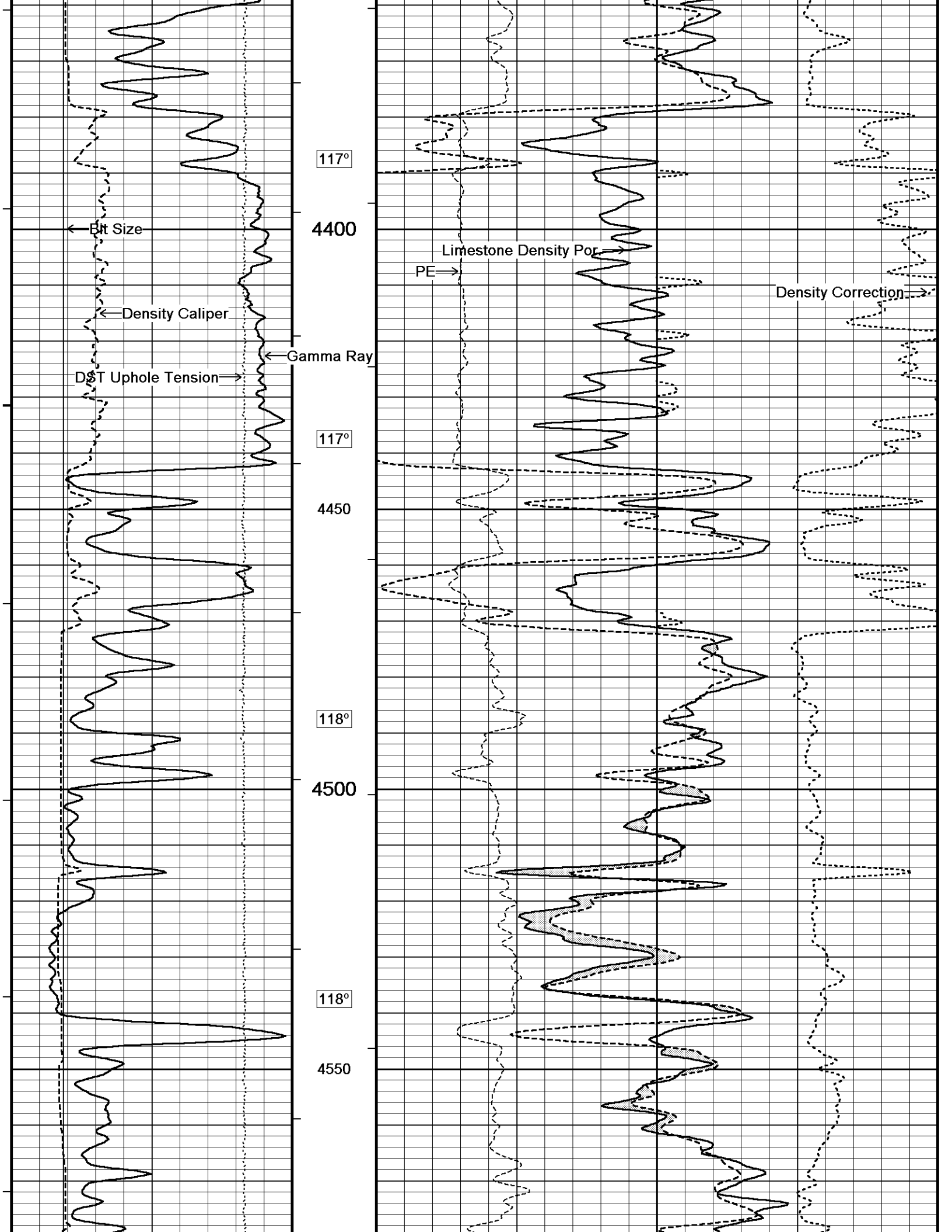

108°
3300
108°
3350
108°
3400
109°
3450

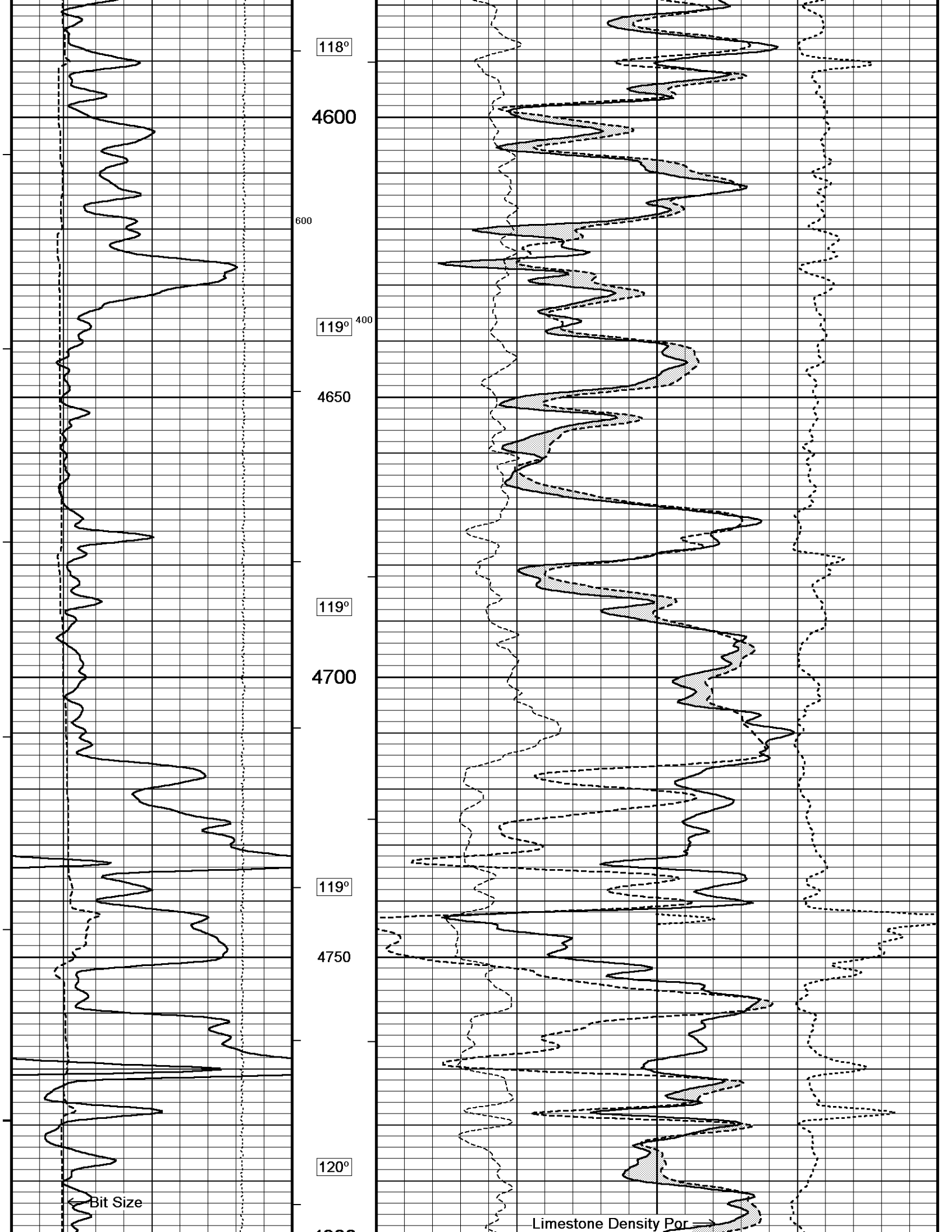

700
109°
3500
109°
1000
3550
110°
3600
Bit Size
Limestone Density Por.
PE
Density Correction
Density Caliper
Limestone Neutron Por.
Gamma Ray
110°
DST Uphole Tension
3650
111°

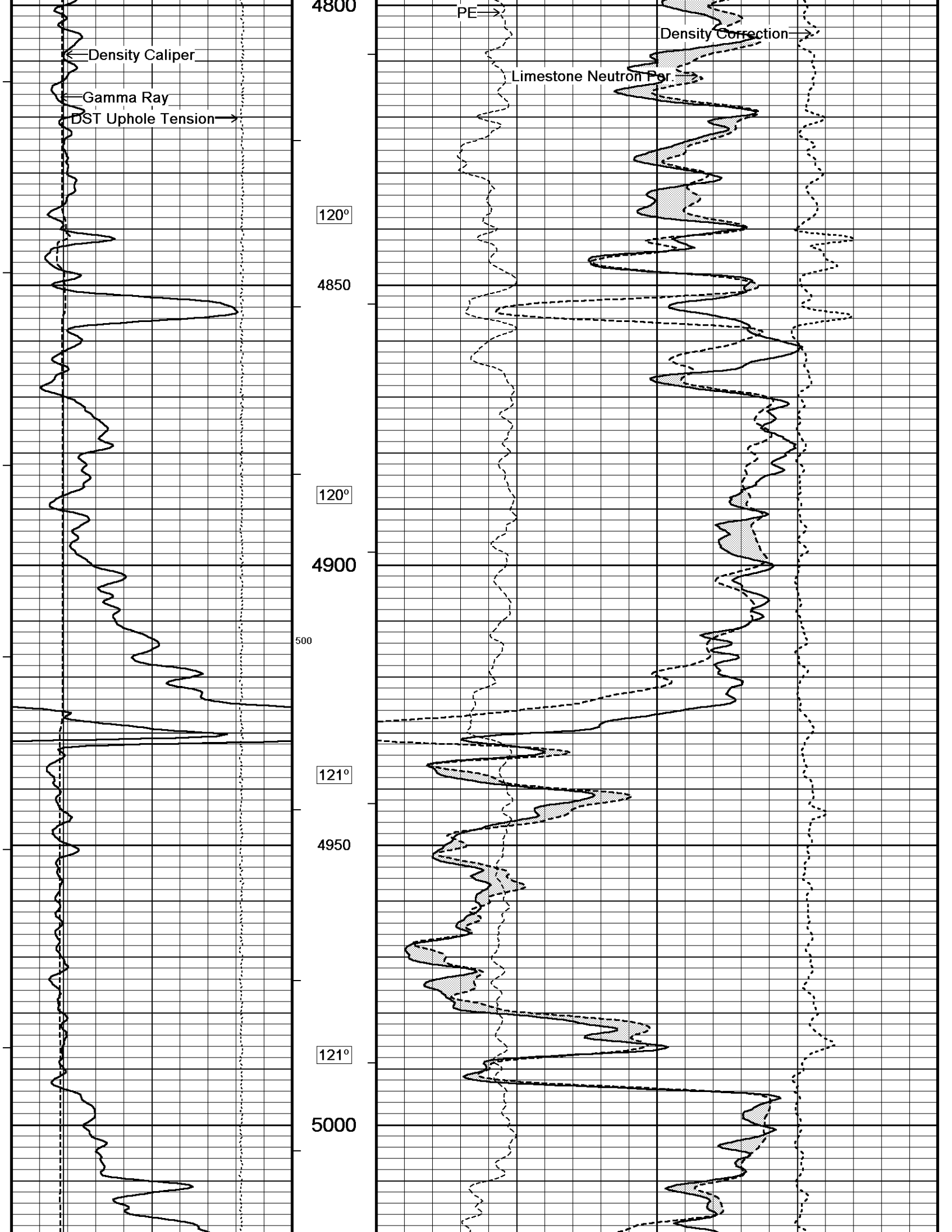

3700
111°
3750
112°
900
3800
112°
3850
600
113°
3900

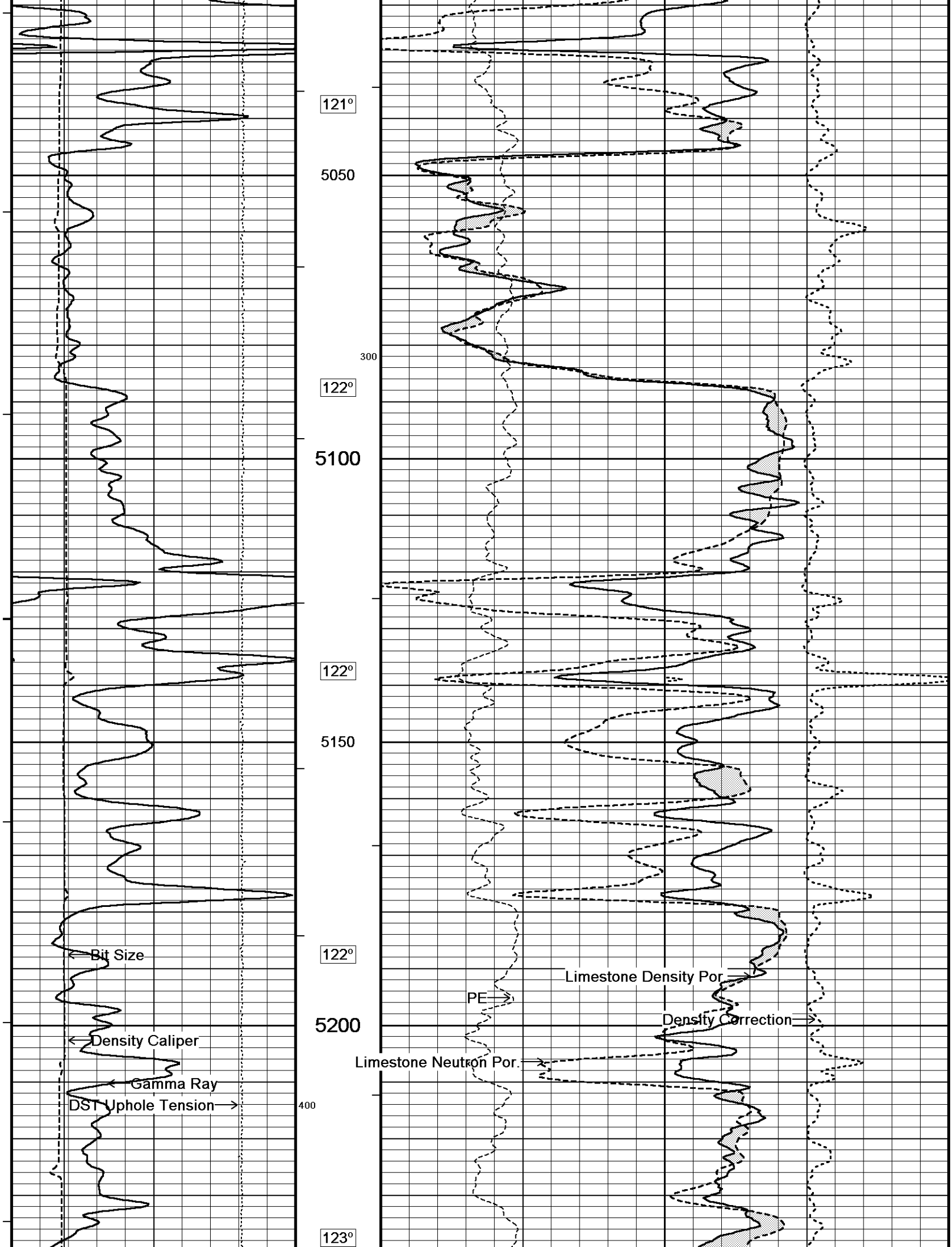

113°
3950
114°
4000
Bit Size
Limestone Density Por
PE
Density Correction
Density Caliper
Limestone Neutron Por.
Gamma Ray
DST Uphole Tension
800
114°
4050
114°
4100
115°

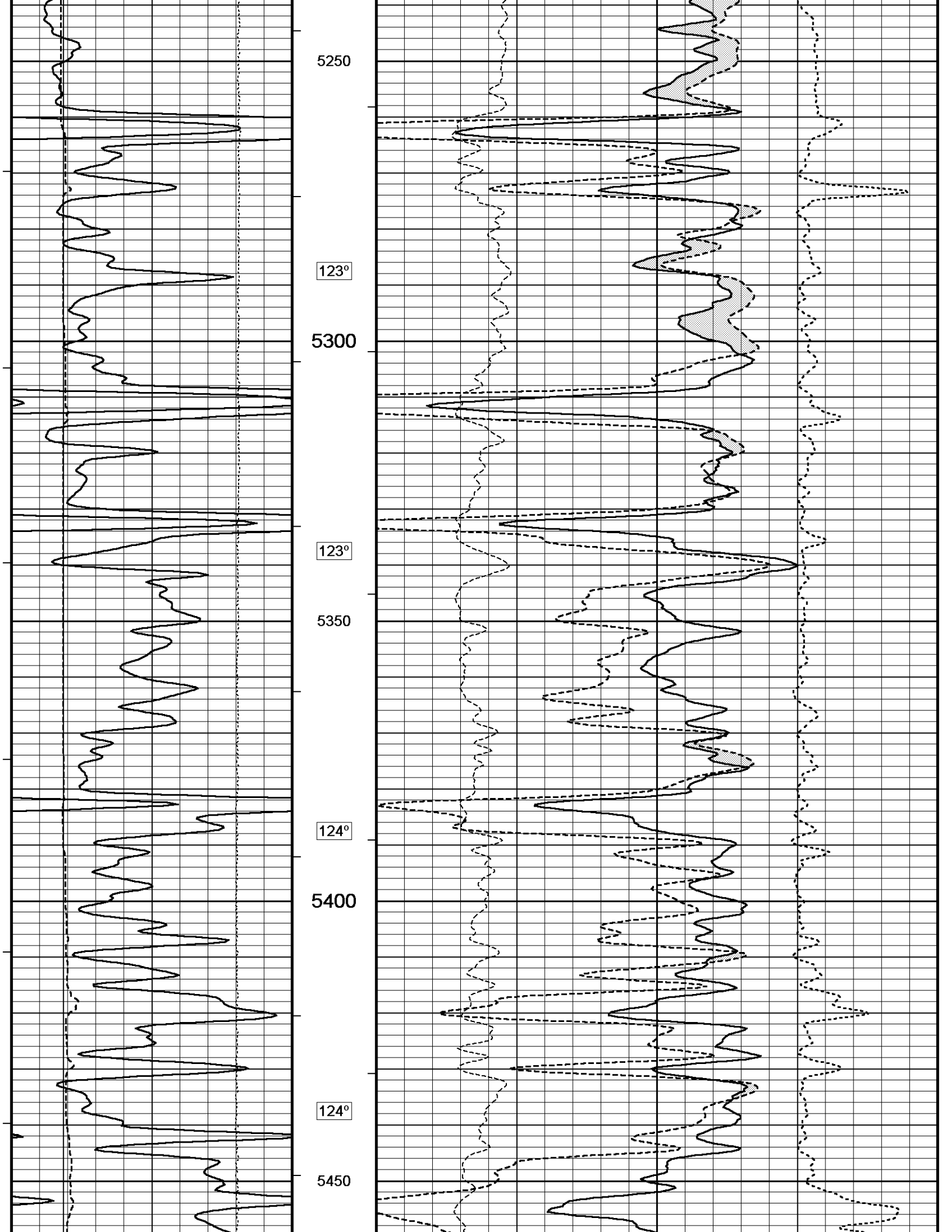

4150
115°
4200
116°
500
4250
116°
4300
116°
700
4350

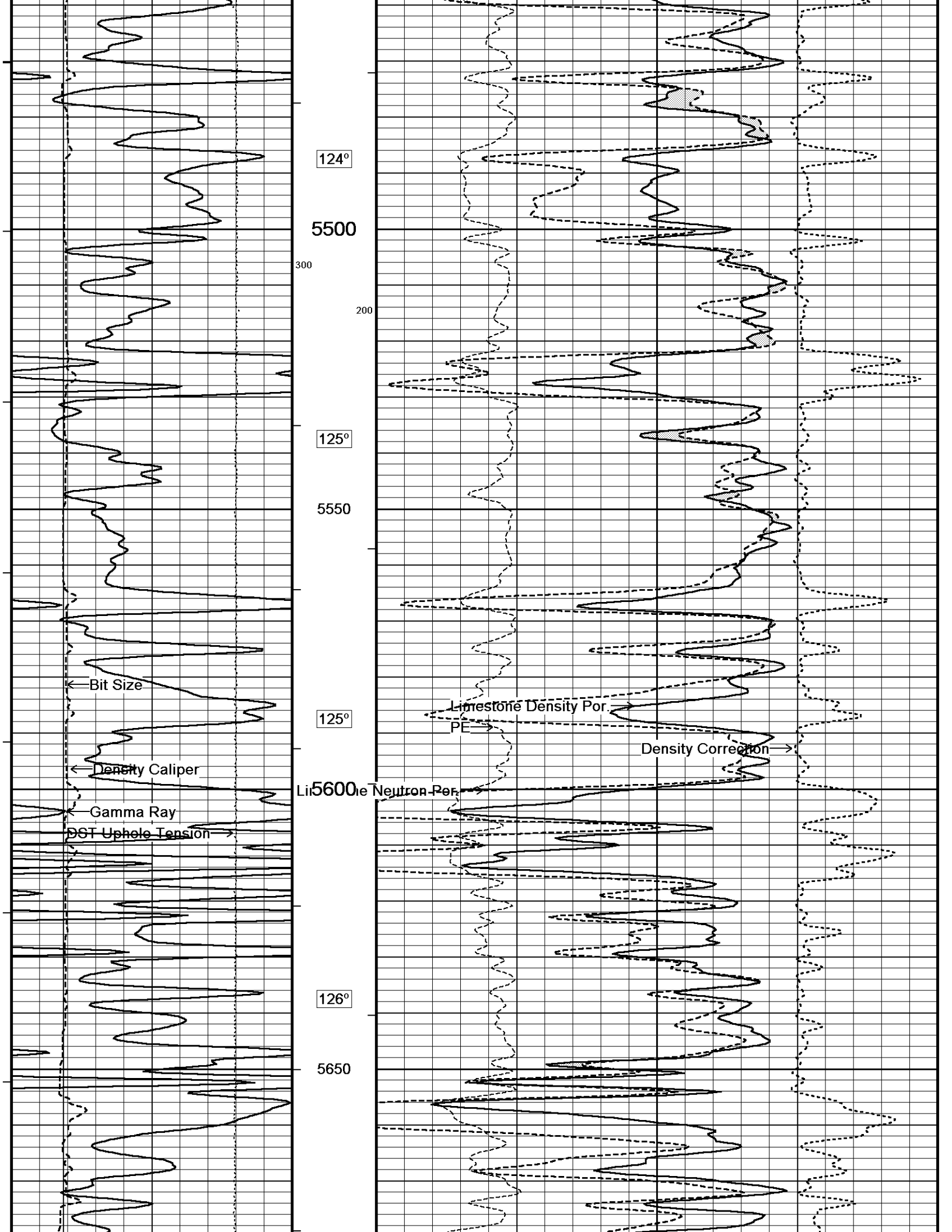

117°
4400
Bit Size
Limestone Density Por
PE
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
117°
4450
118°
4500
118°
4550

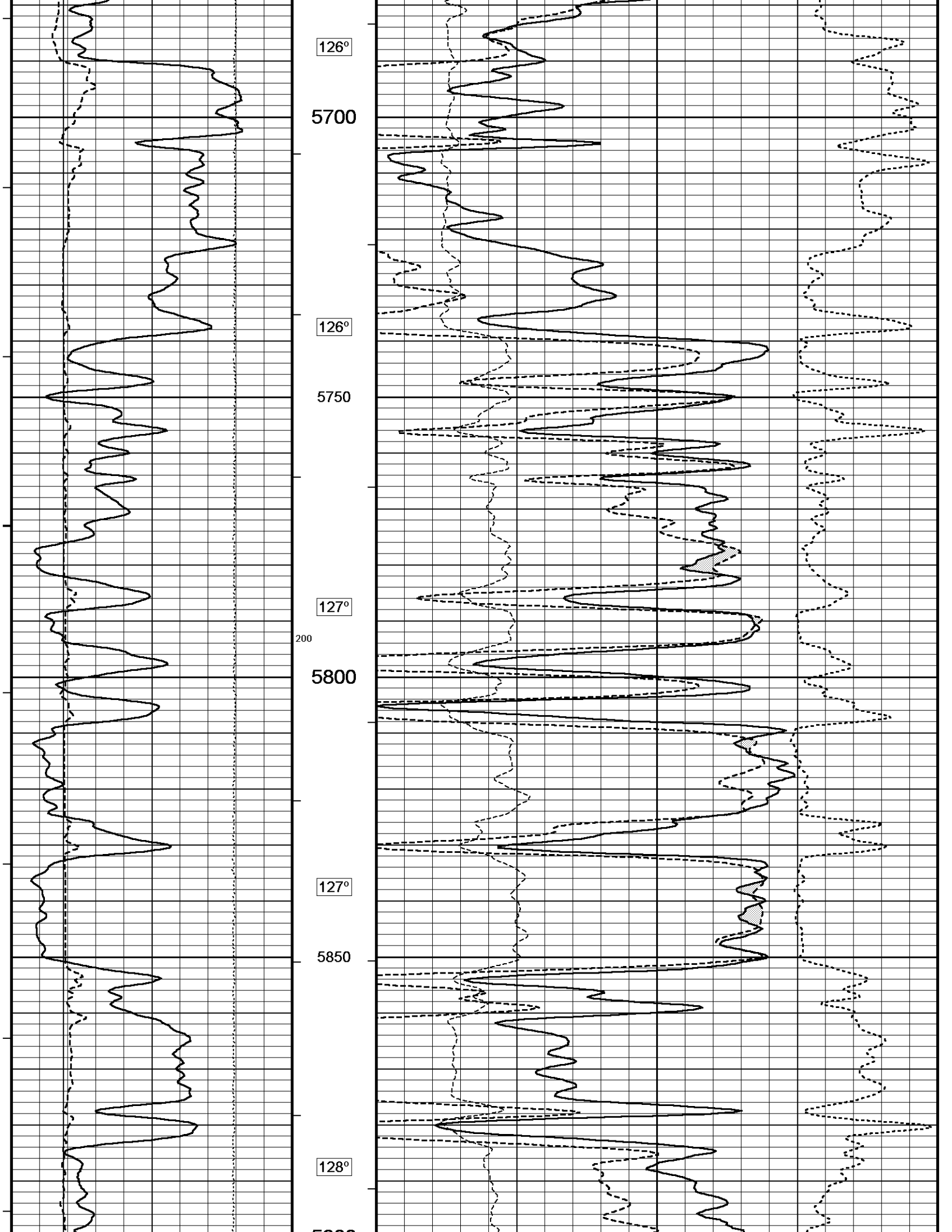

118°
4600
600
119°
400
4650
119°
4700
119°
4750
120°
Bit Size
Limestone Density Por

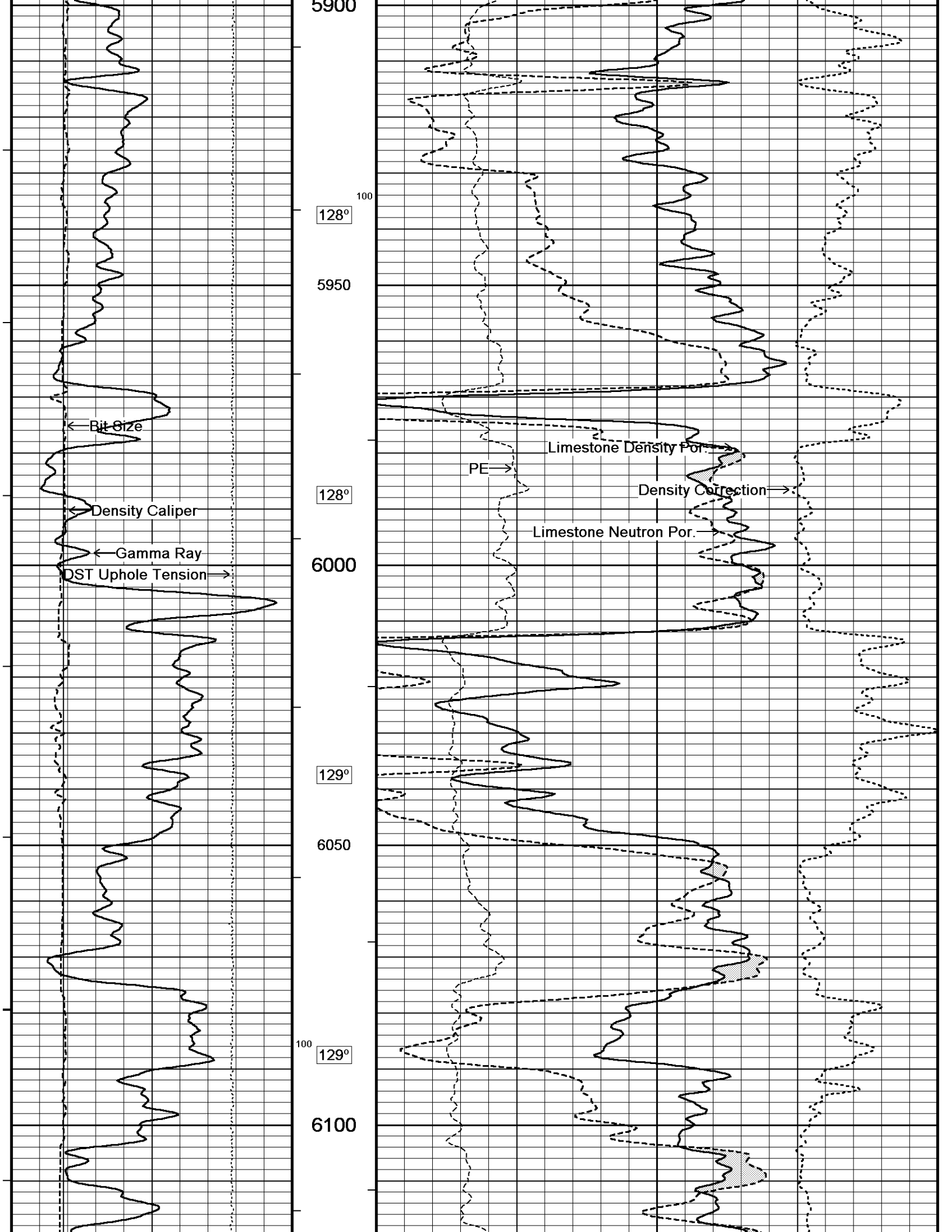

Density Caliper
Gamma Ray
DST Uphole Tension
4800
PE
Density Correction
Limestone Neutron Por.
120°
4850
120°
4900
500
121°
4950
121°
5000

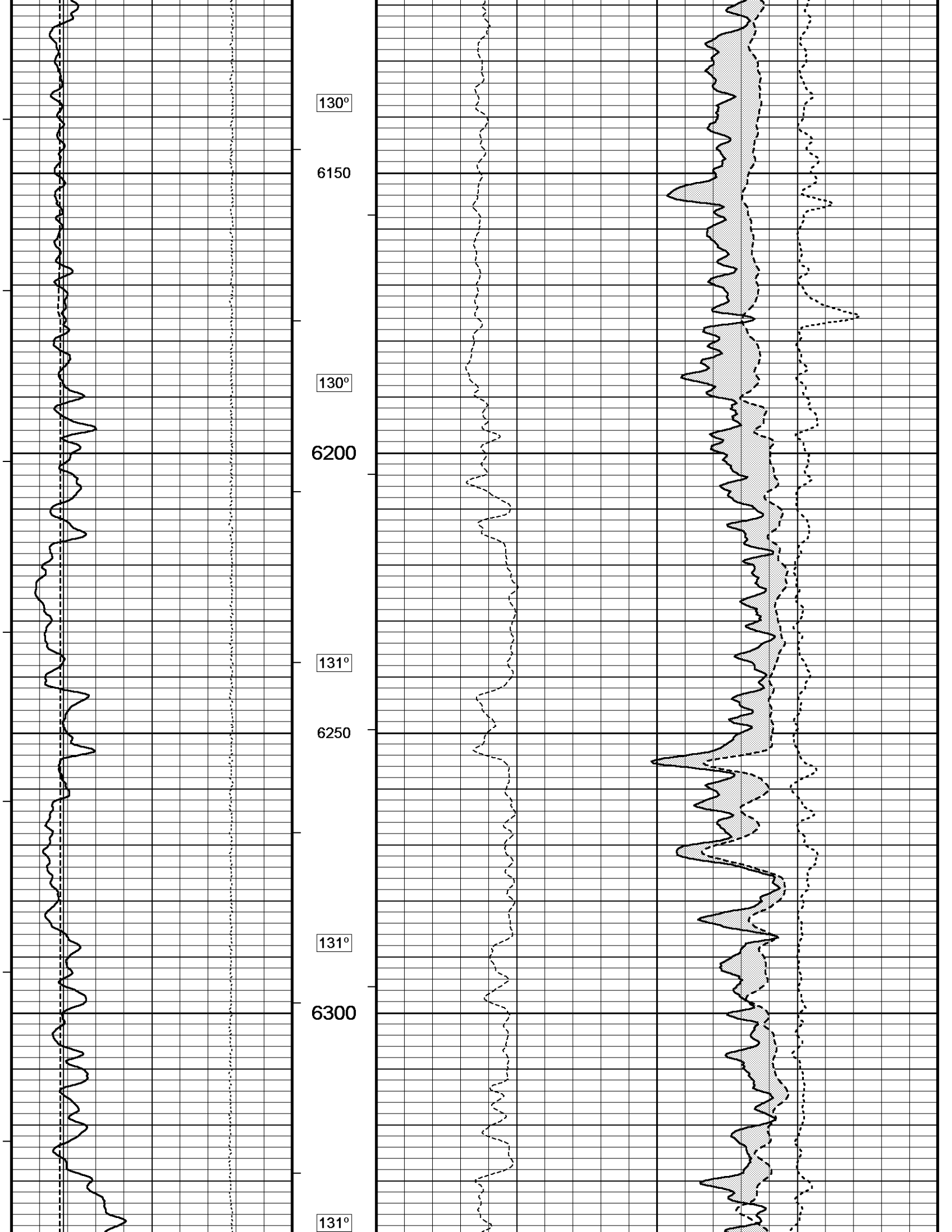

121°
5050
300
122°
5100
122°
5150
122°
5200
123°
400
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
PE
Limestone Density Por.
Density Correction
Limestone Neutron Por.

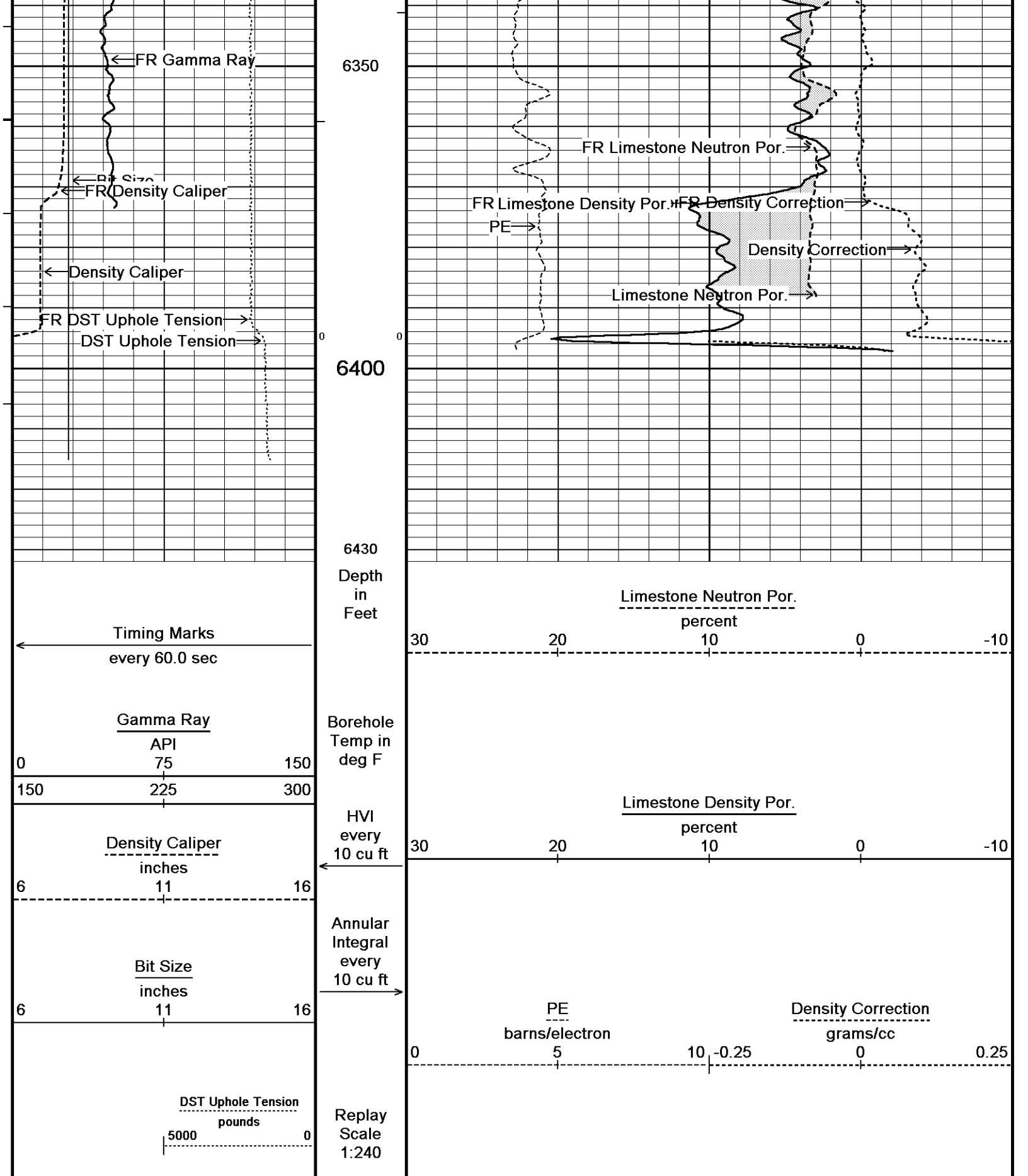

5250
123°
5300
123°
5350
124°
5400
124°
5450


124°
5500
300
200
125°
5550
Bit Size
125°
Limestone Density Por
PE
Density Correction
Density Caliper
5600
Lime Neutron Por
Gamma Ray
DST Uphole Tension
126°
5650


126°
5700
126°
5750
127°
200
5800
127°
5850
128°


5900
100
128°
5950
Bit Size
Limestone Density Por.
PE
128°
Density Caliper
Density Correction
Limestone Neutron Por.
Gamma Ray
6000
DST Uphole Tension
129°
6050
100
129°
6100


130°
6150
130°
6200
131°
6250
131°
6300
131°



Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 05-AUG-2012 20:49
Filename: C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5 Main.dta
Recorded on 05-AUG-2012 18:21
System Versions: Logged with 13.02.6600 Processed with 13.02.6600 Plotted with 13.02.6600

5 INCH MAIN

10 INCH HI-RES

Depth Based Data - Maximum Sampling Increment 2.5cm
Plotted on 05-AUG-2012 20:49
Filename: C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5 Hi-Res.dta
Recorded on 05-AUG-2012 17:20
System Versions: Logged with 13.02.6600 Plotted with 13.02.6600

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F
150 225 300

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:120

Sandstone Neutron Por.
percent
30 20 10 0 -10

Sandstone Density Por.
percent
30 20 10 0 -10

PE
barns/electron
0 5 10

Density Correction
grams/cc
-0.25 0 0.25

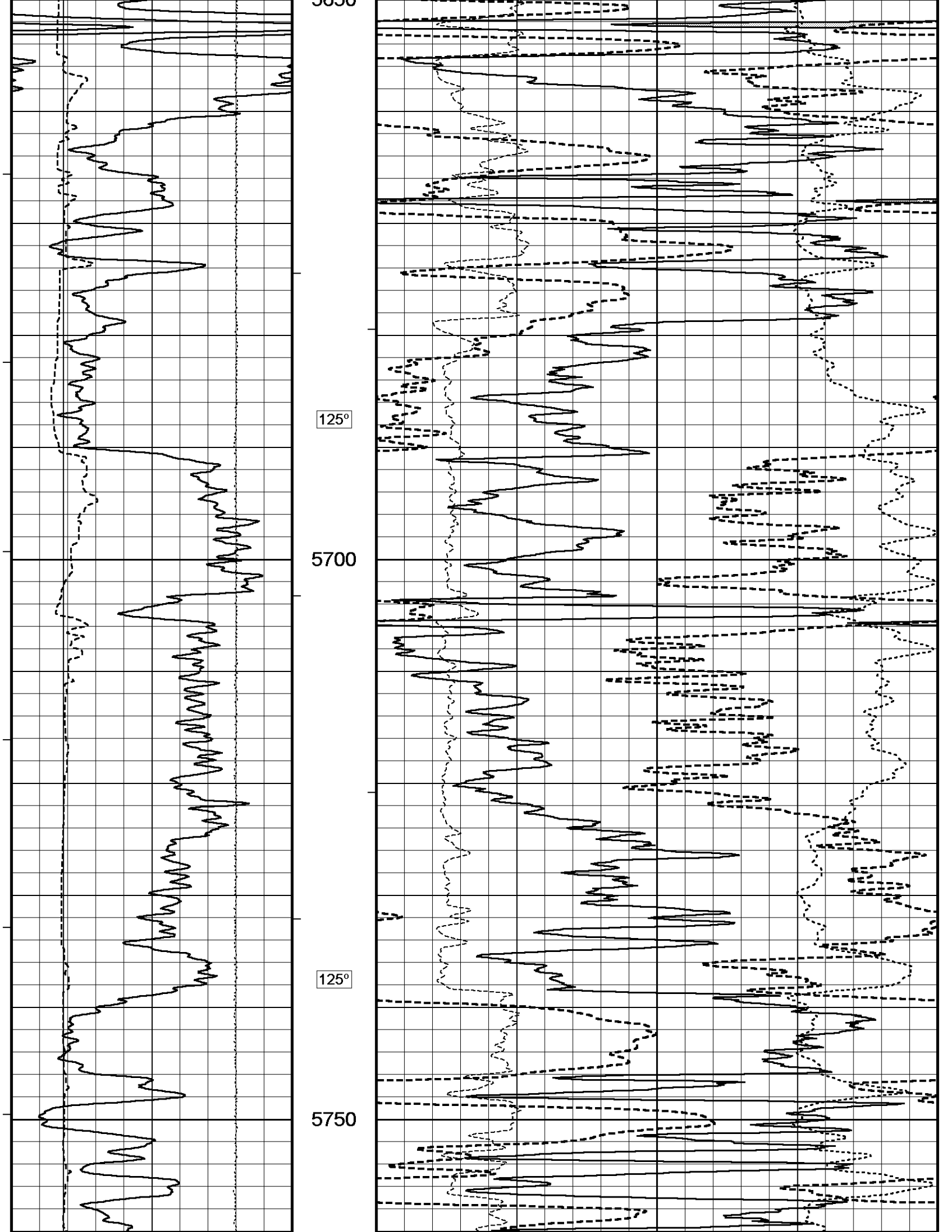
5600

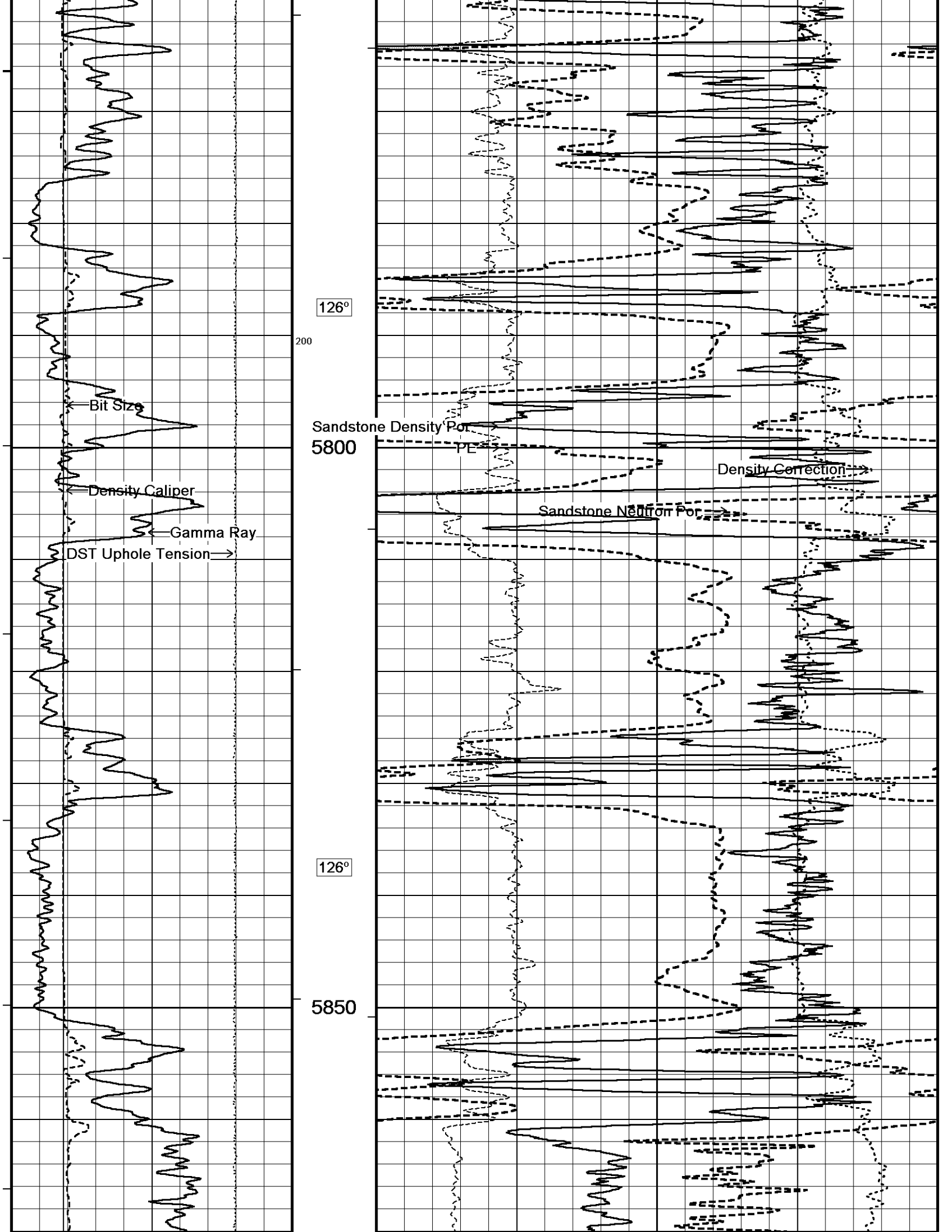
Density Caliper
Gamma Ray
DST Uphole Tension

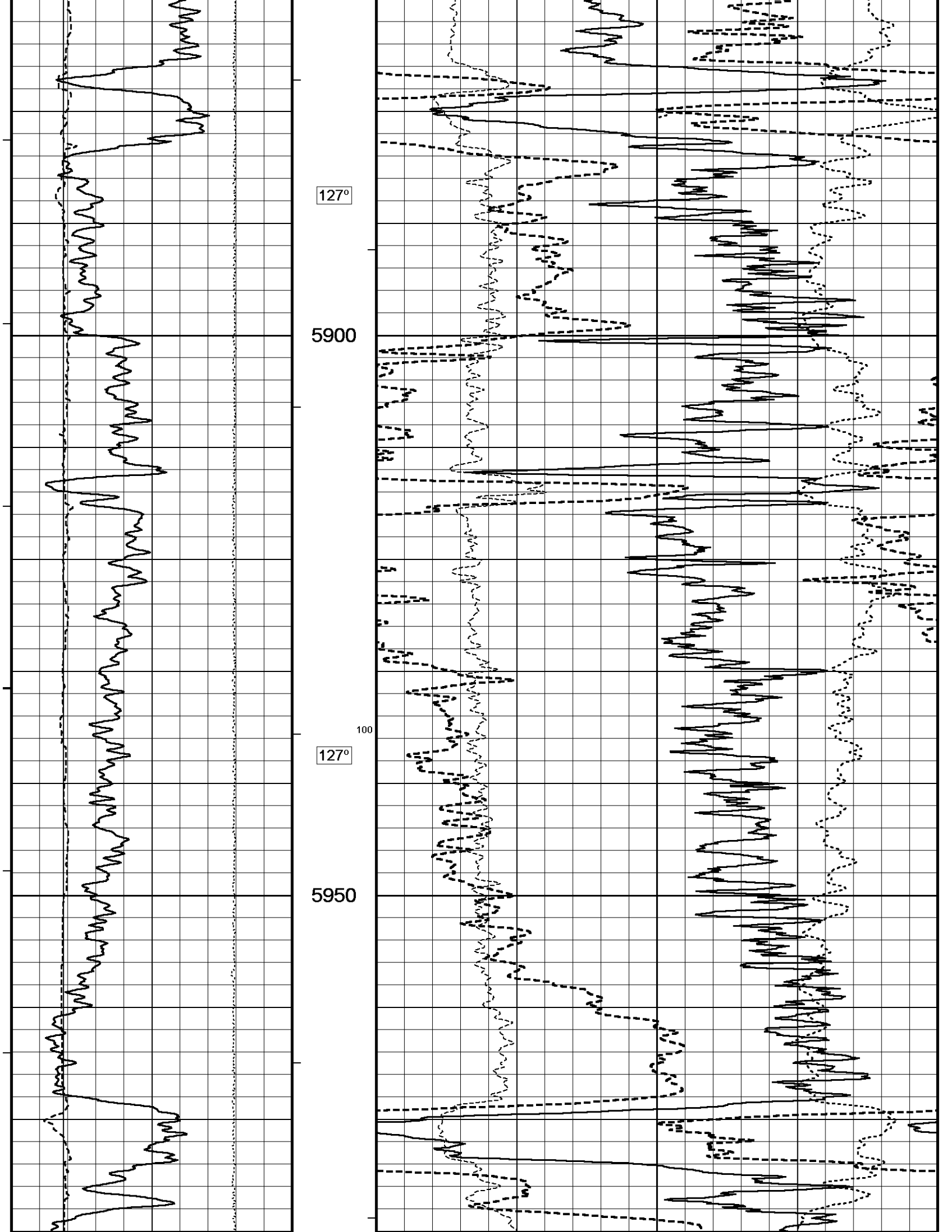
Sandstone Density Por.
PE
Density Correction
Sandstone Neutron Por.

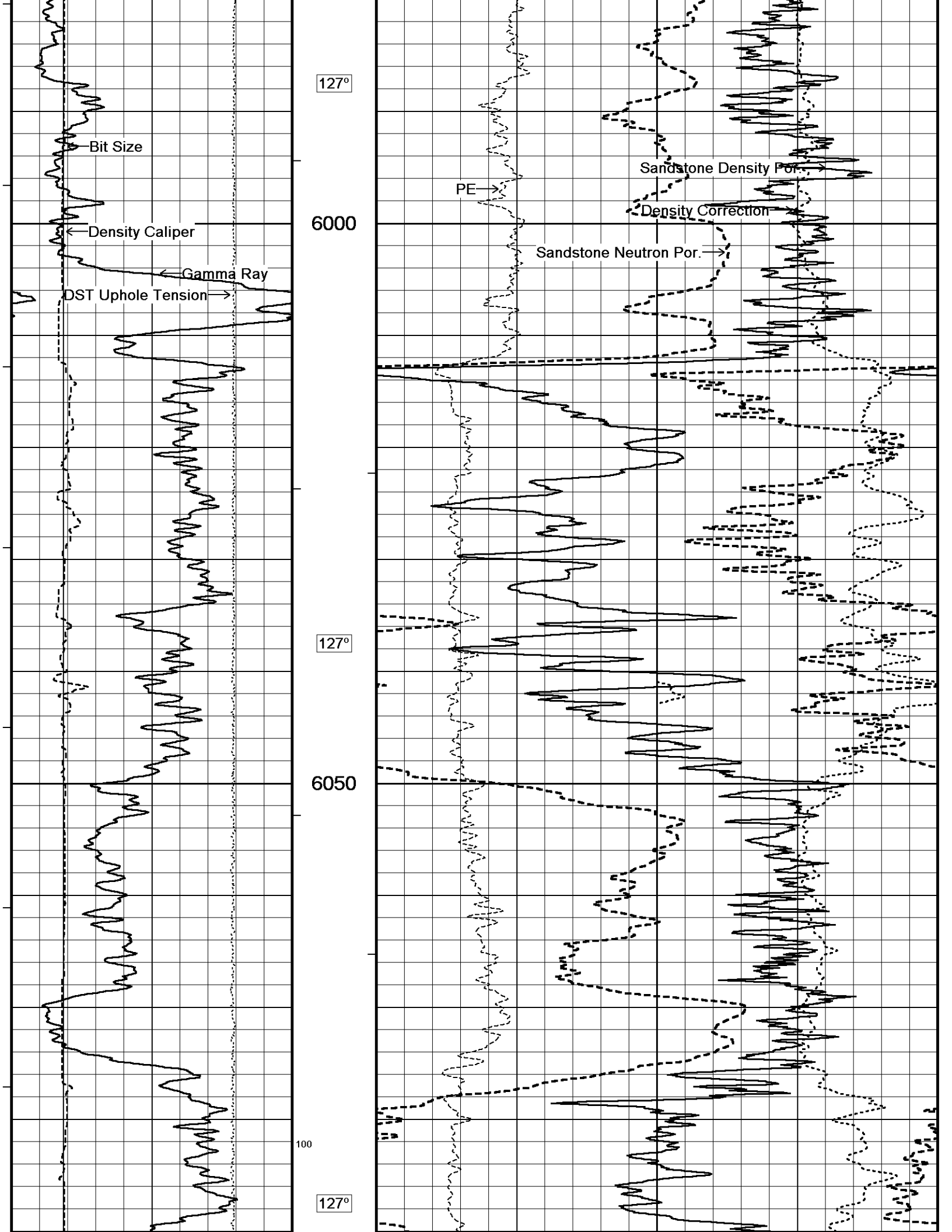
125°

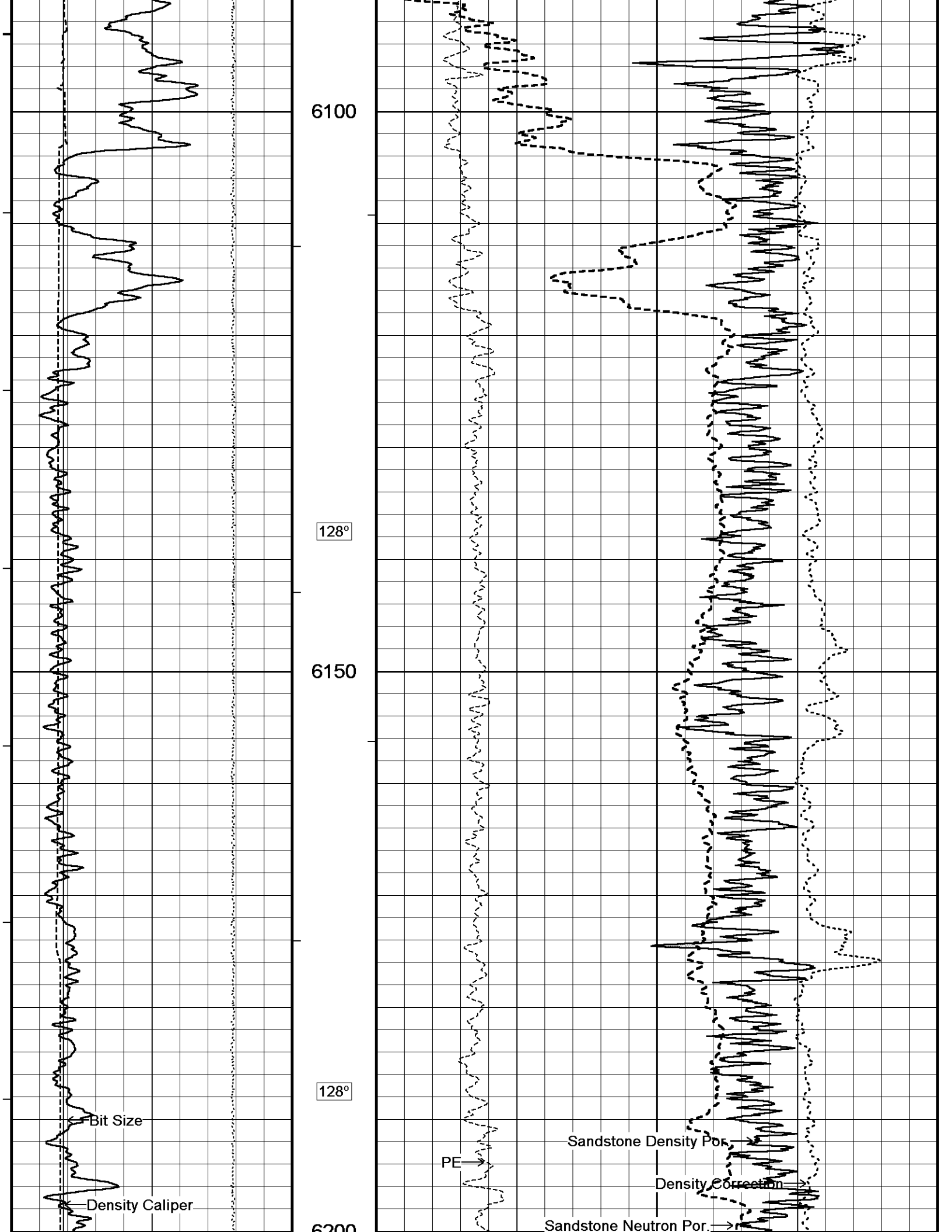
5650

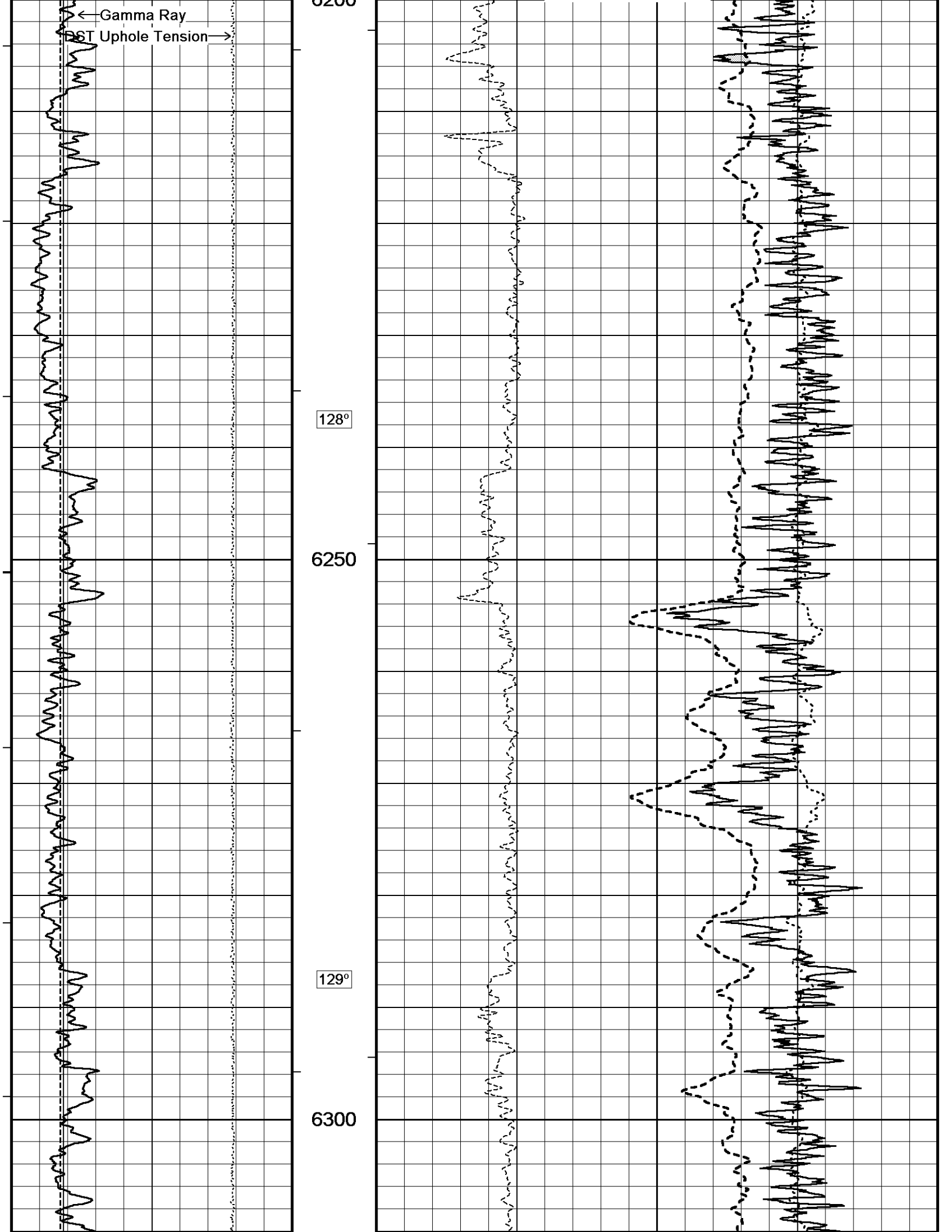

125°
5700
125°
5750

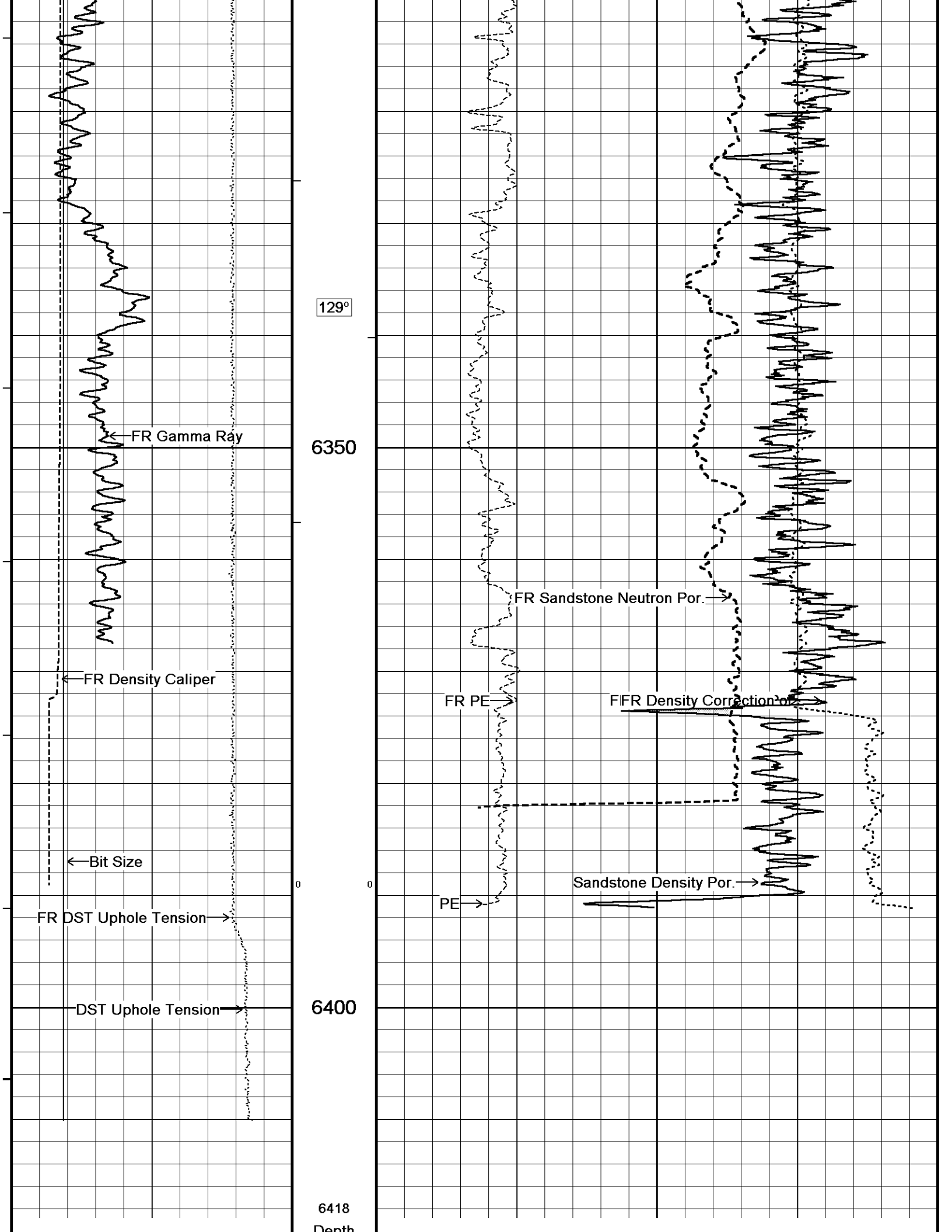

126°
200
Bit Size
Sandstone Density Por
5800
PE
Density Correction
Density Caliper
Sandstone Neutron Por
Gamma Ray
DST Uphole Tension
126°
5850

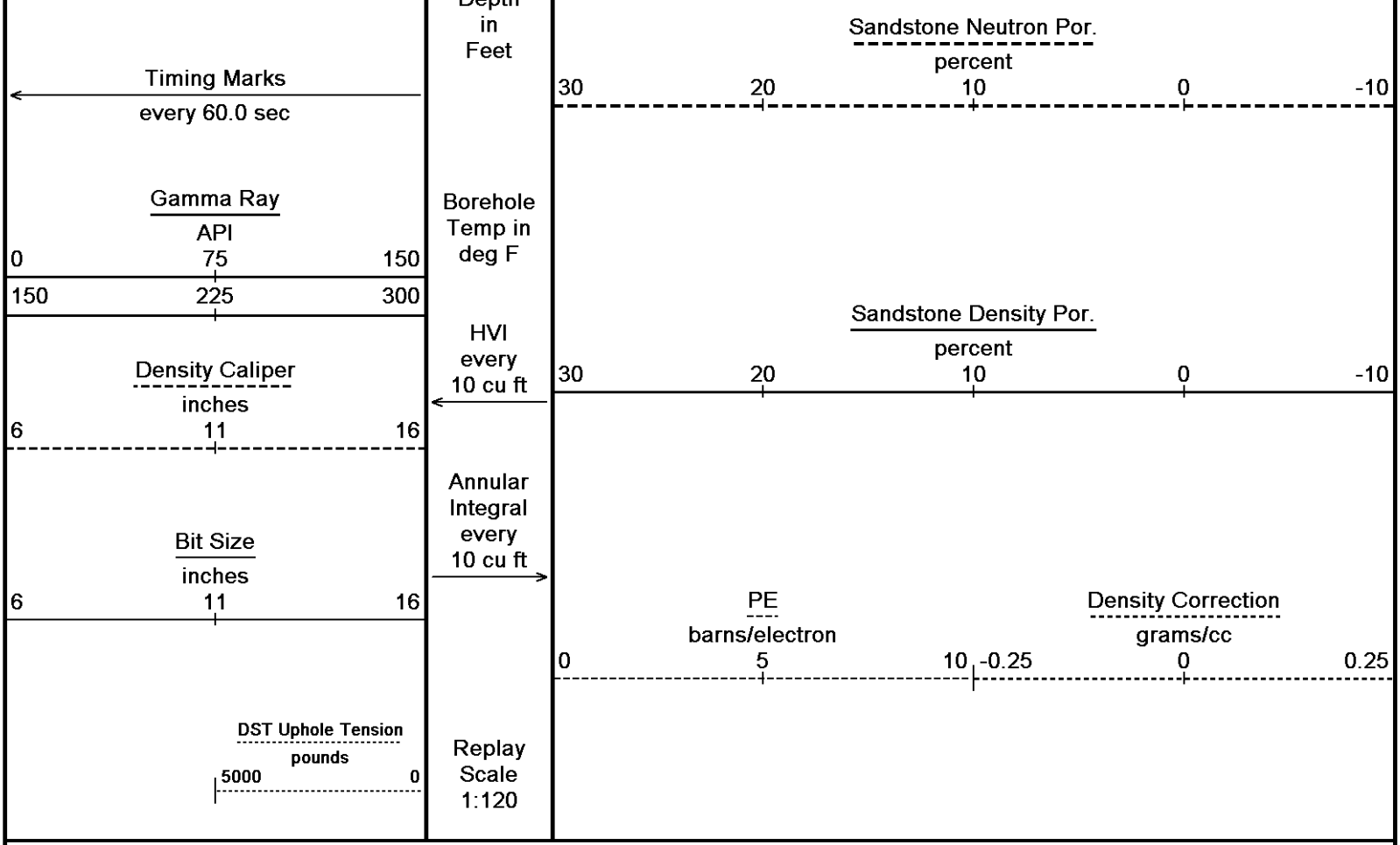

127°
5900
100
127°
5950


Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
127°
6000
127°
6050
100
127°
PE
Sandstone Density Por.
Density Correction
Sandstone Neutron Por.


6100
128°
6150
128°
Bit Size
Density Caliper
PE
Sandstone Density Por.
Density Correction
Sandstone Neutron Por.
6200


←Gamma Ray
DST Uphole Tension→
6200
128°
6250
129°
6300


129°
FR Gamma Ray
6350
FR Density Caliper
FR Sandstone Neutron Por.
FR PE
FFR Density Correction
Bit Size
0
0
Sandstone Density Por.
PE
FR DST Uphole Tension
DST Uphole Tension
6400
6418
Depth

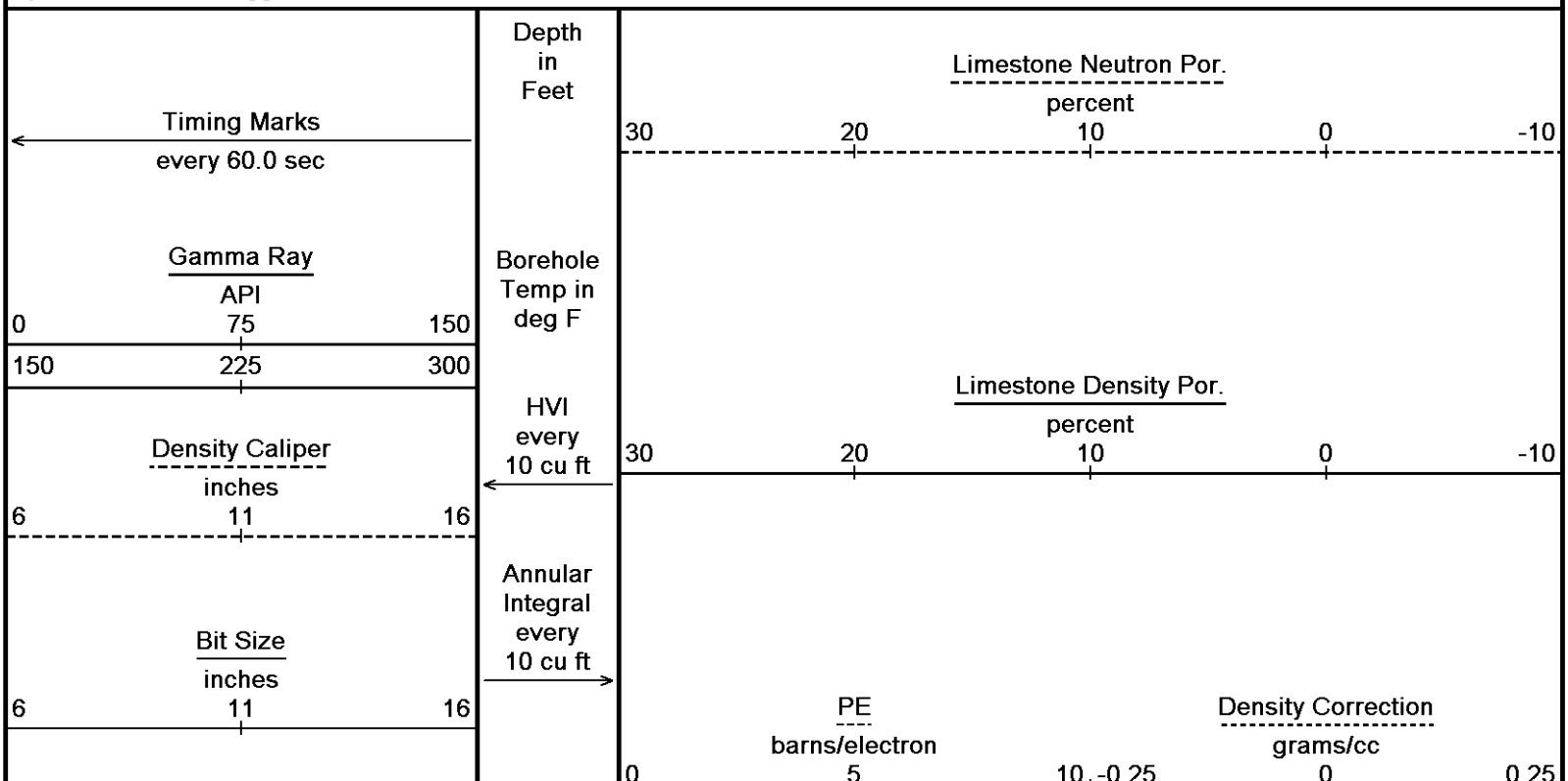


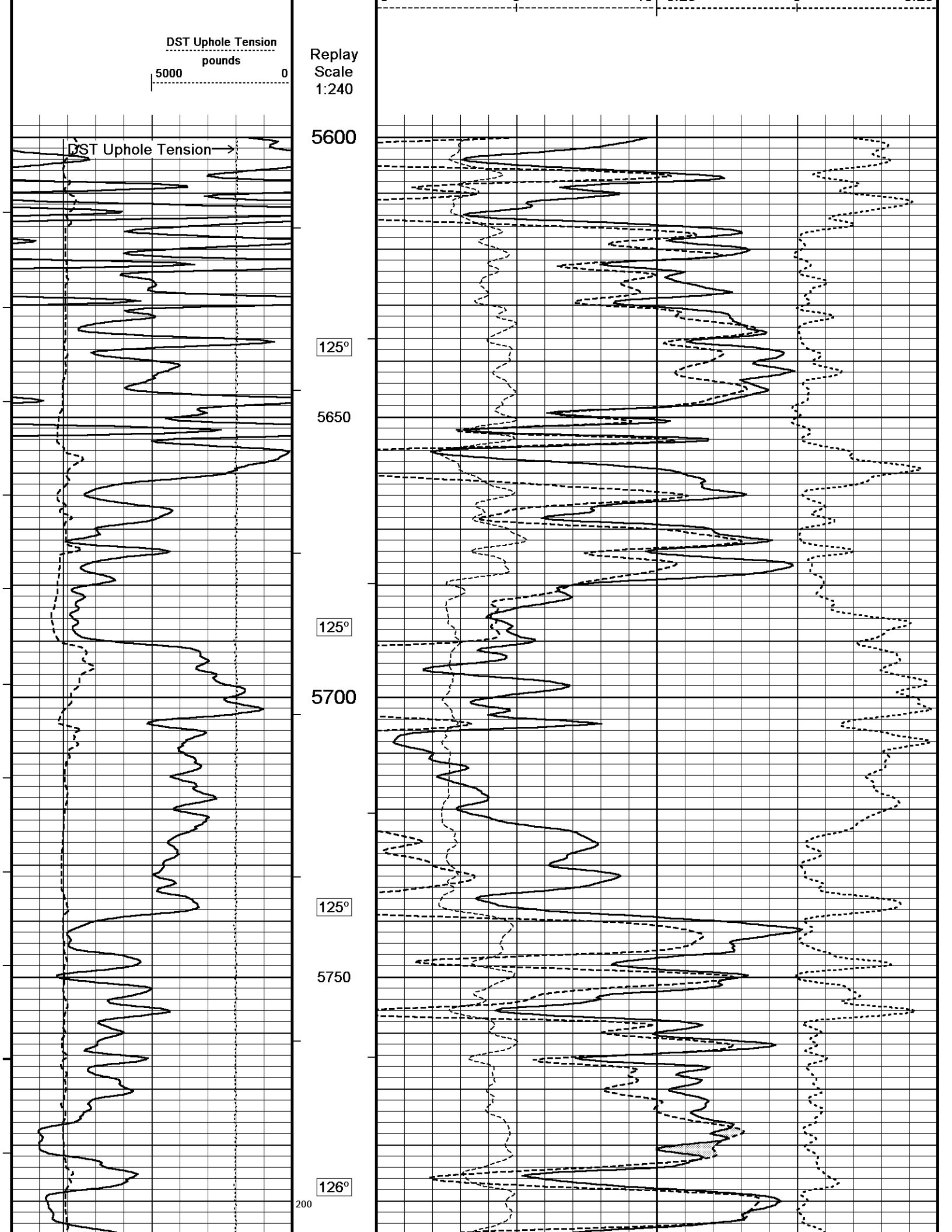
Depth Based Data - Maximum Sampling Increment 2.5cm — Plotted on 05-AUG-2012 20:49
Filename: C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5 Hi-Res.dta — Recorded on 05-AUG-2012 17:20
System Versions: Logged with 13.02.6600 Plotted with 13.02.6600

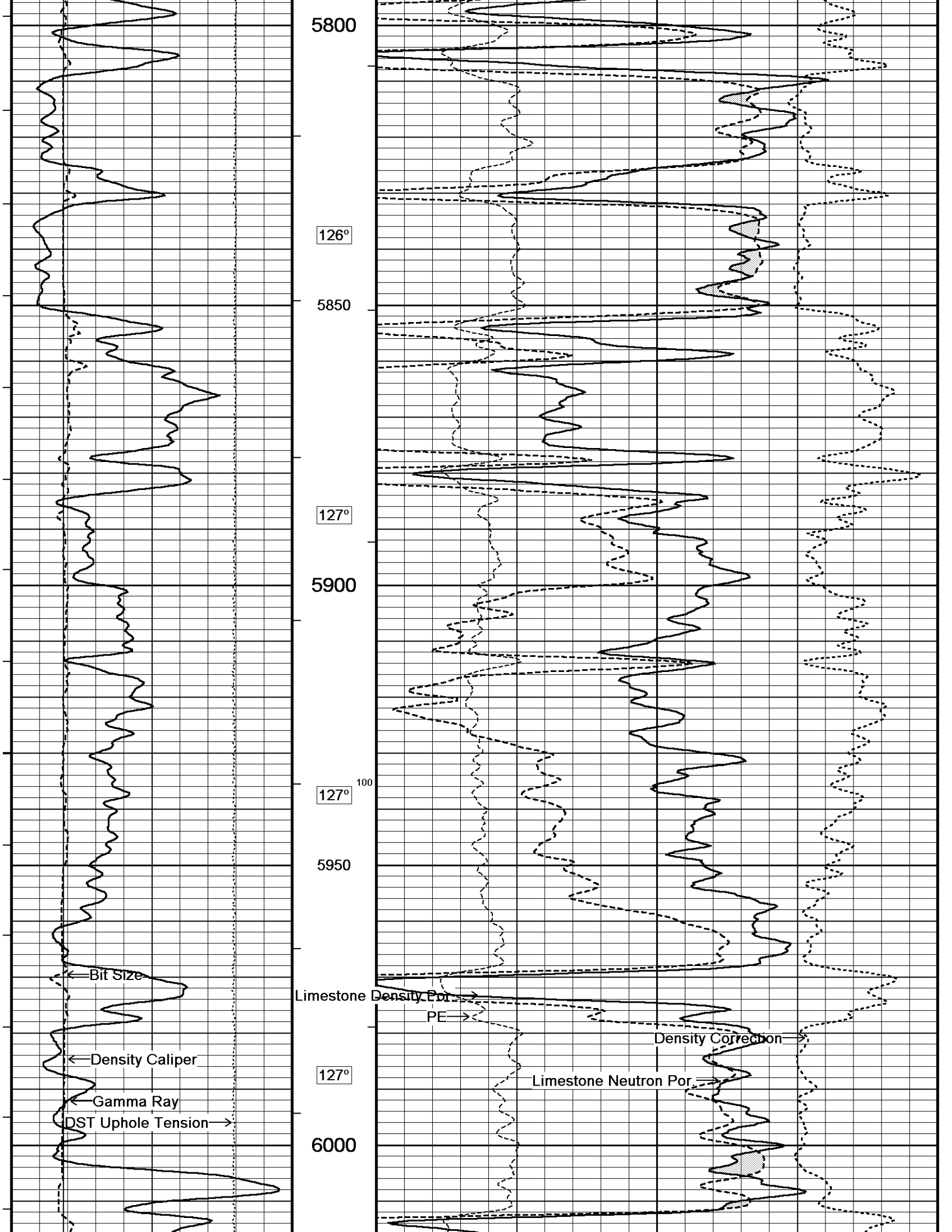
10 INCH HI-RES

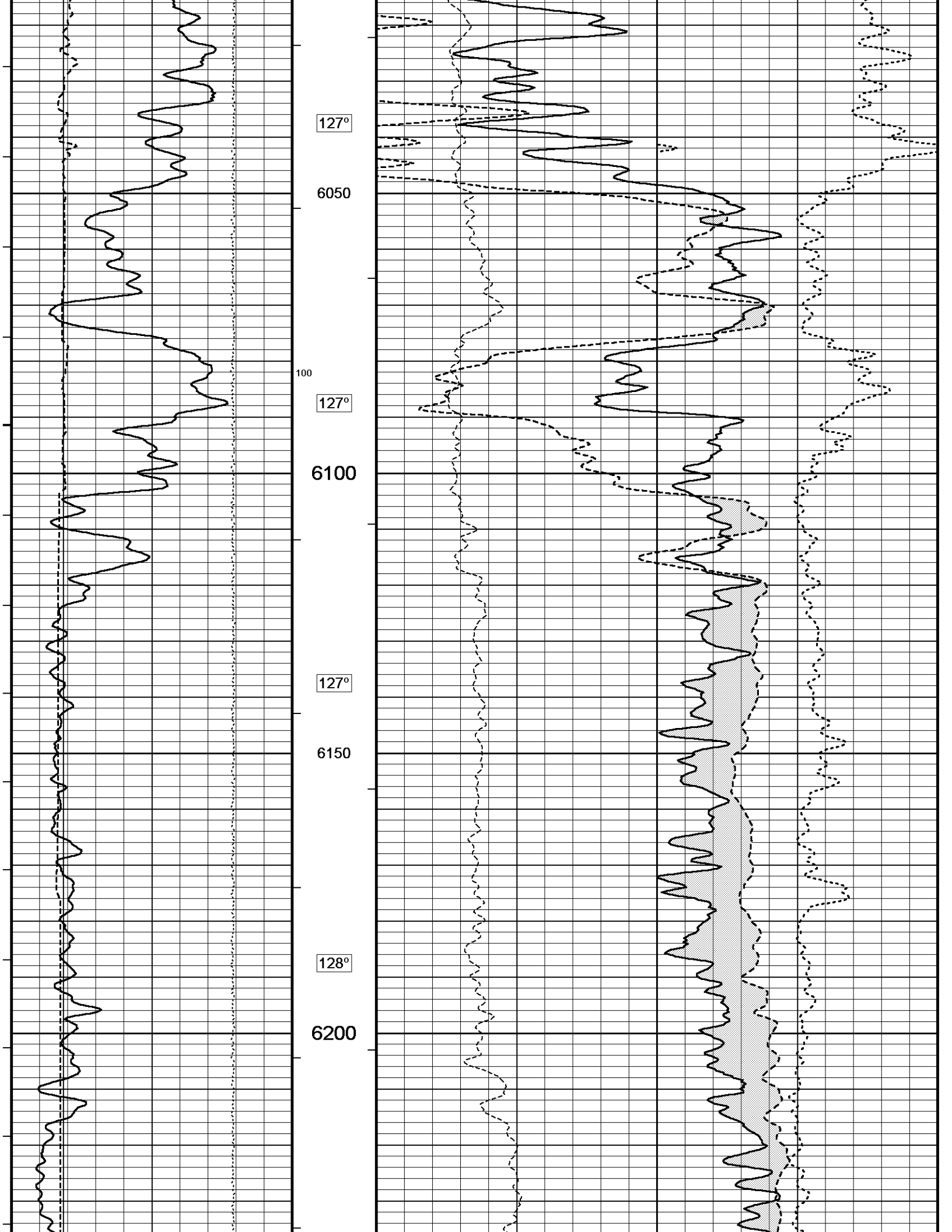
REPEAT SECTION

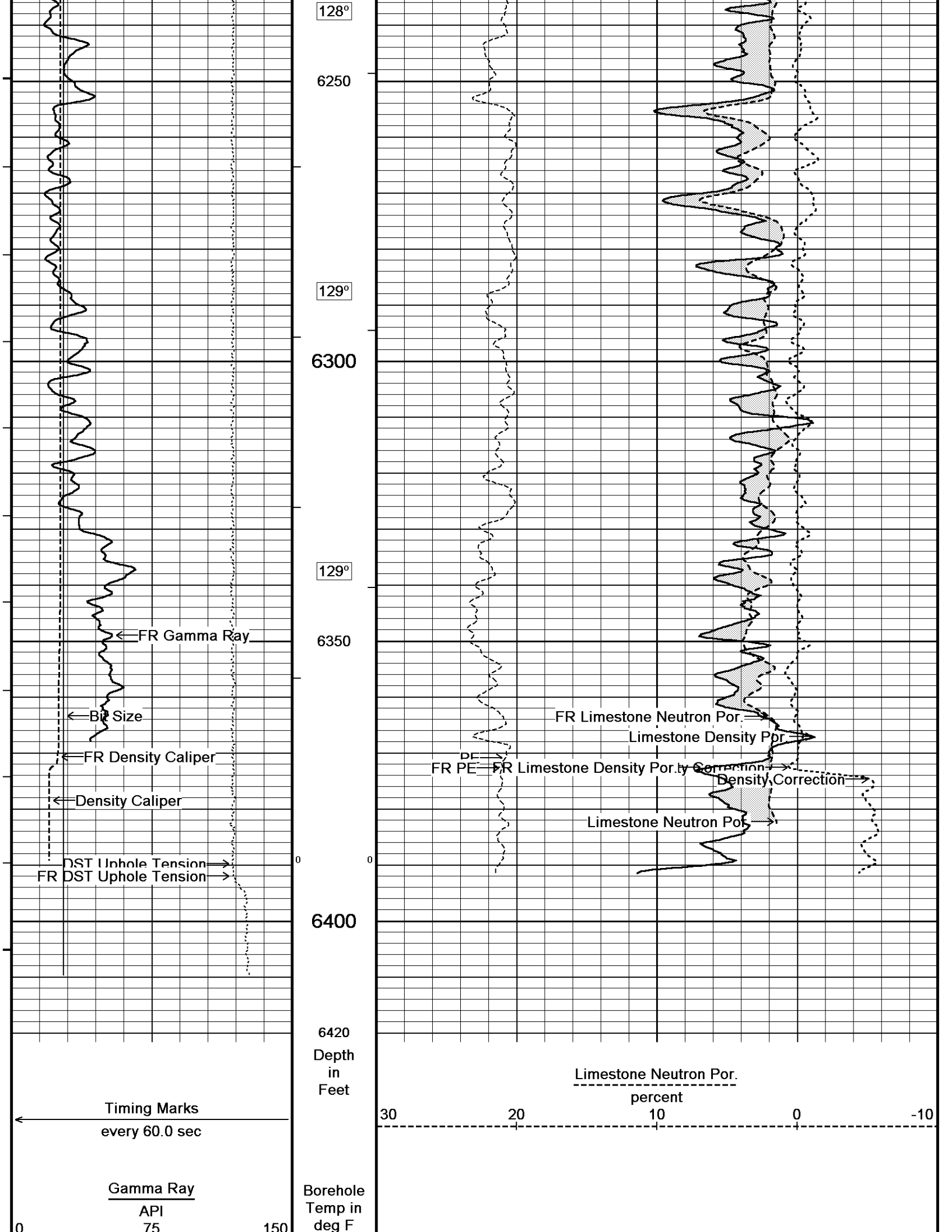
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-AUG-2012 20:49
Filename: C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5 Repeat.dta — Recorded on 05-AUG-2012 17:20
System Versions: Logged with 13.02.6600 Processed with 13.02.6600 Plotted with 13.02.6600




DST Uphole Tension
pounds
5000
0
Replay
Scale
1:240
DST Uphole Tension
5600
125°
5650
125°
5700
125°
5750
126°
200


5800
126°
5850
127°
5900
127°
100
5950
127°
6000
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por
PE
Density Correction
Limestone Neutron Por


127°
6050
100
127°
6100
127°
6150
128°
6200


128°
6250
129°
6300
129°
6350
6400
6420
Depth
in
Feet
FR Gamma Ray
Bit Size
FR Density Caliper
Density Caliper
DST Uphole Tension
FR DST Uphole Tension
0
0
PE
FR PE
FR Limestone Density Por.ty Correction
Density Correction
FR Limestone Neutron Por.
Limestone Density Por.
Limestone Neutron Por.
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
Borehole
Temp in
deg F
Limestone Neutron Por.
percent
30
20
10
0
-10

150 225 300

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

Limestone Density Por.
percent
30 20 10 0 -10

PE
barns/electron
0 5 10

Density Correction
grams/cc
-0.25 0 0.25

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-AUG-2012 20:49
Filename: C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5 Repeat.dta — Recorded on 05-AUG-2012 17:20
System Versions: Logged with 13.02.6600 Processed with 13.02.6600 Plotted with 13.02.6600

REPEAT SECTION

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-AUG-2012 20:49
Filename: C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5 Main.dta — Recorded on 05-AUG-2012 18:21
System Versions: Logged with 13.02.6600 Processed with 13.02.6600 Plotted with 13.02.6600

Timing Marks
every 60.0 sec

Depth in Feet

Compensated Density
grams/cc
2 2.25 2.50 2.75 3

Gamma Ray
API
0 75 150

Borehole Temp in deg F

150 225 300

Density Caliper
inches
6 11 16

HVI every 10 cu ft

Limestone Density Por.
percent
30 20 10 0 -10

Bit Size
inches
6 11 16

Annular Integral every 10 cu ft

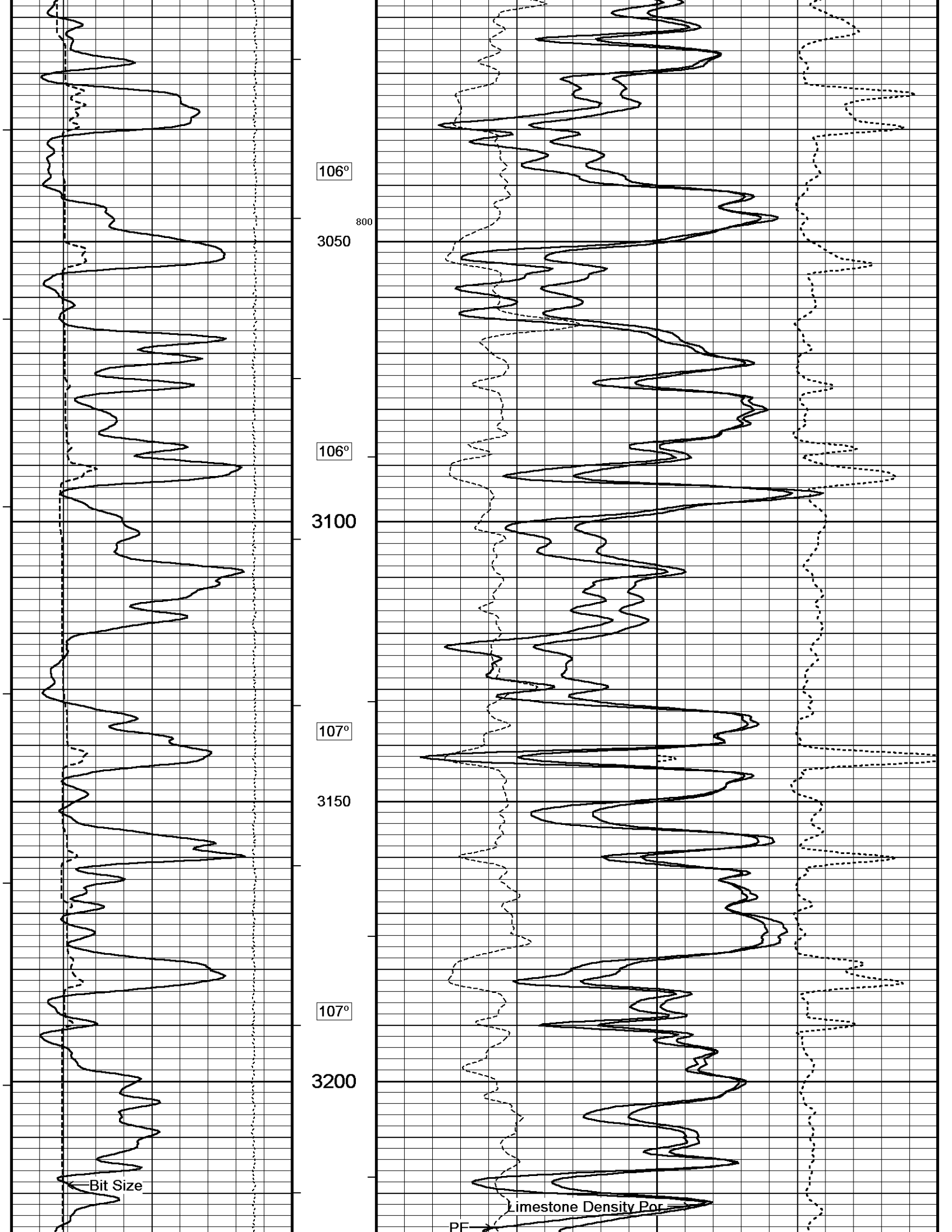
PE
barns/electron
0 5 10

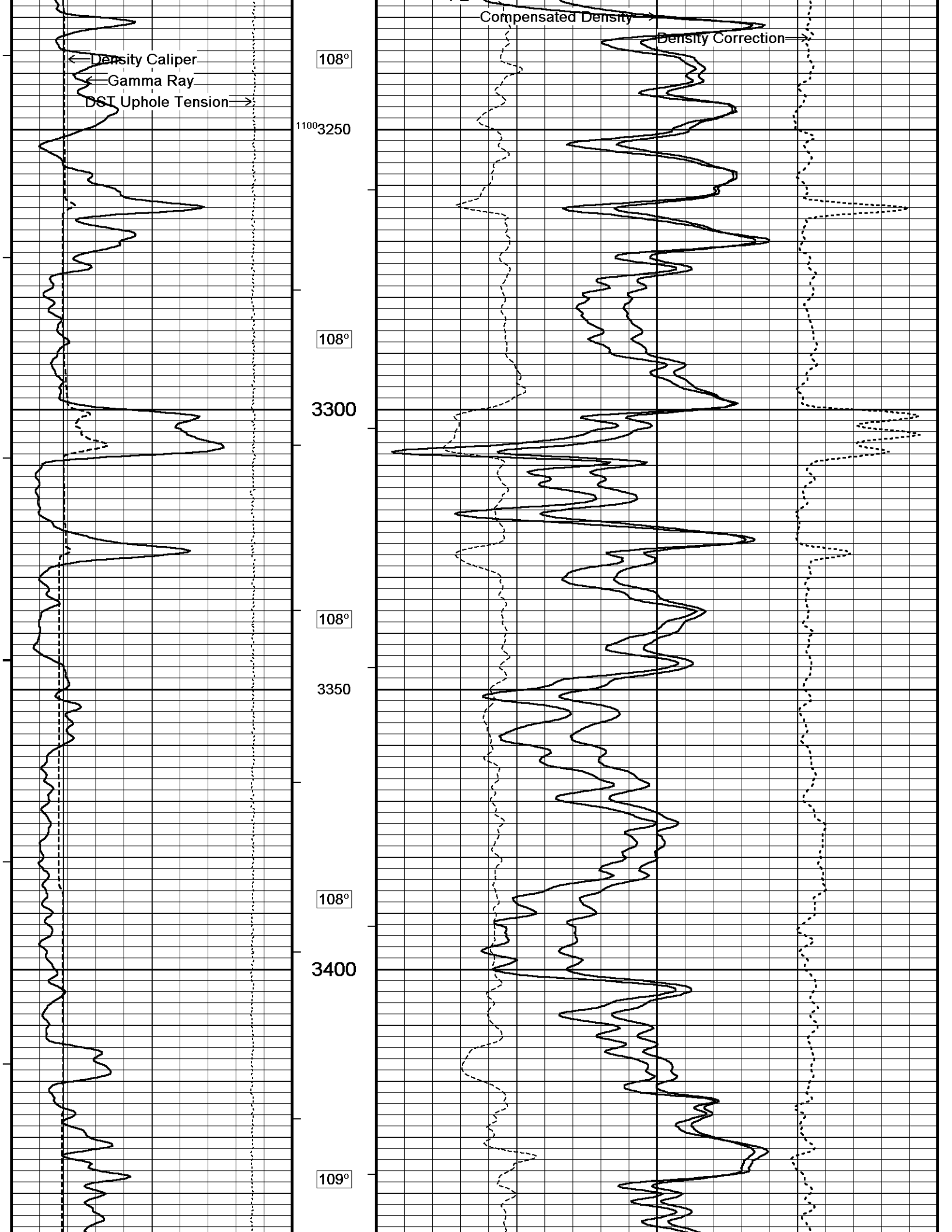
Density Correction
grams/cc
-0.25 0 0.25

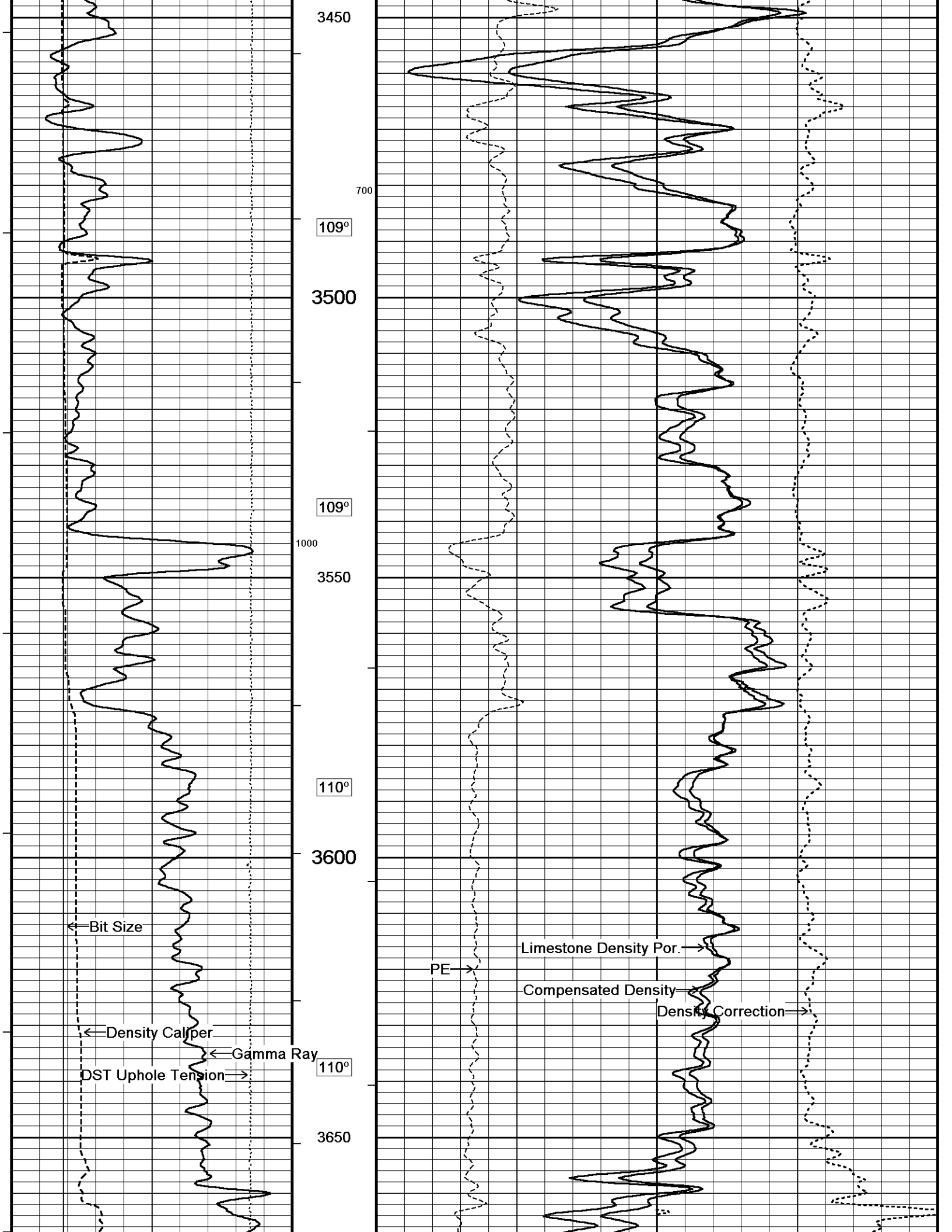
DST Uphole Tension
pounds
5000 0

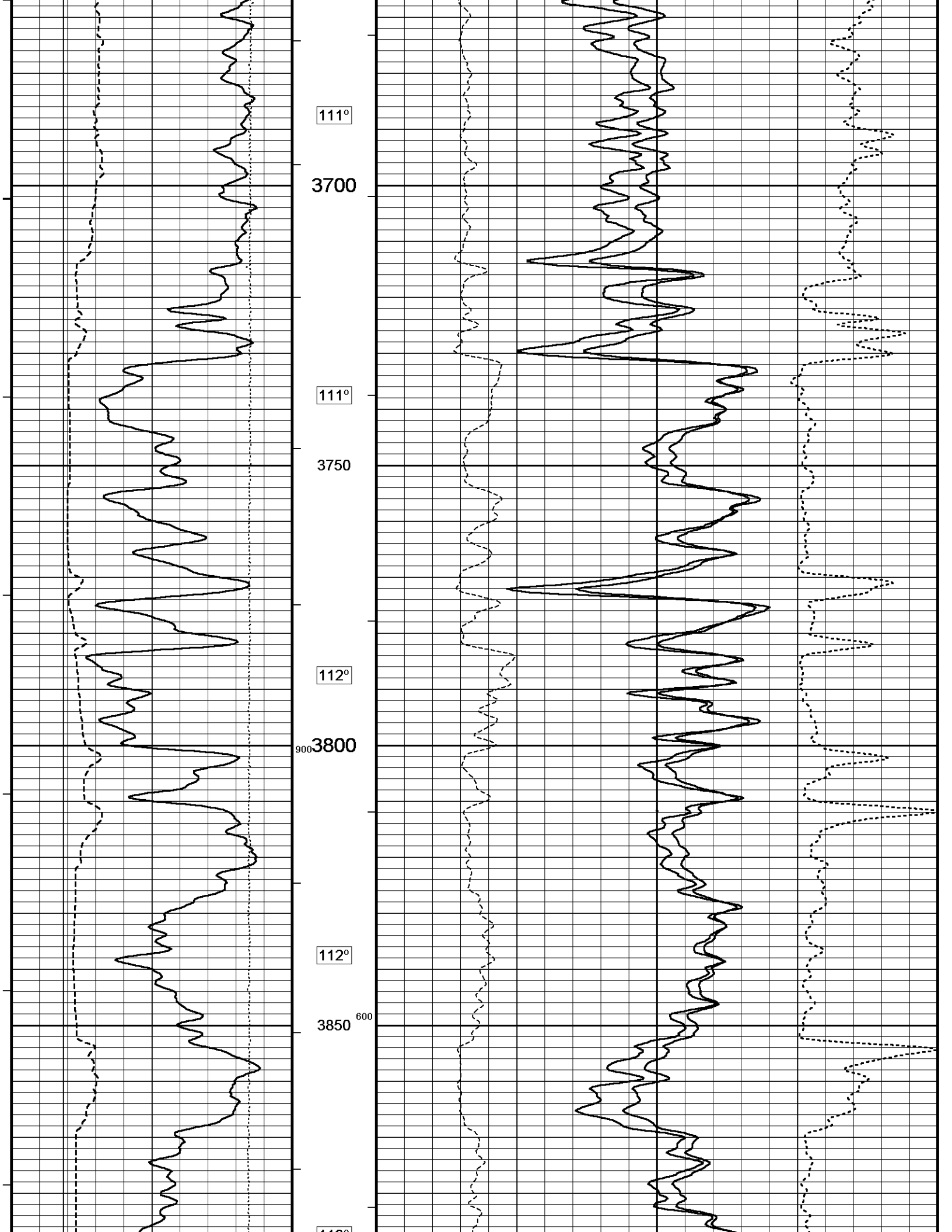
Replay Scale 1:240

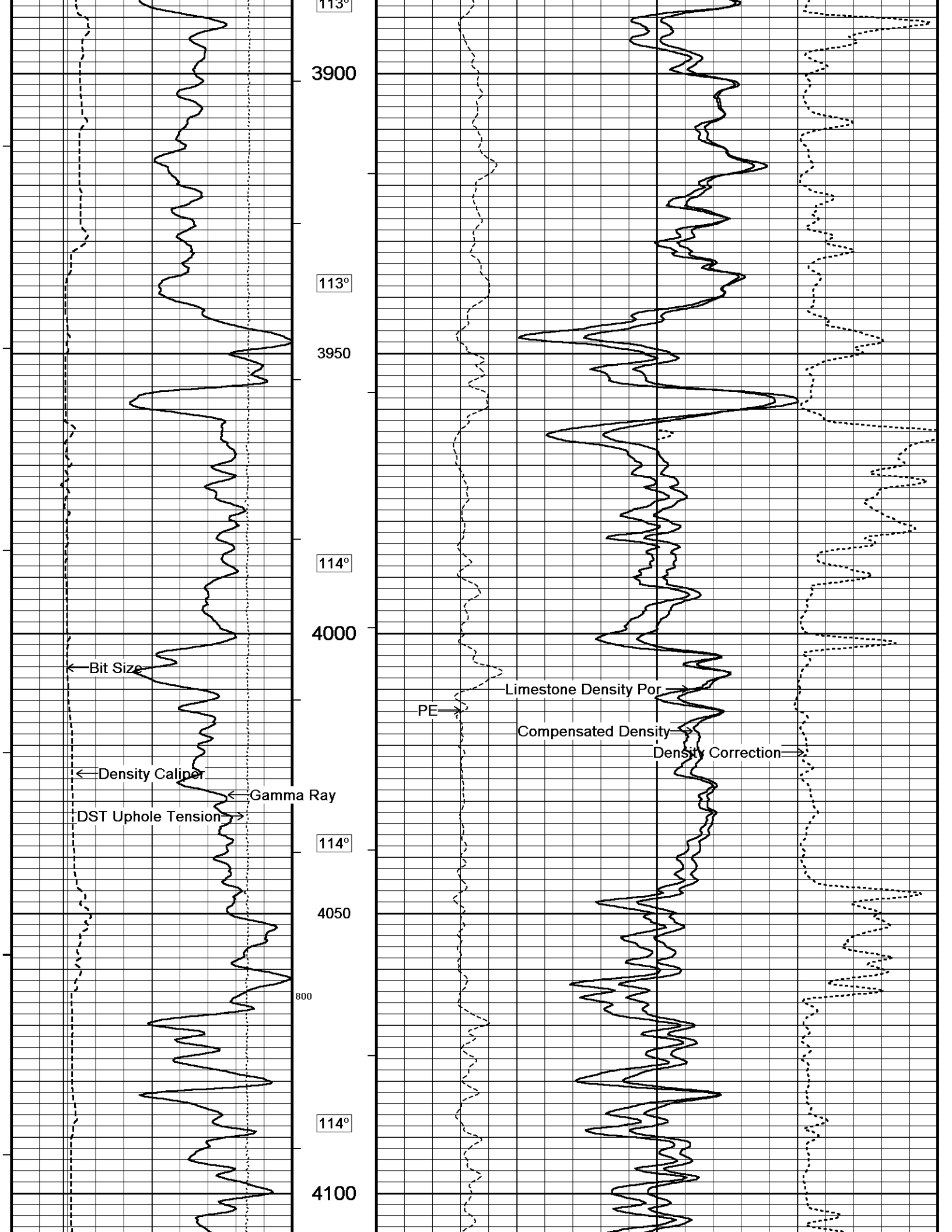
3000

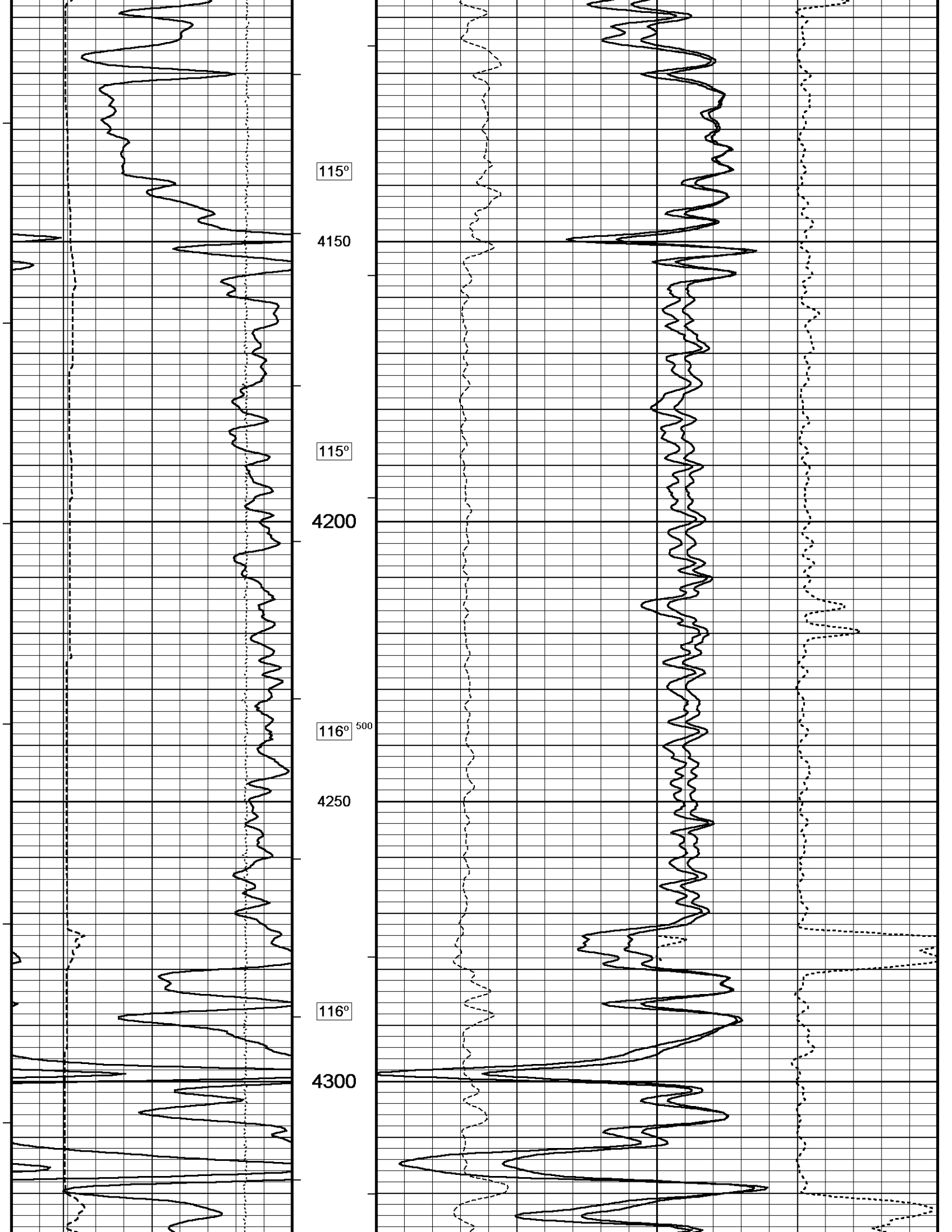

106°
800
3050
106°
3100
107°
3150
107°
3200
Bit Size
Limestone Density Por
PE

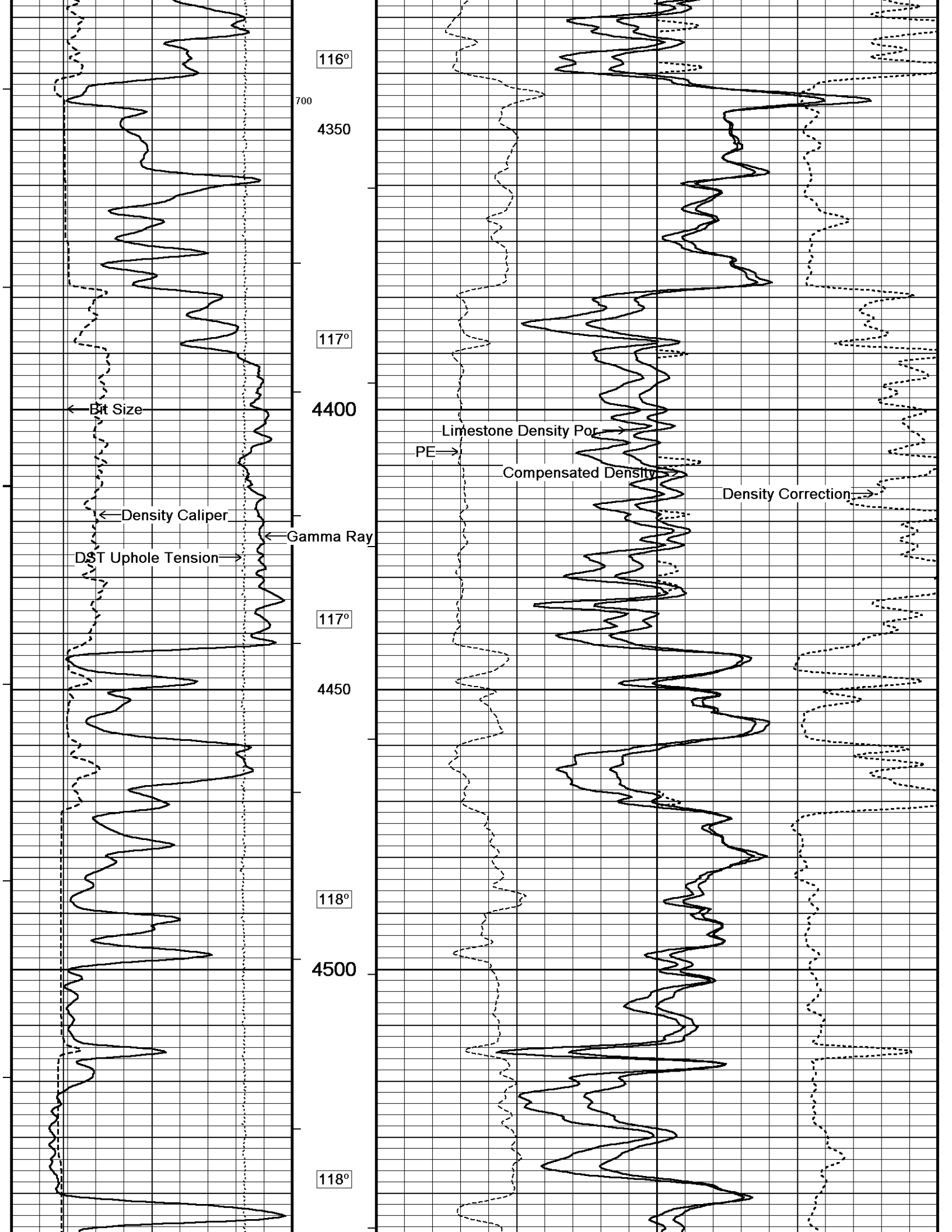

Density Caliper
Gamma Ray
DST Uphole Tension
Compensated Density
Density Correction
108°
1100
3250
108°
3300
108°
3350
108°
3400
109°

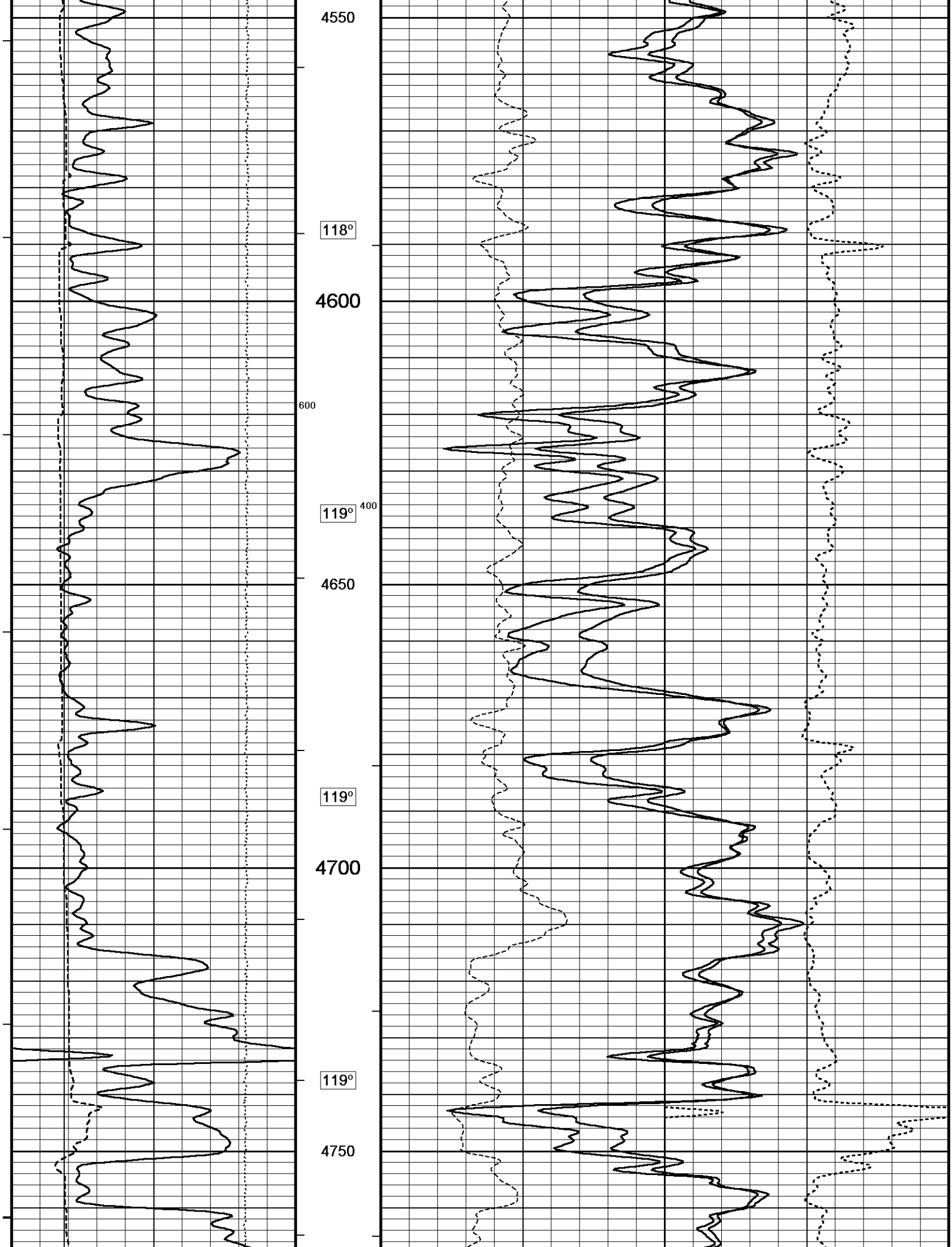

3450
700
109°
3500
109°
1000
3550
110°
3600
Bit Size
Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
110°
DST Uphole Tension
3650

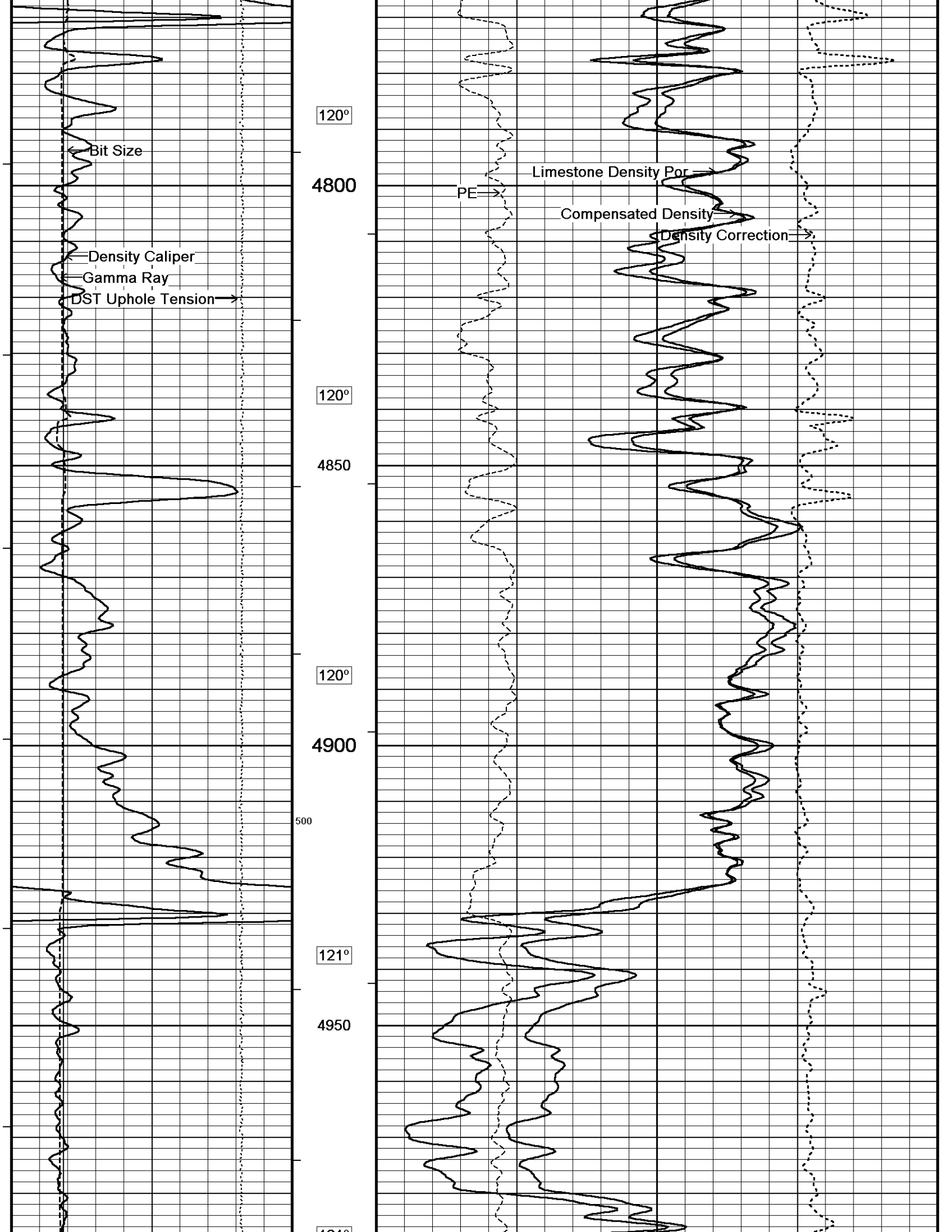

111°
3700
111°
3750
112°
900
3800
112°
3850
600

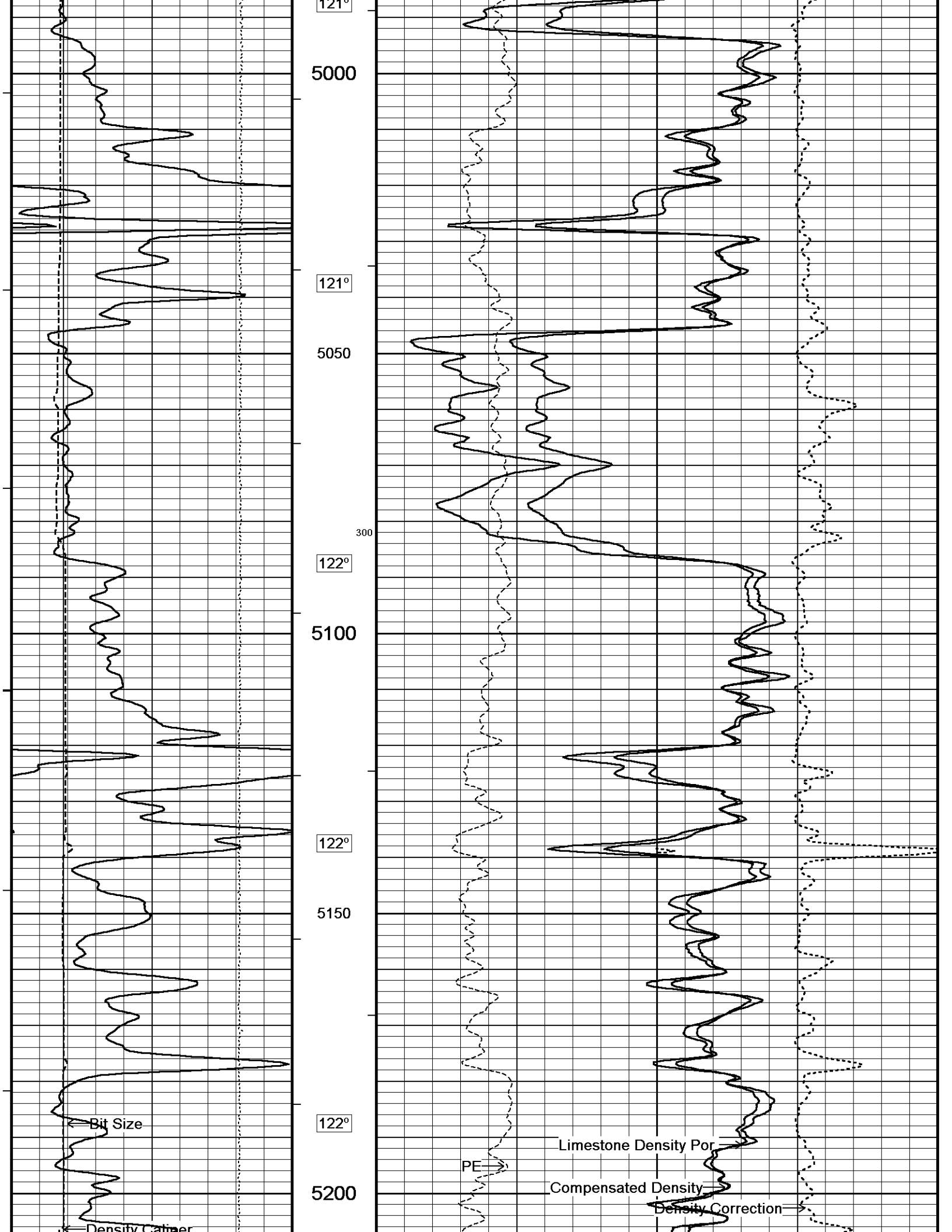

113°
3900
113°
3950
114°
4000
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
114°
4050
800
114°
4100
Limestone Density Por
PE
Compensated Density
Density Correction

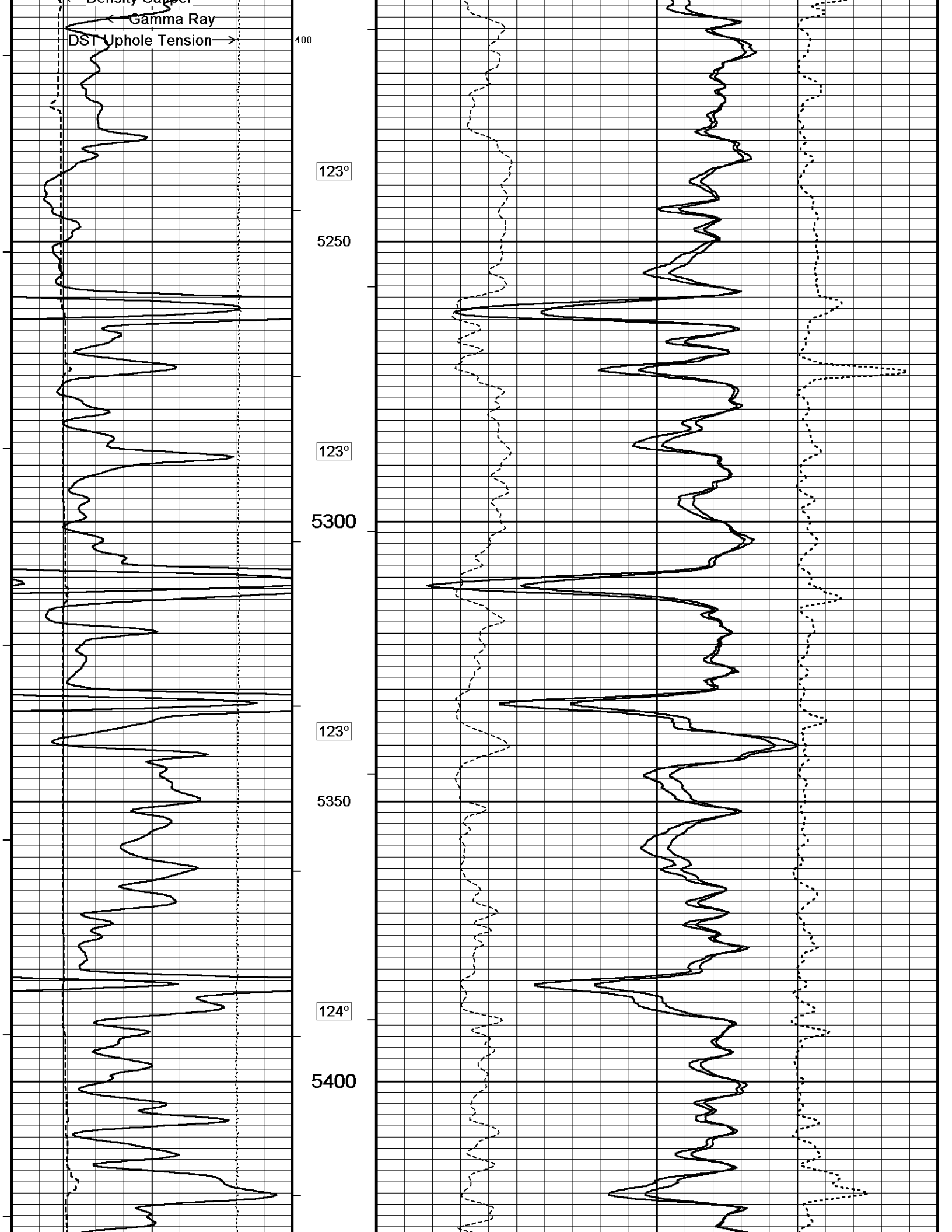

115°
4150
115°
4200
116°
500
4250
116°
4300

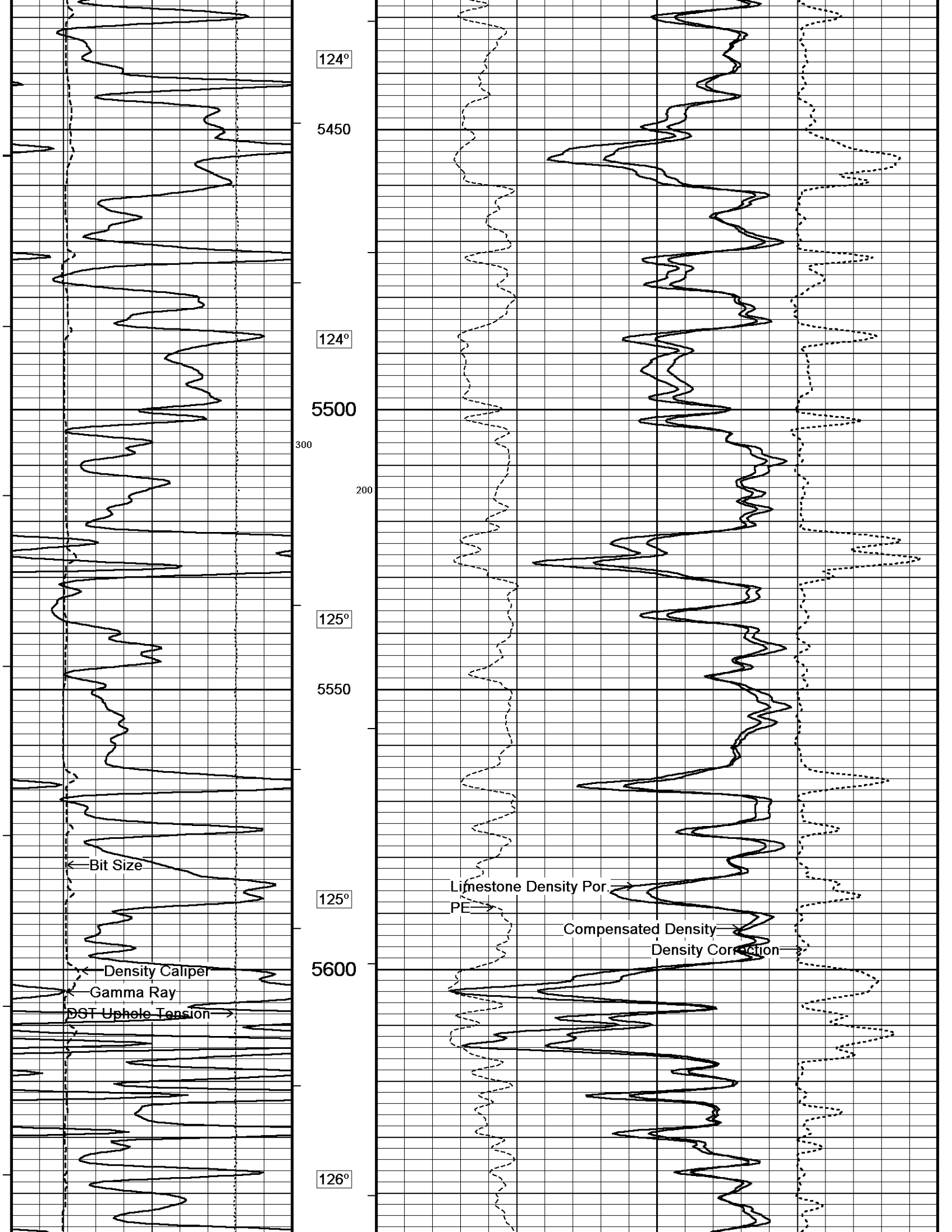

116°
700
4350
117°
4400
Bit Size
Limestone Density Por
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
117°
4450
118°
4500
118°

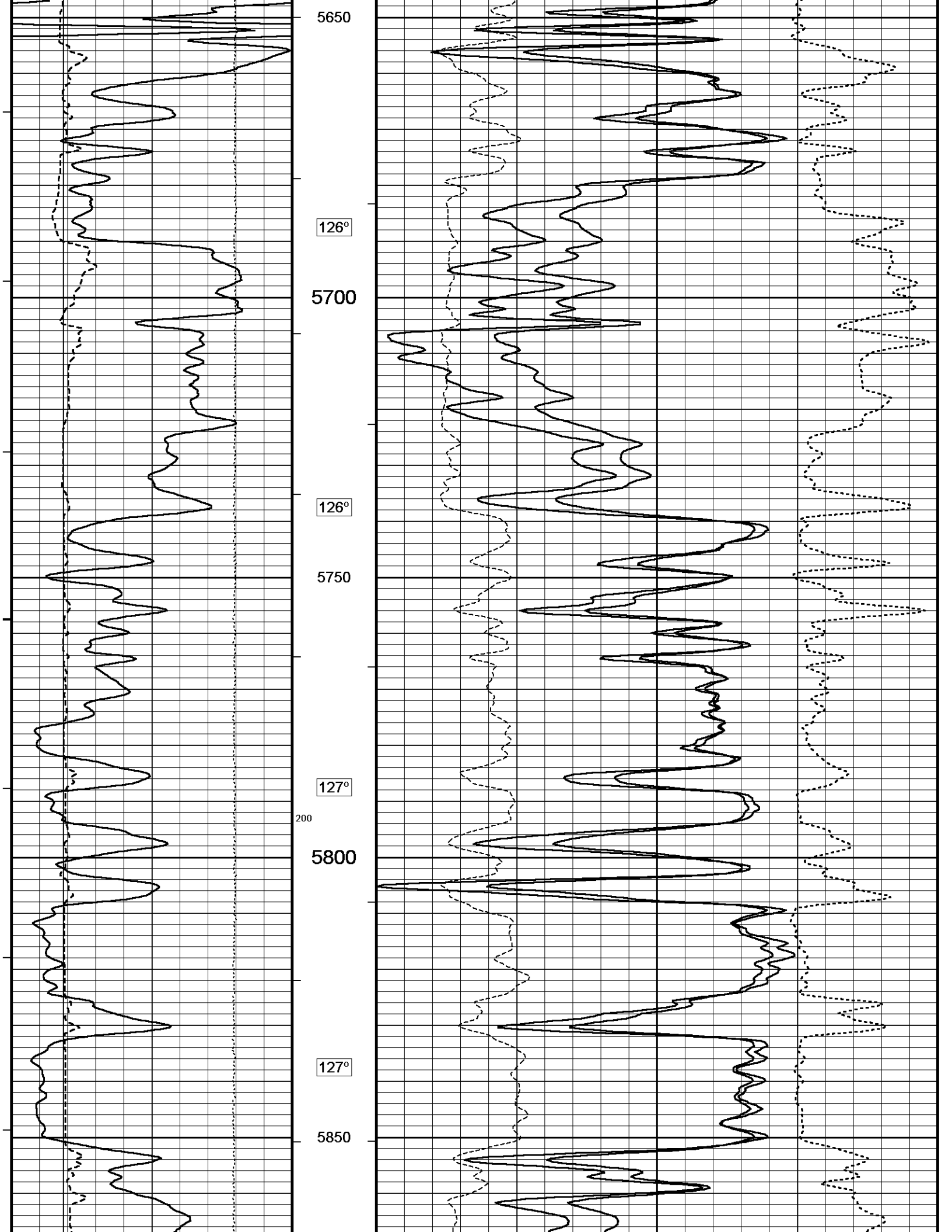

4550
118°
4600
600
119°
400
4650
119°
4700
119°
4750

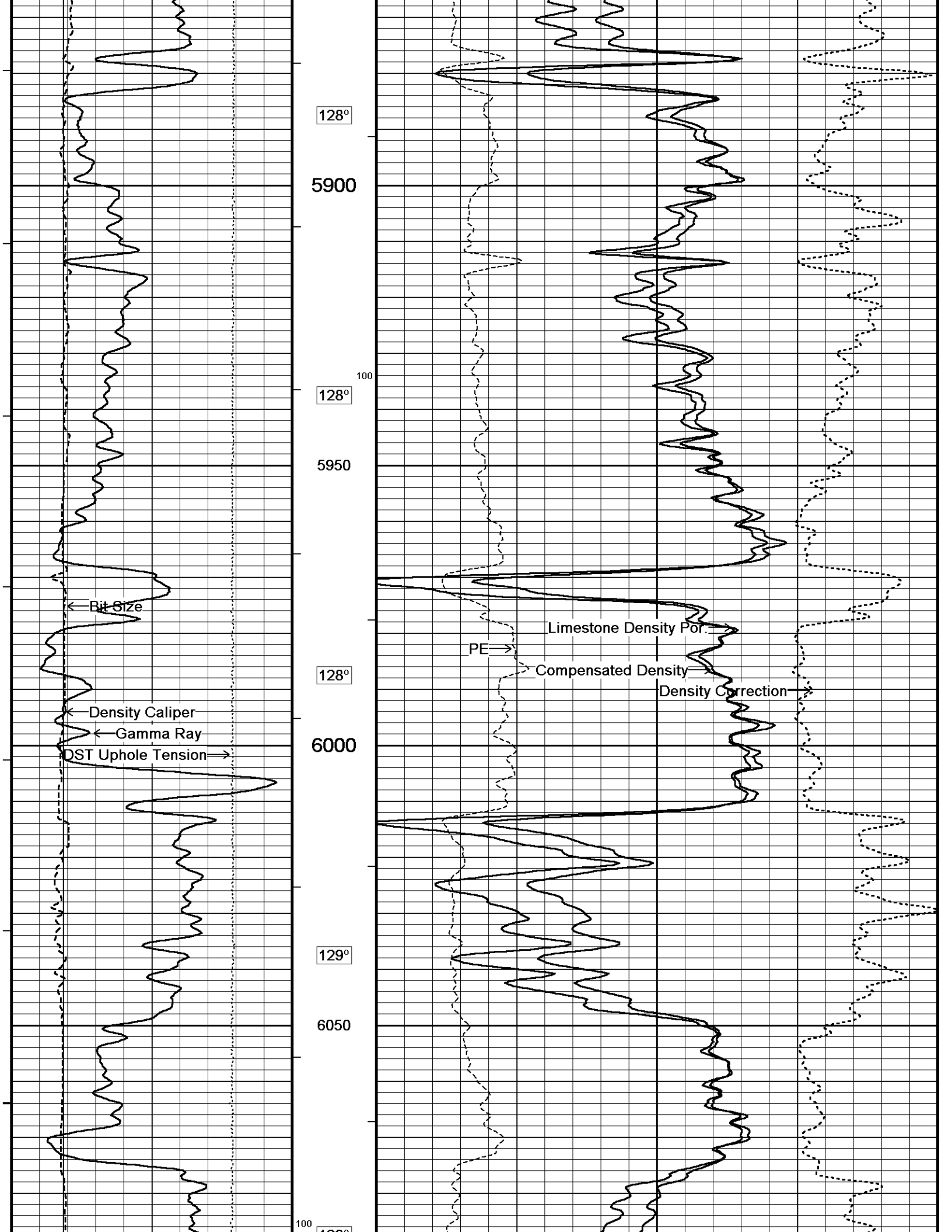

Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
120°
4800
120°
4850
120°
4900
500
121°
4950
PE
Limestone Density Por
Compensated Density
Density Correction

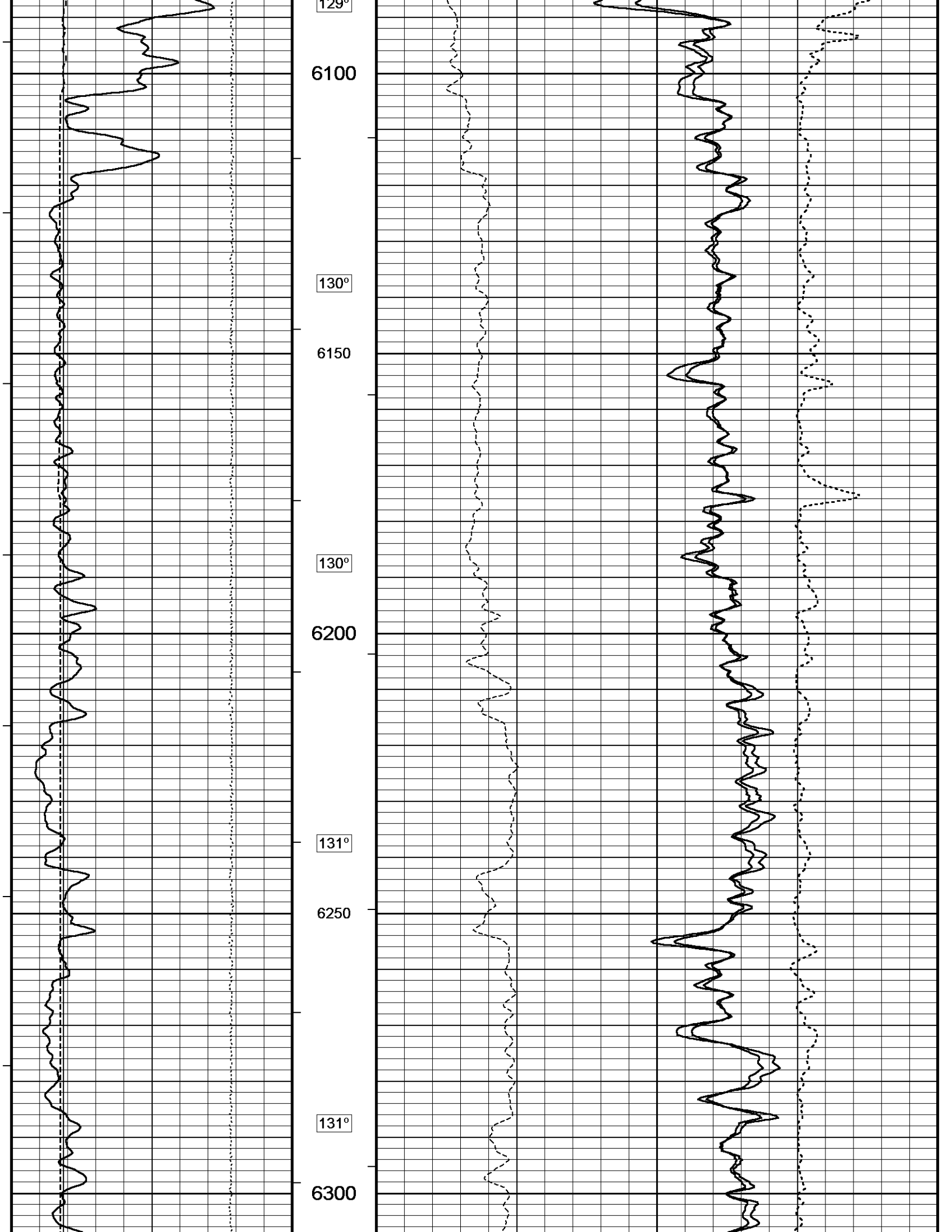

121°
5000
121°
5050
300
122°
5100
122°
5150
122°
5200
Bit Size
Density Caliper
PE
Limestone Density Por
Compensated Density
Density Correction

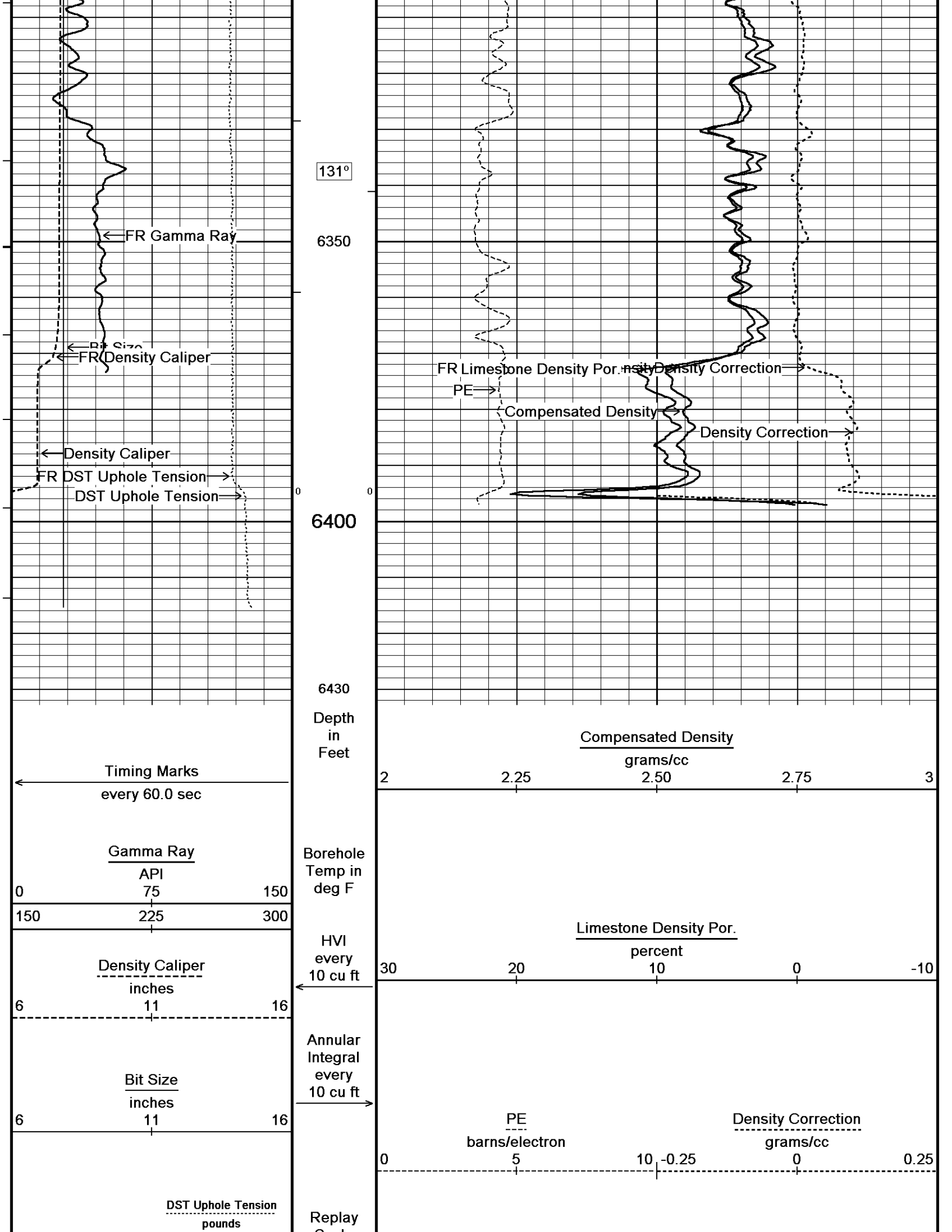

Density Caliper
Gamma Ray
DST Uphole Tension
400
123°
5250
123°
5300
123°
5350
124°
5400


124°
5450
124°
5500
300
200
125°
5550
Bit Size
125°
Limestone Density Por
PE
Compensated Density
Density Correction
5600
Density Caliper
Gamma Ray
DST Uphole Tension
126°


5650
126°
5700
126°
5750
127°
200
5800
127°
5850


128°
5900
100
128°
5950
Bit Size
Limestone Density Por.
PE
Compensated Density
Density Correction
128°
Density Caliper
Gamma Ray
DST Uphole Tension
6000
129°
6050
100


129°
6100
130°
6150
130°
6200
131°
6250
131°
6300


131°
6350
6400
6430
FR Gamma Ray
FR Density Caliper
Density Caliper
FR DST Uphole Tension
DST Uphole Tension
FR Limestone Density Por.
Density Correction
PE
Compensated Density
Density Correction
Depth in Feet
Compensated Density
grams/cc
2
2.25
2.50
2.75
3
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
150
225
300
Borehole Temp in deg F
HVI every 10 cu ft
Limestone Density Por.
percent
30
20
10
0
-10
Density Caliper
inches
6
11
16
Annular Integral every 10 cu ft
Bit Size
inches
6
11
16
PE
barns/electron
0
5
10
Density Correction
grams/cc
-0.25
0
0.25
DST Uphole Tension
pounds
Replay

5000 0

Scale 1:240

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-AUG-2012 20:49
Filename: C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5 Main.dta — Recorded on 05-AUG-2012 18:21
System Versions: Logged with 13.02.6600 Processed with 13.02.6600 Plotted with 13.02.6600

5 INCH MAIN

10 INCH HI-RES

Depth Based Data - Maximum Sampling Increment 2.5cm — Plotted on 05-AUG-2012 20:49
Filename: C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5 Hi-Res.dta — Recorded on 05-AUG-2012 17:20
System Versions: Logged with 13.02.6600 Plotted with 13.02.6600

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:120

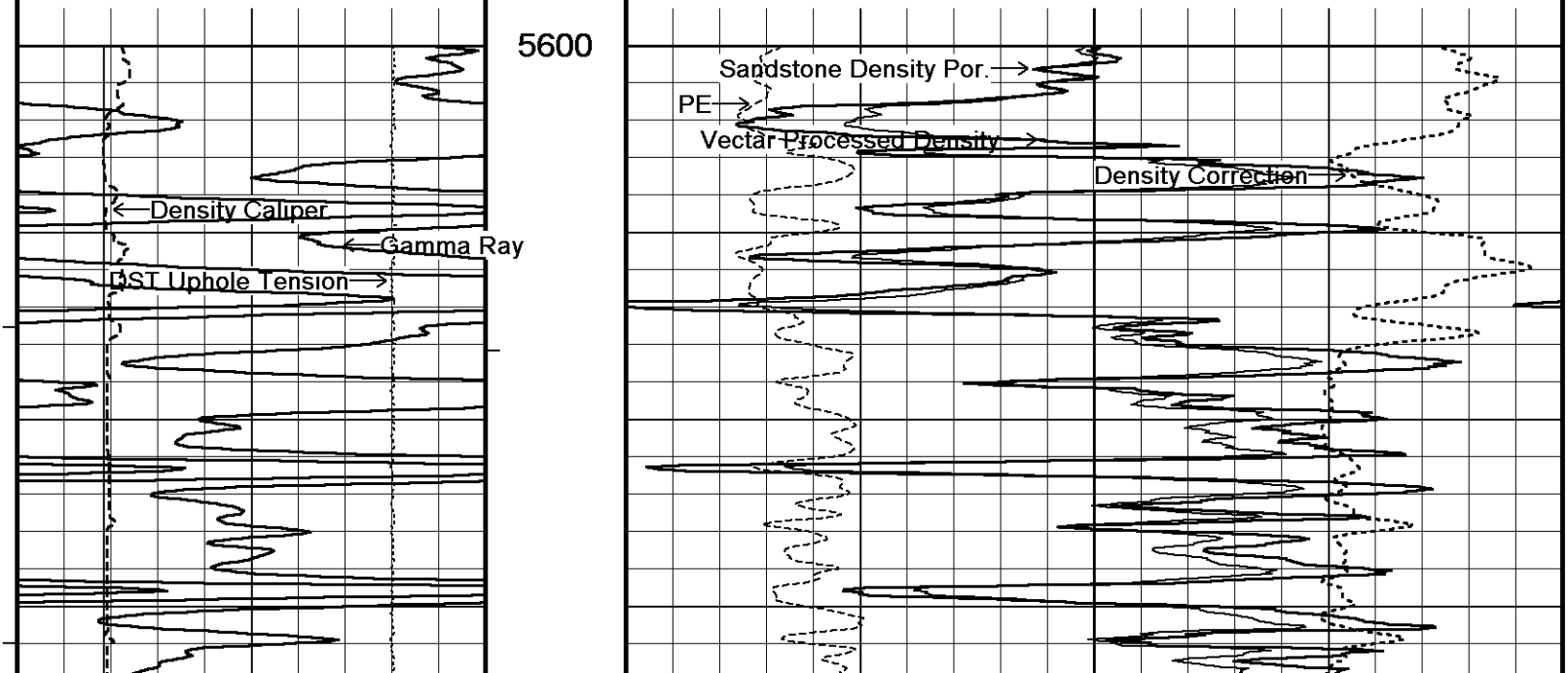
Vectar Processed Density
grams/cc
2 2.25 2.50 2.75 3

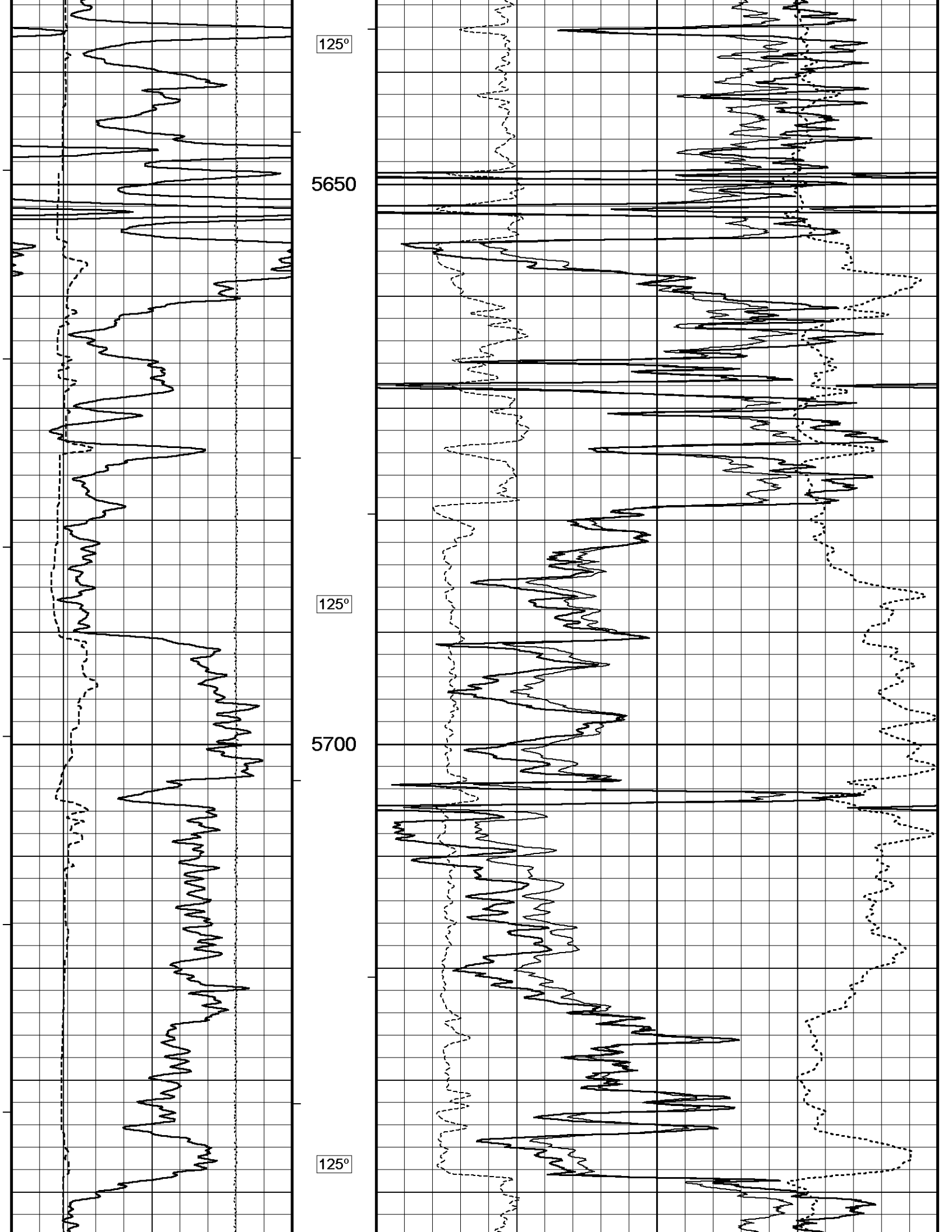
Sandstone Density Por.
percent
30 20 10 0 -10

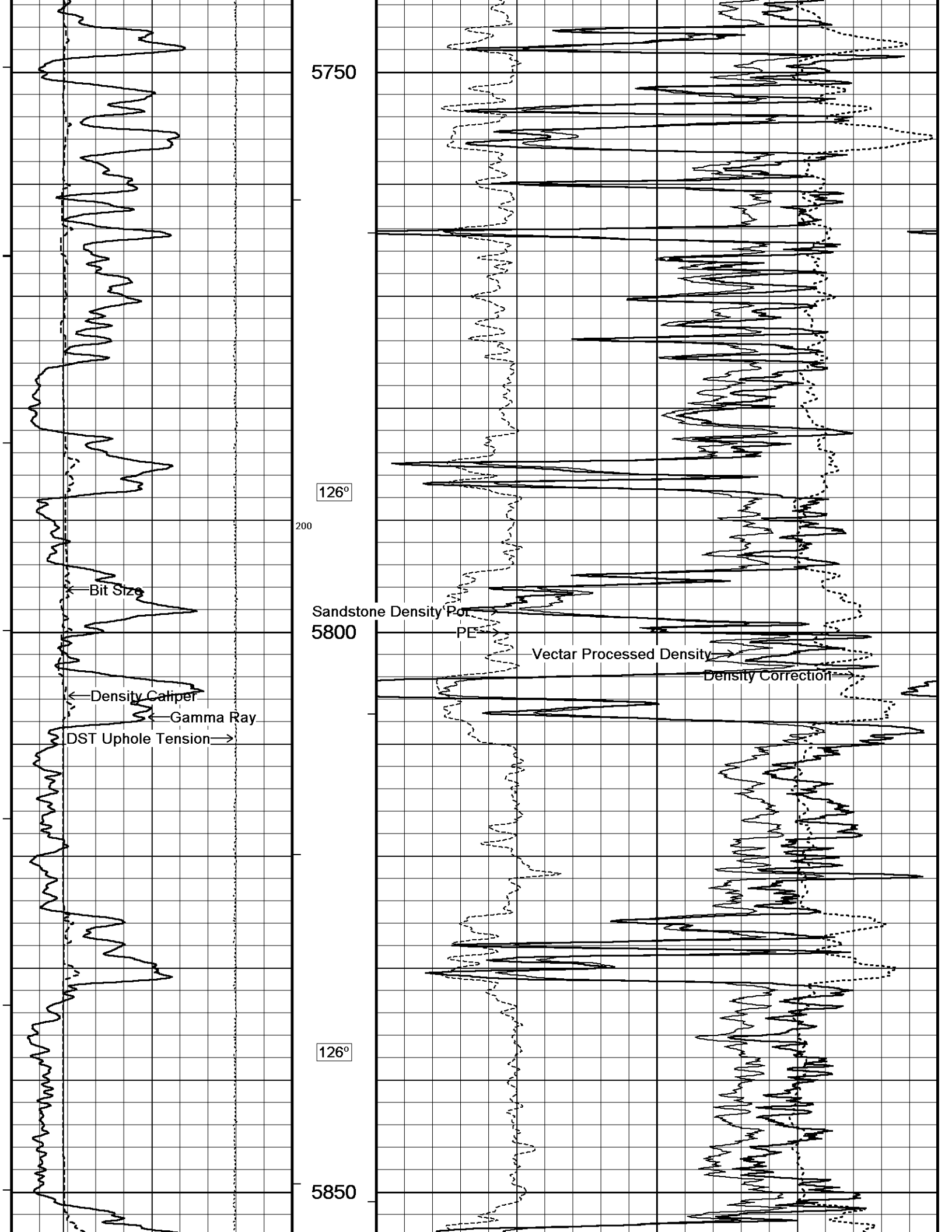
PE
barns/electron
0 5 10

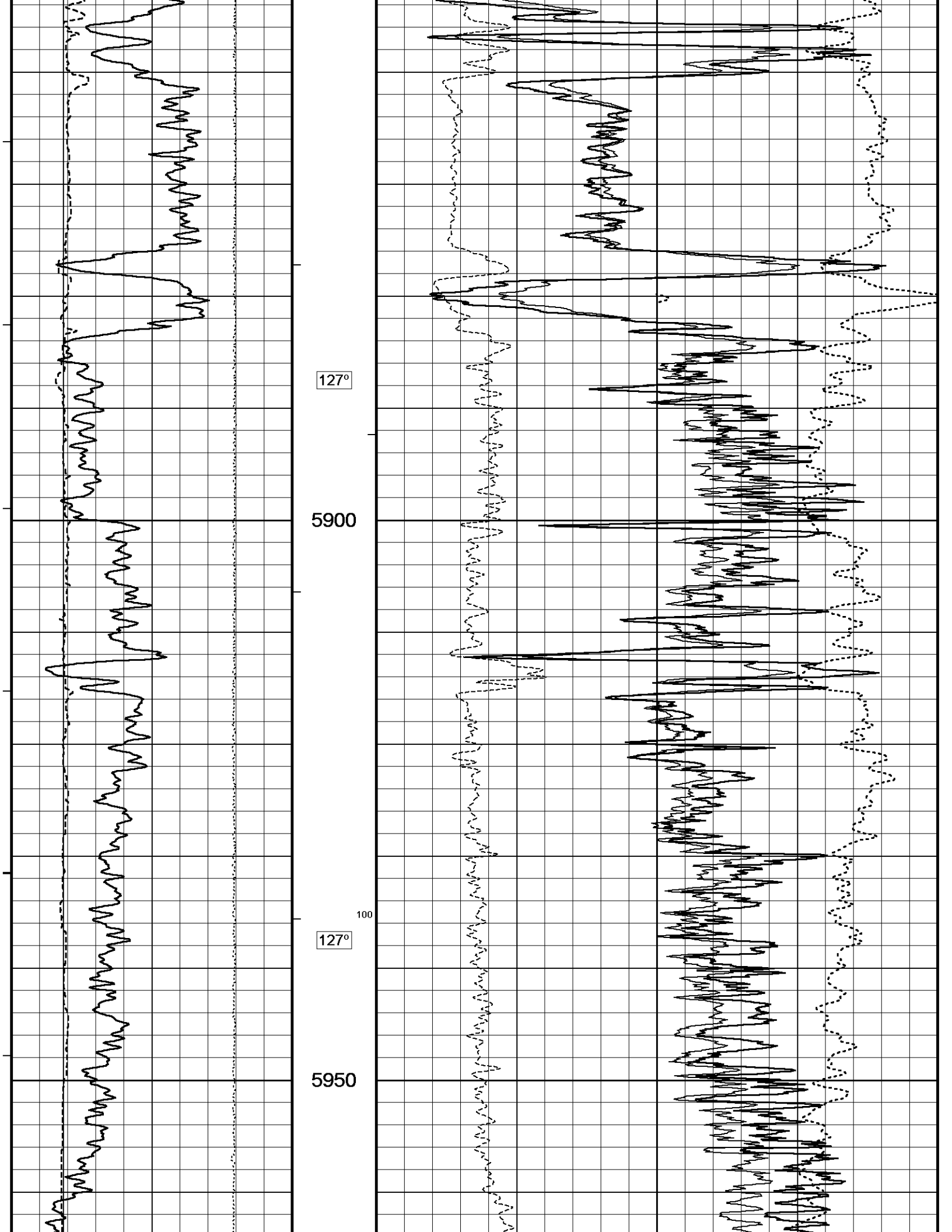
Density Correction
grams/cc
-0.25 0 0.25

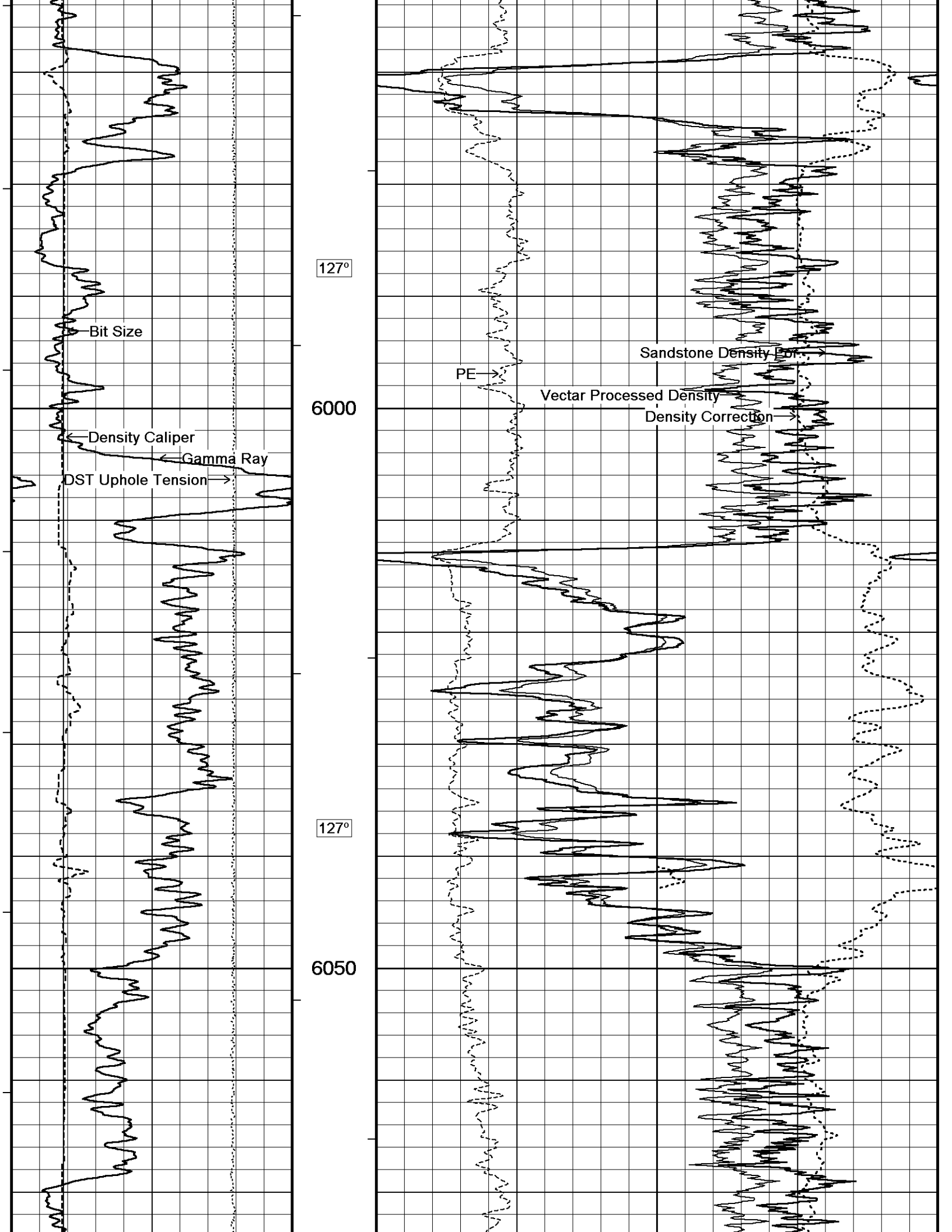
5600

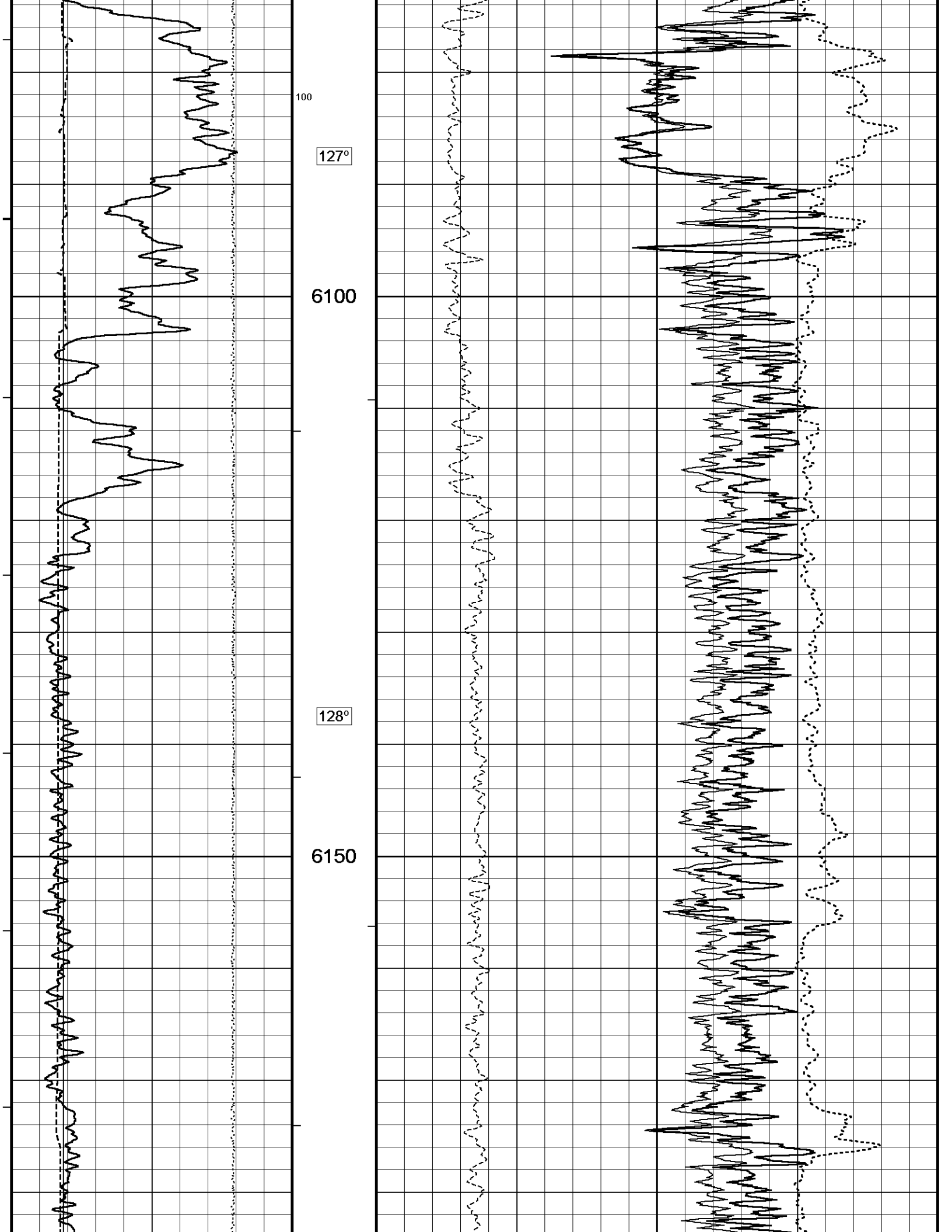


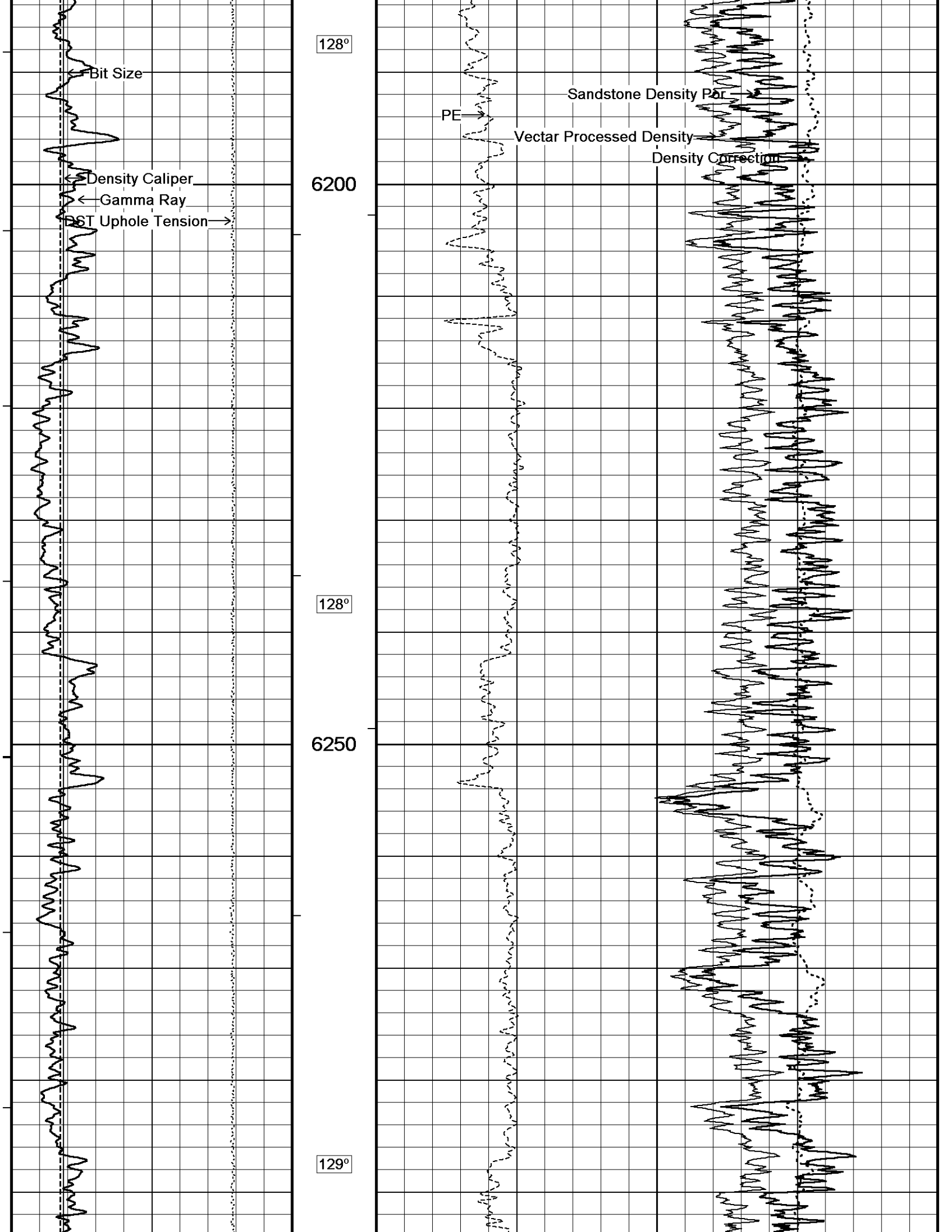

125°
5650
125°
5700
125°

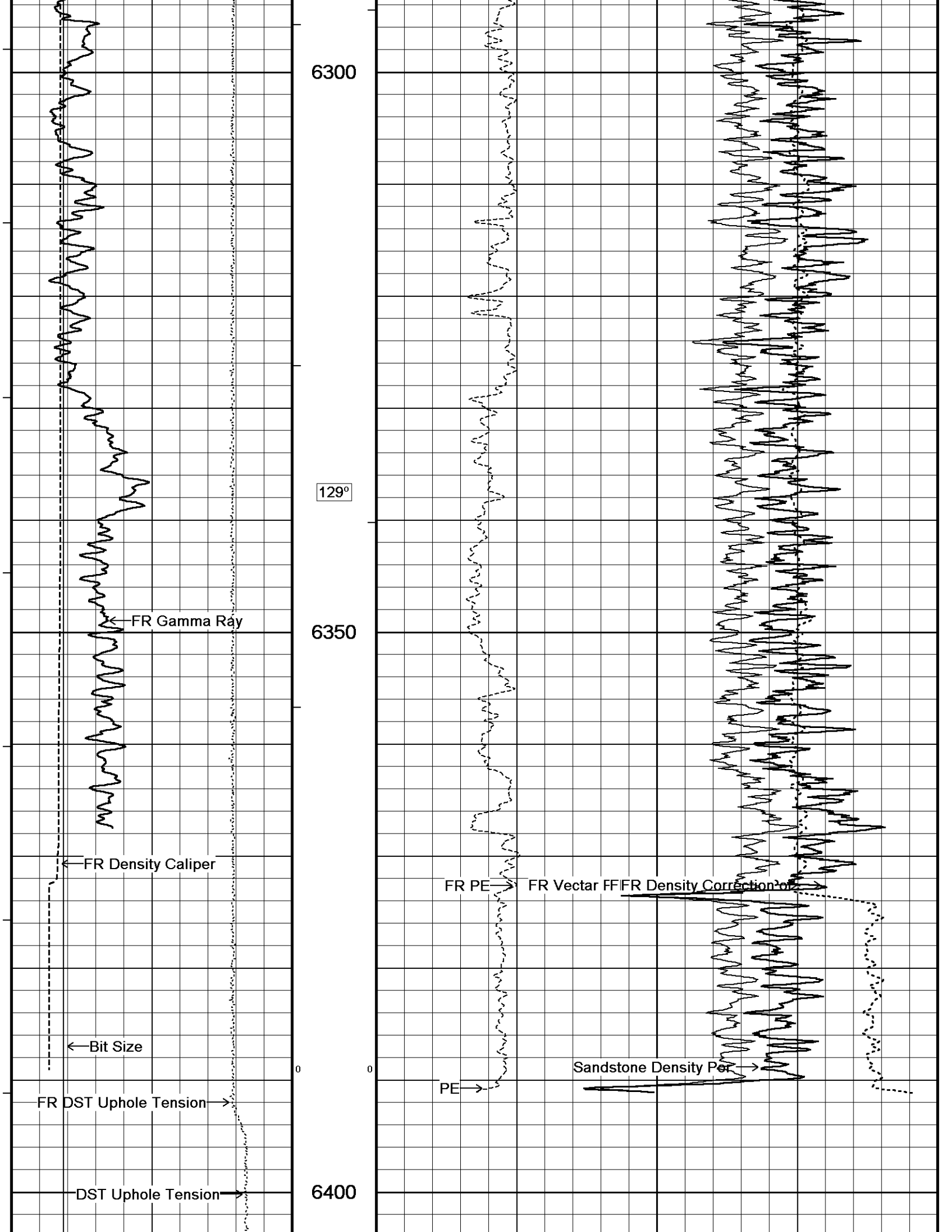

5750
126°
200
Bit Size
Sandstone Density Por
PE
5800
Vectar Processed Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
126°
5850

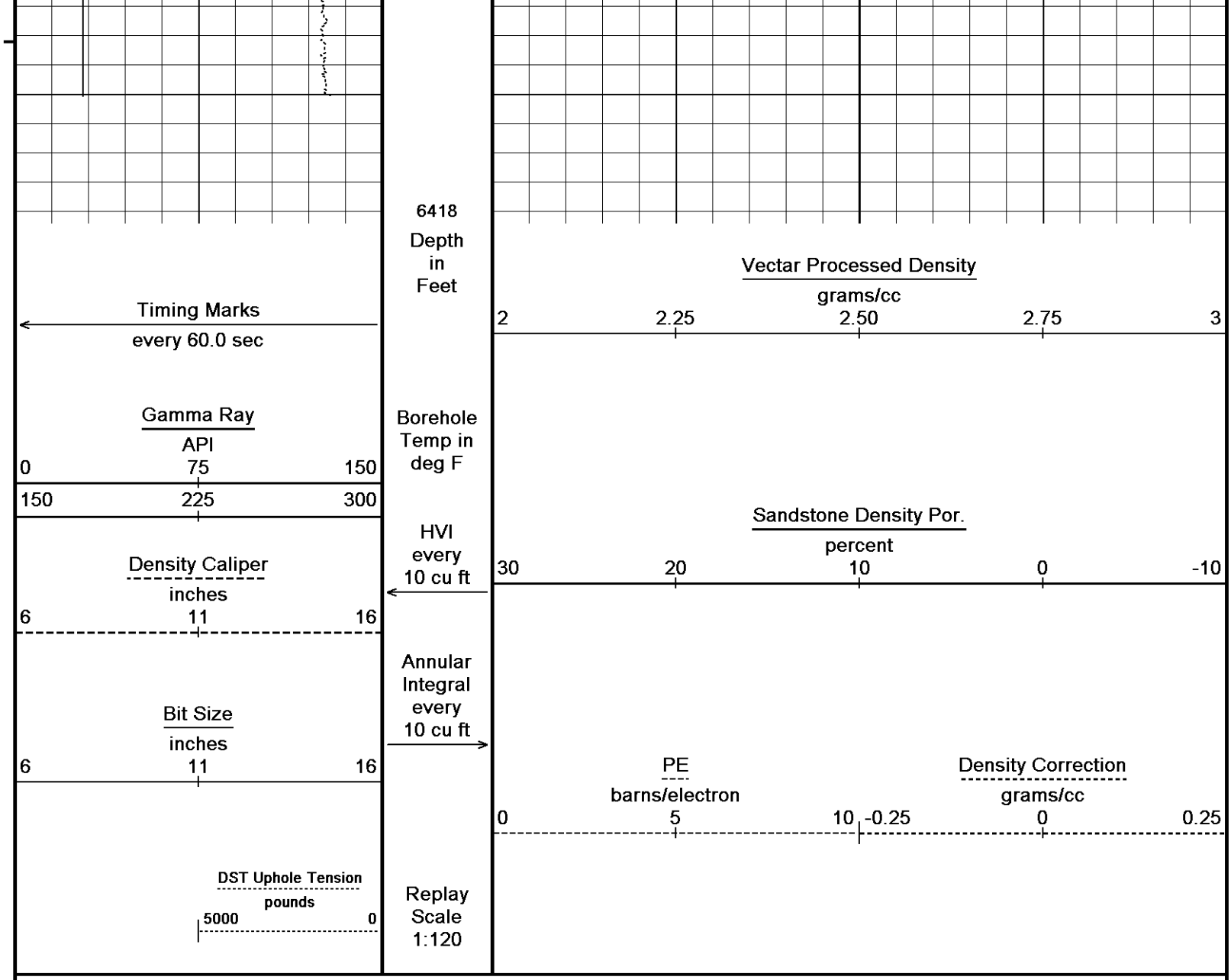

127°
5900
100
127°
5950


127°
Bit Size
Sandstone Density Por
PE
Vectar Processed Density
6000
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
127°
6050


100
127°
6100
128°
6150


128°
Bit Size
Sandstone Density Por
PE
Vectar Processed Density
Density Correction
Density Caliper
6200
Gamma Ray
DST Uphole Tension
128°
6250
129°


6300
129°
6350
6400
FR Gamma Ray
FR Density Caliper
Bit Size
FR DST Uphole Tension
DST Uphole Tension
FR PE
FR Vectar FF
FR Density Correction
Sandstone Density Por
PE
0
0

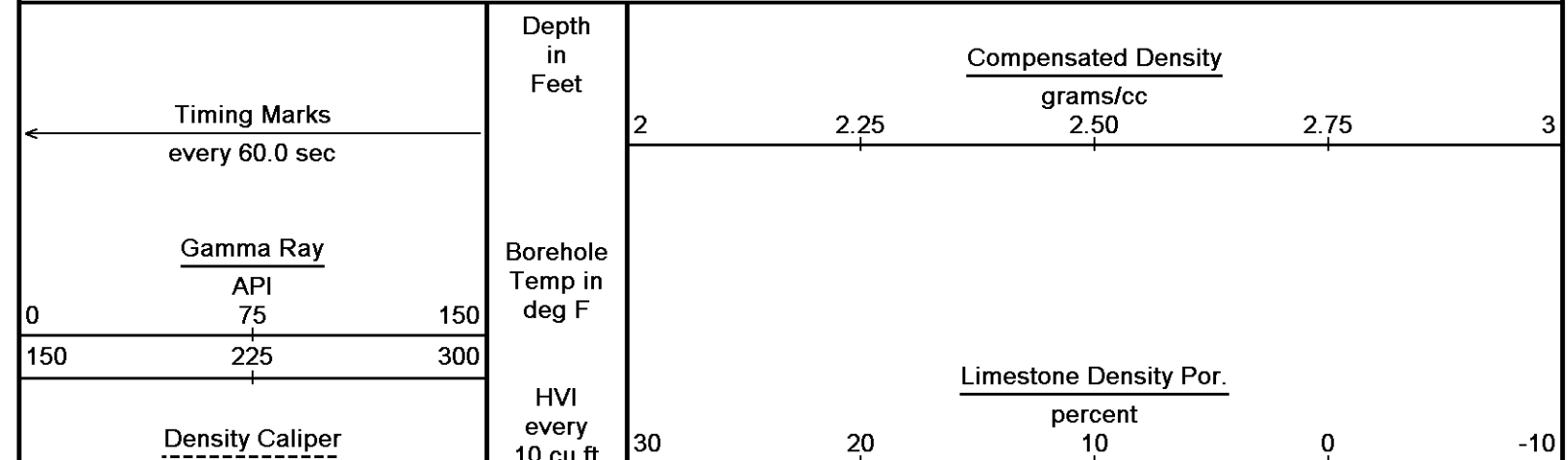


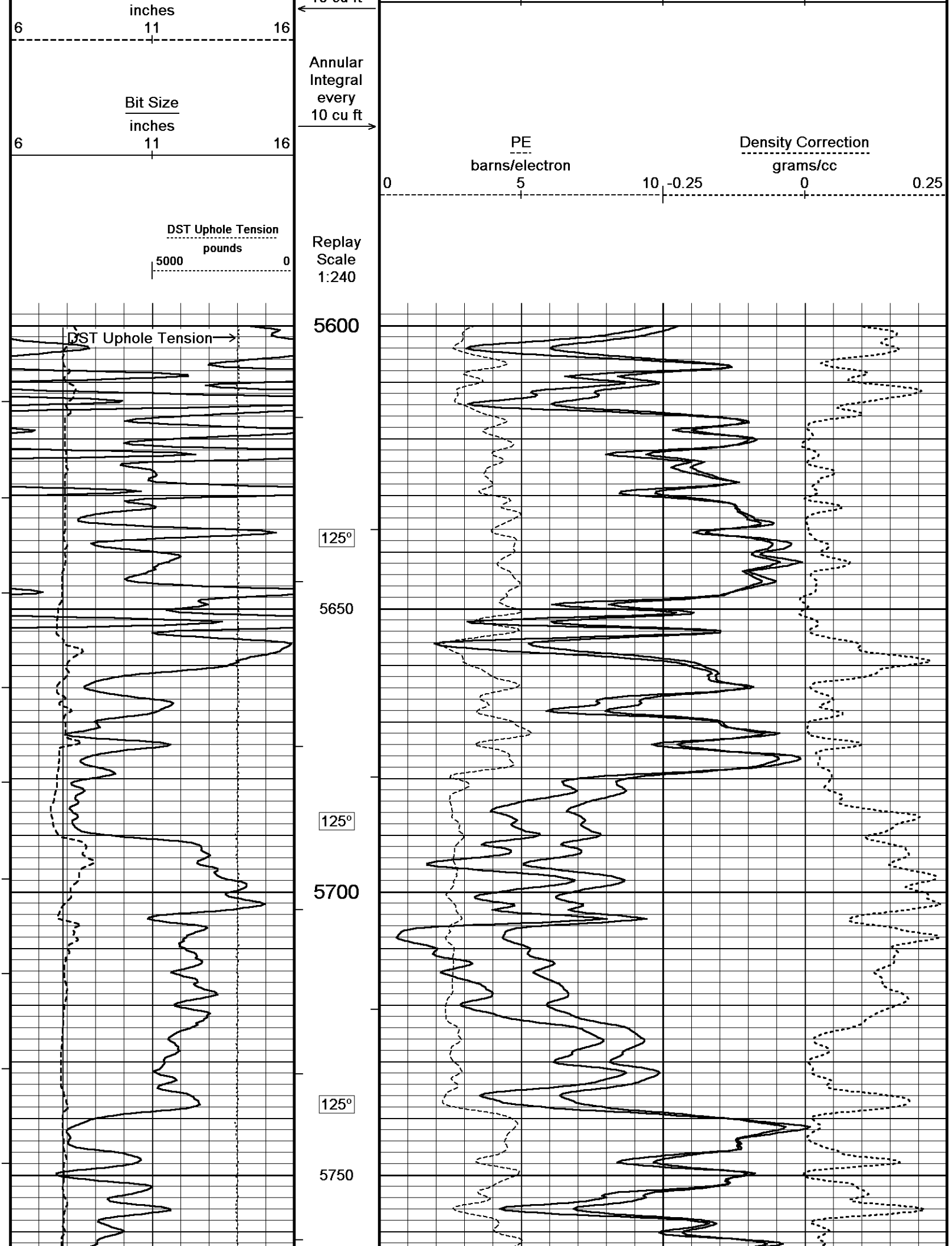
Depth Based Data - Maximum Sampling Increment 2.5cm — Plotted on 05-AUG-2012 20:49
Filename: C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5 Hi-Res.dta — Recorded on 05-AUG-2012 17:20
System Versions: Logged with 13.02.6600 Plotted with 13.02.6600

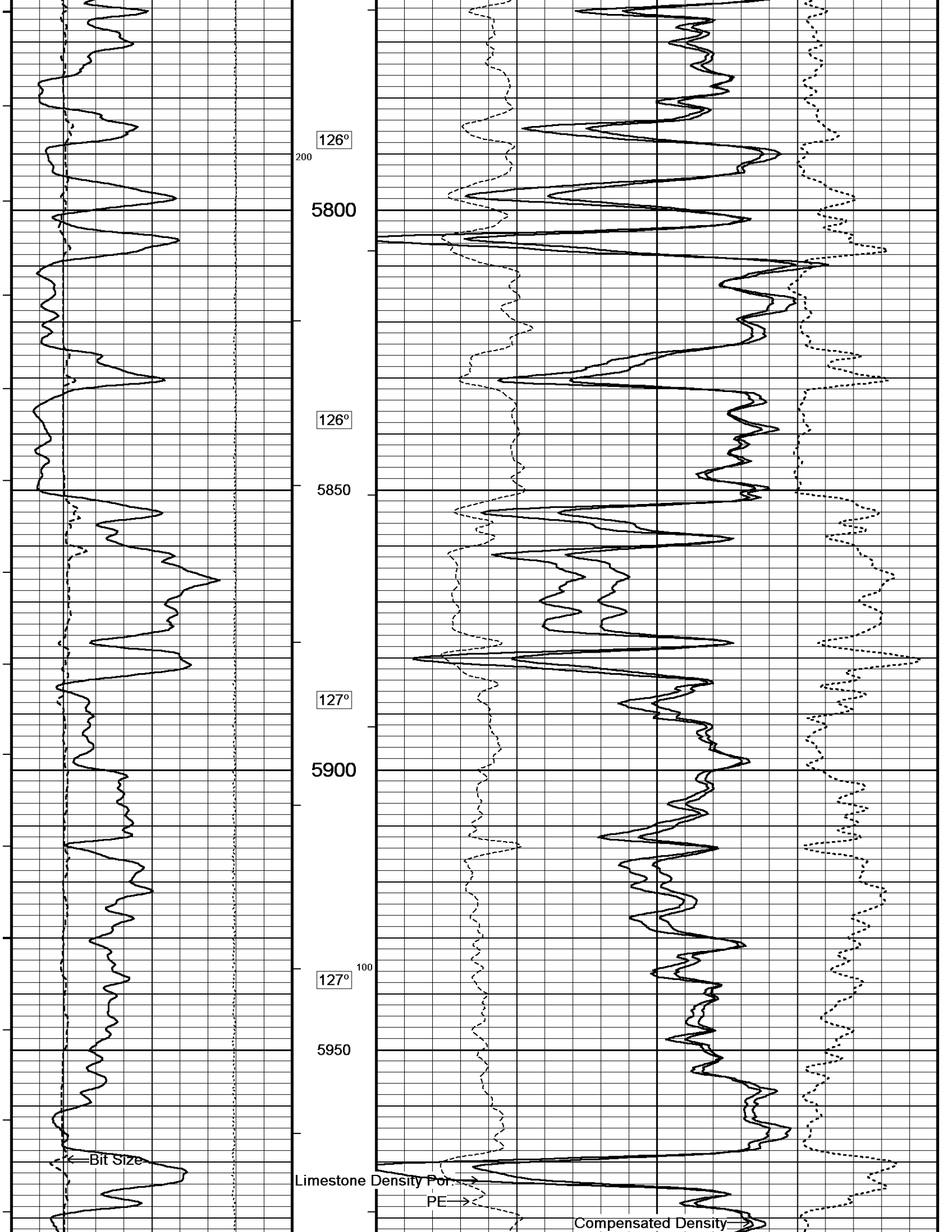
10 INCH HI-RES

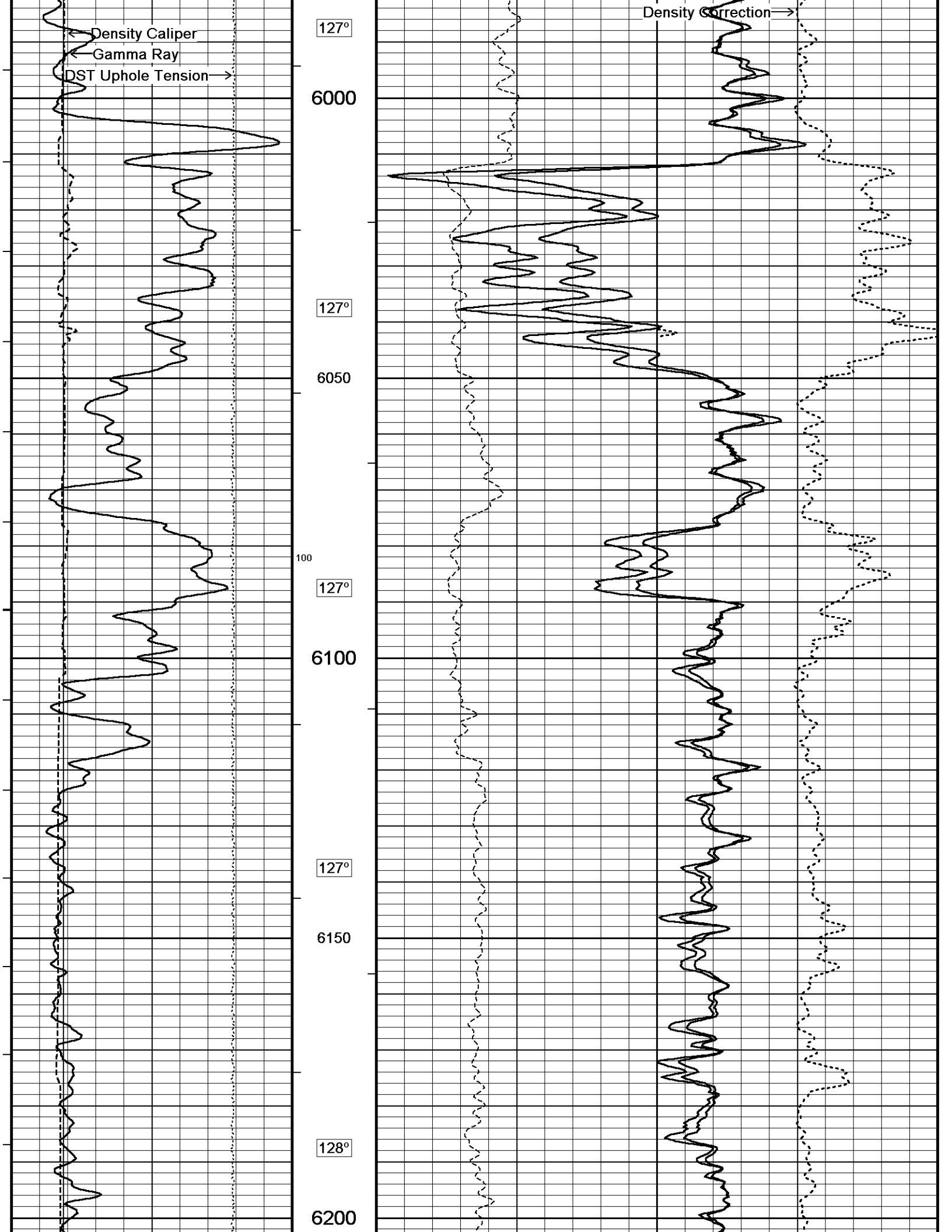
REPEAT SECTION

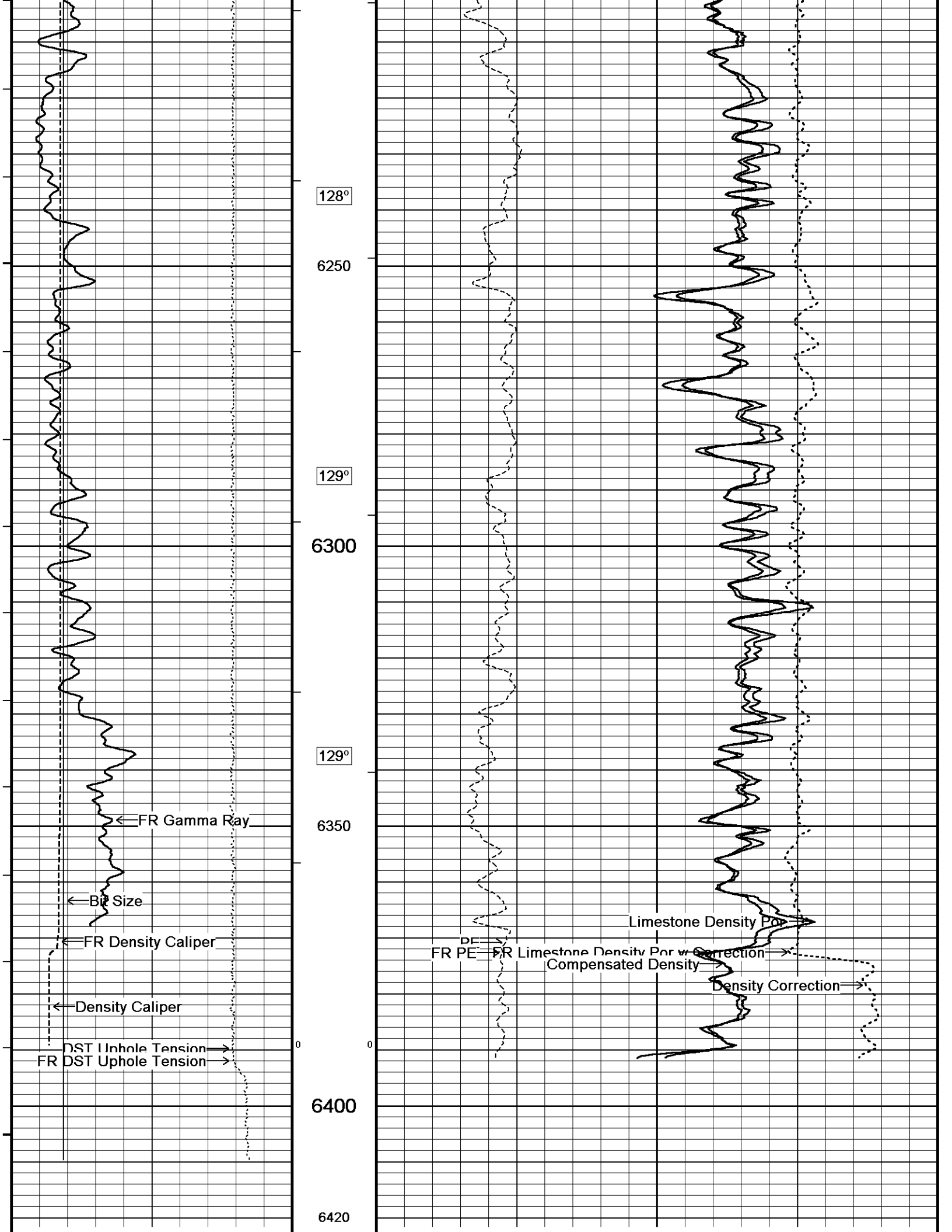
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-AUG-2012 20:49
Filename: C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5 Repeat.dta — Recorded on 05-AUG-2012 17:20
System Versions: Logged with 13.02.6600 Processed with 13.02.6600 Plotted with 13.02.6600

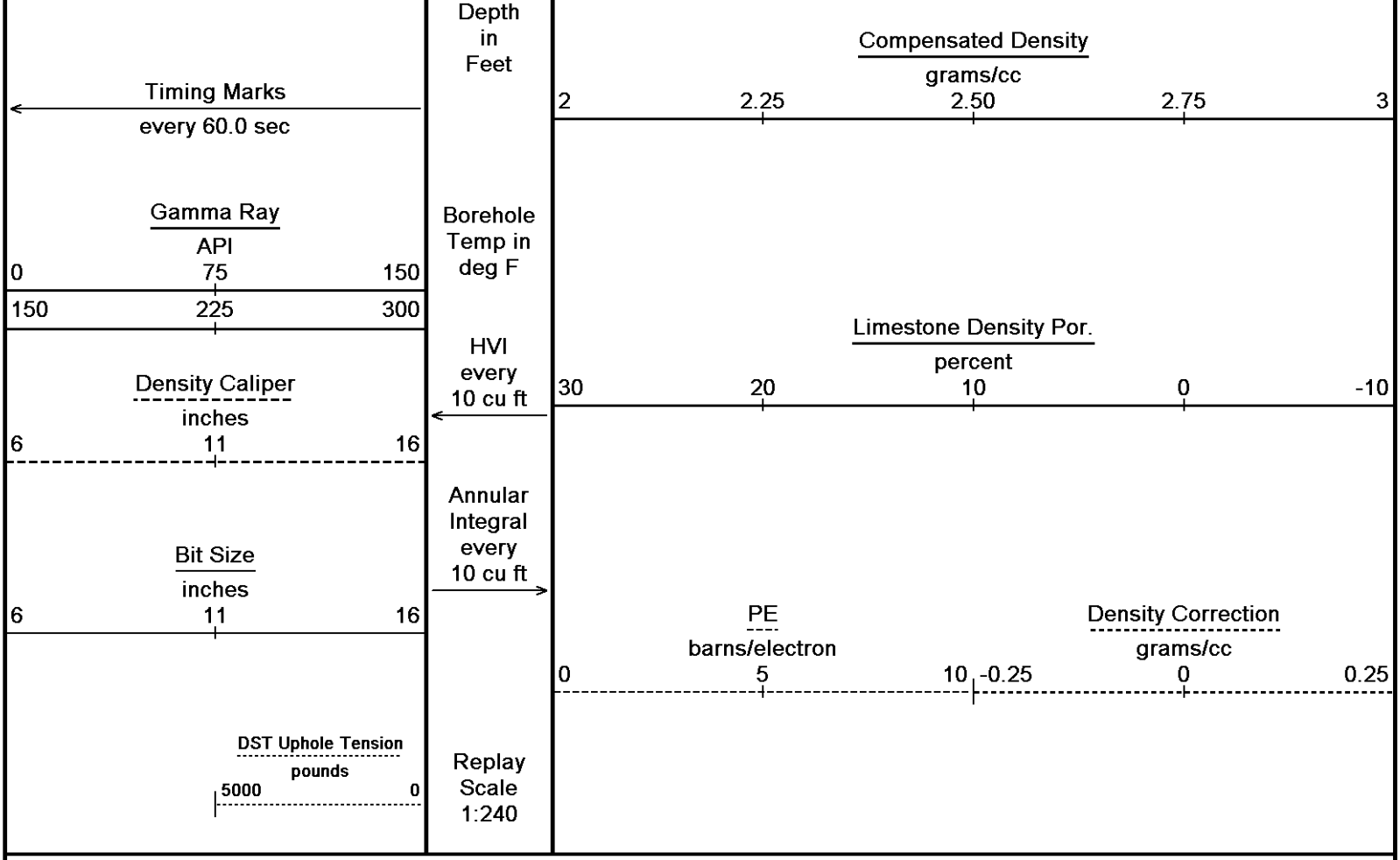



inches
6
11
16
Annular Integral every 10 cu ft
Bit Size
inches
6
11
16
PE
barns/electron
0
5
10
Density Correction
grams/cc
-0.25
0
0.25
DST Uphole Tension
pounds
5000
0
Replay Scale 1:240
DST Uphole Tension
5600
125°
5650
125°
5700
125°
5750


126°
200
5800
126°
5850
127°
5900
127°
100
5950
←Bit Size
Limestone Density Por.→
PE→
Compensated Density→


Density Caliper
Gamma Ray
DST Uphole Tension
Density Correction
127°
6000
127°
6050
100
127°
6100
127°
6150
128°
6200


128°
6250
129°
6300
129°
6350
6400
6420
FR Gamma Ray
Bit Size
FR Density Caliper
Density Caliper
DST Uphole Tension
FR DST Uphole Tension
0
0
PE
FR PE
Limestone Density Por
FR Limestone Density Por w Correction
Compensated Density
Density Correction



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-AUG-2012 20:49

Filename: C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5 Repeat.dta — Recorded on 05-AUG-2012 17:20

System Versions: Logged with 13.02.6600 Processed with 13.02.6600 Plotted with 13.02.6600

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5.dta

General Constants All 000

Last Edited on 05-AUG-2012,16:06

General Parameters		
Mud Resistivity	1.010	ohm-metres
Mud Resistivity Temperature	102.000	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	4.500	inches
Caliper for Differential Caliper	None	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. Four Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Down-hole Tension Calibration SMS 0

Field Calibration on 05-AUG-2012 16:34

Reading No	Measured	Calibrated (lbs)
1	16094.82	0.00
2	16575.01	399.00

Gamma Calibration MCG-C 208

Field Calibration on 03-AUG-2012 22:27

	Measured	Calibrated (API)
Background	79	54
Calibrator (Gross)	1135	779
Calibrator (Net)	1056	725

Gamma Constants MCG-C 208

Last Edited on 05-AUG-2012,16:06

Gamma Calibrator Number	GR38	
Mud Density	1.08	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

SP Calibration MCG-C 208

Field Calibration on 03-AUG-2012 22:37

	Measured	Calibrated (mV)
Reference 1	100.2	101.0
Reference 2	-101.3	-101.0

High Resolution Temperature Calibration MCG-C 208

Field Calibration on 03-AUG-2012,16:18

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

High Resolution Temperature Constants MCG-C 208

Last Edited on

Pre-filter Length	11

Micro Normal and Micro Inverse Calibration MML-A 4

Base Calibration on 24-JUL-2012 08:59
Field Check on 03-AUG-2012 22:21

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.2	60.2	5.0	25.0
Micro Inverse	15.7	78.4	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	62.9	62.9
Micro Inverse	48.2	48.2

Micro Normal and Micro Inverse Constants MML-A 4

Last Edited on 02-AUG-2012,09:13

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159	
Micro Normal K Factor	1.0000	
Micro Inverse K Factor	1.0000	
Standoff Offset	N/A	inches

Caliper Calibration MML-A 4

Base Calibration on 24-JUL-2012 08:53
Field Calibration on 03-AUG-2012 22:21

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	15504	5.98
2	18771	7.97
3	22124	9.86
4	25894	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.93	5.98

Neutron Calibration MDN-A.B 65

Base Calibration on 26-JUL-2012 11:25
Field Check on 03-AUG-2012 22:33

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3179	99	3714	110
Ratio	32.263		33.764	

Field Calibrator at Base	Calibrated (cps)	
	1621	2347

Ratio	0.691	
Field Check	Calibrated (cps)	
	1614	2231
Ratio	0.723	

Neutron Constants MDN-A.B 65

Last Edited on 02-AUG-2012,09:24

Neutron Source Id	PN-521	
Neutron Jig Number	5824NE	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 55

Base Calibration on 24-JUL-2012 09:23
Field Check on 03-AUG-2012 22:12

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	968.0	126.8
Base Check		276.7
Field Check		276.7

FE Constants MFE-A.A 55

Last Edited on 04-AUG-2012,23:27

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Caliper Source for FE correction	Density Caliper	
Caliper Value for FE correction	N/A	inches
Rm Source for FE correction	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Stand-off	0.5	inches

Induction Calibration MAI-A.A 45

Base Calibration on 26-JUL-2012,09:22
Field Check on 03-AUG-2012 22:11

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	14.4	472.6	9.3	966.2
2	5.7	374.0	7.6	821.4
3	3.4	261.2	5.2	566.0
4	2.5	133.9	2.6	279.2

Array Temperature 78.4 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1	0.0	0.0	19.8	3852.9
2	0.0	0.0	32.0	3630.1
3	0.0	0.0	28.8	3050.0
4	0.0	0.0	18.4	2079.5
Deep	0.0	0.0	16.2	1911.6
Medium	0.0	0.0	42.6	4061.3
Shallow	0.0	0.0	50.1	5484.3
Array Temperature	0.0		82.4	Deg F

Induction Constants MAI-A.A 45

Last Edited on 04-AUG-2012,23:27

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	8.0000	
Stand-off Fin Angle	45.00	degrees
Stand-off Fin Width	0.5000	inches
Borehole Corr. Rm Source	Temperature Corr	
Temp. for Rm Corr.	MCG 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	

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 26-JUL-2012,09:09

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

High Resolution Temperature Constants MAI-A.A 45

Last Edited on

Pre-filter Length	11

Caliper Calibration MPD-B 31

Base Calibration on 26-JUL-2012 09:16
Field Calibration on 03-AUG-2012 22:14

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	17567	3.99
2	26416	5.98
3	35056	7.97
4	43488	9.86
5	52816	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.97	5.98

Photo Density Calibration MPD-B 31

Base Calibration on 26-JUL-2012 10:02
Field Check on 03-AUG-2012 22:20

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	48085	24200	59556	30836
Reference 2	19674	1989	24941	2541

Field Check at Base

692.2 849.9

Field Check

691.9 854.9

PE Calibration

Base Calibration	WS	Measured WH	Ratio	Calibrated Ratio
Background	127	608		
Reference 1	19234	47953	0.404	0.371
Reference 2	5695	19580	0.293	0.272

Field Check at Base

126.7 608.3

Field Check

126.9 606.5

Density Constants MPD-B 31

Last Edited on 05-AUG-2012,16:06

Density Source Id	254	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.08	gm/cc
Mud Density Z/A Multiplier	1.13	
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 (m)
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	

DOWNHOLE EQUIPMENT

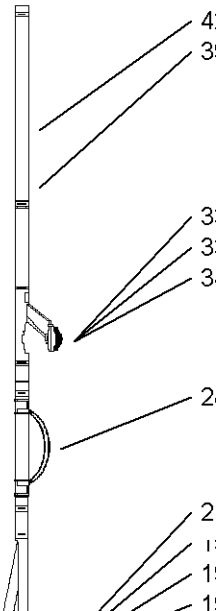
C:\Minimus 13.02.6600\Data\O'Brien Vanderpool #2-5\O'Brien Vanderpool #2-5.dta

Compact Comms Gamma
MCG-C 208 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 4 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

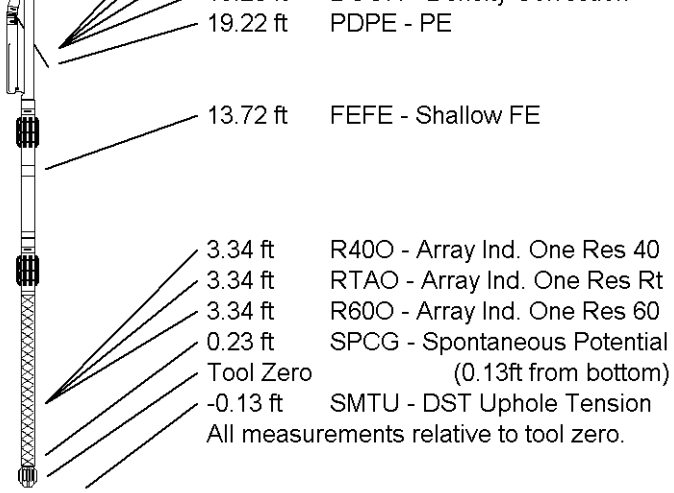


42.87 ft	GRGC - Gamma Ray
39.96 ft	CGXT - MCG External Temperature
33.24 ft	MINV - Micro-inverse
33.24 ft	MNRL - Micro-normal
34.24 ft	MLTC - MML Caliper
28.45 ft	NPRL - Limestone Neutron Por.
21.21 ft	CLDC - Density Caliper
19.28 ft	DPRL - Limestone Density Por.
19.28 ft	DEN - Compensated Density
19.28 ft	DCOR - Density Correction

Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 48.16 ft Weight: 383.6 lb



All measurements relative to tool zero.

COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	VANDERPOOL #2-5
FIELD	UNNAMED
PROVINCE/COUNTY	MEADE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2372.00	feet	First Reading	6373.00	feet
Elevation Drill Floor	2370.00	feet	Depth Driller	6400.00	feet
Elevation Ground Level	2360.00	feet	Depth Logger	6392.00	feet

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COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
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