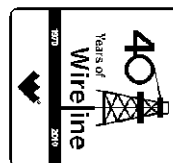




Weatherford

COMPACT PHOTO DENSITY COMPENSATED NEUTRON LOG

COMPANY	GRAND MESA		
WELL	DALE #1-34		
FIELD	WILDCAT		
PROVINCE/COUNTY	LOGAN		
COUNTRY/STATE	U.S.A./KANSAS		
LOCATION	2548' FSL & 352' FEL		



SEC	TWP	RGE	Other Services MAI/MFE MML
34	12S	32W	
API Number 15-109-20995			
Permit Number			

Permanent Datum G.L., Elevation 2983 feet
Log Measured From K.B. @ 5 FEET above Permanent Datum
Drilling Measured From K.B.

Elevations:	feet
KB	2988.00
DF	2987.00
GL	2983.00

Date	06-APR-2011	
Run Number	ONE	
Depth Driller	4750.00	feet
Depth Logger	4747.00	feet
First Reading	4726.00	feet
Last Reading	3600.00	feet
Casing Driller	216.00	feet
Casing Logger	214.00	feet
Bit Size	7.880	inches
Hole Fluid Type	CHEMICAL	
Density / Viscosity	9.70 lb/USg	54.00 CP
PH / Fluid Loss	9.00	10.40 ml/30Min
Sample Source	FLOWLINE	
Rm @ Measured Temp	0.46 @ 78.0	ohm-m
Rmf @ Measured Temp	0.37 @ 78.0	ohm-m
Rmc @ Measured Temp	0.55 @ 78.0	ohm-m
Source Rmf / Rmc	CALC	CALC
Rm @ BHT	0.31 @115.0	ohm-m
Time Since Circulation	3 HOURS	
Max Recorded Temp	115.00	deg F
Equipment Name	COMPACT	
Equipment / Base	13025	LIB
Recorded By	SHAWN NUTT	
Witnessed By	MACKLIN ARMSTRONG	
S.O.#/JOB#	3529713	LB11-069

BOREHOLE RECORD

Last Edited: 06-APR-2011 11:26

Bit Size inches	Depth From feet	Depth To feet
7.880	214.00	4747.00

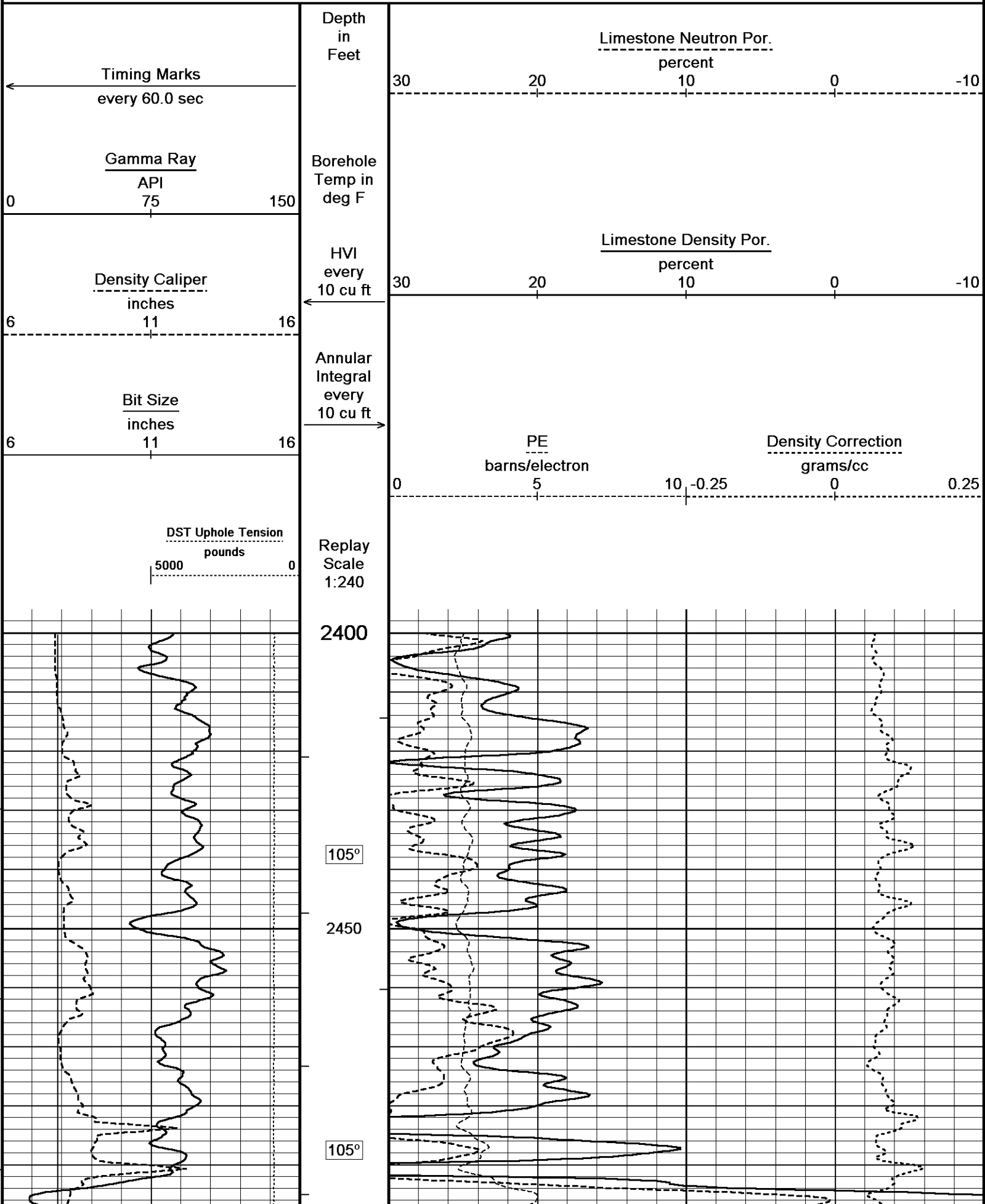
CASING RECORD

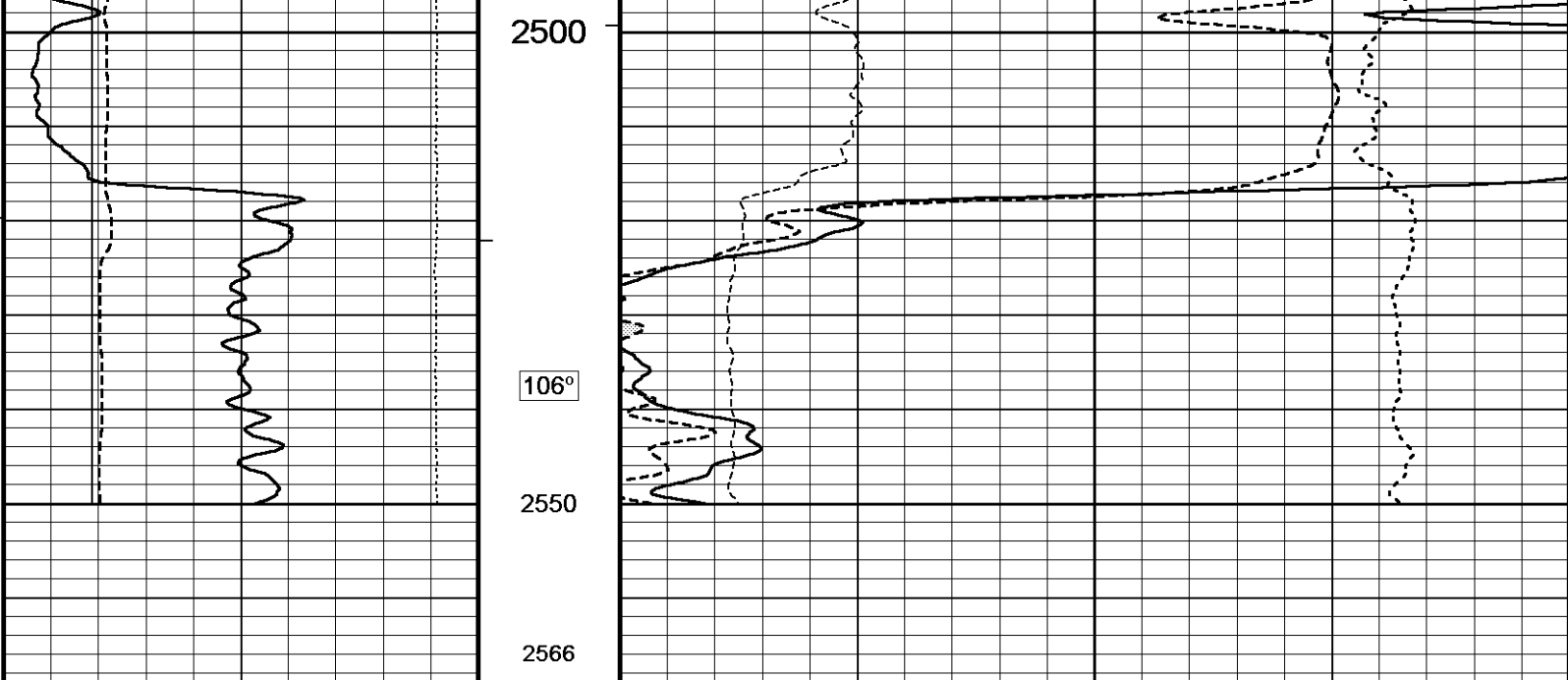
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	214.00	24.00

REMARKS

ols Used: MAI, MPD, MCG, MDN, MML, MFE, SKJ,
Hardware: MPD: 8 inch profile plate. MAI 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 = 220 cu. ft.
Service order #3529173
Rig: Murfin #24
Engineer: Shawn Nutt
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.



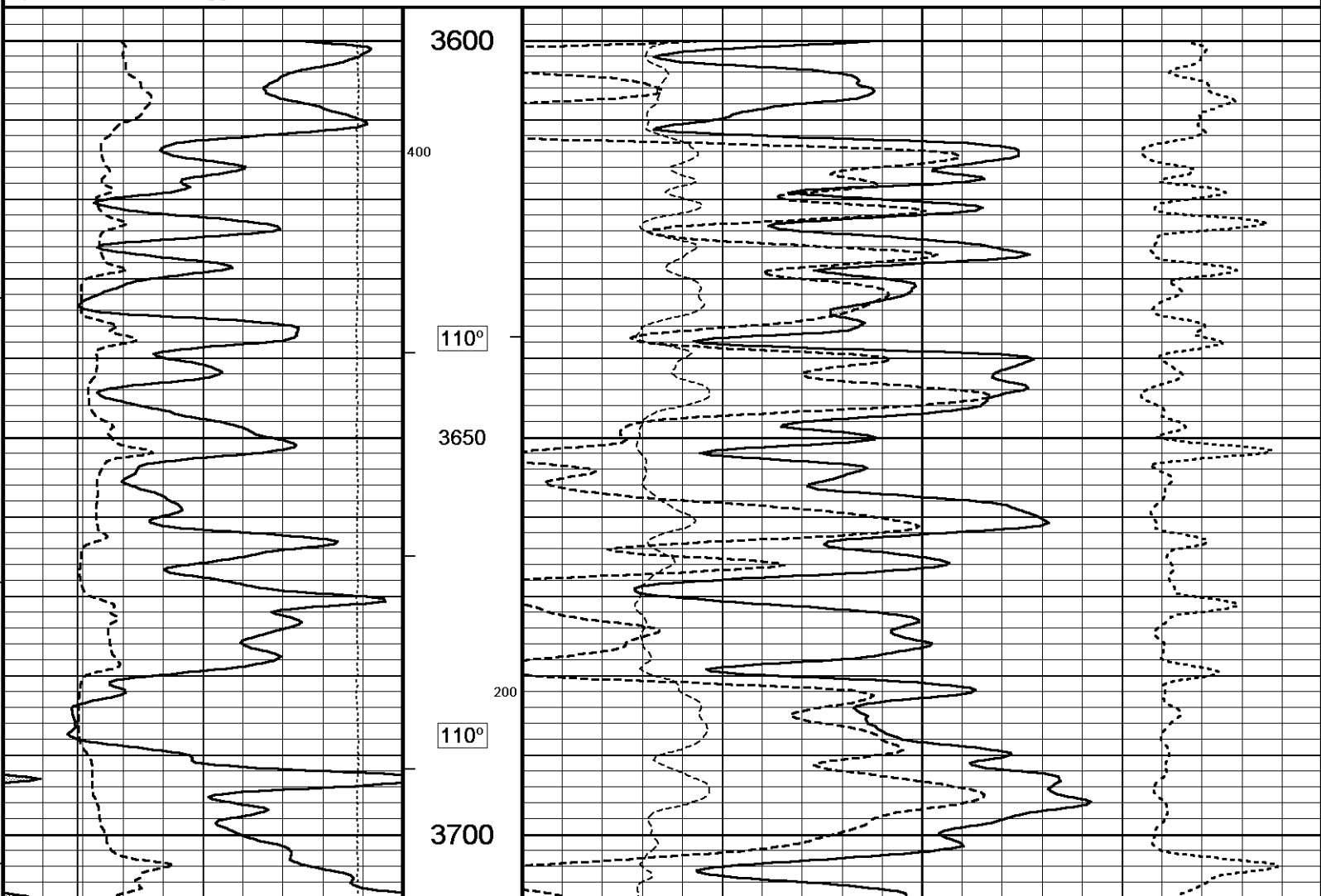


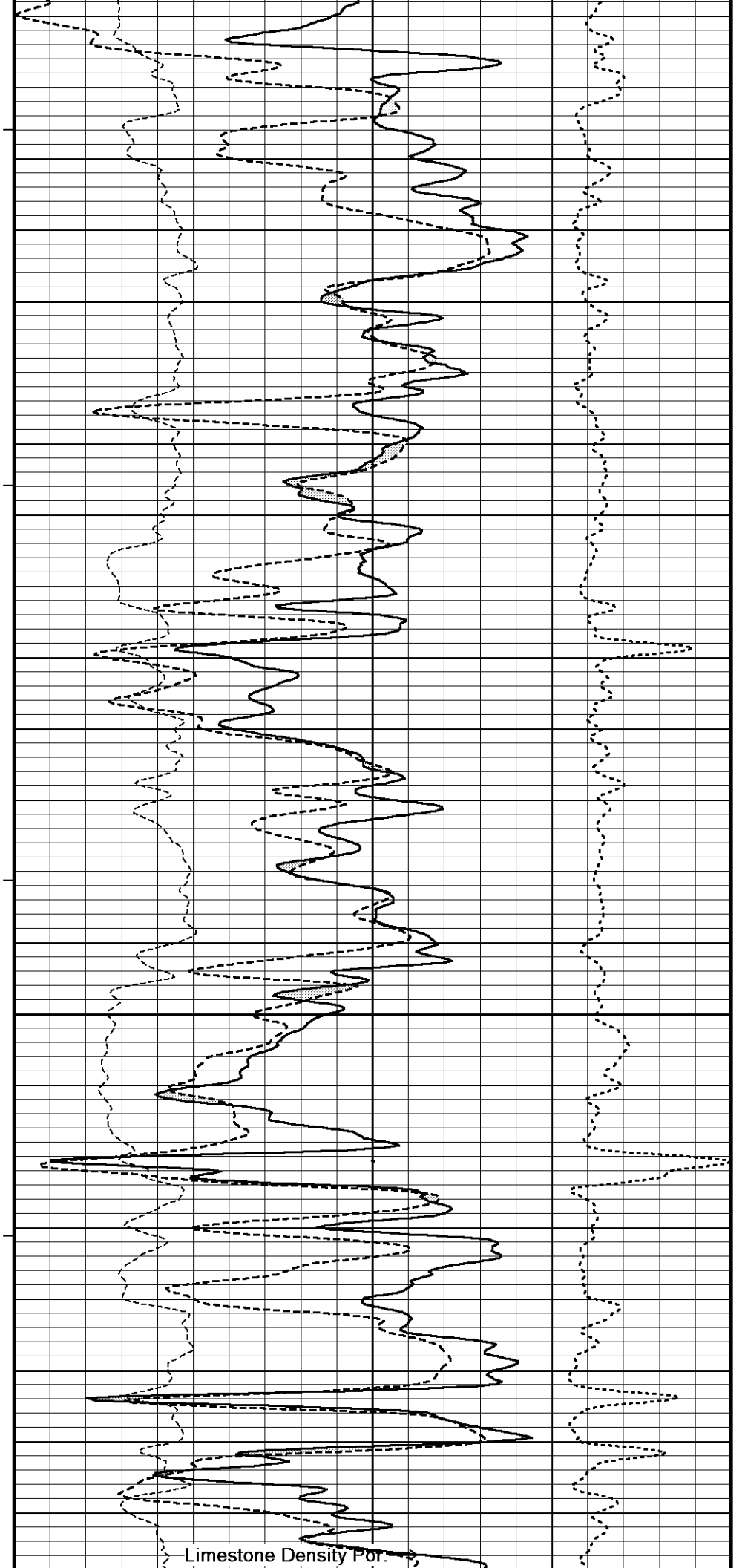
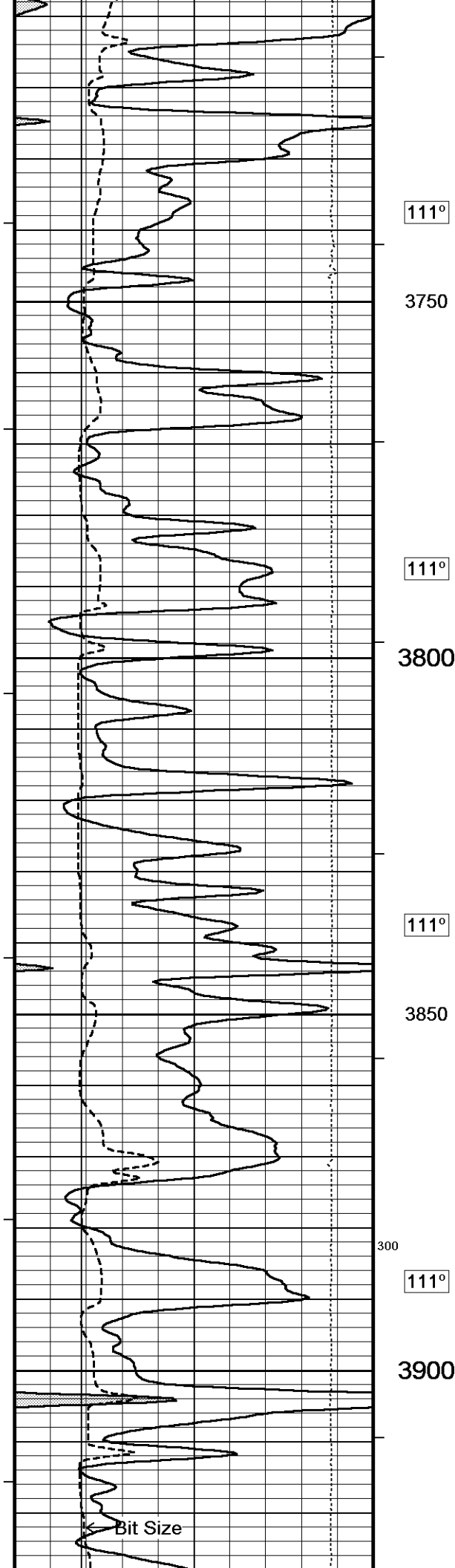
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Filename: C:\Users\SSTRIB~1\AppData\Local\Temp\Weatherfo... \DALE #1-34_002 spooled section.dta
System Versions: Logged with 11.03.2789 Plotted with 11.02.2164

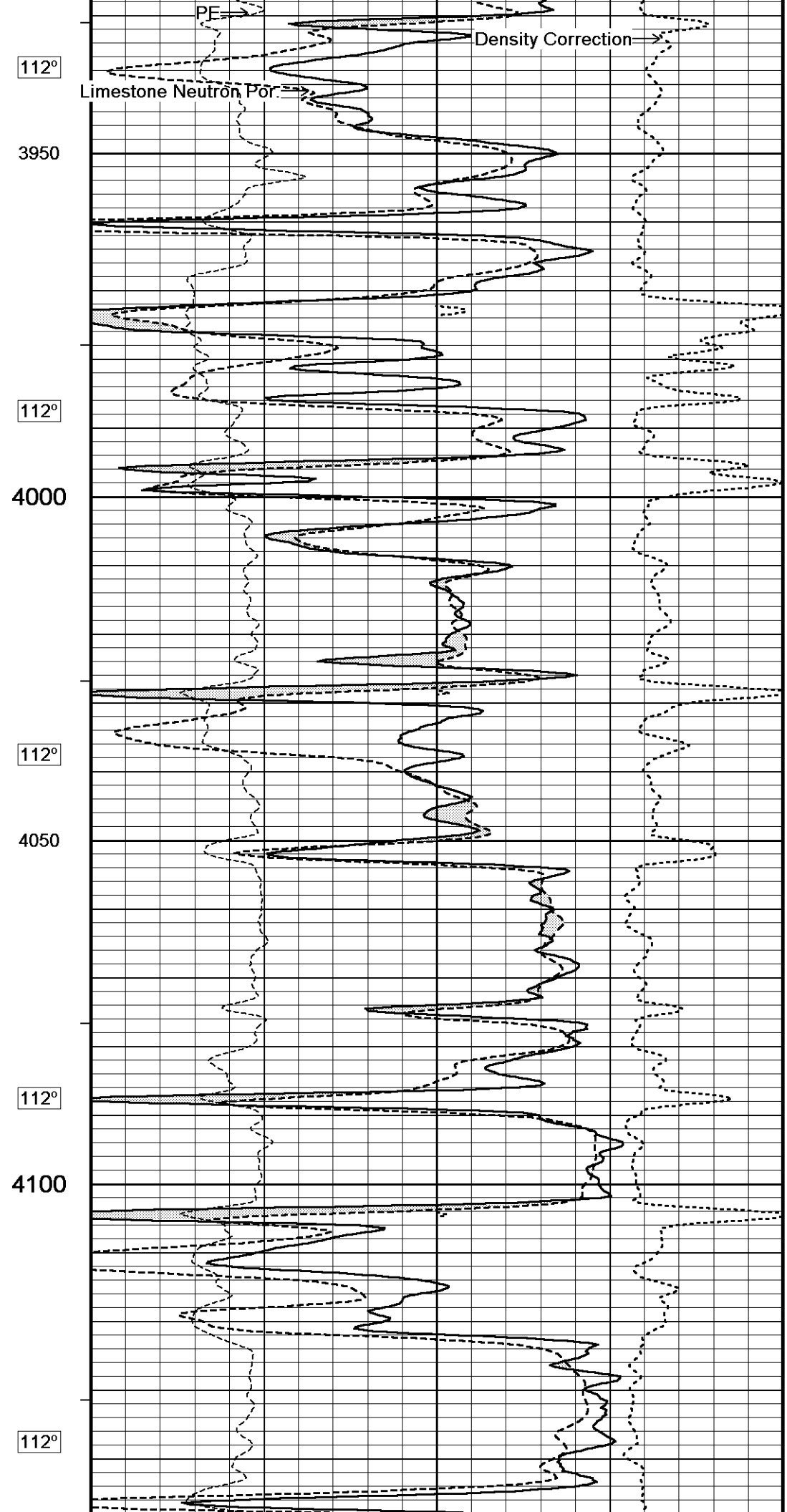
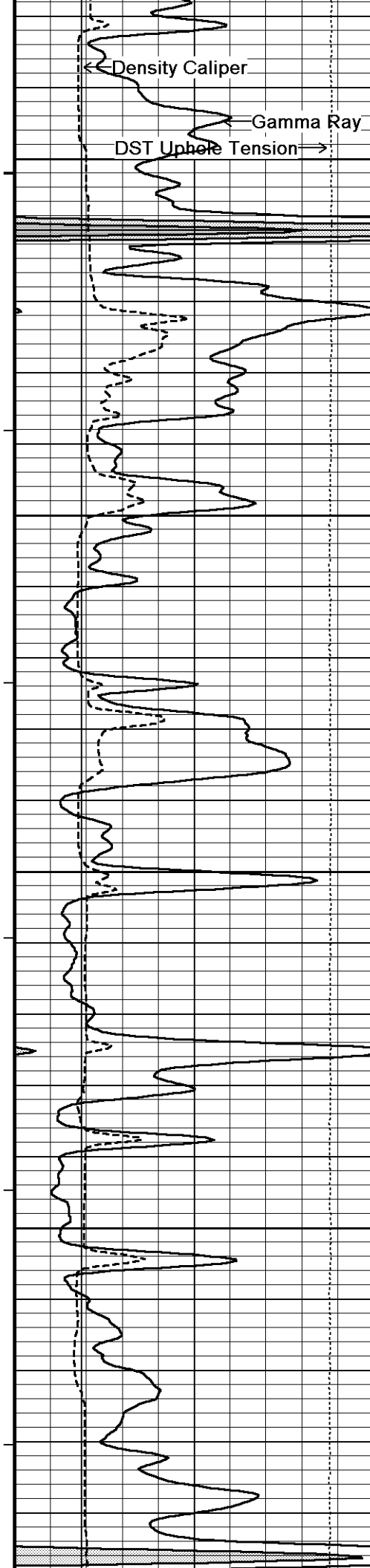
↑ 5 INCH MAIN ↑

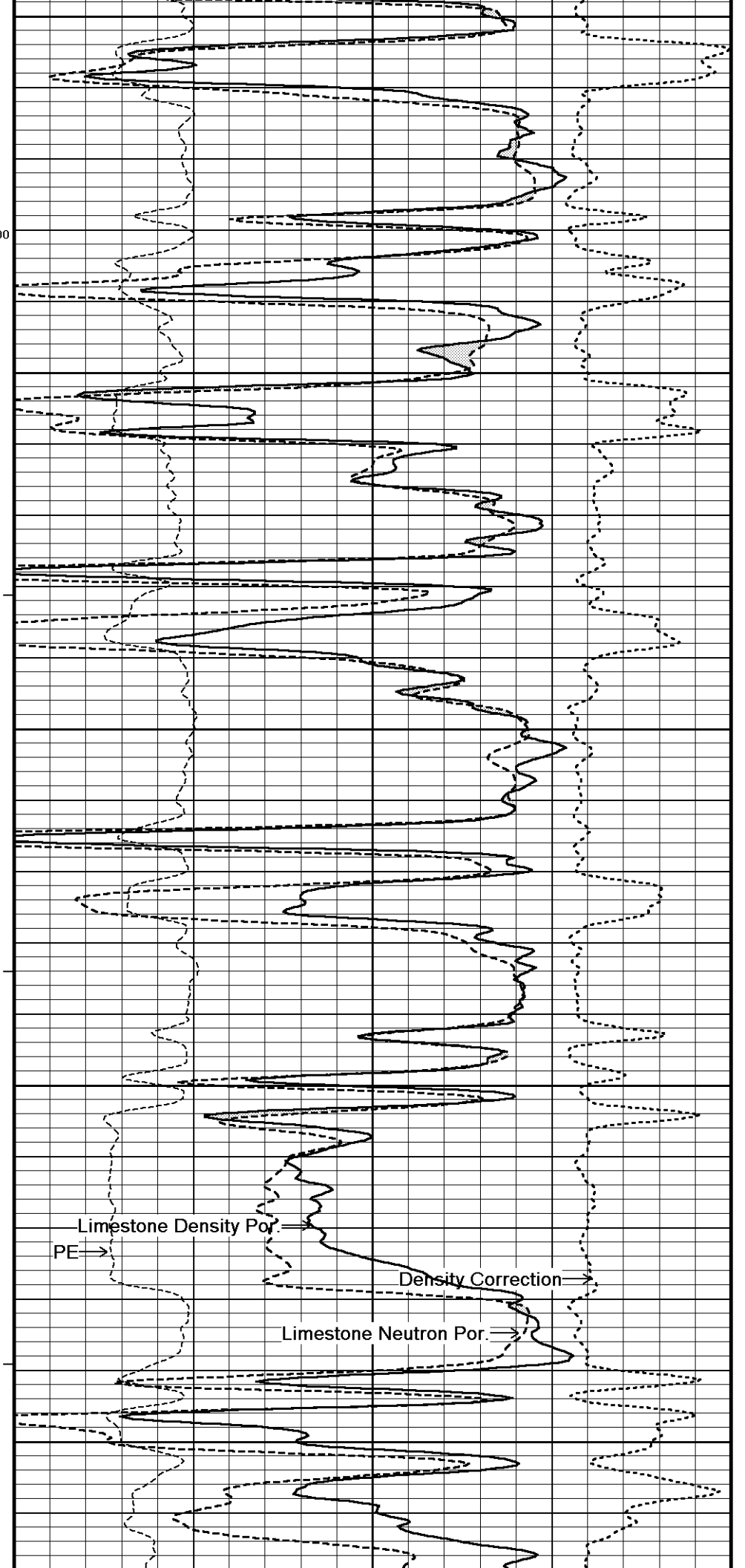
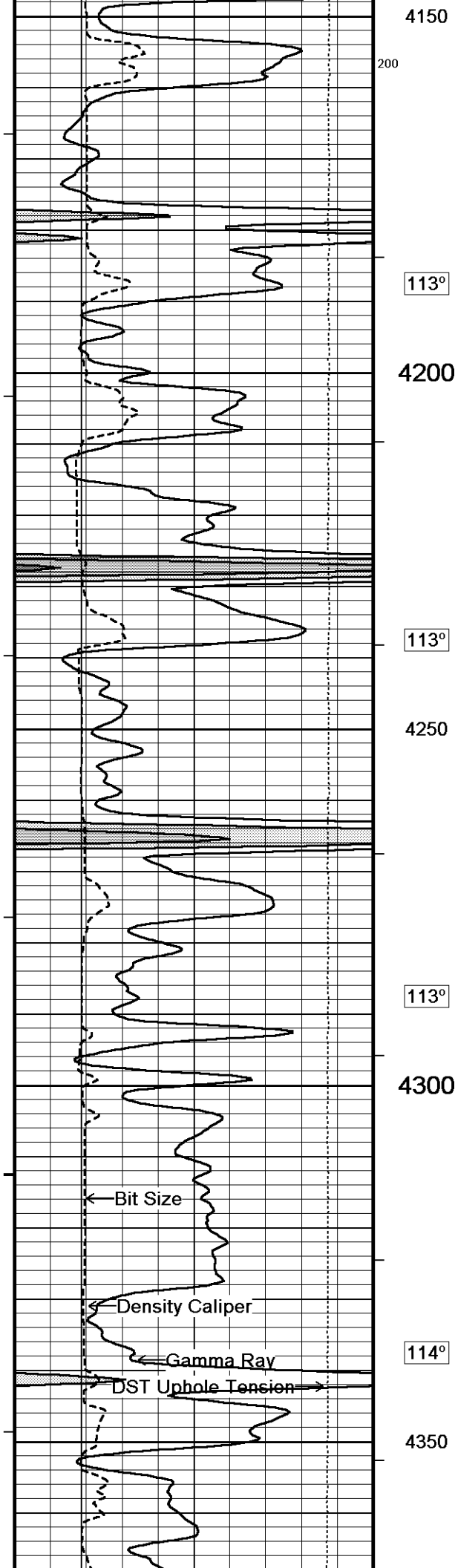
↓ 5 INCH MAIN ↓

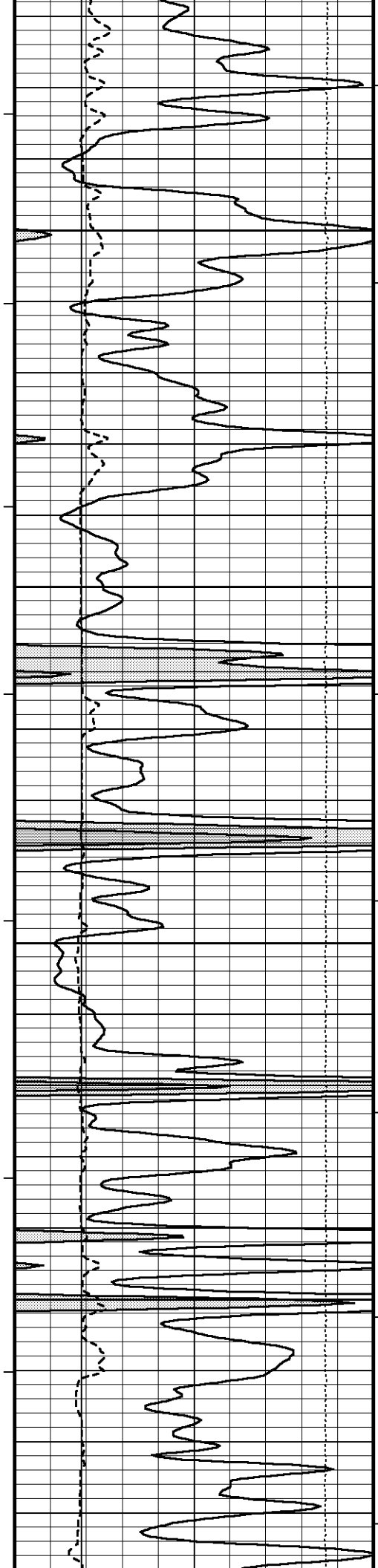
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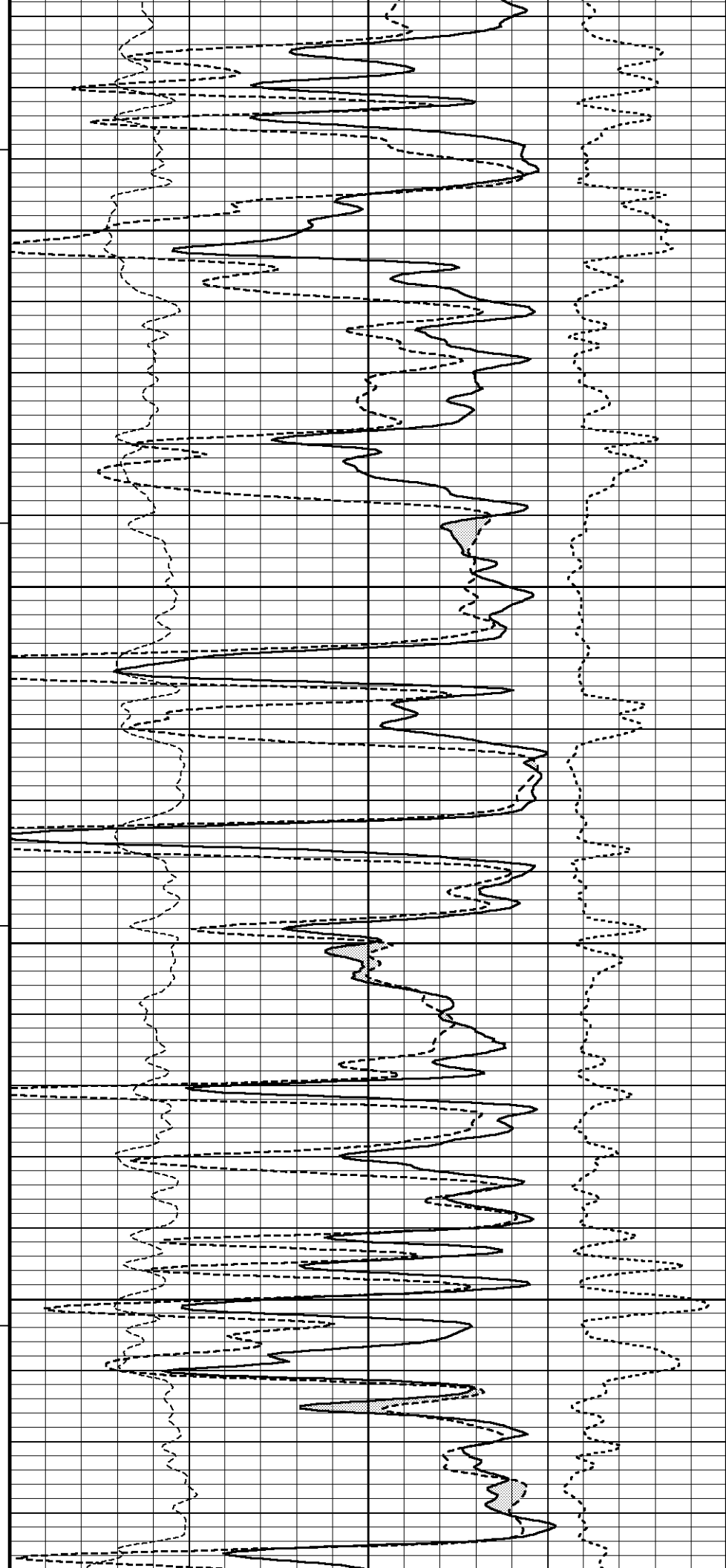


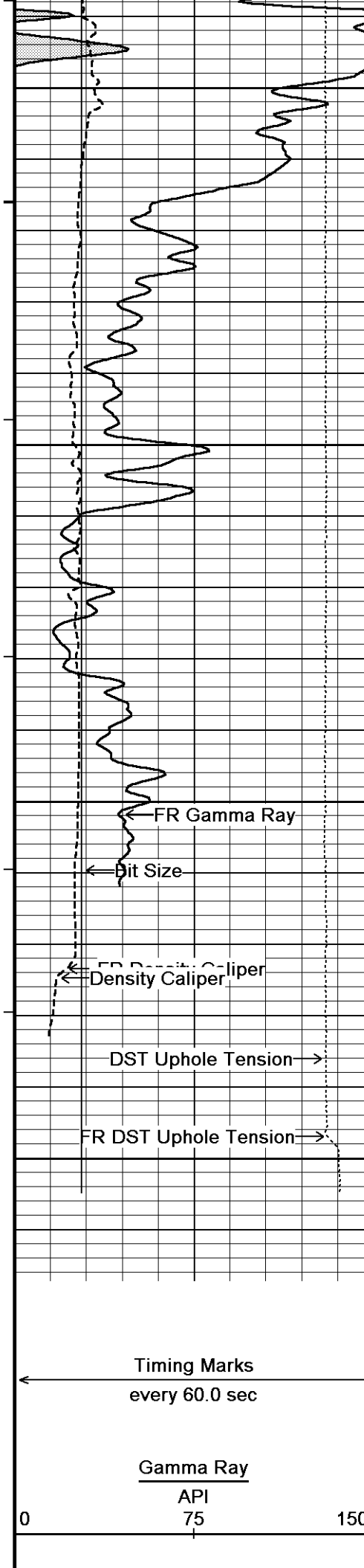






114°
4400
100
115°
4450
115°
4500
116°
4550
117°





117

4600

117°

4650

116°

4700

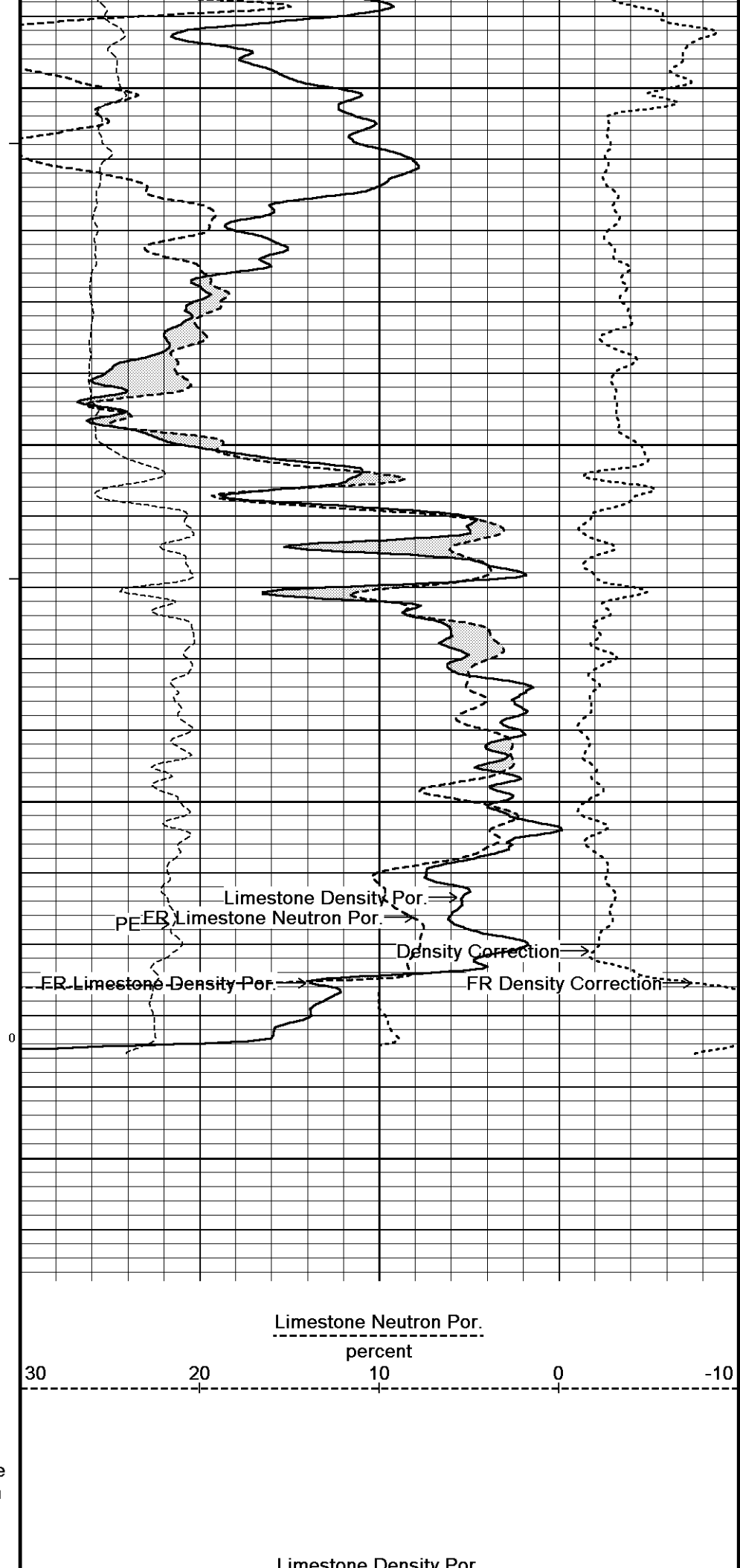
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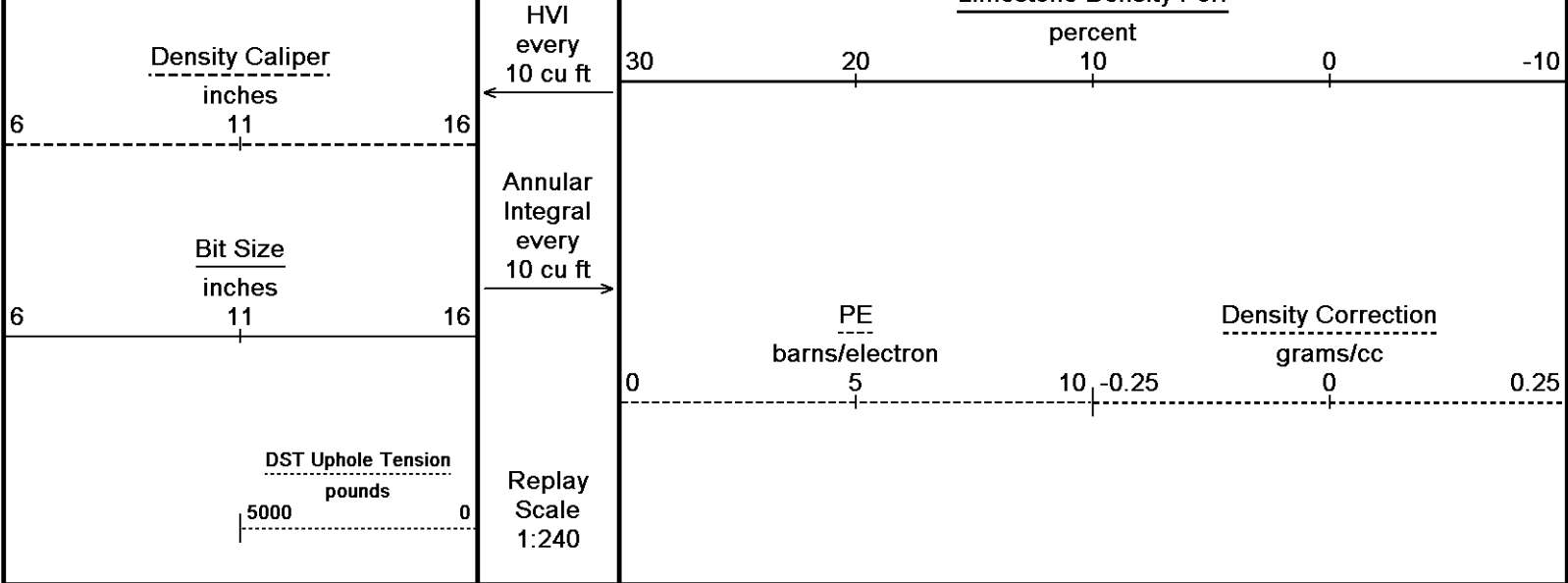
4750

4764

Depth
in
Feet

Borehole
Temp in
deg F



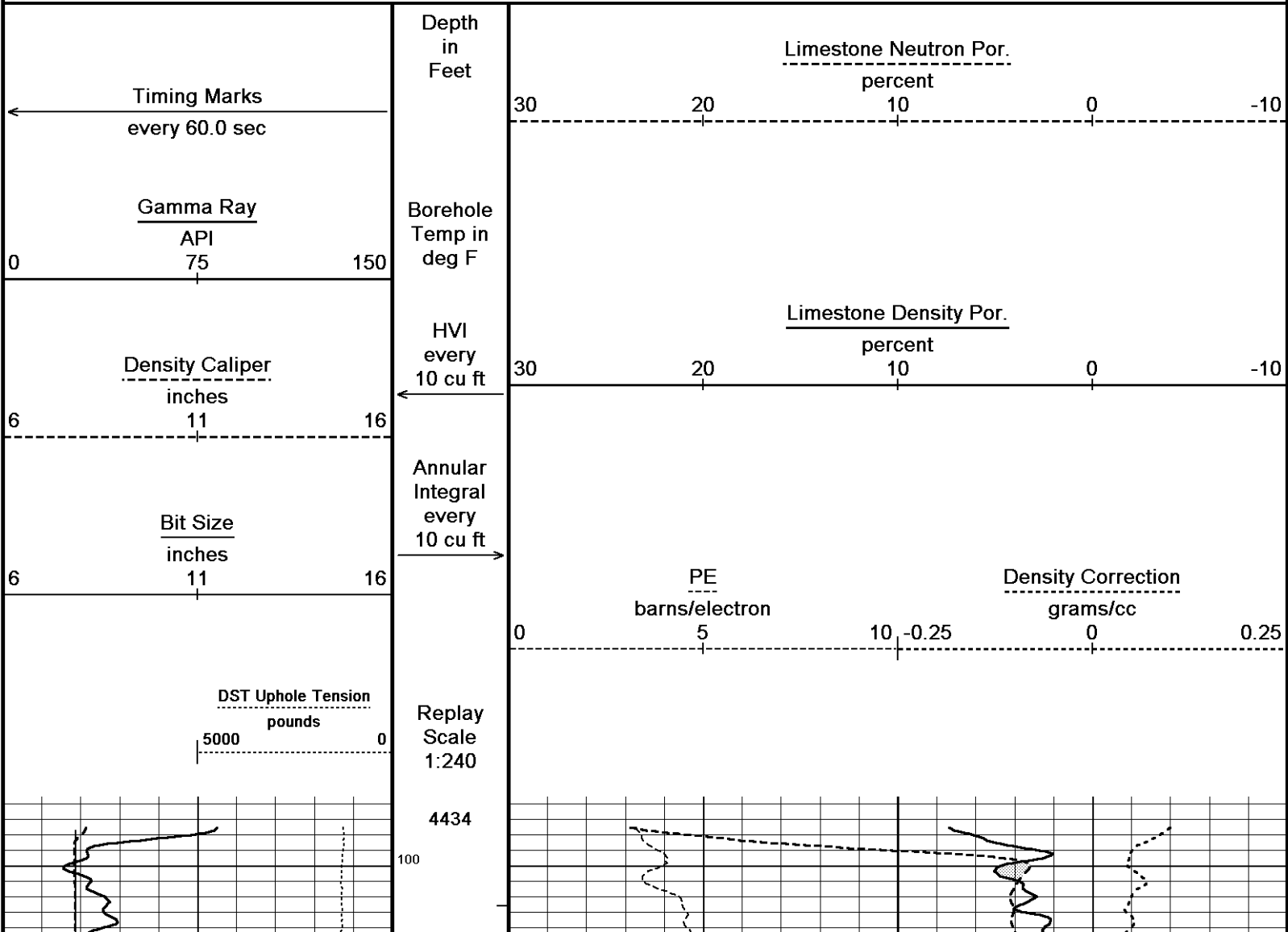


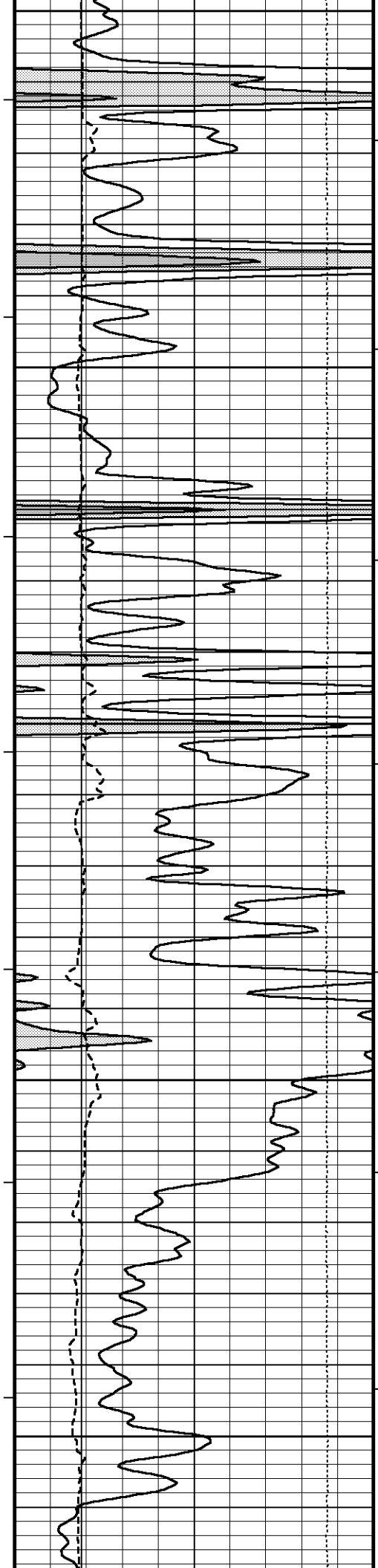
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System Versions: Logged with 11.03.2789 Plotted with 11.02.2164

↑ 5 INCH MAIN ↑

↓ 5 INCH REPEAT ↓

Depth Based Data - Maximum Sampling Increment 10.0cm
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System Versions: Logged with 11.03.2789 Plotted with 11.02.2164





4450

114°

4500

114°

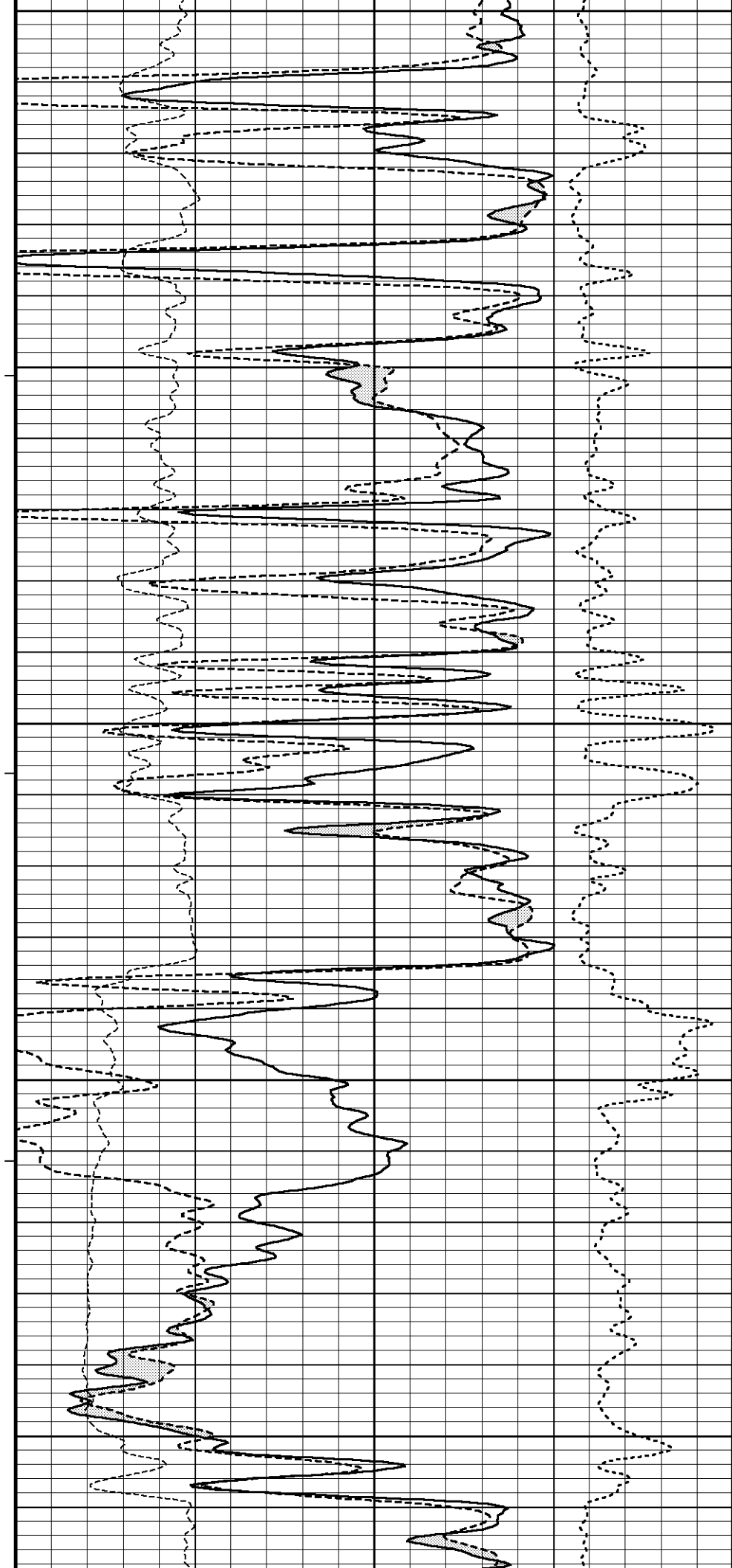
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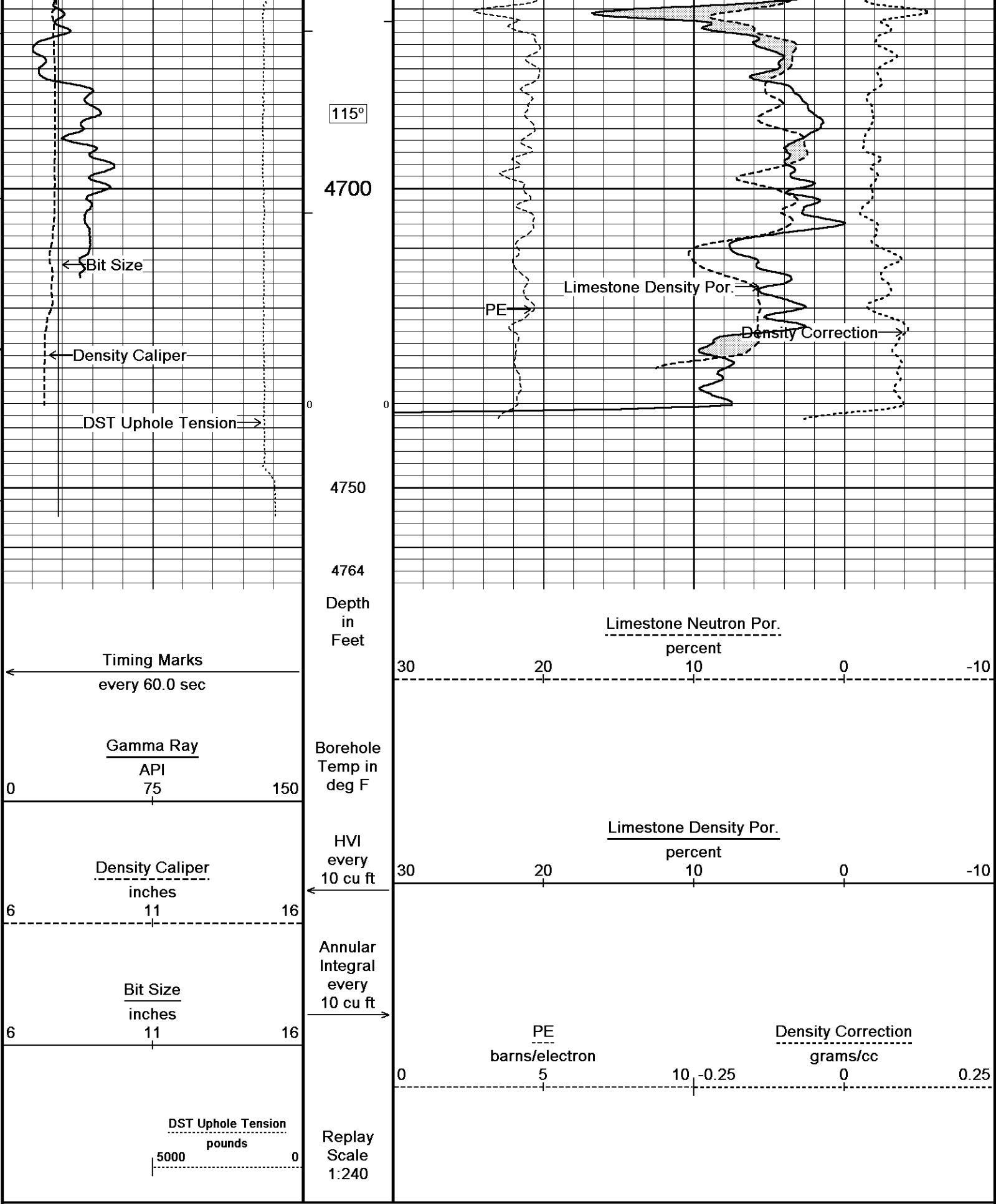
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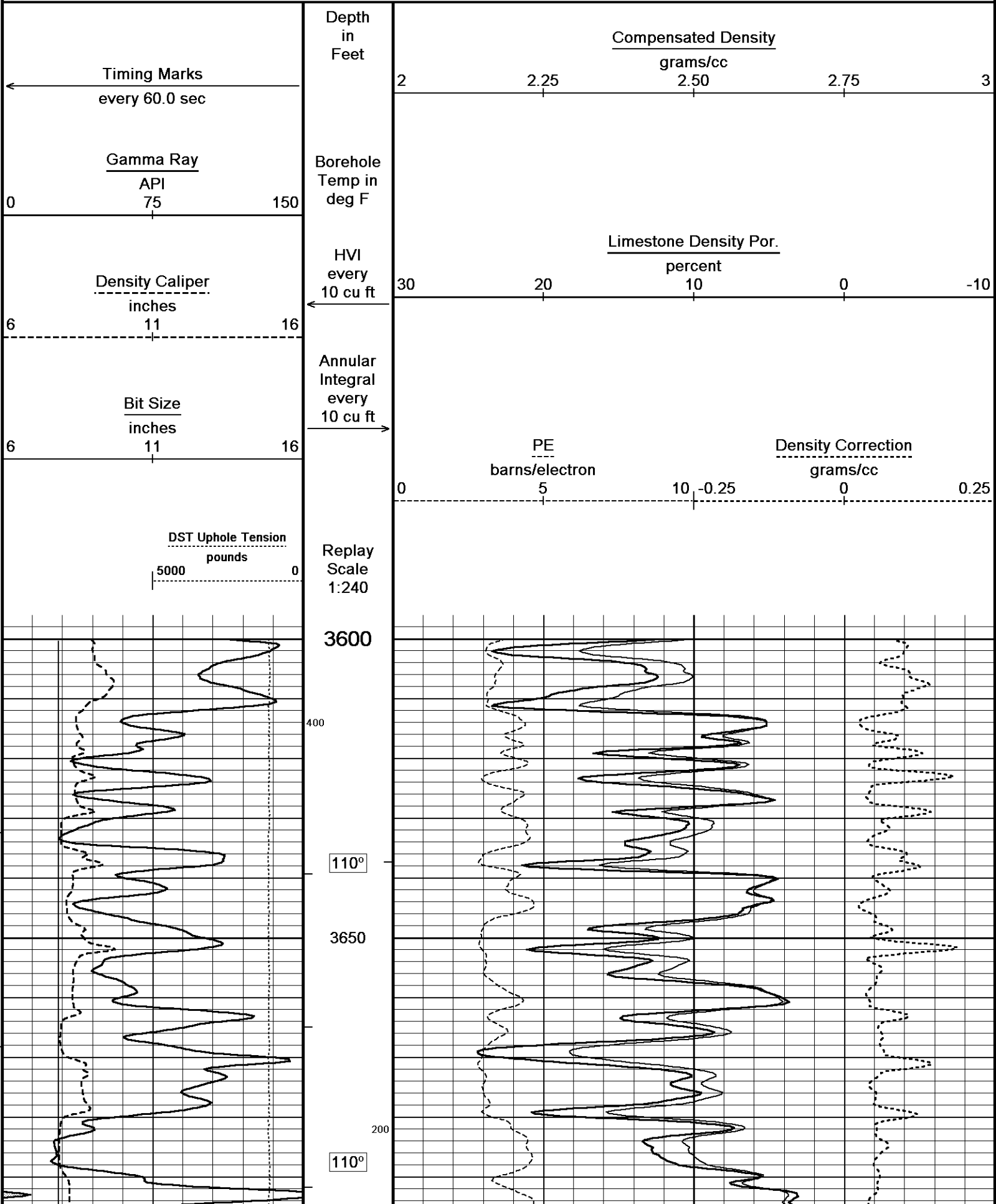
4600

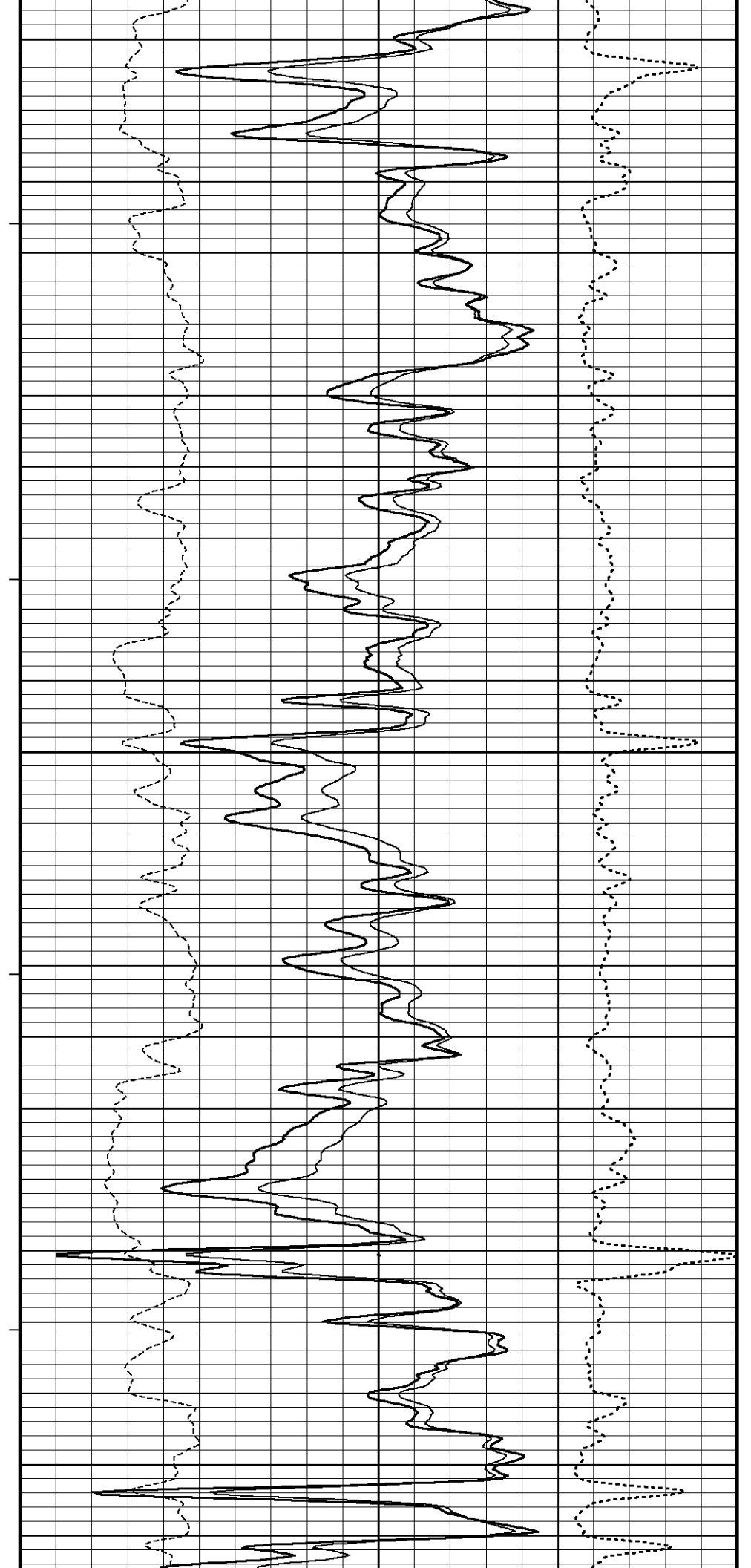
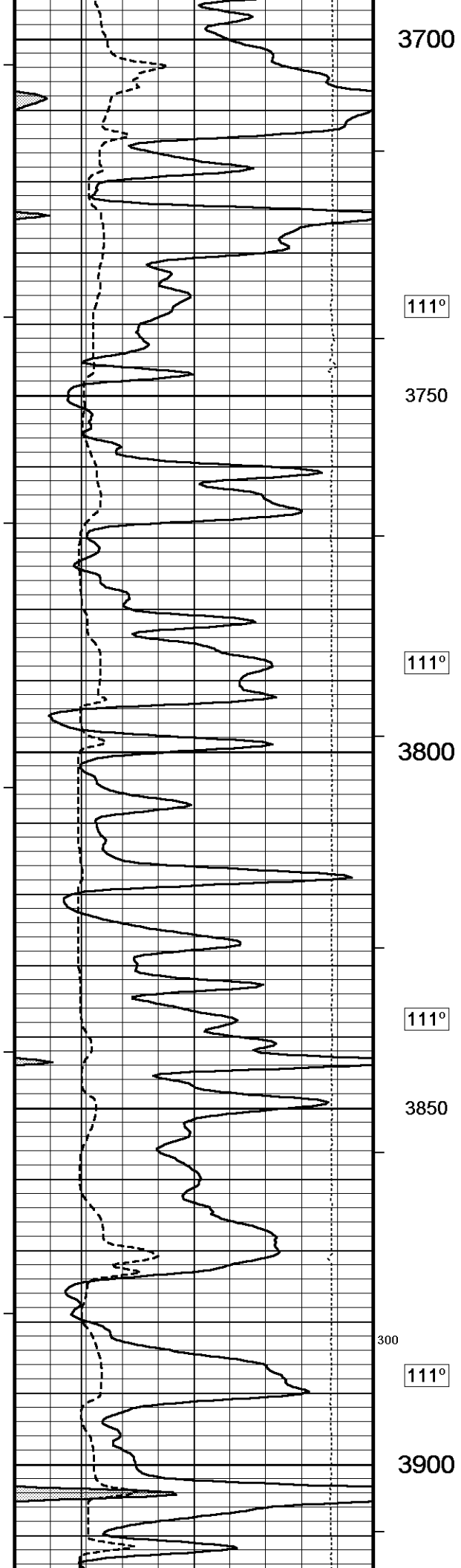
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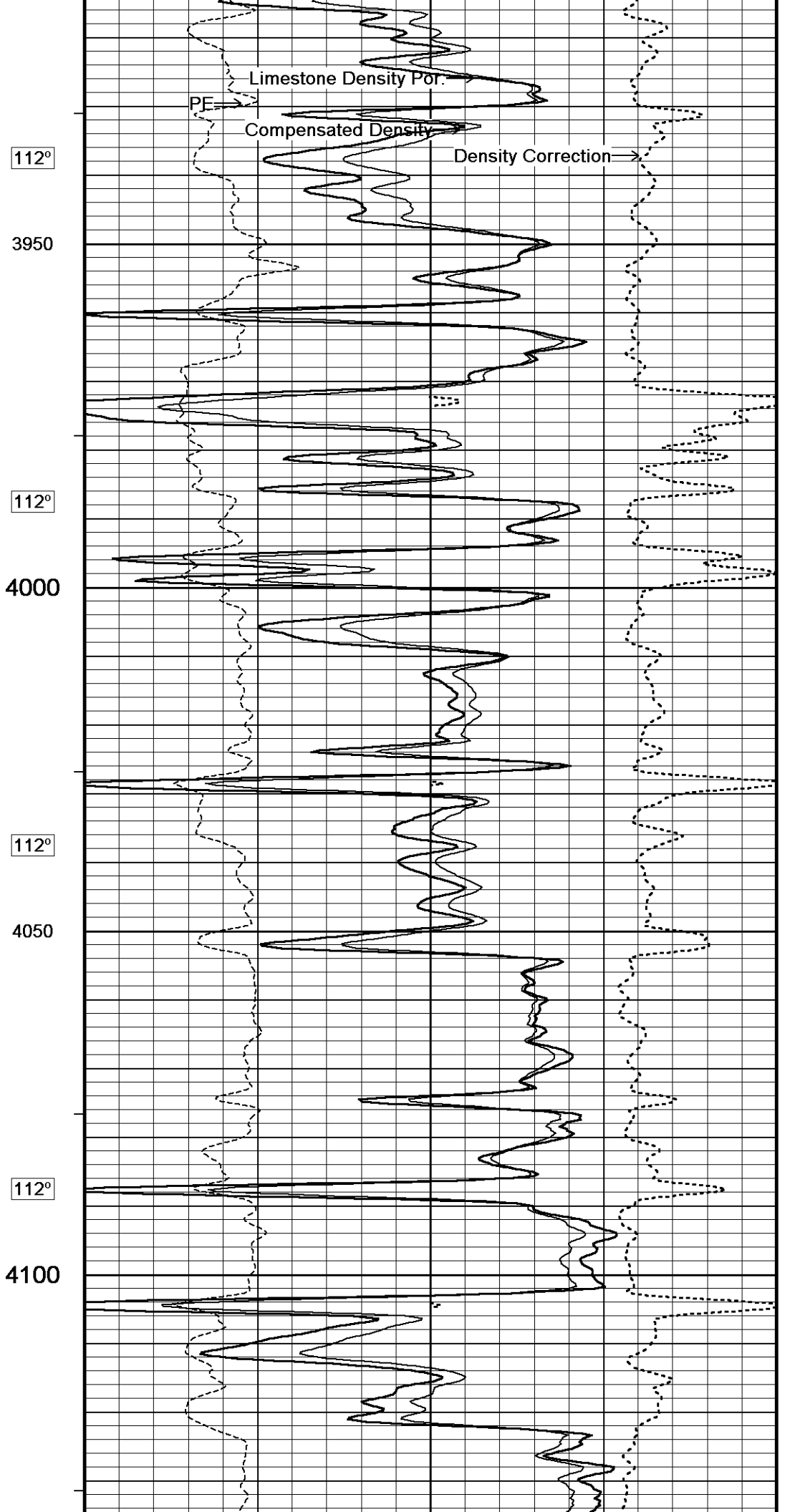
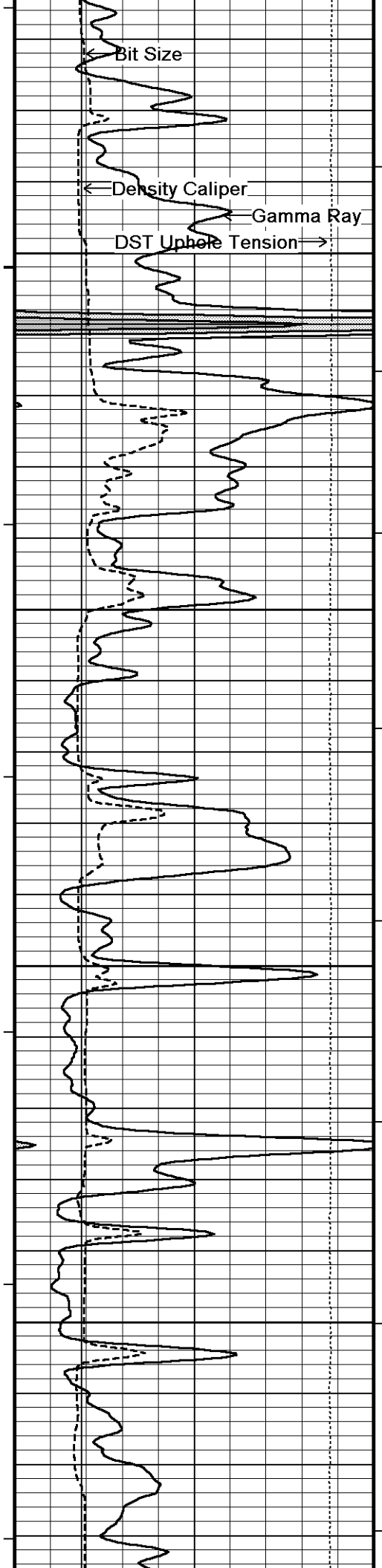
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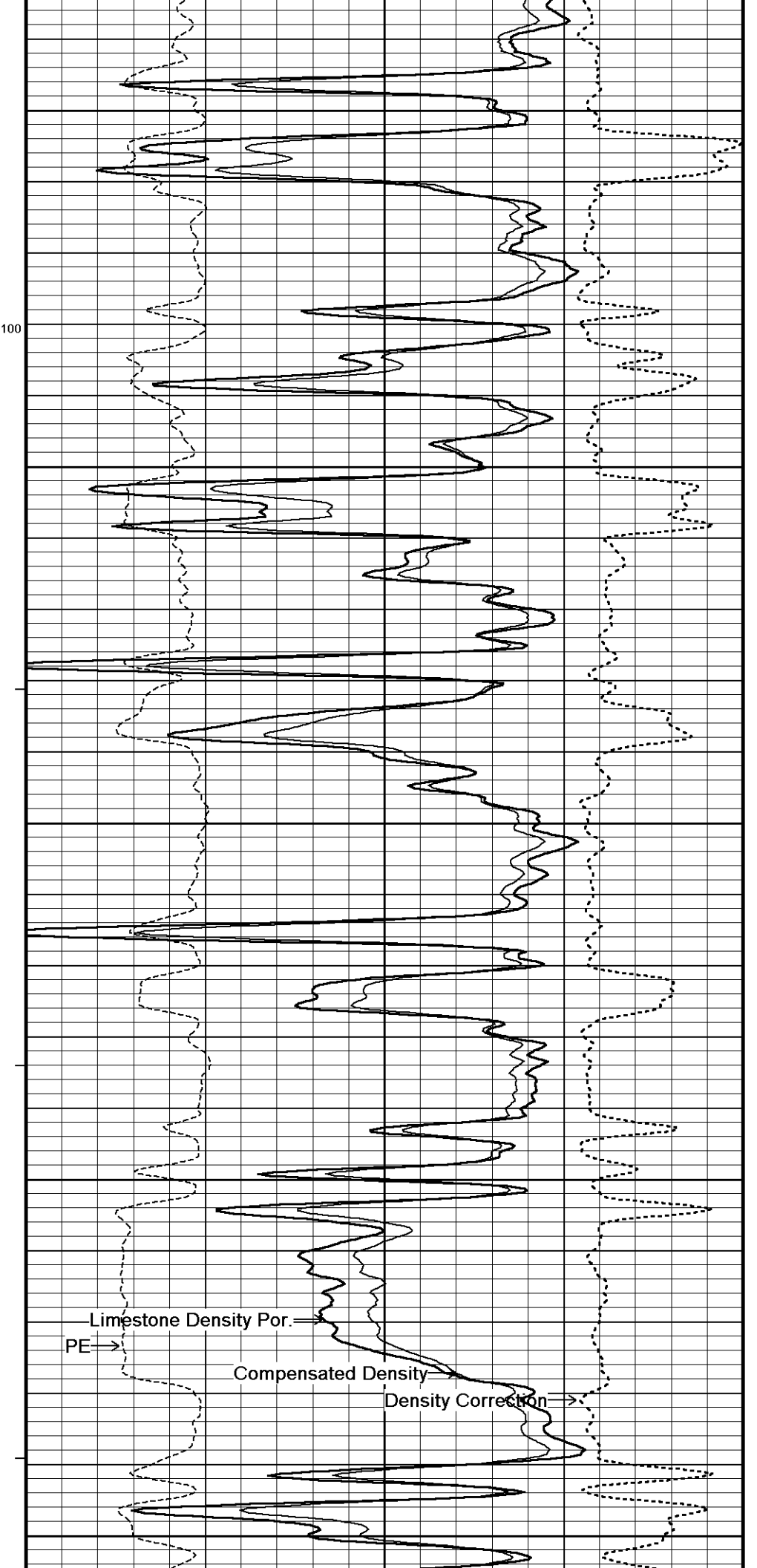
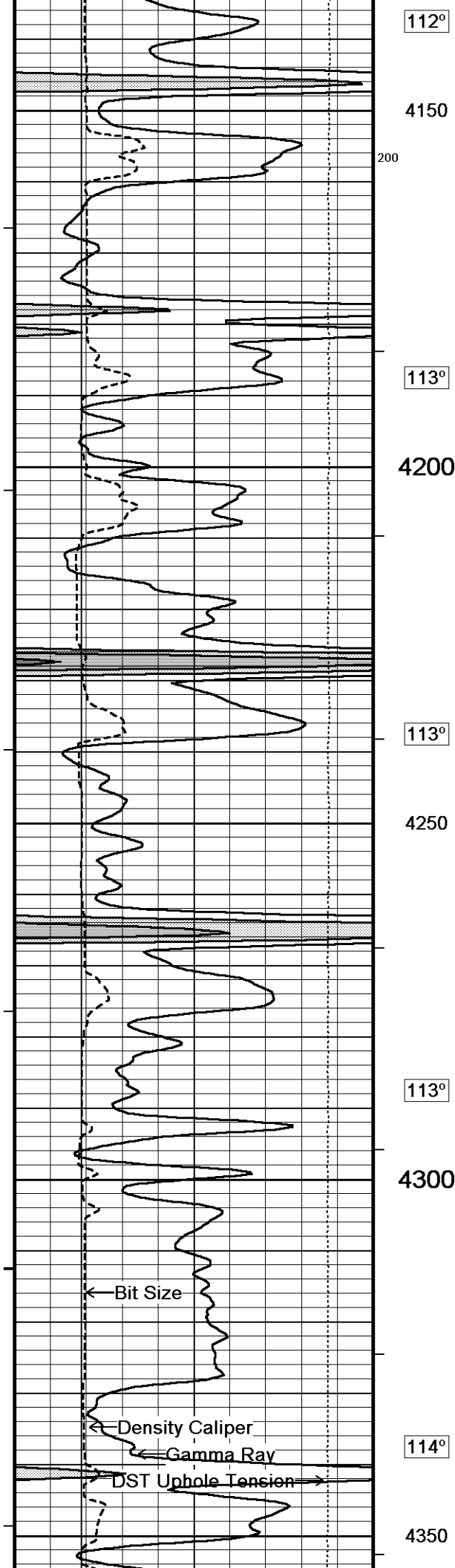


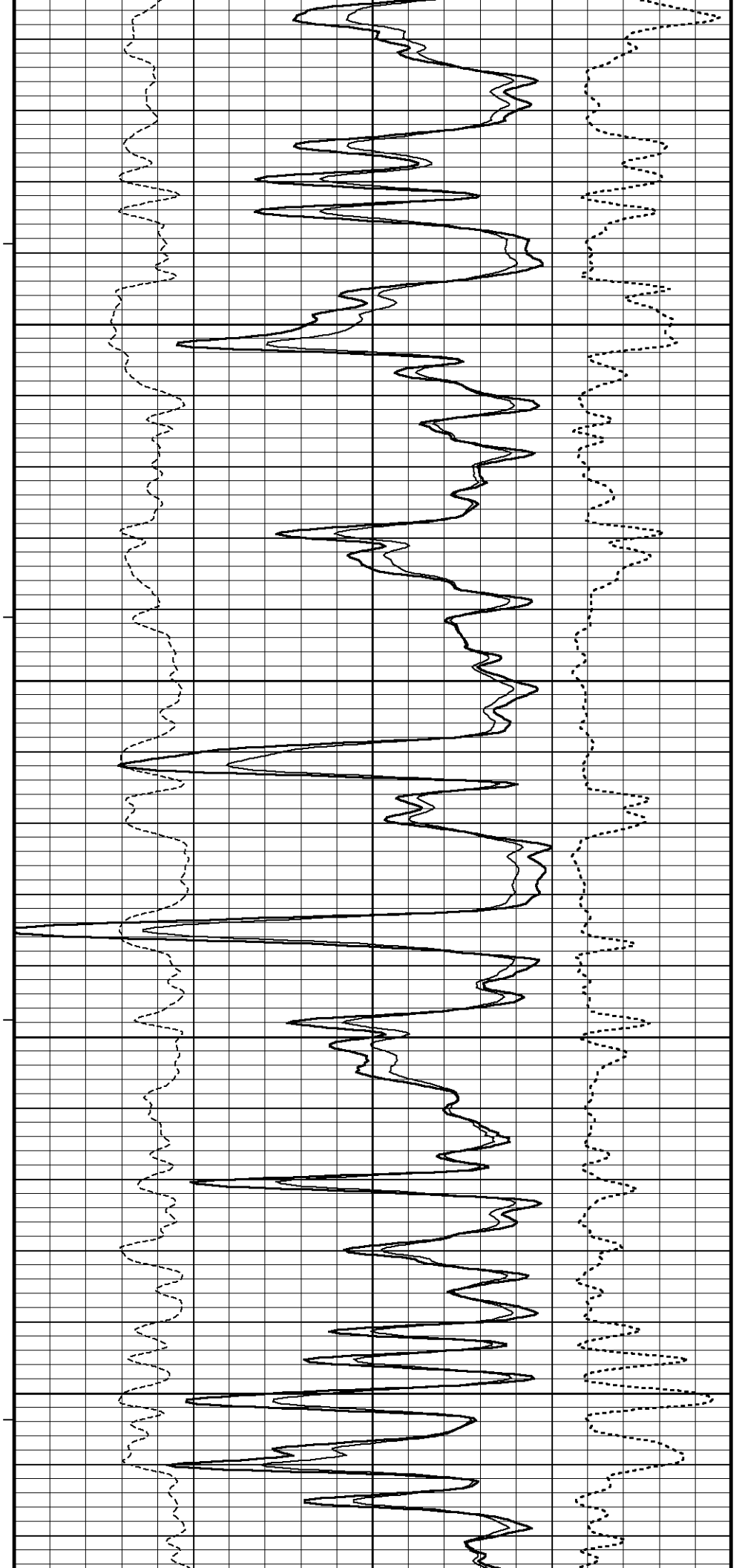
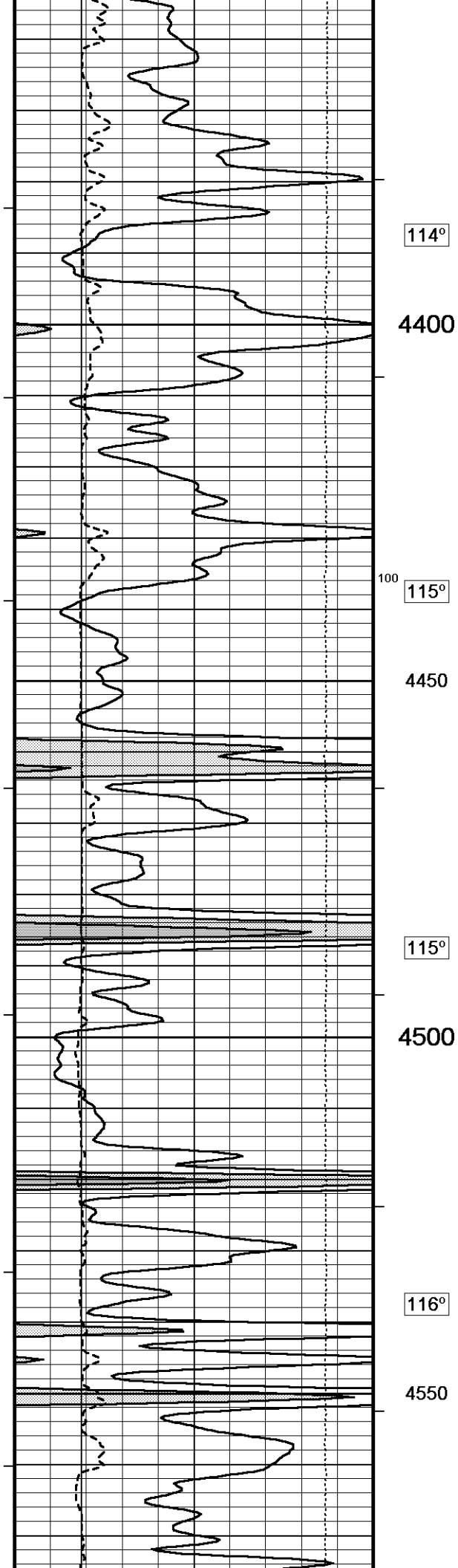


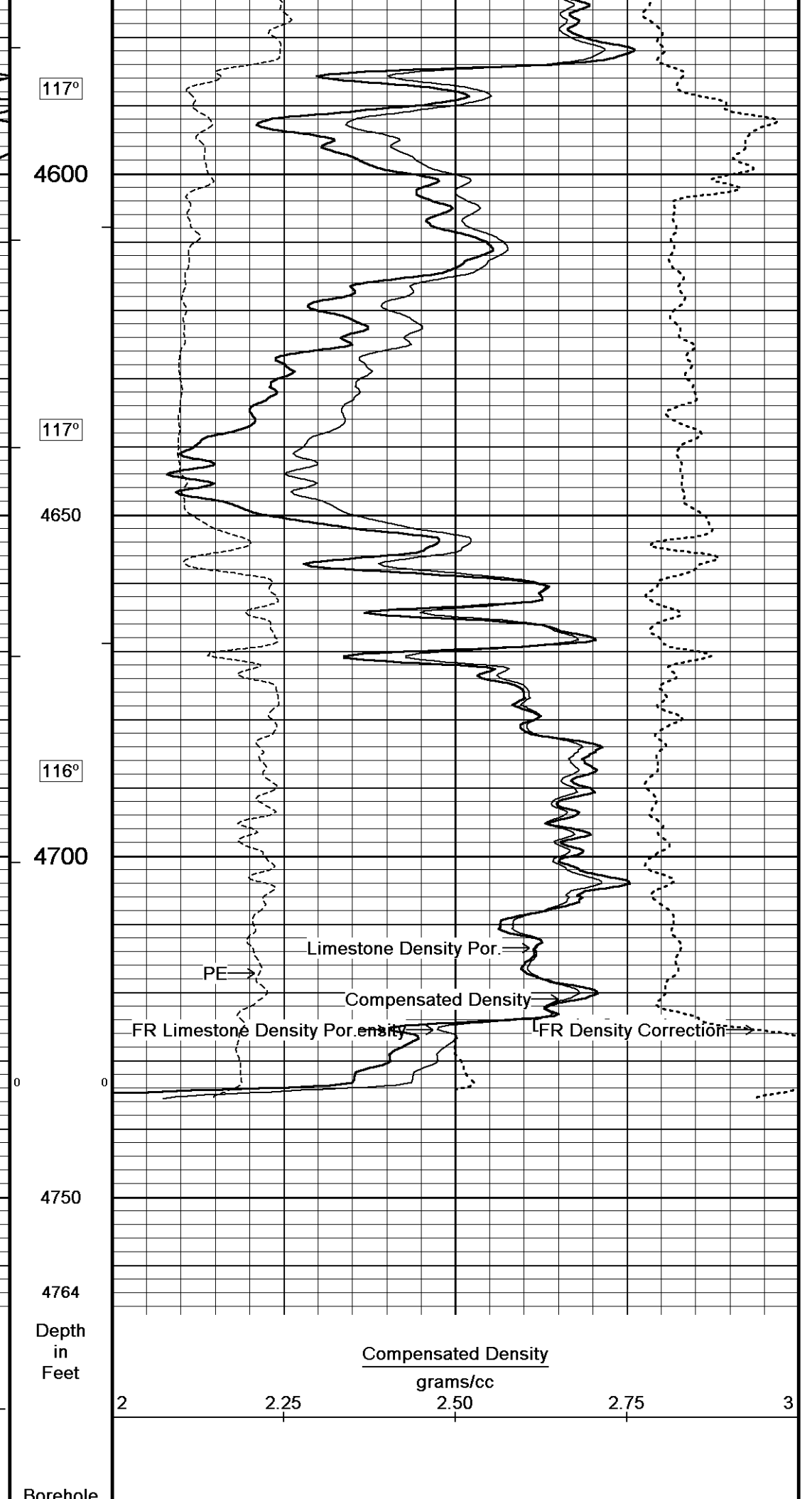
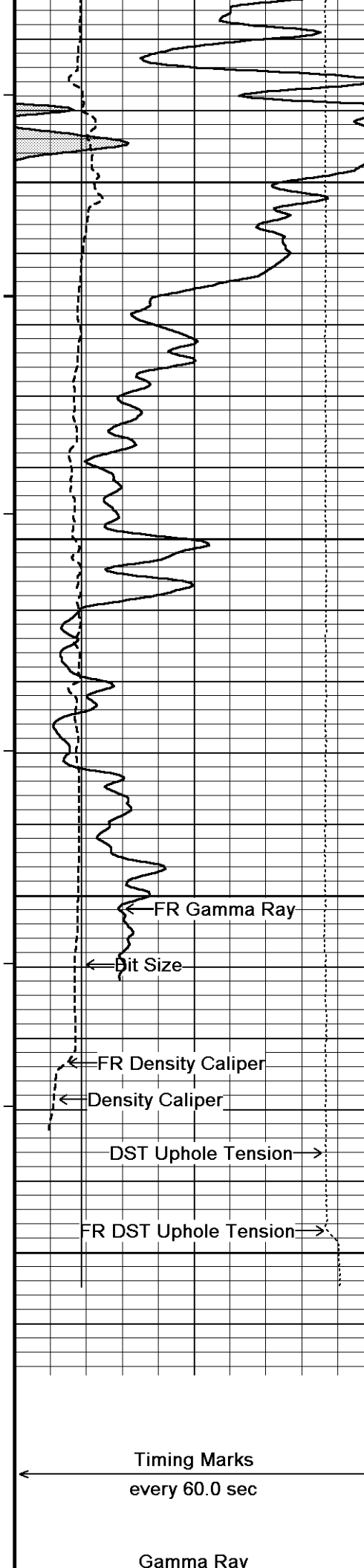


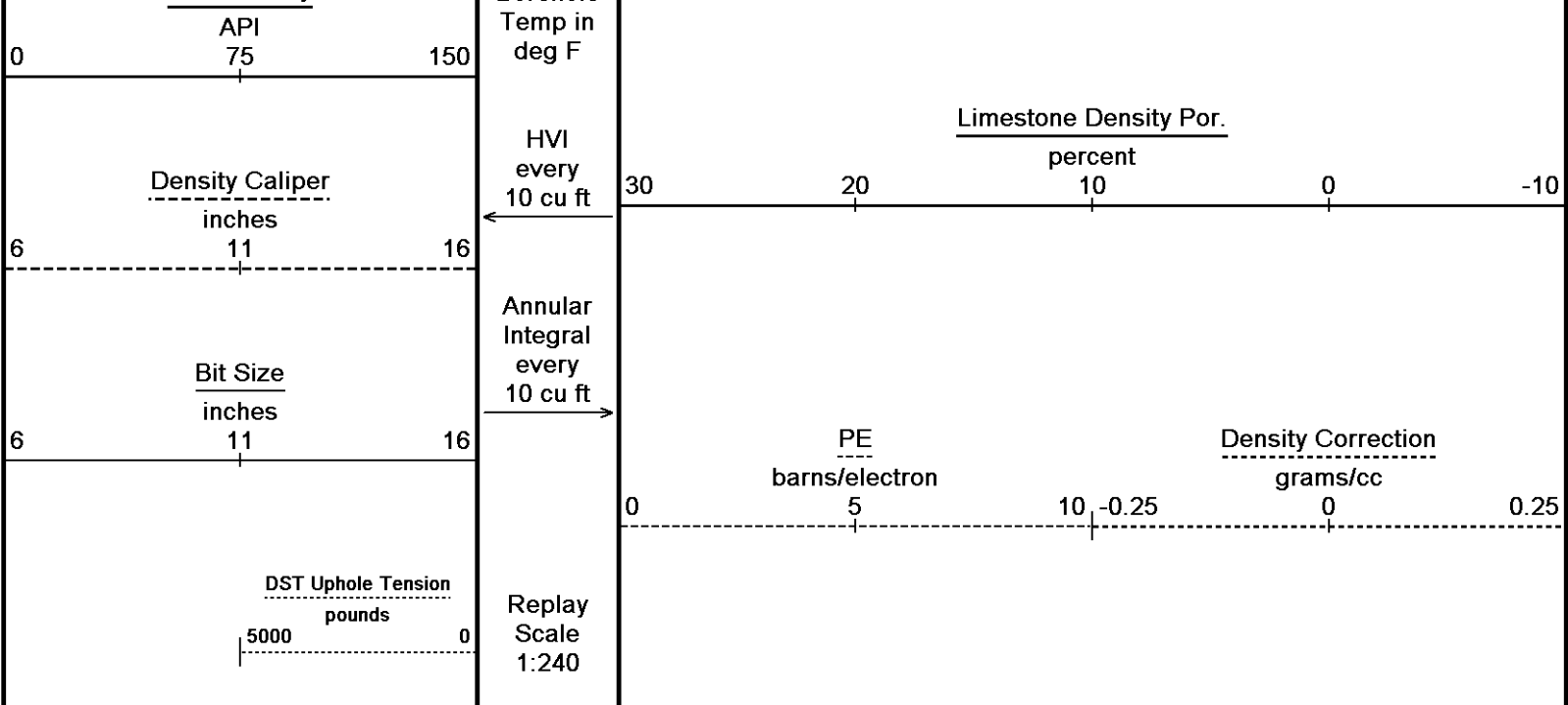








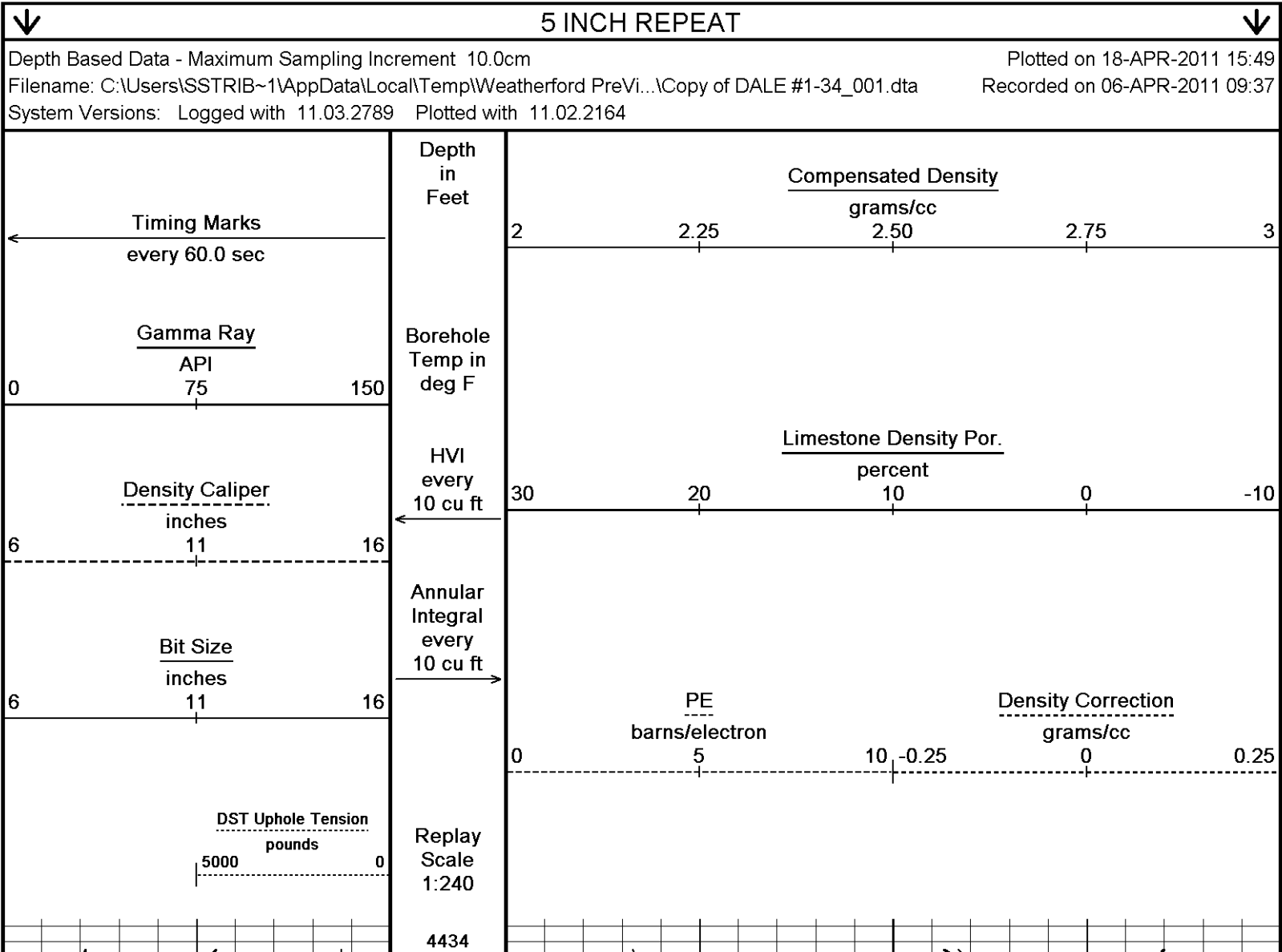


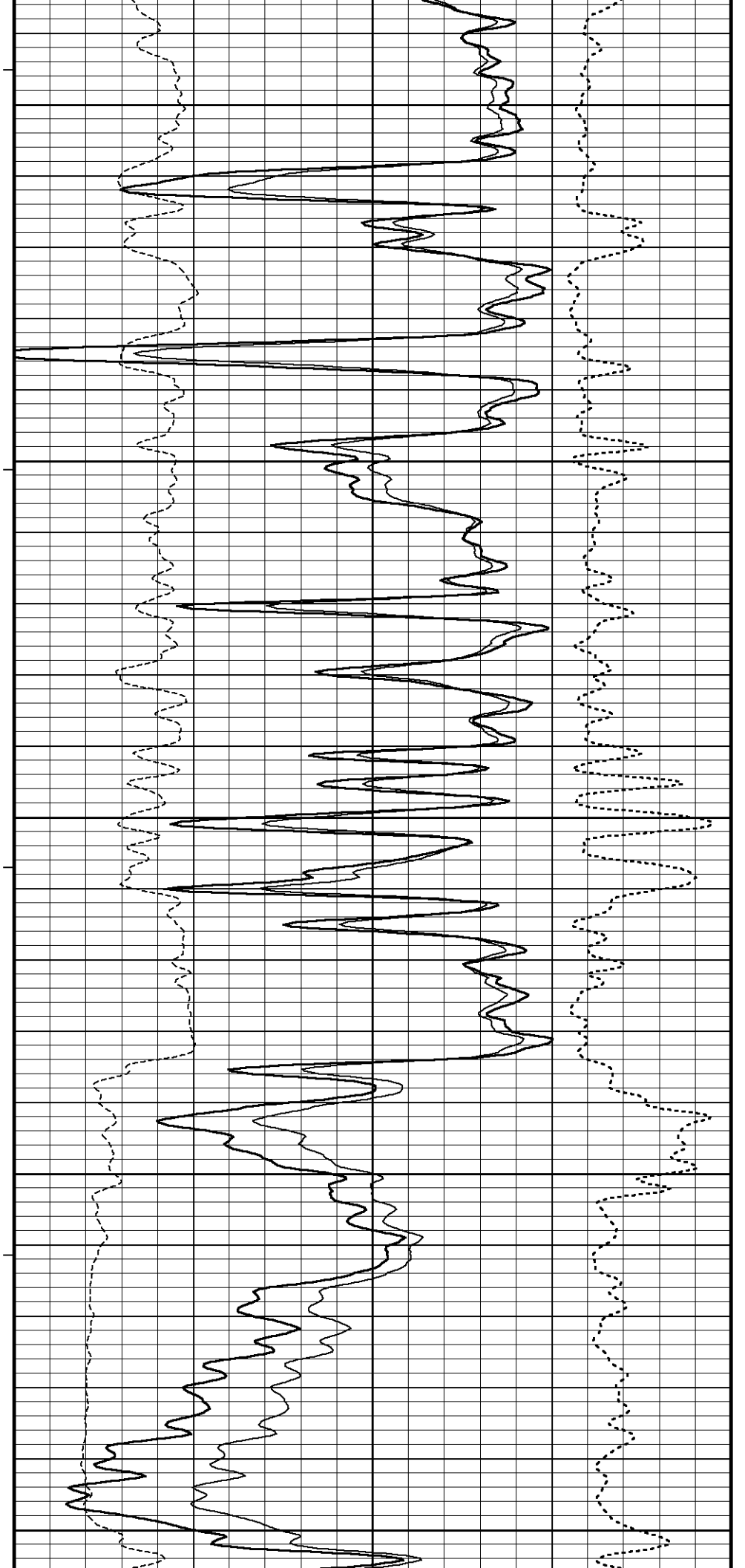
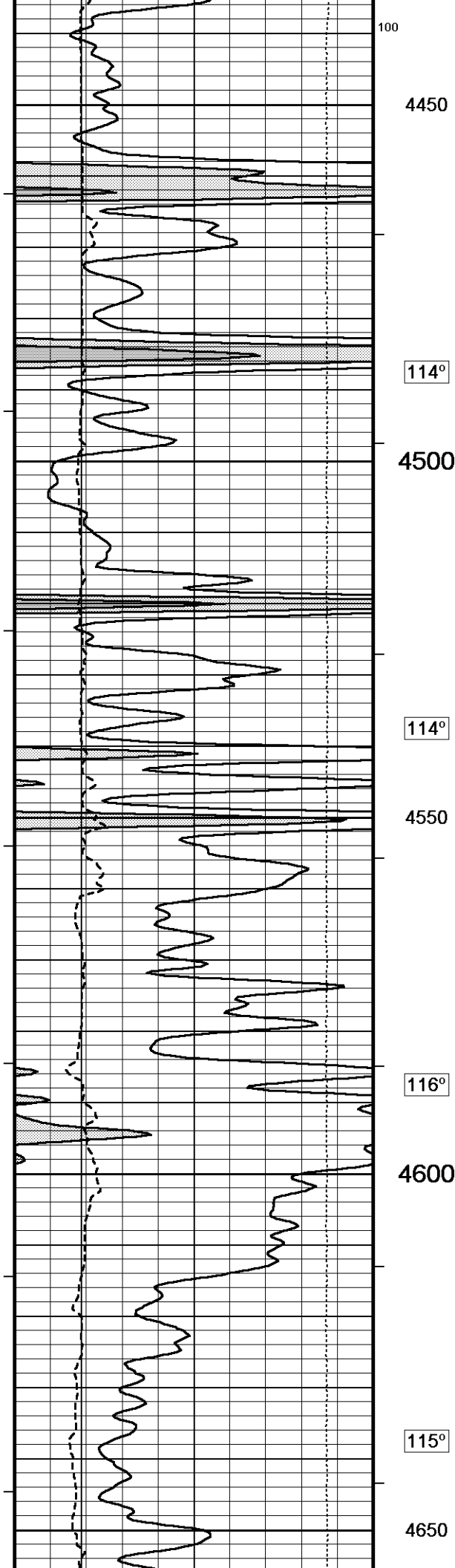


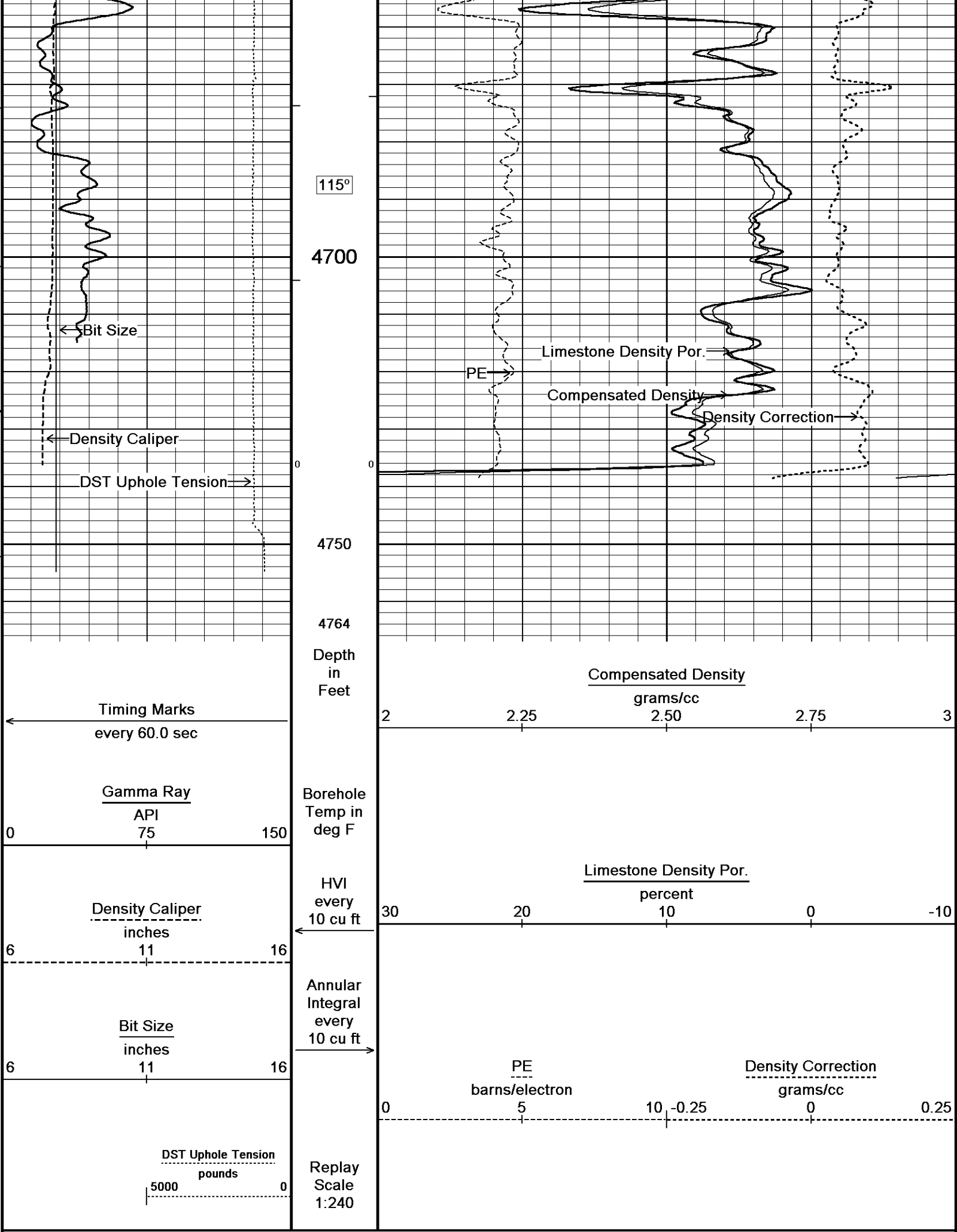
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System Versions: Logged with 11.03.2789 Plotted with 11.02.2164

Plotted on 18-APR-2011 15:49
Recorded on 06-APR-2011 11:11

5 INCH MAIN







BEFORE SURVEY CALIBRATION

C:\Users\SSSTRIB~1\AppData\Local\Temp\Weatherford PreView\0\Copy of DALE #1-34_001.dta

General Constants All 000

Last Edited on 06-APR-2011,06:54

General Parameters

Mud Resistivity	0.460	ohm-metres
Mud Resistivity Temperature	78.000	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	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 02-APR-2011 19:01

	Measured	Calibrated (API)
Background	68	46
Calibrator (Gross)	1138	771
Calibrator (Net)	1071	725

Gamma Constants MCG-C 139

Last Edited on 06-APR-2011,06:54

Gamma Calibrator Number	grc38	
Mud Density	1.16	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

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	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 02-APR-2011,18:46

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 02-APR-2011 18:51

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)
	6.01	5.98

Neutron Calibration MDN-A.B 66

Base Calibration on 11-MAR-2011 13:54

Field Check on 02-APR-2011 18:55

Base Calibration					
		Measured		Calibrated (cps)	
		Near	Far	Near	Far
		3091	97	3714	110
Ratio		31.957		33.764	
Field Calibrator at Base					
				Calibrated (cps)	
				1660	2371
Ratio				0.700	
Field Check					
				Calibrated (cps)	
				1663	2382
Ratio				0.698	

Neutron Constants MDN-A.B 66

Last Edited on 06-APR-2011,06:54

Neutron Source Id	P58125B	
Neutron Jig Number	5824NE	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.16	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 02-APR-2011 18:41

Base Calibration		
	Measured	Calibrated (ohm-m)

Reference 1	Measured	0.0	Calibrated (mm/m)	0.0
Reference 2		965.7		126.8
Base Check				279.9
Field Check				279.9
FE Constants MFE-A.A 52				Last Edited on 02-APR-2011,18:40
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			
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			
Induction Calibration MAI-A.A 167				Base Calibration on 11-MAR-2011,09:58 Field Check on 02-APR-2011 18:40
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	
Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	13.0	3839.1
2	0.0	0.0	29.5	3476.9
3	0.0	0.0	29.0	3053.1
4	0.0	0.0	19.7	2081.9
Deep	0.0	0.0	18.5	2049.2
Medium	0.0	0.0	42.1	3991.2
Shallow	0.0	0.0	42.9	5053.8
Array Temperature	0.0		74.7	Deg F
Induction Constants MAI-A.A 167				Last Edited on 02-APR-2011,18:37
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	SRM2	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 02-APR-2011 18:49

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)
5.98	5.98

Photo Density Calibration MPD-B 35

Base Calibration on 11-MAR-2011 11:54
Field Check on 02-APR-2011 18:46

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

1173.8	1392.5
--------	--------

PE Calibration

Base Calibration	WS	Measured		Calibrated Ratio
		WH	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

209.4	1039.0
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Density Constants MPD-B 35

Last Edited on 06-APR-2011,06:55

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	1.16 gm/cc
Mud Density Z/A Multiplier	1.11
Mud Filtrate Density	1.00 gm/cc

Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	0.00	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:\Users\SSTRIB~1\AppData\Local\Temp\Weatherford PreView\0\Copy of DALE #1-34_001.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

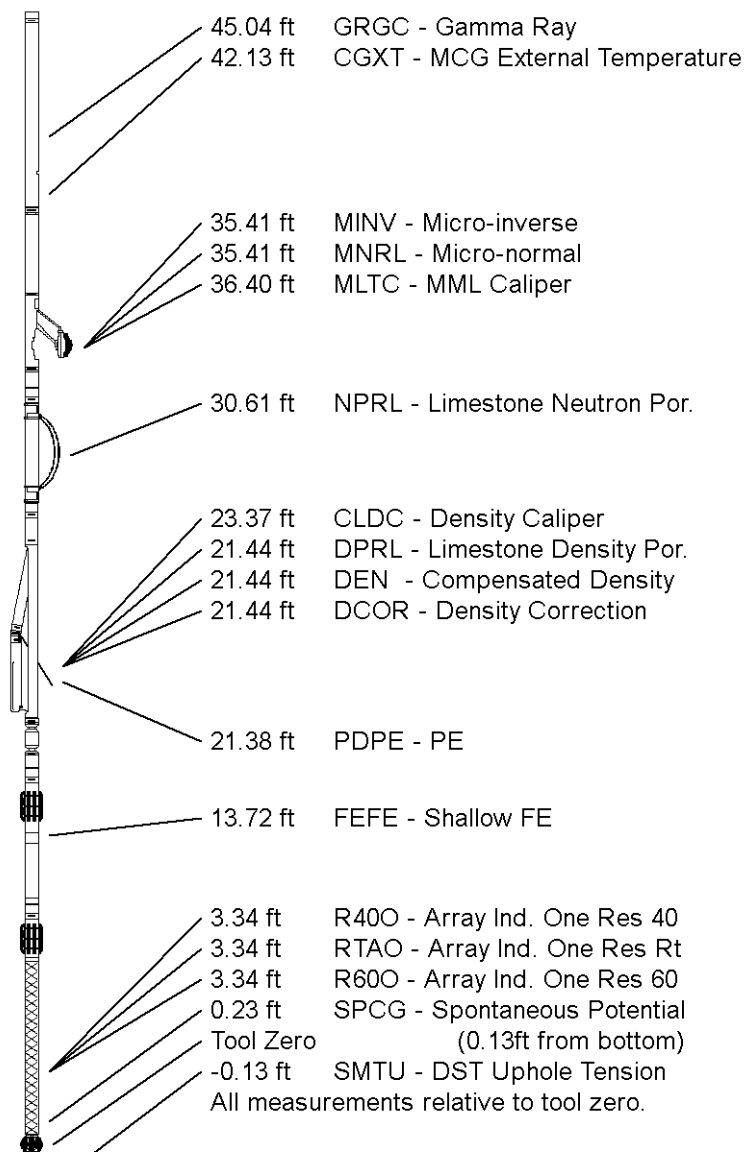
Compact Density/Caliper
MPD-B 35 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

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

Total Length: 50.32 ft Weight: 407.9 lb



COMPANY	GRAND MESA
WELL	DALE #1-34
FIELD	WILDCAT
PROVINCE/COUNTY	LOGAN
COUNTRY/STATE	U.S.A./KANSAS

Elevation Kelly Bushing	2988.00	feet
Elevation Drill Floor	2987.00	feet
Elevation Ground Level	2983.00	feet

First Reading	4726.00	feet
Depth Driller	4750.00	feet
Depth Logger	4747.00	feet



Weatherford®

COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
LOG

