COMPOSITE LOG

COMPANY	O'BRIEN RESOURCES LLC
WELL	COLT 45 FBC 2
FIELD	WILDCAT
PROVINCE/COUNTY	LANE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	720' FNL & 2424' FEL NW SW NW NE

SEC	TWP	RGE	Other Services
2	17S	30W	MPD/MDN MAI/MFE MML

API Number 15-101-22478
Permit Number

Permanent Datum GL, Elevation 2848 feet
Log Measured From KB
Drilling Measured From KB @ 5 FEET

Elevations:	feet
KB	2853.00
DF	2851.00
GL	2848.00

Date	03-JAN-2014				
Run Number	ONE				
Service Order	3547662				
Depth Driller	4635.00	feet			
Depth Logger	4636.00	feet			
First Reading	4632.66	feet			
Last Reading	246.00	feet			
Casing Driller	245.00	feet			
Casing Logger	246.00	feet			
Bit Size	7.875	inches			
Hole Fluid Type	CHEMICAL				
Density / Viscosity	9.40 lb/USg		45.00 CP		
PH / Fluid Loss	10.50		5.20 ml/30Min		
Sample Source	MUDPIT				
Rm @ Measured Temp	1.03 @ 74.8	ohm-m			
Rmf @ Measured Temp	0.82 @ 74.8	ohm-m			
Rmc @ Measured Temp	1.24 @ 74.8	ohm-m			
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	0.71 @111.0	ohm-m			
Time Since Circulation	4 HOURS				
Max Recorded Temp	113.00	deg F			
Equipment / Base	13096		LIB		
Recorded By	DEREK CARTER				
Witnessed By	KURT TALBOTT				
JOB #	LB14-004				

BOREHOLE RECORD

Last Edited: 03-JAN-2014 16:06

Bit Size inches	Depth From feet	Depth To feet
7.875	245.00	4635.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	245.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583
- TOOLS: MCG, MML, MDN, MPD, MFE, MAI RUN IN COMBINATION
- HARDWARE:
  - MDN: DUAL BOWSPRING ECCENTRALIZER
  - MFE: 1 x 0.5 INCH STANDOFF
  - MAI: 2 x 0.5 INCH STANDOFF
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST
- TOTAL HOLE VOLUME FROM TD TO SURFACE PIPE: 1860 CU. FT
- ANNULAR HOLE VOLUME WITH 4.5 INCH CASING FROM TD TO SURFACE PIPE: 1370 CU. FT

- ANNULAR HOLE VOLUME WITH 4.5 INCH CASING FROM TD TO SURFACE PIPE: 161.3 CU. FT.

- RIG: MALLARD J.V. #1

- ENGINEER: DEREK CARTER

- OPERATORS: KEN RINEHART, NICOLAS ADAME

- PER CUSTOMER REQUEST A COMPOSITE (E-LOG ONLY, NO FIELD PRINT) IS BEING INCLUDED WITH THE STANDARD TRIPLECOMBO E-LOGS (DEN-NEU-MIC, INDUCTION, MICROLOG)

- AT ABOUT 1924, WHILE LOGGING THE MAIN PASS, ONE OF THE RIG HANDS WAS NOTICED WELDING ON A PIECE OF EQUIPMENT BEHIND THE DRAWORKS. THE HAND WAS LIKELY ONLY WELDING FOR A SHORT TIME (APPROXIMATELY 2 MINUTES) BECAUSE HE WAS CLEARLY VISIBLE TO THE WINCHMAN. THE DEPTH ON THE KERR PANEL AT THE TIME WAS APPROXIMATELY 4230 FEET. THERE WERE NO NOTICEABLE AFFECTS TO THE SP.

2 INCH COMPOSITE MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 03-JAN-2014 21:58

Filename: C:\Minimus 13.05.9583\Log\O'Brien Resou...\O'Brien Resources LLC Colt 45 FBC 2 Main.dta — Recorded on 03-JAN-2014 18:58

System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

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

MML Caliper
inches
6 — 11 — 16

Bit Size
inches
6 — 11 — 16

DST Uphole Tension
pounds
5000 — 0

Depth In Feet

Borehole Temp in deg F

MNRL
0 — 30

MINV
0 — 30

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale

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

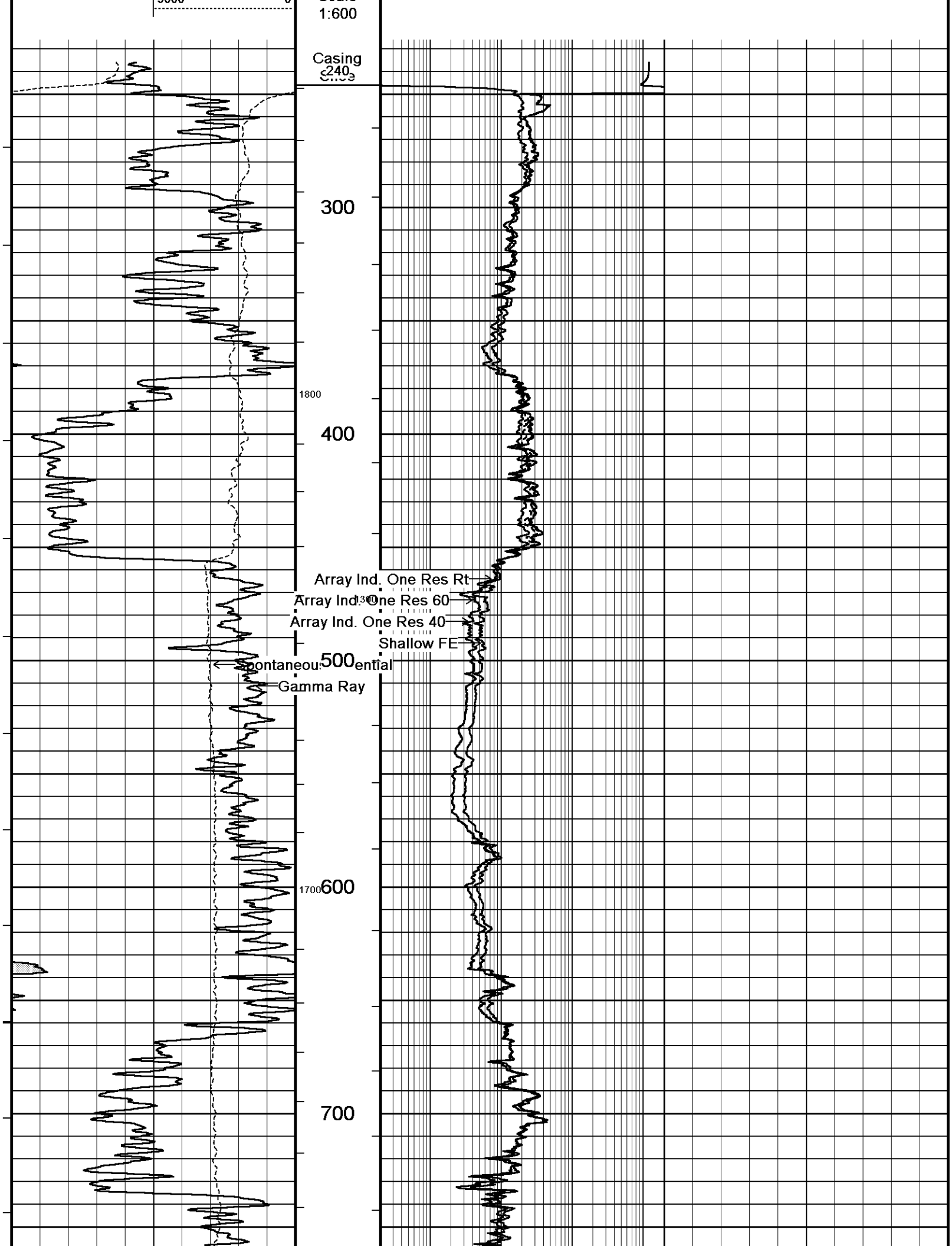
Density Correction
grams/cc
-0.50 — 0 — 0.50

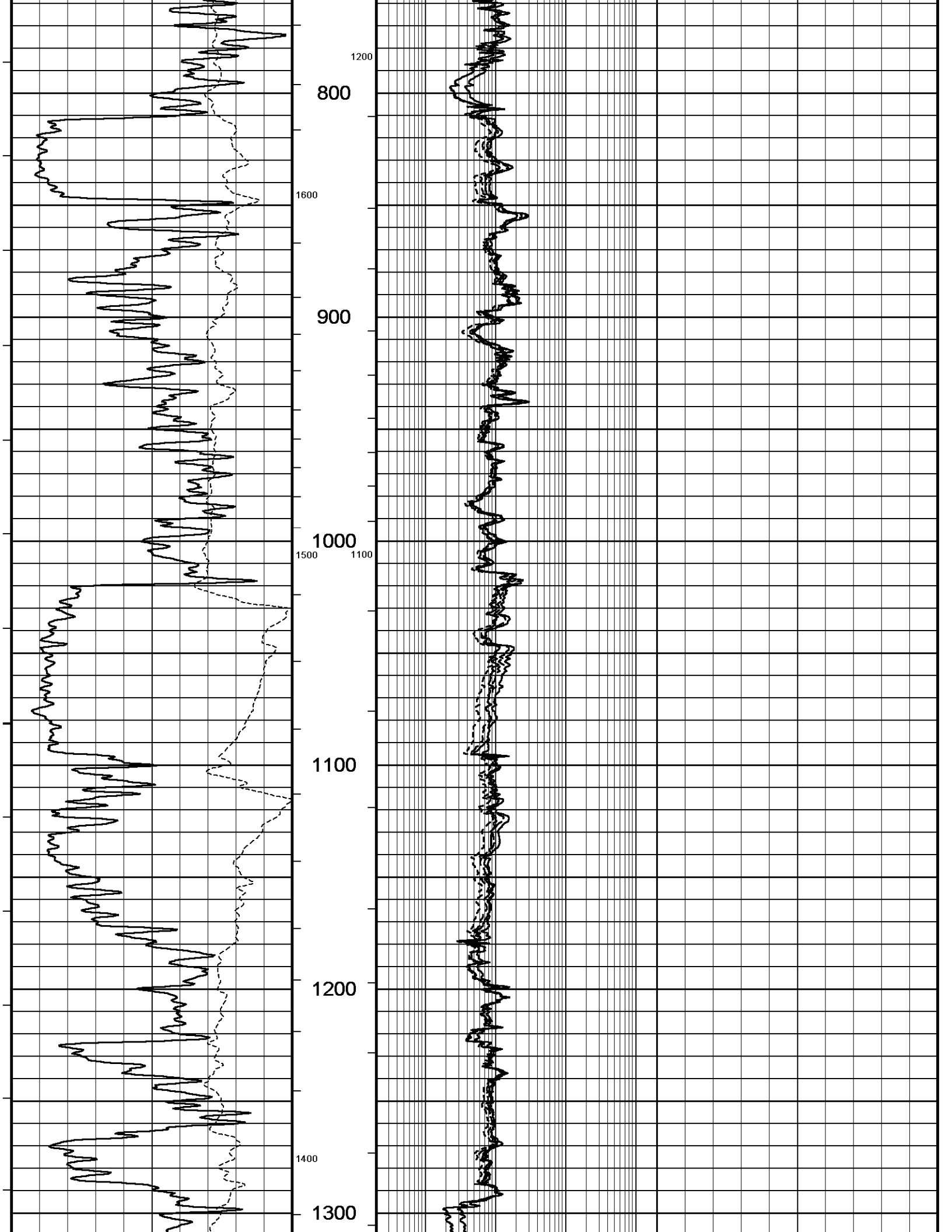
Array Ind. One Res 60
ohm metres
0.20 — 2000
1 — 10 — 100 — 1000

PE
barns/electron
0 — 5 — 10

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

Limestone Density Por.
percent
30 — 10 — -10


1:600
Casing
240
300
1800
400
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
500
Gamma Ray
1700
600
700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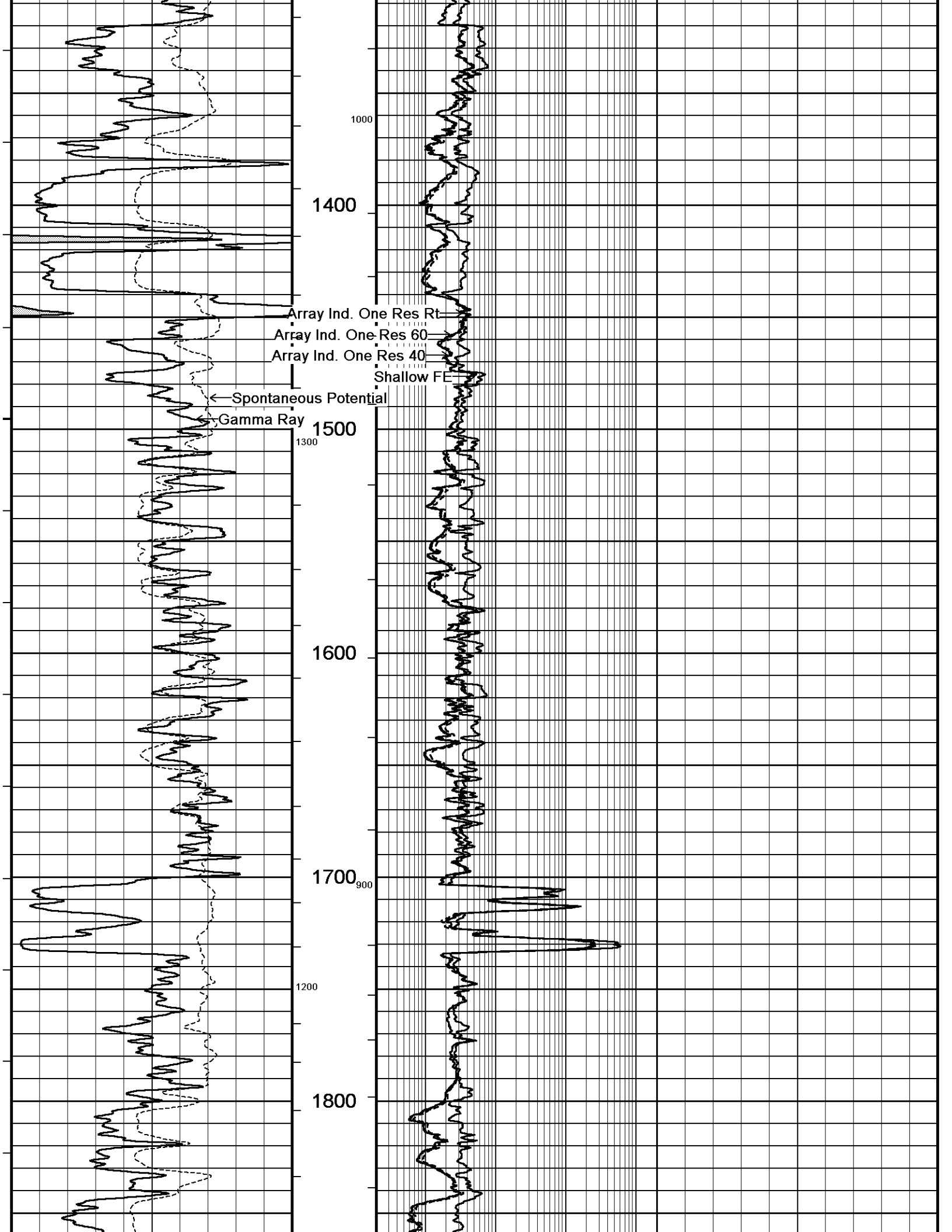
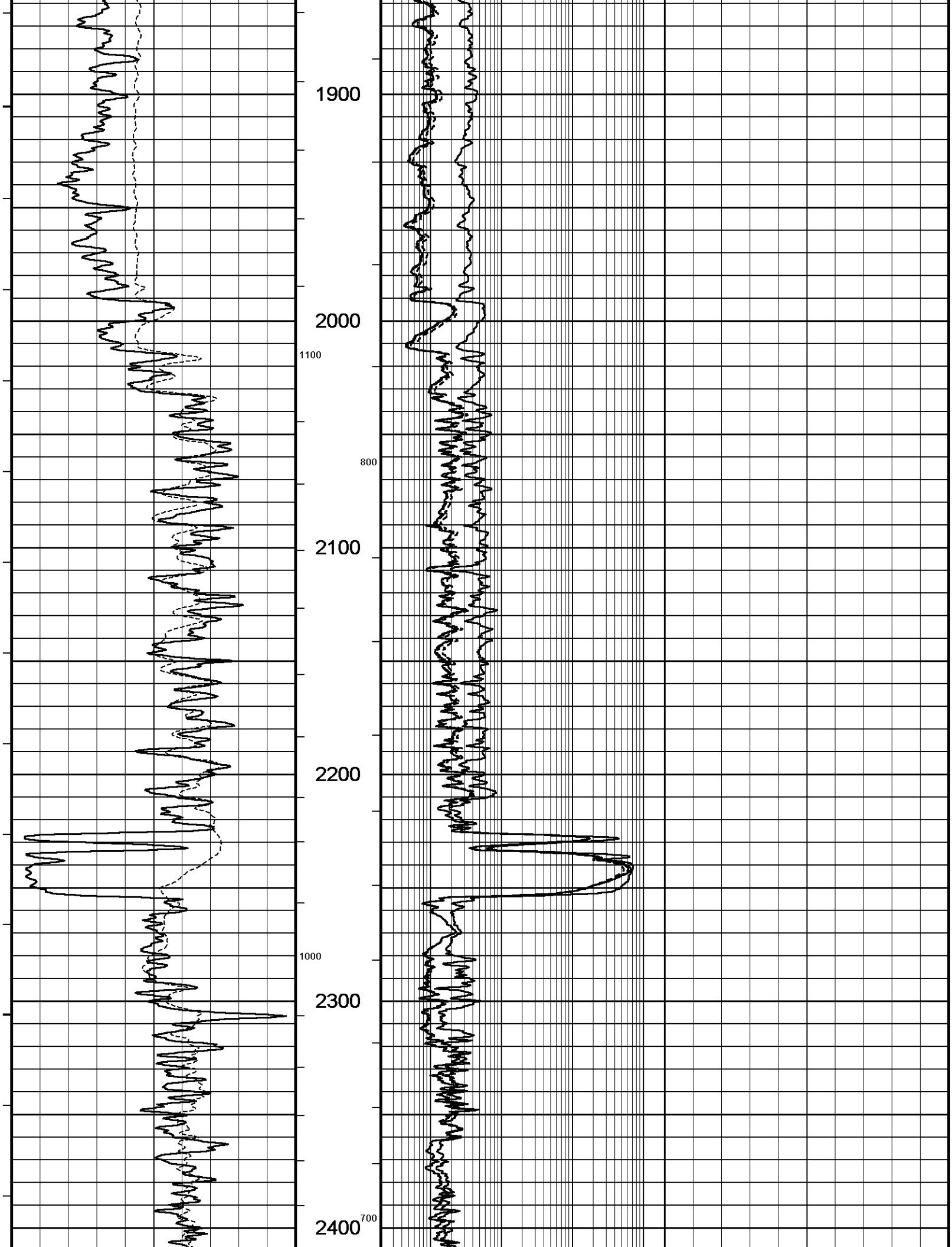
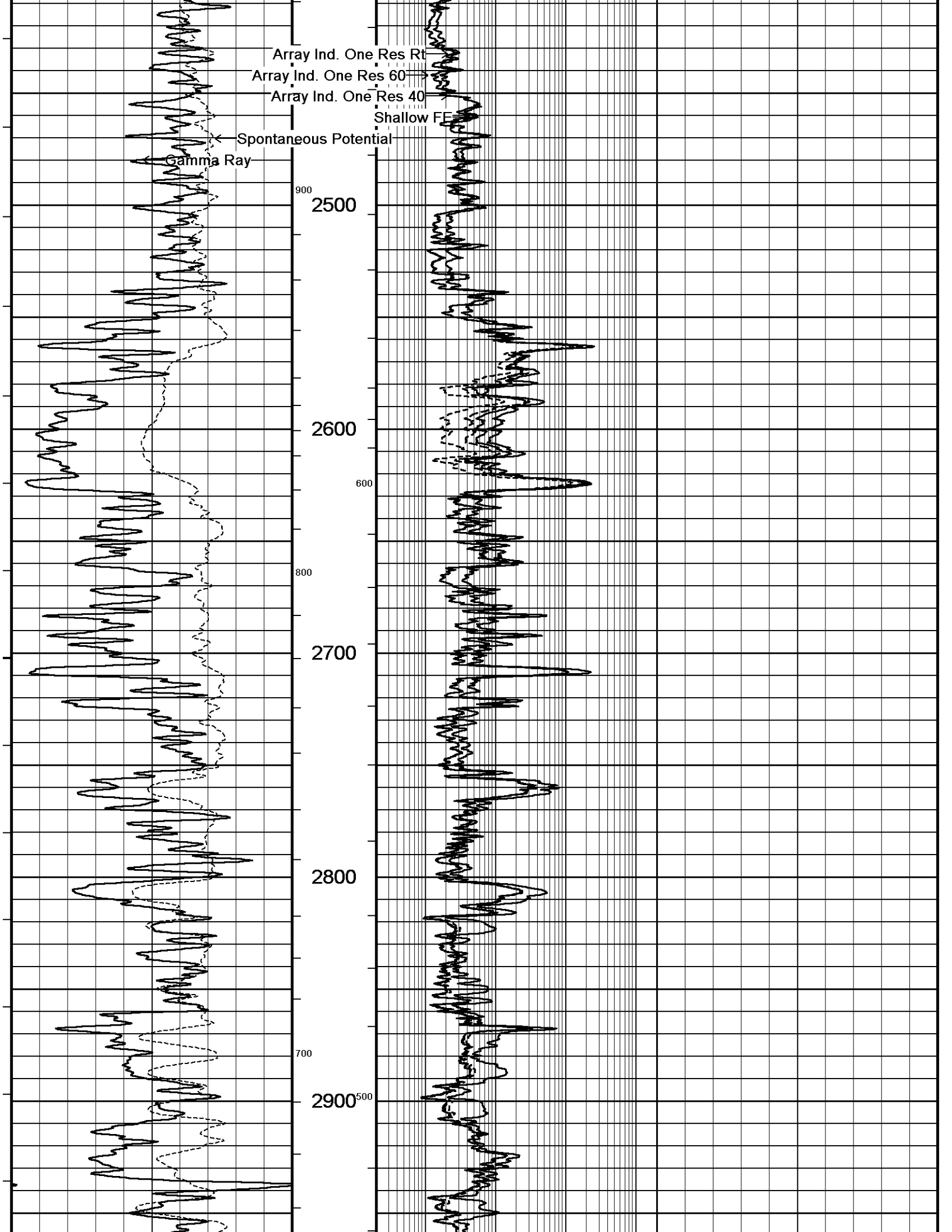
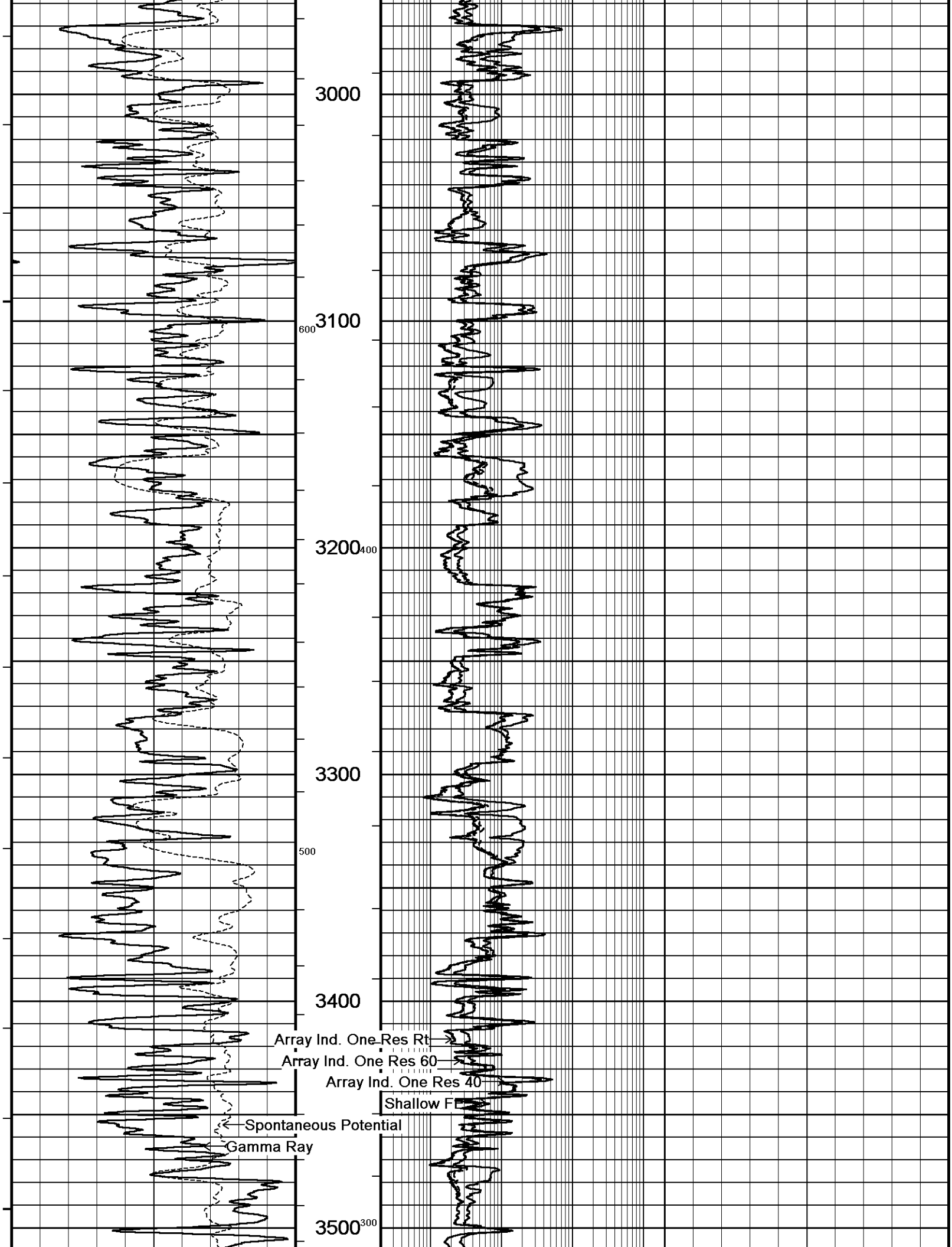
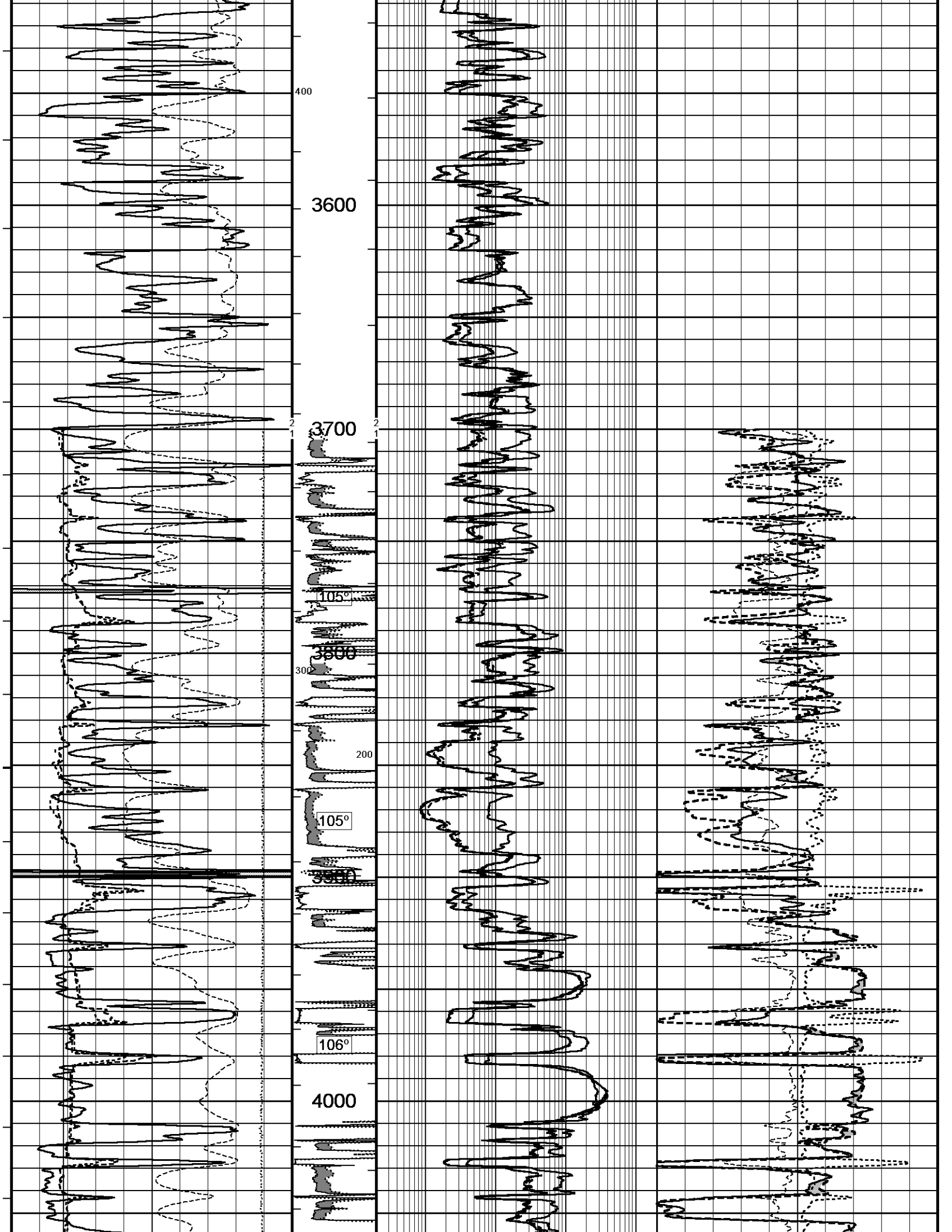
900
1000
1100
1200
1300
1400
1600
1200
1500
1100

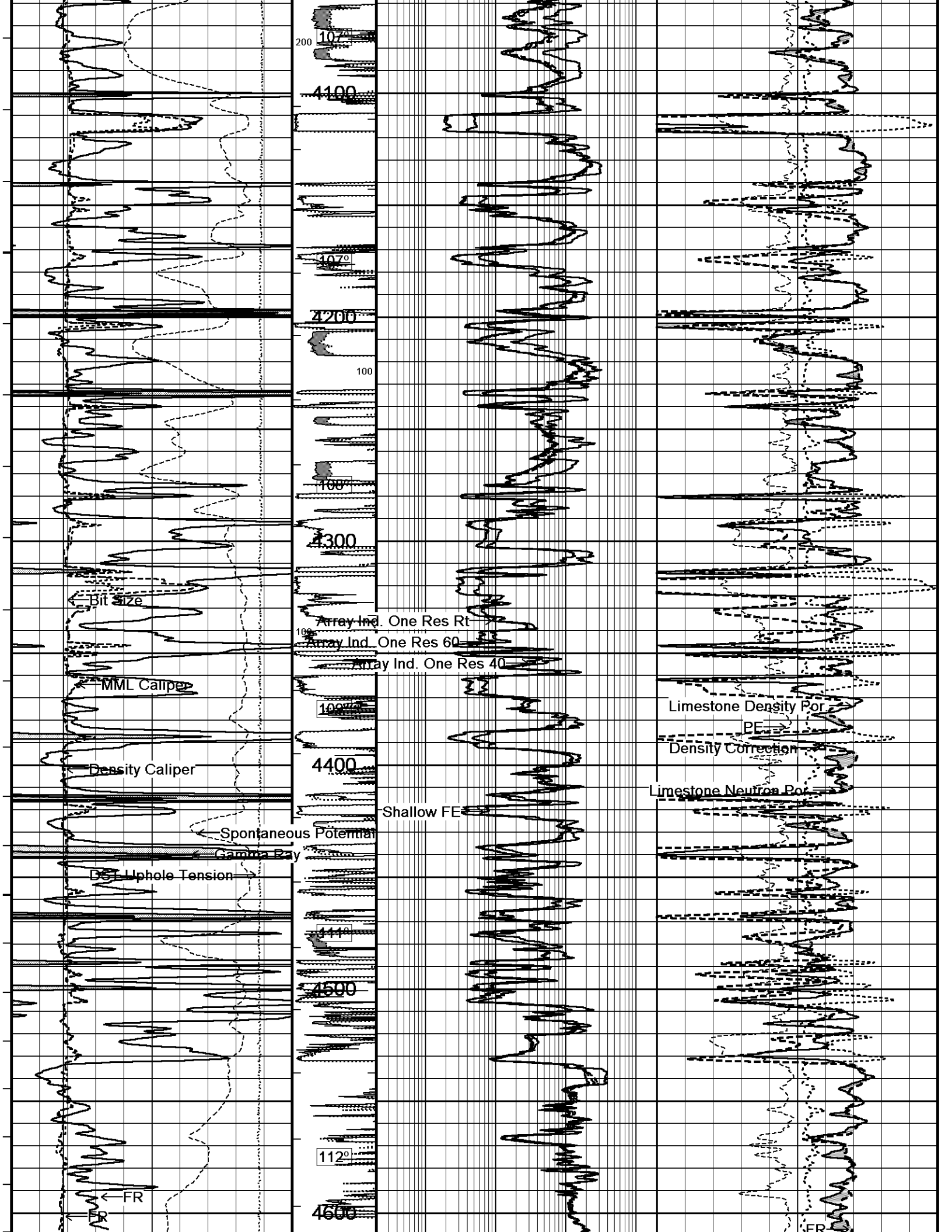

1000
1400
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
1300
1500
1600
1700
900
1200
1800

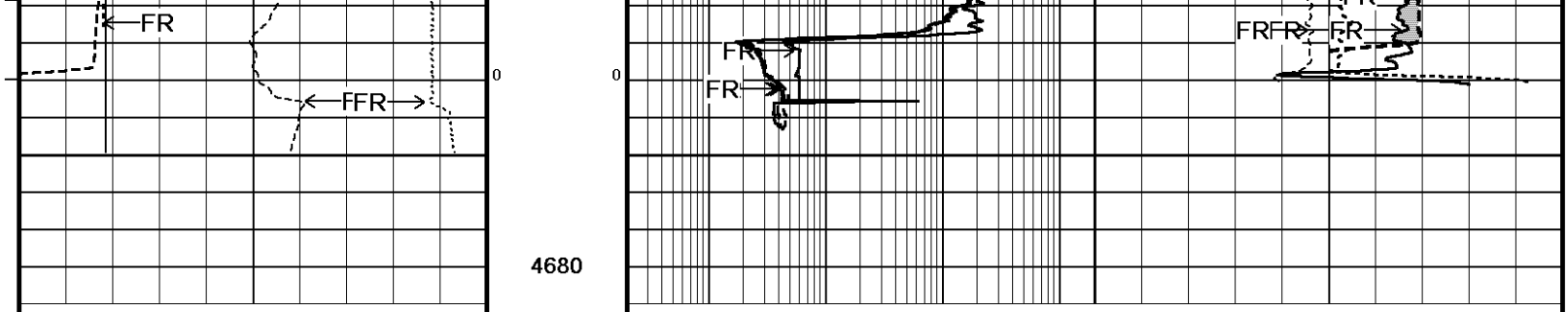

1900
2000
1100
800
2100
2200
1000
2300
2400
700


Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
900
2500
2600
600
800
2700
2800
700
2900
500


3000
600
3100
3200
400
3300
500
3400
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
3500
300


400
3600
2
1
3700
2
1
105°
3800
300
200
105°
106°
4000


200
107°
4100
107°
4200
100
108°
4300
Bit Size
Array Ind. One Res Rt
100
Array Ind. One Res 60
Array Ind. One Res 40
MML Caliper
109°
Limestone Density Por
PE
Density Correction
4400
Density Caliper
Limestone Neutron Por
Shallow FE
Spontaneous Potential
Gamma Ray
DGT Uphole Tension
111°
4500
112°
FR
FR
4600
FR



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

MML Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Borehole Temp in deg F

MNRL
0 30

MINV
0 30

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:600

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

Density Correction
grams/cc
-0.50 0 0.50

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

PE
barns/electron
0 5 10

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

Limestone Density Por.
percent
30 10 -10

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 03-JAN-2014 21:58
Filename: C:\Minimus 13.05.9583\Log\O'Brien Resou...\O'Brien Resources LLC Colt 45 FBC 2 Main.dta
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2 INCH COMPOSITE MAIN

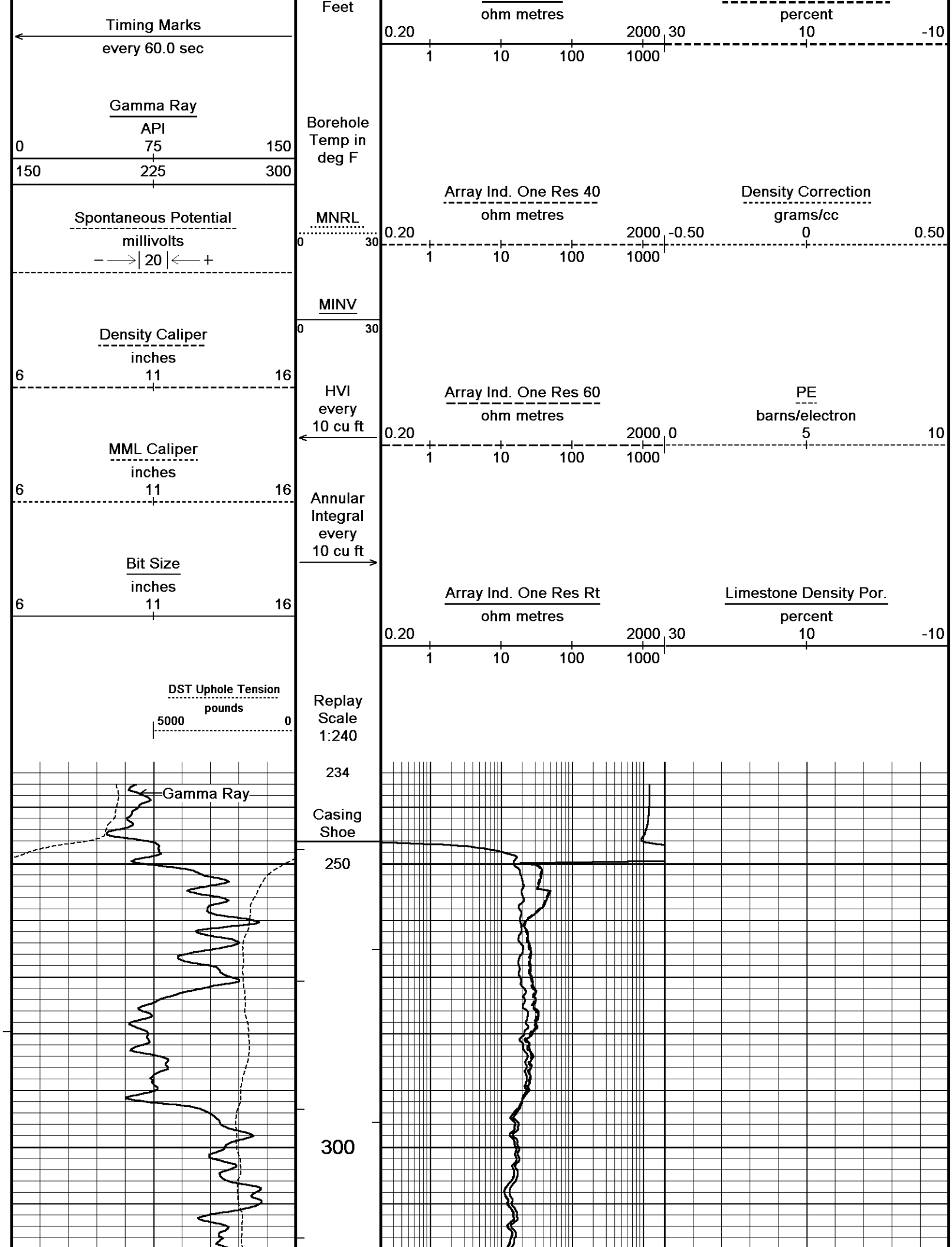
5 INCH COMPOSITE MAIN

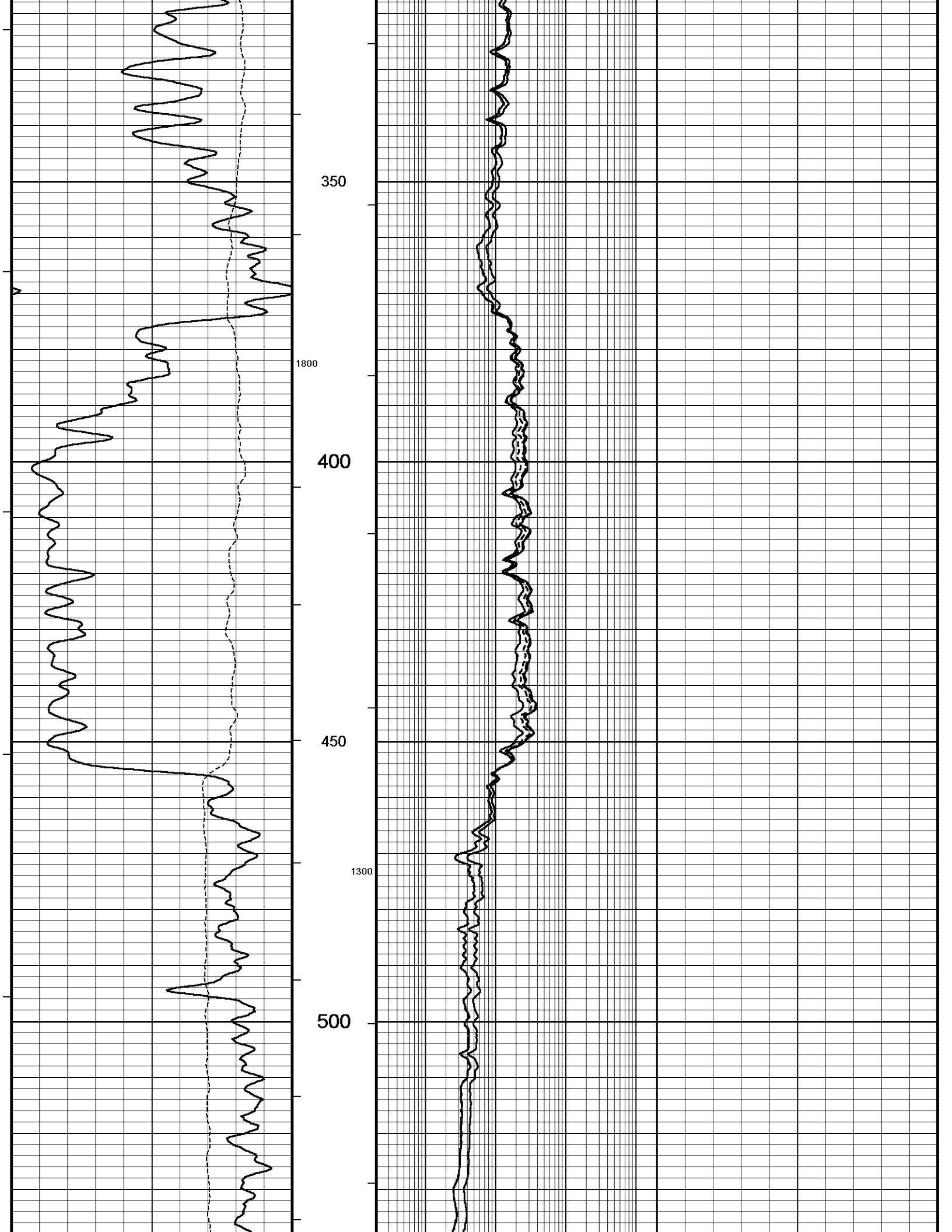
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 03-JAN-2014 21:58
Filename: C:\Minimus 13.05.9583\Log\O'Brien Resou...\O'Brien Resources LLC Colt 45 FBC 2 Main.dta
Recorded on 03-JAN-2014 18:58
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

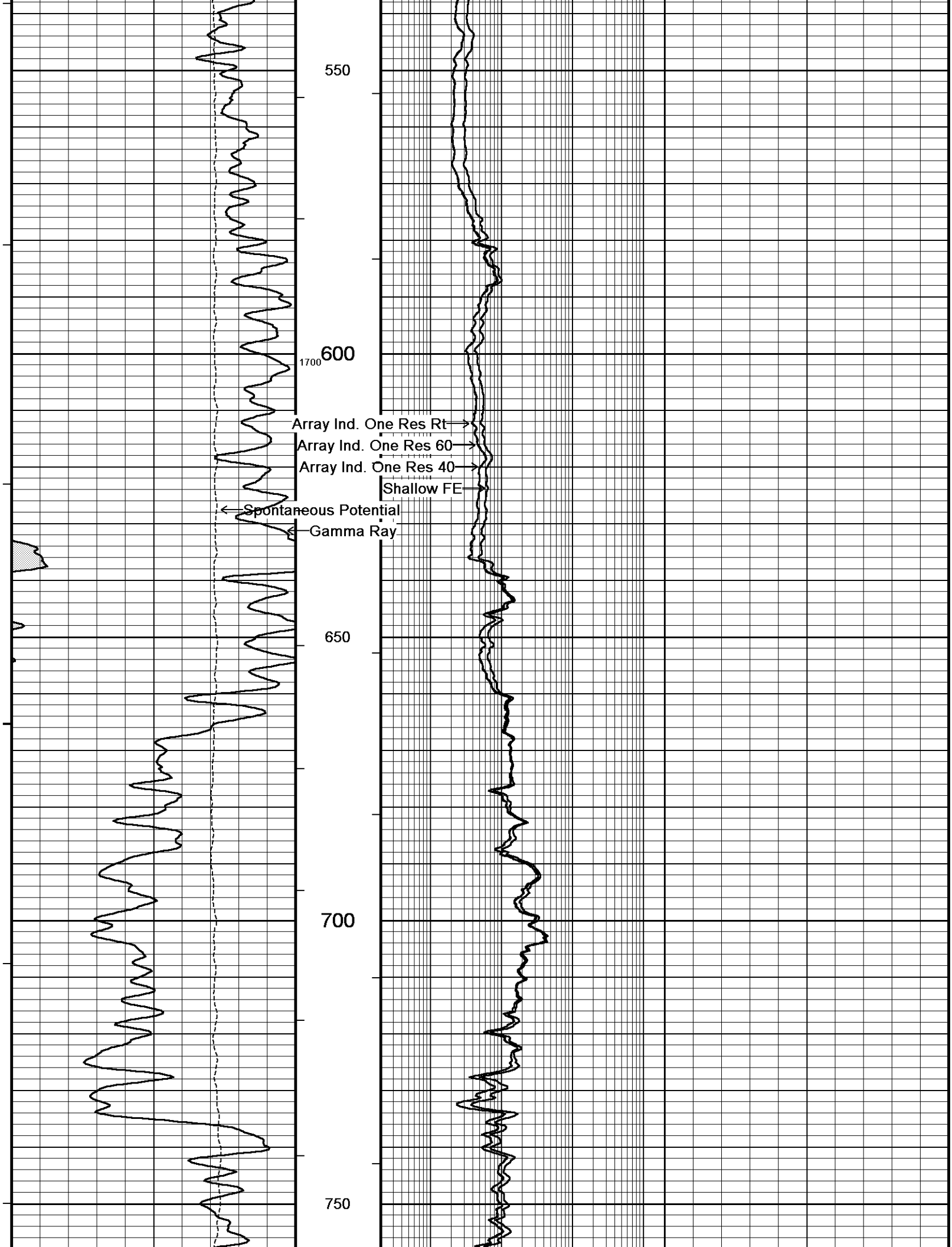
Depth In

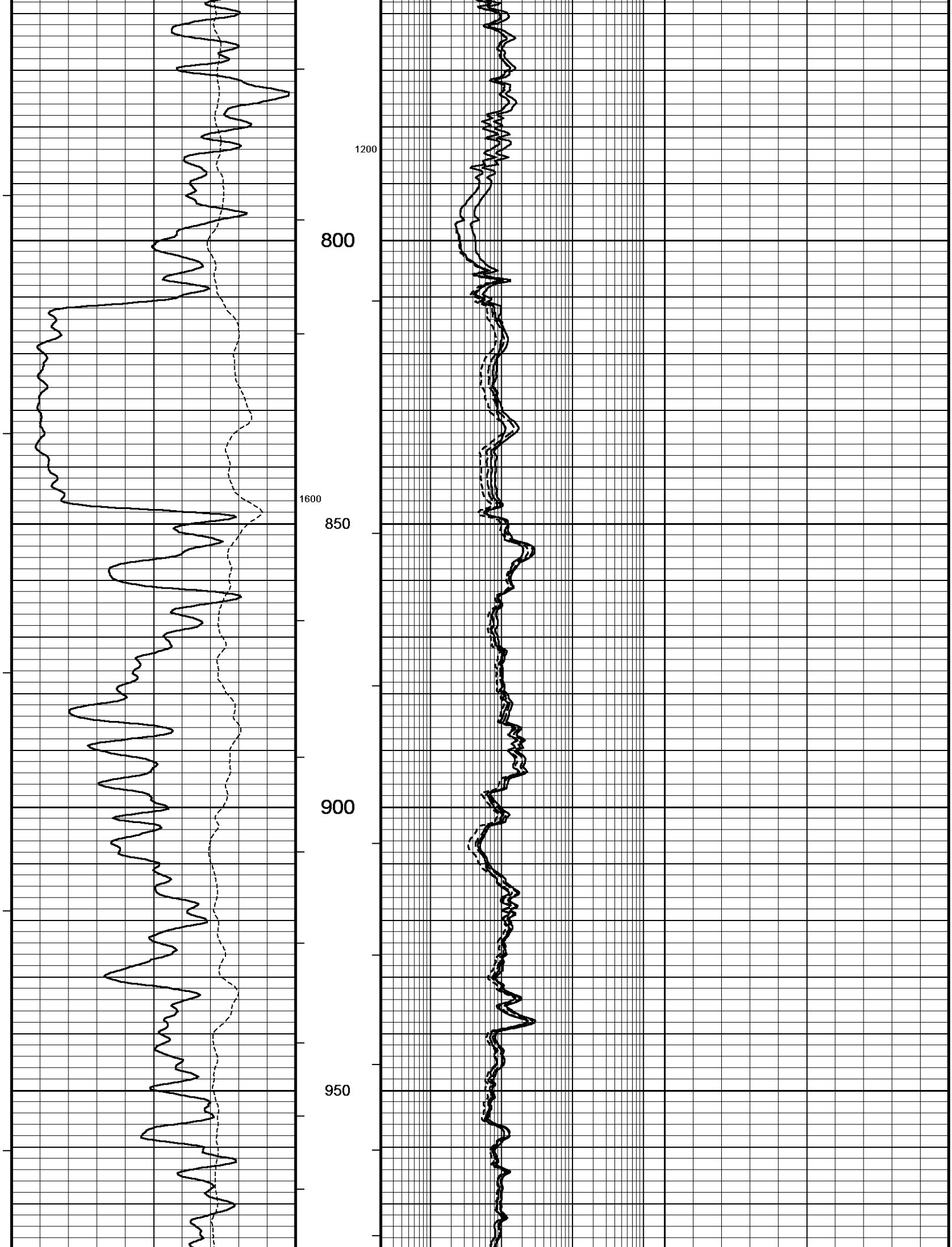
Shallow FE

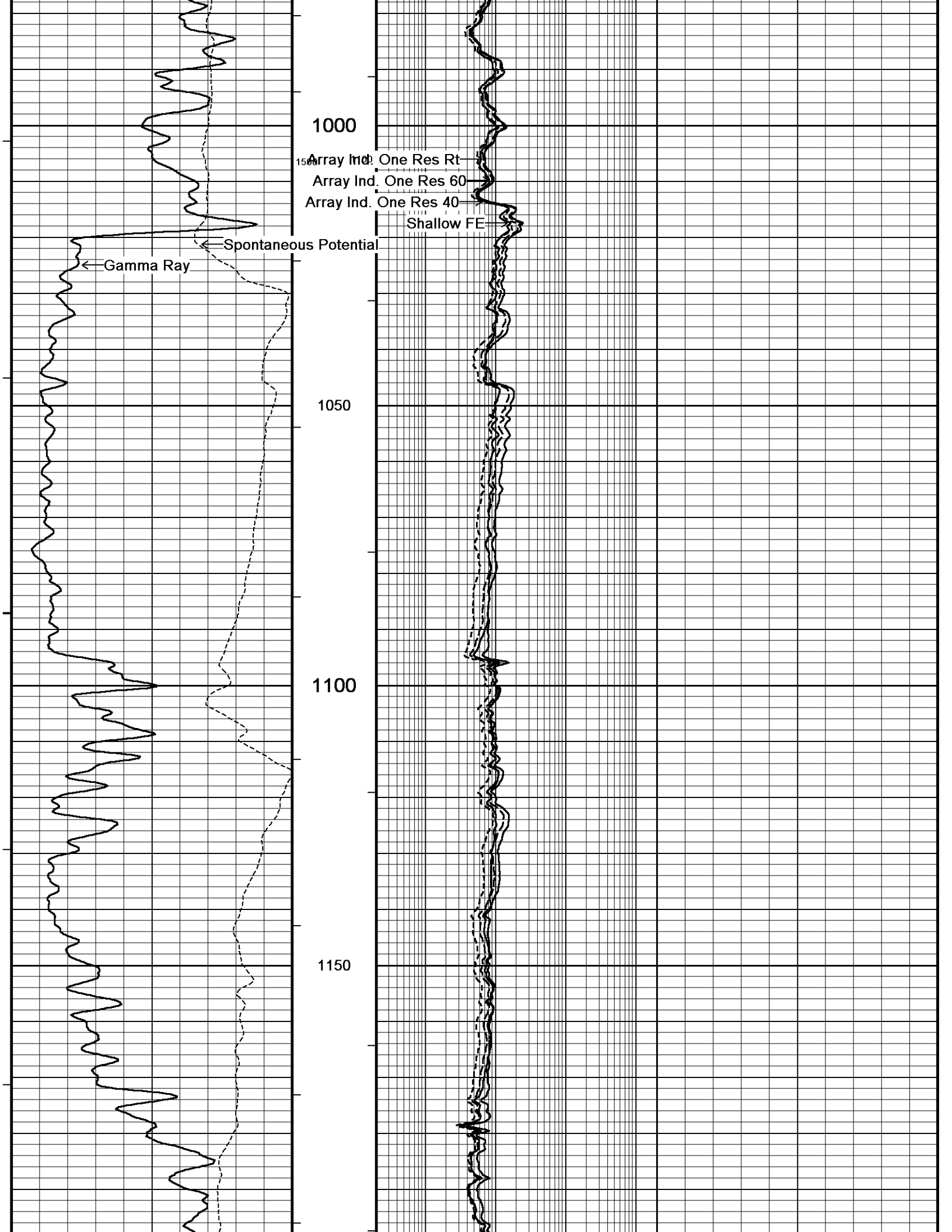
Limestone Neutron Por.

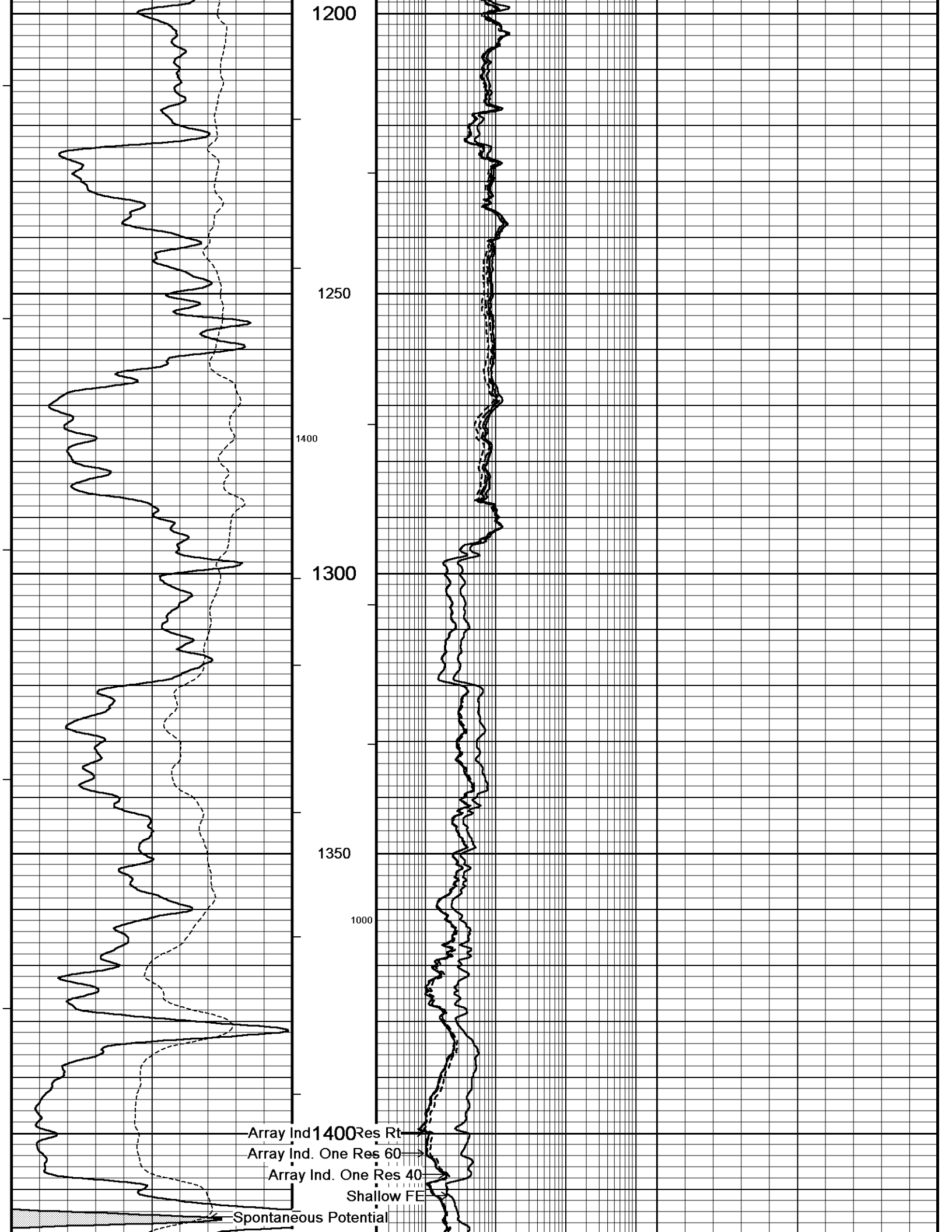

Feet
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
150
225
300
Spontaneous Potential
millivolts
– 20 +
Density Caliper
inches
6
11
16
MML Caliper
inches
6
11
16
Bit Size
inches
6
11
16
DST Uphole Tension
pounds
5000
0
Borehole Temp in deg F
MNRL
0
30
MINV
0
30
HVI
every
10 cu ft
Annular
Integral
every
10 cu ft
Replay
Scale
1:240
234
Casing
Shoe
250
300
ohm metres
0.20
2000
1
10
100
1000
percent
30
10
-10
Array Ind. One Res 40
ohm metres
Density Correction
grams/cc
-0.50
0
0.50
Array Ind. One Res 60
ohm metres
PE
barns/electron
0
5
10
Array Ind. One Res Rt
ohm metres
Limestone Density Por.
percent
Gamma Ray

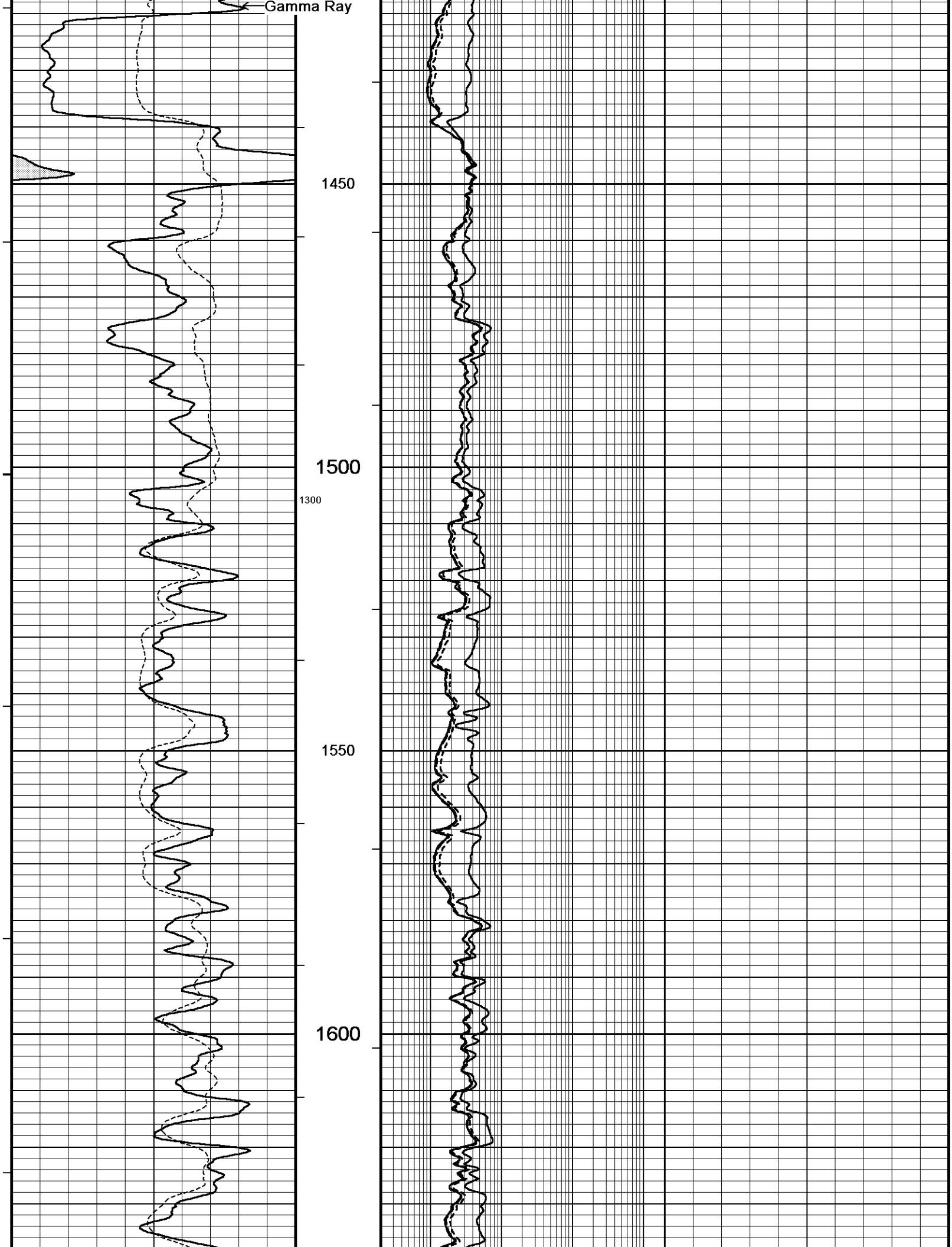

350
1800
400
450
1300
500

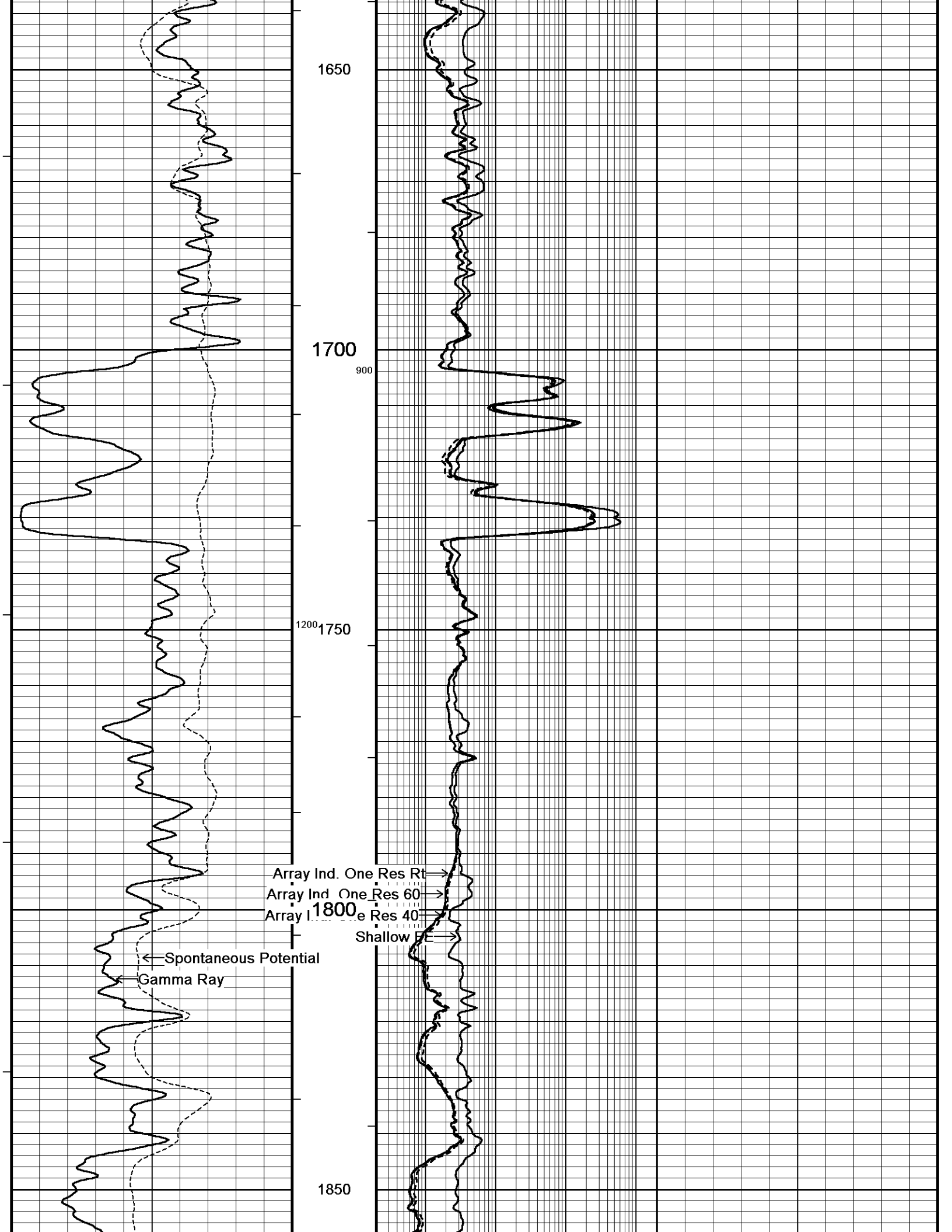

550
600
1700
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
650
700
750

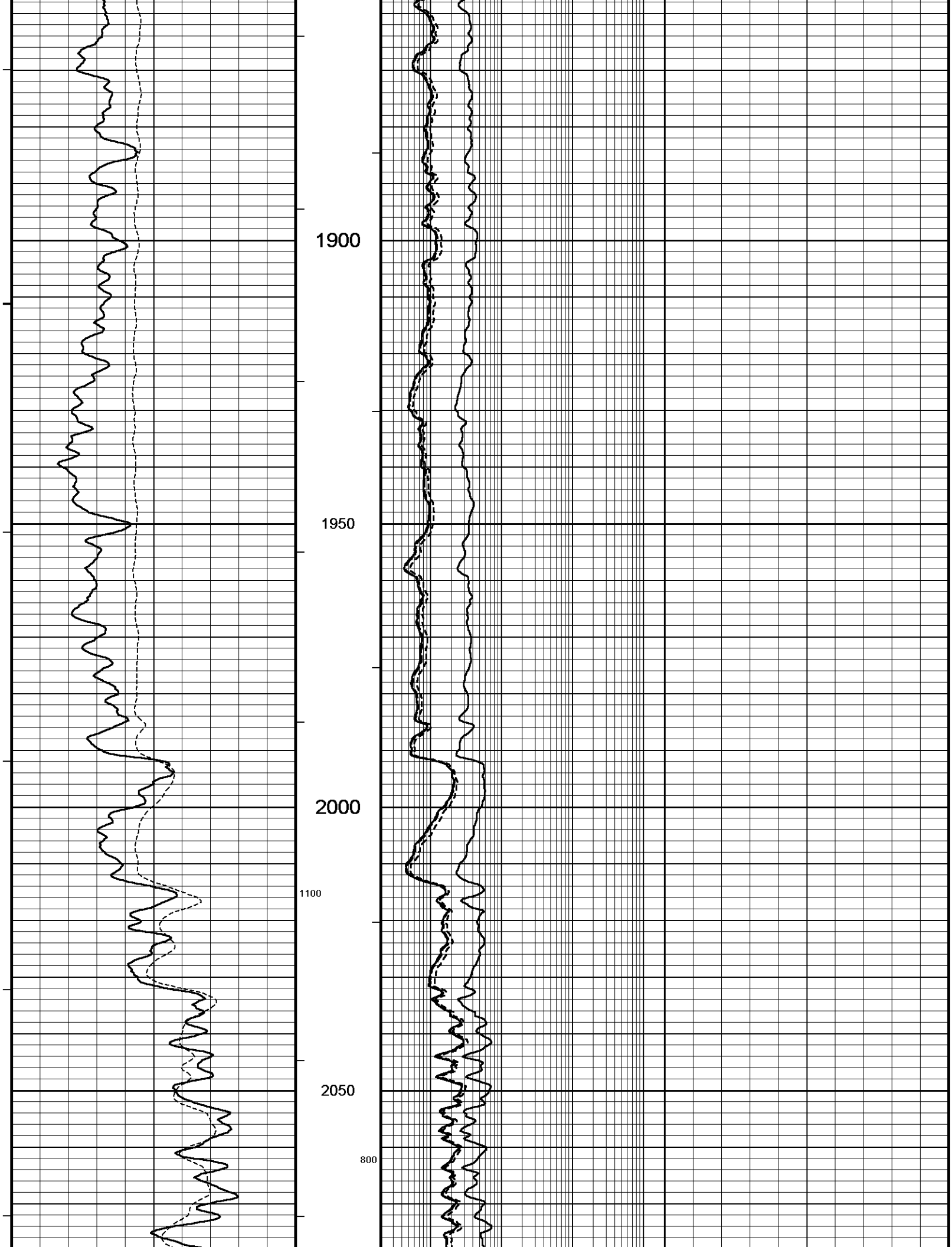

1200
800
1600
850
900
950

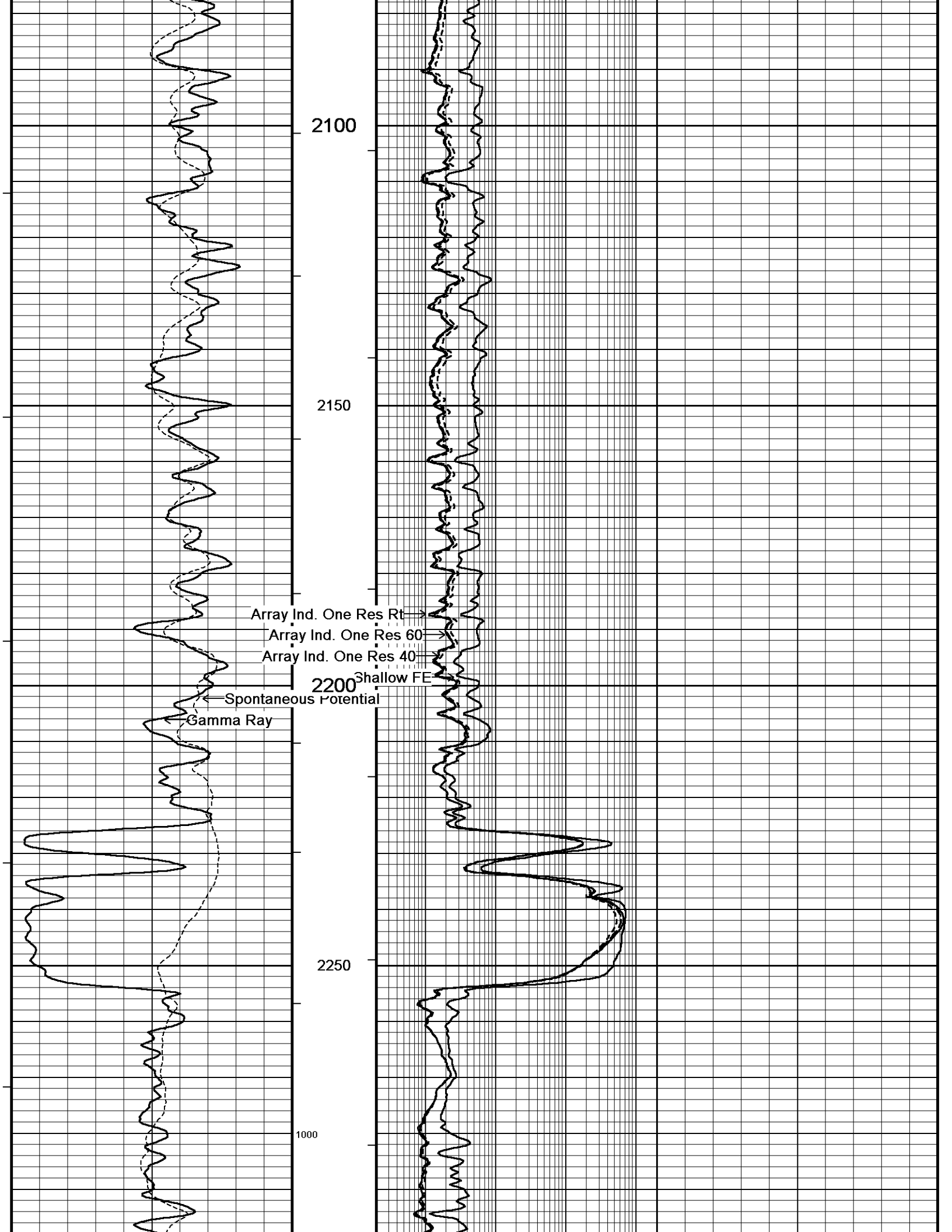

1000
1050
1100
1150
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray

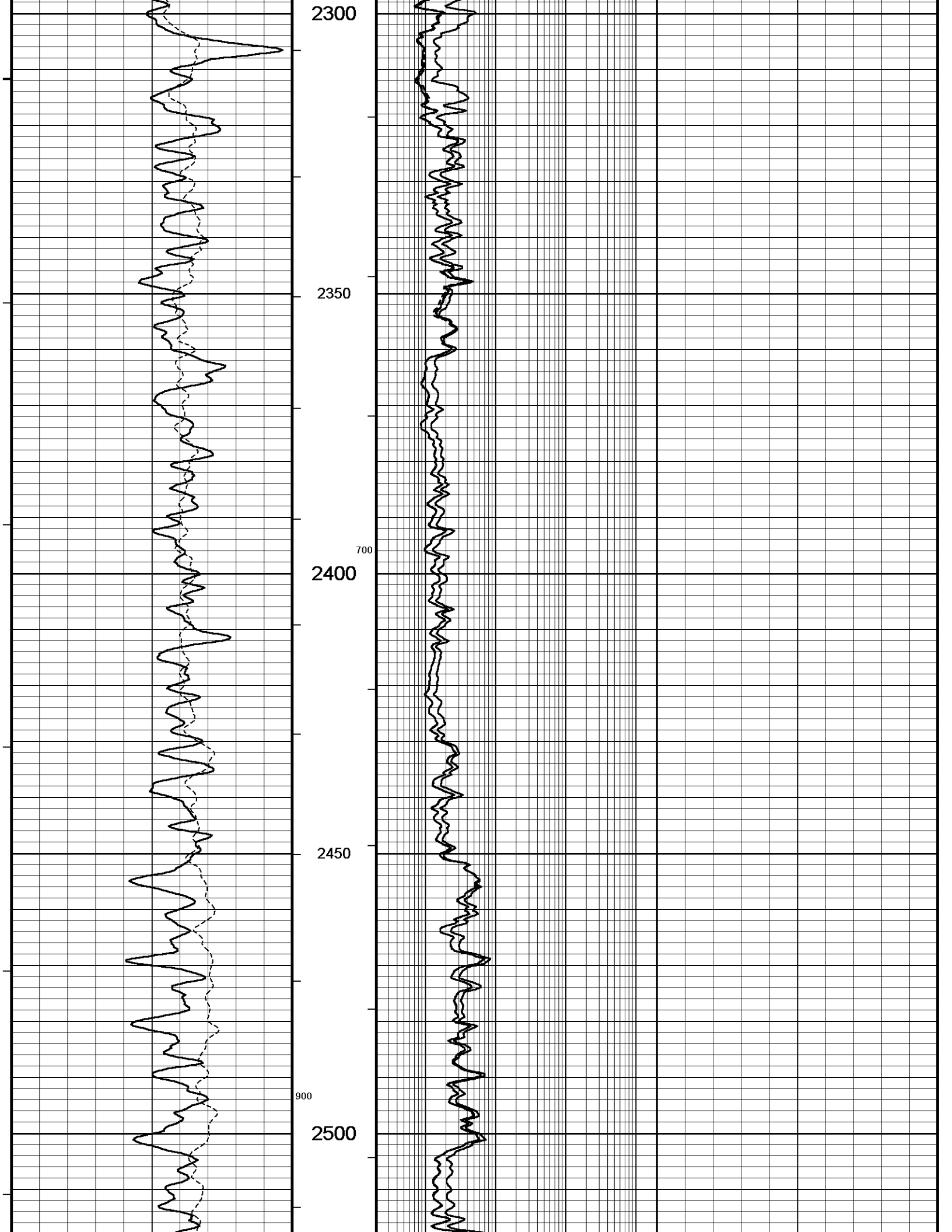

1200
1250
1400
1300
1350
1000
1400
Array Ind Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential

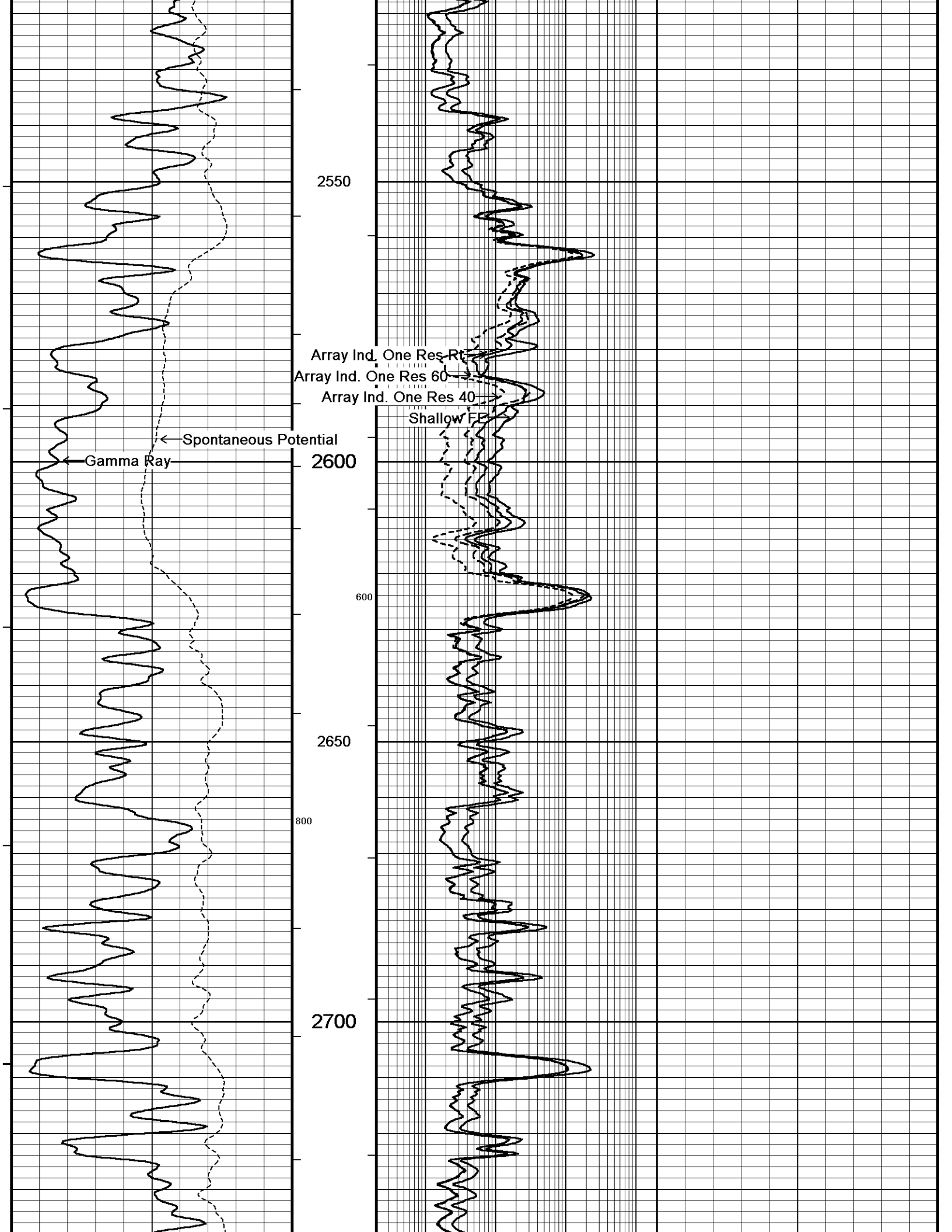

Gamma Ray
1450
1500
1300
1550
1600


1650
1700
900
1200
1750
Array Ind. One Res Rt
Array Ind One Res 60
1800
Shallow RE
Spontaneous Potential
Gamma Ray
1850


1900
1950
2000
1100
2050
800


2100
2150
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
2200
Spontaneous Potential
Gamma Ray
2250
1000


2300
2350
700
2400
2450
900
2500


2550
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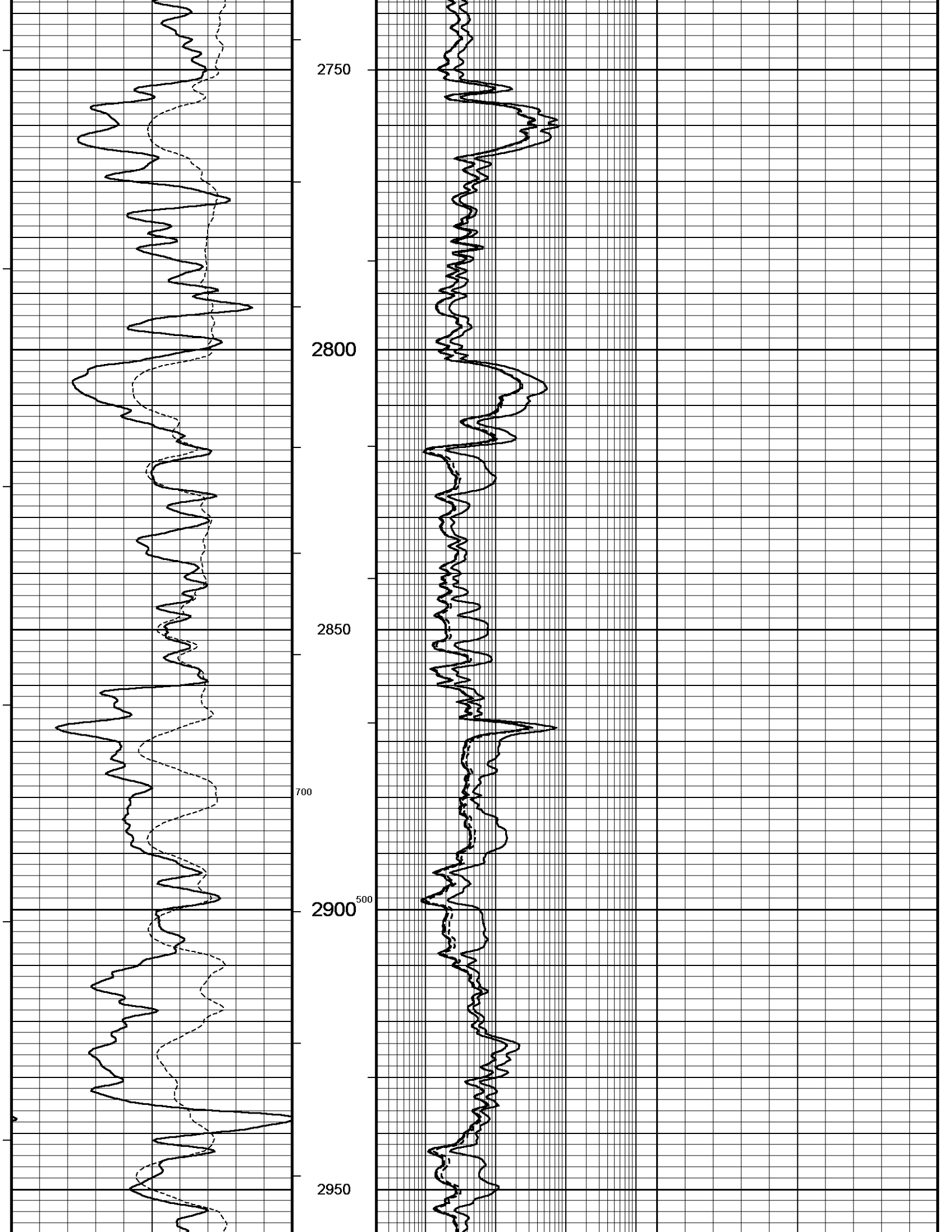
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
2600
600
2650
800
2700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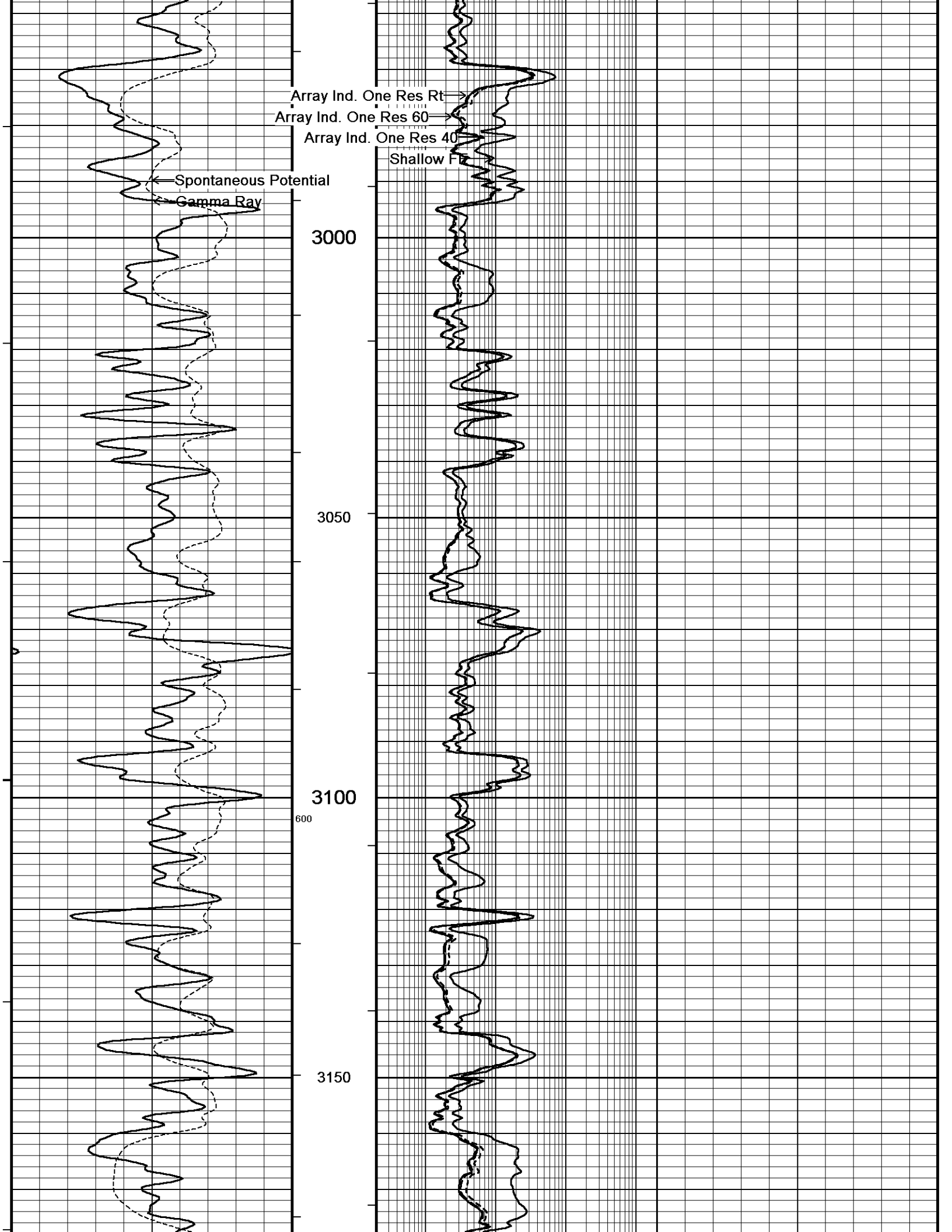
2800
2850
700
2900
500
2950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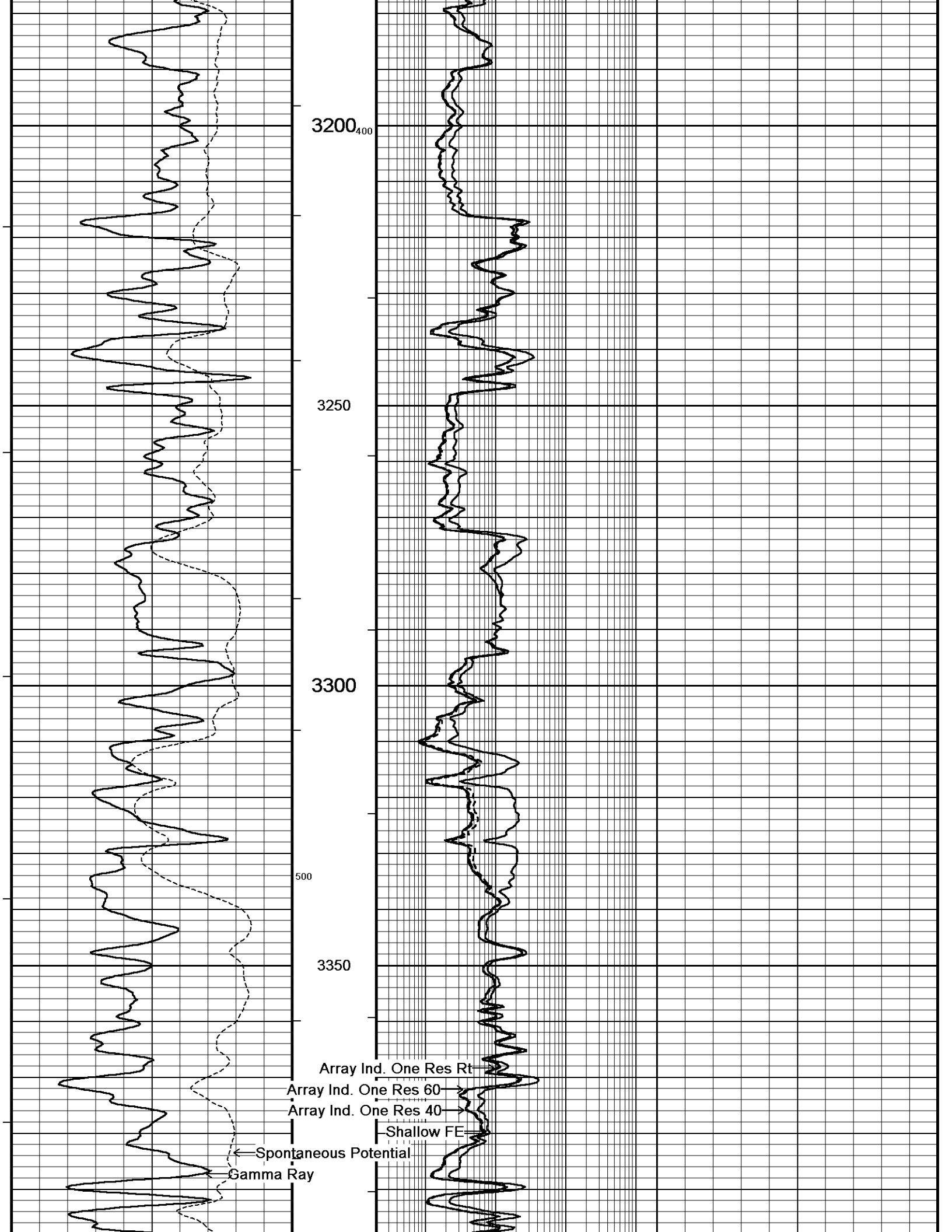
Array Ind. One Res 60
Array Ind. One Res 40
Shallow Ft
Spontaneous Potential
Gamma Ray
3000
3050
3100
600
3150


3200
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3250
3300
500
3350
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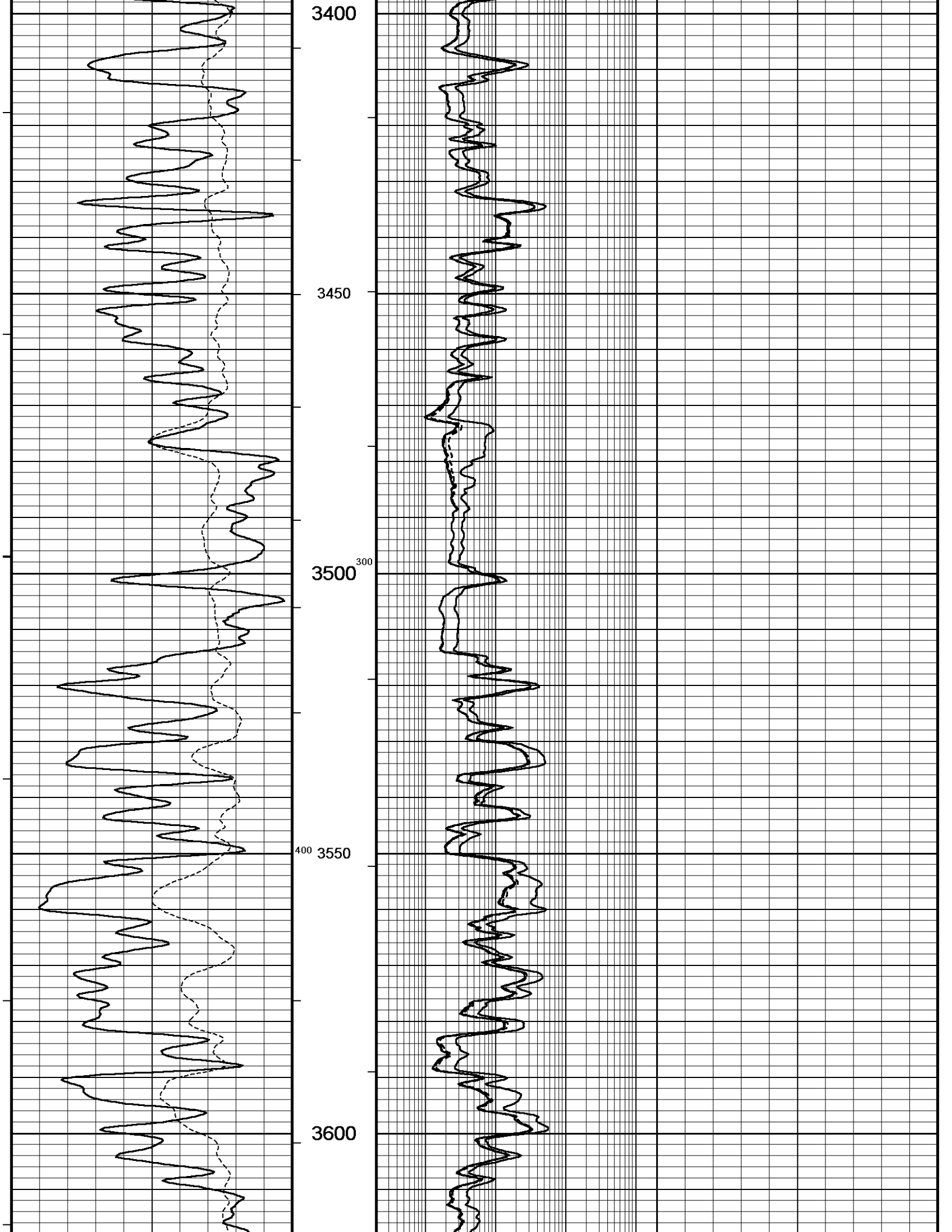
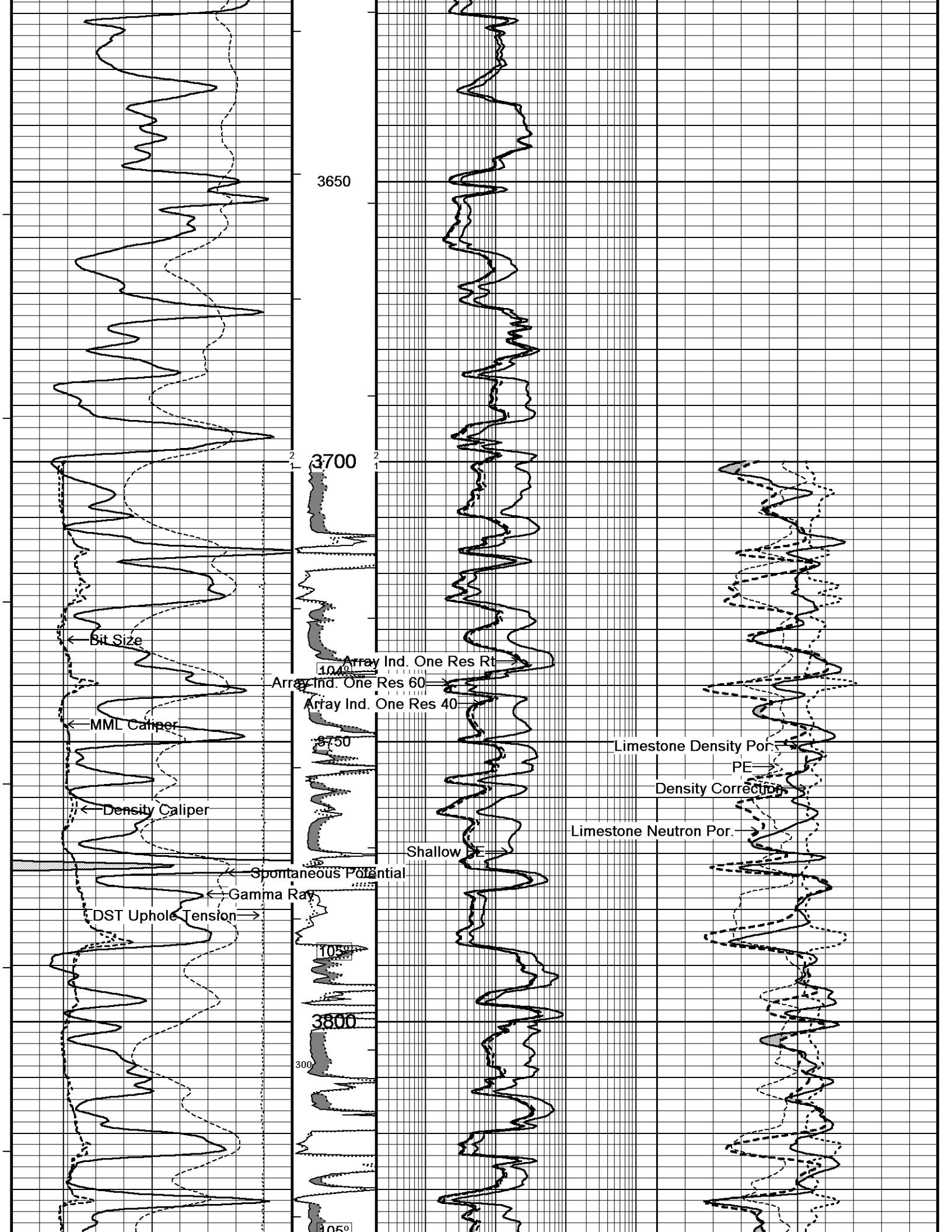
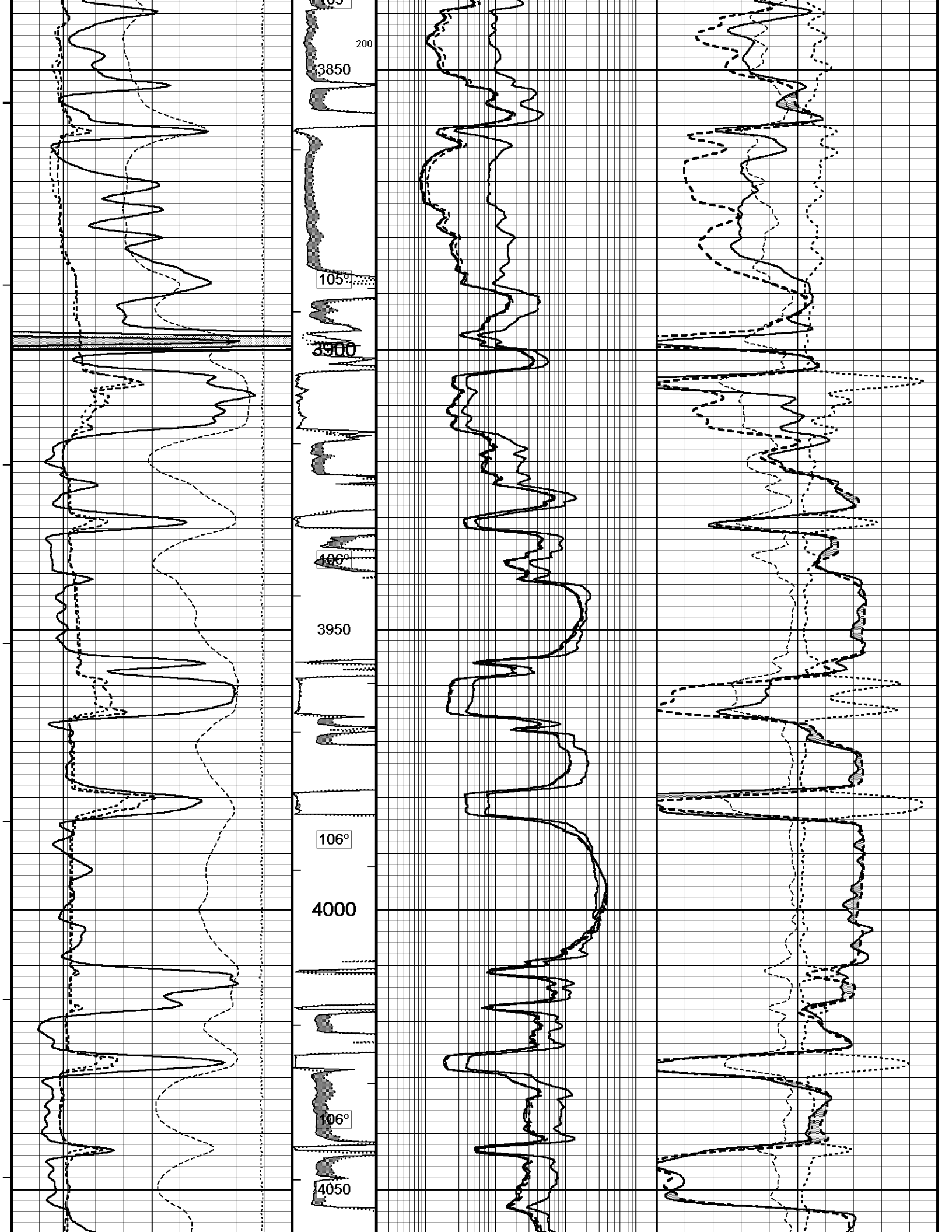
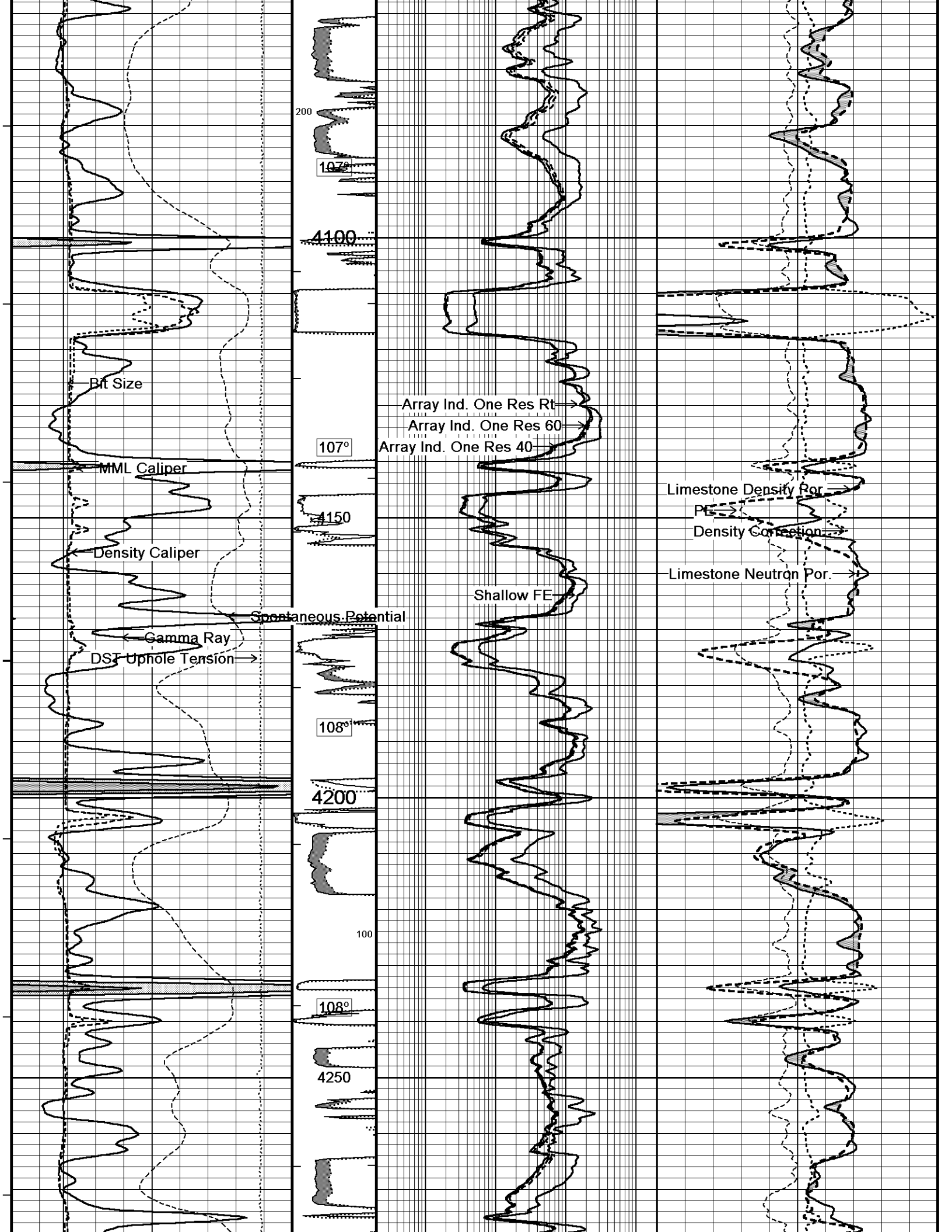
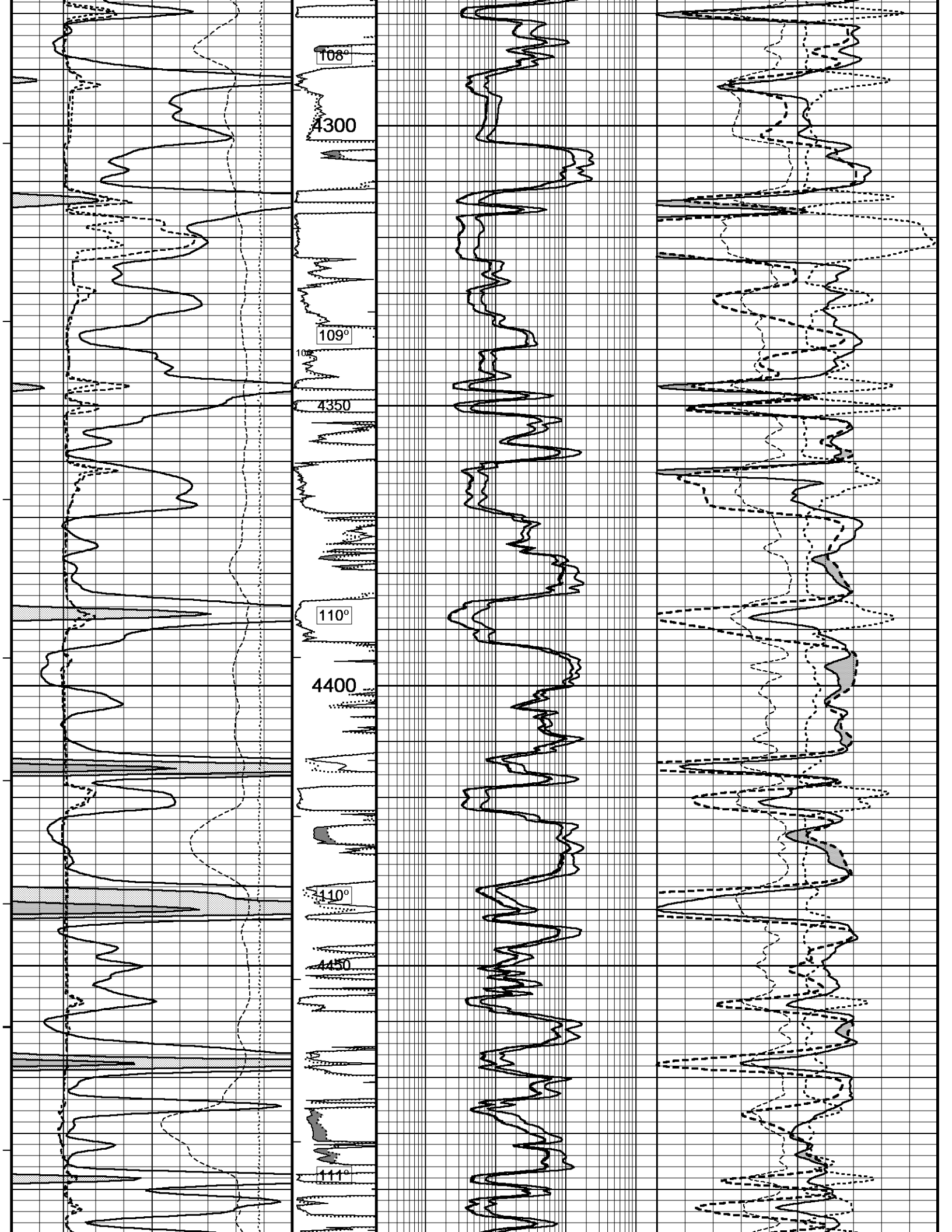
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray

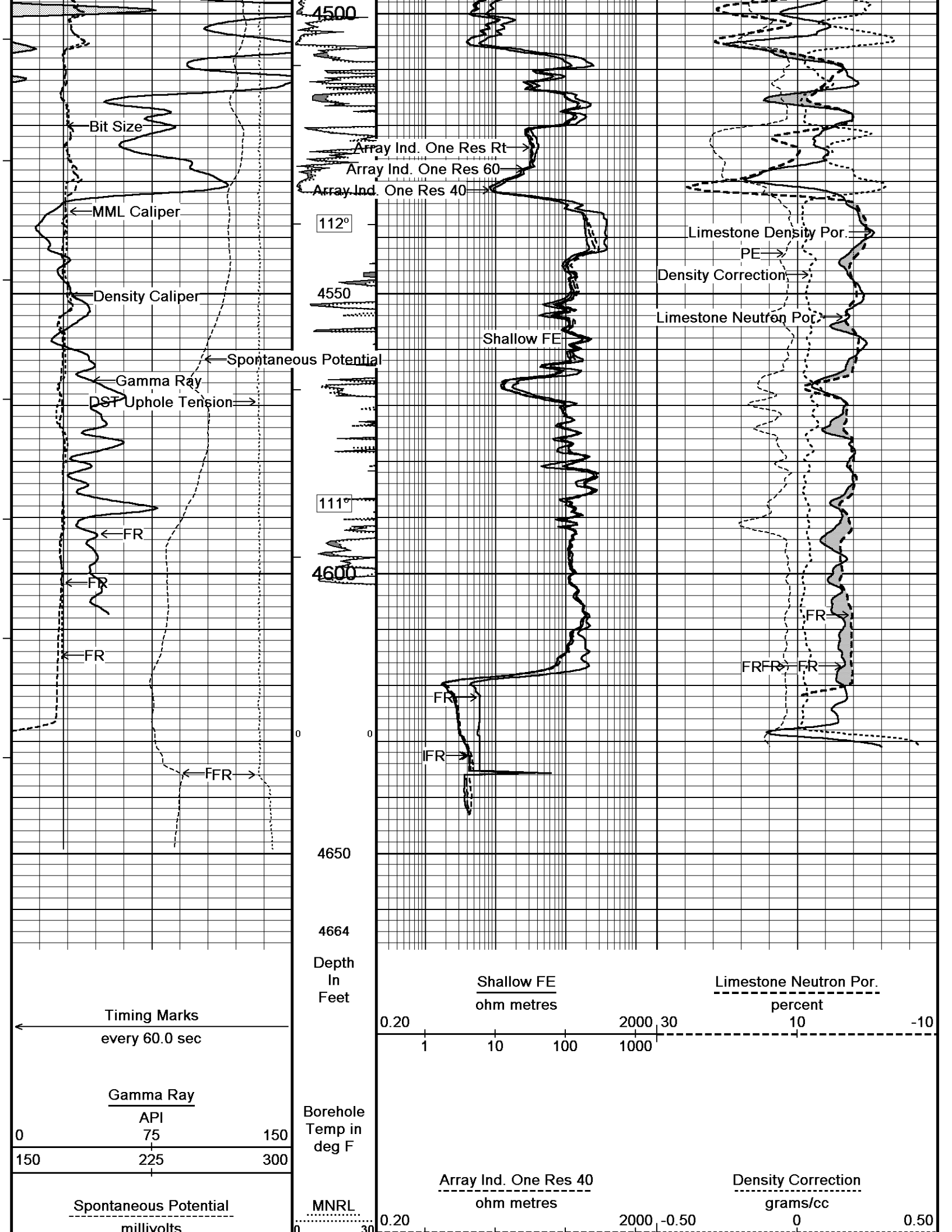

3400
3450
3500
300
400
3550
3600

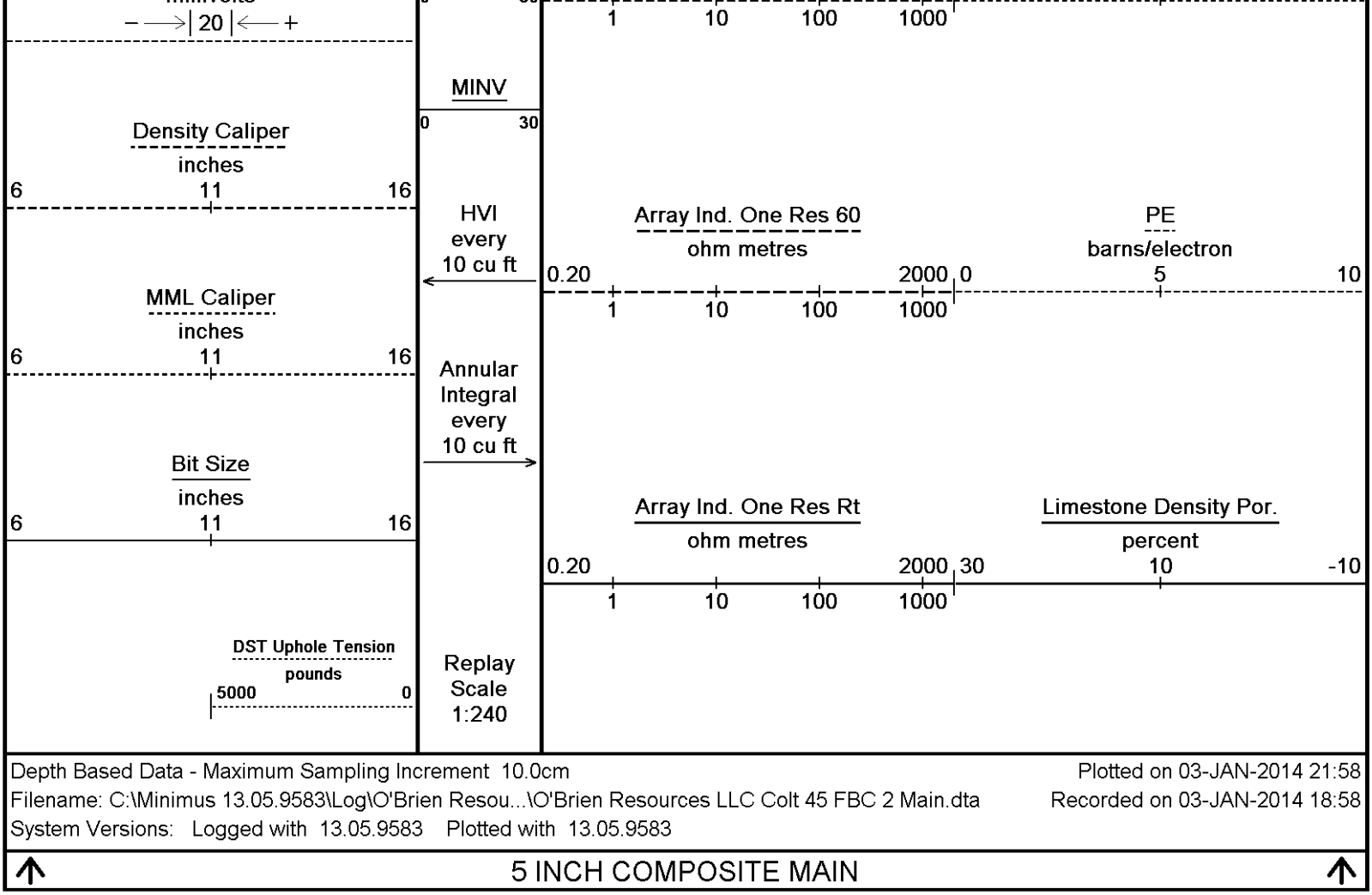

3650
3700
3750
3800
Bit Size
MML Caliper
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.


200
3850
105°
3900
106°
3950
106°
4000
106°
4050


200
107°
4100
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
107°
MML Caliper
4150
Limestone Density Por.
PE
Density Correction
Density Caliper
Limestone Neutron Por.
Shallow FE
Spontaneous Potential
Gamma Ray
DSI Uphole Tension
108°
4200
100
108°
4250


108°
4300
109°
4350
110°
4400
110°
4450
111°


4500
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
MML Caliper
112°
Limestone Density Por.
PE
Density Correction
Density Caliper
4550
Limestone Neutron Por.
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
111°
FR
4600
FR
FR
FR
FR
FR
FR
FR
FR
FR
IFR
0
0
4650
4664
Depth
In
Feet
Timing Marks
every 60.0 sec
Shallow FE
ohm metres
0.20
2000
1
10
100
1000
Limestone Neutron Por.
percent
30
10
-10
Gamma Ray
API
0
75
150
150
225
300
Borehole
Temp in
deg F
Array Ind. One Res 40
ohm metres
0.20
2000
Density Correction
grams/cc
-0.50
0
0.50
Spontaneous Potential
millivolts
MNRL
0
30

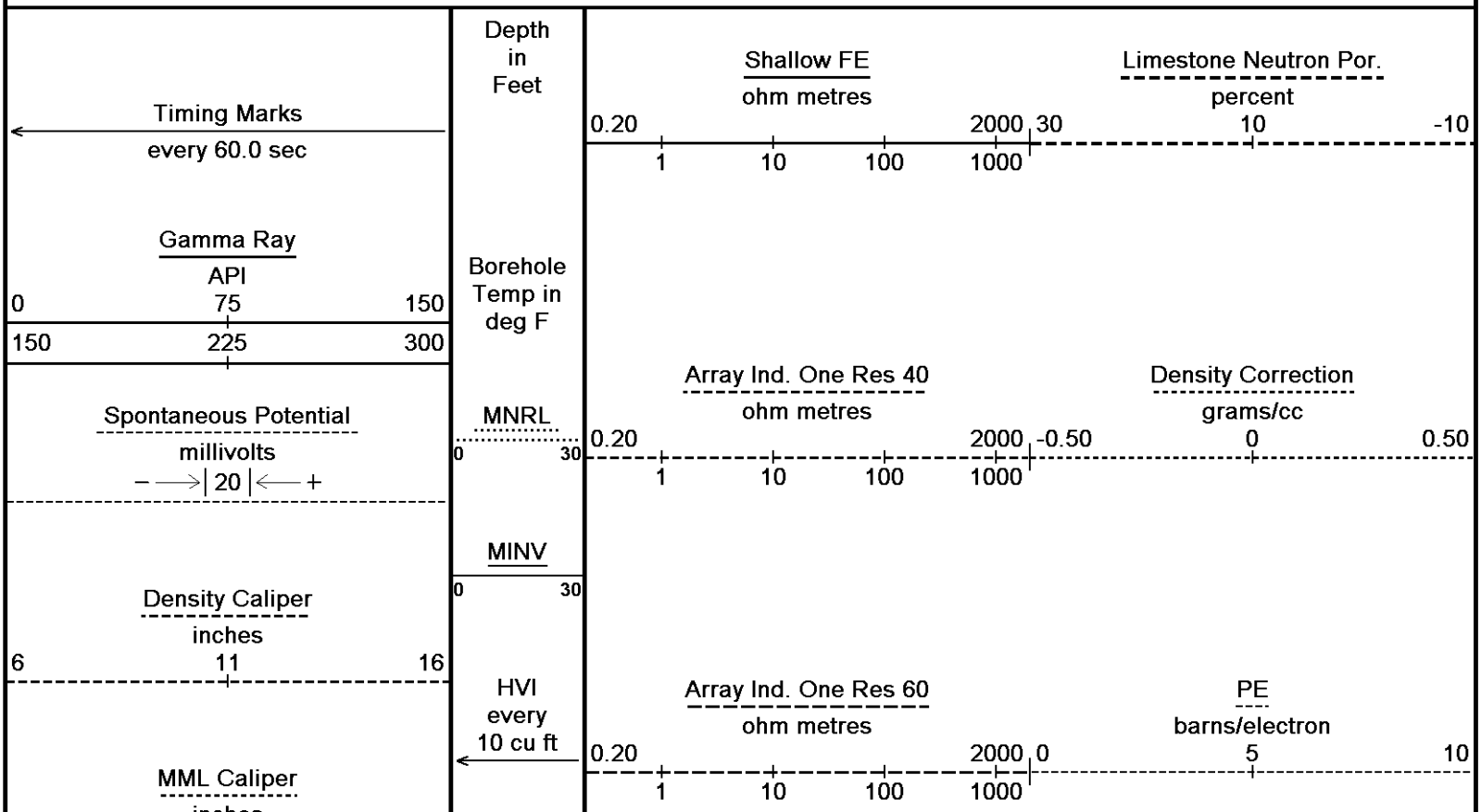


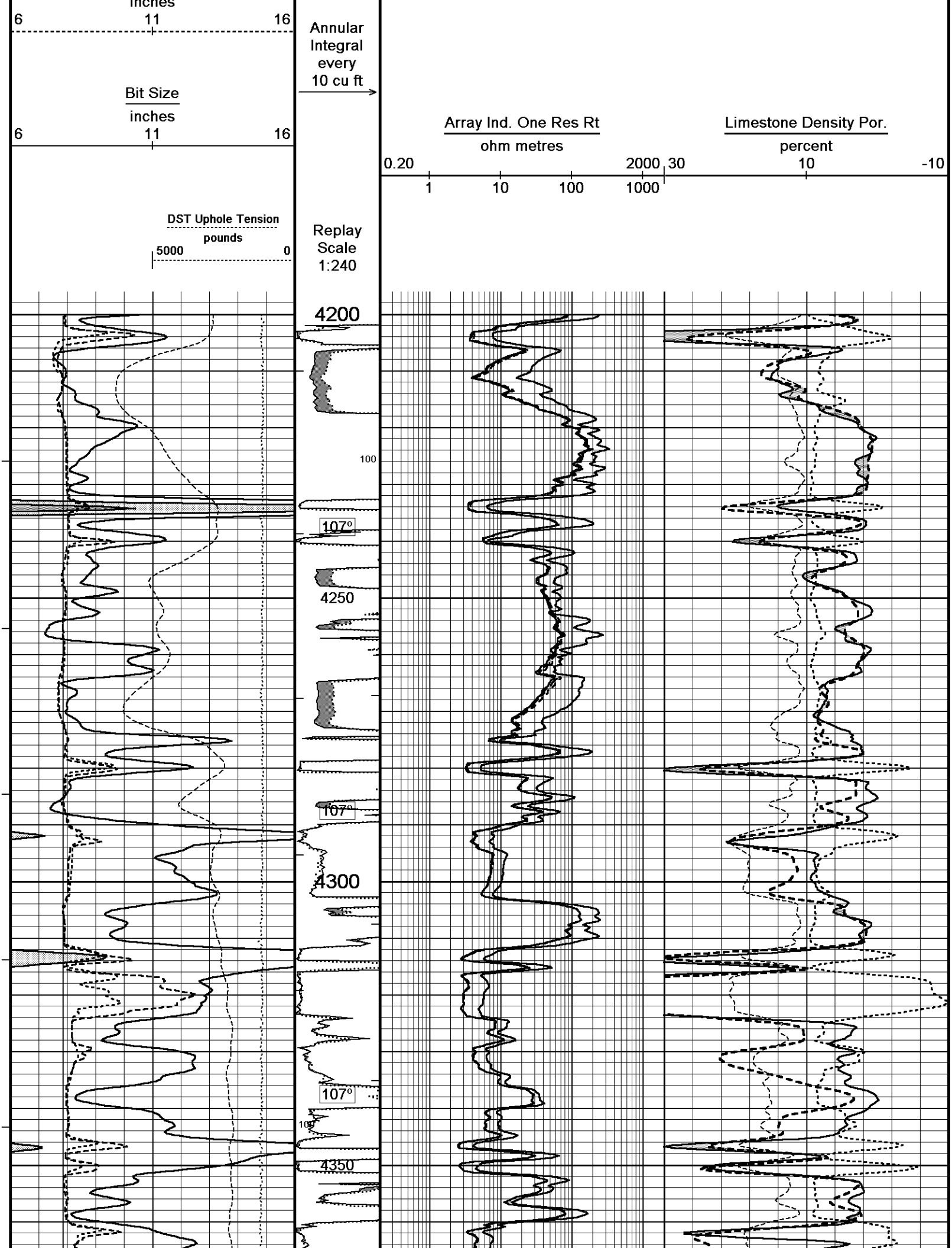
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 03-JAN-2014 21:58
Filename: C:\Minimus 13.05.9583\Log\O'Brien Resou...\O'Brien Resources LLC Colt 45 FBC 2 Main.dta — Recorded on 03-JAN-2014 18:58
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

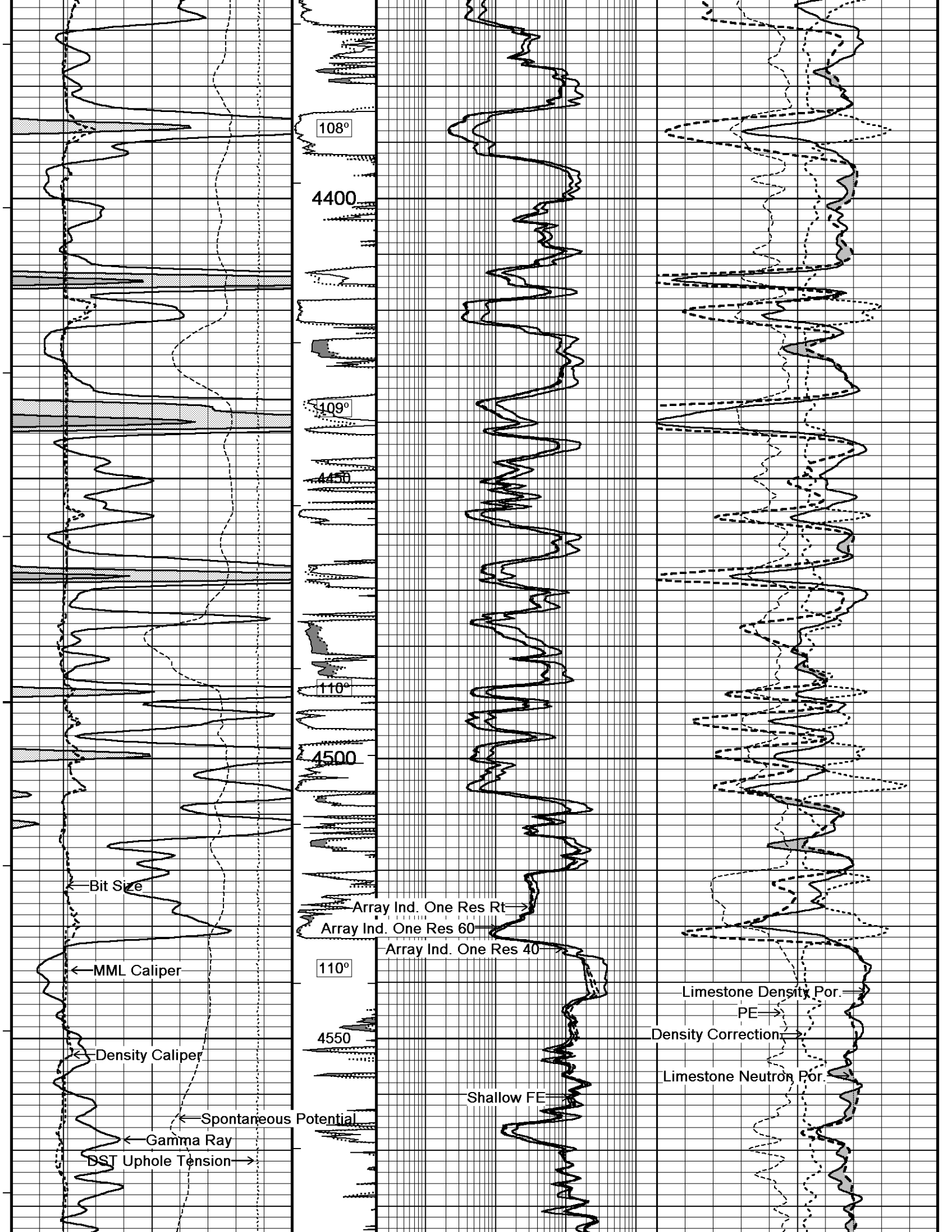
5 INCH COMPOSITE MAIN

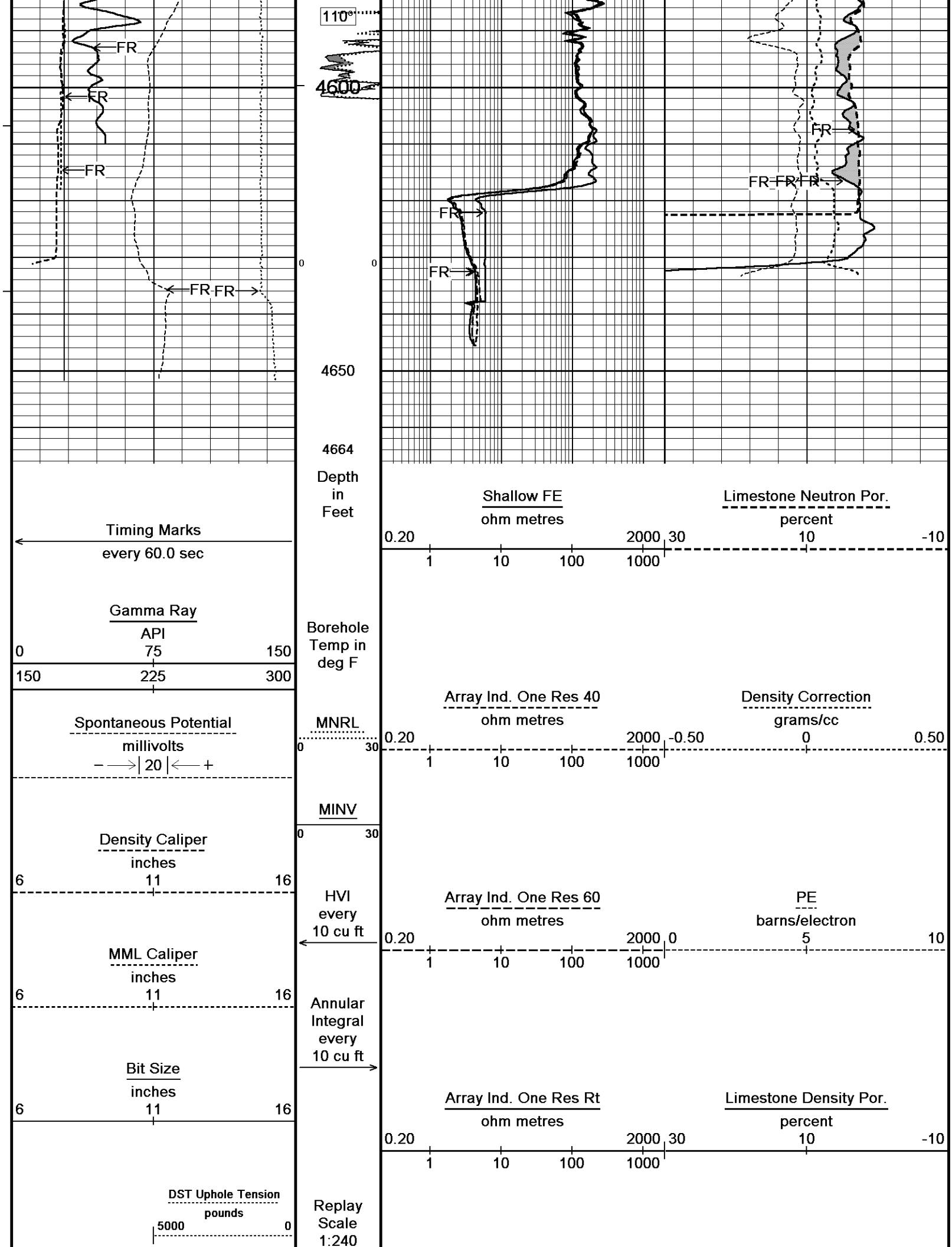
REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 03-JAN-2014 21:58
Filename: C:\Minimus 13.05.9583\Log\O'Brien Res...\O'Brien Resources LLC Colt 45 FBC 2 Repeat.dta — Recorded on 03-JAN-2014 18:14
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583




inches
6
11
16
Annular Integral every 10 cu ft
Bit Size
inches
6
11
16
Array Ind. One Res Rt
ohm metres
0.20
2000
1
10
100
1000
Limestone Density Por.
percent
30
10
-10
DST Uphole Tension
pounds
5000
0
Replay Scale 1:240
4200
100
107°
4250
107°
4300
107°
100
4350


108°
4400
109°
4450
110°
4500
Bit Size
MML Caliper
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
110°
4550
Shallow FE
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.


110°
4600
4650
4664
FR
FR
FR
FR FR
FR
FR
FR FR FR
0
0
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
MML Caliper
inches
6
11
16
Bit Size
inches
6
11
16
DST Uphole Tension
pounds
5000
0
Borehole Temp in deg F
MNRL
0
30
MINV
0
30
HVI every 10 cu ft
Annular Integral every 10 cu ft
Replay Scale 1:240
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
Density Correction
grams/cc
-0.50
0
0.50
Array Ind. One Res 60
ohm metres
0.20
2000
1
10
100
1000
PE
barns/electron
0
5
10
Array Ind. One Res Rt
ohm metres
0.20
2000
1
10
100
1000
Limestone Density Por.
percent
30
10
-10

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 03-JAN-2014 21:58
Filename: C:\Minimus 13.05.9583\Log\O'Brien Res...\O'Brien Resources LLC Colt 45 FBC 2 Repeat.dta — Recorded on 03-JAN-2014 18:14
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REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Log\O'Brien Resources LLC Colt 45 FBC 2\O'Brien Resources LLC Colt 45 FBC 2 Main.dta

General Constants All 000

Last Edited on 03-JAN-2014,17:32

General Parameters		
Mud Resistivity	1.030	ohm-metres
Mud Resistivity Temperature	74.800	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	None	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	
SW/APOR Tool Source	0.000	

Gamma Calibration MCG-D.K 469

Field Calibration on 30-DEC-2013 14:00

	Measured	Calibrated (API)
Background	67	46
Calibrator (Gross)	1131	771
Calibrator (Net)	1064	725

Gamma Constants MCG-D.K 469

Last Edited on 03-JAN-2014,16:09

Gamma Calibrator Number	GRC38	
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	%

High Resolution Temperature Calibration MCG-D.K 469

Field Calibration on 30-DEC-2013,14:00

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

High Resolution Temperature Constants MCG-D.K 469

Last Edited on 30-DEC-2013,14:00

Pre-filter Length	11

Caliper Calibration MML-A 3

Base Calibration on 30-DEC-2013 11:54
Field Calibration on 30-DEC-2013 11:56

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14864	5.98
2	18053	7.97
3	21223	9.86
4	25163	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.92	7.97

Micro Normal and Micro Inverse Calibration MML-A 3

Base Calibration on 30-DEC-2013 12:09
Field Check on 30-DEC-2013 12:23

Base Calibration

Channel	Measured Resistor 1	Measured Resistor 2	Calibrated (ohm-m) Resistor 1	Calibrated (ohm-m) Resistor 2
Micro Normal	12.1	60.2	5.0	25.0
Micro Inverse	15.7	78.4	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	62.9	62.9
Micro Inverse	48.2	48.2

Micro Normal and Micro Inverse Constants MML-A 3

Last Edited on 03-JAN-2014,16:08

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

Neutron Calibration MDN-A.B 66

Base Calibration on 19-NOV-2013 15:33
Field Check on 30-DEC-2013 14:11

Base Calibration

	Measured Near	Measured Far	Calibrated (cps) Near	Calibrated (cps) Far
	3066	94	3714	110
Ratio	32.484		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1680	2433
Ratio	0.691	

Field Check

	Calibrated (cps)	
	1658	2414
Ratio	0.688	

Neutron Constants MDN-A.B 66

Last Edited on 03-JAN-2014,16:08

Neutron Source Id	P0204NN	
Neutron Jig Number	5824NE	
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	None	
Formation Pressure	N/A	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-B.J 353

Base Calibration on 30-DEC-2013 12:34
Field Check on 30-DEC-2013 12:42

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	964.4	126.8
Base Check		280.9
Field Check		280.9

FE Constants MFE-B.J 353

Last Edited on 03-JAN-2014,16:07

Running Mode	No Sleeve	

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

Induction Calibration MAI-A.A 167

Base Calibration on 02-OCT-2013,14:21
Field Check on 30-DEC-2013 15:55

Base Calibration

Test Loop Calibration	Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High
1	17.3	474.2	9.3	966.2
2	6.3	388.4	7.6	821.4
3	3.3	259.4	5.2	566.0
4	1.9	133.0	2.6	279.2

Array Temperature	76.8	Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	12.1	3839.5	12.1	3839.4	
2	29.3	3477.7	29.3	3477.6	
3	29.0	3053.6	28.9	3053.6	
4	19.7	2082.0	19.7	2082.0	
Deep	18.5	2049.2	18.5	2049.2	
Medium	42.1	3992.2	42.1	3992.2	
Shallow	42.6	5055.4	42.5	5055.3	
Array Temperature		59.6		59.6	Deg F

Induction Constants MAI-A.A 167

Last Edited on 03-JAN-2014,16:07

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	8.0000	
Stand-off Fin Angle	45.00	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	

Photo Density Calibration MPD-C.A 216

Base Calibration on 30-DEC-2013 16:39
Field Check on 30-DEC-2013 16:52

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	60912	31239	59556	30836
Reference 2	25458	2782	24941	2541

Field Check at Base

1112.0	1316.2

Field Check

1120.1	1313.7

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	202	993		
Reference 1	25023	60709	0.416	0.371
Reference 2	7244	25325	0.289	0.272

Field Check at Base

202.1	992.6

Field Check

201.9	996.8

Density Constants MPD-C.A 216

Last Edited on 03-JAN-2014,16:08

Density Source Id	18235B	
Nylon Calibrator Number	DNCE528	
Aluminium Calibrator Number	DACD528	
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 (m)
2.71	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

Caliper Calibration MPD-C.A 216

Base Calibration on 30-DEC-2013 16:06
Field Calibration on 30-DEC-2013 16:08

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	16063	3.99
2	26074	5.98
3	36080	7.97
4	45856	9.86
5	57120	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.96	7.97

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Log\O'Brien Resources LLC Colt 45 FBC 2\O'Brien Resources LLC Colt 45 FBC 2 Main.dta

3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.K 469 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 3 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

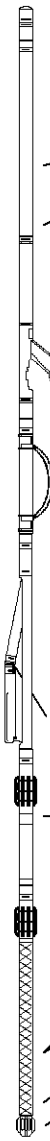
Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-B.J 353 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-A.A 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 49.73 ft Weight: 399.0 lb



42.87 ft	GRGC - Gamma Ray
39.96 ft	CGXT - MCG External Temperature
33.24 ft	MINV - Micro-inverse
33.24 ft	MNRL - Micro-normal
34.24 ft	MLTC - MML Caliper
28.45 ft	NPRL - Limestone Neutron Por.
21.21 ft	AVOL - Annular Volume
21.21 ft	HVOL - Hole Volume
21.21 ft	CLDC - Density Caliper
19.28 ft	DEN - Compensated Density
19.28 ft	DCOR - Density Correction
19.28 ft	DPRL - Limestone Density Por.
19.22 ft	PDPE - PE
13.72 ft	FEFE - Shallow FE
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	R60O - Array Ind. One Res 60
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	O'BRIEN RESOURCES LLC
WELL	COLT 45 FBC 2
FIELD	WILDCAT
PROVINCE/COUNTY	LANE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2853.00	feet	First Reading	4632.66	feet
Elevation Drill Floor	2851.00	feet	Depth Driller	4635.00	feet
Elevation Ground Level	2848.00	feet	Depth Logger	4636.00	feet

Weatherford®

COMPOSITE LOG

COMPANY	O'BRIEN RESOURCES LLC
WELL	COLT 45 FBC 2
FIELD	WILDCAT
PROVINCE/COUNTY	LANE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	720' FNL & 24
	NW SW NW
SEC	2
TWP	17S
RGE	30W
Other Services	MPD MML
Permit Number	15-101-22478
API Number	
Log Measured From GL, Elevation: 2848 feet	
Permanent Datum	
Drilling Measured From KB @ 5 FEET	

Date	03-JAN-2014
Run Number	ONE
Service Order	3547662
Depth Driller	4635.00
Depth Logger	4636.00
First Reading	4632.66
Last Reading	246.00
Casing Driller	245.00
Casing Logger	246.00
Bit Size	7.875
Hole Fluid Type	CHEMICAL
Density/Viscosity	9.40 lb/US
PH / Fluid Loss	10.50
Sample Source	MUDPIT
Rm @ Measured Temp	1.03 @ 74.8
Rmf @ Measured Temp	0.82 @ 74.8
Rmc @ Measured Temp	1.24 @ 74.8
Source Rmf / Rmc	CALC
Rm @ BHT	0.71 @ 111.0
Time Since Circulation	4 HOURS
Max Recorded Temp	113.00
Equipment / Base	13096
Recorded By	DEREK CART
Witnessed By	KURT TALBO
JOB #	LB14-004

COMPOSITE LOG

OURCES LLC
: 2
SAS
24' FEL
NE
Services
/MDN

MAI/MFE

Elevations:
KB 2853.00 feet
DF 2851.00
GL 2848.00

1 INCH COMPOSITE MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 03-JAN-2014 21:58
Filename: C:\Minimus 13.05.9583\Log\O'Brien Resource...\O'Brien Resources LLC Colt 45 FBC 2 Main.dta — Recorded on 03-JAN-2014 18:58
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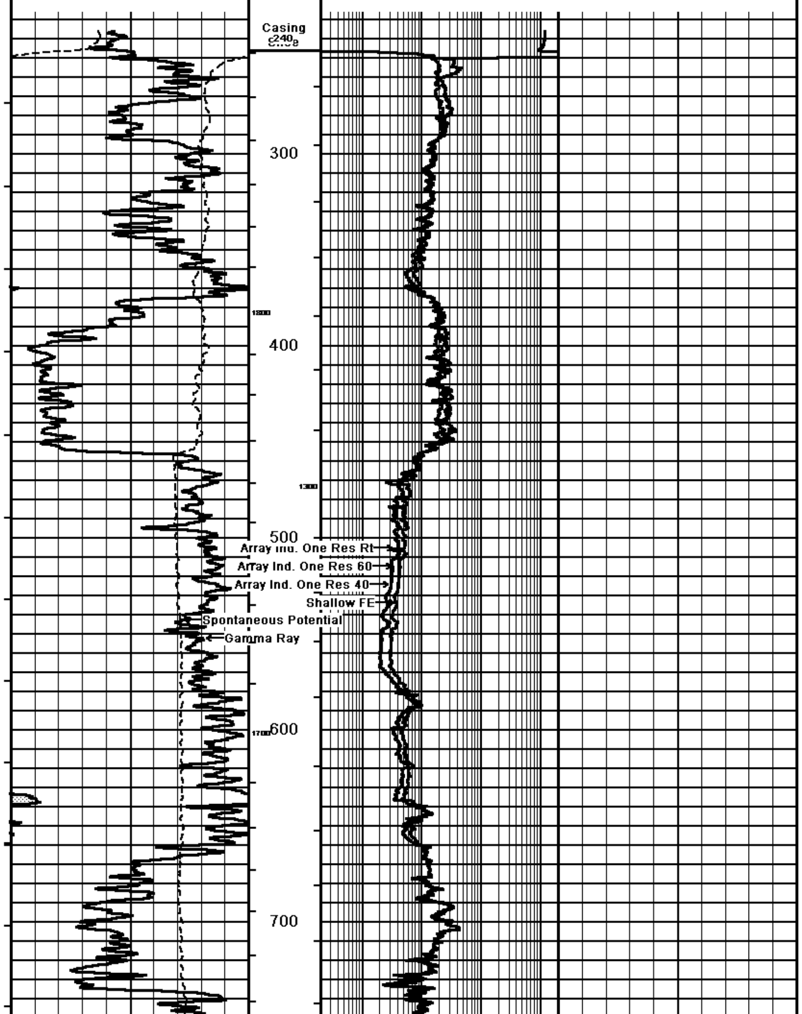
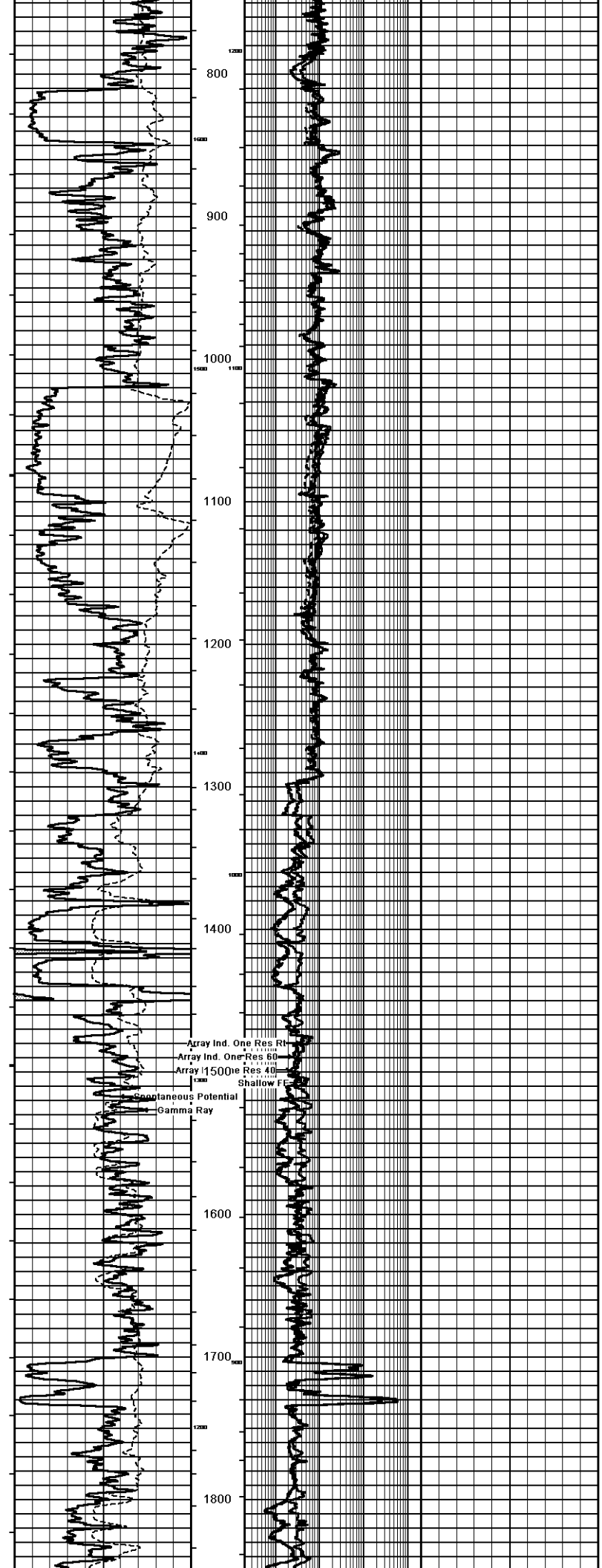
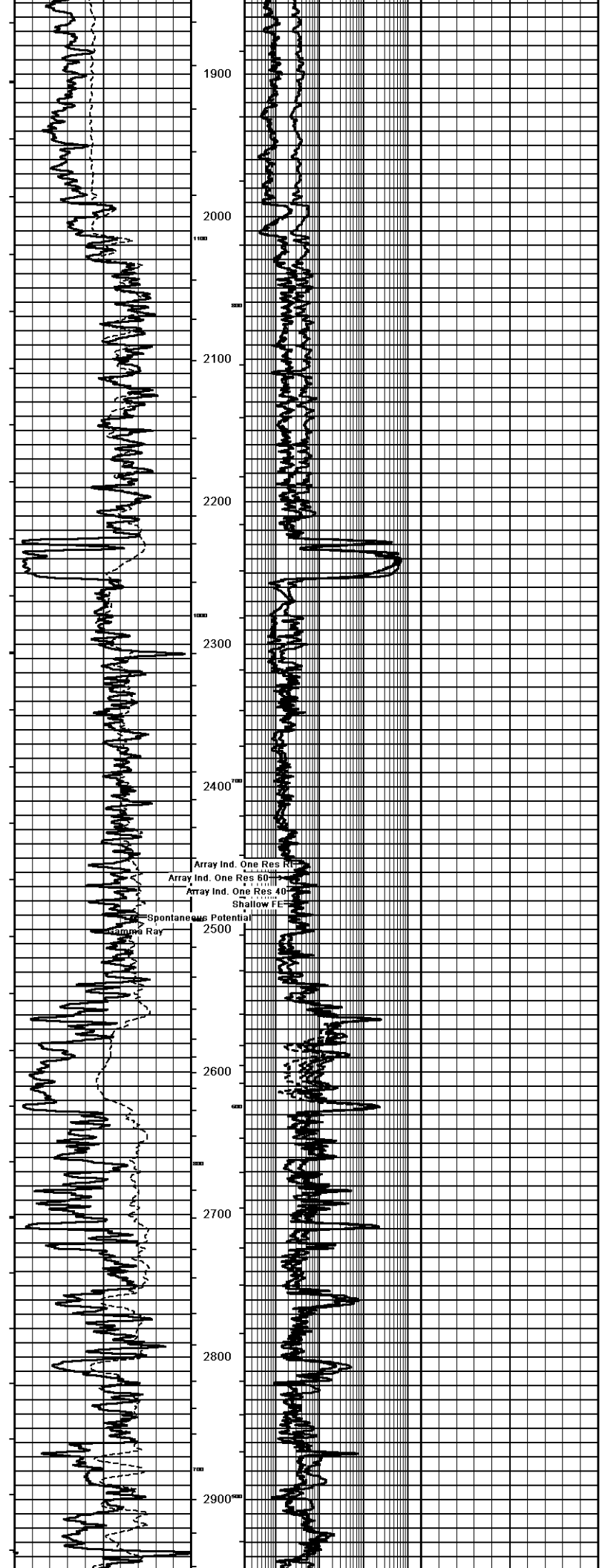
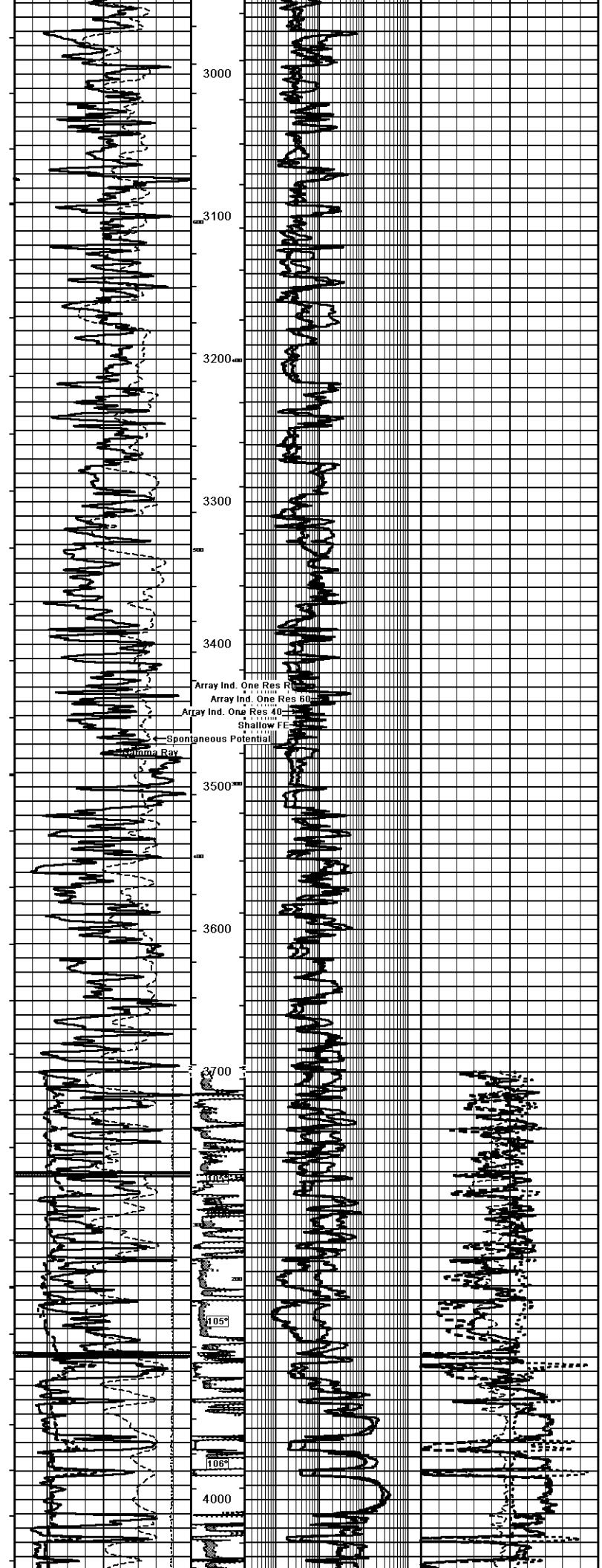
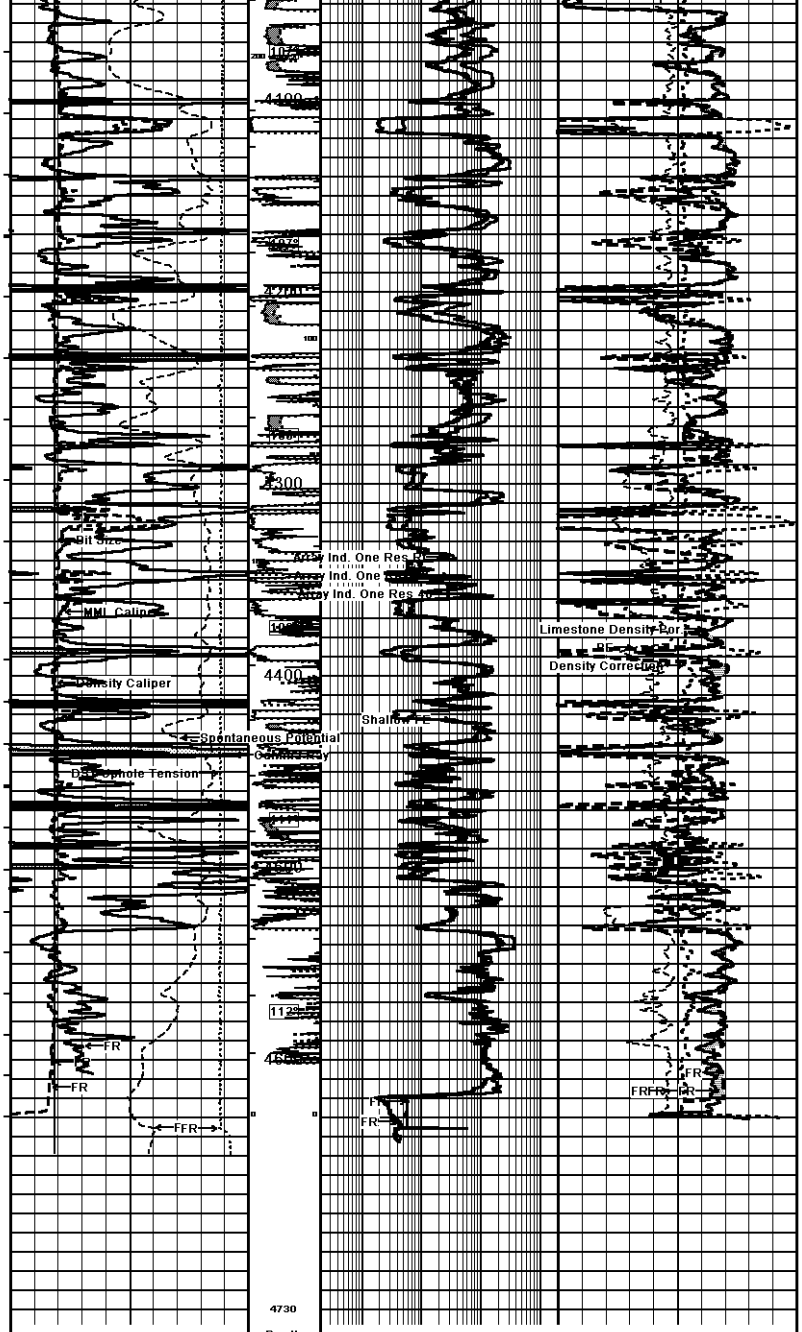
Track 1	Depth Track	Track 2–3	
Timing Marks, every 60.0 sec	Depth In Feet	Shallow FE, ohm metres, 0.20 – 2000 (1, 10, 100, 1000)	Limestone Neutron Por., percent, 30 – 10 – -10
Gamma Ray, API, 0 – 75 – 150; 150 – 225 – 300	Borehole Temp in deg F		
Spontaneous Potential, millivolts, – →|20|← +	MNRL, 0 – 30	Array Ind. One Res 40, ohm metres, 0.20 – 2000 (1, 10, 100, 1000)	Density Correction, grams/cc, -0.50 – 0 – 0.50
Density Caliper, inches, 6 – 11 – 16	MINV, 0 – 30		
MML Caliper, inches, 6 – 11 – 16	HVI every 10 cu ft	Array Ind. One Res 60, ohm metres, 0.20 – 2000 (1, 10, 100, 1000)	PE, barns/electron, 0 – 5 – 10
Bit Size, inches, 6 – 11 – 16	Annular Integral every 10 cu ft	Array Ind. One Res Rt, ohm metres, 0.20 – 2000 (1, 10, 100, 1000)	Limestone Density Por., percent, 30 – 10 – -10
DST Uphole Tension, pounds, 5000 – 0	Replay Scale 1:600		

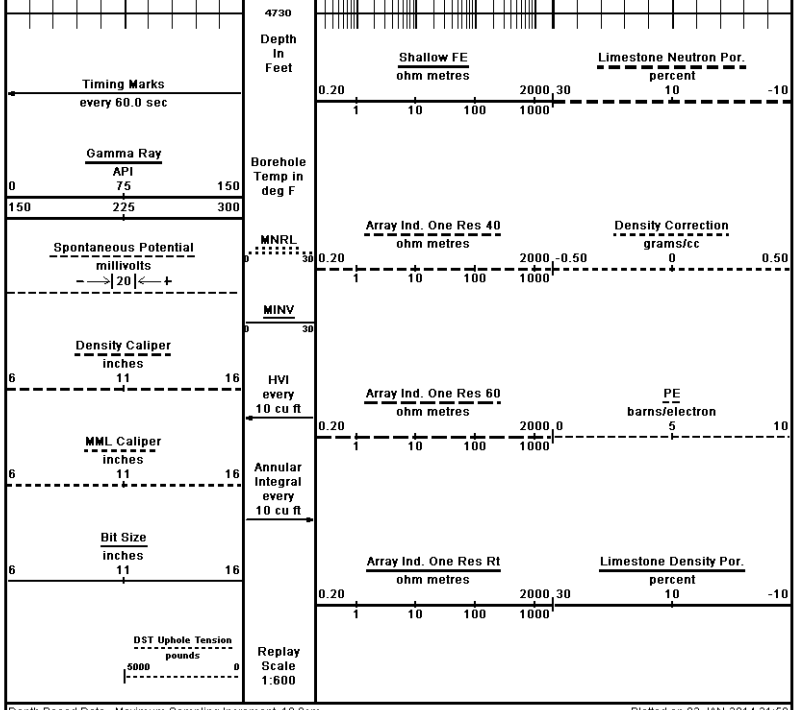



800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray


1900
2000
2100
2200
2300
2400
2500
2600
2700
2800
2900
Array Ind. One Res RT
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray


3000
3100
3200
3300
3400
Array Ind. One Res 85
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
3500
3600
3700
105°
105°
106°
4000





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1 INCH COMPOSITE MAIN

COMPANY	O'BRIEN RESOURCES LLC

COMPANY	O'BRIEN RESOURCES LLC
WELL	COLT 45 FBC 2
FIELD	WILDCAT
PROVINCE/COUNTY	LANE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2853.00	feet	First Reading	4632.66	feet
Elevation Drill Floor	2851.00	feet	Depth Driller	4635.00	feet
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Weatherford

COMPOSITE LOG