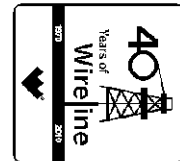




**Weatherford**<sup>®</sup>

**COMPACT TRIPLE COMBO  
QUICKLOOK  
LOG**

COMPANY **BILL BARRETT CORPORATION**  
WELL **GGU FEDERAL 41D-29-691**  
FIELD **GIBSON GULCH**  
PROVINCE/COUNTY **GARFIELD**  
COUNTRY/STATE **U.S.A. / COLORADO**  
LOCATION **SHL: 1224' FNL & 1308' FEL**  
**BHL: 165' FNL & 664' FEL**



SEC 29 TWP 6S RGE 91W Other Services  
API Number 05-045-19795  
Permit Number  
Permanent Datum G.L., Elevation 6104 feet  
Log Measured From K.B. @ 23 FEET above Permanent Datum  
Drilling Measured From K.B.

Elevations:  
KB 6127.00 feet  
DF 6126.00  
GL 6104.00

Date	6-FEB-2011
Run Number	ONE
Depth Driller	7575.00 feet
Depth Logger	7576.00 feet
First Reading	7576.00
Last Reading	756.00
Casing Driller	738.00 feet
Casing Logger	756.00 feet
Bit Size	7.880 inches
Hole Fluid Type	LSND
Density / Viscosity	10.50 lb/USg 59.00 CP
PH / Fluid Loss	8.40 6.30 ml/30Min
Sample Source	FLOW LINE
Rm @ Measured Temp	3.0 @ 90.0 ohm-m
Rmf @ Measured Temp	2.40 @ 90.0 ohm-m
Rmc @ Measured Temp	3.60 @ 90.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	1.45 @ 185.0 ohm-m
Time Since Circulation	5 HOURS
Max Recorded Temp	185.00 deg F
Equipment Name	COMPACT
Equipment / Base	13173 GD JCT
Recorded By	J.GARCIA
Witnessed By	J.BOYD

**BOREHOLE RECORD**

Last Edited: 06-FEB-2011 14:15

Bit Size inches	Depth From feet	Depth To feet
8.750	738.00	5013.00
7.880	5013.00	7575.00

**CASING RECORD**

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	738.00	36.00

**REMARKS**

TOOLS: SHA, MCG, MDN, MPD, SKJ, MFE AND MAI RAN IN COMBINATION.

HARDWARE: MPD: 8 INCH PROFILE PLATE USED.  
ONE 0.5 INCH STANDOFFS USED ON INDUCTION.  
ONE 0.5 INCH STANDOFFS USED ON MFE.  
DUAL BOWSPRING USED ON NEUTRON.

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.

DENSITY POROSITY AND NEUTRON POROSITY READINGS MAY BE AFFECTED DUE TO 8 TO 10% LCM USED IN THE MUD SYSTEM.

CALIPER CHECK IN CASING PRESENTED, REFERENCE I.D. = 8.94" (9 5/8", 36 LB/FT CASING)

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 2900 CU.FT.

ANNULAR VOLUME WITH 4.5 INCH PRODUCTION CASING = 2140 CU.FT.

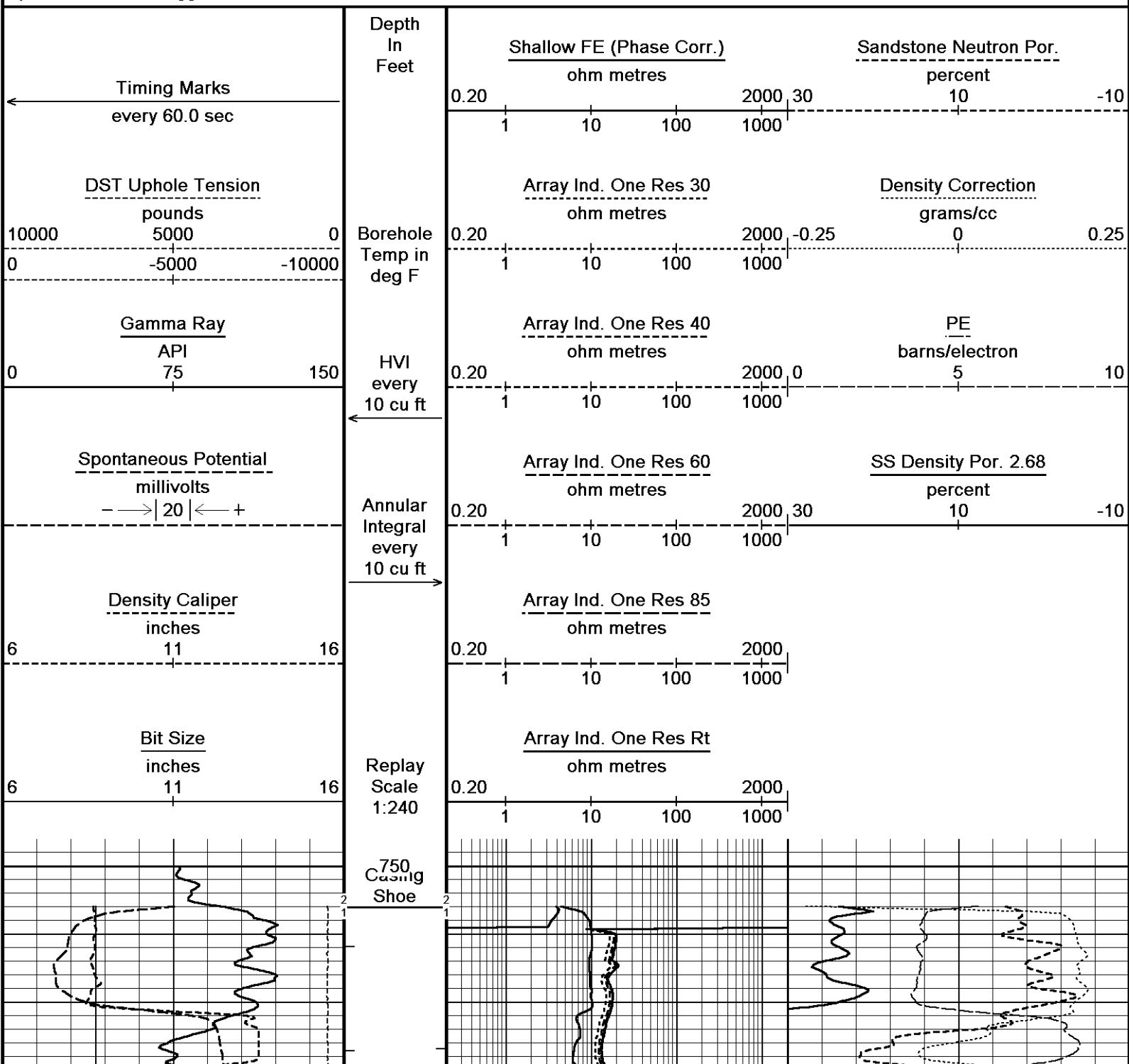
SERVICE ORDER: # 3526117

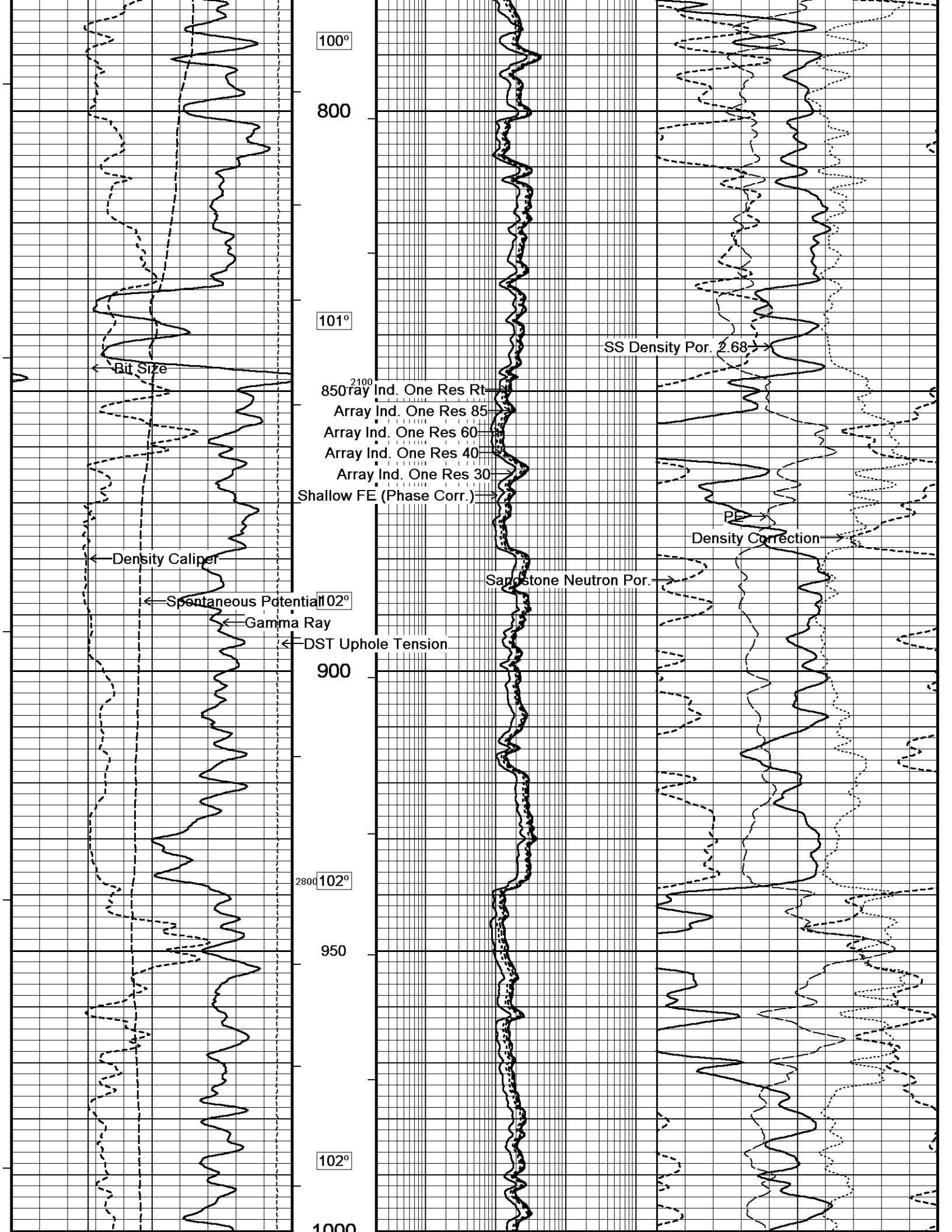
RIG: PATTERSON #307

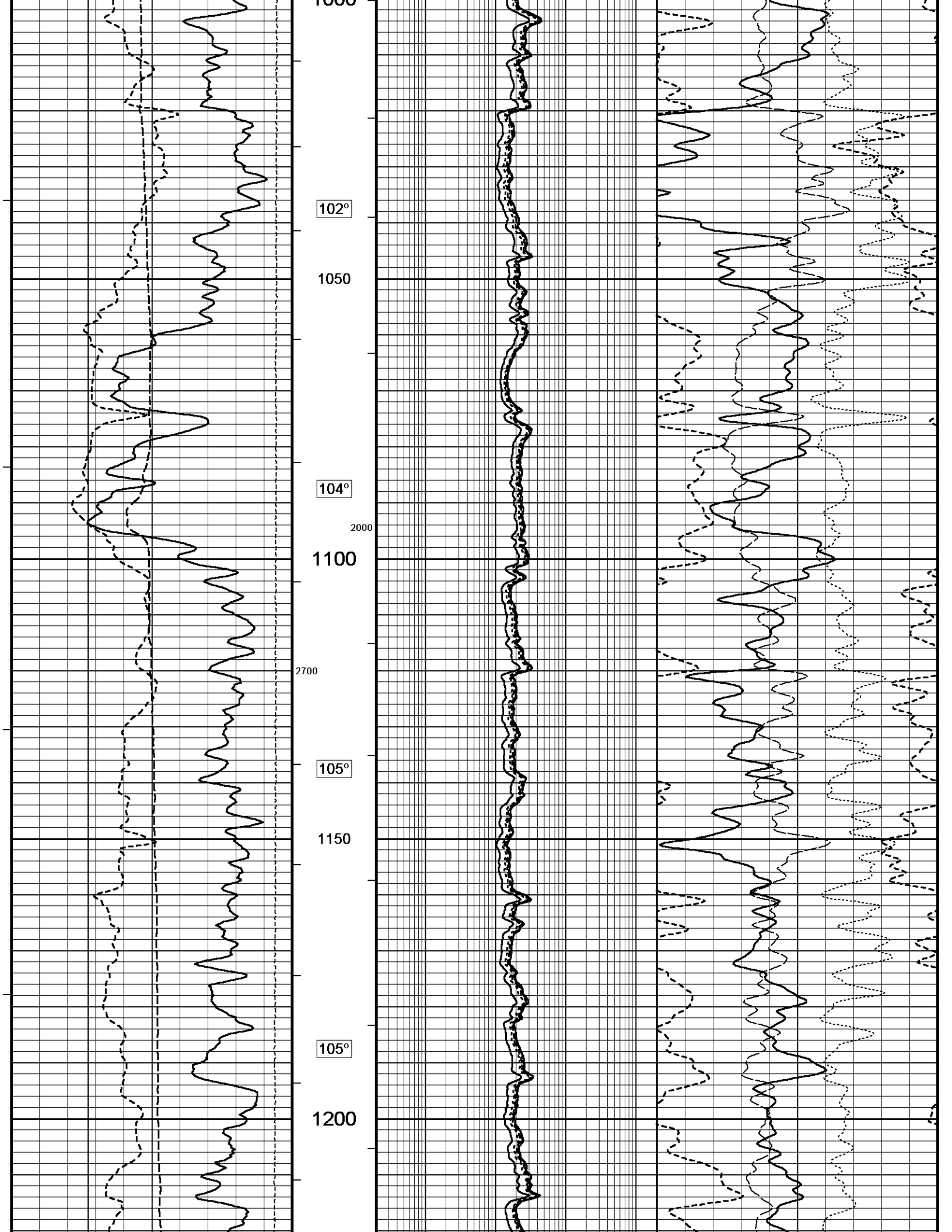
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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

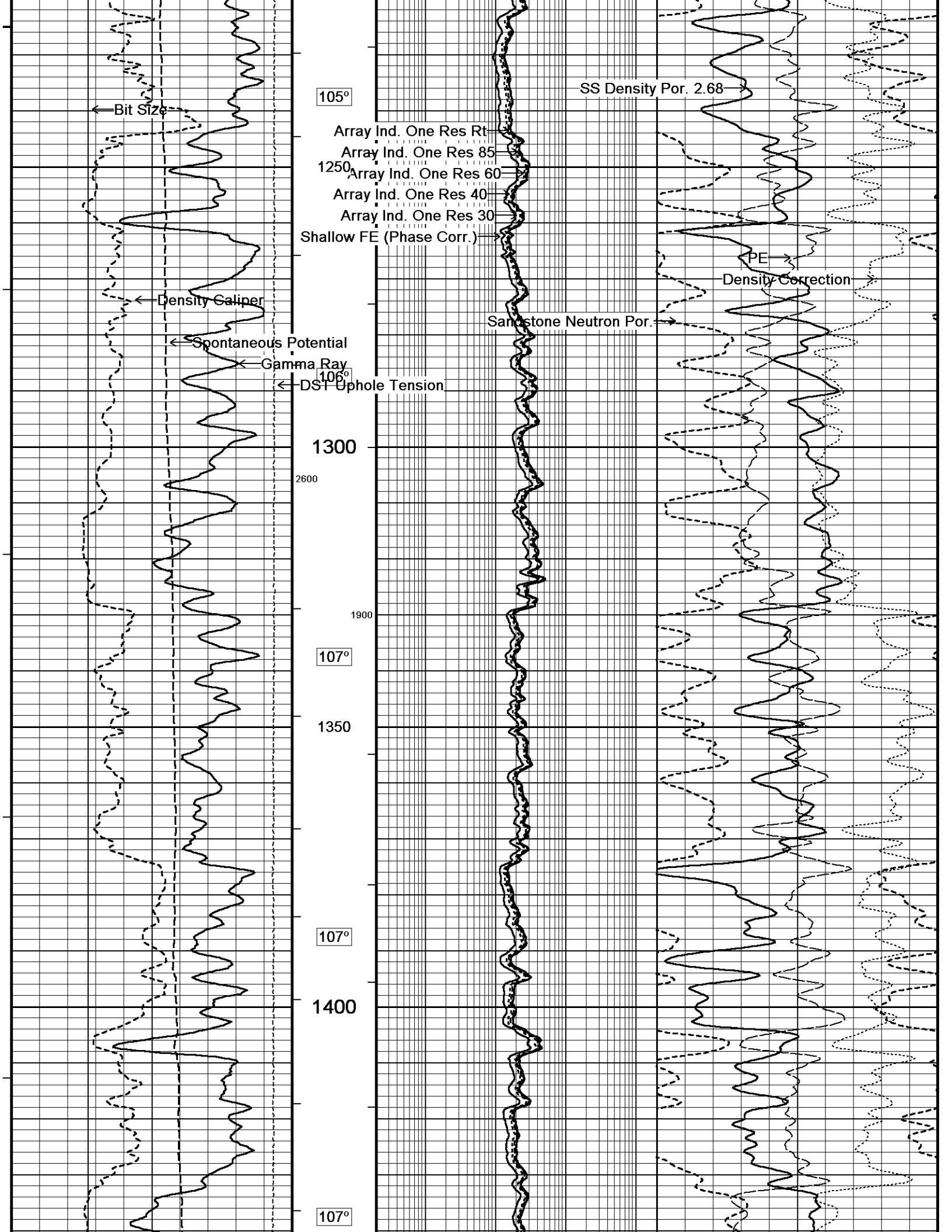
### 5 INCH MAIN LOG

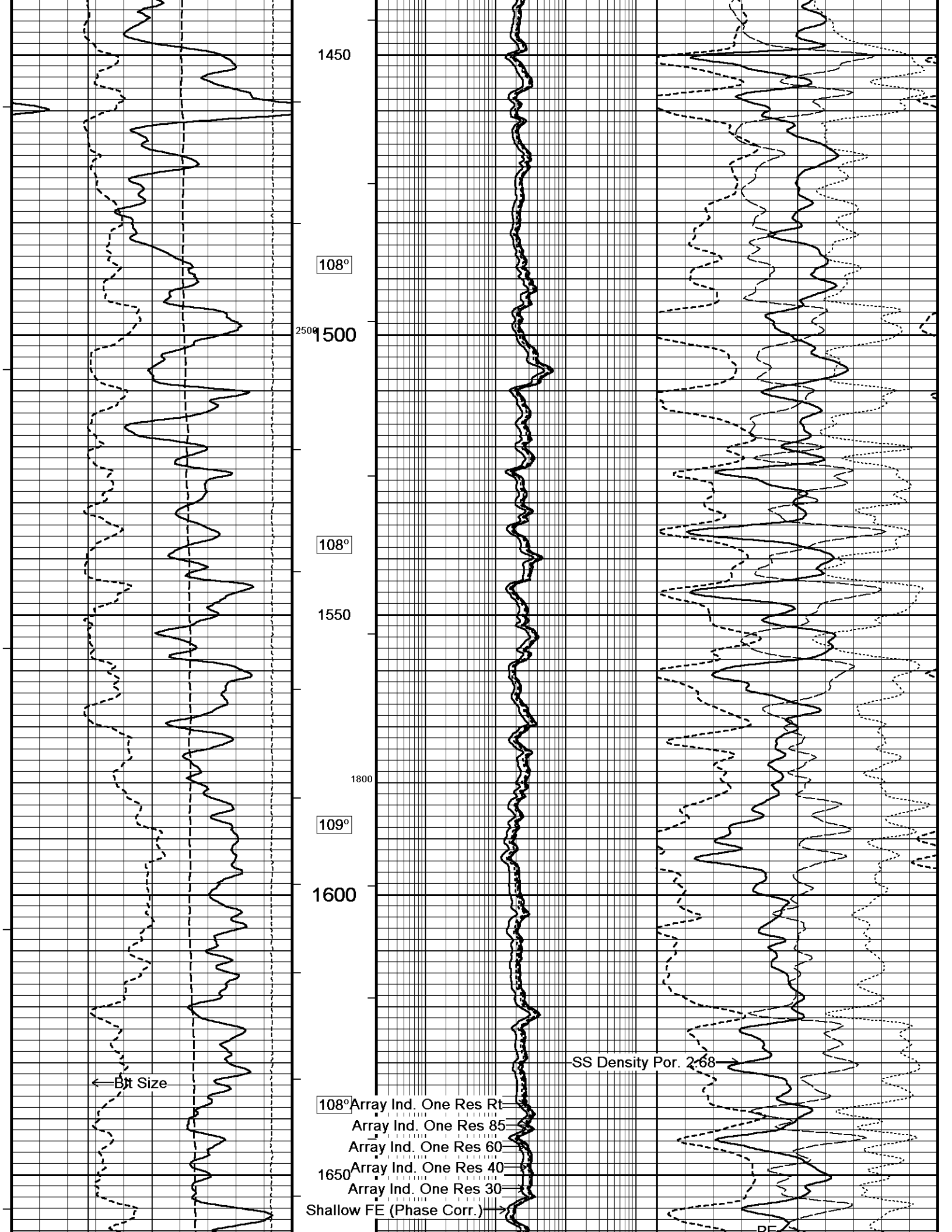
Depth Based Data - Maximum Sampling Increment 10.0cm  
Plotted on 06-FEB-2011 22:00  
Filename: C:\Minimus\Logs\Bill Barrett\GGU Federal 41D-29-691\MAIN-3.dta  
Recorded on 06-FEB-2011 17:45  
System Versions: Logged with 11.01.2198 Processed with 11.01.2198 Plotted with 11.01.2198

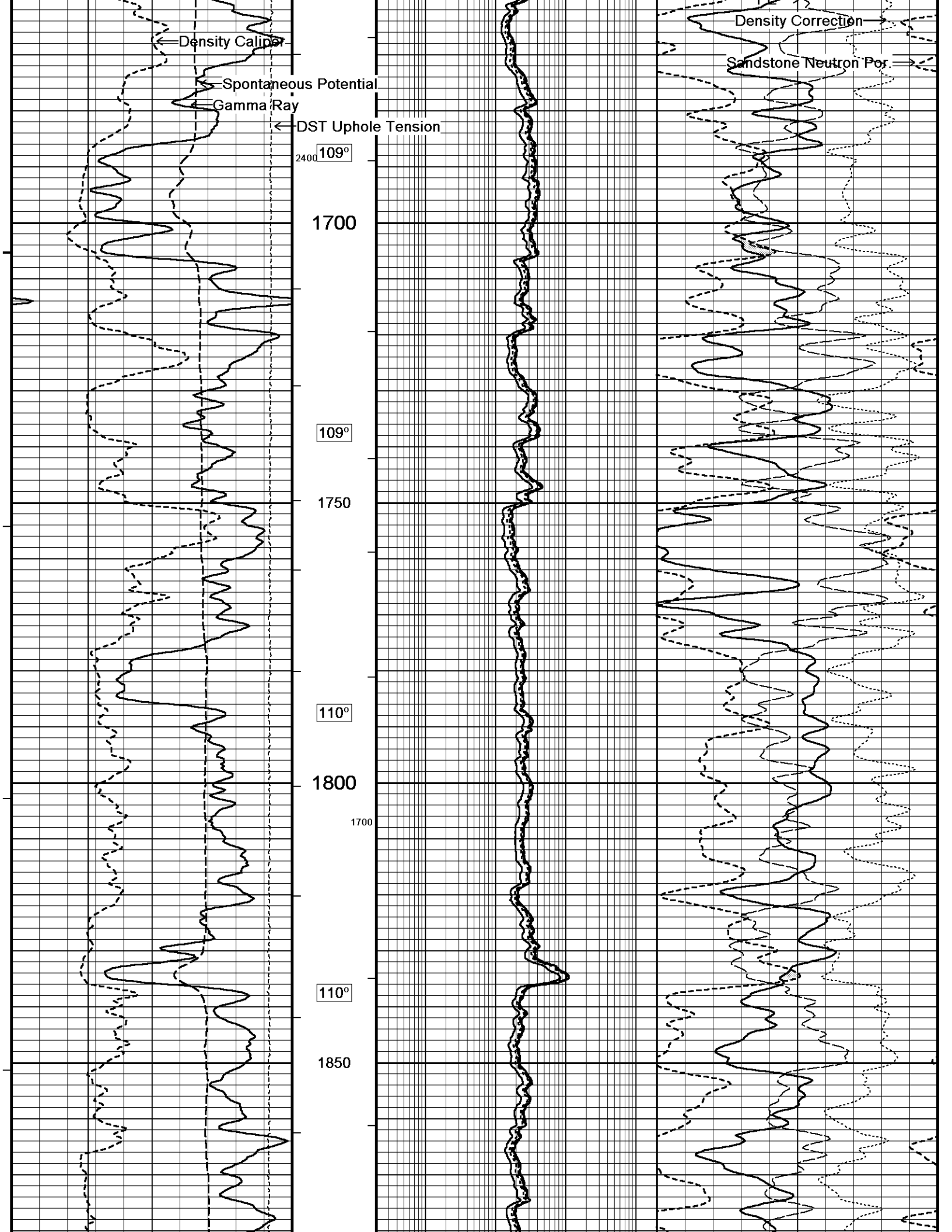


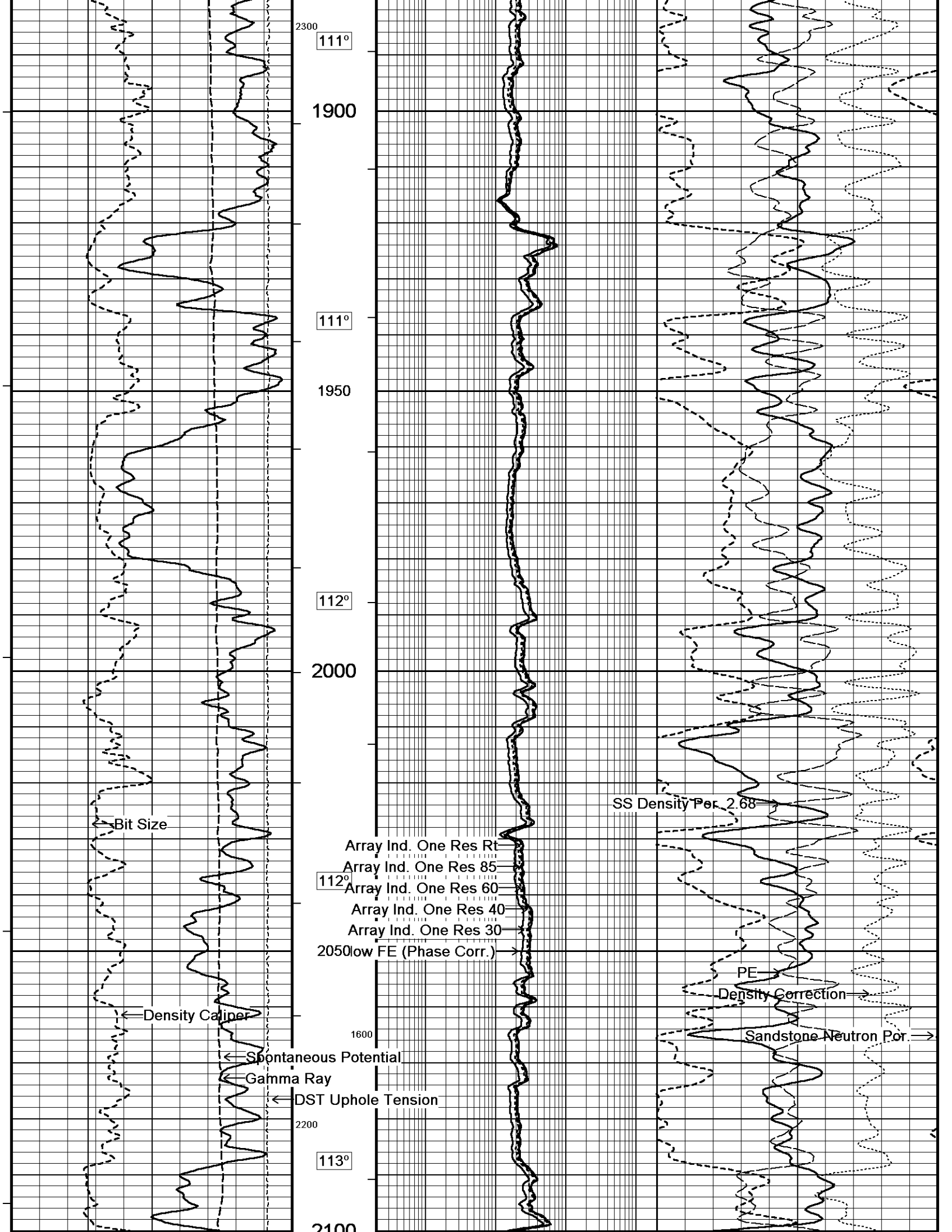


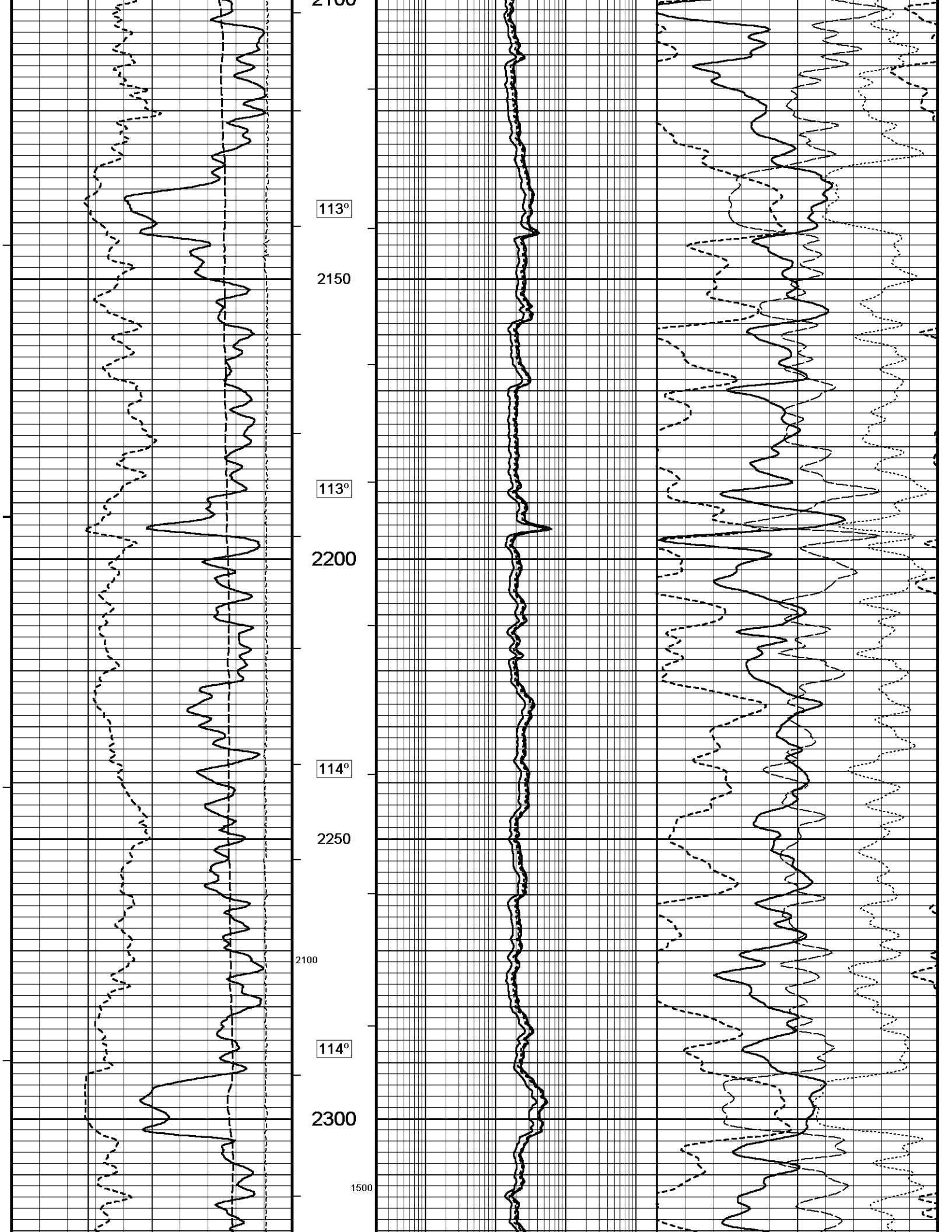


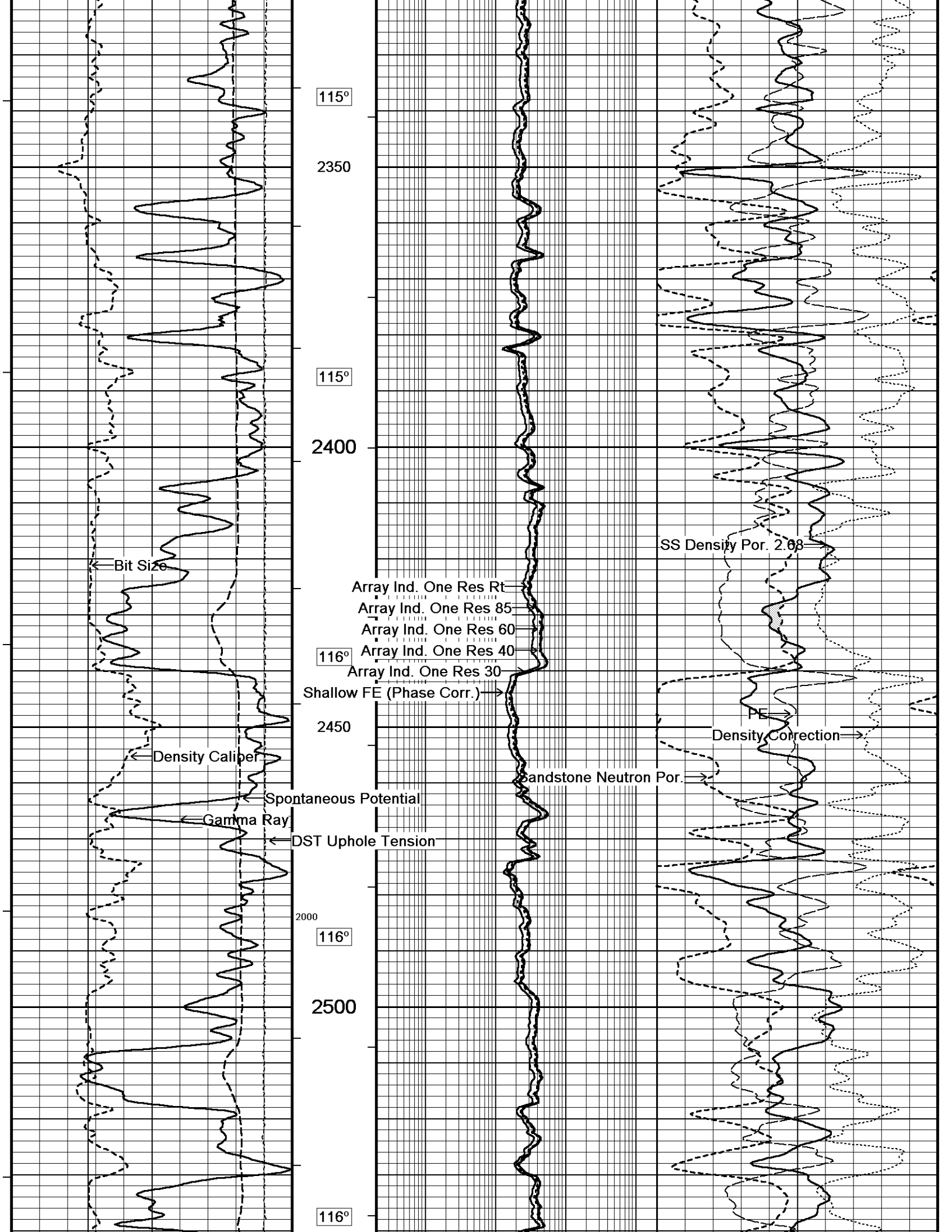


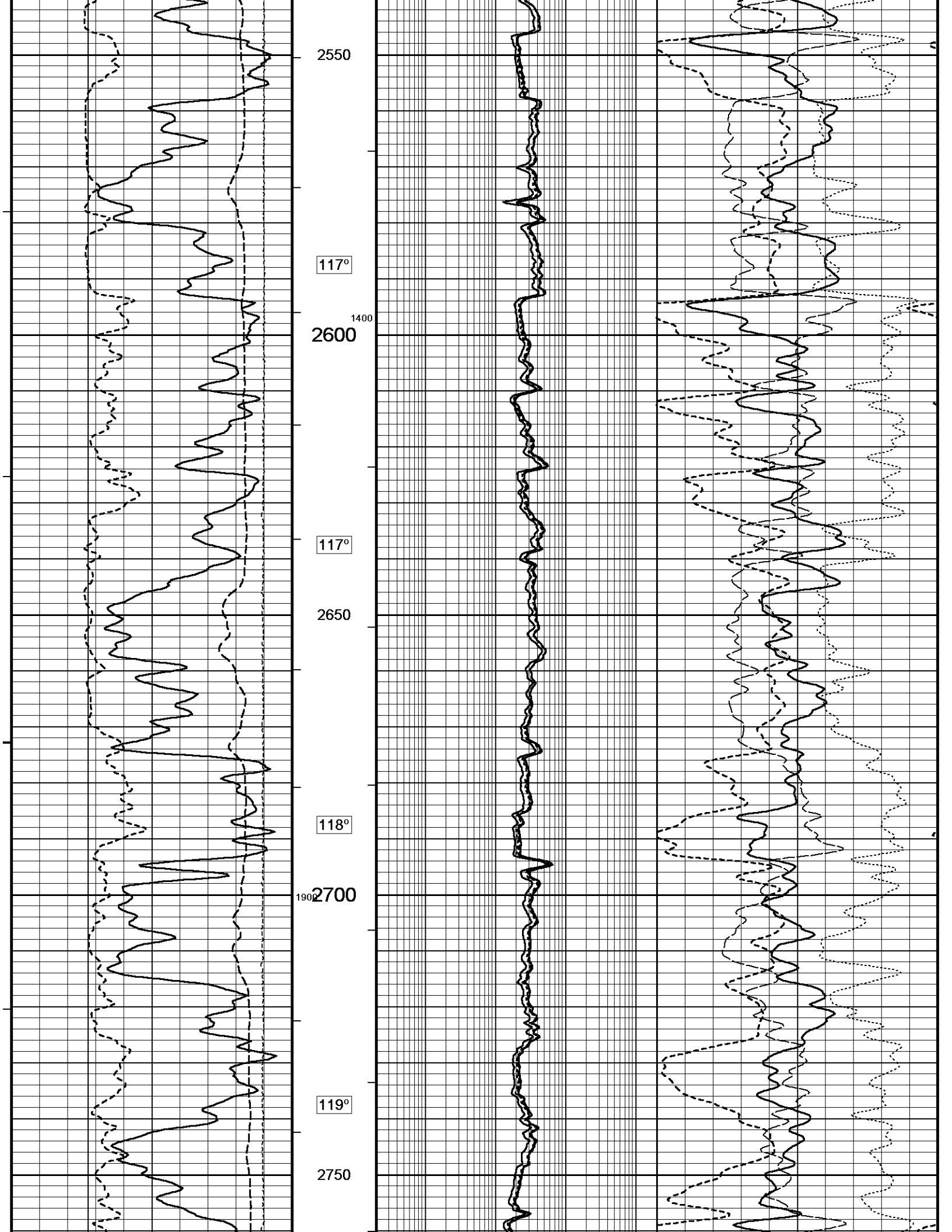


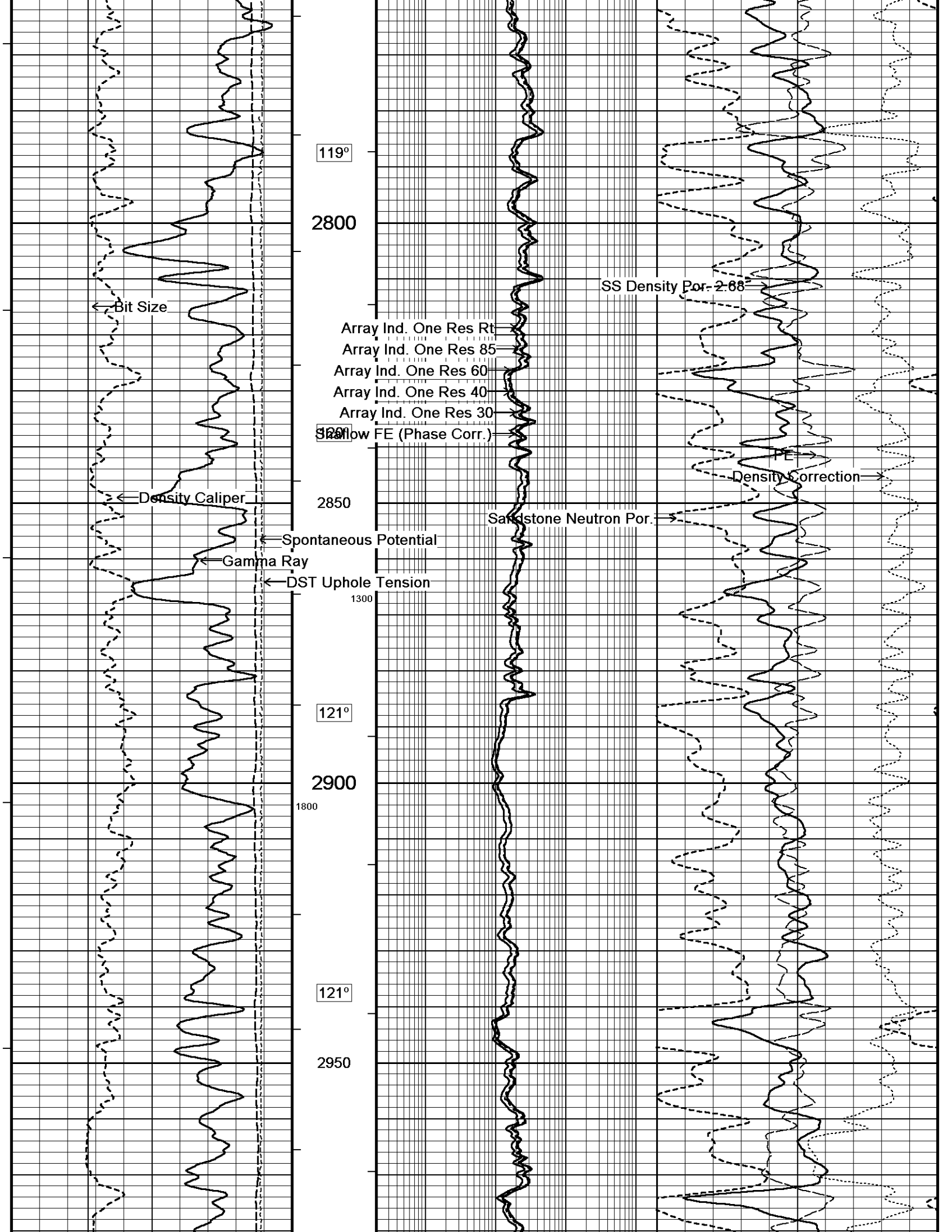


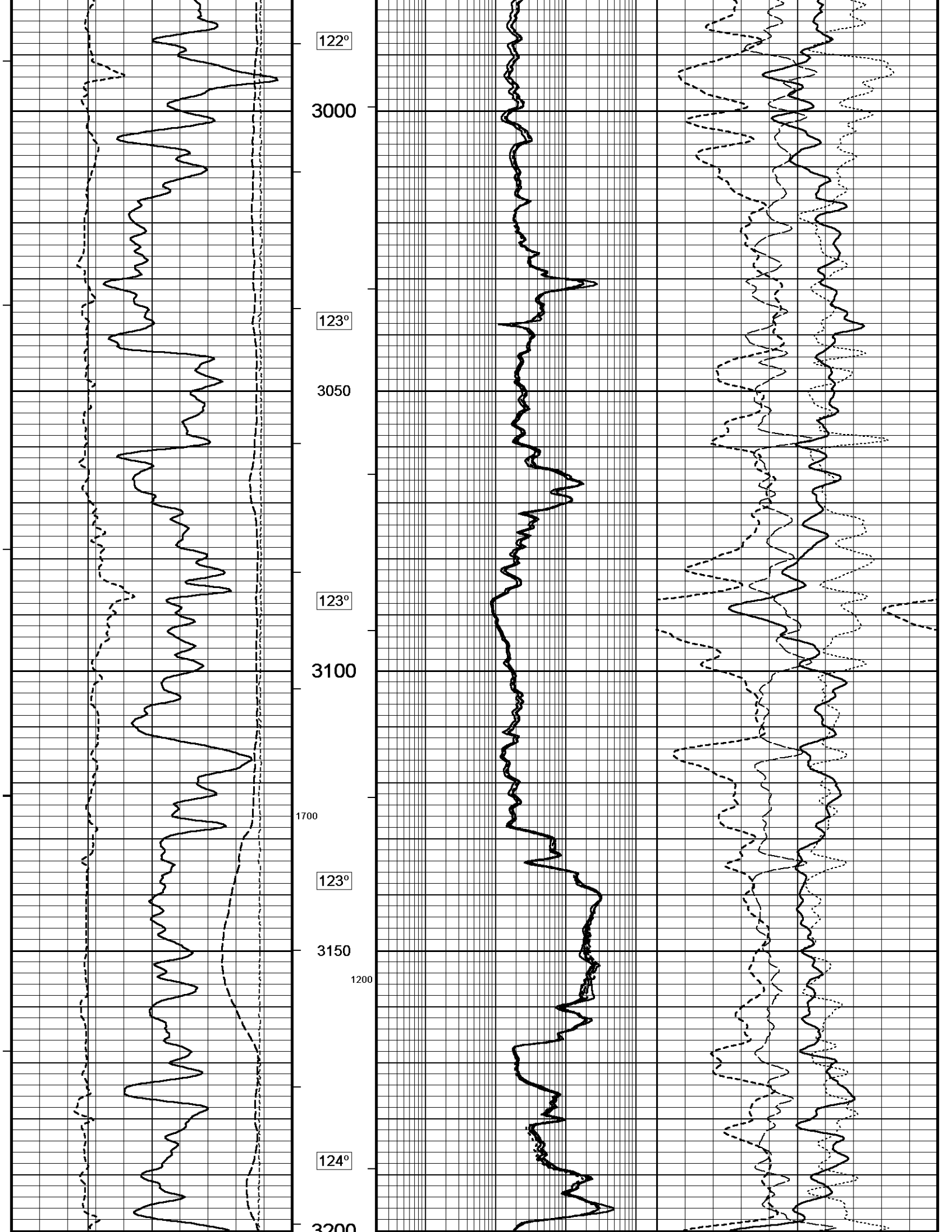


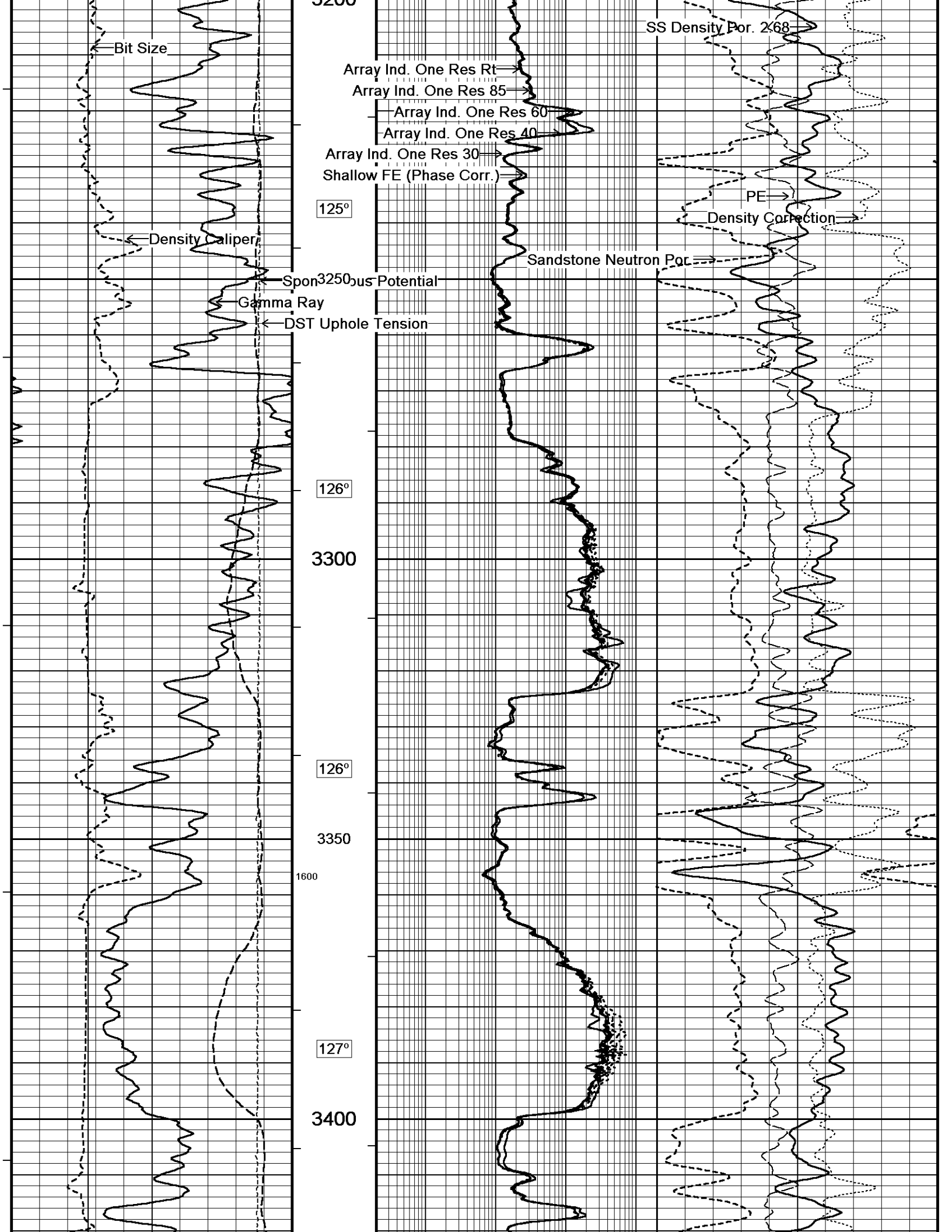


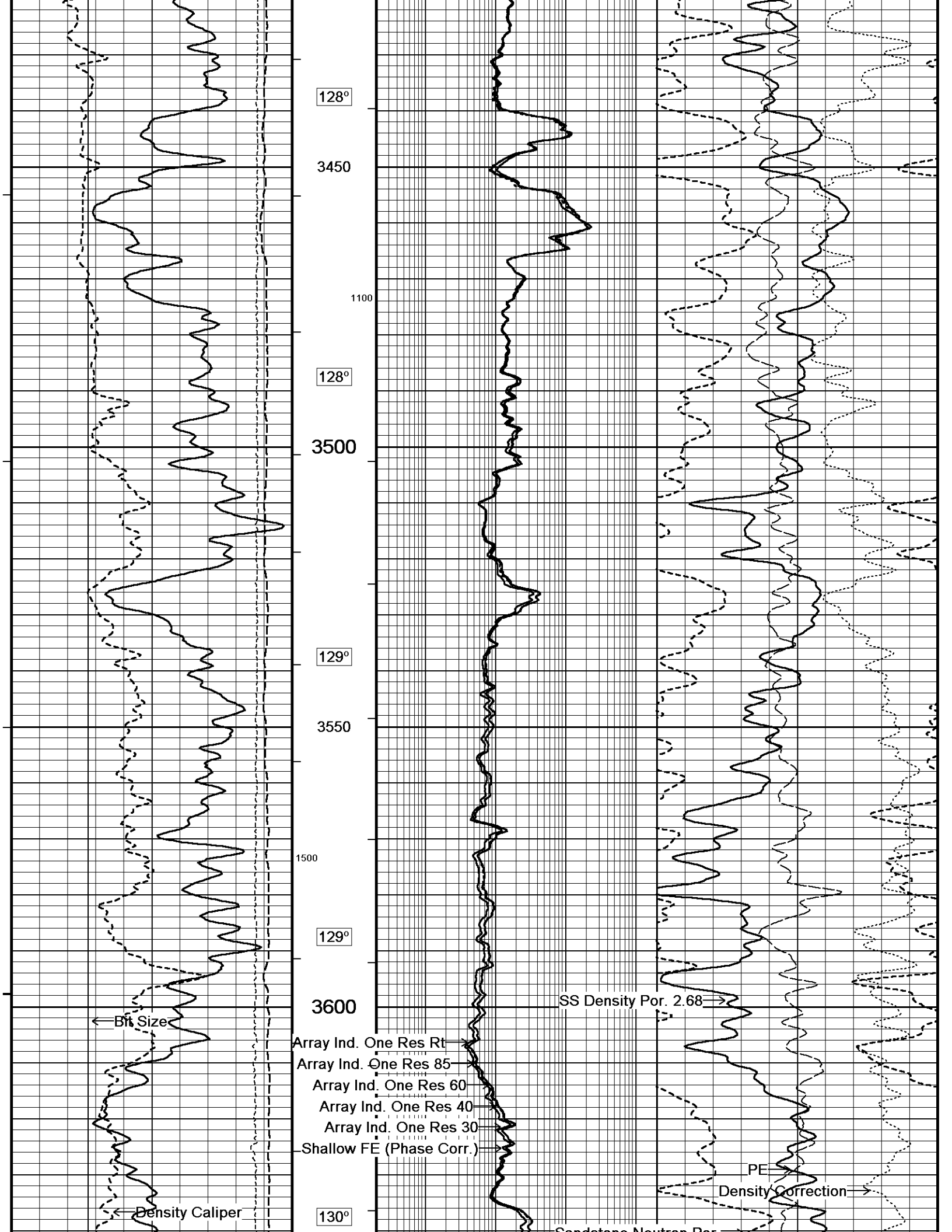


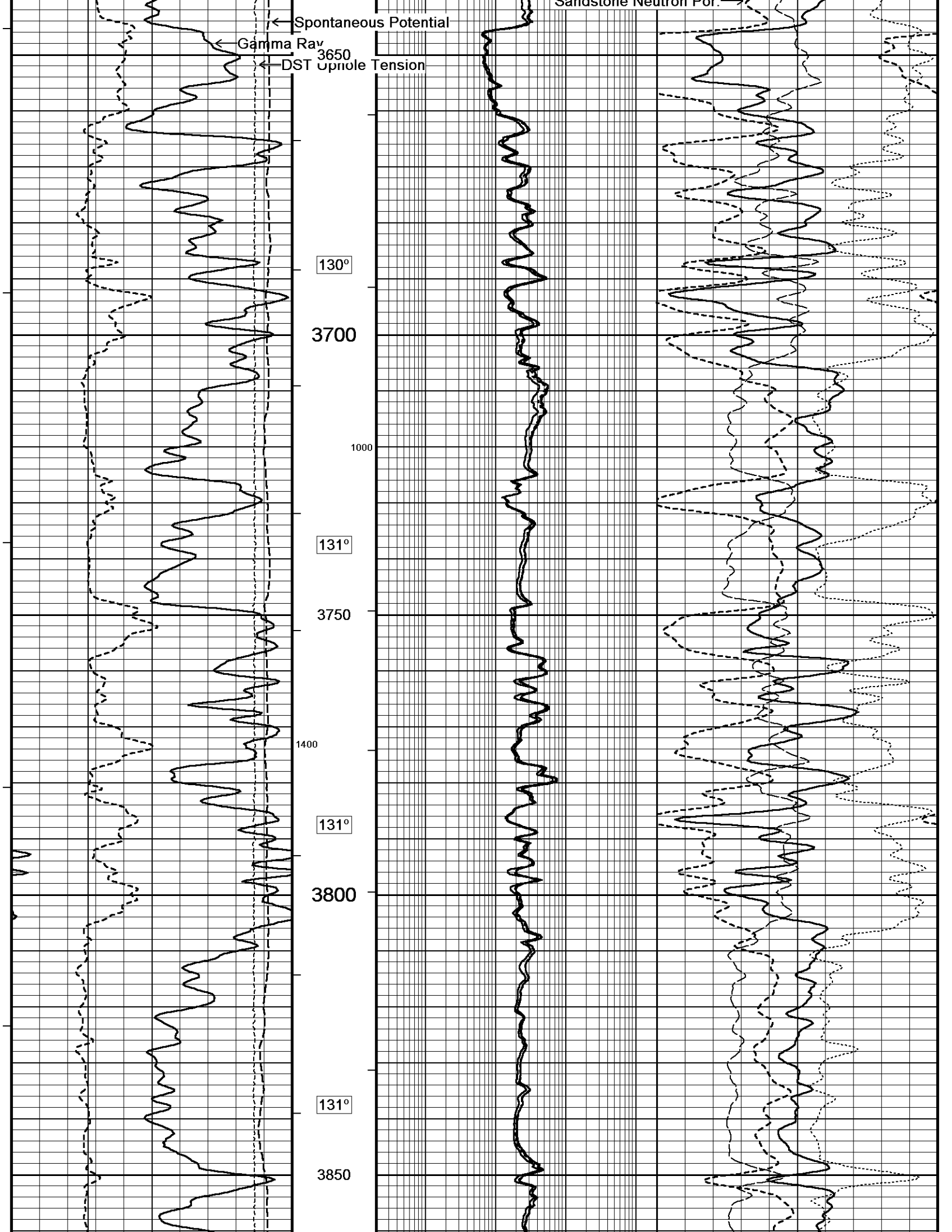


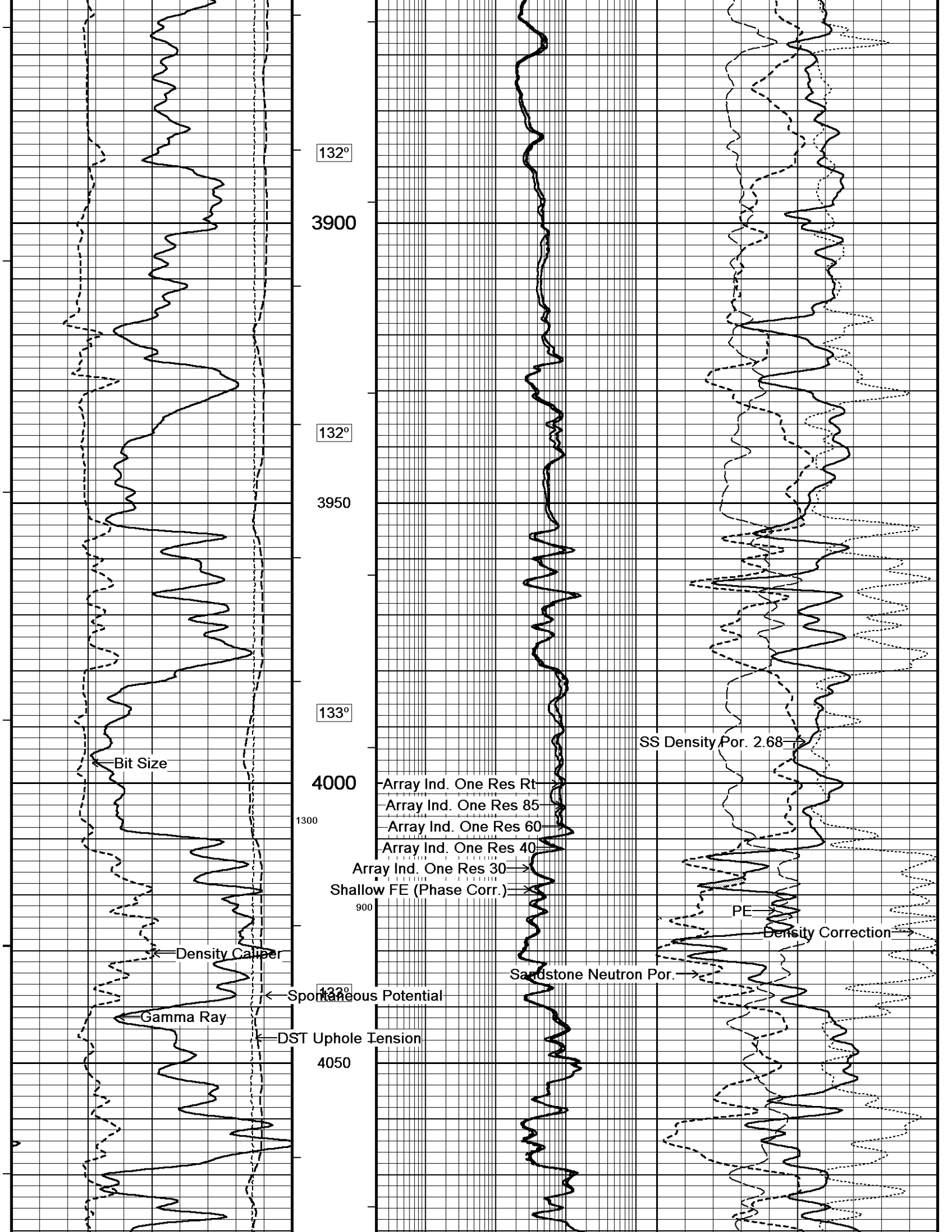


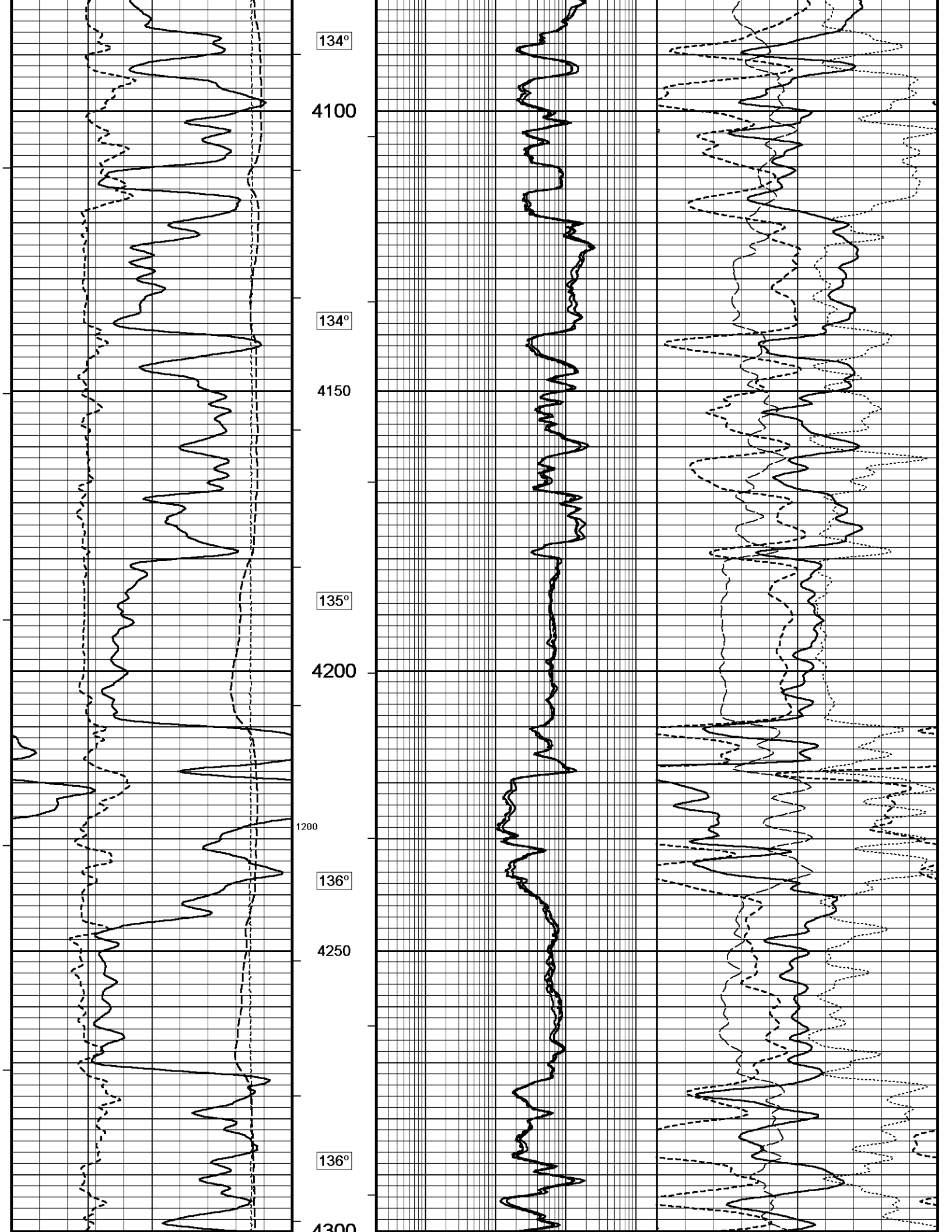


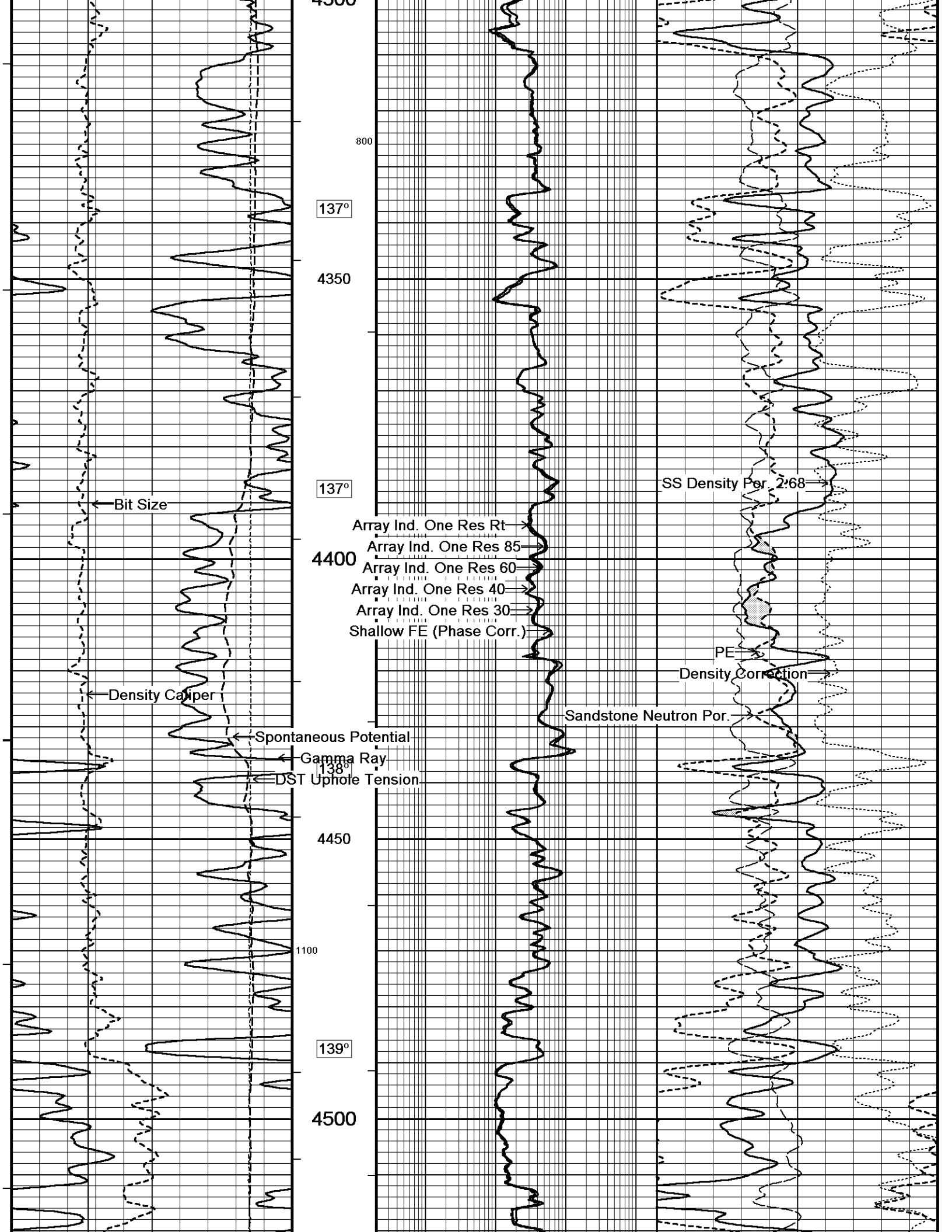












4300

800

137°

4350

137°

4400

4450

1100

139°

4500

Bit Size

Density Caliper

Spontaneous Potential

Gamma Ray

DST Uphole Tension

Array Ind. One Res Rt

Array Ind. One Res 85

Array Ind. One Res 60

Array Ind. One Res 40

Array Ind. One Res 30

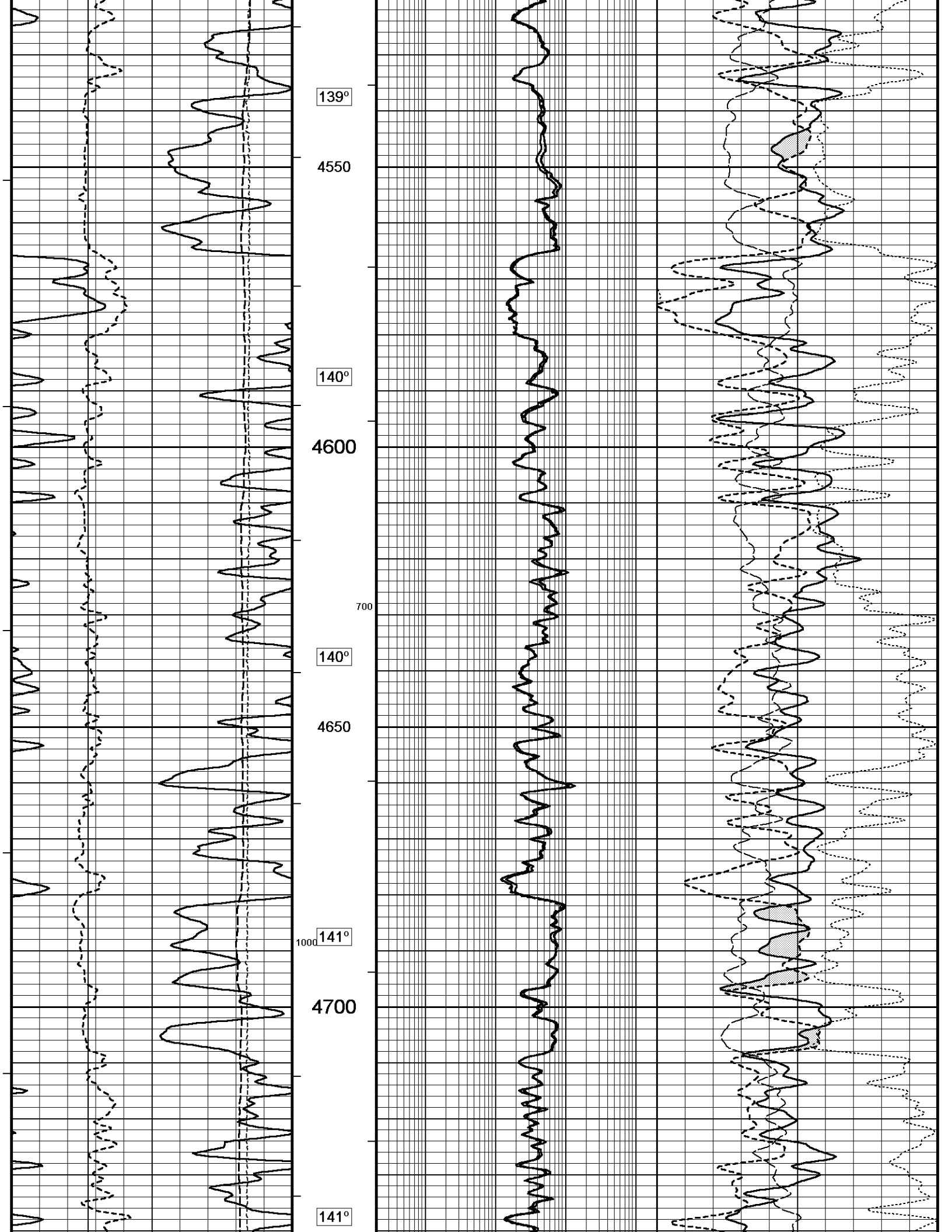
Shallow FE (Phase Corr.)

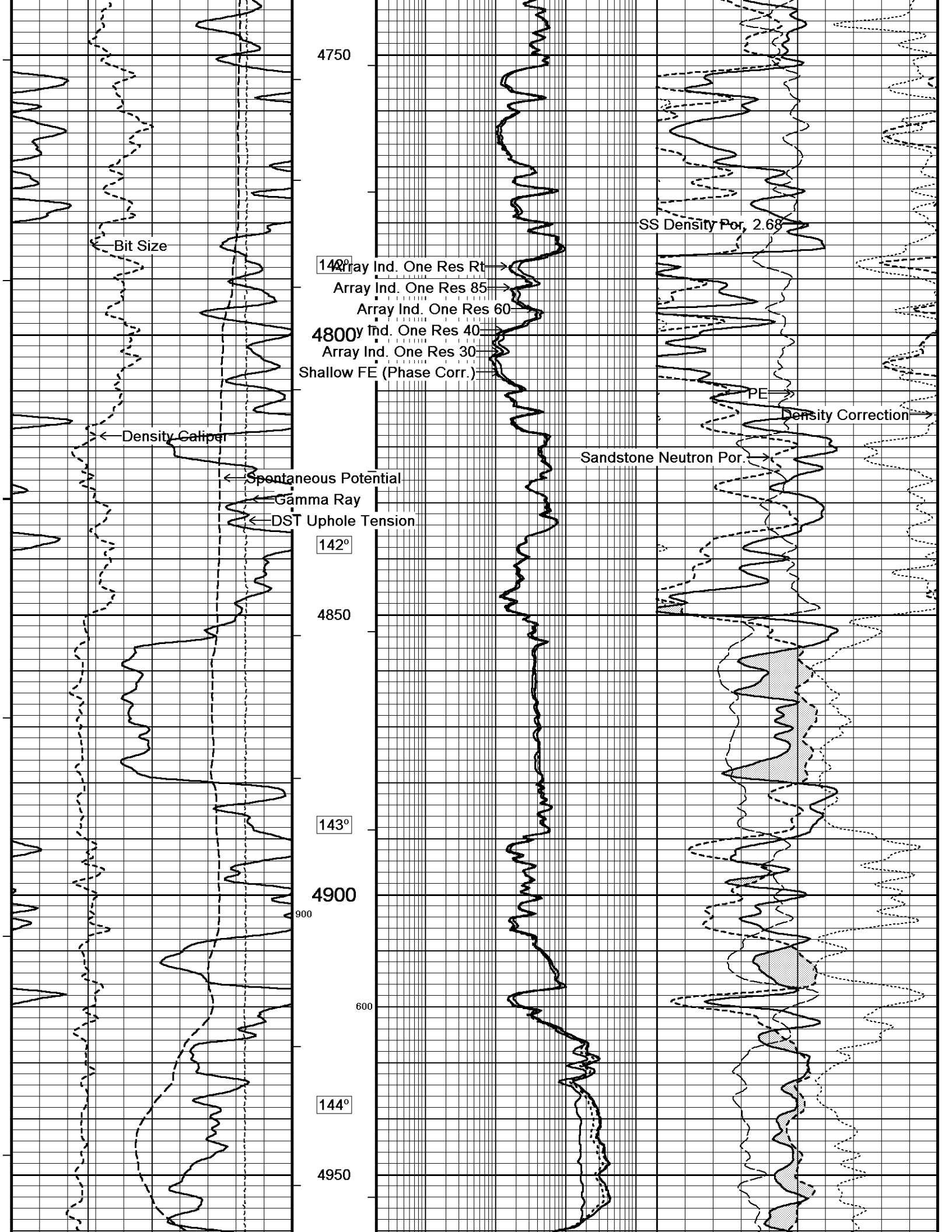
SS Density Por. 2:68

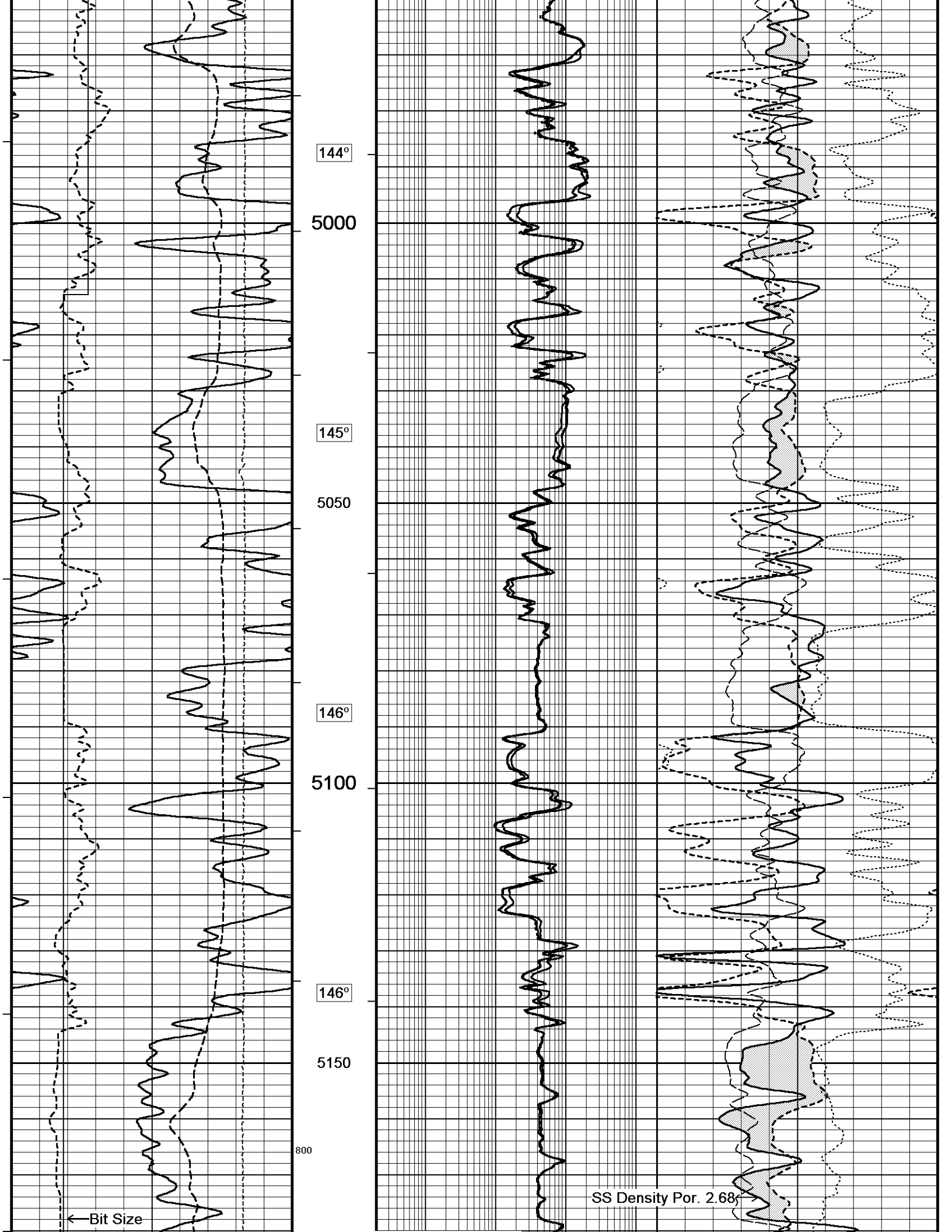
PE

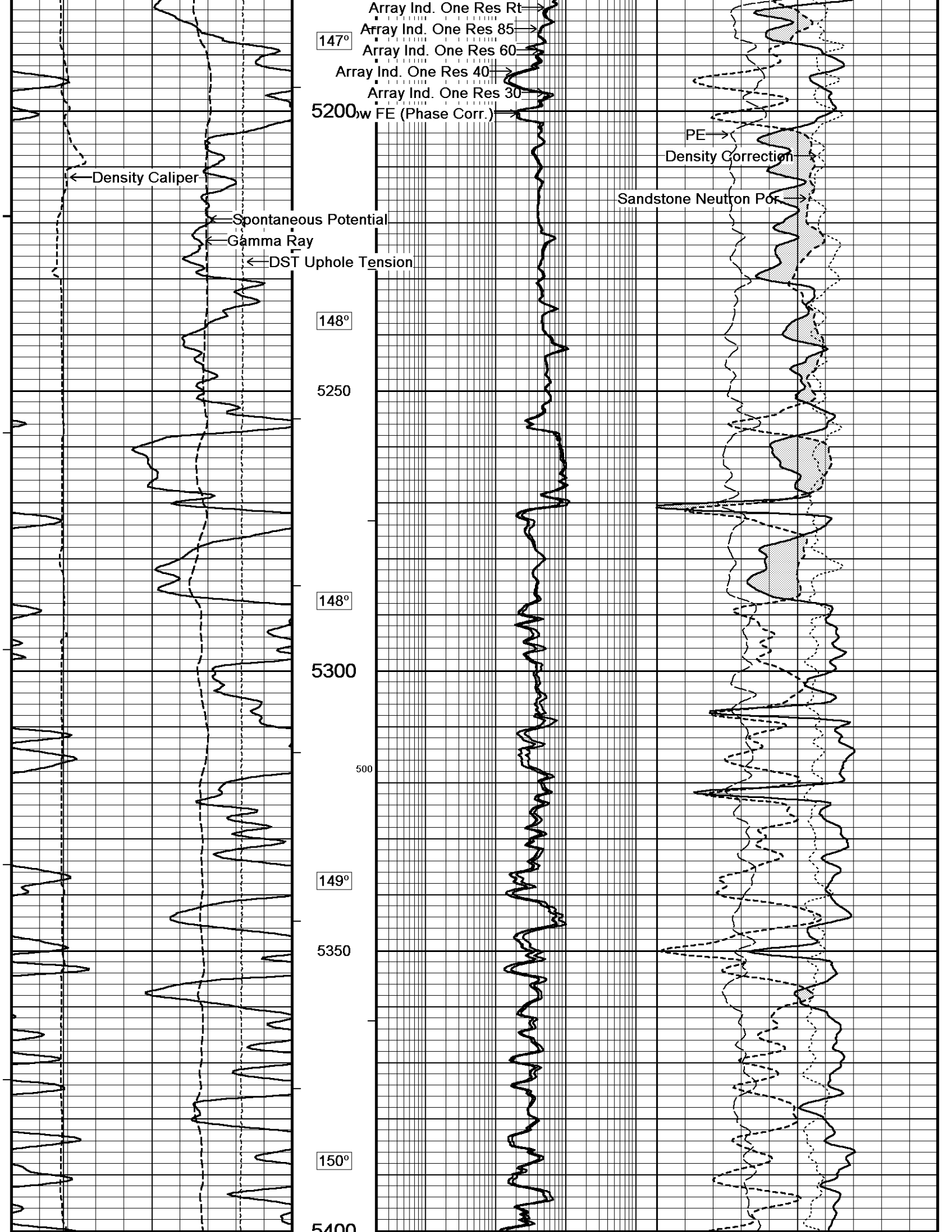
Density Correction

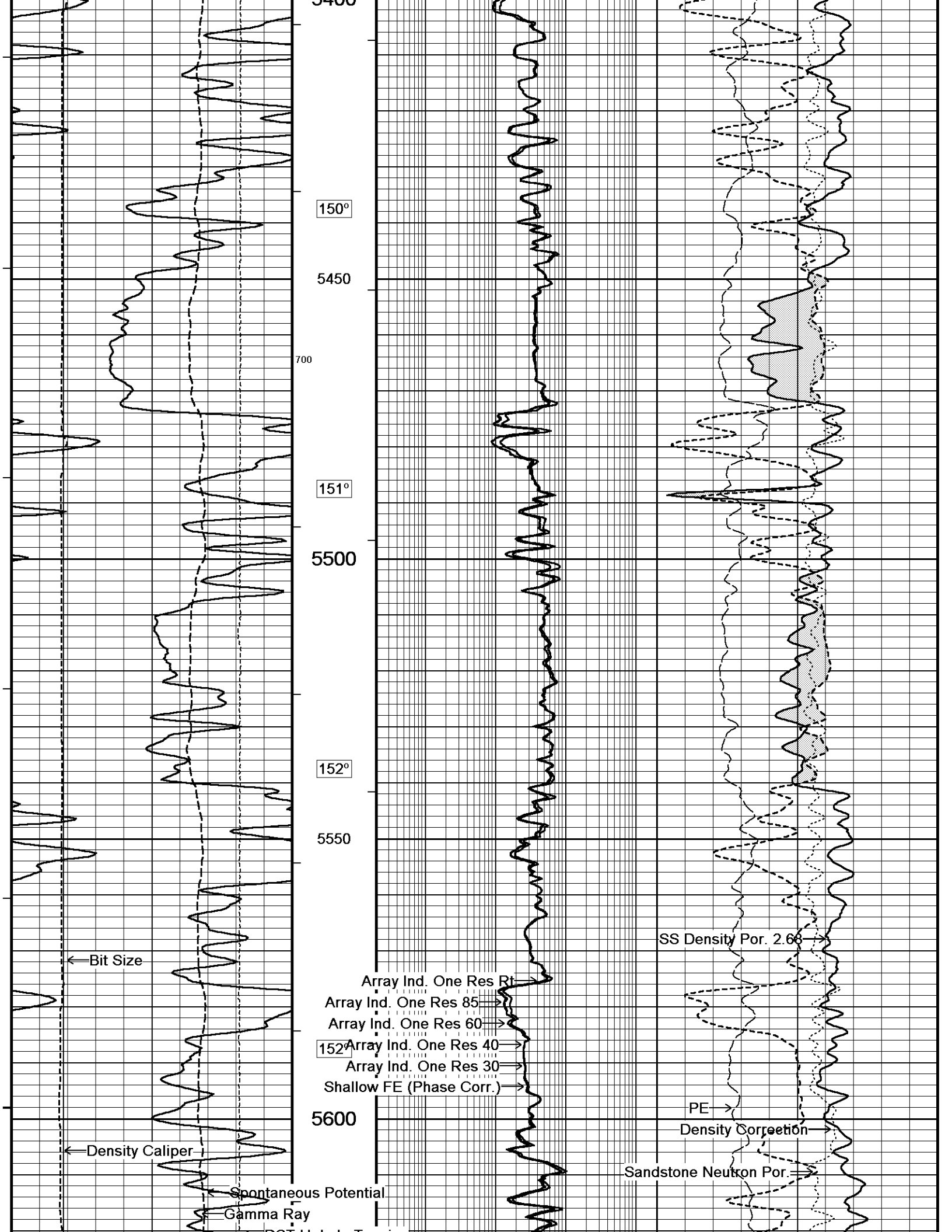
Sandstone Neutron Por.



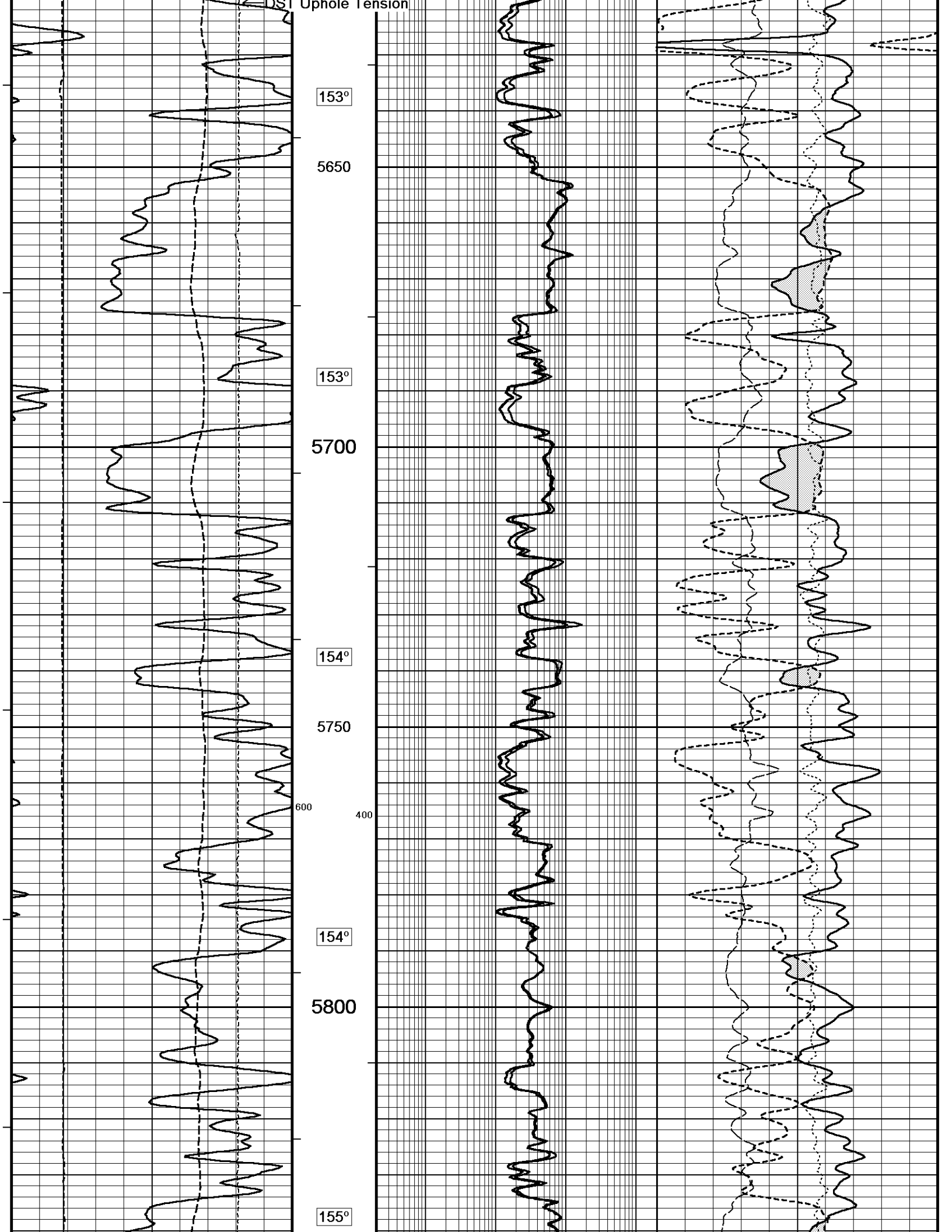


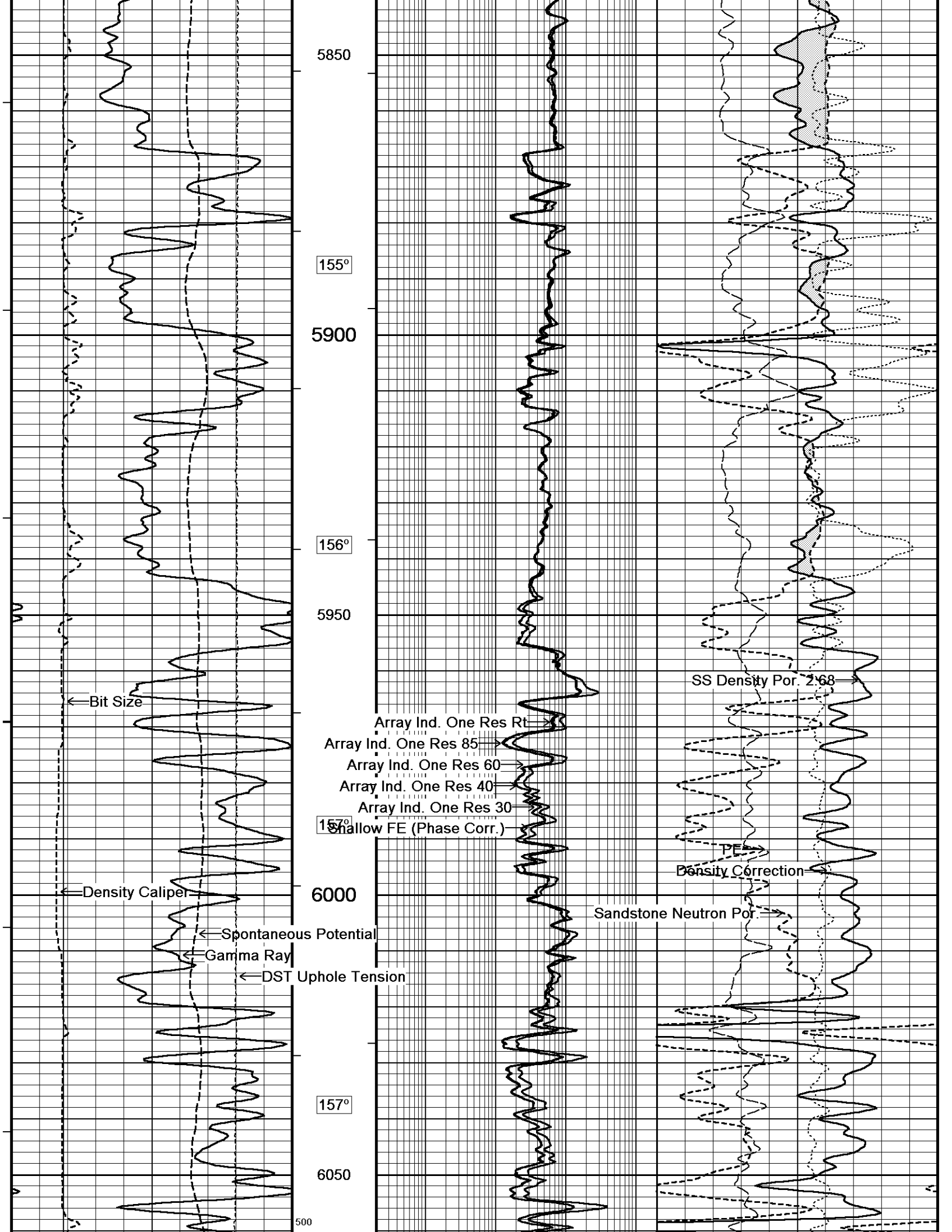


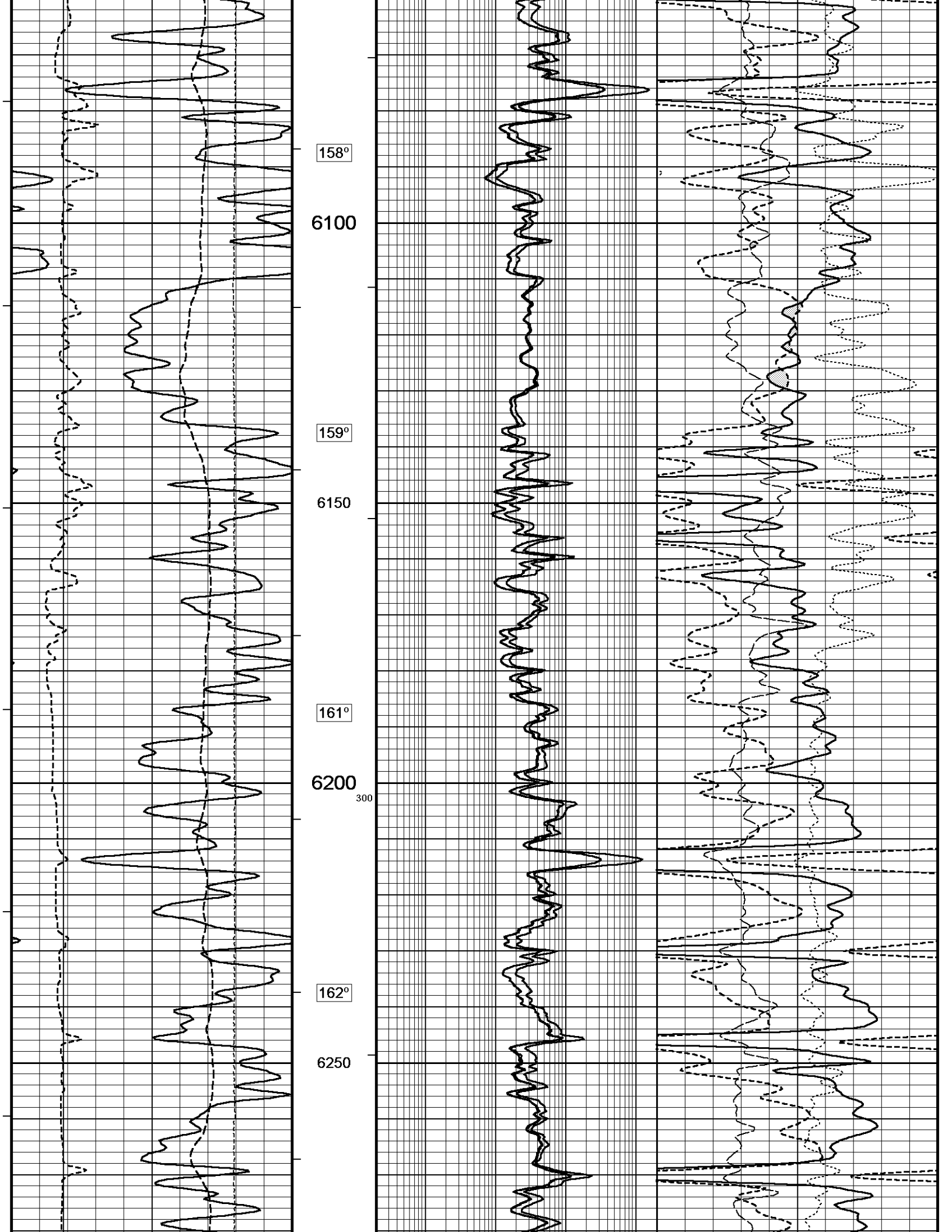


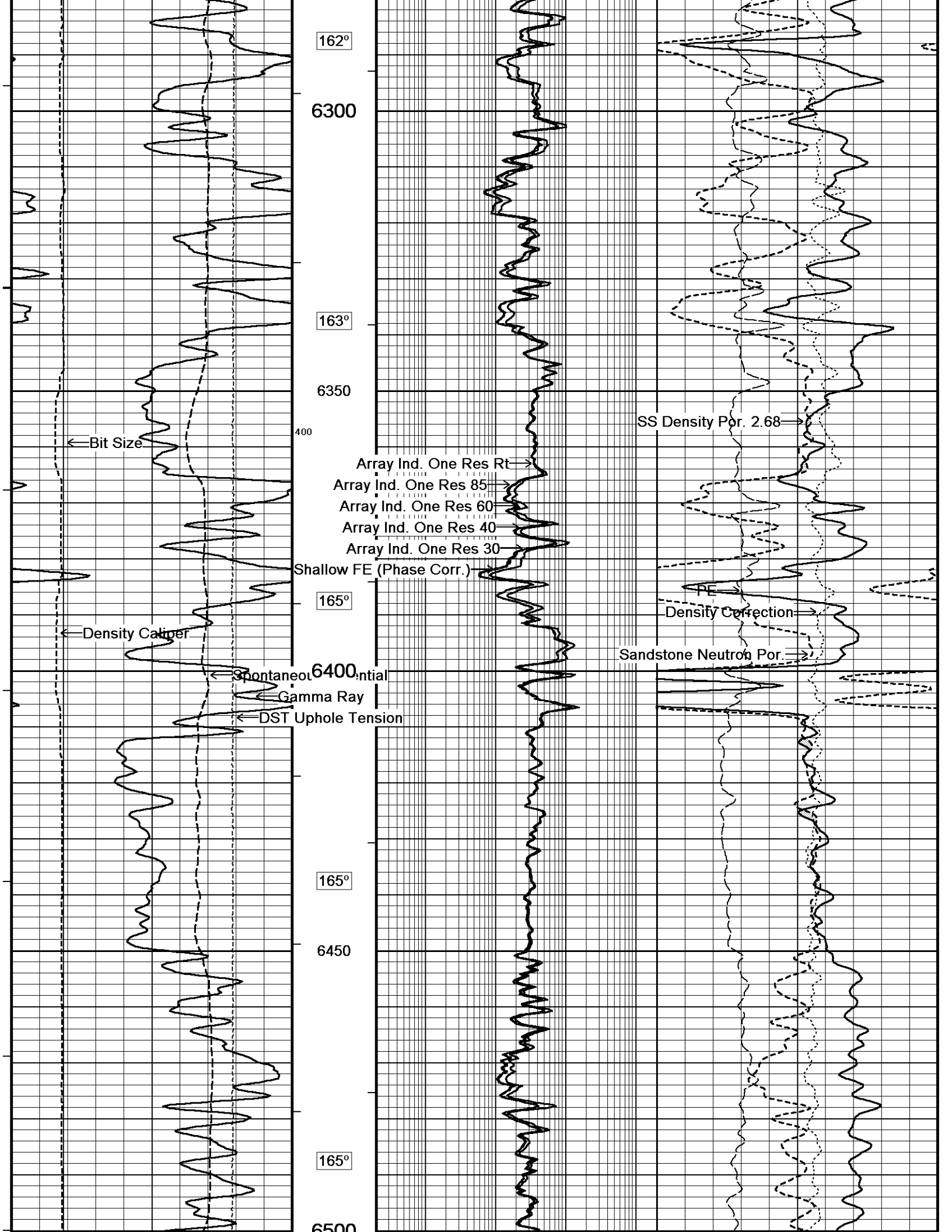


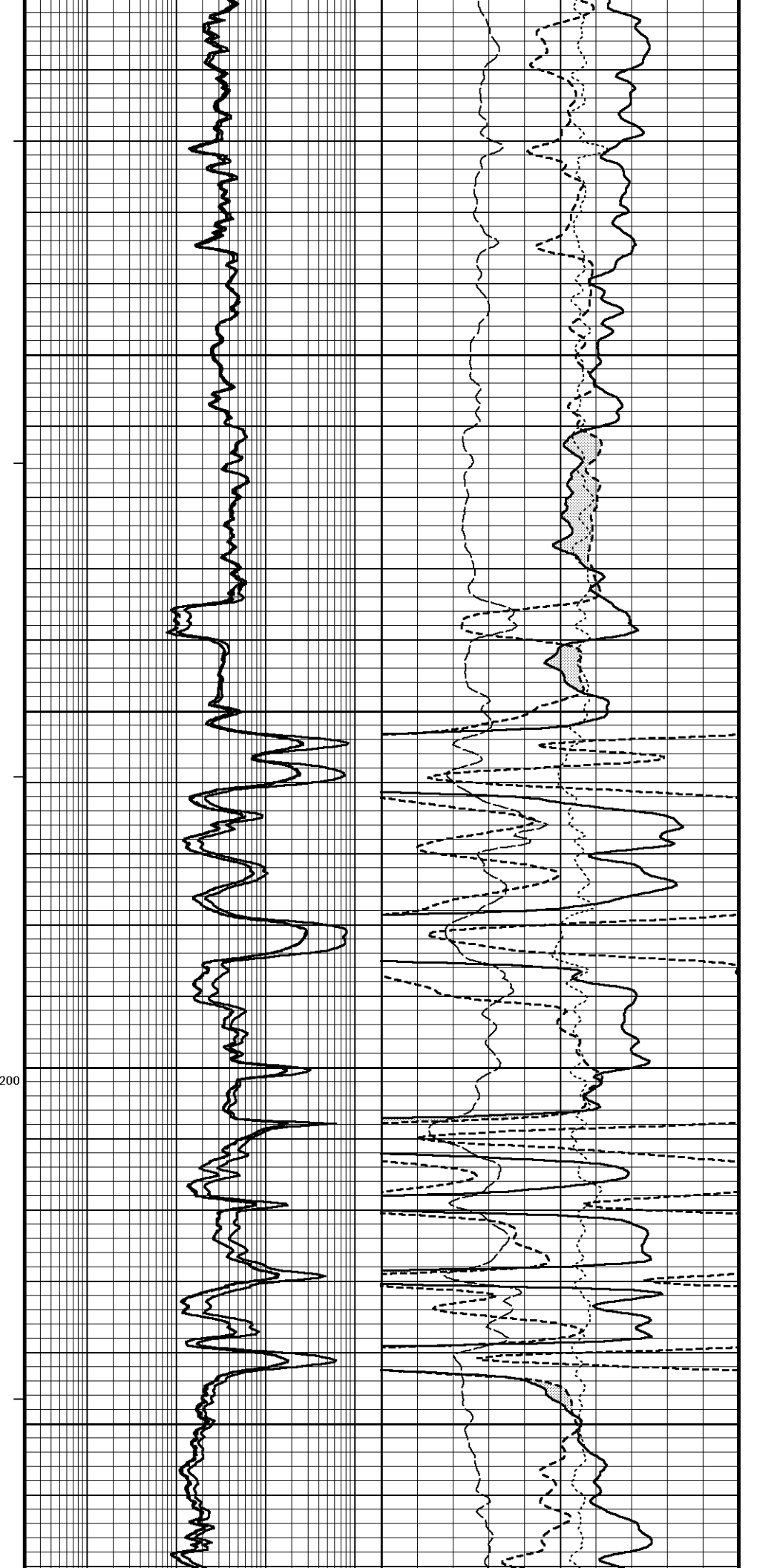
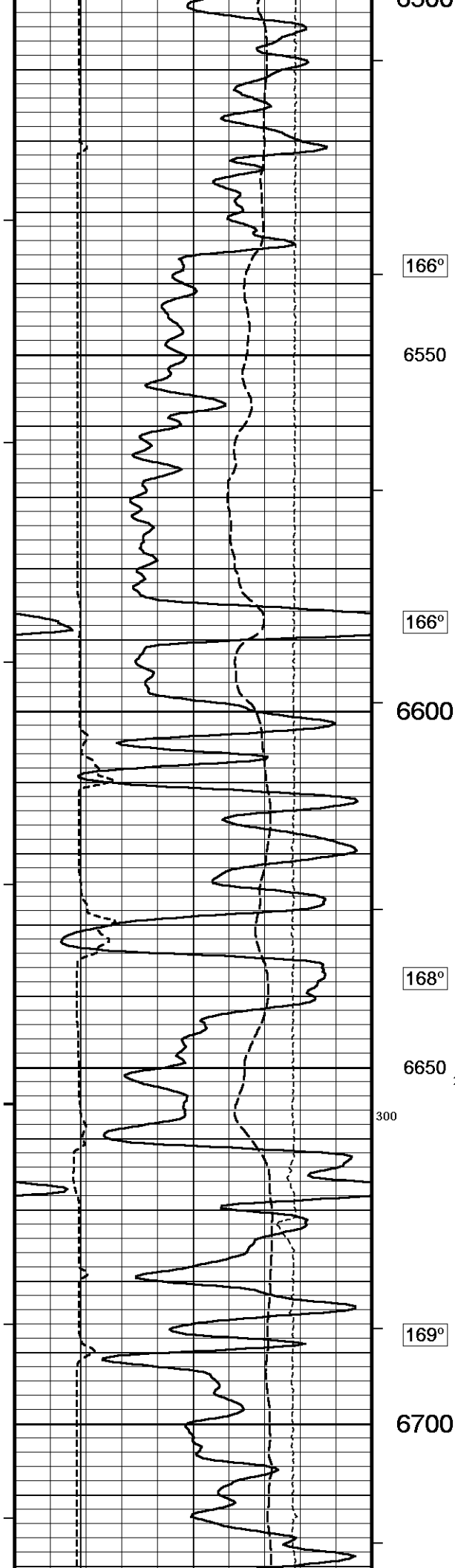
Uphole Tension

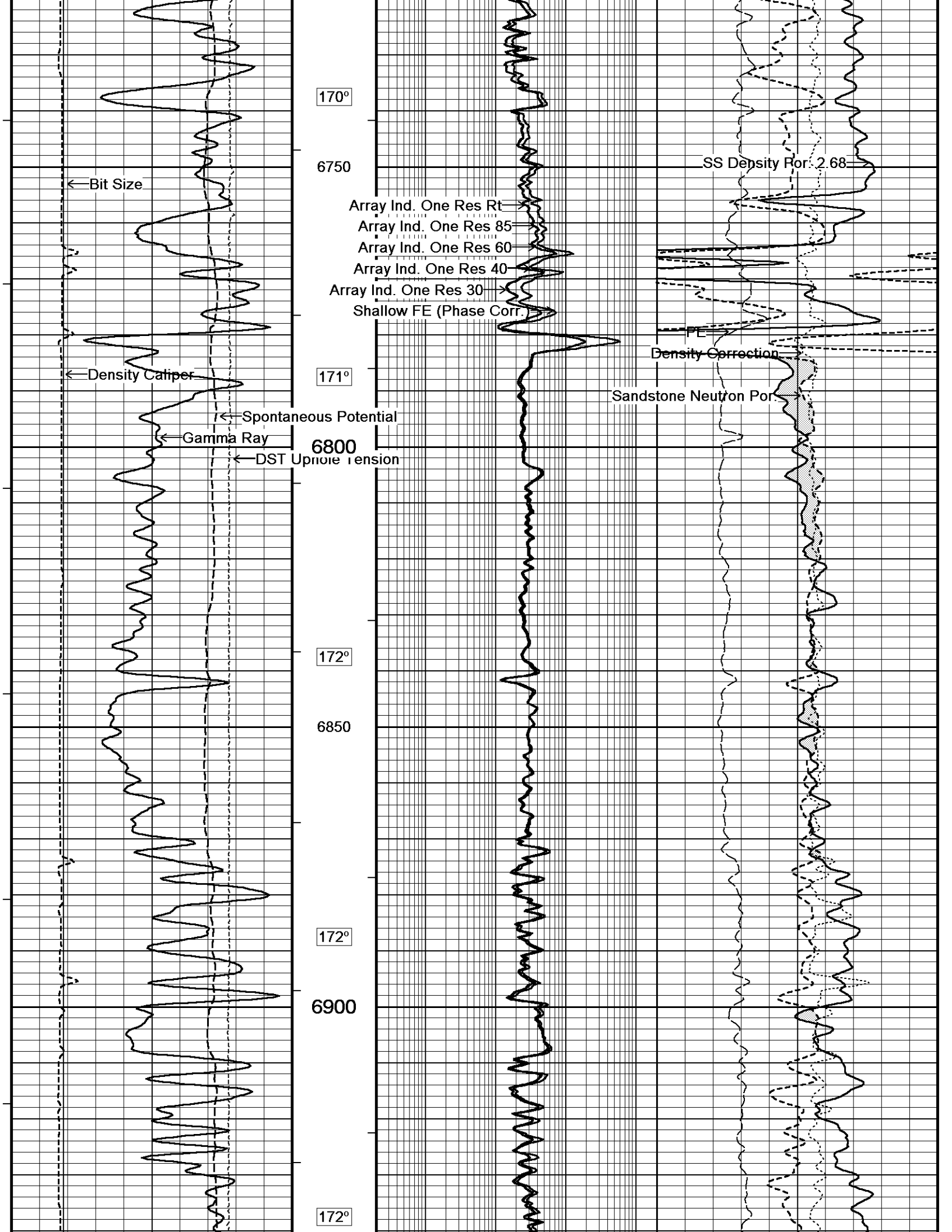


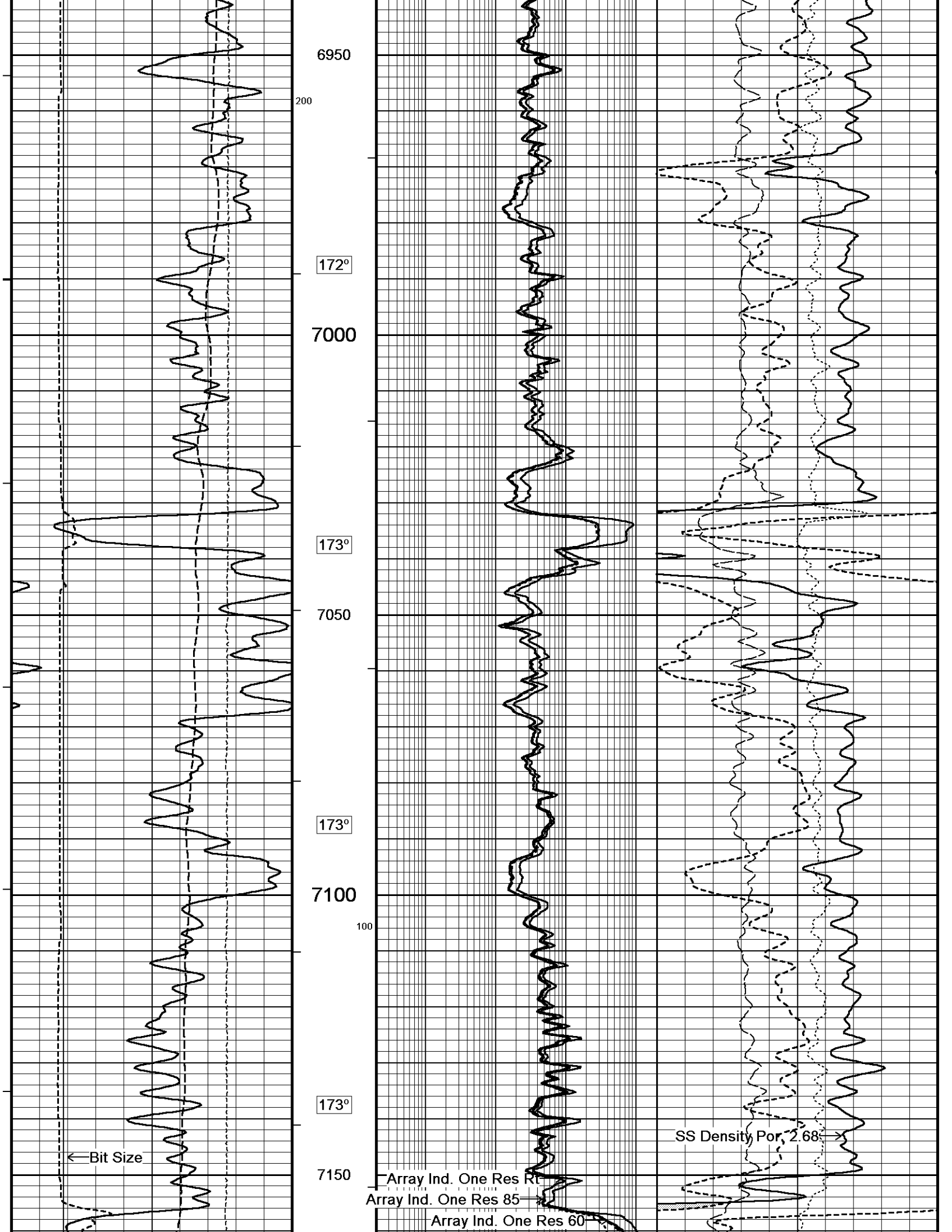












6950

200

172°

7000

173°

7050

173°

7100

100

173°

7150

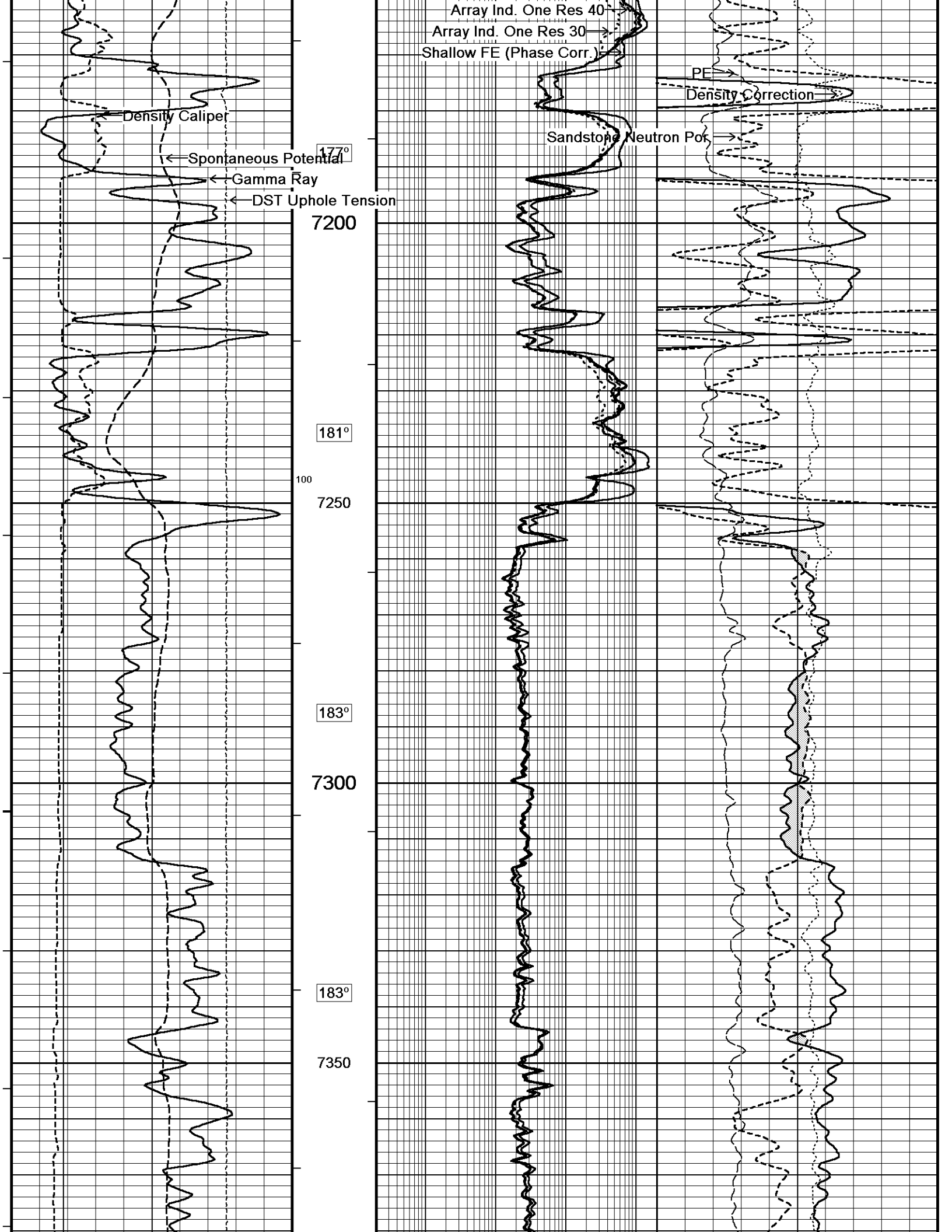
← Bit Size

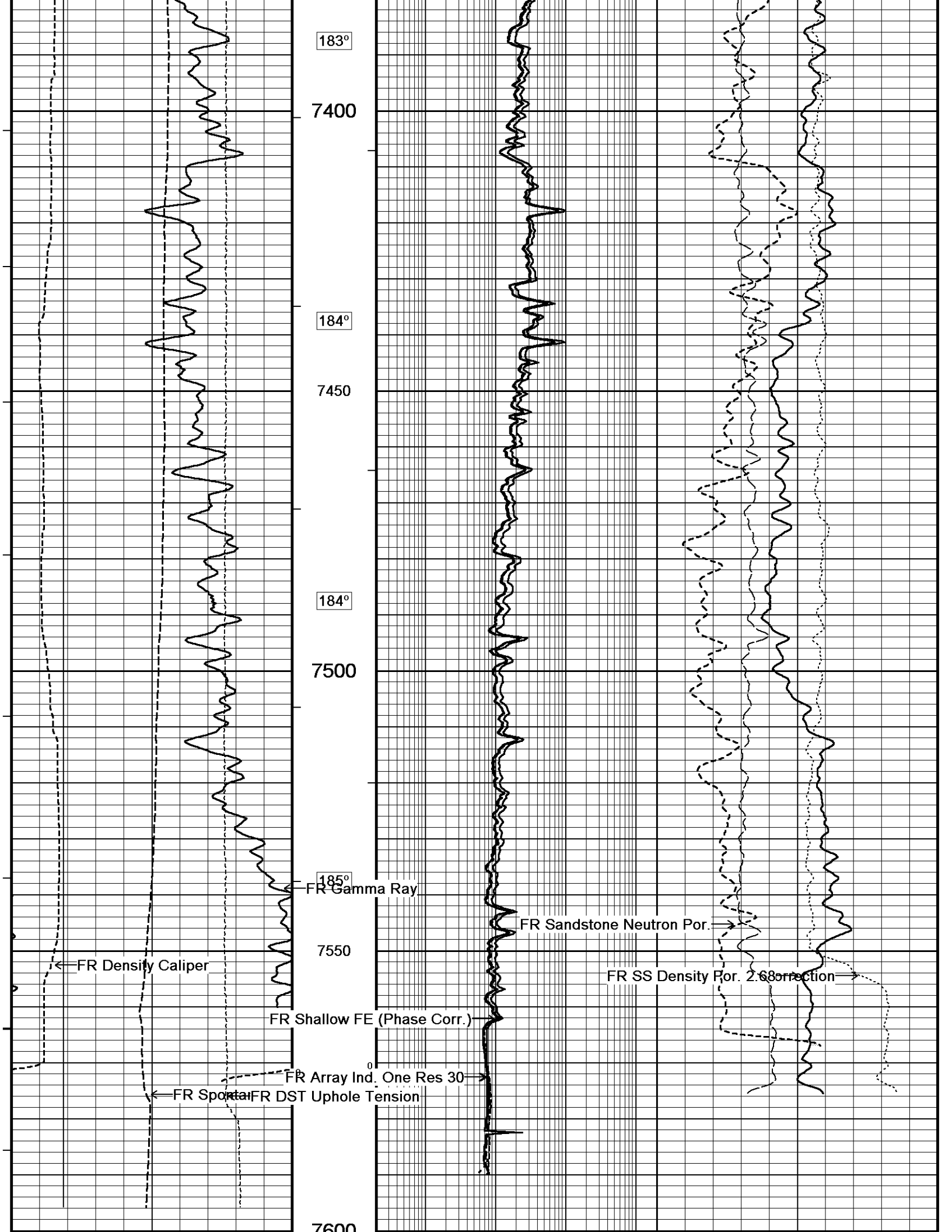
Array Ind. One Res Rt

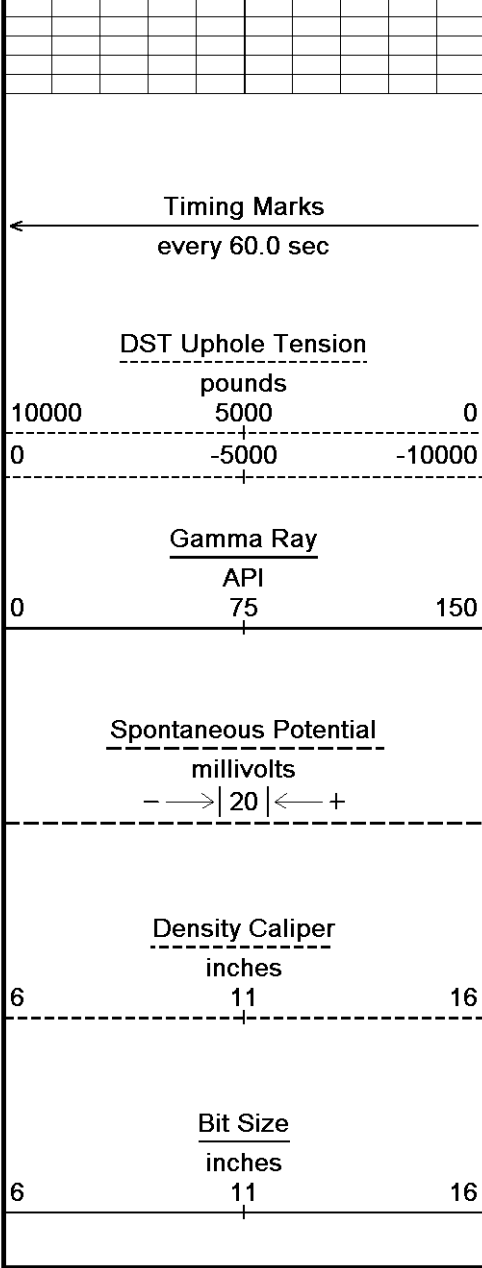
Array Ind. One Res 85

Array Ind. One Res 60

SS Density Por, 2.68 →





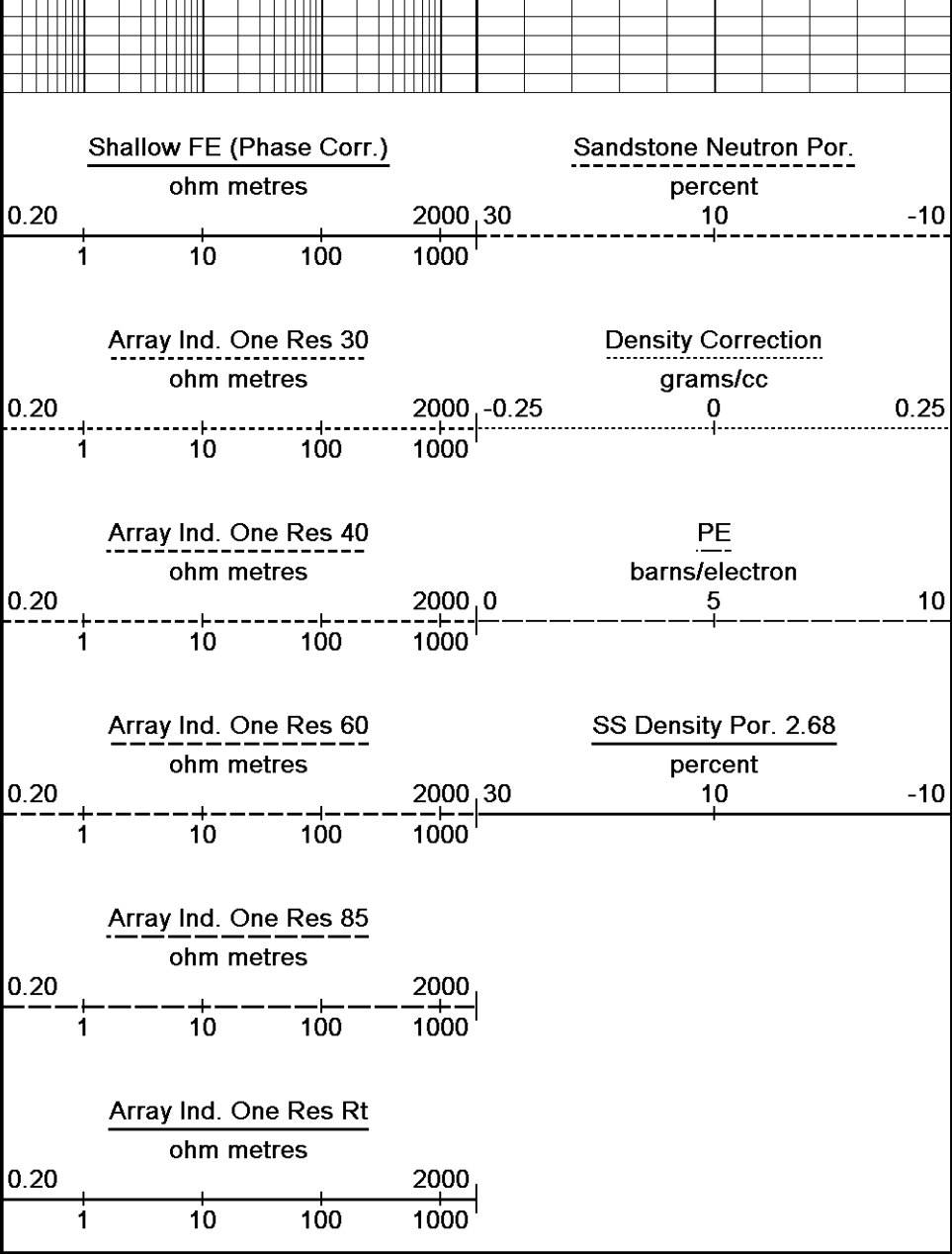


Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

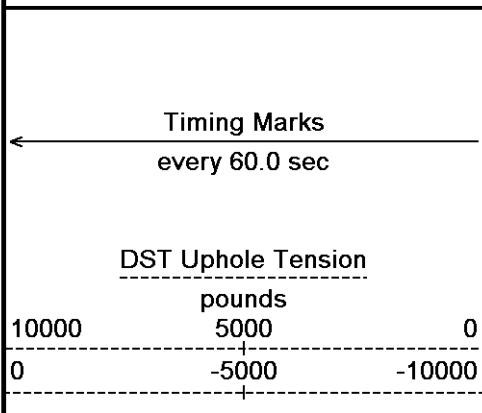


Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 06-FEB-2011 22:00  
 Filename: C:\Minimus\Logs\Bill Barrett\GGU Federal 41D-29-691\MAIN-3.dta  
 Recorded on 06-FEB-2011 17:45  
 System Versions: Logged with 11.01.2198 Processed with 11.01.2198 Plotted with 11.01.2198

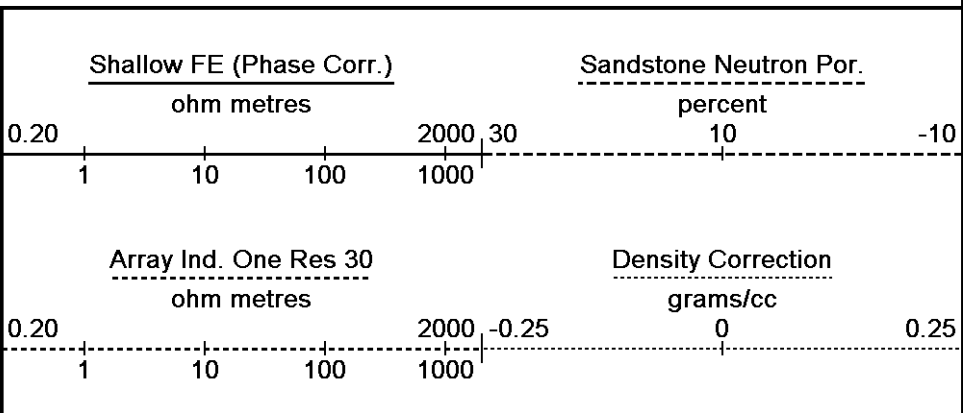
↑ 5 INCH MAIN LOG ↑

↓ MAIN-2 MAIN ↓

Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 06-FEB-2011 22:00  
 Filename: C:\Minimus\Logs\Bill Barrett\GGU Federal 41D-29-691\MAIN-3.dta  
 Recorded on 06-FEB-2011 17:45  
 Filename: C:\Minimus\Logs\Bill Barrett\GGU Federal 41D-29-691\MAIN.dta  
 Recorded on 06-FEB-2011 17:26  
 System Versions: Logged with 11.01.2198 Processed with 11.01.2198 Plotted with 11.01.2198



Depth in Feet



Gamma Ray  
API  
75

0 150

Spontaneous Potential  
millivolts  
--->|20|<---

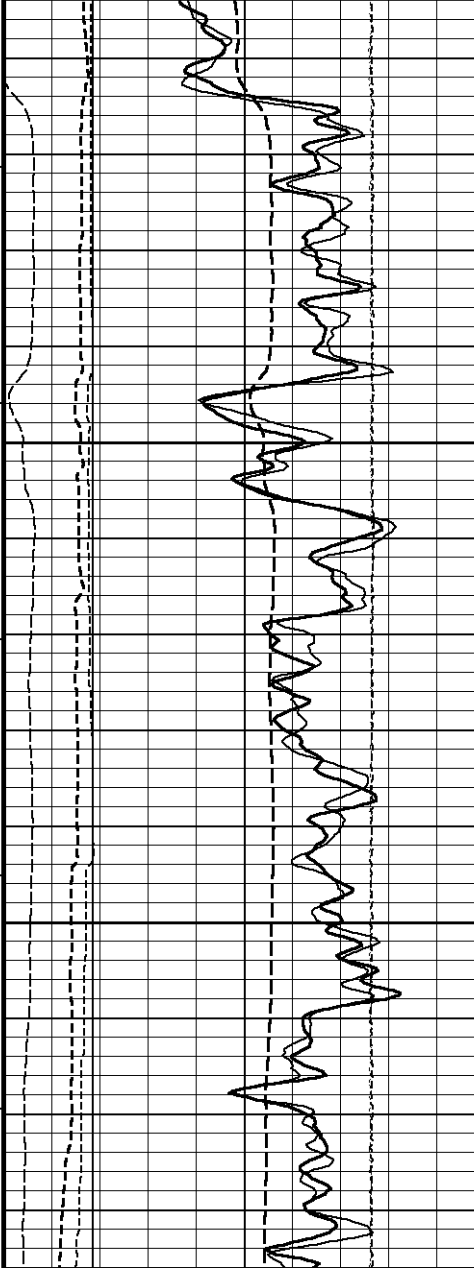
6 11 16

Density Caliper  
inches

6 11 16

Bit Size  
inches

6 11 16



HVI  
every  
10 cu ft

Annular  
Integral  
every  
10 cu ft

Replay  
Scale  
1:240

7300

183°

7350

183°

7400

Array Ind. One Res 40  
ohm metres

0.20 1 10 100 1000 2000 0

Array Ind. One Res 60  
ohm metres

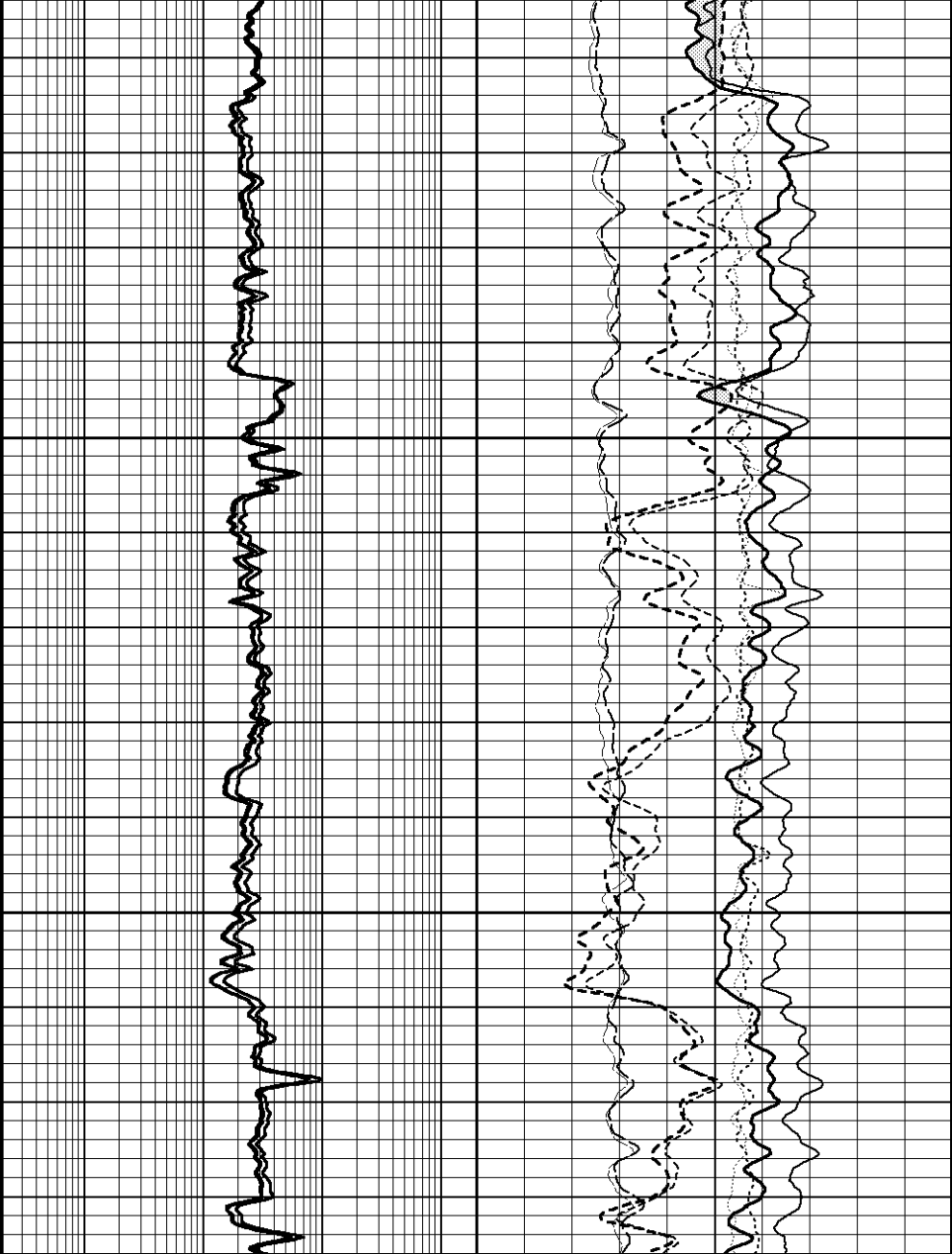
0.20 1 10 100 1000 2000 30

Array Ind. One Res 85  
ohm metres

0.20 1 10 100 1000 2000

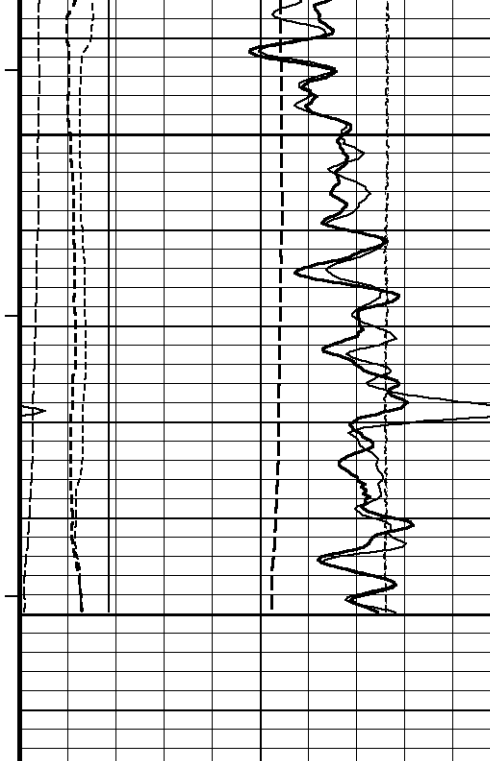
Array Ind. One Res Rt  
ohm metres

0.20 1 10 100 1000 2000



PE  
barns/electron  
5 10

SS Density Por. 2.68  
percent  
10 30



184°

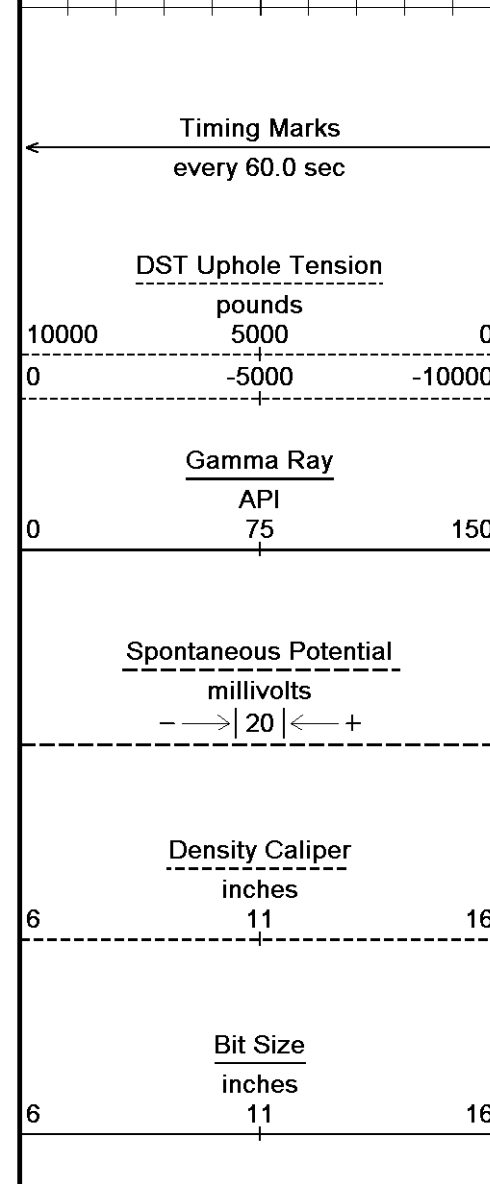
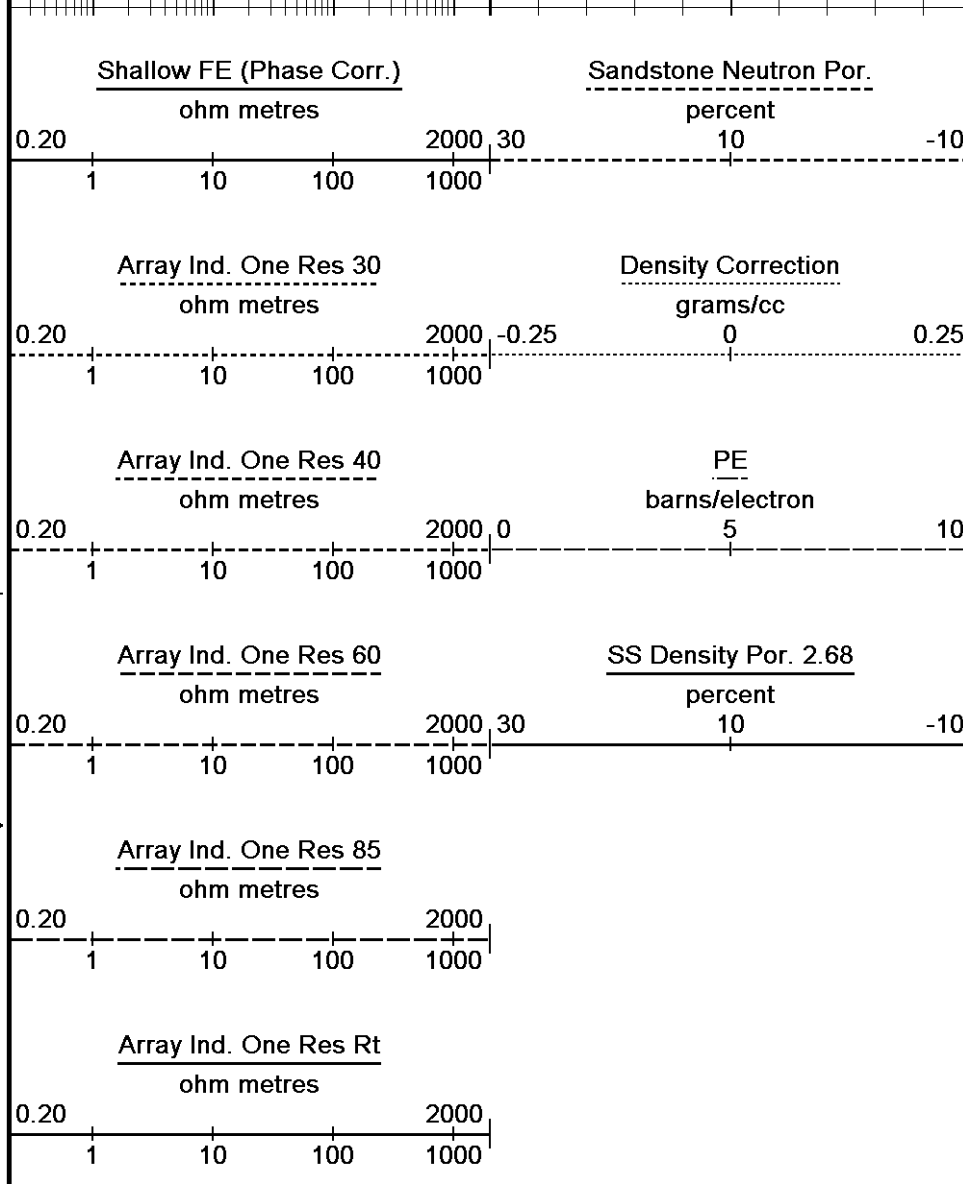
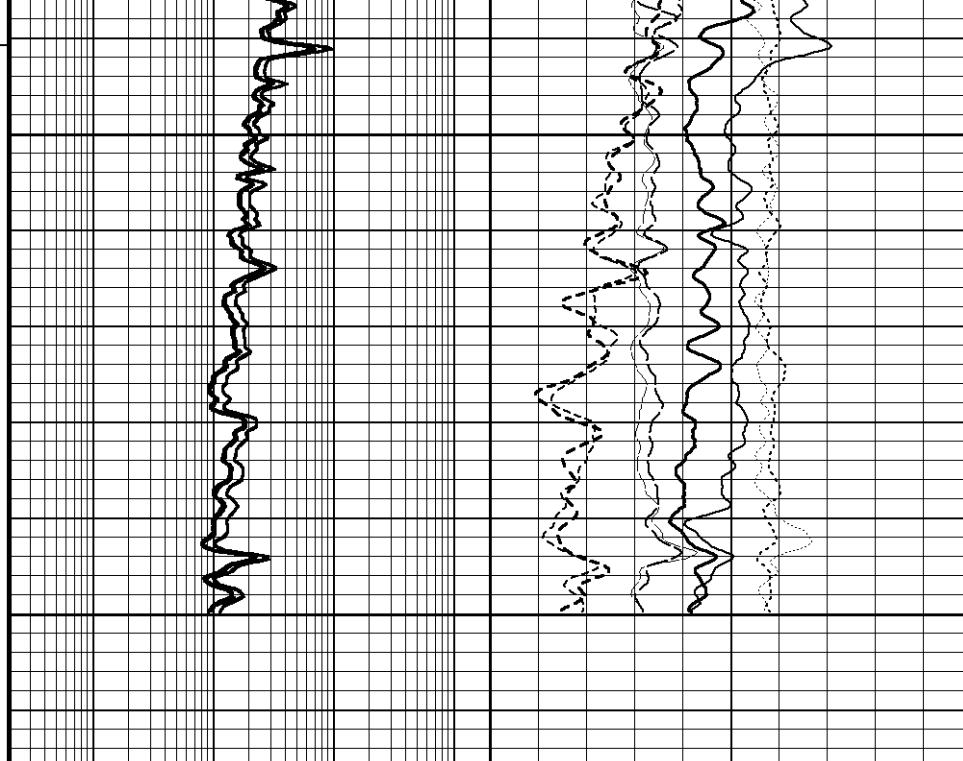
7450

184°

7500

7514

Depth in Feet



Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

**BEFORE SURVEY CALIBRATION**

C:\Minimus\Logs\Bill Barrett\GGU Federal 41D-29-691\MAIN-3.dta

**General Constants All 000**

Last Edited on 06-FEB-2011,15:54

**General Parameters**

Mud Resistivity	3.000	ohm-metres
Mud Resistivity Temperature	90.000	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	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 0**

Field Calibration on 06-FEB-2011 15:48

Reading No	Measured	Calibrated (lbs)
1	16353.34	0.00
2	17112.47	368.20

**High Resolution Temperature Calibration MCG-C 192**

Field Calibration on 06-FEB-2011,15:54

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

**High Resolution Temperature Constants MCG-C 192**

Last Edited on 13-DEC-2010,09:50

Pre-filter Length	11
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**SP Calibration MCG-C 192**

Field Calibration on 06-FEB-2011,15:54

	Measured	Calibrated (mV)
Reference 1	100.9	100.0
Reference 2	-100.2	-100.0

**Gamma Calibration MCG-C 192**

Field Calibration on 06-FEB-2011 13:53

	Measured	Calibrated (API)
Background	104	71
Calibrator (Gross)	1442	983
Calibrator (Net)	1338	912

**Gamma Constants MCG-C 192**

Last Edited on 31-JAN-2011,20:29

Gamma Calibrator Number	GRC-072	
Mud Density	1.00	gm/cc
Caliper Source for Processing	Bit Size	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

**Neutron Calibration MDN-A.B 160**

Base Calibration on 25-DEC-2010,03:47

Field Check on 06-FEB-2011 13:58

**Base Calibration**

	Measured		Calibrated (cps)	
Ratio	Near	Far	Near	Far
	3208	98	3714	110
	32.812		33.764	

Field Calibrator at Base	Calibrated (cps)	1323	1983
Ratio		0.667	
Field Check	Calibrated (cps)	1288	1940
Ratio		0.664	

Neutron Constants MDN-A.B 160

Last Edited on 06-FEB-2011,21:31

Neutron Source Id	1056		
Neutron Jig Number	5922		
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	N/A	kpsi	
Temperature Source	None		
Temperature	N/A	degrees F	
Mud Salinity	0.00	kppm	
Formation Fluid Salinity Source	None		
Formation Fluid Salinity	N/A	kppm	
Barite Mud Correction	Not Applied		

FE Calibration MFE-A.A 85

Base Calibration on 04-FEB-2011 09:44  
Field Check on 06-FEB-2011 14:02

Base Calibration			
	Measured	Calibrated (ohm-m)	
Reference 1	10.7	1.3	
Reference 2	965.5	126.8	
Base Check		281.9	
Field Check		282.1	

FE Constants MFE-A.A 85

Last Edited on 06-FEB-2011,20:58

Running Mode	No Sleeve		
MFE K Factor	0.1268		
Caliper Source for FE correction	Bit Size		
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-B.A 212

Field Calibration on 25-JAN-2011,16:12

	Measured	Calibrated(Deg F)	
Lower	10.00	50.00	
Upper	100.00	212.00	

High Resolution Temperature Constants MAI-B.A 212

Last Edited on 03-JAN-2011,01:08

Pre-filter Length	11
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Induction Calibration MAI-B.A 212

Base Calibration on 12-NOV-2010,10:48  
Field Check on 06-FEB-2011 14:07

Base Calibration				
Test Loop Calibration		Measured	Calibrated (mmho/m)	
Channel	Low	High	Low	High
1	16.6	473.9	9.3	966.2
2	6.2	387.5	7.6	821.4
3	3.9	263.1	5.2	566.0
4	2.0	132.9	2.6	279.2
Array Temperature		71.2	Deg F	
Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High

1	13.3	3845.3	13.5	3845.0
2	29.5	3491.6	29.5	3491.7
3	27.4	3023.7	27.4	3023.9
4	19.5	2088.0	19.5	2088.0
Deep	17.0	2014.9	16.9	2015.1
Medium	39.5	3941.1	39.5	3941.5
Shallow	44.0	5105.2	44.0	5105.3
Array Temperature		56.5	57.9	Deg F

Induction Constants MAI-B.A 212

Last Edited on 06-FEB-2011,14:04

Induction Model		RtAP-WBM	
Caliper for Borehole Corr.		Bit Size	
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		0.0000	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-B 167

Base Calibration on 21-JAN-2011 16:11  
Field Calibration on 06-FEB-2011,14:09

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	18525	4.00
2	27040	5.96
3	34832	7.98
4	43072	9.86
5	52544	11.88
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	6.05	5.96

Photo Density Calibration MPD-B 167

Base Calibration on 21-JAN-2011 15:55  
Field Check on 06-FEB-2011 15:53

Density Calibration				
Base Calibration				
		Measured	Calibrated (sdu)	
		Near	Near	Far
Reference 1	48339	18513	53115	19186
Reference 2	22777	2040	25020	2520

Field Check at Base  
1168.2      1745.6

Field Check  
1176.7      1744.7

PE Calibration

Base Calibration	WS	Measured WH	Ratio	Calibrated Ratio
Background	216	1046		
Reference 1	14699	48168	0.307	0.320
Reference 2	5890	22643	0.263	0.272

Field Check at Base  
216.3      1045.7

Field Check  
212.4      1046.5

Density Constants MPD-B 167

Last Edited on 06-FEB-2011, 13:47

Density Source Id	P50561B	
Nylon Calibrator Number	507	
Aluminium Calibrator Number	507	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.25	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	0.00	

AFTER SURVEY CALIBRATION

C:\Minimus\Logs\Bill Barrett\GGU Federal 41D-29-691\MAIN-3.hta

Gamma Check MCG-C 192

Field Calibration on 06-FEB-2011 13:53  
After Survey Check on 06-FEB-2011 21:30

	Before (API)	After (API)
Background	71	59
Calibrator (Gross)	983	971
Calibrator (Net)	912	912

Neutron Check MDN-A.B 160

Before Survey Check on 06-FEB-2011 13:58  
After Survey Check on 06-FEB-2011 21:36

Near (cps)		Far (cps)		Ratio
Before	After	Before	After	
1288	1284	1940	1938	
	Before	After		
	0.664	0.663		

FE Check MFE-A.A 85

Before Survey Check 06-FEB-2011 14:02  
After Survey Check on 06-FEB-2011 20:59

Before (ohm-m)	After (ohm-m)
282.1	281.5

Channel	Before Survey (mmho/m)		After Survey (mmho/m)		
	Low	High	Low	High	
1	13.5	3845.0	15.4	3844.2	
2	29.5	3491.7	30.1	3489.7	
3	27.4	3023.9	27.8	3022.1	
4	19.5	2088.0	19.6	2086.8	
Deep	16.9	2015.1	17.2	2014.0	
Medium	39.5	3941.5	39.7	3938.9	
Shallow	44.0	5105.3	44.9	5102.2	
Array Temperature		57.9		87.0	Deg F

Photo Density Check MPD-B 167

Before Survey Check on 06-FEB-2011 15:53  
After Survey Check on 06-FEB-2011 21:04

Density Check

	Near		Far	
	Before	After	Before	After
	1176.7	1172.2	1744.7	1745.3

PE Check

	Before	After
WS	212.4	212.9
WH	1046.5	1045.4

DOWNHOLE EQUIPMENT

C:\Minimus\Logs\Bill Barrett\GGU Federal 41D-29-691\MAIN-3.dta

3/8" Triple Cone Cable Head (MCB F B)  
MCB-F.B 9 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

SHA-F Compact Swivel Head Adaptor  
SHA-F 82 LG: 2.74 ft WT: 26.5 lb OD: 2.24 in

Compact Comms Gamma  
MCG-C 192 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Neutron  
MDN-A.B 160 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

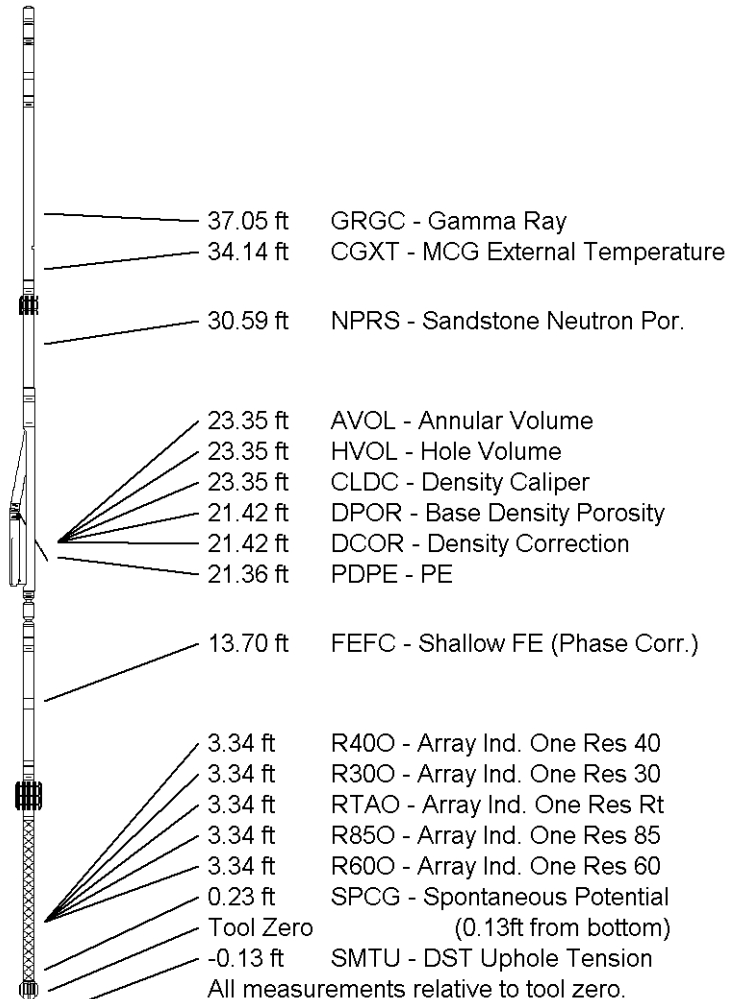
Compact Density/Caliper  
MPD-B 167 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

SKJ-E.A Compact Knuckle Joint  
SKJ-E.A 114 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Focussed Electric  
MFE-A.A 85 LG: 6.03 ft WT: 48.5 lb OD: 2.24 in

Compact Induction  
MAI-B.A 212 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 46.65 ft Weight: 368.2 lb



WELL  
FIELD  
PROVINCE/COUNTY  
COUNTRY/STATE

COSE FEDERAL HD 20 001  
GIBSON GULCH  
GARFIELD  
U.S.A. / COLORADO

Elevation Kelly Bushing	6127.00	feet	First Reading	7576.00	
Elevation Drill Floor	6126.00	feet	Depth Driller	7575.00	feet
Elevation Ground Level	6104.00	feet	Depth Logger	7576.00	feet



**Weatherford**<sup>®</sup>

COMPACT TRIPLE COMBO  
QUICKLOOK  
LOG

