



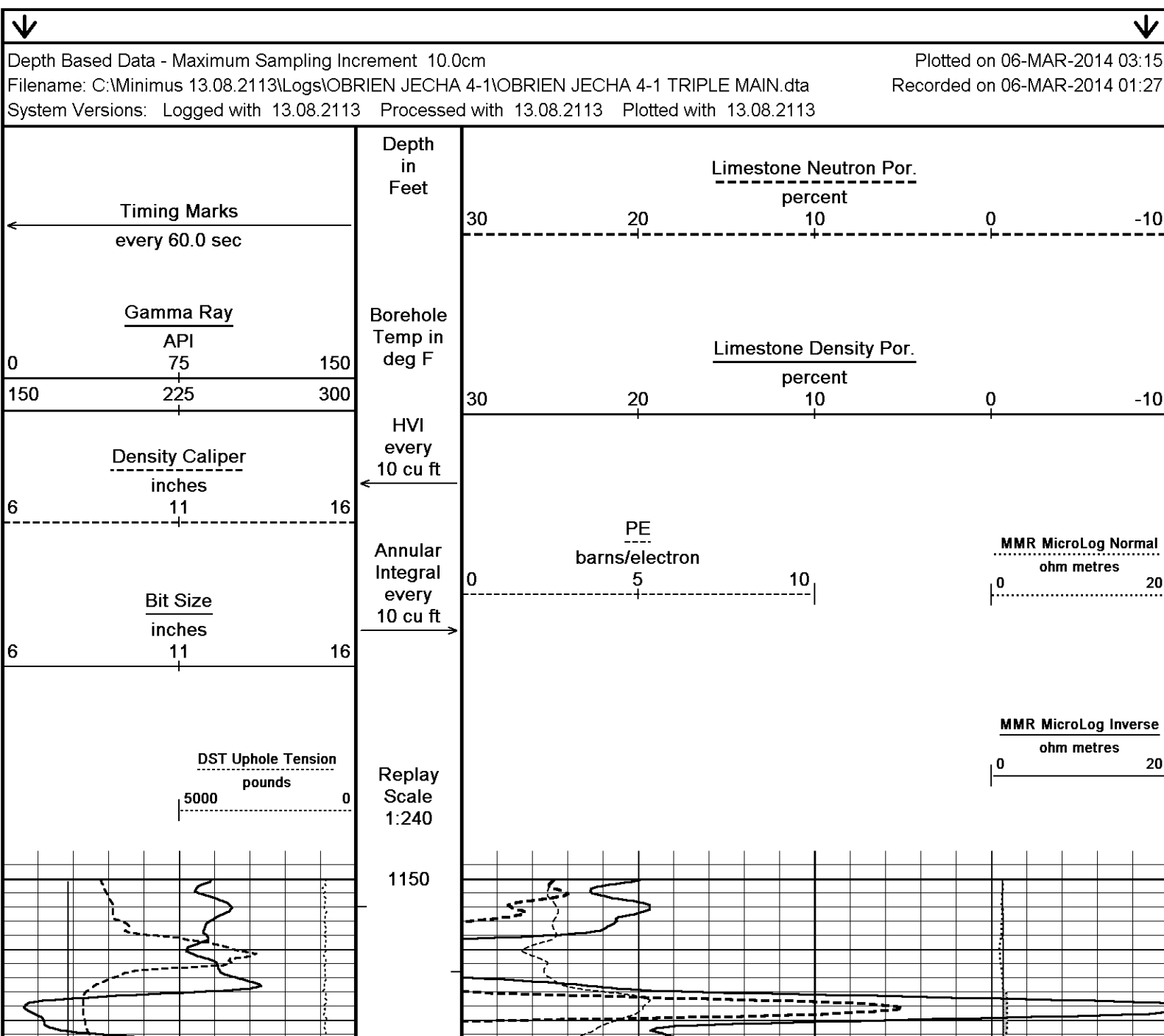
Weatherford

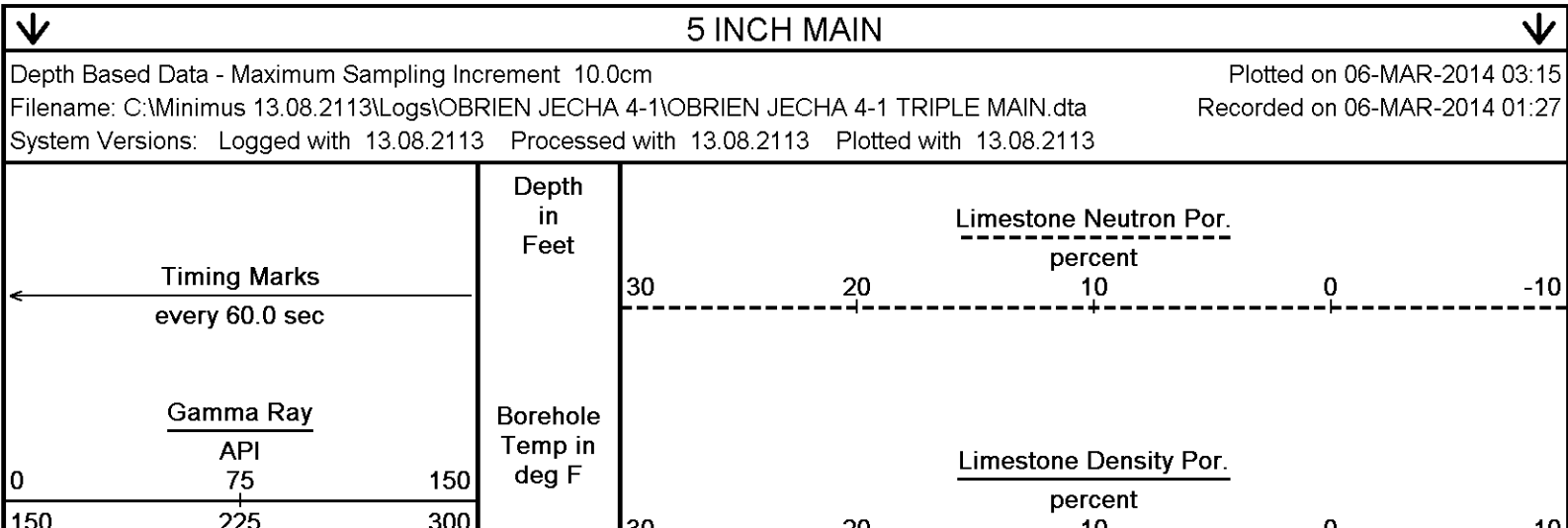
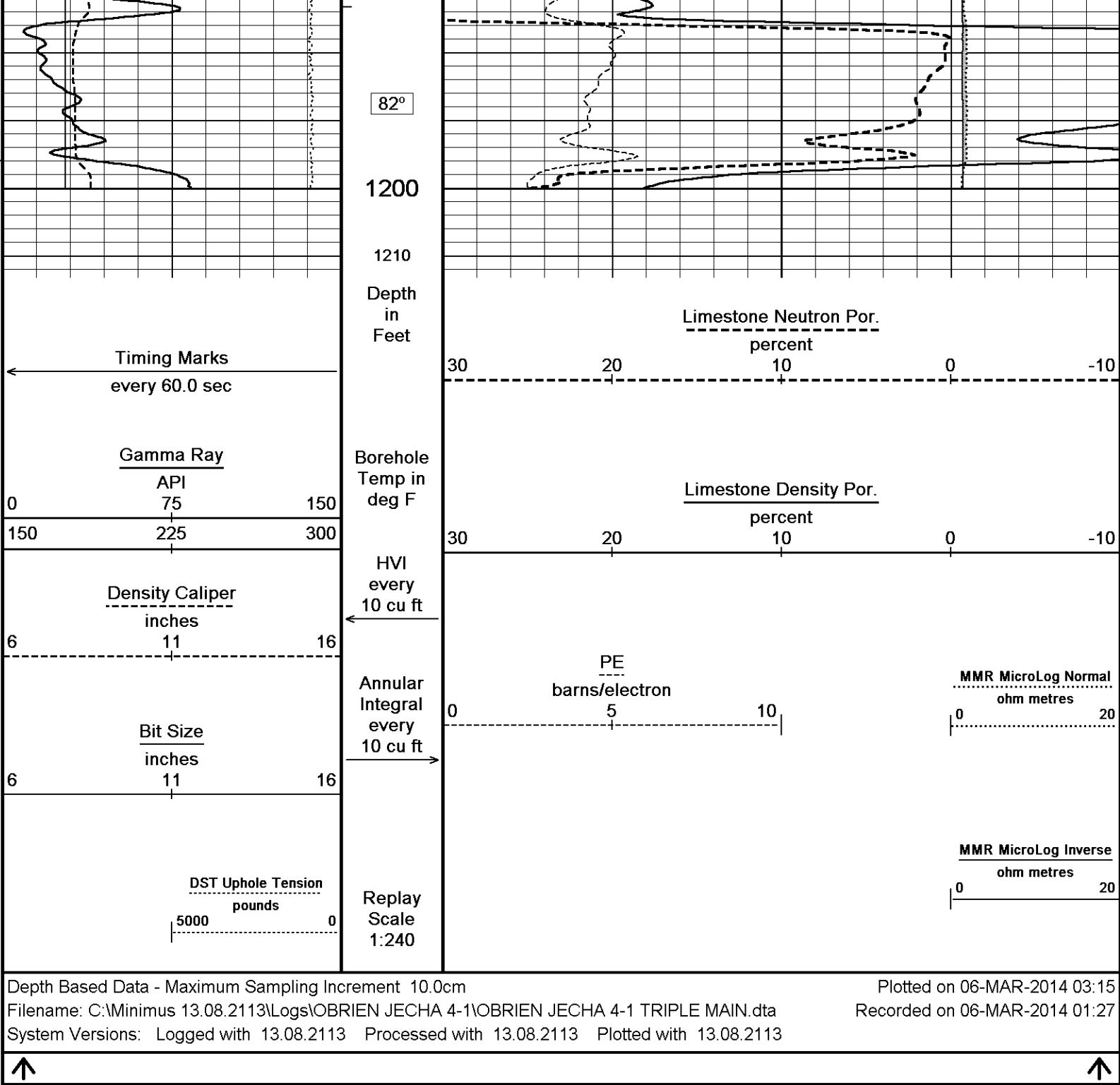
**COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG**

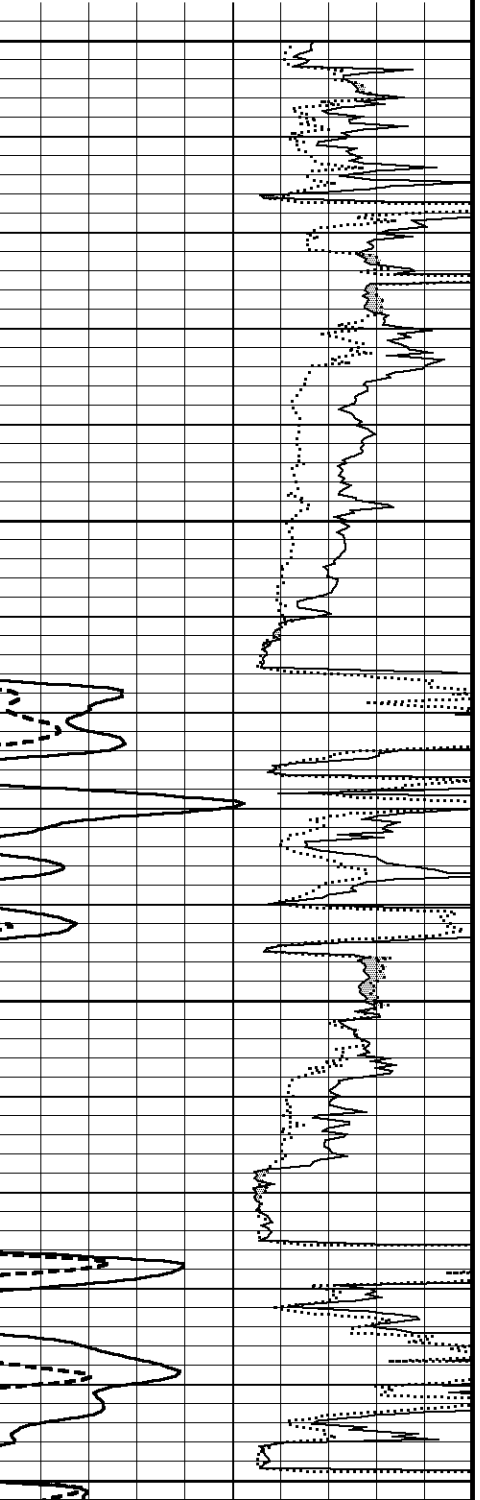
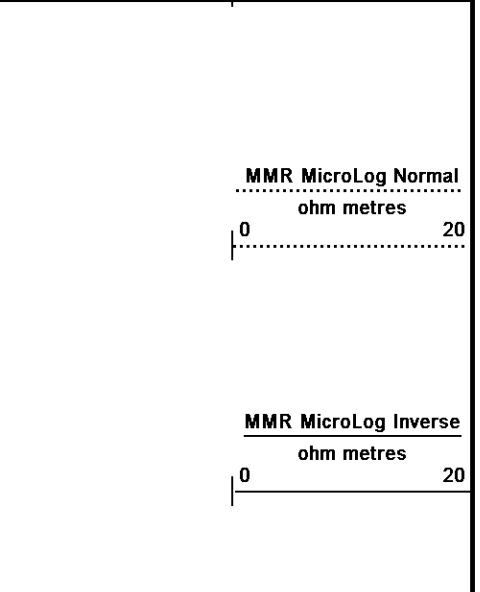
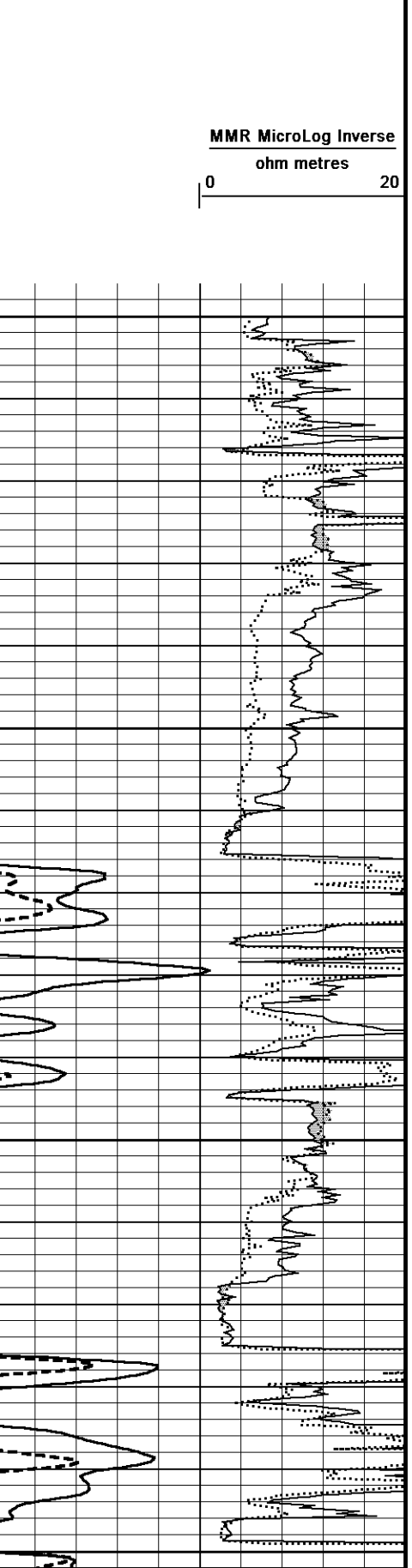
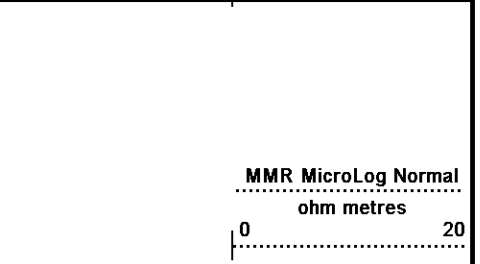
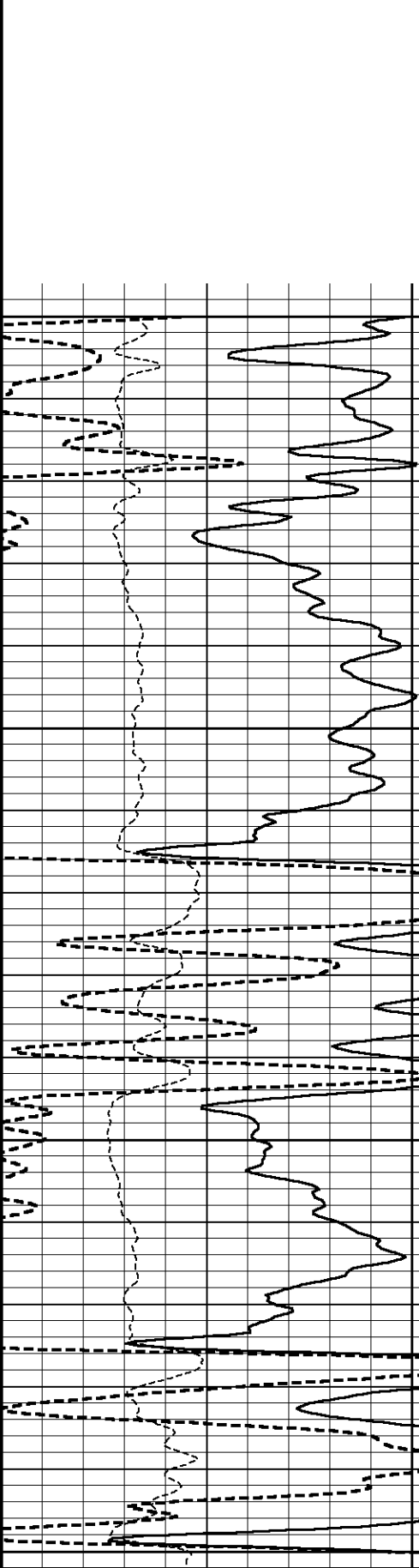
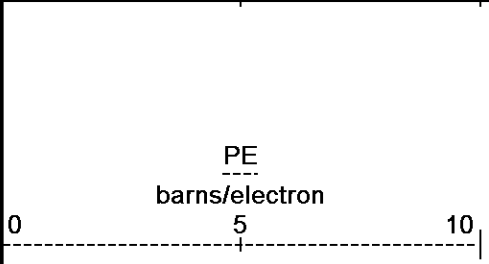
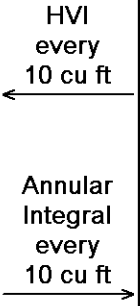
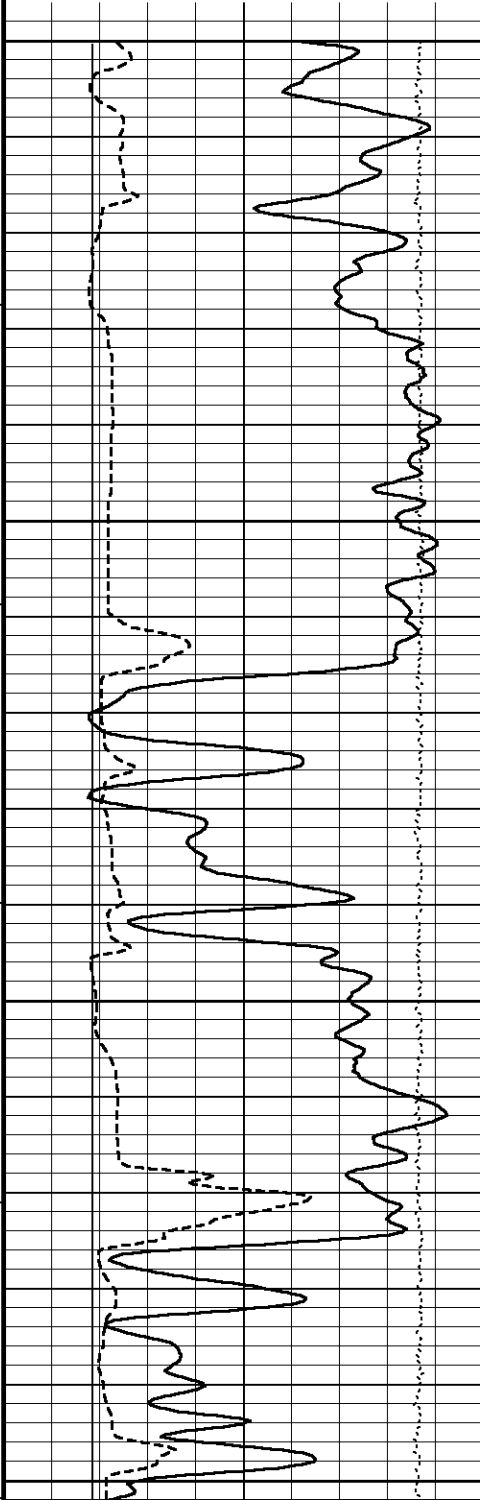
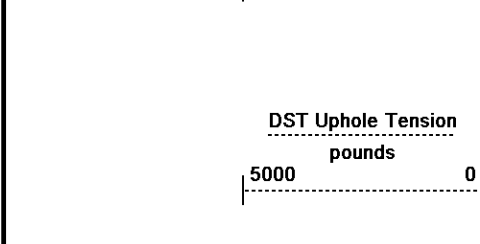
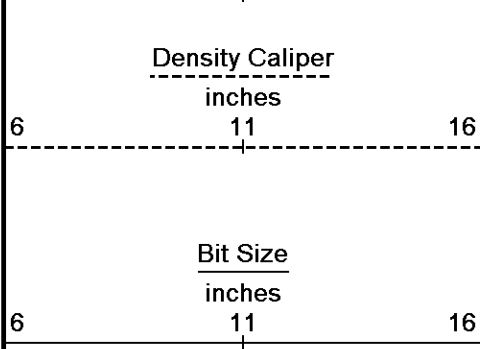
COMPANY			O'BRIEN RESOURCES, LLC		
WELL			JECHA 4-1		
FIELD			WILDCAT		
PROVINCE/COUNTY			RUSH		
COUNTRY/STATE			U.S.A. / KANSAS		
LOCATION			2400' FNL & 1850' FWL OF THE SE SW SE NW		
SEC 4	TWP 19S	RGE 17W	Other Services		
Latitude		MPD/MDN		MML	
Longitude		MAI/MFE			
API Number		15-165-22058		MSS	
Permanent Datum GL, Elevation 2053 feet				Elevations:	
Log Measured From KB				KB	2058.00
Drilling Measured From KB @ 5 FEET				DF	2056.00
				GL	2053.00
Date	05-MAR-2014				
Run Number	ONE				
Service Order	5872-81241285				
Depth Driller	3851.00		feet		
Depth Logger	3851.00		feet		
First Reading	3832.00		feet		
Last Reading	2800.00		feet		
Casing Driller	259.00		feet		
Casing Logger	259.00		feet		
Bit Size	7.875		inches		
Hole Fluid Type	CHEM				
Density / Viscosity	9.40	lb/USg	50.00	CP	
PH / Fluid Loss	9.50		6.80	ml/30Min	
Sample Source	PIT				
Rm @ Measured Temp	1.0 @ 48.0		ohm-m		
Rmf @ Measured Temp	0.80 @ 48.0		ohm-m		
Rmc @ Measured Temp	1.20 @ 48.0		ohm-m		
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	0.48 @ 99.0		ohm-m		
Time Since Circulation	4 HRS				
Max Recorded Temp	99.00		deg F		
Equipment / Base	13057		LIB		
Recorded By	D. COLE				
Witnessed By	K. TALBOTT		A. BRITTAN		
JOB #	LB 14-064				

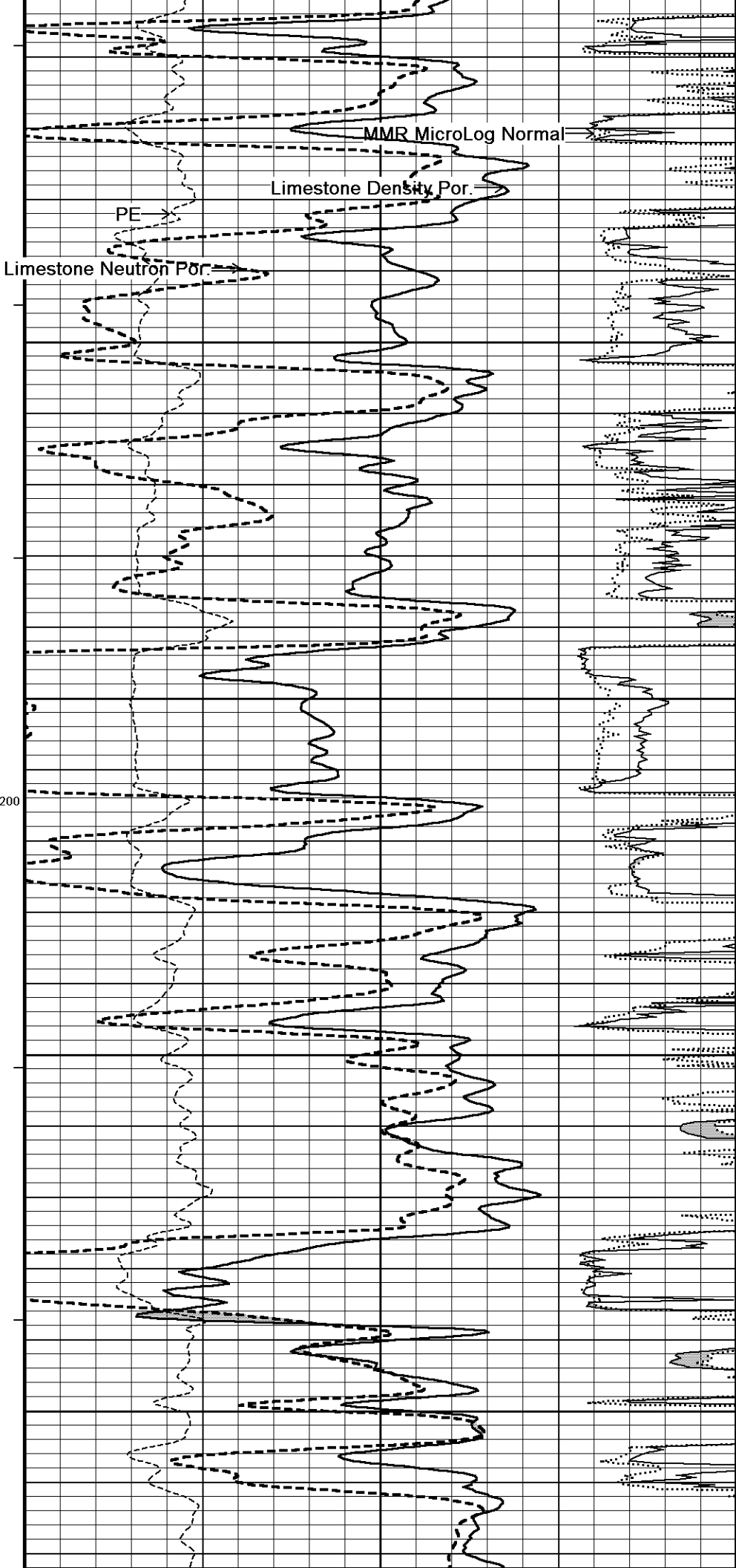
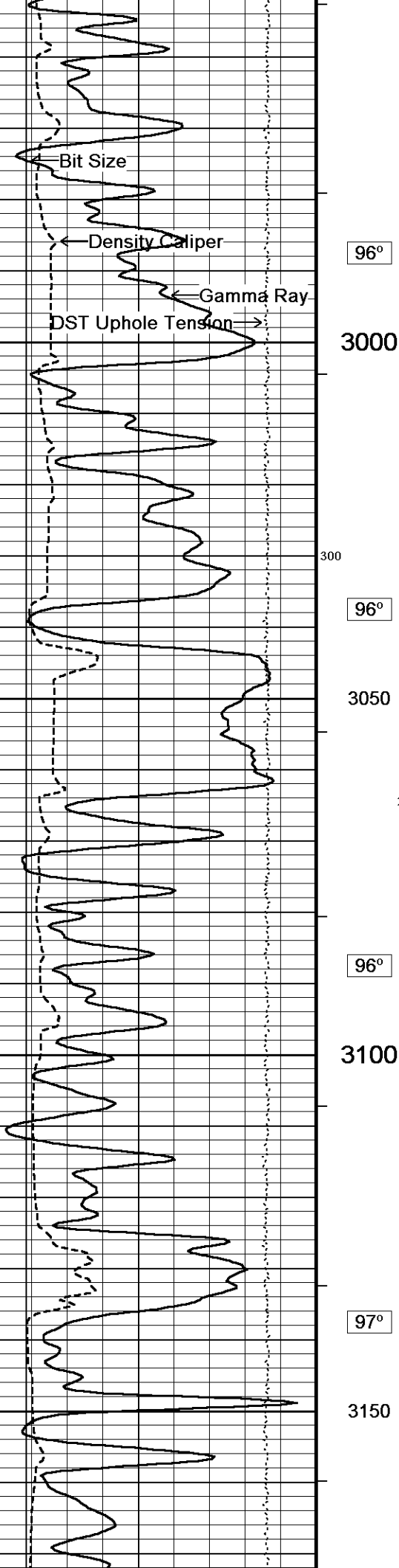
BOREHOLE RECORD					Last Edited: 05-MAR-2014 20:13
Bit Size inches		Depth From feet		Depth To feet	
7.875		259.00		3851.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
CASING	8.625	0.00	259.00	24.00	

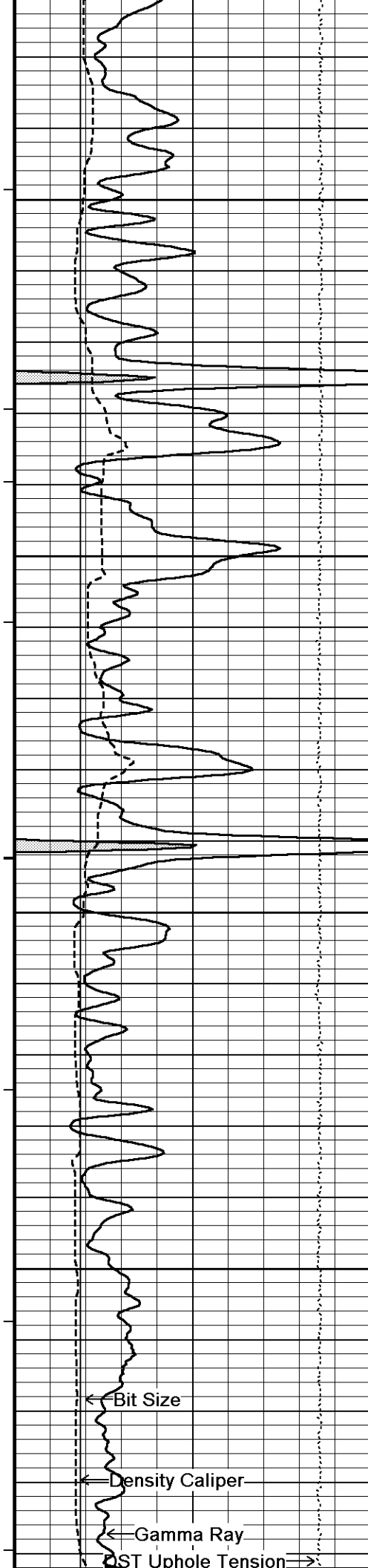
REMARKS
- SOFTWARE ISSUE: WLS 13.08.211.
- RUN ONE: MCG ANS MSS RAN IN COMBINATION. - HARDWARE: TWO 0.5 INCH STANDOFFS USED ON MSS.
- RUN TWO: MCG, MML, MDN, MPD, MFE AND MAI RUN IN COMBINATION. - HARDWARE: DUAL BOWSPRING USED ON MDN. 0.5 INCH STANDOFF USED ON MFE. 0.5 INCH STANDOFF USED ON MAI.
- 2.71 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 2800: 415 CU.FT.



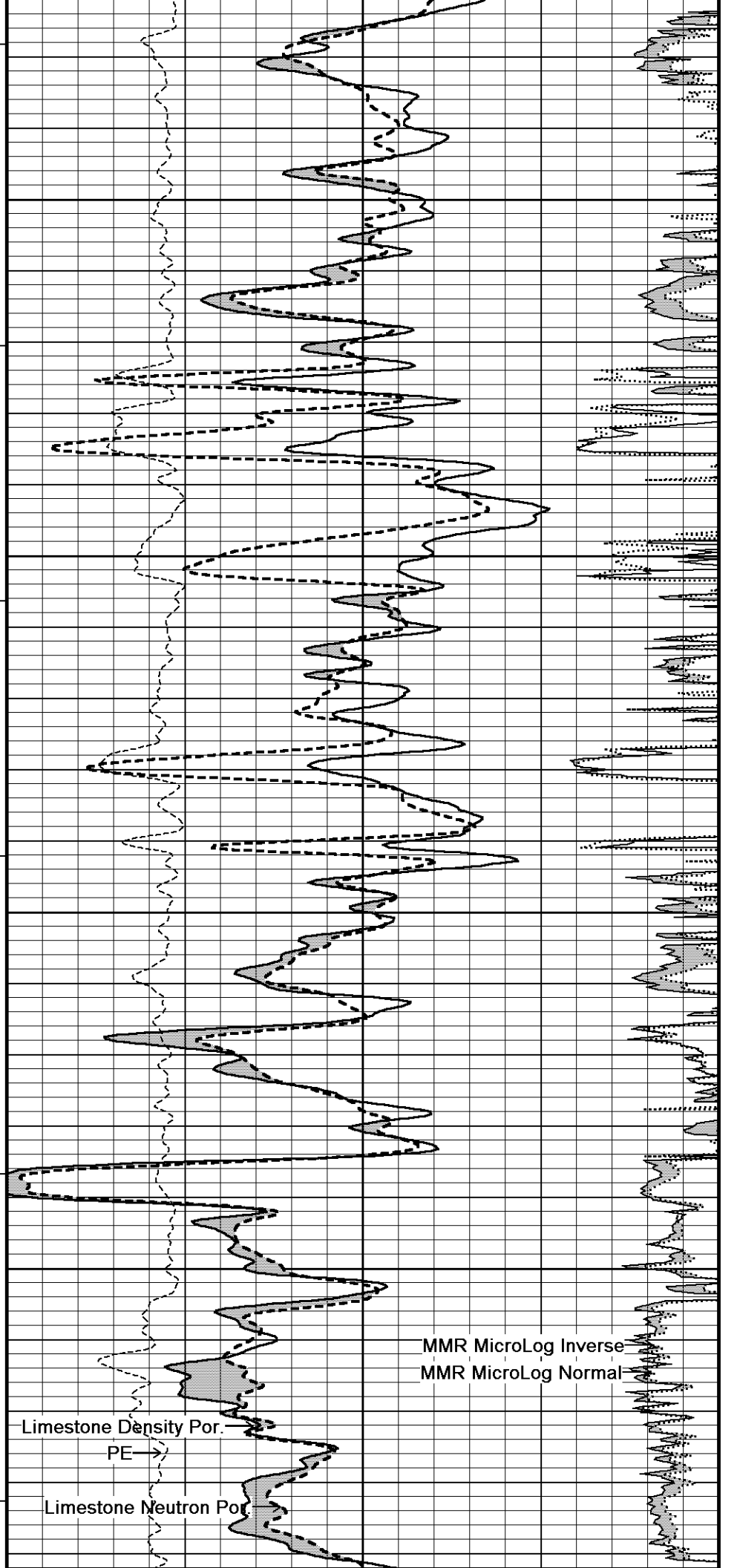








97°
3200
97°
3250
98°
200
3300
98°
3350
98°

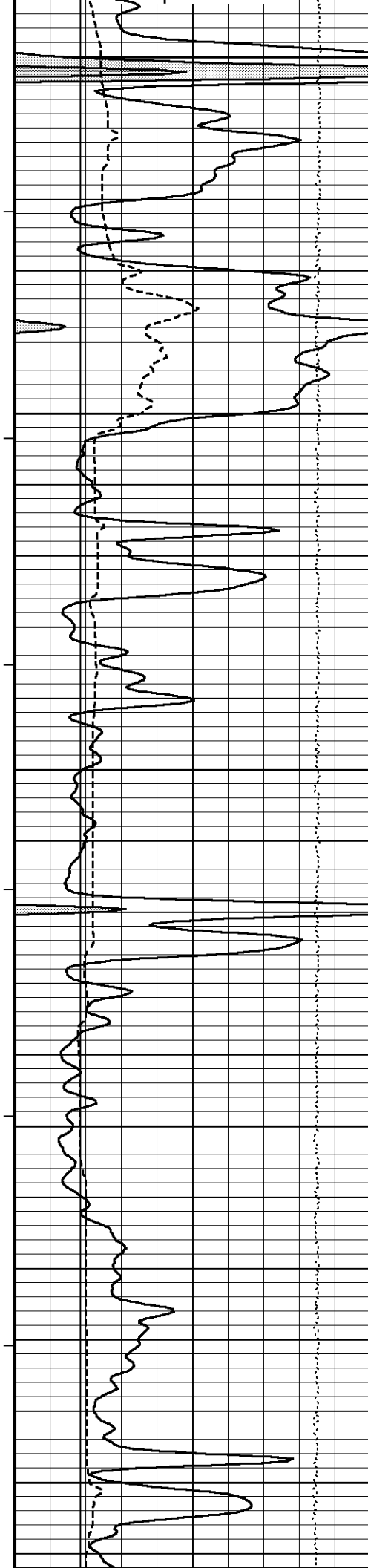


Limestone Density Por.

PE

Limestone Neutron Por.

MMR MicroLog Inverse
MMR MicroLog Normal



3400

99°

100

3450

100°

3500

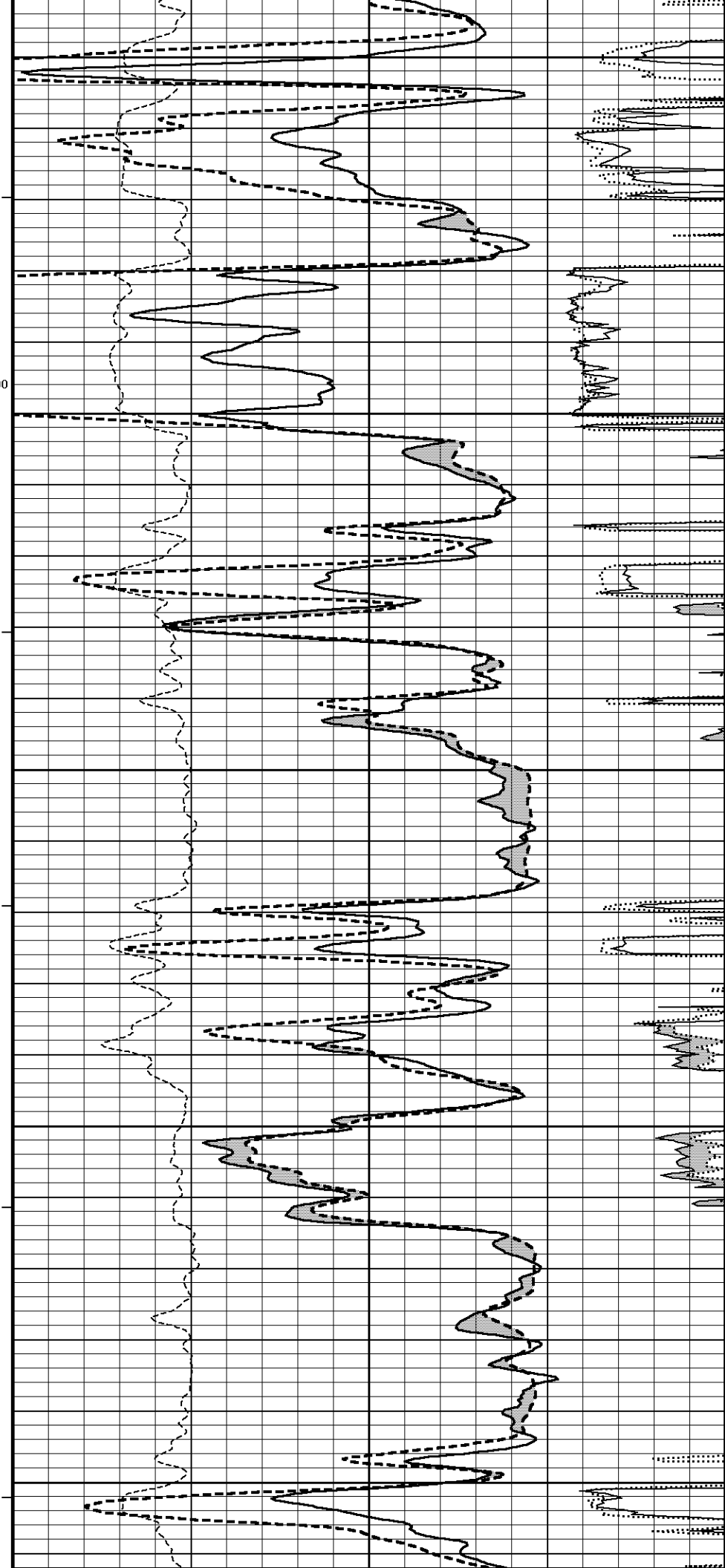
101°

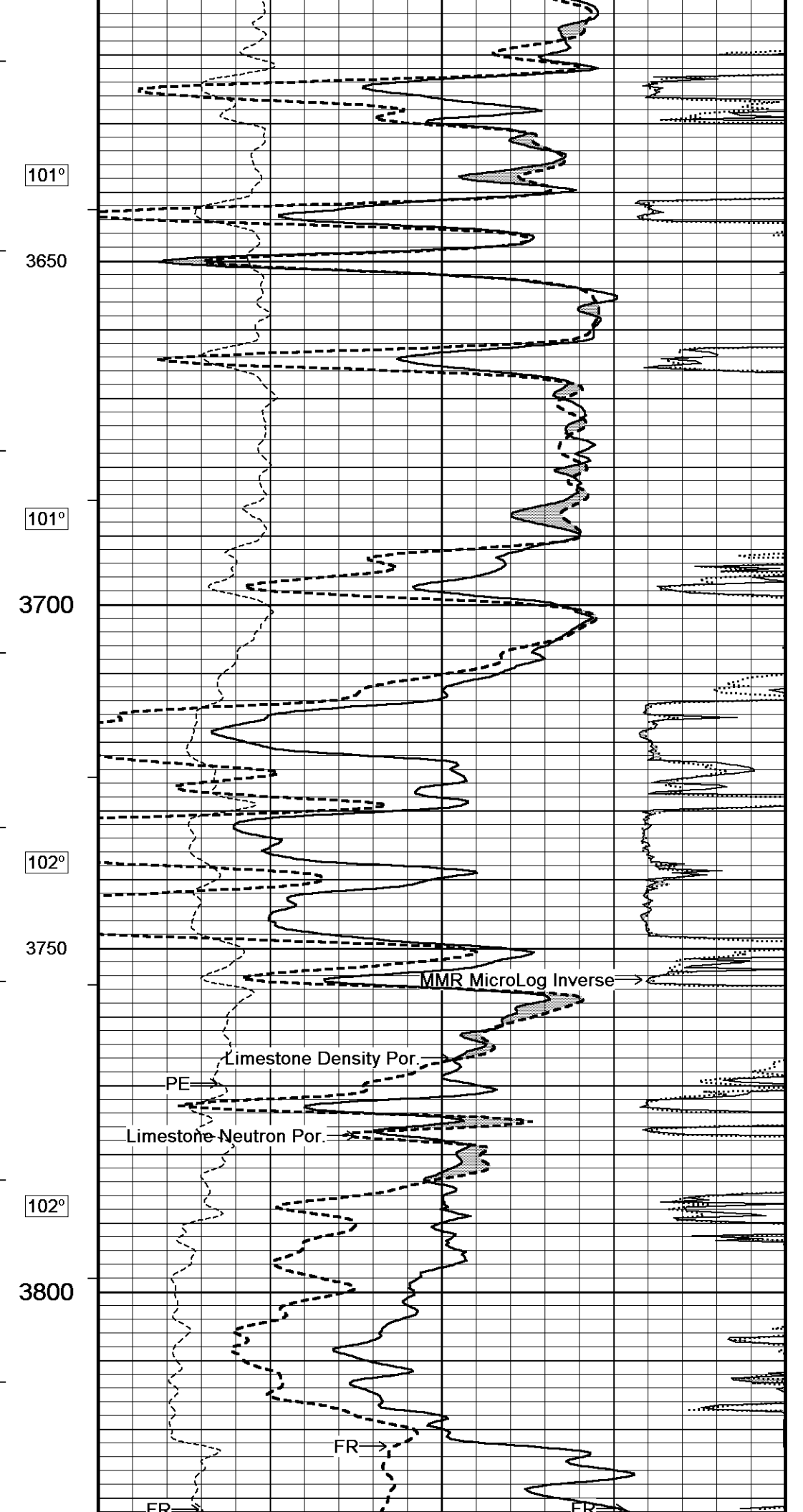
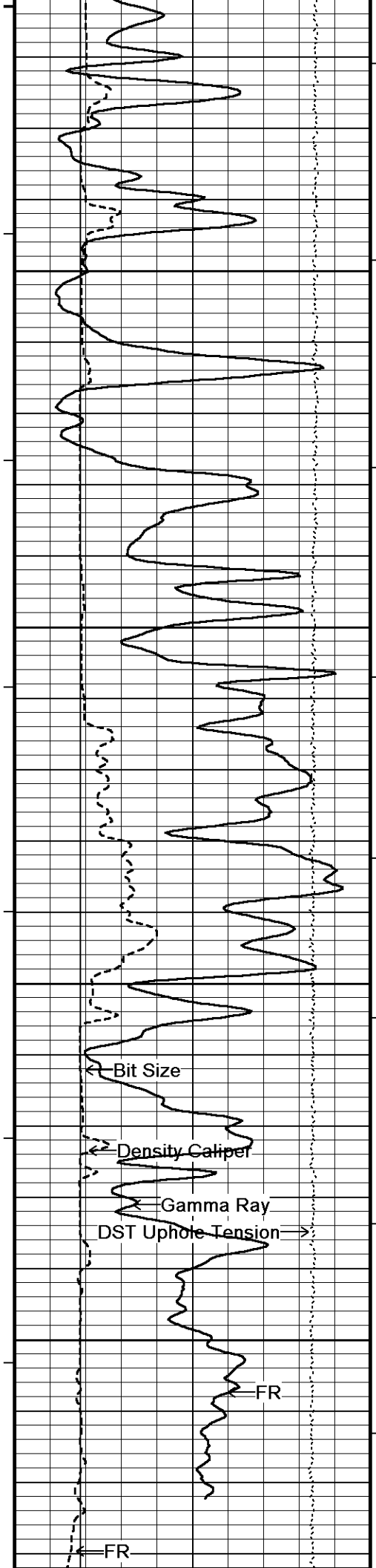
3550

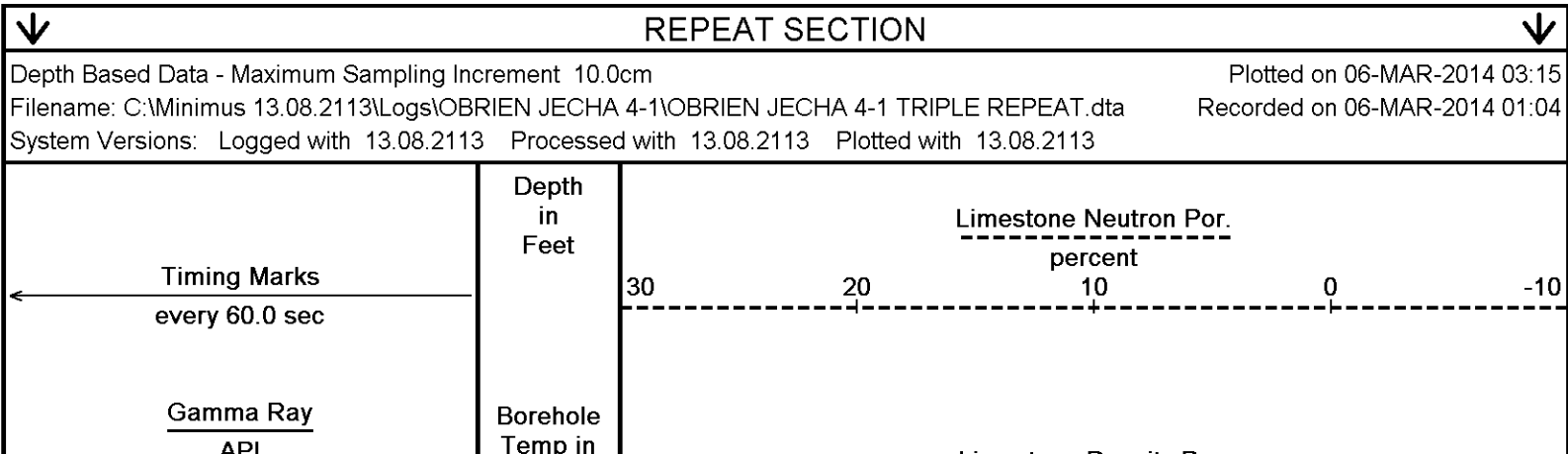
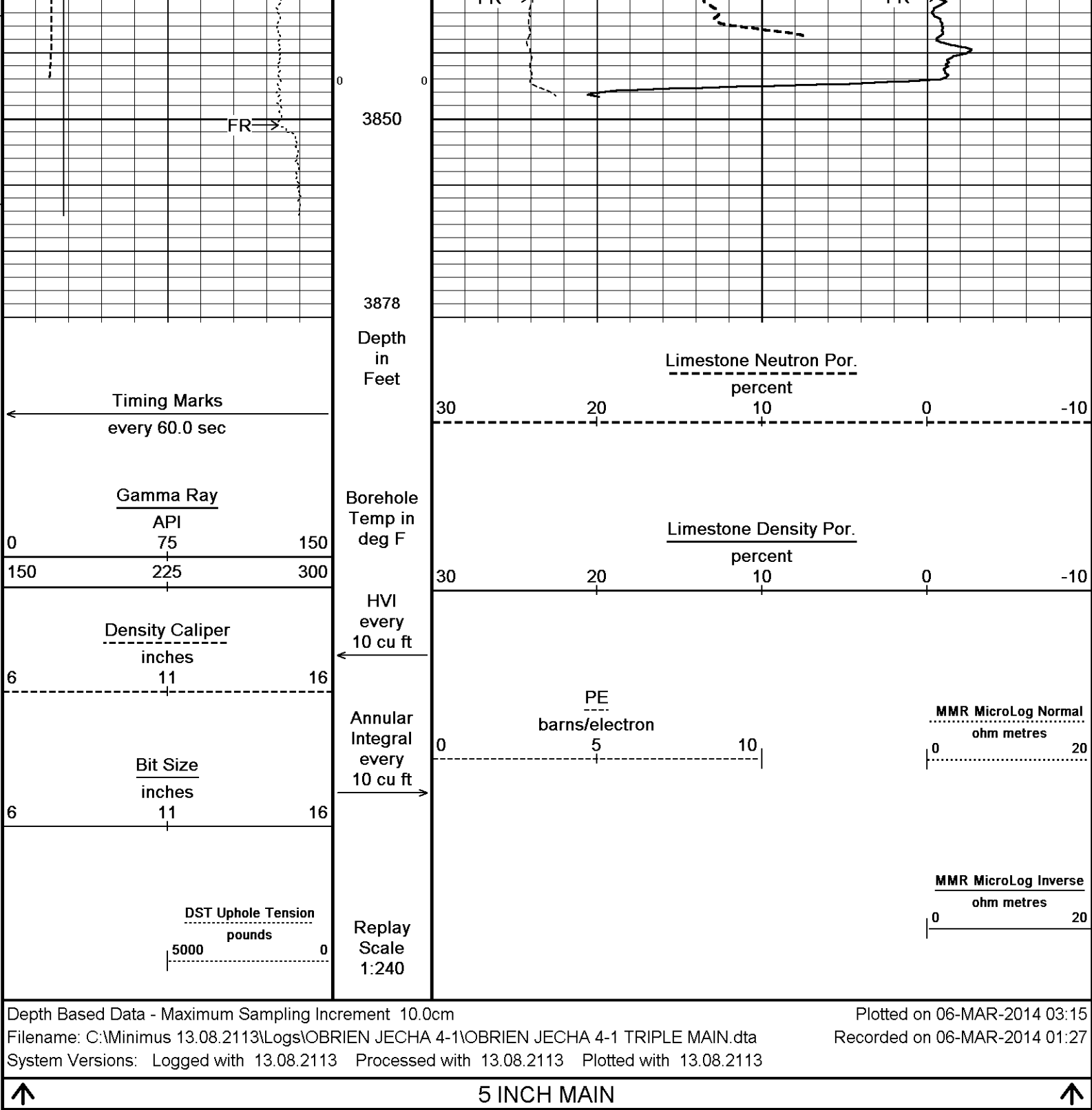
100

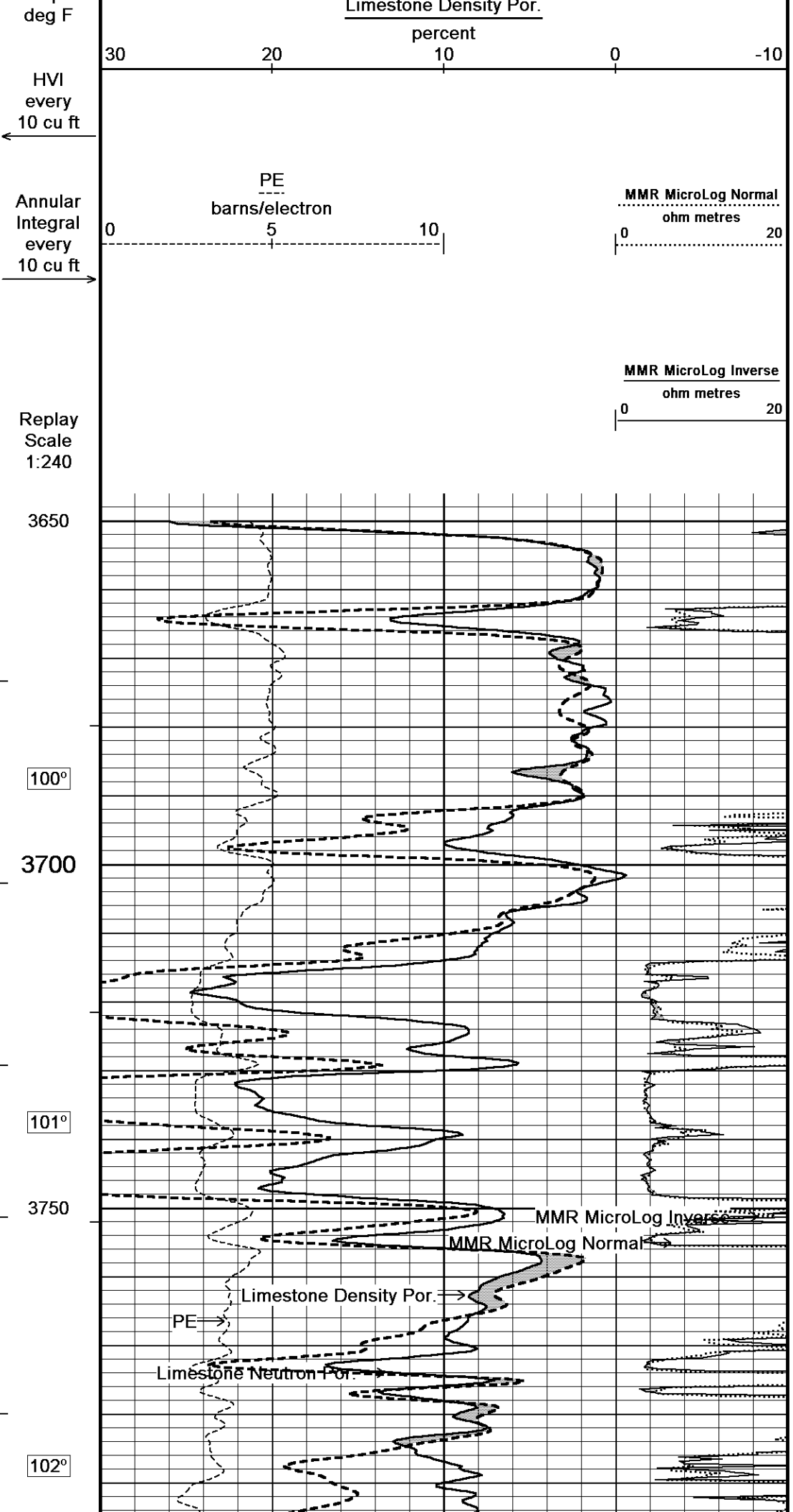
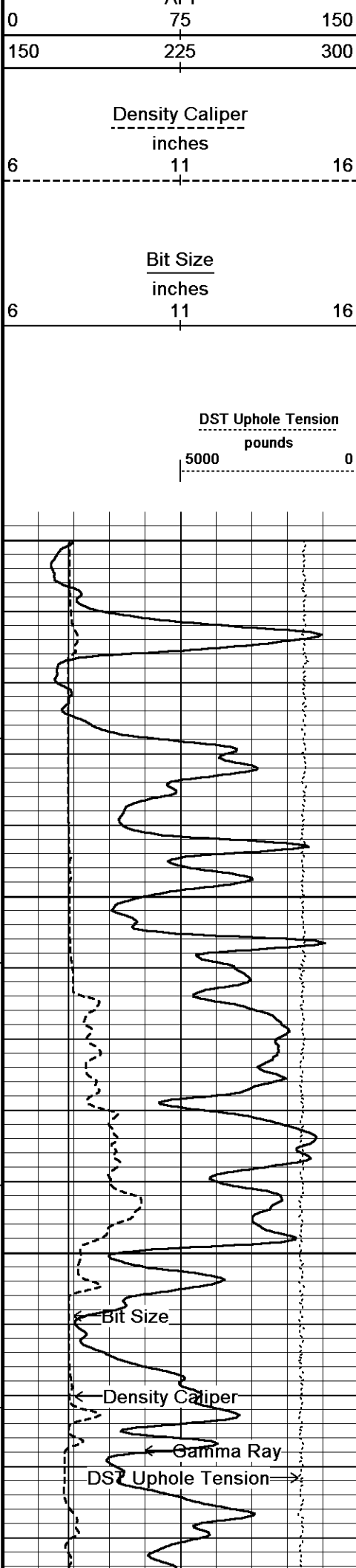
101°

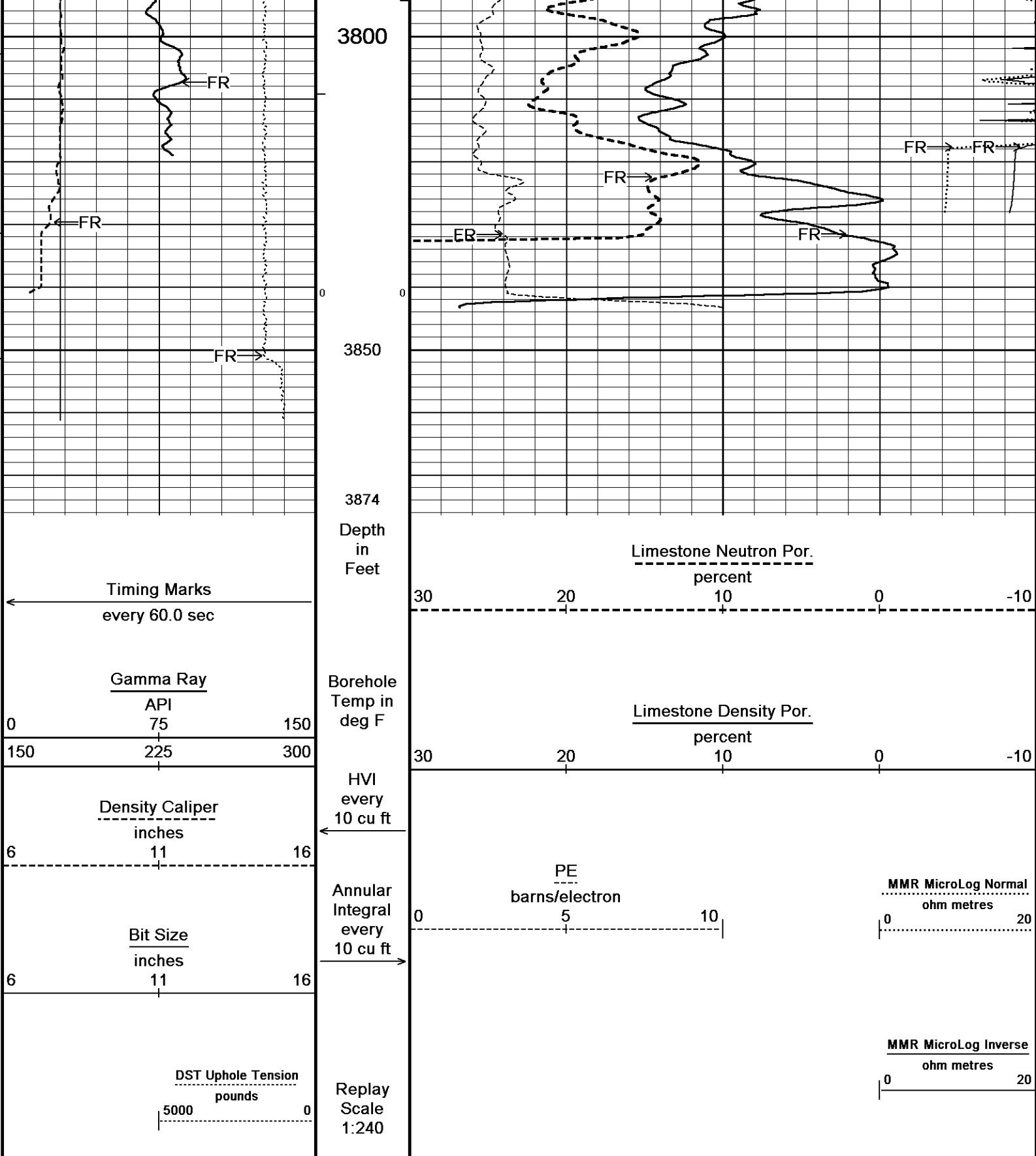
3600











Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.08.2113\Logs\OBRIEN JECHA 4-1\OBRIEN JECHA 4-1 TRIPLE REPEAT.dta
System Versions: Logged with 13.08.2113 Processed with 13.08.2113 Plotted with 13.08.2113

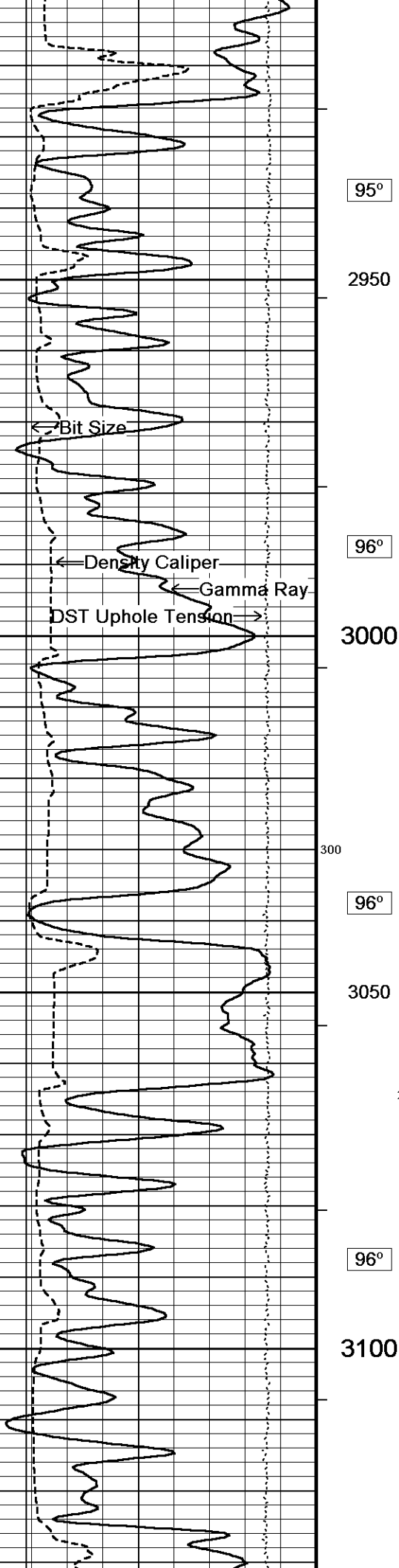
Plotted on 06-MAR-2014 03:15
Recorded on 06-MAR-2014 01:04

↑ REPEAT SECTION ↑

↓ 5 INCH MAIN ↓

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.08.2113\Logs\OBRIEN JECHA 4-1\OBRIEN JECHA 4-1 TRIPLE MAIN.dta
System Versions: Logged with 13.08.2113 Processed with 13.08.2113 Plotted with 13.08.2113

Plotted on 06-MAR-2014 03:15
Recorded on 06-MAR-2014 01:27



95°

2950

96°

3000

300

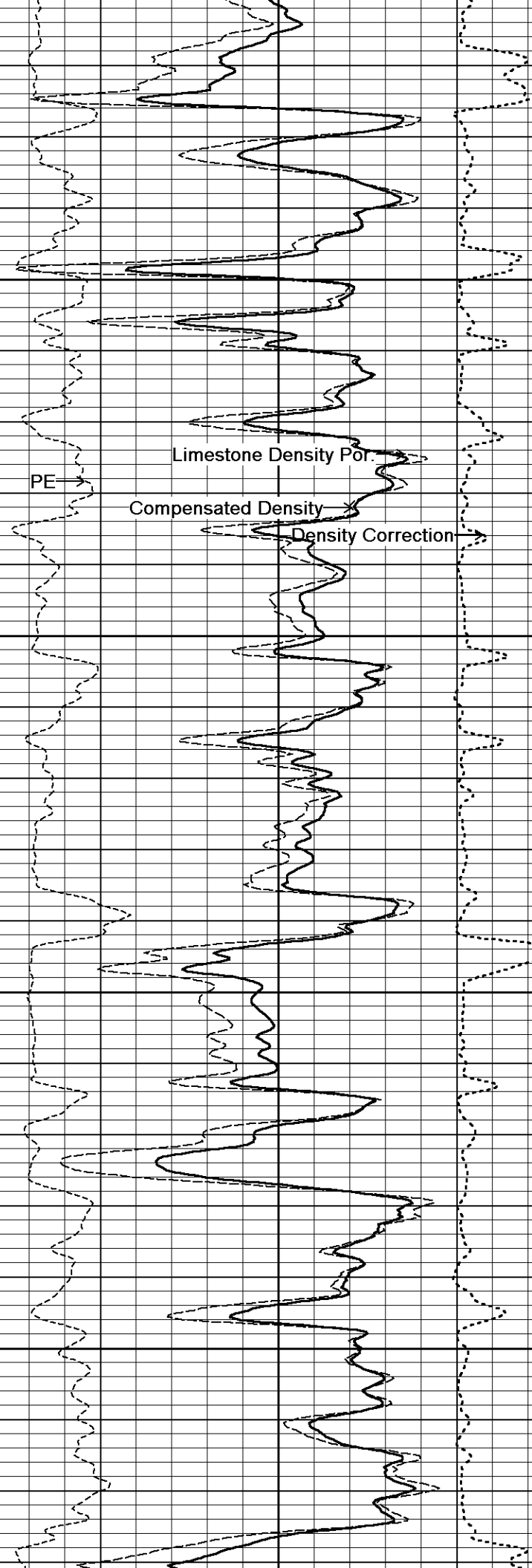
96°

3050

200

96°

3100

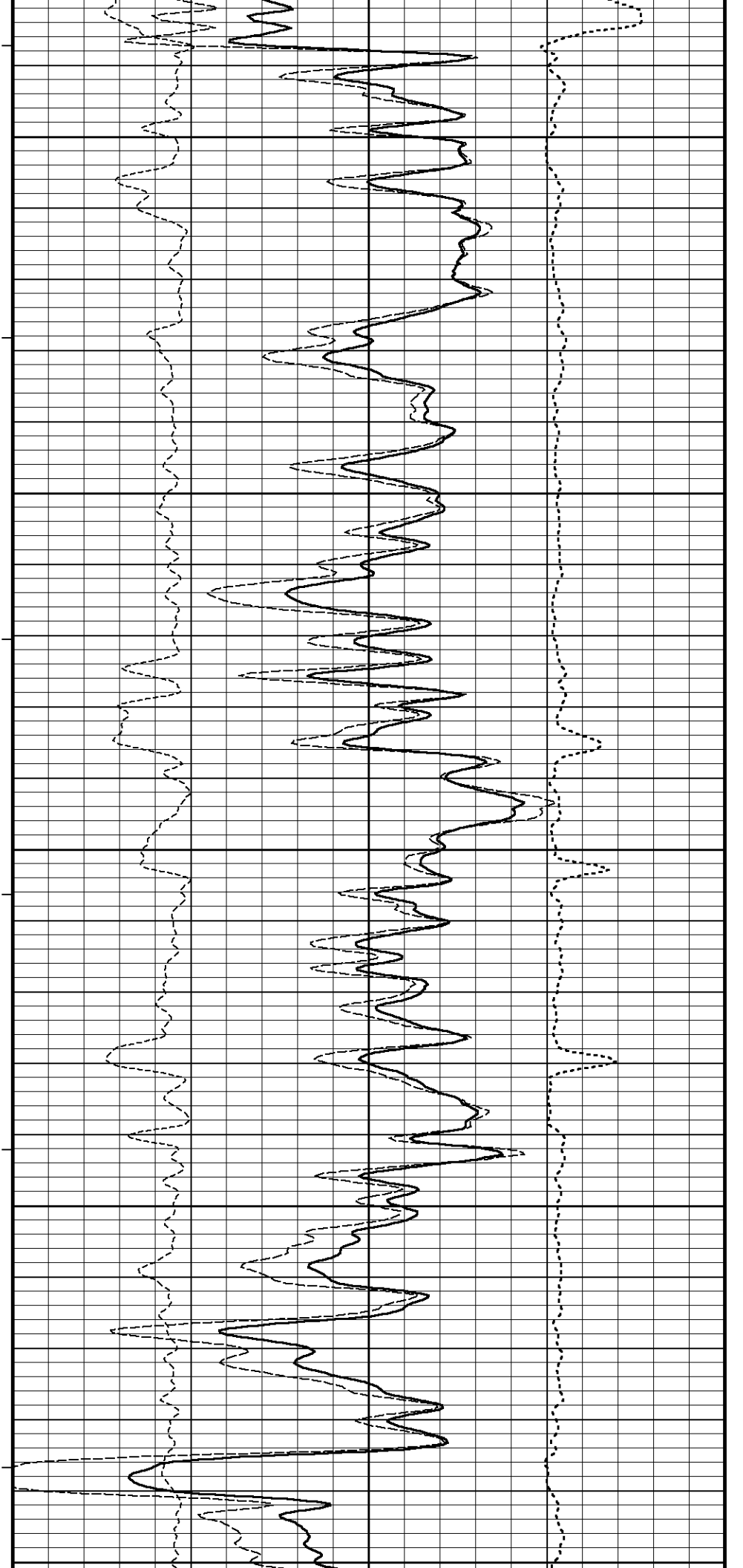
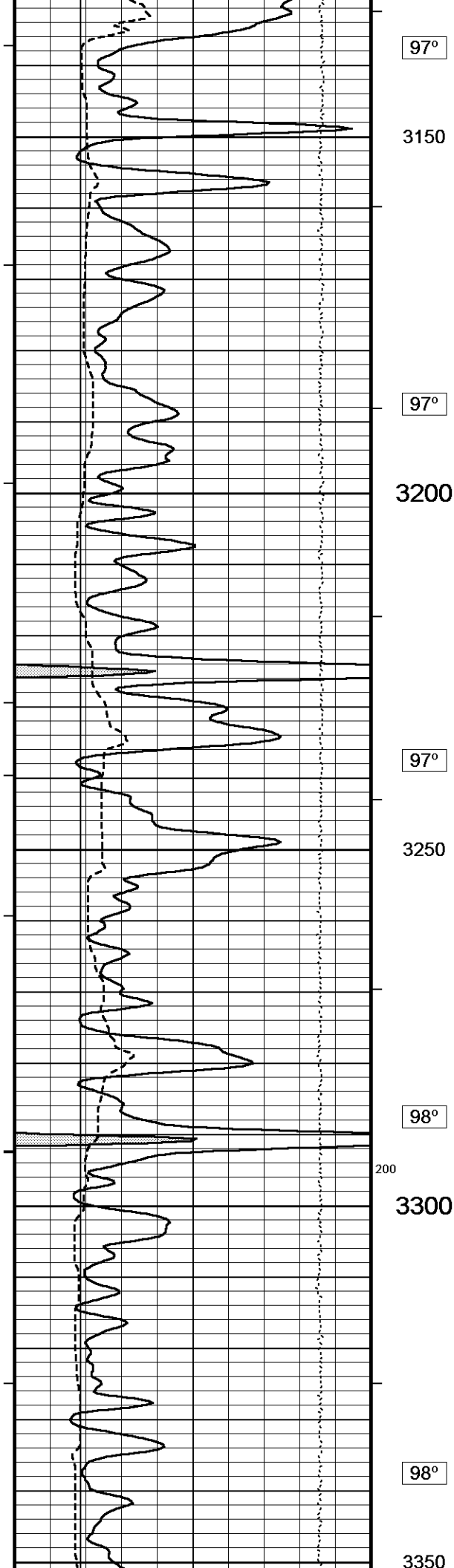


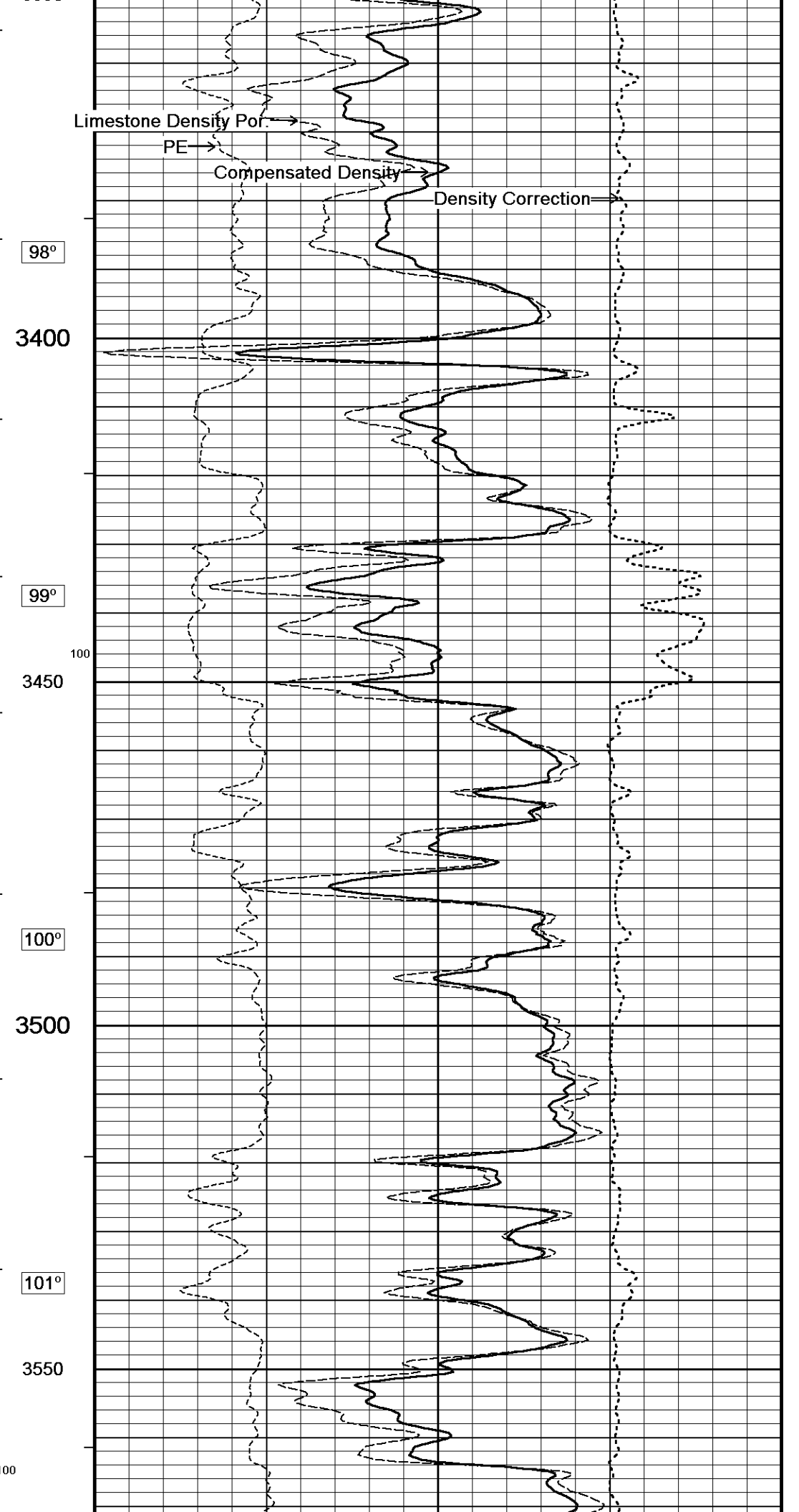
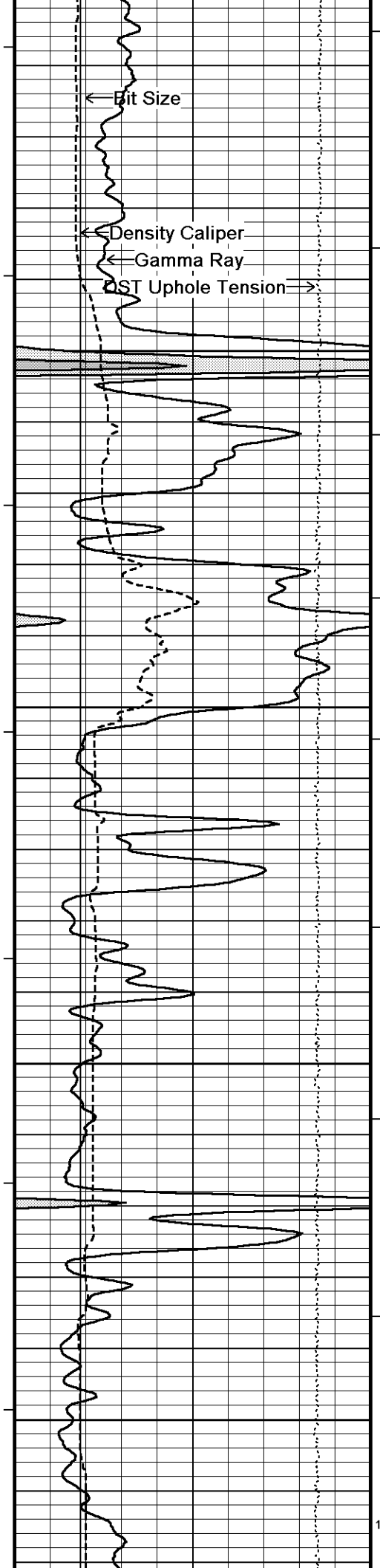
PE

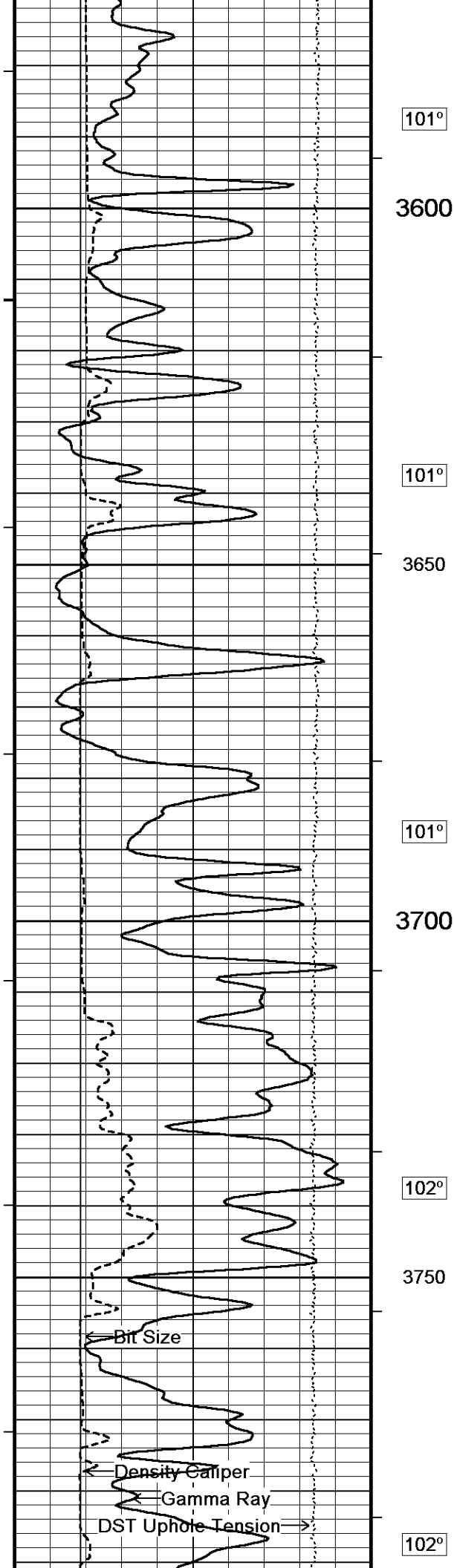
Limestone Density Por.

Compensated Density

Density Correction







101°

3600

101°

3650

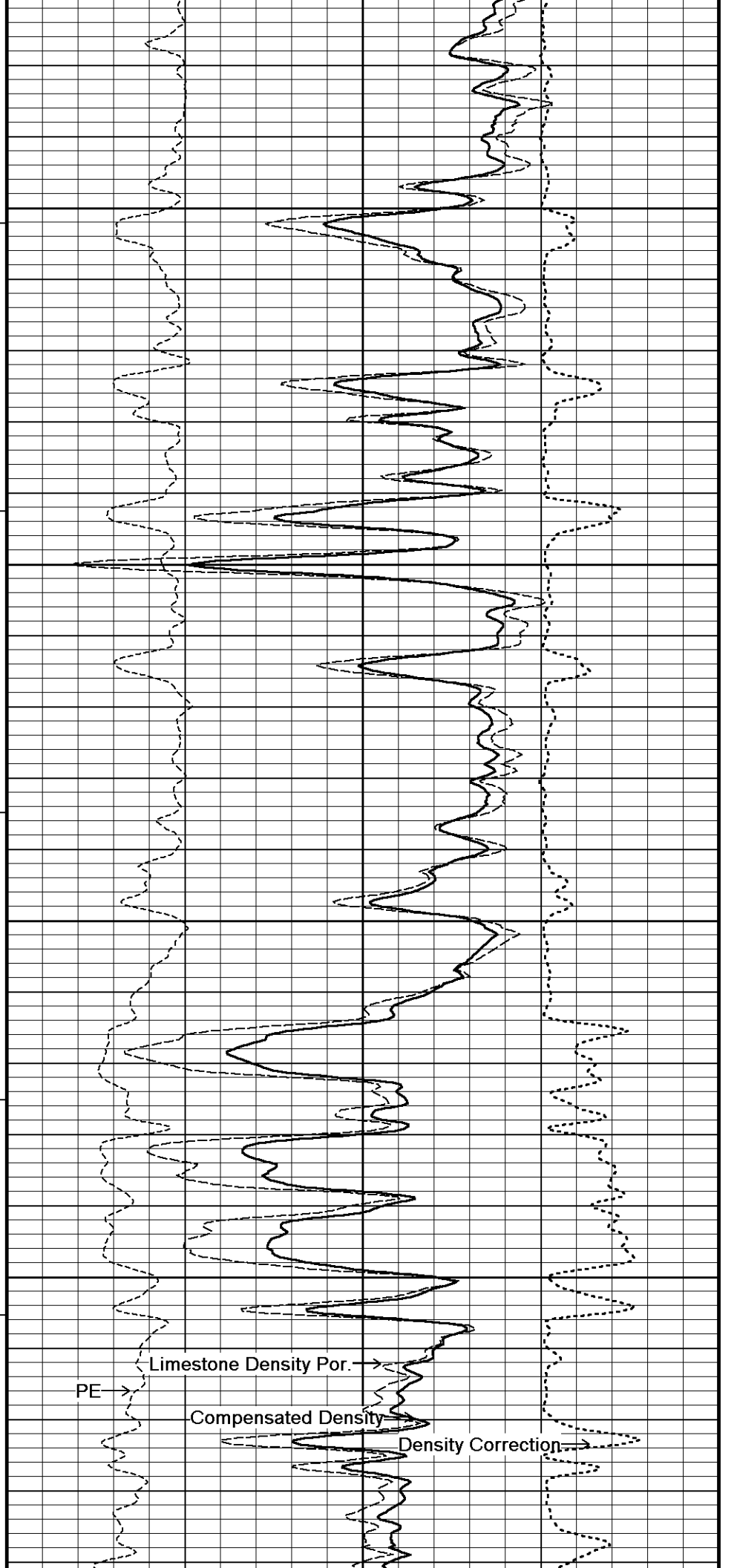
101°

3700

102°

3750

102°

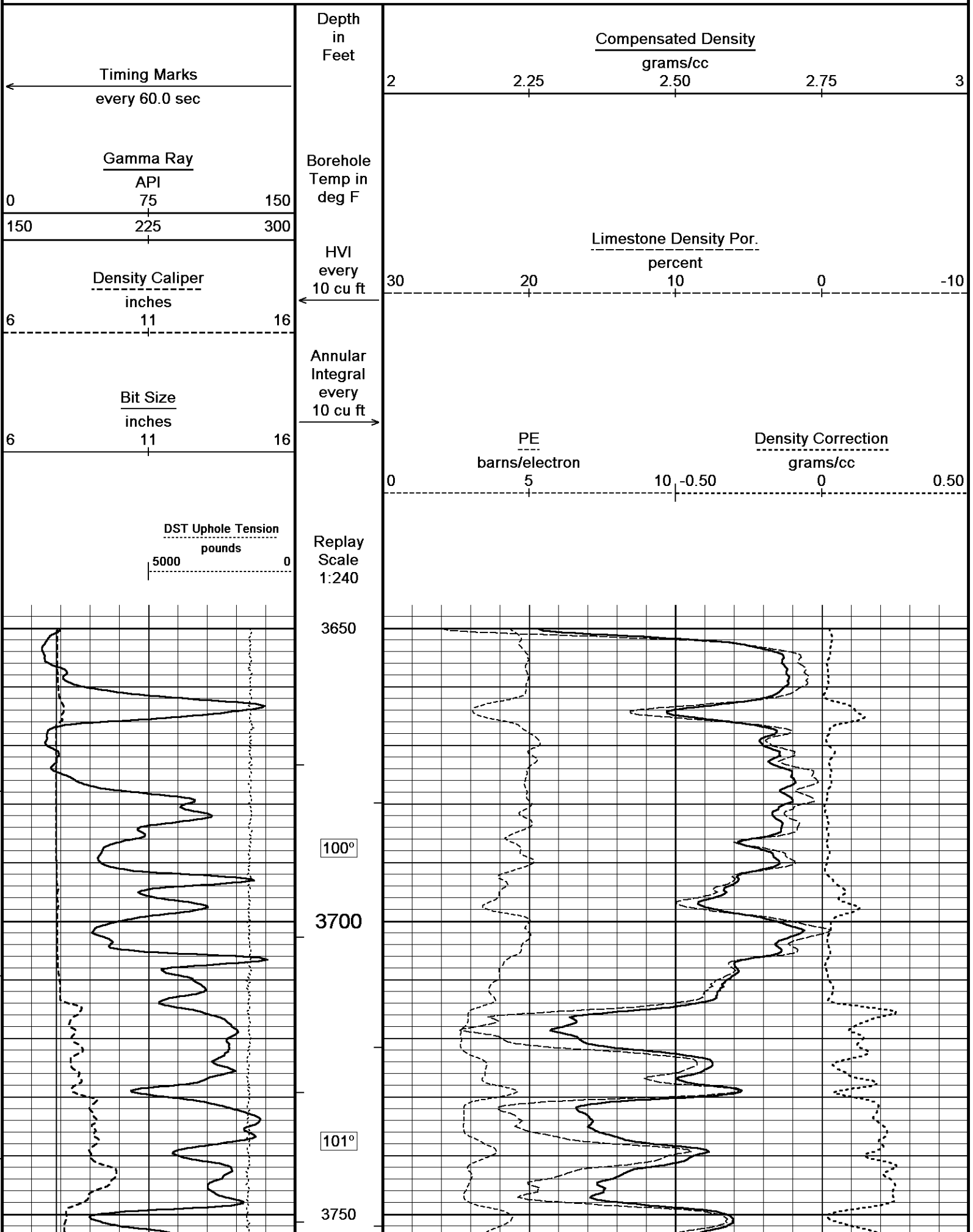


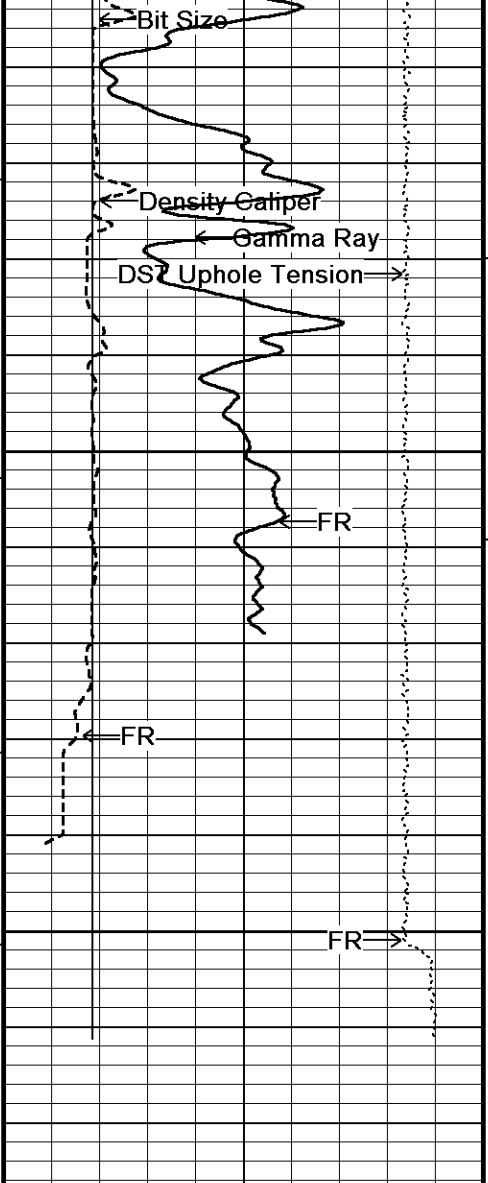
PE

Limestone Density Por.

Compensated Density

Density Correction





102°

3800

3850

3874

Depth
in
Feet

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

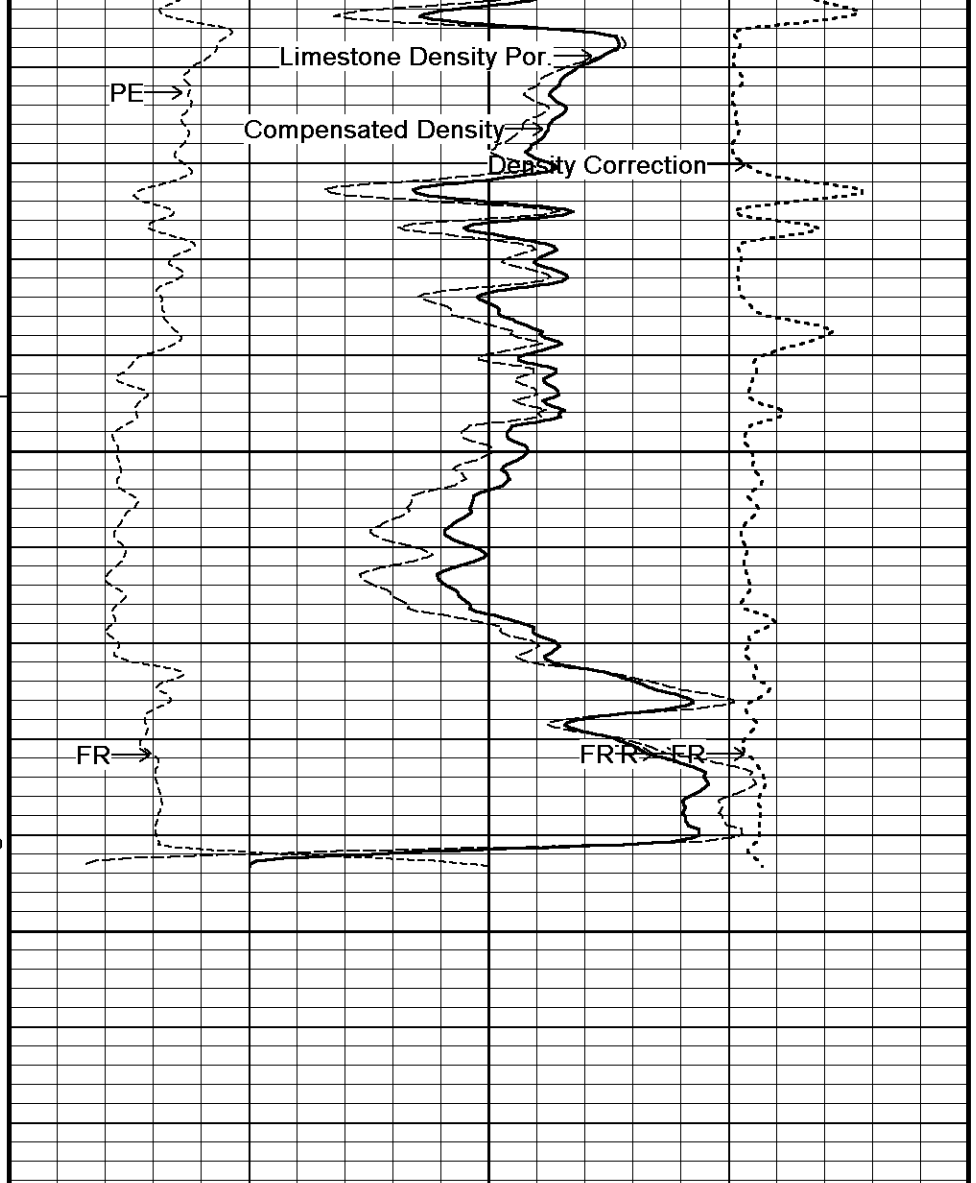
DST Uphole Tension
pounds
5000 0

Borehole
Temp in
deg F

HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

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 -0.50
Density Correction
grams/cc
0 0.50

Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 06-MAR-2014 03:15

Filename: C:\Minimus 13.08.2113\Logs\OBRIEN JECHA 4-1\OBRIEN JECHA 4-1 TRIPLE REPEAT.dta

Recorded on 06-MAR-2014 01:04

System Versions: Logged with 13.08.2113 Processed with 13.08.2113 Plotted with 13.08.2113



REPEAT SECTION



BEFORE SURVEY CALIBRATION

C:\Minimus 13.08.2113\Logs\OBRIEN JECHA 4-1\OBRIEN JECHA 4-1 TRIPLE REPEAT.dta

General Constants All 000

Last Edited on 06-MAR-2014,00:28

General Parameters

Mud Resistivity	1.000	ohm-metres
Mud Resistivity Temperature	48.000	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	MMR Caliper	

Rwa Parameters

Porosity used	Base Density Porosity
Resistivity used	Array Ind. Four Res Rt
RWA Constant A	0.610
RWA Constant M	2.150
SW/APOR Tool Source	0.000

Gamma Calibration MCG-D.K 443

Field Calibration on 05-MAR-2014,20:49

	Measured	Calibrated (API)
Background	75	48
Calibrator (Gross)	1215	773
Calibrator (Net)	1140	725

Gamma Constants MCG-D.K 443

Last Edited on 06-MAR-2014,00:28

Gamma Calibrator Number	GRC38	
Mud Density	1.12	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Centred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MCG-D.K 443

Field Calibration on 05-MAR-2014,20:50

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

High Resolution Temperature Constants MCG-D.K 443

Last Edited on 05-MAR-2014,20:50

Pre-filter Length	11
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Photo Density Calibration MPD-B 31

Base Calibration on 05-MAR-2014 10:34

Field Check on 05-MAR-2014 10:38

Density Calibration

Base Calibration

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	659	817		
Reference 1	44468	22312	59556	30836
Reference 2	18182	1869	24941	2541

Field Check at Base

658.5	816.6
-------	-------

Field Check

665.6 821.1

PE Calibration

Base Calibration

	WS	Measured WH	Ratio	Calibrated Ratio
Background	124	586		
Reference 1	18196	44354	0.413	0.371
Reference 2	5335	18101	0.298	0.272

Field Check at Base

124.4 586.4

Field Check

123.7 587.6

Density Constants MPD-B 31

Last Edited on 06-MAR-2014,00:29

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	1.12 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 (m)
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 31

Base Calibration on 05-MAR-2014 10:47

Field Calibration on 06-MAR-2014,03:11

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	18528	3.99
2	26688	5.98
3	34842	7.97
4	43098	9.86
5	52480	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.94	7.71

DOWNHOLE EQUIPMENT

C:\Minimus 13.08.2113\Logs\OBRIEN JECHA 4-1\OBRIEN JECHA 4-1 TRIPLE REPEAT.dta

MCB-A 11B Tension Cablehead

MCB-A 170 LG: 2.18 ft WT: 19.8 lb OD: 2.240 in

Compact Comms Gamma

MCG-D.K 443 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in



43.50 ft

40.59 ft

GRGC - Gamma Ray

CGXT - MCG External Temperature

Compact Micro-Resistivity
MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

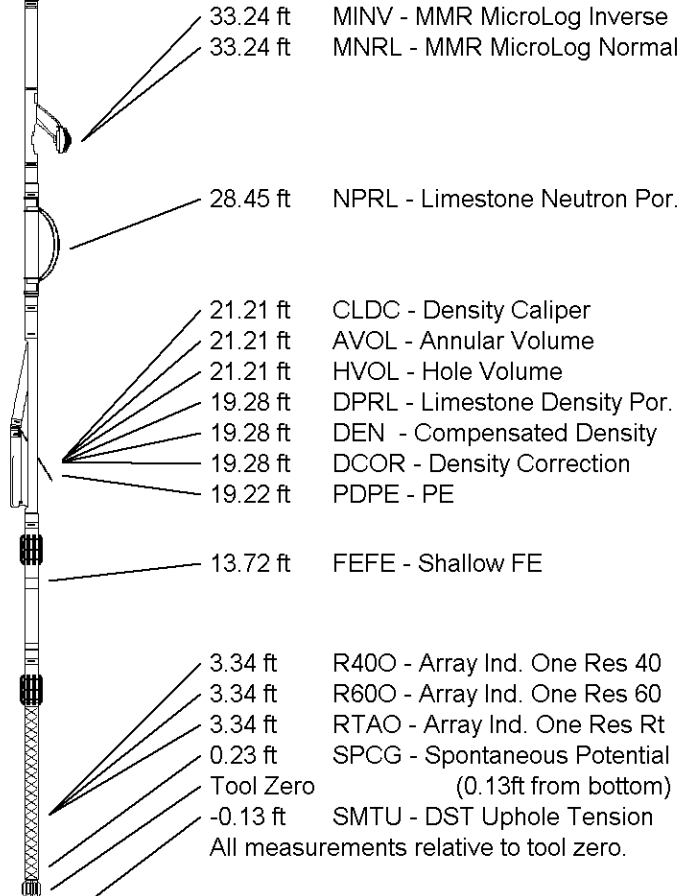
Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-B 31 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 Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 50.96 ft Weight: 403.4 lb



COMPANY	O'BRIEN RESOURCES, LLC
WELL	JECHA 4-1
FIELD	WILDCAT
PROVINCE/COUNTY	RUSH
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2058.00	feet	First Reading	3832.00	feet
Elevation Drill Floor	2056.00	feet	Depth Driller	3851.00	feet
Elevation Ground Level	2053.00	feet	Depth Logger	3851.00	feet



Weatherford®

COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG