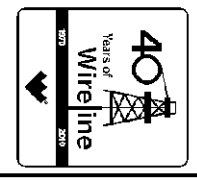




Weatherford[®]

**ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG**

COMPANY **FUTURE PETROLEUM COMPANY, LLC.**
WELL **WEST MADDIX UNIT #4**
FIELD **WEST MADDIX UNIT**
PROVINCE/COUNTY **COWLEY**
COUNTRY/STATE **U.S.A. / KANSAS**
LOCATION **879' FNL & 2127' FEL**



SEC **TWP** **RGE** Other Services
33S **5E** MPD/MDN
API Number **15-035-24422** MML
Permit Number

Permanent Datum GL, Elevation 1301 feet
Log Measured From KB @ 10 FEET above Permanent Datum
Drilling Measured From KB

Elevations: feet
KB 1311.00
DF 1309.00
GL 1310.00

Date	09-JUL-2011
Run Number	ONE
Depth Driller	3236.00 feet
Depth Logger	3234.00 feet
First Reading	3231.00 feet
Last Reading	210.00 feet
Casing Driller	214.00 feet
Casing Logger	210.00 feet
Bit Size	7.875 inches
Hole Fluid Type	GEL
Density / Viscosity	9.20 lb/USg 53.00 CP
PH / Fluid Loss	9.50 10.20 ml/30Min
Sample Source	PIT
Rm @ Measured Temp	1.0 @ 90.0 ohm-m
Rmf @ Measured Temp	0.80 @ 90.0 ohm-m
Rmc @ Measured Temp	1.20 @ 90.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	0.78 @ 116.0 ohm-m
Time Since Circulation	5 HOURS
Max Recorded Temp	116.00 deg F
Equipment Name	COMPACT
Equipment / Base	13039
Recorded By	B. BROWN
Witnessed By	T. MADDEN

BOREHOLE RECORD Last Edited: 09-JUL-2011 19:59

Bit Size inches	Depth From feet	Depth To feet
7.875	210.00	3234.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	210.00	0.00

REMARKS

TOOLS RAN: SHA, MCG, MML, MDN, MPD, MFE, MAI RAN IN COMBINATION

HARDWARE: MAI: TWO 0.5 INCH STANDOFFS USED.
 | MDN: DUAL NEUTRON BOW SPRINGS USED.
 | MPD: 8 INCH PROFILE PLATE USED.

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY
 ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

TOTAL HOLE VOLUME FROM TD TO 210 = 1280 CU.FT.
 ANNULAR HOLE VOLUME WITH 4.5 INCH PRODUCTION CASING FROM TD TO 210 = 950 CU.FT.

SERVICE ORDER # 3531553
 RIG: VAL #3

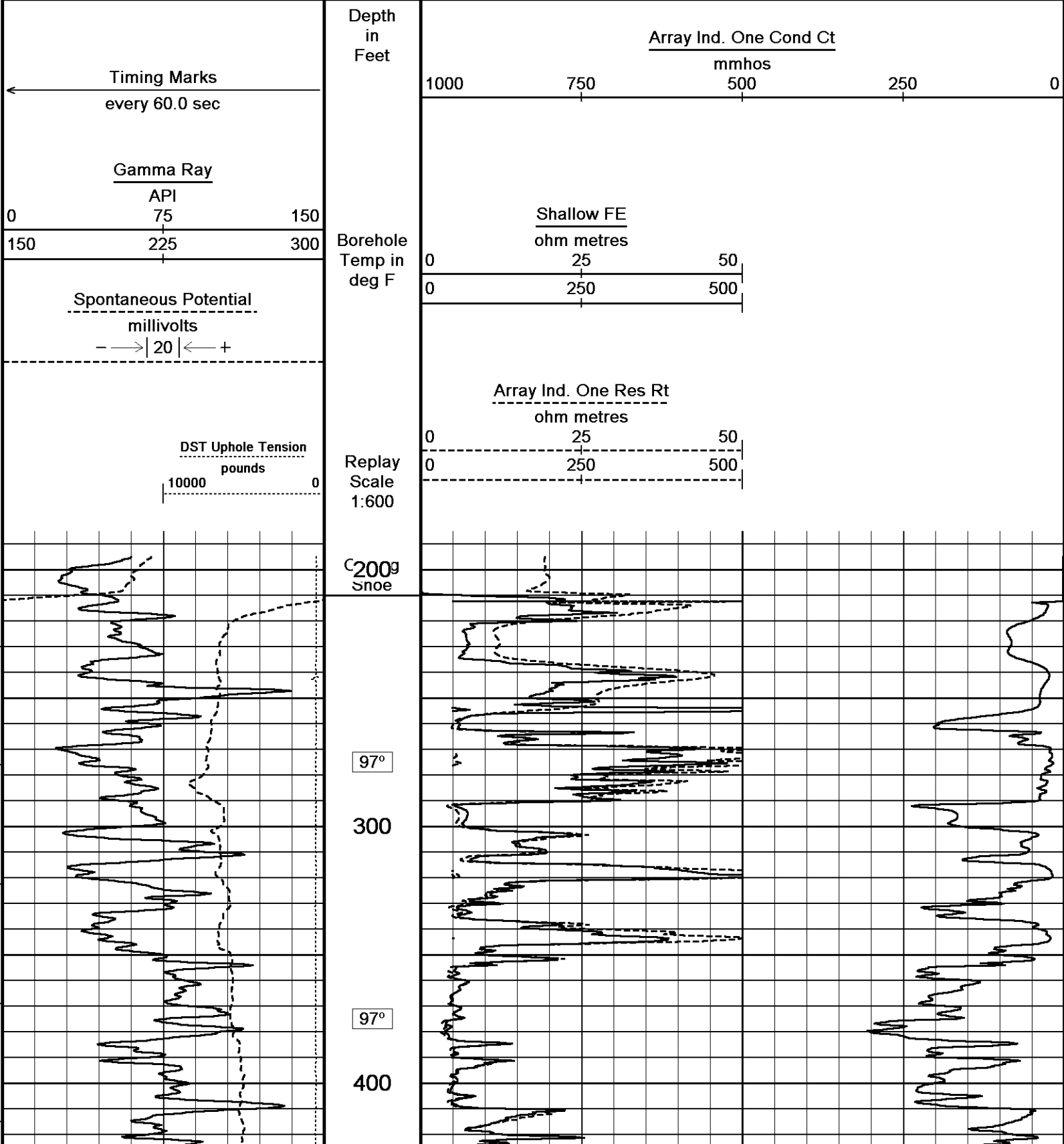
OPERATOR(S): B. BALLINGER

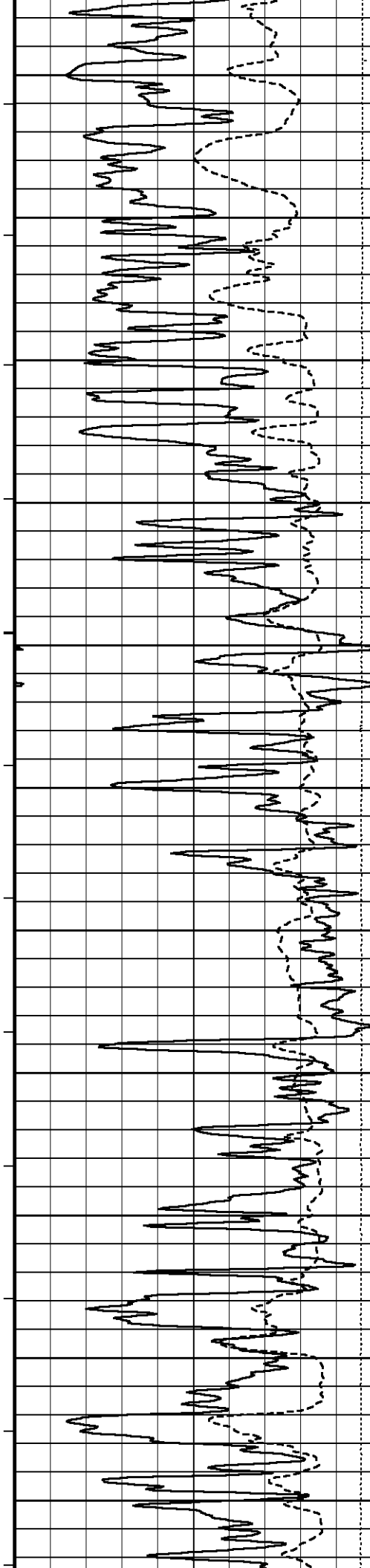
ANOMOLY BETWEEN 490' - 500' ON INDUCTION CURVES. REPEATED WHEN THAT SAECTION WAS RELOGGED

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

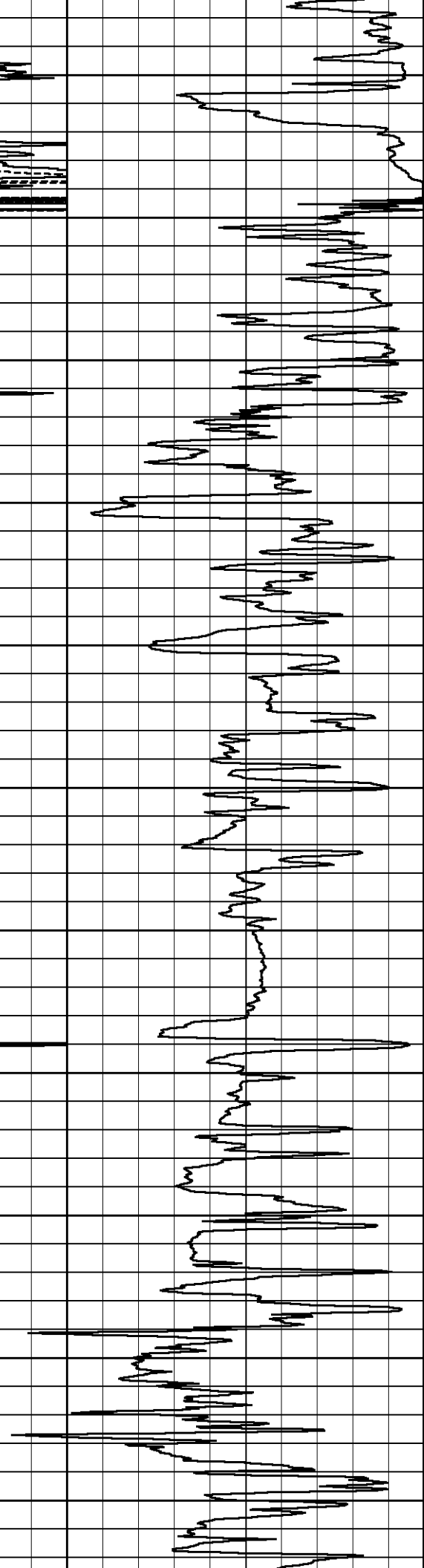
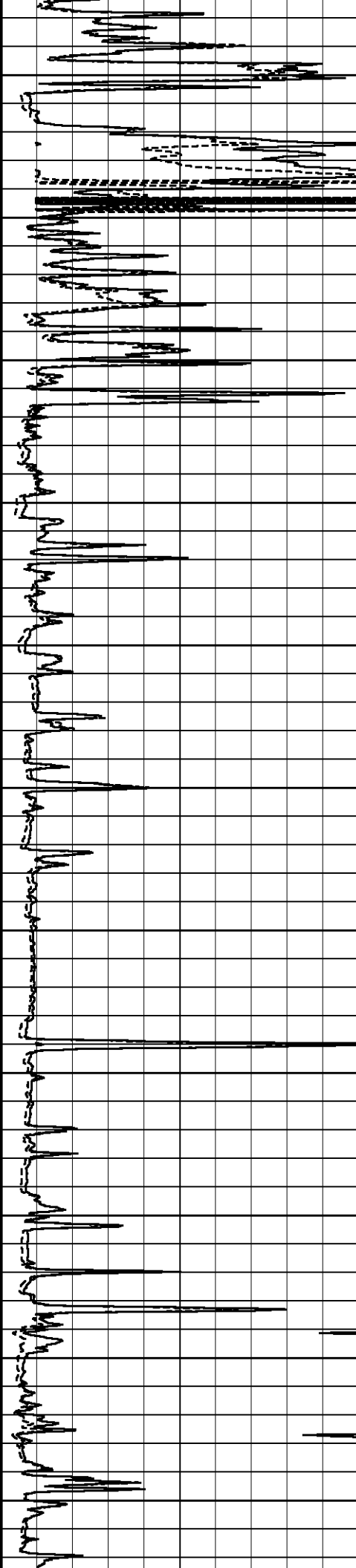
2 INCH MAIN LOG

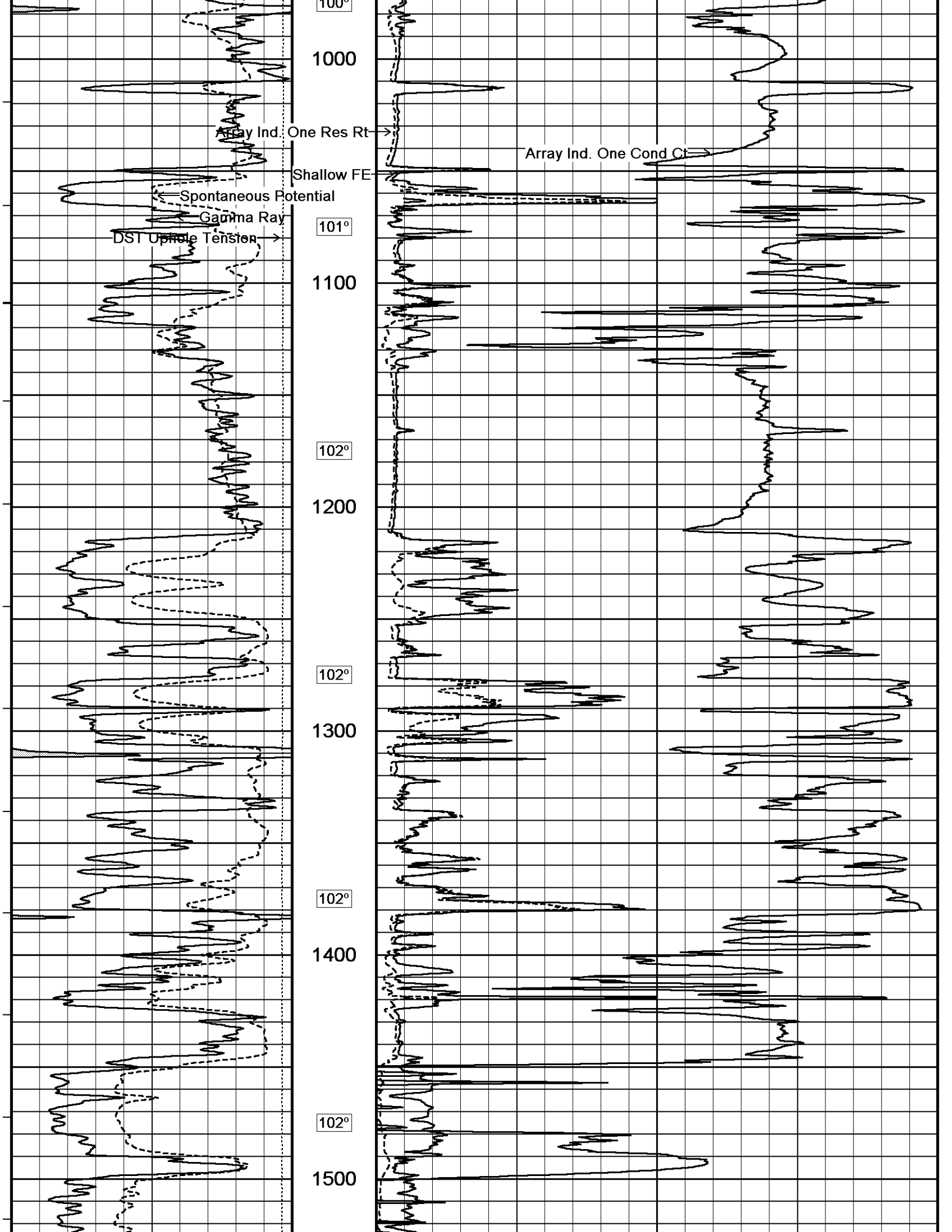
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 09-JUL-2011 21:02
 Filename: C:\Program Files\Weatherford\WLS 11.02.3186\Data\FUTURE (WMU 4)\SPLICE.dta Recorded on 09-JUL-2011 19:23
 System Versions: Plotted with 11.02.3186

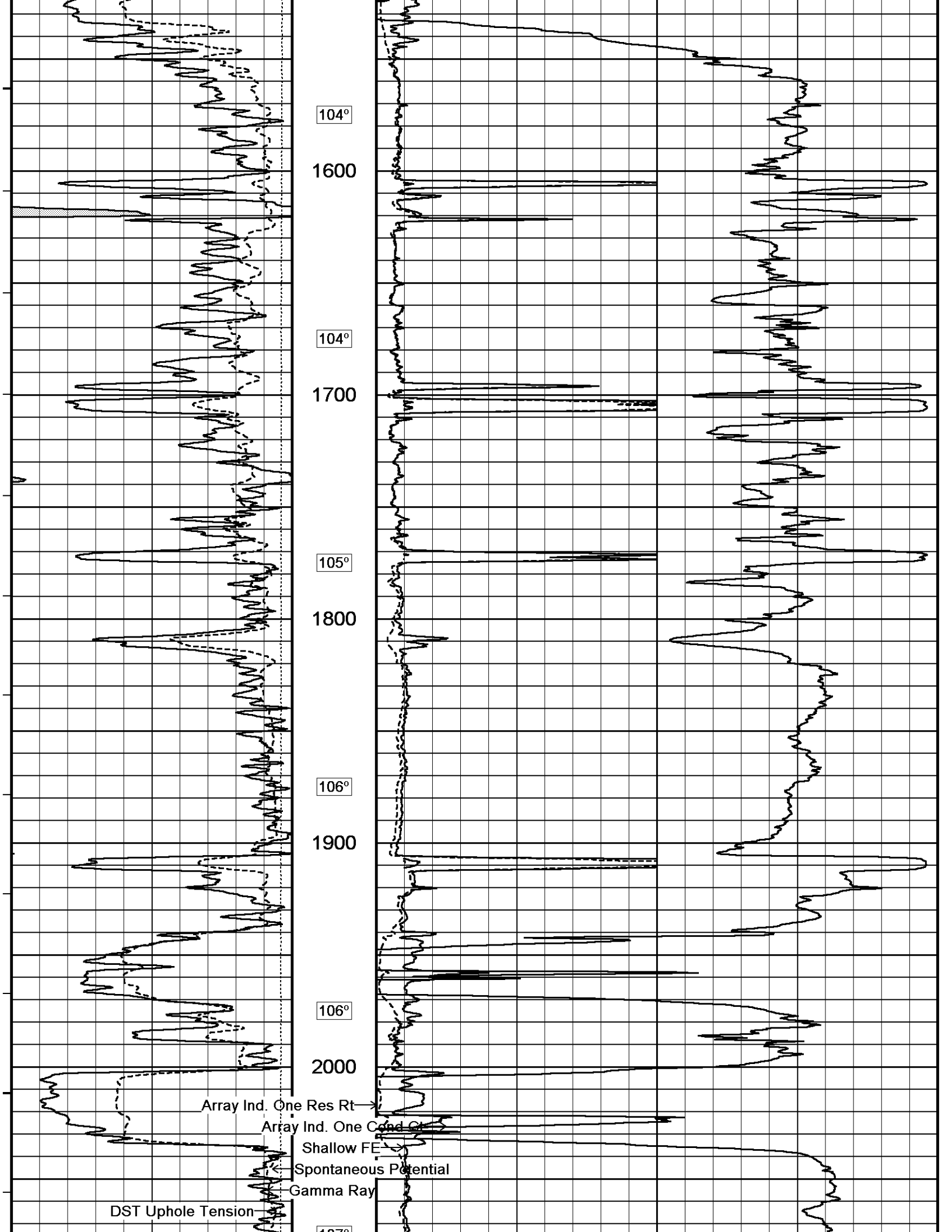


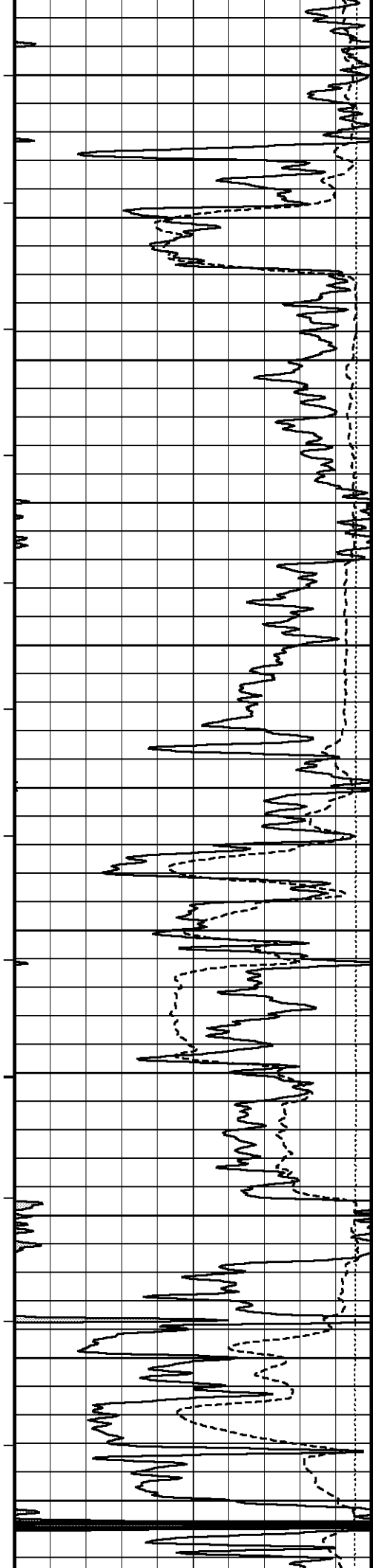


97°
500
98°
600
98°
700
99°
800
100°
900
1000

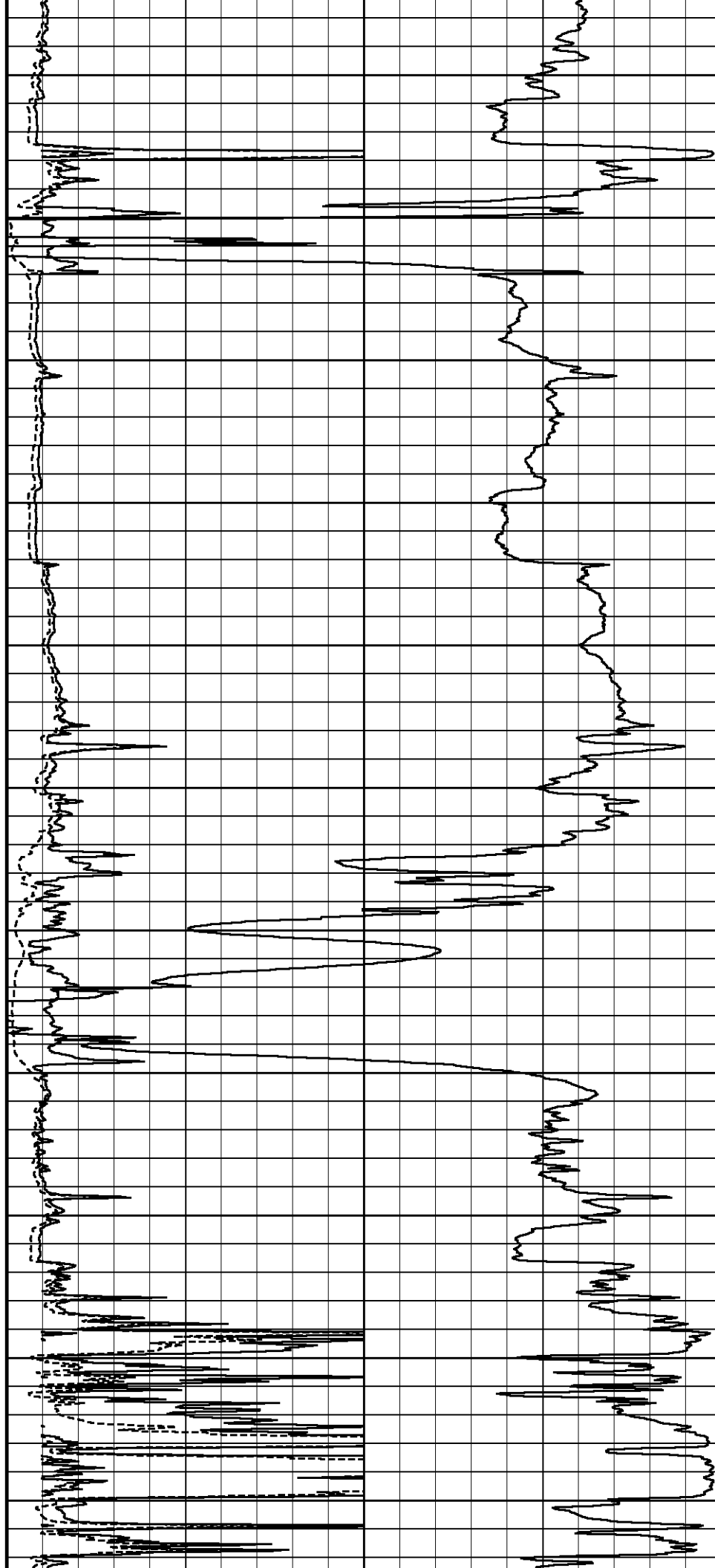


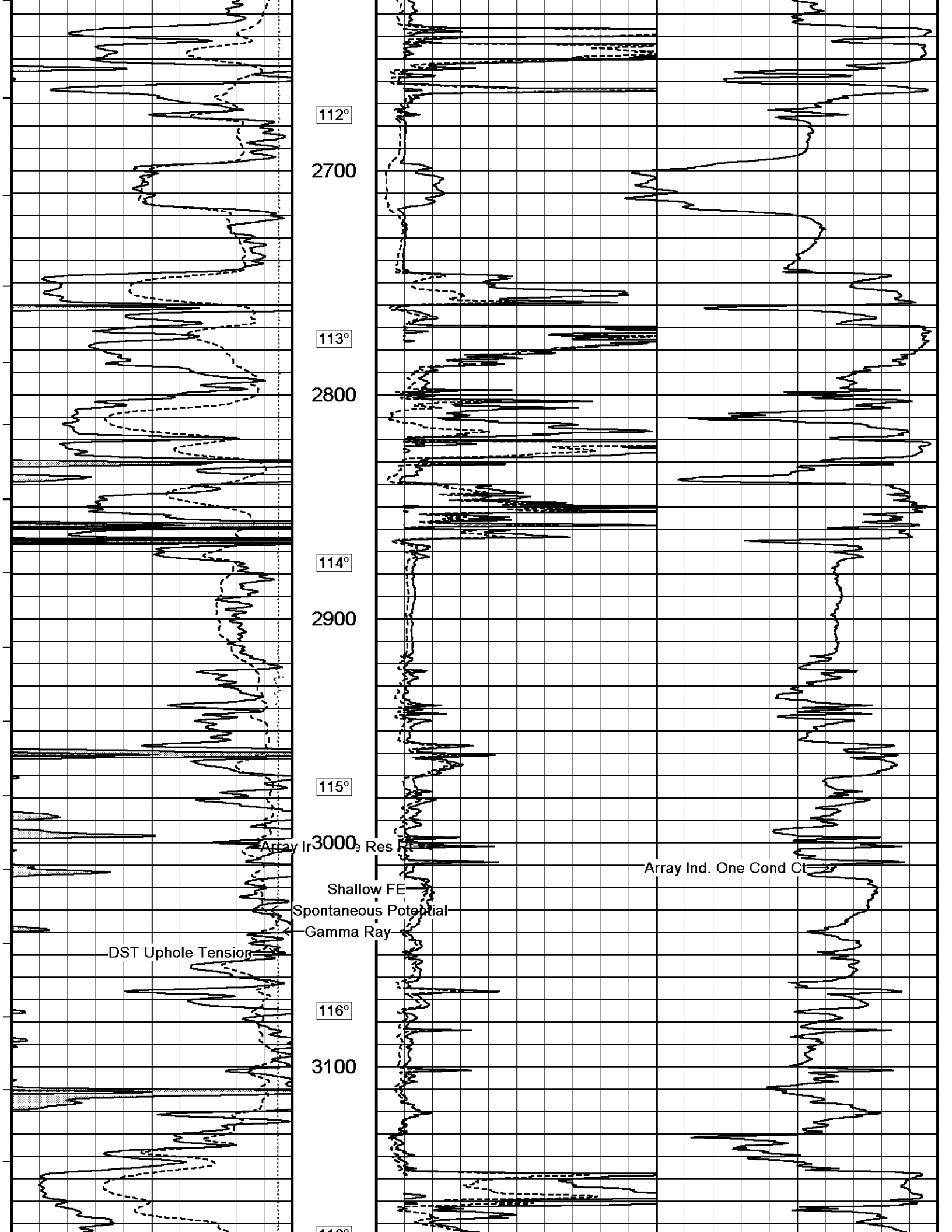






107°
2100
109°
2200
109°
2300
110°
2400
111°
2500
111°
2600





112°

2700

113°

2800

114°

2900

115°

3000

116°

3100

Array Ind. Res F

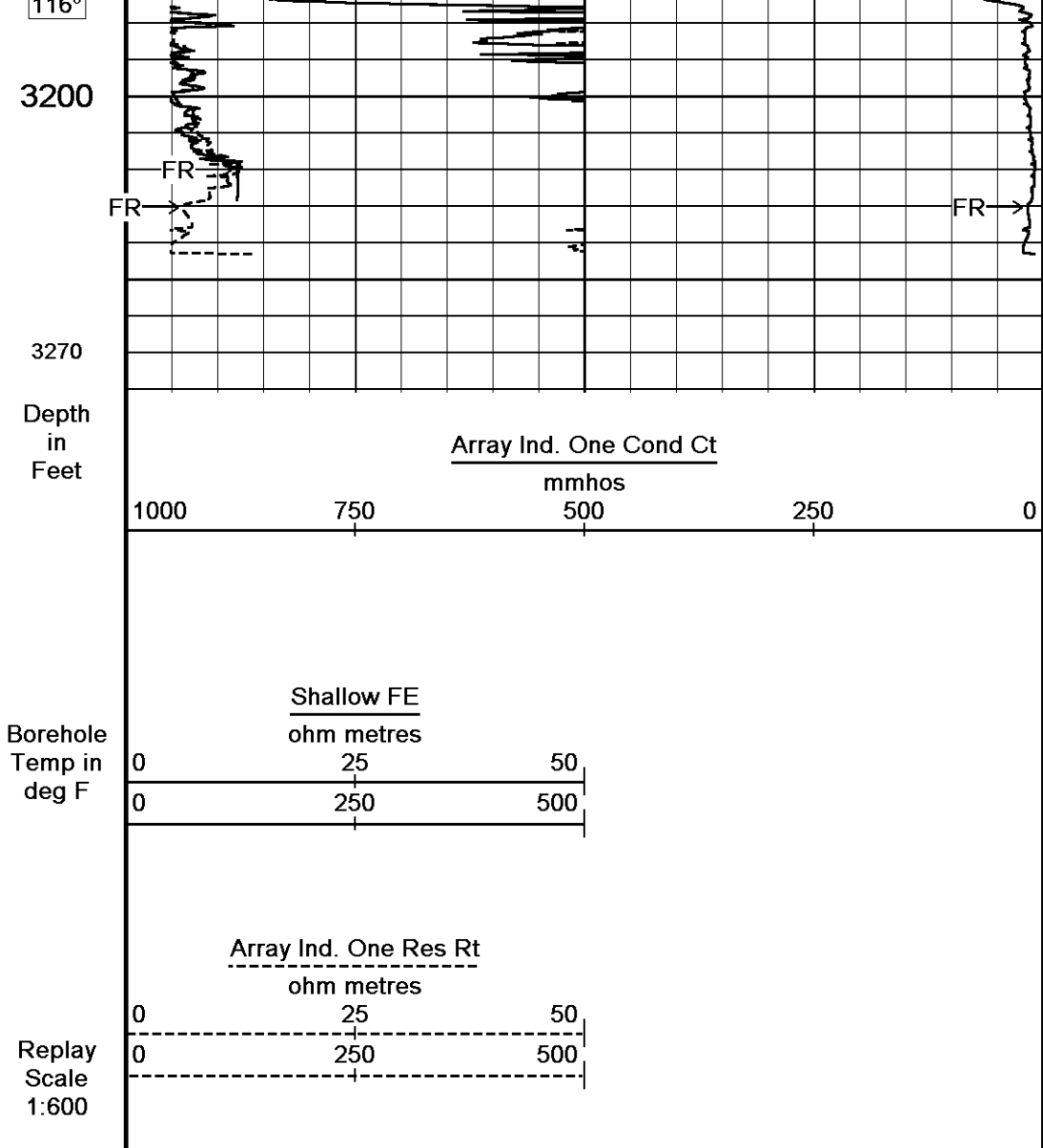
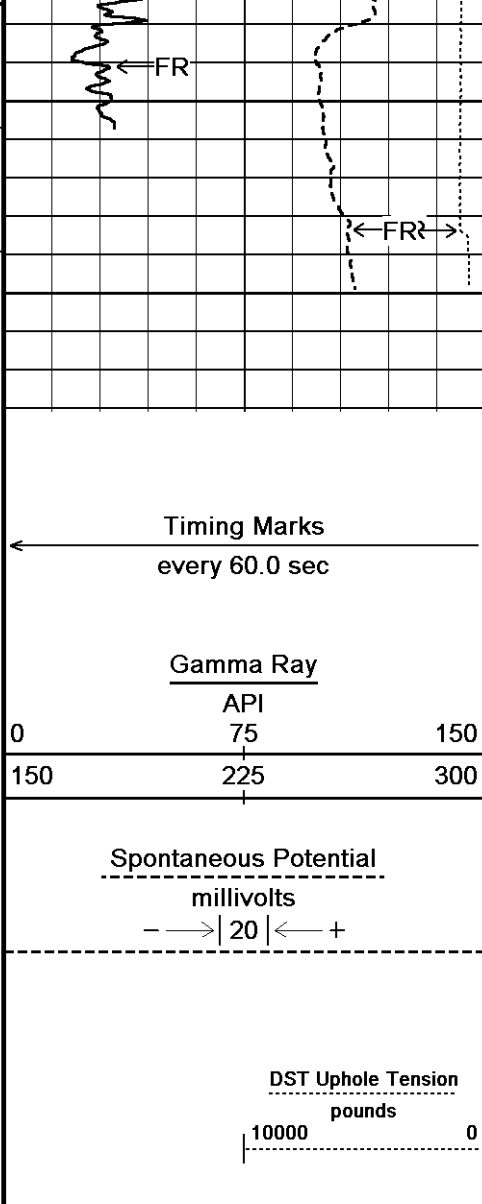
Shallow FE

Spontaneous Potential

Gamma Ray

DST Uphole Tension

Array Ind. One Cond Ct

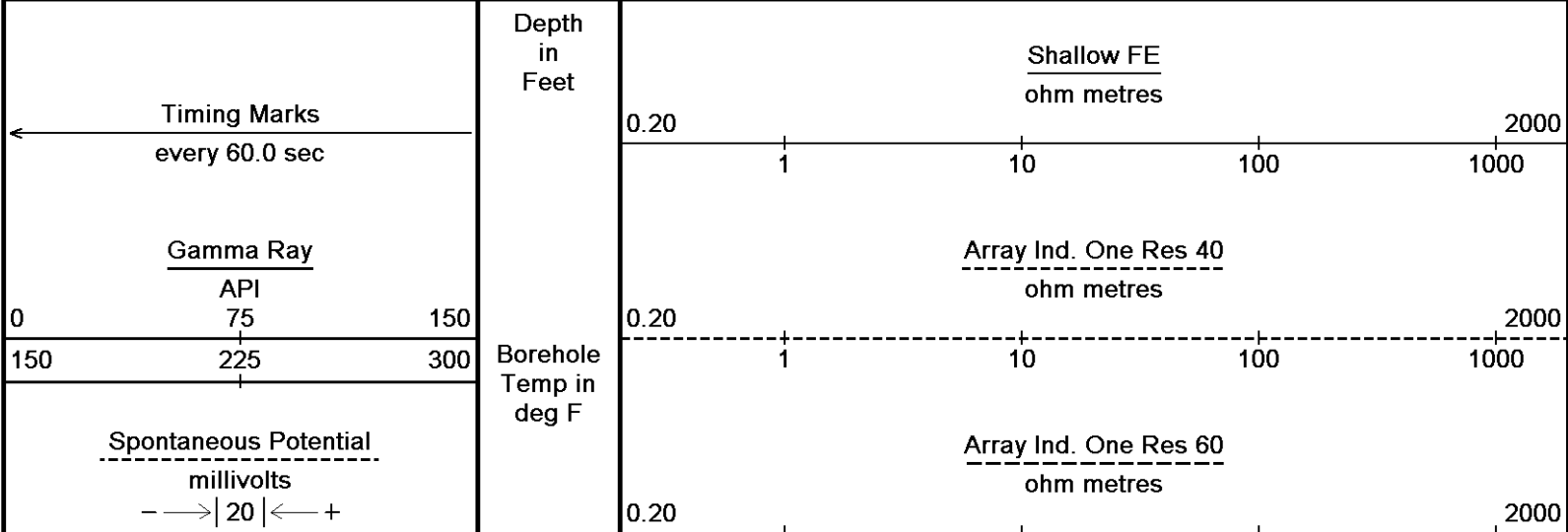


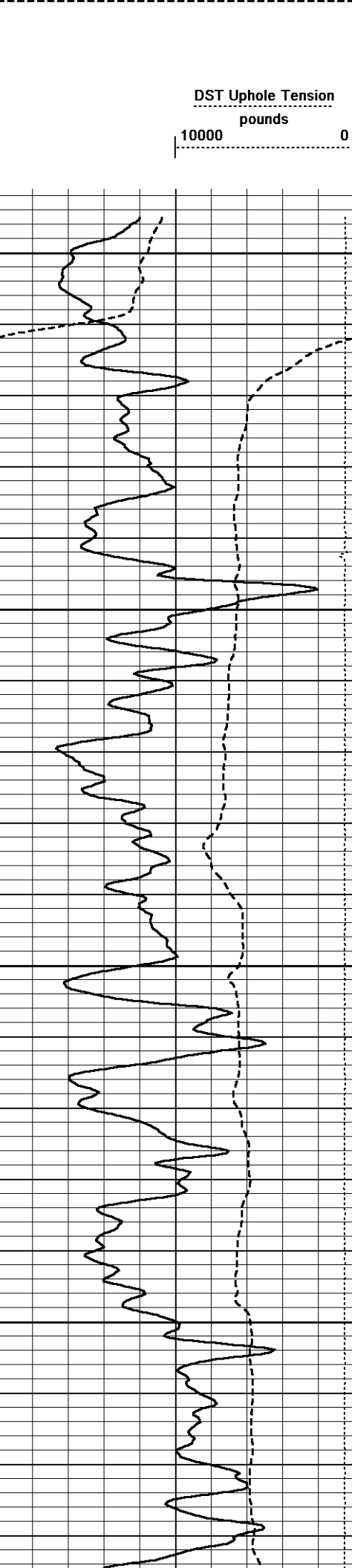
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 09-JUL-2011 21:03
 Filename: C:\Program Files\Weatherford\WLS 11.02.3186\Data\FUTURE (WMU 4)\SPLICE.dta Recorded on 09-JUL-2011 19:23
 System Versions: Plotted with 11.02.3186

↑ 2 INCH MAIN LOG ↑

↓ 5 INCH MAIN LOG ↓

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 09-JUL-2011 21:03
 Filename: C:\Program Files\Weatherford\WLS 11.02.3186\Data\FUTURE (WMU 4)\SPLICE.dta Recorded on 09-JUL-2011 19:23
 System Versions: Plotted with 11.02.3186





Replay
Scale
1:240

200
Casing
Shoe

97°

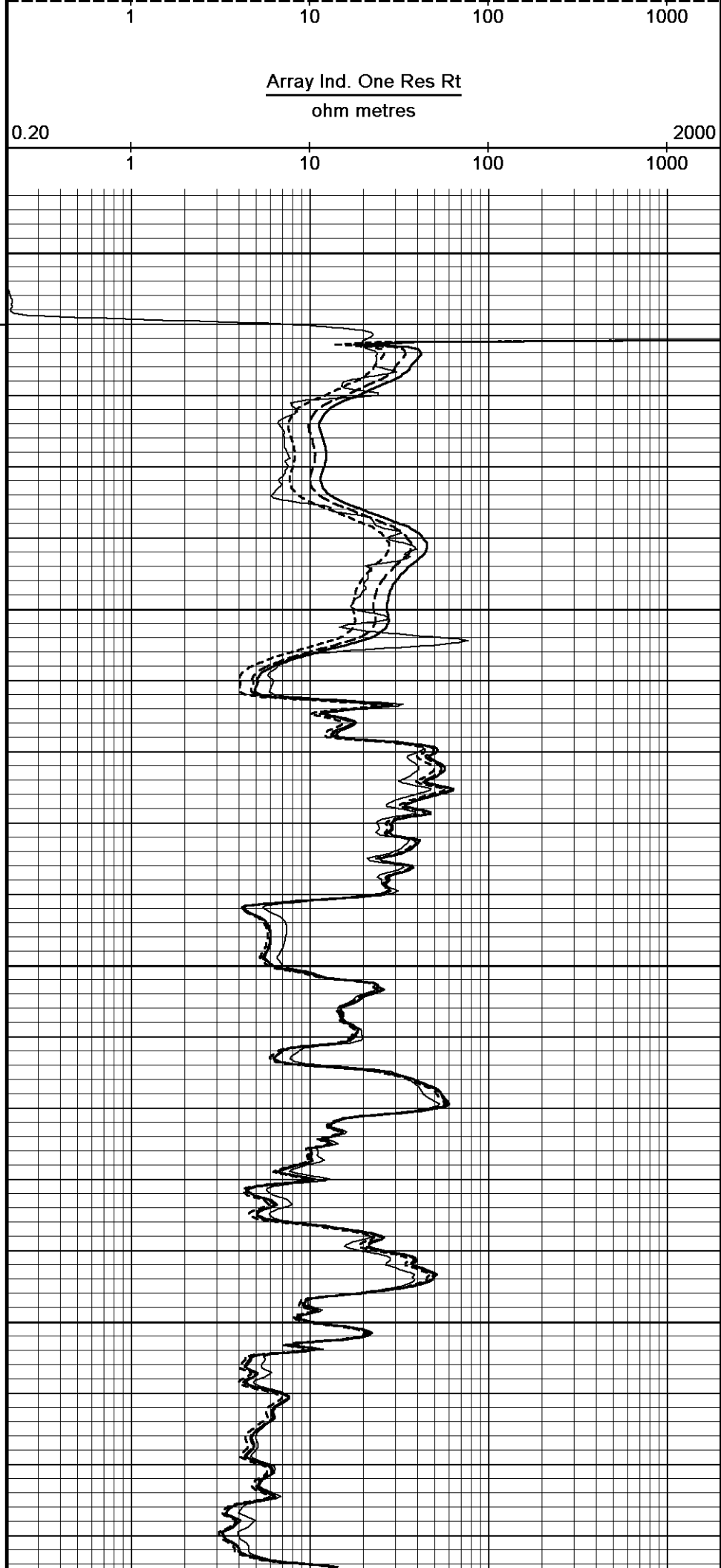
250

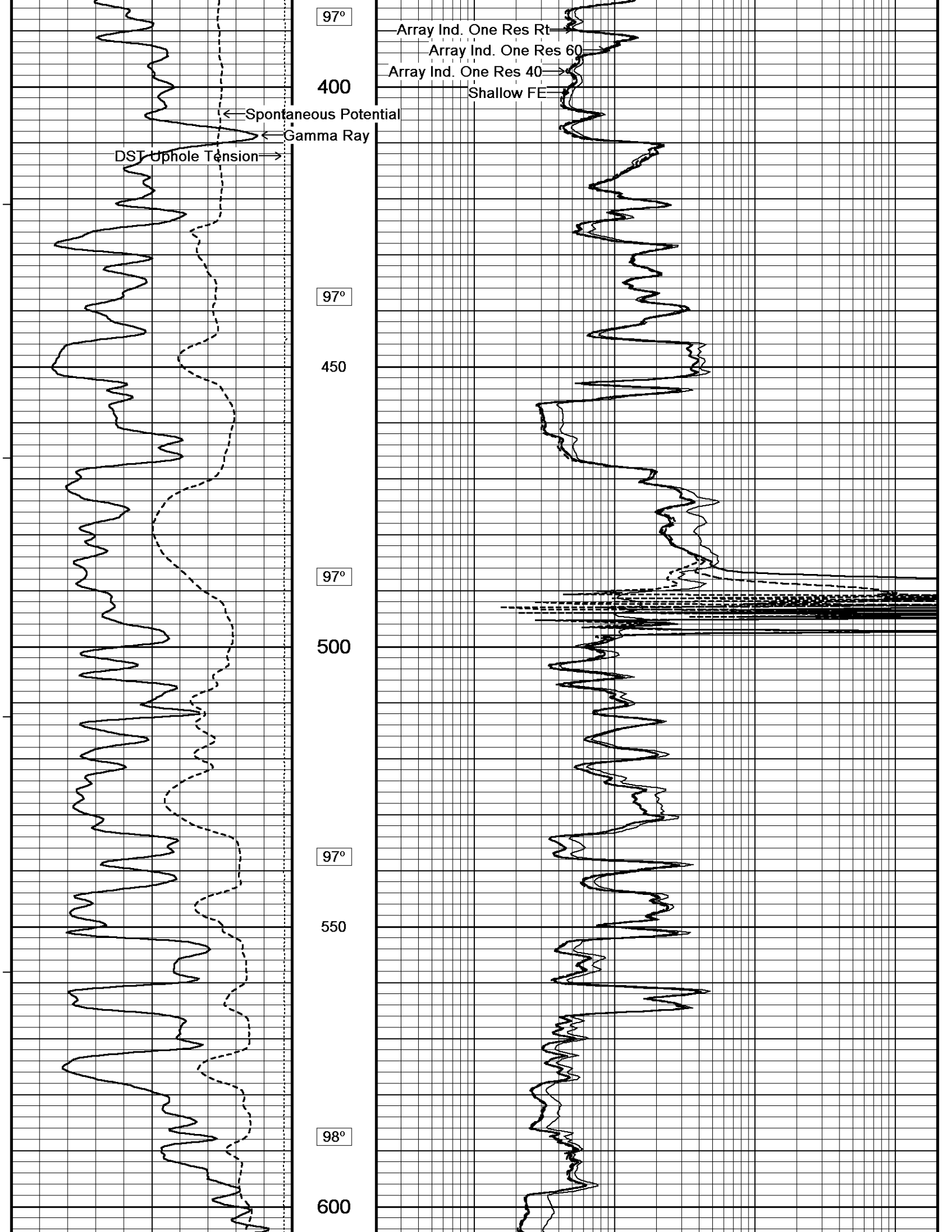
97°

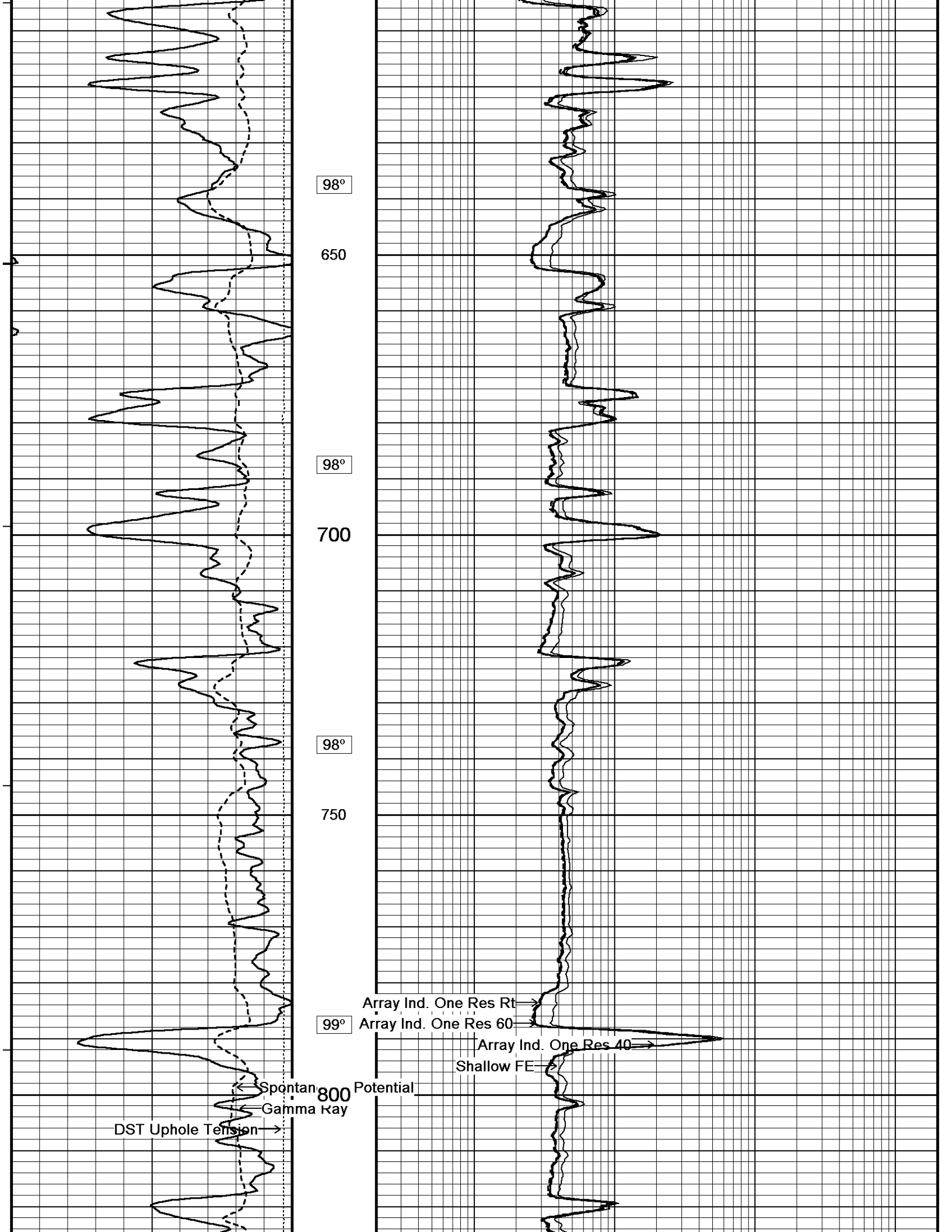
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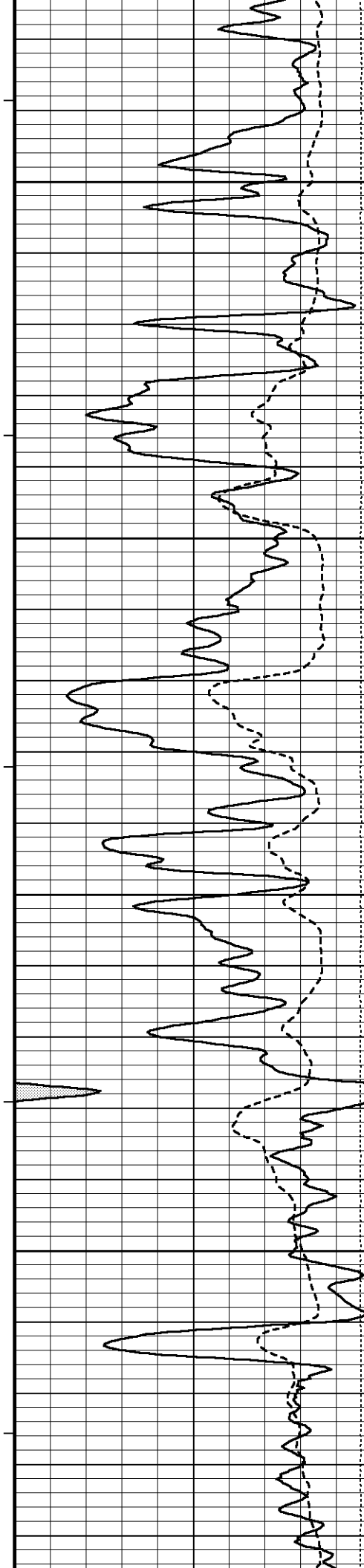
97°

350

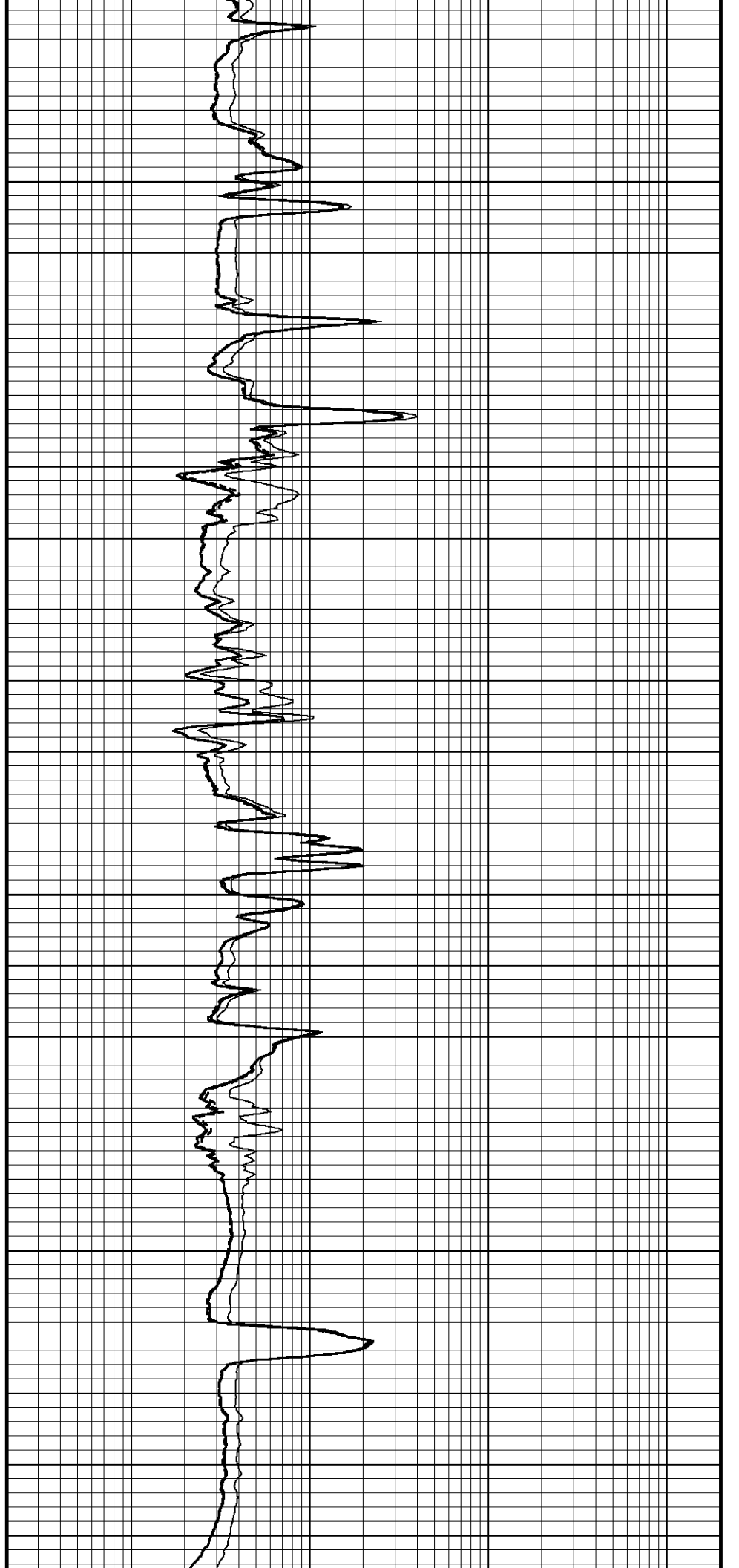


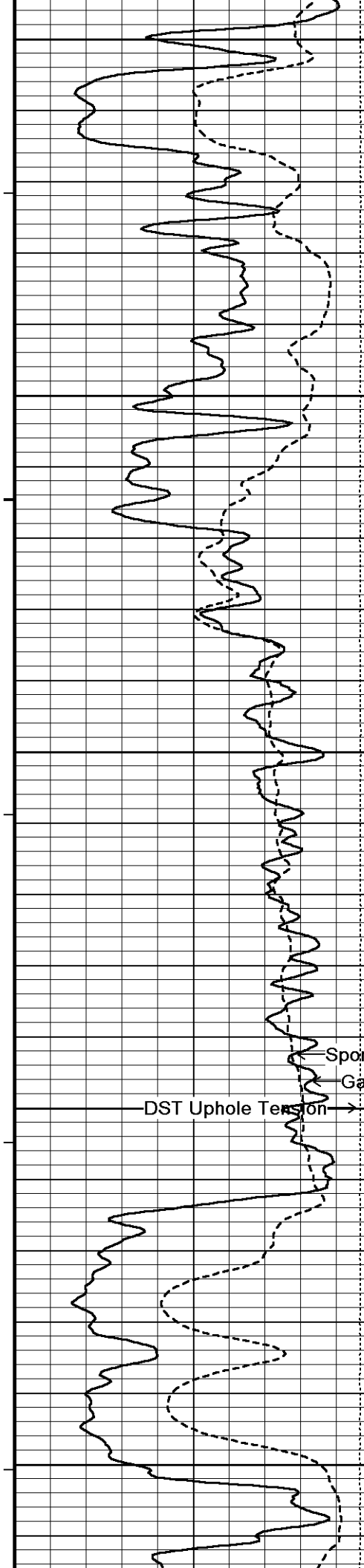






99°
850
100°
900
100°
950
100°
1000
101°





1050

101°

1100

102°

1150

102°

1200

102°

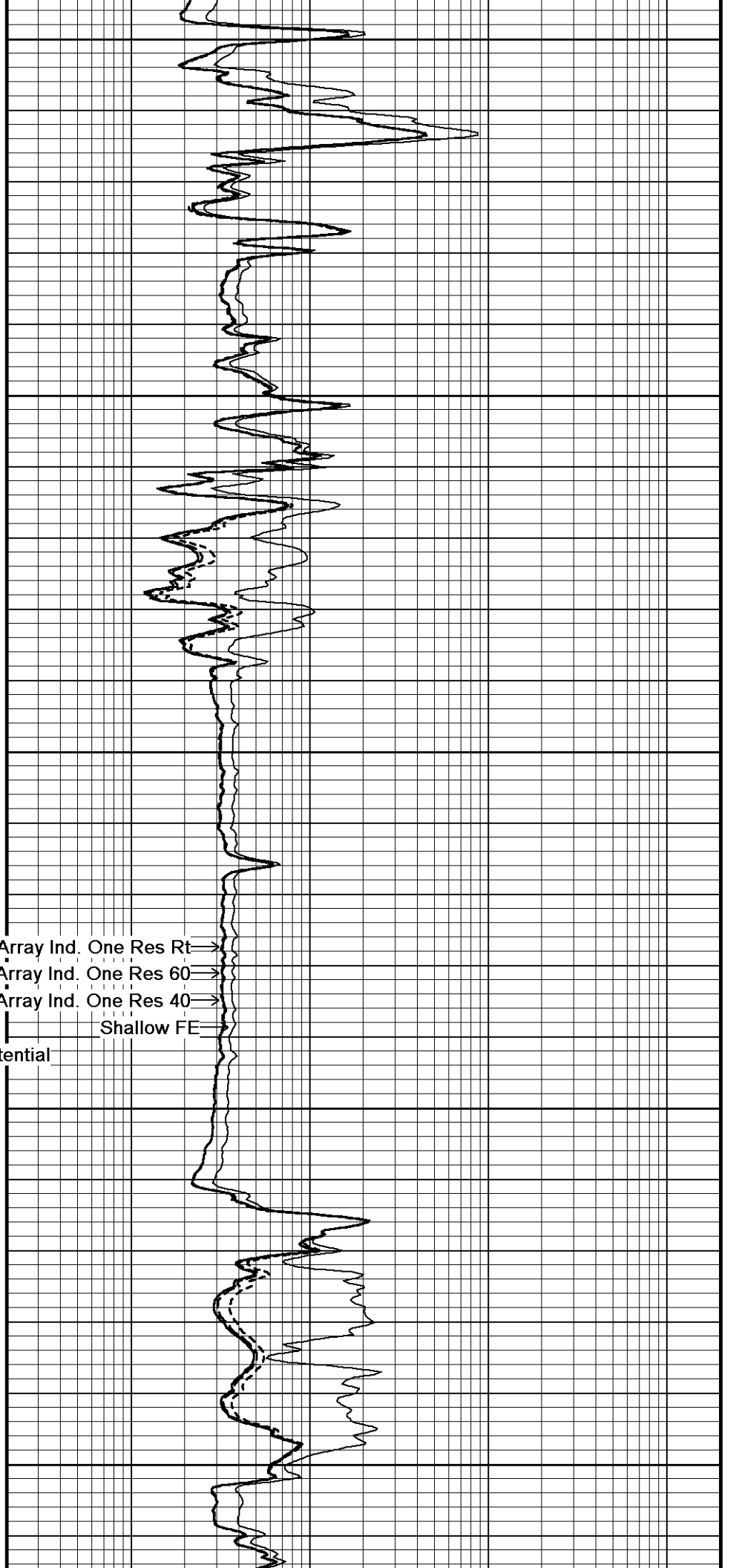
1250

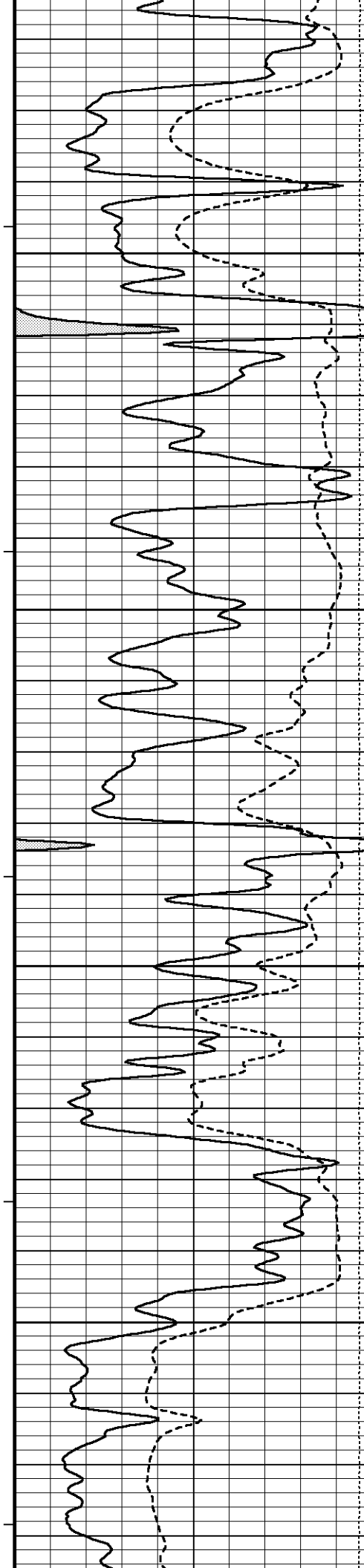
Array Ind. One Res Rt →
Array Ind. One Res 60 →
Array Ind. One Res 40 →
Shallow FE →

Spontaneous Potential

Gamma Ray

DST Uphole Tension →





102°

1300

102°

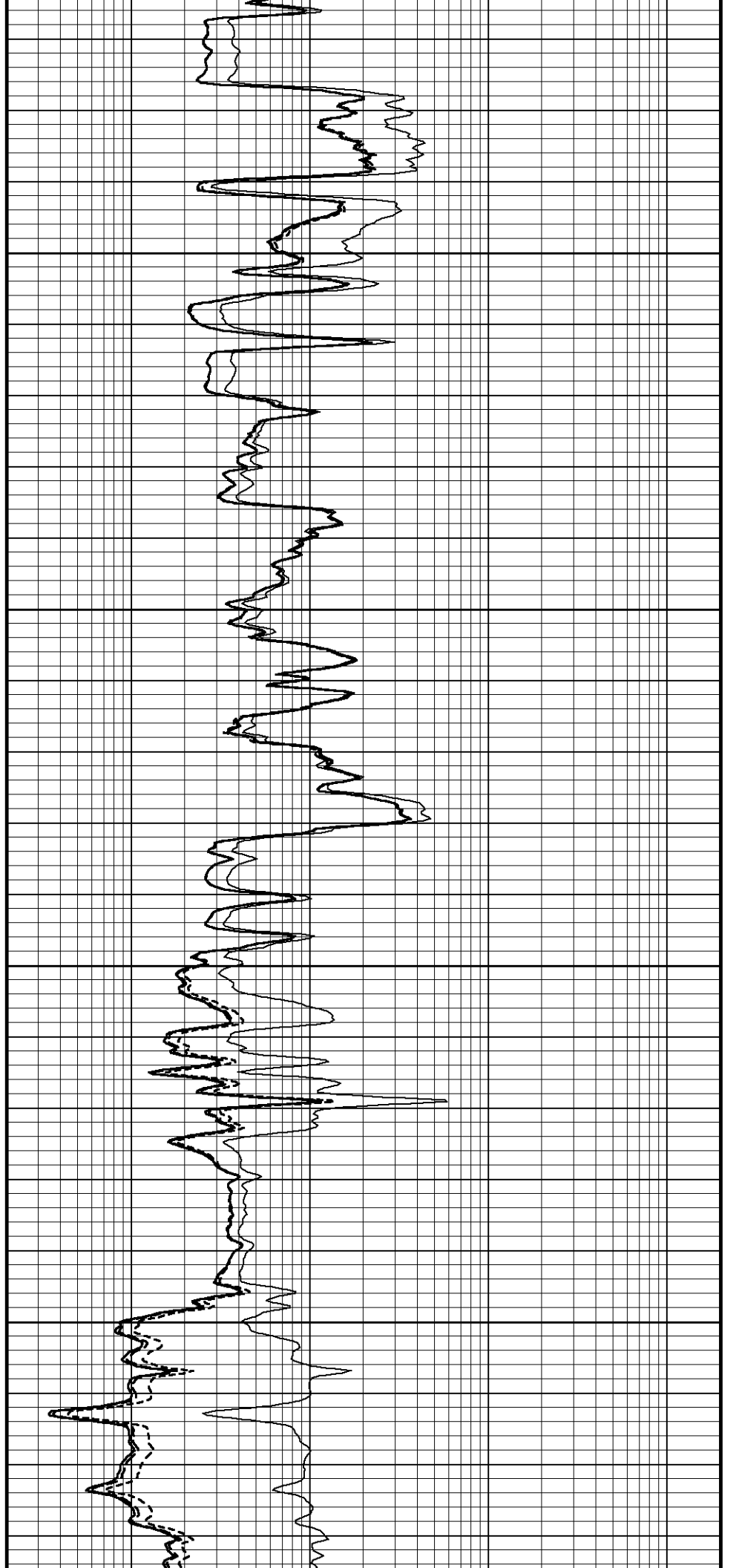
1350

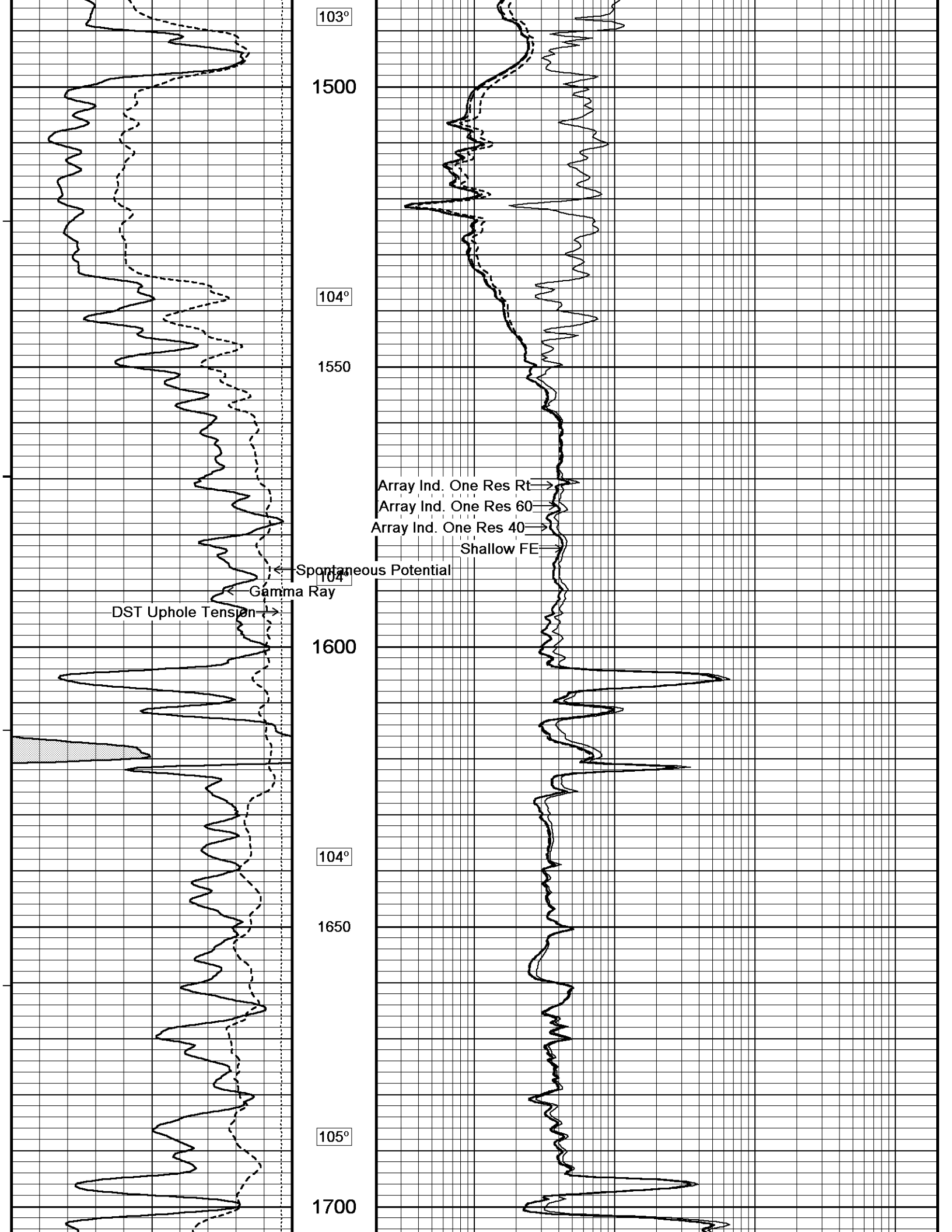
102°

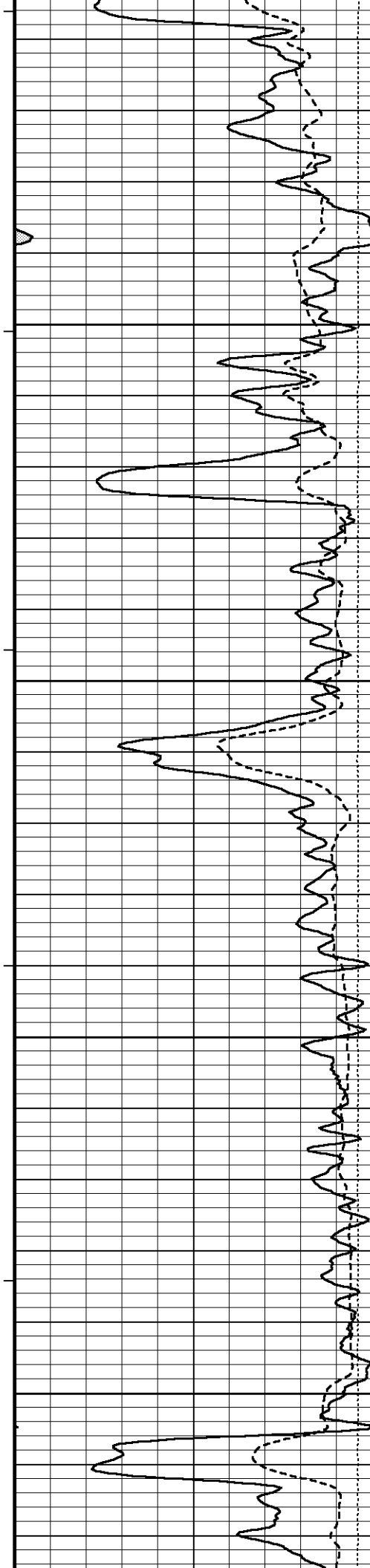
1400

102°

1450







105°

1750

105°

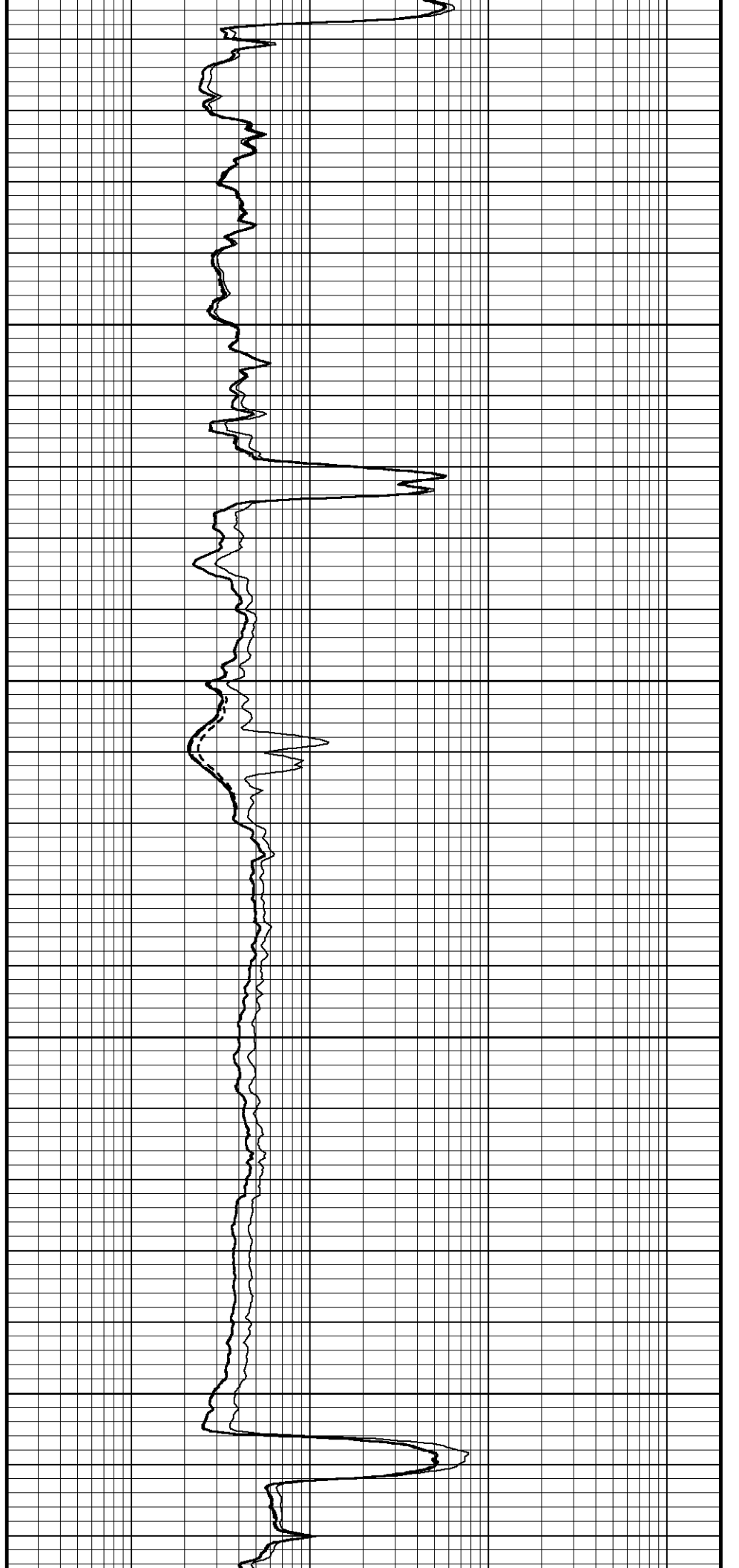
1800

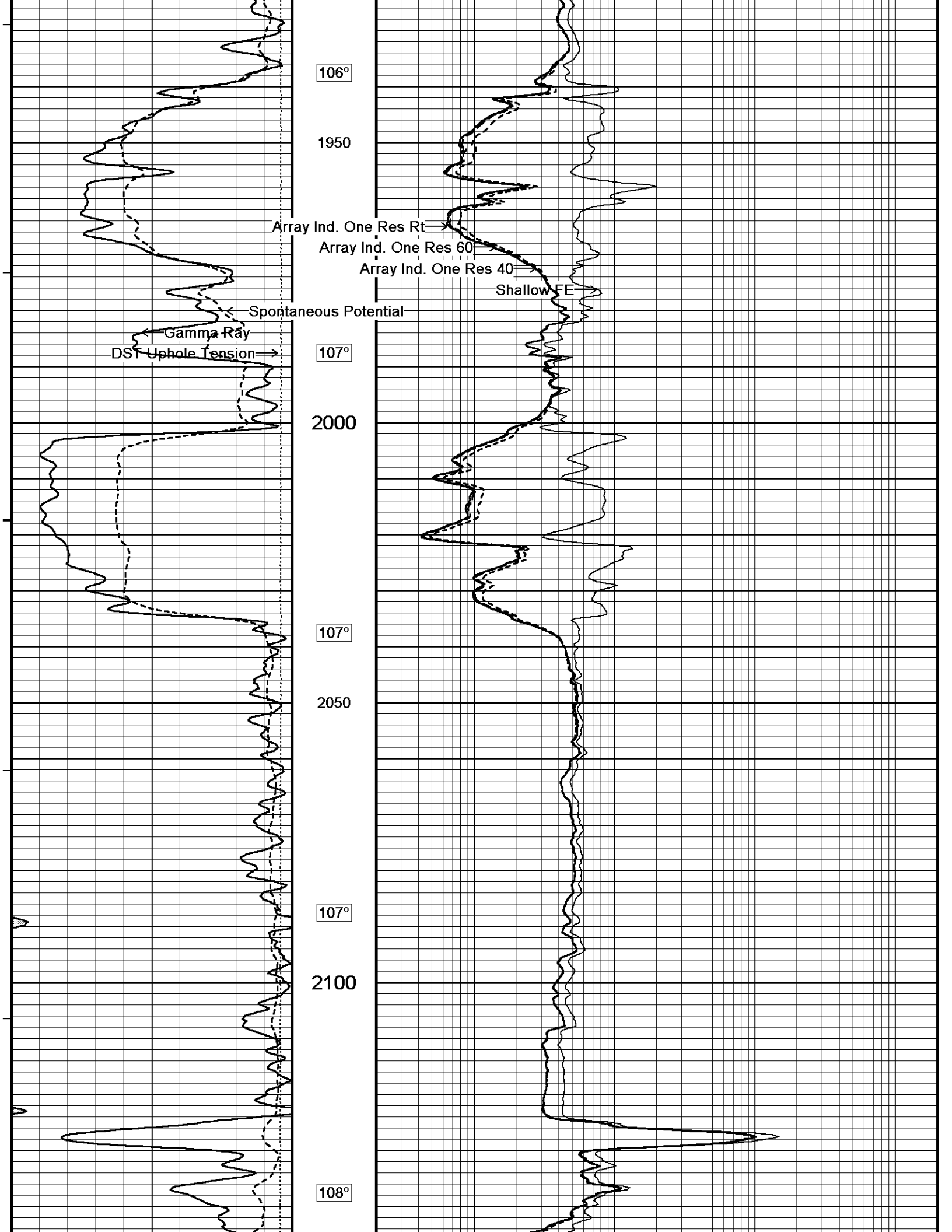
105°

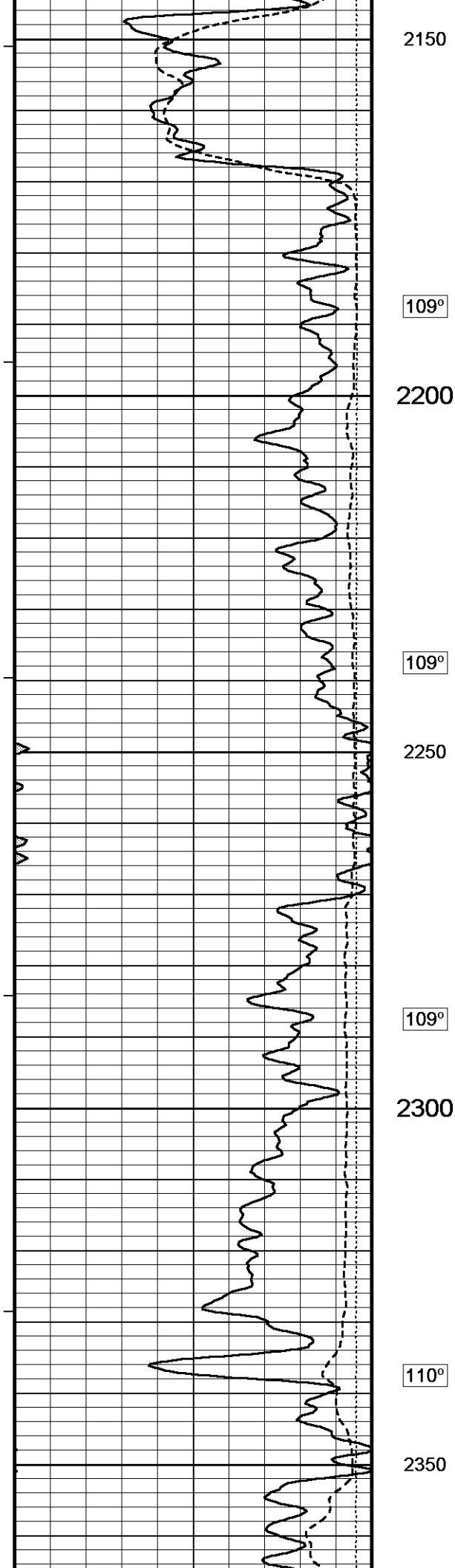
1850

106°

1900







2150

109°

2200

109°

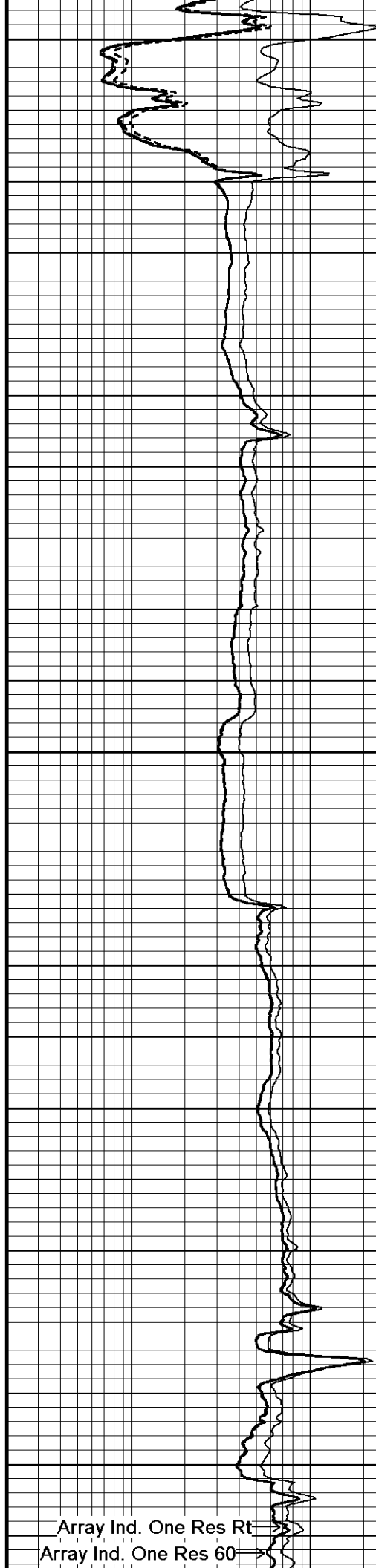
2250

109°

2300

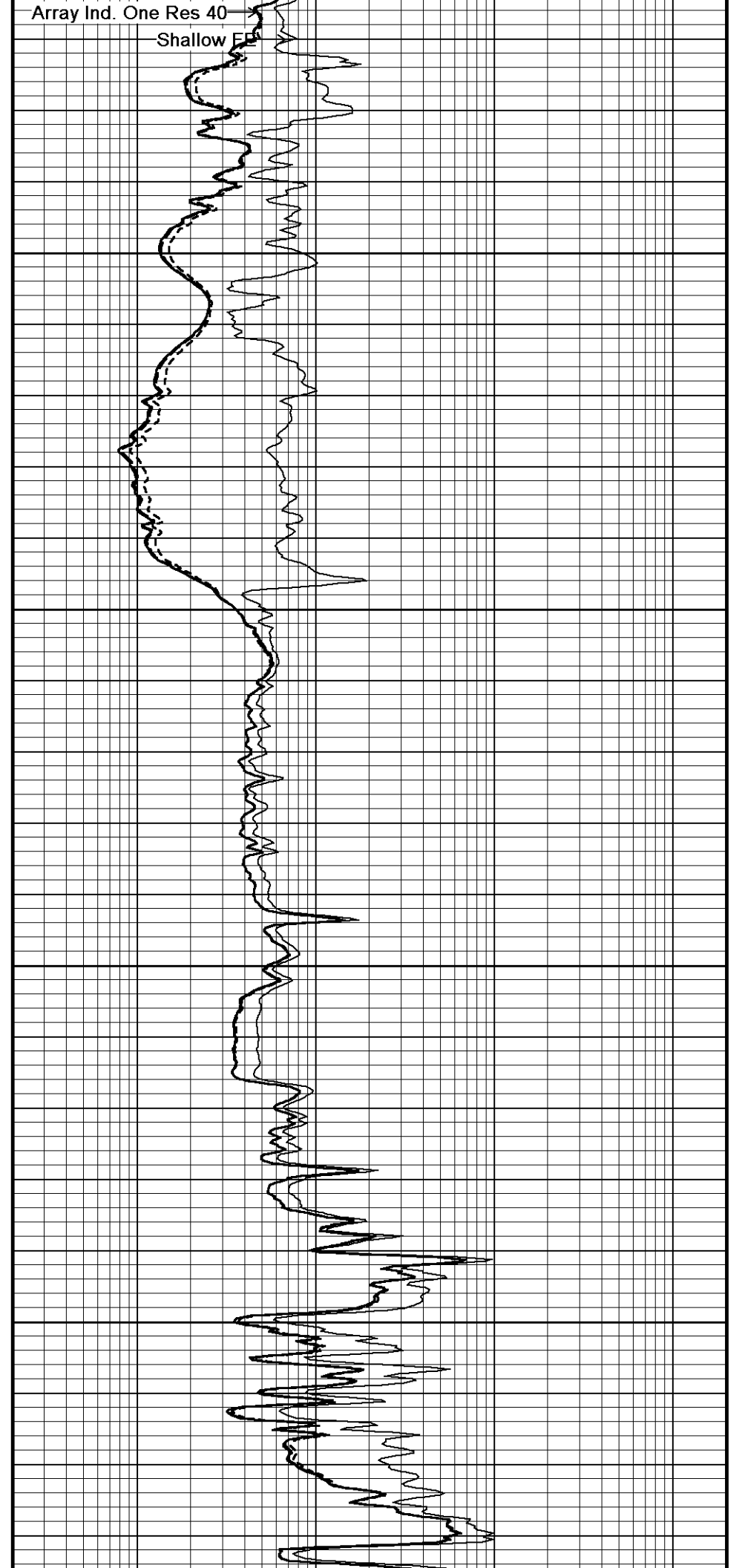
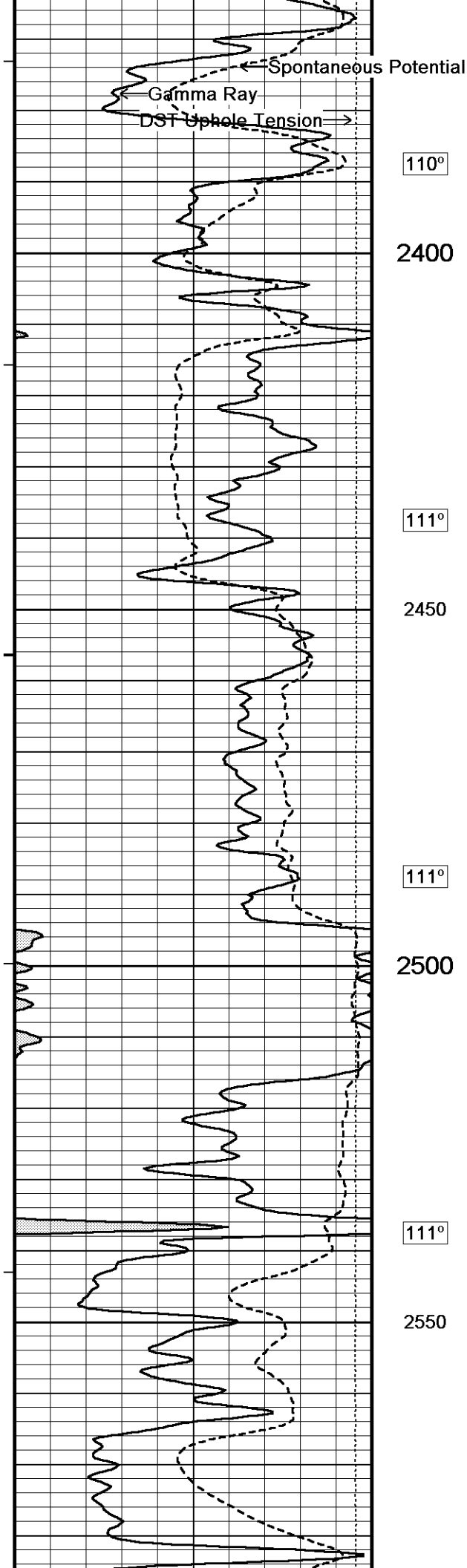
110°

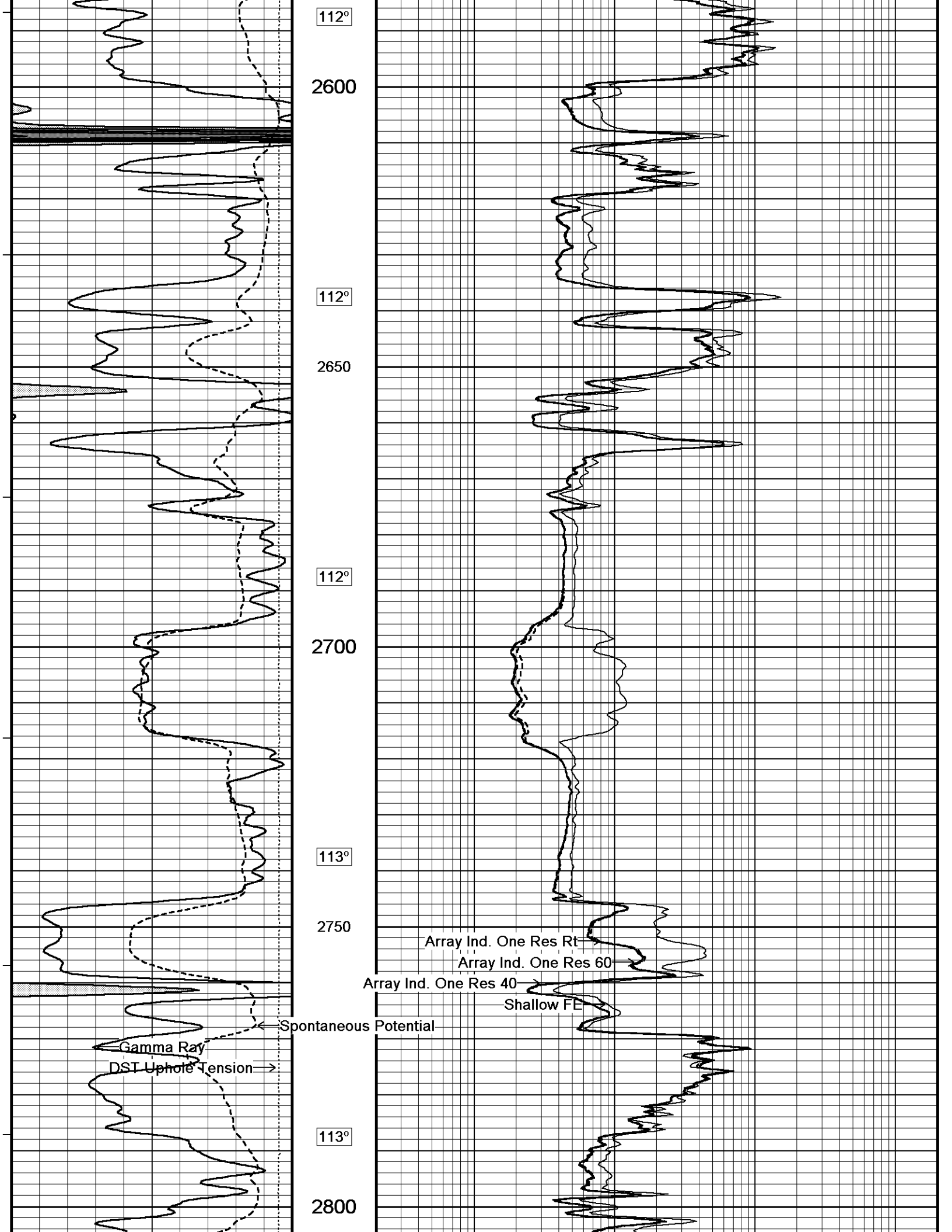
2350

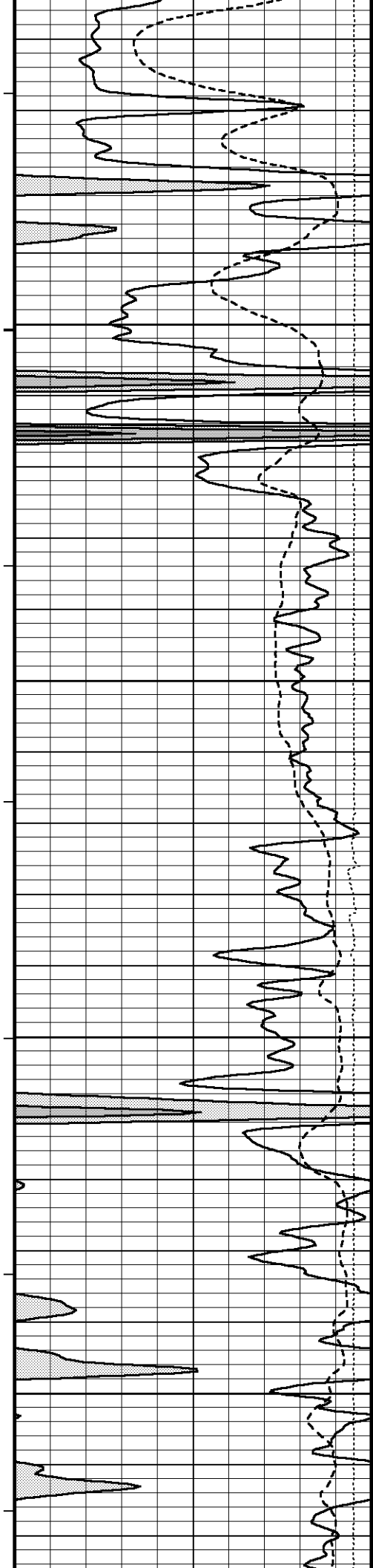


Array Ind. One Res Rt →

Array Ind. One Res 60 →







114°

2850

114°

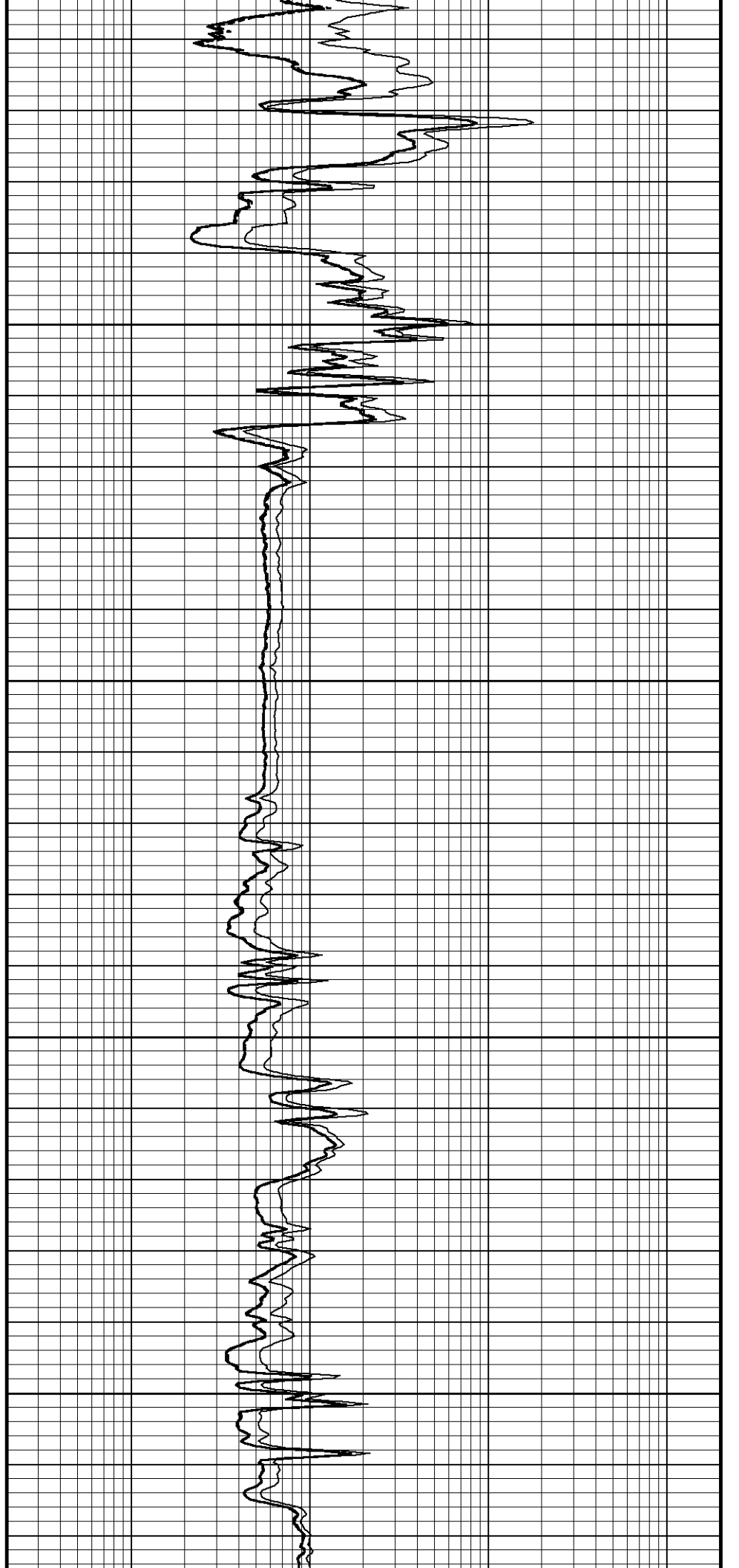
2900

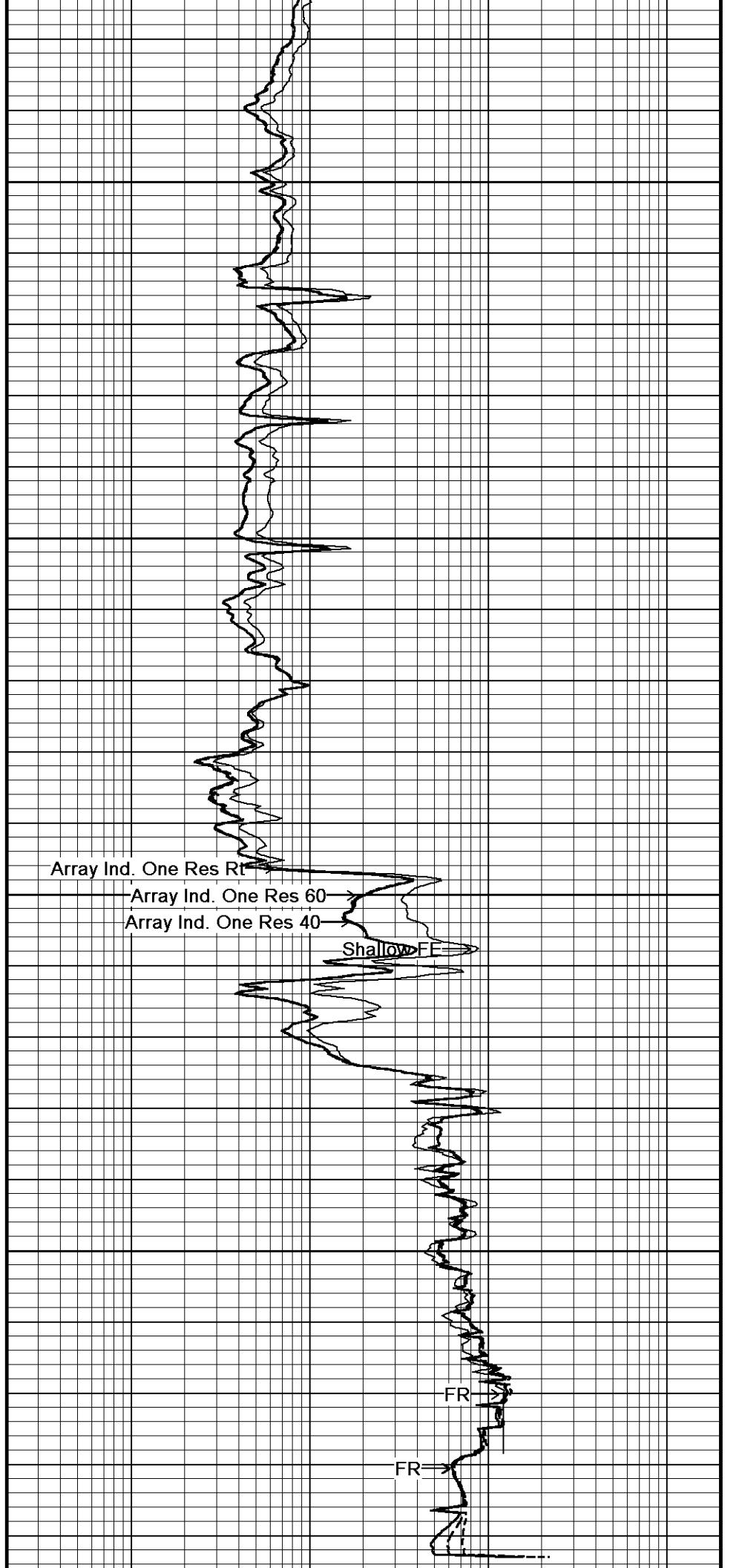
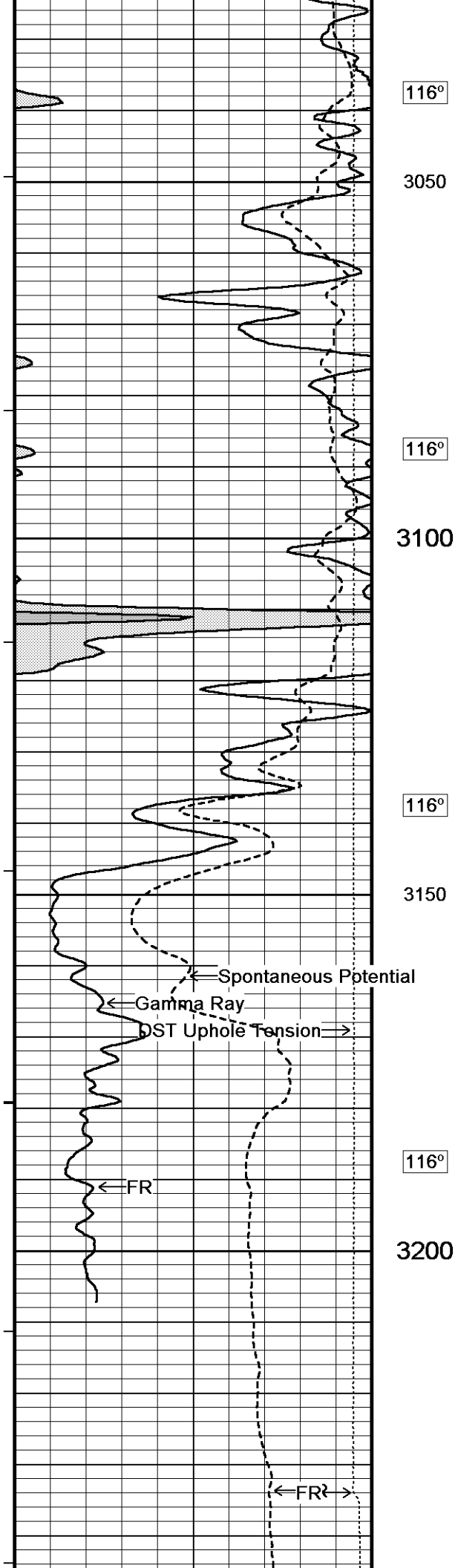
115°

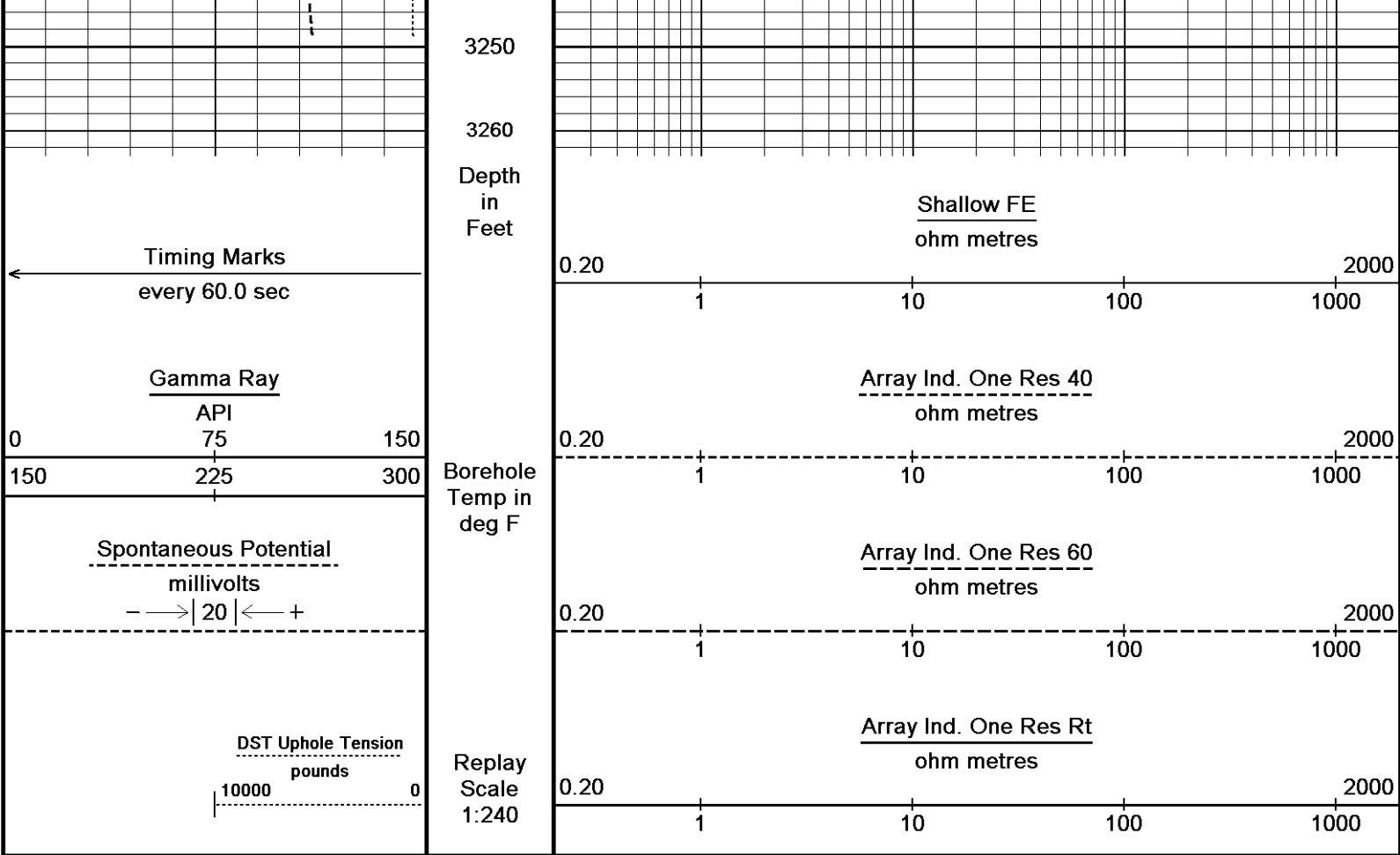
2950

115°

3000





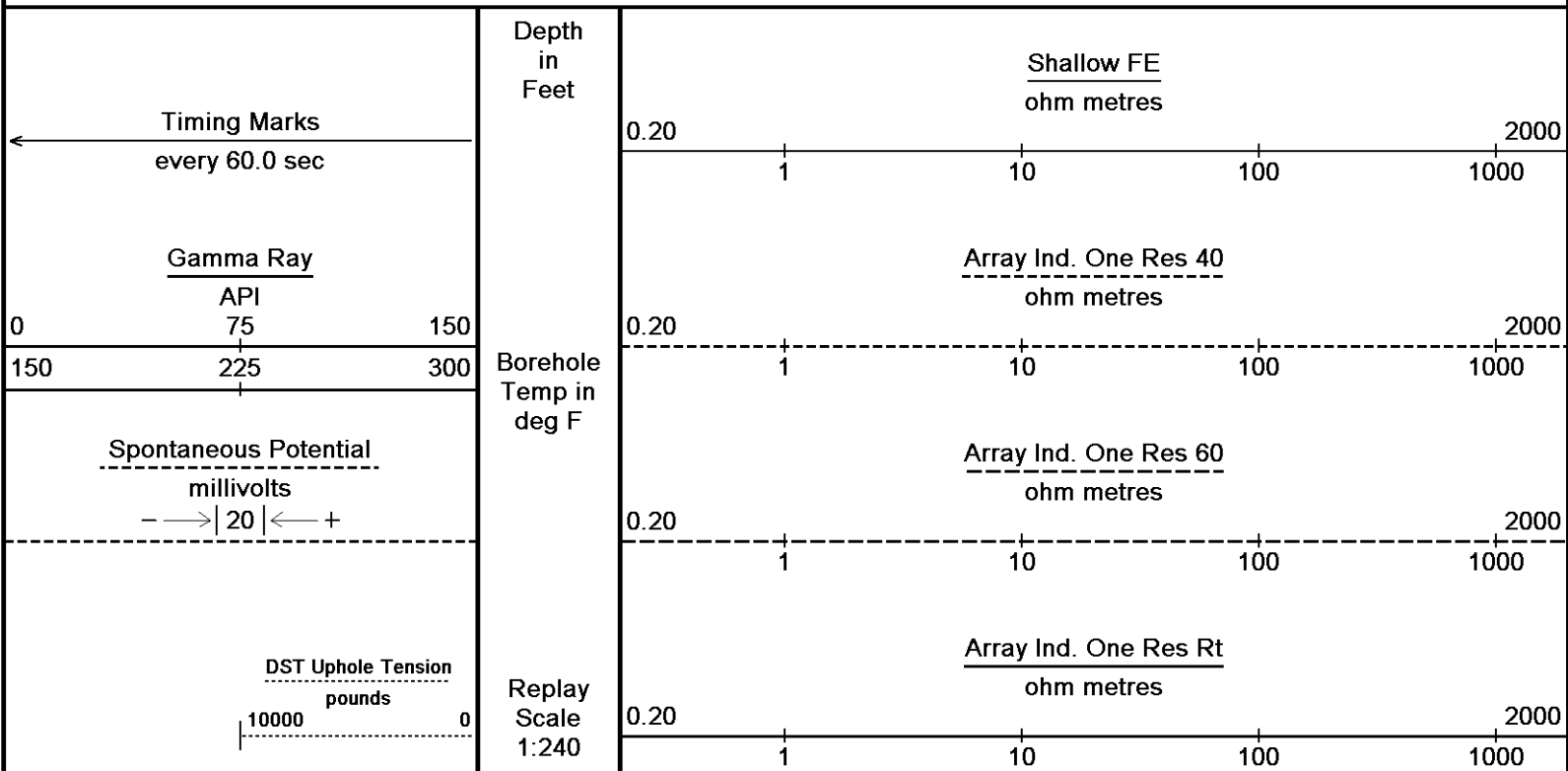


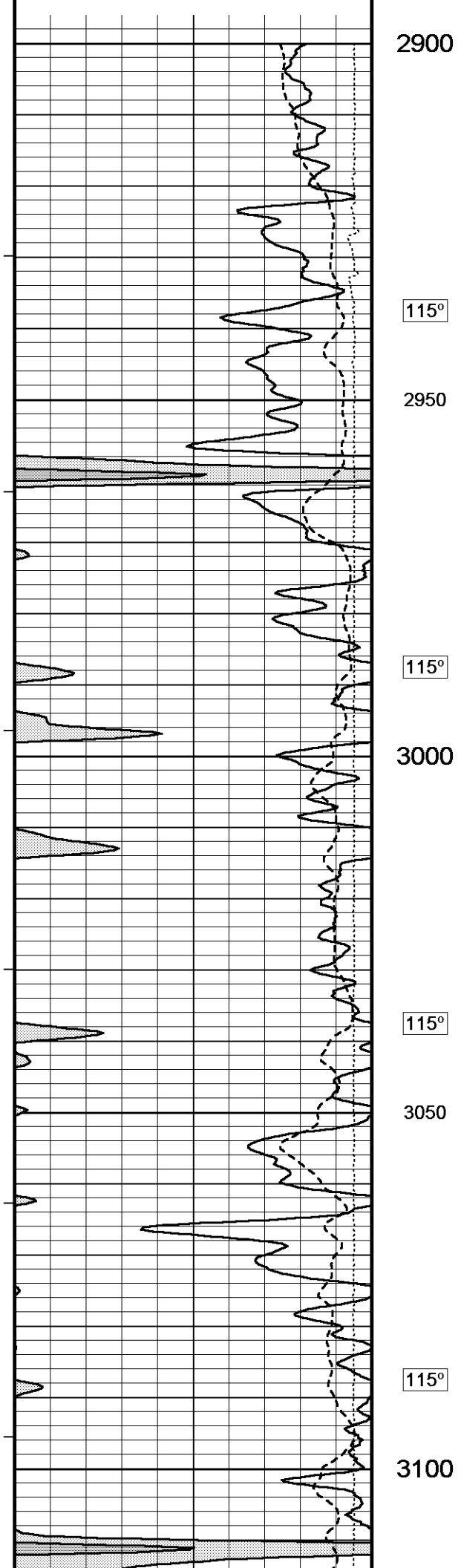
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 09-JUL-2011 21:03
 Filename: C:\Program Files\Weatherford\WLS 11.02.3186\Data\FUTURE (WMU 4)\SPLICE.dta Recorded on 09-JUL-2011 19:23
 System Versions: Plotted with 11.02.3186

↑ 5 INCH MAIN LOG ↑

↓ REPEAT SECTION ↓

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 09-JUL-2011 21:03
 Filename: C:\Program Files\Weatherford\WLS 11.02.3186\Data\FUTURE (WMU 4)\DATA2.dta Recorded on 09-JUL-2011 19:03
 System Versions: Logged with 11.02.3186 Plotted with 11.02.3186





2900

115°

2950

115°

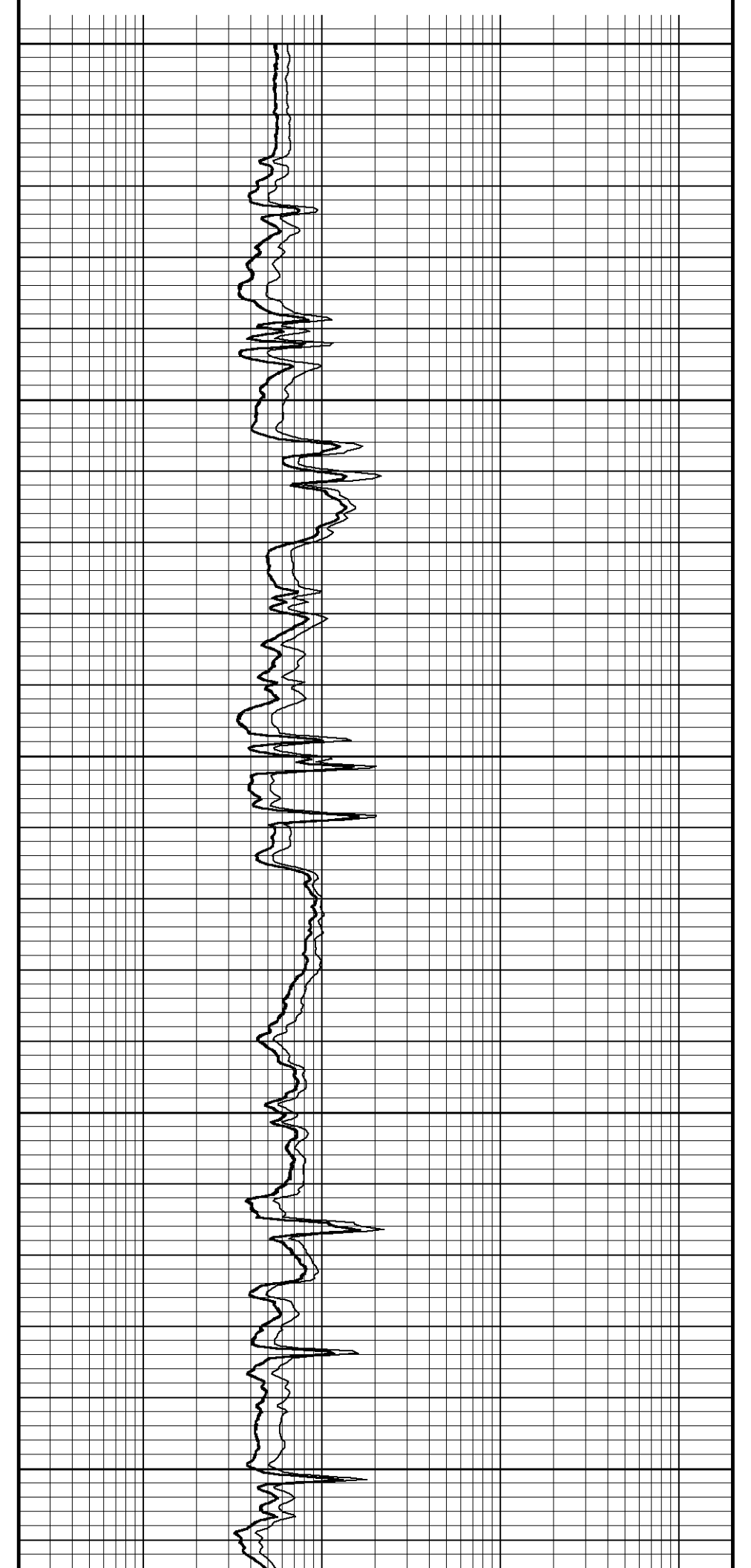
3000

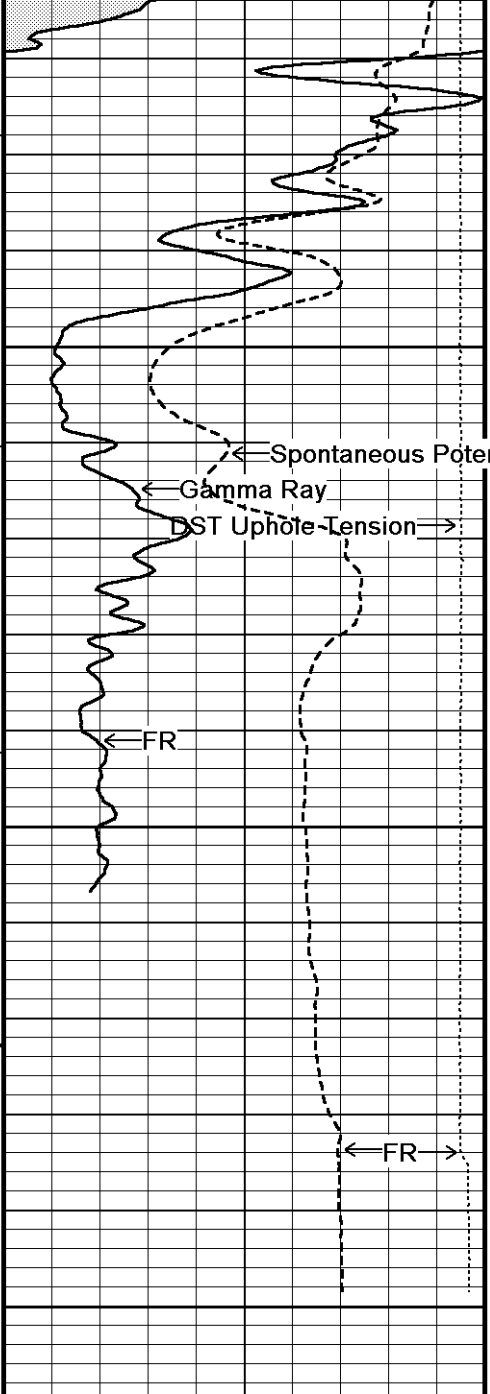
115°

3050

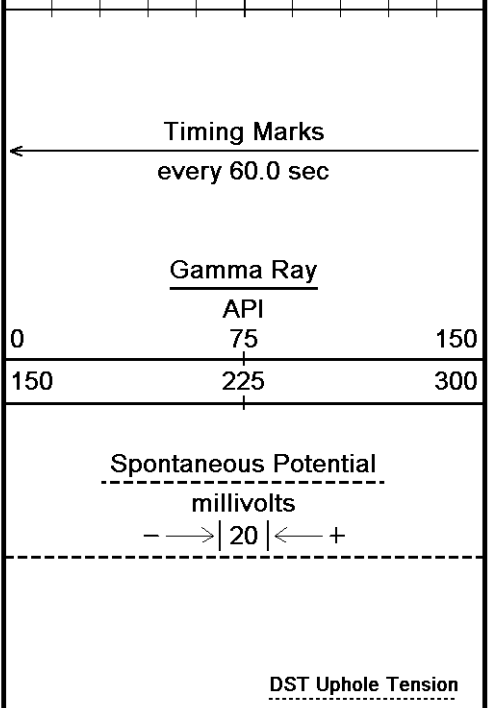
115°

3100

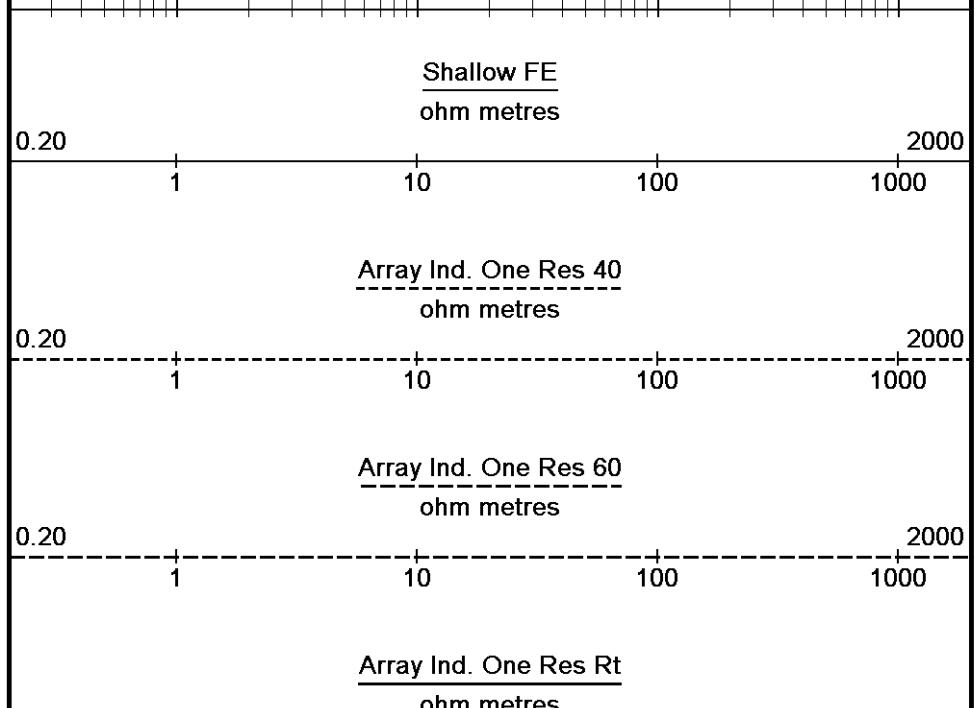
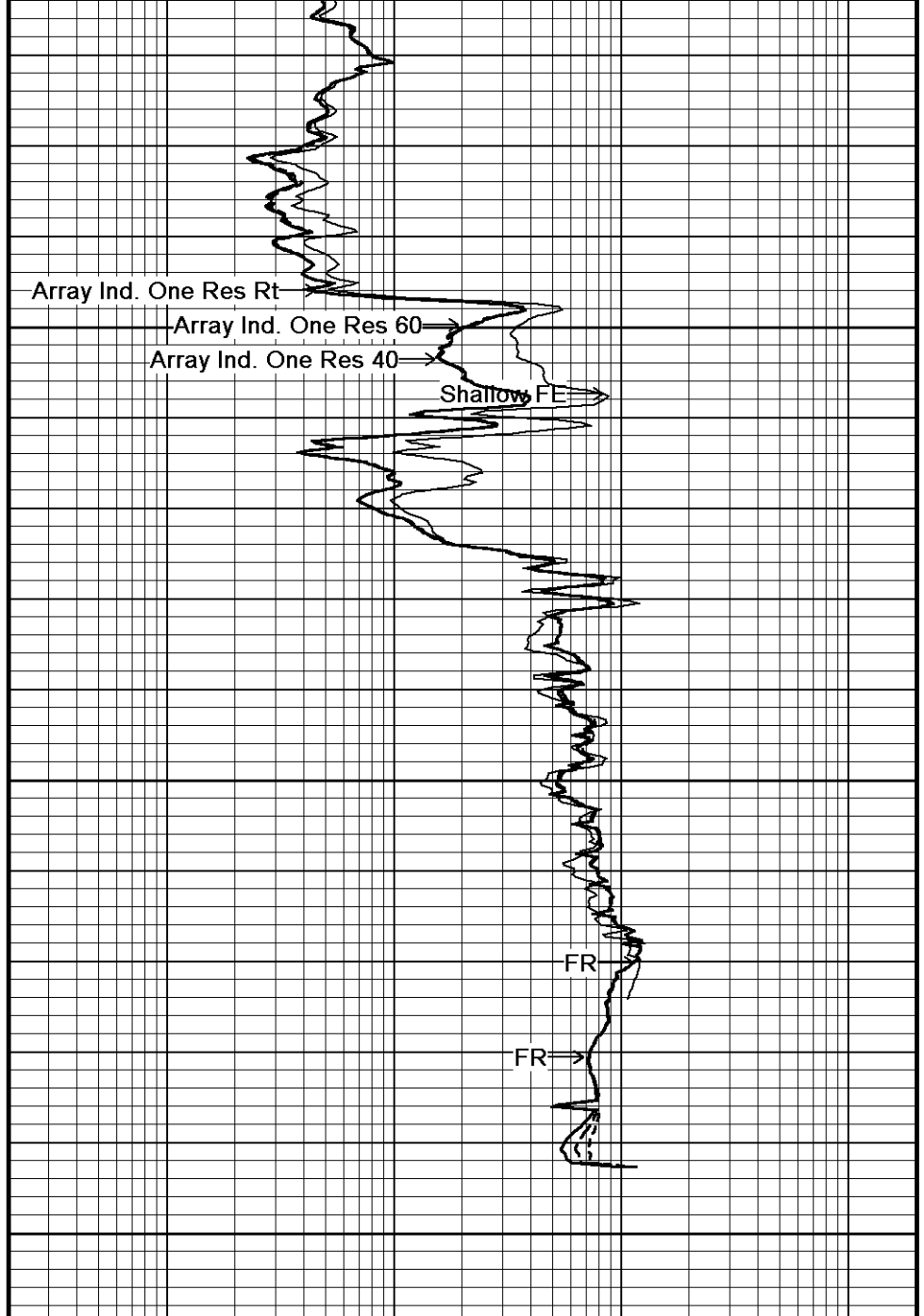


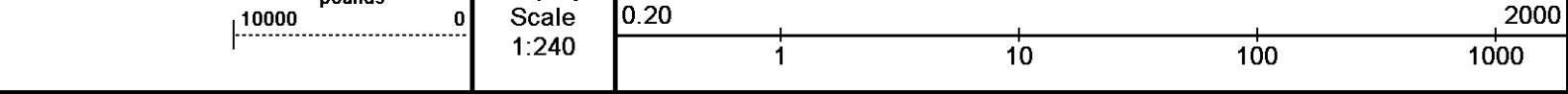


115°
 3150
 115°
 3200
 3250
 3258
 Depth in Feet



Borehole Temp in deg F
 Replay





Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 09-JUL-2011 21:03
 Filename: C:\Program Files\Weatherford\WLS 11.02.3186\Data\FUTURE (WMU 4)\DATA2.dta Recorded on 09-JUL-2011 19:03
 System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

↑ **REPEAT SECTION** ↑

BEFORE SURVEY CALIBRATION
 C:\Program Files\Weatherford\WLS 11.02.3186\Data\FUTURE (WMU 4)\DATA2.dta

General Constants All 000 Last Edited on 09-JUL-2011,18:50

General Parameters		
Mud Resistivity	1.000	ohm-metres
Mud Resistivity Temperature	90.000	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	4.500	inches
Caliper for Differential Caliper	Density Caliper	
 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 SMS 0 Field Calibration on 03-JUL-2011

Reading No	Measured	Calibrated (lbs)
1	16815.80	0.00
2	17984.40	740.00

Gamma Calibration MCG-C 93 Field Calibration on 09-JUL-2011,17:56

	Measured	Calibrated (API)
Background	78	55
Calibrator (Gross)	1063	751
Calibrator (Net)	985	696

Gamma Constants MCG-C 93 Last Edited on 09-JUL-2011,17:55

Gamma Calibrator Number	36	
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 93 Field Calibration on 09-JUL-2011,17:56

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

High Resolution Temperature Calibration MCG-C 93 Field Calibration on 09-JUL-2011,17:56

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

High Resolution Temperature Constants MCG-C 93 Last Edited on

Pre-filter Length	11
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Caliper Calibration MML-A 7 Base Calibration on 08-JUL-2011 10:03
Field Calibration on 08-JUL-2011 10:05

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	15352	5.96
2	18829	7.98
3	22230	9.94
4	26051	11.90
5	0	0.00
6	N/A	N/A

Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.99	7.98

Micro Normal and Micro Inverse Calibration MML-A 7

Base Calibration on 08-JUL-2011 11:07
Field Check on 09-JUL-2011,17:56

Base Calibration				
Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	11.8	59.7	2.6	12.8
Micro Inverse	15.6	77.5	1.7	8.4
Channel	Base Check (ohm-m)		Field Check (ohm-m)	
Micro Normal	32.3		32.3	
Micro Inverse	16.5		16.5	

Micro Normal and Micro Inverse Constants MML-A 7

Last Edited on 09-JUL-2011,17:56

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159		
Micro Normal K Factor	0.5110		
Micro Inverse K Factor	0.3380		
Standoff Offset	N/A		inches

Neutron Calibration MDN-A.B 31

Base Calibration on 23-JUN-2011 09:47
Field Check on 09-JUL-2011,17:56

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
Ratio	3383	105	3714	110
	32.241		33.764	
Field Calibrator at Base			Calibrated (cps)	
Ratio			2209	3198
			0.691	
Field Check			Calibrated (cps)	
Ratio			2177	3160
			0.689	

Neutron Constants MDN-A.B 31

Last Edited on 09-JUL-2011,17:57

Neutron Source Id	N1054		
Neutron Jig Number	N639		
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	None		
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-A.A 54

Base Calibration on 08-JUL-2011,18:39
Field Check on 09-JUL-2011,17:58

Base Calibration		
	Measured	Calibrated (ohm-m)

Reference 1	0.0	0.0
Reference 2	967.6	126.8
Base Check		280.6
Field Check		280.6

FE Constants MFE-A.A 54

Last Edited on 09-JUL-2011,17:58

Running Mode	No Sleeve
MFE K Factor	0.1268
Caliper Source for FE correction	Density Caliper
Caliper Value for FE correction	N/A
Rm Source for FE correction	Temperature Corr
Temp. for Rm Corr.	MCG External Temperature
Stand-off	0.5

Induction Calibration MAI-B.J 390

Base Calibration on 16-AUG-2010,14:24
Field Check on 09-JUL-2011,17:58

Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	16.8	458.6	9.3	966.2	
2	6.3	377.7	7.6	821.4	
3	3.8	258.6	5.2	566.0	
4	1.9	132.3	2.6	279.2	
Array Temperature		77.9		Deg F	
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	18.3	3956.4	
2	0.0	0.0	33.2	3558.5	
3	0.0	0.0	30.5	3057.3	
4	0.0	0.0	21.3	2085.3	
Deep	0.0	0.0	18.9	2003.8	
Medium	0.0	0.0	43.7	4006.6	
Shallow	0.0	0.0	49.6	5253.0	
Array Temperature		0.0		95.3	Deg F

Induction Constants MAI-B.J 390

Last Edited on 09-JUL-2011,17:58

Induction Model	RtAP-WBM			
Caliper for Borehole Corr.	Density Caliper			
Hole Size for Borehole Correction	N/A			
Tool Centred	No			
Stand-off Type	Fins			
Stand-off	0.50			
Number of Fins on Stand-off	6.0000			
Stand-off Fin Angle	60.00			
Stand-off Fin Width	0.5000			
Borehole Corr. Rm Source	Temperature Corr			
Temp. for Rm Corr.	MCG External Temperature			
Squasher Start	0.0060			
Squasher Offset	N/A			
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-B.J 390

Field Calibration on 09-JUL-2011,17:58

	Measured	Calibrated(Deg F)
Lower	10.00	50.00
Upper	100.00	212.00

High Resolution Temperature Constants MAI-B.J 390

Last Edited on

Pre-filter Length	11
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Photo Density Calibration MPD-A.A 11

Base Calibration on 06-JUN-2011 11:18

Field Check on 09-JUL-2011,17:57

Density Calibration Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	60611	32013	59869	31110
Reference 2	25430	2850	24557	2522

Field Check at Base	1241.8	1337.2
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Field Check	1251.1	1358.0
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PE Calibration Base Calibration	WS	Measured		Calibrated Ratio
		WH	Ratio	
Background	223	1091		
Reference 1	21871	60383	0.365	0.369
Reference 2	6643	25267	0.266	0.271

Field Check at Base	223.3	1091.0
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Field Check	226.5	1104.8
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Density Constants MPD-A.A 11

Last Edited on 09-JUL-2011,17:57

Density Source Id	P56135B	
Nylon Calibrator Number	633	
Aluminium Calibrator Number	633	
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	Advanced	

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

Caliper Calibration MPD-A.A 11

Base Calibration on 01-JUN-2011 10:34

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	16962	4.01
2	25393	5.96
3	34176	7.98
4	42561	9.94
5	51421	11.90
6	N/A	N/A

Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	8.17	8.10

DOWNHOLE EQUIPMENT

C:\Program Files\Weatherford\WLS 11.02.3186\Data\FUTURE (WMU 4)\DATA2.dta

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 205 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

Compact Comms Gamma
MCG-C 93 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 7 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

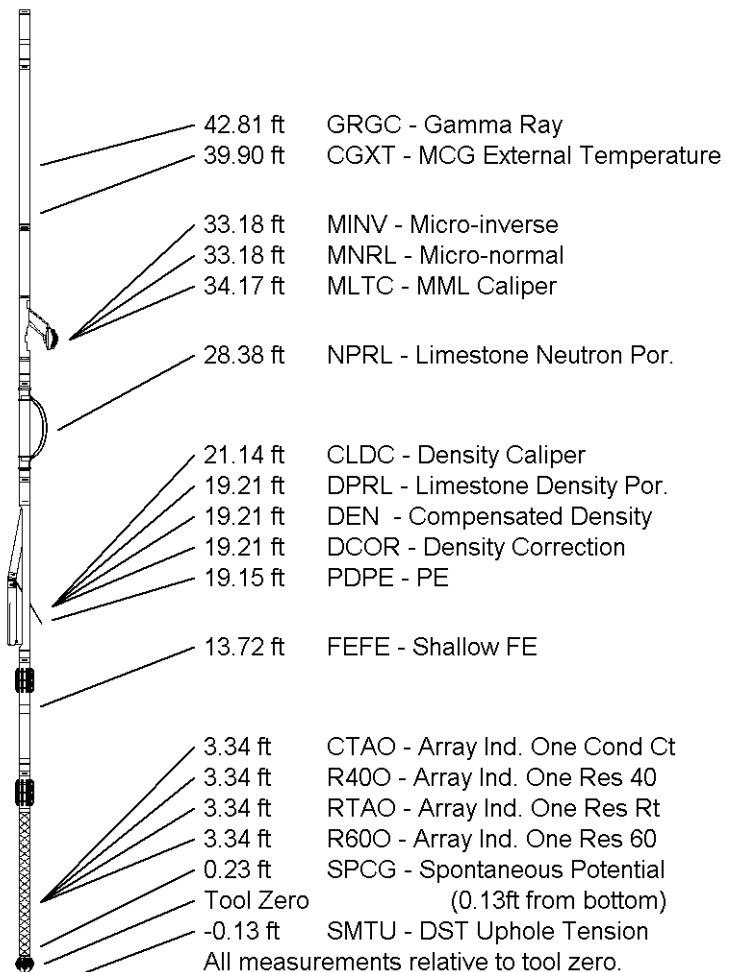
Compact Neutron
MDN-A.B 31 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-A.A 11 LG: 9.53 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-A.A 54 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-B.J 390 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 50.39 ft Weight: 405.7 lb



COMPANY FUTURE PETROLEUM COMPANY, LLC.
WELL WEST MADDIX UNIT #4
FIELD WEST MADDIX UNIT
PROVINCE/COUNTY COWLEY
COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	1311.00	feet	First Reading	3231.00	feet
Elevation Drill Floor	1309.00	feet	Depth Driller	3236.00	feet
Elevation Ground Level	1310.00	feet	Depth Logger	3234.00	feet



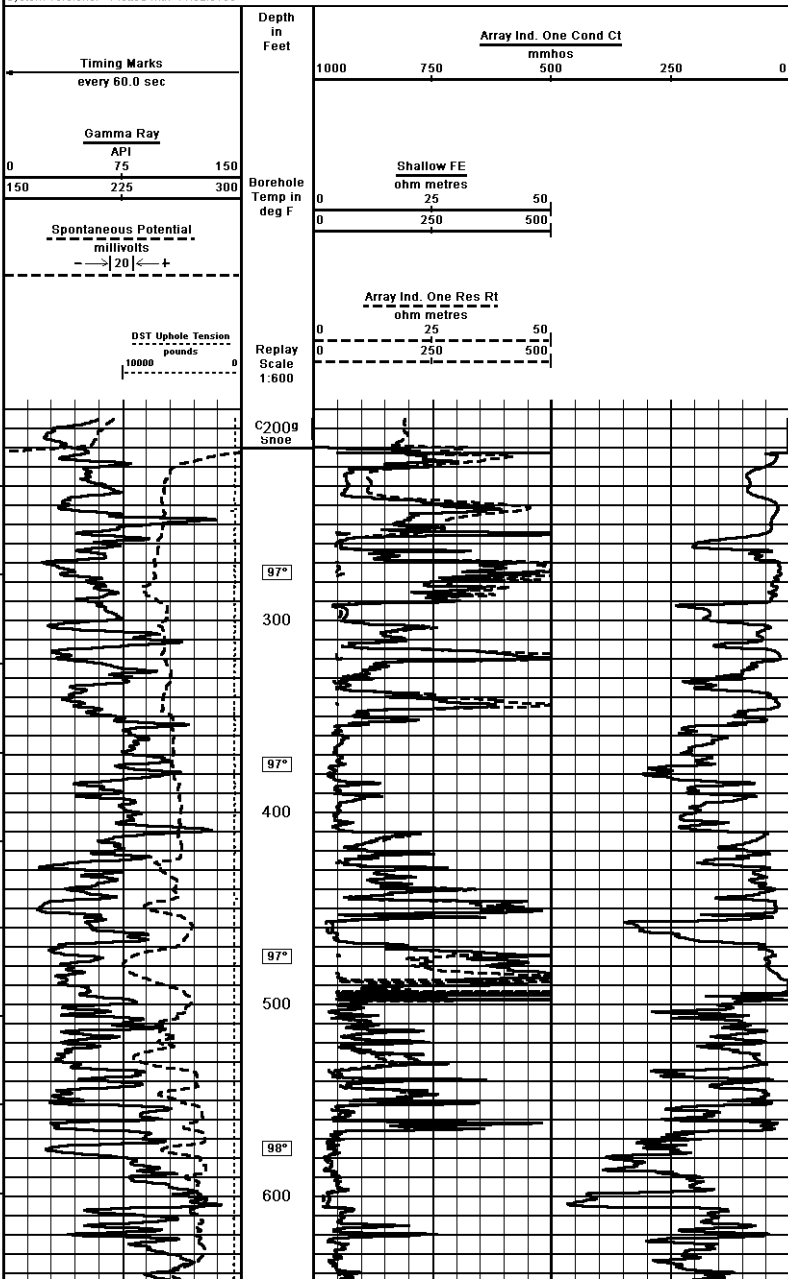
ARRAY INDUCTION

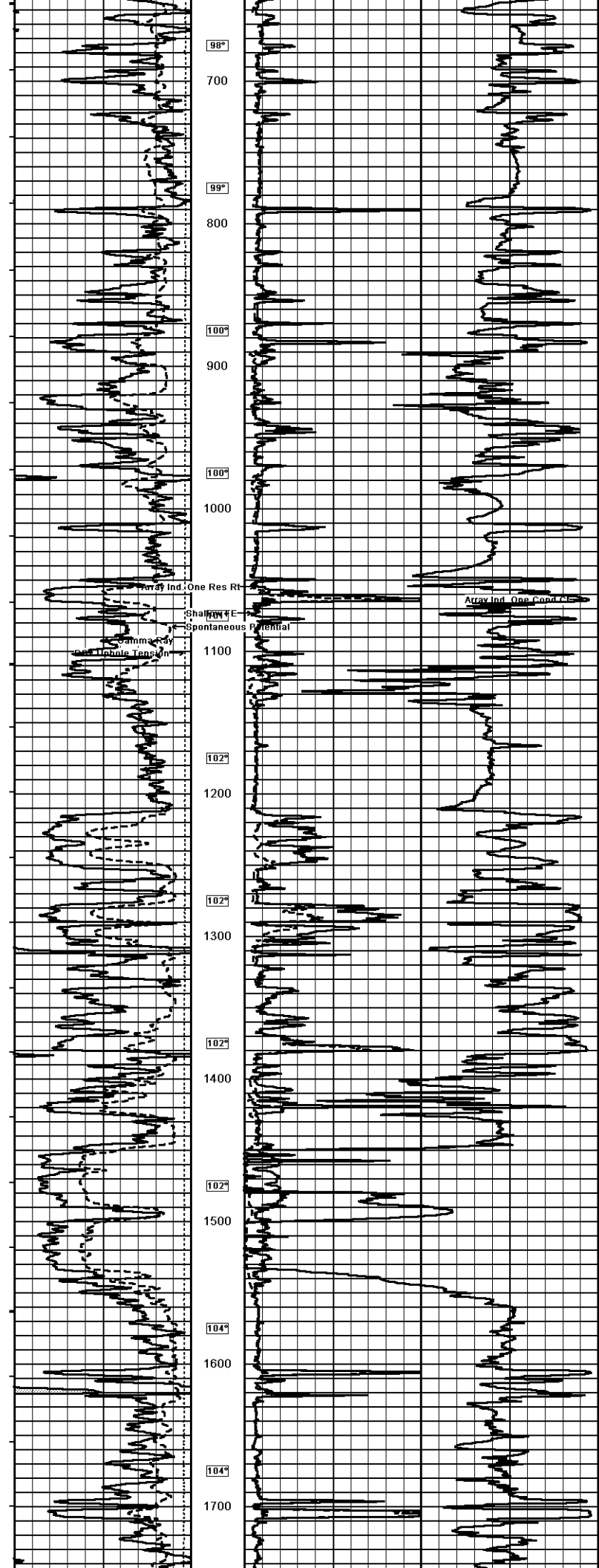


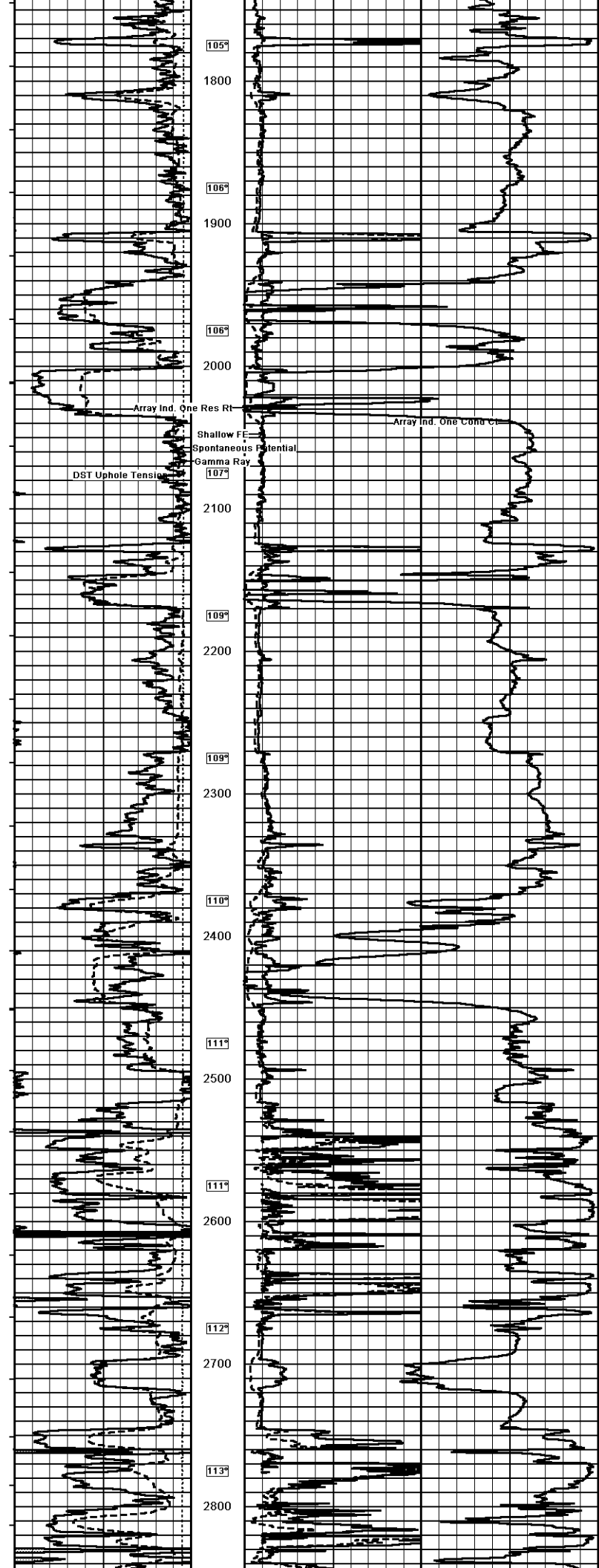
Weatherford		ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG	
COMPANY: FUTURE PETROLEUM COMPANY, LLC. WELL: WEST MADDIX UNIT #4 FIELD: WEST MADDIX UNIT PROVINCE/COUNTY: COWLEY U.S.A. / KANSAS COUNTY/STATE: U.S.A. / KANSAS LOCATION: 879' FN1 & 2127' FEL			
SEC	MAP	FACE	Other Services
3	335	ISE	MPL/MD/N
2	15-035-2442		MML
Serial Number	15-035-2442		
Permanent Datum GL Elevation	1301' feet		
Log Measured From KB @ 10 FEET above Permanent Datum			
Drilling Measured From KB			
Date	09-JUL-2011		
Run Number	ONE		
Depth Driller	3236.00	feet	
Depth Logger	3234.00	feet	
F1S1 Reading	3231.00	feet	
F2S1 Reading	210.00	feet	
Casing Driller	214.00	feet	
Casing Logger	210.00	feet	
Bit Size	7.875	inches	
Fluid Type	GEL		
PH/Fluid Loss	9.20	in/USg	5300 CP
Density/Viscosity	9.50		10.20 ml/30min
Sample Source	PIT		
Rm @ Measured Temp	1.0 @ 90.0	ohm-m	
Rm @ Measured Temp	0.90 @ 90.0	ohm-m	
Rm @ Measured Temp	1.20 @ 90.0	ohm-m	
Source Rm/Fric	CALC		
Rm @ BHT	0.78 @ 116.0	ohm-m	
Time since Circulation	5 HOURS	deg F	
Max Recorded Temp	116.00	deg F	
Equipment Name	COMPACT		
Equipment Base	13039		
Recorded By	B. BROWN		
Witnessed By	T. MADDOEN		

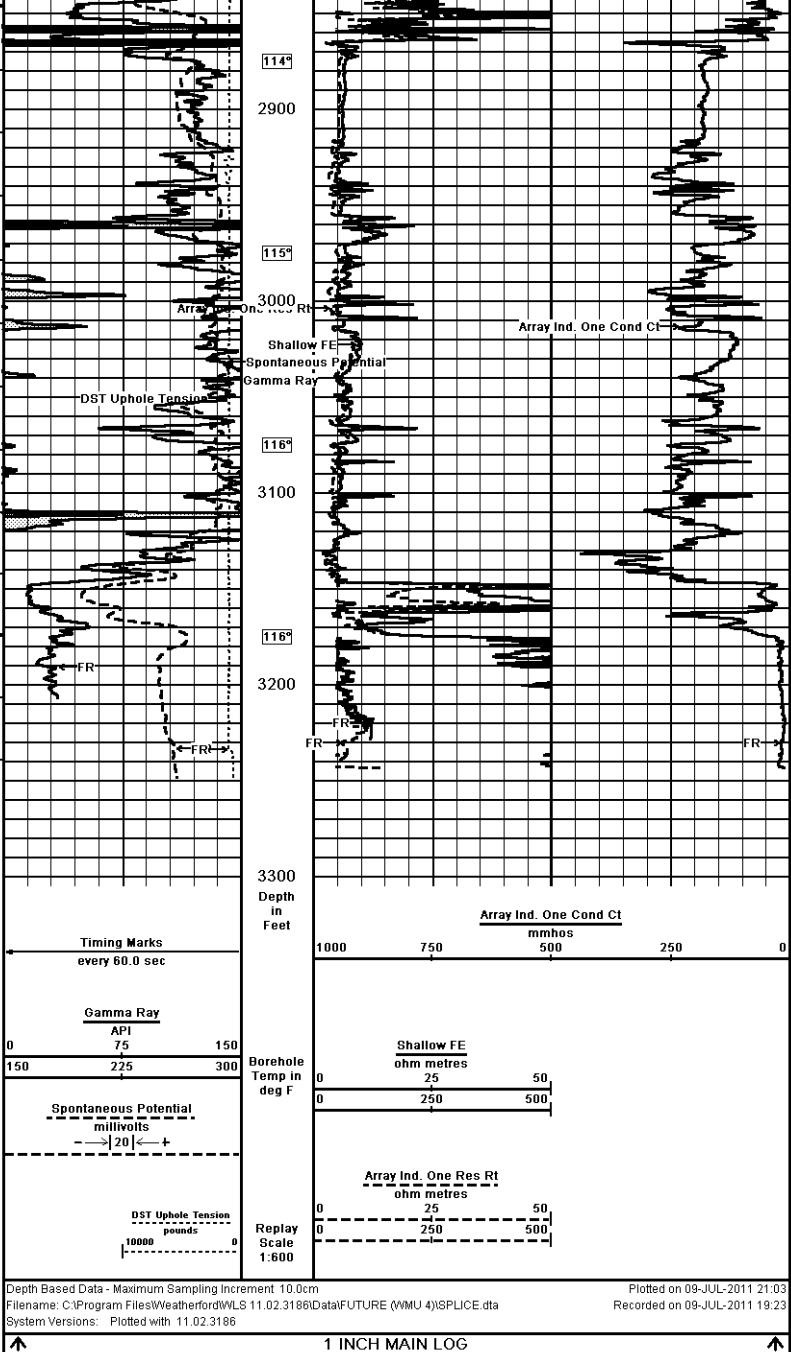
1 INCH MAIN LOG

Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 09-JUL-2011 21:03
 File name: C:\Program Files\Weatherford\WLS 11.02.3186\Data\FUTURE (WMU 4)\SPLICE.dta
 Recorded on 09-JUL-2011 19:23
 System Versions: Plotted with 11.02.3186










↑ 1 INCH MAIN LOG ↓

COMPANY	FUTURE PETROLEUM COMPANY, LLC.		
WELL	WEST MADDIX UNIT #4		
FIELD	WEST MADDIX UNIT		
PROVINCE/COUNTY	COWLEY		
COUNTRY/STATE	U.S.A. / KANSAS		

Elevation Kelly Bushing	1311.00	feet	First Reading	3231.00	feet
Elevation Drill Floor	1309.00	feet	Depth Driller	3236.00	feet
Elevation Ground Level	1310.00	feet	Depth Logger	3234.00	feet



ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG

