Weatherford®

COMPACT PHOTO DENSITY COMPENSATED NEUTRON MICRORESISTIVITY LOG

COMPANY	O'BRIEN RESOURCES, LLC
WELL	BOOMHOWER 36 #3
FIELD	BOOMHOWER
PROVINCE/COUNTY	LANE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1309' FSL & 2300' FEL NE NW SW SE

SEC	TWP	RGE	Other Services
36	17S	29W	MAI/MFE

API Number 15-101-22464
Permit Number

Permanent Datum G.L, Elevation 2774 feet
Log Measured From KB
Drilling Measured From K.B. @ 10 FEET

Elevations:	feet
KB	2784.00
DF	2782.00
GL	2774.00

Date	25-OCT-2013			
Run Number	ONE			
Service Order	3539911			
Depth Driller	4685.00	feet		
Depth Logger	4683.00	feet		
First Reading	4664.00	feet		
Last Reading	3300.00	feet		
Casing Driller	275.00	feet		
Casing Logger	276.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.30 lb/USg		44.00 CP	
PH / Fluid Loss	11.00		5.60 ml/30Min	
Sample Source	FLOWLINE			
Rm @ Measured Temp	1.02 @ 78.0	ohm-m		
Rmf @ Measured Temp	0.82 @ 78.0	ohm-m		
Rmc @ Measured Temp	1.22 @ 78.0	ohm-m		
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	0.69 @115.0	ohm-m		
Time Since Circulation	3 HOURS			
Max Recorded Temp	115.00	deg F		
Equipment / Base	13057		LIB	
Recorded By	ROB HOFFMAN			
Witnessed By	KURT TALBOTT			
JOB #	LB13-305			

BOREHOLE RECORD

Last Edited: 25-OCT-2013 06:19

Bit Size inches	Depth From feet	Depth To feet
7.875	275.00	4685.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	275.00	24.00

REMARKS

- SOFTWARE ISSUE: 13.05.9583
- MCG, MML, MDN, MPD, MFE, MAI RAN IN COMBINATION
- HARDWARE: DUAL BOWSPRING USED ON MDN
  0.5 INCH STANDOFF USED ON MFE_MAI
- 2.71 G/CC LIMESTONE DENSTIY MATRIX USED TO CALCULATE POROSITY
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL EFFECT DATA QUALITY
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMRES REQUEST
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 1732 CU.FT.
- ANNULAR HOLE VOLUME WITH 4.5 INCH PRODUCTION CASING FROM TD TO 3300 FEET: 339 CU.FT.
- RIG: VAL DRILLING RIG #2

- RIG: VAL DRILLING RIG #2

- ENGINEER: ROB HOFFMAN, JOHN LAPOINT

- OPERATOR: CARLOS RAMIREZ

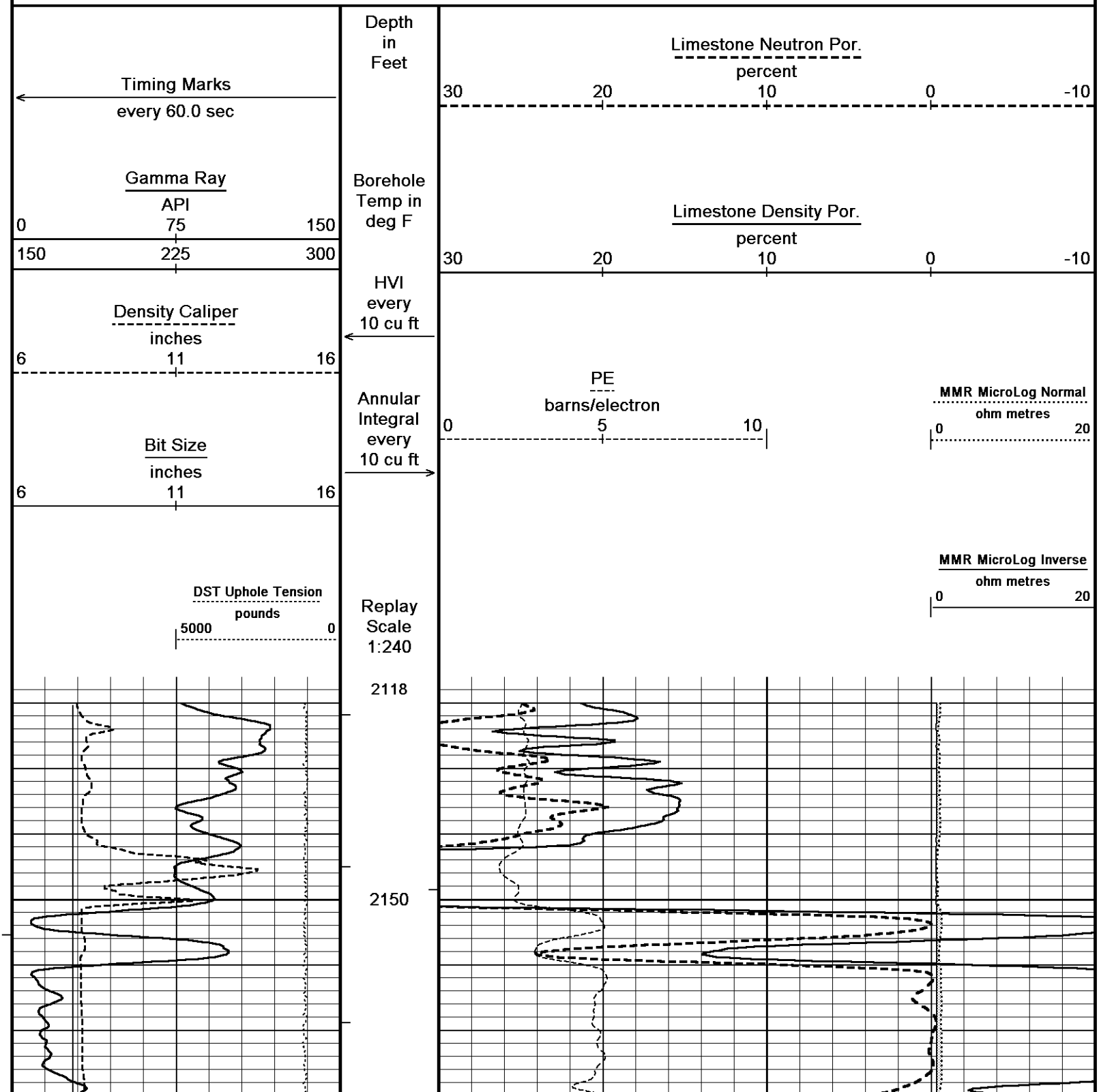
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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

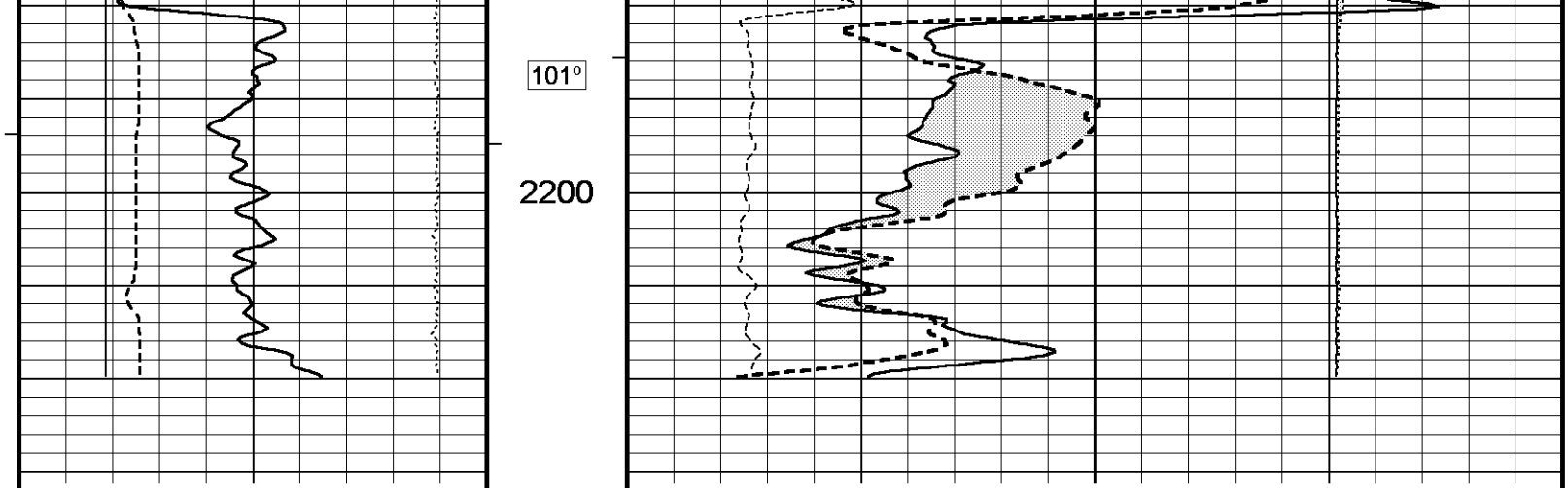
5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 25-OCT-2013 14:53

Filename: C:\Minimus 13.05.9583\Logs\O'Brien Resou...\O'Brien Resources Boomhower 36 #3_002.dta — Recorded on 25-OCT-2013 08:06

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





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

MMR MicroLog Normal
ohm metres
0 20

MMR MicroLog Inverse
ohm metres
0 20

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 25-OCT-2013 14:53
Filename: C:\Minimus 13.05.9583\Logs\O'Brien Resou...\O'Brien Resources Boomhower 36 #3_002.dta
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5 INCH MAIN

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 25-OCT-2013 14:53
Filename: C:\Minimus 13.05.9583\Log...\O'Brien Resources Boomhower 36 #3_002 spooled section.dta
Recorded on 25-OCT-2013 09:30
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

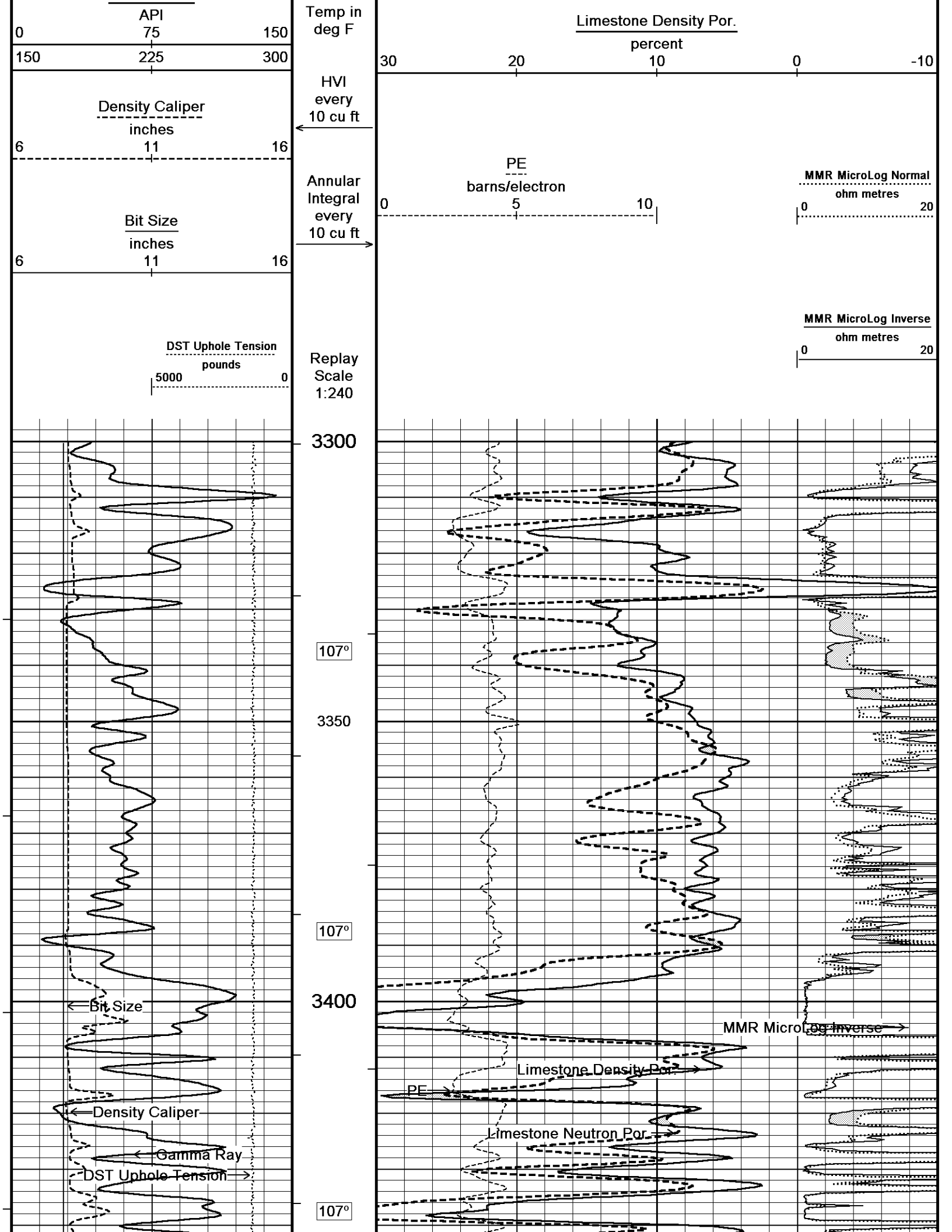
Timing Marks
every 60.0 sec

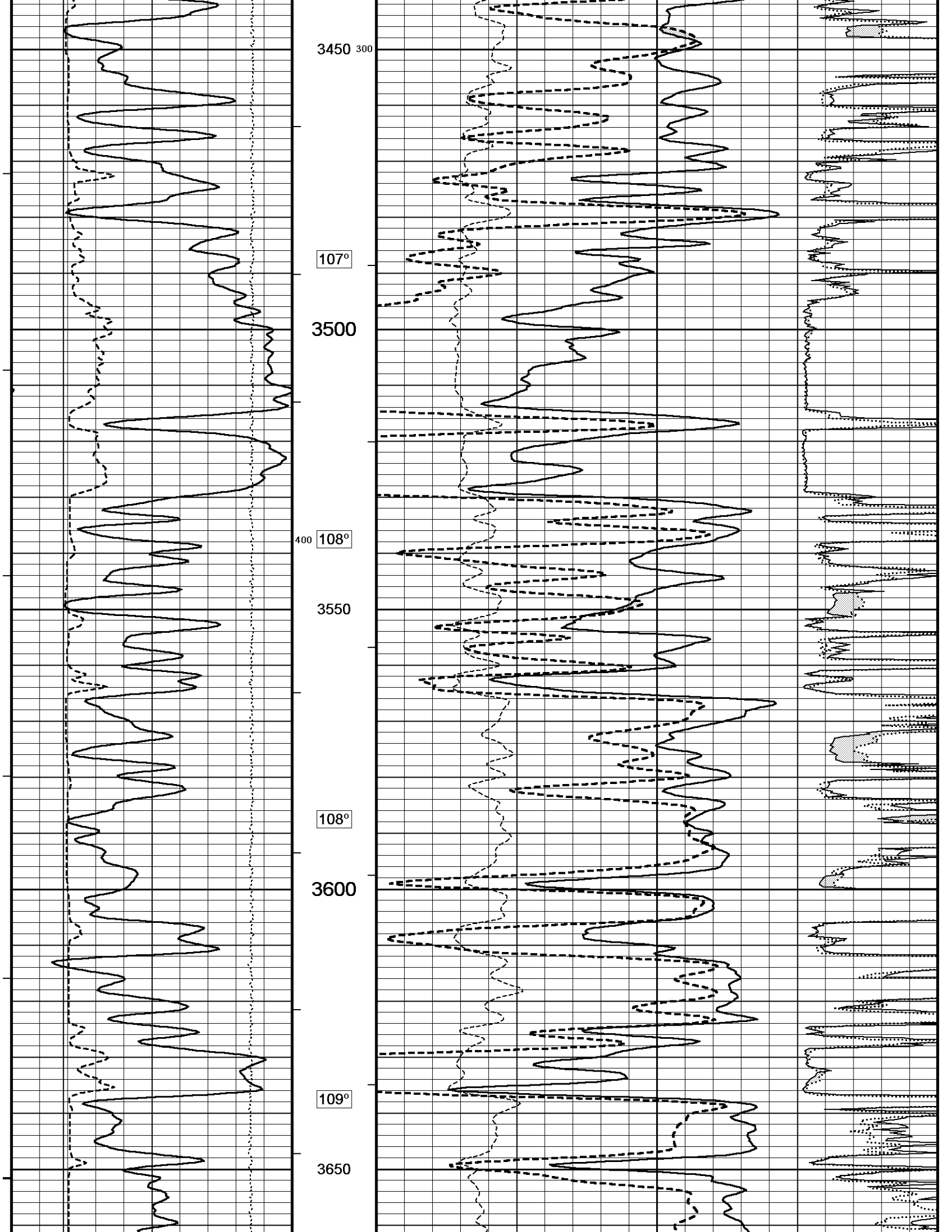
Gamma Ray

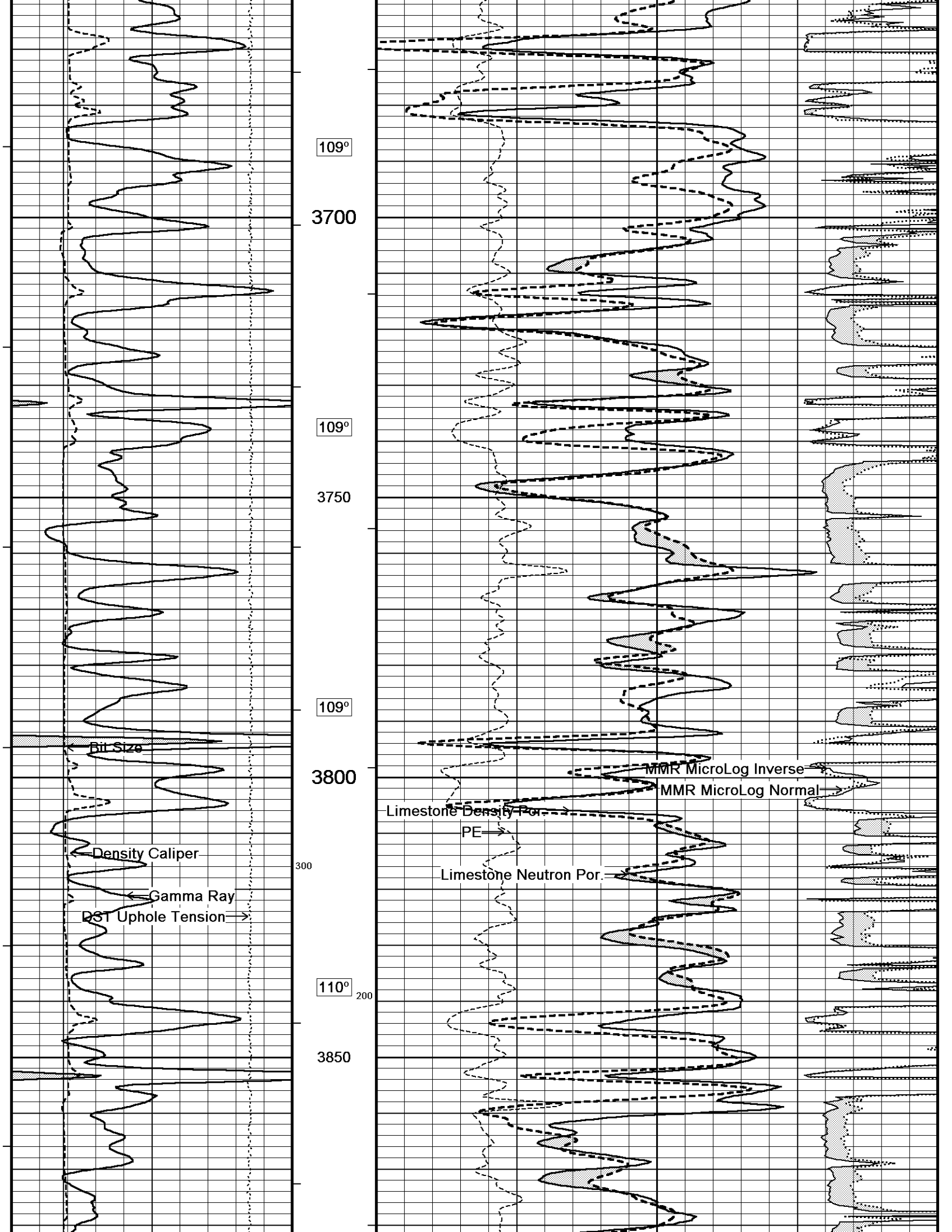
Depth in Feet

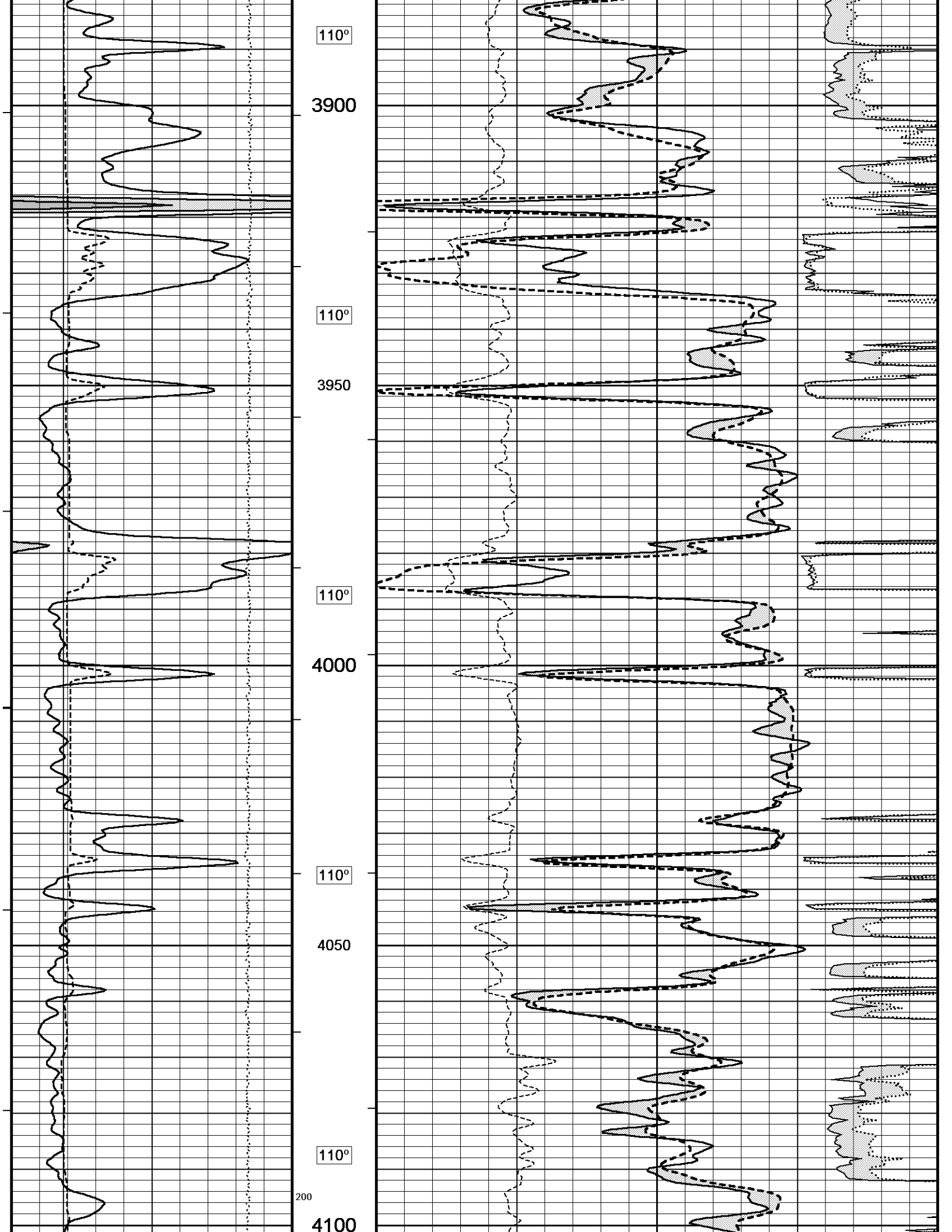
Borehole

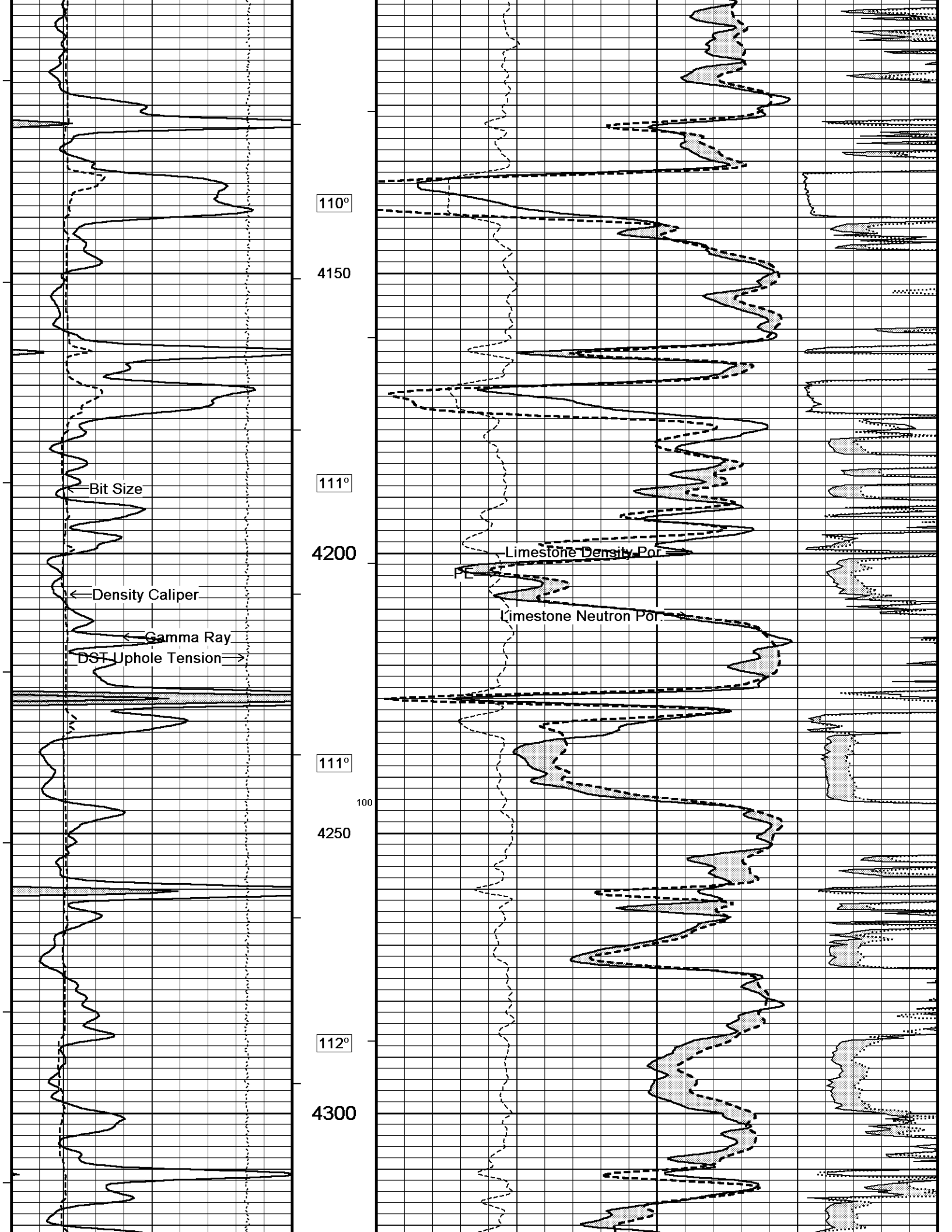
Limestone Neutron Por.
percent
30 20 10 0 -10

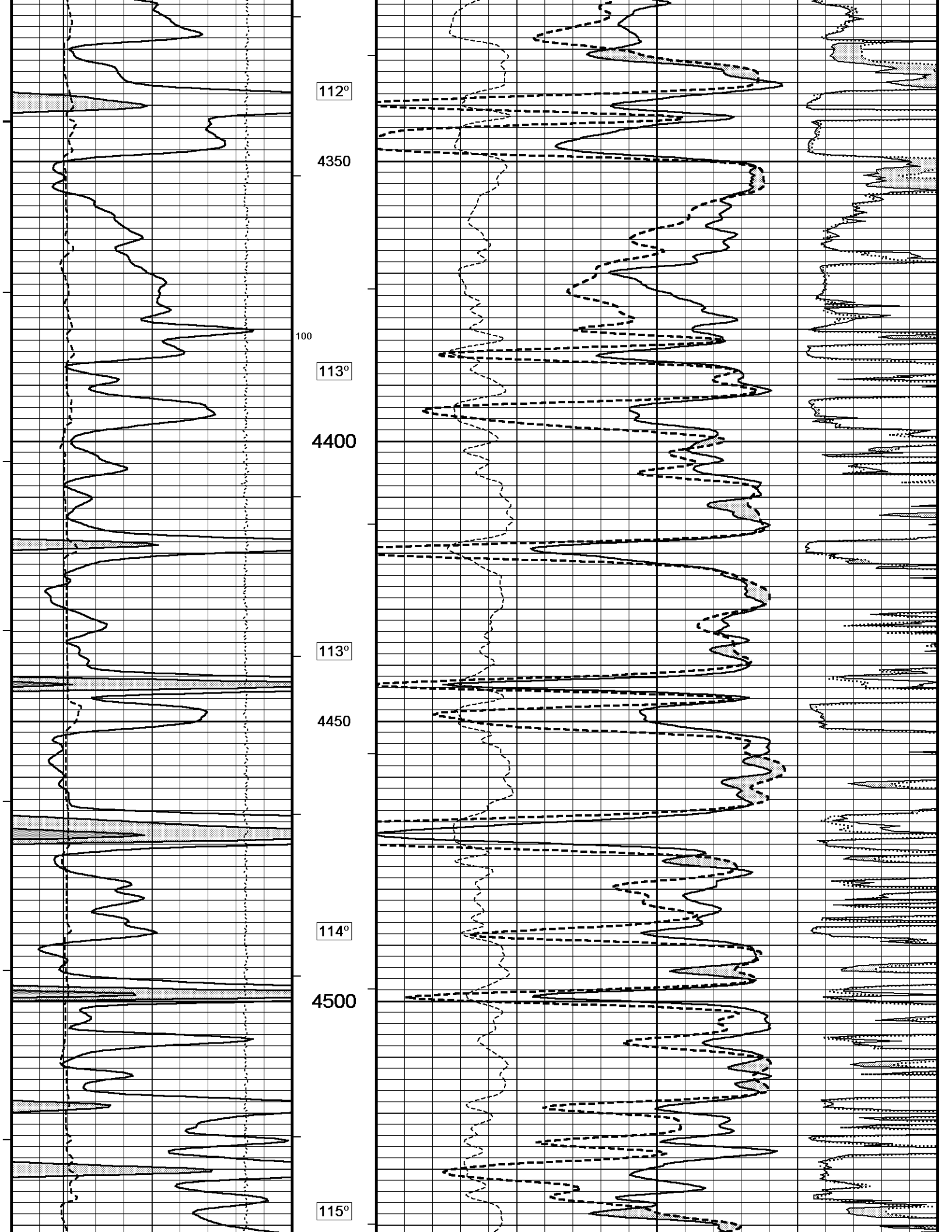

API
0
75
150
150
225
300
Temp in deg F
Limestone Density Por.
percent
30
20
10
0
-10
HVI every 10 cu ft
Density Caliper
inches
6
11
16
PE
barns/electron
0
5
10
MMR MicroLog Normal
ohm metres
0
20
Annular Integral every 10 cu ft
Bit Size
inches
6
11
16
MMR MicroLog Inverse
ohm metres
0
20
DST Uphole Tension
pounds
5000
0
Replay Scale 1:240
3300
107°
3350
107°
3400
107°
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
MMR MicroLog Inverse
Limestone Density Por.
PE
Limestone Neutron Por.

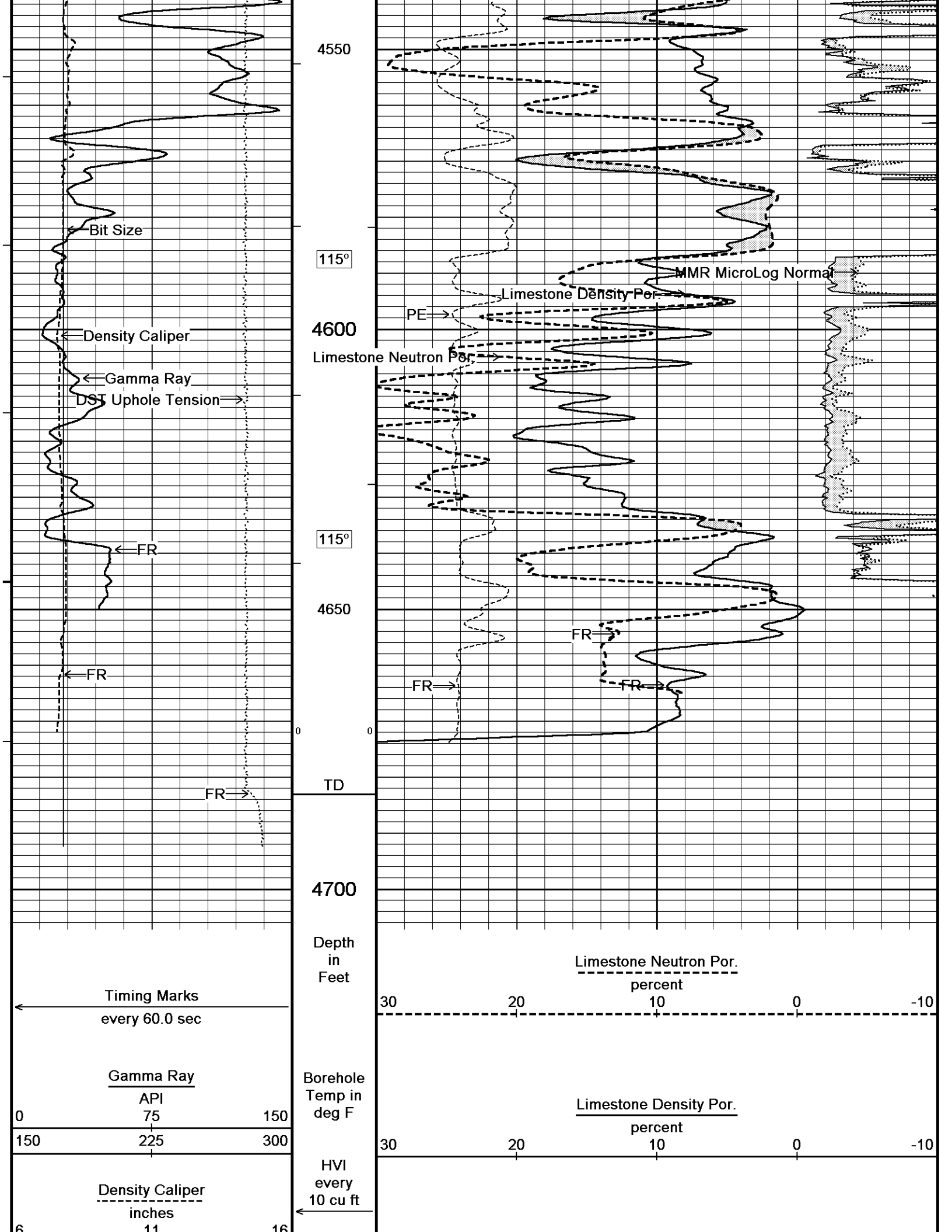

3450
300
107°
3500
400
108°
3550
108°
3600
109°
3650


109°
3700
109°
3750
109°
Bit Size
3800
MMR MicroLog Inverse
MMR MicroLog Normal
Limestone Density Por.
PE
Density Caliper
300
Limestone Neutron Por.
Gamma Ray
DST Uphole Tension
110°
200
3850


110°
3900
110°
3950
110°
4000
110°
4050
110°
200
4100


110°
4150
111°
Bit Size
4200
Limestone Density Por
PE
Density Caliper
Limestone Neutron Por
Gamma Ray
DST Uphole Tension
111°
100
4250
112°
4300


112°
4350
100
113°
4400
113°
4450
114°
4500
115°


4550
Bit Size
115°
MMR MicroLog Normal
Limestone Density Por.
PE
4600
Density Caliper
Limestone Neutron Por.
Gamma Ray
DST Uphole Tension
115°
FR
4650
FR
FR
FR
0
0
TD
FR
4700
Depth in Feet
Timing Marks
every 60.0 sec
Limestone Neutron Por.
percent
30
20
10
0
-10
Gamma Ray
API
0
75
150
Borehole Temp in deg F
150
225
300
Limestone Density Por.
percent
30
20
10
0
-10
Density Caliper
inches
6
11
16
HVI every 10 cu ft

PE
barns/electron
0 5 10

MMR MicroLog Normal
ohm metres
0 20

Annular Integral every 10 cu ft

Bit Size
inches
6 11 16

MMR MicroLog Inverse
ohm metres
0 20

DST Uphole Tension
pounds
5000 0

Replay Scale 1:240

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 25-OCT-2013 14:53
Filename: C:\Minimus 13.05.9583\Log...\O'Brien Resources Boomhower 36 #3_002 spooled section.dta — Recorded on 25-OCT-2013 09:30
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5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 25-OCT-2013 14:53
Filename: C:\Minimus 13.05.9583\Logs\O'Brien Resou...\O'Brien Resources Boomhower 36 #3_001.dta — Recorded on 25-OCT-2013 07:48
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

Depth in Feet

Timing Marks
every 60.0 sec

Limestone Neutron Por.
percent
30 20 10 0 -10

Gamma Ray
API
0 75 150
150 225 300

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

MMR MicroLog Normal
ohm metres
0 20

Annular Integral every 10 cu ft

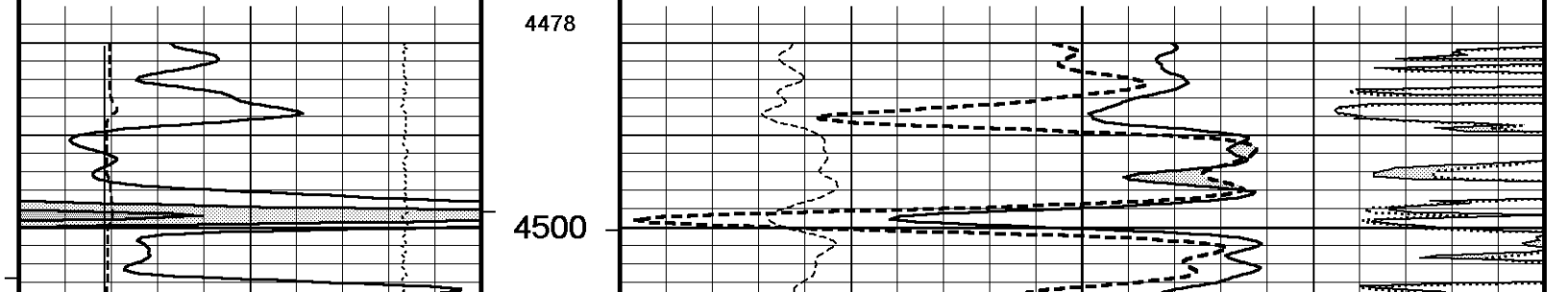
Bit Size
inches
6 11 16

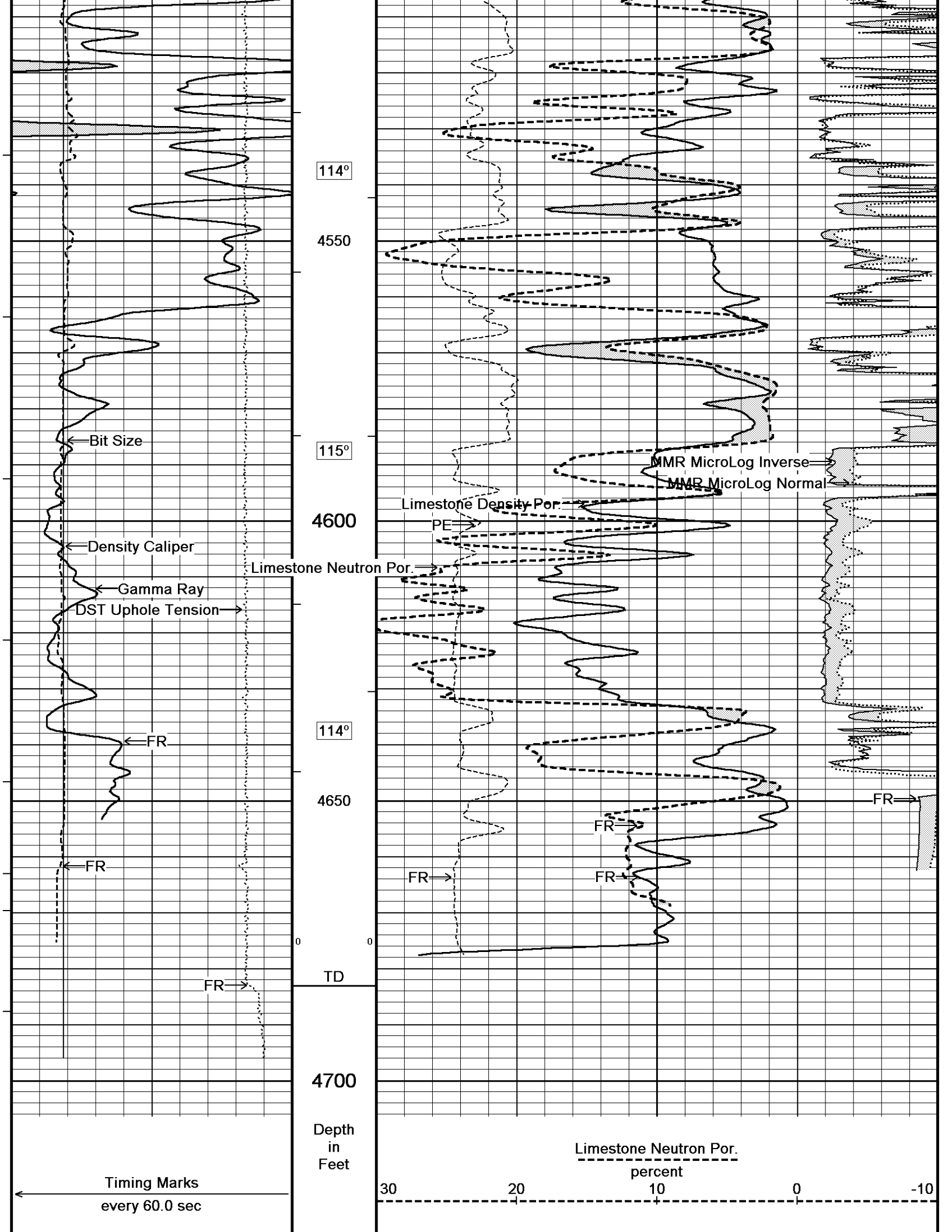
MMR MicroLog Inverse
ohm metres
0 20

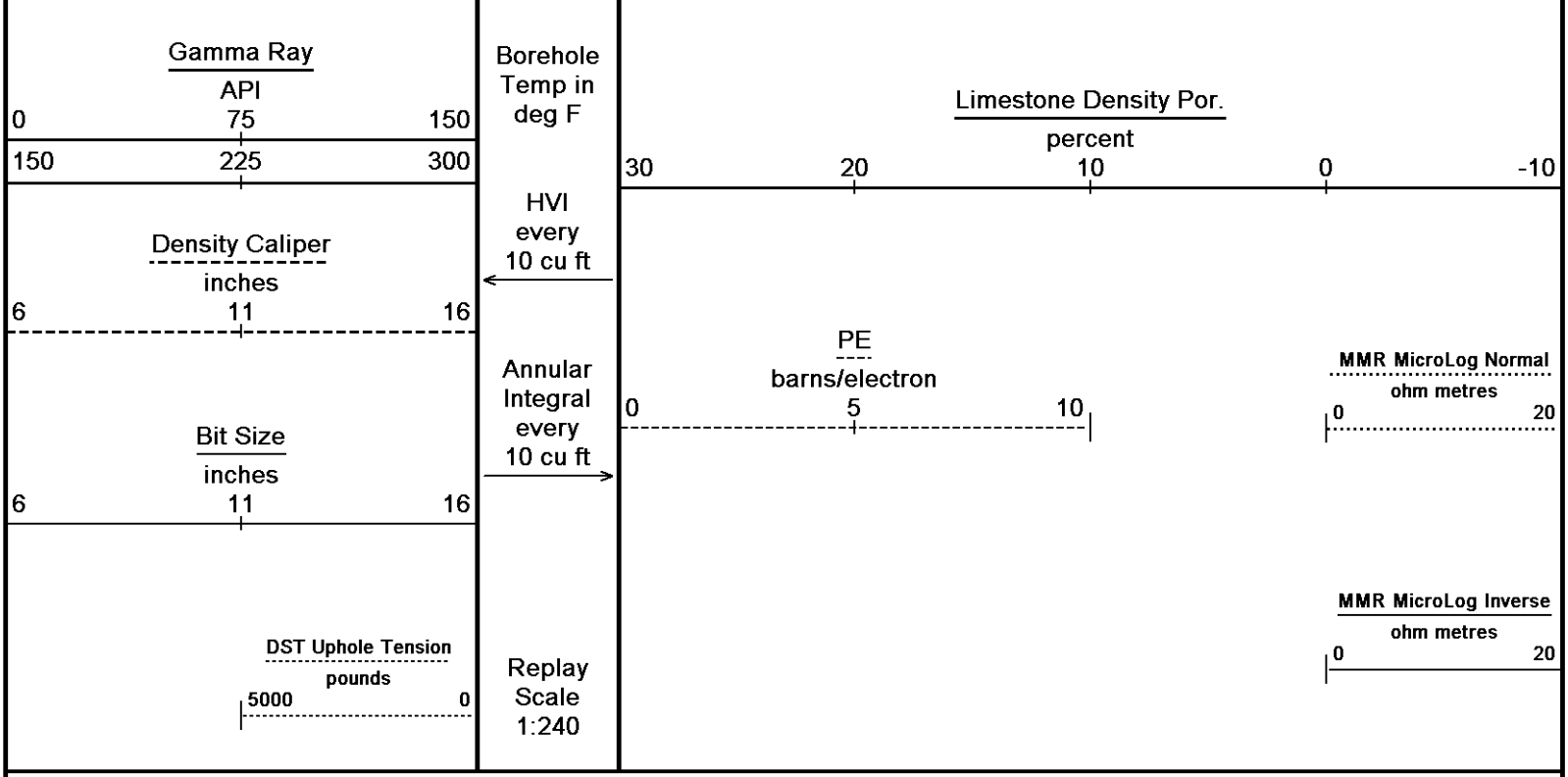
DST Uphole Tension
pounds
5000 0

Replay Scale 1:240

4478




114°
4550
115°
4600
114°
4650
4700
TD
0
0
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
FR
FR
FR
FR
FR
FR
FR
Limestone Density Por.
PE
Limestone Neutron Por.
MMR MicroLog Inverse
MMR MicroLog Normal
Depth
in
Feet
Timing Marks
every 60.0 sec
Limestone Neutron Por.
percent
30
20
10
0
-10

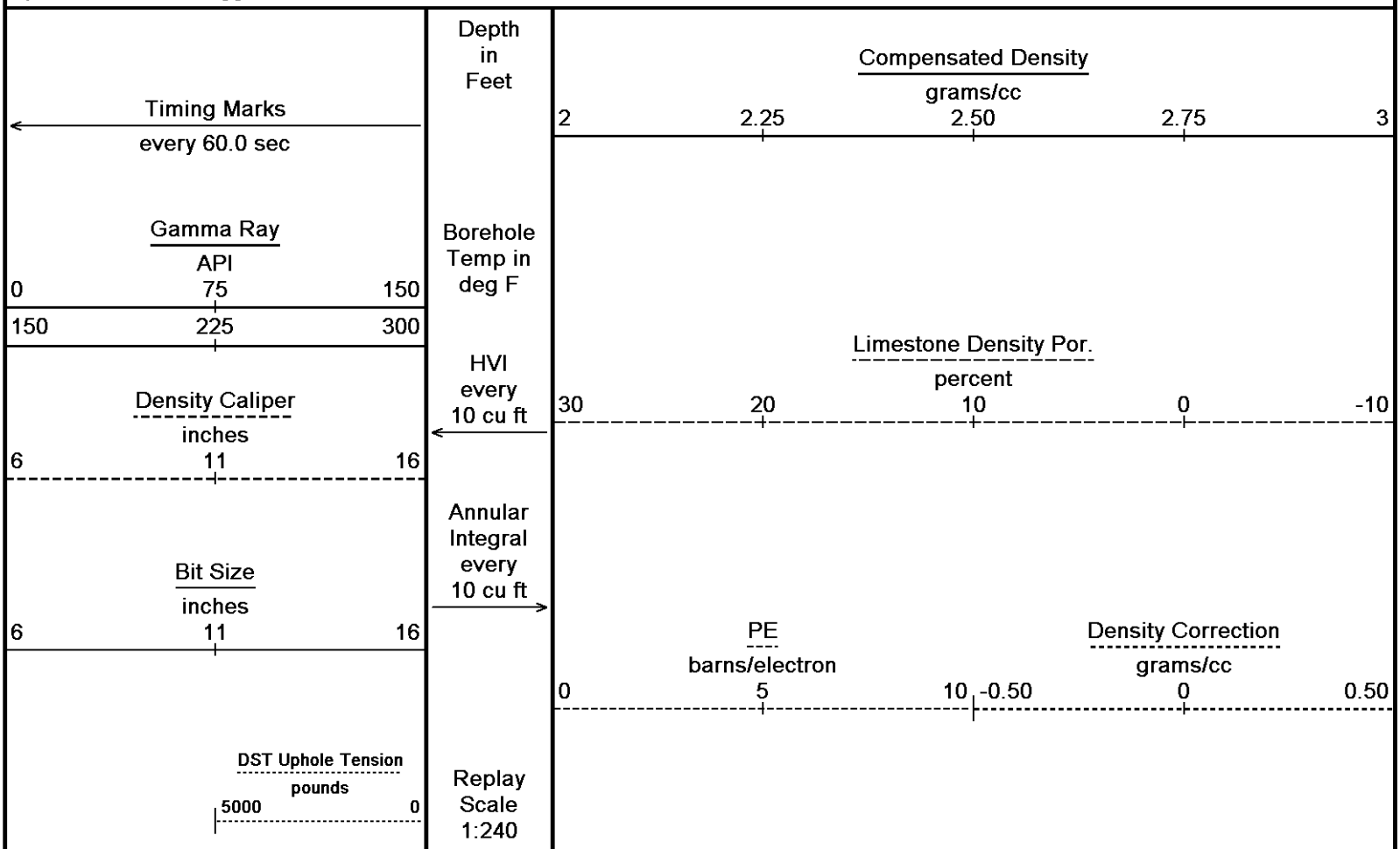


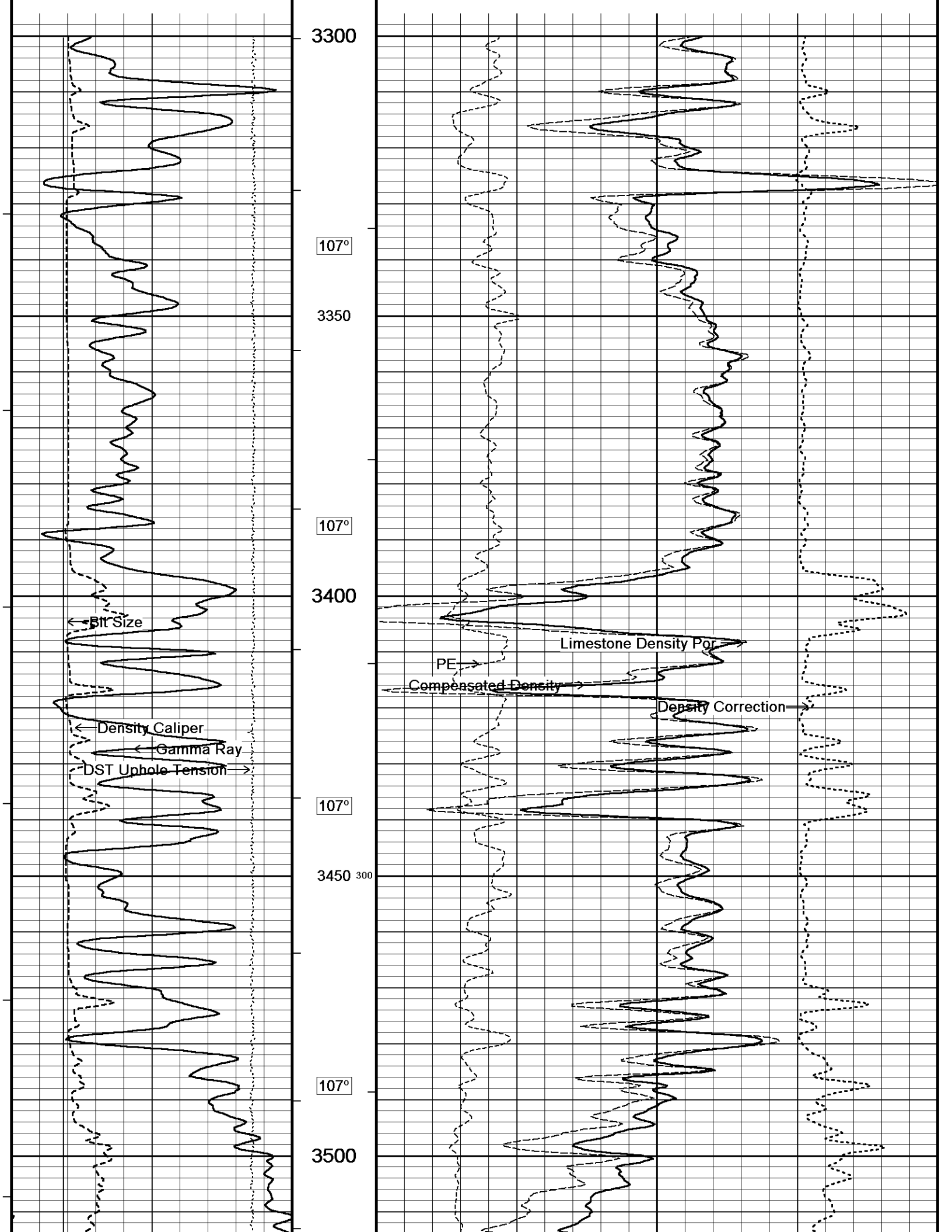
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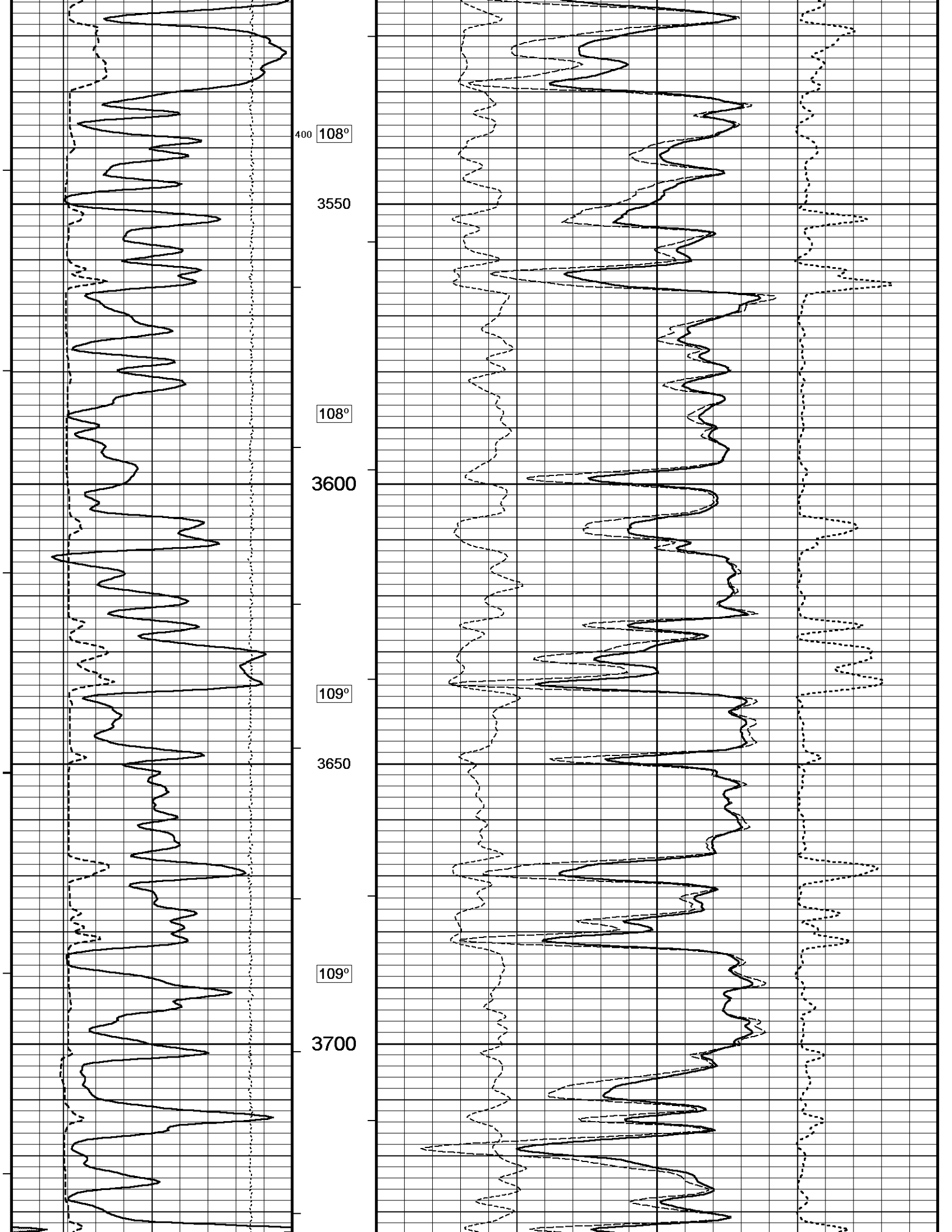
REPEAT SECTION

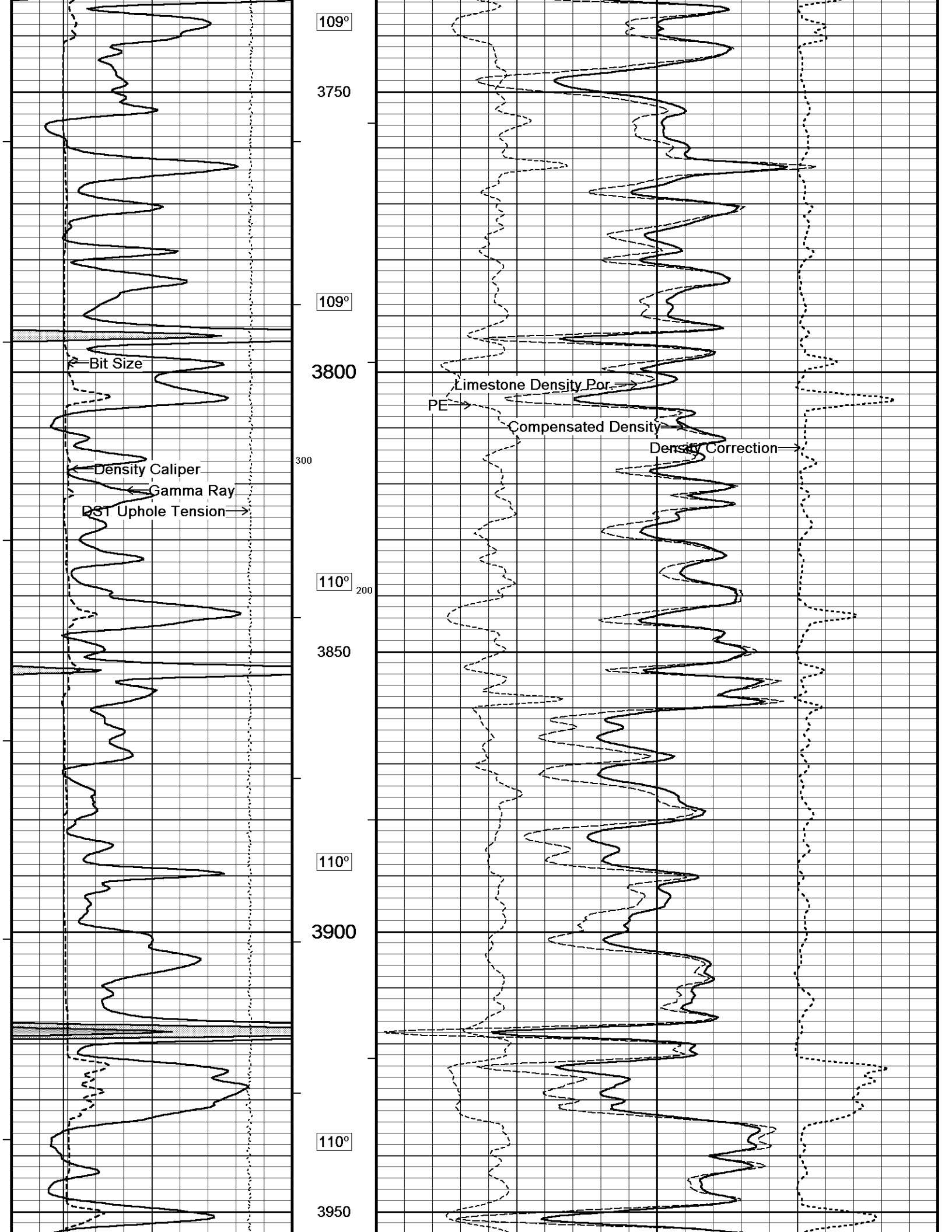
5 INCH MAIN

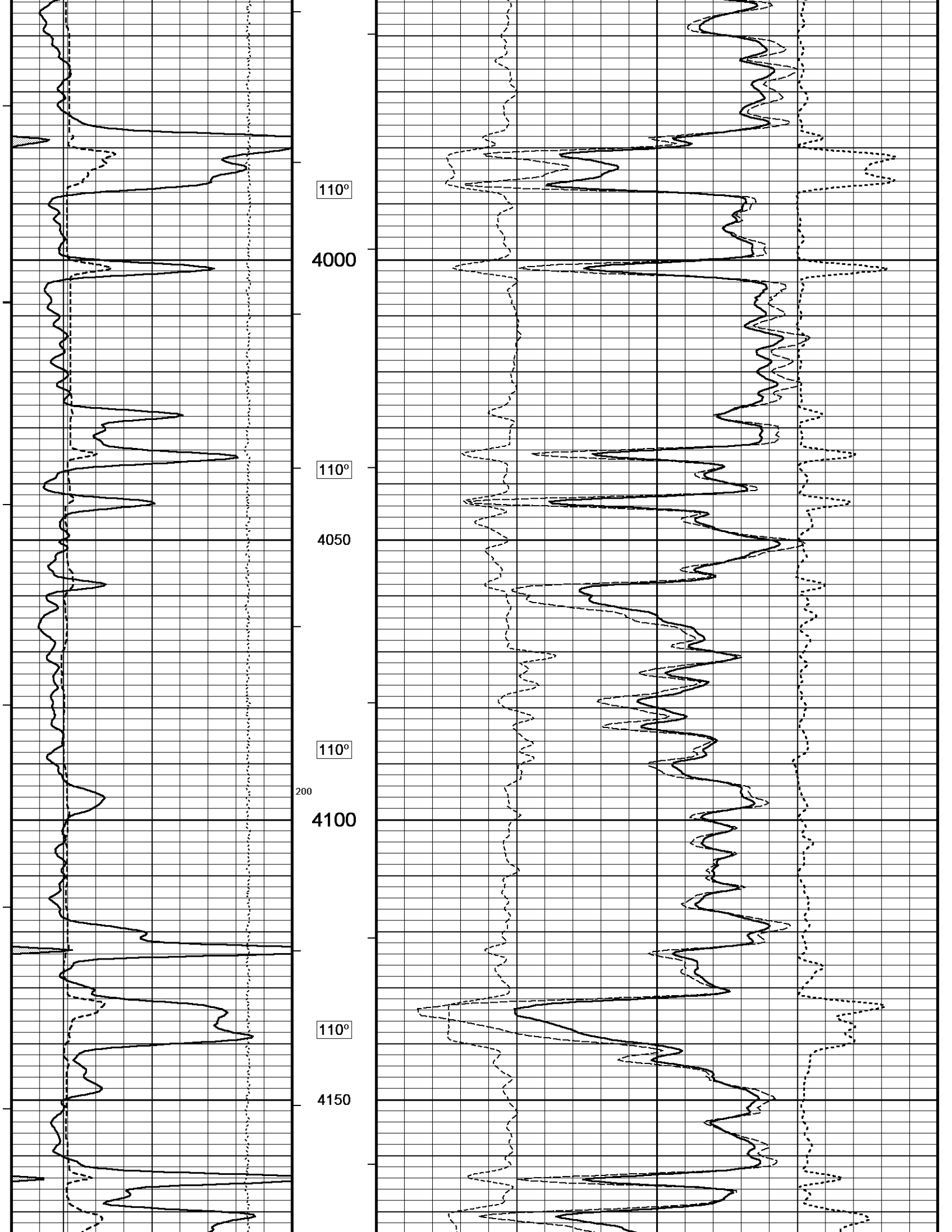
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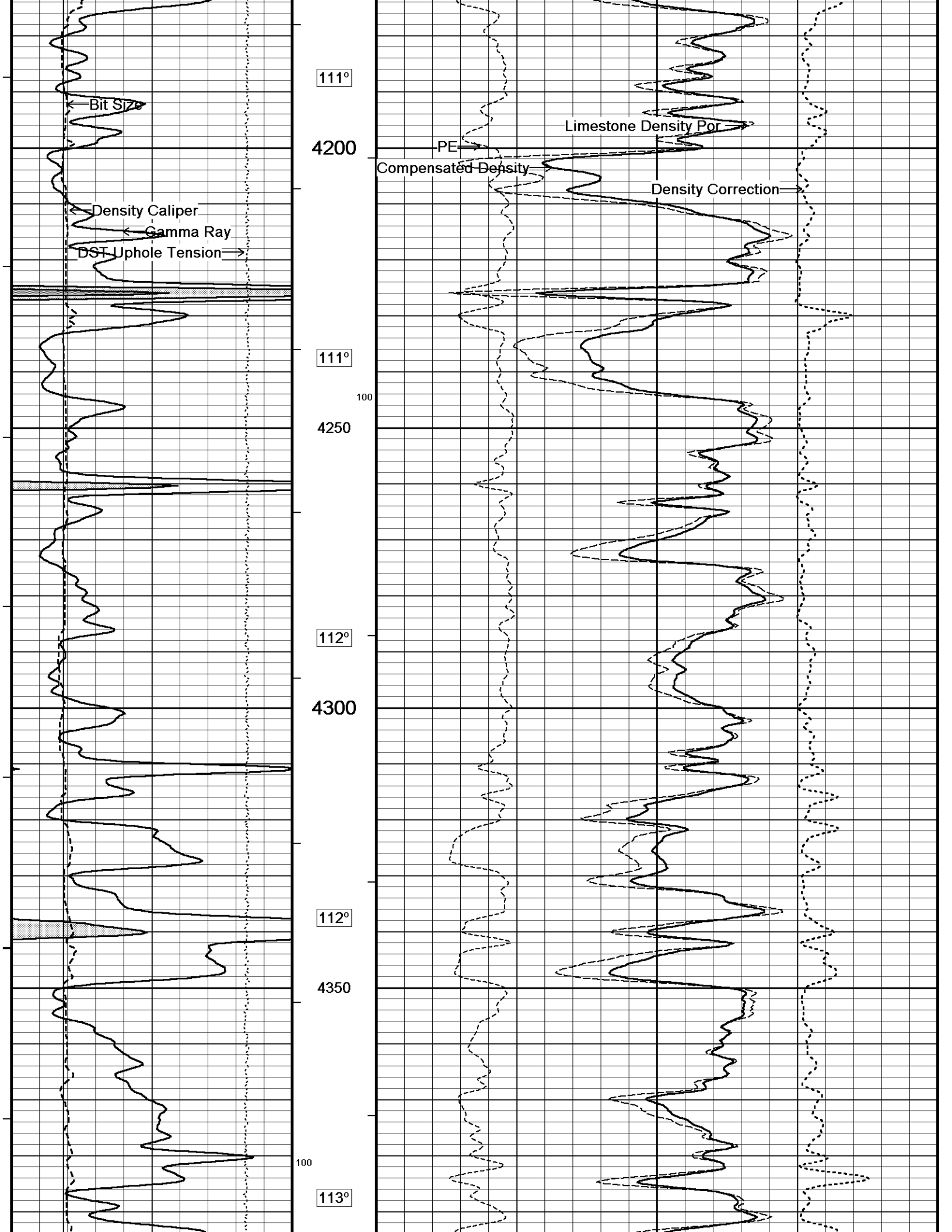


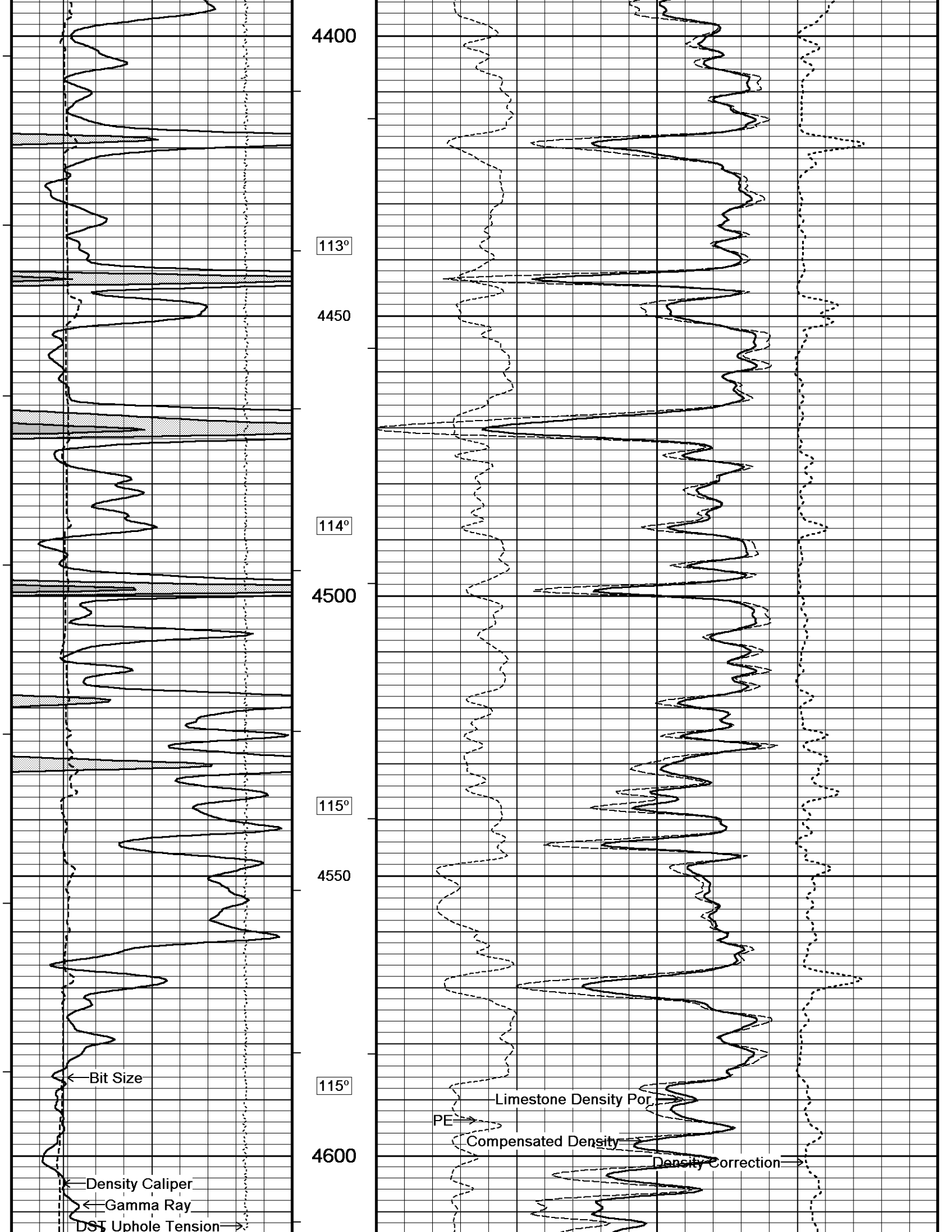

3300
107°
3350
107°
3400
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por
PE
Compensated Density
Density Correction
107°
3450
300
107°
3500

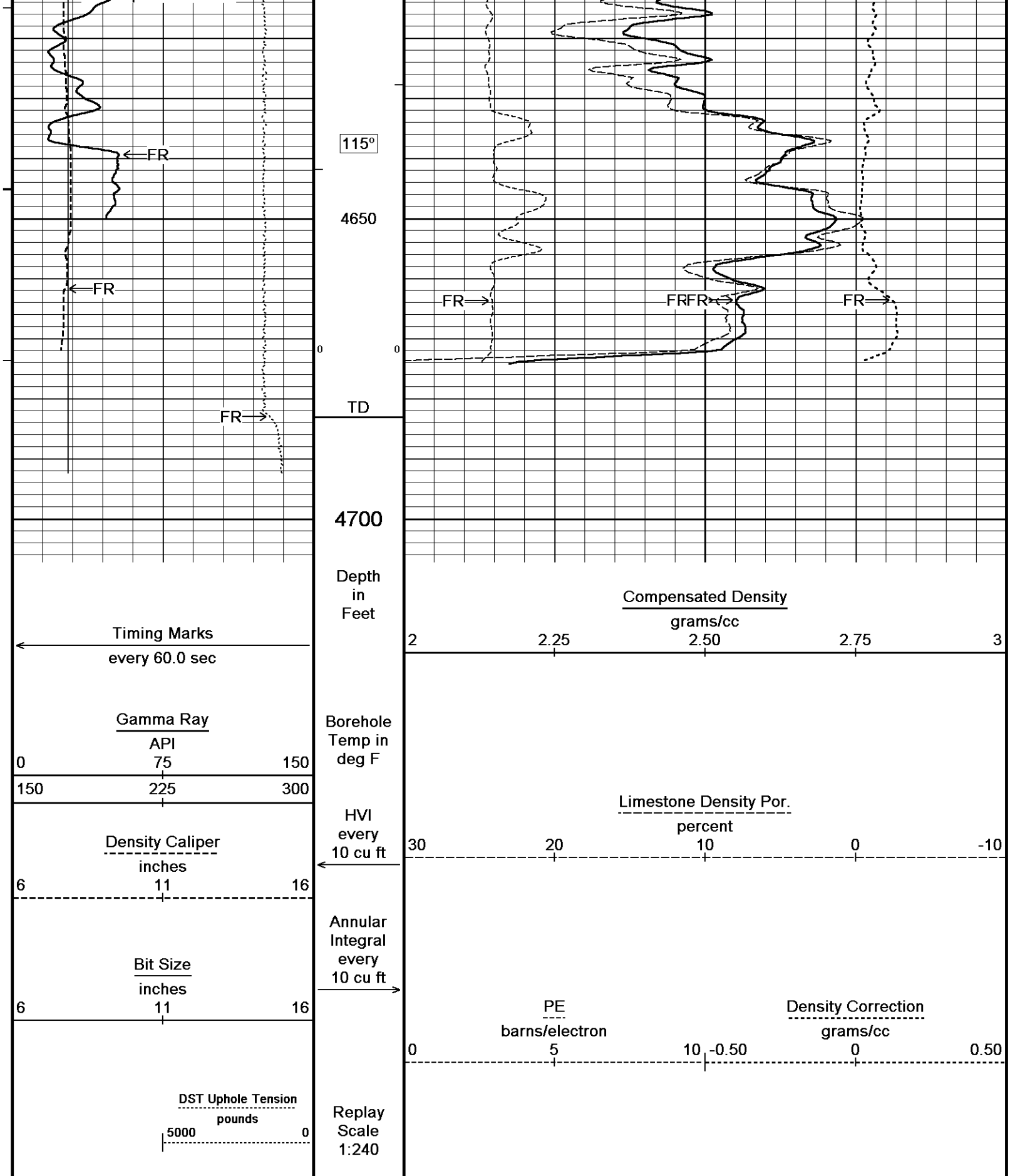

400
108°
3550
108°
3600
109°
3650
109°
3700


109°
3750
109°
Bit Size
3800
Limestone Density Por
PE
Compensated Density
Density Correction
300
Density Caliper
Gamma Ray
DST Uphole Tension
110°
200
3850
110°
3900
110°
3950


110°
4000
110°
4050
110°
200
4100
110°
4150


Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
111°
4200
111°
100
4250
112°
4300
112°
4350
100
113°
Limestone Density Por
PE
Compensated Density
Density Correction


4400
113°
4450
114°
4500
115°
4550
115°
4600
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por
PE
Compensated Density
Density Correction



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5 INCH MAIN

REPEAT SECTION

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 25-OCT-2013 14:53
Filename: C:\Minimus 13.05.9583\Logs\O'Brien Resou...\O'Brien Resources Boomhower 36 #3_001.dta
Recorded on 25-OCT-2013 07:48
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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

Compensated Density
grams/cc
2 2.25 2.50 2.75 3

Limestone Density Por.
percent
30 20 10 0 -10

PE
barns/electron
0 5 10

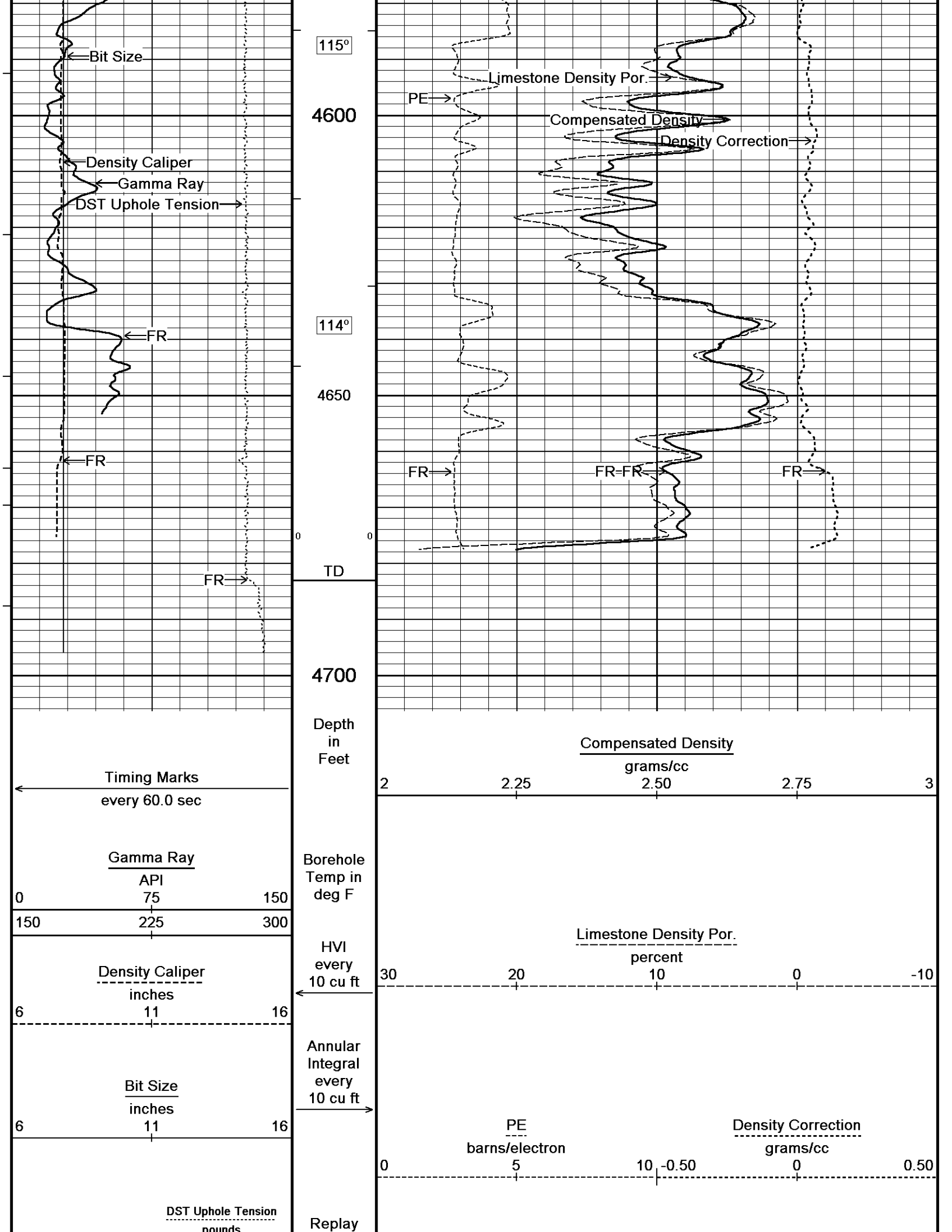
Density Correction
grams/cc
-0.50 0 0.50

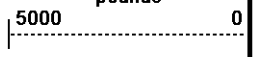
4478

4500

114°

4550


Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
FR
FR
115°
4600
114°
4650
TD
4700
Limestone Density Por.
PE
Compensated Density
Density Correction
FR
FR-FR
FR
Depth in Feet
Timing Marks
every 60.0 sec
Gamma Ray
API
0 75 150
150 225 300
Density Caliper
inches
6 11 16
Bit Size
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6 11 16
DST Uphole Tension
pounds
Borehole Temp in deg F
HVI every 10 cu ft
Annular Integral every 10 cu ft
Replay
Compensated Density
grams/cc
2 2.25 2.50 2.75 3
Limestone Density Por.
percent
30 20 10 0 -10
PE
barns/electron
0 5 10
Density Correction
grams/cc
-0.50 0 0.50



Scale
1:240

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 25-OCT-2013 14:53
Filename: C:\Minimus 13.05.9583\Logs\O'Brien Resou...\O'Brien Resources Boomhower 36 #3_001.dta — Recorded on 25-OCT-2013 07:48
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Logs\O'Brien Resources Boomhower 36 #3\O'Brien Resources Boomhower 36 #3_002 spooled section.dta

General Constants All 000

Last Edited on 25-OCT-2013,06:23

General Parameters		
Mud Resistivity	1.020	ohm-metres
Mud Resistivity Temperature	78.000	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	4.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	
SW/APOR Tool Source	0.000	

Down-hole Tension Calibration SMS 0

Field Calibration on 25-OCT-2013 07:11

Reading No	Measured	Calibrated (lbs)
1	15594.83	0.00
2	17435.90	399.00

SP Calibration MCG-D.K 442

Field Calibration on 20-OCT-2013 18:26

	Measured	Calibrated (mV)
Reference 1	101.8	100.9
Reference 2	-99.5	-100.5

High Resolution Temperature Calibration MCG-D.K 442

Field Calibration on 20-OCT-2013,18:27

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

High Resolution Temperature Constants MCG-D.K 442

Last Edited on 20-OCT-2013,18:27

Pre-filter Length	11

Gamma Calibration MCG-D.K 442

Field Calibration on 23-OCT-2013 01:26

	Measured	Calibrated (API)
Background	74	50
Calibrator (Gross)	1157	775
Calibrator (Net)	1083	725

Gamma Constants MCG-D.K 442

Last Edited on 25-OCT-2013,06:23

Gamma Calibrator Number	GRC38	
Mud Density	1.12	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

K Mud Concentration 0.00 %

Micro Laterolog Calibration MMR-A 11

Base Calibration on 31-DEC-1999 00:00
Field Check on 31-DEC-1999 00:00

Base Calibration

	Measured		Calibrated (ohm-m)	
	Ref 1	Ref 2	Ref 1	Ref 2
	0.0	0.0	0.0	0.0

Base Check (ohm-m)	Field Check (ohm-m)
0.0	0.0

Micro Laterolog Constants MMR-A 11

Last Edited on

Pad Type	6 in Solid Nylon B23059	
Micro Laterolog K Factor	0.0128	
Standoff Offset	0.0000	inches

Mudcake Thickness Correction Constants

Mud Cake Source	Constant Value	
Mud Cake Thickness	0.4000	inches
Mud Cake Thickness Caliper		
Mud Cake Resistivity	0.1500	ohm-m
Mud Cake Resistivity Temp.	68.00	Deg F
Mud Cake Resistivity Source	Constant Value	
Temp. Source Rmc Correc.	MCG External Temperature	

Caliper Calibration MMR-A 11

Base Calibration on 01-OCT-2013 09:07
Field Calibration on 23-OCT-2013 14:30

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14311	5.98
2	17410	7.97
3	20706	9.86
4	24667	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.99	7.97

Micro Normal and Micro Inverse Calibration MMR-A 11

Base Calibration on 11-OCT-2013 11:00
Field Check on 23-OCT-2013 14:26

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.1	59.0	5.0	25.0
Micro Inverse	15.5	76.7	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	77.5	77.5
Micro Inverse	59.4	59.4

Micro Normal and Micro Inverse Constants MMR-A 11

Last Edited on 18-APR-2013,13:52

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	0.0000	inches

Neutron Calibration MDN-A.B 65

Base Calibration on 11-OCT-2013 14:23
Field Check on 23-OCT-2013 01:30

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3088	96	3714	110
Ratio	32.181		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1674	2387
Ratio	0.701	

Field Check	Calibrated (cps)	
	1677	2401
Ratio	0.680	

Neutron Constants MDN-A.B 65

Last Edited on 25-OCT-2013,06:23

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	None	
Formation Pressure	N/A	kpsi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-B.J 352

Base Calibration on 11-OCT-2013 11:23
Field Check on 23-OCT-2013 14:29

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	965.0	126.8
Base Check		281.1
Field Check		281.1

FE Constants MFE-B.J 352

Last Edited on 24-OCT-2013,04:27

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

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 20-OCT-2013,18:08

	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 24-OCT-2013,04:26

Pre-filter Length	11

Induction Calibration MAI-A.A 45

Base Calibration on 21-MAY-2013,16:47
Field Check on 23-OCT-2013 14:25

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 0.0 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1			18.9	3851.4
2			31.8	3629.2
3			28.6	3049.3
4			18.3	2079.2

4	18.3	2079.2	
Deep	16.1	1911.2	
Medium	42.5	4060.4	
Shallow	49.7	5482.8	
Array Temperature		69.9	Deg F

Induction Constants MAI-A.A 45

Last Edited on 24-OCT-2013,04:26

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	

Photo Density Calibration MPD-B 31

Base Calibration on 11-OCT-2013 13:32
Field Check on 23-OCT-2013 01:18

Density Calibration

Base Calibration	Measured Near	Measured Far	Calibrated (sdu) Near	Calibrated (sdu) Far
Reference 1	44679	22866	59556	30836
Reference 2	18345	1888	24941	2541

Field Check at Base	669.8	824.9
Field Check	667.4	826.5

PE Calibration

Base Calibration	WS	Measured WH	Ratio	Calibrated Ratio
Background	125	594		
Reference 1	18704	44569	0.422	0.371
Reference 2	5436	18261	0.301	0.272

Field Check at Base	124.9	594.3

Field Check		
	124.0	593.3

Density Constants MPD-B 31

Last Edited on 25-OCT-2013,06:22

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 (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

Caliper Calibration MPD-B 31

Base Calibration on 11-OCT-2013 13:50
Field Calibration on 23-OCT-2013 01:14

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	18160	3.99
2	27038	5.98
3	35584	7.97
4	43976	9.86
5	53328	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.94	7.97

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Logs\O'Brien Resources Boomhower 36 #3\O'Brien Resources Boomhower 36 #3_002 spooled section.dta

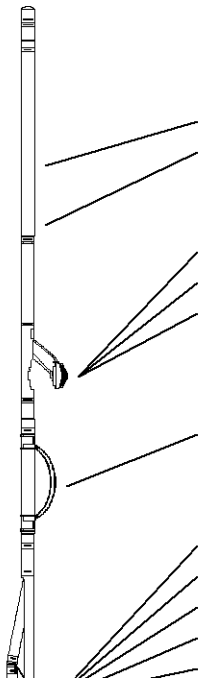
3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.K 442 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity
MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.88 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

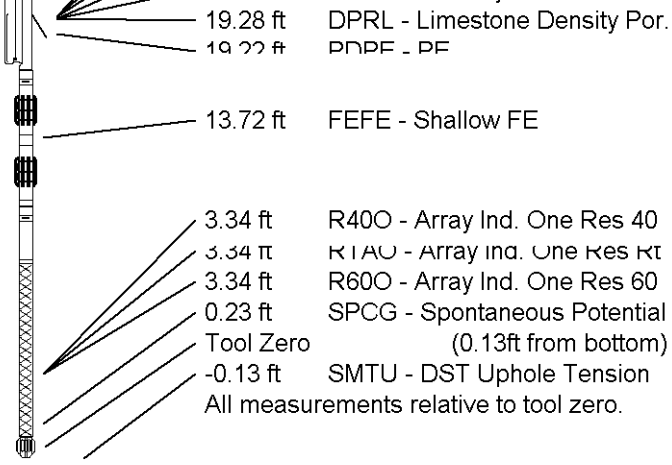


43.50 ft	GRGC - Gamma Ray
40.59 ft	CGXT - MCG External Temperature
33.24 ft	MBTC - MMR Caliper
33.24 ft	MINV - MMR MicroLog Inverse
33.24 ft	MNRL - MMR MicroLog Normal
28.45 ft	NPRL - Limestone Neutron Por.
21.21 ft	AVOL - Annular Volume
21.21 ft	HVOL - Hole Volume
21.21 ft	CLDC - Density Caliper
19.28 ft	DEN - Compensated Density
19.28 ft	DCOR - Density Correction

Compact Focussed Electric
MFE-B.J 352 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: 50.36 ft Weight: 399.0 lb



COMPANY	O'BRIEN RESOURCES, LLC
WELL	BOOMHOWER 36 #3
FIELD	BOOMHOWER
PROVINCE/COUNTY	LANE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2784.00	feet	First Reading	4664.00	feet
Elevation Drill Floor	2782.00	feet	Depth Driller	4685.00	feet
Elevation Ground Level	2774.00	feet	Depth Logger	4683.00	feet

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COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG