Weatherford®

COMPOSITE LOG

COMPANY	O'BRIEN RESOURCES, LLC
WELL	SWART 21 #1
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	879' FNL & 483' FWL NE SW NW NW

SEC	TWP	RGE
21	14S	30W

API Number 15-063-22107
Permit Number

Other Services
MPD/MDN MSS
MAI/MFE
MML

Permanent Datum GL, Elevation 2803 feet
Log Measured From KB
Drilling Measured From KB @ 10 FEET

Elevations:	feet
KB	2813.00
DF	2812.00
GL	2803.00

Date	03-JUNE-2013			
Run Number	0NE			
Service Order	3539062			
Depth Driller	4610.00	feet		
Depth Logger	4608.00	feet		
First Reading	4603.00	feet		
Last Reading	256.00	feet		
Casing Driller	255.00	feet		
Casing Logger	256.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.40 lb/USg	57.00 CP		
PH / Fluid Loss	10.00	8.00 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	1.19 @ 85.0	ohm-m		
Rmf @ Measured Temp	0.96 @ 85.0	ohm-m		
Rmc @ Measured Temp	1.43 @ 85.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.85 @119.0	ohm-m		
Time Since Circulation	4 HOURS			
Max Recorded Temp	119.00	deg F		
Equipment / Base	13057	LIB		
Recorded By	W. STAMBAUGH			
Witnessed By	SEAN DEENIHAN			
JOB #	LIB13-160			

BOREHOLE RECORD

Last Edited: 03-JUN-2013 17:17

Bit Size inches	Depth From feet	Depth To feet
7.880	256.00	4608.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	256.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583.
- RUN 1: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION.
  - HARDWARE: DUAL ECCENTRALISER USED ON MDN
    0.5 INCH STANDOFF USED ON MFE.
    TWO 0.5 INCH STANDOFFS USED ON MSS.
    0.5 INCH STANDOFF USED ON MAI.
- 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 256 FEET: 1630 CU. FT.
- ANNULAR HOLE VOLUME WITH 4.5 INCH PRODUCTION CASING FROM TD TO 3500 FEET: 270 CU. FT.

- RIG: MAVERICK DRILLING #106

- ENGINEER: WILLIAM STAMBAUGH

- OPERATOR(S): BRIAN BALLINGER

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.

2 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 21-AUG-2013 11:27

Filename: C:\Minimus 13.05.9583\Log\New Folder (4)\OBrien Resources LLC Swart #21-1-DETAIL.dta — Recorded on 03-JUN-2013 15:15

System Versions: Logged with 13.05.9583 Processed 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 | ← +

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 20

MINV
0 20

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:600

200

Casing Shoe

Shallow FE
ohm metres
0.20 2000
1 10 100 1000

Limestone Neutron Por.
percent
35 10 -15

Density Caliper
inches
-20 -10 0

Density Correction
grams/cc
-0.80 -0.30 0.20

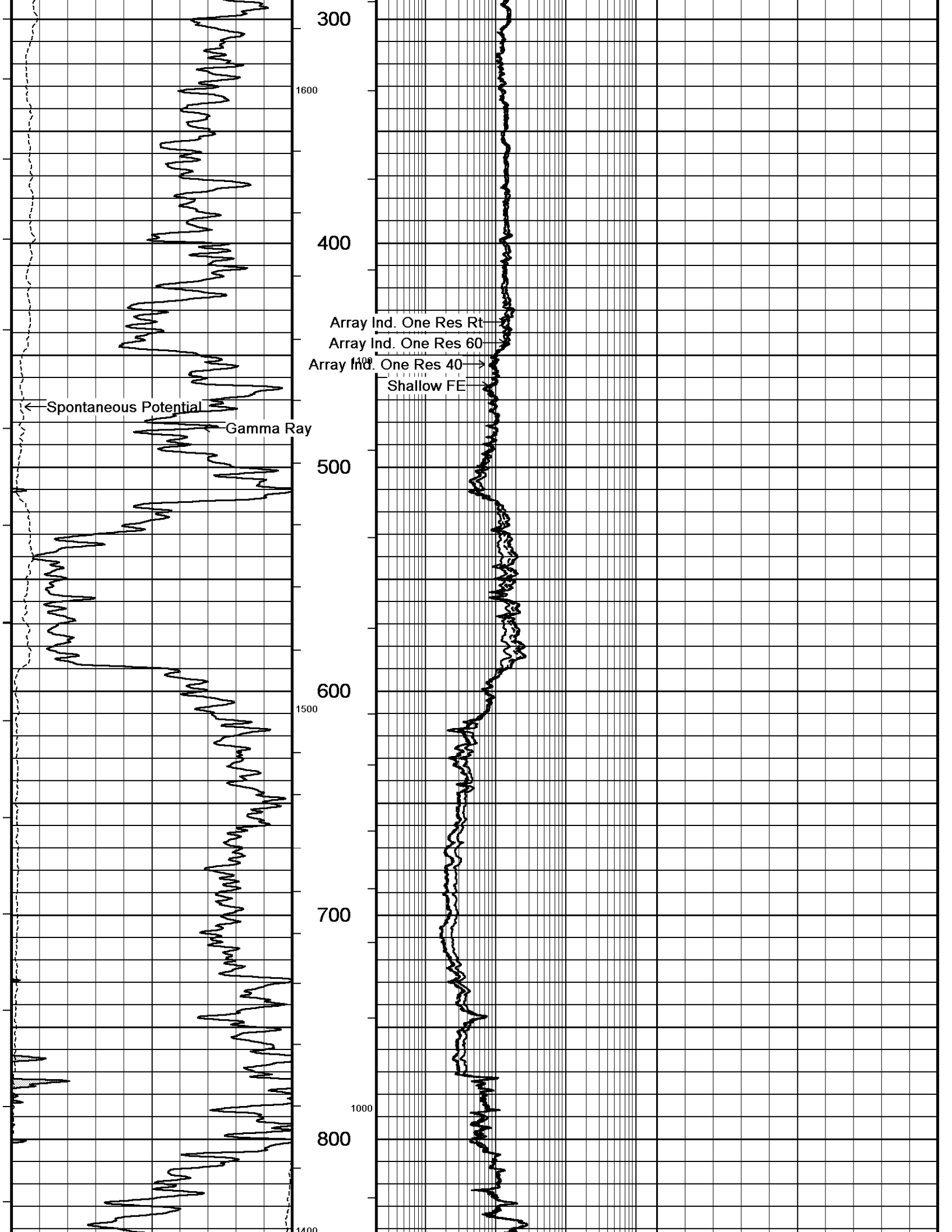
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ohm metres
0.20 2000
1 10 100 1000

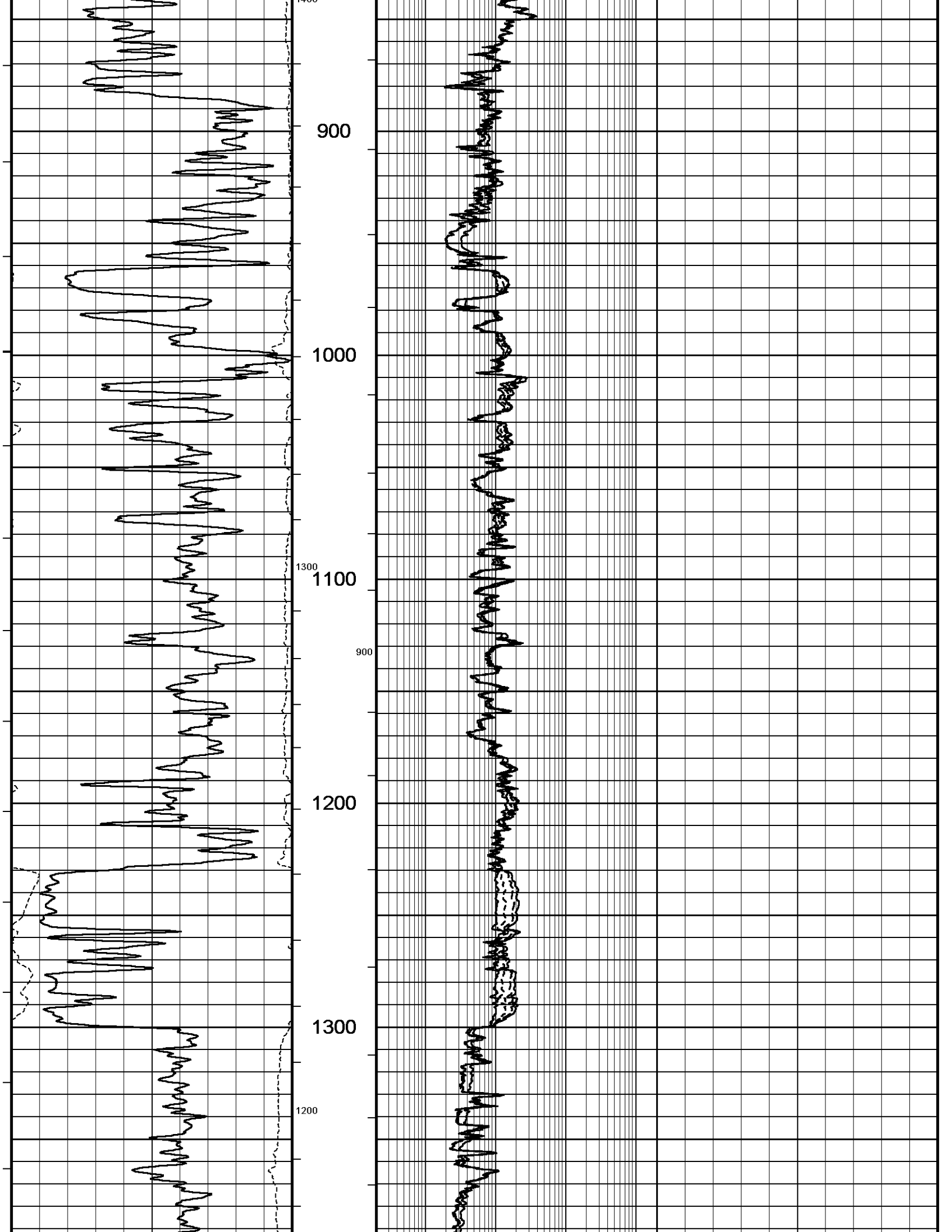
Limestone Density Por.
percent
35 10 -15

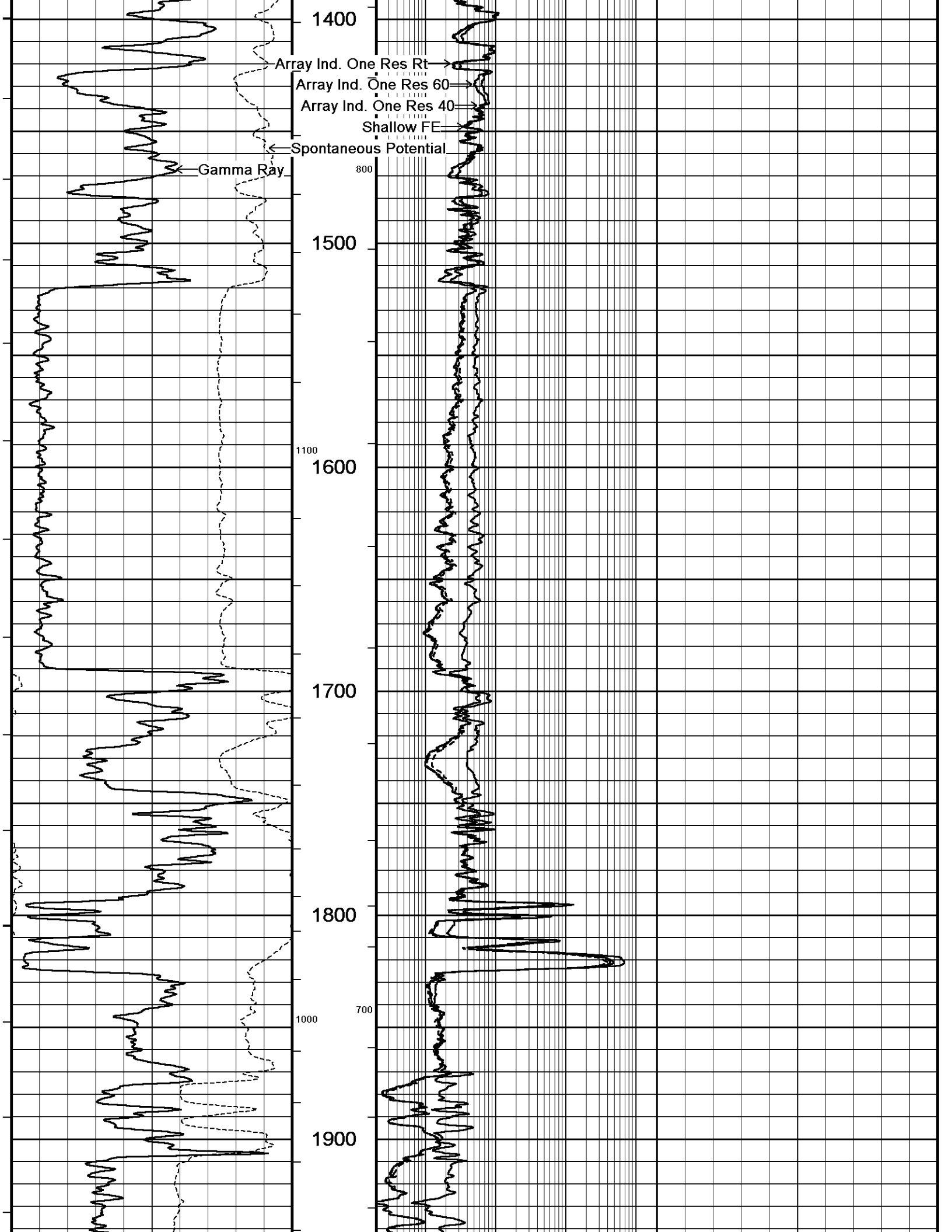
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ohm metres
0.20 2000
1 10 100 1000

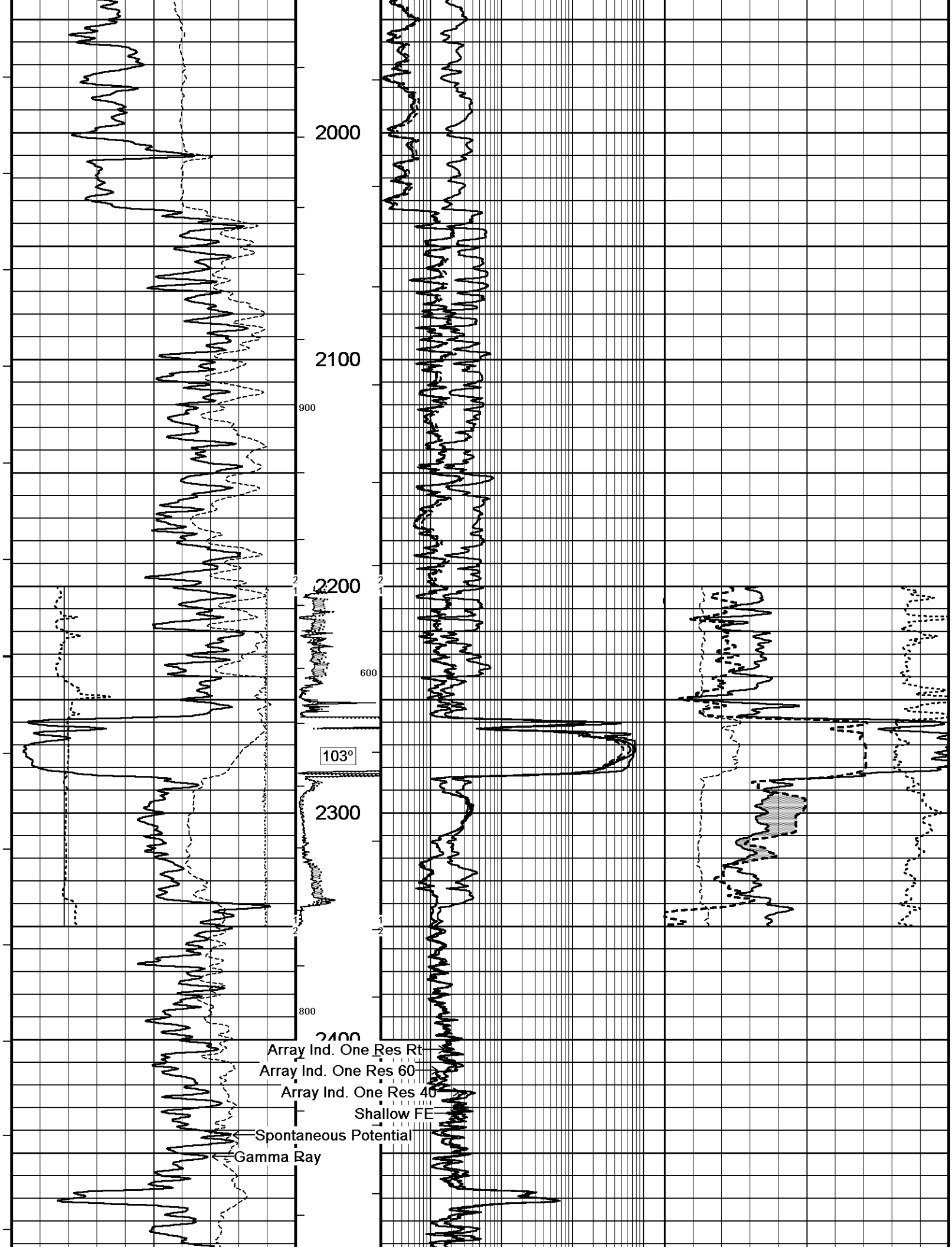
PE
barns/electron
0 10

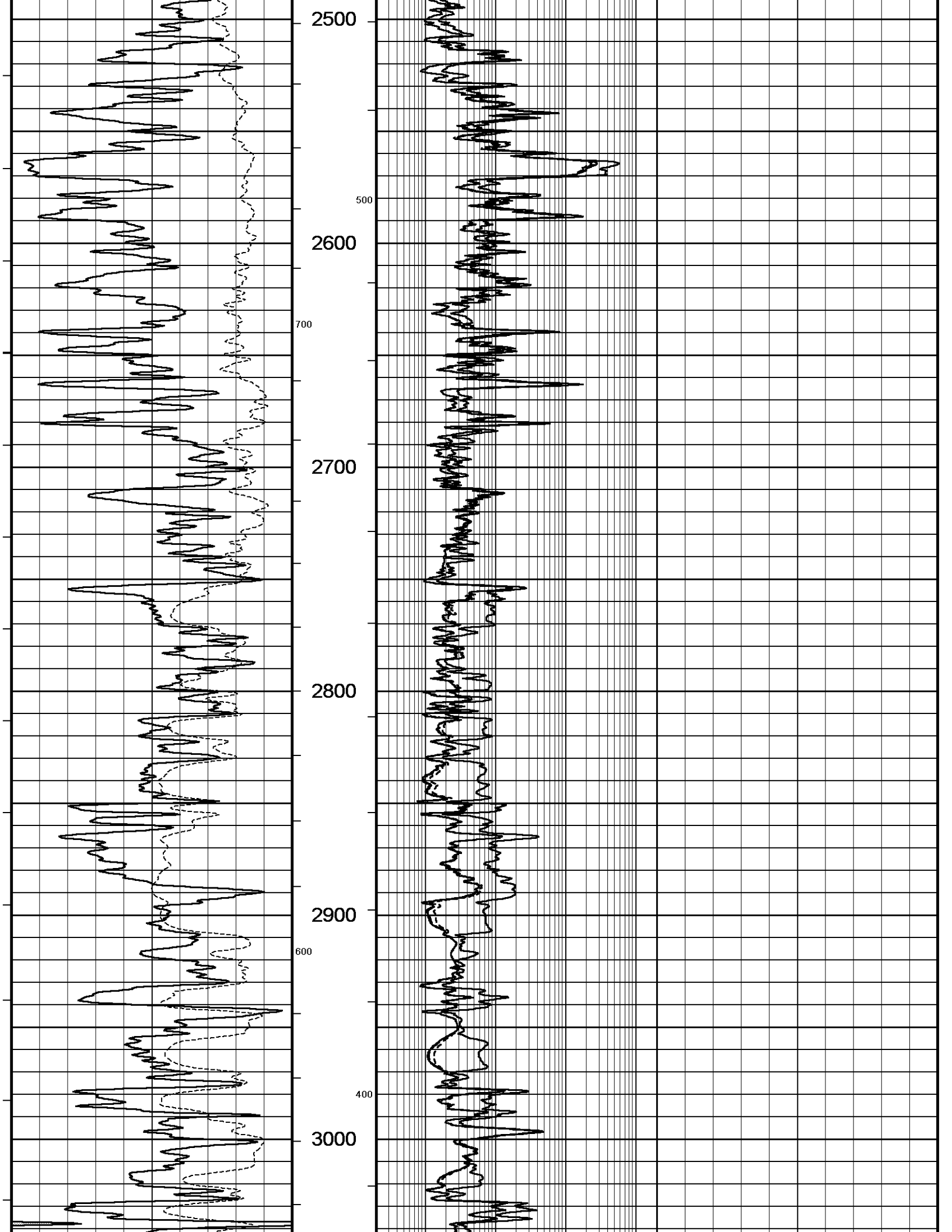
Array Ind. One Res Rt
ohm metres
0.20 2000
1 10 100 1000

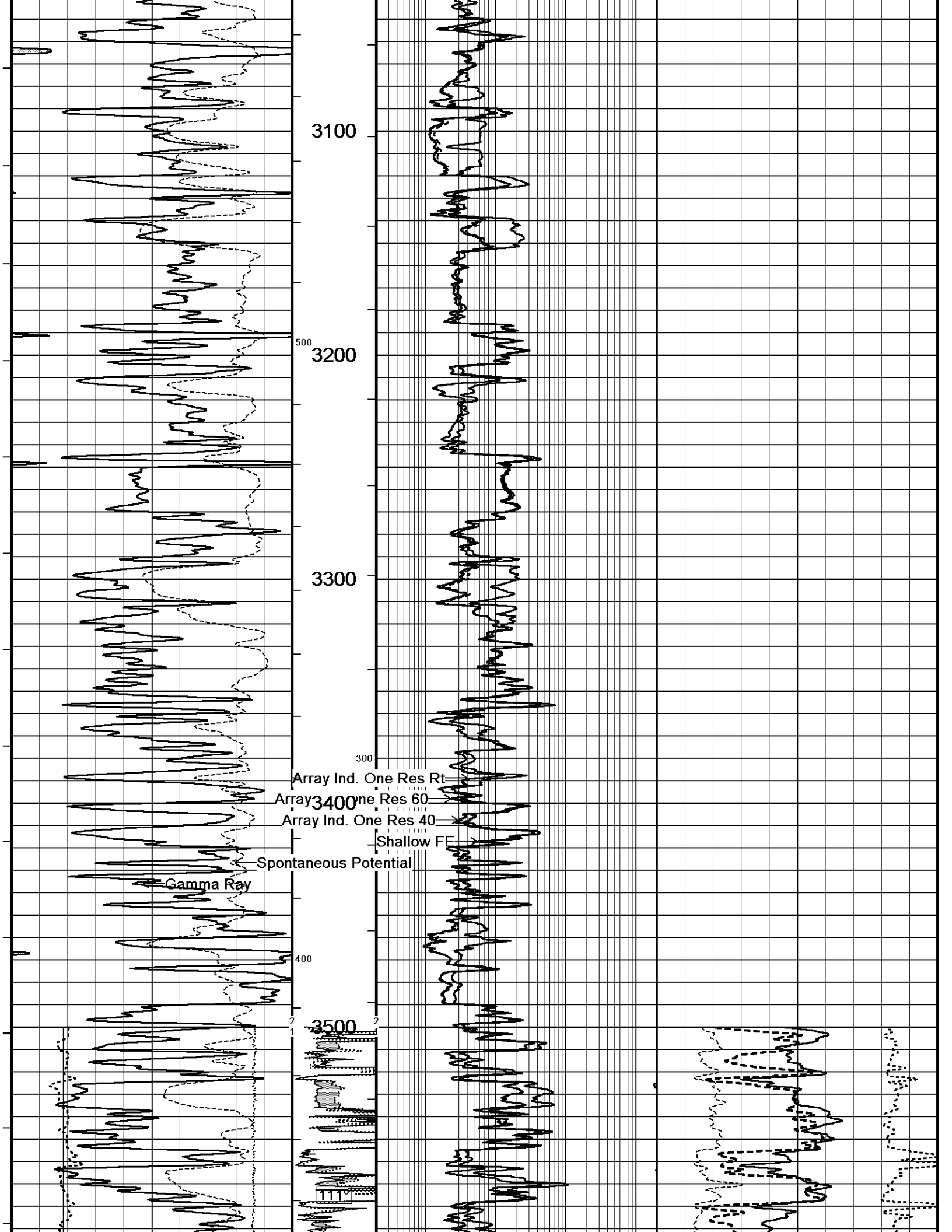

300
1600
400
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
500
600
1500
700
1000
800
1400

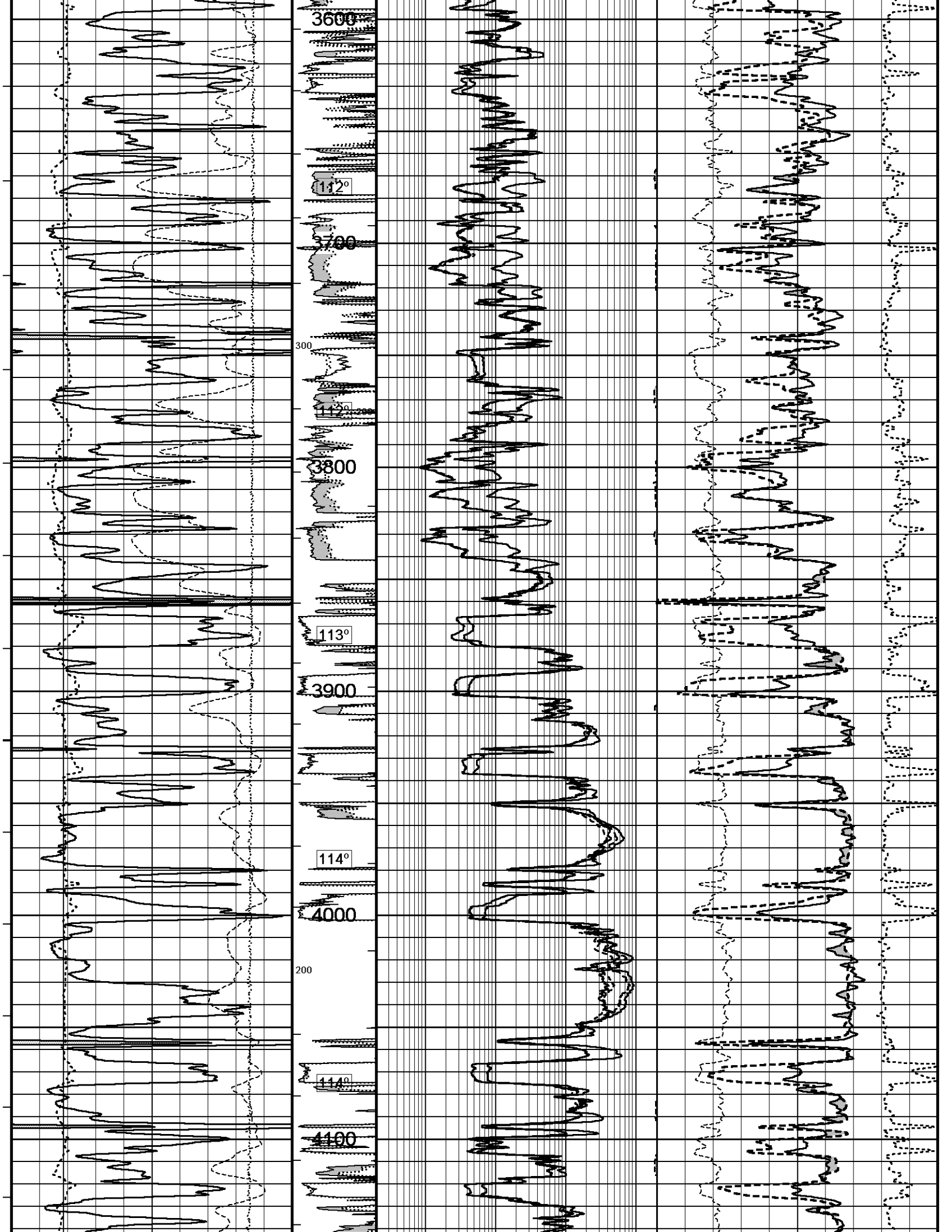

900
1000
1300
1100
900
1200
1300
1200

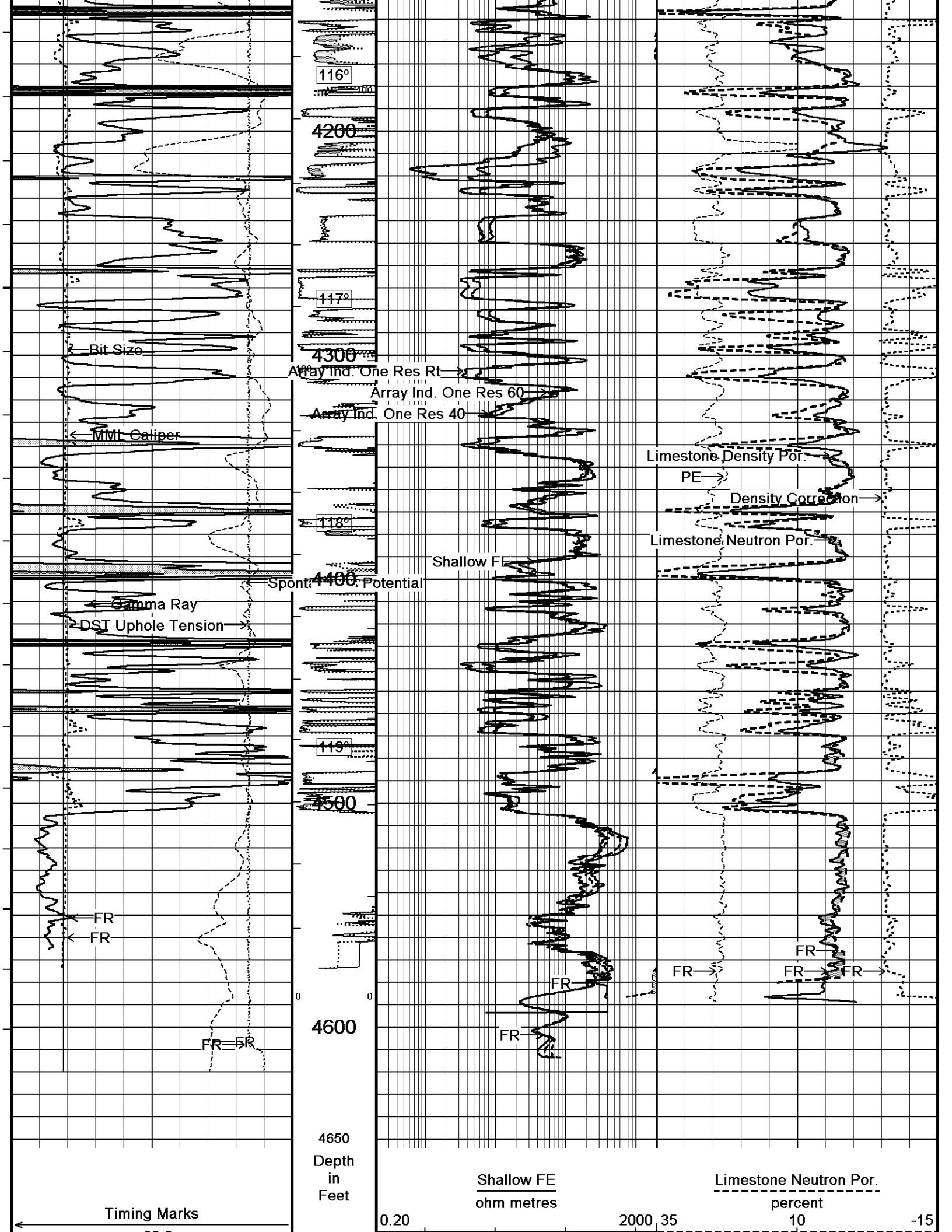

1400
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
800
1500
1100
1600
1700
1800
1000
700
1900

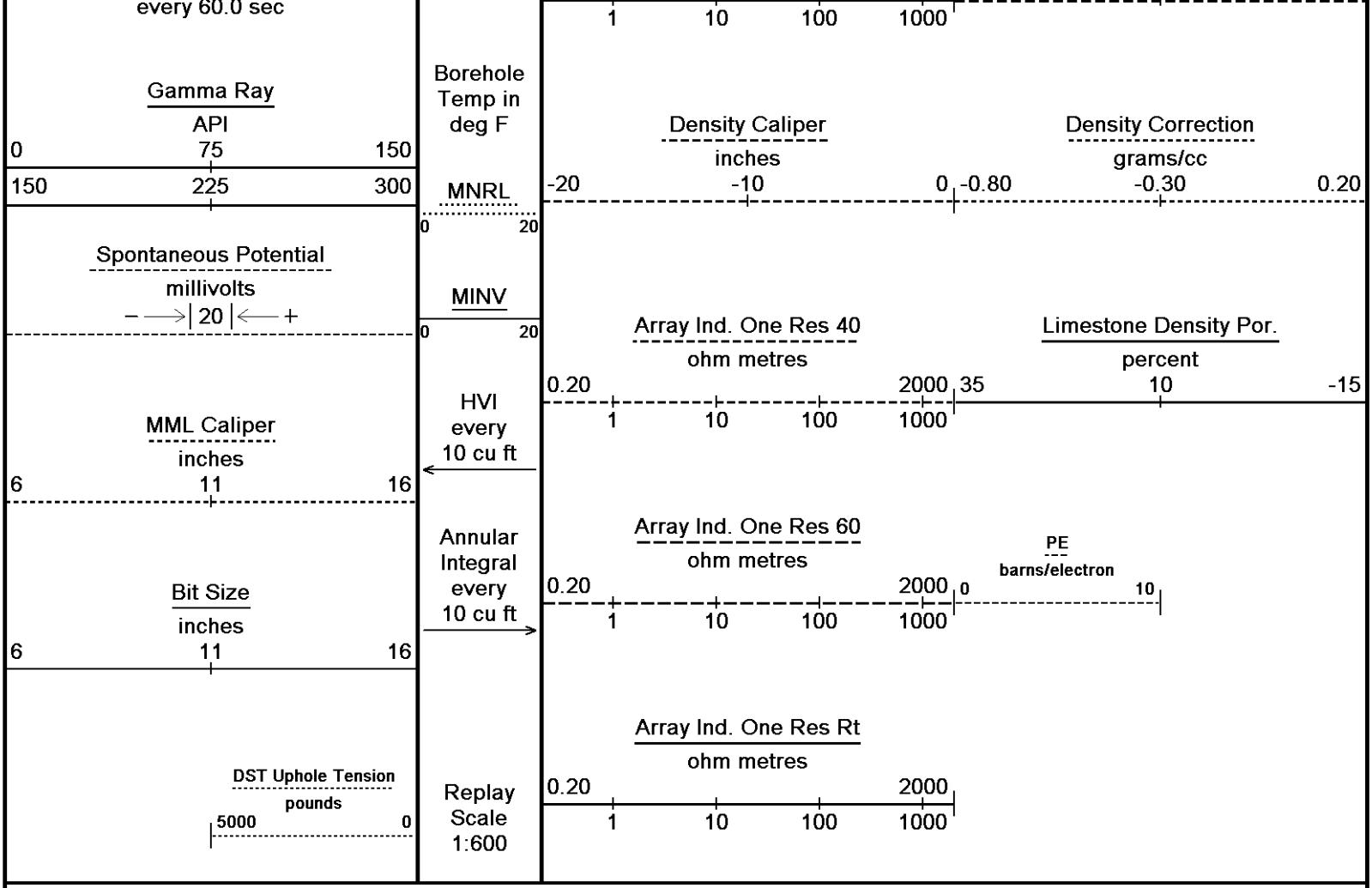

2000
2100
900
2200
600
103°
2300
800
2400
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray


2500
500
2600
700
2700
2800
2900
600
400
3000


3100
500
3200
3300
300
Array Ind. One Res Rt
Array
3400
ne Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
400
2
1
3500
2
111°


3600
112°
3700
300
112°
200
3800
113°
3900
114°
4000
200
114°
4100


116°
4200
117°
4300
118°
4400
119°
4500
4600
4650
Bit Size
MWL Caliper
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.
FR
Depth
in
Feet
Timing Marks
Shallow FE
ohm metres
0.20
2000
Limestone Neutron Por.
percent
35
10
-15

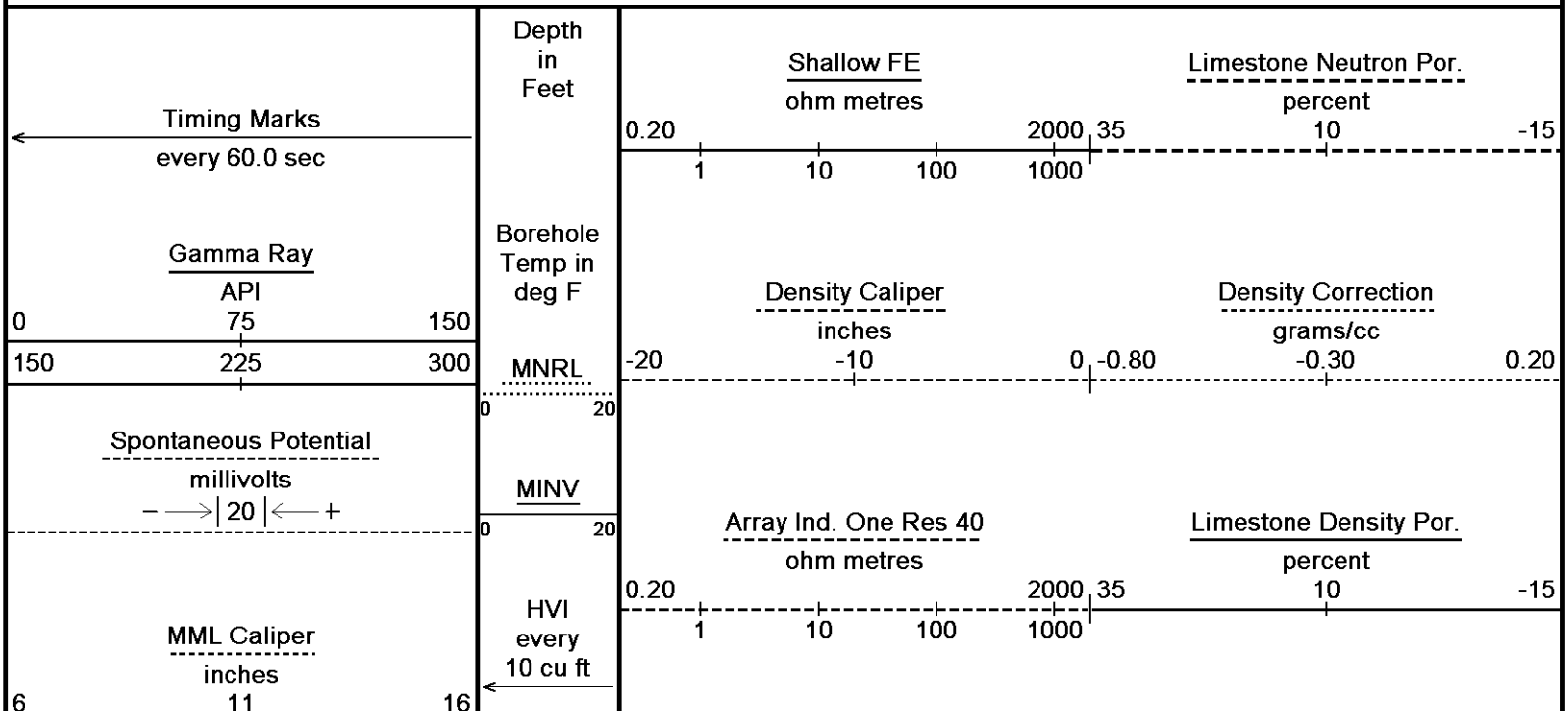


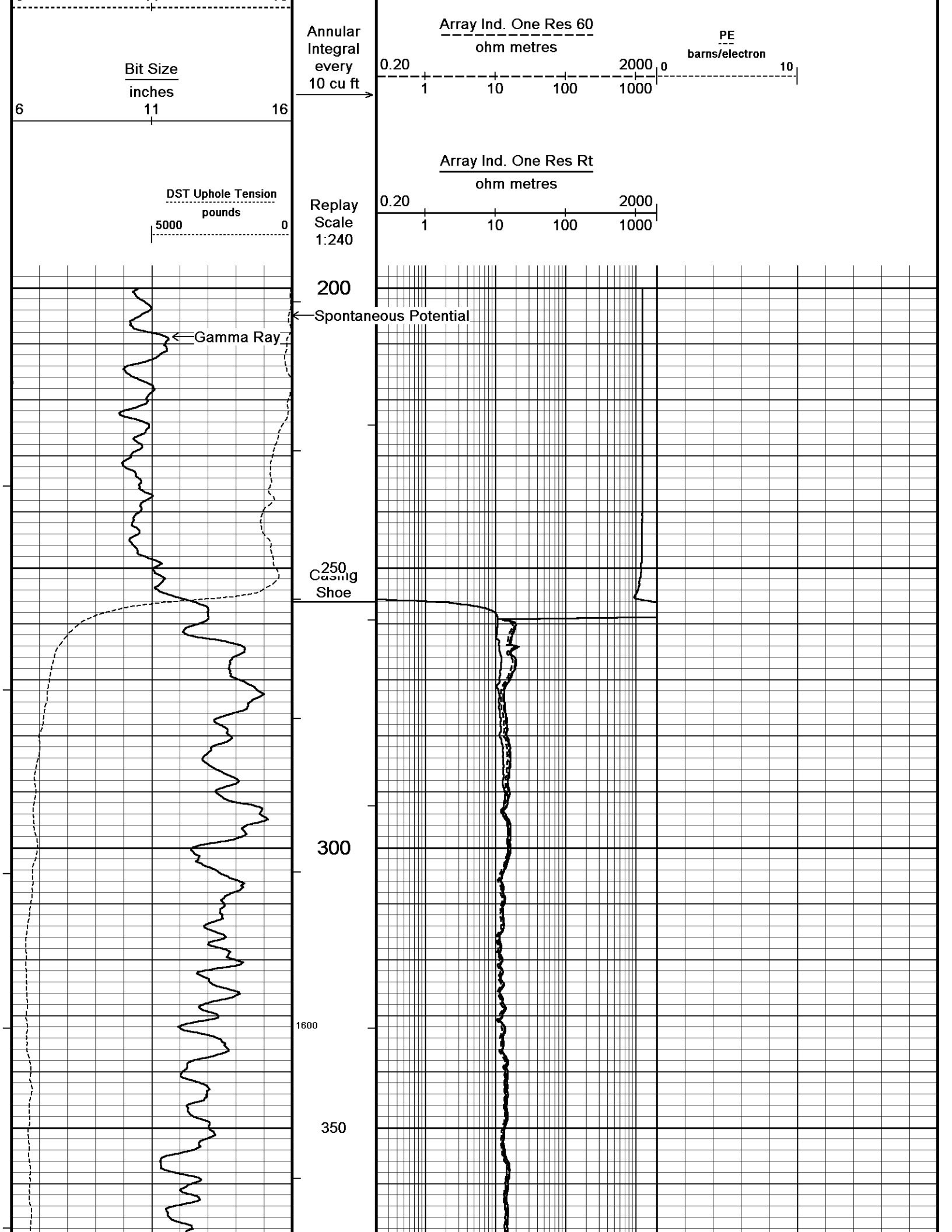
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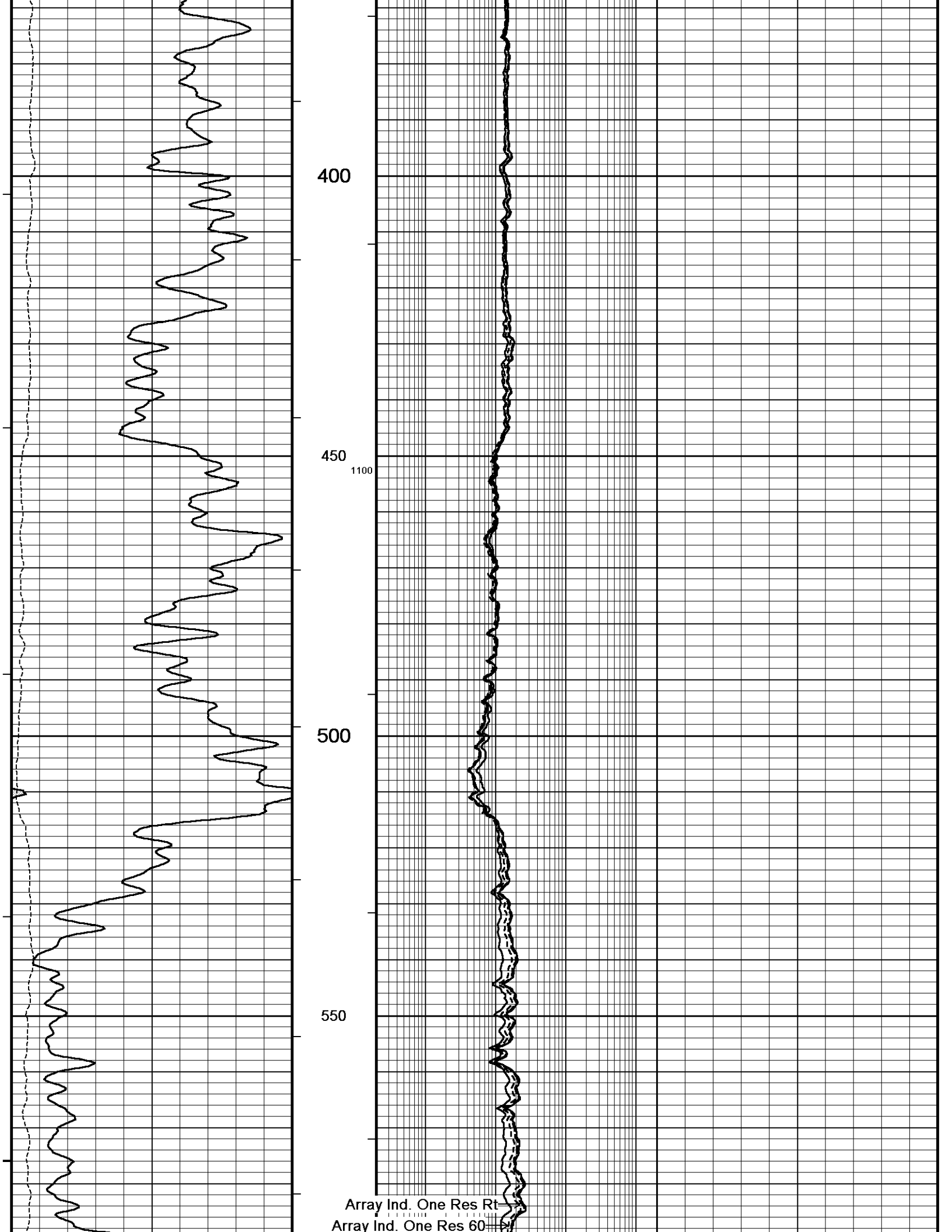
2 INCH MAIN

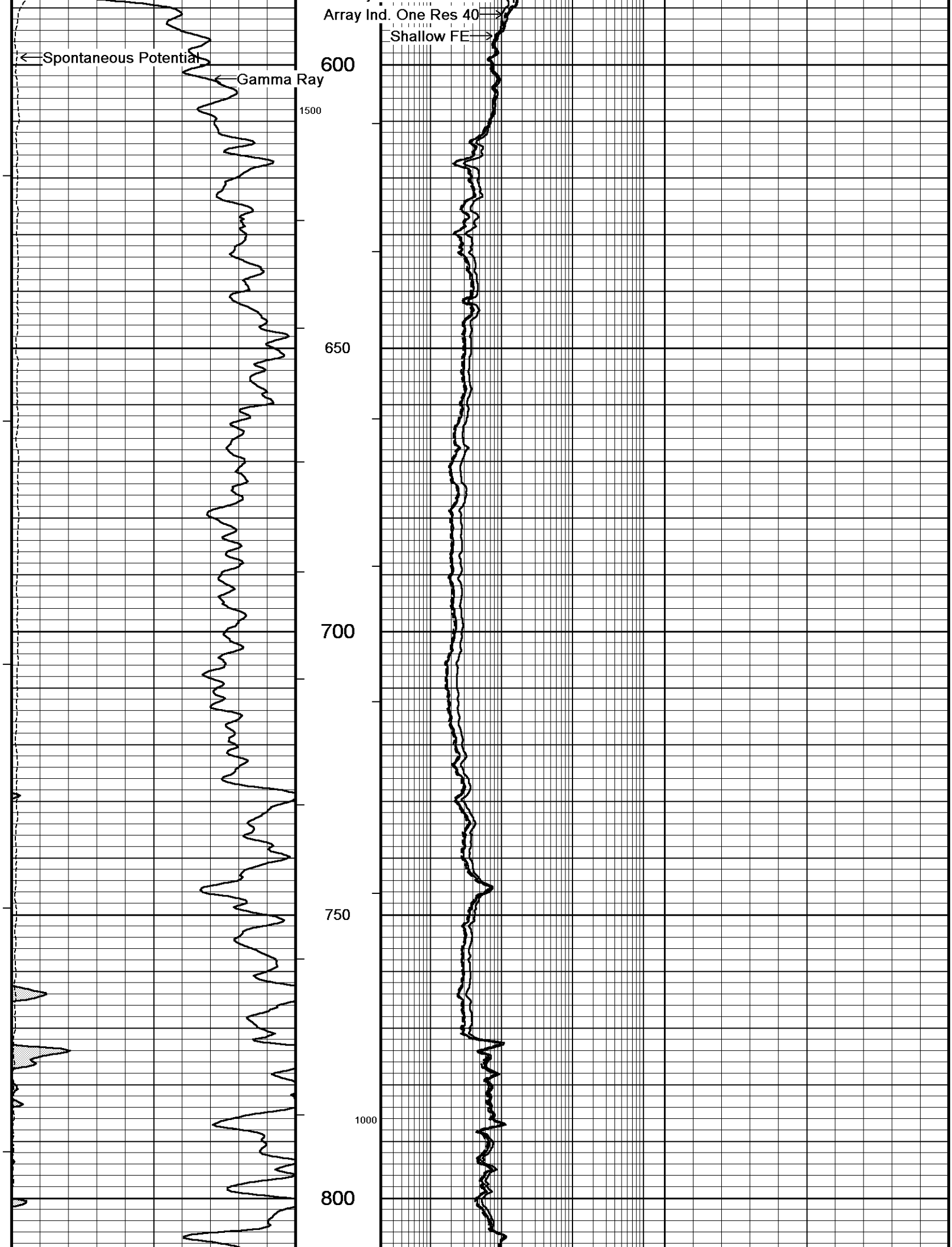
5 INCH MAIN

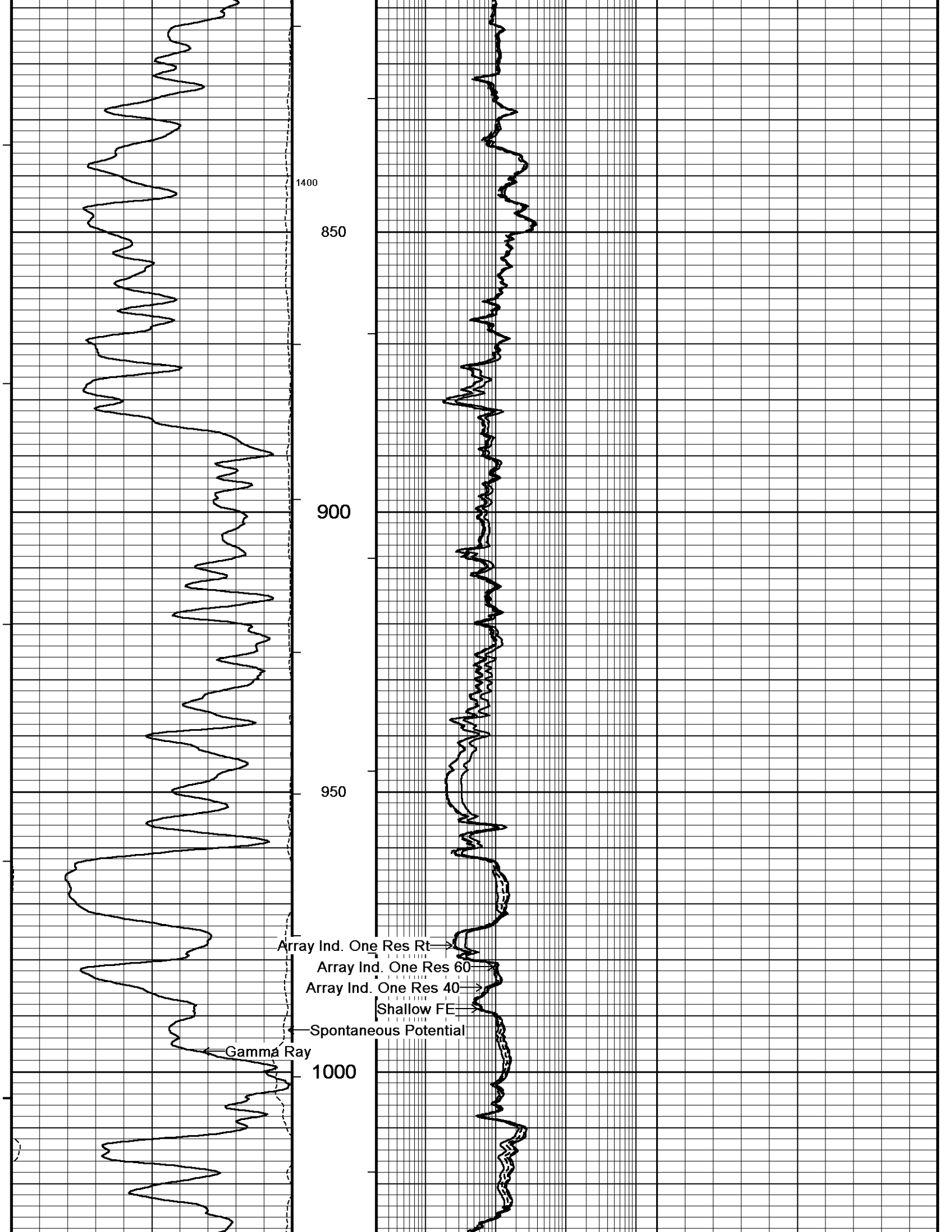
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Filename: C:\Minimus 13.05.9583\Log\New Folder (4)\OBrien Resources LLC Swart #21-1-DETAIL.dta — Recorded on 03-JUN-2013 15:15
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

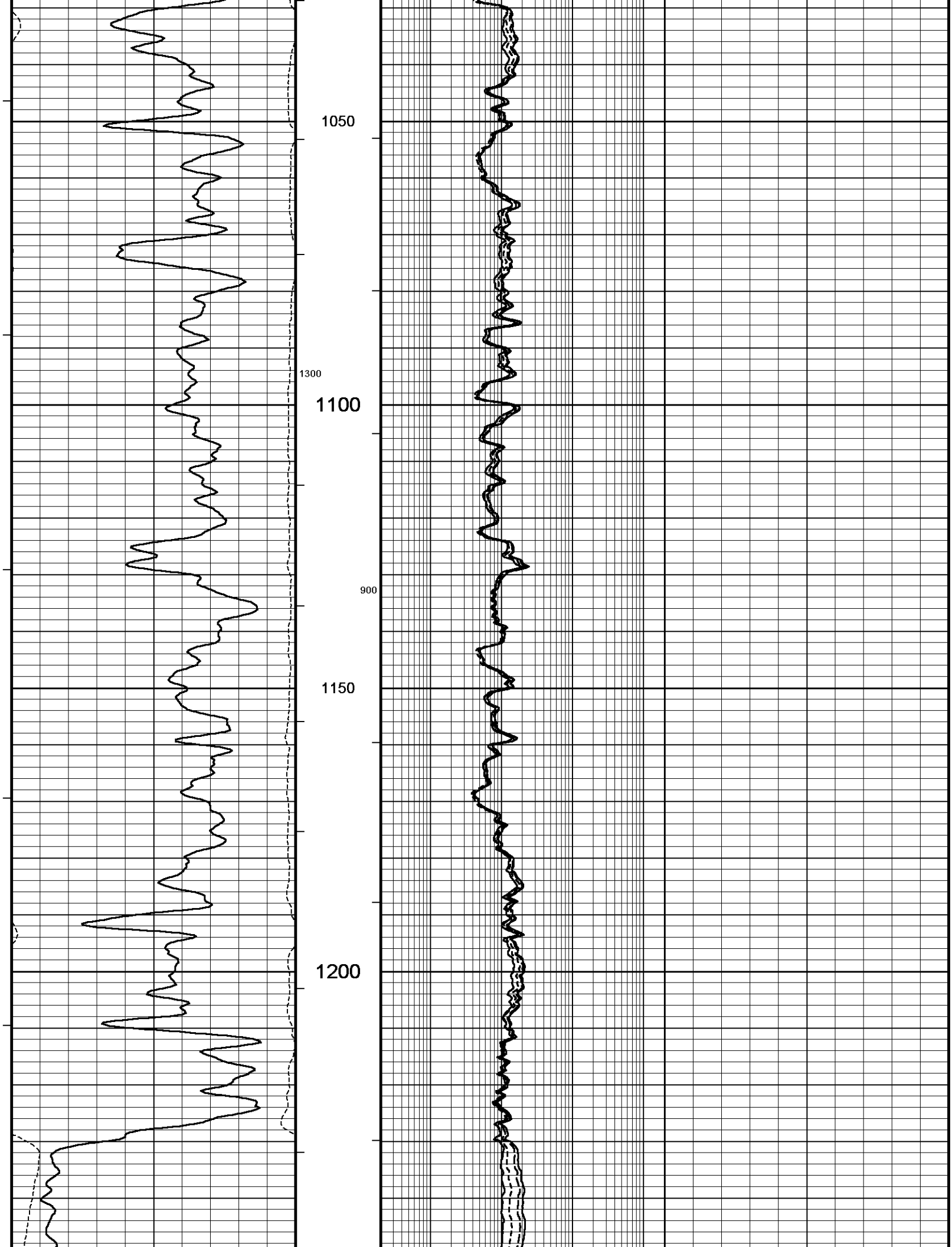


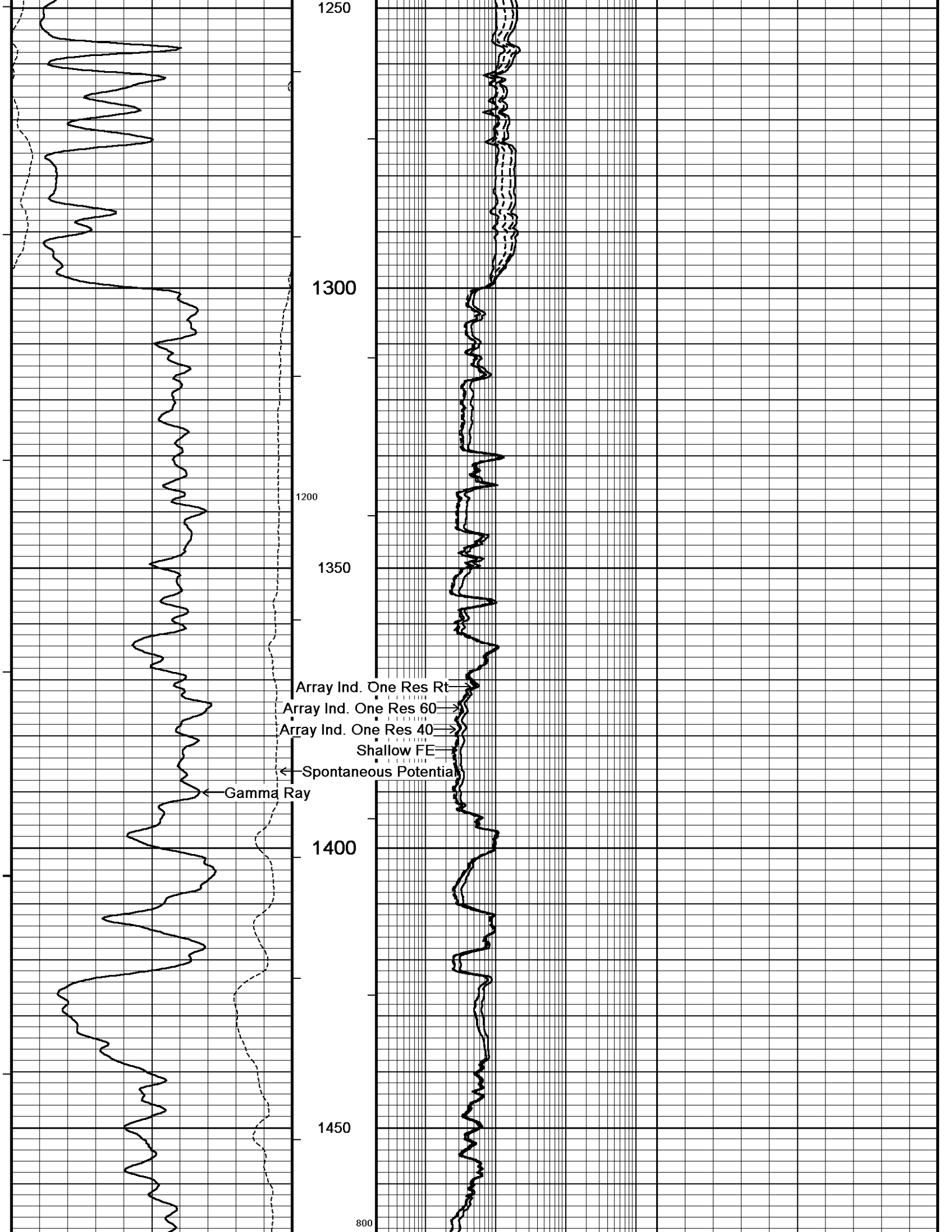

Bit Size
inches
6
11
16
Annular Integral every 10 cu ft
Array Ind. One Res 60
ohm metres
0.20
1
10
100
2000
1000
PE
barns/electron
0
10
Array Ind. One Res Rt
ohm metres
0.20
1
10
100
2000
1000
DST Uphole Tension
pounds
5000
0
Replay Scale 1:240
200
Spontaneous Potential
Gamma Ray
250
Casing Shoe
300
1600
350

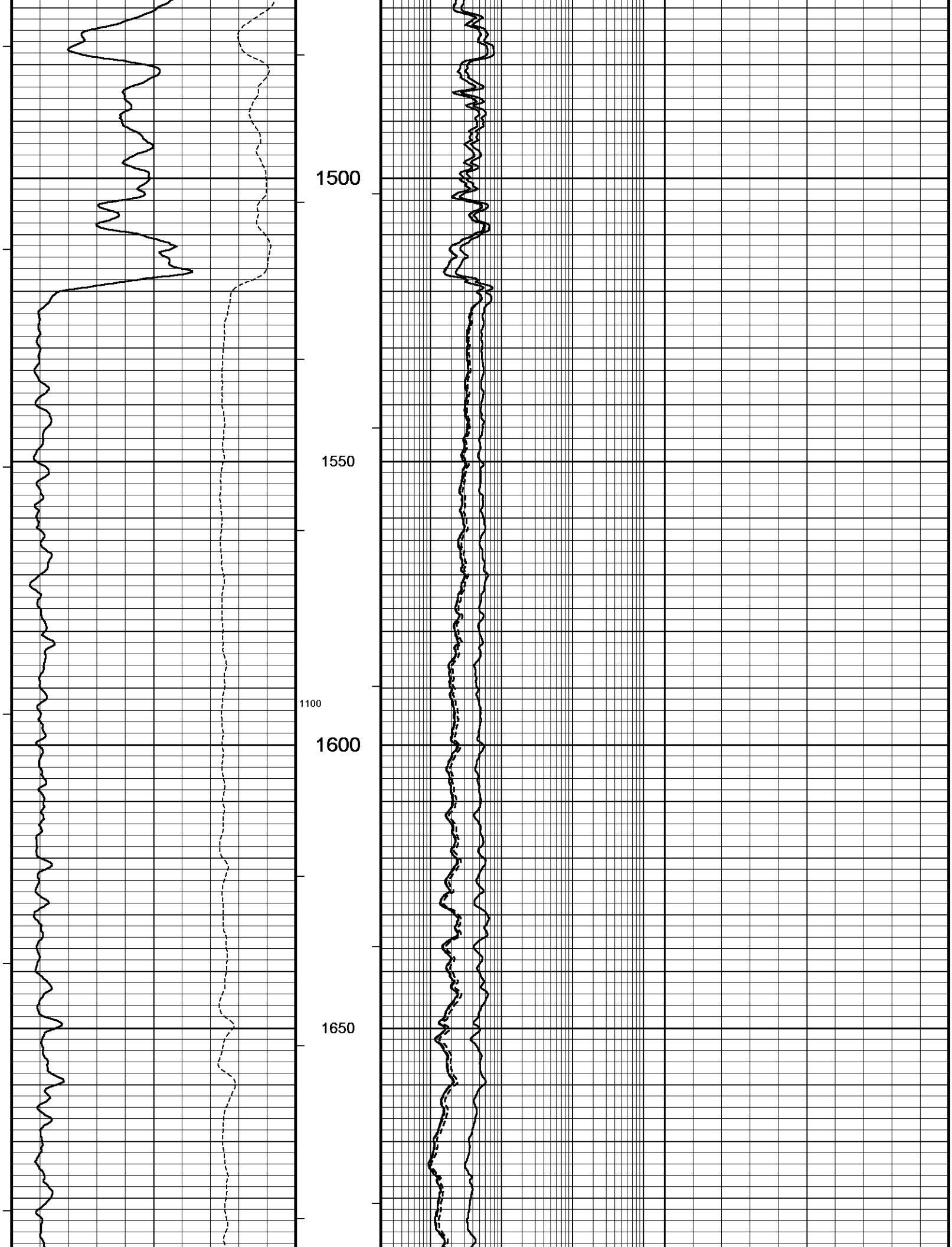

400
450
1100
500
550
Array Ind. One Res Rt
Array Ind. One Res 60

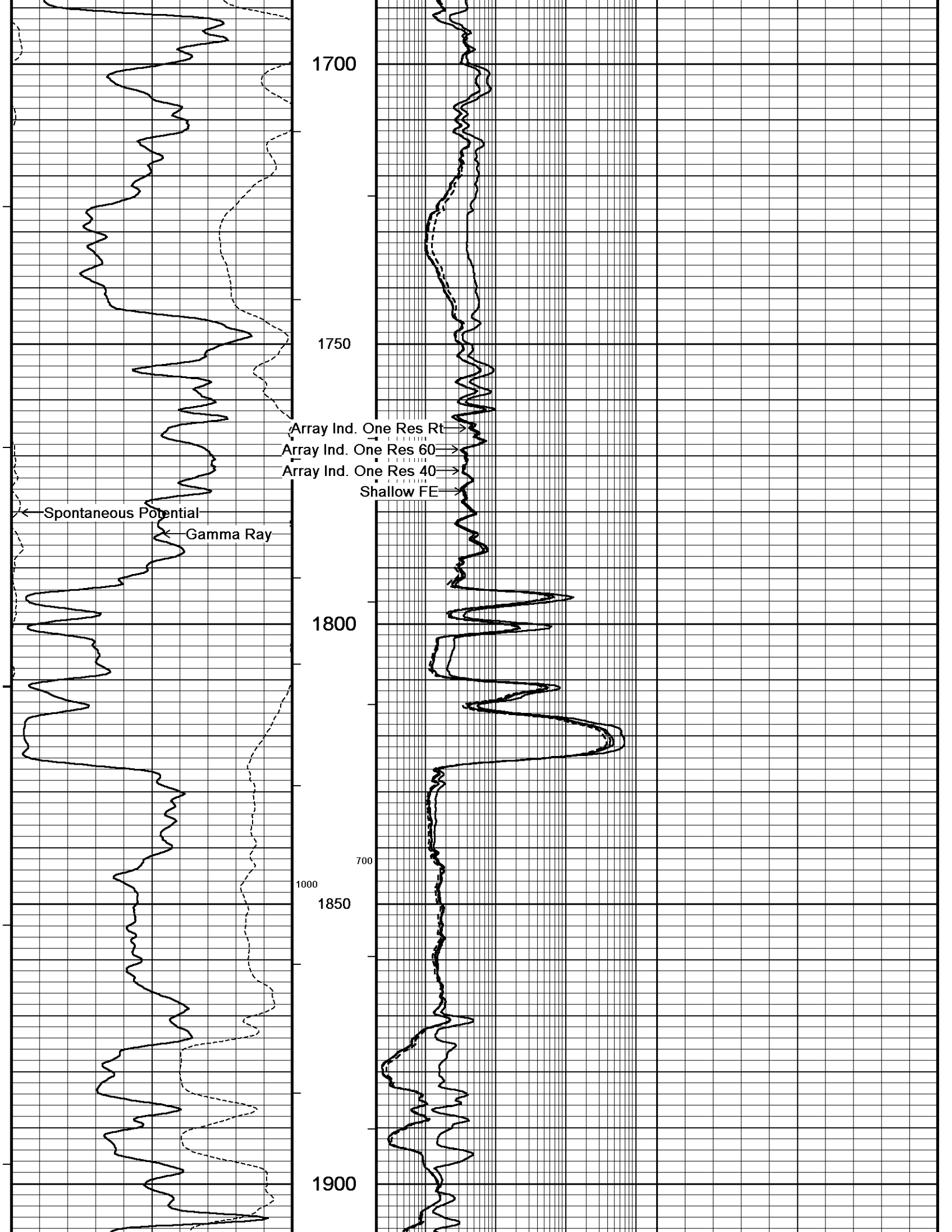

Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
600
1500
650
700
750
1000
800

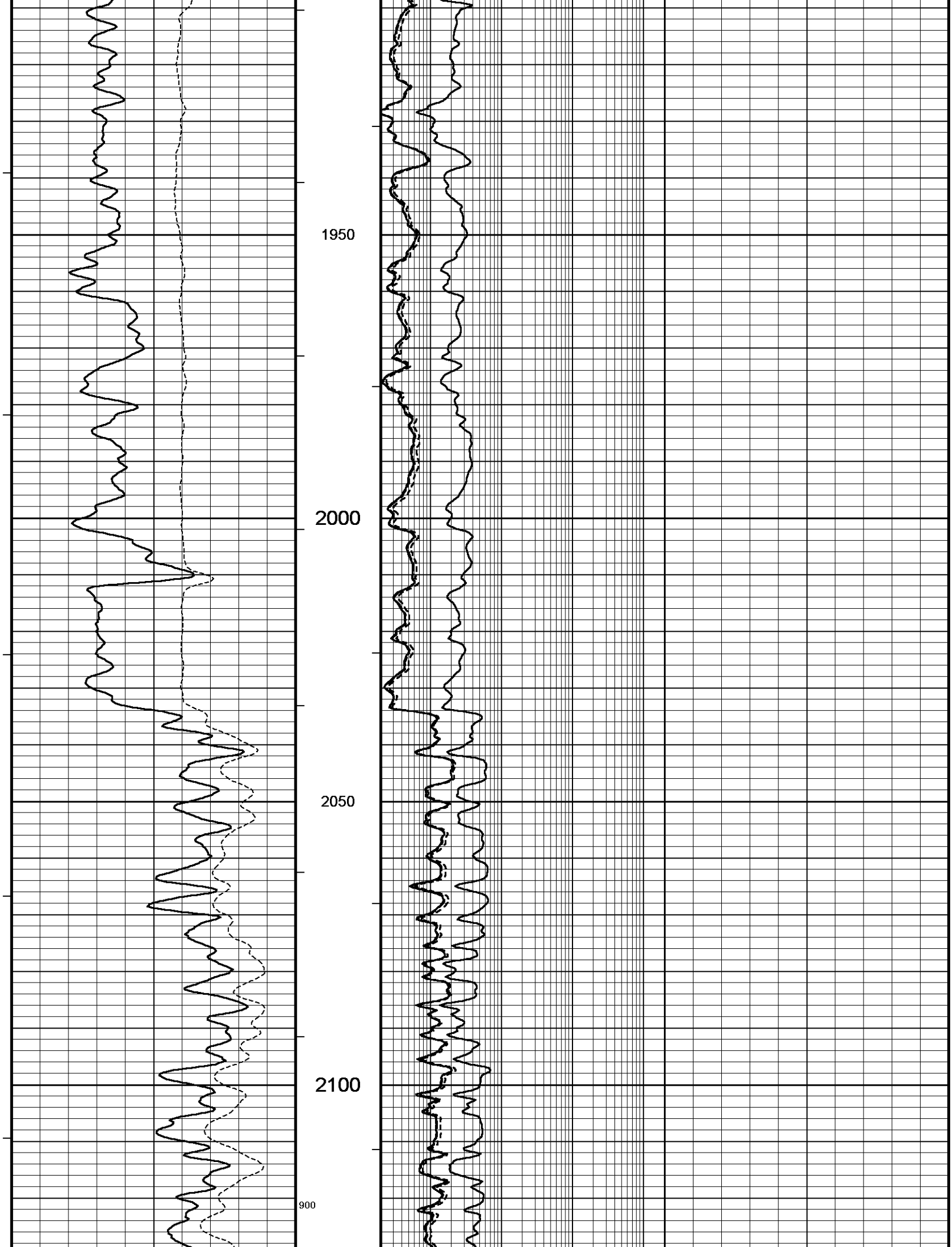

1400
850
900
950
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
1000

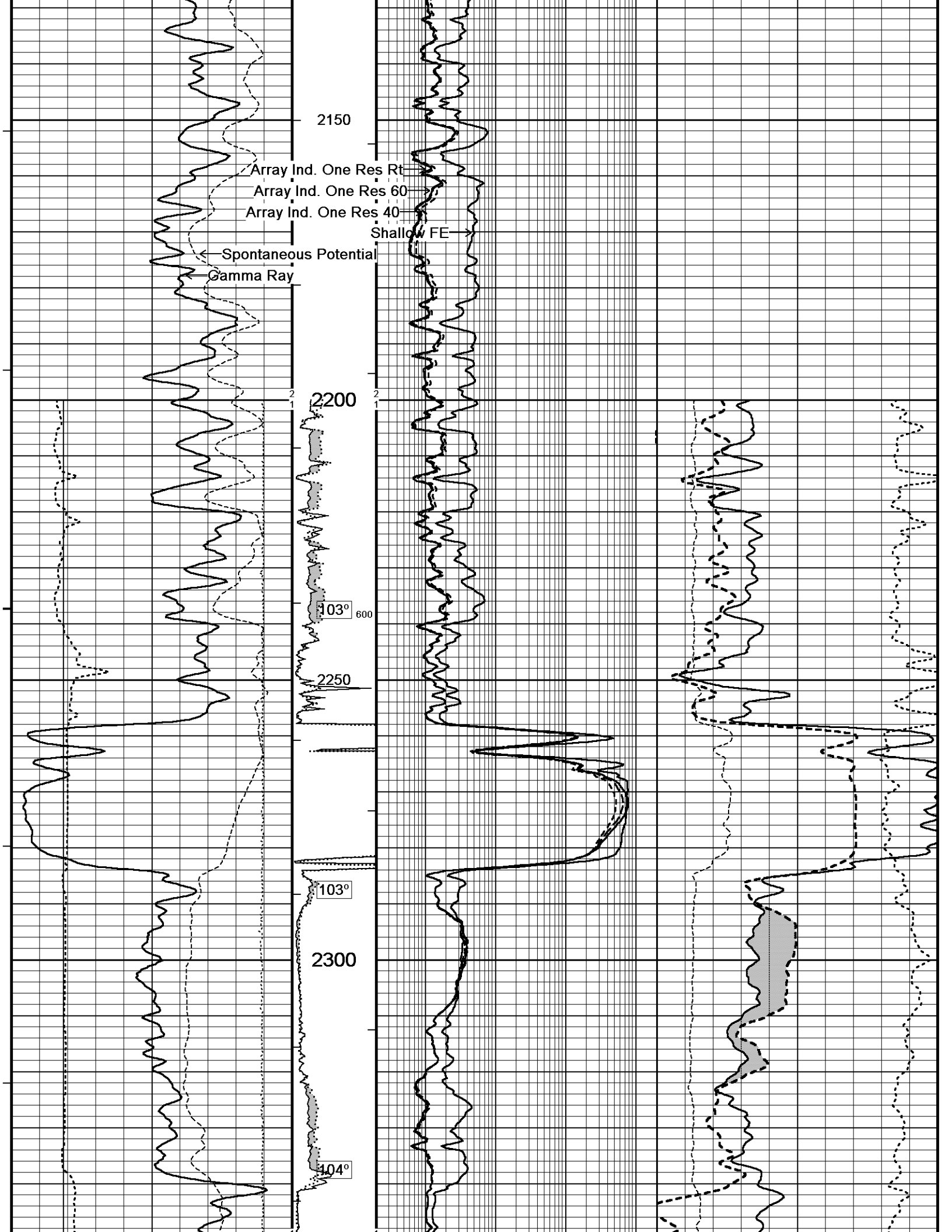

1050
1300
1100
900
1150
1200

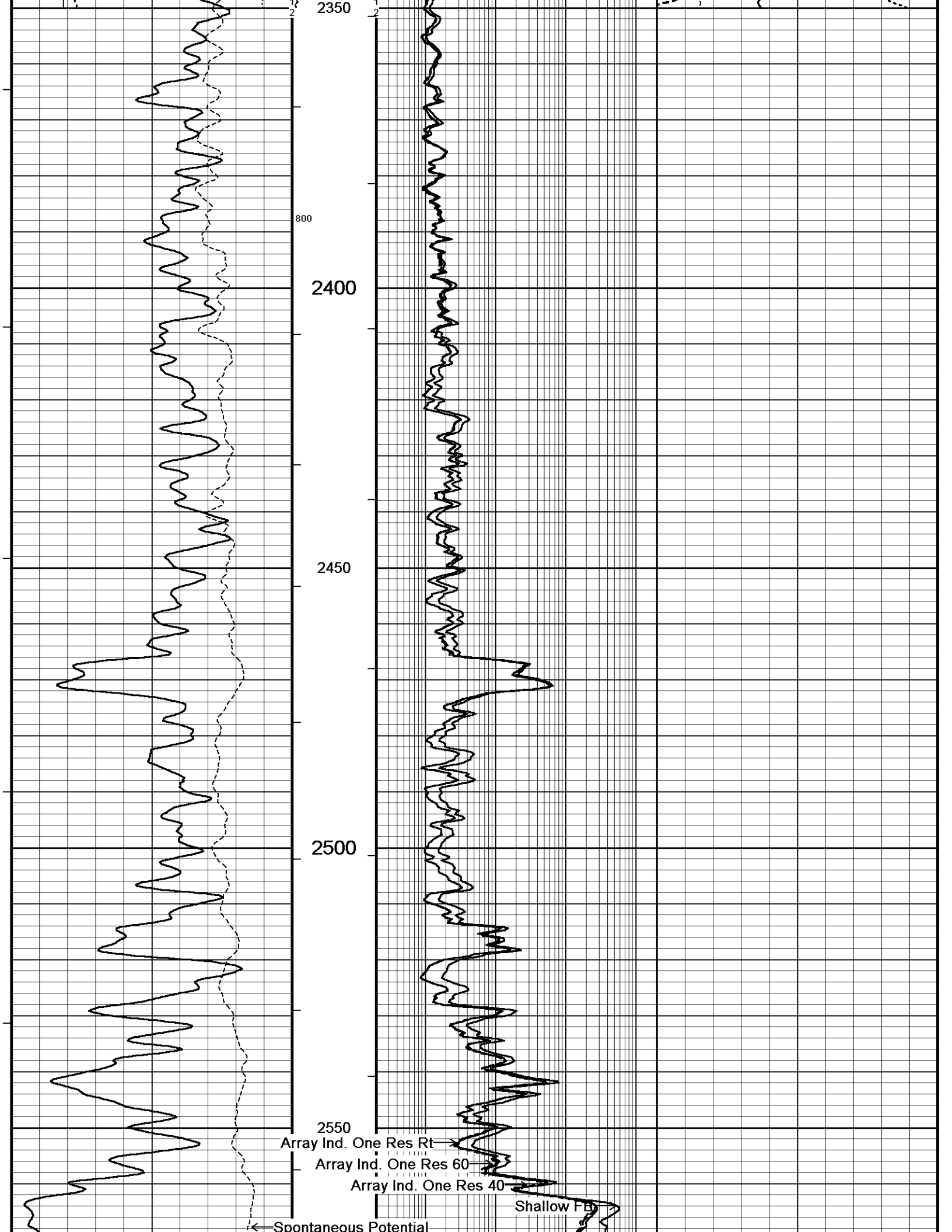

1250
1300
1200
1350
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
1400
1450
800

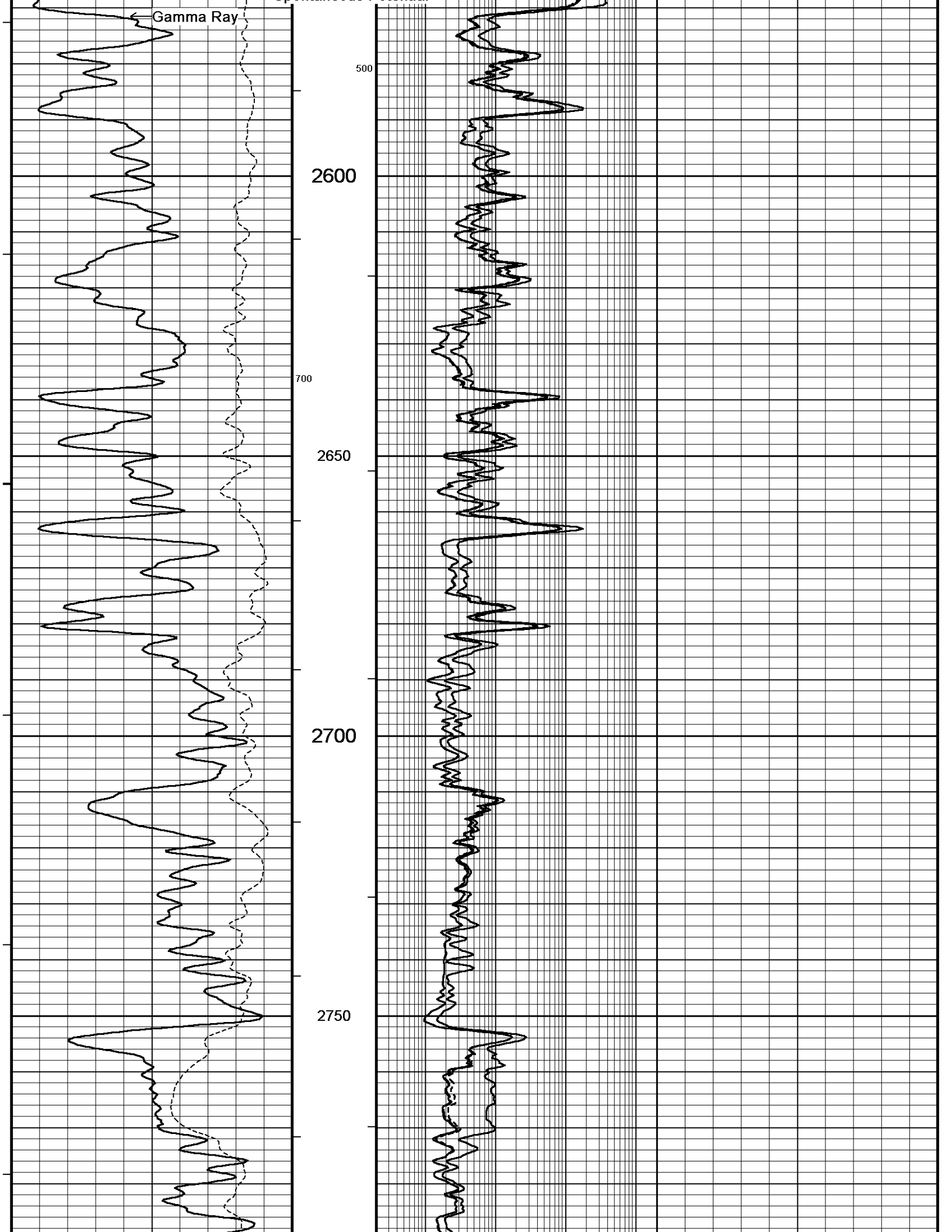

1500
1550
1100
1600
1650

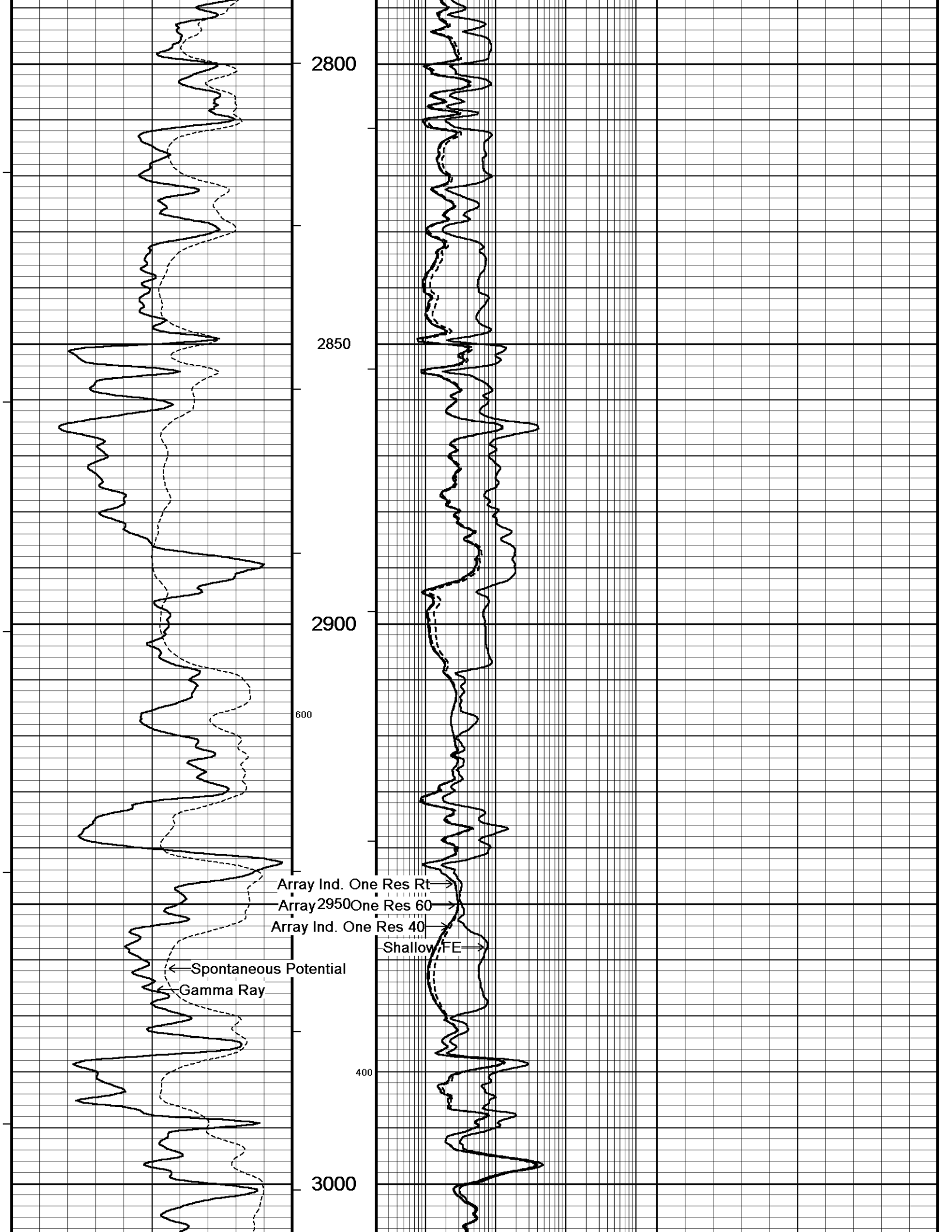

1700
1750
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
1800
700
1000
1850
1900

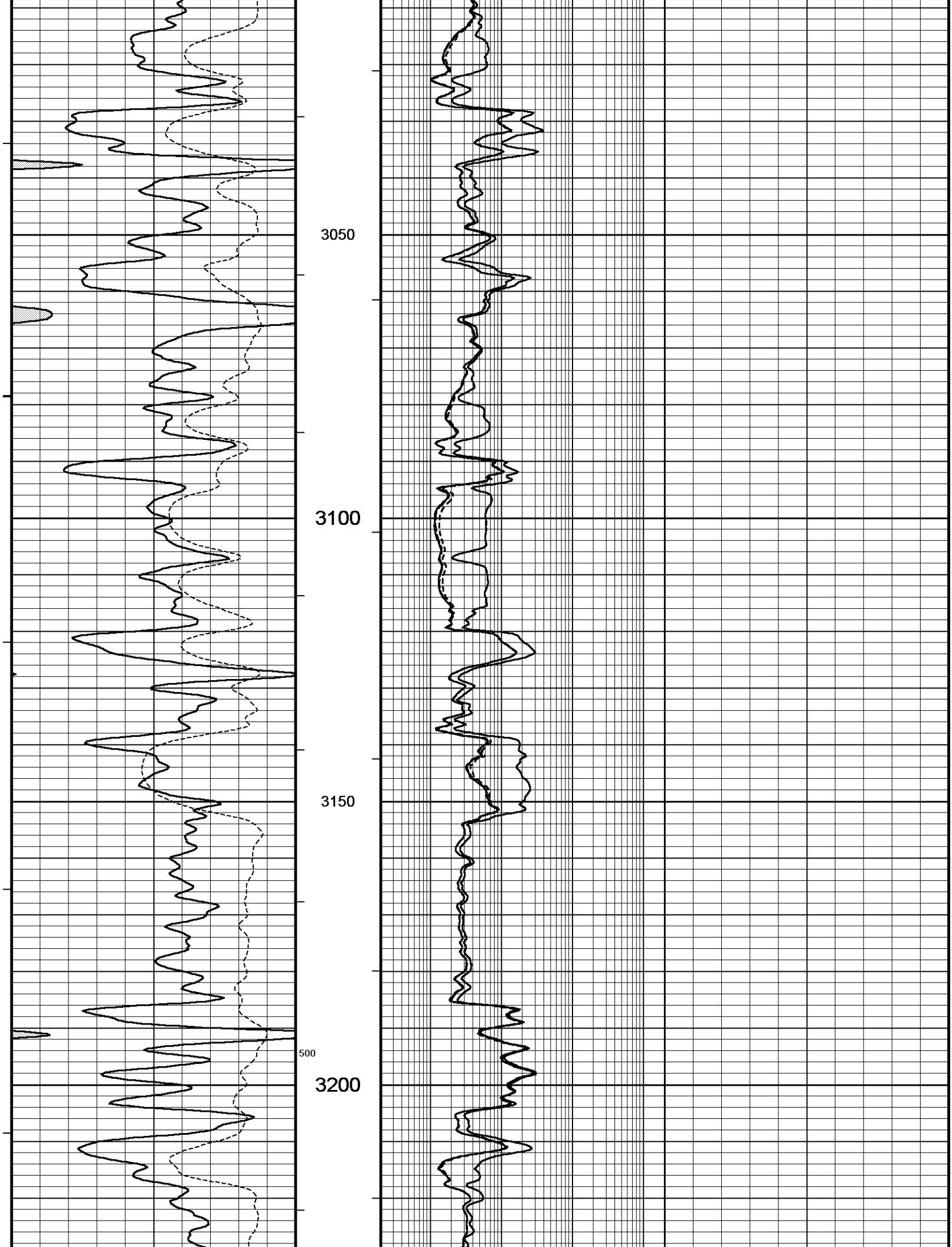

1950
2000
2050
2100
900

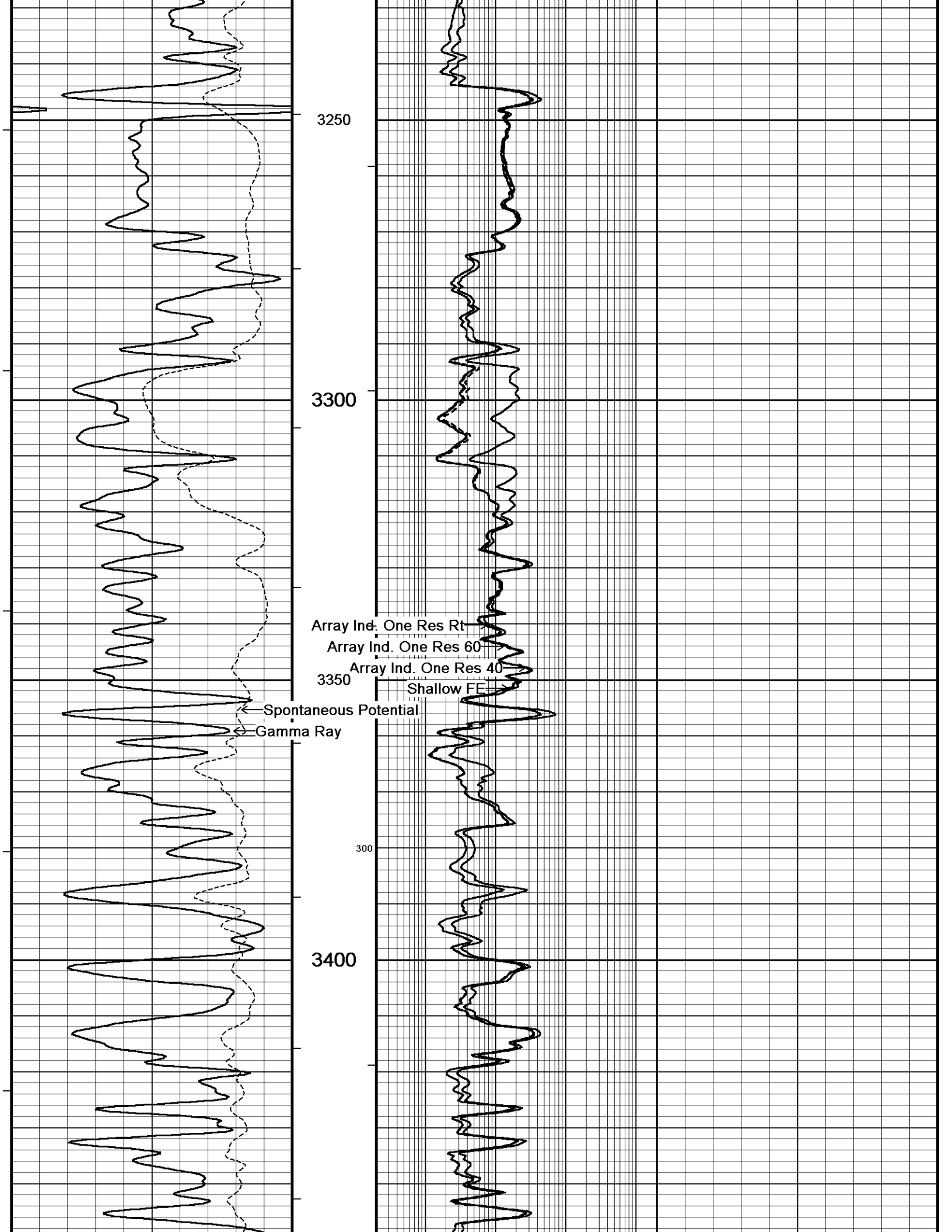

2150
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
2200
2
1
2
1
103°
600
2250
103°
2300
104°

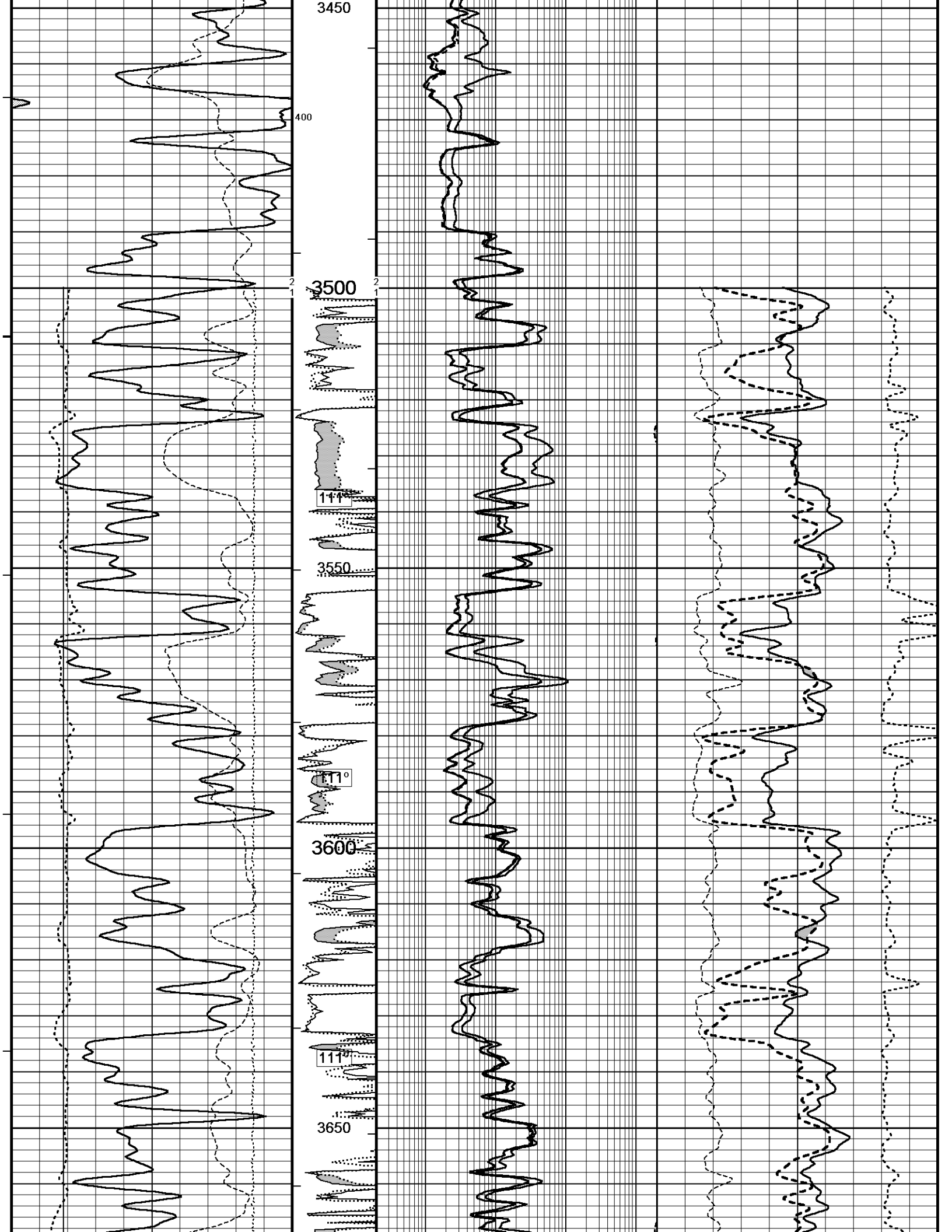

2350
800
2400
2450
2500
2550
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential

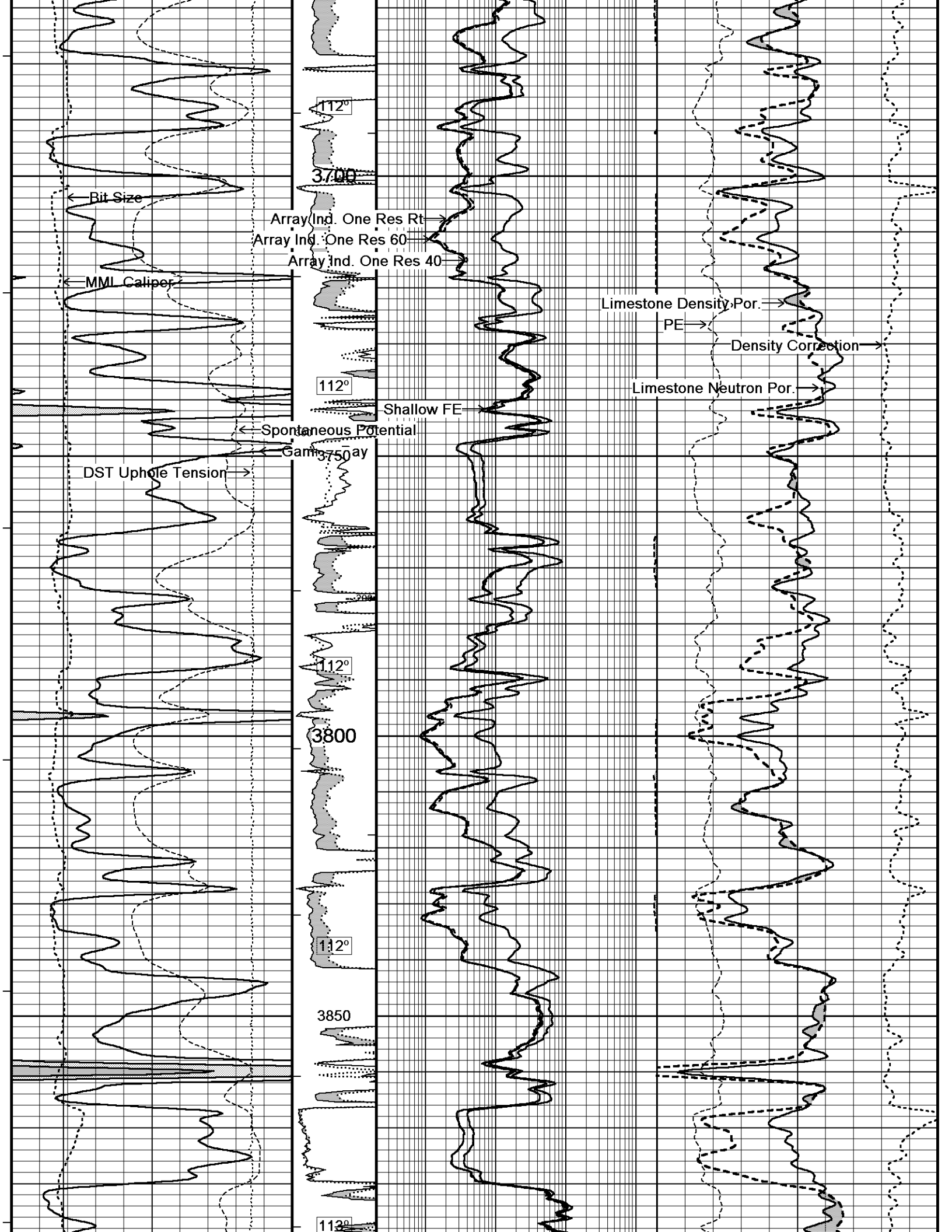

Gamma Ray
500
2600
700
2650
2700
2750

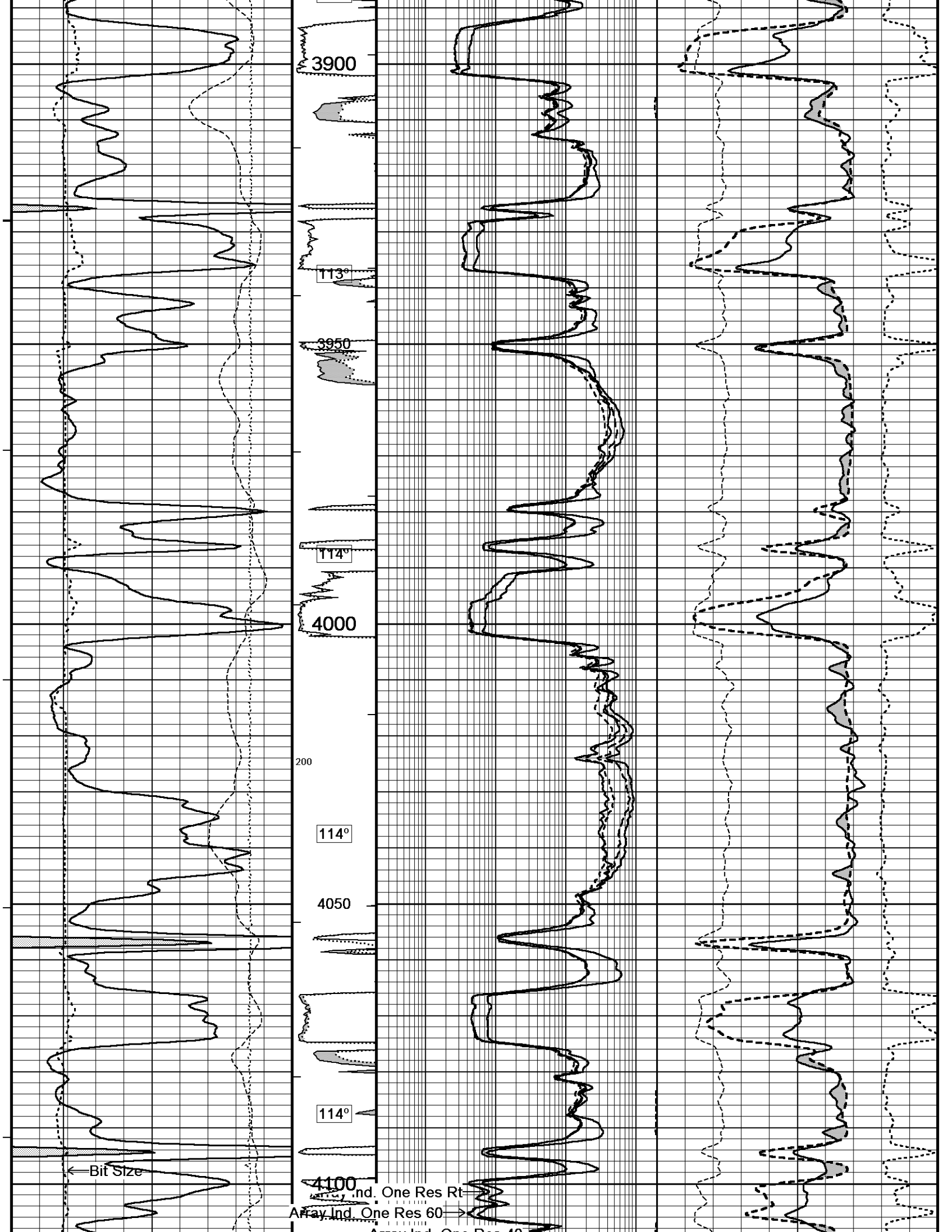

2800
2850
2900
600
Array Ind. One Res Rt
Array 2950 One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
400
3000

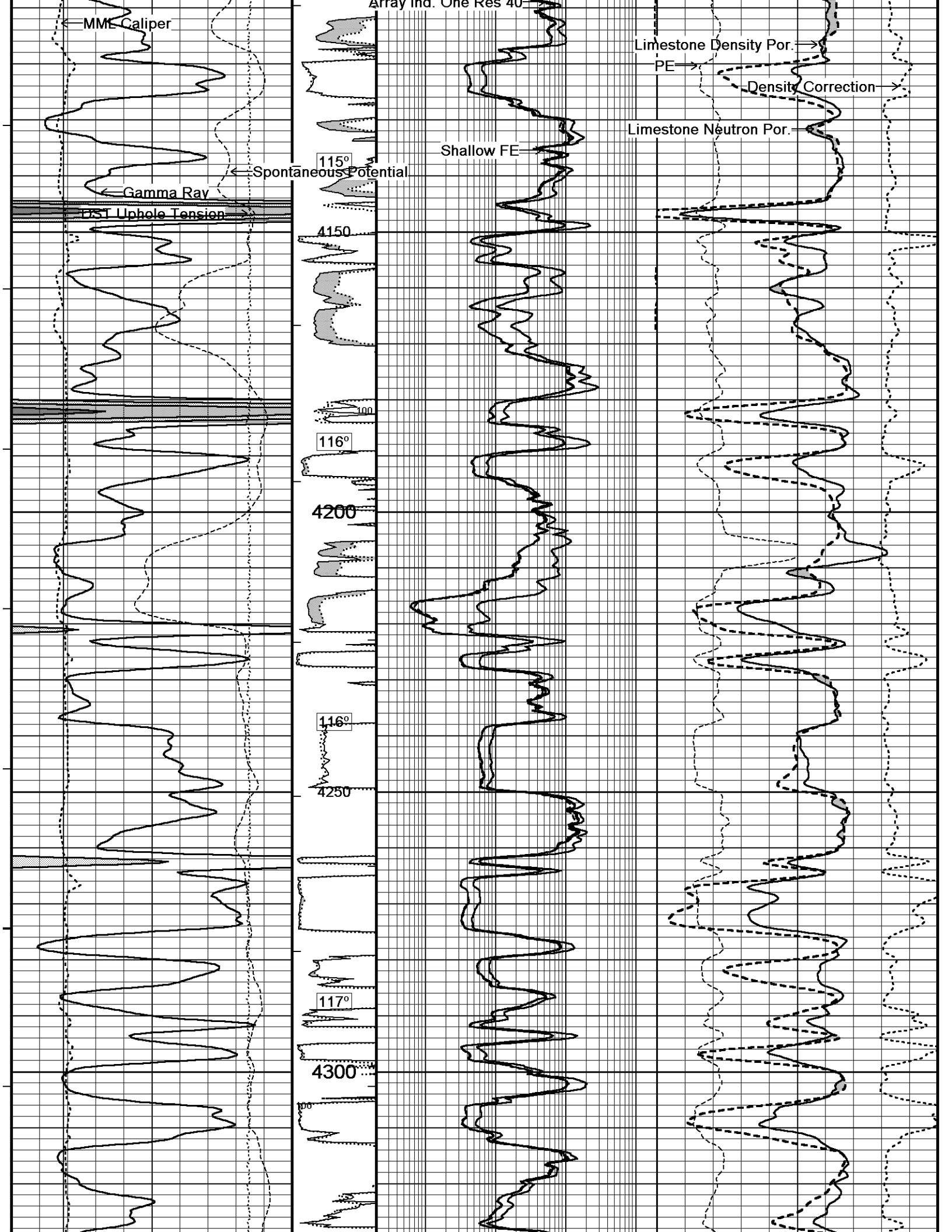

3050
3100
3150
500
3200

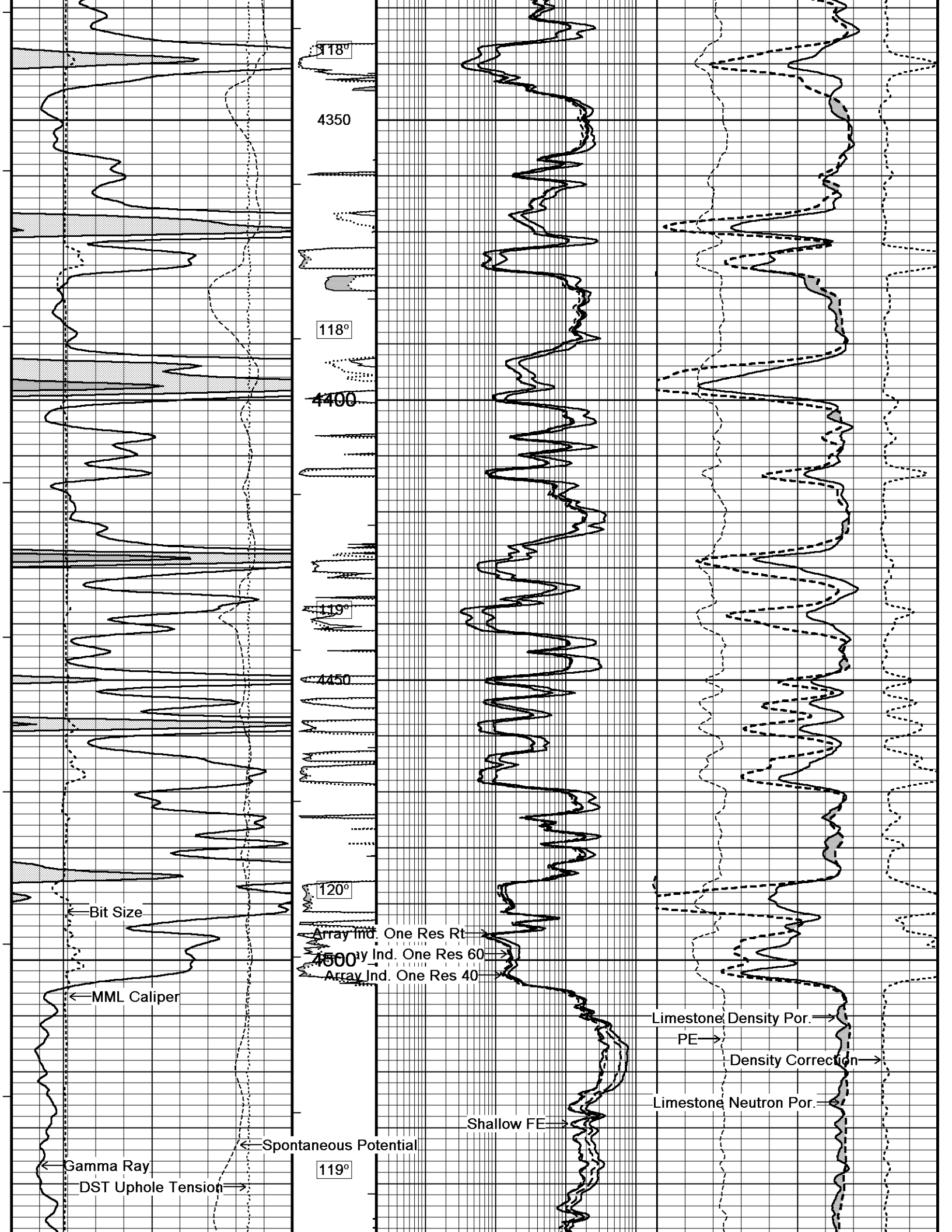

3250
3300
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
3350
Shallow FE
Spontaneous Potential
Gamma Ray
300
3400

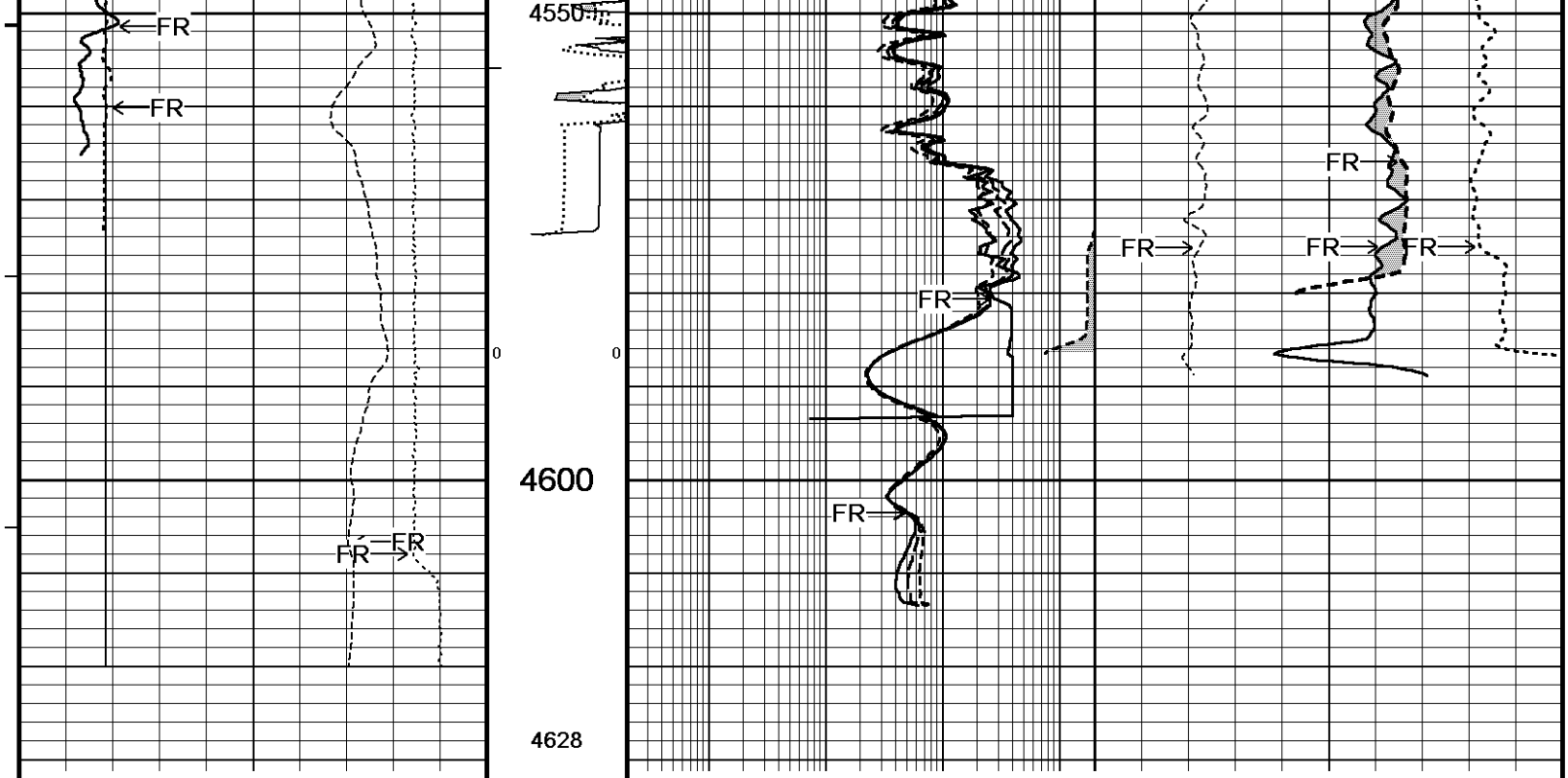

3450
400
3500
111°
3550
111°
3600
111°
3650


112°
3700
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
MML Caliper
Limestone Density Por.
PE
Density Correction
112°
Limestone Neutron Por.
Shallow FE
Spontaneous Potential
Gamma Ray
3750
DST Uphole Tension
112°
3800
112°
3850
113°


3900
113°
3950
114°
4000
200
114°
4050
114°
4100
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60


Array Ind. One Res 40
MME Caliper
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.
Shallow FE
115°
Spontaneous Potential
Gamma Ray
UST Uphole Tension
4150
100
116°
4200
116°
4250
117°
4300
100


118°
4350
118°
4400
119°
4450
120°
4500
119°
Bit Size
MML Caliper
Gamma Ray
DST Uphole Tension
Spontaneous Potential
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.



4628

Depth in Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
– → | 20 | ← +

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 20

MINV
0 20

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
35 10 -15

Density Caliper
inches
-20 -10 0

Density Correction
grams/cc
-0.80 -0.30 0.20

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

Limestone Density Por.
percent
35 10 -15

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

PE
barns/electron
0 10

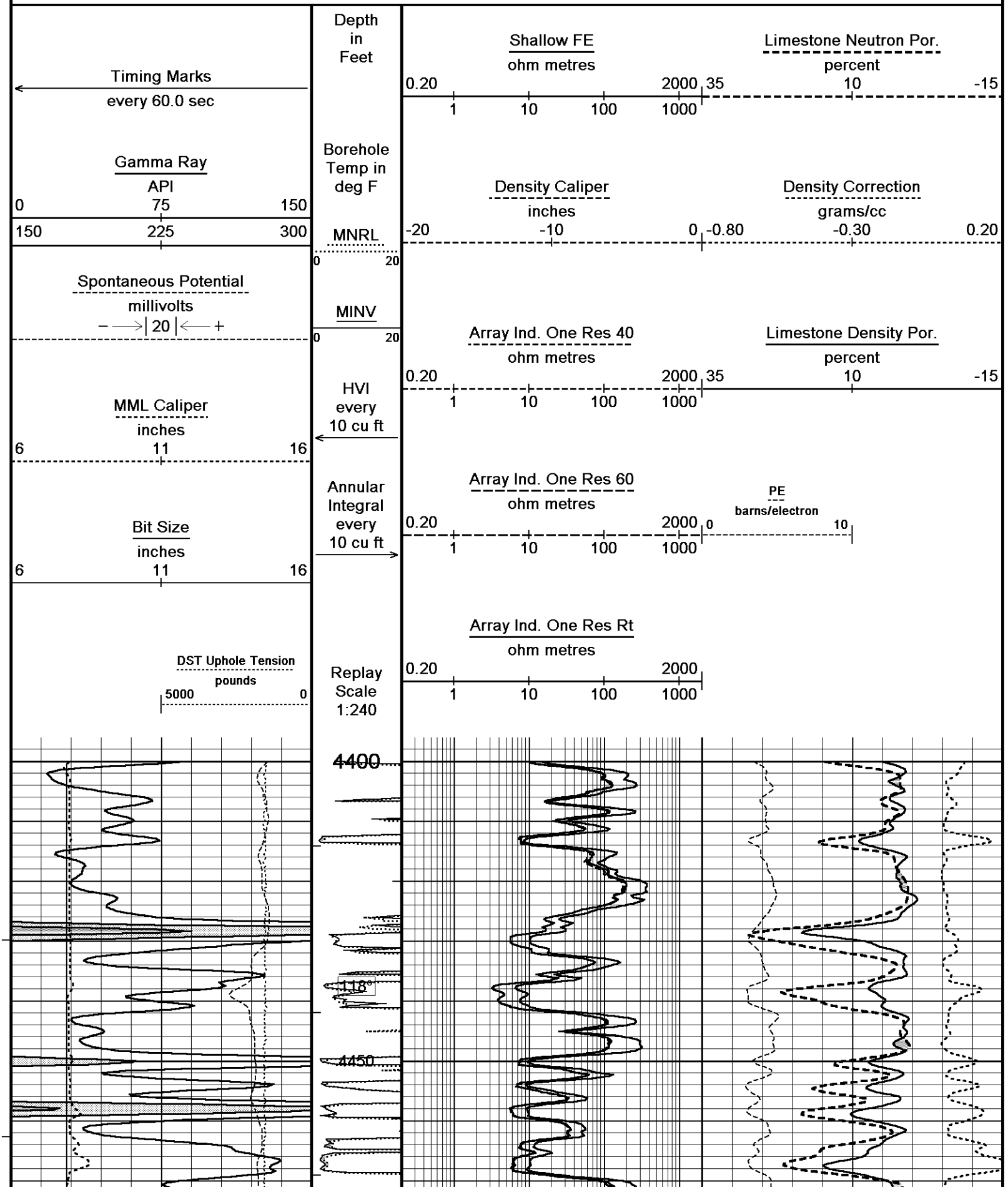
Array Ind. One Res Rt
ohm metres
0.20 2000
1 10 100 1000

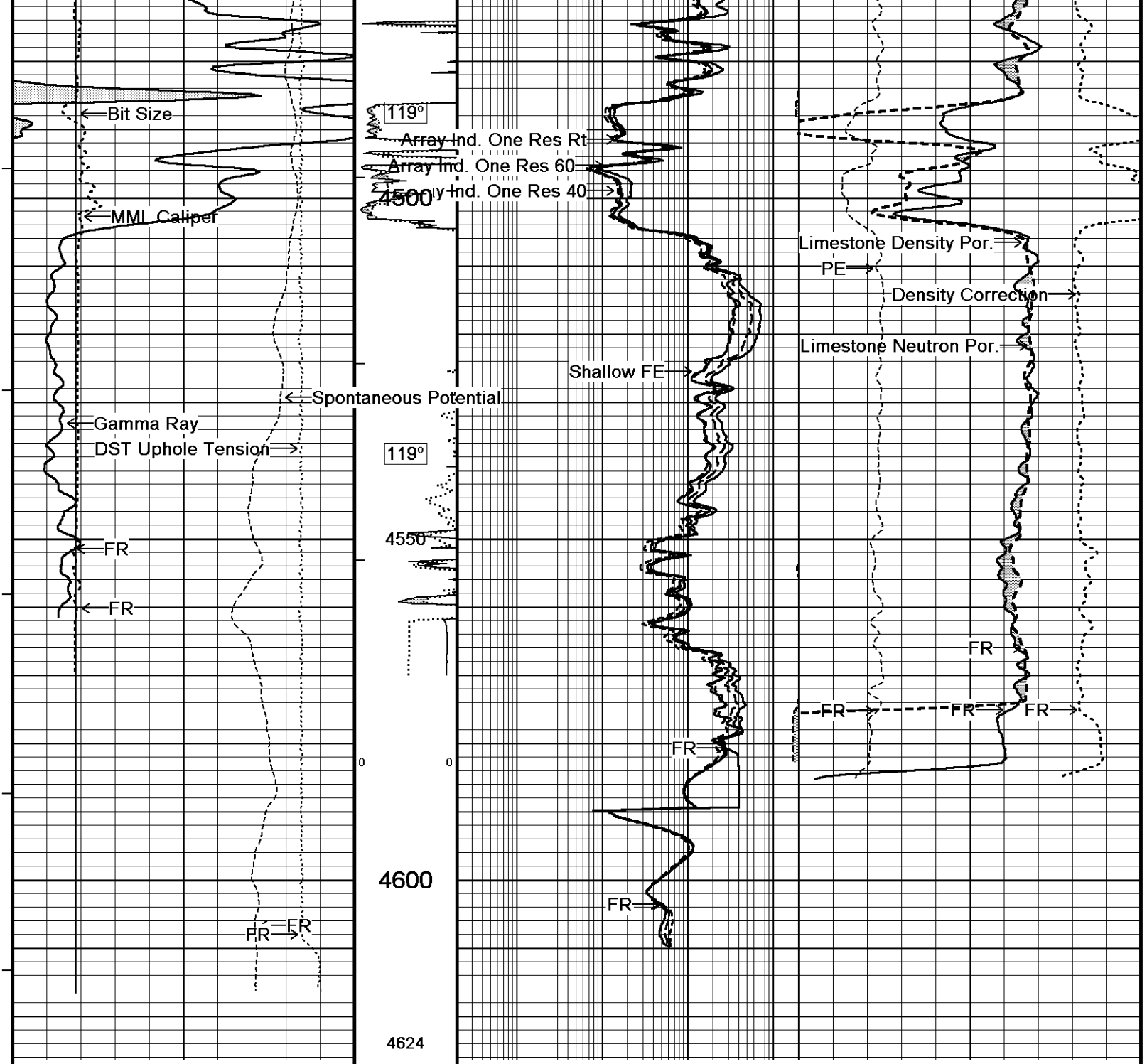
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 21-AUG-2013 11:27
Filename: C:\Minimus 13.05.9583\Log\New Folder (4)\OBrien Resources LLC Swart #21-1-DETAIL.dta
Recorded on 03-JUN-2013 15:15
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

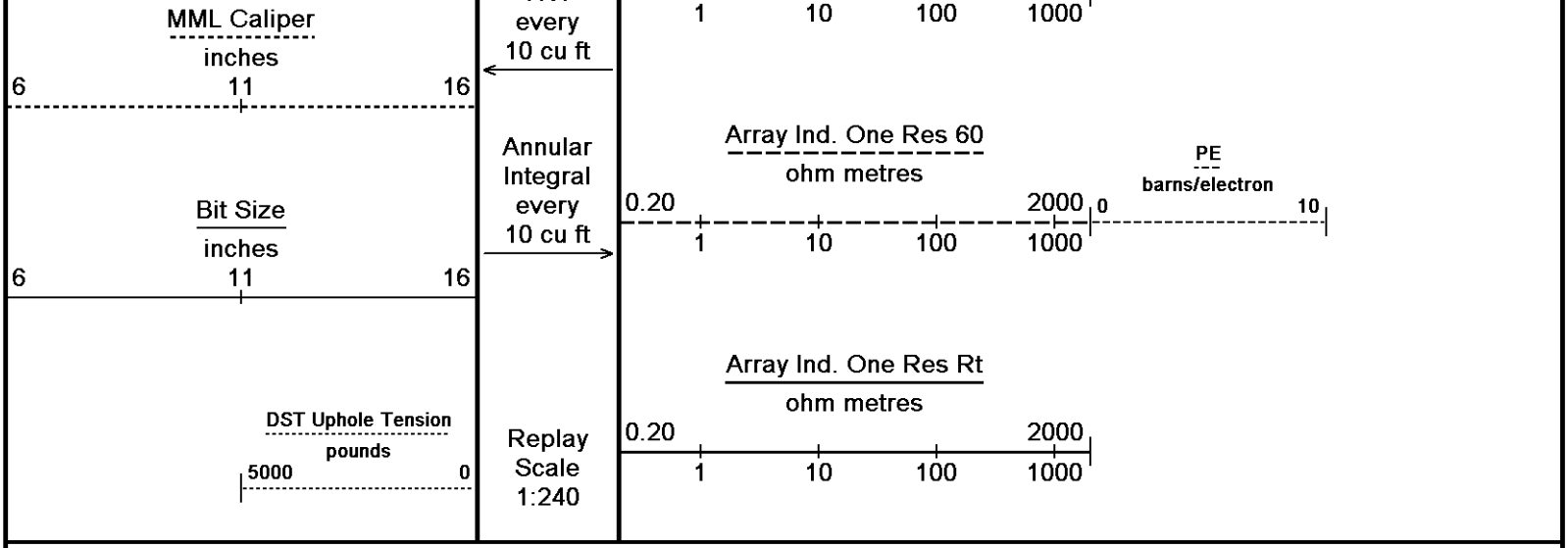
5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 21-AUG-2013 11:27
Filename: C:\Minimus 13.05.9583\Log\New...\Copy of OBrien Resources LLC Swart #21-1 REPEAT.dta
Recorded on 03-JUN-2013 15:03
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583




Bit Size
MML Caliper
Gamma Ray
DST Uphole Tension
Spontaneous Potential
FR
FR
FR
FR
FR
119°
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
4500
119°
4550
Shallow FE
0
0
4600
FR
FR
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.
FR
FR
FR
FR
4624
Depth in Feet
Timing Marks
every 60.0 sec
Shallow FE
ohm metres
0.20
2000
1
10
100
1000
Limestone Neutron Por.
percent
35
10
-15
Gamma Ray
API
0
75
150
150
225
300
Borehole Temp in deg F
MNRL
0
20
Density Caliper
inches
-20
-10
0
Density Correction
grams/cc
-0.80
-0.30
0.20
Spontaneous Potential
millivolts
− 20 +
MINV
0
20
Array Ind. One Res 40
ohm metres
0.20
2000
Limestone Density Por.
percent
35
10
-15
HVI



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 21-AUG-2013 11:27
Filename: C:\Minimus 13.05.9583\Log\New...\Copy of OBrien Resources LLC Swart #21-1 REPEAT.dta — Recorded on 03-JUN-2013 15:03
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Log\New Folder (4)\OBrien Resources LLC Swart #21-1-DETAIL.dta

General Constants All 000

Last Edited on 03-JUN-2013,13:48

General Parameters		
Mud Resistivity	1.188	ohm-metres
Mud Resistivity Temperature	85.000	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	4.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. Six Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	
SW/APOR Tool Source	0.000	

Down-hole Tension Calibration SMS 0

Field Calibration on 03-JUN-2013 13:17

Reading No	Measured	Calibrated (lbs)
1	15217.45	0.00
2	15947.88	471.80

SP Calibration MCG-D.K 442

Field Calibration on 03-JUN-2013,07:02

	Measured	Calibrated (mV)
Reference 1	100.9	100.0
Reference 2	-100.5	-100.0

High Resolution Temperature Calibration MCG-D.K 442

Field Calibration on 03-JUN-2013,07:02

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

High Resolution Temperature Constants MCG-D.K 442

Last Edited on 03-JUN-2013,07:02

Pre-filter Length	11

Gamma Calibration MCG-D.K 442

Field Calibration on 03-JUN-2013 07:06

	Measured	Calibrated (API)
Background	69	47
Calibrator (Gross)	1126	772
Calibrator (Net)	1057	725

Gamma Constants MCG-D.K 442

Last Edited on 03-JUN-2013,13:47

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	%

Micro Normal and Micro Inverse Calibration MML-A 16

Base Calibration on 16-MAY-2013 12:07
Field Check on 03-JUN-2013 06:25

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.1	60.2	5.0	25.0
Micro Inverse	15.6	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 16

Last Edited on 03-JUN-2013,07:07

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 16

Base Calibration on 16-MAY-2013 11:56
Field Calibration on 03-JUN-2013 06:28

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14258	5.98
2	17442	7.97
3	20671	9.86
4	24432	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.99	5.98

Neutron Calibration MDN-A.B 65

Base Calibration on 22-MAY-2013 14:17
Field Check on 03-JUN-2013 07:02

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3104	96	3714	110
Ratio	32.242		33.764	

Field Calibrator at Base	Calibrated (cps)	
	1657	2415
Ratio	0.686	

Field Check	Calibrated (cps)	
	1660	2408
Ratio	0.704	

Neutron Constants MDN-A.B 65

Last Edited on 03-JUN-2013,07:07

Neutron Source Id	PN-521
Neutron Jig Number	5824NE
Epithermal Neutron	No
Caliper Source for Processing	Density Caliper

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	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-B.J 352

Base Calibration on 16-MAY-2013 15:06
Field Check on 03-JUN-2013 06:18

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	963.9	126.8
Base Check		281.3
Field Check		281.4

FE Constants MFE-B.J 352

Last Edited on 03-JUN-2013,07:06

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-C.A 156

Last Edited on

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	3-5' Compensated	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	0.00	micro-sec
MX3FT	1500.00	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft
Sonde Mode	Compensated	
Hole Type	Open Hole	

Sonde Parameters

	Measured	Calibrated
Offset	0.0000	0.0000
Free Pipe	0.0000	

Peak Amplitude Source

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)	Depth (m)
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	0.00	0.00	0.00

Full Waveform Parameters

Use 3' Waveform to derive TR	No	
Use 4' Waveform to derive TR	No	
Use 5' Waveform to derive TR	No	
Use 6' Waveform to derive TR	No	
3' Waveform Discriminator Level	0.30	mV
4' Waveform Discriminator Level	0.30	mV
5' Waveform Discriminator Level	0.15	mV
6' Waveform Discriminator Level	0.15	mV
3' Waveform Filter		
4' Waveform Filter		
5' Waveform Filter		
6' Waveform Filter		
Semblance Level	0.50	
Semblance Window Width	120.00	micro-sec
Sonic 1 Despiker	100.00	micro-sec/ft
Sonic 2 Despiker	100.00	micro-sec/ft

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 03-JUN-2013,06:17

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

High Resolution Temperature Constants MAI-A.A 45

Last Edited on 03-JUN-2013,06:17

Pre-filter Length	11

Induction Calibration MAI-A.A 45

Base Calibration on 21-MAY-2013,16:47
Field Check on 03-JUN-2013 06:16

Base Calibration

Test Loop Calibration	Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High
1	14.4	472.6	9.3	966.2
2	5.7	374.0	7.6	821.4
3	3.4	261.2	5.2	566.0
4	2.5	133.9	2.6	279.2

Array Temperature 0.0 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1			18.9	3851.5
2			31.8	3628.8
3			28.7	3048.9
4			18.3	2078.8
Deep			16.1	1911.0
Medium			42.6	4059.8
Shallow			49.8	5482.1

Array Temperature 68.8 Deg F

Induction Constants MAI-A.A 45

Last Edited on 03-JUN-2013,14:46

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	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.	Borehole Temp. Unfilt.	
Squasher Start	0.0020	mhos/metre
Squasher Offset	N/A	mhos/metre

Squasher Offset	N/A	mmhos/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 31

Base Calibration on 19-MAY-2013 17:48
Field Calibration on 03-JUN-2013 06:19

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	17088	3.99
2	25888	5.98
3	34607	7.97
4	42944	9.86
5	52301	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.88	5.98

Photo Density Calibration MPD-B 31

Base Calibration on 19-MAY-2013 18:09
Field Check on 03-JUN-2013 06:24

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	45338	23124	59556	30836
Reference 2	18546	1915	24941	2541

Field Check at Base

677.6	838.3

Field Check

677.6	832.0

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	125	601		
Reference 1	19261	45226	0.429	0.371
Reference 2	5568	18464	0.305	0.272

Field Check at Base

125.4	601.0

Field Check

124.4	603.1

Density Constants MPD-B 31

Last Edited on 03-JUN-2013,13:47

Density Source Id	254
Nylon Calibrator Number	DNCE695

Aluminium Calibrator Number	DACD698	
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
0.00	

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Log\New Folder (4)\OBrien Resources LLC Swart #21-1-DETAIL.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 442 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 16 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

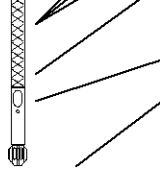
Compact Sonic
MSS-C.A 156 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 45 LG: 11.79 ft WT: 48.5 lb OD: 2.24 in



55.39 ft	GRGC - Gamma Ray
52.48 ft	CGXT - MCG External Temperature
45.76 ft	MINV - Micro-inverse
45.76 ft	MNRL - Micro-normal
46.76 ft	MLTC - MML Caliper
40.97 ft	NPRL - Limestone Neutron Por.
33.73 ft	AVOL - Annular Volume
33.73 ft	HVOL - Hole Volume
33.73 ft	CLDC - Density Caliper
31.80 ft	DPRL - Limestone Density Por.
31.80 ft	DEN - Compensated Density
31.80 ft	DCOR - Density Correction
31.74 ft	PDPE - PE
26.24 ft	FEFE - Shallow FE
12.96 ft	DT35 - 3-5' Compensated Sonic
12.96 ft	SPRL - Wyllie Lime. Sonic Por.
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	RTAO - Array Ind. One Res Rt
3.34 ft	R60O - Array Ind. One Res 60
0.23 ft	SPCG - Spontaneous Potential

Total	Length: 63.24 ft	Weight: 471.8 lb



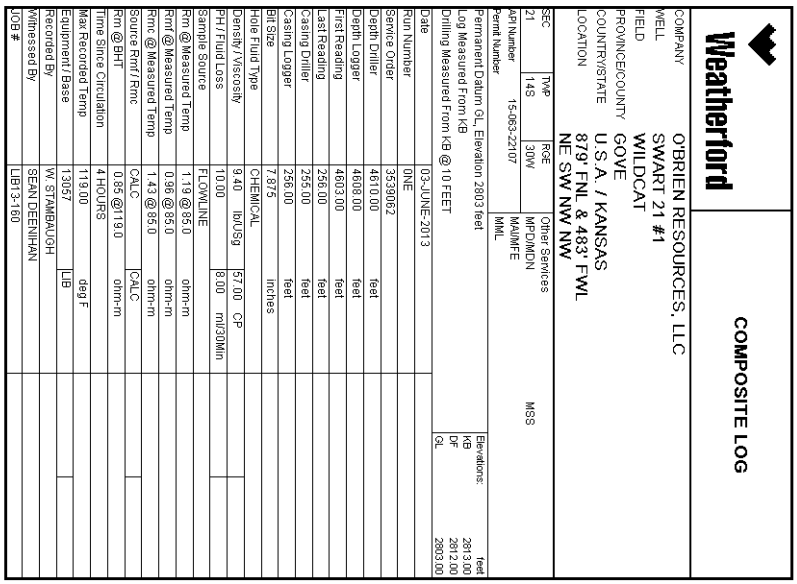
Tool Zero (1.12ft from bottom)
-1.12 ft SMTU - DST Uphole Tension
All measurements relative to tool zero.

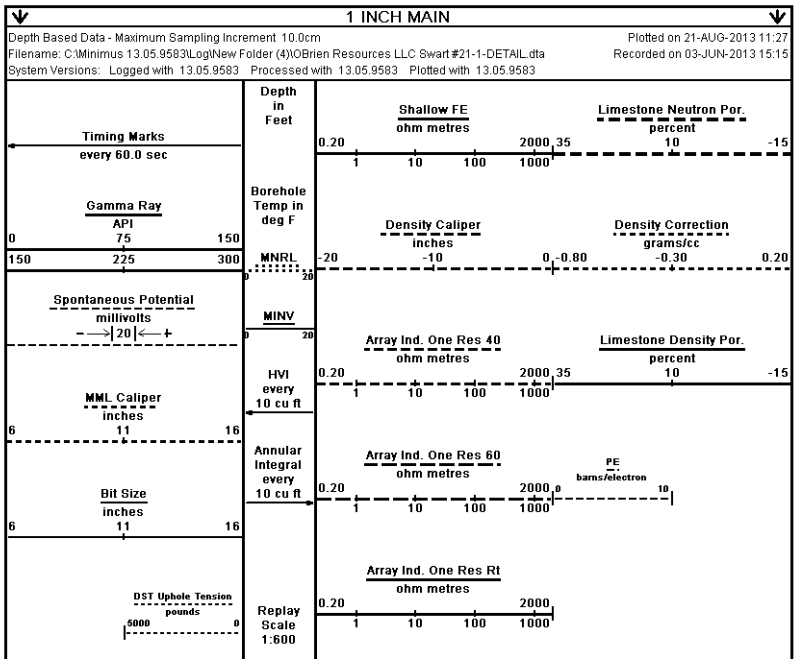
COMPANY	O'BRIEN RESOURCES, LLC
WELL	SWART 21 #1
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS

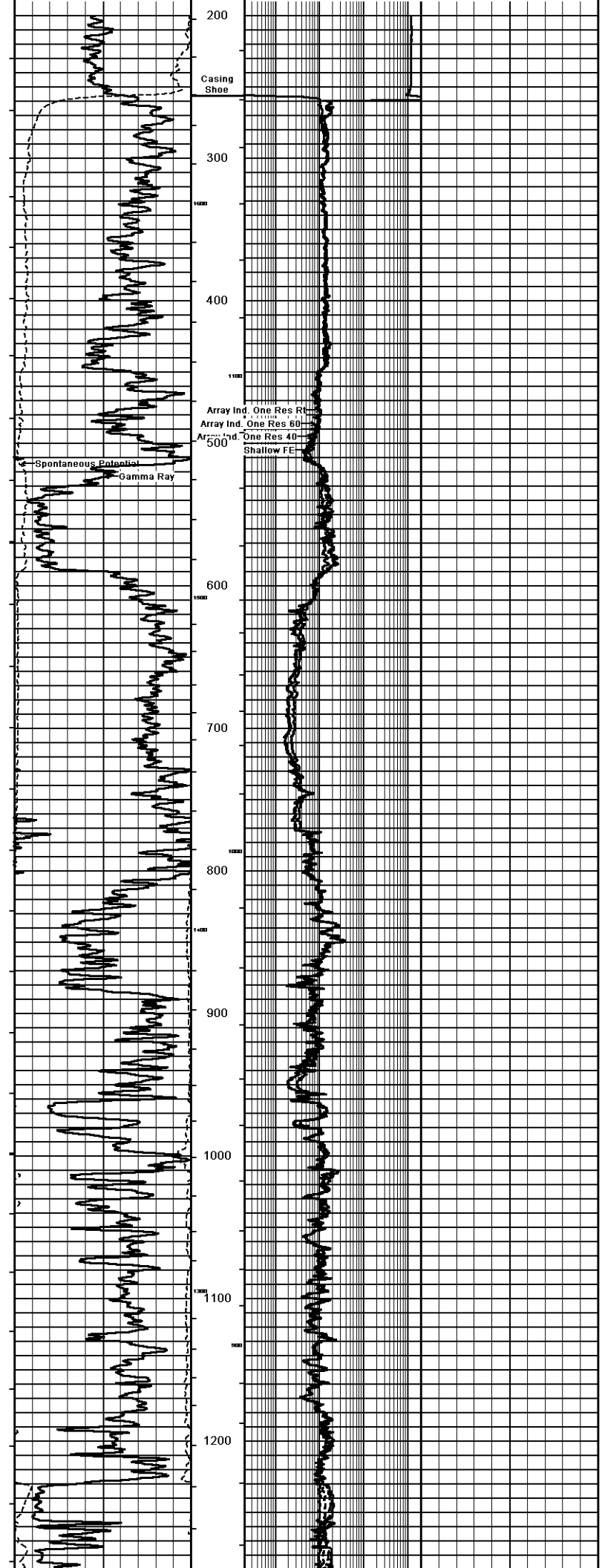
Elevation Kelly Bushing	2813.00	feet	First Reading	4603.00	feet
Elevation Drill Floor	2812.00	feet	Depth Driller	4610.00	feet
Elevation Ground Level	2803.00	feet	Depth Logger	4608.00	feet

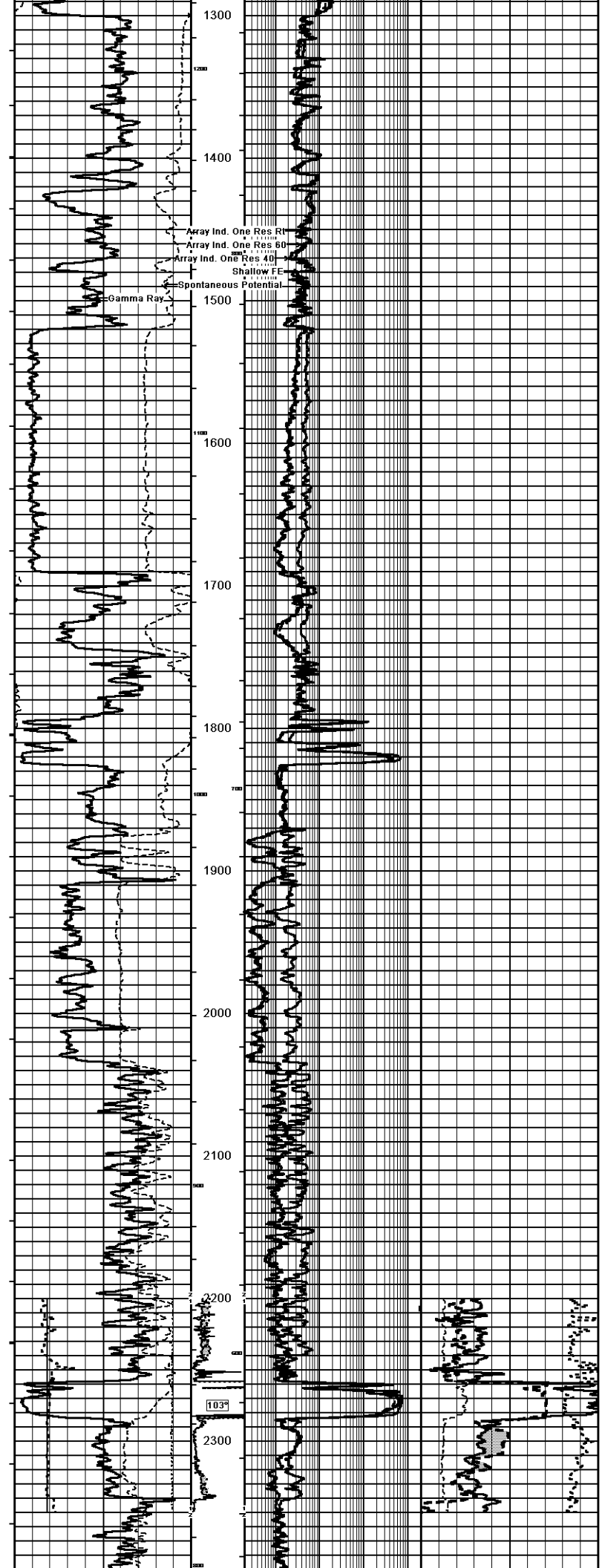
Weatherford®

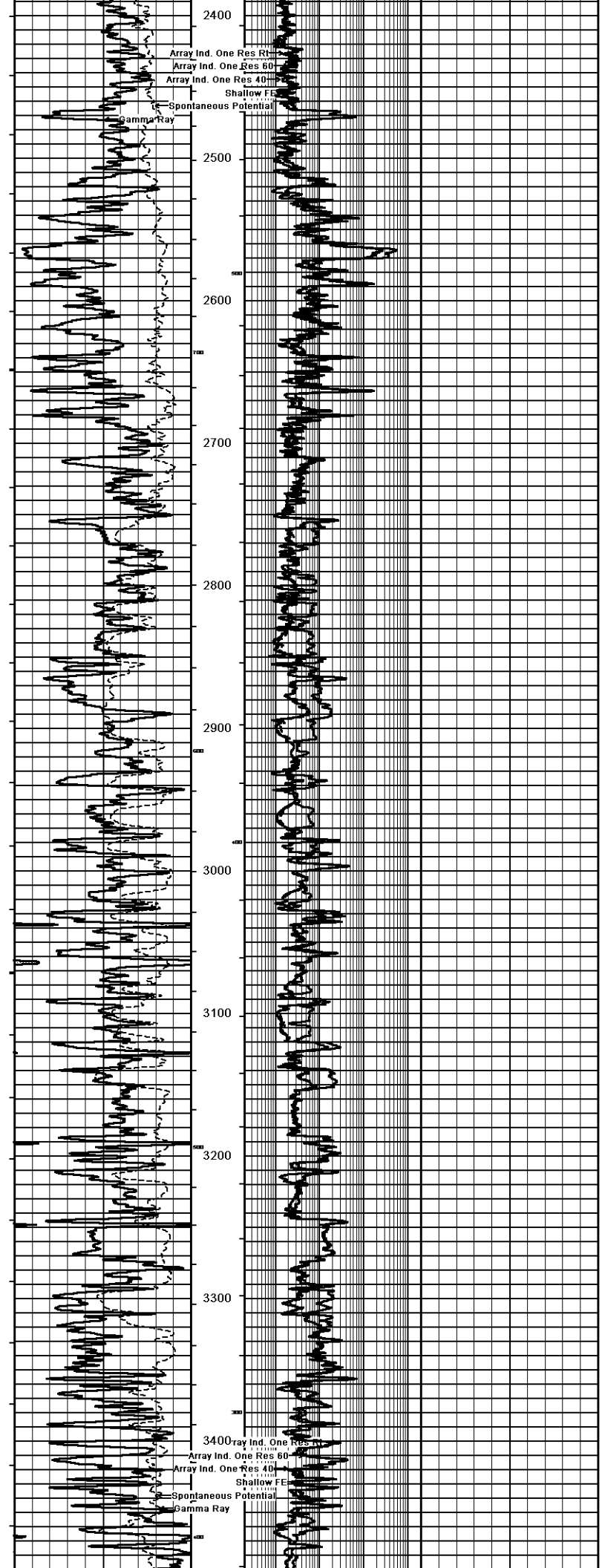
COMPOSITE LOG

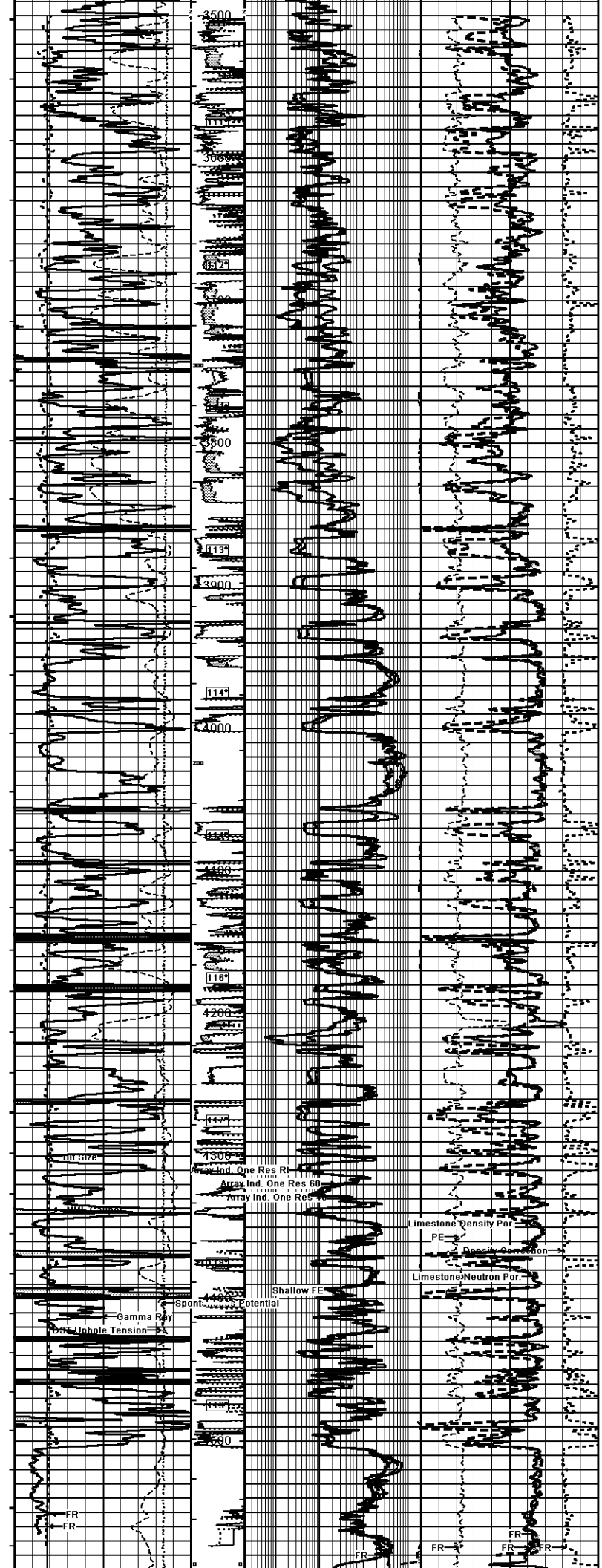


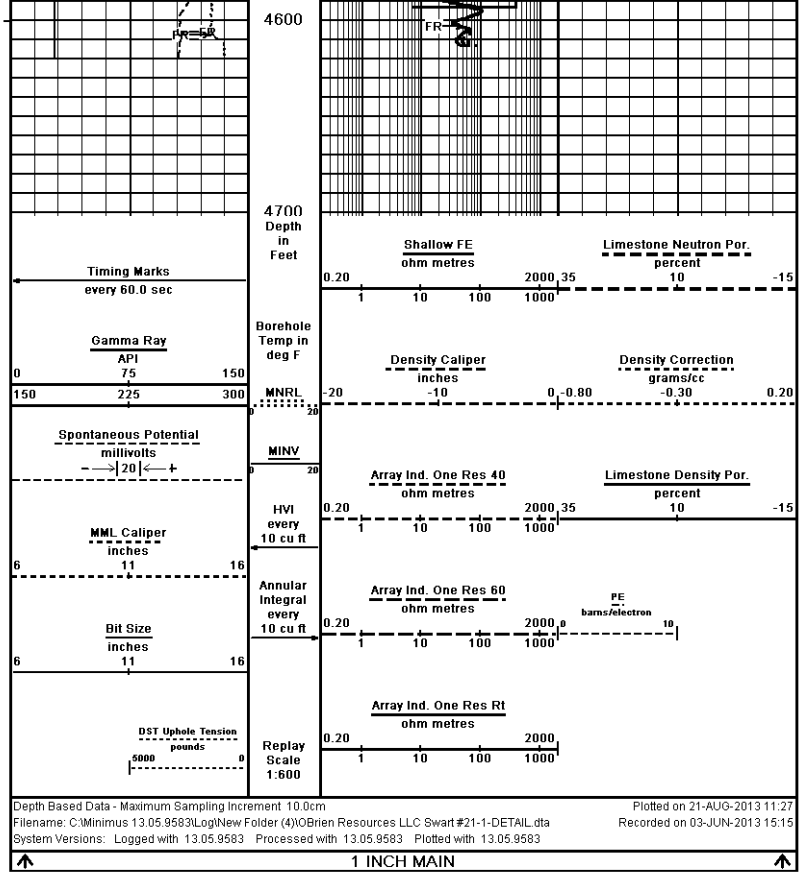



200
Casing Shoe
300
400
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
500
Spontaneous Potential
Gamma Ray
600
700
800
900
1000
1100
1200


1300
1400
Array Ind. One Res RI
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
1500
1600
1700
1800
1900
2000
2100
2200
103°
2300


2400
Array Ind. One Res RH
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
2500
2600
2700
2800
2900
3000
3100
3200
3300
3400
Array Ind. One Res RH
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray


3500
3600
3700
3800
3900
4000
4100
4200
4300
4400
4500
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Spont. Pot. Potential
Gamma Ray
DOT Uphole Tension
Shallow FE
Limestone Density Por
PE
Limestone Neutron Por
FR



COMPANY	O'BRIEN RESOURCES, LLC
WELL	SWART 21 #1
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2813.00	feet	First Reading	4603.00	feet
Elevation Drill Floor	2812.00	feet	Depth Driller	4610.00	feet
Elevation Ground Level	2803.00	feet	Depth Logger	4608.00	feet

Weatherford

COMPOSITE LOG