Weatherford®

ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

COMPANY	GRAND MESA OPERATING COMPANY
WELL	PHILLIP # 1-26
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	2180' FNL & 1707' FWL
	NW SW SE NW

40 Years of Wireline 1970 2010

SEC	TWP	RGE
26	13S	31W

API Number 15-063-22000
Permit Number

Other Services
MPD/MDN
MML
MSS

Permanent Datum G.L., Elevation 2851 feet
Log Measured From KB
Drilling Measured From K.B.

Elevations:	feet
KB	2856.00
DF	2854.00
GL	2851.00

Date	03-JUN-2012			
Run Number	ONE			
Depth Driller	4631.00	feet		
Depth Logger	4638.00	feet		
First Reading	4635.00	feet		
Last Reading	207.00	feet		
Casing Driller	210.00	feet		
Casing Logger	207.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.20 lb/USg	63.00 CP		
PH / Fluid Loss	10.50	7.20 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.92 @ 81.0	ohm-m		
Rmf @ Measured Temp	0.74 @ 81.0	ohm-m		
Rmc @ Measured Temp	1.10 @ 81.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.61 @125.0	ohm-m		
Time Since Circulation	7 HOURS			
Max Recorded Temp	126.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	13057			
Recorded By	A. GIAMBALVO			
Witnessed By	BOB SCHRIBER			
S.O. / JOB #	3534584		LB12-138	

BOREHOLE RECORD

Last Edited: 04-JUN-2012 02:20

Bit Size inches	Depth From feet	Depth To feet
7.875	207.00	4638.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	5.00	207.00	24.00

REMARKS

Tools Ran: MCG, MML, MDN, MPD, MFE, MSS, MAI.
Hardware Used: MDN Dual Eccentralizer used. MPD 8 inch profile plate used. MFE, MSS and MAI 0.5 inch standoffs used.
2.71 g/cc Limestone Density Matrix used to calculate porosity.
All intervals logged and scaled per customer's request.
Annular volume with 5.5 inch production casing calculated0 = 192 cu. ft.
Service order #3534584
Rig: Murfin Rig # 24
Engineer: A. Giambalvo
Operator(s): K. Rinehart

2 INCH MAIN PASS

2 INCH MAIN PASS

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 04-JUN-2012 02:26
Filename: C:\Minimus 11.03.4044\Data\Gra...\Grand Mesa Operating Company Phillip # 1-26 Splice.dta
Recorded on 03-JUN-2012 22:06
System Versions: Plotted with 11.03.4044

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

Spontaneous Potential
millivolts
− → | 20 | ← +

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F

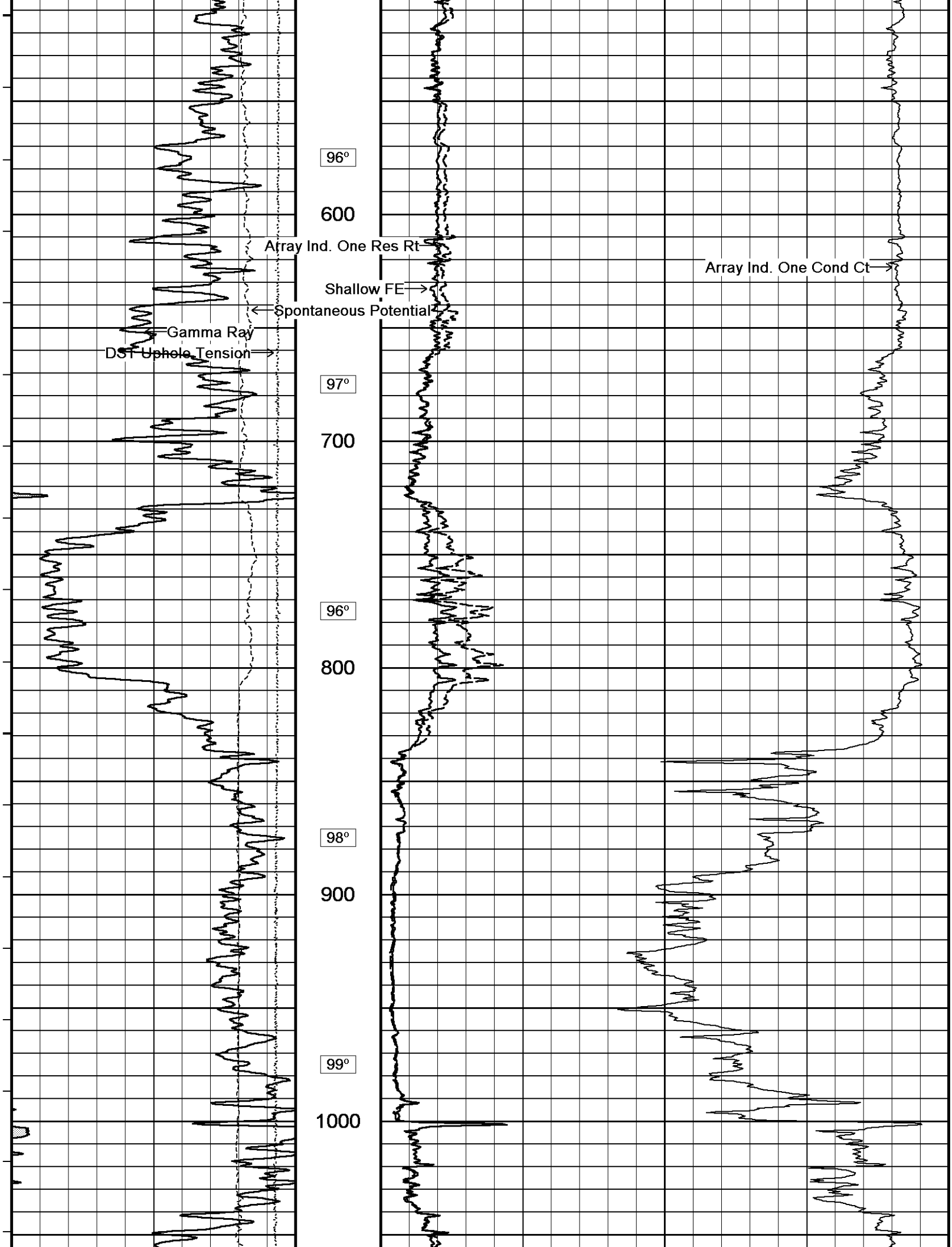
Replay Scale 1:600

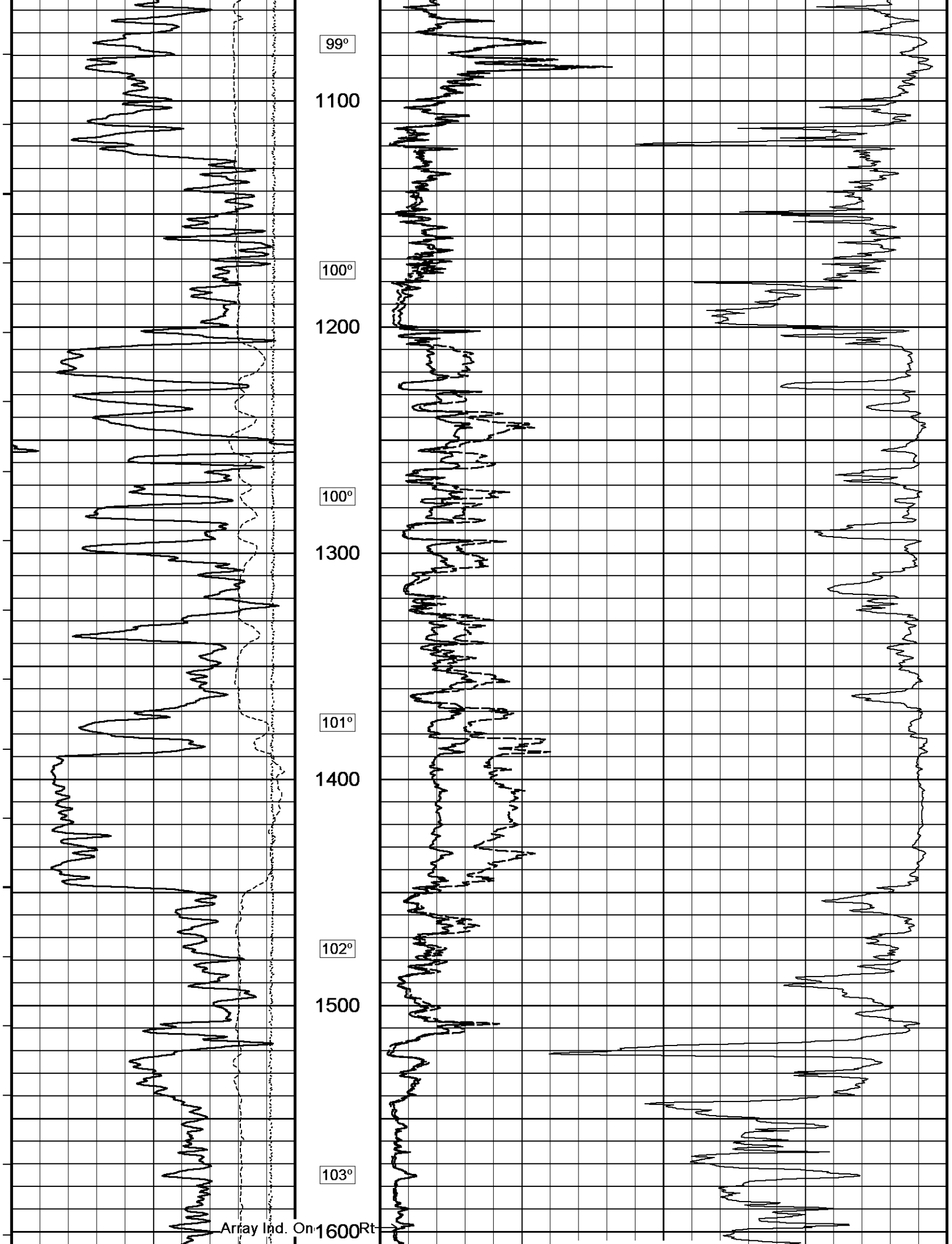
Array Ind. One Cond Ct
mmhos
1000 750 500 250 0
2000 1750 1500 1250 1000

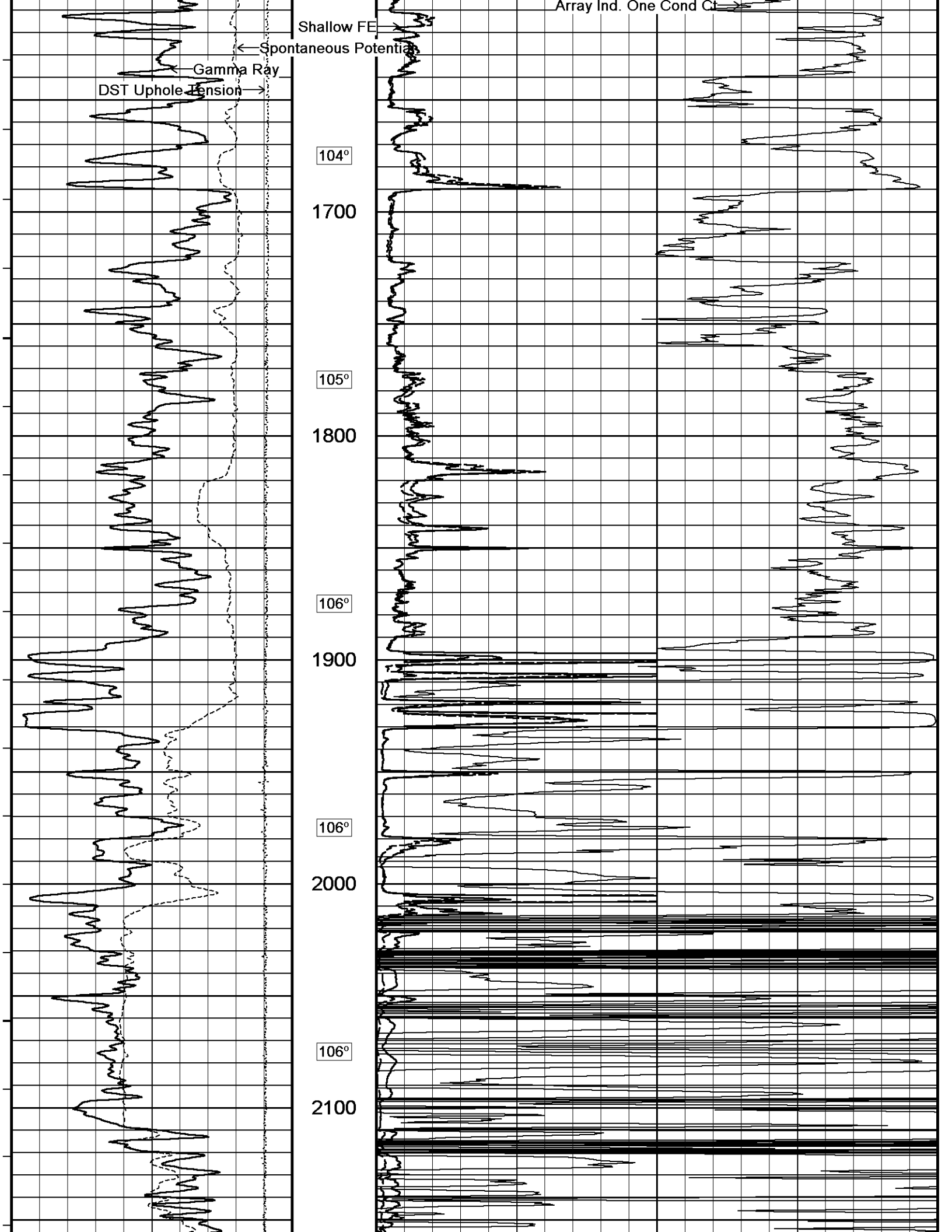
Shallow FE
ohm metres
0 25 50
0 250 500

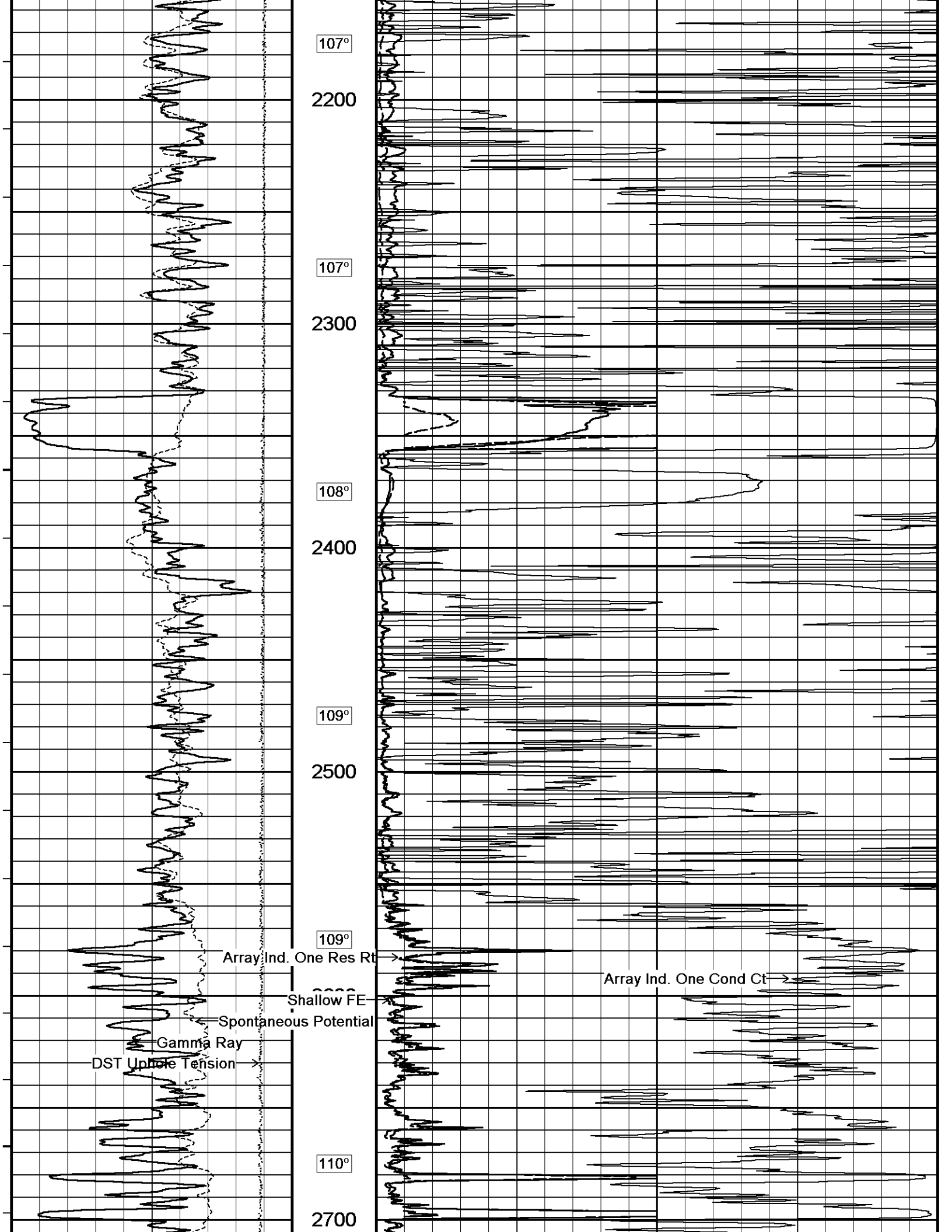
Array Ind. One Res Rt
ohm metres
0 25 50
0 250 500

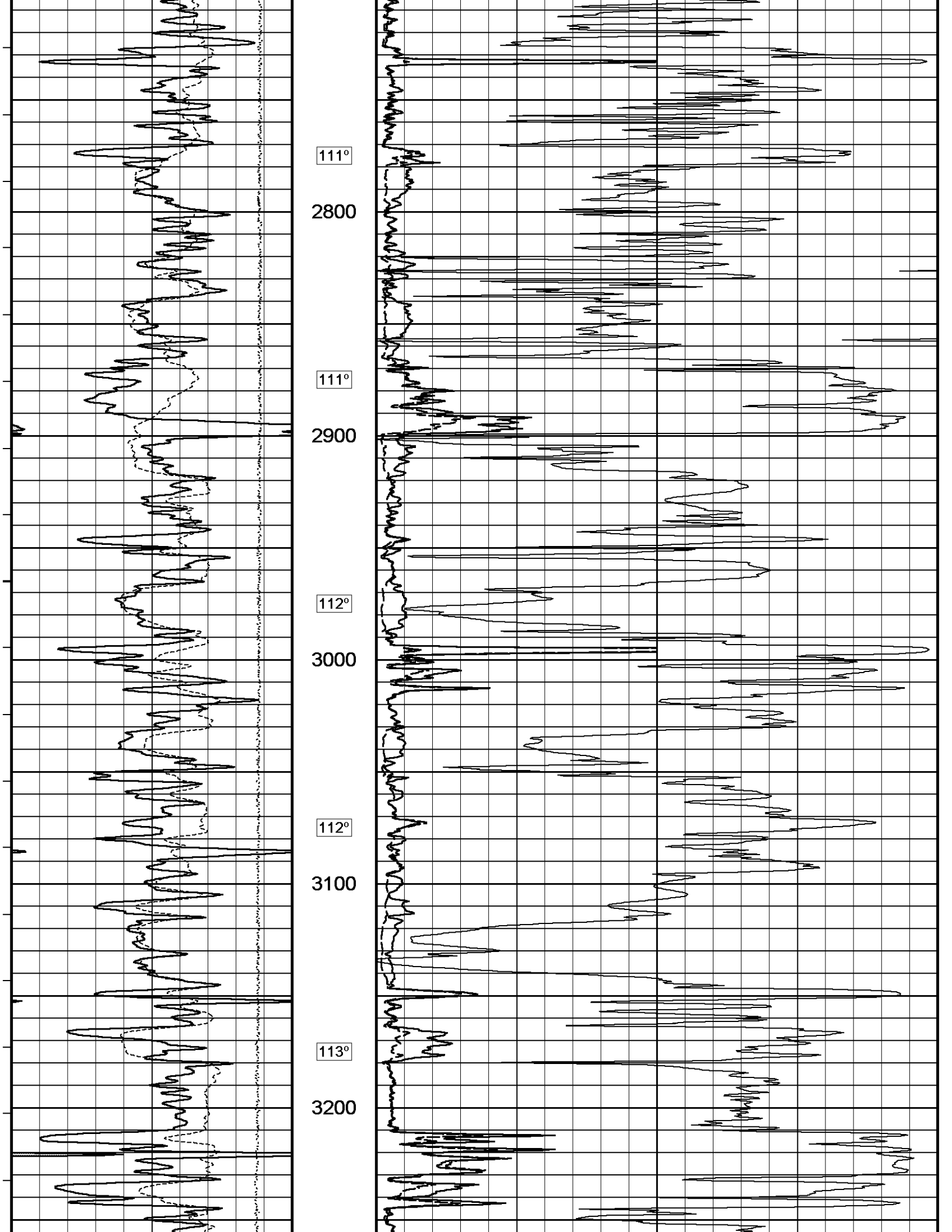
200
94°
300
95°
400
95°
500

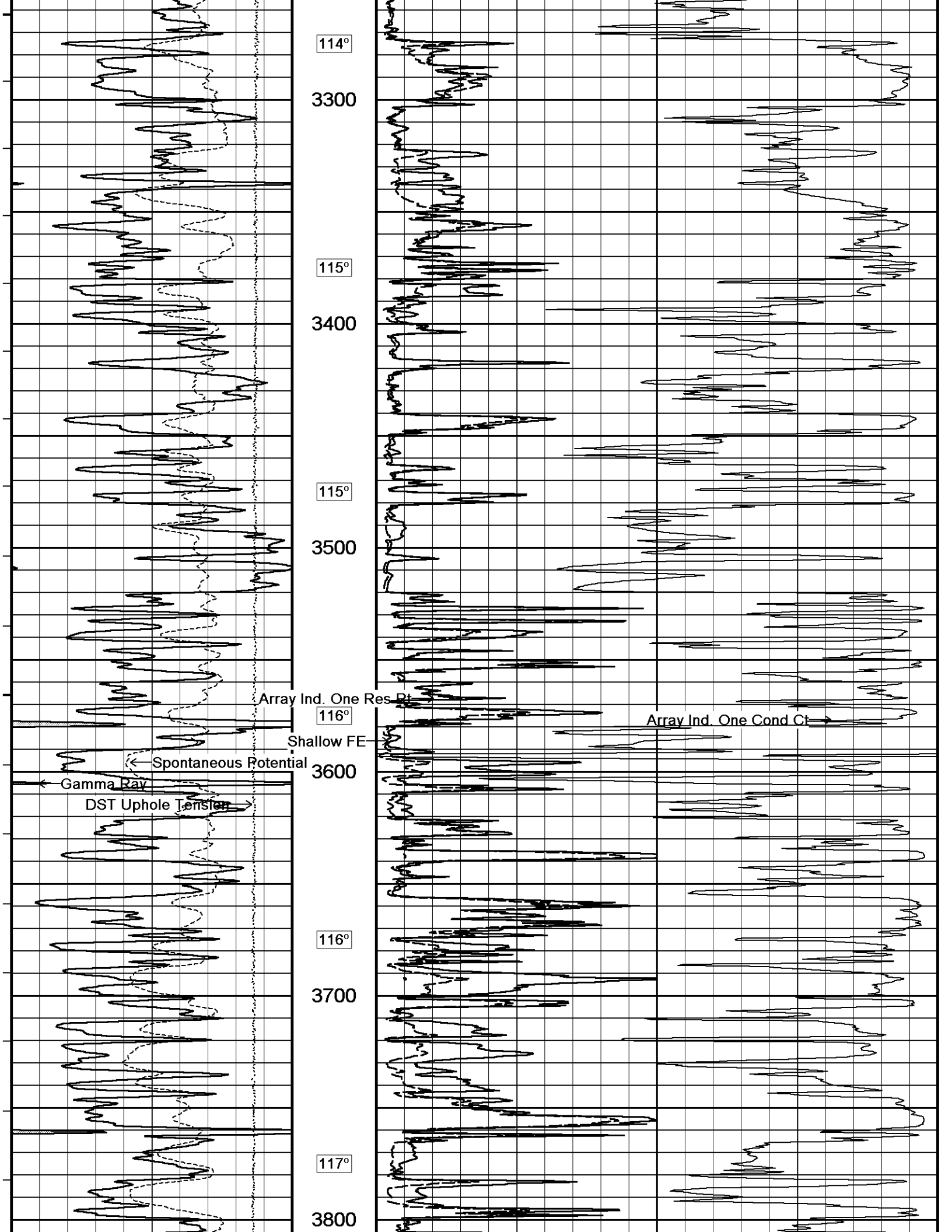

96°
600
Array Ind. One Res Rt
Array Ind. One Cond Ct
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
97°
700
96°
800
98°
900
99°
1000

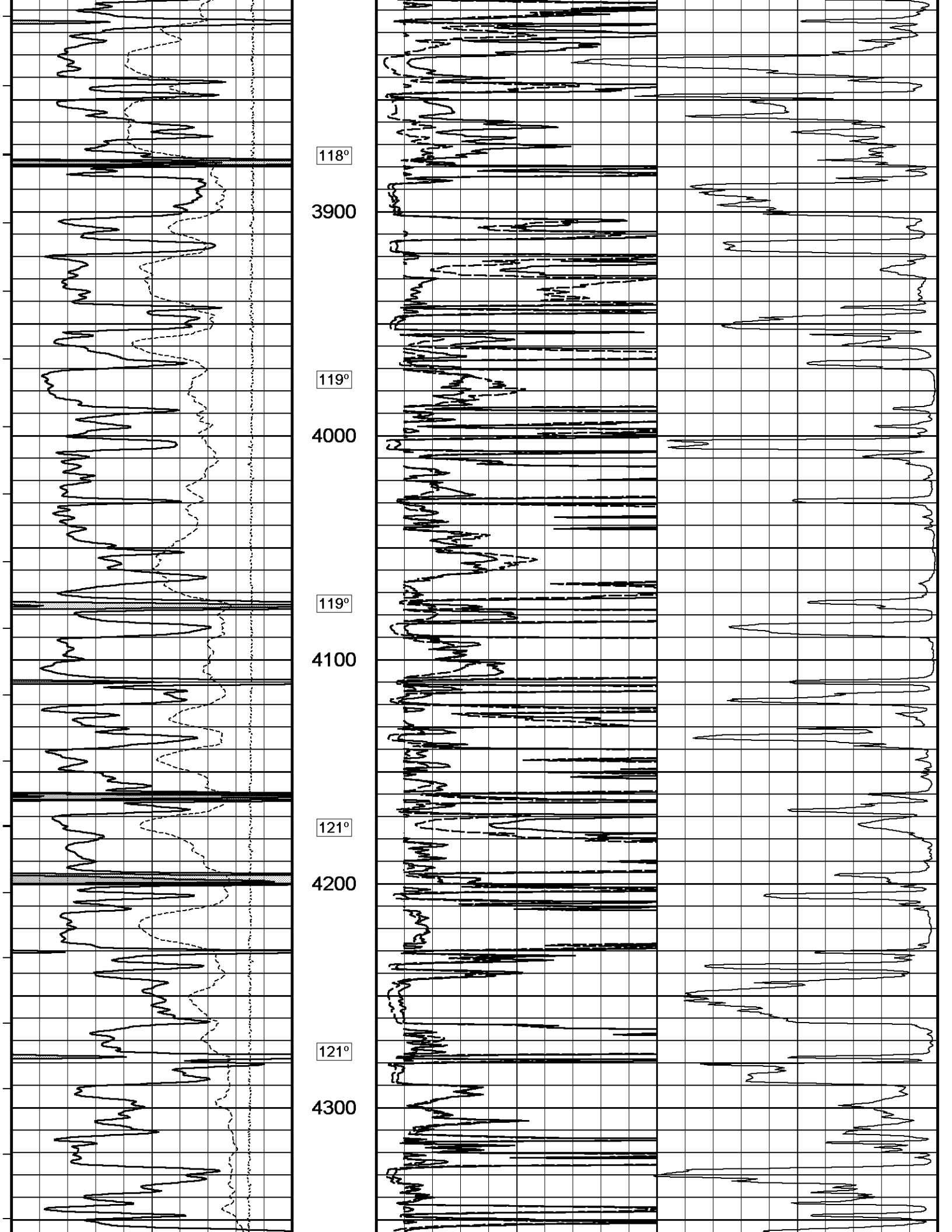

99°
1100
100°
1200
100°
1300
101°
1400
102°
1500
103°
1600
Array Ind. On
Rt

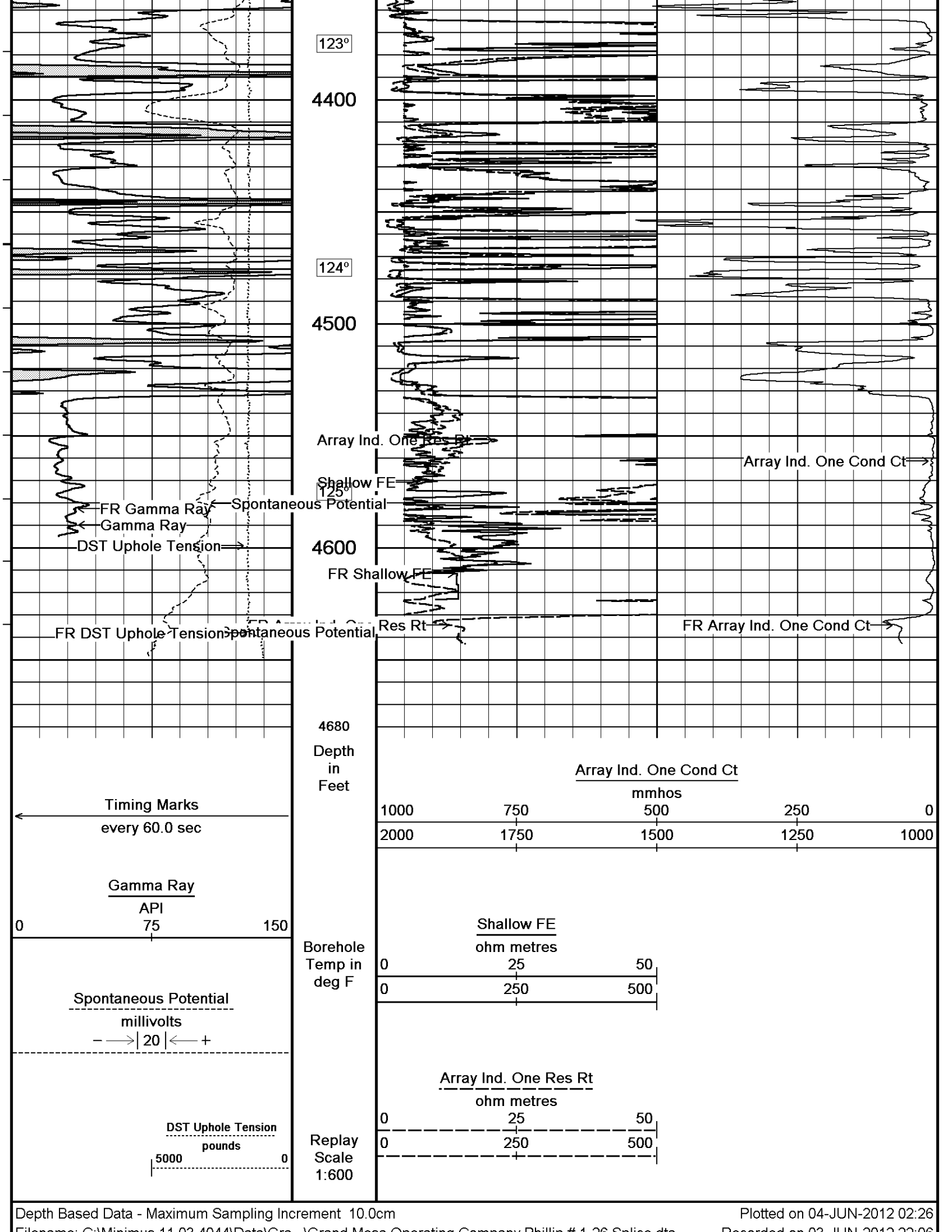

Array Ind. One Cond Ct
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
104°
1700
105°
1800
106°
1900
106°
2000
106°
2100


107°
2200
107°
2300
108°
2400
109°
2500
109°
Array Ind. One Res Rt
Array Ind. One Cond Ct
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
110°
2700


111°
2800
111°
2900
112°
3000
112°
3100
113°
3200


114°
3300
115°
3400
115°
3500
Array Ind. One Res Rt
116°
Array Ind. One Cond Ct
Shallow FE
Spontaneous Potential
3600
Gamma Ray
DST Uphole Tension
116°
3700
117°
3800


118°
3900
119°
4000
119°
4100
121°
4200
121°
4300



Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 04-JUN-2012 02:26

Filename: C:\Minimus 11-03-4044\Data\Cra...\Grand Mesa Operating Company Phillip # 1-26 Splice.dta

Recorded on 03-JUN-2012 22:06

Filename: C:\Minimus 11.03.4044\Data\Gra...\Grand Mesa Operating Company Phillip # 1-26 Splice.dta Recorded on 03-JUN-2012 22:06
System Versions: Plotted with 11.03.4044

2 INCH MAIN PASS

5 INCH ANHYDRITE

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 04-JUN-2012 02:26
Filename: C:\Minimus 11.03.4044\Data\Gra...\Grand Mesa Operating Company Phillip # 1-26 Splice.dta Recorded on 03-JUN-2012 22:06
System Versions: Plotted with 11.03.4044

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

Spontaneous Potential
millivolts
− 20 +

Density Caliper
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

2328

2350

2372

Depth in Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

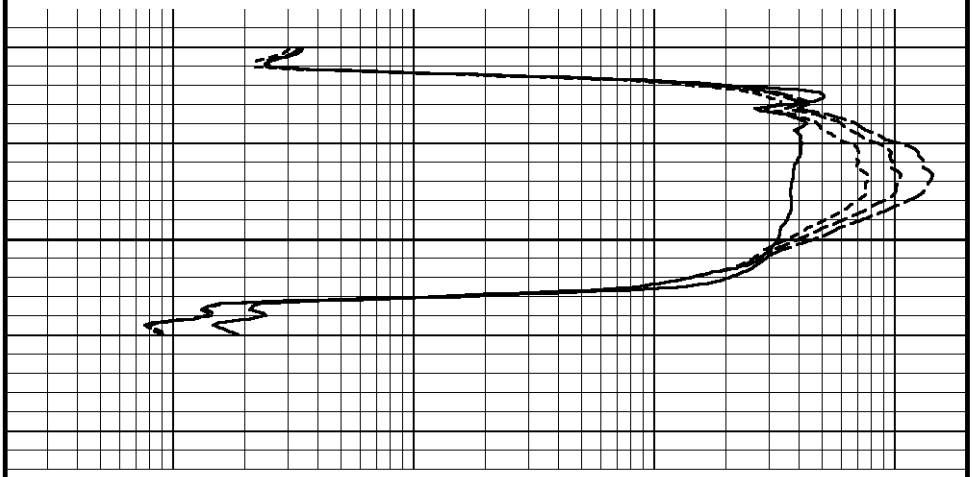
Borehole Temp in deg F

Shallow FE
ohm metres
0.20 1 10 100 2000

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

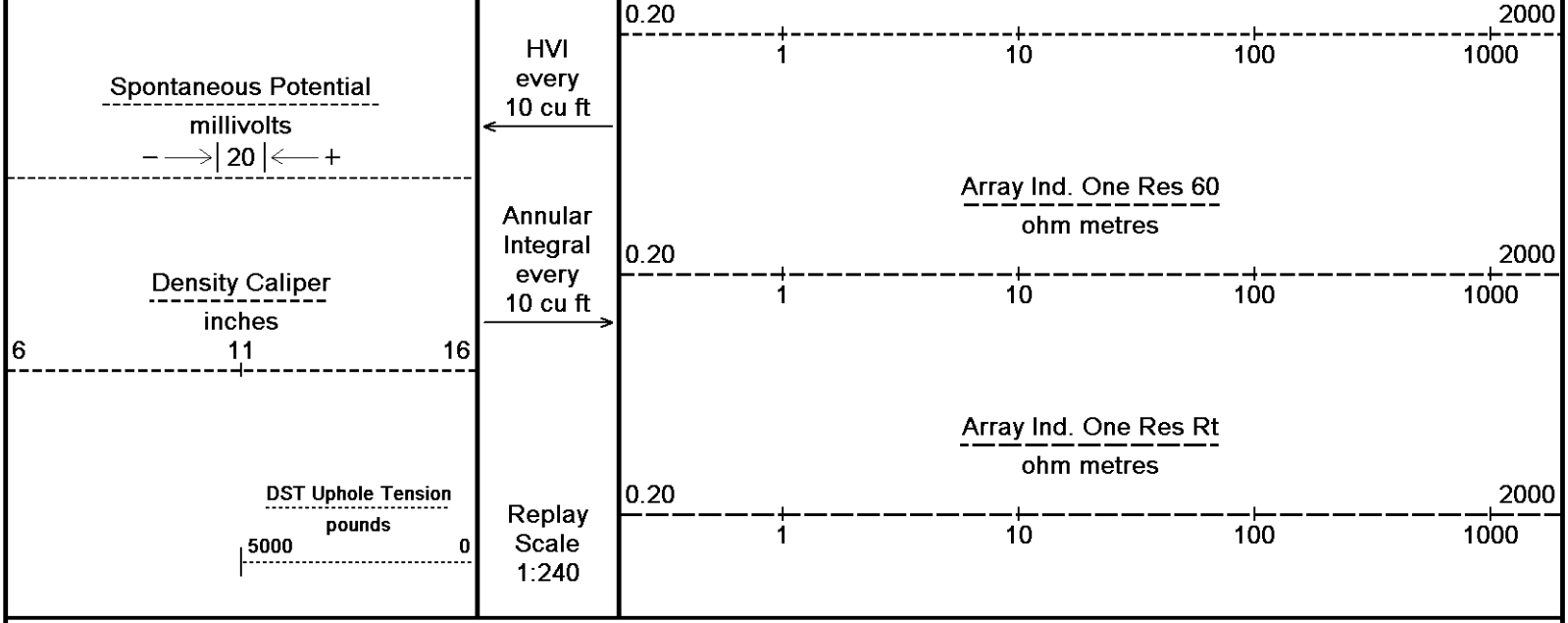
Array Ind. One Res 60
ohm metres
0.20 1 10 100 2000

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



Shallow FE
ohm metres
0.20 1 10 100 2000

Array Ind. One Res 40
ohm metres

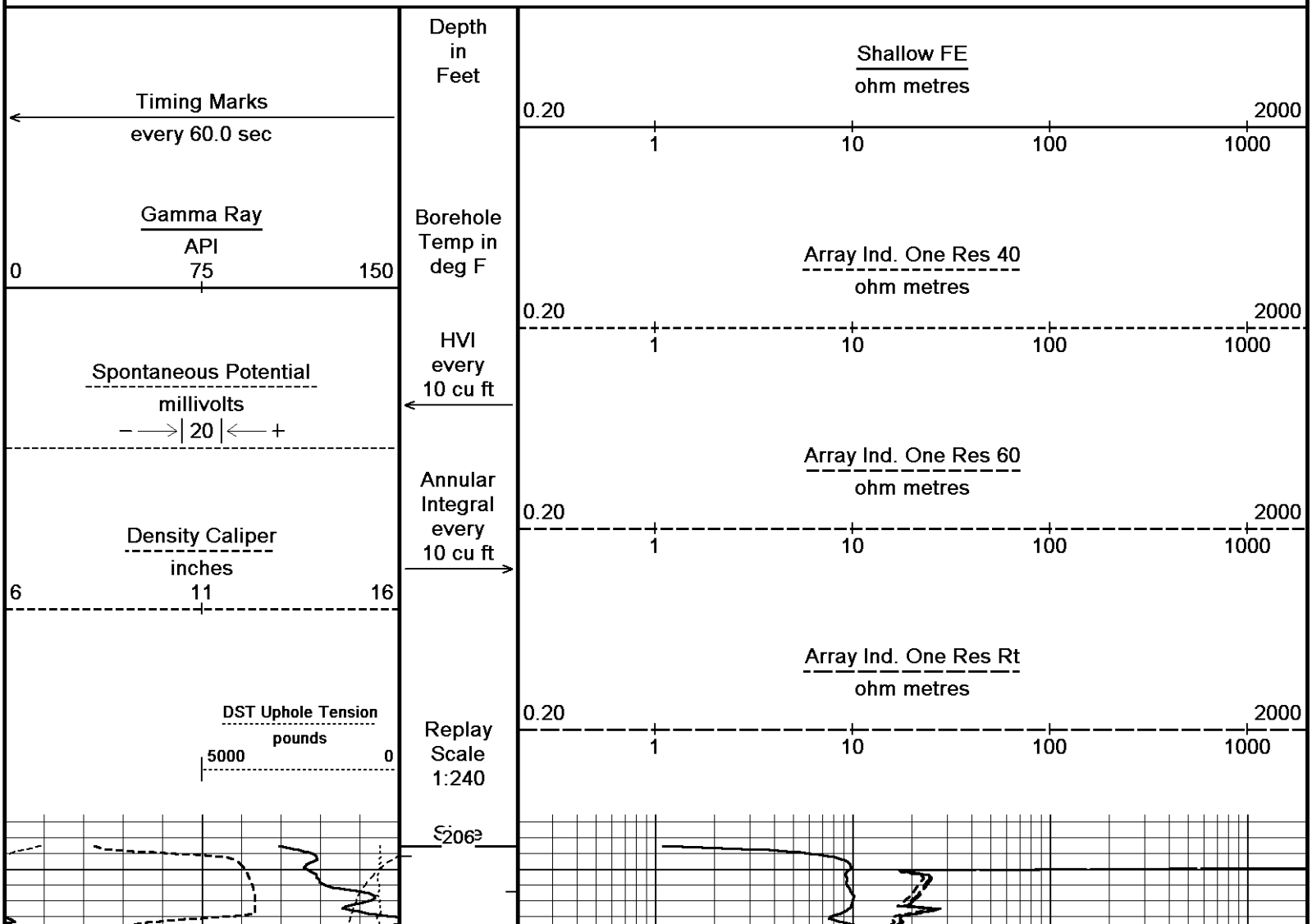


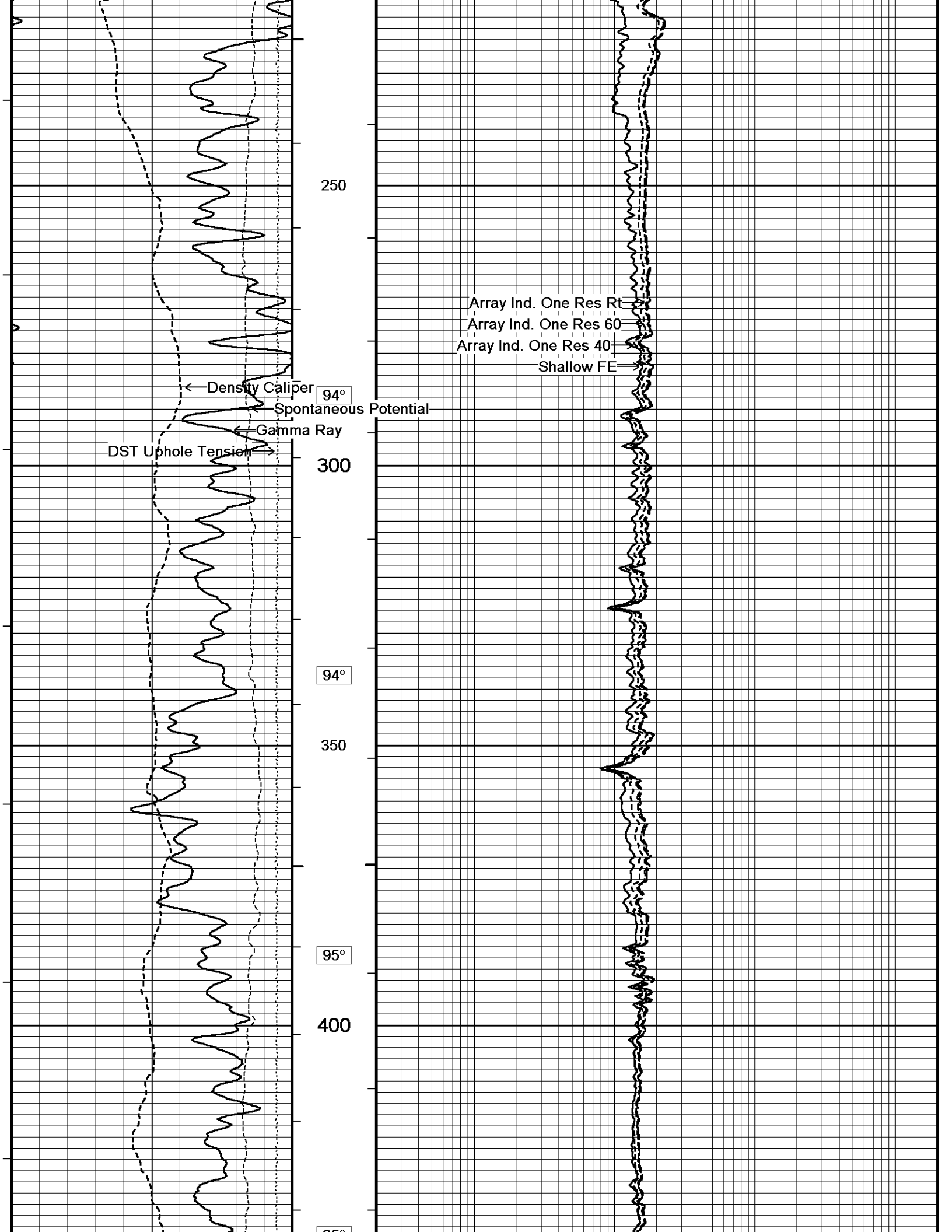
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 04-JUN-2012 02:26
Filename: C:\Minimus 11.03.4044\Data\Gra...\Grand Mesa Operating Company Phillip # 1-26 Splice.dta — Recorded on 03-JUN-2012 22:06
System Versions: Plotted with 11.03.4044

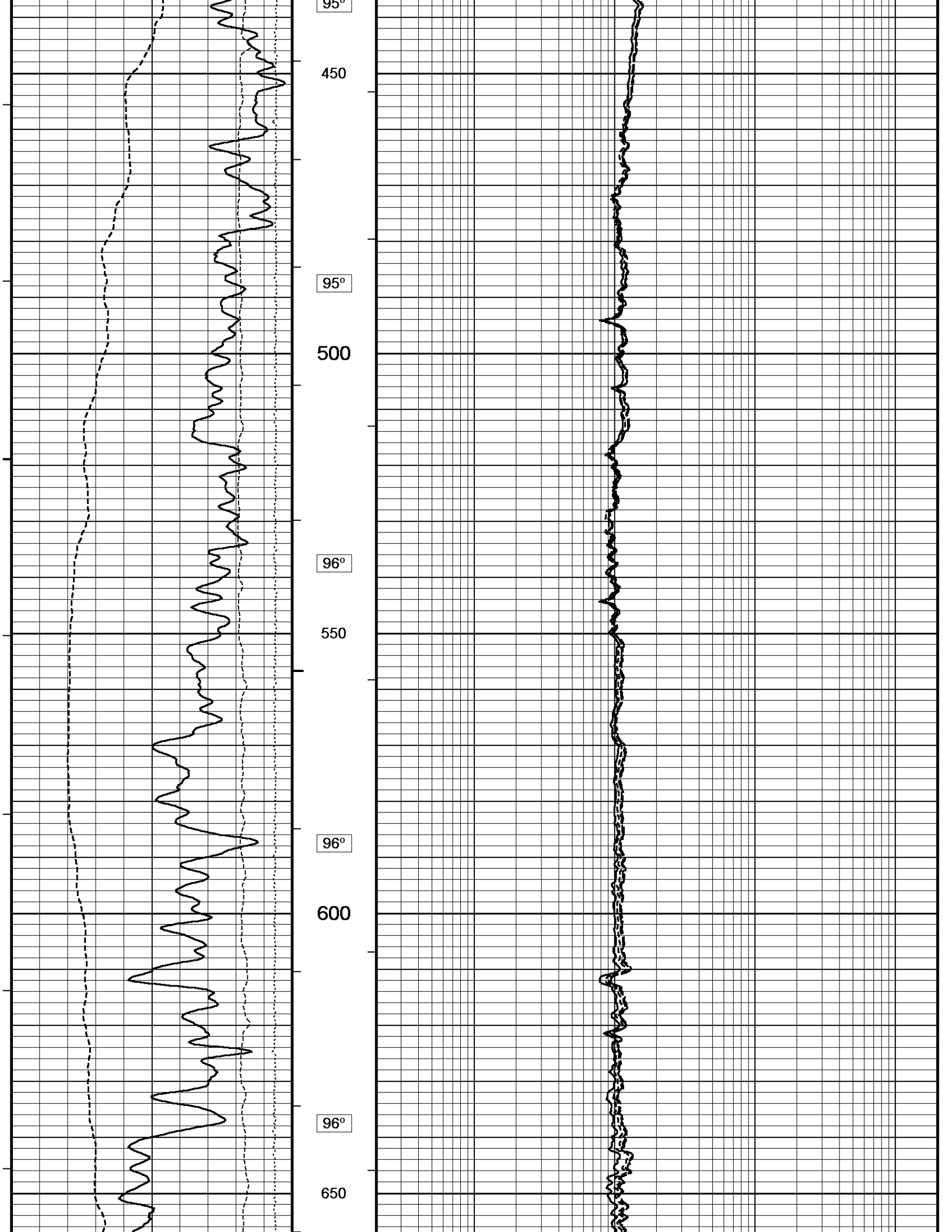
5 INCH ANHYDRITE

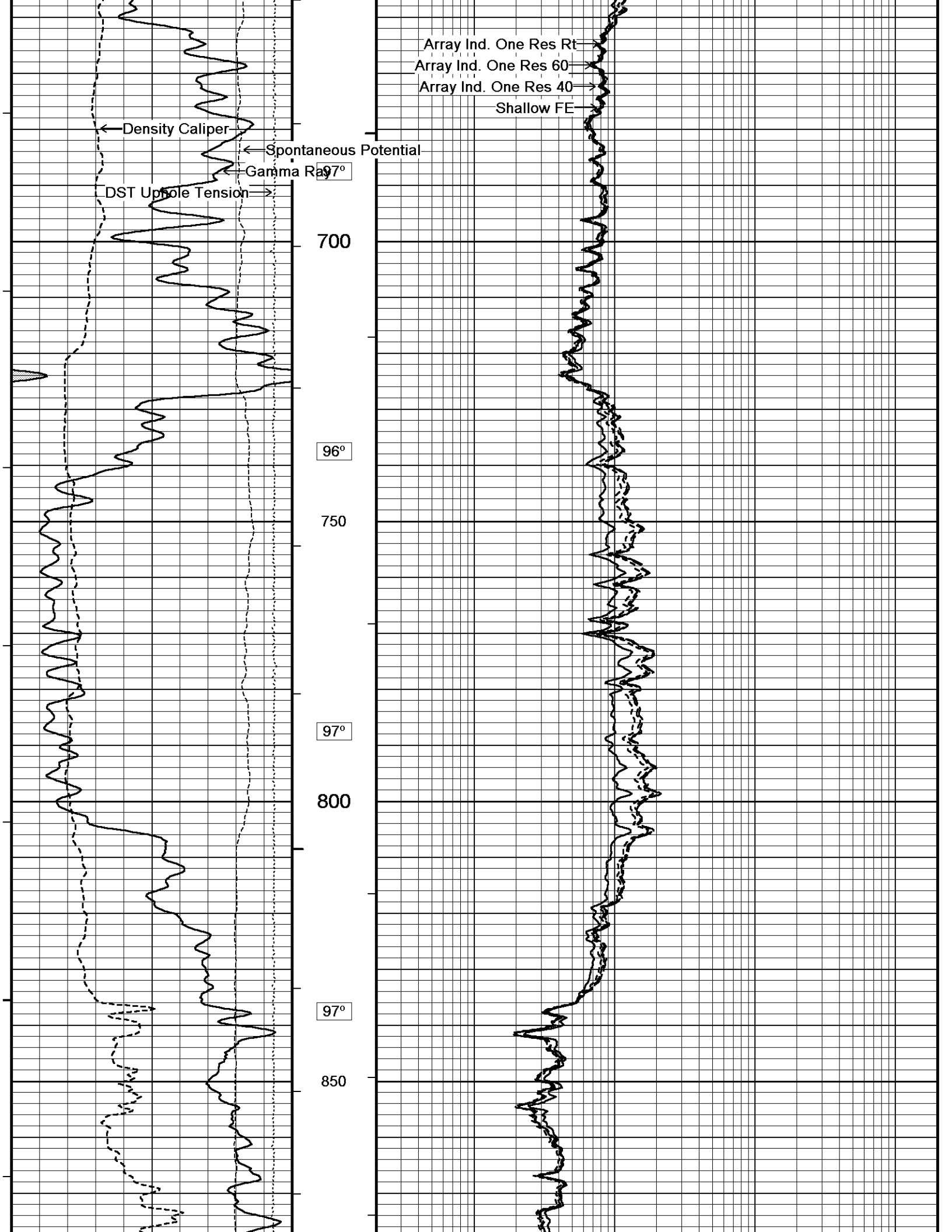
5 INCH MAIN PASS

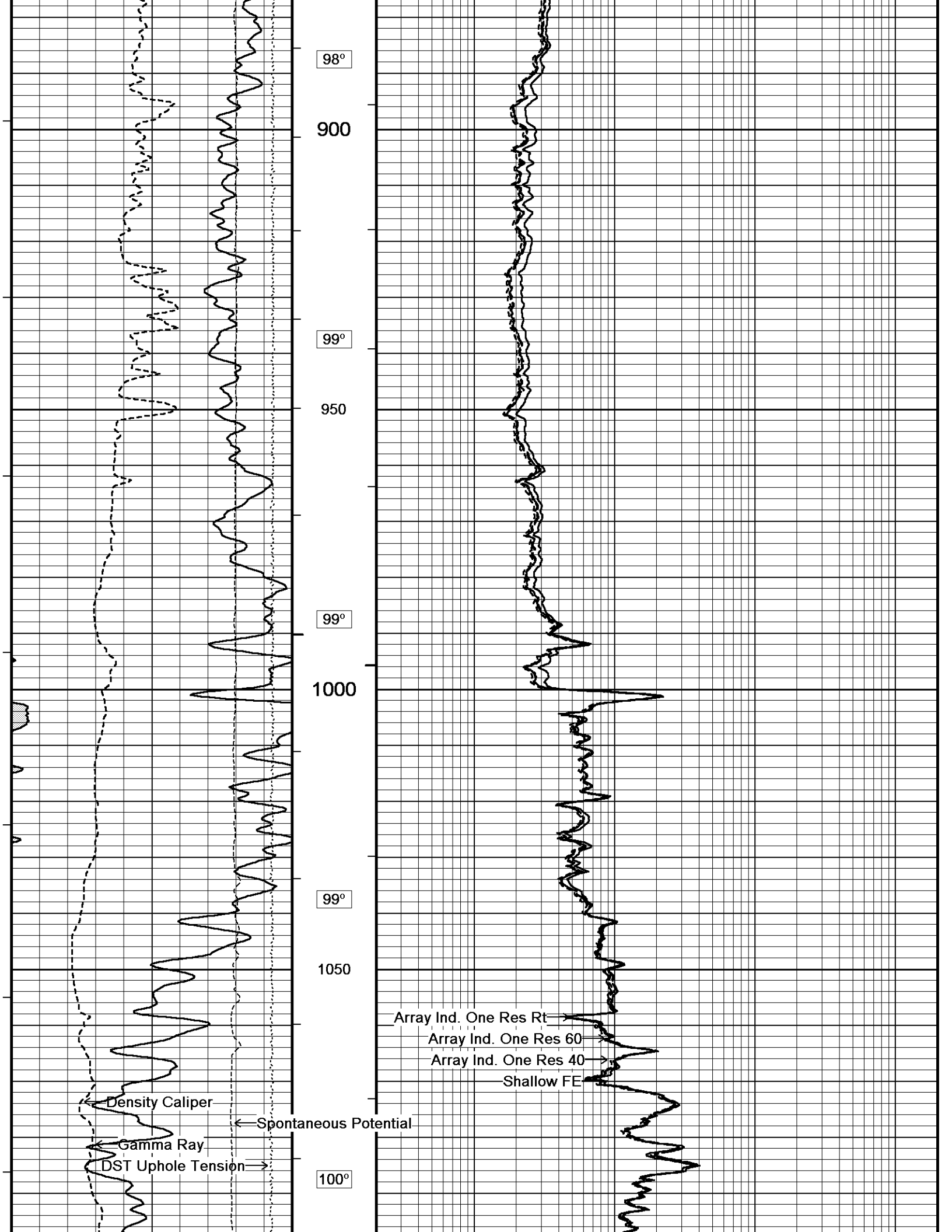
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 04-JUN-2012 02:26
Filename: C:\Minimus 11.03.4044\Data\Gra...\Grand Mesa Operating Company Phillip # 1-26 Splice.dta — Recorded on 03-JUN-2012 22:06
System Versions: Plotted with 11.03.4044

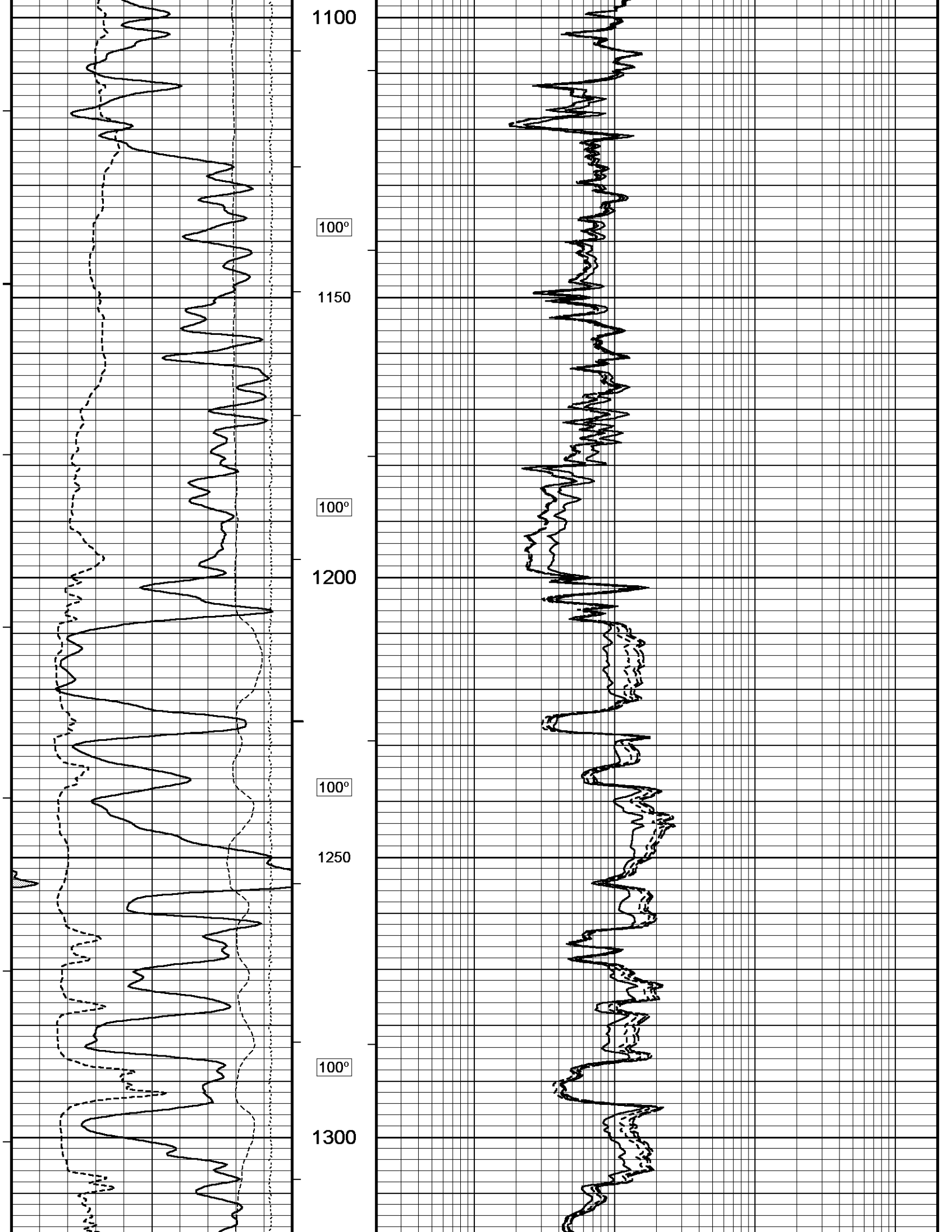


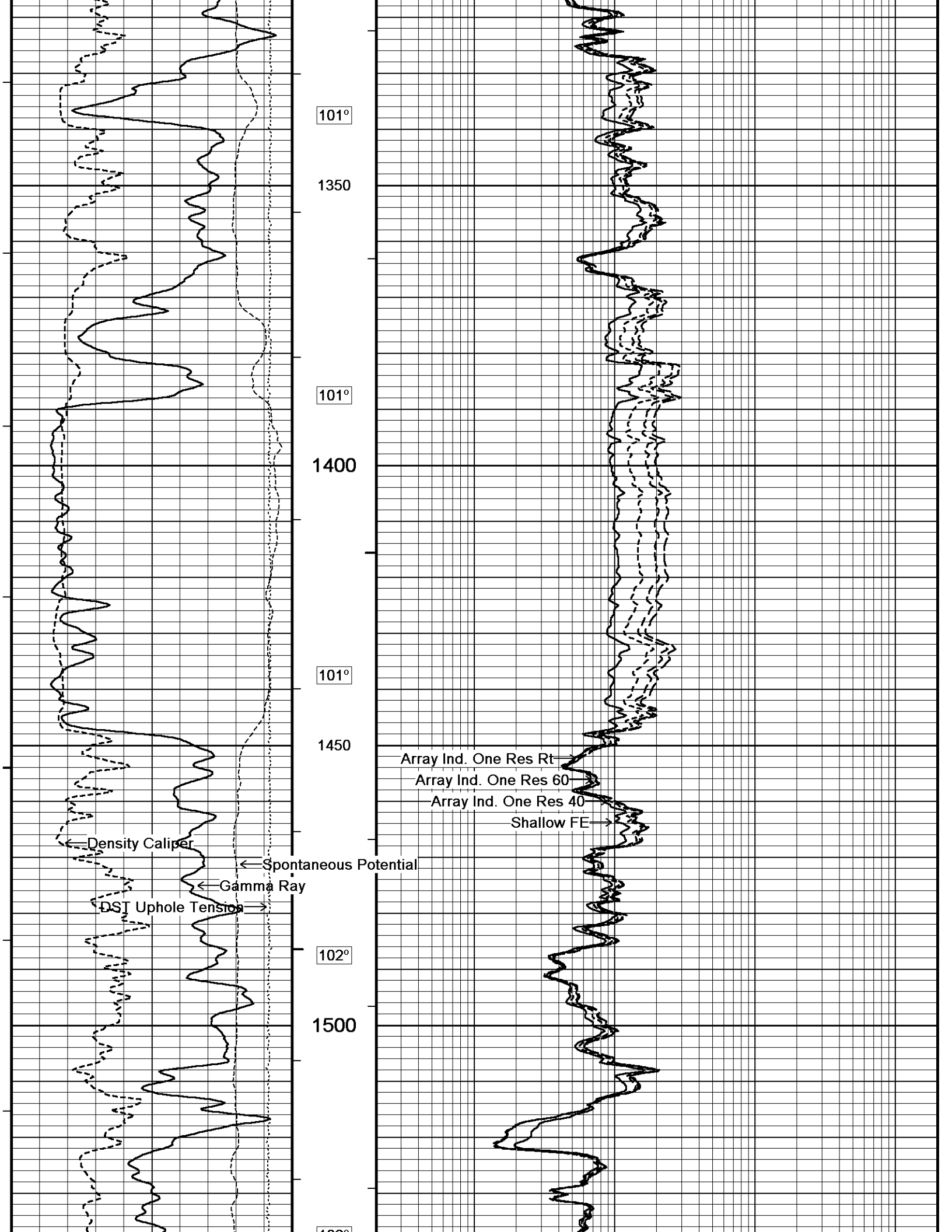

250
300
350
400
94°
94°
95°
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE

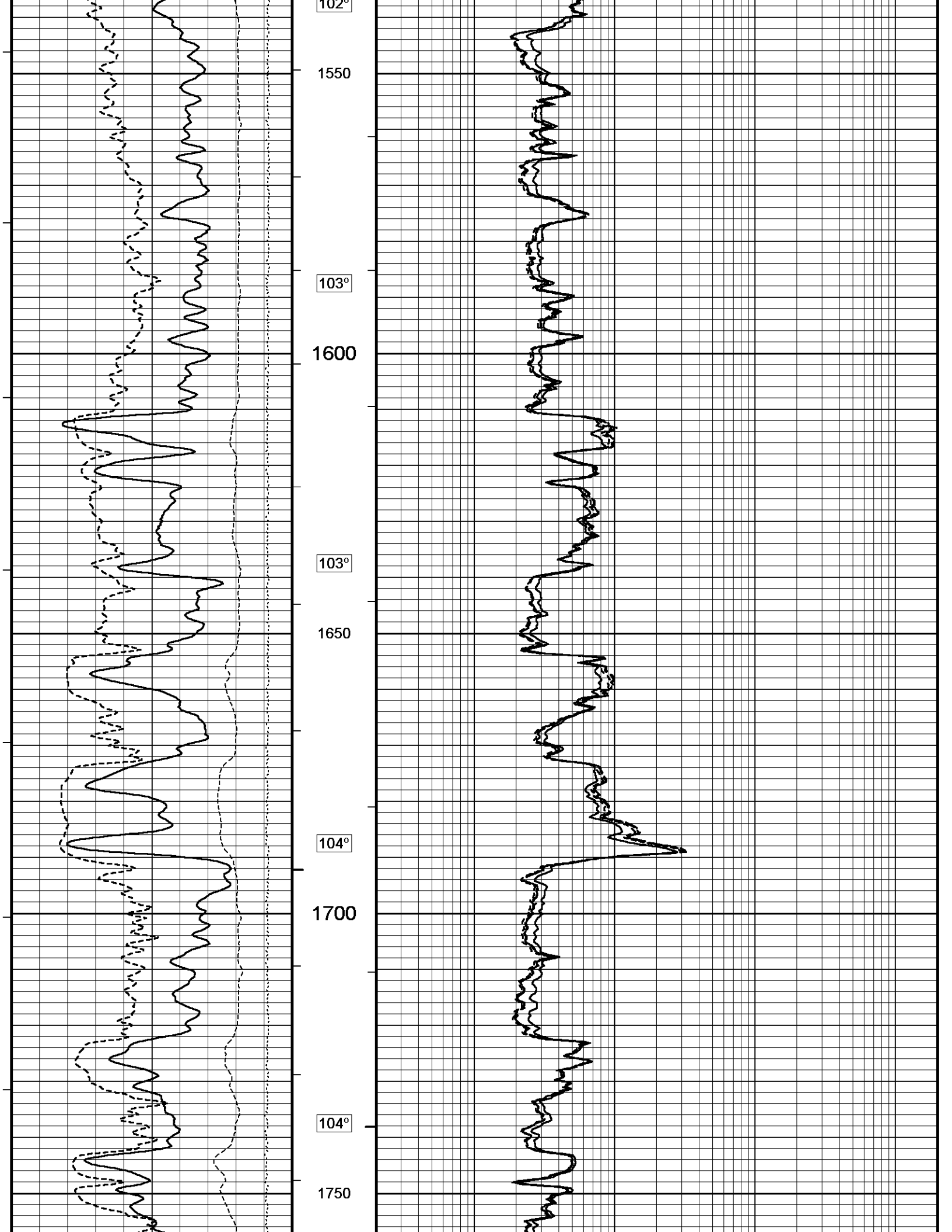

95°
450
95°
500
96°
550
96°
600
96°
650

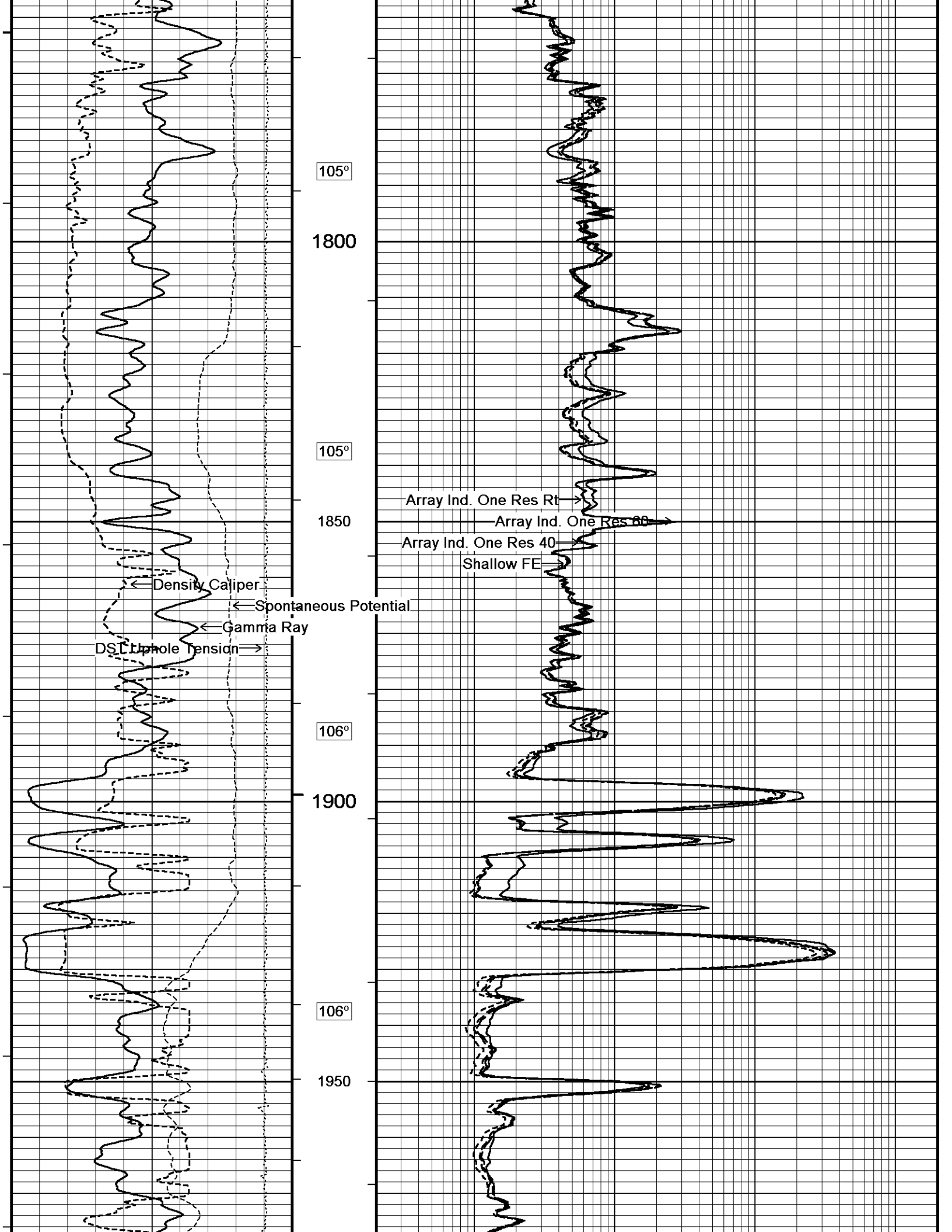

Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
97°
700
96°
750
97°
800
97°
850

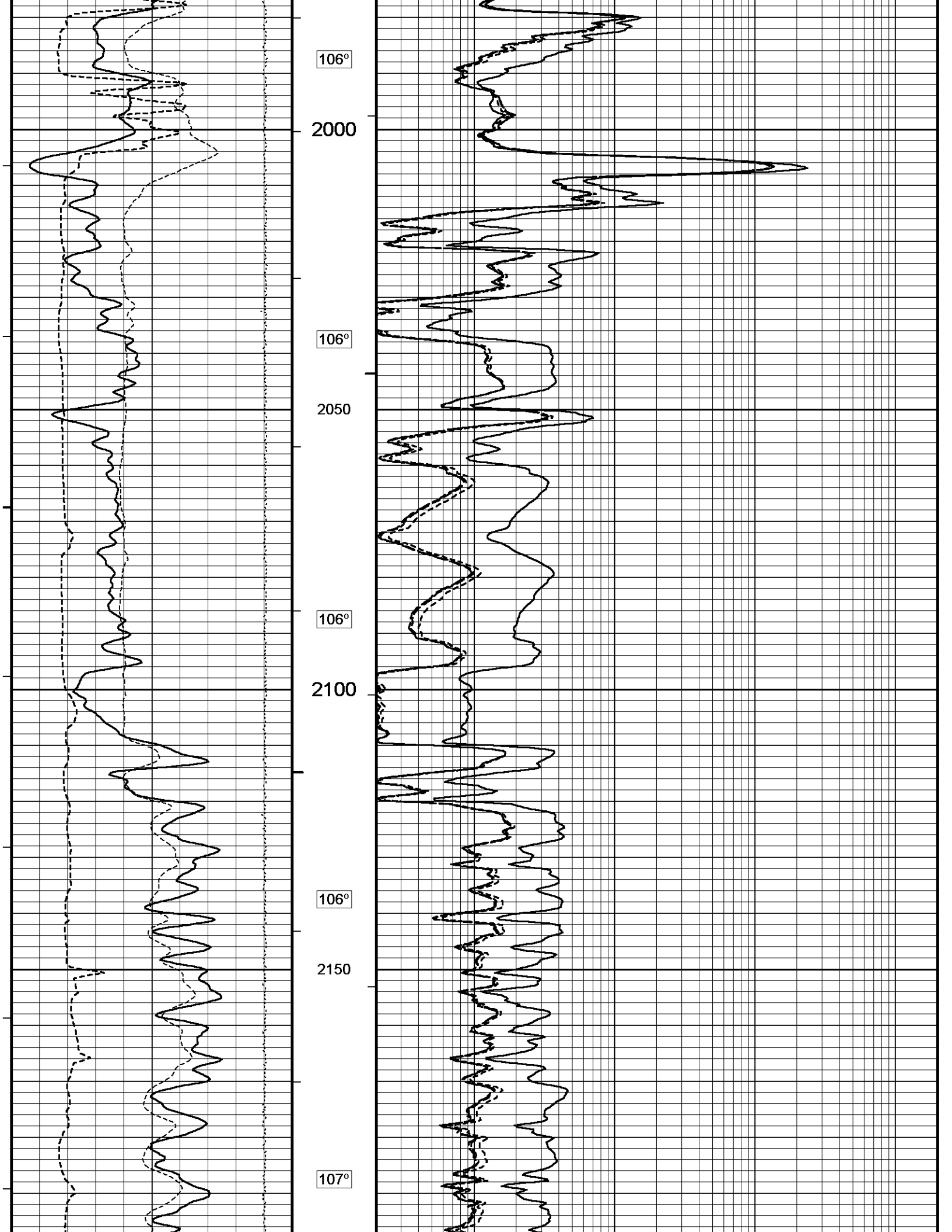

98°
900
99°
950
99°
1000
99°
1050
100°
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension

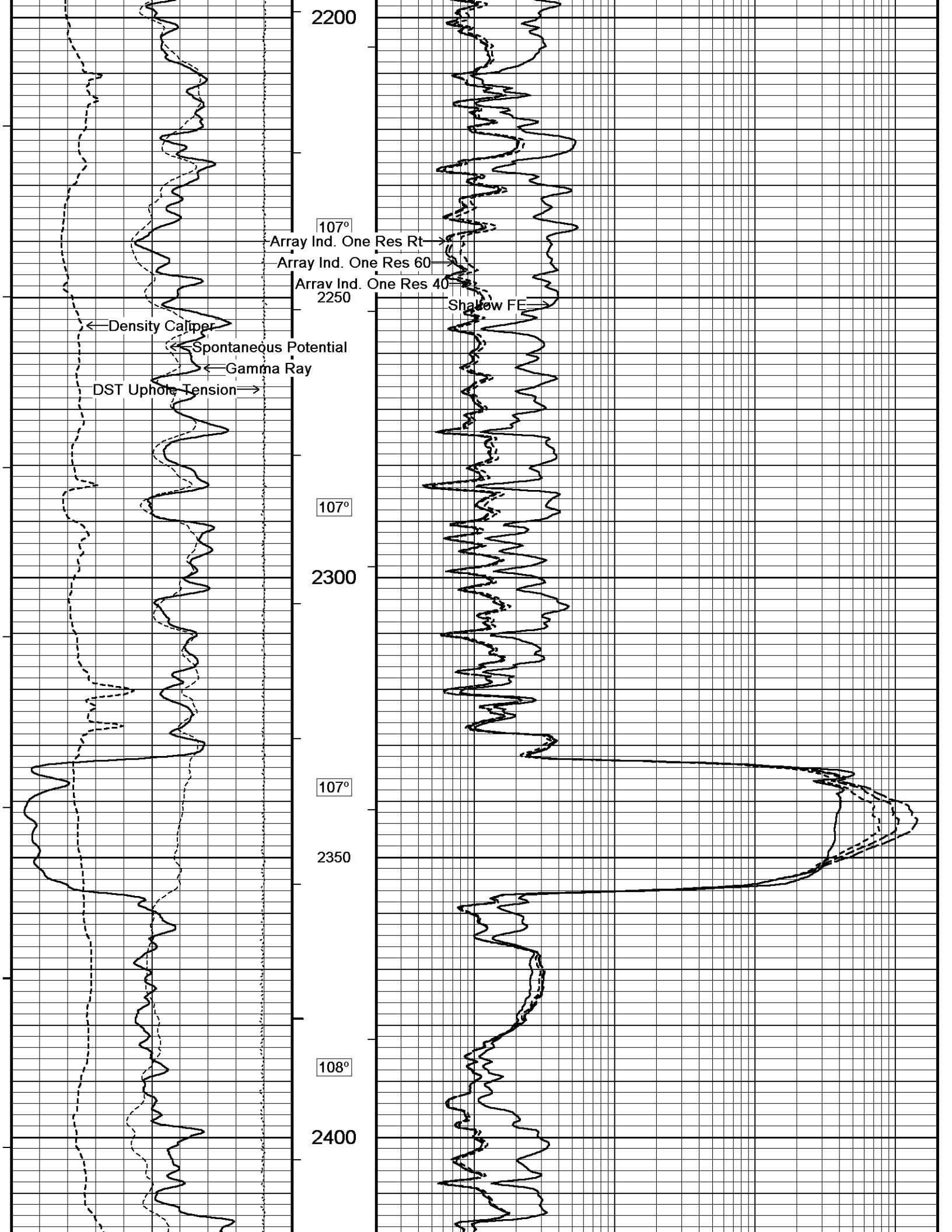

1100
100°
1150
100°
1200
100°
1250
100°
1300

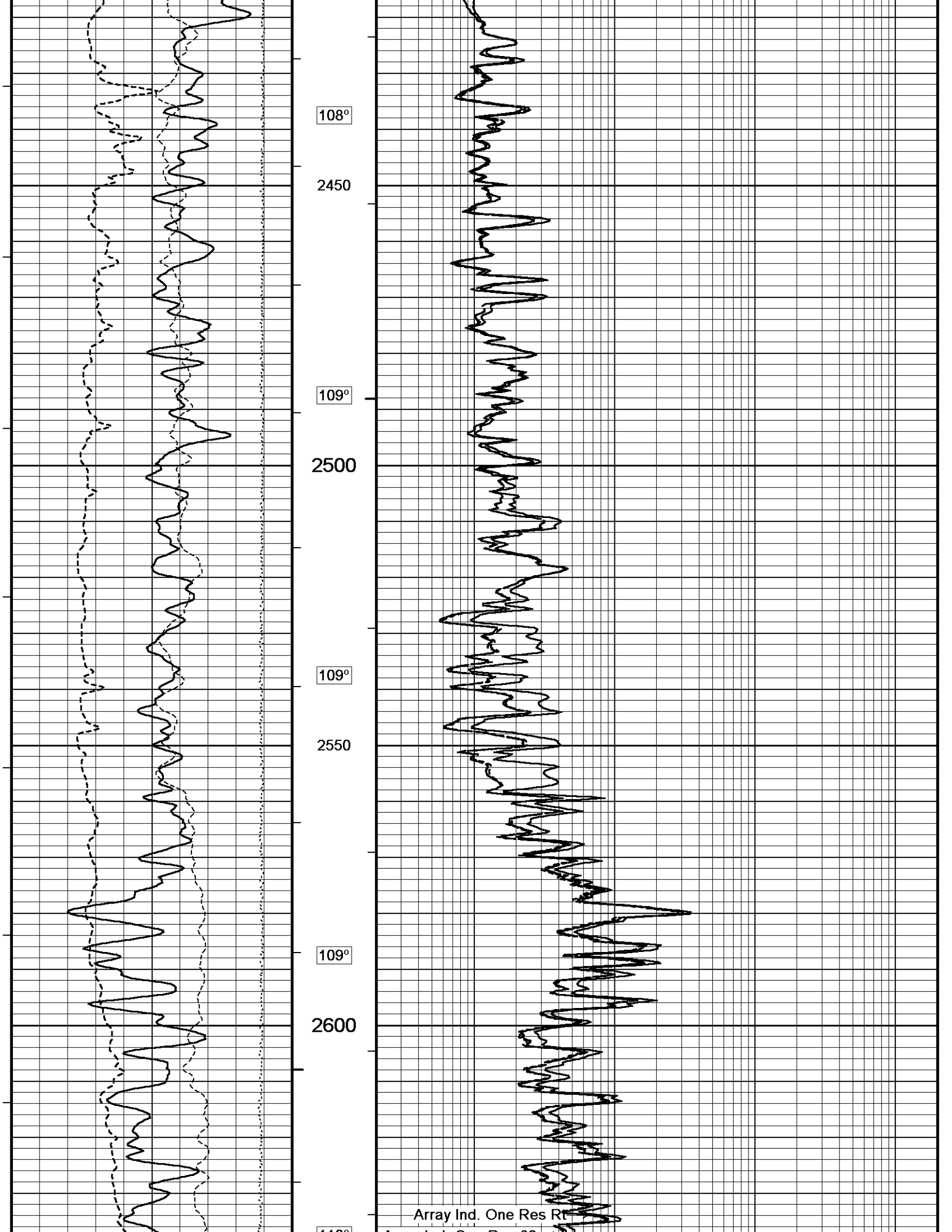

101°
1350
101°
1400
101°
1450
102°
1500
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension

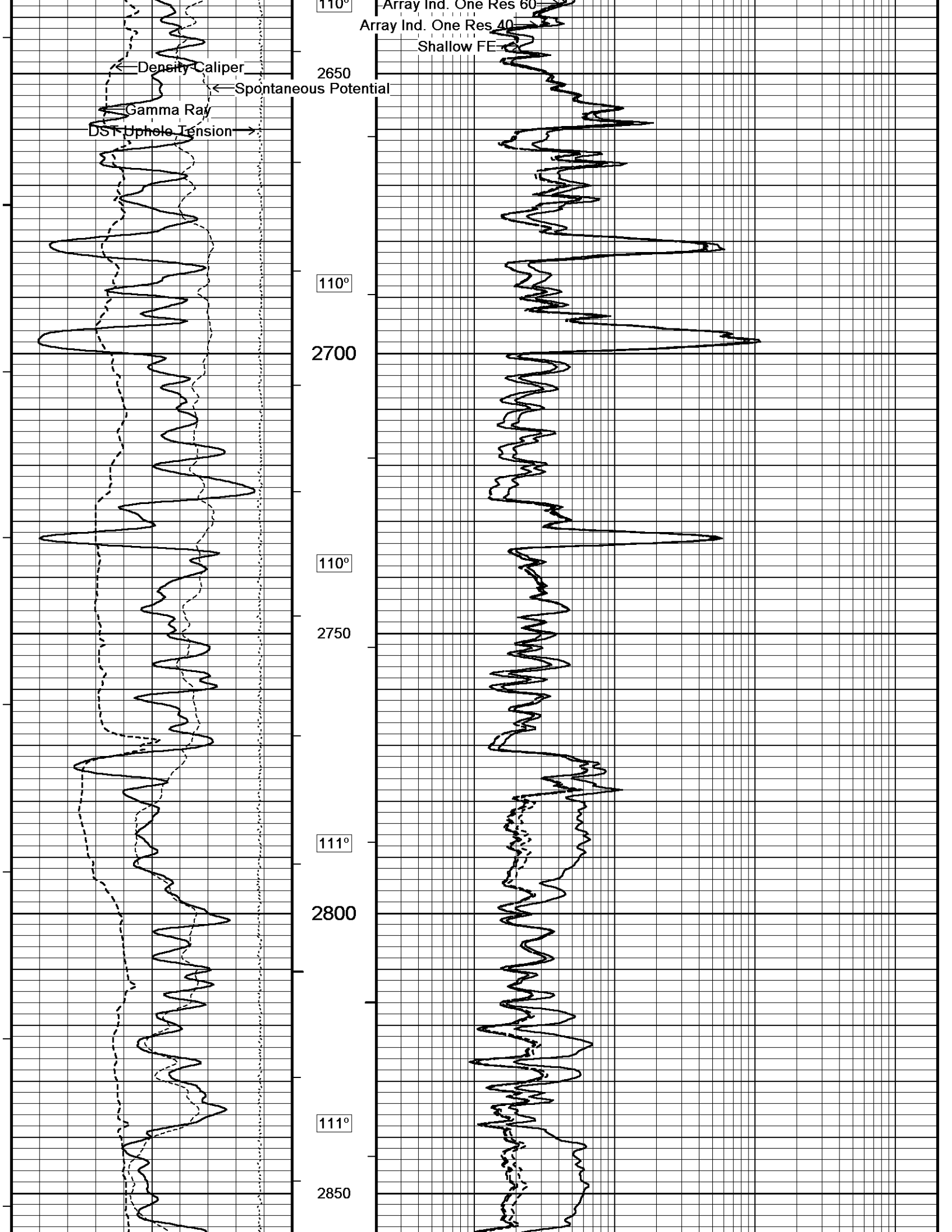

102°
1550
103°
1600
103°
1650
104°
1700
104°
1750

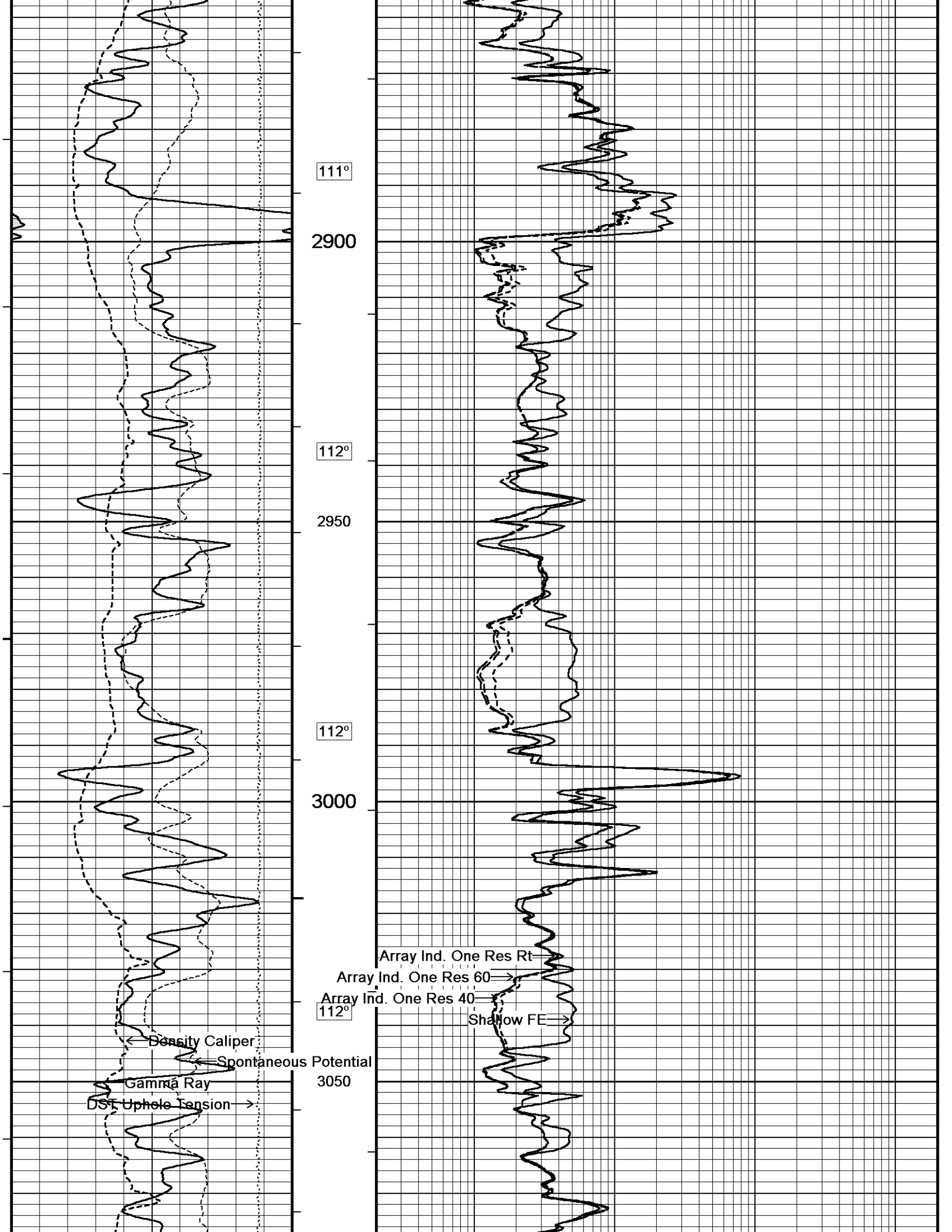

105°
1800
105°
Array Ind. One Res Rt
1850
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
106°
1900
106°
1950

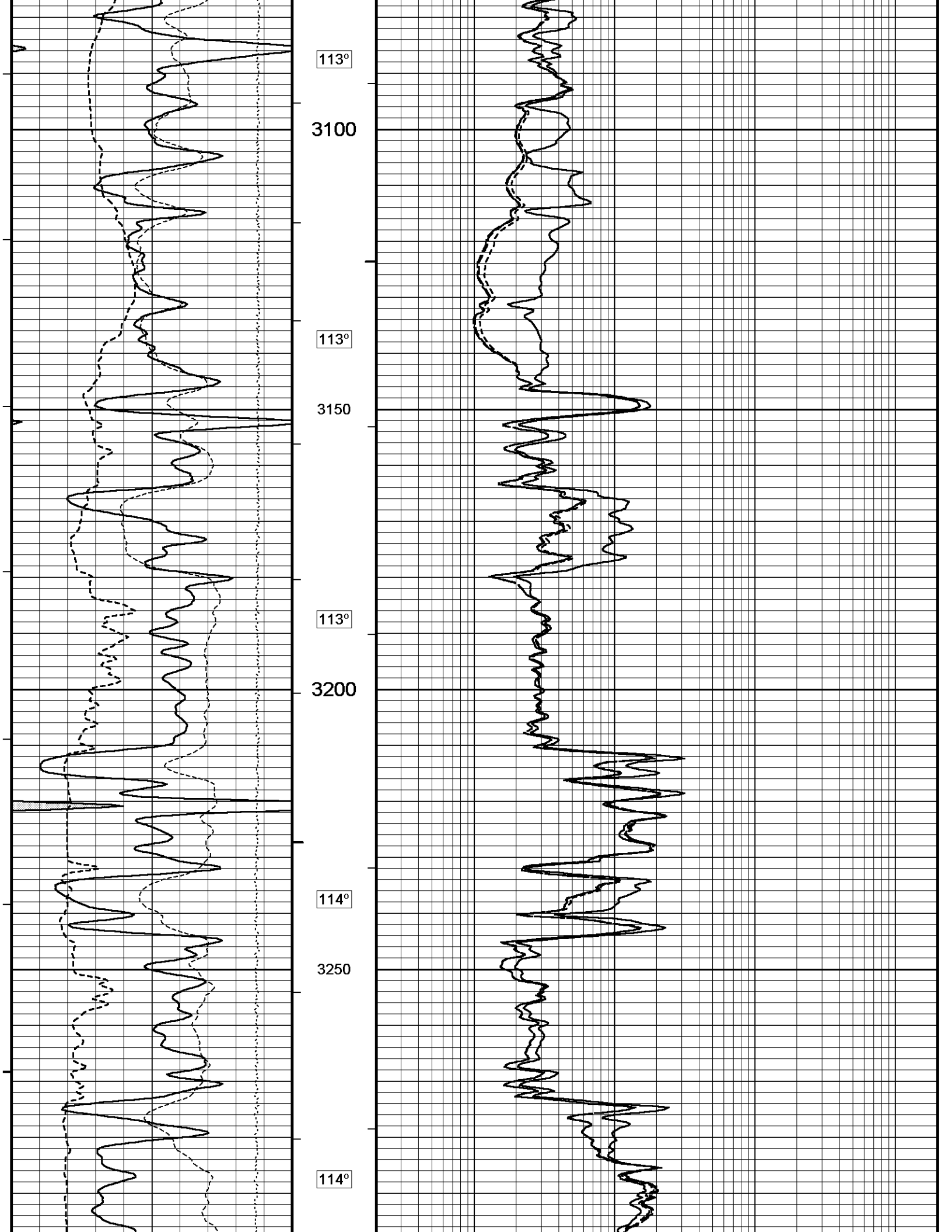

106°
2000
106°
2050
106°
2100
106°
2150
107°

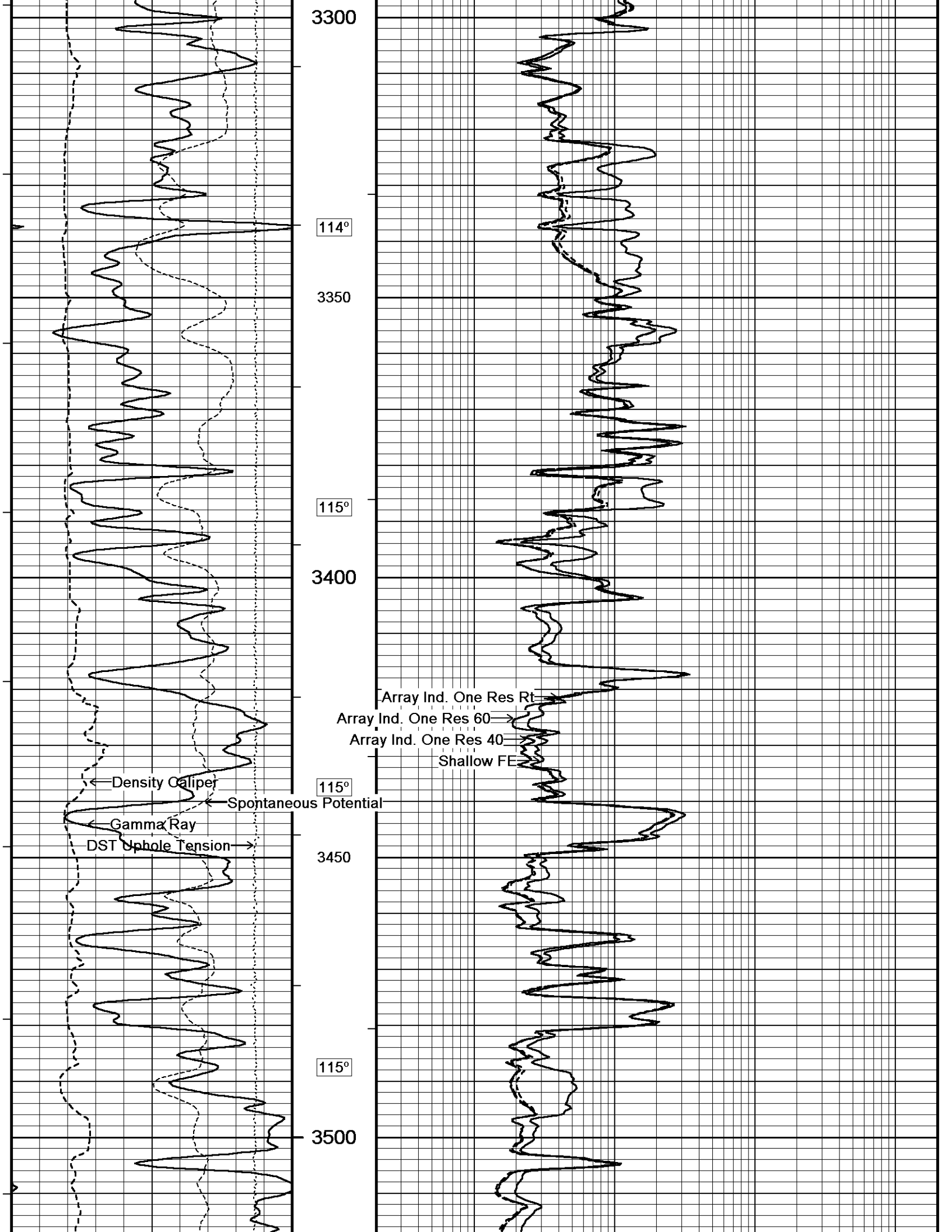

2200
107°
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
2250
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
107°
2300
107°
2350
108°
2400

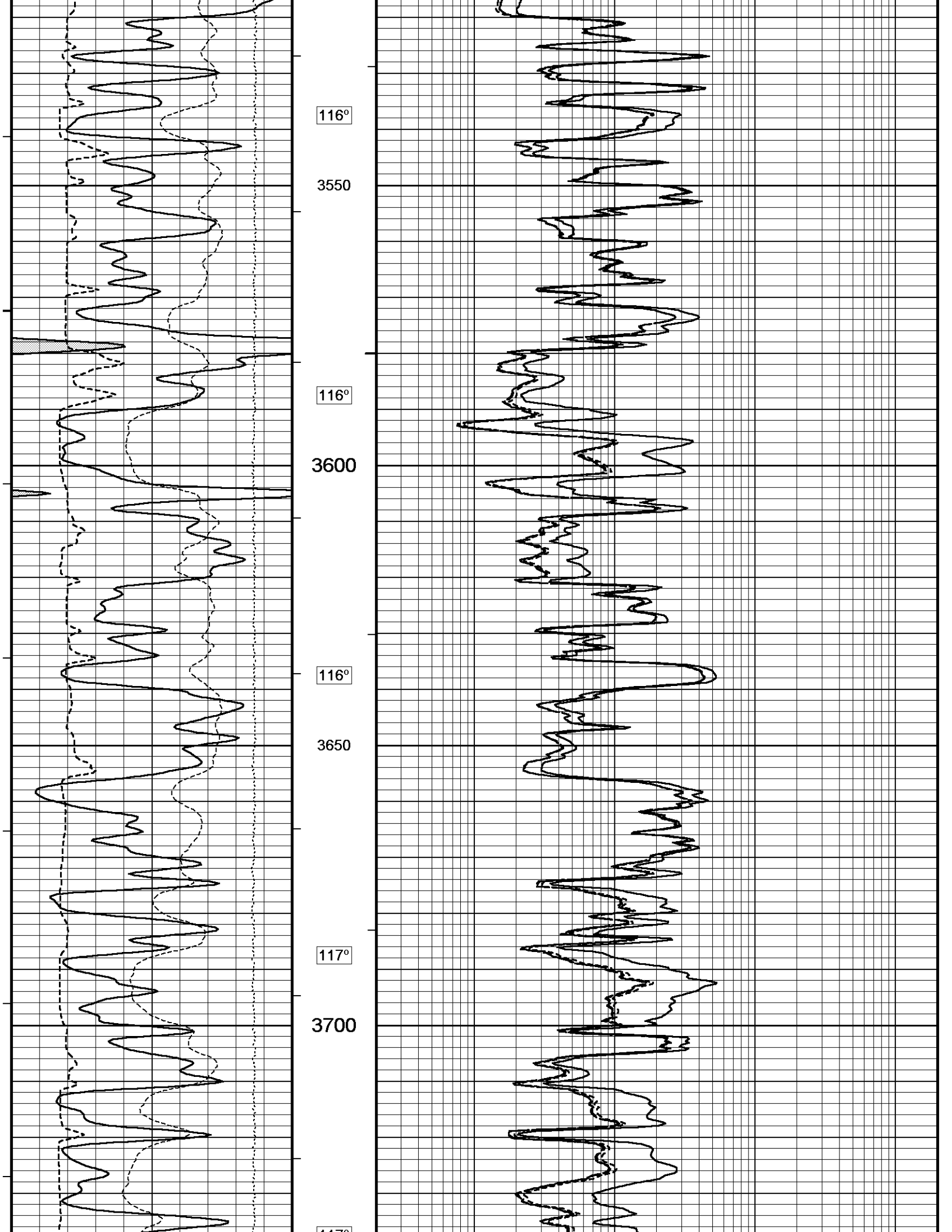

108°
2450
109°
2500
109°
2550
109°
2600
Array Ind. One Res Rt

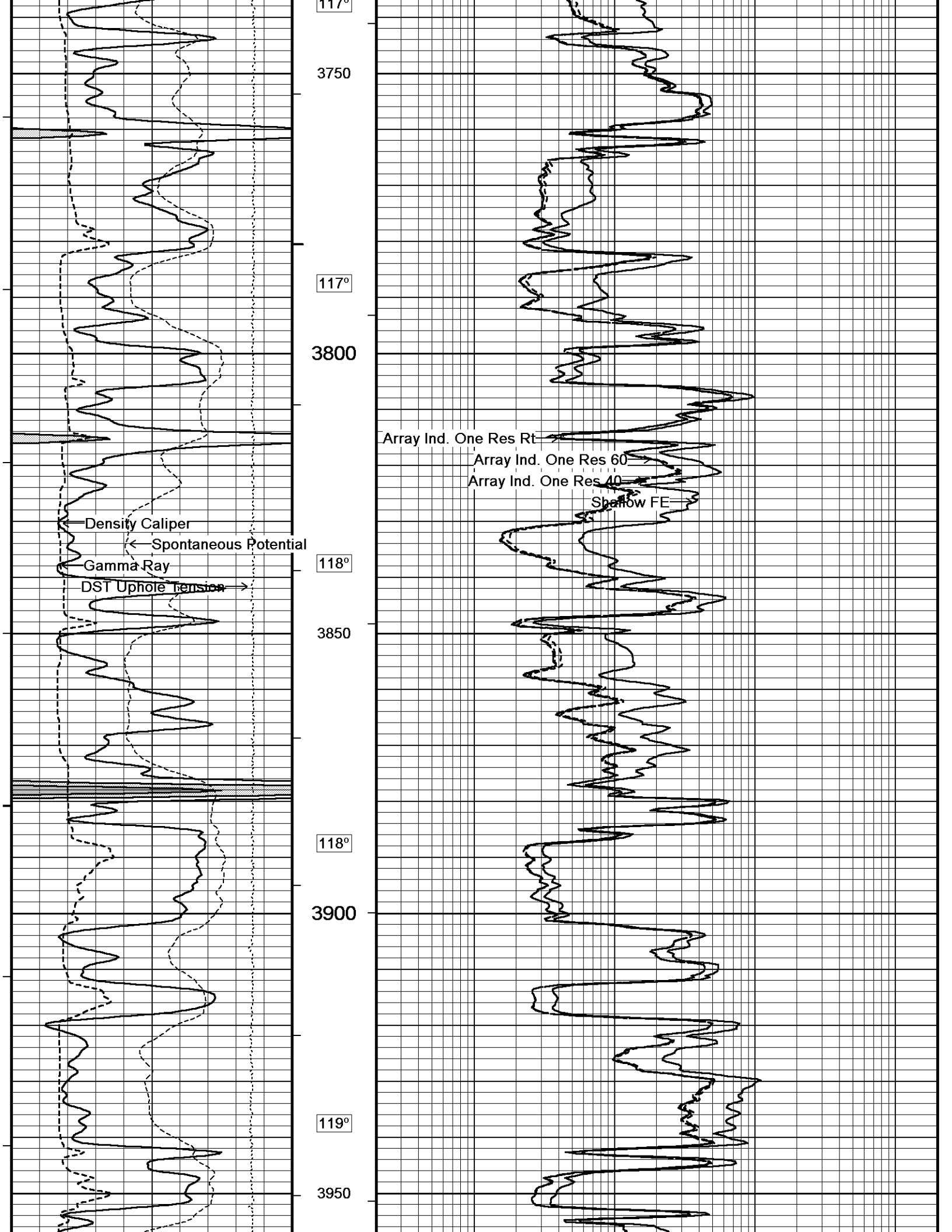

Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
110°
2650
110°
2700
110°
2750
111°
2800
111°
2850

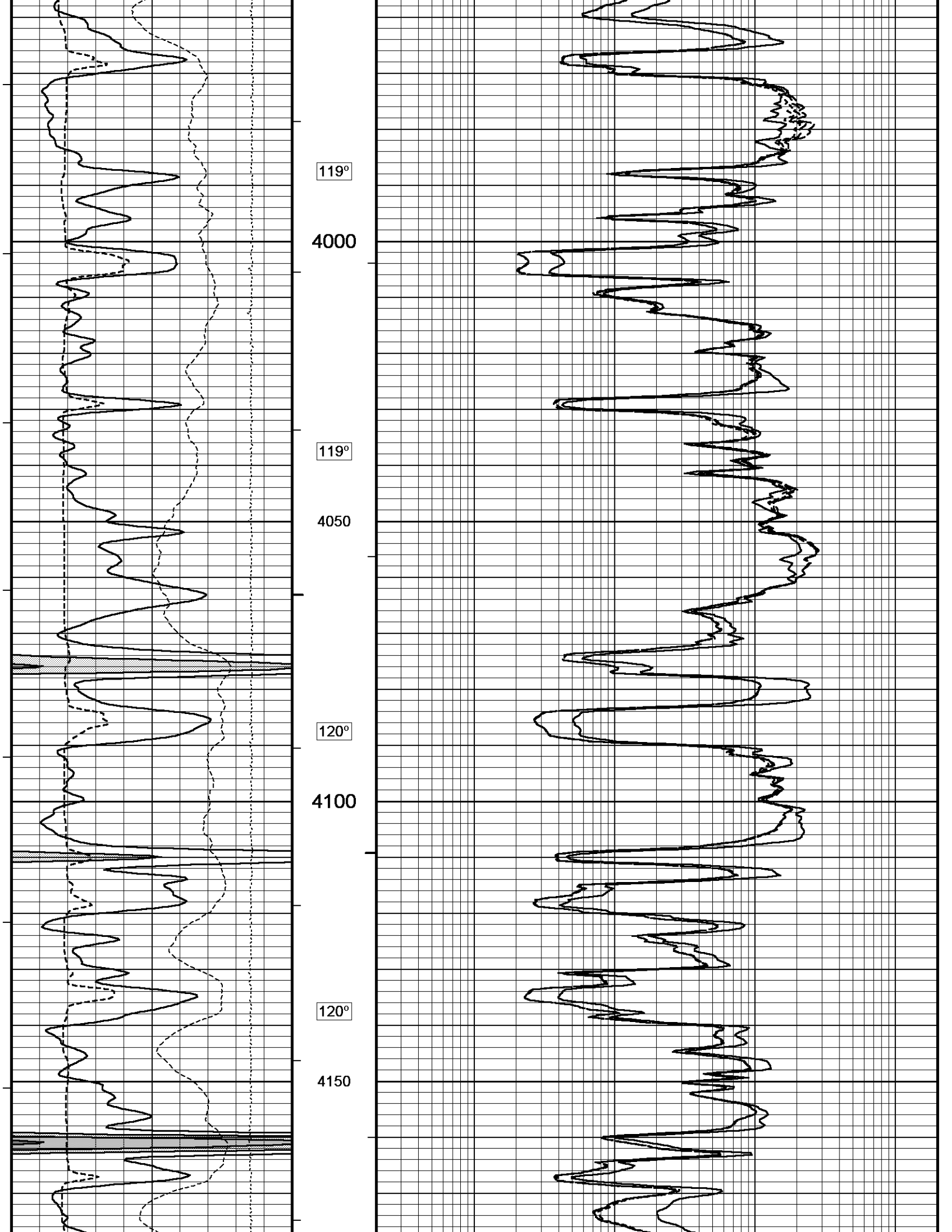

111°
2900
112°
2950
112°
3000
112°
3050
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension

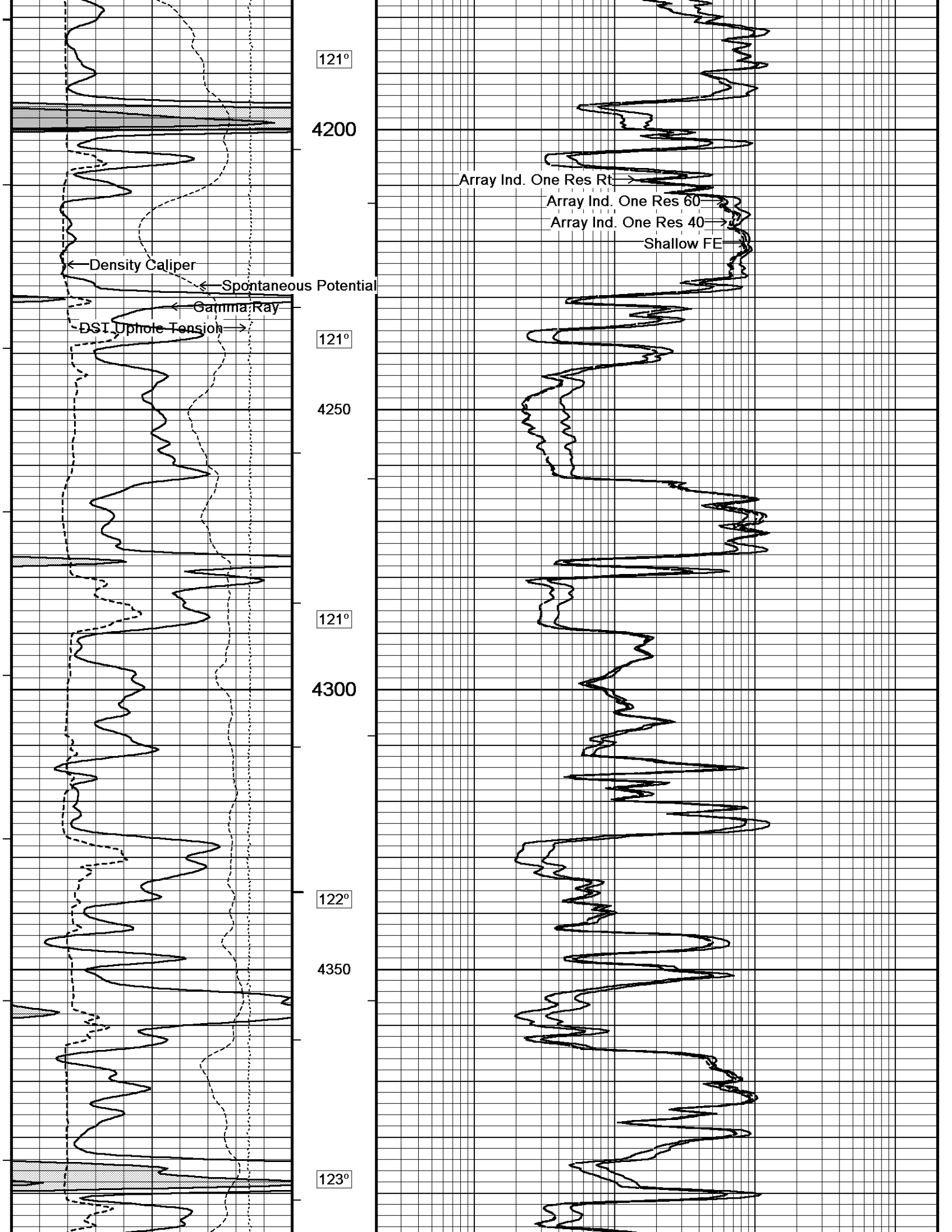

113°
3100
113°
3150
113°
3200
114°
3250
114°

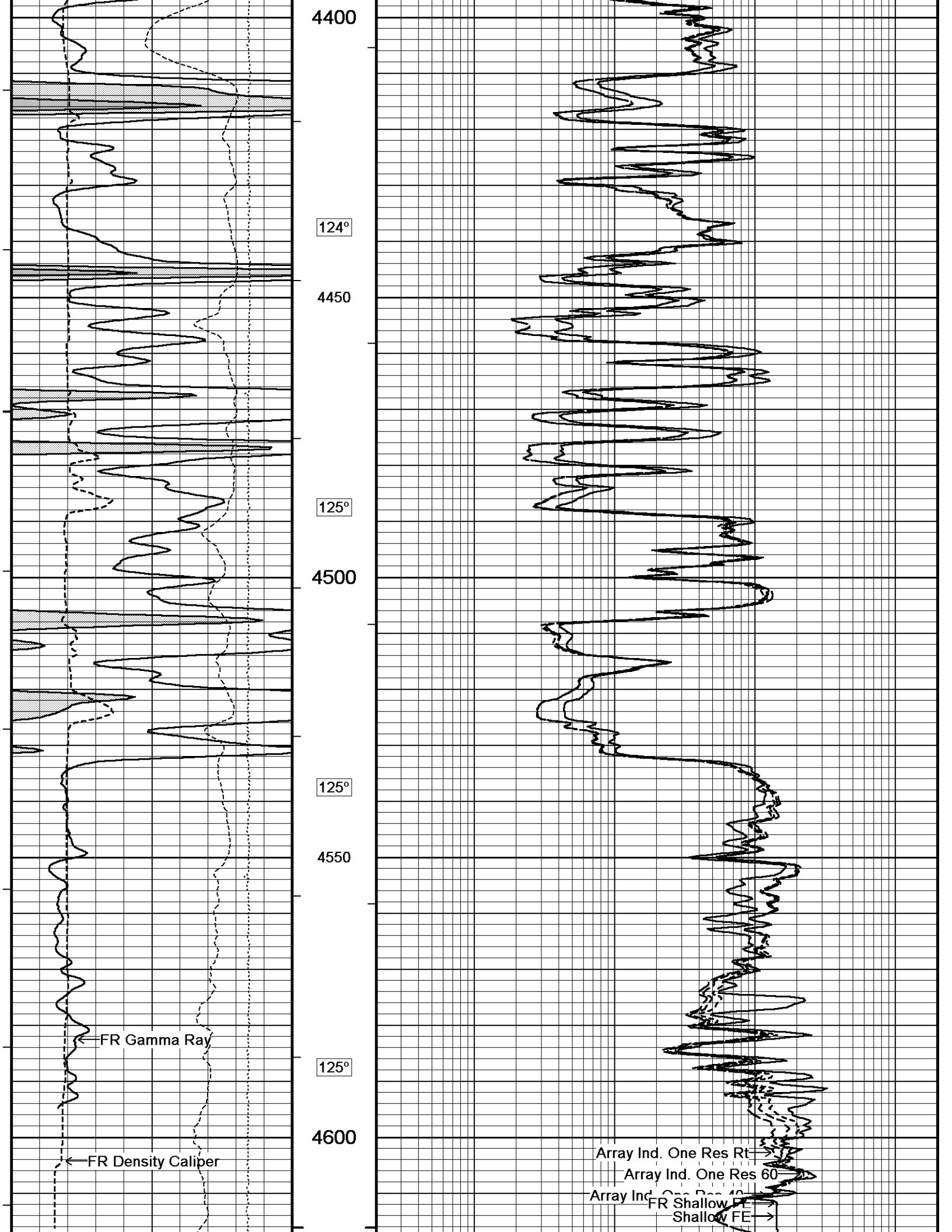

3300
114°
3350
115°
3400
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
115°
Spontaneous Potential
Gamma Ray
DST Uphole Tension
3450
115°
3500

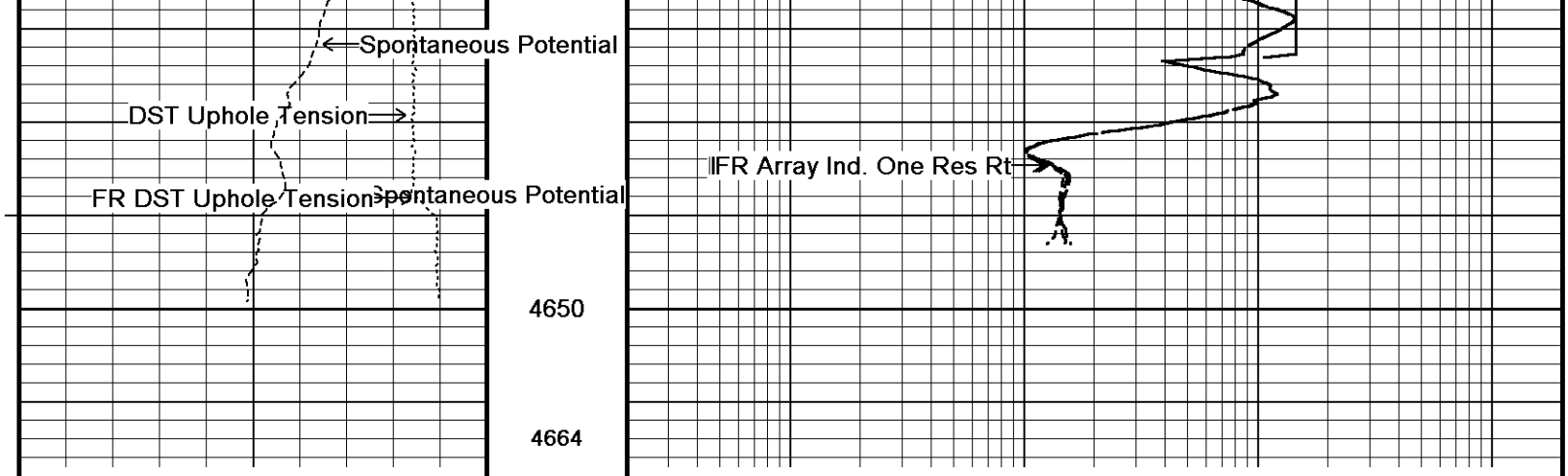

116°
3550
116°
3600
116°
3650
117°
3700


117°
3750
117°
3800
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
118°
3850
118°
3900
119°
3950


119°
4000
119°
4050
120°
4100
120°
4150


121°
4200
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DSI Uphole Tension
121°
4250
121°
4300
122°
4350
123°


4400
124°
4450
125°
4500
125°
4550
125°
4600
FR Gamma Ray
FR Density Caliper
Array Ind. One Res Rt
Array Ind. One Res 60
FR Shallow FE
Shallow FE



Depth in Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

Spontaneous Potential
millivolts
− 20 +

Density Caliper
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

Shallow FE
ohm metres
0.20 1 10 100 2000

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

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

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

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 04-JUN-2012 02:26
Filename: C:\Minimus 11.03.4044\Data\Gra...\Grand Mesa Operating Company Phillip # 1-26 Splice.dta
Recorded on 03-JUN-2012 22:06
System Versions: Plotted with 11.03.4044

5 INCH MAIN PASS

10 INCH HI RESOLUTION

Depth Based Data - Maximum Sampling Increment 2.5cm
Plotted on 04-JUN-2012 02:26
Filename: C:\Minimus 11.03.4044\Data\Gran...\Grand Mesa Operating Company Phillip # 1-26_006.dta
Recorded on 03-JUN-2012 23:05
System Versions: Logged with 11.03.4044 Processed with 11.03.4044 Plotted with 11.03.4044

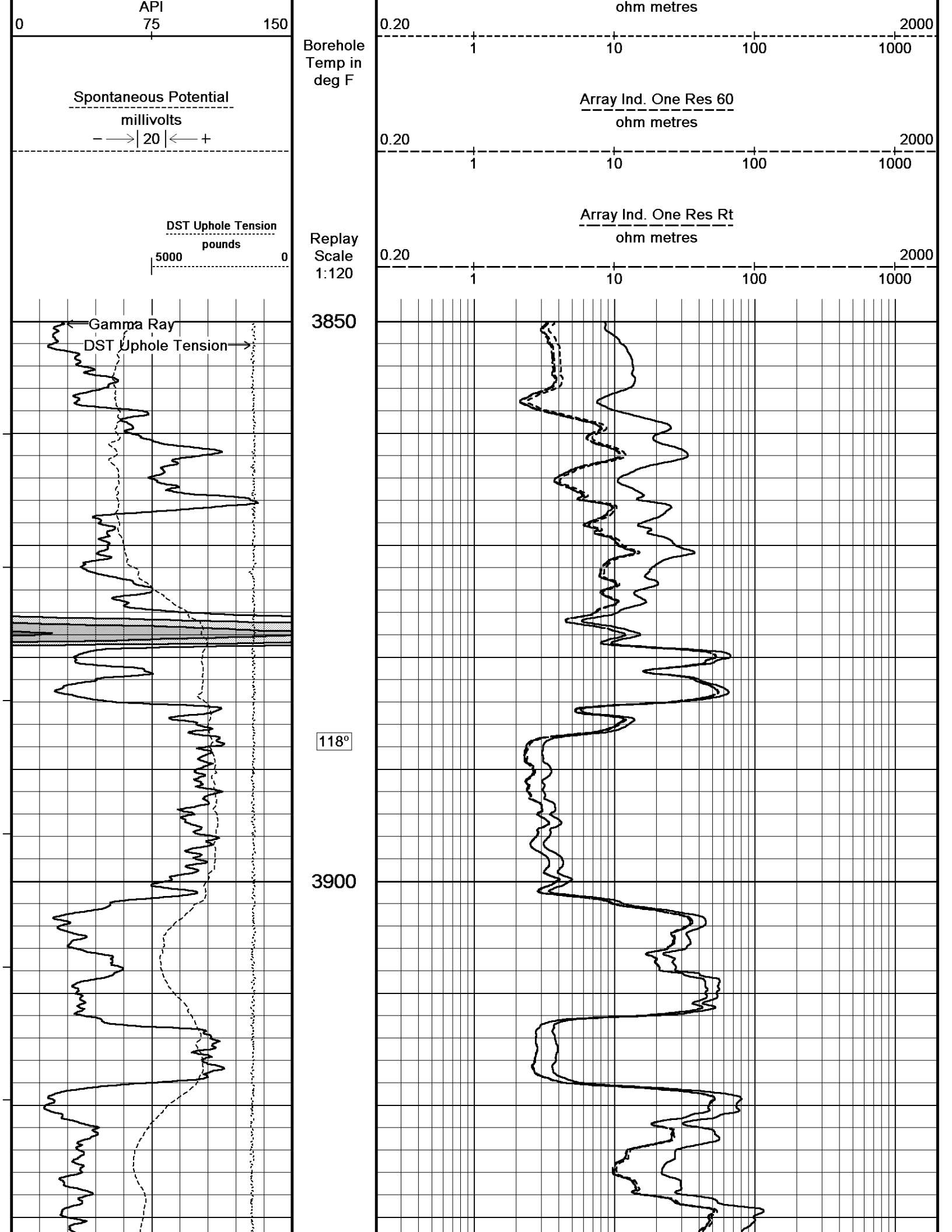
Depth in Feet

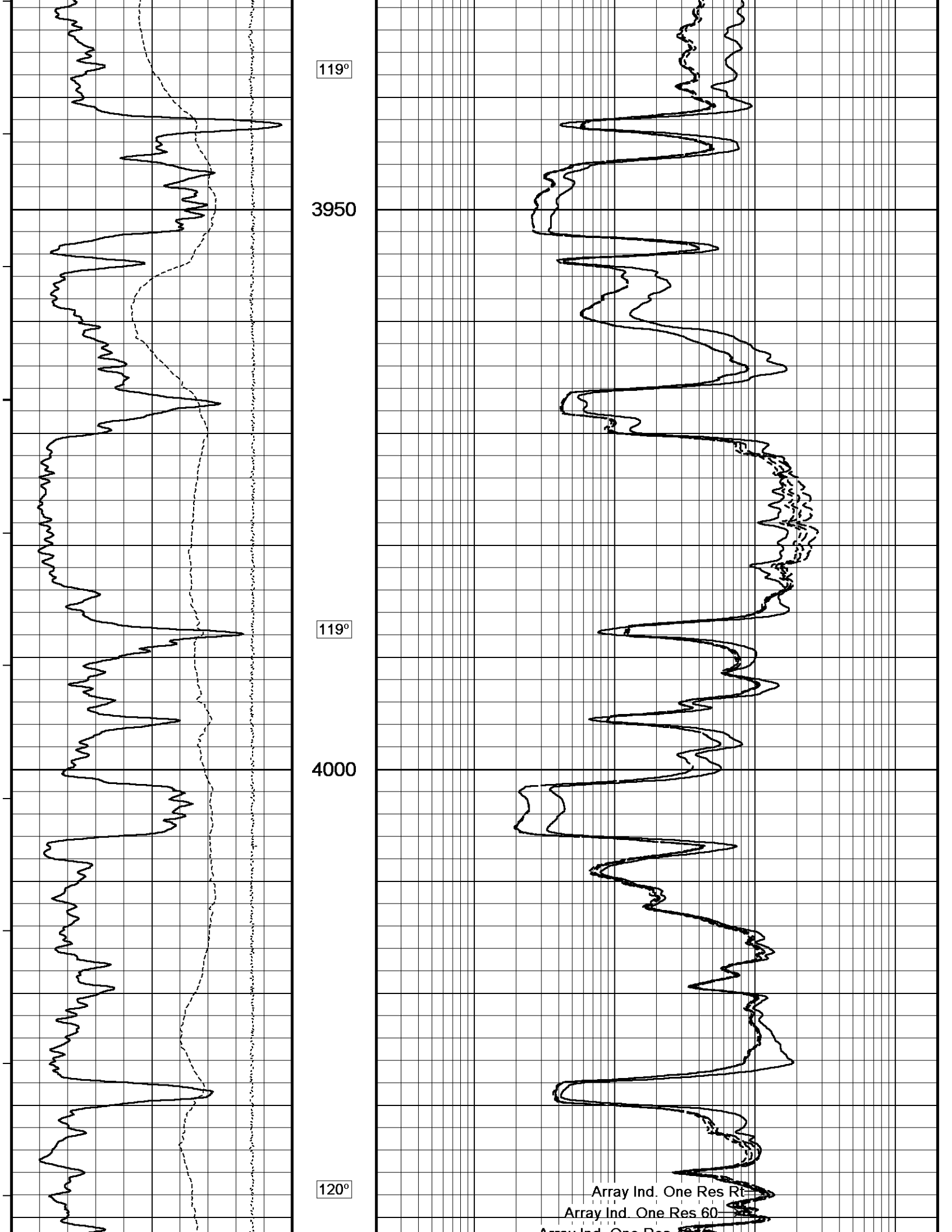
Timing Marks
every 60.0 sec

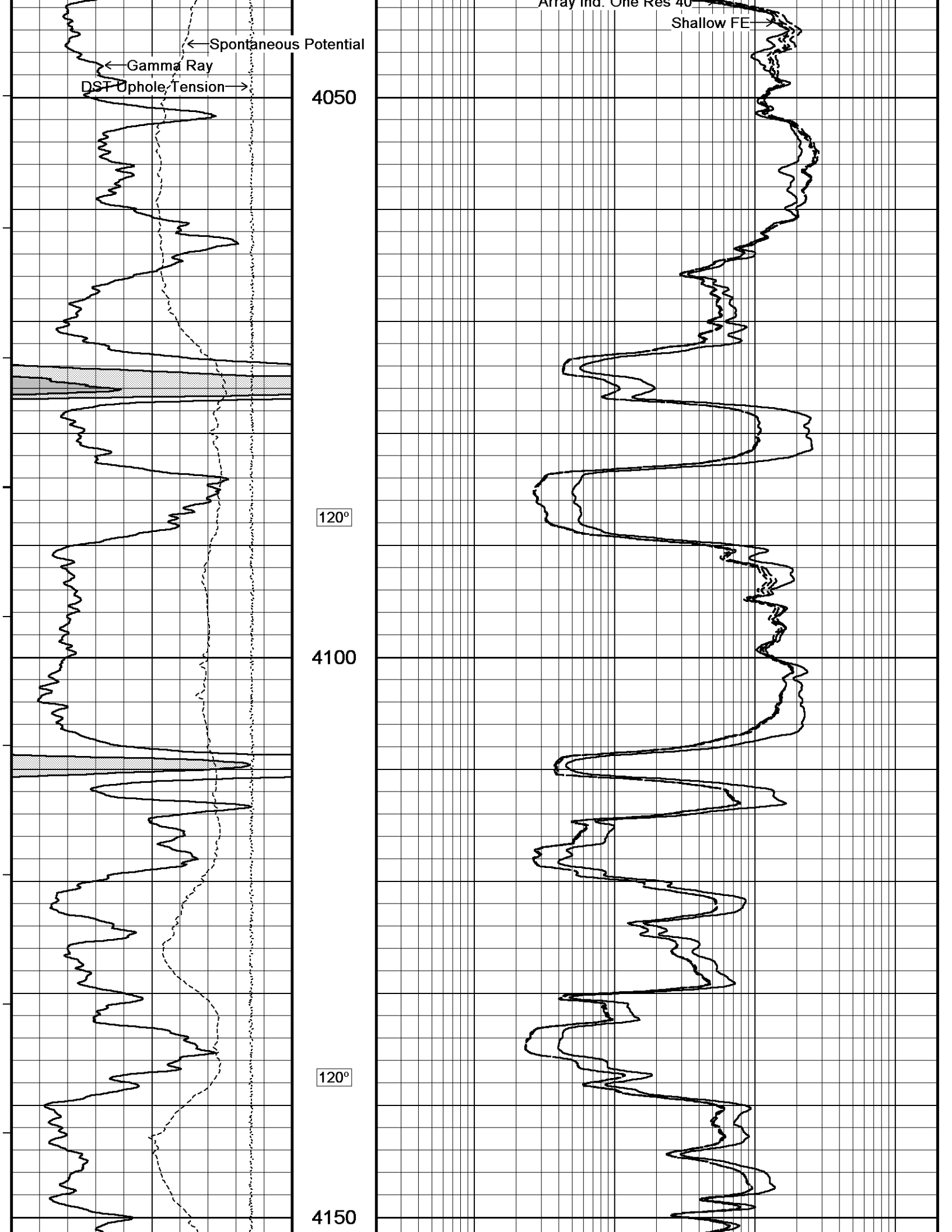
Gamma Ray

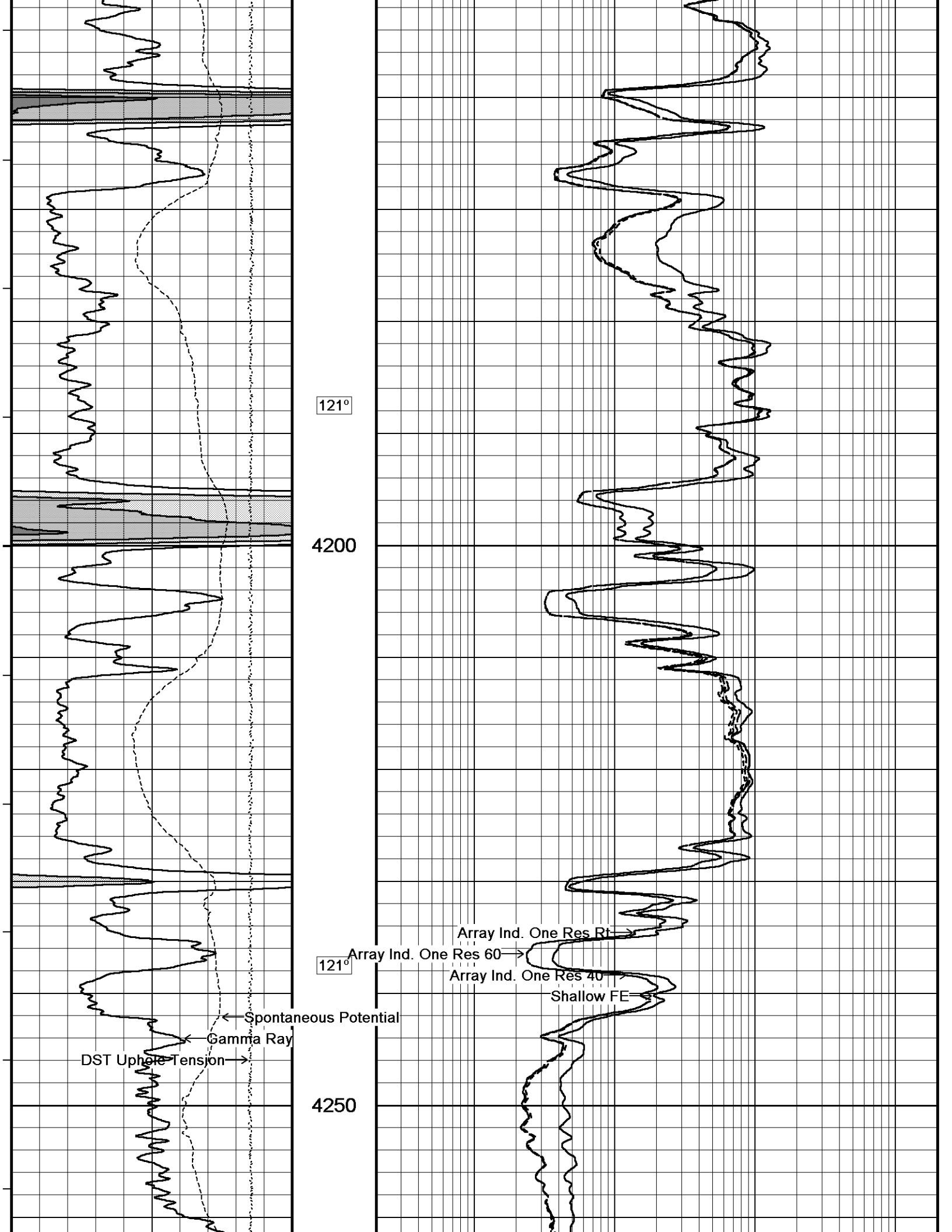
Shallow FE
ohm metres
0.20 1 10 100 2000

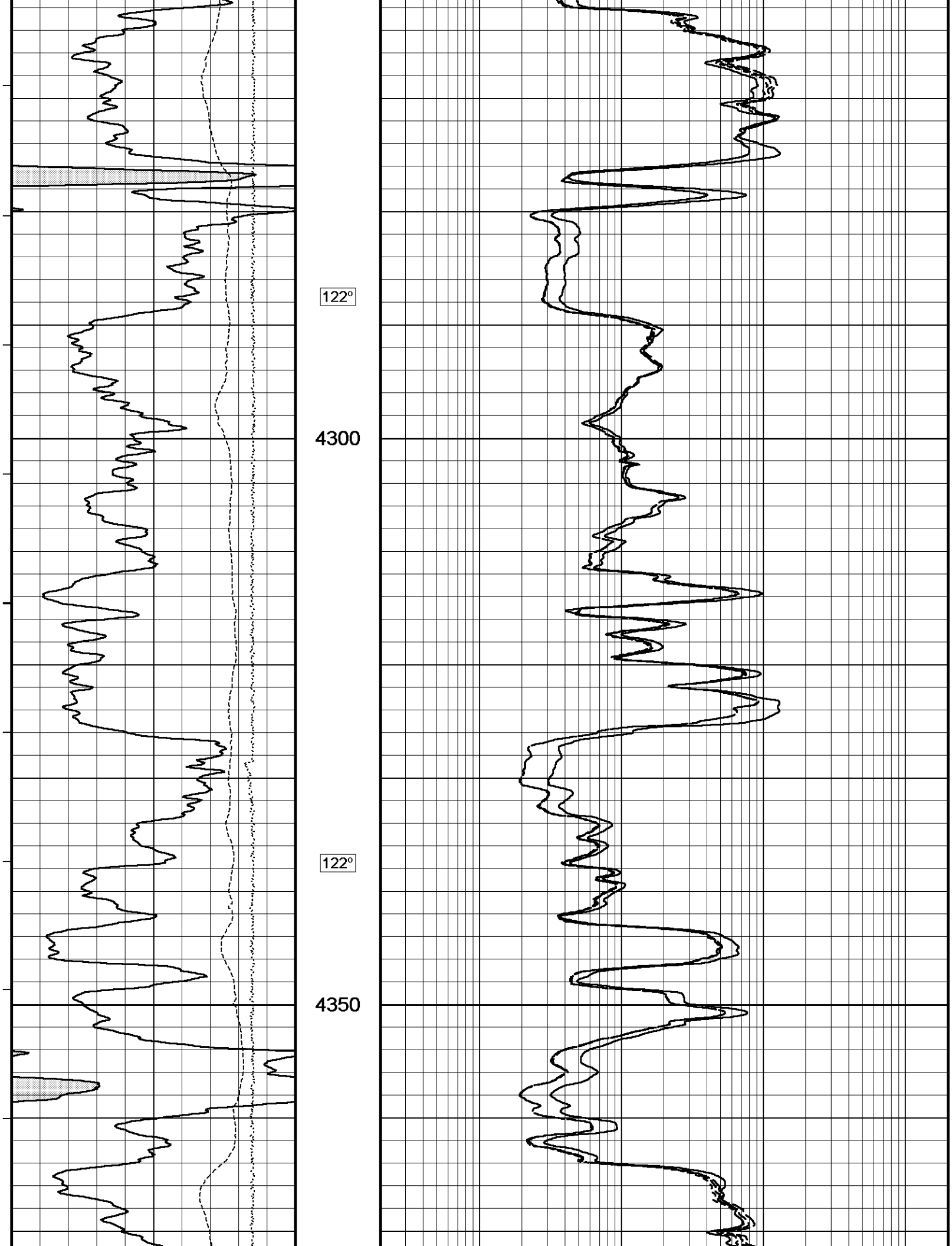
Array Ind. One Res 40

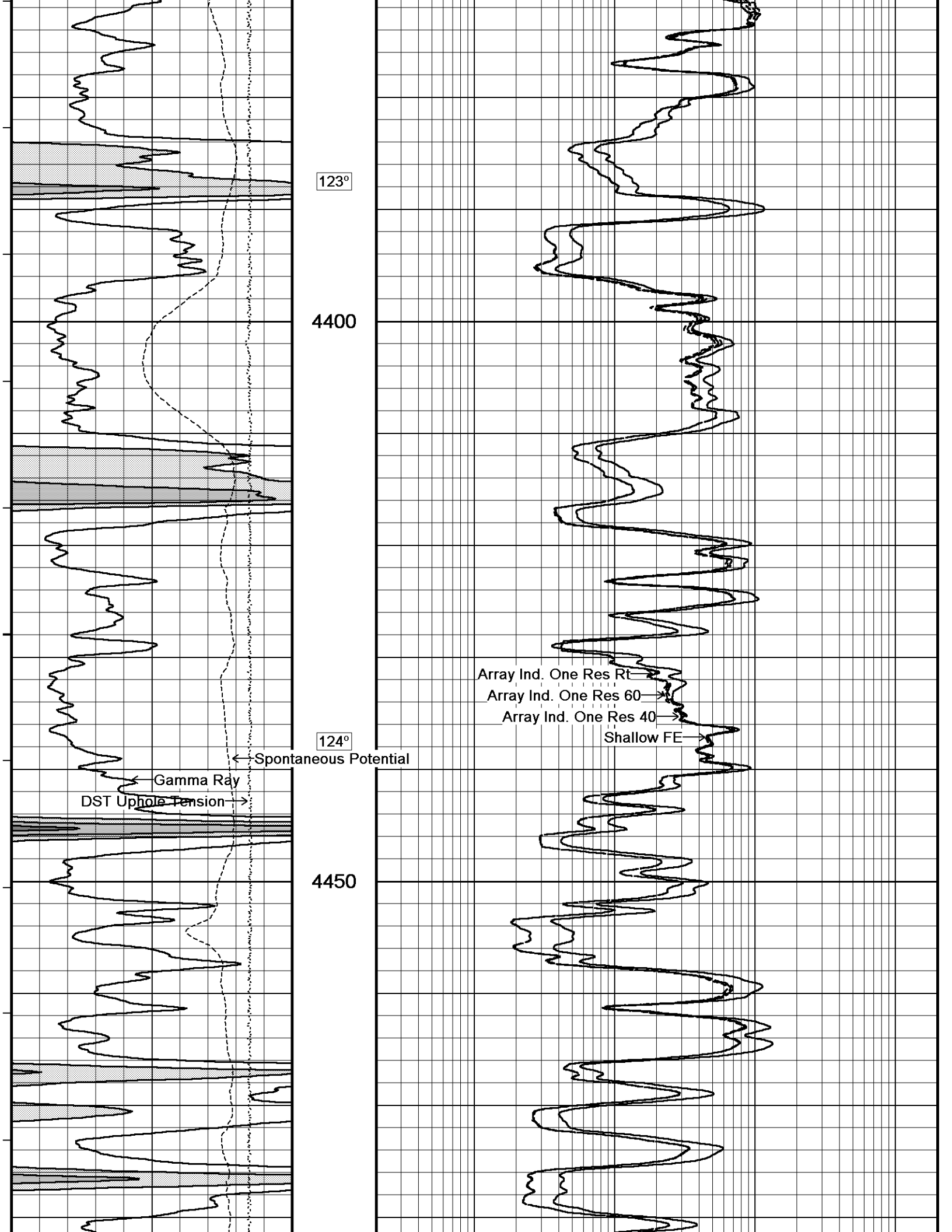

API
0
75
150
Spontaneous Potential
millivolts
– → | 20 | ← +
DST Uphole Tension
pounds
5000
0
Gamma Ray
DST Uphole Tension
Borehole Temp in deg F
Replay Scale 1:120
3850
118°
3900
ohm metres
0.20
2000
1
10
100
1000
Array Ind. One Res 60
ohm metres
0.20
2000
1
10
100
1000
Array Ind. One Res Rt
ohm metres
0.20
2000
1
10
100
1000

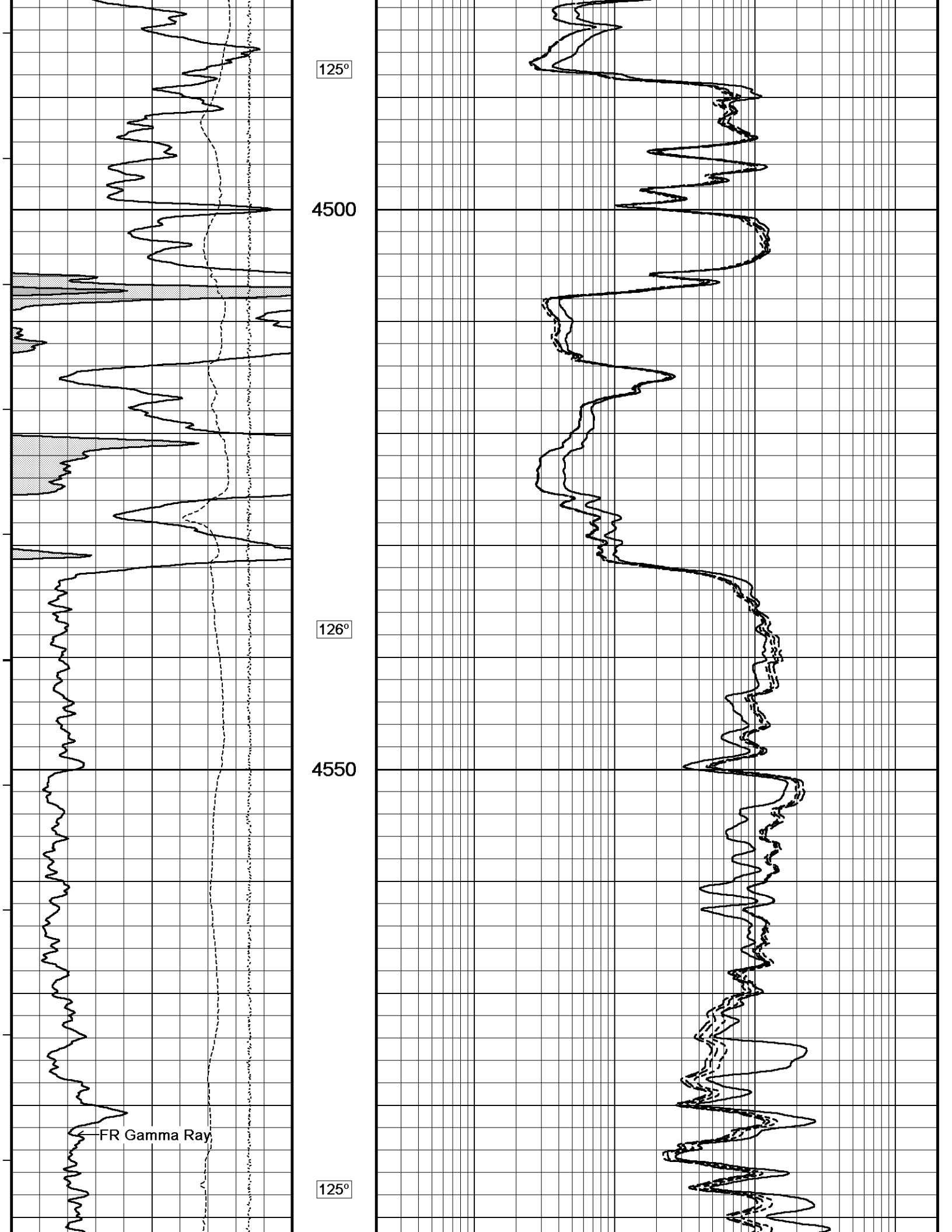

119°
3950
119°
4000
120°
Array Ind. One Res Rt
Array Ind. One Res 60

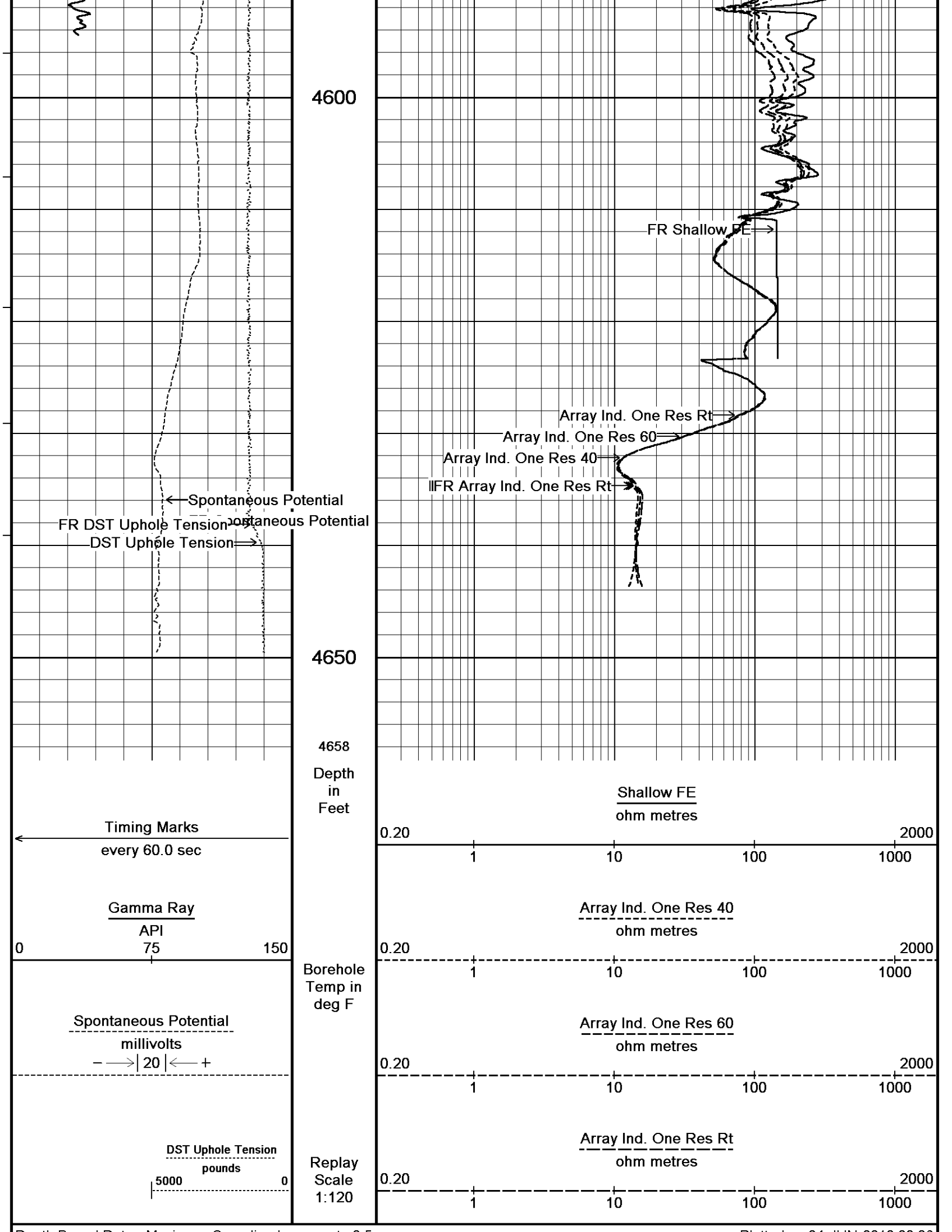

Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
4050
120°
4100
120°
4150


121°
4200
121°
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
4250


122°
4300
122°
4350


123°
4400
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
124°
Spontaneous Potential
Gamma Ray
DST Uphole Tension
4450


125°
4500
126°
4550
FR Gamma Ray
125°


4600
4650
4658
FR Shallow FE
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
IFR Array Ind. One Res Rt
Spontaneous Potential
FR DST Uphole Tension
Spontaneous Potential
DST Uphole Tension
Depth
in
Feet
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
Spontaneous Potential
millivolts
20
DST Uphole Tension
pounds
5000
0
Borehole
Temp in
deg F
Replay
Scale
1:120
Shallow FE
ohm metres
0.20
2000
1
10
100
1000
Array Ind. One Res 40
ohm metres
Array Ind. One Res 60
ohm metres
Array Ind. One Res Rt
ohm metres

Depth Based Data - Maximum Sampling Increment 2.5cm — Plotted on 04-JUN-2012 02:26
Filename: C:\Minimus 11.03.4044\Data\Gran...\Grand Mesa Operating Company Phillip # 1-26_006.dta — Recorded on 03-JUN-2012 23:05
System Versions: Logged with 11.03.4044 Processed with 11.03.4044 Plotted with 11.03.4044

10 INCH HI RESOLUTION

5 INCH REPEAT PASS

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 04-JUN-2012 02:26
Filename: C:\Minimus 11.03.4044\Data\Gran...\Grand Mesa Operating Company Phillip # 1-26_003.dta — Recorded on 03-JUN-2012 21:40
System Versions: Logged with 11.03.4044 Processed with 11.03.4044 Plotted with 11.03.4044

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

Spontaneous Potential
millivolts
− 20 +

Density Caliper
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

Shallow FE
ohm metres
0.20 1 10 100 1000 2000

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

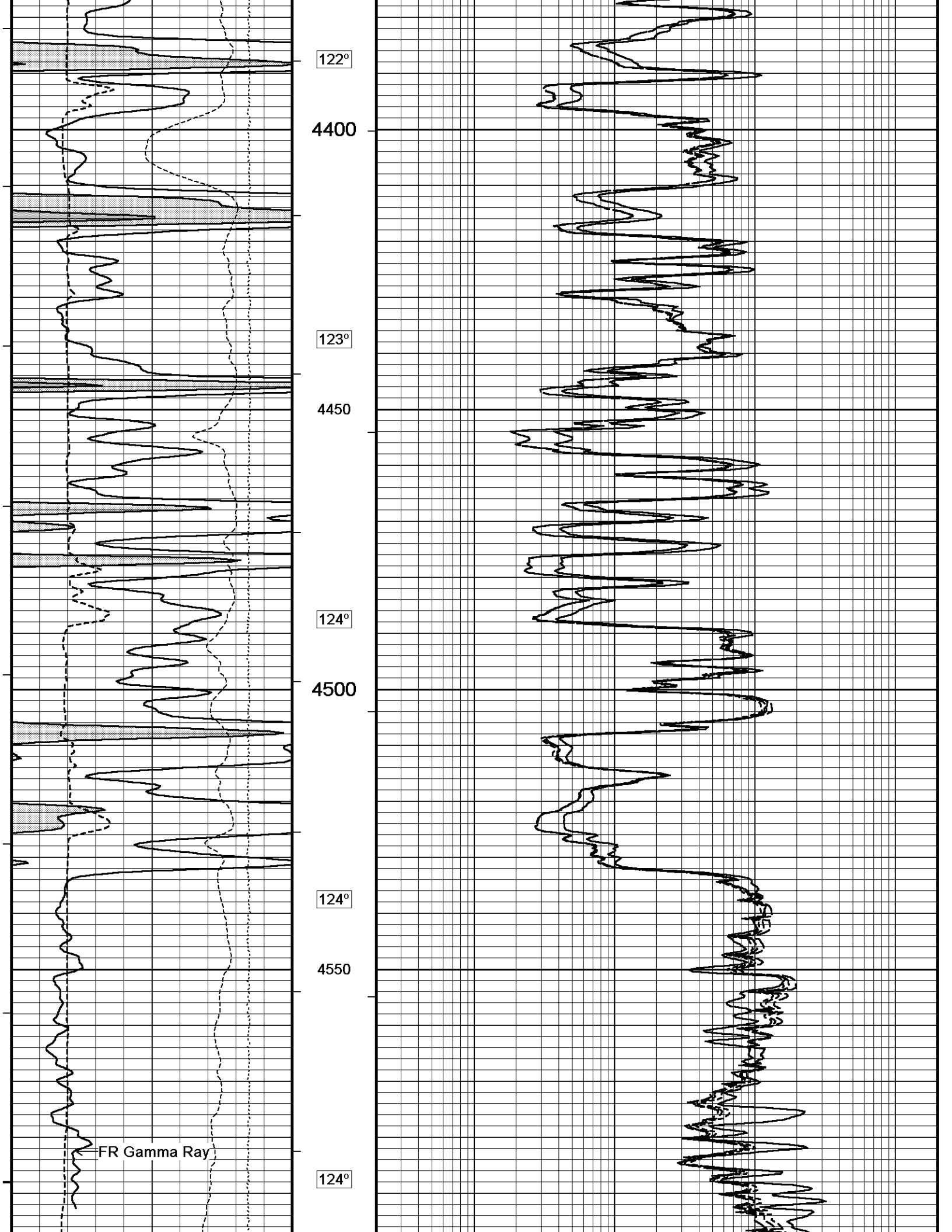
Array Ind. One Res 60
ohm metres
0.20 1 10 100 1000 2000

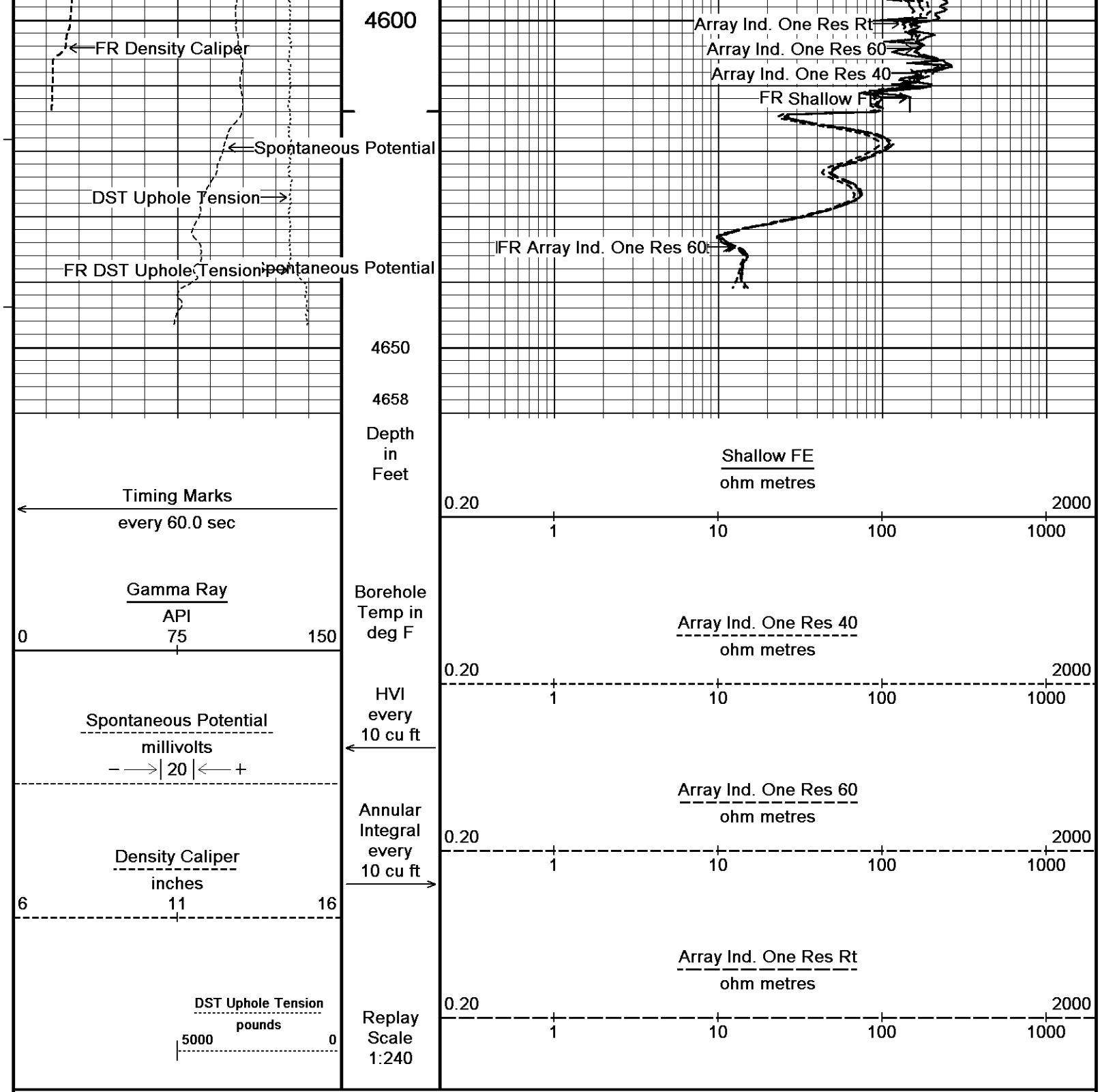
Array Ind. One Res Rt
ohm metres
0.20 1 10 100 1000 2000

4300

121°

4350


122°
4400
123°
4450
124°
4500
124°
4550
124°
FR Gamma Ray



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 04-JUN-2012 02:26

Filename: C:\Minimus 11.03.4044\Data\Gran...\Grand Mesa Operating Company Phillip # 1-26_003.dta — Recorded on 03-JUN-2012 21:40

System Versions: Logged with 11.03.4044 Processed with 11.03.4044 Plotted with 11.03.4044

5 INCH REPEAT PASS

BEFORE SURVEY CALIBRATION

C:\Minimus 11.03.4044\Data\Grand Mesa Operating Company Phillip # 1-26\Grand Mesa Operating Company Phillip # 1-26_003.dta

General Constants All 000 — Last Edited on 03-JUN-2012,20:21

General Parameters		
Mud Resistivity	0.920	ohm-metres
Mud Resistivity Temperature	81.000	degrees F
Water Level	0.000	feet
Density/Neutron Processing	Wet Hole	

Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	5.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. Four Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Gamma Calibration MCG-C 84

Field Calibration on 31-MAY-2012 09:46

	Measured	Calibrated (API)
Background	66	44
Calibrator (Gross)	1148	769
Calibrator (Net)	1082	725

Gamma Constants MCG-C 84

Last Edited on 03-JUN-2012,20:21

Gamma Calibrator Number	GR38	
Mud Density	1.10	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

SP Calibration MCG-C 84

Field Calibration on 28-MAY-2012,07:31

	Measured	Calibrated (mV)
Reference 1	103.5	100.0
Reference 2	-96.9	-100.0

High Resolution Temperature Calibration MCG-C 84

Field Calibration on 28-MAY-2012,07:32

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

High Resolution Temperature Constants MCG-C 84

Last Edited on

Pre-filter Length	11

Caliper Calibration MML-A 16

Base Calibration on 23-MAY-2012 11:59
Field Calibration on 31-MAY-2012 09:39

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14501	5.98
2	17771	7.97
3	21107	9.86
4	24905	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.01	5.98

Micro Normal and Micro Inverse Calibration MML-A 16

Base Calibration on 23-MAY-2012 12:04
Field Check on 31-MAY-2012 09:40

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.2	60.2	5.0	25.0
Micro Inverse	15.6	78.3	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-2012,13:49

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 65

Base Calibration on 23-MAY-2012 14:31
Field Check on 31-MAY-2012 09:51

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3164	98	3714	110
Ratio	32.187		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1615	2315
Ratio	0.697	

Field Check

	Calibrated (cps)	
	1630	2345
Ratio	0.695	

Neutron Constants MDN-A.B 65

Last Edited on 03-JUN-2012,20:22

Neutron Source Id	PN-521	
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	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 55

Base Calibration on 23-MAY-2012 09:37
Field Check on 31-MAY-2012 09:30

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	951.5	126.8
Base Check		281.5
Field Check		281.6

FE Constants MFE-A.A 55

Last Edited on 03-JUN-2012,13:50

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 55

Last Edited on 06-JAN-2011,18:39

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 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

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 45

Base Calibration on 12-JAN-2012,13:34
Field Check on 31-MAY-2012 09:29

Base Calibration

Test Loop Calibration Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) 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 79.4 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1	0.0	0.0	18.3	3851.3
2	0.0	0.0	31.6	3629.3
3	0.0	0.0	28.5	3049.3
4	0.0	0.0	18.2	2079.0
Deep	0.0	0.0	16.0	1911.0
Medium	0.0	0.0	42.4	4060.5
Shallow	0.0	0.0	49.4	5483.1

Array Temperature	0.0	70.7	Deg F

Induction Constants MAI-A.A 45

Last Edited on 03-JUN-2012,20:22

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	

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 12-JAN-2012,13:36

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

High Resolution Temperature Constants MAI-A.A 45

Last Edited on 12-JAN-2012,11:13

Pre-filter Length	11

Caliper Calibration MPD-B 59

Base Calibration on 16-MAY-2012 14:32
Field Calibration on 31-MAY-2012 09:33

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	19200	3.99
2	29152	5.98
3	39216	7.97
4	48949	9.86
5	60064	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.93	5.98

Photo Density Calibration MPD-B 59

Base Calibration on 16-MAY-2012 14:49
Field Check on 31-MAY-2012 09:38

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far

Reference 1	49293	24802	59556	30836
Reference 2	20819	2436	24941	2541

Field Check at Base

1213.5 1290.5

Field Check

1206.1 1292.9

PE Calibration

Base Calibration	WS	Measured WH	Ratio	Calibrated Ratio
Background	220	1092		
Reference 1	18022	49118	0.371	0.371
Reference 2	5449	20689	0.267	0.272

Field Check at Base

220.3 1091.9

Field Check

221.9 1084.8

Density Constants MPD-B 59

Last Edited on 03-JUN-2012,20:22

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	1.10	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	

DOWNHOLE EQUIPMENT

C:\Minimus 11.03.4044\Data\Grand Mesa Operating Company Phillip # 1-26\Grand Mesa Operating Company Phillip # 1-26_003.dta

MCB-A.A 11B Tension Cablehead
MCB-A.A 155 LG: 2.40 ft WT: 19.8 lb OD: 2.24 in

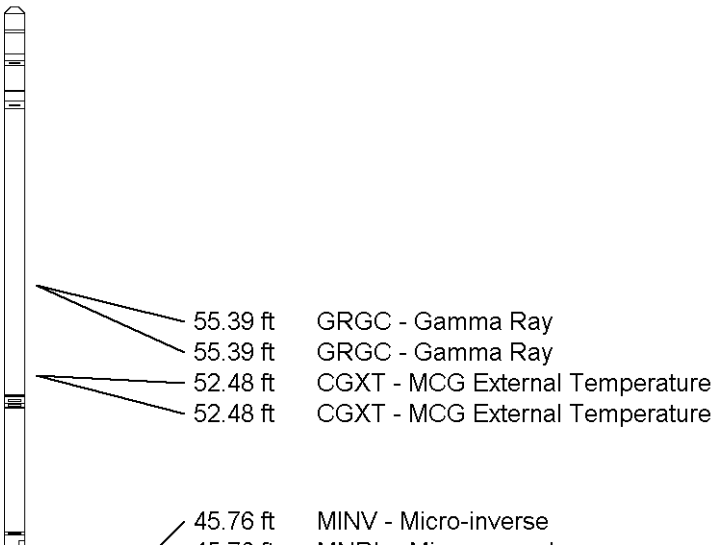
MCB-A.A 11B Tension Cablehead
MCB-A.A 155 LG: 2.40 ft WT: 19.8 lb OD: 2.24 in

Compact Comms Gamma
MCG-C 84 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Comms Gamma
MCG-C 84 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 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 Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 59 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Density/Caliper
MPD-B 59 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-A.A 55 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

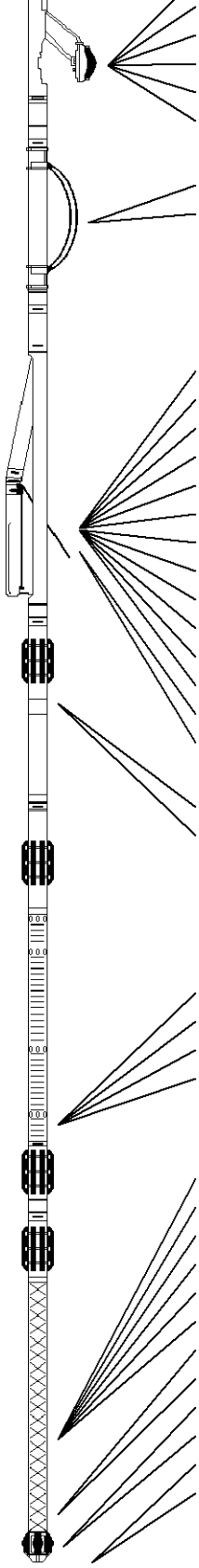
Compact Sonic
MSS-A.A 55 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 63.07 ft Weight: 476.2 lb

Total Length: 63.07 ft Weight: 476.2 lb



45.76 ft MNRL - Micro-normal
46.76 ft MLTC - MML Caliper
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.
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
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
31.80 ft DCOR - Density Correction
31.80 ft DPRL - Limestone Density Por.
31.80 ft DEN - Compensated Density
31.74 ft PDPE - PE
31.74 ft PDPE - PE

26.24 ft FEFE - Shallow FE
26.24 ft FEFE - Shallow FE

12.96 ft SPRL - Wyllie Lime. Sonic Por.
12.96 ft DT35 - 3-5' Compensated Sonic
12.96 ft SPRL - Wyllie Lime. Sonic Por.
12.96 ft DT35 - 3-5' Compensated Sonic

3.34 ft R40O - Array Ind. One Res 40
3.34 ft R40O - Array Ind. One Res 40
3.34 ft R60O - Array Ind. One Res 60
3.34 ft RTAO - Array Ind. One Res Rt
3.34 ft R60O - Array Ind. One Res 60
3.34 ft RTAO - Array Ind. One Res Rt
0.23 ft SPCG - Spontaneous Potential
0.23 ft SPCG - Spontaneous Potential
Tool Zero (0.13ft from bottom)
Tool Zero (0.13ft from bottom)
-0.13 ft SMTU - DST Uphole Tension
-0.13 ft SMTU - DST Uphole Tension
All measurements relative to tool zero.
All measurements relative to tool zero.

COMPANY	GRAND MESA OPERATING COMPANY
WELL	PHILLIP # 1-26
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2856.00	feet	First Reading	4635.00	feet
Elevation Drill Floor	2854.00	feet	Depth Driller	4631.00	feet
Elevation Ground Level	2851.00	feet	Depth Logger	4638.00	feet

Elevation Ground Level	2851.00	feet	Depth Logger	4638.00	feet

ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG

Weatherford®

40 Years of Wireline 1970 2010

ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

COMPANY	GRAND MESA OPERATING COMPANY
WELL	PHILLIP # 1-26
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	2180' FNL & 1707' FWL NW SW SE NW

SEC	TWP	RGE	Other Services
26	13S	31W	MPD/MDN MML MSS

API Number 15-063-22000

Permit Number

Permanent Datum G.L., Elevation 2851 feet

Log Measured From KB

Drilling Measured From K.B.

Elevations:	feet
KB	2856.00
DF	2854.00
GL	2851.00

Date	03-JUN-2012		
Run Number	ONE		
Depth Driller	4631.00	feet	
Depth Logger	4638.00	feet	
First Reading	4635.00	feet	
Last Reading	207.00	feet	
Casing Driller	210.00	feet	
Casing Logger	207.00	feet	
Bit Size	7.875	inches	
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.20 lb/USg	63.00 CP	
PH / Fluid Loss	10.50	7.20 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	0.92 @ 81.0	ohm-m	
Rmf @ Measured Temp	0.74 @ 81.0	ohm-m	
Rmc @ Measured Temp	1.10 @ 81.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.61 @ 125.0	ohm-m	
Time Since Circulation	7 HOURS		
Max Recorded Temp	126.00	deg F	
Equipment Name	COMPACT		
Equipment / Base	13057		
Recorded By	A. GIAMBALVO		
Witnessed By	BOB SCHRIBER		
S.O. / JOB #	3534584		LB12-138

1 INCH MAIN PASS

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 11.03.4044\Data\Grand ...\Grand Mesa Operating Company Phillip # 1-26 Splice.dta
System Versions: Plotted with 11.03.4044

Plotted on 04-JUN-2012 02:26
Recorded on 03-JUN-2012 22:06

Timing Marks every 60.0 sec

Gamma Ray API 0 75 150

Spontaneous Potential millivolts − 20 +

DST Uphole Tension pounds 5000 0

Depth in Feet

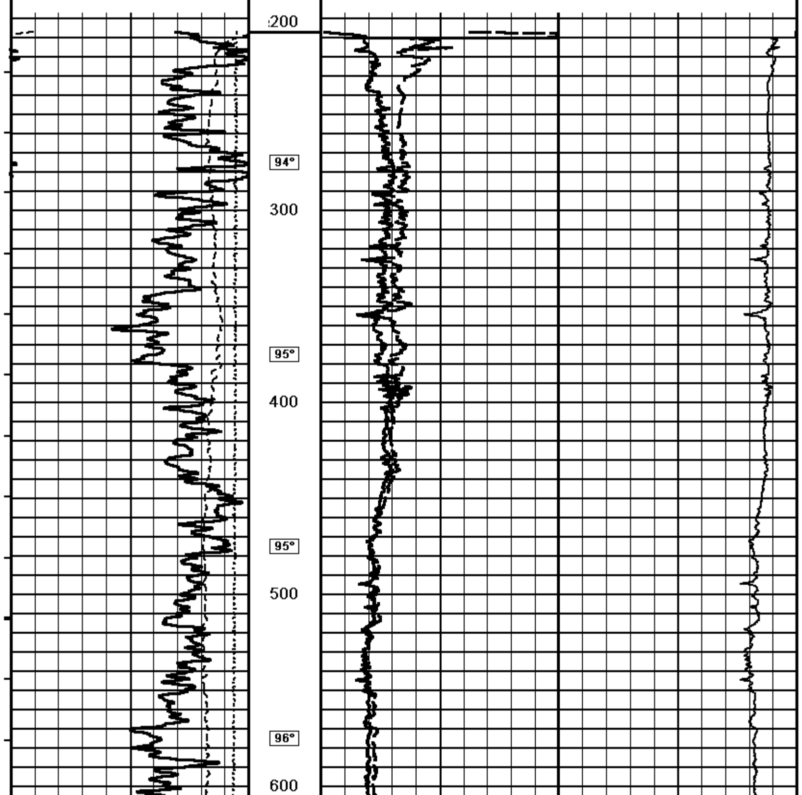
Borehole Temp in deg F

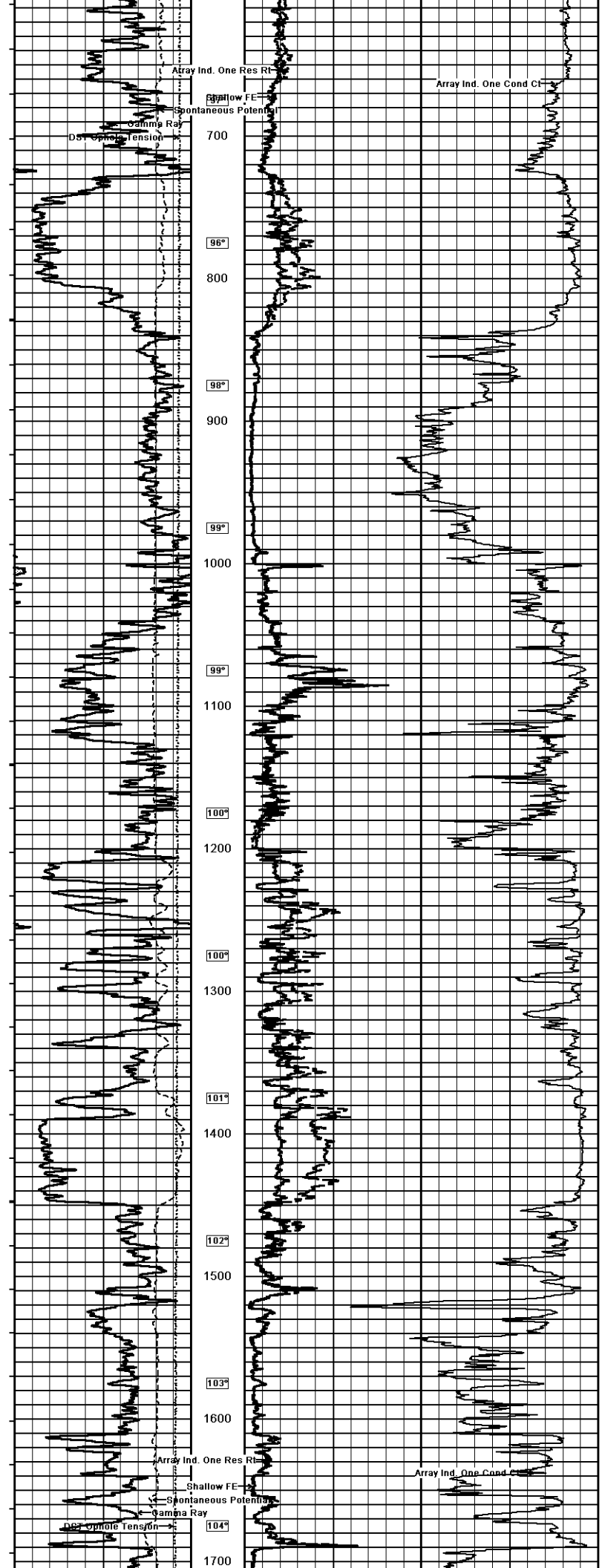
Replay Scale 1:600

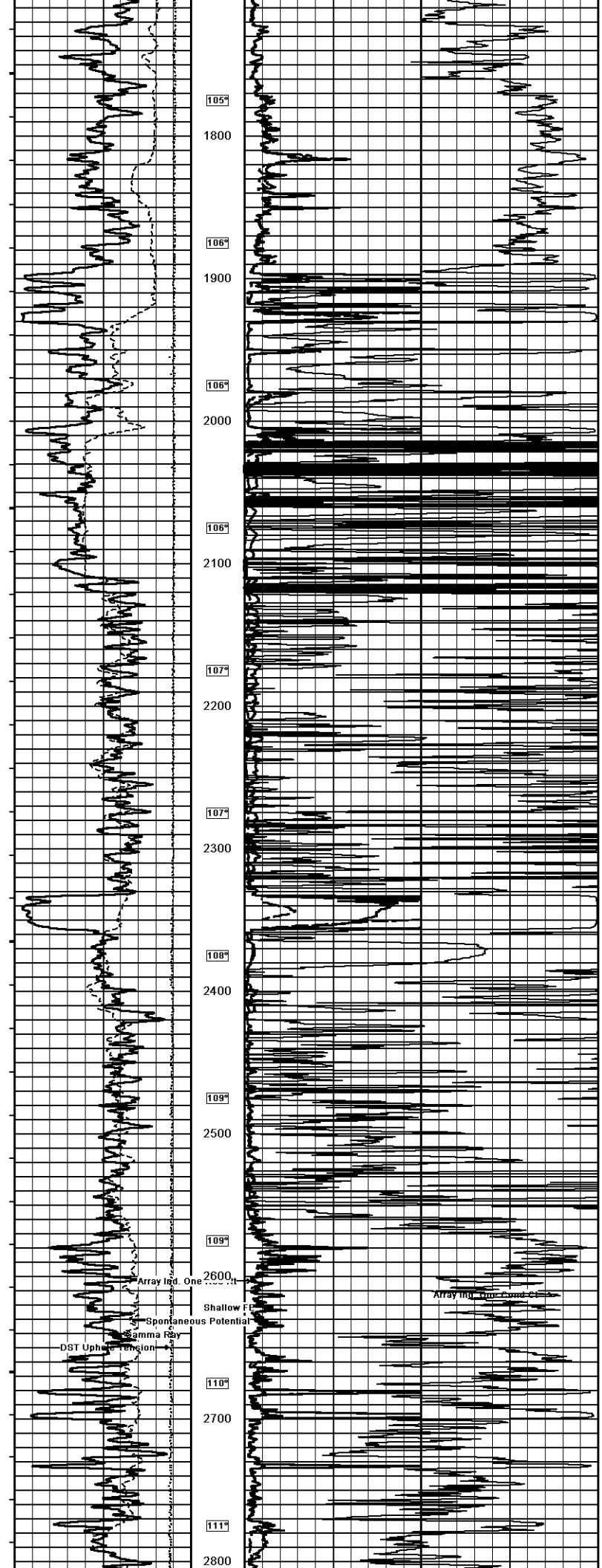
Array Ind. One Cond Ct mmhos 1000 750 500 250 0 / 2000 1750 1500 1250 1000

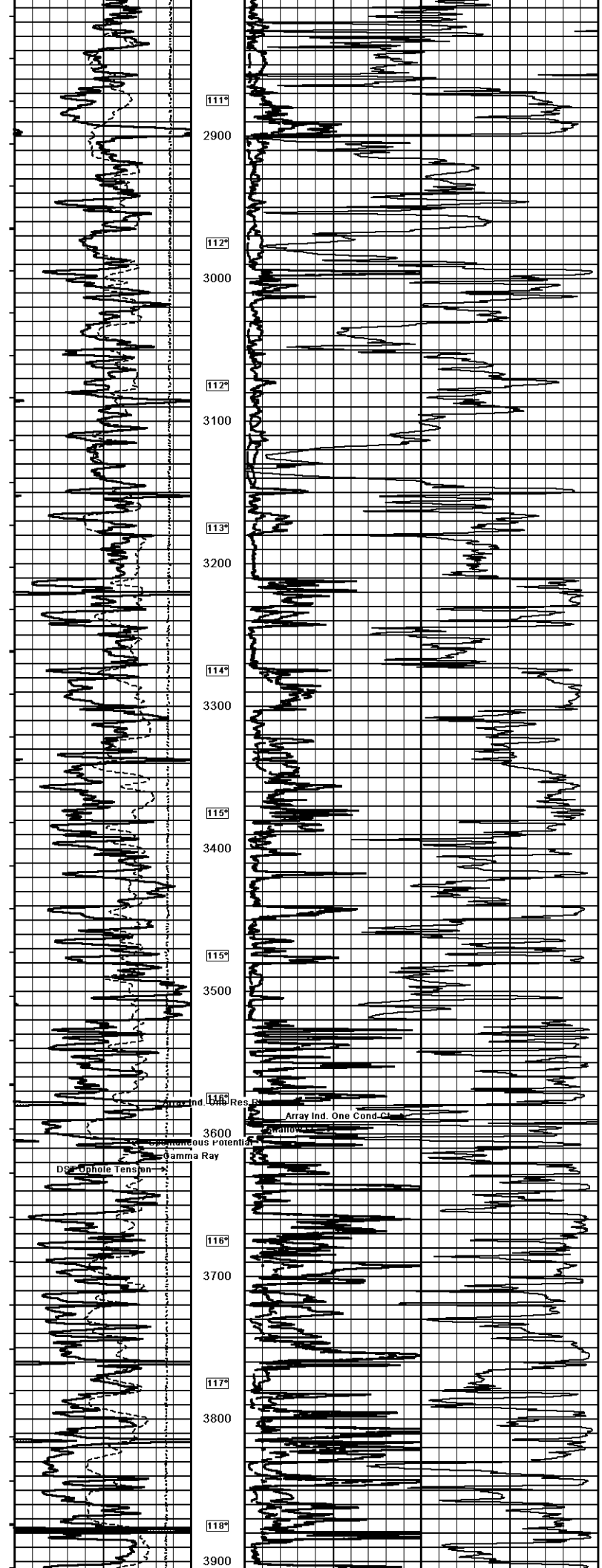
Shallow FE ohm metres 0 25 50 / 0 250 500

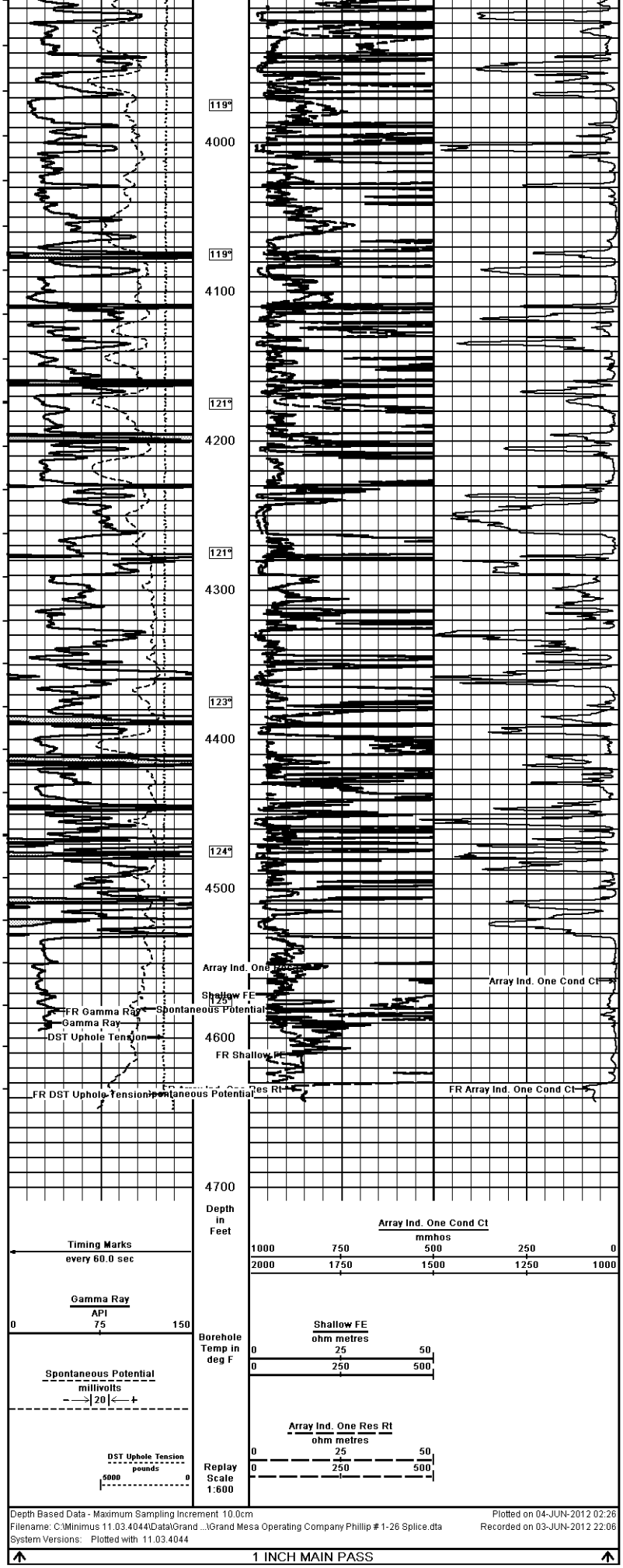
Array Ind. One Res Rt ohm metres 0 25 50 / 0 250 500




Array Ind. One Res Rt
Shallow FE
Spontaneous Potential
Gamma Ray
DST Cphole Tension
Array Ind. One Cond Ct
700
96°
800
98°
900
99°
1000
99°
1100
100°
1200
100°
1300
101°
1400
102°
1500
103°
1600
Array Ind. One Res Rt
Shallow FE
Spontaneous Potential
Gamma Ray
DST Cphole Tension
104°
Array Ind. One Cond Ct
1700


105"
1800
106"
1900
106"
2000
106"
2100
107"
2200
107"
2300
108"
2400
109"
2500
109"
2600
Array Ind. One
Shallow F
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Cond. Cl
110"
2700
111"
2800


111"
2900
112"
3000
112"
3100
113"
3200
114"
3300
115"
3400
115"
3500
116"
Array Ind. One Cond-Clay
3600
Spontaneous Potential
Gamma Ray
DSS Ophole Tension
116"
3700
117"
3800
118"
3900



Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 04-JUN-2012 02:26
Filename: C:\Minimus 11.03.4044\Data\Grand ...\Grand Mesa Operating Company Phillip # 1-26 Splice.dta
Recorded on 03-JUN-2012 22:06
System Versions: Plotted with 11.03.4044

1 INCH MAIN PASS

COMPANY	GRAND MESA OPERATING COMPANY
WELL	PHILLIP # 1-26
FIELD	WILDCAT

PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS

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