Weatherford

COMPOSITE DENSITY/NEUTRON INDUCTION/FE

COMPANY	TAOS RESOURCES OPERATING CO.
WELL	WMU #19
FIELD	MADDIX NORTH
PROVINCE/COUNTY	COWLEY
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	495' FSL & 2145' FWL
PERMIT NUMBER	C SE SE SW

SEC 2	TWP 33S	RGE 5E	Other Services
LATITUDE			NONE
API NUMBER	15-035-24545		

Permanent Datum GL, Elevation 1270 feet
Log Measured From KB
Drilling Measured From KB

Elevations:	feet
KB	1280.00
DF	1278.00
GL	1270.00

Date	12-DEC-2013			
Run Number	ONE			
Service Order	3546083			
Depth Driller	3650.00	feet		
Depth Logger	3650.00	feet		
First Reading	3647.00	feet		
Last Reading	252.00	feet		
Casing Driller	252.00	feet		
Casing Logger	252.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.50 lb/USg	35.00 CP		
PH / Fluid Loss	9.50	12.80 ml/30Min		
Sample Source	MUD PIT			
Rm @ Measured Temp	0.80 @ 70.0	ohm-m		
Rmf @ Measured Temp	0.64 @ 70.0	ohm-m		
Rmc @ Measured Temp	0.96 @ 70.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.52 @108.0	ohm-m		
Time Since Circulation	4 HOURS			
Max Recorded Temp	108.00	deg F		
Equipment / Base	13379	OKC		
Recorded By	AXEL HANNENBERG			
Witnessed By	STEVE BALL		BLAKE JOHNSON	

BOREHOLE RECORD

Last Edited: 17-DEC-2013 12:25

Bit Size inches	Depth From feet	Depth To feet
7.875	252.00	3650.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	252.00	24.00

REMARKS

WLS 13.06.9804

DEPTH CONTROL: CALIBRATED MEASURING WHEEL

TOOLS RAN: MCG, MMR, MDN, MPD, 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.
MSS: THREE 0.5 INCH STANDOFFS 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 = 1440 CU.FT.
ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO SURFACE CASING = 880 CU.FT.

ANNULAR HOLE VOLUME WITH 11.0 INCH PRODUCTION CASING FROM TD TO SURFACE CASING = 600 CU.FT.

SERVICE ORDER # 3546083

RIG: VAL RIG #3

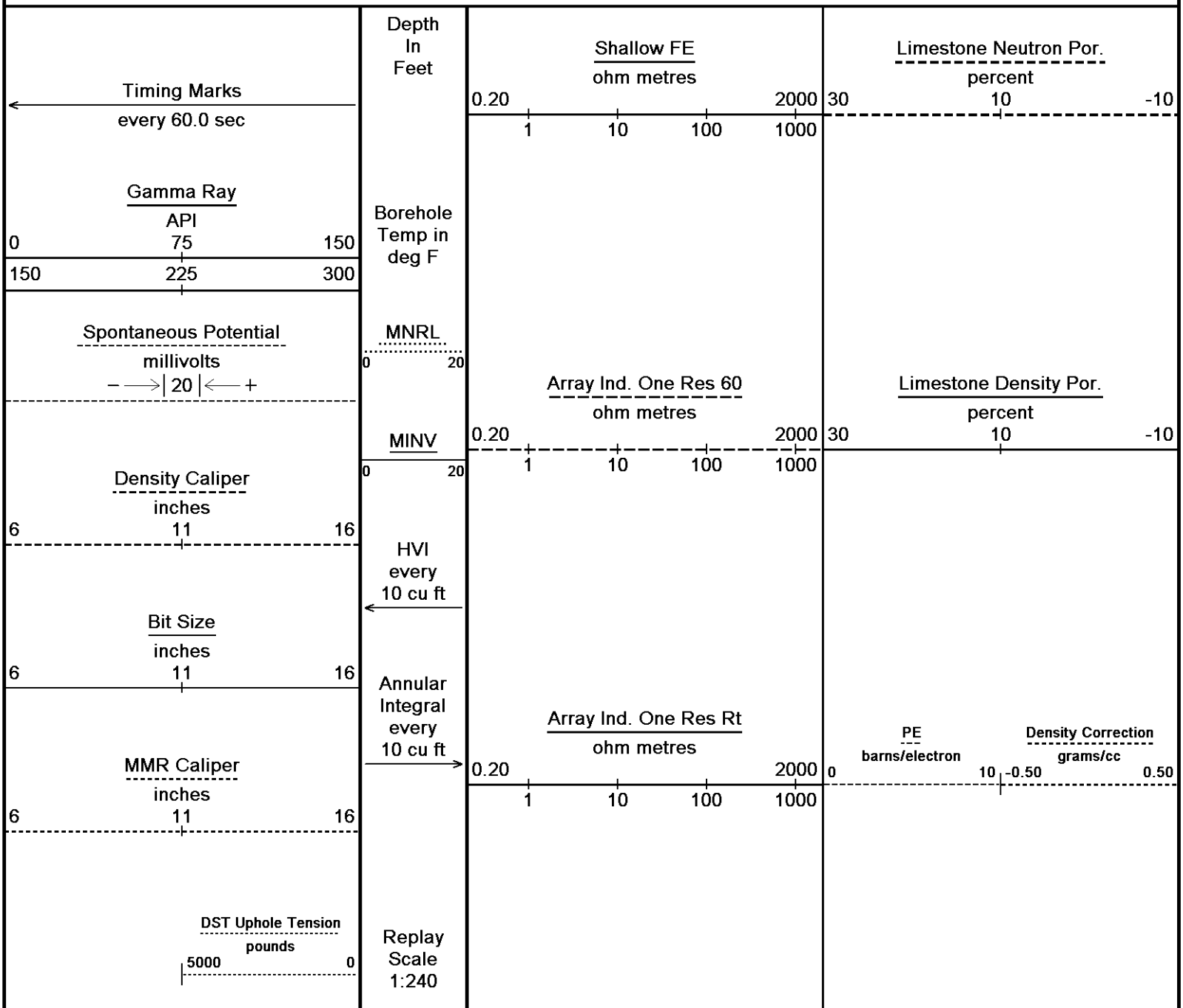
OPERATOR(S): S. WORLEY

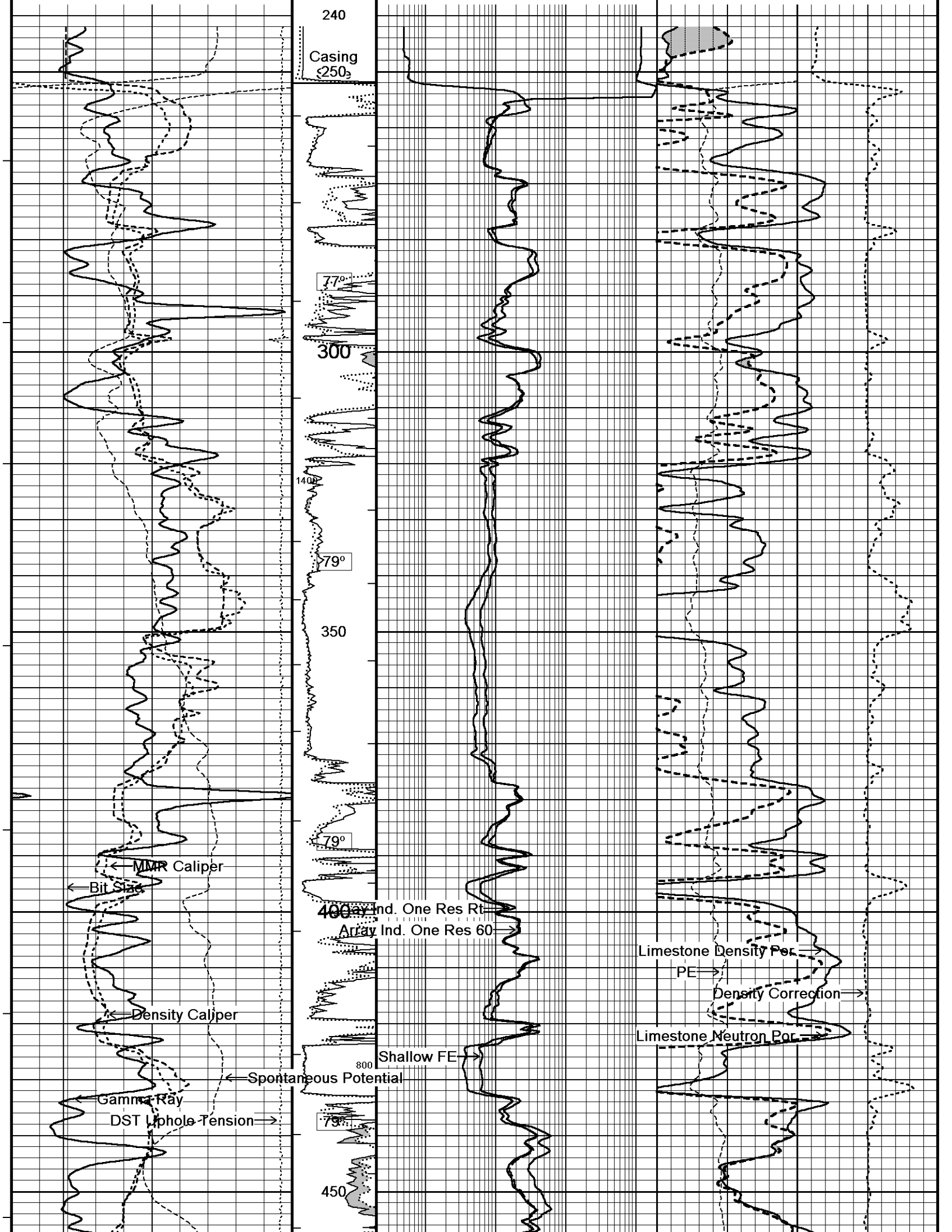
CHLORIDES: 1000 PPM
LCM: 3 LB/ BBL
650' (3000'-3650') OF HI-RESOLUTION LOG WAS RUN AS PER CUSTOMER REQUEST.

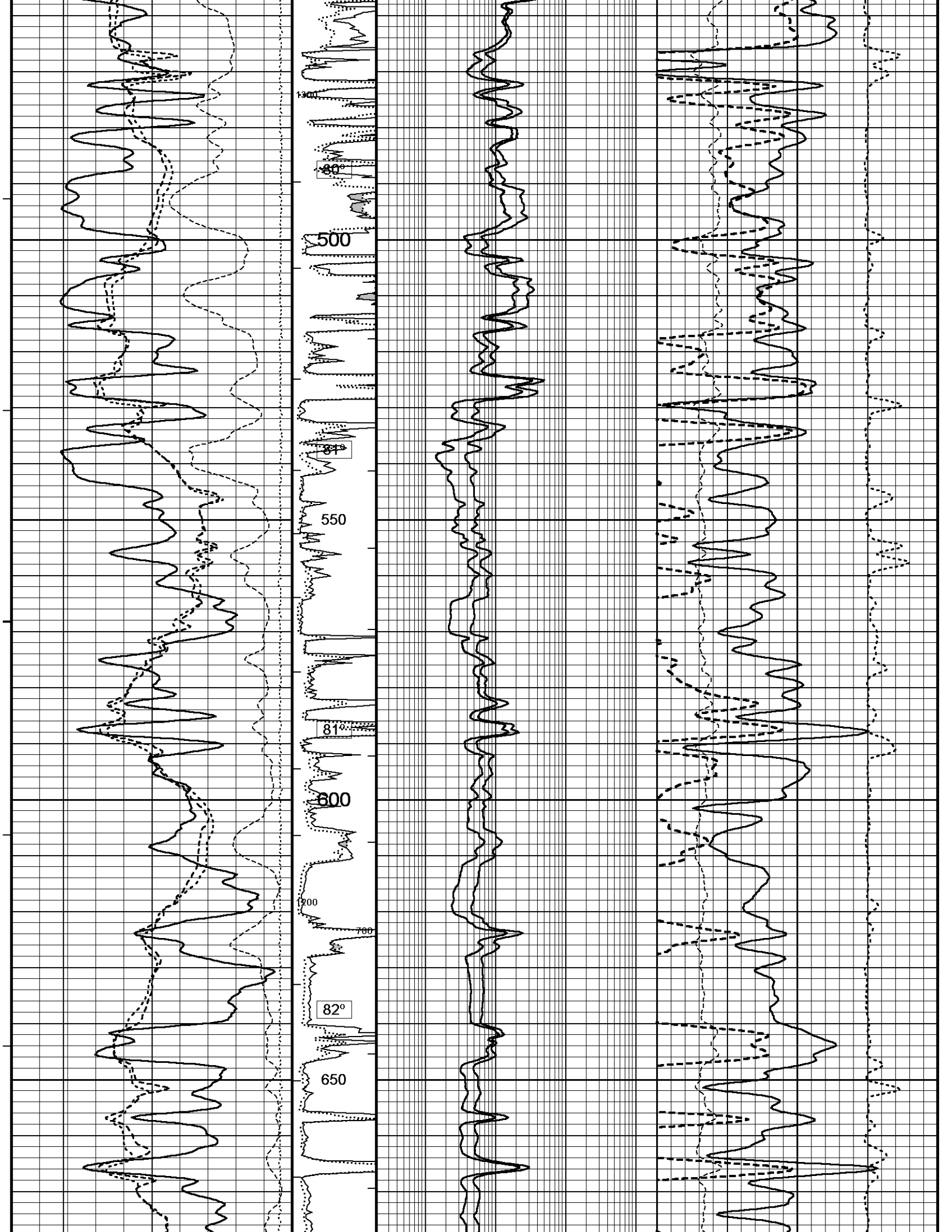
HOLE WASHOUTS AND RUGOSITY WILL AFFECT LOG QUALITY AND REPEATABILITY

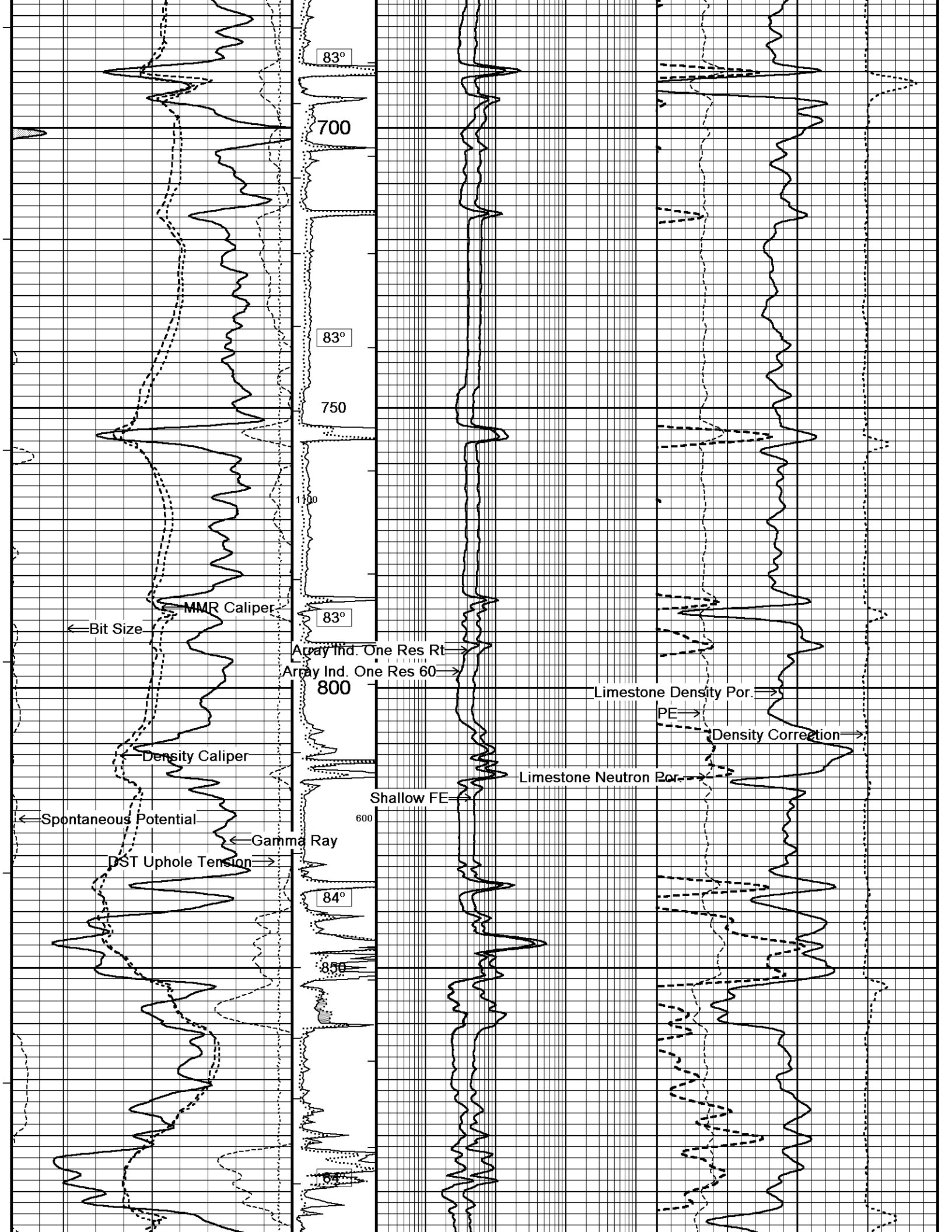
5 INCH MAIN SECTION

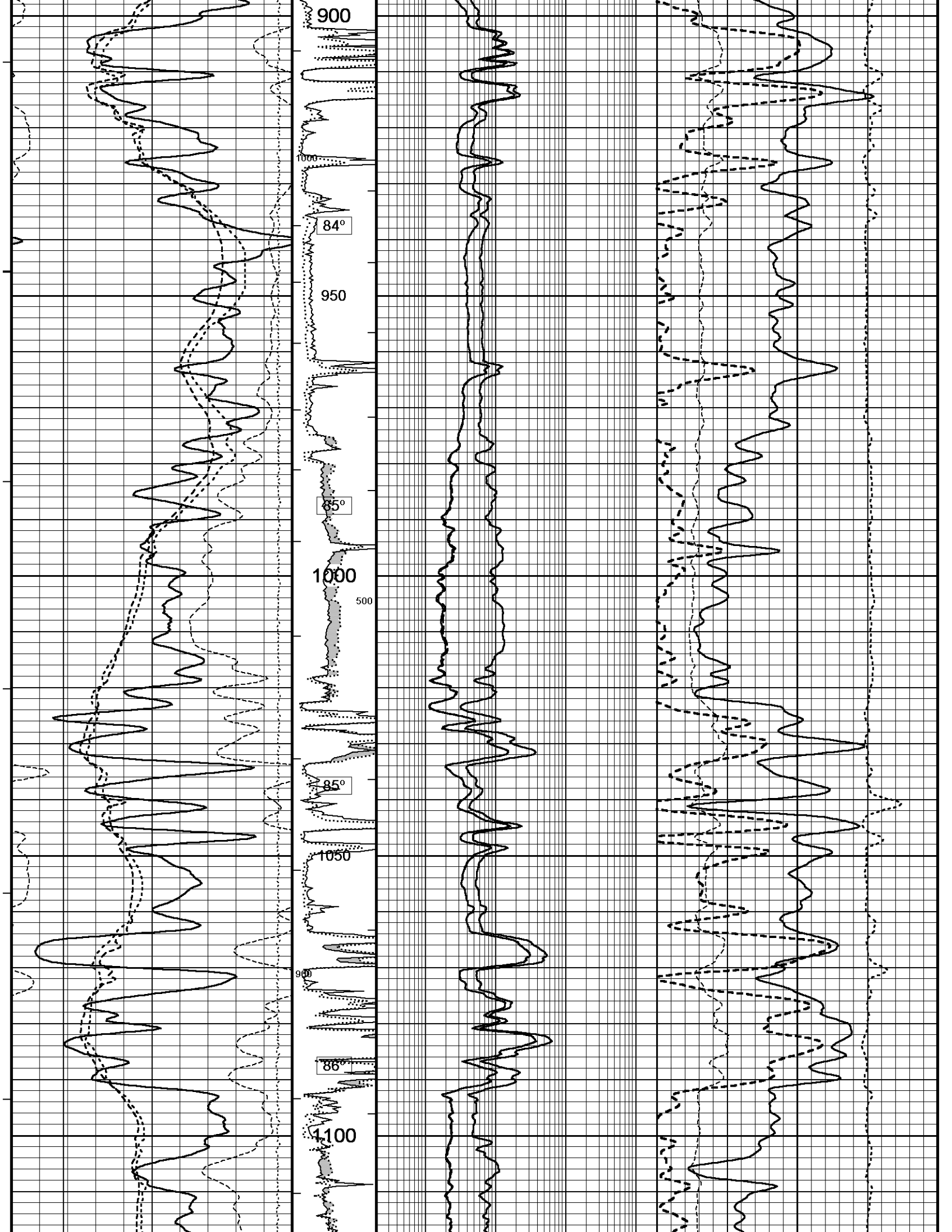
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 17-DEC-2013 20:01
Filename: C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS RESOURCES (W...\MAIN PASS.dta — Recorded on 17-DEC-2013 16:26
System Versions: Logged with 13.06.9804 Processed with 13.06.9804 Plotted with 13.06.9804

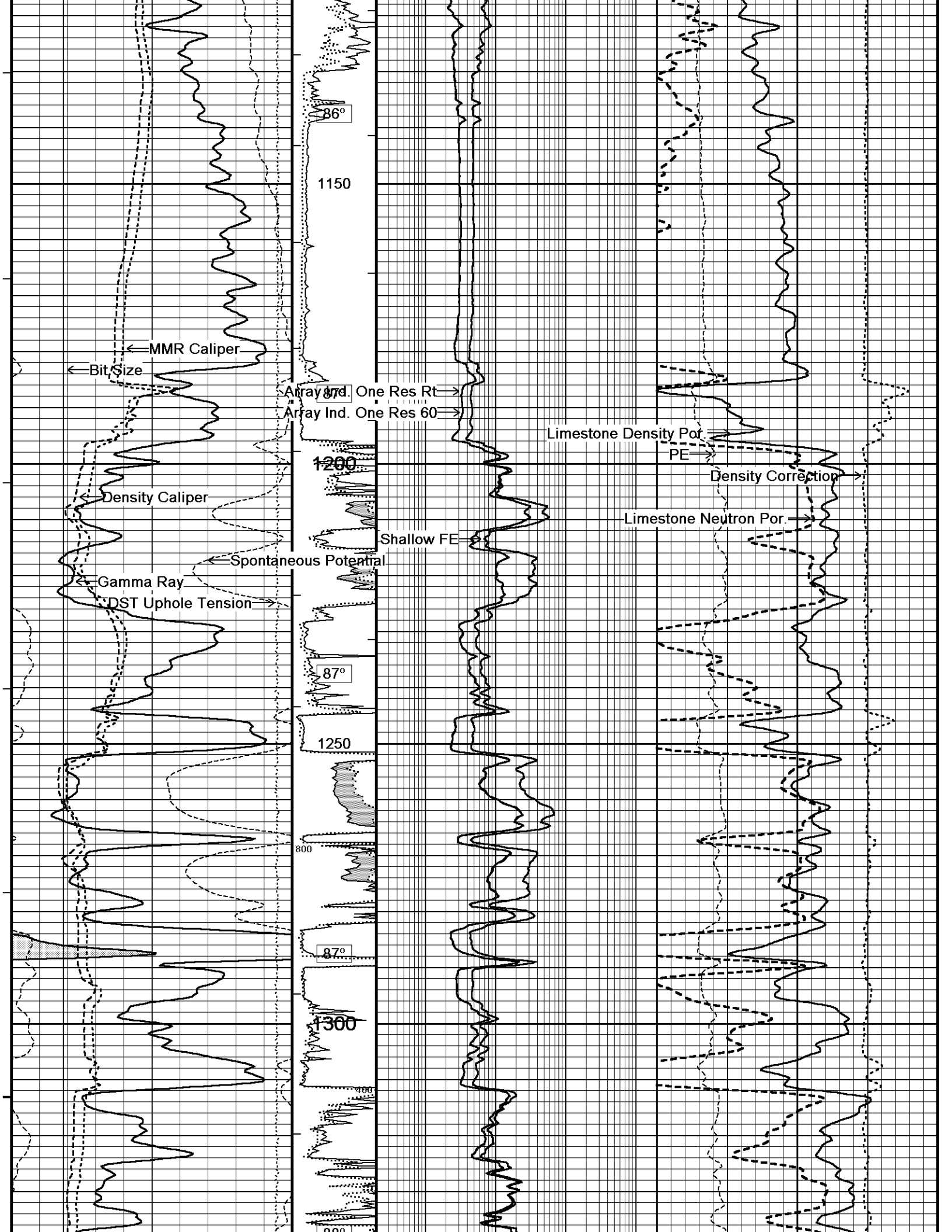


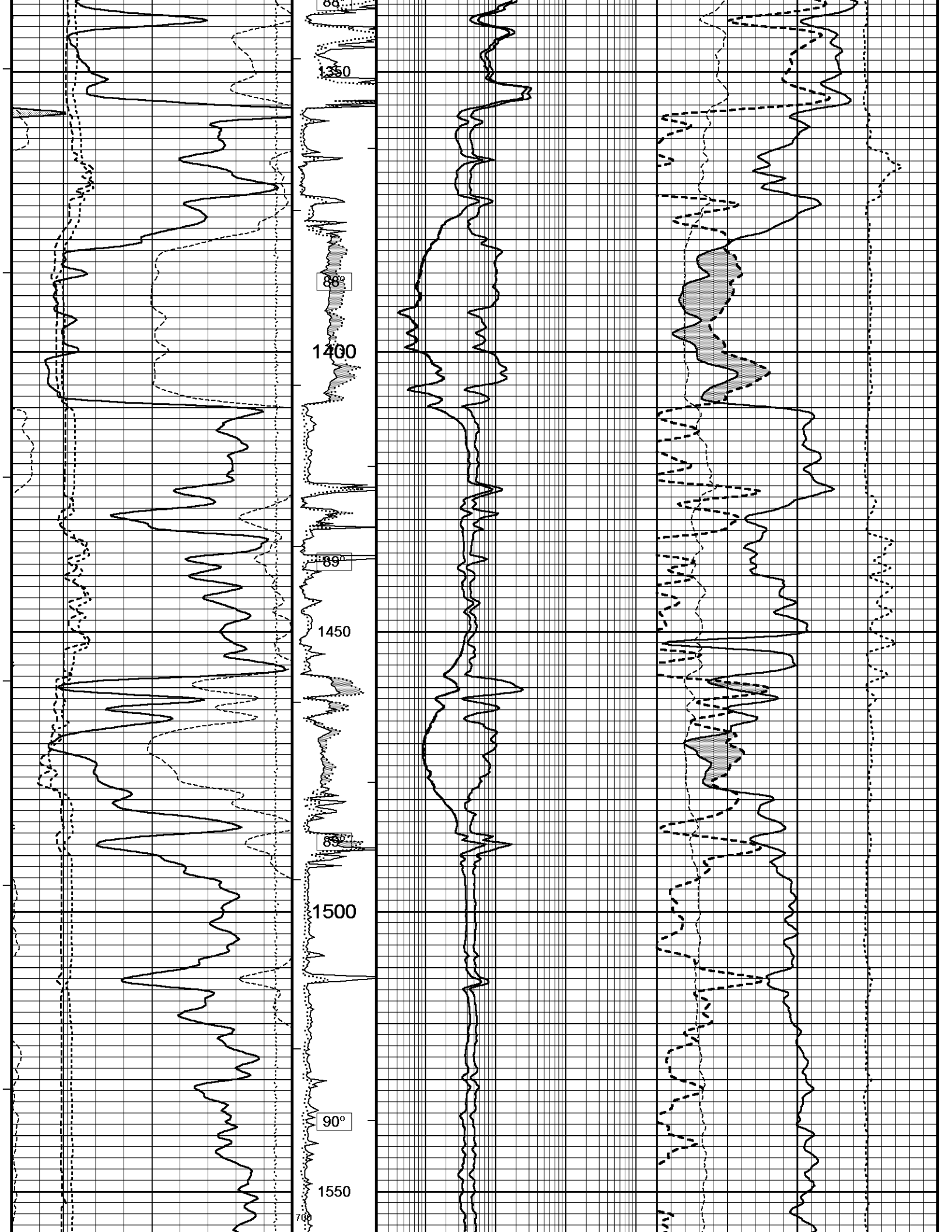

240
Casing
250
77°
300
1400
79°
350
79°
MMR Caliper
Bit Size
400
Array Ind. One Res Rt
Array Ind. One Res 60
Limestone Density Por.
PE
Density Correction
Density Caliper
Limestone Neutron Por.
Shallow FE
800
Spontaneous Potential
Gamma Ray
DST Uphole Tension
79°
450

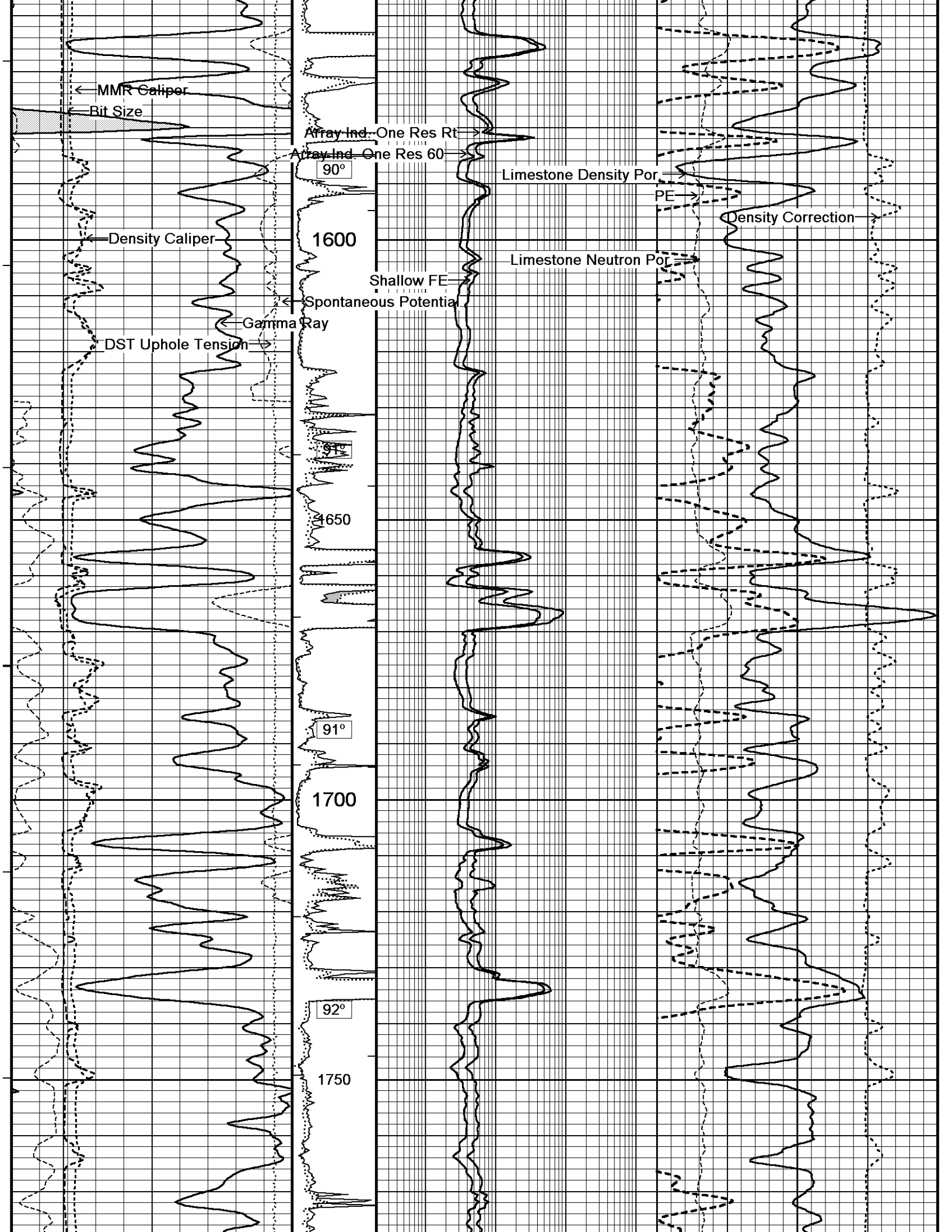

1300
80°
500
81°
550
81°
600
1200
700
82°
650

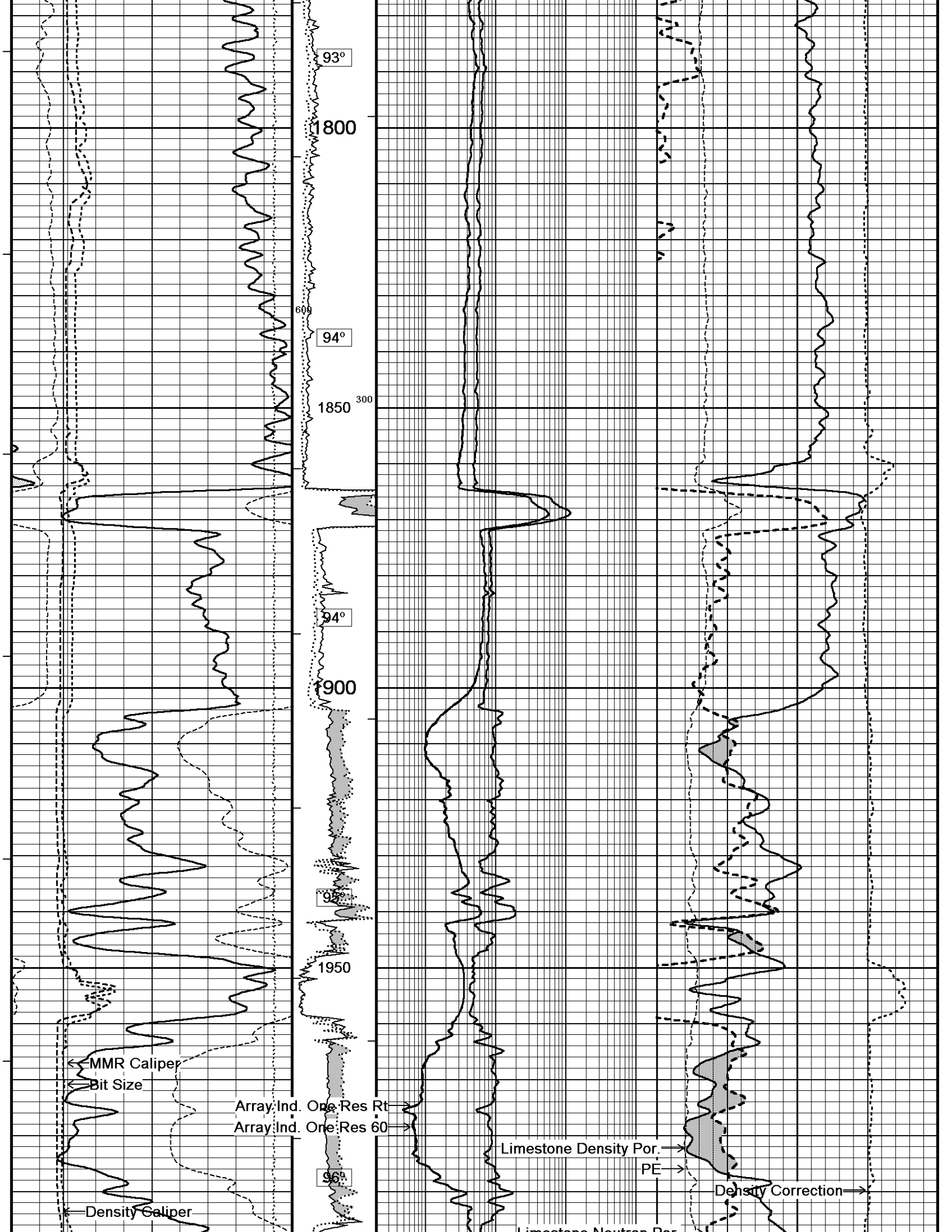

83°
700
83°
750
1100
MMR Caliper
Bit Size
83°
Array Ind. One Res Rt
Array Ind. One Res 60
800
Limestone Density Por.
PE
Density Correction
Density Caliper
Limestone Neutron Por.
Shallow FE
600
Spontaneous Potential
Gamma Ray
DST Uphole Tension
84°
850
84°

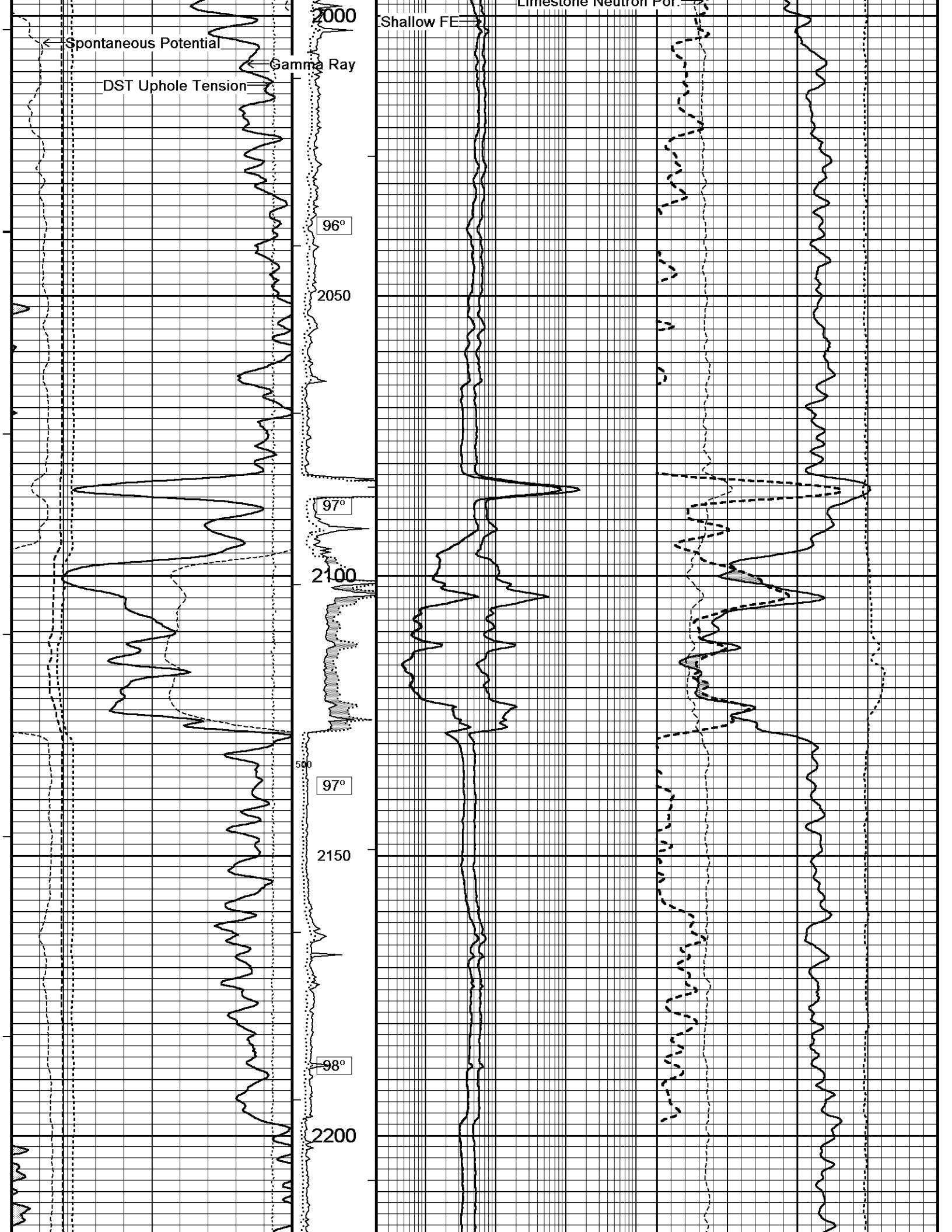

900
1000
84°
950
85°
1000
500
85°
1050
900
86°
1100

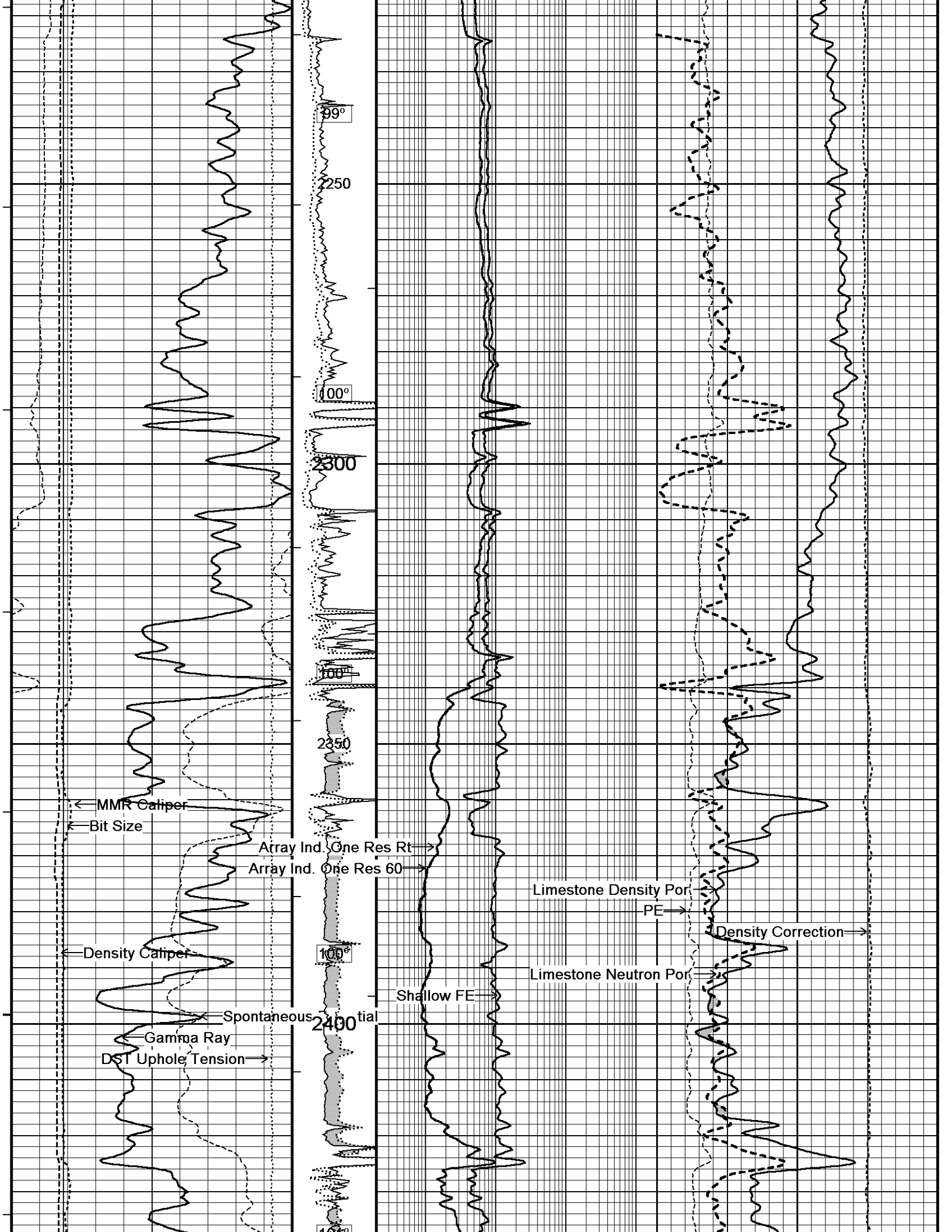

86°
1150
MMR Caliper
Bit Size
87°
Array Ind. One Res Rt
Array Ind. One Res 60
Limestone Density Por.
PE
1200
Density Correction
Density Caliper
Limestone Neutron Por.
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
87°
1250
800
87°
1300
400

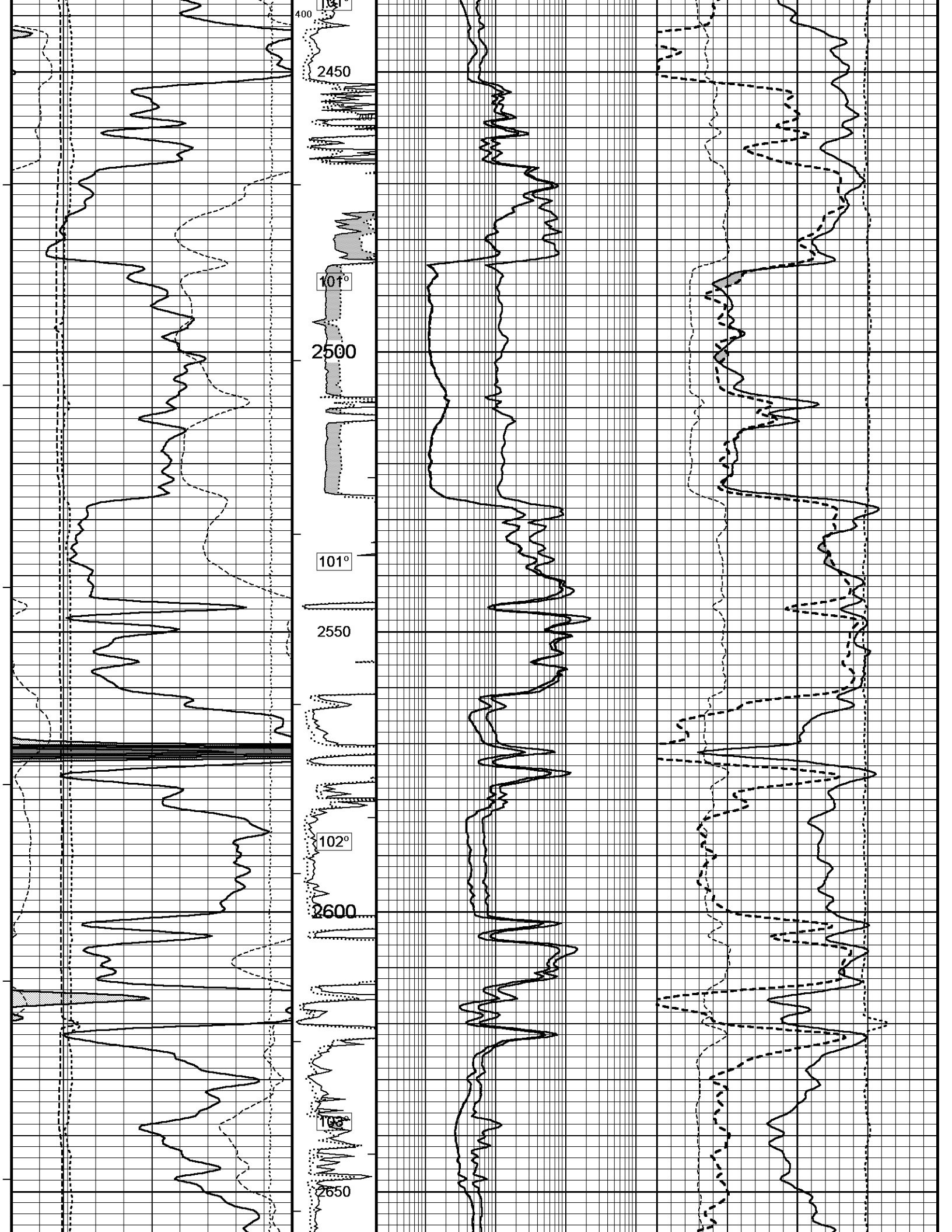

88°
1350
88°
1400
89°
1450
89°
1500
90°
1550

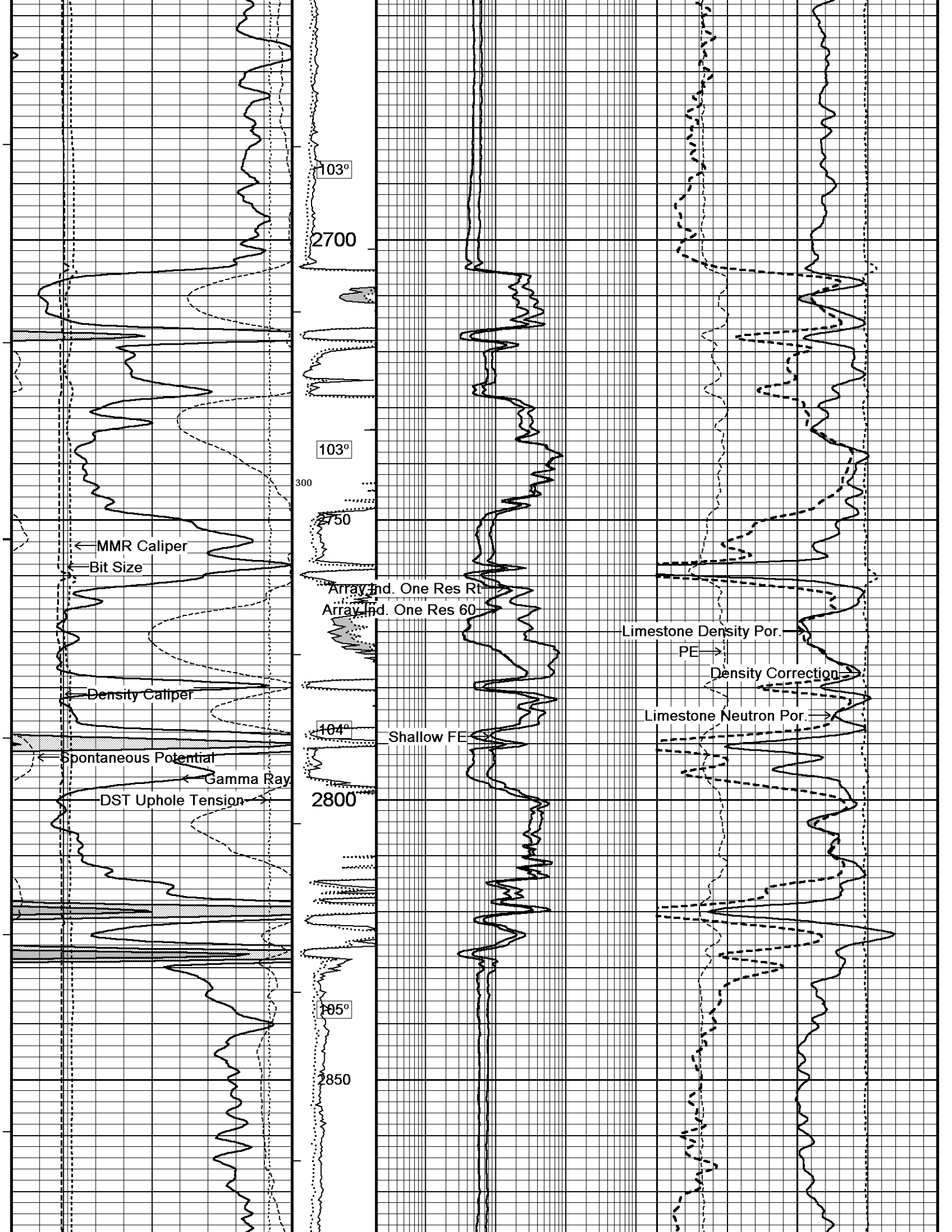

MMR Caliper
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
90°
Limestone Density Por
PE
Density Correction
Density Caliper
1600
Limestone Neutron Por
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
91°
1650
91°
1700
92°
1750

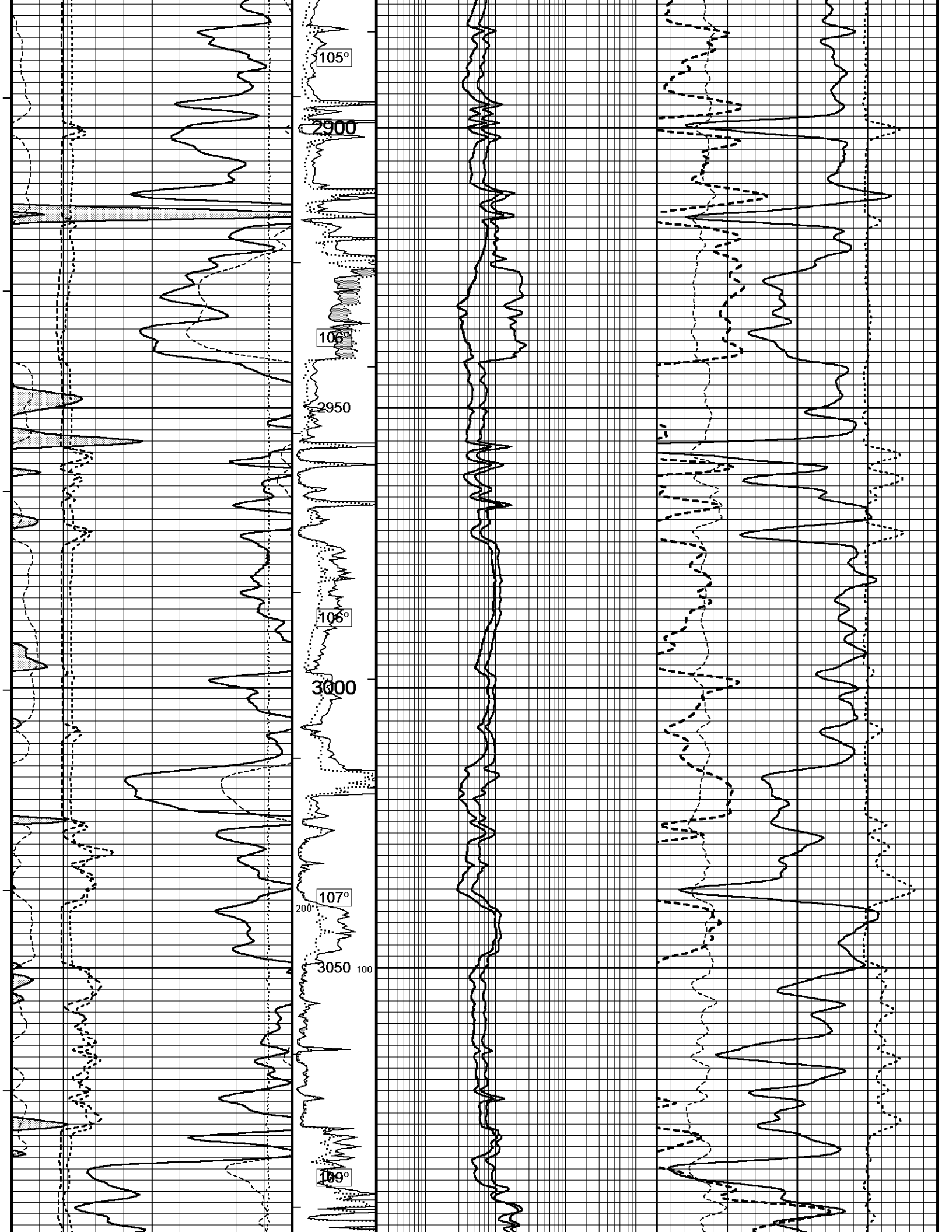

93°
1800
600
94°
1850
300
94°
1900
95°
1950
96°
MMR Caliper
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
Density Caliper
Limestone Density Por.
PE
Density Correction

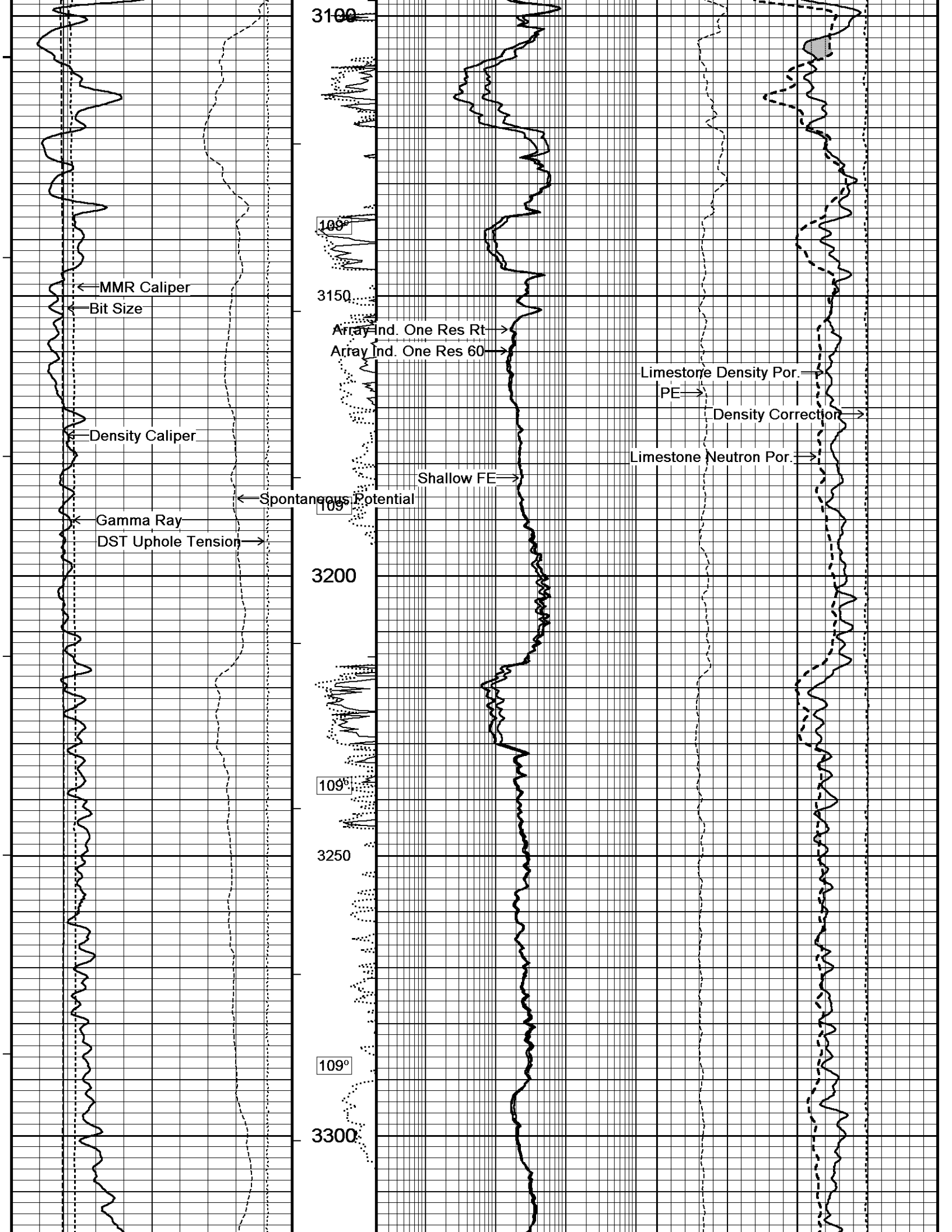

Limestone Neutron Por
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
2000
96°
2050
97°
2100
500
97°
2150
98°
2200

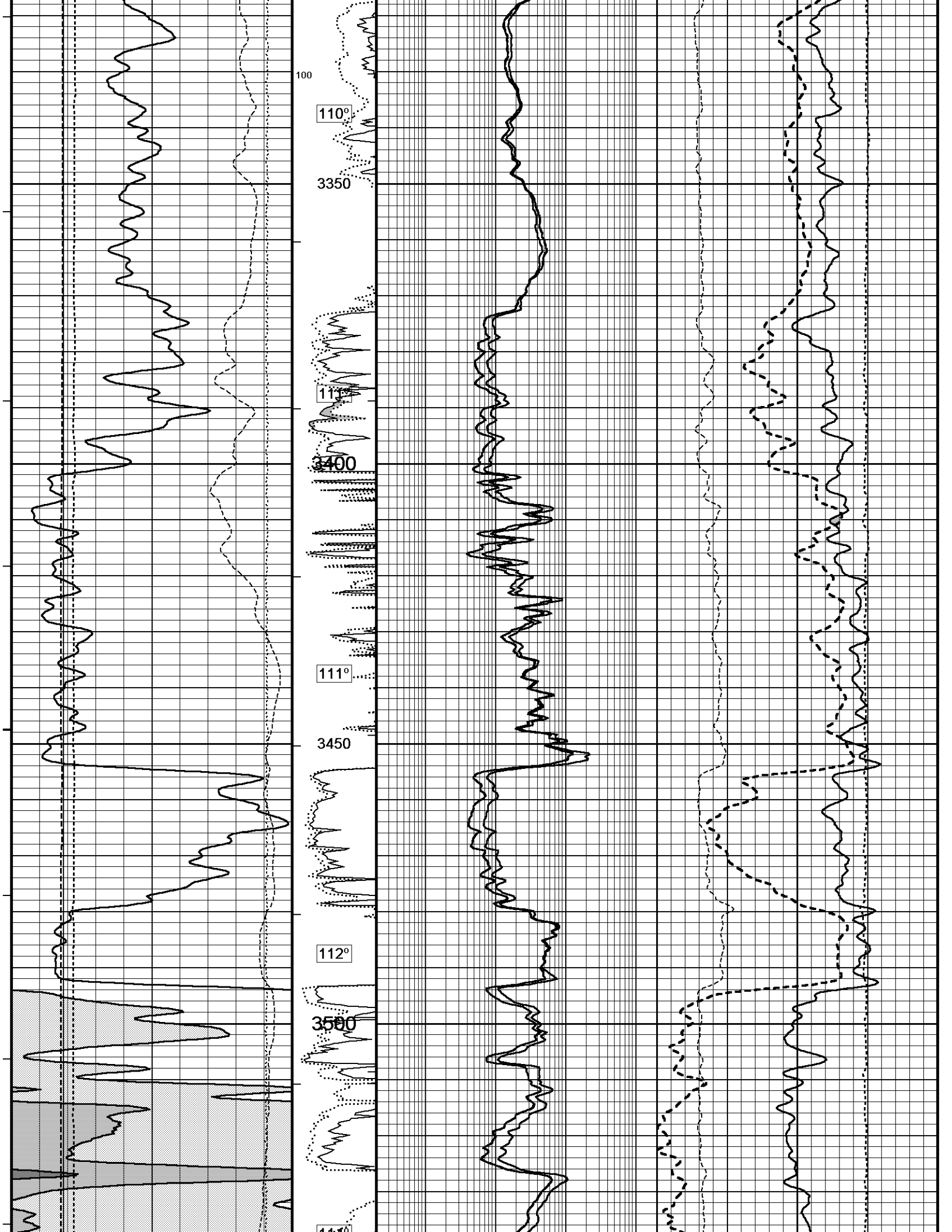

99°
2250
100°
2300
100°
2350
MMR Caliper
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
Limestone Density Por
PE
Density Correction
Density Caliper
100°
Limestone Neutron Por
Shallow FE
Spontaneous
tial
2400
Gamma Ray
DST Uphole Tension

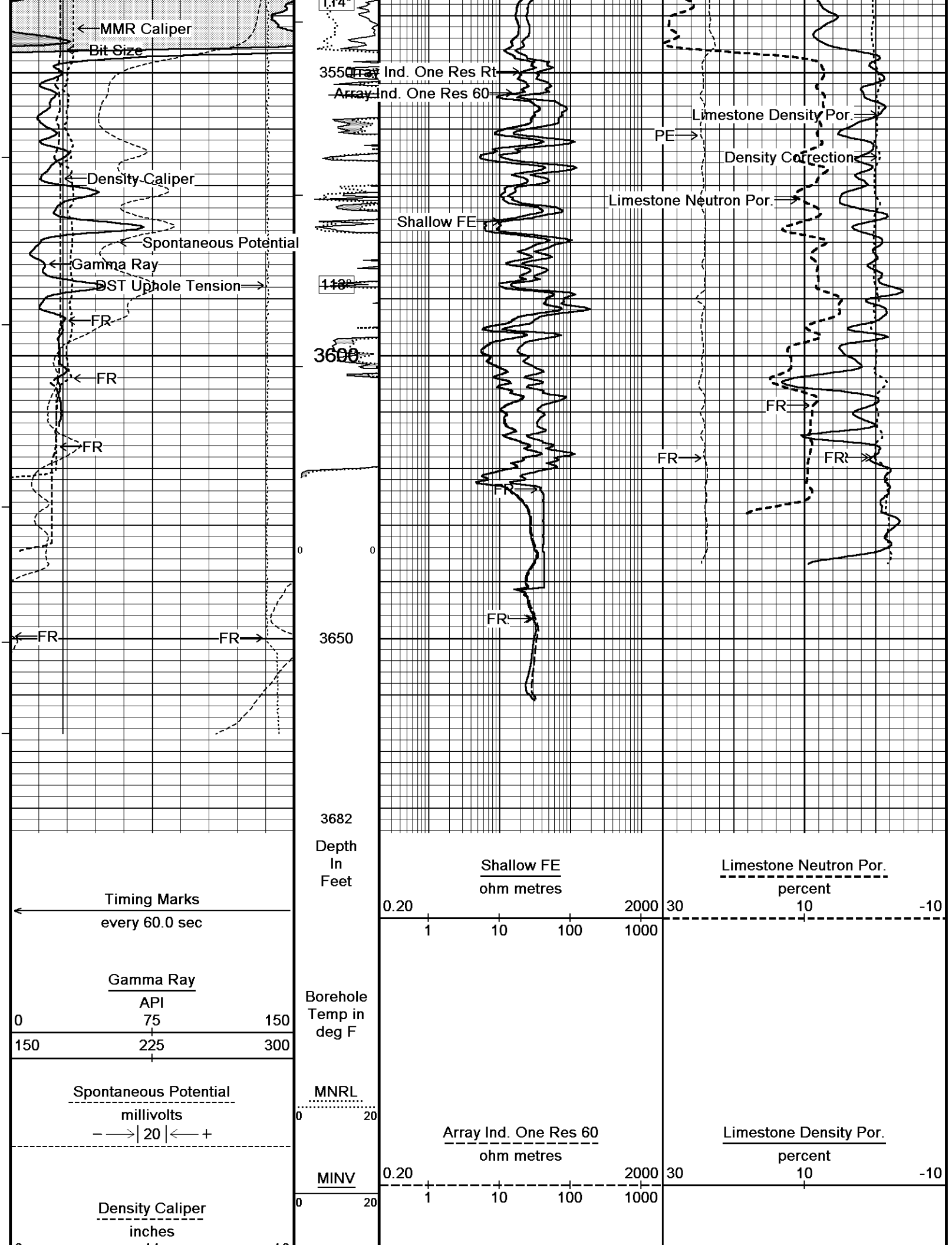

400
2450
101°
2500
101°
2550
102°
2600
103°
2650

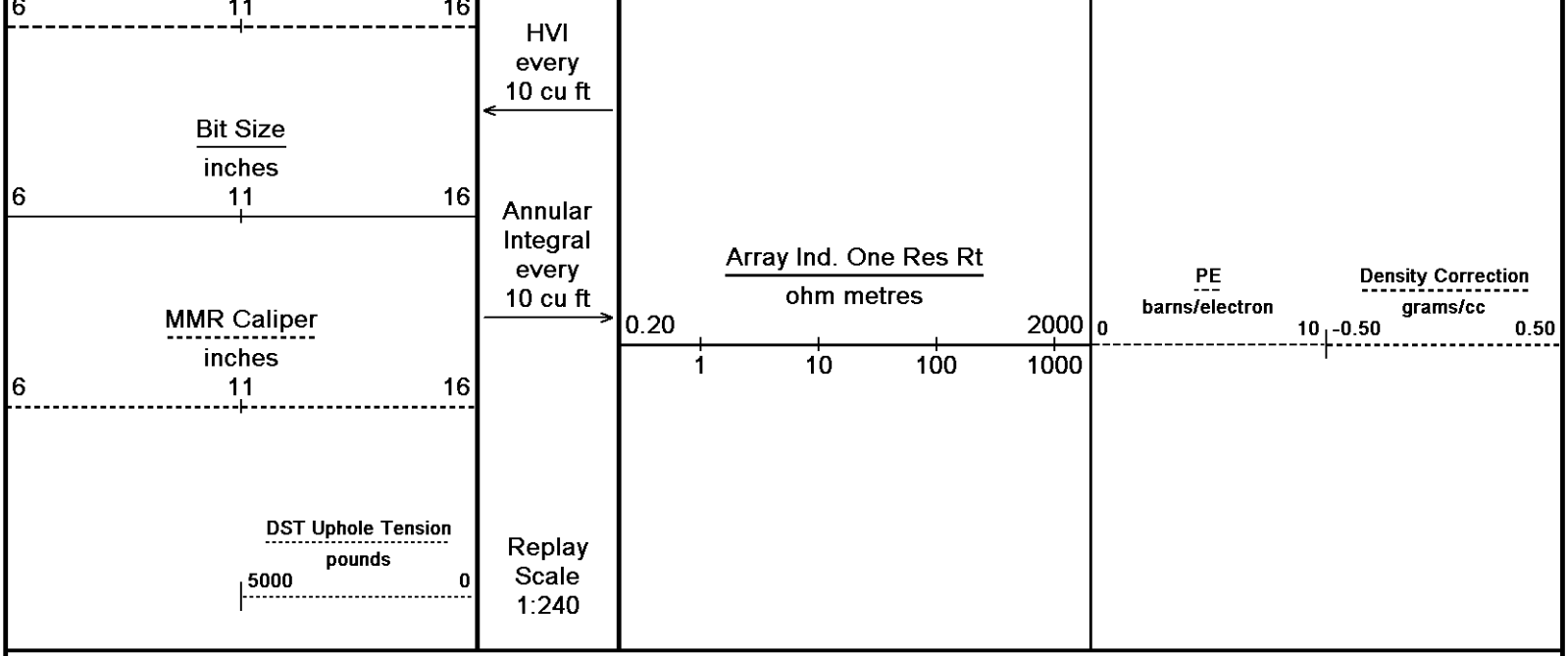

103°
2700
103°
300
2750
MMR Caliper
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
Limestone Density Por.
PE
Density Correction
Density Caliper
Limestone Neutron Por.
104°
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
2800
105°
2850


105°
2900
106°
2950
106°
3000
107°
200
3050
100
109°


3100
109°
MMR Caliper
Bit Size
3150
Array Ind. One Res Rt
Array Ind. One Res 60
Limestone Density Por.
PE
Density Correction
Density Caliper
Limestone Neutron Por.
Shallow FE
Spontaneous Potential
109°
Gamma Ray
DST Uphole Tension
3200
109°
3250
109°
3300


100
110°
3350
111°
3400
111°
3450
112°
3500


MMR Caliper
Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
FR
FR
FR
FR
FR
FR
1.14"
3550
Array Ind. One Res Rt
Array Ind. One Res 60
Shallow FE
118°
3600
0
0
3650
3682
Depth
In
Feet
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
150
225
300
Spontaneous Potential
millivolts
− 20 +
Density Caliper
inches
Borehole
Temp in
deg F
MNRL
0
20
MINV
0
20
Shallow FE
ohm metres
0.20
2000
1
10
100
1000
Array Ind. One Res 60
ohm metres
0.20
2000
1
10
100
1000
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.
FR
FR
FR
FR
Limestone Neutron Por.
percent
30
10
-10
Limestone Density Por.
percent
30
10
-10

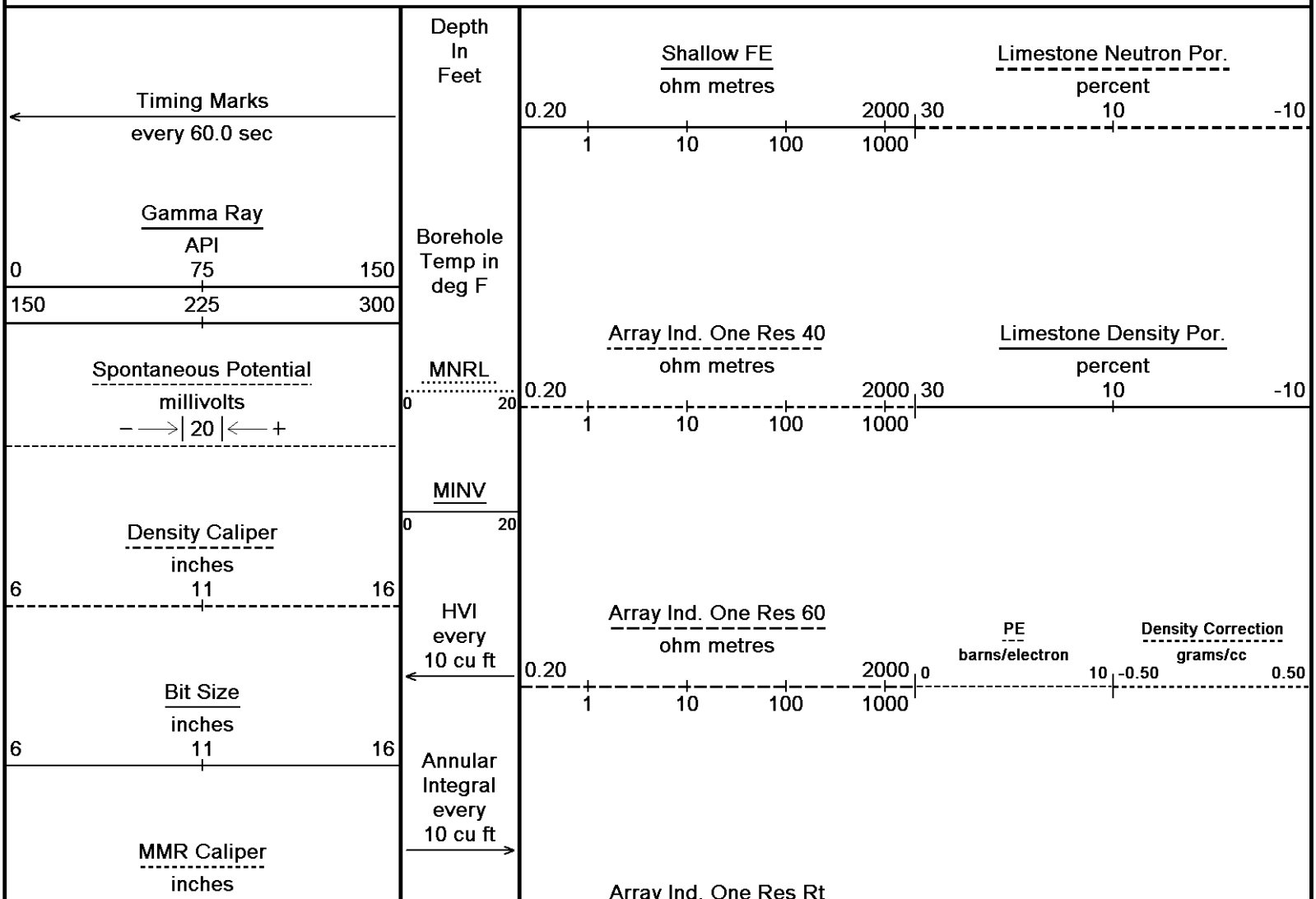


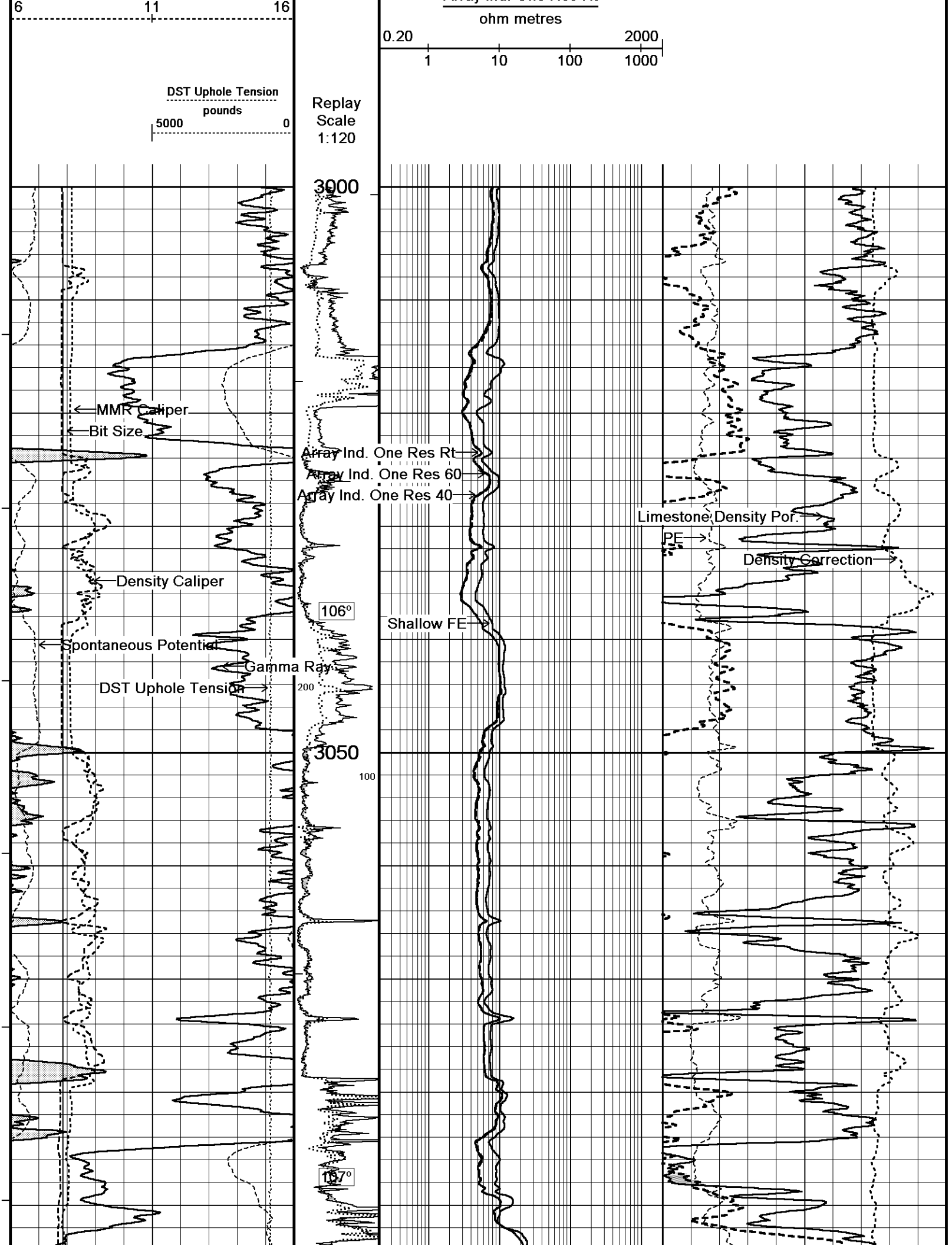
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 17-DEC-2013 20:01
Filename: C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS RESOURCES (W...\MAIN PASS.dta — Recorded on 17-DEC-2013 16:26
System Versions: Logged with 13.06.9804 Processed with 13.06.9804 Plotted with 13.06.9804

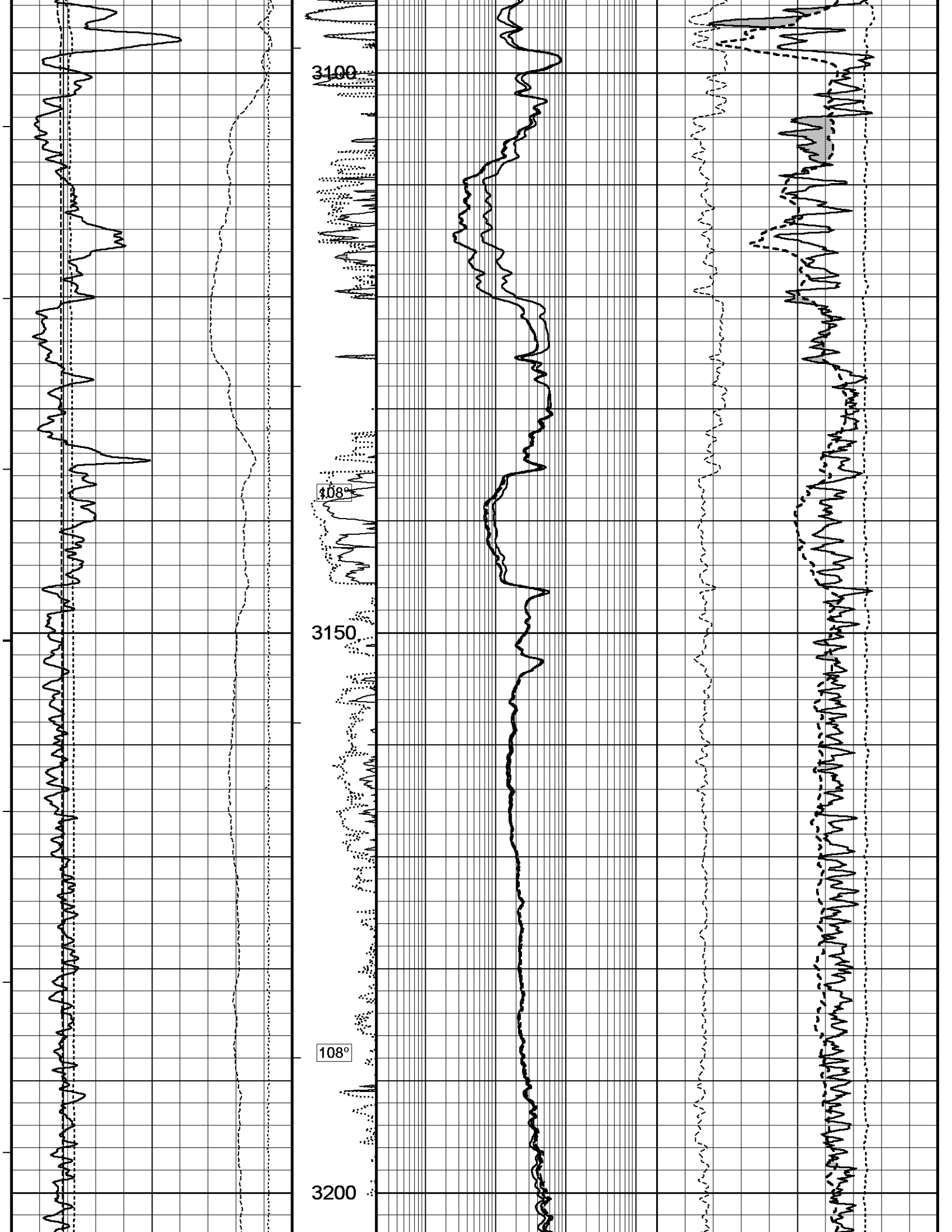
5 INCH MAIN SECTION

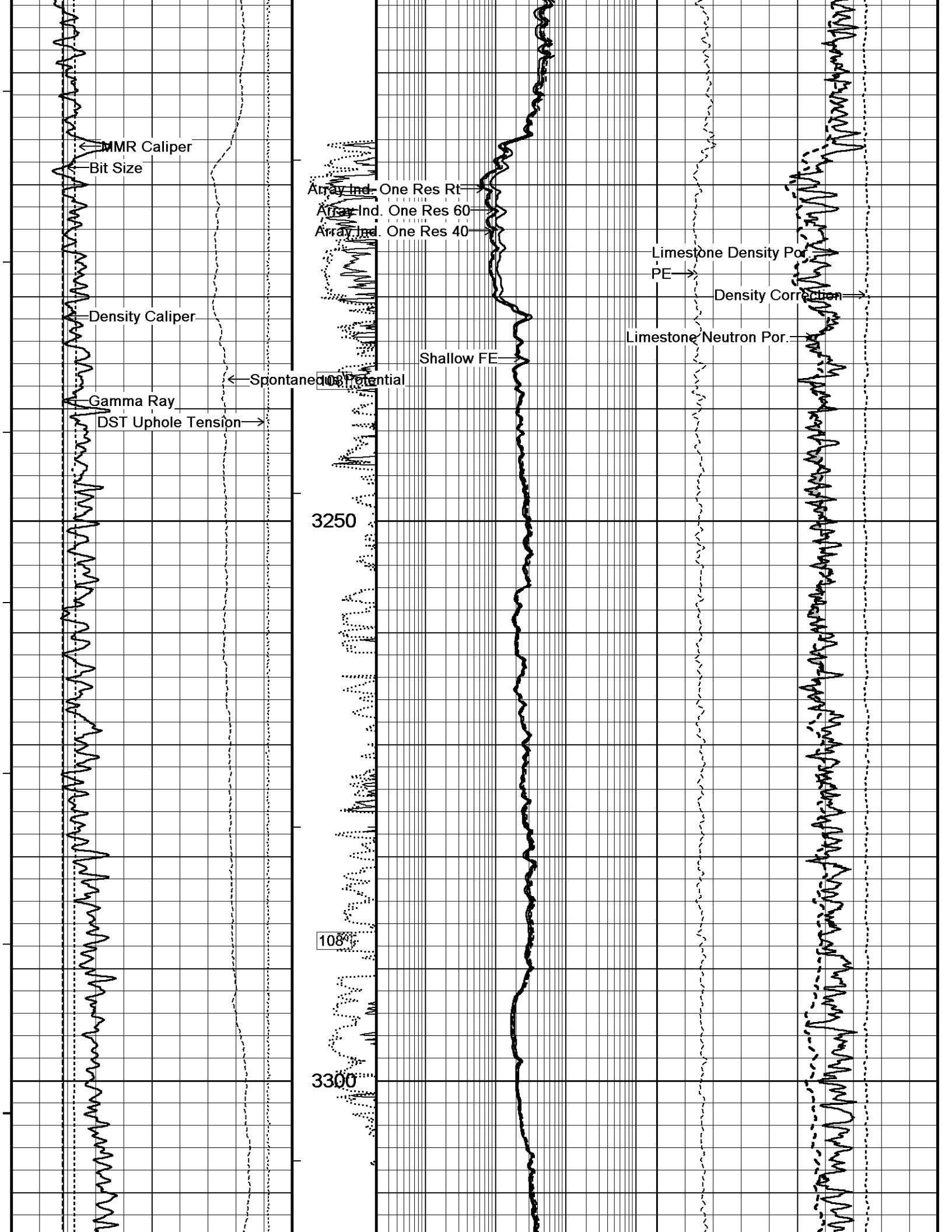
HIGH RESOLUTION SECTION

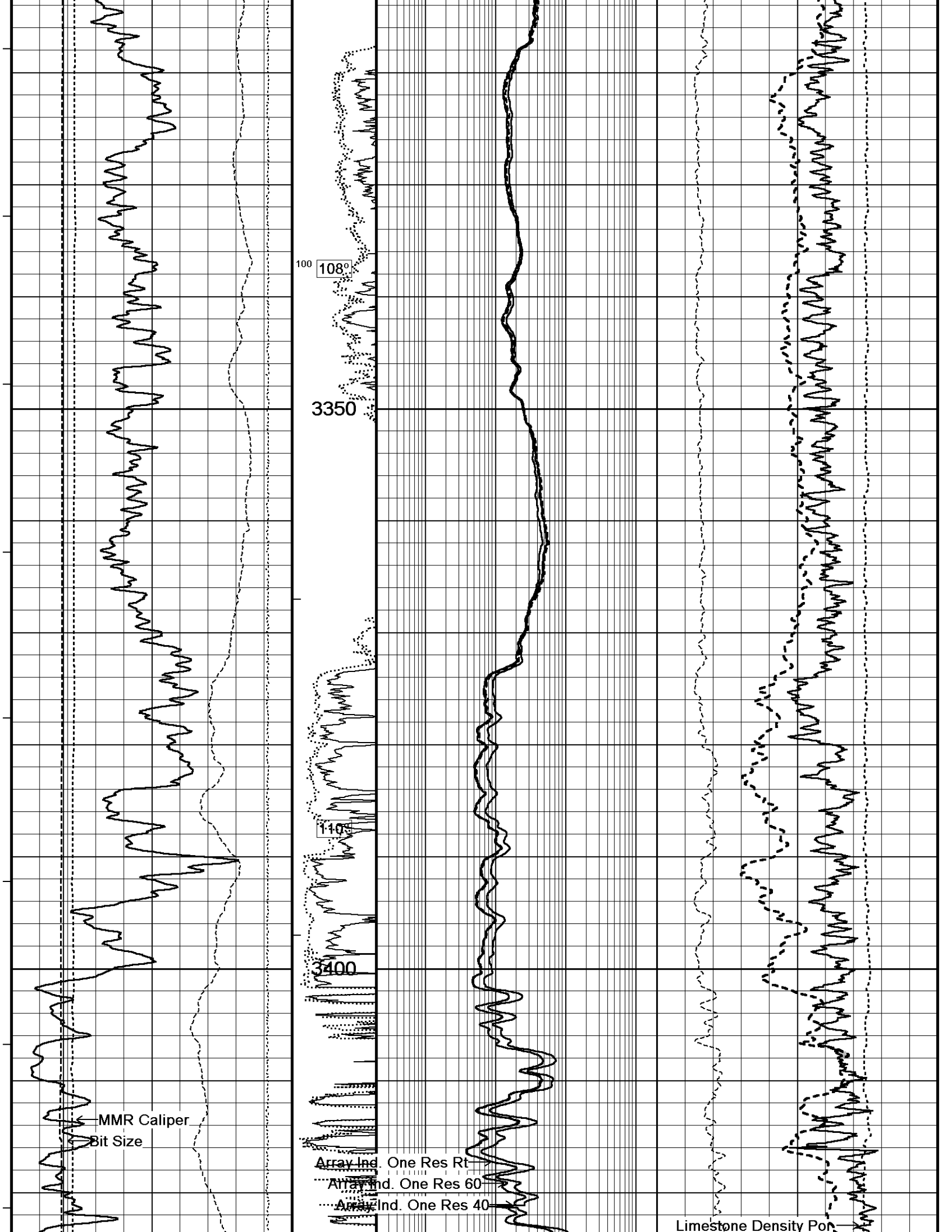
Depth Based Data - Maximum Sampling Increment 2.5cm — Plotted on 17-DEC-2013 20:01
Filename: C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS RE...\HIGH RESOLUTION PASS.dta
System Versions: Logged with 13.06.9804 Processed with 13.06.9804 Plotted with 13.06.9804

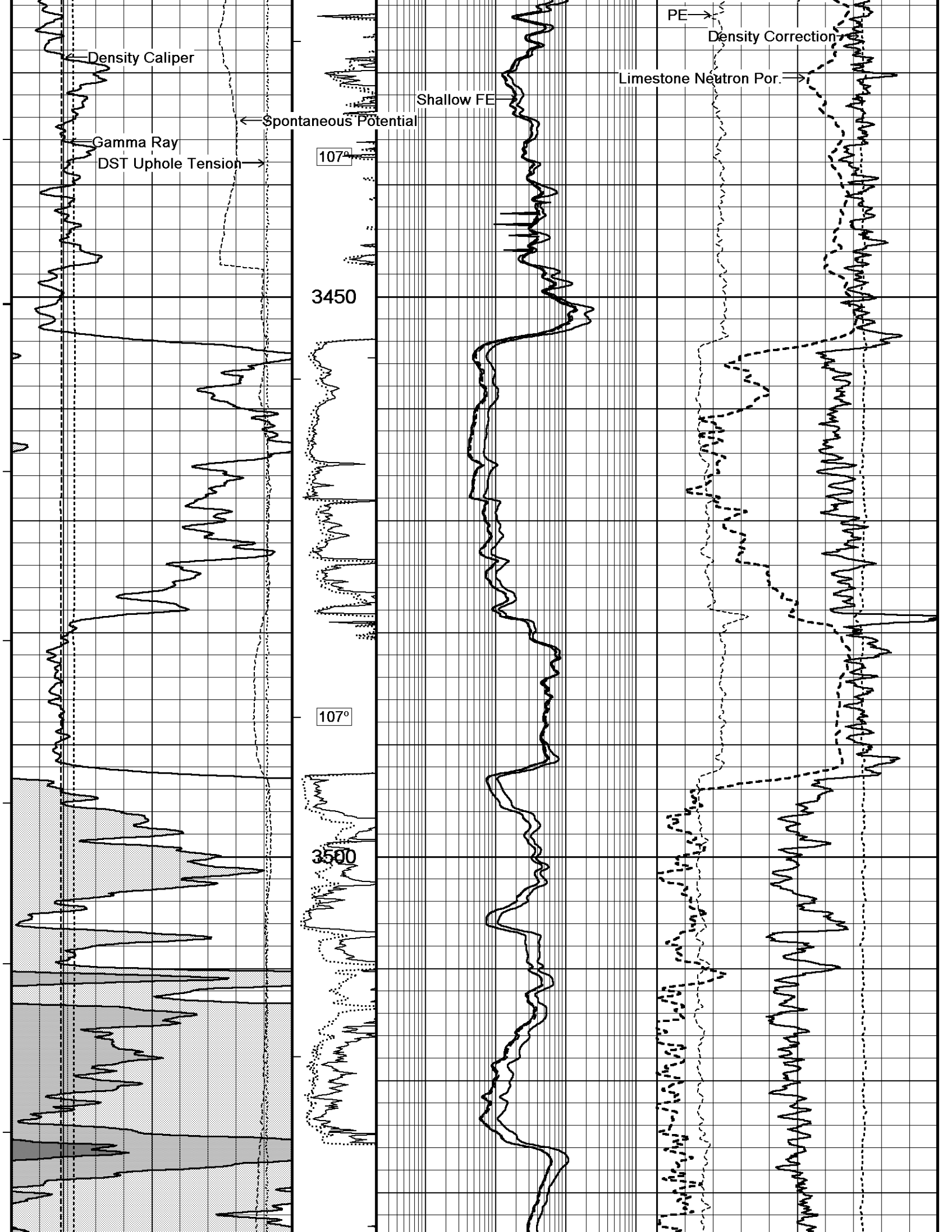


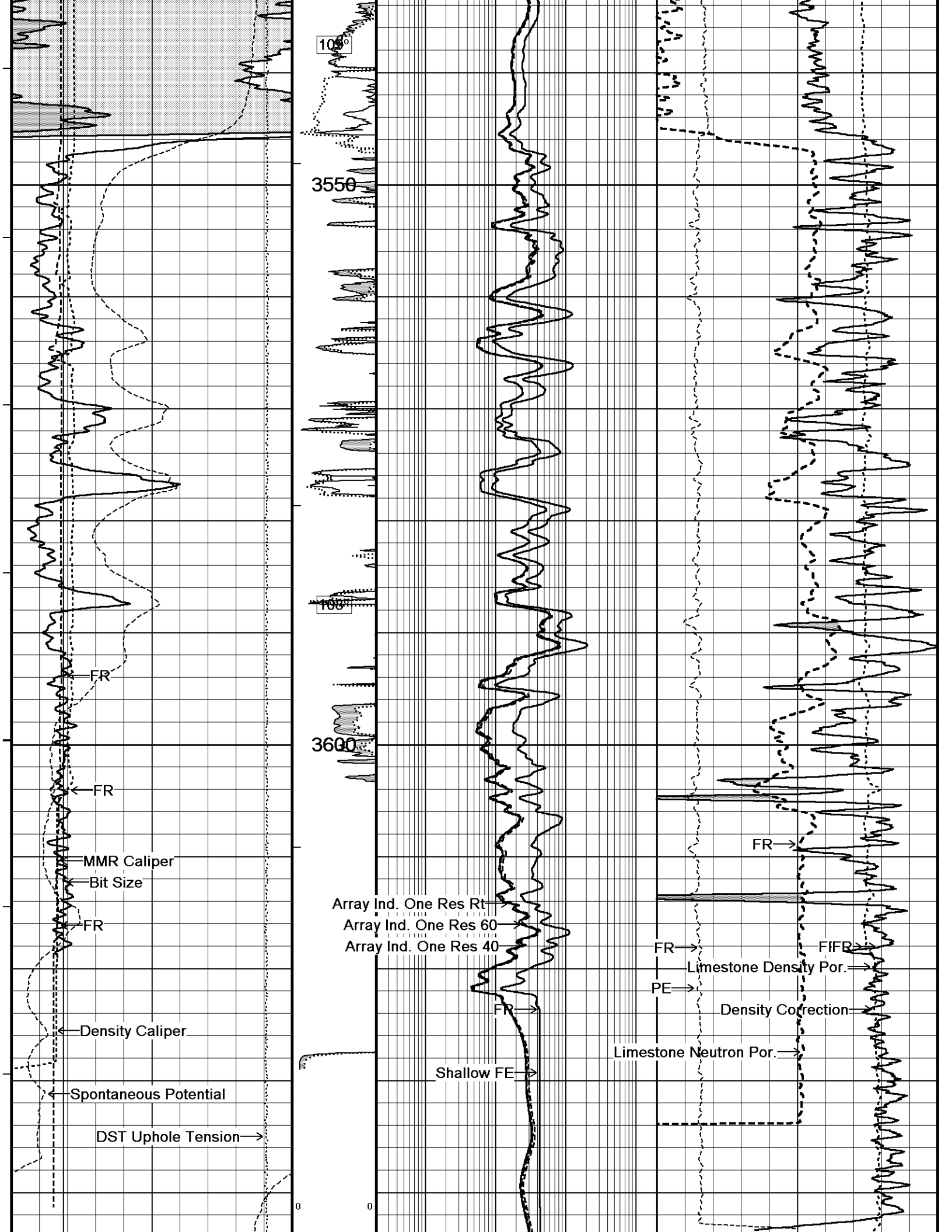

6
11
16
DST Uphole Tension
pounds
5000
0
Replay
Scale
1:120
ohm metres
0.20
2000
1
10
100
1000
3000
MMR Caliper
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Limestone Density Por.
PE
Density Correction
Density Caliper
106°
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
200
3050
100
107°

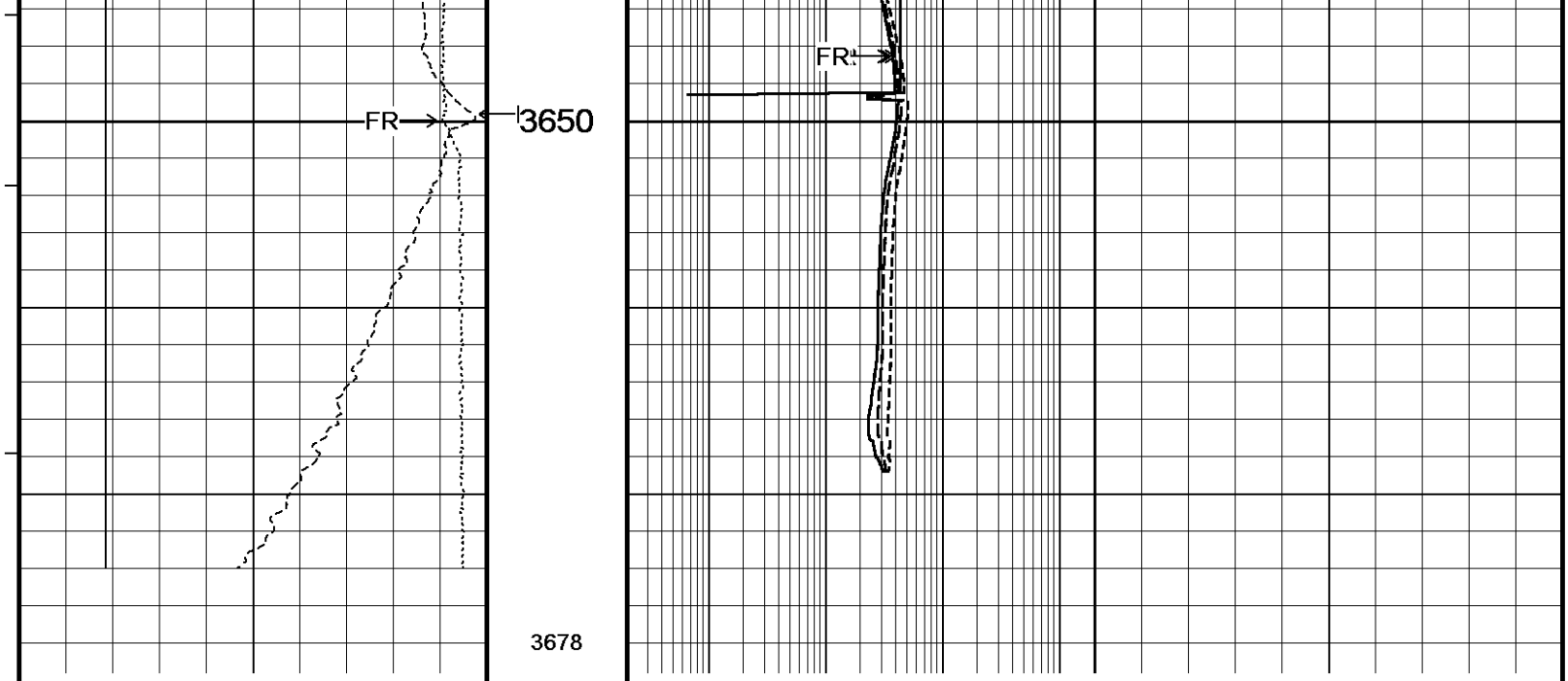

3100
108°
3150
108°
3200


MMR Caliper
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
108
3250
108
3300
Limestone Density Por
PE
Density Correction
Limestone Neutron Por.


100
108°
3350
110°
3400
MMR Caliper
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Limestone Density Por


Density Caliper
Gamma Ray
DST Uphole Tension
Spontaneous Potential
107°
3450
107°
3500
Shallow FE
PE
Density Correction
Limestone Neutron Por.


3550
3600
FR
FR
MMR Caliper
Bit Size
FR
Density Caliper
Spontaneous Potential
DST Uphole Tension
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
FR
Shallow FE
FR
FR
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.
0
0



3678

Depth In Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
– → | 20 | ← +

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

MMR Caliper
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Borehole Temp in deg F

MNRL
0 20

MINV
0 20

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:120

Shallow FE
ohm metres
0.20 2000
1 10 100 1000

Limestone Neutron Por.
percent
30 10 -10

Array Ind. One Res 40
ohm metres
0.20 2000
1 10 100 1000

Limestone Density Por.
percent
30 10 -10

Array Ind. One Res 60
ohm metres
0.20 2000
1 10 100 1000

PE
barns/electron
0 10

Density Correction
grams/cc
-0.50 0.50

Array Ind. One Res Rt
ohm metres
0.20 2000
1 10 100 1000

Depth Based Data - Maximum Sampling Increment 2.5cm

Plotted on 17-DEC-2013 20:01

Filename: C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS RE...\HIGH RESOLUTION PASS.dta

Filename: C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS RESOUR...\HIGH RESOLUTION PASS.dta
System Versions: Logged with 13.06.9804 Processed with 13.06.9804 Plotted with 13.06.9804

HIGH RESOLUTION SECTION

5 INCH REPEAT SECTON 1:240

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 17-DEC-2013 20:01
Filename: C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS RESOUR...\REPEAT PASS_4-6.dta
System Versions: Logged with 13.06.9804 Processed with 13.06.9804 Plotted with 13.06.9804

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
– → | 20 | ← +

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

MMR Caliper
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth
In
Feet

Borehole
Temp in
deg F

MNRL
0 20

MINV
0 20

HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

Replay
Scale
1:240

3450

107°

Shallow FE
ohm metres
0.20 2000
1 10 100 1000

Array Ind. One Res 60
ohm metres
0.20 2000
1 10 100 1000

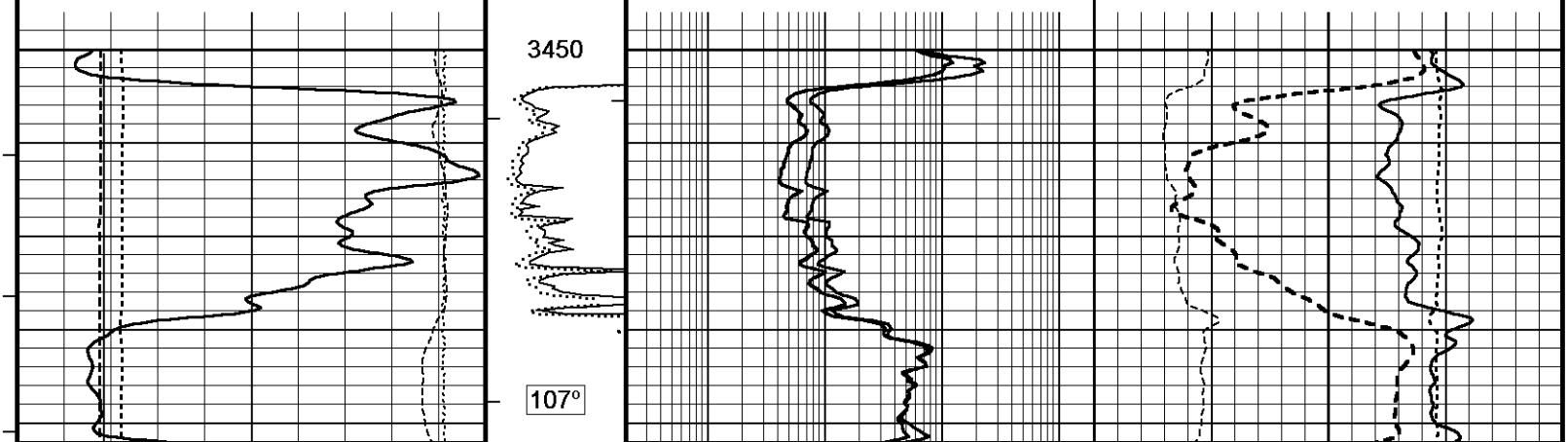
Array Ind. One Res Rt
ohm metres
0.20 2000
1 10 100 1000

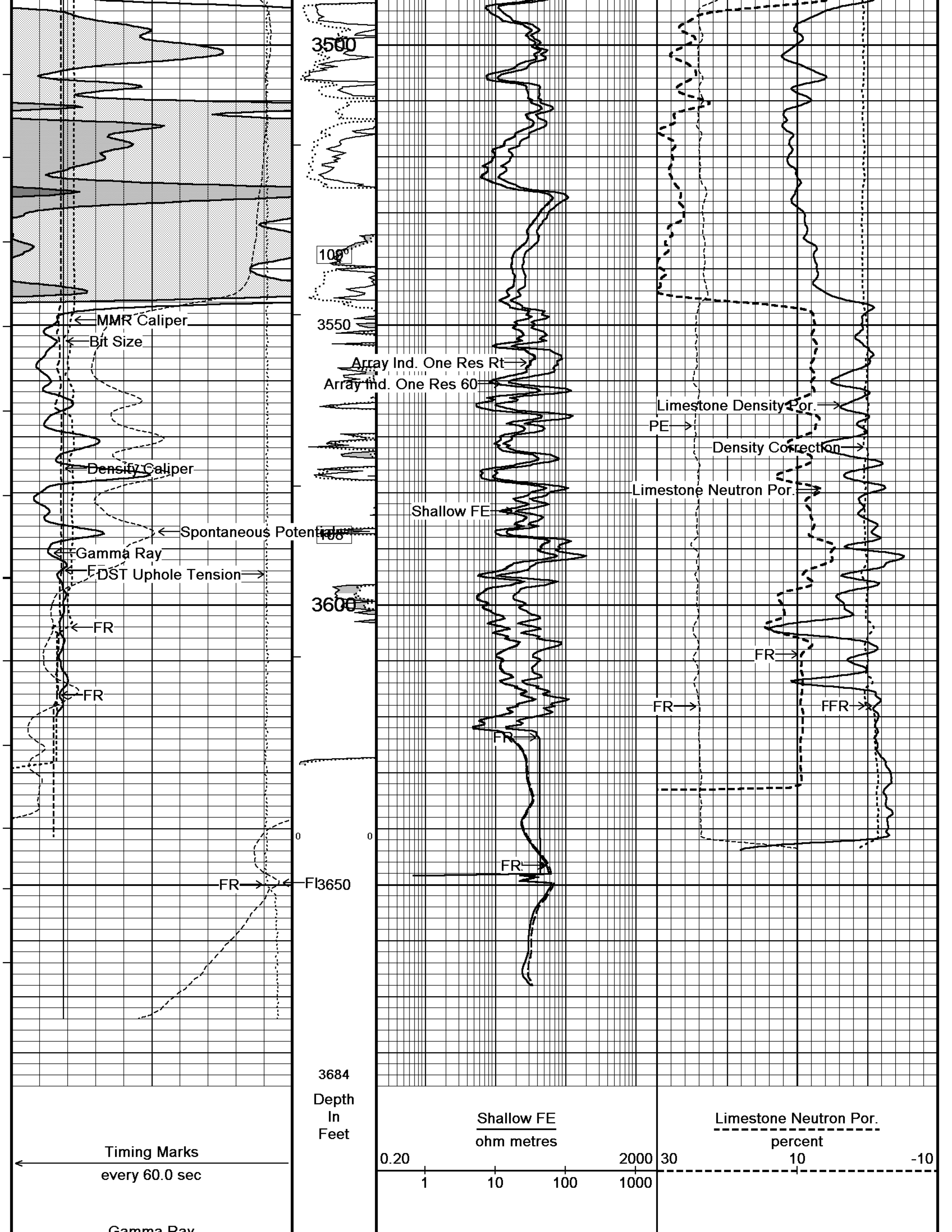
Limestone Neutron Por.
percent
30 10 -10

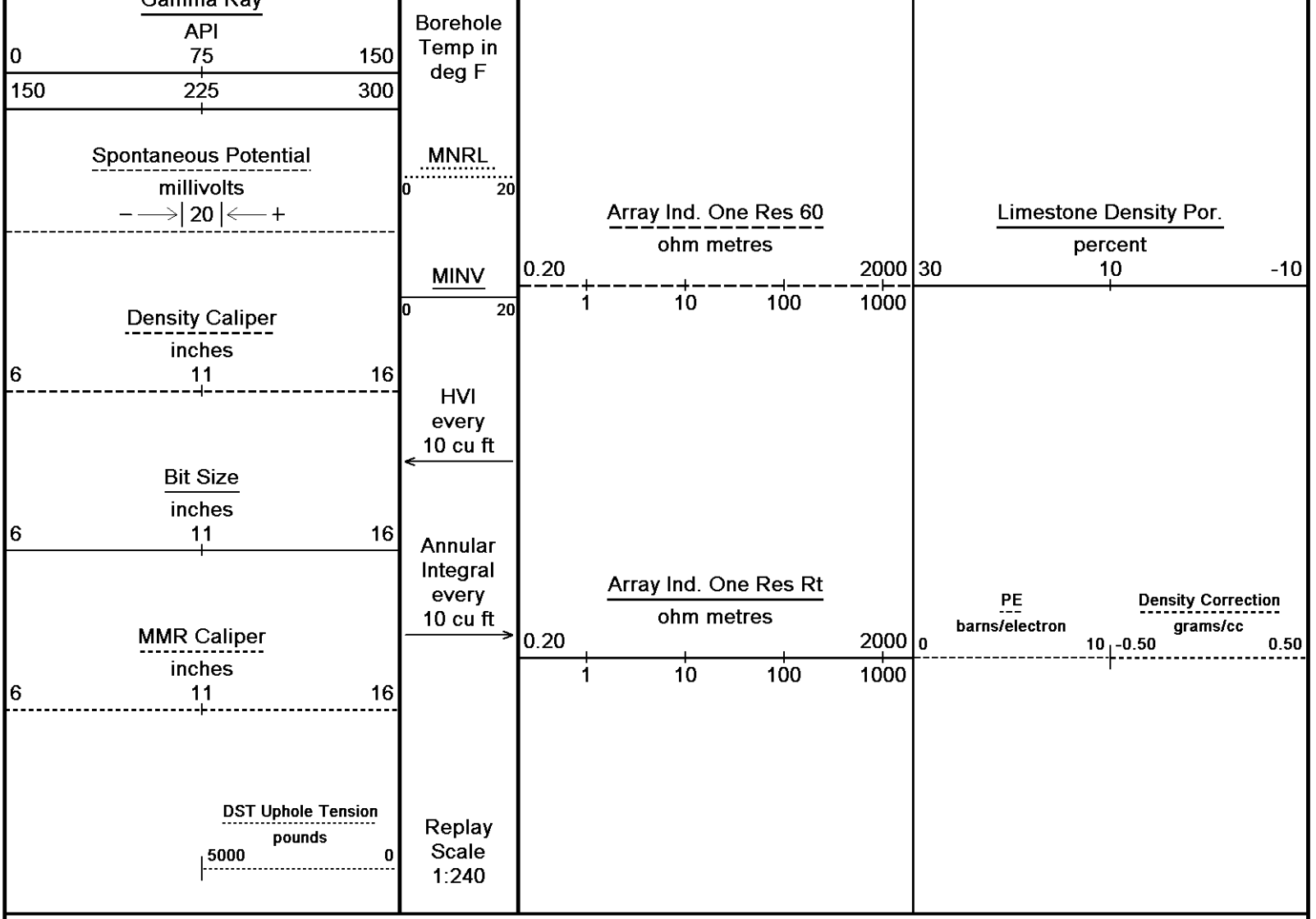
Limestone Density Por.
percent
30 10 -10

PE
barns/electron
0 10

Density Correction
grams/cc
-0.50 0.50




3500
3550
3600
3650
3684
MMR Caliper
Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
FR
FR
FR
Array Ind. One Res Rt
Array Ind. One Res 60
Shallow FE
FR
FR
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.
FR
FR
FFR
Depth
In
Feet
Timing Marks
every 60.0 sec
Gamma Ray
Shallow FE
ohm metres
0.20
2000
1
10
100
1000
Limestone Neutron Por.
percent
30
10
-10



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 17-DEC-2013 20:01

Filename: C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS RESOUR...\REPEAT PASS_4-6.dta

System Versions: Logged with 13.06.9804 Processed with 13.06.9804 Plotted with 13.06.9804

5 INCH REPEAT SECTON 1:240

BEFORE SURVEY CALIBRATION

C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS RESOURCES (WMU #19)\MAIN PASS.dta

General Constants All 000 — Last Edited on 17-DEC-2013,12:39

General Parameters		
Mud Resistivity	0.800	ohm-metres
Mud Resistivity Temperature	70.000	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	Base Density Porosity	
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 17-DEC-2013 12:59

Reading No	Measured	Calibrated (lbs)
1	14609.35	0.00
2	15828.66	415.00

Gamma Calibration MCG-E.A 571

Field Calibration on 16-DEC-2013 19:07

	Measured	Calibrated (API)
Background	42	28
Calibrator (Gross)	1083	724
Calibrator (Net)	1041	696

Gamma Constants MCG-E.A 571

Last Edited on 17-DEC-2013,12:38

Gamma Calibrator Number	36	
Mud Density	1.13	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

SP Calibration MCG-E.A 571

Field Calibration on 16-DEC-2013,18:49

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

High Resolution Temperature Calibration MCG-E.A 571

Field Calibration on 16-DEC-2013,18:49

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

High Resolution Temperature Constants MCG-E.A 571

Last Edited on 16-DEC-2013,18:49

Pre-filter Length	11

Micro Laterolog Calibration MMR-C.A 245

Base Calibration on
Field Check on

Base Calibration

Measured		Calibrated (ohm-m)	
Ref 1	Ref 2	Ref 1	Ref 2
0.0	0.0	0.0	0.0

Base Check (ohm-m)	Field Check (ohm-m)
0.0	0.0

Micro Laterolog Constants MMR-C.A 245

Last Edited on 03-NOV-2013 17:42

Pad Type	8 in Profile 3.5 in OD B32583	
Micro Laterolog K Factor	0.0165	
Standoff Offset	0.0000	inches

Mudcake Thickness Correction Constants

Mud Cake Source	Constant Value	
Mud Cake Thickness	0.4000	inches
Mud Cake Thickness Caliper	N/A	
Mud Cake Resistivity	0.1500	ohm-m
Mud Cake Resistivity Temp.	68.00	Deg F
Mud Cake Resistivity Source	Constant Value	
Temp. Source Rmc Correc.	N/A	

Caliper Calibration MMR-C.A 245

Base Calibration on 12-NOV-2013 01:45
Field Calibration on 16-DEC-2013 18:51

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13776	5.96
2	17030	7.99
3	20382	9.84
4	24138	11.90
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
9.74	9.94

Micro Normal and Micro Inverse Calibration MMR-C.A 245

Base Calibration on 13-DEC-2013 14:16
Field Check on 16-DEC-2013 18:50

Base Calibration

Channel	Measured Resistor 1	Measured Resistor 2	Calibrated (ohm-m) Resistor 1	Calibrated (ohm-m) Resistor 2
Micro Normal	11.7	59.7	5.0	25.0
Micro Inverse	15.5	77.3	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	76.0	76.0
Micro Inverse	58.9	58.9

Micro Normal and Micro Inverse Constants MMR-C.A 245

Last Edited on 13-DEC-2013 14:18

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	0.0000	inches

Neutron Calibration MDN-A.A 11

Base Calibration on 13-DEC-2013 14:23
Field Check on 16-DEC-2013 19:16

Base Calibration

	Measured Near	Measured Far	Calibrated (cps) Near	Calibrated (cps) Far
	3430	106	3714	110
Ratio	32.349		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	2162	3072
Ratio	0.704	

Field Check

	Calibrated (cps)	
	2114	3061
Ratio	0.695	

Neutron Constants MDN-A.A 11

Last Edited on 16-DEC-2013,19:07

Neutron Source Id	N1054	
Neutron Jig Number	036	
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	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	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 65

Base Calibration on 13-DEC-2013 13:49
Field Check on 16-DEC-2013 19:00

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	958.0	126.8
Base Check		281.6
Field Check		281.5

FE Constants MFE-A.A 65

Last Edited on 16-DEC-2013,18:59

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

Sonic Constants MSS-A.A 101

Last Edited on 17-DEC-2013,16:23

Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	4-6' Compensated Sonic	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	N/A	micro-sec
MX3FT	N/A	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft
Sonde Mode	Compensated	
Hole Type	Open Hole	

Sonde Parameters

	Measured	Calibrated
Offset	N/A	0.0000
Free Pipe	N/A	N/A

Peak Amplitude Source N/A

Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)
3'	N/A	N/A	N/A	N/A	N/A
4'	N/A	N/A	N/A	N/A	N/A
5'	N/A	N/A	N/A	N/A	N/A
6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

Waveform Used For Processing N/A

Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	N/A
N/A	N/A	N/A	
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	

Full Waveform Parameters

Use 3' Waveform to derive TR	N/A	
Use 4' Waveform to derive TR	N/A	
Use 5' Waveform to derive TR	N/A	
Use 6' Waveform to derive TR	N/A	
3' Waveform Discriminator Level	N/A	mV
4' Waveform Discriminator Level	N/A	mV
5' Waveform Discriminator Level	N/A	mV
6' Waveform Discriminator Level	N/A	mV
3' Waveform Filter	N/A	
4' Waveform Filter	N/A	
5' Waveform Filter	N/A	
6' Waveform Filter	N/A	
Semblance Level	N/A	
Semblance Window Width	N/A	micro-sec
Sonic 1 Despiker	N/A	N/A
Sonic 2 Despiker	N/A	N/A

Induction Calibration MAI-A.A 169

Base Calibration on 13-DEC-2013,15:15
Field Check on 16-DEC-2013 18:48

Base Calibration

Test Loop Calibration	Measured	Calibrated (mmho/m)

Channel	Low	High	Low	High
1	17.8	485.7	9.3	966.2
2	6.3	393.9	7.6	821.4
3	3.5	265.5	5.2	566.0
4	2.3	135.1	2.6	279.2

Array Temperature 75.2 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1			11.5	3765.6
2			29.3	3446.9
3			28.1	3000.9
4			18.7	2065.3
Deep			16.8	2001.8
Medium			41.8	3921.6
Shallow			44.2	5032.4

Array Temperature 65.9 Deg F

Induction Constants MAI-A.A 169

Last Edited on 16-DEC-2013,18:46

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	

High Resolution Temperature Calibration MAI-A.A 169

Field Calibration on 16-DEC-2013,18:46

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

High Resolution Temperature Constants MAI-A.A 169

Last Edited on 16-DEC-2013,18:46

Pre-filter Length	11

Caliper Calibration MPD-B 120

Base Calibration on 12-NOV-2013 01:30
Field Calibration on 16-DEC-2013 18:54

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	20464	4.01
2	29007	5.96
3	37760	7.99
4	46288	9.84
5	55232	11.90
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.10	7.88

Photo Density Calibration MPD-B 120

Base Calibration on 20-NOV-2013 09:59
Field Check on 16-DEC-2013 18:59

Density Calibration

Base Calibration	Measured Near	Measured Far	Calibrated (sdu) Near	Calibrated (sdu) Far
Reference 1	57527	28805	59869	31110
Reference 2	23364	2568	24557	2522
Field Check at Base	996.5	1249.7		
Field Check	988.3	1237.5		

PE Calibration

Base Calibration	WS	Measured WH	Measured Ratio	Calibrated Ratio
Background	176	870		
Reference 1	20680	57341	0.363	0.369
Reference 2	5905	23227	0.256	0.271
Field Check at Base	176.1	869.9		
Field Check	175.0	861.6		

Density Constants MPD-B 120

Last Edited on 17-DEC-2013,12:37

Density Source Id	P56135B	
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	1.13	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

DOWNHOLE EQUIPMENT

C:\Program Files\Weatherford\WLS 13.06\DATA\TAOS RESOURCES (WMU #19)\MAIN PASS.dta

Compact Comms Gamma
MCG-E.A 571 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity
MMR-C.A 245 LG: 8.59 ft WT: 81.6 lb OD: 4.88 in

Compact Neutron
MDN-A.A 11 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

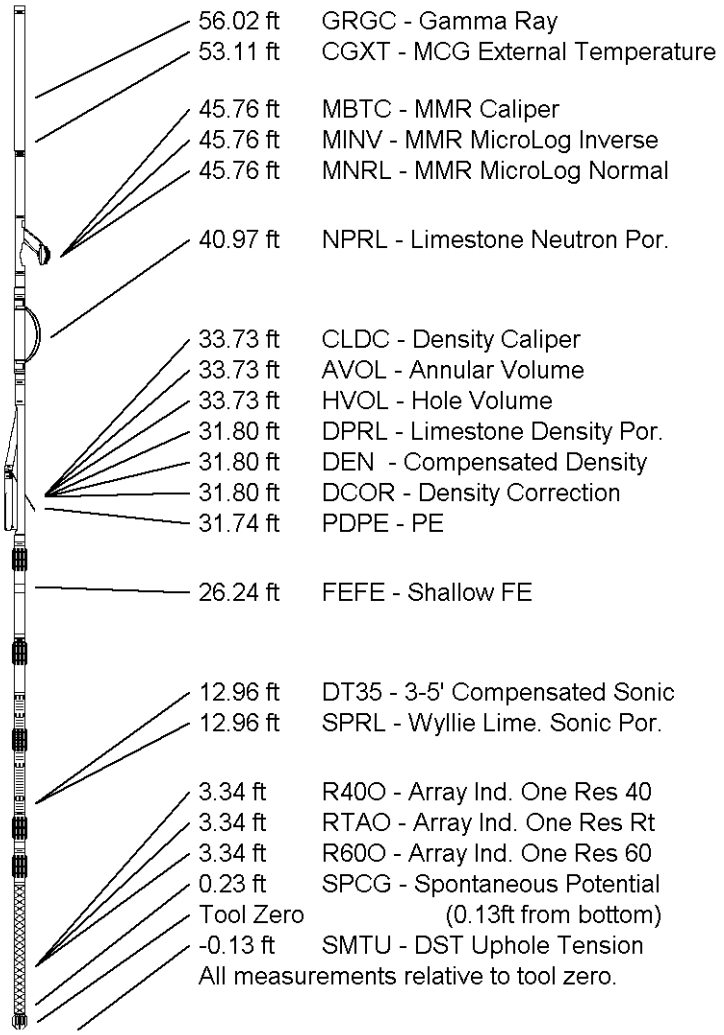
Compact Density/Caliper
MPD-B 120 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-A.A 65 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-A.A 101 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 169 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 61.30 ft Weight: 456.4 lb



COMPANY	TAOS RESOURCES OPERATING CO.
WELL	WMU #19
FIELD	MADDIX NORTH
PROVINCE/COUNTY	COWLEY
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	1280.00	feet	First Reading	3647.00	feet
Elevation Drill Floor	1278.00	feet	Depth Driller	3650.00	feet
Elevation Ground Level	1270.00	feet	Depth Logger	3650.00	feet

Weatherford®

COMPOSITE
DENSITY/NEUTRON
INDUCTION/FE