



Weatherford[®]

**COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG**

COMPANY

SHAKESPEARE OIL CO., INC.

WELL

GOERING #1-5

FIELD

WILDCAT

PROVINCE/COUNTY LANE

COUNTRY/STATE U.S.A. / KANSAS

LOCATION 1580' FNL & 360' FEL

SEC 5 TWP 20S RGE 30W

Other Services
MAI/MFE

Latitude

MSS

Longitude

API Number 15-101-22596

Permanent Datum GL, Elevation 2940 feet

Log Measured From KB, 11.00 feet above Permanent Datum

Drilling Measured From KB

Date 21-JUL-2017

Elevations: feet
KB 2951.00
DF 2949.00
GL 2940.00

Run Number ONE

Service Order 4558-187851123

Depth Driller 4800.00 feet

Depth Logger 4802.00 feet

First Reading 4770.00 feet

Last Reading 3800.00 feet

Casing Driller 265.00 feet

Casing Logger 266.00 feet

Bit Size 7.875 inches

Hole Fluid Type CHEMICAL

Density / Viscosity 9.10 lb/USg 49.00 CP

PH / Fluid Loss 10.50 7.20 ml/30Min

Sample Source FLOWLINE

Rm @ Measured Temp 0.96 @ 75.0 ohm-m

Rmf @ Measured Temp 0.77 @ 75.0 ohm-m

Rmc @ Measured Temp 1.15 @ 75.0 ohm-m

Source Rmf / Rmc CALC CALC

Rm @ BHT 0.57 @ 126.0 ohm-m

Time Since Circulation 5 HOURS

Max Recorded Temp 126.00 deg F

Equipment / Base 13096 LIB

Recorded By ADAM SILL

Witnessed By TIM PRIEST

BOREHOLE RECORD

Last Edited: 21-JUL-2017 20:12

Bit Size inches	Depth From feet	Depth To feet
7.875	265.00	4800.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	265.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 17.01.7206.
- RUN ONE: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION.
 - HARDWARE: DUAL BOWSPRING USED ON MDN.
 - 0.5 INCH STANDOFF USED ON MFE.
 - TWO 0.5 INCH STANDOFFS USED ON MSS.
 - 0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 1722 CU.FT.
- ANNULAR HOLE VOLUME WITH 4.5 INCH PRODUCTION CASING FROM TD TO 3800 FEET: 222 CU.FT.

- RIG: DUKE #5.

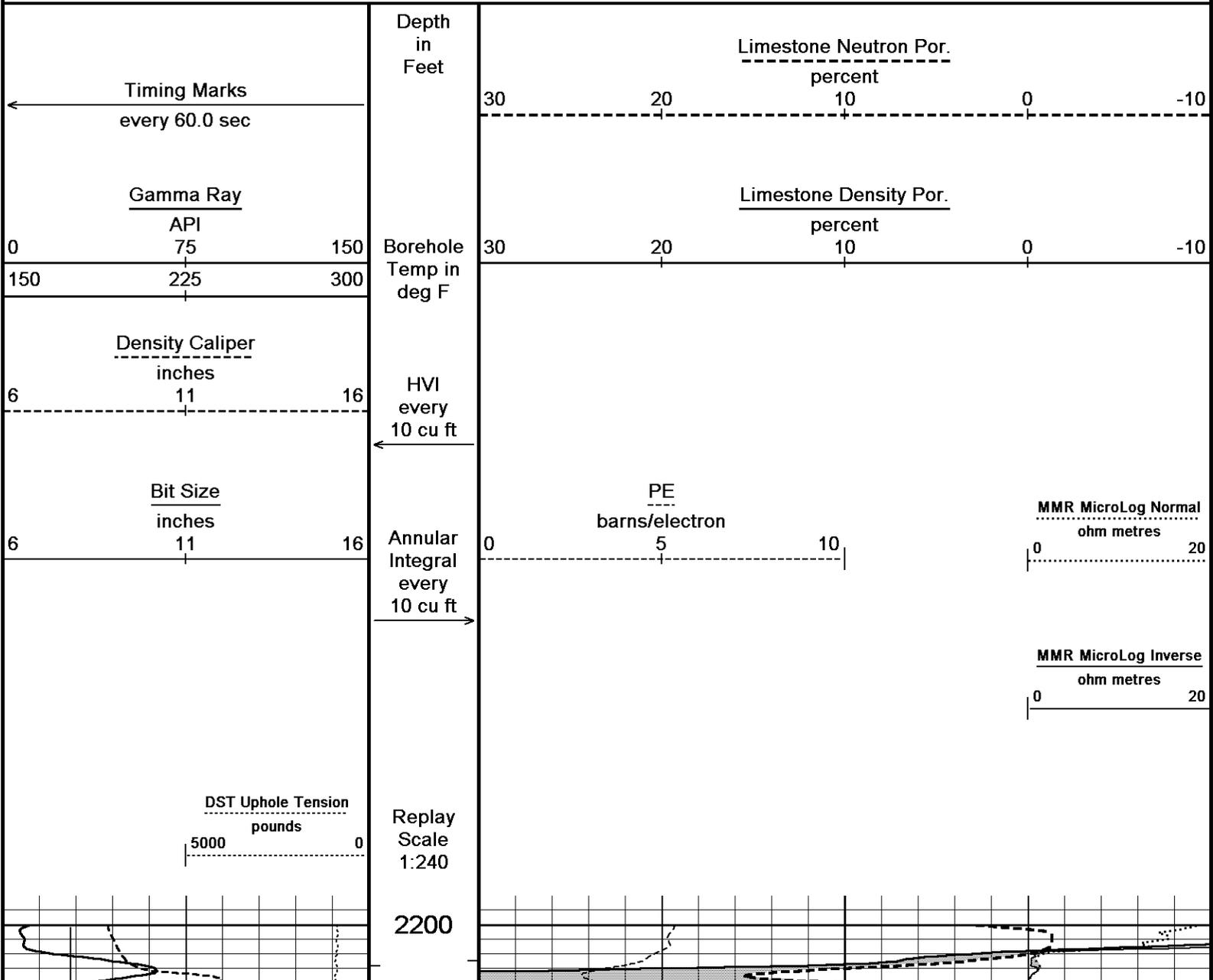
- ENGINEER: A. SILL.

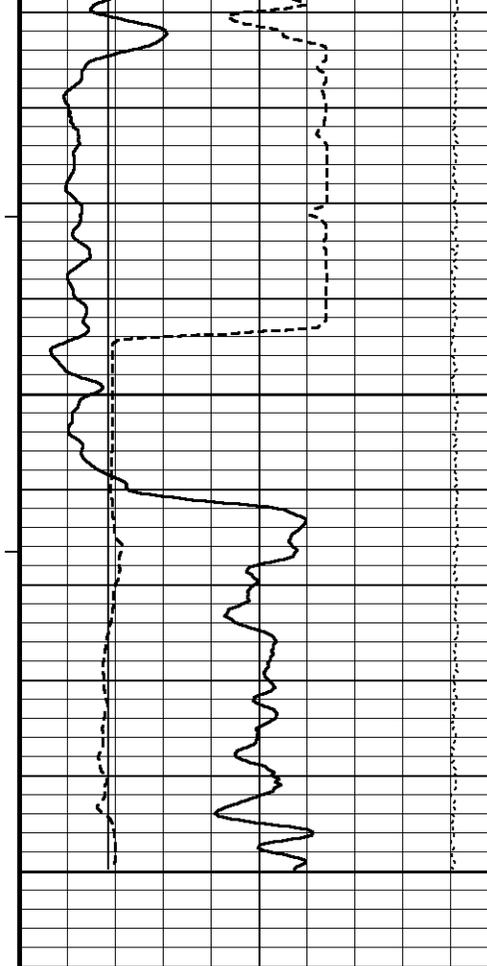
- OPERATOR: B. TOVAR.

In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

5 INCH MAIN - ANHYDRITE

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 22-JUL-2017 02:30
 Filename: C:\Minimus 17.01.7206\Data\Shakespeare Goering #1-5\Shakespeare Goering #1-5_002.dta Recorded on 21-JUL-2017 23:39
 System Versions: Logged with 17.01.7206 Plotted with 17.01.7206





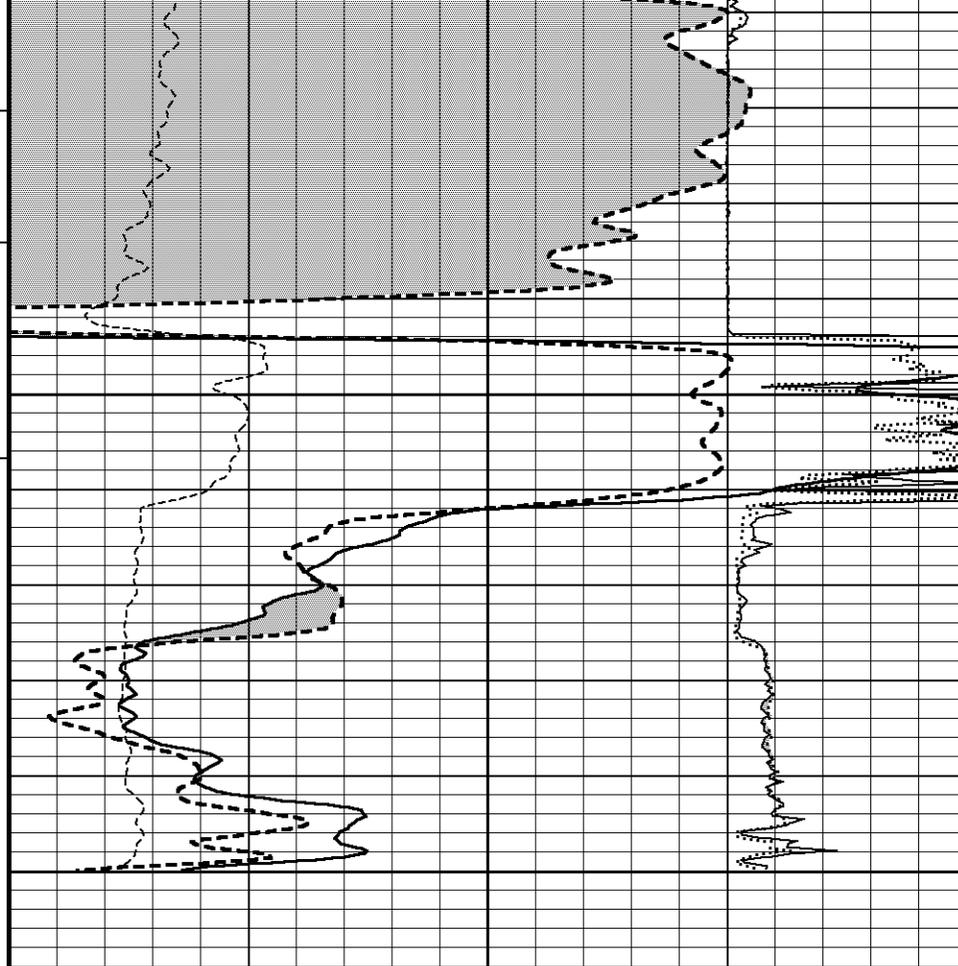
108°

2250

109°

2300

Depth in Feet



Limestone Neutron Por.
percent

30 20 10 0 -10

Limestone Density Por.
percent

30 20 10 0 -10

Timing Marks
every 60.0 sec

Gamma Ray
API

0 75 150
150 225 300

Borehole
Temp in
deg F

Density Caliper
inches

6 11 16

HVI
every
10 cu ft

Bit Size
inches

6 11 16

Annular
Integral
every
10 cu ft

PE
barns/electron

0 5 10

MMR MicroLog Normal
ohm metres

0 20

MMR MicroLog Inverse
ohm metres

0 20

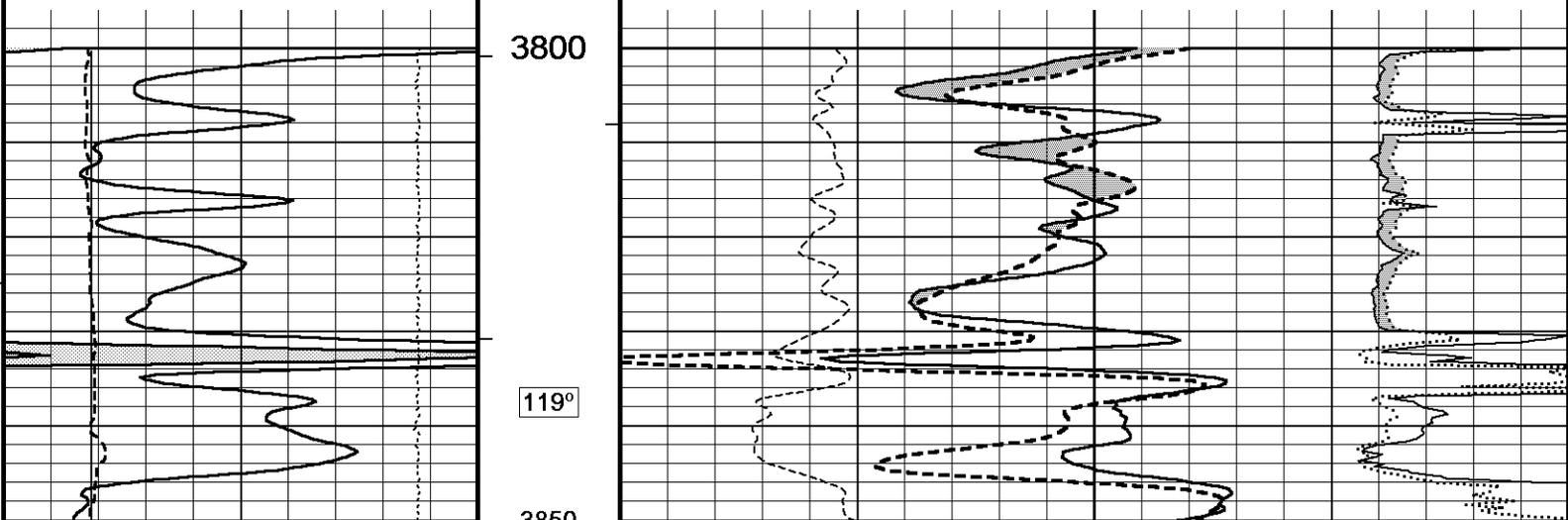
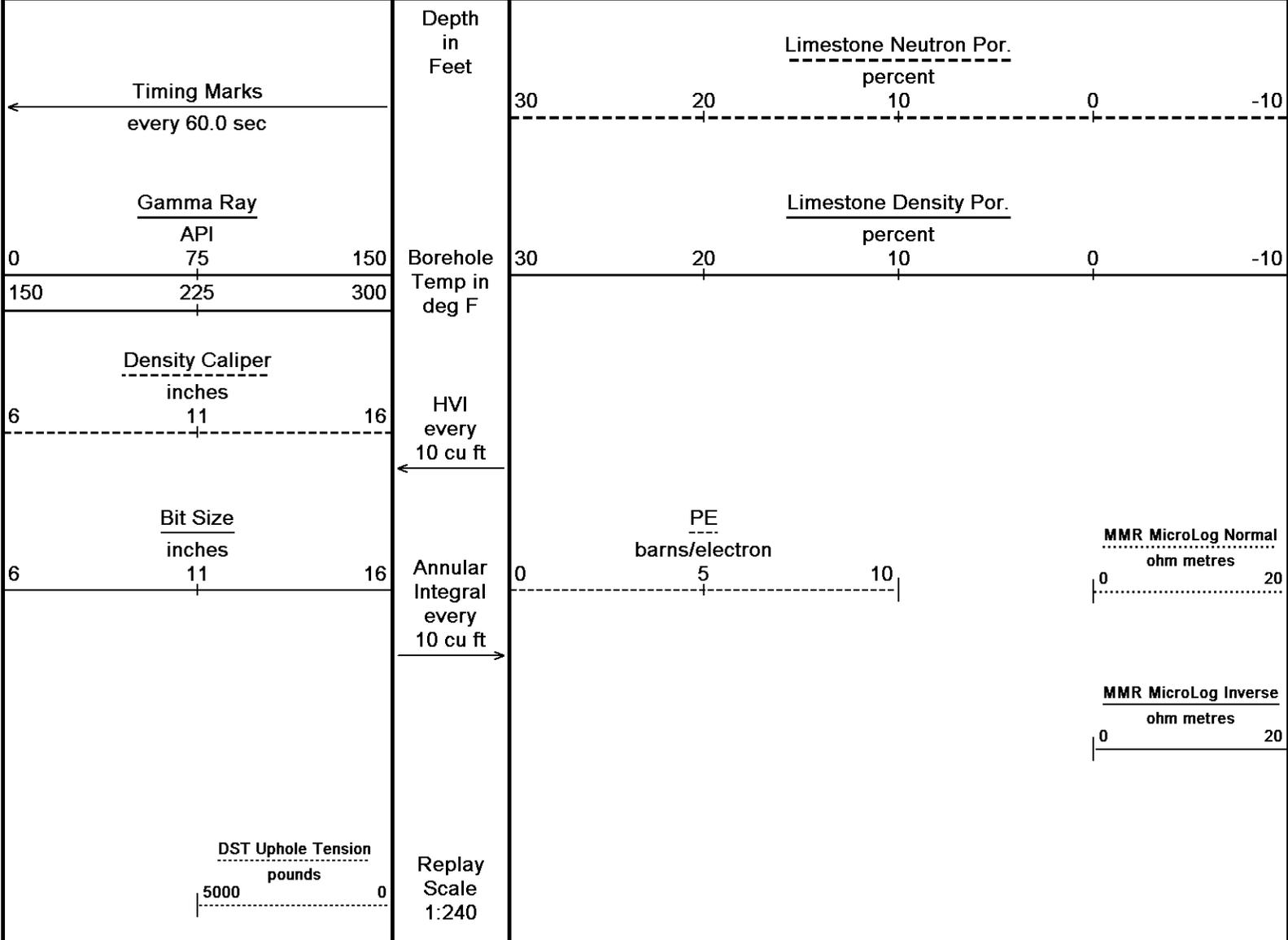
DST Uphole Tension
pounds

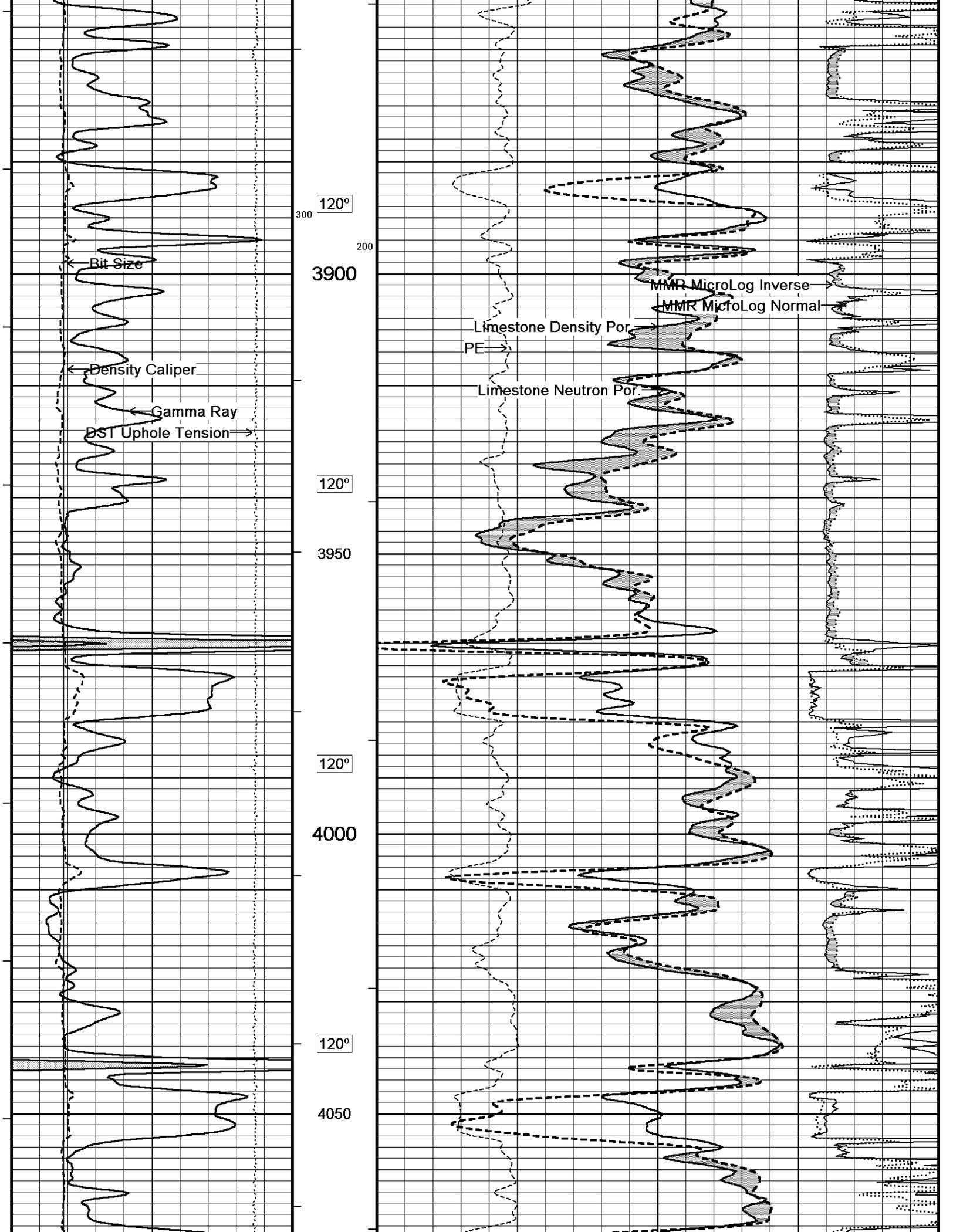
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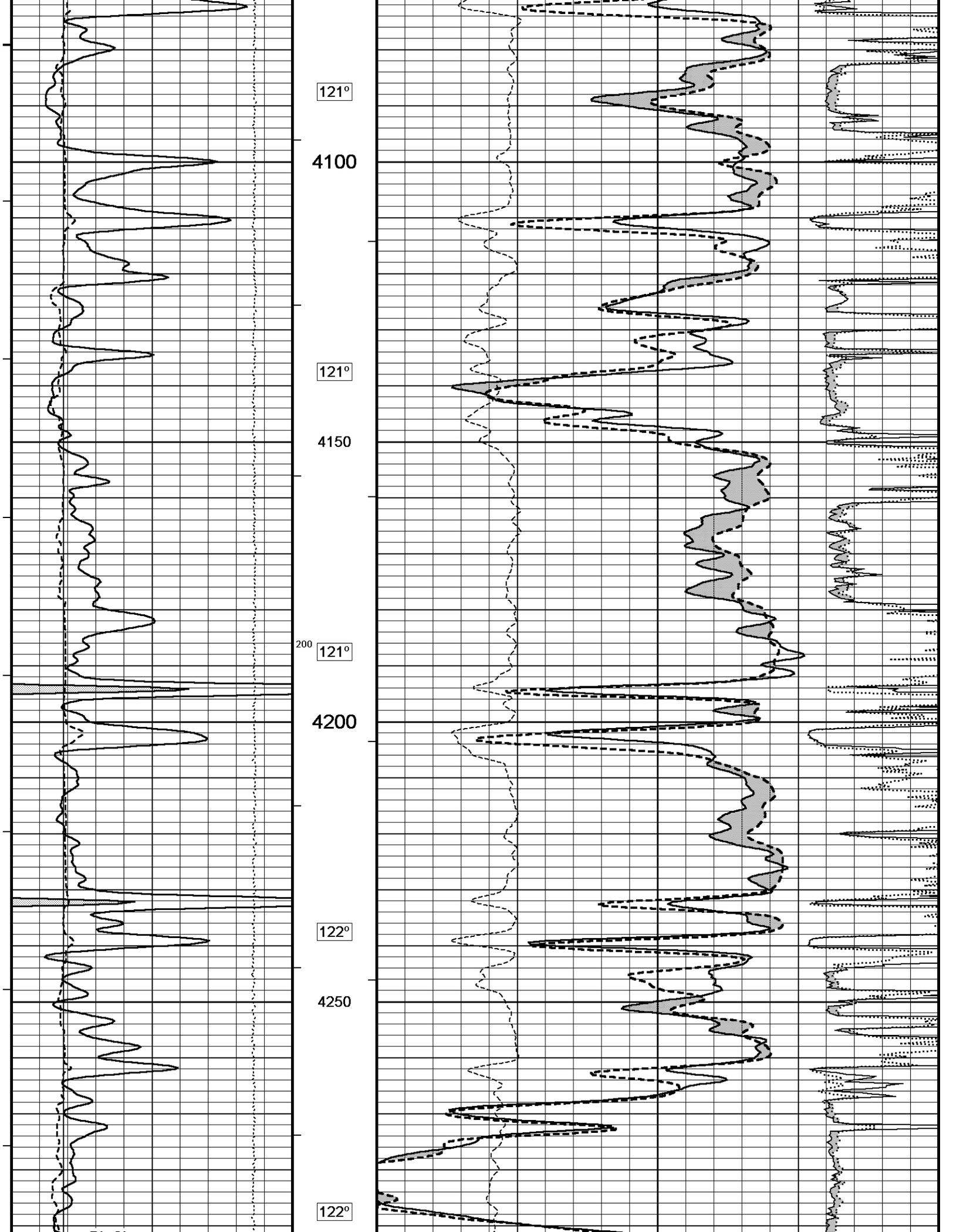
Replay
Scale
1:240

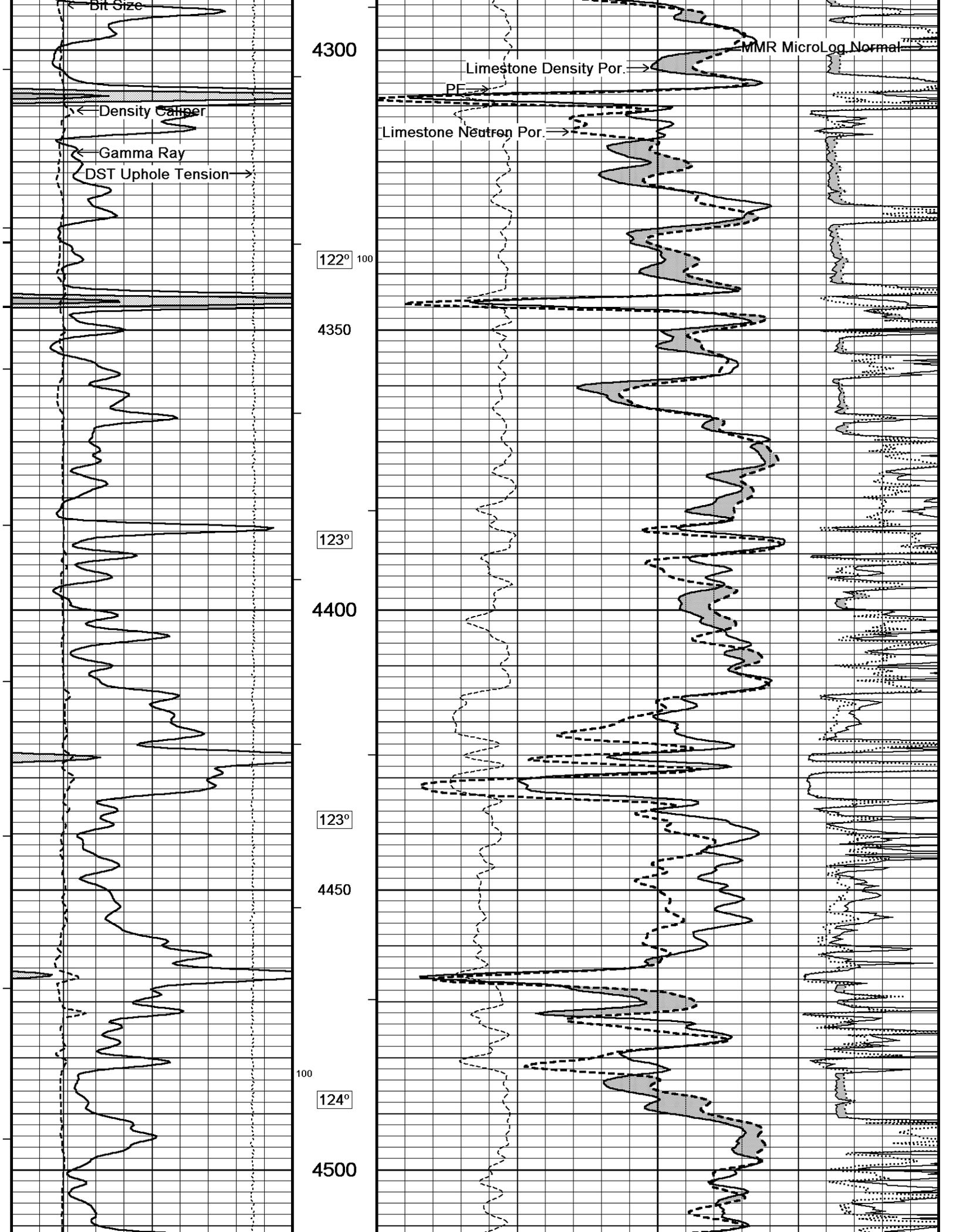
5 INCH MAIN - ANHYDRITE

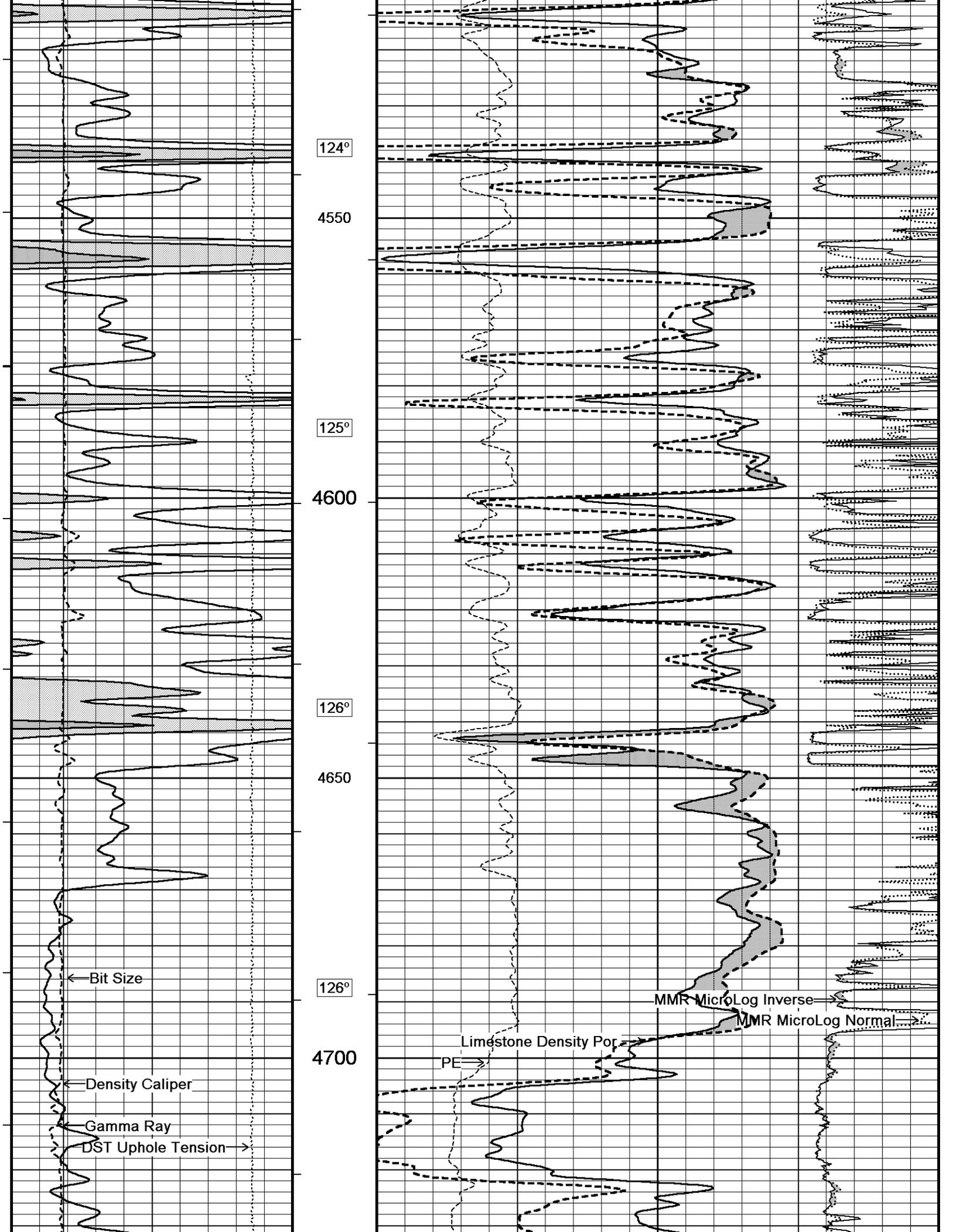
5 INCH LIMESTONE MAIN

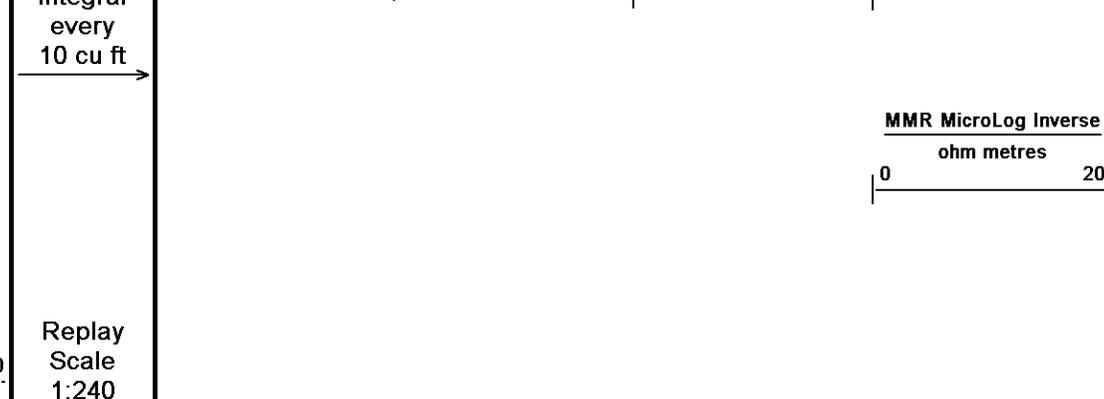
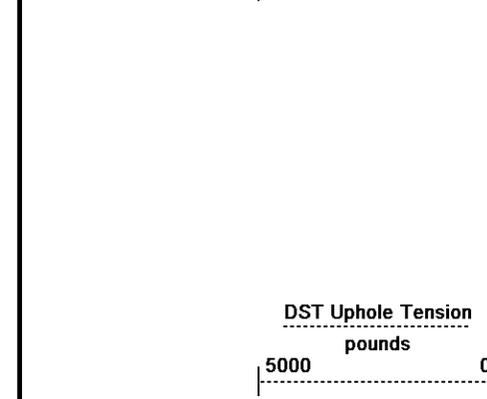
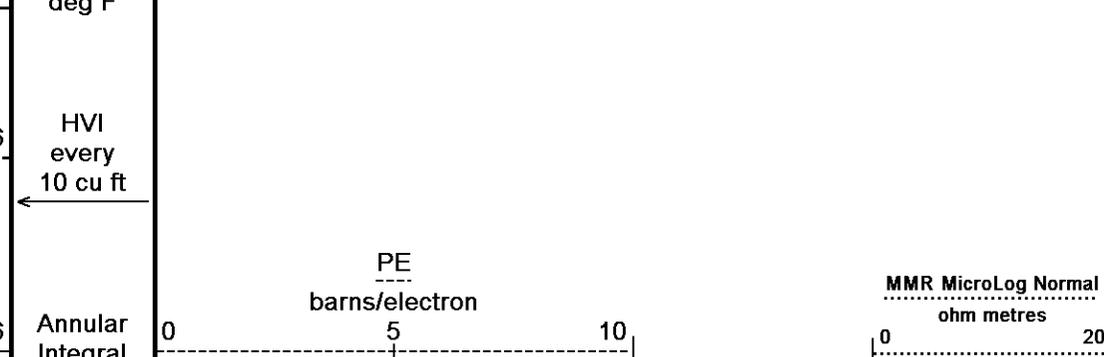
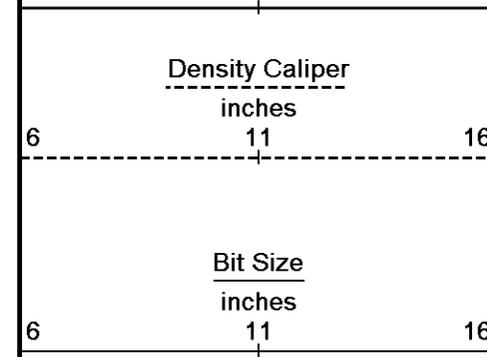
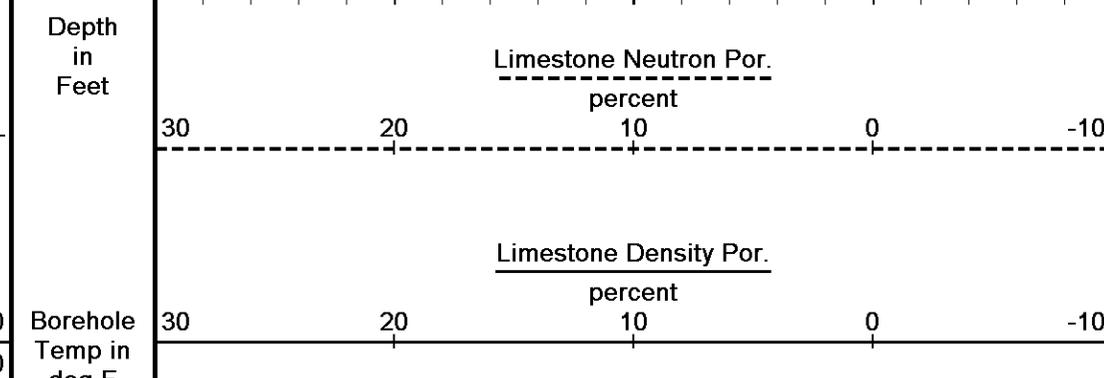
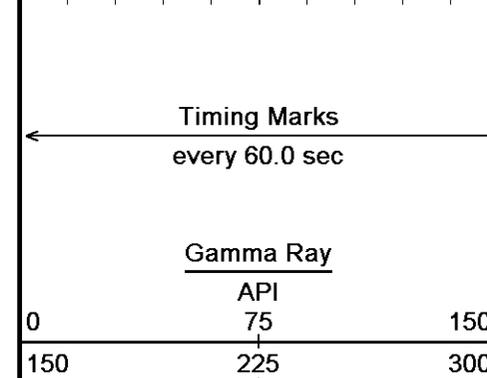
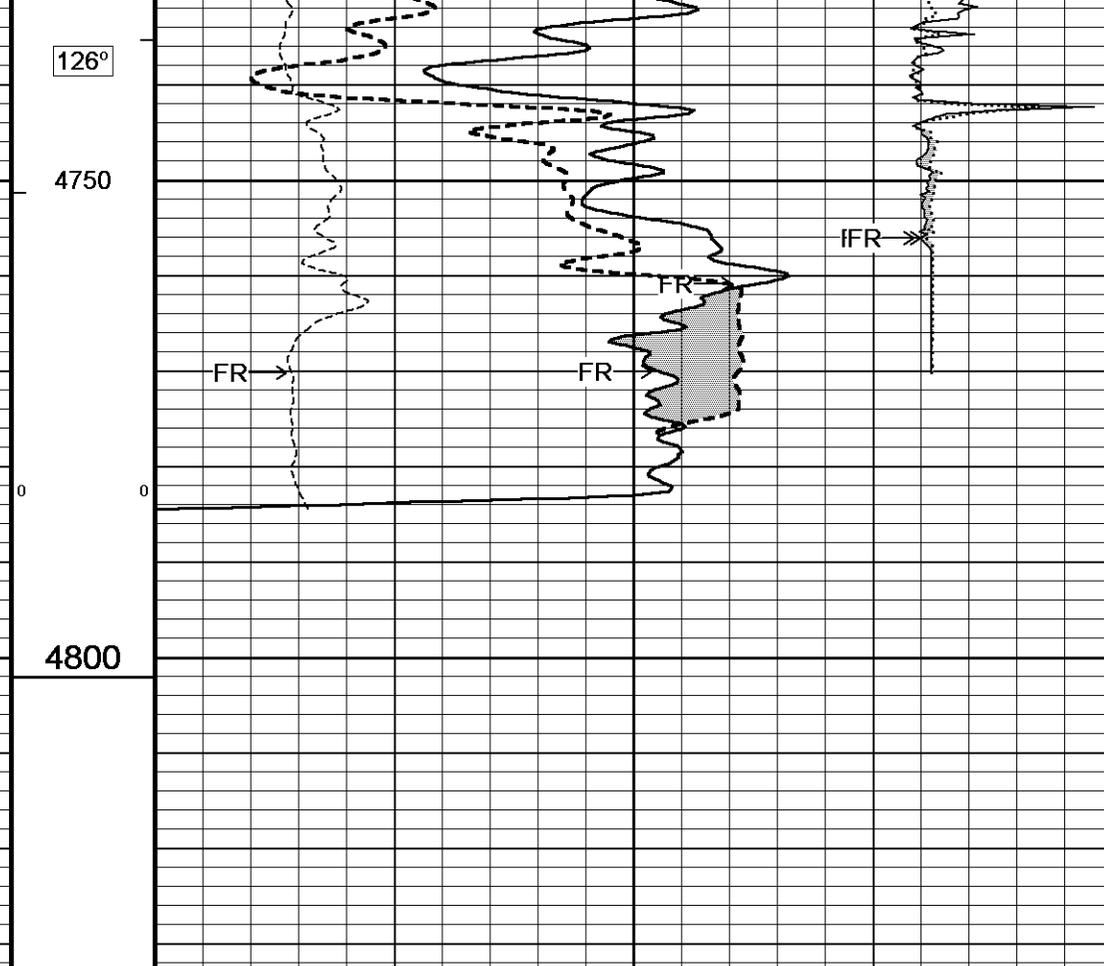
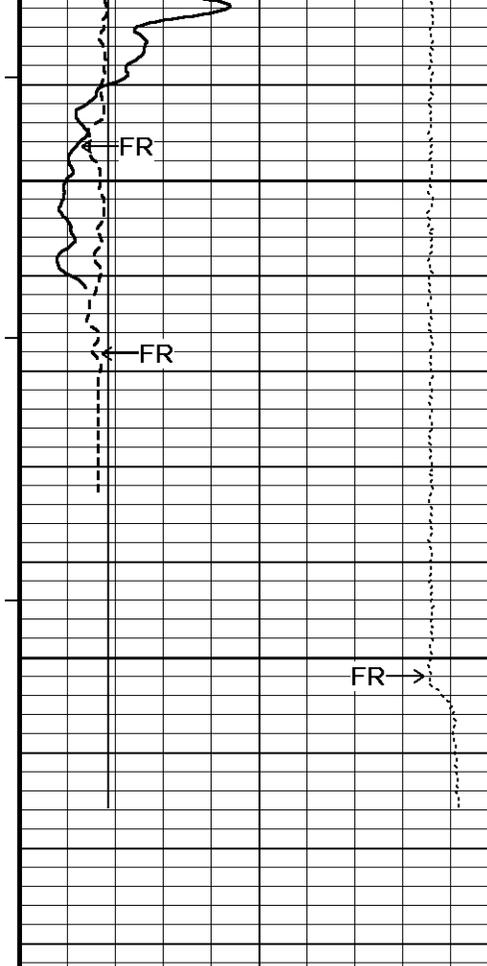




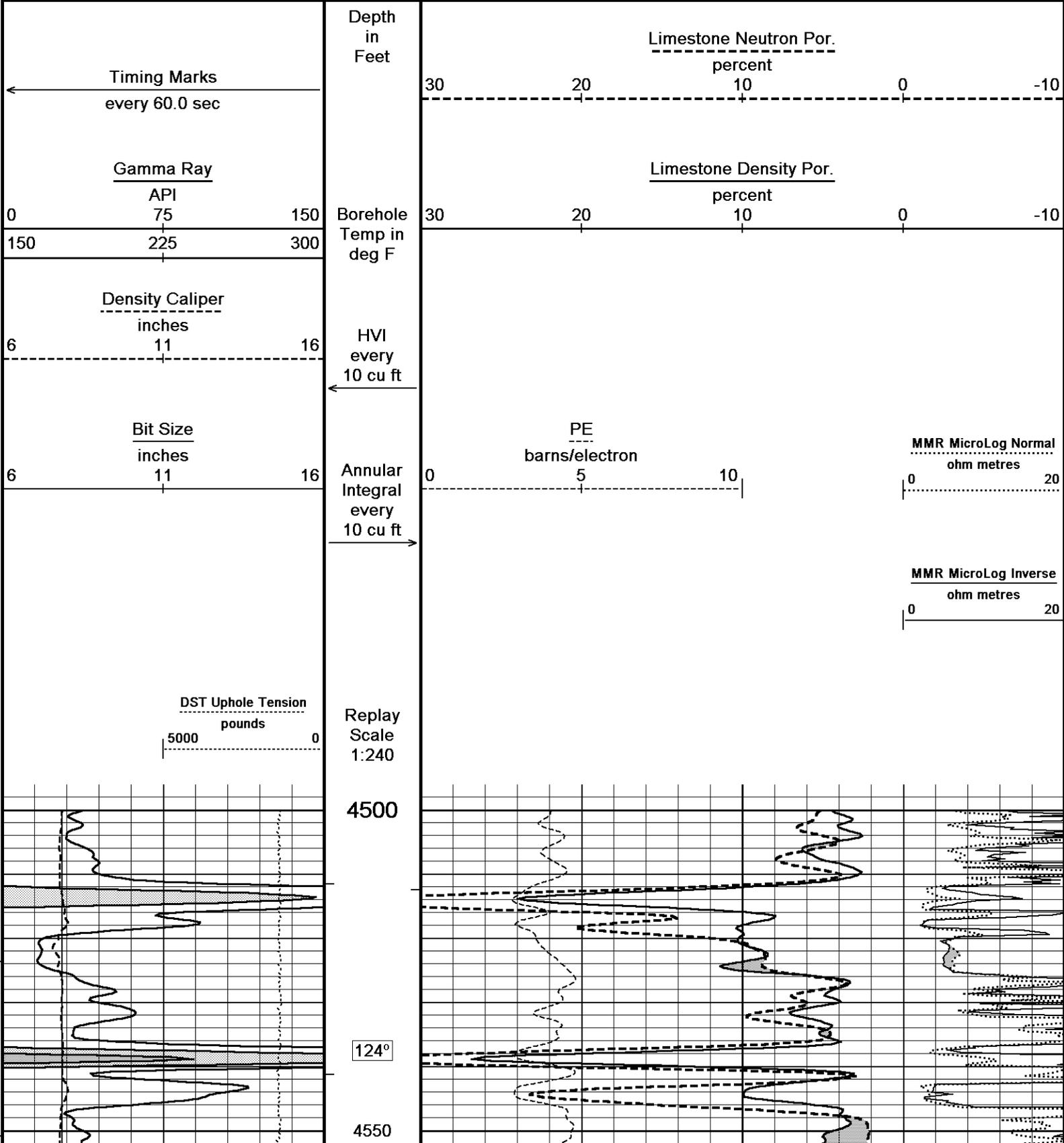


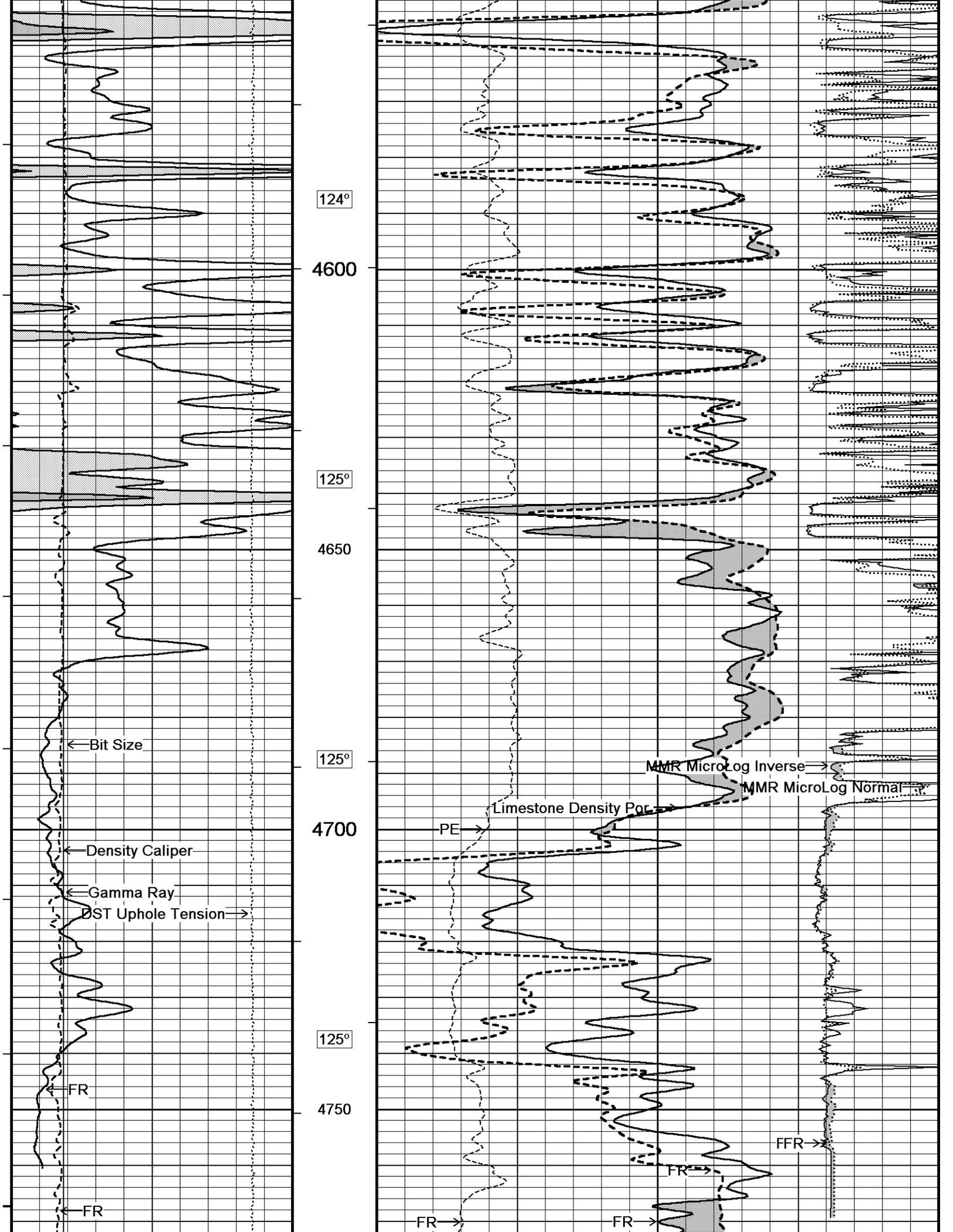


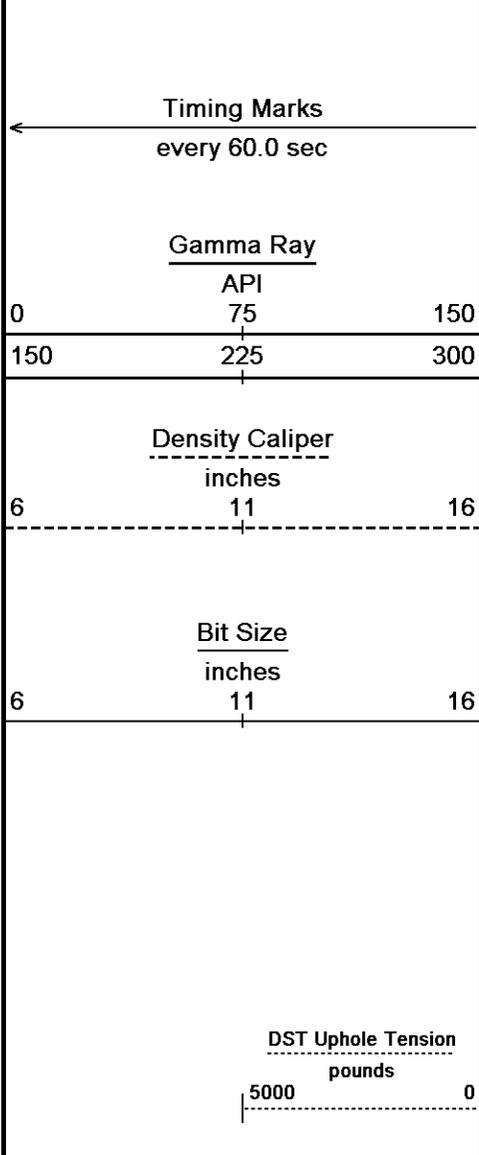
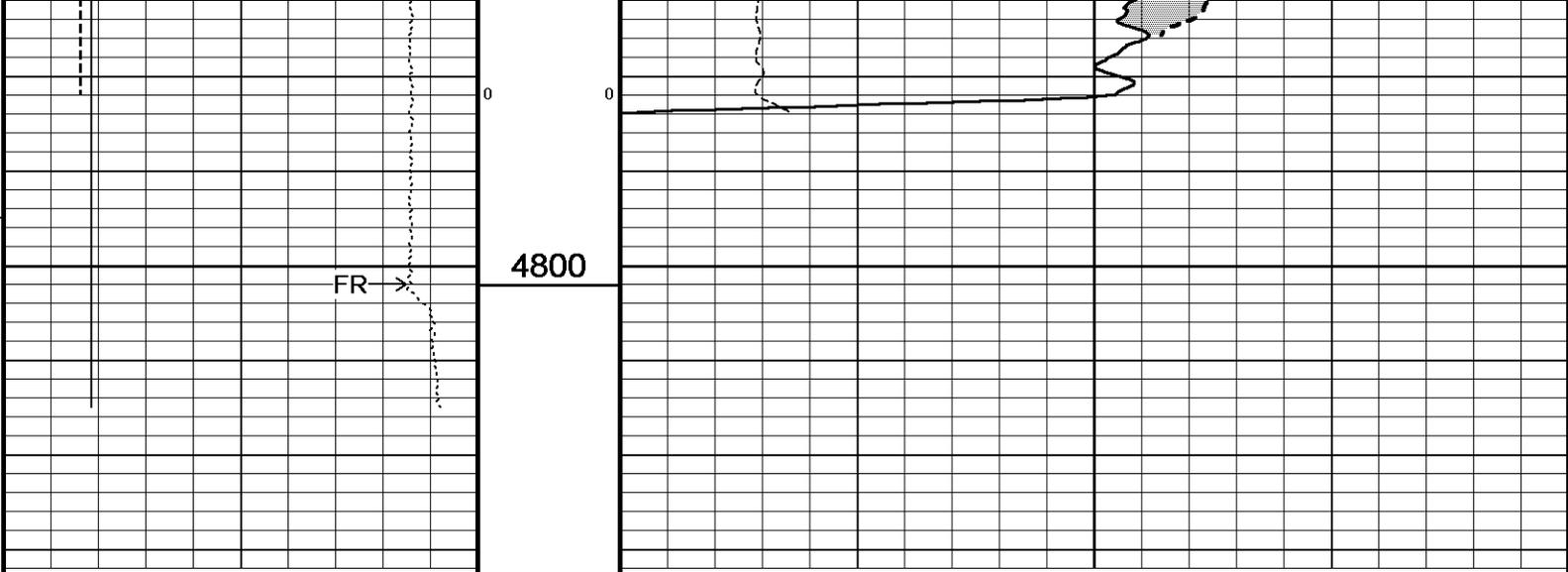




5 INCH LIMESTONE MAIN







Depth
in
Feet

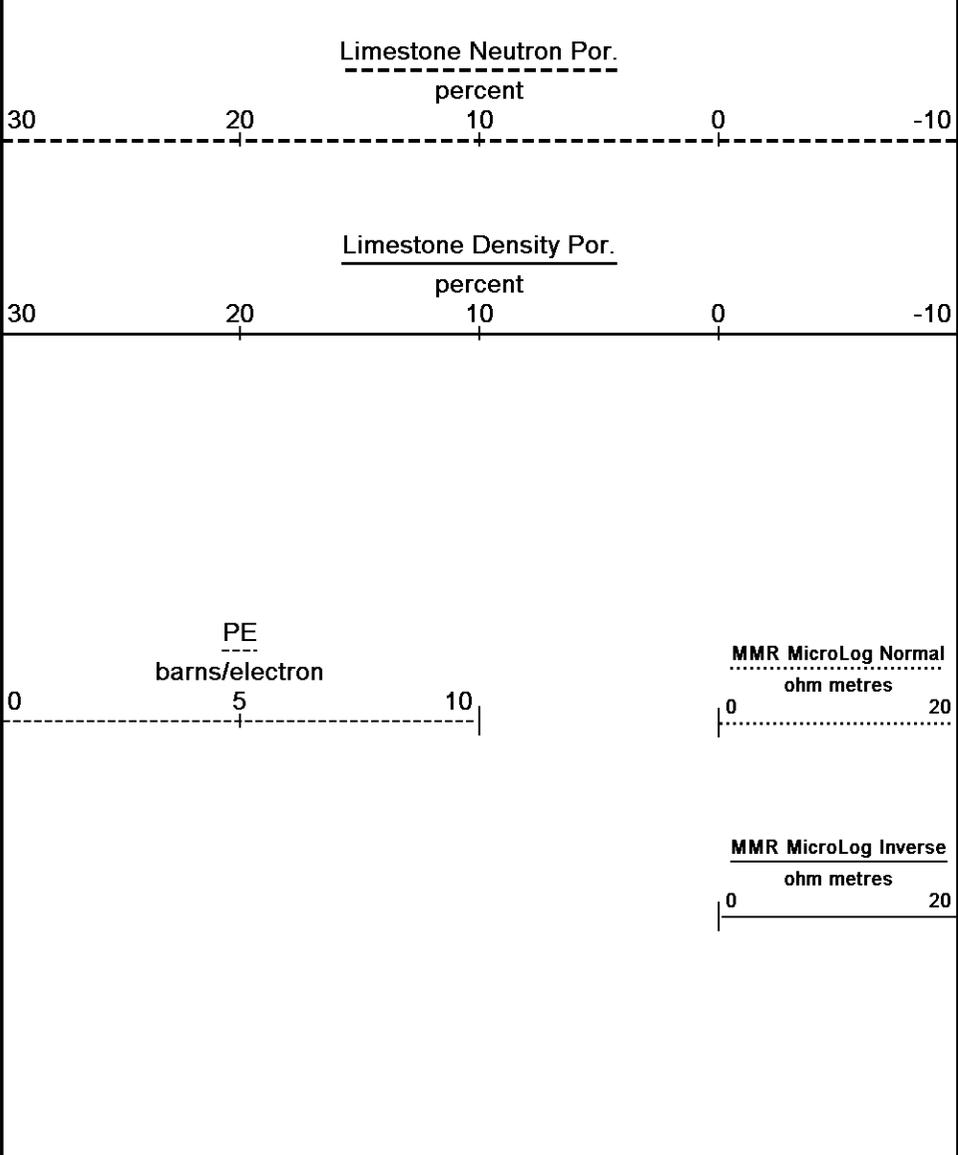
4800

Borehole
Temp in
deg F

HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

Replay
Scale
1:240



Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 22-JUL-2017 02:30
 Filename: C:\Minimus 17.01.7206\Data\Shakespeare Goering #1-5\Shakespeare Goering #1-5_001.dta
 Recorded on 21-JUL-2017 23:12
 System Versions: Logged with 17.01.7206 Plotted with 17.01.7206

↑ REPEAT SECTION ↑

↓ 5 INCH BULK DENSITY MAIN ↓

Depth Based Data - Maximum Sampling Increment 10.0cm
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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
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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

Compensated Density
grams/cc

2	2.25	2.50	2.75	3
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Limestone Density Por.
percent

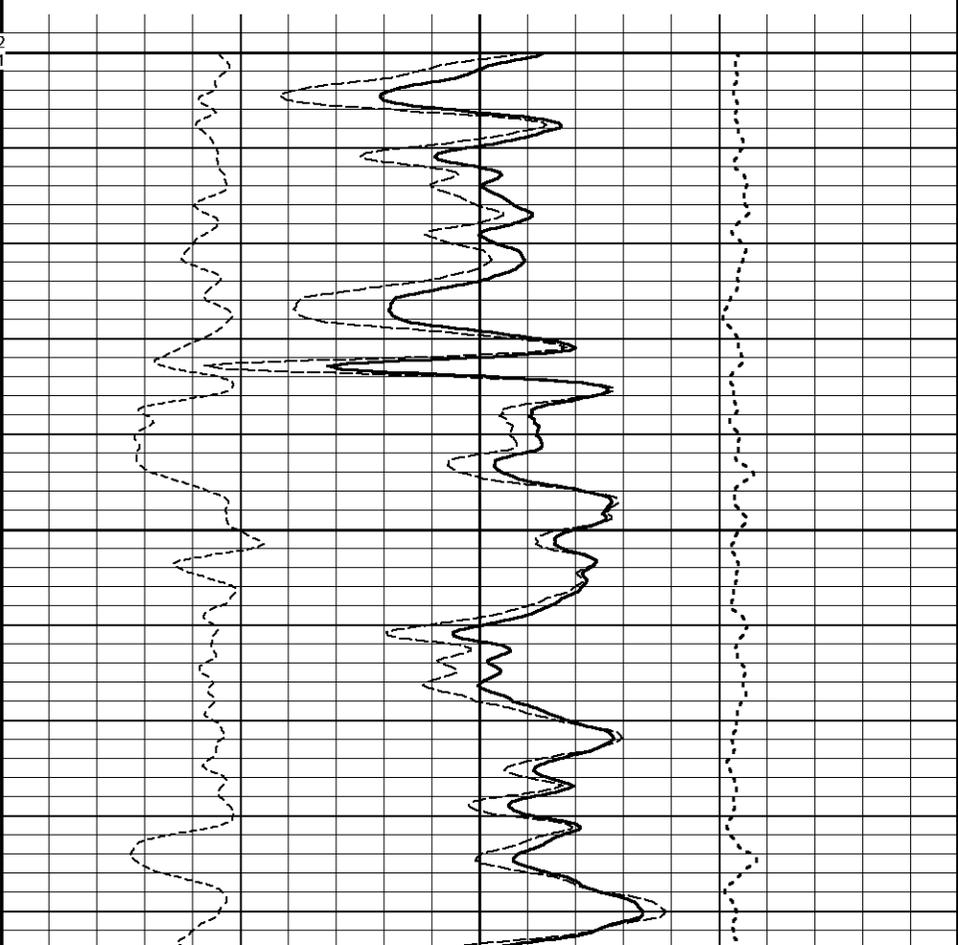
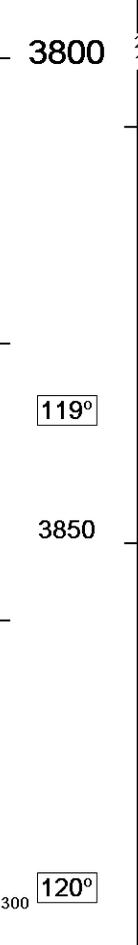
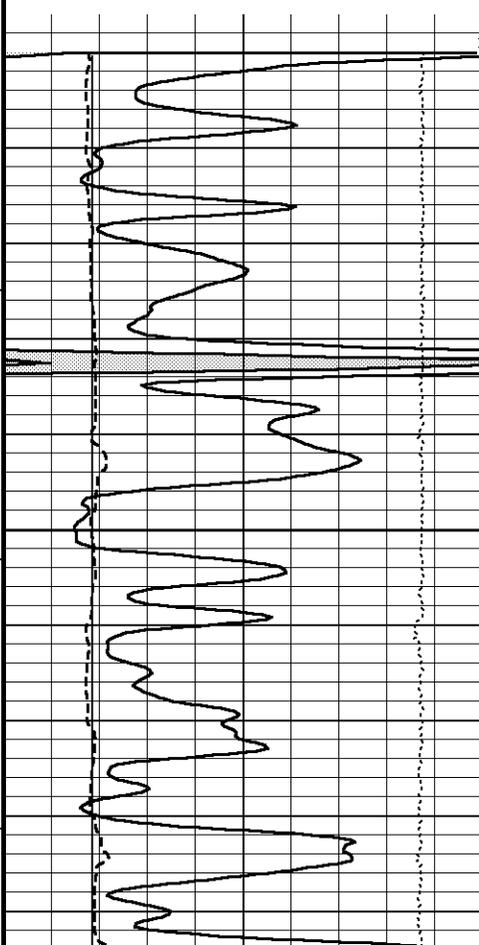
30	20	10	0	-10
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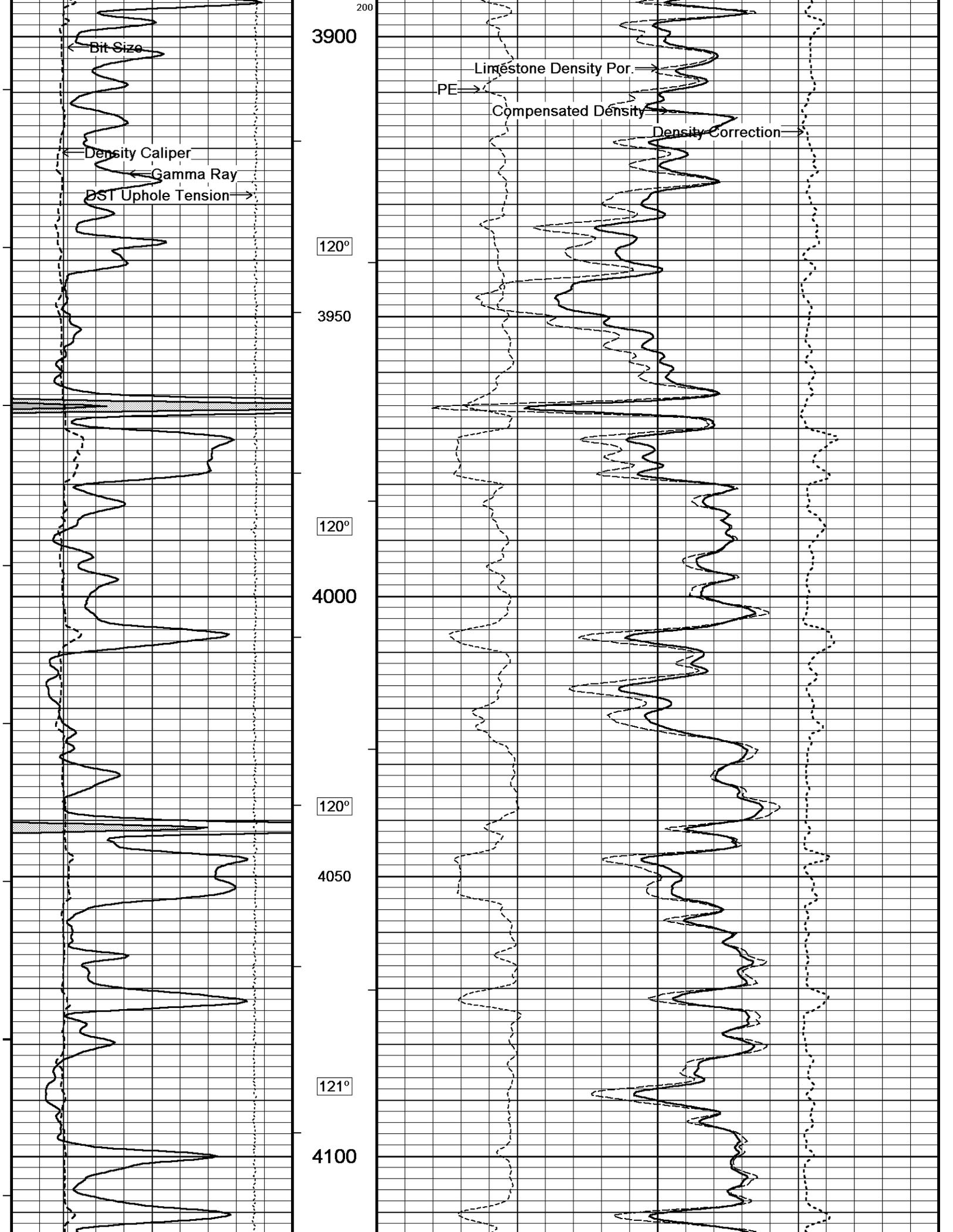
PE
barns/electron

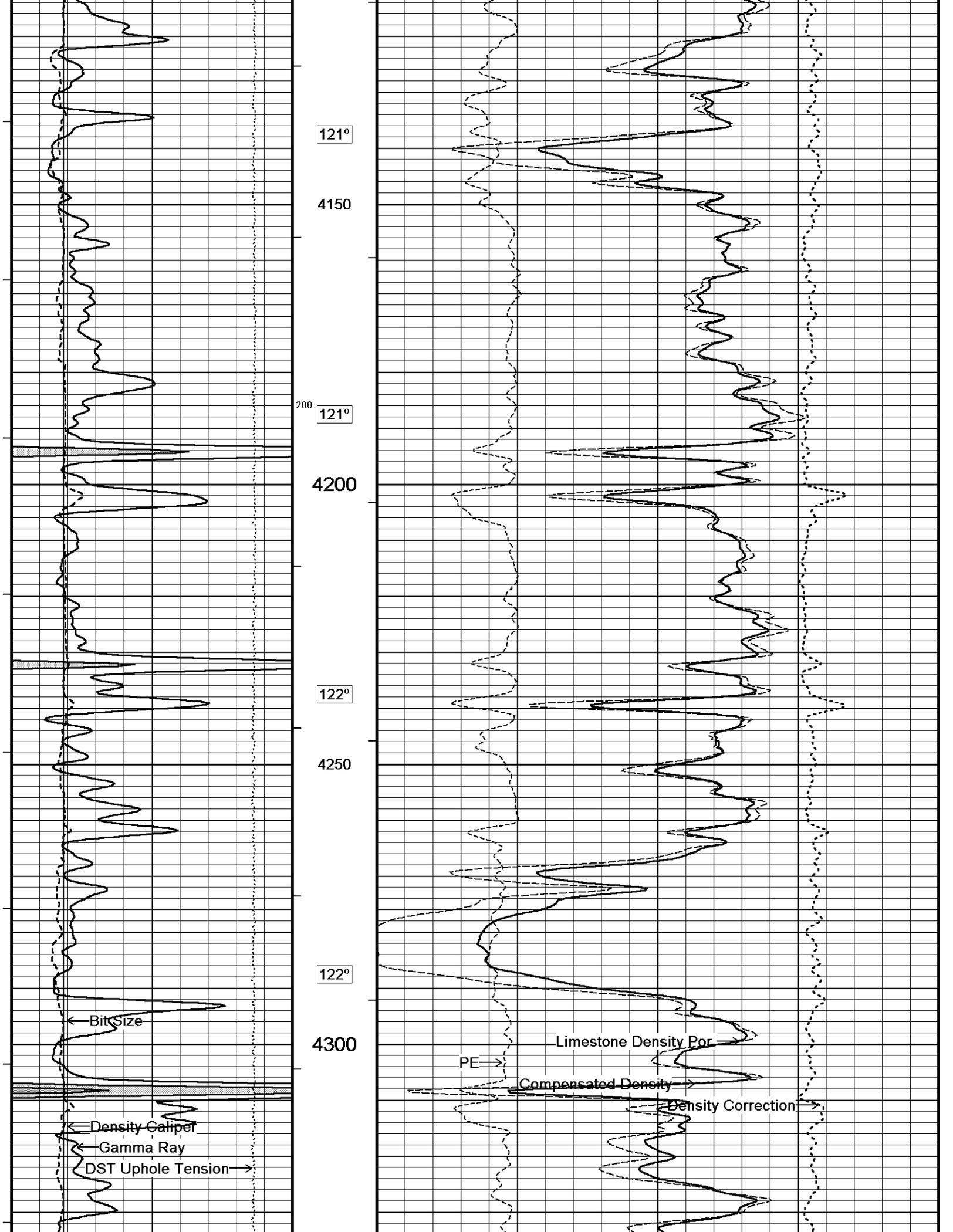
0	5	10
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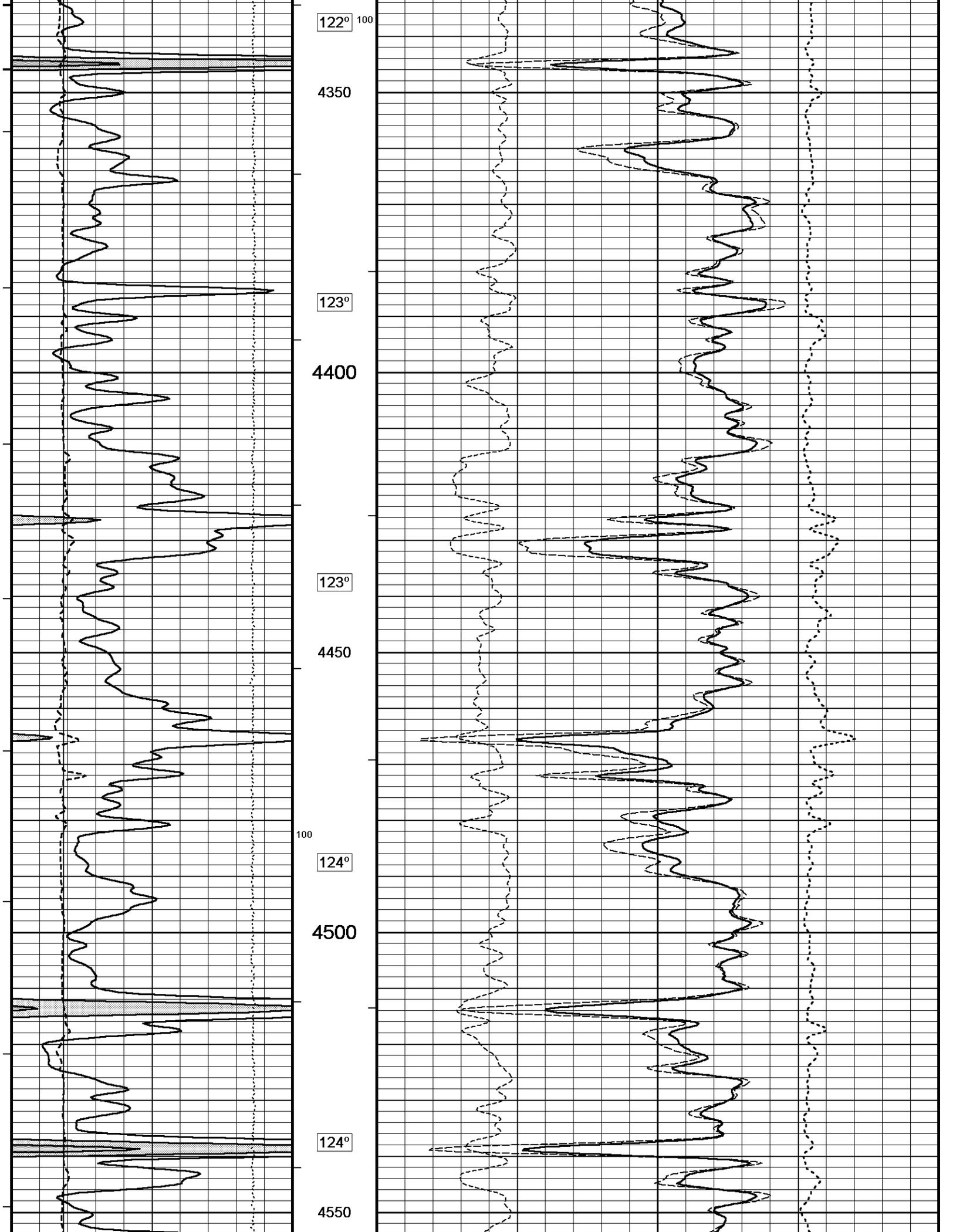
Density Correction
grams/cc

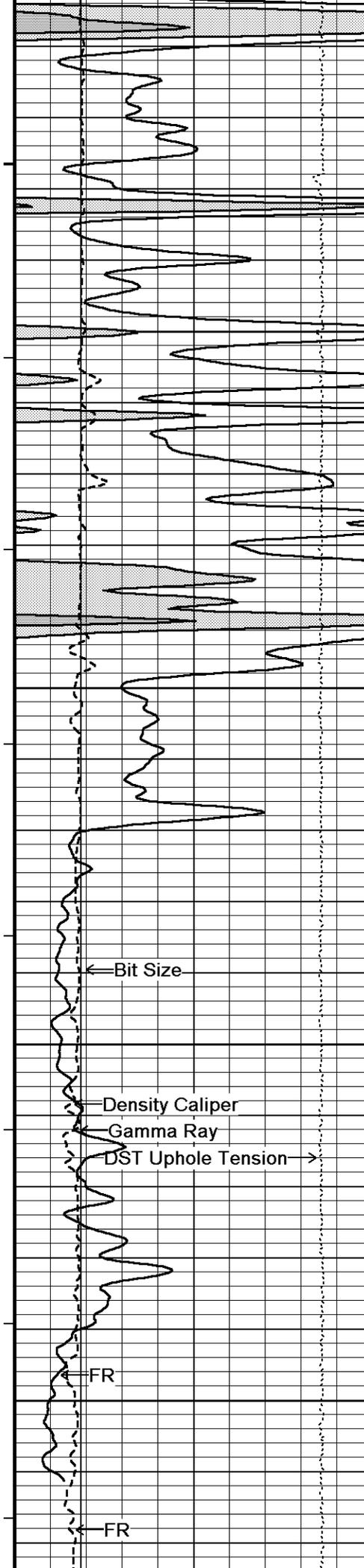
-0.50	0	0.50
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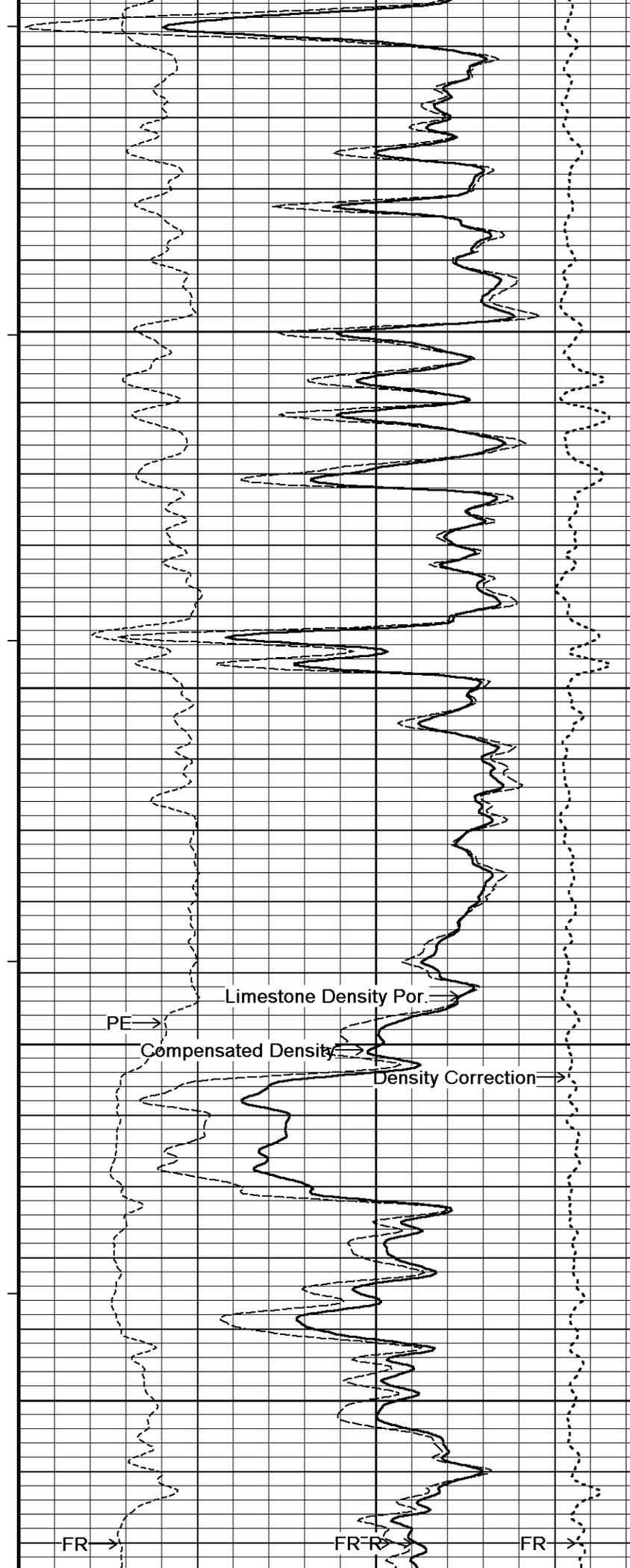






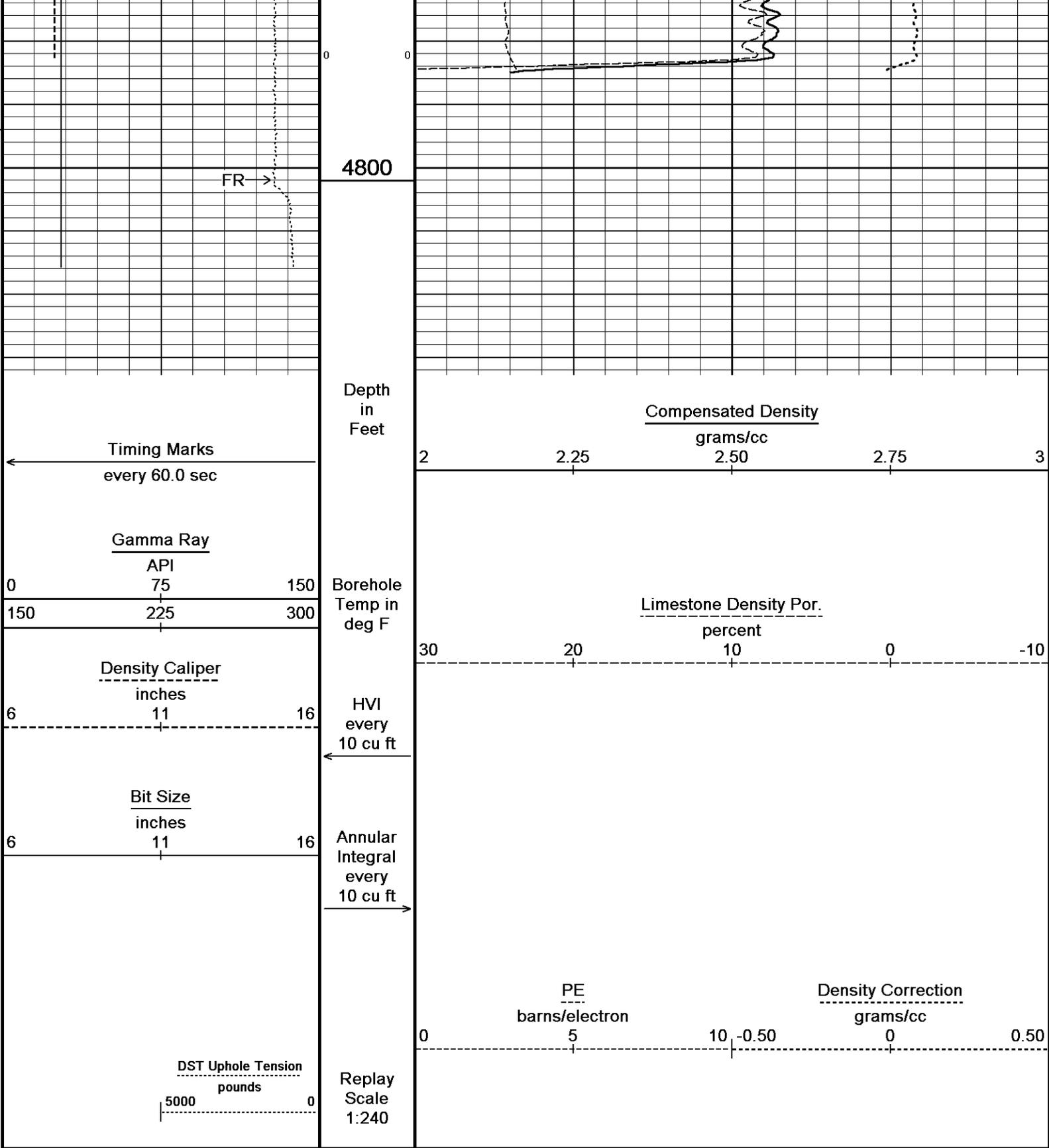


125°
4600
126°
4650
126°
4700
126°
4750



← Bit Size
← Density Caliper
← Gamma Ray
← DST Uphole Tension →
← FR
← FR

PE →
Limestone Density Por. →
Compensated Density →
Density Correction →
FR →
FR-R →
FR →

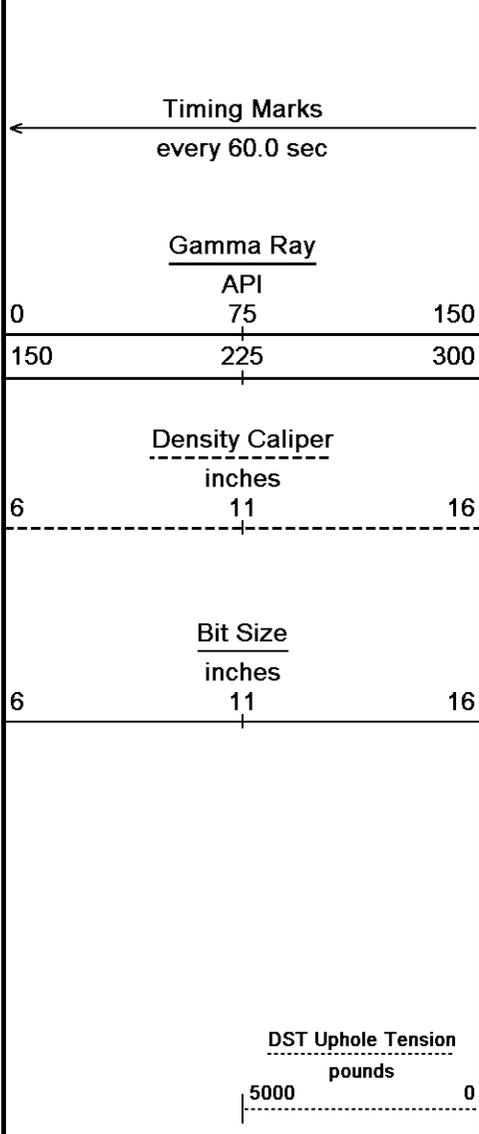


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↑ **5 INCH BULK DENSITY MAIN** ↑

↓ **REPEAT SECTION** ↓

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 22-JUL-2017 02:30
 Filename: C:\Minimus 17.01.7206\Data\Shakespeare Goering #1-5\Shakespeare Goering #1-5_001.dta Recorded on 21-JUL-2017 23:12
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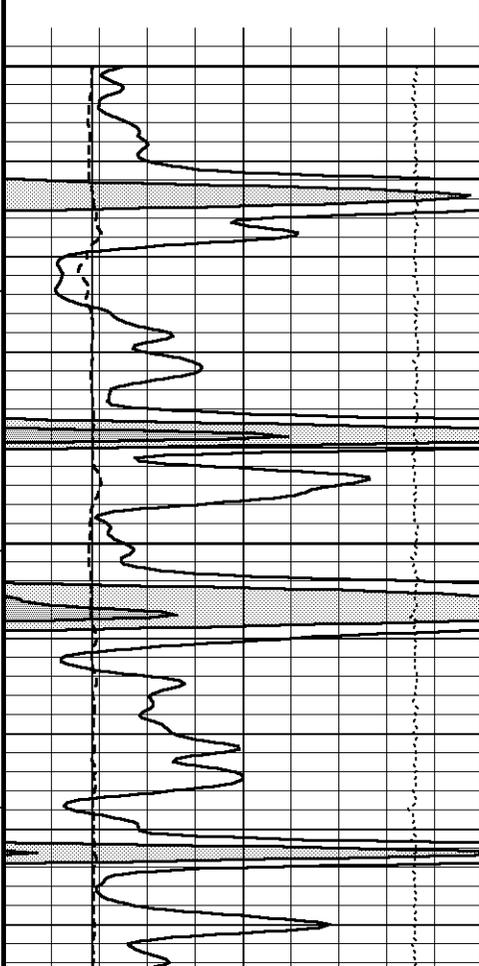
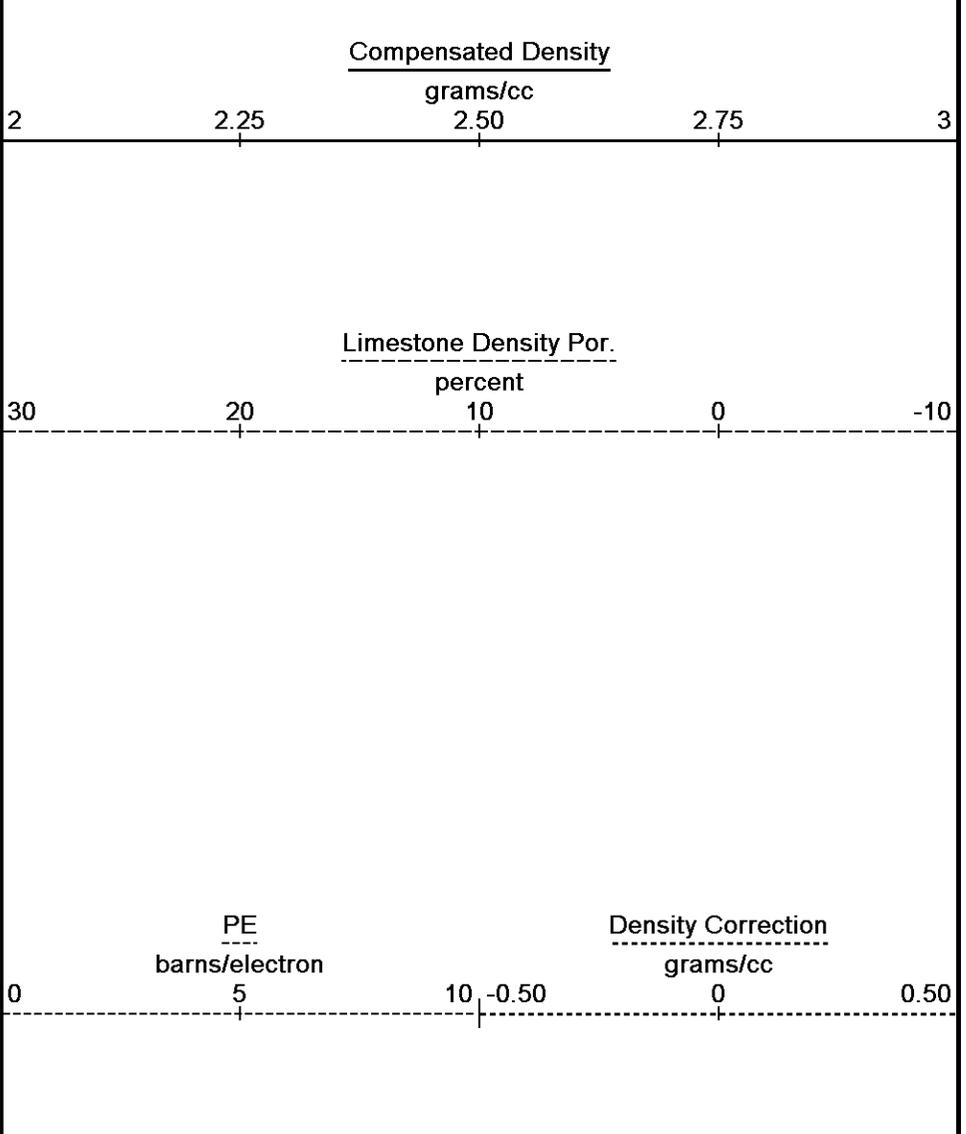
Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

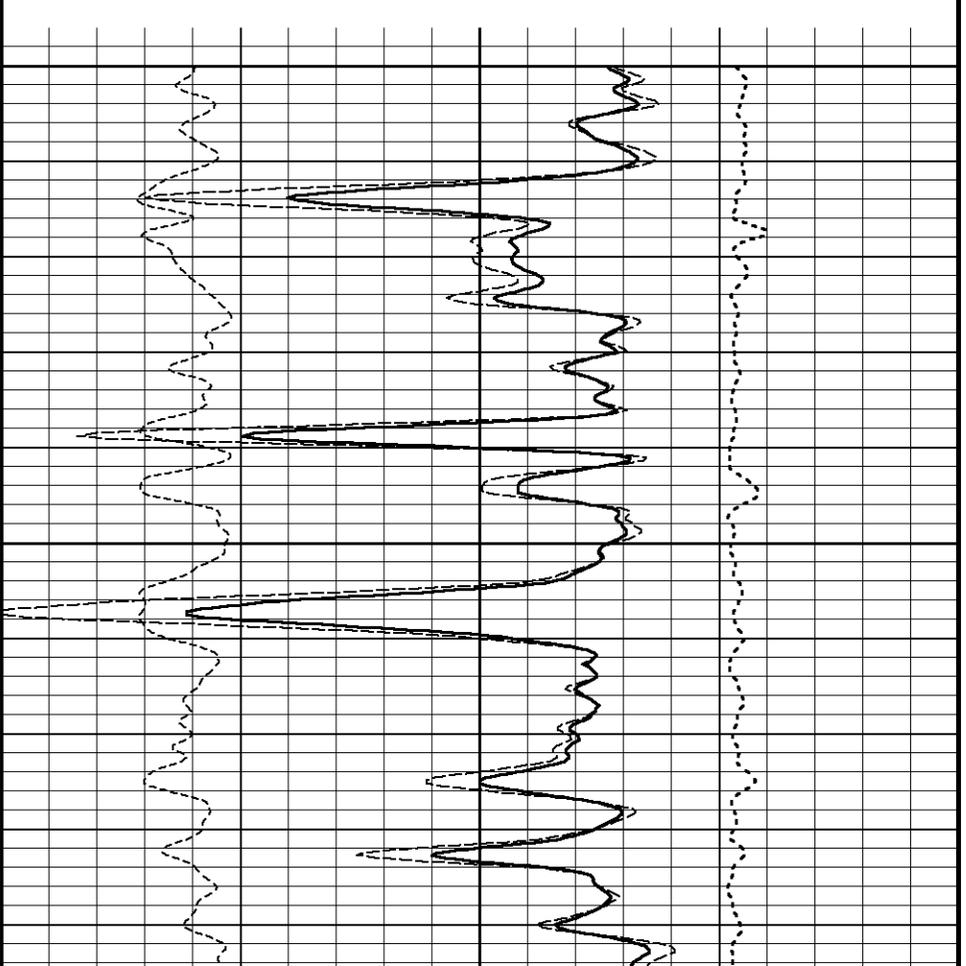


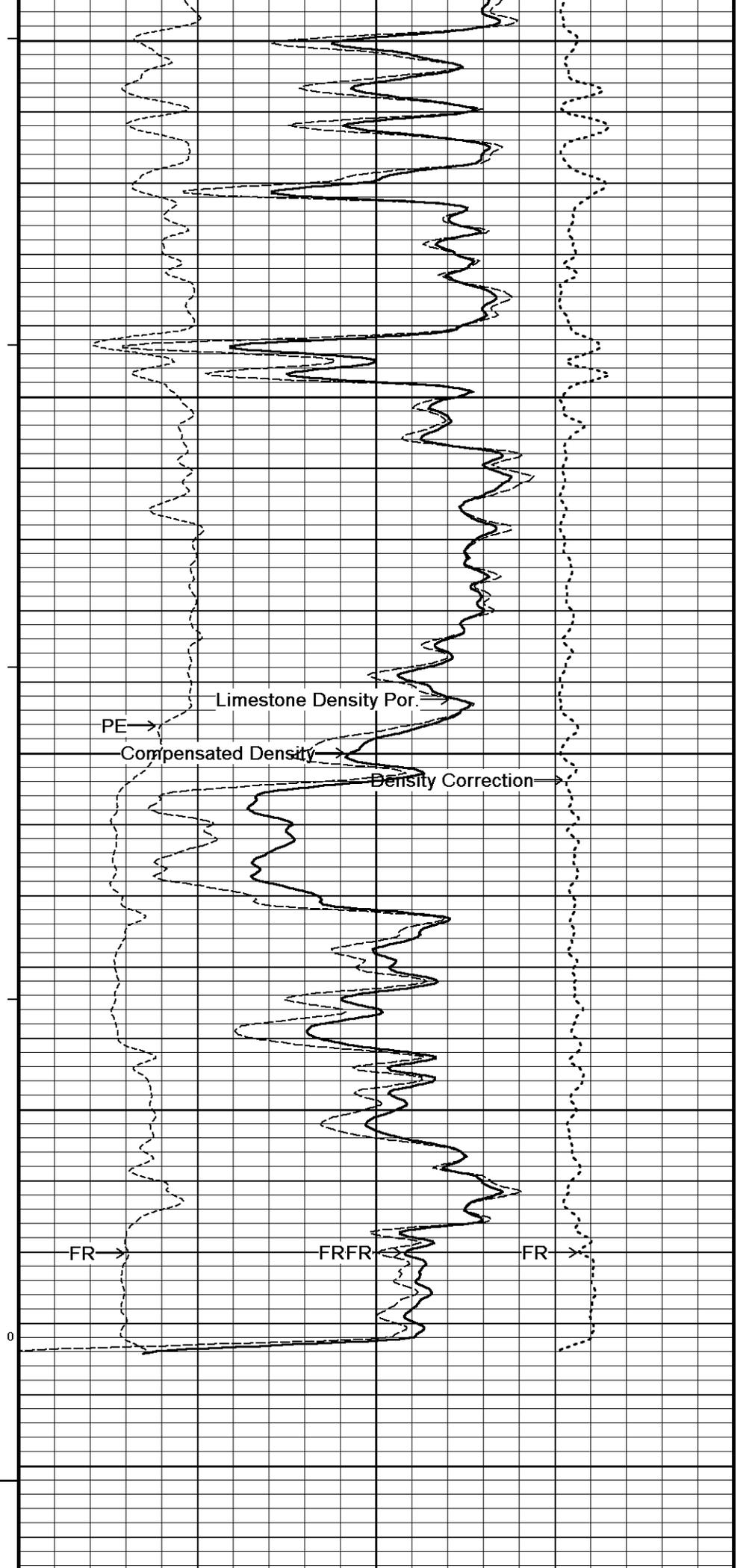
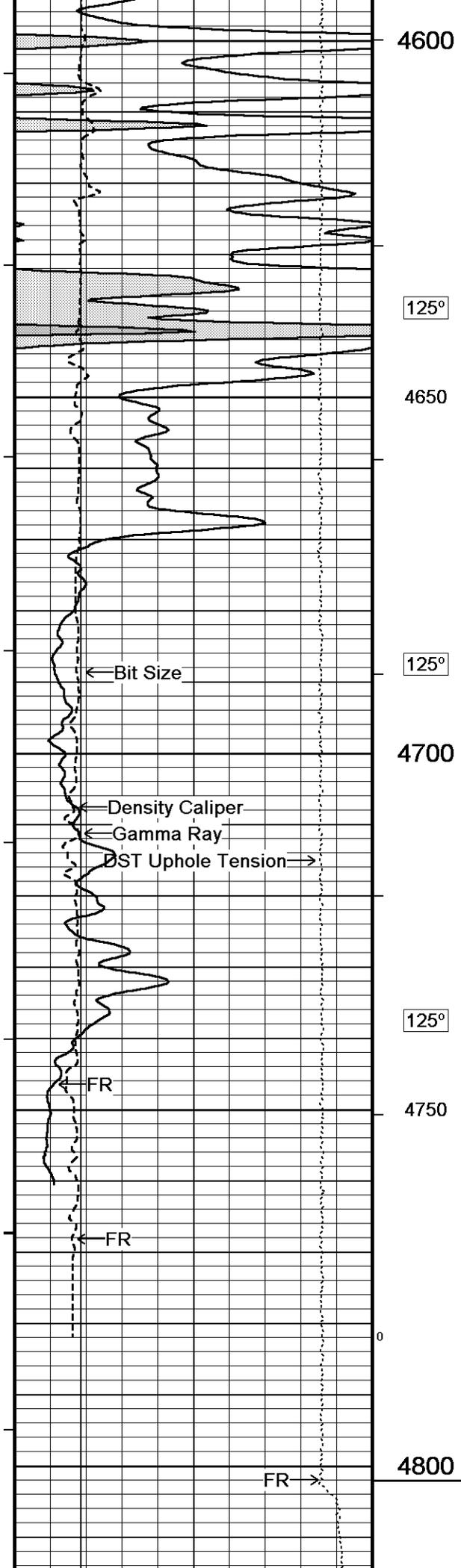
4500

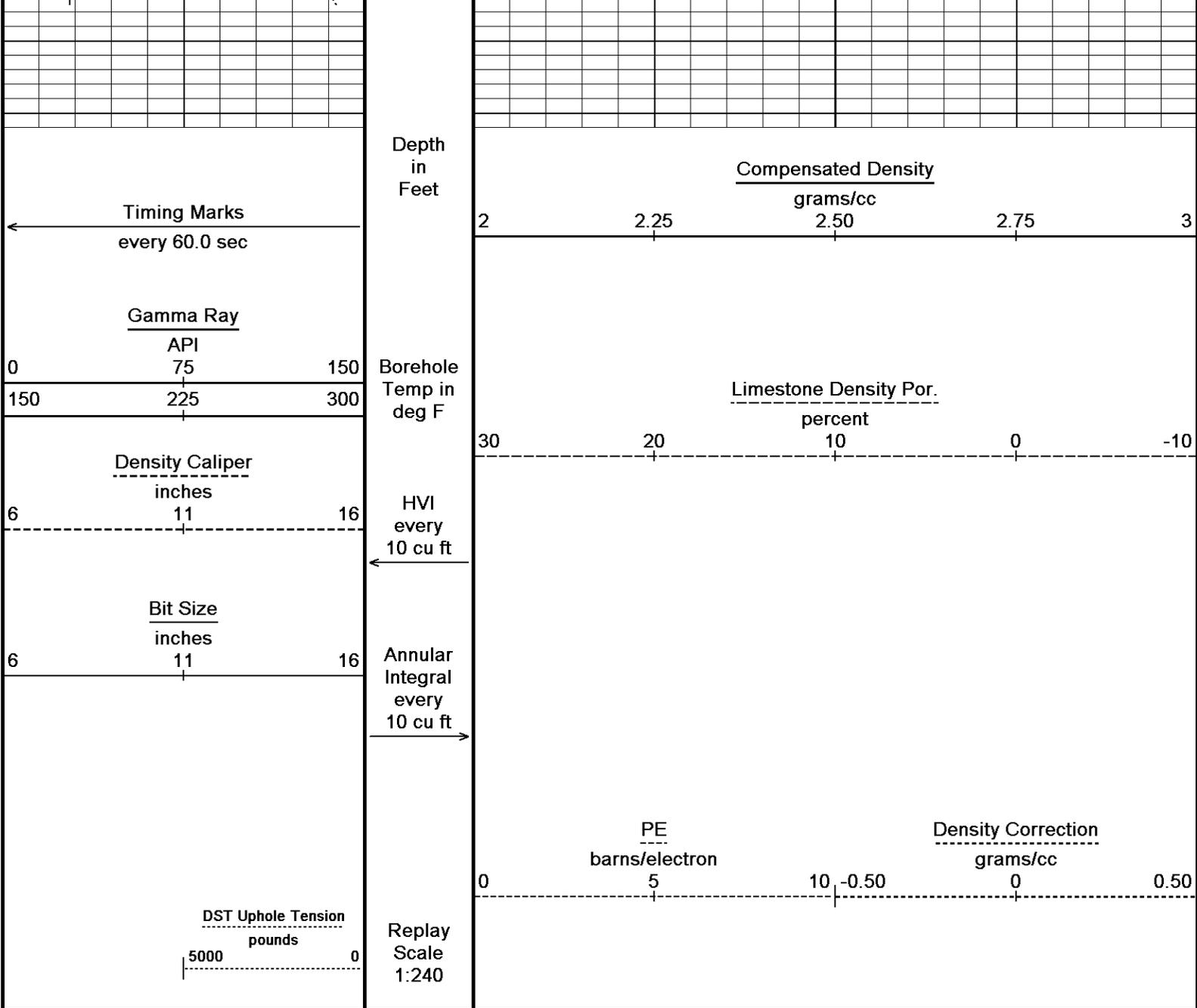
124°

4550

124°







Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 22-JUL-2017 02:30
 Filename: C:\Minimus 17.01.7206\Data\Shakespeare Goering #1-5\Shakespeare Goering #1-5_001.dta
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↑ REPEAT SECTION ↑

BEFORE SURVEY CALIBRATION
 C:\Minimus 17.01.7206\Data\Shakespeare Goering #1-5\Shakespeare Goering #1-5_001.dta

General Constants All 000 Last Edited on 21-JUL-2017,22:39

General Parameters		
Mud Resistivity	0.960	ohm-metres
Mud Resistivity Temperature	75.000	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	None	

Rwa Parameters	Base Density Porosity
Porosity used	Array Ind. One Res Rt
Resistivity used	
RWA Constant A	0.620
RWA Constant M	2.150
SW/APOR Tool Source	0.000

Down-hole Tension Calibration SMS 0

Field Calibration on 21-JUL-2017 22:14

Reading No	Measured	Calibrated (lbs)
1	14039.09	0.00
2	14869.52	481.00

Gamma Calibration MCG-C 84

Field Calibration on 21-JUL-2017 17:00

	Measured	Calibrated (API)
Background	142	95
Calibrator (Gross)	825	551
Calibrator (Net)	683	456

Gamma Calibration Tolerances MCG-C 84

Ratio 1.498  Counts/API

Gamma Constants MCG-C 84

Last Edited on 21-JUL-2017,20:15

Gamma Calibrator Number	MCGGRCC141	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.09	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

SP Calibration MCG-C 84

Field Calibration on 03-JUL-2017,10:23

	Measured	Calibrated (mV)
Reference 1	104.4	100.1
Reference 2	-95.8	-100.1

High Resolution Temperature Calibration MCG-C 84

Field Calibration on 03-JUL-2017,10:23

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

High Resolution Temperature Constants MCG-C 84

Last Edited on 09-SEP-2014,02:23

Pre-filter Length 11

Micro Normal and Micro Inverse Calibration MML-A 7

Base Calibration on 21-JUL-2017,09:26

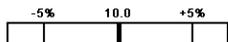
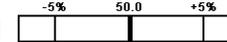
Field Check on 21-JUL-2017 16:43

Base Calibration

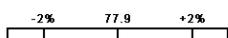
Channel		Measured		Calibrated (ohm-m)	
		Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal		10.0	49.7	5.1	25.6
Micro Inverse		10.0	50.1	3.4	16.9

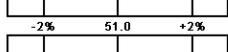
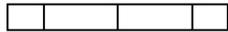
Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	77.9	77.9
Micro Inverse	51.0	51.0

Micro Normal & Micro Inverse Calibration Tolerance MML-A 7

Micro Normal Res. 1	10.0		ohm	Micro Normal Res. 2	49.7		ohm
Micro Inverse Res. 1	10.0		ohm	Micro Inverse Res. 2	50.1		ohm

Micro Normal Base Check	77.9		ohm-m
Micro Inverse Base Check	51.0		ohm-m

Micro Normal Field Check	77.9		ohm-m
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Micro Normal Field Check 77.9  ohm-m
 Micro Inverse Field Check 51.0  ohm-m

Micro Normal and Micro Inverse Constants MML-A 7 Last Edited on 21-JUL-2017,20:15

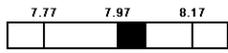
Pad Type 8-12 in Soft Rubber Inflatable 006-9011-159
 Micro Normal K Factor 0.5110
 Micro Inverse K Factor 0.3380
 Standoff Offset N/A inches

Caliper Calibration MML-A 7 Base Calibration on 21-JUL-2017,09:17
Field Calibration on 21-JUL-2017 16:41

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	13752	5.98
2	16863	7.97
3	19899	9.86
4	23808	11.92
5	0	0.00
6	N/A	N/A

Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	8.04	7.97

Caliper Calibration Tolerances MML-A 7

Short Arm Field Cal. 8.04  in

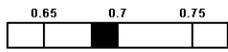
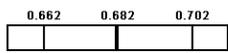
Neutron Calibration MDN-A.B 114 Base Calibration on 21-JUL-2017,14:44
Field Check on 21-JUL-2017 17:05

Base Calibration					
	Measured		Calibrated (cps)		Ratio
	Near	Far	Near	Far	
	3156	98	3714	110	
	32.298		33.764		

Field Calibrator at Base		
	Calibrated (cps)	
	2073	3042
Ratio	0.682	

Field Check		
	Calibrated (cps)	
	2082	3059
Ratio	0.681	

Neutron Calibration Tolerances MDN-A.B 114

Ratio 32.298 
 Base Check 0.682 
 Field Check 0.681 

Neutron Constants MDN-A.B 114 Last Edited on 21-JUL-2017,20:15

Neutron Source Id P0204NN
 Neutron Jig Number NJ5736
 Air Hole Processing Legacy
 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 Source None
 Formation Fluid Salinity Not Applied
 Barite Mud Correction Not Applied kppm

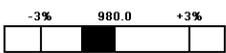
FE Calibration MFE-B.J 352

Base Calibration on 21-JUL-2017,09:08
 Field Check on 21-JUL-2017 16:32

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	966.4	126.8
Base Check		280.6
Field Check		280.2

FE Calibration Tolerances MFE-B.J 352

Reference 2	966.4		ohm
Base Check	280.6		ohm-m
Field Check	280.2		ohm-m

FE Constants MFE-B.J 352

Last Edited on 21-JUL-2017,20:15

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Borehole Correction Constants		
Sonde Position	0.5	inches
Hole Size Source	Density Caliper	
Hole Size Constant Value	N/A	inches
Rm Source	Global Value: Temperature Corrected	
Temp. for Rm Corr.	MCG External Temperature	

Sonic Constants MSS-A.A 55

Last Edited on 21-JUL-2017,20:14

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 Sonic	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	N/A	micro-sec
MX3FT	N/A	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft

Sonde Mode	Compensated
Hole Type	Open Hole

Sonde Parameters

	Measured	Calibrated
Offset	N/A	0.0000
Free Pipe	N/A	N/A
Peak Amplitude Source		N/A

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)	N/A	
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

N/A
N/A

N/A
N/A

N/A
N/A

N/A
N/A

Full Waveform Parameters

Use 3' Waveform to derive TR	N/A	
Use 4' Waveform to derive TR	N/A	
Use 5' Waveform to derive TR	N/A	
Use 6' Waveform to derive TR	N/A	
3' Waveform Discriminator Level	N/A	mV
4' Waveform Discriminator Level	N/A	mV
5' Waveform Discriminator Level	N/A	mV
6' Waveform Discriminator Level	N/A	mV
Waveform Discriminator Filter	N/A	
Semblance Window Width	N/A	micro-sec
Sonic Despiker	N/A	N/A

High Resolution Temperature Calibration MAI-A.A 111

Field Calibration on 03-JUL-2017,10:17

	Measured	Calibrated(Deg F)
Lower	10.00	10.00
Upper	100.00	100.00

High Resolution Temperature Constants MAI-A.A 111

Last Edited on 26-JUN-2014,15:06

Pre-filter Length	11
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Induction Calibration MAI-A.A 111

Base Calibration on 21-JUL-2017,10:20
Field Check on 21-JUL-2017 16:30

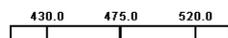
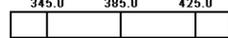
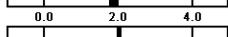
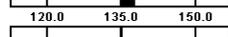
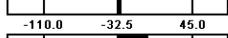
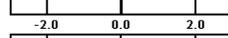
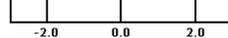
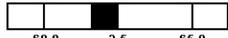
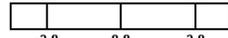
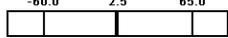
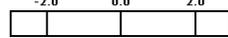
Base Calibration

Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel		Low	High	Low	High
1		17.6	473.6	9.3	966.2
2		6.4	385.9	7.6	821.4
3		3.2	264.0	5.2	566.0
4		2.1	135.5	2.6	279.2
Array Temperature		23.0		Deg F	

Test Loop Calibration Verified

Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	13.7	3869.0	14.0	3870.2	
2	30.1	3523.0	30.4	3523.7	
3	29.2	3017.0	29.4	3017.1	
4	19.2	2055.4	19.3	2055.2	
Deep	17.8	1959.3	18.0	1959.0	
Medium	43.1	3970.5	43.4	3971.0	
Shallow	44.9	5225.2	45.3	5226.9	
Array Temperature		95.2		94.1	Deg F

Induction Calibration Tolerances MAI-A.A 111

Low Conductivity 1	17.6		mmho/m	High Conductivity 1	473.6		mmho/m
Low Conductivity 2	6.4		mmho/m	High Conductivity 2	385.9		mmho/m
Low Conductivity 3	3.2		mmho/m	High Conductivity 3	264.0		mmho/m
Low Conductivity 4	2.1		mmho/m	High Conductivity 4	135.5		mmho/m
Background Vx 1	0.0		mmho/m	Phase Check Loop 1	0.0		%
Background Vx 2	0.0		mmho/m	Phase Check Loop 2	0.0		%
Background Vx 3	0.0		mmho/m	Phase Check Loop 3	0.0		%
Background Vx 4	0.0		mmho/m	Phase Check Loop 4	0.0		%

Induction Constants MAI-A.A 111

Last Edited on 21-JUL-2017,20:15

Induction Model RtAP-WBM

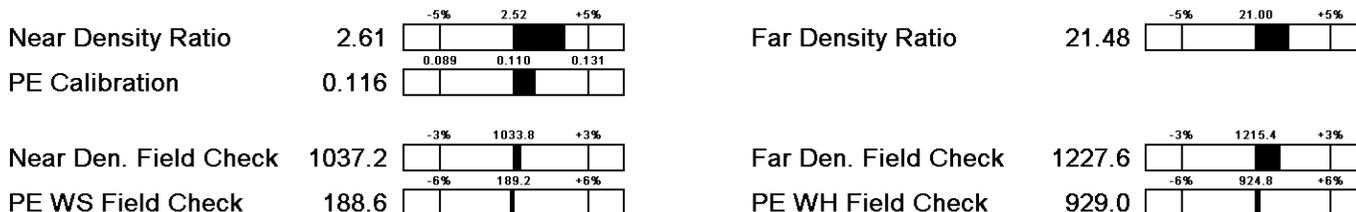
Borehole Correction Constants		No	
Tool Centred		Density Caliper	
Hole Size Source		N/A	inches
Hole Size Constant Value		Fins	
Stand-off Type		0.50	inches
Stand-off		8.0000	
Number of Fins on Stand-off		45.00	degrees
Stand-off Fin Angle		0.5000	inches
Stand-off Fin Width		Global Value: Temperature Corrected	
Rm Source		MCG External Temperature	
Temp. for Rm Corr.			
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
Symmetrised Receiver Gains			
Receiver 1		1.00	
Receiver 2		1.00	
Receiver 3		1.00	
Receiver 4		1.00	
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-C.A 216

Base Calibration on 21-JUL-2017,11:29
Field Check on 21-JUL-2017 16:39

Density Calibration		Measured		Calibrated (sdu)	
Base Calibration		Near	Far	Near	Far
Background		1034	1215		
Reference 1		51875	24845	59556	30836
Reference 2		20527	2316	24941	2541
Field Check at Base					
		1033.8	1215.4		
Field Check					
		1037.2	1227.6		
PE Calibration					
Base Calibration		Measured		Calibrated	
	WS	WH	Ratio	Ratio	
Background	189	925			
Reference 1	21486	51702	0.419	0.371	
Reference 2	5928	20410	0.295	0.272	
Field Check at Base					
	189.2	924.8			
Field Check					

Photo Density Calibration Tolerances MPD-C.A 216



Density Constants MPD-C.A 216

Last Edited on 21-JUL-2017,20:14

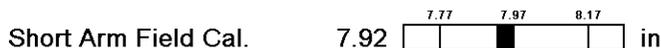
Density Source Id	P50557B	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.09	gm/cc
Mud Density Type		
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	
Precision Enhanced Density Processing	Not Applied	
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	0.00	

Caliper Calibration MPD-C.A 216

Base Calibration on 21-JUL-2017,11:21
Field Calibration on 21-JUL-2017 16:35

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	18416	3.99
2	28544	5.98
3	38624	7.97
4	48448	9.86
5	59555	11.92
6	N/A	N/A
Field Calibration	Measured Caliper (in)	Actual Caliper (in)
	7.92	7.97

Caliper Calibration Tolerances MPD-C.A 216

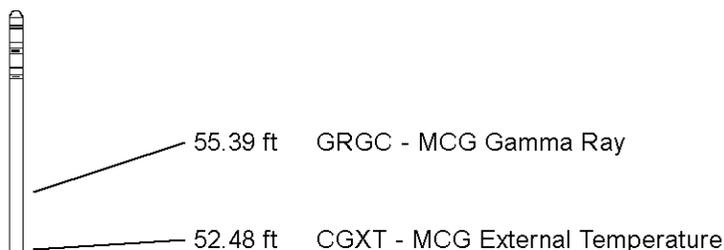


DOWNHOLE EQUIPMENT

C:\Minimus 17.01.7206\Data\Shakespeare Goering #1-5\Shakespeare Goering #1-5_001.dta

Cablehead, 11 pin
CBH-C 0 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

Compact Comms Gamma
MCG-C 84 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in



Compact Micro-log
MML-A.7 LG: 7.97 ft WT: 81.6 lb OD: 2.244 in

Compact Neutron
MDN-A.B 114 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

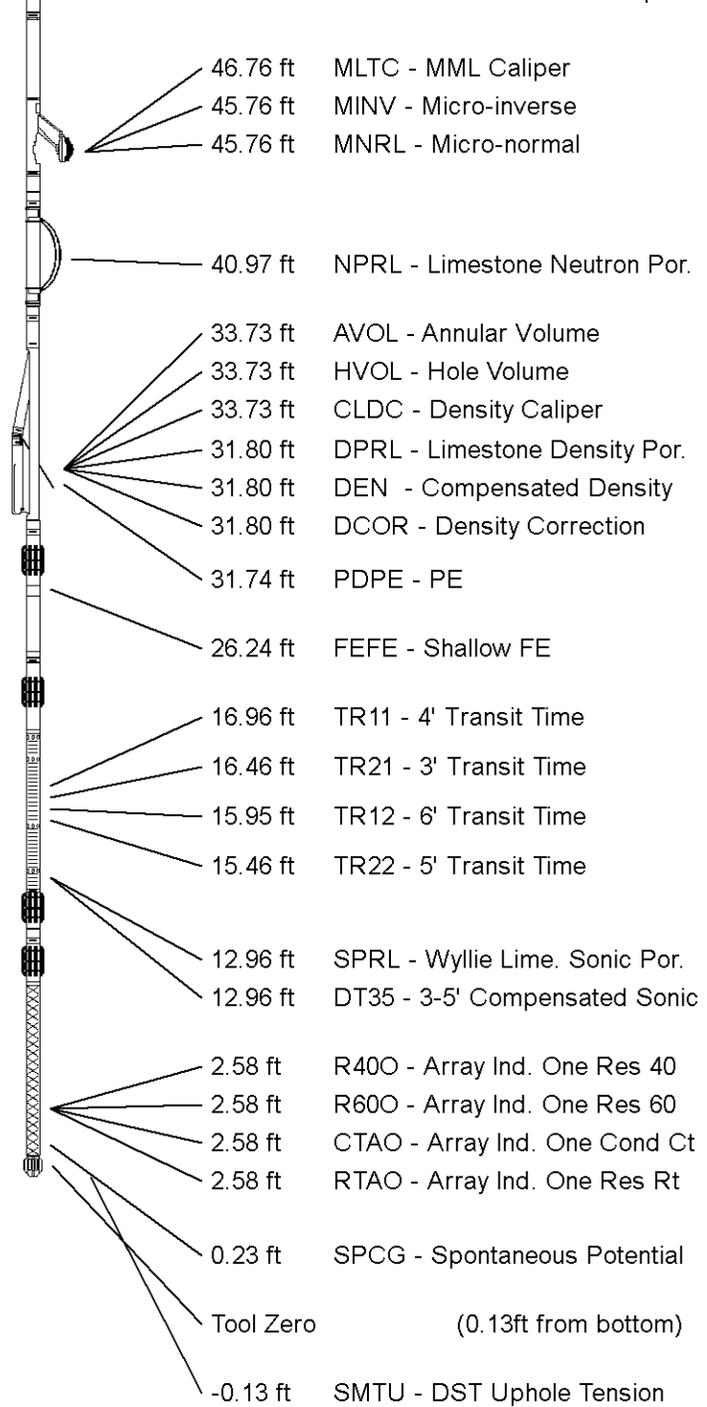
Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Sonic
MSS-A.A 55 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in

Compact Induction
MAI-A.A 111 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 63.07 ft Weight: 480.6 lb



All measurements relative to tool zero.

COMPANY SHAKESPEARE OIL CO., INC.
WELL GOERING #1-5
FIELD WILDCAT
PROVINCE/COUNTY LANE
COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	2951	feet	First Reading	4770.00	feet
Elevation Drill Floor	2949	feet	Depth Driller	4800.00	feet
Elevation Ground Level	2940	feet	Depth Logger	4802.00	feet



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