



Weatherford[®]

**COMPENSATED NEUTRON
COMPACT PHOTO DENSITY
MICRORESISTIVITY LOG**

COMPANY O'BRIEN RESOURCES, LLC
WELL PRATHER FARMS 22 #1
FIELD WILDCAT
PROVINCE/COUNTY GOVE
COUNTRY/STATE U.S.A. / KANSAS
LOCATION 1002' FSL & 1965' FEL

SEC 22 TWP 14S RGE 30W Other Services
MAI/MFE
API Number 15-063-22108 MSS
Permit Number

Permanent Datum GL, Elevation 2778 feet
Log Measured From KB
Drilling Measured From KB @ 10 FEET

Elevations: KB 2788.00
DF 2786.00
GL 2778.00

Date	23-MAY-2013
Run Number	ONE
Service Order	3539055
Depth Driller	4650.00 feet
Depth Logger	4651.00 feet
First Reading	4619.00 feet
Last Reading	3500.00 feet
Casing Driller	258.00 feet
Casing Logger	260.00 feet
Bit Size	7.875 inches
Hole Fluid Type	CHEMICAL
Density / Viscosity	9.30 lb/USg 53.00 CP
PH / Fluid Loss	9.50 6.80 ml/30Min
Sample Source	FLOWLINE
Rm @ Measured Temp	1.43 @ 80.0 ohm-m
Rmf @ Measured Temp	1.14 @ 80.0 ohm-m
Rmc @ Measured Temp	1.72 @ 80.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	0.93 @123.0 ohm-m
Time Since Circulation	4 HOURS
Max Recorded Temp	123.00 deg F
Equipment / Base	13057 LIB
Recorded By	ROB HOFFMAN
Witnessed By	SEAN DEENIHAN
JOB #	LIB13-147

BOREHOLE RECORD			Last Edited: 23-MAY-2013 13:40	
Bit Size inches	Depth From feet	Depth To feet		
7.875	260.00	4651.00		
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	260.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583.
- RUN 1: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION.
 - HARDWARE: DUAL ECCENTRALISER 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 260 FEET: 1565 CU. FT.
- ANNULAR HOLE VOLUME WITH 4.5 INCH PRODUCTION CASING FROM TD TO 3500 FEET: 259 CU. FT.

- RIG: MAVERICK DRILLING #106

- ENGINEER: ROB HOFFMAN, DEREK CARTER

- OPERATOR(S): DAVID CANADAY

****SONIC WAS WORKING ON CASING CHECK, AFTER GOING DOWNHOLE, SONIC QUIT WORKING PROPERLY BEFORE WE RAN THE REPEAT. TRANSIT TIME READINGS WERE ERRATIC.****

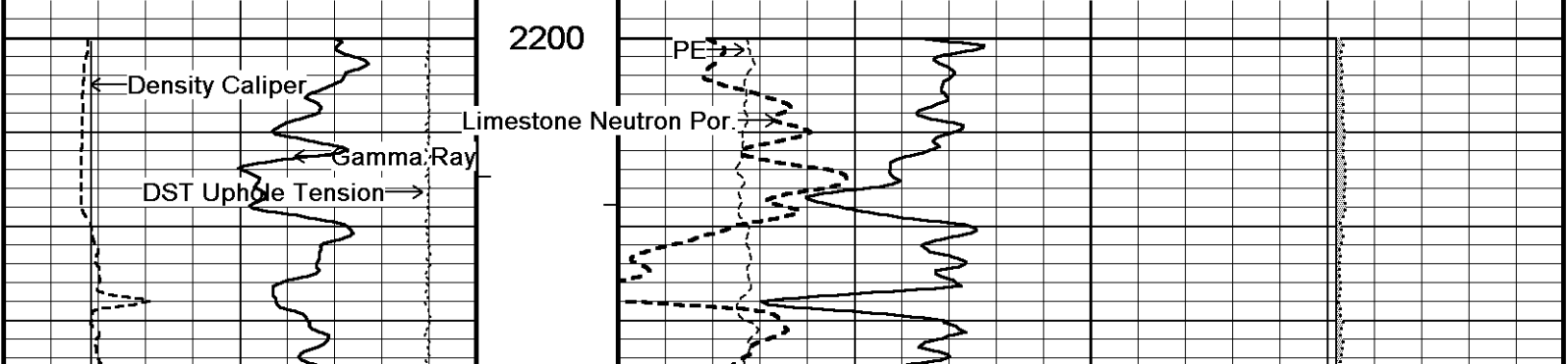
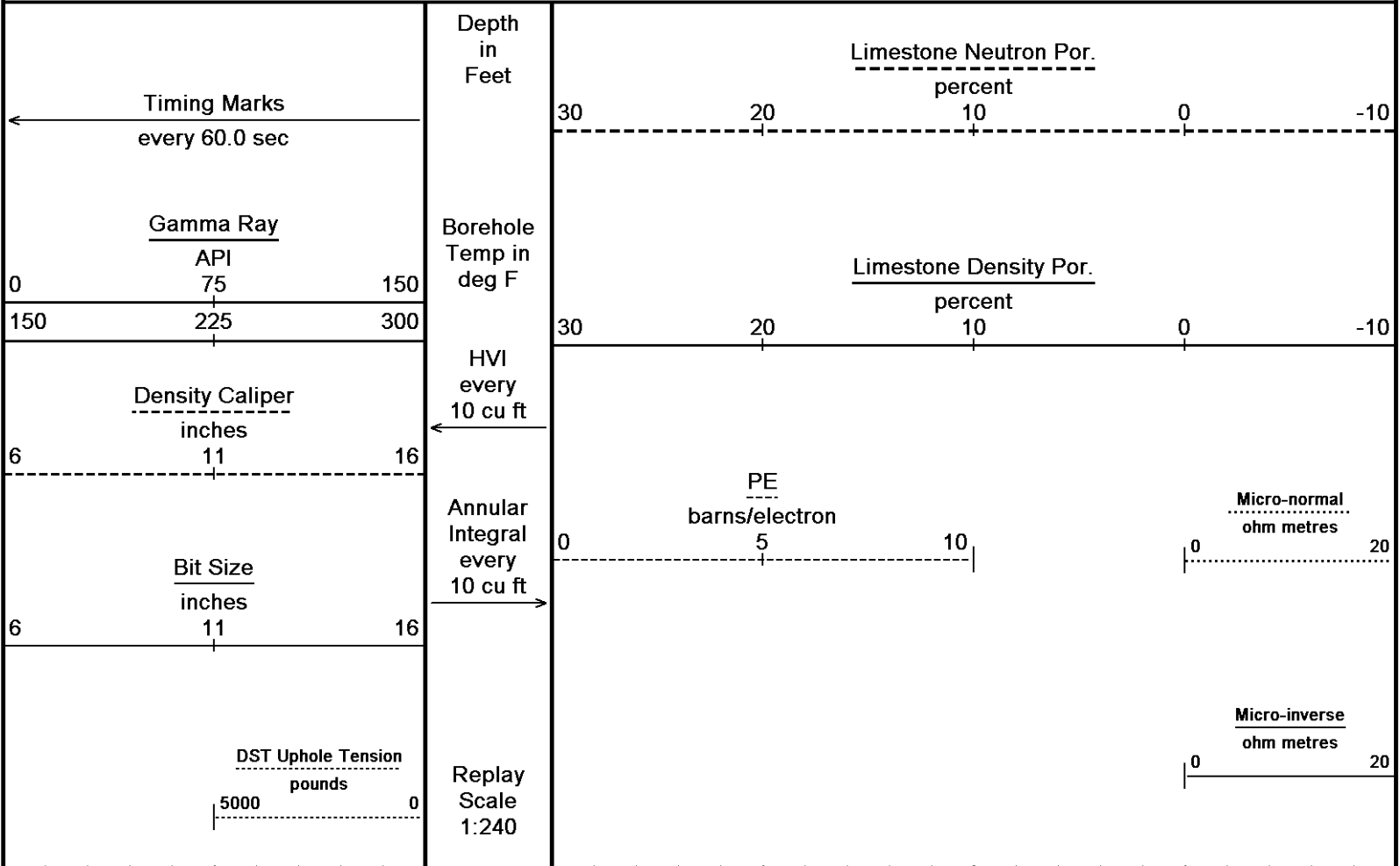
****CUSTOMER DECIDED THEY DID NOT WANT US TO RUN ANOTHER SONIC****

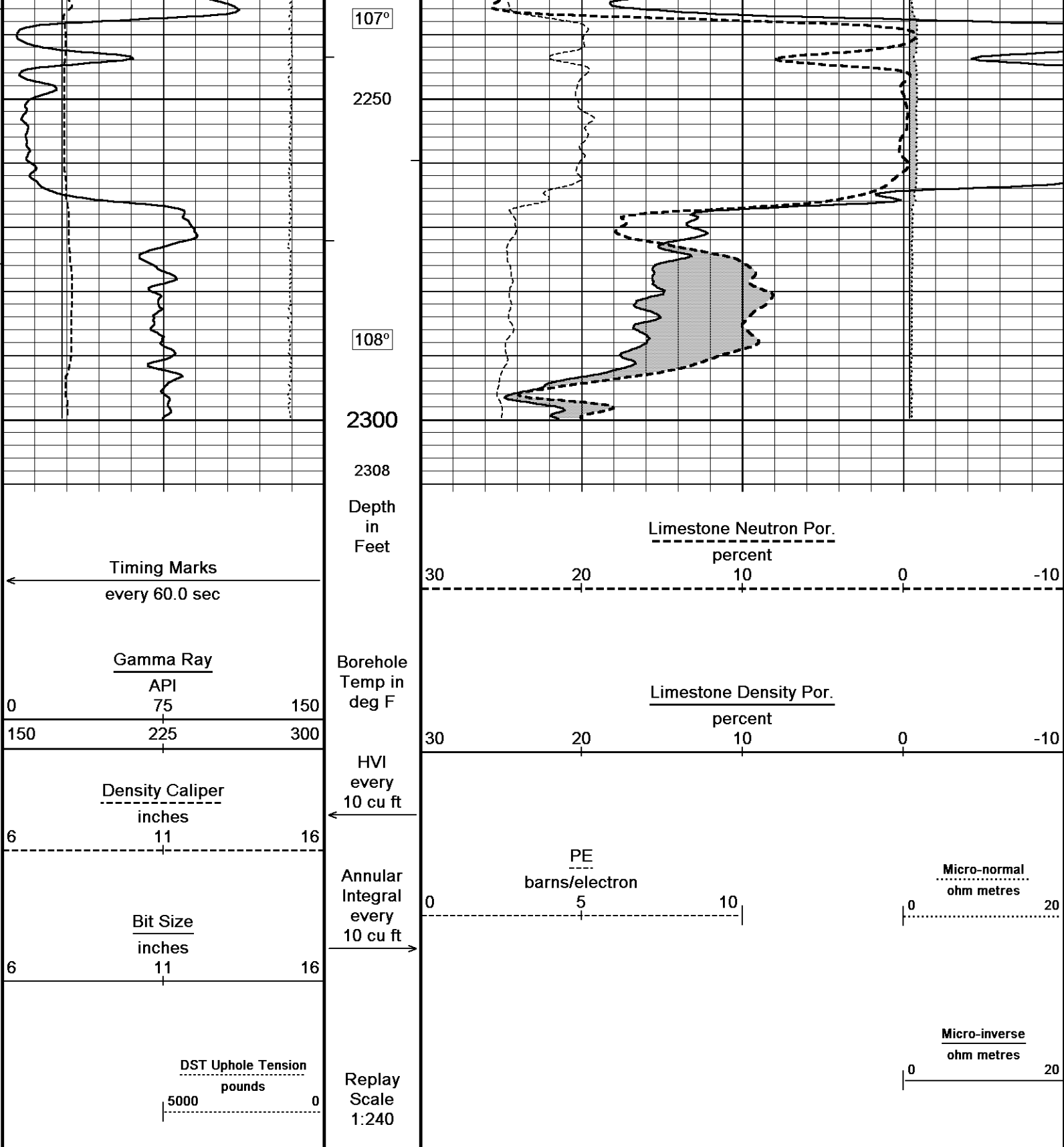
****NO SONIC DATA IS BEING PRESENTED****

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 23-MAY-2013 15:13
Filename: C:\Minimus 13.05.9583\Logs\O'Brien Res...\O'Brien Resources Prather Farms 22 #1_002.dta Recorded on 23-MAY-2013 12:27
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583





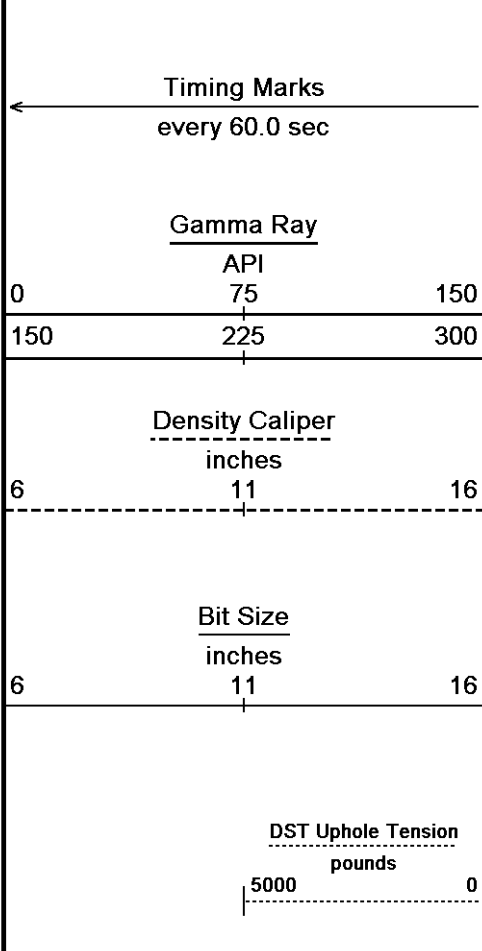
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	Depth	
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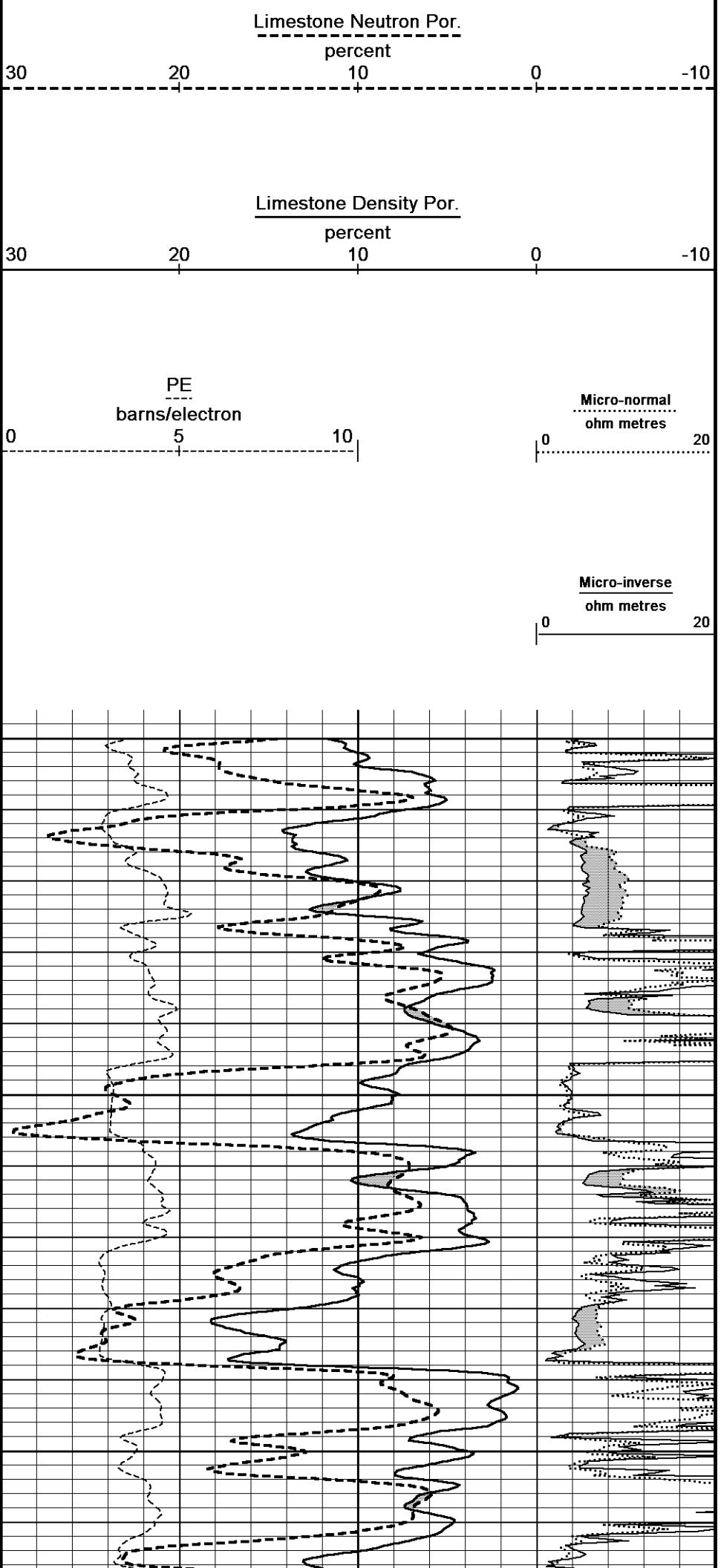
Depth
in
Feet

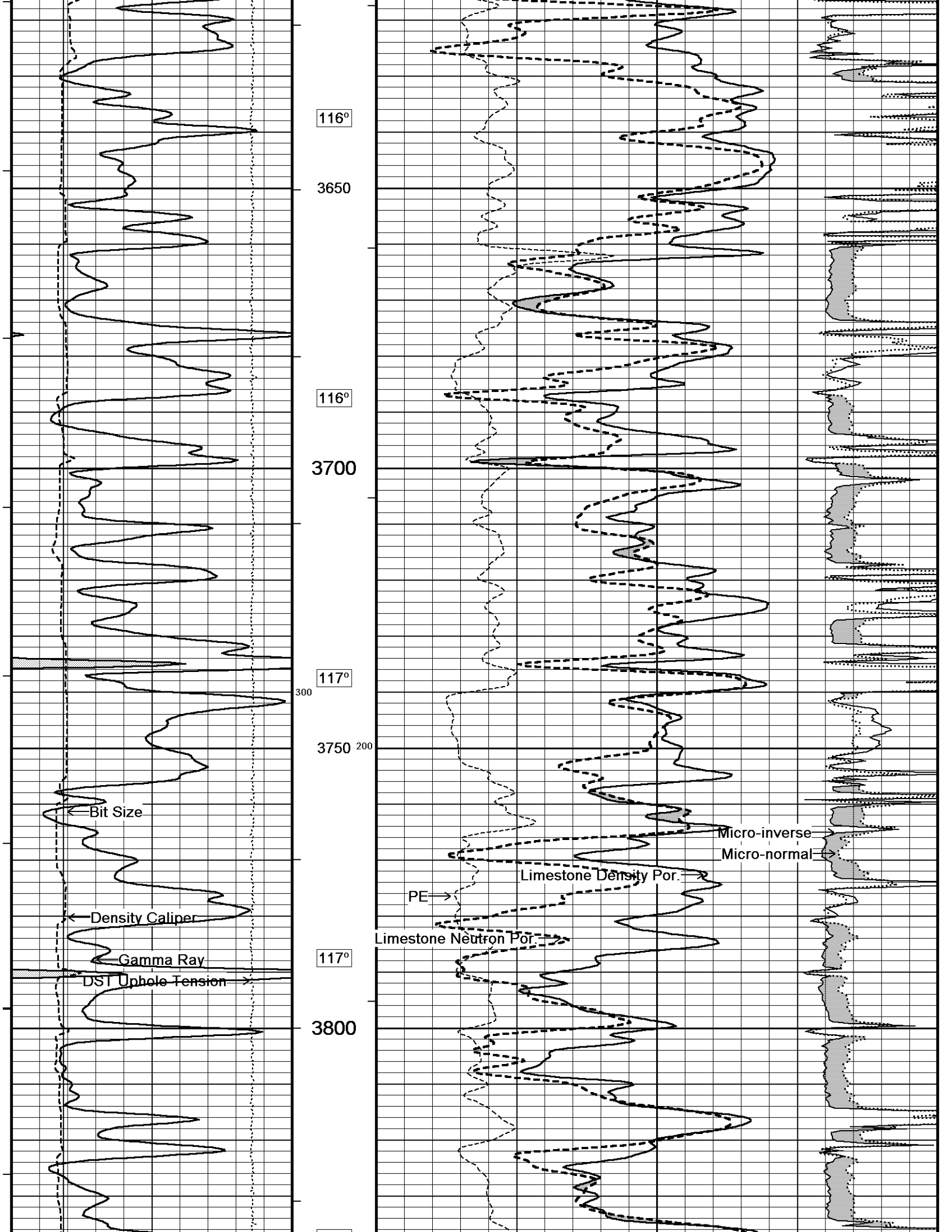
Borehole
Temp in
deg F

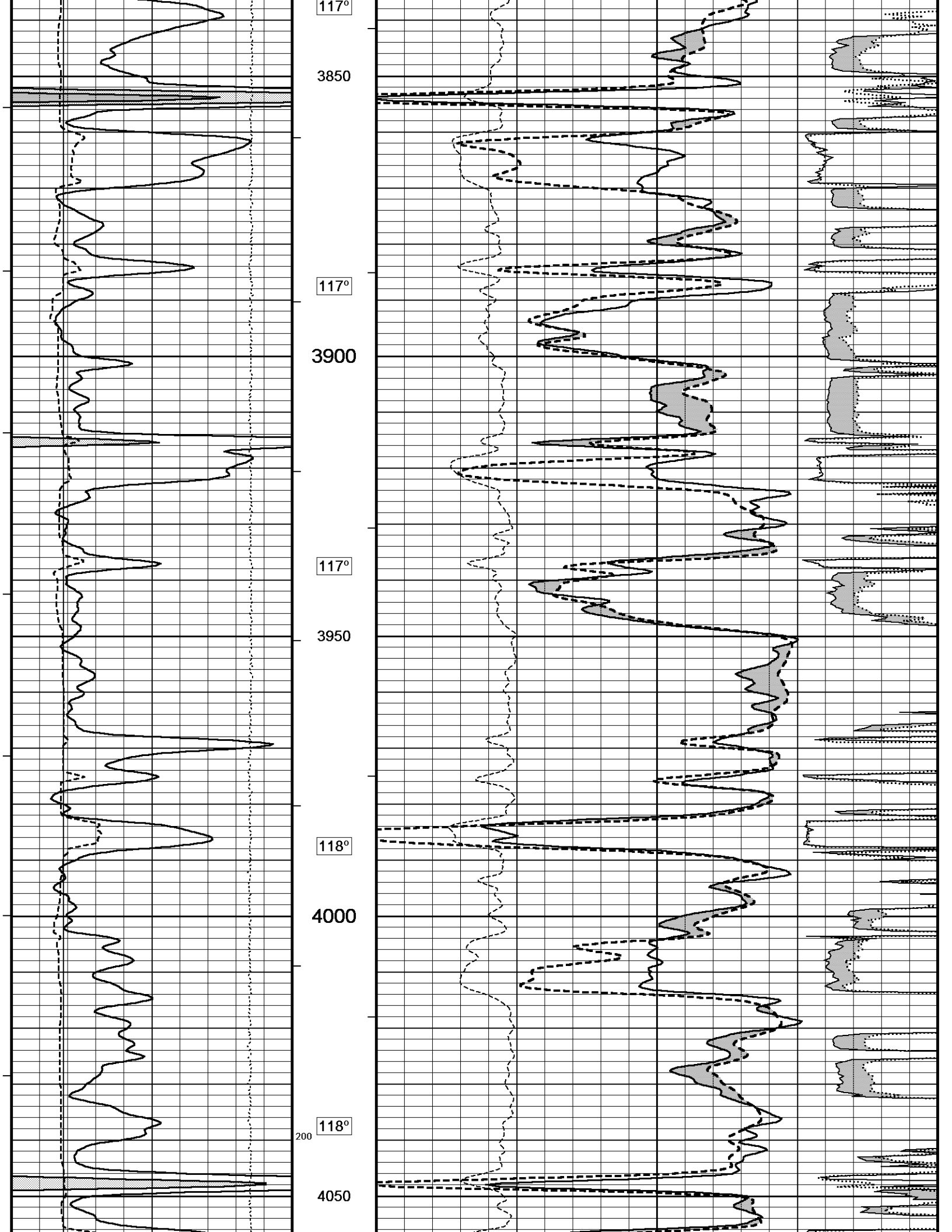
HVI
every
10 cu ft

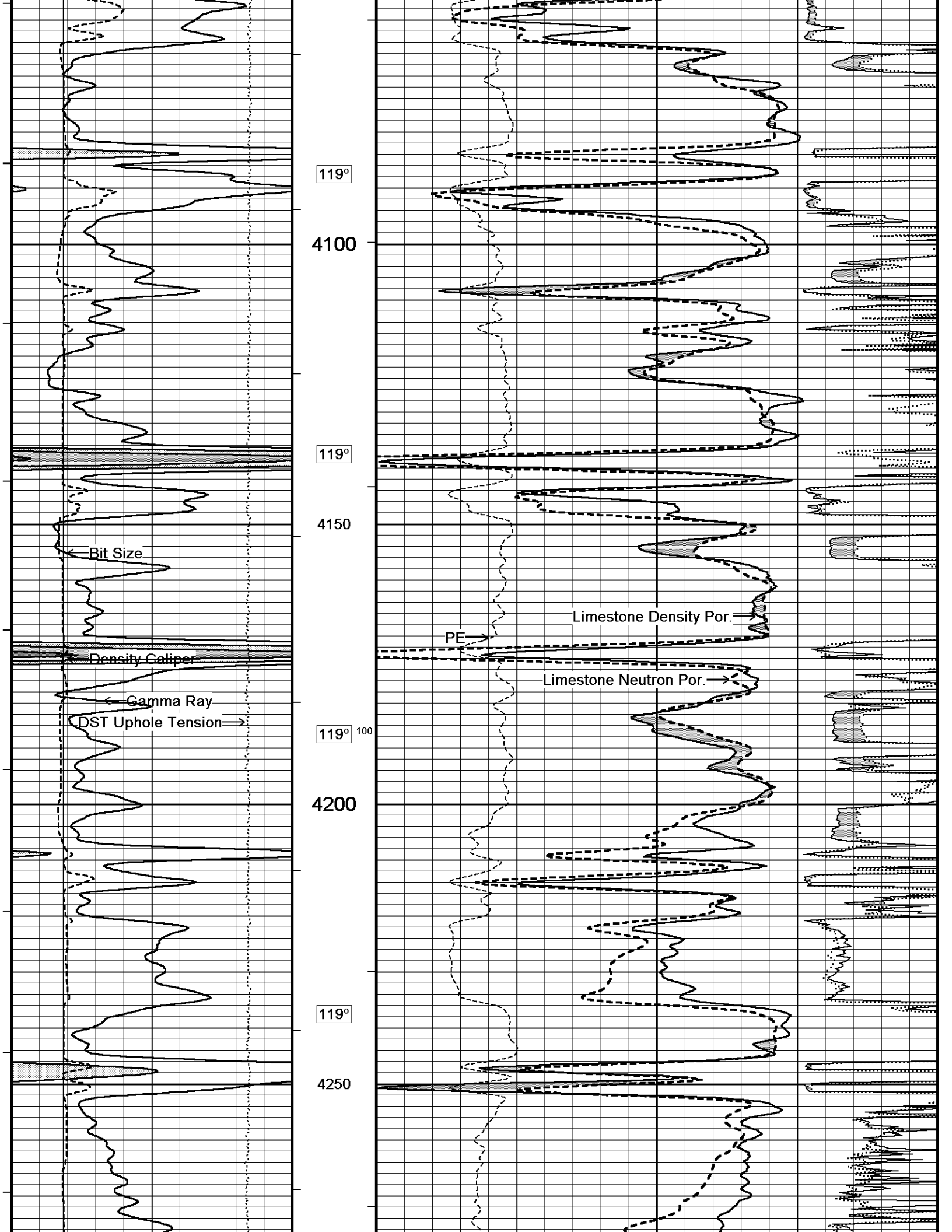
Annular
Integral
every
10 cu ft

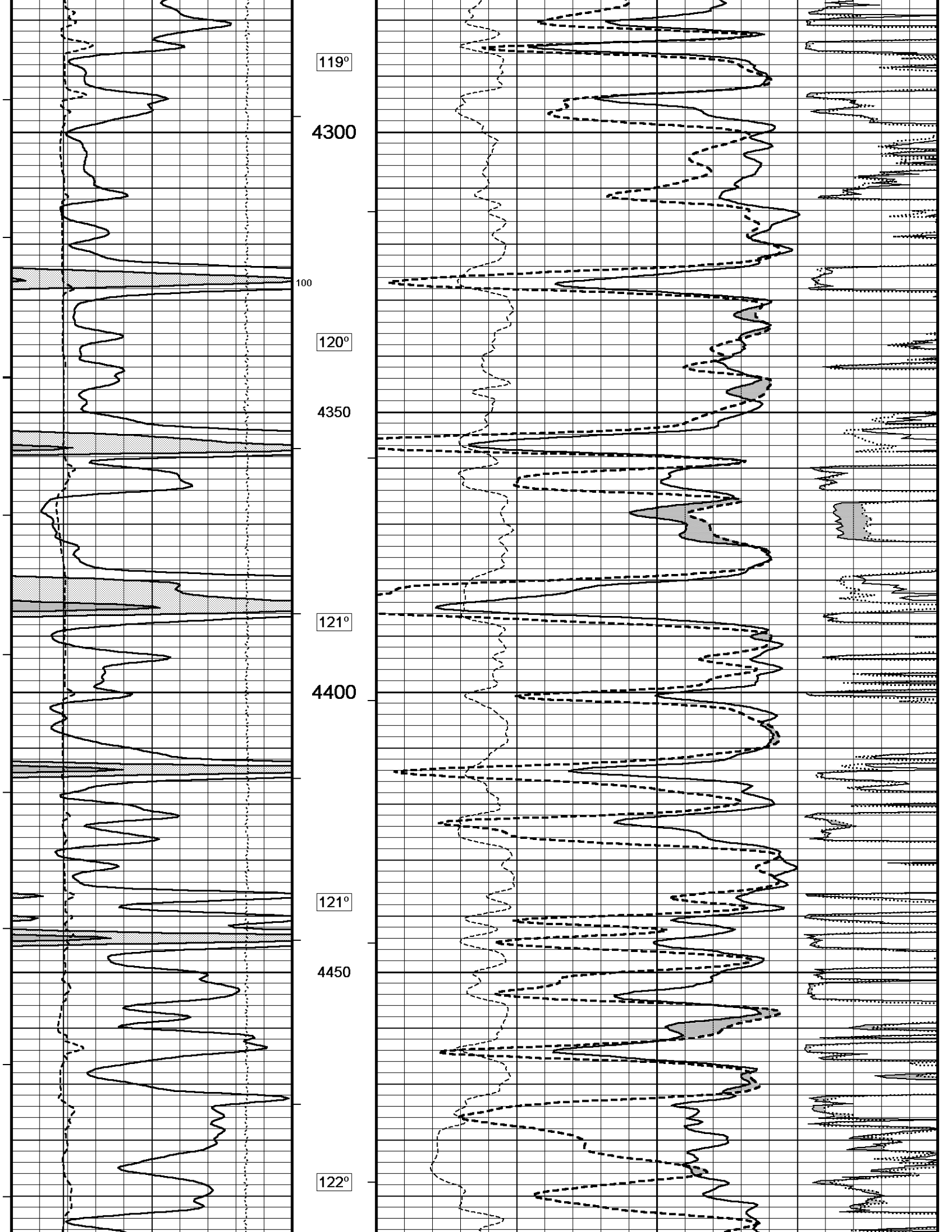
Replay
Scale
1:240

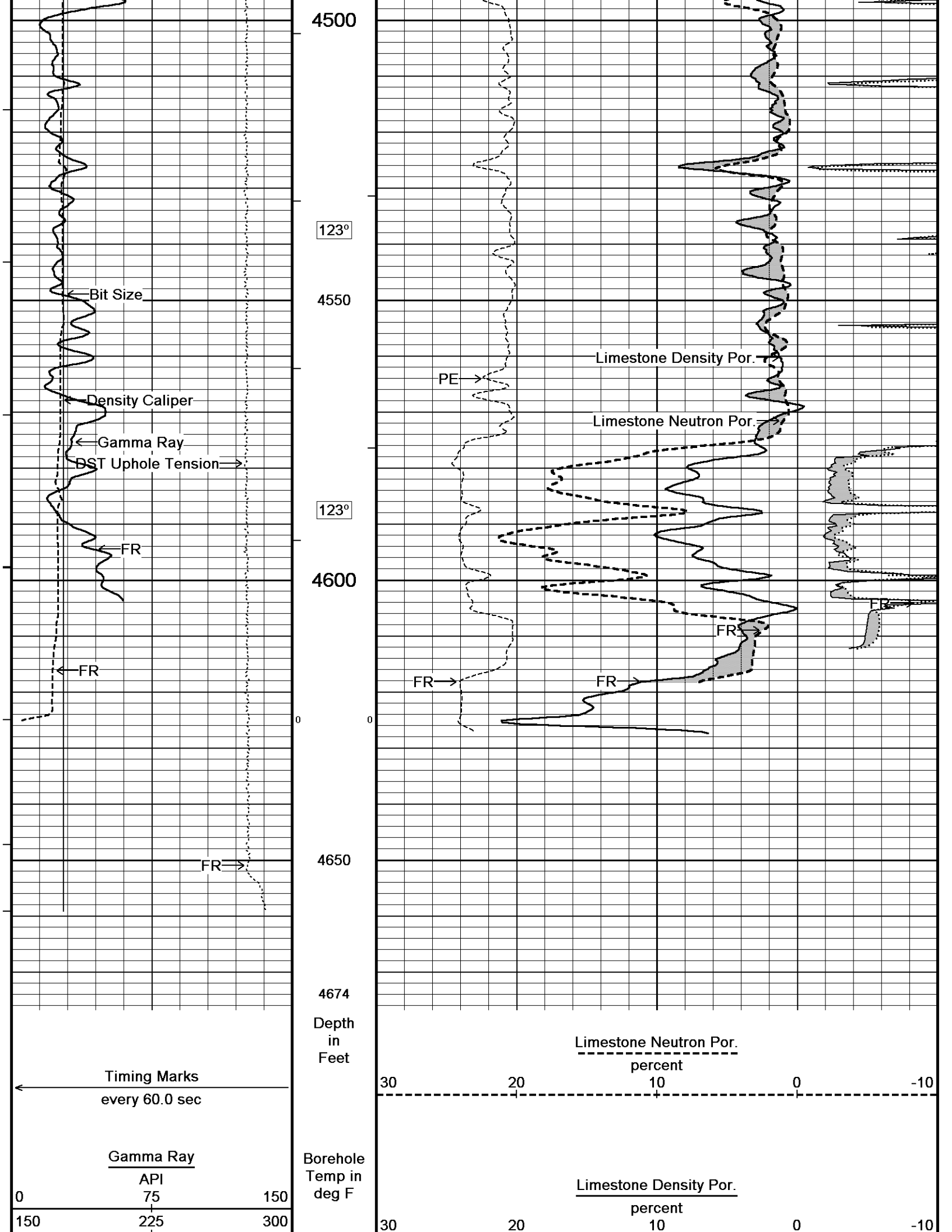


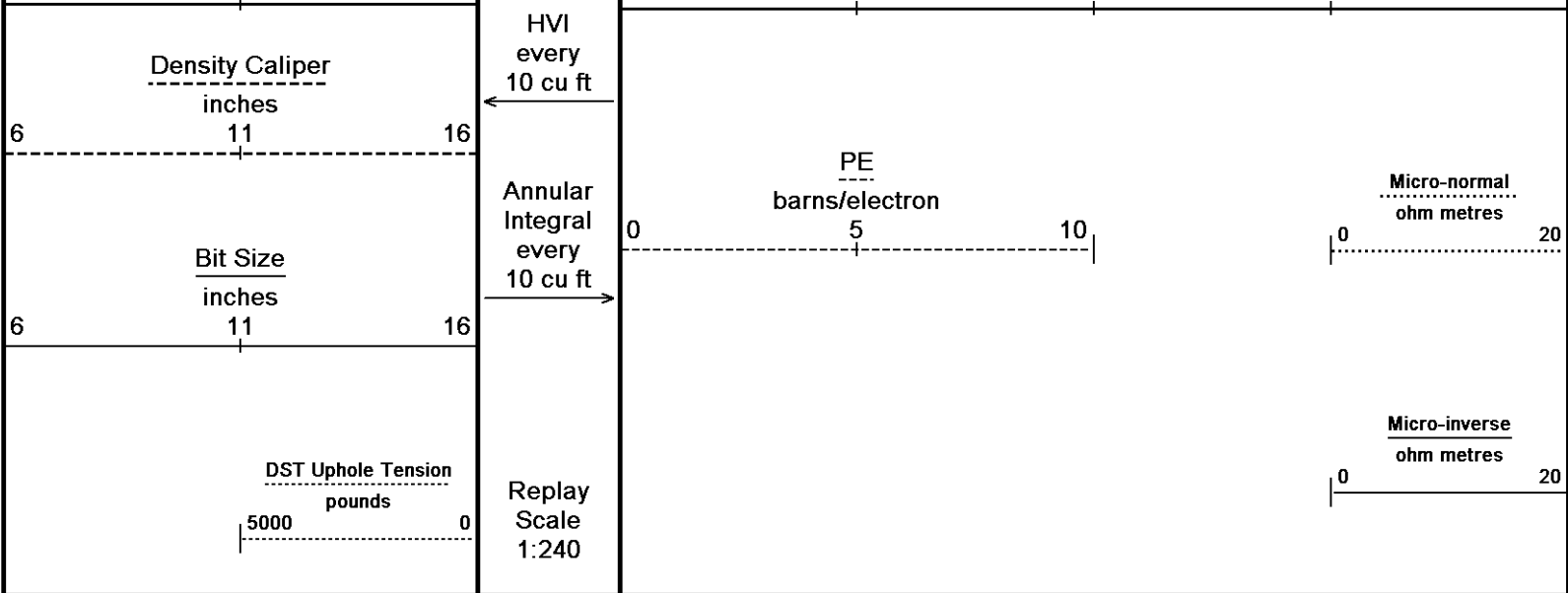










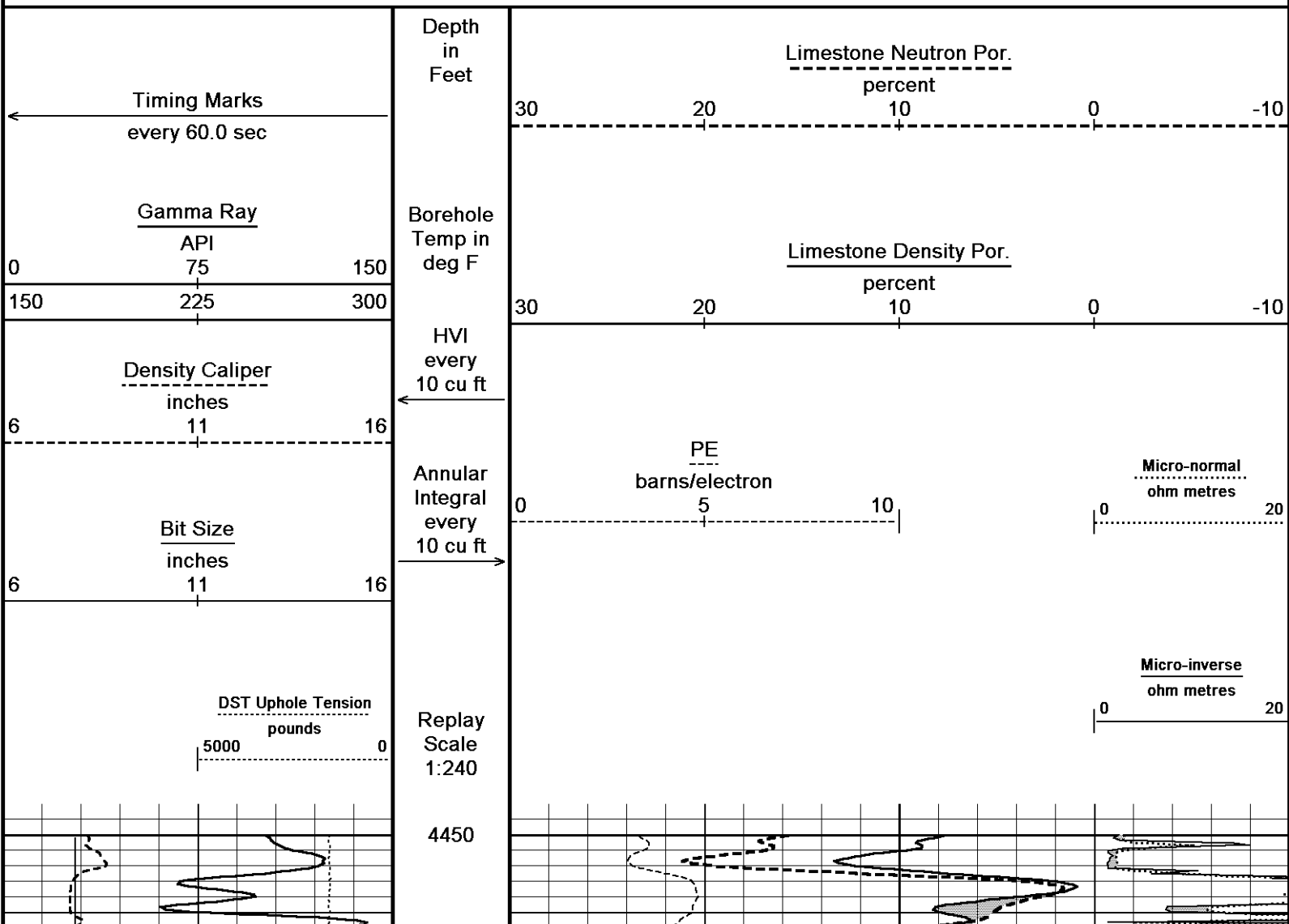


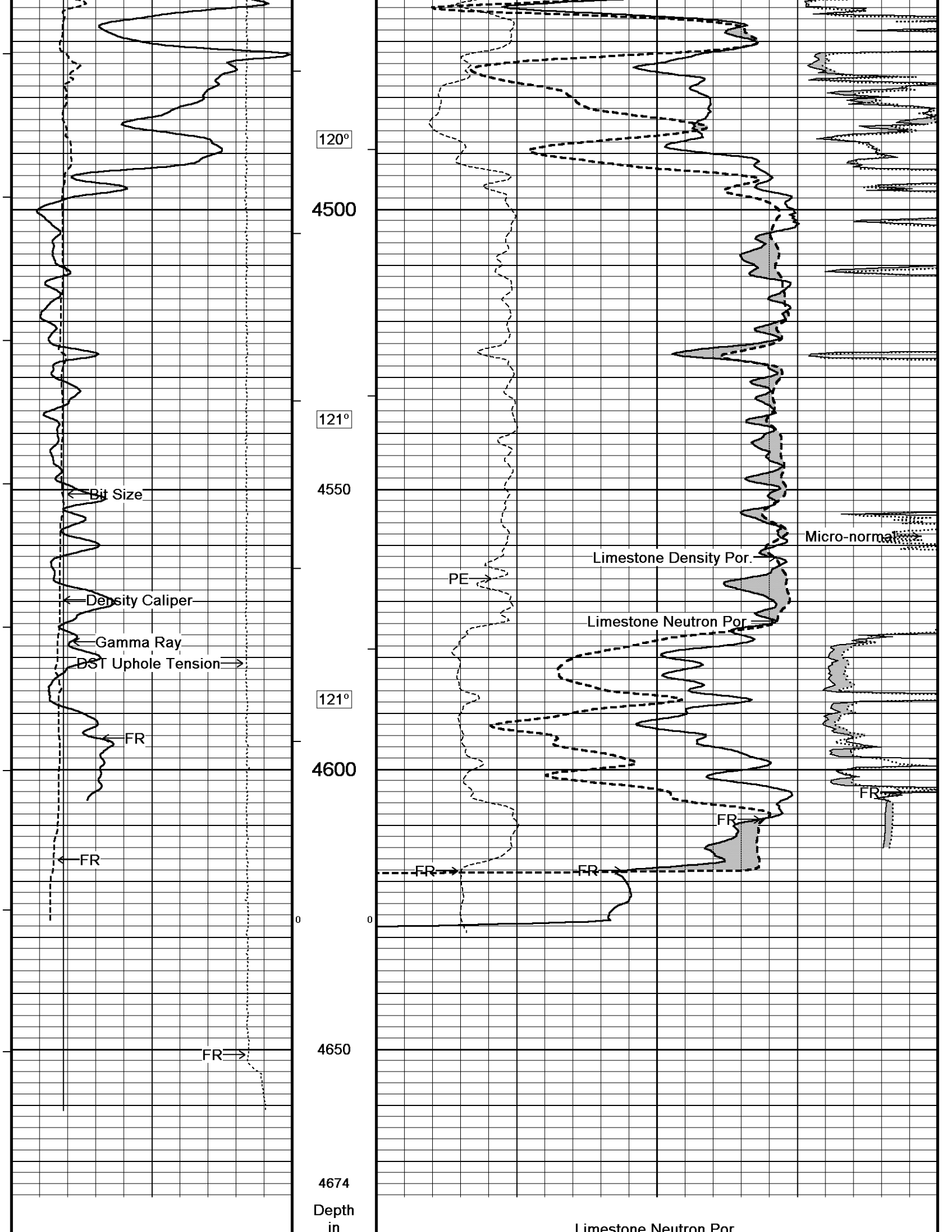
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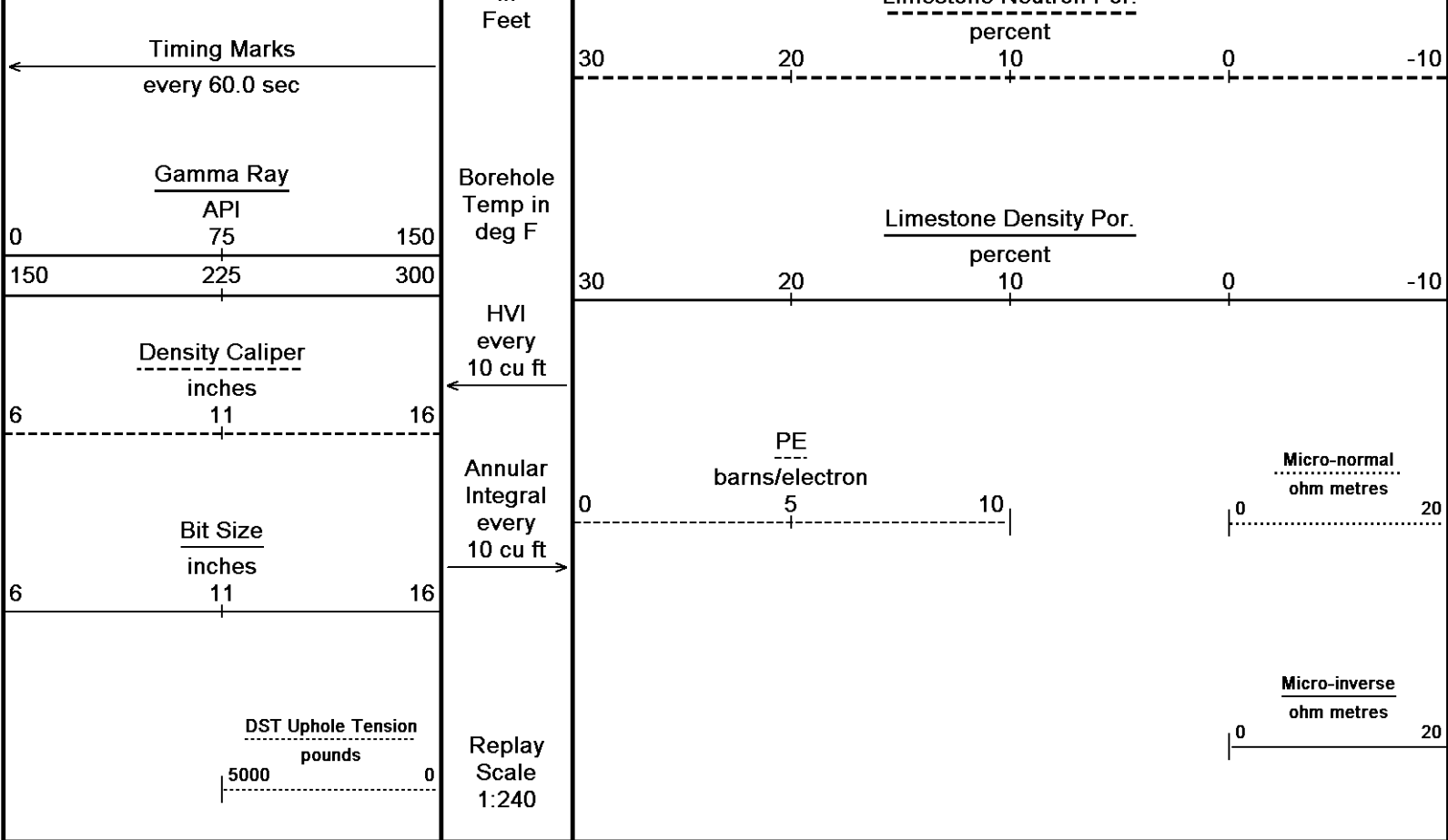
↑ 5 INCH MAIN ↑

↓ REPEAT SECTION ↓

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 23-MAY-2013 15:13
 Filename: C:\Minimus 13.05.9583\Logs\O'Brien Res...\O'Brien Resources Prather Farms 22 #1_001.dta Recorded on 23-MAY-2013 11:55
 System Versions: Logged with 13.05.9583 Plotted with 13.05.9583





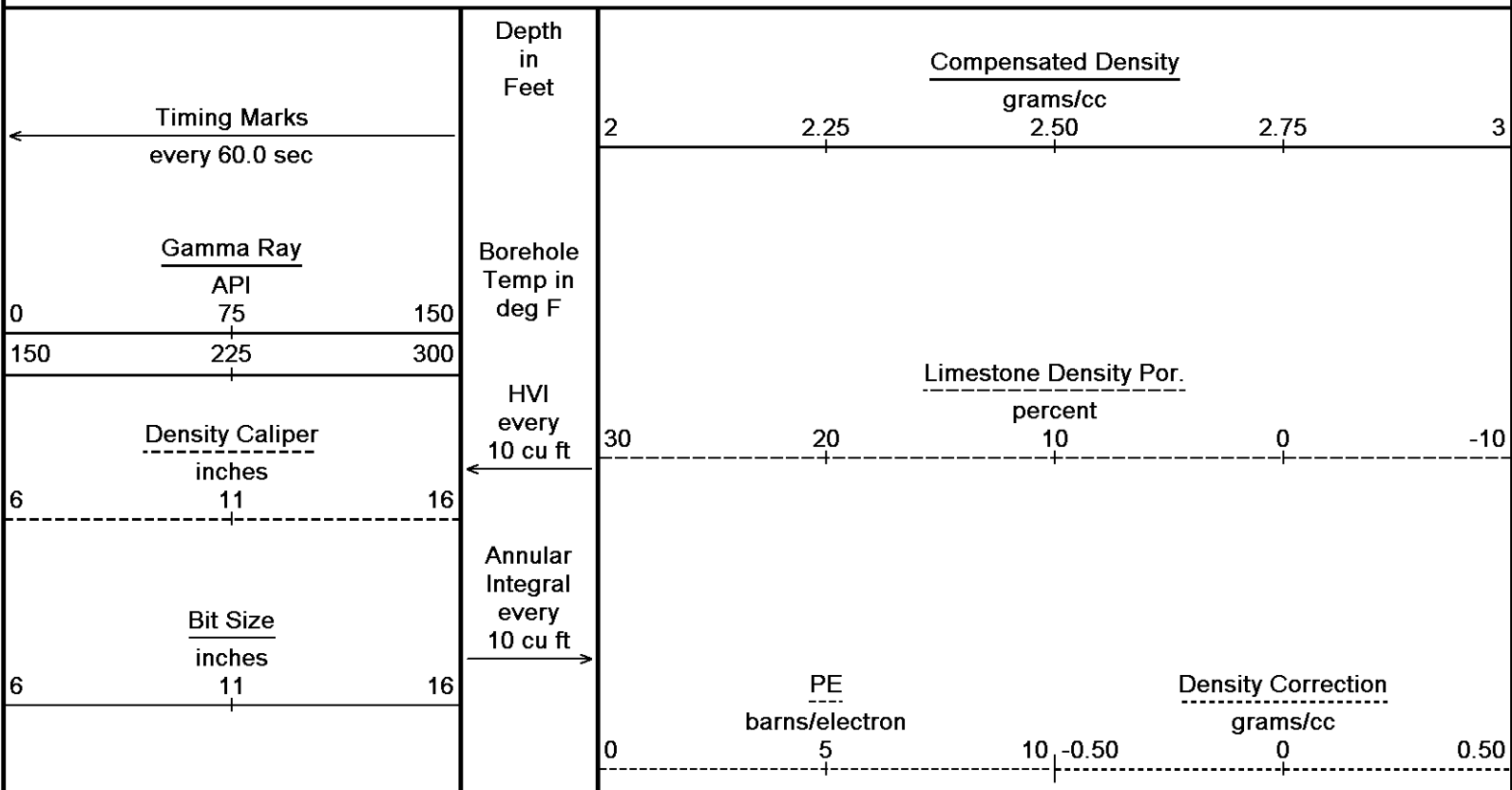


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DST Uphole Tension
pounds

5000 0

Replay
Scale
1:240

3500

116°

3550

116°

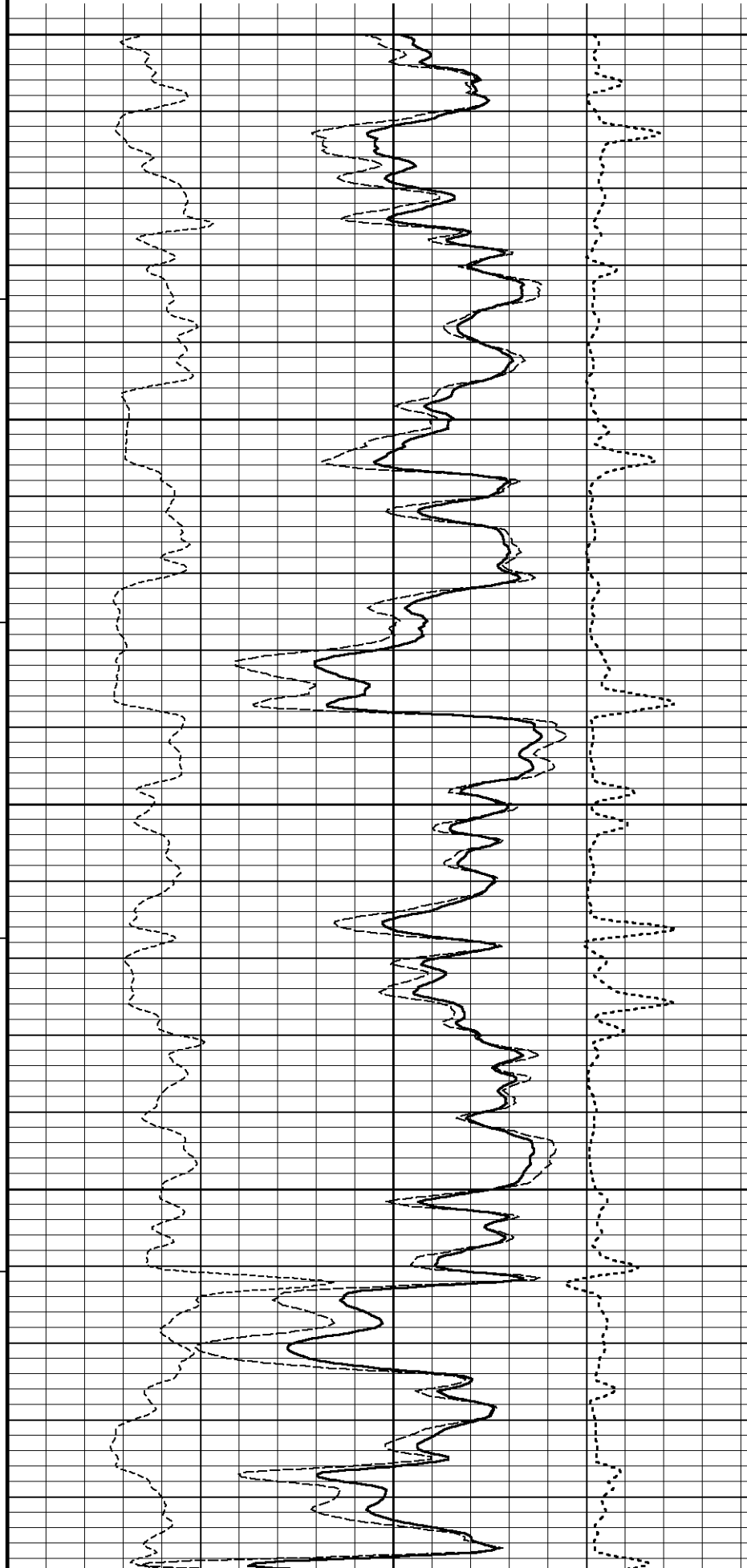
3600

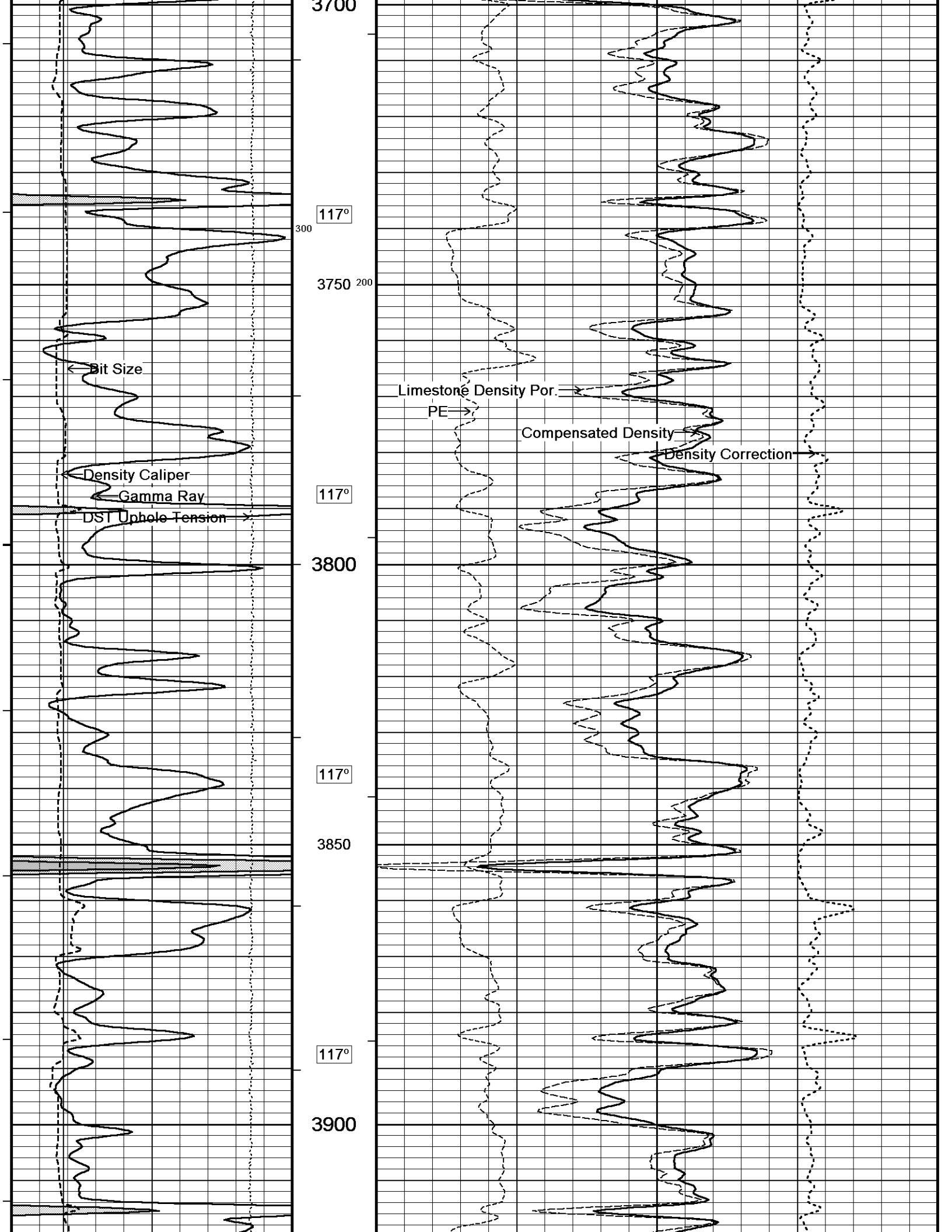
116°

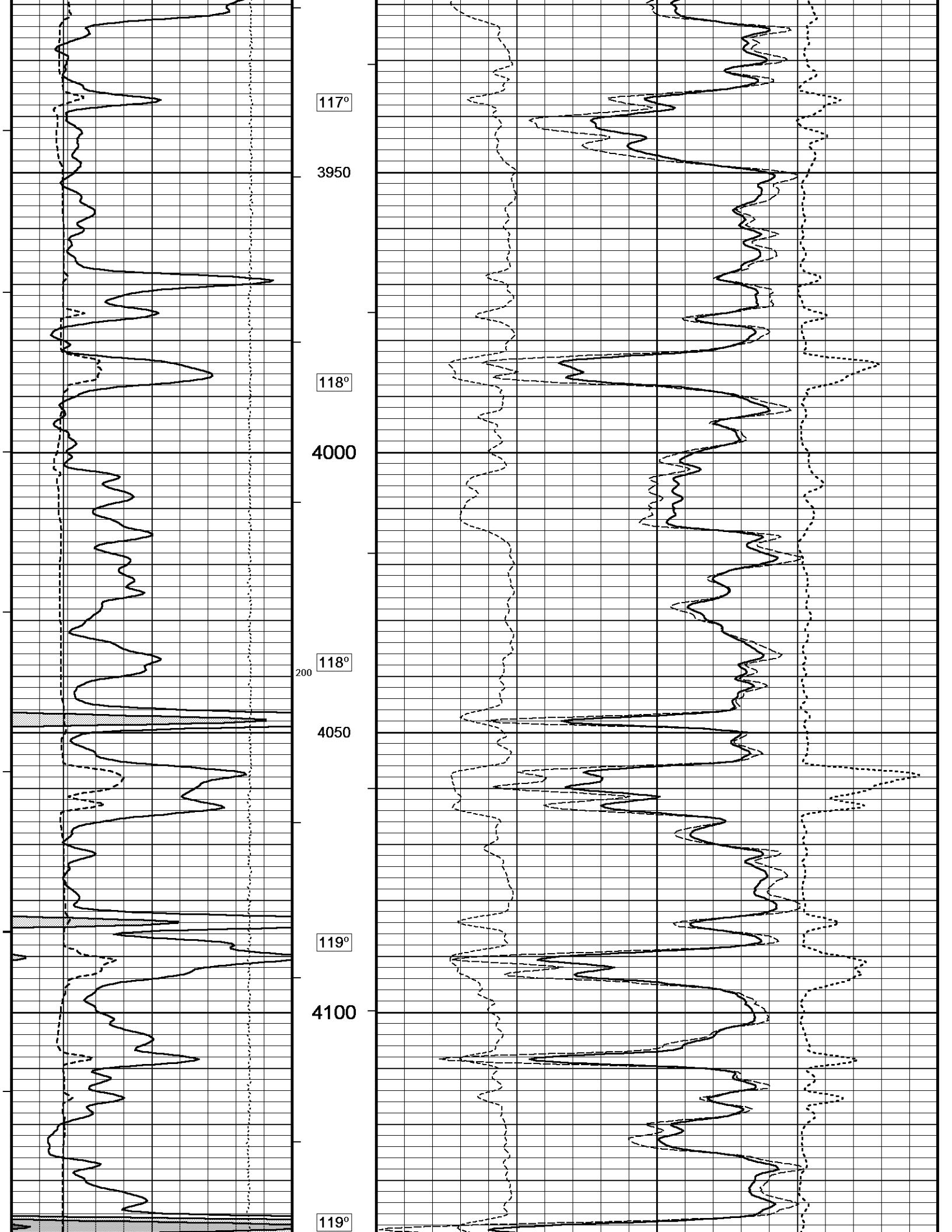
3650

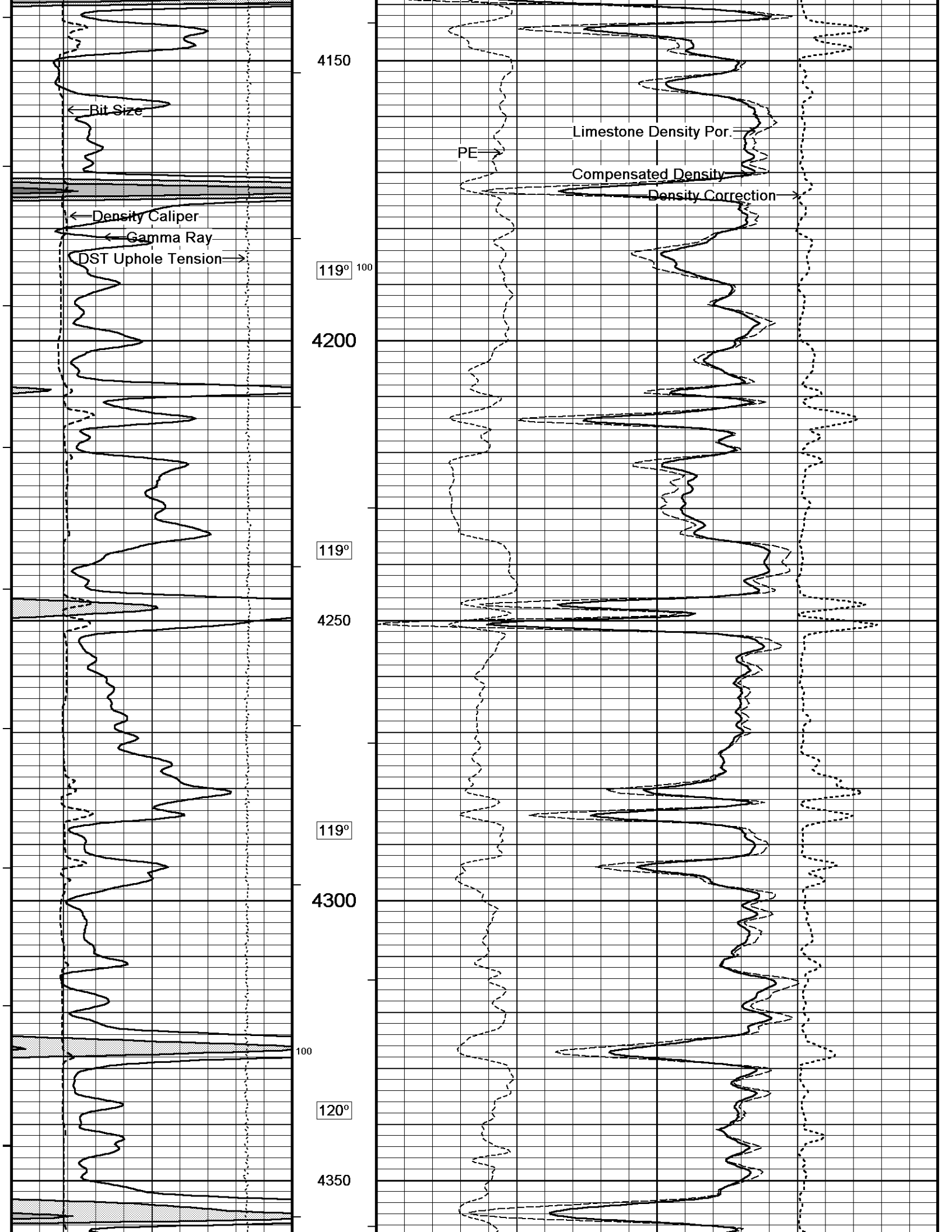
116°

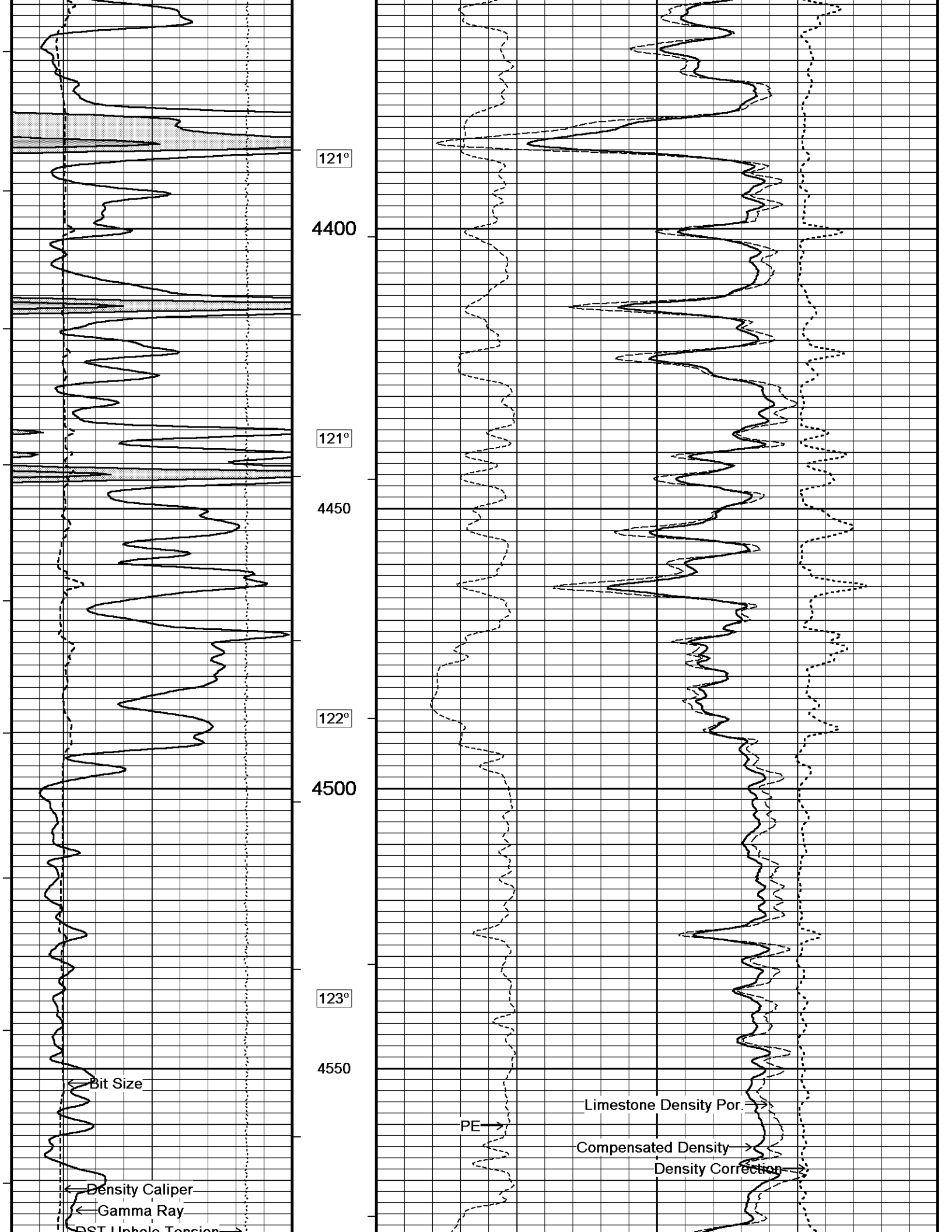
3700

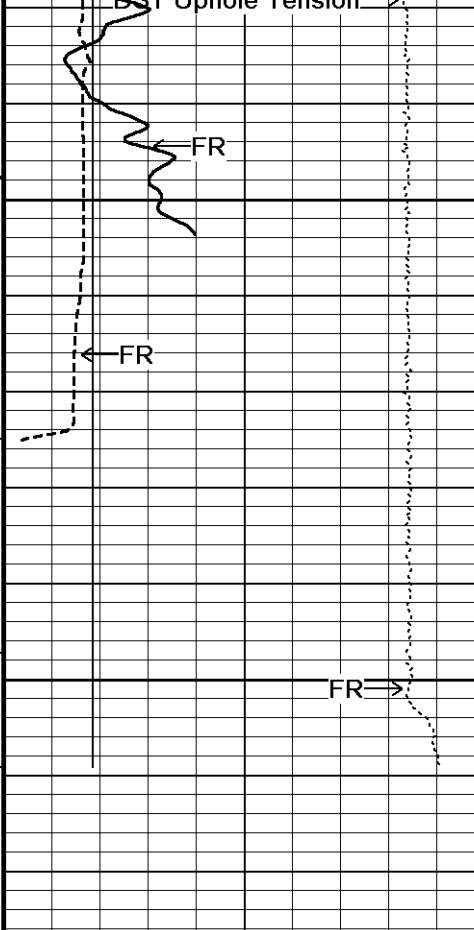












123°

4600

4650

4674

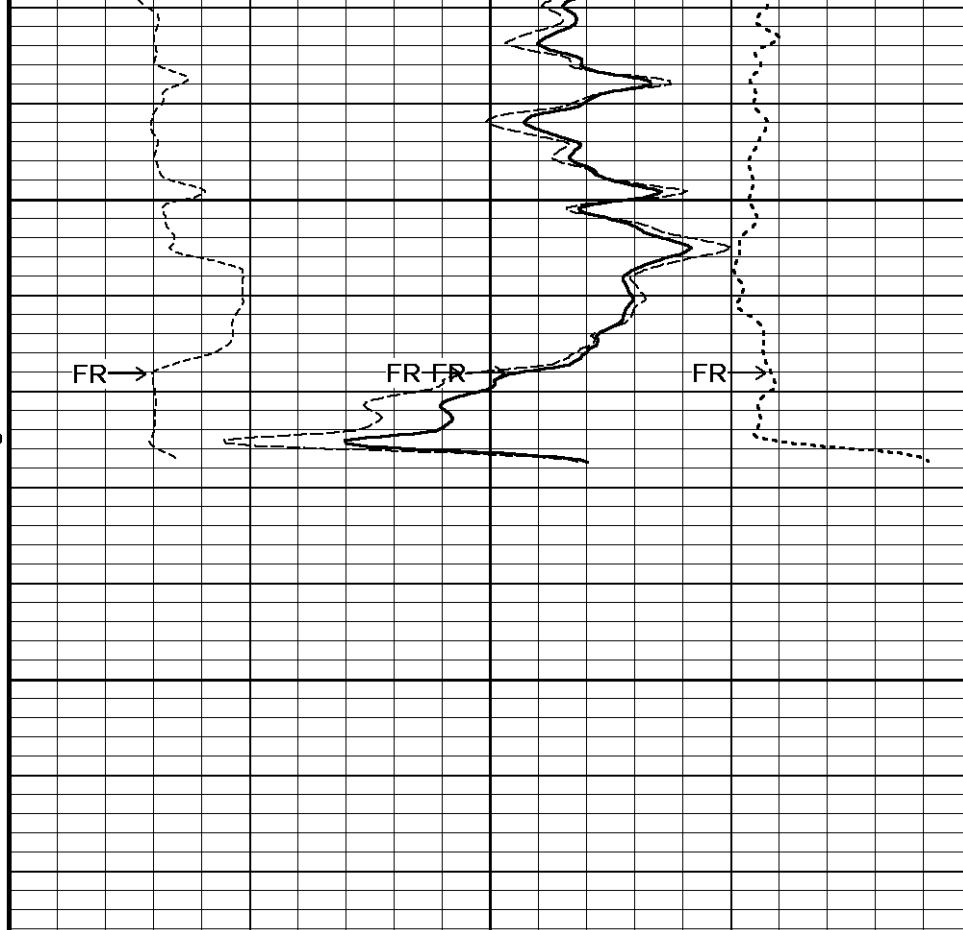
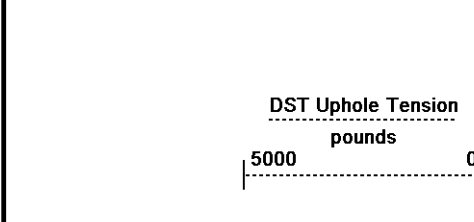
Depth in Feet

Timing Marks every 60.0 sec

Gamma Ray			
API			
0	75	150	
150	225	300	

Density Caliper		
inches		
6	11	16

Bit Size		
inches		
6	11	16



Compensated Density
grams/cc
2 2.25 2.50 2.75 3

Borehole Temp in deg F
0 75 150 225 300

HVI every 10 cu ft
30 20 10 0 -10

Limestone Density Por. percent

Annular Integral every 10 cu ft

PE barns/electron
0 5 10 -0.50

Density Correction grams/cc
0 0.50

Replay Scale 1:240

REPEAT SECTION

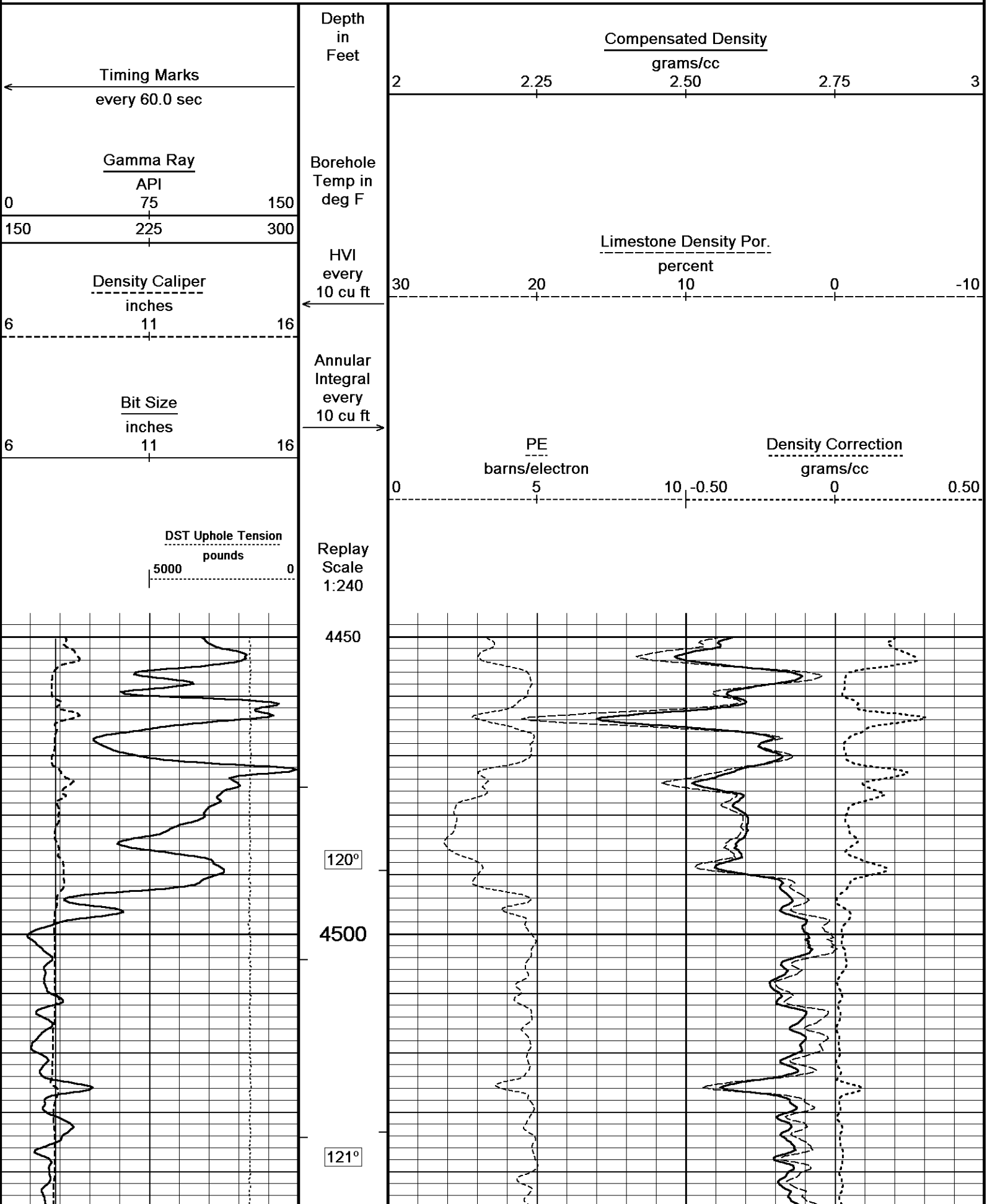
Depth Based Data - Maximum Sampling Increment 10.0cm

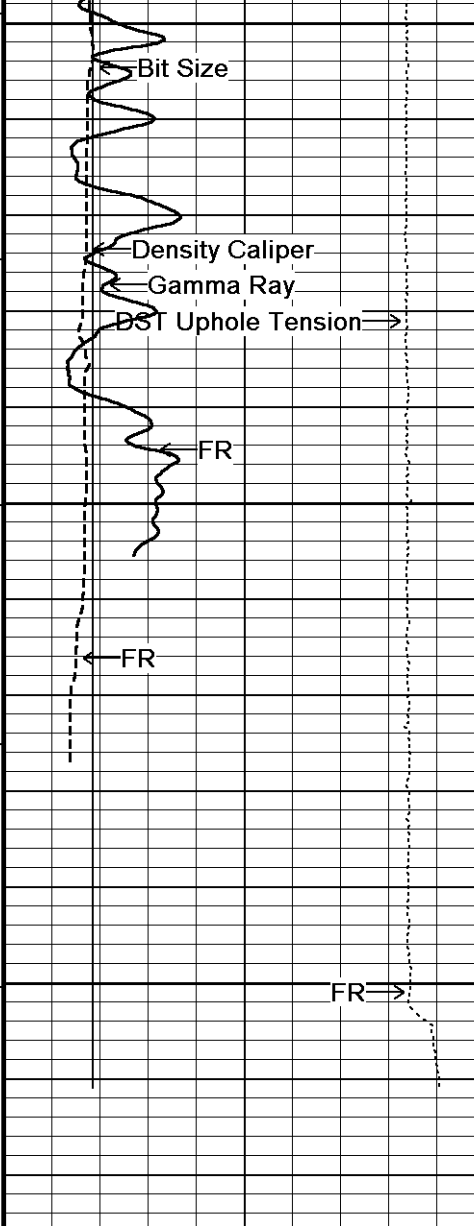
Plotted on 23-MAY-2013 15:13

Filename: C:\Minimus 13.05.9583\Logs\O'Brien Res...\O'Brien Resources Prather Farms 22 #1_001.dta

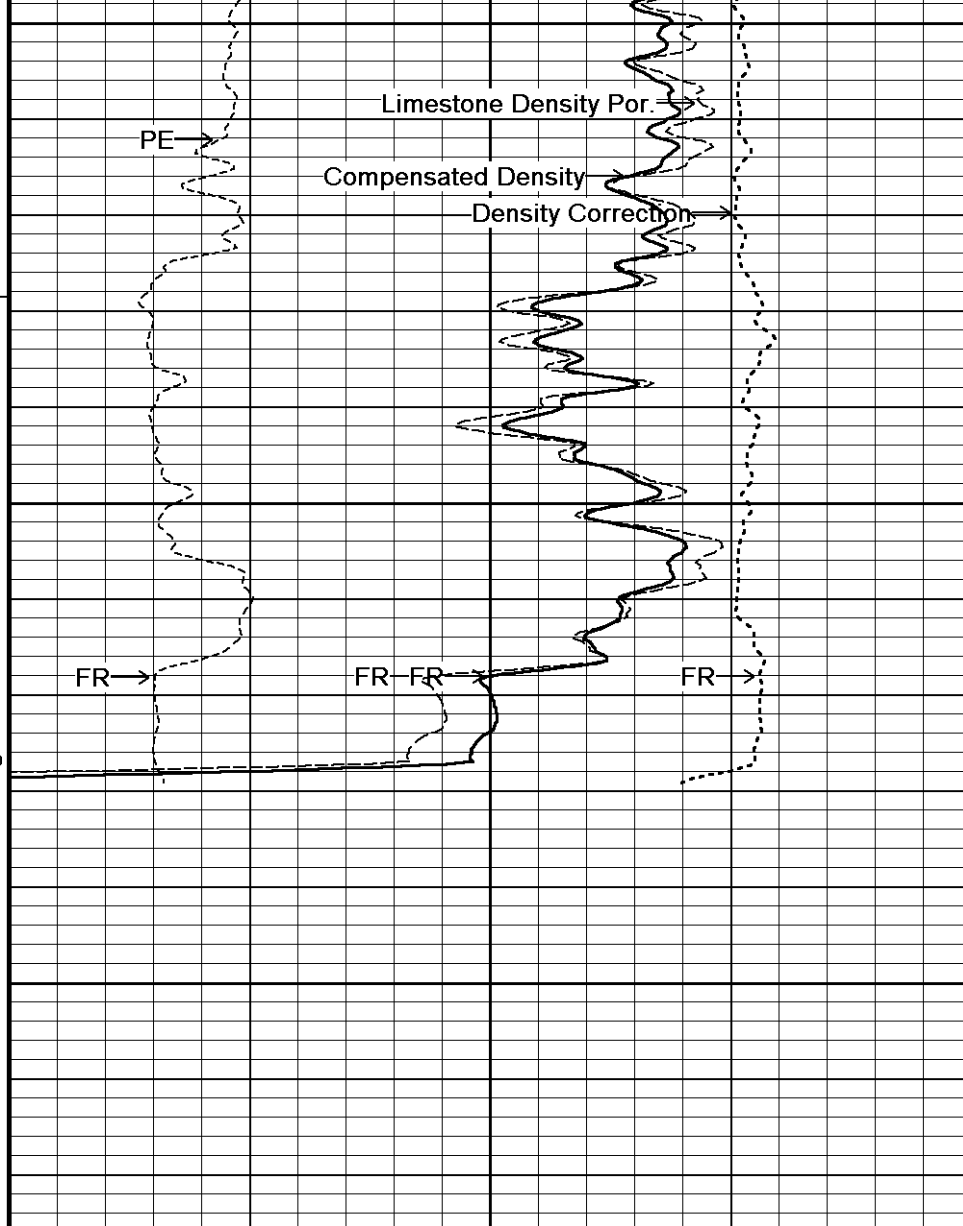
Recorded on 23-MAY-2013 11:55

System Versions: Logged with 13.05.9583 Plotted with 13.05.9583





4550
121°
4600
0
4650
4674
Depth in Feet



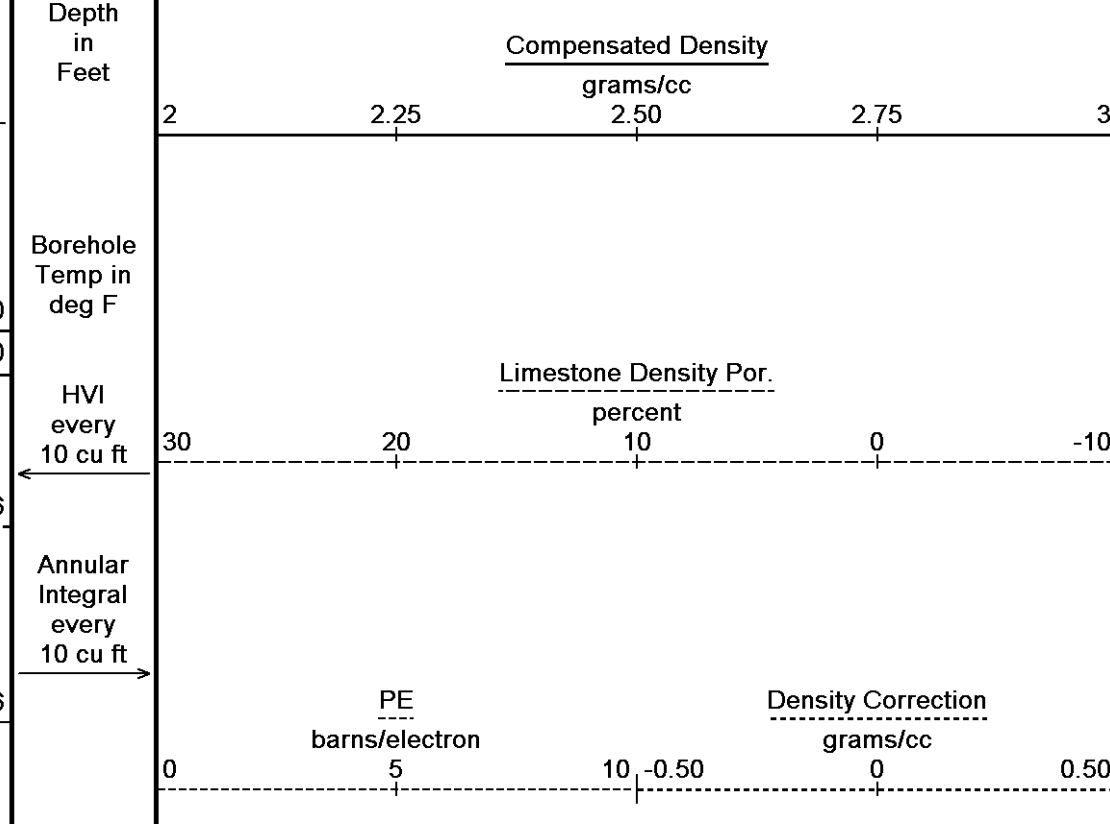
Timing Marks every 60.0 sec

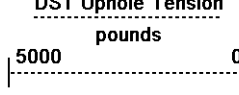
Gamma Ray		
API		
0	75	150
150	225	300

Density Caliper		
inches		
6	11	16

Bit Size		
inches		
6	11	16

DST Uphole Tension





Replay
Scale
1:240

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 23-MAY-2013 15:13
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↑ **REPEAT SECTION** ↑

BEFORE SURVEY CALIBRATION
 C:\Minimus 13.05.9583\Logs\O'Brien Resources Prather Farms 22 #1\O'Brien Resources Prather Farms 22 #1_002.dta

General Constants All 000 Last Edited on 23-MAY-2013,09:24

General Parameters

Mud Resistivity	1.430	ohm-metres
Mud Resistivity Temperature	80.000	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. Six 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 23-MAY-2013 11:11

Reading No	Measured	Calibrated (lbs)
1	14891.20	0.00
2	15693.49	471.00

Gamma Calibration MCG-B 34 Field Calibration on 21-MAY-2013 10:30

	Measured	Calibrated (API)
Background	72	49
Calibrator (Gross)	1130	774
Calibrator (Net)	1058	725

Gamma Constants MCG-B 34 Last Edited on 21-MAY-2013,10:05

Gamma Calibrator Number	GRC38	
Mud Density	1.00	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

SP Calibration MCG-B 34 Field Calibration on 17-APR-2013 14:33

	Measured	Calibrated (mV)
Reference 1	106.4	100.0
Reference 2	-95.3	-100.0

High Resolution Temperature Calibration MCG-B 34 Field Calibration on 19-APR-2013,18:21

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

High Resolution Temperature Constants MCG-B 34 Last Edited on 24-APR-2013,09:25

Micro Normal and Micro Inverse Calibration MML-A 16

Base Calibration on 16-MAY-2013 12:07
Field Check on 21-MAY-2013 10:01

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.1	60.2	5.0	25.0
Micro Inverse	15.6	78.4	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	62.9	62.9
Micro Inverse	48.2	48.2

Micro Normal and Micro Inverse Constants MML-A 16

Last Edited on 23-MAY-2013,09:23

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	N/A	inches	

Caliper Calibration MML-A 16

Base Calibration on 16-MAY-2013 11:56
Field Calibration on 21-MAY-2013 10:04

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14258	5.98
2	17442	7.97
3	20671	9.86
4	24432	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.07	5.98

Neutron Calibration MDN-A.B 65

Base Calibration on 22-MAY-2013 14:17
Field Check on 22-MAY-2013 14:36

Base Calibration

Ratio	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3104	96	3714	110
	32.242		33.764	

Field Calibrator at Base

Calibrated (cps)
1657
2415
0.686

Field Check

Calibrated (cps)
1660
2408
0.689

Neutron Constants MDN-A.B 65

Last Edited on 23-MAY-2013,10:13

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	Constant Value		
Formation Fluid Salinity	0.00	kppm	
Porite Mud Correction	Not Applied		

Barite Mud Correction

Not Applied

FE Calibration MFE-B.J 352

Base Calibration on 16-MAY-2013 15:06

Field Check on 21-MAY-2013 09:39

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	963.9	126.8
Base Check		281.3
Field Check		281.5

FE Constants MFE-B.J 352

Last Edited on 23-MAY-2013,09:23

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

Sonic Constants MSS-C.K 330

Last Edited on 26-APR-2013,15:00

Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-5' Compensated	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	0.00	micro-sec
MX3FT	1500.00	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft

Sonde Mode	Compensated
Hole Type	Open Hole

Sonde Parameters

	Measured	Calibrated
Offset	0.0000	0.0000
Free Pipe	0.0000	

Peak Amplitude Source

Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)
3'	N/A	N/A	N/A	N/A	N/A
4'	N/A	N/A	N/A	N/A	N/A
5'	N/A	N/A	N/A	N/A	N/A
6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

Waveform Used For Processing	N/A			
Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	Depth (ft)	
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	
0.00	0.00	0.00	0.00	

Full Waveform Parameters

Use 3' Waveform to derive TR	No
Use 4' Waveform to derive TR	No
Use 5' Waveform to derive TR	No
Use 6' Waveform to derive TR	No
3' Waveform Discriminator Level	0.30 mV
4' Waveform Discriminator Level	0.30 mV
5' Waveform Discriminator Level	0.15 mV
6' Waveform Discriminator Level	0.15 mV

3' Waveform Filter
 4' Waveform Filter
 5' Waveform Filter
 6' Waveform Filter

Semblance Level 0.50
 Semblance Window Width 120.00 micro-sec
 Sonic 1 Despiker 100.00 micro-sec/ft
 Sonic 2 Despiker 100.00 micro-sec/ft

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 26-APR-2013,08:51

	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 05-MAY-2013,08:10

Pre-filter Length 11

Induction Calibration MAI-A.A 45

Base Calibration on 21-MAY-2013,16:47

Field Check on 21-MAY-2013 17:20

Base Calibration

Test Loop Calibration

Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	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)		Field Check (mmho/m)	
	Low	High	Low	High
1	20.1	3853.8	20.1	3853.8
2	32.2	3630.4	32.2	3630.3
3	28.9	3050.0	28.9	3050.0
4	18.4	2079.4	18.4	2079.4
Deep	16.2	1911.5	16.3	1911.4
Medium	42.7	4061.4	42.7	4061.3
Shallow	50.3	5484.8	50.3	5484.8

Array Temperature 87.9 88.4 Deg F

Induction Constants MAI-A.A 45

Last Edited on 23-MAY-2013,09:29

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. Borehole Temp. Unfilt.
 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

Chamber 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 31

Base Calibration on 19-MAY-2013 17:48
Field Calibration on 21-MAY-2013 09:59

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	17088	3.99
2	25888	5.98
3	34607	7.97
4	42944	9.86
5	52301	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.04	5.98

Photo Density Calibration MPD-B 31

Base Calibration on 19-MAY-2013 18:09
Field Check on 21-MAY-2013 09:56

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	45338	23124	59556	30836
Reference 2	18546	1915	24941	2541

Field Check at Base

677.6 838.3

Field Check

676.5 836.6

PE Calibration

Base Calibration	WS	Measured		Calibrated Ratio
		WH	Ratio	
Background	125	601		
Reference 1	19261	45226	0.429	0.371
Reference 2	5568	18464	0.305	0.272

Field Check at Base

125.4 601.0

Field Check

125.6 598.7

Density Constants MPD-B 31

Last Edited on 21-MAY-2013,09:39

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	1.00	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

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Logs\O'Brien Resources Prather Farms 22 #1\O'Brien Resources Prather Farms 22 #1_002.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-B 34 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 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

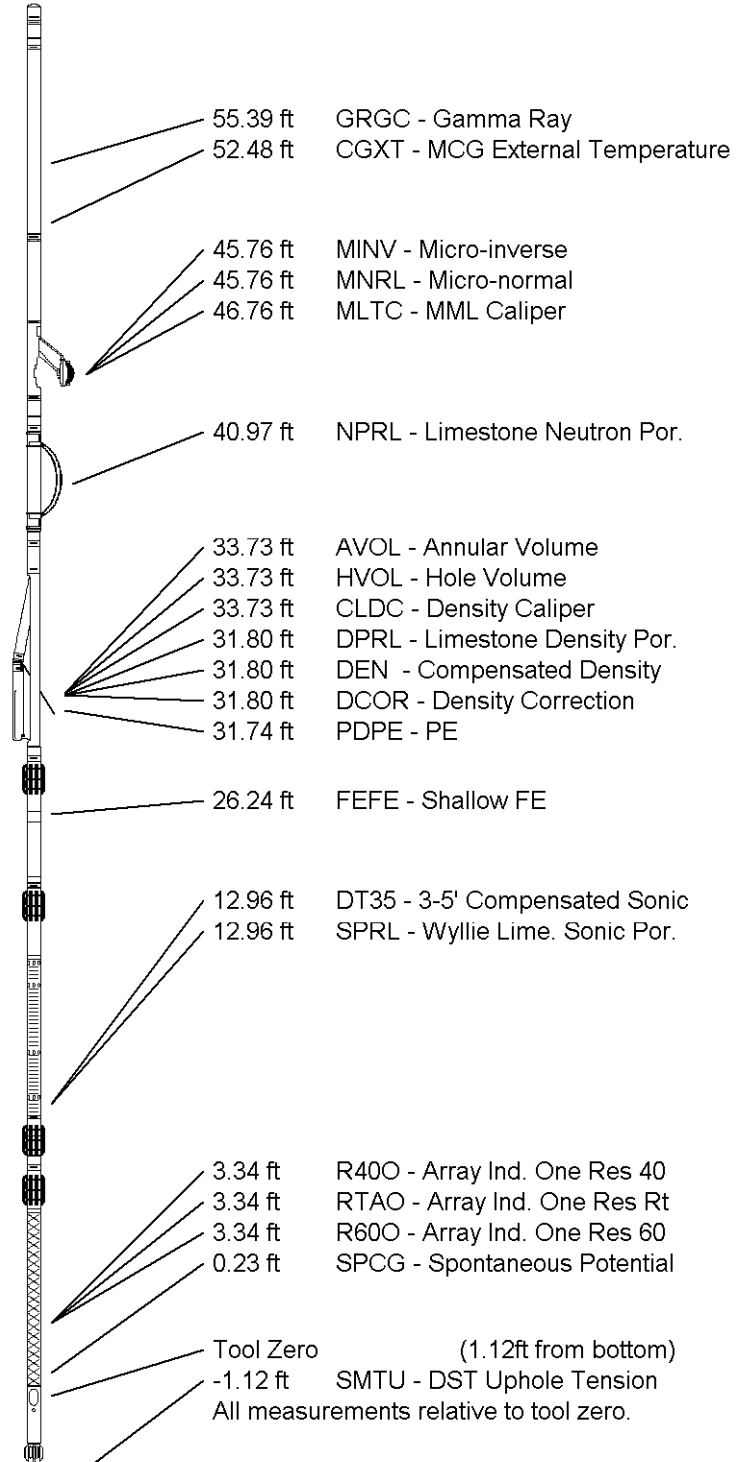
Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

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

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

Compact Induction
MAI-A.A 45 LG: 11.79 ft WT: 48.5 lb OD: 2.24 in

Total Length: 63.24 ft Weight: 471.8 lb



COMPANY
WELL
FIELD

O'BRIEN RESOURCES, LLC
PRATHER FARMS 22 #1
WILDCAT

PROVINCE/COUNTY GOVE

COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	2788.00	feet	First Reading	4619.00	feet
Elevation Drill Floor	2786.00	feet	Depth Driller	4650.00	feet
Elevation Ground Level	2778.00	feet	Depth Logger	4651.00	feet



Weatherford[®]

COMPENSATED NEUTRON
COMPACT PHOTO DENSITY
MICRORESISTIVITY LOG