



Weatherford

**COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG**

COMPANY

MCCOY PETROLEUM CORPORATION

WELL

M-M DIEL UNIT "A" # 1-8

FIELD

WILDCAT

PROVINCE/COUNTY

LANE

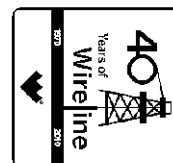
COUNTRY/STATE

U.S.A. / KANSAS

LOCATION

2310' FSL & 2310' FEL

NW NW SE



SEC TWP RGE Other Services

8 20S 27W MA/MFE

Permit Number 15-101-22334

Permanent Datum G.L., Elevation 2733 feet

Log Measured From KB

Drilling Measured From K.B. @ 10 FEET

Date 16-DEC-2011

Elevations:
KB 2743.00
DF 2741.00
GL 2733.00

Run Number	ONE	
Depth Driller	4730.00	feet
Depth Logger	4735.00	feet
First Reading	4712.00	feet
Last Reading	1900.00	feet
Casing Driller	228.00	feet
Casing Logger	227.00	feet
Bit Size	7.875	inches
Hole Fluid Type	CHEMICAL	
Density / Viscosity	9.40 lb/USg	54.00 CP
PH / Fluid Loss	10.50	7.60 ml/30Min
Sample Source	FLOWLINE	
Rm @ Measured Temp	1.45 @ 67.0	ohm-m
Rmf @ Measured Temp	1.16 @ 67.0	ohm-m
Rmc @ Measured Temp	1.74 @ 67.0	ohm-m
Source Rmf / Rmc	CALC	CALC
Rm @ BHT	0.80 @ 125.0	ohm-m
Time Since Circulation	5 HOURS	
Max Recorded Temp	126.00	deg F
Equipment Name	COMPACT	
Equipment / Base	13096	LIB
Recorded By	A. GIAMBALVO	
Witnessed By	JERRY SMITH	
S.O. / JOB #	3534684	LB11-319

BOREHOLE RECORD

Last Edited: 16-DEC-2011 07:22

Bit Size inches	Depth From feet	Depth To feet
7.875	227.00	4735.00

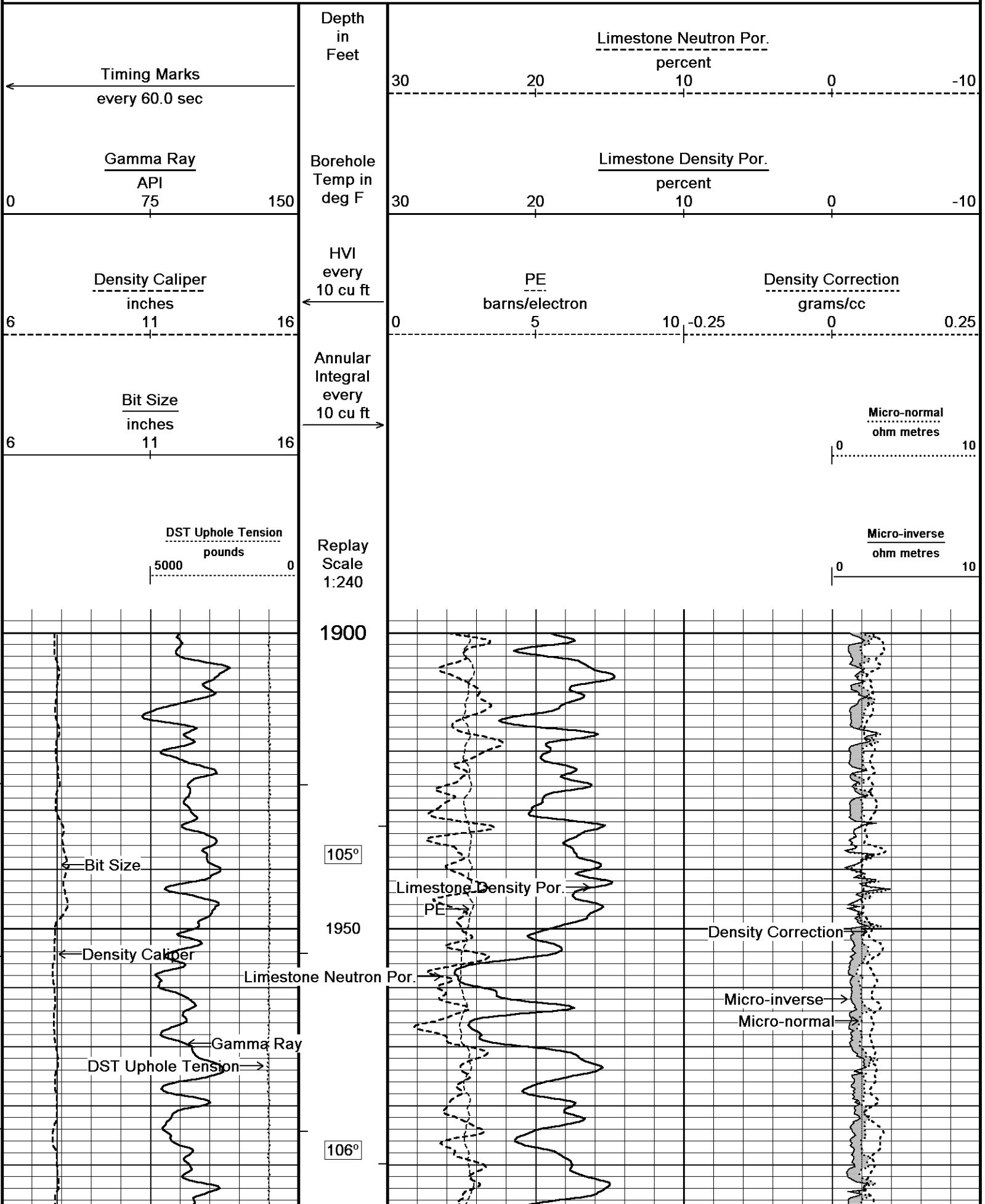
CASING RECORD

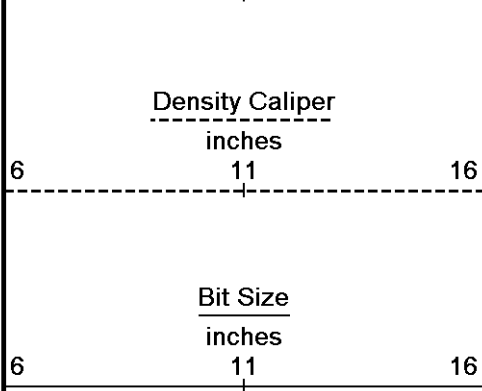
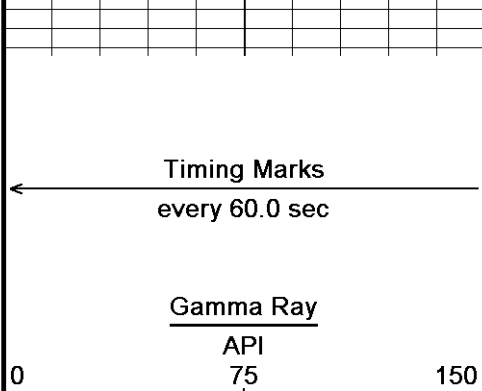
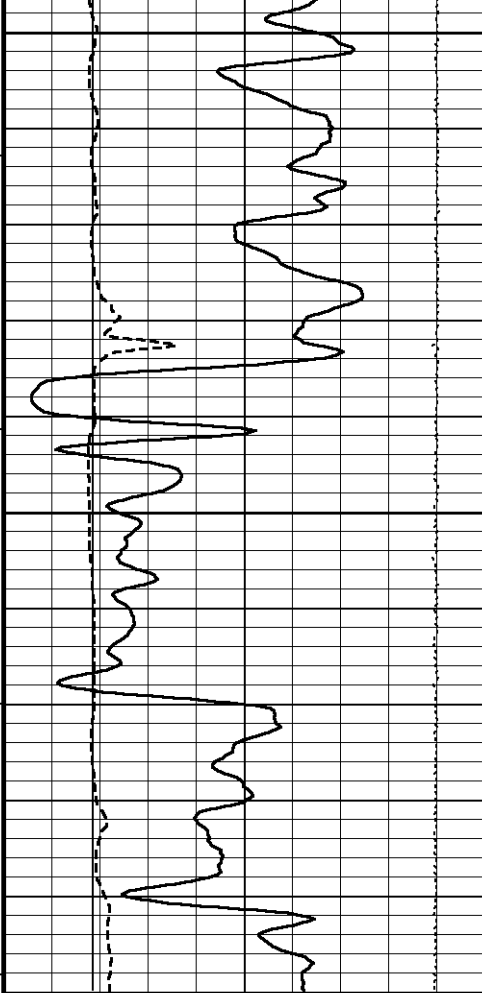
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	10.00	227.00	24.00

REMARKS

Tools Used: MPD, MCG, MDN, MFE, MAI, MML.
Hardware: MPD: 8 inch profile plate used. MAI, MSS and MFE: 0.5 Inch standoffs used. MDN: Dual Bowspring used.
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.
Annular volume with 5.5 inch production casing from TD to 3800 ft = 158 cu. ft
Service Order #3534684
Rig: Val # 7
Engineer: A. Giambalvo
Operator(s): K. Rinehart

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.





2000

106°

2050

106°

2100

2114

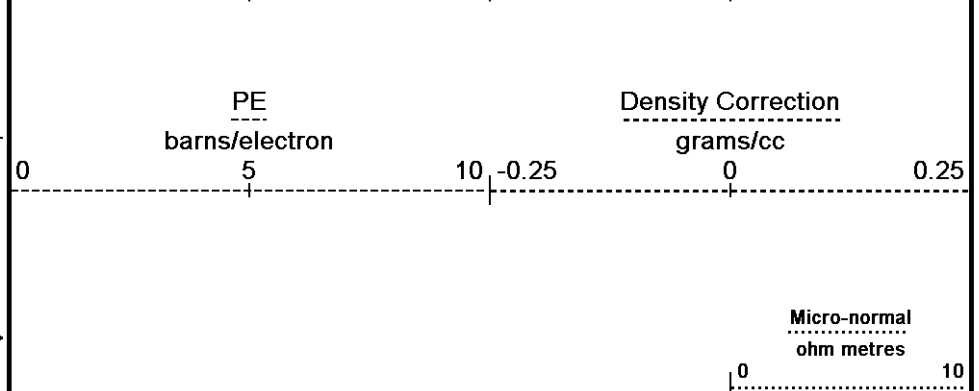
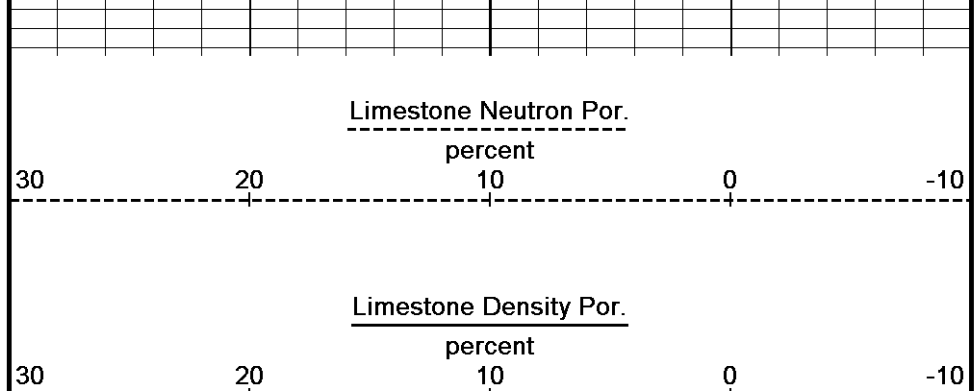
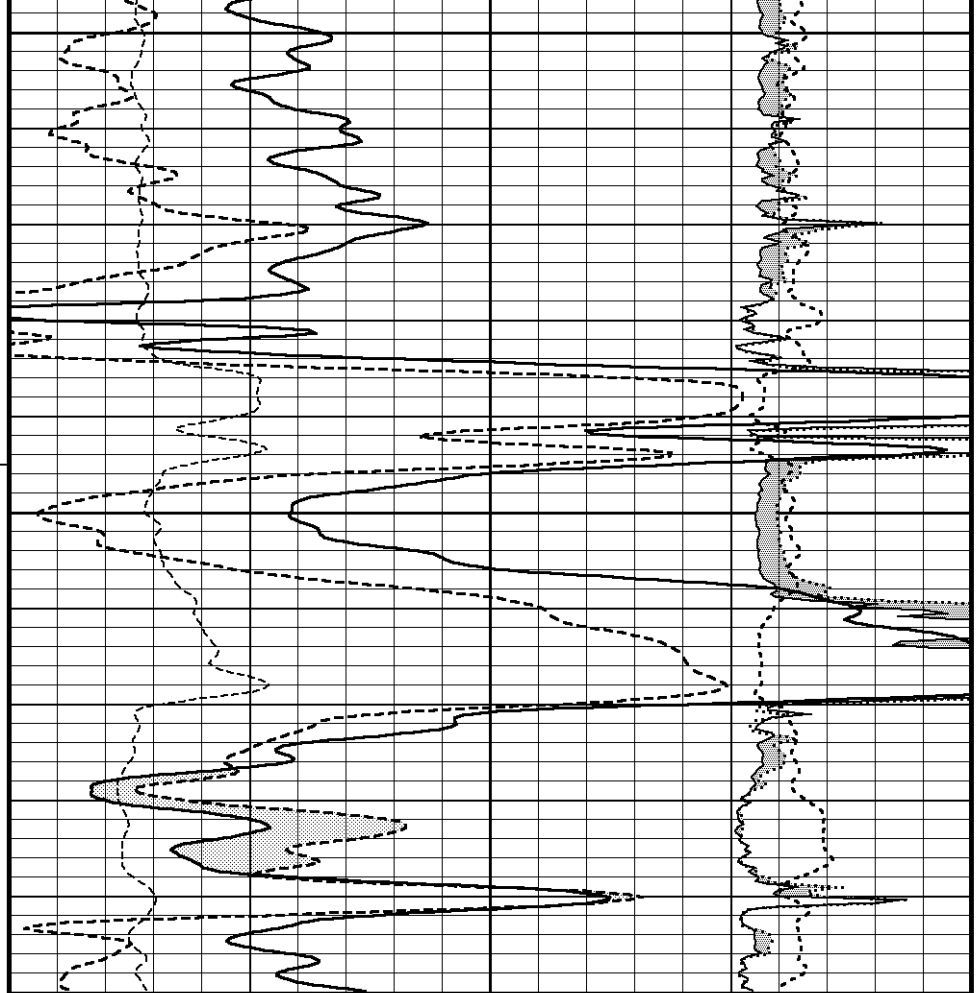
Depth
in
Feet

Borehole
Temp in
deg F

HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

Replay
Scale
1:240



↑

5 INCH MAIN PASS

↑

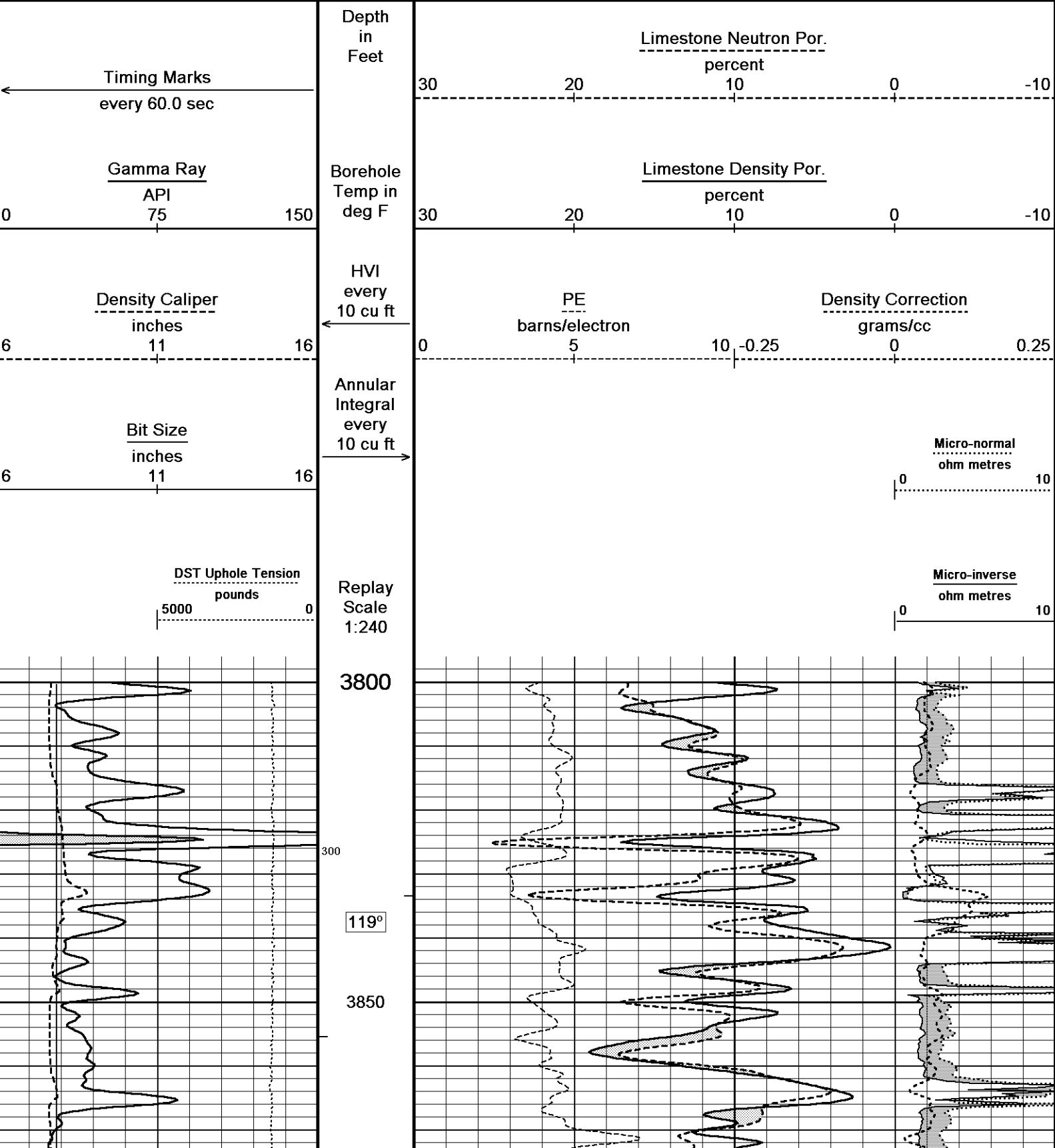
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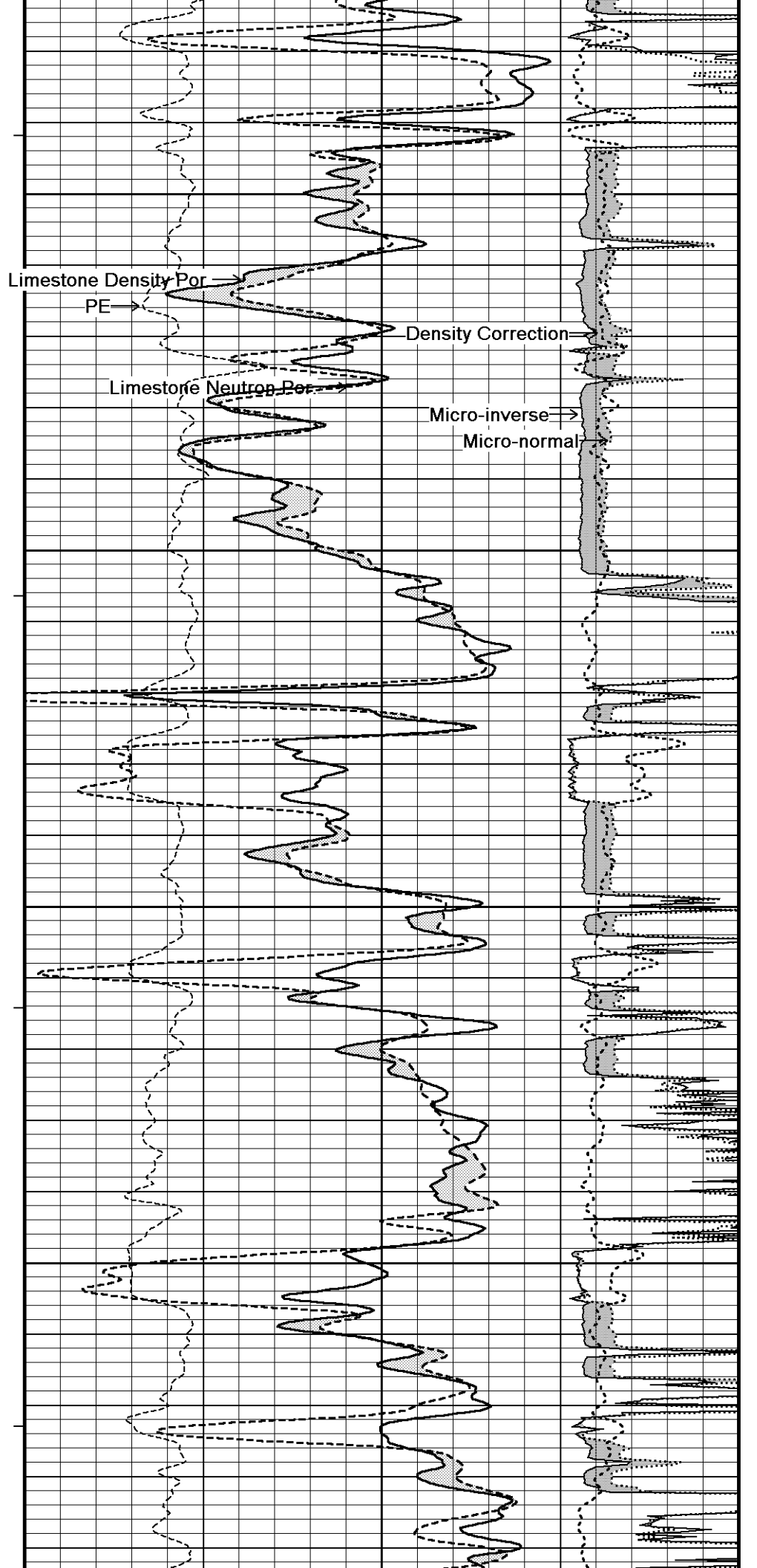
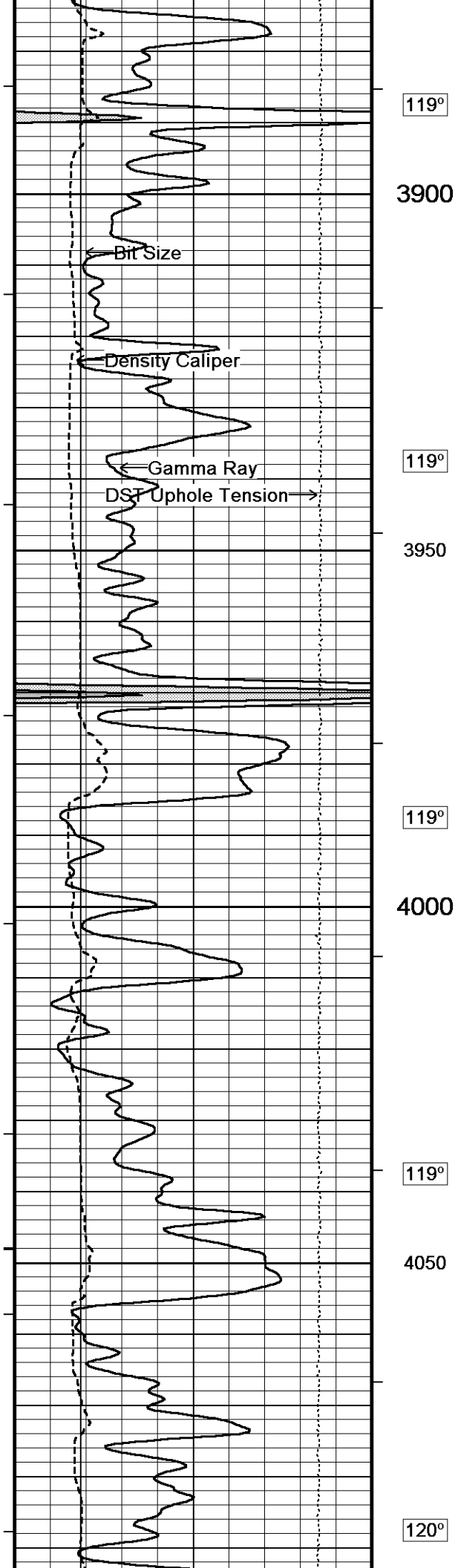
*MAIN PASS

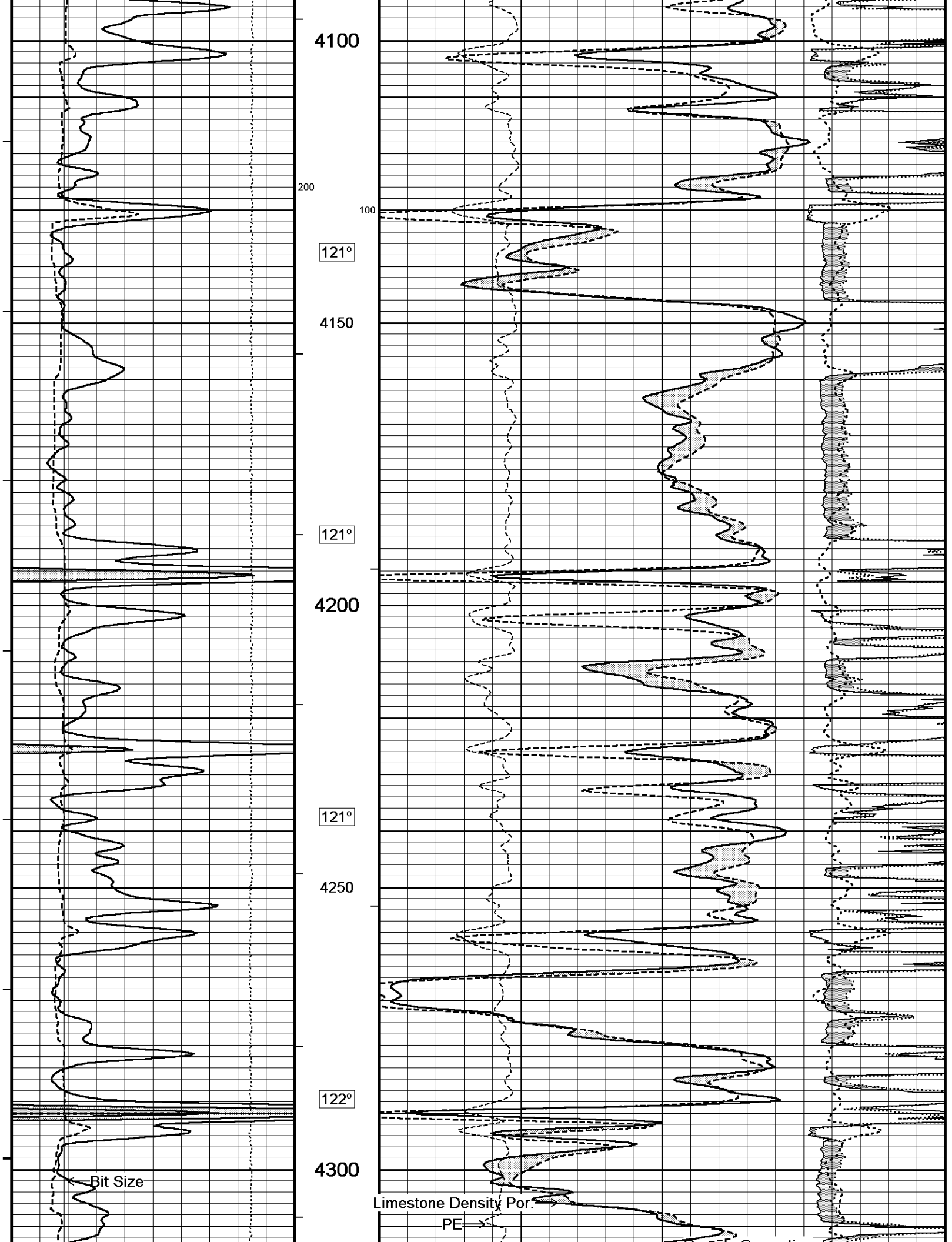
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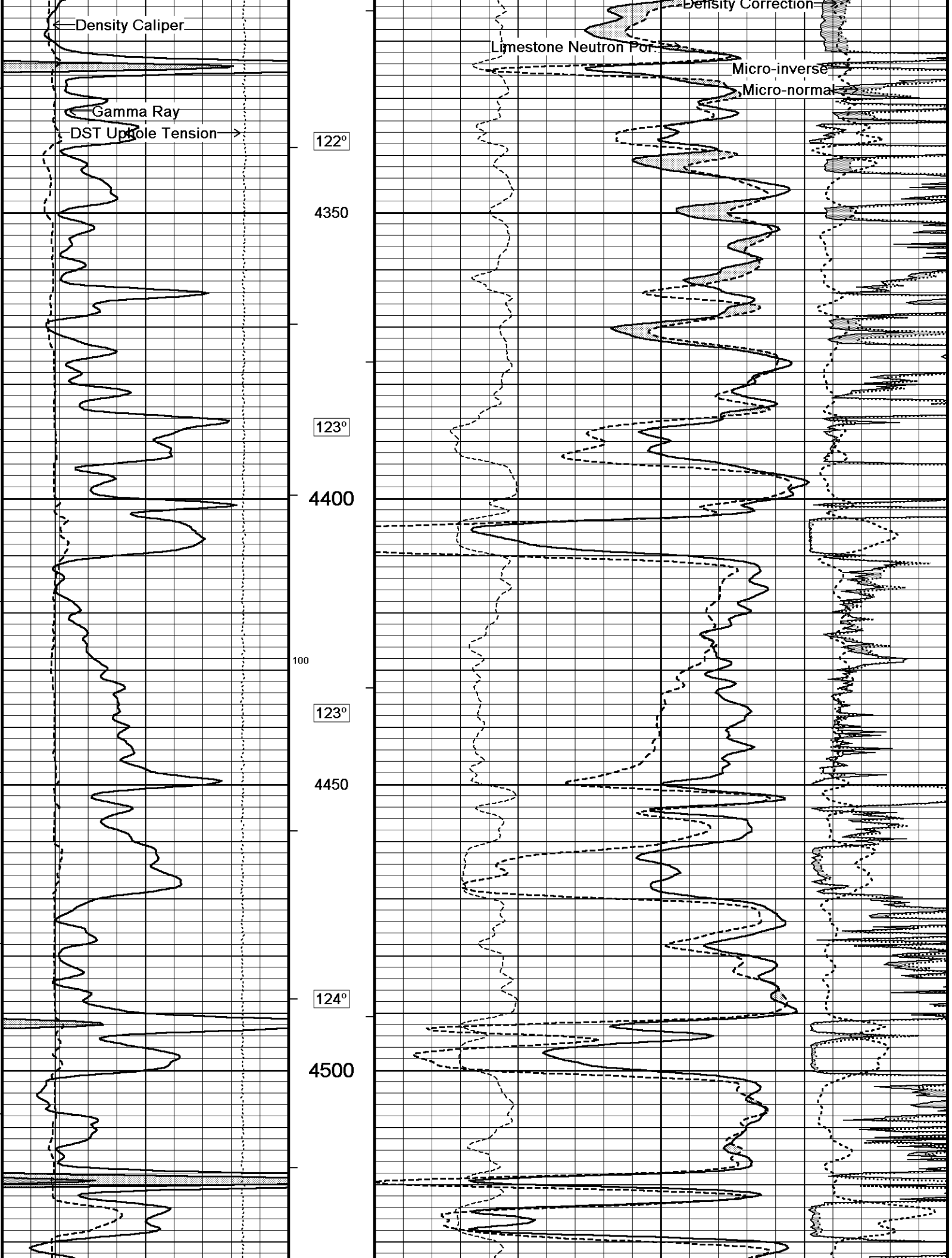
Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 11.02.3186\Data\McCoy M-M Diel Unit ...McCoy M-M Diel Unit A # 1-8 Splice.dta
System Versions: Plotted with 12.03.5032

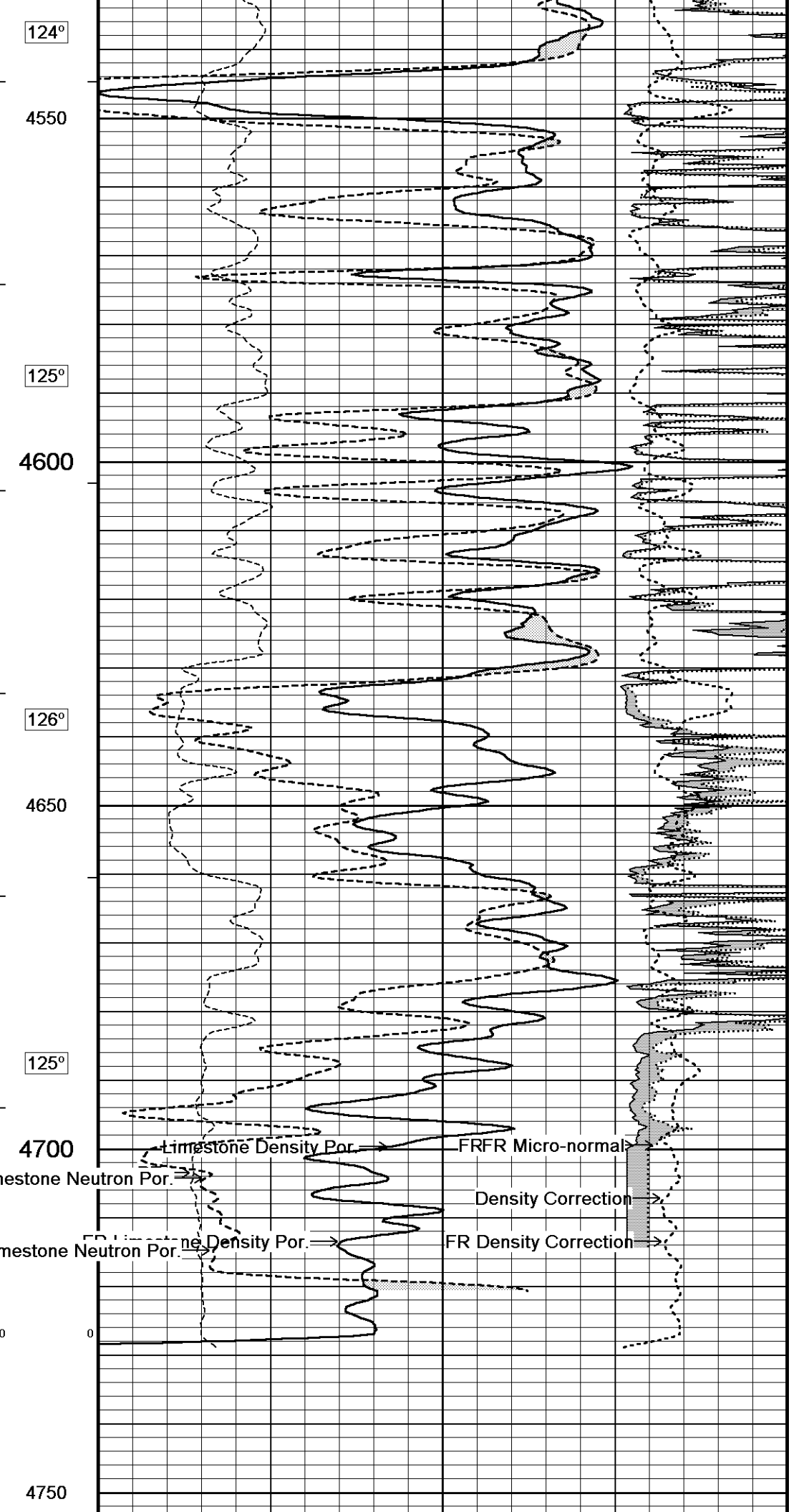
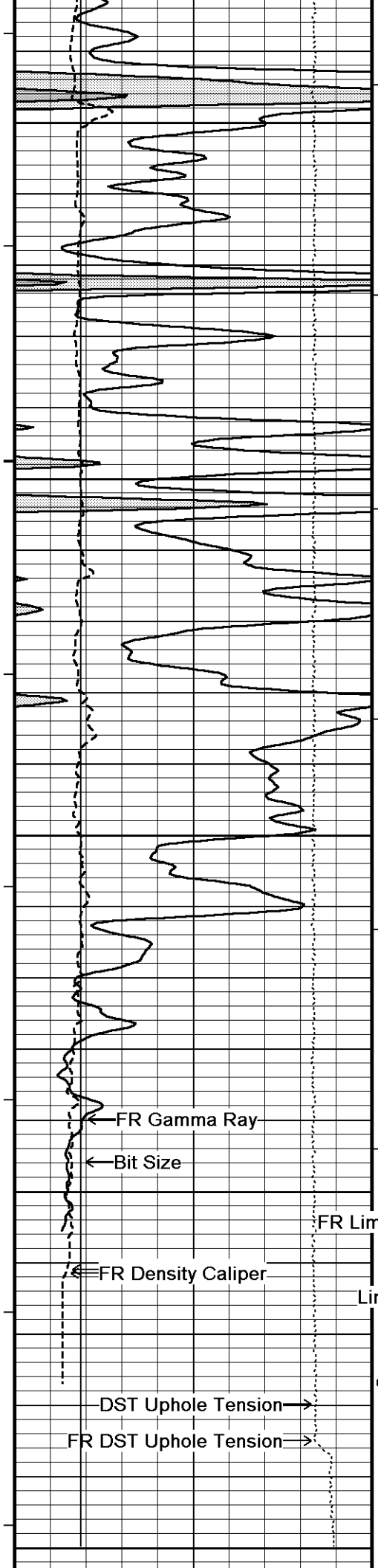
Plotted on 16-DEC-2011 07:46
Recorded on 16-DEC-2011 04:15

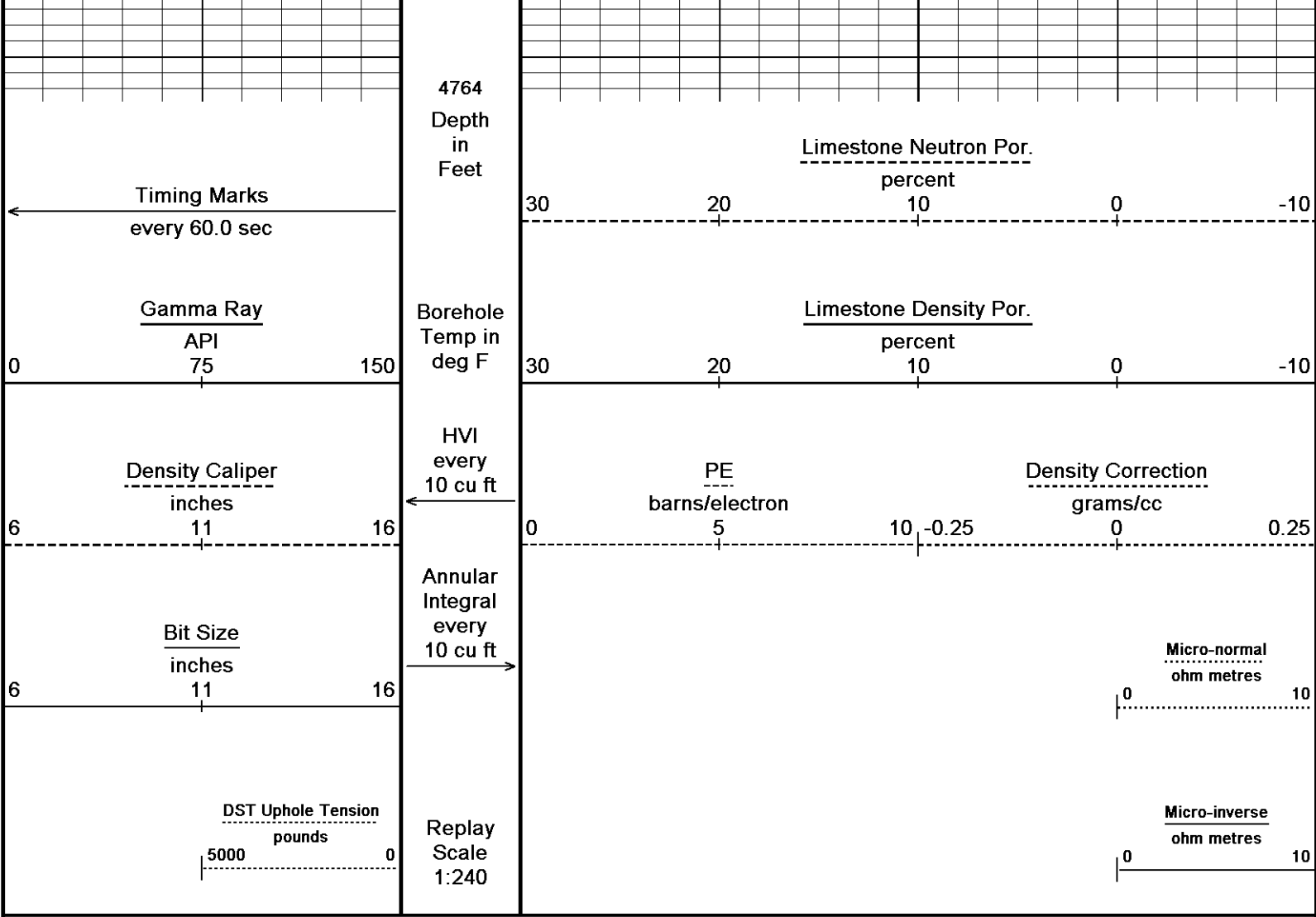












Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 16-DEC-2011 07:46

Filename: C:\Minimus 11.02.3186\Data\McCoy M-M Diel Unit ...McCoy M-M Diel Unit A # 1-8 Splice.dta

Recorded on 16-DEC-2011 04:15

System Versions: Plotted with 12.03.5032

↑

*MAIN PASS

↑

↓

5 INCH REPEAT PASS

↓

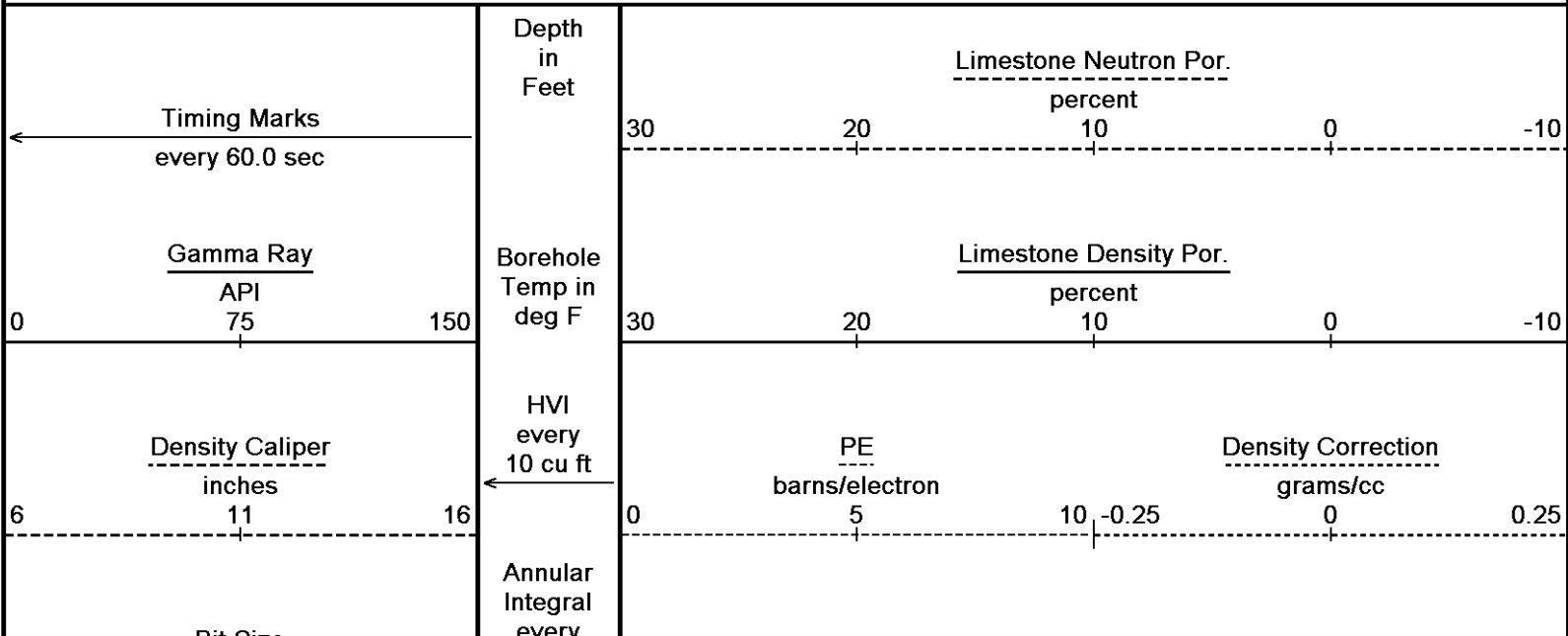
Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 16-DEC-2011 07:46

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Recorded on 16-DEC-2011 03:50

System Versions: Logged with 12.03.5032 Processed with 12.03.5032 Plotted with 12.03.5032



Bit Size
inches

6 11 16

DST Uphole Tension
pounds

5000 0

every
10 cu ft

Replay
Scale
1:240

Micro-normal
ohm metres

0 10

Micro-inverse
ohm metres

0 10

4400

100

122°

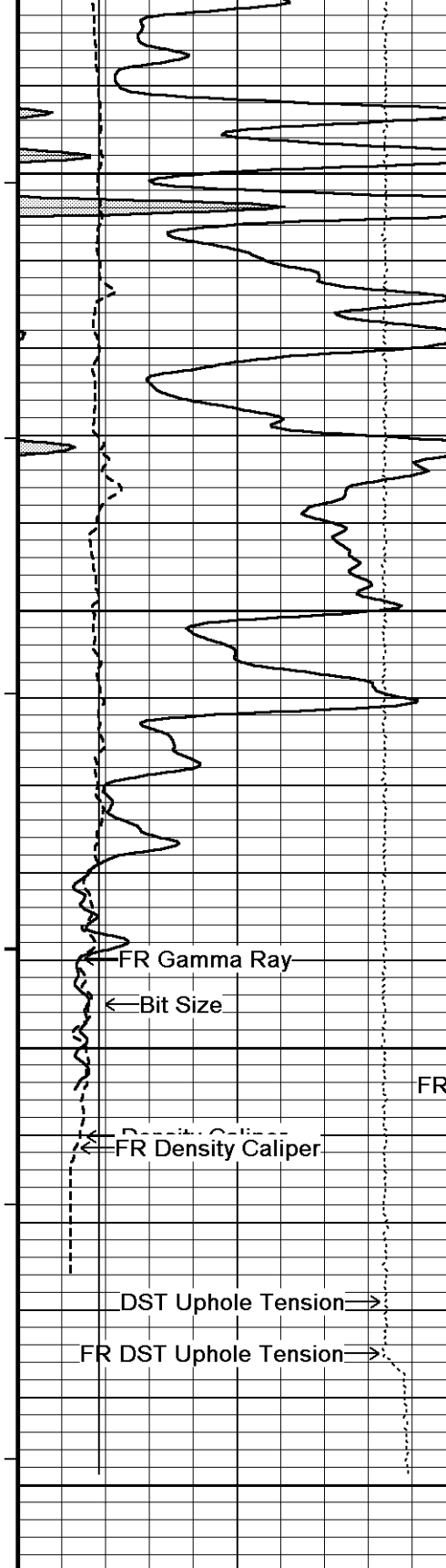
4450

122°

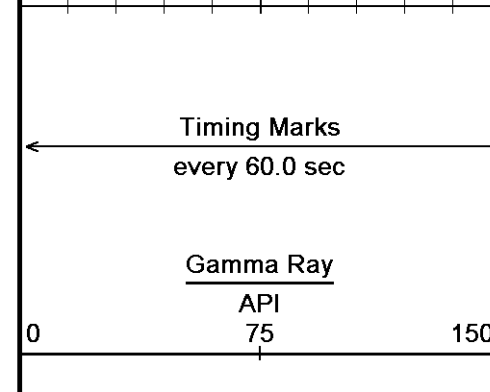
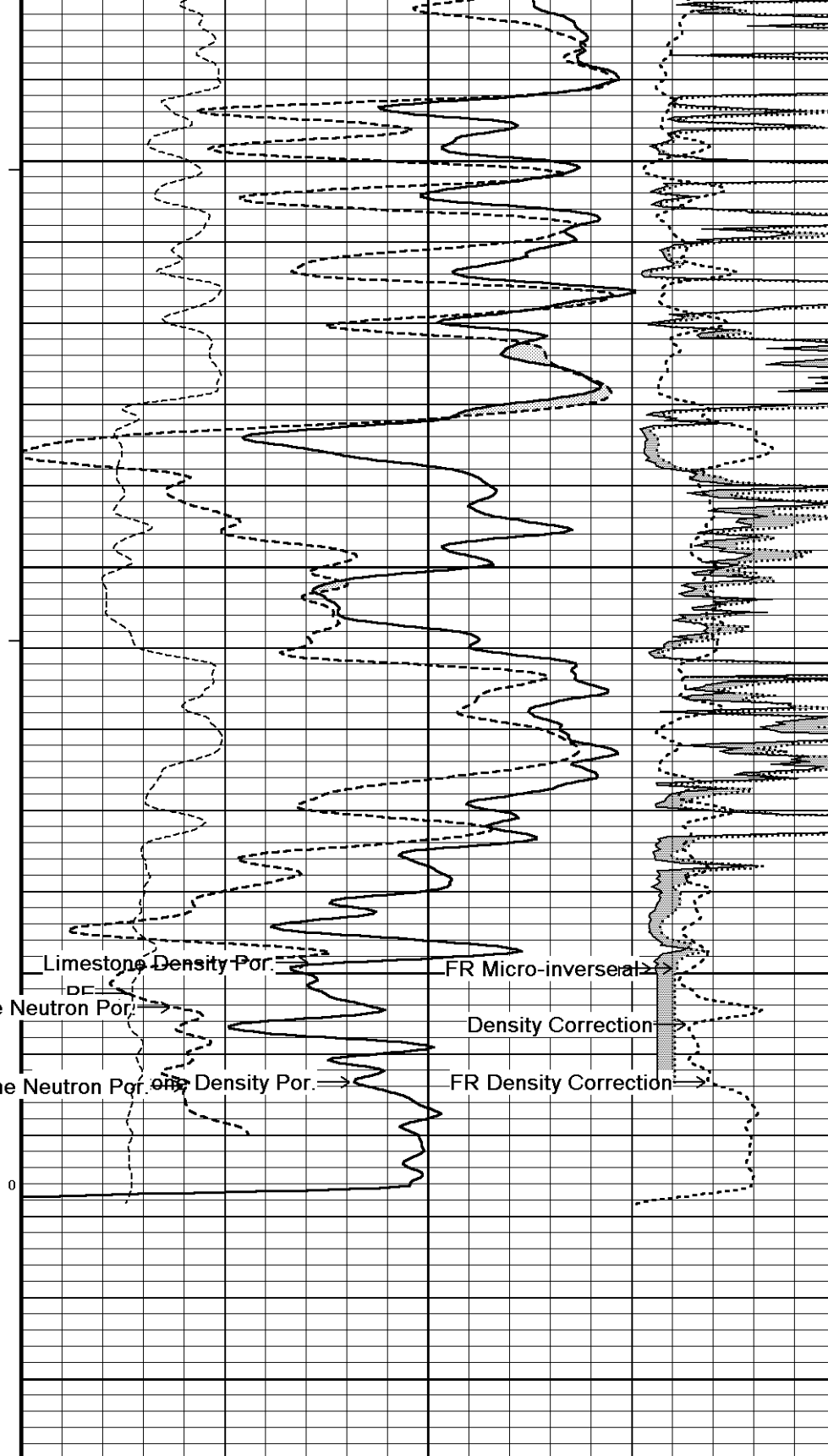
4500

123°

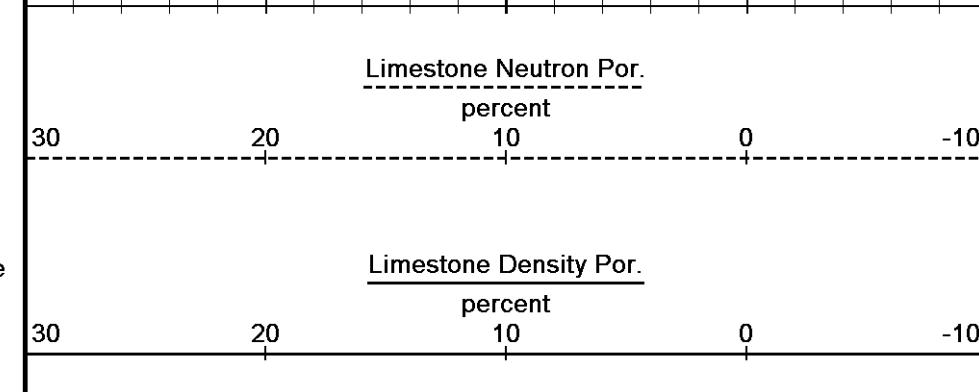
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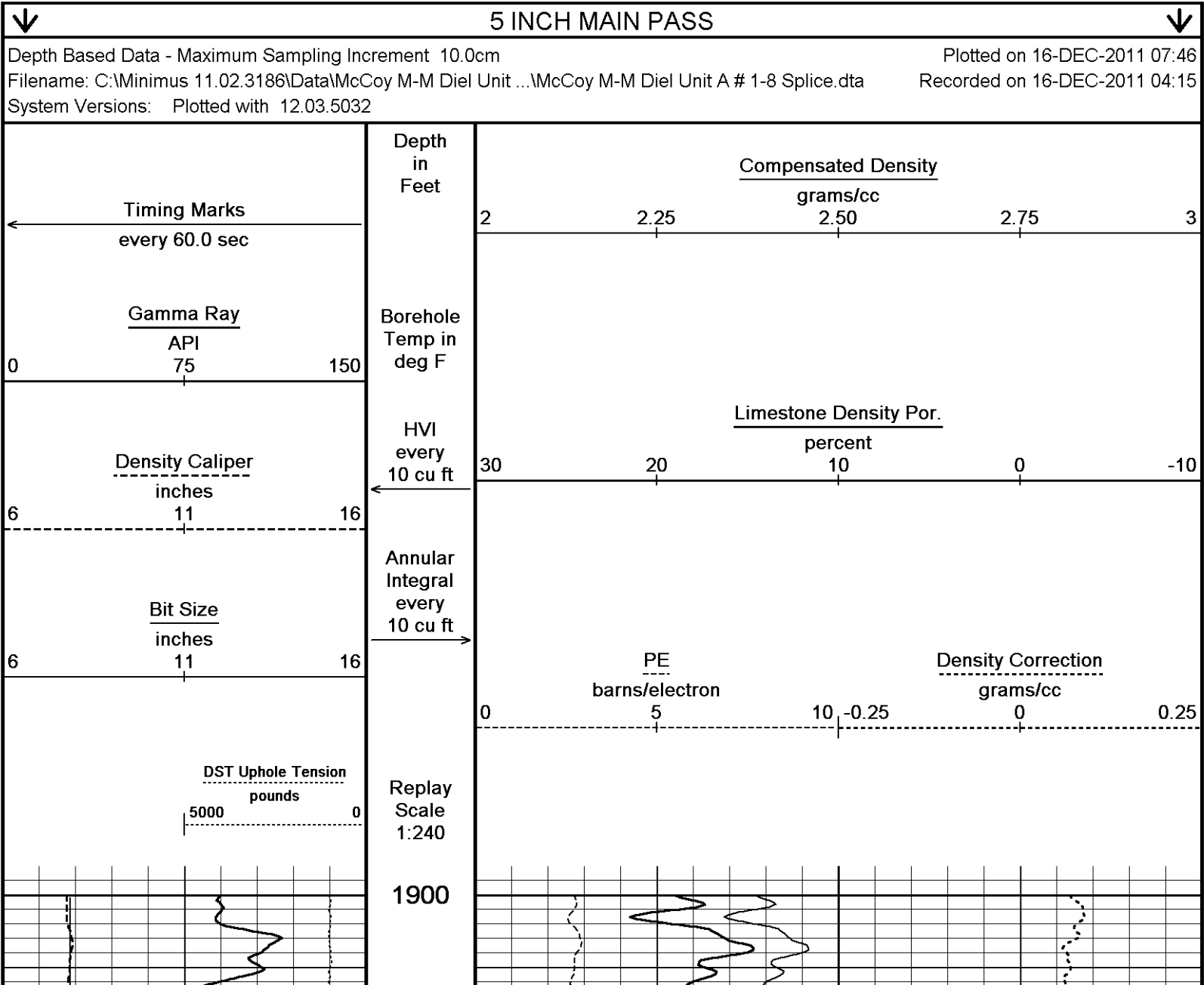
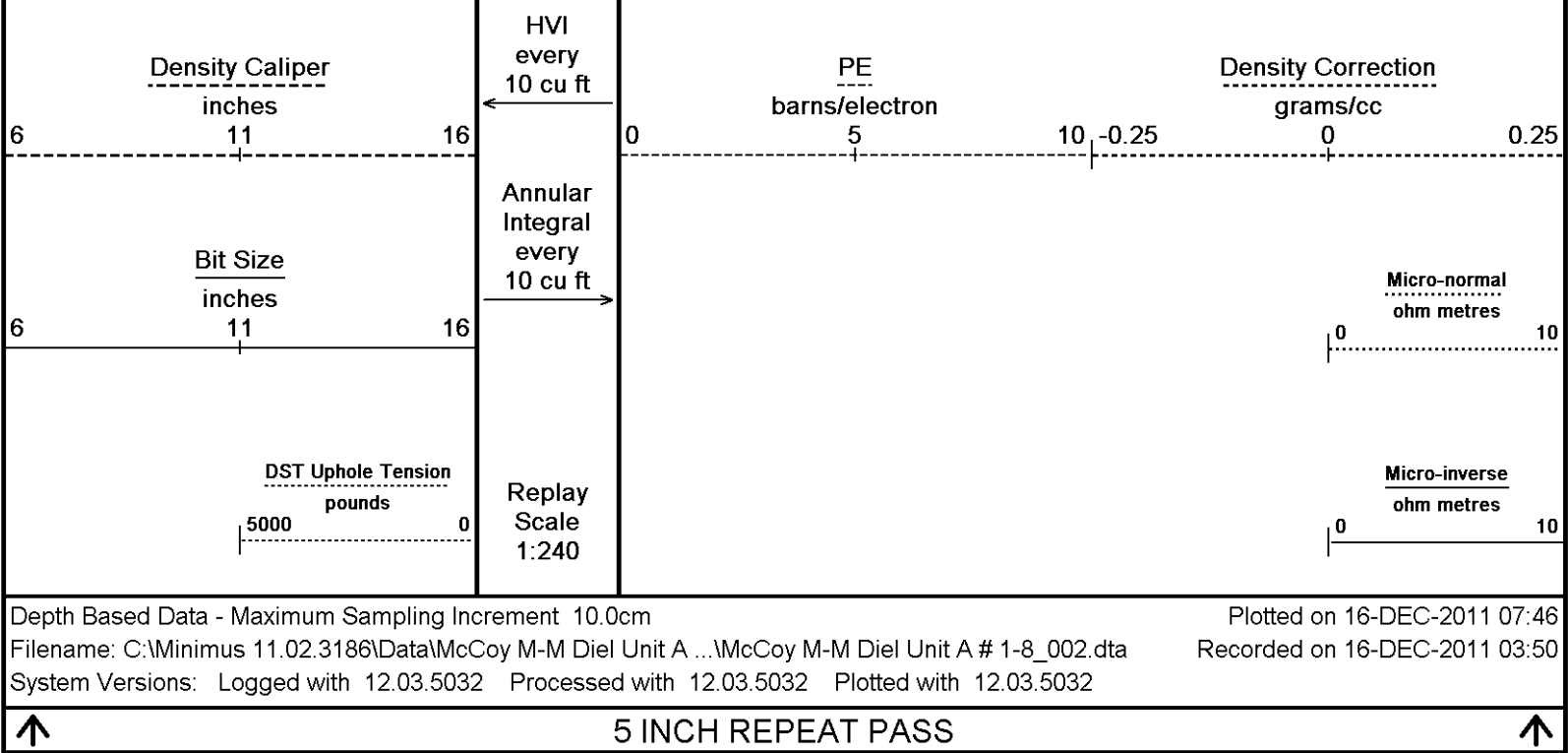


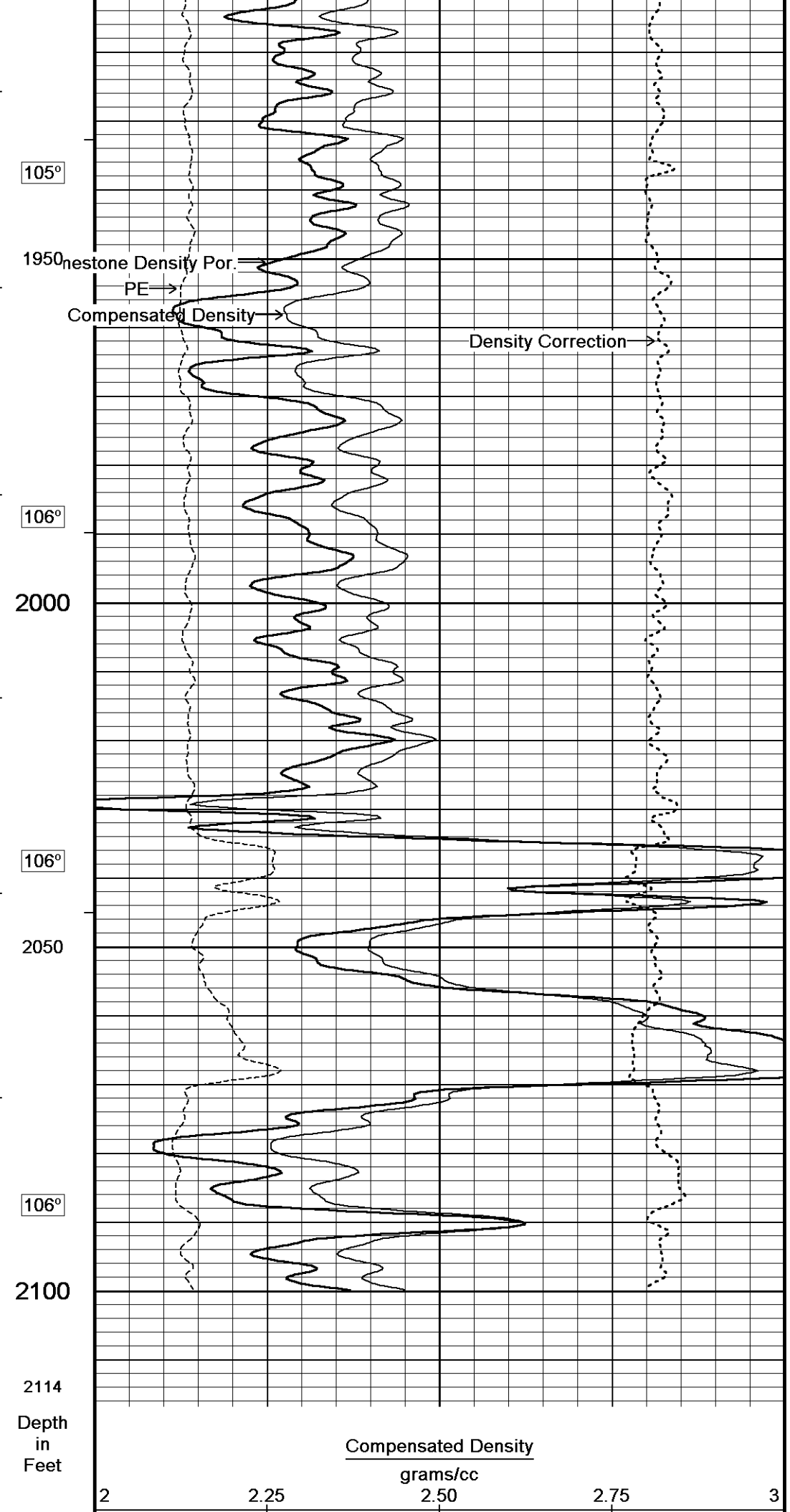
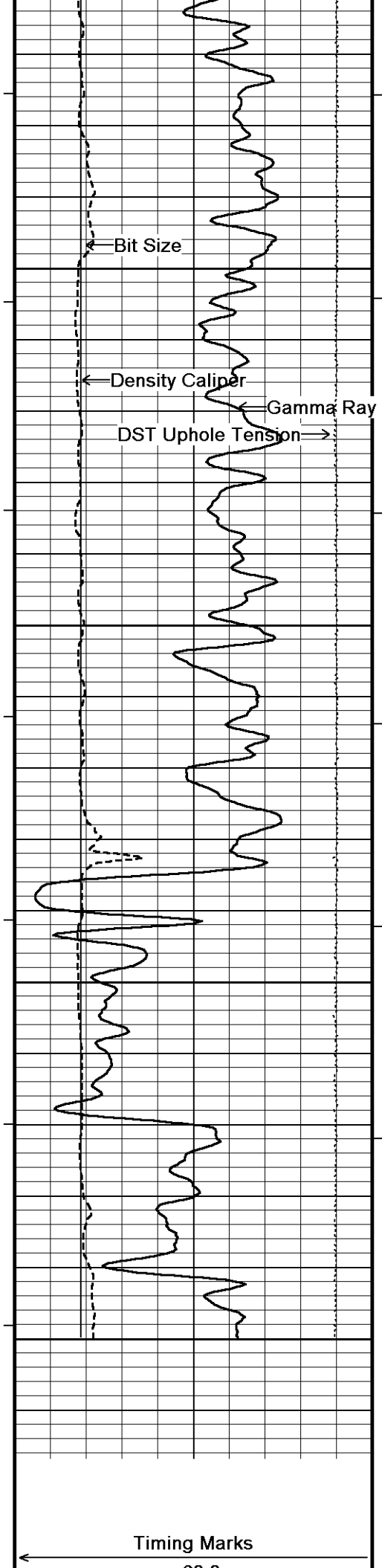
124°
4600
125°
4650
125°
4700
4750
4758
Depth in Feet



Borehole Temp in deg F







every 60.0 sec

Gamma Ray

API

75

0

150

Borehole
Temp in
deg F

Density Caliper
inches

11

6

16

HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

Bit Size
inches

11

6

16

DST Uphole Tension
pounds

5000

0

Replay
Scale
1:240

Limestone Density Por.

percent

30

20

10

0

-10

PE

barns/electron

0

5

10

-0.25

Density Correction

grams/cc

0

0.25

Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 16-DEC-2011 07:46

Filename: C:\Minimus 11.02.3186\Data\McCoy M-M Diel Unit ...McCoy M-M Diel Unit A # 1-8 Splice.dta

Recorded on 16-DEC-2011 04:15

System Versions: Plotted with 12.03.5032



5 INCH MAIN PASS



*MAIN PASS



Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 16-DEC-2011 07:46

Filename: C:\Minimus 11.02.3186\Data\McCoy M-M Diel Unit ...McCoy M-M Diel Unit A # 1-8 Splice.dta

Recorded on 16-DEC-2011 04:15

System Versions: Plotted with 12.03.5032

Timing Marks
every 60.0 sec

←

Gamma Ray

API

75

0

150

Depth
in
Feet

Borehole
Temp in
deg F

Density Caliper
inches

11

6

16

HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

Bit Size
inches

11

6

16

DST Uphole Tension
pounds

5000

0

Replay
Scale

Compensated Density

grams/cc

2

2.25

2.50

2.75

3

Limestone Density Por.

percent

30

20

10

0

-10

PE

barns/electron

0

5

10

-0.25

Density Correction

grams/cc

0

0.25

Scale
1:240

3800

300

119°

3850

119°

3900

Bit Size

Density Caliper

Gamma Ray

DST Uphole Tension

119°

3950

119°

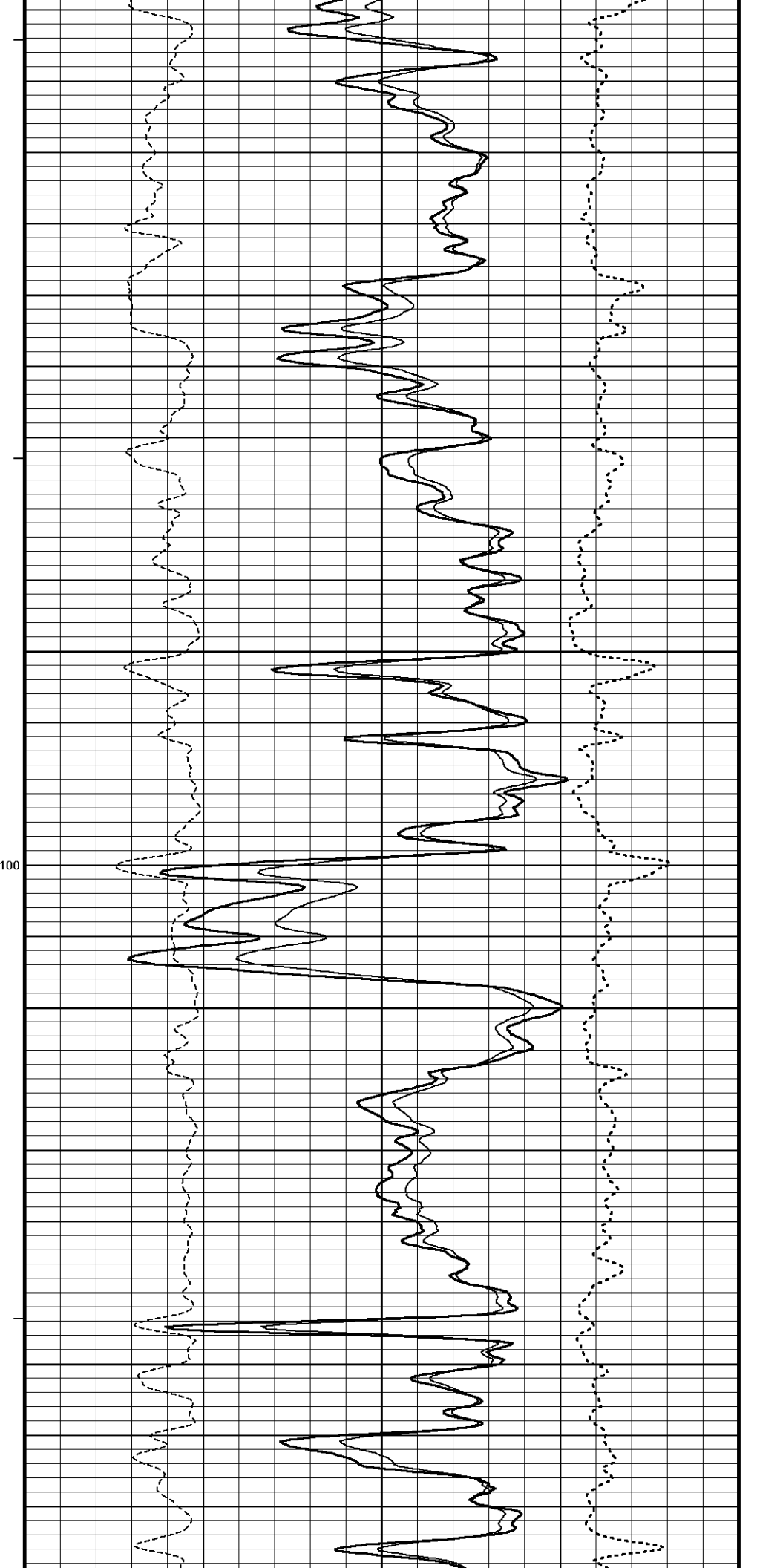
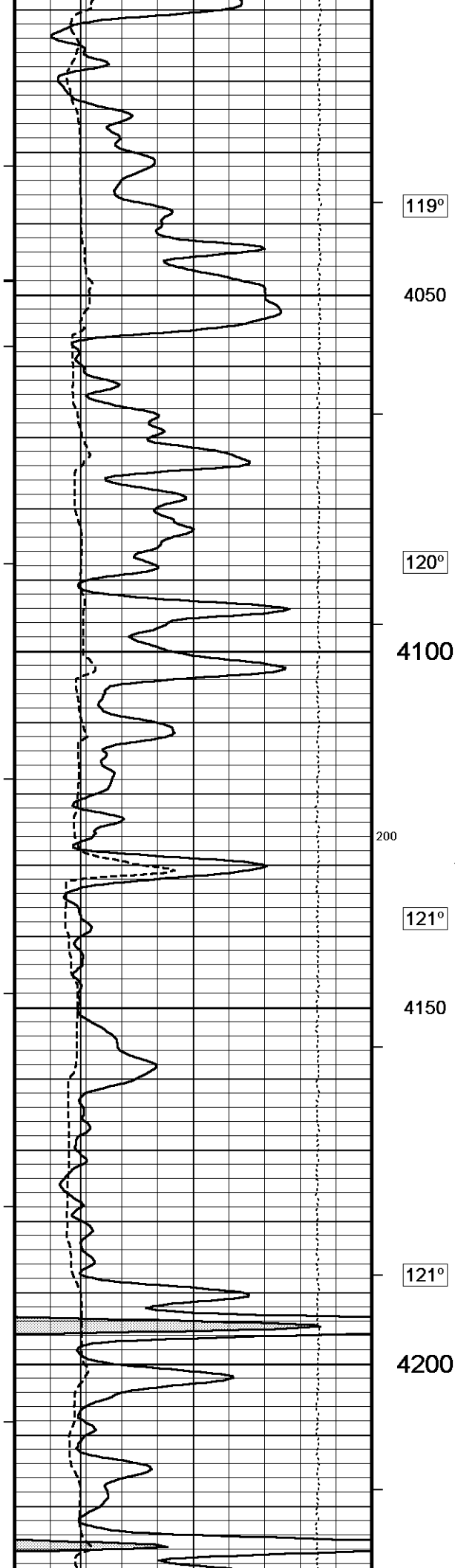
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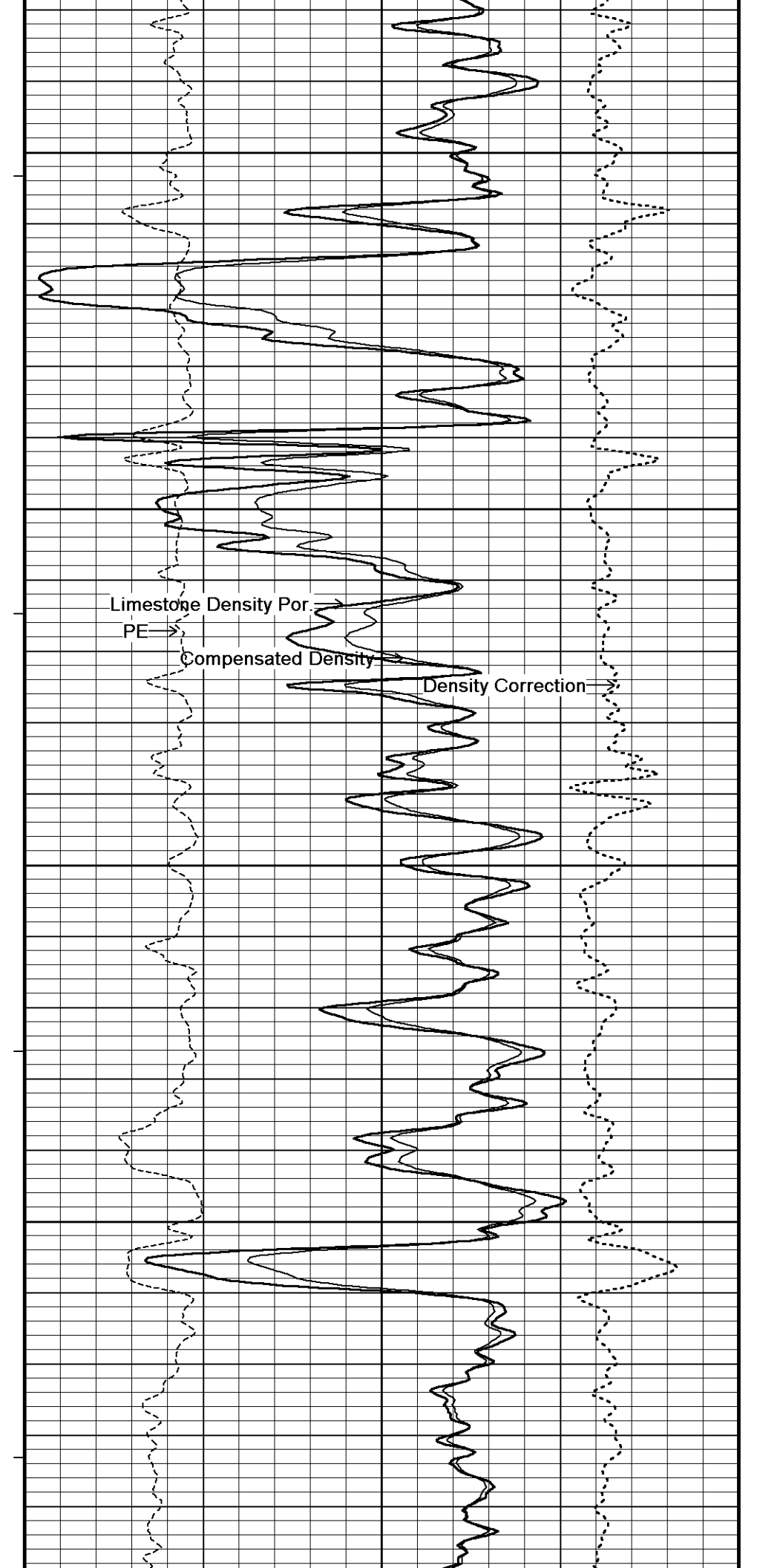
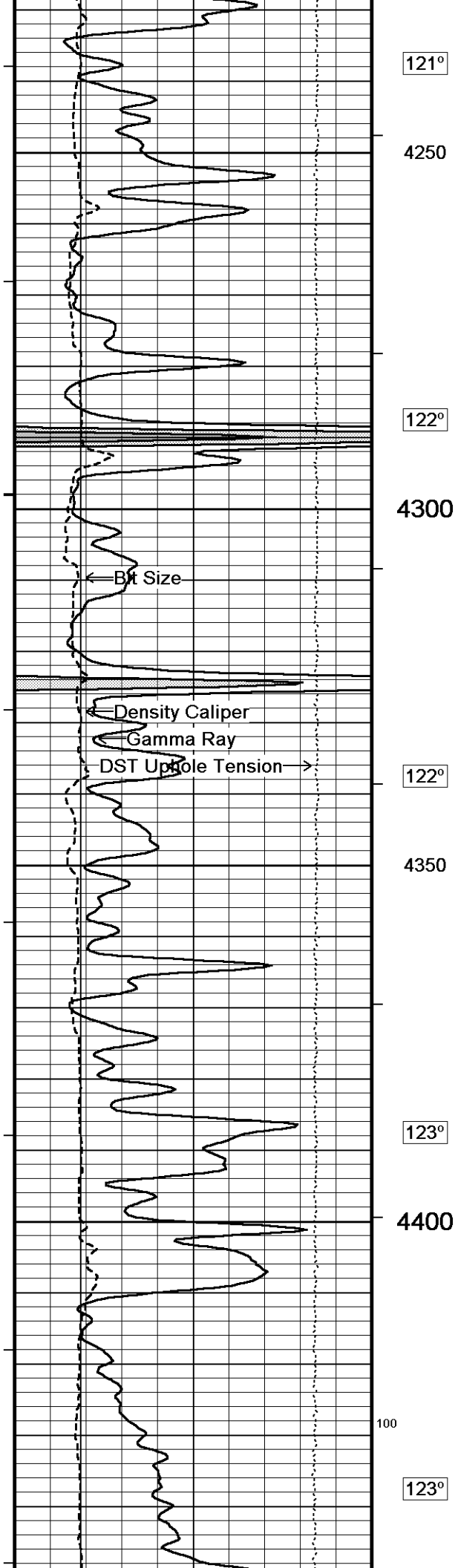
Limestone Density Por

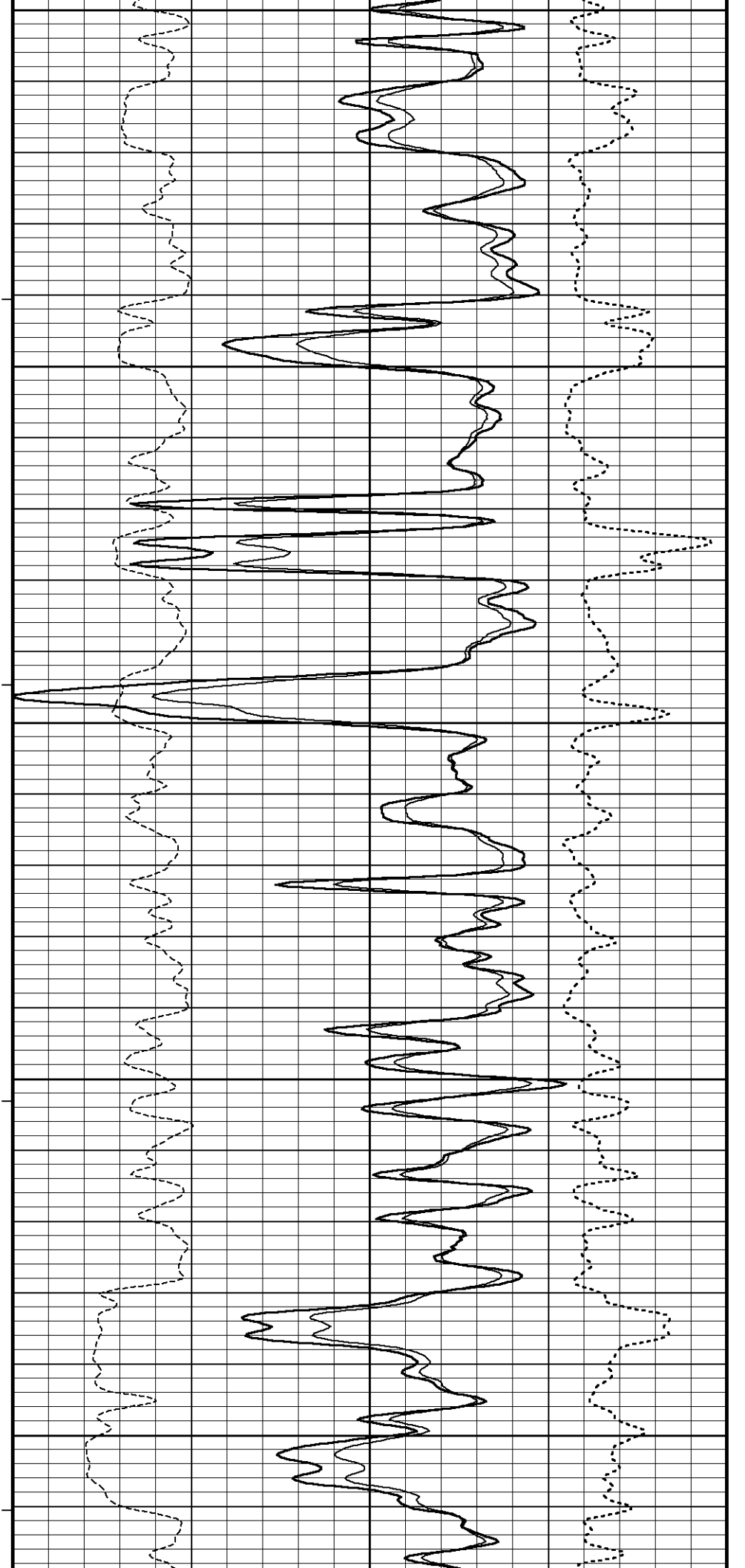
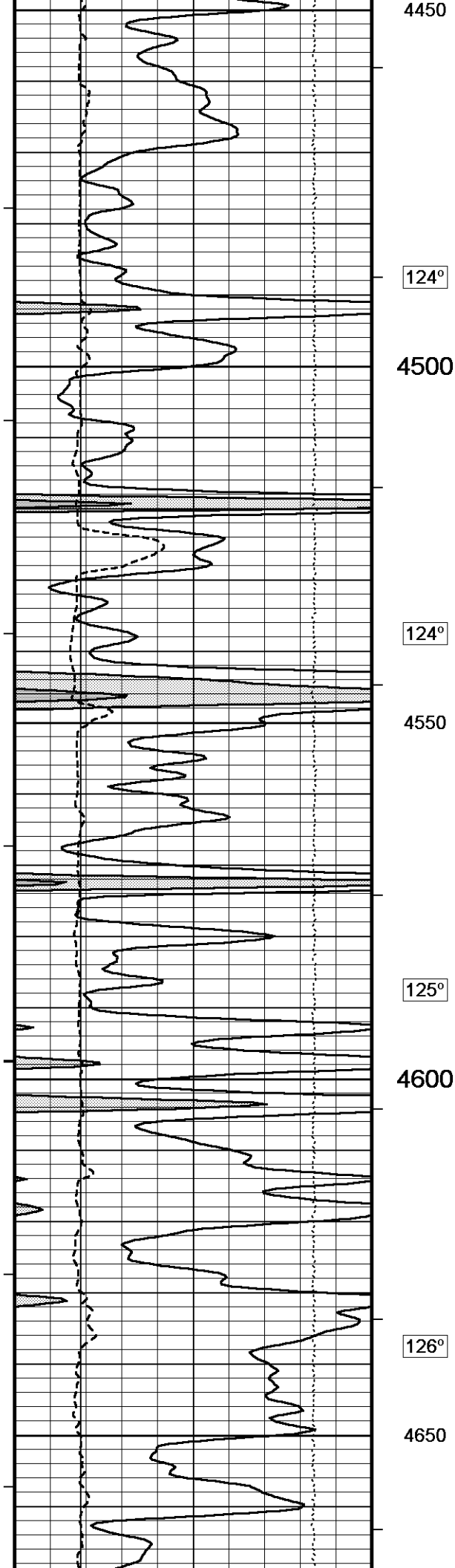
PE

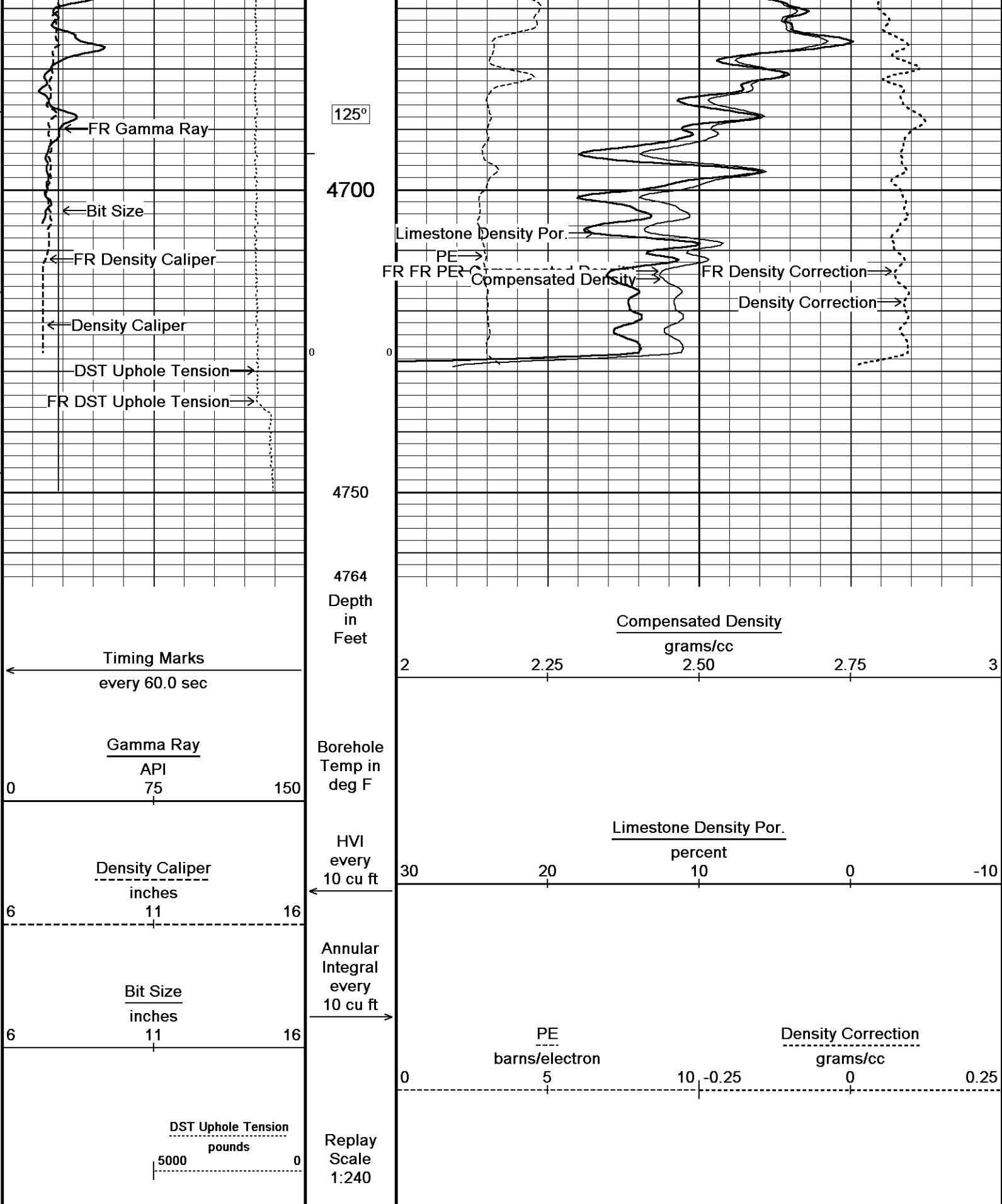
Compensated Density

Density Correction



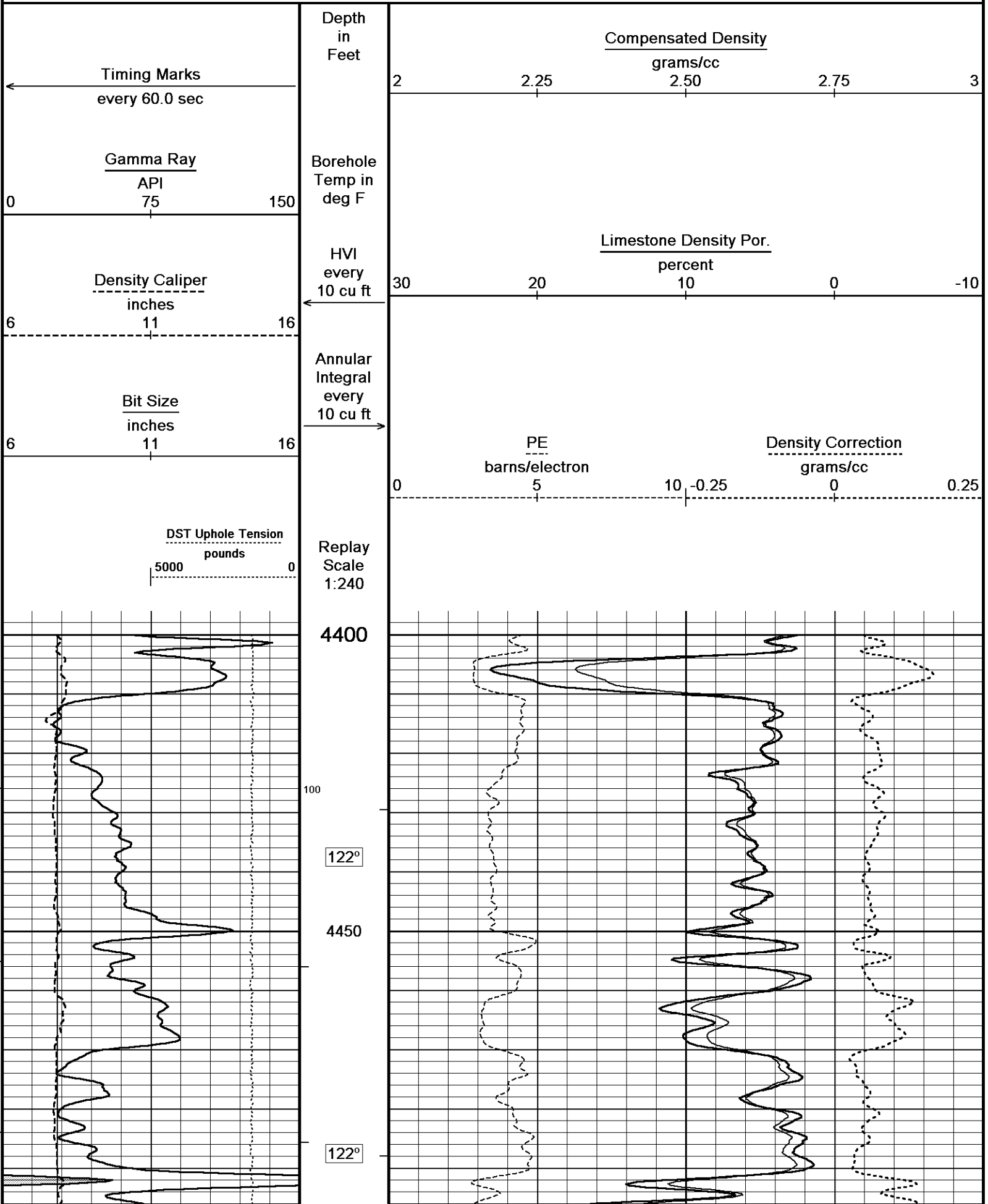


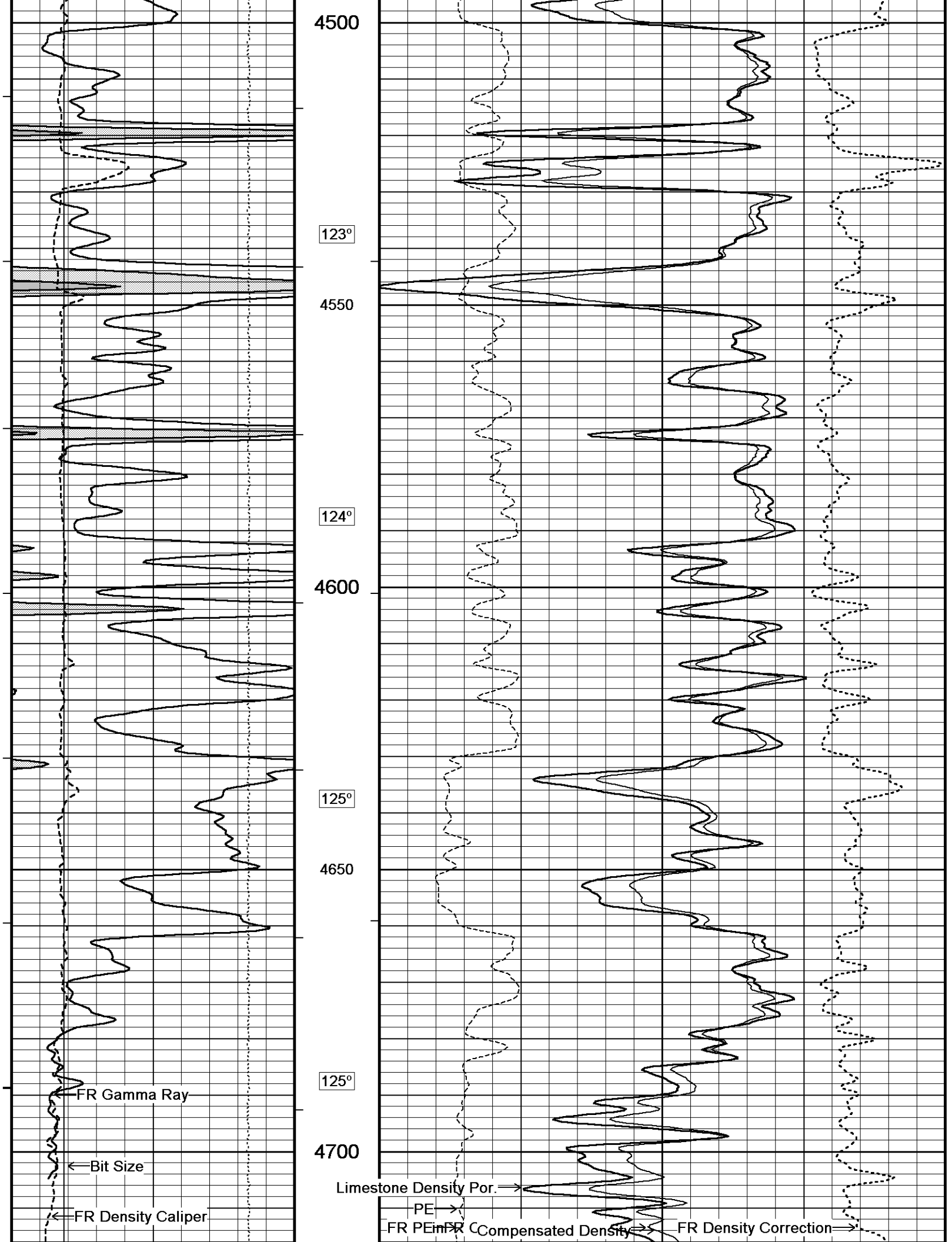


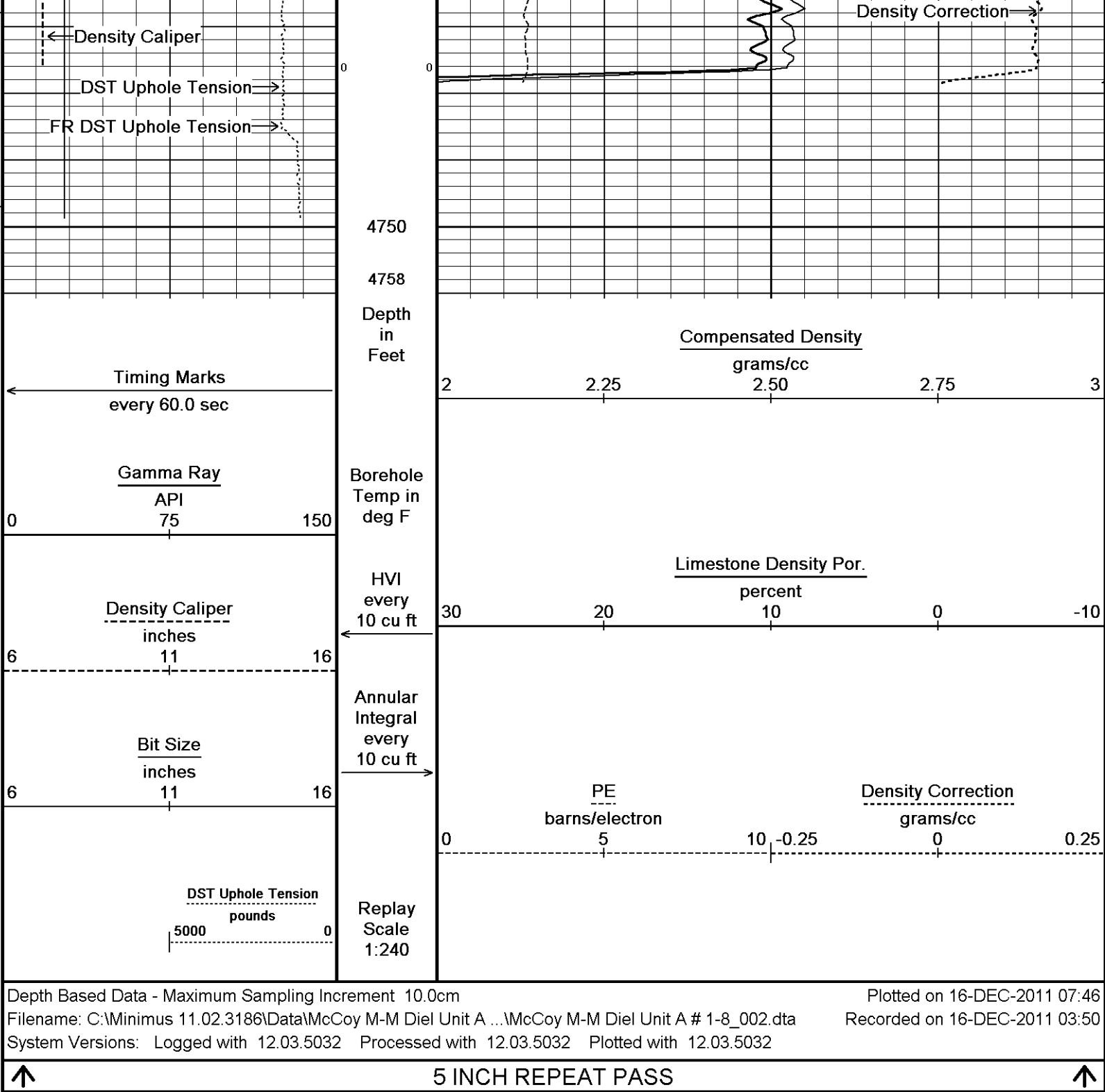


Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 11.02.3186\Data\McCoy M-M Diel Unit ...McCoy M-M Diel Unit A # 1-8 Splice.dta
System Versions: Plotted with 12.03.5032

Plotted on 16-DEC-2011 07:46
Recorded on 16-DEC-2011 04:15







Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 11.02.3186\Data\McCoy M-M Diel Unit A ...\McCoy M-M Diel Unit A # 1-8_002.dta
System Versions: Logged with 12.03.5032 Processed with 12.03.5032 Plotted with 12.03.5032

5 INCH REPEAT PASS

BEFORE SURVEY CALIBRATION		
C:\Minimus 11.02.3186\Data\McCoy M-M Diel Unit A # 1-8\McCoy M-M Diel Unit A # 1-8 Splice.dta		
General Constants All 000		Last Edited on 16-DEC-2011,02:42
General Parameters		
Mud Resistivity	1.450	ohm-metres
Mud Resistivity Temperature	67.000	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. Six Res Rt		
RWA Constant A	0.610		
RWA Constant M	2.150		
Down-hole Tension Calibration SMS 0		Field Calibration on 23-OCT-2011 03:19	
Reading No	Measured	Calibrated (lbs)	
1	12734.06	0.00	
2	13523.27	454.00	
Gamma Calibration MCG-C 84		Field Calibration on 14-DEC-2011 10:22	
	Measured	Calibrated (API)	
Background	70	46	
Calibrator (Gross)	756	502	
Calibrator (Net)	686	456	
Gamma Constants MCG-C 84		Last Edited on 16-DEC-2011,02:54	
Gamma Calibrator Number	grc141		
Mud Density	1.13	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	
SP Calibration MCG-C 84		Field Calibration on 28-DEC-2010 11:28	
	Measured	Calibrated (mV)	
Reference 1	100.3	100.0	
Reference 2	-99.7	-100.0	
High Resolution Temperature Calibration MCG-C 84		Field Calibration on 24-JUN-2010,13:02	
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	75.00	75.00	
High Resolution Temperature Constants MCG-C 84		Last Edited on	
Pre-filter Length	11		
Micro Normal and Micro Inverse Calibration MML-A 9		Base Calibration on 21-NOV-2011 11:00 Field Check on 28-NOV-2011 19:50	
Base Calibration			
Channel	Resistor 1	Measured Resistor 2	Calibrated (ohm-m) Resistor 2
Micro Normal	12.1	59.5	2.6 12.8
Micro Inverse	15.6	77.7	1.7 8.4
Channel	Base Check (ohm-m)		Field Check (ohm-m)
Micro Normal	32.5		32.5
Micro Inverse	16.4		16.4
Micro Normal and Micro Inverse Constants MML-A 9		Last Edited on 29-NOV-2011,00:10	
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 9		Base Calibration on 21-NOV-2011 11:11 Field Calibration on 28-NOV-2011 19:54	
Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	15045	5.98	
2	18517	7.97	
3	21877	9.86	
4	25857	11.92	
5	0	0.00	
6	N/A	N/A	

Field Calibration	Measured Caliper (in) 7.96	Actual Caliper (in) 7.97	
Neutron Calibration MDN-A.B 39			Base Calibration on 22-NOV-2011 10:41 Field Check on 14-DEC-2011 10:28
Base Calibration			
	Measured	Calibrated (cps)	
	Near Far	Near Far	
	2737 86	3714 110	
Ratio	31.919	33.764	
Field Calibrator at Base		Calibrated (cps)	
		2423 3477	
Ratio		0.697	
Field Check		Calibrated (cps)	
		2406 3408	
Ratio		0.706	
Neutron Constants MDN-A.B 39			Last Edited on 16-DEC-2011,02:55
Neutron Source Id	N1095		
Neutron Jig Number	NECD117		
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	
Barite Mud Correction	Not Applied		
FE Calibration MFE-A.A 67			Base Calibration on 21-NOV-2011 10:35 Field Check on 14-DEC-2011 10:40
Base Calibration			
	Measured	Calibrated (ohm-m)	
Reference 1	0.0	0.0	
Reference 2	959.4	126.8	
Base Check		281.1	
Field Check		281.0	
FE Constants MFE-A.A 67			Last Edited on 16-DEC-2011,02:55
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 188			Base Calibration on 14-JUN-2006 13:48 Field Check on 14-DEC-2011 10:42
Base Calibration			
Test Loop Calibration			
Channel	Measured	Calibrated (mmho/m)	
	Low High	Low High	
1	16.5 472.3	9.3 966.2	
2	6.0 378.3	7.6 821.4	
3	3.5 260.7	5.2 566.0	
4	1.1 135.1	2.6 279.2	

Array Temperature		82.2	Deg F	
Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	13.9	3846.8
2	0.0	0.0	30.5	3568.4
3	0.0	0.0	28.2	3039.7
4	0.0	0.0	20.8	2038.0
Deep	0.0	0.0	17.9	1922.9
Medium	0.0	0.0	39.9	4053.9
Shallow	0.0	0.0	44.8	5360.2
Array Temperature		0.0	65.6	Deg F

Induction Constants MAI-A.A 188

Last Edited on 16-DEC-2011,02:59

Induction Model		RtAP-WBM	
Caliper for Borehole Corr.		Density Caliper	
Hole Size for Borehole Correction		N/A	inches
Tool Centred		No	
Stand-off Type		Fins	
Stand-off		0.50	inches
Number of Fins on Stand-off		8.0000	
Stand-off Fin Angle		45.00	degrees
Stand-off Fin Width		0.5000	inches
Borehole Corr. Rm Source		Temperature Corr	
Temp. for Rm Corr.	MCG	External Temperature	
Squasher Start		0.0020	mhos/metre
Squasher Offset		N/A	mhos/metre
Borehole Normalisation			
DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

High Resolution Temperature Calibration MAI-A.A 188

Field Calibration on 14-JUN-2006,13:48

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

High Resolution Temperature Constants MAI-A.A 188

Last Edited on

Pre-filter Length	11
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Caliper Calibration MPD-B 65

Base Calibration on 21-NOV-2011 14:58

Field Calibration on 14-DEC-2011 10:36

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	13999	3.99
2	22481	5.98
3	30982	7.97
4	39297	9.86

4	39297	9.80
5	48432	11.92
6	N/A	N/A

Field Calibration

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

Photo Density Calibration MPD-B 65

Base Calibration on 21-NOV-2011 14:42
Field Check on 14-DEC-2011 10:33

Density Calibration Base Calibration

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	60841	28249	59556	30836
Reference 2	24364	2437	24941	2541

Field Check at Base

1234.7	1185.8
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Field Check

1233.5	1181.3
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PE Calibration

Base Calibration

	WS	Measured		Calibrated
		WH	Ratio	Ratio
Background	223	1098		
Reference 1	22974	60634	0.382	0.371
Reference 2	6577	24217	0.275	0.272

Field Check at Base

223.4	1098.4
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Field Check

223.3	1095.5
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Density Constants MPD-B 65

Last Edited on 16-DEC-2011,02:55

Density Source Id	P57072B
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	1.13 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 11.02.3186\Data\McCoy M-M Diel Unit A # 1-8\McCoy M-M Diel Unit A # 1-8 Splice.dta

MCB-A.A 11B Tension Cablehead
MCB-A.A 161 LG: 2.40 ft WT: 19.8 lb OD: 2.24 in

Compact Comms Gamma
MCG-C 84 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in



45.04 ft GRGC - Gamma Ray
42.13 ft CGXT - MCG External Temperature

Compact Micro-log
MML-A 9 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.B 39 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

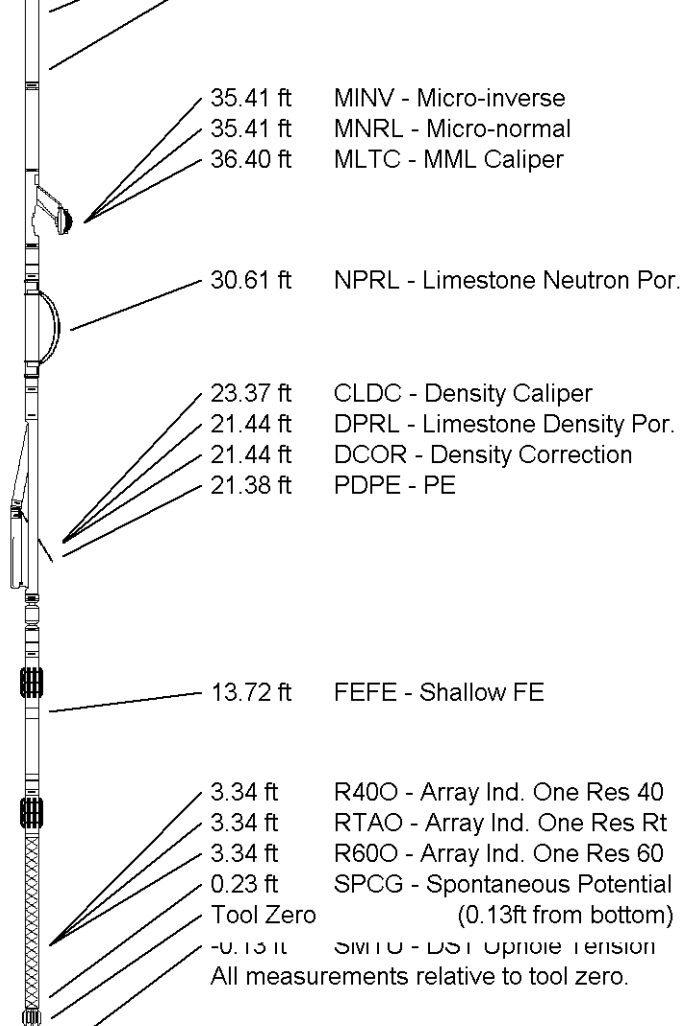
Compact Density/Caliper
MPD-B 65 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 91 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Focussed Electric
MFE-A.A 67 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-A.A 188 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 52.72 ft Weight: 427.7 lb



COMPANY	MCCOY PETROLEUM CORPORATION
WELL	M-M DIEL UNIT "A" # 1-8
FIELD	WILDCAT
PROVINCE/COUNTY	LANE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2743.00	feet	First Reading	4712.00	feet
Elevation Drill Floor	2741.00	feet	Depth Driller	4730.00	feet
Elevation Ground Level	2733.00	feet	Depth Logger	4735.00	feet



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COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG

