

**Weatherford****COMPOSITE
LOG**

COMPANY	TAOS RESOURCES OPERATING CO.			
WELL	WEST MADDIX UNIT #18			
FIELD	MADDIX NORTH			
PROVINCE/COUNTY	COWLEY			
COUNTRY/STATE	USA / KANSAS			
LOCATION	1320' FSL & 2310' FWL E/2-E/2-SW			
SEC 11	TWP 33S	RGE 5E	Other Services	
			MDN/MPD	CXD
			MML	MBN
			SGS	MPD/MDN
API NUMBER	15-035-24552	SGS		
Permanent Datum GL, Elevation	1853 feet			
Log Measured From	KB		Elevations:	feet
			KB	1863.00
			DF	1862.00
			GL	1853.00
Drilling Measured From	KB			
Date	01-FEB-2014			
Run Number	ONE			
Service Order	5820-78486976			
Depth Driller	3700.00	feet		
Depth Logger	3695.00	feet		
First Reading	3692.00	feet		
Last Reading	266.00	feet		
Casing Driller	267.00	feet		
Casing Logger	266.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	GEL			
Density / Viscosity	9.50 lb/USg	42.00 CP		
PH / Fluid Loss	9.50	8.00 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	2.60 @ 66.0	ohm-m		
Rmf @ Measured Temp	2.08 @ 66.0	ohm-m		
Rmc @ Measured Temp	3.12 @ 66.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	1.62 @108.0	ohm-m		
Time Since Circulation	5 HOURS			
Max Recorded Temp	108.00	deg F		
Equipment / Base	13226	OKC		
Recorded By	L.HEATON			
Witnessed By	S. BALL			

BOREHOLE RECORD

Last Edited: 01-FEB-2014 18:59

Bit Size inches	Depth From feet	Depth To feet
7.875	267.00	3700.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	267.00	24.00

REMARKS

TOOLS RAN: MCG,MBN,SGS, MML, MDN, MPD,MDM,MRD,MTD, MFE, MSS, MAI RAN IN COMBINATION.

HARDWARE:

MAI: TWO 0.5 INCH STANDOFFS USED.

MFE: ONE 0.5 INCH STANDOFF USED.

MDN: DUAL NEUTRON BOW SPRINGS USED.

MPD: 8 INCH PROFILE PLATE USED.

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 1390 CU.FT.

ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO SURFACE CASING = 840 CU.FT.

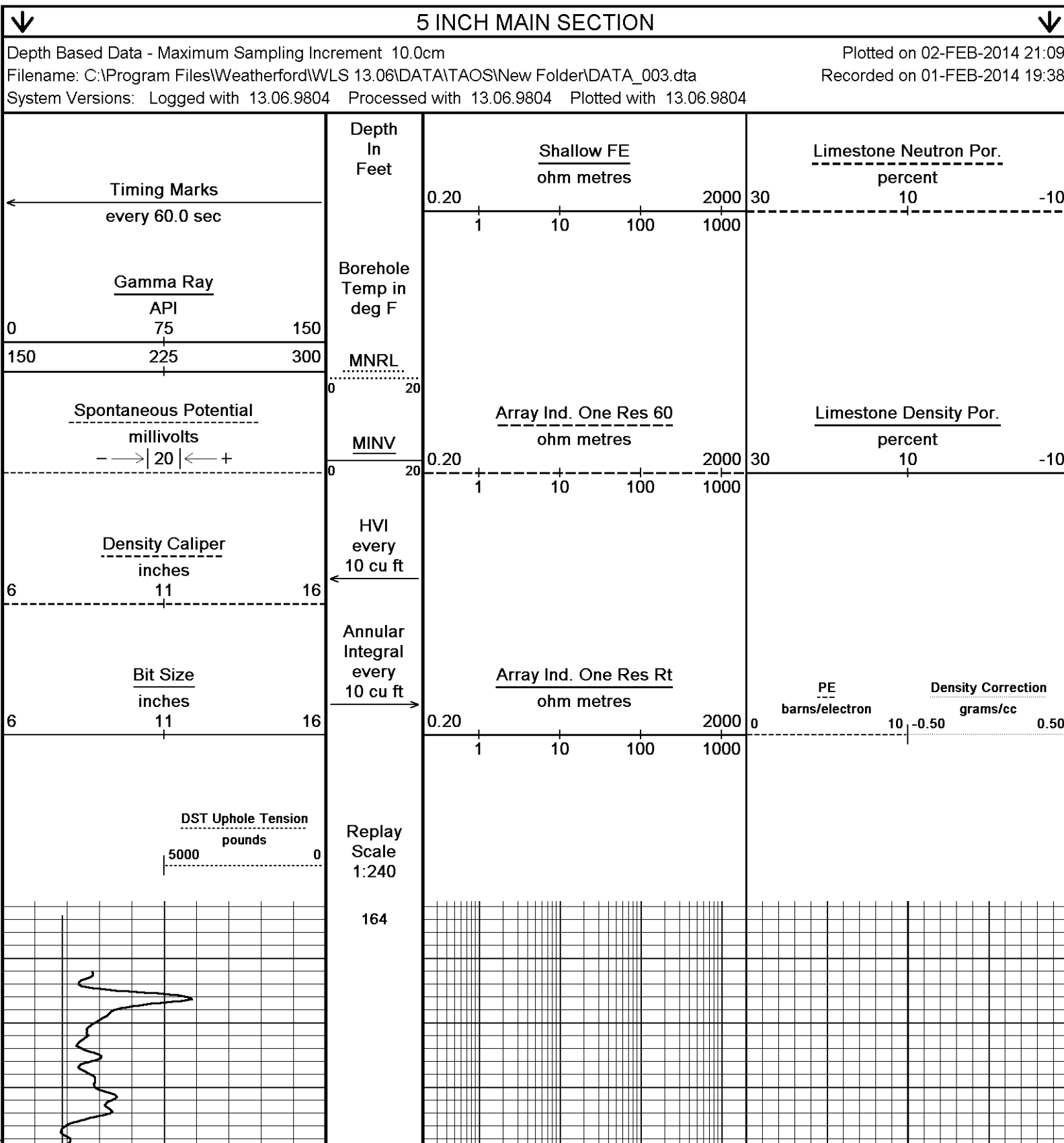
SERVICE ORDER # 5820-78486976

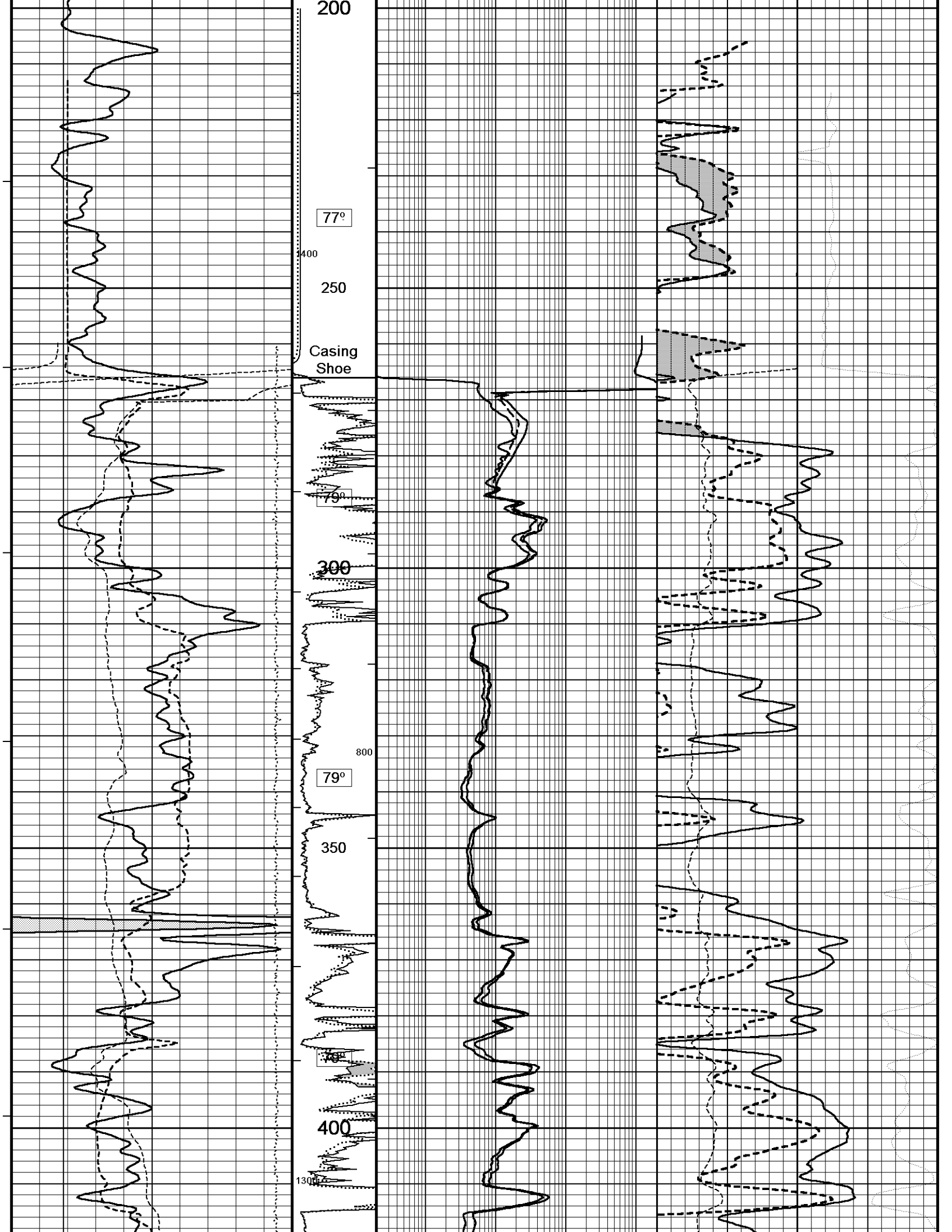
RIG: VAL RIG #3

OPERATOR(S): P. BURGER

HOLE WASHOUTS AND RUGOSITY WILL AFFECT LOG QUALITY AND REPEATABILITY.

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.





Bit Size

Array, Ind. One Res Rt

80°
Array, Ind. One Res 60

Limestone Density Por.

PE

Density Correction

Density Caliper

Spontaneous Potential

Gamma Ray

DST Uphole Tension

Shallow FE

Limestone Neutron Por.

80°

500

81°

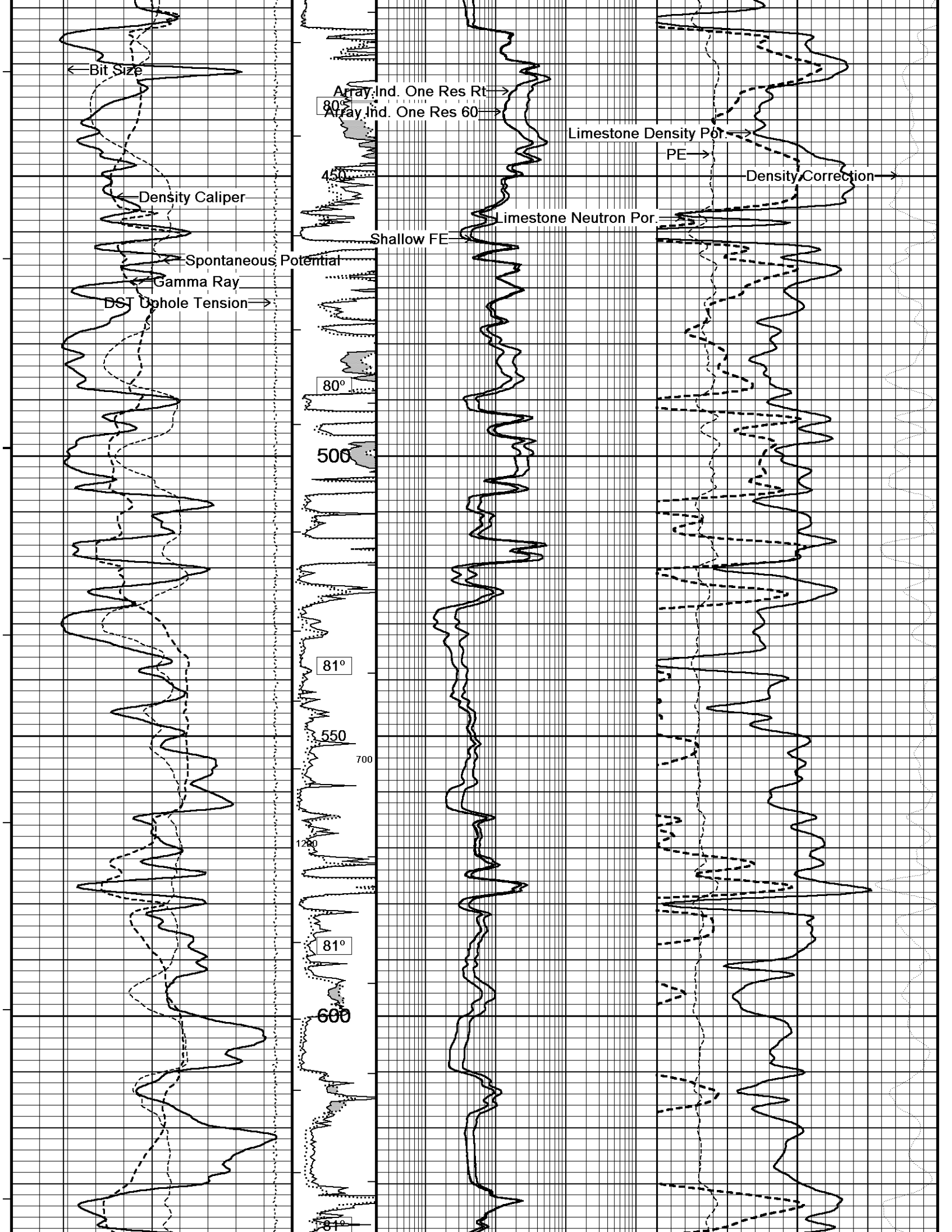
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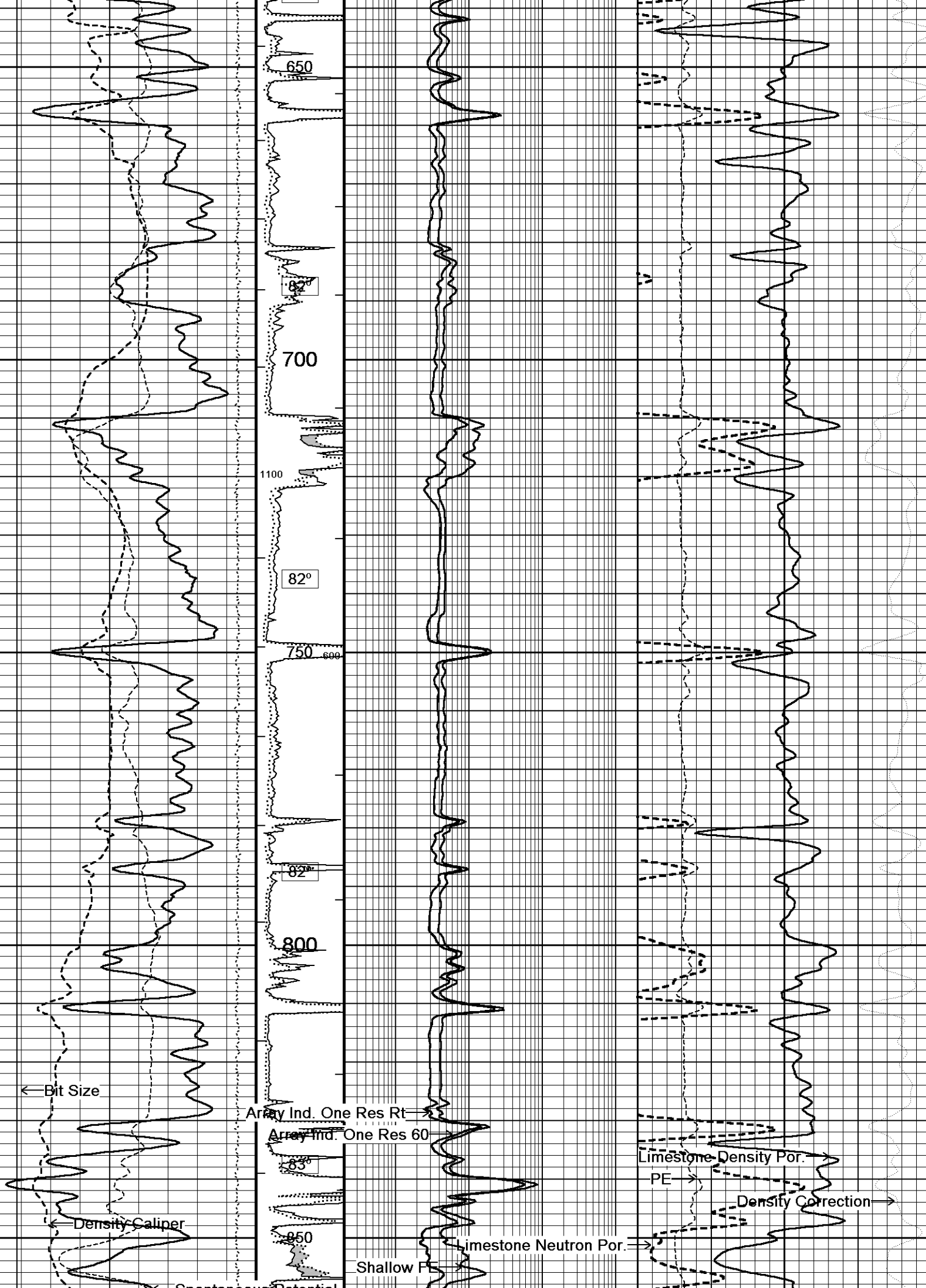
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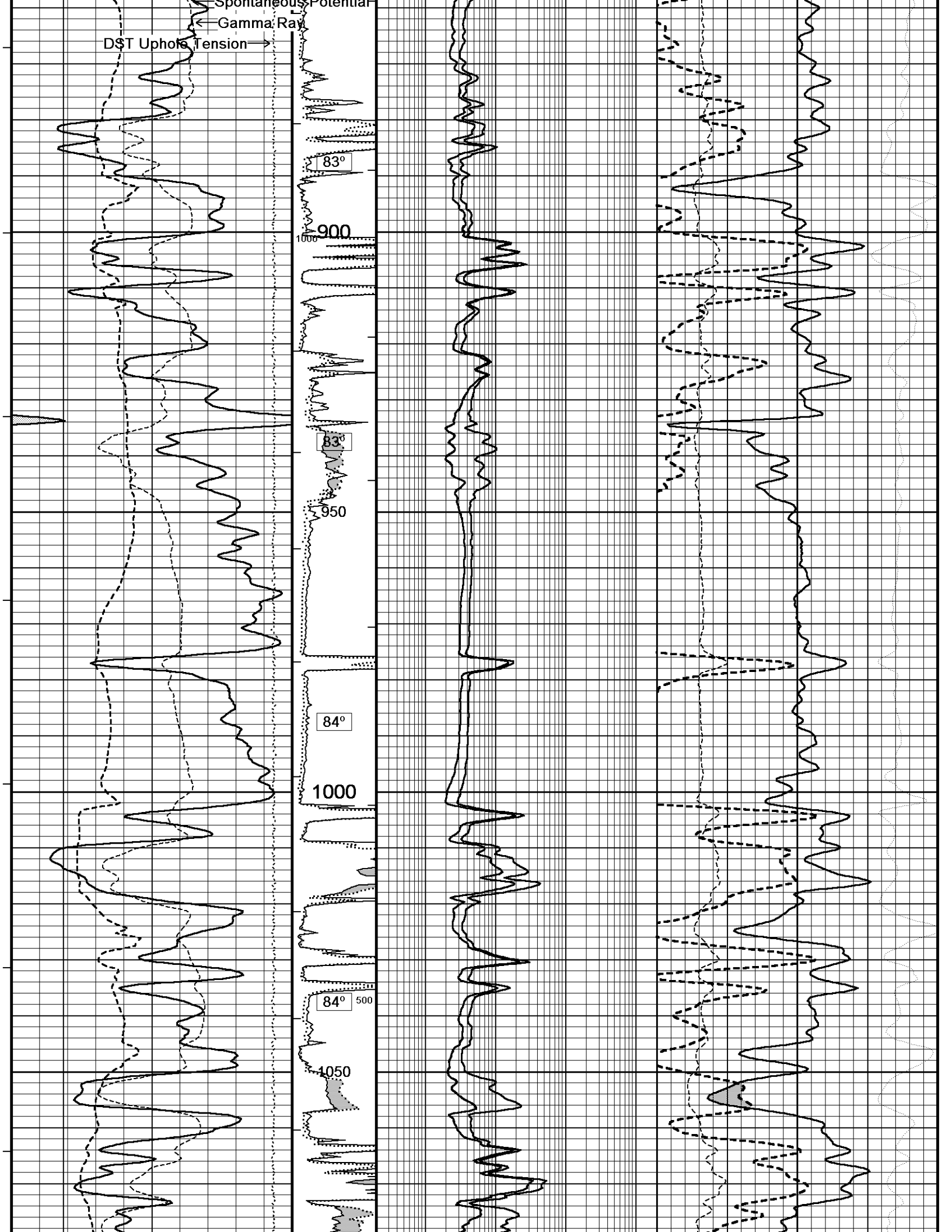
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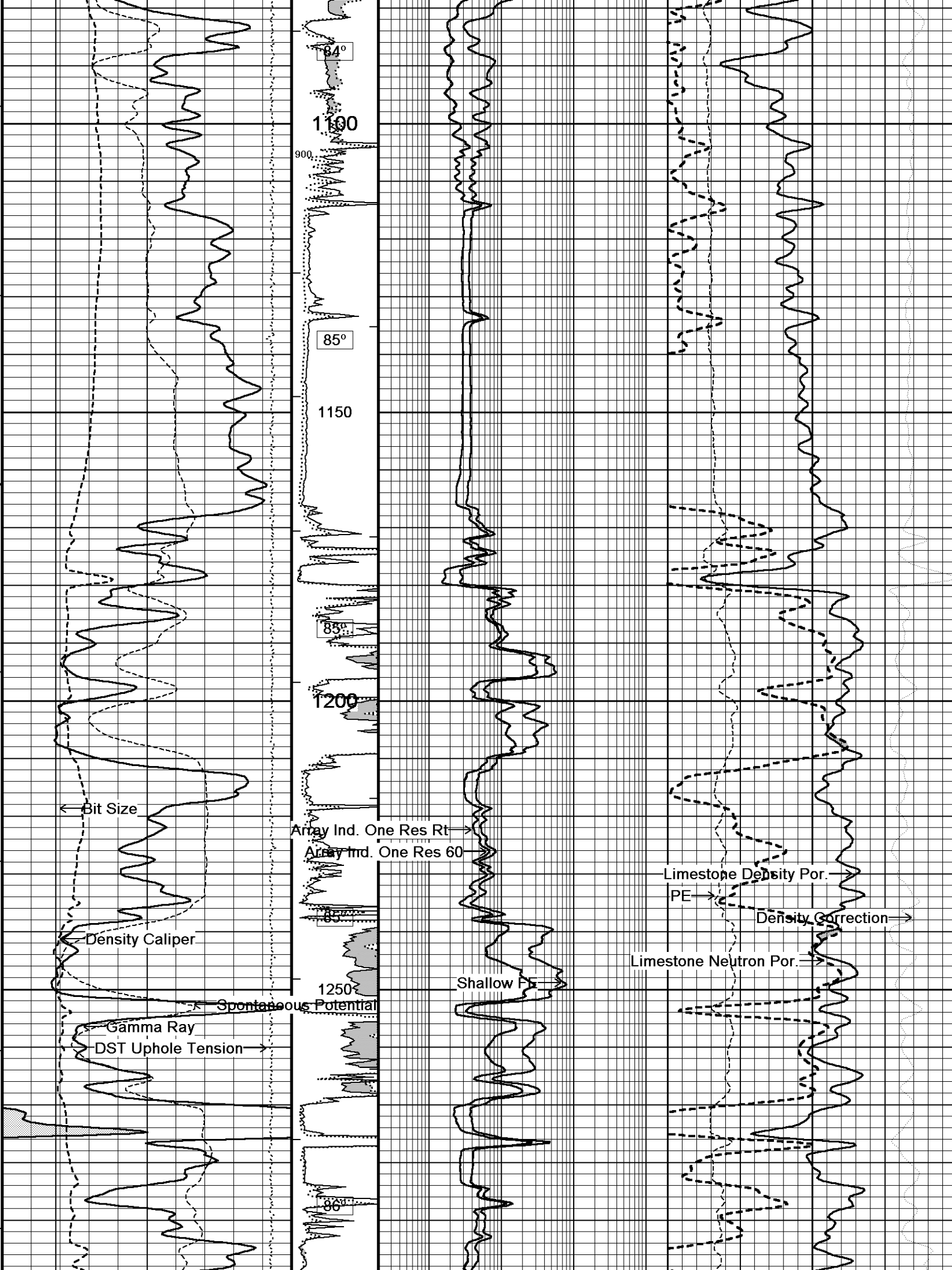
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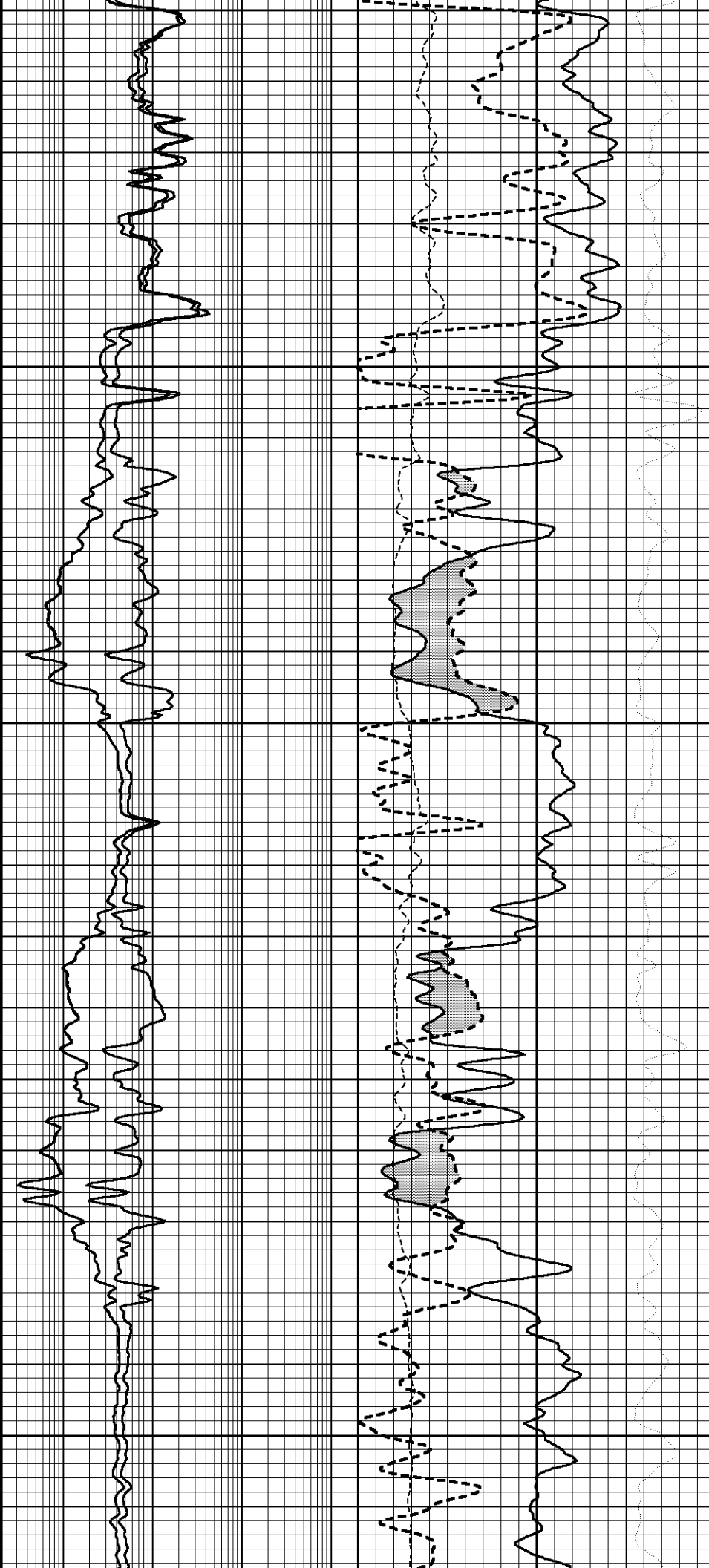
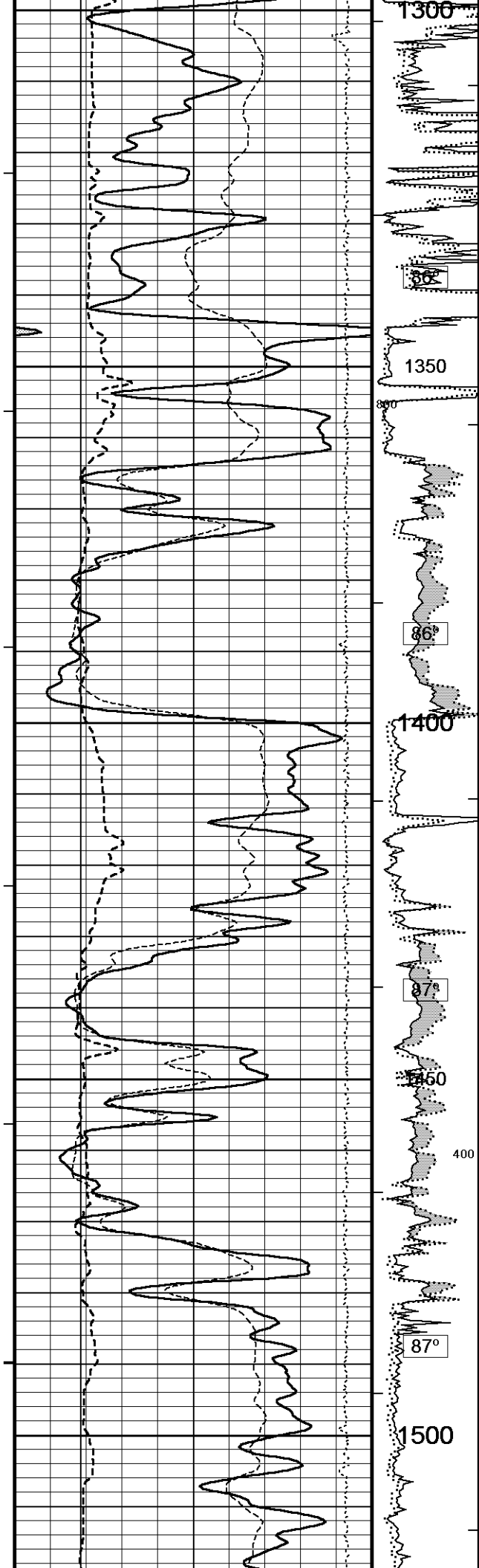
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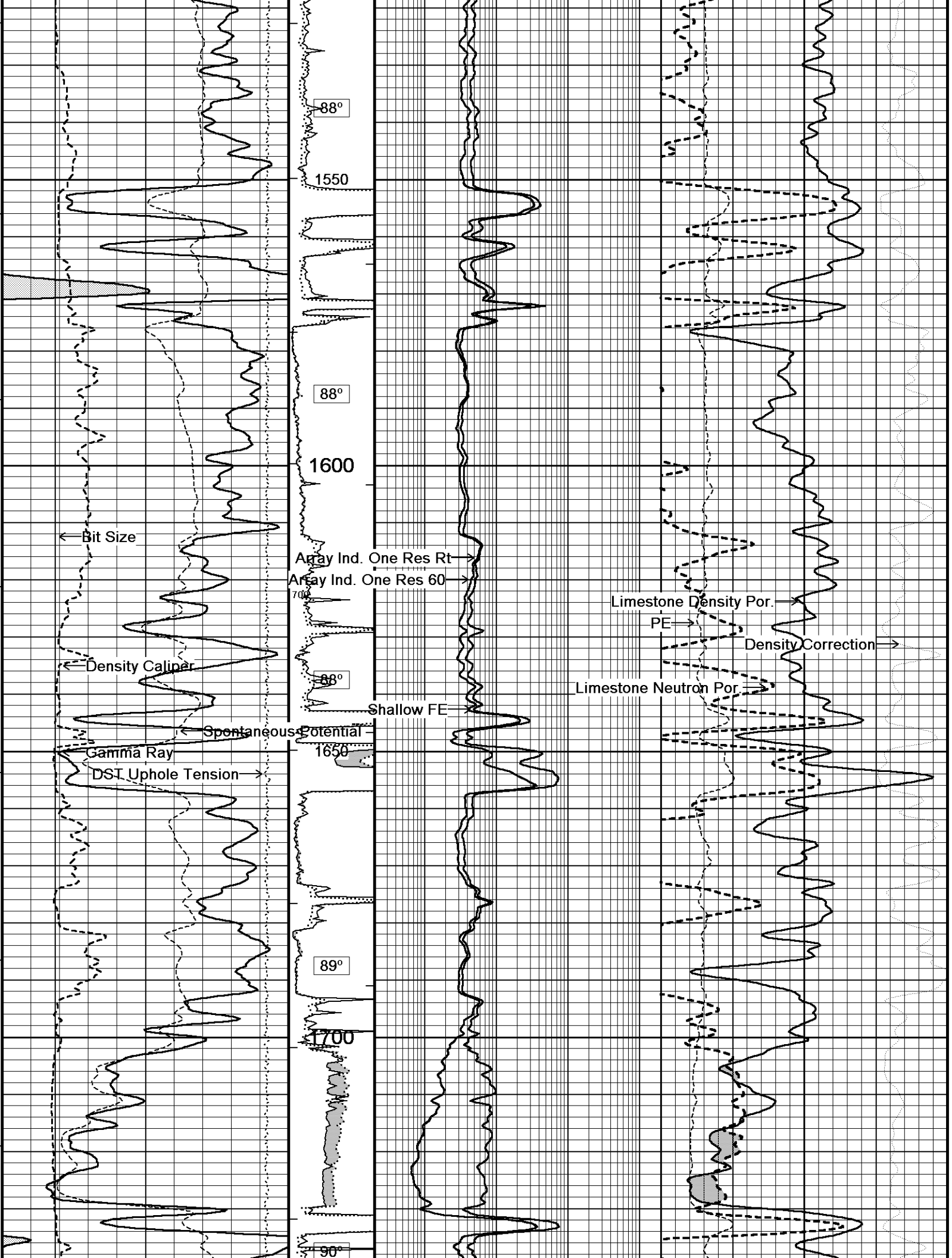


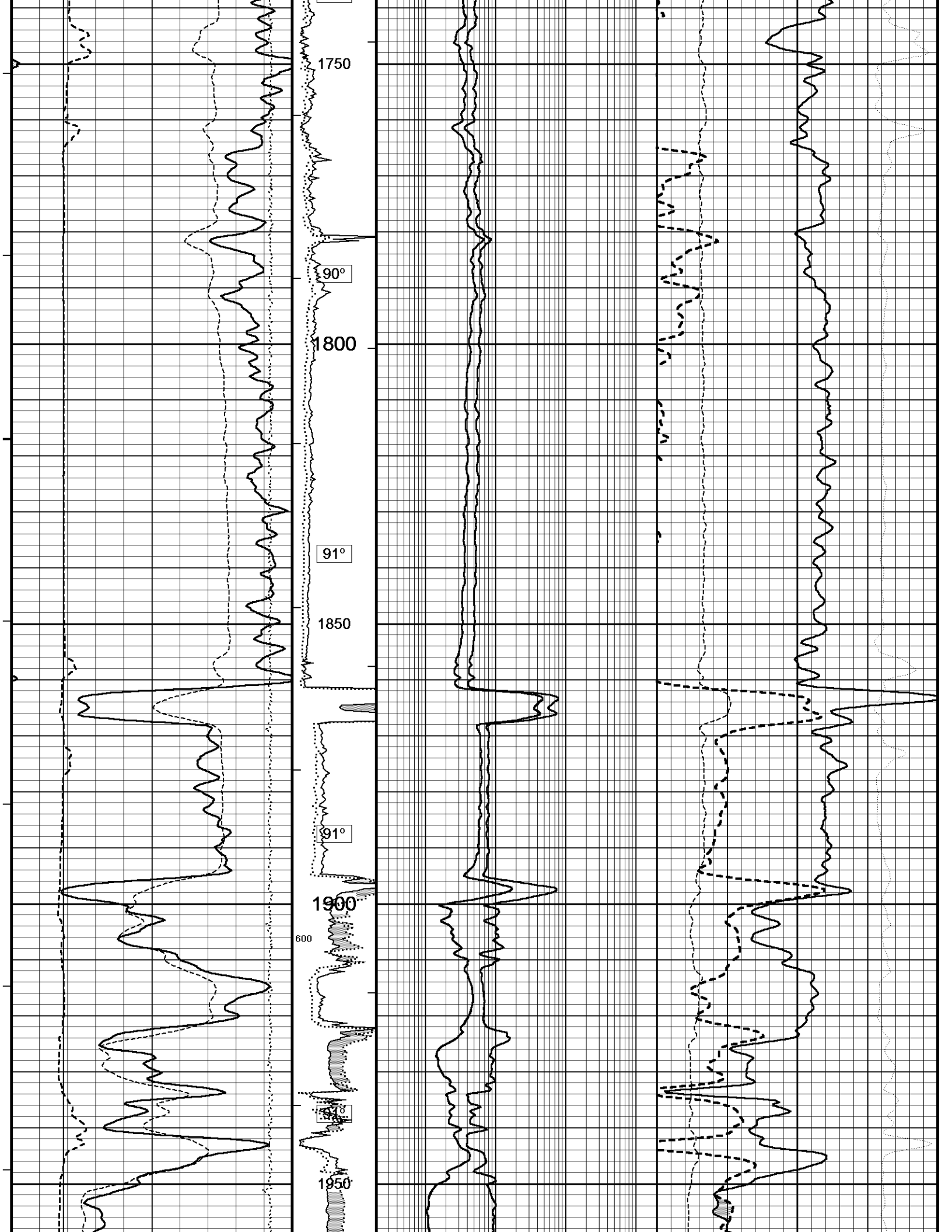




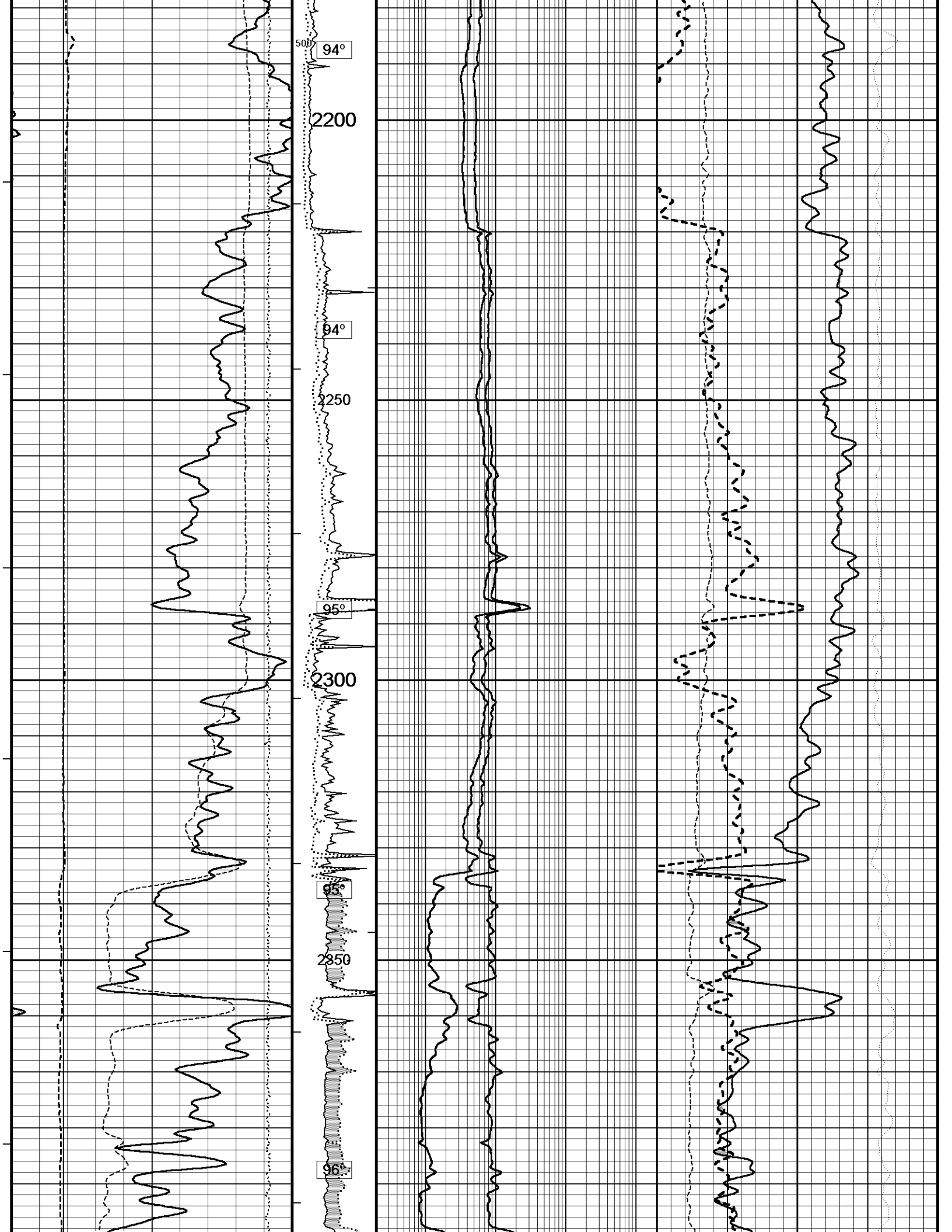


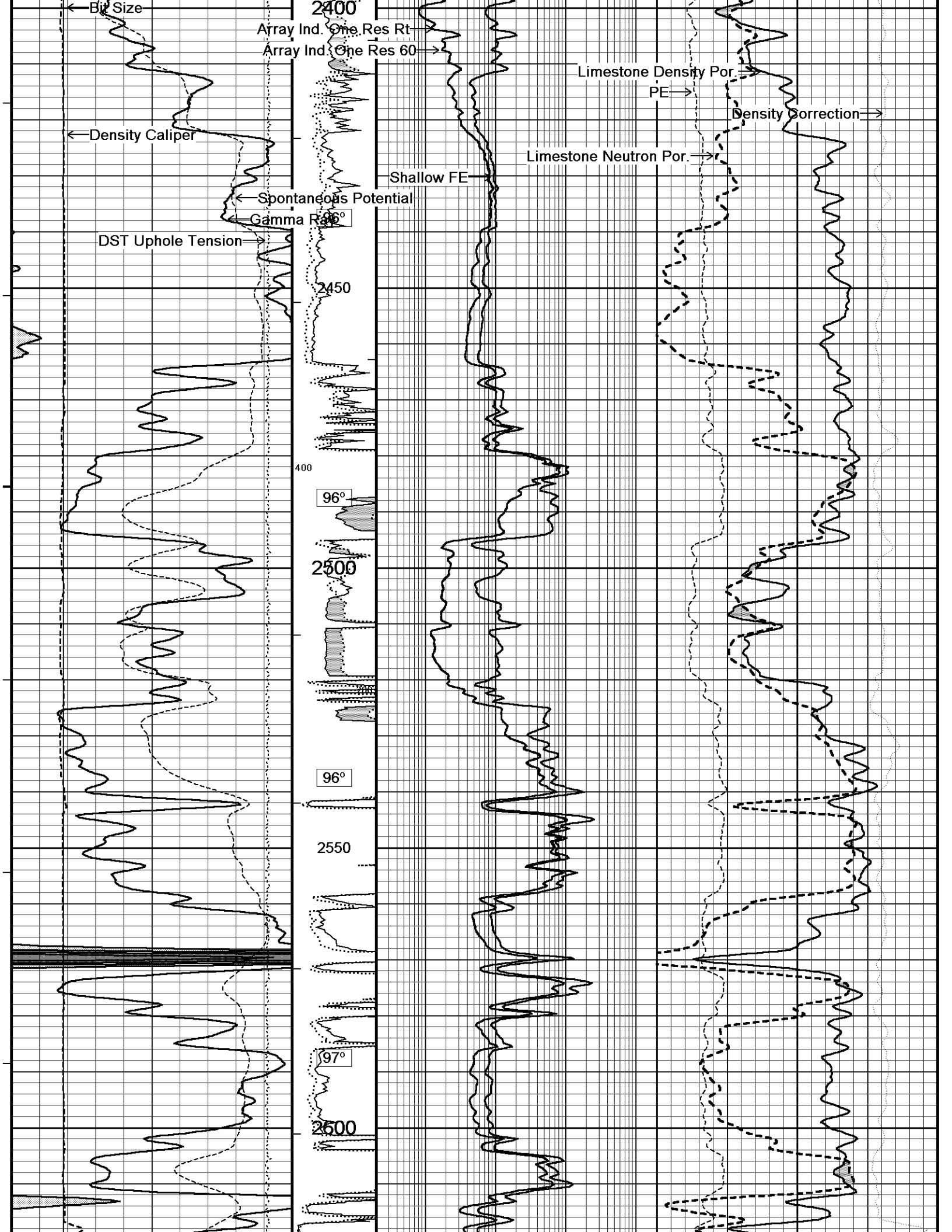


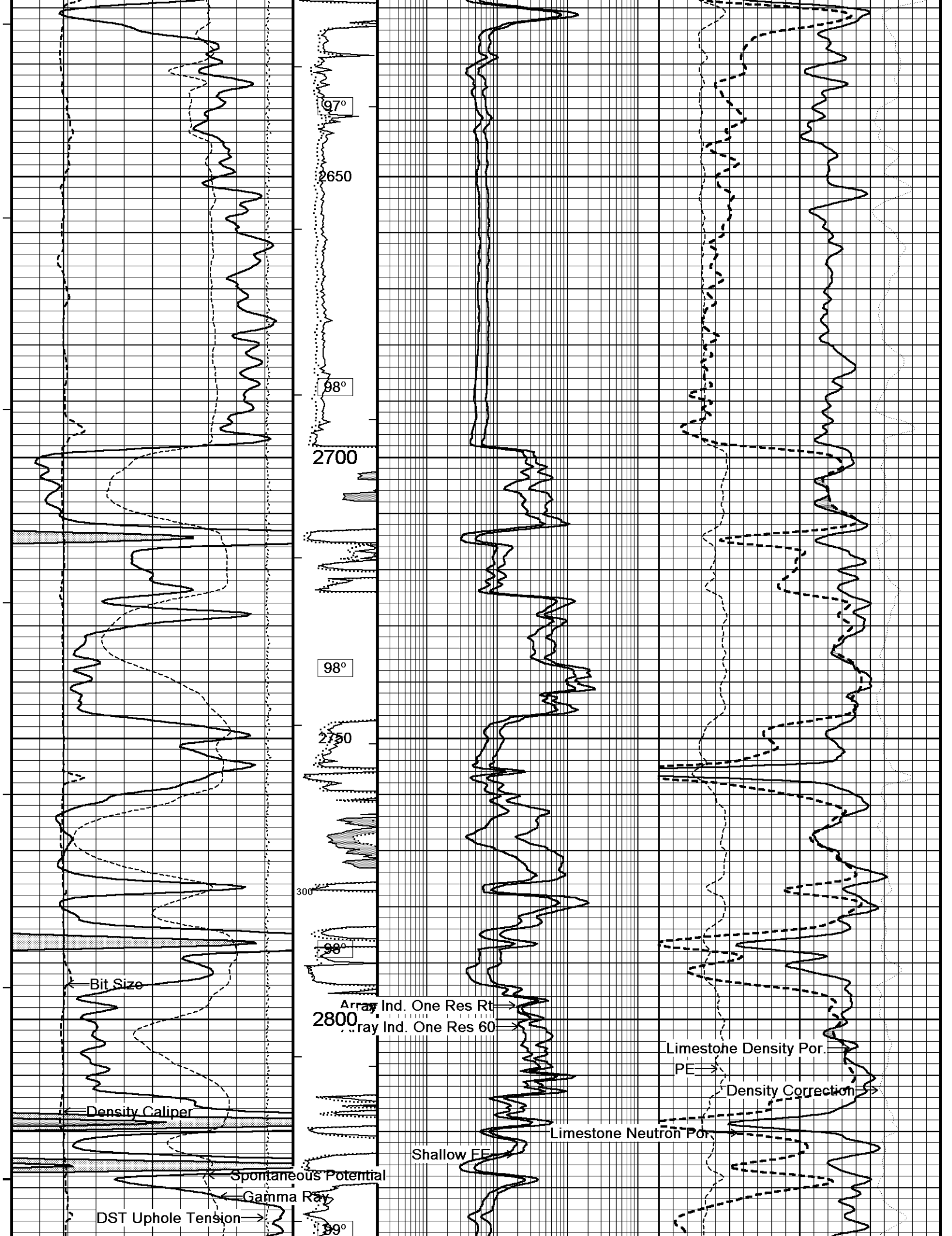


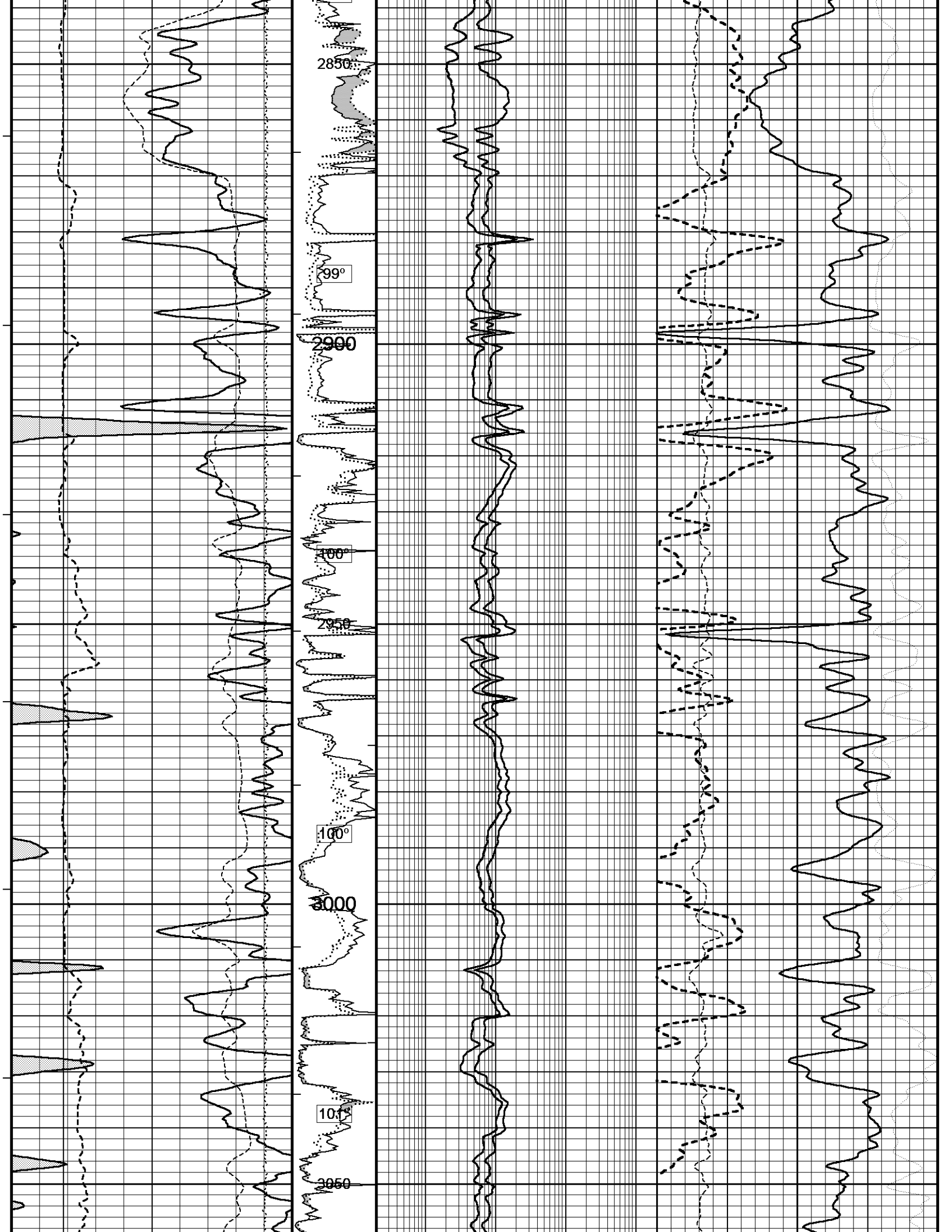


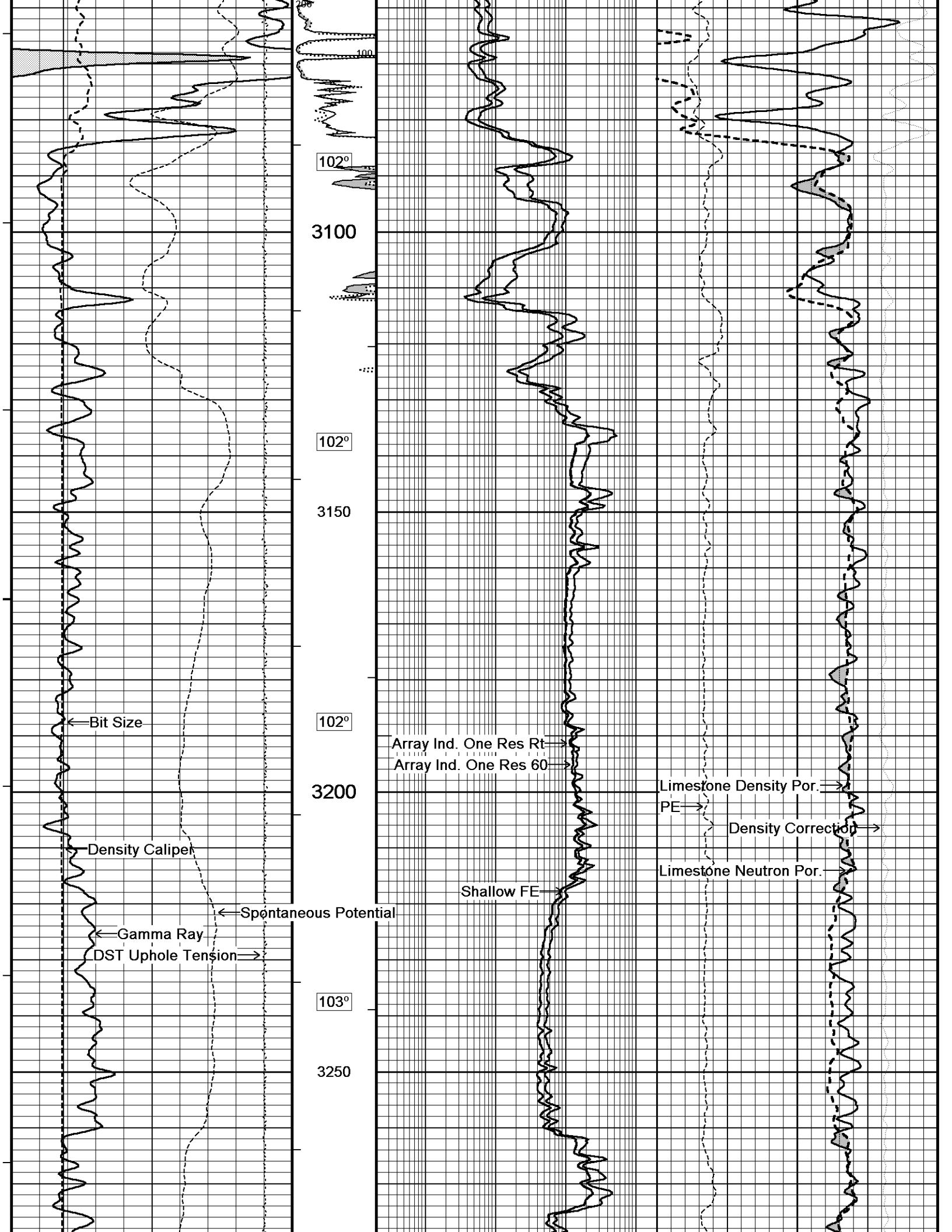


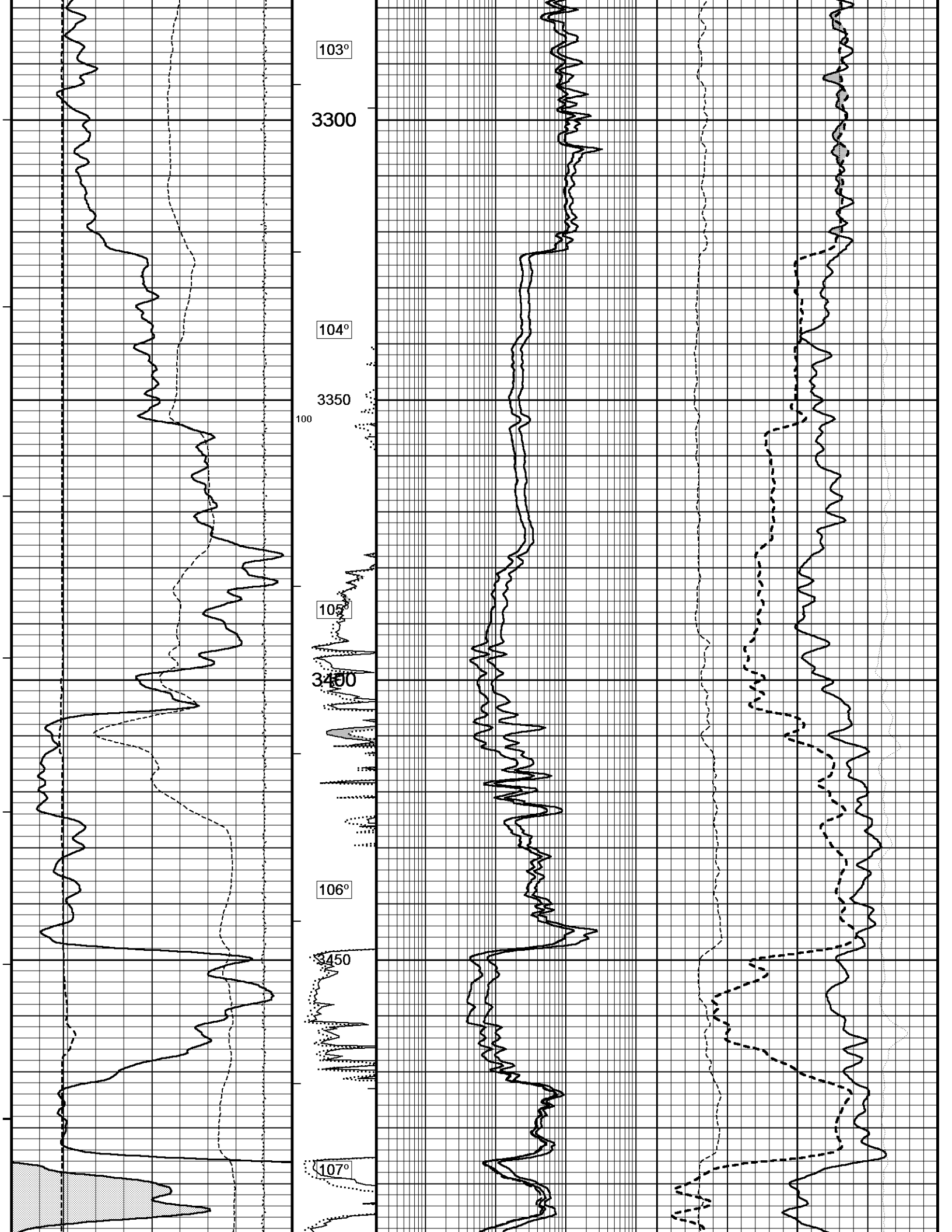


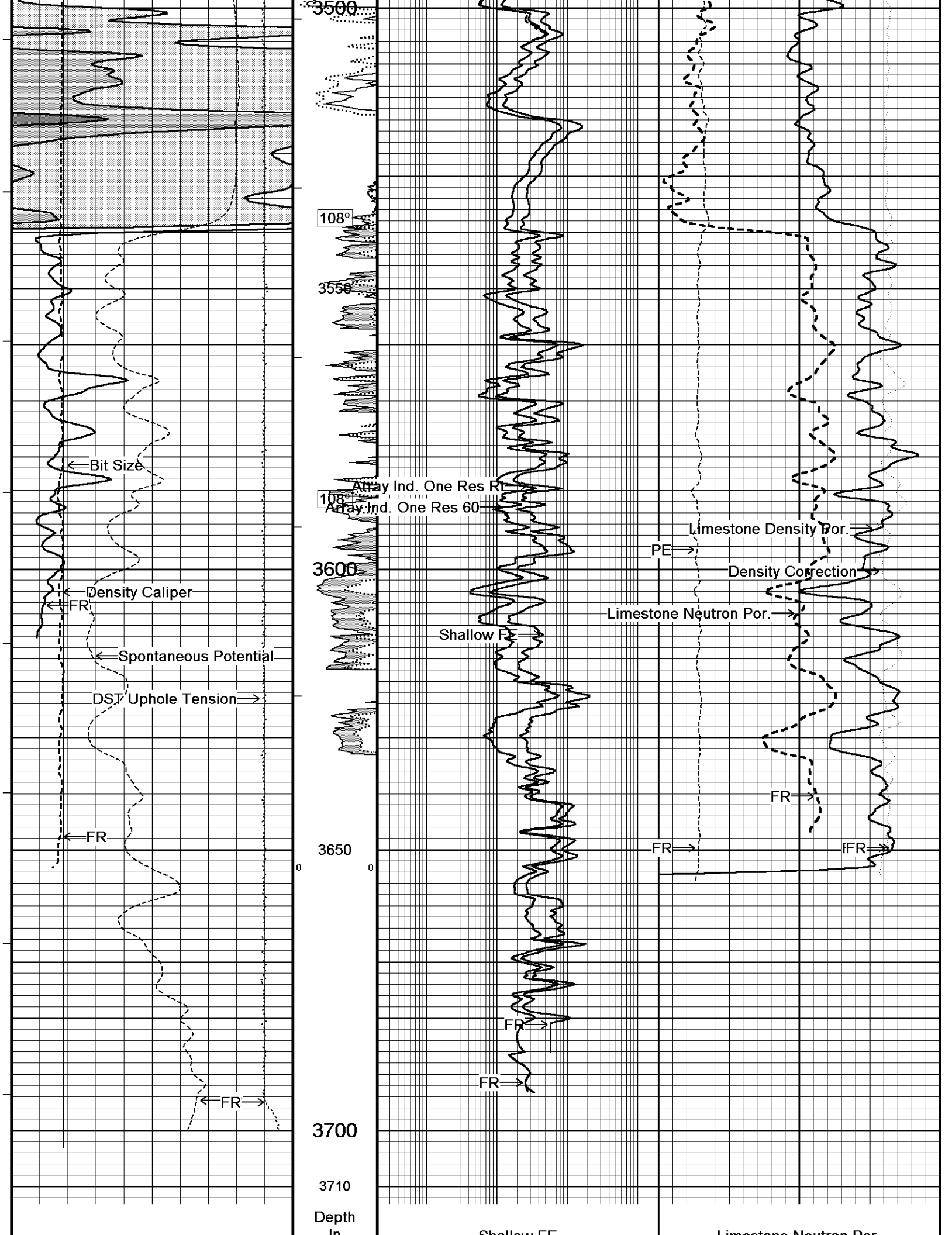


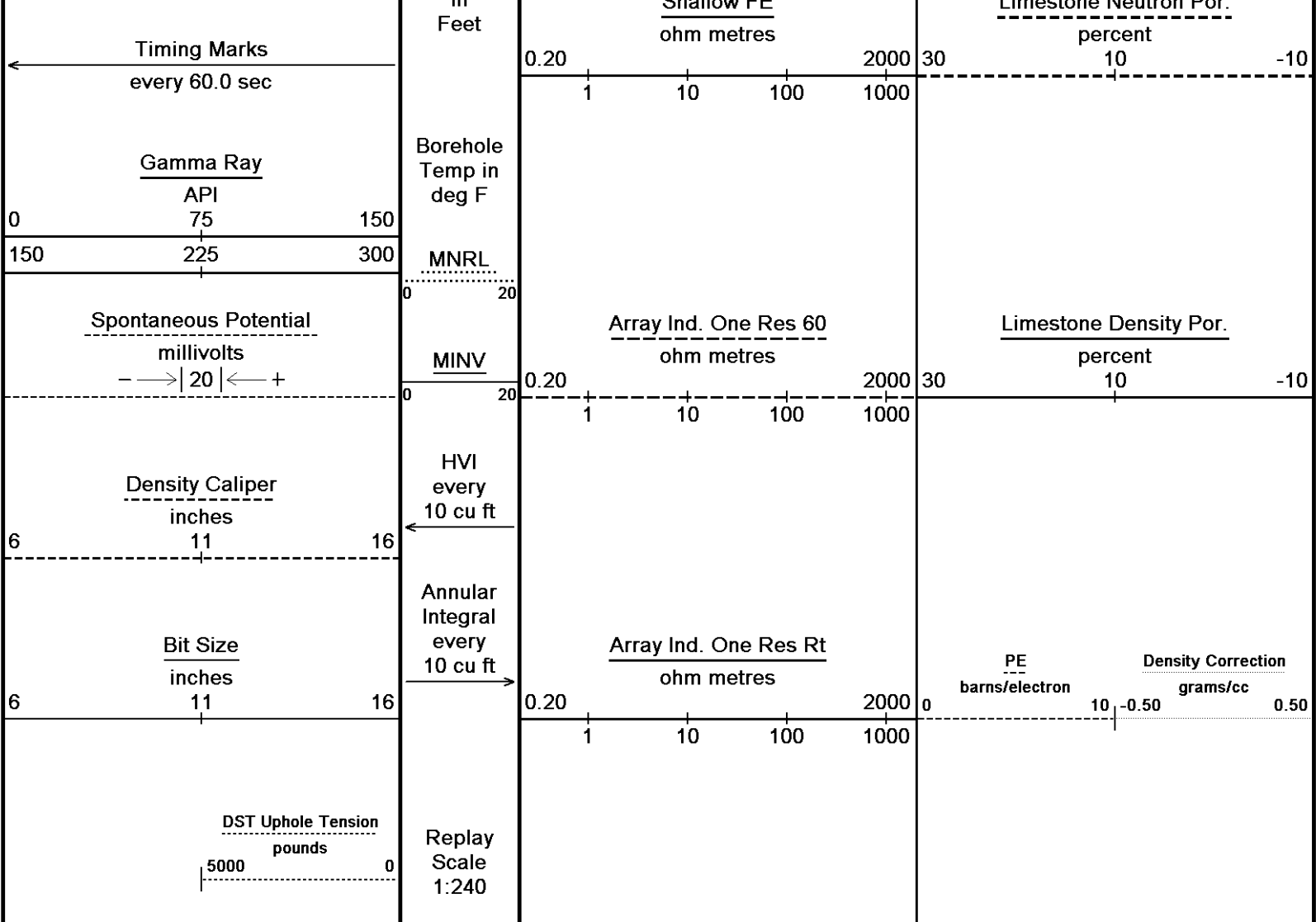










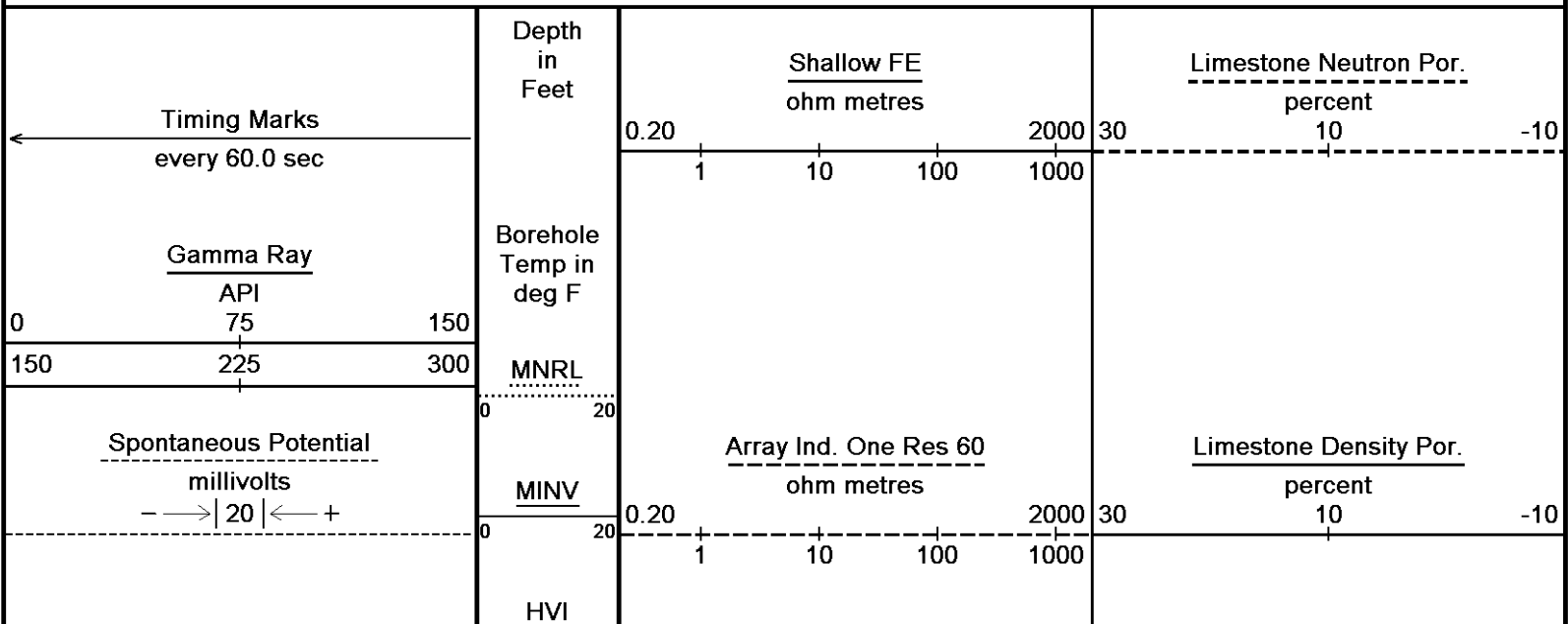


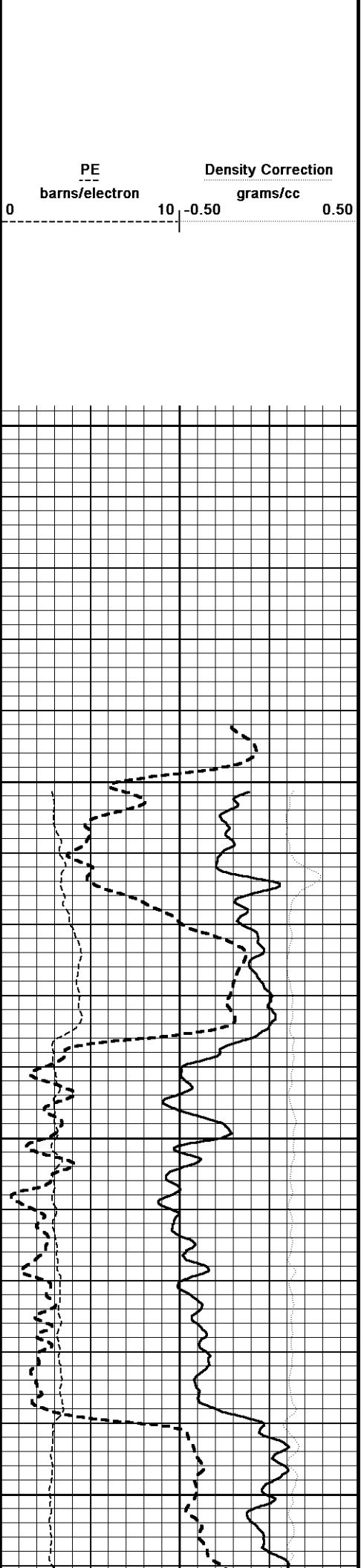
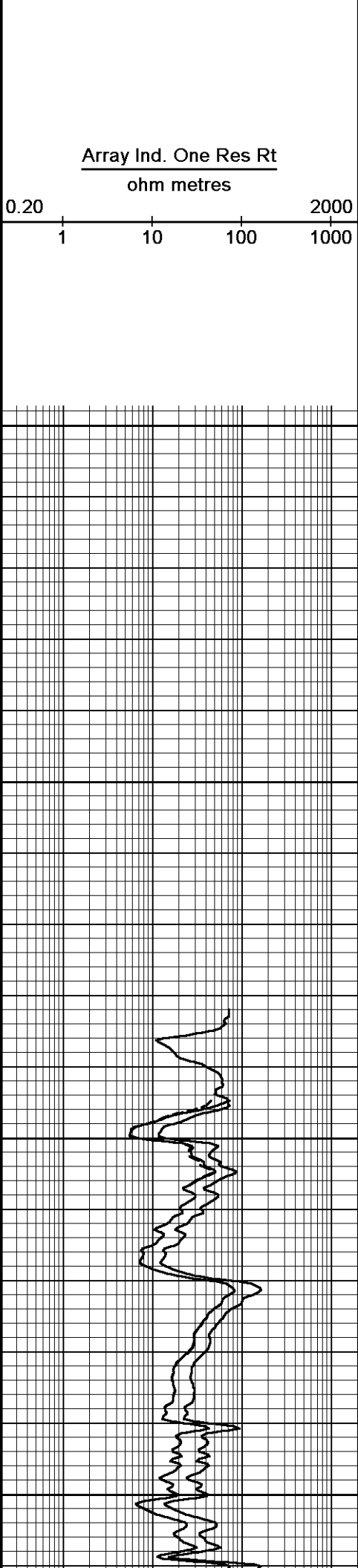
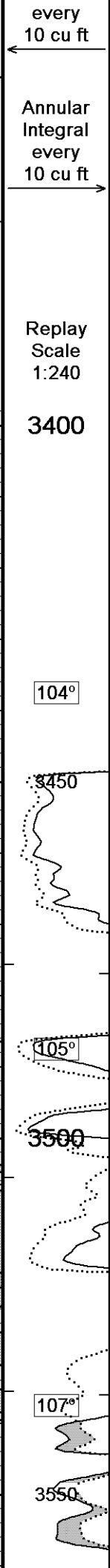
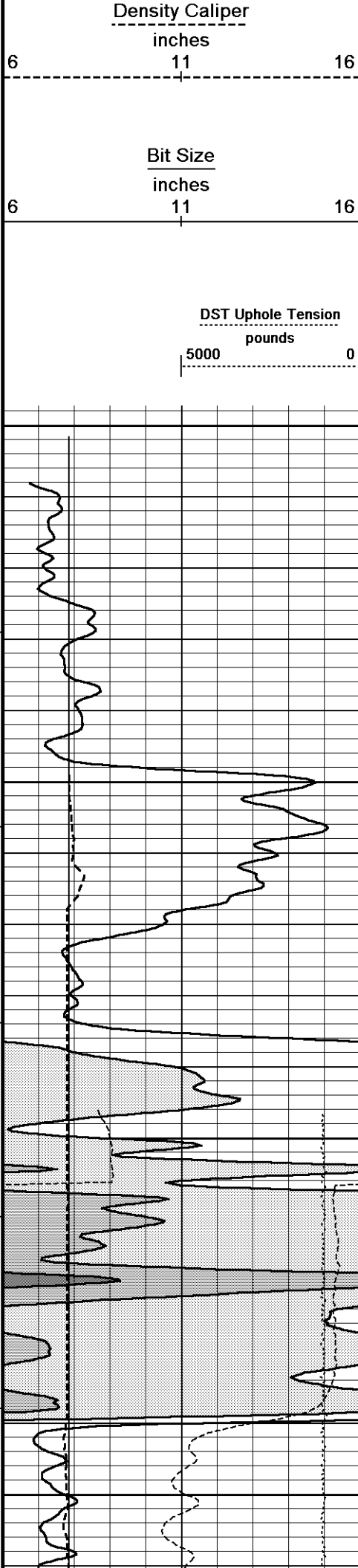
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 02-FEB-2014 21:09
 Filename: C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS\New Folder\DATA_003.dta Recorded on 01-FEB-2014 19:38
 System Versions: Logged with 13.06.9804 Processed with 13.06.9804 Plotted with 13.06.9804

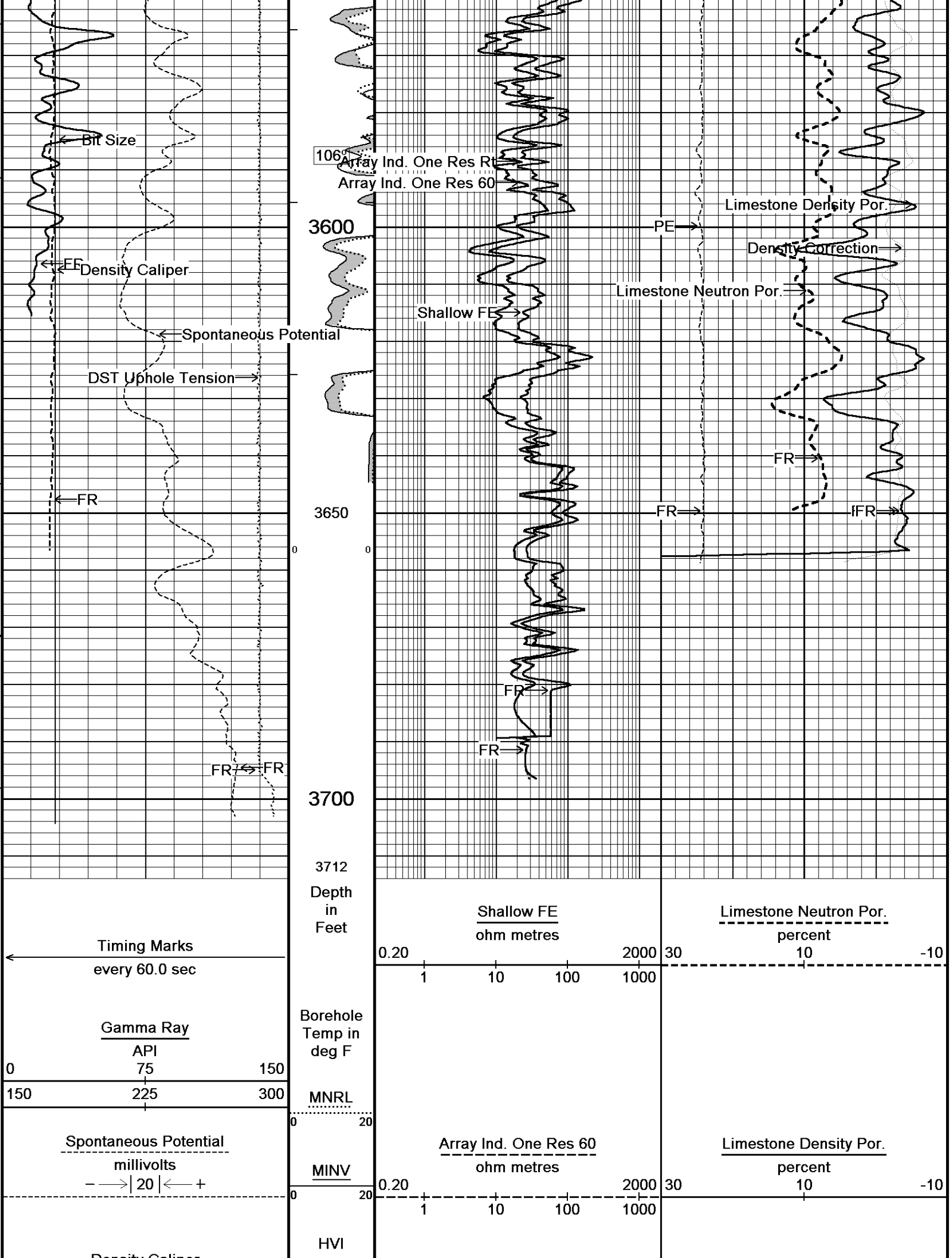
↑ 5 INCH MAIN SECTION ↑

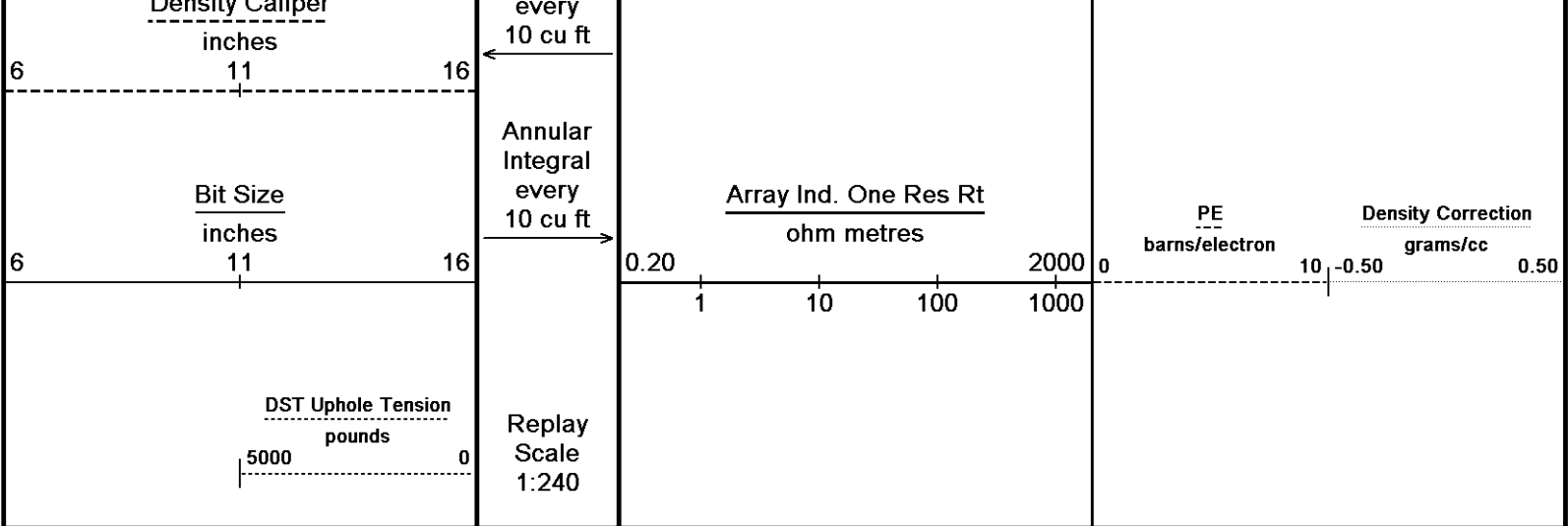
↓ 5 INCH REPEAT SECTION 1:240 ↓

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 02-FEB-2014 21:09
 Filename: C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS\New Folder\DATA_001.dta Recorded on 01-FEB-2014 19:26
 System Versions: Logged with 13.06.9804 Processed with 13.06.9804 Plotted with 13.06.9804









Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 02-FEB-2014 21:09
 Filename: C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS\New Folder\DATA_001.dta
 Recorded on 01-FEB-2014 19:26
 System Versions: Logged with 13.06.9804 Processed with 13.06.9804 Plotted with 13.06.9804

↑ 5 INCH REPEAT SECTION 1:240 ↑

BEFORE SURVEY CALIBRATION			
C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS\New Folder\DATA_001.dta			
General Constants All 000			Last Edited on 01-FEB-2014,18:59
General Parameters			
Mud Resistivity	2.600	ohm-metres	
Mud Resistivity Temperature	67.000	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	5.500	inches	
Caliper for Differential Caliper	Density Caliper		
Rwa Parameters			
Porosity used	Limestone Density Por.		
Resistivity used	Array Ind. One Res Rt		
RWA Constant A	0.610		
RWA Constant M	2.150		
SW/APOR Tool Source	0.000		
Down-hole Tension Calibration SMS 0			Field Calibration on 23-NOV-2013 12:14
Reading No	Measured	Calibrated (lbs)	
1	13135.95	0.00	
2	13368.82	384.00	
High Resolution Temperature Calibration MCG-D.K 475			Field Calibration on 29-JAN-2014,07:30
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	100.00	100.00	
High Resolution Temperature Constants MCG-D.K 475			Last Edited on 29-JAN-2014,07:30
Pre-filter Length	11		
SP Calibration MCG-D.K 475			Field Calibration on 29-JAN-2014,07:31
	Measured	Calibrated (mV)	
Reference 1	100.0	100.0	
Reference 2	-100.0	-100.0	

	Measured	Calibrated (API)
Background	37	26
Calibrator (Gross)	1850	1287
Calibrator (Net)	1813	1261

Gamma Constants MCG-D.K 475

Last Edited on 01-FEB-2014,18:29

Gamma Calibrator Number	46	
Mud Density	1.14	gm/cc
Caliper Source for Processing	Bit Size	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

Magnetometer Parameters MBN-C.A 93

Date Of Last Magnetometer Calibration	20-FEB-2012,08:37		
	X Magnetometer	Y Magnetometer	Z Magnetometer
Slope	-1.000000	1.011488	0.989151
Offset	0.008588	0.017344	-0.011800

Magnetometer Constants MBN-C.A 93

Last Edited on

Magnetometer Calibrator Number	000
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Navigation Constants MBN-C.A 93

Last Edited on 21-AUG-2013,13:33

Magnetic Declination	4.00	degrees	East
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Accelerometer Parameters MBN-C.A 93

Date Of Last Accelerometer Calibration	20-FEB-2012,08:34		
	X Accelerometer	Y Accelerometer	Z Accelerometer
Slope	-1.103870	-1.104620	-1.117770
Offset	0.001435	0.002840	0.001182

Accelerometer Constants MBN-C.A 93

Last Edited on 20-FEB-2012,08:35

Accelerometer Calibrator Number	000
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Accelerometer Temperature Characterisation

X Accelerometer

Serial Number	726			
Calibration Date	11-Dec-2008			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	-1.39902e-005	1.44432e-008	1.80567e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.78075e-004	2.42401e-007	1.28442e-009

Y Accelerometer

Serial Number	728			
Calibration Date	12-Dec-2008			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	3.31273e-005	-8.33579e-010	1.03225e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.68818e-004	3.32028e-007	1.20458e-009

Z Accelerometer

Serial Number	725			
Calibration Date	11-Dec-2008			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	9.06911e-006	-1.72113e-008	1.44672e-010
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.68544e-004	3.17817e-007	1.28799e-009

Micro Normal and Micro Inverse Calibration MML-A 7

Base Calibration on 21-JAN-2014 10:41

Field Check on 31-JAN-2014 04:28

Base Calibration

		Measured		Calibrated (ohm-m)
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	11.0	60.5	5.0	25.0

Micro Normal	11.9	60.3	5.0	25.0
Micro Inverse	15.7	78.1	5.0	25.0
Channel	Base Check (ohm-m)		Field Check (ohm-m)	
Micro Normal	62.3		62.3	
Micro Inverse	48.4		48.4	

Micro Normal and Micro Inverse Constants MML-A 7

Last Edited on 31-JAN-2014,04:27

Pad Type 8-12 in Soft Rubber Inflatable 006-9011-159
 Micro Normal K Factor 1.0000
 Micro Inverse K Factor 1.0000
 Standoff Offset N/A inches

Caliper Calibration MML-A 7

Base Calibration on 21-JAN-2014 10:54

Field Calibration on 29-JAN-2014 07:33

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14205	5.98
2	17414	7.97
3	20504	9.84
4	24398	11.91
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.87	7.97

Neutron Calibration MDN-C.A 460

Base Calibration on 24-JAN-2014 12:06

Field Check on 31-JAN-2014,04:36

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	2854	84	3714	110
Ratio	33.982		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	2485	3746
Ratio	0.664	

Field Check

	Calibrated (cps)	
	1284	1971
Ratio	0.652	

Neutron Constants MDN-C.A 460

Last Edited on 31-JAN-2014,04:36

Neutron Source Id	P14043B	
Neutron Jig Number	NEC046	
Epithermal Neutron	No	
Caliper Source for Processing	Bit Size	
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	Constant Value	
Formation Pressure	0.00	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 20

Base Calibration on 21-JAN-2014 11:08

Field Check on 31-JAN-2014 04:33

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	9.9	1.3
Reference 2	974.2	126.8

Base Check				281.0	
Field Check				280.5	
FE Constants MFE-A.A 20					Last Edited on 31-JAN-2014,04:32
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-A.A 166					Field Calibration on 29-JAN-2014,07:29
	Measured	Calibrated(Deg F)			
Lower	50.00	50.00			
Upper	100.00	100.00			
High Resolution Temperature Constants MAI-A.A 166					Last Edited on 29-JAN-2014,07:29
Pre-filter Length	11				
Induction Calibration MAI-A.A 166					Base Calibration on 19-JAN-2014,13:34 Field Check on 31-JAN-2014 04:35
Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	17.4	475.9	9.3	966.2	
2	6.7	390.1	7.6	821.4	
3	3.6	261.4	5.2	566.0	
4	2.0	135.3	2.6	279.2	
Array Temperature		23.6	Deg F		
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1			11.5	3815.9	
2			28.3	3456.7	
3			27.9	3026.8	
4			19.1	2043.0	
Deep			17.8	2008.1	
Medium			40.5	3979.0	
Shallow			41.1	5056.4	
Array Temperature			56.3	Deg F	
Induction Constants MAI-A.A 166					Last Edited on 31-JAN-2014,04:34
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					

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-A.A 11

Base Calibration on 24-JAN-2014 13:11
Field Calibration on 29-JAN-2014 07:36

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	18564	3.98
2	28269	5.98
3	38288	7.97
4	48016	9.84
5	59312	11.91
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.00	5.98

Photo Density Calibration MPD-A.A 11

Base Calibration on 24-JAN-2014 13:32
Field Check on 31-JAN-2014 04:32

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	47271	24761	59869	31110
Reference 2	19808	2425	24557	2522

Field Check at Base

1162.7 1254.3

Field Check

1162.3 1251.9

PE Calibration

Base Calibration	WS	Measured		Calibrated
		WH	Ratio	Ratio
Background	213	1040		
Reference 1	17570	47101	0.377	0.369
Reference 2	5271	19679	0.271	0.271

Field Check at Base

213.4 1039.5

Field Check

210.1 1039.4

Density Constants MPD-A.A 11

Last Edited on 01-FEB-2014,18:28

Density Source Id	263	
Nylon Calibrator Number	633	
Aluminium Calibrator Number	633	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.14	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

Spectral Gamma Calibration			SGS-E.J 171			Base Calibration on 10-JAN-2013 10:38		
						Field Calibration on 10-JAN-2013 10:38		
Base Calibration								
Potassium Calibrator								
		Gate 1	Gate 2	Gate 3	Gate 4	Gate 5		
	Background	77.9	23.8	2.6	0.9	1.6		
	Calibrator (Gross)							
	Calibrator (Net)	124.1	84.2	25.2	0.0	-0.1		
	Concentrations	K %	U ppm	Th ppm				
		5.8	0.0	0.0				
Uranium Calibrator								
		Gate 1	Gate 2	Gate 3	Gate 4	Gate 5		
	Background	77.9	23.8	2.6	0.9	1.6		
	Calibrator (Gross)							
	Calibrator (Net)	396.3	144.9	13.0	9.6	2.8		
	Concentrations	K %	U ppm	Th ppm				
		0.0	14.8	0.0				
Thorium Calibrator								
		Gate 1	Gate 2	Gate 3	Gate 4	Gate 5		
	Background	77.9	23.8	2.6	0.9	1.6		
	Calibrator (Gross)							
	Calibrator (Net)	313.6	122.2	8.6	5.5	14.7		
	Concentrations	K %	U ppm	Th ppm				
		0.0	0.0	44.3				
Mixture Calibrator								
		Gate 1	Gate 2	Gate 3	Gate 4	Gate 5		
	Background	77.9	23.8	2.6	0.9	1.6		
	Calibrator (Gross)	905.4	373.2	48.9	15.8	19.5		
	Calibrator (Net)	827.5	349.4	46.3	14.8	17.9		
Field Calibration								
Gamma Ray								
		Measured		Calibrated (API)				
	Background	111		22				
	Calibrator (Gross)	1367		272				
	Calibrator (Net)	1256		250				
Mixture Calibrator								
		Gate 1	Gate 2	Gate 3	Gate 4	Gate 5		
	Background	77.9	23.8	2.6	0.9	1.6		
	Calibrator (Gross)	905.4	373.2	48.9	15.8	19.5		
	Calibrator (Net)	827.5	349.4	46.3	14.8	17.9		

Spectral Gamma Constants			SGS-E.J 171	Last Edited on 01-FEB-2014,18:28	
Background Calibrator Number	000				
Mixture Calibrator Number	147-1				
Potassium Calibrator Number	148-1				
Uranium Calibrator Number	150-1				
Thorium Calibrator Number	149-1				
Mud Density	1.14	gm/cc			
Caliper Source for Processing	Bit Size				
Tool Position	Eccentred				

Concentration of KCl		
K Mud Type	Chloride	kppm
K Mud Concentration	0.00	%

Dipole Constants and Gains MRD-A.A 127

Logging Mode	Standard	
Semblance Parameters		
Window Start	1.00	milliseconds
Window Width	15	milliseconds

Discriminator Levels

M1C Discriminator	0.1	mV
M2C Discriminator	0.1	mV
M3C Discriminator	0.1	mV
M4C Discriminator	0.1	mV

Monopole Receiver Gains

MR1A	1.000000	MR1B	1.000000	MR1C	1.000000	MR1D	1.000000
MR2A	1.000000	MR2B	1.000000	MR2C	1.000000	MR2D	1.000000
MR3A	1.000000	MR3B	1.000000	MR3C	1.000000	MR3D	1.000000
MR4A	1.000000	MR4B	1.000000	MR4C	1.000000	MR4D	1.000000
MR5A	1.000000	MR5B	1.000000	MR5C	1.000000	MR5D	1.000000
MR6A	1.000000	MR6B	1.000000	MR6C	1.000000	MR6D	1.000000
MR7A	1.000000	MR7B	1.000000	MR7C	1.000000	MR7D	1.000000
MR8A	1.000000	MR8B	1.000000	MR8C	1.000000	MR8D	1.000000

DOWNHOLE EQUIPMENT

C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS\New Folder\DATA_001.dta

Compact Comms Gamma
MCG-D.K 475 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Navigation
MBN-C.A 93 LG: 11.81 ft WT: 70.5 lb OD: 2.24 in

Spectral Gamma Ray Sub
SGS-E.J 171 LG: 7.78 ft WT: 105.8 lb OD: 3.54 in

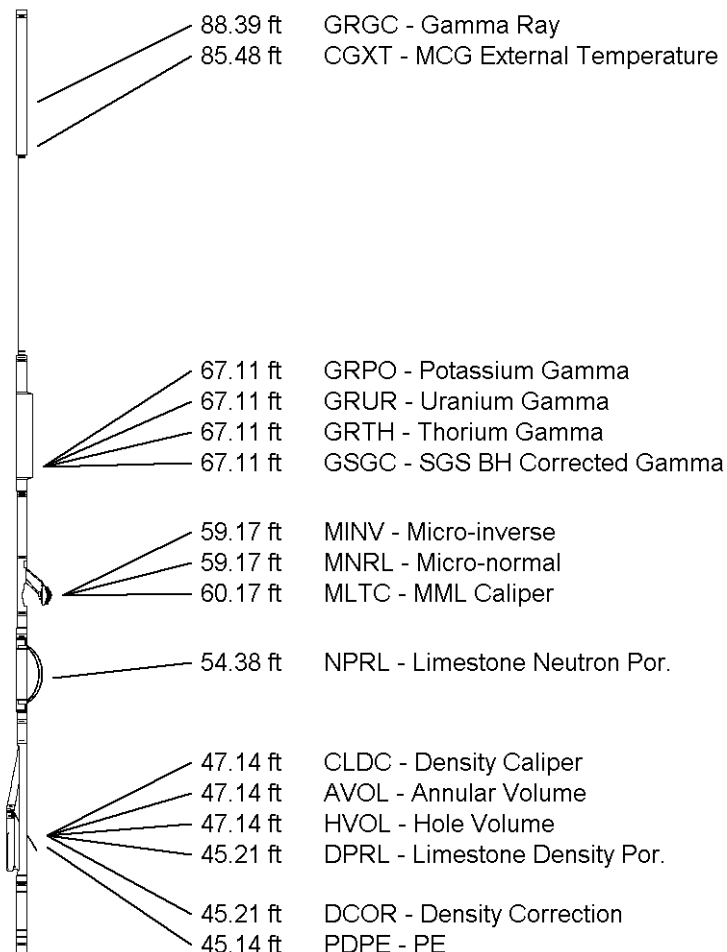
Compact Micro-log
MML-A 7 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-C.A 460 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-A.A 11 LG: 9.53 ft WT: 90.4 lb OD: 2.45 in

Compact Dipole Memory
MDM-A.A 127 LG: 4.48 ft WT: 39.7 lb OD: 2.24 in

Compact Dipole Receiver
MRD-A.A 127 LG: 8.89 ft WT: 88.2 lb OD: 2.24 in

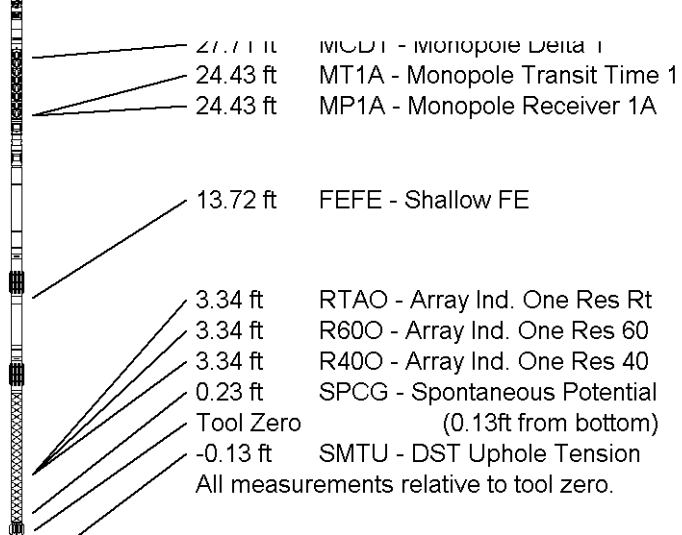


Compact Dipole Transmitter
MTD-A.A 127 LG: 12.63 ft WT: 110.2 lb OD: 2.24 in

Compact Focussed Electric
MFE-A.A 20 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-A.A 166 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 93.67 ft Weight: 798.1 lb



COMPANY	TAOS RESOURCES OPERATING CO.
WELL	WEST MADDIX UNIT #18
FIELD	MADDIX NORTH
PROVINCE/COUNTY	COWLEY
COUNTRY/STATE	USA / KANSAS

Elevation Kelly Bushing	1863.00	feet	First Reading	3692.00	feet
Elevation Drill Floor	1862.00	feet	Depth Driller	3700.00	feet
Elevation Ground Level	1853.00	feet	Depth Logger	3695.00	feet



COMPOSITE
LOG

Weatherford®