Weatherford®

COMPACT PHOTO DENSITY COMPENSATED NEUTRON MICRORESISTIVITY LOG

COMPANY	PETROSANTANDER (USA) INC.
WELL	ODD WILLIAMS #6
FIELD	CHRISTABELLE
PROVINCE/COUNTY	KEARNY
COUNTRY/STATE	UNITED STATES / KANSAS
LOCATION	140' FSL & 1120' FWL SE SE SW SW

SEC	TWP	RGE
12	21S	35W

API Number 15-093-21897
Permit Number

Other Services
MAI/MFE SGS
MML
MSS

Permanent Datum G.L., Elevation 3092 feet
Log Measured From KB
Drilling Measured From K.B. @ 12 FEET

Elevations:	feet
KB	4004.00
DF	4002.00
GL	3092.00

Date	26-SEP-2013		
Run Number	ONE		
Service Order	3541089		
Depth Driller	5000.00 feet		
Depth Logger	5001.00 feet		
First Reading	4969.00 feet		
Last Reading	507.00 feet		
Casing Driller	504.00 feet		
Casing Logger	507.00 feet		
Bit Size	7.880 inches		
Hole Fluid Type	CHEMICAL		
Density / Viscosity	7.00 lb/USg	42.00 CP	
PH / Fluid Loss	42.00	10.60 ml/30Min	
Sample Source	MUDPIT		
Rm @ Measured Temp	1.24 @ 71.0	ohm-m	
Rmf @ Measured Temp	0.99 @ 71.0	ohm-m	
Rmc @ Measured Temp	1.49 @ 71.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.80 @110.0	ohm-m	
Time Since Circulation	5 HOURS		
Max Recorded Temp	110.00	deg F	
Equipment / Base	13096	LIB	
Recorded By	W. STAMBAUGH		
Witnessed By		JEFF QUIMBY	
JOB#	LB13-270		

BOREHOLE RECORD

Last Edited: 27-SEP-2013 00:50

Bit Size inches	Depth From feet	Depth To feet
7.880	507.00	5001.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	507.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583.
- MCG, MDN, MPD, MFE, MAI RUN IN COMBINATION.
  - HARDWARE: DUAL BOWSPRING USED ON MDN.
    0.5 INCH STANDOFF USED ON MFE.
    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: 1840 CU. FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO 504 FEET: 1100 CU. FT.
- RIG: TRINIDAD #216

- RIG: TRINIDAD #210.

- ENGINEER: W. STAMBAUGH

- OPERATOR(S): C. RAMIREZ, J. DUNLAP.

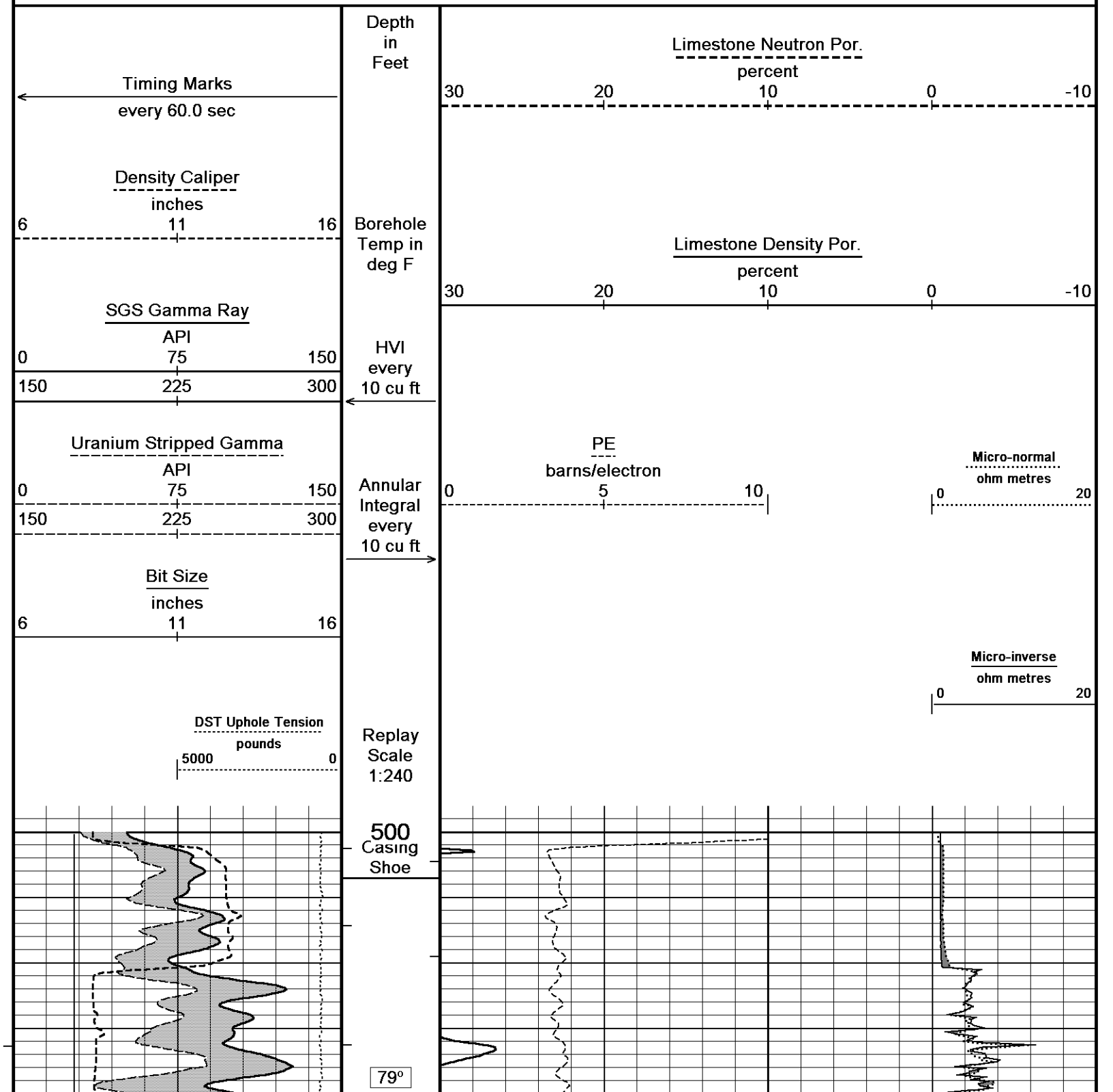
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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

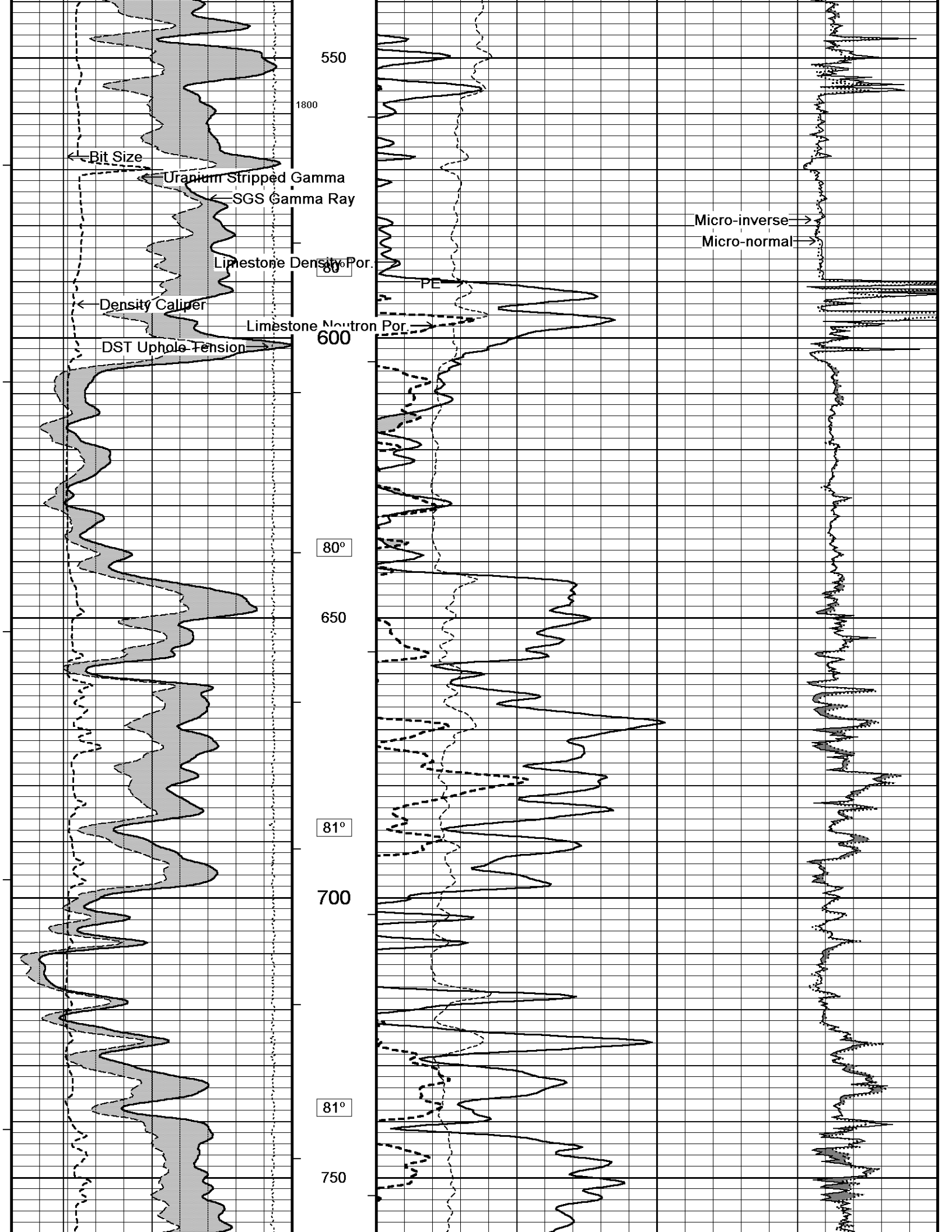
5 INCH MAIN

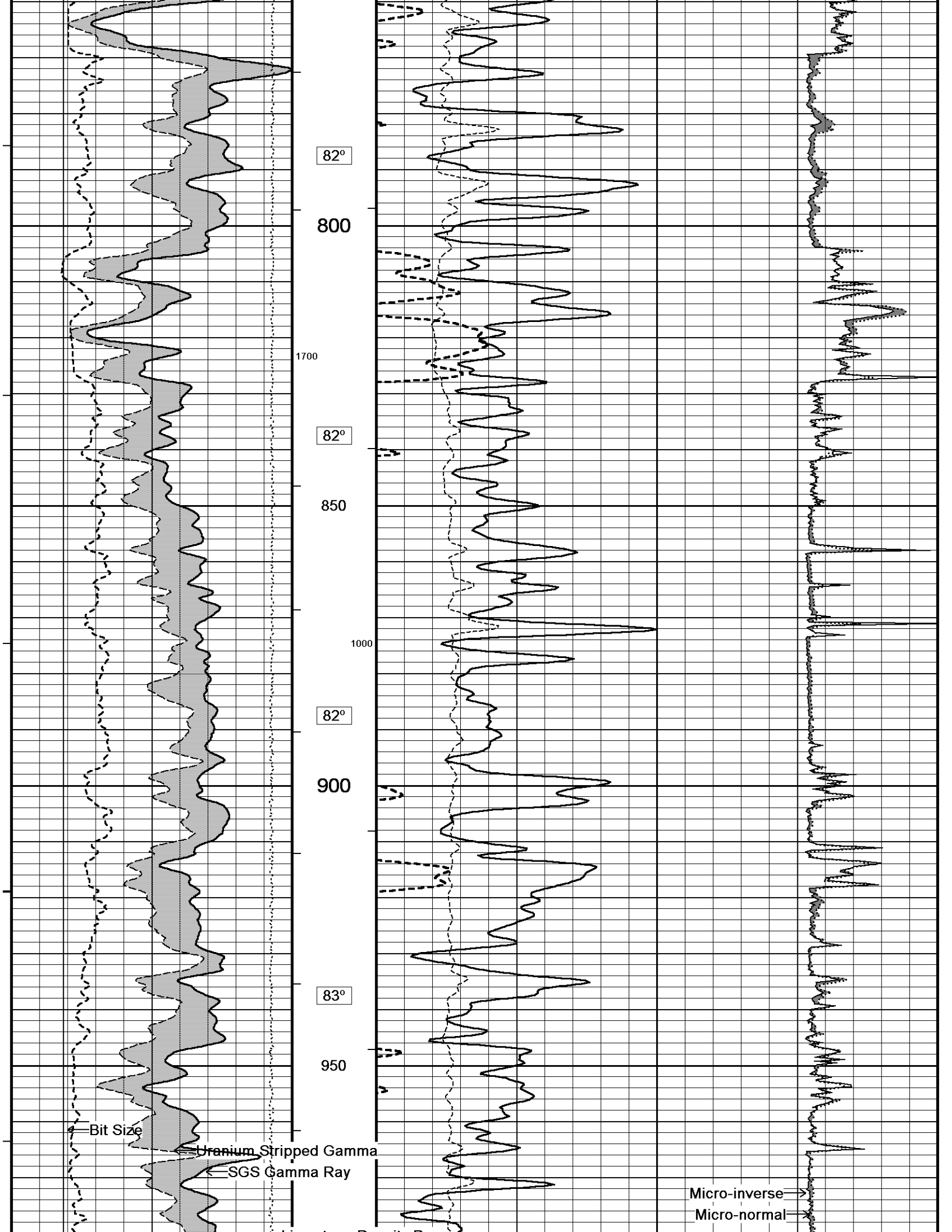
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 27-SEP-2013 00:50

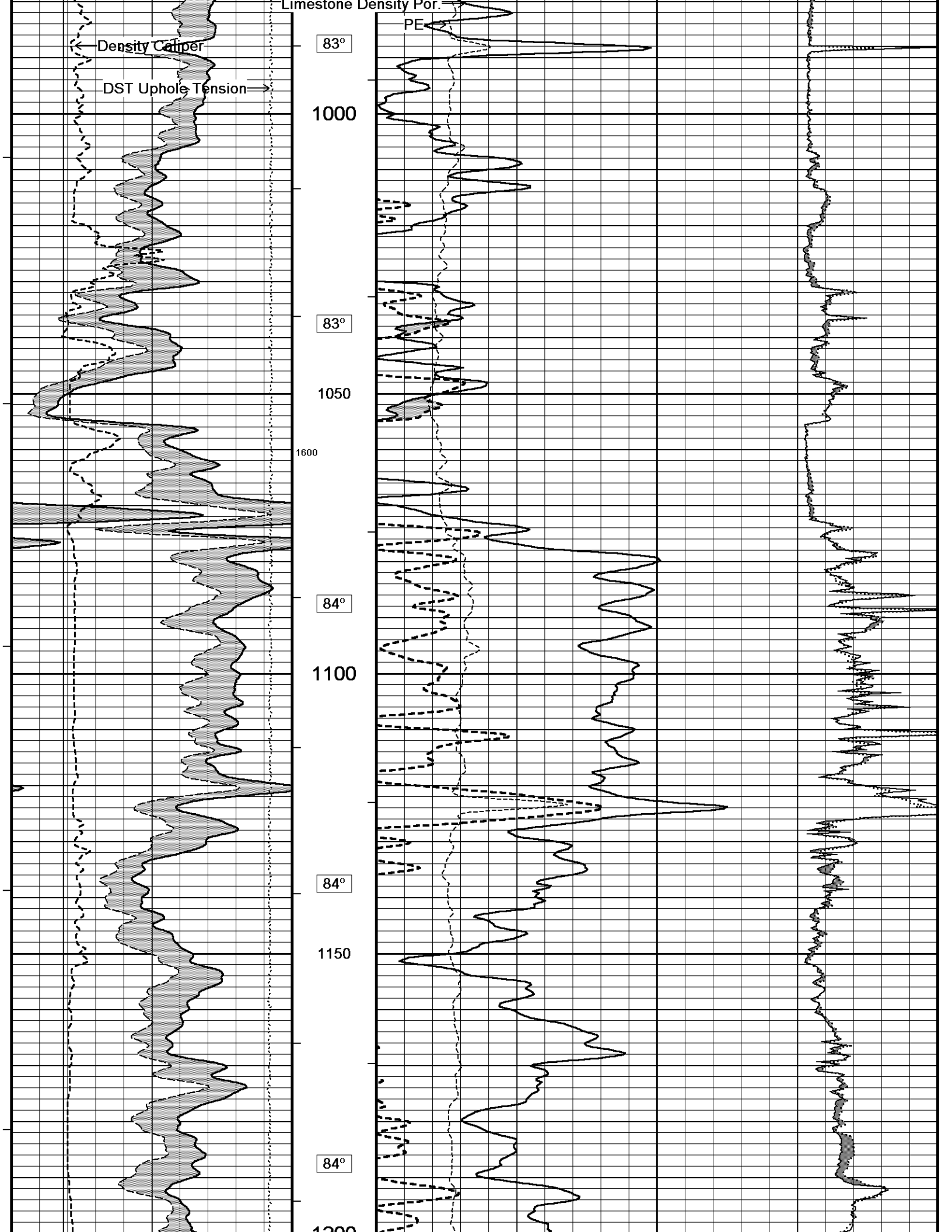
Filename: C:\Minimus 13.05.9583\Log\PetroSantander Od...\PetroSantander Odd Williams #6 MAIN.dta — Recorded on 26-SEP-2013 21:18

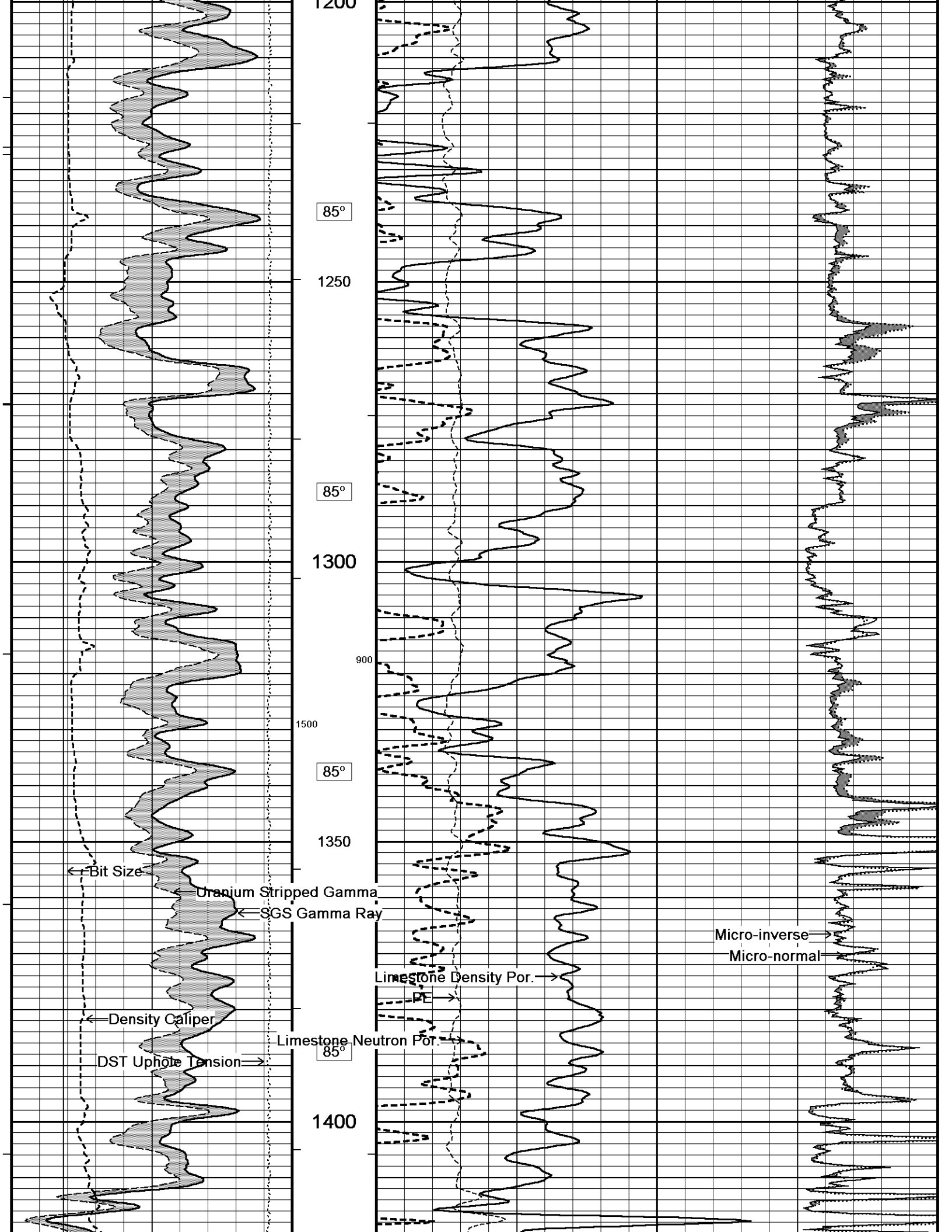
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

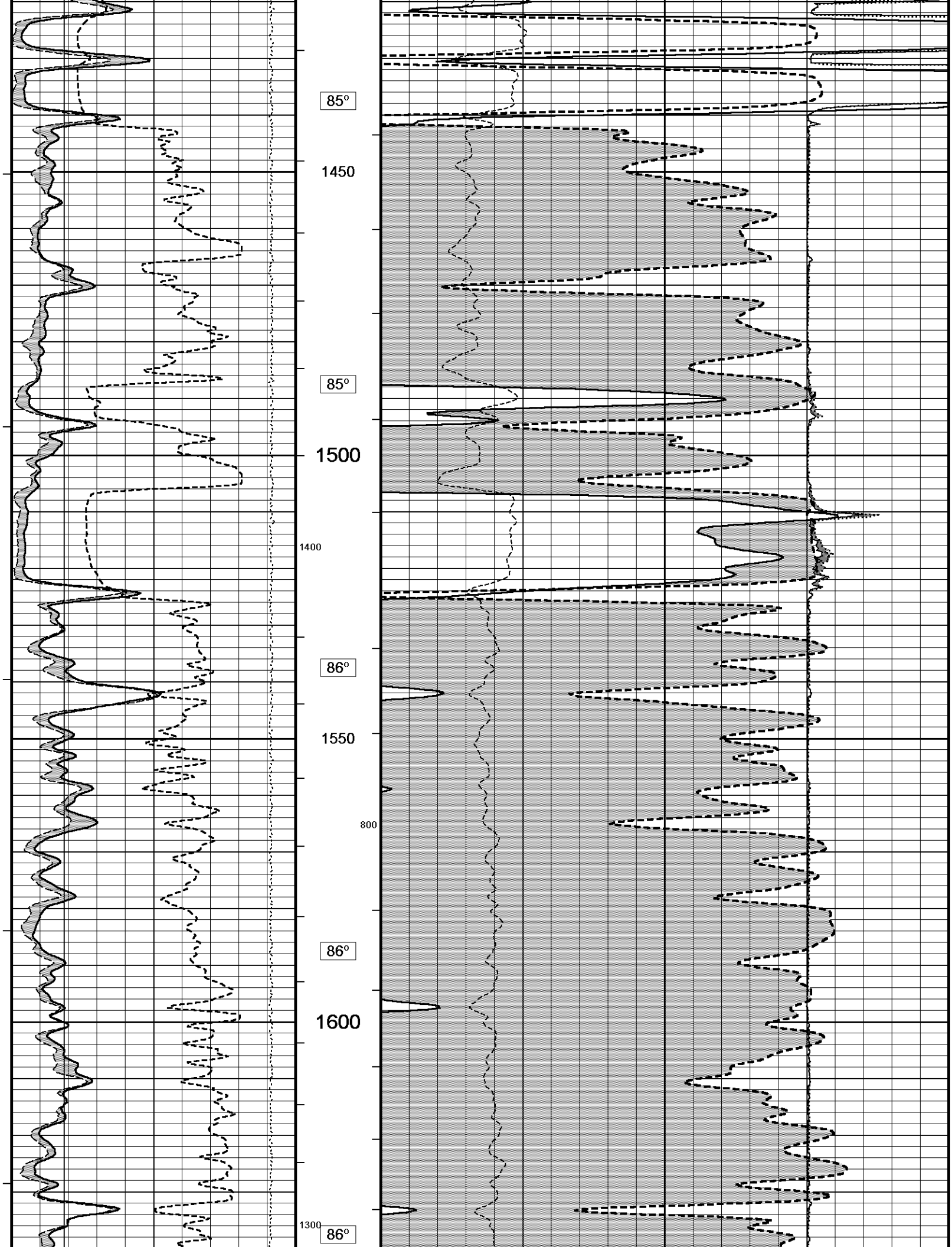


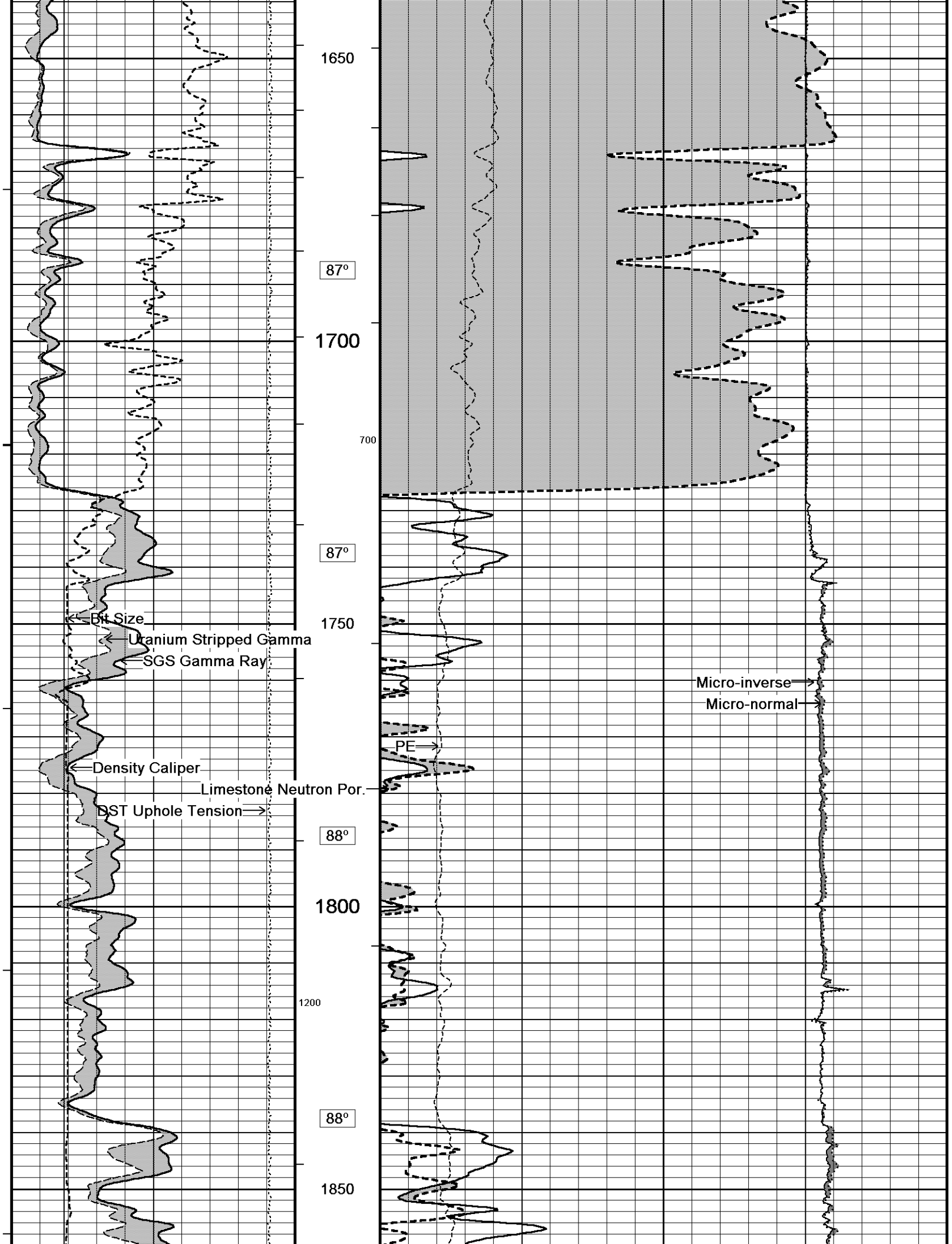

550
1800
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Limestone Density Por.
80
PE
Density Caliper
Limestone Neutron Por.
600
DST Uphole Tension
Micro-inverse
Micro-normal
80°
650
81°
700
81°
750

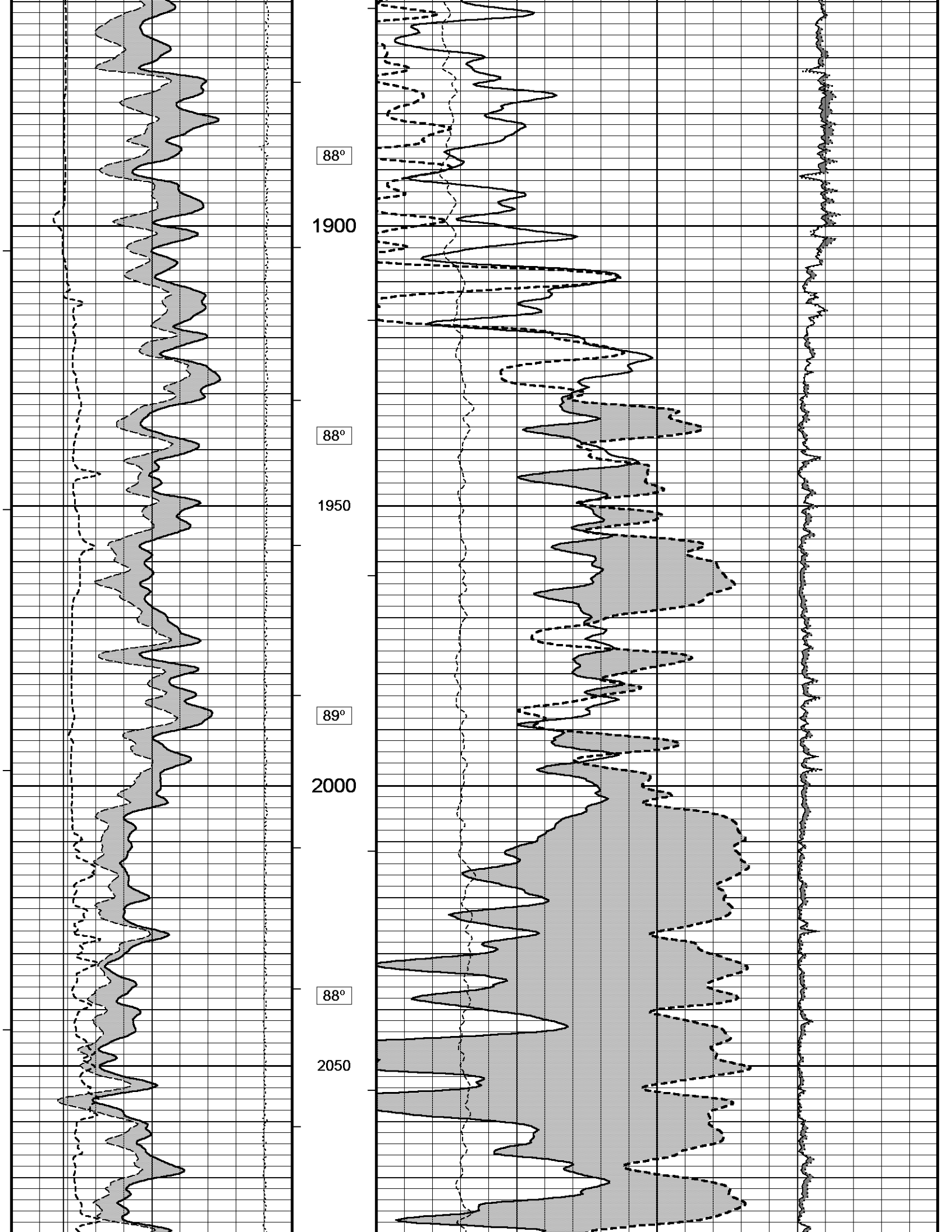

82°
800
1700
82°
850
1000
82°
900
83°
950
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Micro-inverse
Micro-normal

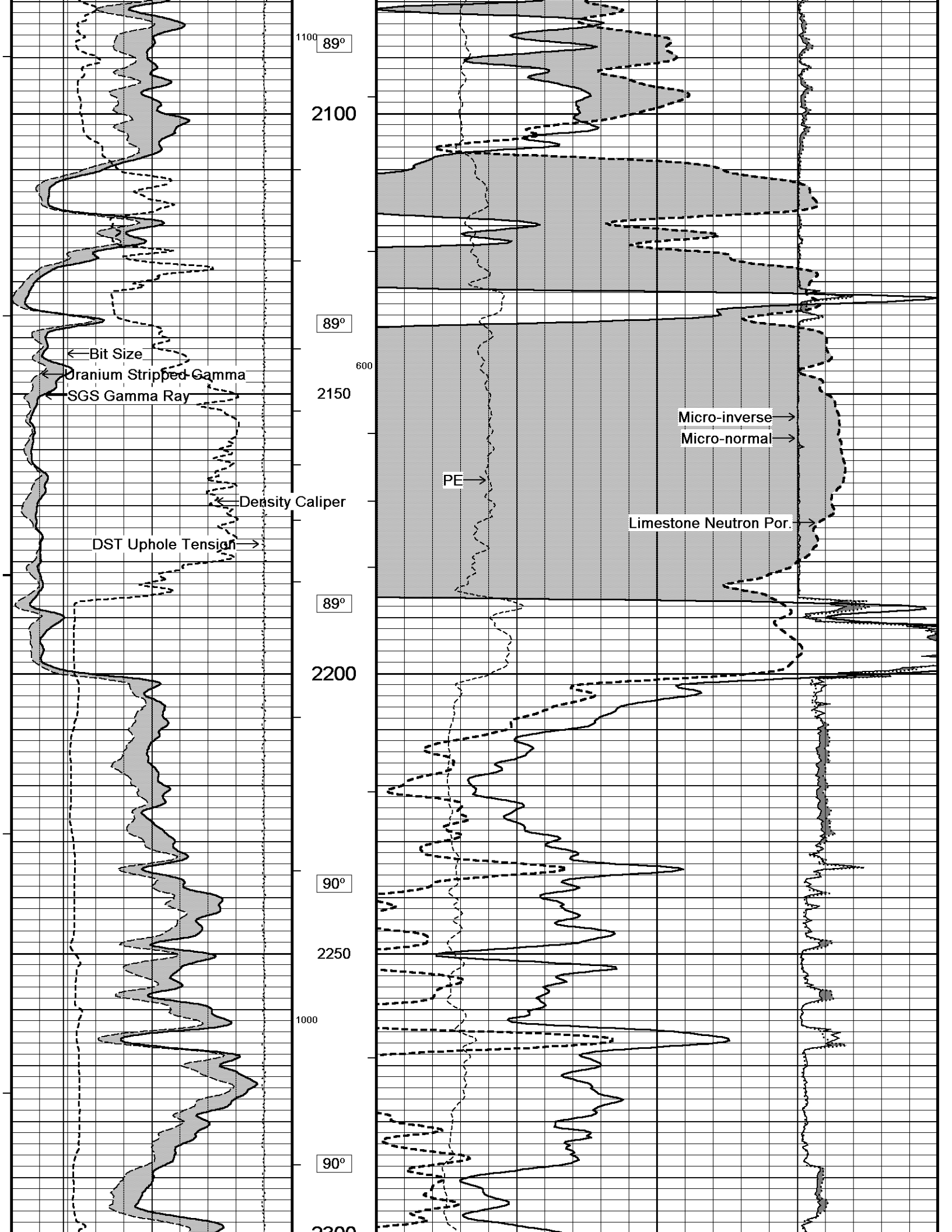

Limestone Density Por.
PE
Density Caliper
DST Uphole Tension
83°
1000
83°
1050
1600
84°
1100
84°
1150
84°

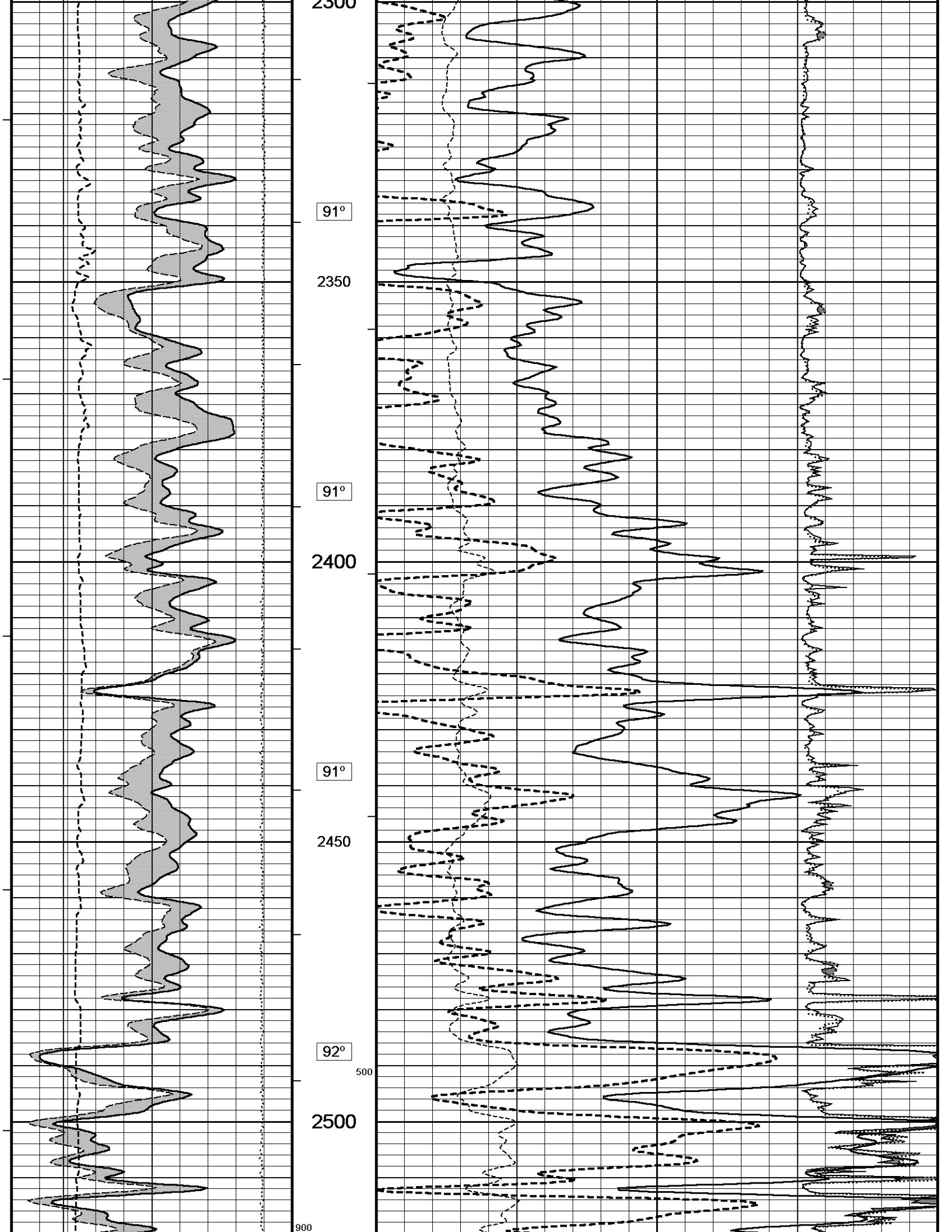

1200
85°
1250
85°
1300
900
1500
85°
1350
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Density Caliper
DST Uphole Tension
Limestone Neutron Por.
85°
1400
Limestone Density Por.
PE
Micro-inverse
Micro-normal

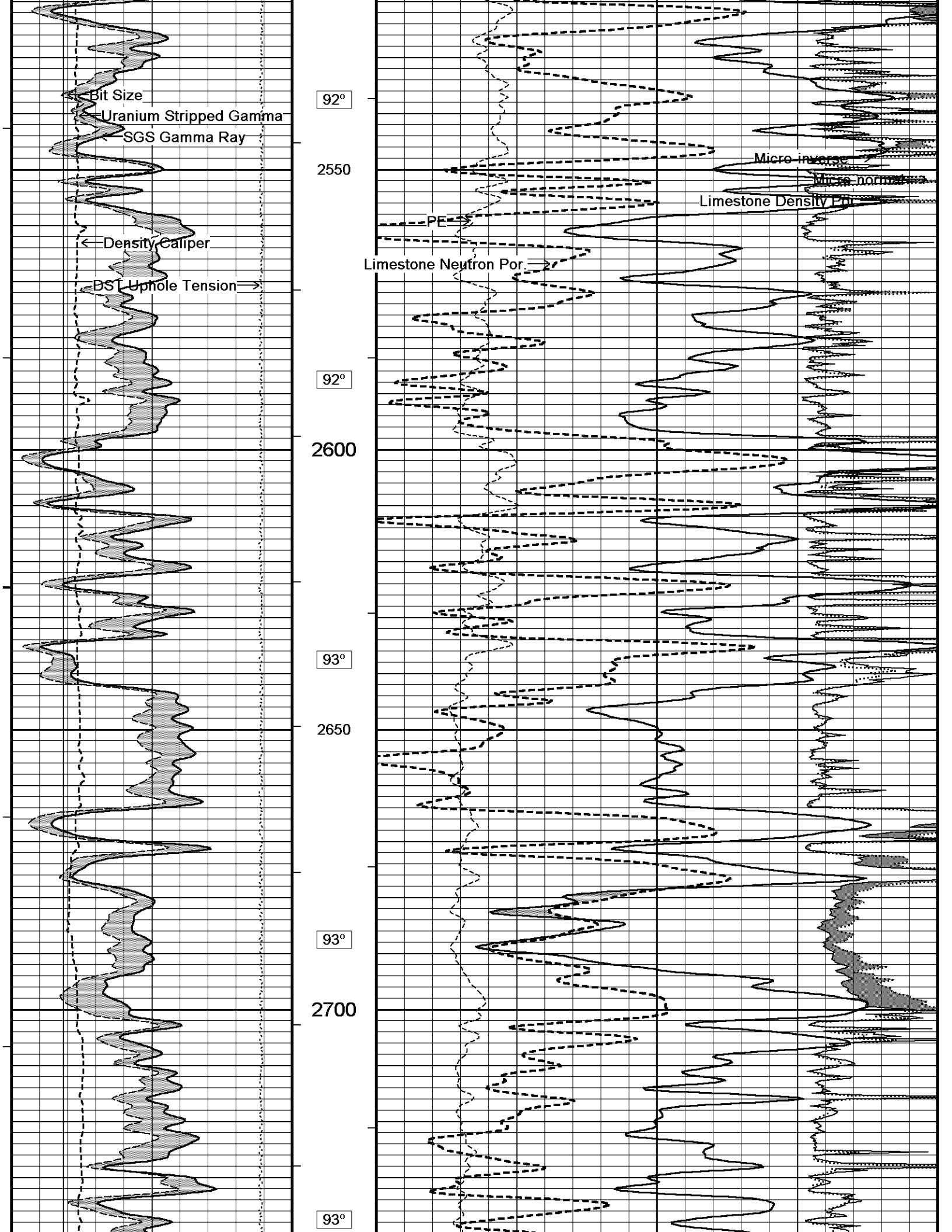

85°
1450
85°
1500
1400
86°
1550
800
86°
1600
1300
86°

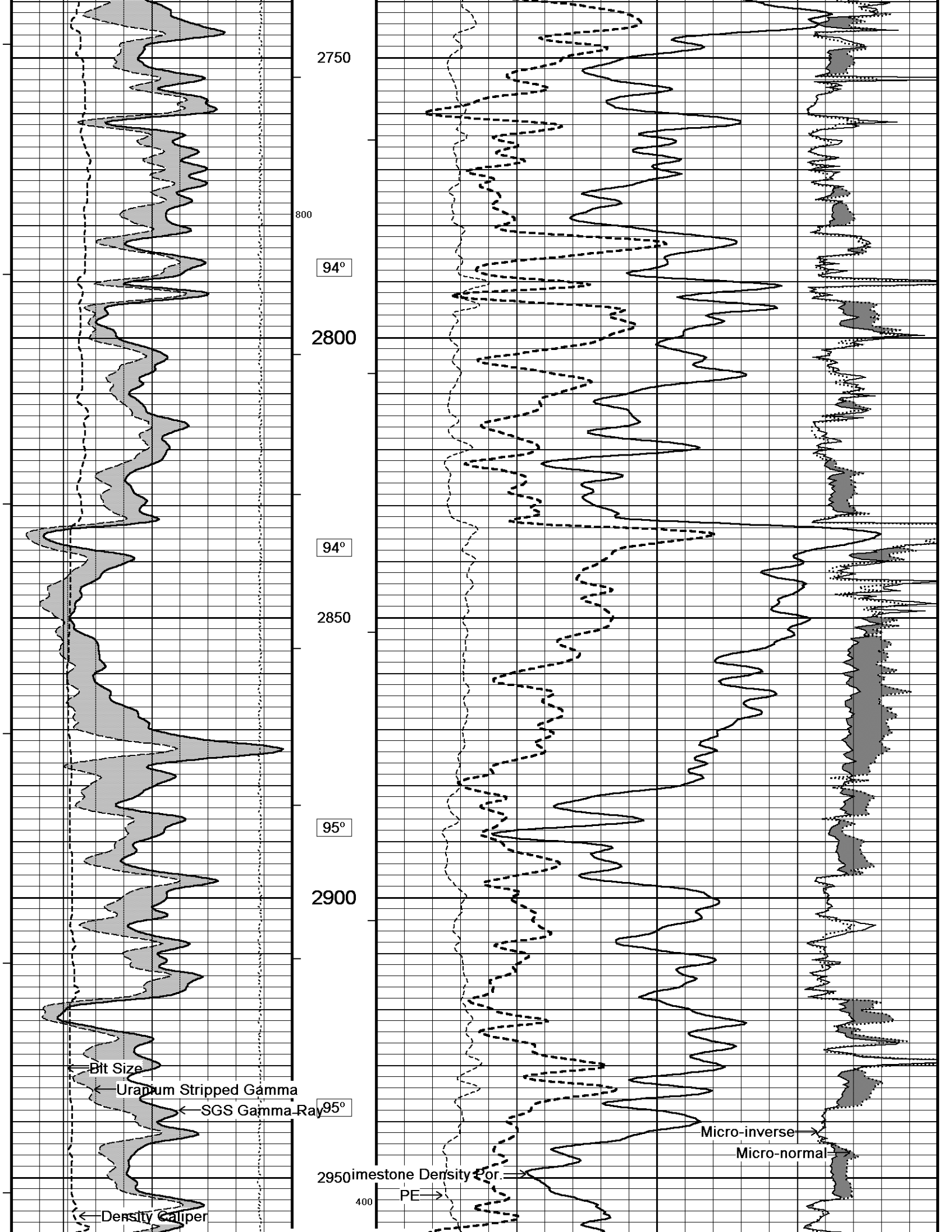

1650
87°
1700
700
87°
Bit Size
1750
Uranium Stripped Gamma
SGS Gamma Ray
Micro-inverse
Micro-normal
PE
Density Caliper
Limestone Neutron Por.
DST Uphole Tension
88°
1800
1200
88°
1850

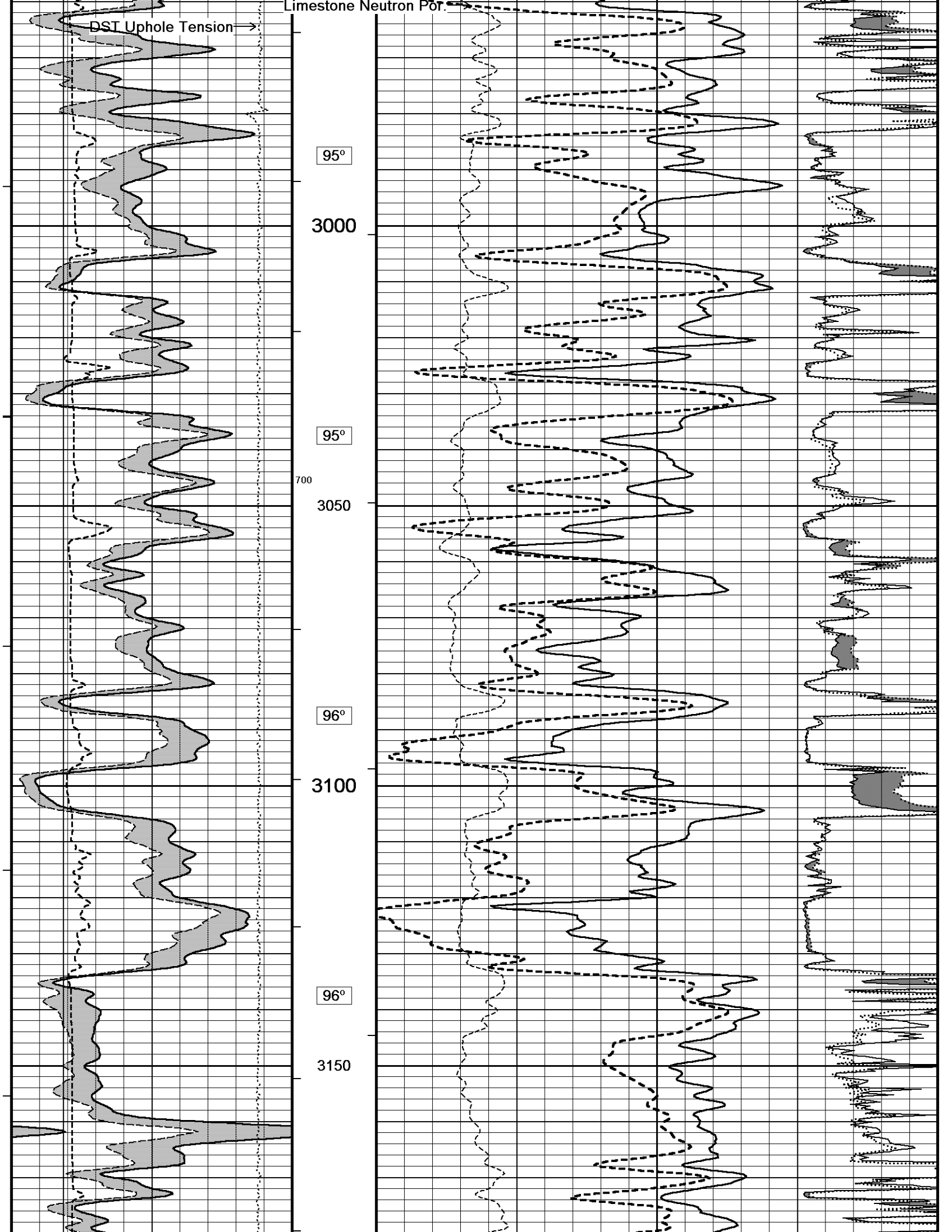

88°
1900
88°
1950
89°
2000
88°
2050

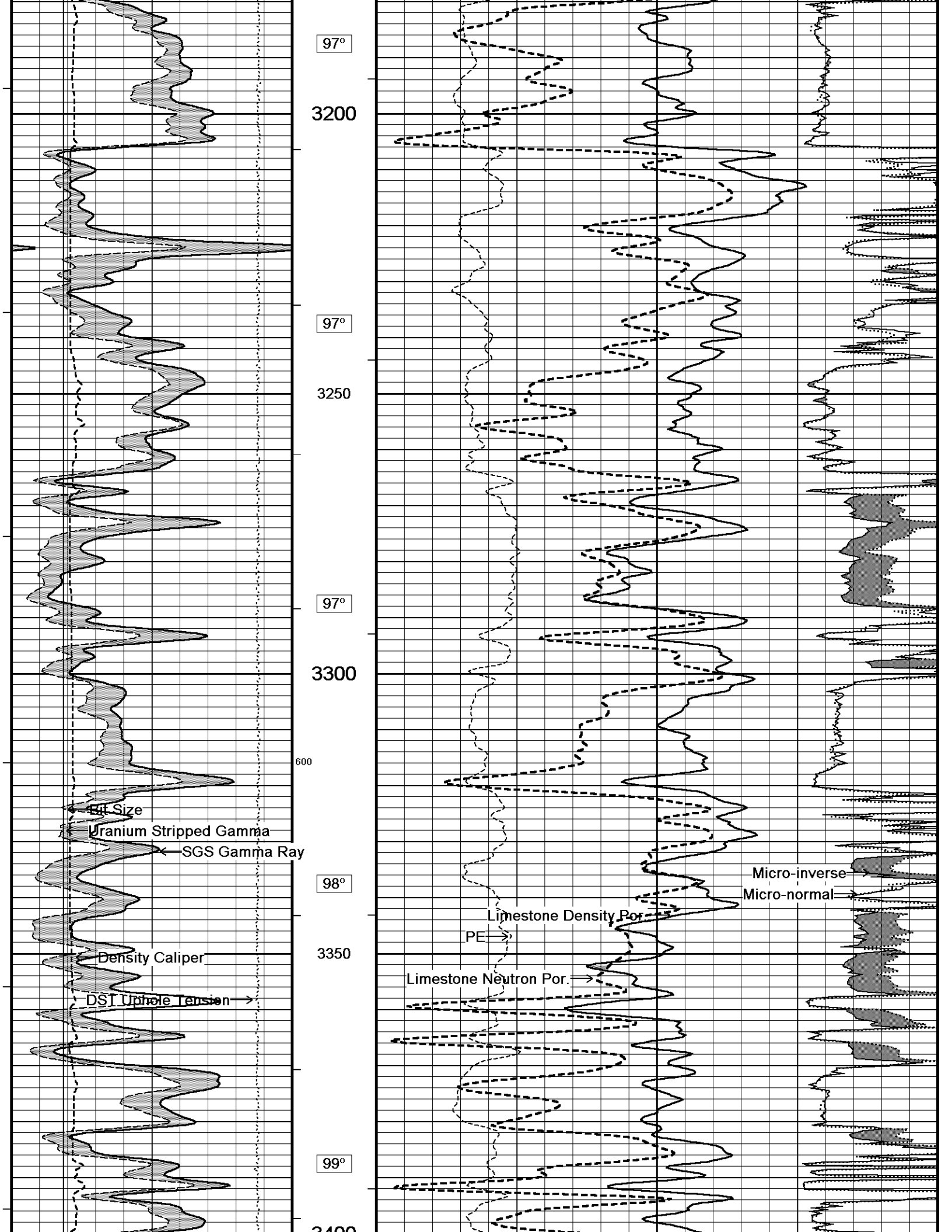

1100
89°
2100
89°
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
600
2150
Micro-inverse
Micro-normal
PE
Density Caliper
Limestone Neutron Por.
DST Uphole Tension
89°
2200
90°
2250
1000
90°

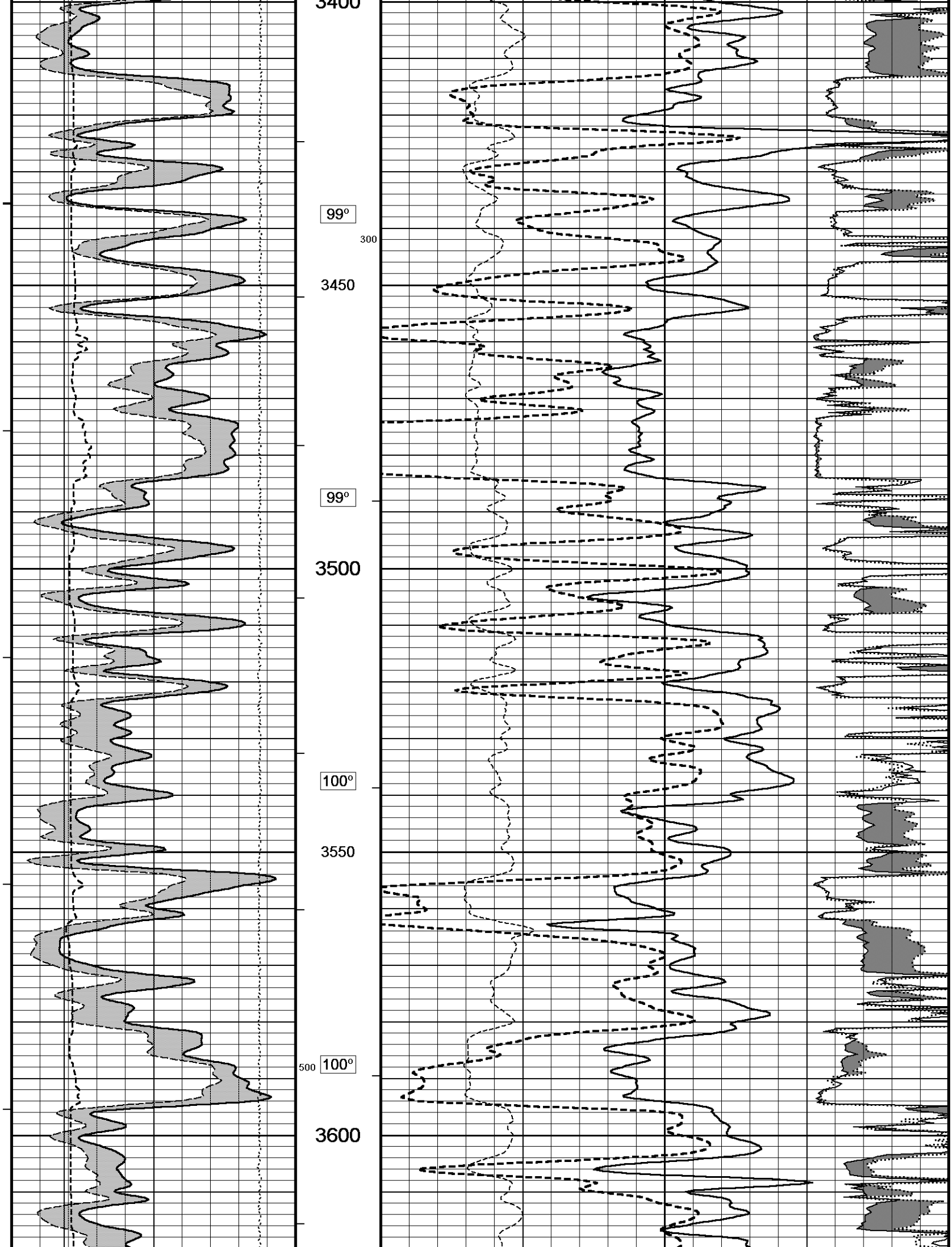

2300
91°
2350
91°
2400
91°
2450
92°
500
2500
900

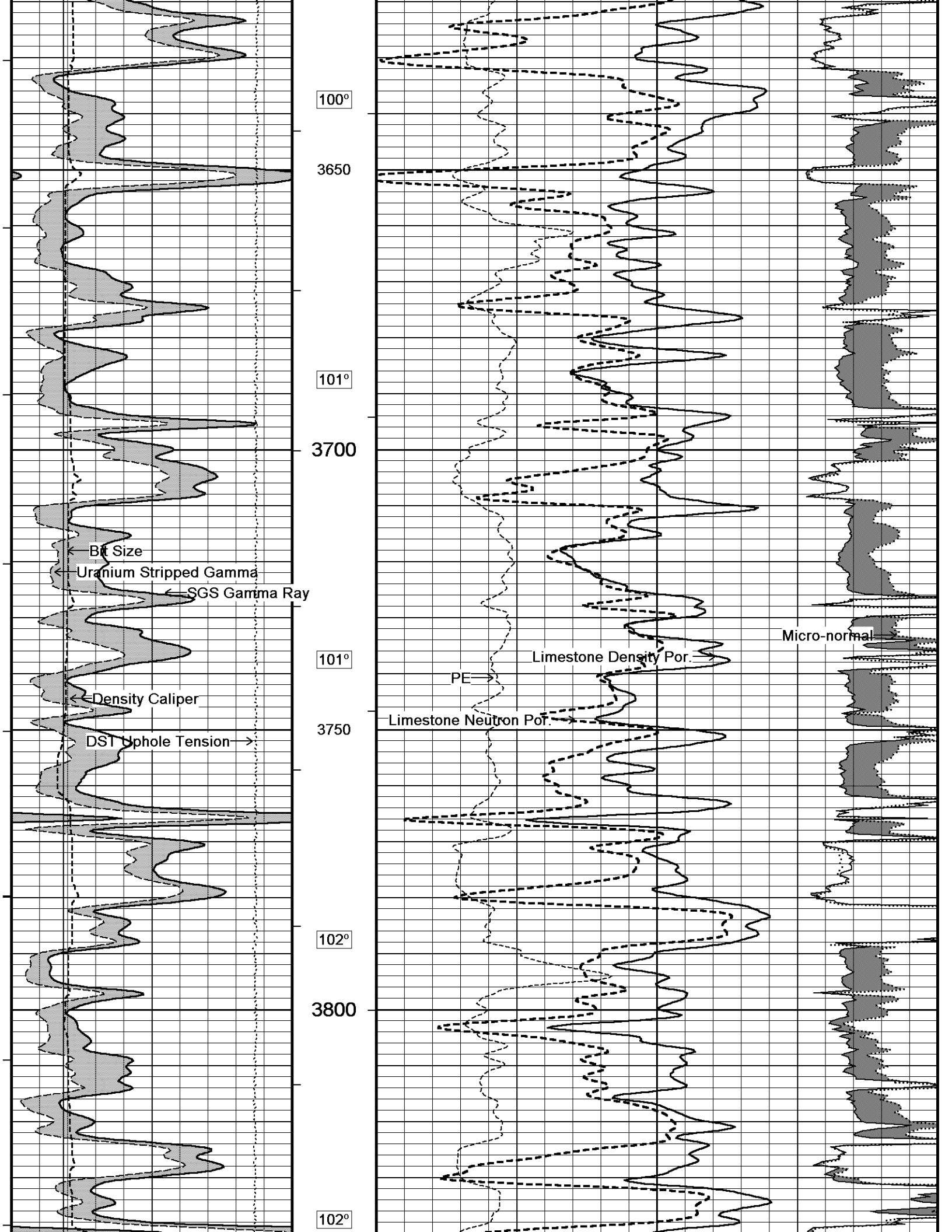

Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Density Caliper
DST Uphole Tension
92°
2550
92°
2600
93°
2650
93°
2700
93°
Micro-inverse
Micro-normal
Limestone Density Por
PE
Limestone Neutron Por

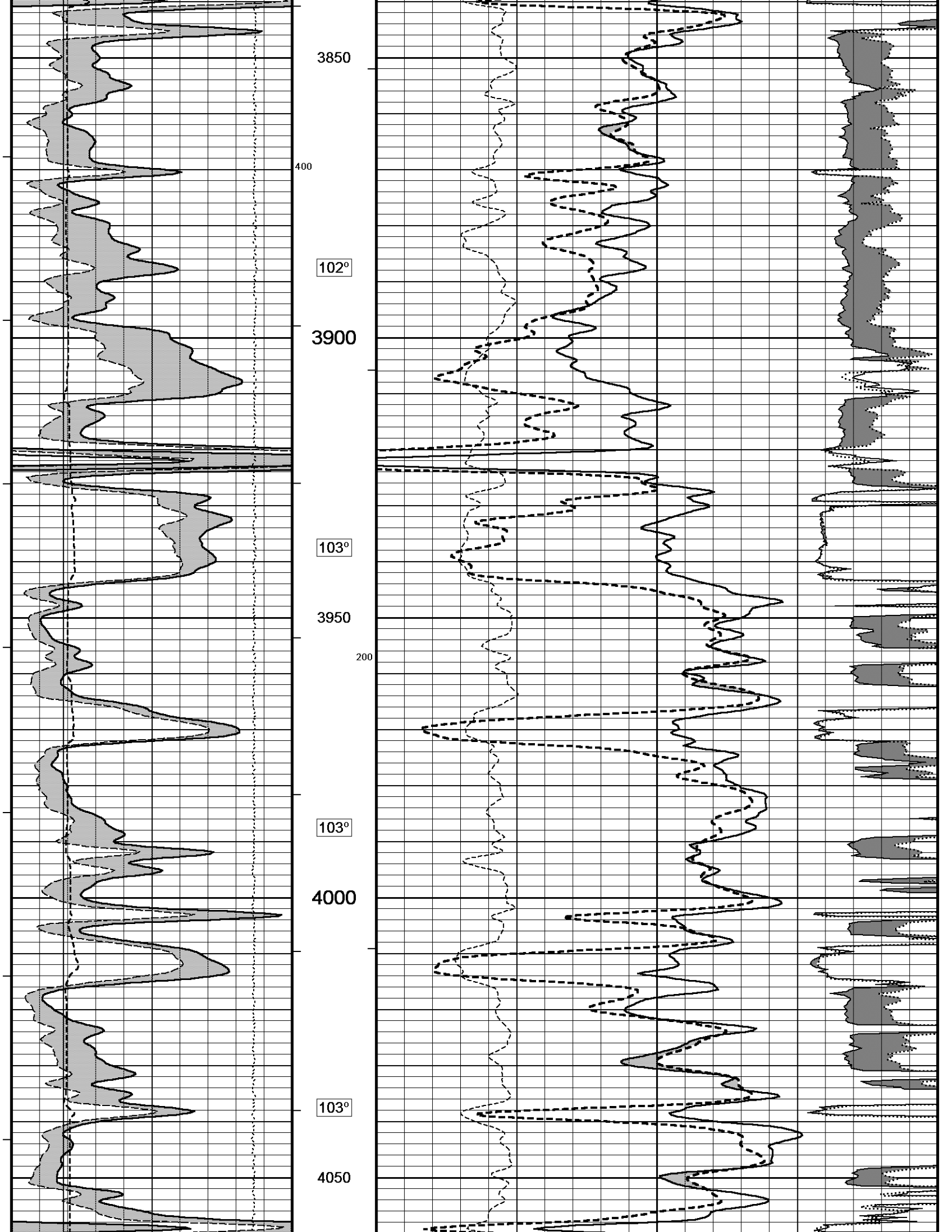

2750
800
94°
2800
94°
2850
95°
2900
95°
2950
400
Bit Size
Uranium Stripped Gamma
SGS Gamma-Ray
Density Caliper
Micro-inverse
Micro-normal
Limestone Density Por.
PE

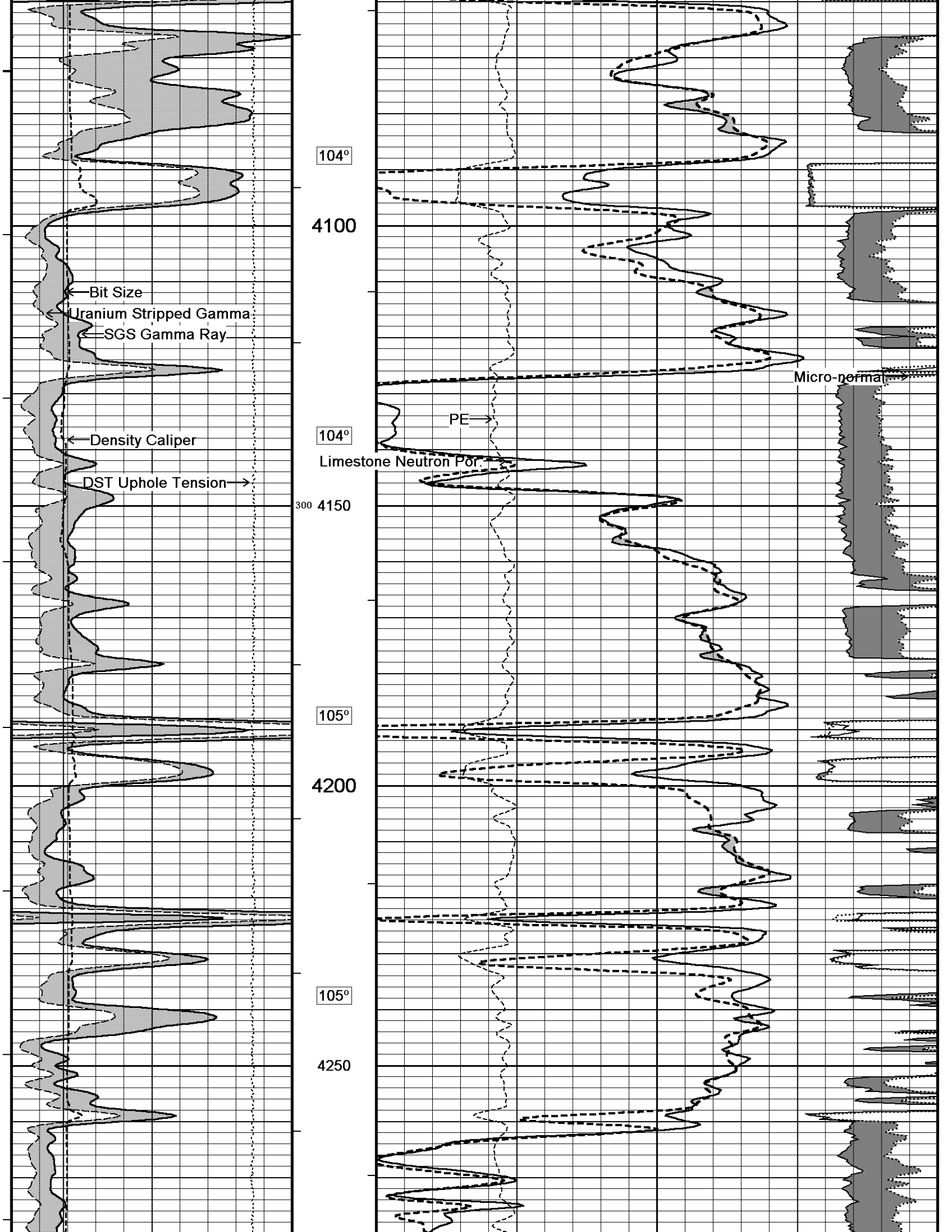

Limestone Neutron Por.
DST Uphole Tension
95°
3000
95°
700
3050
96°
3100
96°
3150

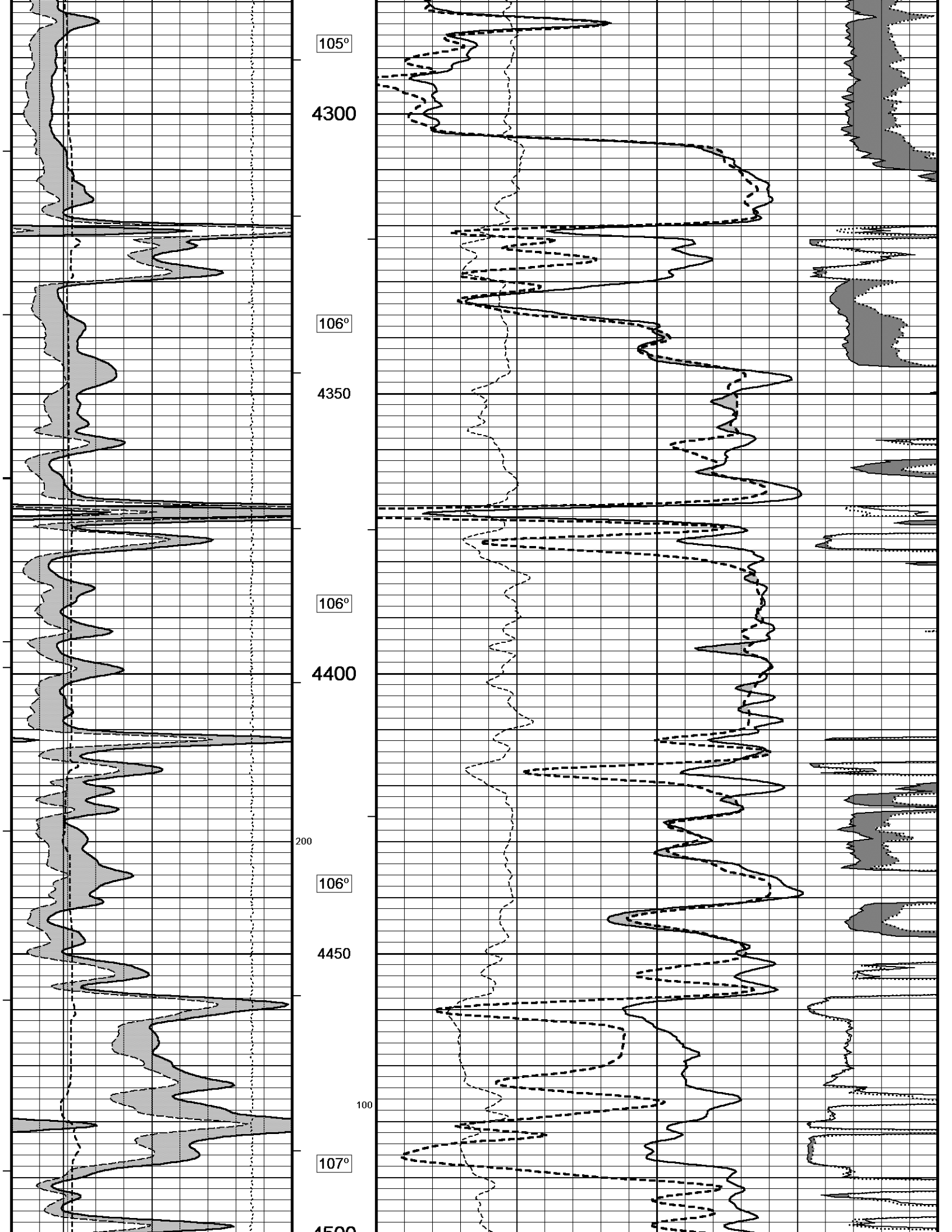

97°
3200
97°
3250
97°
3300
600
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
98°
Density Caliper
3350
DST Uphole Tension
99°
Micro-inverse
Micro-normal
Limestone Density Por.
PE
Limestone Neutron Por.

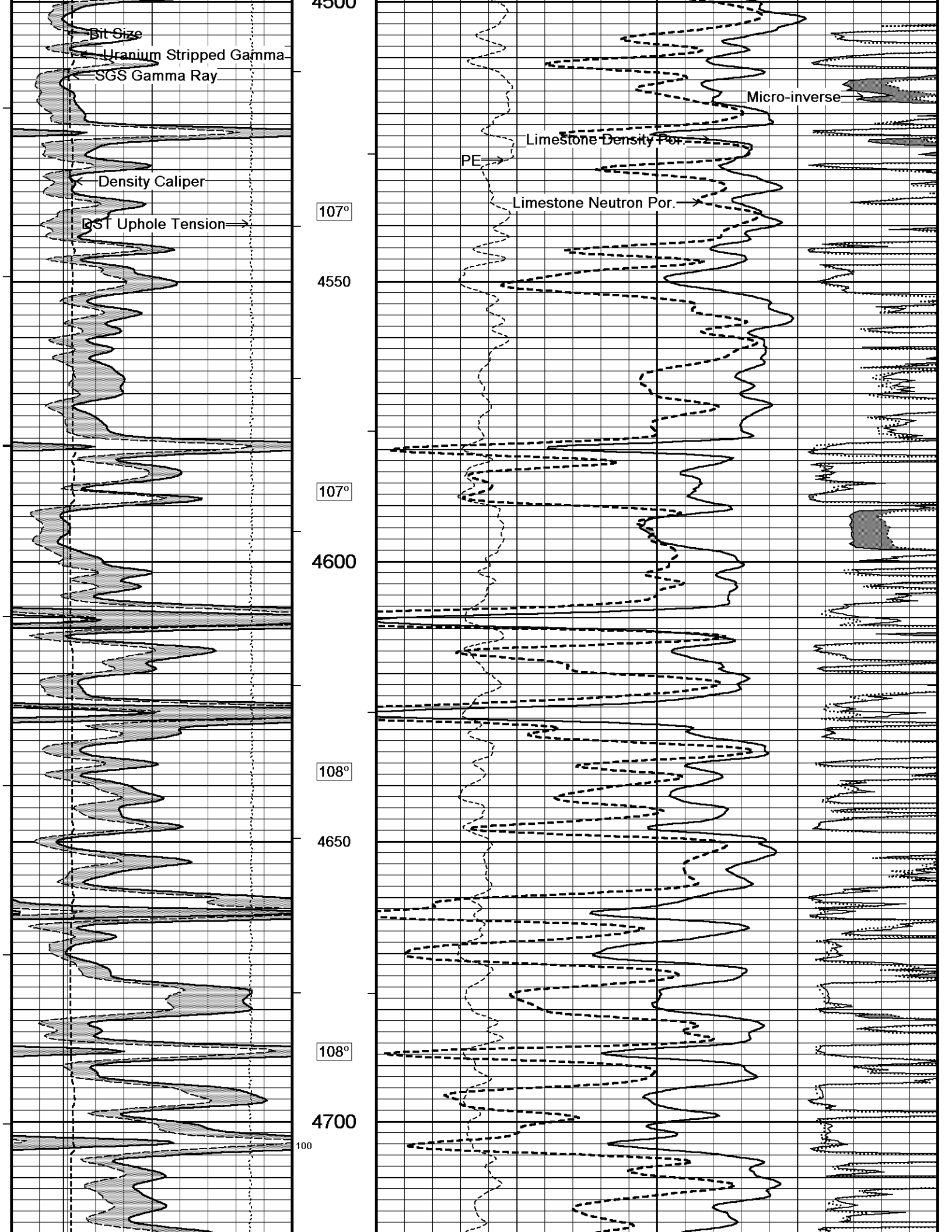

3400
99°
300
3450
99°
3500
100°
3550
500
100°
3600

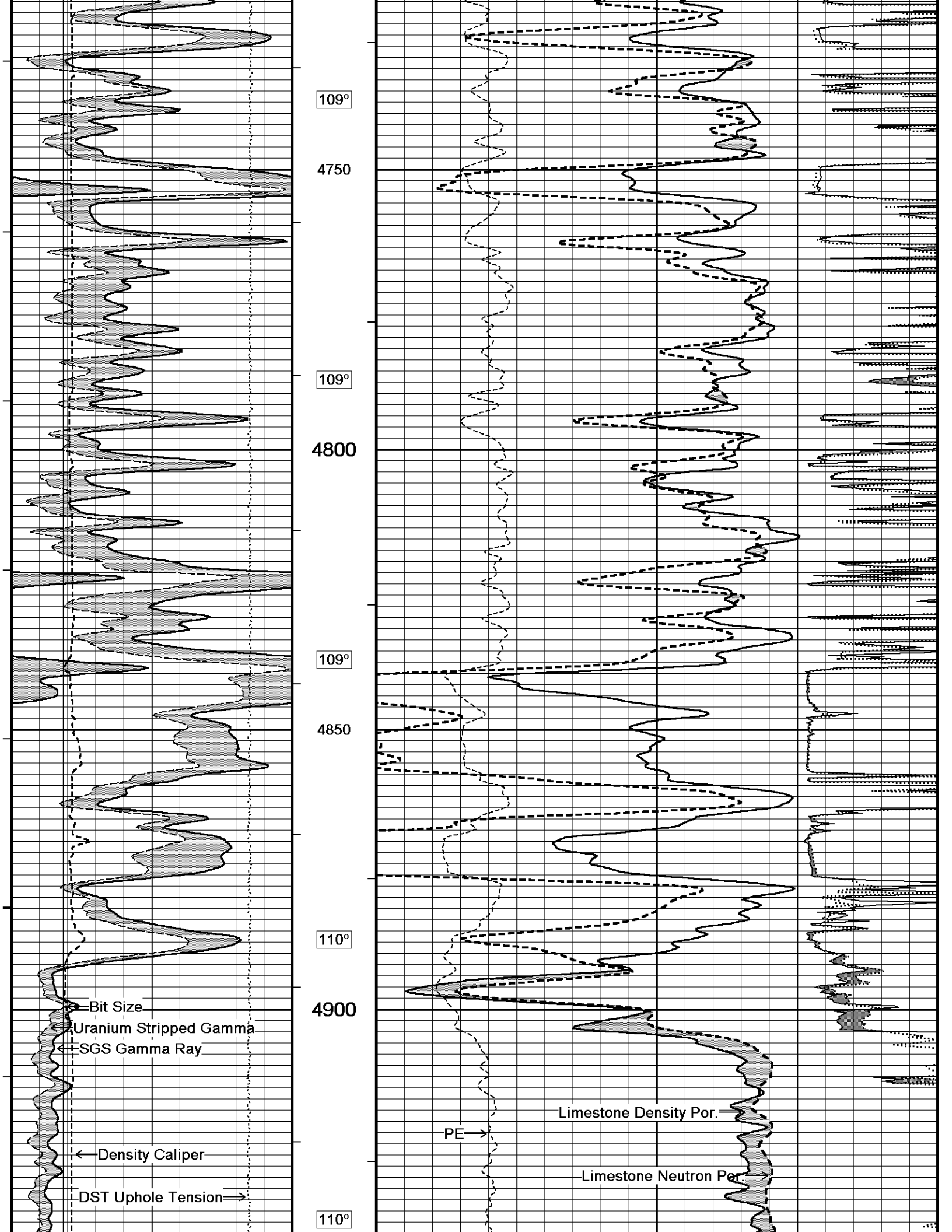

100°
3650
101°
3700
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
101°
Density Caliper
DST Uphole Tension
3750
102°
3800
102°
PE
Limestone Density Por.
Limestone Neutron Por.
Micro-normal

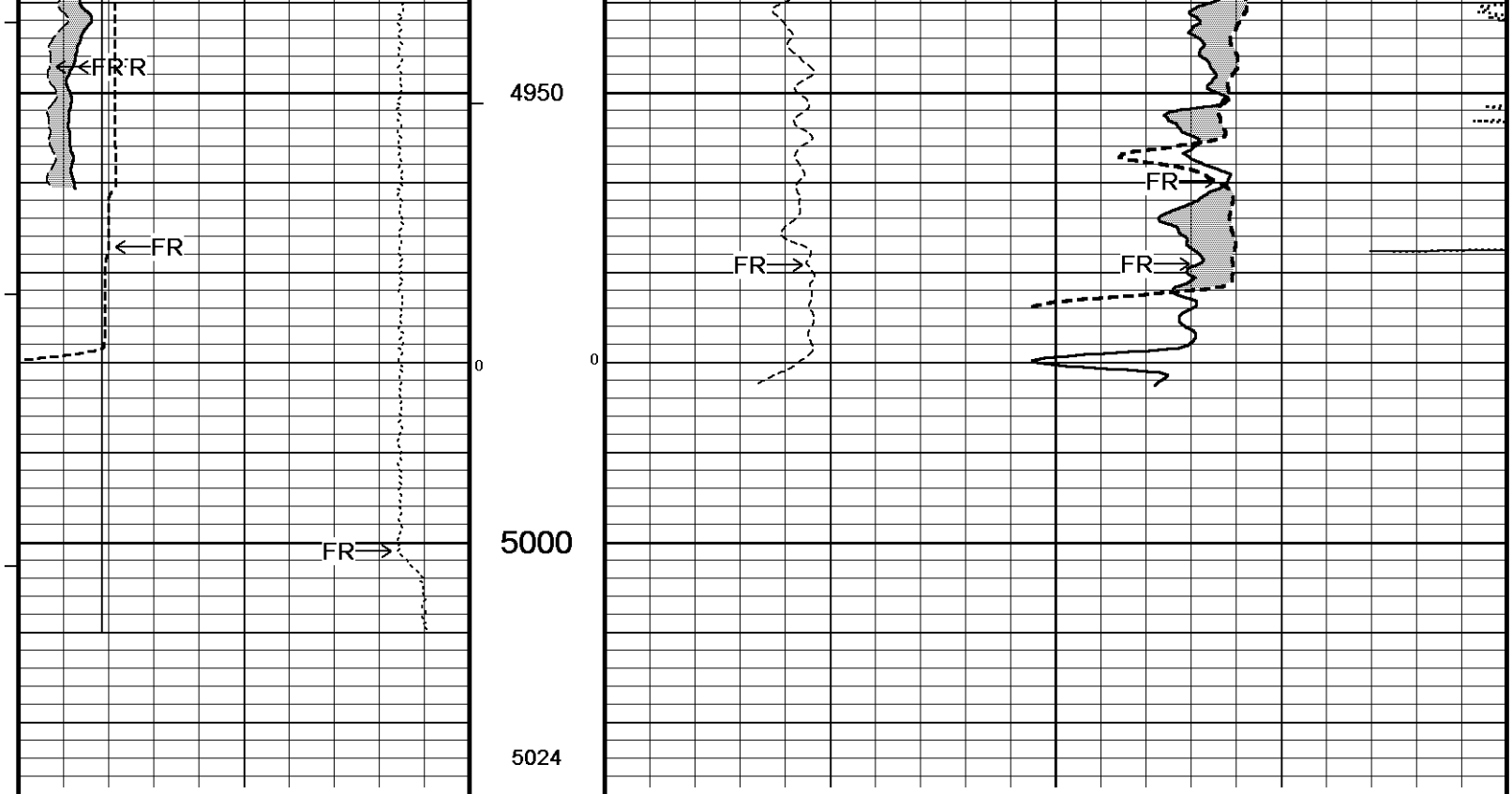

3850
400
102°
3900
103°
3950
200
103°
4000
103°
4050


104°
4100
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Micro-normal
PE
104°
Density Caliper
Limestone Neutron Por
DST Uphole Tension
300
4150
105°
4200
105°
4250


105°
4300
106°
4350
106°
4400
200
106°
4450
100
107°
4500


Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Density Caliper
DST Uphole Tension
Micro-inverse
Limestone Density Por.
PE
Limestone Neutron Por.
4500
107°
4550
107°
4600
108°
4650
108°
4700
100


109°
4750
109°
4800
109°
4850
110°
4900
110°
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Density Caliper
DST Uphole Tension
PE
Limestone Density Por.
Limestone Neutron Por.



5024

Depth in Feet

Timing Marks
every 60.0 sec

Density Caliper
inches
6 11 16

SGS Gamma Ray
API
0 75 150
150 225 300

Uranium Stripped Gamma
API
0 75 150
150 225 300

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

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

Micro-normal
ohm metres
0 20

Micro-inverse
ohm metres
0 20

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 27-SEP-2013 00:50
Filename: C:\Minimus 13.05.9583\Log\PetroSantander Od...\PetroSantander Odd Williams #6 MAIN.dta
Recorded on 26-SEP-2013 21:18
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 27-SEP-2013 00:50
Filename: C:\Minimus 13.05.9583\Log\PetroSantander...\PetroSantander Odd Williams #6 REPEAT.dta
Recorded on 26-SEP-2013 20:48
System Versions: Processed with 13.05.9583 Plotted with 13.05.9583

Timing Marks
every 60.0 sec

Density Caliper
inches
6 11 16

SGS Gamma Ray
API
0 75 150
150 225 300

Uranium Stripped Gamma
API
0 75 150
150 225 300

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

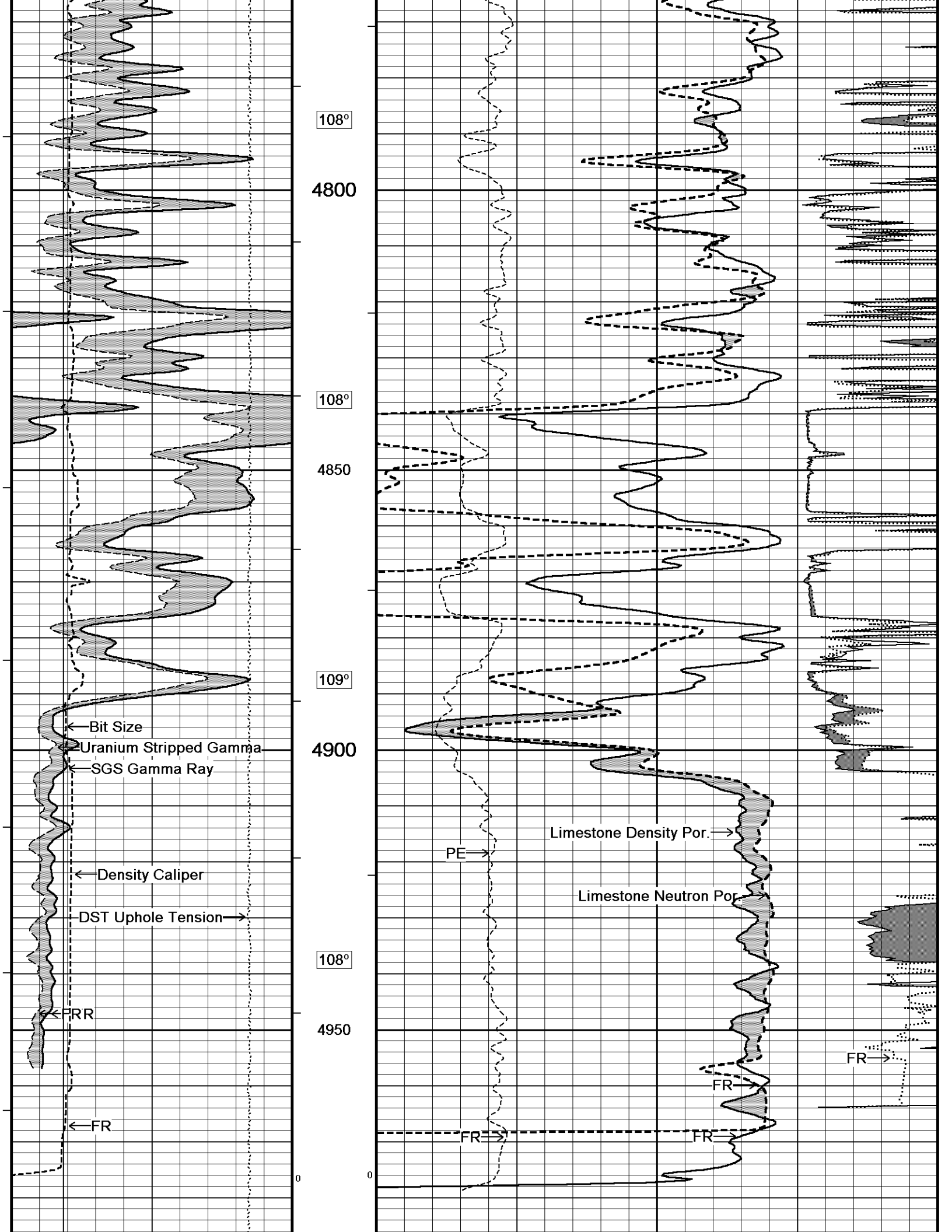
Micro-normal
ohm metres
0 20

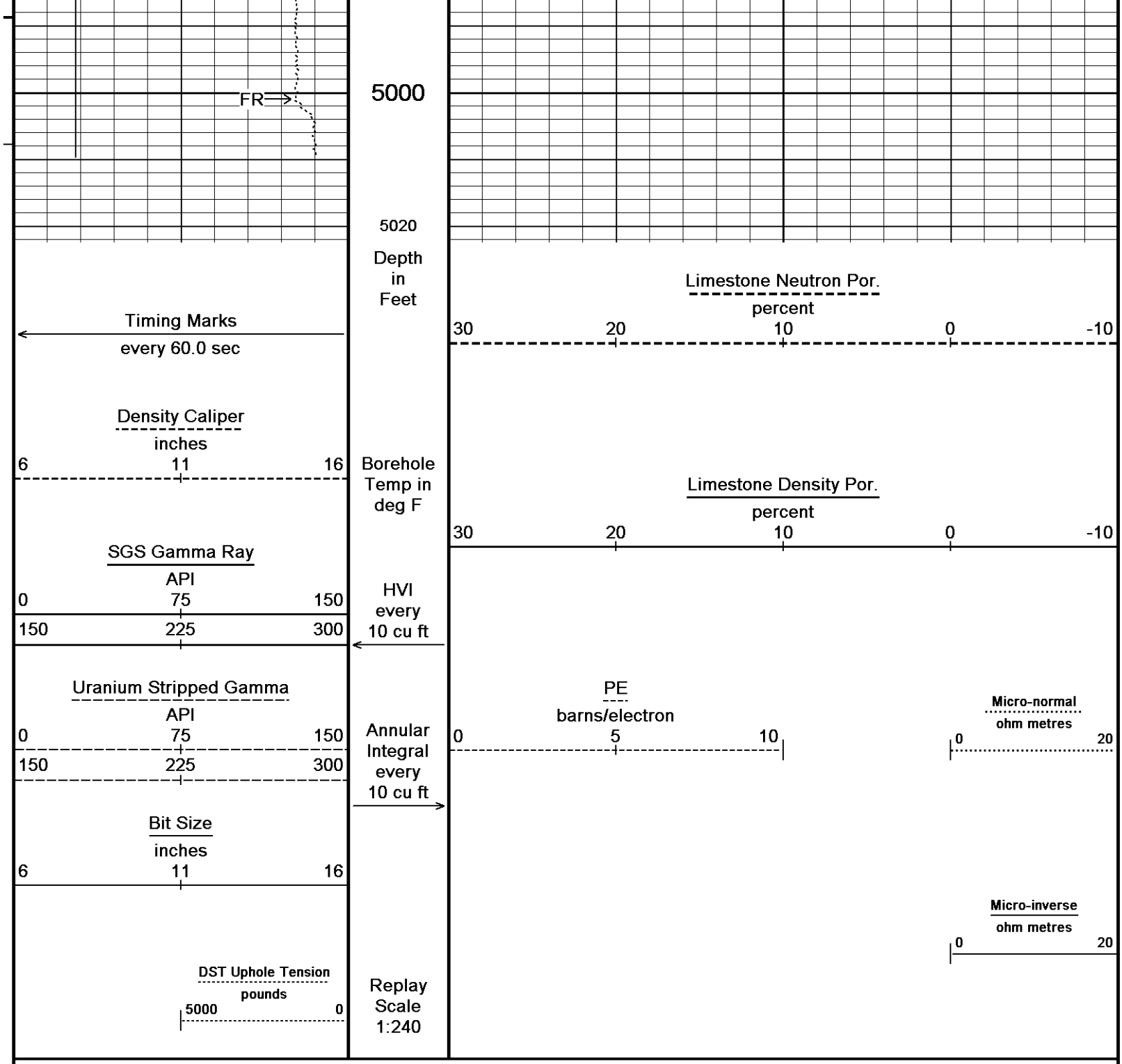
Micro-inverse
ohm metres
0 20

4700

108°

4750


108°
4800
108°
4850
109°
4900
108°
4950
0
0
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Density Caliper
DST Uphole Tension
PRR
FR
PE
Limestone Density Por.
Limestone Neutron Por.
FR
FR
FR
FR



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 27-SEP-2013 00:50
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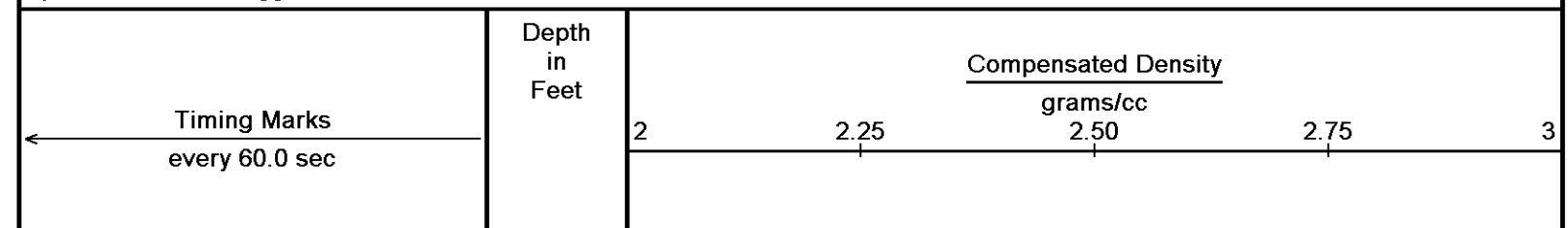
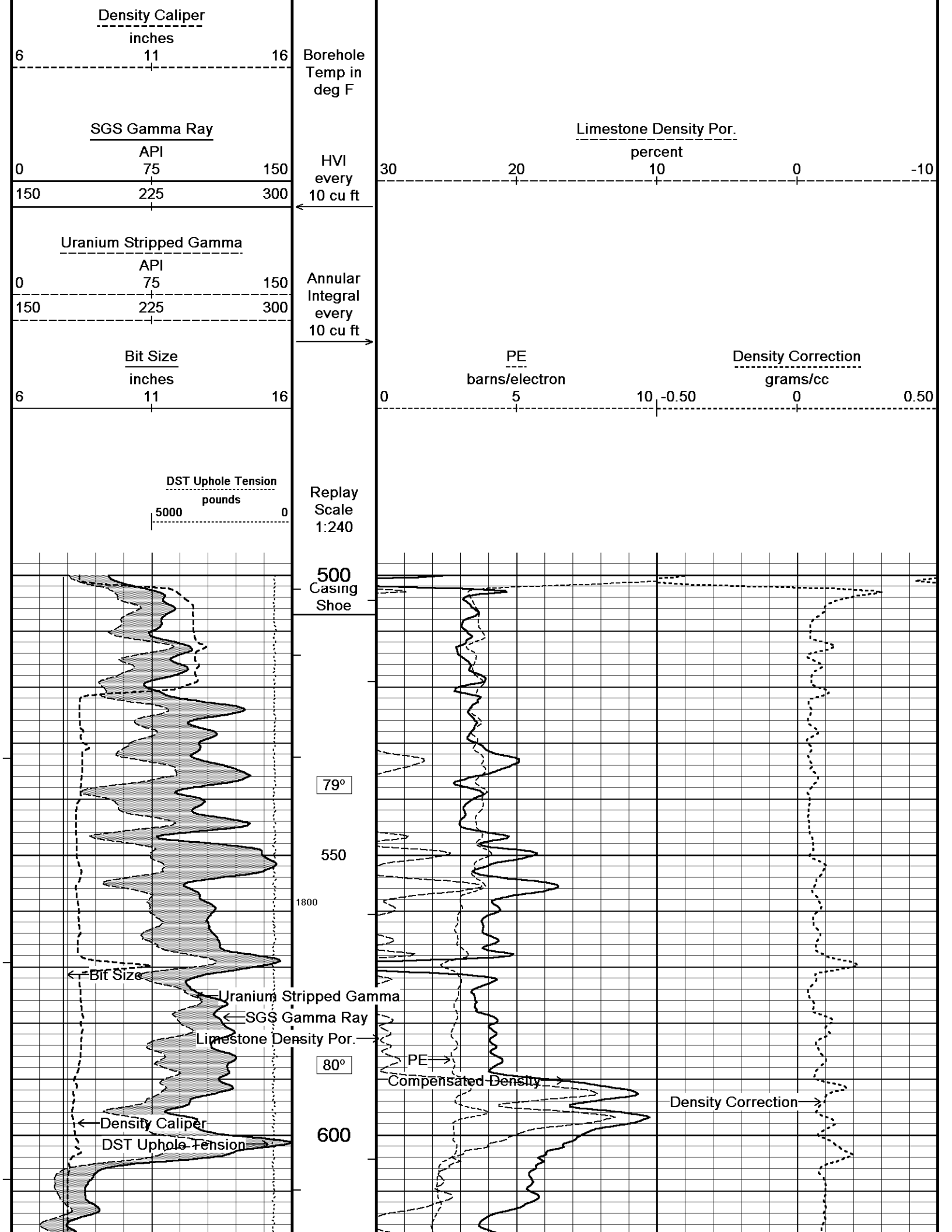
System Versions: Processed with 13.05.9583 Plotted with 13.05.9583

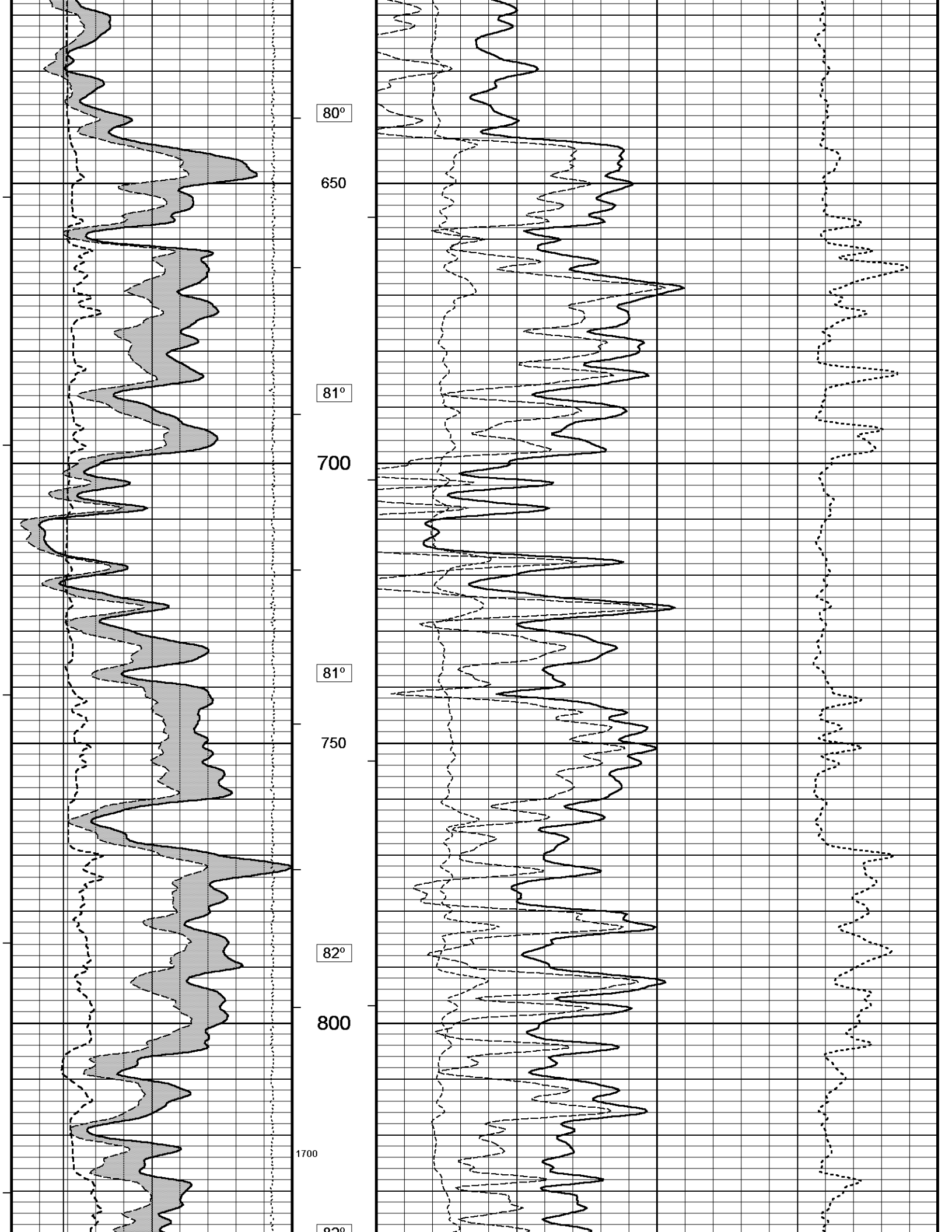
REPEAT SECTION

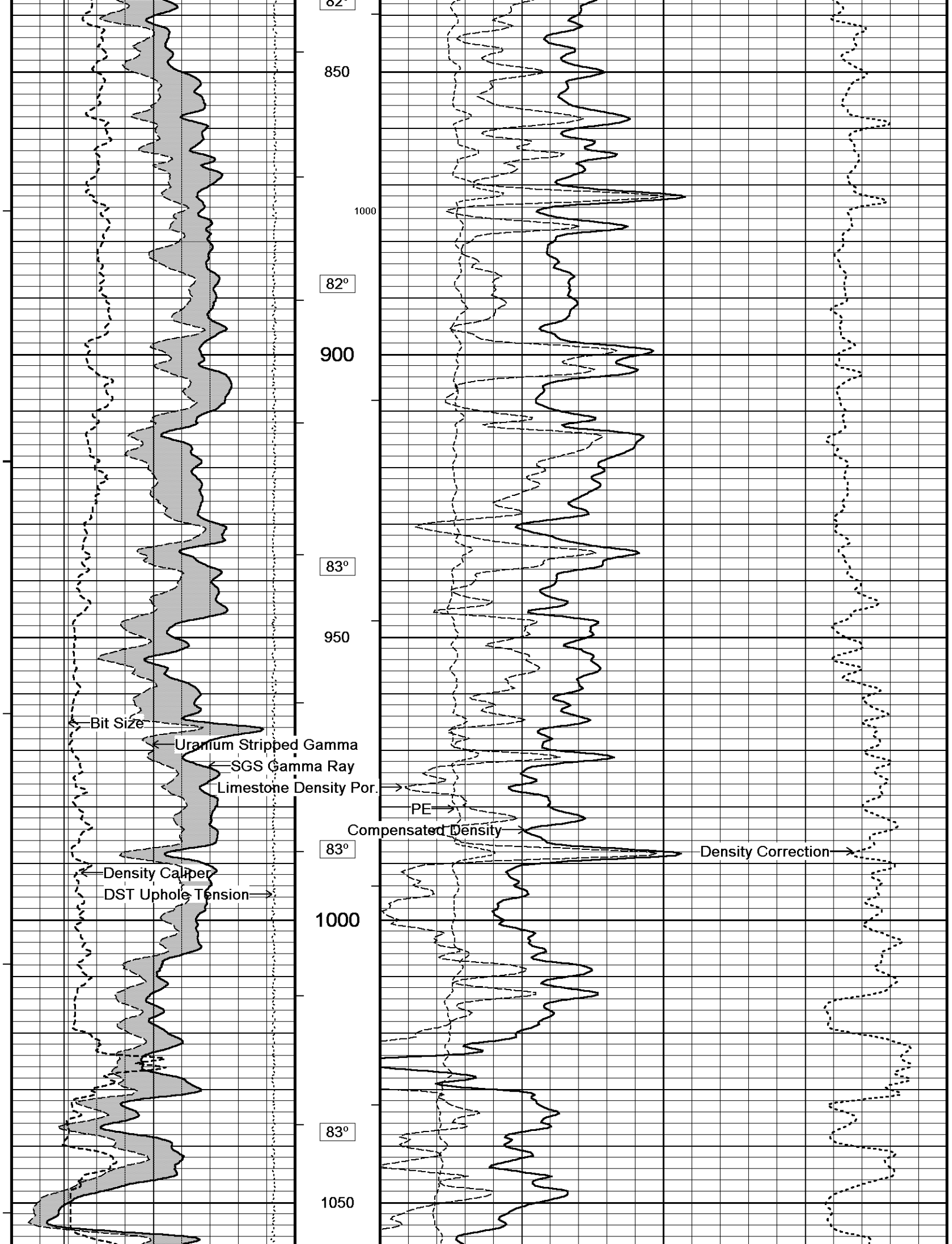
5 INCH MAIN

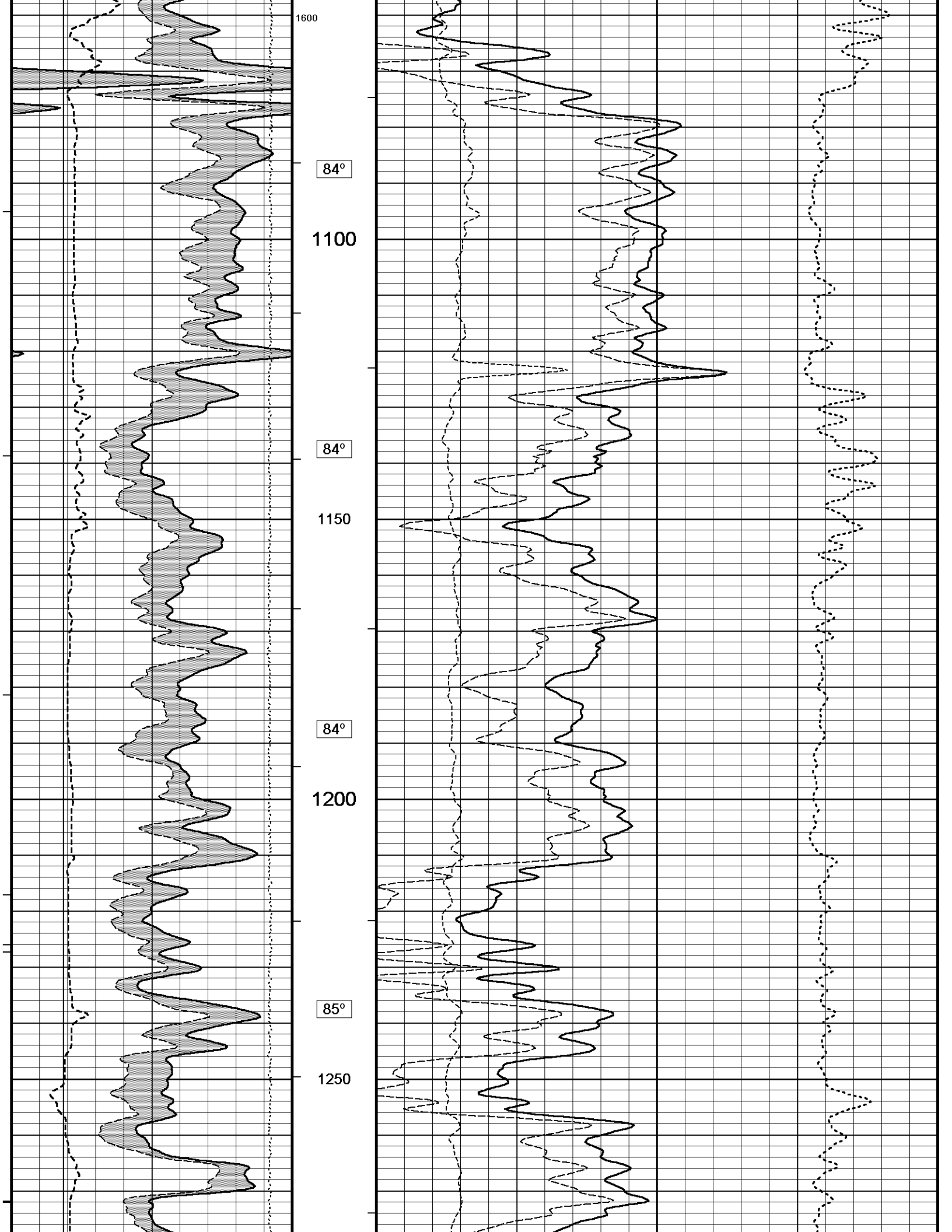
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 27-SEP-2013 00:50
Filename: C:\Minimus 13.05.9583\Log\PetroSantander Od...\PetroSantander Odd Williams #6 MAIN.dta — Recorded on 26-SEP-2013 21:18
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

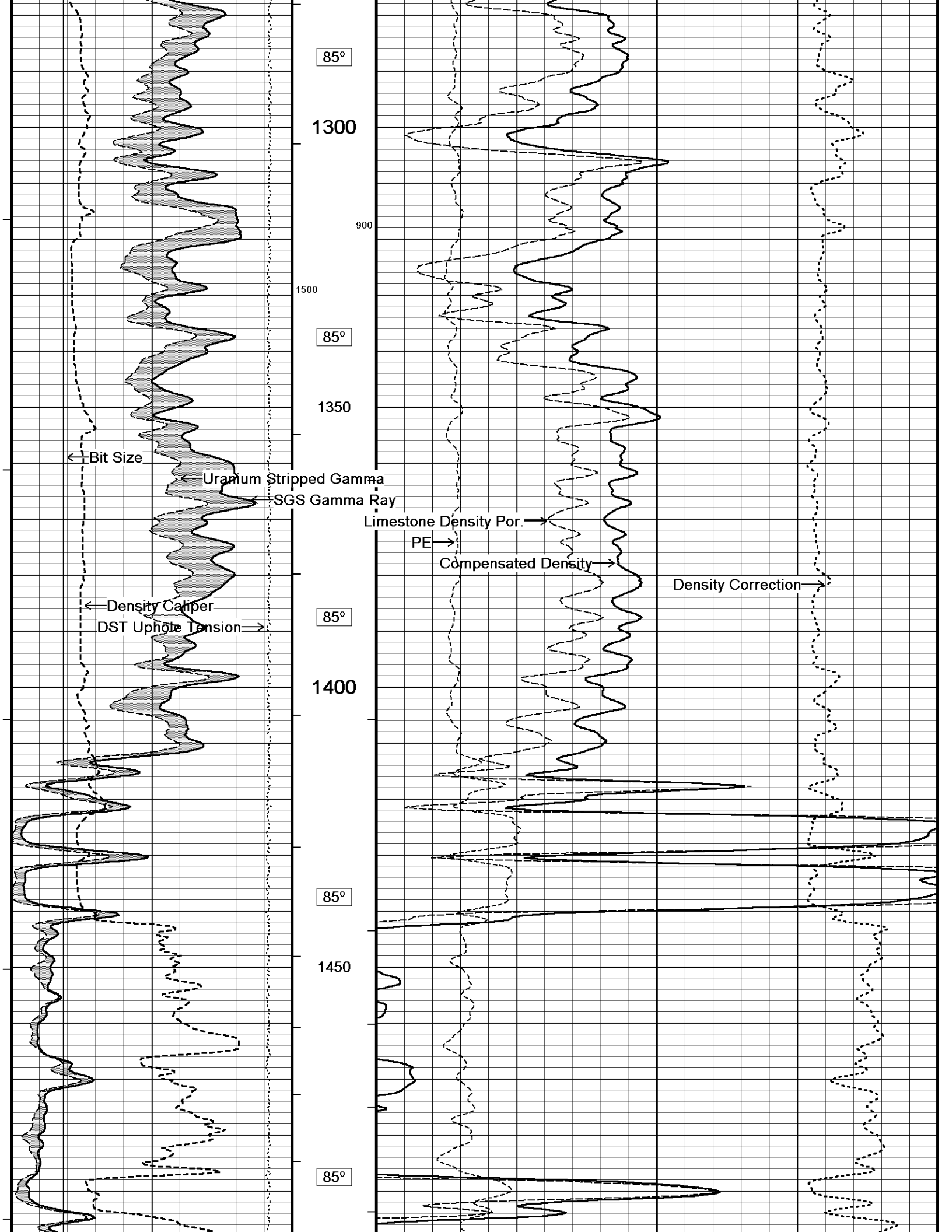


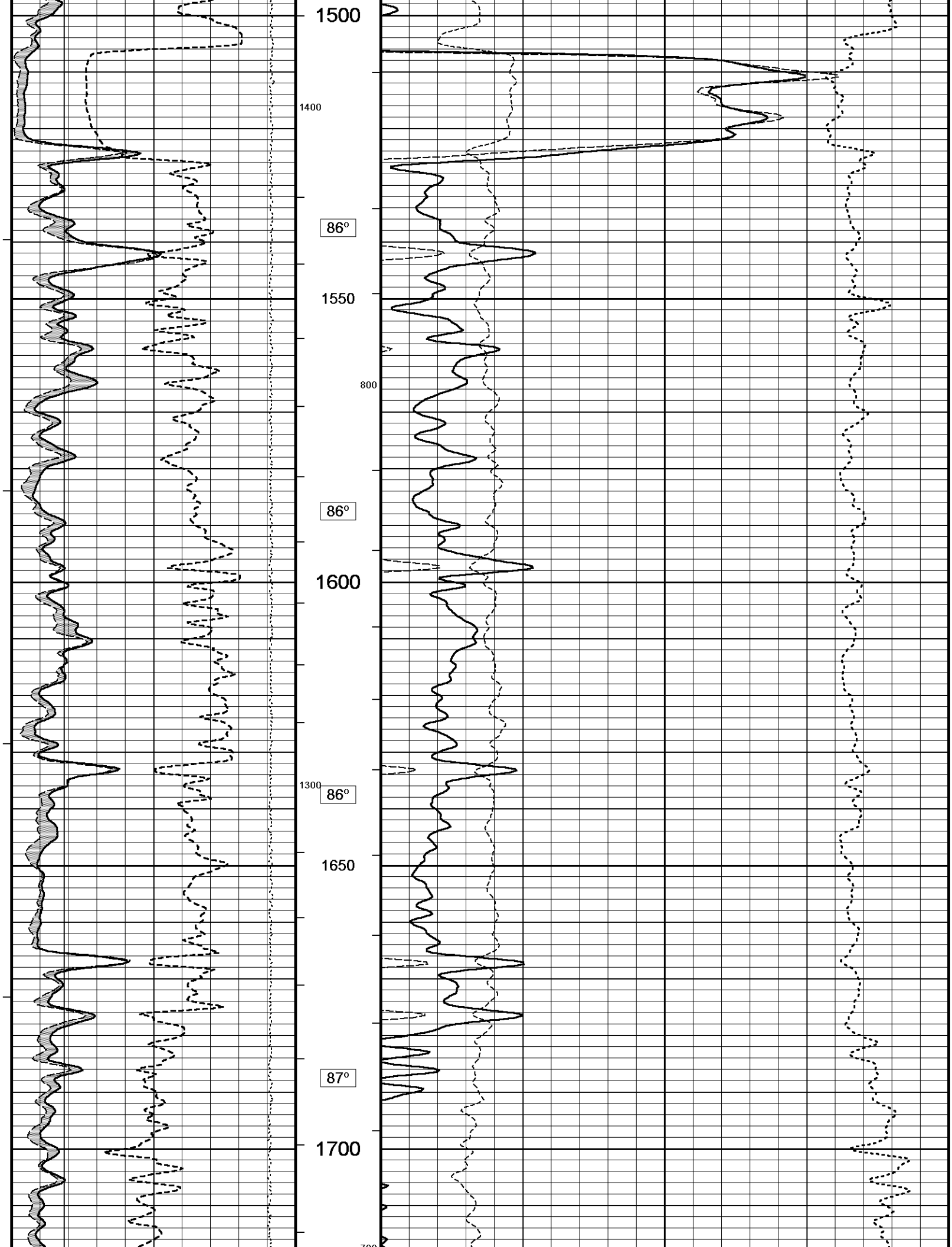

Density Caliper
inches
6
11
16
Borehole Temp in deg F
SGS Gamma Ray
API
0
75
150
150
225
300
HVI every 10 cu ft
Limestone Density Por.
percent
30
20
10
0
-10
Uranium Stripped Gamma
API
0
75
150
150
225
300
Annular Integral every 10 cu ft
Bit Size
inches
6
11
16
PE
barns/electron
0
5
10
Density Correction
grams/cc
-0.50
0
0.50
DST Uphole Tension
pounds
5000
0
Replay Scale 1:240
500
Casing Shoe
79°
550
1800
80°
600
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
DST Uphole Tension

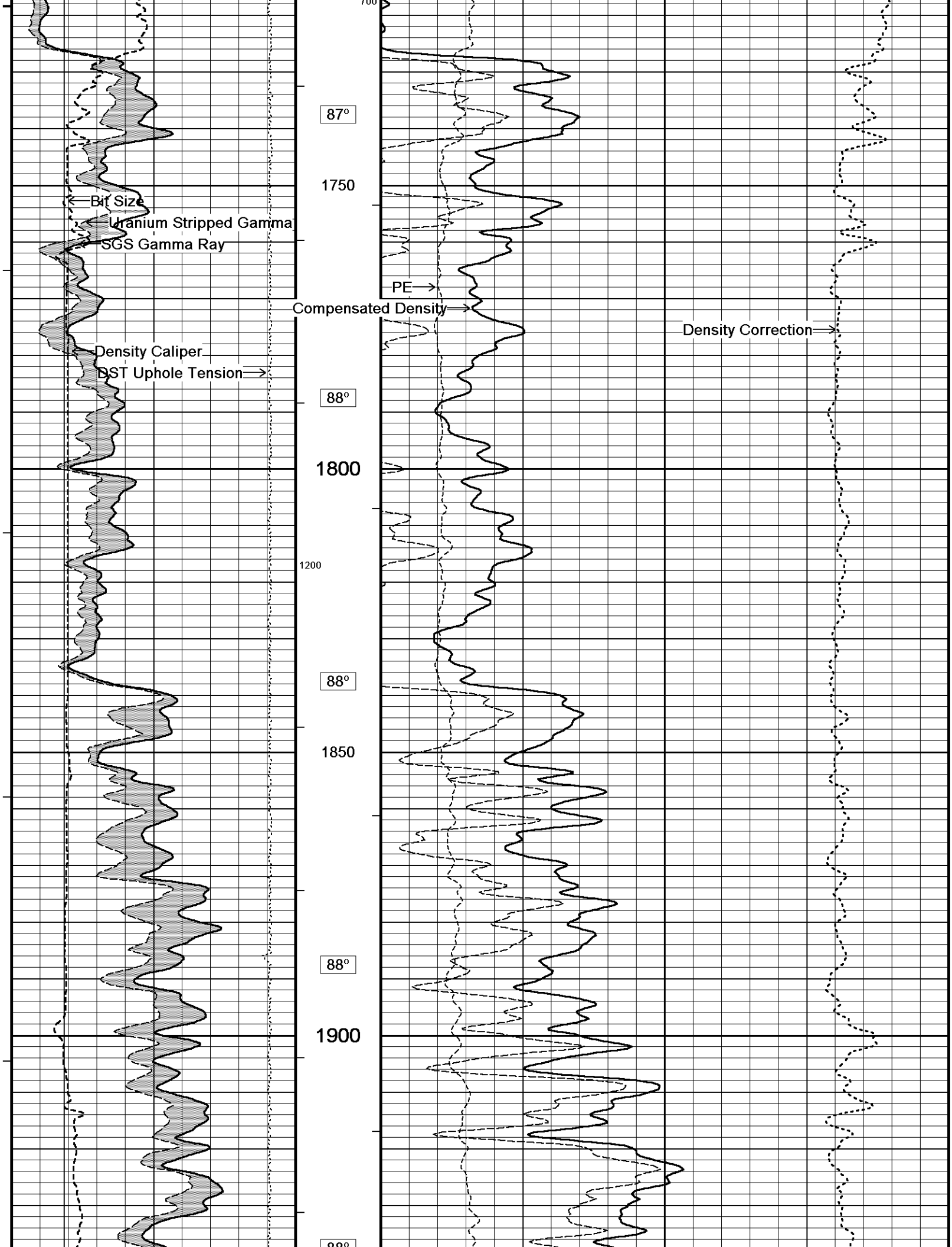

80°
650
81°
700
81°
750
82°
800
1700
82°

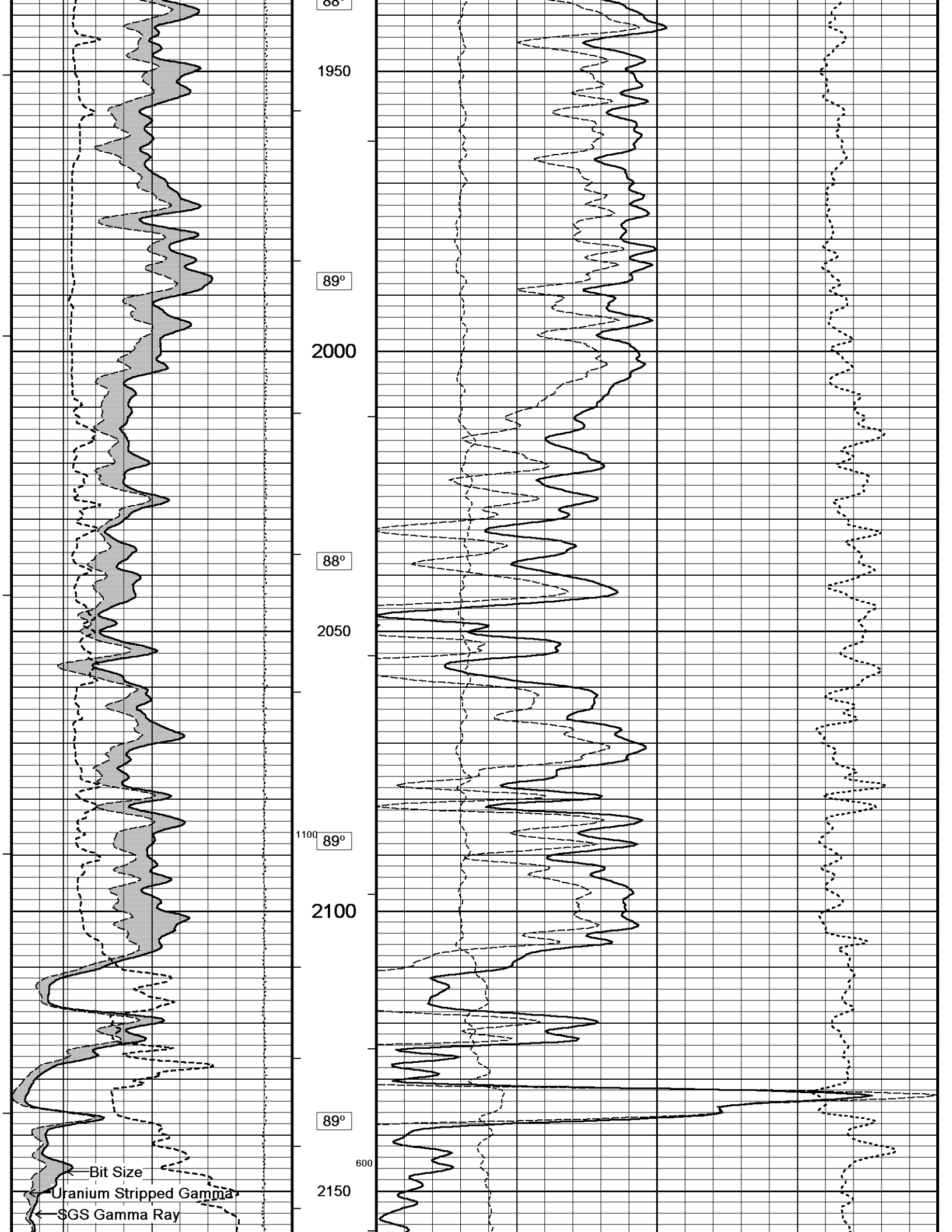

850
1000
82°
900
83°
950
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Limestone Density Por.
PE
Compensated Density
83°
Density Correction
Density Caliper
DST Uphole Tension
1000
83°
1050

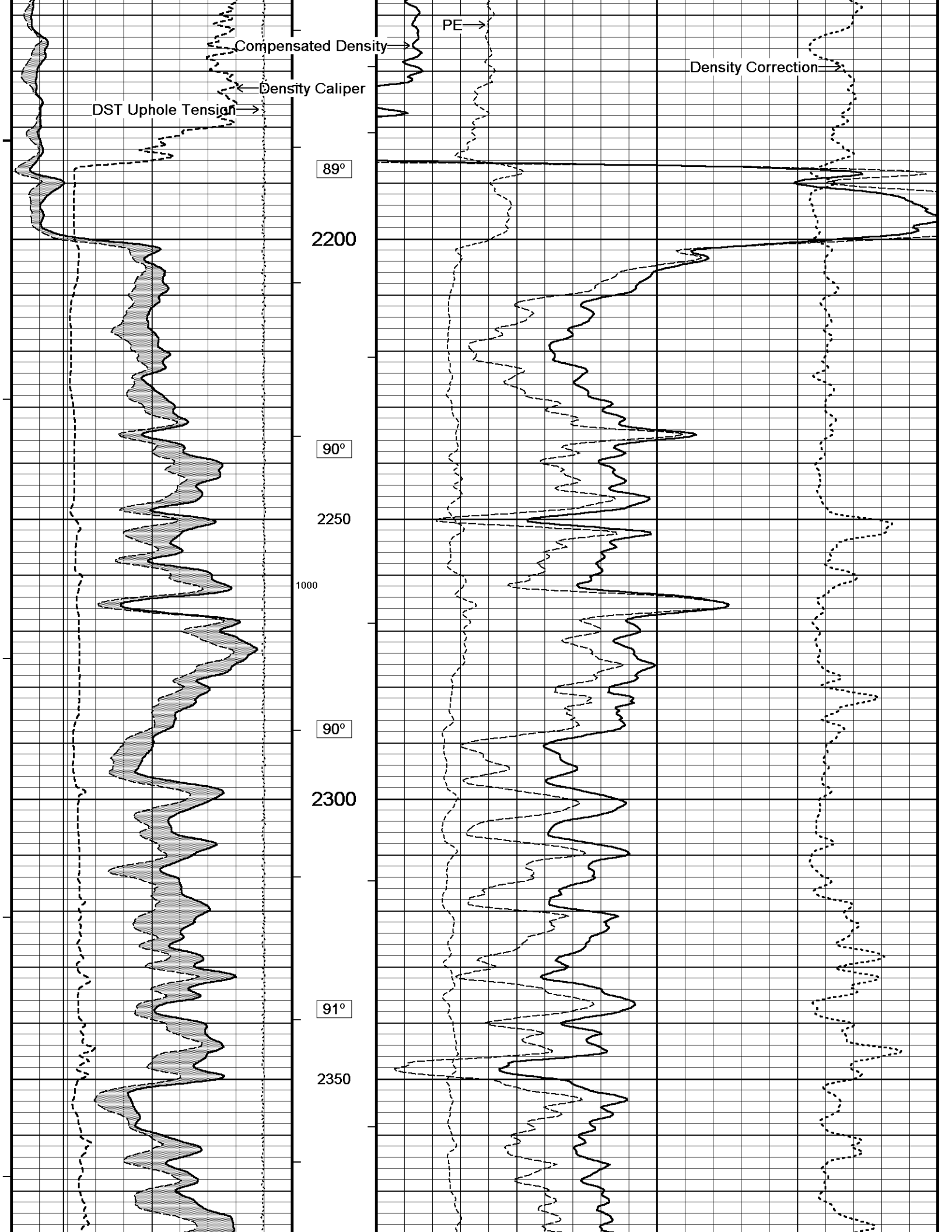

1600
84°
1100
84°
1150
84°
1200
85°
1250

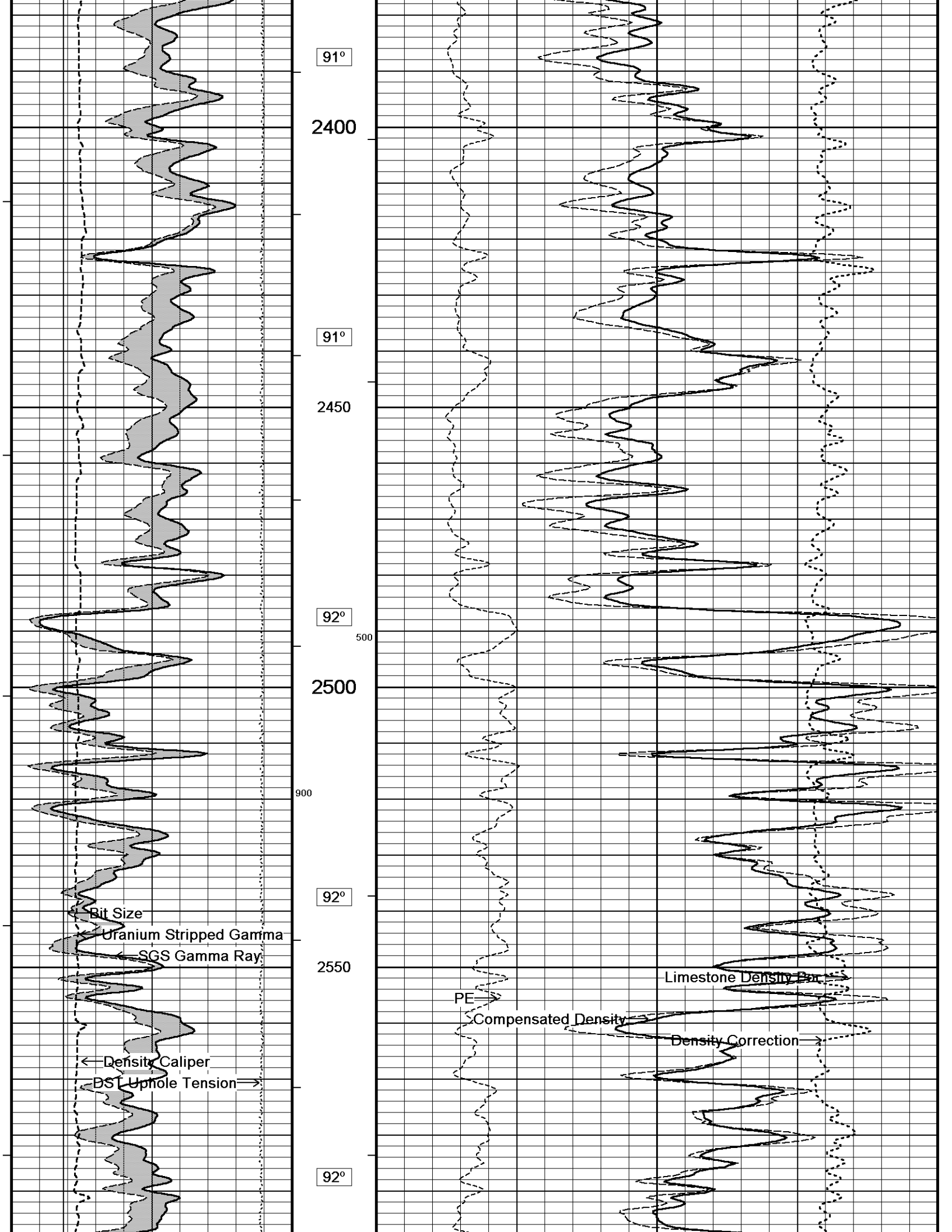

85°
1300
900
1500
85°
1350
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
DST Uphole Tension
85°
1400
85°
1450
85°

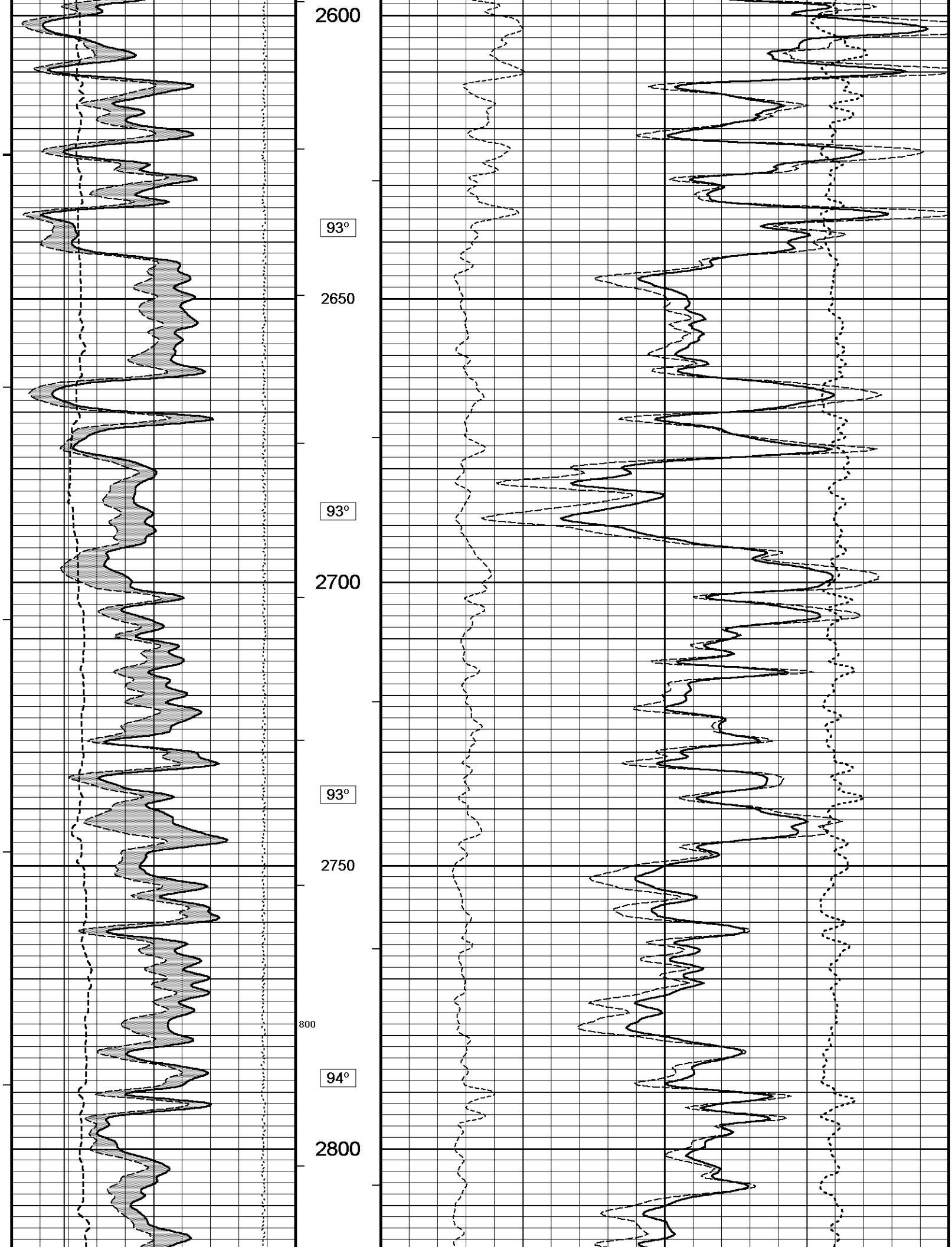

1500
1400
86°
1550
800
86°
1600
1300
86°
1650
87°
1700

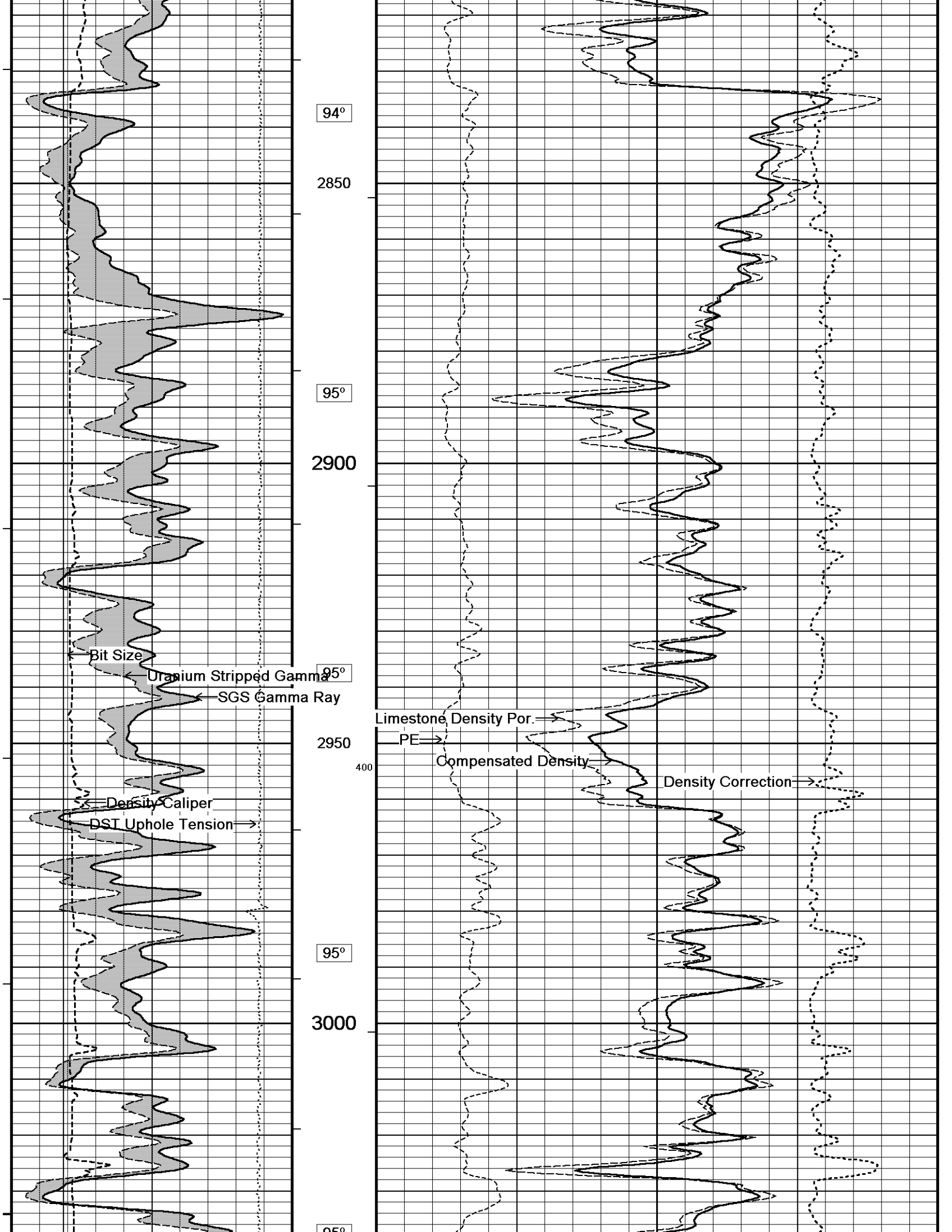

700
87°
1750
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
PE
Compensated Density
Density Correction
Density Caliper
DST Uphole Tension
88°
1800
1200
88°
1850
88°
1900

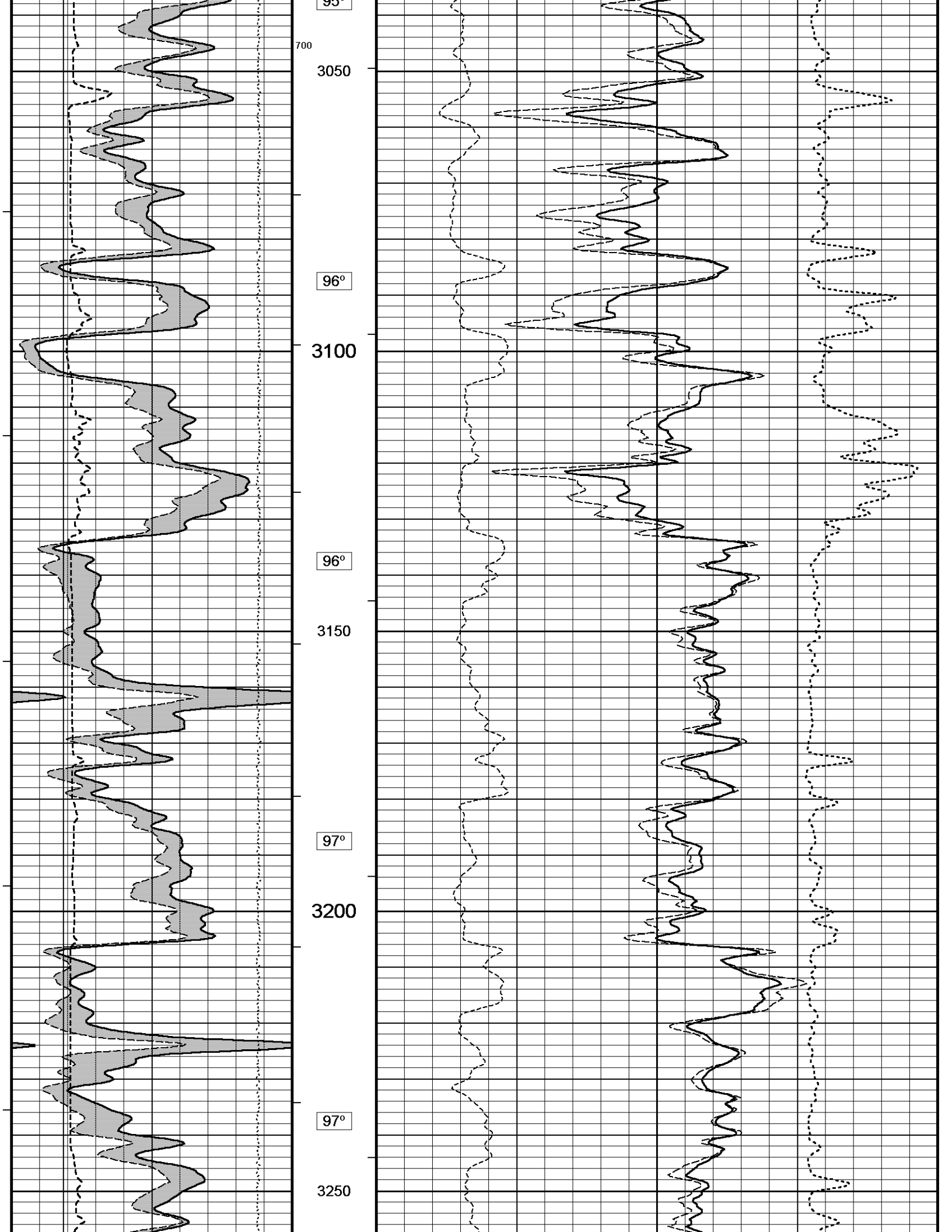

88°
1950
89°
2000
88°
2050
1100
89°
2100
89°
600
2150
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray

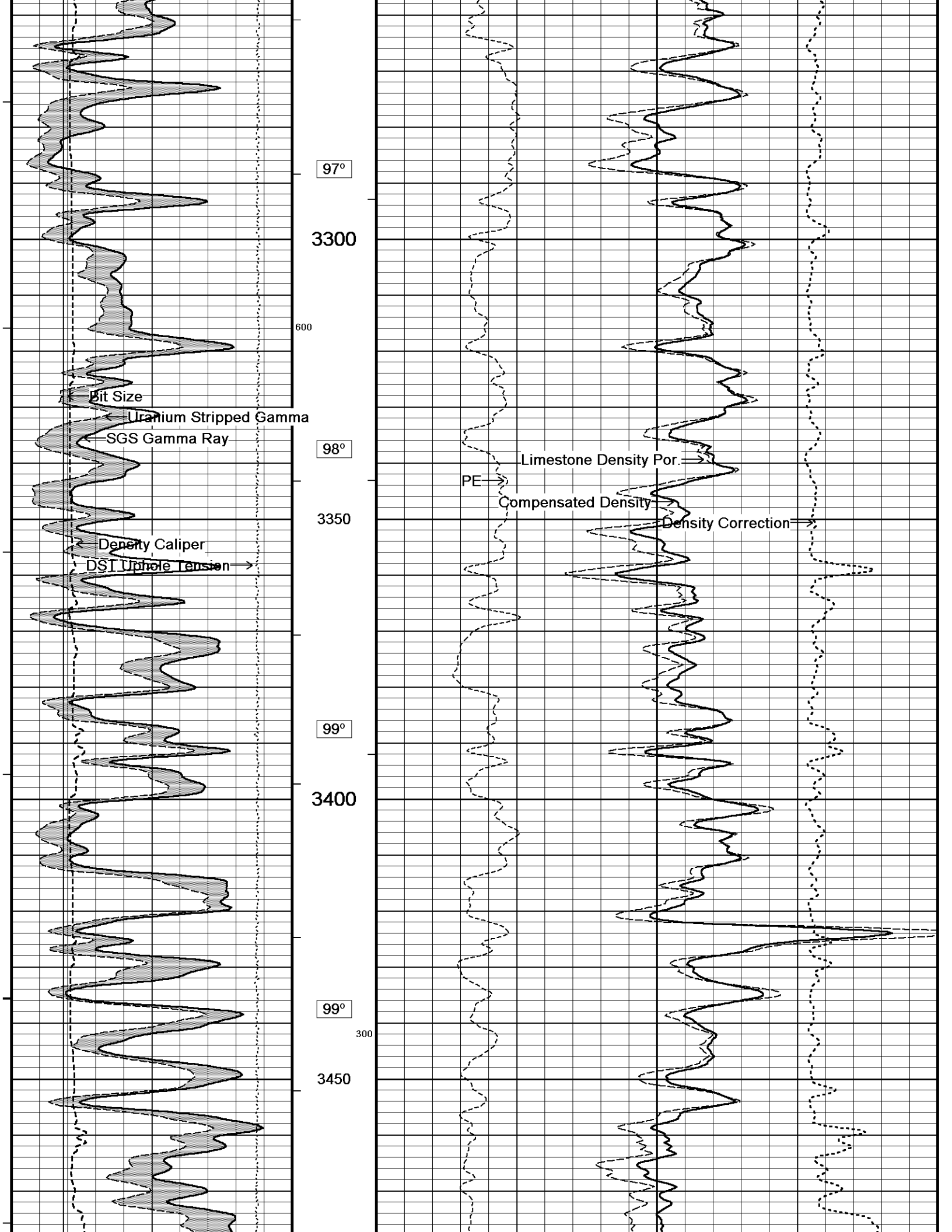

PE
Compensated Density
Density Caliper
DST Uphole Tension
Density Correction
89°
2200
90°
2250
1000
90°
2300
91°
2350

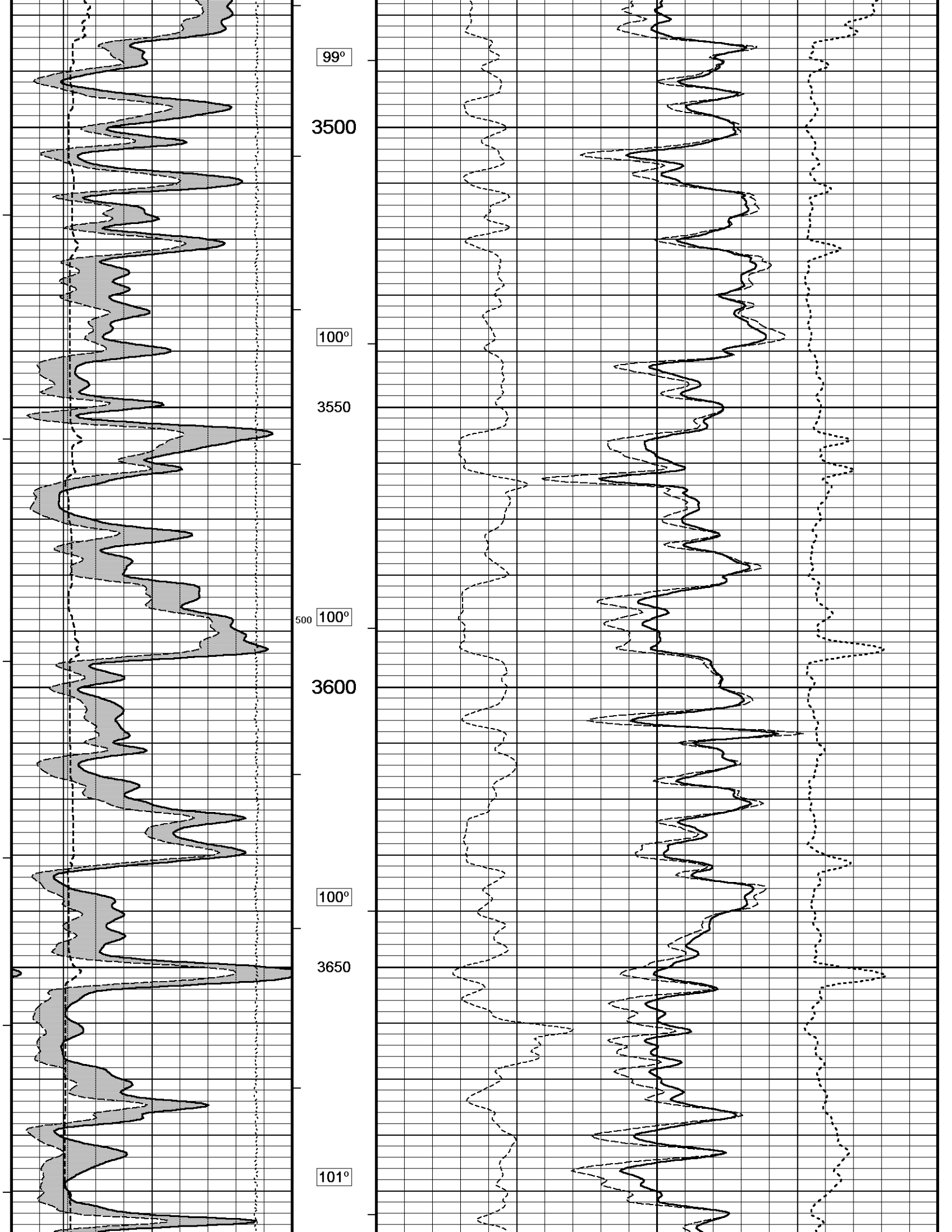

91°
2400
91°
2450
92°
500
2500
900
92°
2550
92°
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Density Caliper
DST Uphole Tension
PE
Compensated Density
Limestone Density Por
Density Correction

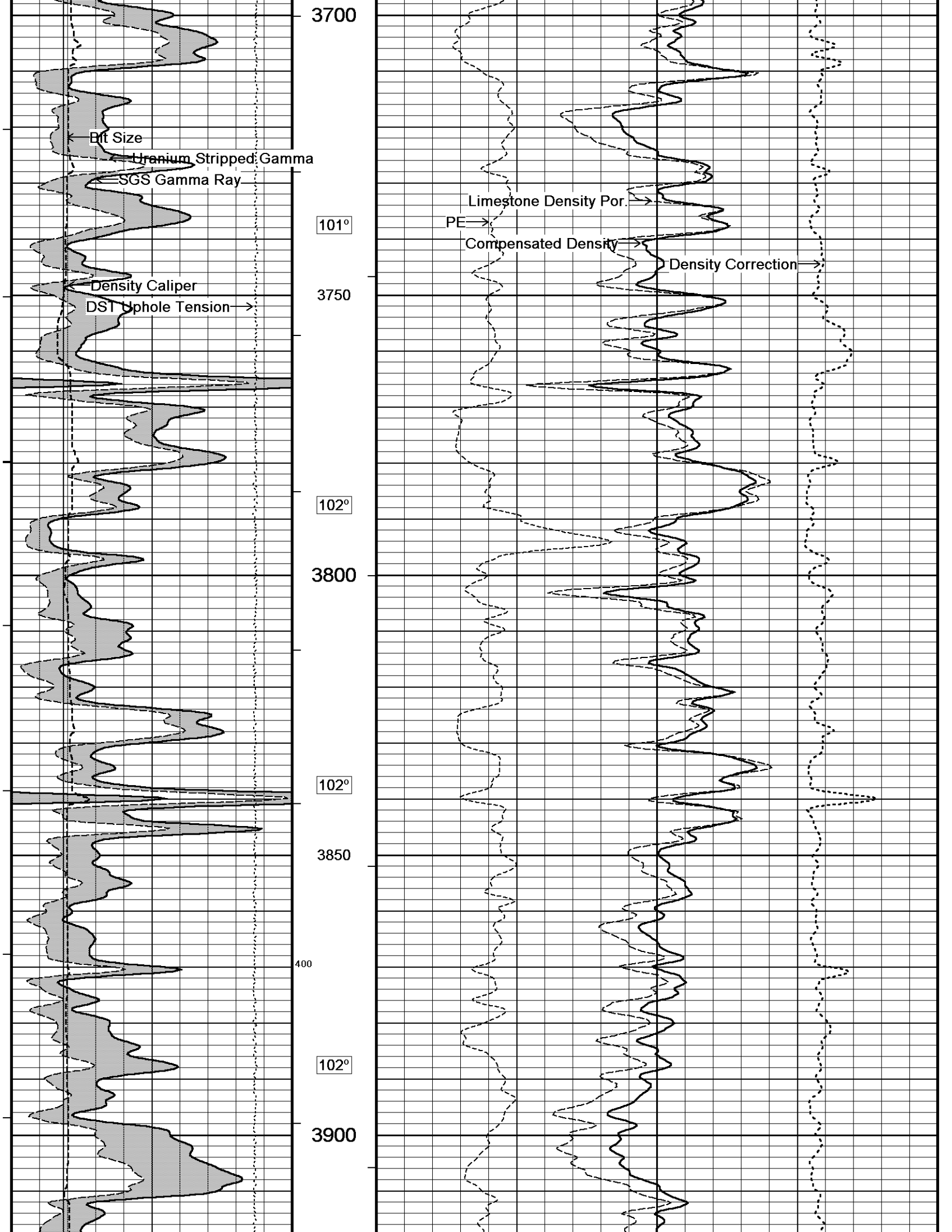

2600
93°
2650
93°
2700
93°
2750
800
94°
2800

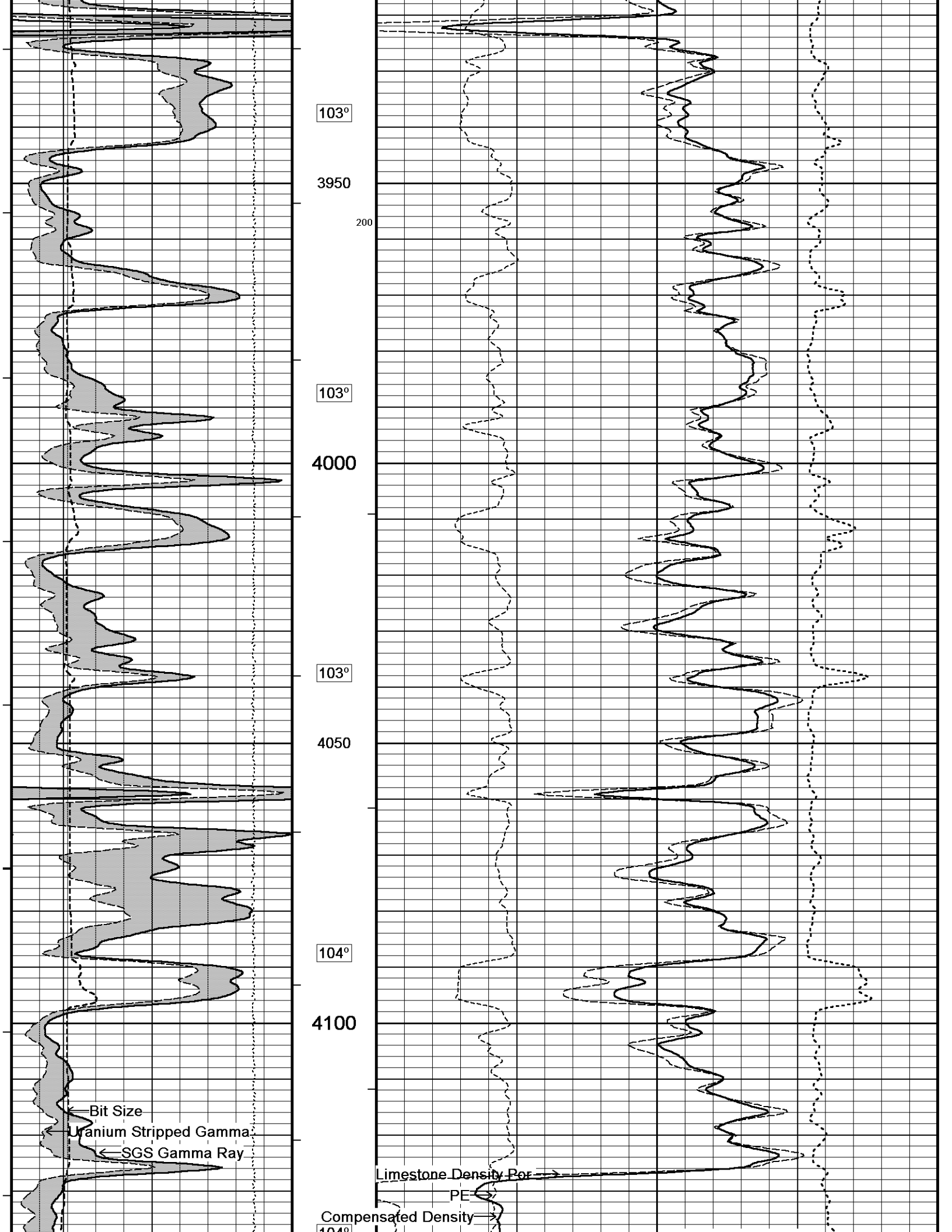

94°
2850
95°
2900
95°
2950
95°
3000
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Density Caliper
DST Uphole Tension
Limestone Density Por.
PE
Compensated Density
400
Density Correction

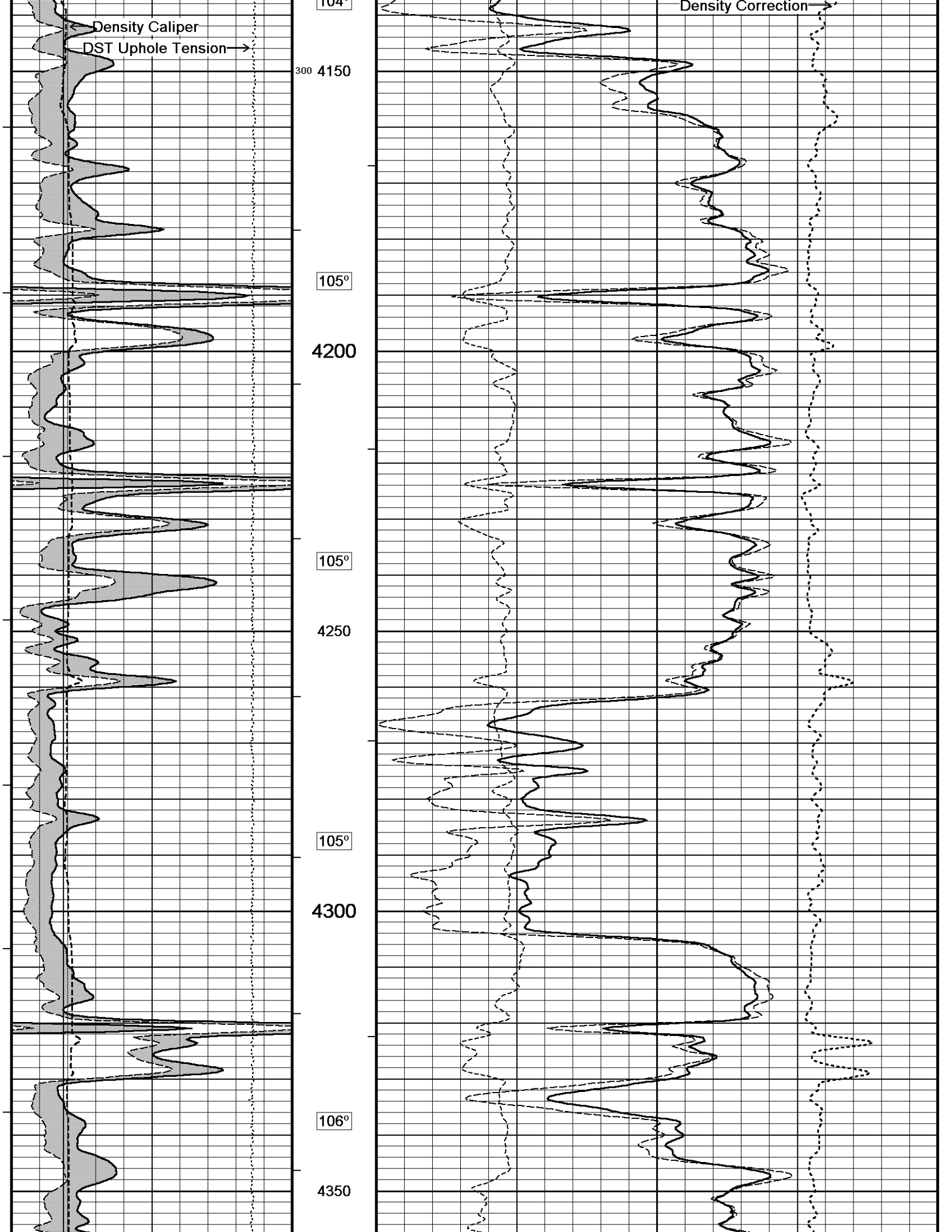

95°
700
3050
96°
3100
96°
3150
97°
3200
97°
3250

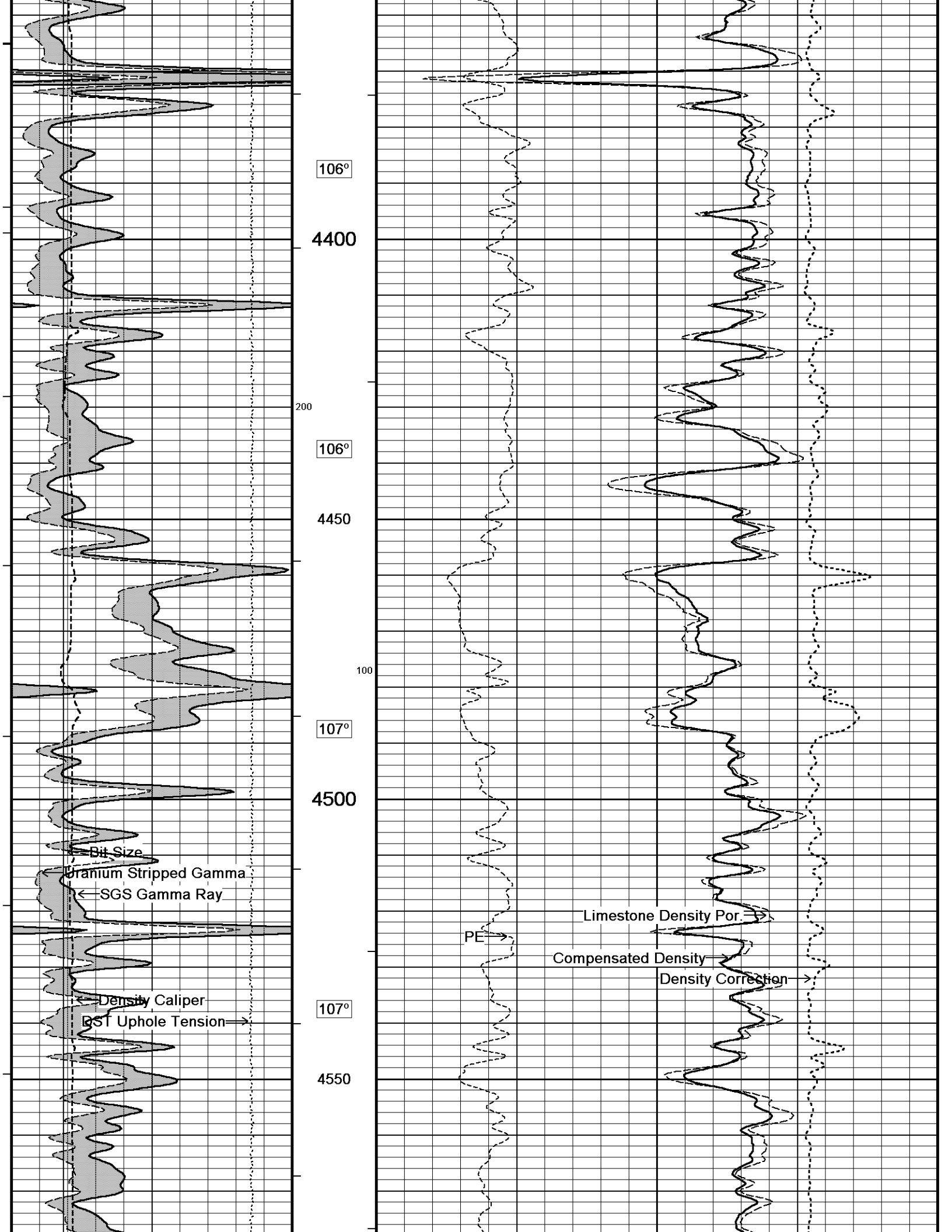

97°
3300
600
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
98°
Limestone Density Por.
PE
Compensated Density
3350
Density Caliper
DSI Uphole Tension
Density Correction
99°
3400
99°
300
3450

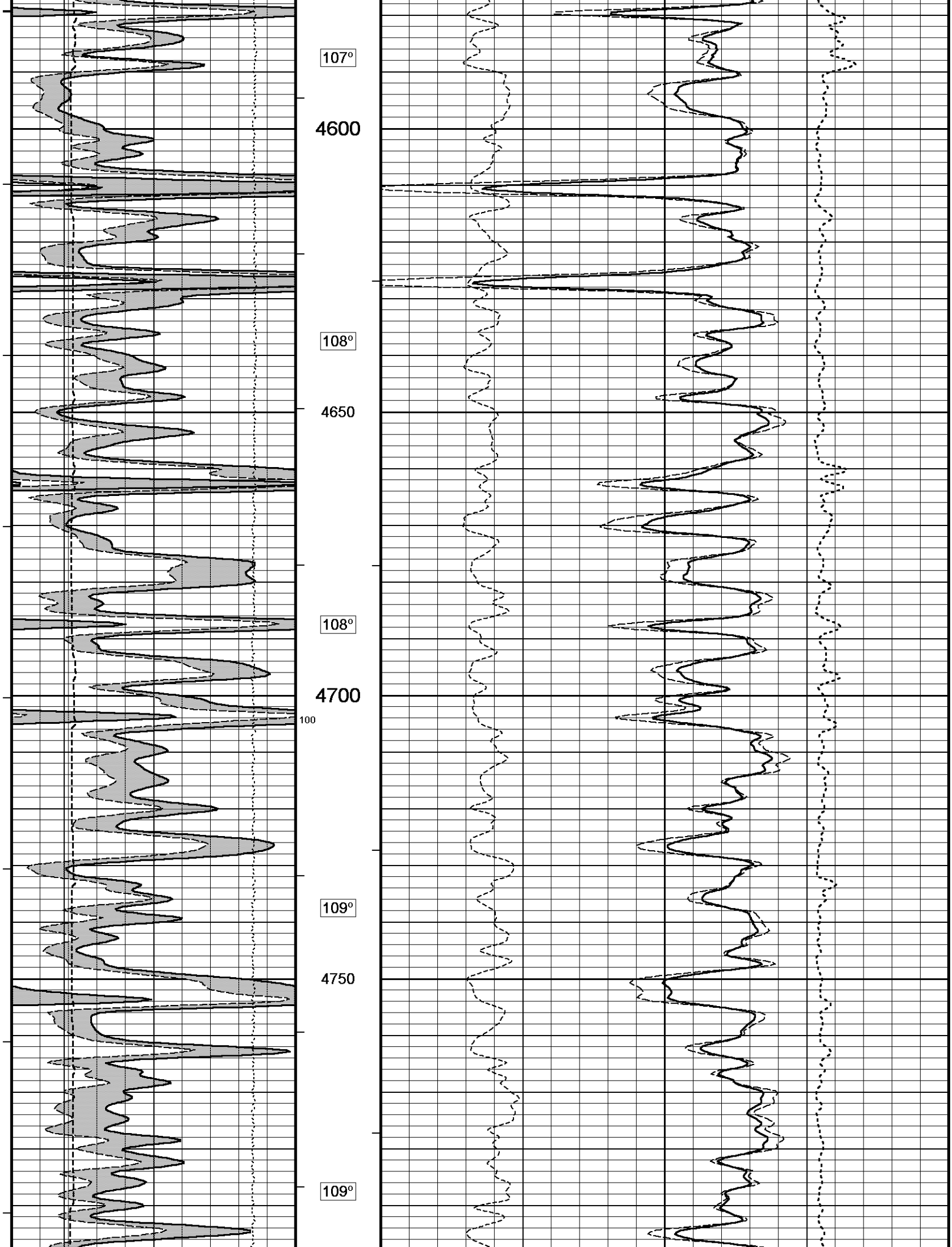

99°
3500
100°
3550
500
100°
3600
100°
3650
101°

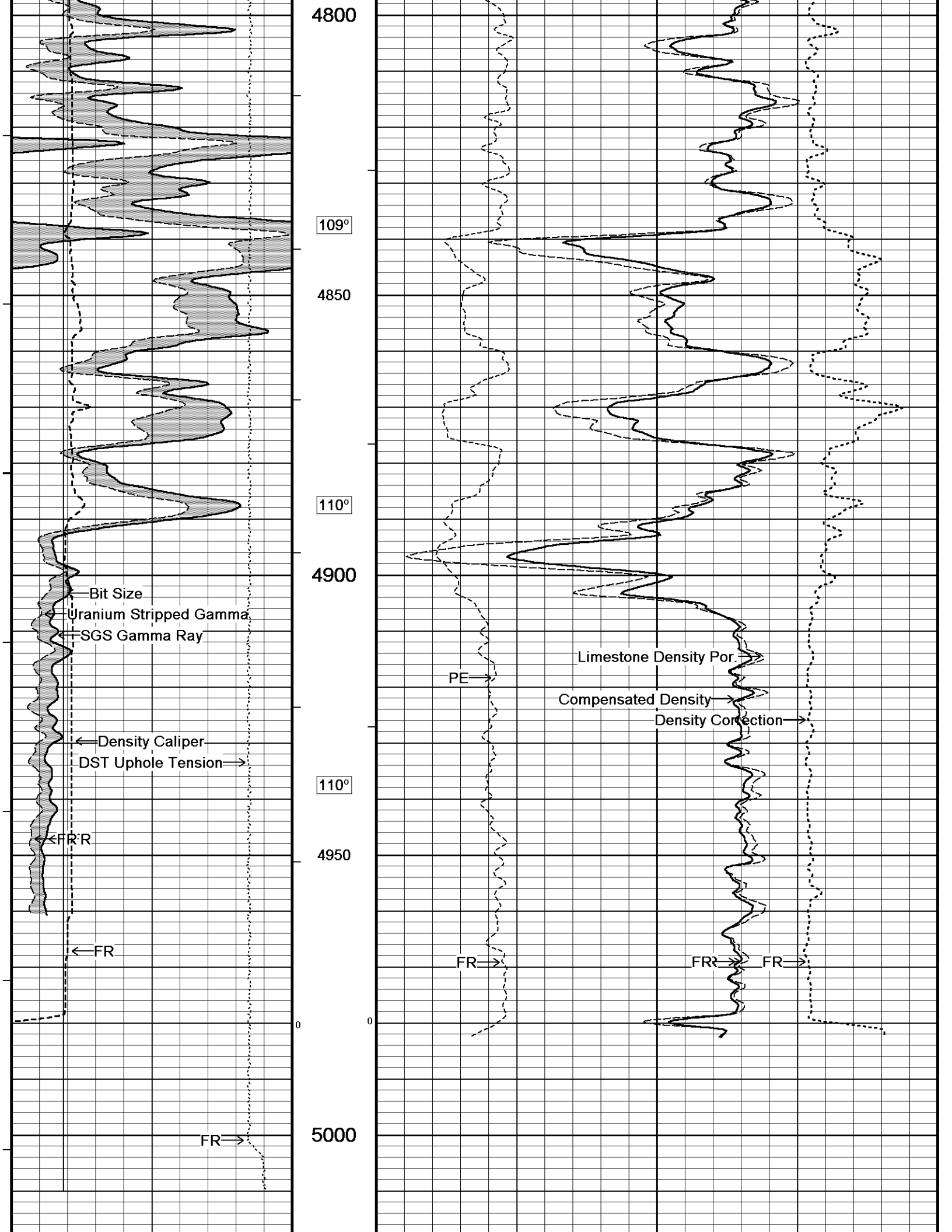

3700
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Limestone Density Por.
PE
101°
Compensated Density
Density Correction
Density Caliper
3750
DST Uphole Tension
102°
3800
102°
3850
400
102°
3900

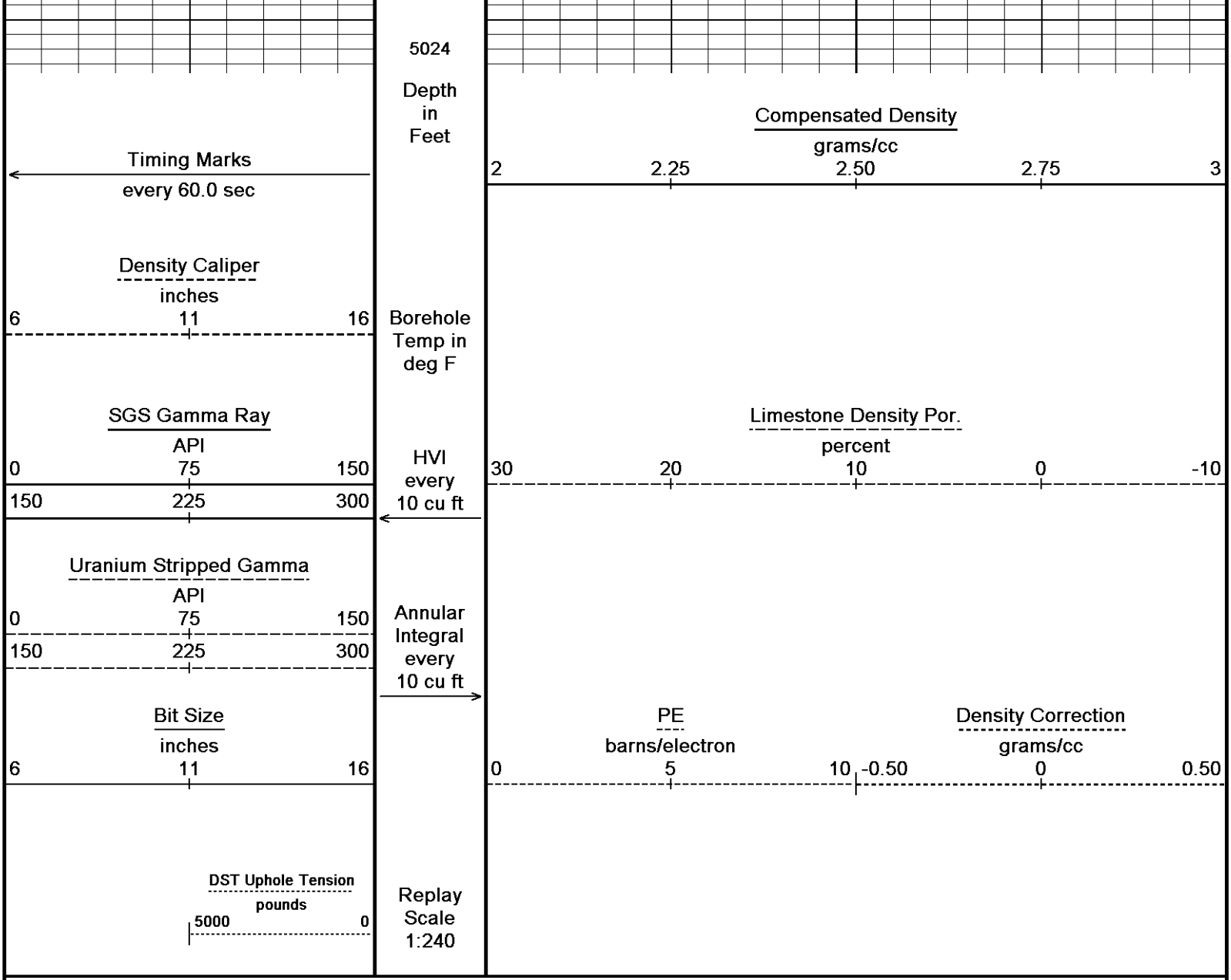

103°
3950
200
103°
4000
103°
4050
104°
4100
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Limestone Density Por
PE
Compensated Density


Density Caliper
DST Uphole Tension
Density Correction
104°
300
4150
105°
4200
105°
4250
105°
4300
106°
4350


106°
4400
200
106°
4450
100
107°
4500
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
PE
Limestone Density Por.
Compensated Density
Density Correction
Density Caliper
DST Uphole Tension
107°
4550


107°
4600
108°
4650
108°
4700
100
109°
4750
109°


4800
109°
4850
110°
4900
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Density Caliper
DST Uphole Tension
110°
FR R
4950
FR
0
FR
5000
PE
FR
Limestone Density Por
Compensated Density
Density Correction
FR
FR
0

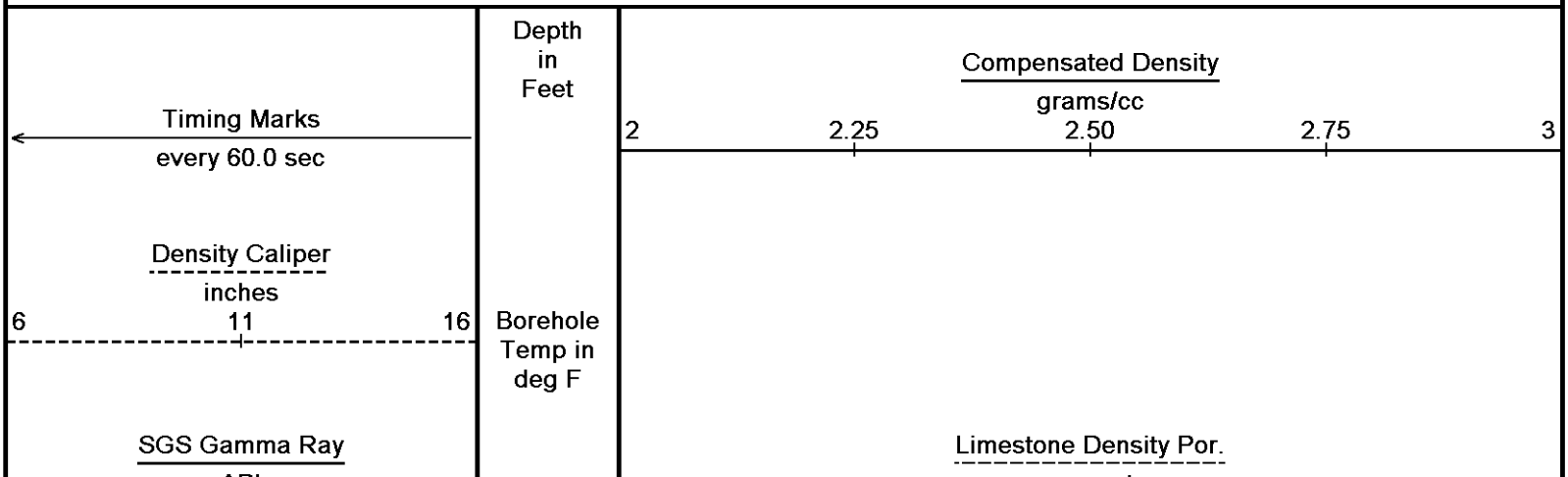


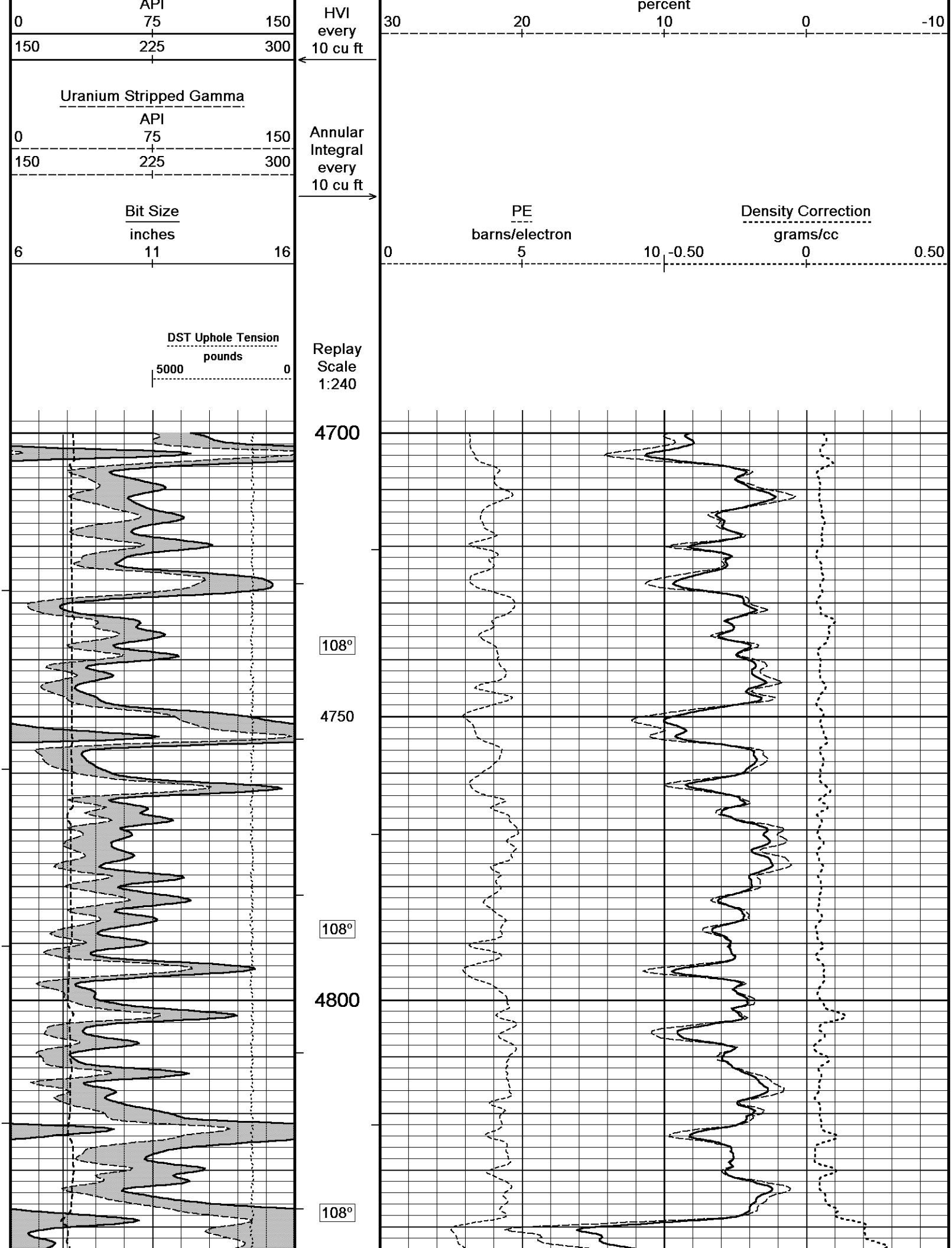
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 27-SEP-2013 00:50
Filename: C:\Minimus 13.05.9583\Log\PetroSantander Od...\PetroSantander Odd Williams #6 MAIN.dta — Recorded on 26-SEP-2013 21:18
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

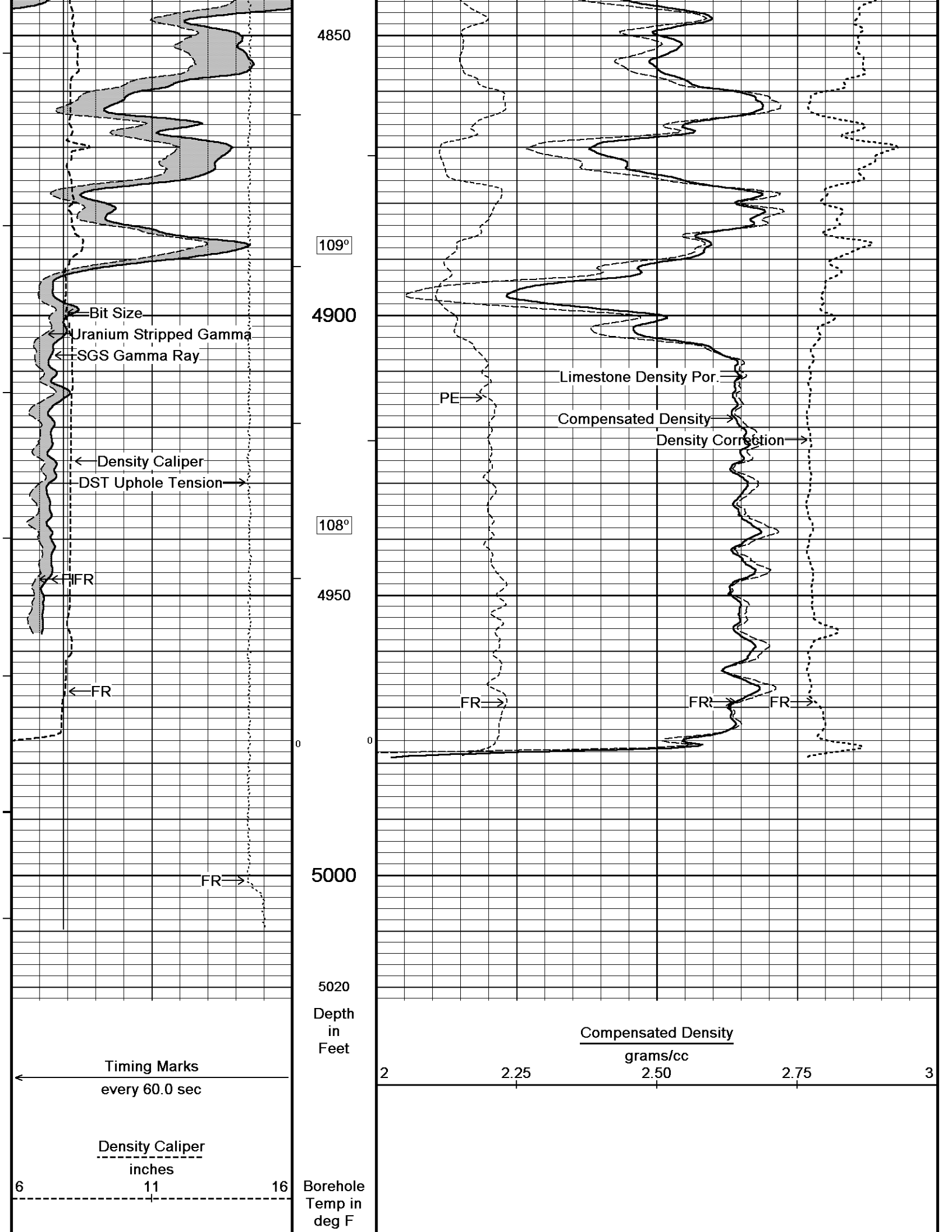
5 INCH MAIN

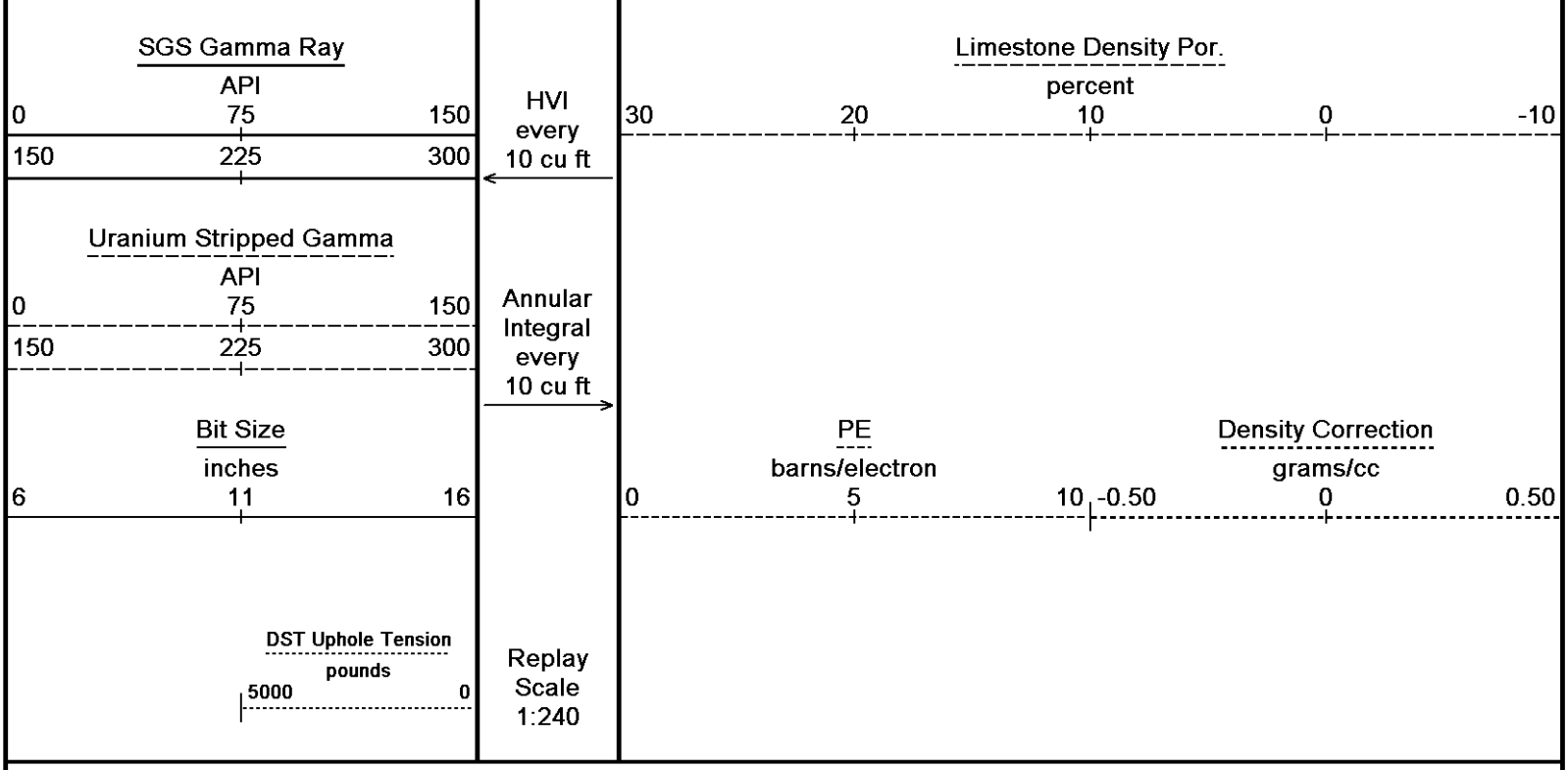
REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 27-SEP-2013 00:50
Filename: C:\Minimus 13.05.9583\Log\PetroSantander...\PetroSantander Odd Williams #6 REPEAT.dta — Recorded on 26-SEP-2013 20:48
System Versions: Processed with 13.05.9583 Plotted with 13.05.9583




API
0
75
150
150
225
300
HVI
every
10 cu ft
percent
30
20
10
0
-10
Uranium Stripped Gamma
API
0
75
150
150
225
300
Annular
Integral
every
10 cu ft
Bit Size
inches
6
11
16
PE
barns/electron
0
5
10
Density Correction
grams/cc
-0.50
0
0.50
DST Uphole Tension
pounds
5000
0
Replay
Scale
1:240
4700
108°
4750
108°
4800
108°


4850
109°
4900
108°
4950
5000
5020
Bit Size
Uranium Stripped Gamma
SGS Gamma Ray
Density Caliper
DST Uphole Tension
FR
FR
FR
FR
PE
Limestone Density Por.
Compensated Density
Density Correction
FR
FR
FR
0
0
Depth in Feet
Timing Marks
every 60.0 sec
Density Caliper
inches
6
11
16
Borehole Temp in deg F
Compensated Density
grams/cc
2
2.25
2.50
2.75
3



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 27-SEP-2013 00:50

Filename: C:\Minimus 13.05.9583\Log\PetroSantander...\PetroSantander Odd Williams #6 REPEAT.dta — Recorded on 26-SEP-2013 20:48

System Versions: Processed with 13.05.9583 Plotted with 13.05.9583

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Log\PetroSantander Odd Williams #6\PetroSantander Odd Williams #6 MAIN.dta

General Constants All 000

Last Edited on 26-SEP-2013,18:14

General Parameters		
Mud Resistivity	0.620	ohm-metres
Mud Resistivity Temperature	91.000	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. Six Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	
SW/APOR Tool Source	0.000	

High Resolution Temperature Calibration MCG-D.K 469

Field Calibration on 18-AUG-2013,02:35

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG-D.K 469

Last Edited on 18-AUG-2013,02:35

Pre-filter Length	11

Caliper Calibration MPD-B 64

Base Calibration on 15-AUG-2013 14:54
Field Calibration on 24-SEP-2013 02:31

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	16560	3.99
2	24992	5.98
3	32880	7.97
4	41184	9.86
5	50688	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.83	5.98

Photo Density Calibration MPD-B 64

Base Calibration on 15-AUG-2013 14:37
Field Check on 24-SEP-2013 02:44

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	60206	33560	59556	30836
Reference 2	25378	2915	24941	2541

Field Check at Base

1155.1	1345.7

Field Check

1162.8	1346.9

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	211	1029		
Reference 1	22957	60005	0.386	0.371
Reference 2	6904	25238	0.276	0.272

Field Check at Base

211.2	1028.9

Field Check

209.0	1035.1

Density Constants MPD-B 64

Last Edited on 24-SEP-2013,08:10

Density Source Id	18235B	
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 (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

Spectral Gamma Calibration SGS-E.J 150

Base Calibration on 19-APR-2013,17:21
Field Calibration on 19-APR-2013,17:21

Base Calibration

Potassium Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	79.9	23.1	2.2	0.8	1.4
Calibrator (Gross)	204.7	109.8	22.0	0.9	1.3

Calibrator (Net)	124.8	86.7	19.7	0.2	-0.1

	K %	U ppm	Th ppm
Concentrations	5.8	0.0	0.0

Uranium Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	79.9	23.1	2.2	0.8	1.4
Calibrator (Gross)	480.7	164.8	14.5	7.2	4.1
Calibrator (Net)	400.8	141.7	12.3	6.5	2.7

	K %	U ppm	Th ppm
Concentrations	0.0	9.8	0.0

Thorium Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	79.9	23.1	2.2	0.8	1.4
Calibrator (Gross)	397.7	137.8	11.3	6.3	15.0
Calibrator (Net)	317.8	114.7	9.0	5.6	13.6

	K %	U ppm	Th ppm
Concentrations	0.0	0.0	44.3

Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	79.9	23.1	2.2	0.8	1.4
Calibrator (Gross)	914.0	361.7	43.2	12.9	17.8
Calibrator (Net)	834.0	338.5	41.0	12.1	16.4

Field Calibration

Gamma Ray

	Measured	Calibrated (API)
Background	112	23
Calibrator (Gross)	1354	273
Calibrator (Net)	1242	250

Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	79.9	23.1	2.2	0.8	1.4
Calibrator (Gross)	914.0	361.7	43.2	12.9	17.8
Calibrator (Net)	834.0	338.5	41.0	12.1	16.4

Spectral Gamma Constants SGS-E.J 150

Last Edited on 03-SEP-2013,10:47

Background Calibrator Number	0	
Mixture Calibrator Number	147-1	
Potassium Calibrator Number	148-1	
Uranium Calibrator Number	150-1	
Thorium Calibrator Number	149-1	
Mud Density	1.09	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Log\PetroSantander Odd Williams #6\PetroSantander Odd Williams #6 MAIN.dta

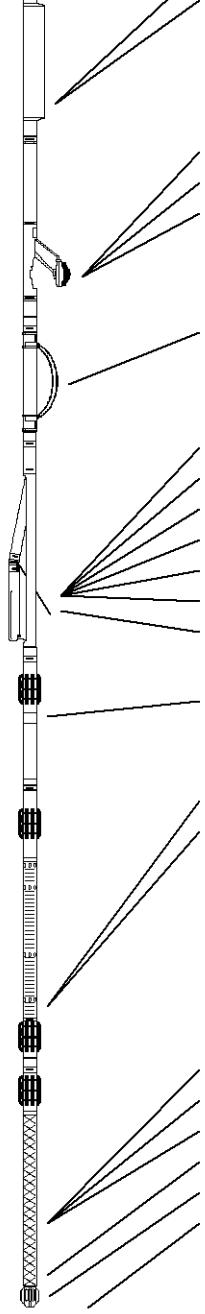
3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.K 469 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Spectral Gamma Ray Sub
SGS-E.J 150 LG: 7.78 ft WT: 105.8 lb OD: 3.54 in

63.17 ft GRGC - Gamma Ray
60.26 ft CGXT - MCG External Temperature
53.70 ft GCGR - Uranium Stripped Gamma

SGS-E.J 150 LG: 7.78 ft WT: 105.8 lb OD: 3.54 in



55.76 ft GRSG - SGS Gamma Ray

Compact Micro-log
MML-A 3 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

45.76 ft MINV - Micro-inverse
45.76 ft MNRL - Micro-normal
46.76 ft MLTC - MML Caliper

Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

40.97 ft NPRL - Limestone Neutron Por.

Compact Density/Caliper
MPD-B 64 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

33.73 ft AVOL - Annular Volume
33.73 ft HVOL - Hole Volume
33.73 ft CLDC - Density Caliper
31.80 ft DEN - Compensated Density
31.80 ft DCOR - Density Correction
31.80 ft DPRL - Limestone Density Por.
31.74 ft PDPE - PE

Compact Focussed Electric
MFE-B.J 353 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

26.24 ft FEFE - Shallow FE

Compact Sonic
MSS-C.K 330 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

12.96 ft DT35 - 3-5' Compensated Sonic
12.96 ft SPRL - Wyllie Lime. Sonic Por.

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

3.34 ft R40O - Array Ind. One Res 40
3.34 ft R60O - Array Ind. One Res 60
3.34 ft RTAO - Array Ind. One Res Rt
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.

Total Length: 70.03 ft Weight: 577.6 lb

COMPANY	PETROSANTANDER (USA) INC.
WELL	ODD WILLIAMS #6
FIELD	CHRISTABELLE
PROVINCE/COUNTY	KEARNY
COUNTRY/STATE	UNITED STATES / KANSAS

Elevation Kelly Bushing	4004.00	feet	First Reading	4969.00	feet
Elevation Drill Floor	4002.00	feet	Depth Driller	5000.00	feet
Elevation Ground Level	3092.00	feet	Depth Logger	5001.00	feet

Weatherford®

COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG