



Weatherford

**COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG**

COMPANY				GRAND MESA OPERATING COMPANY			
WELL				GLENNIS 4-27			
FIELD				WILDCAT			
PROVINCE/COUNTY				GOVE			
COUNTRY/STATE				U.S.A. / KANSAS			
LOCATION				757' FNL & 2013' FEL			
SEC	TWP	RGE	Other Services		MSS		
27	13S	31W	MAI/MFE				
API Number			15-063-22054				
Permit Number							
Permanent Datum GL, Elevation 2860 feet						Elevations:	
Log Measured From KB						KB	2865.00
Drilling Measured From KB						DF	2863.00
						GL	2860.00
Date	12-NOV-2012						
Run Number	ONE						
Service Order	3538947						
Depth Driller	4630.00					feet	
Depth Logger	4630.00					feet	
First Reading	4598.00					feet	
Last Reading	3630.00					feet	
Casing Driller	220.00					feet	
Casing Logger	219.00					inches	
Bit Size	7.875						
Hole Fluid Type	CHEMICAL					lb/USg	
Density / Viscosity	9.30 lb/USg					54.00 CP	
PH / Fluid Loss	10.00					10.00	
Sample Source	FLOWLINE						
Rm @ Measured Temp	1.29 @ 64.0					ohm-m	
Rmf @ Measured Temp	1.03 @ 64.0					ohm-m	
Rmc @ Measured Temp	1.55 @ 64.0					ohm-m	
Source Rmf / Rmc	CALC					CALC	
Rm @ BHT	0.72 @120.0					ohm-m	
Time Since Circulation	6 HOURS						
Max Recorded Temp	120.00					deg F	
Equipment / Base	13057					LIB	
Recorded By	ADAM SILL						
Witnessed By	KENT MATSON						
JOB #	LB12-296						

BOREHOLE RECORD

Last Edited: 12-NOV-2012 01:36

Bit Size inches	Depth From feet	Depth To feet
7.875	211.00	4630.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	211.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.04.8492.
- MCG, MML, MDN, MPD, MFE, MSS, MAI RAN IN COMBINATION.
 - HARDWARE: DUAL BOWSPRING USED ON MDN.
 - 0.5 INCH STANDOFF USED ON MFE.
 - TWO 0.5 INCH STANDOFFS USED ON MSS.
 - 0.5 INCH STANDOFF USED ON MAI.
- 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.
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 1893 CU. FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 3630 FEET: 235 CU. FT.

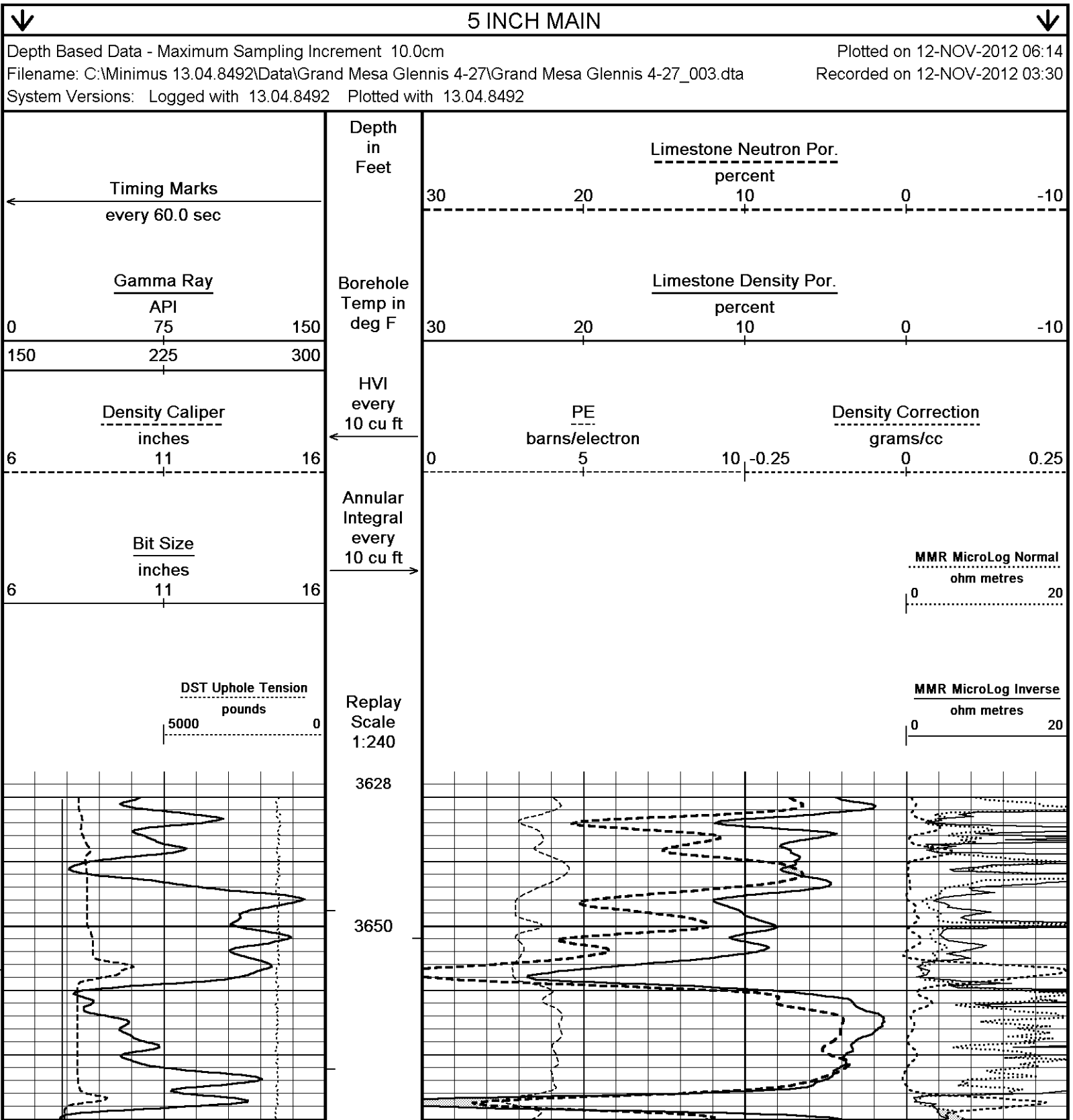
- SERVICE ORDER # 3538947.

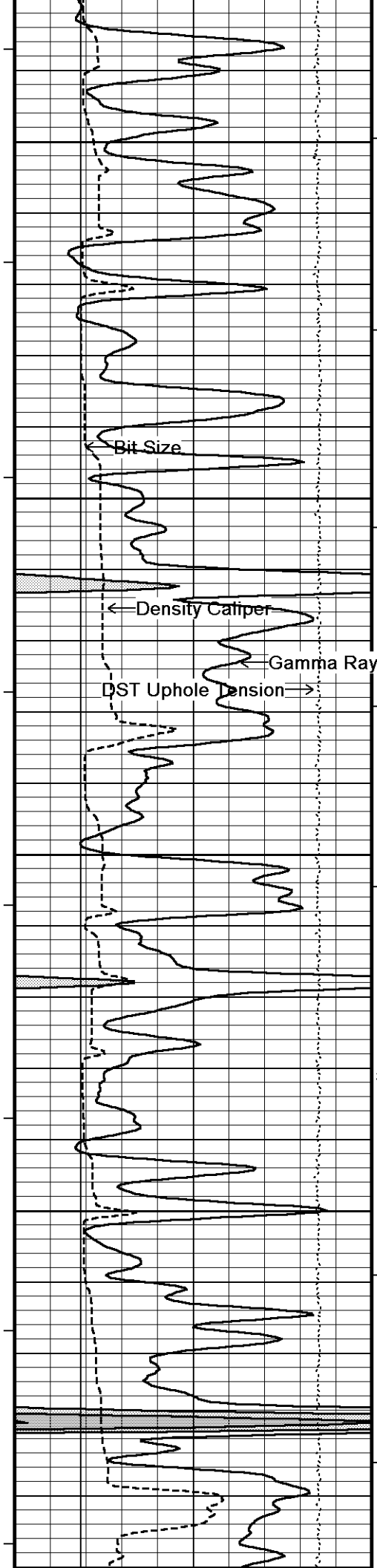
- RIG: MURFIN #24.

- ENGINEER: A. SILL.

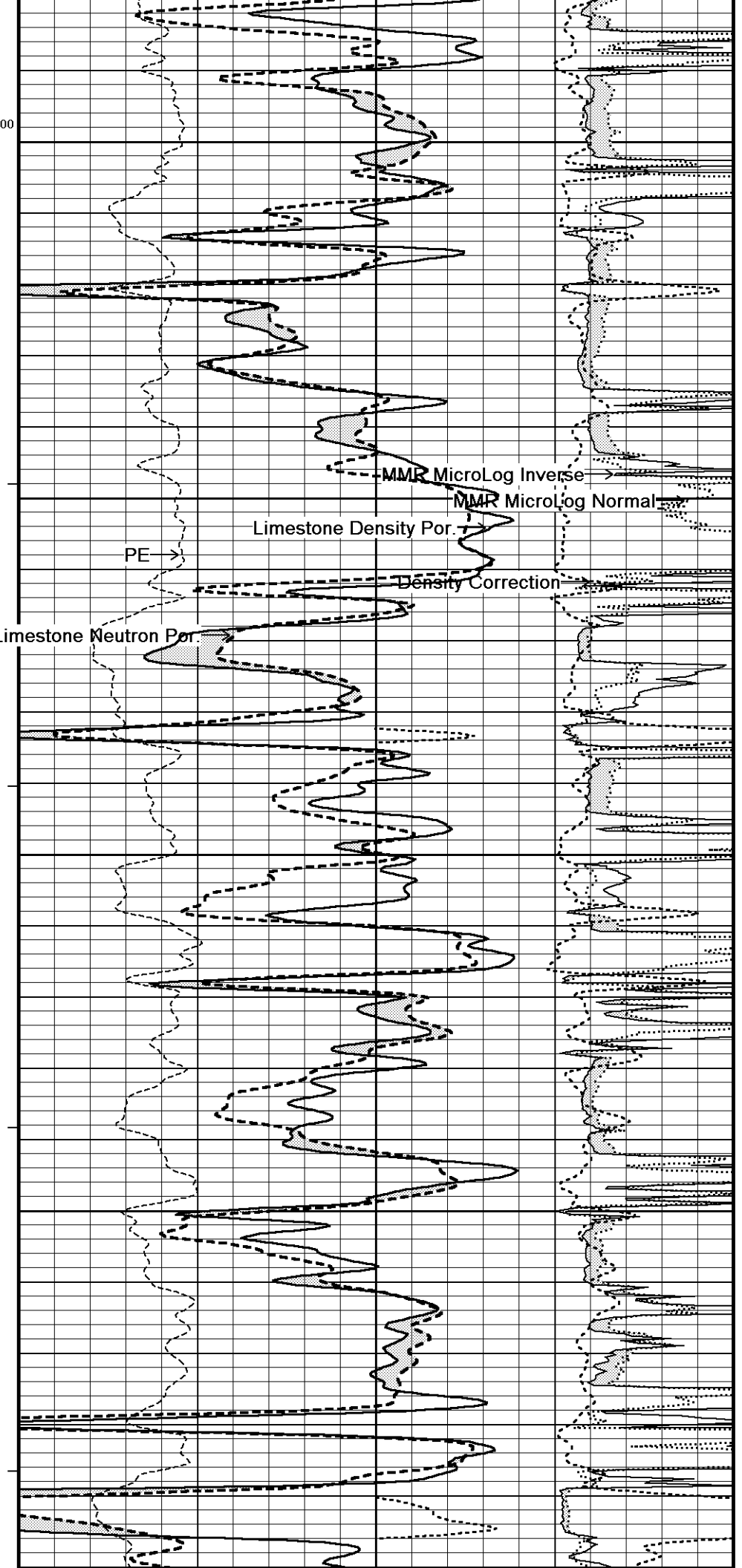
- OPERATOR(S): B. REEVES.

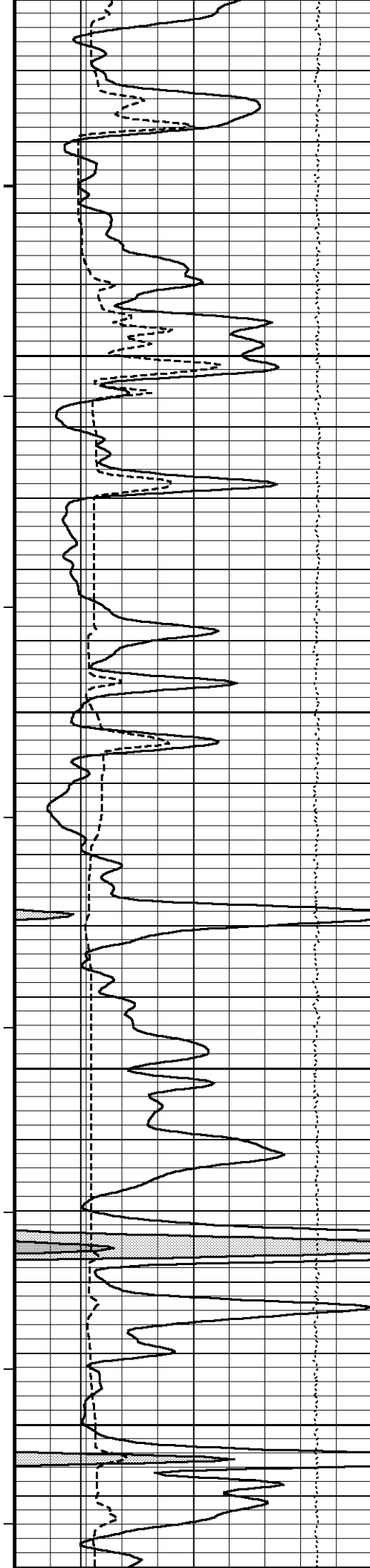
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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



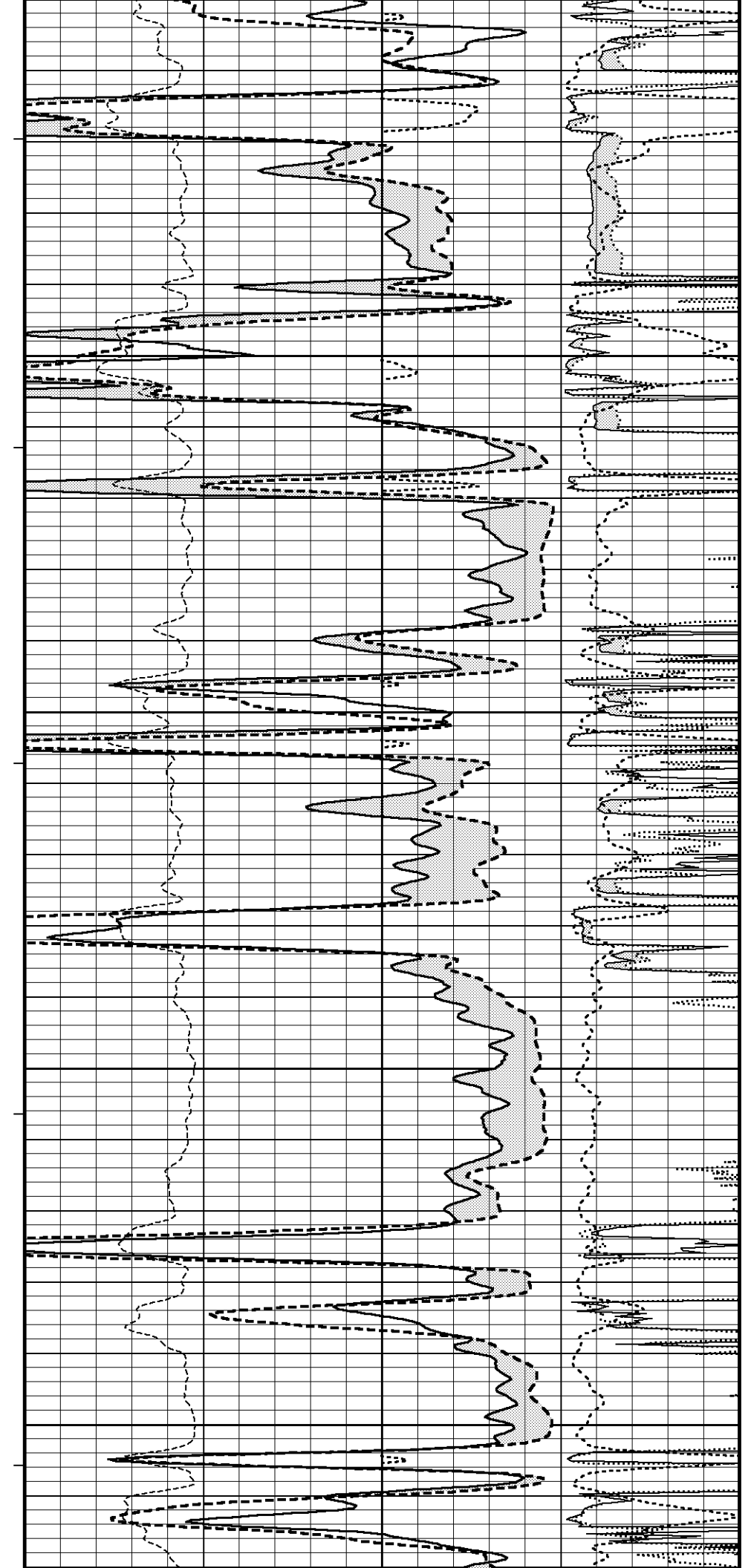


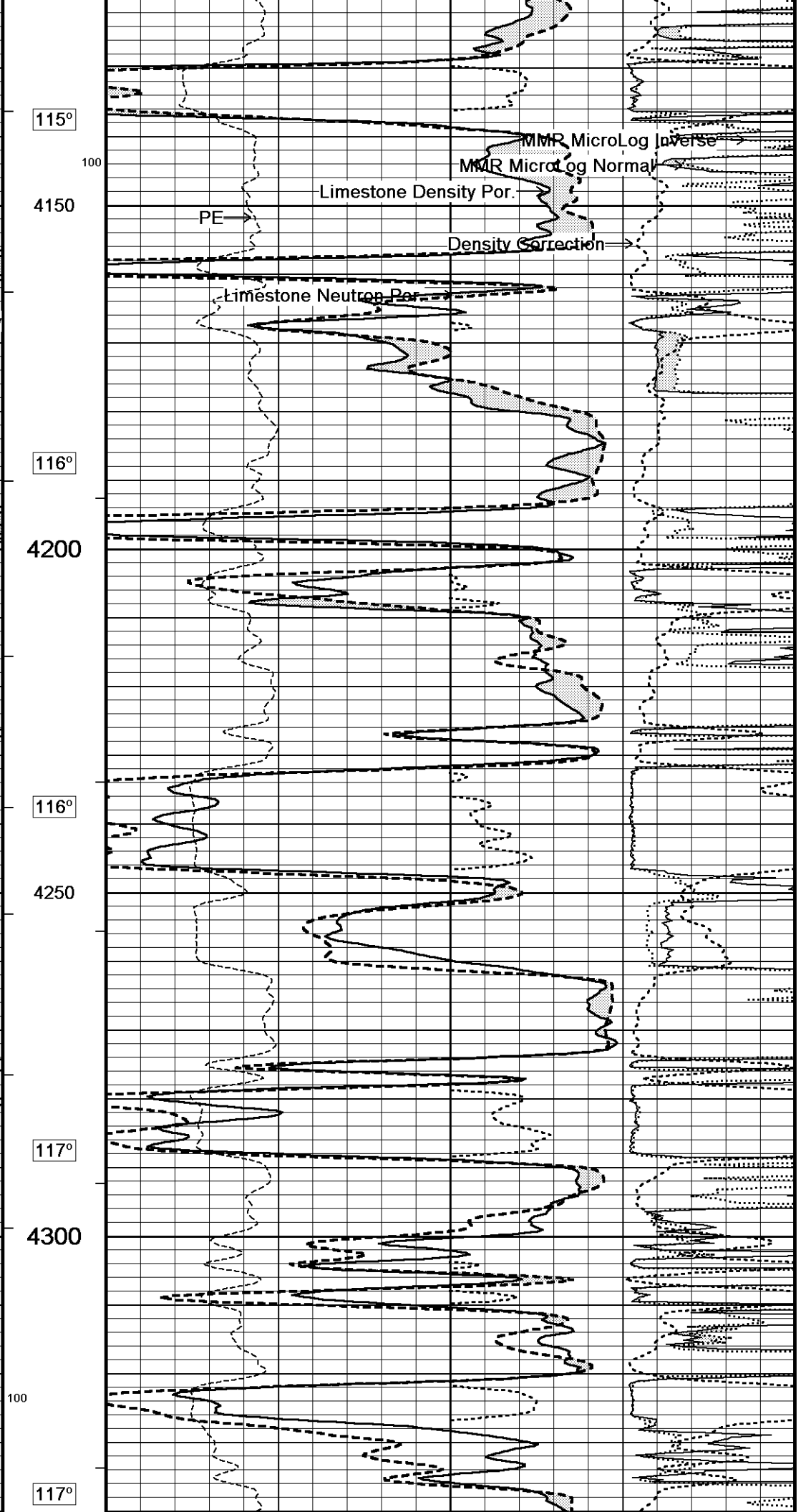
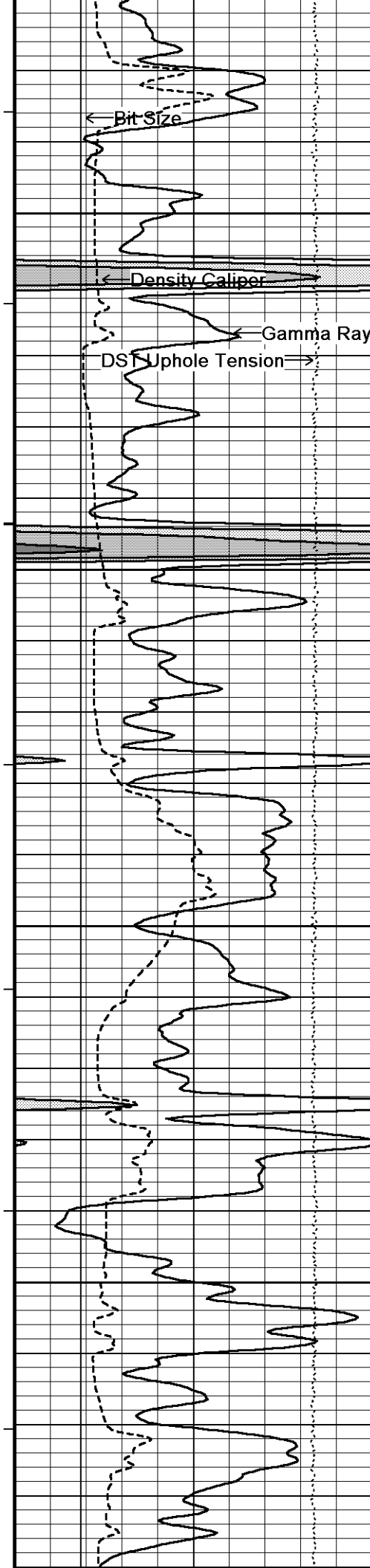
112°
3700
112°
3750
113°
3800
113°
3850
113°
3900

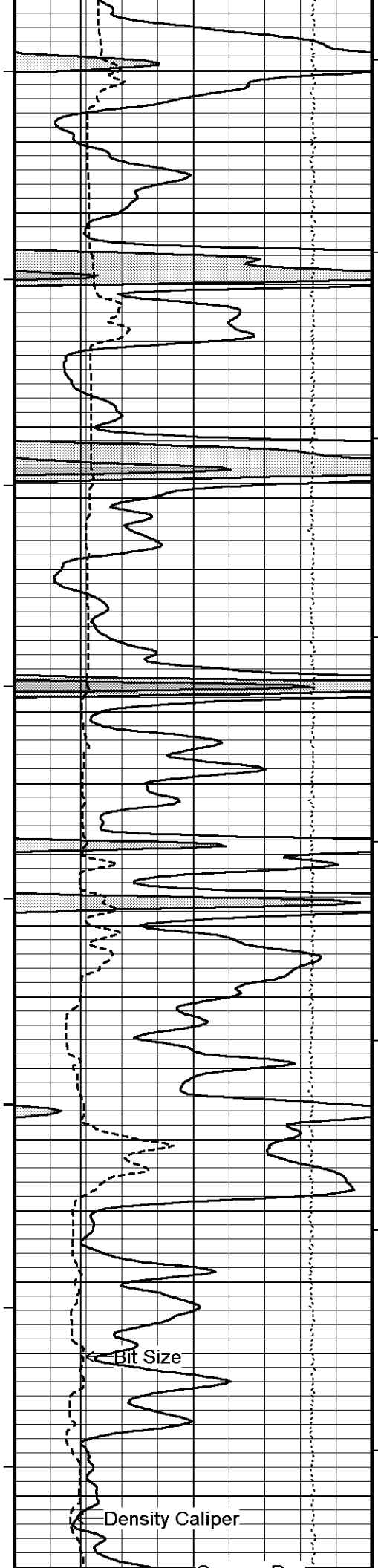




3900
114°
3950
114°
4000
115°
4050
200 115°
4100







4350

118°

4400

118°

4450

119°

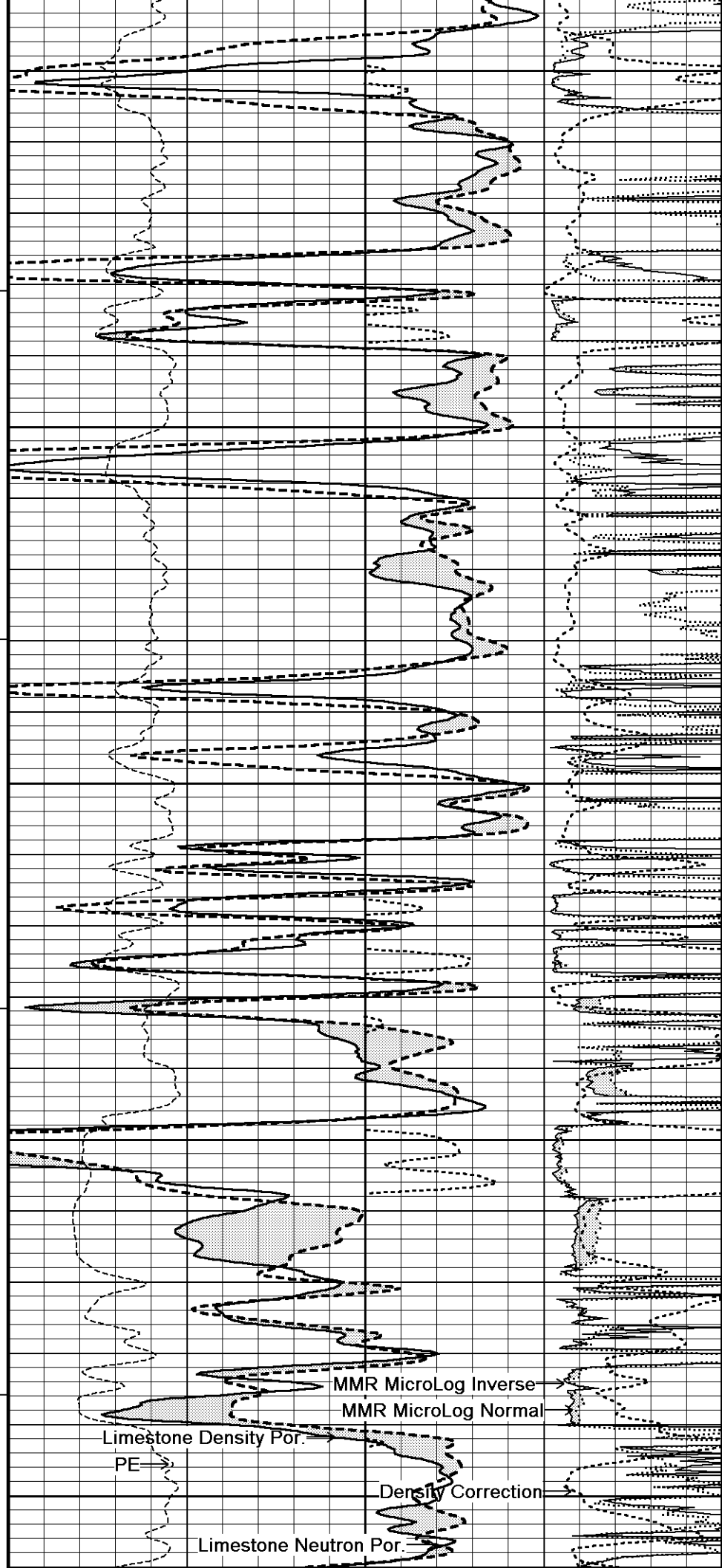
4500

120°

4550

Bit Size

Density Caliper



Limestone Density Por.

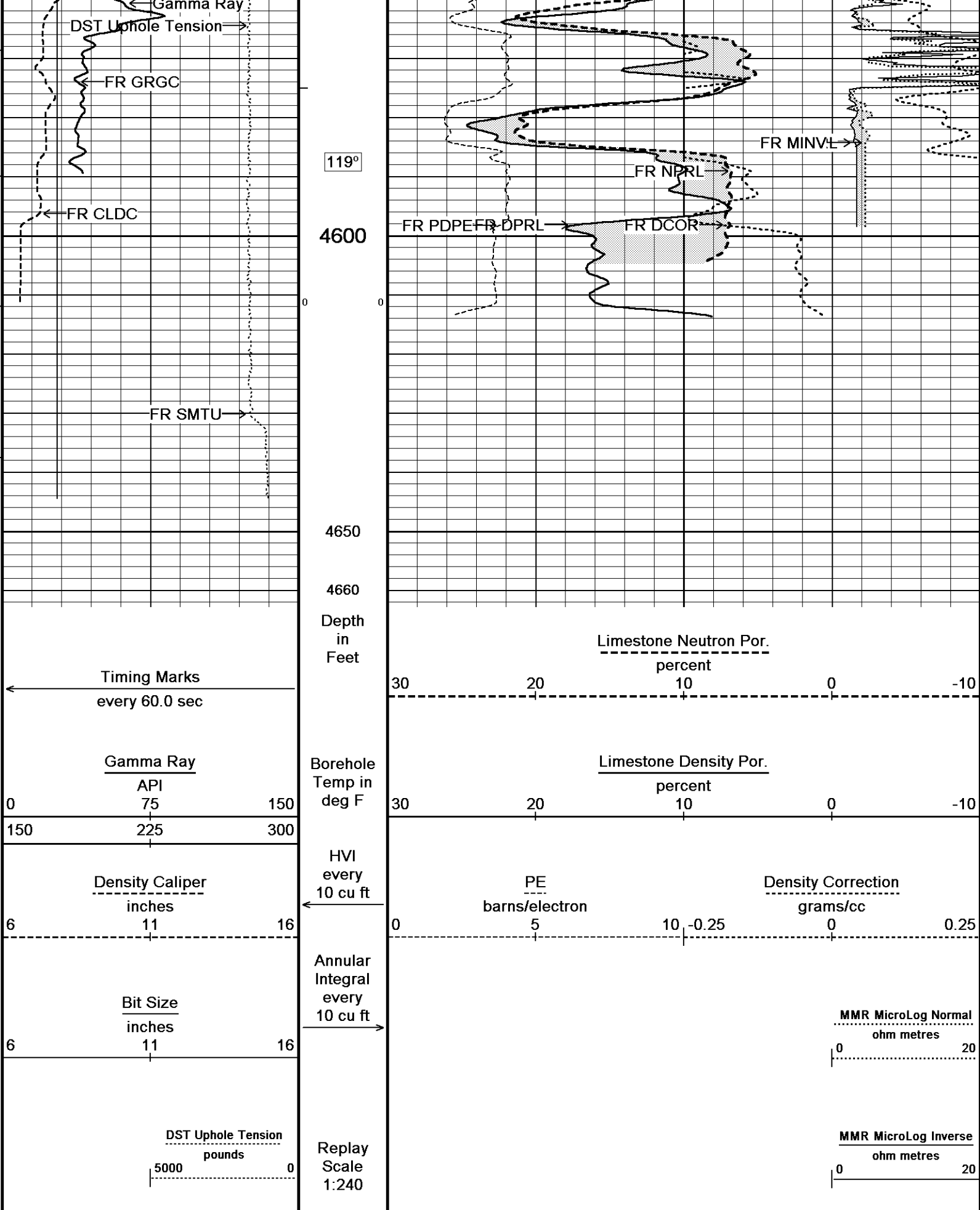
PE

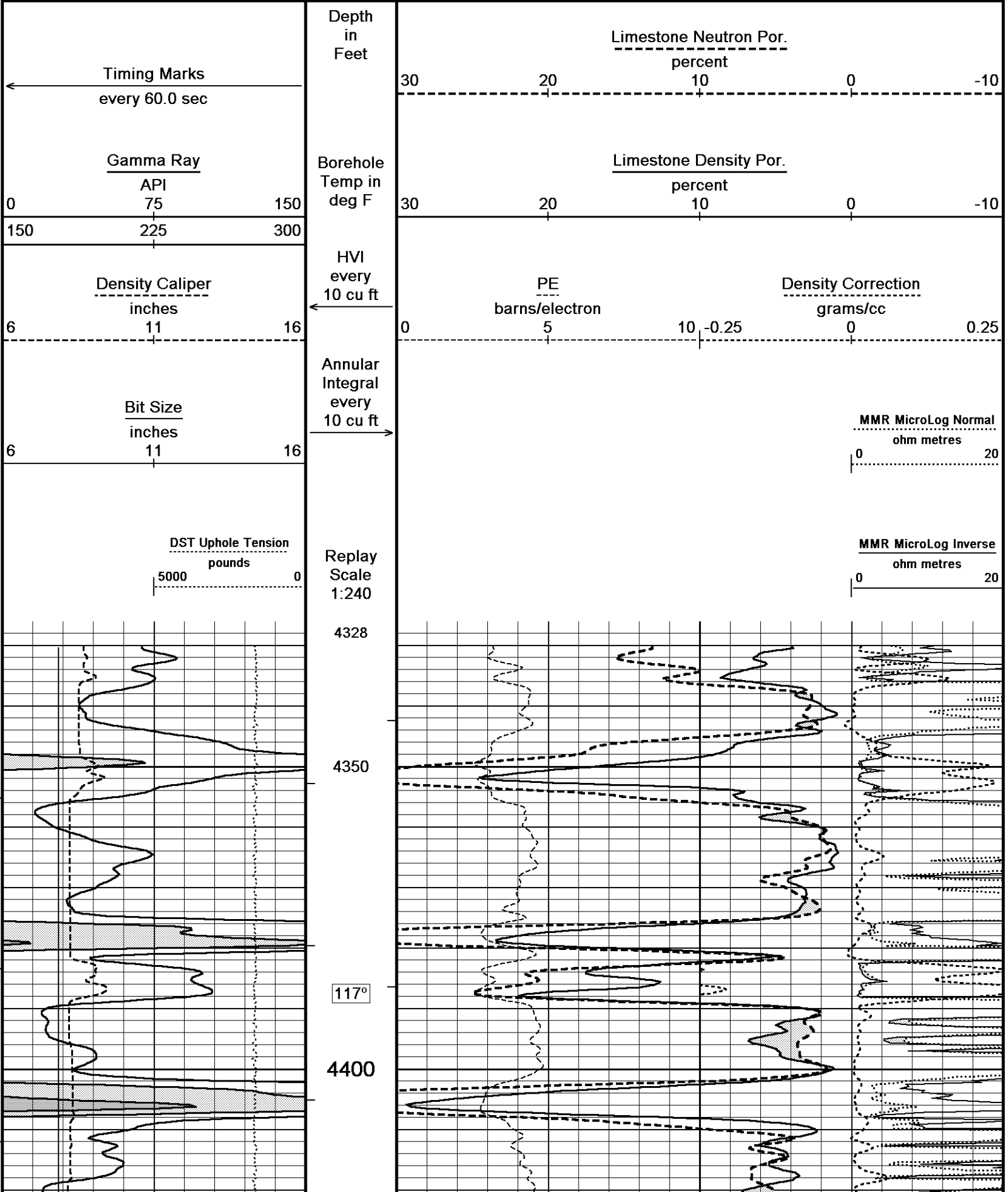
Limestone Neutron Por.

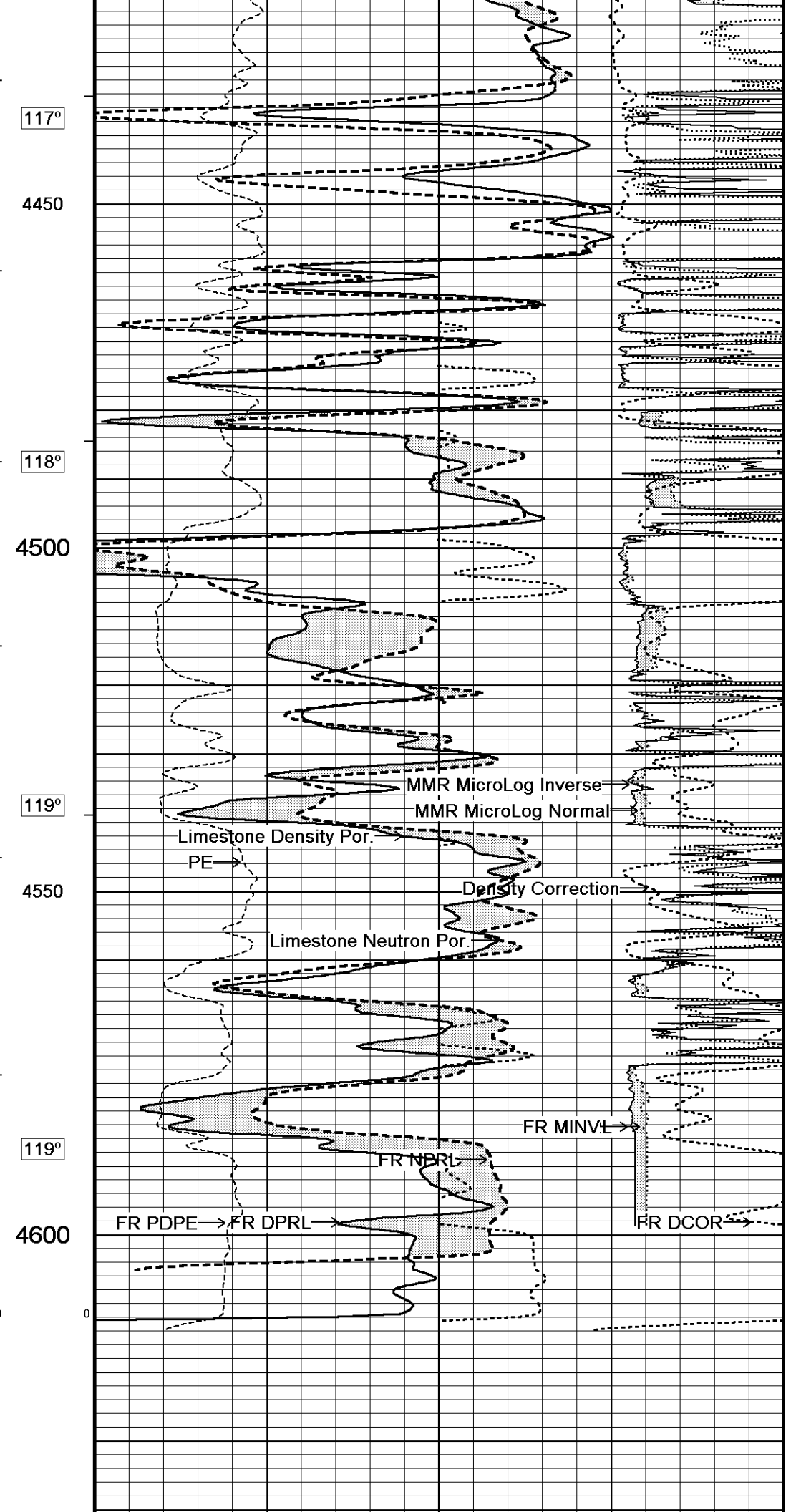
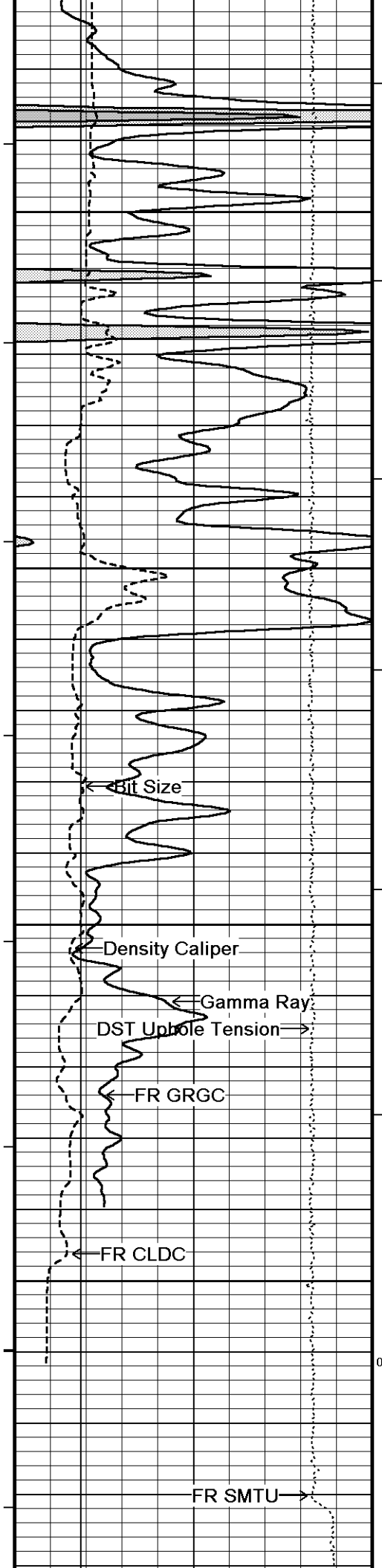
MMR MicroLog Inverse

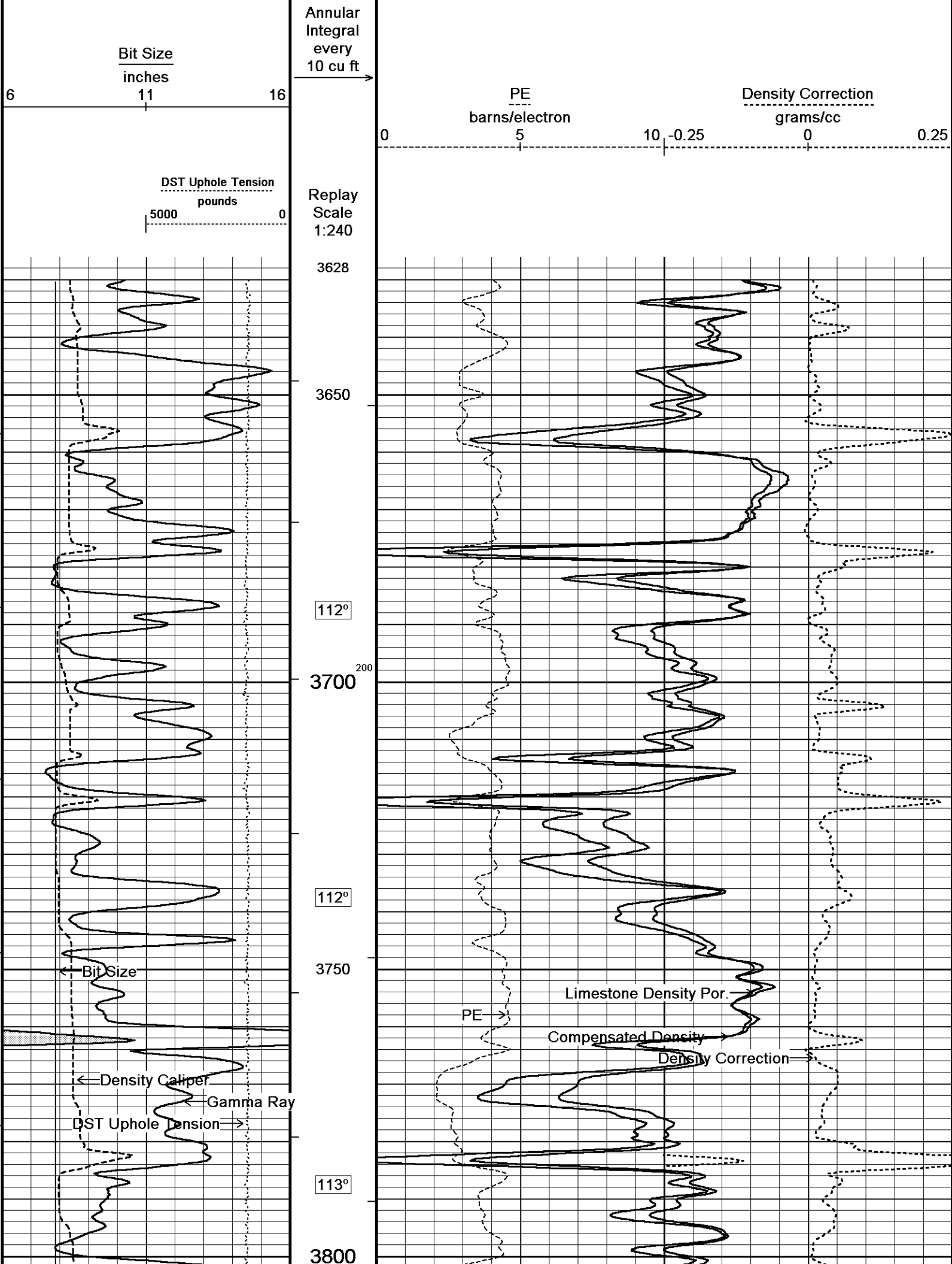
MMR MicroLog Normal

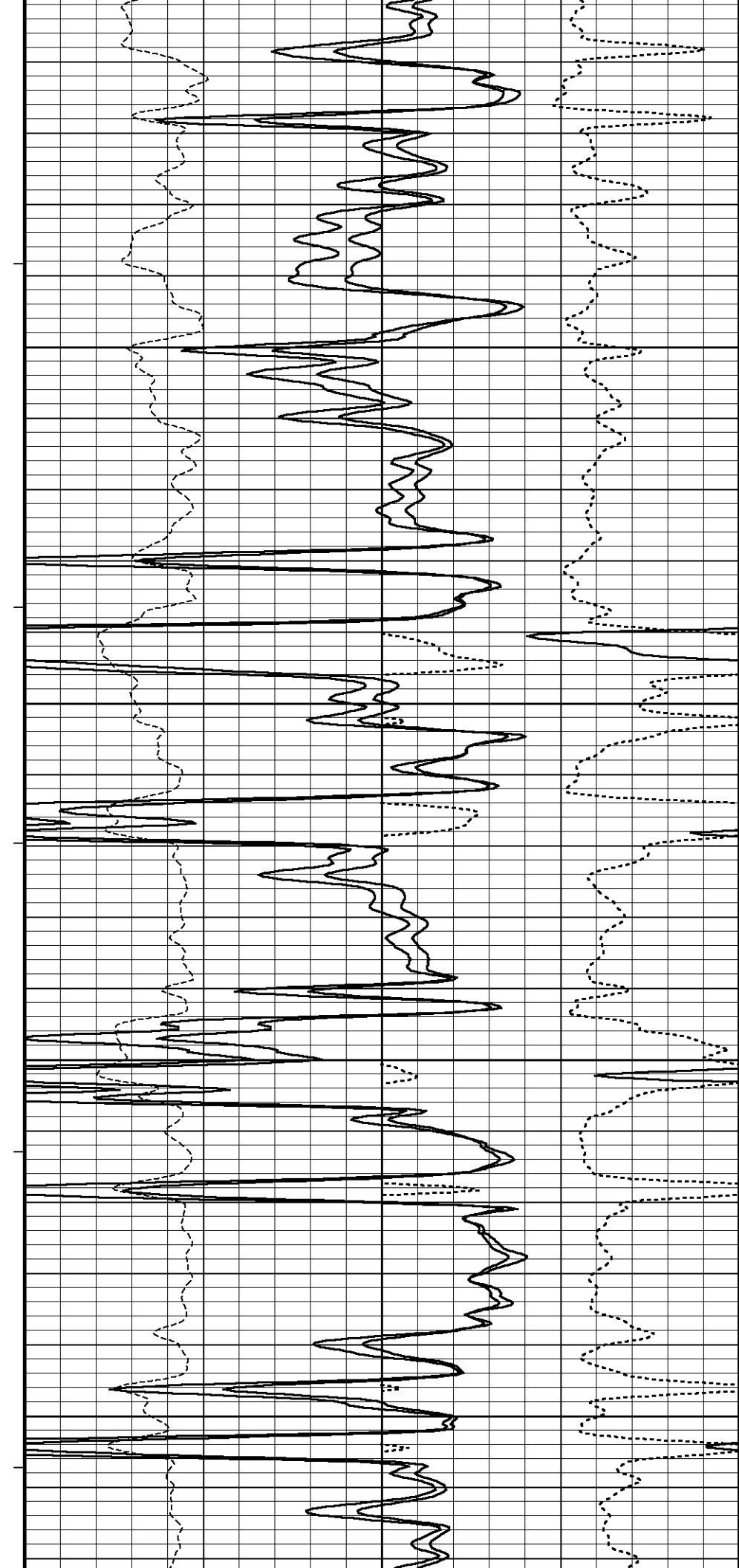
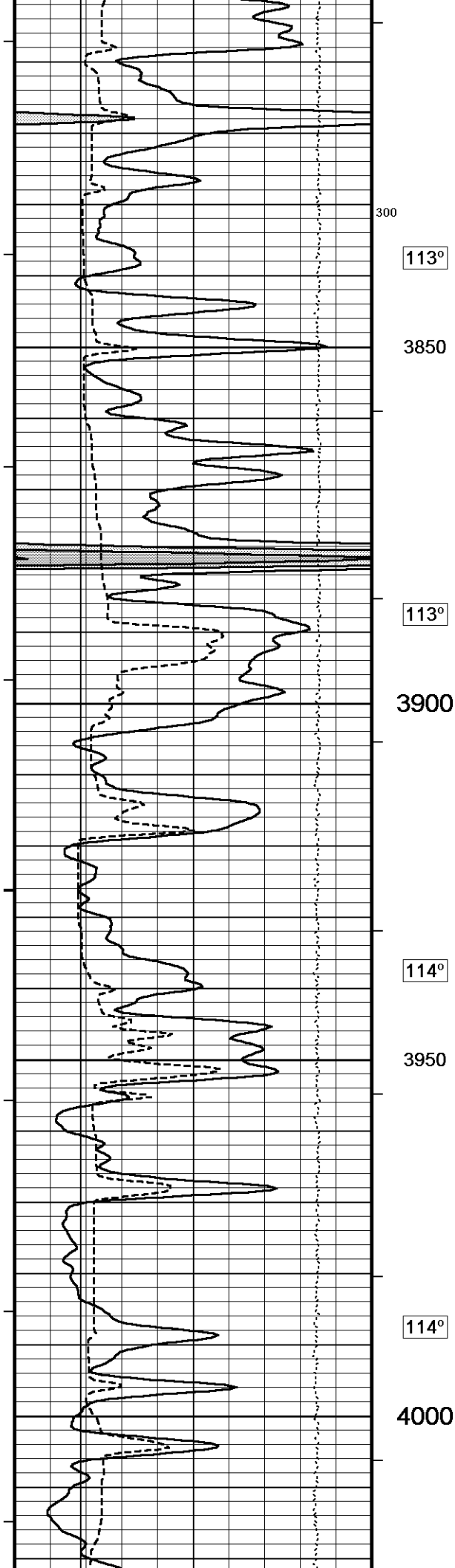
Density Correction

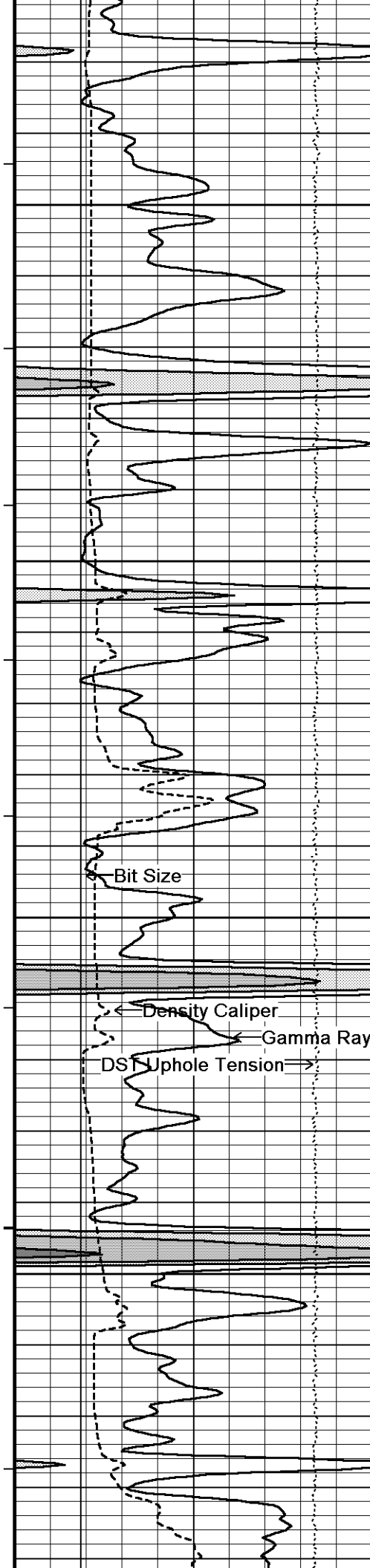












115°

4050

200 115°

4100

115°

100

4150

116°

4200

116°

Bit Size

Density Caliper

Gamma Ray

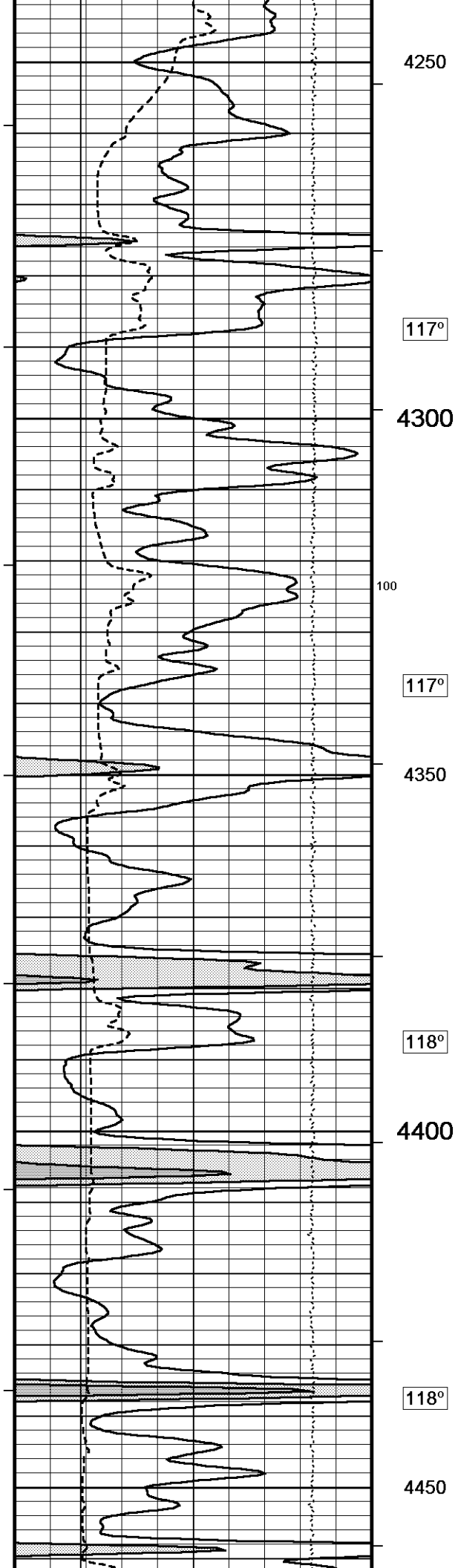
DST Uphole Tension

PE

Limestone Density Por.

Compensated Density

Density Correction



4250

117°

4300

100

117°

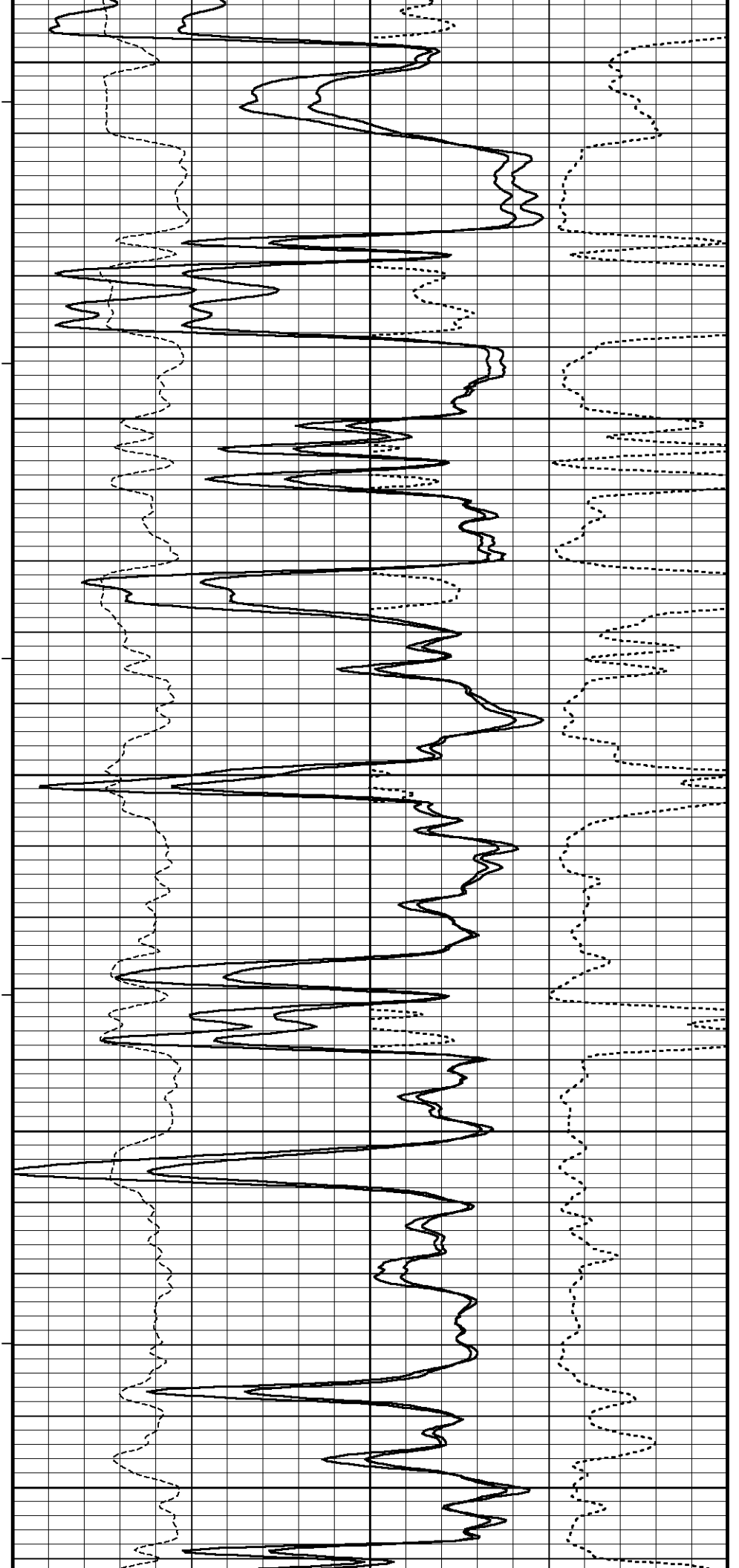
4350

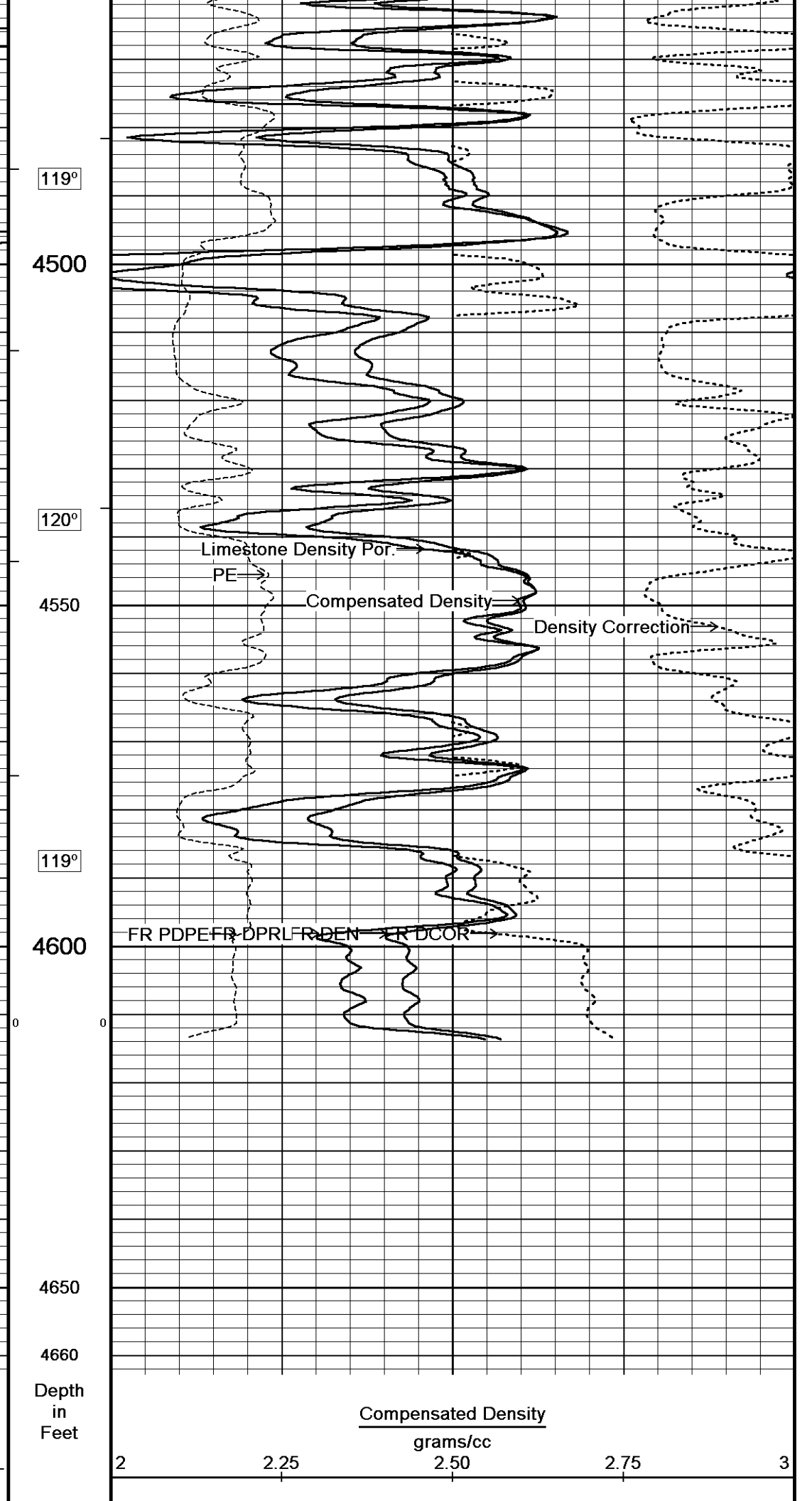
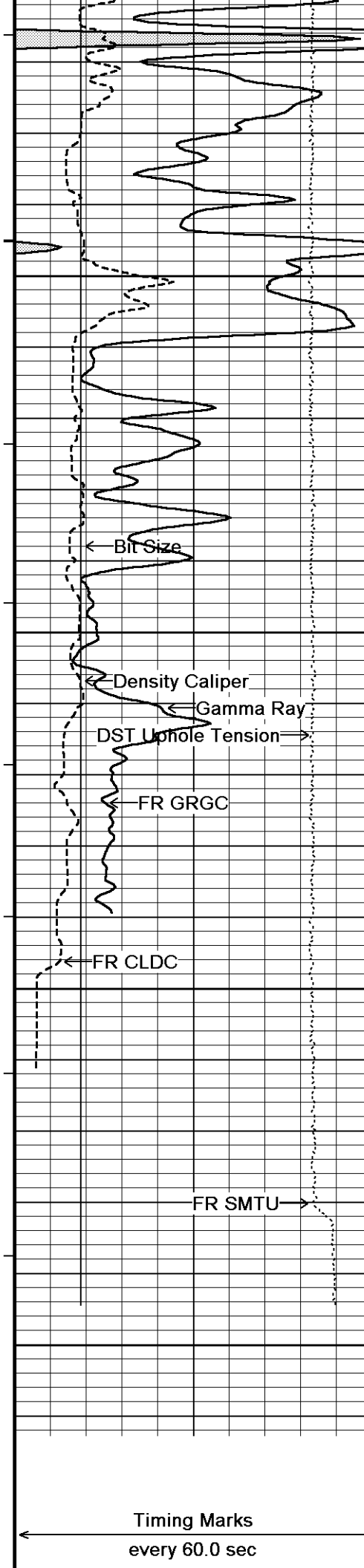
118°

4400

118°

4450



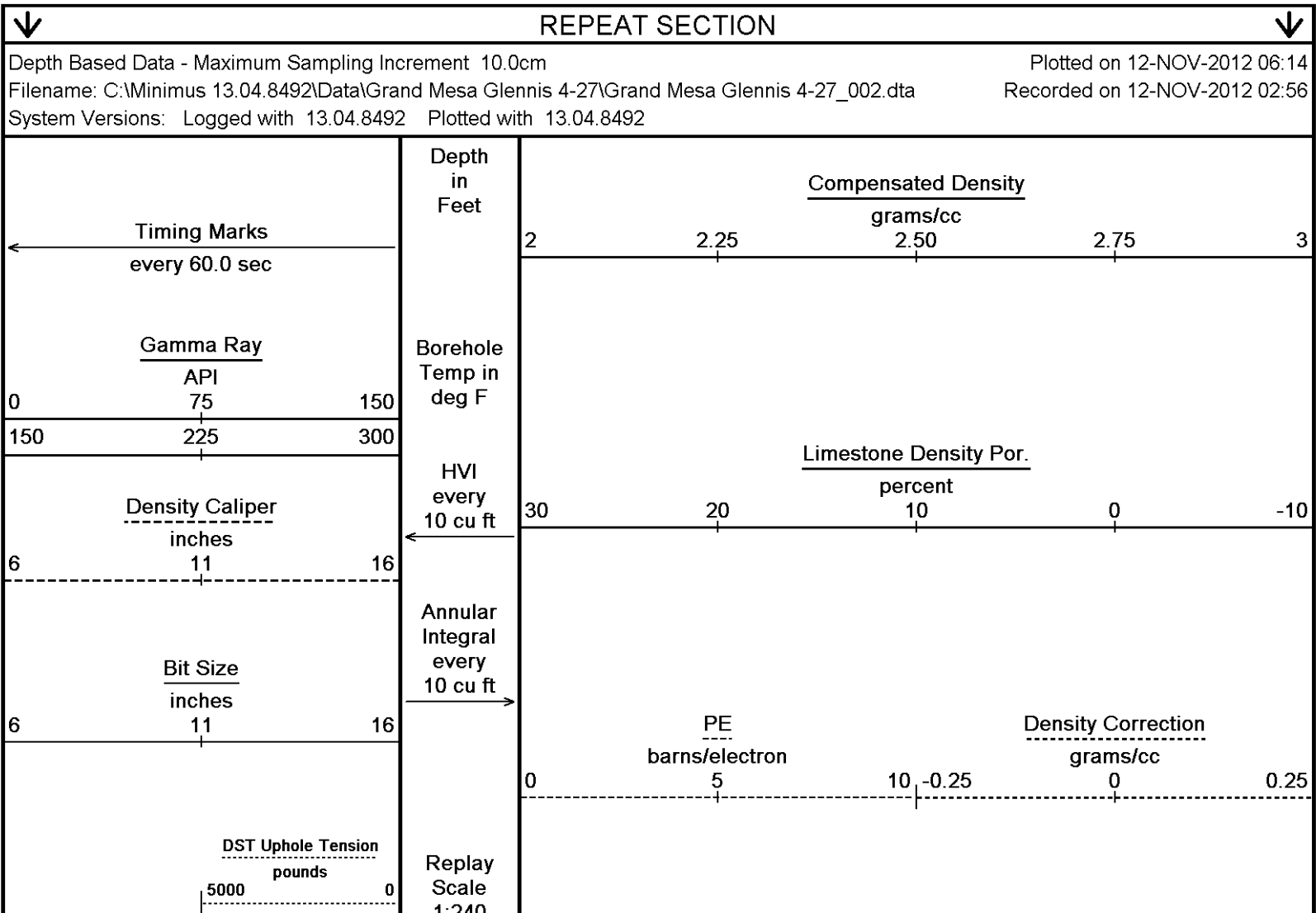
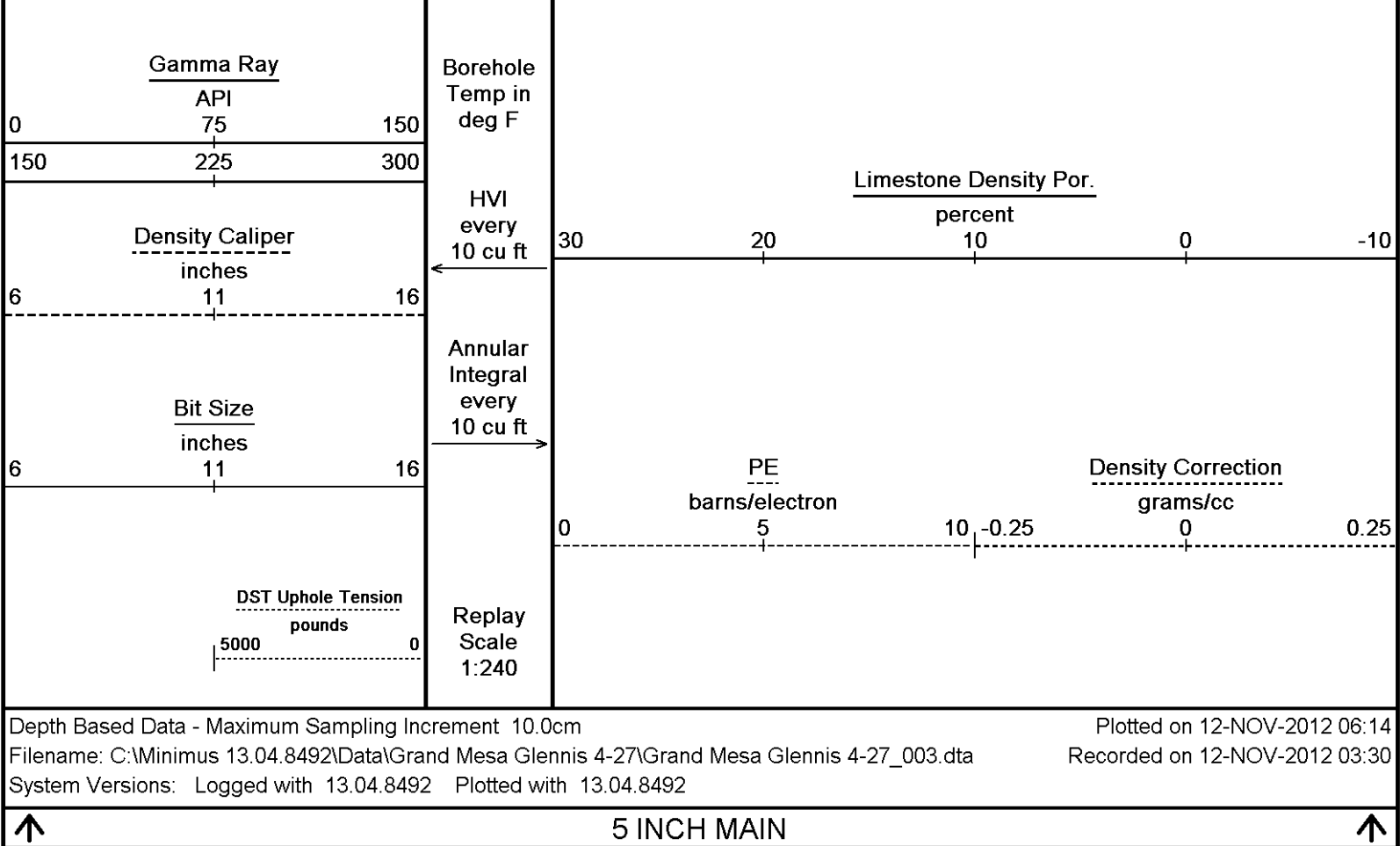


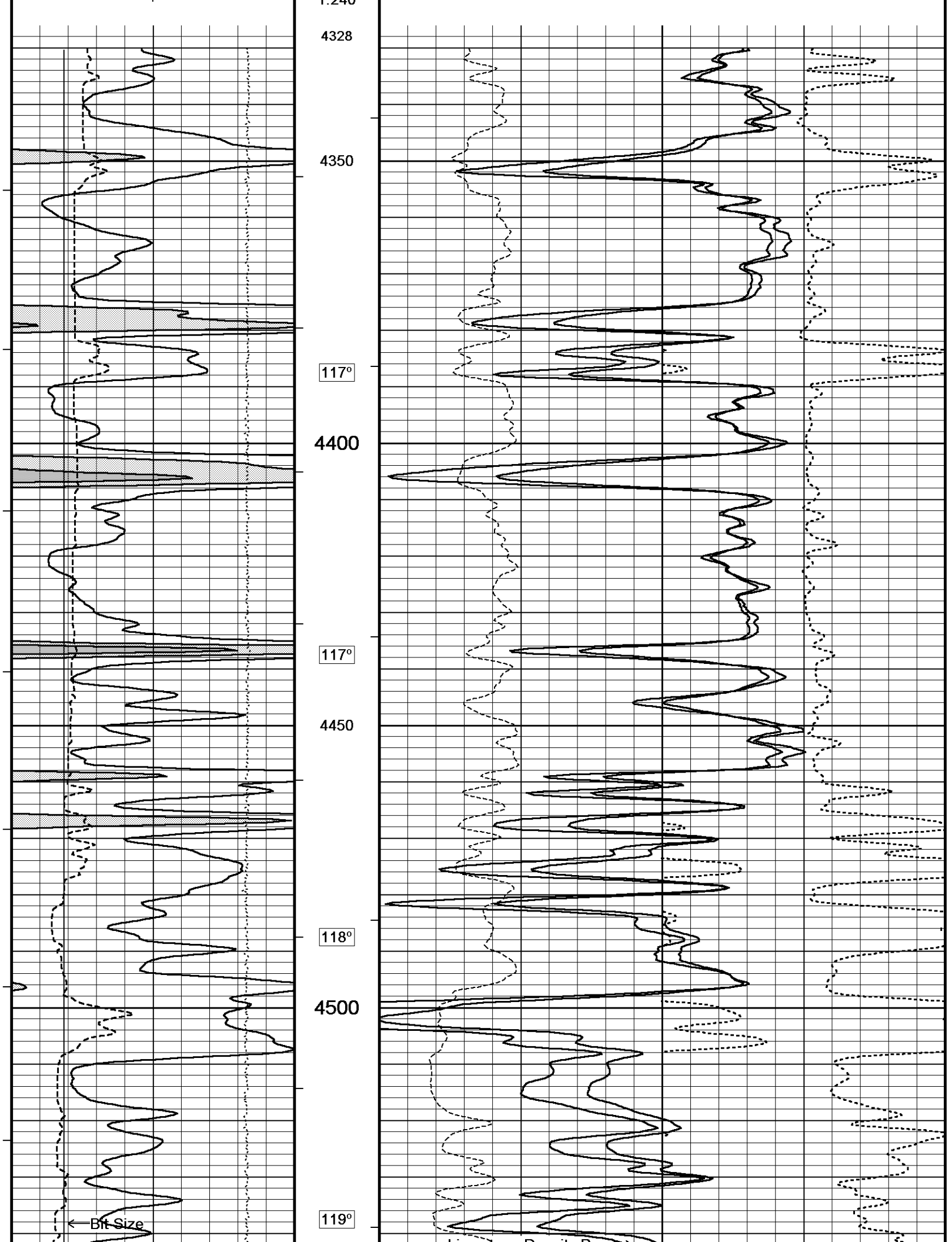
Timing Marks
every 60.0 sec

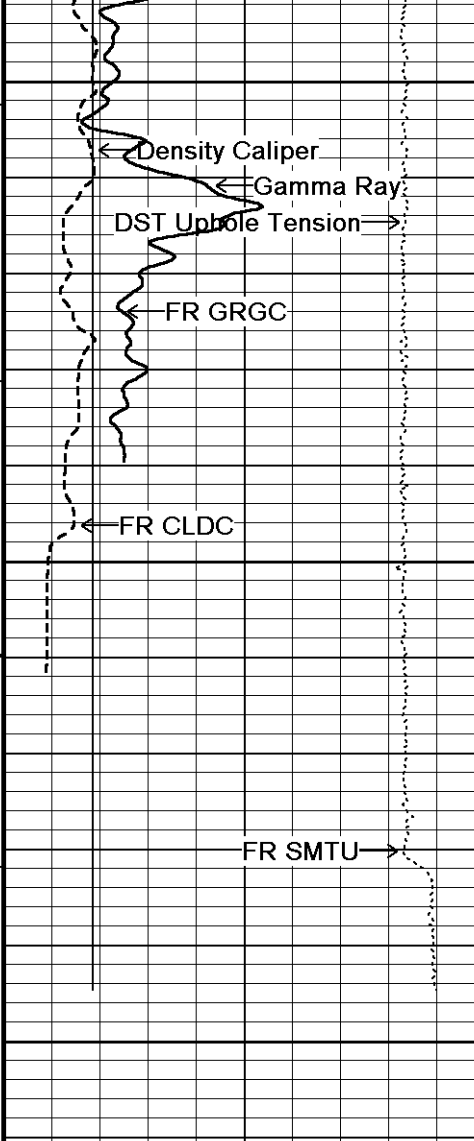
Depth
in
Feet

Compensated Density
grams/cc

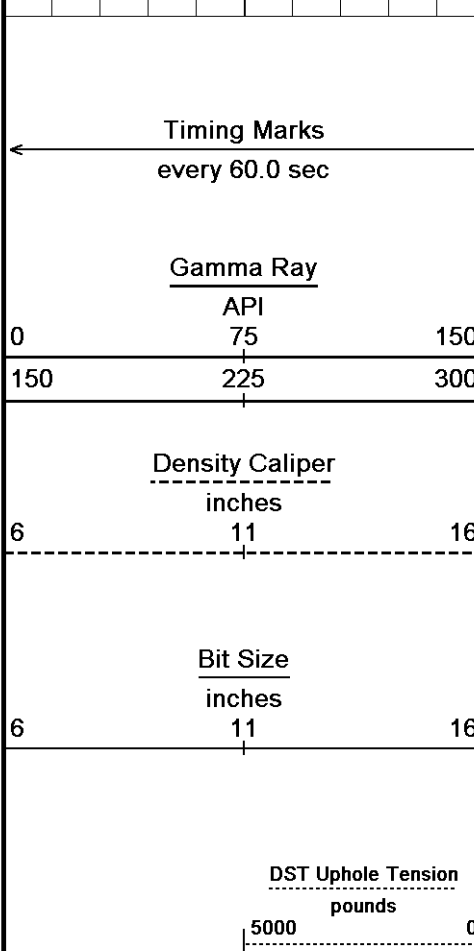
2 2.25 2.50 2.75 3



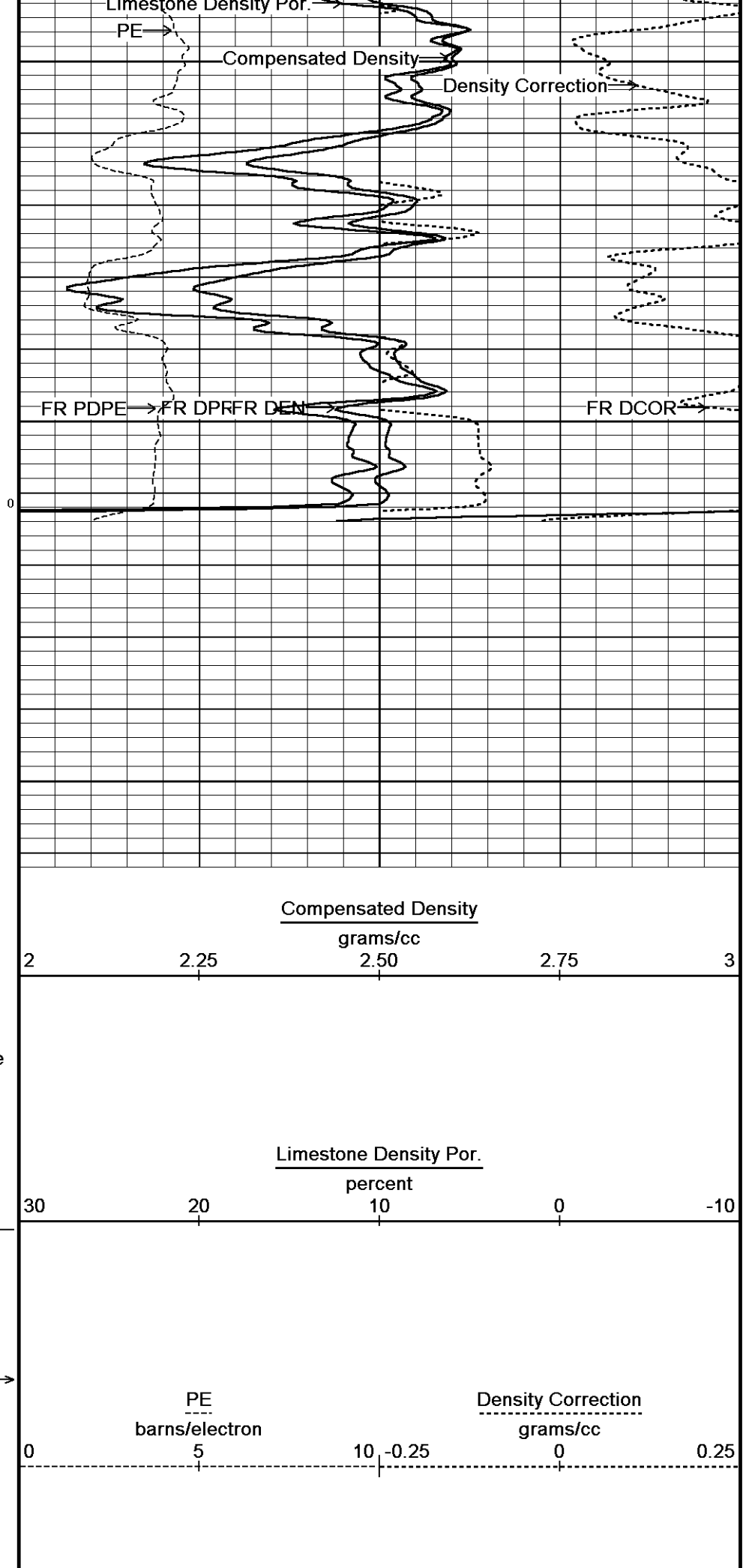




4550
119°
4600
0
4650
4660
Depth
in
Feet



Borehole
Temp in
deg F
HVI
every
10 cu ft
Annular
Integral
every
10 cu ft
Replay
Scale
1:240



↑

REPEAT SECTION

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BEFORE SURVEY CALIBRATION

C:\Minimus 13.04.8492\Data\Grand Mesa Glennis 4-27\Grand Mesa Glennis 4-27_003.dta

General Constants All 000			Last Edited on 12-NOV-2012,02:08		
General Parameters					
Mud Resistivity	1.290		ohm-metres		
Mud Resistivity Temperature	64.000		degrees F		
Water Level	0.000		feet		
Borehole Fluid 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	5.500		inches		
Caliper for Differential Caliper	Density Caliper				
Rwa Parameters					
Porosity used	Base Density Porosity				
Resistivity used	Array Ind. Four Res Rt				
RWA Constant A	0.610				
RWA Constant M	2.150				

Gamma Calibration MCG-C 208		Field Calibration on 07-NOV-2012 10:08	
	Measured	Calibrated (API)	
Background	75	55	
Calibrator (Gross)	1067	780	
Calibrator (Net)	992	725	

Gamma Constants MCG-C 208		Last Edited on 08-NOV-2012,06:36	
Gamma Calibrator Number	GR38		
Mud Density	1.12	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	

High Resolution Temperature Calibration MCG-C 208		Field Calibration on 05-NOV-2012,14:26	
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	75.00	75.00	

High Resolution Temperature Constants MCG-C 208		Last Edited on 05-NOV-2012,14:25	
Pre-filter Length	11		

Photo Density Calibration MPD-B 31				Base Calibration on 05-NOV-2012 10:55	
				Field Check on 07-NOV-2012 10:01	
Density Calibration					
Base Calibration		Measured		Calibrated (sdu)	
	Near	Far	Near	Far	
Reference 1	47158	23871	59556	30836	
Reference 2	19466	1970	24941	2541	
Field Check at Base					
	688.7	842.9			
Field Check					
	688.5	846.9			
PE Calibration					

Base Calibration	WS	WH	Measured Ratio	Calibrated Ratio
Background	126	602		
Reference 1	19229	47030	0.411	0.371
Reference 2	5676	19373	0.296	0.272
Field Check at Base				
	126.3	602.0		
Field Check				
	126.4	602.6		

Density Constants MPD-B 31			Last Edited on 08-NOV-2012,06:36	
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	1.12		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 (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	0.00			

Caliper Calibration MPD-B 31			Base Calibration on 05-NOV-2012 10:35 Field Calibration on 07-NOV-2012 09:55	
Base Calibration				
Reading No	Measured	Calibrator Size (in)		
1	18880	3.99		
2	27744	5.98		
3	36416	7.97		
4	44768	9.86		
5	54080	11.92		
6	N/A	N/A		
Field Calibration				
	Measured Caliper (in)	Actual Caliper (in)		
	5.88	5.98		

DOWNHOLE EQUIPMENT			
C:\Minimus 13.04.8492\Data\Grand Mesa Glennis 4-27\Grand Mesa Glennis 4-27_003.dta			
Compact Comms Gamma MCG-C 208 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in		56.02 ft	GRGC - Gamma Ray
		53.11 ft	CGXT - MCG External Temperature
Compact Micro-Resistivity MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.88 in		45.76 ft	MBTC - MMR Caliper
		45.76 ft	MINV - MMR MicroLog Inverse
		45.76 ft	MNRL - MMR MicroLog Normal
Compact Neutron		40.97 ft	NPRL - Limestone Neutron Por

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

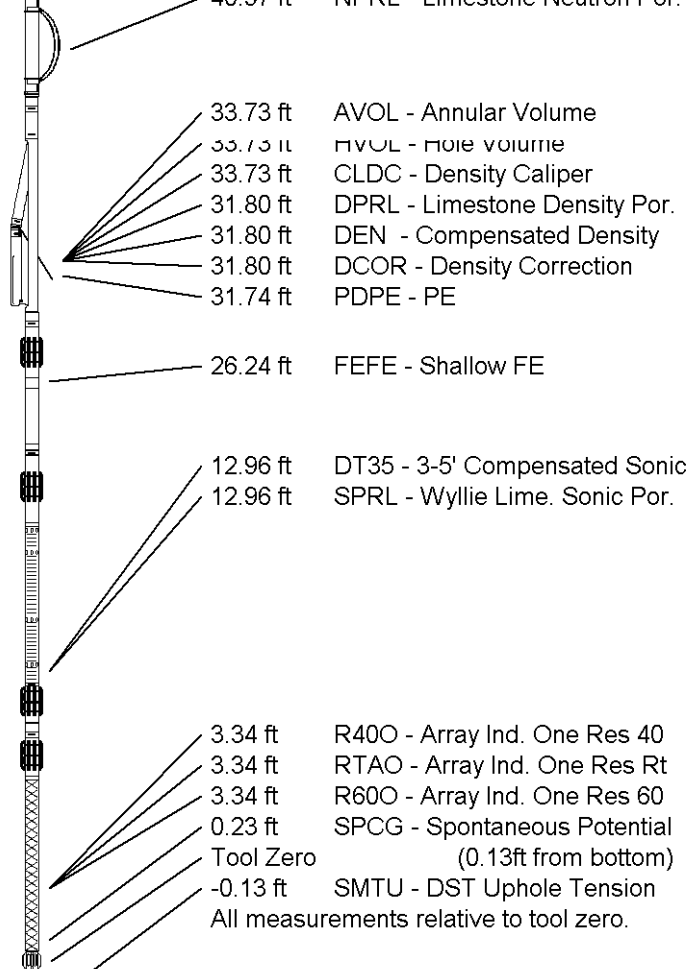
Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

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

Compact Sonic
MSS-A.A 126 LG: 12.52 ft WT: 72.8 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: 61.30 ft Weight: 456.4 lb



COMPANY	GRAND MESA OPERATING COMPANY
WELL	GLENNIS 4-27
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2865.00	feet	First Reading	4598.00	feet
Elevation Drill Floor	2863.00	feet	Depth Driller	4630.00	feet
Elevation Ground Level	2860.00	feet	Depth Logger	4630.00	feet



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MICRORESISTIVITY LOG