



Weatherford

**COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG**

COMPANY

COMANCHE RESOURCES CO. LLC

WELL

BONTRAGER 33-1

FIELD

WILDCAT

PROVINCE/COUNTY

SCOTT

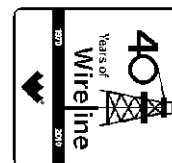
COUNTRY/STATE

U.S.A./KANSAS

LOCATION

2640' FSL & 975' FWL

W2-E2-W2-W2



SEC

TWP
19S

RGE
34W

Other Services
MA/MFE

API Number

15-171-20798

MSS

Permit Number

Permanent Datum G.L., Elevation 3064 feet
Log Measured From K.B. @ 11 FEET above Permanent Datum
Drilling Measured From K.B.

Elevations:

KB 3075.00
DF 3073.00
GL 3064.00

Date

07-JUN-2011

Run Number

ONE

Depth Driller

5104.00 feet

Depth Logger

5109.00 feet

First Reading

5075.00 feet

Last Reading

3850.00 feet

Casing Driller

393.00 feet

Casing Logger

392.00 feet

Bit Size

7.875 inches

Hole Fluid Type

CHEMICAL

Density / Viscosity

9.20 lb/USg

PH / Fluid Loss

10.00

Sample Source

FLOWLINE

Rm @ Measured Temp

0.73 @ 88.0 ohm-m

Rmf @ Measured Temp

0.58 @ 88.0 ohm-m

Rmc @ Measured Temp

0.88 @ 88.0 ohm-m

Source Rmf / Rmc

CALC

Rm @ BHT

0.53 @ 122.0 ohm-m

Time Since Circulation

4 HOURS

Max Recorded Temp

122.00 deg F

Equipment Name

COMPACT

Equipment / Base

13025 LIB

Recorded By

A. SILL

Witnessed By

JIM SPELLMAN

S.O. #JOB #

3531120

LB11-124

BOREHOLE RECORD

Last Edited: 07-JUN-2011 02:42

Bit Size
inches

7.875

Depth From
feet

392.00

Depth To
feet

5109.00

CASING RECORD

Type

Size
inches

8.625

Depth From
feet

0.00

Shoe Depth
feet

392.00

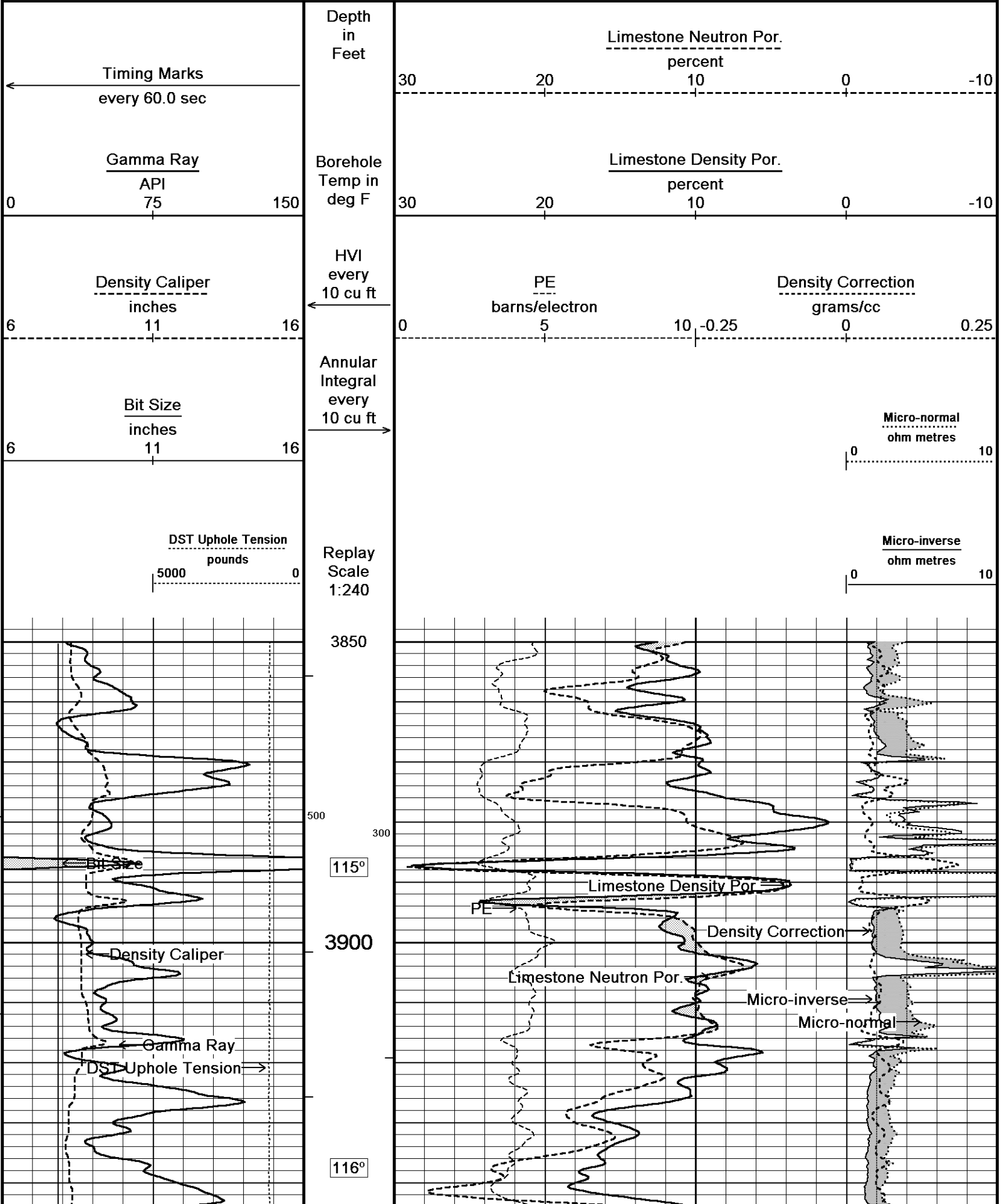
Weight
pounds/ft

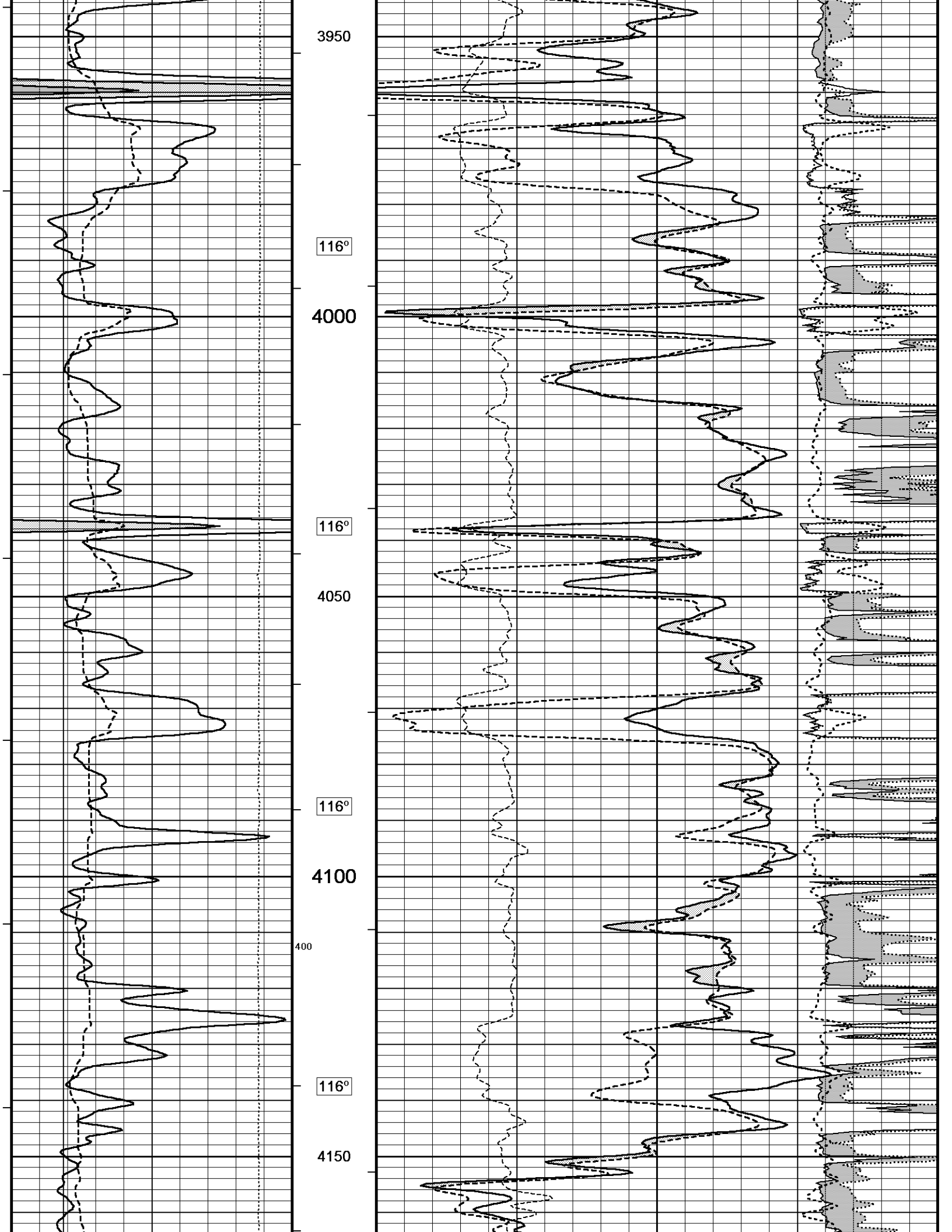
24.00

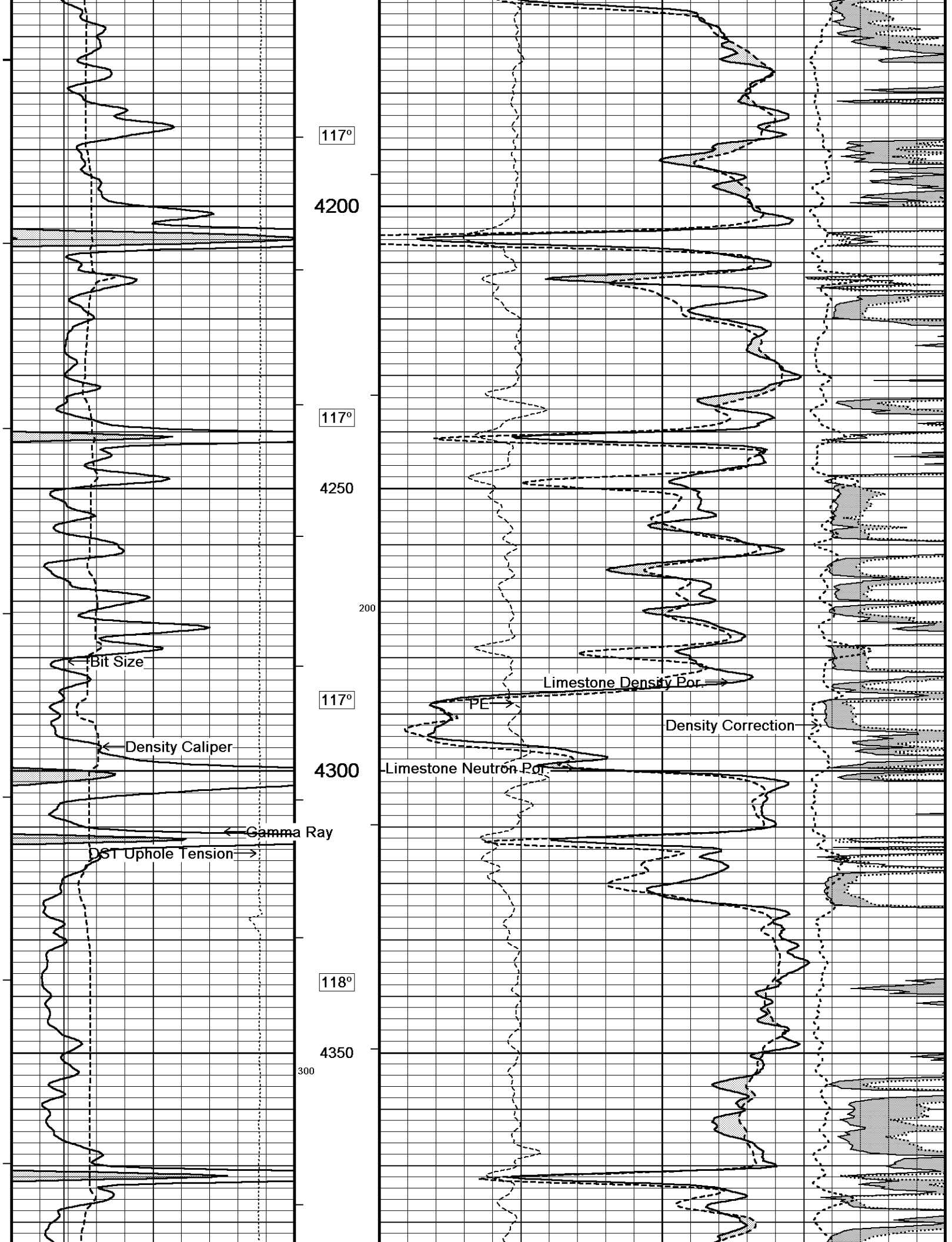
REMARKS

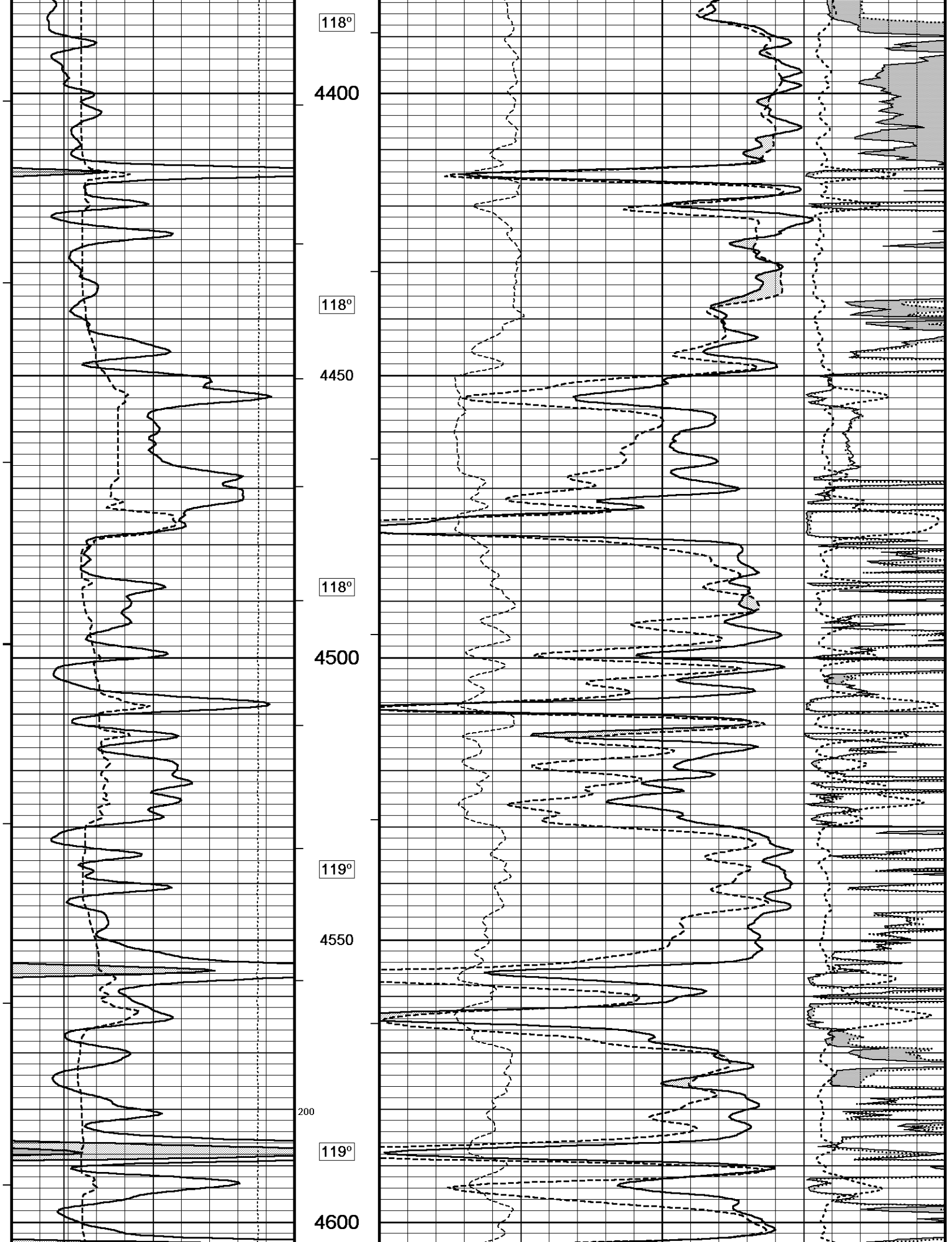
ols Used: MAI, MPD, MCG, MDN, MML, MFE, SKJ, MSS
Hardware: MPD: 8 inch profile plate. MAI, MSS and MFE: 0.5 Inch standoffs used. MDN: Dual Bowspring used.
2.71 G/CC Limestone density matrix used to calculate porosity.
Sonic porosity calculated on a limestone scale (47.5 usec/ft).
Borehole rugosity, tight pulls, and washouts will affect data quality.
All intervals logged and scaled per customer's request.
Annular volume with 5.5 inch production casing = 310 cu. ft.
Service order #3531120
Rig: Murfin # 22
Engineer: A. Sill, L. Scott
Operator(s): J. LaPoint

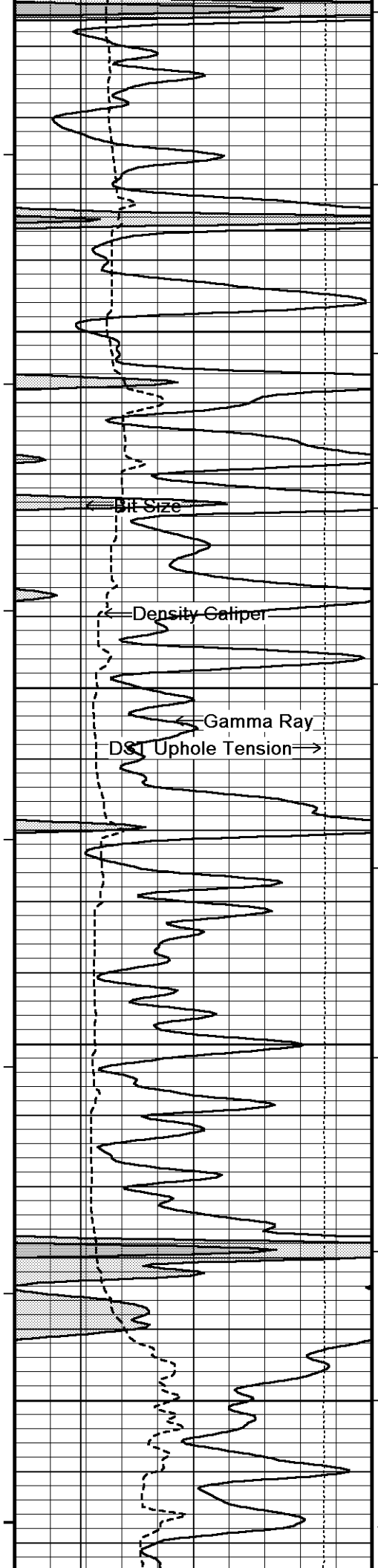
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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



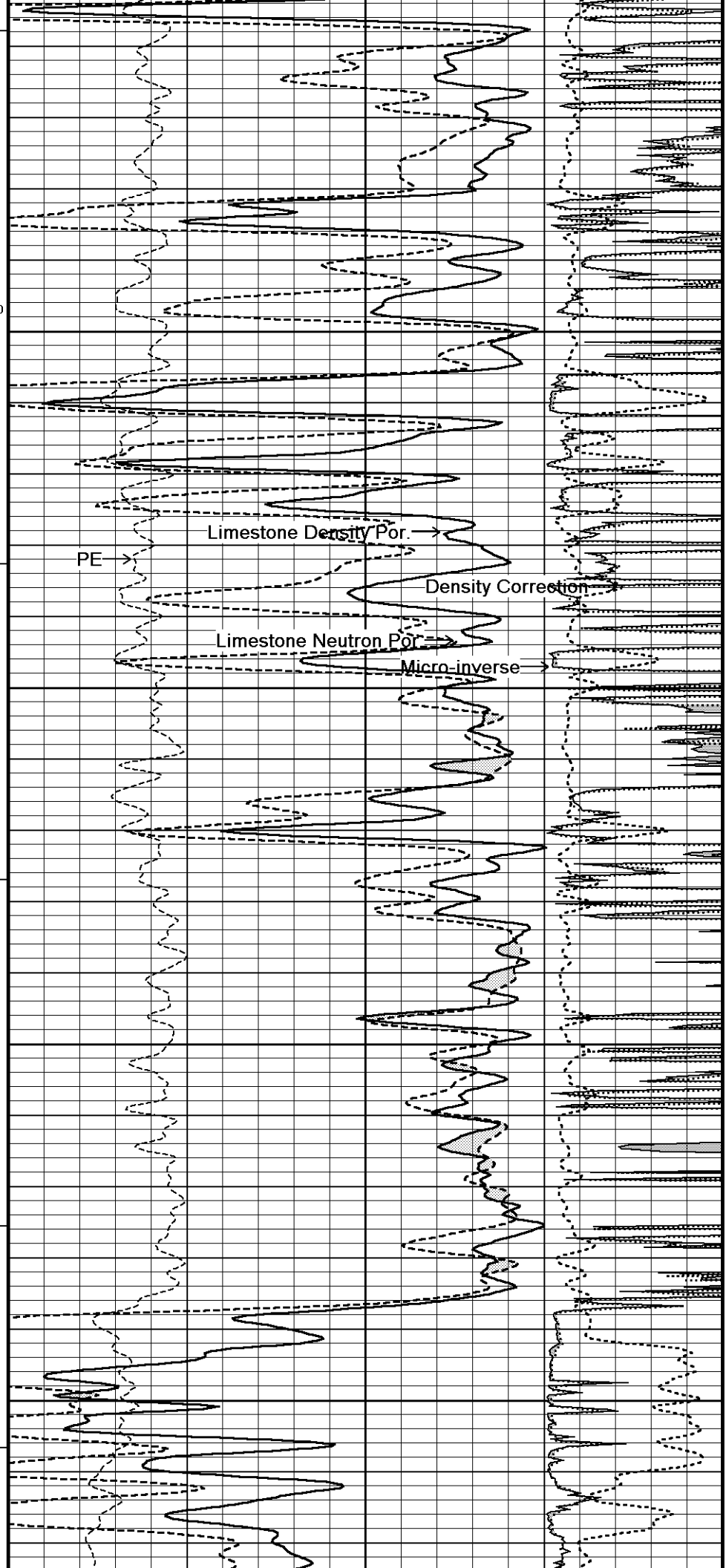


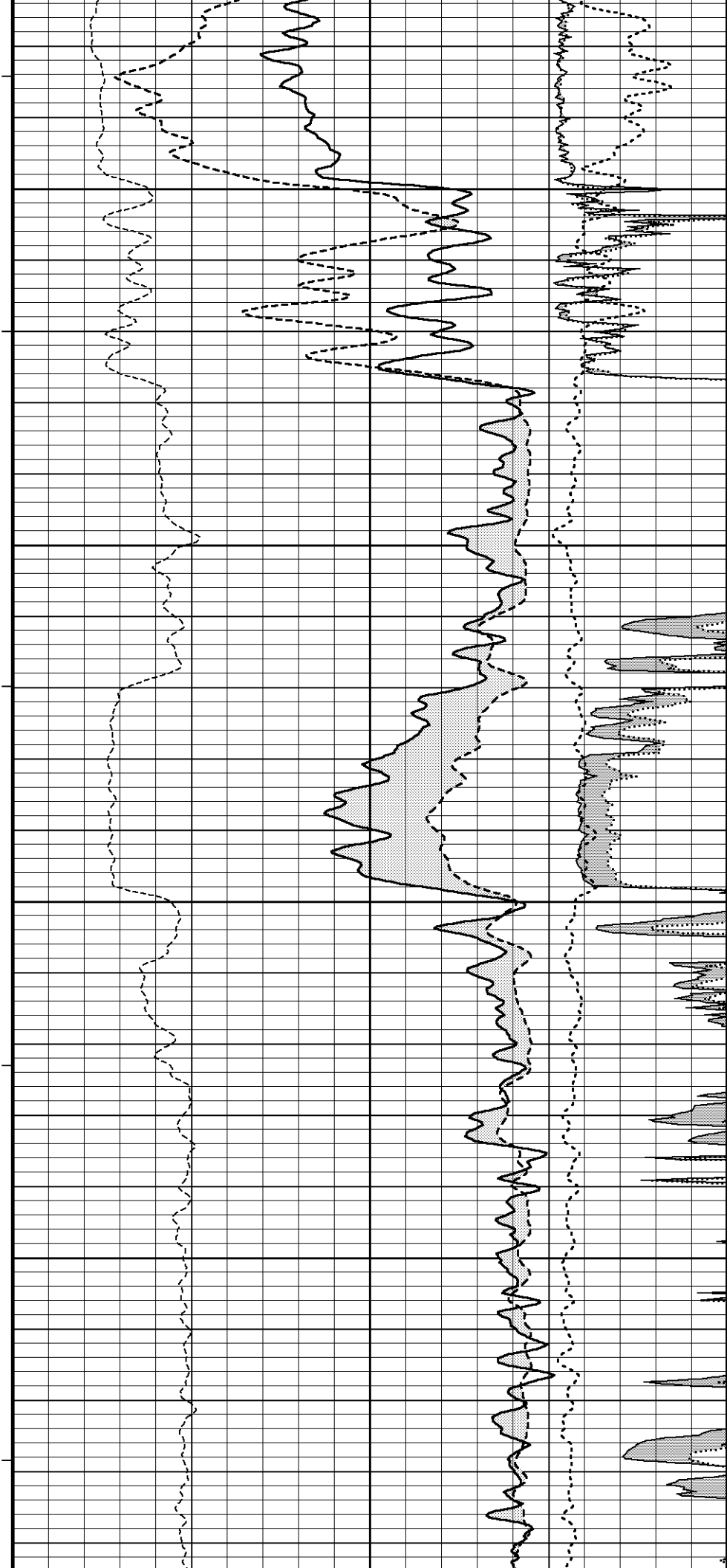
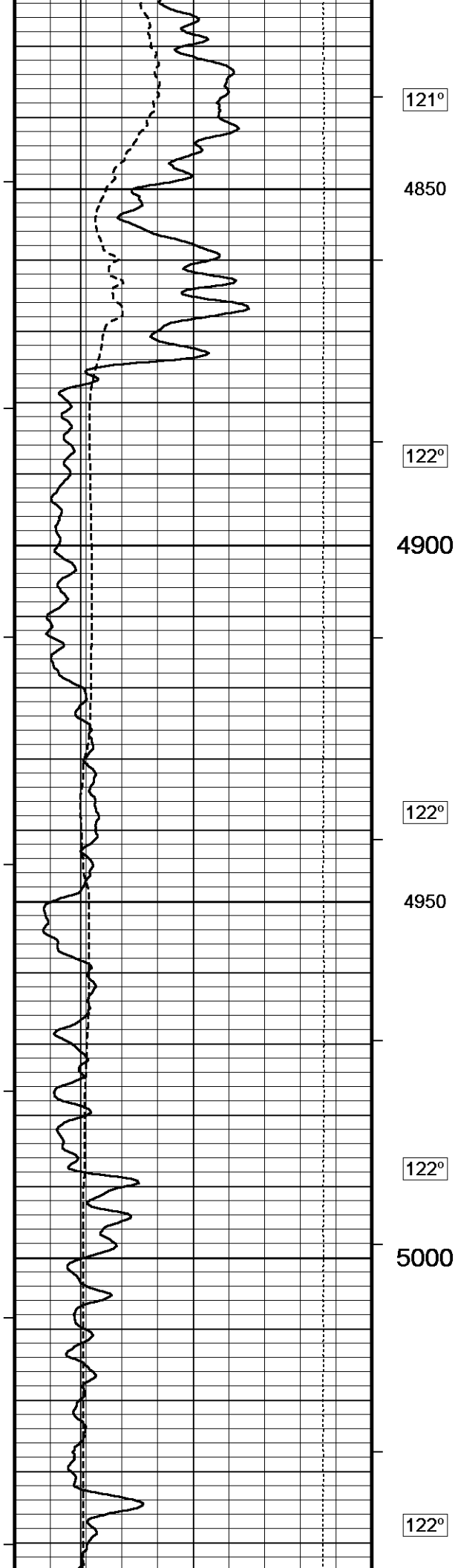


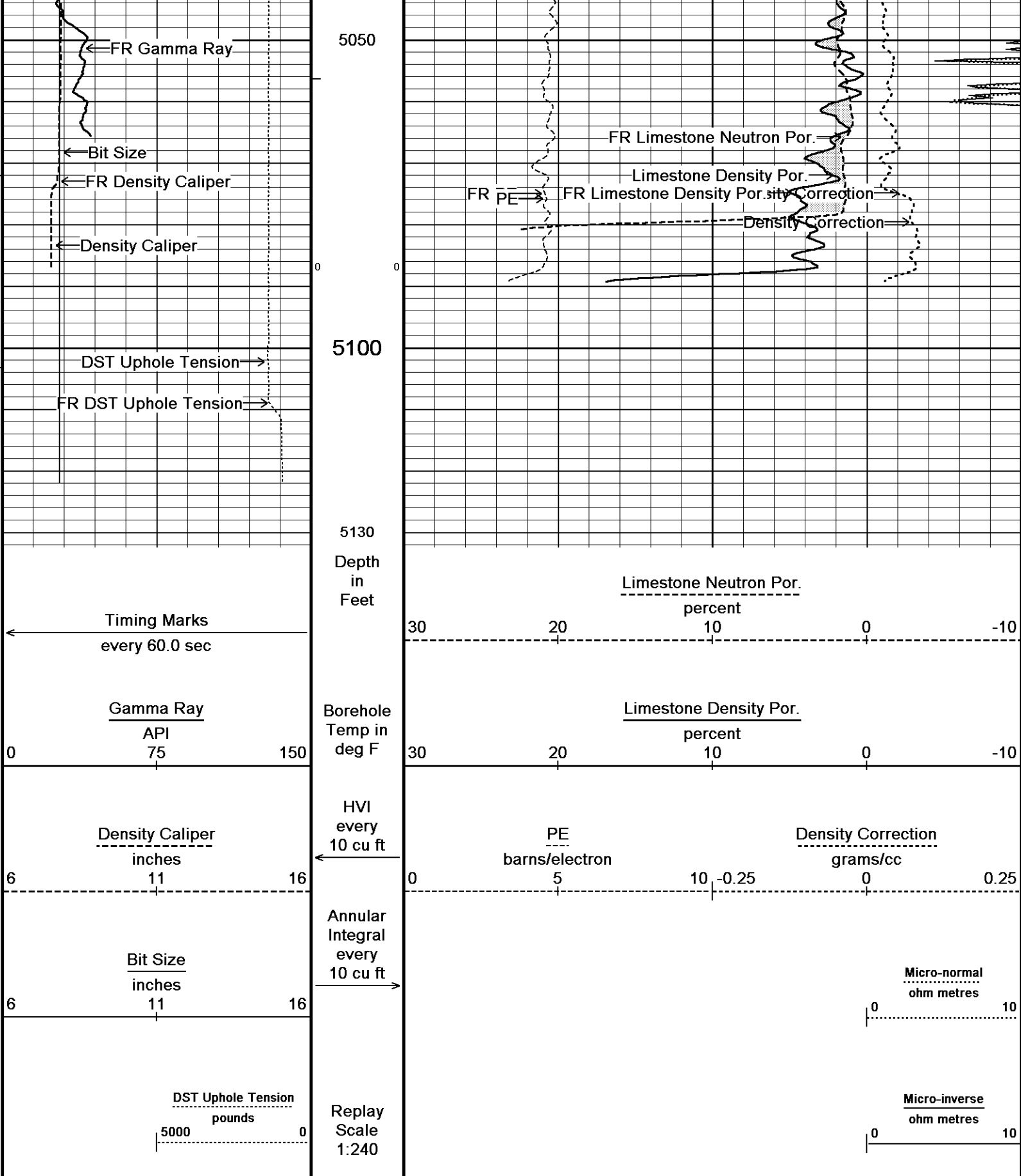




119°
4650
100
120°
4700
120°
4750
120°
4800
100







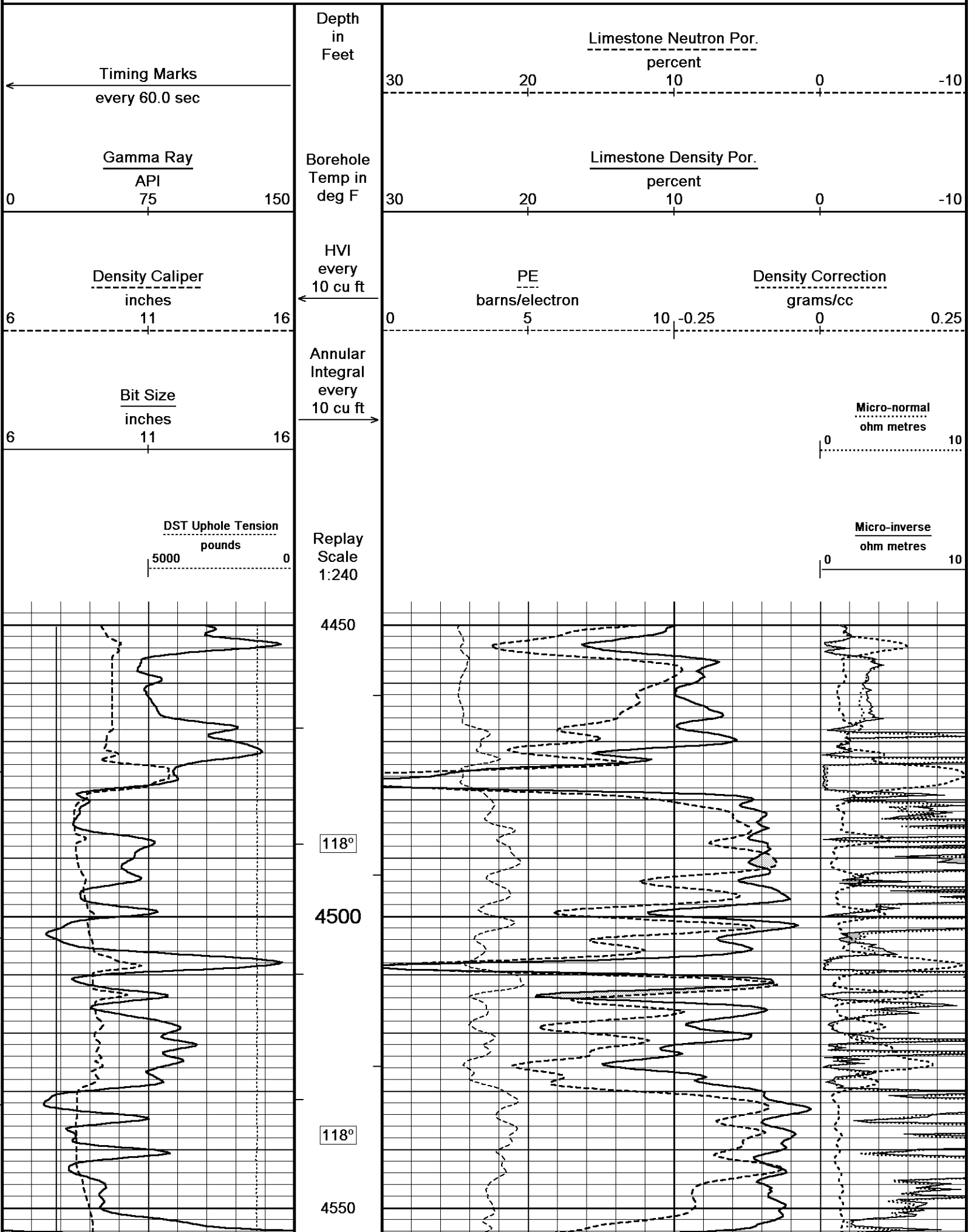
Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 11.03.2789\Data\Comanche Bontrager 33-1\Comanche Bontrager 33-1_002.dta
System Versions: Logged with 11.03.2789 Plotted with 11.03.2789

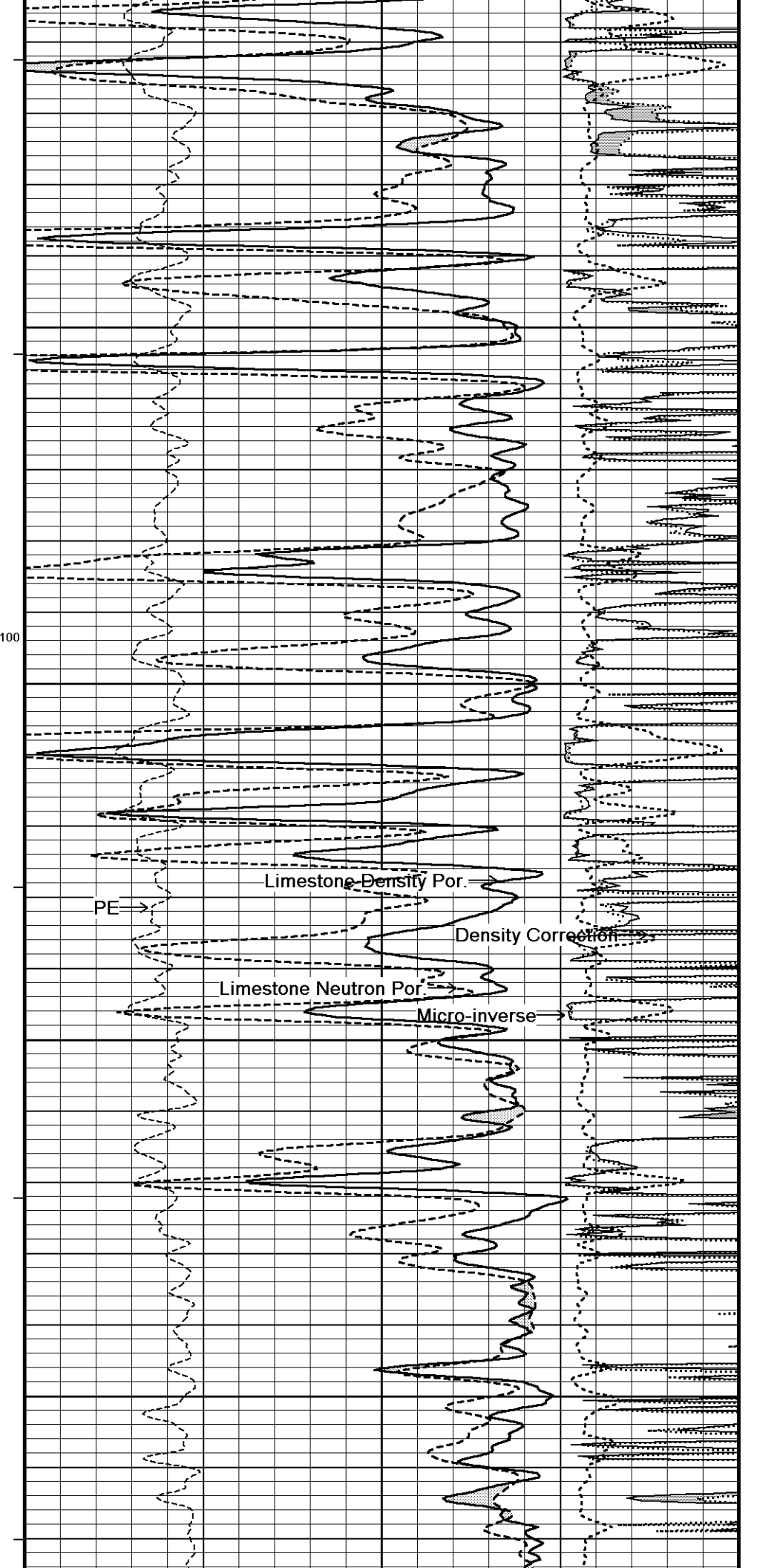
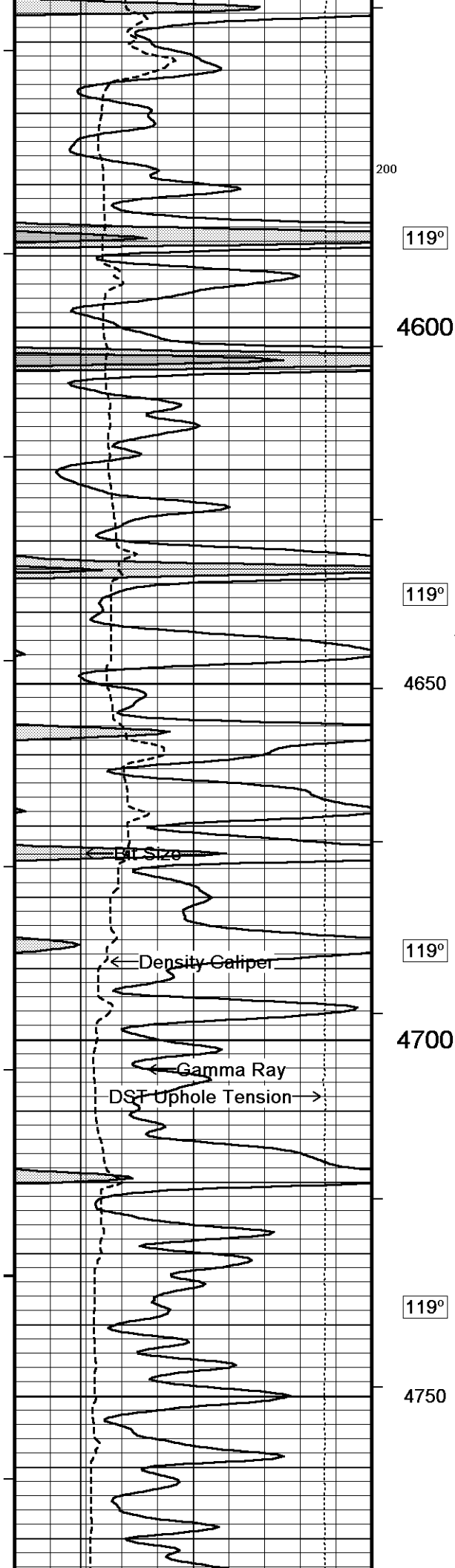
Plotted on 07-JUN-2011 03:30
Recorded on 07-JUN-2011 00:07

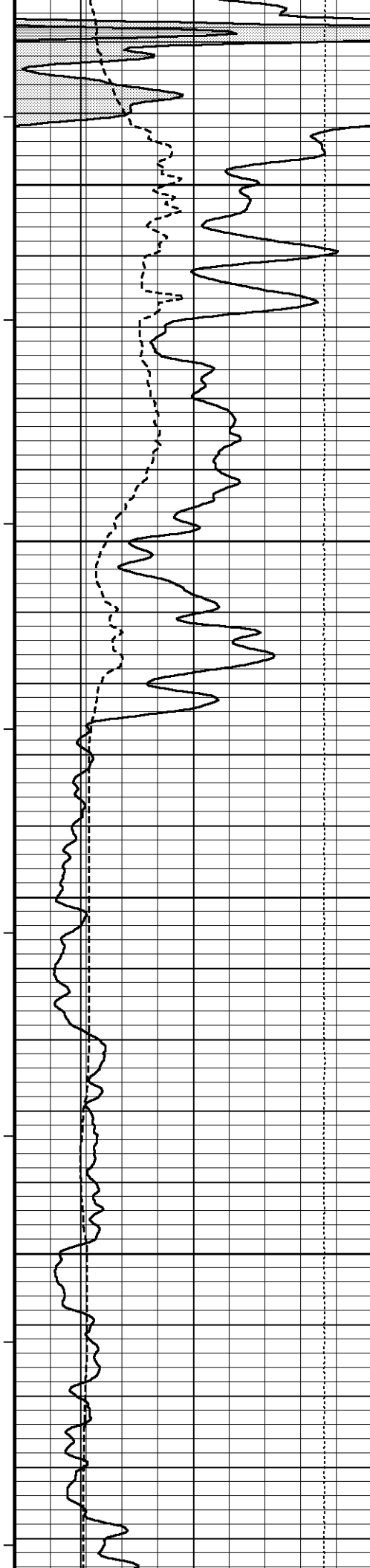
5 INCH MAIN

REPEAT SECTION

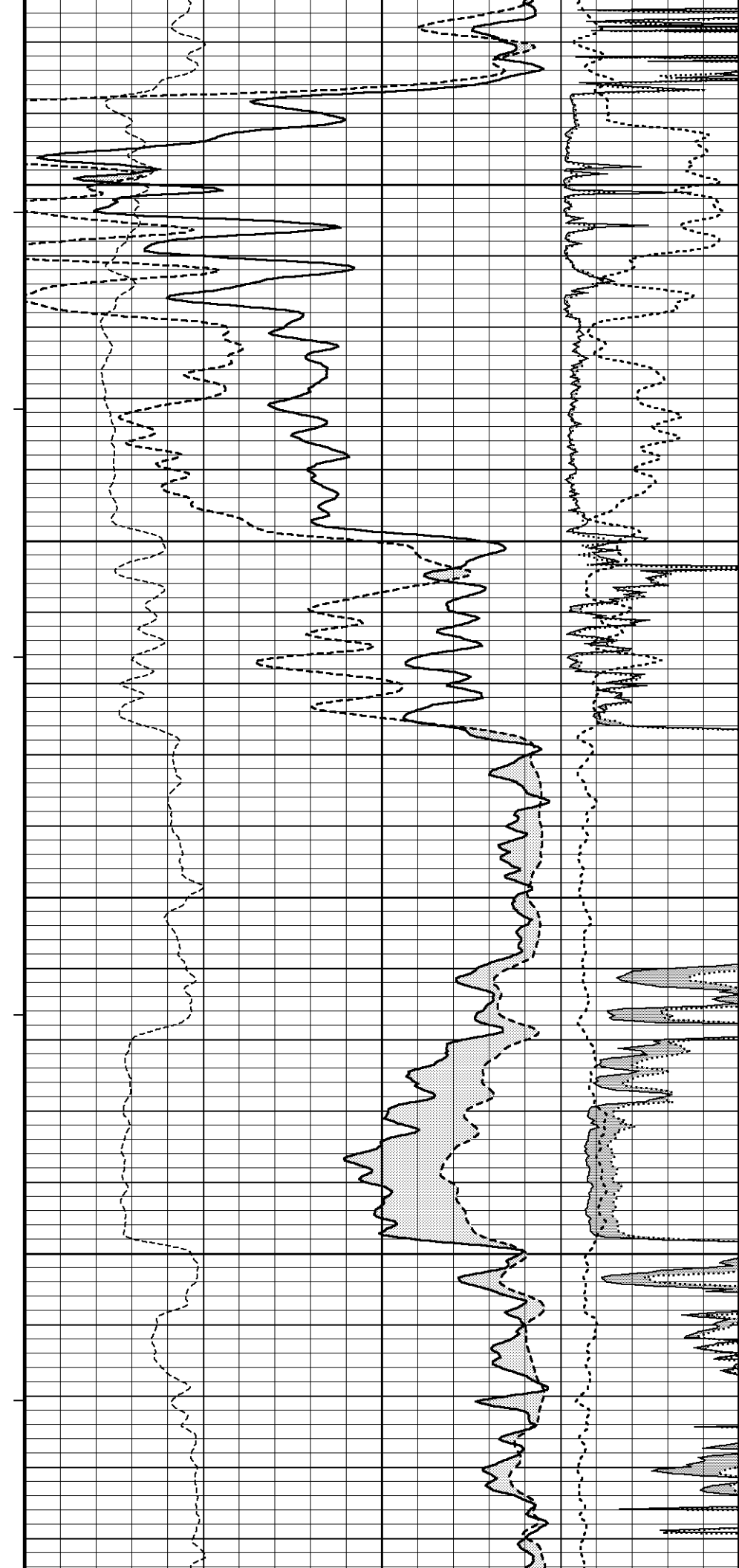
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 07-JUN-2011 03:30

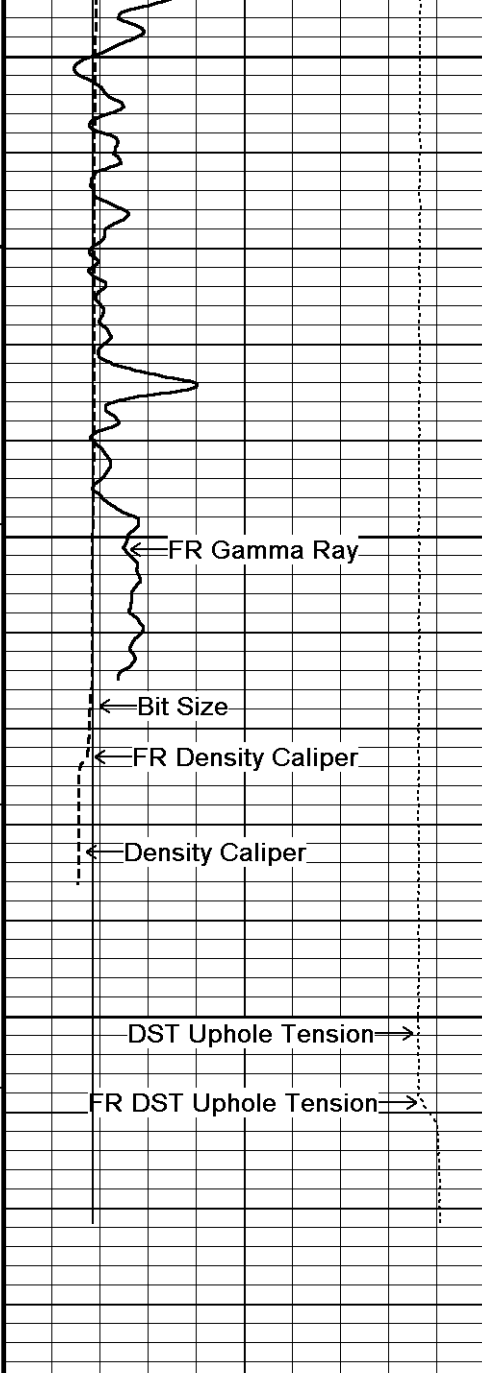






120°
4800
100
120°
4850
121°
4900
121°
4950
122°





122°

5100

5134

Depth
in
Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

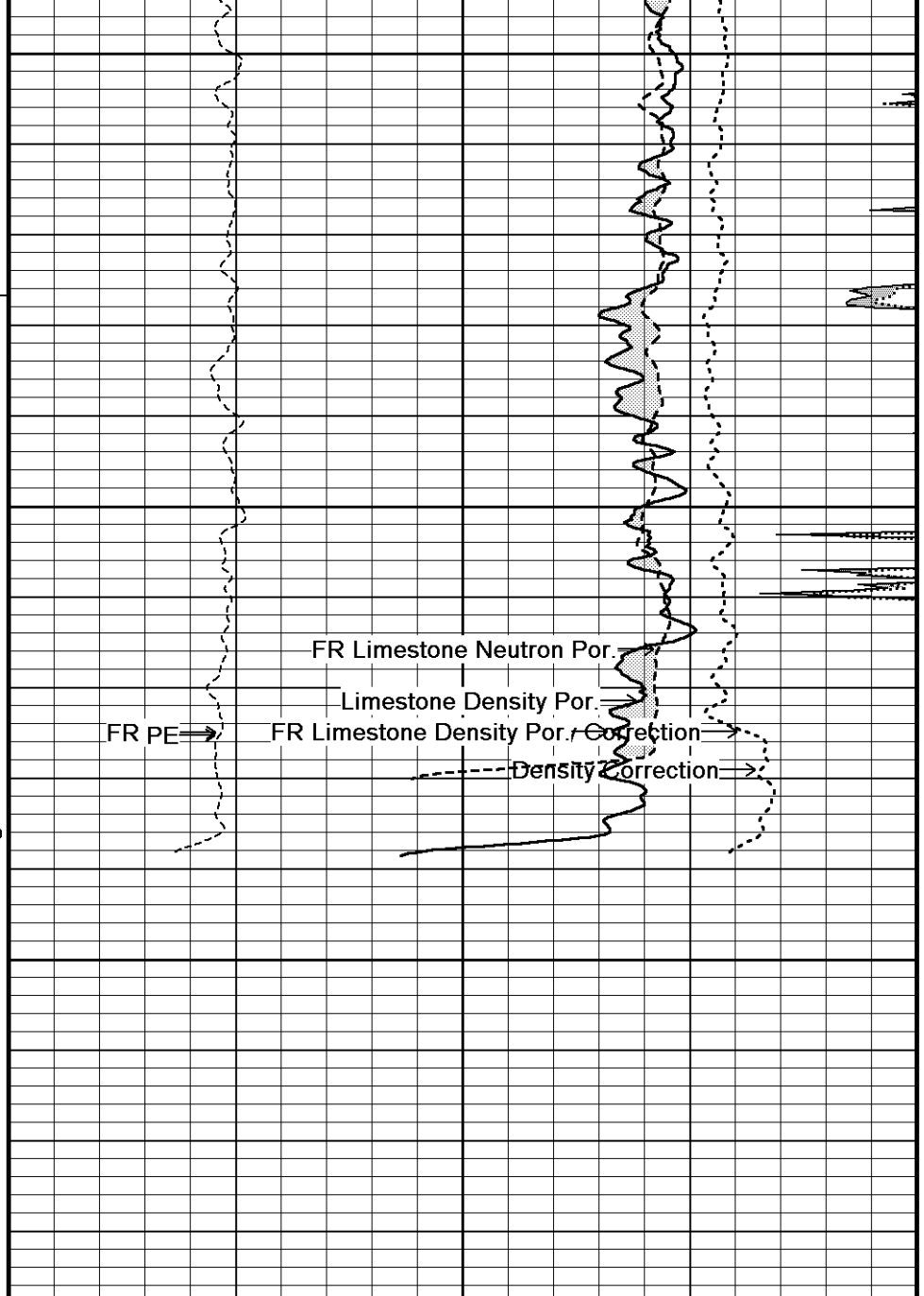
Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Borehole
Temp in
deg F

HVI
every
10 cu ft

Annular
Integral
every
10 cu ft



Limestone Neutron Por.
percent
30 20 10 0 -10

Limestone Density Por.
percent
30 20 10 0 -10

PE
barns/electron
0 5 10

Density Correction
grams/cc
-0.25 0 0.25

Micro-normal
ohm metres
0 10

DST Uphole Tension
pounds

50000

Replay
Scale
1:240

Micro-inverse
ohm metres

010

Depth Based Data - Maximum Sampling Increment 10.0cmPlotted on 07-JUN-2011 03:30
Filename: C:\Minimus 11.03.2789\Data\Comanche Bontrager 33-1\Comanche Bontrager 33-1_001.dtaRecorded on 06-JUN-2011 23:32
System Versions: Logged with 11.03.2789 Plotted with 11.03.2789

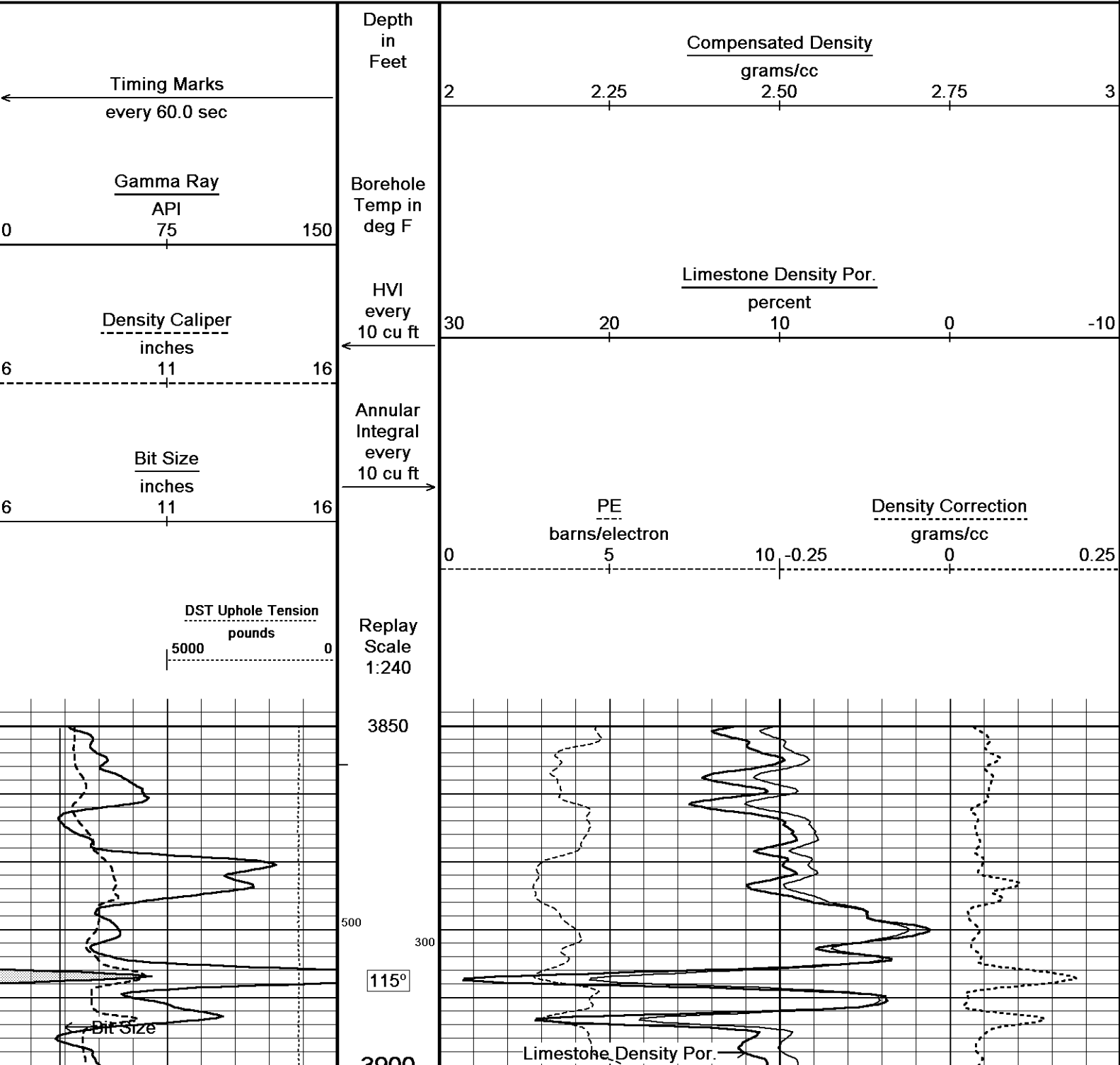
↑REPEAT SECTION↑

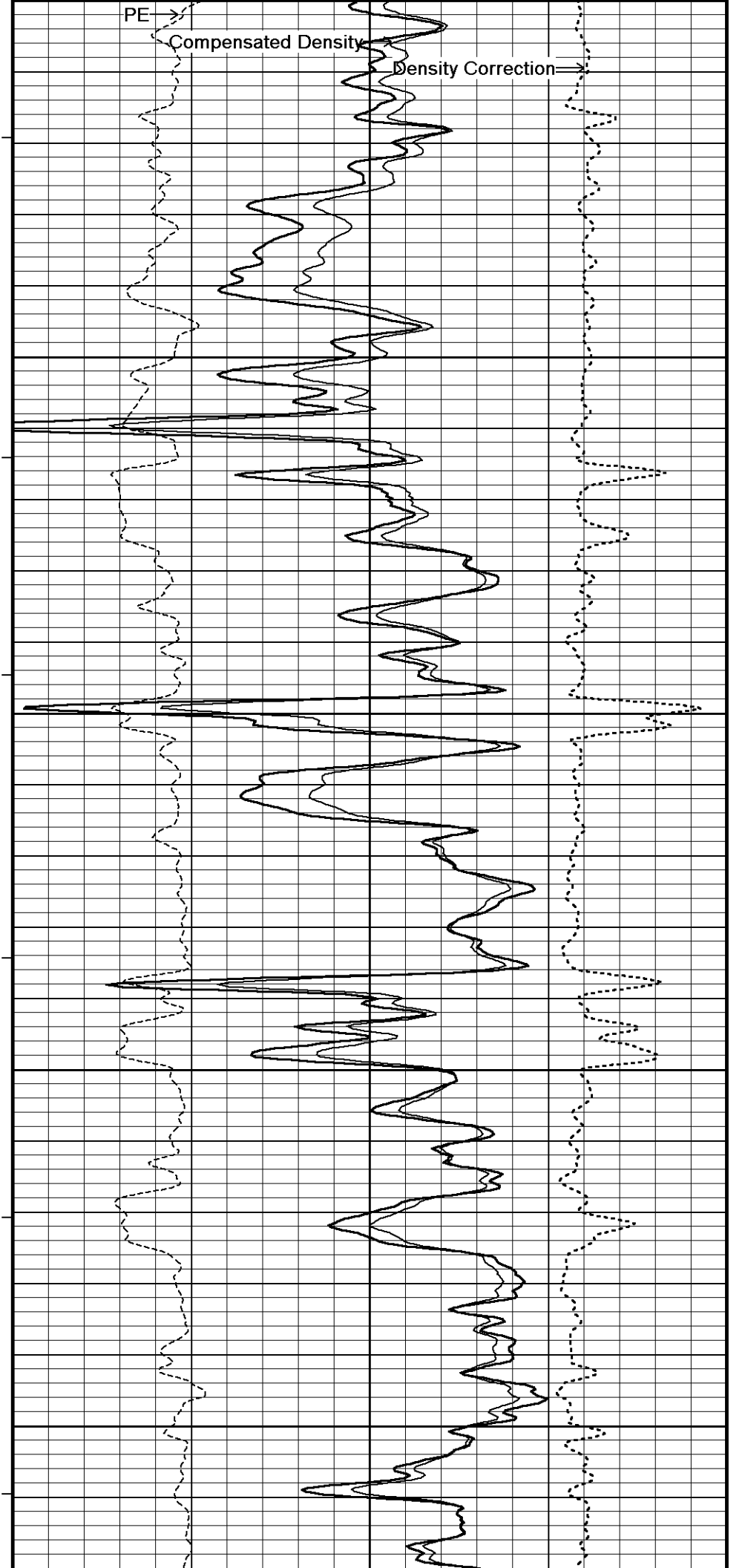
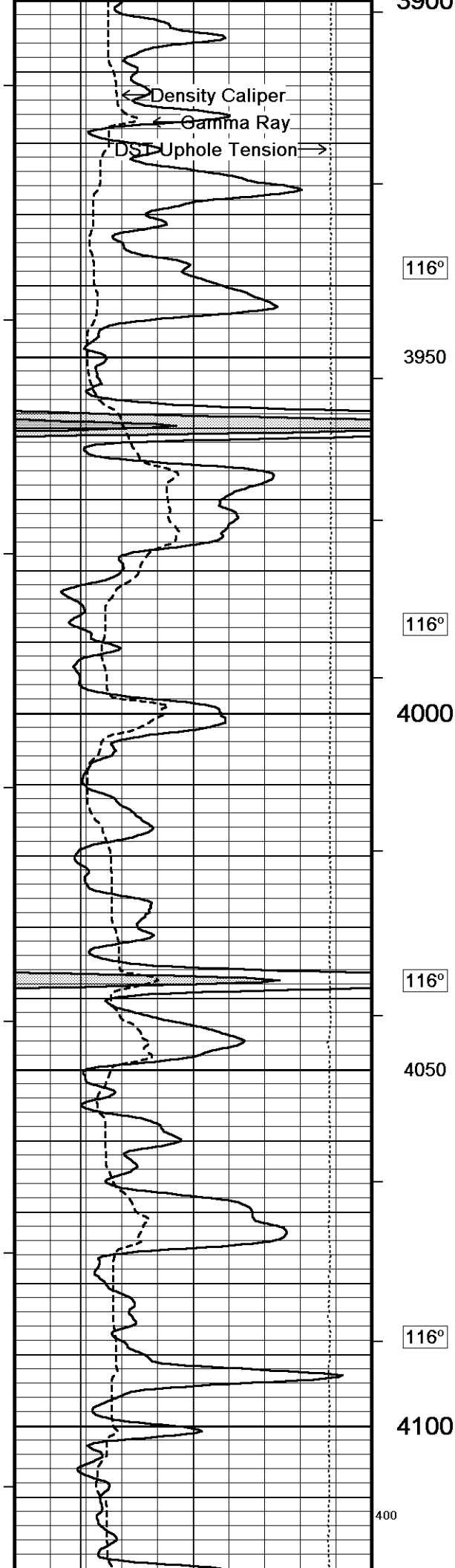
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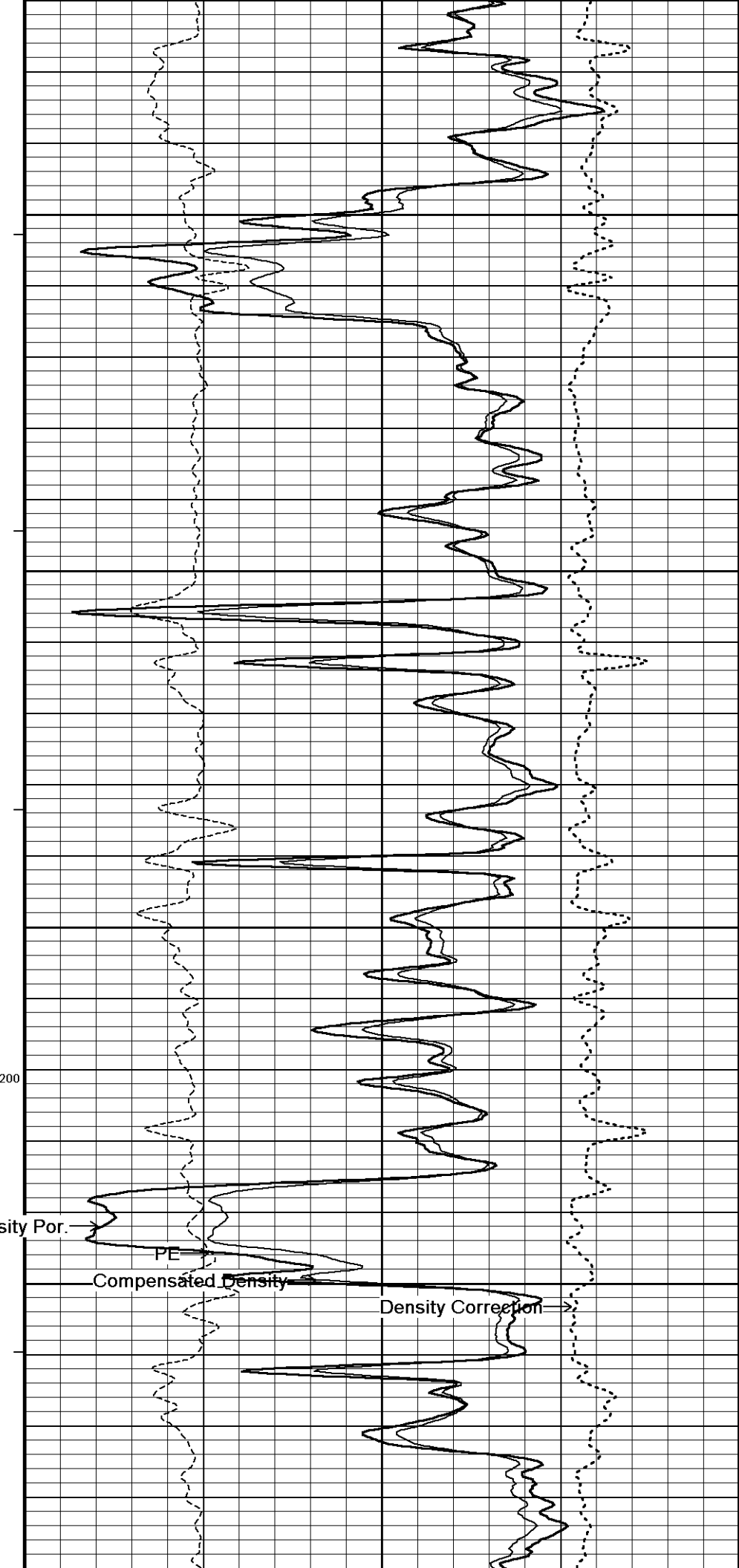
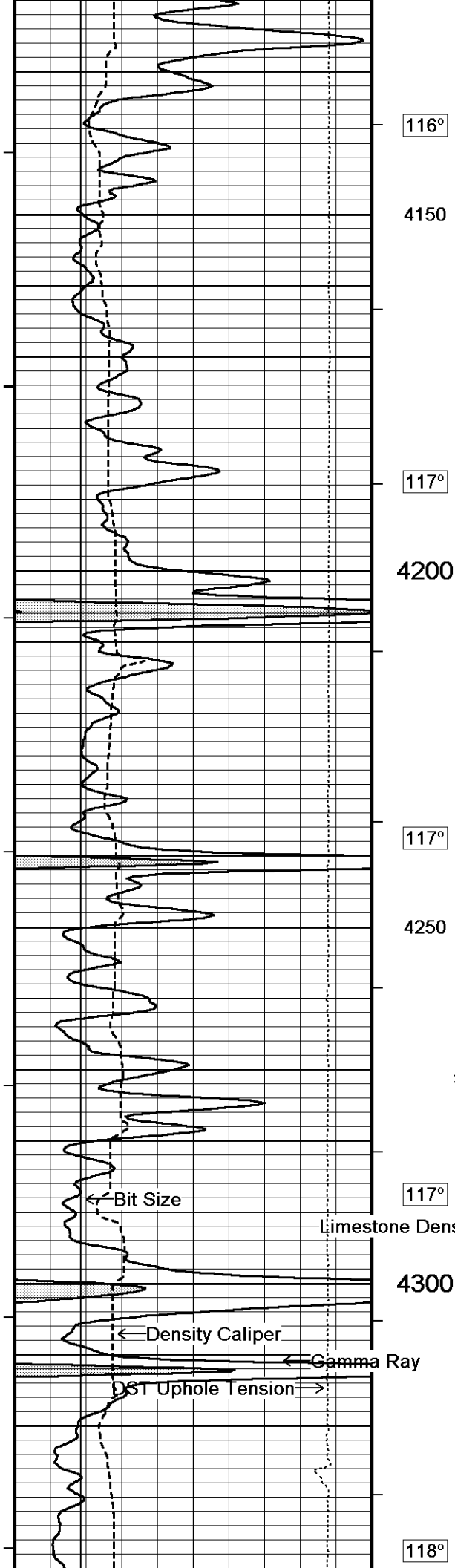
5 INCH MAIN

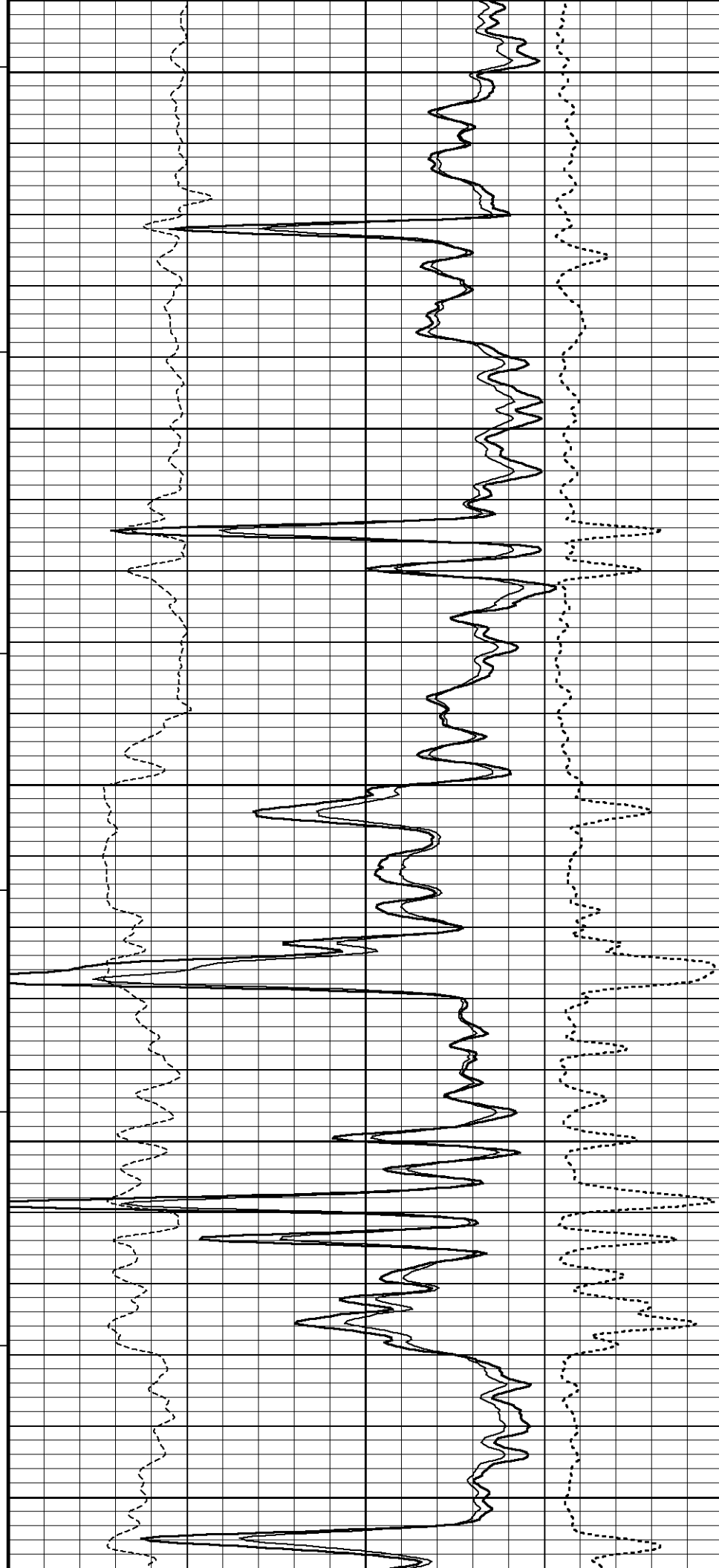
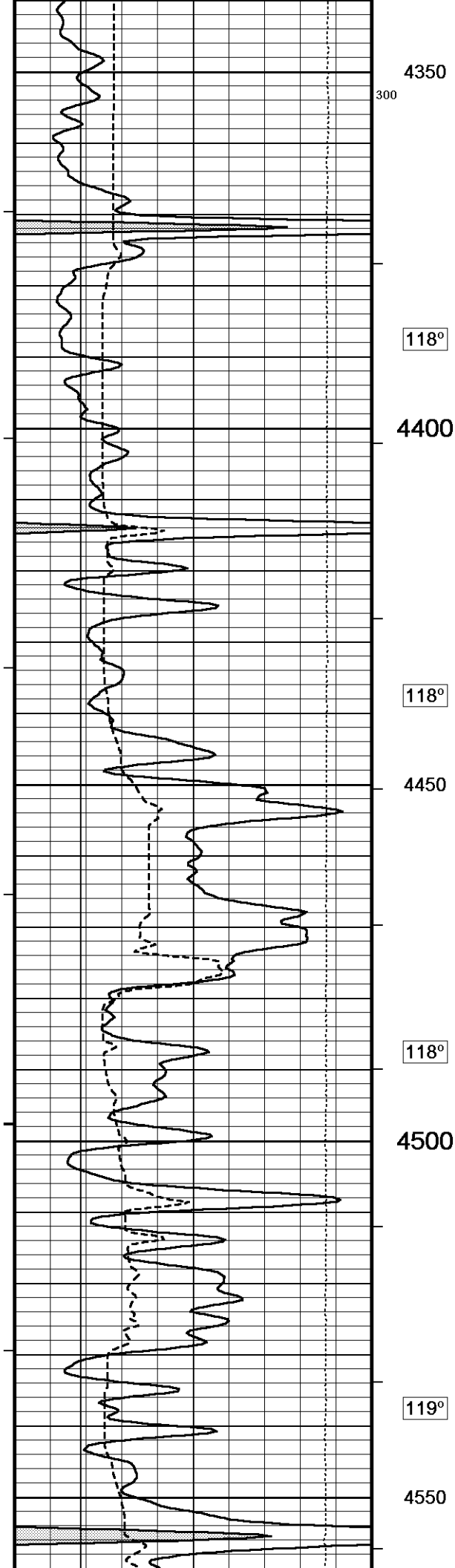
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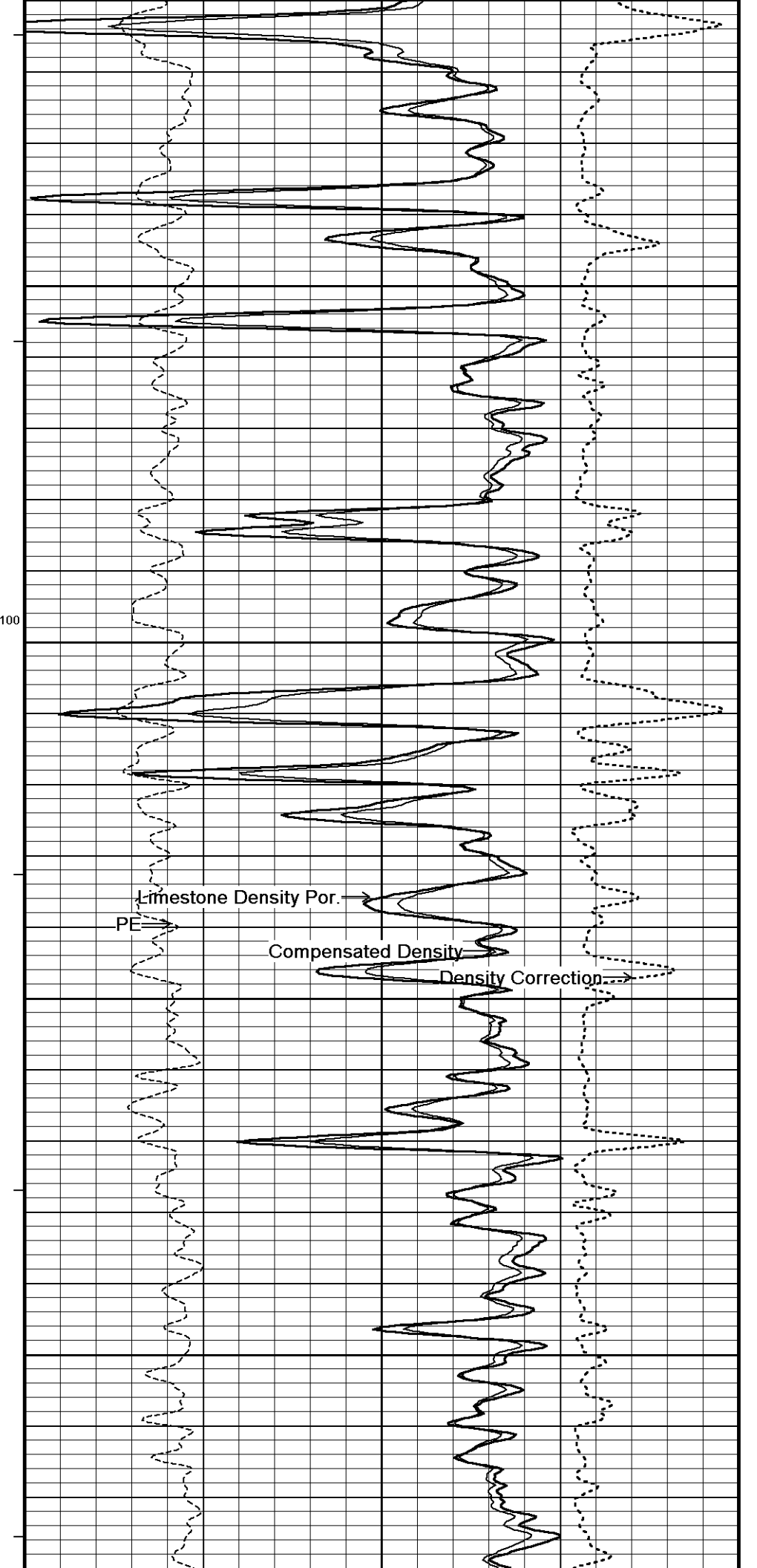
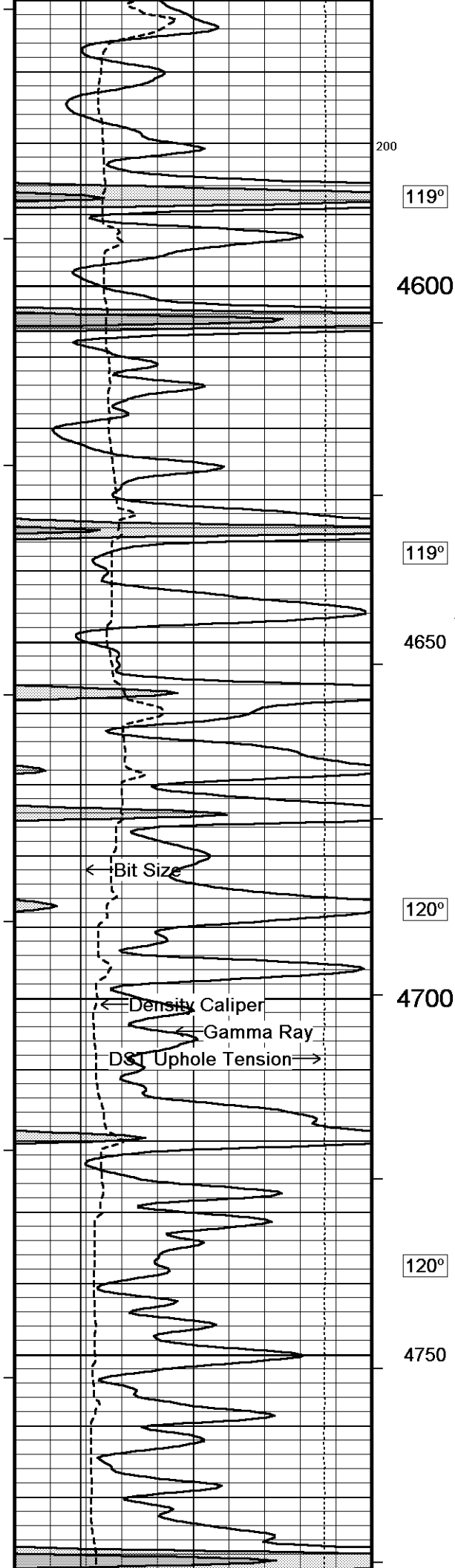
Depth Based Data - Maximum Sampling Increment 10.0cmPlotted on 07-JUN-2011 03:30
Filename: C:\Minimus 11.03.2789\Data\Comanche Bontrager 33-1\Comanche Bontrager 33-1_002.dtaRecorded on 07-JUN-2011 00:07
System Versions: Logged with 11.03.2789 Plotted with 11.03.2789

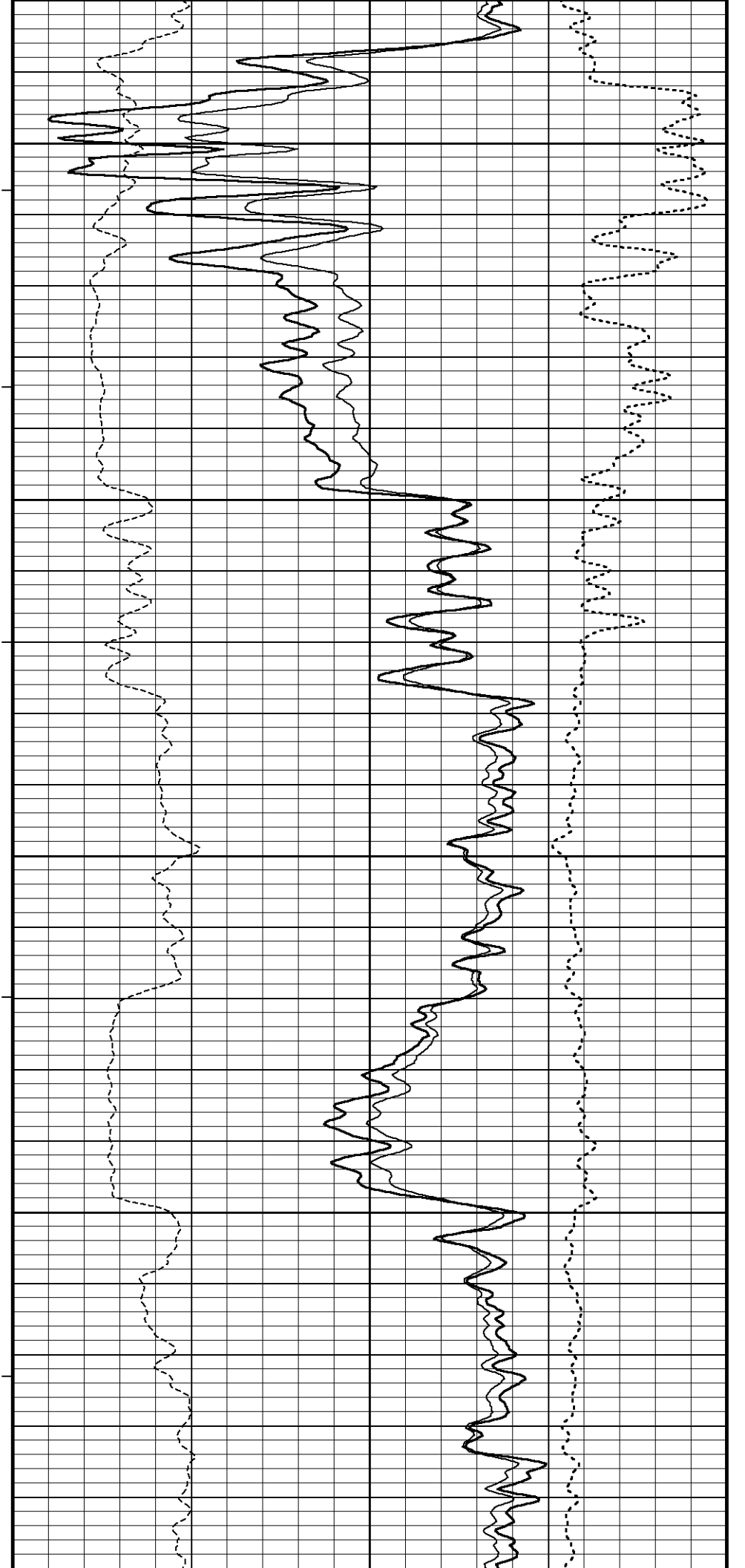
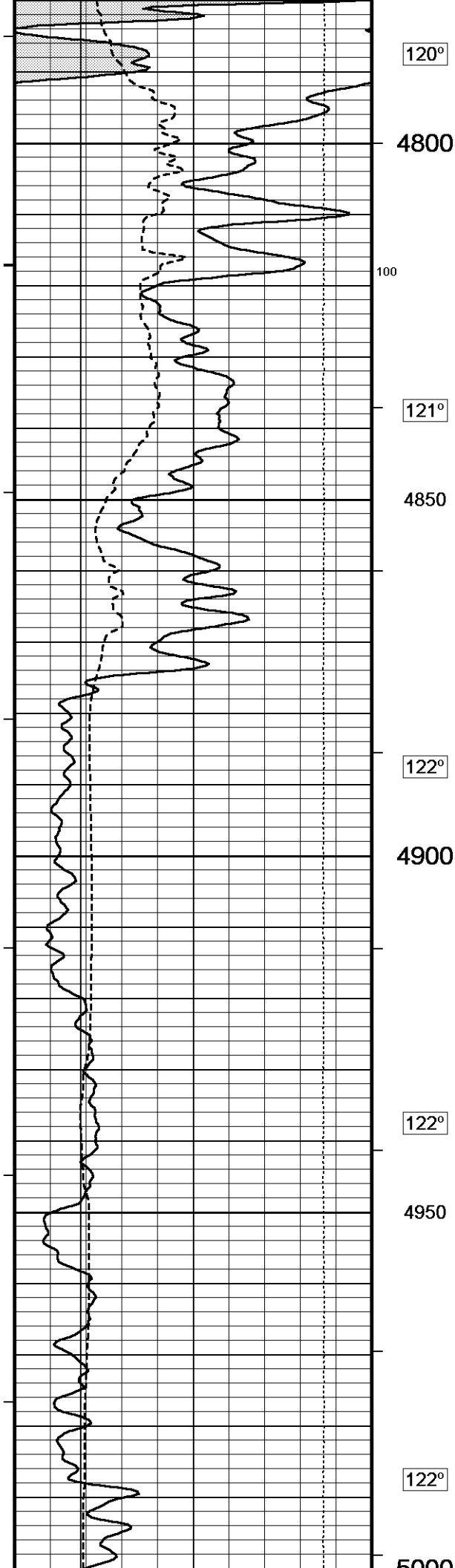


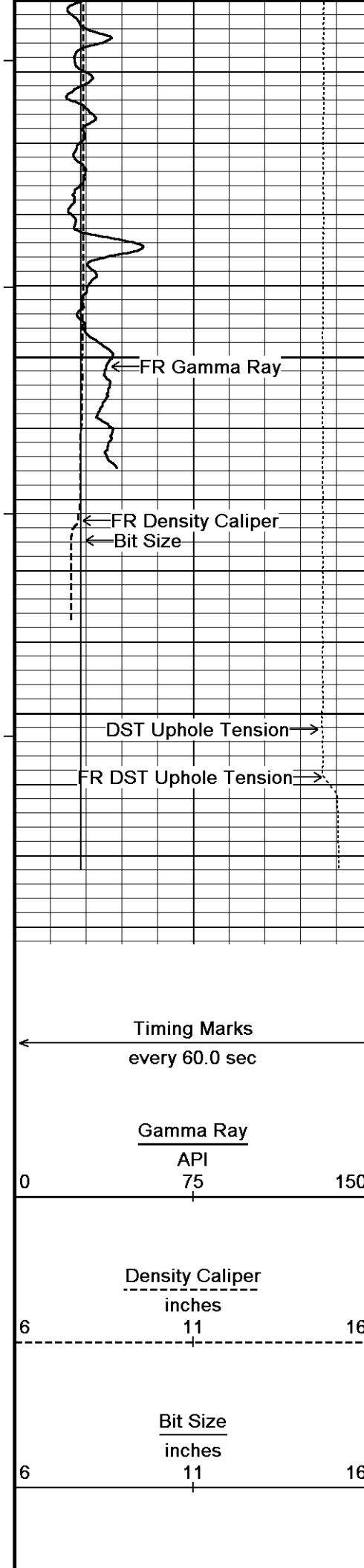












122°

FR Gamma Ray

FR Density Caliper

Bit Size

DST Uphole Tension

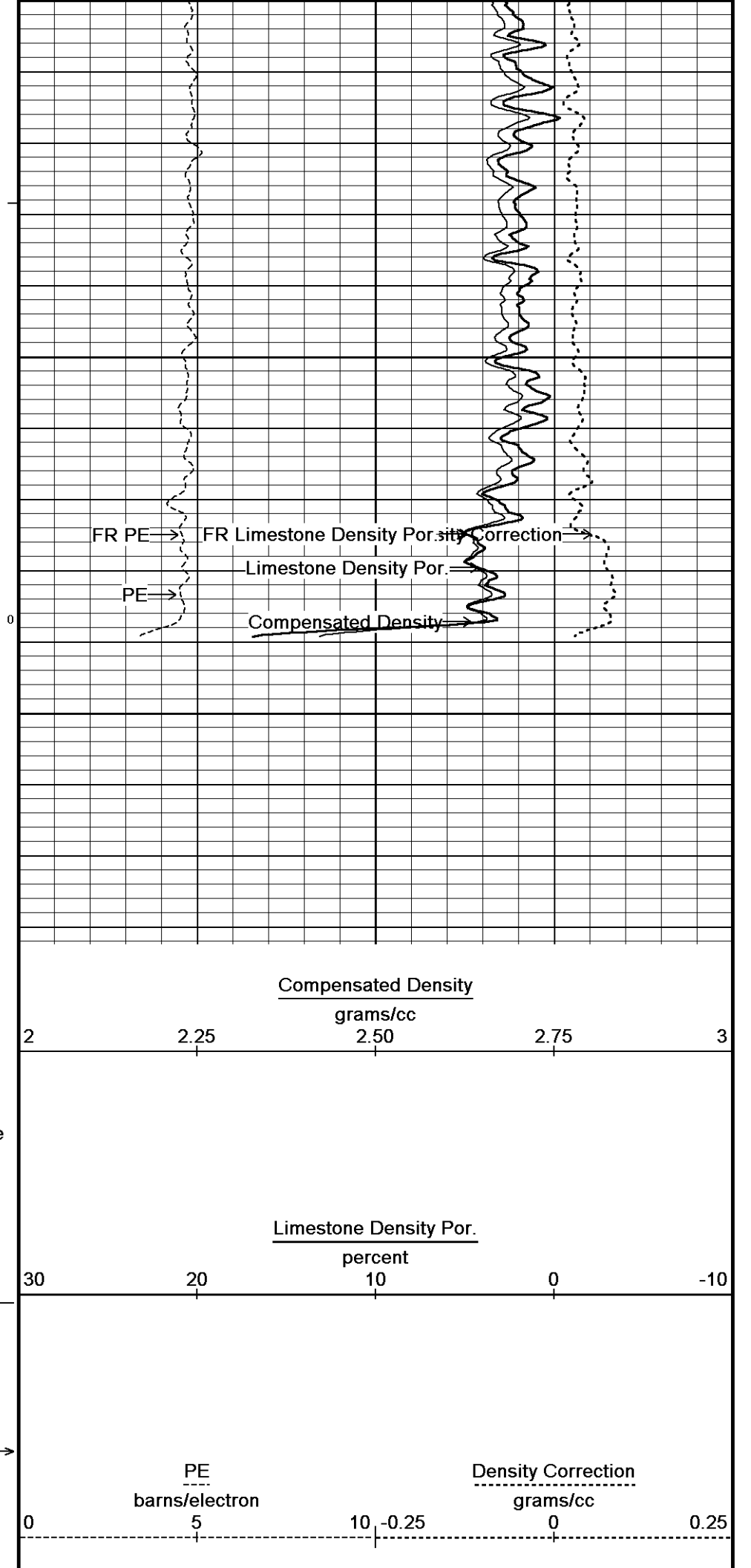
FR DST Uphole Tension

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft



DST Uphole Tension
pounds

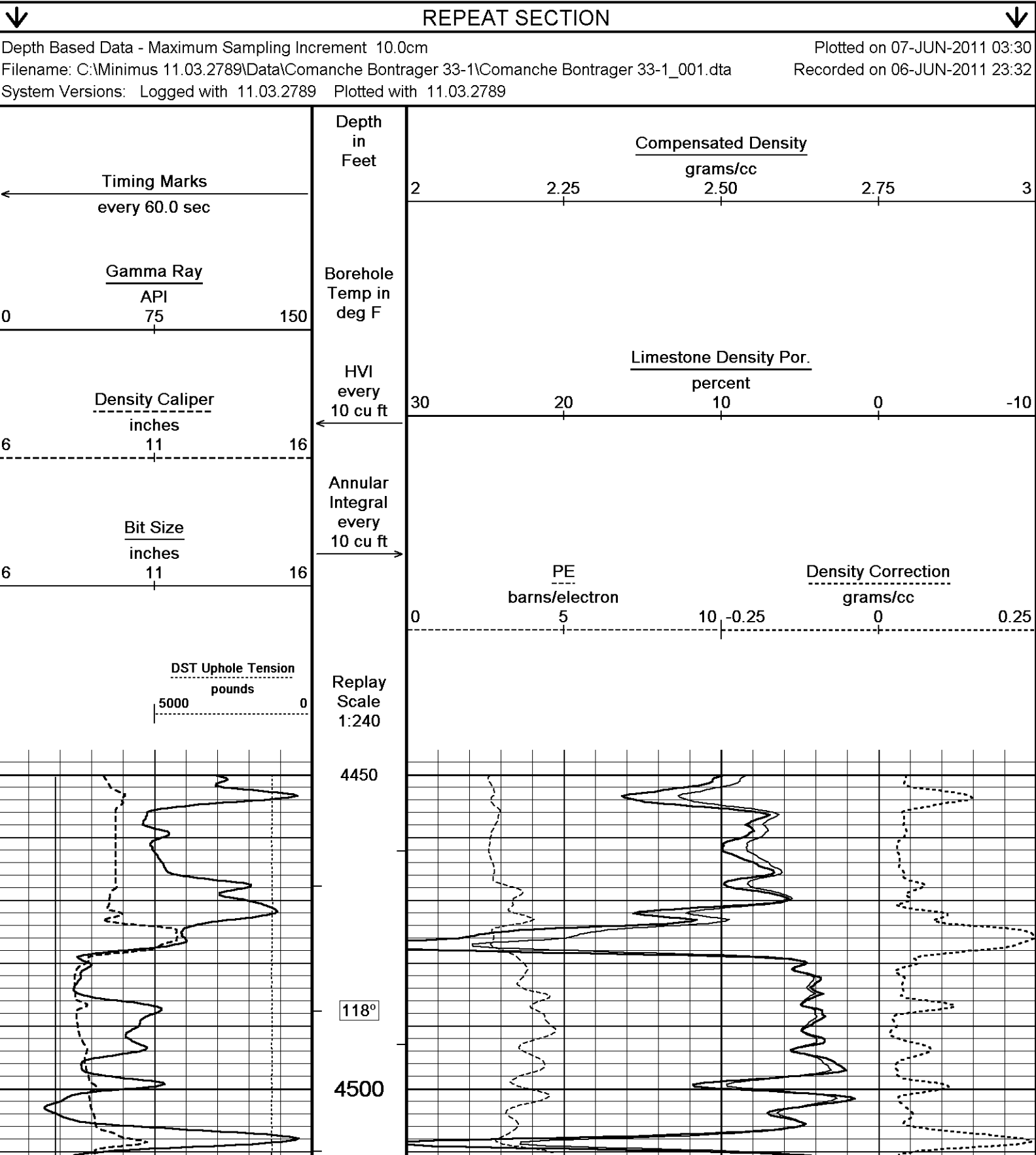
50000

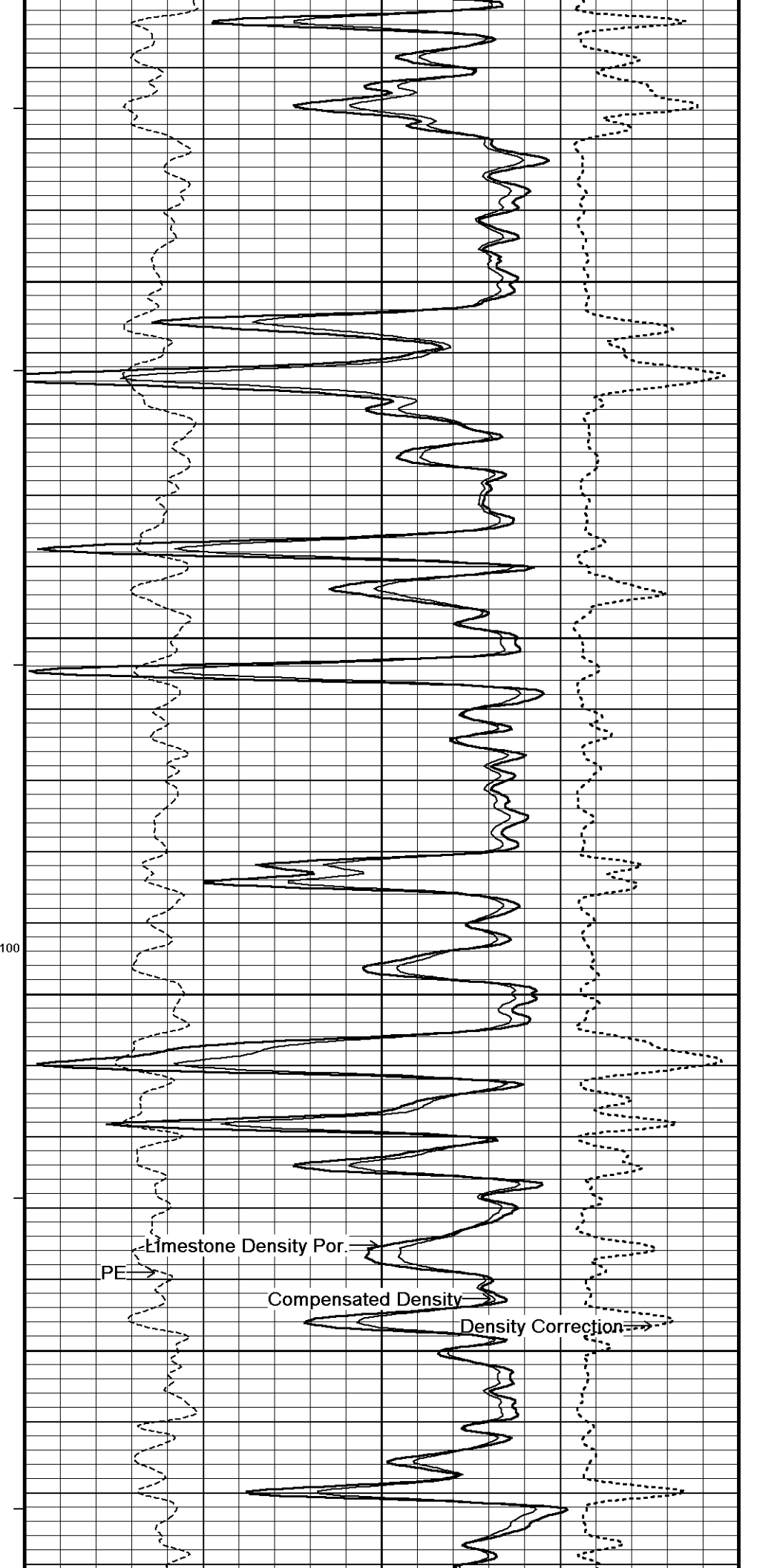
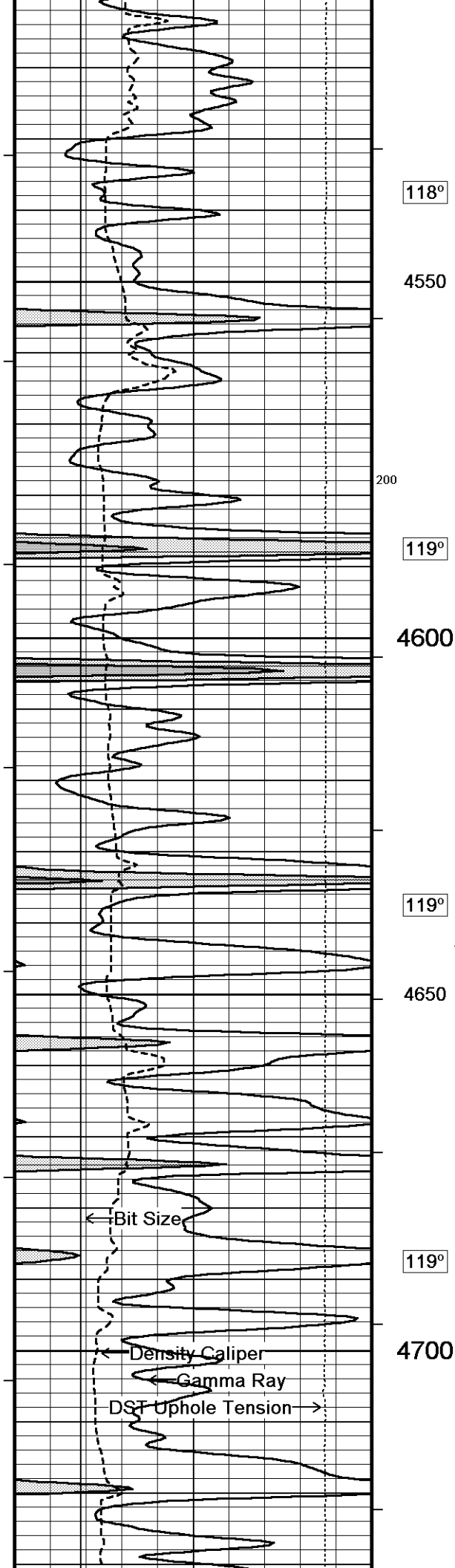
Replay
Scale
1:240

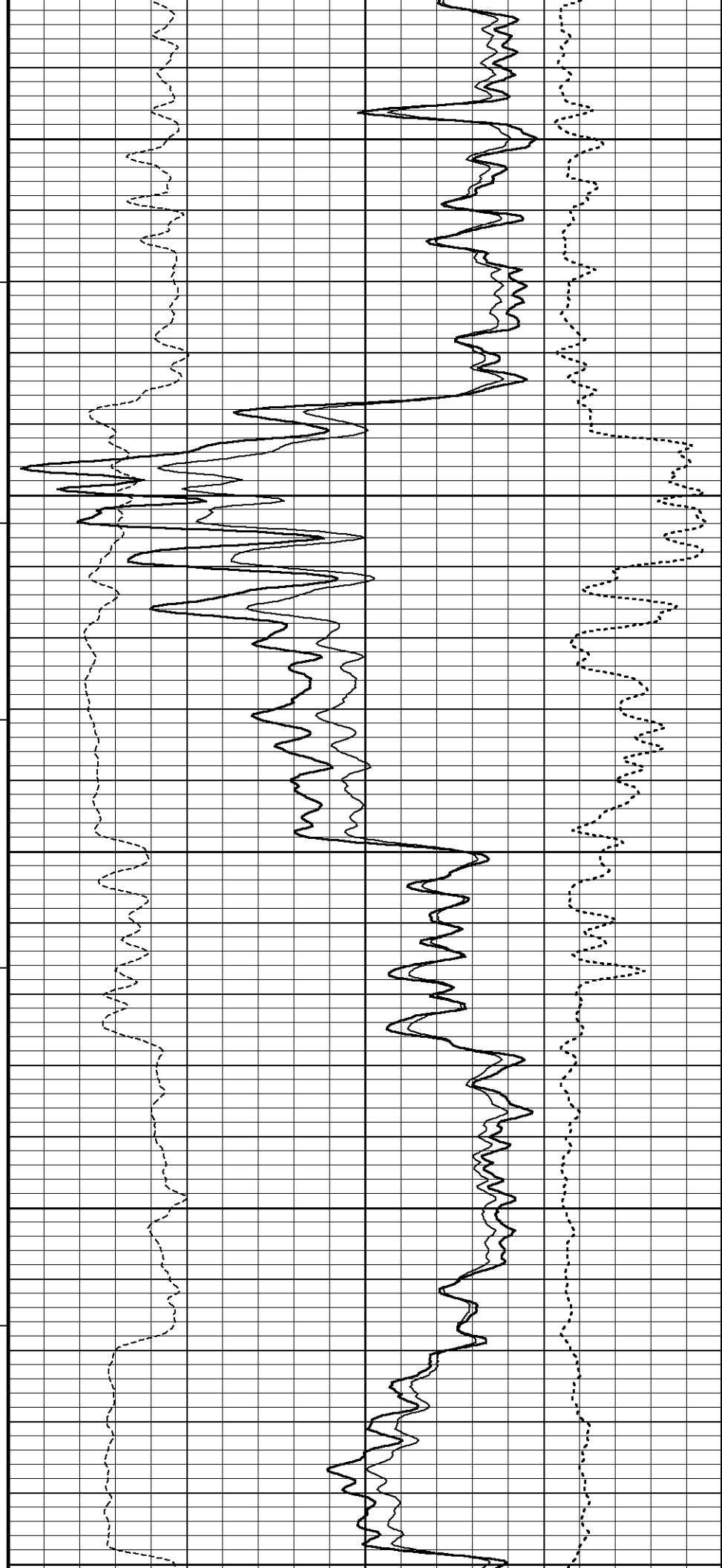
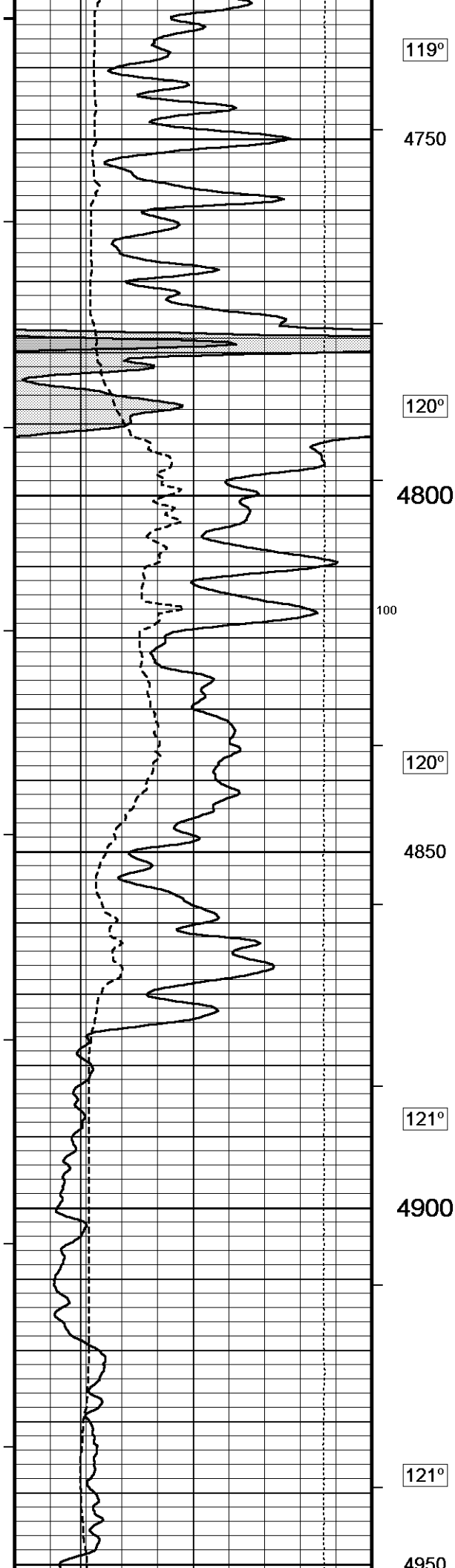
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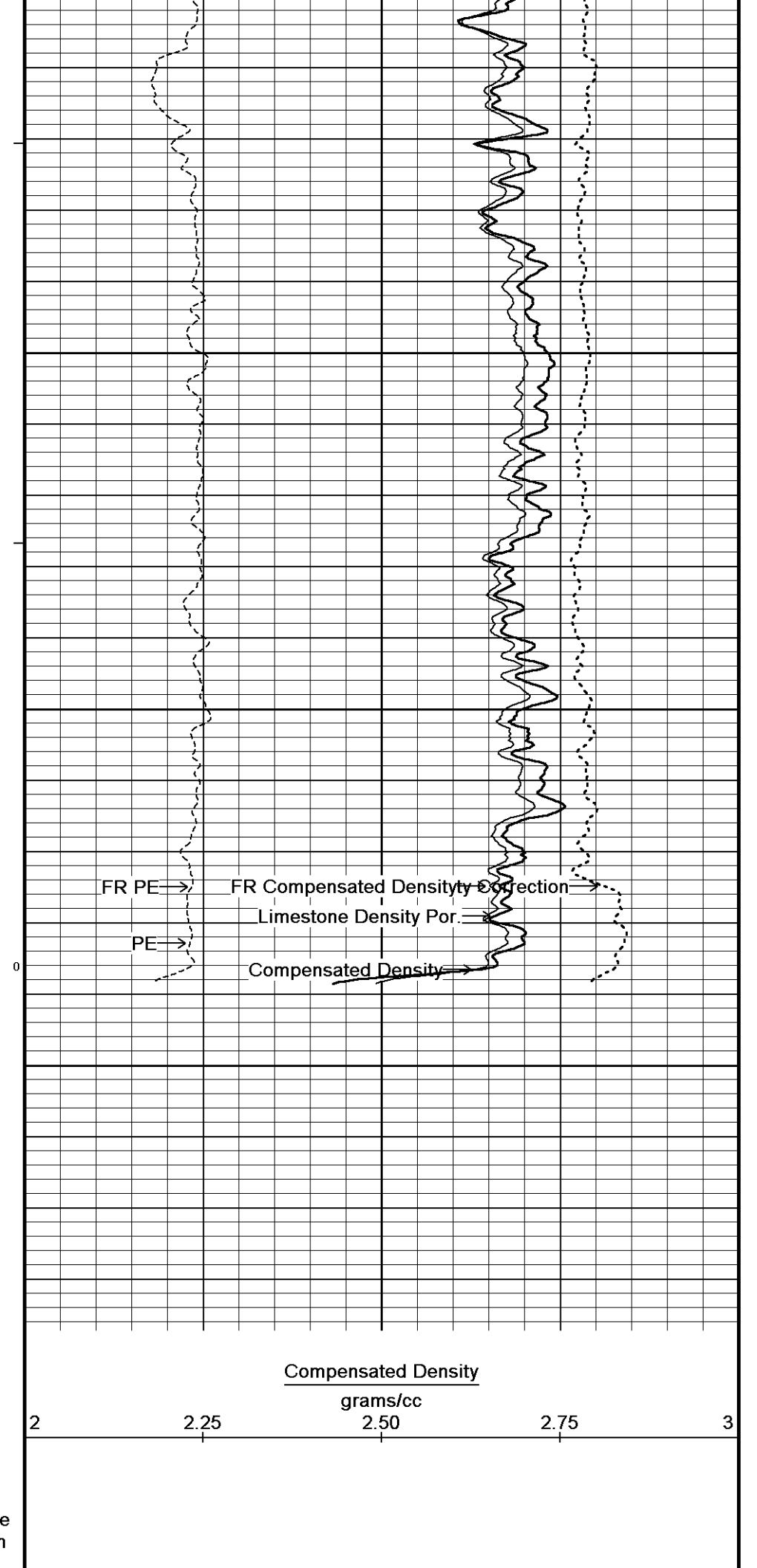
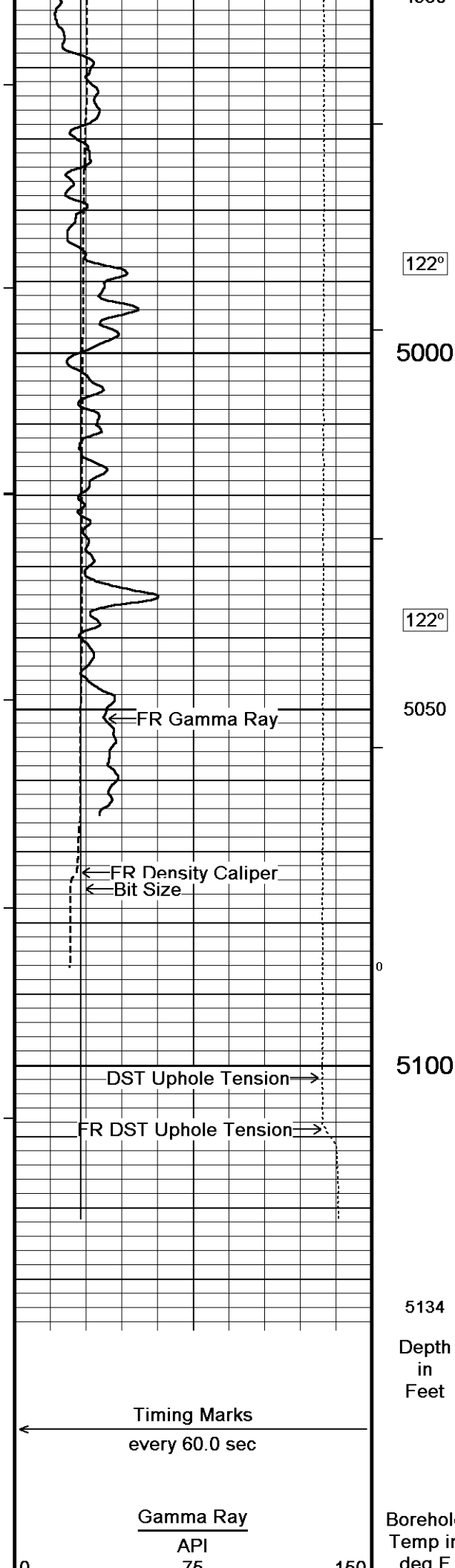
Plotted on 07-JUN-2011 03:30
Recorded on 07-JUN-2011 00:07

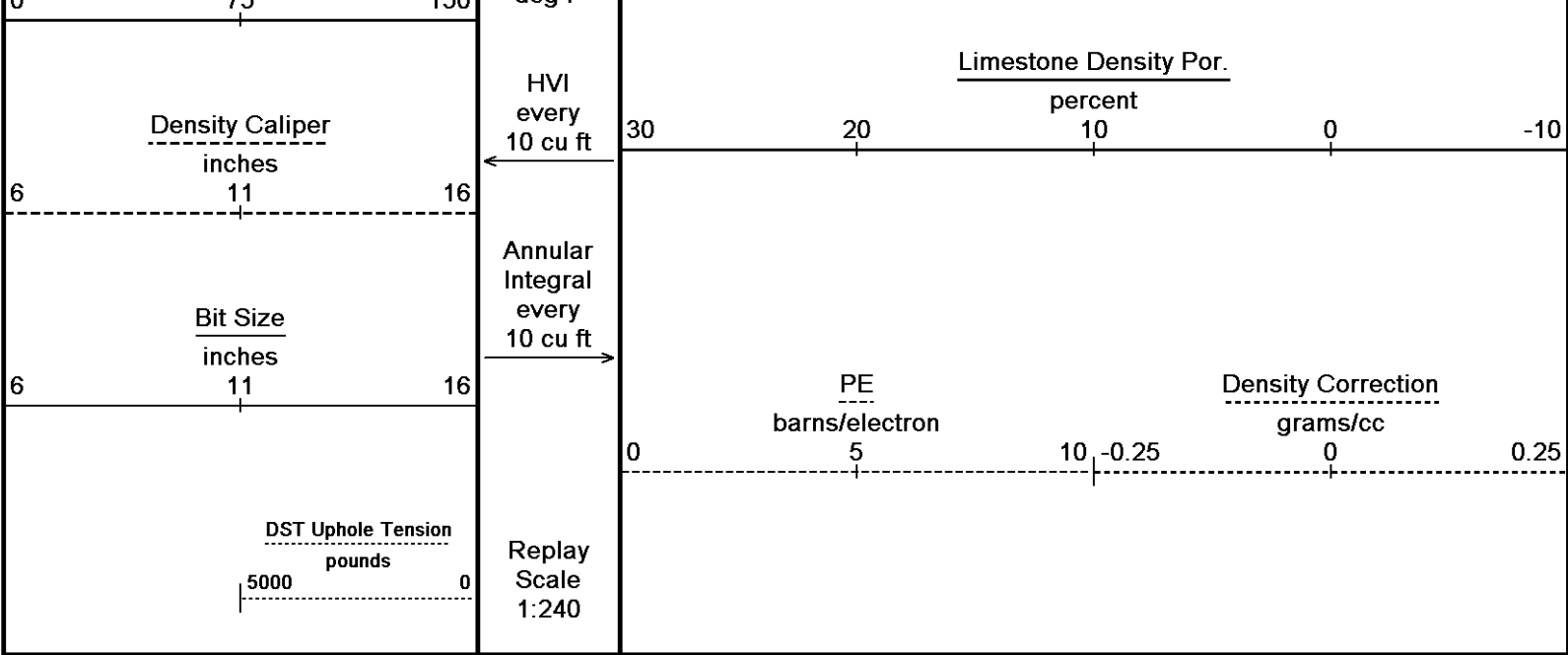
↑5 INCH MAIN↑











Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 07-JUN-2011 03:30
Filename: C:\Minimus 11.03.2789\Data\Comanche Bontrager 33-1\Comanche Bontrager 33-1_001.dta
Recorded on 06-JUN-2011 23:32
System Versions: Logged with 11.03.2789 Plotted with 11.03.2789

↑ REPEAT SECTION ↑

BEFORE SURVEY CALIBRATION
C:\Minimus 11.03.2789\Data\Comanche Bontrager 33-1\Comanche Bontrager 33-1.dta

General Constants All 000			Last Edited on 06-JUN-2011,22:19	
General Parameters				
Mud Resistivity	0.730	ohm-metres		
Mud Resistivity Temperature	88.000	degrees F		
Water Level	0.000	feet		
Density/Neutron Processing	Wet Hole			
Hole/Annular Volume and Differential Caliper Parameters				
HVOL Method	Single Caliper			
HVOL Caliper 1	Density Caliper			
HVOL Caliper 2	N/A			
Annular Volume Diameter	5.500	inches		
Caliper for Differential Caliper	None			
Rwa Parameters				
Porosity used	Base Density Porosity			
Resistivity used	Array Ind. One Res Rt			
RWA Constant A	0.610			
RWA Constant M	2.150			

Down-hole Tension Calibration All 000			Field Calibration on 30-JUN-2010
Reading No	Measured	Calibrated (lbs)	
1	14112.01	10.00	
2	15164.79	427.00	

Down-hole Tension Calibration SMS 0			Field Calibration on 30-JUN-2010
Reading No	Measured	Calibrated (lbs)	
1	14112.01	10.00	
2	15164.79	427.00	

High Resolution Temperature Calibration MCG-C 139			Field Calibration on 03-SEP-2010,11:23
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	75.00	75.00	

High Resolution Temperature Constants MCG-C 139 Last Edited on

Pre-filter Length

11

SP Calibration MCG-C 139

Field Calibration on 04-MAR-2011 06:37

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

Gamma Calibration MCG-C 139

Field Calibration on 06-JUN-2011 19:22

	Measured	Calibrated (API)
Background	67	46
Calibrator (Gross)	1134	771
Calibrator (Net)	1067	725

Gamma Constants MCG-C 139

Last Edited on 11-APR-2011,15:01

Gamma Calibrator Number	grc38	
Mud Density	1.10	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Micro Normal and Micro Inverse Calibration MML-A 16

Base Calibration on 11-MAR-2011 11:10

Field Check on 06-JUN-2011 19:13

Base Calibration

		Measured	Calibrated (ohm-m)
Channel	Resistor 1	Resistor 2	Resistor 1 Resistor 2
Micro Normal	12.2	60.2	2.6 12.8
Micro Inverse	15.6	78.3	1.7 8.4

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	32.1	32.1
Micro Inverse	16.3	16.3

Micro Normal and Micro Inverse Constants MML-A 16

Last Edited on 11-APR-2011,09:08

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

Caliper Calibration MML-A 16

Base Calibration on 11-MAR-2011 11:20

Field Calibration on 06-JUN-2011 19:12

Base Calibration

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

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.00	5.98

Neutron Calibration MDN-A.B 66

Base Calibration on 11-MAR-2011 13:54

Field Check on 06-JUN-2011 19:17

Base Calibration

	Measured	Calibrated (cps)
	Near Far	Near Far
Ratio	3091 97	3714 110
	31.957	33.764

Field Calibrator at Base

Calibrated (cps)
1660 2371
Ratio 0.700

Field Check

Calibrated (cps)
1682 2409
Ratio 0.698

Neutron Source Id	P58125B	
Neutron Jig Number	5824NE	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.10	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 52

Base Calibration on 11-MAR-2011 10:55

Field Check on 06-JUN-2011 19:04

Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	965.7	126.8
Base Check		279.9
Field Check		279.7

FE Constants MFE-A.A 52

Last Edited on 06-JUN-2011,22:20

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-A.A 40

Last Edited on

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	0.0000
Peak Amplitude Source		0

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 (m)
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	0	
4' Waveform Filter	0	
5' Waveform Filter	0	
6' Waveform Filter	0	
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 167

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

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

High Resolution Temperature Constants MAI-A.A 167

Last Edited on

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

Base Calibration on 11-MAR-2011,09:58
Field Check on 06-JUN-2011 19:29

Base Calibration

Test Loop Calibration	Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High
1	17.3	474.2	9.3	966.2
2	6.3	388.4	7.6	821.4
3	3.3	259.4	5.2	566.0
4	1.9	133.0	2.6	279.2

Array Temperature	76.8	Deg F
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Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	14.0	3836.6
2	0.0	0.0	29.7	3474.1
3	0.0	0.0	29.1	3050.3
4	0.0	0.0	19.7	2079.6
Deep	0.0	0.0	18.6	2046.9
Medium	0.0	0.0	42.1	3987.8
Shallow	0.0	0.0	43.3	5050.4

Array Temperature	0.0	89.1	Deg F
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Induction Constants MAI-A.A 167

Last Edited on 06-JUN-2011,22:20

Induction Model	RtAP-WBM
Caliper for Borehole Corr.	Density Caliper
Hole Size for Borehole Correction	N/A
Tool Centred	No
Stand-off Type	Fins
Stand-off	0.50
Number of Fins on Stand-off	8.0000

Stand-off Fin Angle		45.00	degrees
Stand-off Fin Width		0.5000	inches
Borehole Corr. Rm Source		Temperature Corr	
Temp. for Rm Corr.		MCG External Temperature	
Squasher Start		0.0020	mhos/metre
Squasher Offset		N/A	mhos/metre
Borehole Normalisation			
DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000
Calibration Site Corrections			
Channel 1		0.00	mmhos/metre
Channel 2		0.00	mmhos/metre
Channel 3		0.00	mmhos/metre
Channel 4		0.00	mmhos/metre
Apparent Porosity and Water Saturation Constants			
Archie Constant (A)		1.00	
Cementation Exponent (M)		2.00	
Saturation Exponent (N)		2.00	
Saturation of Water for Apor		100.00	percent
Resistivity of Water for Apor and Sw		0.05	ohm-m
Resistivity of Mud Filtrate for Sw		0.00	ohm-m
Source for Rt		0.00	
Source for Rxo		0.00	

Caliper Calibration MPD-B 35

Base Calibration on 11-MAR-2011 11:34
Field Calibration on 06-JUN-2011 19:06

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	17936	3.99
2	28079	5.98
3	38384	7.97
4	48048	9.86
5	59047	11.92
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	6.10	5.98

Photo Density Calibration MPD-B 35

Base Calibration on 11-MAR-2011 11:54
Field Check on 06-JUN-2011 19:11

Density Calibration				
Base Calibration				
		Measured	Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	57876	27553	59556	30836
Reference 2	23524	2615	24941	2541
Field Check at Base				
	1175.2	1398.5		
Field Check				
	1165.5	1389.2		
PE Calibration				
Base Calibration				
	WS	Measured	Calibrated	
		WH	Ratio	Ratio
Background	211	1039		
Reference 1	21426	57673	0.375	0.371
Reference 2	6234	23377	0.270	0.272
Field Check at Base				
	211.2	1039.0		
Field Check				

Density Constants MPD-B 35

Last Edited on 06-JUN-2011,22:13

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	1.10	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	
Matrix Density (gm/cc)	Depth (ft)	
2.71	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	

DOWNHOLE EQUIPMENT

C:\Minimus 11.03.2789\Data\Comanche Bontrager 33-1\Comanche Bontrager 33-1.dta

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

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

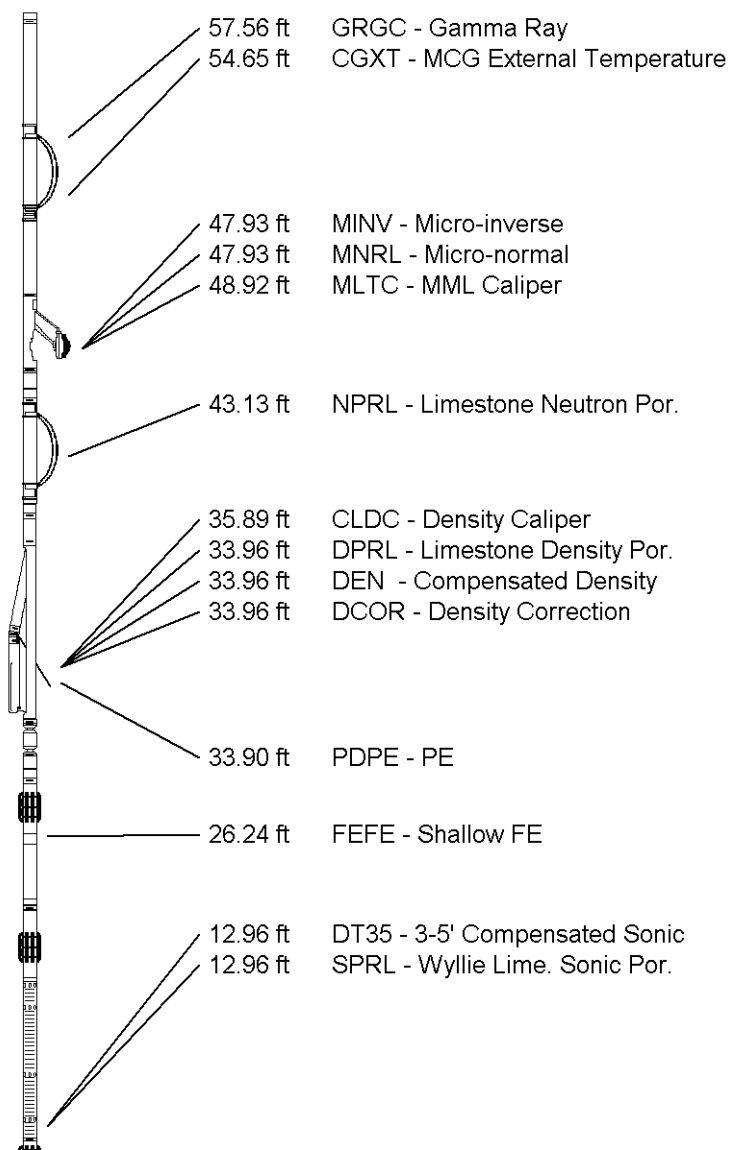
Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 35 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 36 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

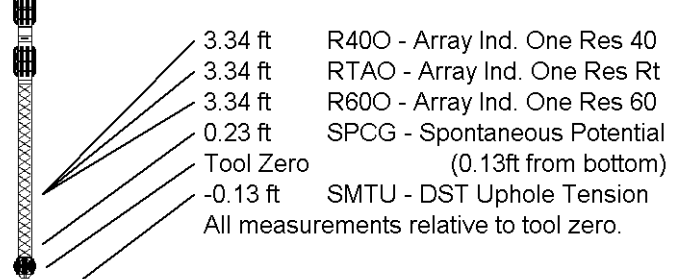
Compact Focussed Electric
MFE-A.A 52 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-A.A 40 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in



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

Total Length: 62.84 ft Weight: 480.6 lb



COMPANY	COMANCHE RESOURCES CO. LLC
WELL	BONTRAGER 33-1
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A./KANSAS

Elevation Kelly Bushing	3075.00	feet	First Reading	5075.00	feet
Elevation Drill Floor	3073.00	feet	Depth Driller	5104.00	feet
Elevation Ground Level	3064.00	feet	Depth Logger	5109.00	feet



Weatherford®

COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG

