



Weatherford

**COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG**

COMANCHE RESOURCES COMPANY

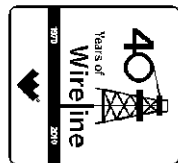
WELL EDER # 6-4

FIELD WILDCAT

PROVINCE/COUNTY SCOTT

COUNTRY/STATE U.S.A. / KANSAS

LOCATION 780' FSL & 920' FEL



SEC TWP RGE Other Services

6 20S 34W

API Number 15-171-20857

Permit Number

Permanent Datum G.L., Elevation 3070 feet

Log Measured From KB

Drilling Measured From K.B. @ 11 FEET

Elevations:
KB 3081.00
DF 3079.00
GL 3070.00

Date 03-JAN-2012

Run Number ONE

Depth Driller 5000.00

Depth Logger 5004.00

First Reading 4981.00

Last Reading 3900.00

Casing Driller 393.00

Casing Logger 394.00

Bit Size 7.875

Hole Fluid Type CHEMICAL

Density / Viscosity 9.10 lb/USg

PH / Fluid Loss 10.00

Sample Source FLOWLINE

Rm @ Measured Temp 0.80 @ 50.0

Rmf @ Measured Temp 0.64 @ 50.0

Rmc @ Measured Temp 0.96 @ 50.0

Source Rmf / Rmc CALC

Rm @ BHT 0.38 @ 111.0

Time Since Circulation 5 HOURS

Max Recorded Temp 111.00

Equipment Name COMPACT

Equipment / Base 13057

Recorded By A. GIAMBALVO

Witnessed By SEAN DEENIHAN

S.O. / JOB # 3531243

BOREHOLE RECORD

Last Edited: 04-JAN-2012 03:19

Bit Size
inches

7.875

Depth From
feet

394.00

Depth To
feet

5004.00

CASING RECORD

Type

Size
inches

8.625

Depth From
feet

11.00

Shoe Depth
feet

394.00

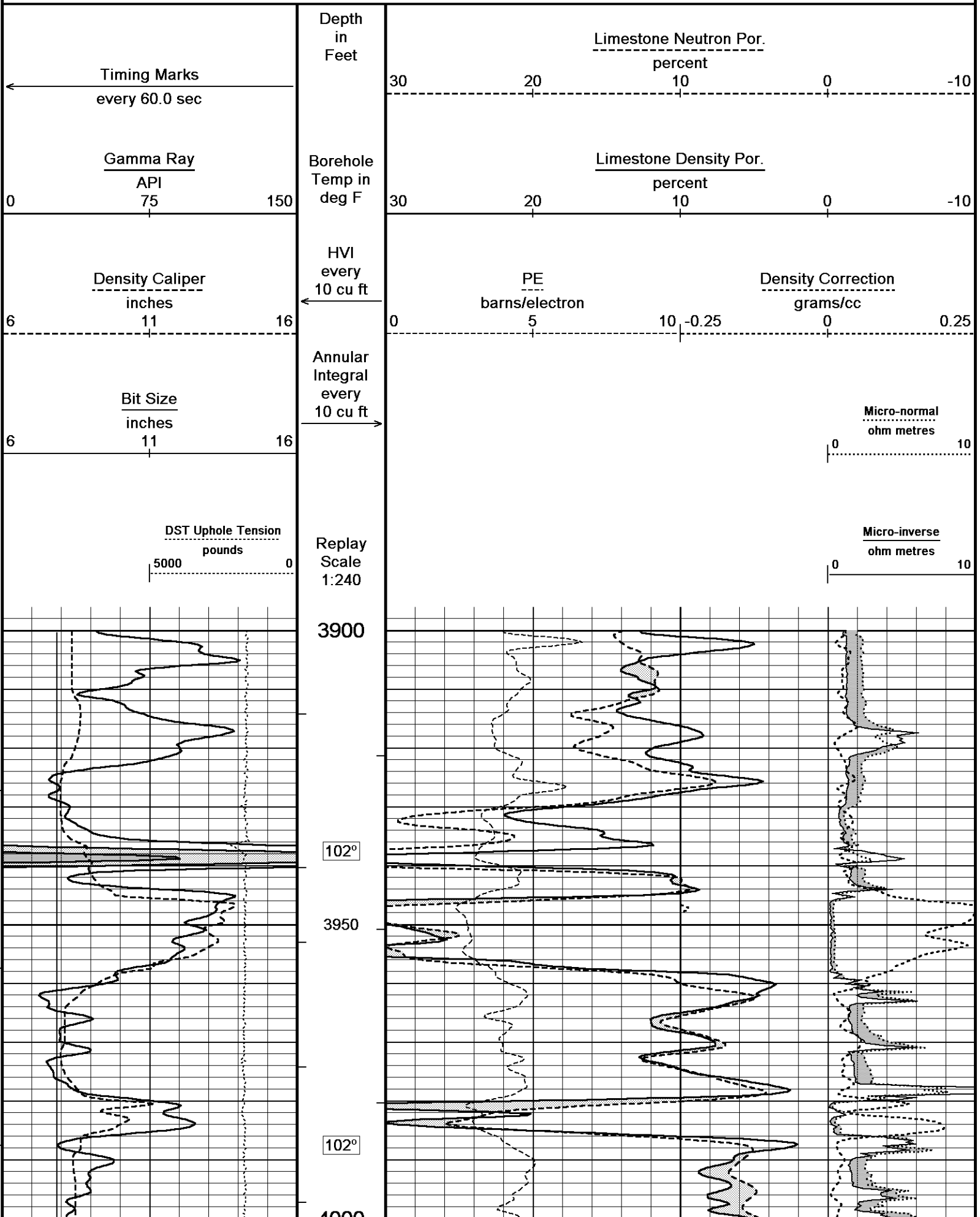
Weight
pounds/ft

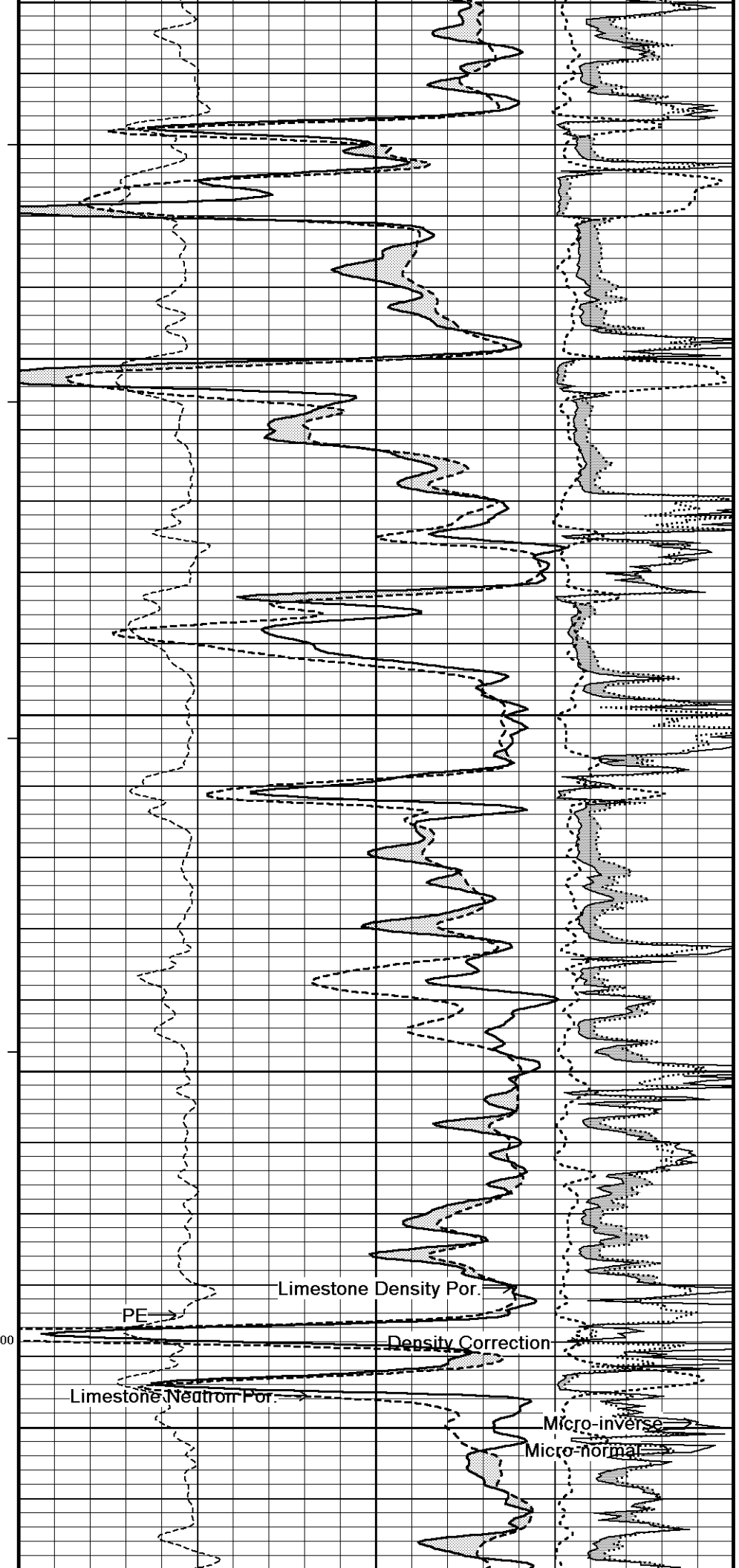
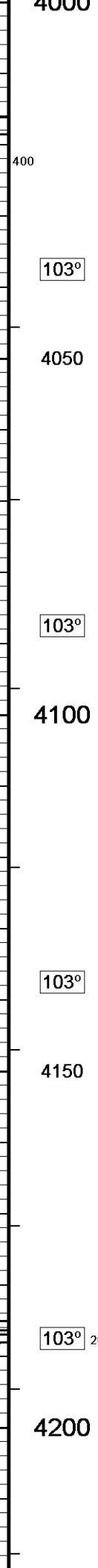
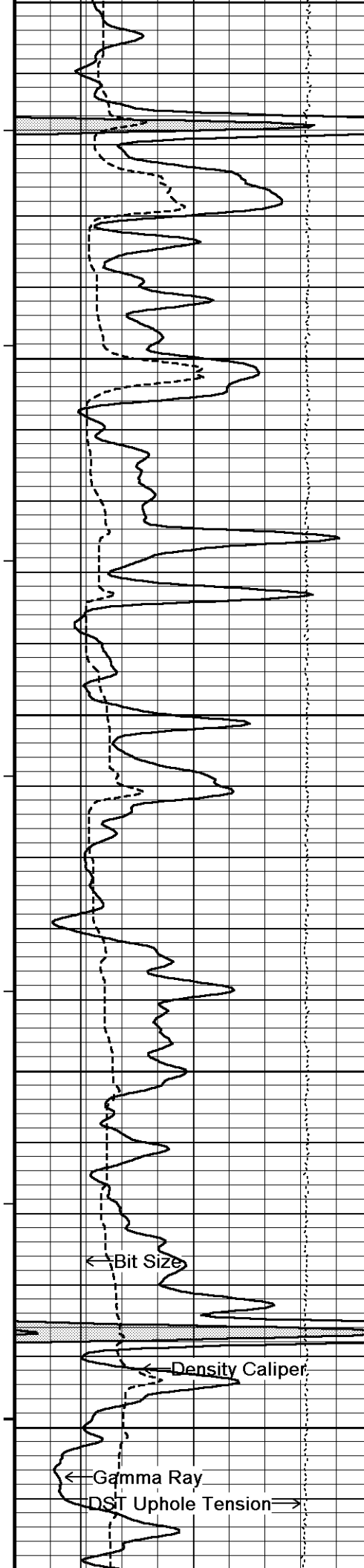
24.00

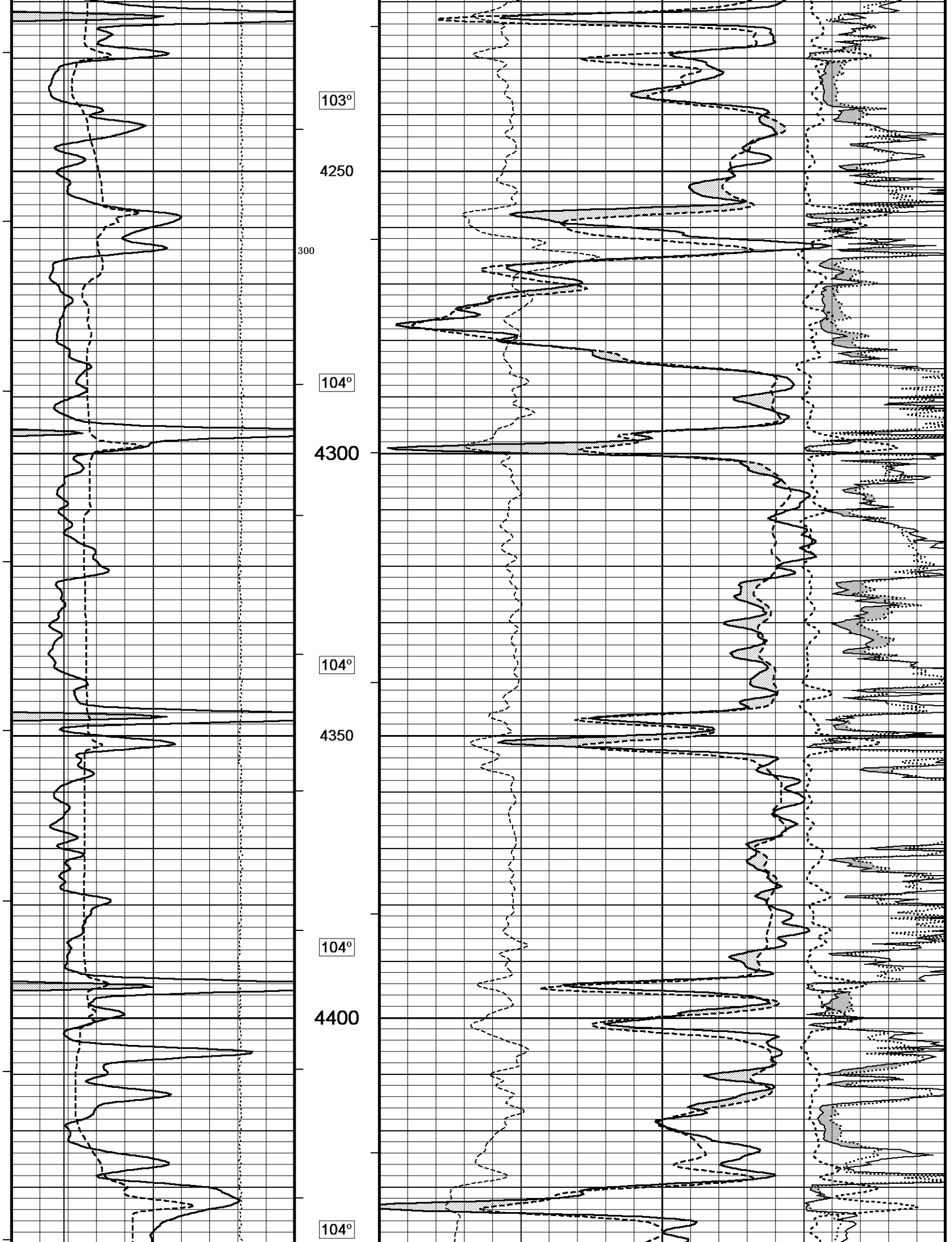
REMARKS

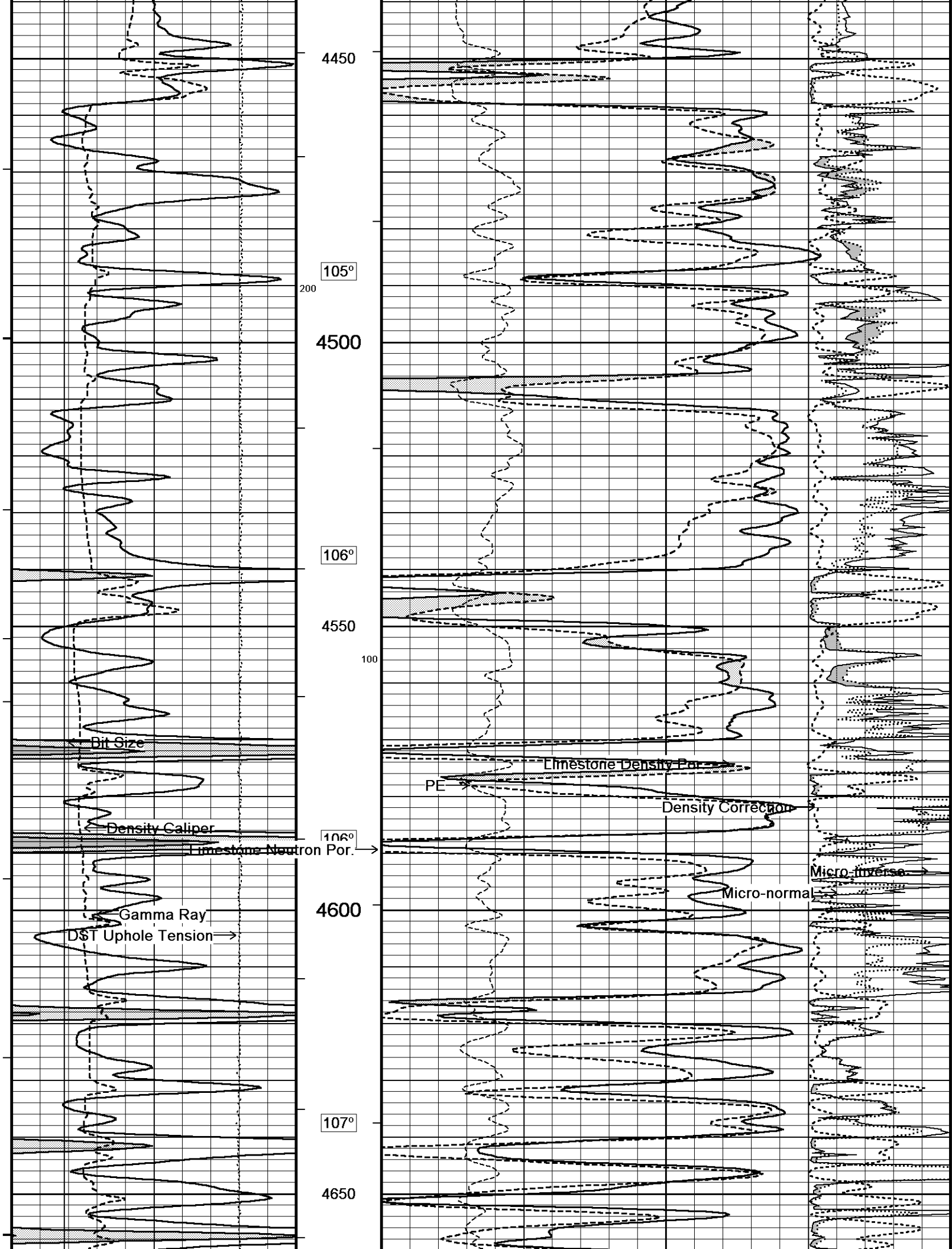
Tools Ran: MCG, MML, MDN, MPD, SKJ, MFE, MAI.
Hardware Used: MDN Dual Eccentralizer used. MPD 8 inch profile plate used. MFE and MAI 0.5 inch standoffs used.
2.71 g/cc Limestone Density Matrix used to calculate porosity.
All intervals logged and scaled per customer's request.
Annular volume with 5.5 inch production casing = 275 cu. ft.
Service order #3531243
Rig: Murfin Rig # 22
Engineer: A. Giambalvo
Operator(s): B. Johnson

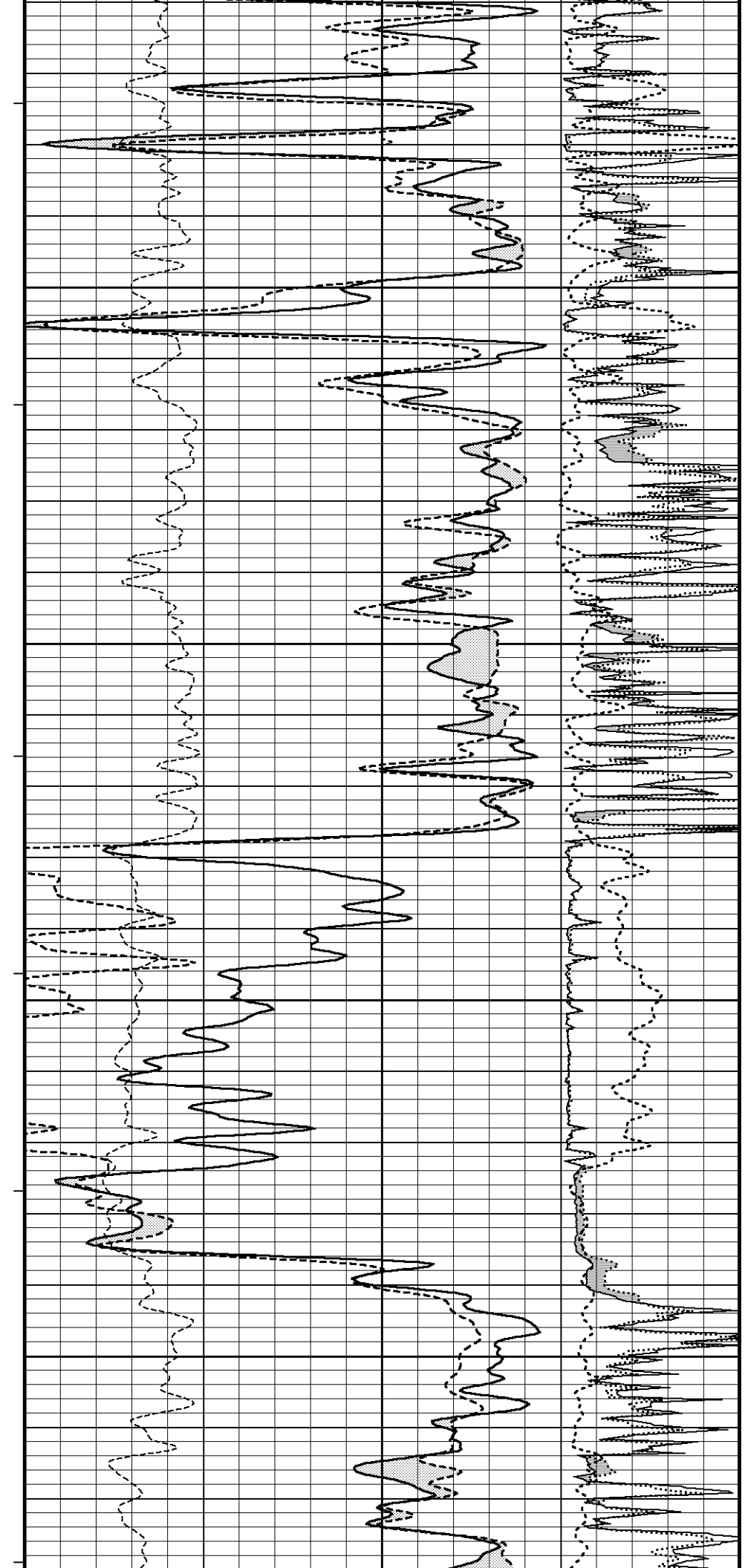
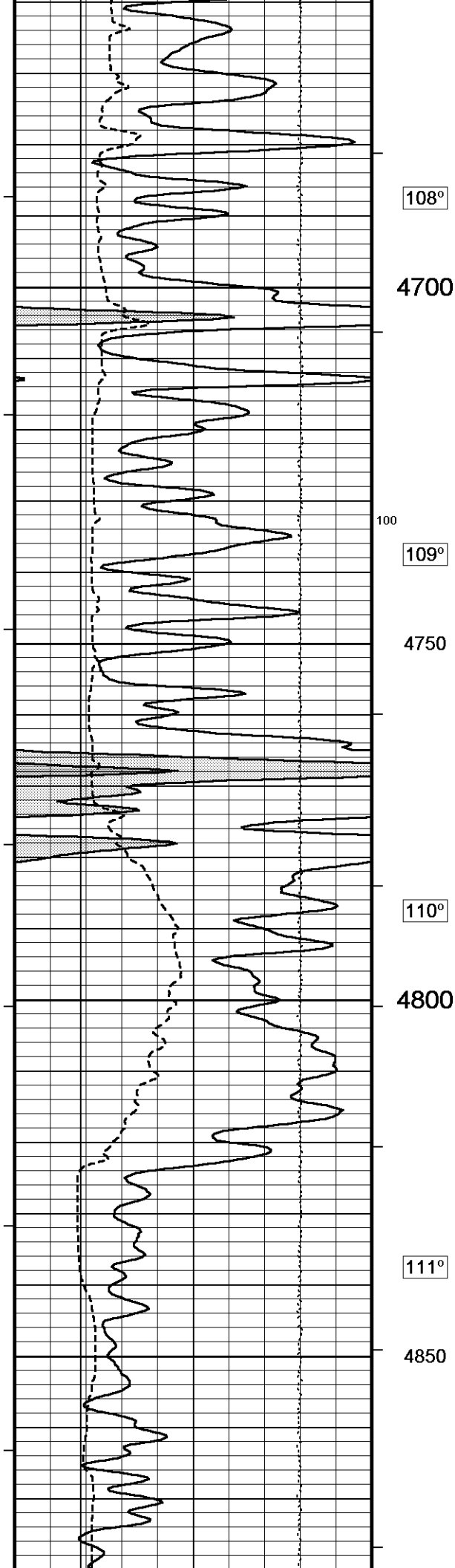
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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

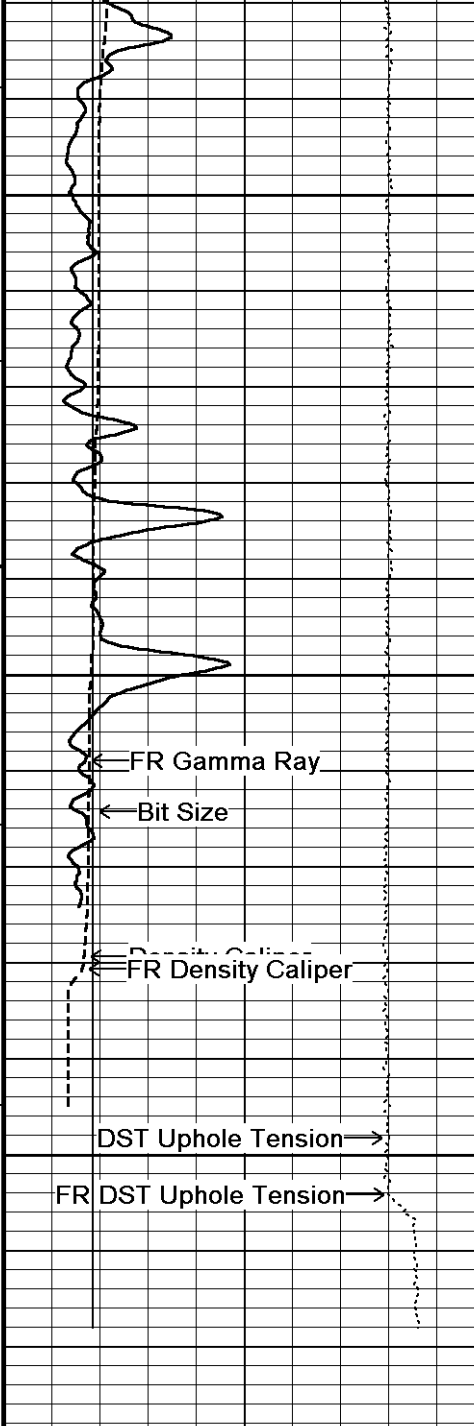












111°

4900

111°

4950

5000

5026

Depth
in
Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

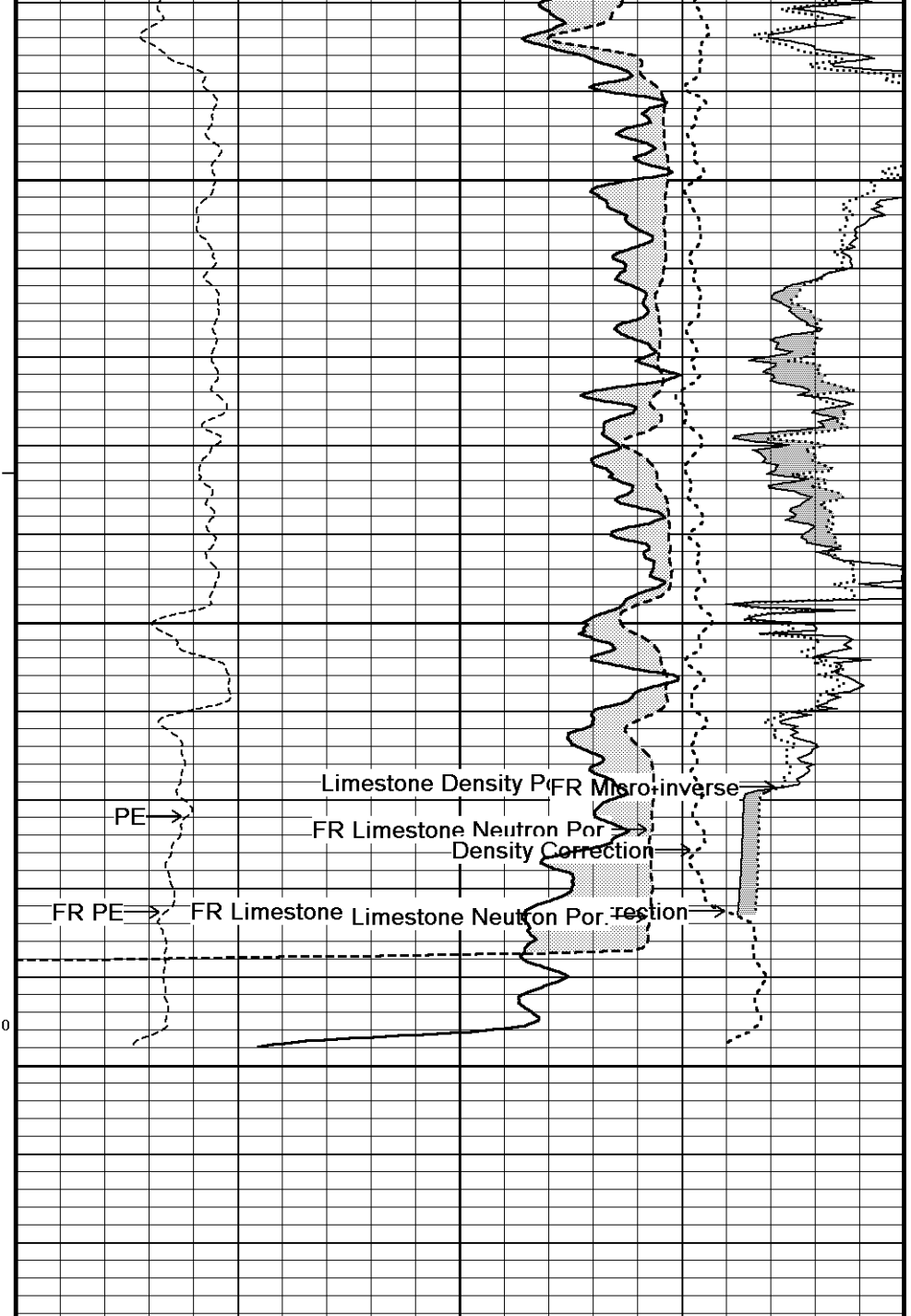
Density Caliper
inches
6 11 16

Bit Size
inches

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 -0.25

Density Correction
grams/cc
0 0.25

Micro-normal

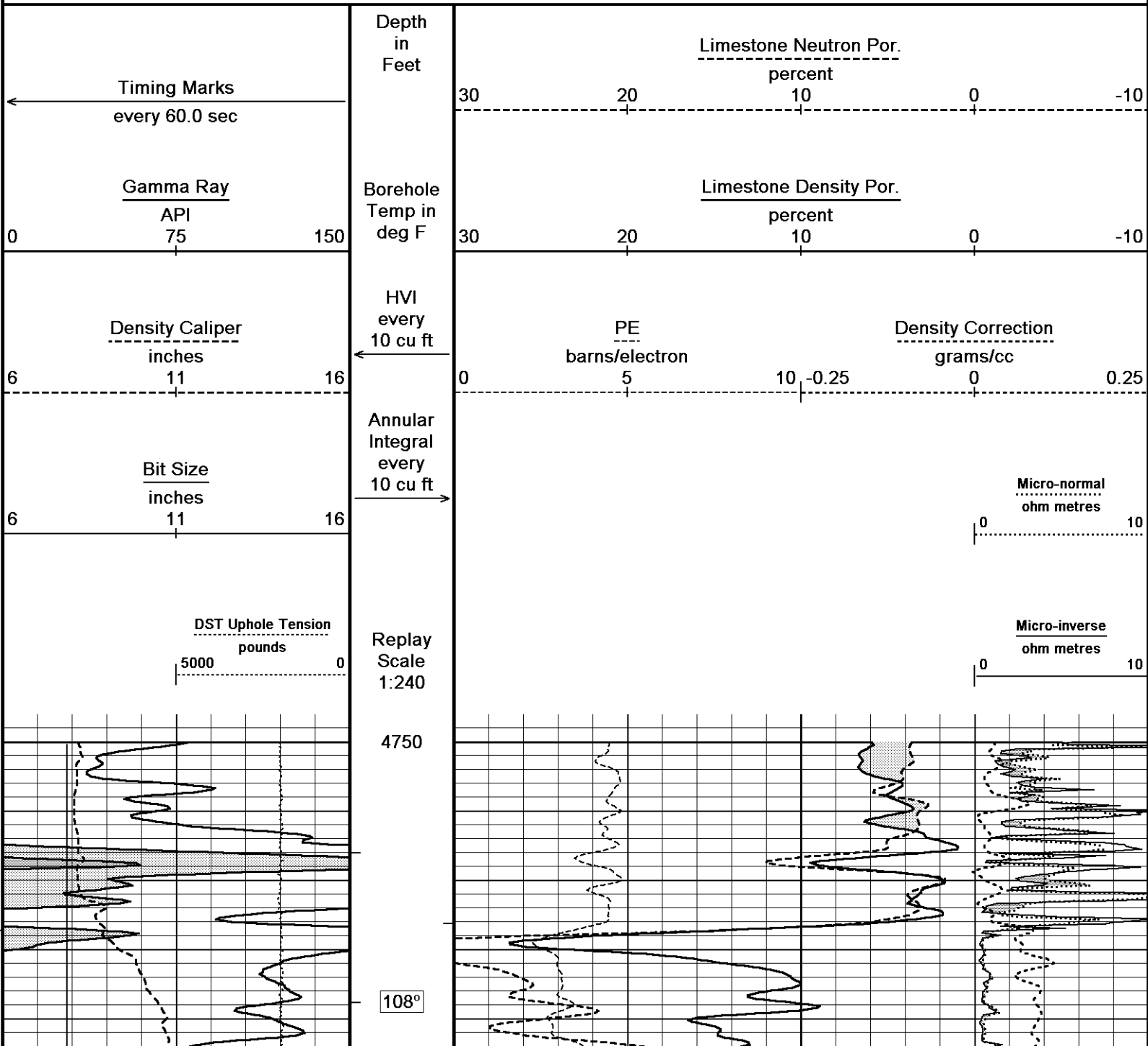


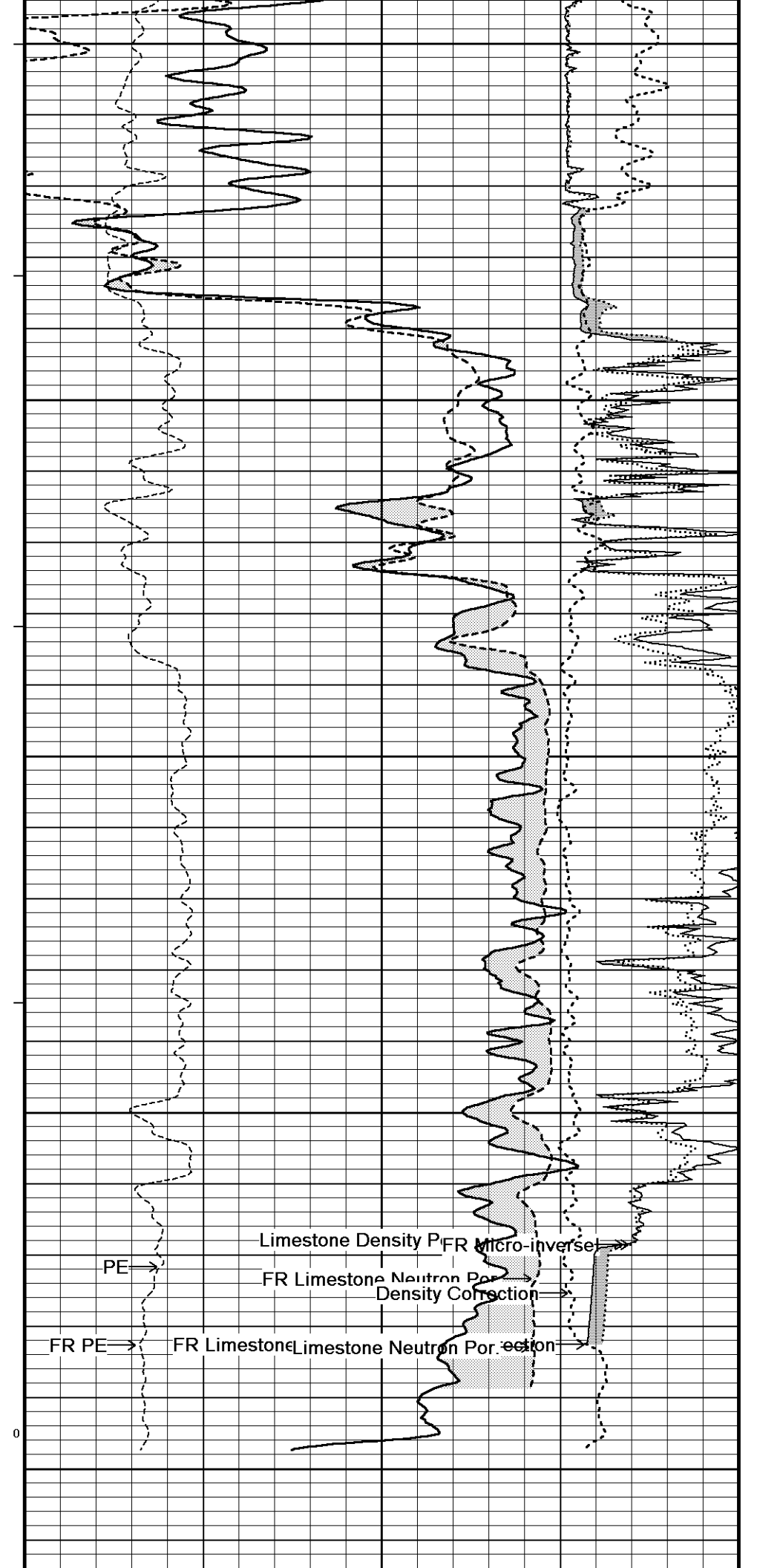
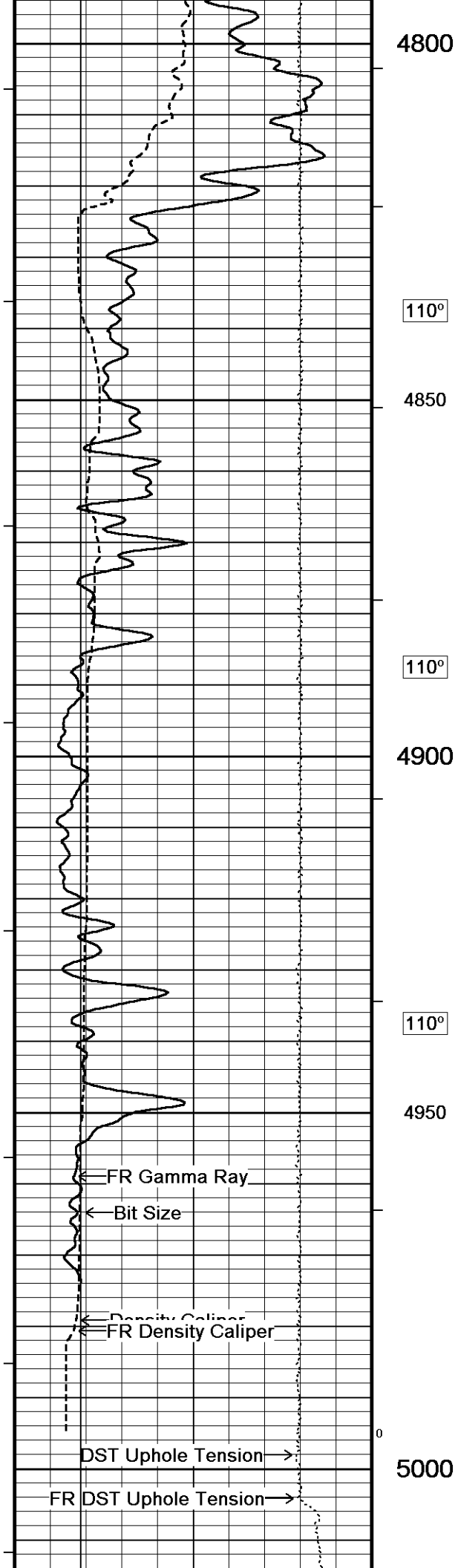
Depth Based Data - Maximum Sampling Increment 10.0cm	Plotted on 04-JAN-2012 03:45
Filename: C:\Minimus 11.03.4044\Data\Comanche Eder # 6-4\Comanche Eder 6-4_002.dta	Recorded on 04-JAN-2012 00:37
System Versions: Logged with 11.03.4044 Plotted with 11.03.4044	

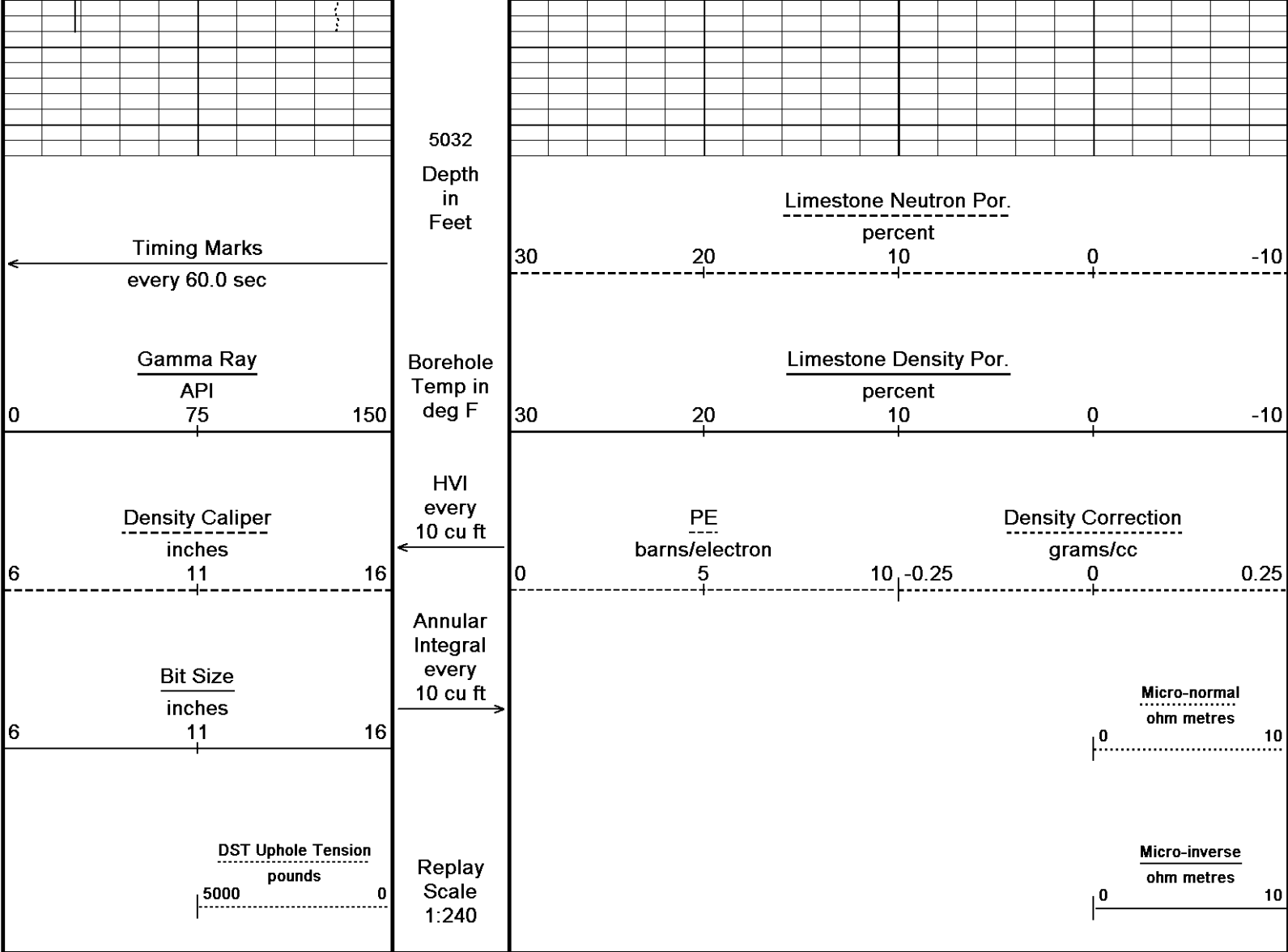
↑	5 INCH MAIN PASS	↑
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↓	5 INCH REPEAT PASS	↓
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Depth Based Data - Maximum Sampling Increment 10.0cm	Plotted on 04-JAN-2012 03:45
Filename: C:\Minimus 11.03.4044\Data\Comanche Eder # 6-4\Comanche Eder 6-4_001.dta	Recorded on 04-JAN-2012 00:17
System Versions: Logged with 11.03.4044 Plotted with 11.03.4044	



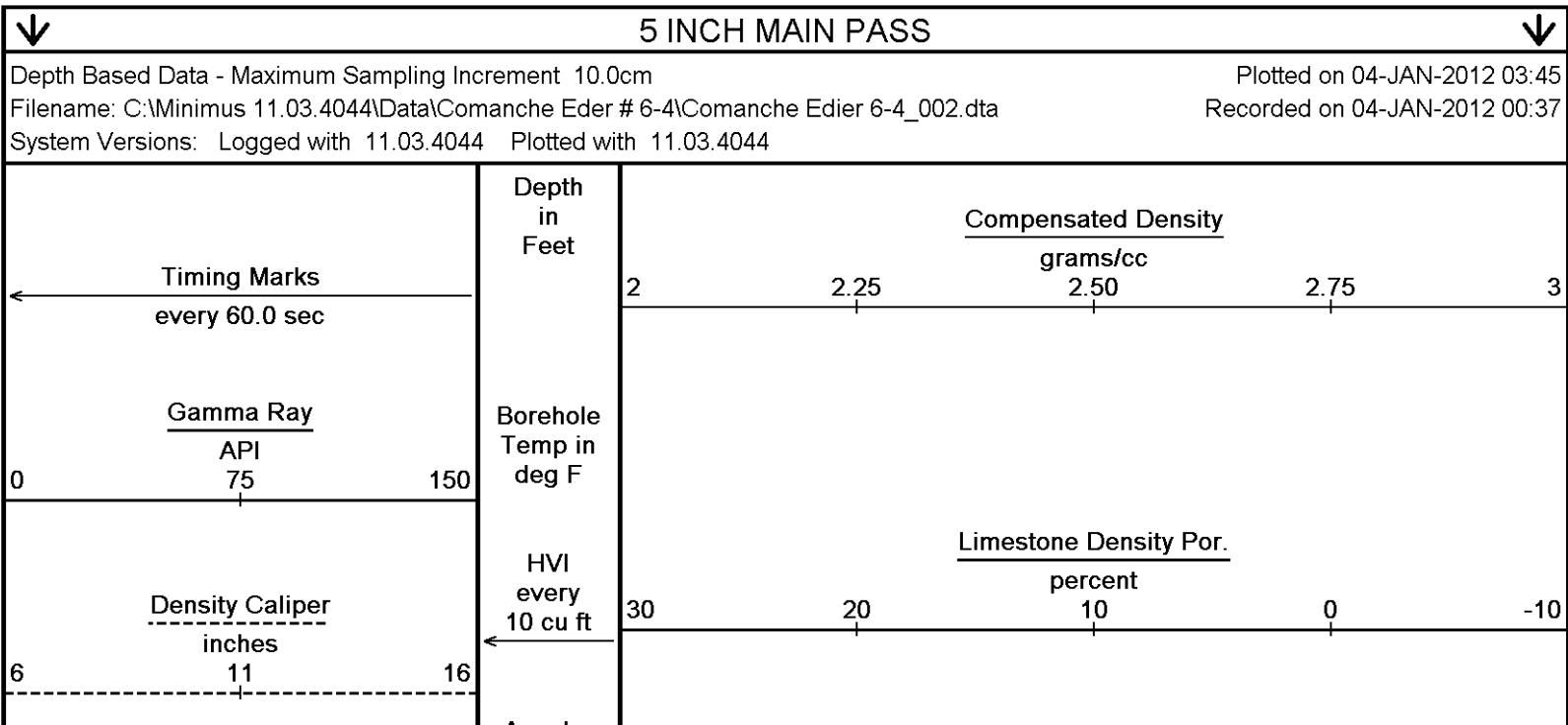


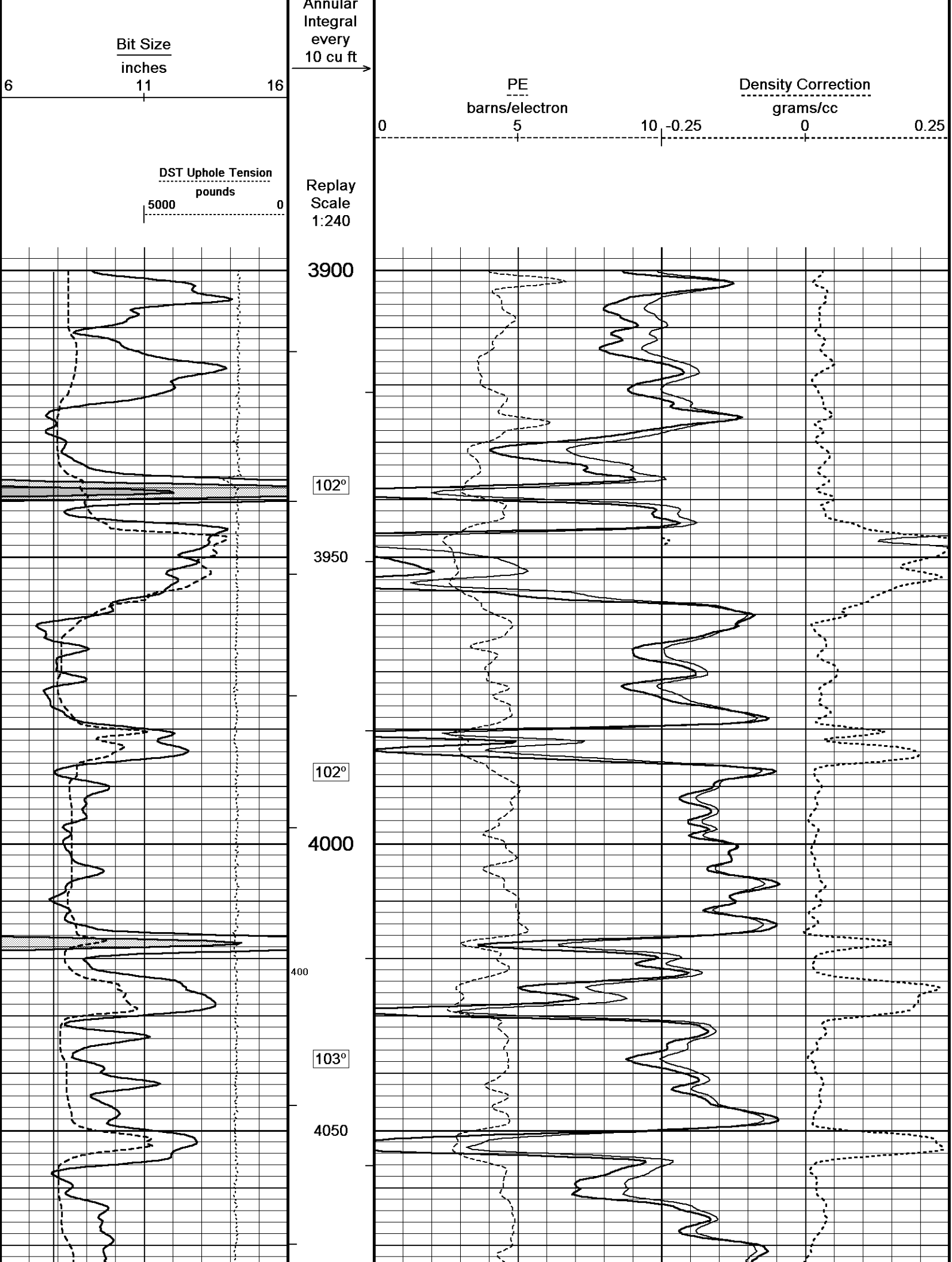


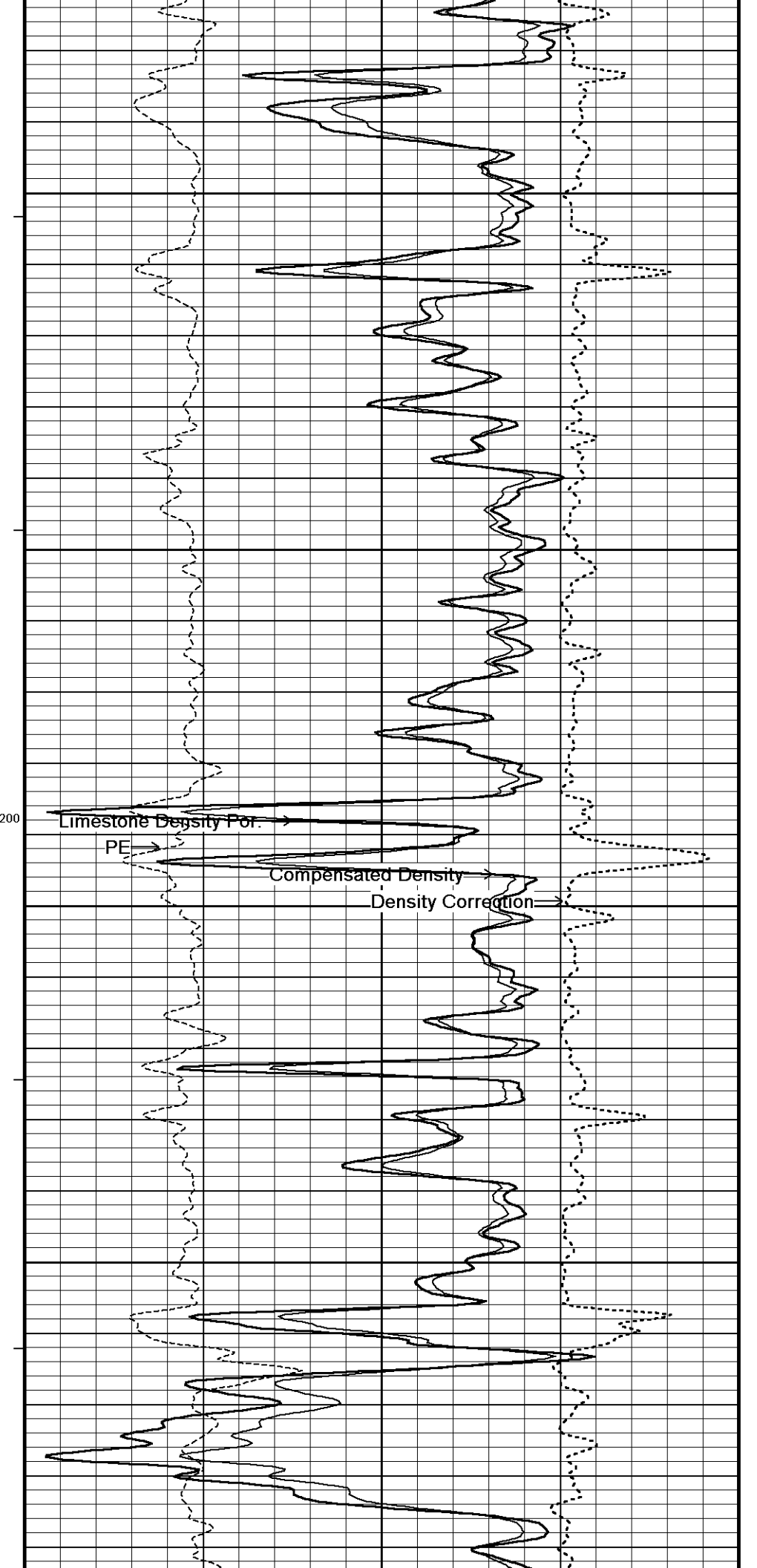
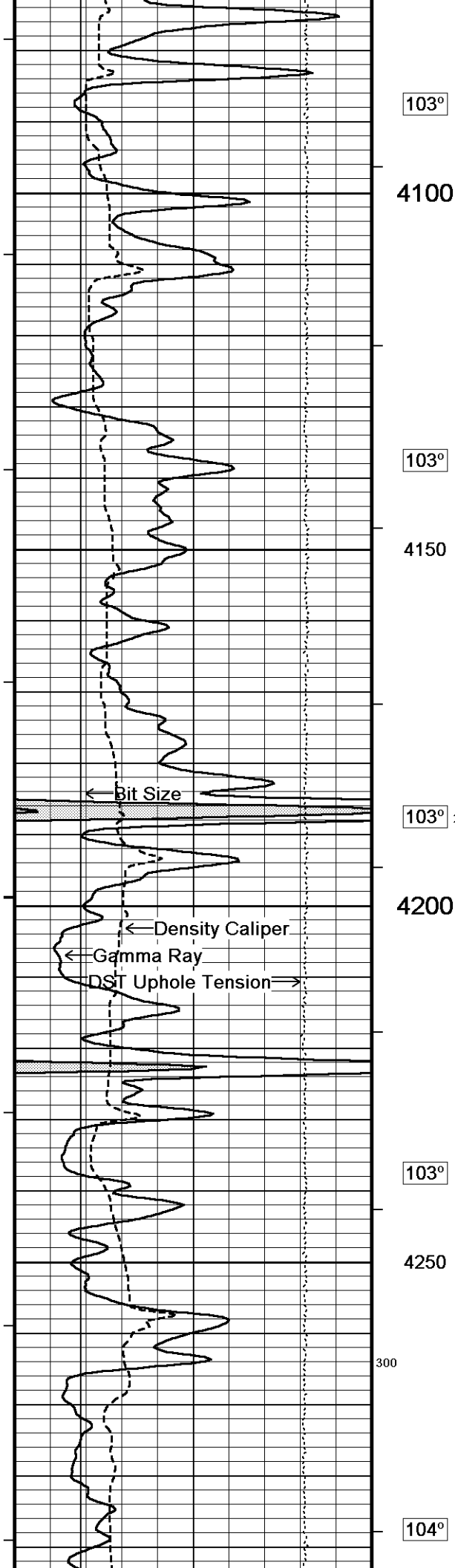
Depth Based Data - Maximum Sampling Increment 10.0cm
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System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

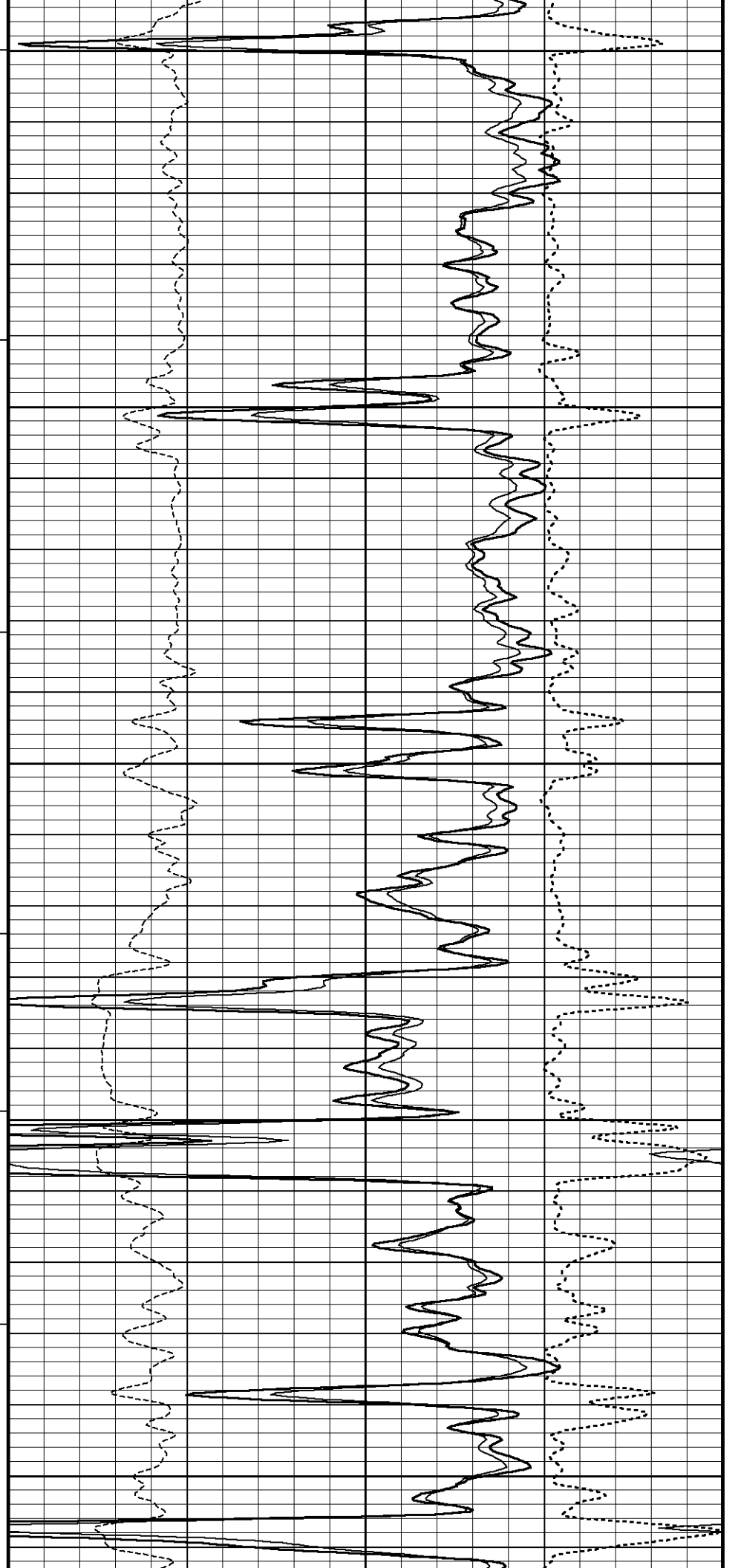
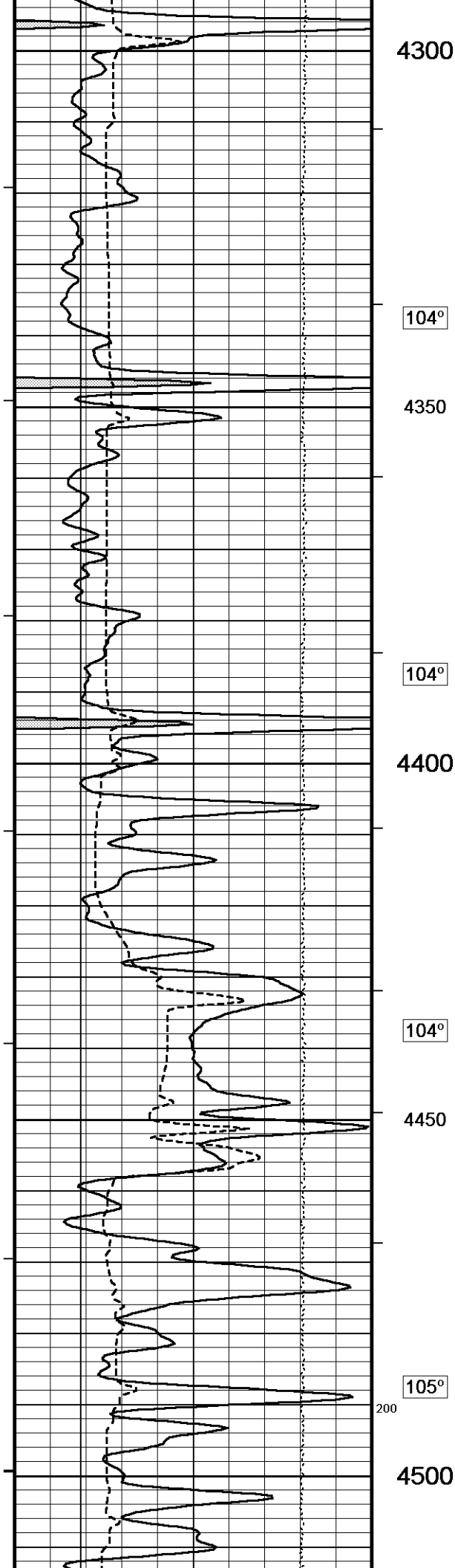
Plotted on 04-JAN-2012 03:45
Recorded on 04-JAN-2012 00:17

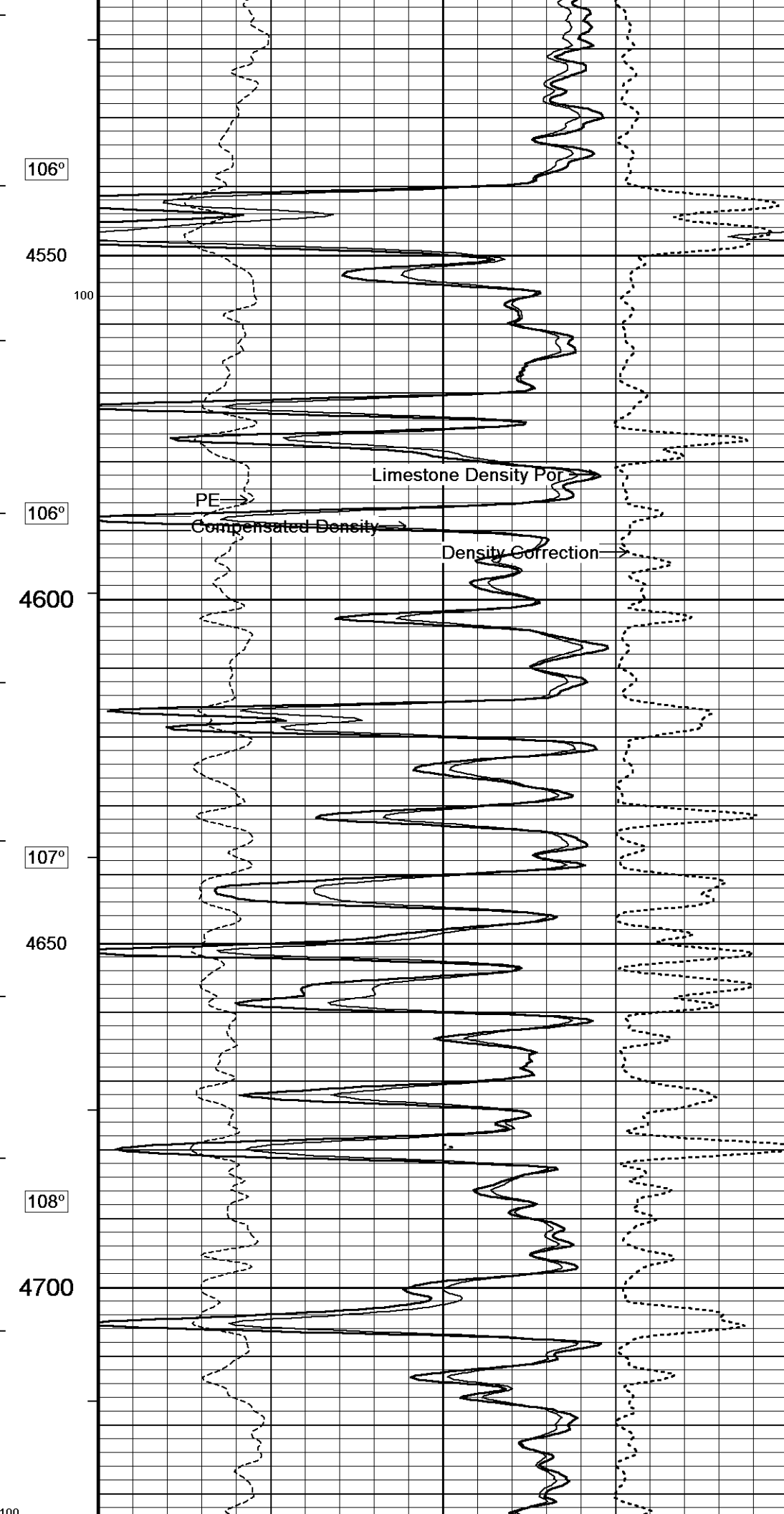
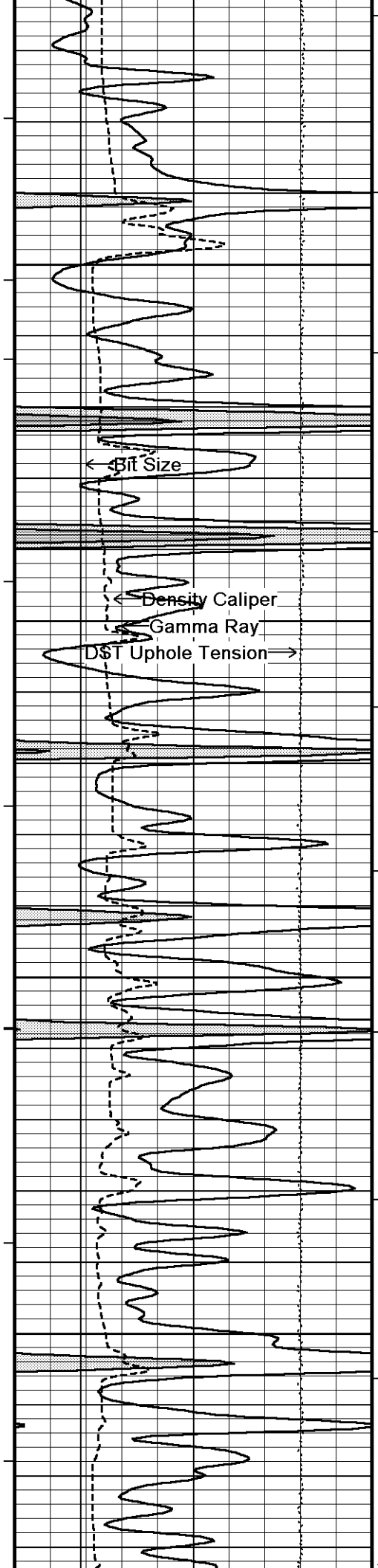
5 INCH REPEAT PASS

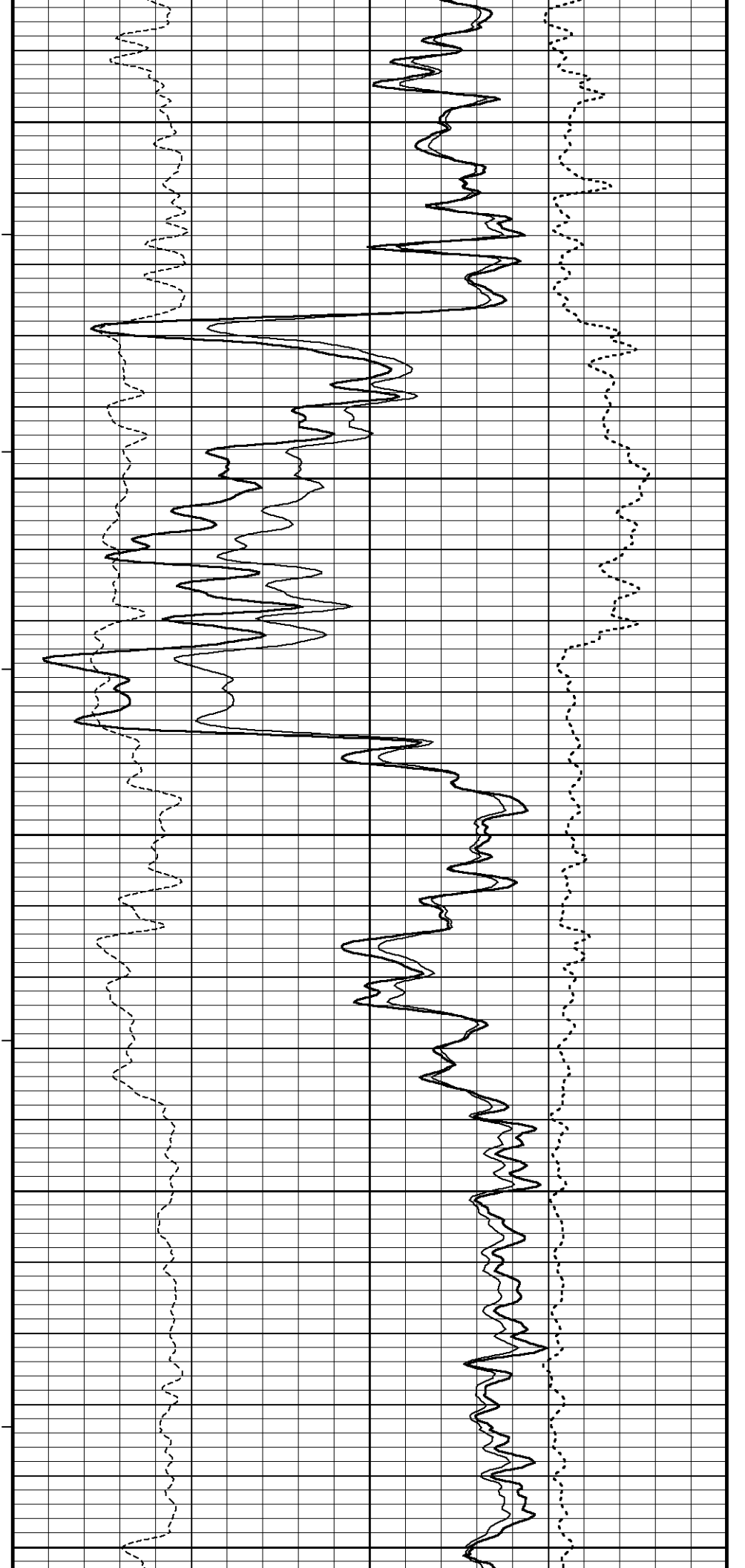
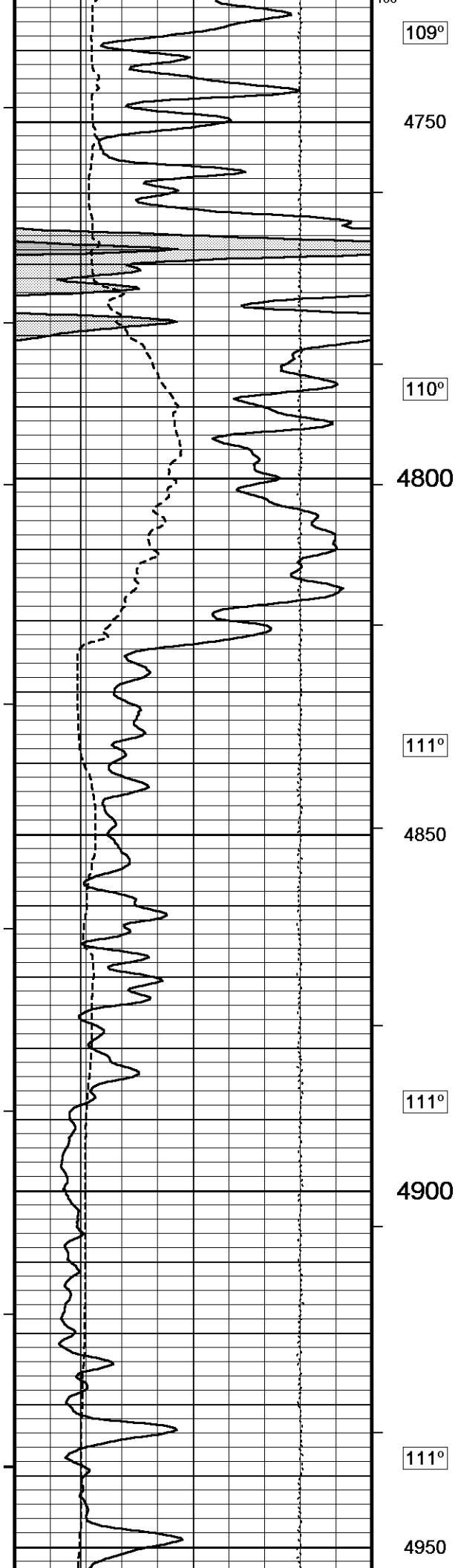


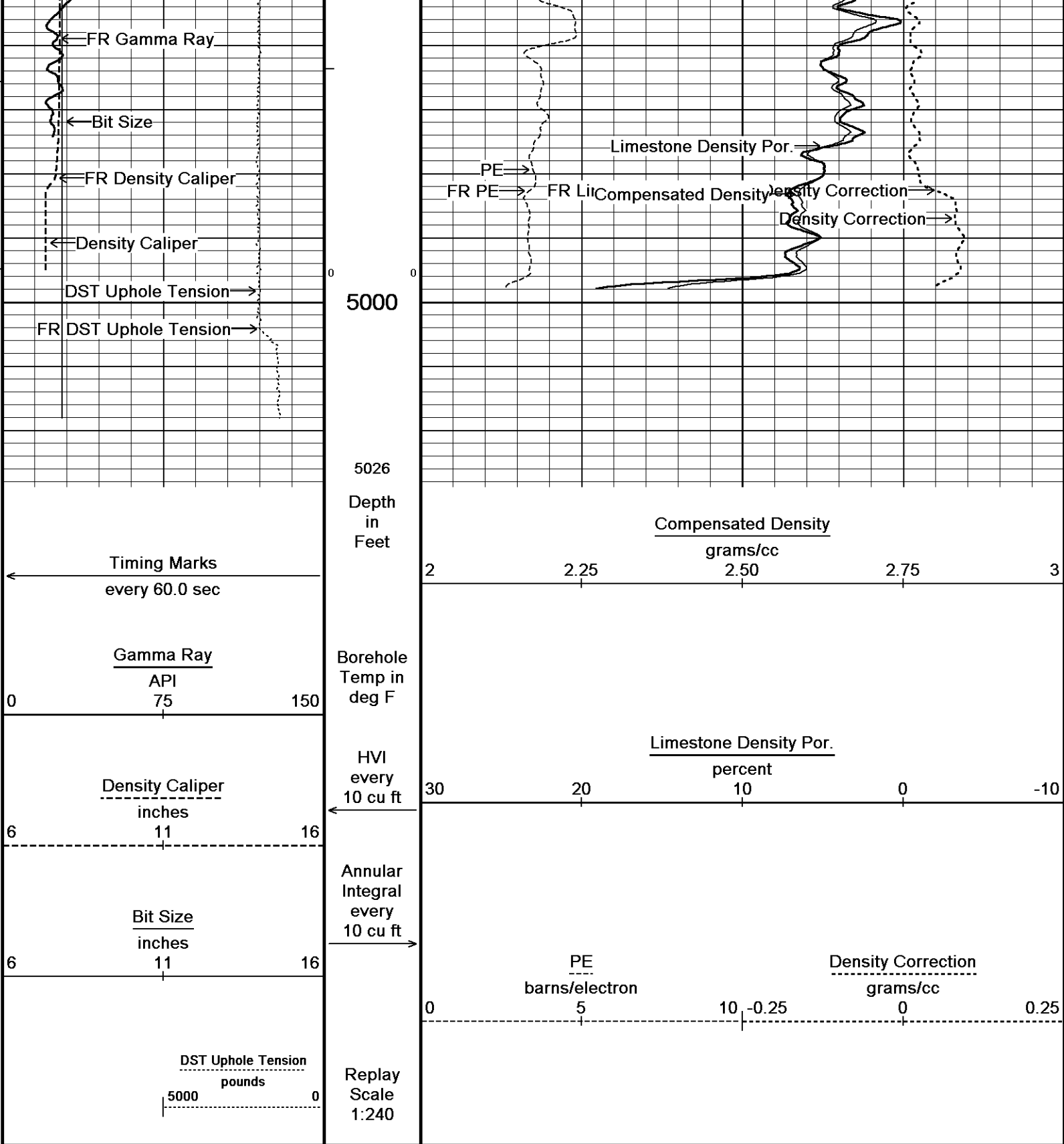












Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 11.03.4044\Data\Comanche Eder # 6-4\Comanche Eder 6-4_002.dta
System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

Plotted on 04-JAN-2012 03:45
Recorded on 04-JAN-2012 00:37

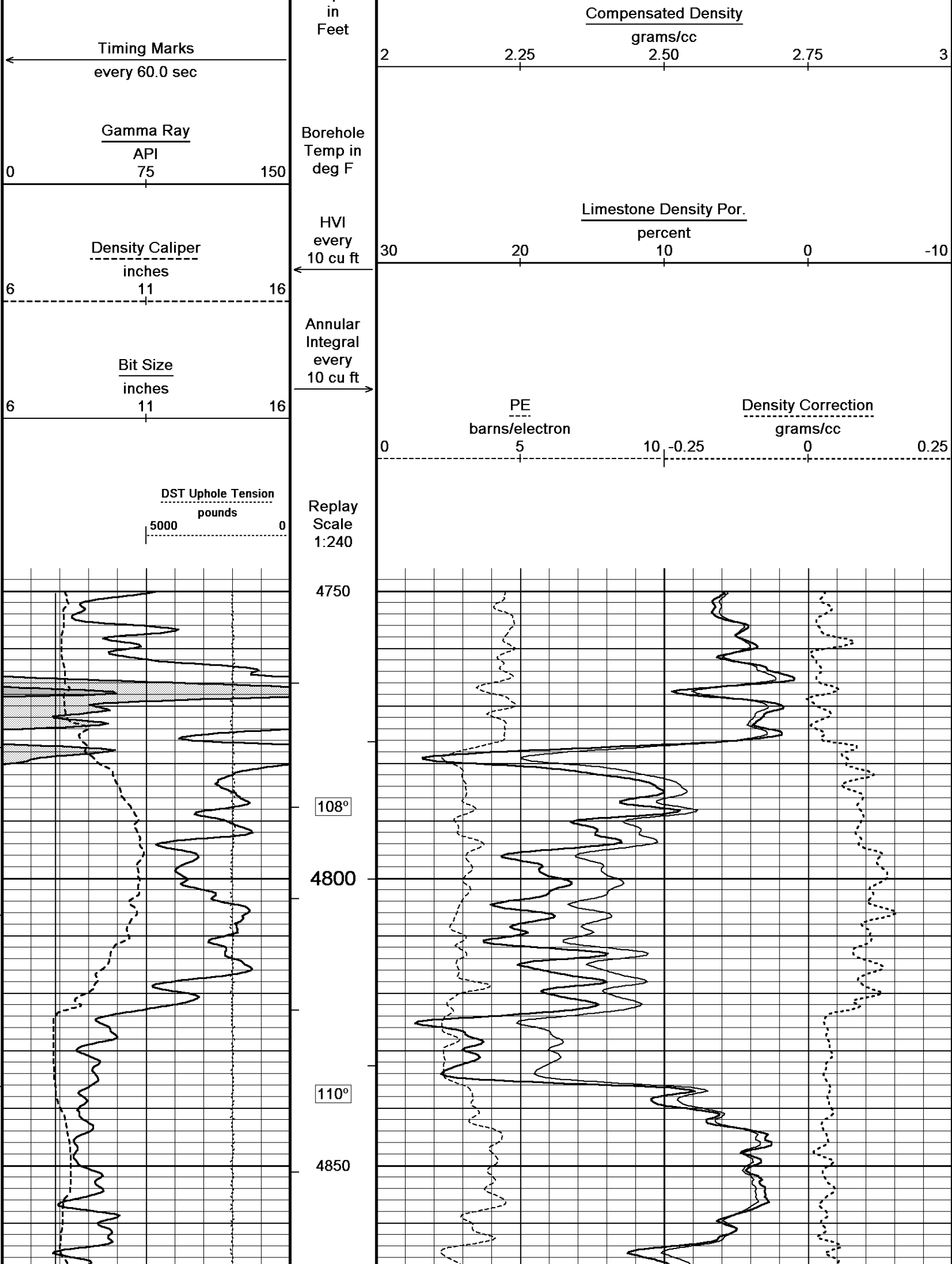
5 INCH MAIN PASS

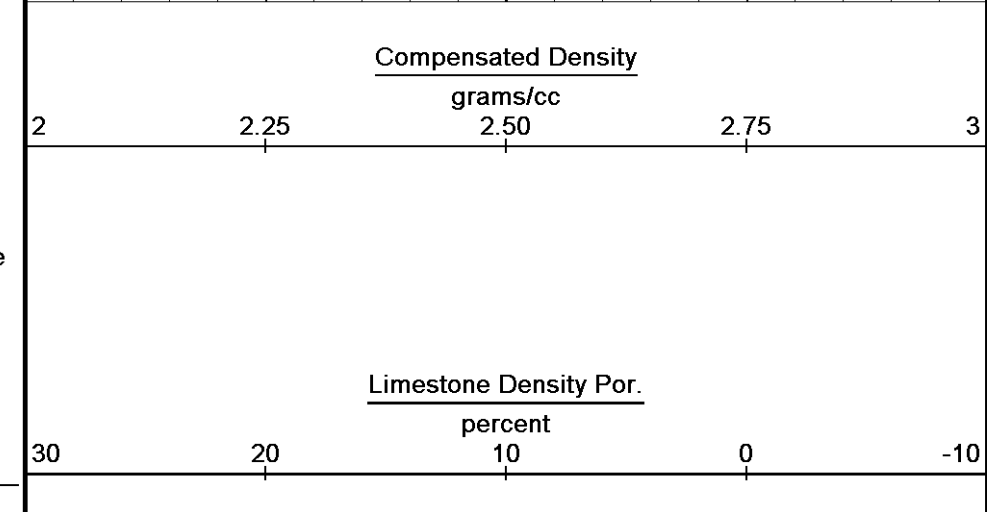
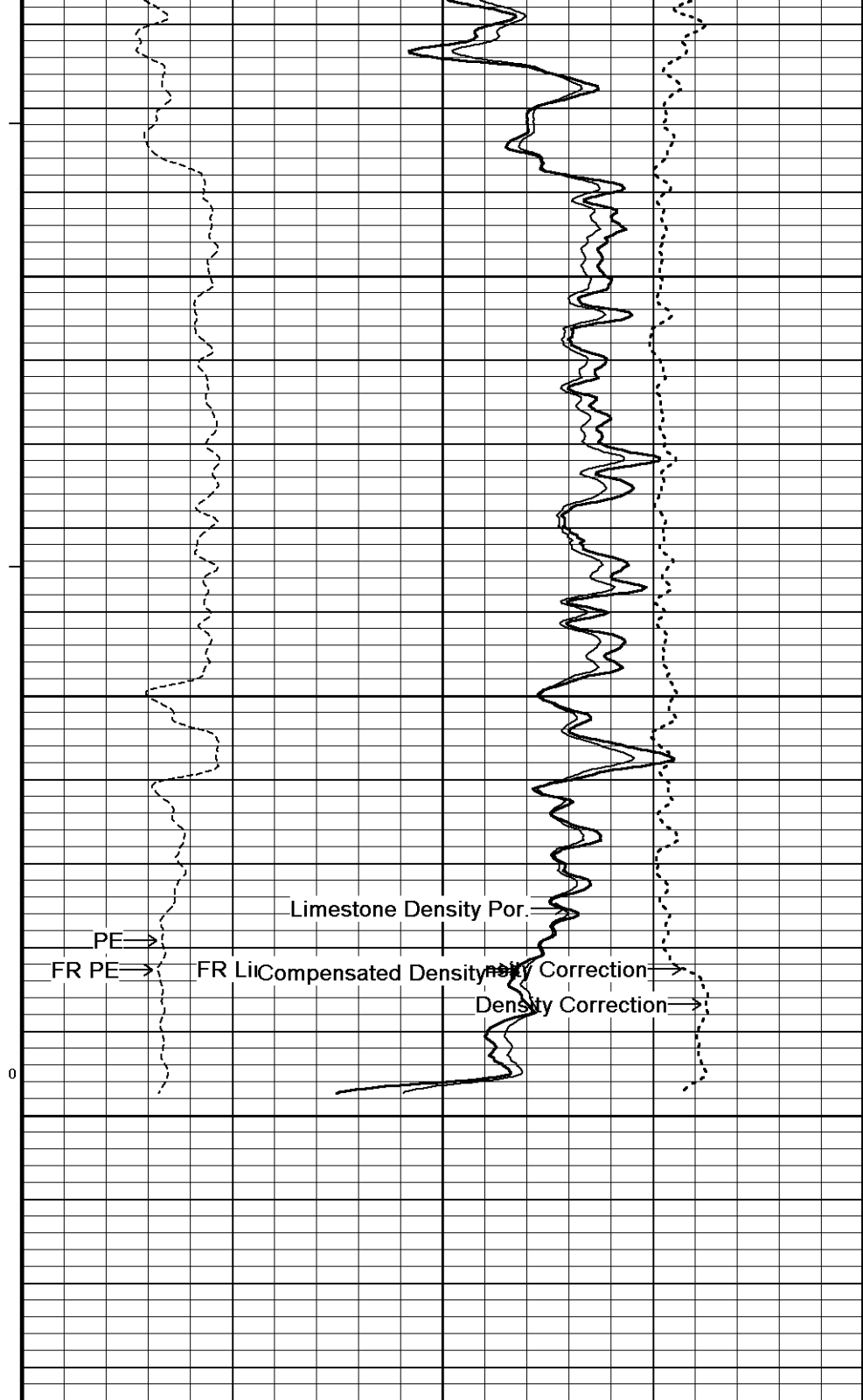
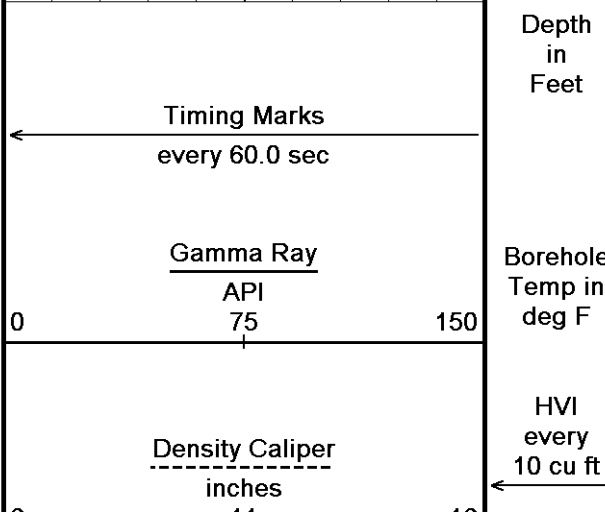
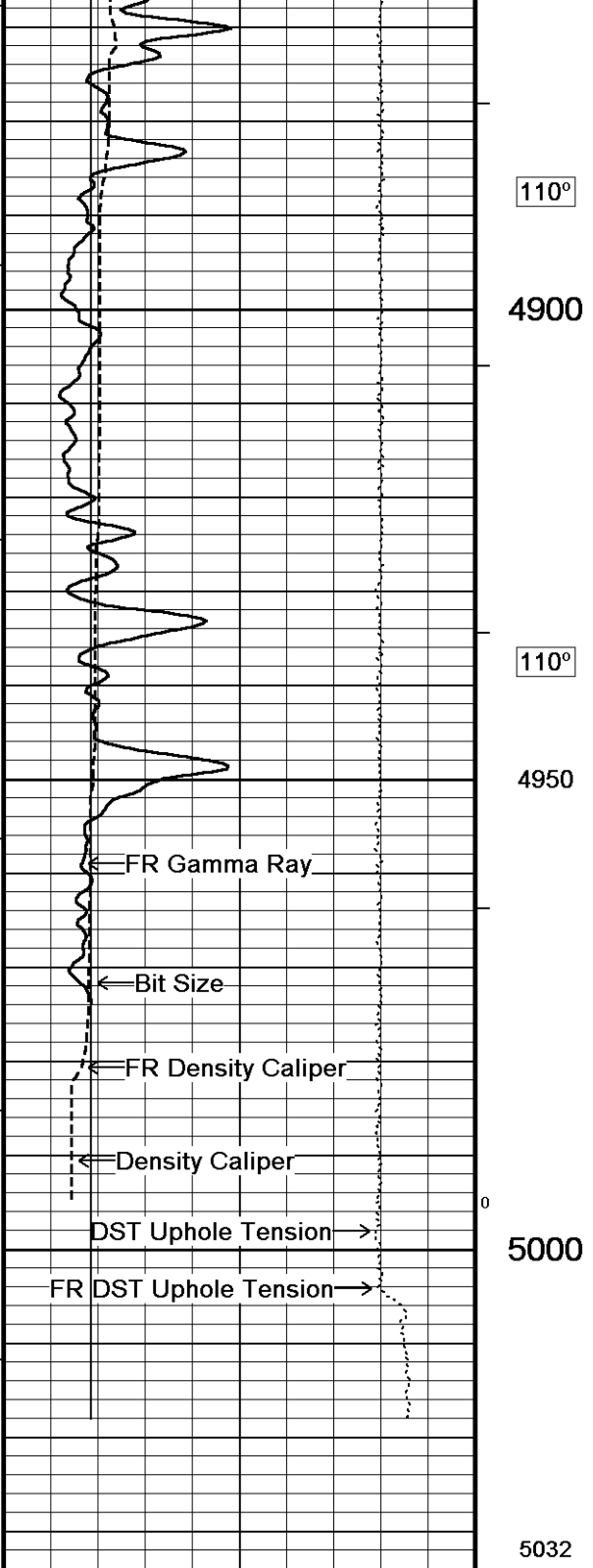
5 INCH REPEAT PASS

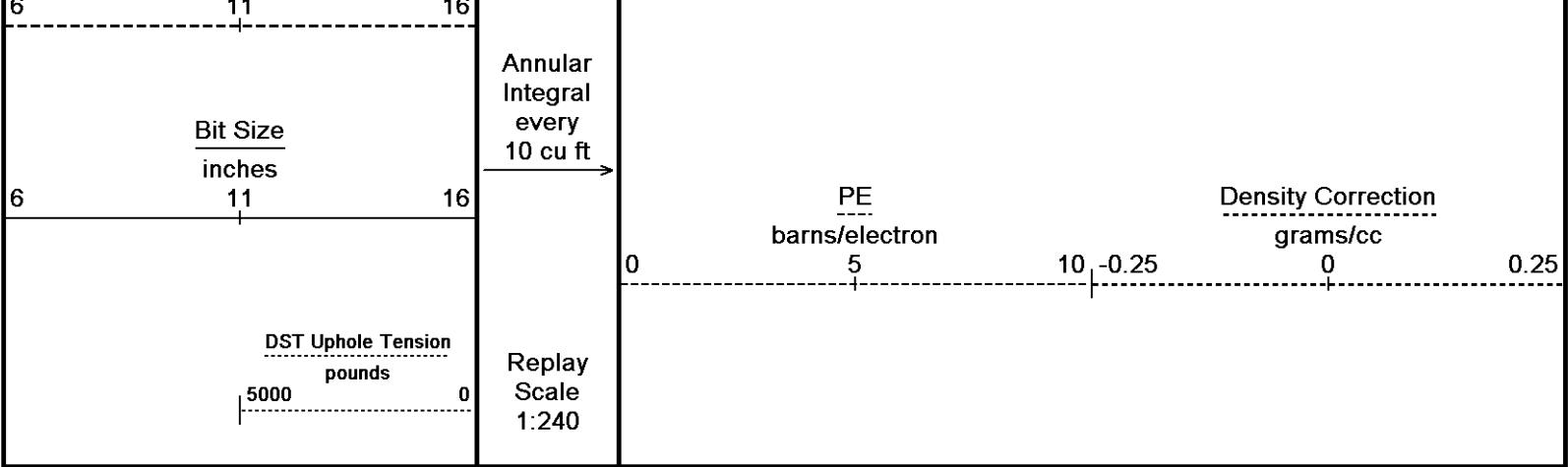
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Filename: C:\Minimus 11.03.4044\Data\Comanche Eder # 6-4\Comanche Eder 6-4_001.dta
System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

Plotted on 04-JAN-2012 03:45
Recorded on 04-JAN-2012 00:17

Depth







Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 04-JAN-2012 03:45
 Filename: C:\Minimus 11.03.4044\Data\Comanche Eder # 6-4\Comanche Eder 6-4_001.dta
 Recorded on 04-JAN-2012 00:17
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

↑ 5 INCH REPEAT PASS ↑

BEFORE SURVEY CALIBRATION

C:\Minimus 11.03.4044\Data\Comanche Eder # 6-4\Comanche Eder 6-4_002.dta

General Constants All 000			Last Edited on 03-JAN-2012,23:46		
General Parameters					
Mud Resistivity	0.800		ohm-metres		
Mud Resistivity Temperature	50.000		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	Density Caliper				
Rwa Parameters					
Porosity used	Base Density Porosity				
Resistivity used	Array Ind. One Res Rt				
RWA Constant A	1.000				
RWA Constant M	2.000				

Down-hole Tension Calibration SMS 0			Field Calibration on 24-DEC-2011 19:14
Reading No	Measured	Calibrated (lbs)	
1	13180.10	0.00	
2	14049.87	408.00	

Gamma Calibration MCG-D.K 442			Field Calibration on 30-NOV-2011 11:34
	Measured	Calibrated (API)	
Background	73	51	
Calibrator (Gross)	731	507	
Calibrator (Net)	658	456	

Gamma Constants MCG-D.K 442			Last Edited on 03-JAN-2012,23:46
Gamma Calibrator Number	grc141		
Mud Density	1.09	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	

SP Calibration MCG-D.K 442			Field Calibration on 23-SEP-2011 14:10
	Measured	Calibrated (mV)	
Reference 1	100.3	100.0	

Reference 2	-98.9	-100.0		
High Resolution Temperature Calibration MCG-D.K 442			Field Calibration on 02-DEC-2011,12:34	
	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 25-SEP-2011,21:25	
Pre-filter Length	11			
Caliper Calibration MML-A 4			Base Calibration on 26-DEC-2011 14:04 Field Calibration on 03-JAN-2012 11:18	
Base Calibration				
Reading No	Measured	Calibrator Size (in)		
1	15032	5.98		
2	18428	7.97		
3	21790	9.86		
4	25773	11.92		
5	0	0.00		
6	N/A	N/A		
Field Calibration				
	Measured Caliper (in)	Actual Caliper (in)		
	5.98	5.98		
Micro Normal and Micro Inverse Calibration MML-A 4			Base Calibration on 26-DEC-2011 13:57 Field Check on 03-JAN-2012 11:22	
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	15.7	78.4	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 4			Last Edited on 26-DEC-2011,13:43	
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			
Neutron Calibration MDN-A.B 65			Base Calibration on 16-DEC-2011 14:56 Field Check on 03-JAN-2012 11:14	
Base Calibration				
	Measured	Calibrated (cps)		
	Near	Far	Near	Far
	3067	96	3714	110
Ratio	31.868		33.764	
Field Calibrator at Base			Calibrated (cps)	
			1645	2378
Ratio	0.692			
Field Check			Calibrated (cps)	
			1658	2359
Ratio	0.703			
Neutron Constants MDN-A.B 65			Last Edited on 03-JAN-2012,23:46	
Neutron Source Id	757			
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	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 55

Base Calibration on 16-DEC-2011 15:40

Field Check on 03-JAN-2012 11:26

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	951.4	126.8
Base Check		281.6
Field Check		281.6

FE Constants MFE-A.A 55

Last Edited on 03-JAN-2012,23:47

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

Induction Calibration MAI-A.A 45

Base Calibration on 13-OCT-2011 14:35

Field Check on 03-JAN-2012 11:30

Base Calibration

Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel		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 79.4 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	18.8	3852.2
2	0.0	0.0	31.8	3630.0
3	0.0	0.0	28.7	3050.0
4	0.0	0.0	18.4	2079.5
Deep	0.0	0.0	16.1	1911.6
Medium	0.0	0.0	42.6	4061.5
Shallow	0.0	0.0	49.7	5484.1

Array Temperature 0.0 65.1 Deg F

Induction Constants MAI-A.A 45

Last Edited on 03-JAN-2012,23:47

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

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	

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 03-NOV-2011,09:08

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

High Resolution Temperature Constants MAI-A.A 45

Last Edited on

Pre-filter Length	11
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Photo Density Calibration MPD-B 64

Base Calibration on 08-DEC-2011 15:10

Field Check on 03-JAN-2012 11:06

Density Calibration

Base Calibration

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	47904	25079	59556	30836
Reference 2	19725	2537	24941	2541

Field Check at Base

1205.0 1399.0

Field Check

1205.2 1397.8

PE Calibration

Base Calibration

	WS	Measured WH	Ratio	Calibrated Ratio
Background	220	1077		
Reference 1	18004	47717	0.381	0.371
Reference 2	5349	19592	0.277	0.272

Field Check at Base

219.9 1077.0

Field Check

219.0 1077.4

Density Constants MPD-B 64

Last Edited on 03-JAN-2012,23:47

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	1.09	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
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 64

Base Calibration on 08-DEC-2011 14:37

Field Calibration on 03-JAN-2012 11:08

Base Calibration

Reading No

Measured

Calibrator Size (in)

1

12765

3.99

2

21501

5.98

3

30128

7.97

4

38369

9.86

5

47411

11.92

6

N/A

N/A

Field Calibration

Measured Caliper (in)

5.96

Actual Caliper (in)

5.98

DOWNHOLE EQUIPMENT

C:\Minimus 11.03.4044\Data\Comanche Eder # 6-4\Comanche Edier 6-4_002.dta

MCB-A.A 11B Tension Cablehead

MCB-A.A 175 LG: 2.40 ft WT: 19.8 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-log

MML-A 4 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 64 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

SKJ-D.A Compact Knuckle Joint

SKJ-D.A 37 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

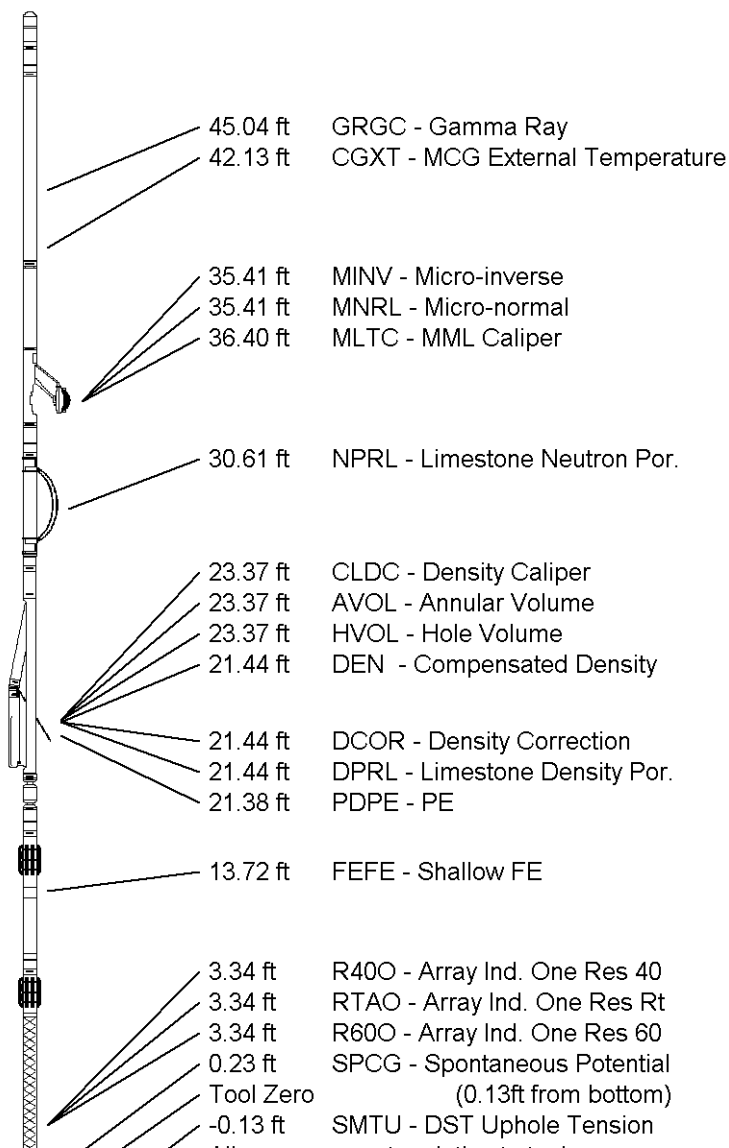
Compact Focussed Electric

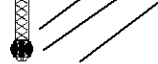
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction

MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 52.72 ft Weight: 427.7 lb





All measurements relative to tool zero.

COMPANY	COMANCHE RESOURCES COMPANY			
WELL	EDER # 6-4			
FIELD	WILDCAT			
PROVINCE/COUNTY	SCOTT			
COUNTRY/STATE	U.S.A. / KANSAS			
Elevation Kelly Bushing	3081.00	feet	First Reading	4981.00 feet
Elevation Drill Floor	3079.00	feet	Depth Driller	5000.00 feet
Elevation Ground Level	3070.00	feet	Depth Logger	5004.00 feet
		COMPACT PHOTO DENSITY		
Weatherford [®]		COMPENSATED NEUTRON		
		MICRORESISTIVITY LOG		