



# COMPACT TRIPLE COMBO QUICKLOOK LOG

COMPANY			BILL BARRETT CORPORATION		
WELL			GGU MILLER 23B-32-691		
FIELD			GIBSON GULCH		
PROVINCE/COUNTY			GARFIELD		
COUNTRY/STATE			U.S.A. / COLORADO		
LOCATION			SHL: 1241' FSL & 2293' FWL BHL: 1800' FSL & 1990' FWL		
SEC	TWP	RGE	Other Services		
32	6S	91W			
API Number		05-045-19424			
Permit Number					
Permanent Datum G.L., Elevation 6121 feet				Elevations:	
Log Measured From K.B. @ 23 FEET above Permanent Datum				KB 6144.00	
Drilling Measured From K.B.				DF 6143.00	
Date	25-NOV-2010			GL 6121.00	
Run Number	ONE				
Depth Driller	7250.00			feet	
Depth Logger	7253.00			feet	
First Reading	7250.00				
Last Reading	784.00				
Casing Driller	780.00			feet	
Casing Logger	784.00			feet	
Bit Size	7.875			inches	
Hole Fluid Type	LSND				
Density / Viscosity	10.50 lb/USg		55.00 CP		
PH / Fluid Loss	9.60		7.00 ml/30Min		
Sample Source	FLOW LINE				
Rm @ Measured Temp	2.16 @ 87.7			ohm-m	
Rmf @ Measured Temp	1.73 @ 87.7			ohm-m	
Rmc @ Measured Temp	2.59 @ 87.7			ohm-m	
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	1.0 @ 193.0		ohm-m		
Time Since Circulation	6 HOURS				
Max Recorded Temp	194.00		deg F		
Equipment Name	COMPACT				
Equipment / Base	13045		GD JCT		
Recorded By	R. BROWN				
Witnessed By	C.CROW				

BOREHOLE RECORD			Last Edited: 25-NOV-2010 00:37
Bit Size inches	Depth From feet	Depth To feet	
8.750	780.00	4730.00	
7.875	4730.00	7250.00	

CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	780.00	36.00

REMARKS
TOOLS: SHA, MCG, MDN, MPD, SKJ, MFE, AND MAI RAN IN COMBINATION
HARDWARE: MPD: (1) 8 INCH PROFILE PLATE MAI: (1) 0.5 INCH STANDOFF MDN: (1) DUAL BOWSPRING
2.68 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.
ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
TIGHT PULLS, BOREHOLE SIZE, AND RUGOSITY WILL AFFECT REPEATABILITY AND DATA QUALITY.
CALIPER CHECK IN CASING PRESENTED, REFERENCE I.D. = 8.98" (9 5/8", 36 LB/FT CASING)
8.75 INCH BIT USED FROM SURFACE CASING TO 4730 FEET.
TOOL ROLL-OVER THROUGHOUT EXTENT OF LOG. SEVERAL REPEAT PASSES WERE ATTEMPTED TO CORRECT THE ISSUE, HOWEVER, CALIPER STILL READ UNDERGAUGED THROUGH THE FOLLOWING ZONES: FROM 6460 - 6440 FEET, 6345 - 6314 FEET, 6210 - 6190 FEET, 5894 - 5878 FEET AND 4772 - 4760 FEET

6210 = 6150 FEET, 5854 = 5875 FEET AND 4772 = 4750 FEET.

DATA SPLICED AT 6800 FEET, 6660 FEET, 6500 FEET, 6460 FEET, 6210 FEET, 5900 FEET, 4780 FEET, AND 2570 FEET.

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 2480 CU.FT.

ANNULAR VOLUME WITH 4.5 INCH PRODUCTION CASING = 1760 CU.FT.

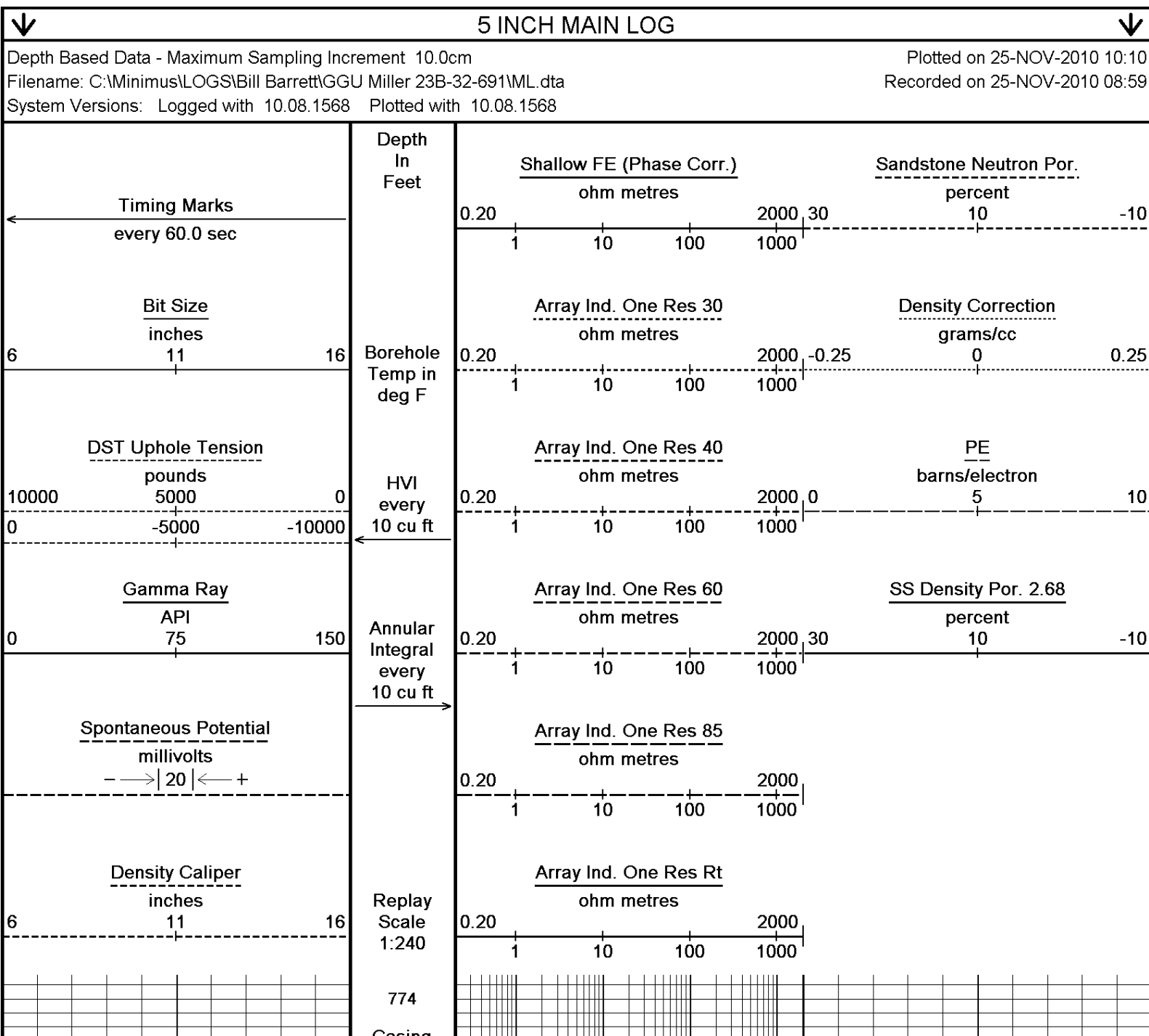
ENGINEER: R. BROWN

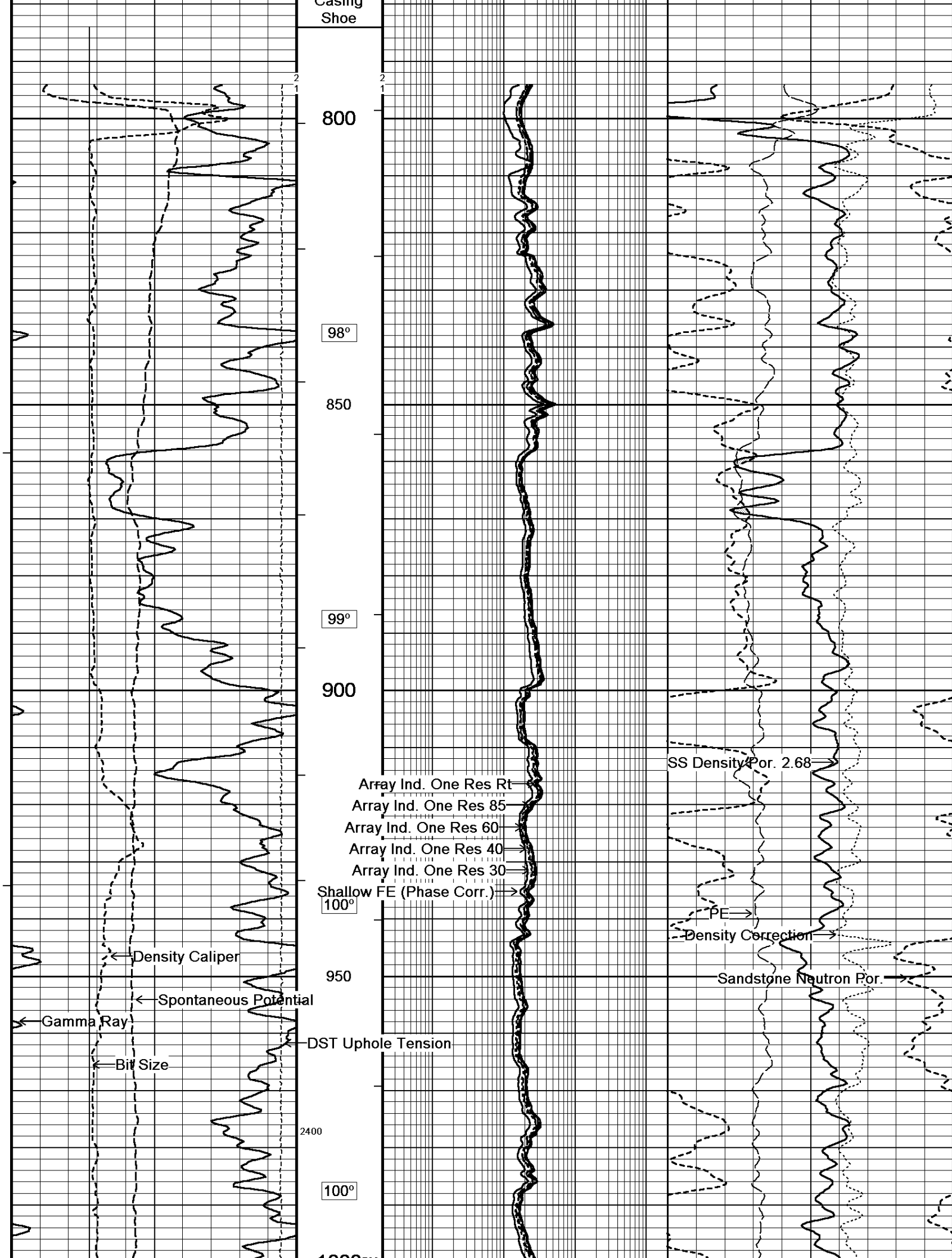
OPERATOR(S): S.KAISER, L. STAAKE

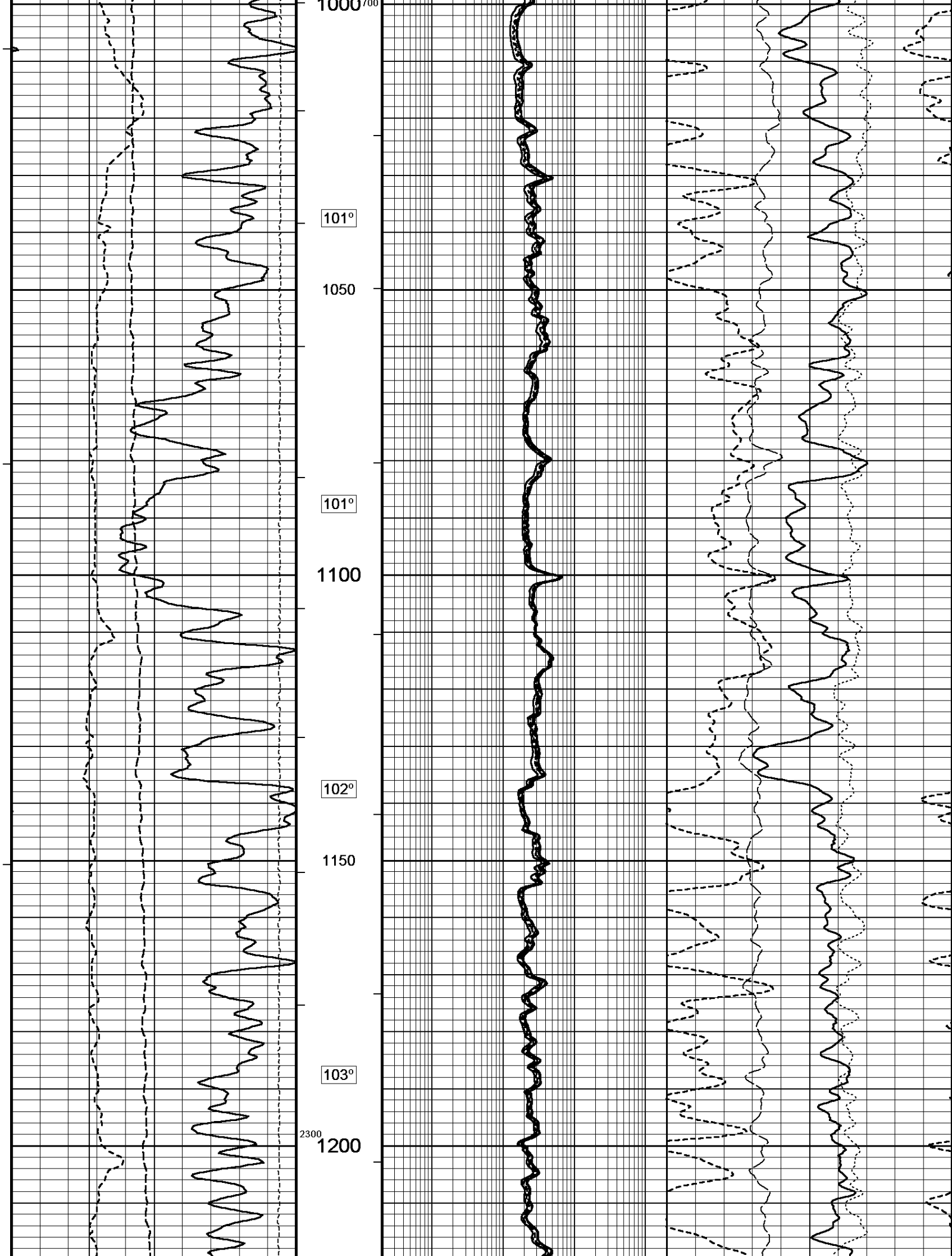
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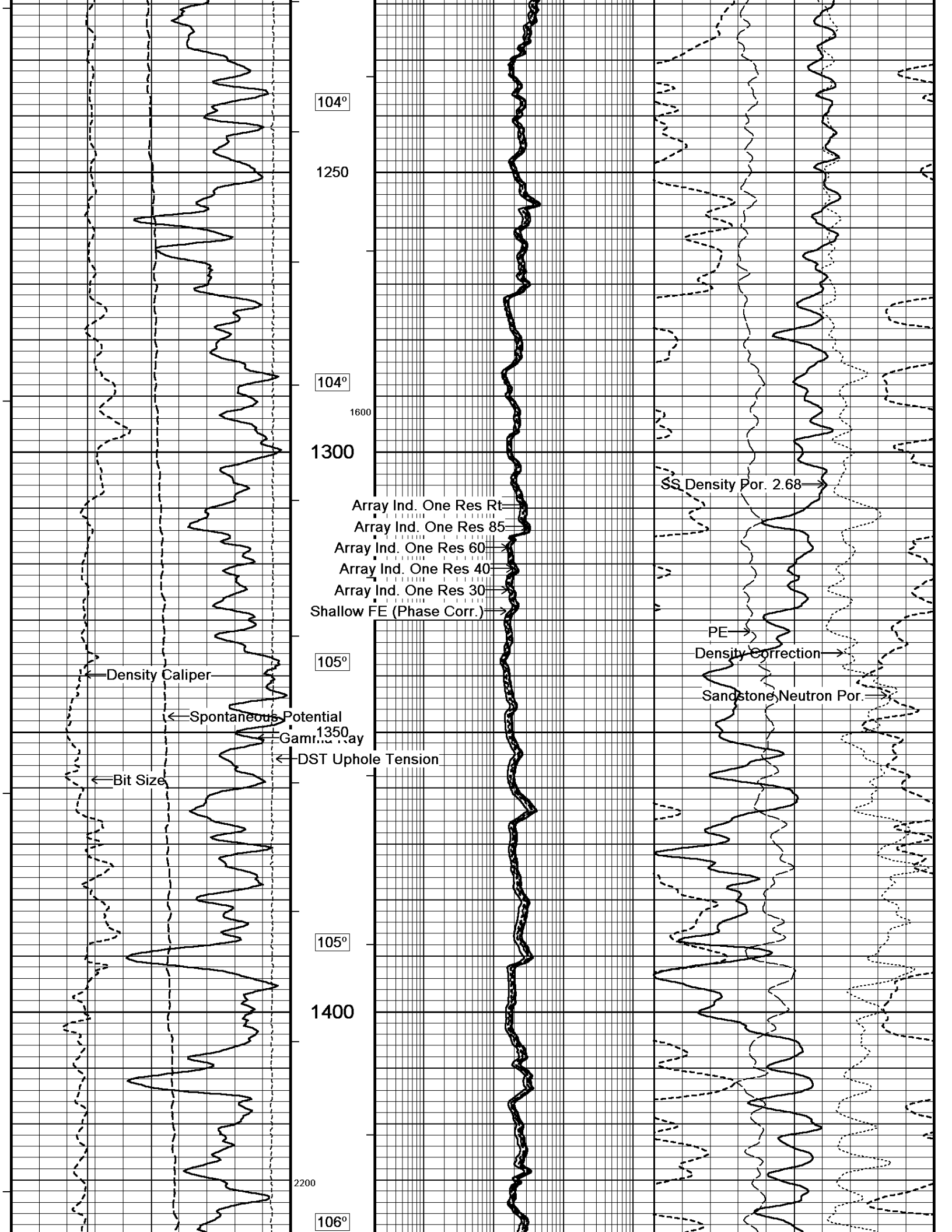
RIG: PATTERSON #307

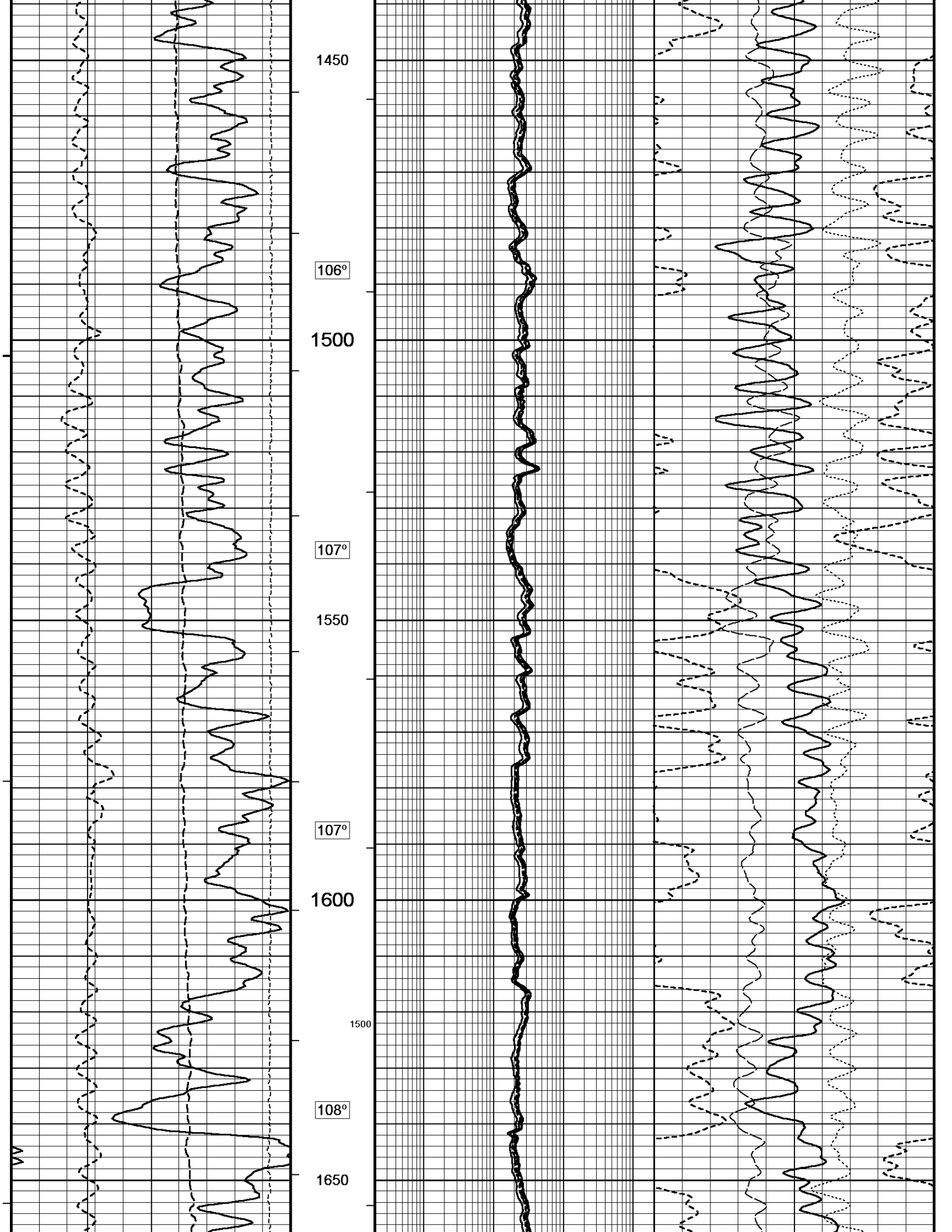
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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

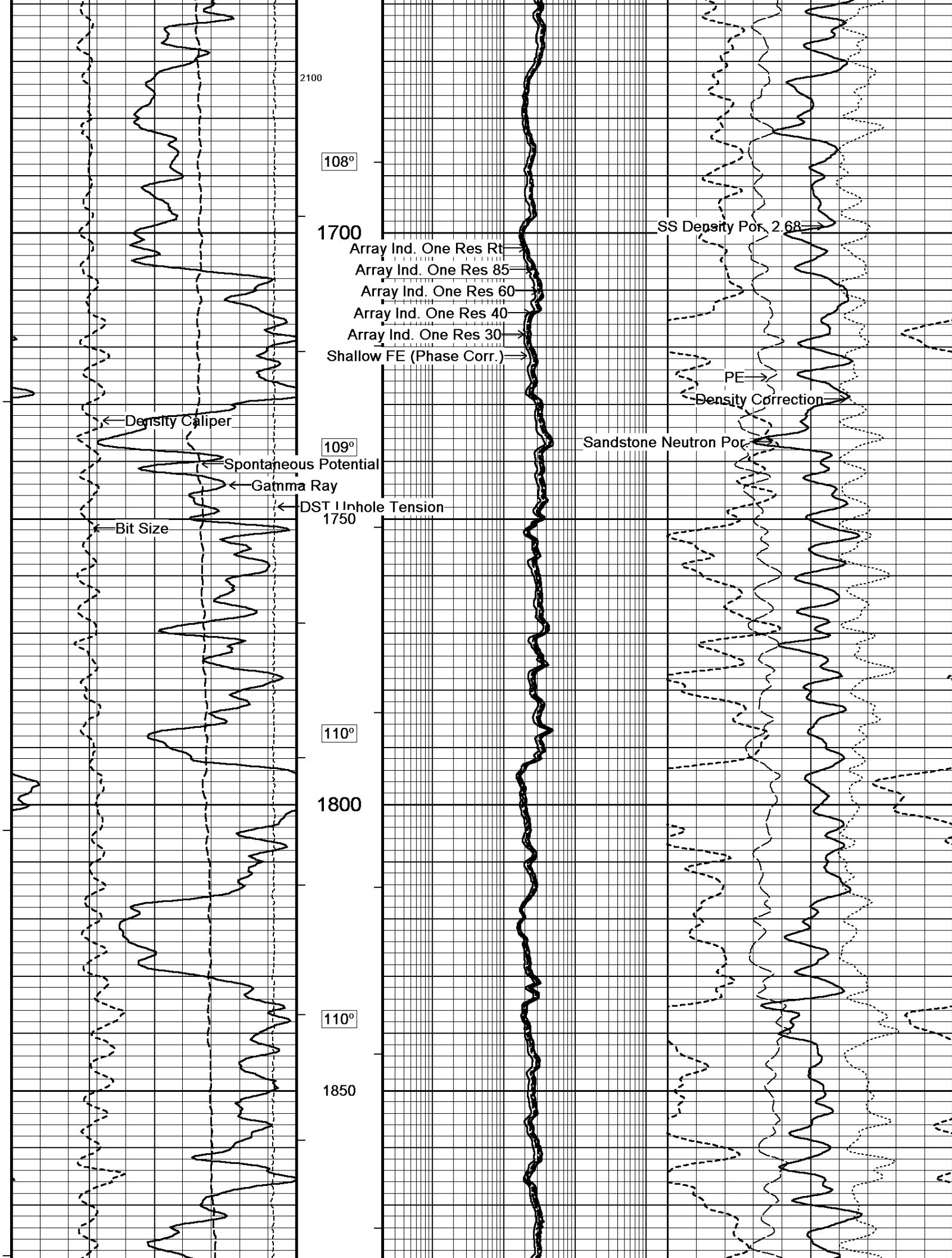


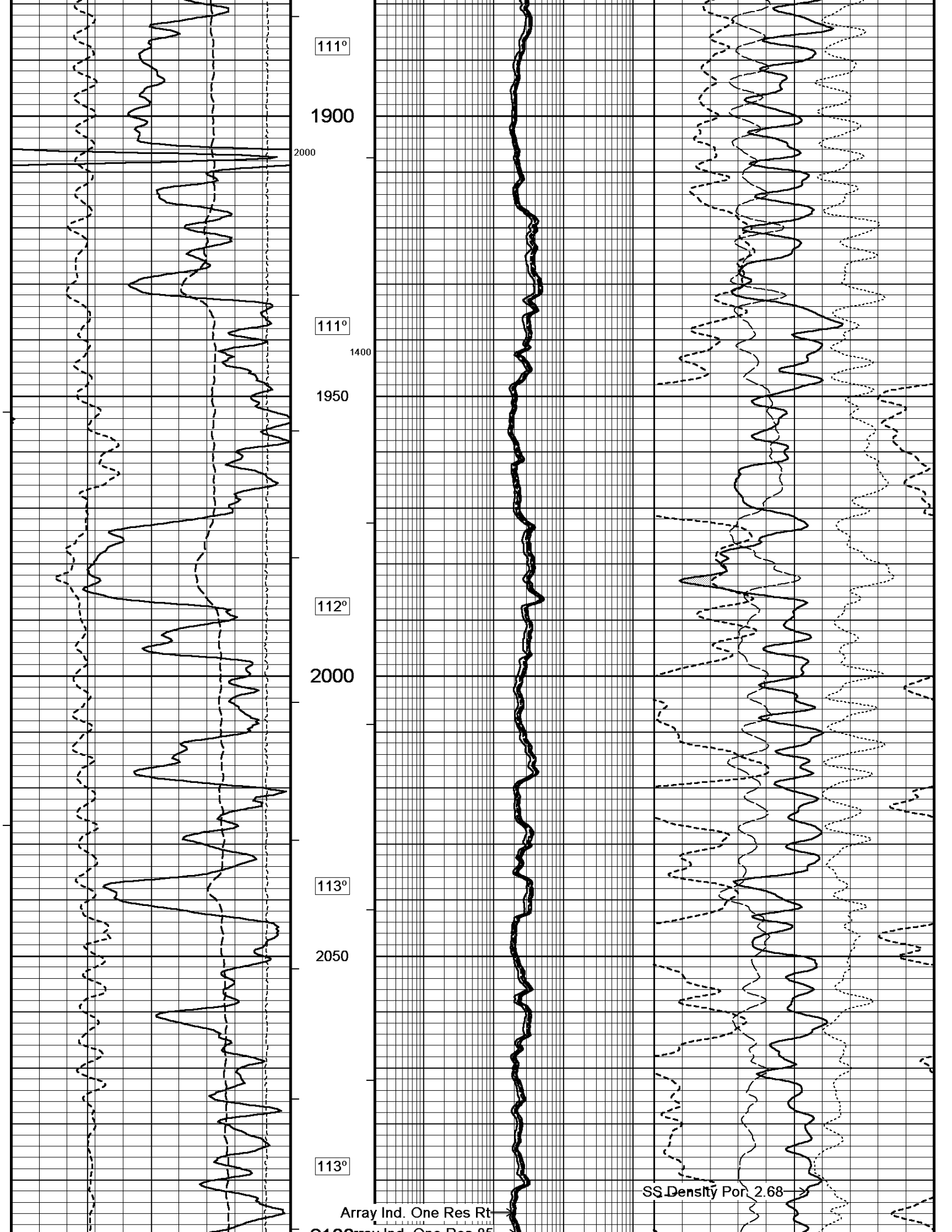




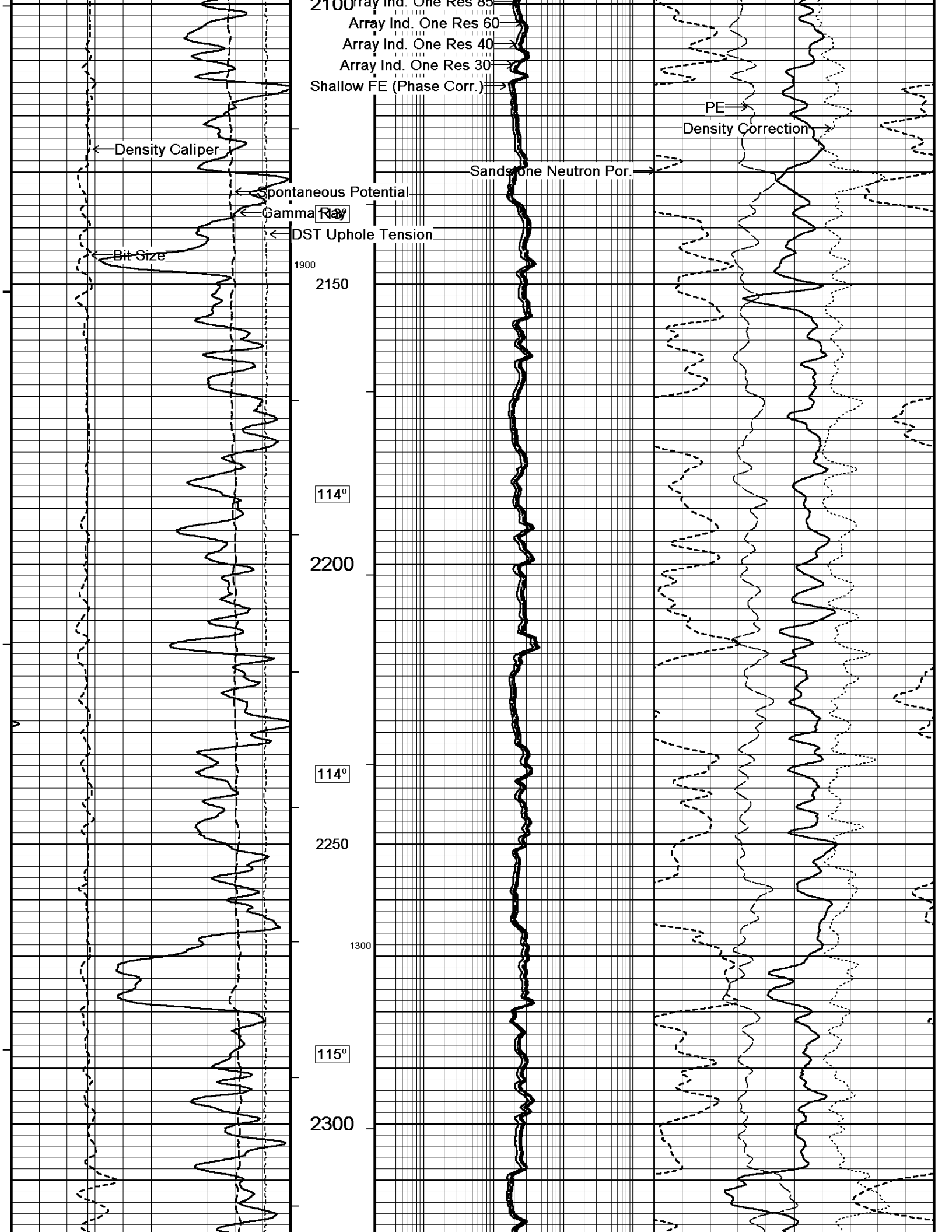


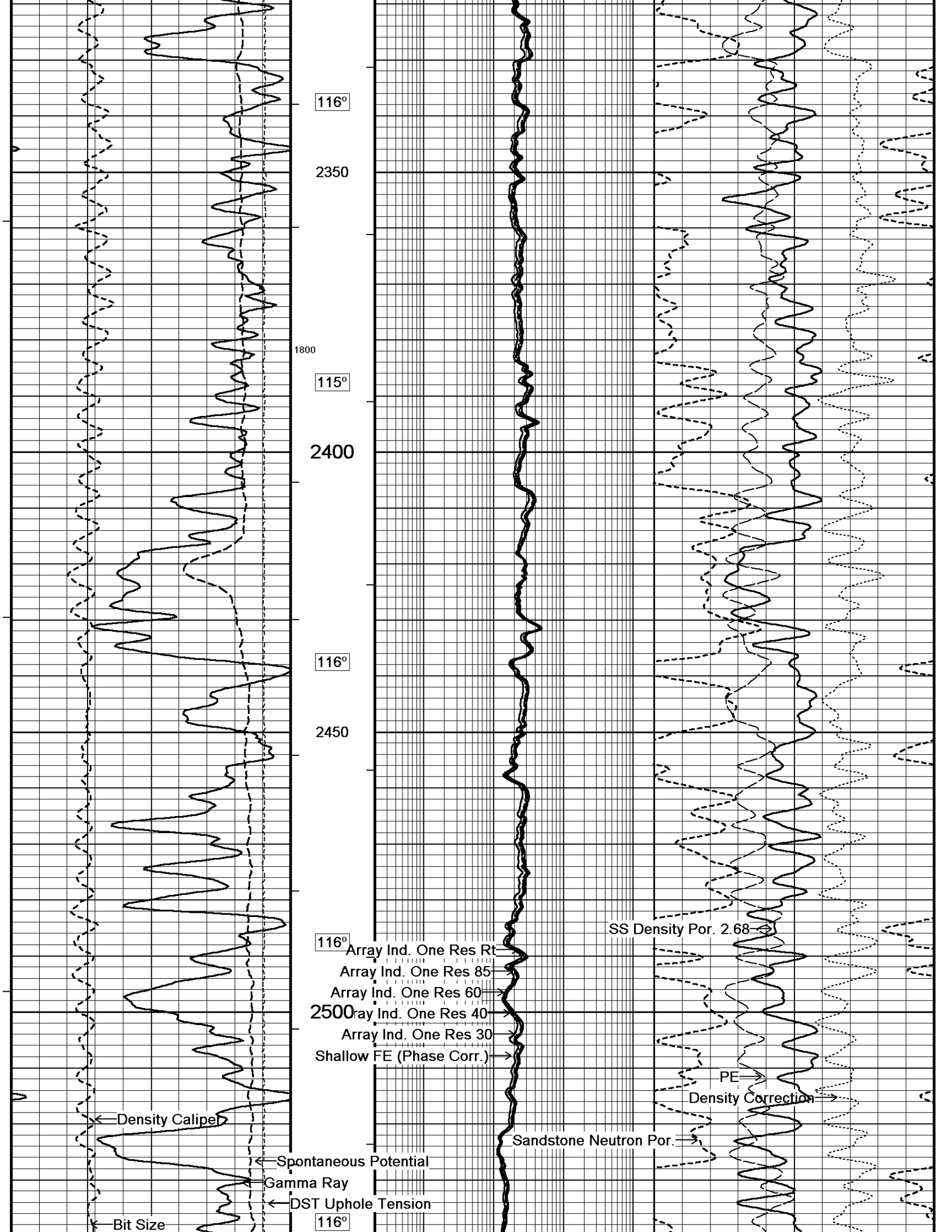


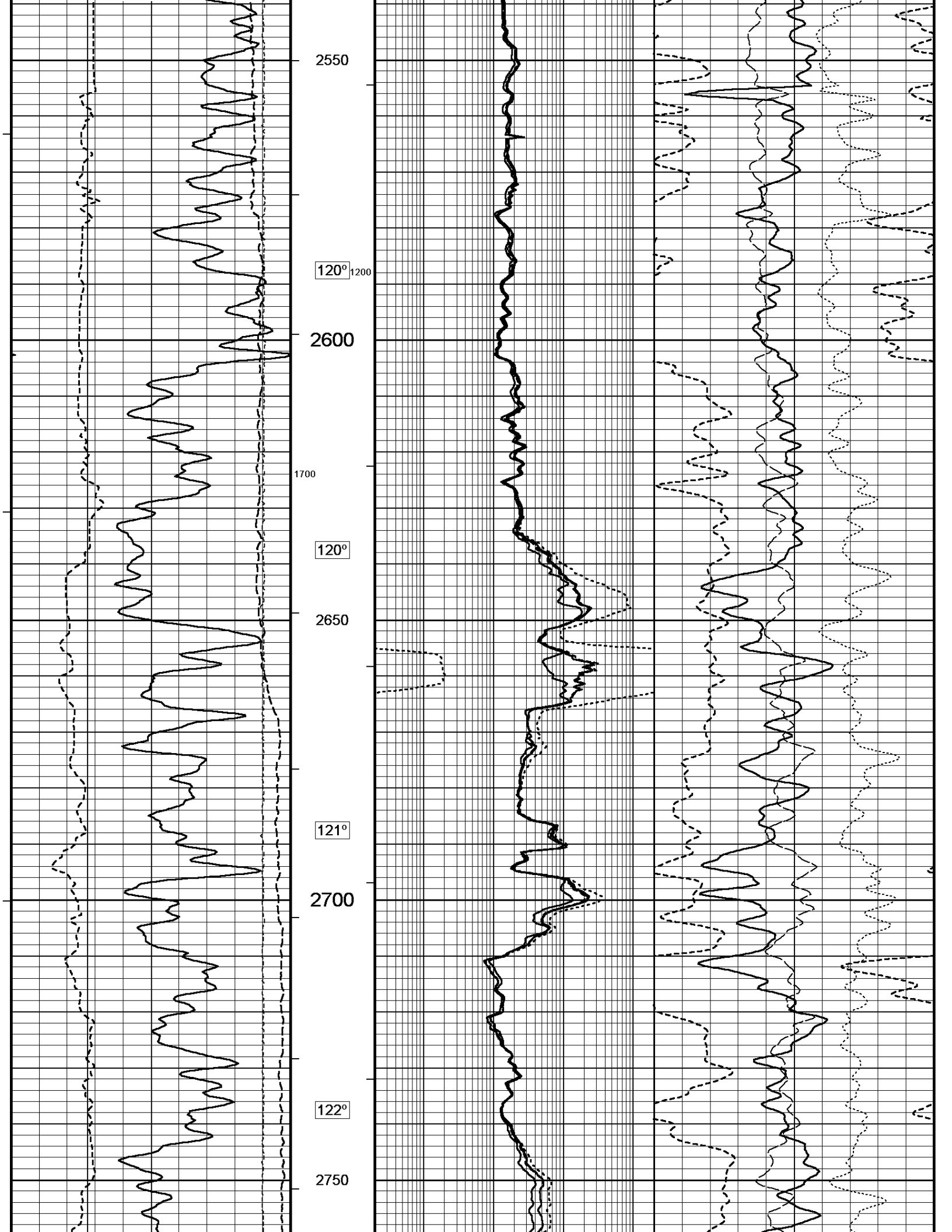


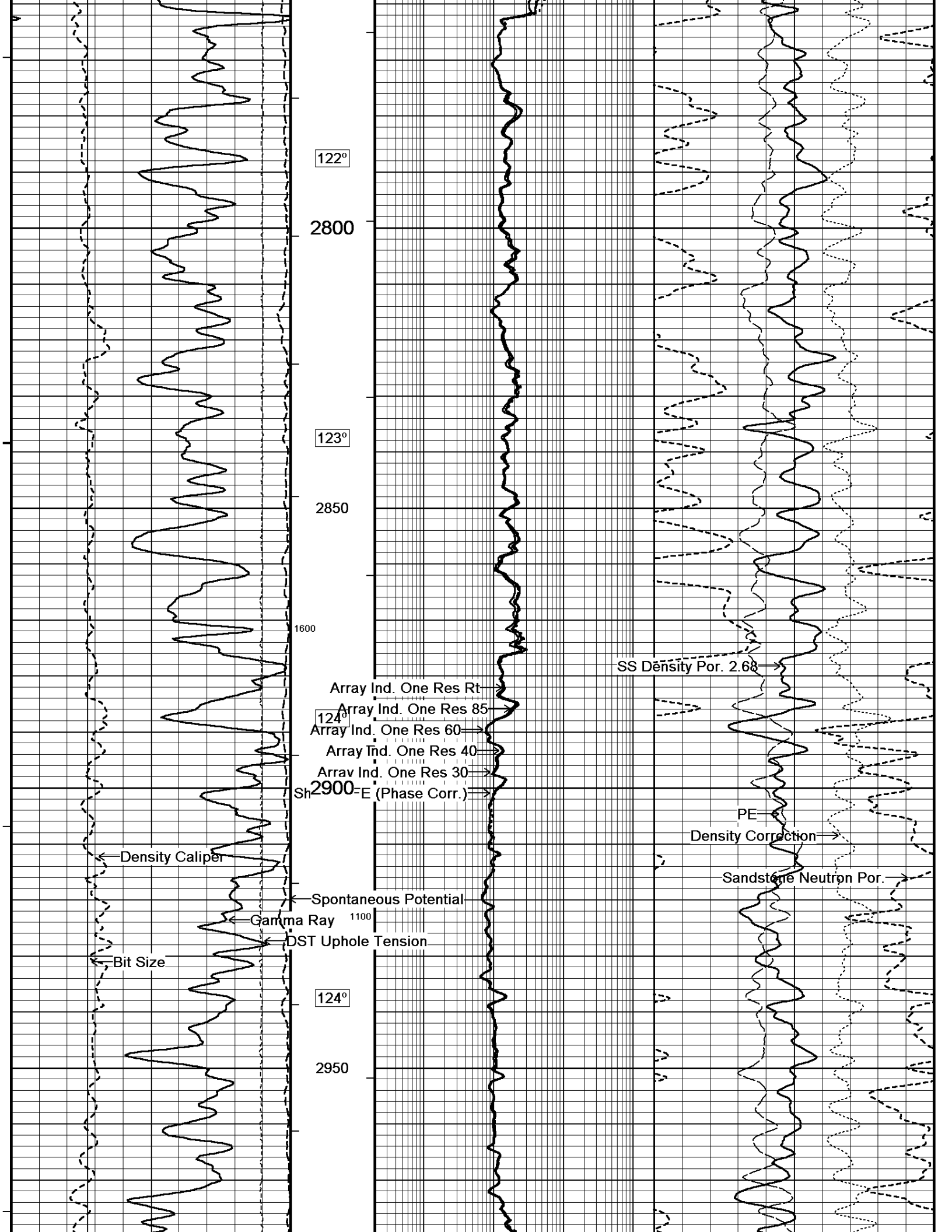


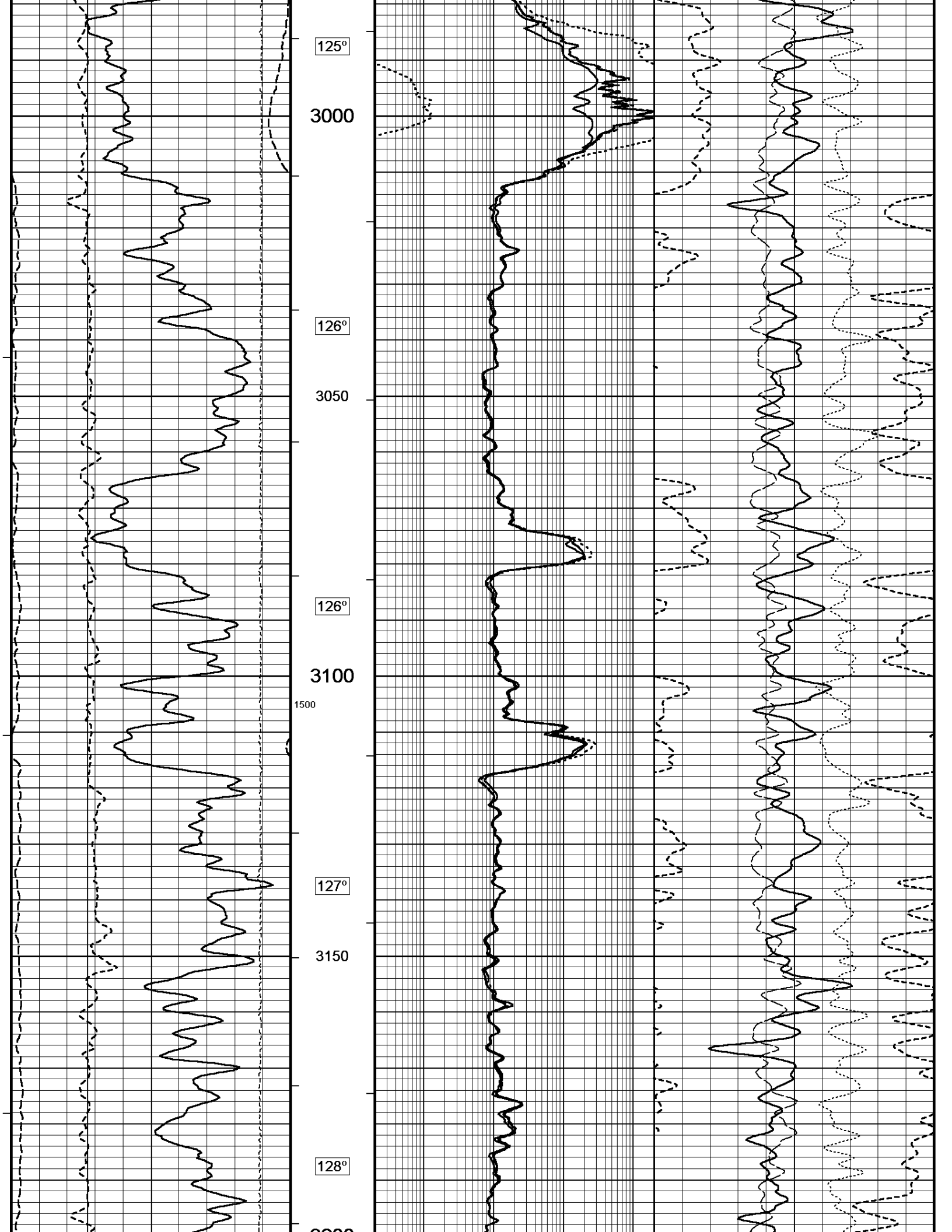


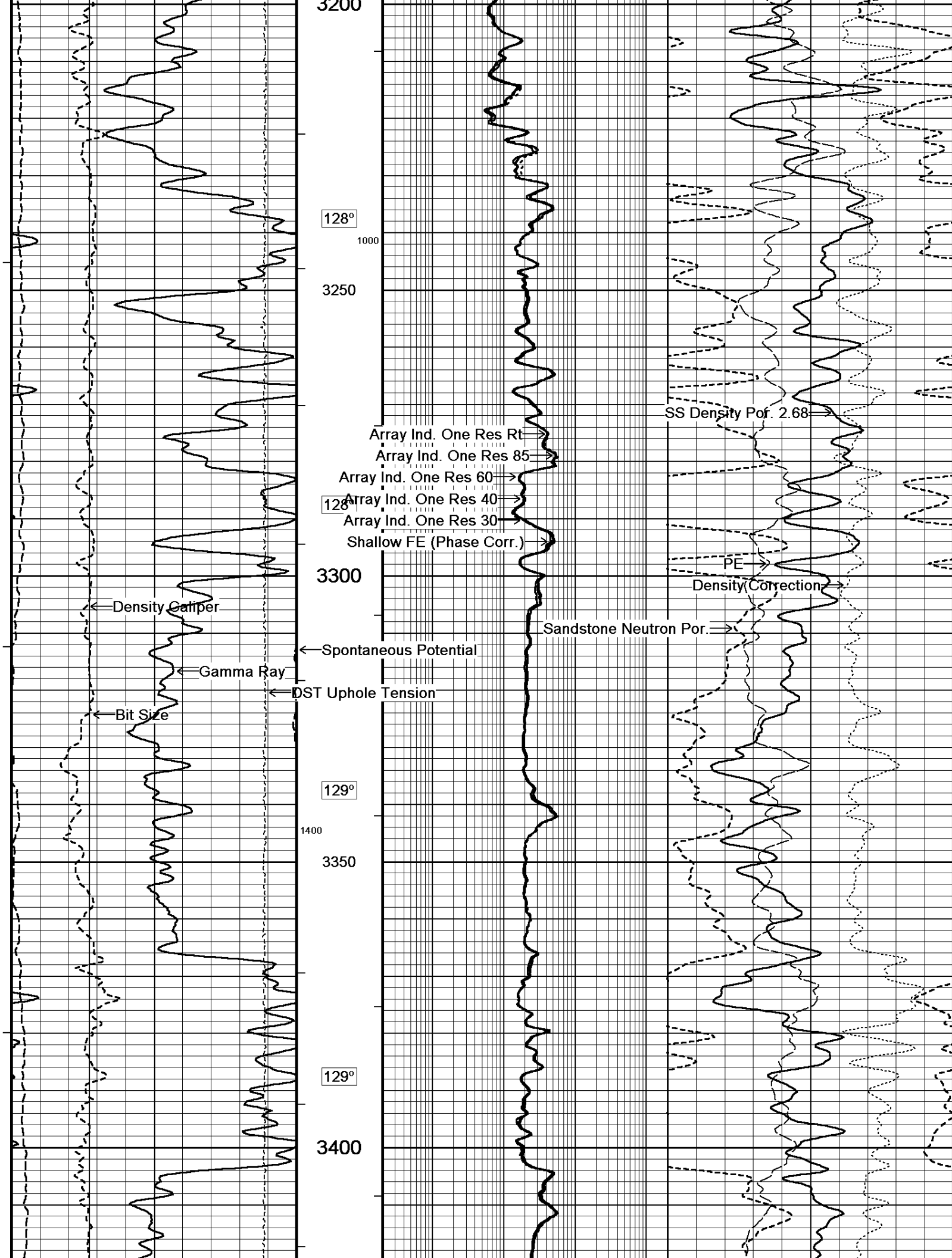


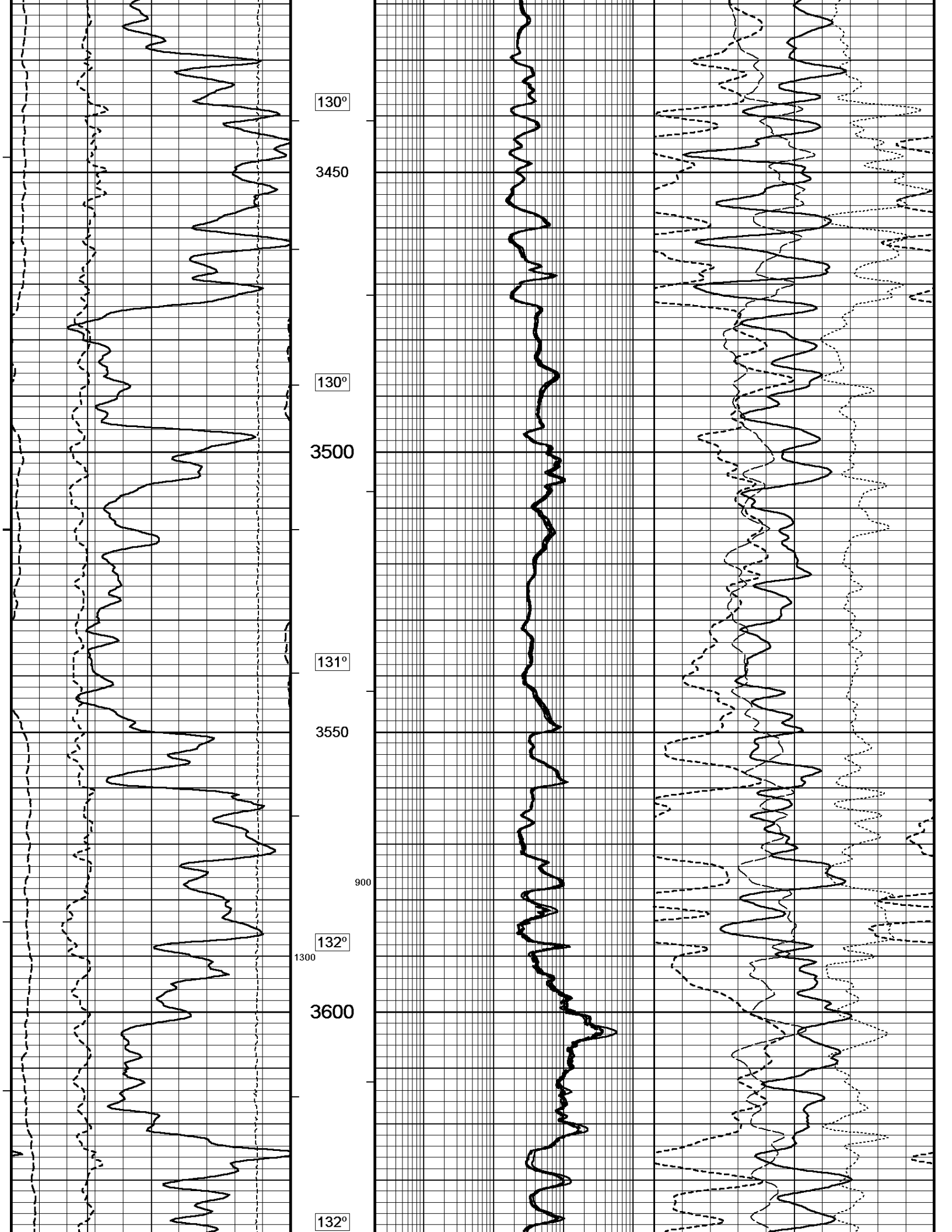


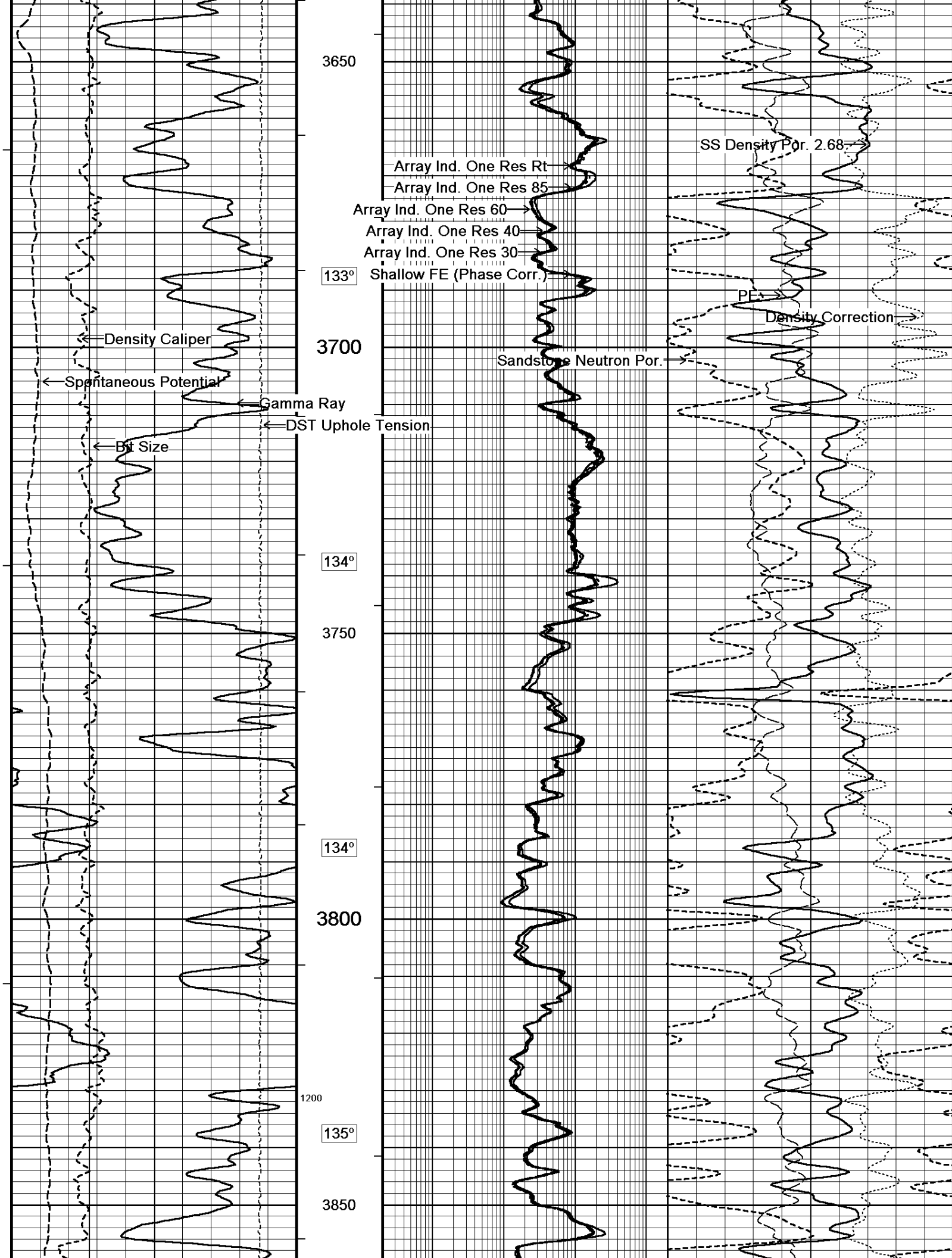




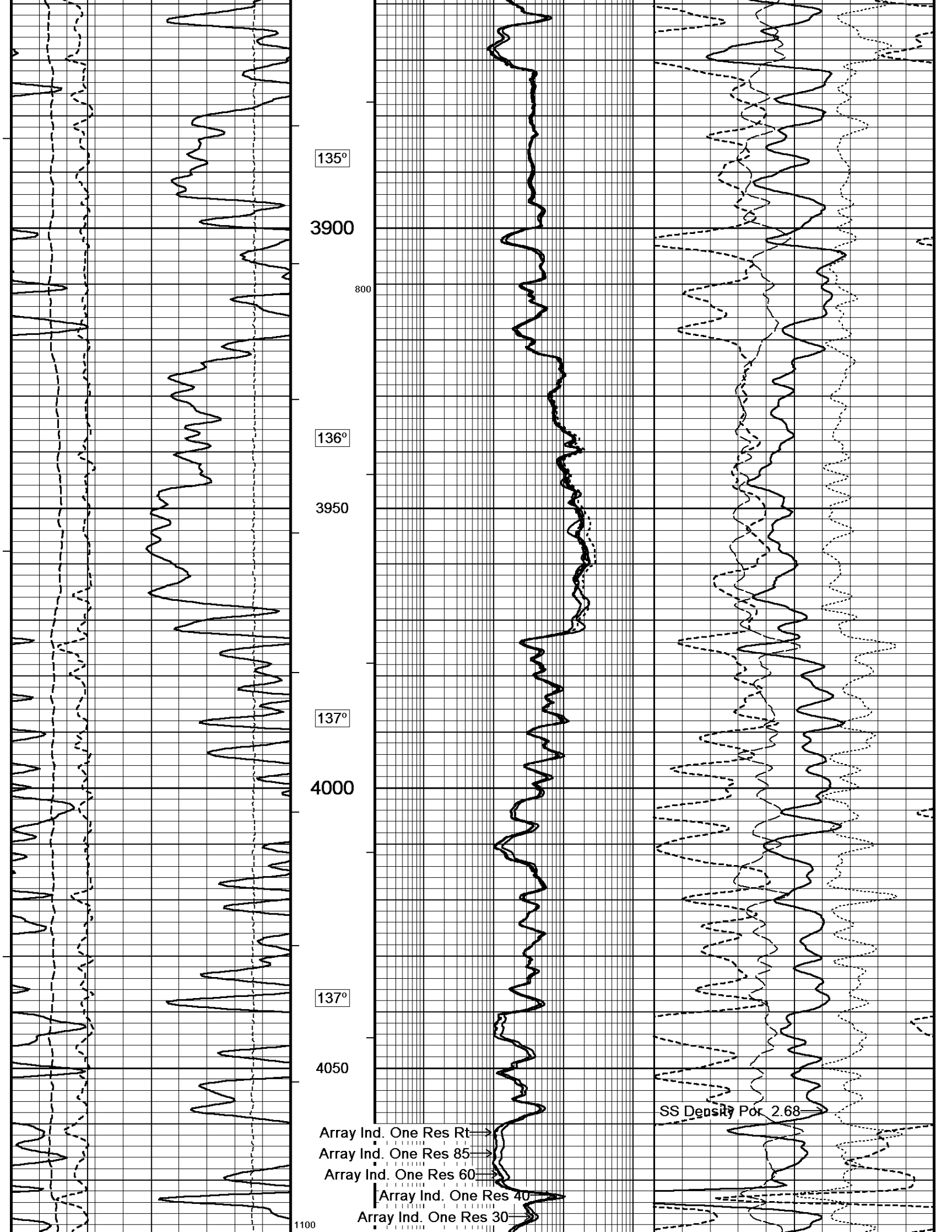


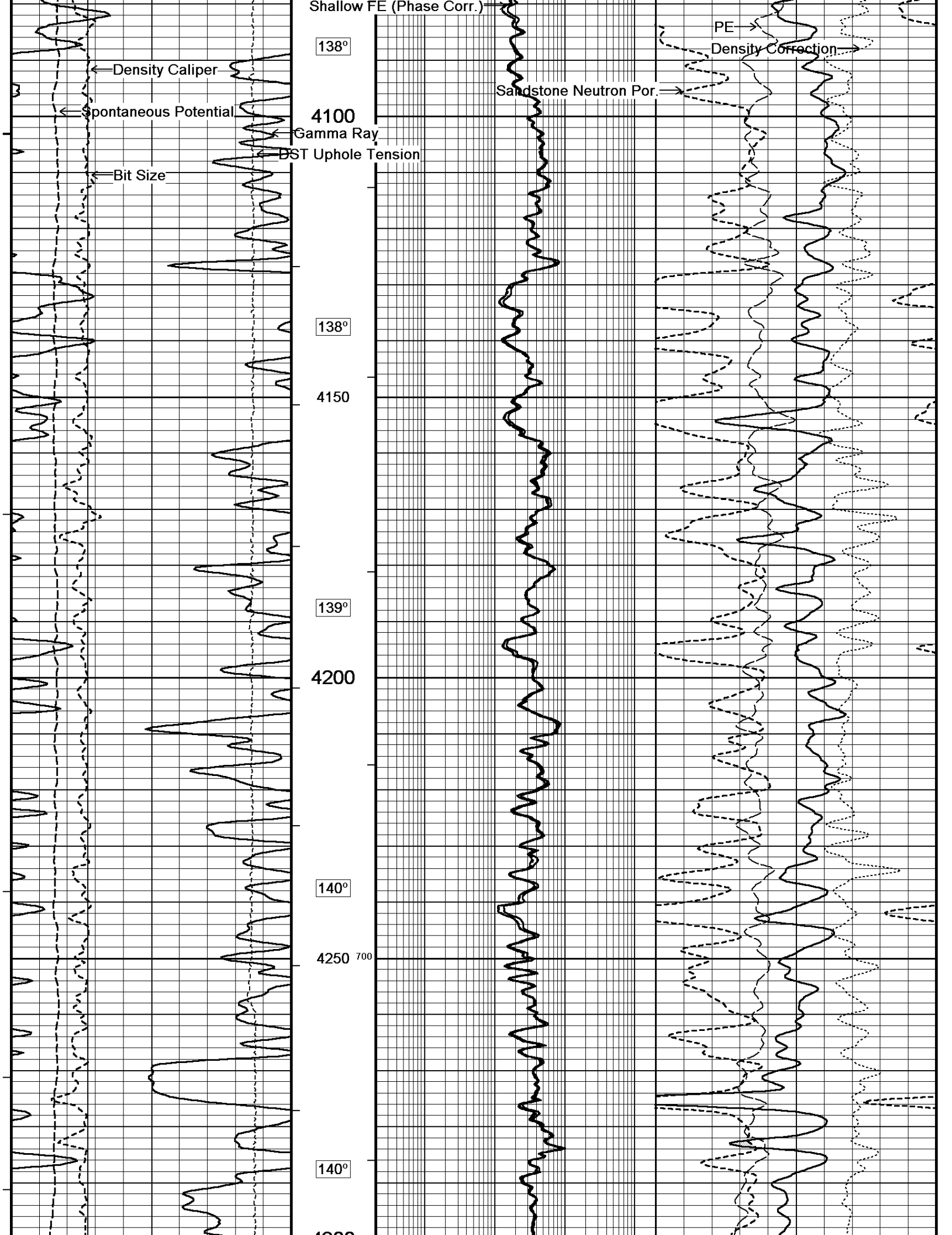


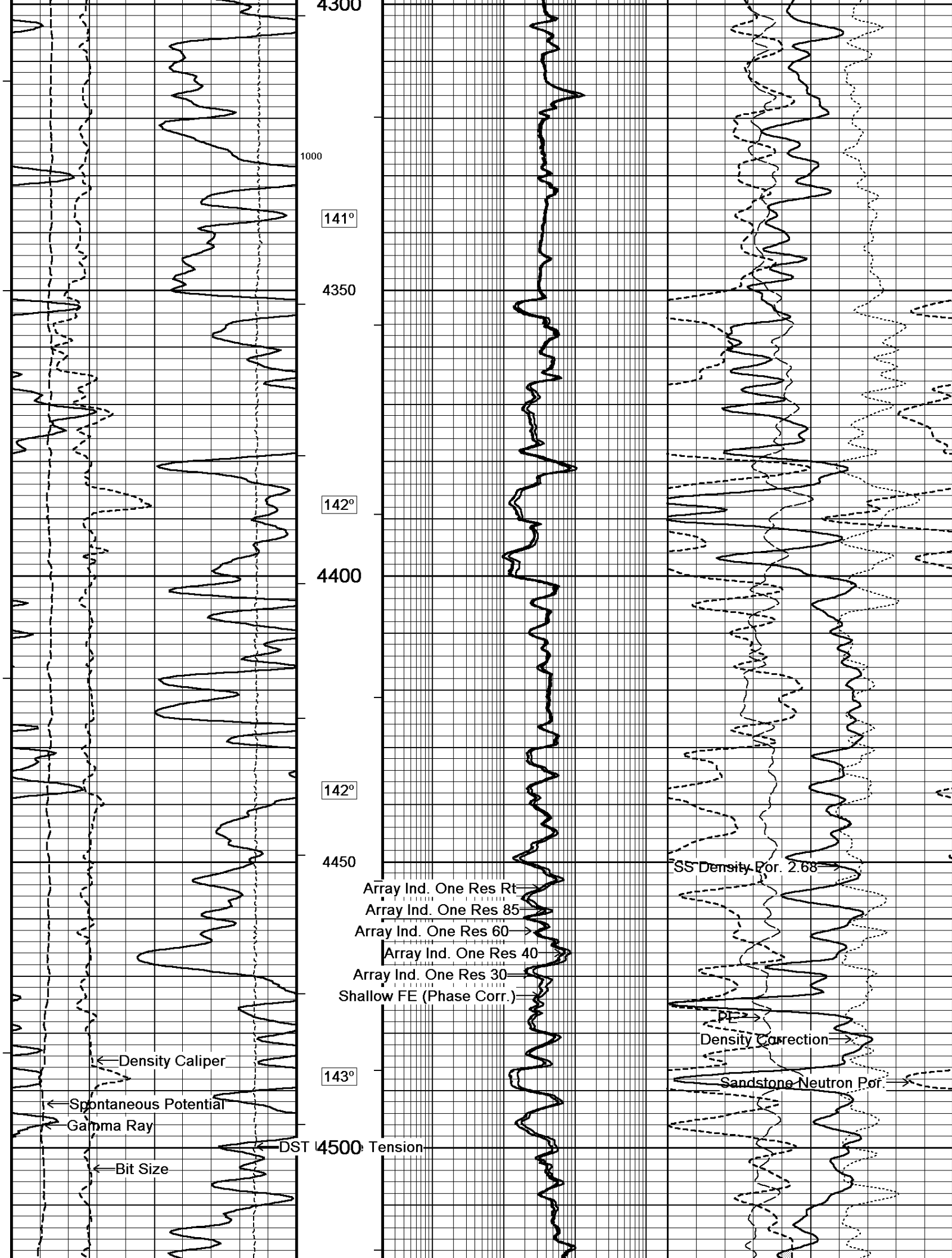


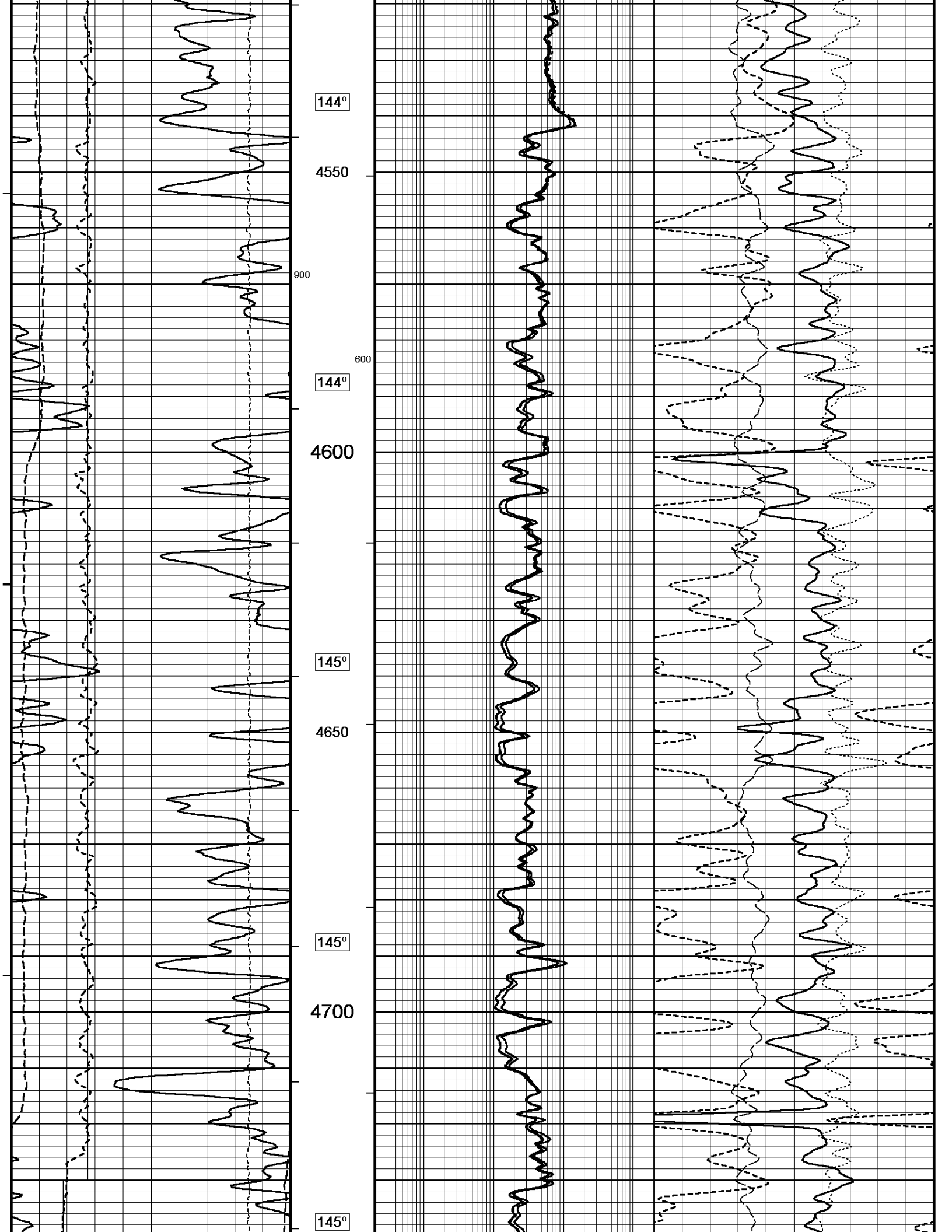


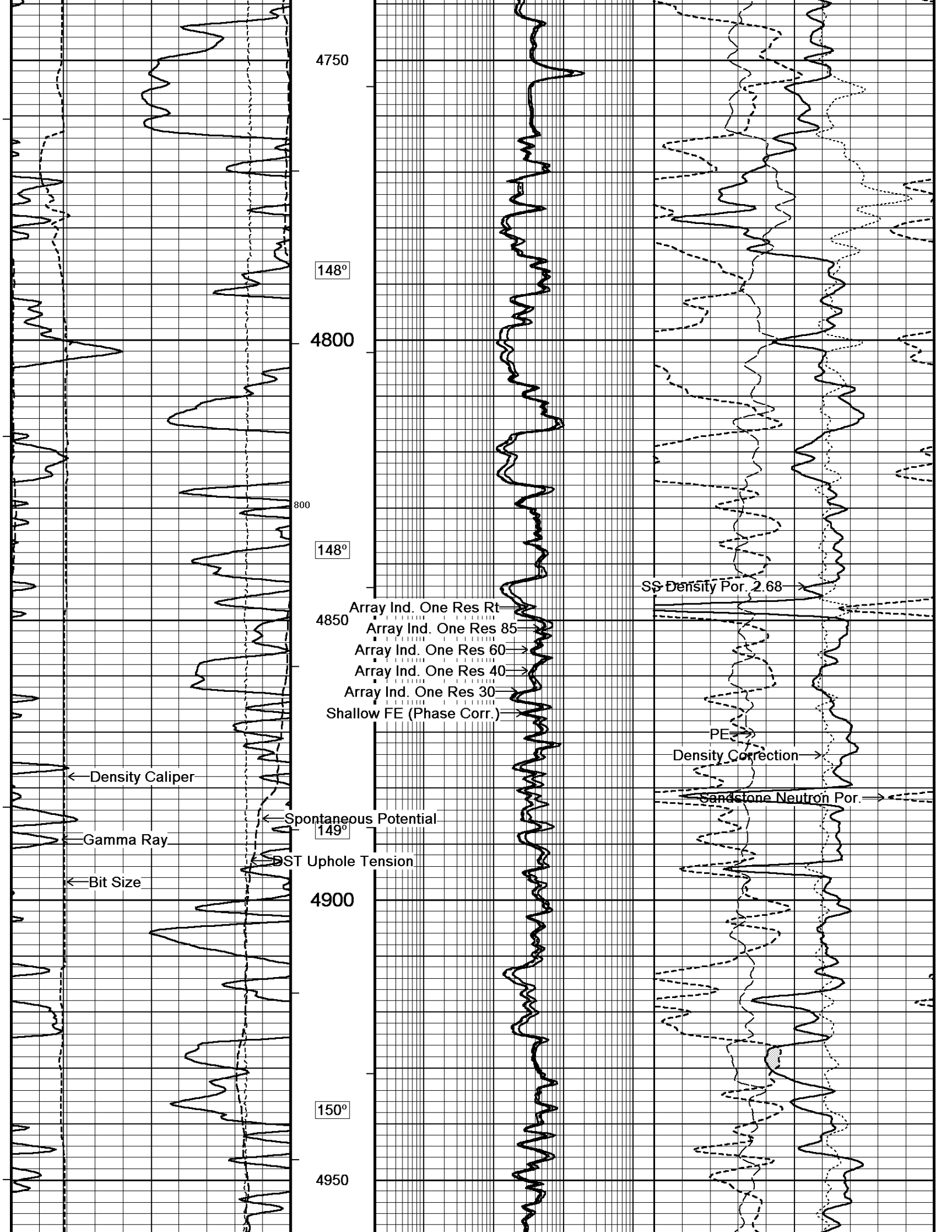


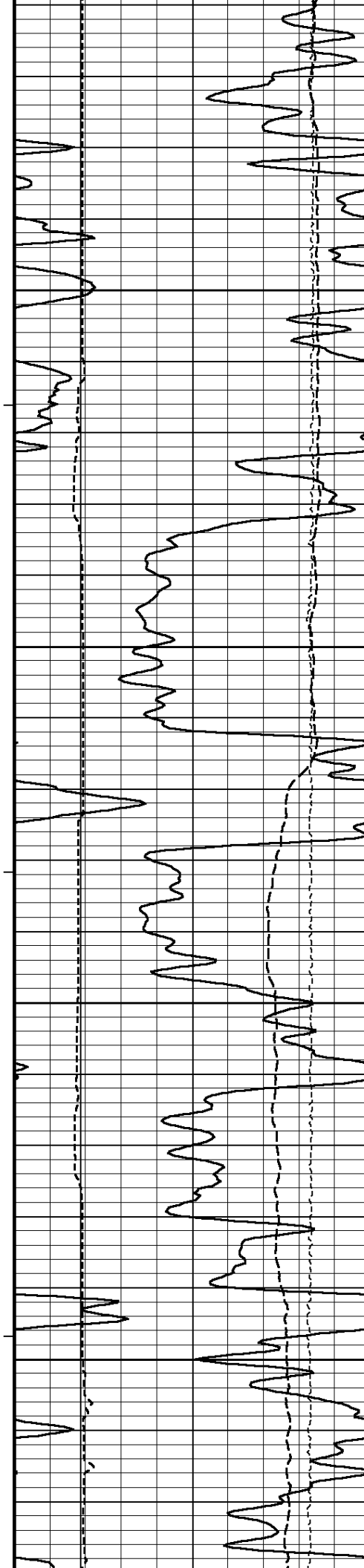












151°

5000

152°

5050

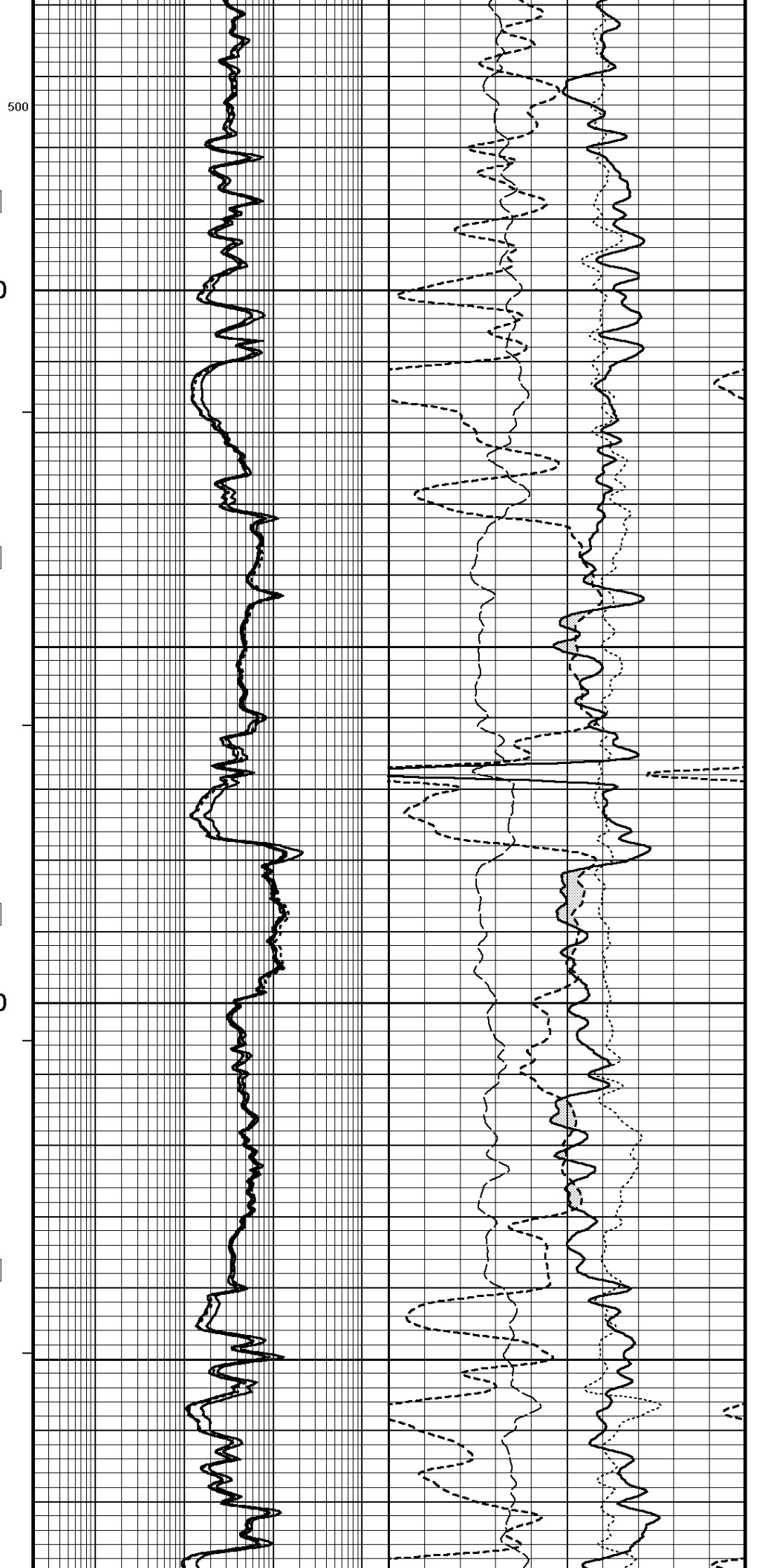
152°

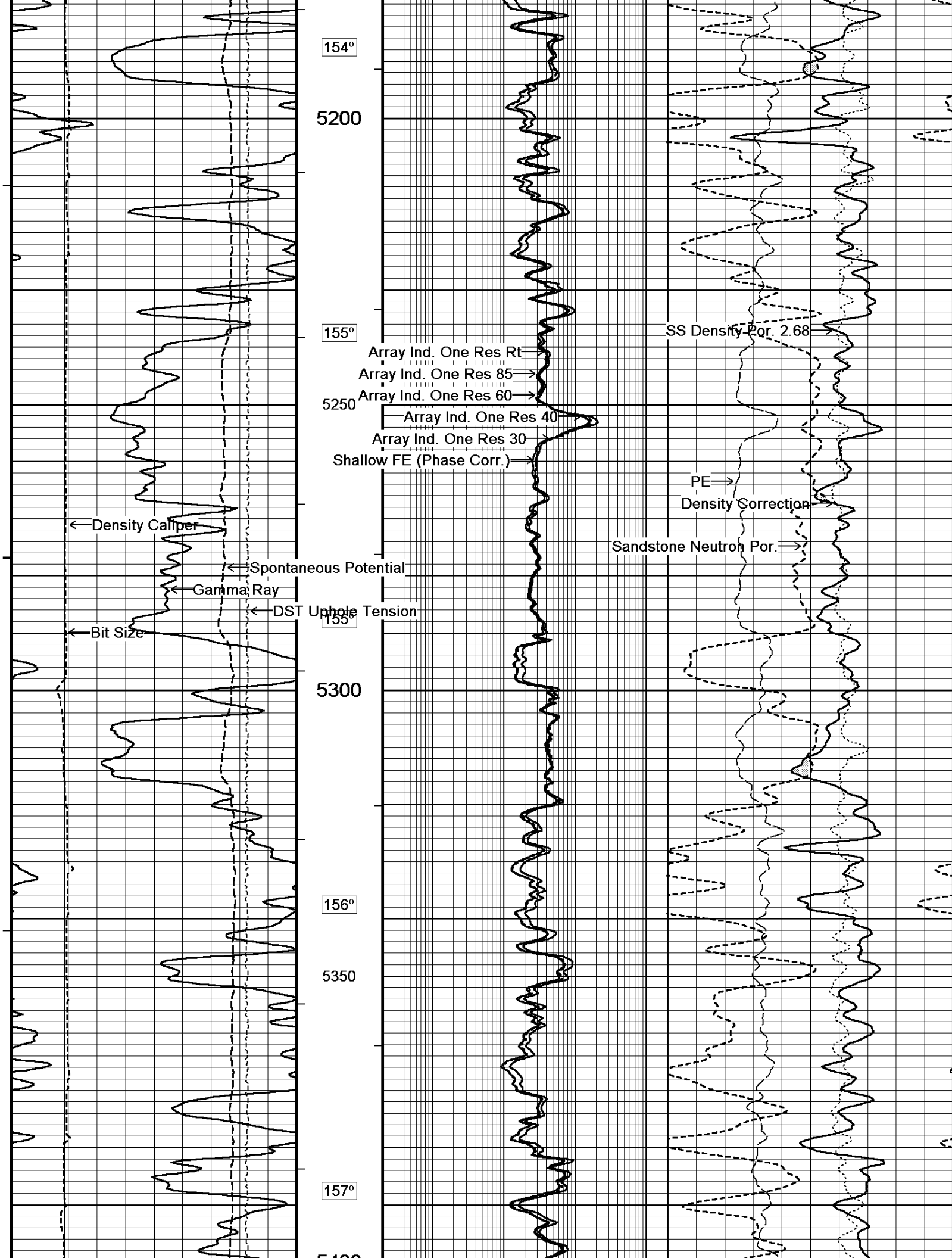
5100

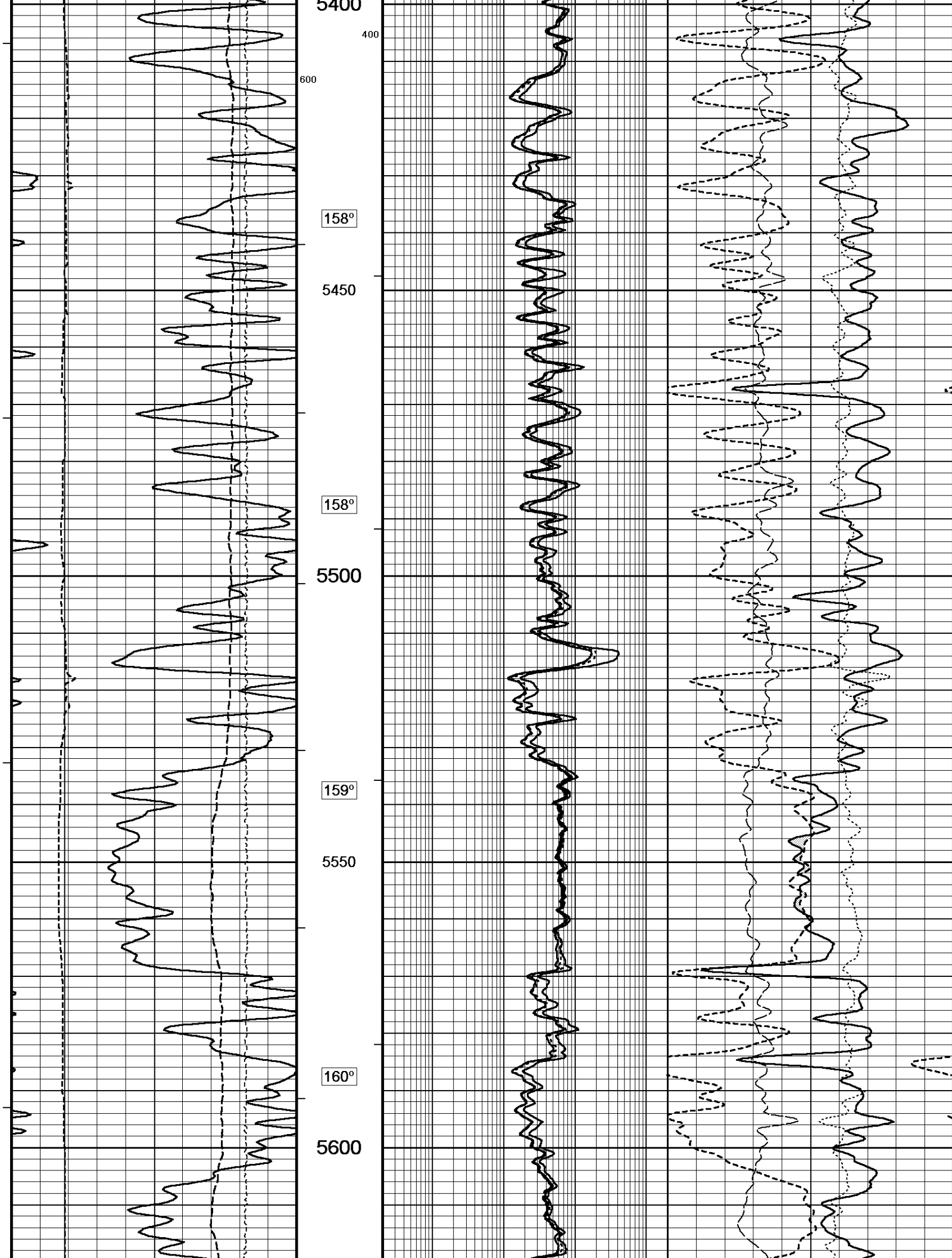
700

153°

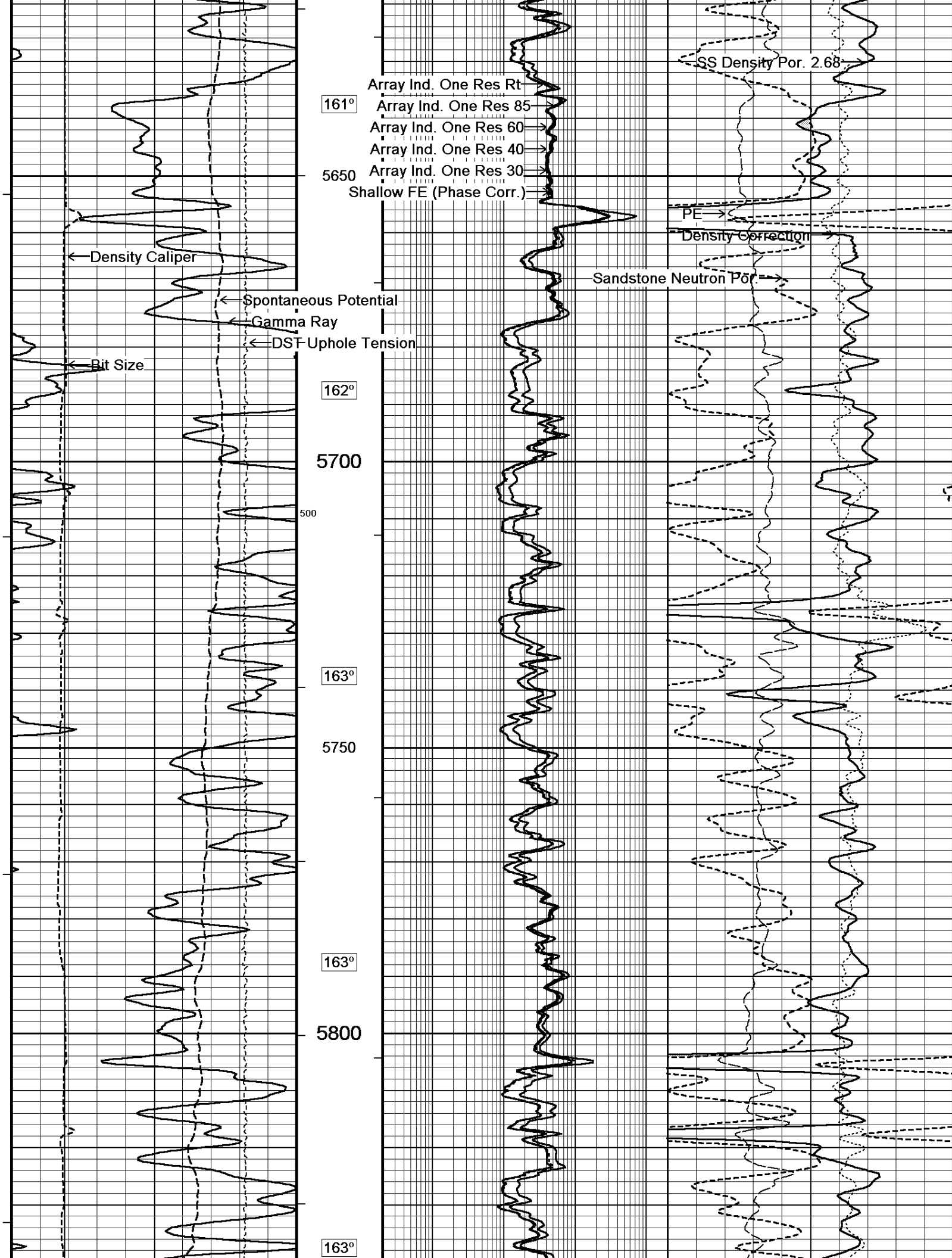
5150

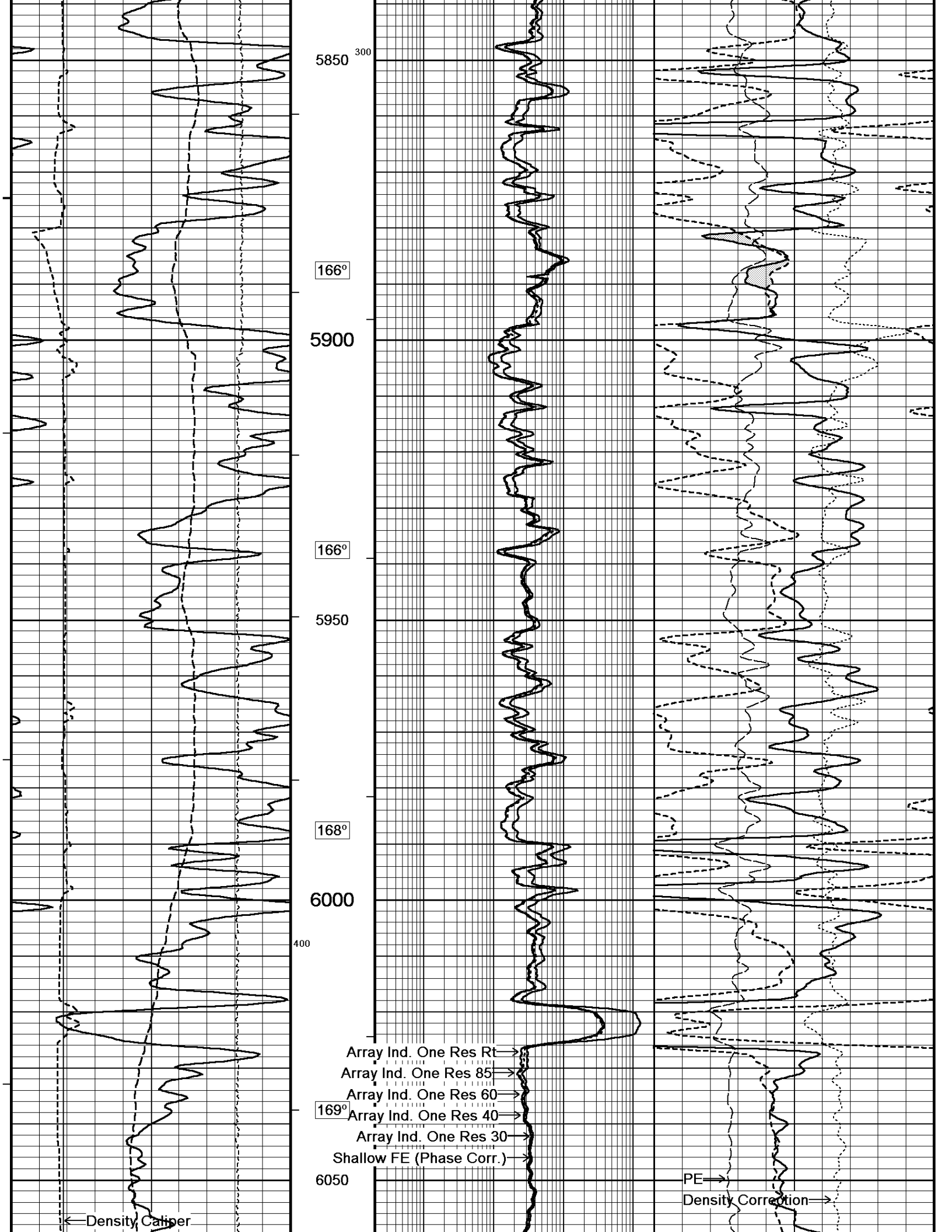


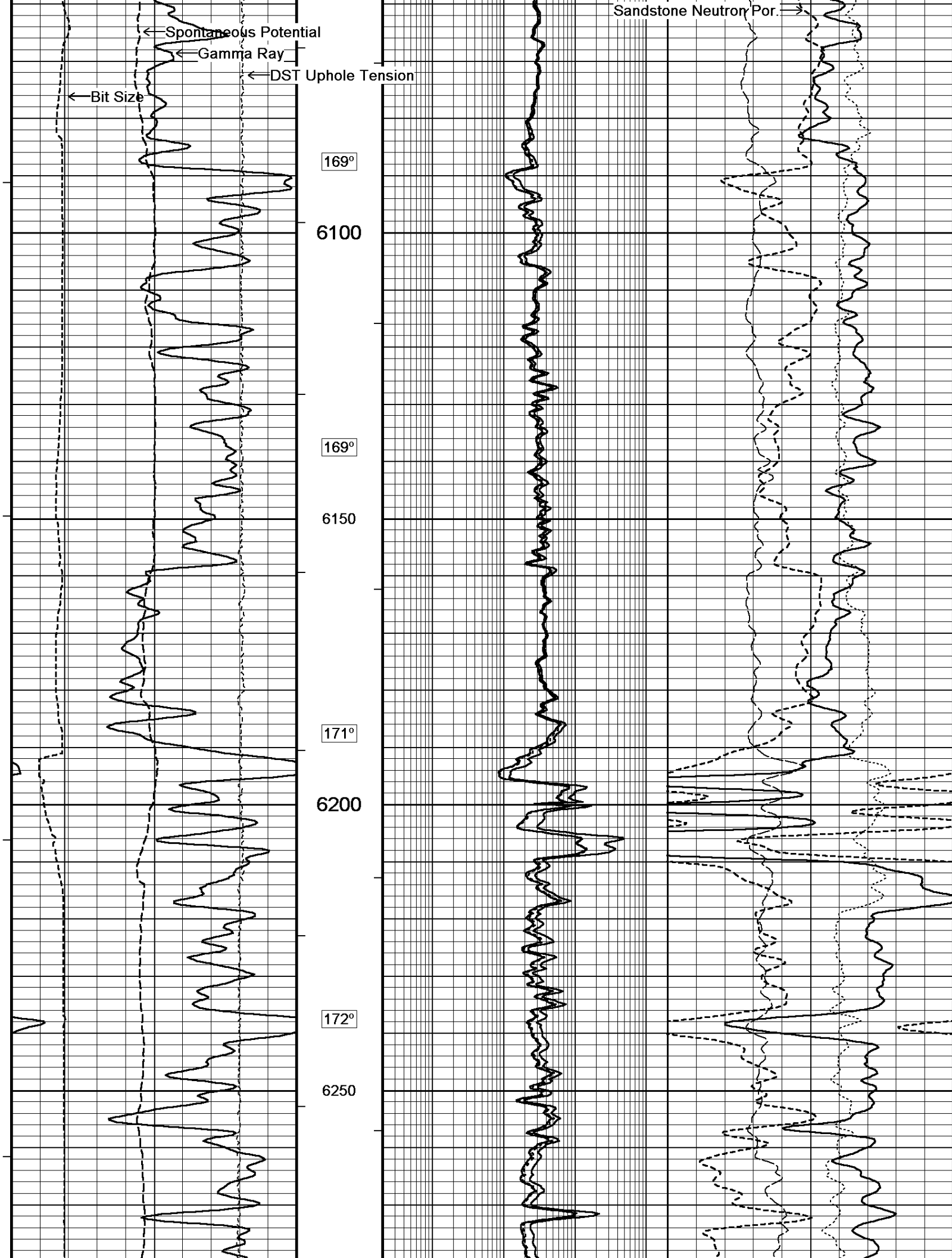


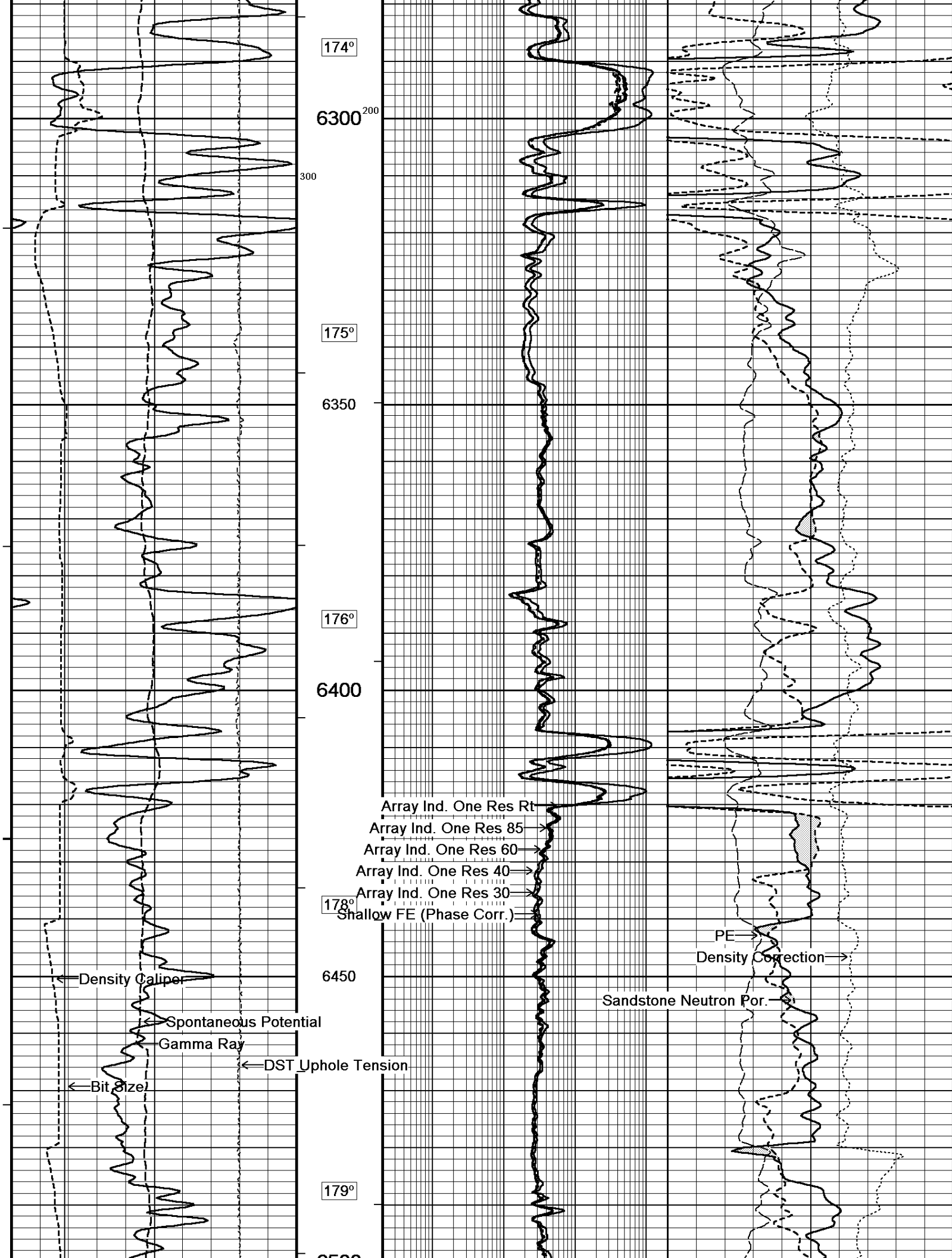


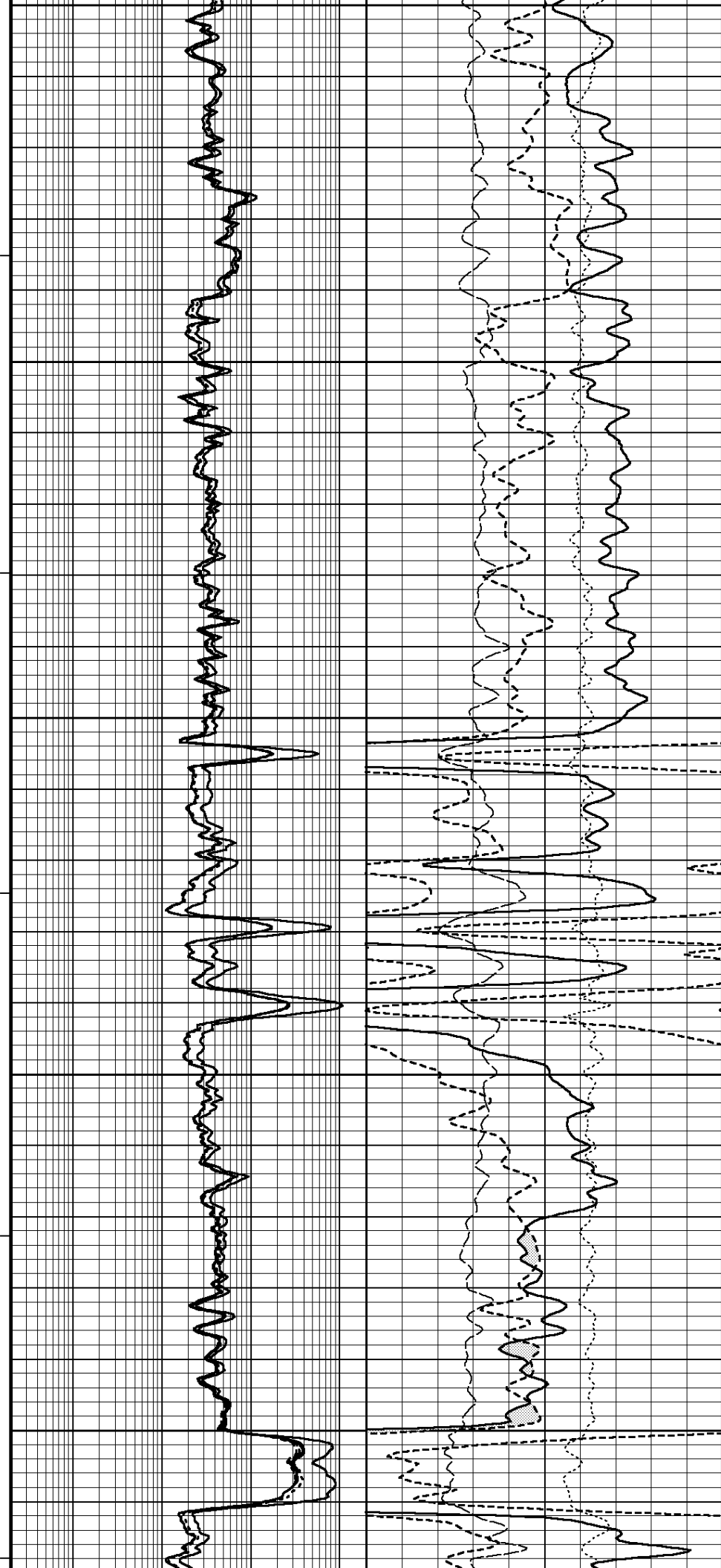
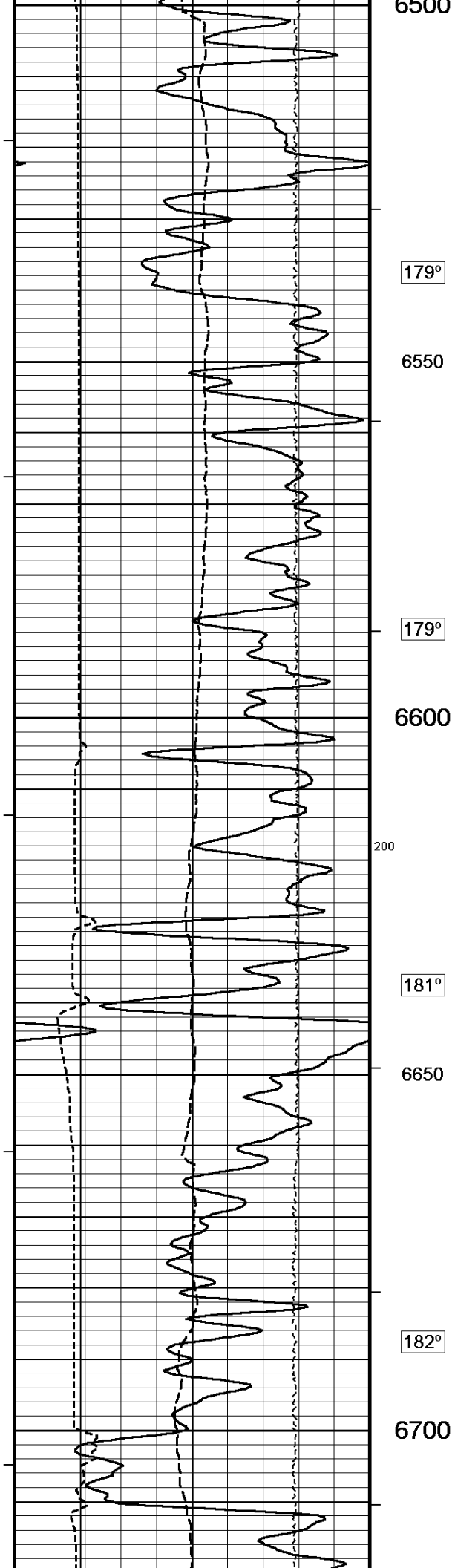


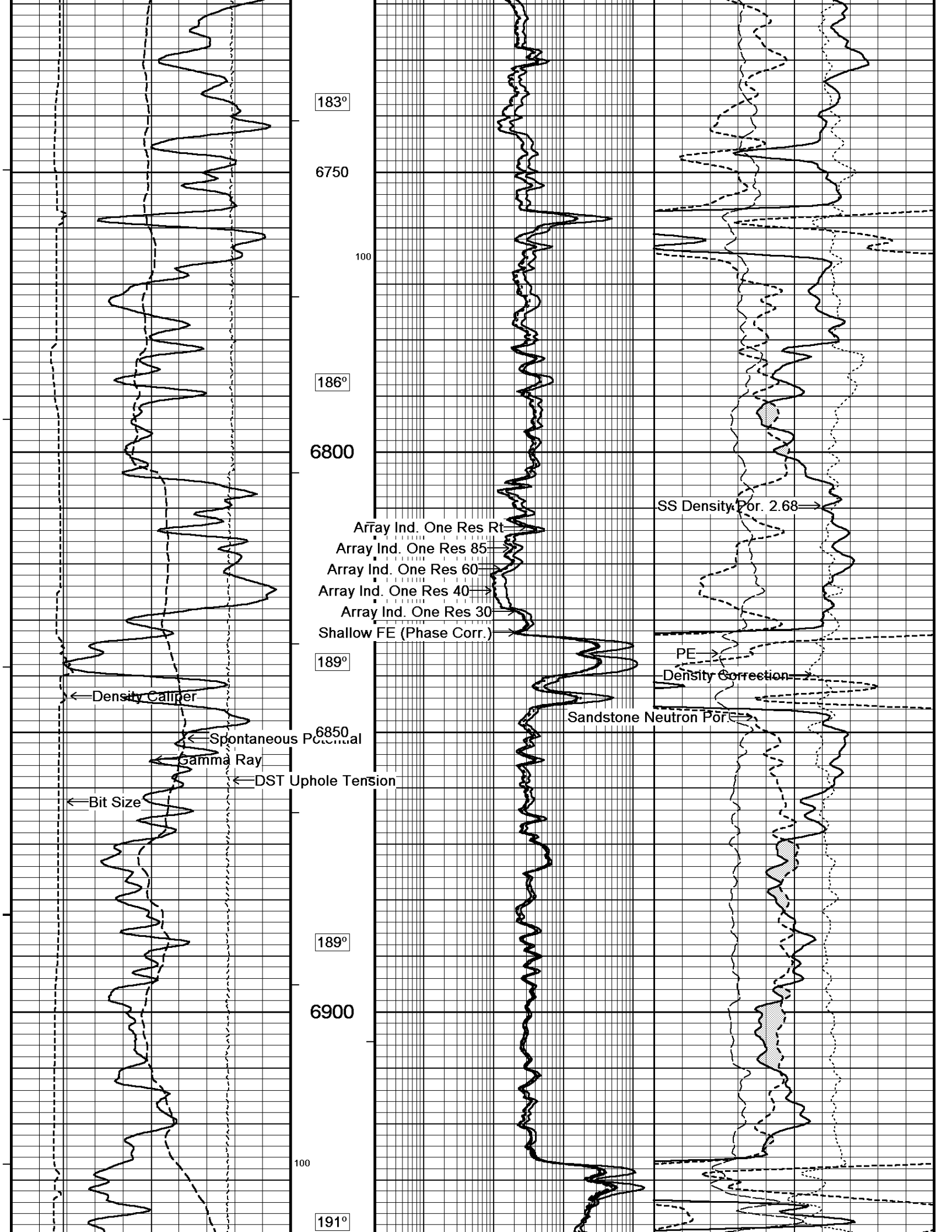


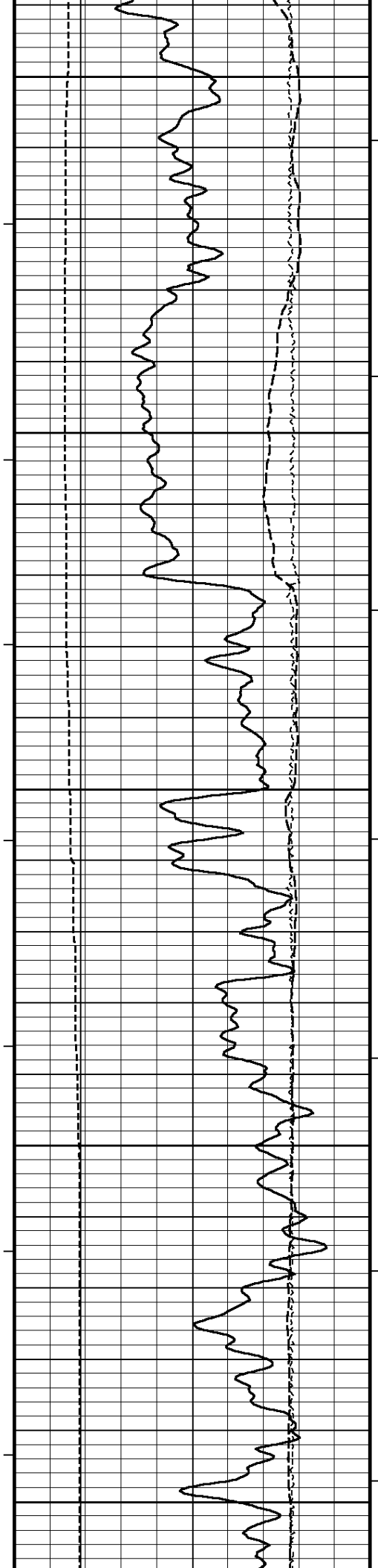




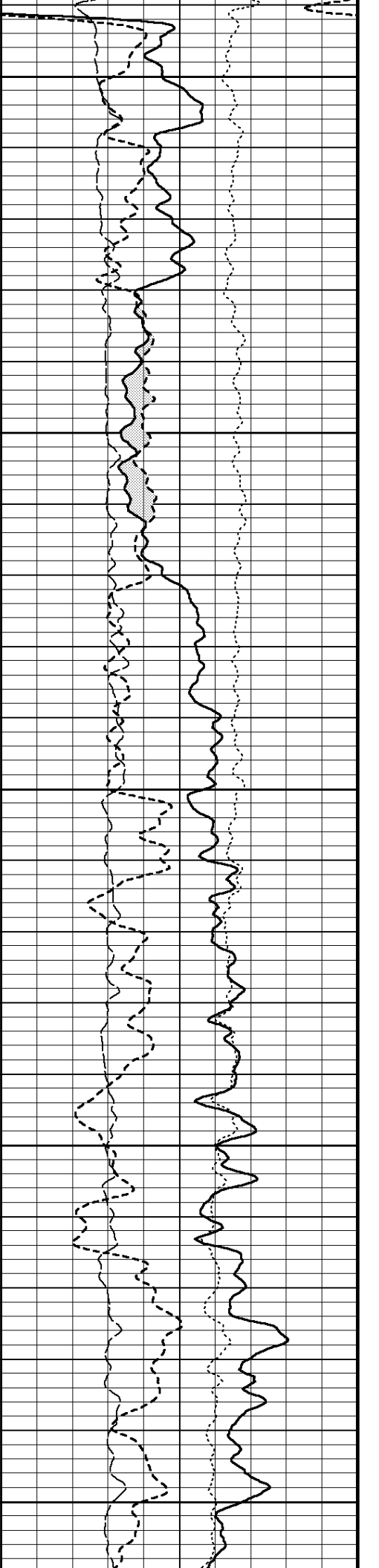
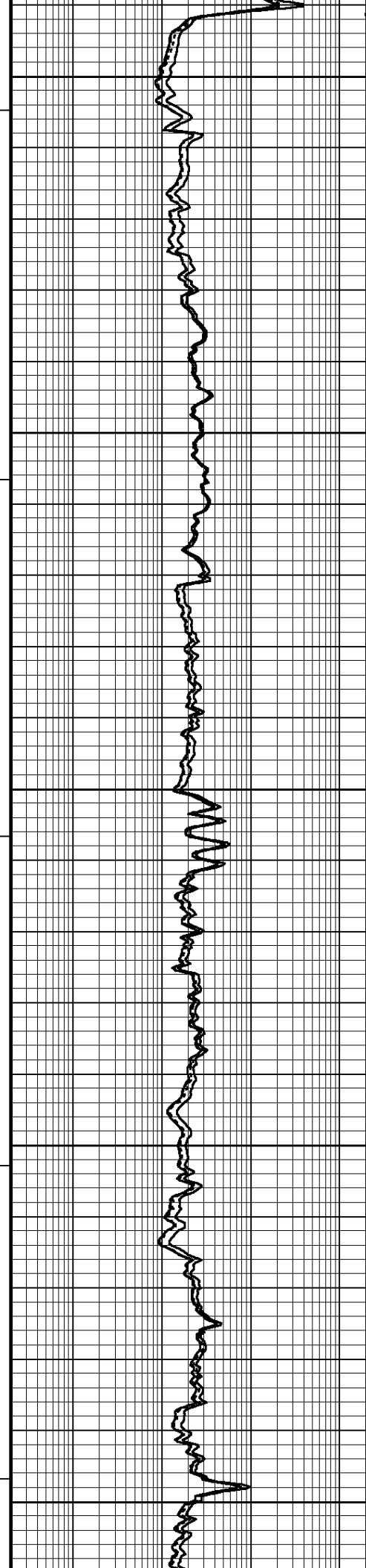


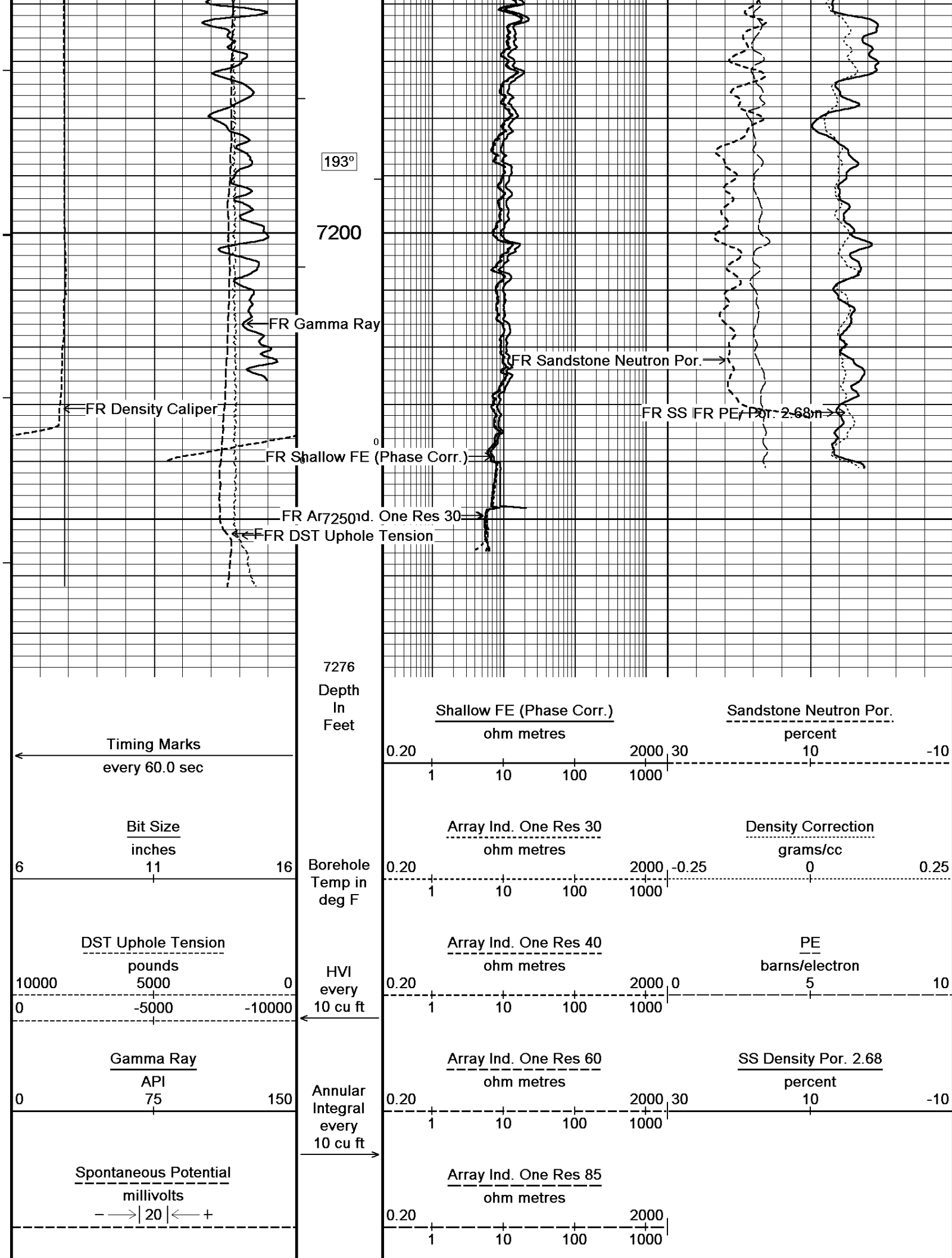






6950  
192°  
7000  
193°  
7050  
194°  
7100  
194°  
7150







Density Caliper  
inches  
61116

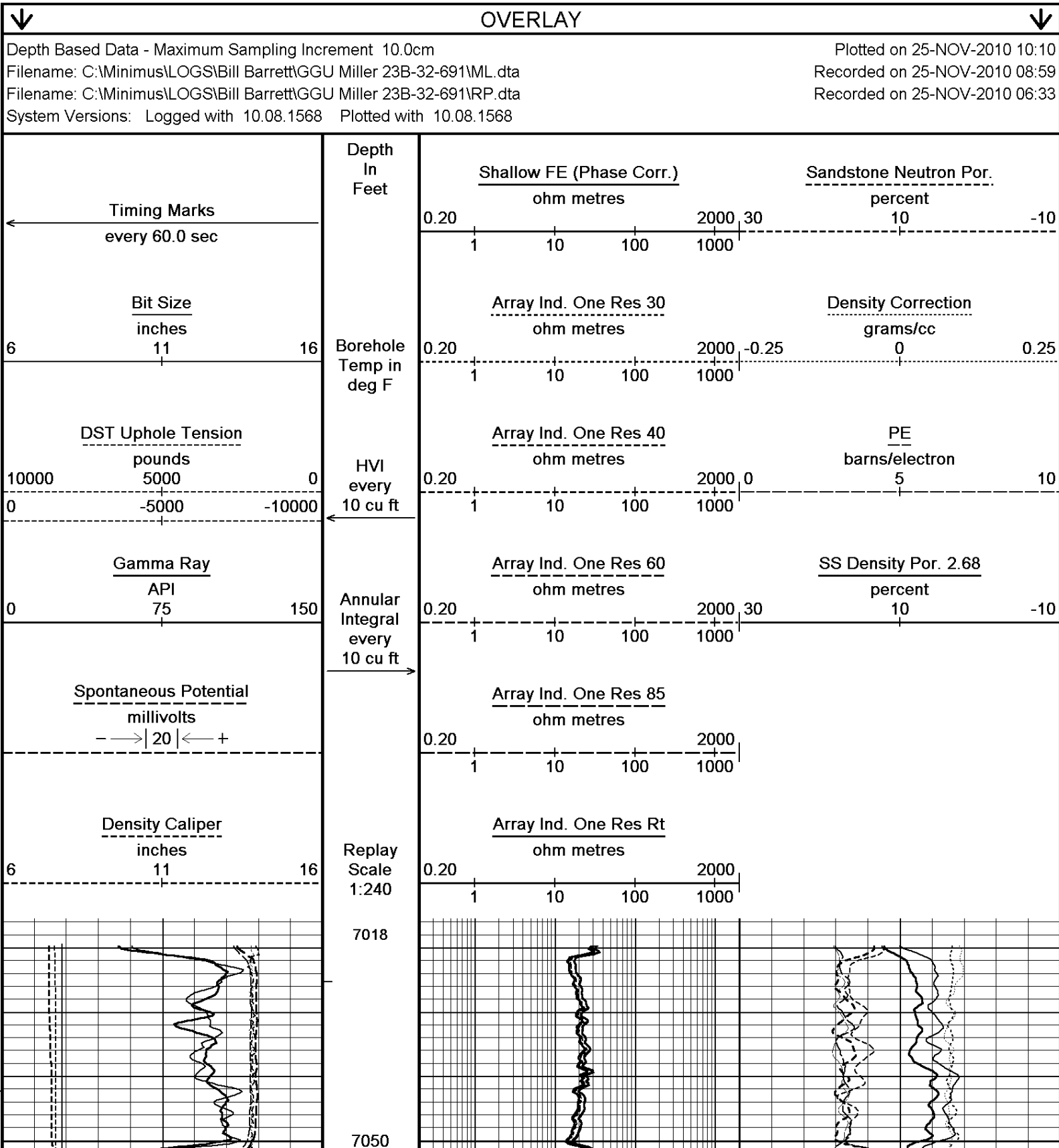
Replay  
Scale  
1:240

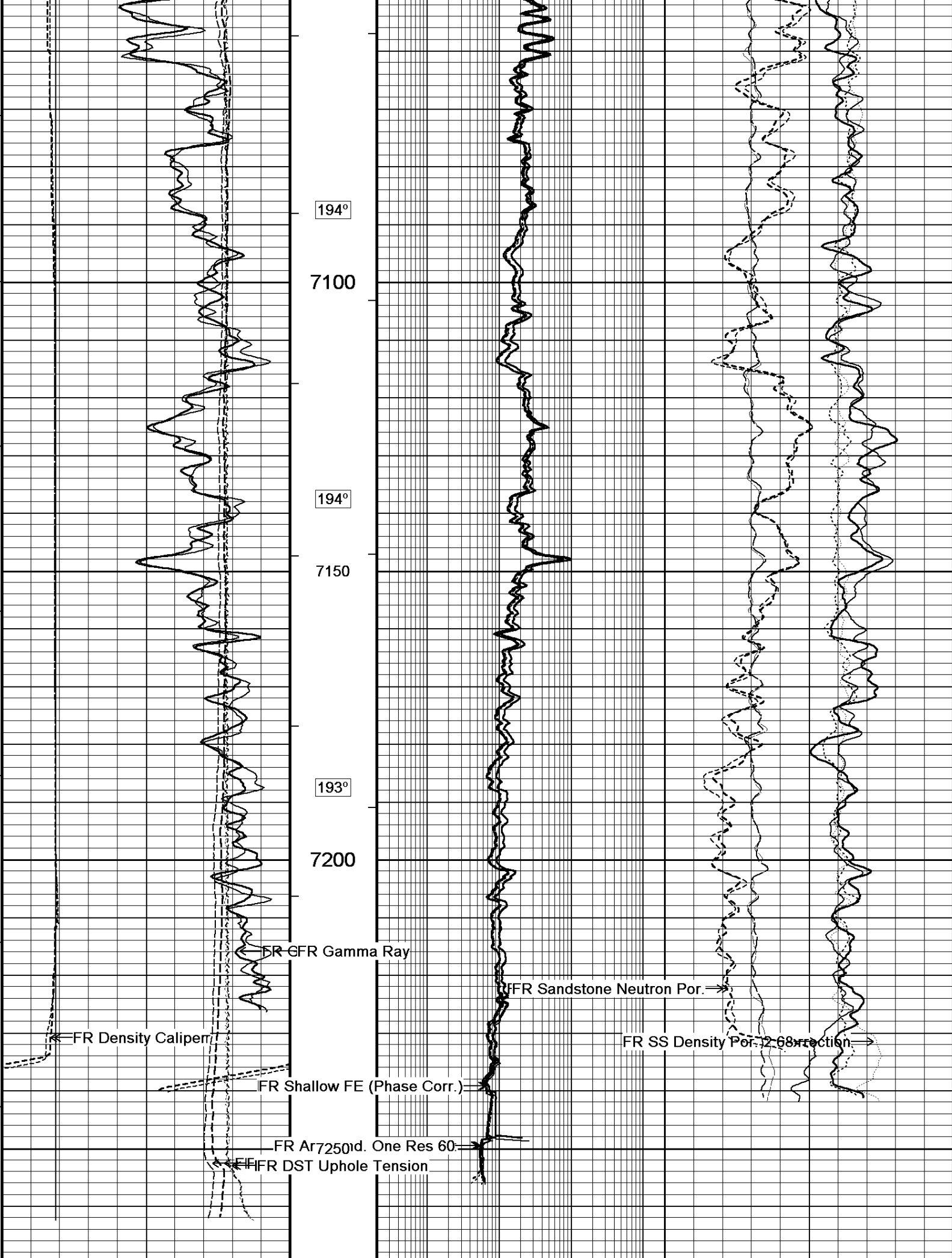
Array Ind. One Res Rt  
ohm metres  
0.2011010020001000

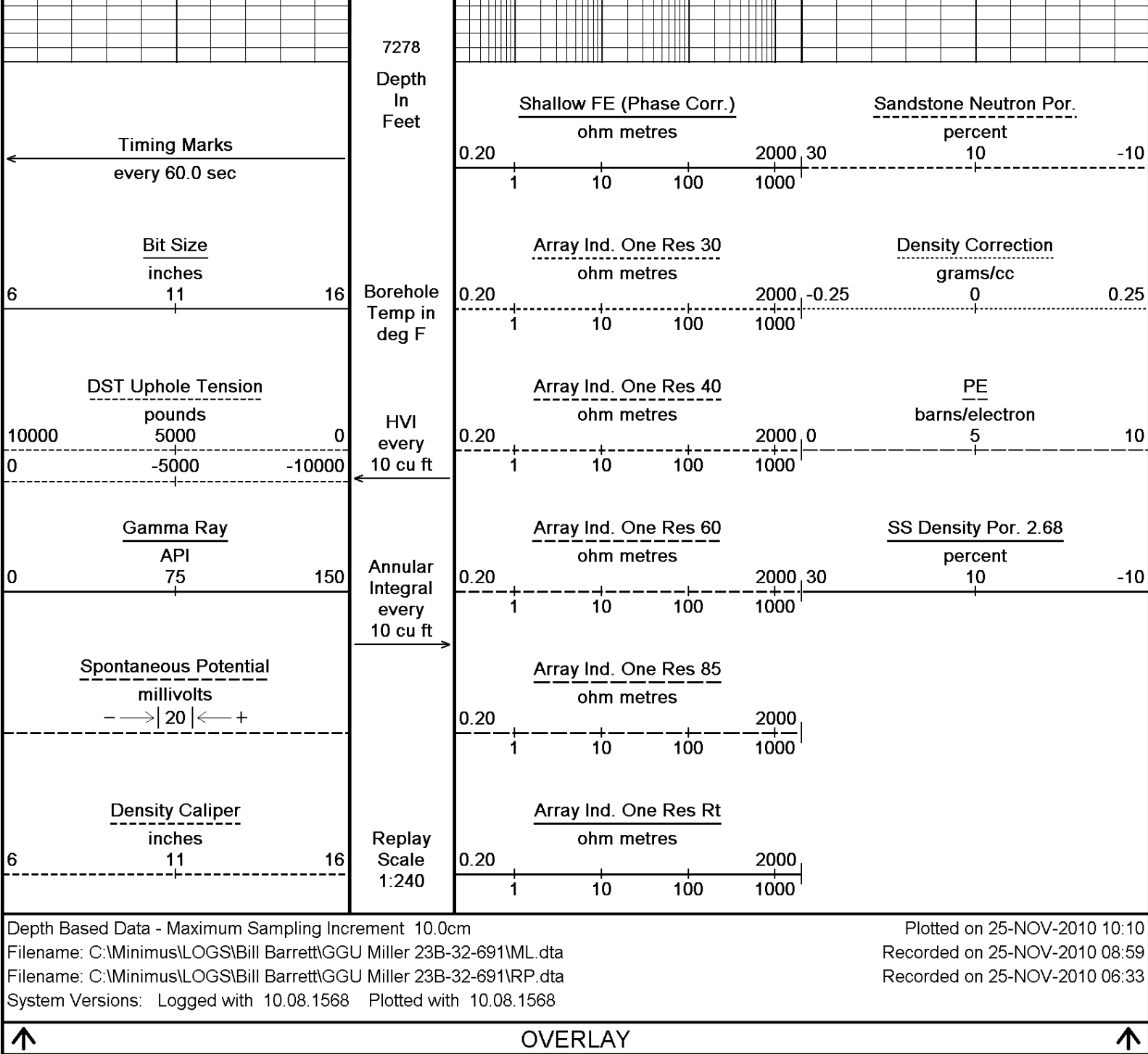
Depth Based Data - Maximum Sampling Increment 10.0cm  
Filename: C:\Minimus\LOGS\Bill Barrett\GGU Miller 23B-32-691\ML.dta  
System Versions: Logged with 10.08.1568 Plotted with 10.08.1568

Plotted on 25-NOV-2010 10:10  
Recorded on 25-NOV-2010 08:59

5 INCH MAIN LOG







BEFORE SURVEY CALIBRATION		
C:\Minimus\LOGS\Bill Barrett\GGU Miller 23B-32-691\SETUP.dta		
General Constants All 000		Last Edited on 25-NOV-2010,00:49
General Parameters		
Mud Resistivity	2.160	ohm-metres
Mud Resistivity Temperature	87.700	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	4.500	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 SMS 000			Field Calibration on 25-NOV-2010 02:36
Reading No	Measured	Calibrated (lbs)	
1	15330.33	0.00	
2	17092.43	363.80	
High Resolution Temperature Calibration MCG 287			Field Calibration on 25-NOV-2010,00:57
	Measured	Calibrated(Deg F)	
Lower	10.00	10.00	
Upper	100.00	100.00	
High Resolution Temperature Constants MCG 287			Last Edited on 27-OCT-2010,11:54
Pre-filter Length	11		
SP Calibration MCG 287			Field Calibration on 25-NOV-2010,00:57
	Measured	Calibrated (mV)	
Reference 1	95.0	104.2	
Reference 2	-87.4	-104.5	
Gamma Calibration MCG 287			Field Calibration on 25-NOV-2010 00:56
	Measured	Calibrated (API)	
Background	110	74	
Calibrator (Gross)	889	601	
Calibrator (Net)	779	527	
Gamma Constants MCG 287			Last Edited on 25-NOV-2010,00:52
Gamma Calibrator Number	GRC-174		
Mud Density	1.00	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	
Neutron Calibration MDN 112			Base Calibration on 25-OCT-2010,16:11 Field Check on 25-NOV-2010 01:01
Base Calibration			
	Measured	Calibrated (cps)	
	Near Far	Near Far	
	3130 99	3714 110	
Ratio	31.503	33.764	
Field Calibrator at Base			
		Calibrated (cps)	
		2252 3194	
Ratio		0.705	
Field Check			
		Calibrated (cps)	
		2156 3108	
Ratio		0.694	
Neutron Constants MDN 112			Last Edited on 20-NOV-2010,09:37
Neutron Source Id	P44384		
Neutron Jig Number	NJ6584		
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	7.00	cu	
Dolomite Sigma	4.70	cu	
Formation Pressure Source	None		
Formation Pressure	0.00	kpsi	
Temperature Source	None		
Temperature	20.00	degrees F	
Mud Salinity	1.00	kppm	

Formation Fluid Salinity Source	None	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	
FE Calibration MFE 179		Base Calibration on 15-OCT-2010 11:16 Field Check on 25-NOV-2010 02:40
Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	962.4	126.8
Base Check		280.5
Field Check		280.5
FE Constants MFE 179		Last Edited on 25-NOV-2010,01:05
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 106		Field Calibration on 25-NOV-2010,01:06
	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00
High Resolution Temperature Constants MAI 106		Last Edited on 10-NOV-2010,07:35
Pre-filter Length	11	
Induction Calibration MAI 106		Base Calibration on 22-NOV-2010,16:09 Field Check on 25-NOV-2010 02:39
Base Calibration		
Test Loop Calibration		
Channel	Low High	Low High
1	16.5 486.3	9.3 966.2
2	5.8 391.9	7.6 821.4
3	3.0 262.9	5.2 566.0
4	1.4 138.3	2.6 279.2
Array Temperature	74.6	Deg F
Channel	Base Check (mmho/m)	Field Check (mmho/m)
	Low High	Low High
1	0.0 0.0	15.0 3748.4
2	0.0 0.0	30.9 3455.1
3	0.0 0.0	29.7 3022.5
4	0.0 0.0	20.2 2002.7
Deep	0.0 0.0	18.7 1962.3
Medium	0.0 0.0	43.1 4026.1
Shallow	0.0 0.0	45.5 5108.4
Array Temperature	0.0	74.7 Deg F
Induction Constants MAI 106		Last Edited on 25-NOV-2010,02:39
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	6.0000	
Stand-off Fin Angle	60.00	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 220

Base Calibration on 25-NOV-2010,01:03

Field Calibration on 25-NOV-2010,01:04

## Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14272	4.00
2	22416	5.96
3	30368	7.98
4	38432	9.86
5	47536	11.88
6	N/A	N/A

## Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.90	8.93

## Photo Density Calibration MPD 220

Base Calibration on 27-OCT-2010 19:35

Field Check on 25-NOV-2010 02:44

## Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	52933	16878	53237	19445
Reference 2	24114	2409	25135	2545

## Field Check at Base

1196.9 1213.9

## Field Check

1191.9 1211.7

## PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	215	1060		
Reference 1	17971	52737	0.344	0.320
Reference 2	6633	23964	0.280	0.274

## Field Check at Base

214.5 1059.9

## Field Check

213.6 1053.6

## Density Constants MPD 220

Last Edited on 25-NOV-2010,01:02

Density Source Id

P44263B

Nylon Calibrator Number

532

Nylon Calibrator Number	532	
Aluminium Calibrator Number	532	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.26	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)
2.68	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

## AFTER SURVEY CALIBRATION

C:\Minimus\LOGS\Bill Barrett\GGU Miller 23B-32-691\ML.dta

FE Check MFE 179

Before Survey Check 25-NOV-2010 02:40

After Survey Check on 25-NOV-2010 09:49

Before (ohm-m)	After (ohm-m)
280.5	280.8

Induction Check MAI 106

Before Survey Check on 25-NOV-2010 02:39

After Survey Check on 25-NOV-2010 09:51

Channel	Before Survey (mmho/m)		After Survey (mmho/m)	
	Low	High	Low	High
1	15.0	3748.4	14.0	3748.3
2	30.9	3455.1	30.6	3455.4
3	29.7	3022.5	29.6	3022.8
4	20.2	2002.7	20.1	2002.9
Deep	18.7	1962.3	18.5	1962.4
Medium	43.1	4026.1	43.0	4026.6
Shallow	45.5	5108.4	45.1	5109.0
Array Temperature	74.7		57.6	
			Deg F	

Photo Density Check MPD 220

Before Survey Check on 25-NOV-2010 02:44

After Survey Check on 25-NOV-2010 09:45

Density Check

	Near		Far	
	Before	After	Before	After
	1191.9	1187.2	1211.7	1208.3

PE Check

	Before	After
WS	213.6	216.2
WH	1053.6	1052.6

## DOWNHOLE EQUIPMENT

C:\Minimus\LOGS\Bill Barrett\GGU Miller 23B-32-691\ML.dta

3/8" Triple Cone Cable Head (MCB C A)  
MCB 5 Length: 1.58 ft Weight: 15.4 lb

SHA-J.A Compact Swivel Head Adaptor  
SHA 213 Length: 2.30 ft Weight: 22.0 lb

Compact Gamma  
MCG 287 Length: 8.70 ft Weight: 63.9 lb



37.05 ft GRGC - Gamma Ray  
34.14 ft CGXT - MCG External Temperature

Compact Neutron  
MDN 112 Length: 5.04 ft Weight: 50.7 lb

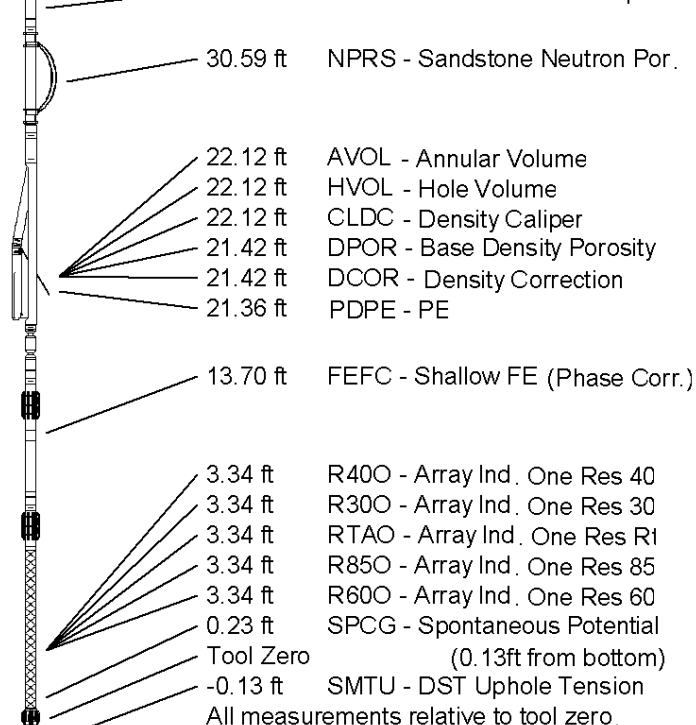
Compact Density/Caliper  
MPD 220 Length: 9.59 ft Weight: 90.4 lb

SKJ-D.A Compact Knuckle Joint  
SKJ 154 Length: 2.17 ft Weight: 24.3 lb

Compact Focussed Electric  
MFE 179 Length: 6.03 ft Weight: 48.5 lb

Compact Induction  
MAI 106 Length: 10.81 ft Weight: 48.5 lb

Total Length: 46.21 ft Weight: 363.8 lb



COMPANY BILL BARRETT CORPORATION  
WELL GGU MILLER 23B-32-691  
FIELD GIBSON GULCH  
PROVINCE/COUNTY GARFIELD  
COUNTRY/STATE U.S.A. / COLORADO

Elevation Kelly Bushing	6144.00	feet	First Reading	7250.00	
Elevation Drill Floor	6143.00	feet	Depth Driller	7250.00	feet
Elevation Ground Level	6121.00	feet	Depth Logger	7253.00	feet



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COMPACT TRIPLE COMBO  
QUICKLOOK  
LOG