Weatherford®

COMPACT PHOTO DENSITY COMPENSATED NEUTRON MICRORESISTIVITY LOG

COMPANY	RED OAK ENERGY, INC.
WELL	FS/FRAHM # 1-35
FIELD	WC
PROVINCE/COUNTY	THOMAS
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1980' FSL & 100' FEL
	E2 E2 NE SE

40 Years of Wireline 1970 2010

SEC	TWP	RGE	Other Services
35	8S	35W	MAI/MFE

API Number 15-193-20848
Permit Number

Permanent Datum G.L., Elevation 3303 feet
Log Measured From KB
Drilling Measured From K.B.

Elevations:	feet
KB	3308.00
DF	3306.00
GL	3303.00

Date	12-MAY-2012			
Run Number	ONE			
Depth Driller	4860.00	feet		
Depth Logger	4857.00	feet		
First Reading	4836.00	feet		
Last Reading	3800.00	feet		
Casing Driller	335.00	feet		
Casing Logger	331.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.20 lb/USg	57.00 CP		
PH / Fluid Loss	11.00	8.80 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.71 @ 80.0	ohm-m		
Rmf @ Measured Temp	0.57 @ 80.0	ohm-m		
Rmc @ Measured Temp	0.85 @ 80.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.47 @124.0	ohm-m		
Time Since Circulation	5 HOURS			
Max Recorded Temp	124.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	13096	LIB		
Recorded By	A. GIAMBALVO			
Witnessed By	KEVIN DAVIS			
S.O. / JOB #	3534539		LB12-122	

BOREHOLE RECORD

Last Edited: 12-MAY-2012 08:32

Bit Size inches	Depth From feet	Depth To feet
7.875	331.00	4857.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	5.00	331.00	24.00

REMARKS

Tools Used: MPD, MCG, MDN, MFE, MAI, MML.
Hardware: MPD: 8 inch profile plate used. MAI and MFE: 0.5 Inch standoffs used. MDN: Dual Bowspring used.
2.71 G/CC Limestone density matrix used to calculate porosity.
Borehole rugosity, tight pulls, and washouts will affect data quality.
All intervals logged and scaled per customer's request.
Annular volume with 5.5 inch production casing = 212 cu. ft
Service order #3534539
Rig: WW Drilling # 4
Engineer: A. Giambalvo
Operator(s): M. Stegman

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 12-MAY-2012 08:41
Filename: C:\Minimus 11_03_4044\Data\Red Oak En...\Red Oak Energy, Inc FS-Frahm # 1-35_003.dta
Recorded on 12-MAY-2012 05:59
System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

Timing Marks
every 60.0 sec

Depth in Feet

Limestone Neutron Por.
percent
30 20 10 0 -10

Gamma Ray
API
0 75 150

Borehole Temp in deg F

Limestone Density Por.
percent
30 20 10 0 -10

HVI every 10 cu ft

Density Caliper
inches
6 11 16

PE
barns/electron
0 5 10

Density Correction
grams/cc
-0.25 0 0.25

Annular Integral every 10 cu ft

Bit Size
inches
6 11 16

Micro-normal
ohm metres
0 10

DST Uphole Tension
pounds
5000 0

Micro-inverse
ohm metres
0 10

Replay Scale 1:240

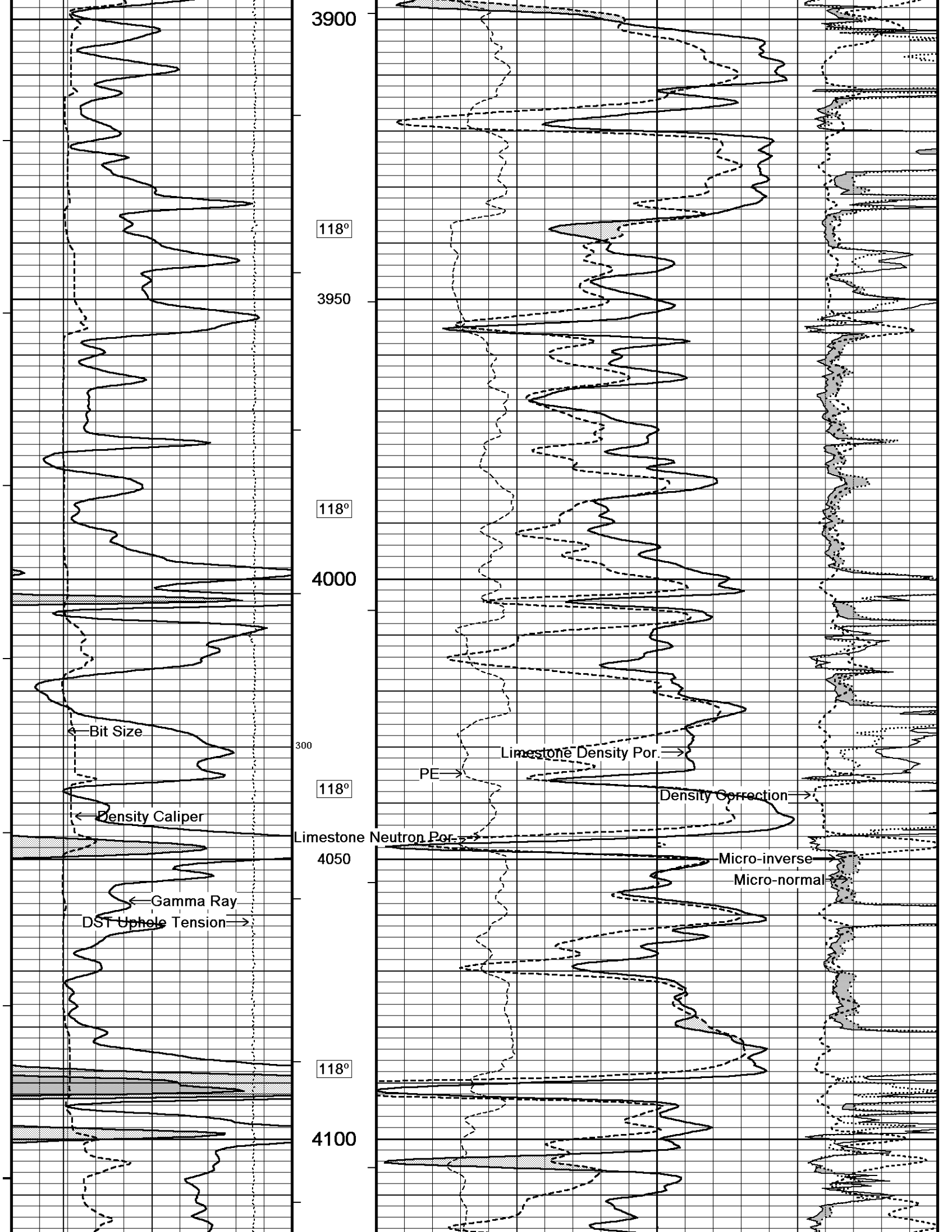
3800

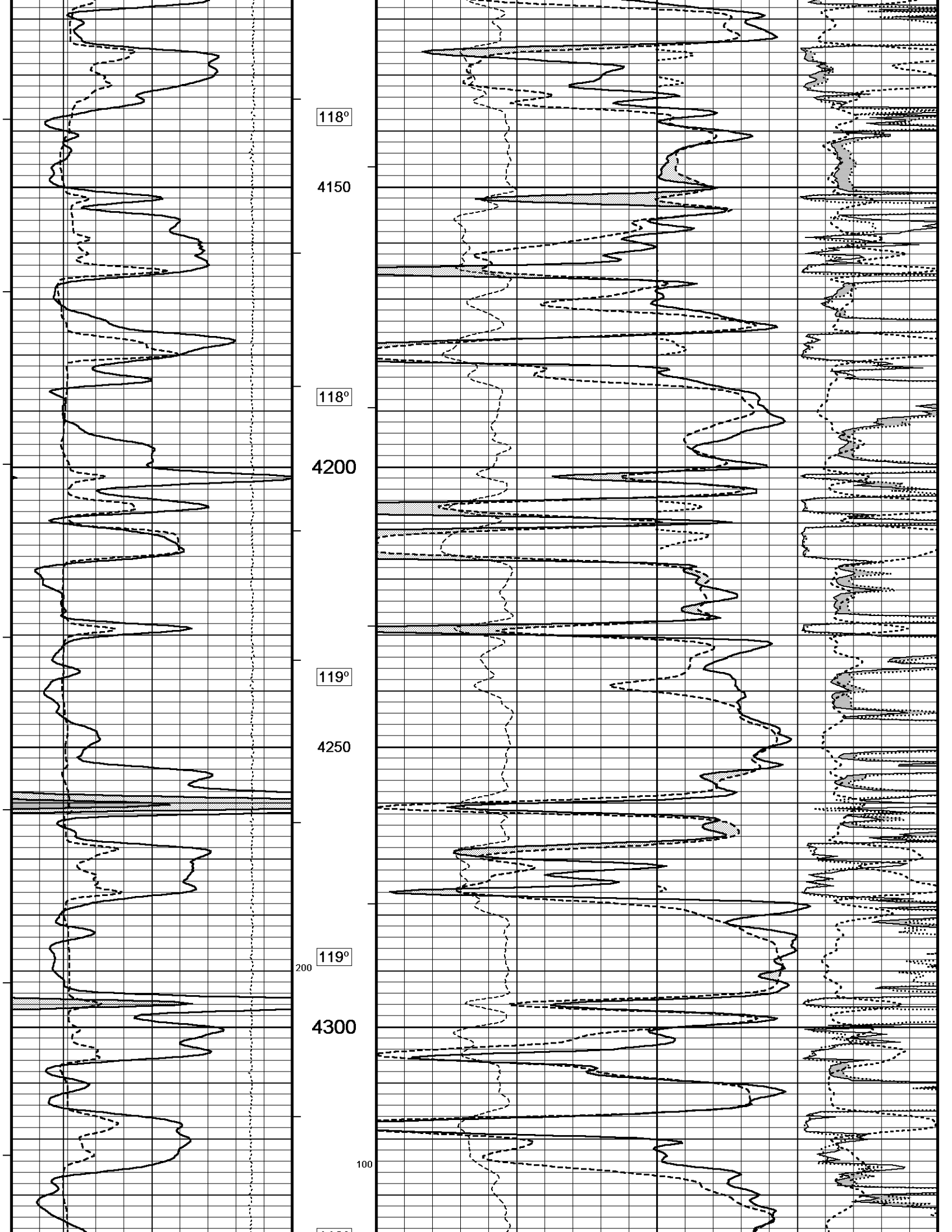
117°

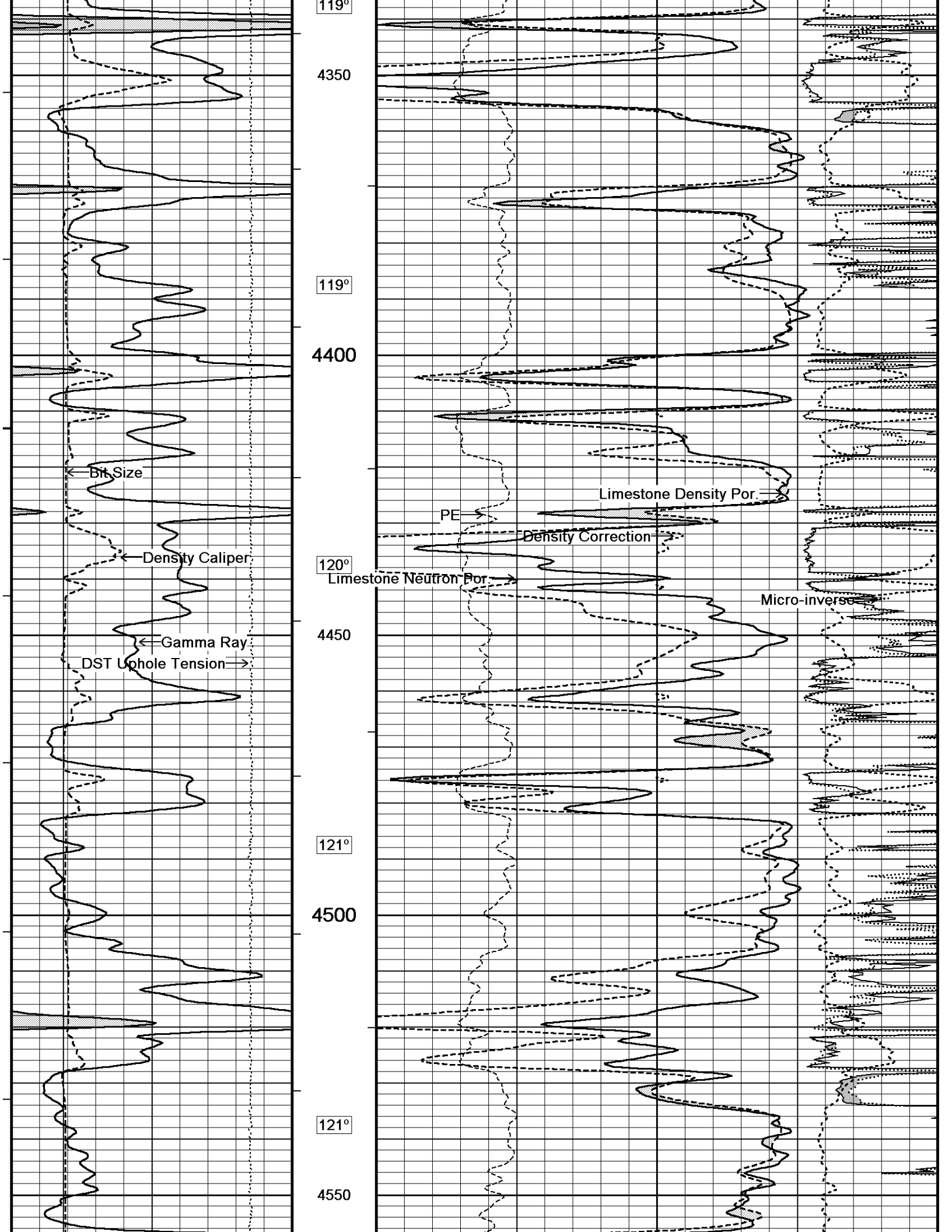
3850

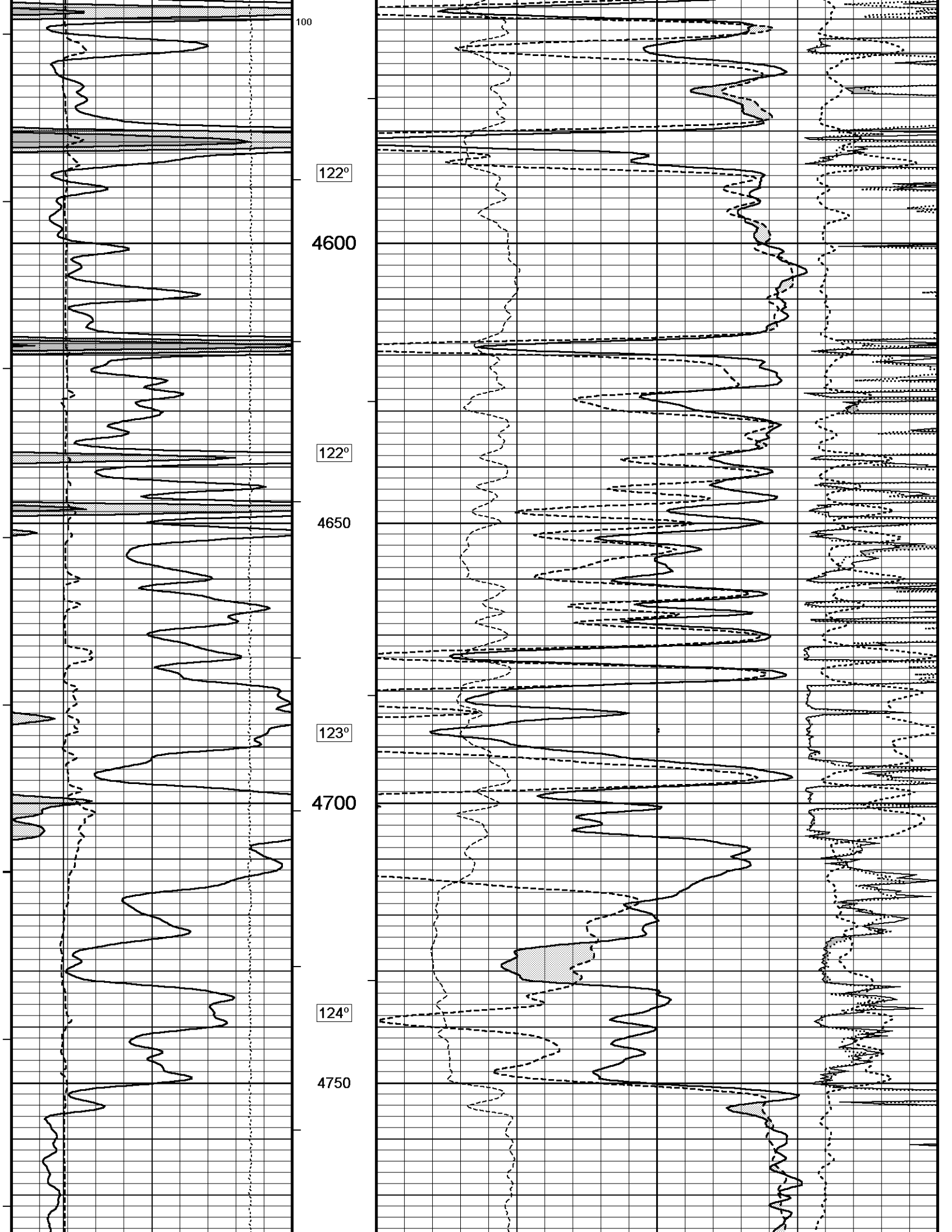
200

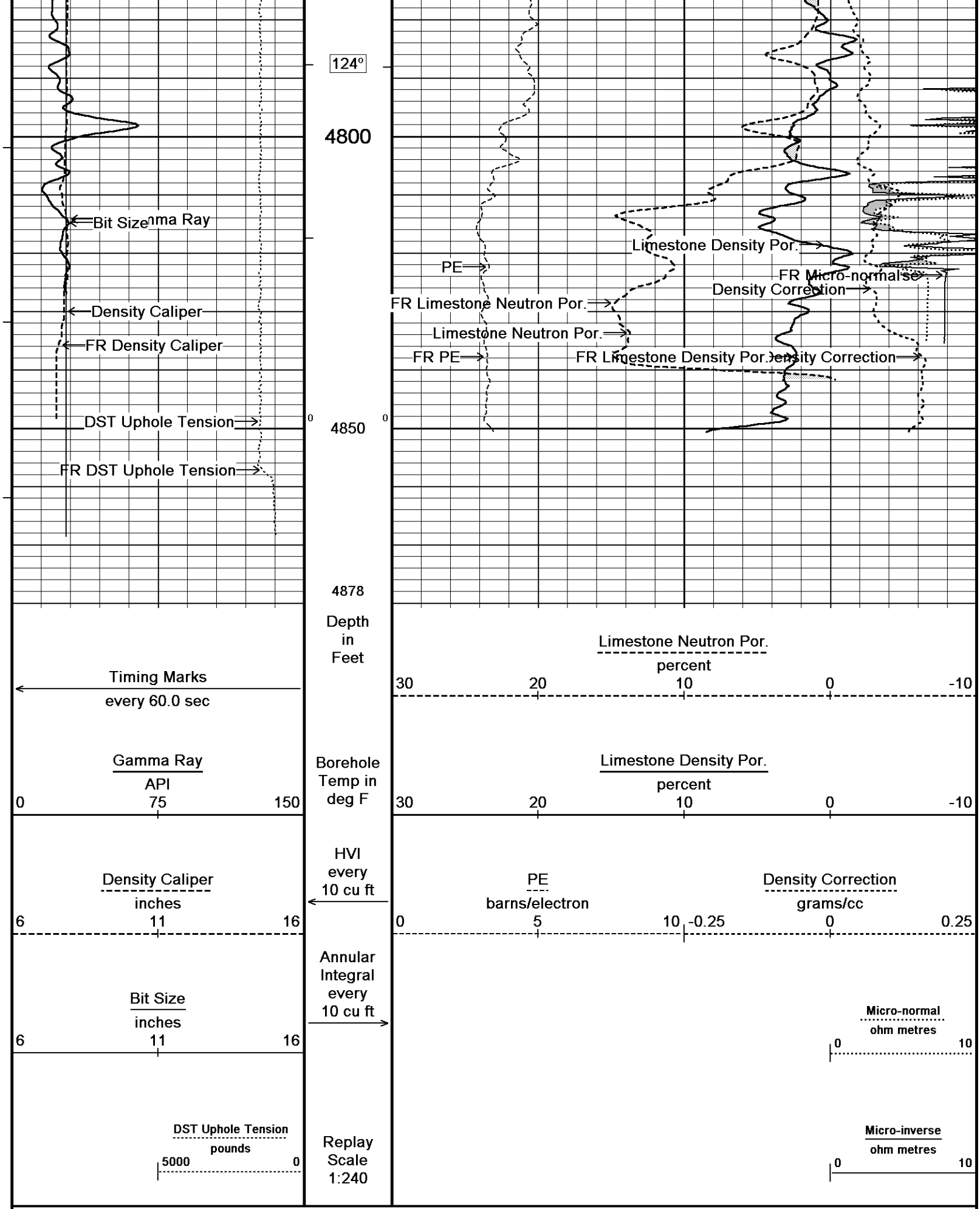
117°


3900
118°
3950
118°
4000
Bit Size
300
Limestone Density Por.
PE
118°
Density Correction
Density Caliper
Limestone Neutron Por.
4050
Micro-inverse
Micro-normal
Gamma Ray
DST Uphole Tension
118°
4100


118°
4150
118°
4200
119°
4250
200
119°
4300
100


119°
4350
119°
4400
Bit Size
Limestone Density Por.
PE
Density Caliper
Density Correction
120°
Limestone Neutron Por.
Micro-inverse
4450
Gamma Ray
DST Uphole Tension
121°
4500
121°
4550


100
122°
4600
122°
4650
123°
4700
124°
4750



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REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
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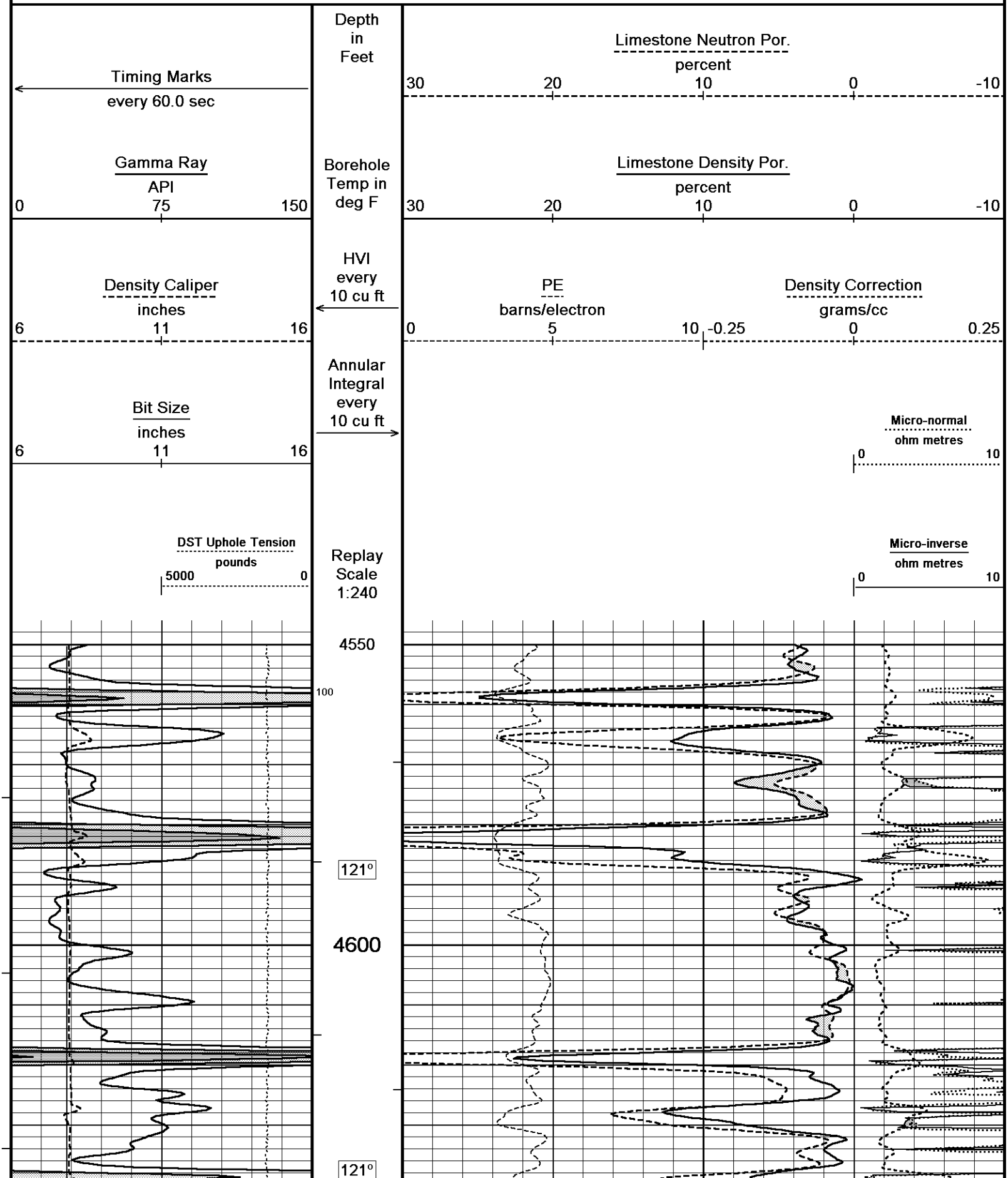
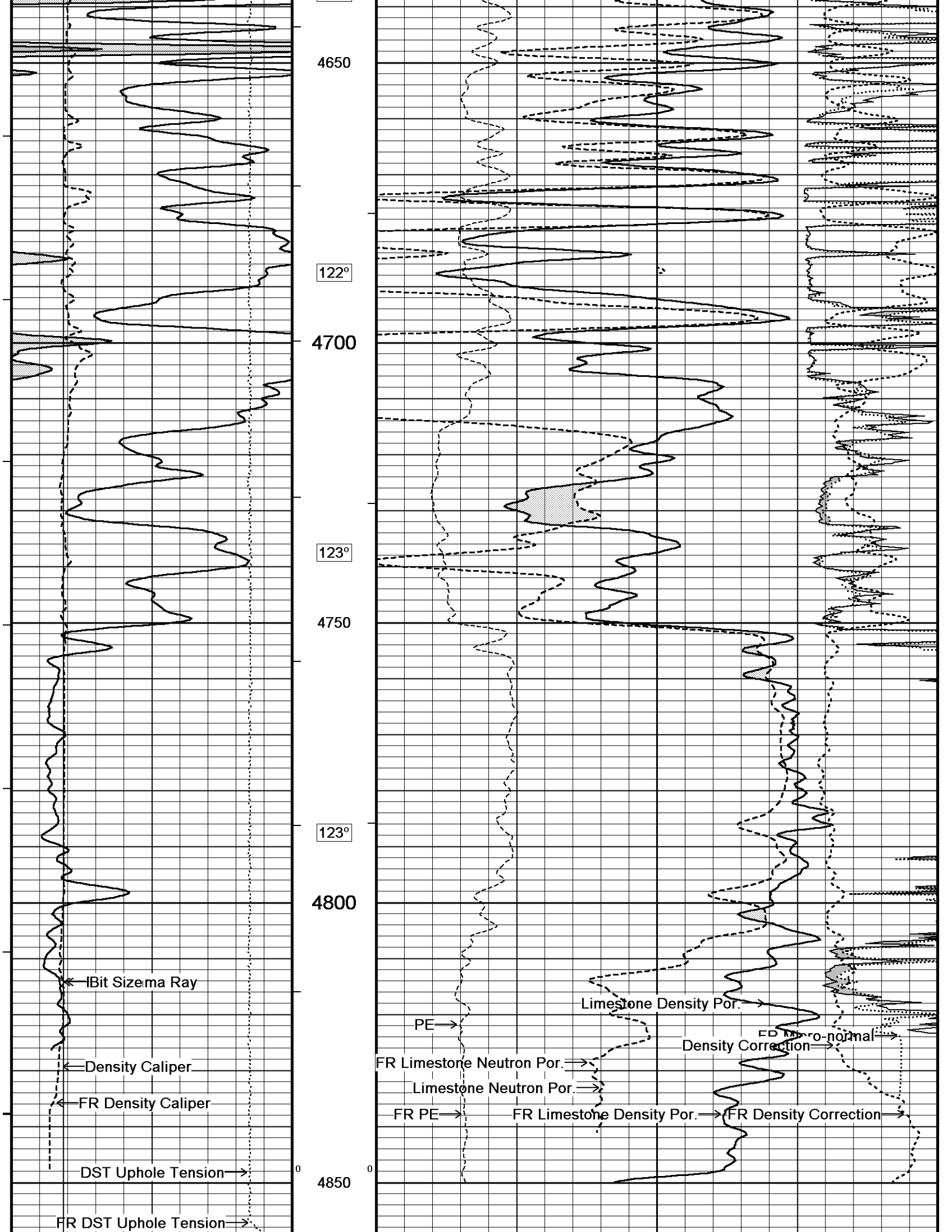
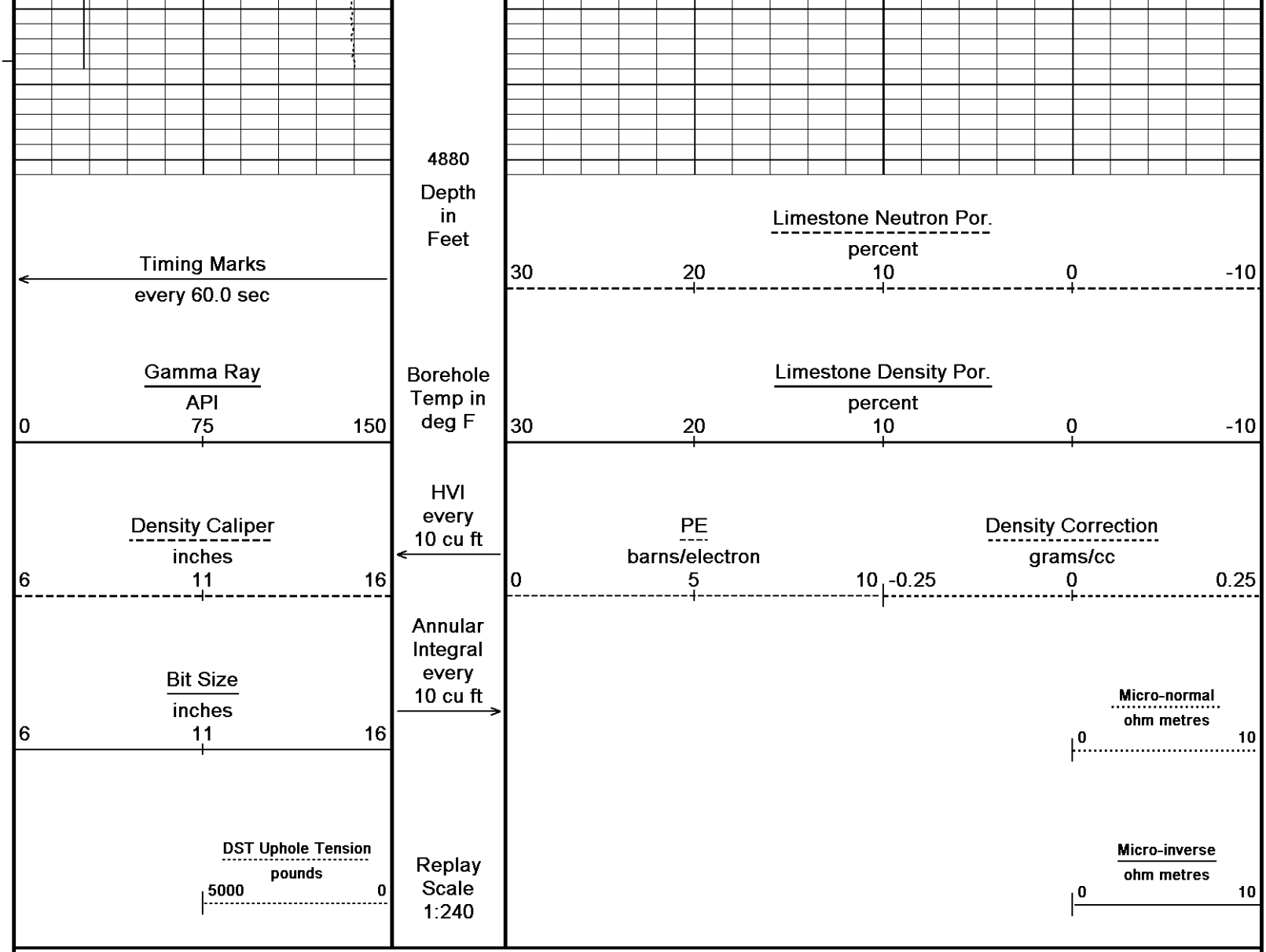



4650
122°
4700
123°
4750
123°
4800
4850
Bit Size
ma Ray
Density Caliper
FR Density Caliper
DST Uphole Tension
FR DST Uphole Tension
PE
FR Limestone Neutron Por.
Limestone Neutron Por.
FR PE
Limestone Density Por.
FR Limestone Density Por.
Density Correction
FR Density Correction



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REPEAT SECTION

5 INCH MAIN

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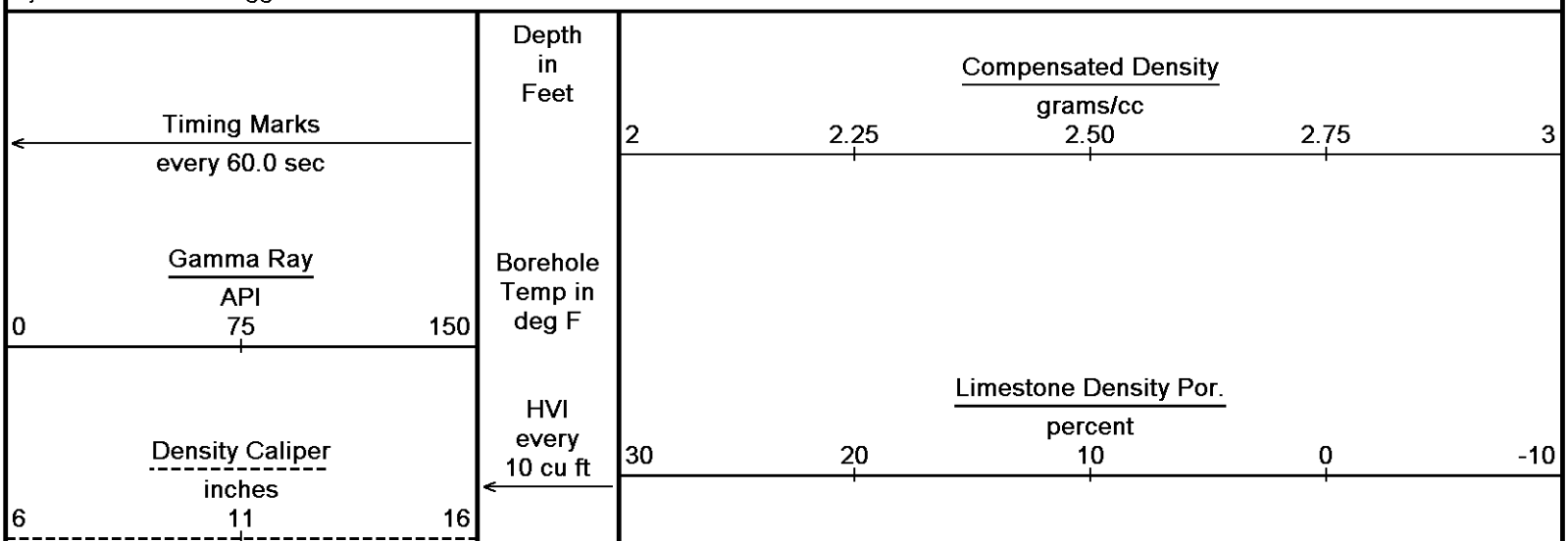
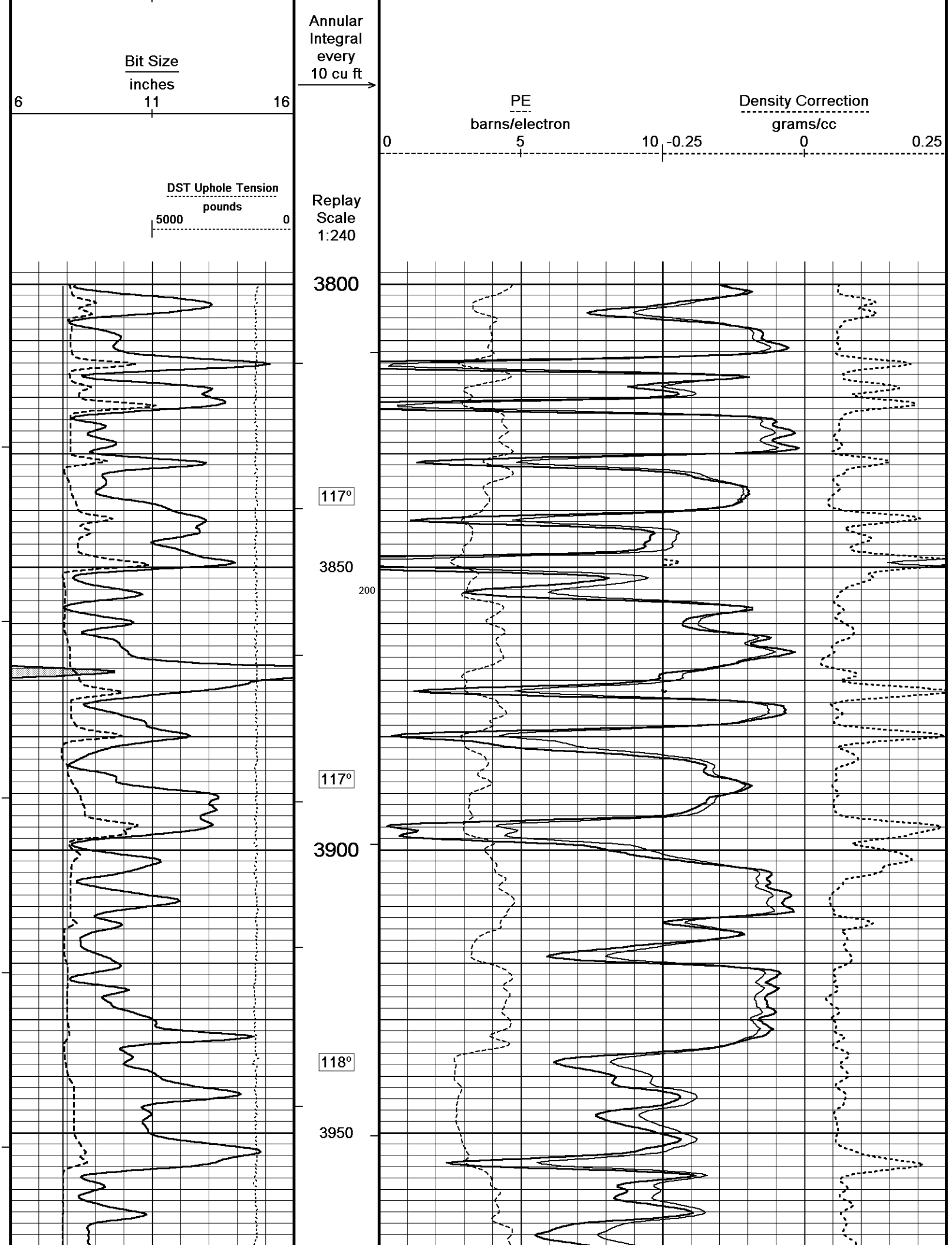
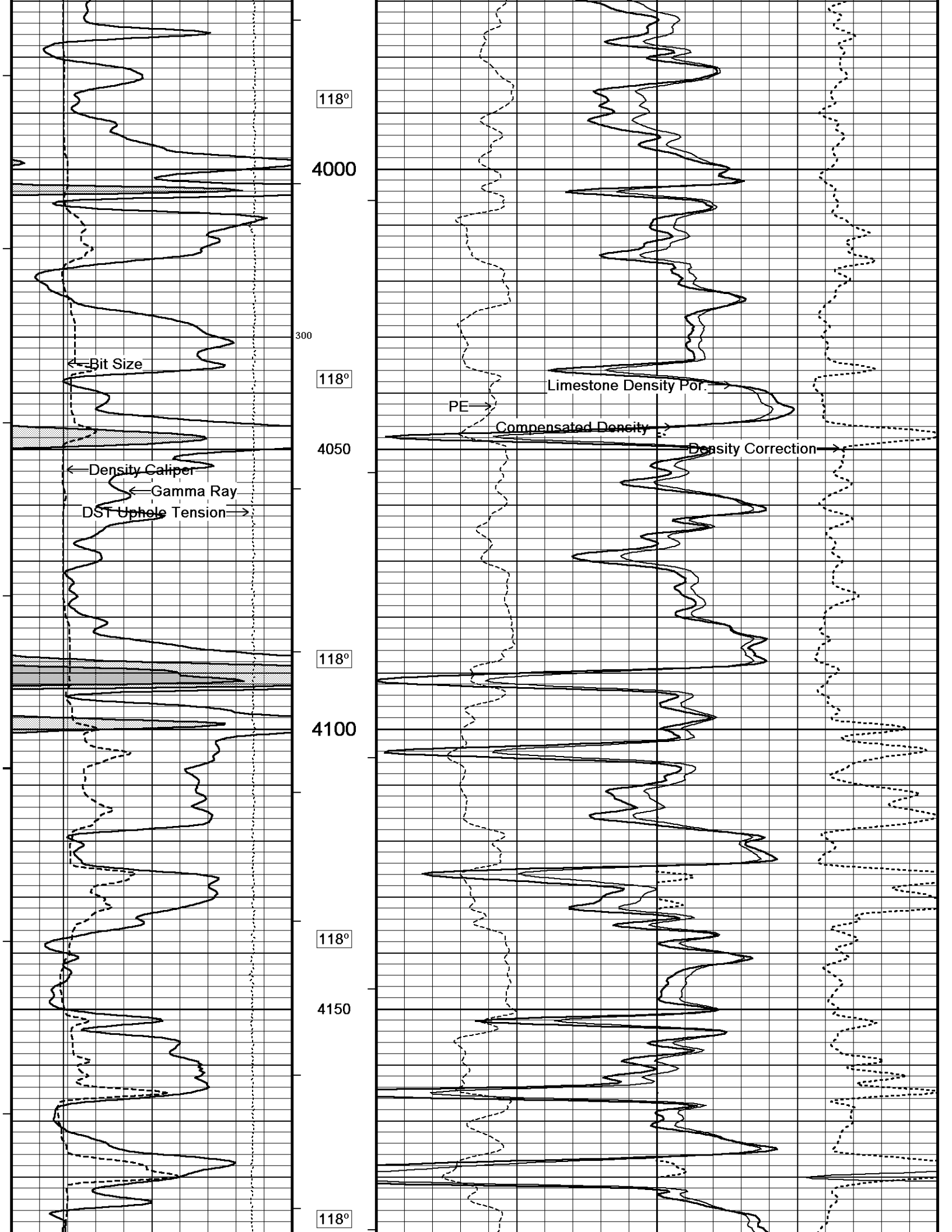
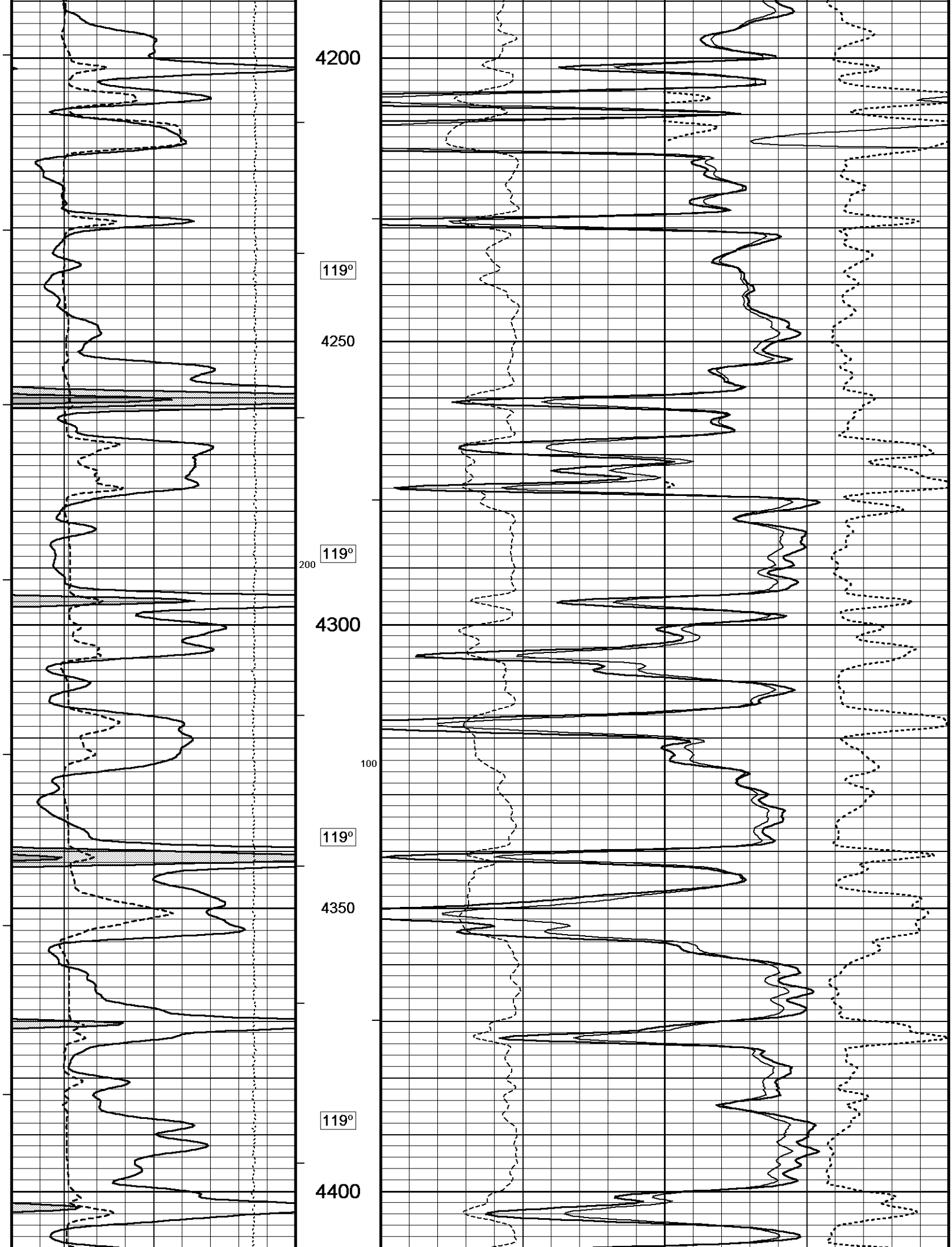
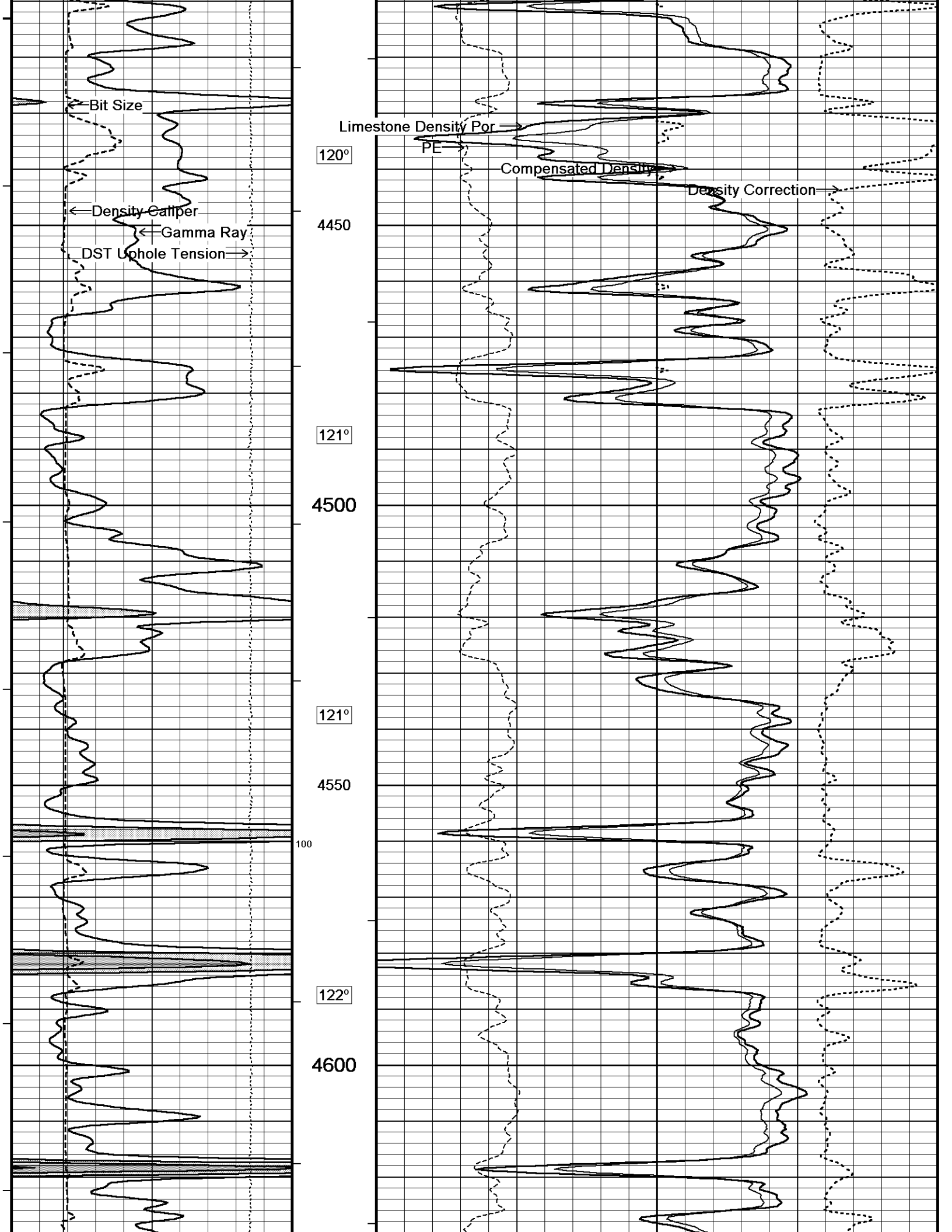
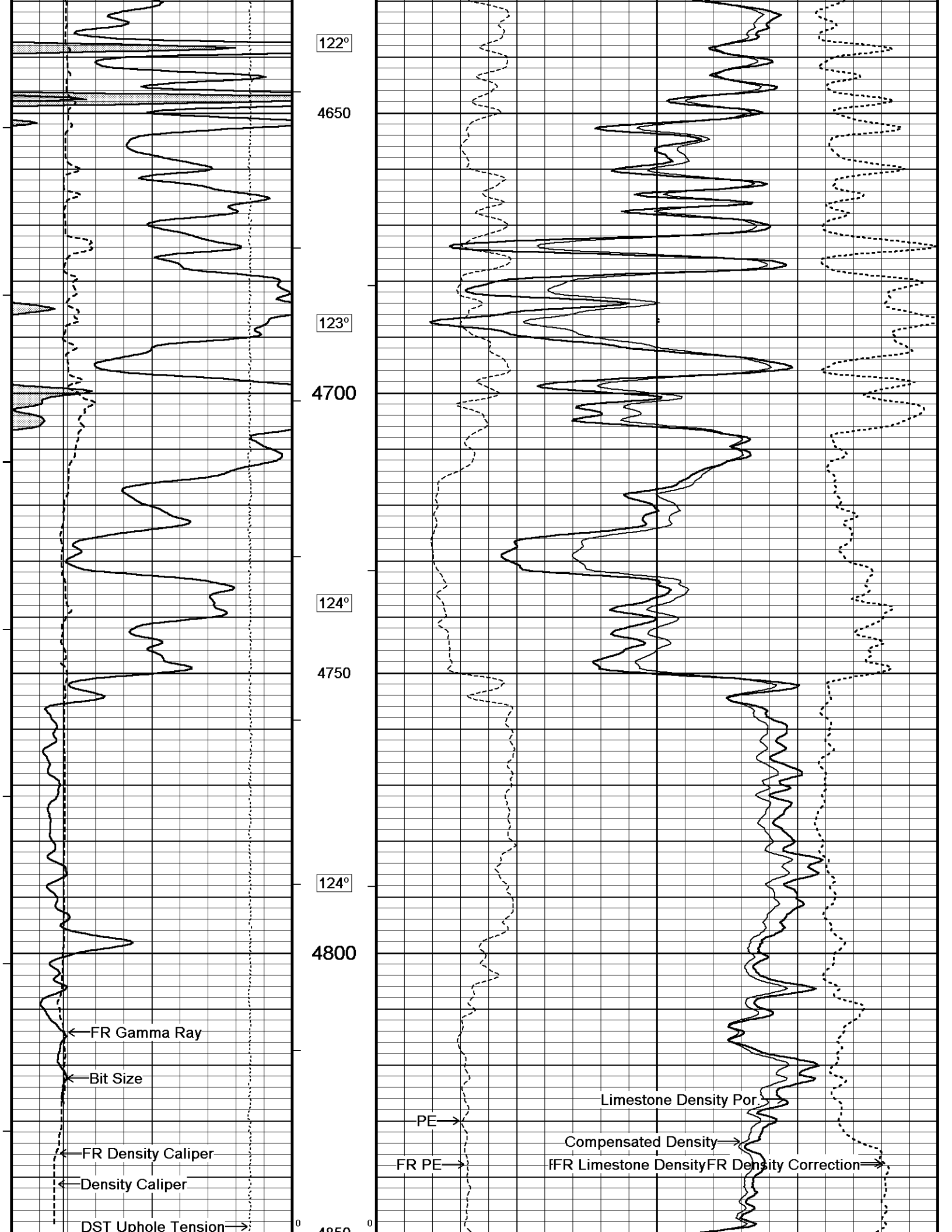


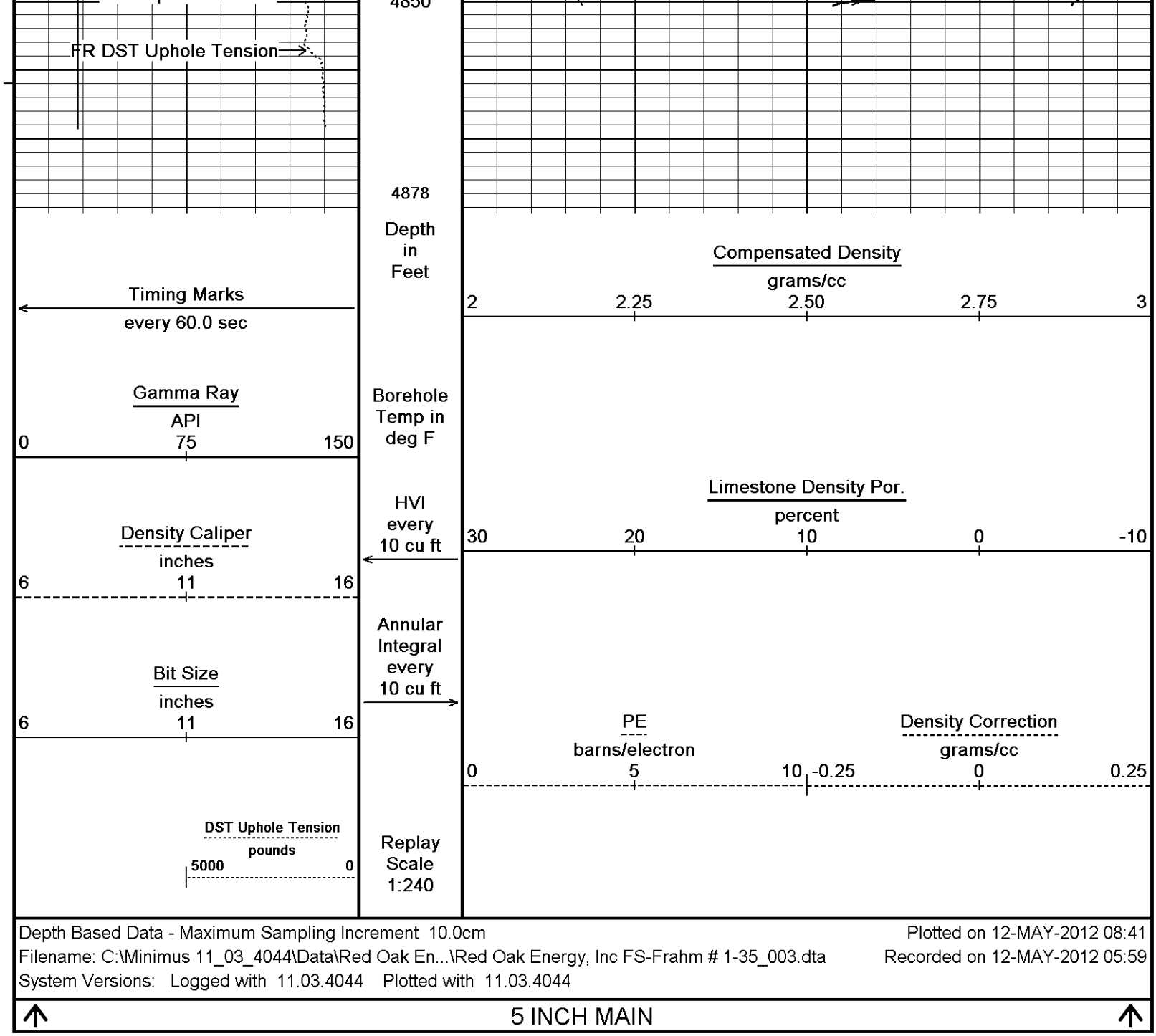

Bit Size
inches
6
11
16
Annular Integral every 10 cu ft
PE
barns/electron
0
5
10
Density Correction
grams/cc
-0.25
0
0.25
DST Uphole Tension
pounds
5000
0
Replay Scale 1:240
3800
117°
3850
200
117°
3900
118°
3950


118°
4000
300
Bit Size
118°
Limestone Density Por.
PE
Compensated Density
4050
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
118°
4100
118°
4150
118°


4200
119°
4250
119°
200
4300
100
119°
4350
119°
4400


Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por
PE
Compensated Density
Density Correction
120°
4450
121°
4500
121°
4550
100
122°
4600


122°
4650
123°
4700
124°
4750
124°
4800
FR Gamma Ray
Bit Size
FR Density Caliper
Density Caliper
DST Uphole Tension
0
4850
0
PE
FR PE
Limestone Density Por
Compensated Density
FR Limestone Density
FR Density Correction



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5 INCH MAIN

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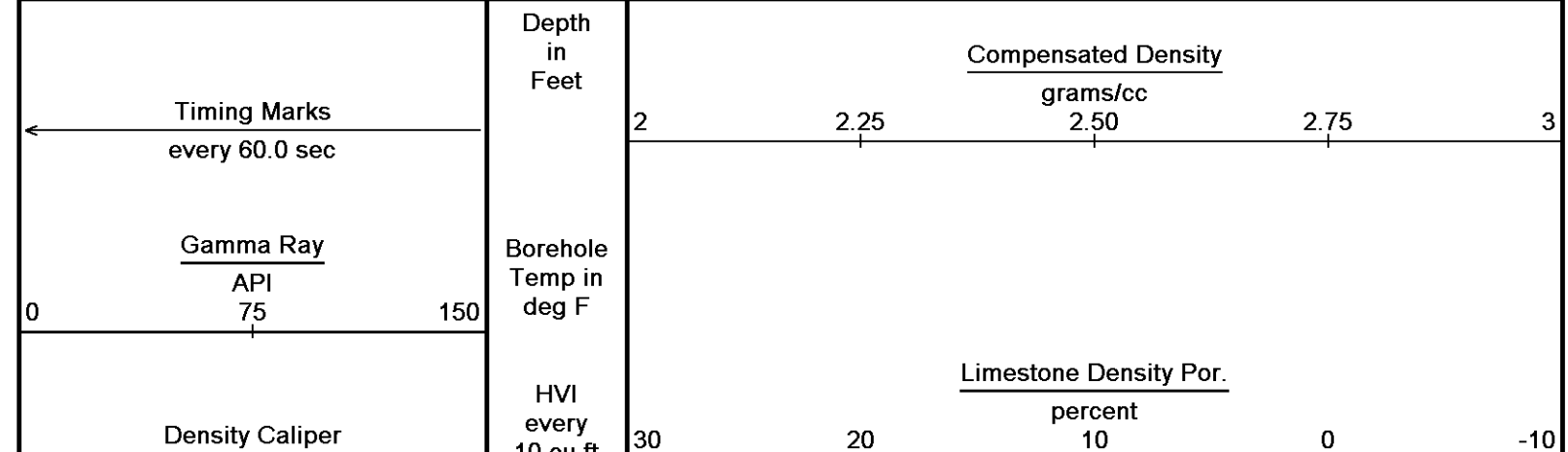
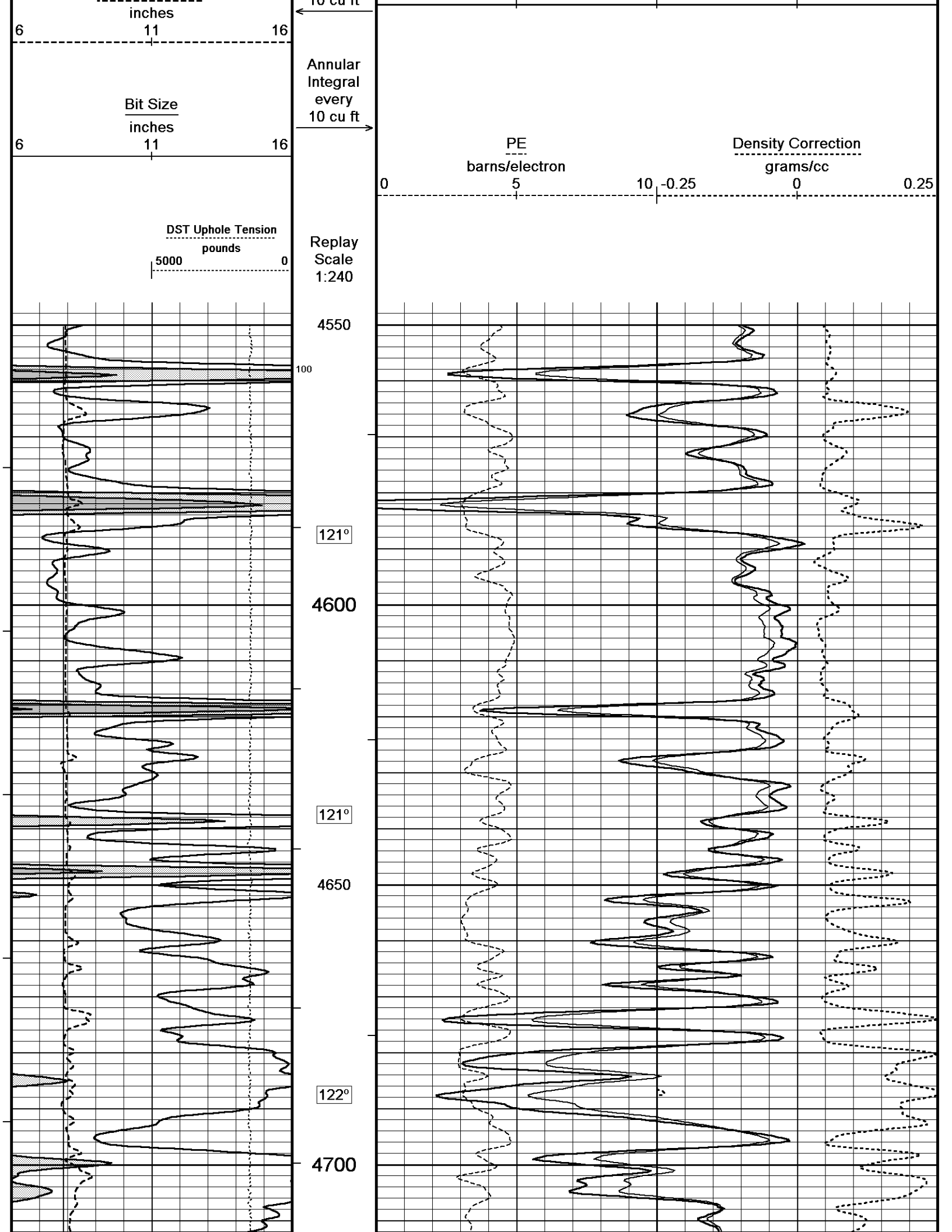
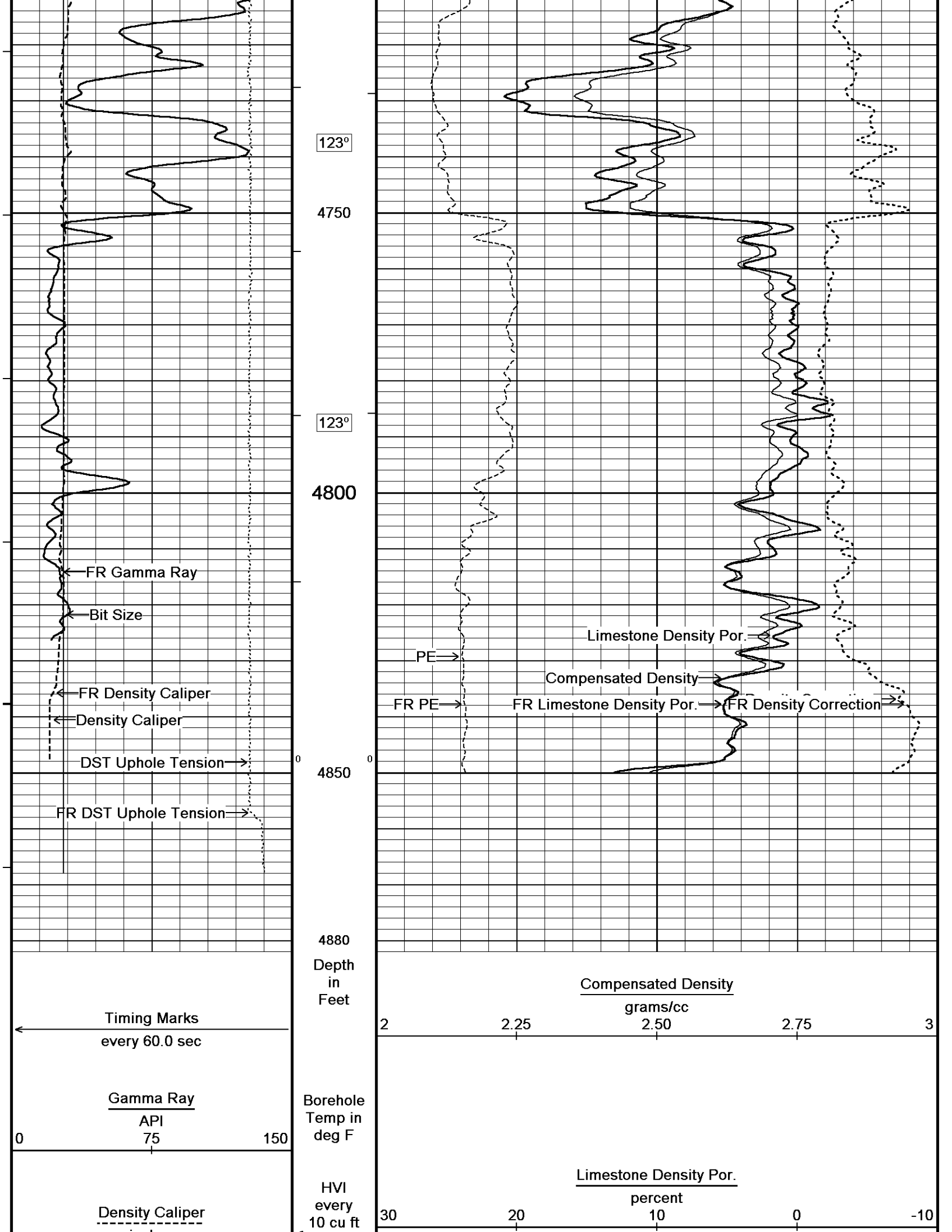
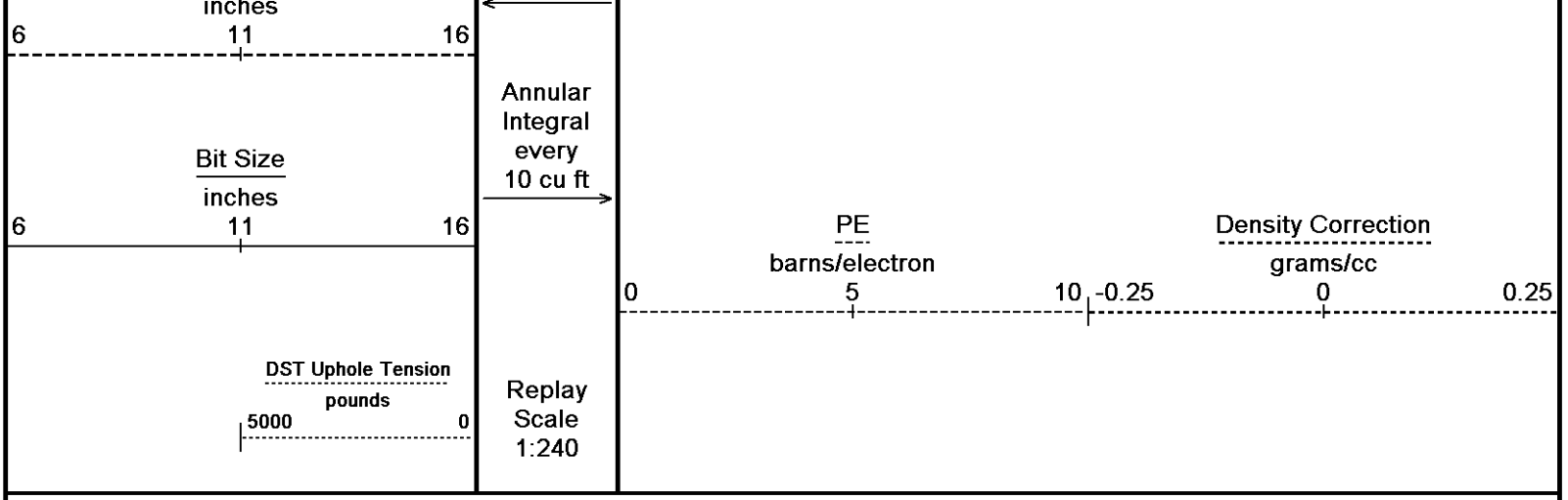



inches
6
11
16
Bit Size
inches
6
11
16
Annular
Integral
every
10 cu ft
PE
barns/electron
0
5
10
Density Correction
grams/cc
-0.25
0
0.25
DST Uphole Tension
pounds
5000
0
Replay
Scale
1:240
4550
100
121°
4600
121°
4650
122°
4700


123°
4750
123°
4800
FR Gamma Ray
Bit Size
FR Density Caliper
Density Caliper
DST Uphole Tension
FR DST Uphole Tension
0
0
4850
4880
Depth in Feet
PE
FR PE
Limestone Density Por.
Compensated Density
FR Limestone Density Por.
FR Density Correction
Compensated Density
grams/cc
2
2.25
2.50
2.75
3
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
Borehole Temp in deg F
HVI every 10 cu ft
Limestone Density Por.
percent
30
20
10
0
-10
Density Caliper



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REPEAT SECTION

DOWNHOLE EQUIPMENT

C:\Minimus 11_03_4044\Data\Red Oak Energy, Inc FS-Frahm # 1-35\Red Oak Energy, Inc FS-Frahm # 1-35_003.dta

MCB-A.A 11B Tension Cablehead
MCB-A.A 161 LG: 2.40 ft WT: 19.8 lb OD: 2.24 in

Compact Comms Gamma
MCG-B 39 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

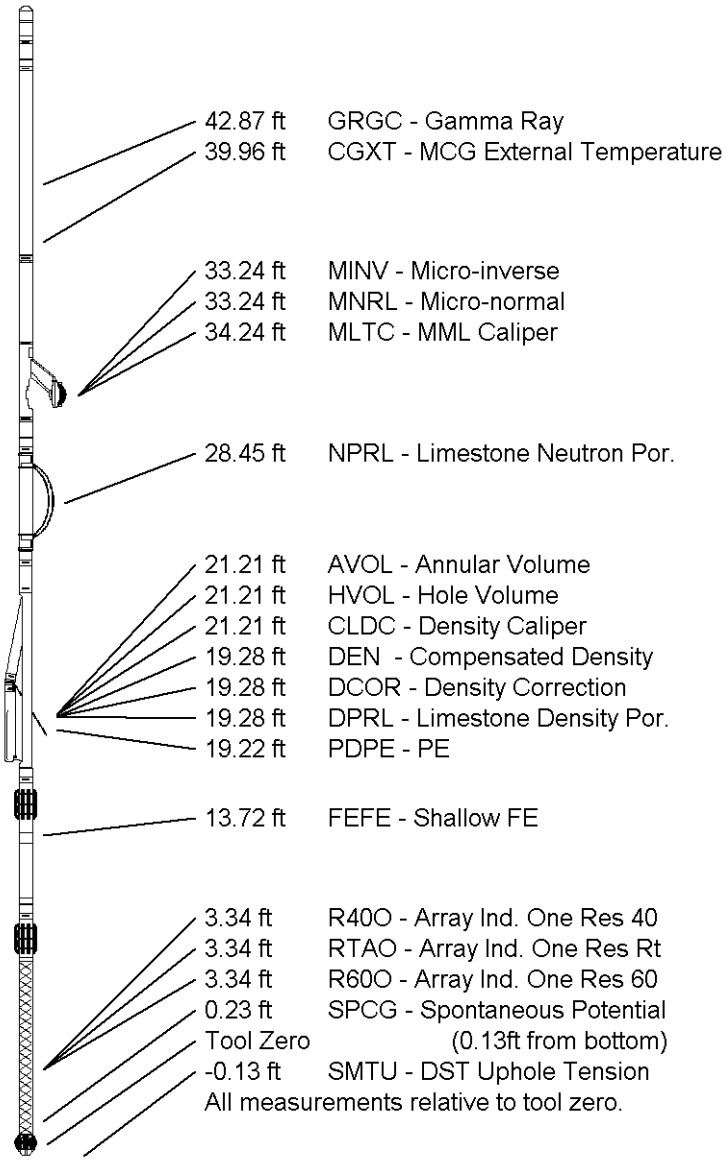
Compact Neutron
MDN-B.J 387 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 35 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-A.A 178 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 50.55 ft Weight: 403.4 lb



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	AVOL - Annular Volume
21.21 ft	HVOL - Hole Volume
21.21 ft	CLDC - Density Caliper
19.28 ft	DEN - Compensated Density
19.28 ft	DCOR - Density Correction
19.28 ft	DPRL - Limestone Density Por.
19.22 ft	PDPE - PE
13.72 ft	FEFE - Shallow FE
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	RTAO - Array Ind. One Res Rt
3.34 ft	R60O - Array Ind. One Res 60
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY RED OAK ENERGY, INC

COMPANY	RED OAK ENERGY, INC.
WELL	FS/FRAHM # 1-35
FIELD	WC
PROVINCE/COUNTY	THOMAS
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	3308.00	feet	First Reading	4836.00	feet
Elevation Drill Floor	3306.00	feet	Depth Driller	4860.00	feet
Elevation Ground Level	3303.00	feet	Depth Logger	4857.00	feet

Weatherford®

COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG