

**COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MIRCO RESISTIVITY LOG**

COMPANY STRAT LAND EXPLORATION
WELL FELICE #2-12
FIELD NW BORCHERS
PROVINCE/COUNTY MEADE
COUNTRY/STATE U.S.A. / KANSAS
LOCATION 1450' FNL & 330' FWL

SEC 12 TWP 33S RGE 29W Other Services MAI/MFE
API Number 15-119-21282
Permit Number

Permanent Datum G.L., Elevation 2523 feet
Log Measured From K.B. @ 12 FEET above Permanent Datum
Drilling Measured From K.B.

Elevations:
KB 2535.00 feet
DF 2533.00
GL 2523.00

Date	12-MAR-2011
Run Number	ONE
Depth Driller	6070.00 feet
Depth Logger	6066.00 feet
First Reading	6047.00 feet
Last Reading	2500.00 feet
Casing Driller	1528.00 feet
Casing Logger	1524.00 feet
Bit Size	7.875 inches
Hole Fluid Type	CHEMICAL
Density / Viscosity	8.90 lb/USg 54.00 CP
PH / Fluid Loss	9.00 5.60 ml/30Min
Sample Source	FLOWLINE
Rm @ Measured Temp	1.50 @102.0 ohm-m
Rmf @ Measured Temp	1.20 @102.0 ohm-m
Rmc @ Measured Temp	1.80 @102.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	1.13 @135.0 ohm-m
Time Since Circulation	6 HOURS
Max Recorded Temp	135.00 deg F
Equipment Name	COMPACT
Equipment / Base	13025 LIB
Recorded By	R. HOFFMAN
Witnessed By	MELVIN EARL
S.O. # / JOB #	3529087 LB11-047

BOREHOLE RECORD

Last Edited: 12-MAR-2011 07:22

Bit Size inches	Depth From feet	Depth To feet
7.875	1524.00	6066.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	1524.00	24.00

REMARKS

Tools Used: MPD, MCG, MDN, MFE, MAI, MML
 Hardware: MPD: 8 inch profile plate used. MAI, 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 = 648 cu. ft.
 Service order #3529087
 Rig: Kenai Rig #55
 Engineer: R. Hoffman
 Operator(s): B. Reeves, N. Adame

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.

5 Inch Main

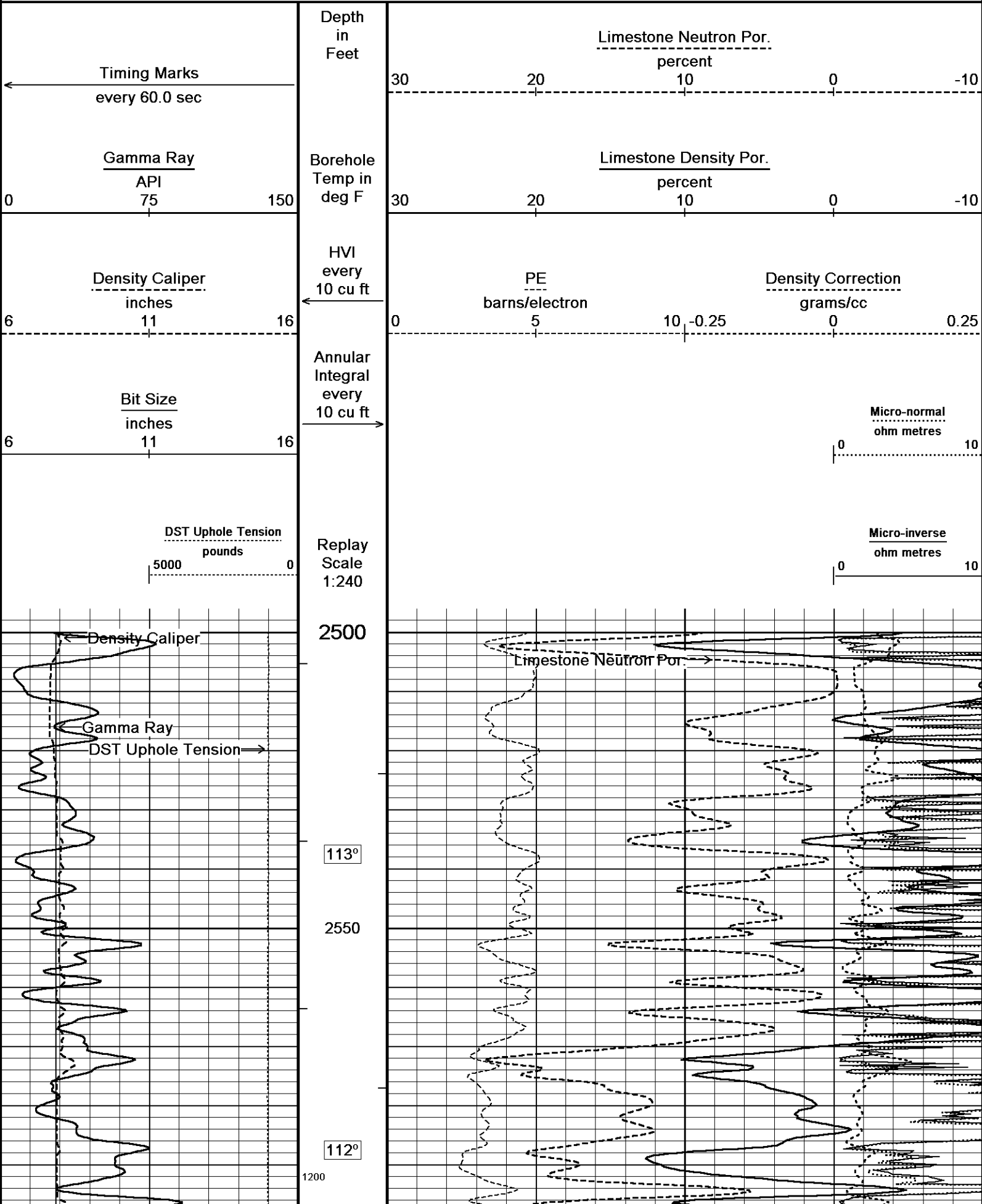
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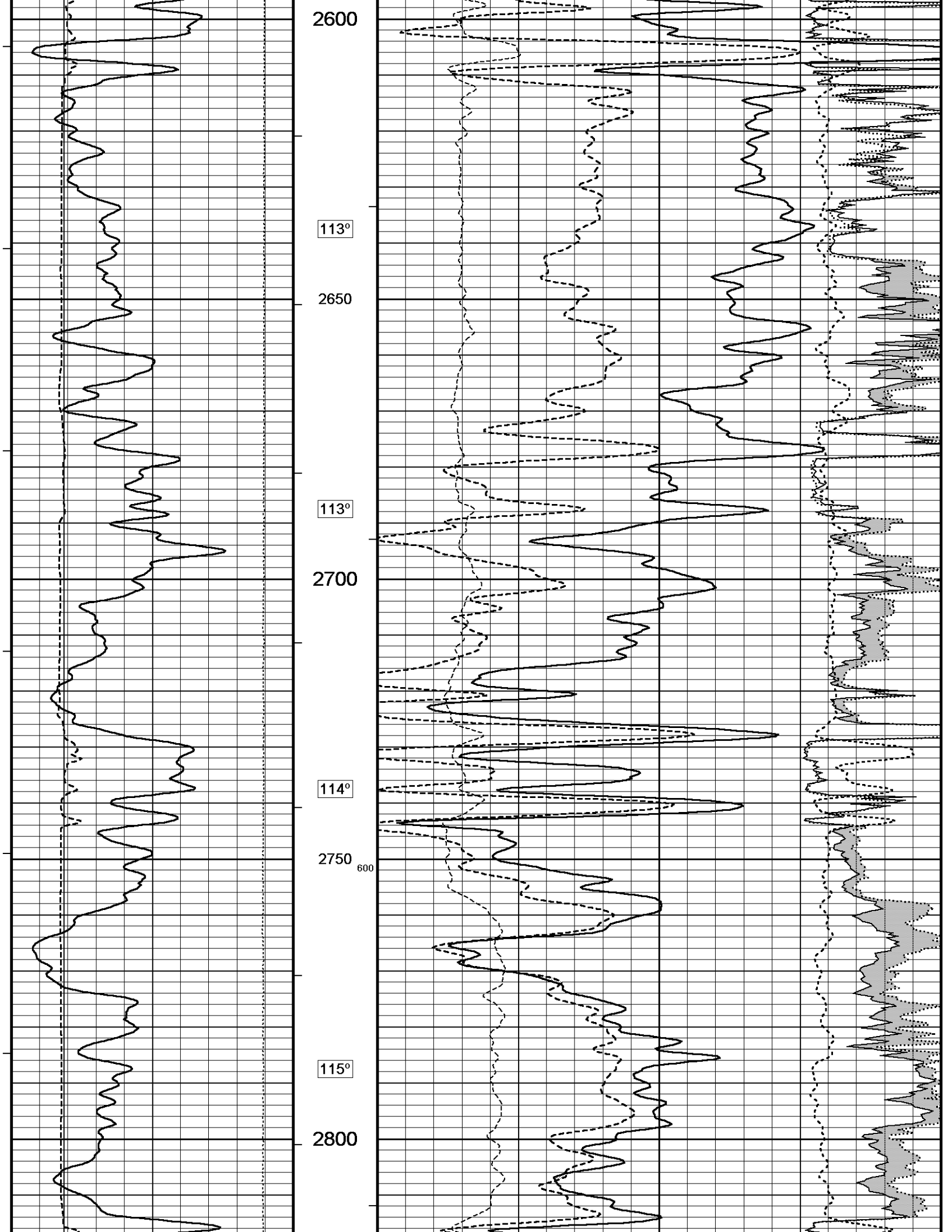
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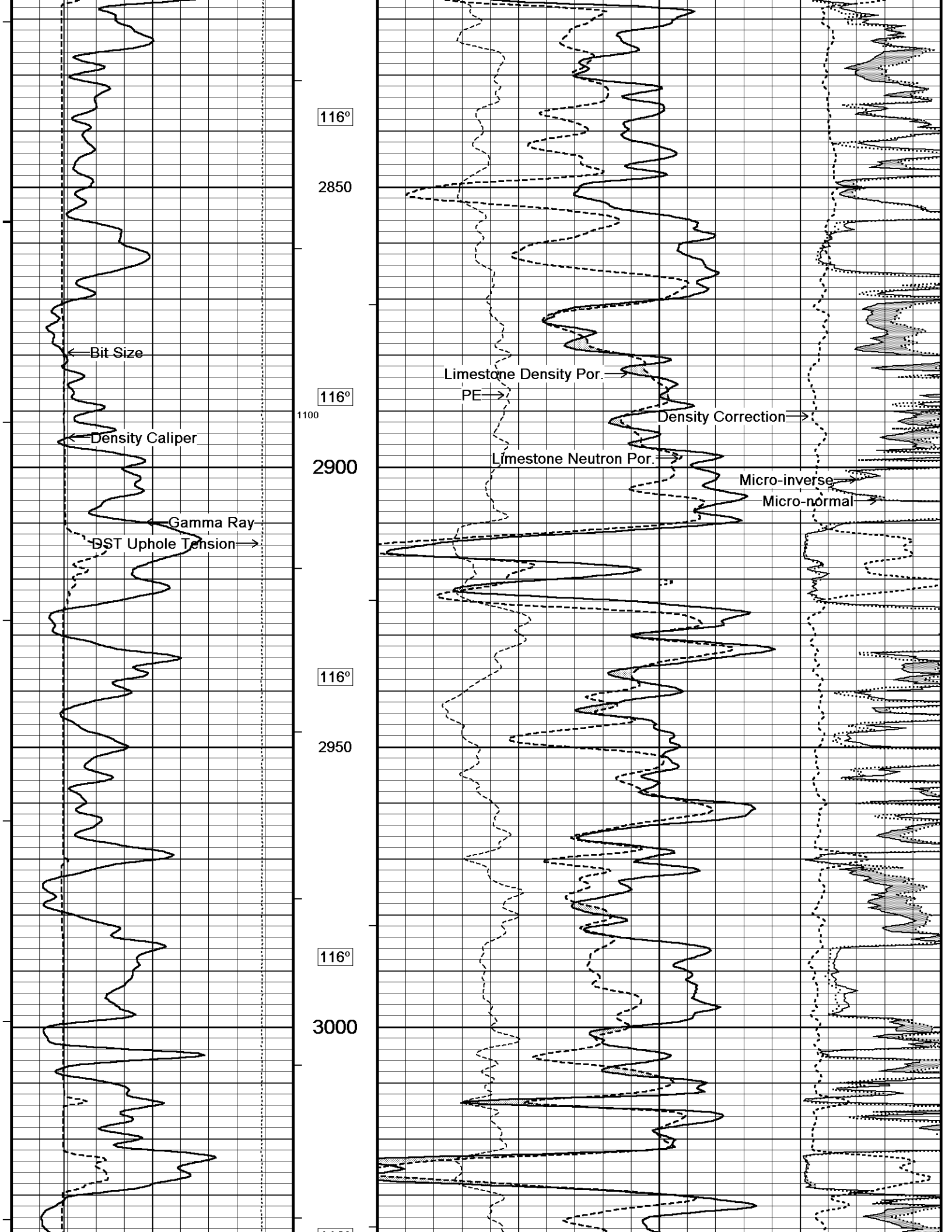
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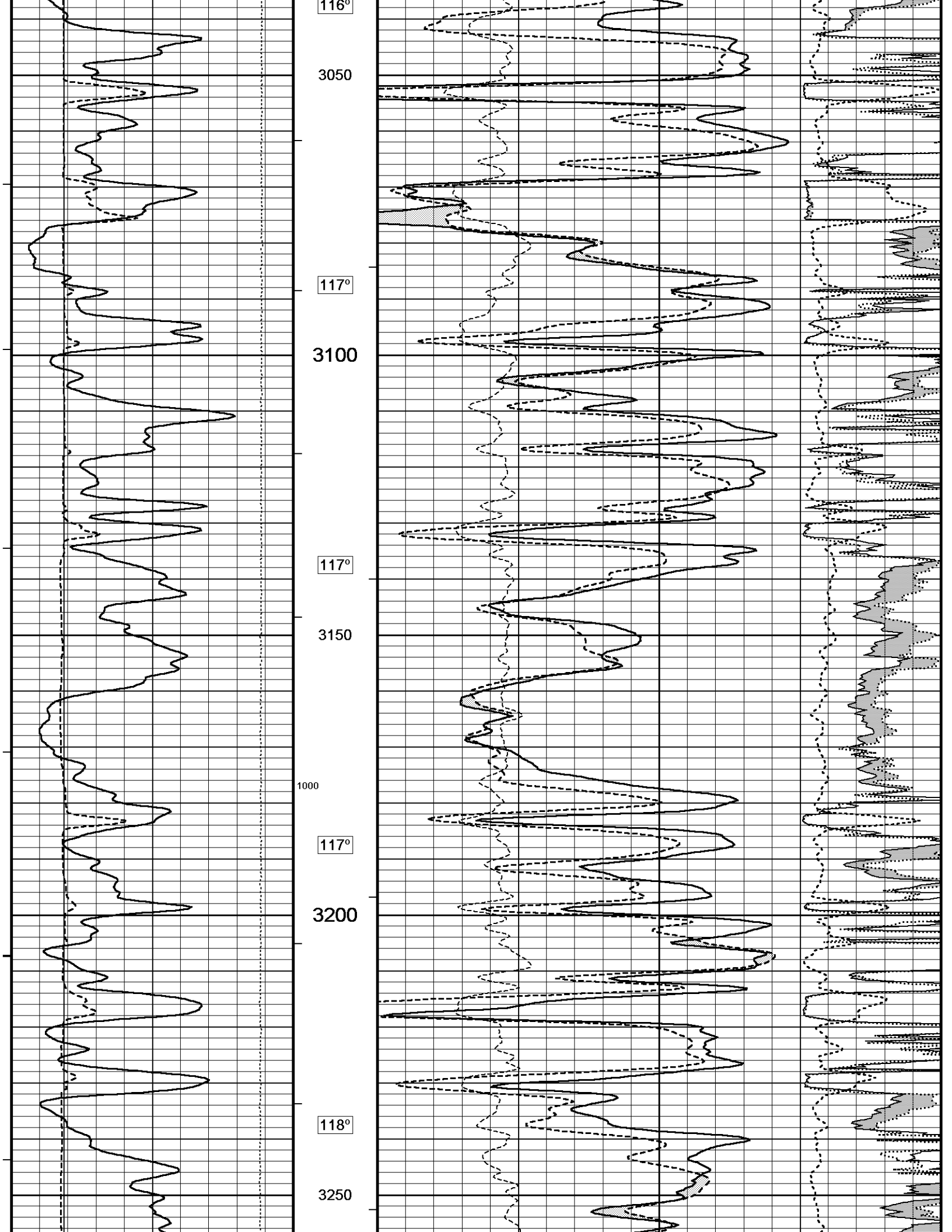
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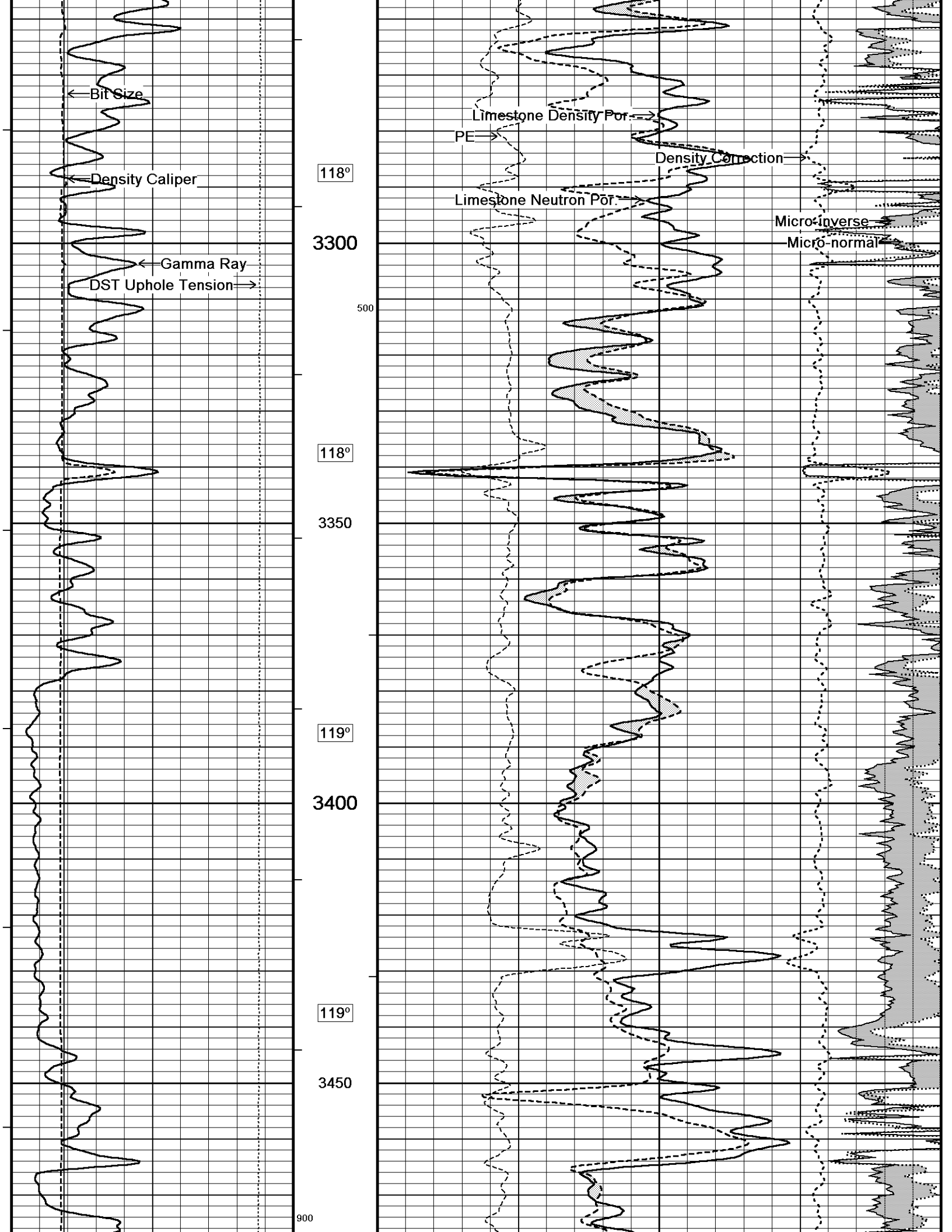
System Versions: Logged with 11.03.2789 Plotted with 11.00.1327

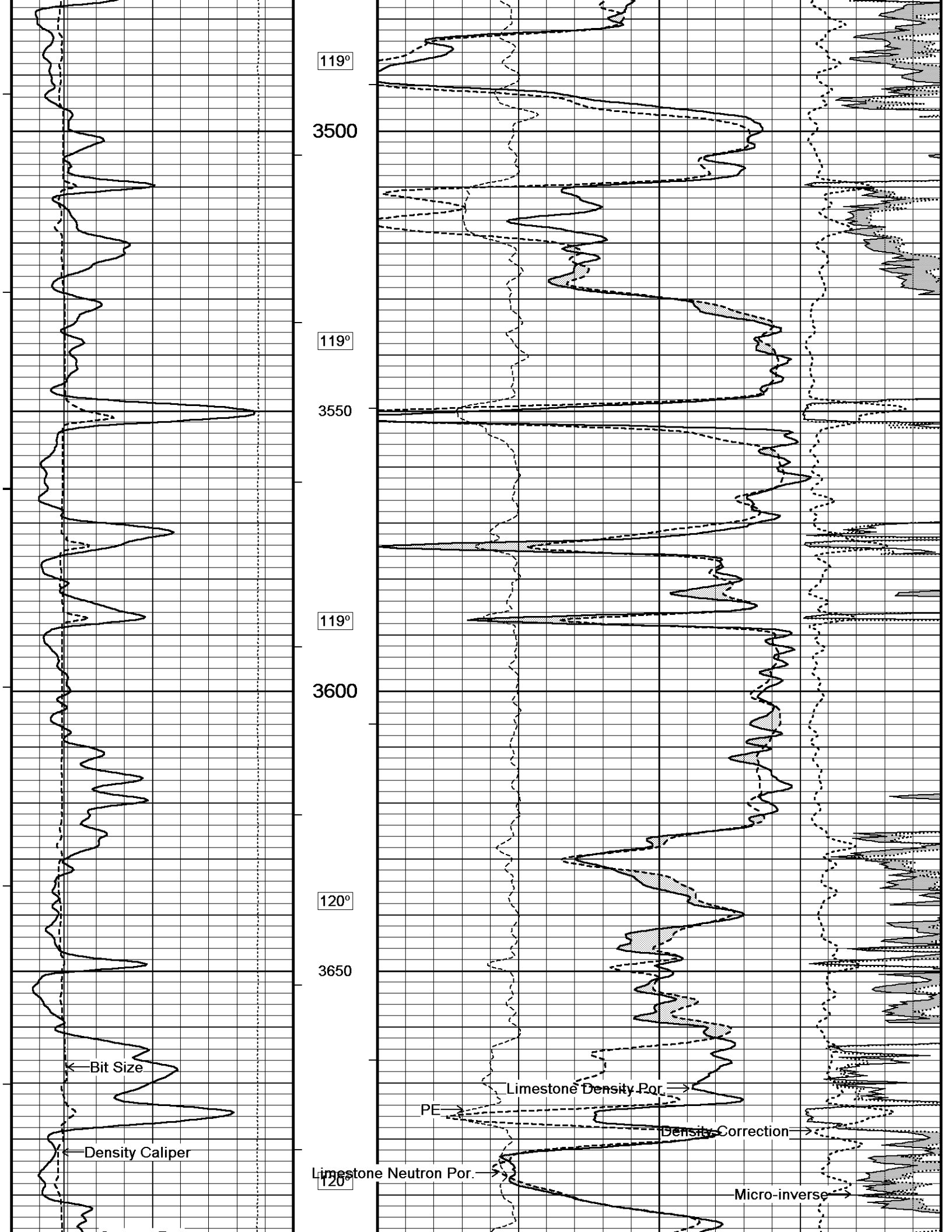


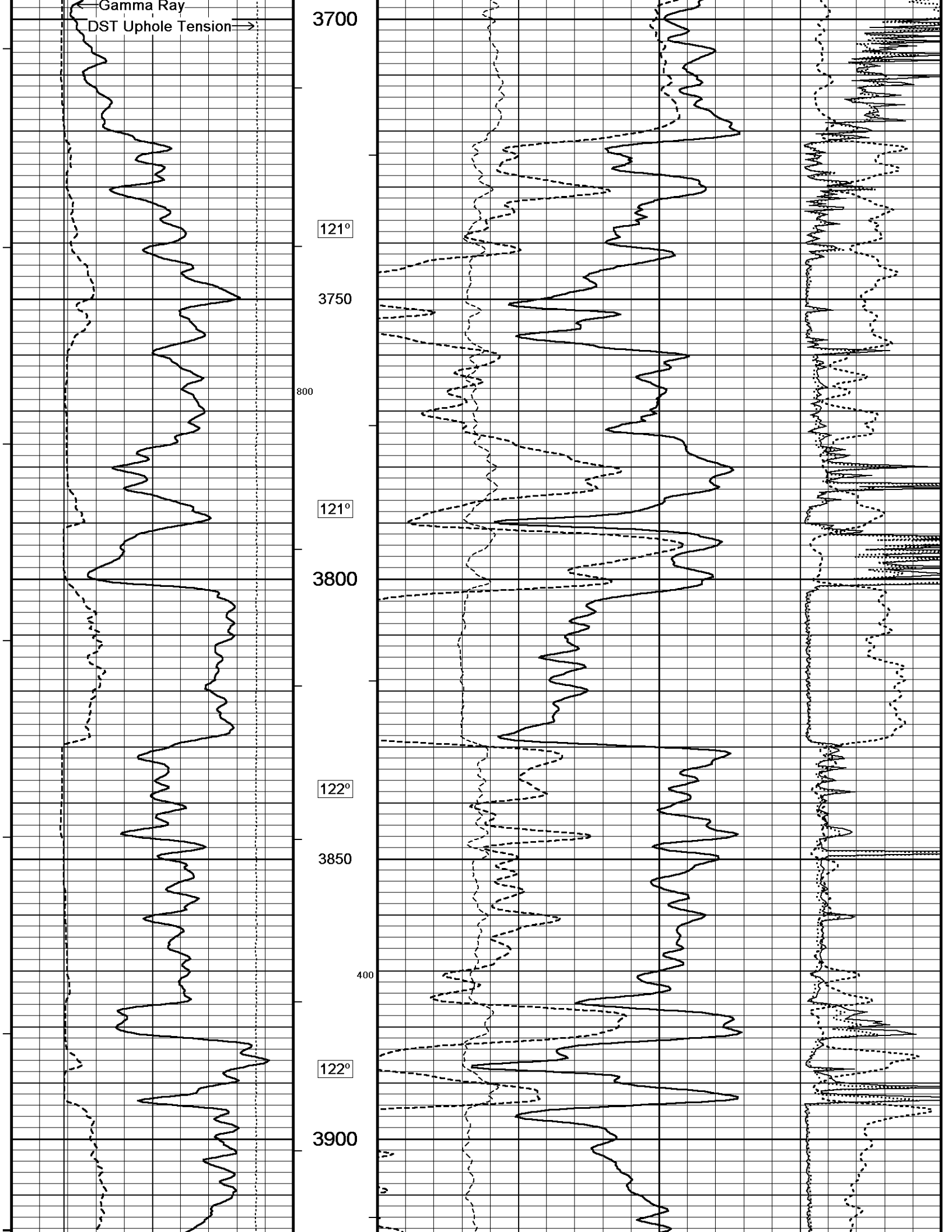


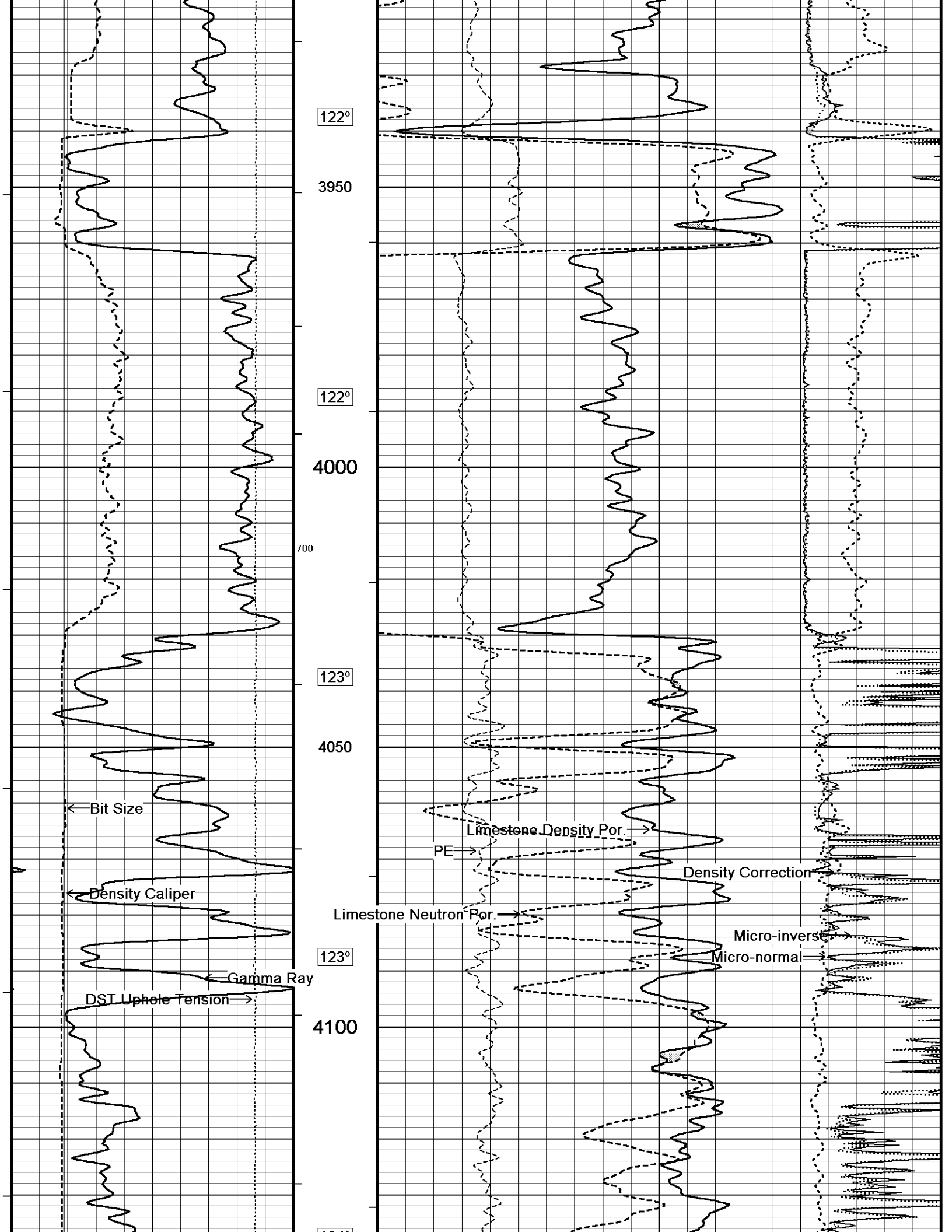


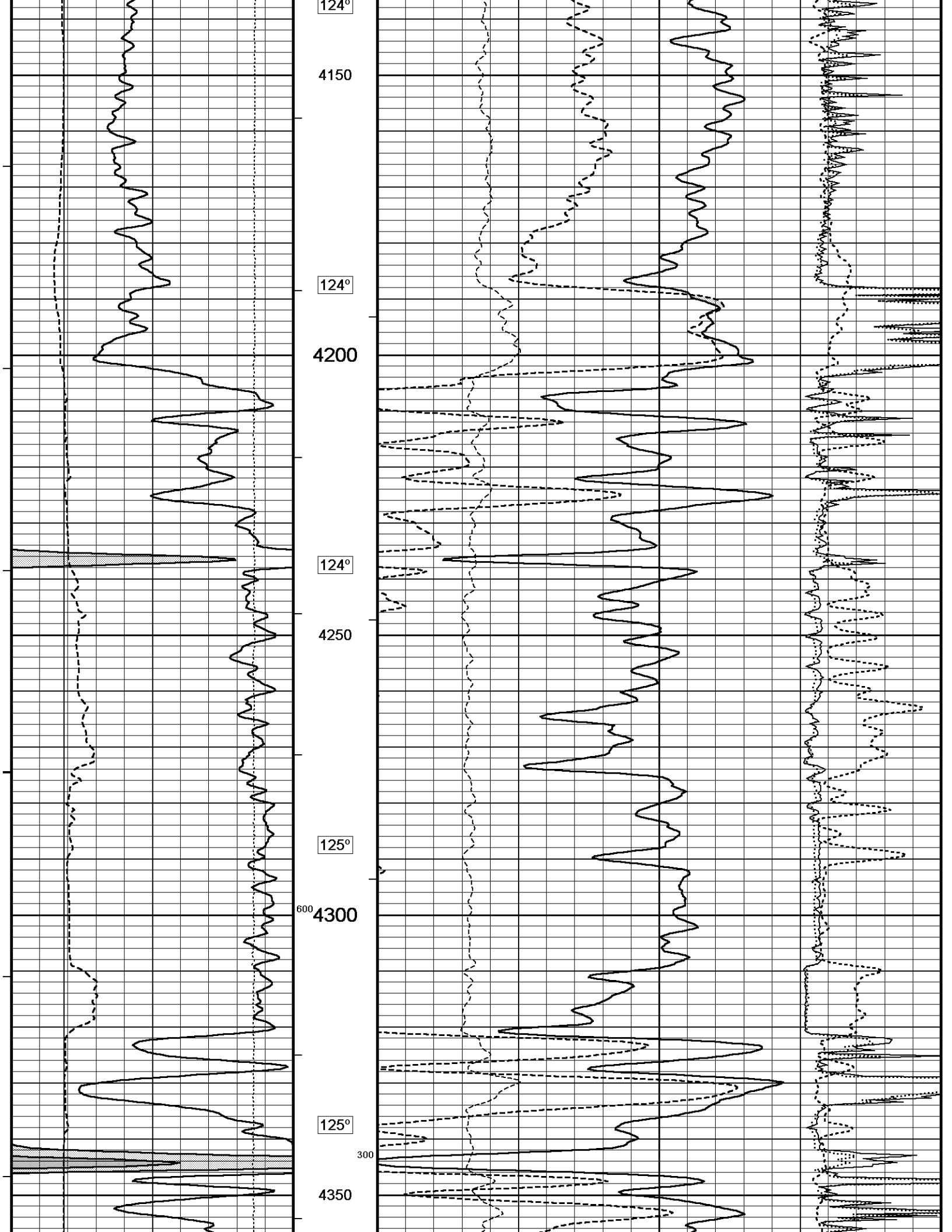


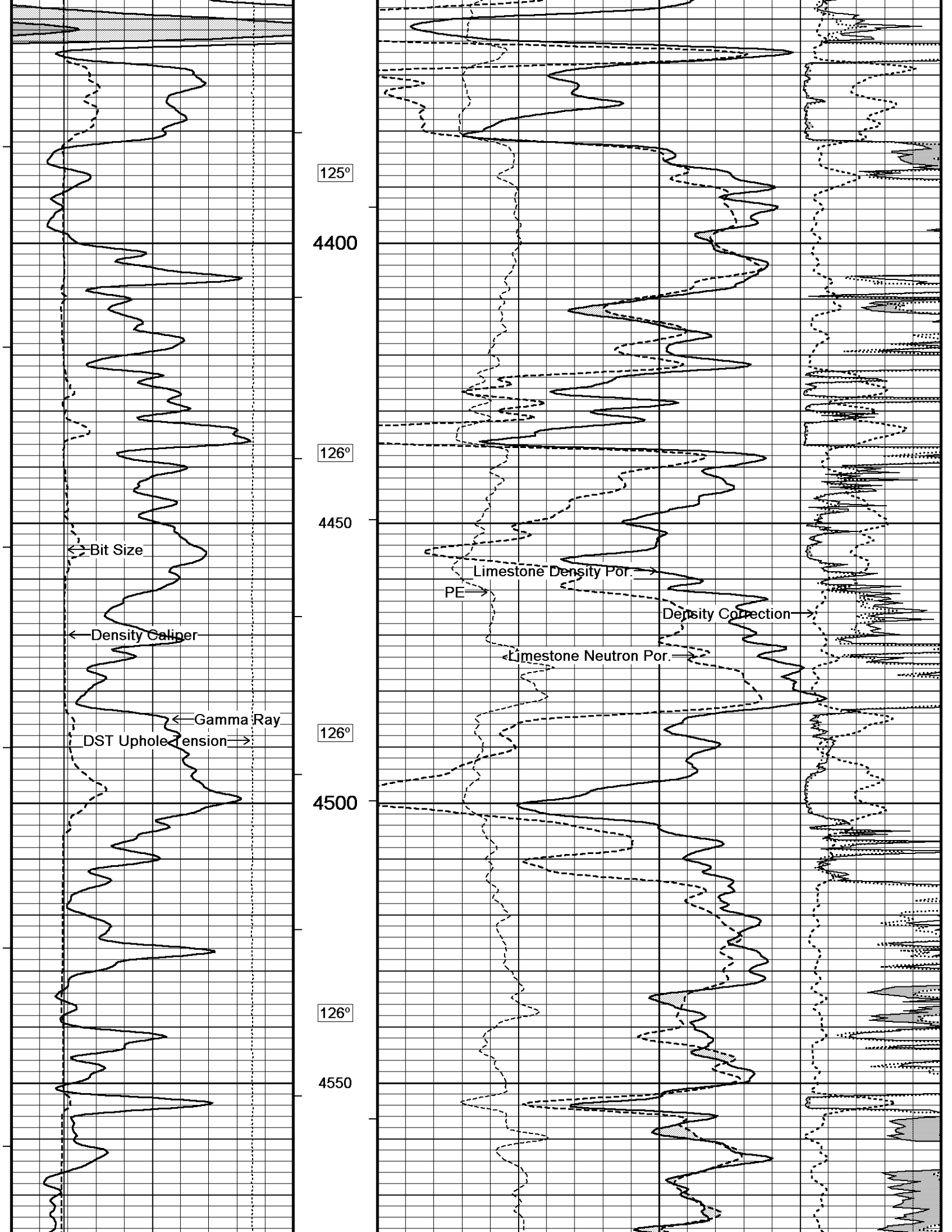


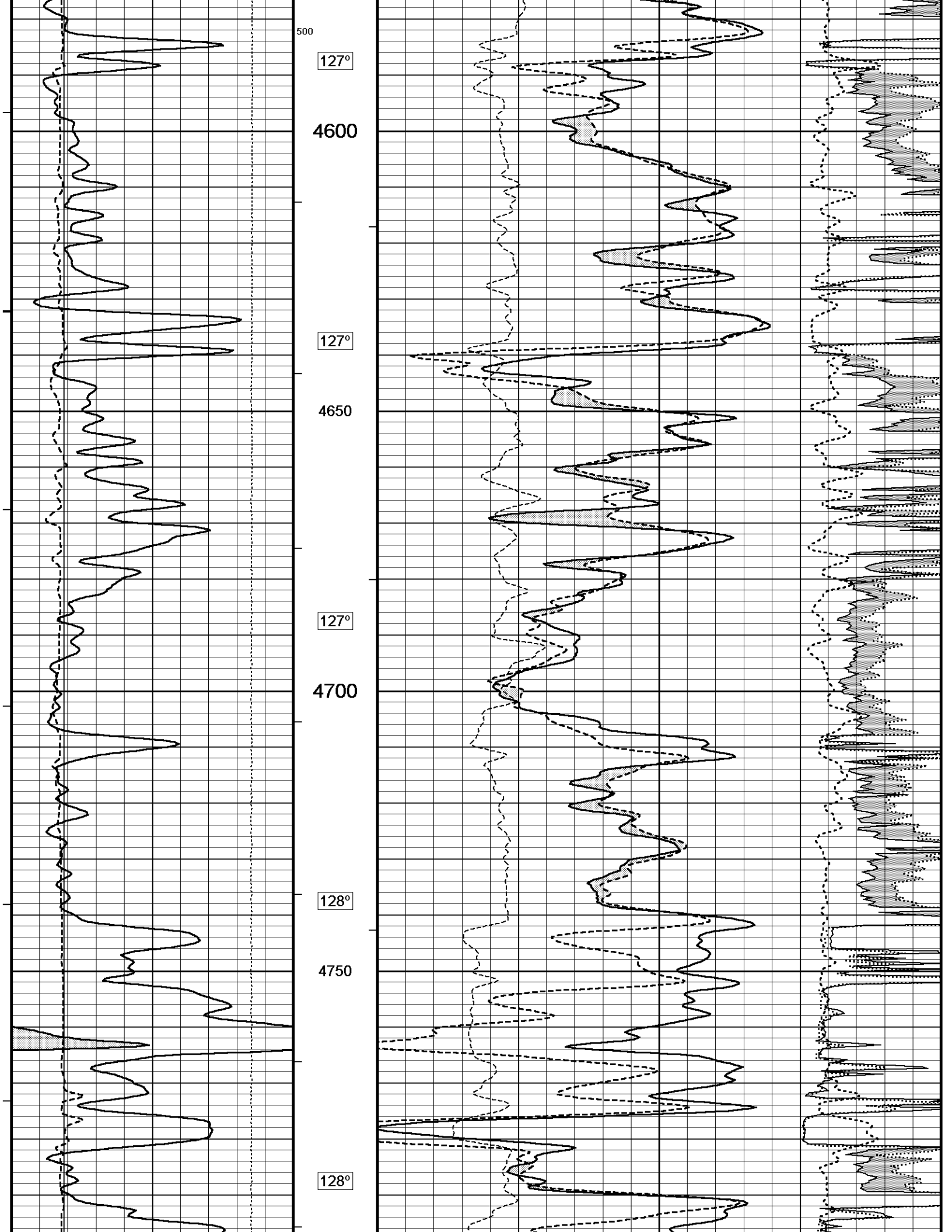


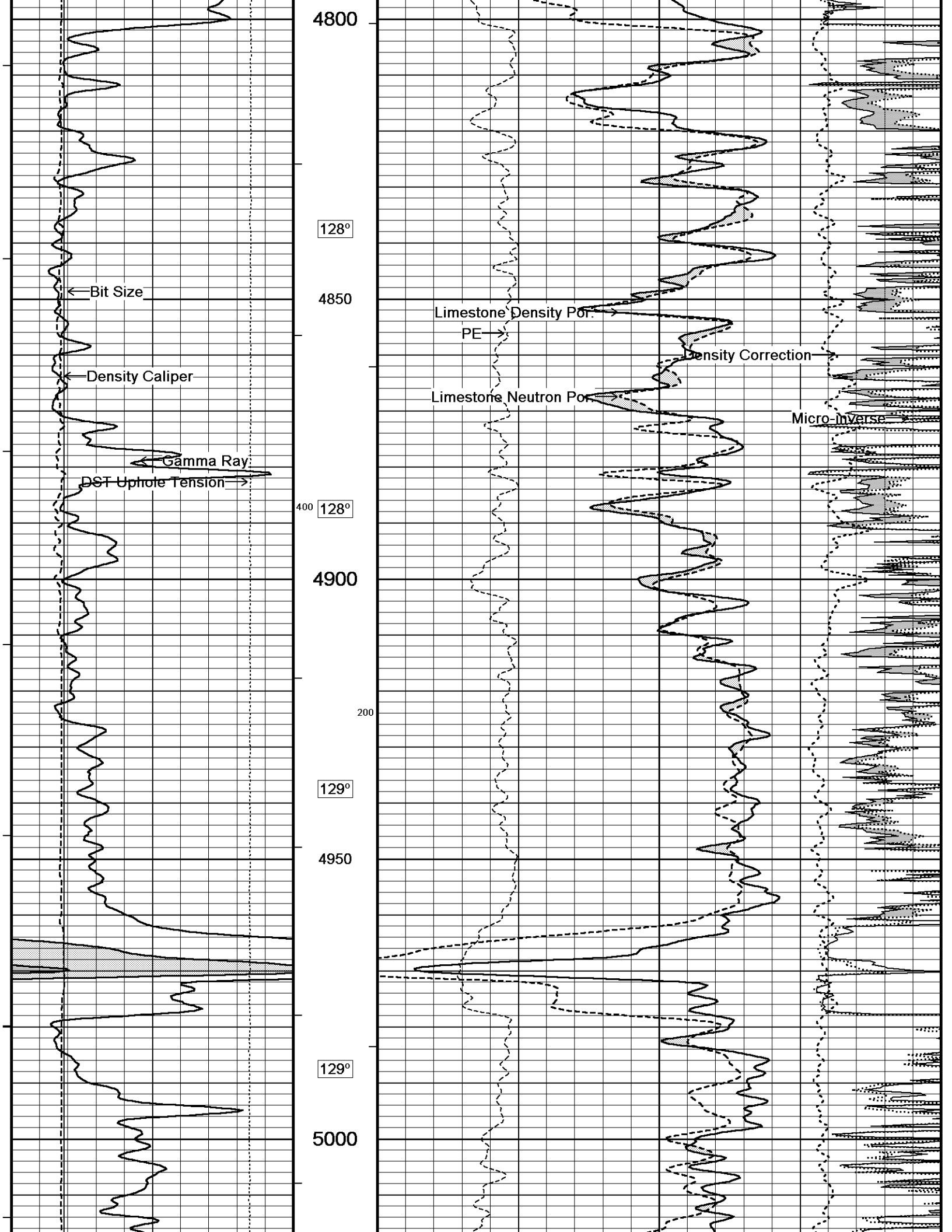


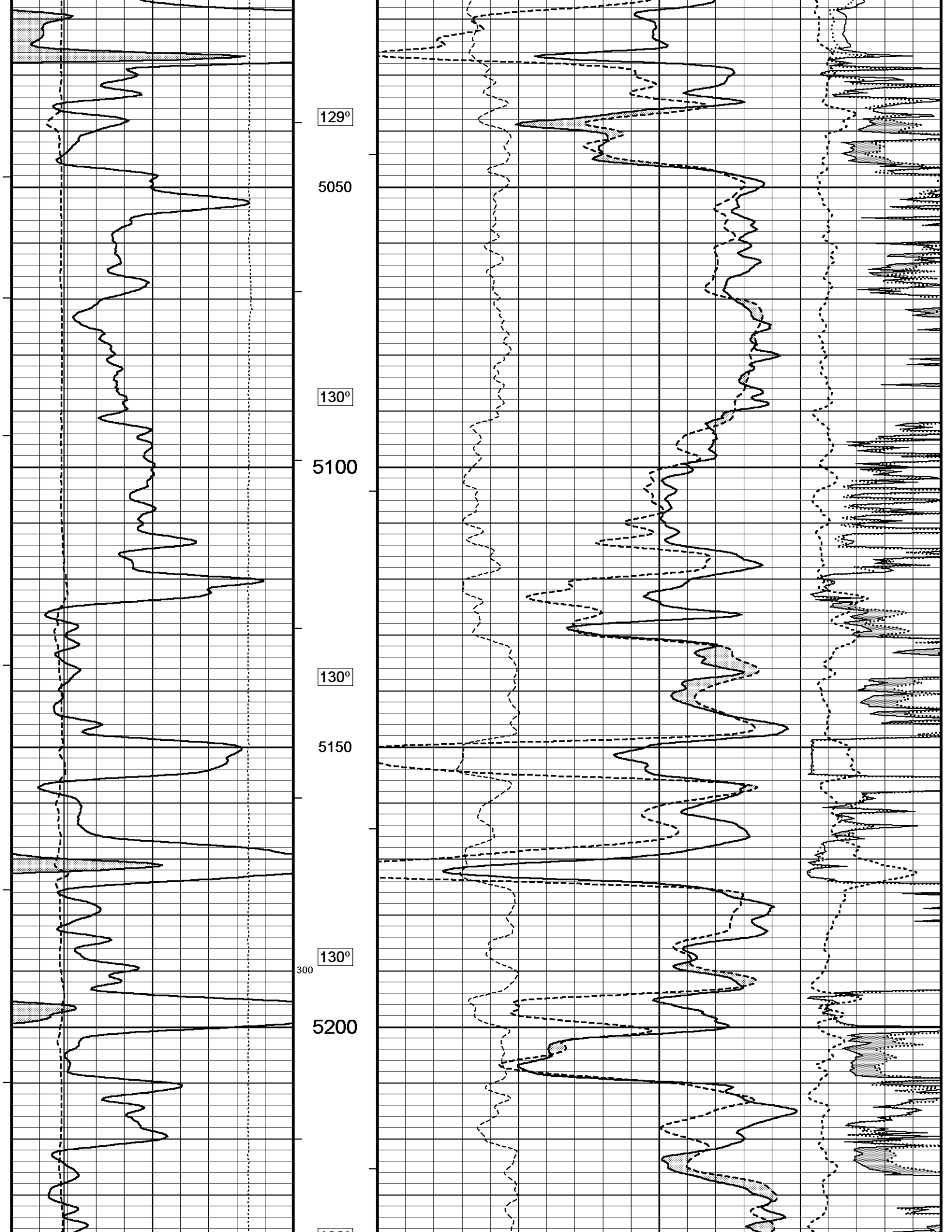


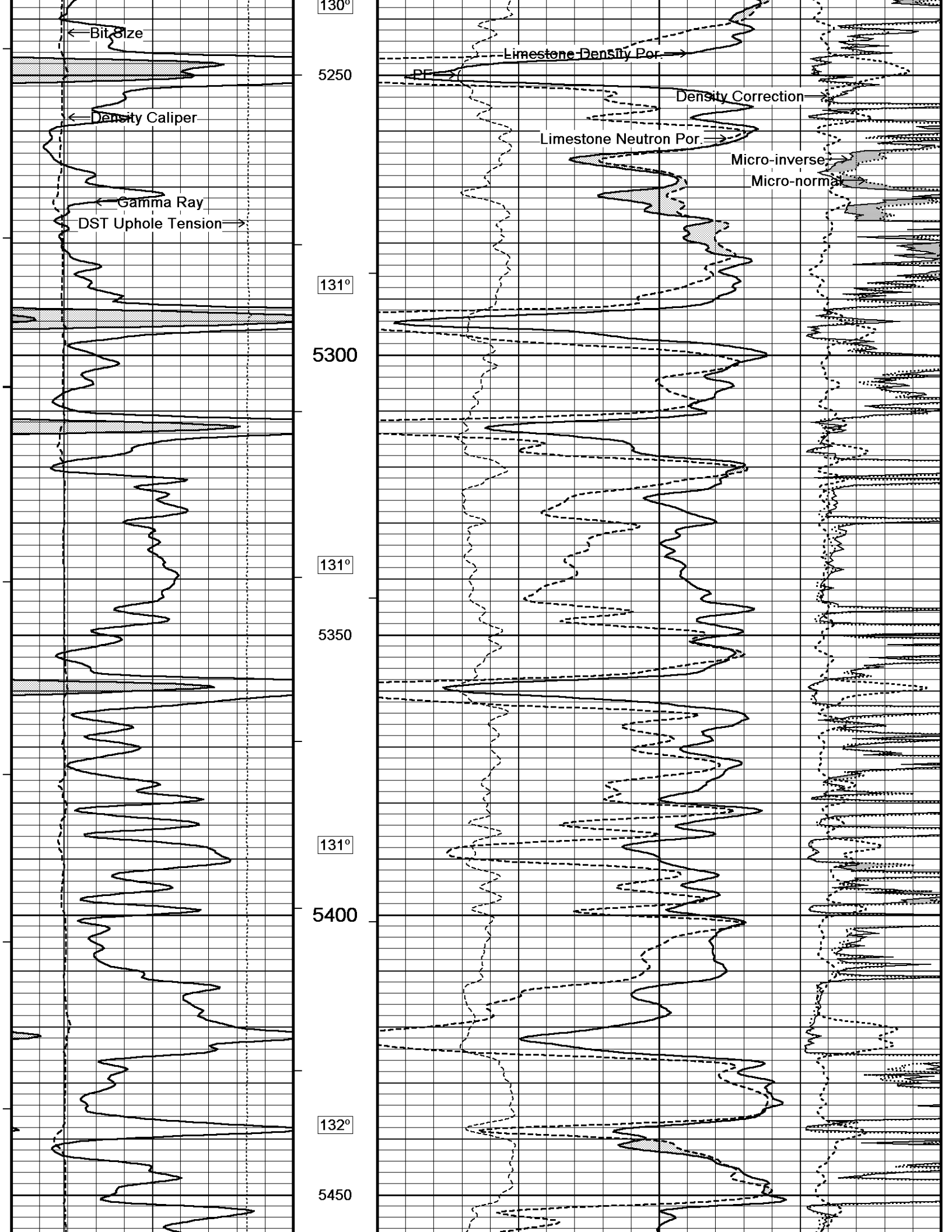


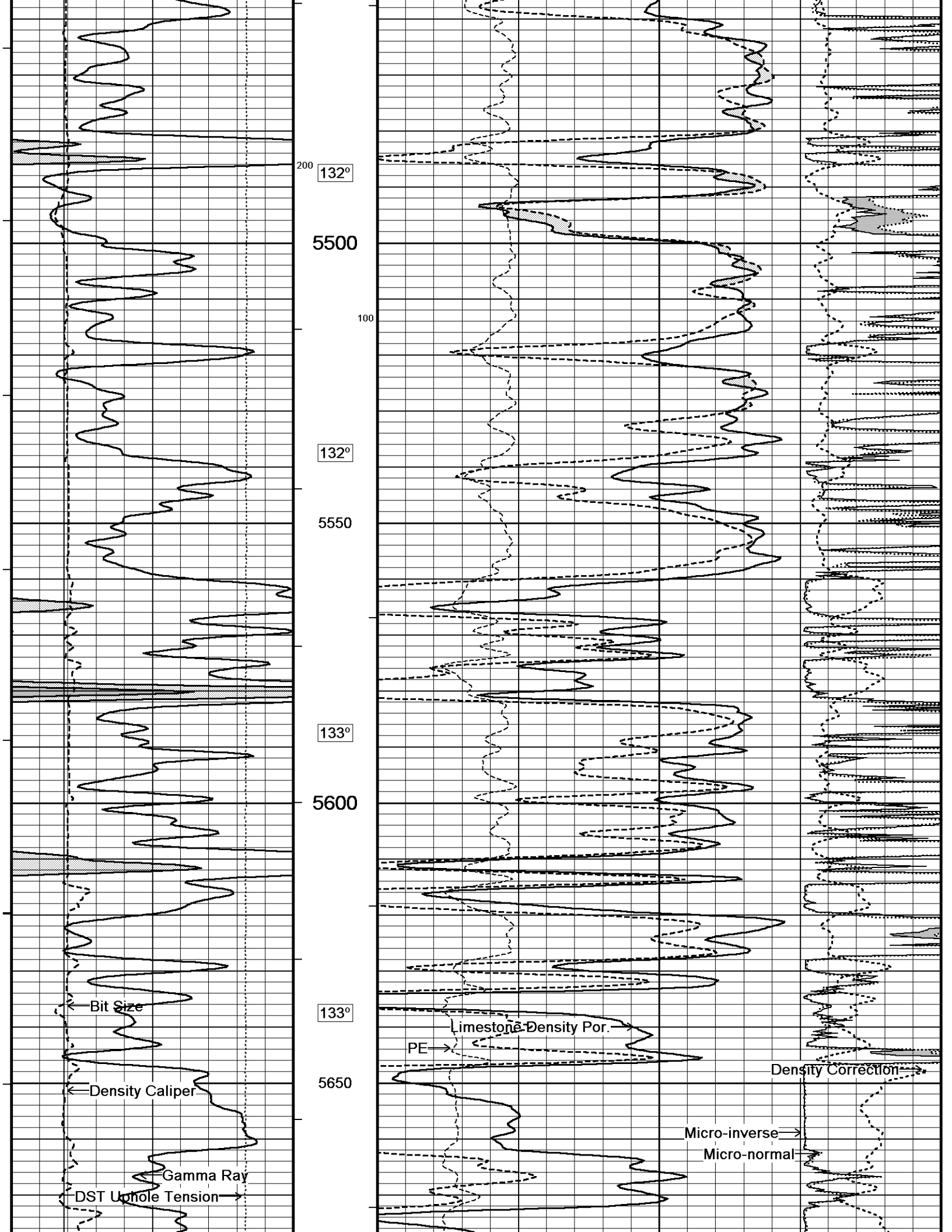


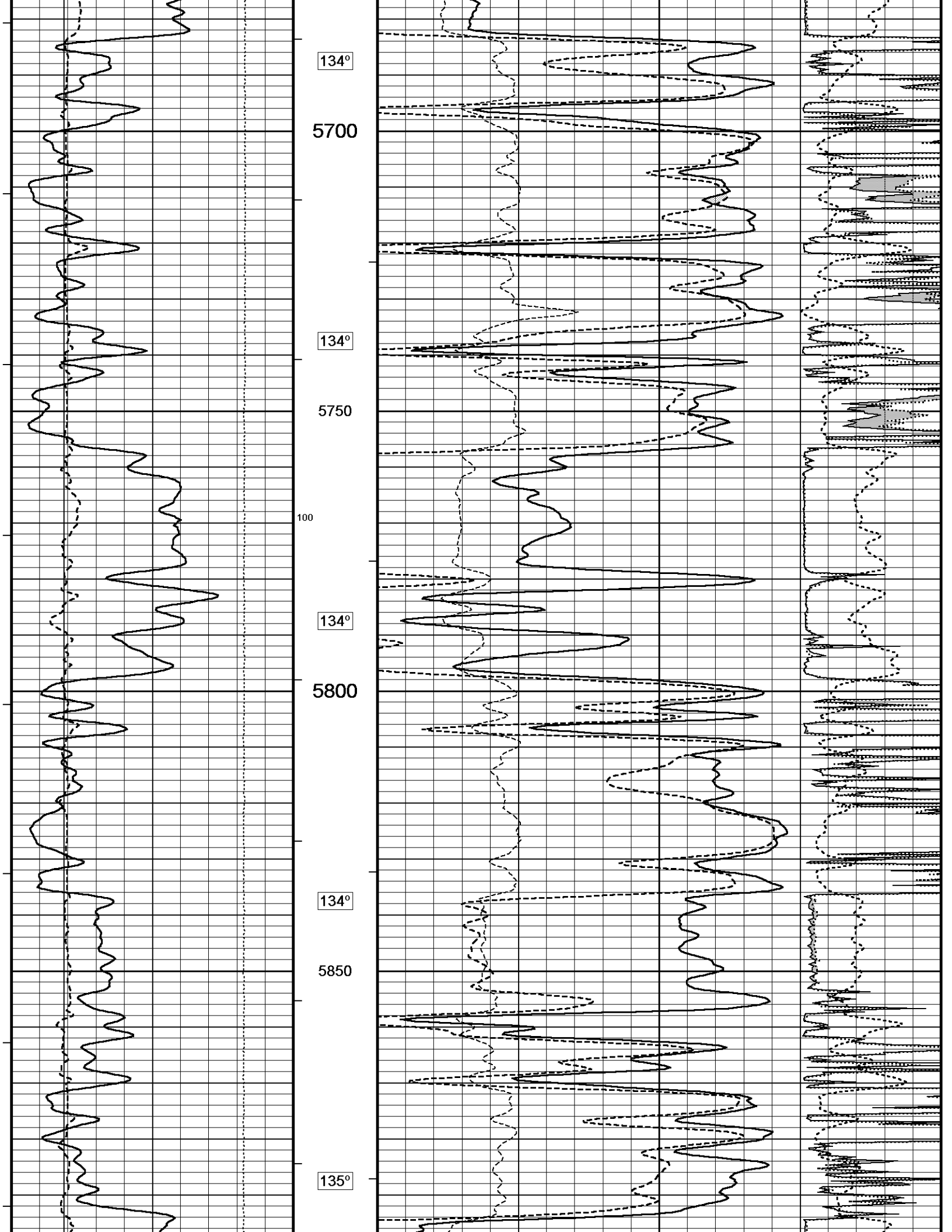


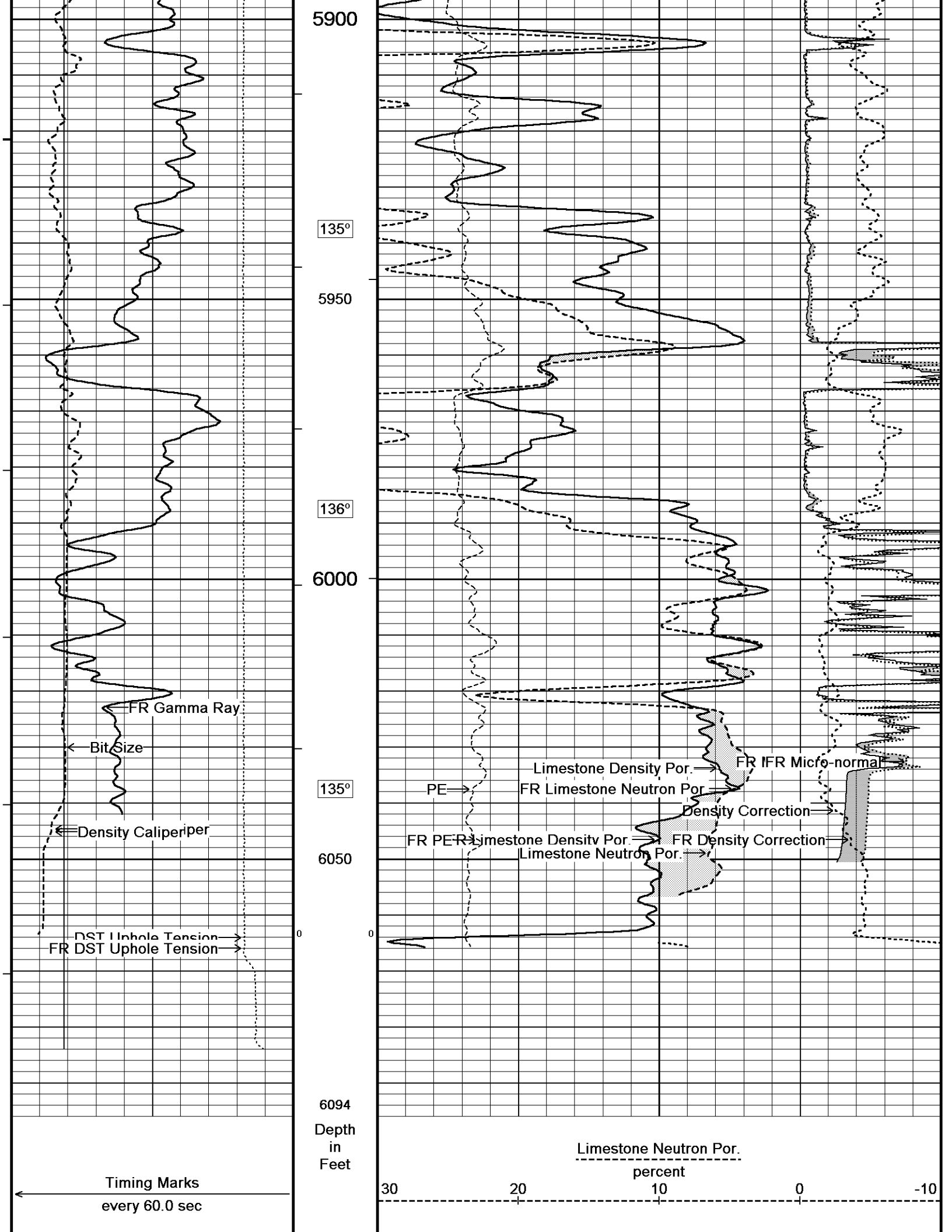


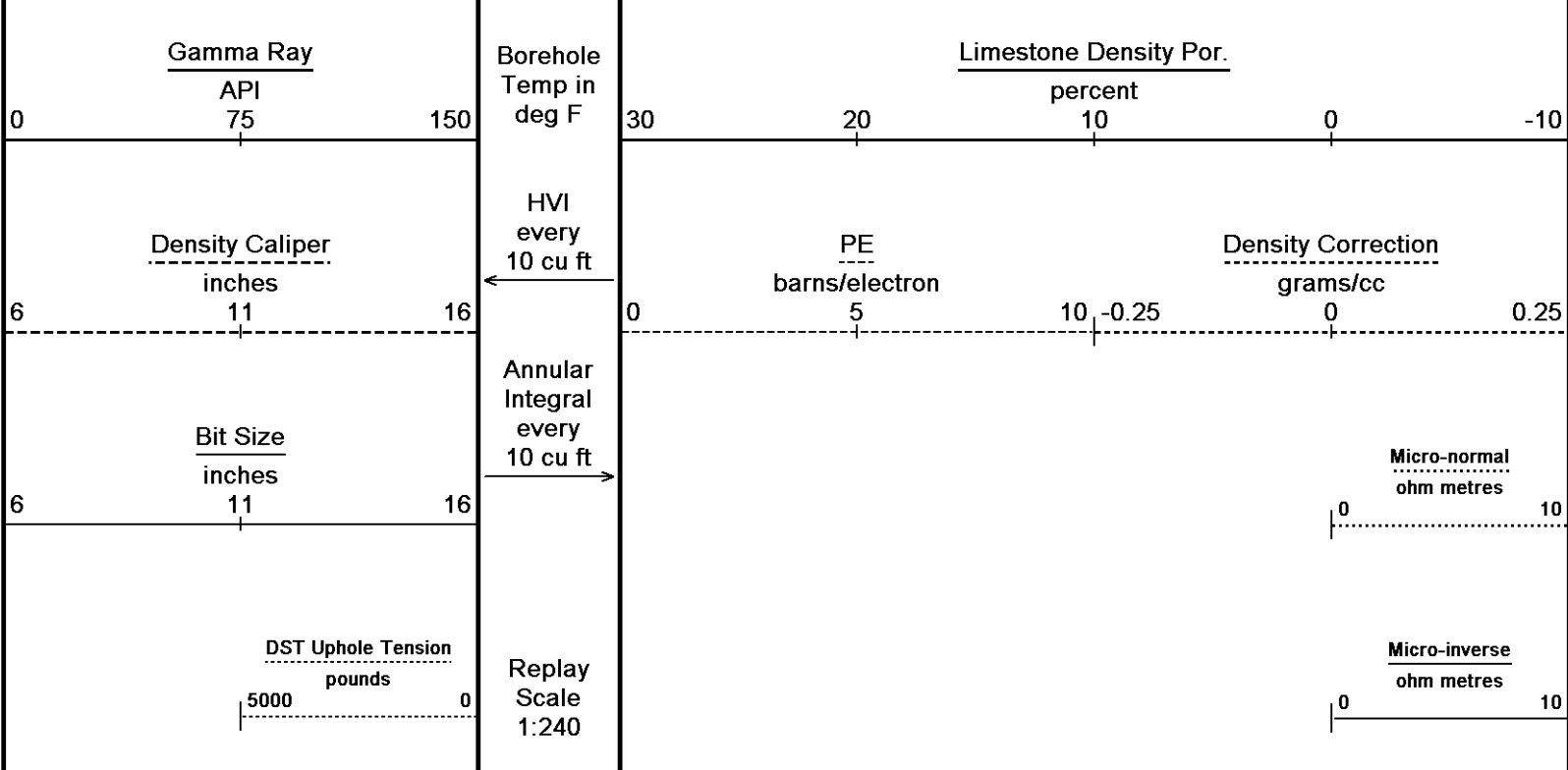










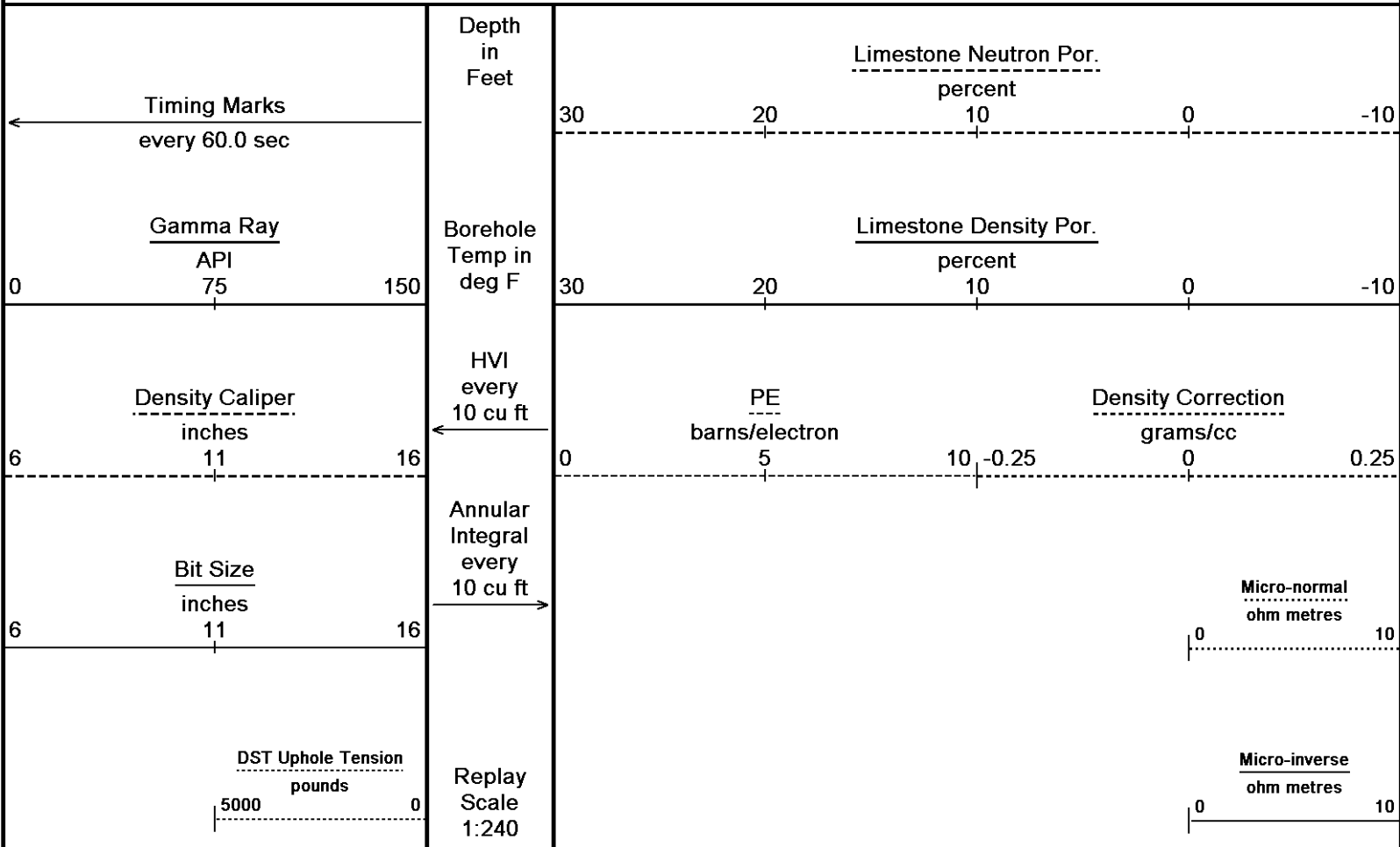


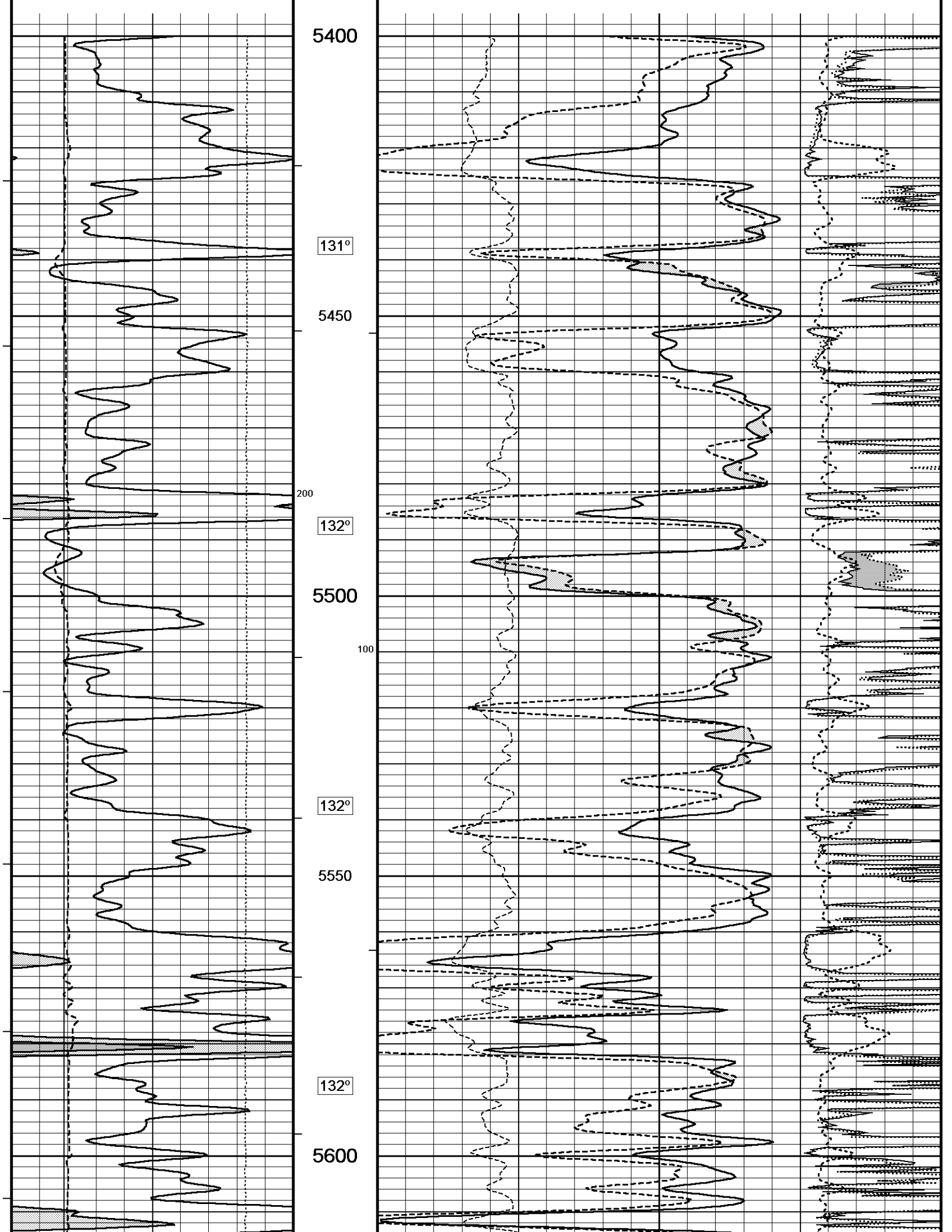
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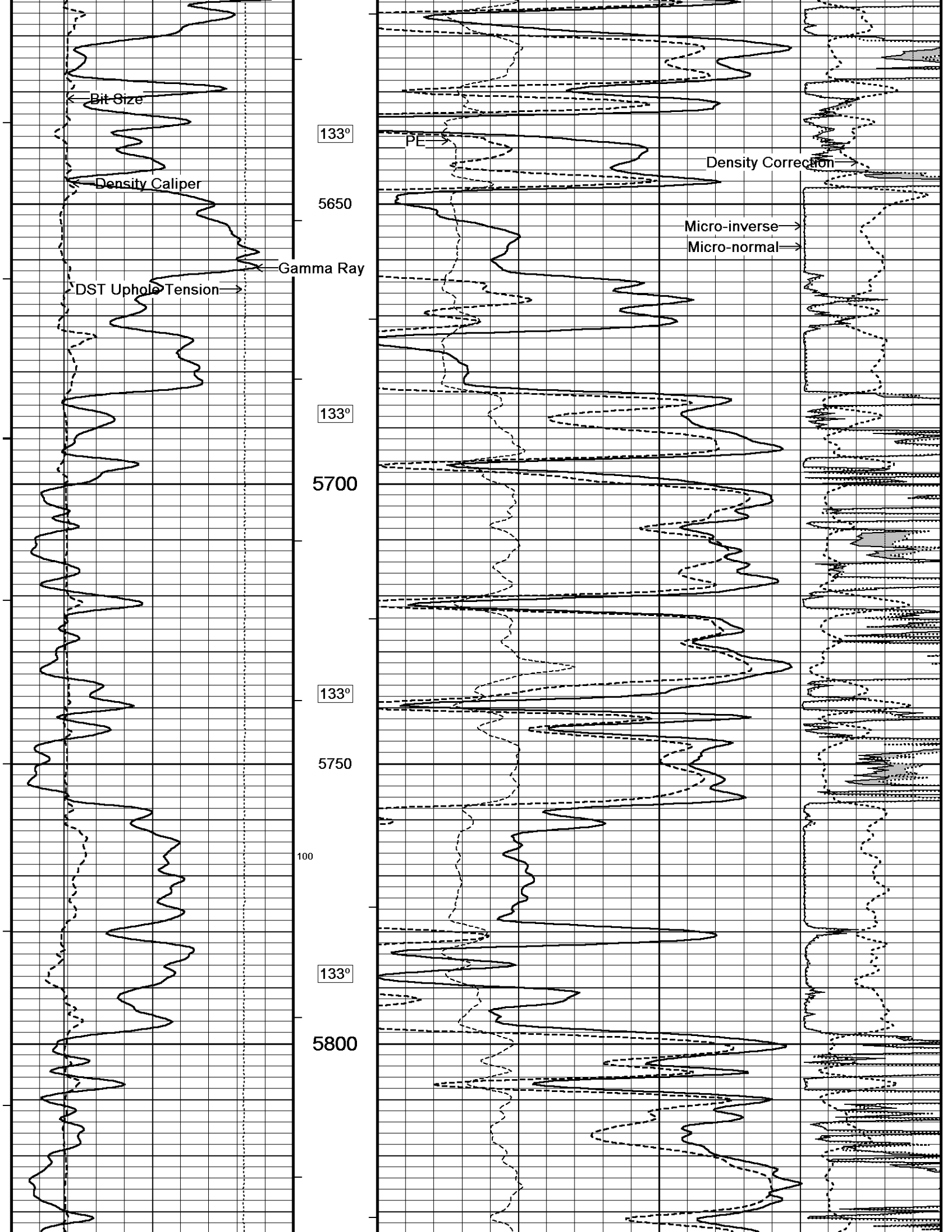
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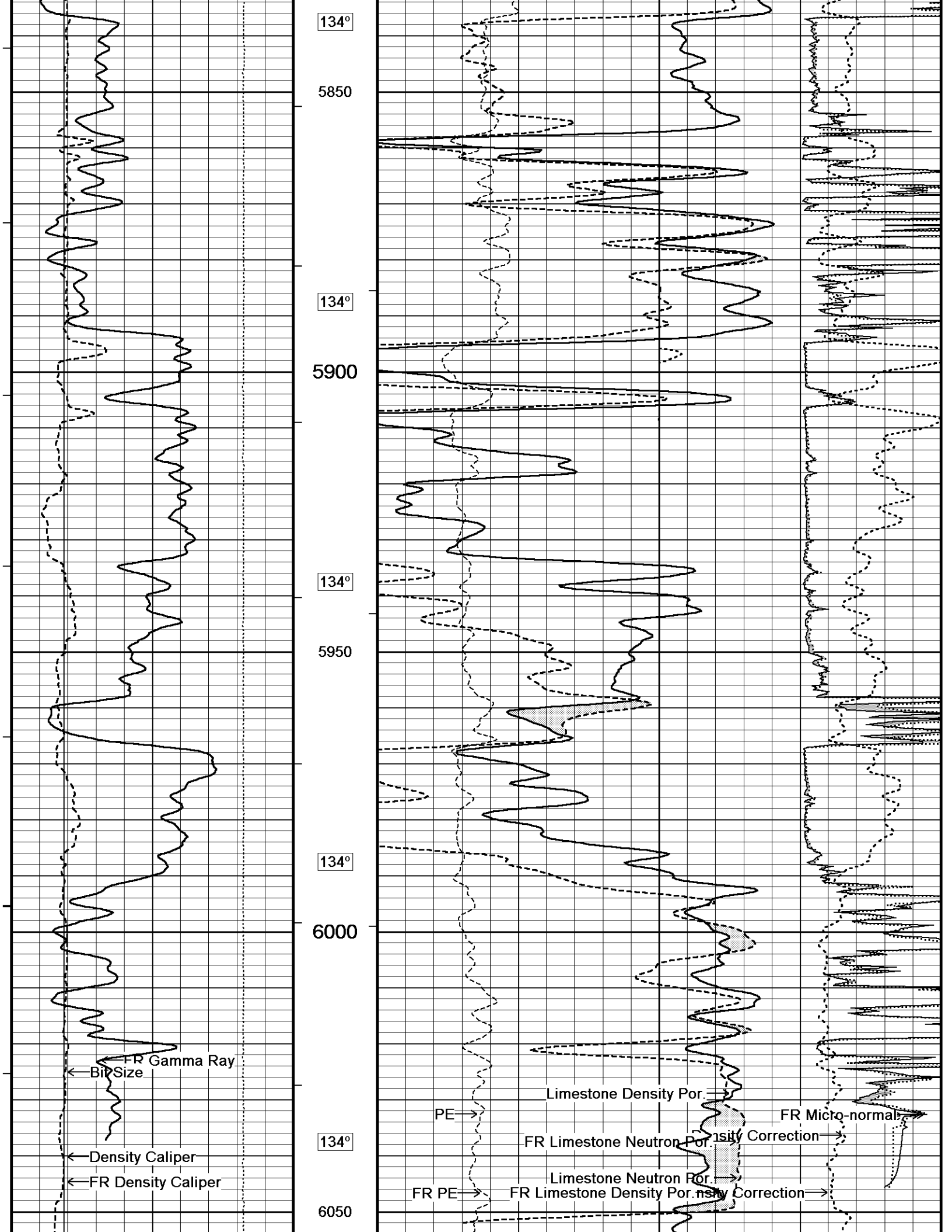
↓ Repeat Section ↓

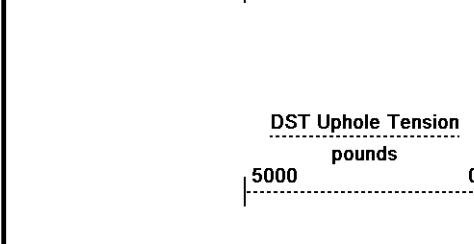
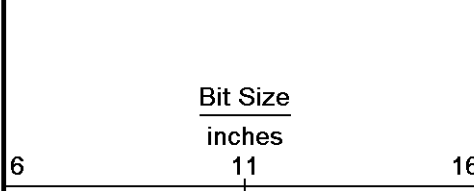
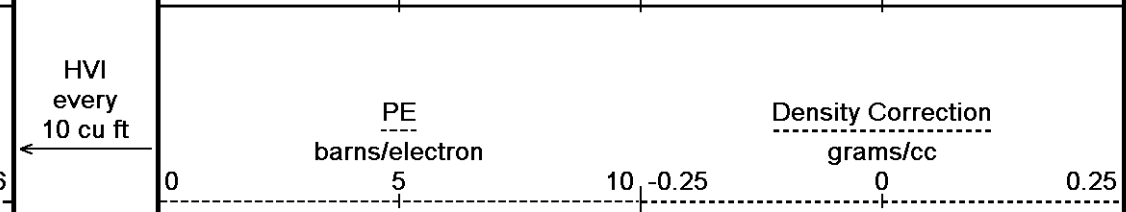
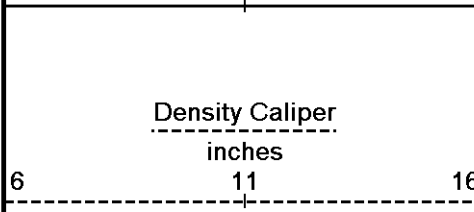
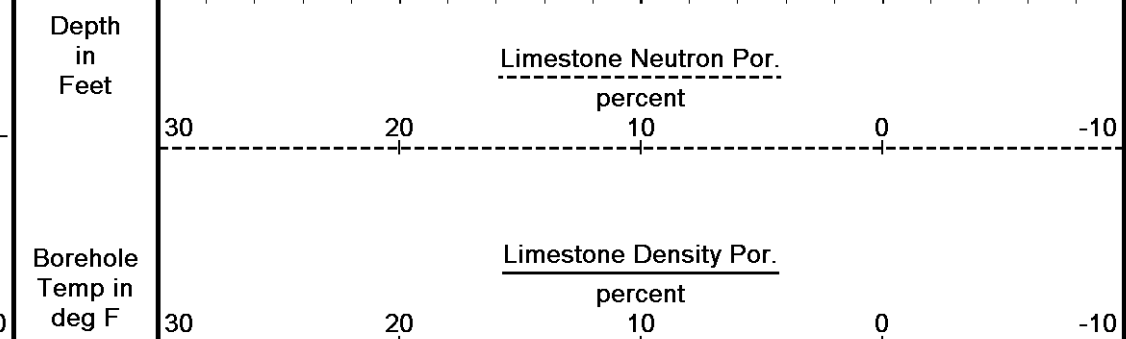
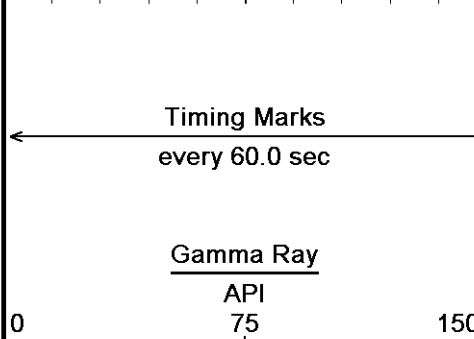
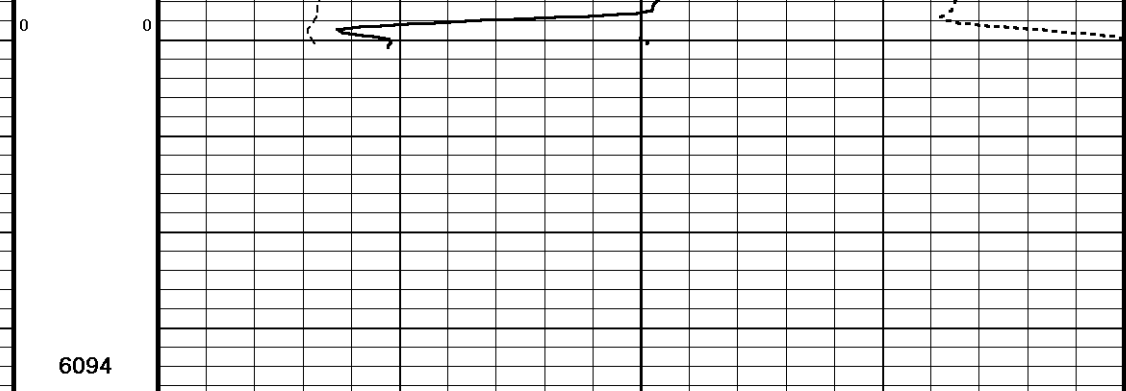
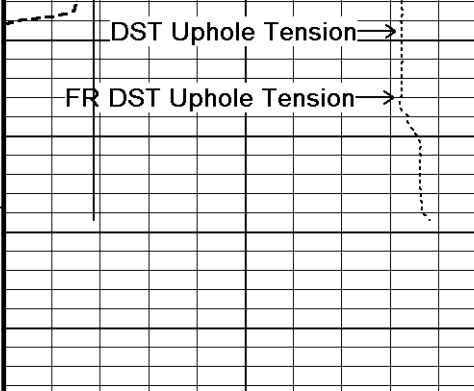
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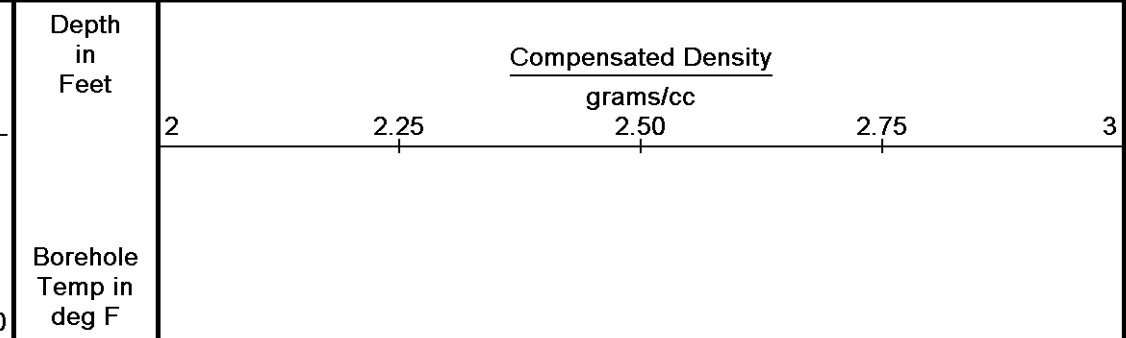
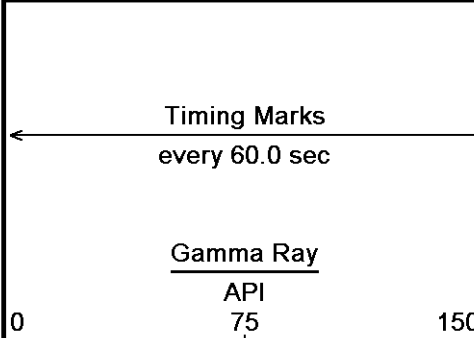


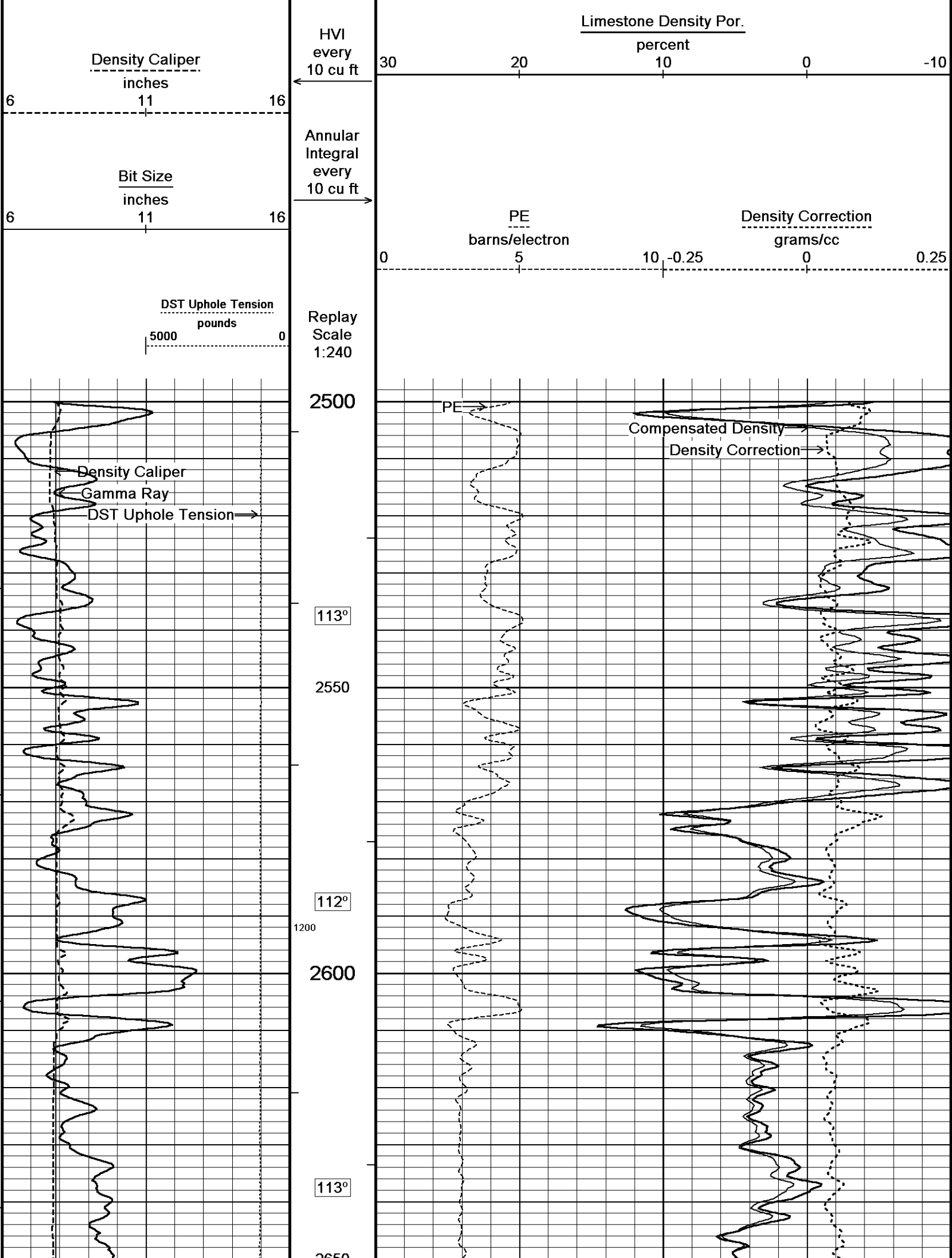


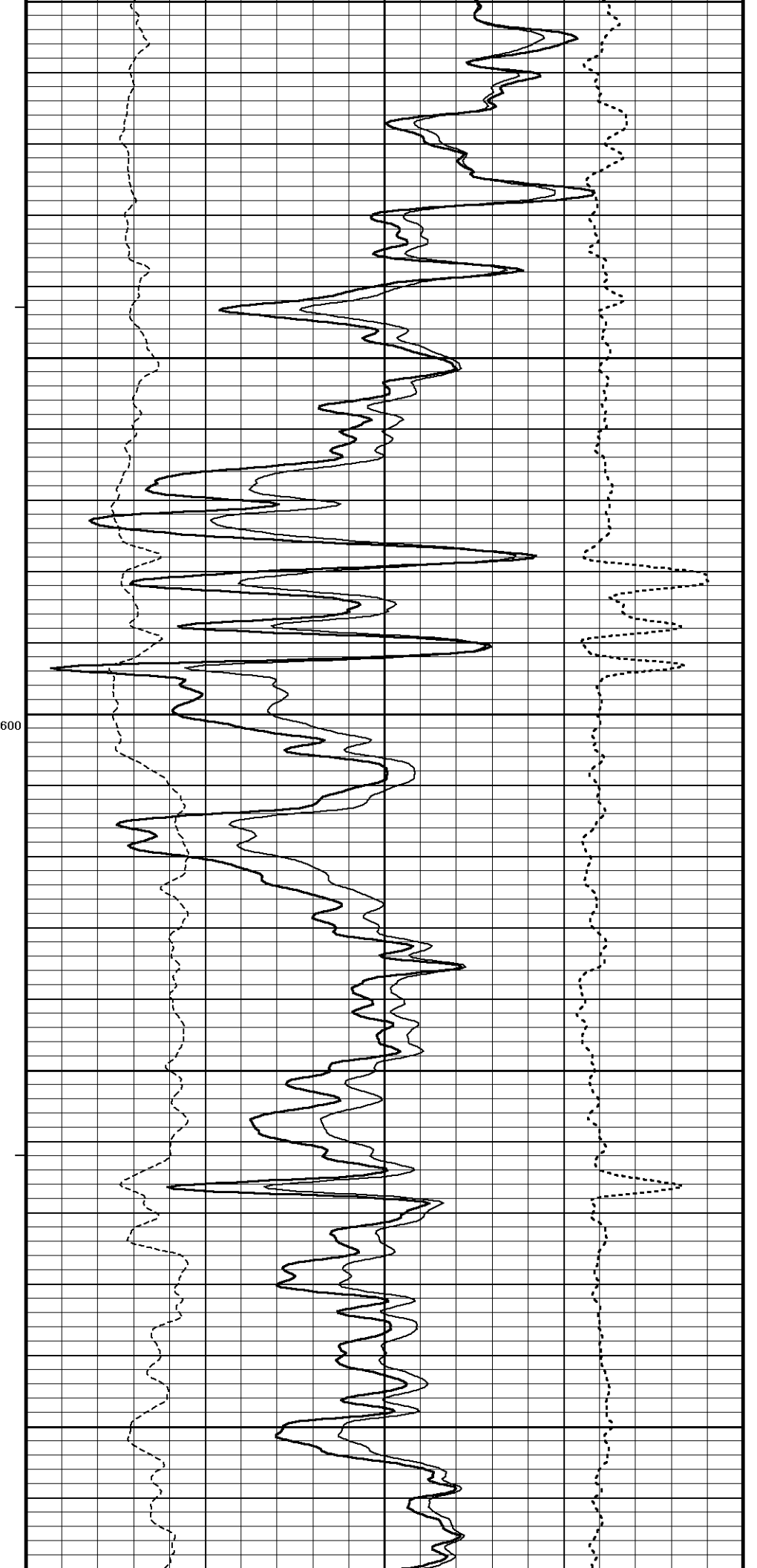
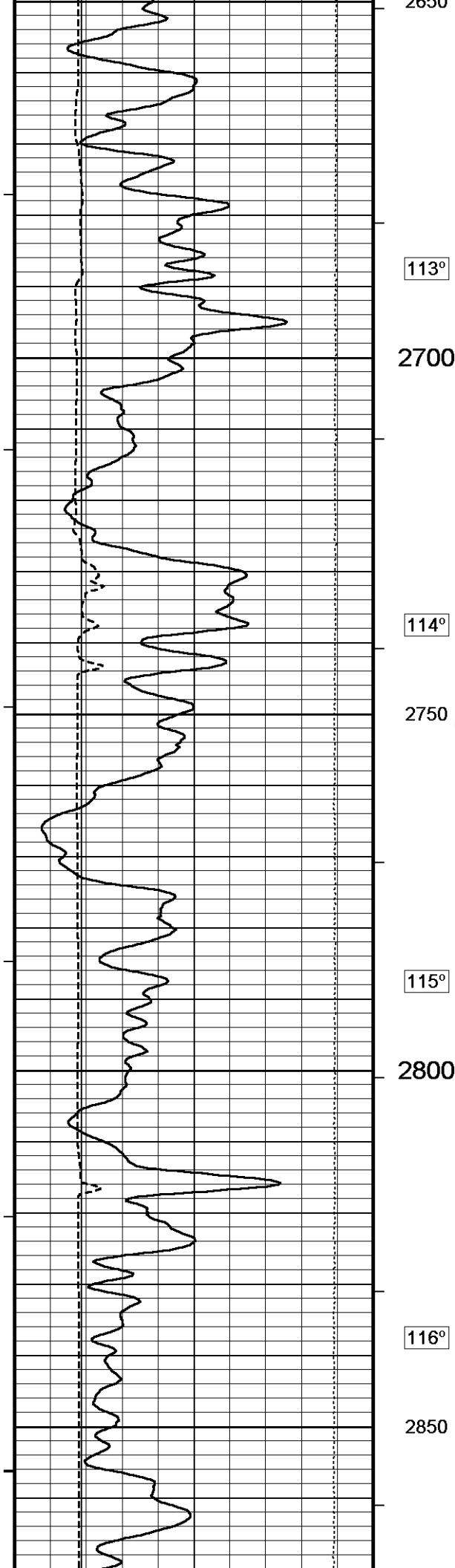
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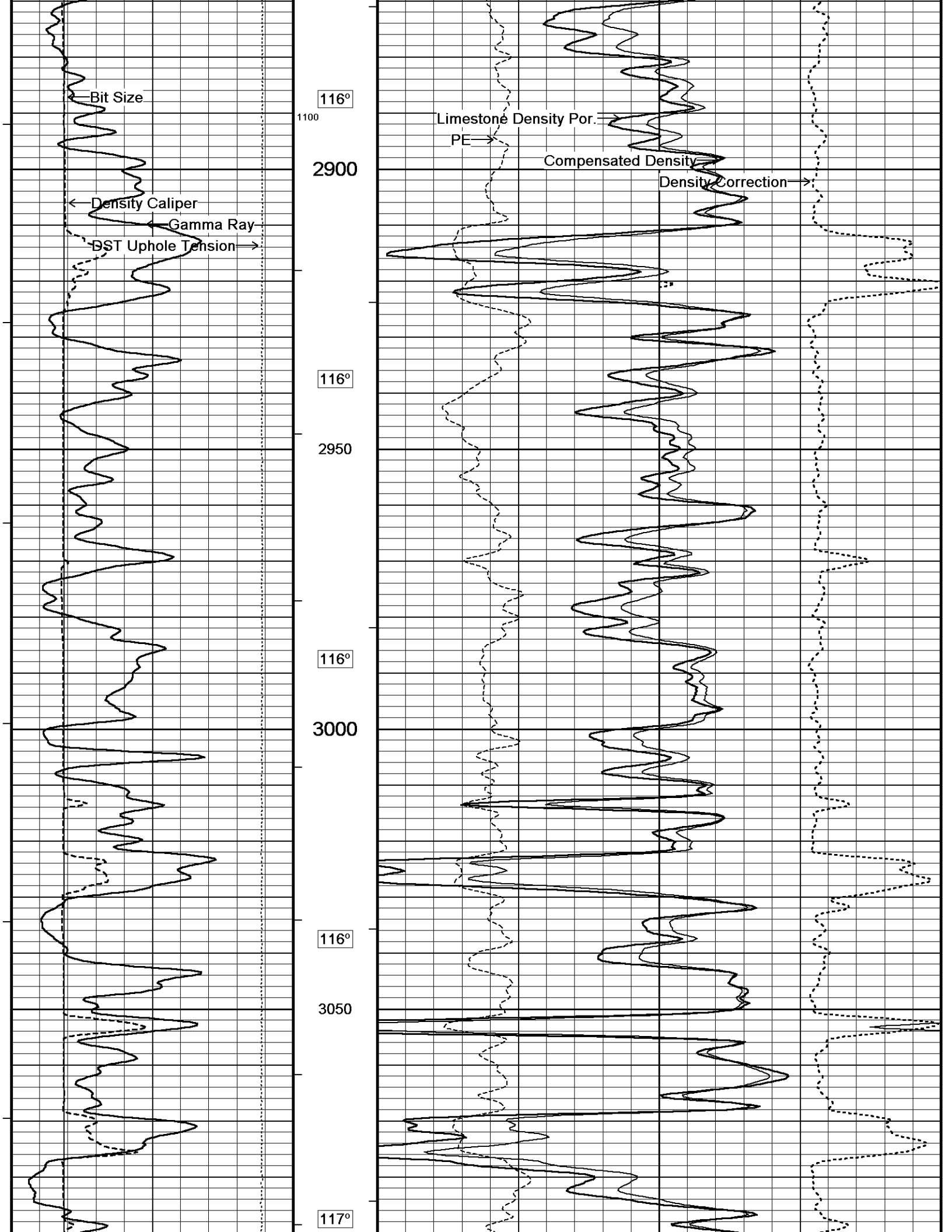
↑ Repeat Section ↑

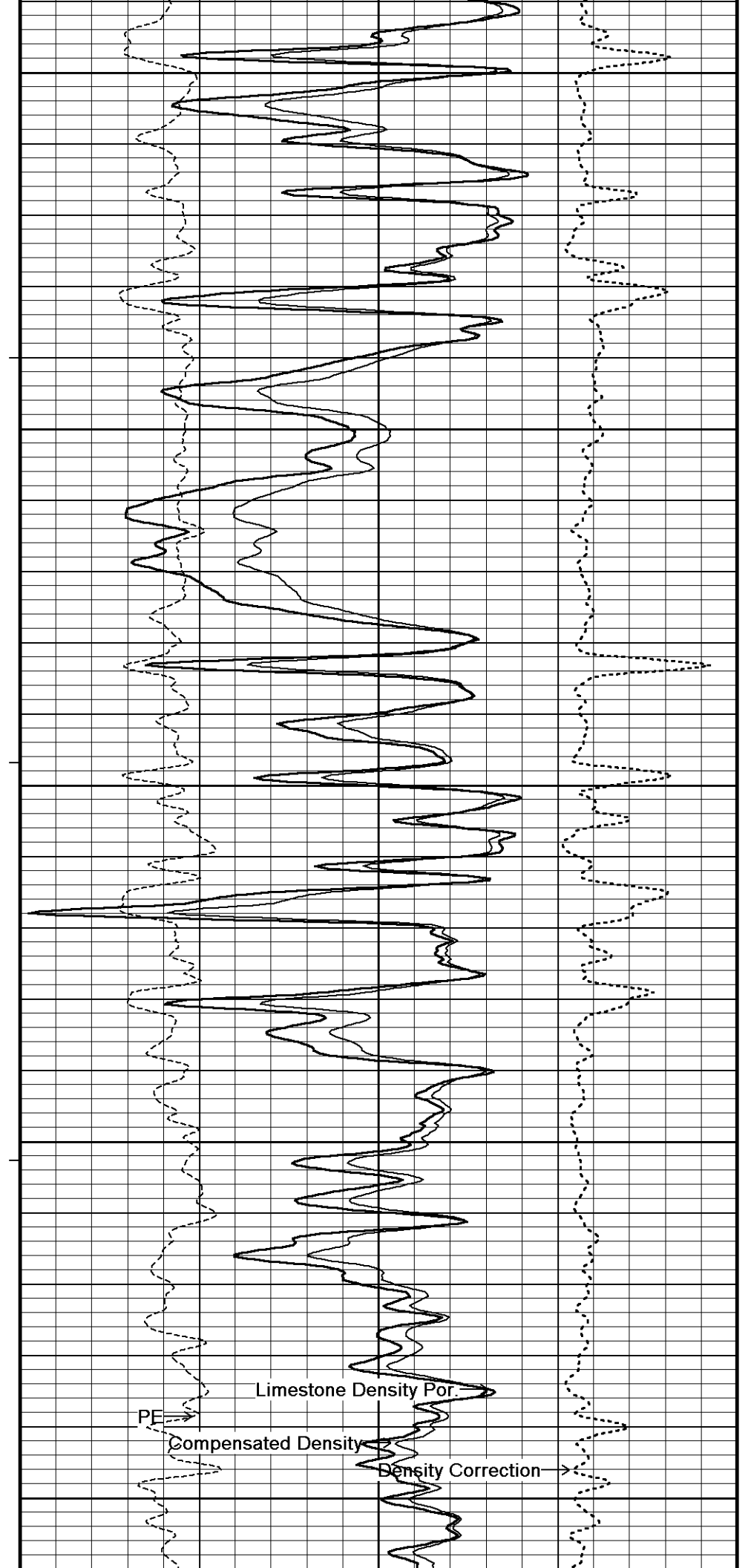
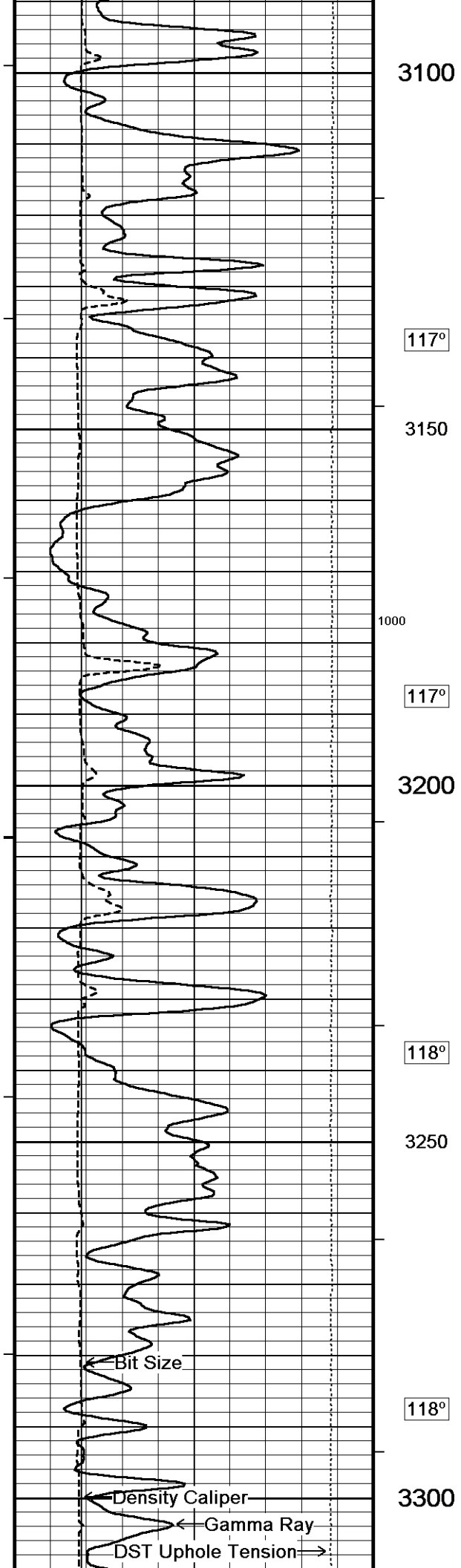
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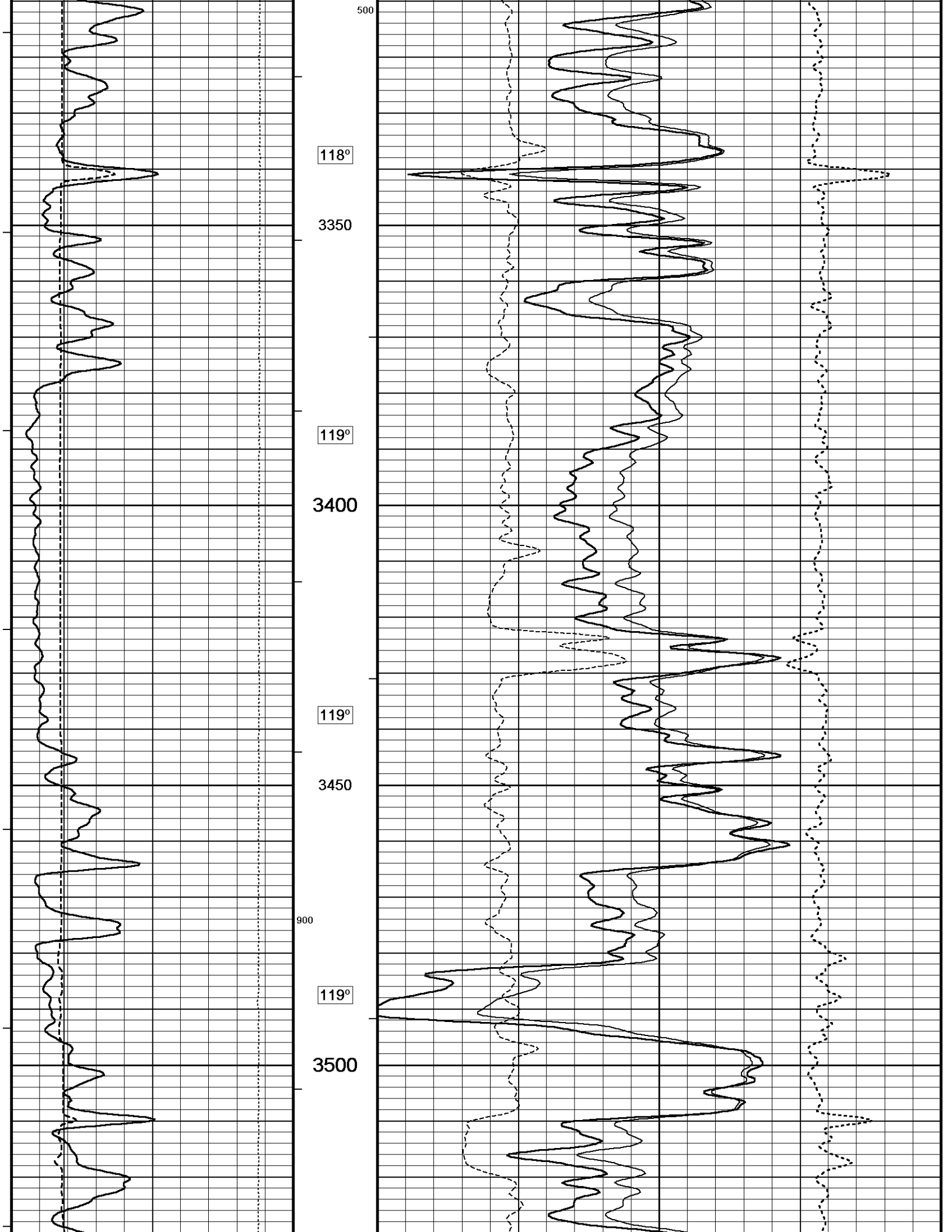


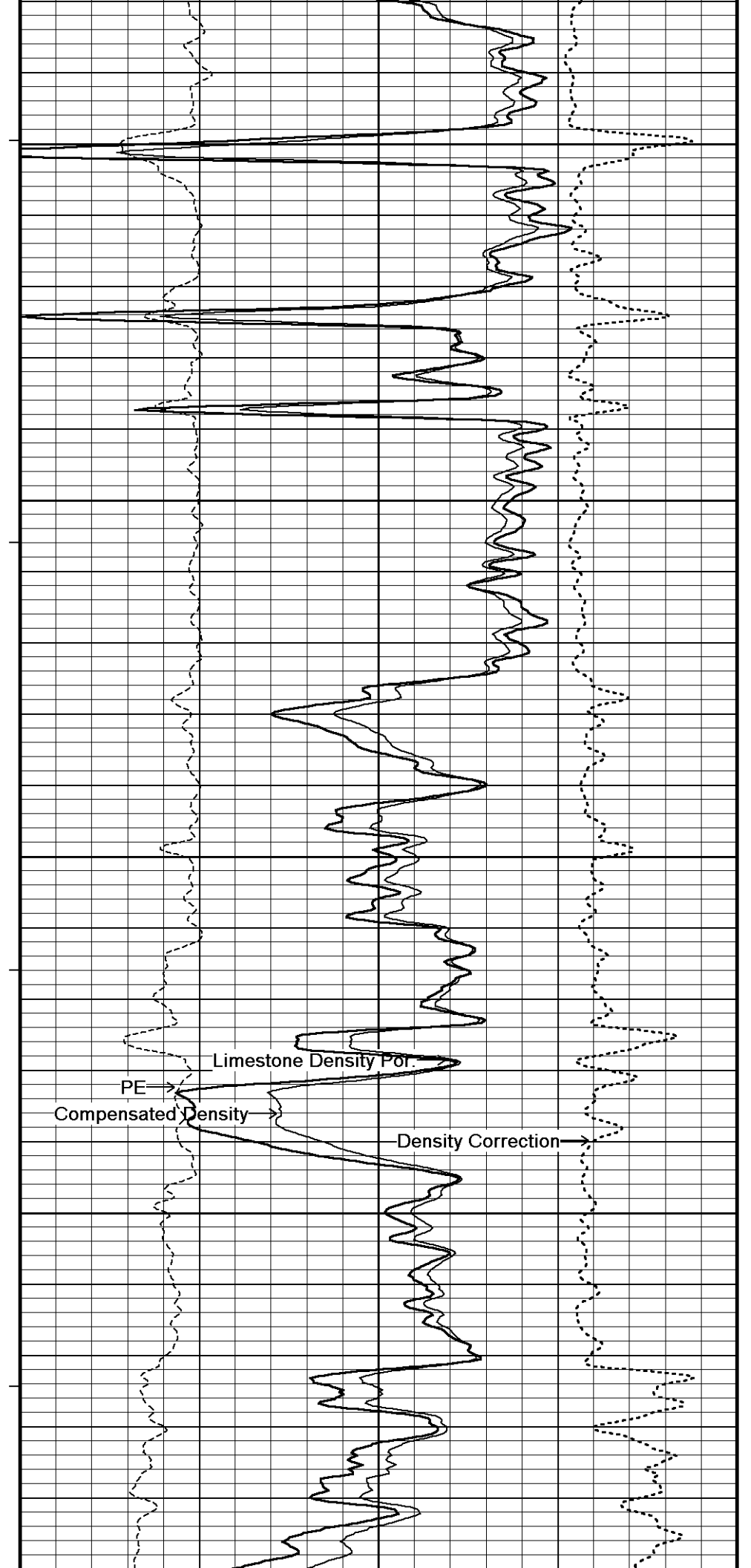
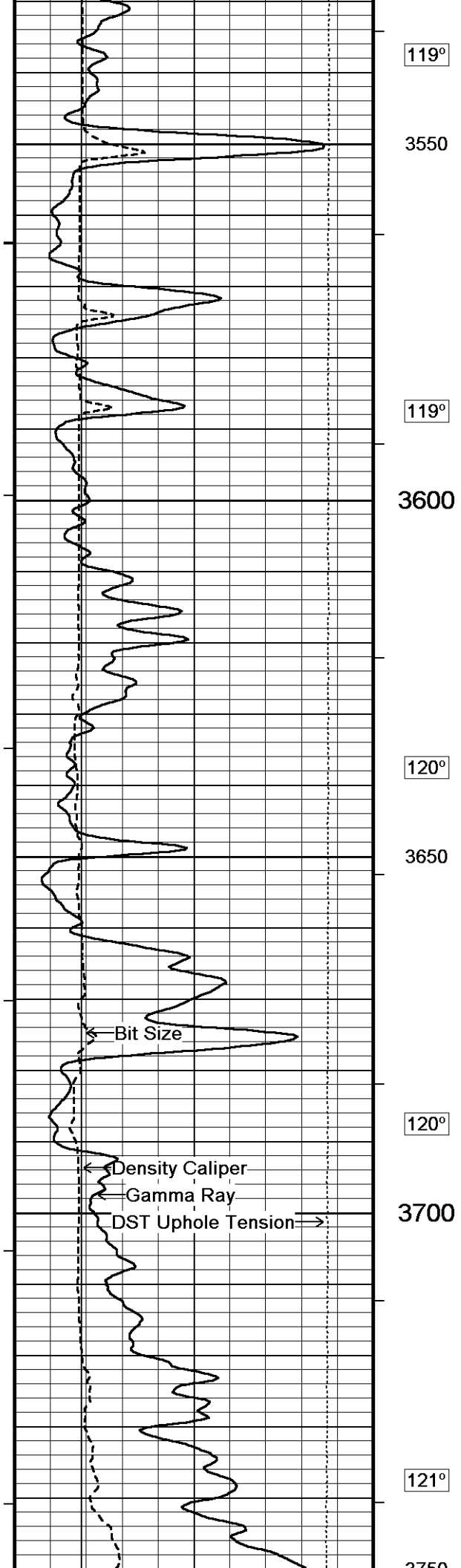


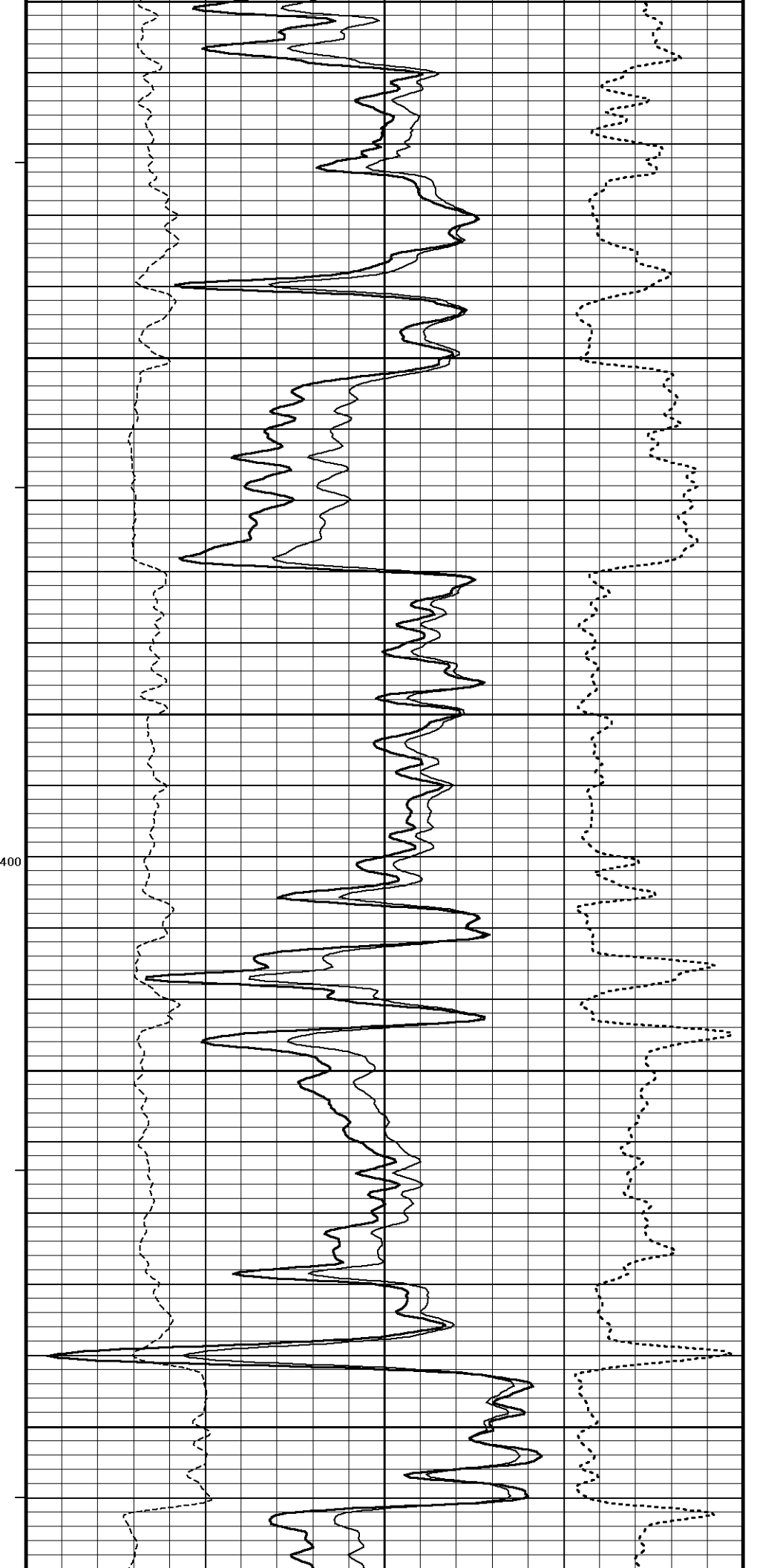
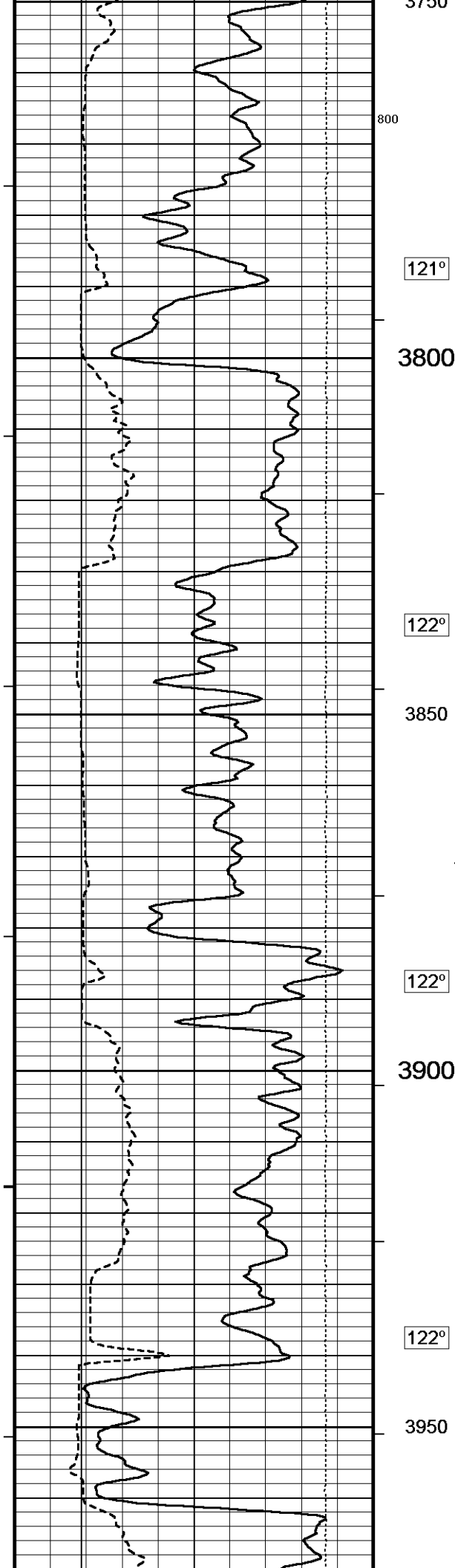


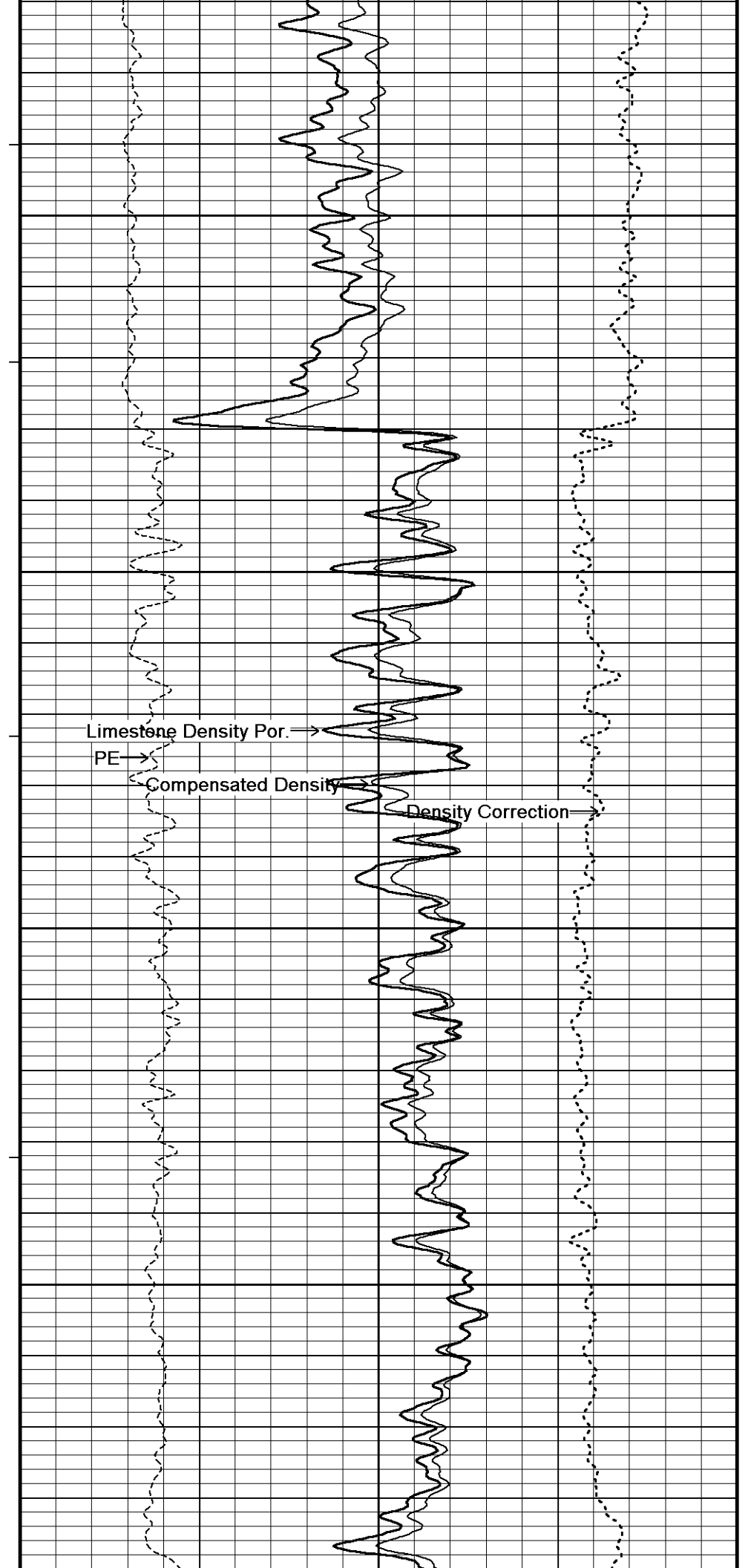
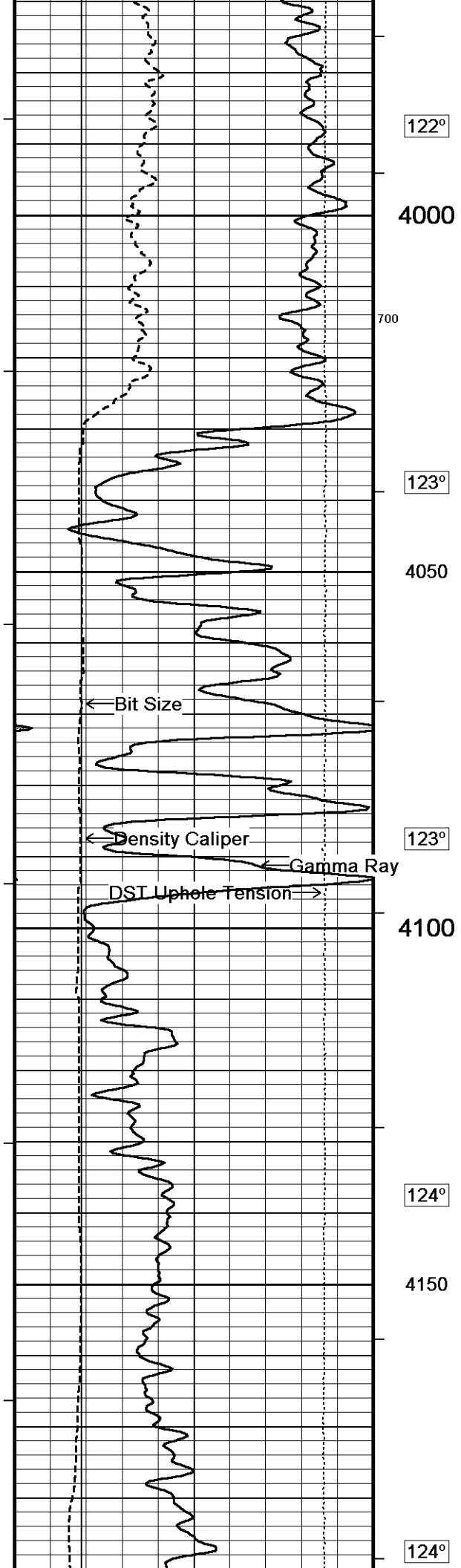


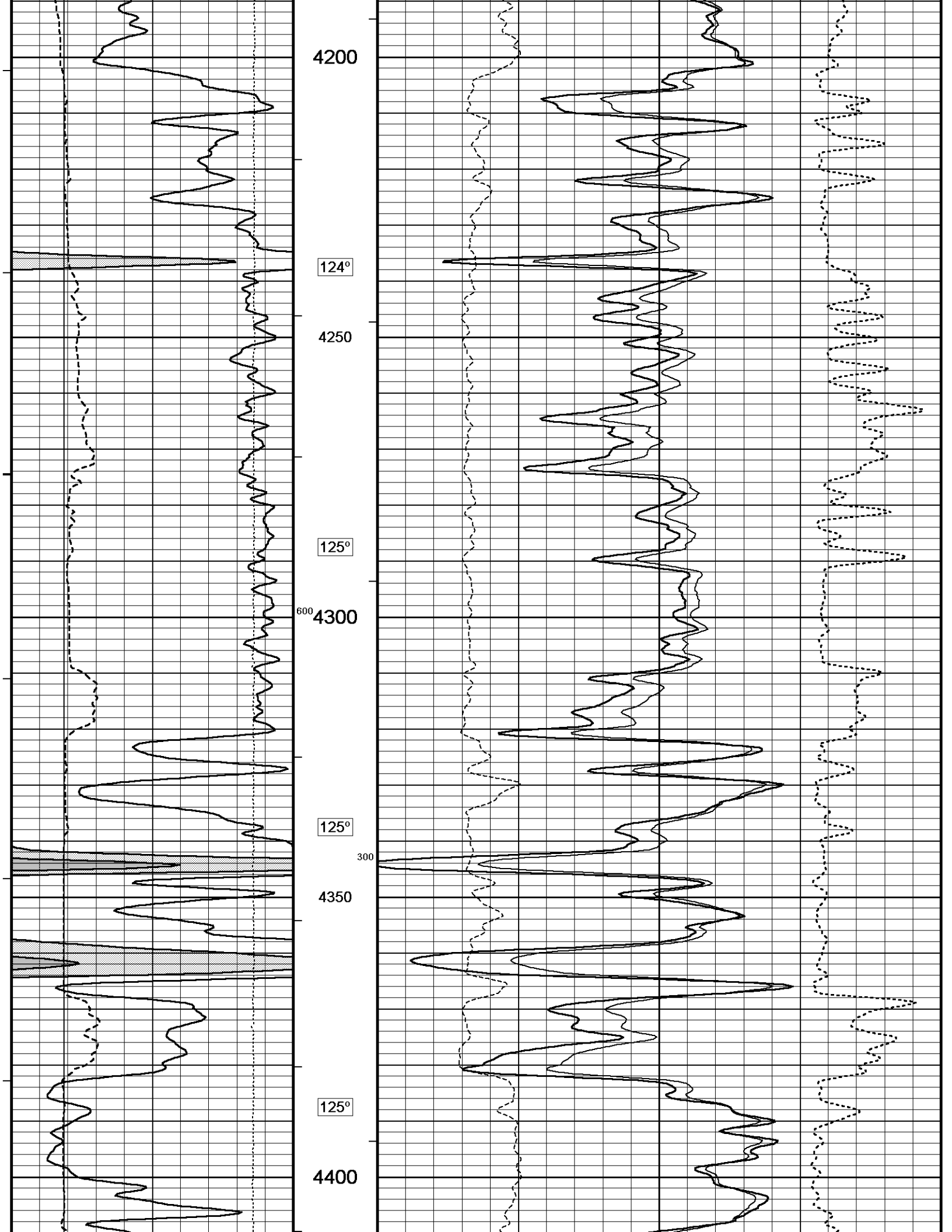


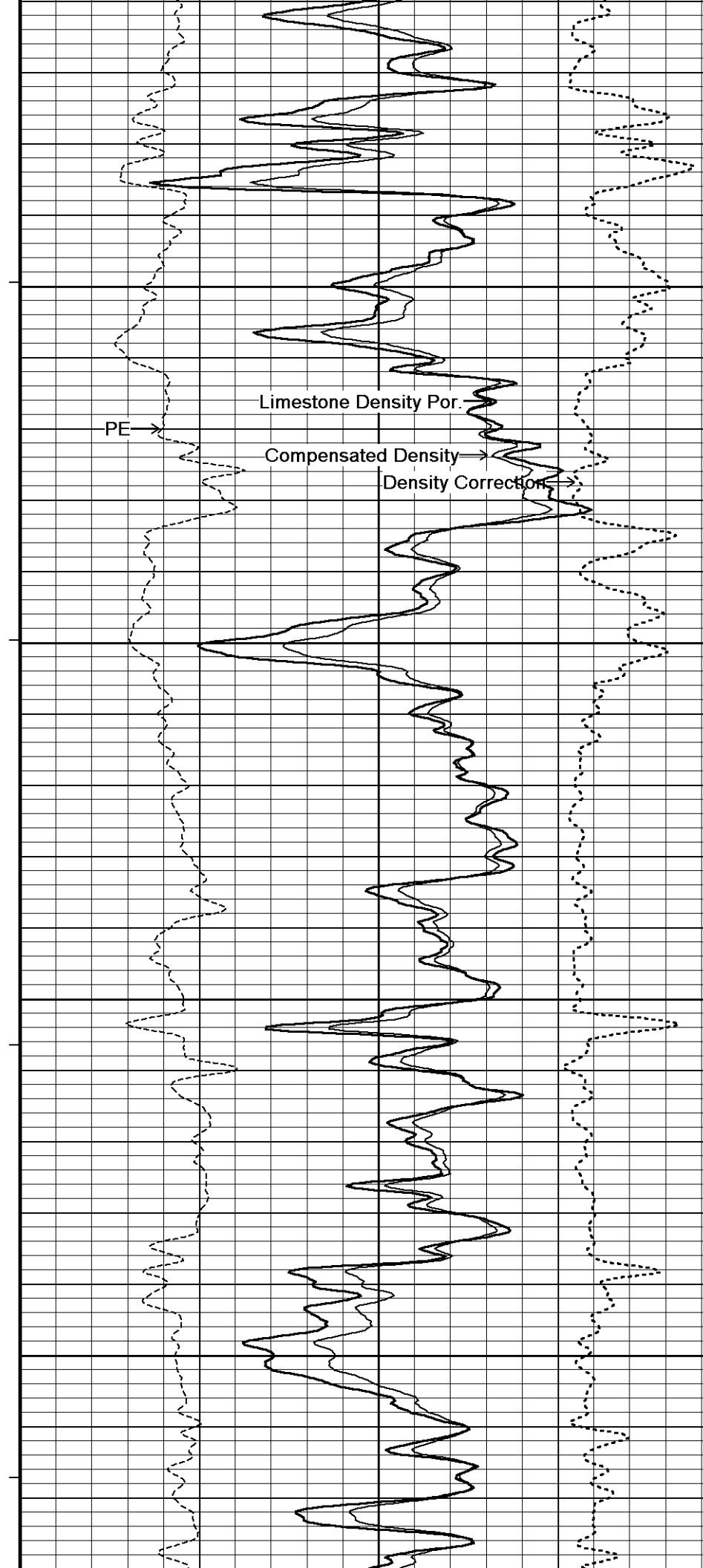
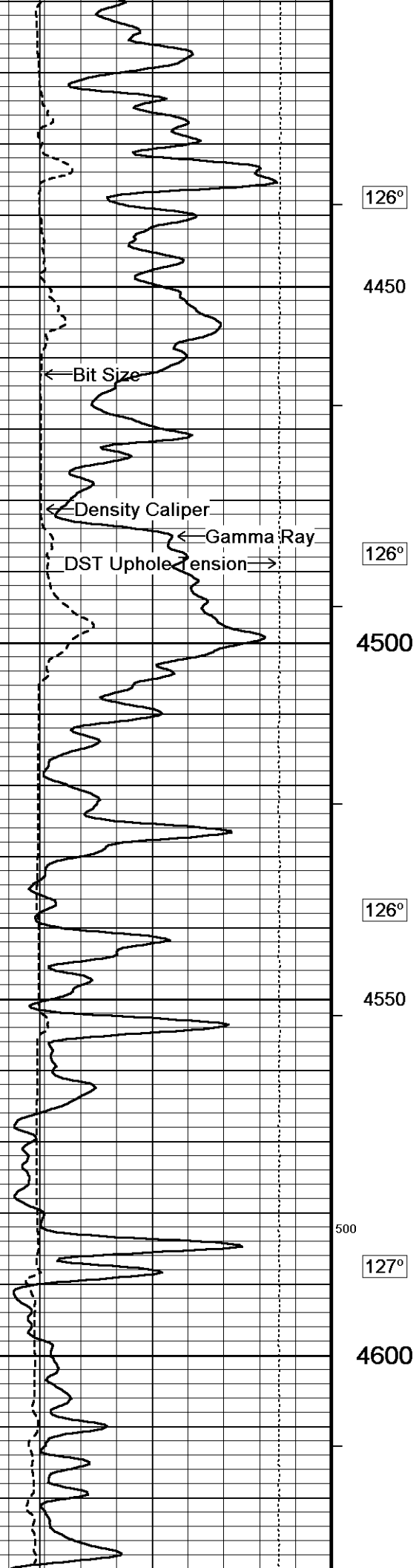


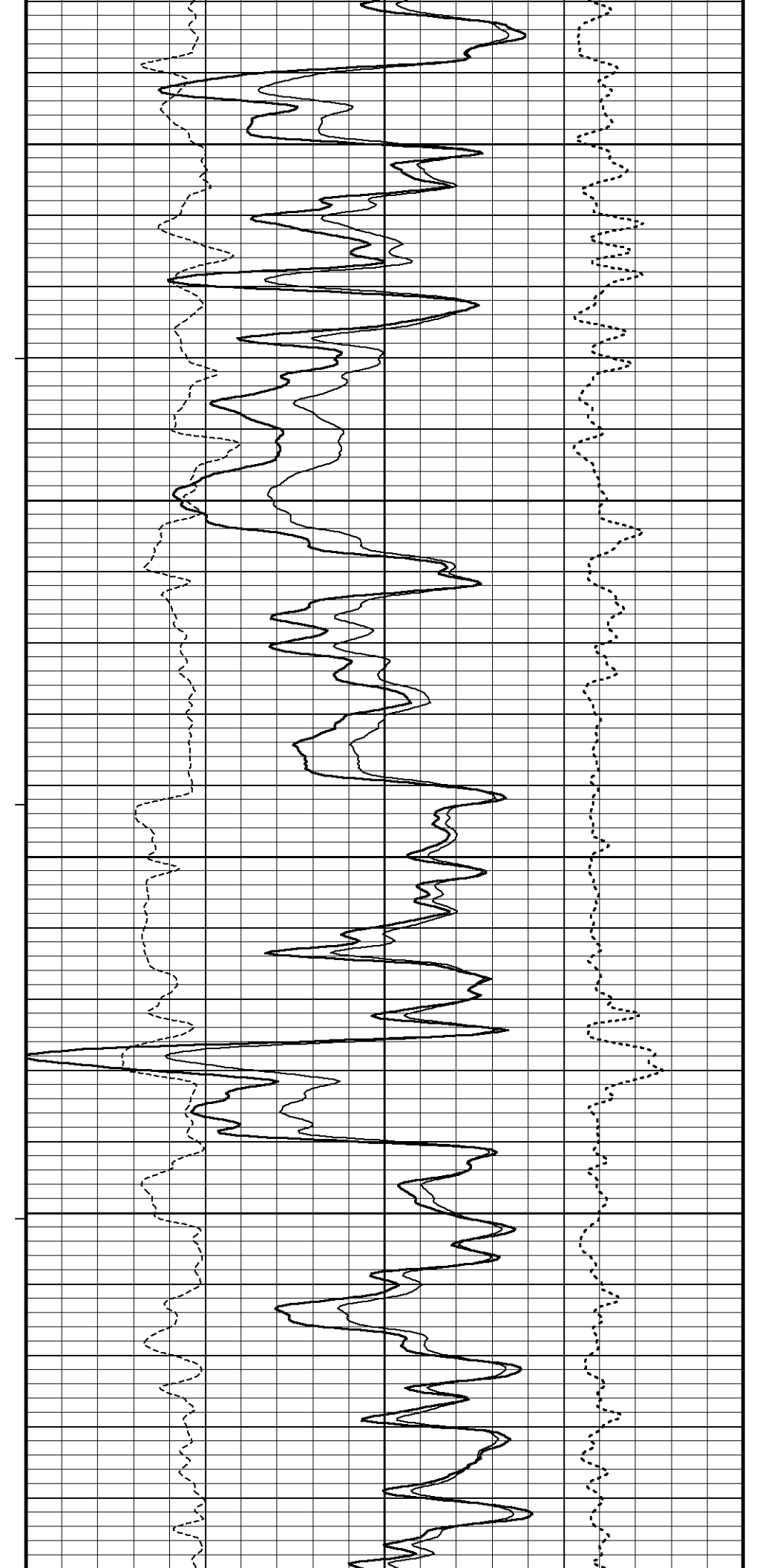
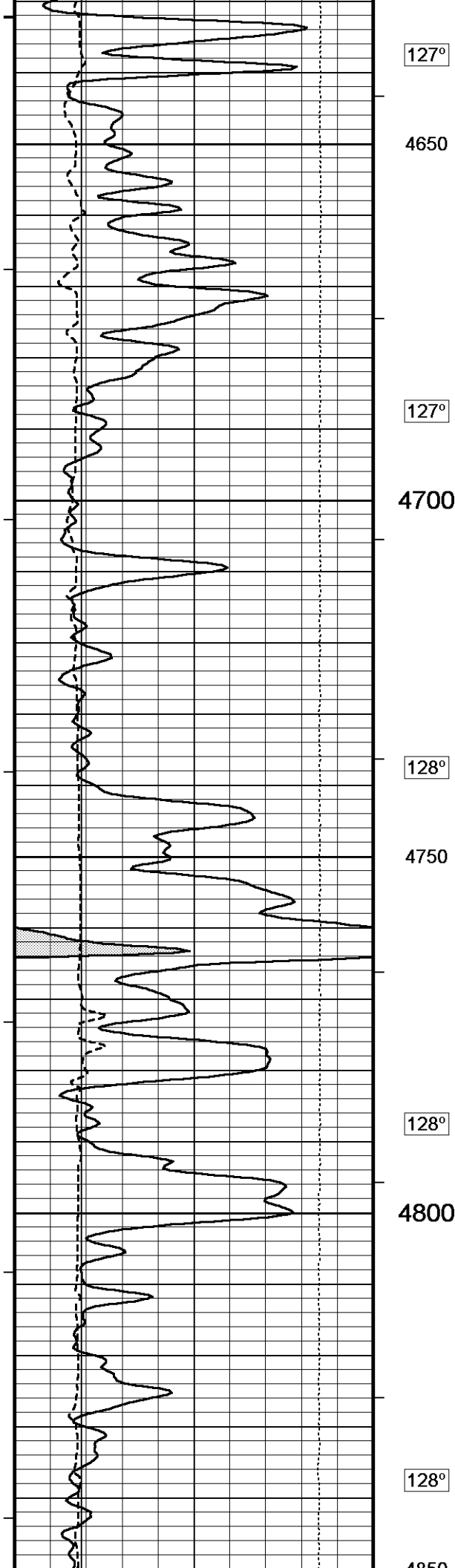


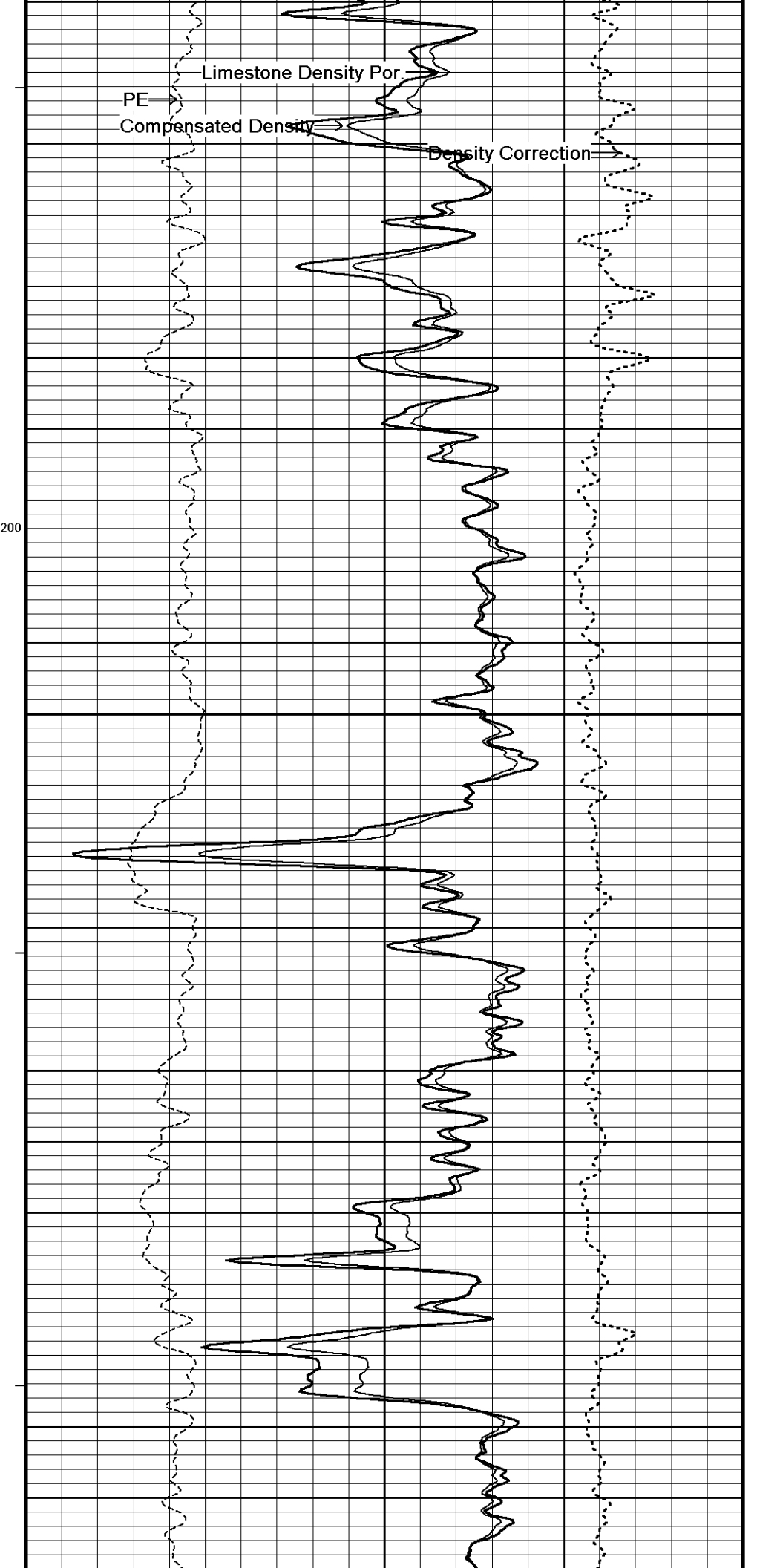
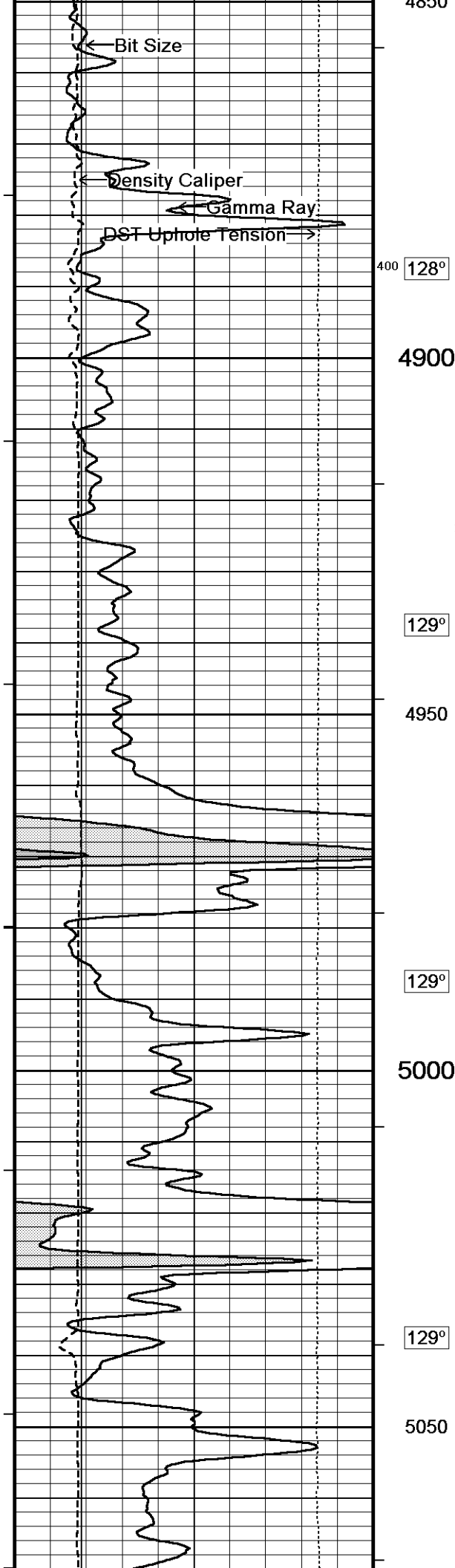


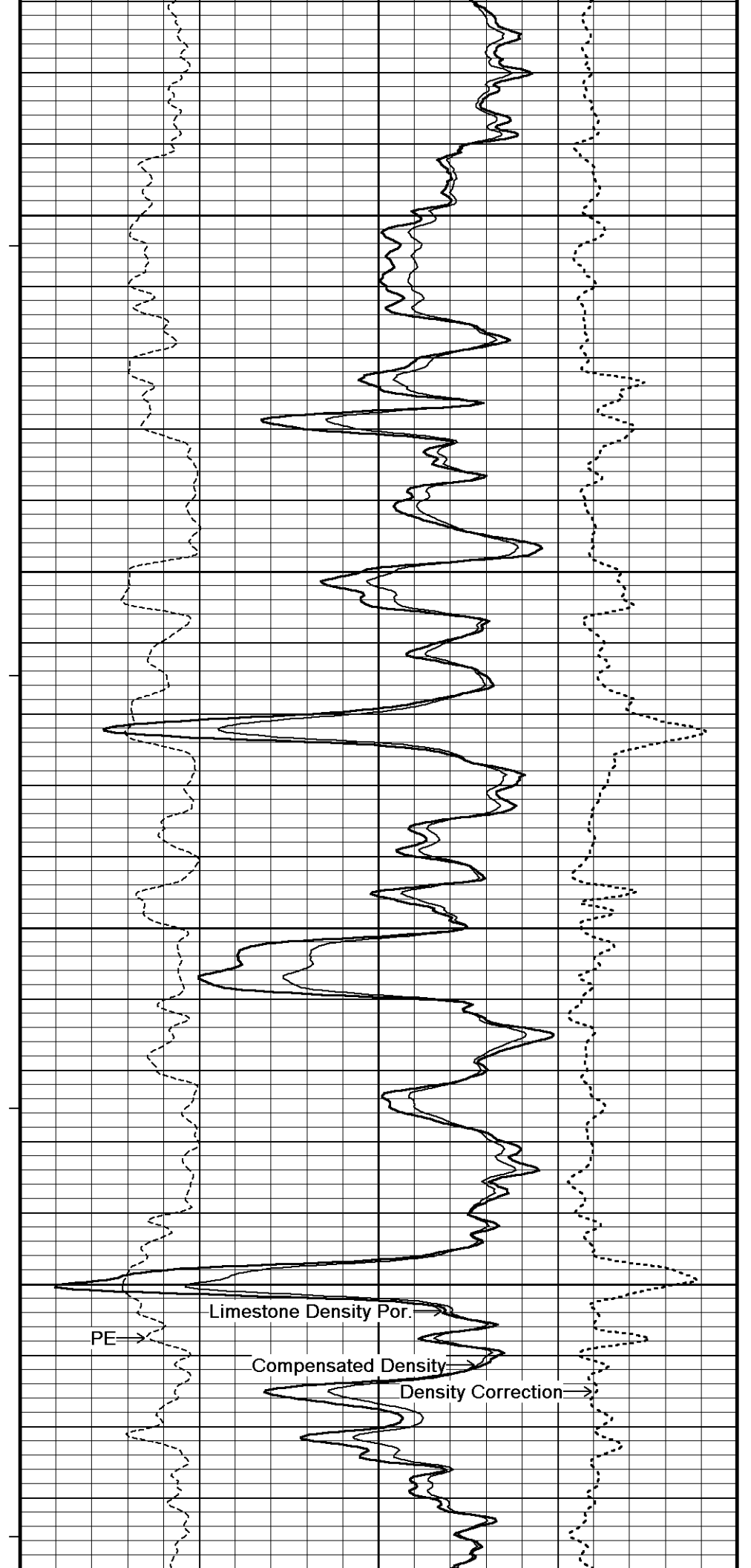
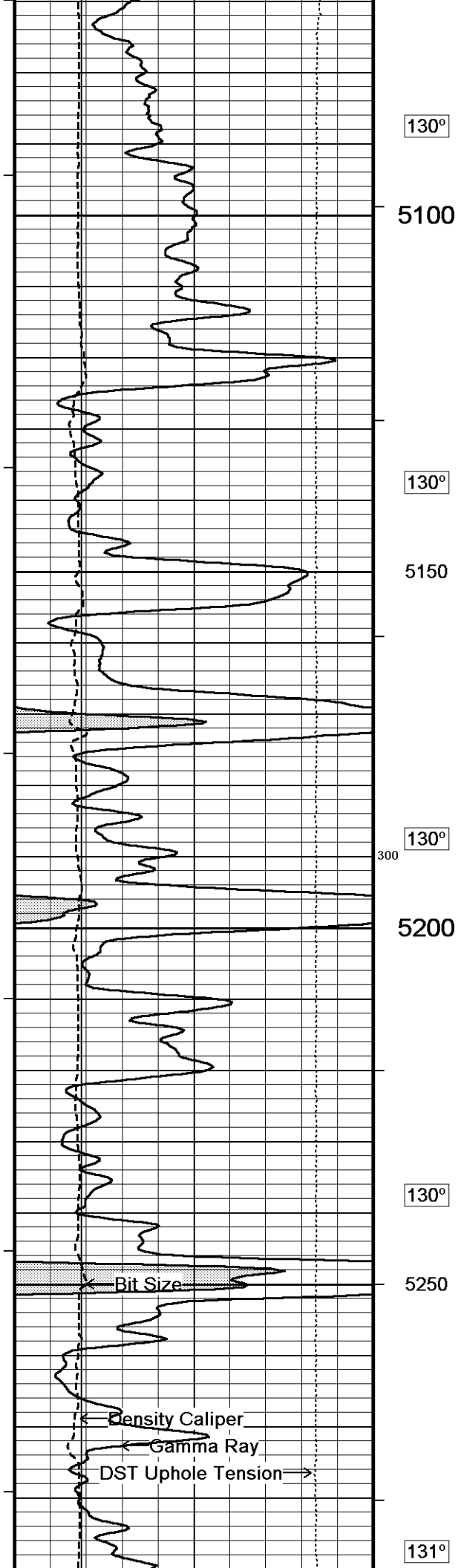


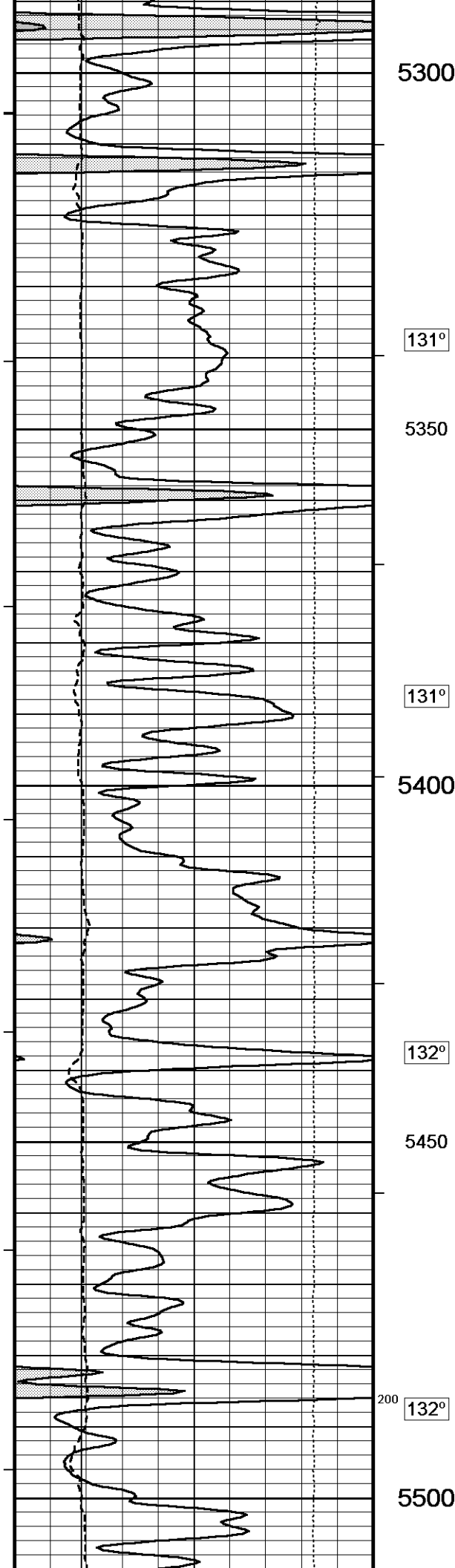












5300

131°

5350

131°

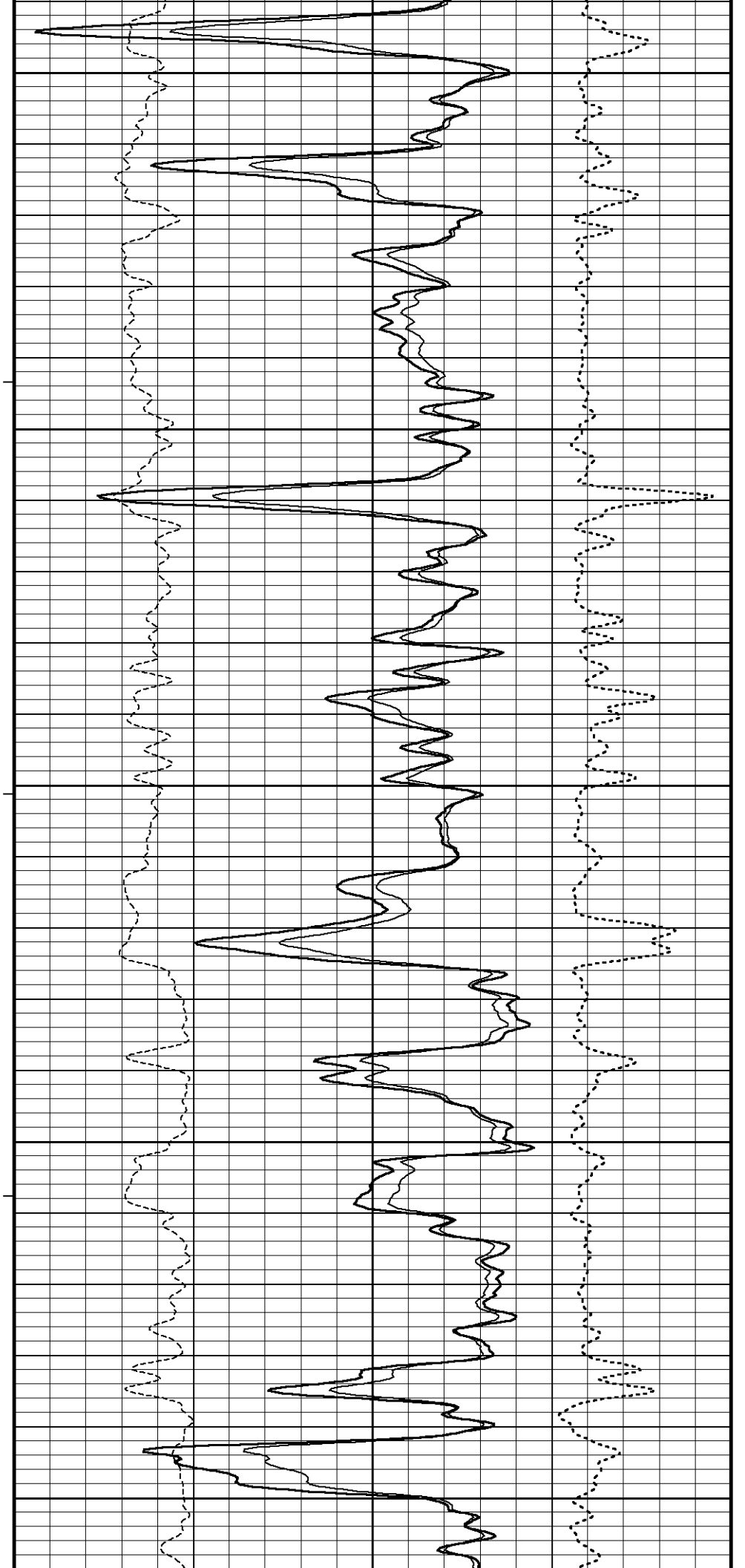
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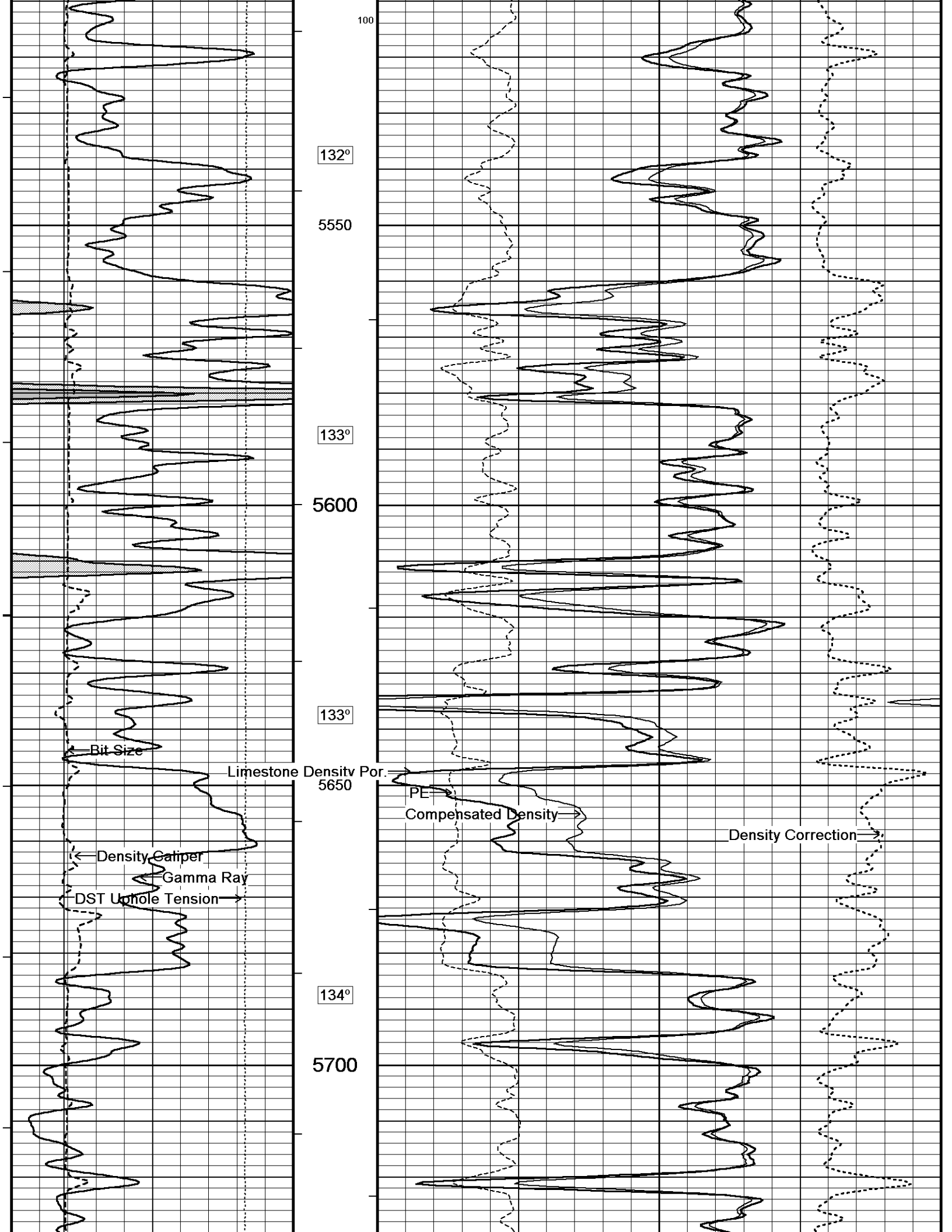
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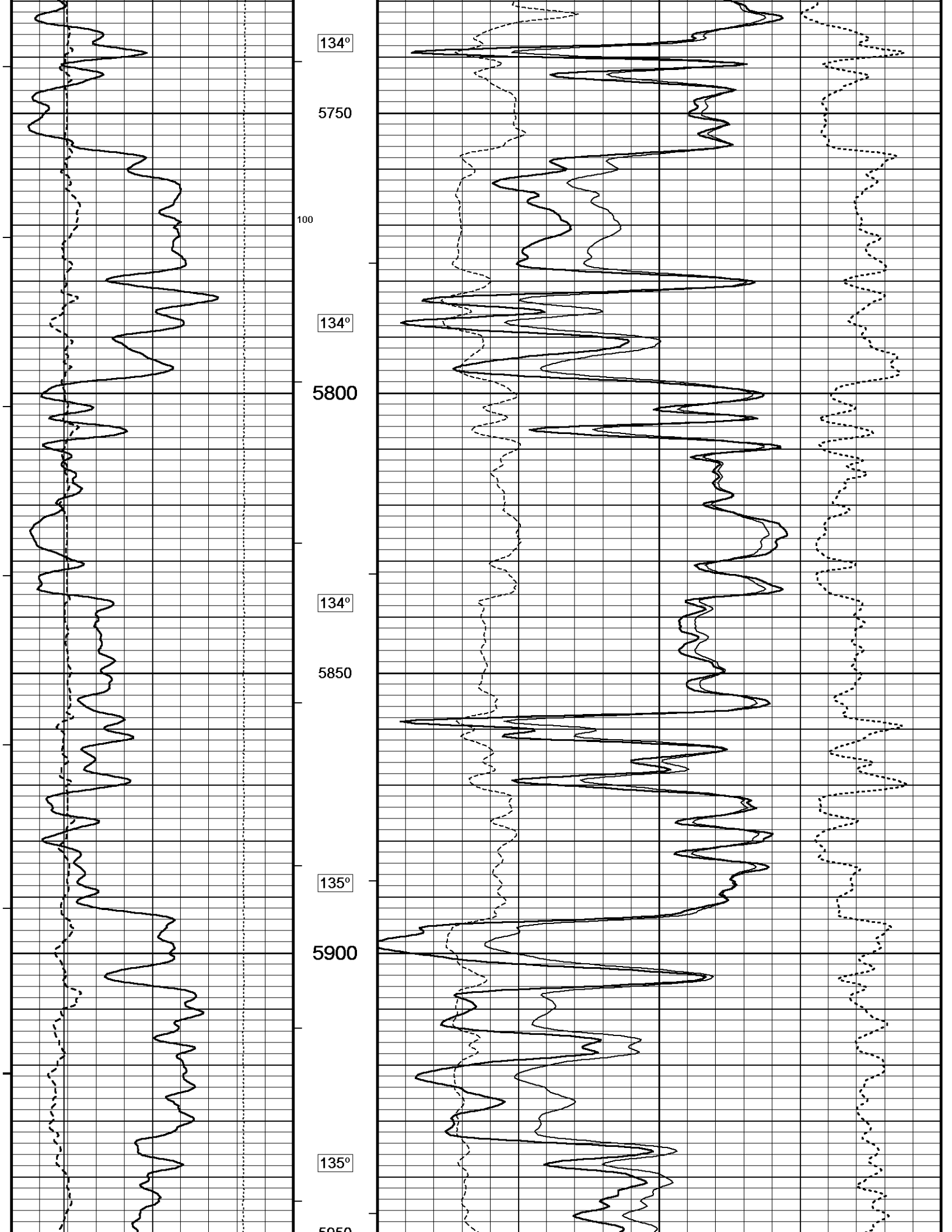
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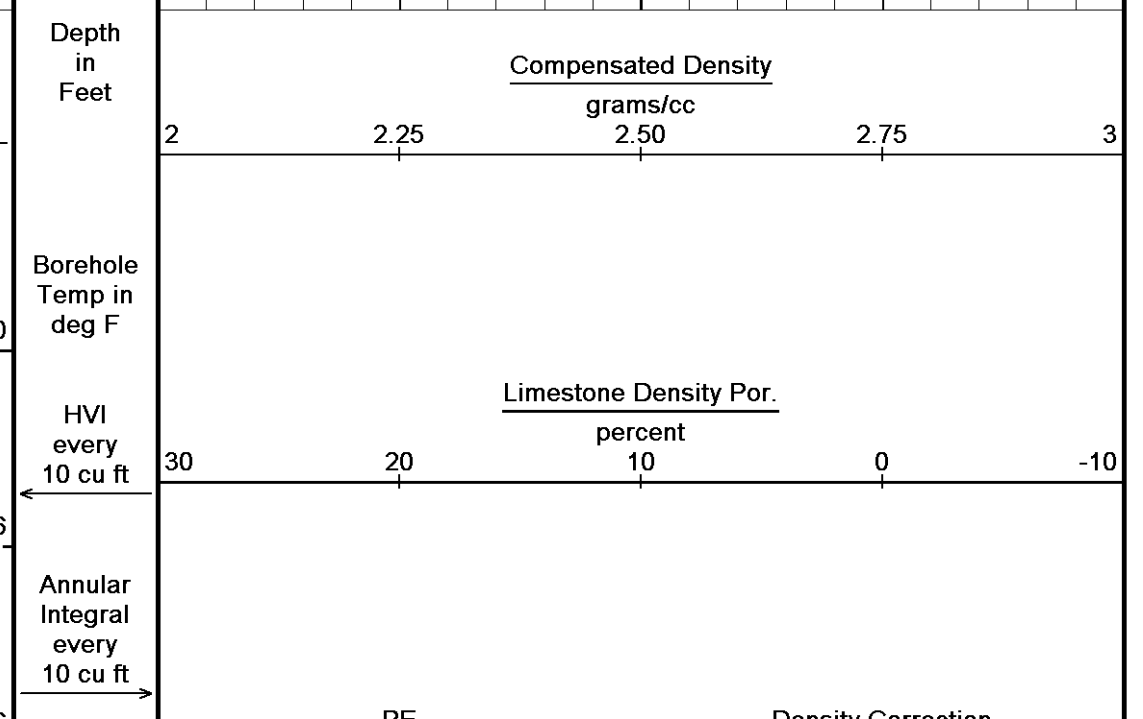
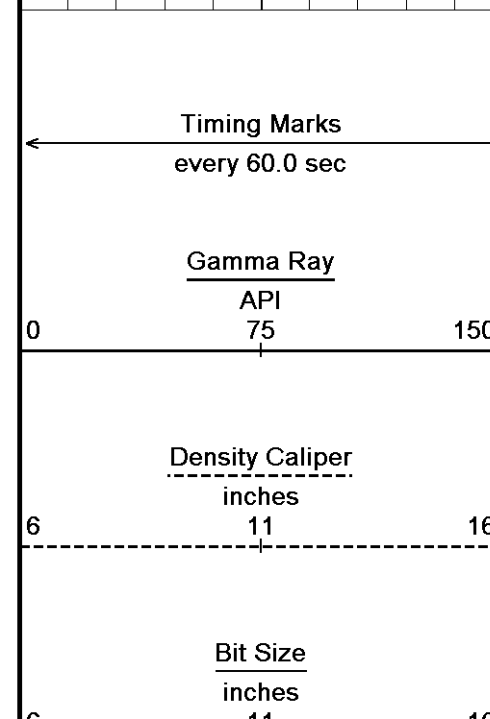
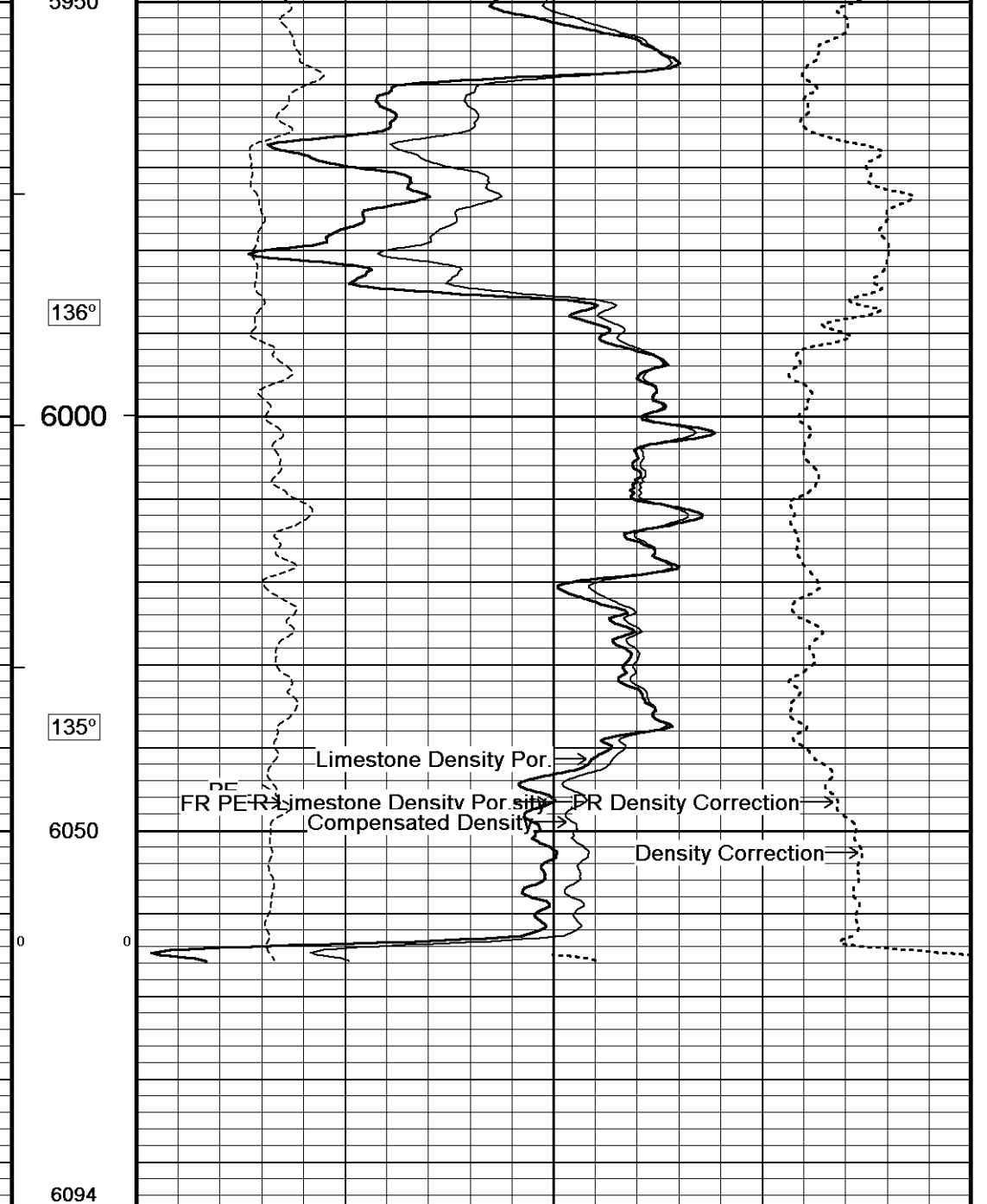
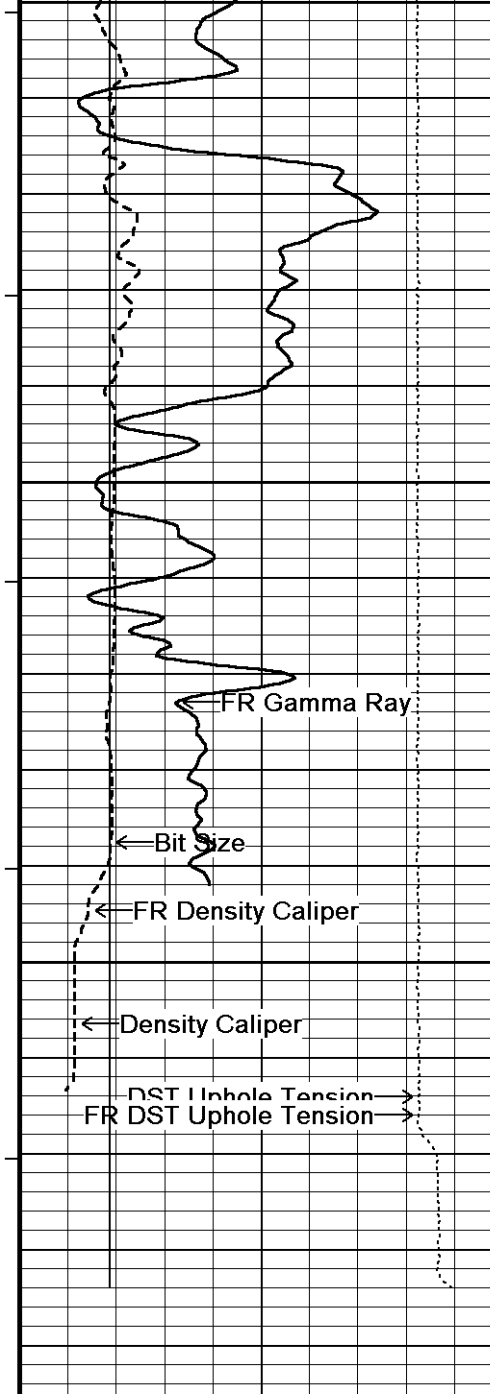
200 132°

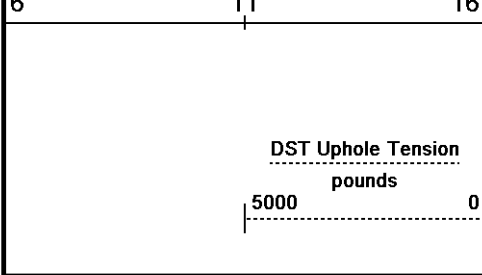
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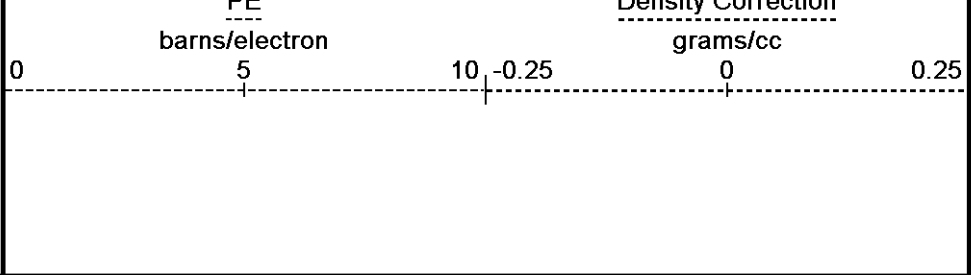








Replay
Scale
1:240

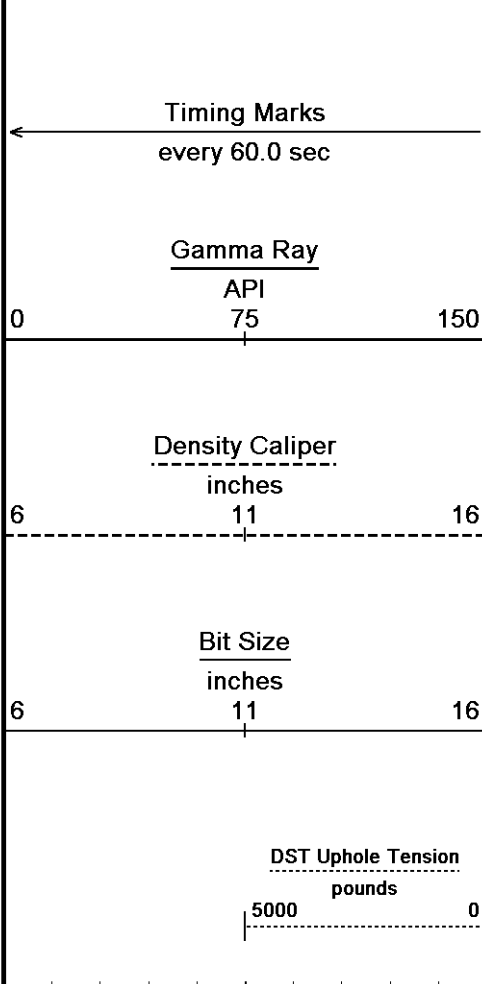


Depth Based Data - Maximum Sampling Increment 10.0cm
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↑ 5 Inch Main ↑

↓ Repeat Section ↓

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 Plotted on 16-MAY-2011 14:34
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Depth
in
Feet

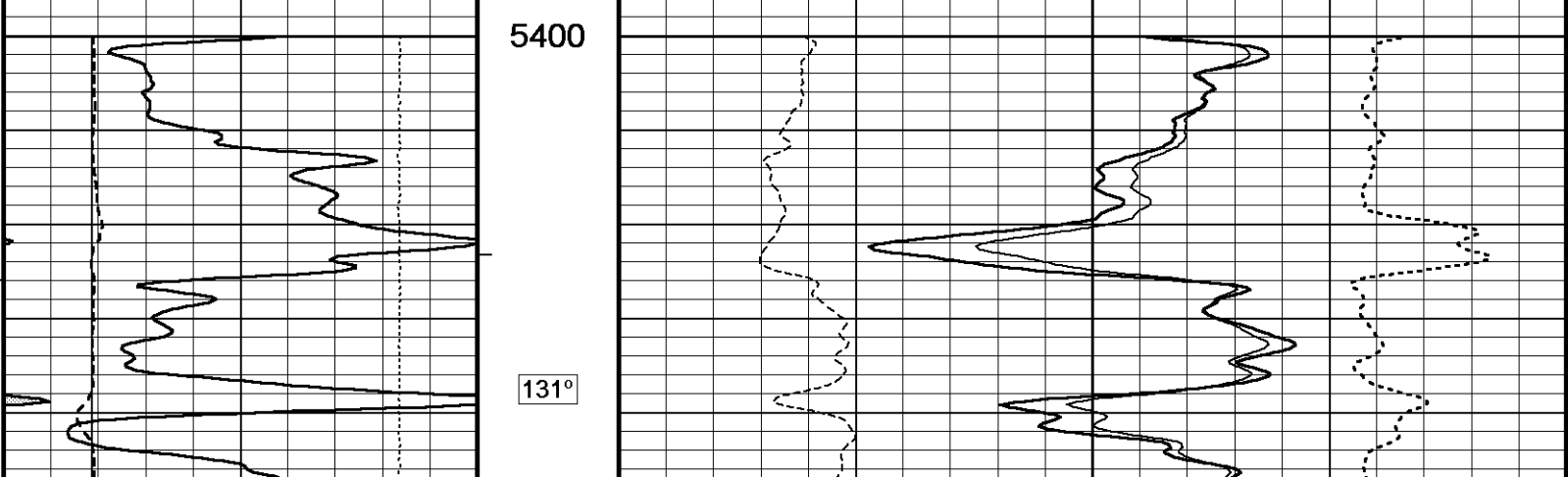
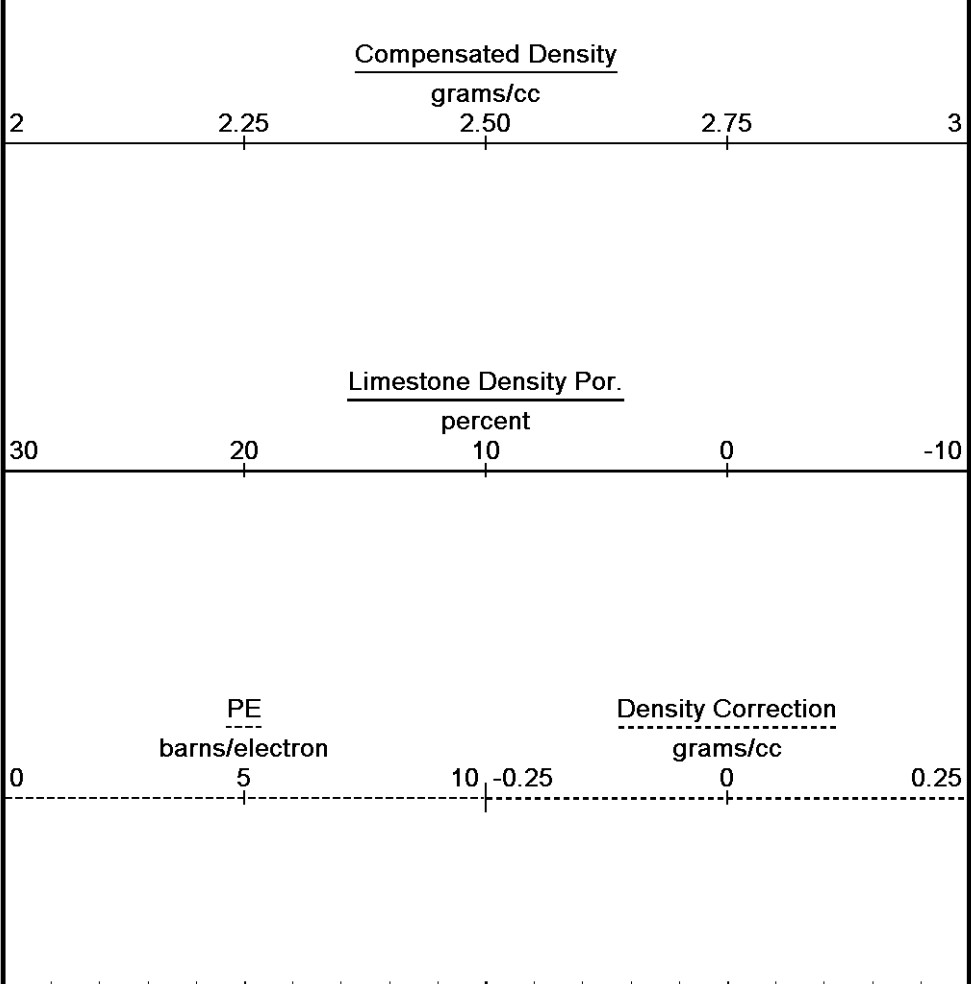
Borehole
Temp in
deg F

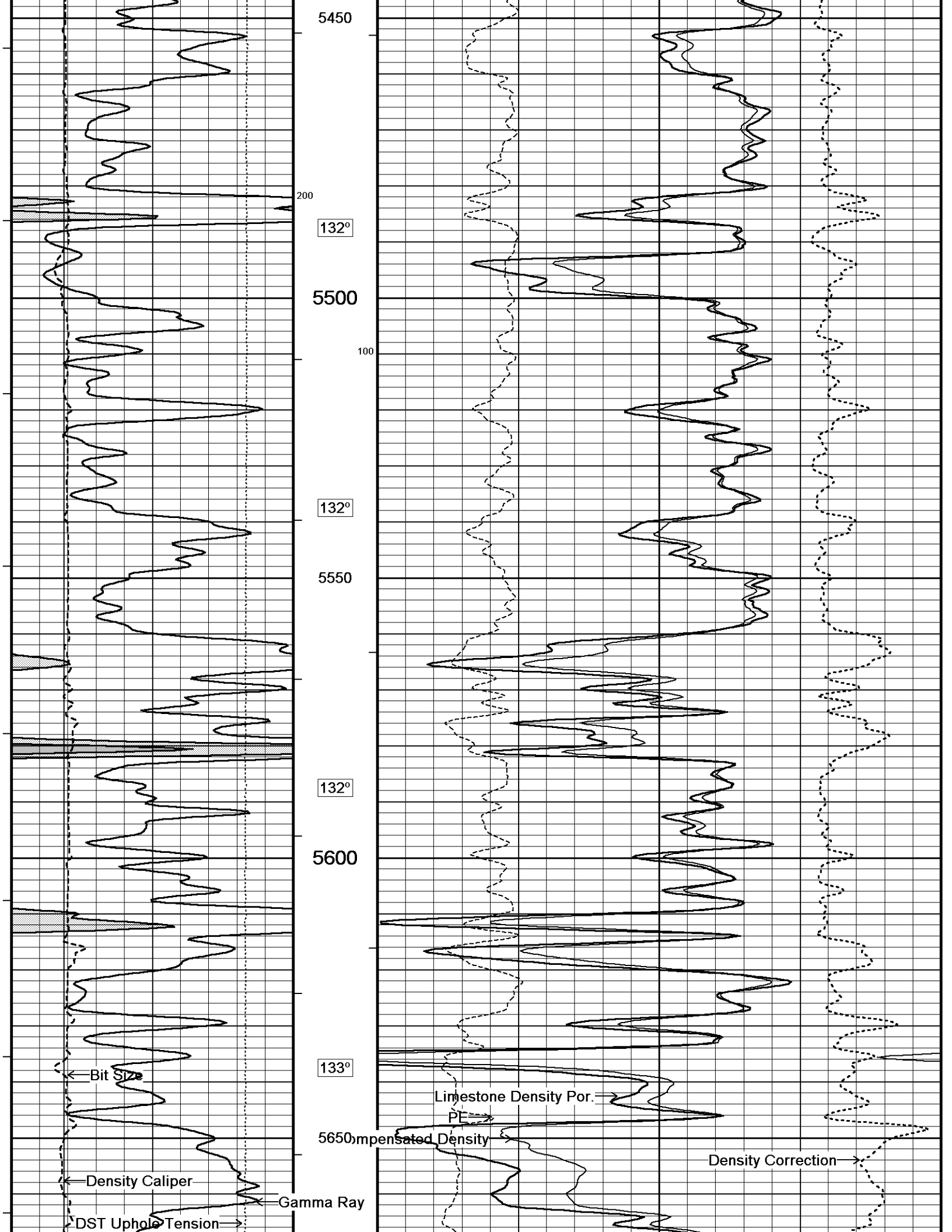
HVI
every
10 cu ft

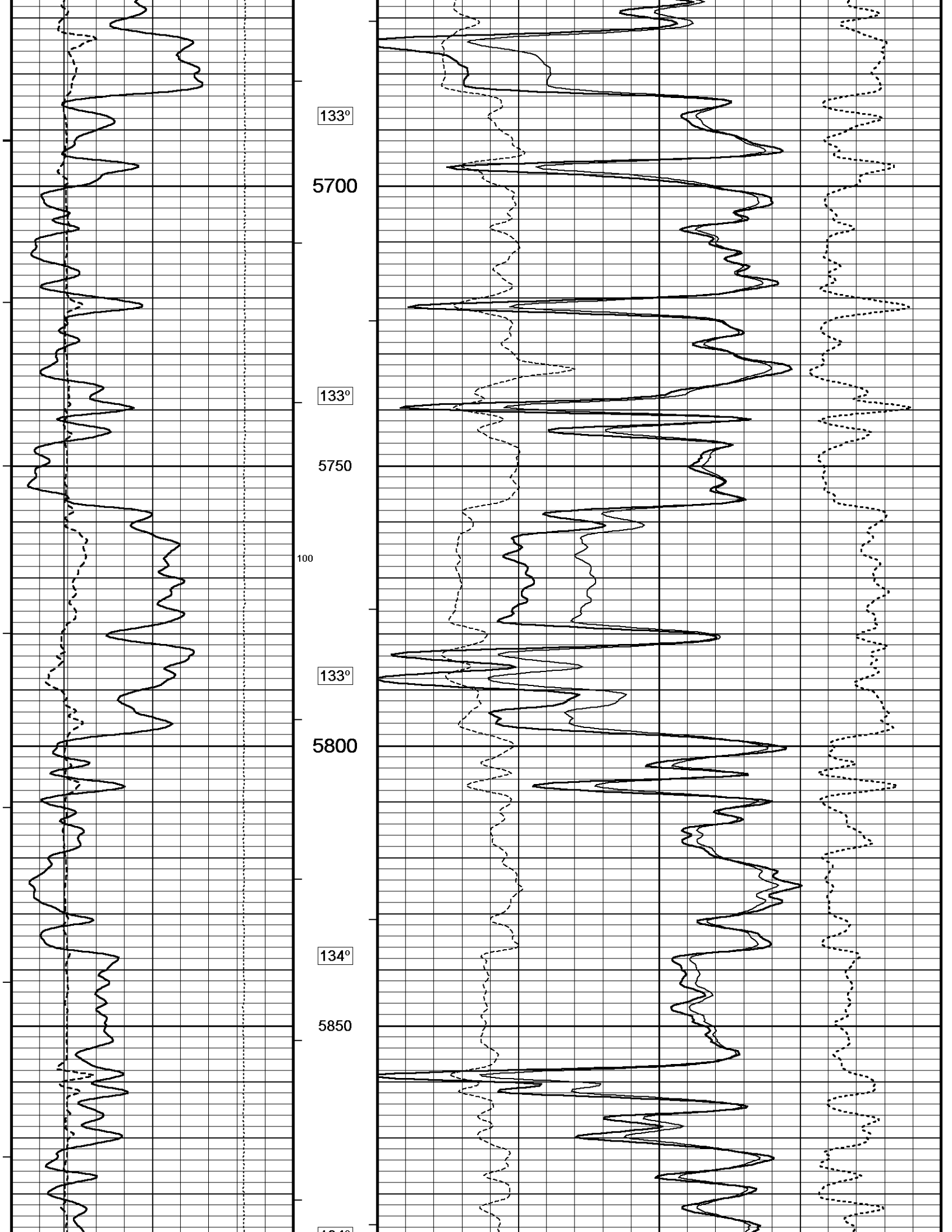
Annular
Integral
every
10 cu ft

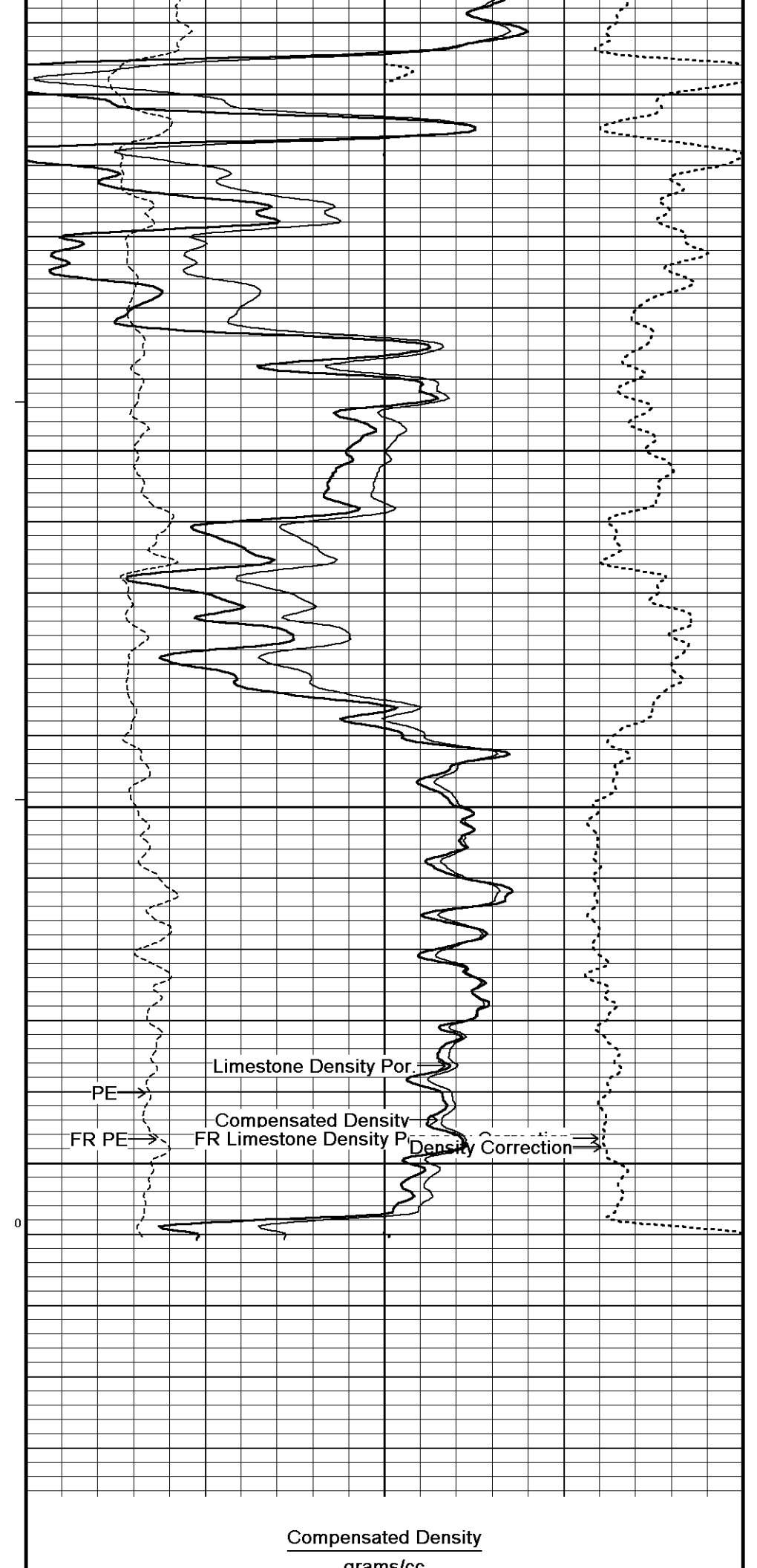
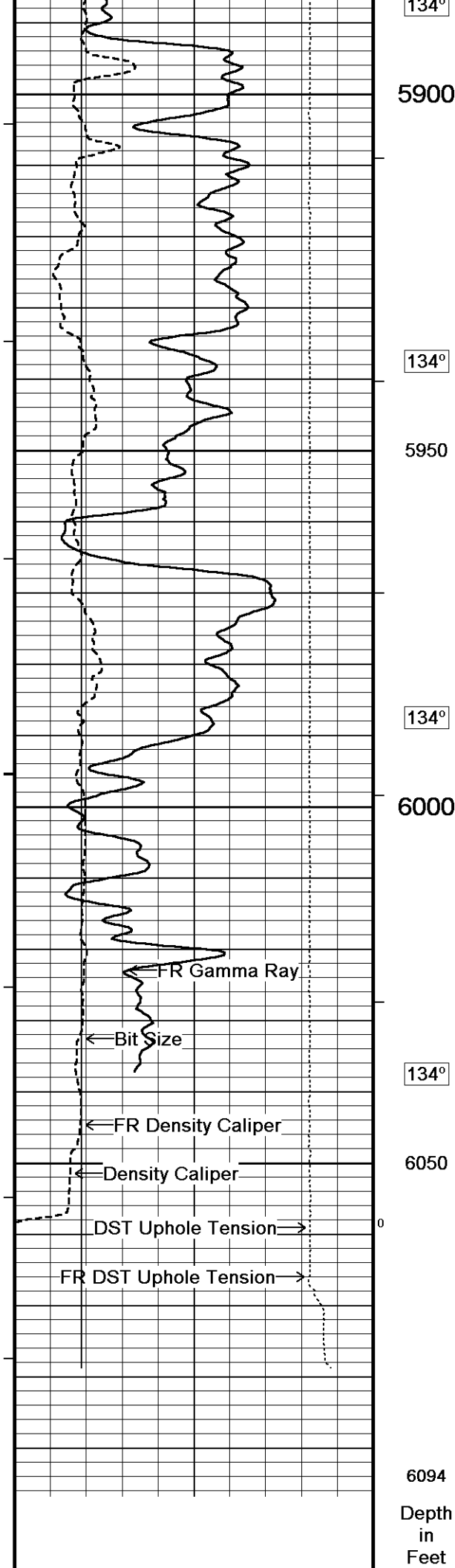
Replay
Scale
1:240

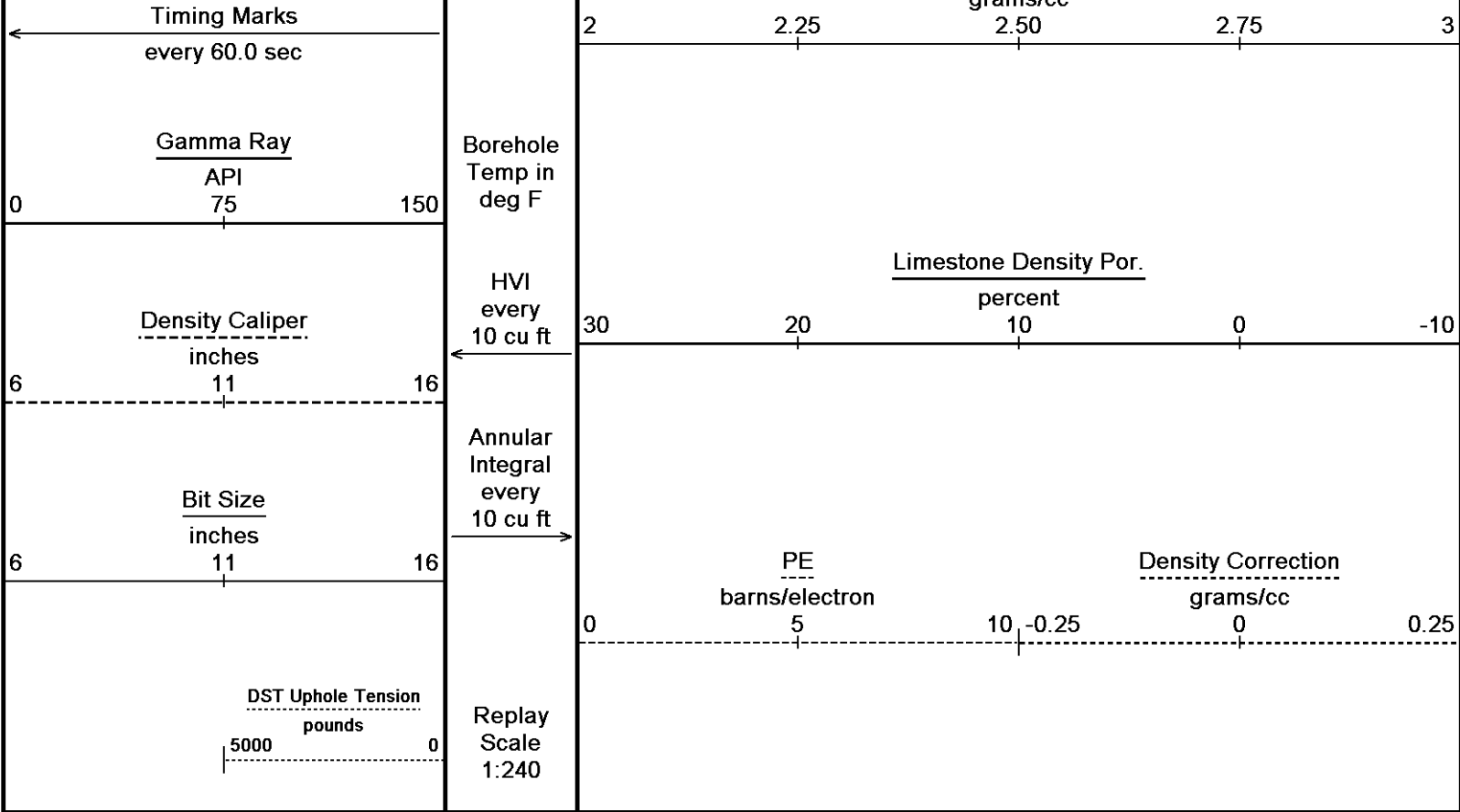
5400











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Repeat Section

BEFORE SURVEY CALIBRATION

C:\DOCUME~1\jbohanan\LOCALS~1\Temp\Weatherford PreView\0\Strat Land Felice #2-12.dta

General Constants All 000 Last Edited on 12-MAR-2011,05:48

General Parameters		
Mud Resistivity	1.500	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	5.500	inches
Caliper for Differential Caliper	None	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	

High Resolution Temperature Calibration MCG-C 139 Field Calibration on 03-SEP-2010,11:23

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

High Resolution Temperature Constants MCG-C 139 Last Edited on

Pre-filter Length 11

SR Calibration MCG C 139

SP Calibration MCG-C 139

Field Calibration on 04-MAR-2011 06:37

	Measured	Calibrated (mV)
Reference 1	103.7	100.0
Reference 2	-96.9	-100.0

Gamma Calibration MCG-C 139

Field Calibration on 11-MAR-2011 14:21

	Measured	Calibrated (API)
Background	70	47
Calibrator (Gross)	1145	772
Calibrator (Net)	1074	725

Gamma Constants MCG-C 139

Last Edited on 12-MAR-2011,05:48

Gamma Calibrator Number	grc38	
Mud Density	1.07	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Micro Normal and Micro Inverse Calibration MML-A 16

Base Calibration on 11-MAR-2011 11:10
Field Check on 11-MAR-2011 11:12

Base Calibration				
Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.2	60.2	2.6	12.8
Micro Inverse	15.6	78.3	1.7	8.4
Field Check				
Channel	Base Check (ohm-m)		Field Check (ohm-m)	
Micro Normal	32.1		32.1	
Micro Inverse	16.3		16.3	

Micro Normal and Micro Inverse Constants MML-A 16

Last Edited on 11-MAR-2011,11:11

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159		
Micro Normal K Factor	0.5110		
Micro Inverse K Factor	0.3380		
Standoff Offset	N/A	inches	

Caliper Calibration MML-A 16

Base Calibration on 11-MAR-2011 11:20
Field Calibration on 11-MAR-2011 11:22

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	13875	5.98
2	17350	7.97
3	20581	9.86
4	24656	11.92
5	0	0.00
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	5.98	5.98

Neutron Calibration MDN-A.B 66

Base Calibration on 11-MAR-2011 13:54
Field Check on 11-MAR-2011 14:12

Base Calibration					
Ratio	Measured		Calibrated (cps)		
	Near	Far	Near	Far	
	3091	97	3714	110	
	31.957		33.764		
Field Calibrator at Base					
			Calibrated (cps)		
			1660	2371	
			0.700		
Field Check					
			Calibrated (cps)		
			1653	2362	
			0.700		

Neutron Constants MDN-A.B 66

Last Edited on 12-MAR-2011,05:49

Neutron Source Id	P58125B
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Neutron Jig Number	5824NE		
Epithermal Neutron	No		
Caliper Source for Processing	Density Caliper		
Stand-off	0.00	inches	
Mud Density	1.07	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	
Formation Fluid Salinity Source	Constant Value		
Formation Fluid Salinity	0.00	kppm	
Barite Mud Correction	Not Applied		

FE Calibration MFE-A.A 52

Base Calibration on 11-MAR-2011 10:55
Field Check on 11-MAR-2011 11:01

Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	965.7	126.8
Base Check		279.9
Field Check		279.9

FE Constants MFE-A.A 52

Last Edited on 12-MAR-2011,05:49

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	

High Resolution Temperature Calibration MAI-A.A 167

Field Calibration on 17-JAN-2011,18:32

	Measured	Calibrated(Deg F)
Lower	1.00	33.80
Upper	11.00	51.80

High Resolution Temperature Constants MAI-A.A 167

Last Edited on

Pre-filter Length	11
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Induction Calibration MAI-A.A 167

Base Calibration on 11-MAR-2011,09:58
Field Check on 11-MAR-2011 10:43

Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	17.3	474.2	9.3	966.2	
2	6.3	388.4	7.6	821.4	
3	3.3	259.4	5.2	566.0	
4	1.9	133.0	2.6	279.2	
Array Temperature		76.8		Deg F	
Channel		Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High	
1	13.4	3836.9	13.4	3836.8	
2	29.6	3474.5	29.6	3474.3	
3	29.1	3050.8	29.1	3050.7	
4	19.7	2080.2	19.7	2080.2	
Deep	18.5	2047.5	18.5	2047.5	
Medium	42.2	3988.2	42.2	3988.0	
Shallow	43.1	5050.7	43.1	5050.1	
Array Temperature		78.5		79.1	Deg F

Induction Constants MAI-A.A 167

Last Edited on 12-MAR-2011,05:49

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	

Caliper Calibration MPD-B 35

Base Calibration on 11-MAR-2011 11:34
Field Calibration on 11-MAR-2011 11:36

Base Calibration			
Reading No		Measured	Calibrator Size (in)
1		17936	3.99
2		28079	5.98
3		38384	7.97
4		48048	9.86
5		59047	11.92
6		N/A	N/A
Field Calibration			
		Measured Caliper (in)	Actual Caliper (in)
		5.96	5.98

Photo Density Calibration MPD-B 35

Base Calibration on 11-MAR-2011 11:54
Field Check on 11-MAR-2011 12:01

Density Calibration				
Base Calibration		Measured	Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	57876	27553	59556	30836
Reference 2	23524	2615	24941	2541
Field Check at Base				
	1175.2	1398.5		
Field Check				
	1174.0	1394.6		

PE Calibration				
Base Calibration		Measured	Calibrated	
	WS	WH	Ratio	Ratio

Background	211	1039		
Reference 1	21426	57673	0.375	0.371
Reference 2	6234	23377	0.270	0.272

Field Check at Base
211.2 1039.0

Field Check
209.1 1034.9

Density Constants MPD-B 35

Last Edited on 12-MAR-2011,05:49

Density Source Id p50557b
 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 1.07 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:\DOCUME~1\jbohanan\LOCALS~1\Temp\Weatherford PreView\0\Strat Land Felice #2-12.dta

3/8" Triple Cone Cable Head (MCB C A)
 MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

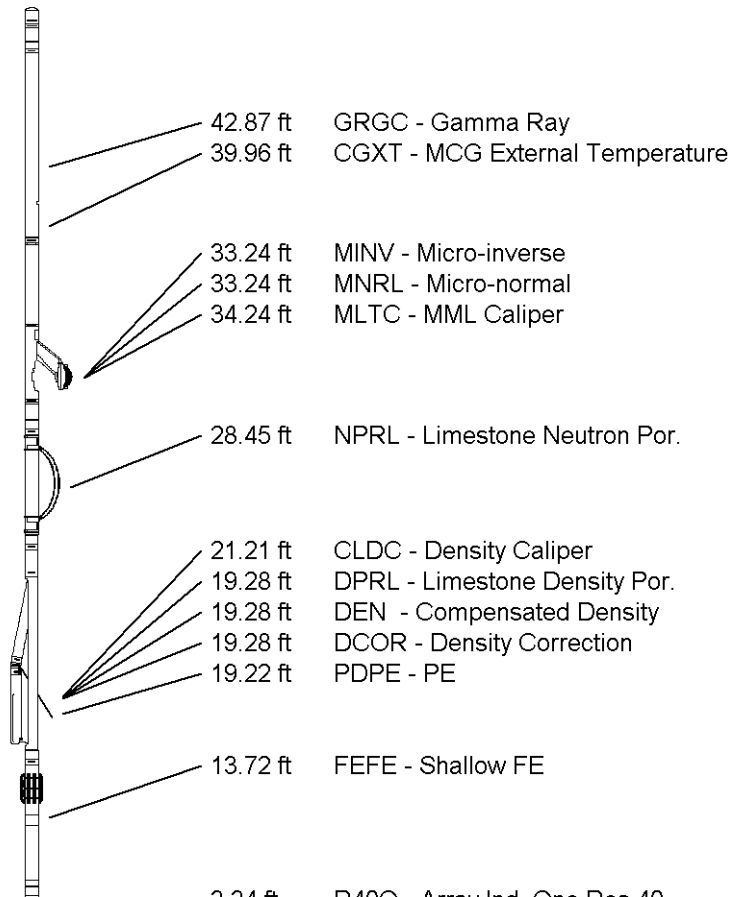
Compact Comms Gamma
 MCG-C 139 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
 MML-A 16 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
 MDN-A.B 66 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-A.A 52 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in



Compact Induction 2.24 ft D100 Array Ind. One Dip 40

Compact induction
MAI-A.A 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 49.73 ft Weight: 399.0 lb



5.34 ft R400 - Array Ind. One Res 40
3.34 ft RTAO - Array Ind. One Res Rt
3.34 ft R600 - 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 STRAT LAND EXPLORATION
WELL FELICE #2-12
FIELD NW BORCHERS
PROVINCE/COUNTY MEADE
COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	2535.00	feet	First Reading	6047.00	feet
Elevation Drill Floor	2533.00	feet	Depth Driller	6070.00	feet
Elevation Ground Level	2523.00	feet	Depth Logger	6066.00	feet



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COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MIRCO RESISTIVITY LOG