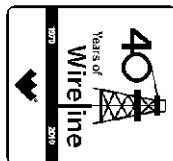




Weatherford

ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG



COMPANY	BEREN CORPORATION				
WELL	LOIS #10				
FIELD	HARDTNER				
PROVINCE/COUNTY	BARBER				
COUNTRY/STATE	U.S.A. / KANSAS				
LOCATION	2302' FNL & 990' FWL				
SEC	TWP	RGE	Other Services		MML
9	35S	12W	MPD/MDN		
API Number	15-007-23889				
Permit Number					
Permanent Datum GL, Elevation 1419 feet					Elevations: KB 1432.00 DF 1429.00 GL 1419.00
Log Measured From KB					
Drilling Measured From KB					
Date	11-JUN-2012				
Run Number	ONE				
Depth Driller	5100.00	feet			
Depth Logger	5113.00	feet			
First Reading	5110.00	feet			
Last Reading	293.00	feet			
Casing Driller	300.00	feet			
Casing Logger	293.00	feet			
Bit Size	7.875	inches			
Hole Fluid Type	CHEMICAL				
Density / Viscosity	9.20 lb/USg	58.00 CP			
PH / Fluid Loss	9.50	8.80 ml/30Min			
Sample Source	FLOWLINE				
Rm @ Measured Temp	0.32 @ 91.0	ohm-m			
Rmf @ Measured Temp	0.26 @ 91.0	ohm-m			
Rmc @ Measured Temp	0.38 @ 91.0	ohm-m			
Source Rmf / Rmc	CALC	CALC			
Rm @ BHT	0.25 @ 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	EDWIN GRIEVES				
S.O. # / JOB #	3534657		LB12-145		

40

Years of
Wireline

19732013

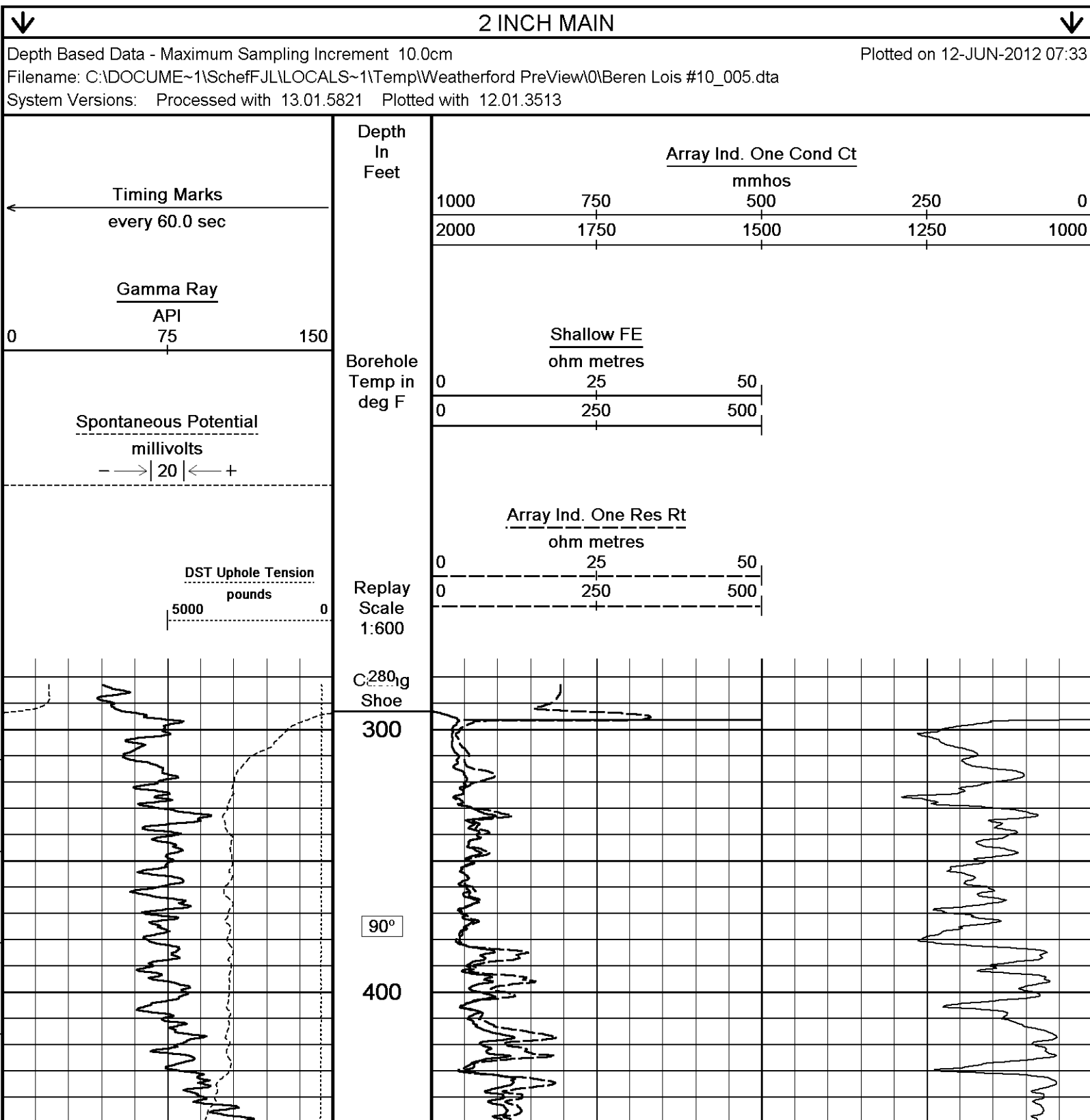
BOREHOLE RECORD			Last Edited: 11-JUN-2012 21:37
Bit Size inches	Depth From feet	Depth To feet	
14.500	0.00	300.00	
12.250	300.00	900.00	
7.875	900.00	5100.00	

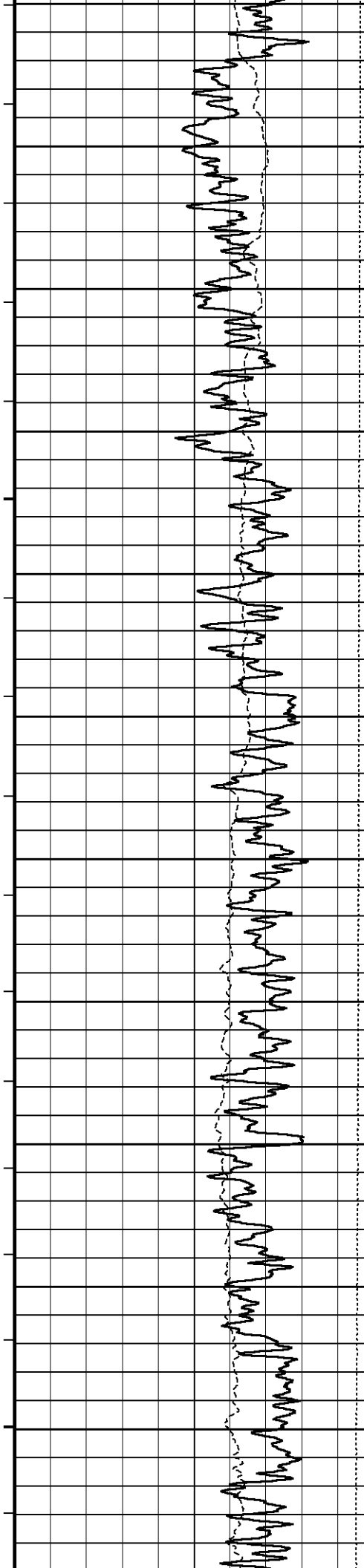
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	13.375	0.00	300.00	48.00

REMARKS	
- SOFTWARE ISSUE: WLS 11.03.4044.	
- MCG, MML, MDN, MPD, MFE, MAI RAN IN COMBINATION.	
- HARDWARE: DUAL BOWSPRING USED ON MDN.	
0.5 INCH STANDOFF USED ON MAI.	
0.5 INCH STANDOFF USED ON MFE.	
- 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: 572 CU.FT.	
ANNULAR HOLE VOLUME WITH 5.5 INCH CASING: 325 CU.FT.	

- OPERATOR(S): B. REEVES.

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.





91°

500

92°

600

92°

700

93°

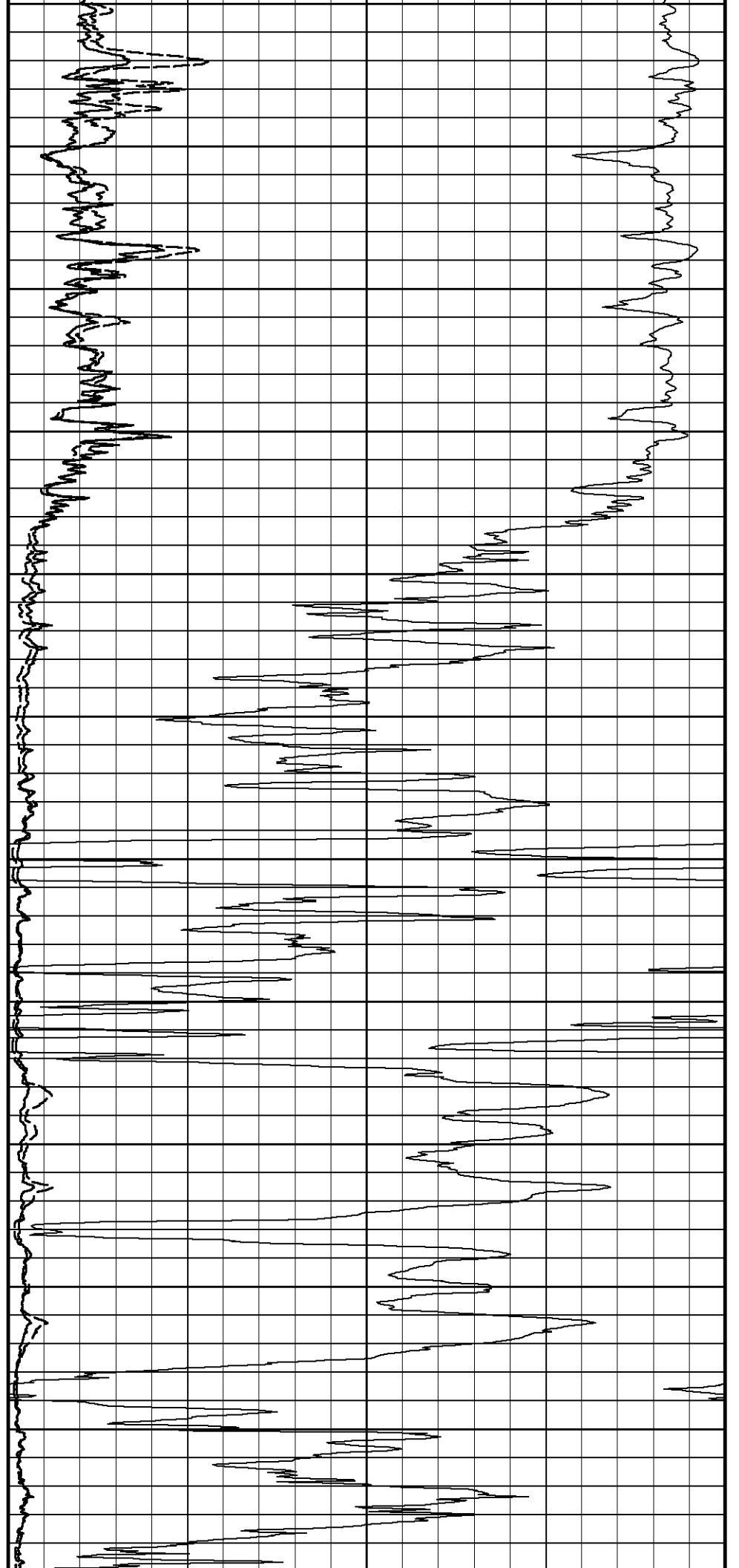
800

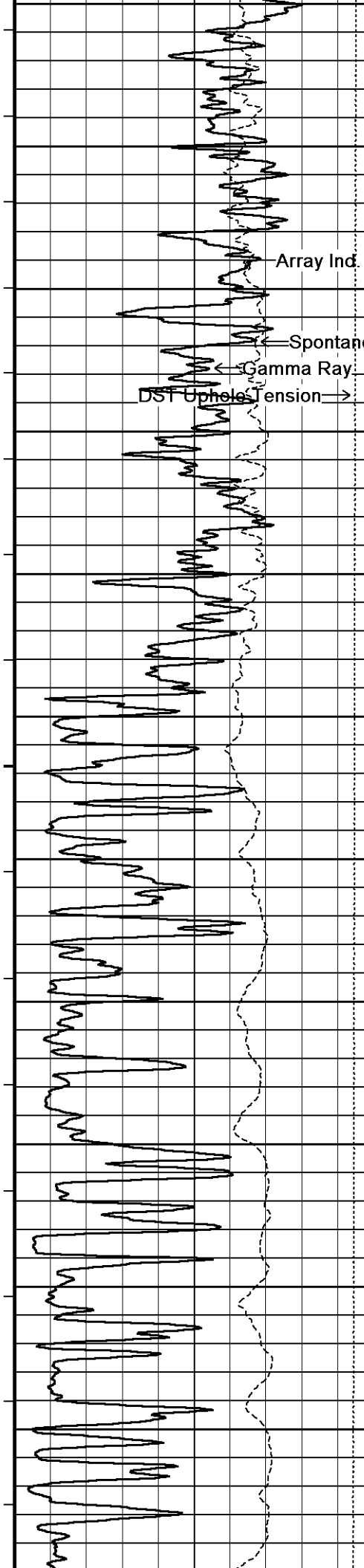
94°

900

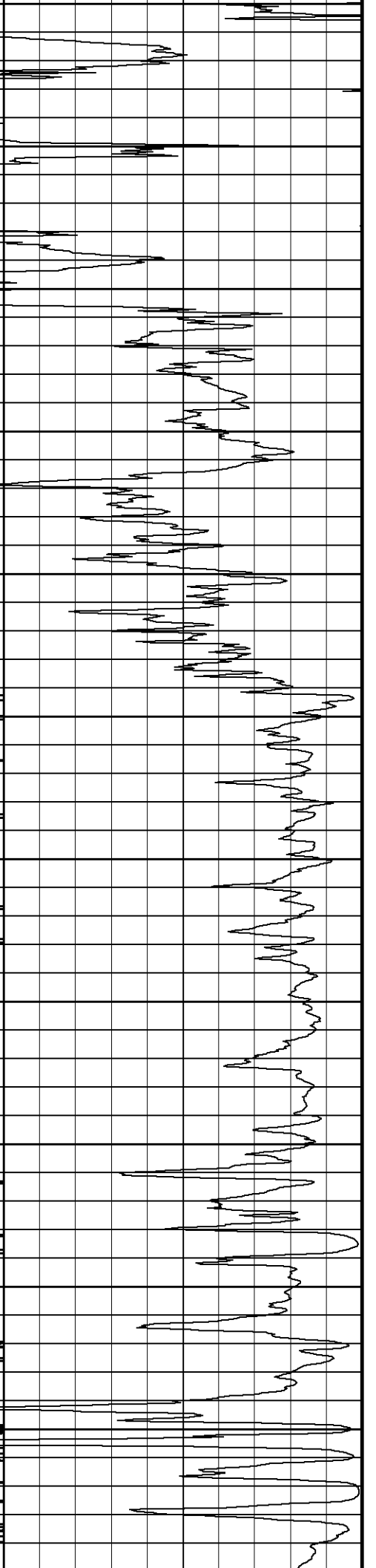
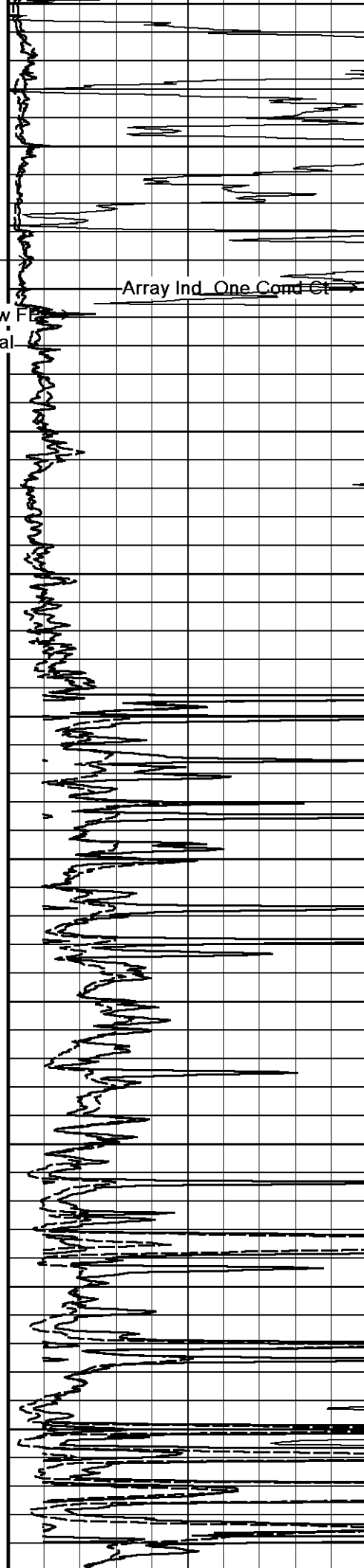
93°

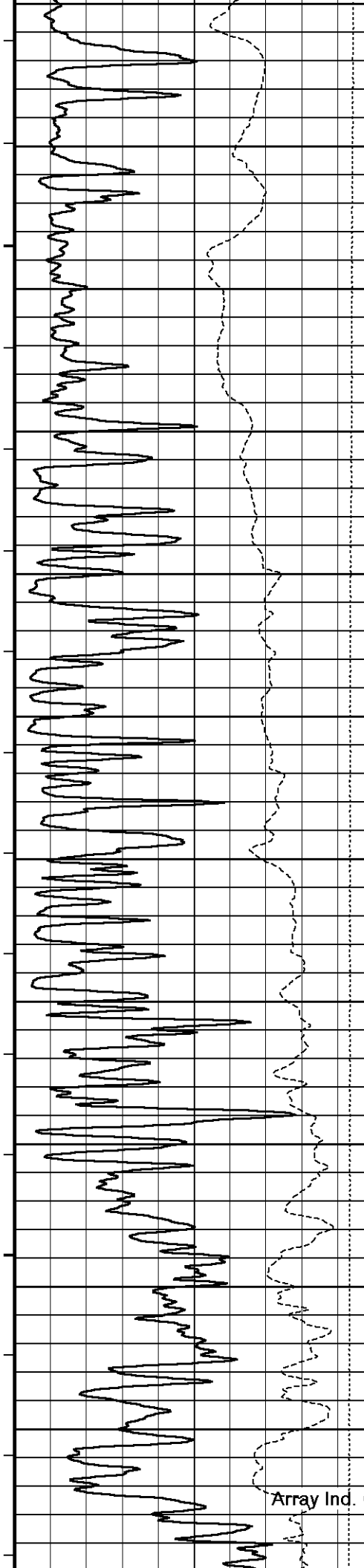
1000





1000
94°
1100
Shallow F
94°
1200
94°
1300
95°
1400
95°
1500





96°

1600

96°

1700

96°

1800

96°

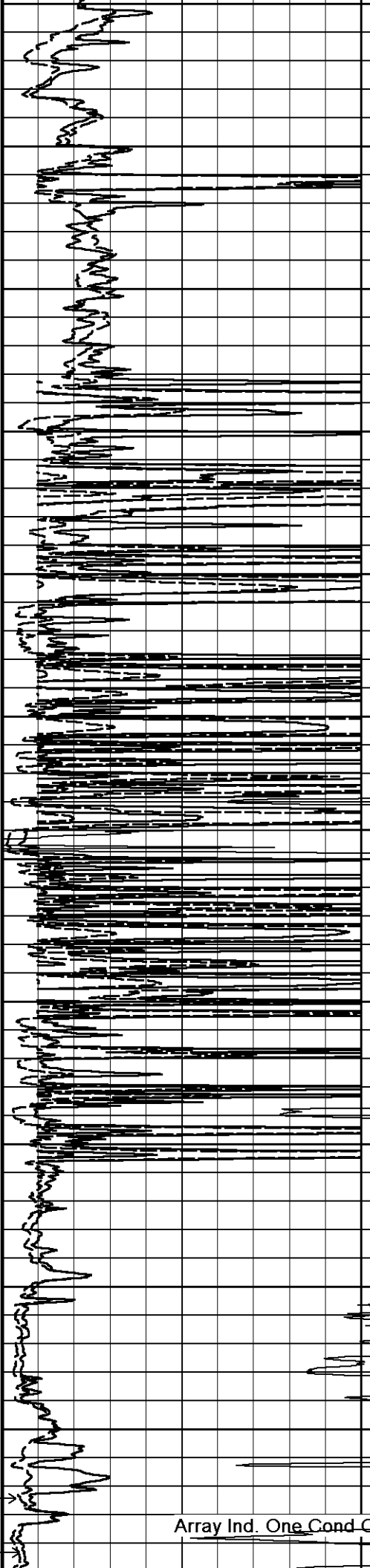
1900

97°

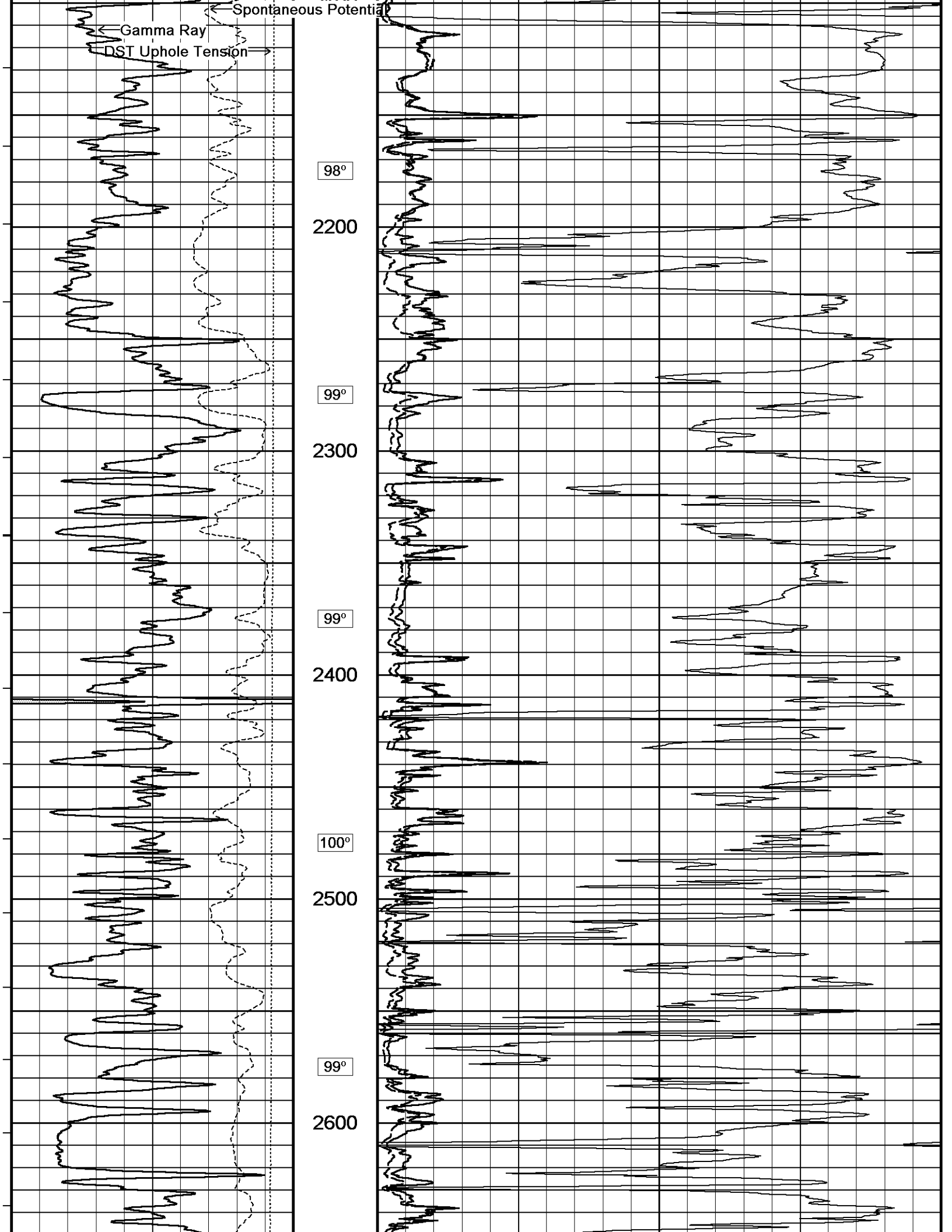
2000

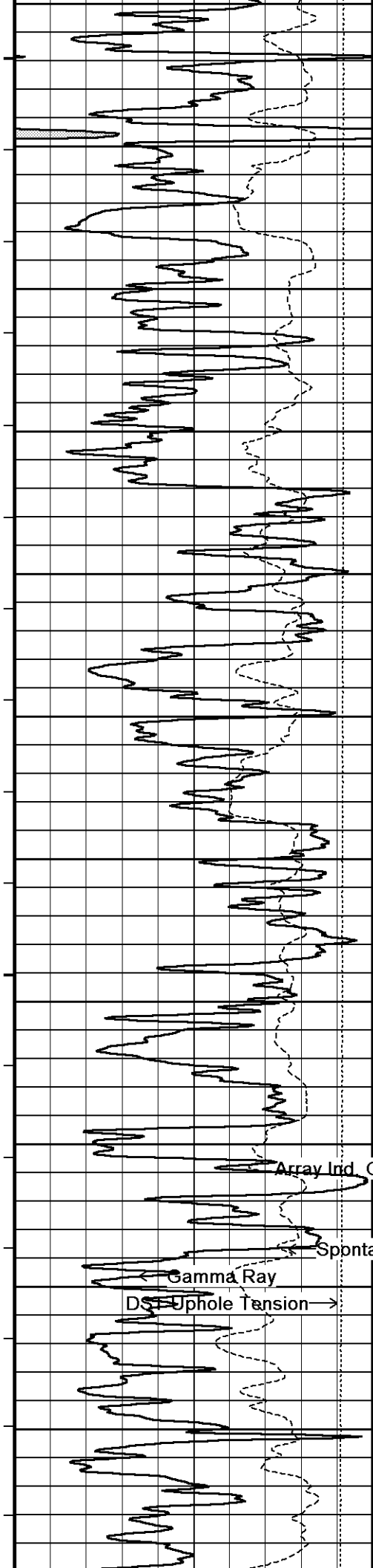
Array Ind. One Res Rt →

Shallow FE
2100



Array Ind. One Cond Ct →





101°

2700

102°

2800

102°

2900

103°

3000

Array Ind. One Res Rt

103°
Shallow FE
Spontaneous Potential

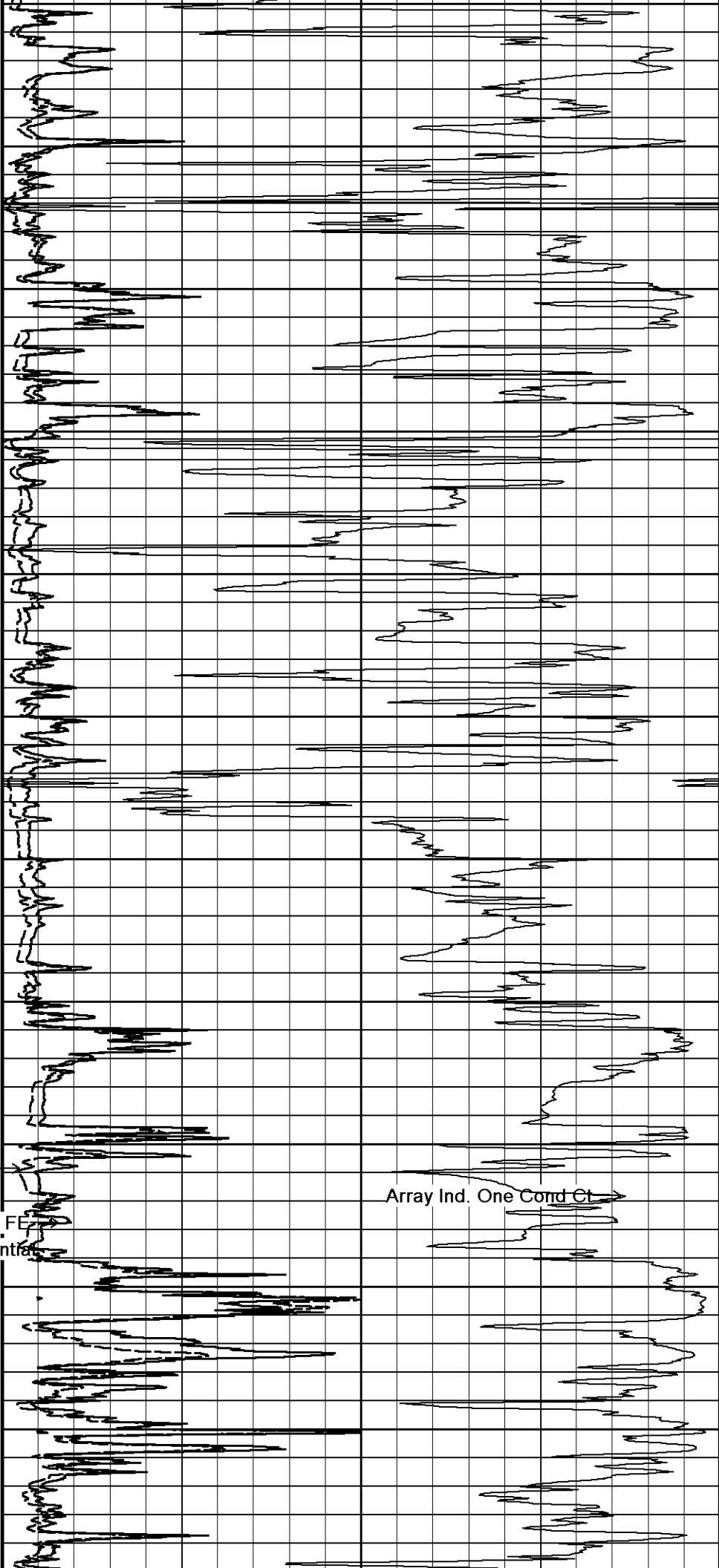
Gamma Ray

DST Uphole Tension

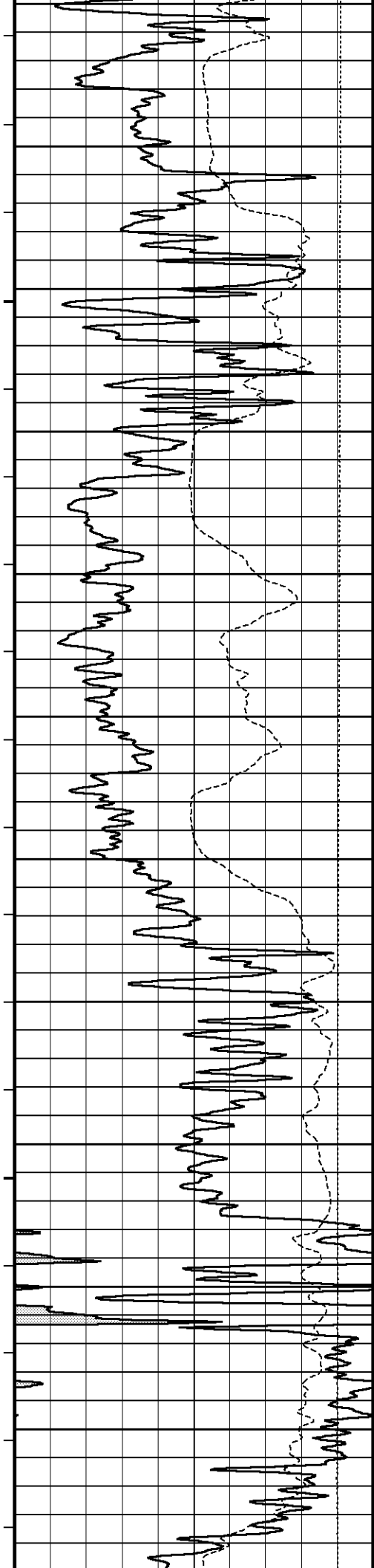
3100

104°

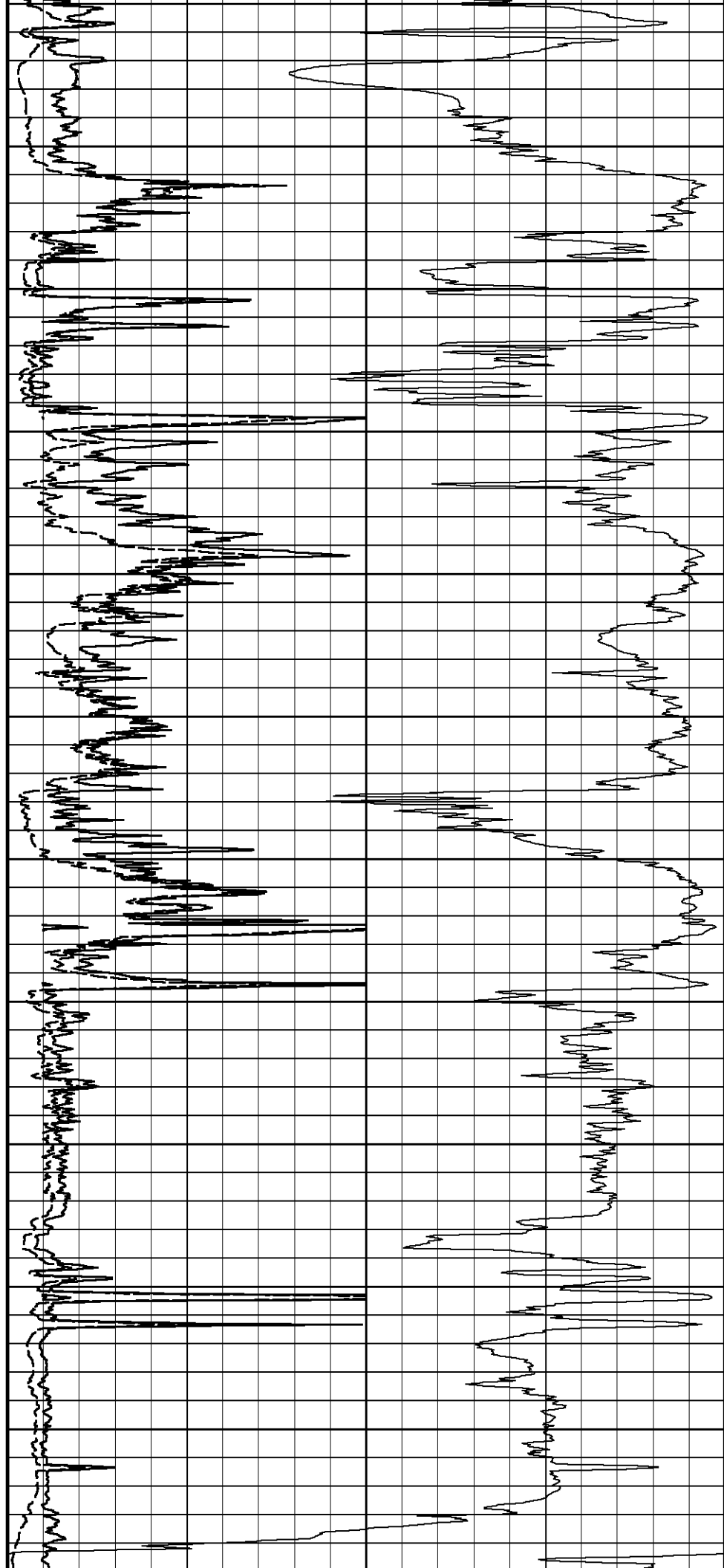
3200

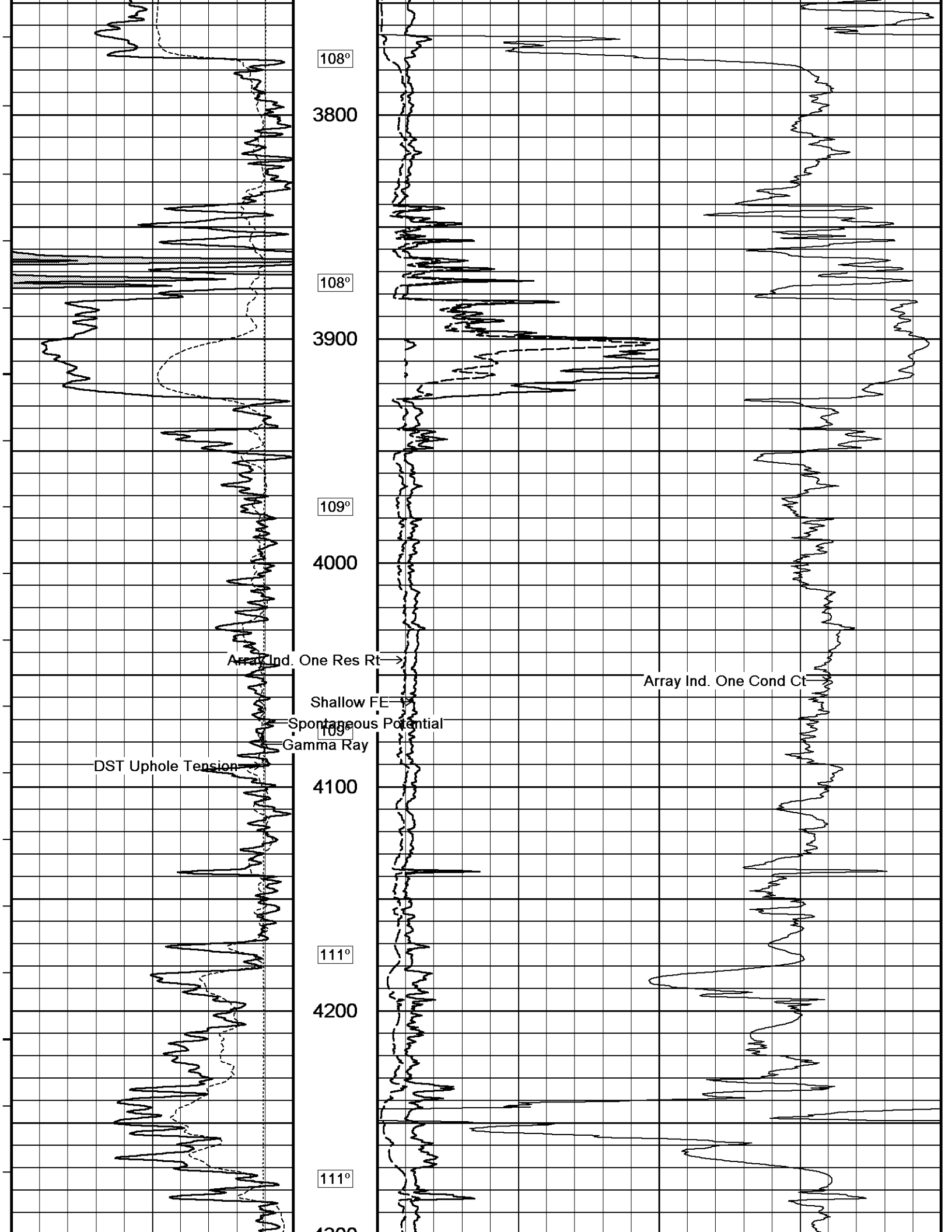


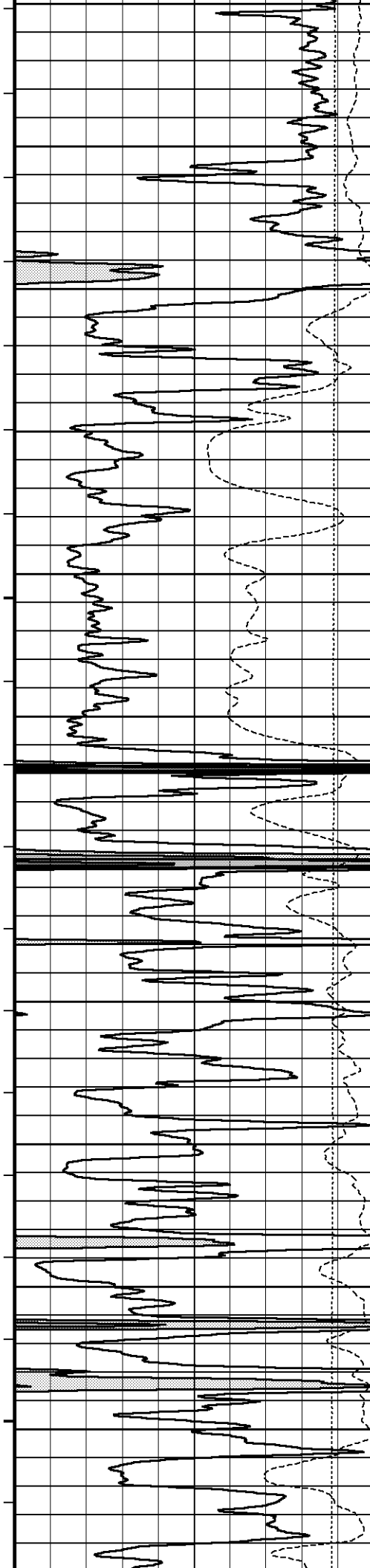
Array Ind. One Cond Ct



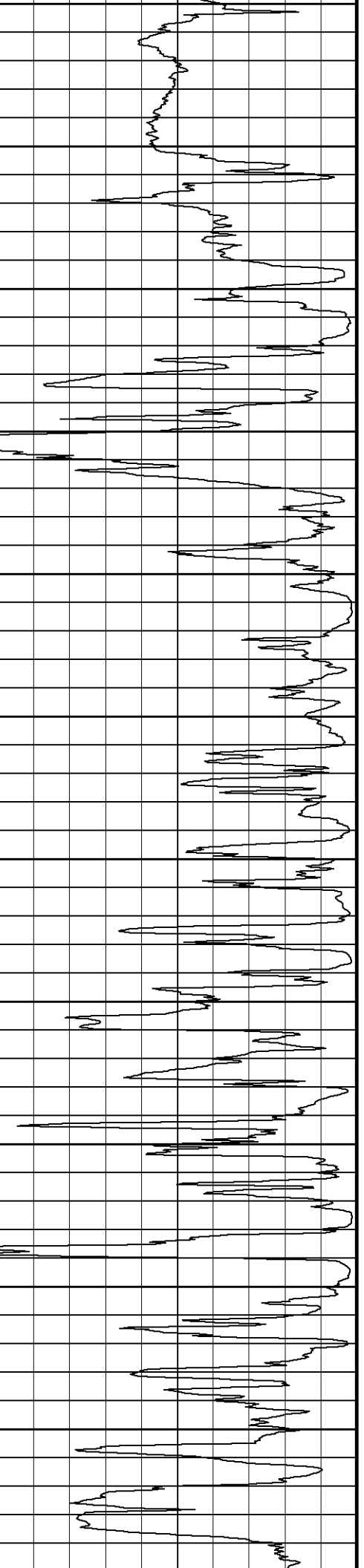
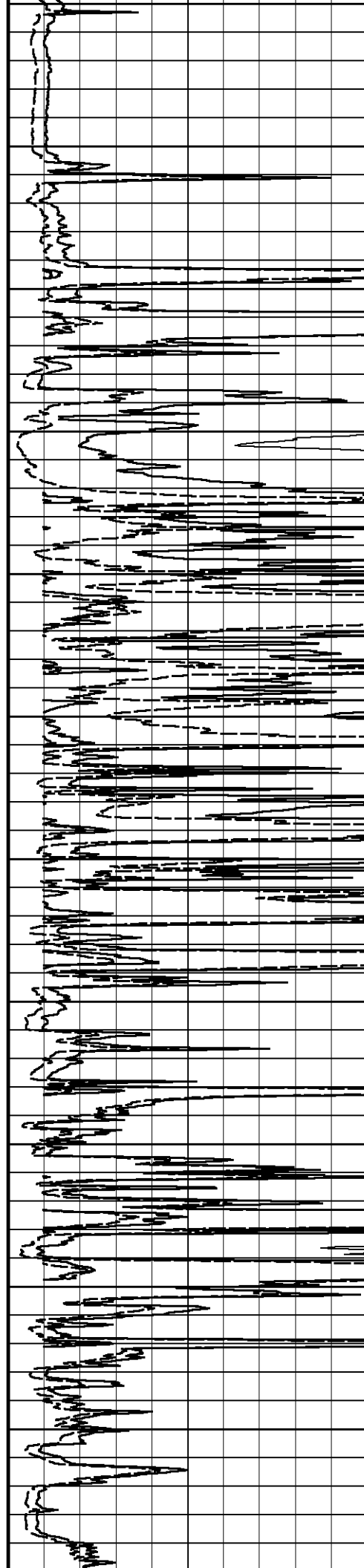
3200
104°
3300
105°
3400
106°
3500
106°
3600
107°
3700

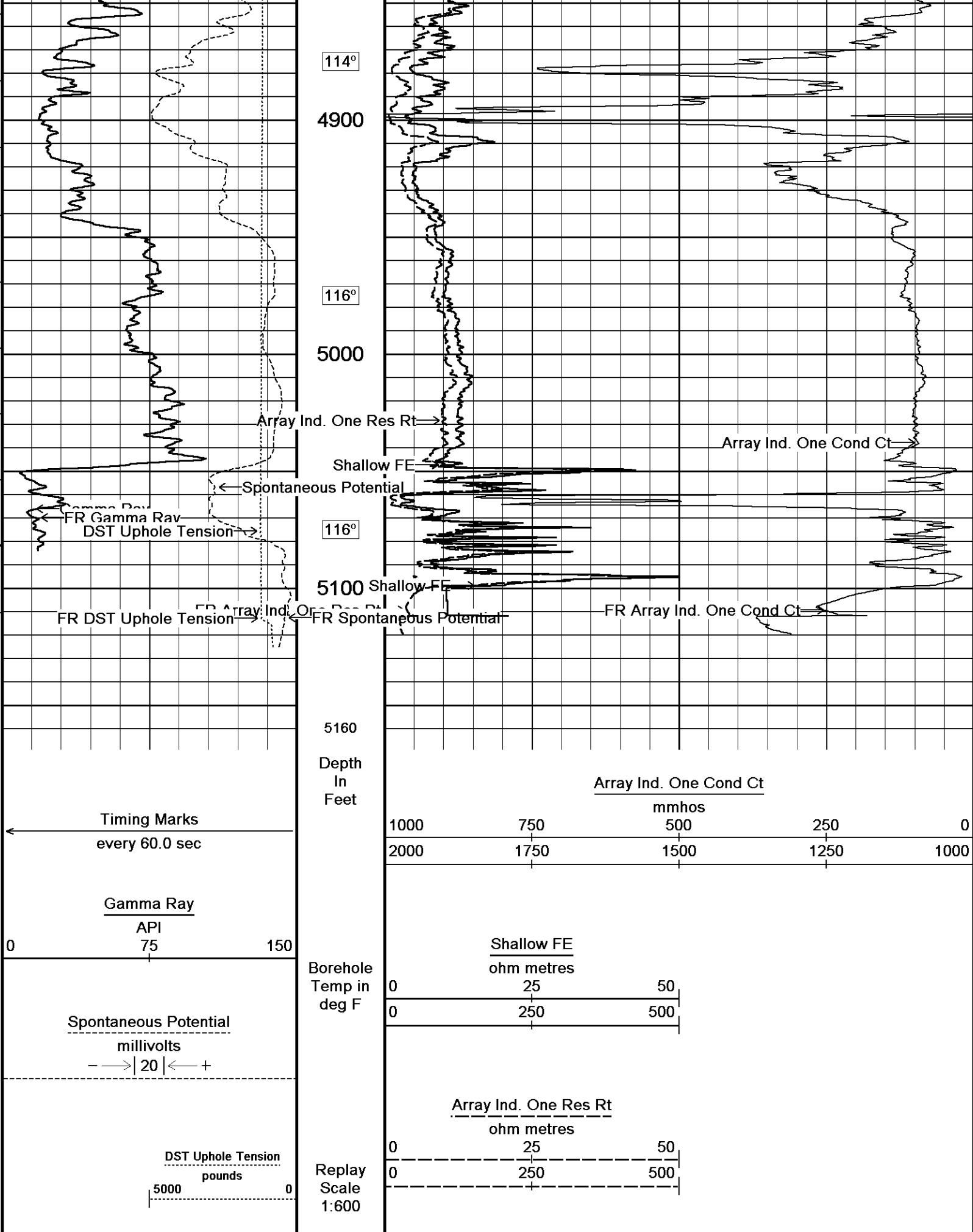




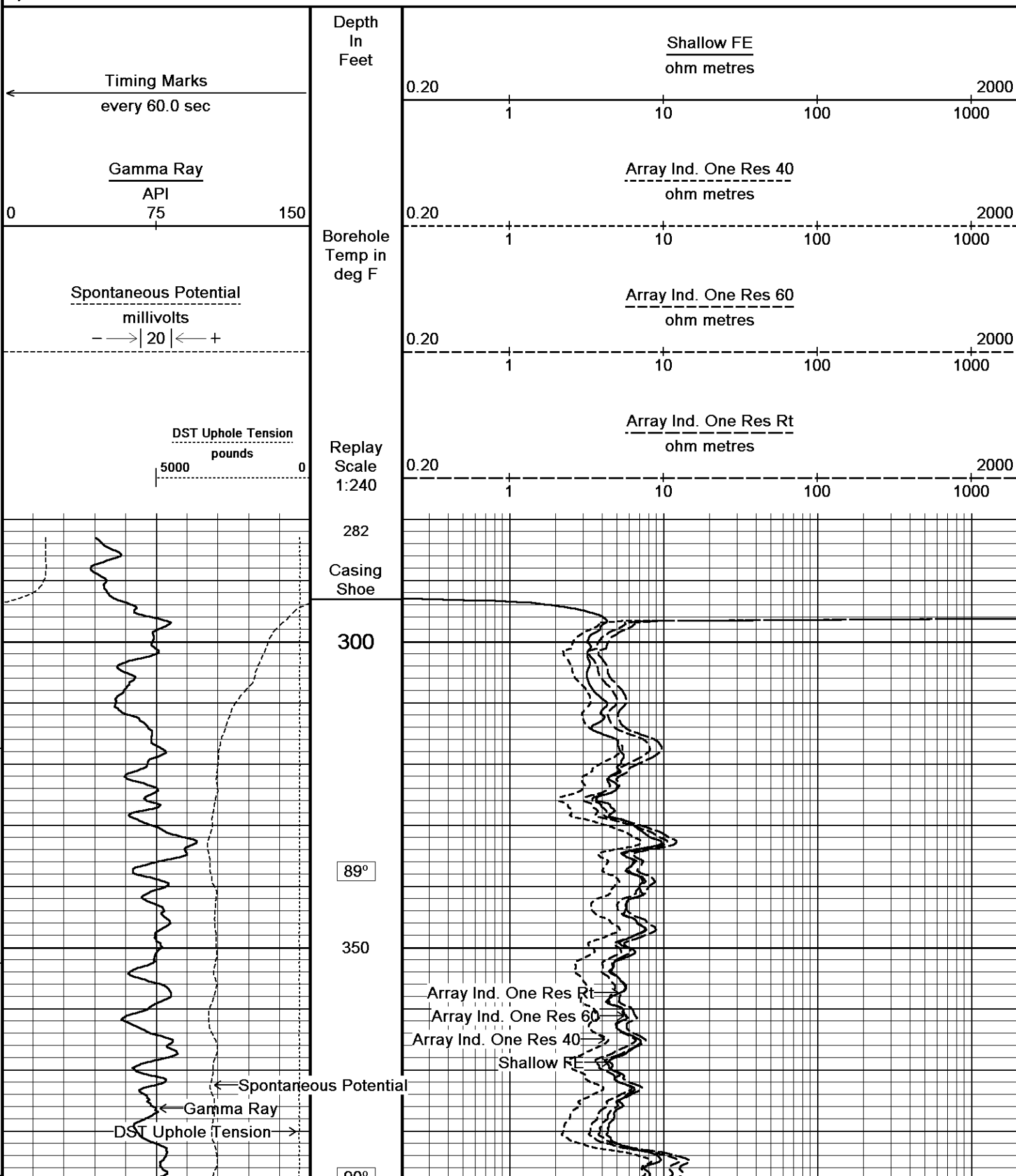


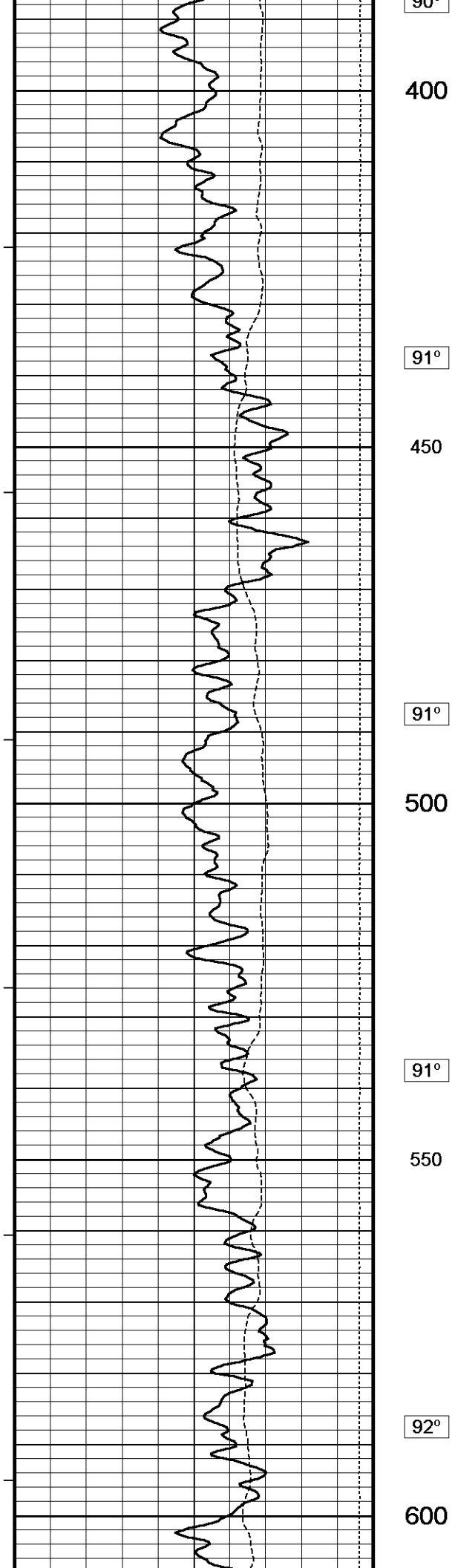
4300
111°
4400
112°
4500
112°
4600
113°
4700
113°
4800





System Versions: Processed with 13.01.5821 Plotted with 12.01.3513





90°

400

91°

450

91°

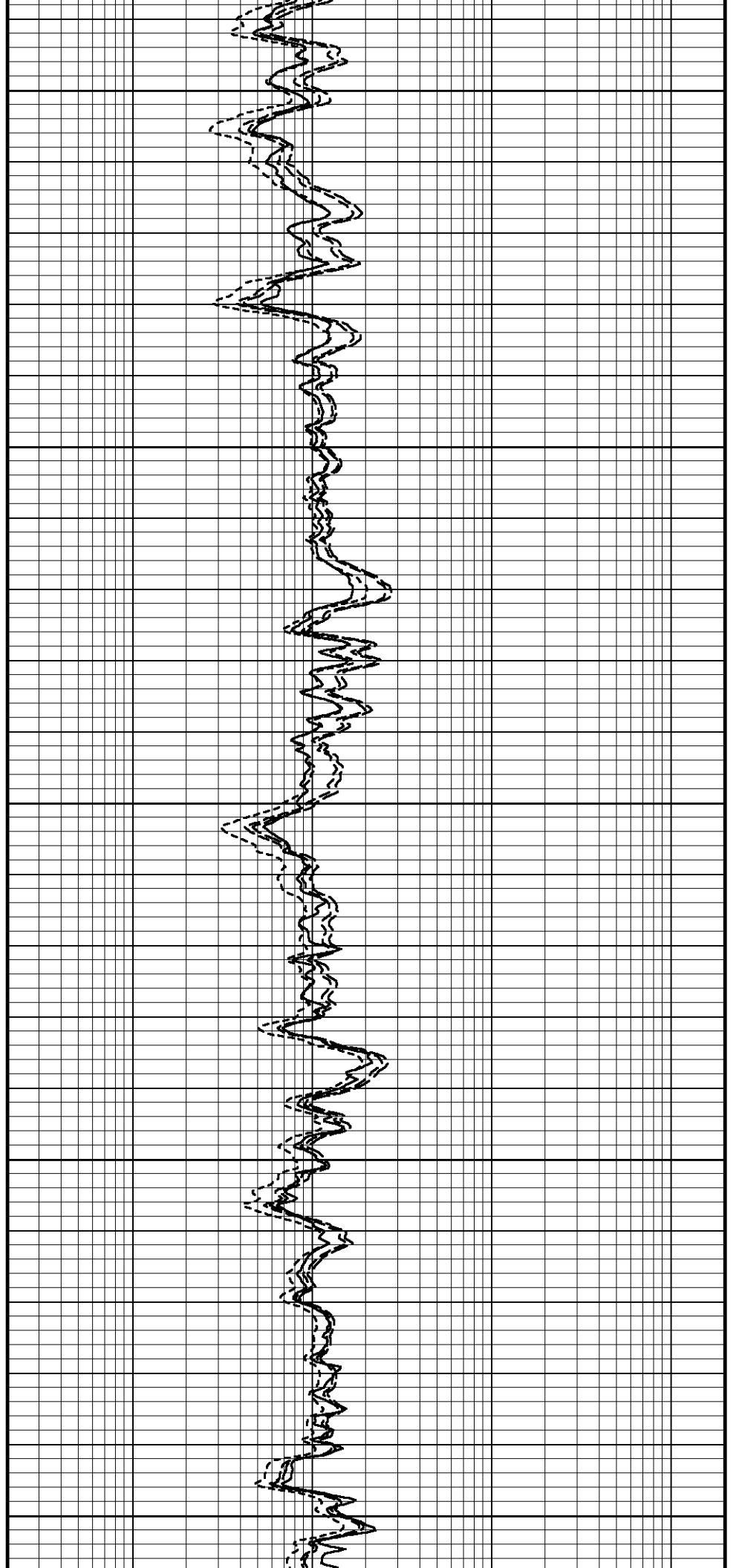
500

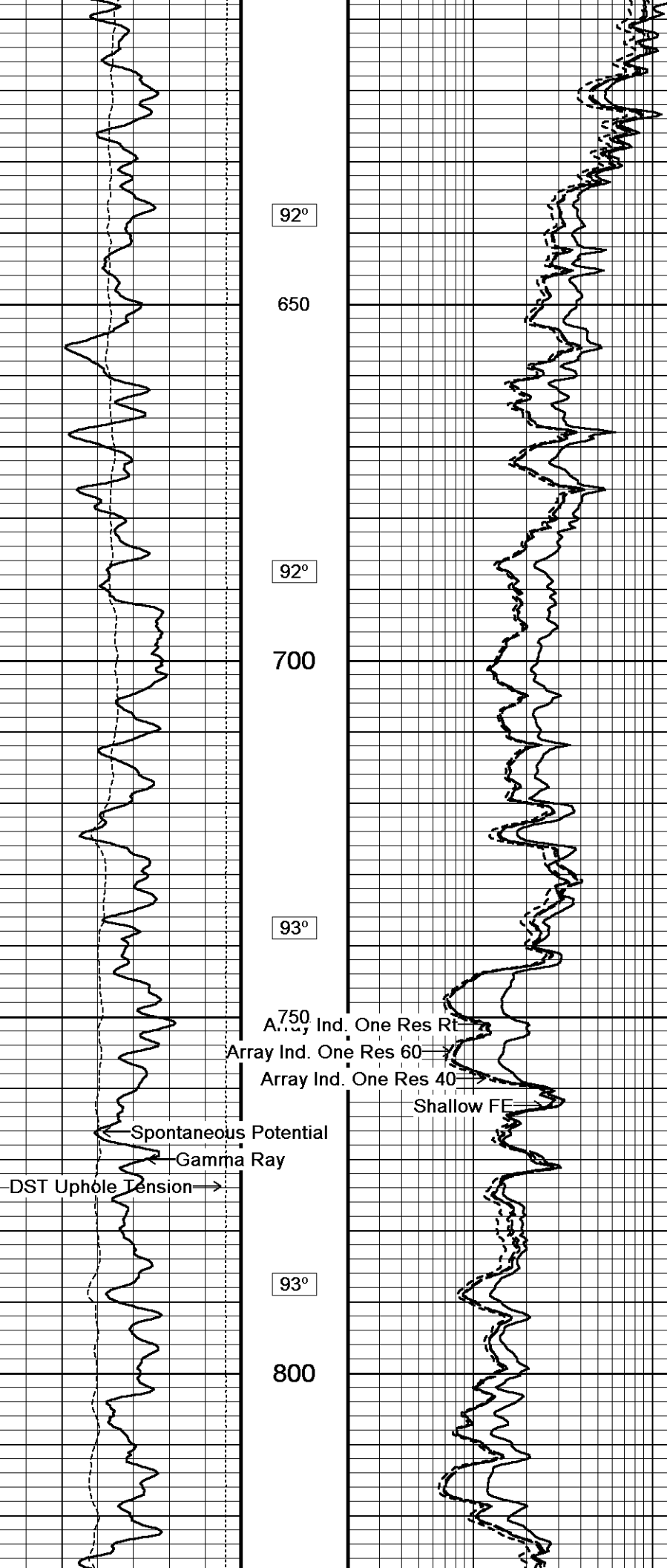
91°

550

92°

600





92°

650

92°

700

93°

750

Array Ind. One Res Rt

Array Ind. One Res 60

Array Ind. One Res 40

Shallow FF

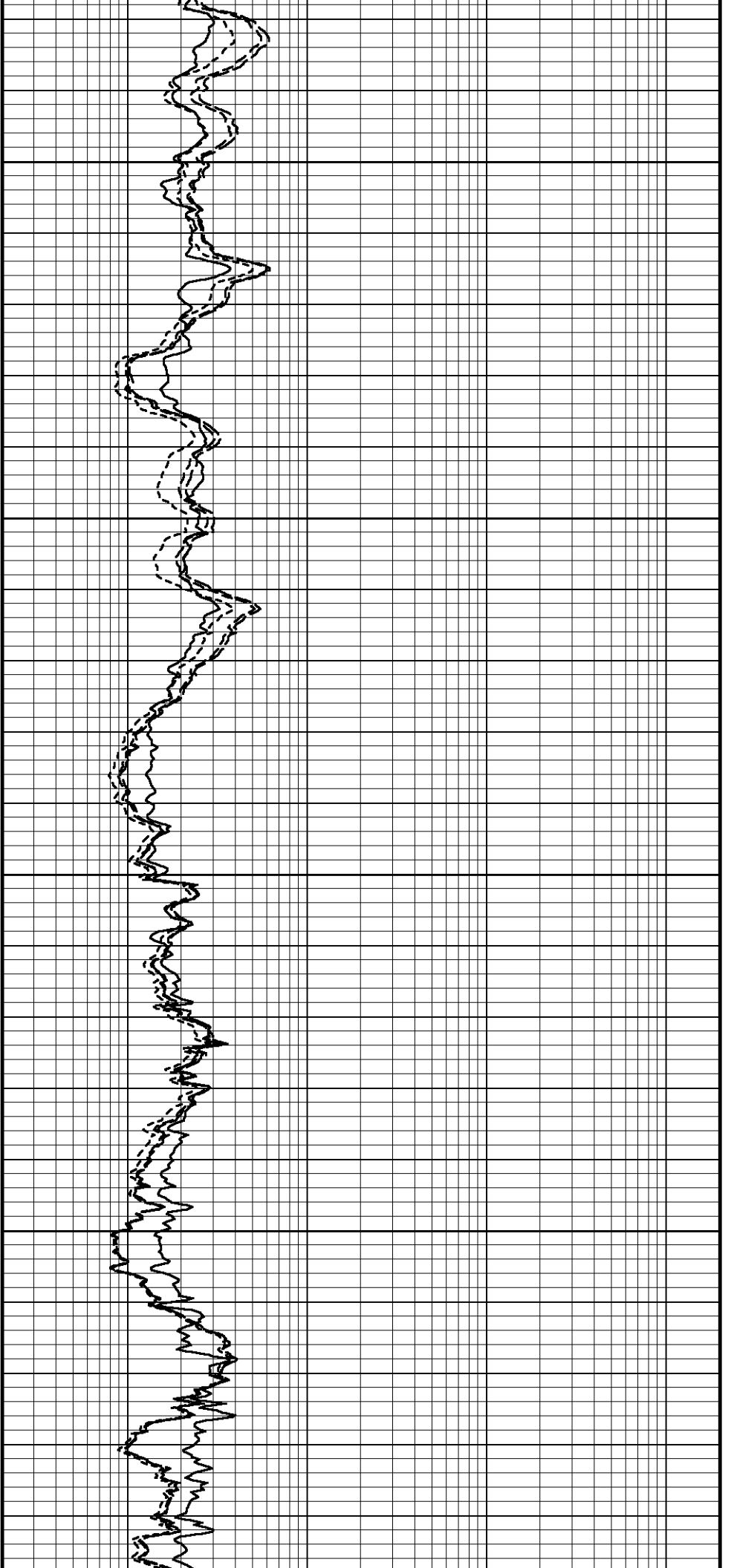
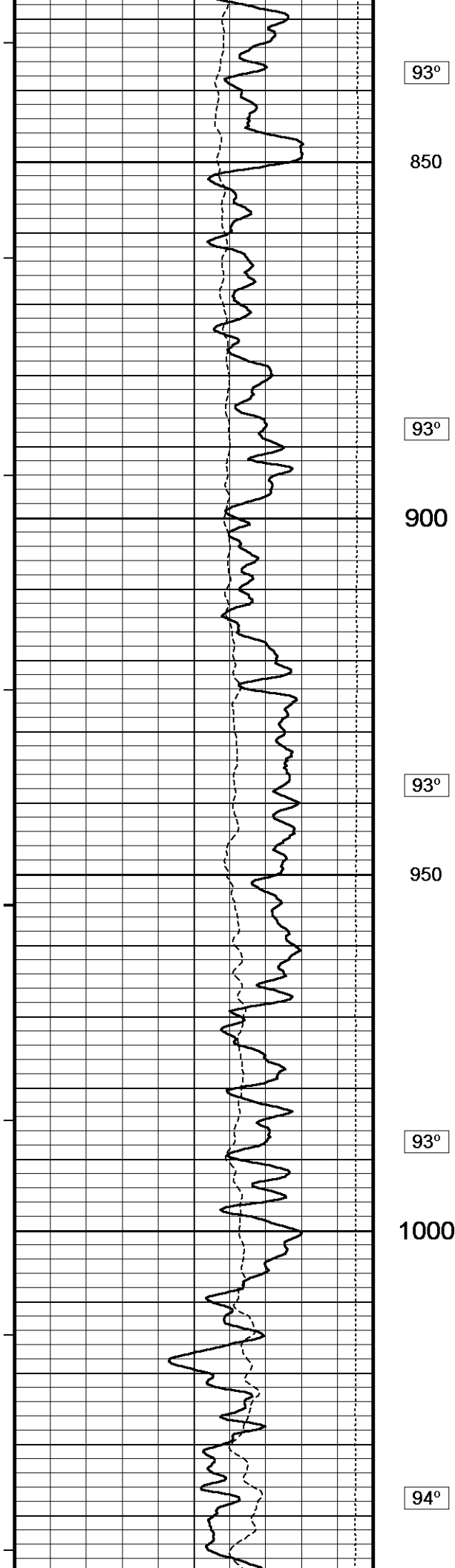
Spontaneous Potential

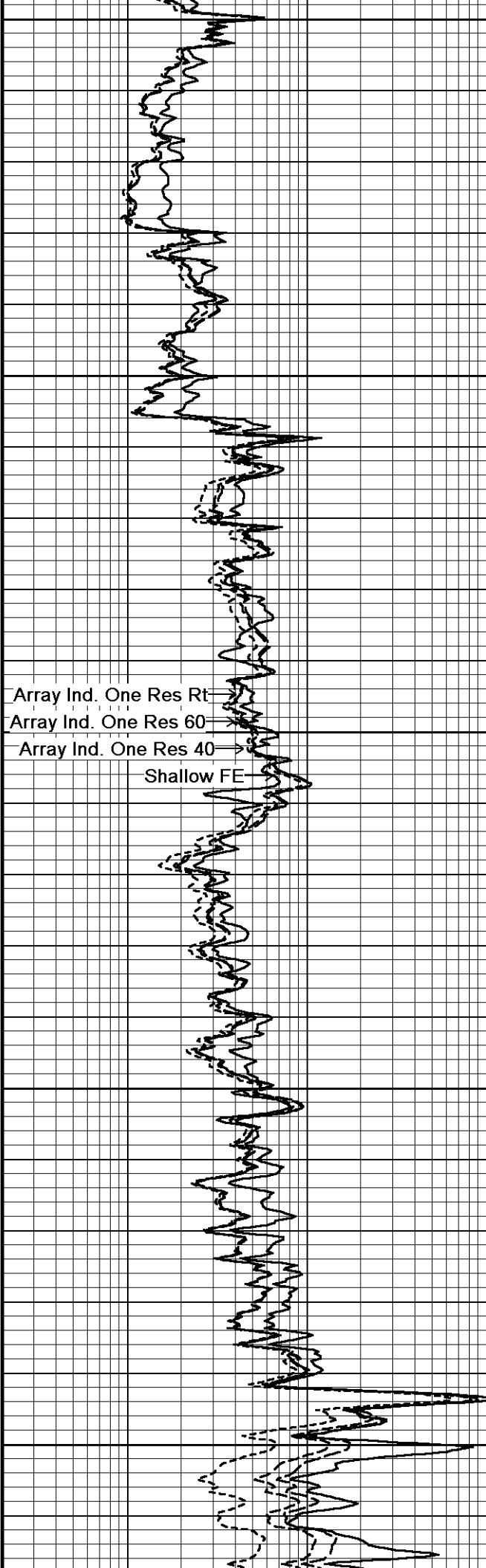
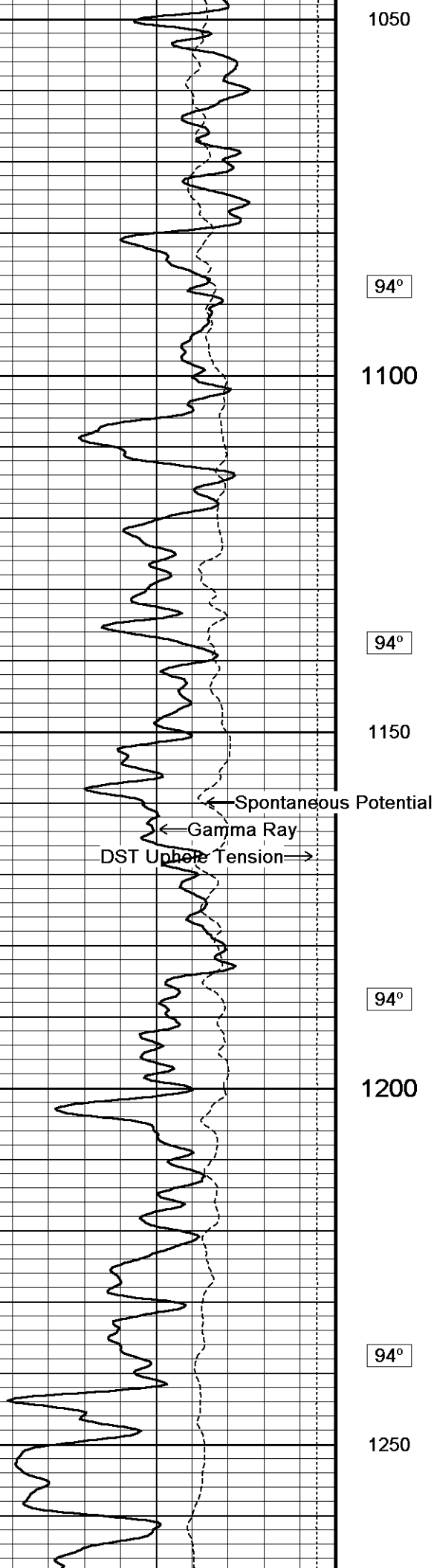
Gamma Ray

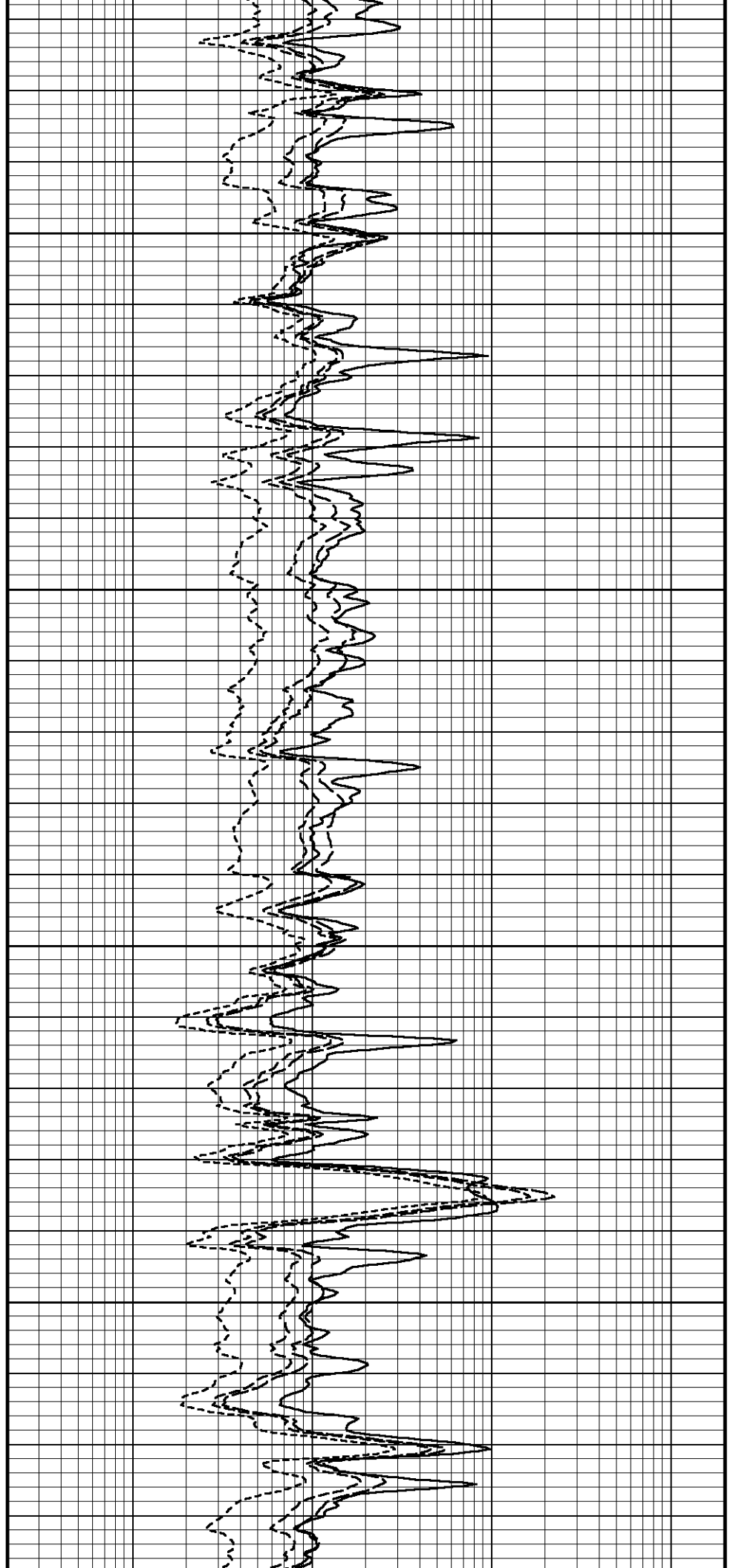
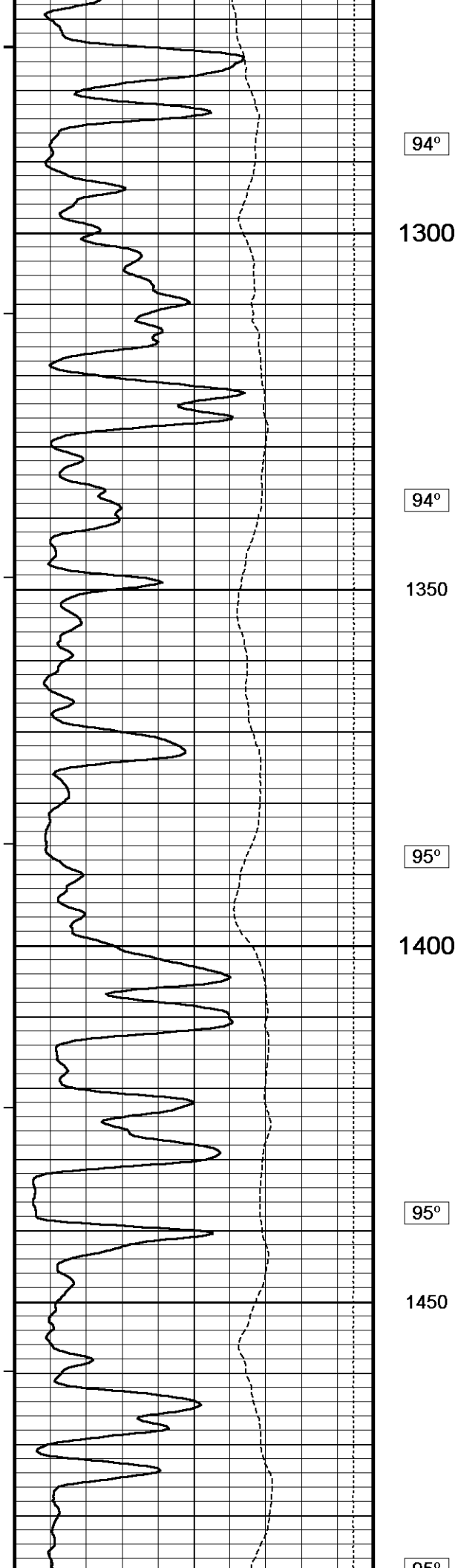
DST Uphole Tension

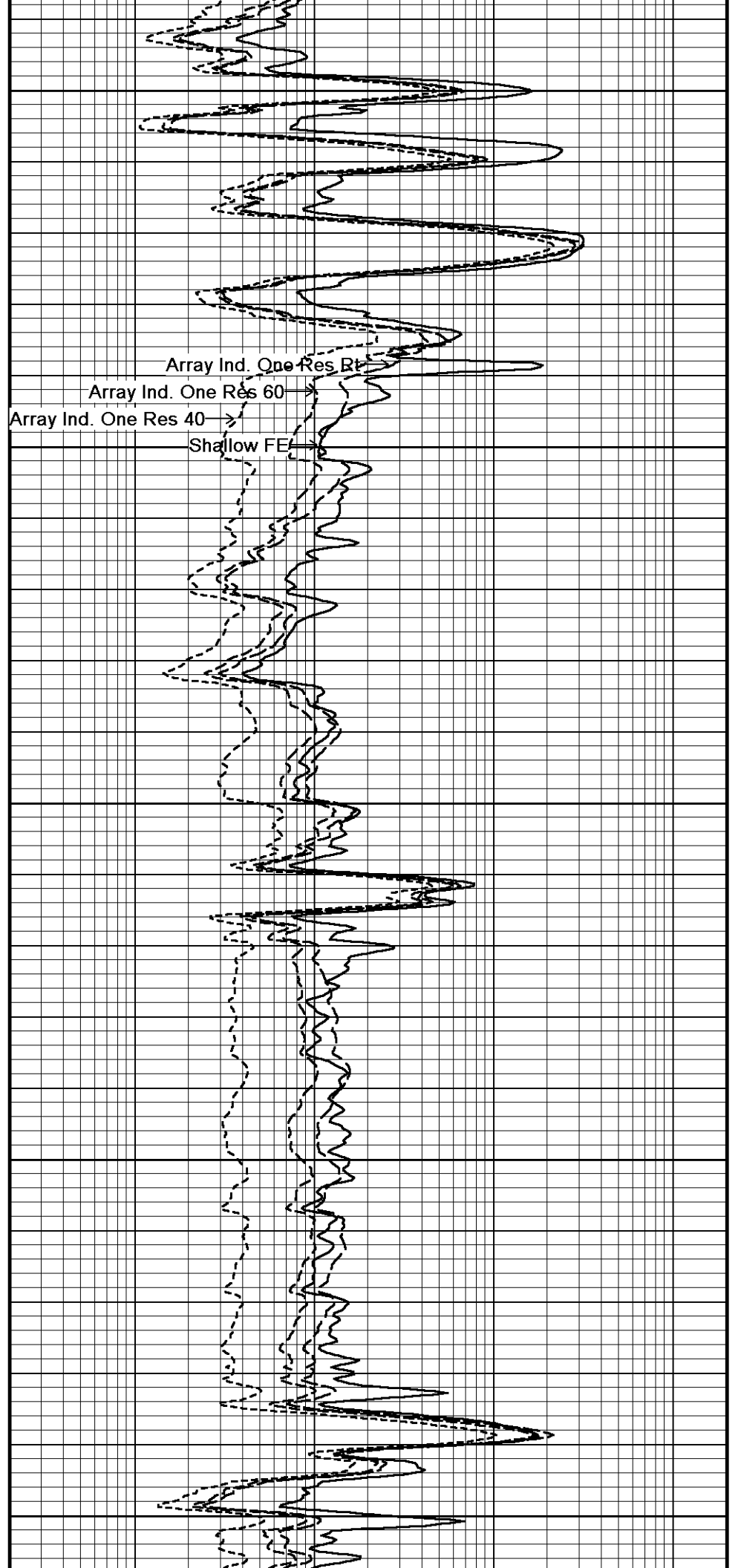
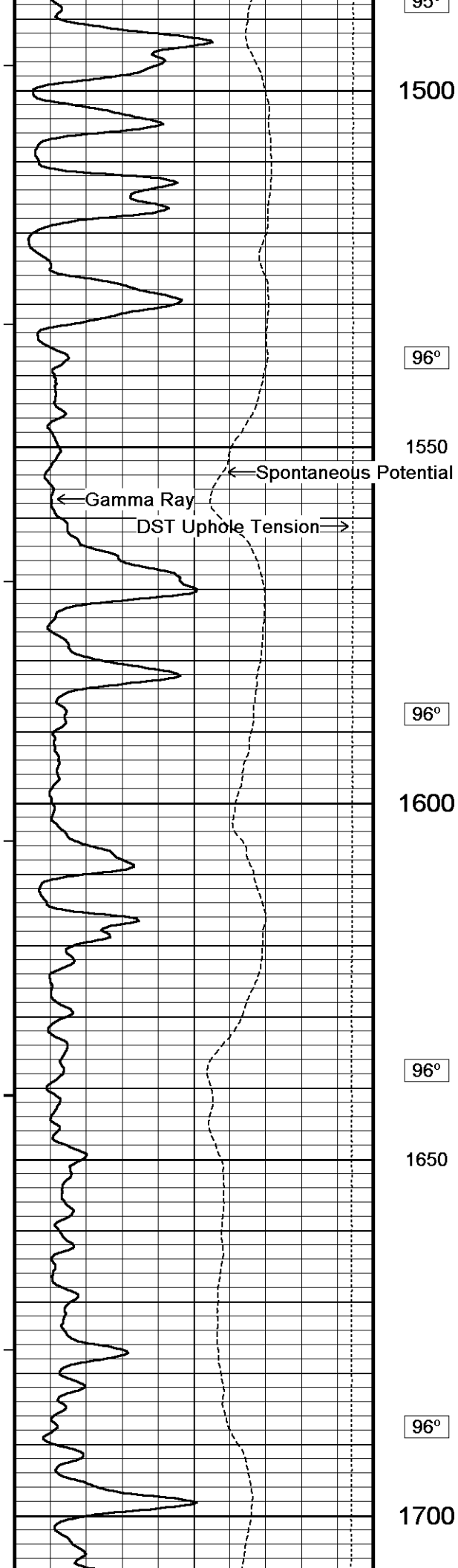
93°

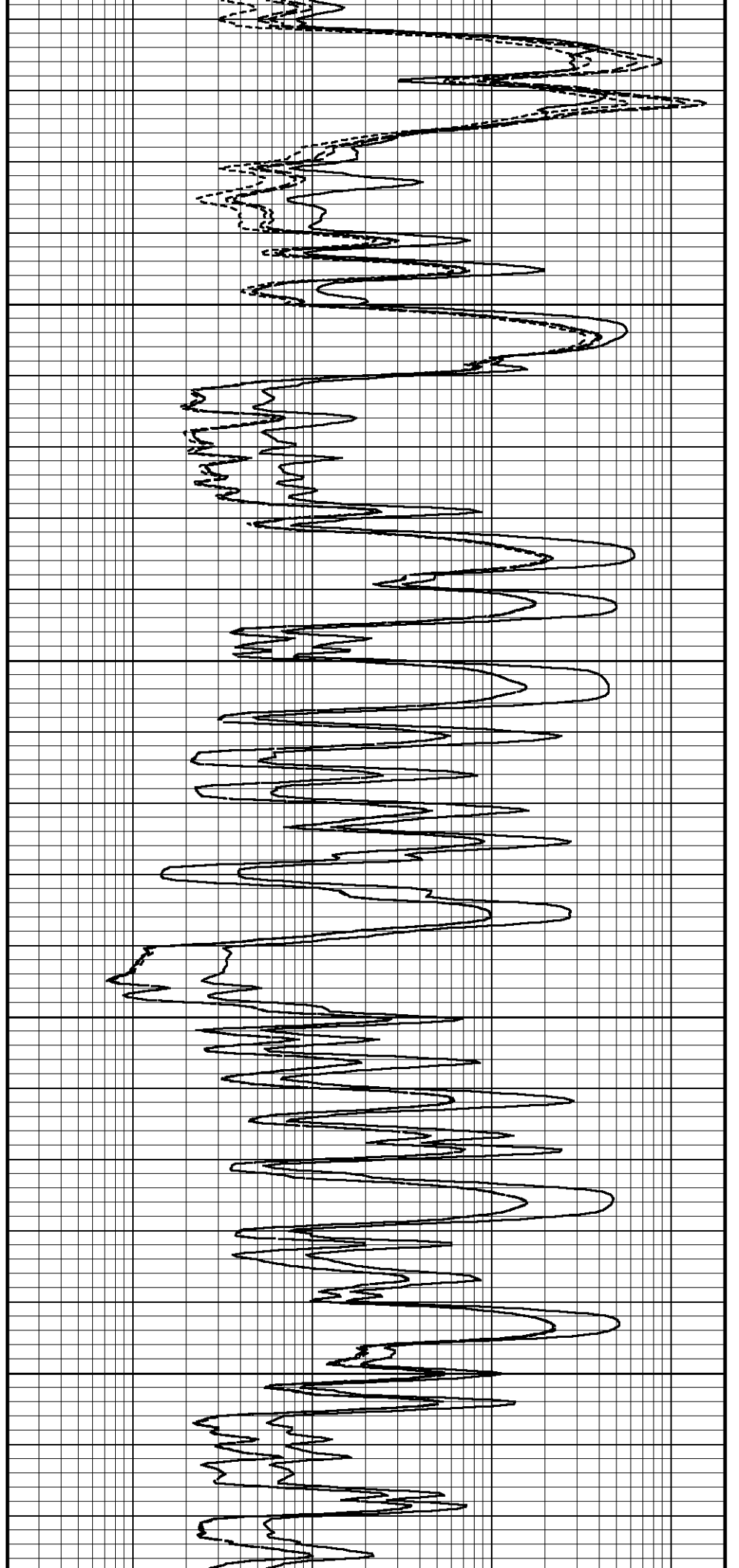
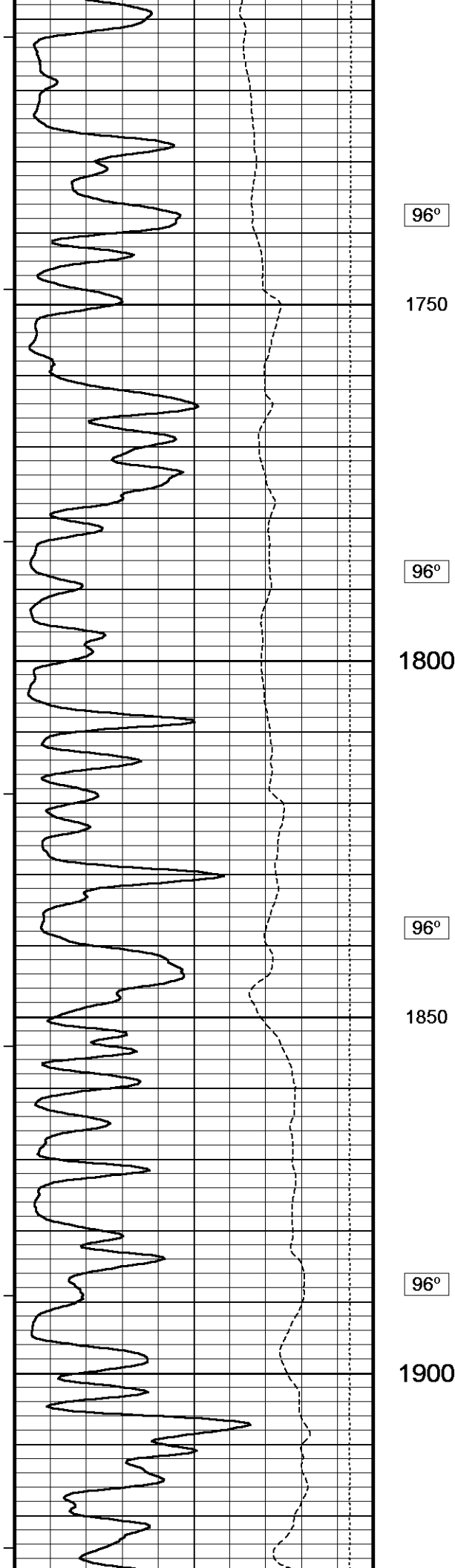
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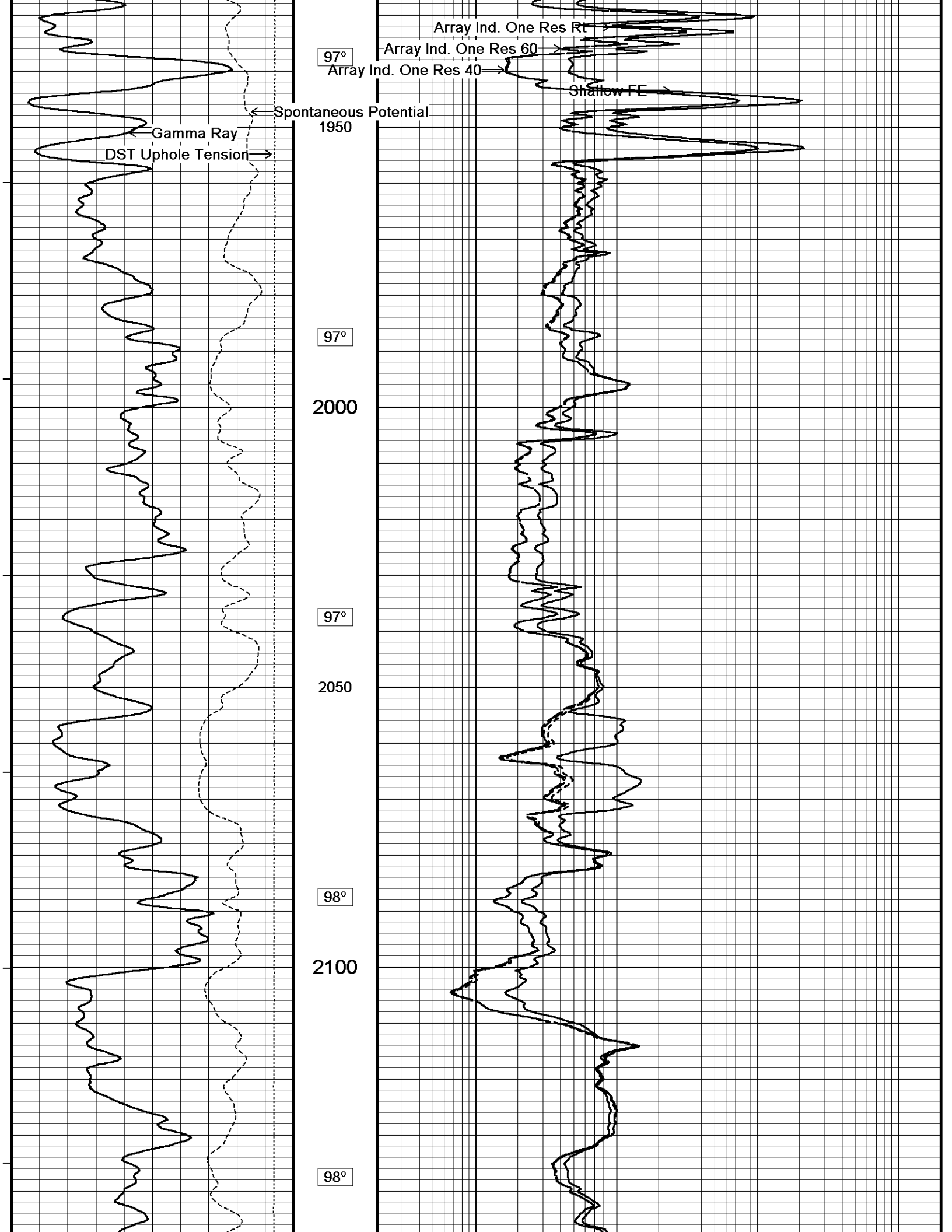


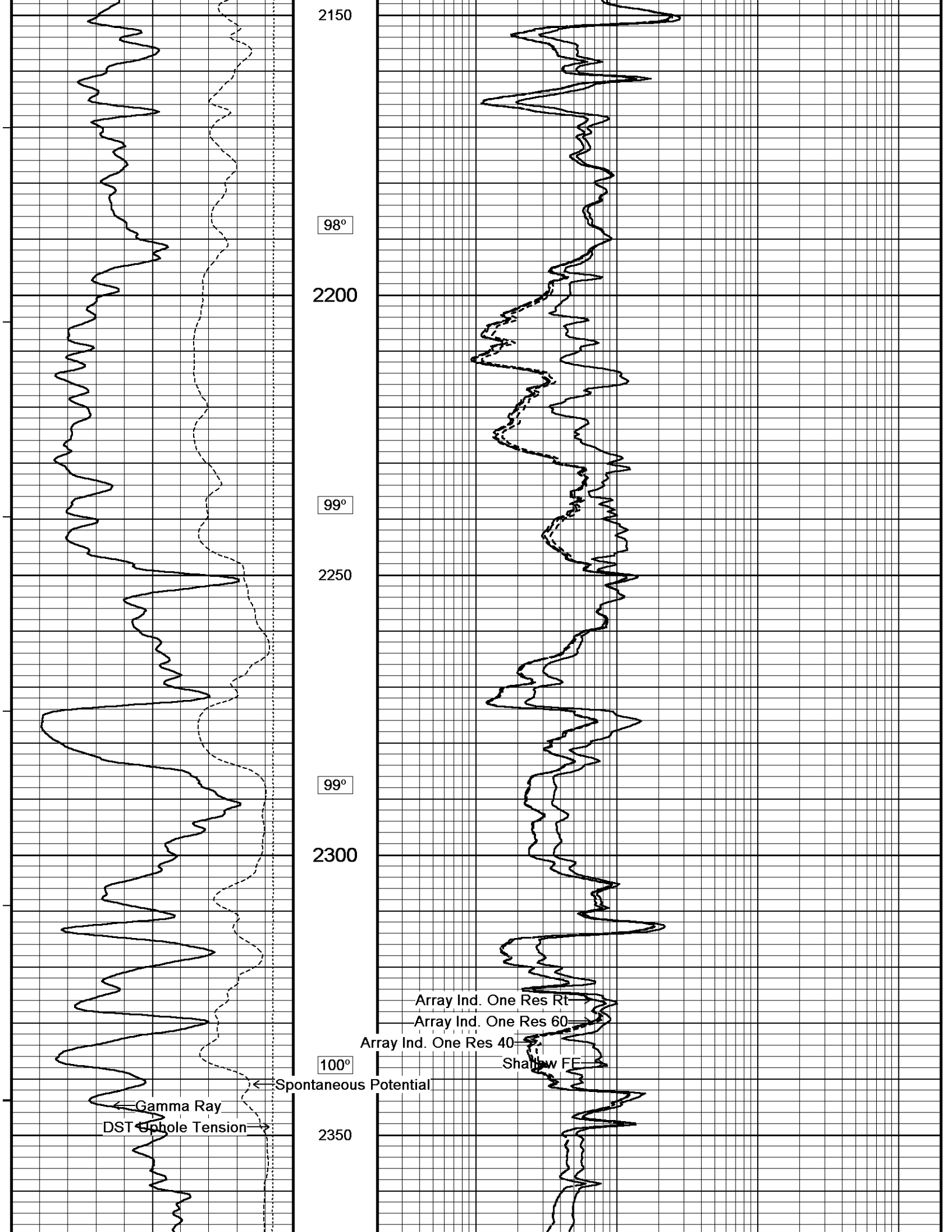


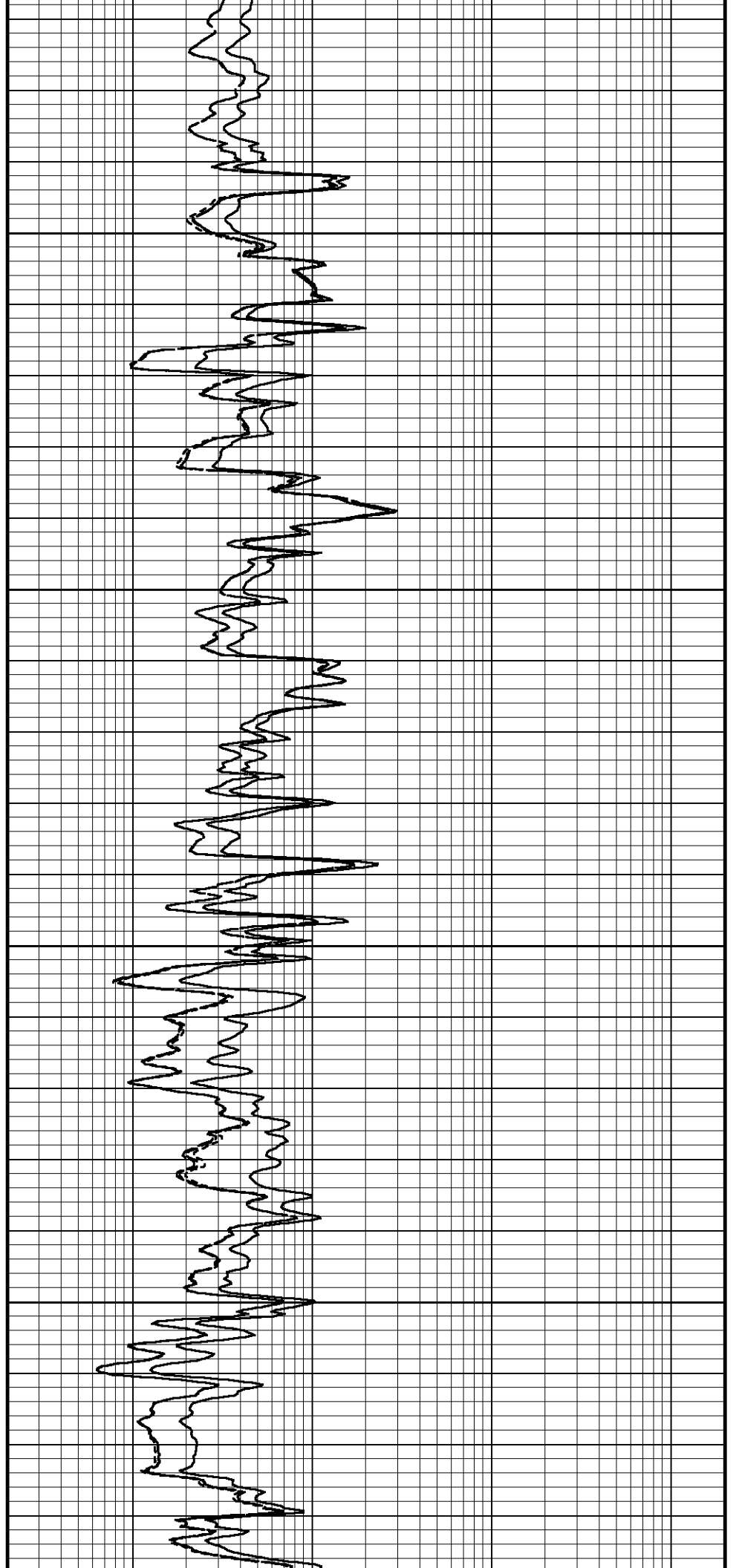
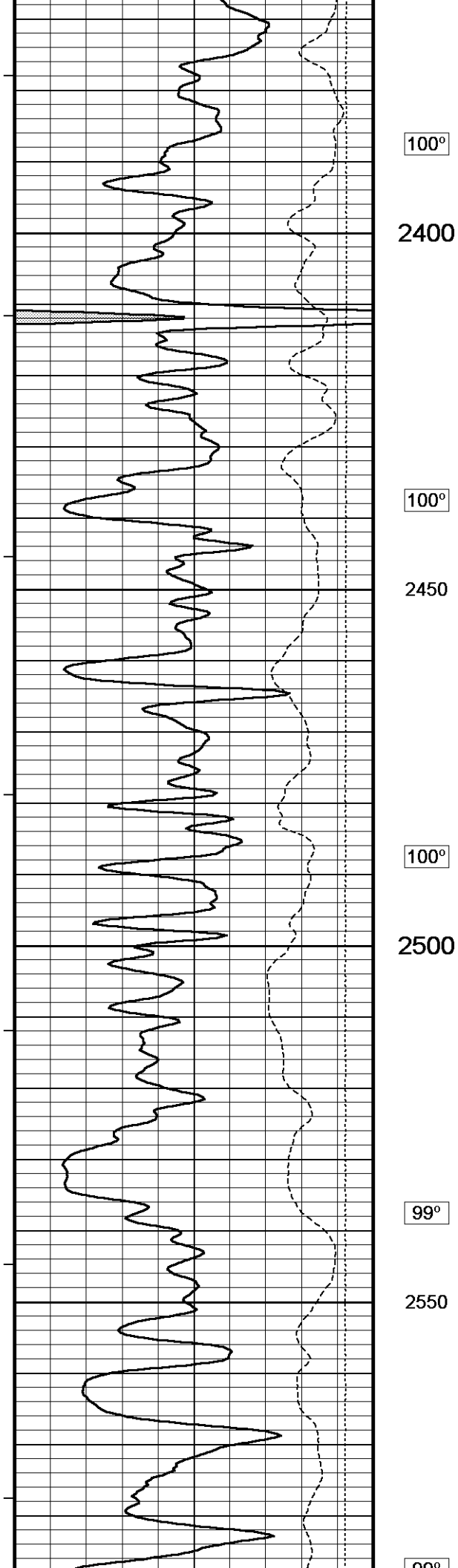


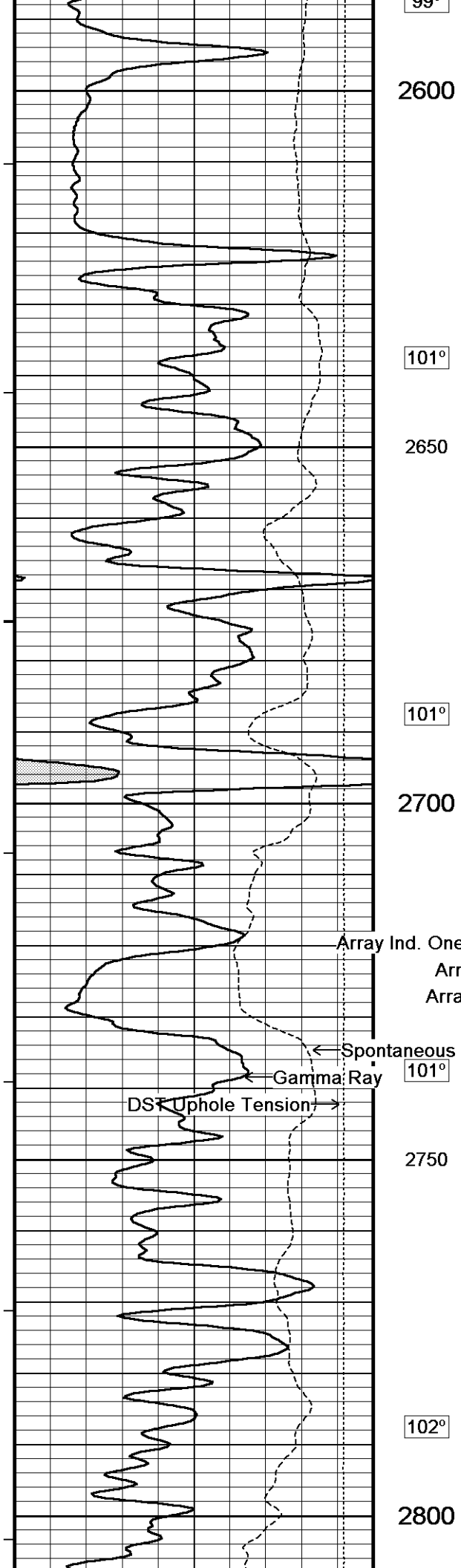












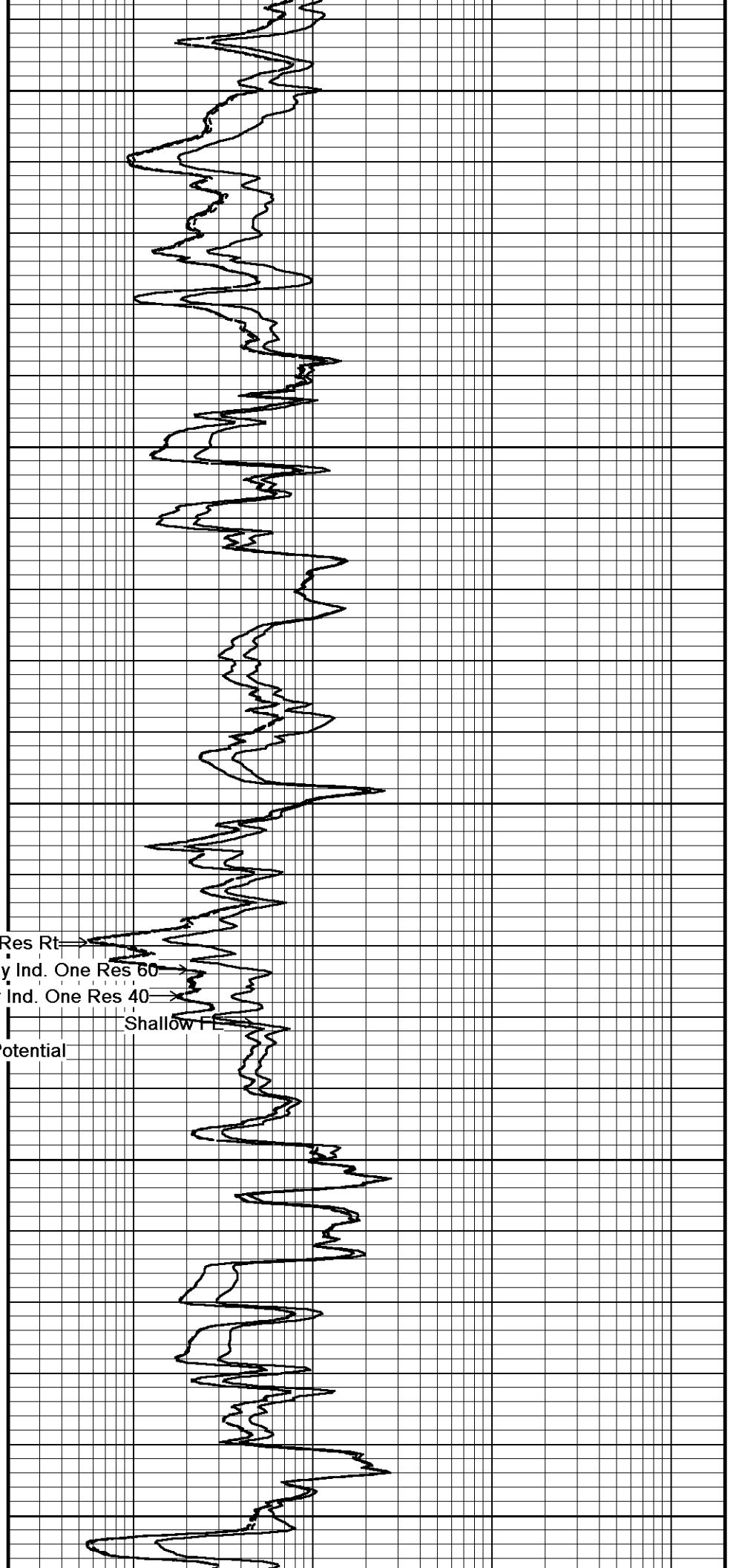
99°

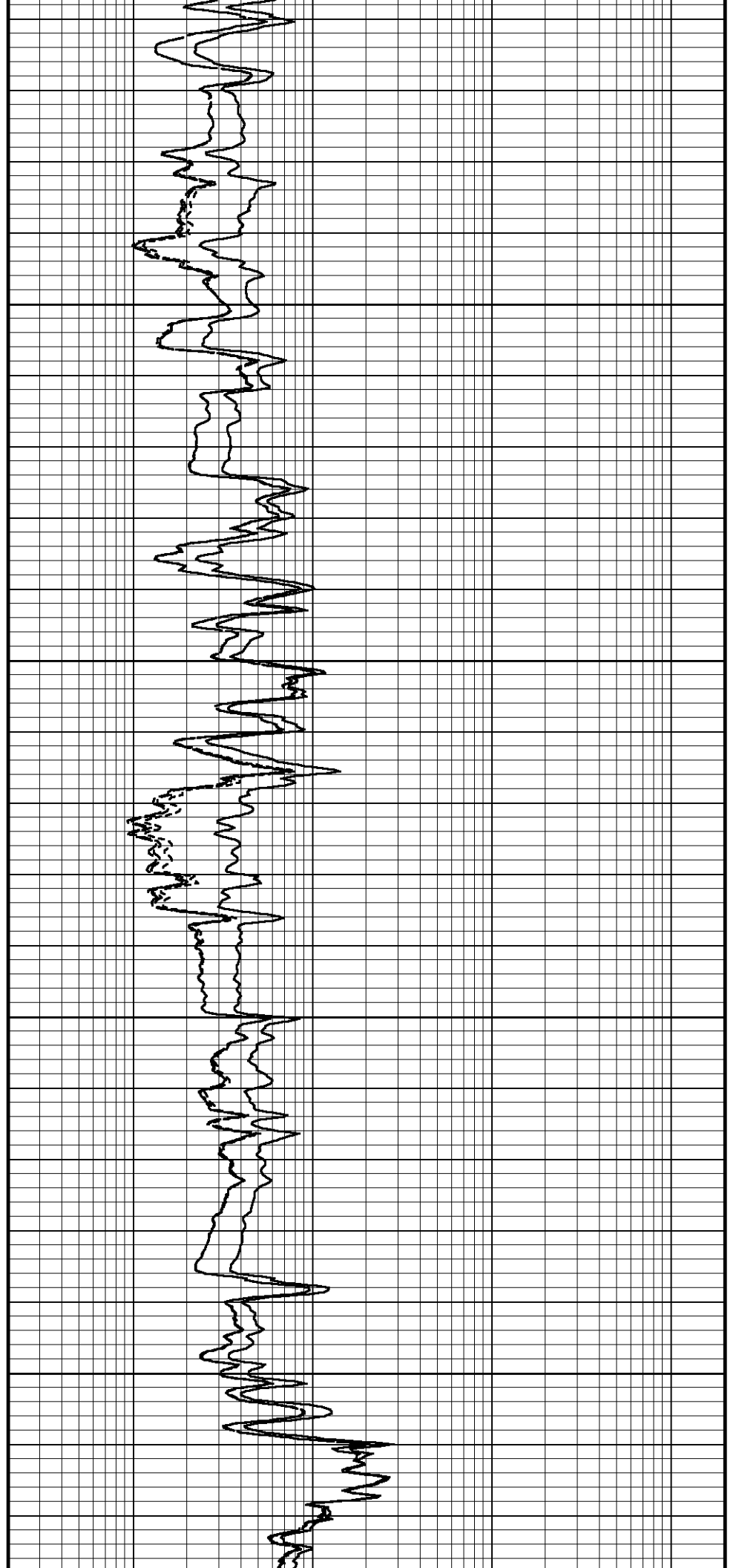
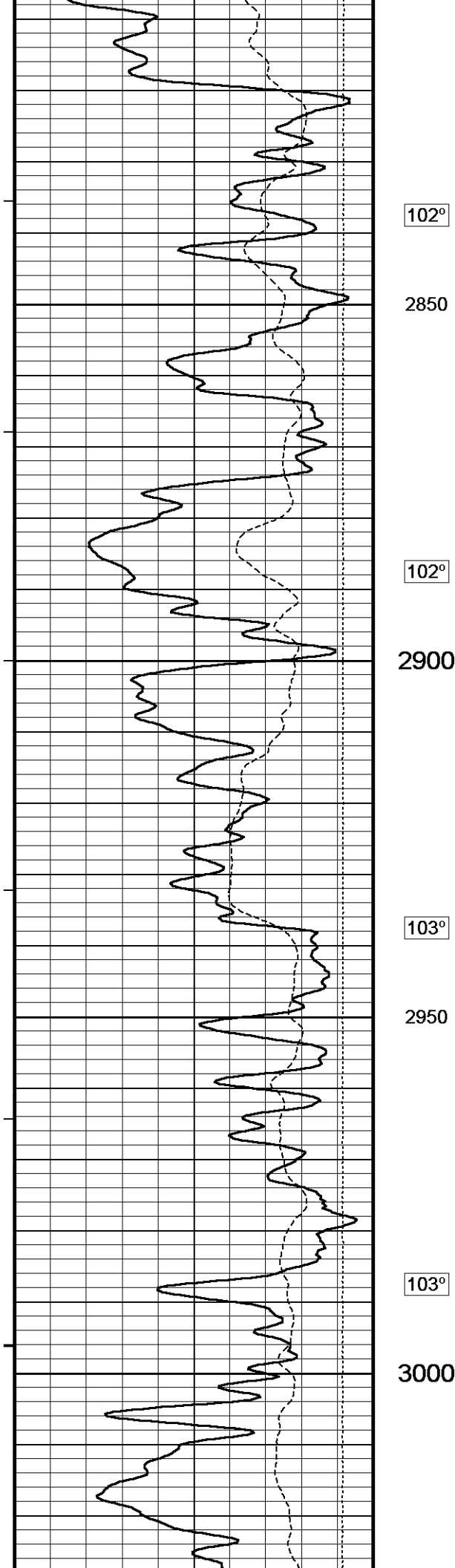
101°

101°

101°

102°





103°

3050

103°

3100

Array Ind. One Res Rt

Array Ind. One Res 60

Array Ind. One Res 40

Shallow FF

← Spontaneous Potential

← Gamma Ray

DST Uphole Tension →

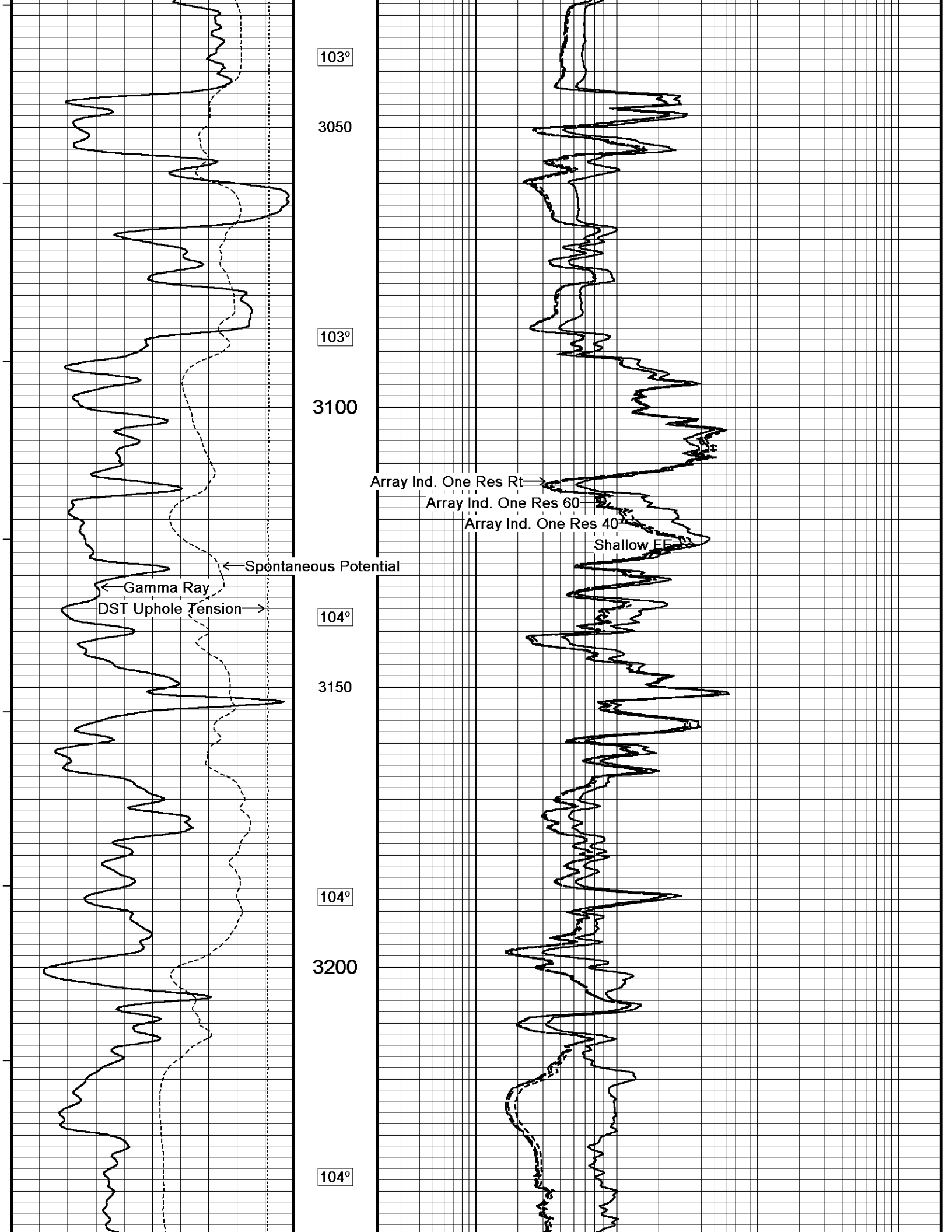
104°

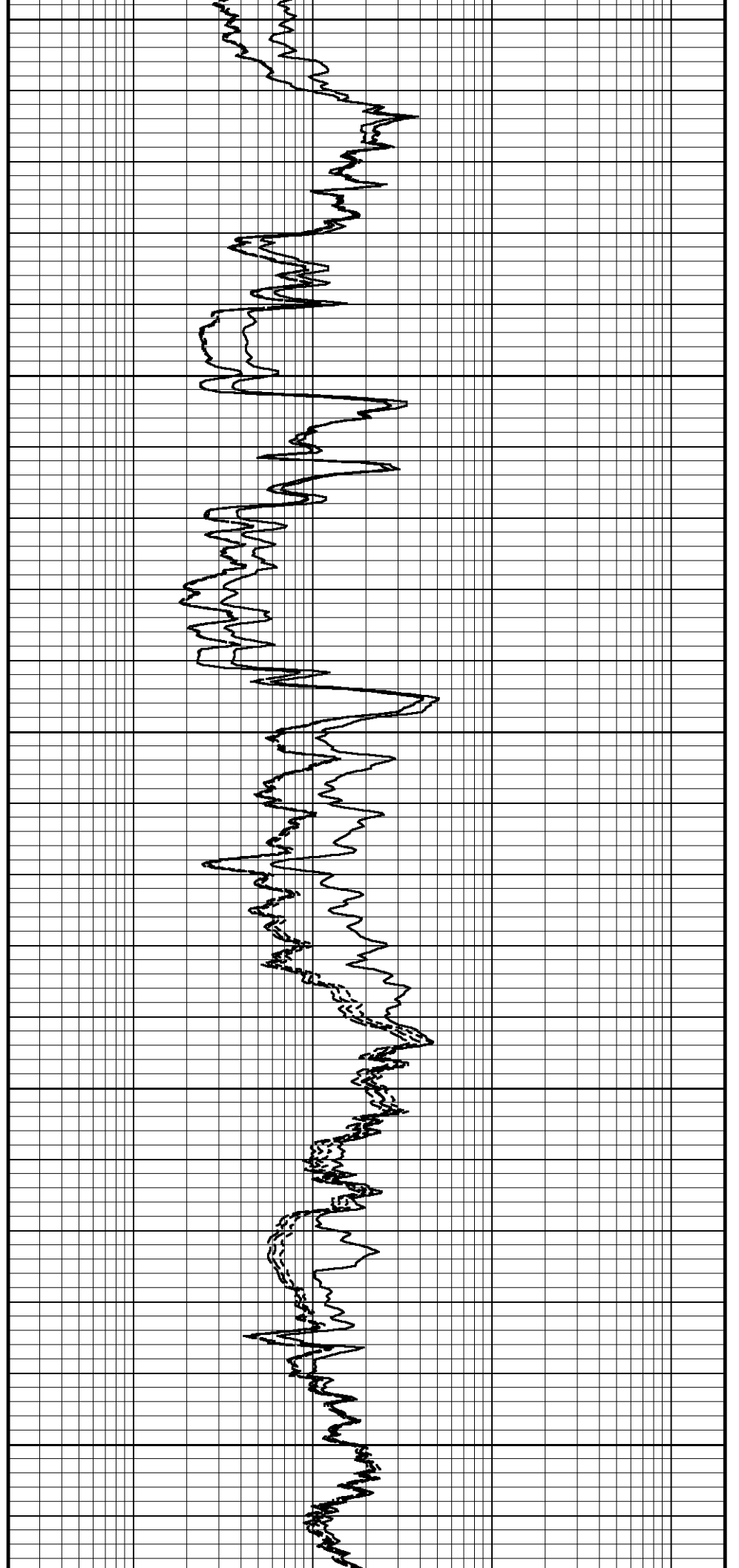
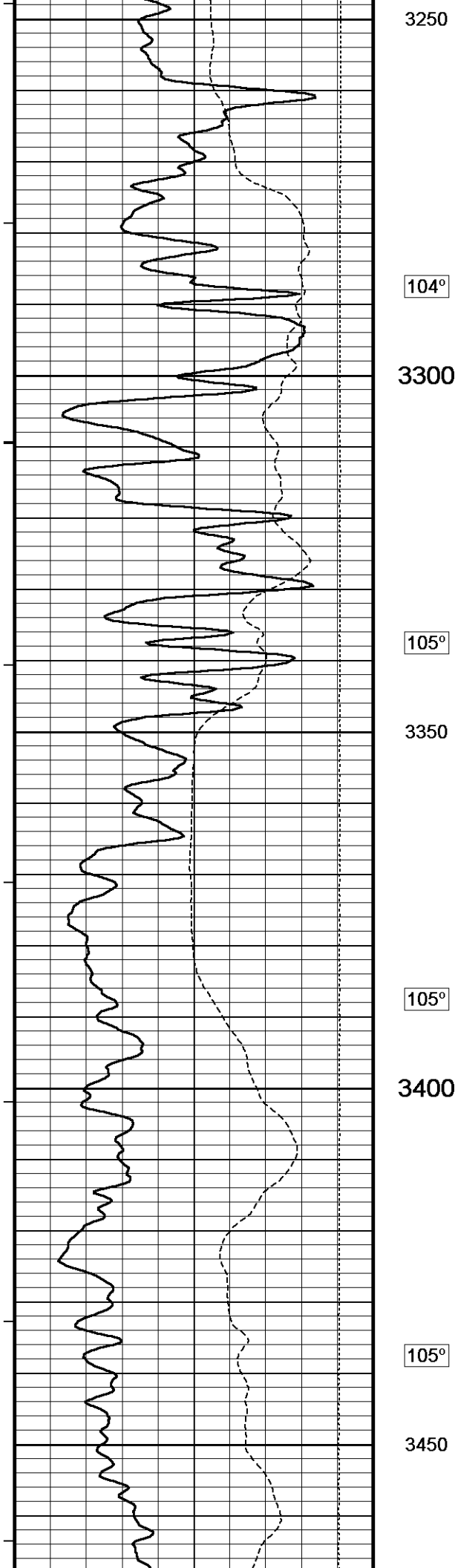
3150

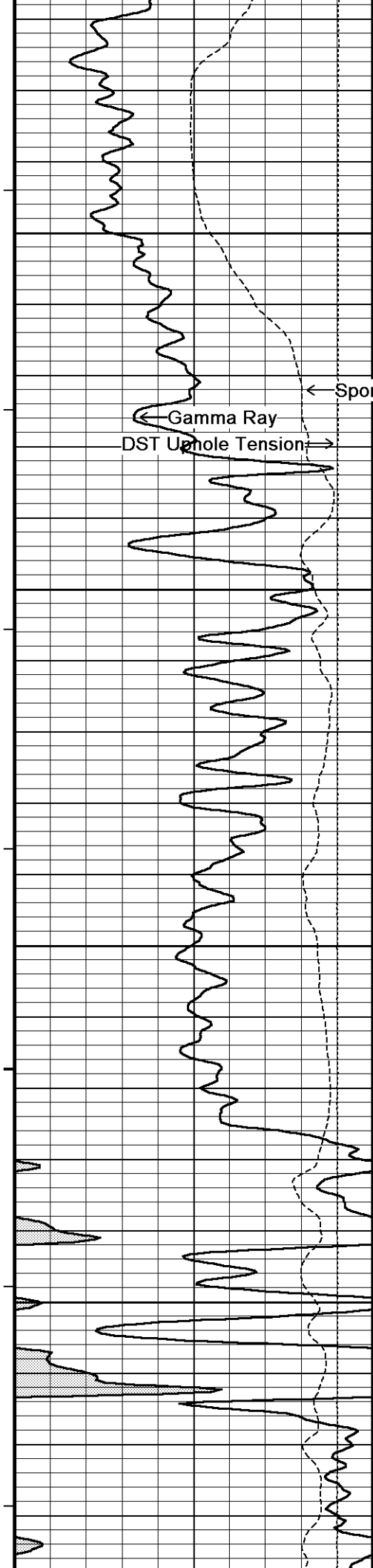
104°

3200

104°







106°

3500

← Spontaneous Potential

← Gamma Ray
DST Up/Down Tension →

106°

3550

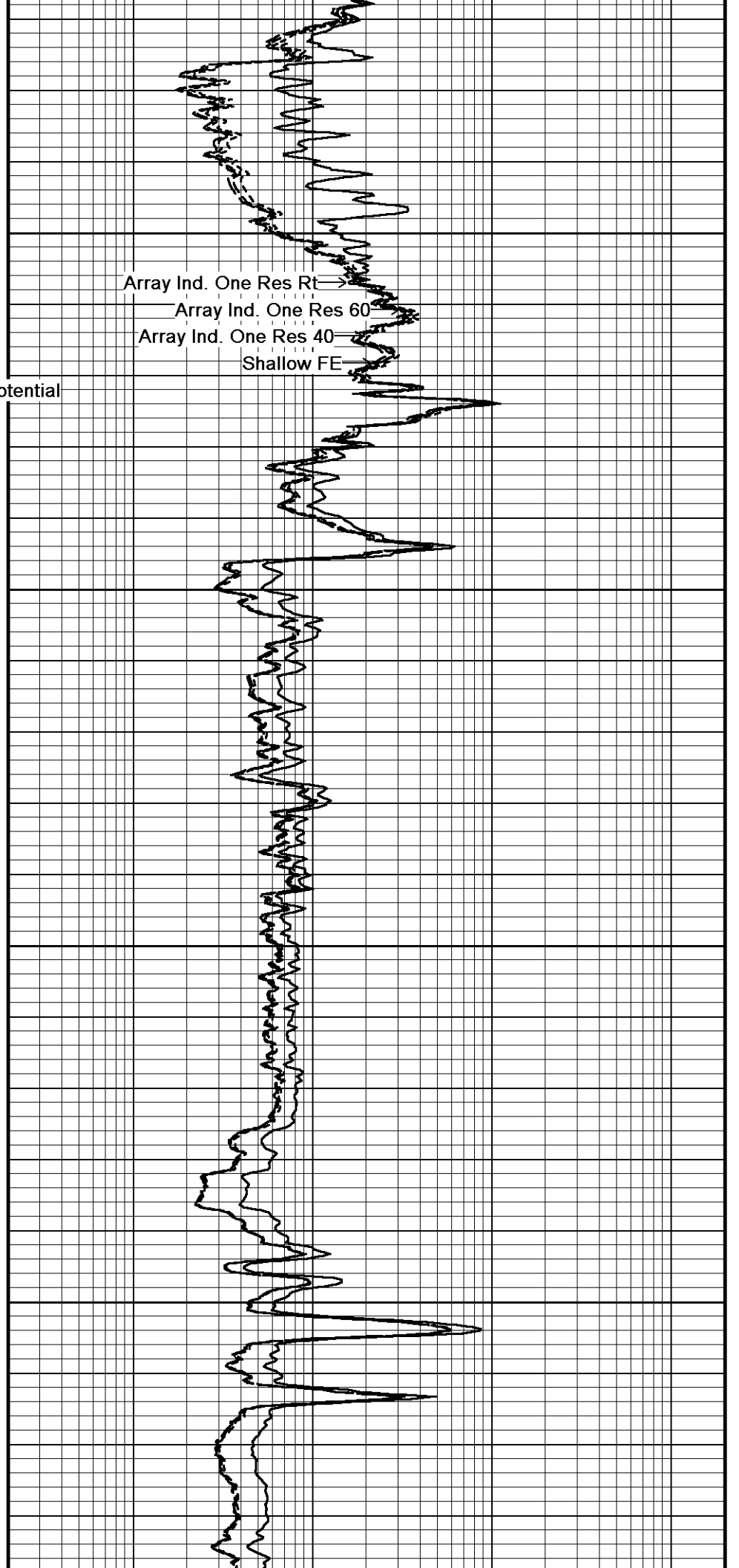
106°

3600

107°

3650

107°

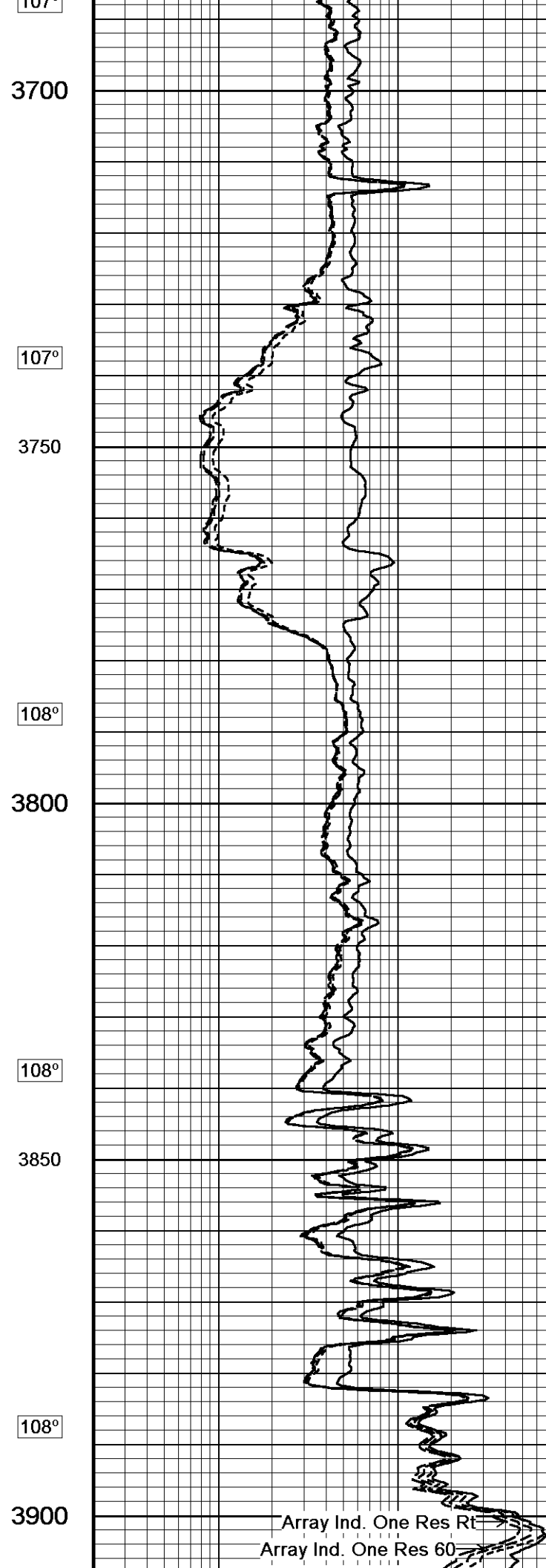
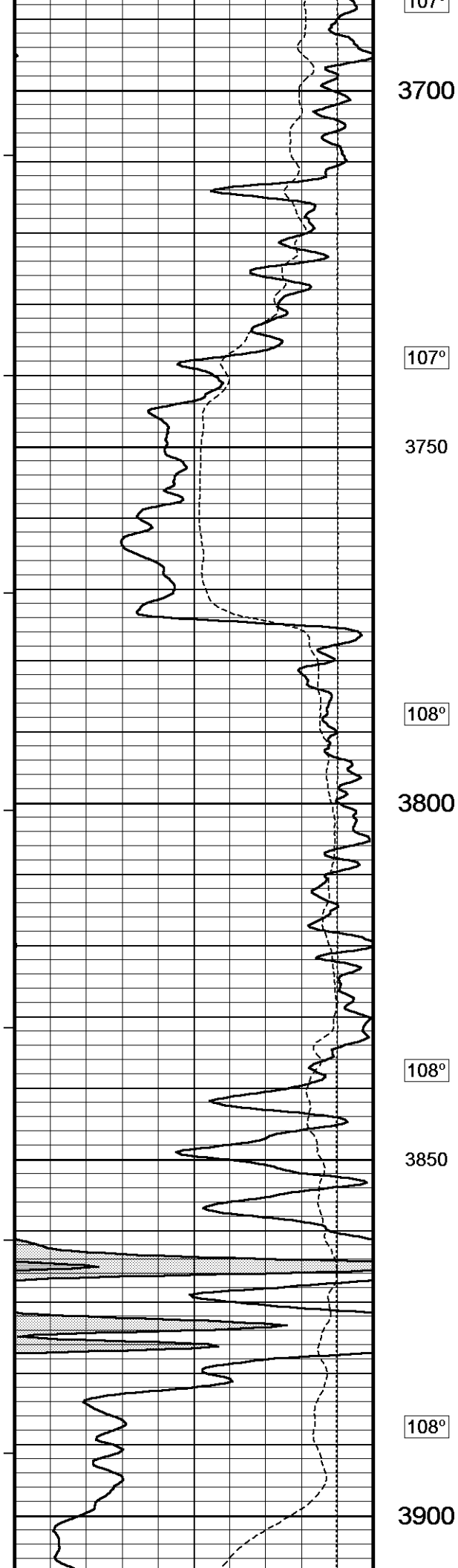


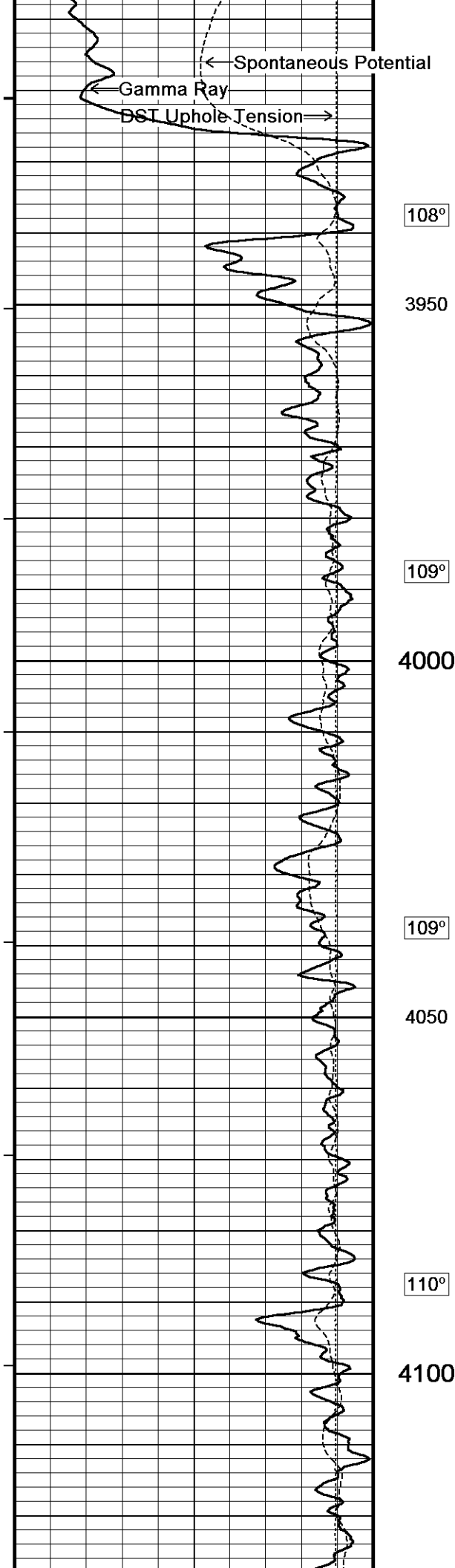
Array Ind. One Res Rt →

Array Ind. One Res 60 →

Array Ind. One Res 40 →

Shallow FE →





108°

3950

109°

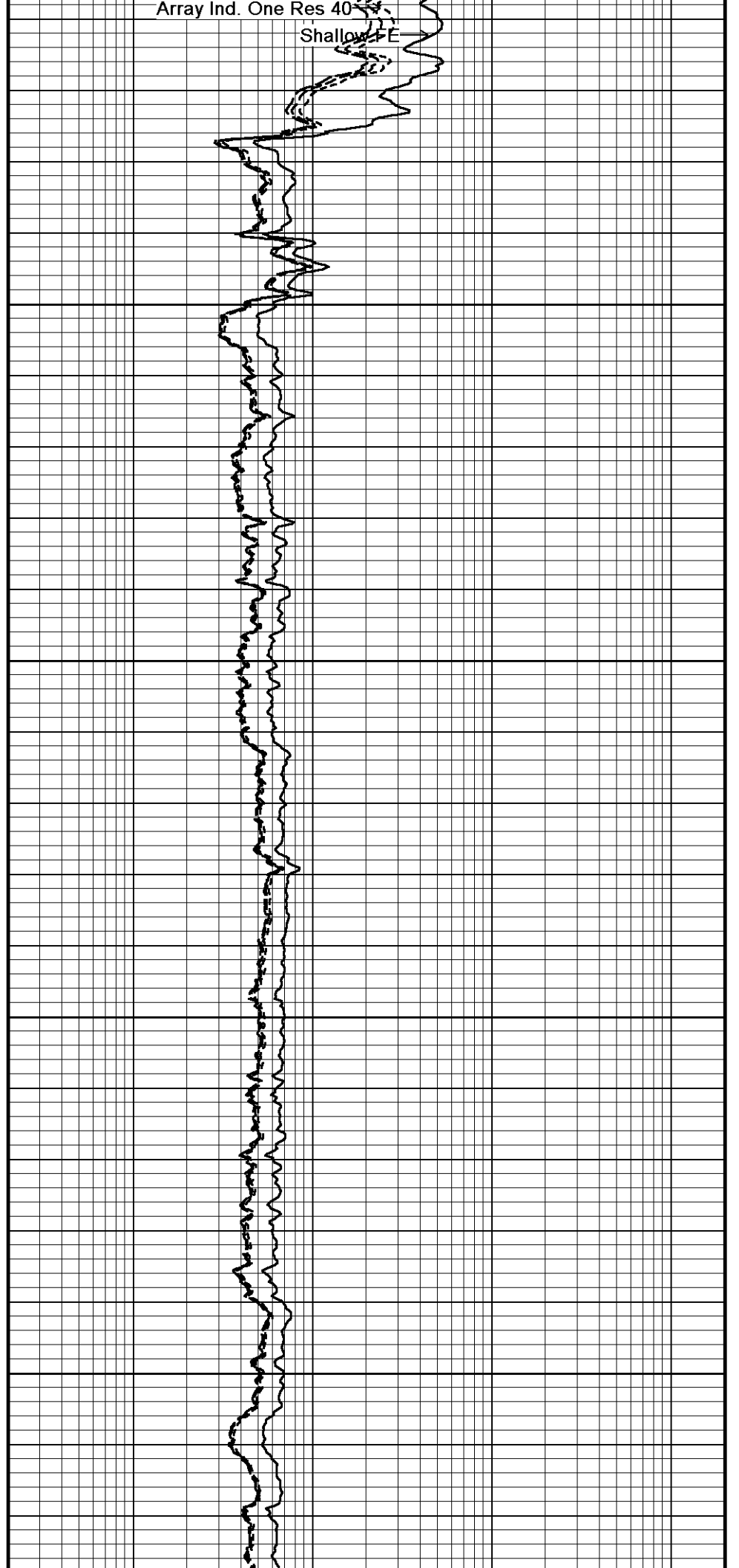
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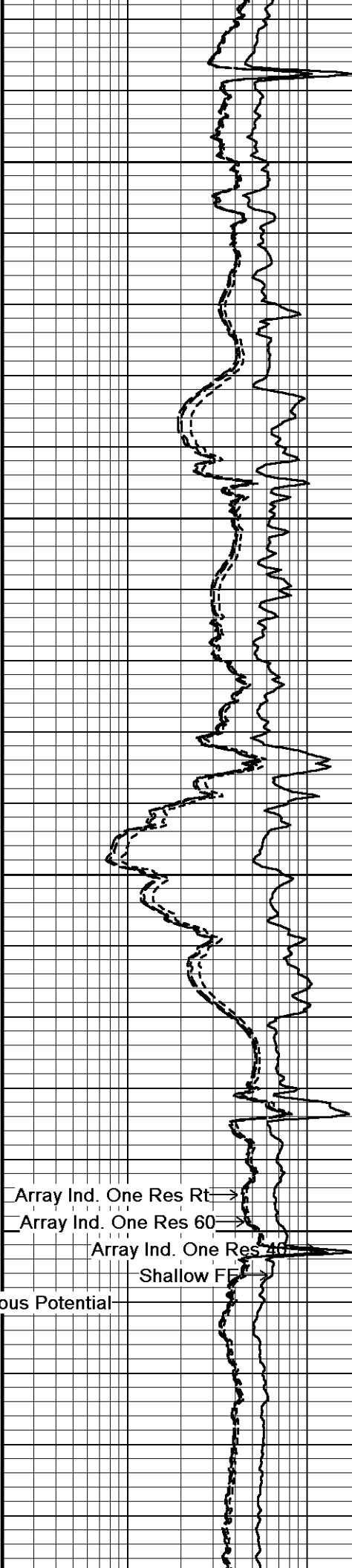
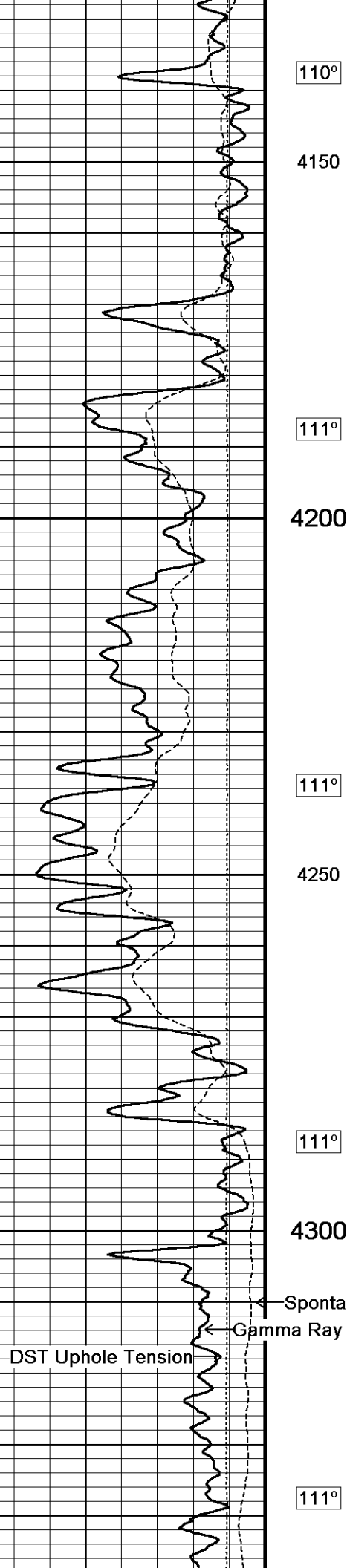
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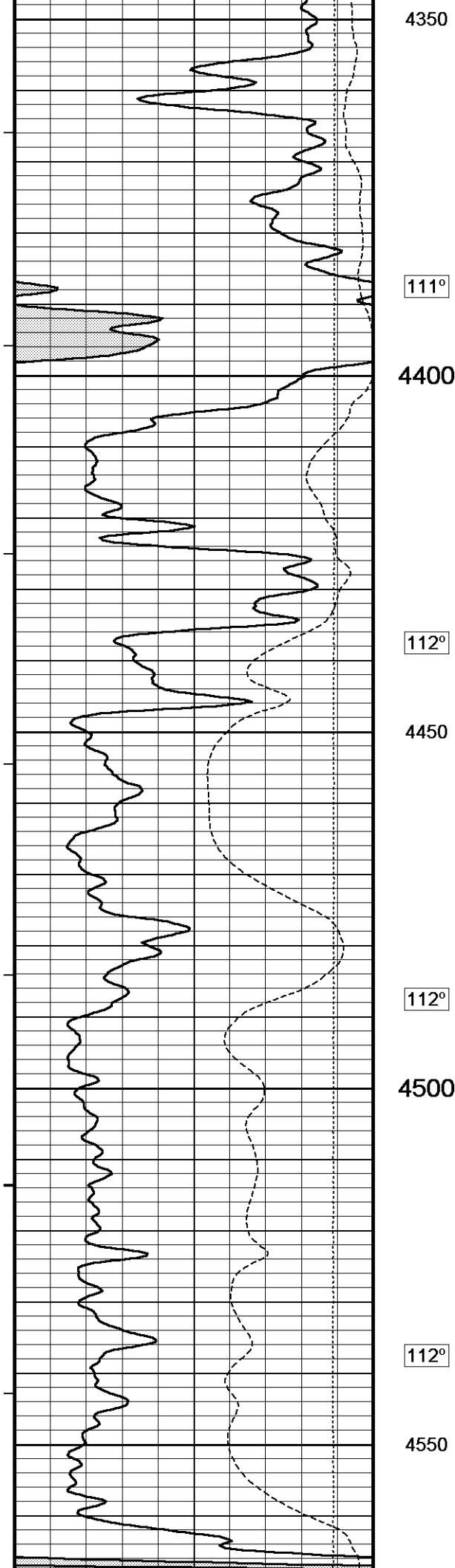
4050

110°

4100







4350

111°

4400

112°

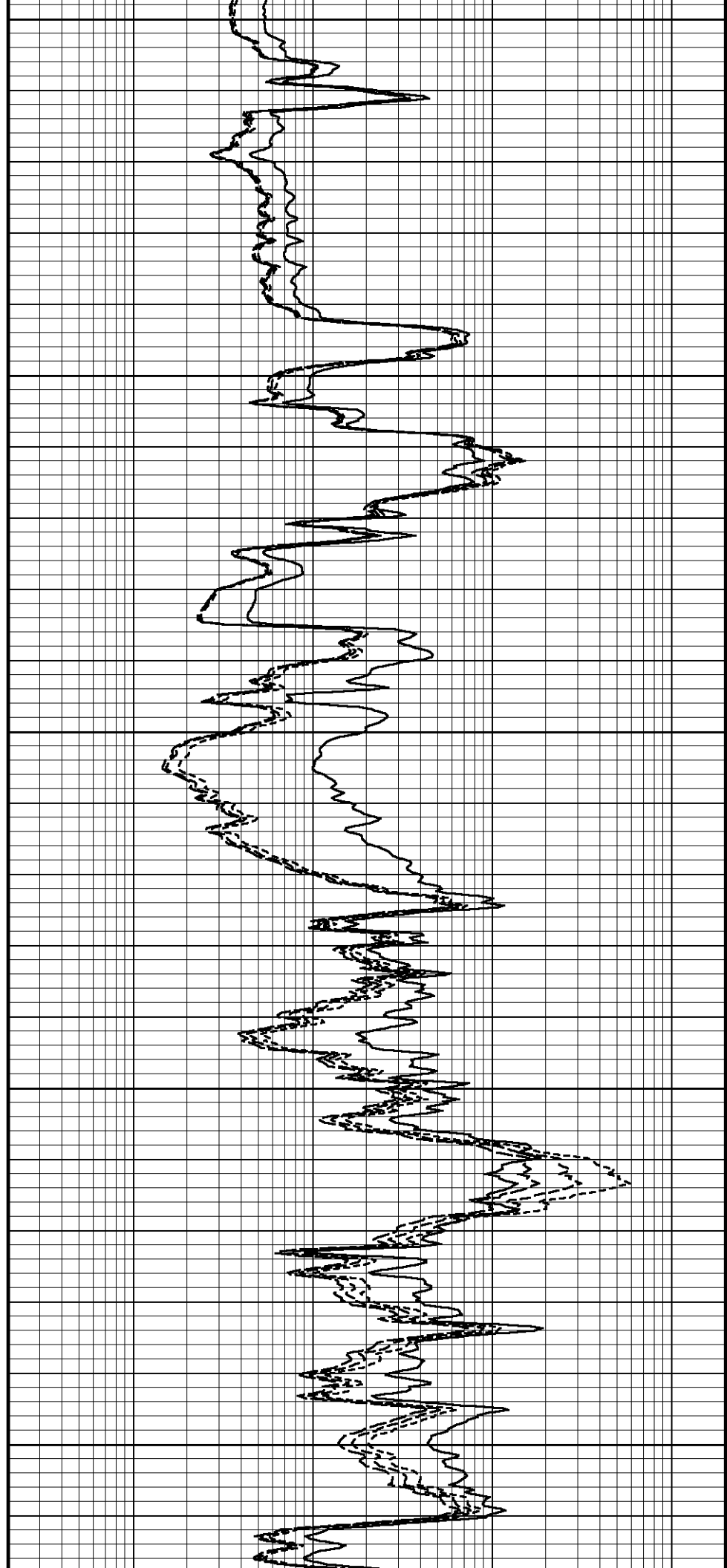
4450

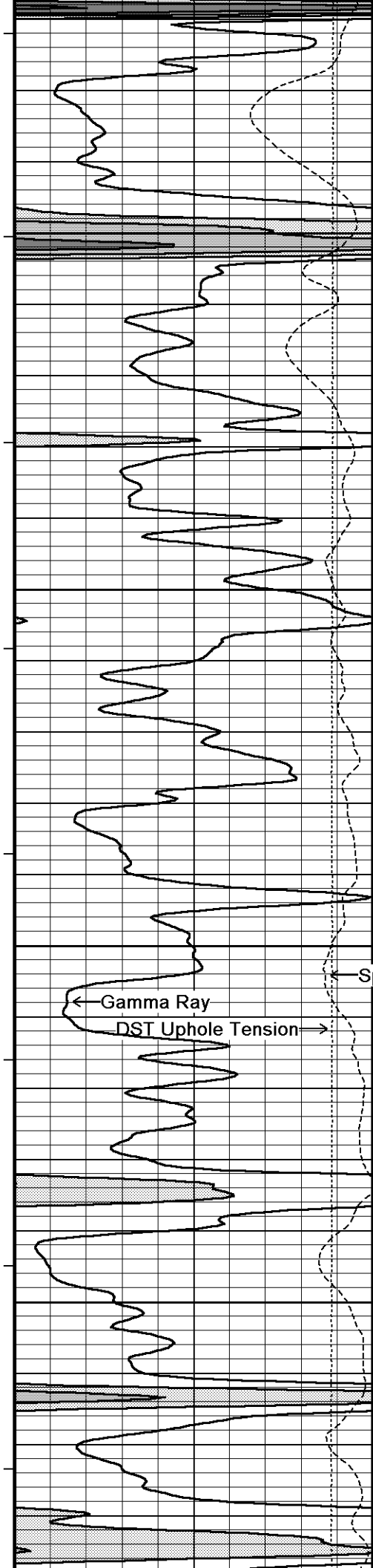
112°

4500

112°

4550





112°

4600

112°

4650

113°

4700

113°

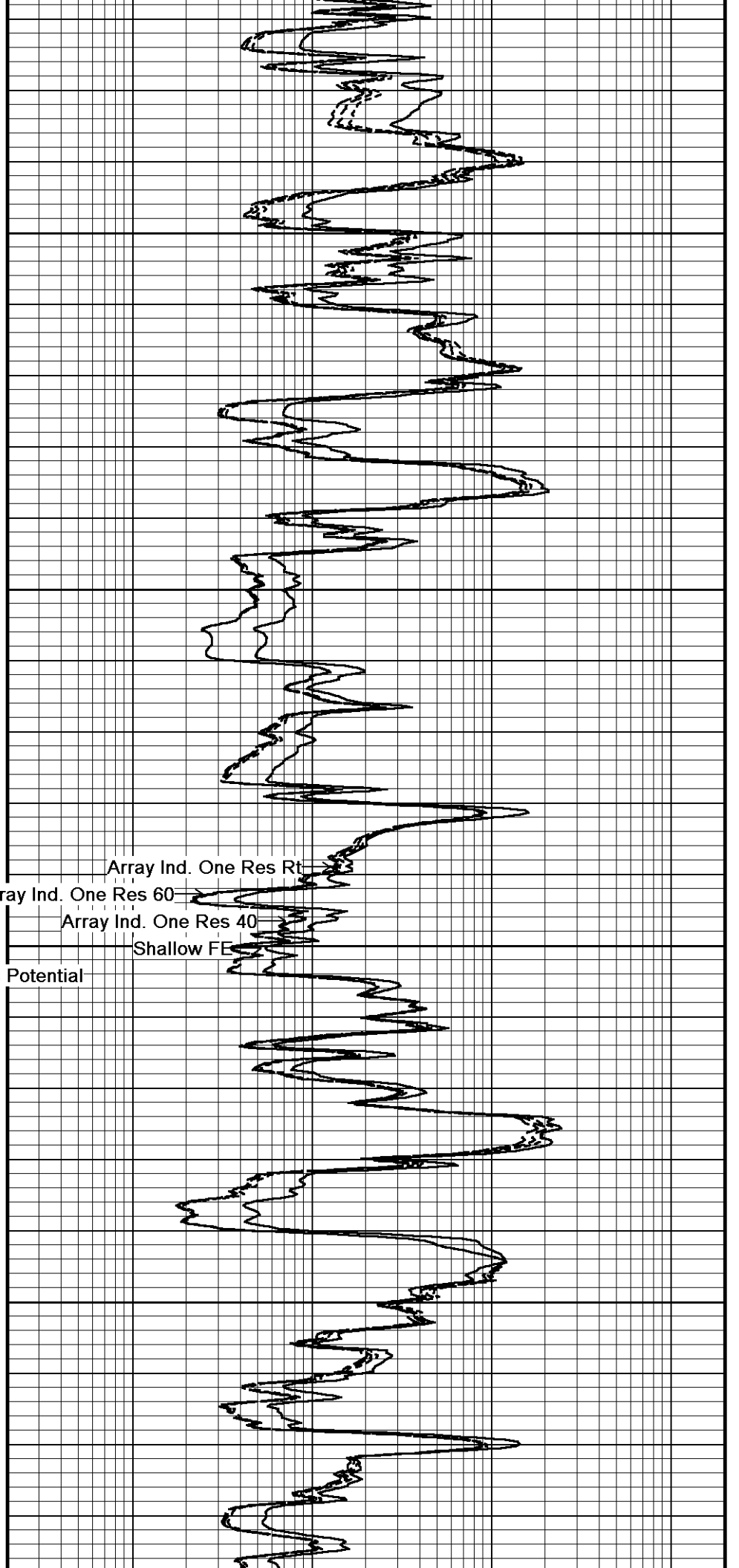
4750

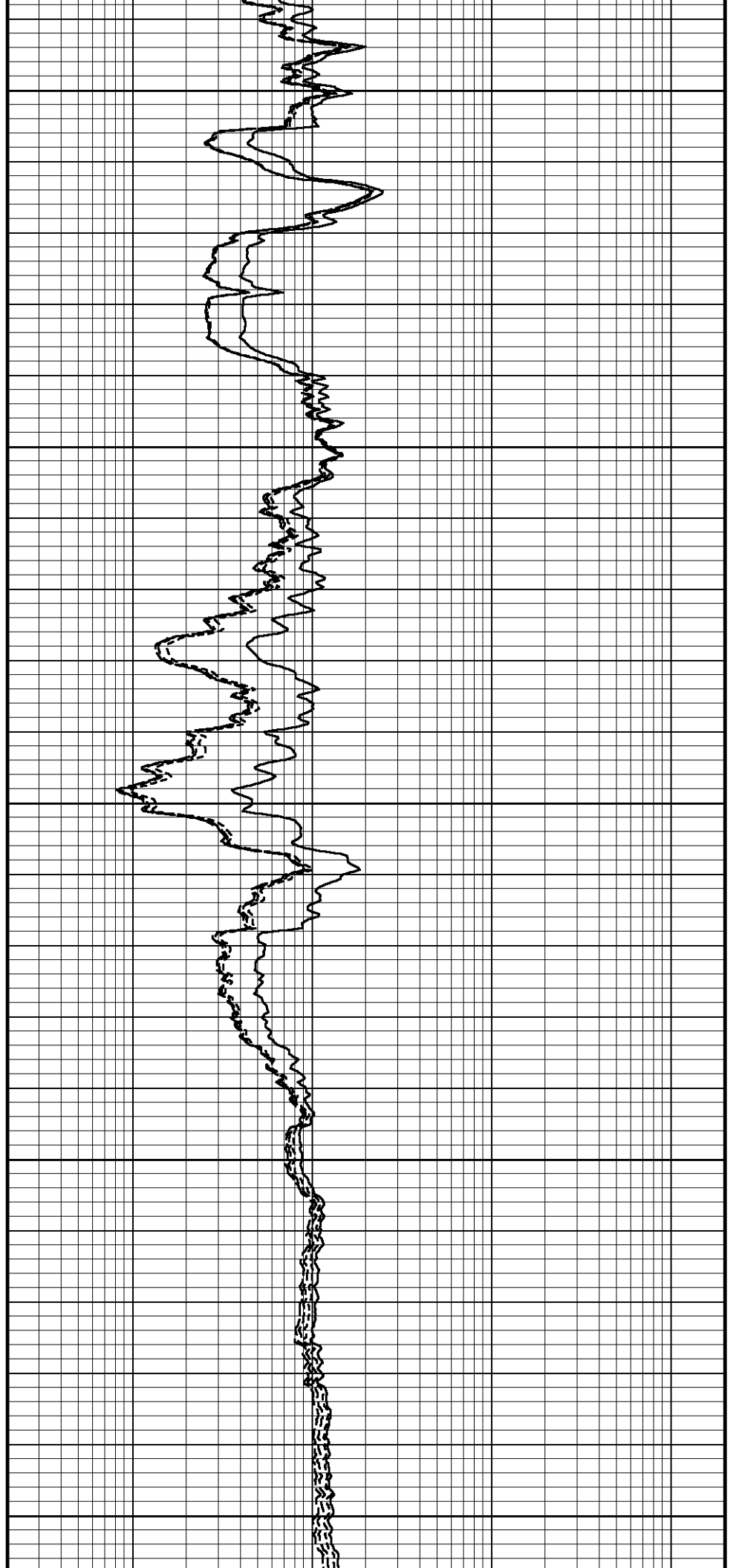
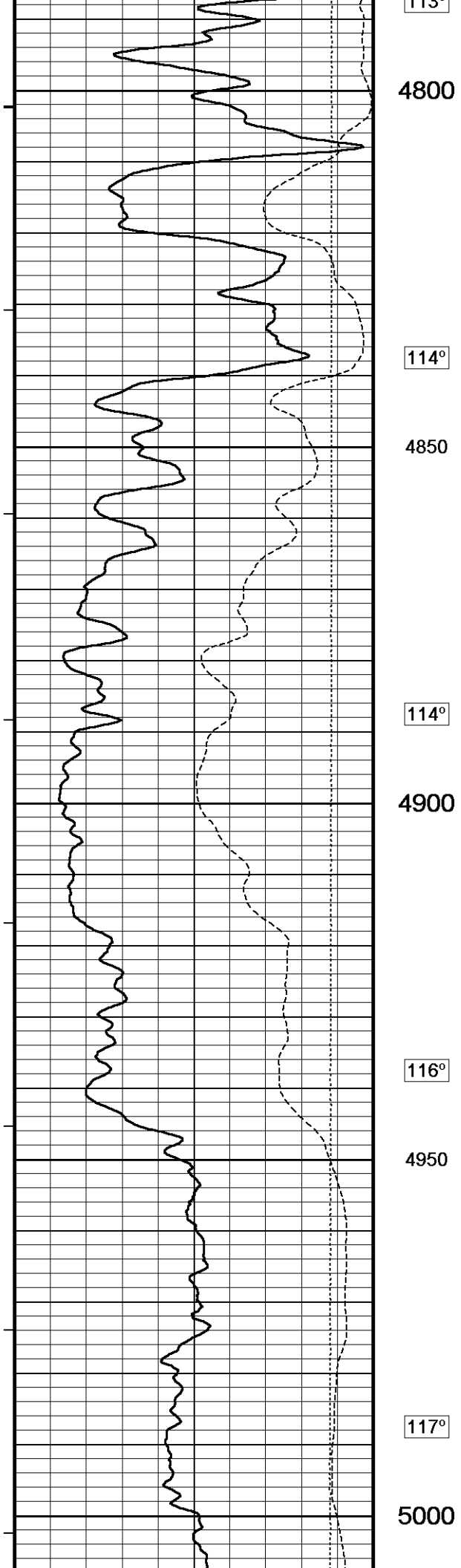
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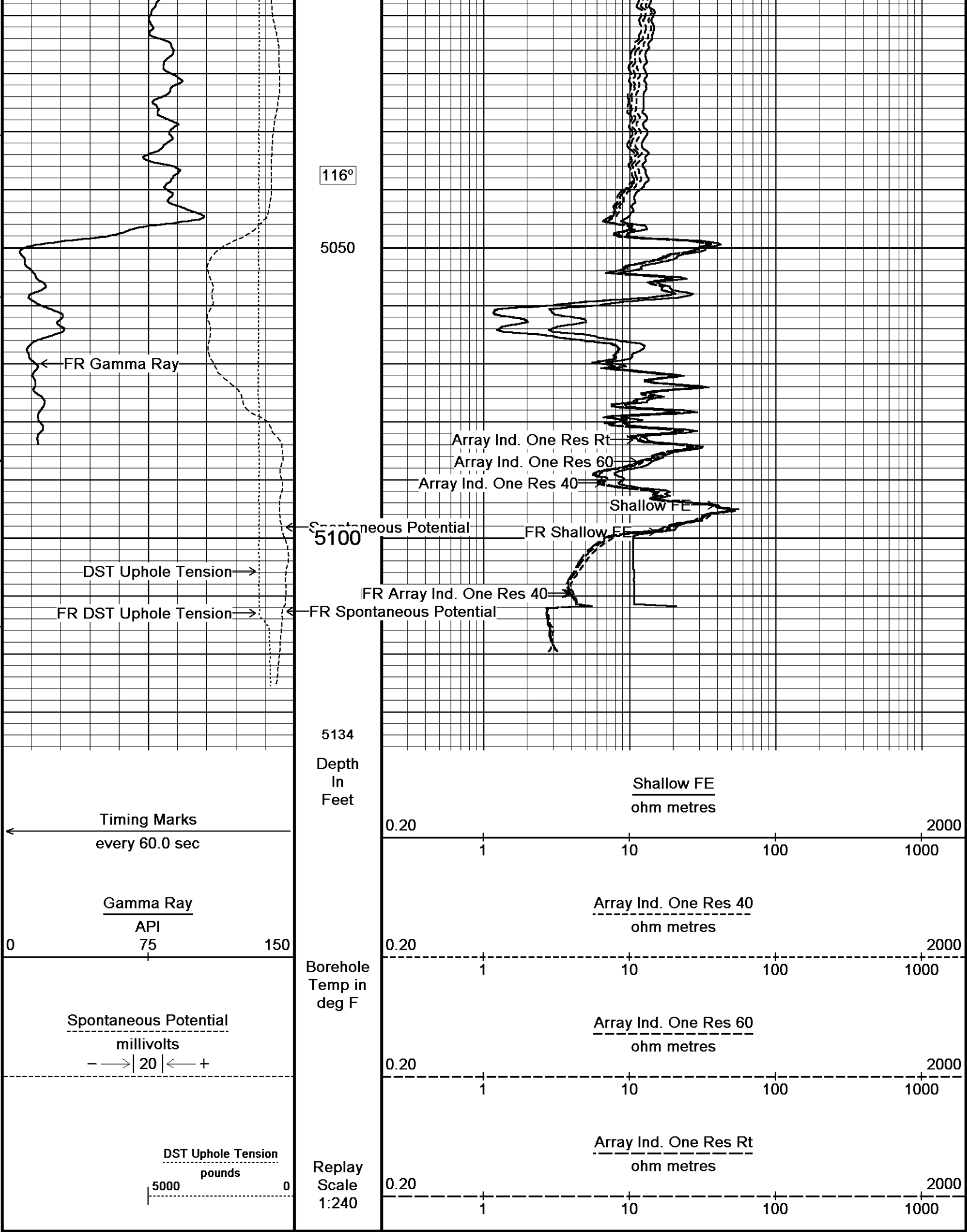
Array Ind. One Res Rt
Array Ind. One Res 60
Array Ind. One Res 40
Shallow FE

Spontaneous Potential

← Gamma Ray
DST Uphole Tension →

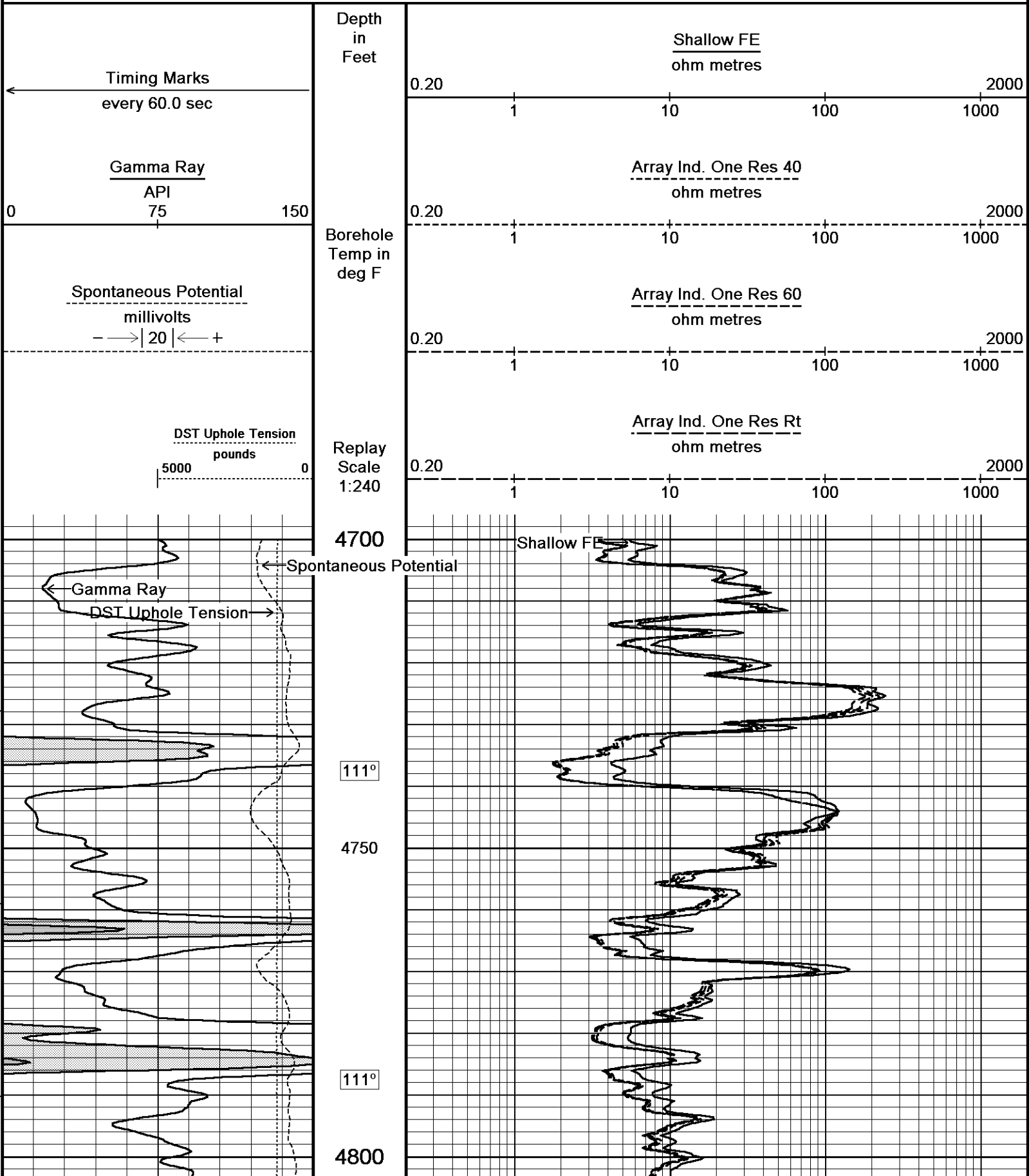


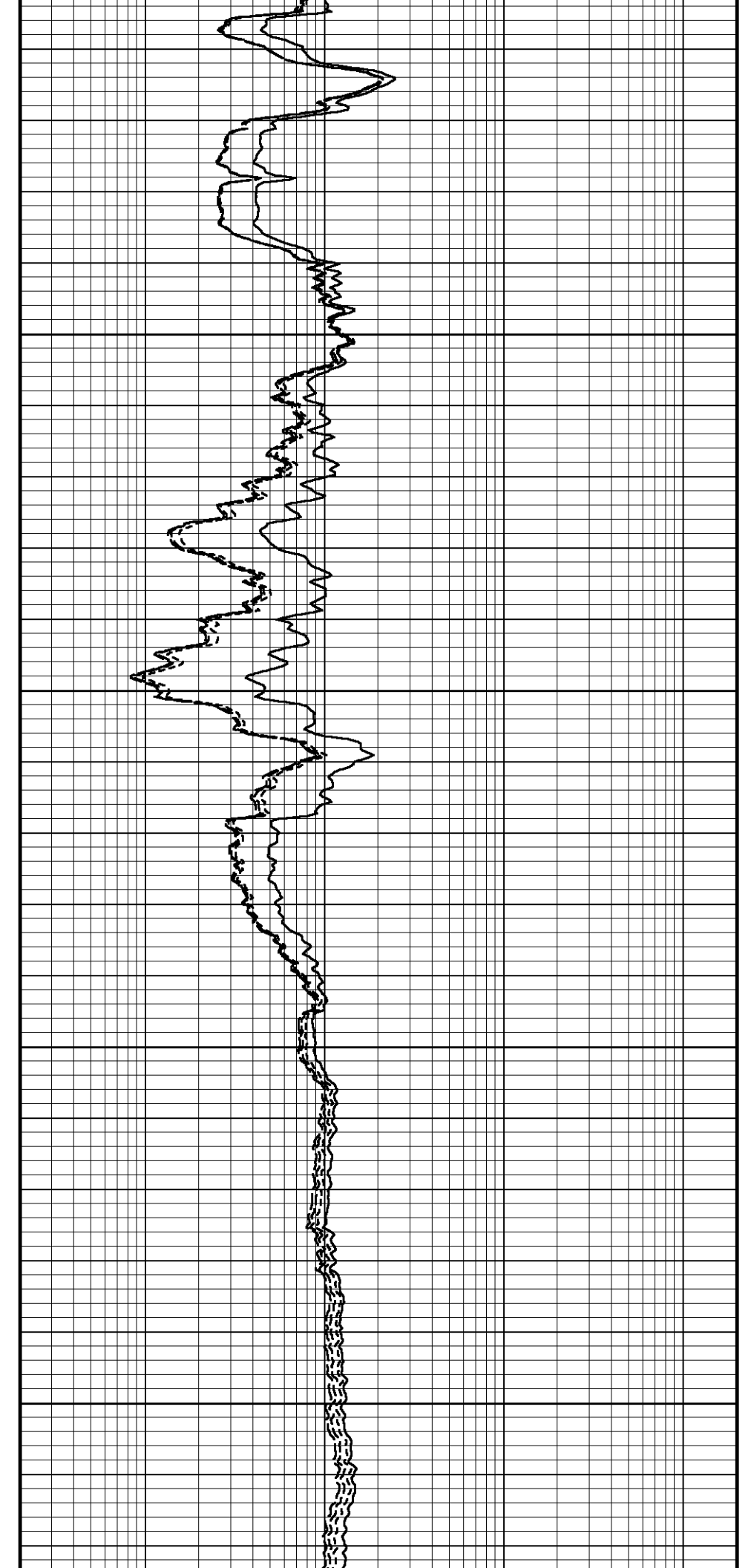
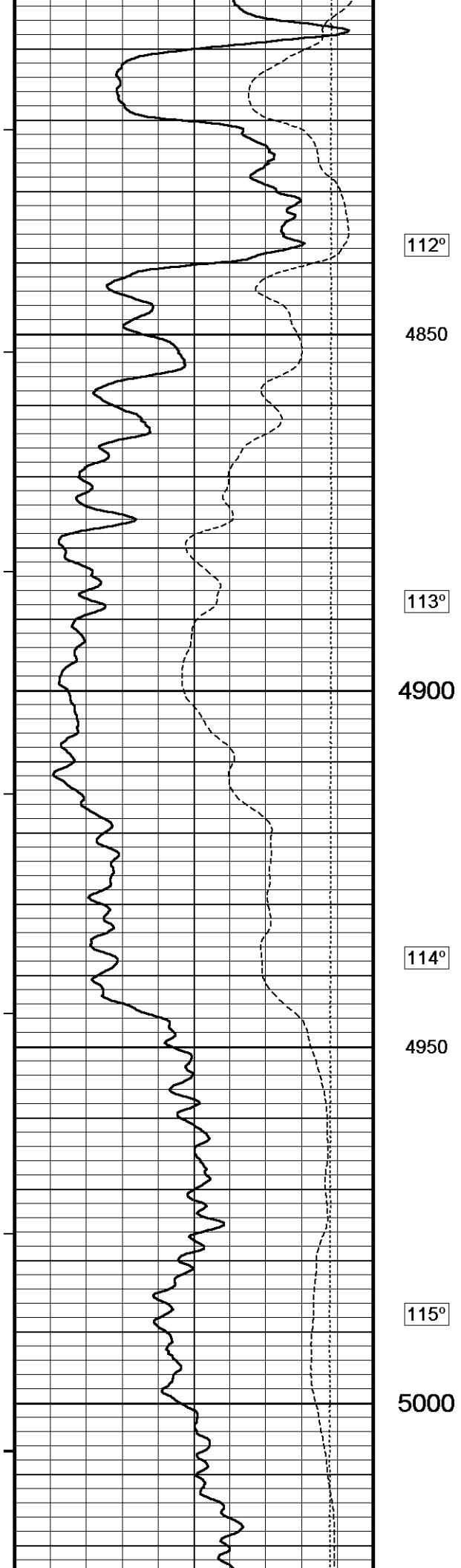


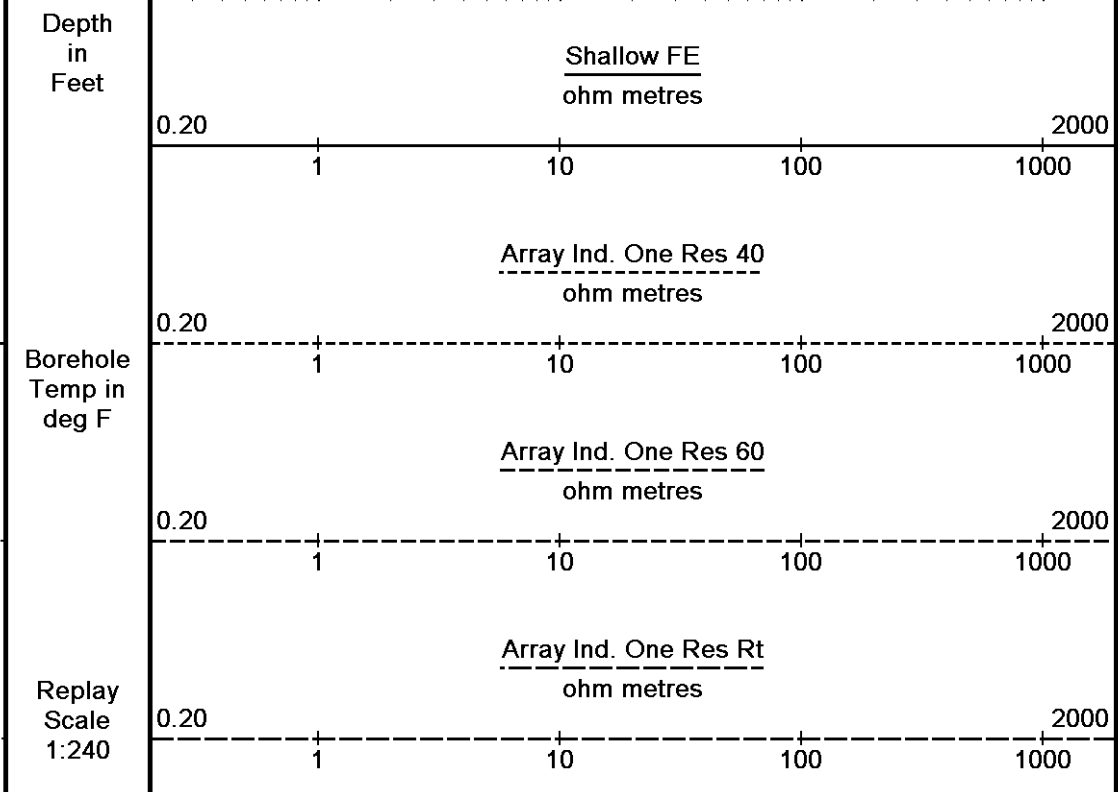
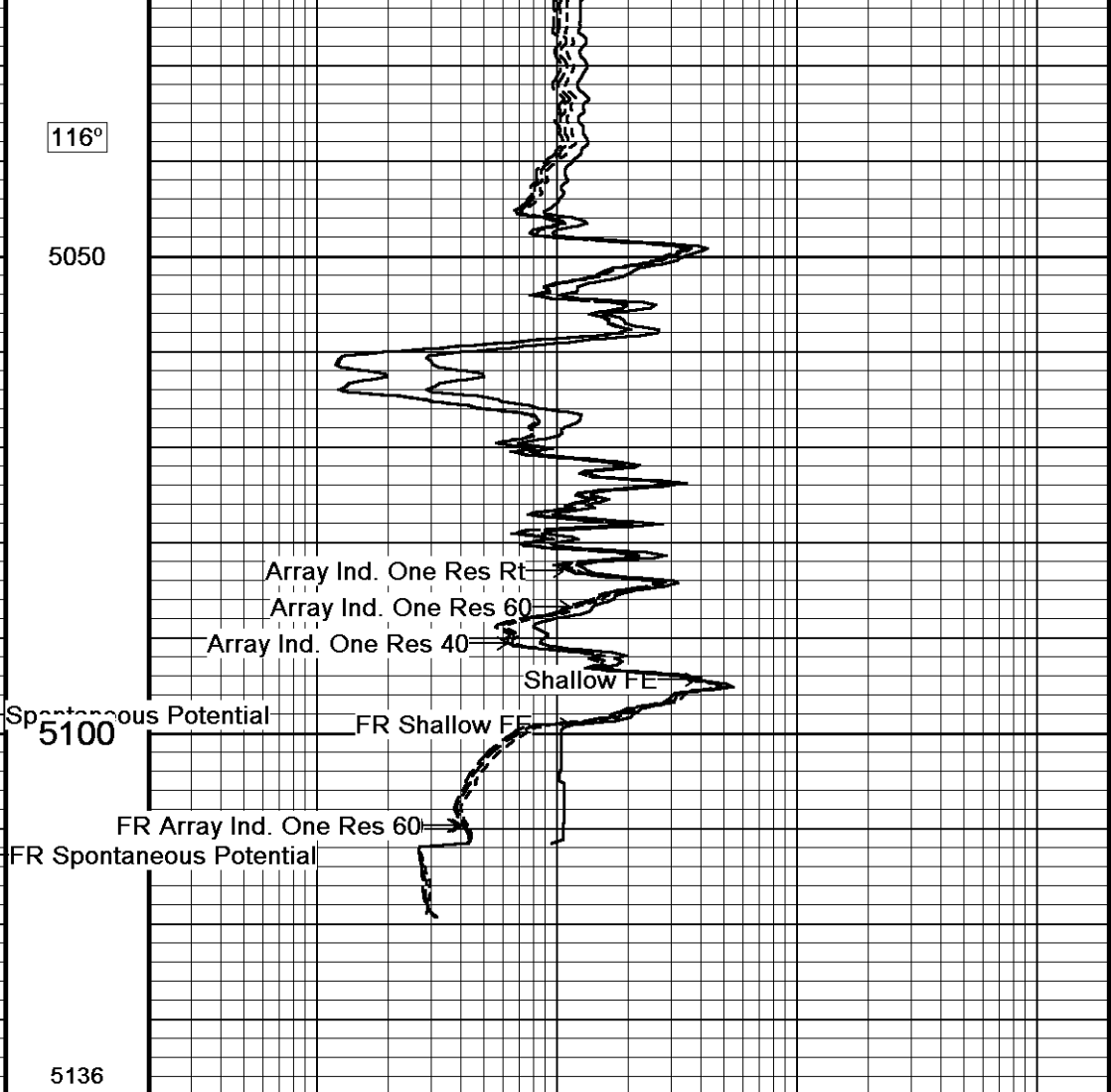
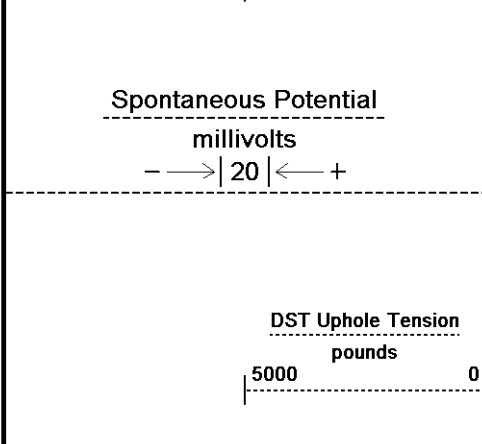
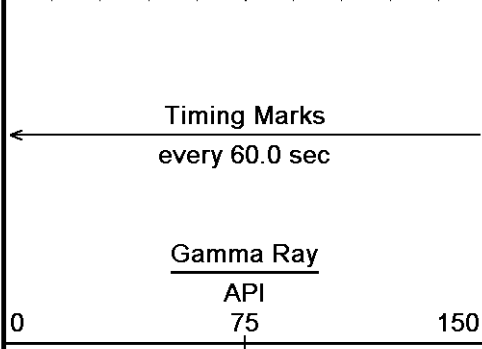
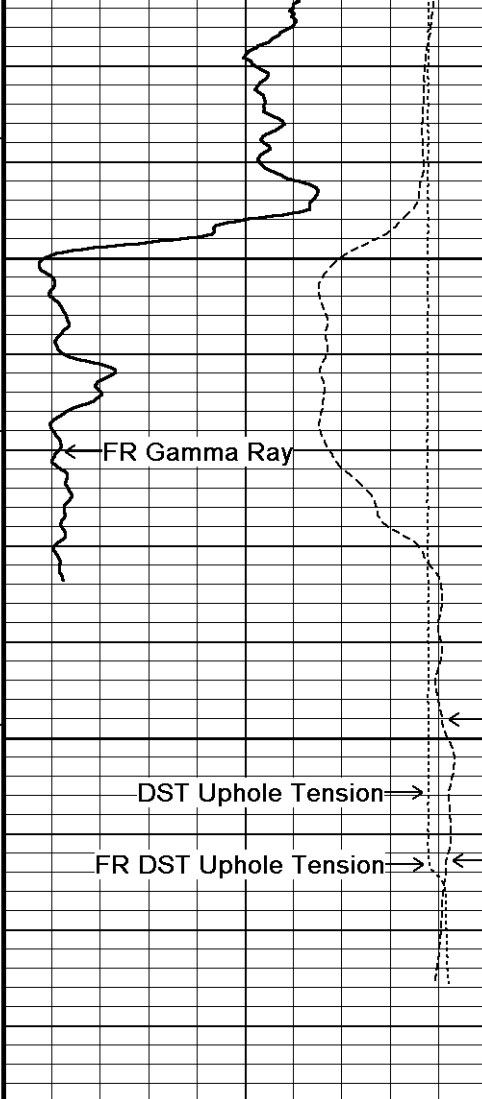


REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 12-JUN-2012 07:33
 Filename: C:\DOCUME~1\ScheffJL\LOCALS~1\Temp\Weatherford PreView\0\Beren Lois #10_001.dta
 Recorded on 11-JUN-2012 23:16
 System Versions: Logged with 11.03.4044 Processed with 13.01.5821 Plotted with 12.01.3513







Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 12-JUN-2012 07:33

Filename: C:\DOCUME~1\ScheffJL\LOCALS~1\Temp\Weatherford PreView\0\Beren Lois #10_001.dta

Recorded on 11-JUN-2012 23:16

System Versions: Logged with 11.03.4044 Processed with 13.01.5821 Plotted with 12.01.3513

BEFORE SURVEY CALIBRATION

C:\DOCUME~1\SchefFJL\LOCALS~1\Temp\Weatherford PreView\0\Beren Lois #10_004.dta

General Constants All 000

Last Edited on 11-JUN-2012 23:43

General Parameters

Mud Resistivity	0.320	ohm-metres
Mud Resistivity Temperature	91.000	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	None	
HVOL Caliper 2	N/A	
Annular Volume Diameter	5.500	inches
Caliper for Differential Caliper	None	

Rwa Parameters

Porosity used	Limestone Density Por.
Resistivity used	Array Ind. One Res Rt
RWA Constant A	0.610
RWA Constant M	2.150

Down-hole Tension Calibration All 000

Field Calibration on 30-JUN-2010 01:00

Reading No	Measured	Calibrated (lbs)
1	14112.01	10.00
2	15164.79	427.00

Down-hole Tension Calibration SMS 0

Field Calibration on 29-MAR-2012 12:07

Reading No	Measured	Calibrated (lbs)
1	-2133.10	0.00
2	-2135.89	100.00

Gamma Calibration MCG-C 208

Field Calibration on 11-JUN-2012 10:21

	Measured	Calibrated (API)
Background	74	53
Calibrator (Gross)	1091	778
Calibrator (Net)	1016	725

Gamma Constants MCG-C 208

Last Edited on 11-JUN-2012 17:07

Gamma Calibrator Number	gcr38	
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 208

Field Calibration on 24-FEB-2012 11:08

	Measured	Calibrated (mV)
Reference 1	98.6	100.0
Reference 2	-101.8	-100.0

High Resolution Temperature Calibration MCG-C 208

Field Calibration on 17-MAY-2012 11:07

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

High Resolution Temperature Constants MCG-C 208

Last Edited on

Pre-filter Length	11
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Caliper Calibration MML-A 16

Base Calibration on 23-MAY-2012 09:49

Field Calibration on 11-JUN-2012 10:13

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14648	5.98
2	17884	7.97
3	21168	9.86

4	21.00	0.00
5	25204	11.92
6	0	0.00
	N/A	N/A

Field Calibration

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

Micro Normal and Micro Inverse Calibration MML-A 16

Base Calibration on 23-MAY-2012 09:57
Field Check on 11-JUN-2012 10:15

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	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 11-JUN-2012 10:14

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159		
Micro Normal K Factor	1.0000		
Micro Inverse K Factor	1.0000		
Standoff Offset	N/A	inches	

Neutron Calibration MDN-A.B 66

Base Calibration on 17-MAY-2012 13:54
Field Check on 11-JUN-2012 10:26

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3162	99	3714	110
Ratio	31.795		33.764	

Field Calibrator at Base

	Calibrated (cps)
	1615 2304
Ratio	0.701

Field Check

	Calibrated (cps)
	1621 2311
Ratio	0.701

Neutron Constants MDN-A.B 66

Last Edited on 11-JUN-2012 17:08

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	None
Formation Pressure	N/A kpsi
Temperature Source	MCG External Temperature
Temperature	N/A 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-C.A 353

Base Calibration on 17-MAY-2012 09:40
Field Check on 11-JUN-2012 10:04

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	964.5	126.8

Base Check	281.0
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FE Constants MFE-C.A 353

Last Edited on 11-JUN-2012 17:08

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	0.0	inches

Induction Calibration MAI-A.A 167

Base Calibration on 11-MAR-2011 09:58

Field Check on 11-JUN-2012 10:02

Base Calibration

Test Loop Calibration

Channel	Low	High	Low	High
1	17.3	474.2	9.3	966.2
2	6.3	388.4	7.6	821.4
3	3.3	259.4	5.2	566.0
4	1.9	133.0	2.6	279.2

Array Temperature	76.8	Deg F
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Channel	Base Check (mmho/m)	Field Check (mmho/m)
	Low High	Low High
1	0.0 0.0	13.1 3839.5
2	0.0 0.0	29.6 3477.3
3	0.0 0.0	29.1 3053.2
4	0.0 0.0	19.7 2081.7
Deep	0.0 0.0	18.5 2048.9
Medium	0.0 0.0	42.2 3991.6
Shallow	0.0 0.0	43.1 5054.9

Array Temperature	0.0	73.4	Deg F
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Induction Constants MAI-A.A 167

Last Edited on 11-JUN-2012 17:08

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	0.00	inches
Number of Fins on Stand-off	6.0000	
Stand-off Fin Angle	60.00	degrees
Stand-off Fin Width	0.0000	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 Water for Rpt and Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	
High Resolution Temperature Calibration MAI-A.A 167		
	Measured	Calibrated(Deg F)
Lower	1.00	33.80
Upper	11.00	51.80
High Resolution Temperature Constants MAI-A.A 167		
Pre-filter Length	11	
Caliper Calibration MPD-B 31		
Base Calibration		Base Calibration on 17-MAY-2012 11:46
Field Calibration		Field Calibration on 11-JUN-2012 10:06
Reading No	Measured	Calibrator Size (in)
1	17422	3.99
2	26064	5.98
3	34746	7.97
4	42992	9.86
5	52432	11.92
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	5.95	5.98
Photo Density Calibration MPD-B 31		
Base Calibration		Base Calibration on 17-MAY-2012 12:08
Field Check		Field Check on 11-JUN-2012 10:11
Density Calibration		
Base Calibration	Measured	Calibrated (sdu)
	Near	Far
Reference 1	57479	28439
Reference 2	22883	2144
	59556	30836
	24941	2541
Field Check at Base		
	693.0	857.8
Field Check		
	694.1	856.7
PE Calibration		
Base Calibration	Measured	Calibrated
	WS	WH
	Ratio	Ratio
Background	127	608
Reference 1	22685	57323
Reference 2	6674	22783
	0.398	0.371
	0.295	0.272
Field Check at Base		
	127.1	608.2
Field Check		
	125.9	608.6
Density Constants MPD-B 31		
Last Edited on 11-JUN-2012 17:07		
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	
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)	

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
0.00

DOWNHOLE EQUIPMENT

C:\DOCUME~1\SchefFJL\LOCALS~1\Temp\Weatherford PreView\0\Beren Lois #10_004.dta

Compact Comms Gamma

MCG-C 208 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Comms Gamma

MCG-C 208 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 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Neutron

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

Compact Density/Caliper

MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Density/Caliper

MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric

MFE-C.A 353 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Focussed Electric

MFE-C.A 353 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction

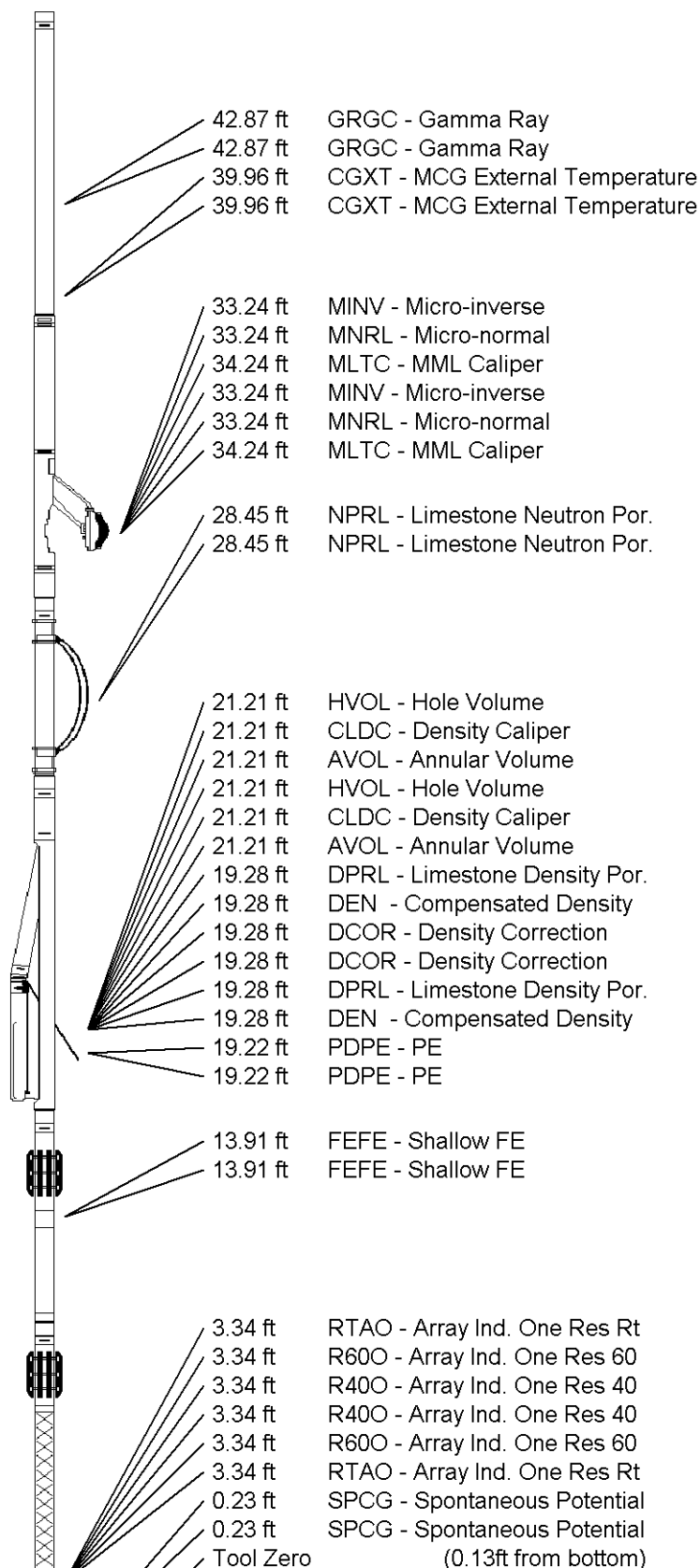
MAI-A.A 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Compact Induction

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

Total Length: 48.16 ft Weight: 383.6 lb

Total Length: 48.16 ft Weight: 383.6 lb





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.

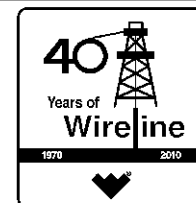
COMPANY BEREN CORPORATION
WELL LOIS #10
FIELD HARDTNER
PROVINCE/COUNTY BARBER
COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	1432.00	feet	First Reading	5110.00	feet
Elevation Drill Floor	1429.00	feet	Depth Driller	5100.00	feet
Elevation Ground Level	1419.00	feet	Depth Logger	5113.00	feet

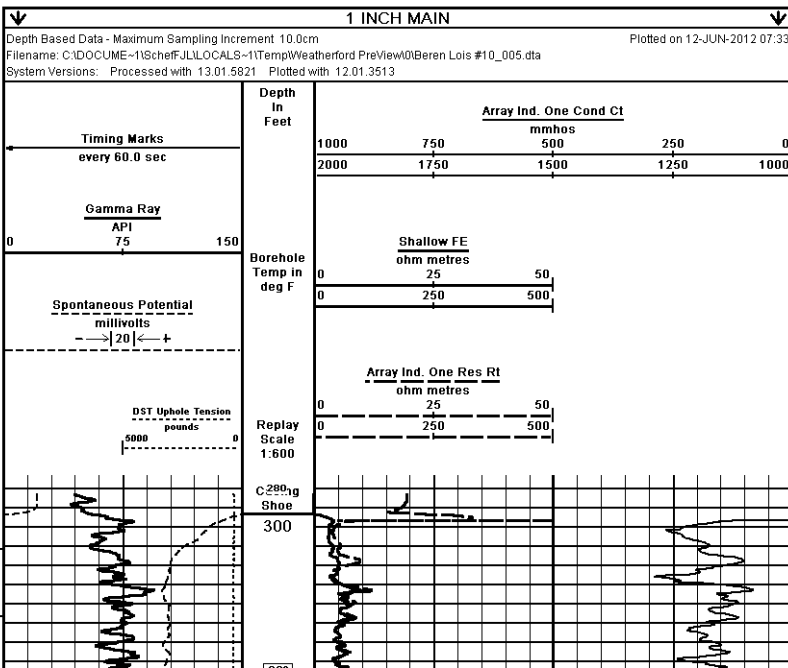


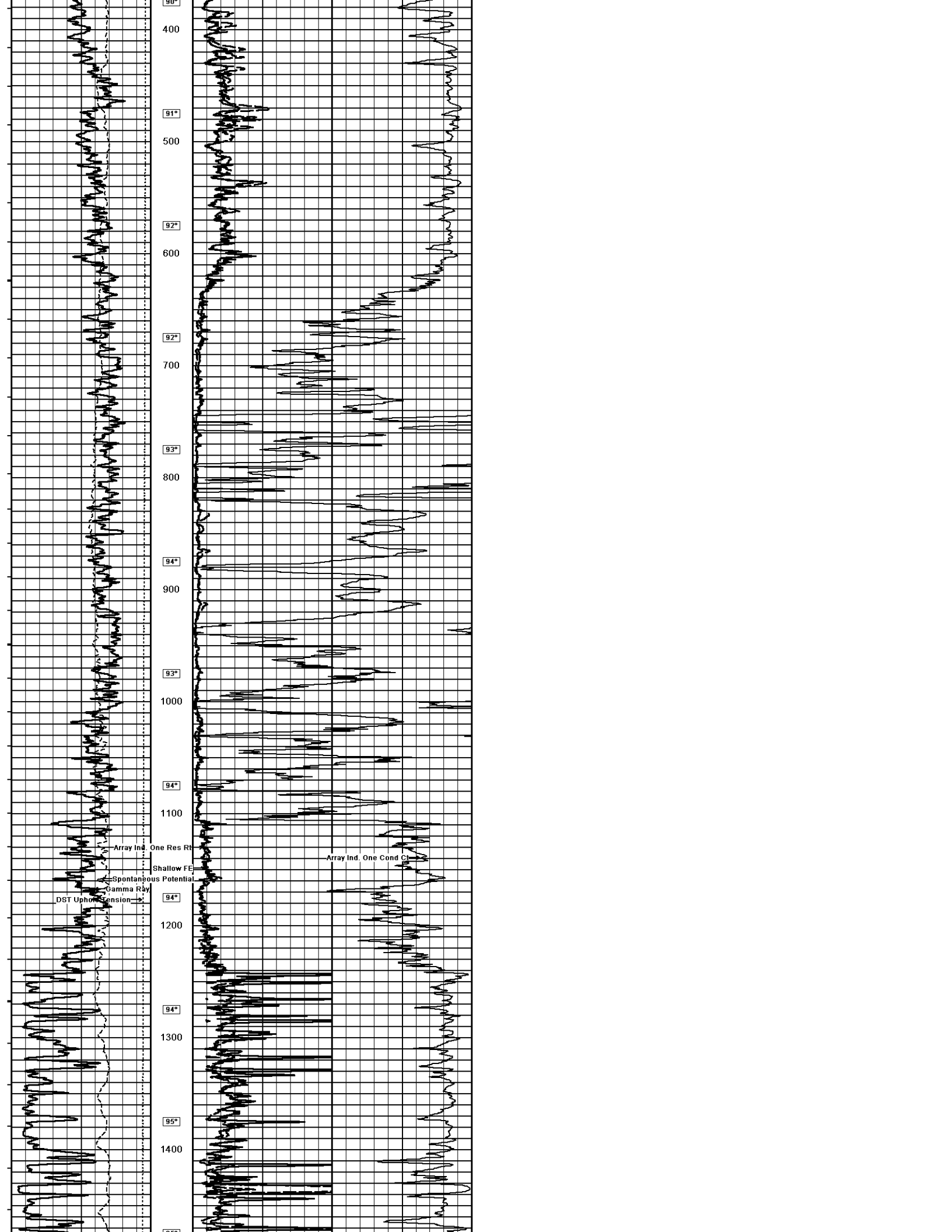
**ARRAY INDUCTION
 SHALLOW FOCUSED
 ELECTRIC LOG**

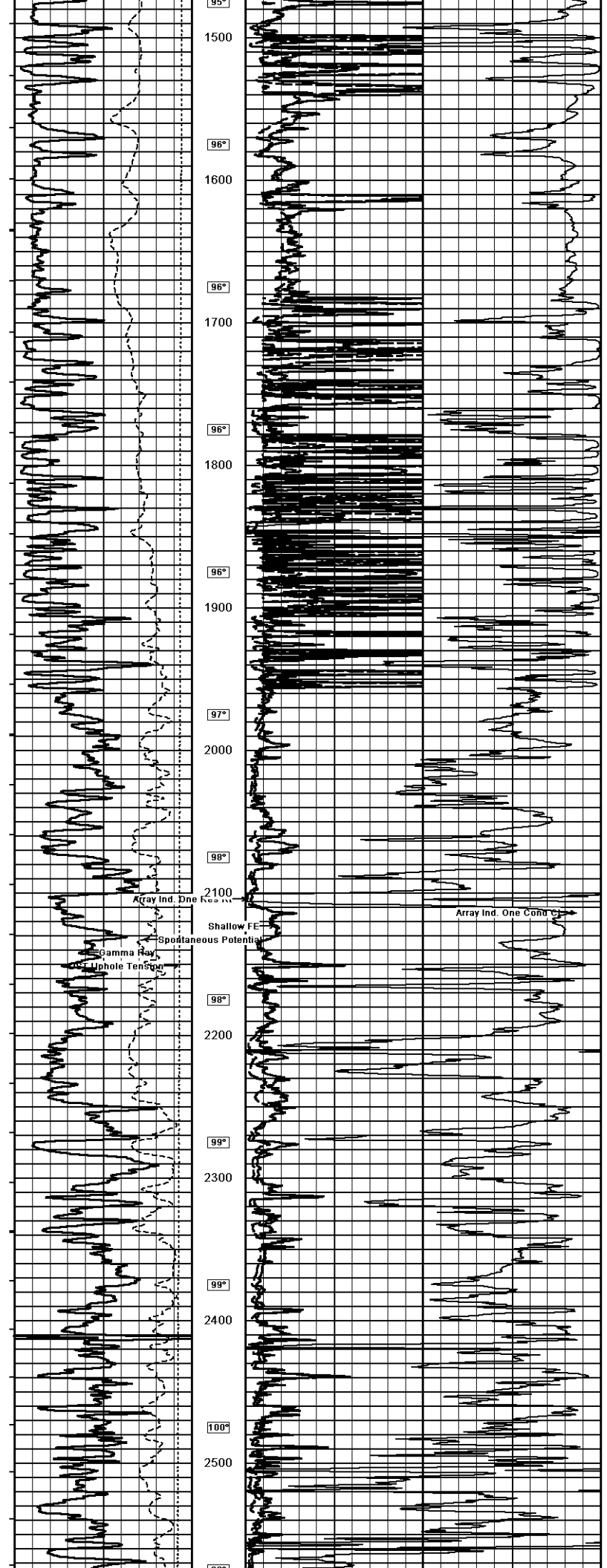
Weatherford®

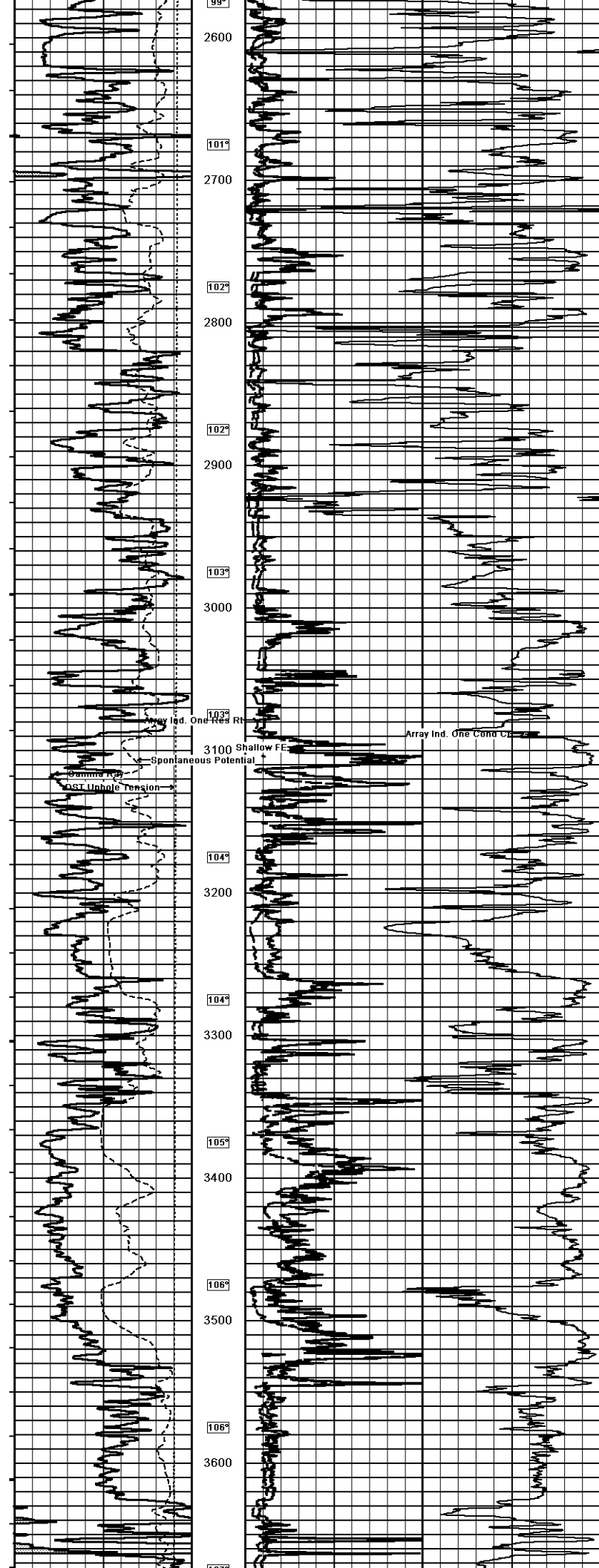


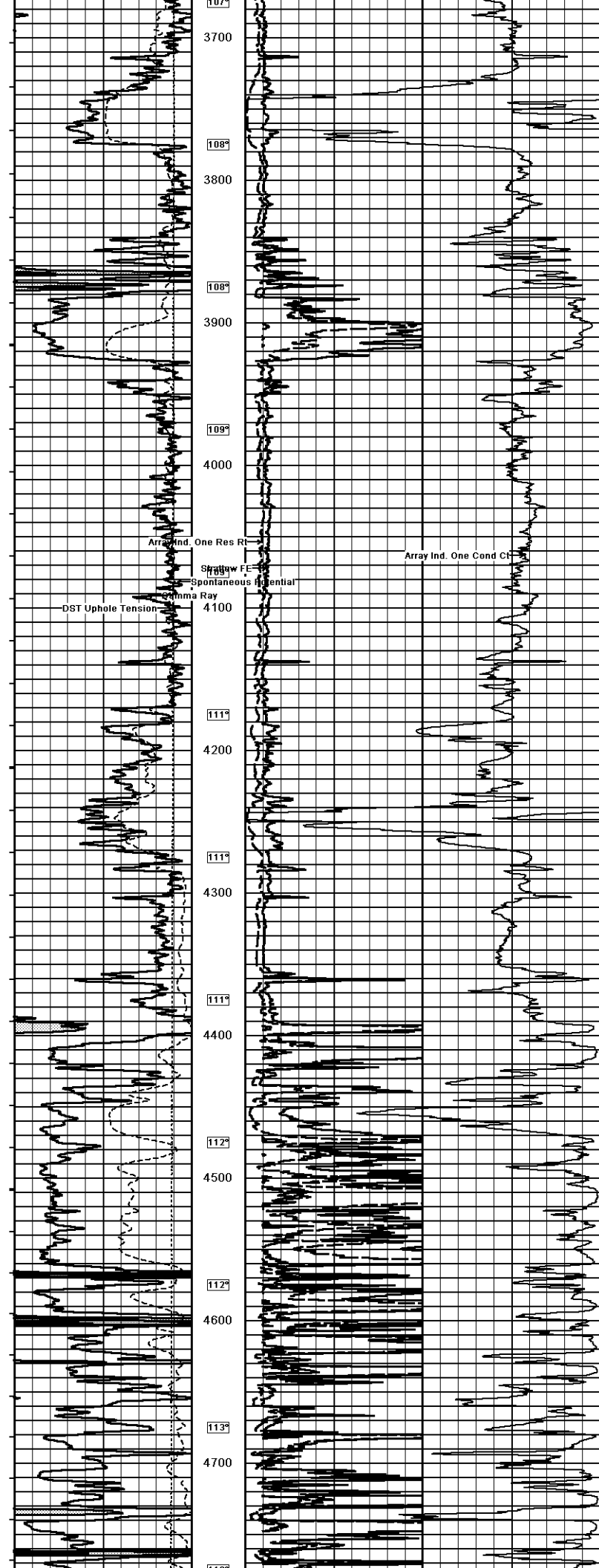
Weatherford		ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG	
COMPANY BEREN CORPORATION WELL LOIS #10 FIELD HARDTNER PROVINCE/COUNTY BARBER COUNTRY/STATE U.S.A. / KANSAS LOCATION 2302' FNL & 990' FWL		SEC 9 TWP 36S R2E Other Services MPD/MCN MML	
Log Number 15-007-23889 Permanent Datum GL Elevation 1419 feet Log Measured From 149 Drilling Measured From 149		Elevation: 1432.00 HG 1429.00 GL 1419.00	
Date 11-JUN-2012	Run Number ONE	Depth Driller 5100.00	feet
Depth Logger 5113.00	feet	First Reading 5110.00	feet
Last Reading 293.00	feet	Casing Driller 300.00	feet
Casing Logger 293.00	feet	Bit Size 7.875	inches
Hole Fluid Type CHEMICAL	9.20	lb/USg	58.00
Density/Viscosity	9.50	CP	mi/30min
Sample Source FLOWLINE	0.32 @ 91.0	ohm-m	
Rm @ Measured Temp	0.28 @ 91.0	ohm-m	
Rm @ Measured Temp	0.38 @ 91.0	ohm-m	
Source Rm/Rmc	CALC		
Rm @ BHT	0.25 @ 117.0	ohm-m	
Time Since Circulation	5 HOURS	deg F	
Max Recorded Temp	117.00	deg F	
Equipment Name COMPACT	LIB		
Equipment Base 13025			
Recorded By ADAM BILL			
Witnessed By EDWIN GRAYLES			
3.0 #1 JOB #	3534857	LIB/2-145	

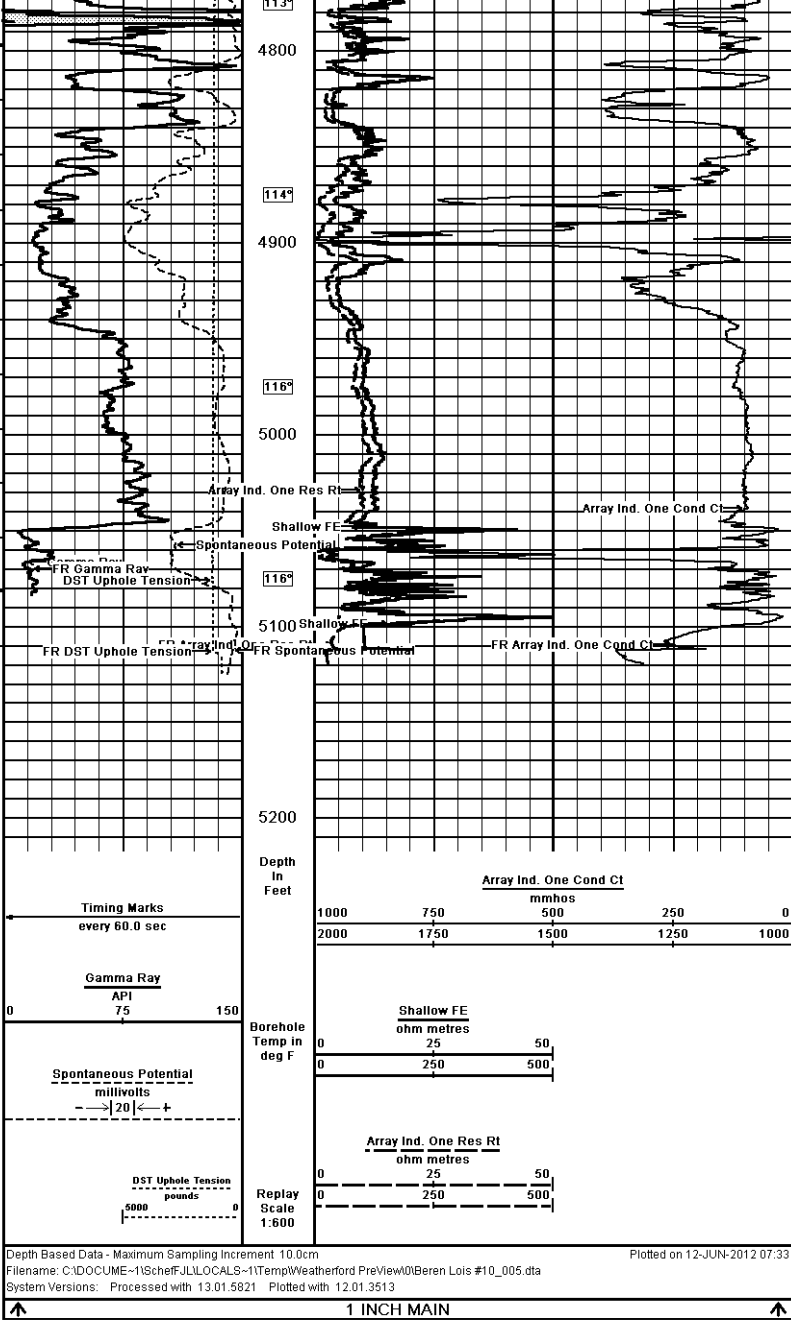












COMPANY			BEREN CORPORATION		
WELL			LOIS #10		
FIELD			HARDTNER		
PROVINCE/COUNTY			BARBER		
COUNTRY/STATE			U.S.A. / KANSAS		
Elevation Kelly Bushing	1432.00	feet	First Reading	5110.00	feet
Elevation Drill Floor	1429.00	feet	Depth Driller	5100.00	feet
Elevation Ground Level	1419.00	feet	Depth Logger	5113.00	feet
 Weatherford			ARRAY INDUCTION		
			SHALLOW FOCUSED		
			ELECTRIC LOG		
					