ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

Weatherford®

COMPANY	GRAND MESA OPERATING COMPANY
WELL	GLENNIS #2-27
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1931' FSL & 1945' FEL

SEC	TWP	RGE	Other Services
27	13S	31W	MPD/MDN MML

API Number 15-063-22041
Permit Number

Permanent Datum GL, Elevation 2834 feet
Log Measured From KB
Drilling Measured From KB

Elevations:	feet
KB	2839.00
DF	2837.00
GL	2834.00

Date	05-OCT-2012			
Run Number	ONE			
Depth Driller	4622.00	feet		
Depth Logger	4622.00	feet		
First Reading	4619.00	feet		
Last Reading	219.00	feet		
Casing Driller	222.00	feet		
Casing Logger	219.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.20 g/c3	62.00 CP		
PH / Fluid Loss	10.50	7.20 ml/30Min		
Sample Source	MUDPIT			
Rm @ Measured Temp	0.63 @ 84.0	ohm-m		
Rmf @ Measured Temp	0.50 @ 84.0	ohm-m		
Rmc @ Measured Temp	0.76 @ 84.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.46 @117.0	ohm-m		
Time Since Circulation	5 HOURS			
Max Recorded Temp	117.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	13025	LIB		
Recorded By	ADAM SILL			
Witnessed By	MENT MATSON			
S.O. # / JOB #	3534666		LB12-266	

BOREHOLE RECORD

Last Edited: 01-JAN-2003 00:06

Bit Size inches	Depth From feet	Depth To feet
7.875	222.00	4622.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	222.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.02.6600.
- MCG, MML, MDN, MPD, MFE, MAI RAN IN COMBINATION.
  - HARDWARE: DUAL BOWSPRING USED ON MDN.
  0.5 INCH STANDOFF USED ON MFE.
  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 SURFACE CASING: 1862 CU. FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 3622 FEET: 205 CU. FT.
- SERVICE ORDER # 3534666

- SERVICE ORDER # [illegible].

- RIG: MURFIN #24.

- ENGINEER: A. SILL.

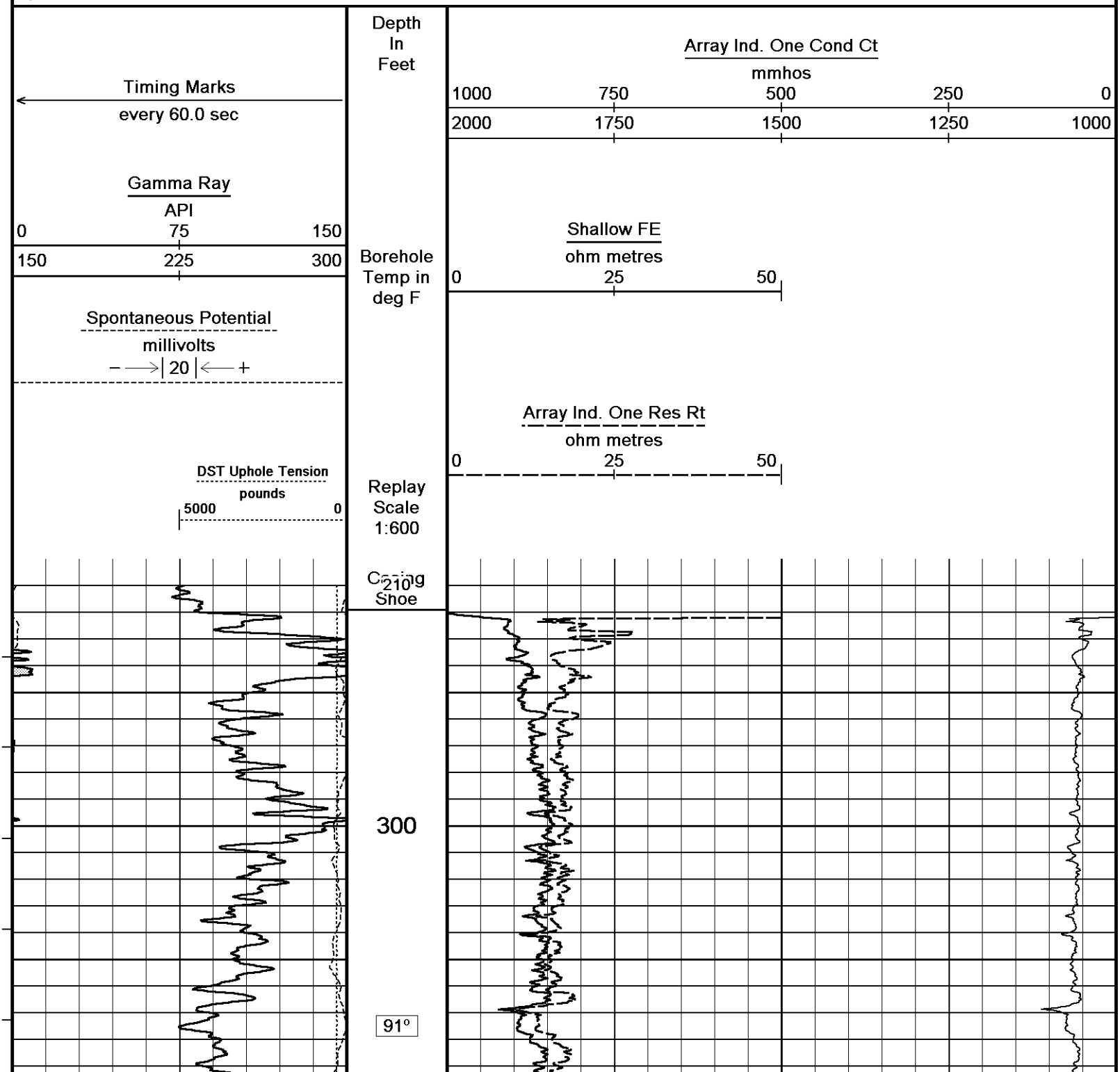
- OPERATOR(S): R. VENEGAS.

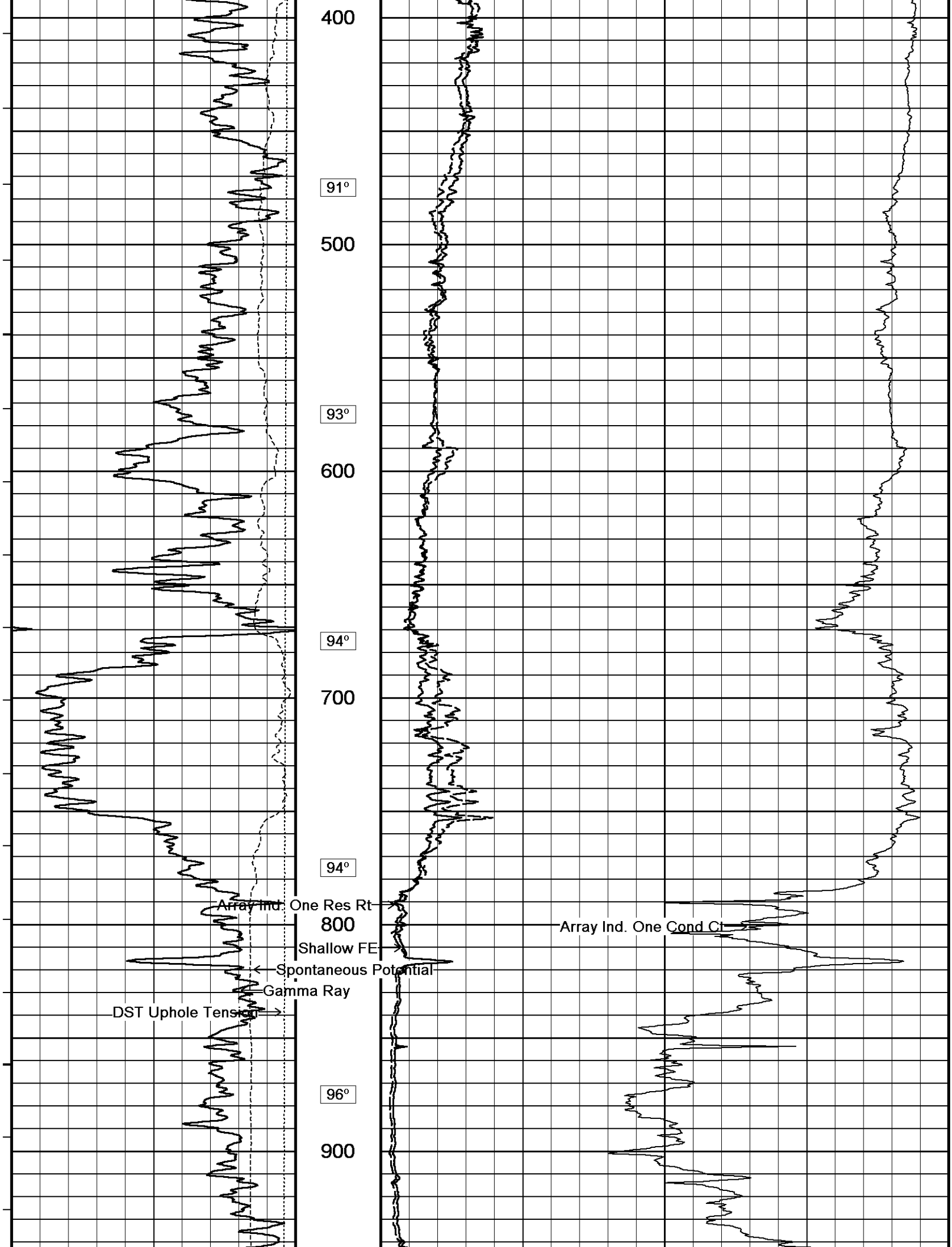
2 INCH MAIN

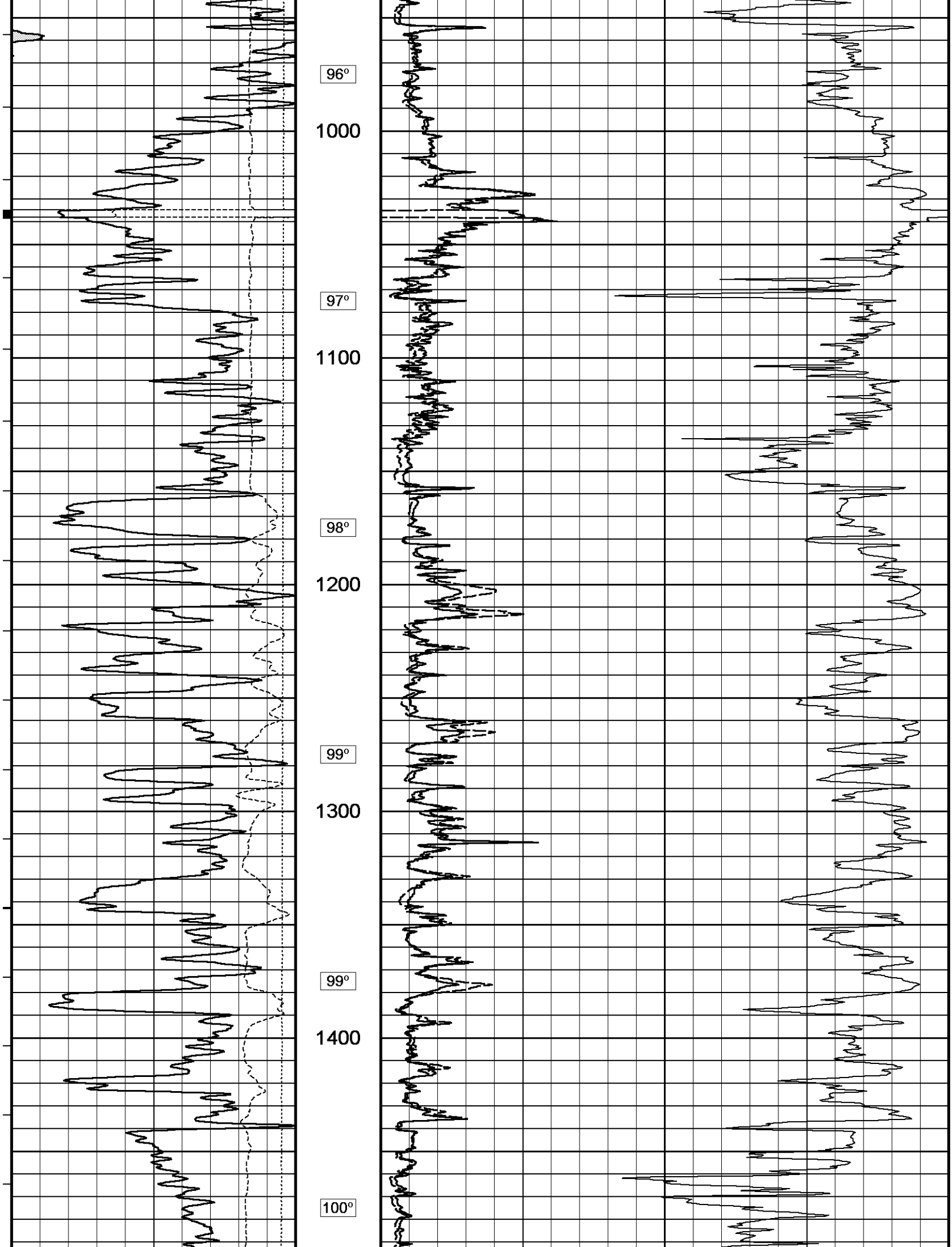
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-OCT-2012 23:13

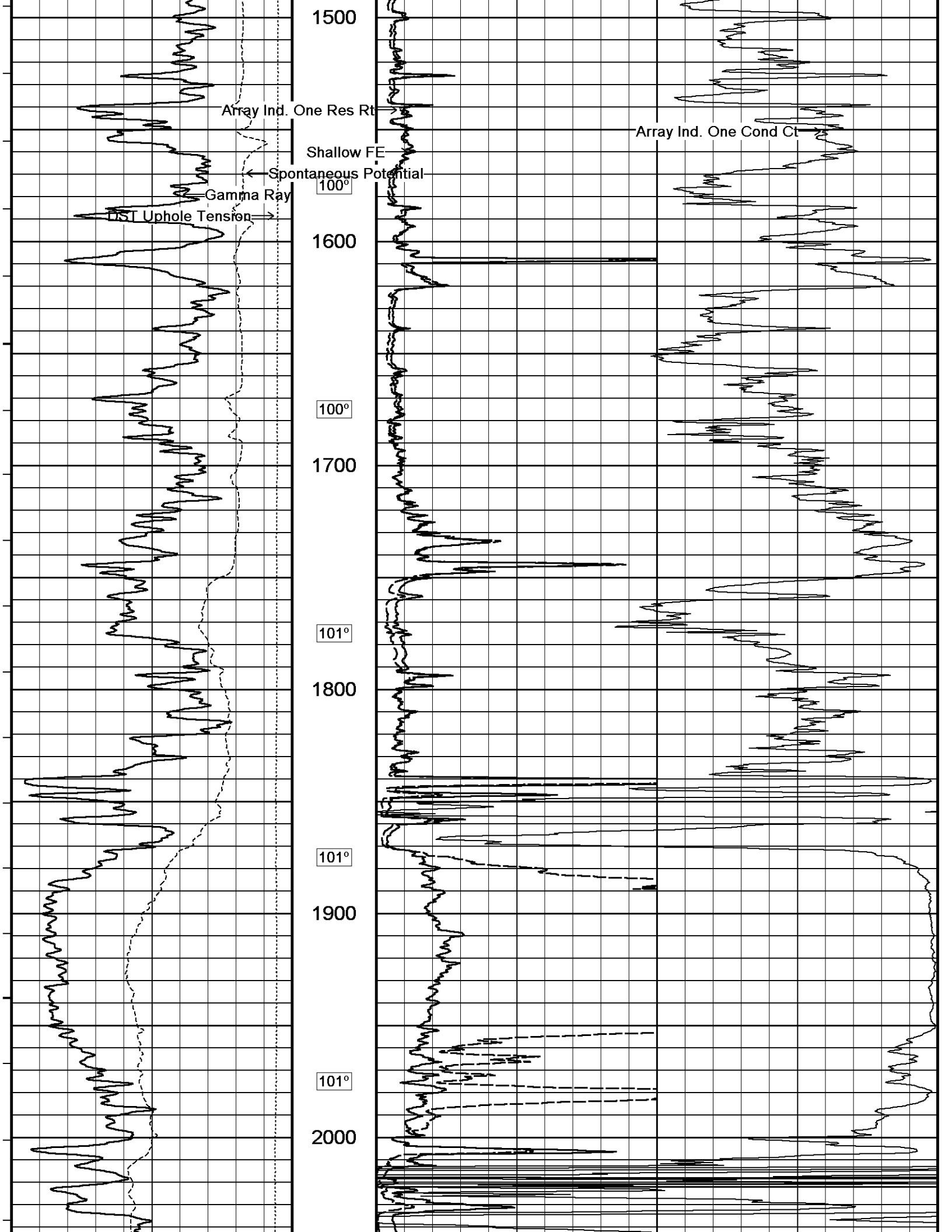
Filename: C:\Minimus 13.02.6600\Data\Grand Mesa Glennis #2...\Grand Mesa Glennis #2-27 Splice.dta — Recorded on 05-OCT-2012 20:00

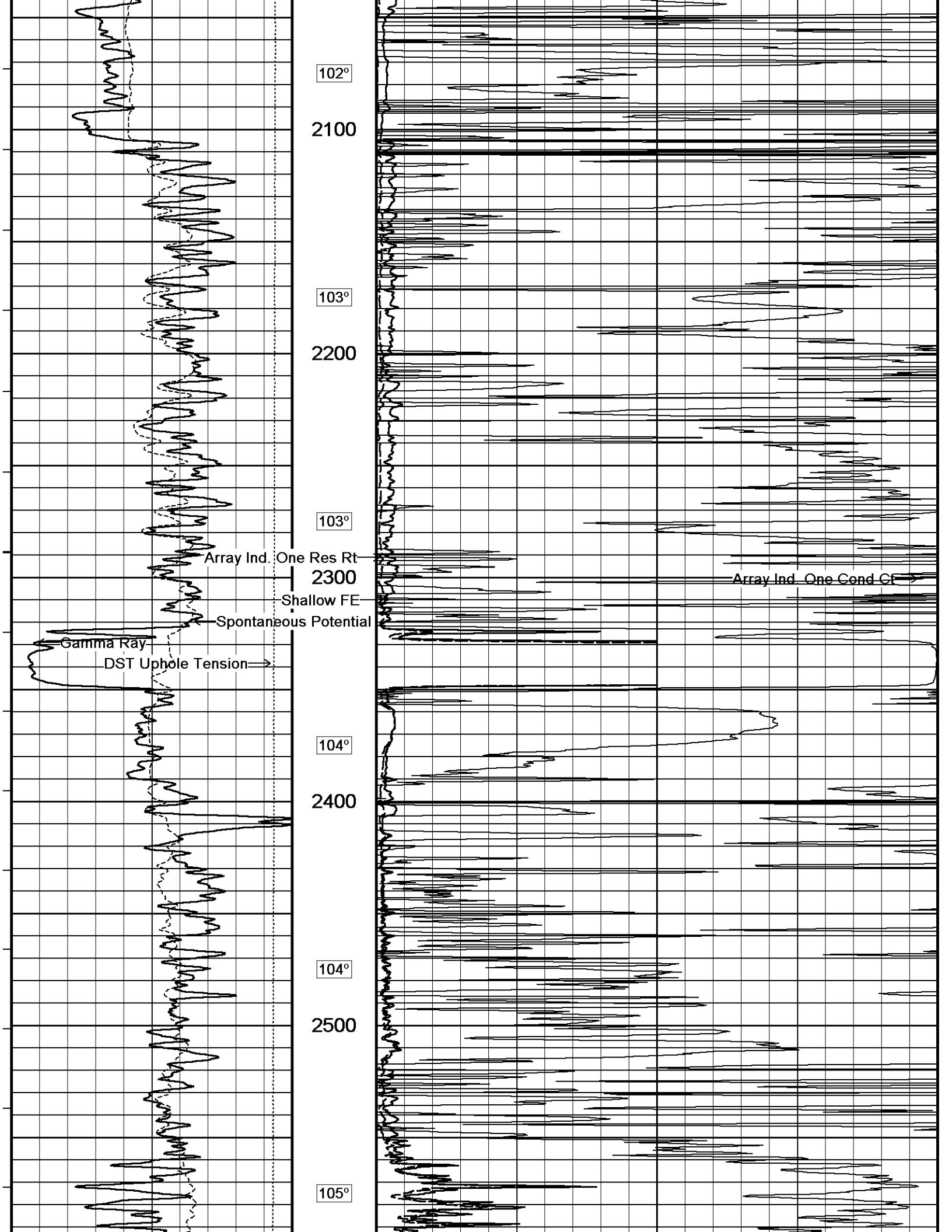
System Versions: Plotted with 13.02.6600

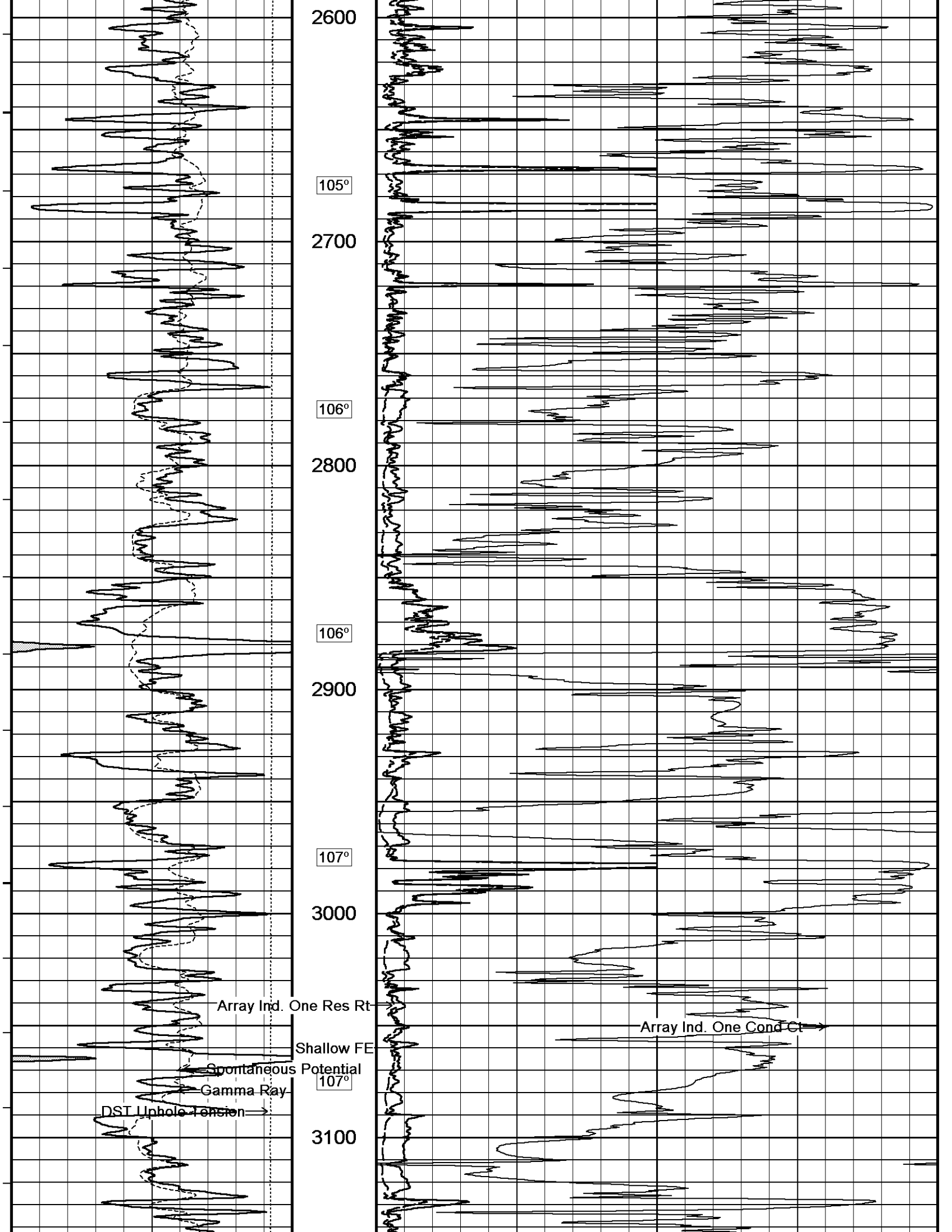


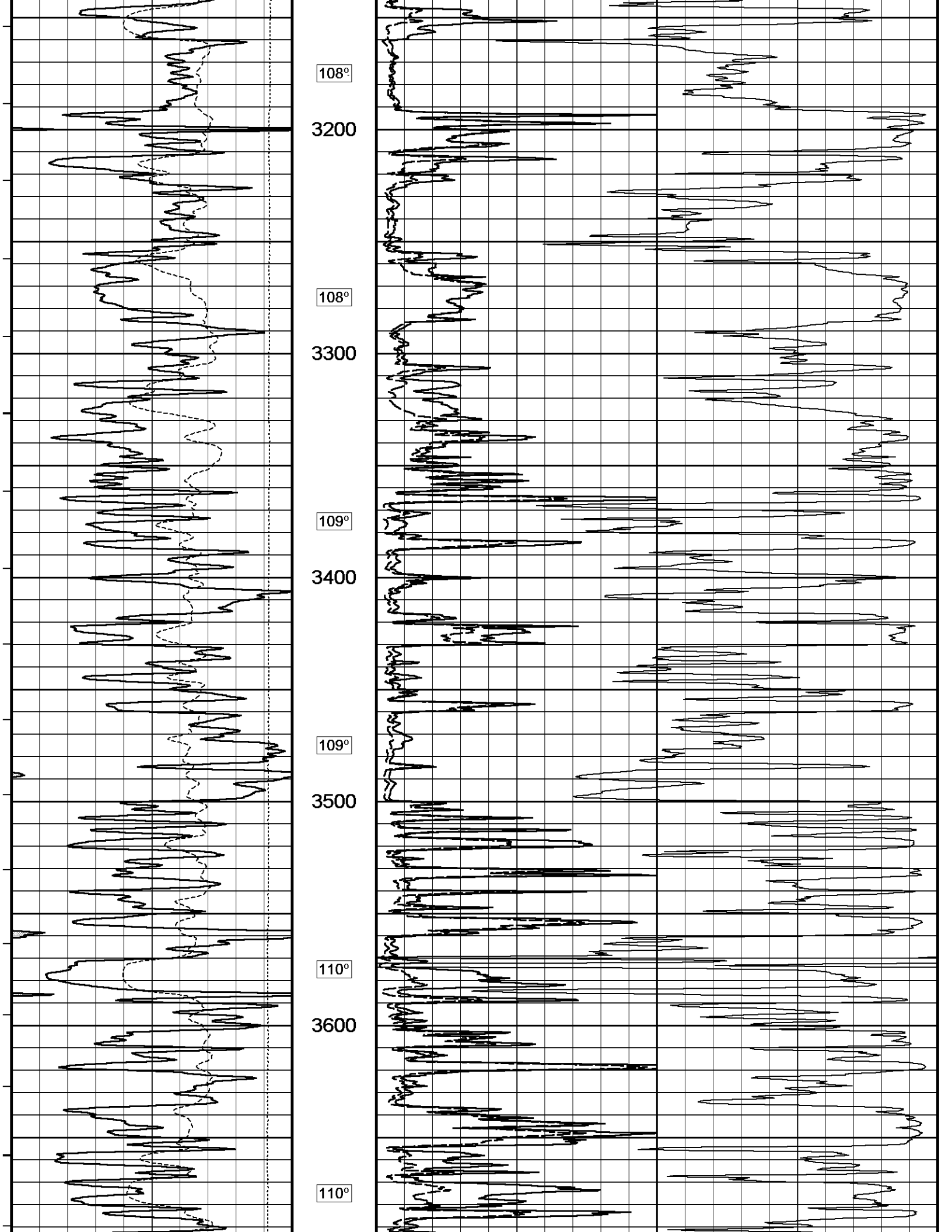

400
91°
500
93°
600
94°
700
94°
Array Ind. One Res Rt
800
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
96°
900
Array Ind. One Cond Ct

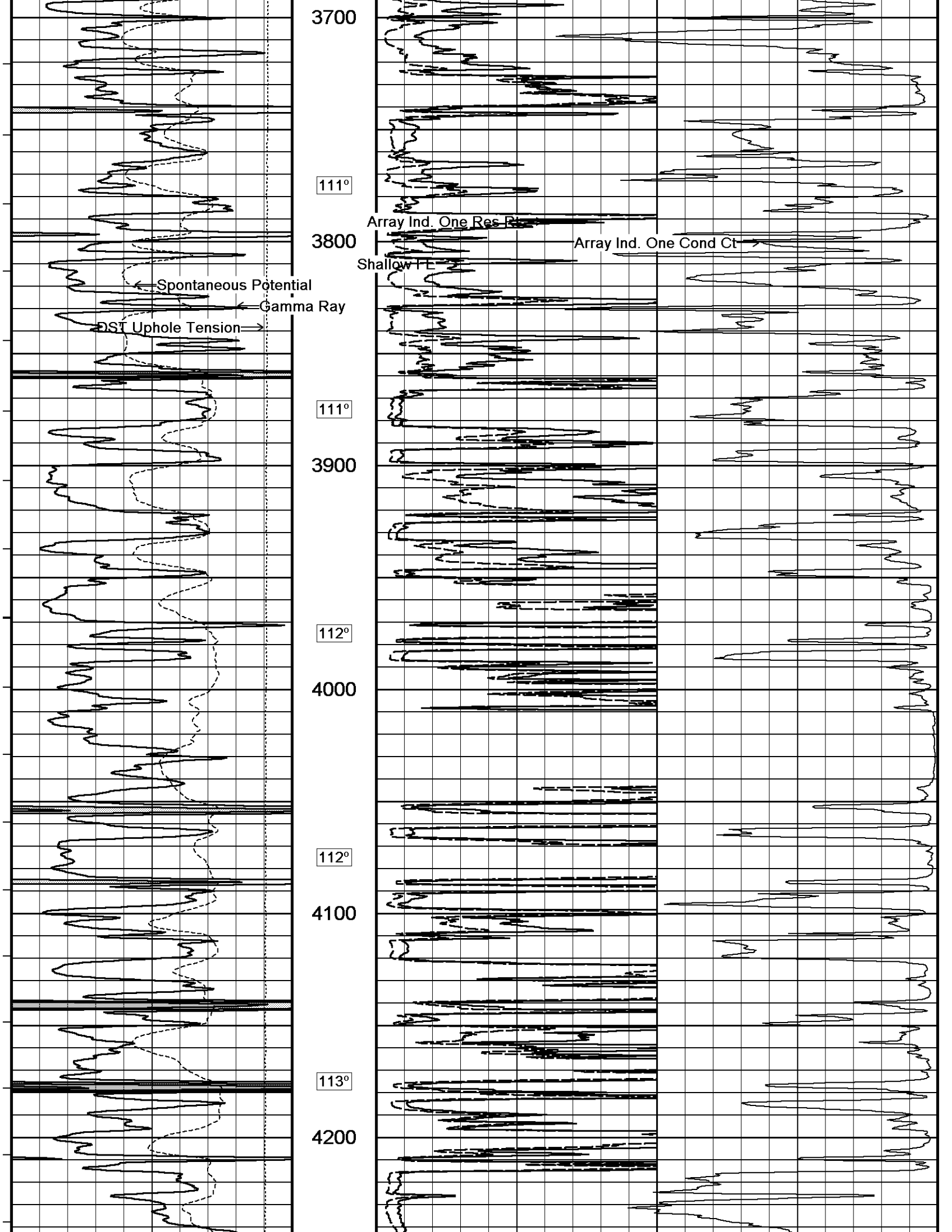

96°
1000
97°
1100
98°
1200
99°
1300
99°
1400
100°

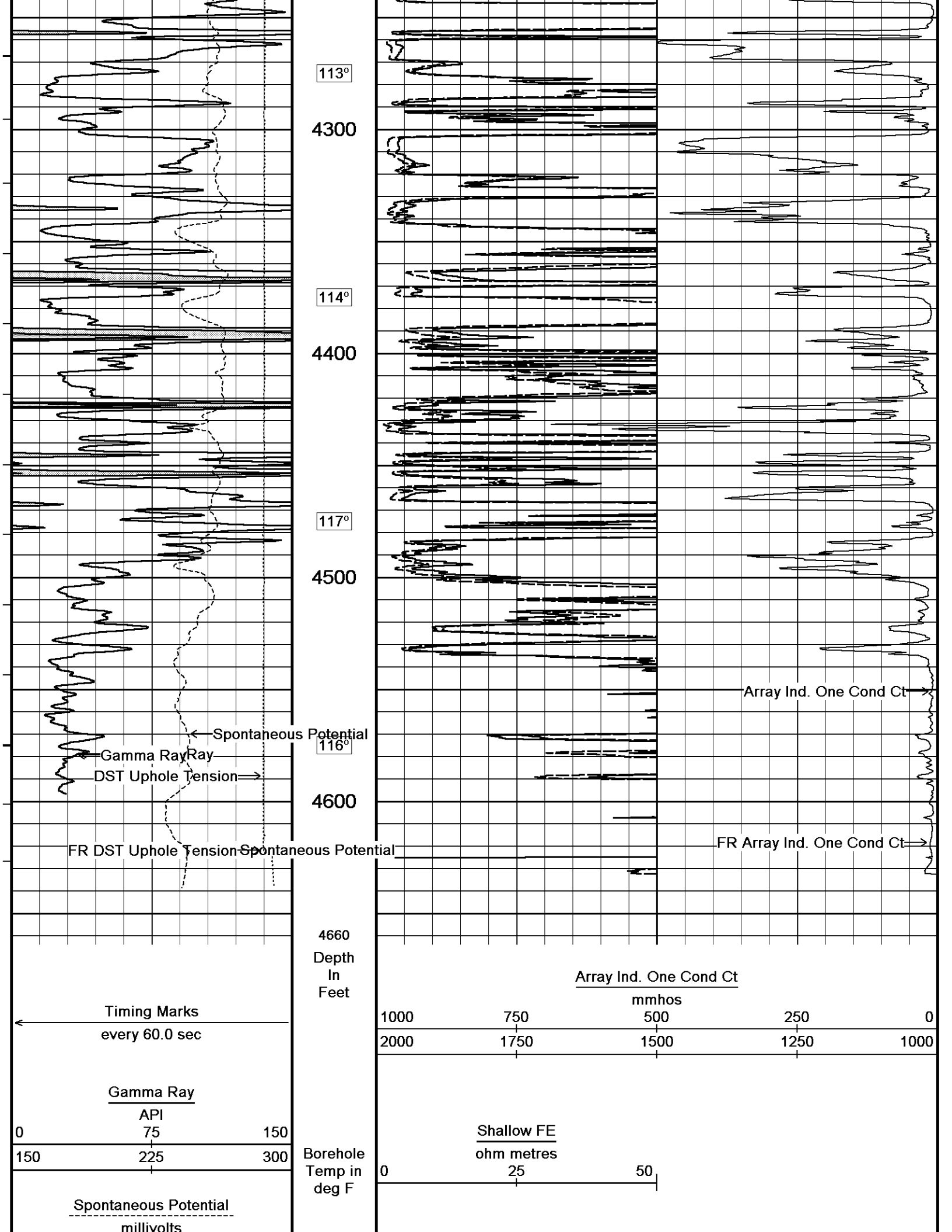

1500
Array Ind. One Res Rt
Array Ind. One Cond Ct
Shallow FE
Spontaneous Potential
100°
Gamma Ray
DST Uphole Tension
1600
100°
1700
101°
1800
101°
1900
101°
2000

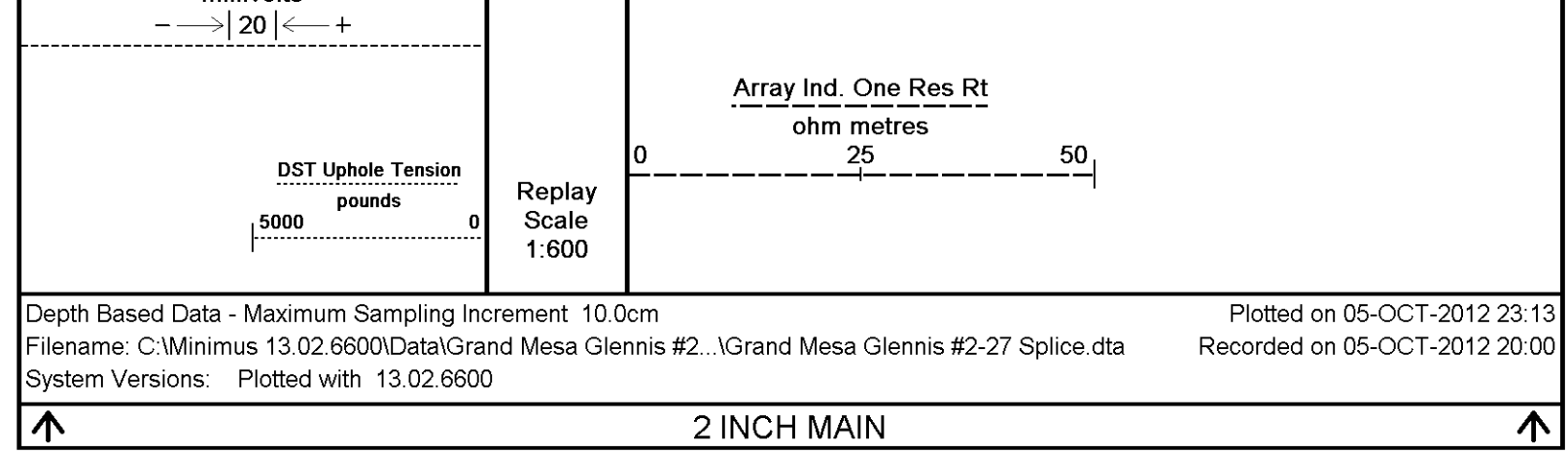

102°
2100
103°
2200
103°
Array Ind. One Res Rt
2300
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Cond Ct
104°
2400
104°
2500
105°


2600
105°
2700
106°
2800
106°
2900
107°
3000
Array Ind. One Res Rt
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
107°
3100
Array Ind. One Cond Ct


108°
3200
108°
3300
109°
3400
109°
3500
110°
3600
110°


3700
111°
Array Ind. One Res Rt
3800
Array Ind. One Cond Ct
Shallow TL
Spontaneous Potential
Gamma Ray
DST Uphole Tension
111°
3900
112°
4000
112°
4100
113°
4200


113°
4300
114°
4400
117°
4500
116°
4600
Array Ind. One Cond Ct
Spontaneous Potential
Gamma Ray
Ray
DST Uphole Tension
FR DST Uphole Tension
Spontaneous Potential
FR Array Ind. One Cond Ct
4660
Depth
In
Feet
Timing Marks
every 60.0 sec
Array Ind. One Cond Ct
mmhos
1000 750 500 250 0
2000 1750 1500 1250 1000
Gamma Ray
API
0 75 150
150 225 300
Borehole
Temp in
deg F
Shallow FE
ohm metres
0 25 50
Spontaneous Potential
millivolts

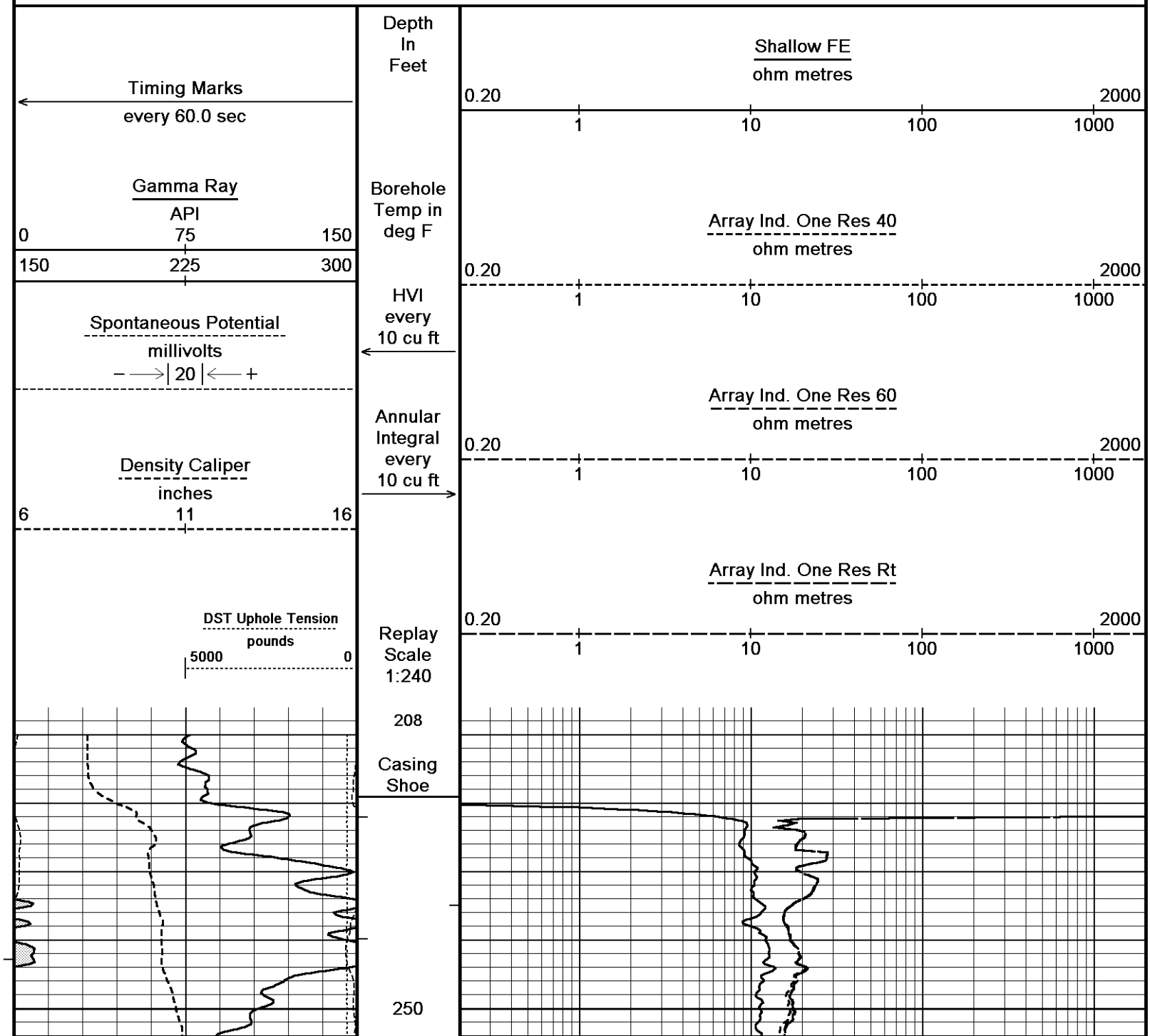


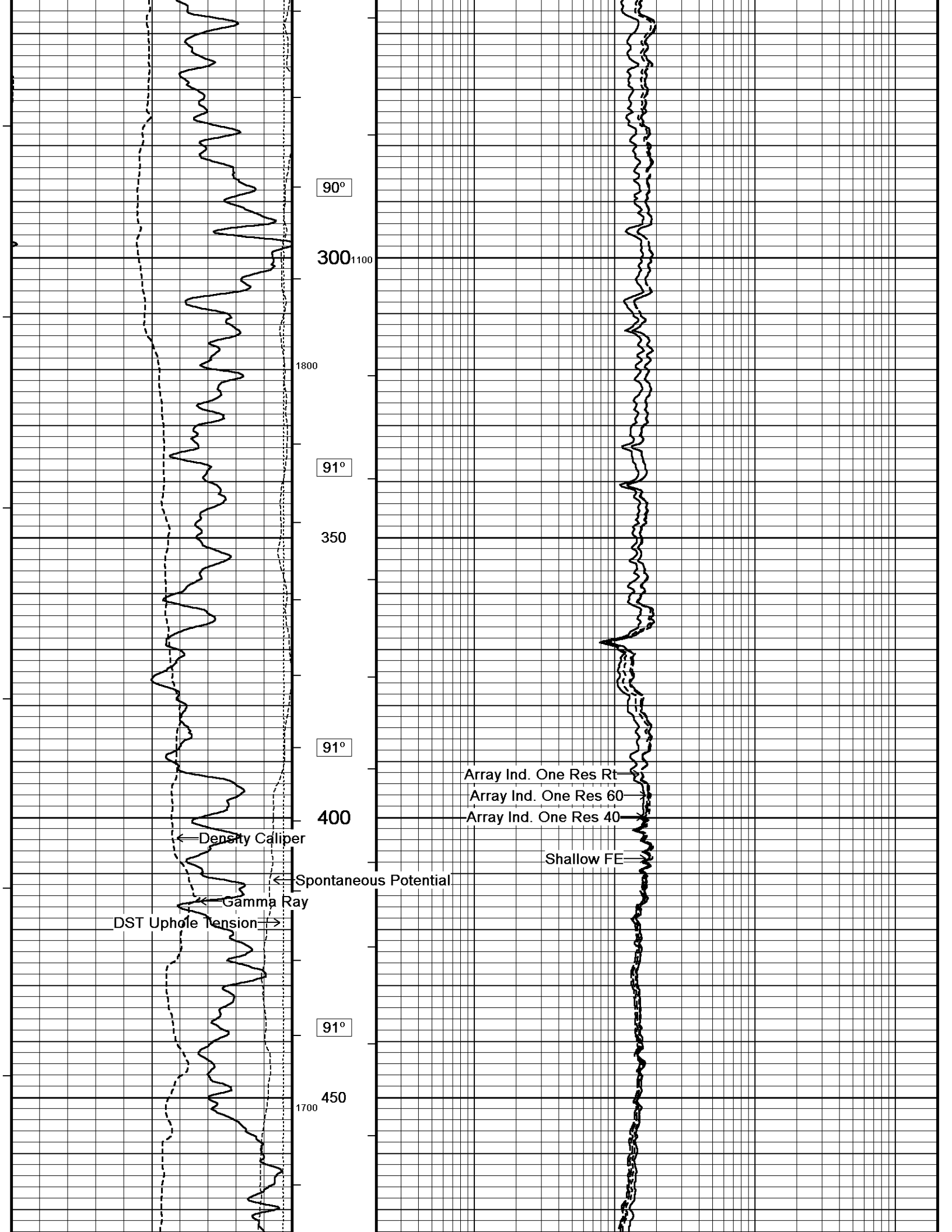
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-OCT-2012 23:13
Filename: C:\Minimus 13.02.6600\Data\Grand Mesa Glennis #2...\Grand Mesa Glennis #2-27 Splice.dta — Recorded on 05-OCT-2012 20:00
System Versions: Plotted with 13.02.6600

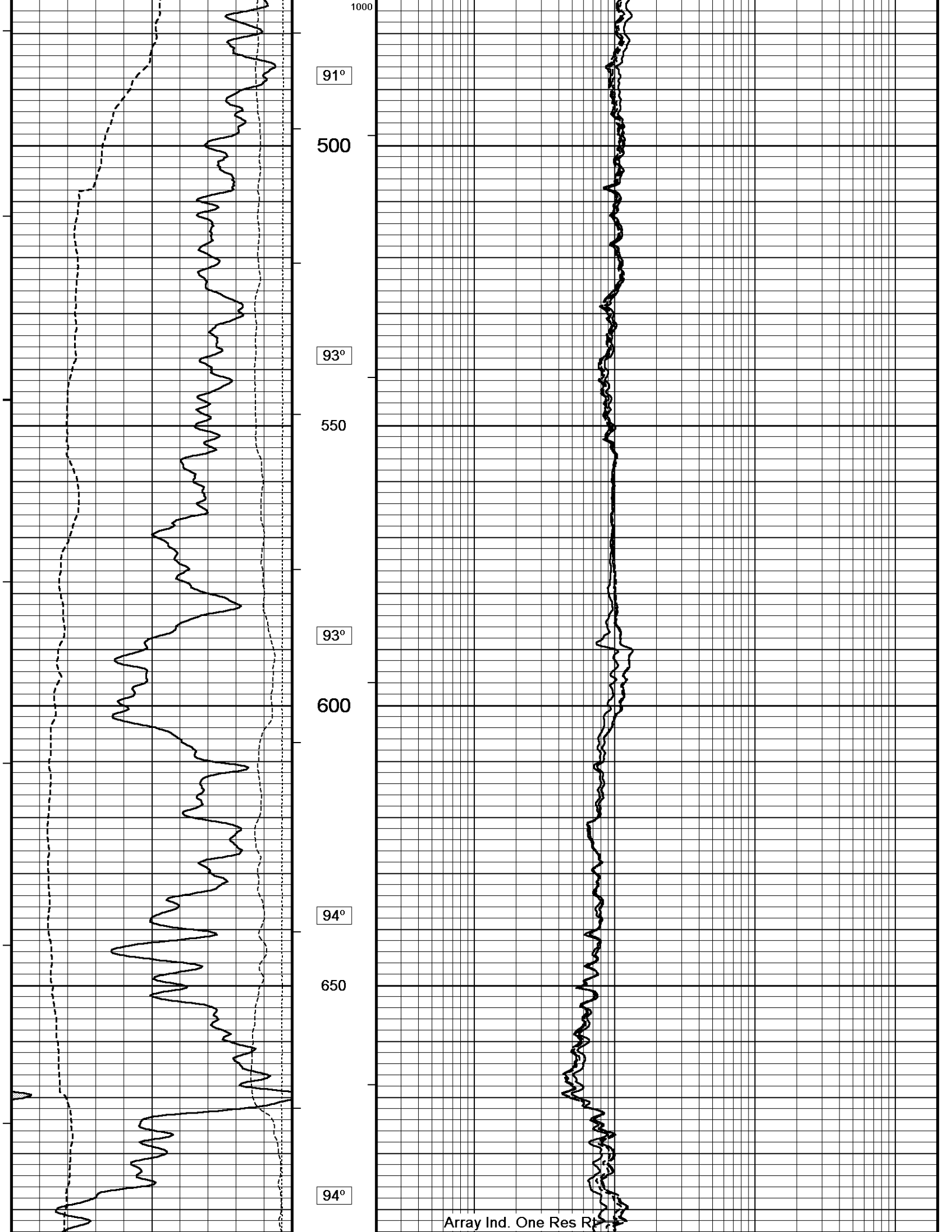
2 INCH MAIN

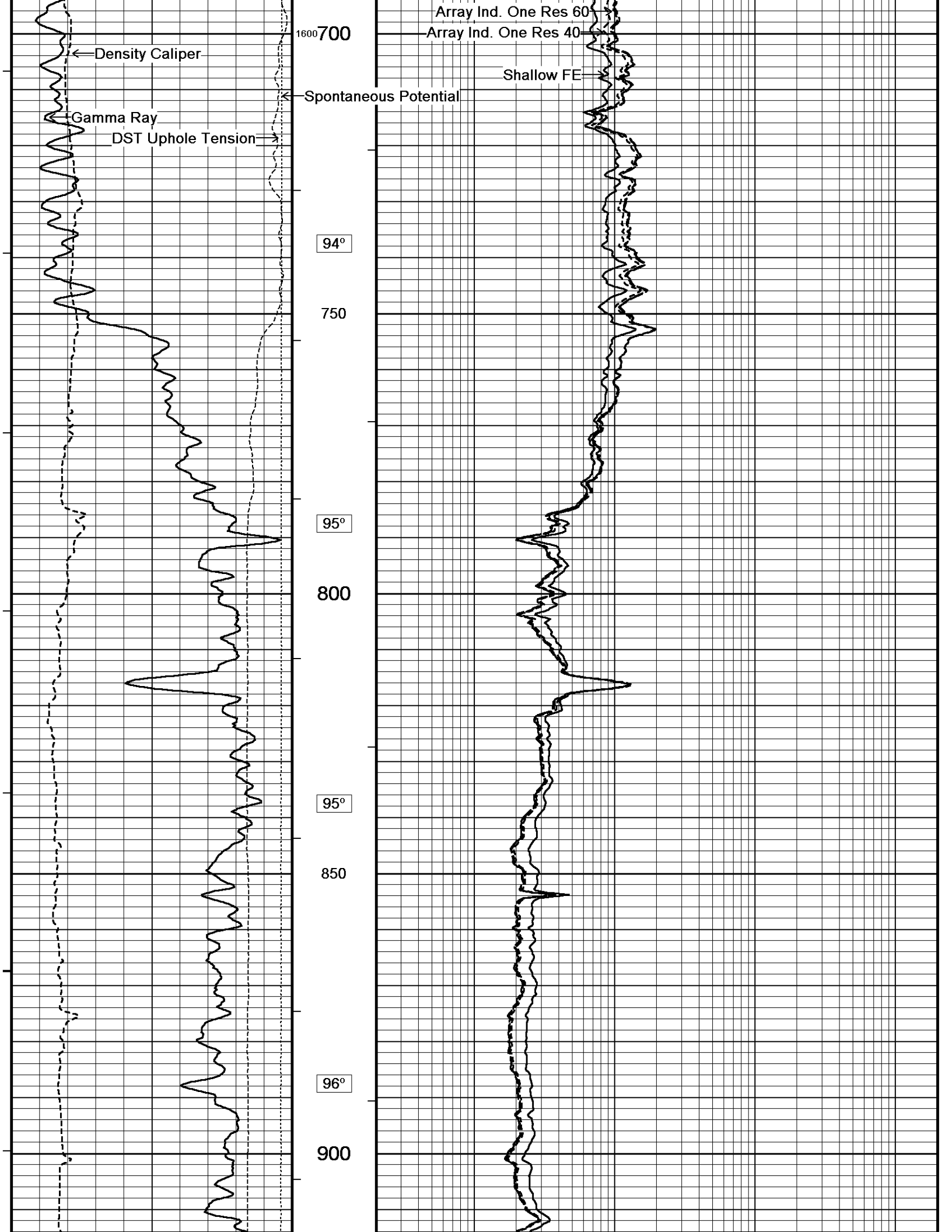
5 INCH MAIN

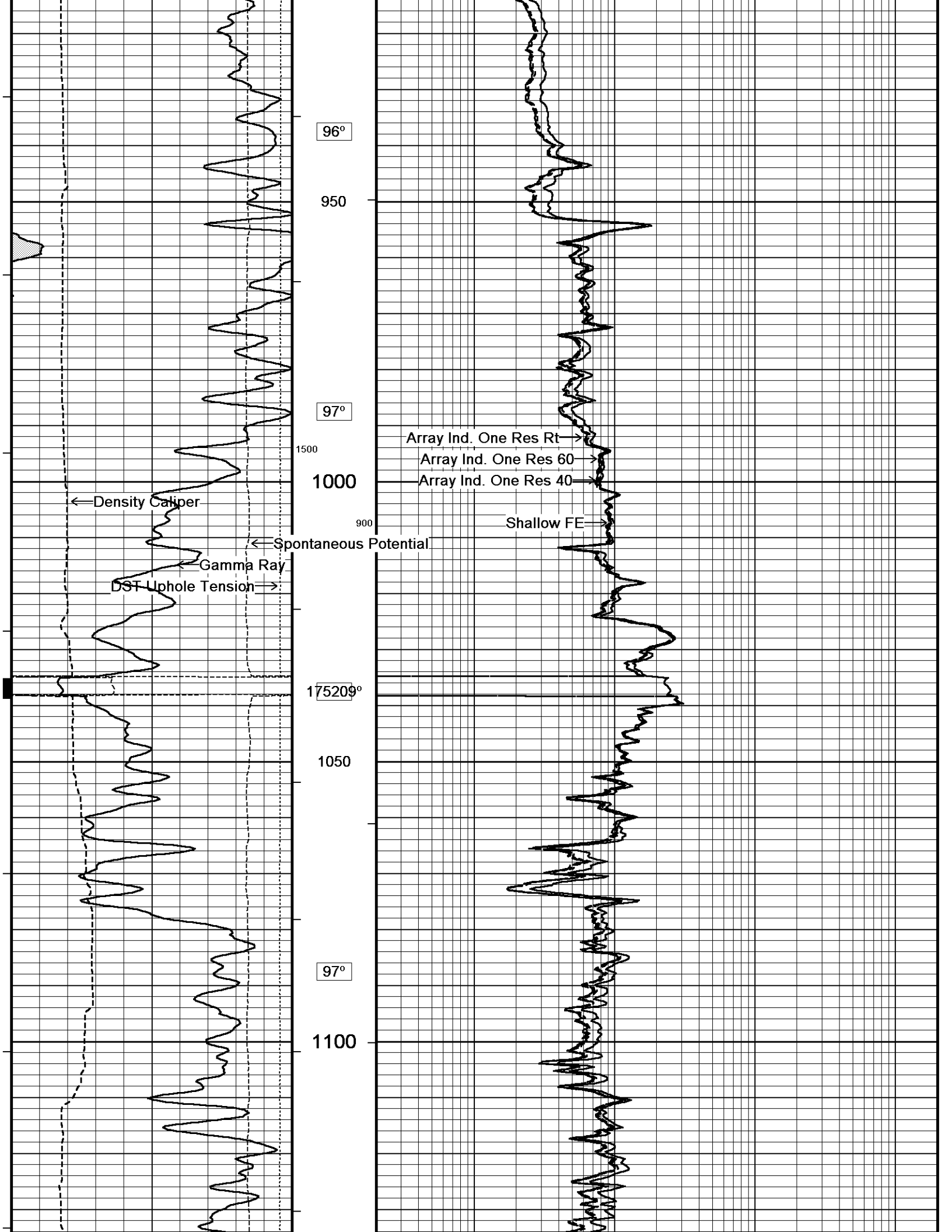
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-OCT-2012 23:13
Filename: C:\Minimus 13.02.6600\Data\Grand Mesa Glennis #2...\Grand Mesa Glennis #2-27 Splice.dta — Recorded on 05-OCT-2012 20:00
System Versions: Plotted with 13.02.6600

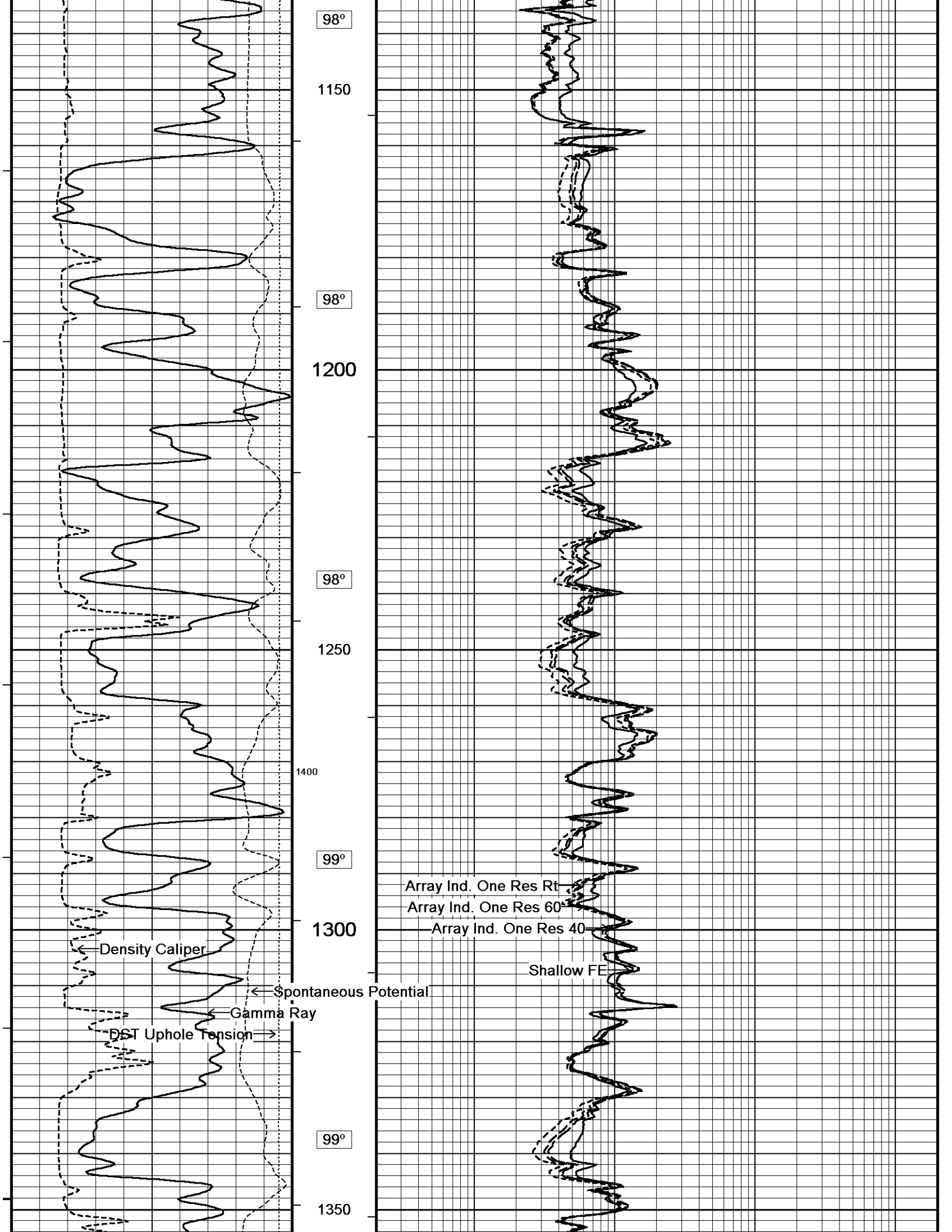


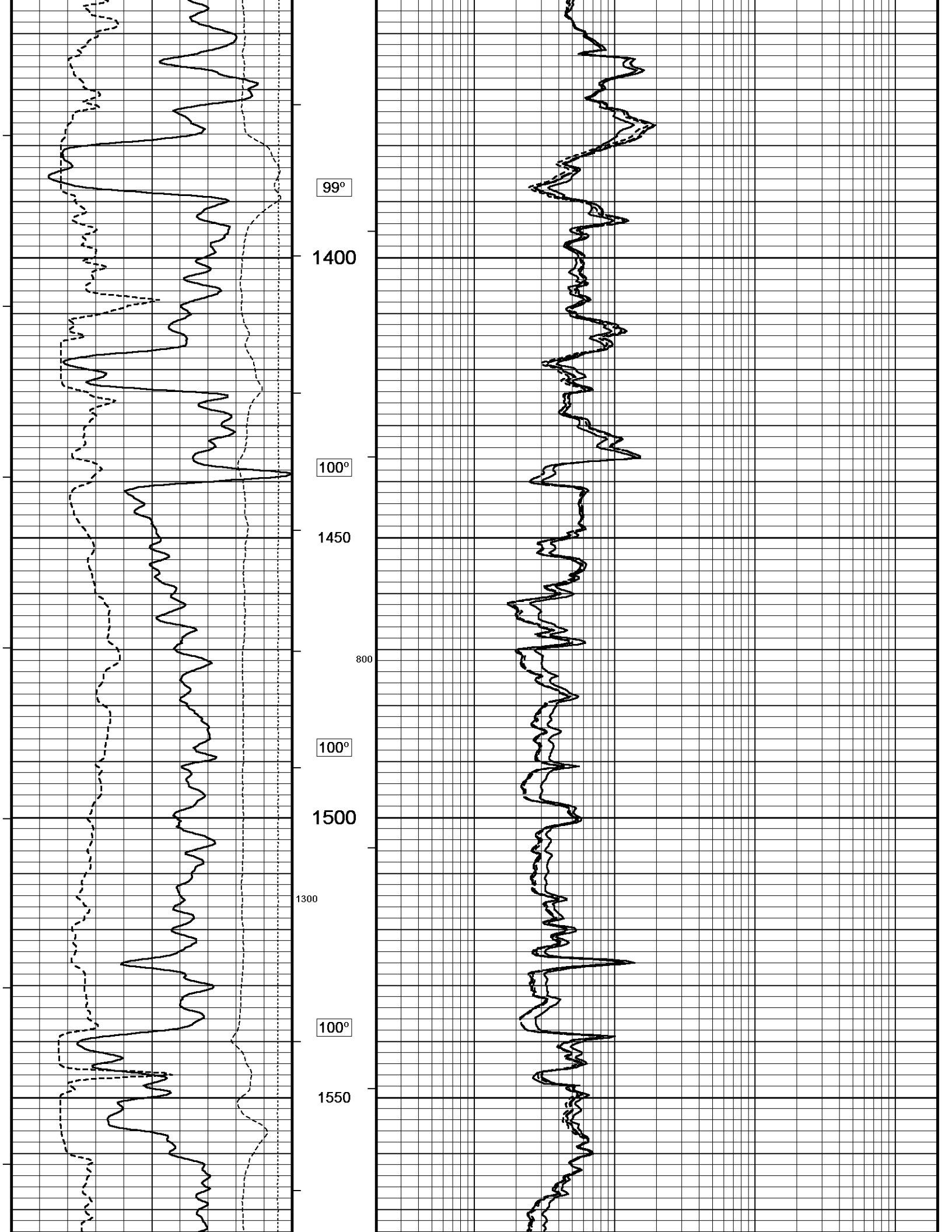

90°
300
1100
1800
91°
350
91°
400
91°
450
1700
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension

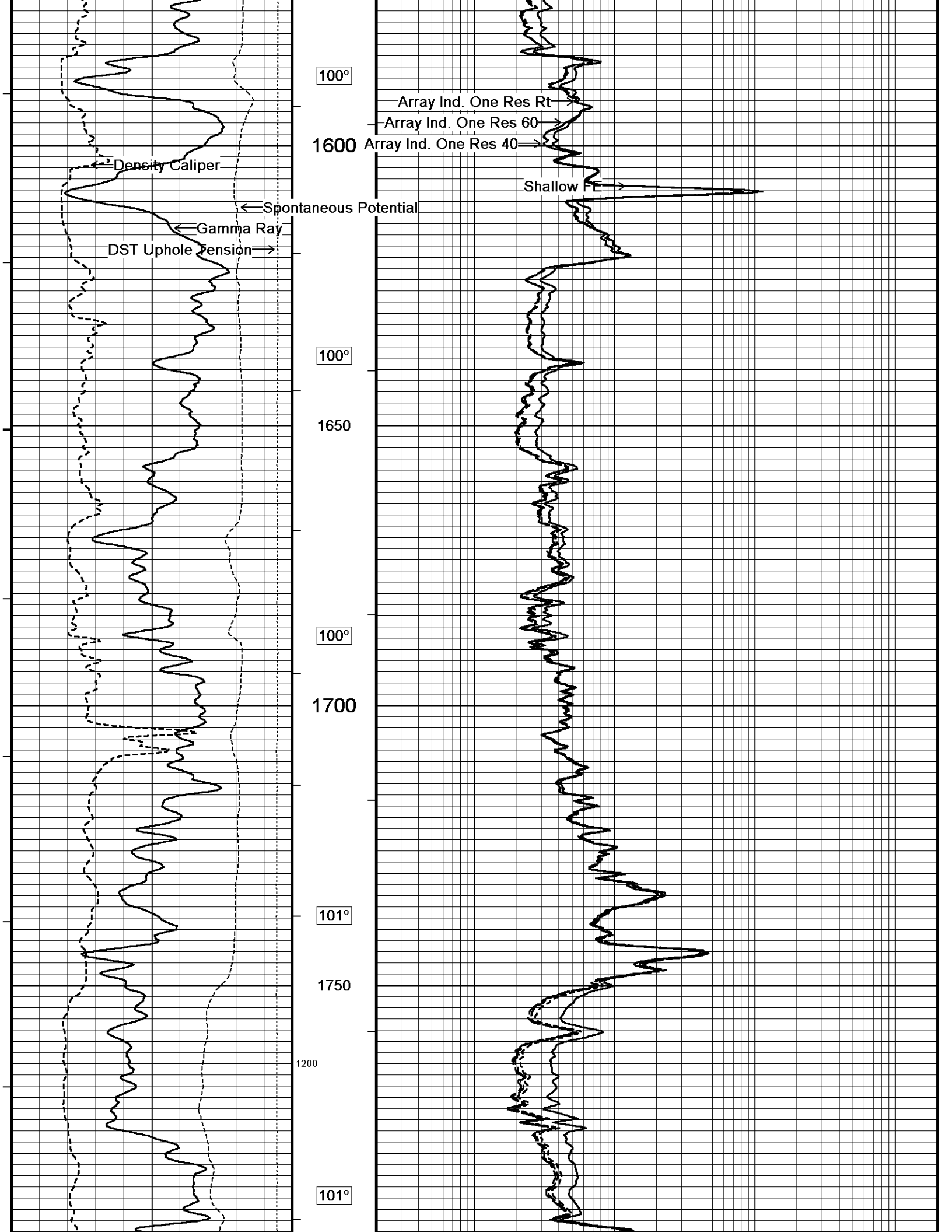

1000
91°
500
93°
550
93°
600
94°
650
94°
Array Ind. One Res Rt

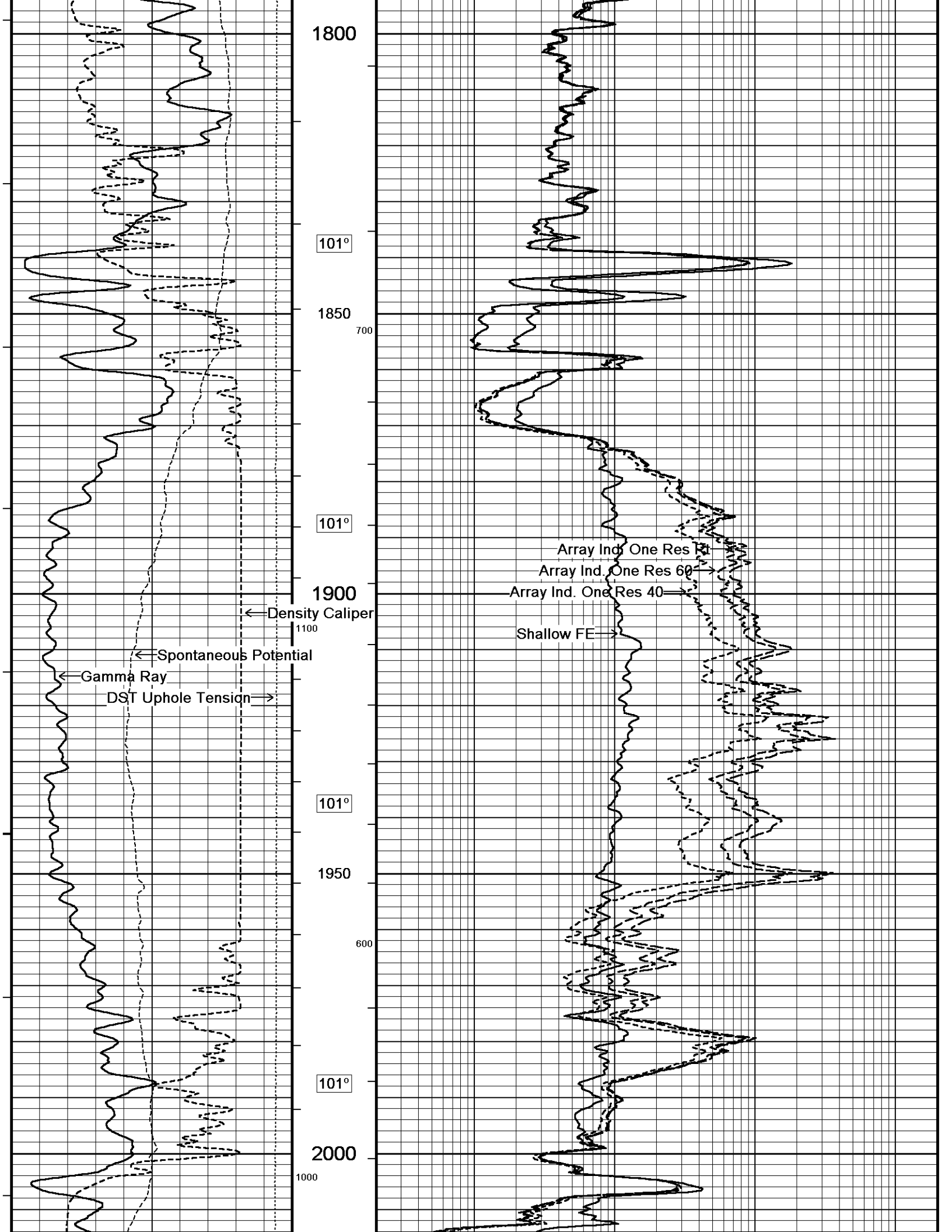

Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
1600
700
94°
750
95°
800
95°
850
96°
900

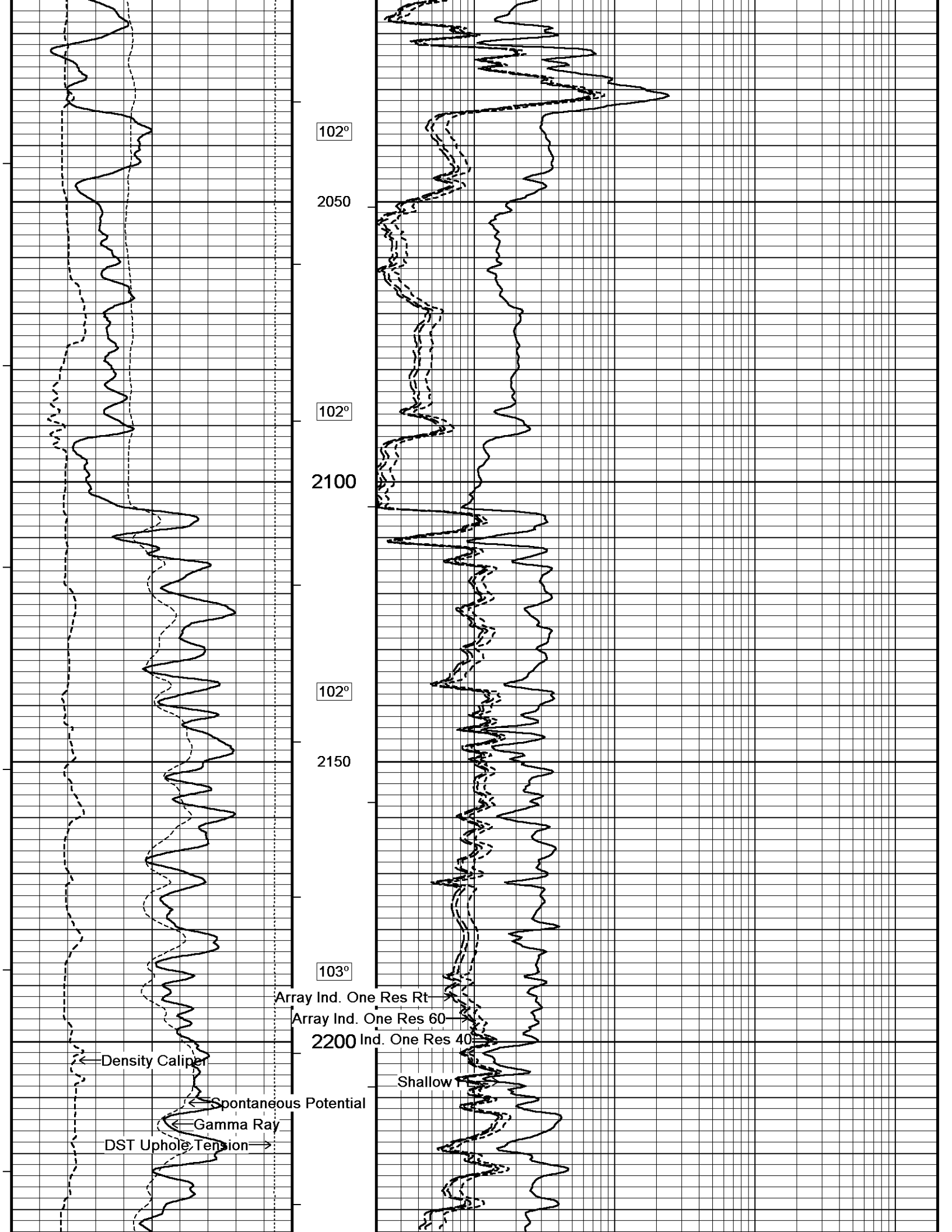

96°
950
97°
1500
1000
900
175209°
1050
97°
1100
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension

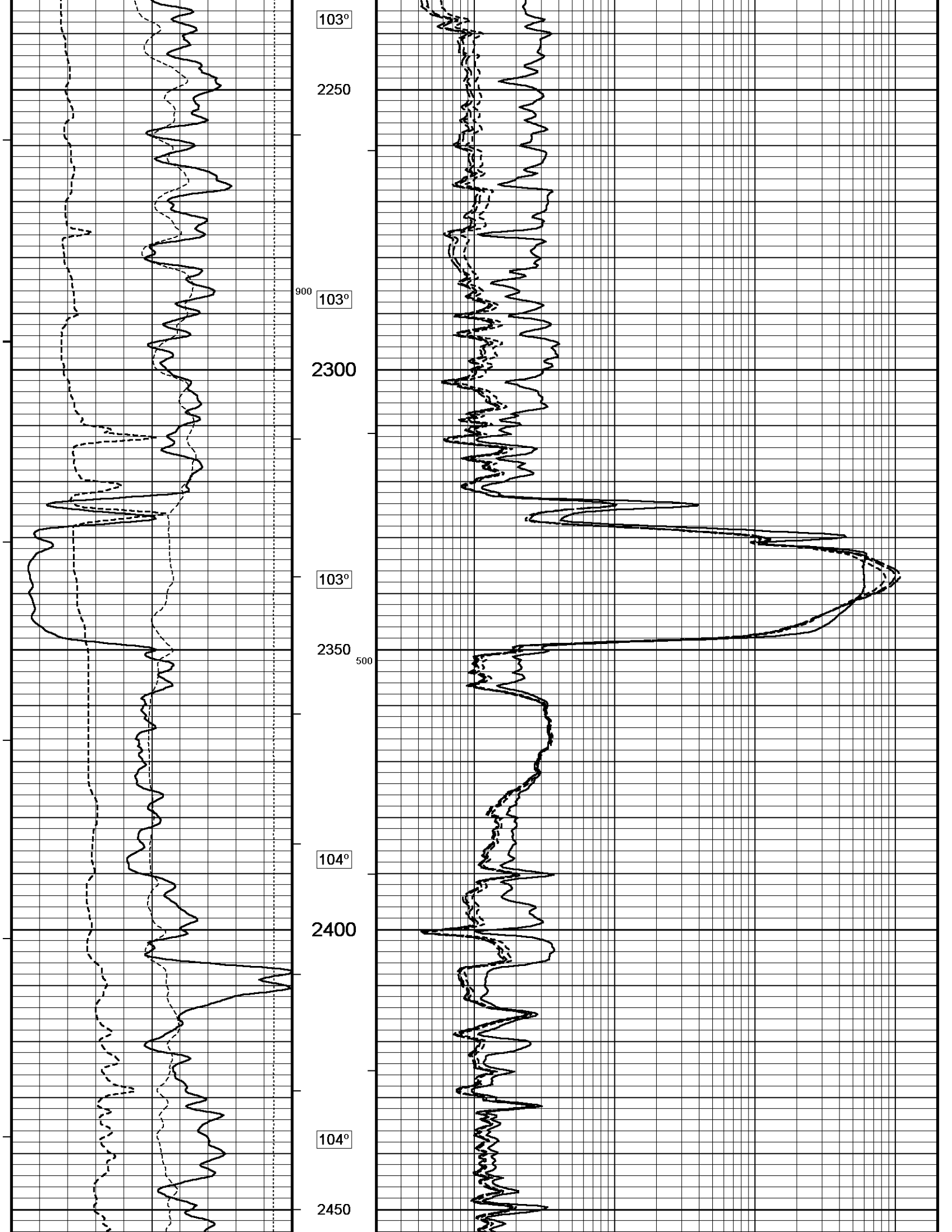

98°
1150
98°
1200
98°
1250
1400
99°
1300
99°
1350
Array Ind. One Res Rt
Array Ind. One Res 60"
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension

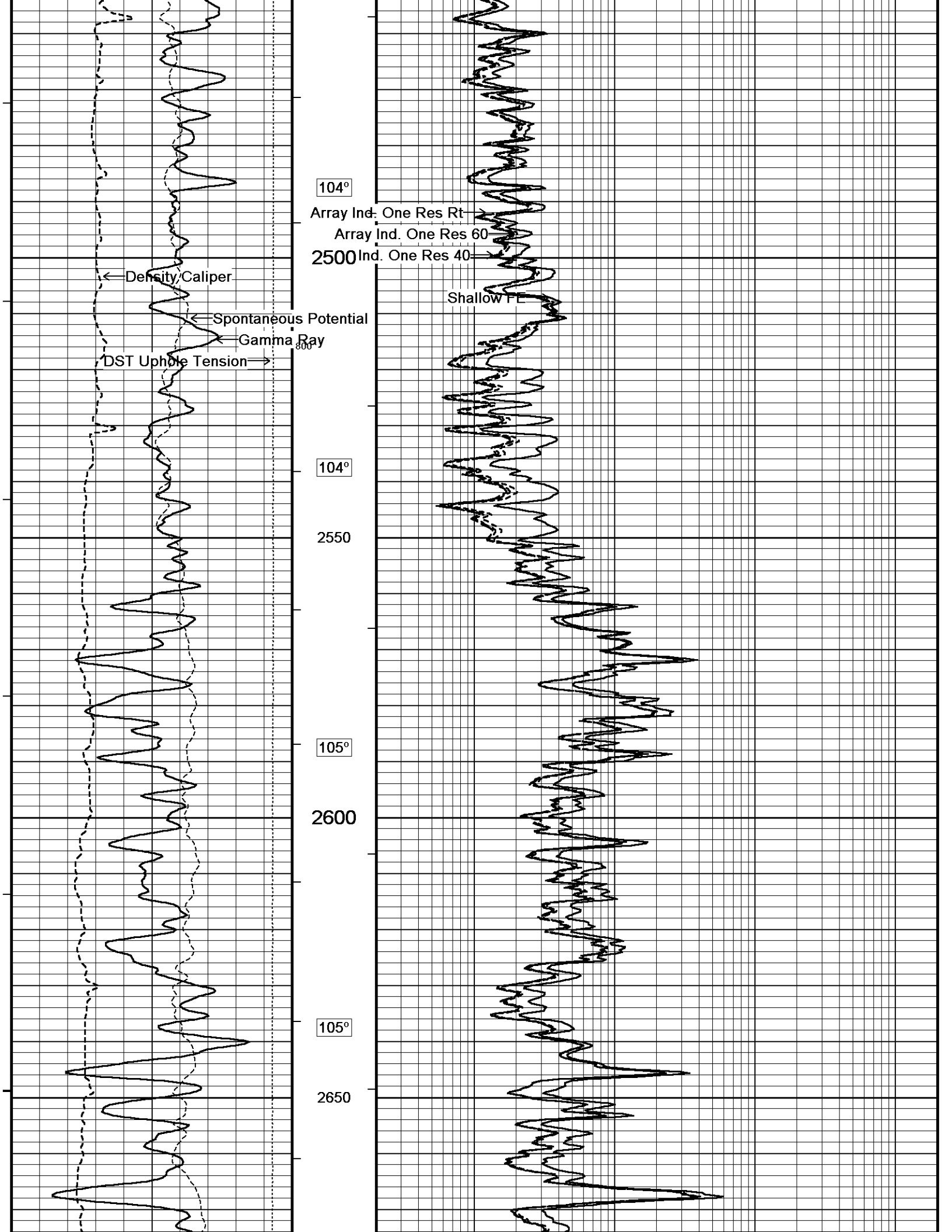

99°
1400
100°
1450
800
100°
1500
1300
100°
1550

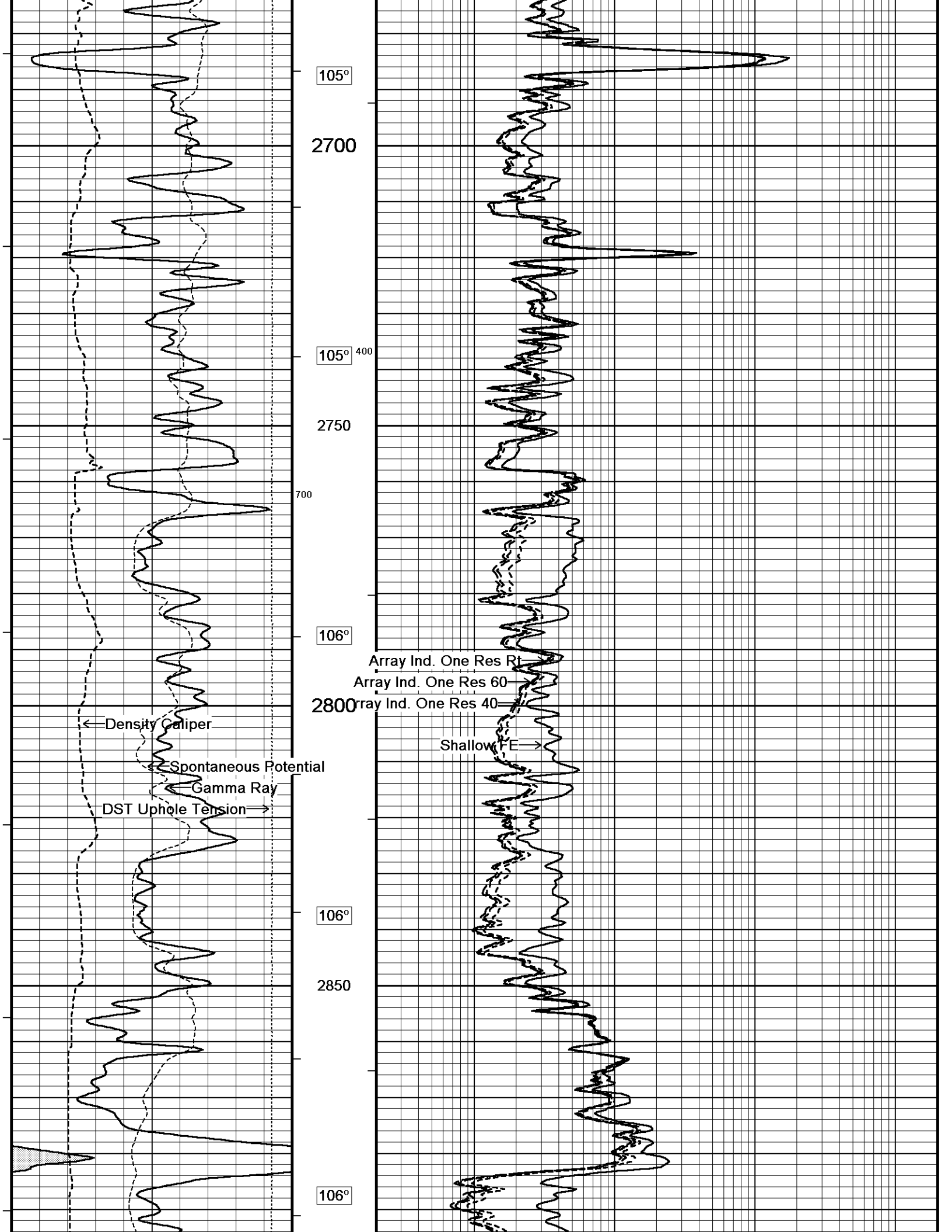

100°
Array Ind. One Res Rt
Array Ind. One Res 60
1600
Array Ind. One Res 40
Density Caliper
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
100°
1650
100°
1700
101°
1750
1200
101°

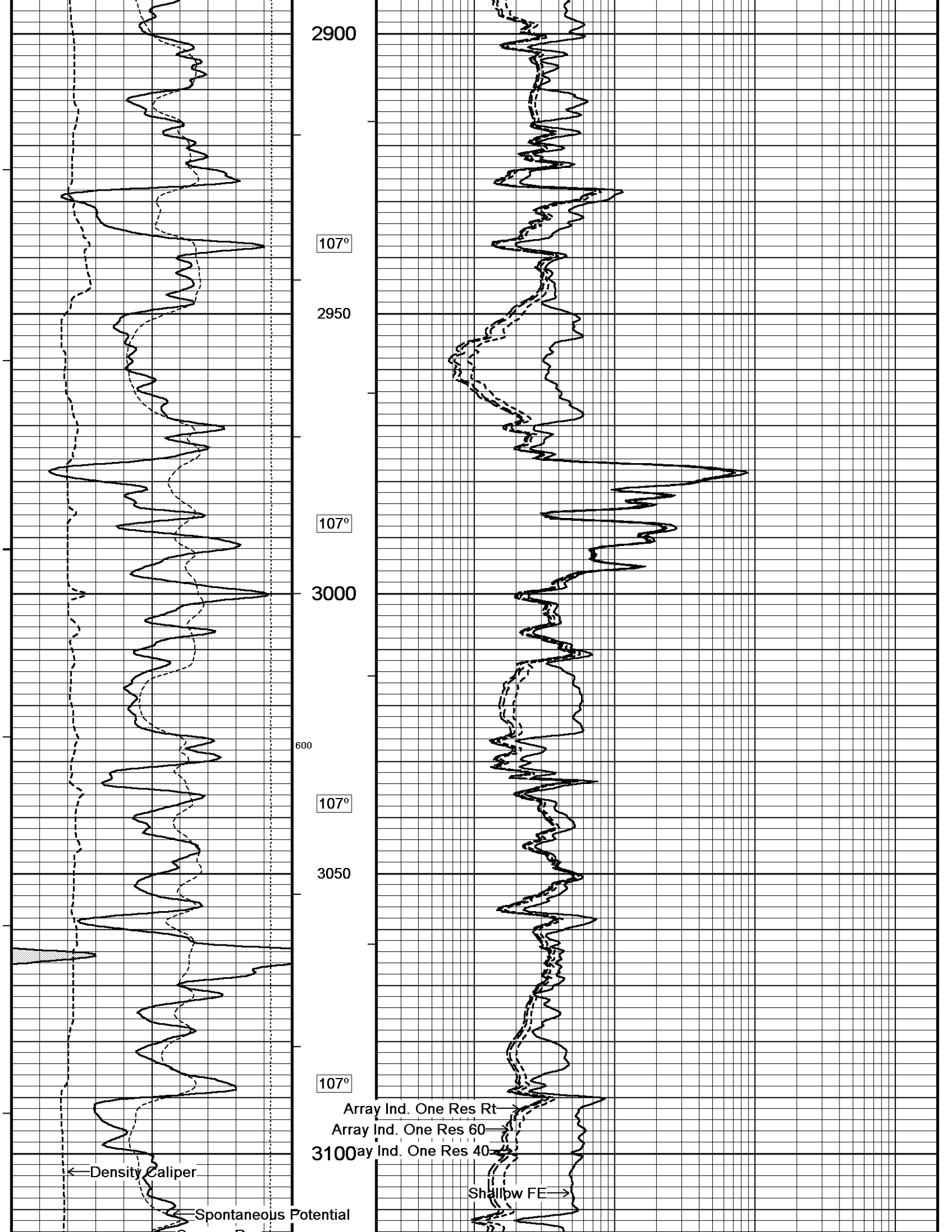

1800
101°
1850
700
101°
1900
Density Caliper
1100
Spontaneous Potential
Gamma Ray
DST Uphole Tension
101°
1950
600
101°
2000
1000
Array Ind. One Res 90
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE

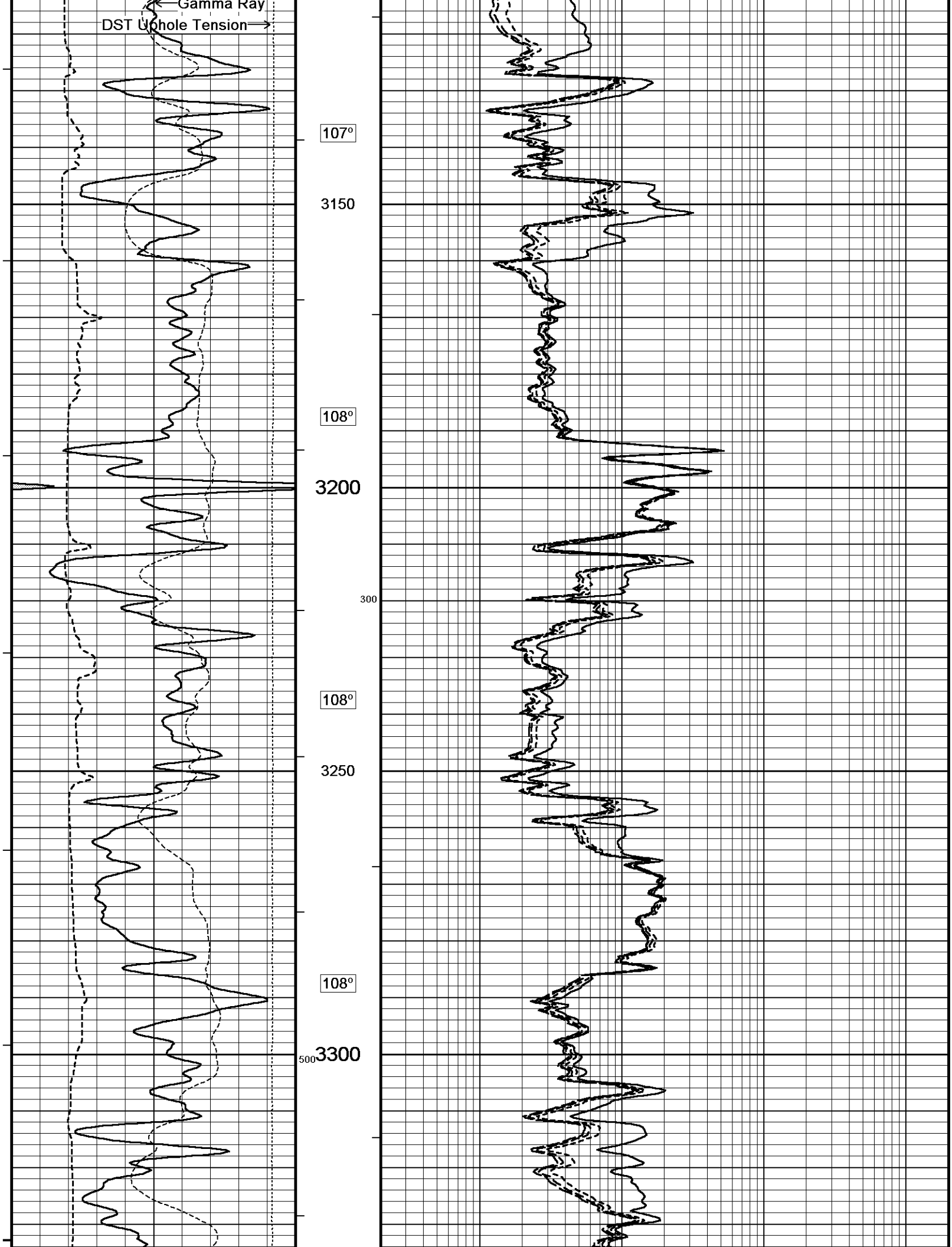

102°
2050
102°
2100
102°
2150
103°
Array Ind. One Res Rt
Array Ind. One Res 60
2200
Ind. One Res 40
Shallow
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension

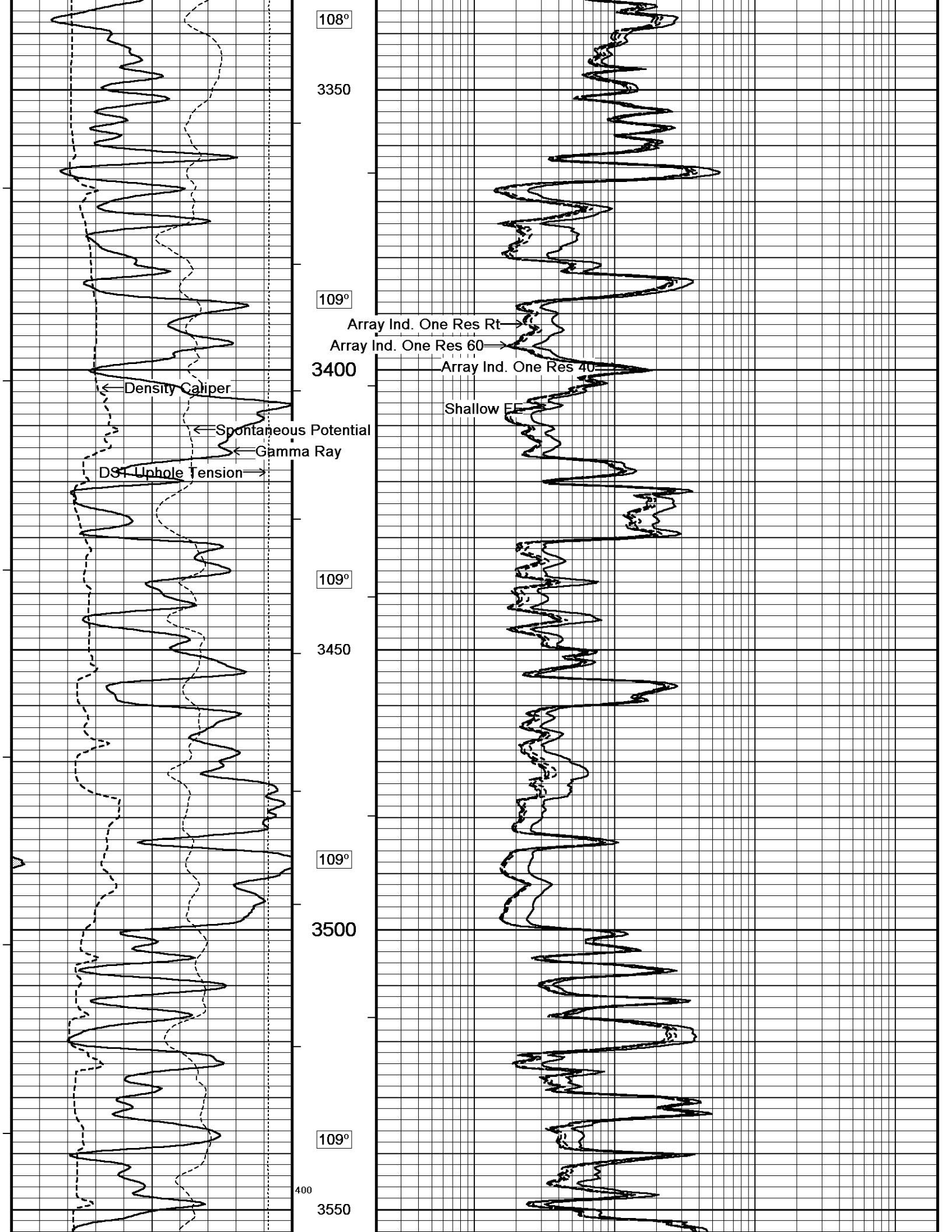

103°
2250
900
103°
2300
103°
2350
500
104°
2400
104°
2450

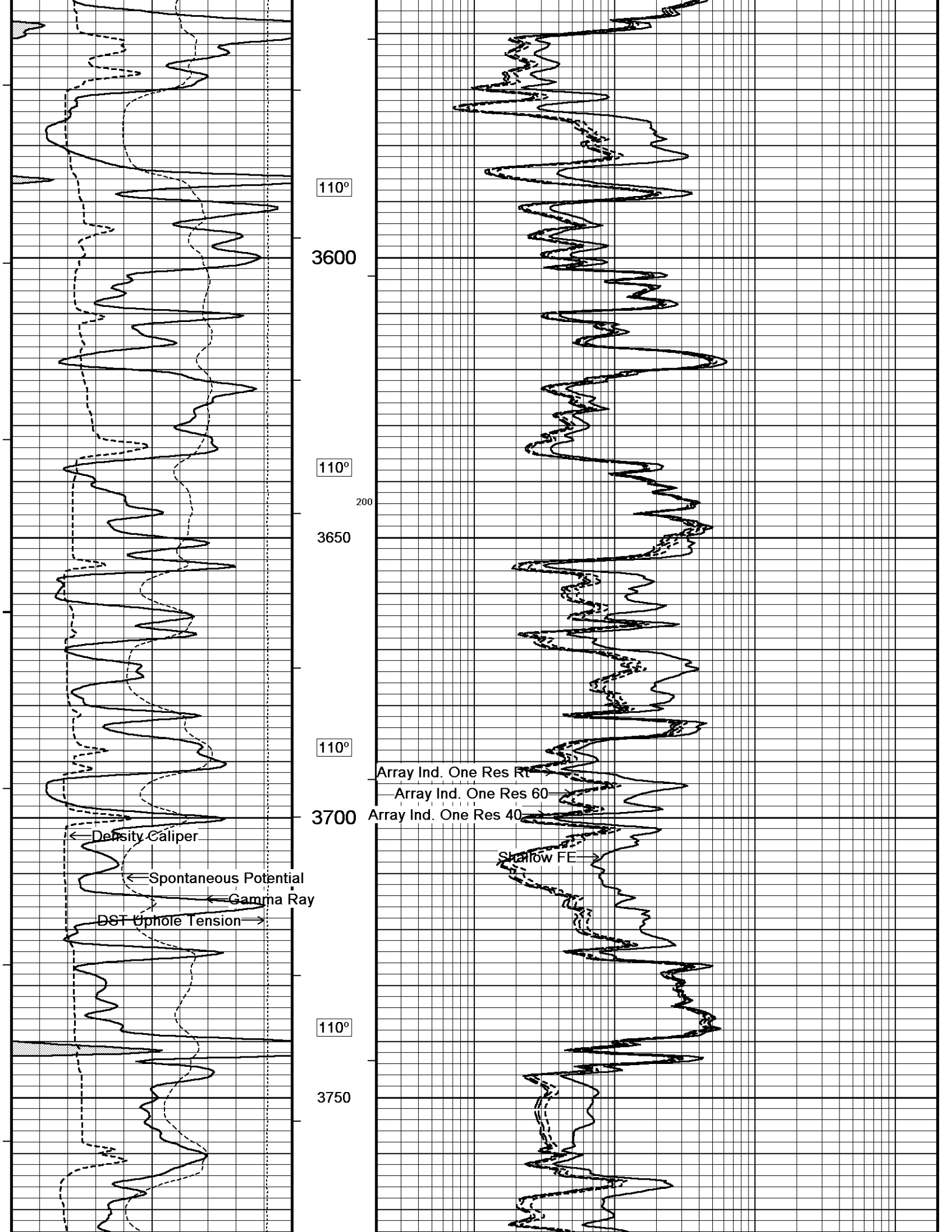

104°
Array Ind. One Res Rt
Array Ind. One Res 60
2500
Ind. One Res 40
Density Caliper
Shallow FE
Spontaneous Potential
Gamma Ray
800
DST Uphole Tension
104°
2550
105°
2600
105°
2650

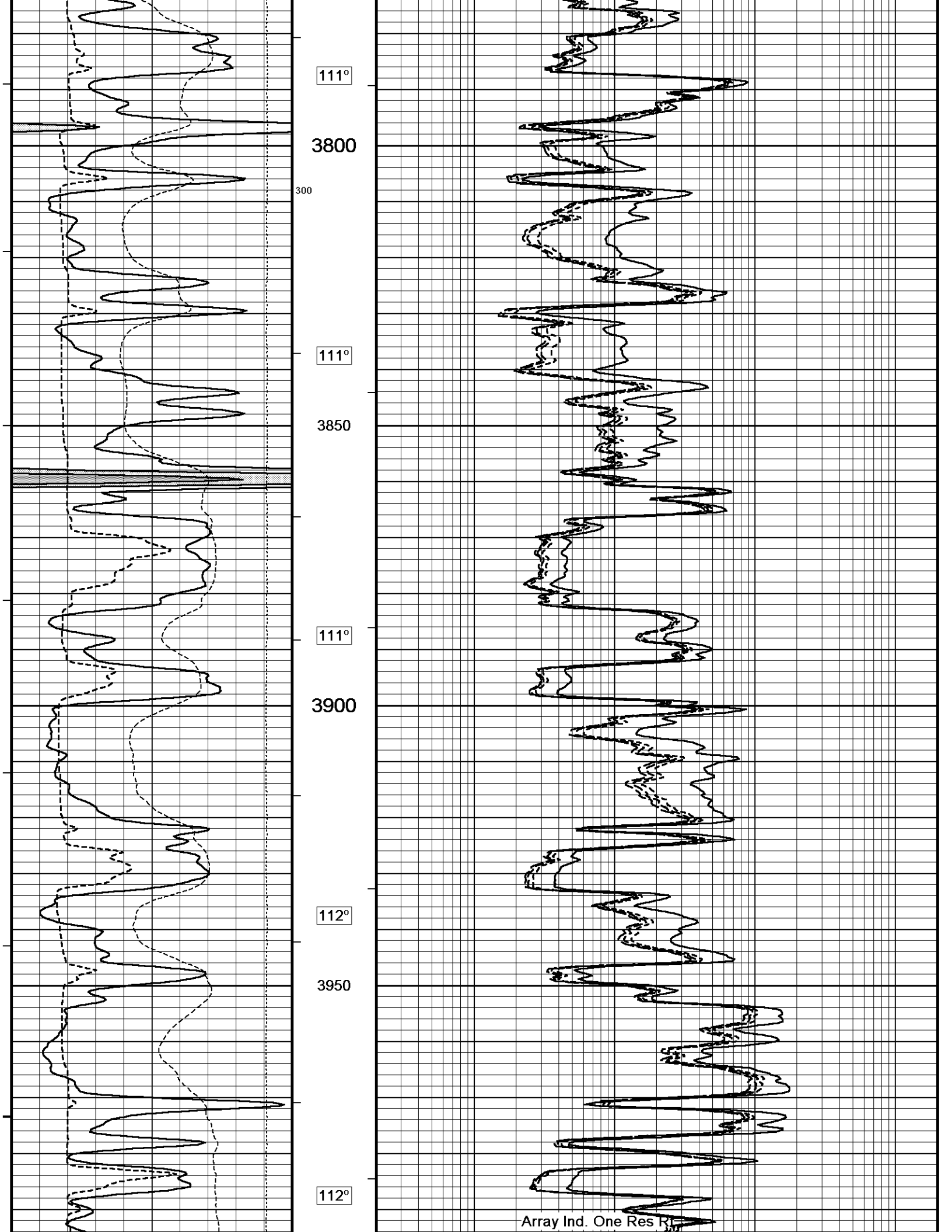

105°
2700
105°
400
2750
700
106°
Array Ind. One Res Rt
Array Ind. One Res 60
2800
rray Ind. One Res 40
Density Caliper
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
106°
2850
106°

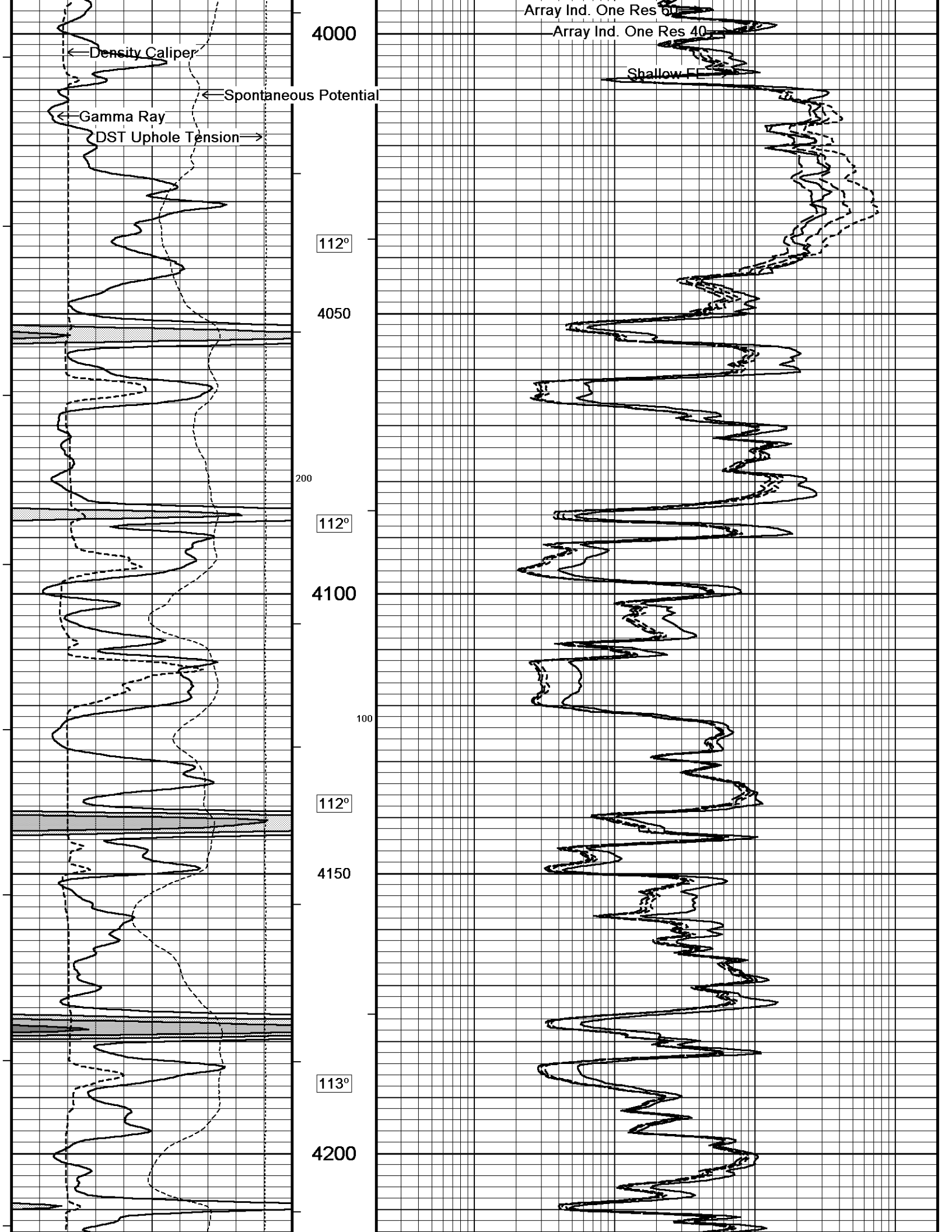

2900
107°
2950
107°
3000
600
107°
3050
107°
3100
Array Ind. One Res Rt
Array Ind. One Res 60
ay Ind. One Res 40
Density Caliper
Shallow FE
Spontaneous Potential

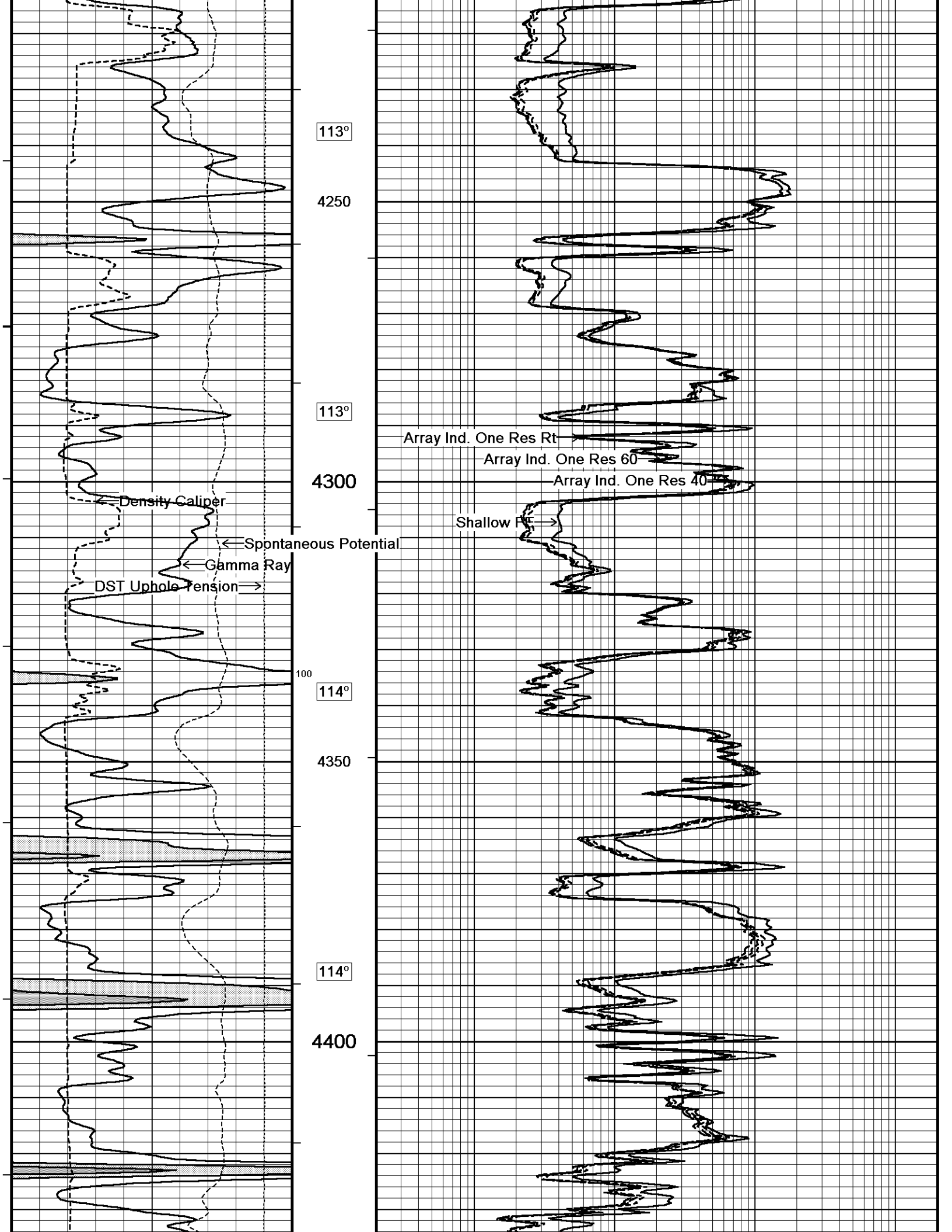

Gamma Ray
DST Uphole Tension
107°
3150
108°
3200
300
108°
3250
108°
500
3300

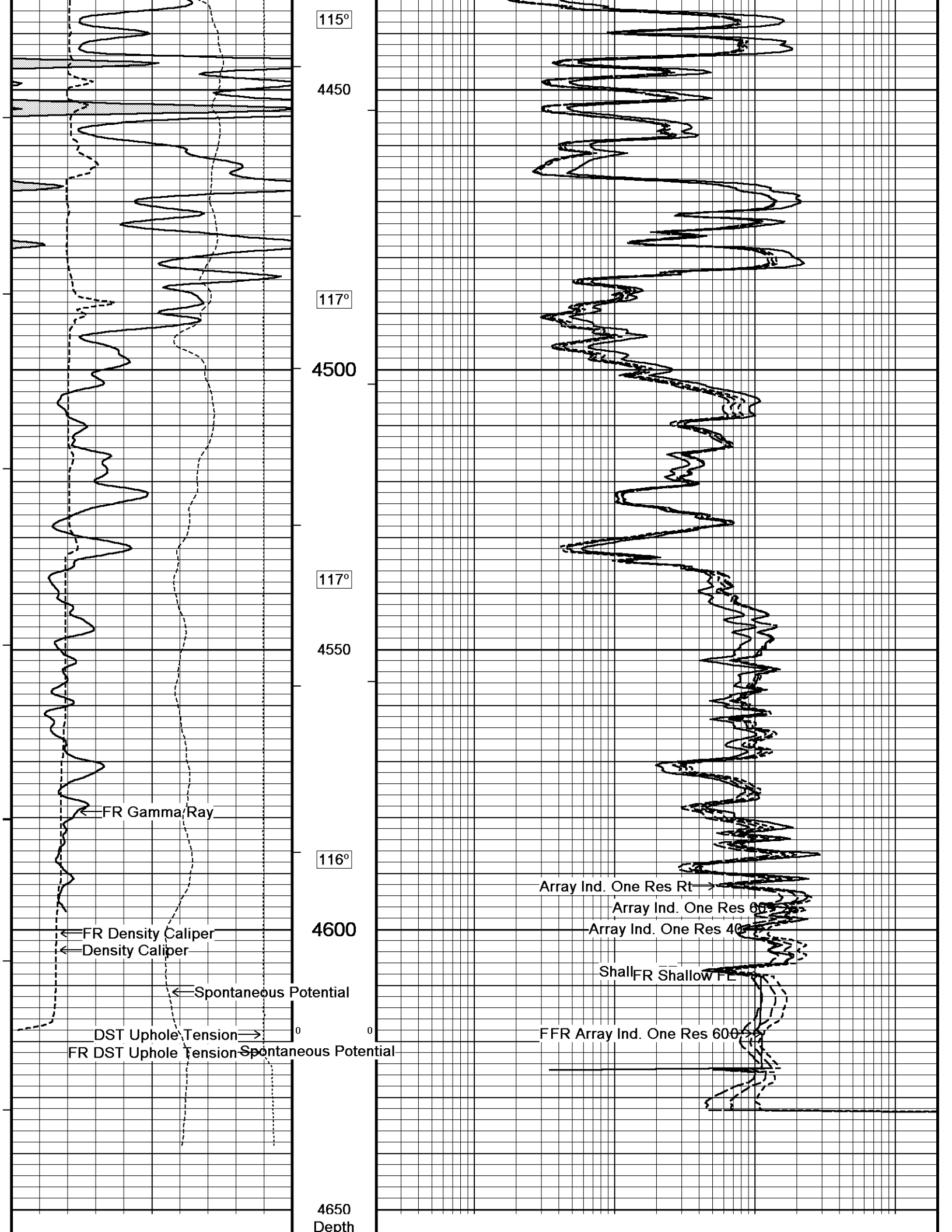

108°
3350
109°
Array Ind. One Res Rt
Array Ind. One Res 60
3400
Array Ind. One Res 40
Density Caliper
Shallow EE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
109°
3450
109°
3500
109°
400
3550

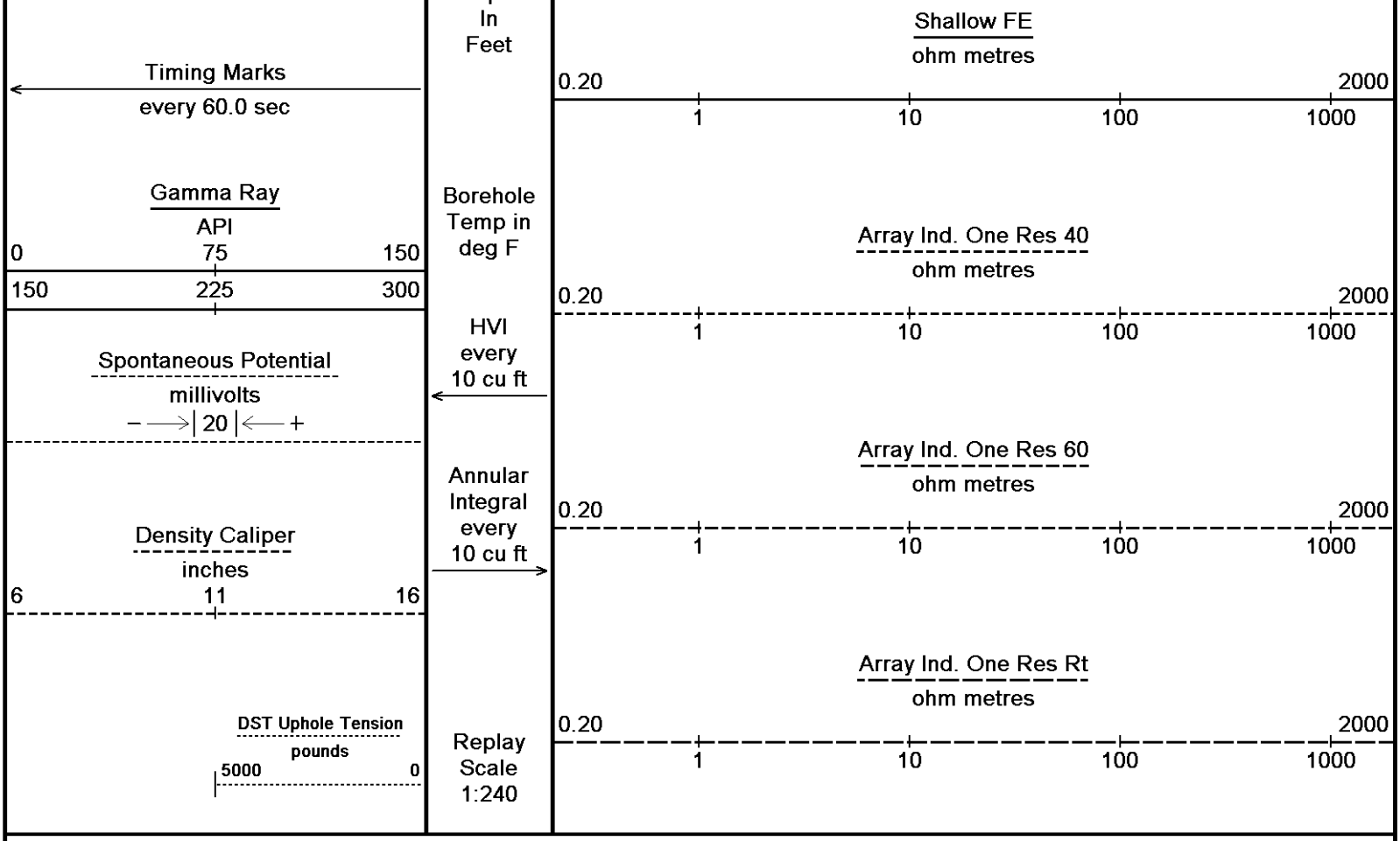

110°
3600
110°
200
3650
110°
Array Ind. One Res Rt
Array Ind. One Res 60
3700
Array Ind. One Res 40
Density Caliper
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
110°
3750


111°
3800
300
111°
3850
111°
3900
112°
3950
112°
Array Ind. One Res R


Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
4000
112°
4050
200
112°
4100
100
112°
4150
113°
4200


113°
4250
113°
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
4300
Density Caliper
Shallow RT
Spontaneous Potential
Gamma Ray
DST Uphole Tension
100
114°
4350
114°
4400


115°
4450
117°
4500
117°
4550
116°
4600
4650
Depth
FR Gamma Ray
FR Density Caliper
Density Caliper
Spontaneous Potential
DST Uphole Tension
FR DST Uphole Tension
0
0
Spontaneous Potential
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shall
FR Shallow FE
FFR Array Ind. One Res 60

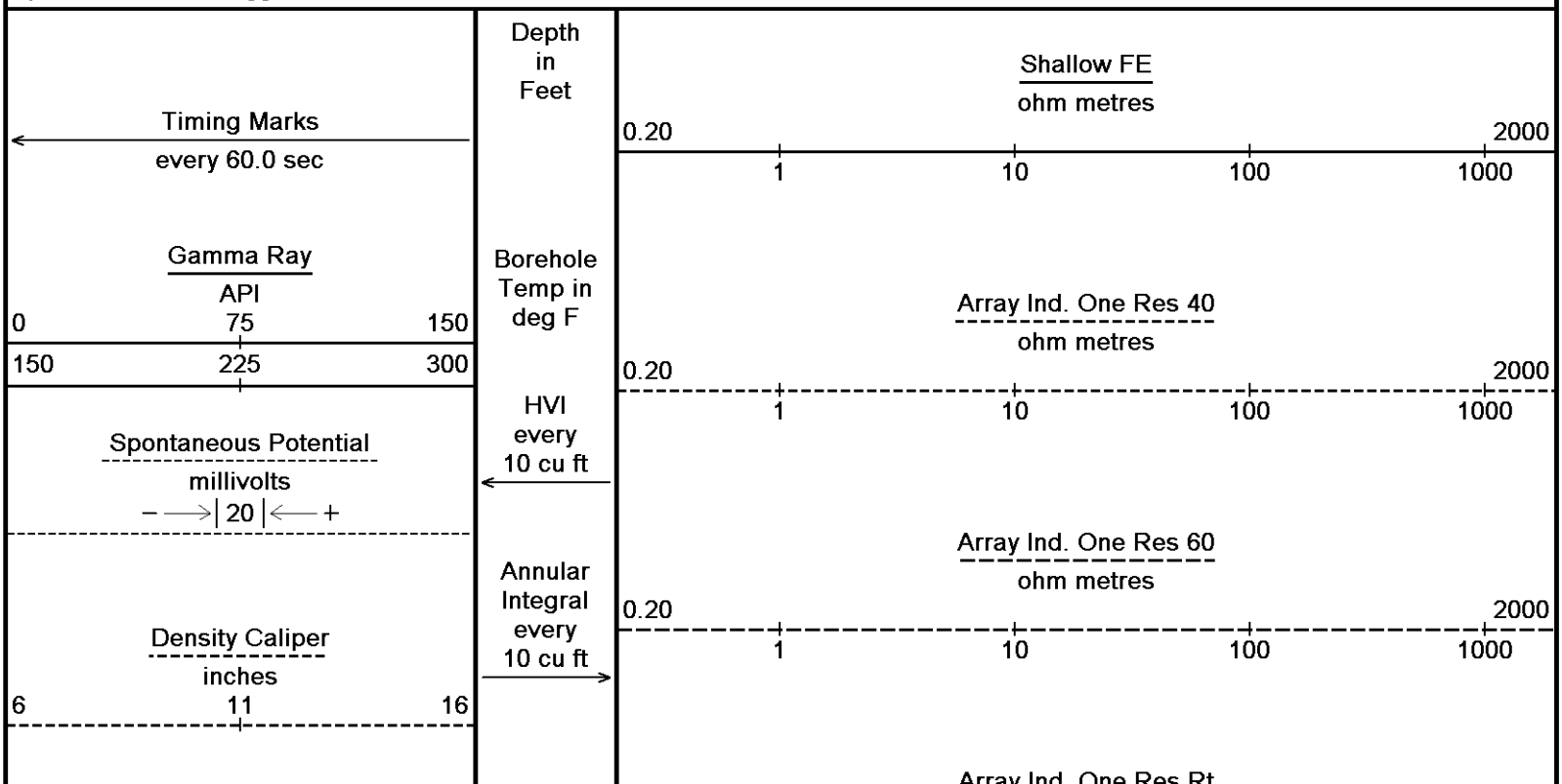


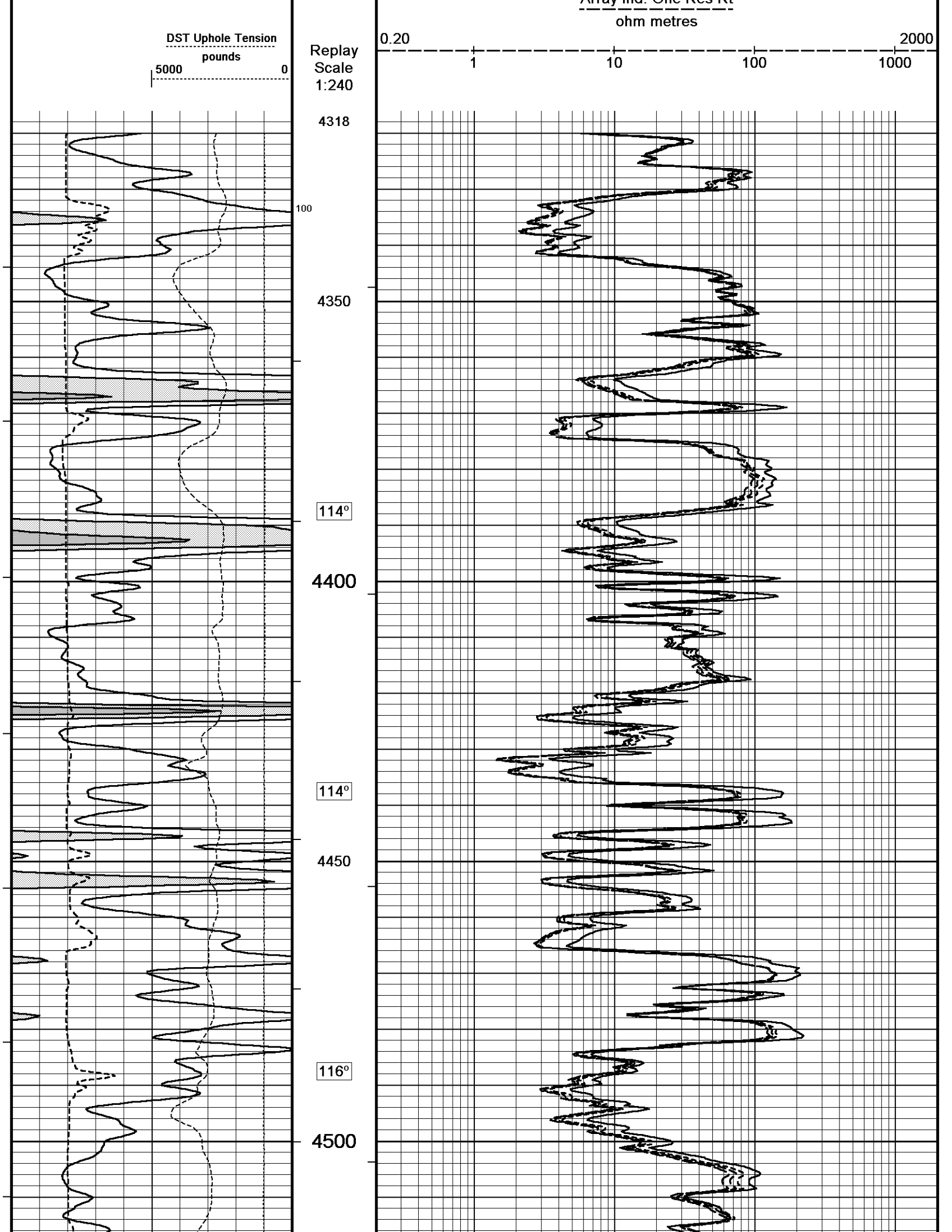
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-OCT-2012 23:13
Filename: C:\Minimus 13.02.6600\Data\Grand Mesa Glennis #2...\Grand Mesa Glennis #2-27 Splice.dta — Recorded on 05-OCT-2012 20:00
System Versions: Plotted with 13.02.6600

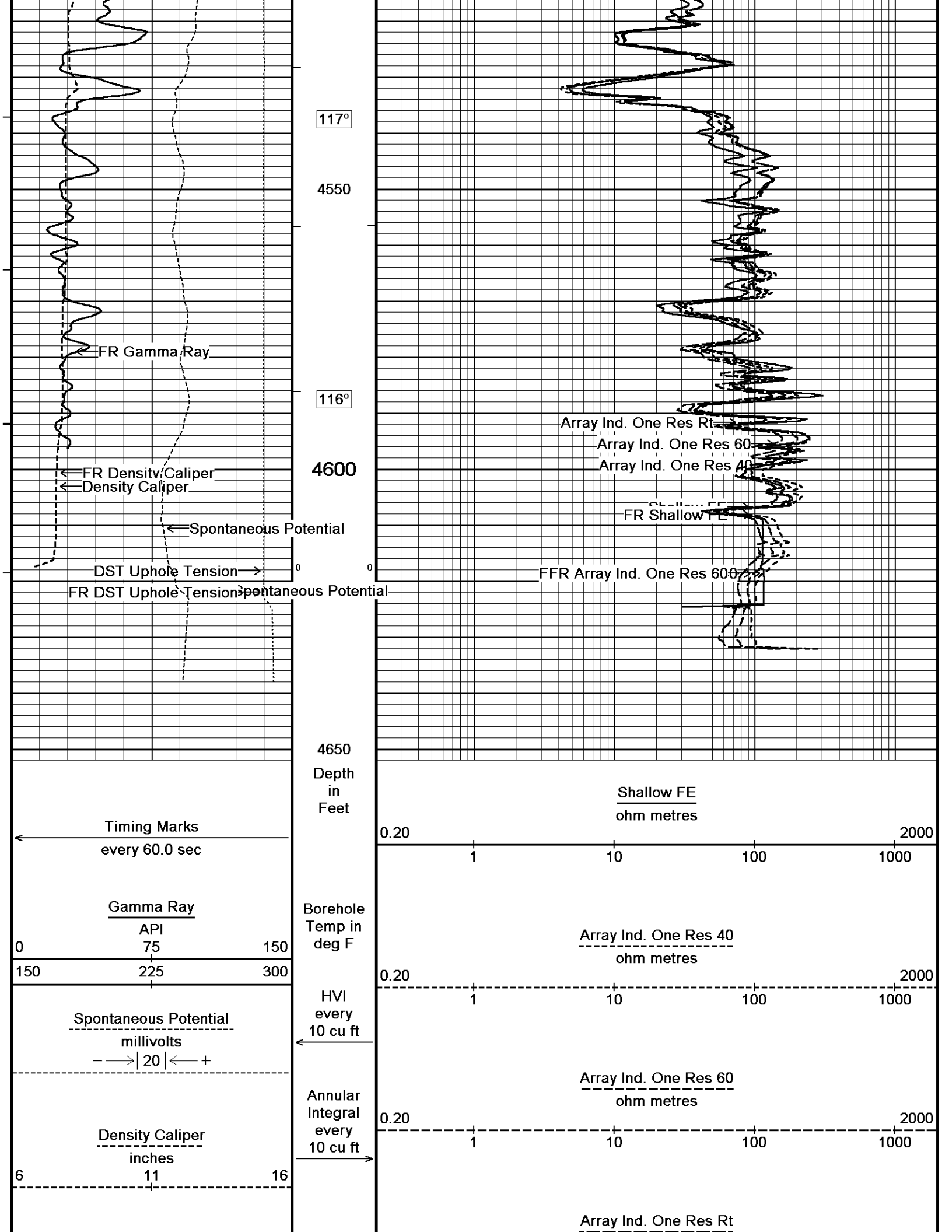
5 INCH MAIN

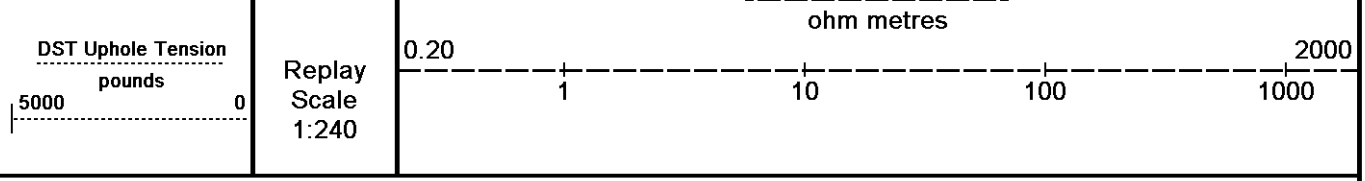
REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-OCT-2012 23:13
Filename: C:\Minimus 13.02.6600\Data\Grand Mesa Glennis #2-27\Grand Mesa Glennis #2-27_002.dta — Recorded on 05-OCT-2012 19:39
System Versions: Logged with 13.02.6600 Processed with 13.02.6600 Plotted with 13.02.6600




DST Uphole Tension
pounds
5000
0
Replay
Scale
1:240
4318
100
4350
114°
4400
114°
4450
116°
4500
Array Ind. Uhc Res Rt
ohm metres
0.20
2000
1
10
100
1000


117°
4550
116°
4600
4650
FR Gamma Ray
FR Density Caliper
Density Caliper
Spontaneous Potential
DST Uphole Tension
FR DST Uphole Tension
Spontaneous Potential
0
0
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
FR Shallow FE
FFR Array Ind. One Res 60
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
Borehole Temp in deg F
HVI every 10 cu ft
Annular Integral every 10 cu ft
Shallow FE
ohm metres
0.20
2000
1
10
100
1000
Array Ind. One Res 40
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



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 05-OCT-2012 23:13
Filename: C:\Minimus 13.02.6600\Data\Grand Mesa Glennis #2-27\Grand Mesa Glennis #2-27_002.dta — Recorded on 05-OCT-2012 19:39
System Versions: Logged with 13.02.6600 Processed with 13.02.6600 Plotted with 13.02.6600

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.02.6600\Data\Grand Mesa Glennis #2-27\Grand Mesa Glennis #2-27 Splice.dta

General Constants All 000

Last Edited on 05-OCT-2012,19:15

General Parameters		
Mud Resistivity	0.630	ohm-metres
Mud Resistivity Temperature	84.000	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	

Down-hole Tension Calibration SMS 0

Field Calibration on 05-OCT-2012 18:53

Reading No	Measured	Calibrated (lbs)
1	-2307.27	0.00
2	-2305.09	400.00

Gamma Calibration MCG-C 84

Field Calibration on 02-OCT-2012 14:55

	Measured	Calibrated (API)
Background	71	49
Calibrator (Gross)	1136	774
Calibrator (Net)	1064	725

Gamma Constants MCG-C 84

Last Edited on 01-JAN-2003,00:09

Gamma Calibrator Number	GRC38	
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 01-OCT-2012,10:14

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

High Resolution Temperature Calibration MCG-C 84

Field Calibration on 01-OCT-2012,10:14

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

High Resolution Temperature Constants MCG-C 84

Last Edited on

Pre-filter Length	11

Caliper Calibration MML-A 16

Base Calibration on 07-SEP-2012 10:01
Field Calibration on 20-SEP-2012 14:10

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13823	5.98
2	16876	7.97
3	20058	9.86
4	23883	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

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

Micro Normal and Micro Inverse Calibration MML-A 16

Base Calibration on 07-SEP-2012 10:10
Field Check on 20-SEP-2012 14:11

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	78.3	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 01-JAN-2003,00:09

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-B.J 387

Base Calibration on 03-OCT-2012 16:16
Field Check on 03-OCT-2012 16:32

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	2923	89	3714	110
Ratio	32.740		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1702	2509
Ratio	0.678	

Field Check

	Calibrated (cps)	
	1694	2505
Ratio	0.676	

Neutron Constants MDN-B.J 387

Last Edited on 01-JAN-2003,00:09

Neutron Source Id	P58125B	
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
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 55

Base Calibration on 01-OCT-2012 09:28
Field Check on 01-OCT-2012 09:33

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	953.9	126.8
Base Check		280.7
Field Check		280.8

FE Constants MFE-A.A 55

Last Edited on 01-JAN-2003,00:08

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 178

Base Calibration on 18-APR-2011,13:49
Field Check on 03-OCT-2012 15:31

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	17.6	484.7	9.3	966.2
2	6.2	391.4	7.6	821.4
3	4.0	264.5	5.2	566.0
4	2.3	135.1	2.6	279.2

Array Temperature 77.0 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1	13.7	3764.4	13.7	3764.2
2	30.0	3467.5	30.0	3467.3
3	27.4	3013.9	27.4	3013.8
4	18.8	2064.8	18.8	2064.8
Deep	16.0	1995.0	16.0	1995.2
Medium	40.3	3954.7	40.3	3954.5
Shallow	46.0	5083.0	46.0	5082.4
Array Temperature		94.4		94.8 Deg F

Induction Constants MAI-A.A 178

Last Edited on 01-JAN-2003,00:08

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 178

Field Calibration on 03-MAR-2011,09:58

	Measured	Calibrated(Deg F)
Lower	1.00	33.80
Upper	11.00	51.80

High Resolution Temperature Constants MAI-A.A 178

Last Edited on

Pre-filter Length	11

Caliper Calibration MPD-B 59

Base Calibration on 31-DEC-2002 23:12
Field Calibration on 31-DEC-2002 23:13

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	17177	3.99
2	25648	5.98
3	34313	7.97
4	42560	9.86
5	51728	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.04	5.98

Photo Density Calibration MPD-B 59

Base Calibration on 31-DEC-2002 23:33
Field Check on 31-DEC-2002 23:40

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	56697	27917	59556	30836
Reference 2	23013	2513	24941	2541

Field Check at Base

1200.6	1281.4

Field Check

1199.8	1279.8

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	220	1079		
Reference 1	21366	56515	0.381	0.371
Reference 2	6125	22879	0.271	0.272

Field Check at Base

220.5	1078.6

Field Check

218.4	1074.7

Density Constants MPD-B 59

Last Edited on 01-JAN-2003,00:09

Density Source Id	P50557B
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

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 13.02.6600\Data\Grand Mesa Glennis #2-27\Grand Mesa Glennis #2-27 Splice.dta

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

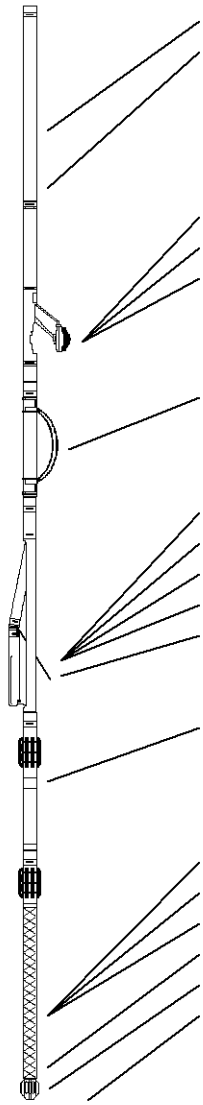
Compact Neutron
MDN-B.J 387 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

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

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

Compact Induction
MAI-A.A 178 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 48.16 ft Weight: 383.6 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	CLDC - Density Caliper
19.28 ft	DPRL - Limestone Density Por.
19.28 ft	DEN - Compensated Density
19.28 ft	DCOR - Density Correction
19.22 ft	PDPE - PE
13.72 ft	FEFE - Shallow FE
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
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	GRAND MESA OPERATING COMPANY
WELL	GLENNIS #2-27
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A./KANSAS

COUNTRY/STATE	U.S.A. / KANSAS				
Elevation Kelly Bushing	2839.00	feet	First Reading	4619.00	feet
Elevation Drill Floor	2837.00	feet	Depth Driller	4622.00	feet
Elevation Ground Level	2834.00	feet	Depth Logger	4622.00	feet

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ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG

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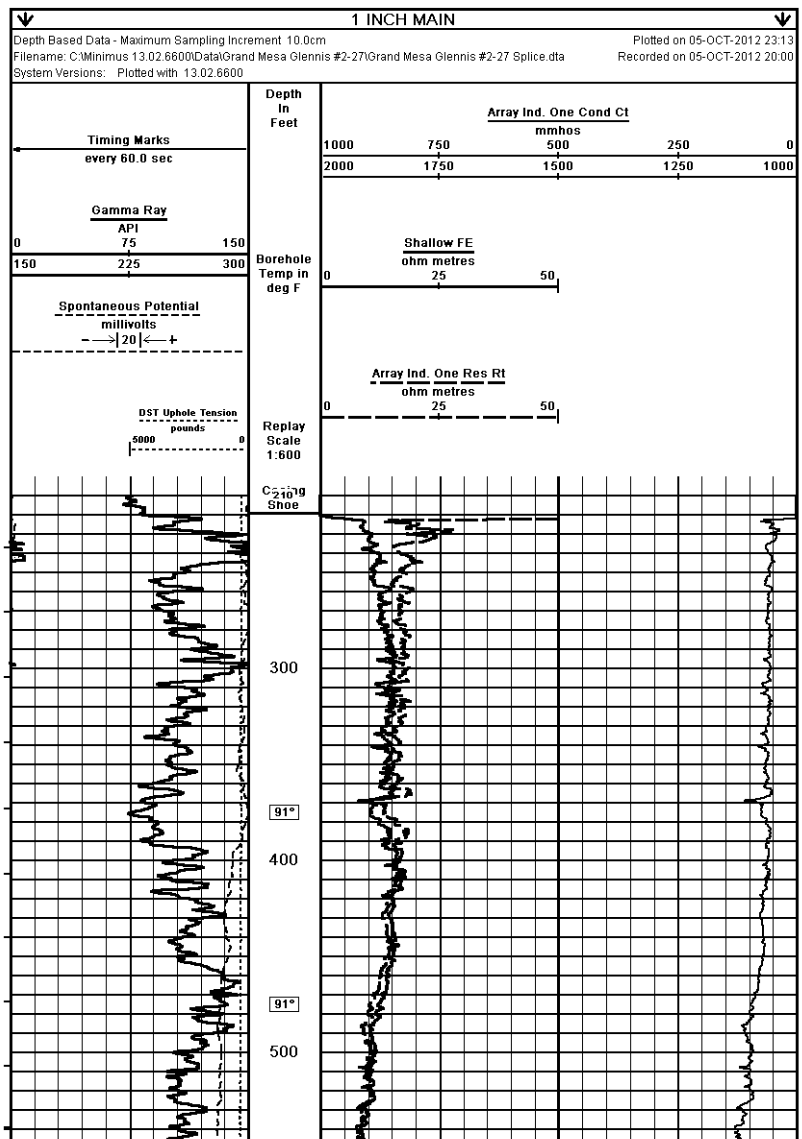
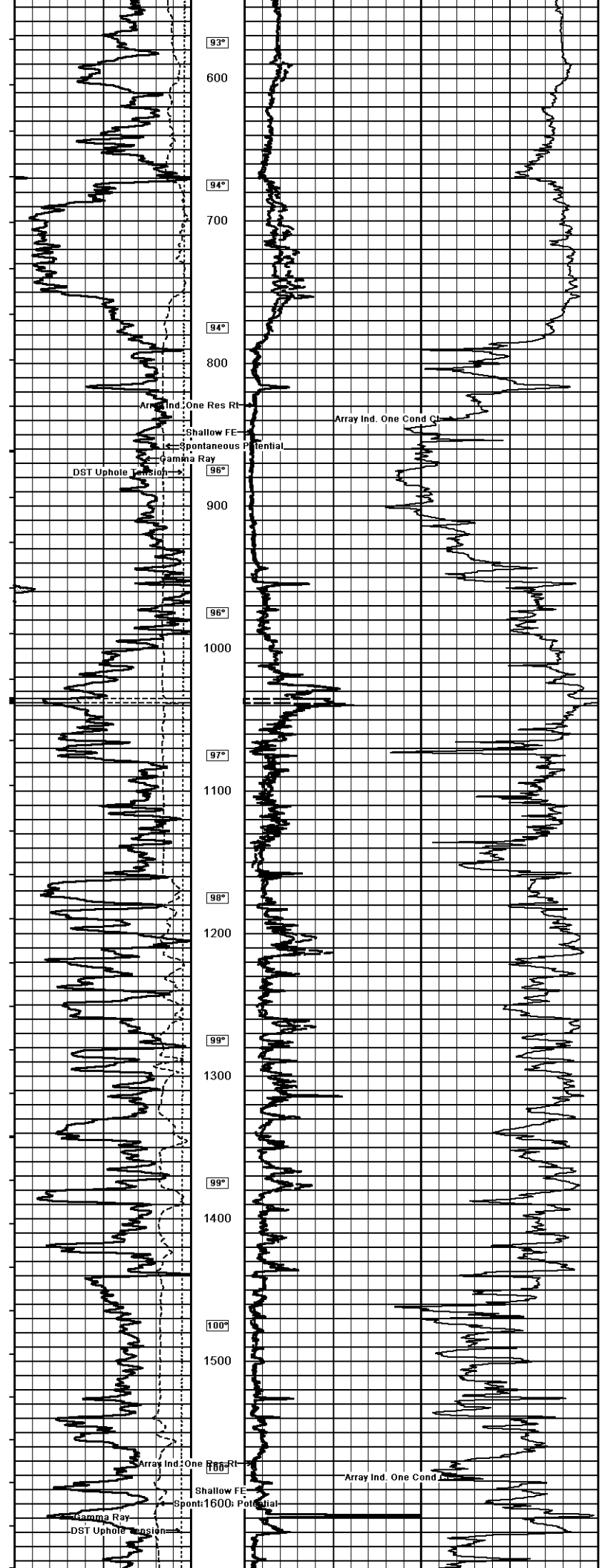
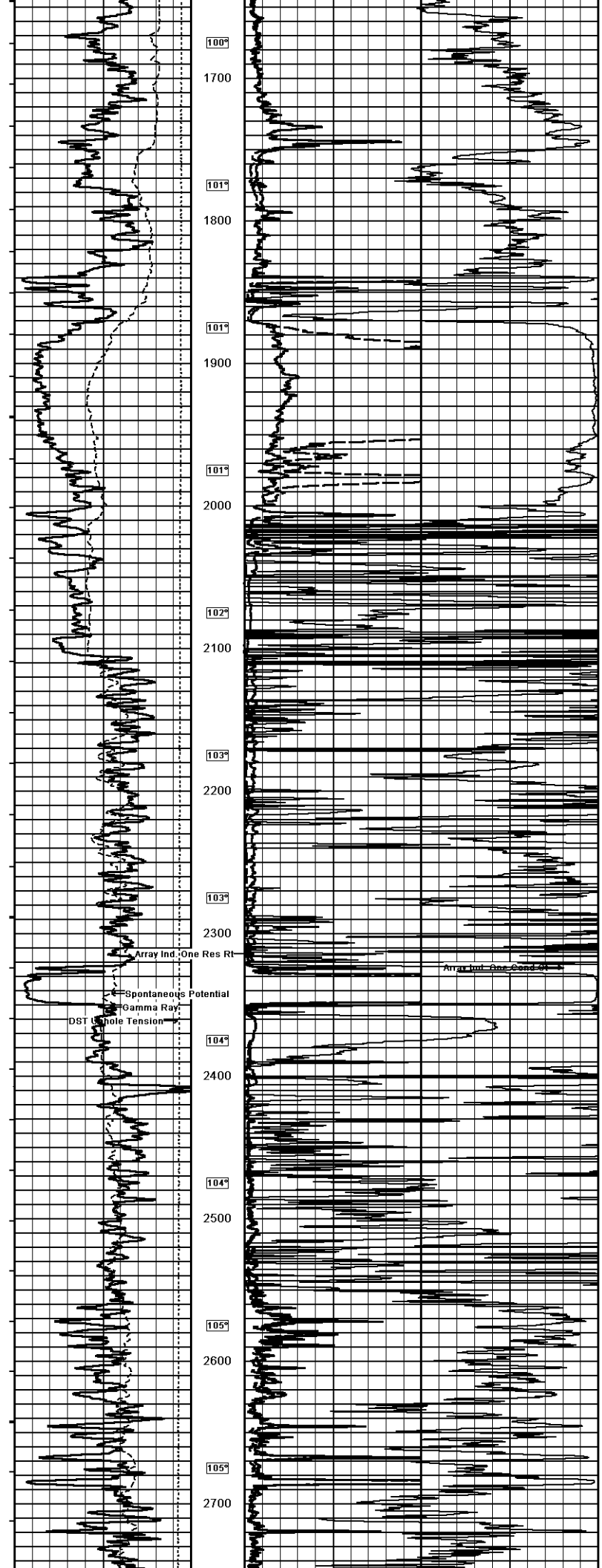
ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

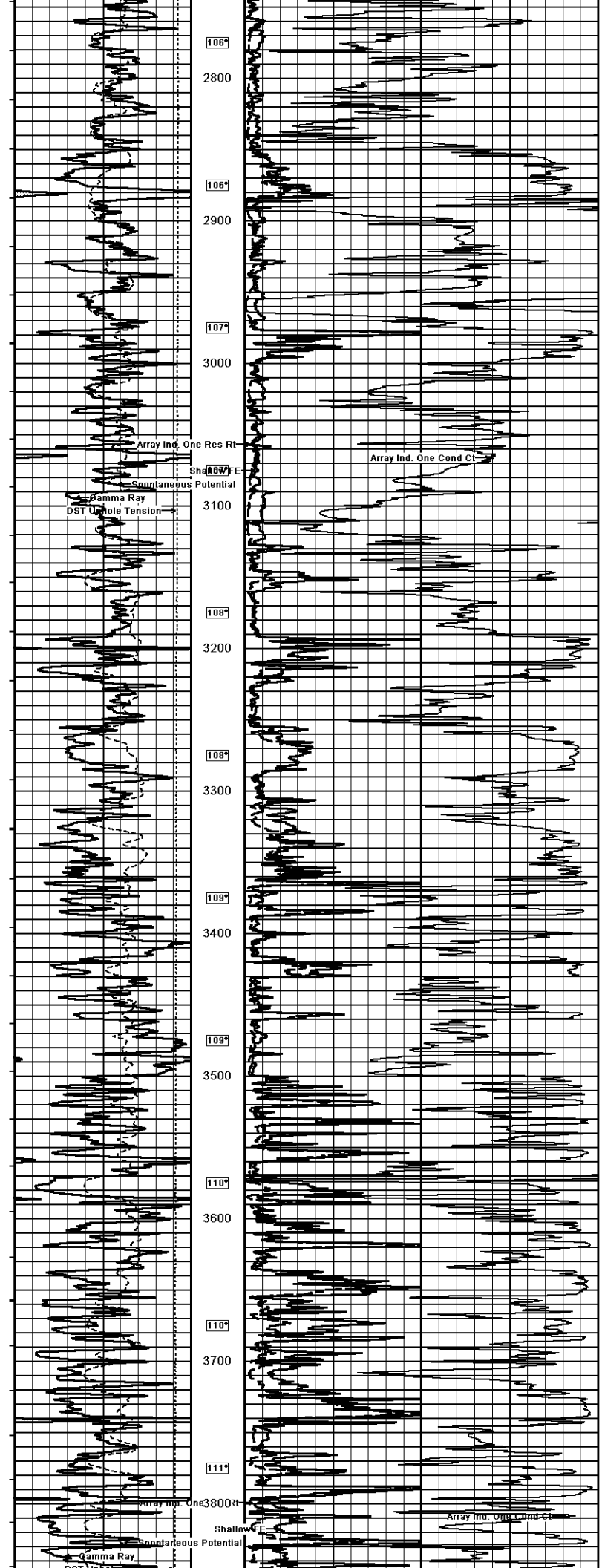
COMPANY	GRAND MESA OPERATING COMPANY
WELL	GLENNIS #2-27
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1931' FSL & 1945' FEL
SEC 27 / TWP 13S / RGE 31W	Other Services: MPD/MDN, MML
API Number	15-063-22041
Permit Number	
Permanent Datum GL, Elevation 2834 feet	Elevations: feet
Log Measured From KB	KB 2839.00
Drilling Measured From KB	DF 2837.00
	GL 2834.00

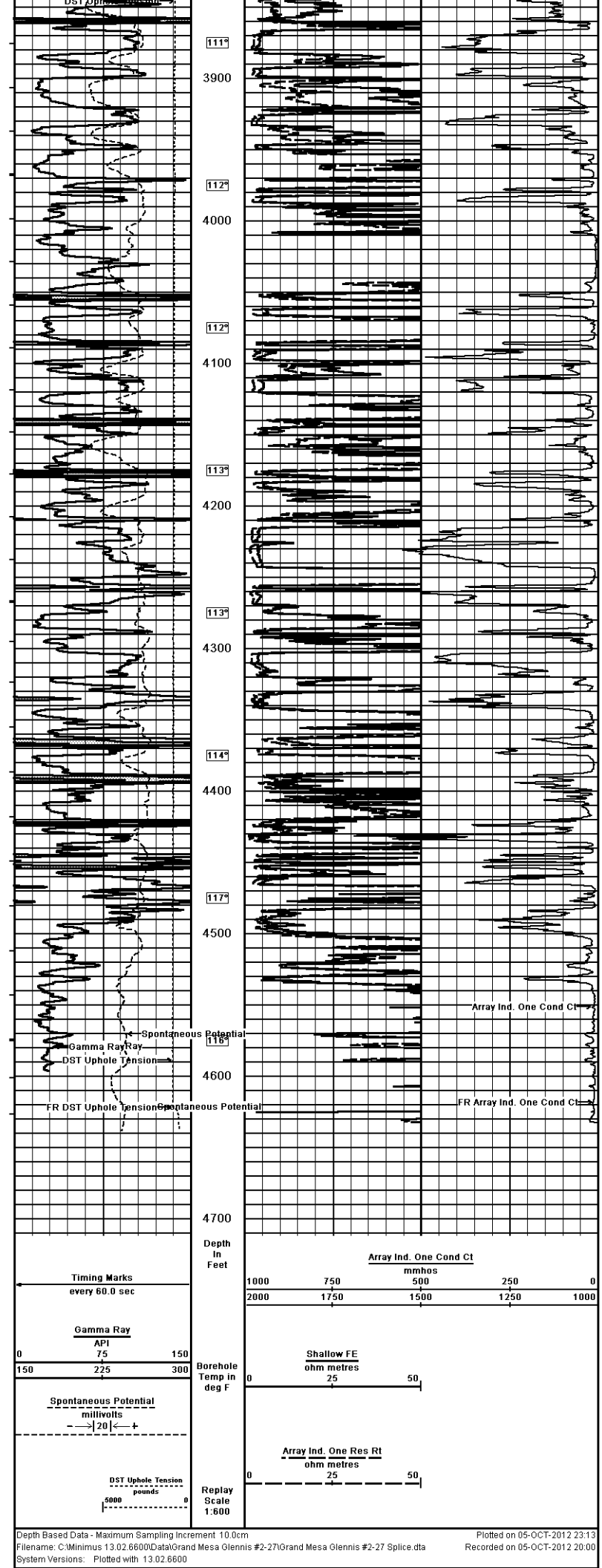
Date	05-OCT-2012		
Run Number	ONE		
Depth Driller	4622.00	feet	
Depth Logger	4622.00	feet	
First Reading	4619.00	feet	
Last Reading	219.00	feet	
Casing Driller	222.00	feet	
Casing Logger	219.00	feet	
Bit Size	7.875	inches	
Hole Fluid Type	CHEMICAL		
Density/Viscosity	9.20 g/c3	62.00 CP	
PH / Fluid Loss	10.50	7.20 ml/30Min	
Sample Source	MUDPIT		
Rm @ Measured Temp	0.63 @ 84.0	ohm-m	
Rmf @ Measured Temp	0.50 @ 84.0	ohm-m	
Rmc @ Measured Temp	0.76 @ 84.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.46 @ 117.0	ohm-m	
Time Since Circulation	5 HOURS		
Max Recorded Temp	117.00	deg F	
Equipment Name	COMPACT		
Equipment / Base	13025	LIB	
Recorded By	ADAM SILL		
Witnessed By	MENT MATSON		
S.O. # / JOB #	3534666		LB12-266




93°
600
94°
700
94°
800
Array Ind. One Res Rt
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
96°
900
96°
1000
97°
1100
98°
1200
99°
1300
99°
1400
100°
1500
Array Ind. One Res Rt
Shallow FE
Spont
1600
Potential
Gamma Ray
DST Uphole Tension
Array Ind. One Cond Ct
Array Ind. One Cond Ct


100°
1700
101°
1800
101°
1900
101°
2000
102°
2100
103°
2200
103°
2300
Array Ind. One Res Rt
Array Ind. One Cond Rt
Spontaneous Potential
Gamma Ray
DST Whole Tension
104°
2400
104°
2500
105°
2600
105°
2700


106"
2800
106"
2900
107"
3000
Array Ind. One Res Rt
Array Ind. One Cond Ct
Shallow FE
107"
Spontaneous Potential
Gamma Ray
DST Uphole Tension
3100
108"
3200
108"
3300
109"
3400
109"
3500
110"
3600
110"
3700
111"
Array Ind. One
3800
Rt
Array Ind. One Cond Ct
Shallow F
Spontaneous Potential
Gamma Ray



Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 05-OCT-2012 23:13
Filename: C:\Minimus 13.02.6600\Data\Grand Mesa Glennis #2-27\Grand Mesa Glennis #2-27 Splice.dta
Recorded on 05-OCT-2012 20:00
System Versions: Plotted with 13.02.6600

1 INCH MAIN

COMPANY	GRAND MESA OPERATING COMPANY
WELL	GLENNIS #2-27
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2839.00	feet	First Reading	4619.00	feet
Elevation Drill Floor	2837.00	feet	Depth Driller	4622.00	feet
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