



ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

COMPANY	WEXPRO COMPANY		
WELL	CARL ALLEN #28		
FIELD	POWDER WASH UNIT		
PROVINCE/COUNTY	MOFFAT		
COUNTRY/STATE	U.S.A. / COLORADO		
LOCATION	2346' FSL & 783' FWL		
SEC	TWP	RGE	Other Services
28	12N	97W	MPD/MDN
API Number	05-081-0740900		MML
Permit Number			
Permanent Datum G.L., Elevation 6653 feet			Elevations: feet
Log Measured From K.B. @ 13 FEET above Permanent Datum			KB 6666.00
Drilling Measured From K.B.			DF 6665.00
			GL 6653.00
Date	05-APR-2008		
Run Number	ONE		
Depth Driller	9058.00	feet	
Depth Logger	9033.00	feet	
First Reading	9030.00		
Last Reading	488.00		
Casing Driller	492.00	feet	
Casing Logger	488.00	feet	
Bit Size	7.88	inches	
Hole Fluid Type	KCL / POLY		
Density / Viscosity	10.60 lb/USg	53.00 Cp	
PH / Fluid Loss	9.50	6.80 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	0.39 @ 58.5	ohm-m	
Rmf @ Measured Temp	0.31 @ 58.5	ohm-m	
Rmc @ Measured Temp	0.46 @ 58.5	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.12 @195.0	ohm-m	
Time Since Circulation	8 HOURS		
Max Recorded Temp	195.00	deg F	
Equipment Name	COMPACT		
Equipment / Base	13056	RK SPR	
Recorded By	C. FERREYRA		
Witnessed By	R. LARSON		
Last Title	Last Line		Last Line

BOREHOLE RECORD			Last Edited: 5-APR-2008 12:18
Bit Size inches	Depth From feet	Depth To feet	
7.875	492.00	7392.00	
7.000	7392.00	8173.00	
6.000	8173.00	9058.00	
CASING RECORD			
Type	Size inches	Depth From feet	Shoe Depth feet
SURFACE	9.625	0.00	492.00
			Weight pounds/ft
			36.00

REMARKS	
TOOLS RUN: SHA, MCG, MML, MDN, MPD, SKJ, MFE, MAI RAN IN COMBINATION.	
HARDWARE: MPD: 8" PROFILE PLATE USED. MFE: ONE 0.5" STANDOFF USED. MAI: TWO 0.5" STANDOFFS USED. MDN: NO BOWSPRINGS USED AS PER CUSTOMERS REQUEST.	
2.65 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.	
INDUCTION MODEL USED: ENHANCED.	
ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.	
TOTAL HOLE VOLUME FROM T.D. TO SURFACE CASING = 3290 CUBIC FEET.	
ANNULAR VOLUME WITH 4.5 INCH PRODUCTION CASING = 2342 CUBIC FEET.	

TIGHT PULLS, BOREHOLE SIZE AND RUGOSITY WILL AFFECT REPEATABILITY AND DATA QUALITY.

REPEAT SECTION PULLED BELOW CASING DUE TO CUSTOMER'S REQUEST.

ONE REPEAT RAN ONLY BELOW CASING AND BOTTOM PER CUSTOMER'S REQUEST.

MAIN PASS PULLED FROM 9033 TO SURFACE DUE TO INABILITY TO REACH T.D.

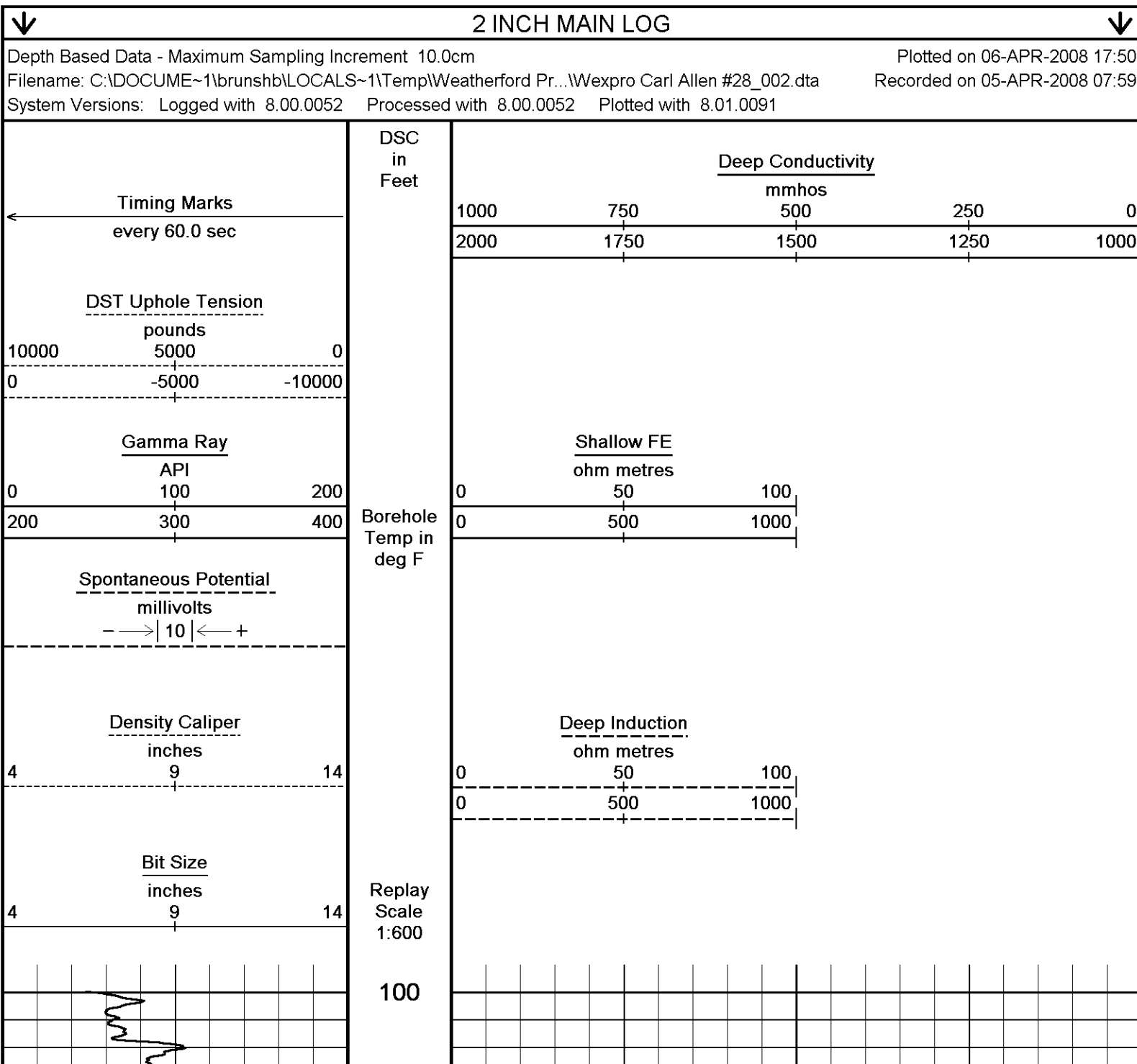
TD FROM REPEAT PASS AND MAIN PASS ARE 6 FEET DIFFERENT DUE TO A HOLE CONDITIONS.

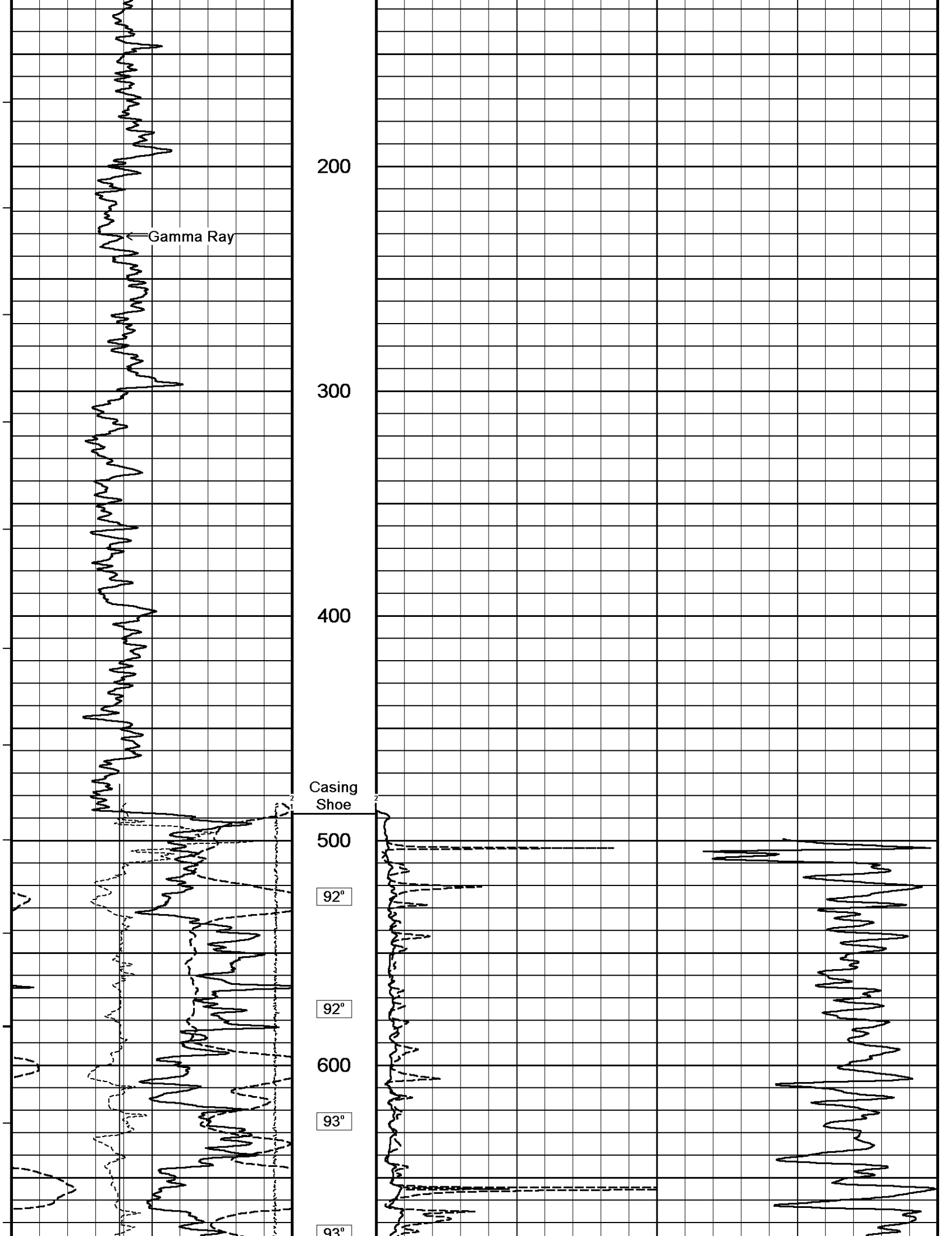
OPERATORS: B. STEWARD.

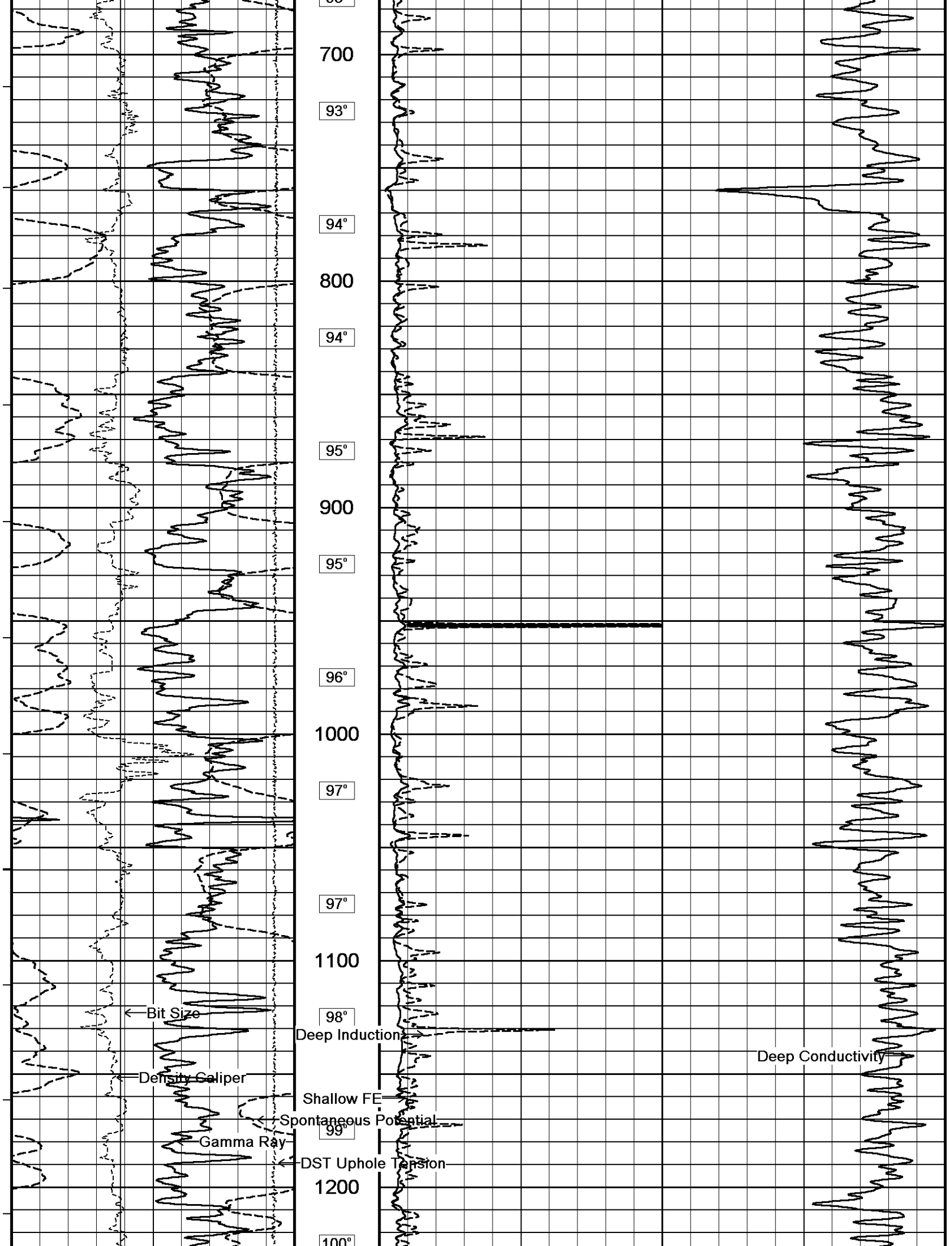
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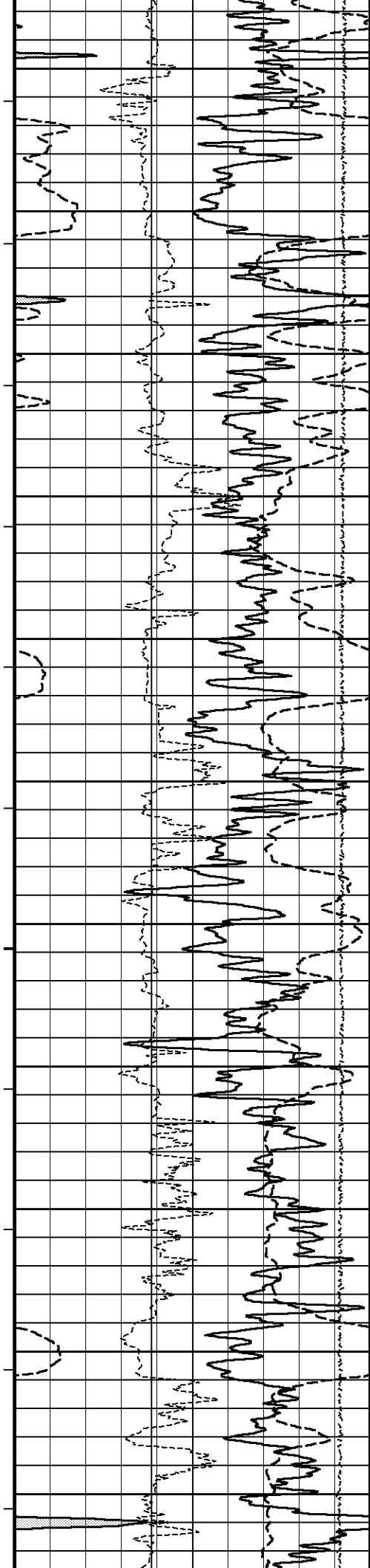
RIG: UNIT # 137.

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.

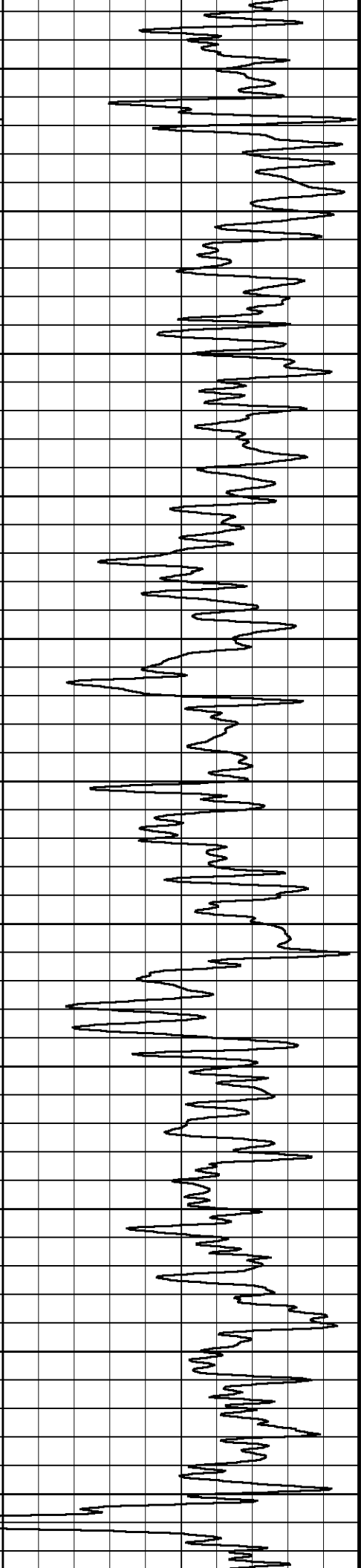
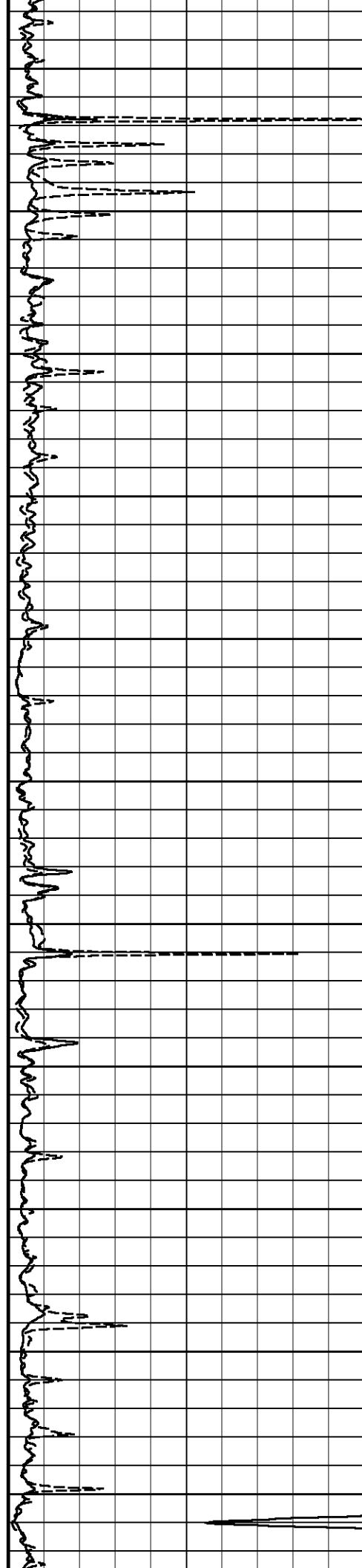


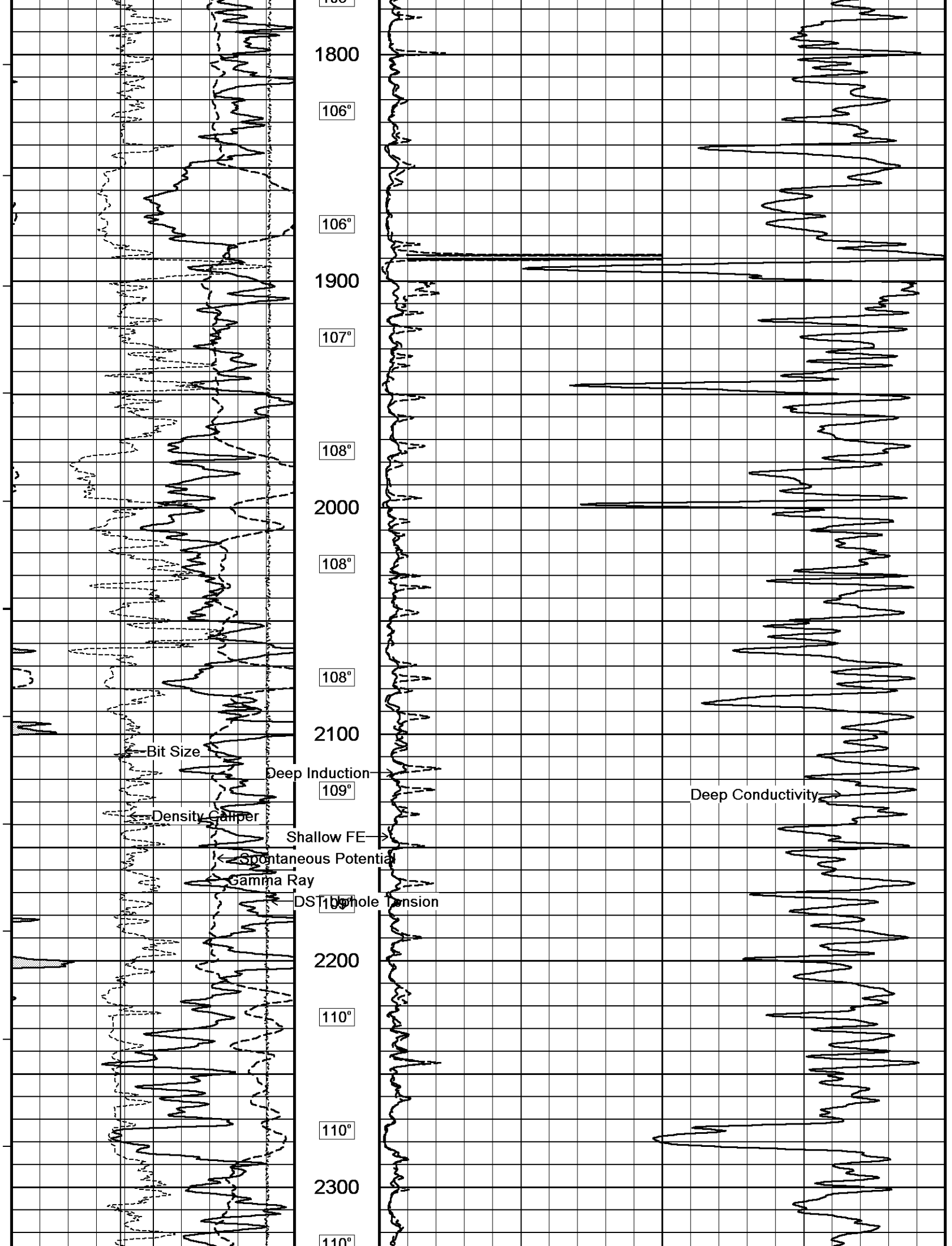


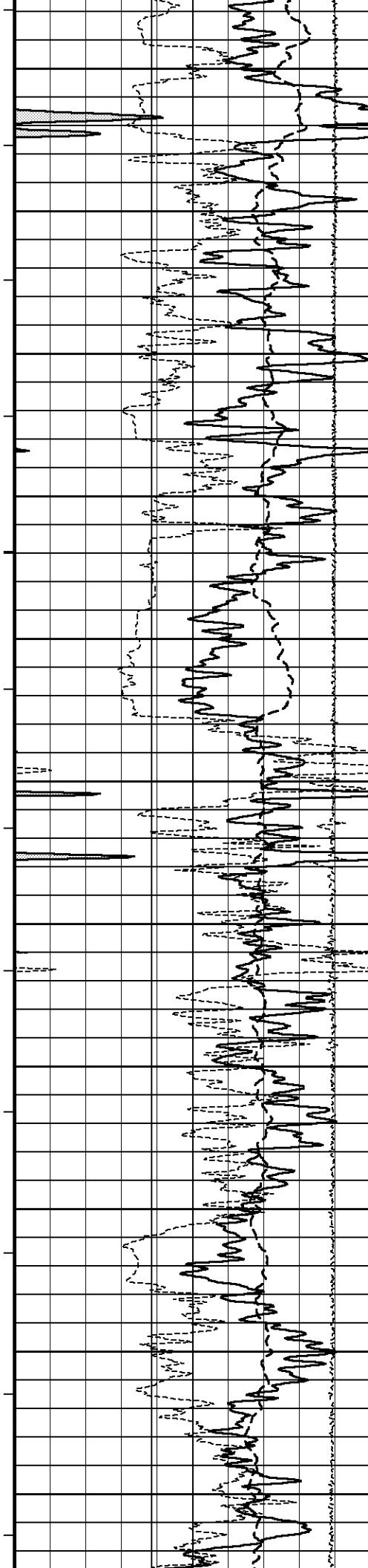




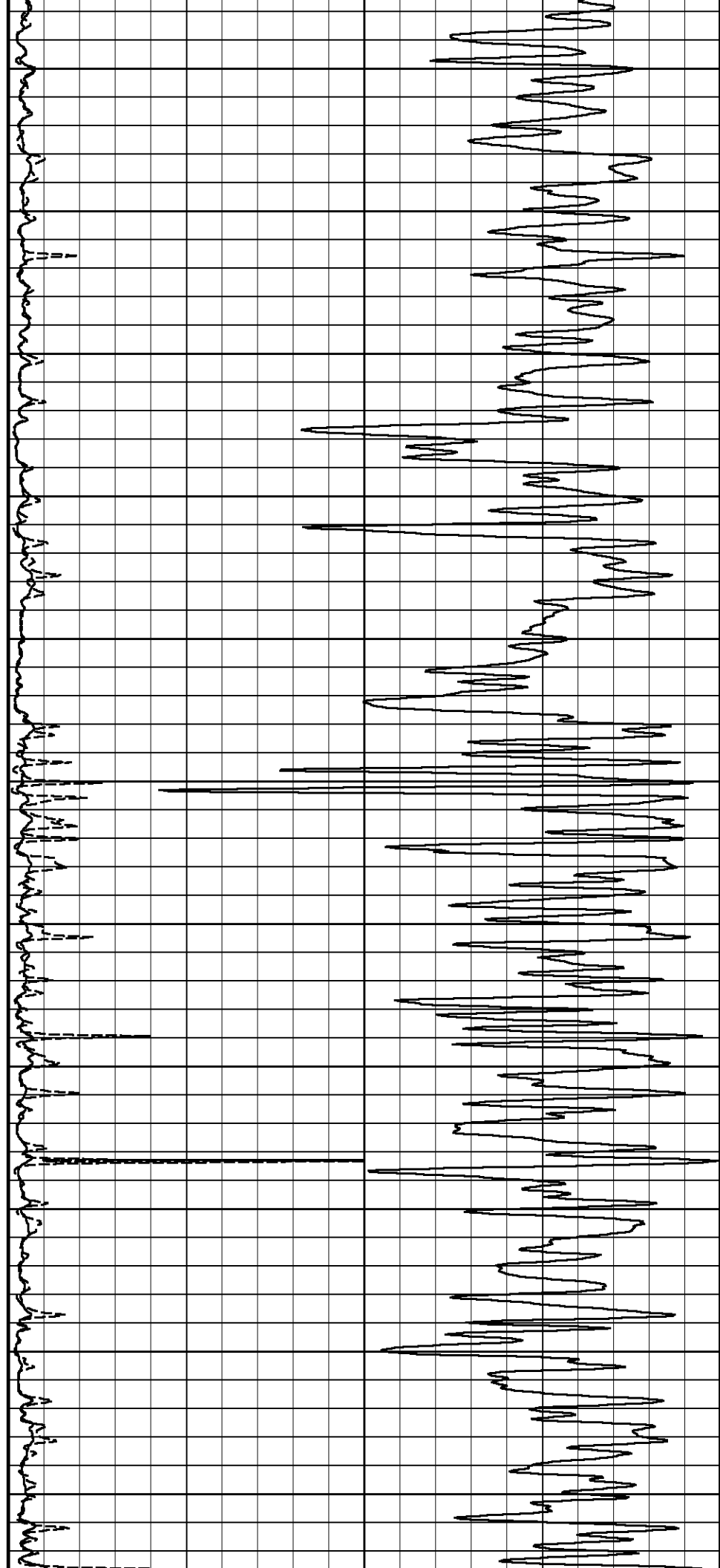
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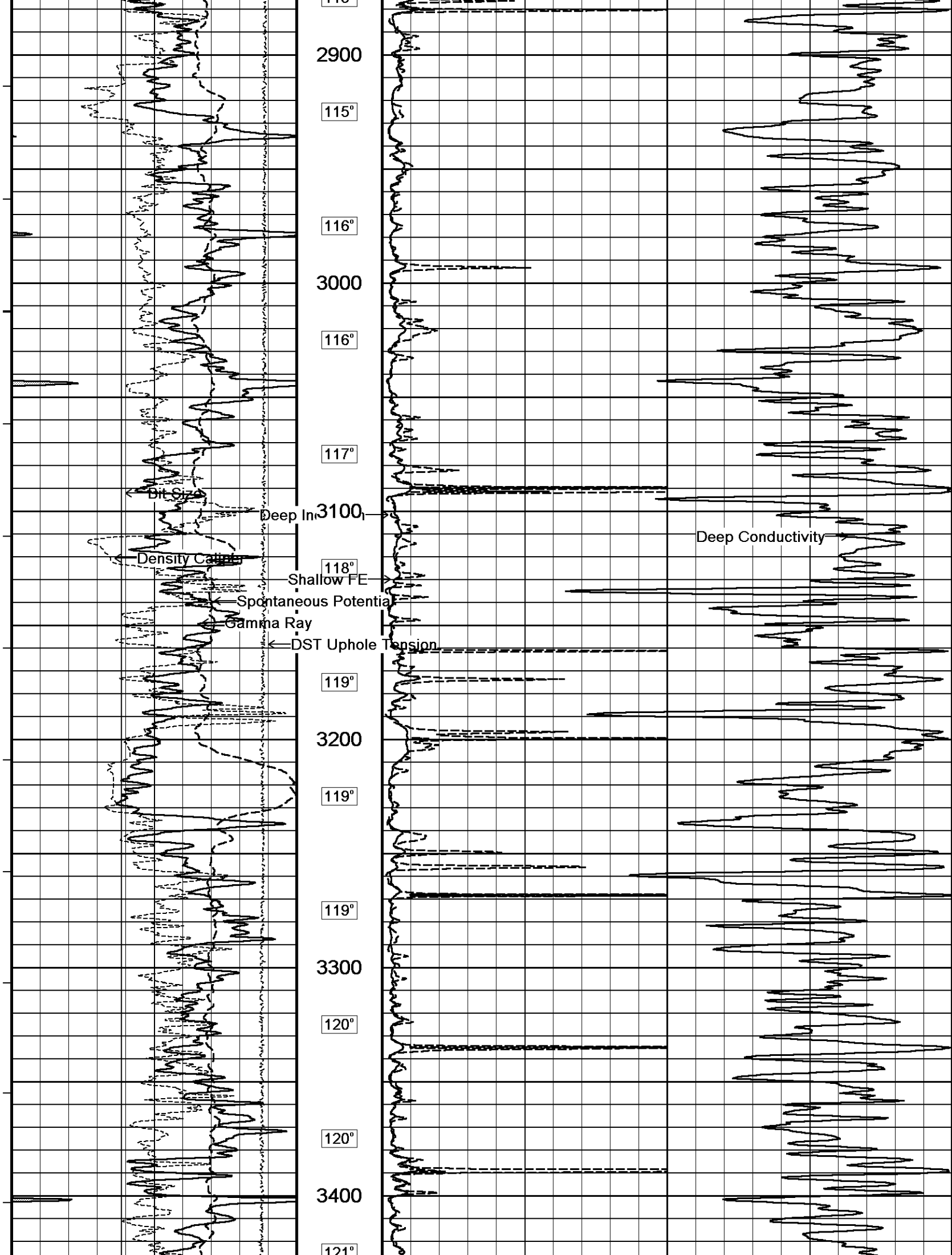


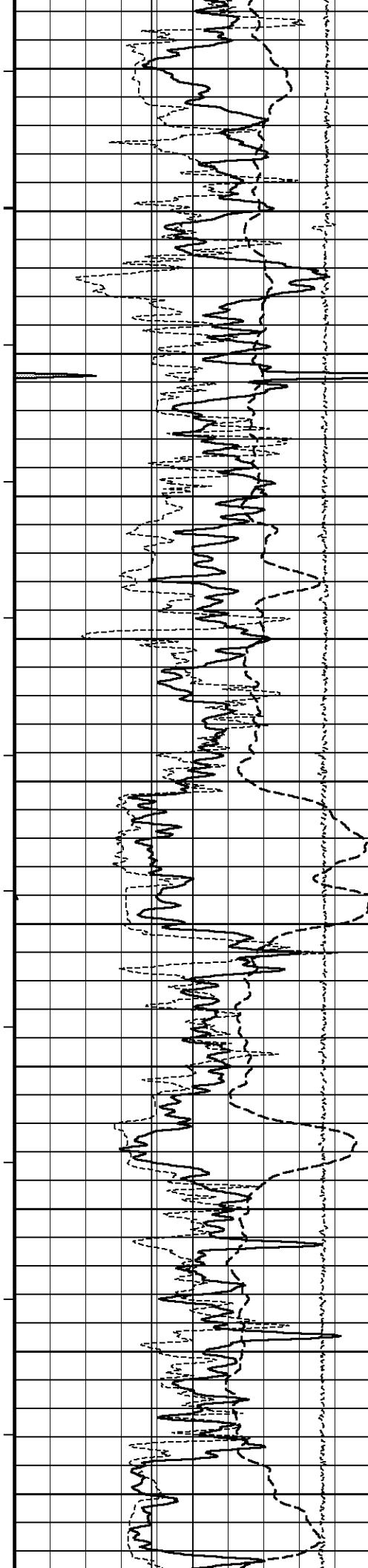




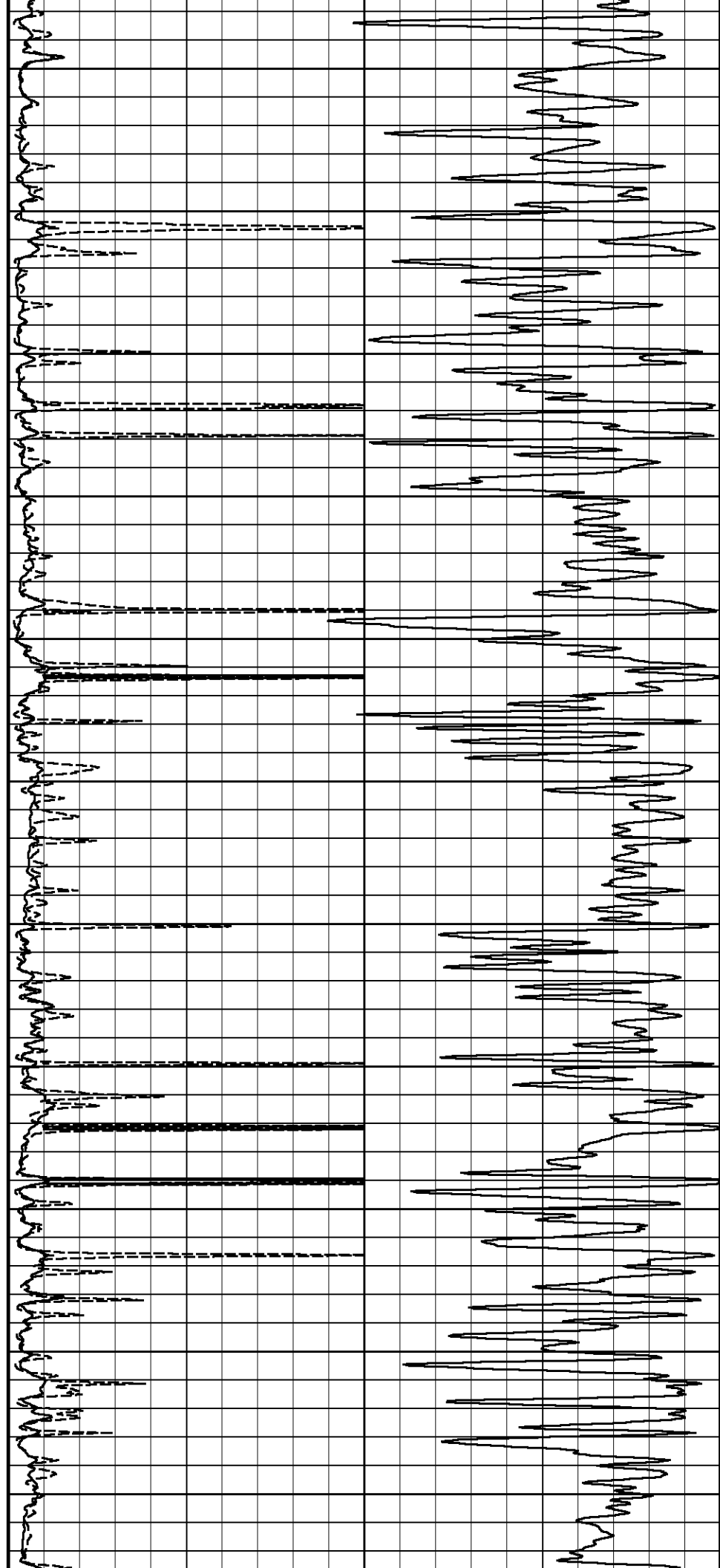
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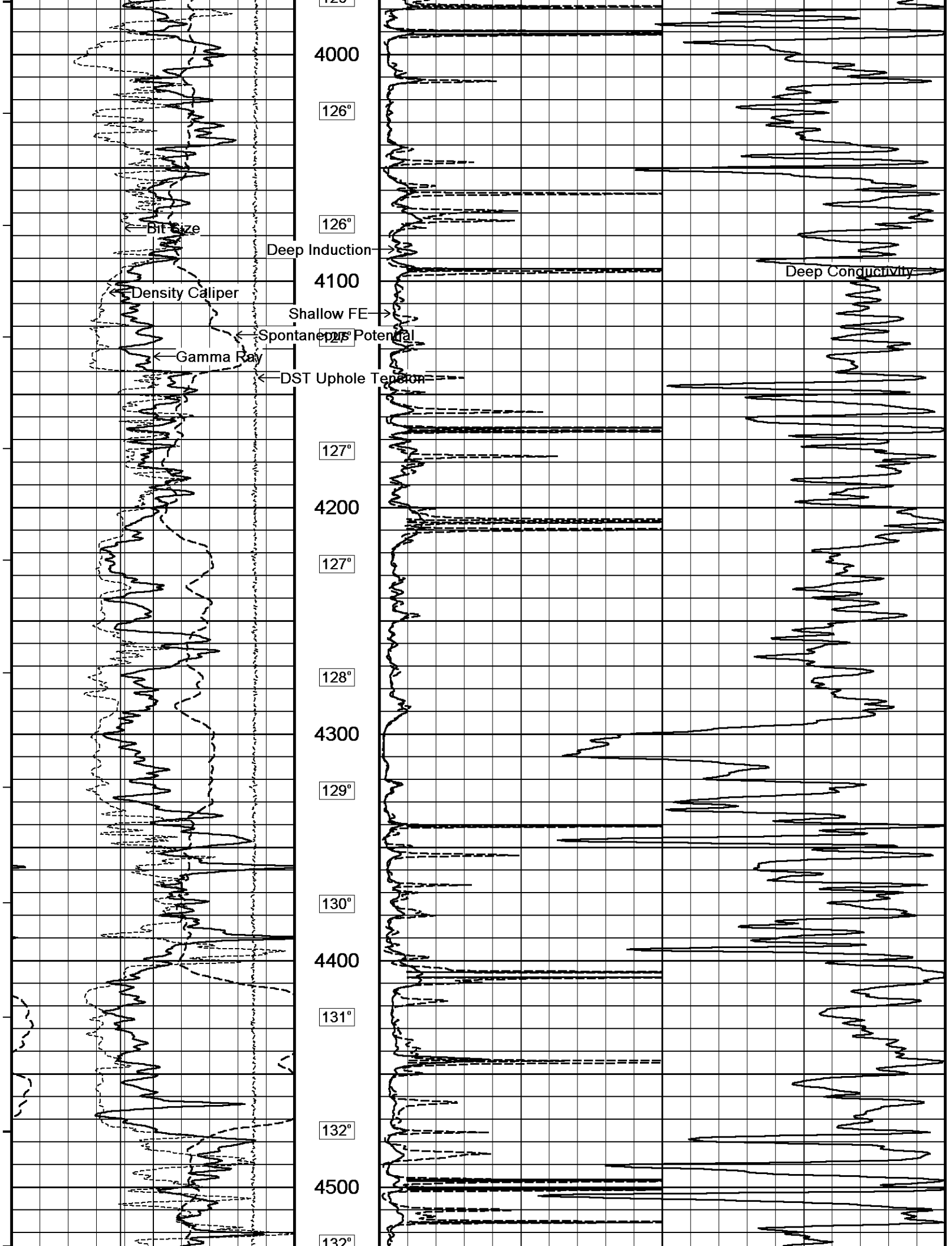


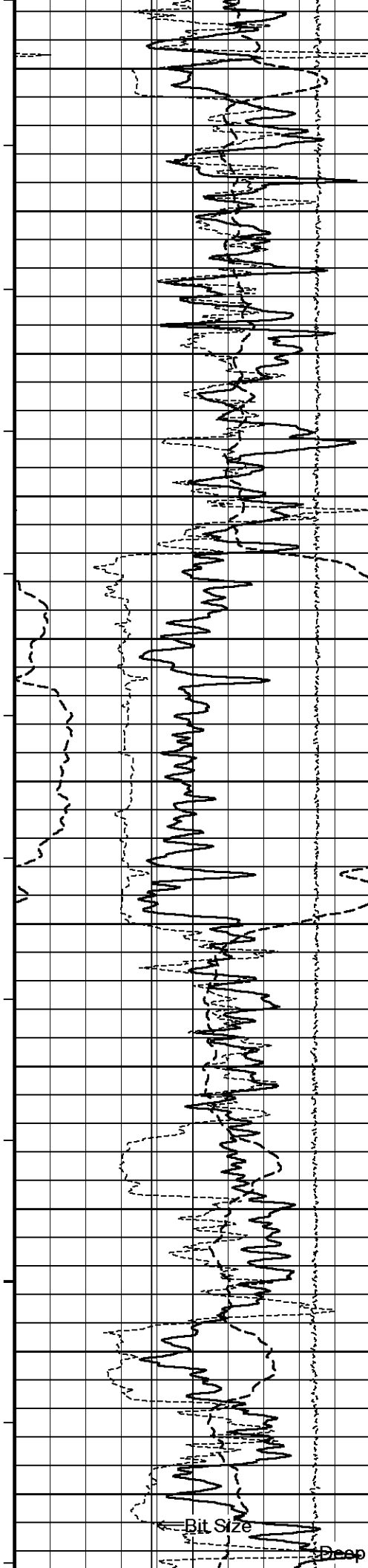




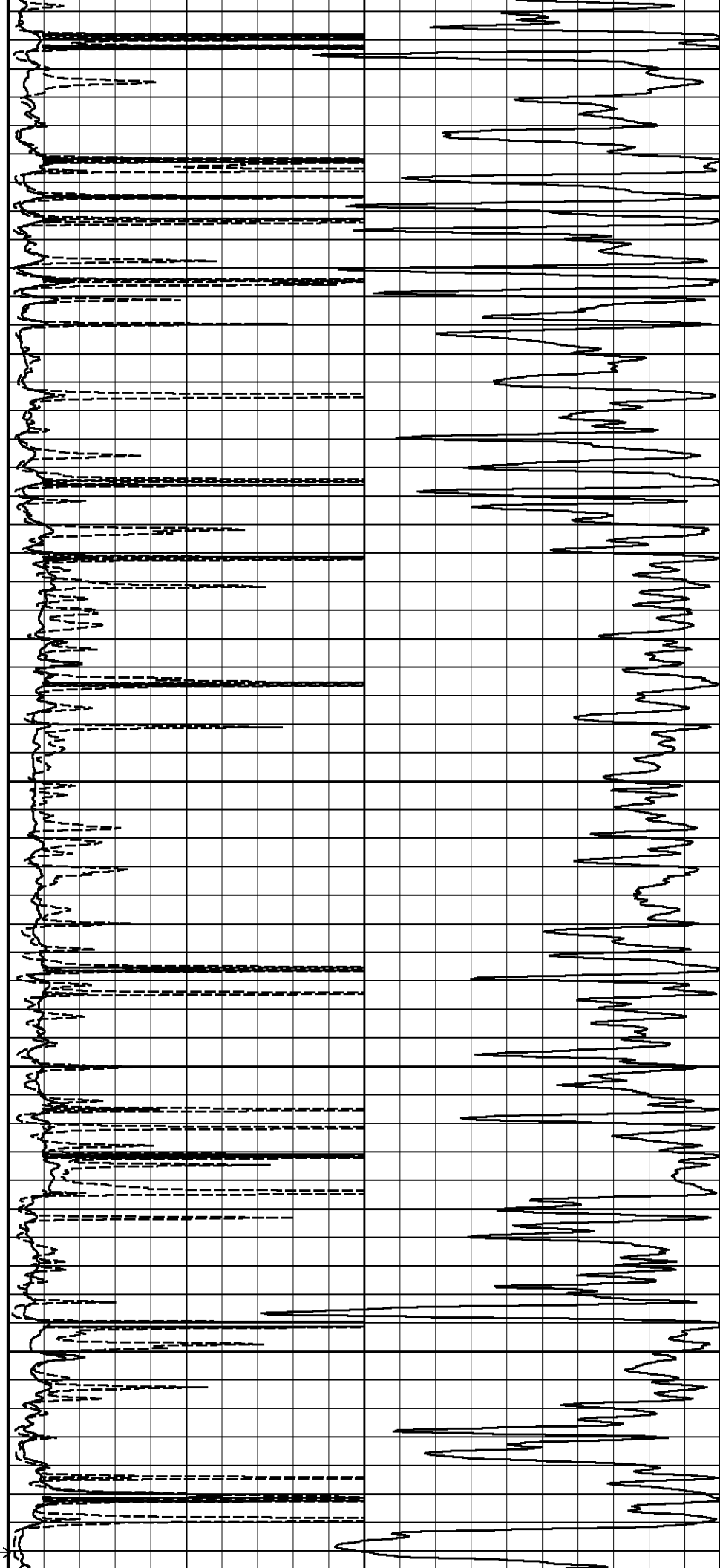
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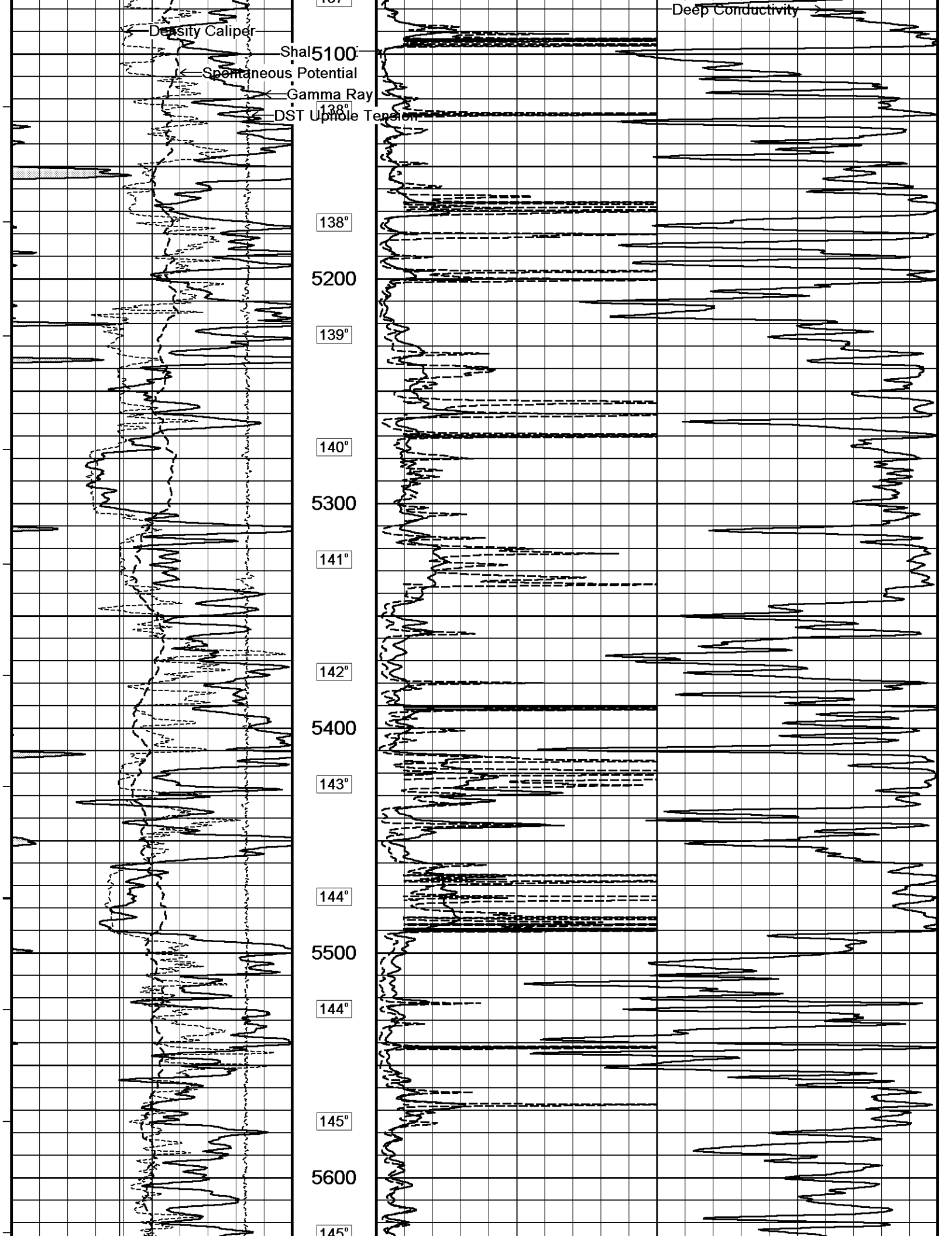


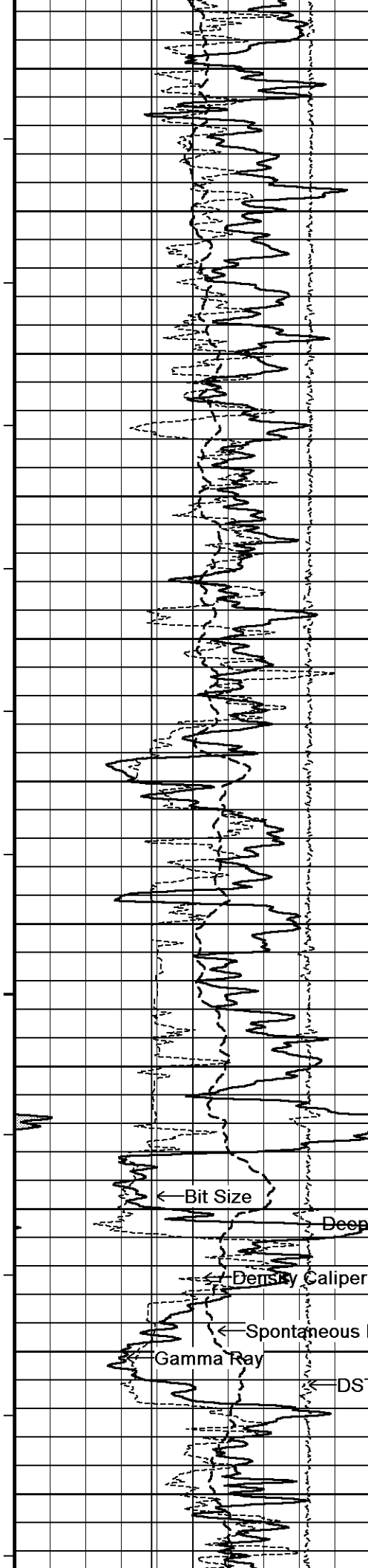




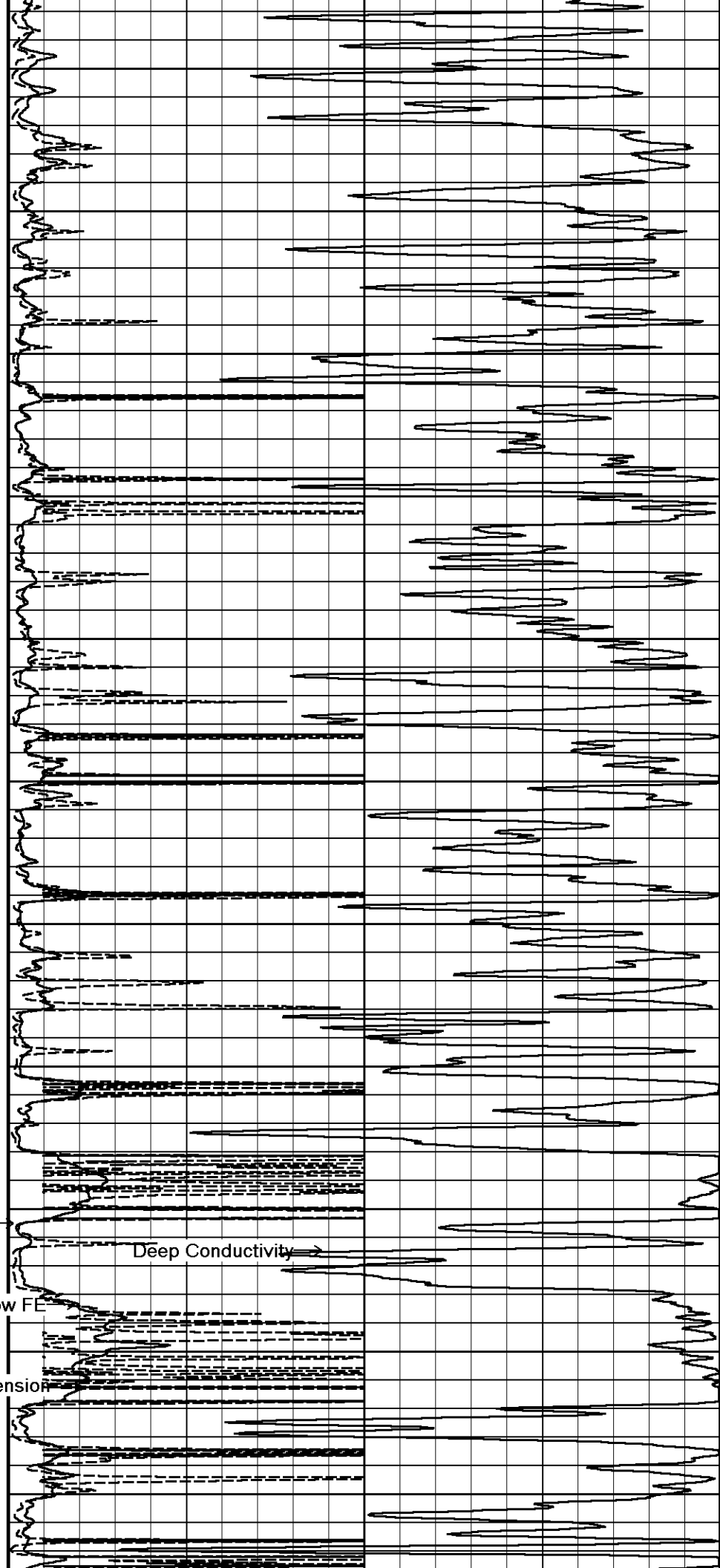
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5000
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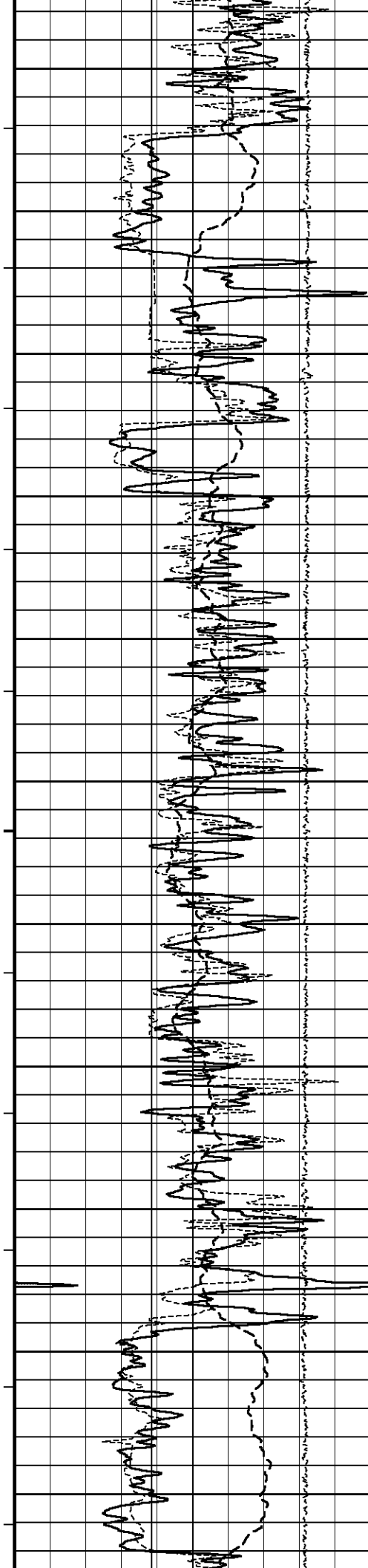




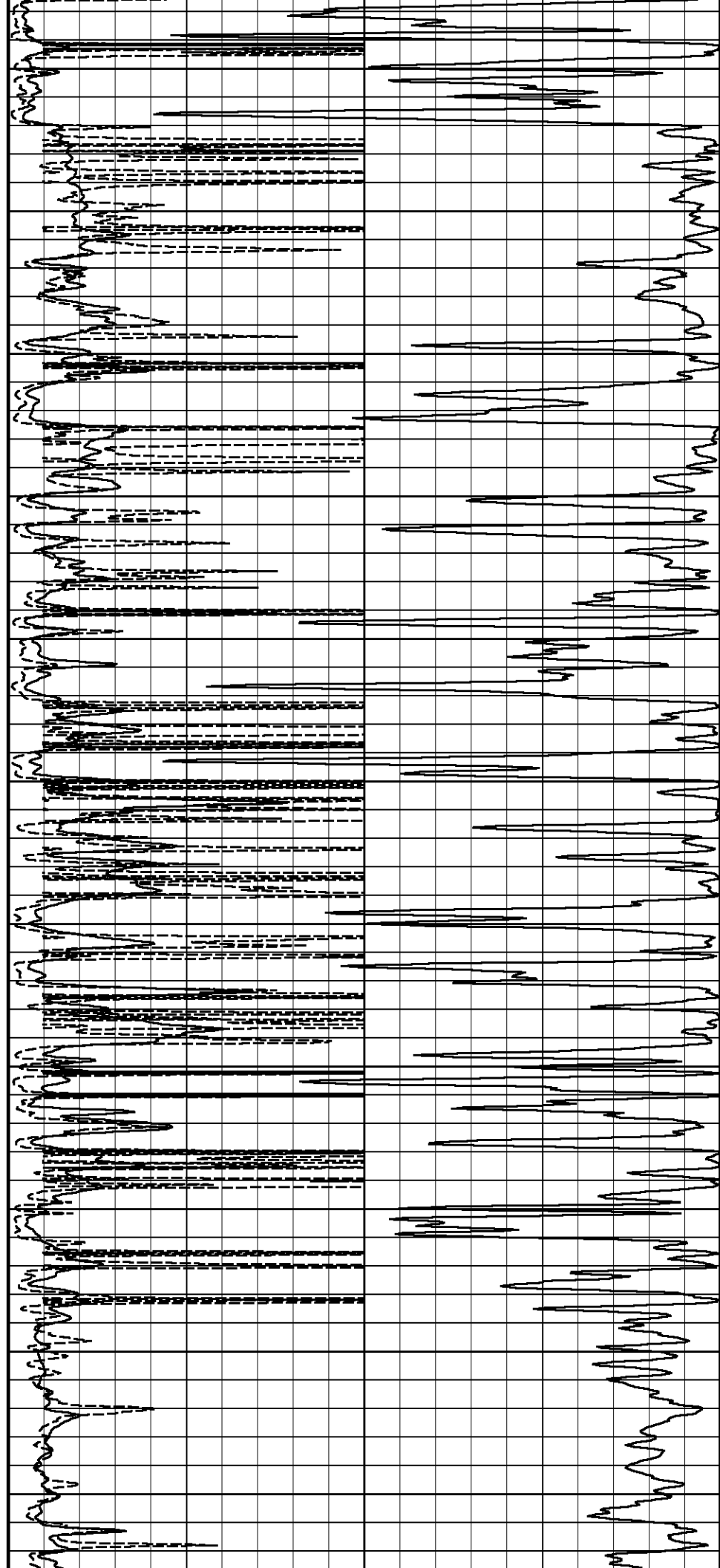


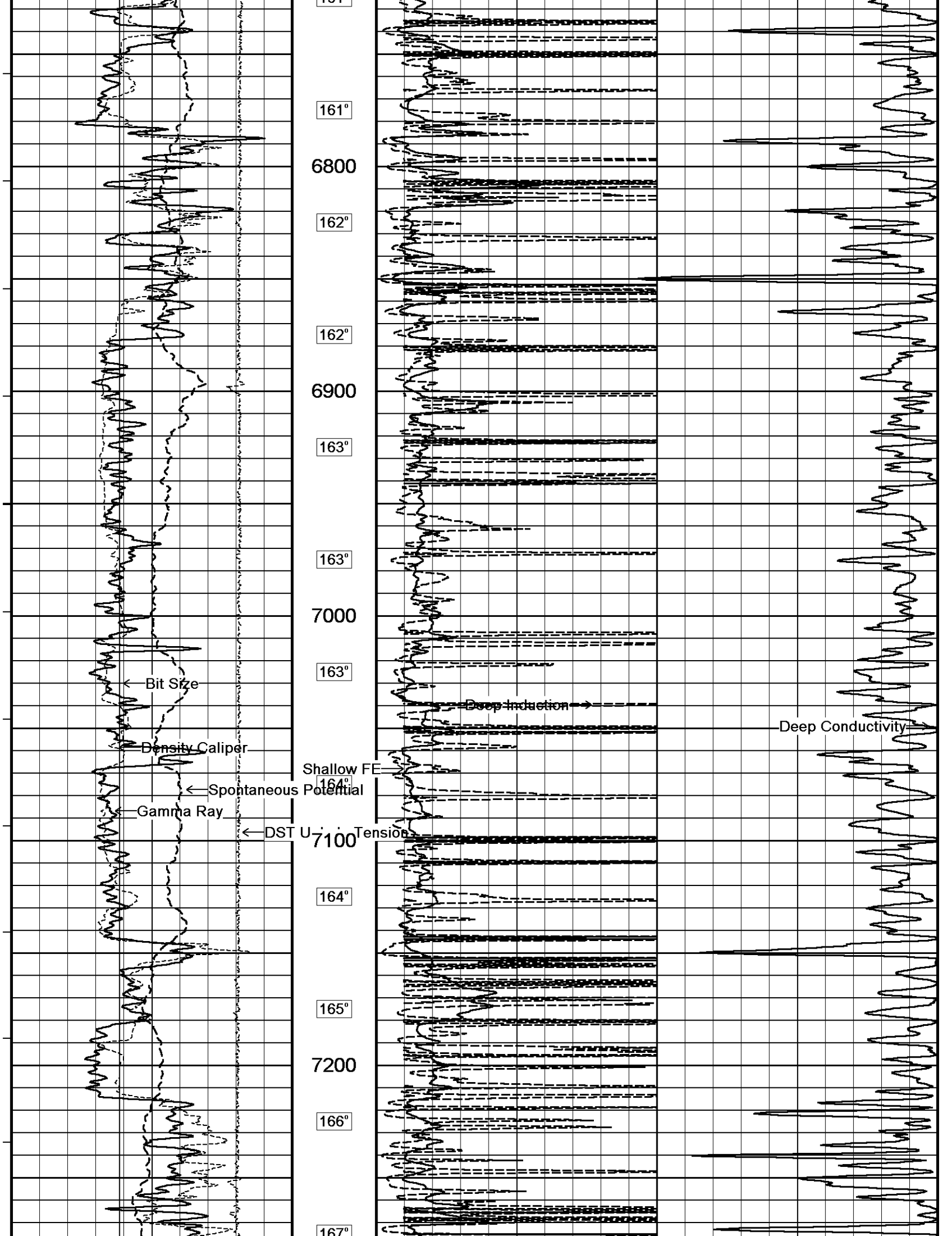
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153°
154°

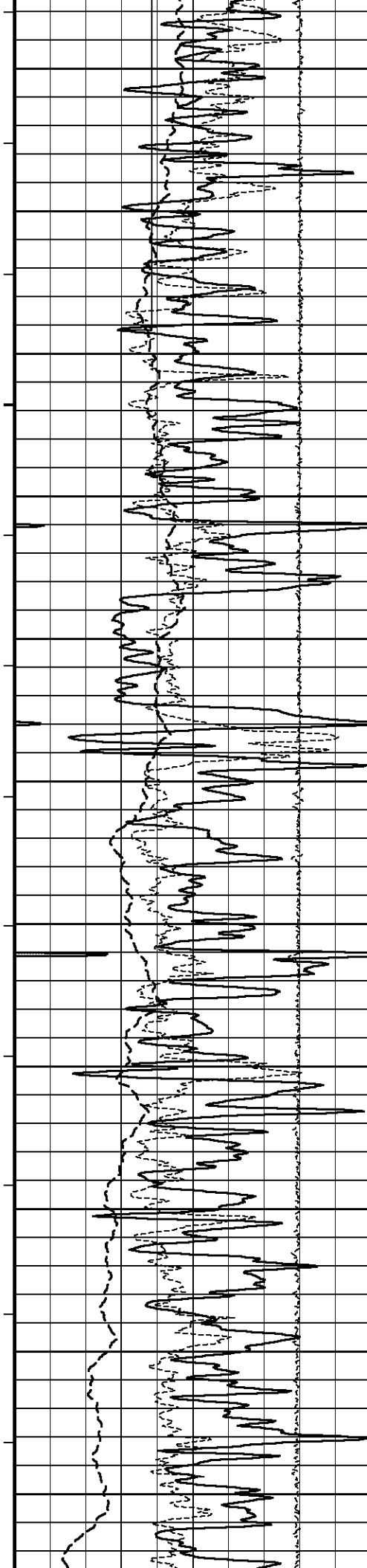




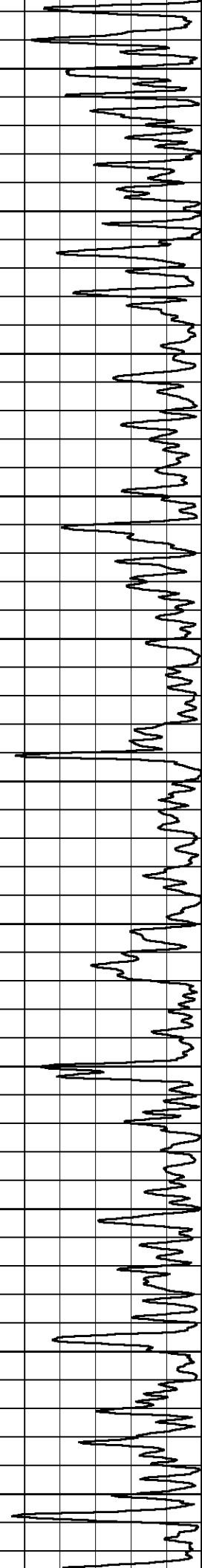
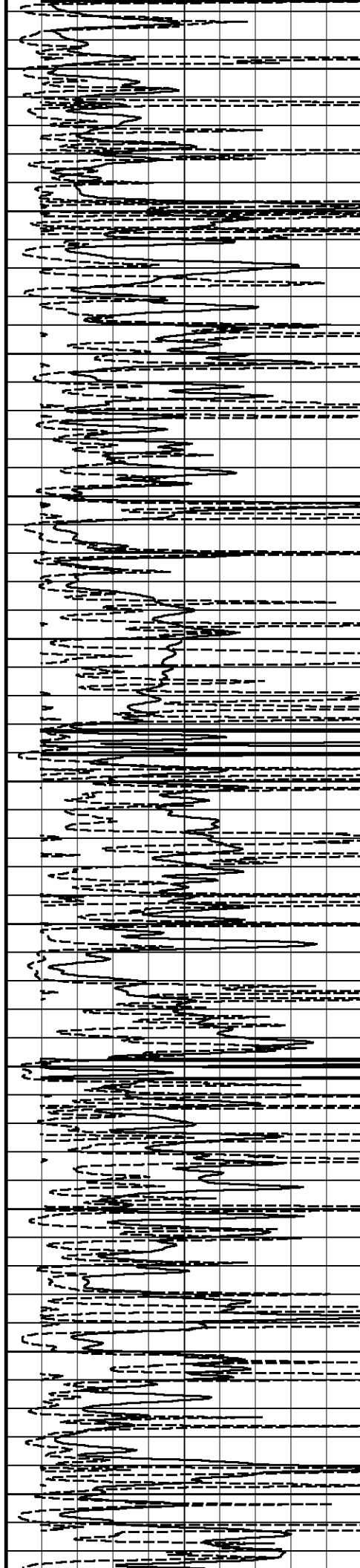
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161°

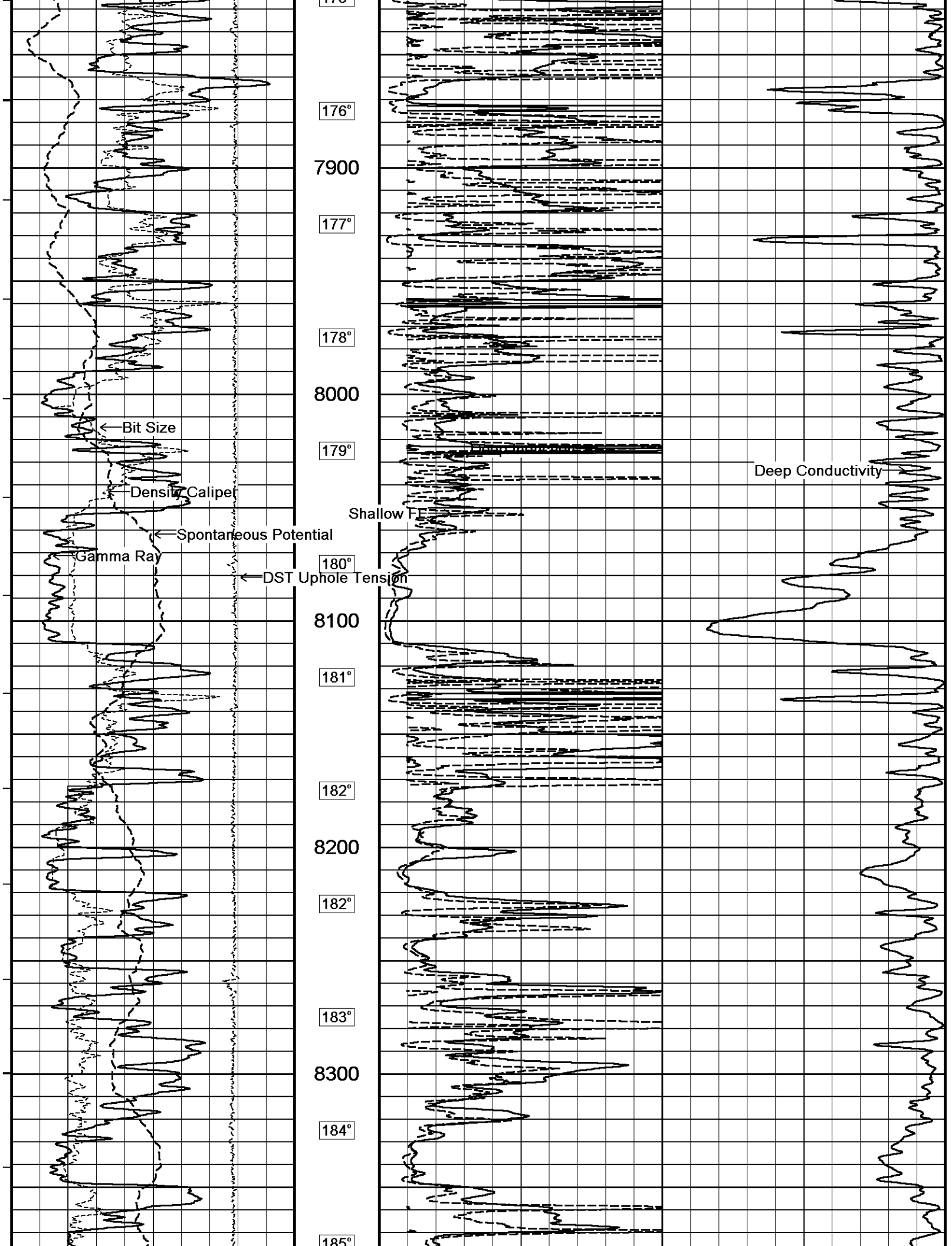


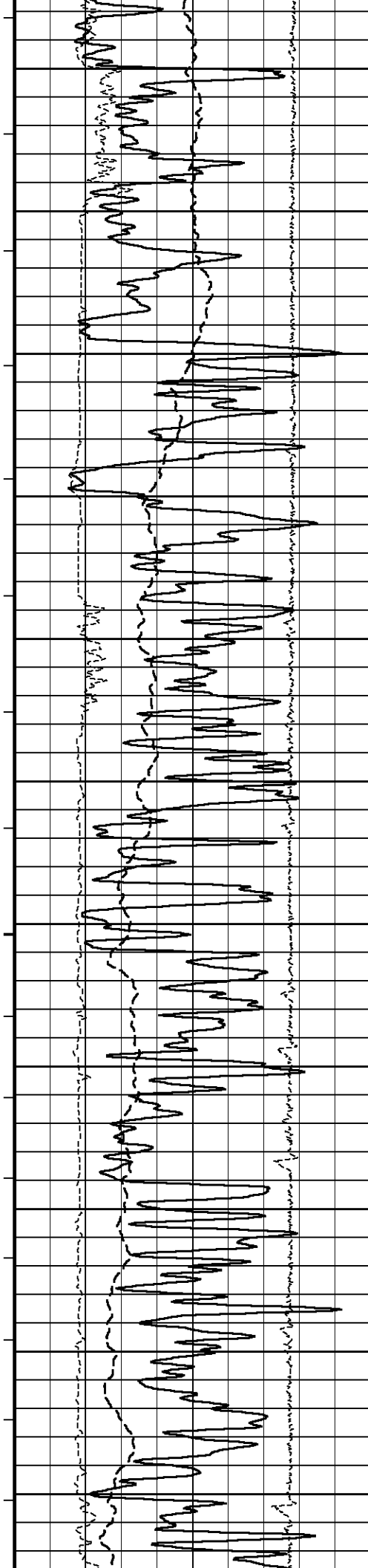




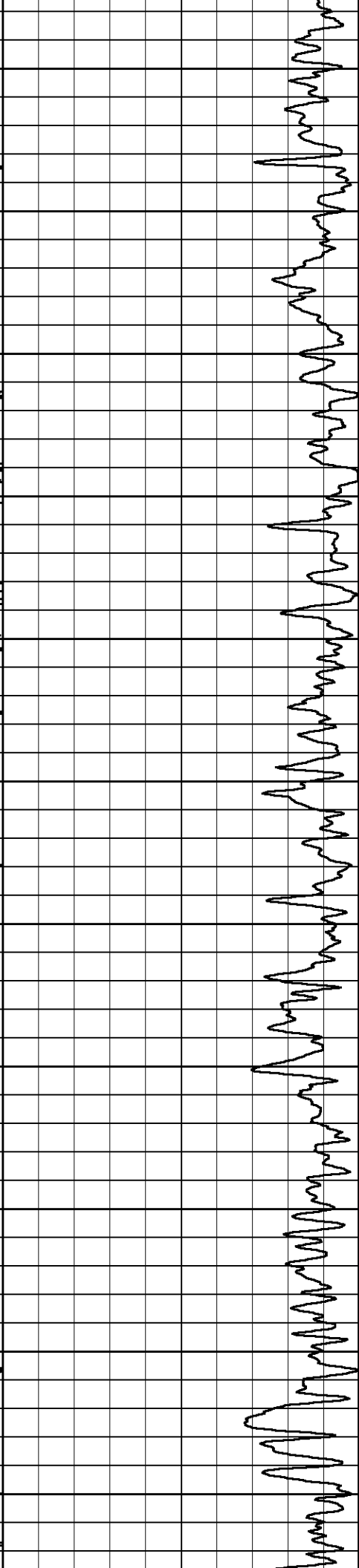
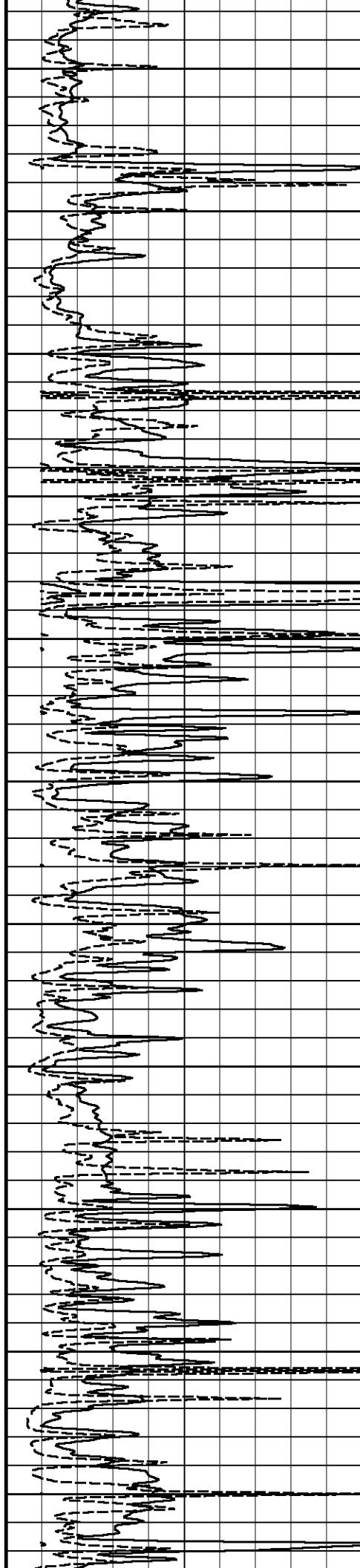
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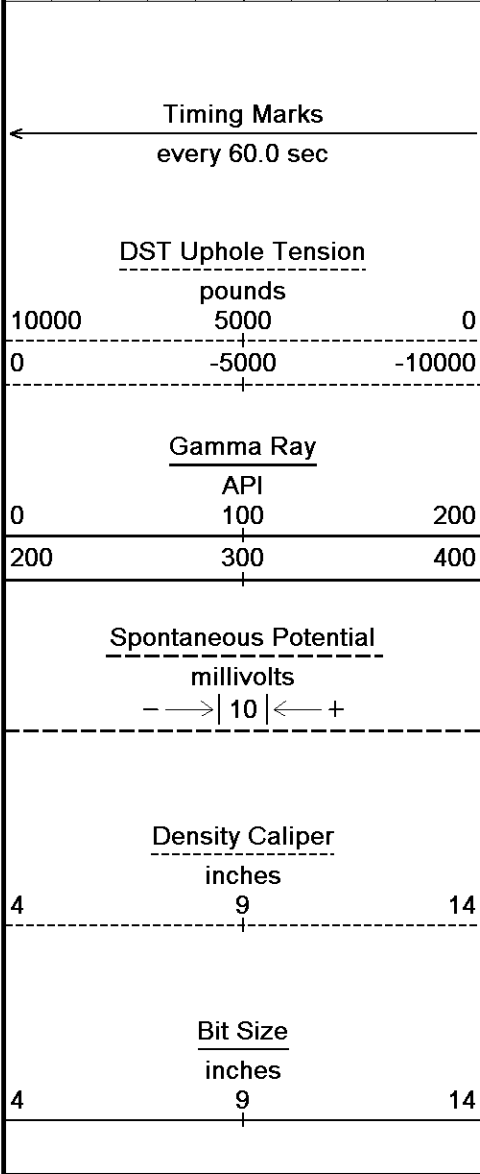
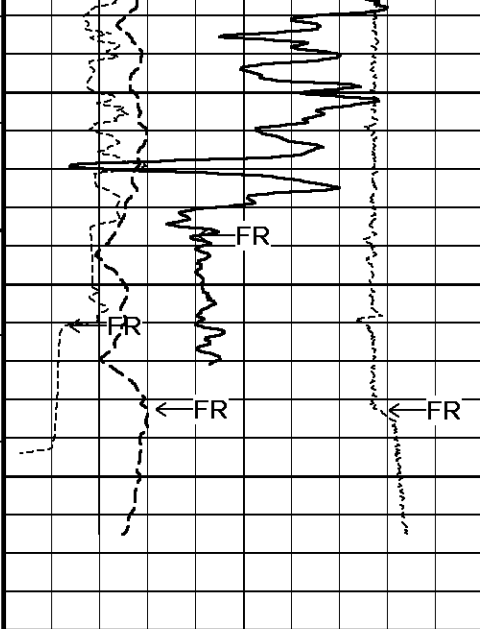






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8900
195°





195°

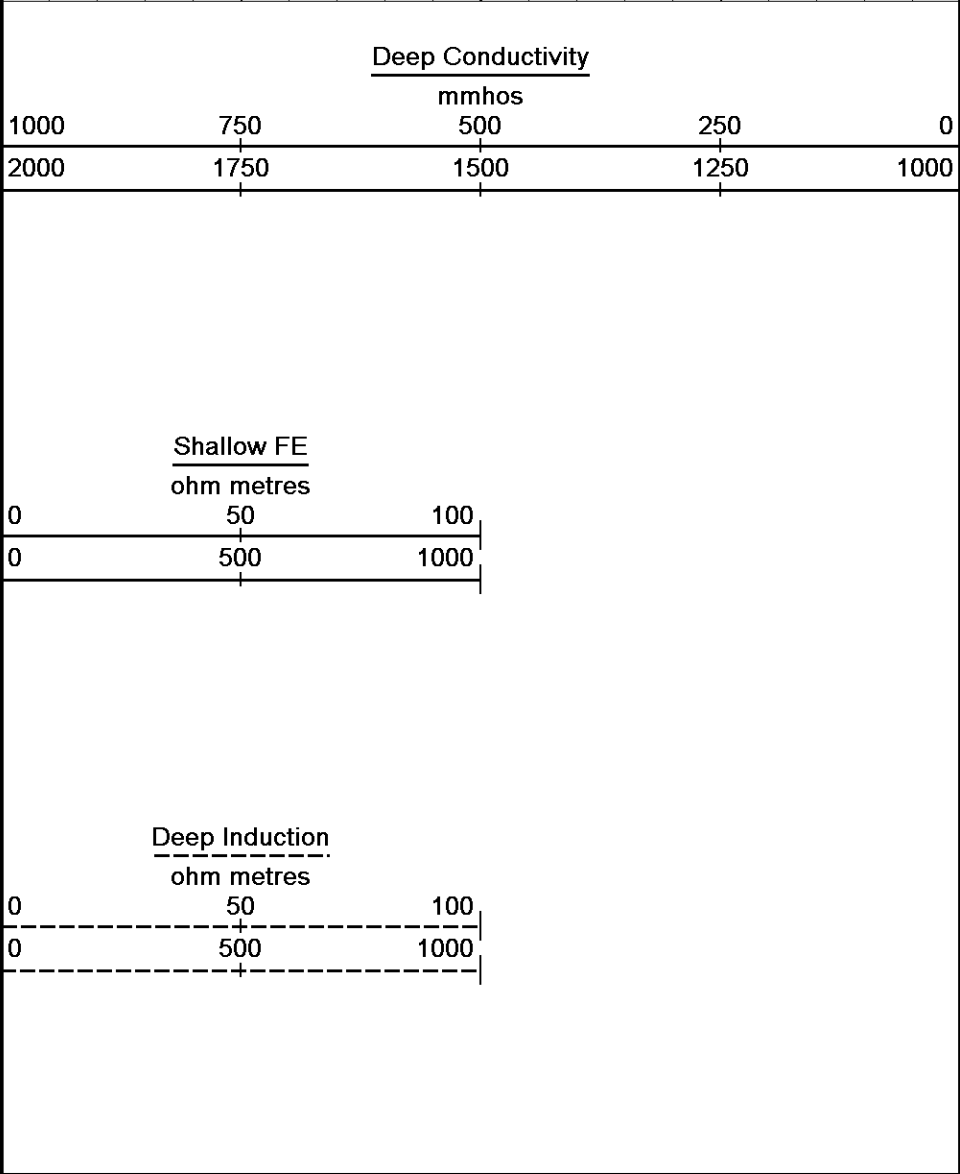
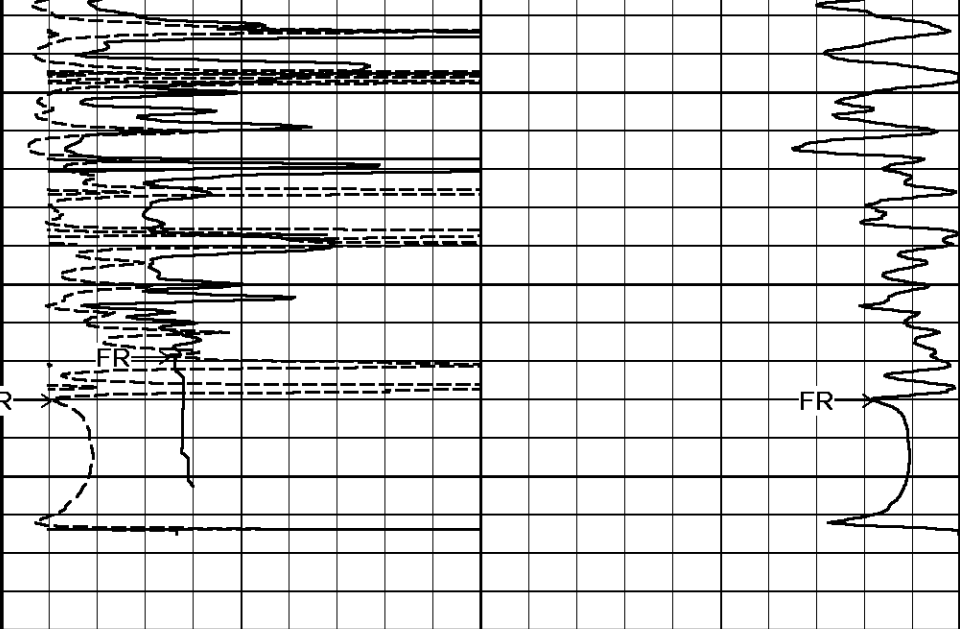
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9080

DSC
in
Feet

Borehole
Temp in
deg F

Replay
Scale
1:600

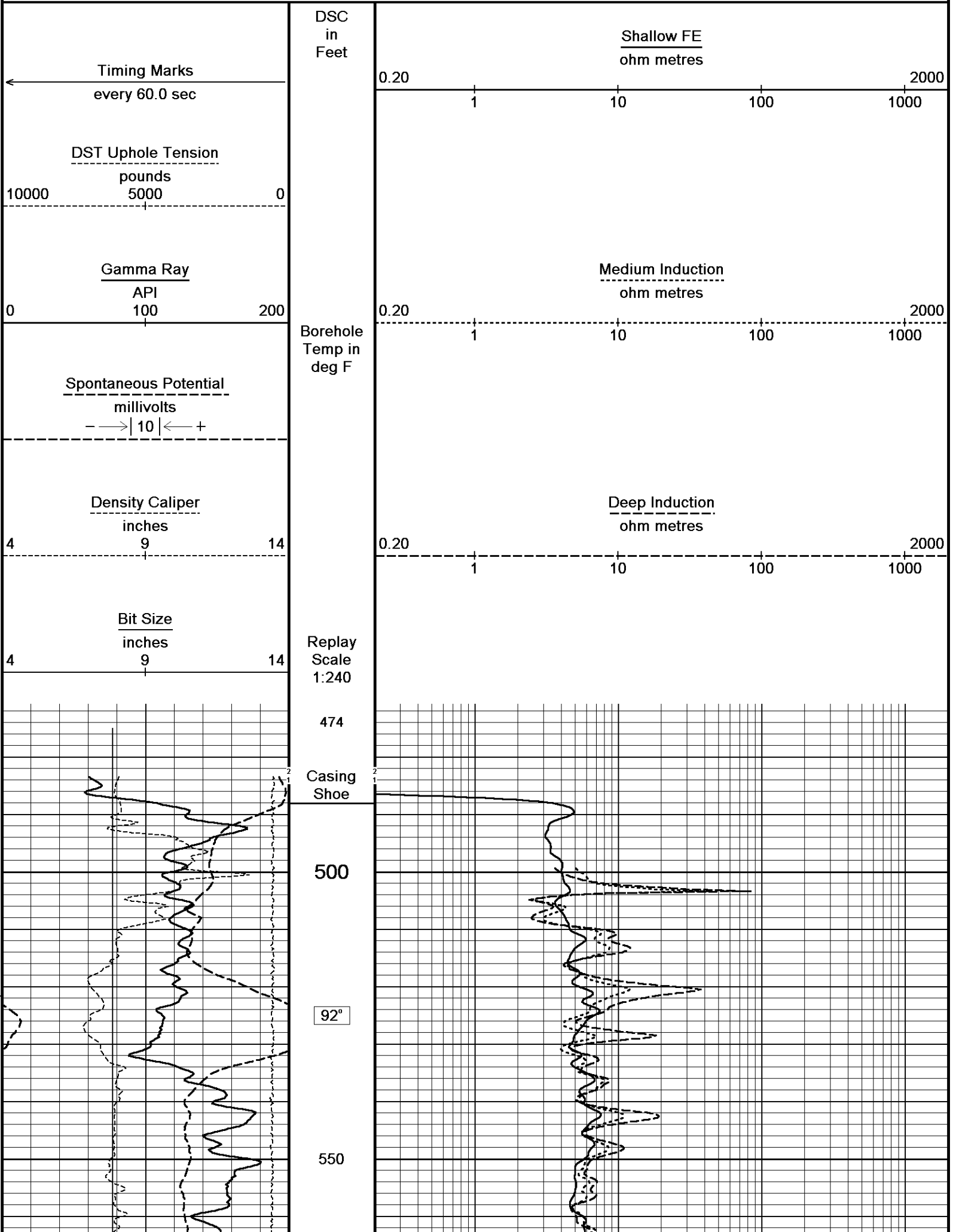


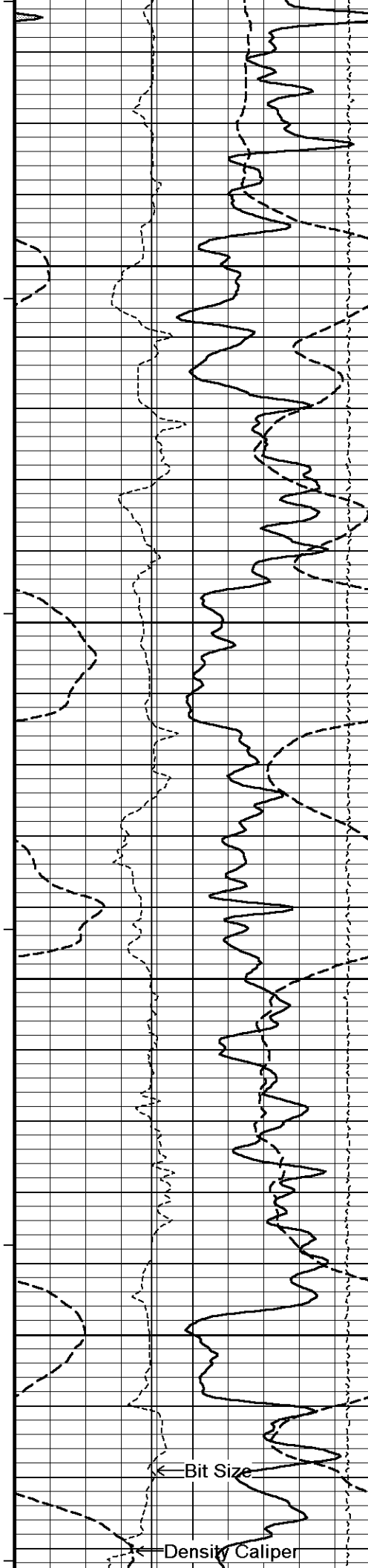
Depth Based Data - Maximum Sampling Increment 10.0cm
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System Versions: Logged with 8.00.0052 Processed with 8.00.0052 Plotted with 8.01.0091

↑ 2 INCH MAIN LOG ↑

↓ 5 INCH MAIN LOG ↓

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\DOCUME~1\brunshb\LOCALS~1\Temp\Weatherford Pr...Wexpro Carl Allen #28_002.dta
System Versions: Logged with 8.00.0052 Processed with 8.00.0052 Plotted with 8.01.0091





92°

600

93°

650

93°

700

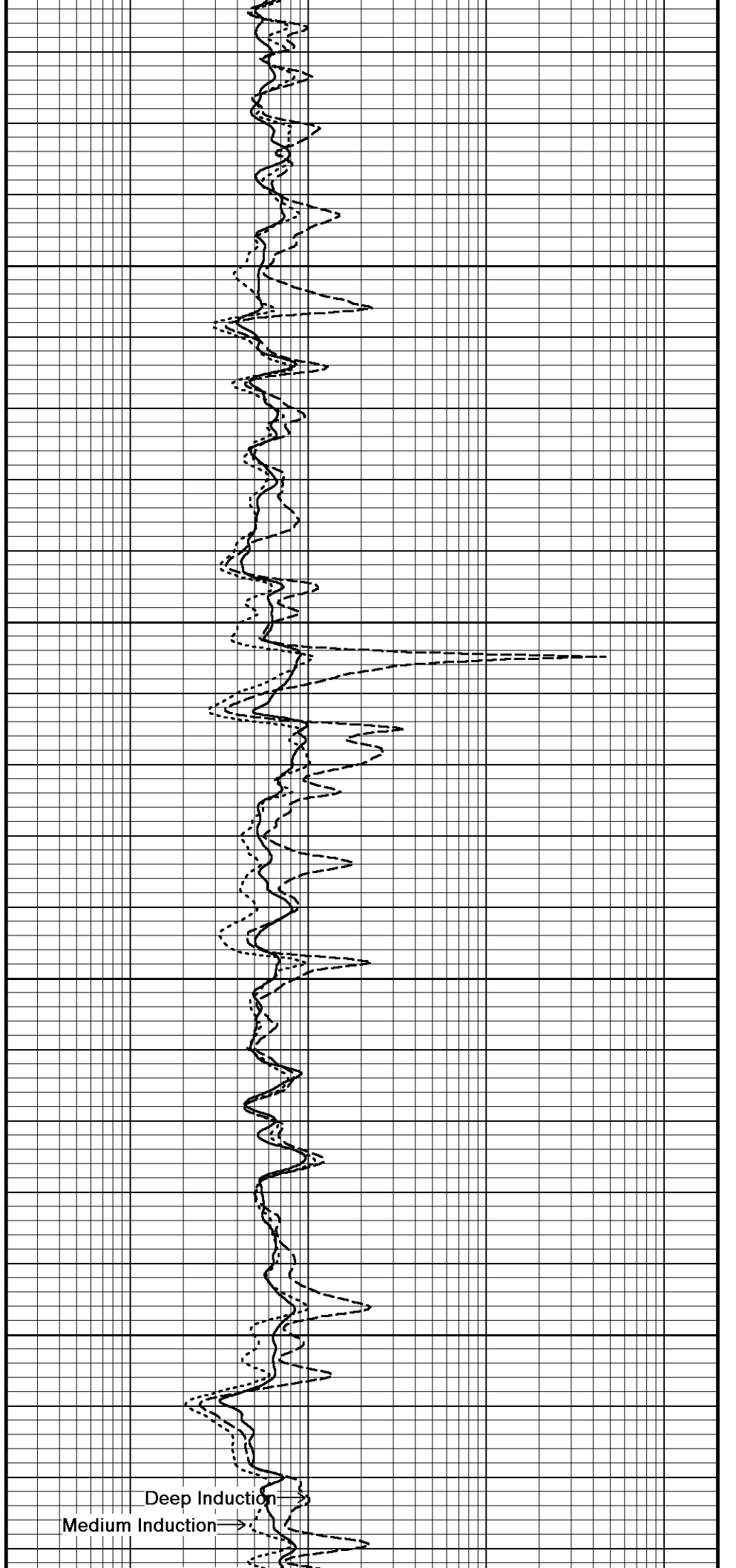
93°

750

94°

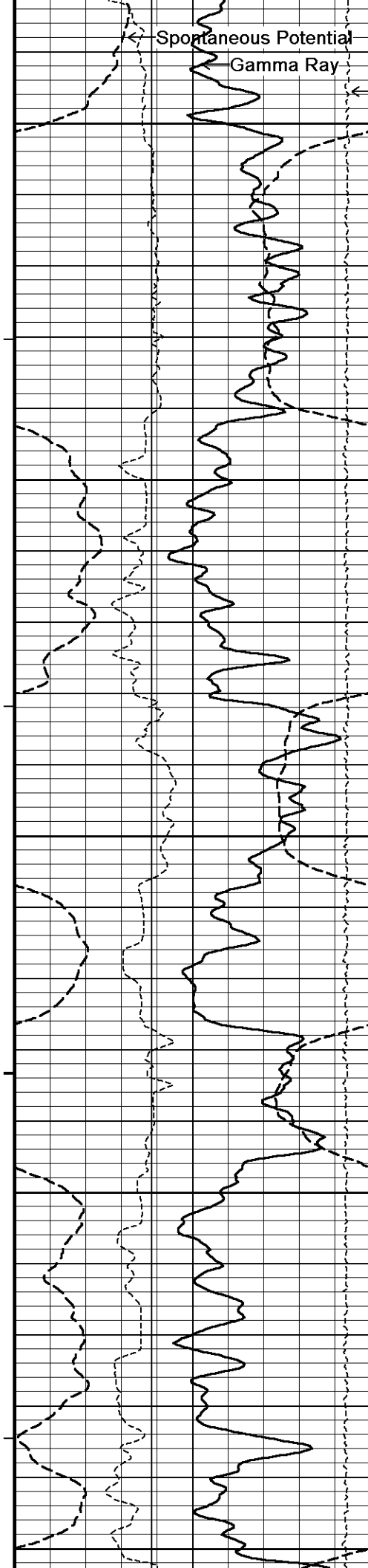
← Bit Size

← Density Caliper



Deep Induction

Medium Induction →



800

94°

850

95°

900

95°

950

96°

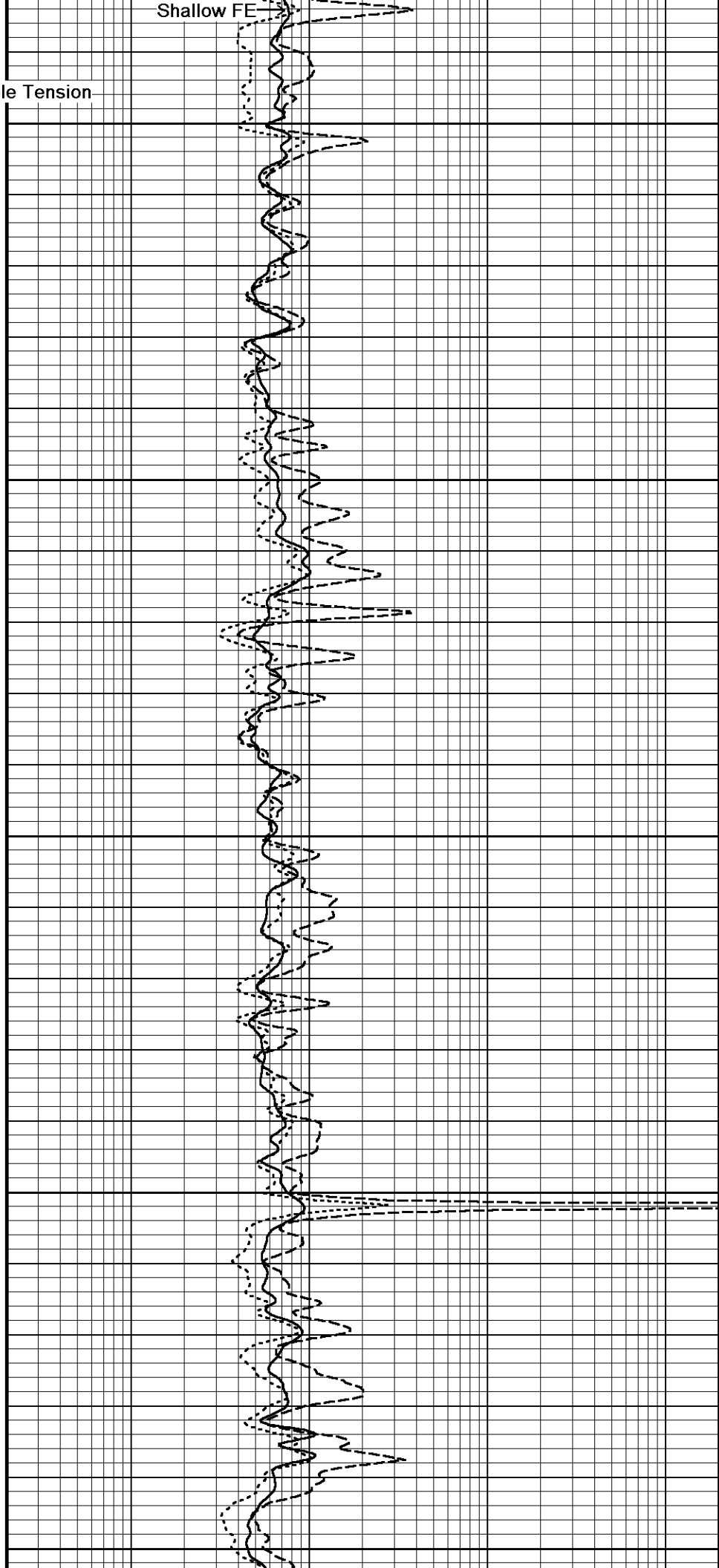
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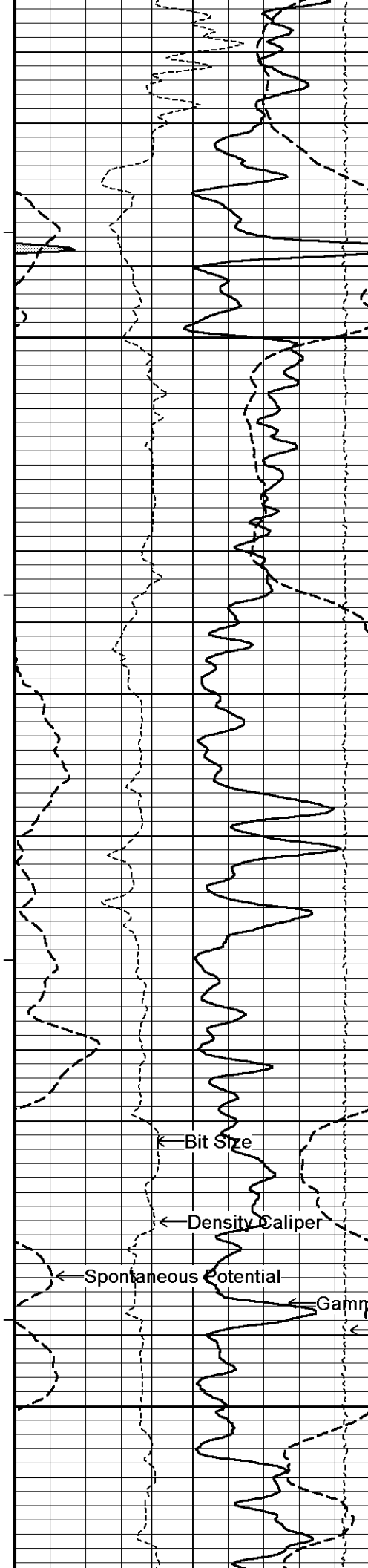
DST Uphole Tension

Spontaneous Potential

Gamma Ray

Shallow FE





97°

1050

97°

1100

98°

1150

Bit Size

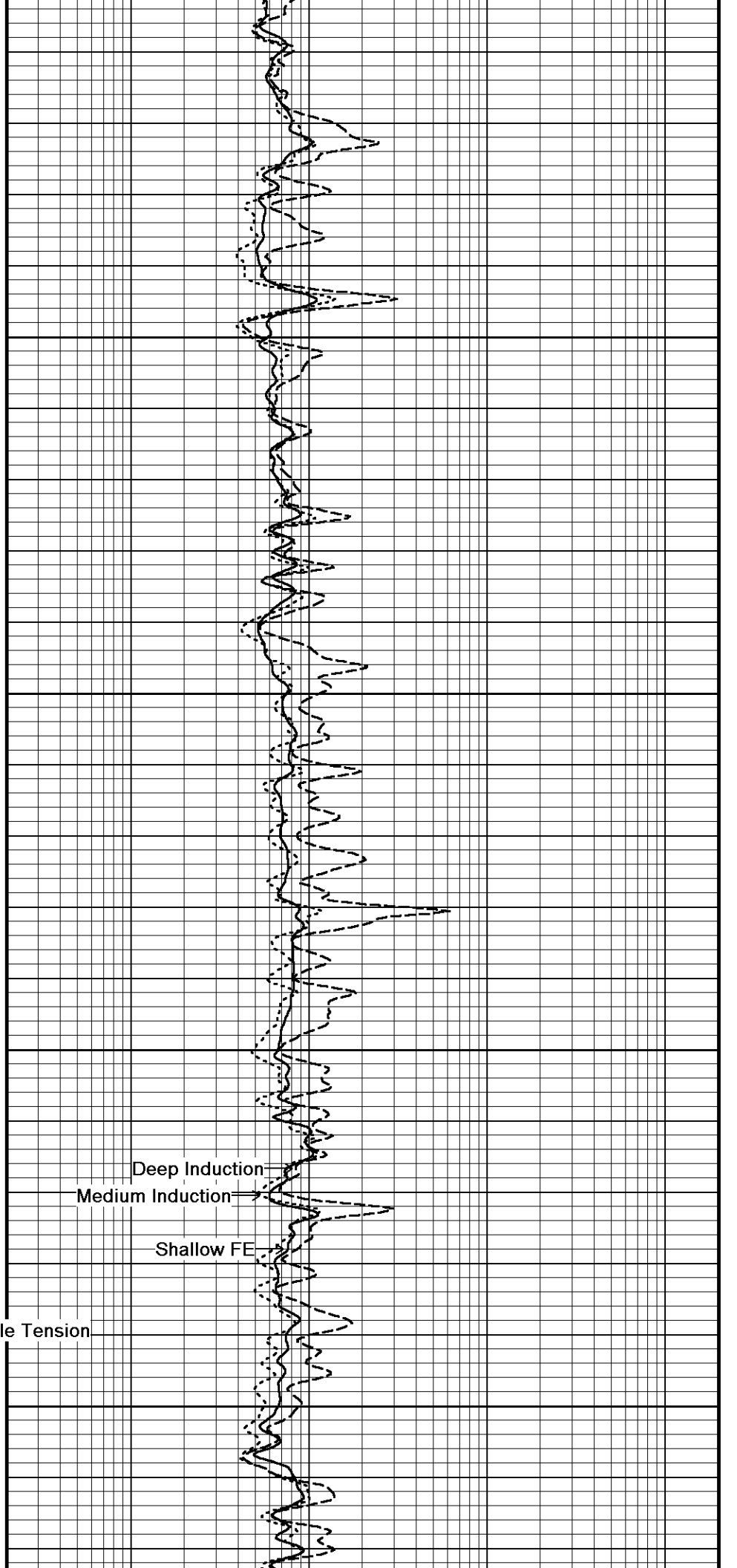
Density Caliper

Spontaneous Potential

Gamma Ray

DST Uphole Tension

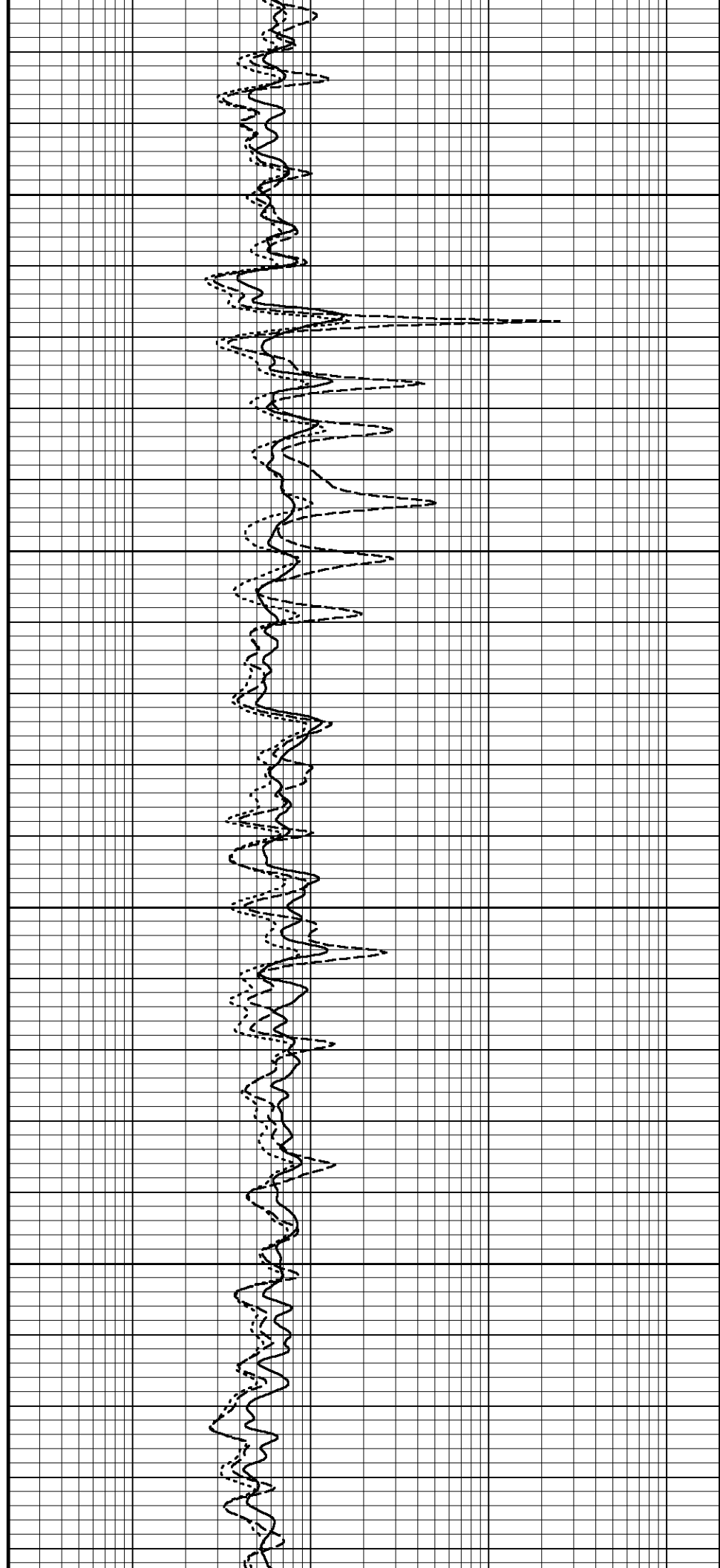
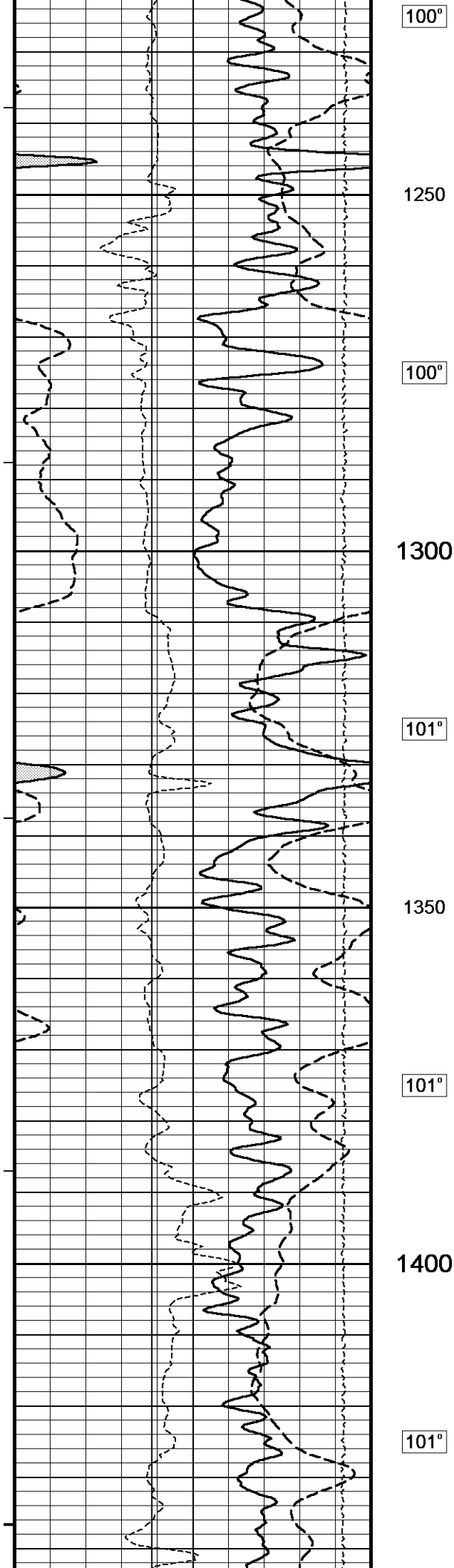
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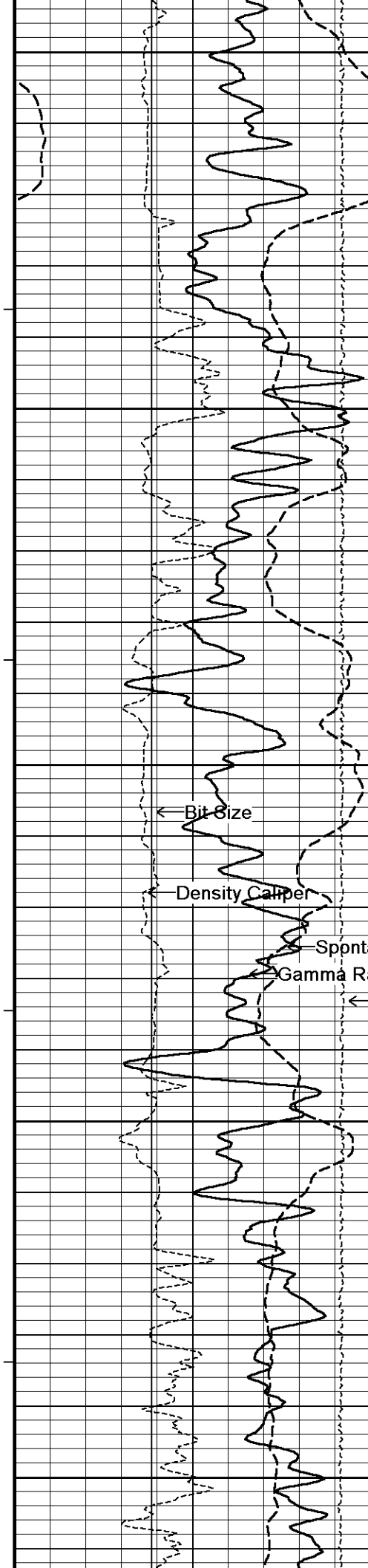


Deep Induction

Medium Induction

Shallow FE





1450

102°

1500

102°

1550

Bit Size

Density Caliper

Spontaneous Potential

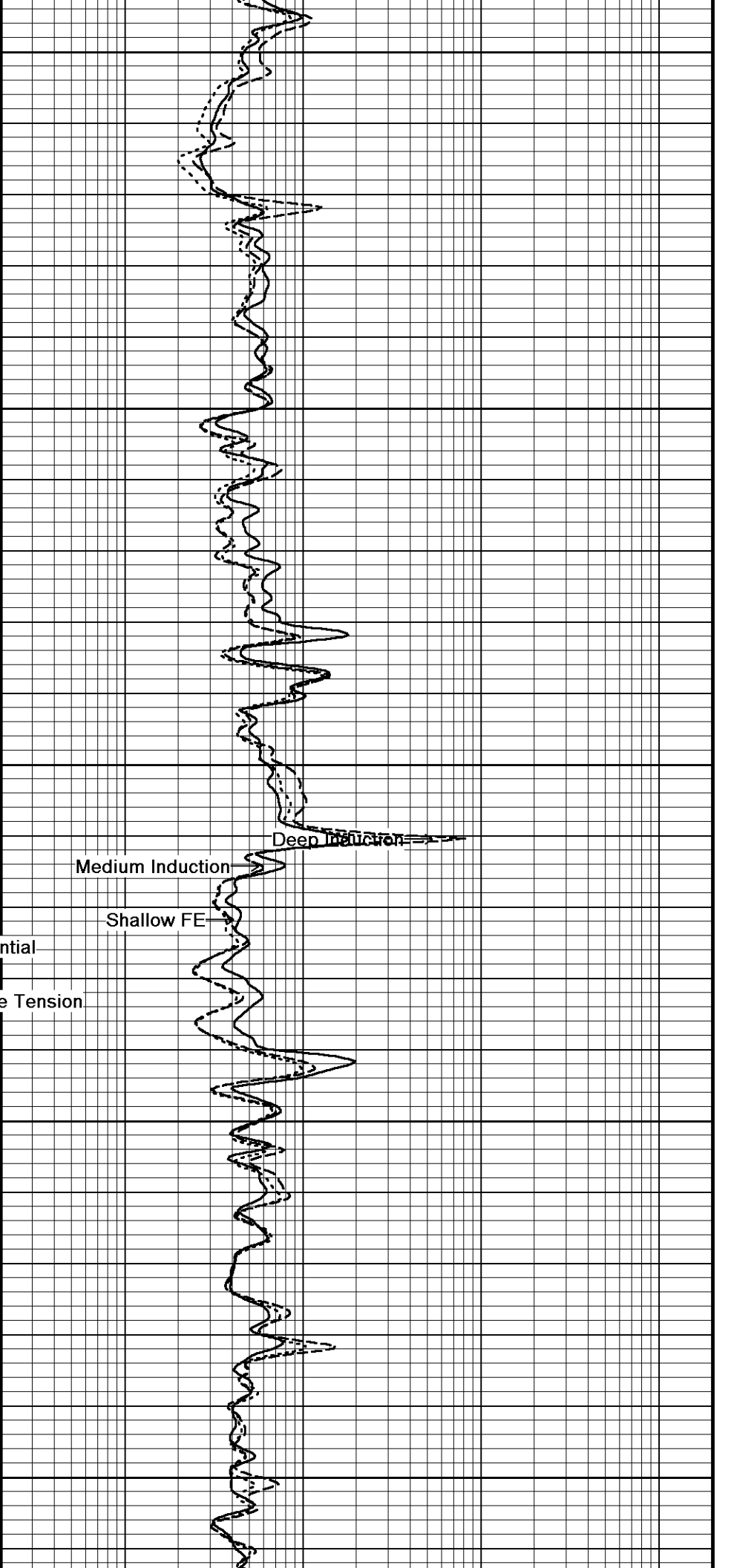
Gamma Ray

DST Uphole Tension

1600

104°

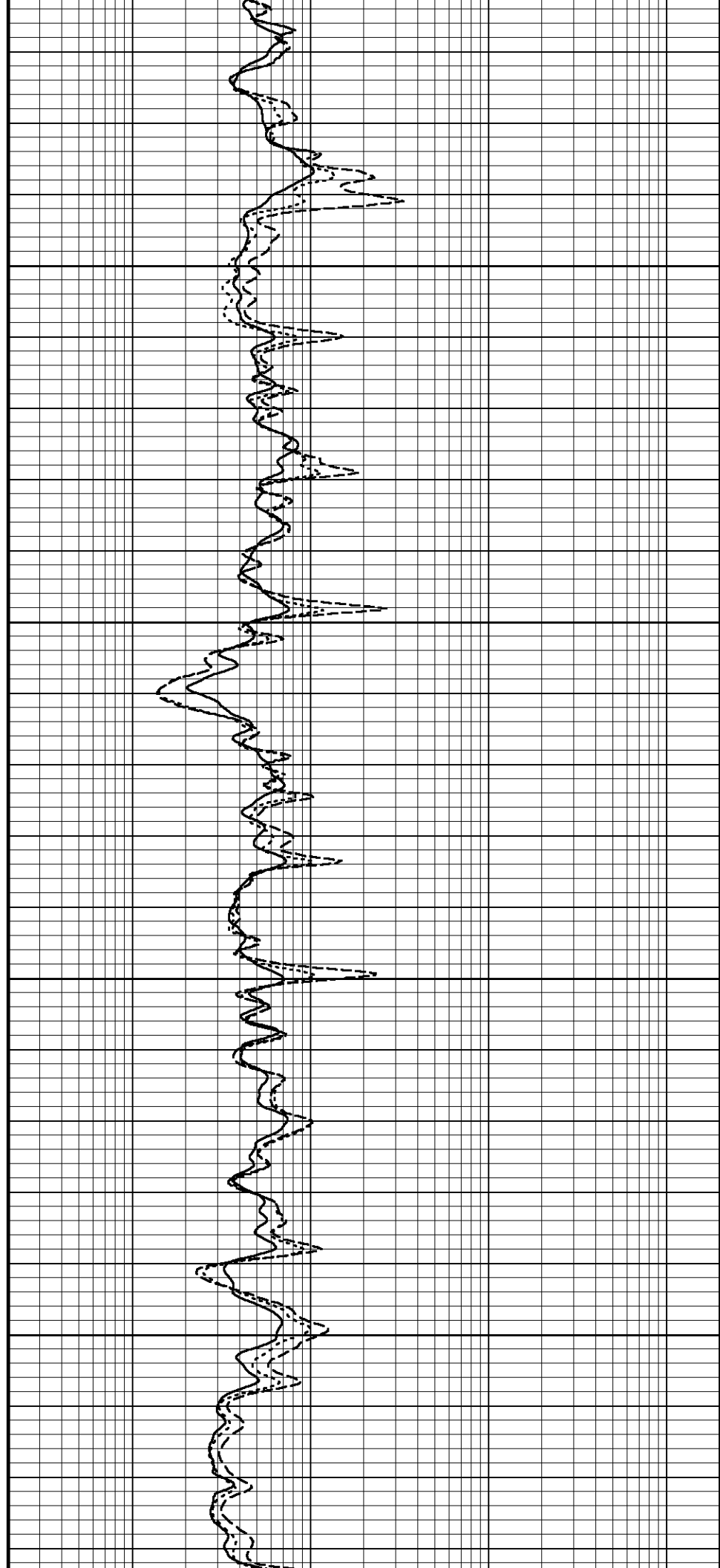
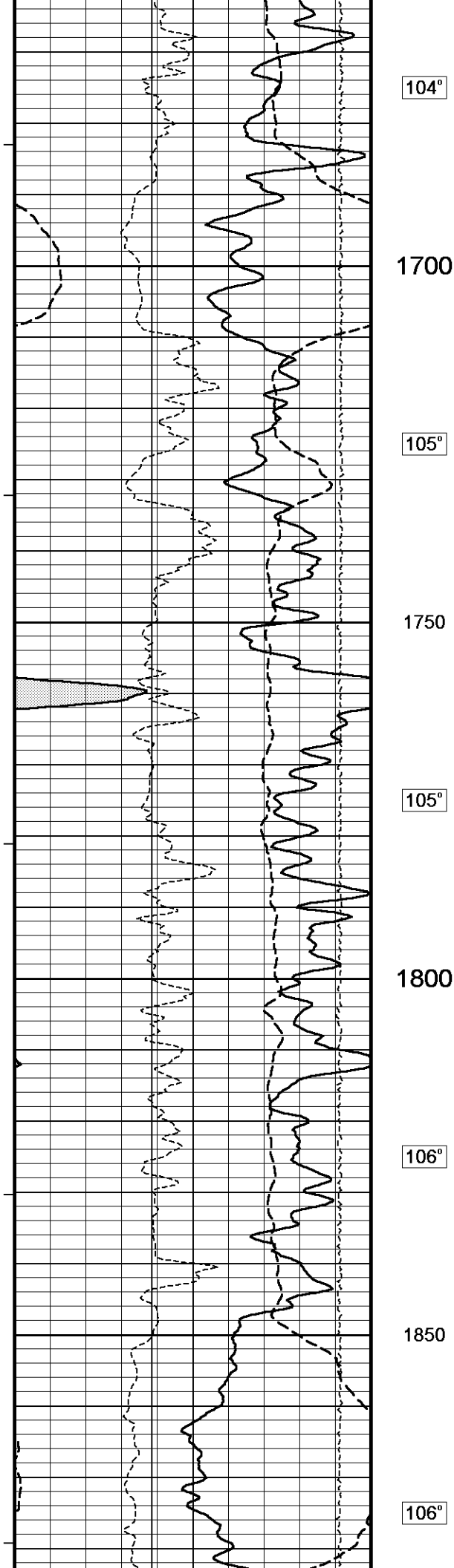
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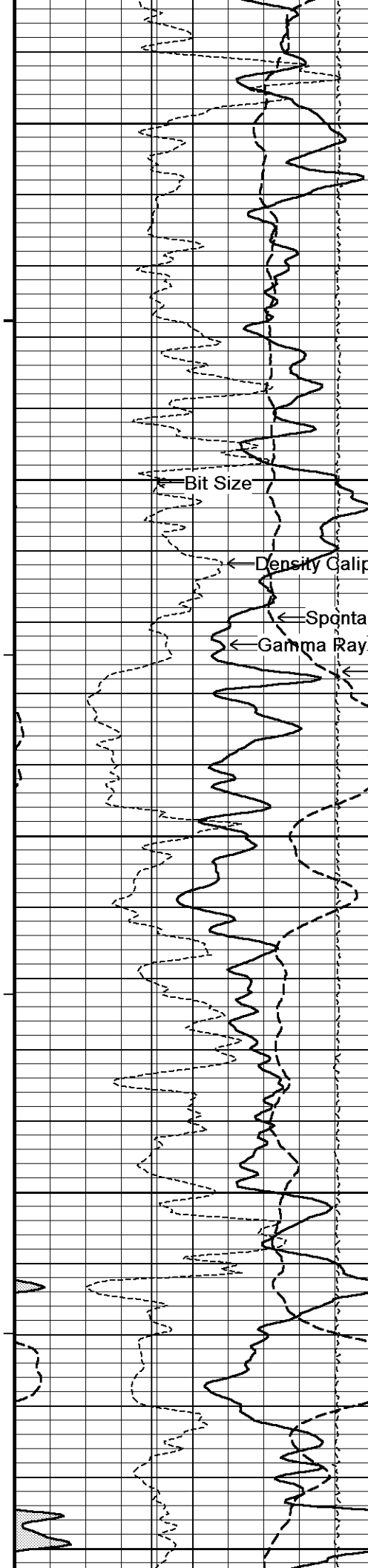


Medium Induction

Shallow FE

Deep Induction





1900

107°

1950

Bit Size

Density Galiper

Spontaneous Potential

Gamma Ray

DST Uphole Tension

108°

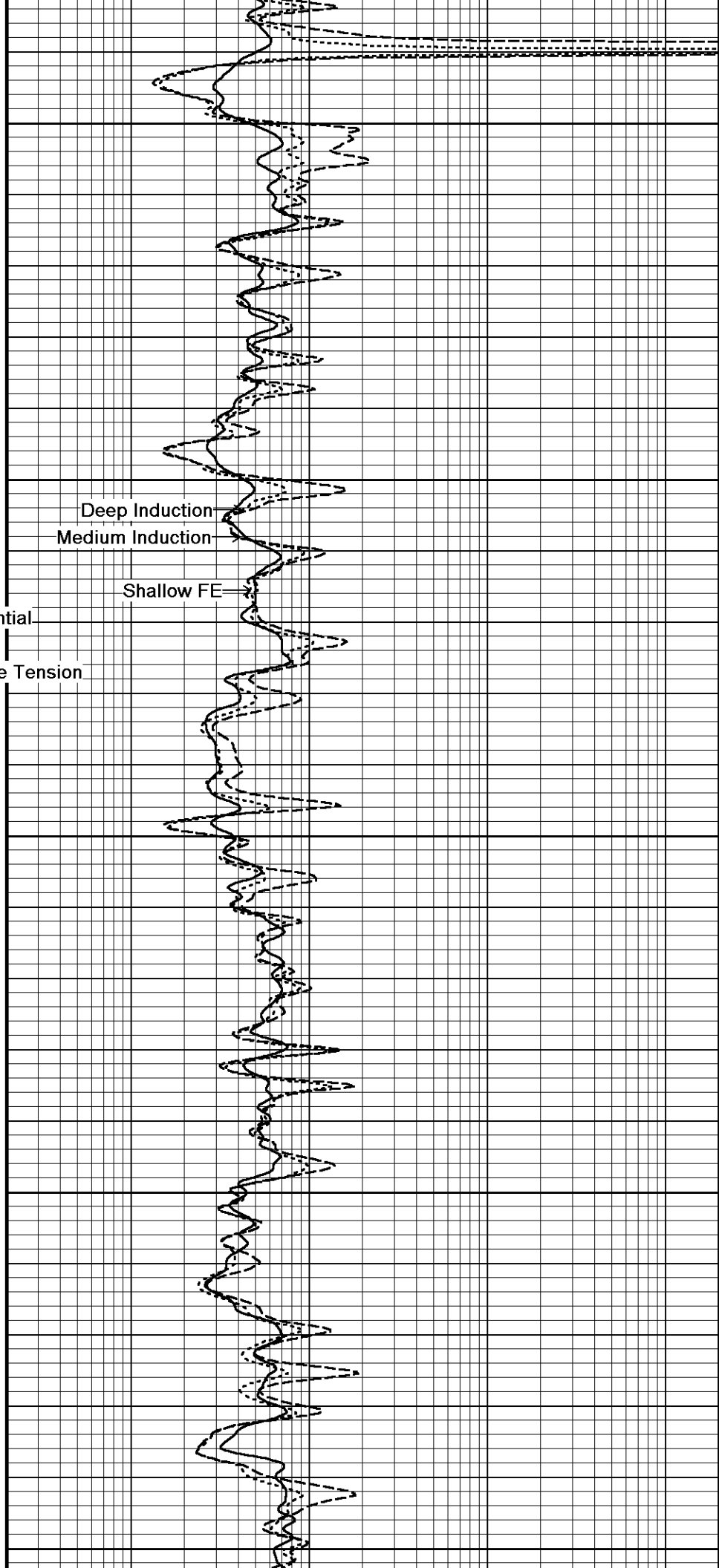
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108°

2050

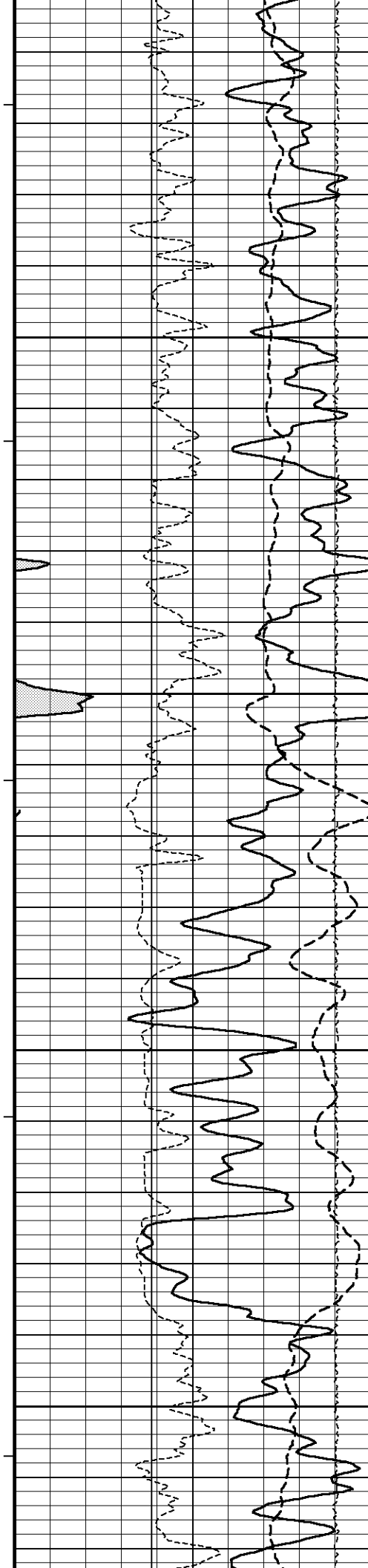
108°

2100



Deep Induction
Medium Induction

Shallow FE



109°

2150

109°

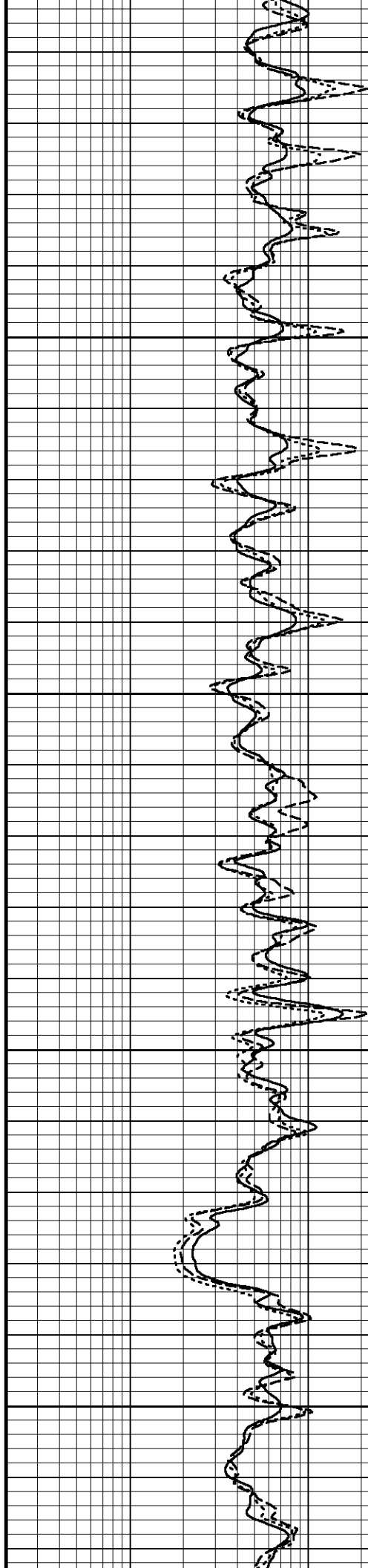
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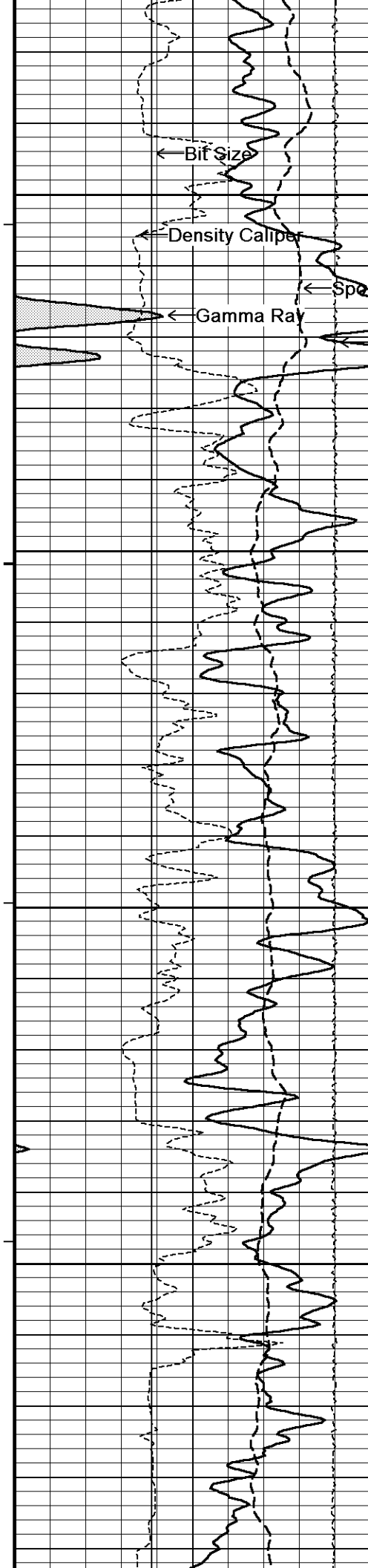
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2250

110°

2300





110°

2350

111°

2400

111°

2450

112°

2500

112°

Deep Induction

Medium Induction

Shallow FE

Spontaneous Potential

DST Uphole Tension

← DST Uphole Tension

114°

2800

114°

2850

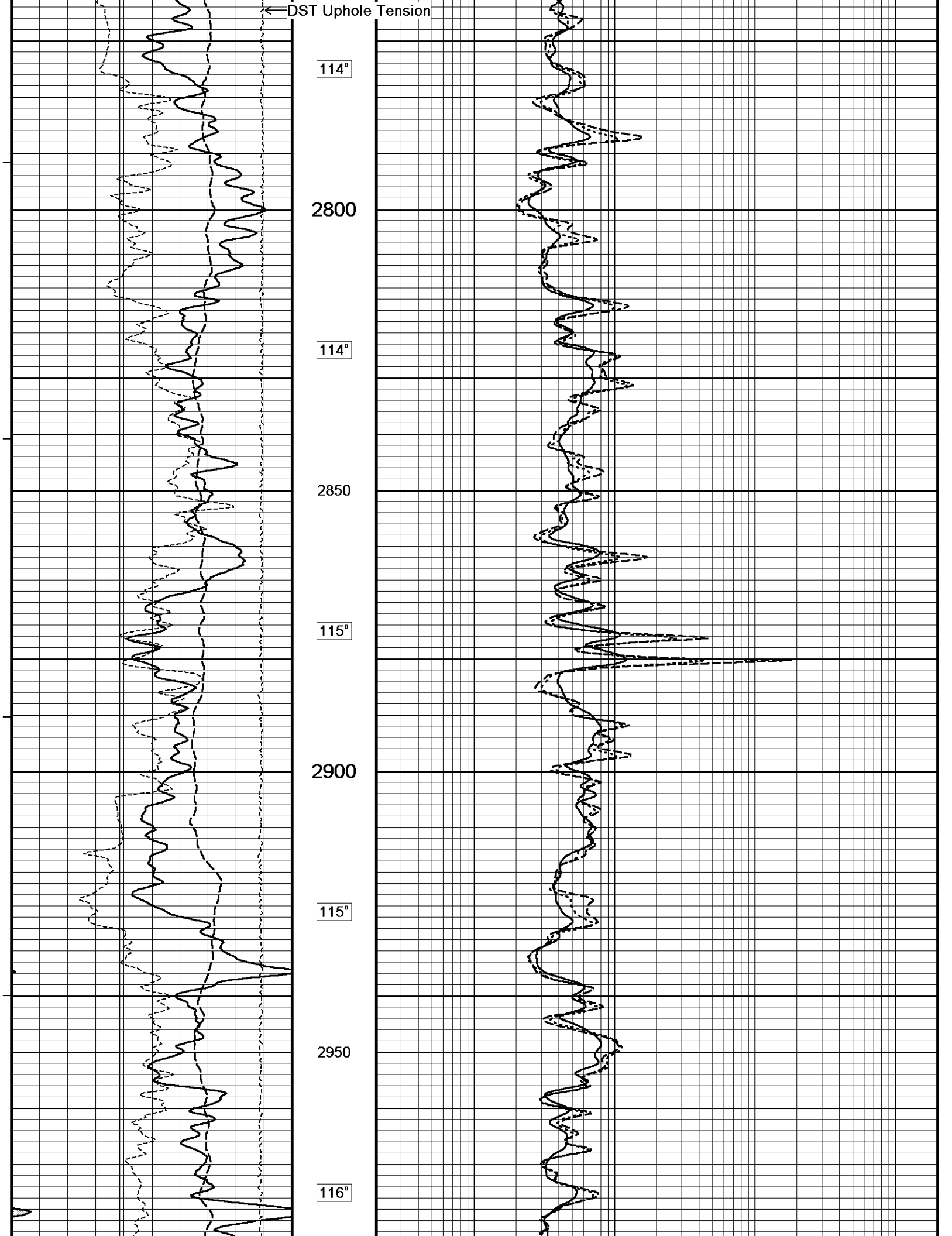
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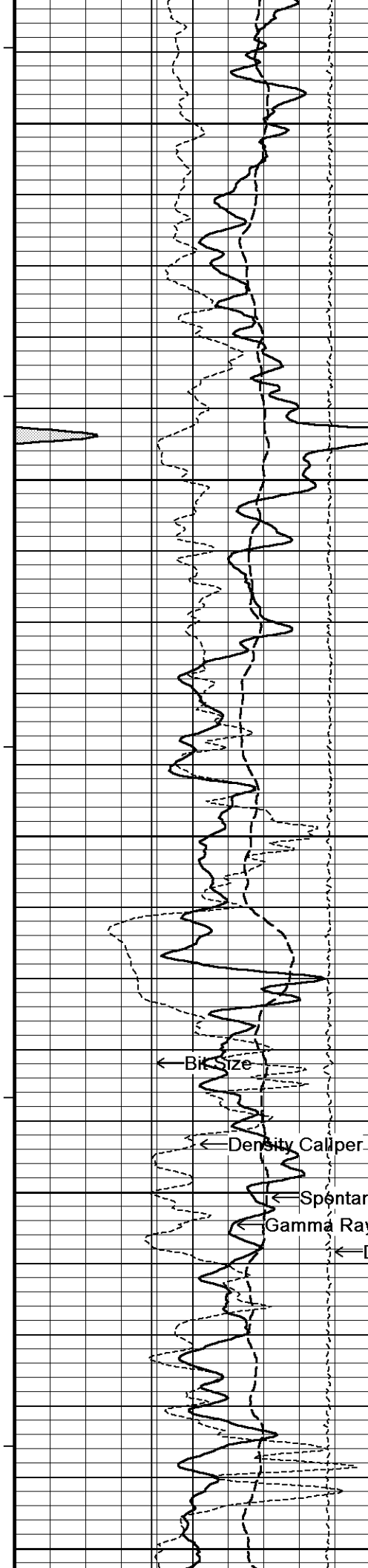
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2950

116°





3000

116°

3050

117°

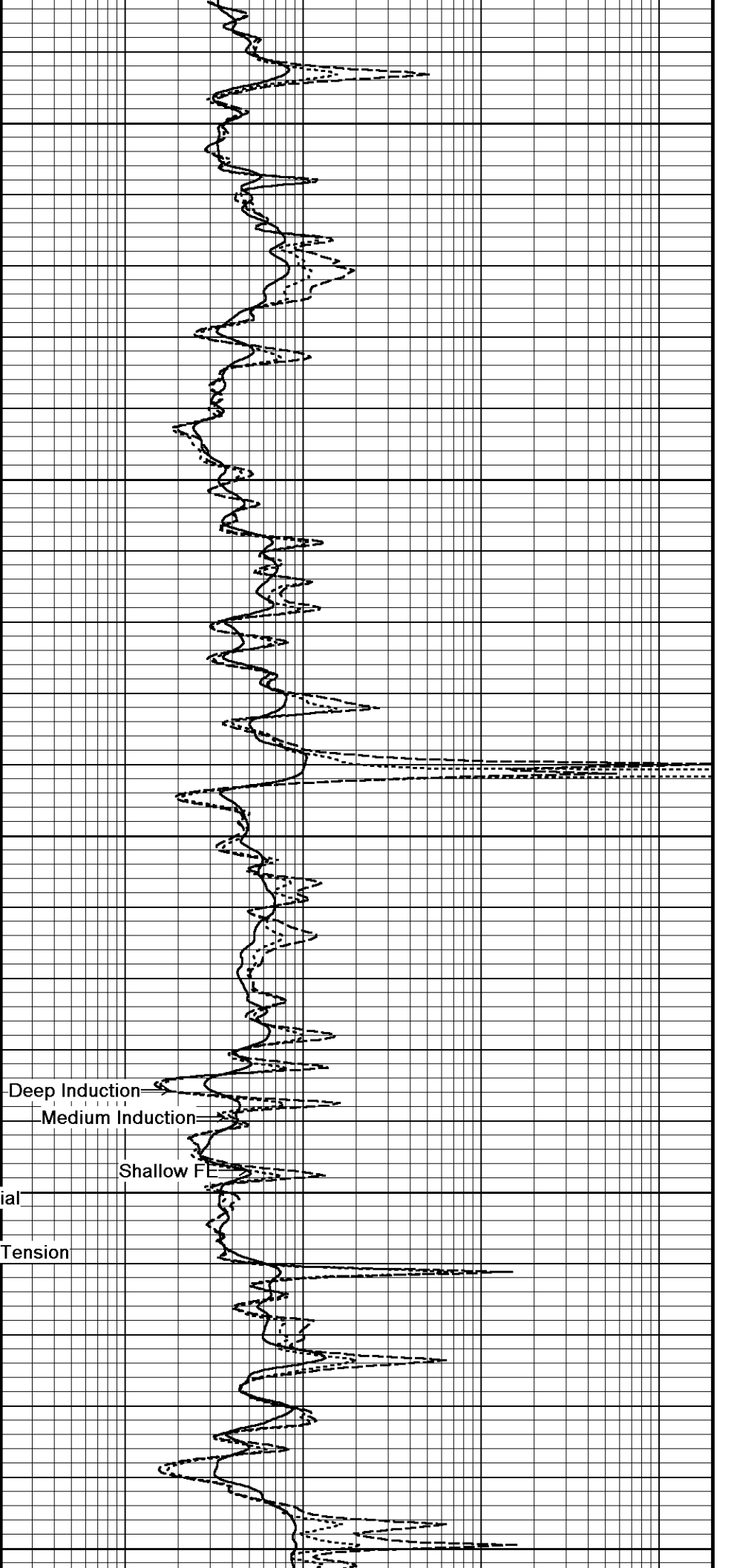
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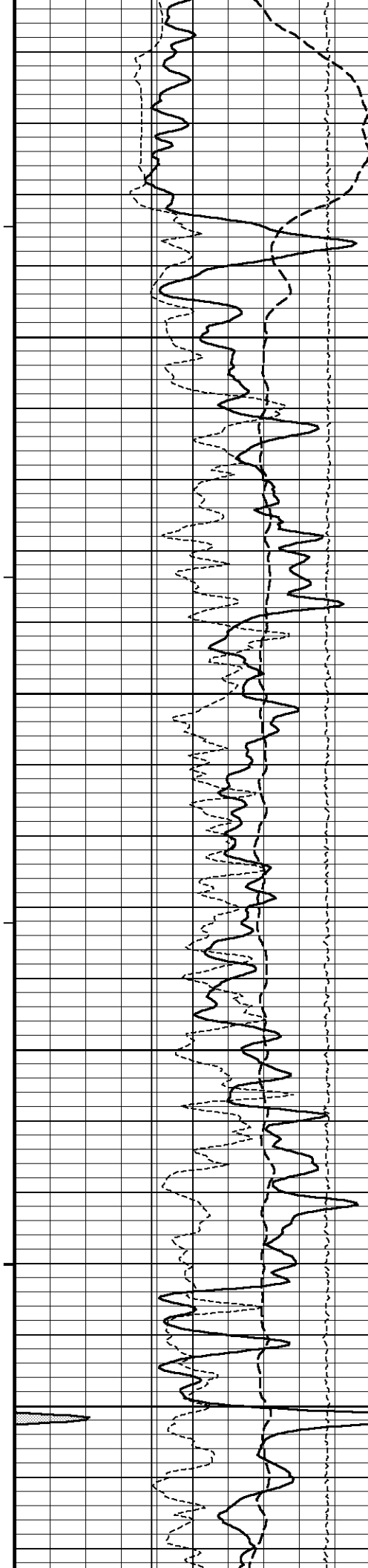
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119°

3200





119°

3250

119°

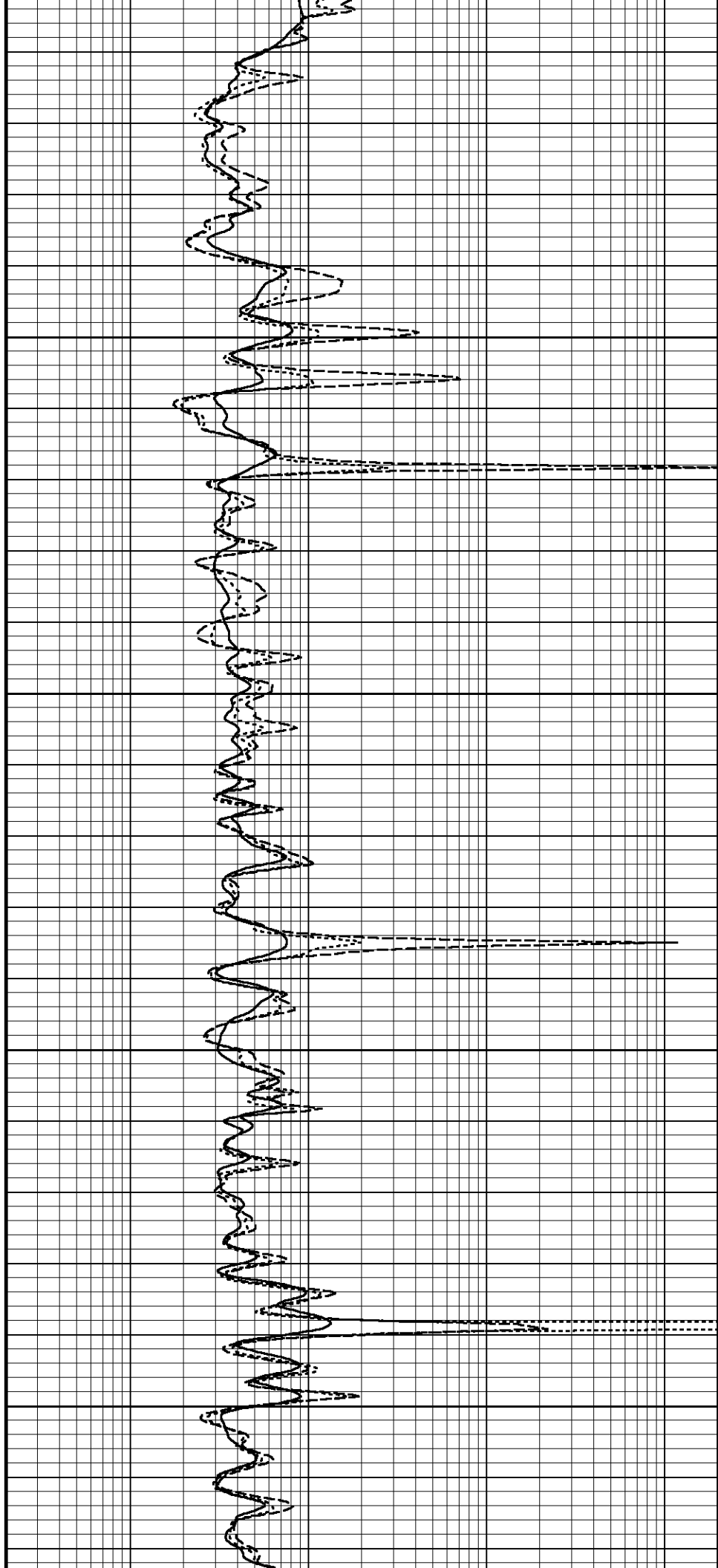
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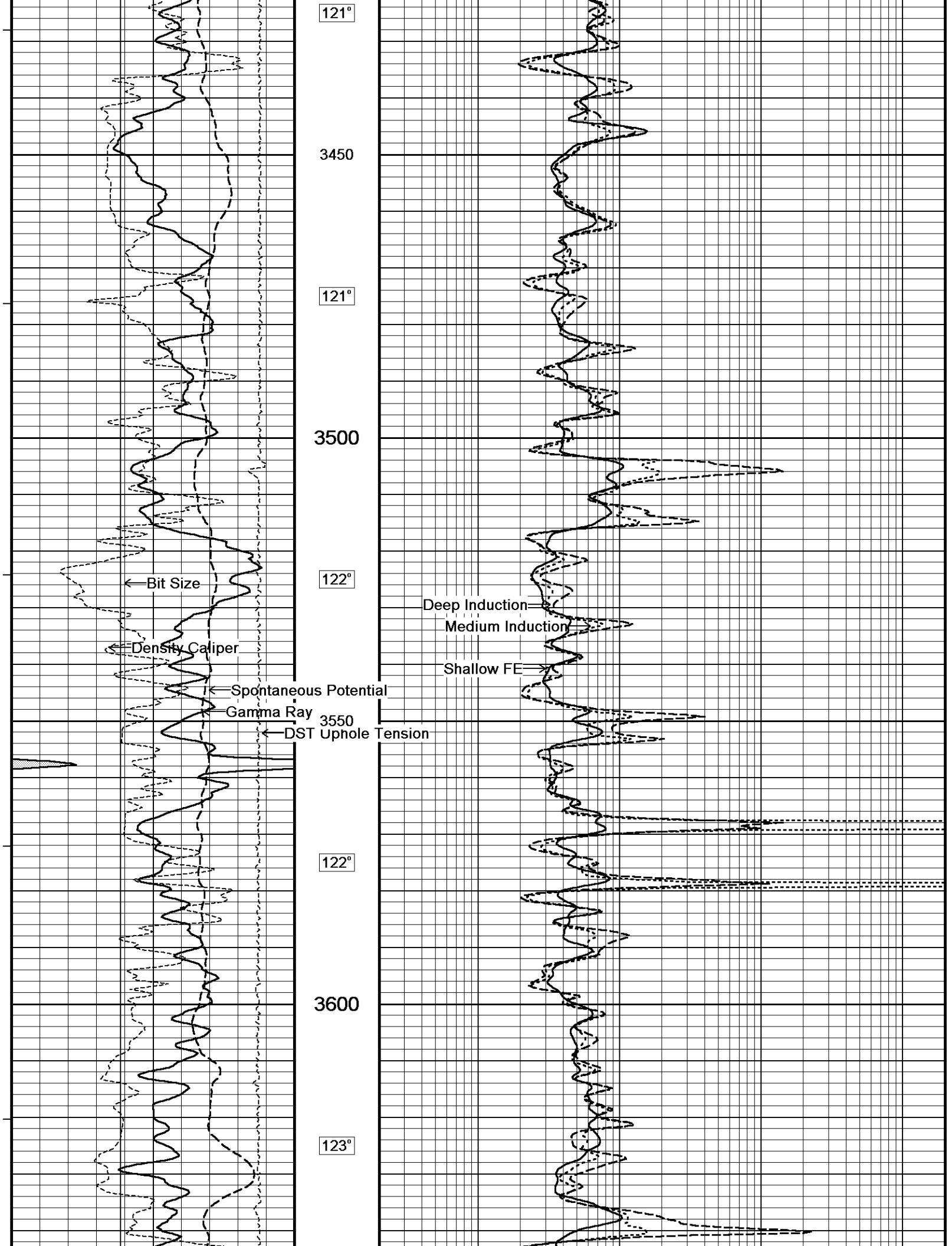
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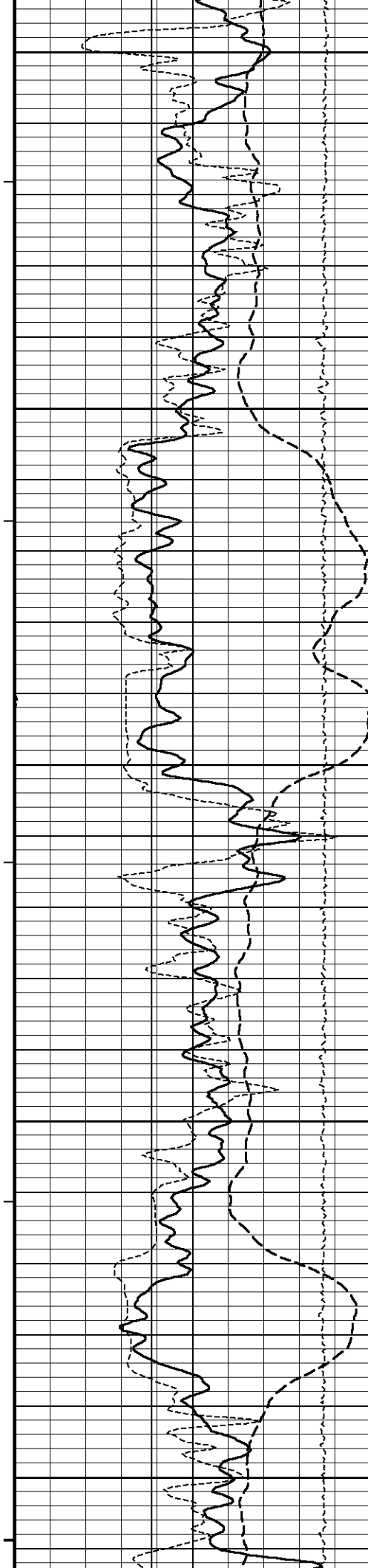
3350

120°

3400







3650

123°

3700

123°

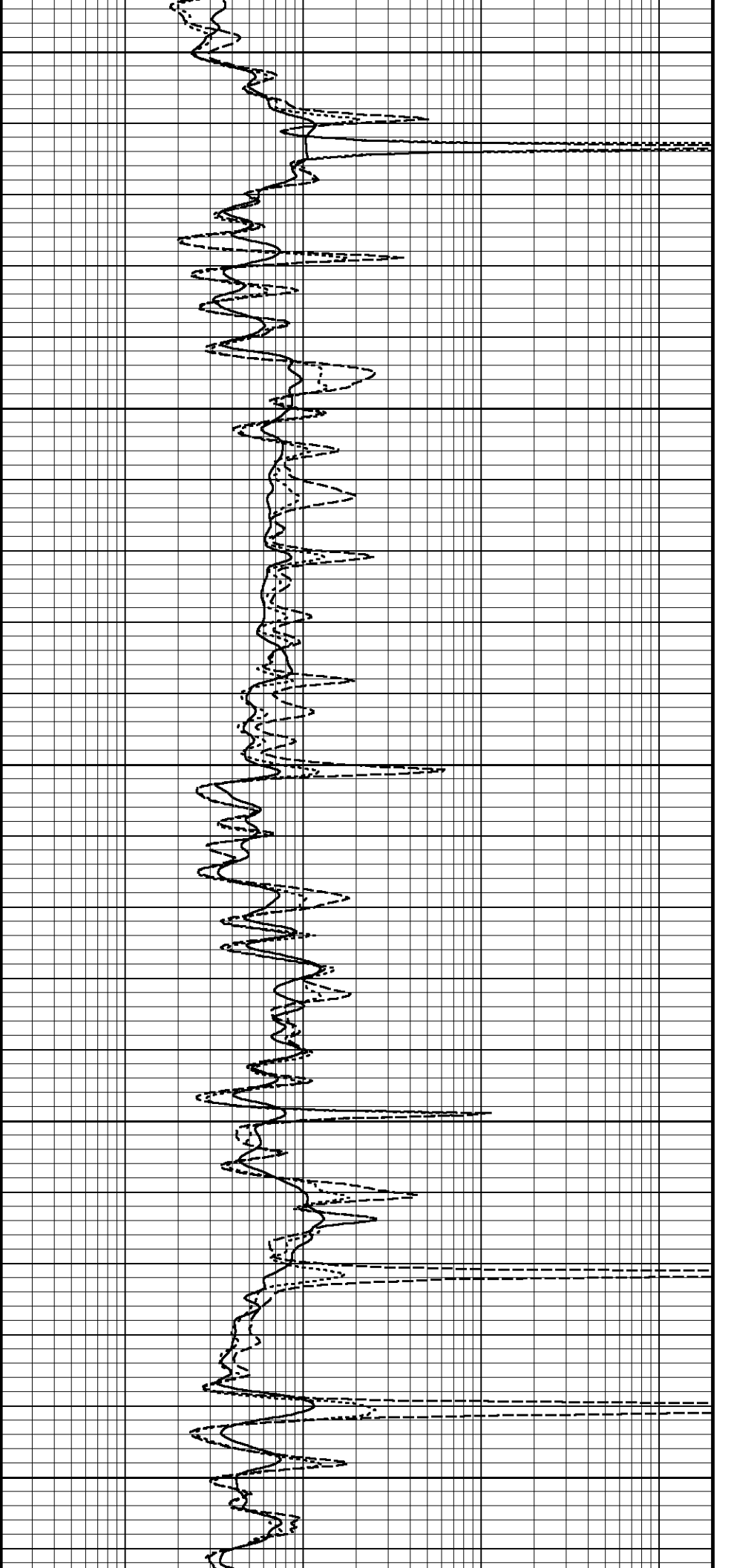
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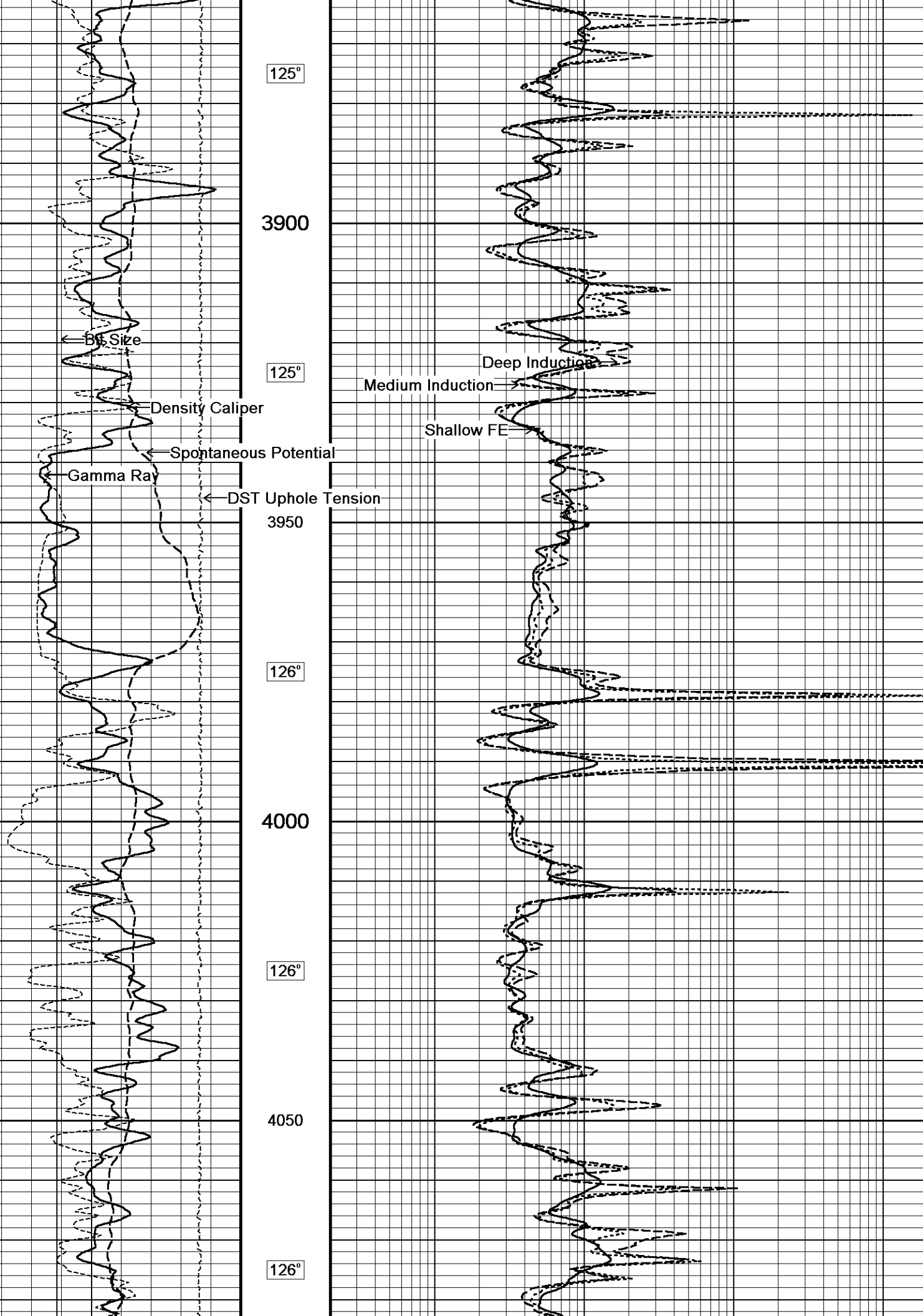
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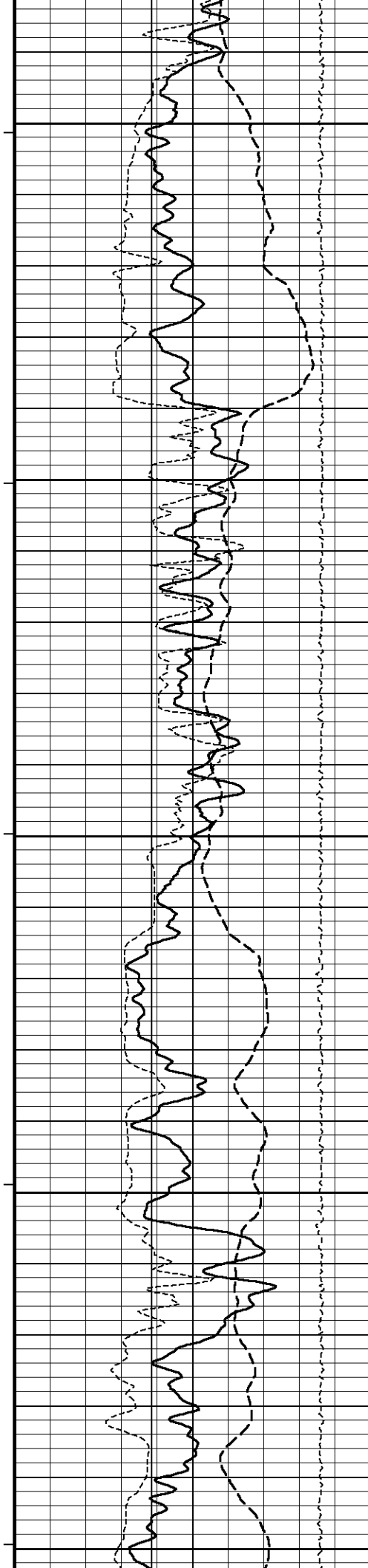
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124°

3850







4100

127°

4150

127°

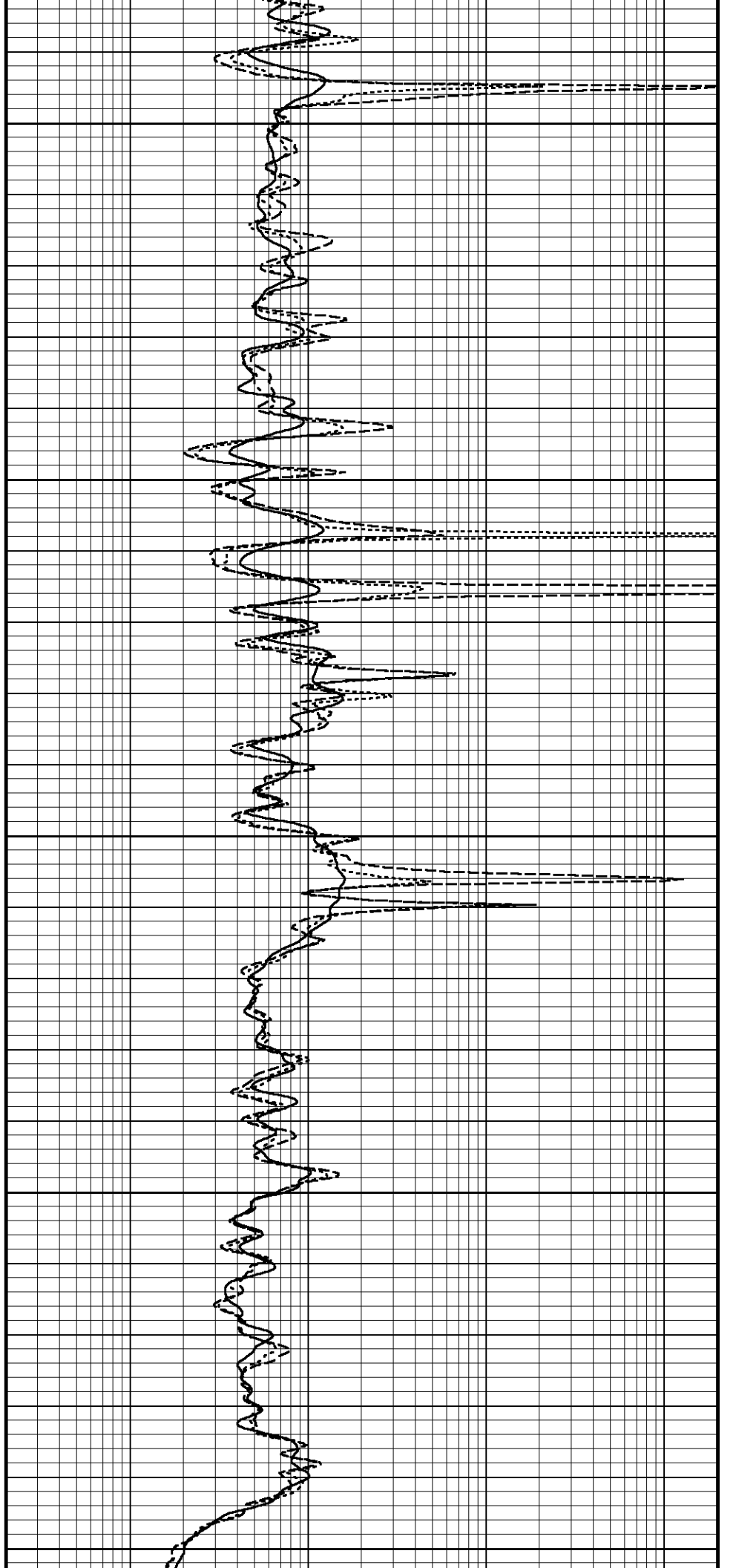
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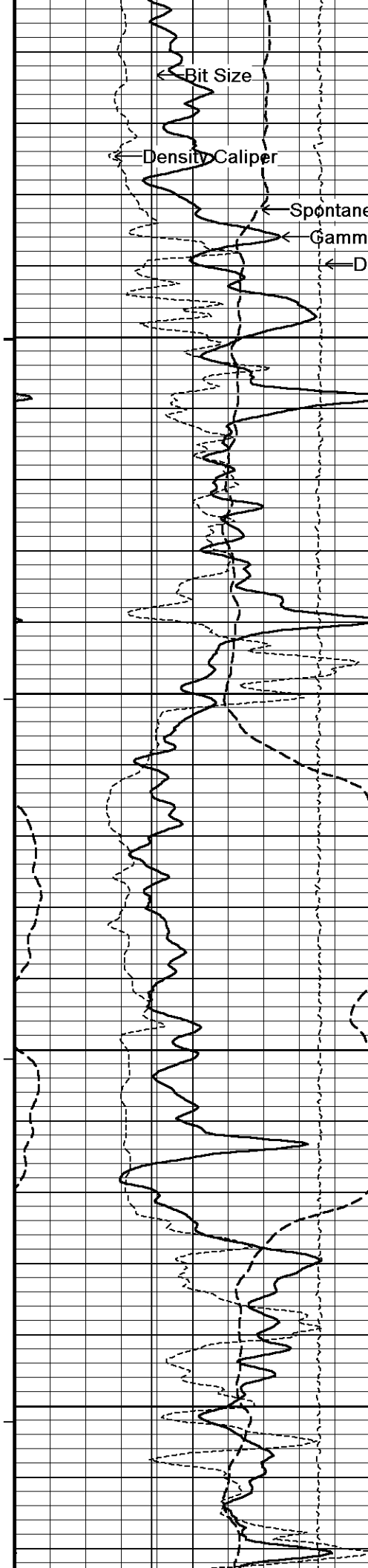
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4250

128°

4300





129°

4350

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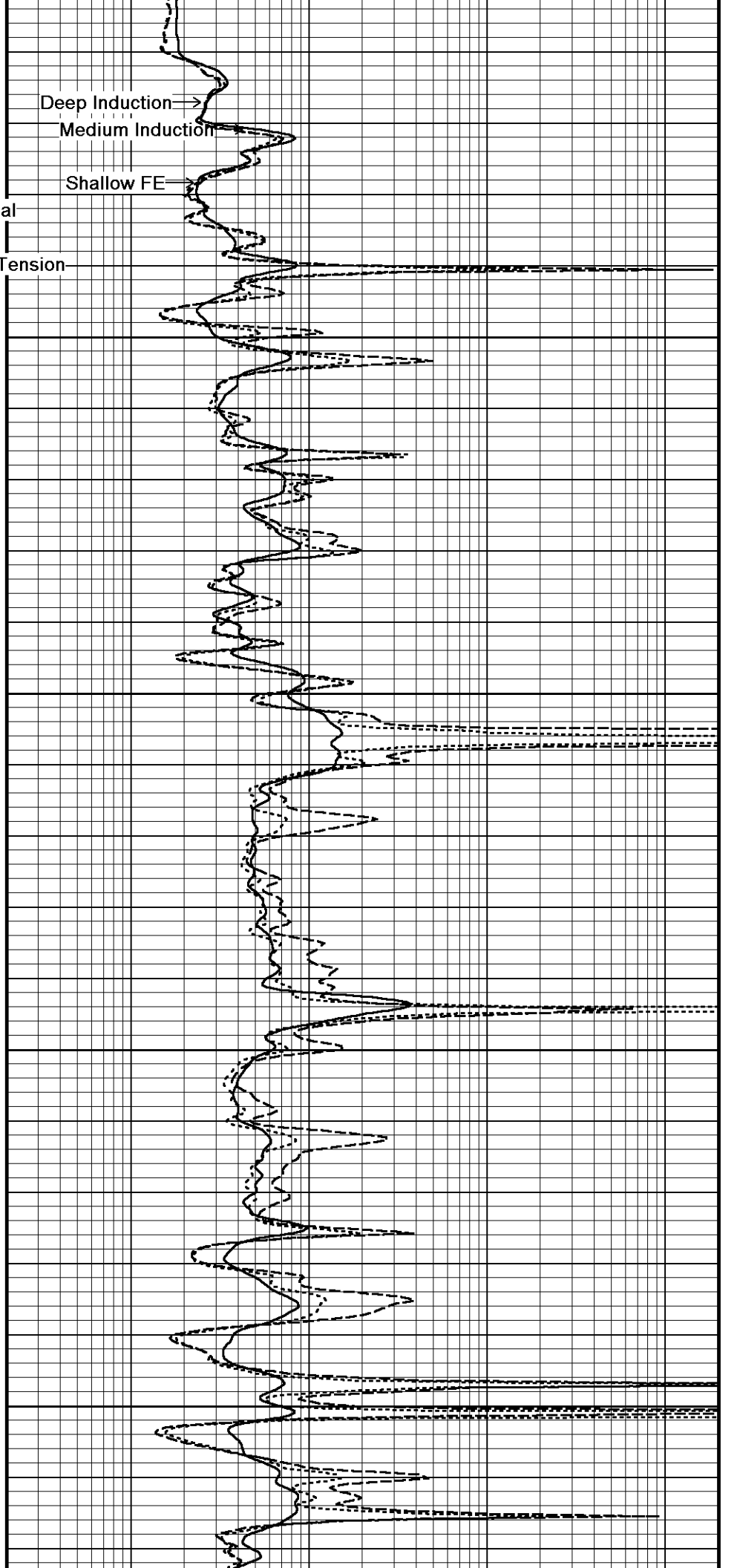
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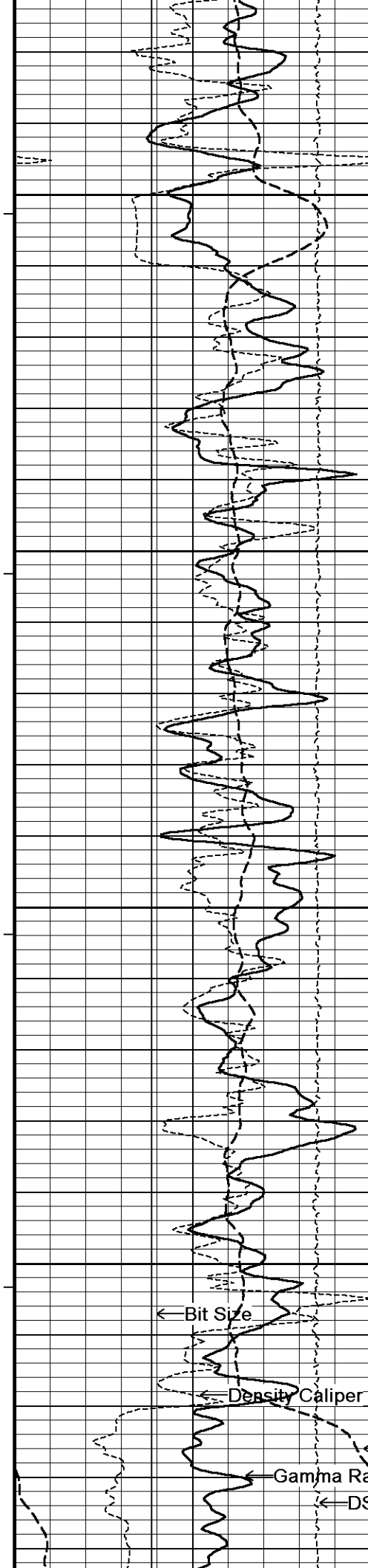
131°

4450

132°

4500





132°

4550

133°

4600

133°

4650

133°

4700

← Bit Size

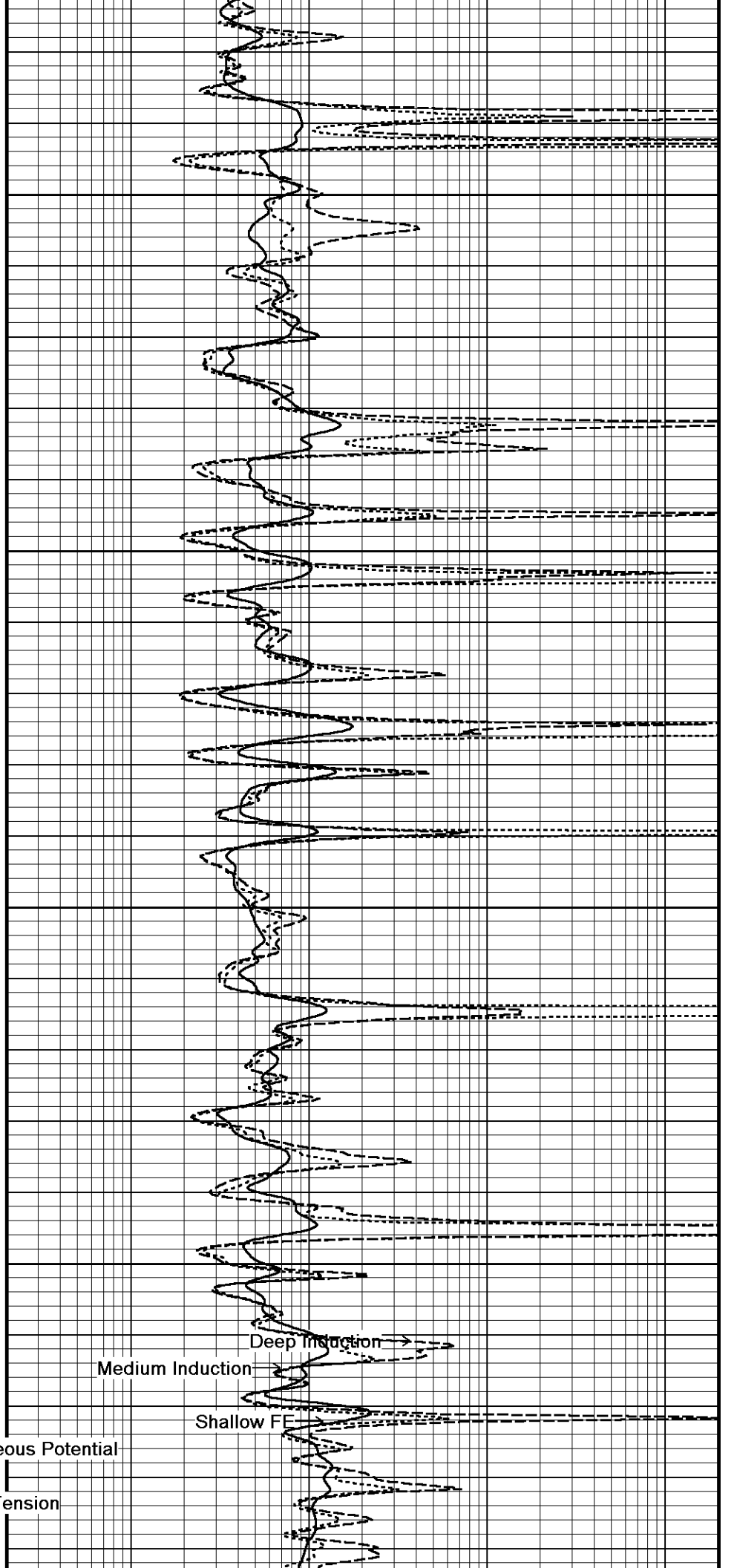
← Density Caliper

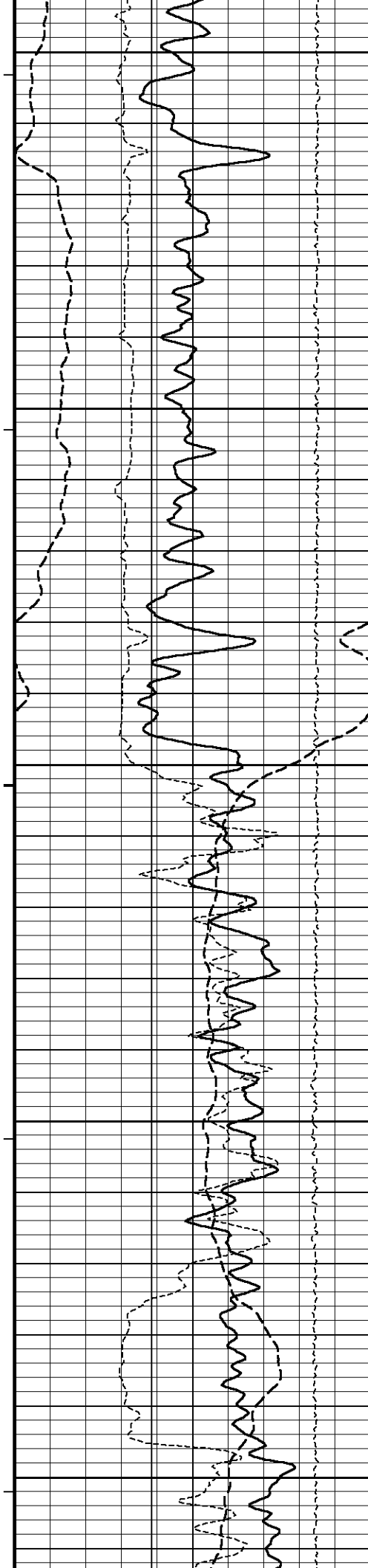
← Gamma Ray

← DST Uphole Tension

← Spontaneous Potential

134°





4750

135°

4800

135°

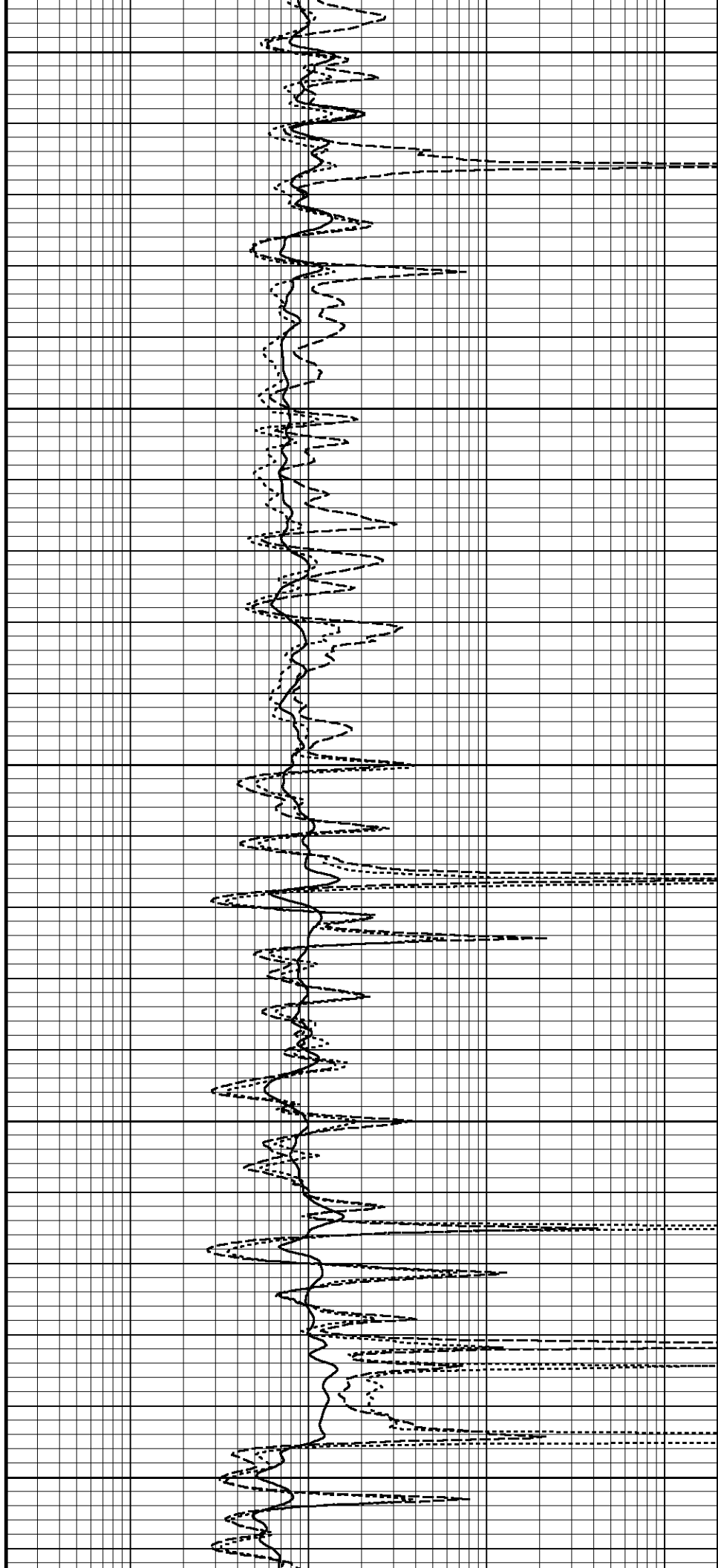
4850

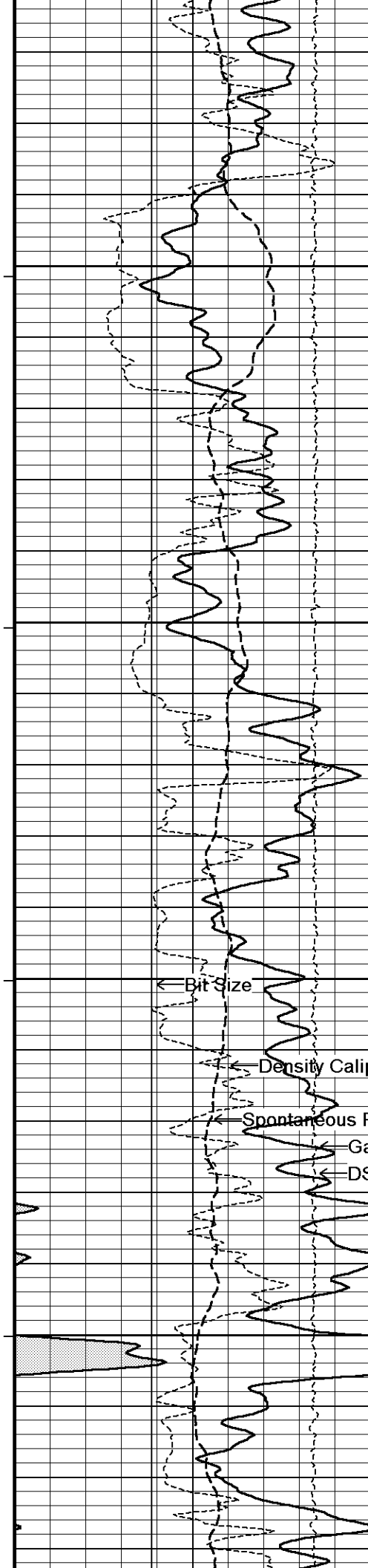
136°

4900

136°

4950





136°

5000

137°

5050

137°

5100

← Bit Size

← Density Caliper

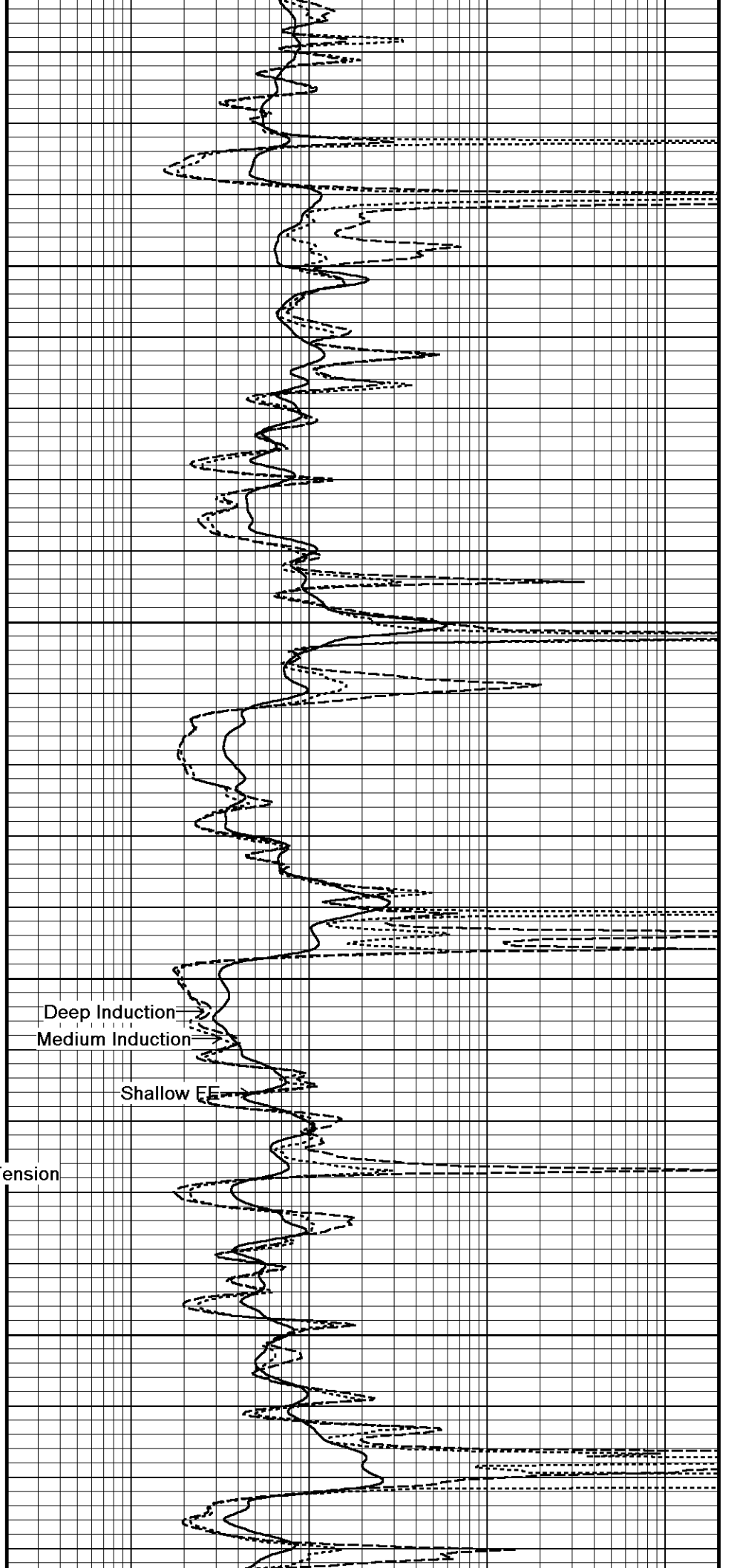
← Spontaneous Potential

← Gamma Ray

← DST Uphole Tension

5150

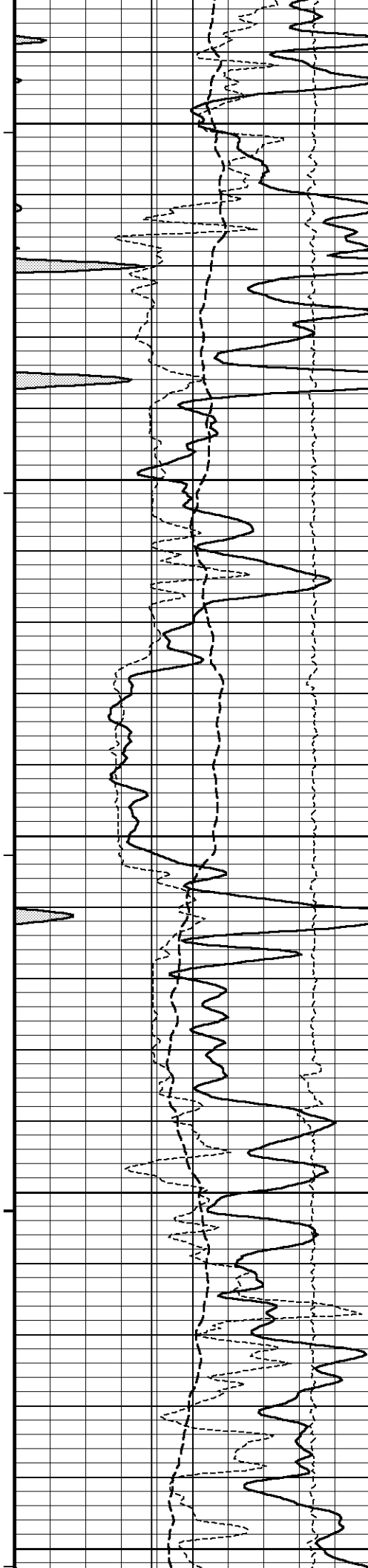
138°



Deep Induction

Medium Induction

Shallow EE



5200

139°

5250

140°

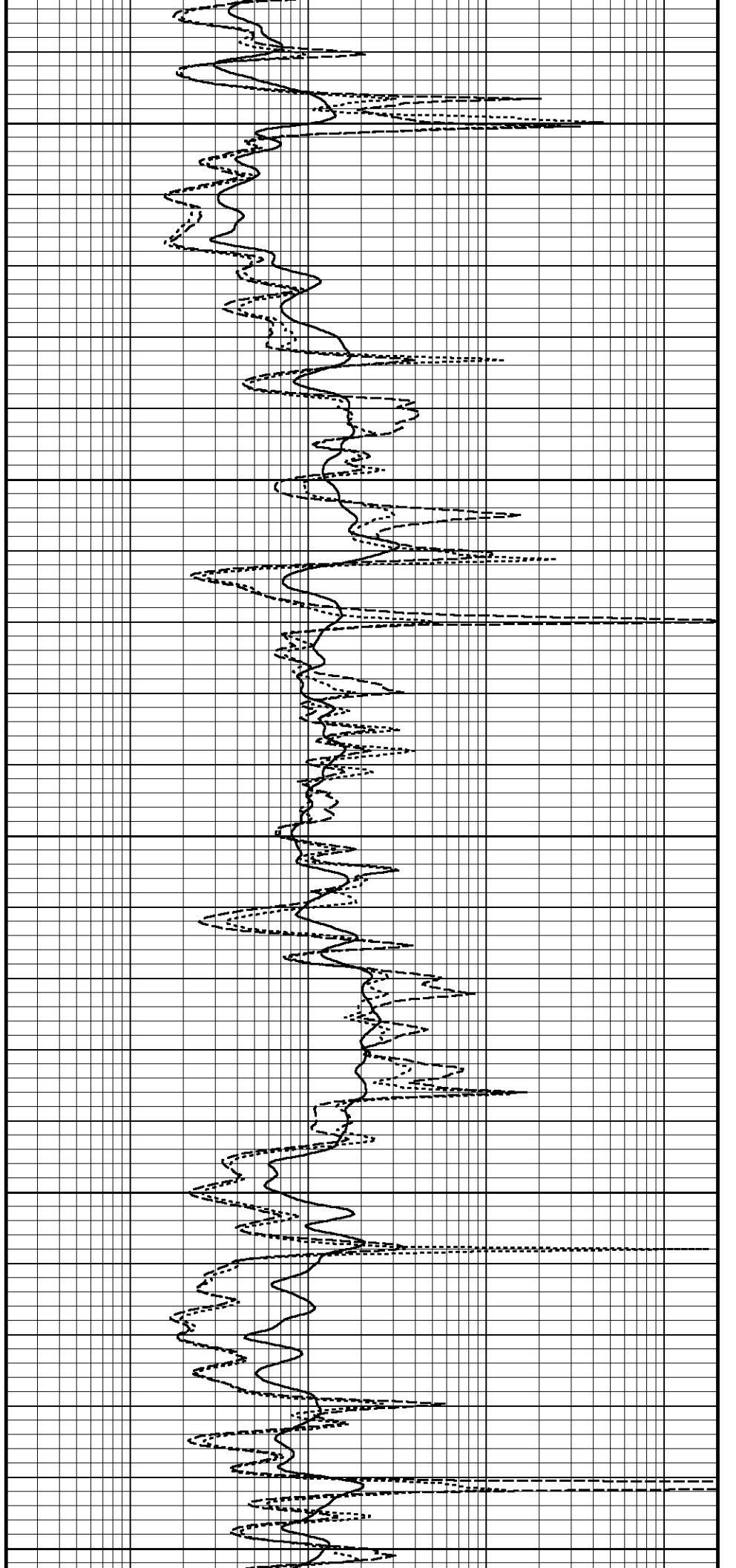
5300

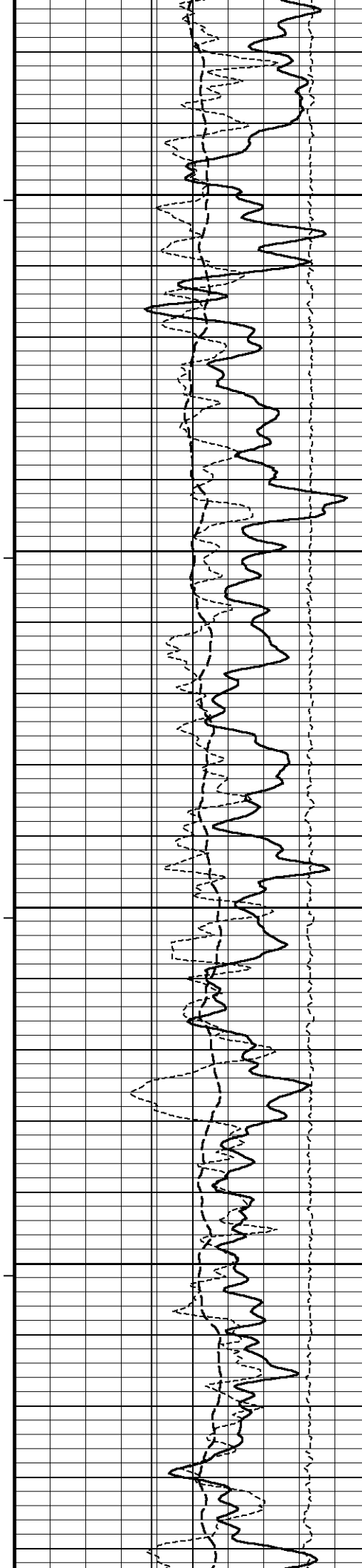
141°

5350

142°

5400





145°

5650

146°

5700

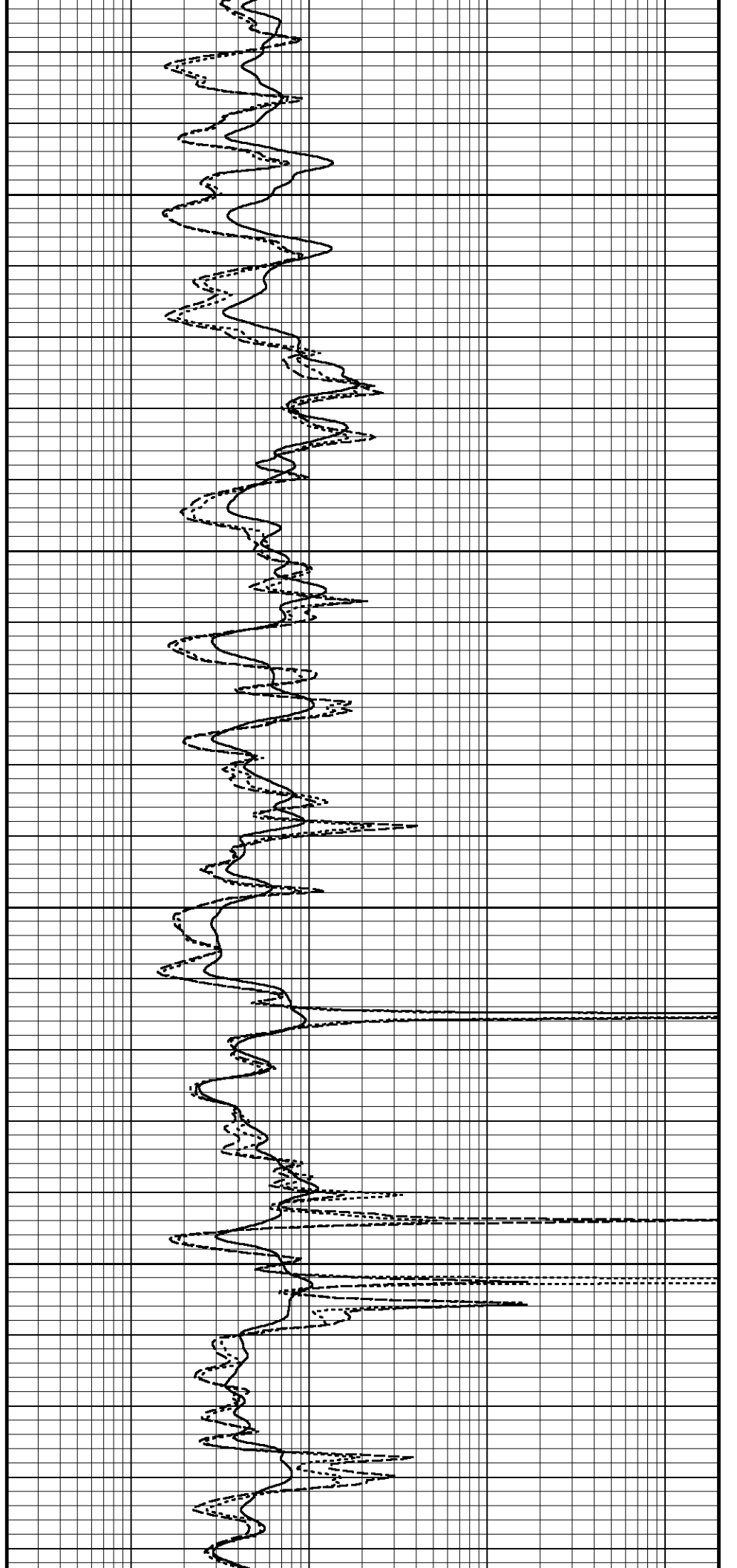
147°

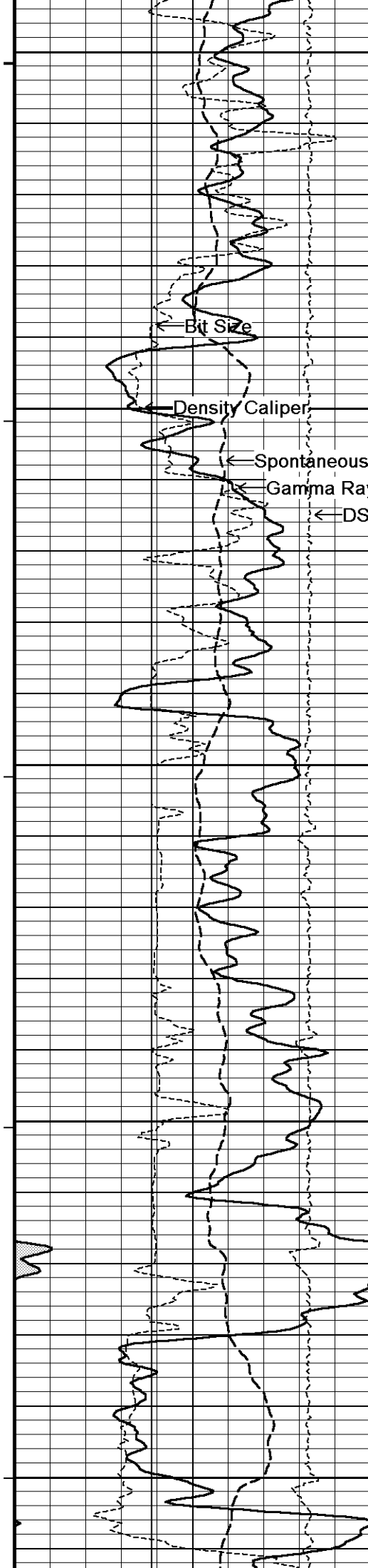
5750

147°

5800

148°





5850

149°

Bit Size

Density Caliper

5900

Spontaneous Potential

Gamma Ray

DST Uphole Tension

150°

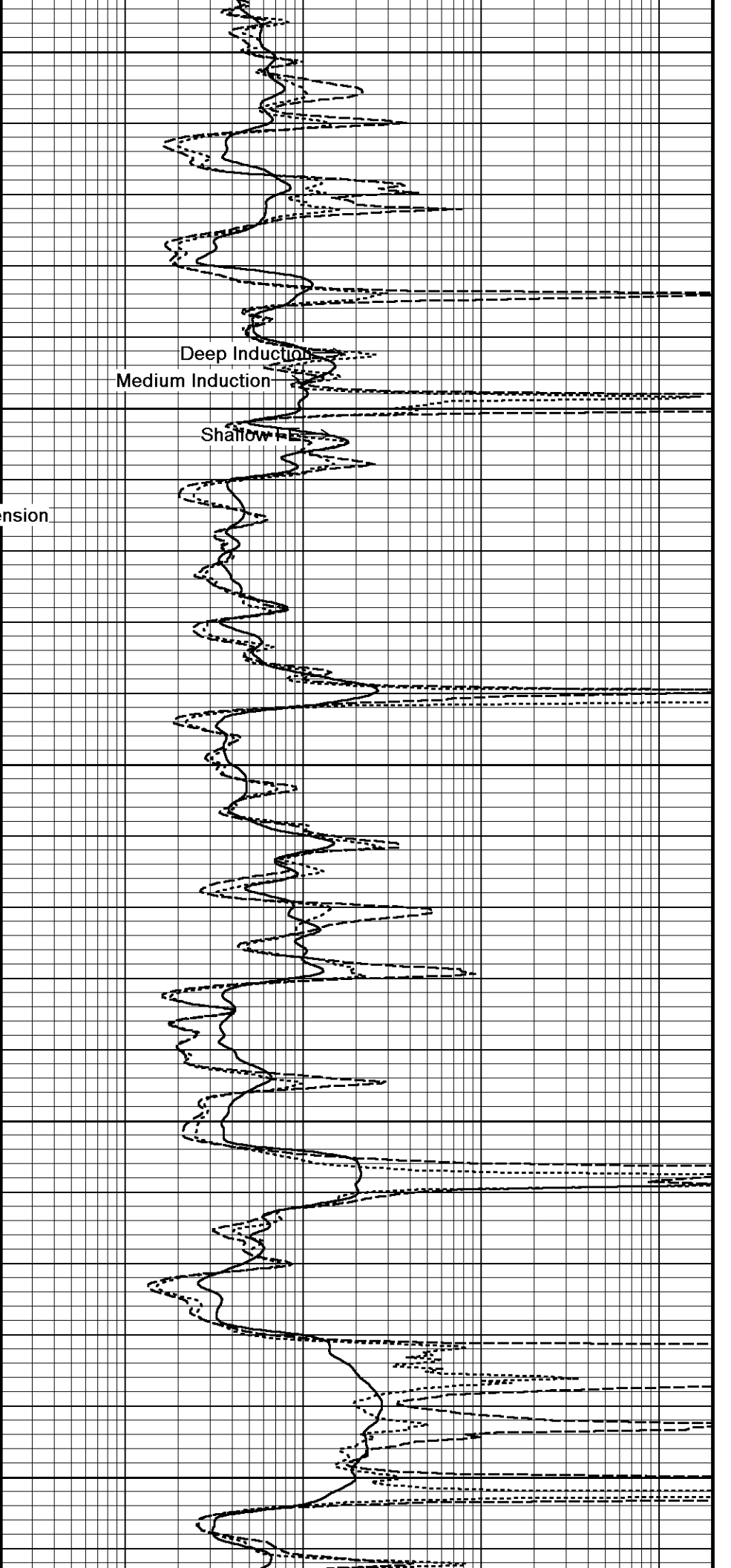
5950

151°

6000

151°

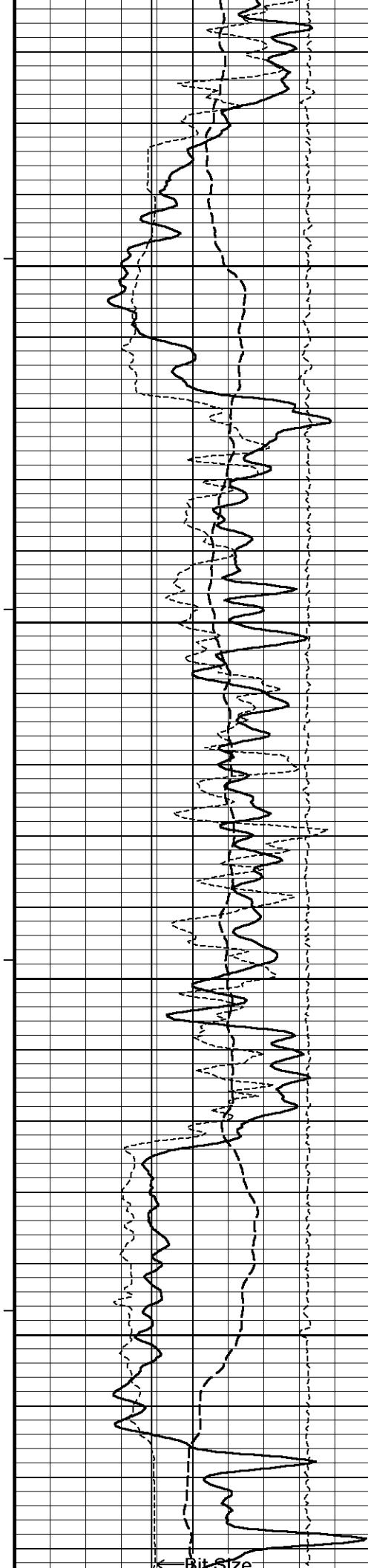
6050



Deep Induction

Medium Induction

Shallow Induction



152°

6100

153°

6150

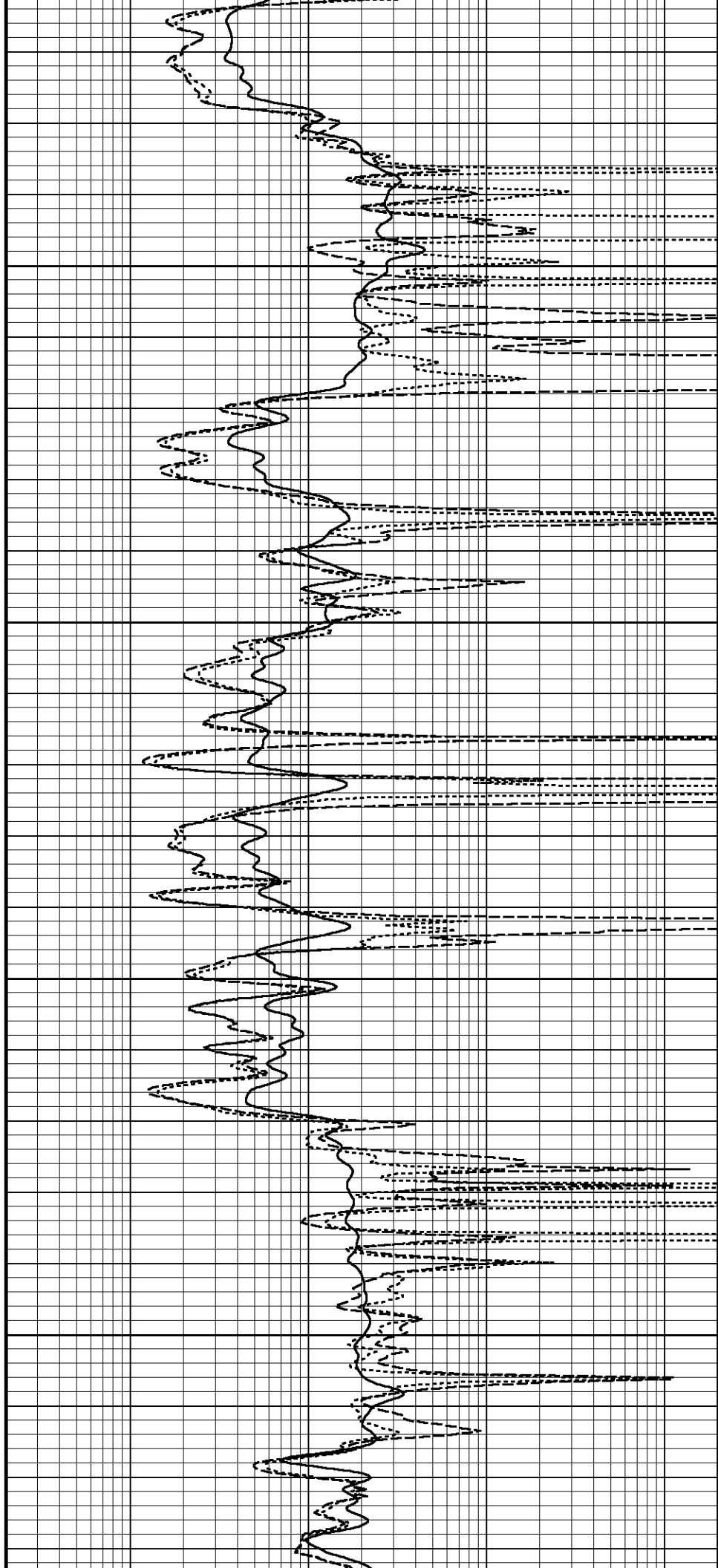
154°

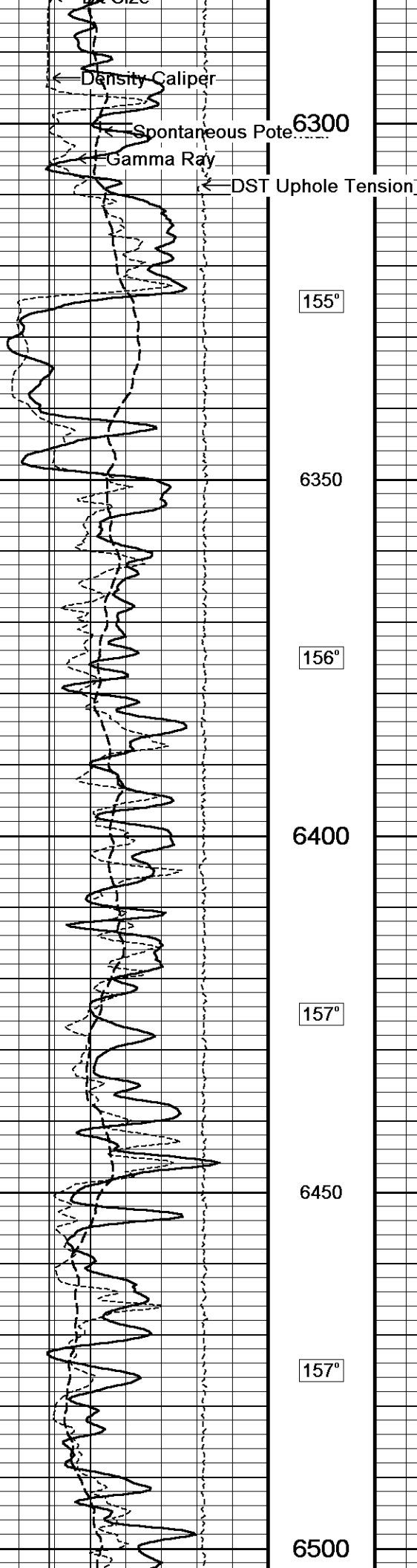
6200

154°

6250

155°





155°

6350

156°

6400

157°

6450

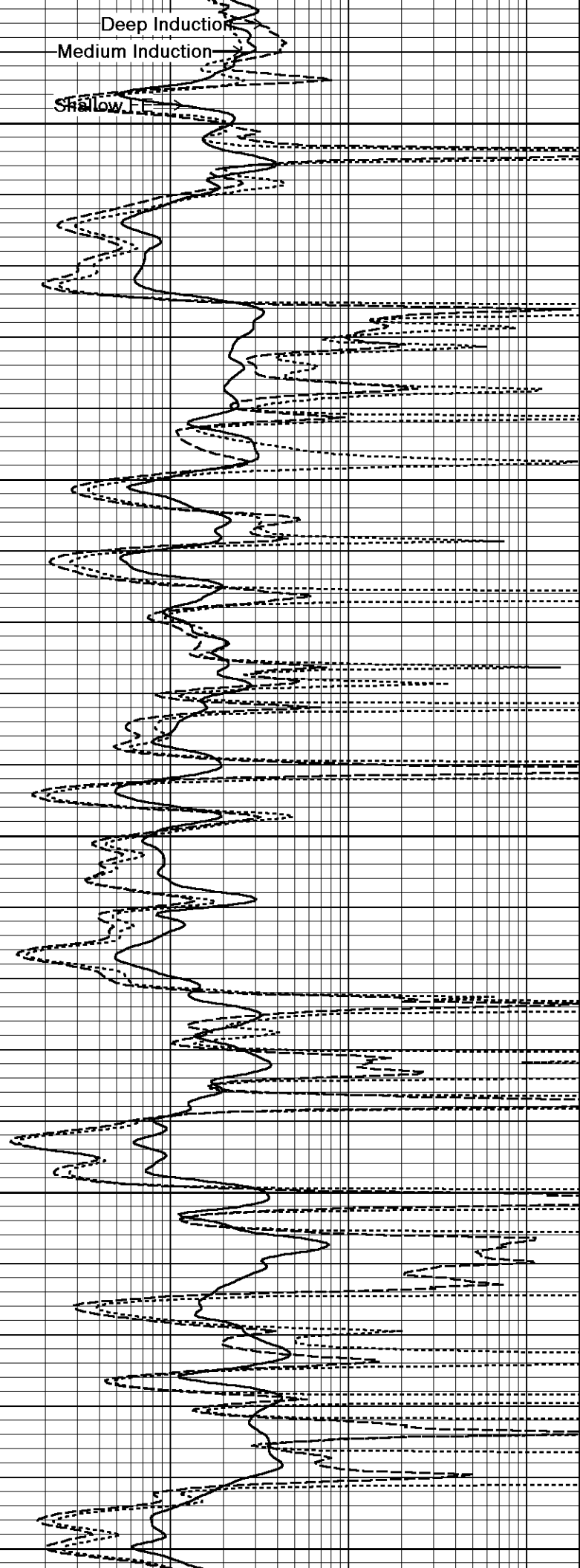
157°

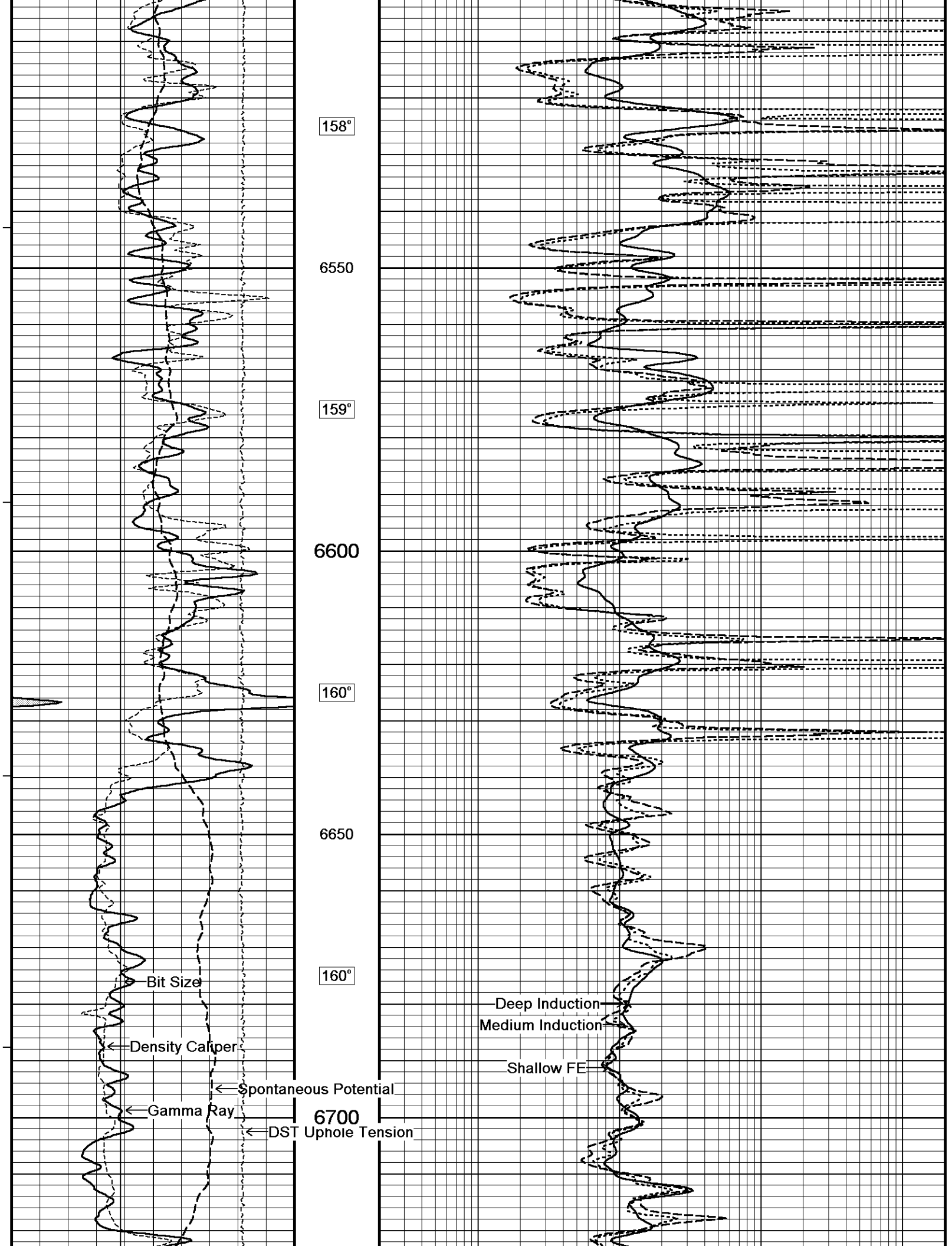
6500

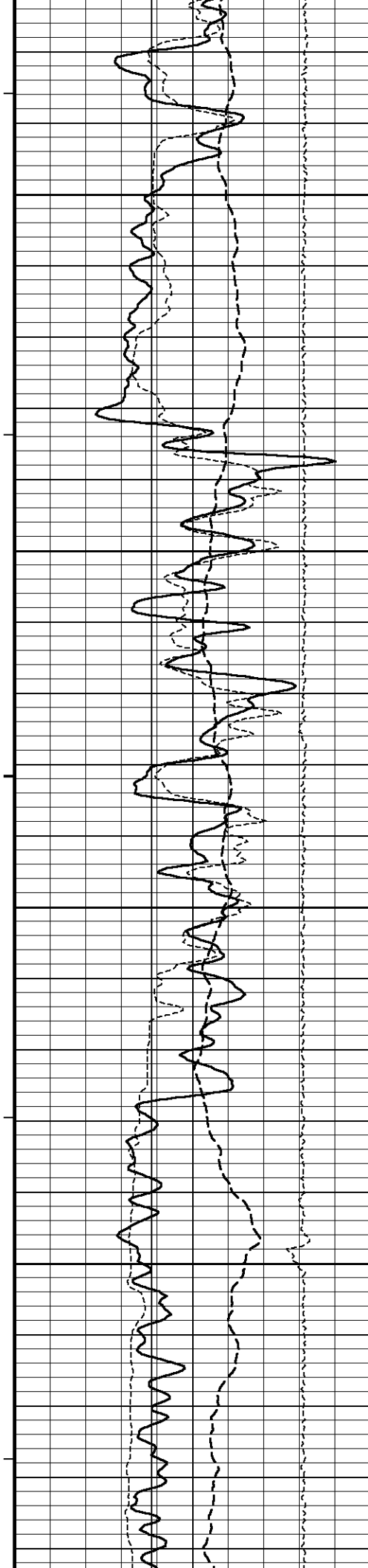
Deep Induction

Medium Induction

Shallow Induction







161°

6750

161°

6800

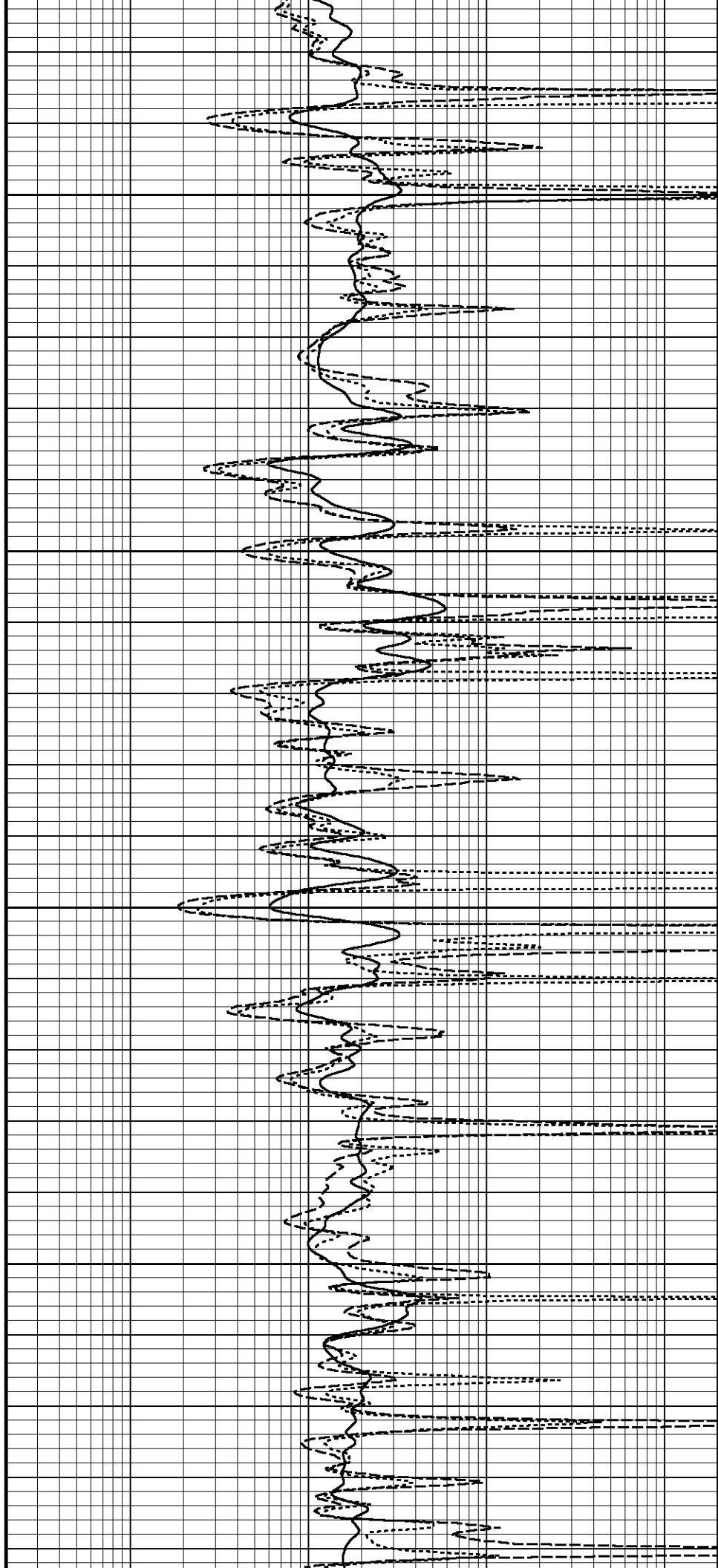
162°

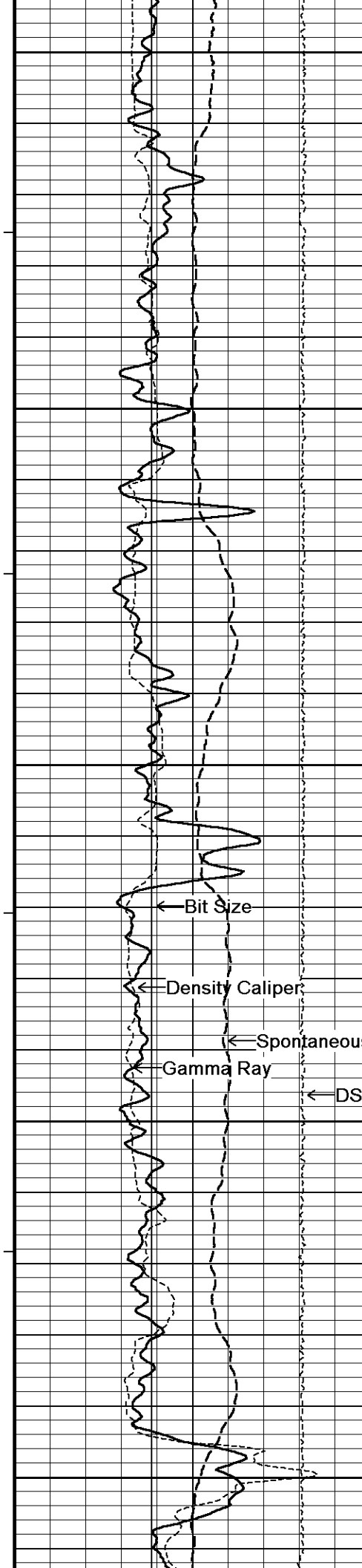
6850

162°

6900

163°





6950

163°

7000

163°

7050

164°

← Bit Size

← Density Caliper

← Spontaneous Potential

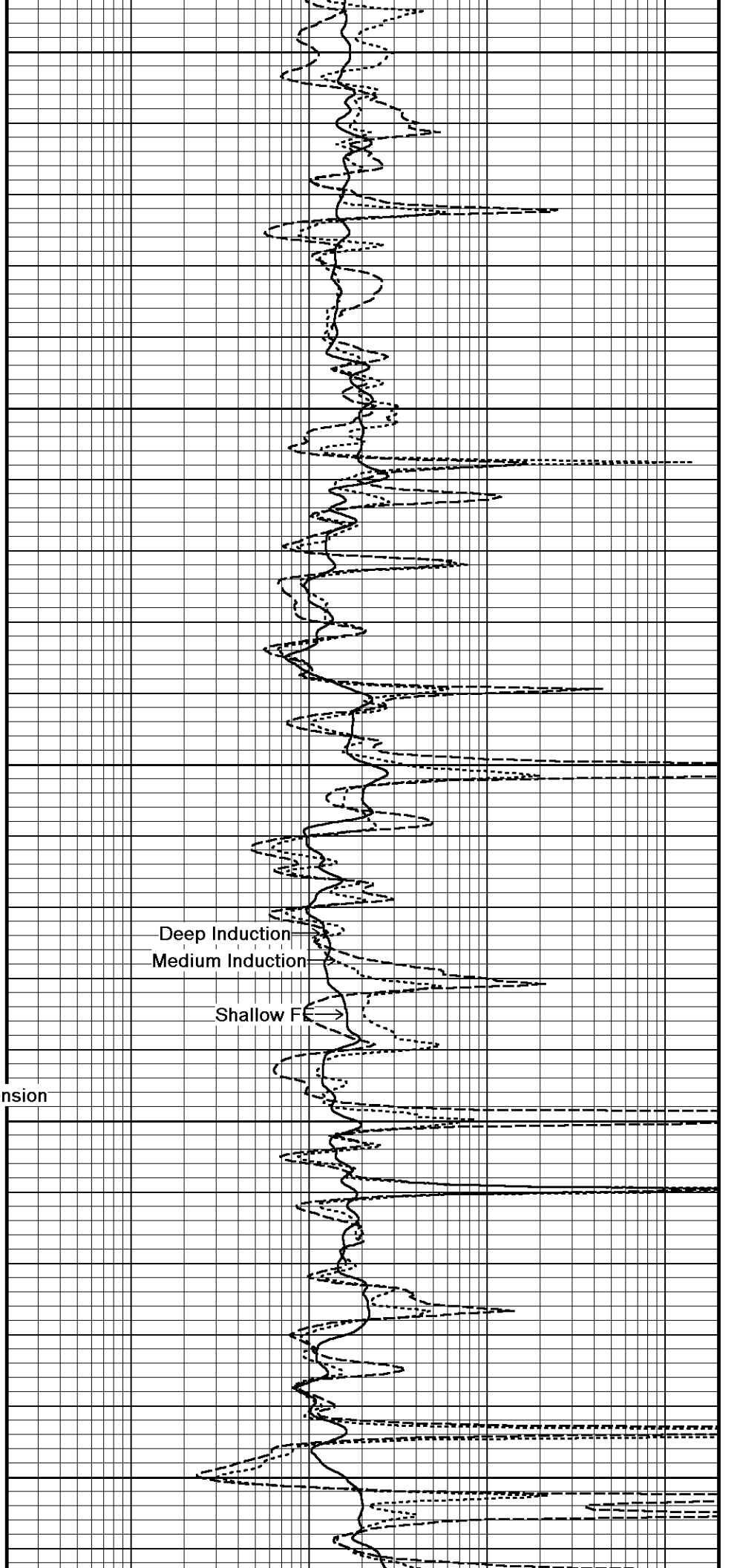
← Gamma Ray

← DST Uphole Tension

7100

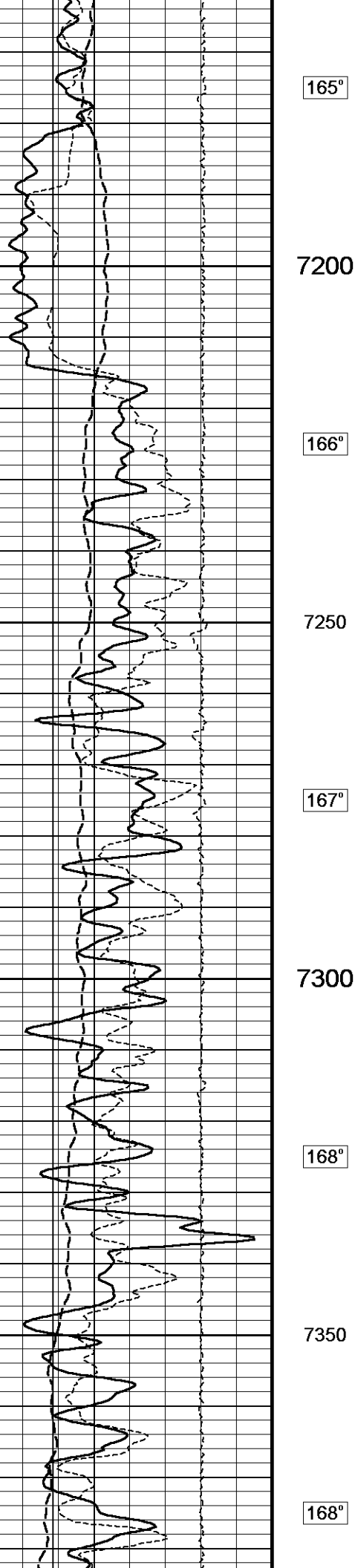
164°

7150



Deep Induction
Medium Induction

Shallow F



165°

7200

166°

7250

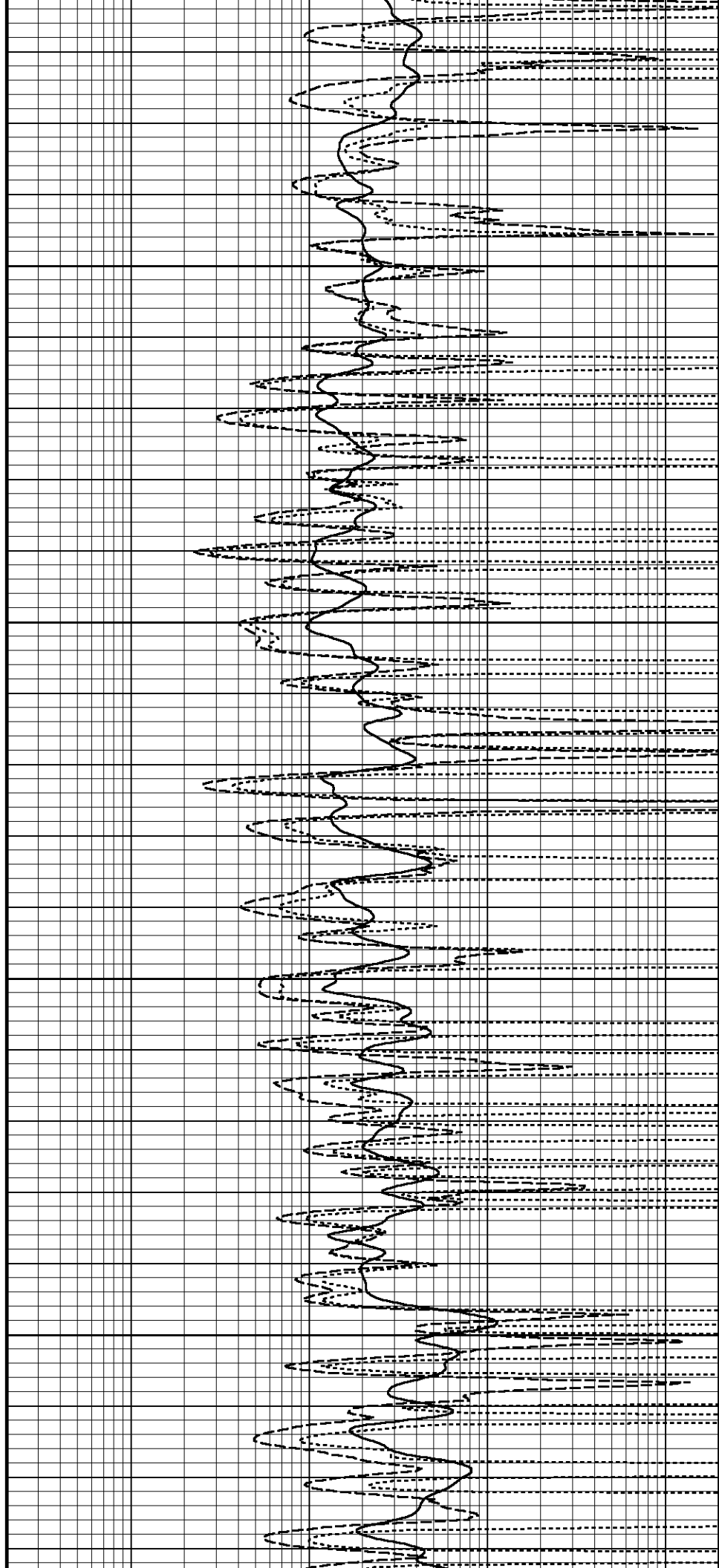
167°

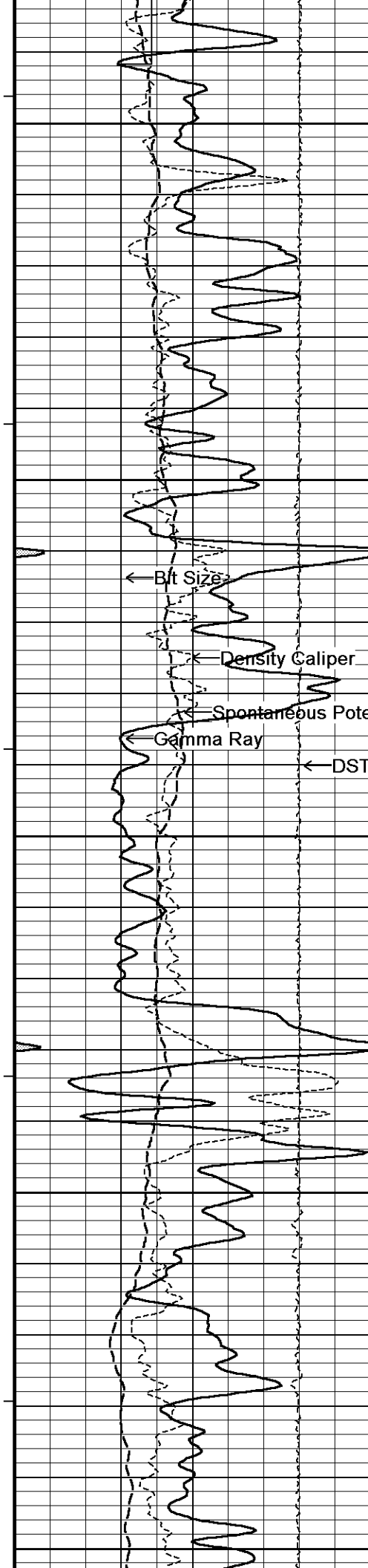
7300

168°

7350

168°





7400

169°

7450

← Bit Size

← Density Caliper

← Spontaneous Potential

← Gamma Ray

← DST Uphole Tension

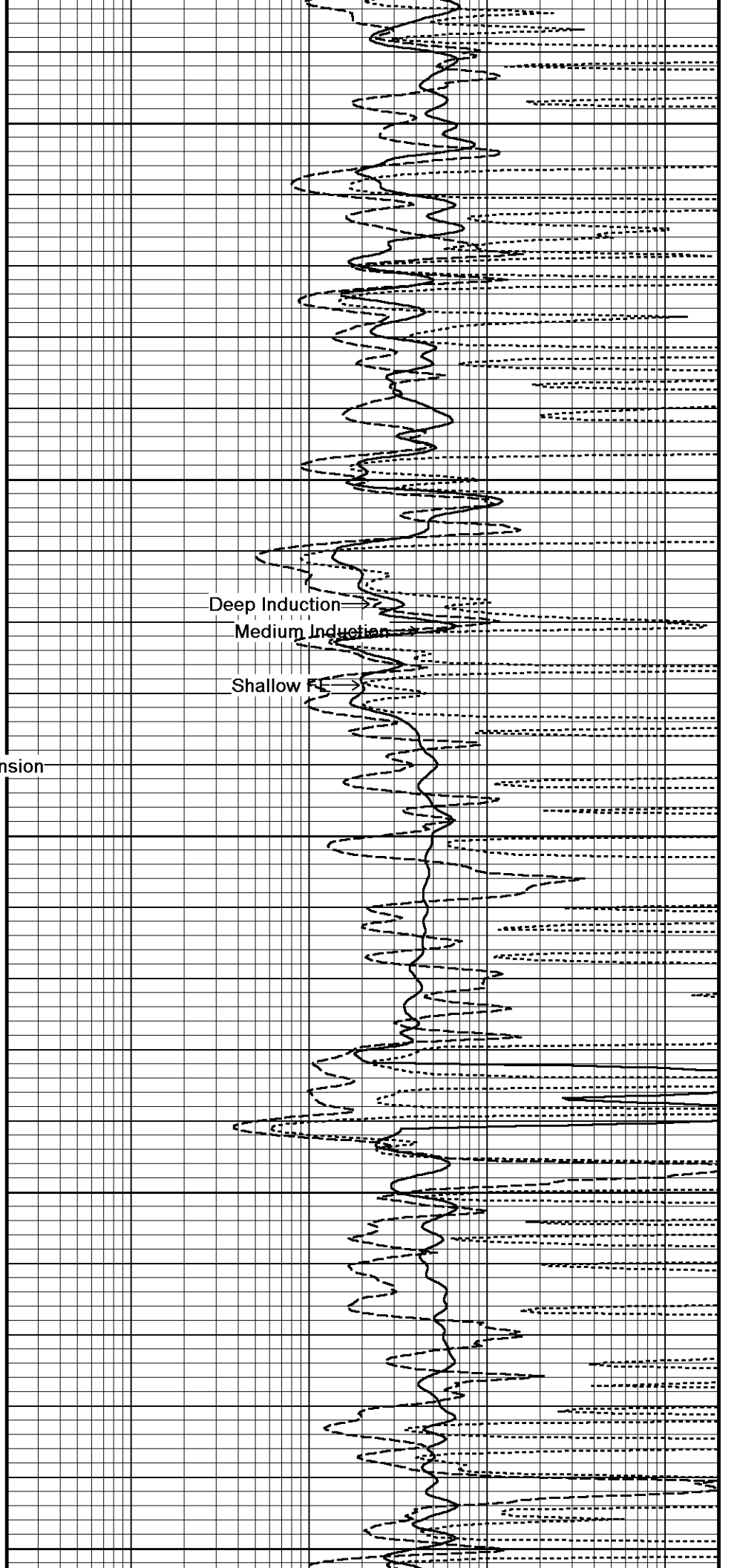
7500

171°

7550

171°

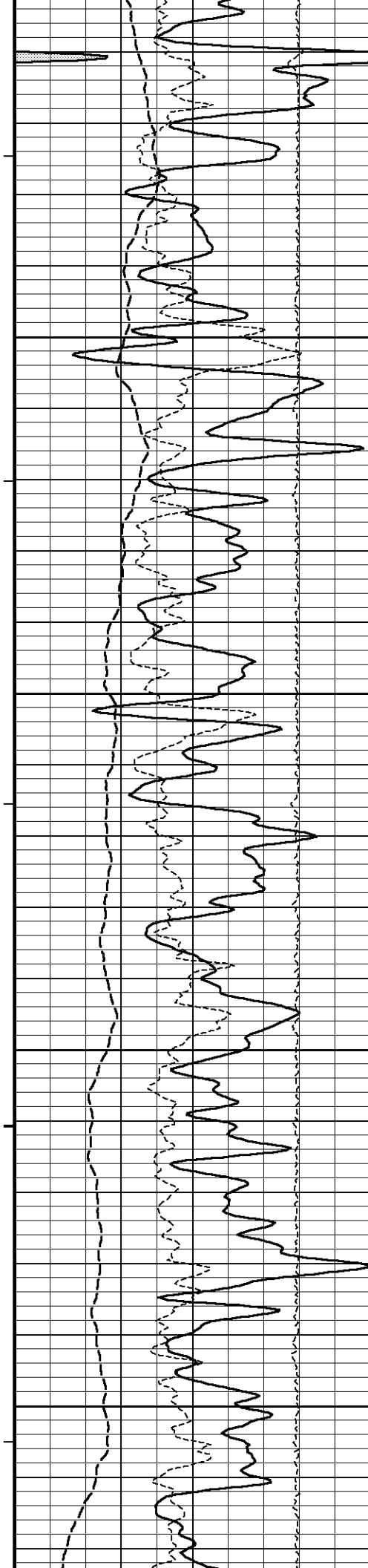
7600



Deep Induction

Medium Induction

Shallow Induction



172°

7650

173°

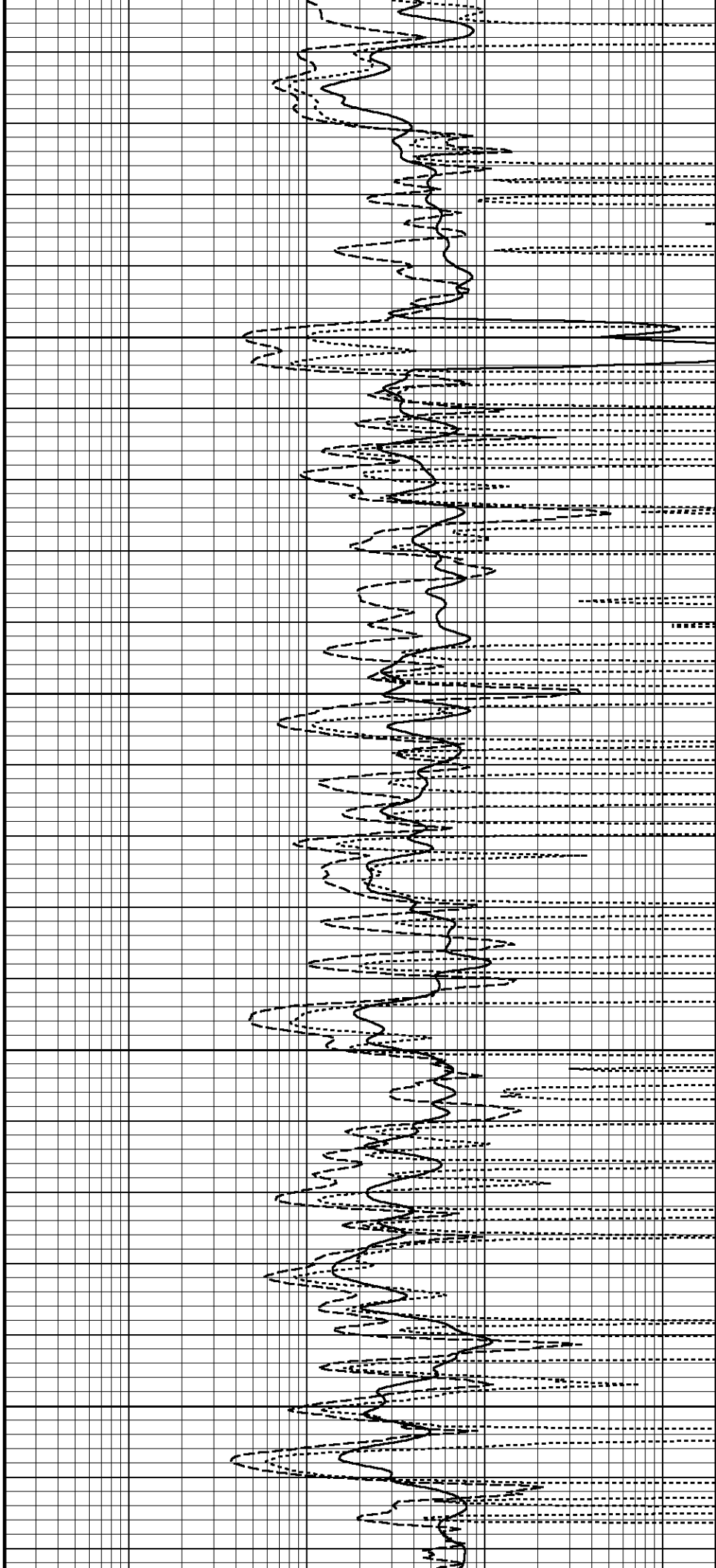
7700

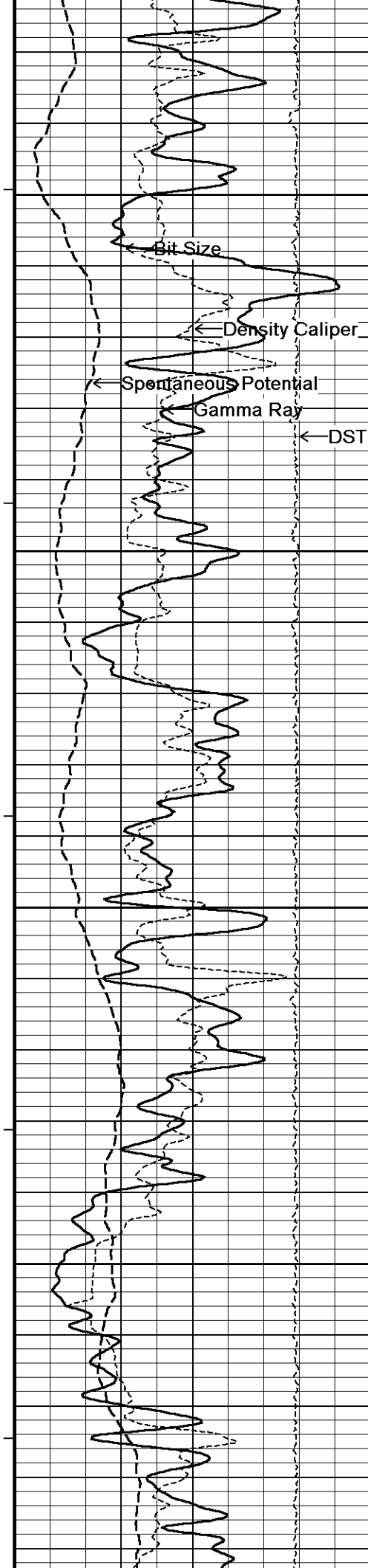
173°

7750

174°

7800





175°

7850

176°

7900

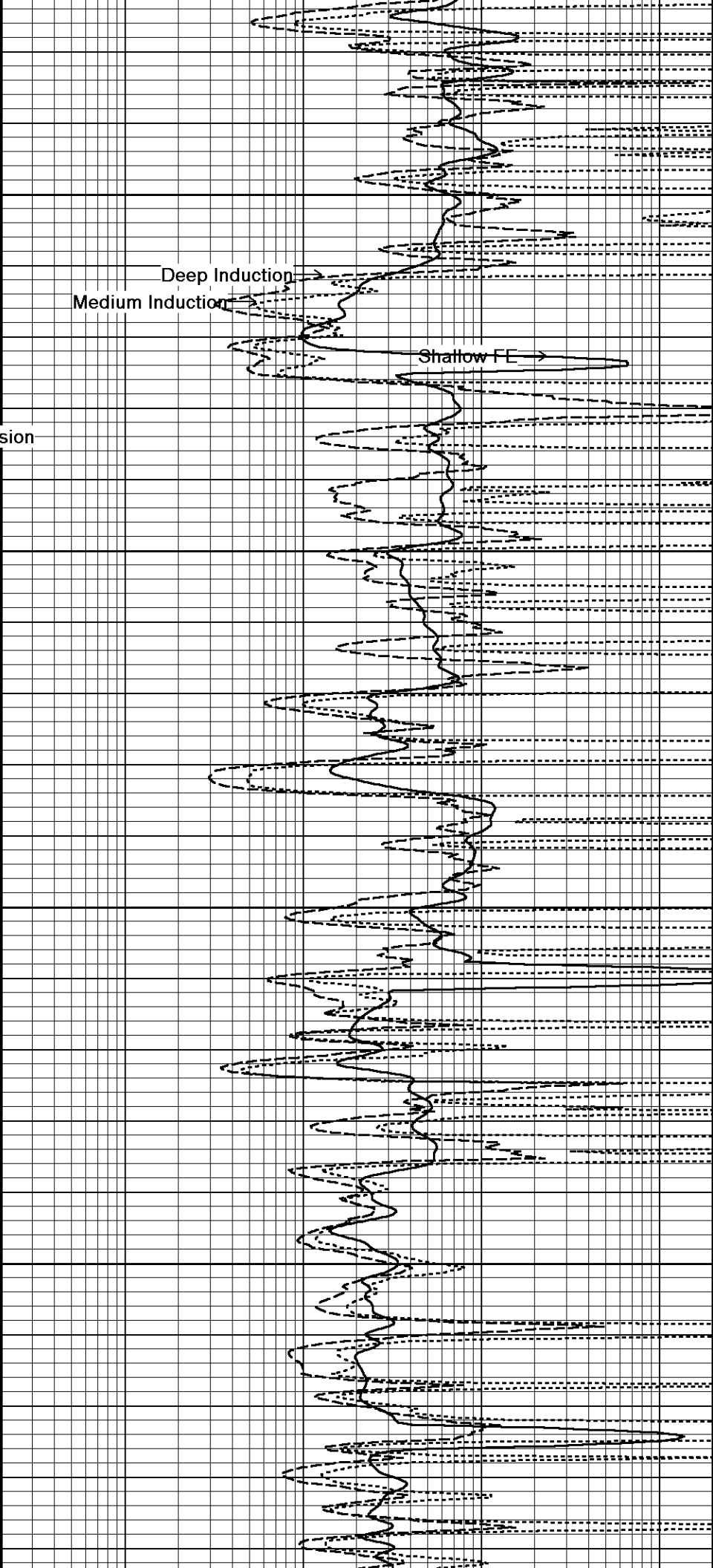
177°

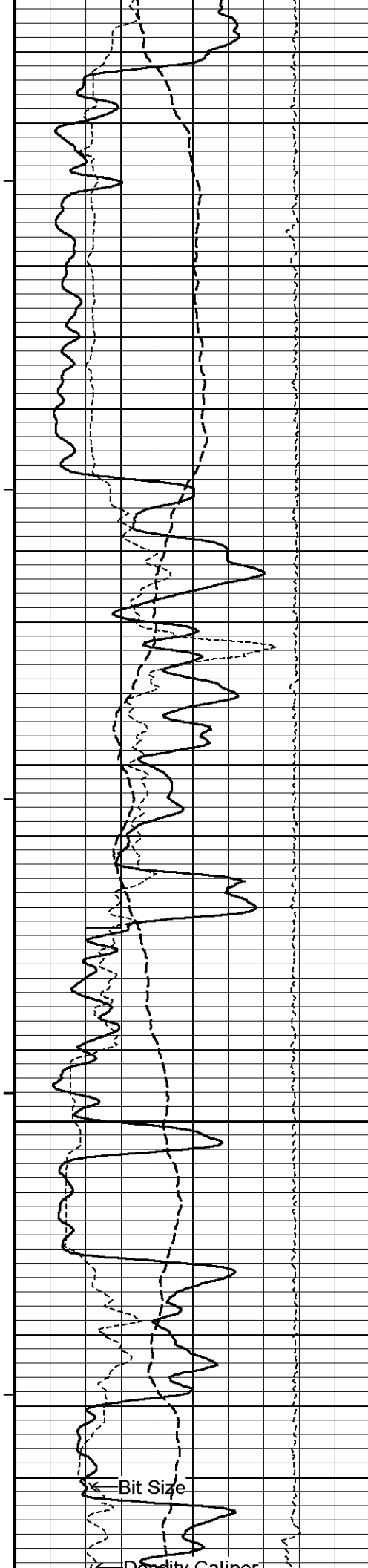
7950

178°

8000

179°





8050

180°

8100

181°

8150

182°

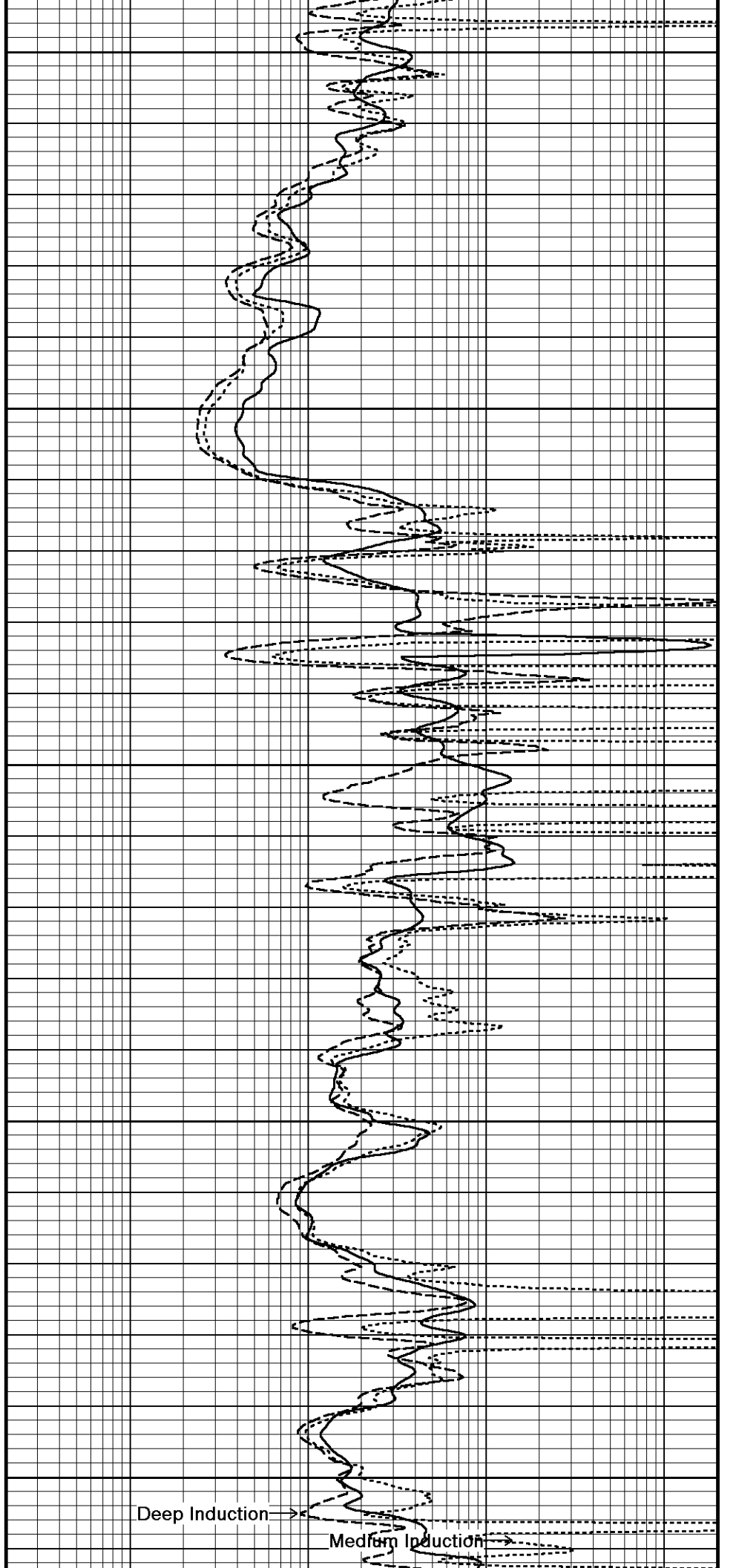
8200

182°

8250

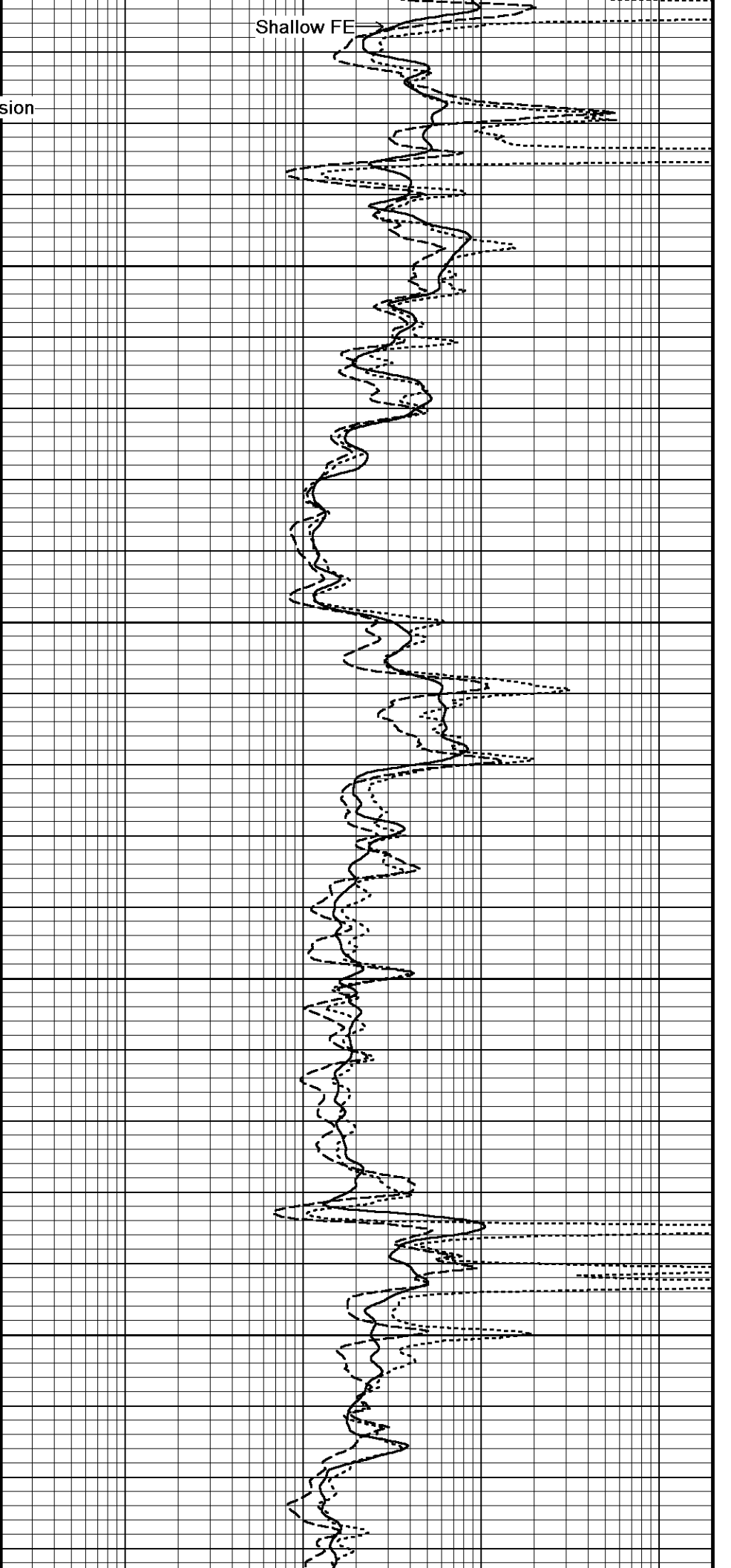
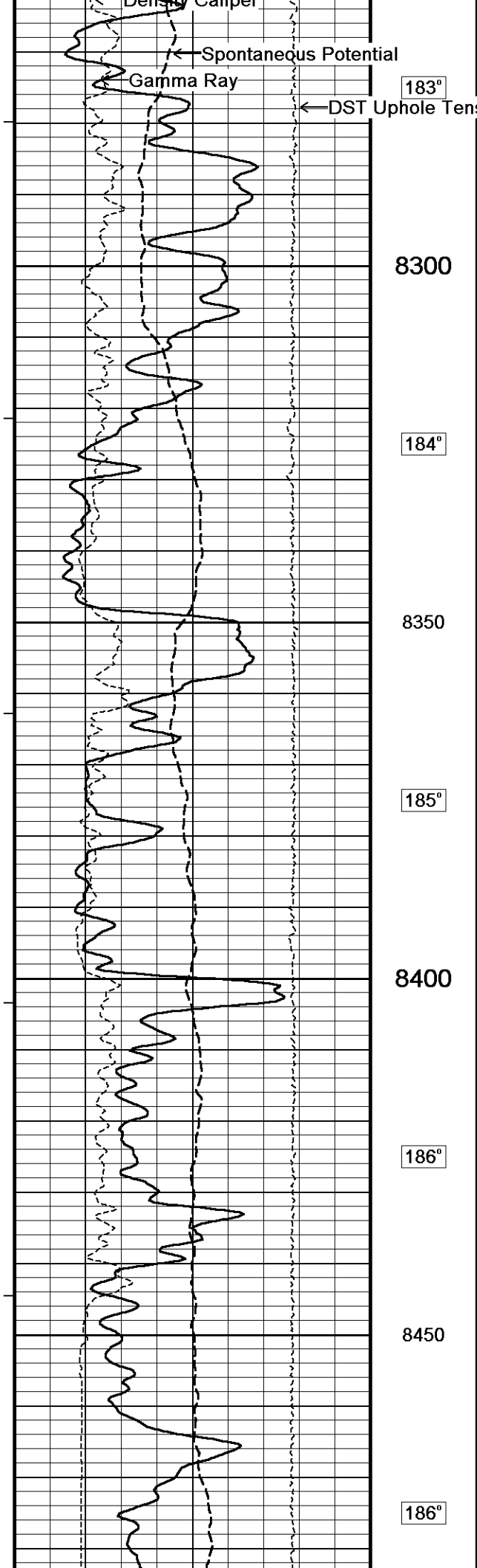
Bit Size

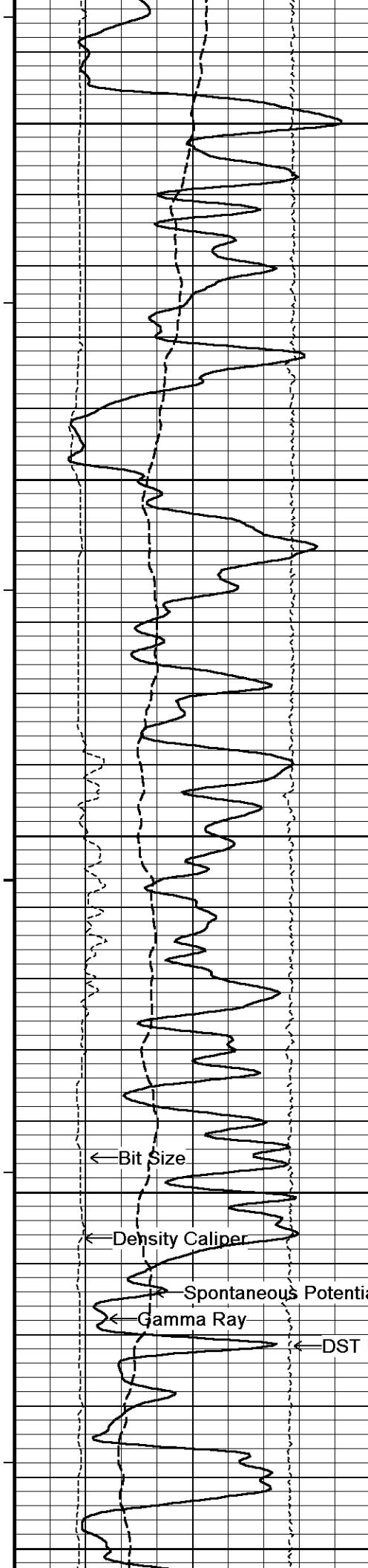
Density Caliper



Deep Induction

Medium Induction





8500

187°

8550

188°

8600

189°

8650

190°

8700

← Bit Size

← Density Caliper

← Spontaneous Potential

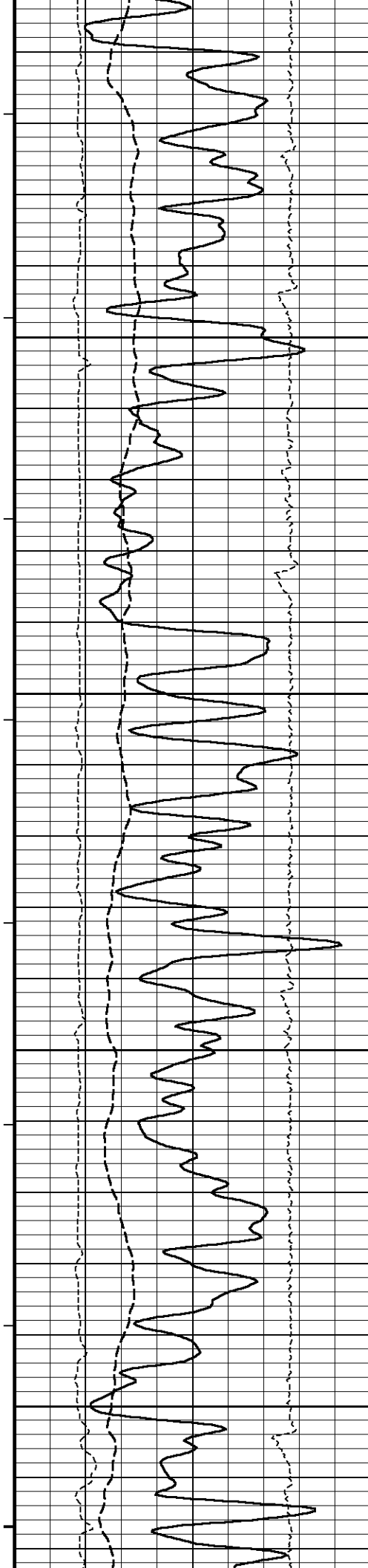
← Gamma Ray

← DST Uphole Tension

Deep Induction →

Medium Induction →

Shallow FE →



191°

8750

193°

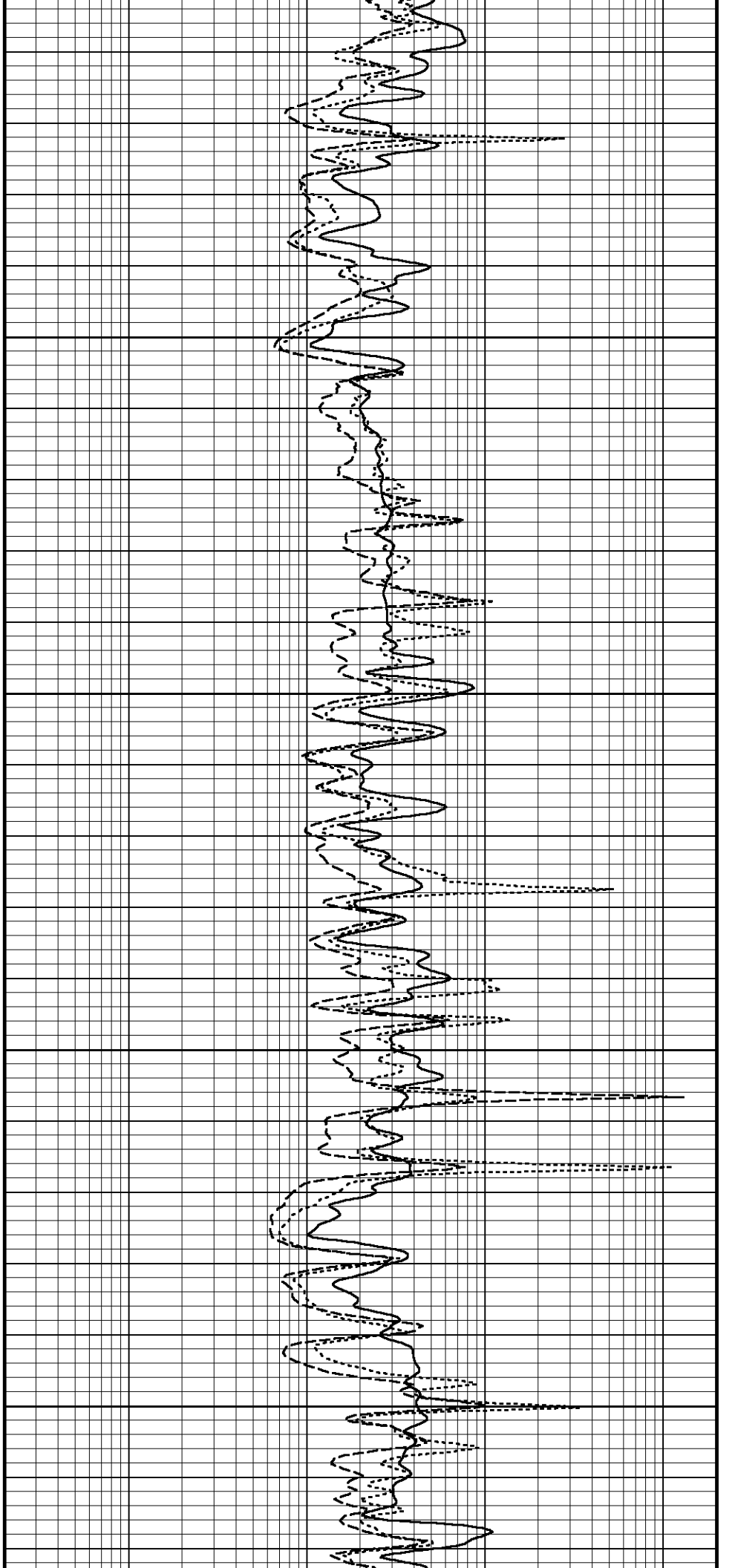
8800

194°

8850

194°

8900





Timing Marks
every 60.0 sec

DST Uphole Tension
pounds
10000 5000 0

Gamma Ray
API
0 100 200

195°

8950

195°

9000

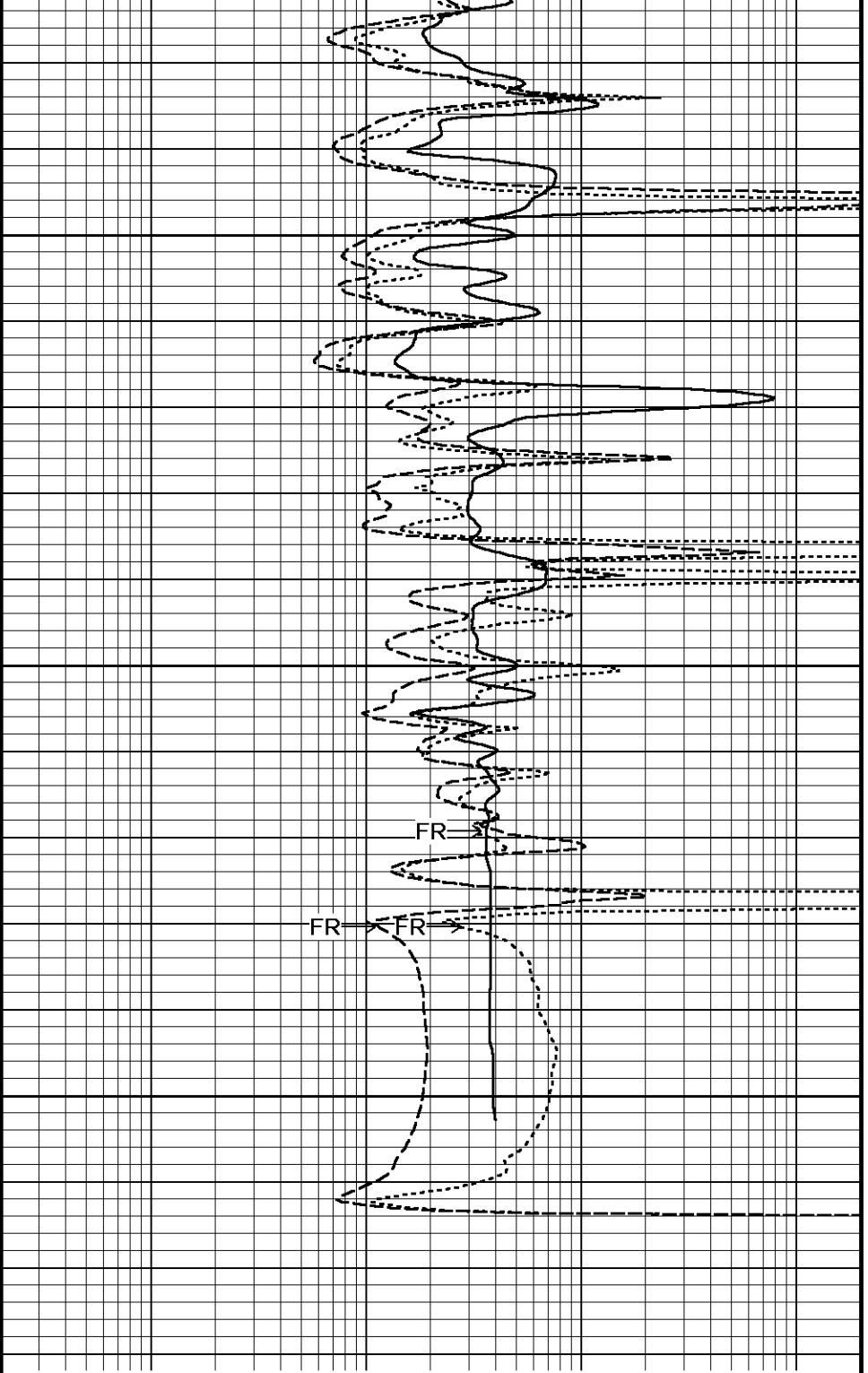
FR

FR

9050

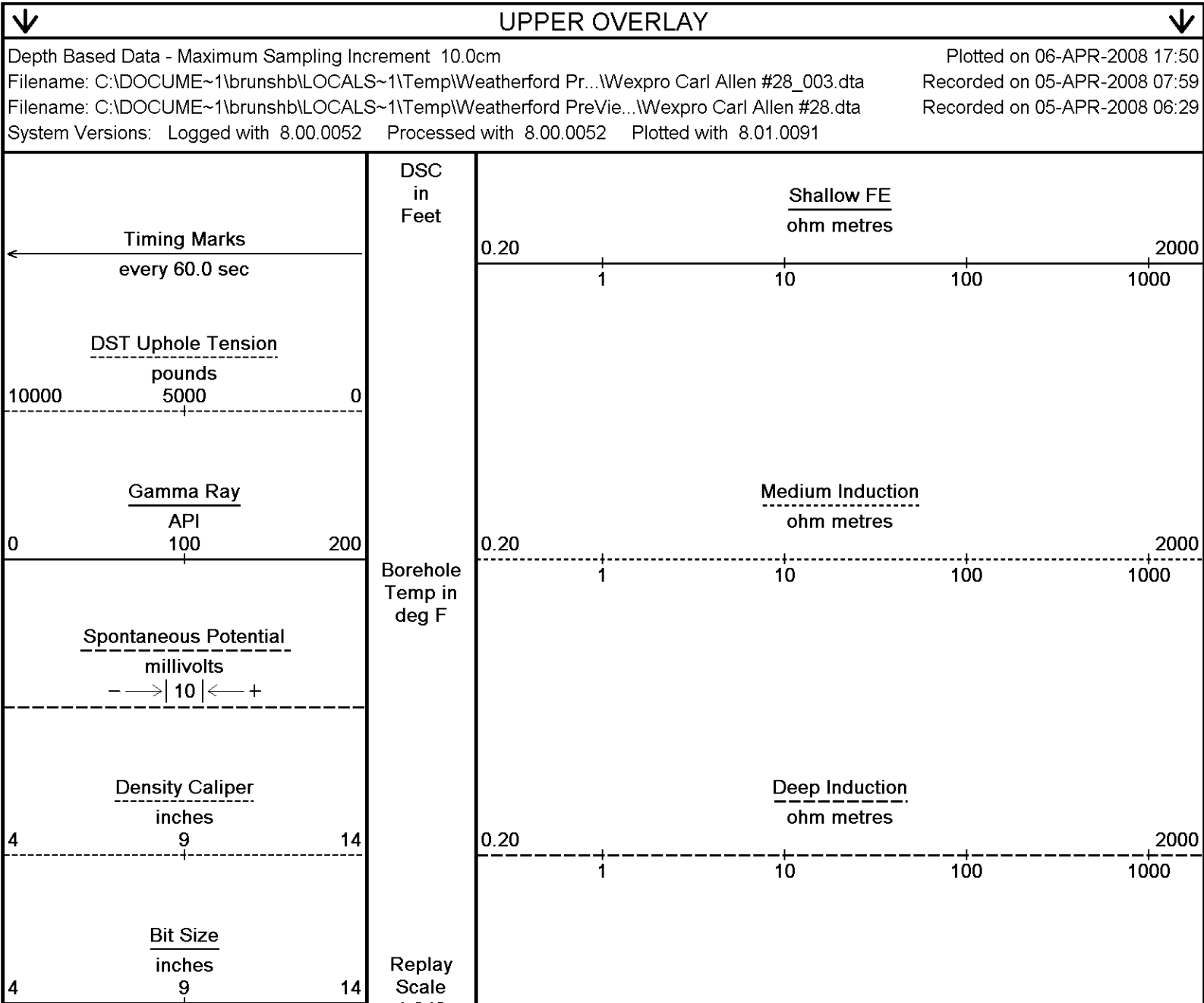
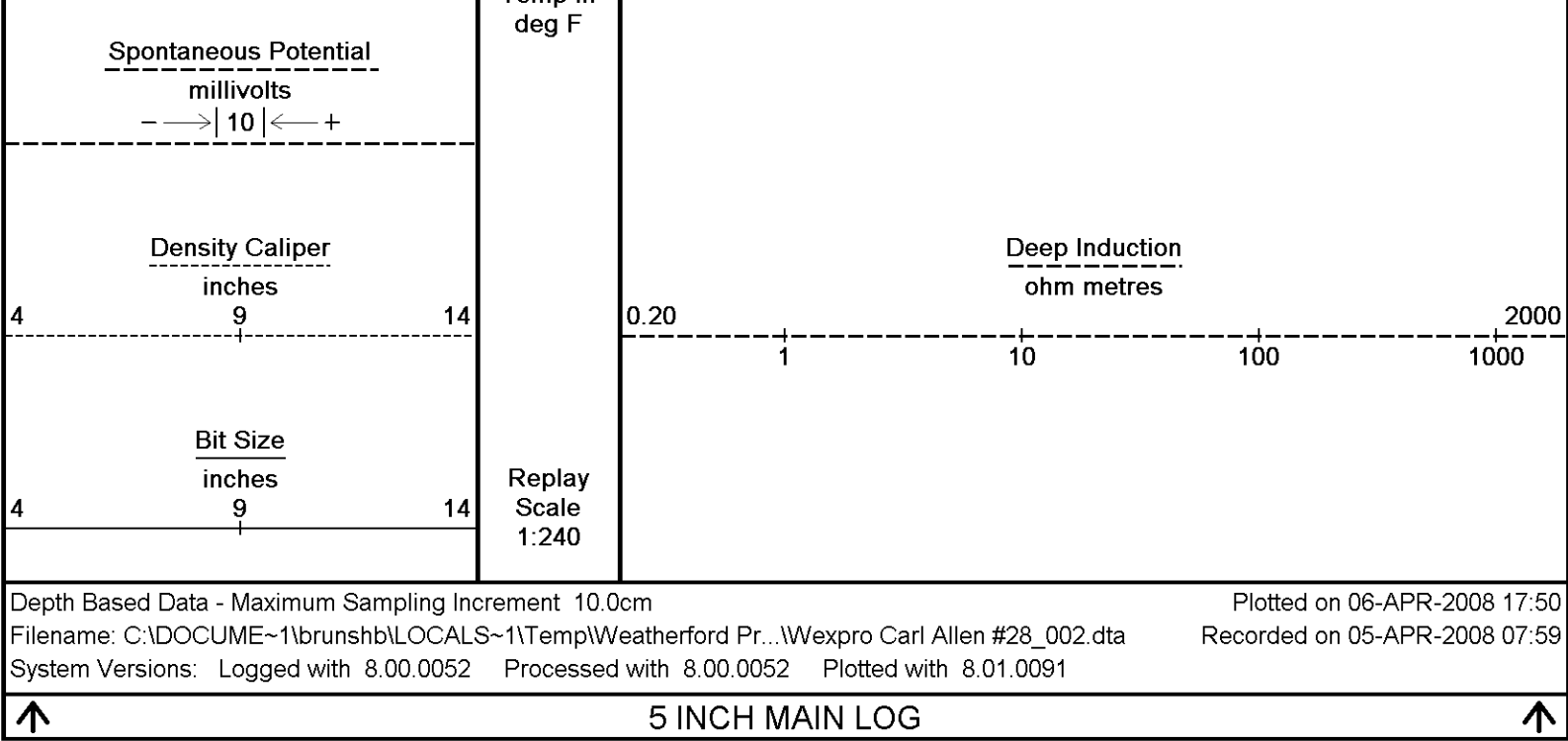
9080
DSC
in
Feet

Borehole
Temp in



Shallow FE
ohm metres
0.20 1 10 100 1000 2000

Medium Induction
ohm metres
0.20 1 10 100 1000 2000



1:240

500

92°

550

92°

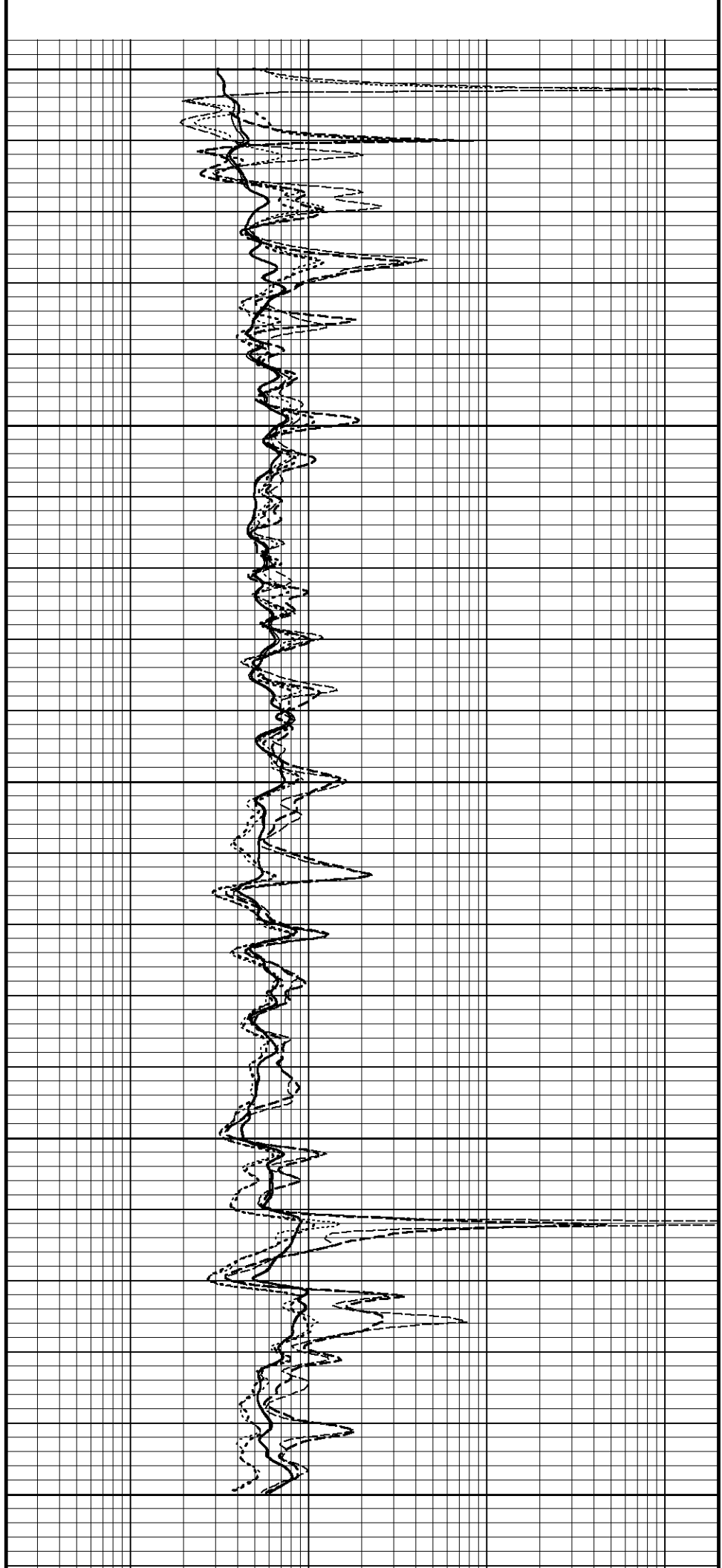
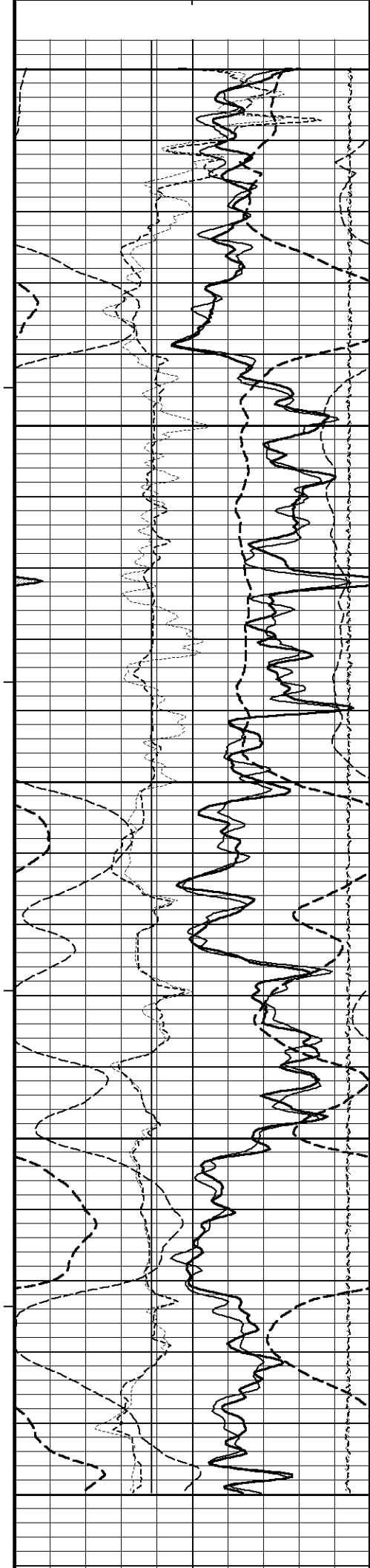
600

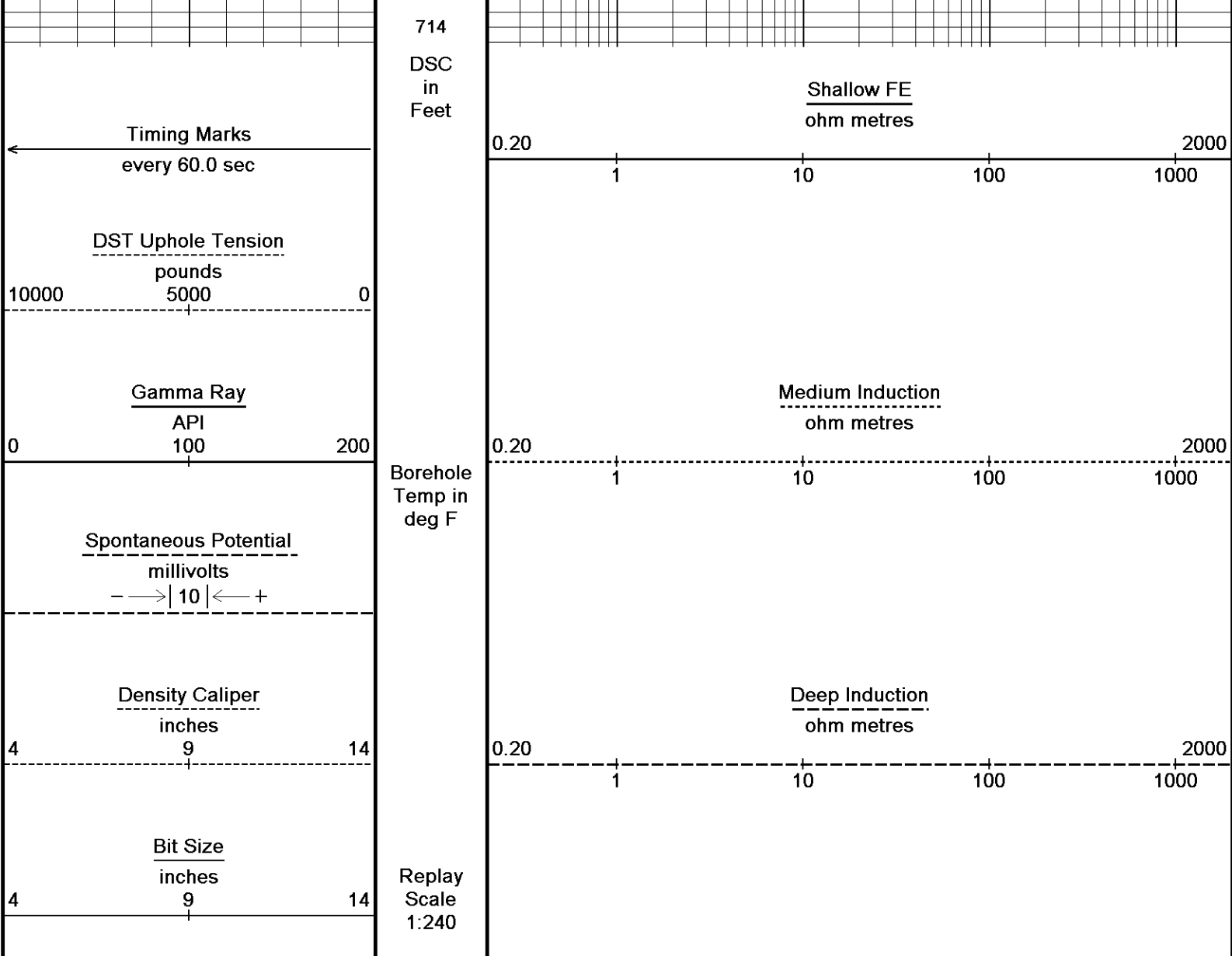
93°

650

93°

700





Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 06-APR-2008 17:50

Filename: C:\DOCUME~1\brunshb\LOCALS~1\Temp\Weatherford Pr... \Wexpro Carl Allen #28_003.dta

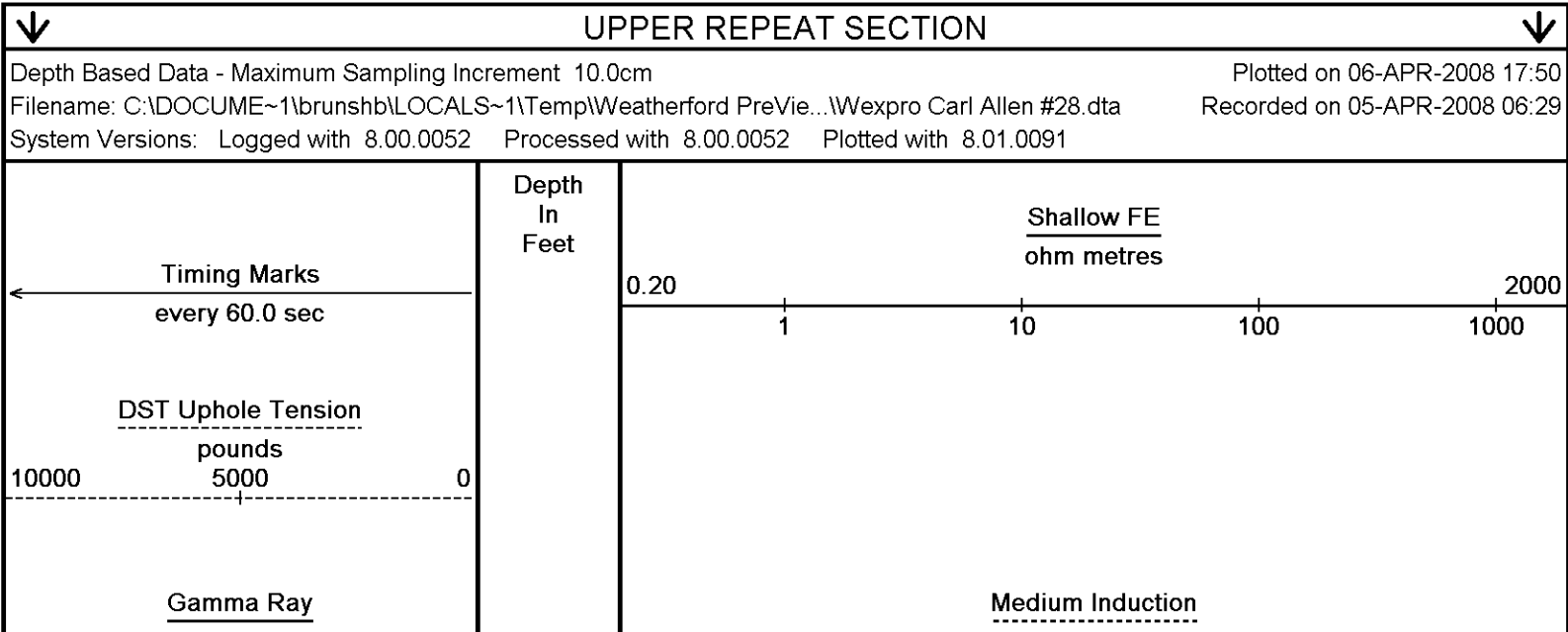
Recorded on 05-APR-2008 07:59

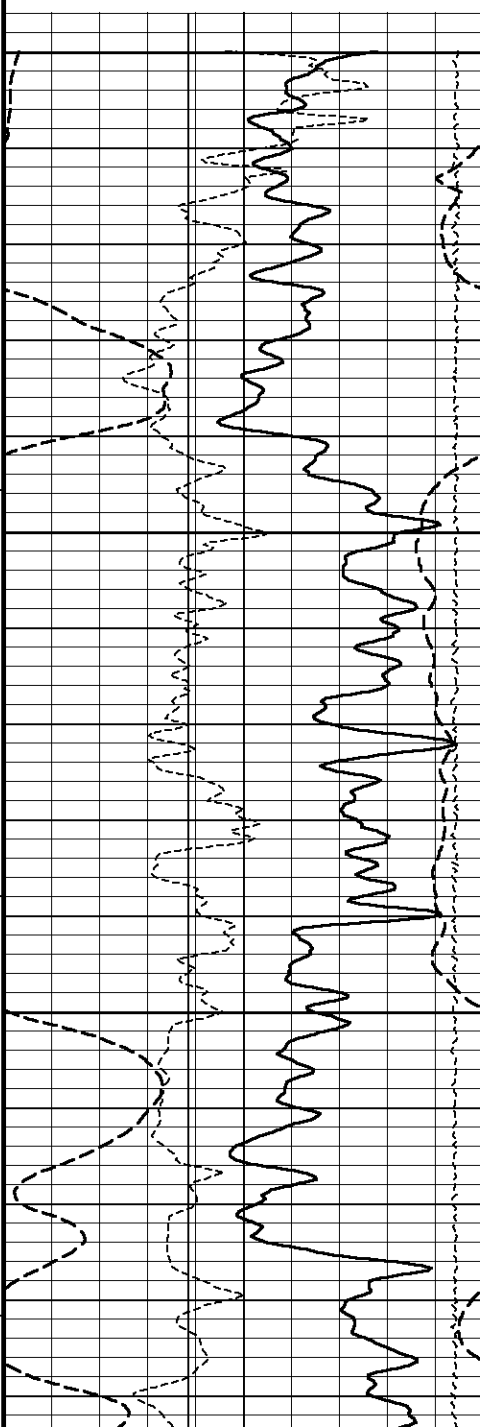
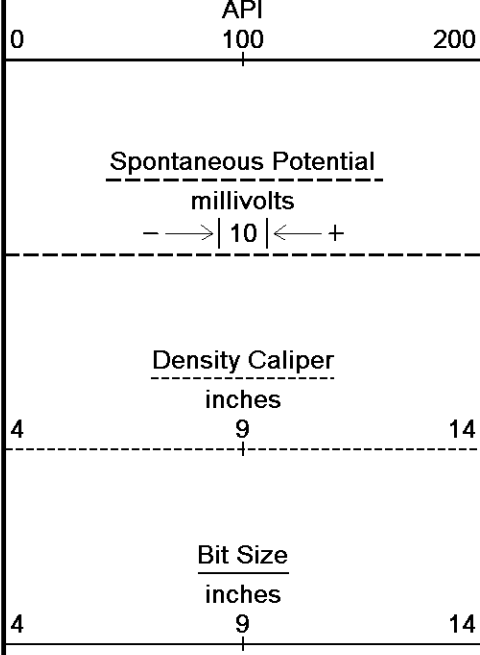
Filename: C:\DOCUME~1\brunshb\LOCALS~1\Temp\Weatherford PreVie... \Wexpro Carl Allen #28.dta

Recorded on 05-APR-2008 06:29

System Versions: Logged with 8.00.0052 Processed with 8.00.0052 Plotted with 8.01.0091

UPPER OVERLAY





Borehole
Temp in
deg F

Replay
Scale
1:240

500

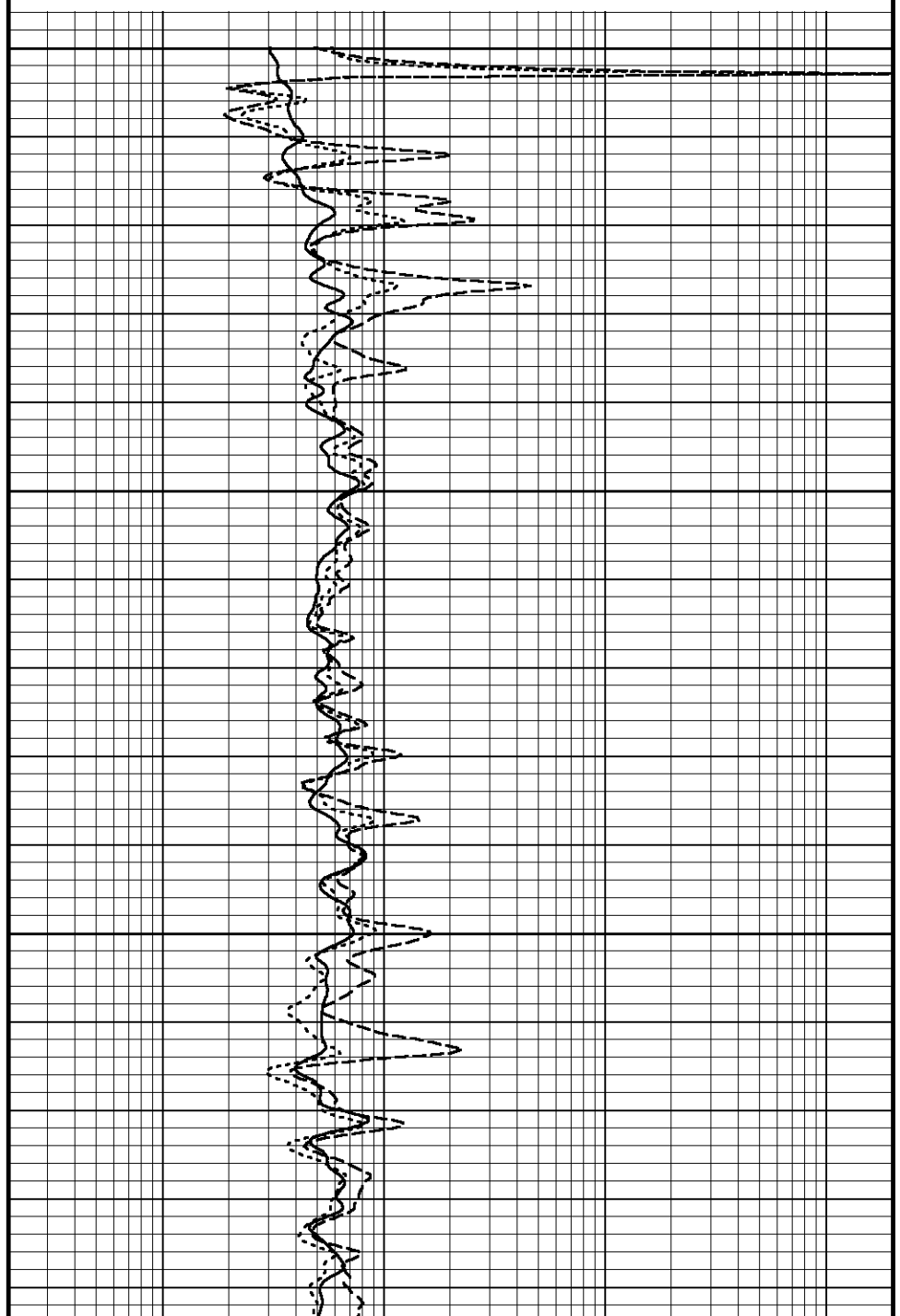
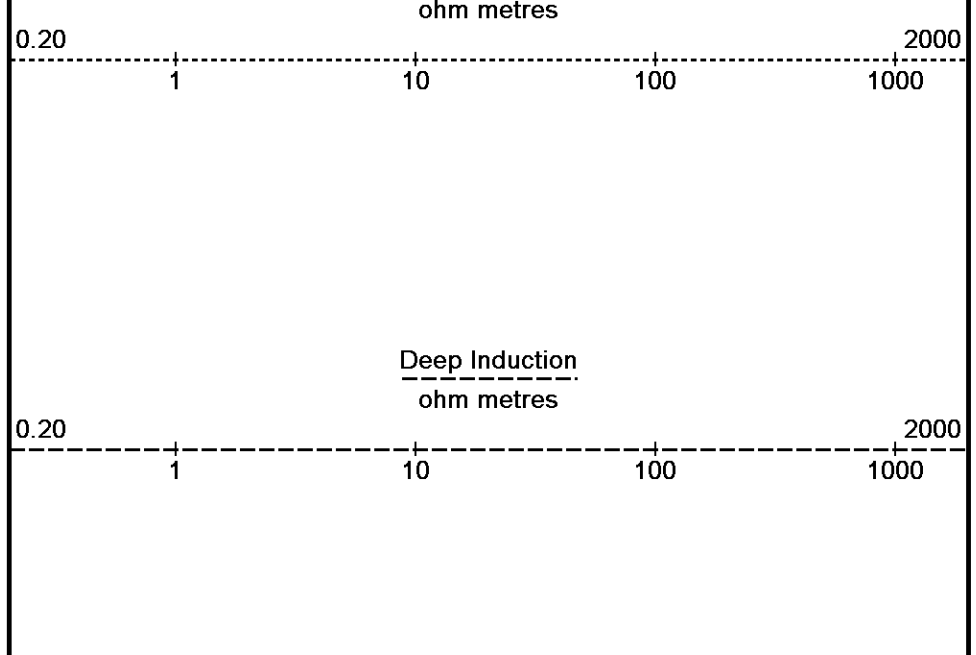
92°

550

92°

600

92°





650

92°

700

714

Depth
In
Feet

← Timing Marks
every 60.0 sec

DST Uphole Tension
pounds
10000 5000 0

Gamma Ray
API
0 100 200

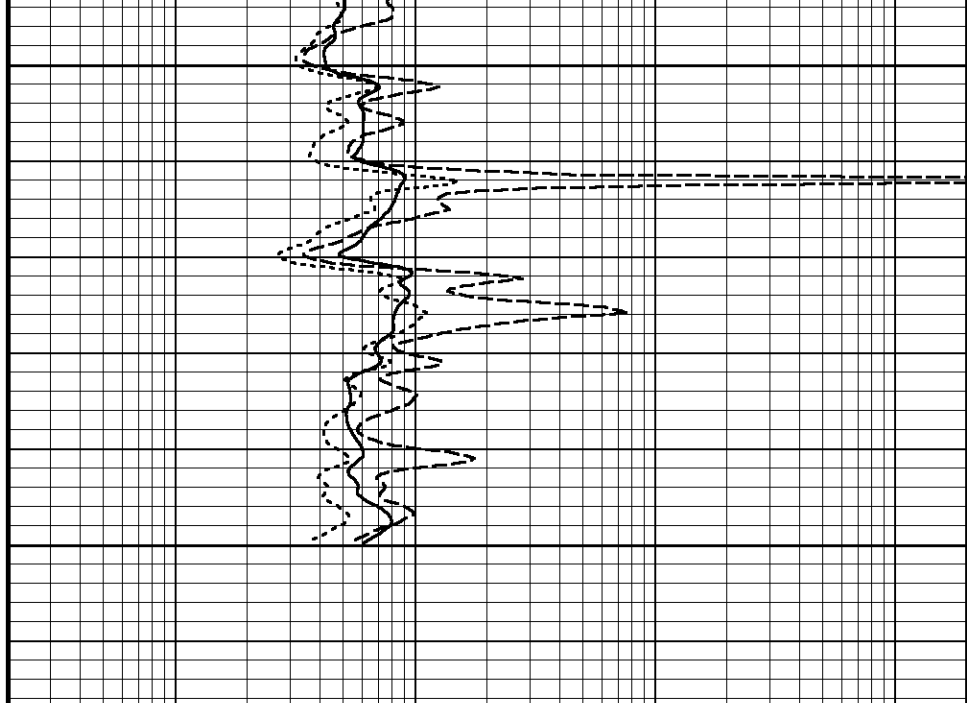
Spontaneous Potential
millivolts
- - - - - 10 - - - - - +

Density Caliper
inches
4 9 14

Bit Size
inches
4 9 14

Borehole
Temp in
deg F

Replay
Scale
1:240



Shallow FE
ohm metres
0.20 1 10 100 1000 2000

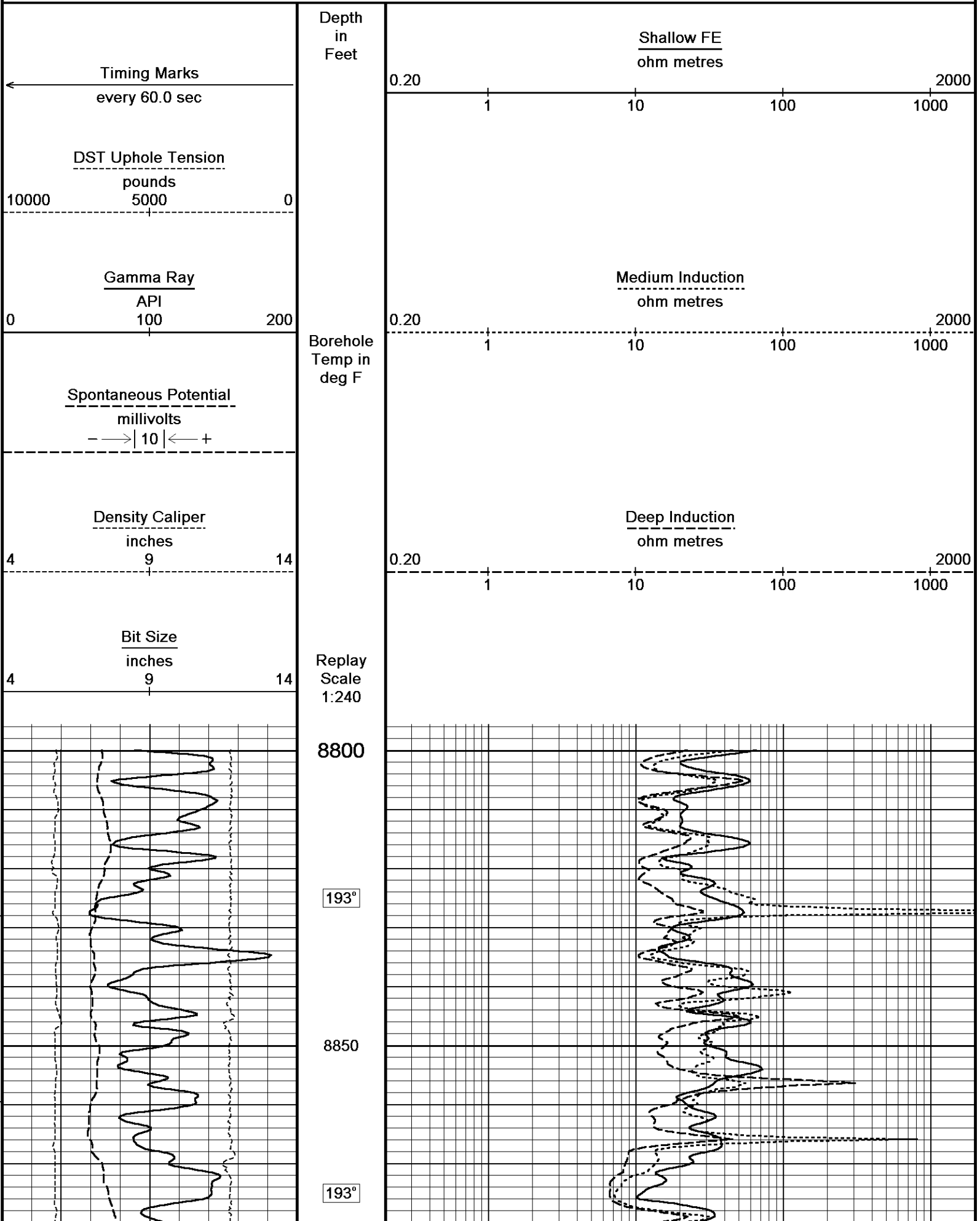
Medium Induction
ohm metres
0.20 1 10 100 1000 2000

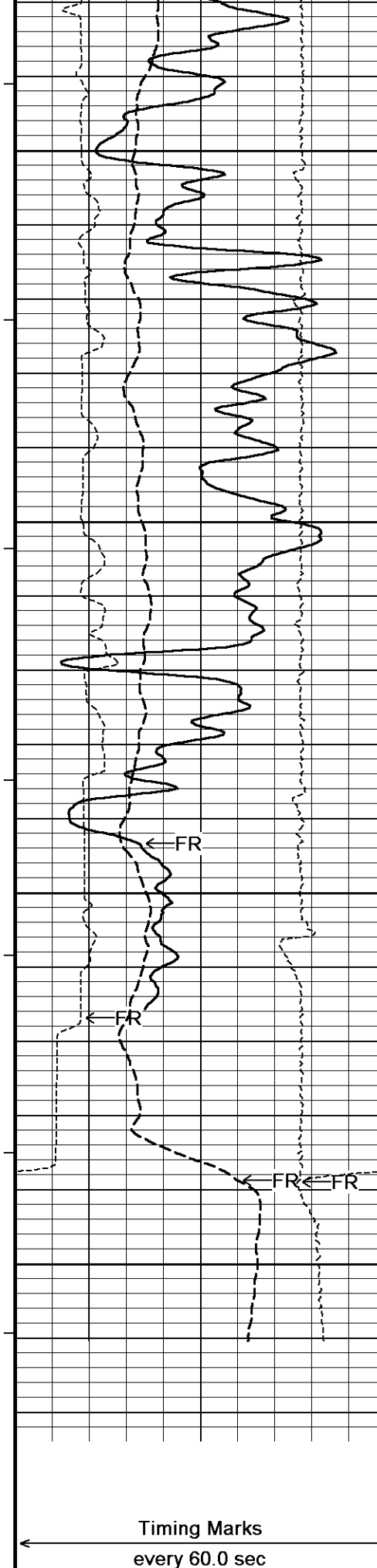
Deep Induction
ohm metres
0.20 1 10 100 1000 2000

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\DOCUME~1\brunshb\LOCALS~1\Temp\Weatherford PreView...Wexpro Carl Allen #28.dta
System Versions: Logged with 8.00.0052 Processed with 8.00.0052 Plotted with 8.01.0091
Plotted on 06-APR-2008 17:50
Recorded on 05-APR-2008 06:29

UPPER REPEAT SECTION

BOTTOM OVERLAY





8900

194°

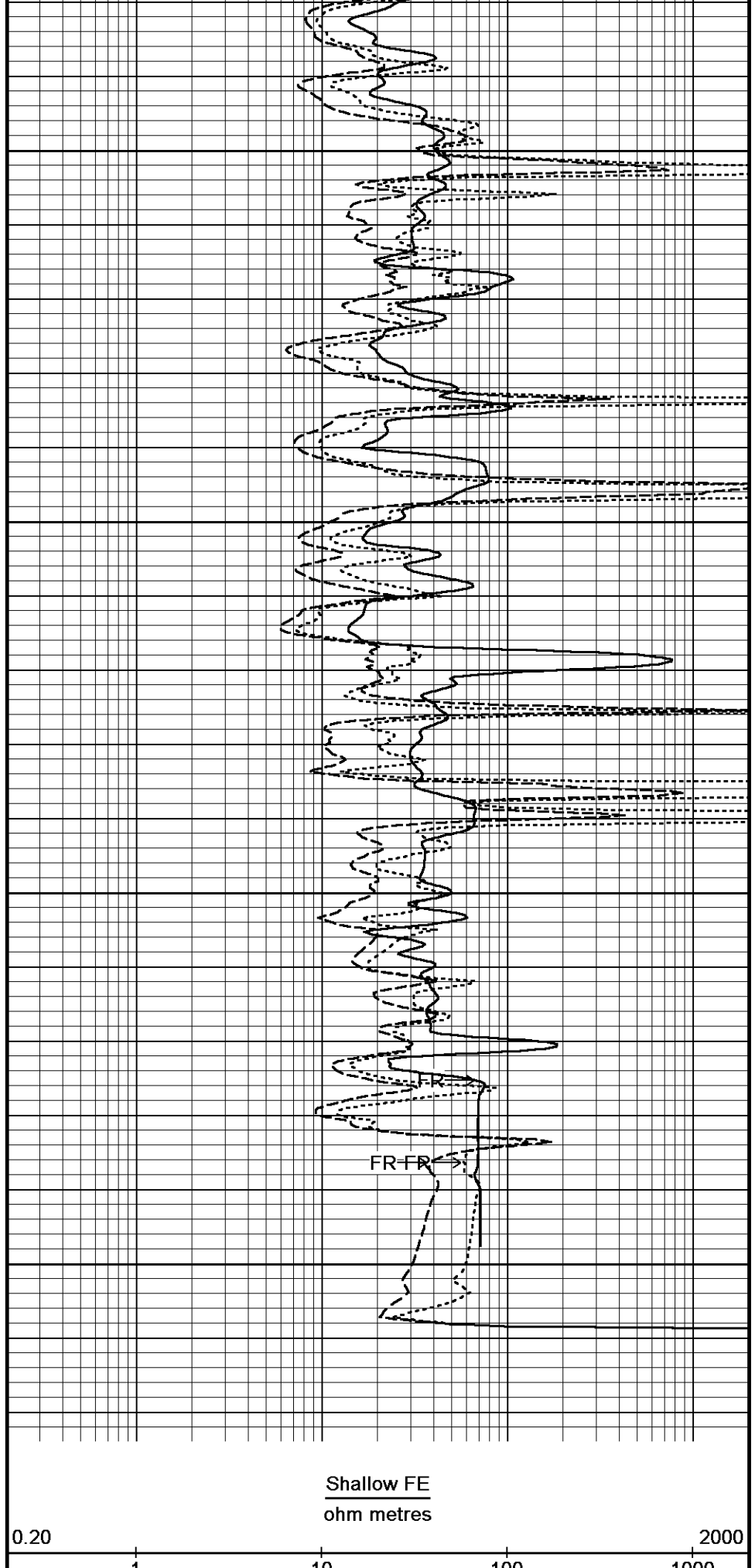
8950

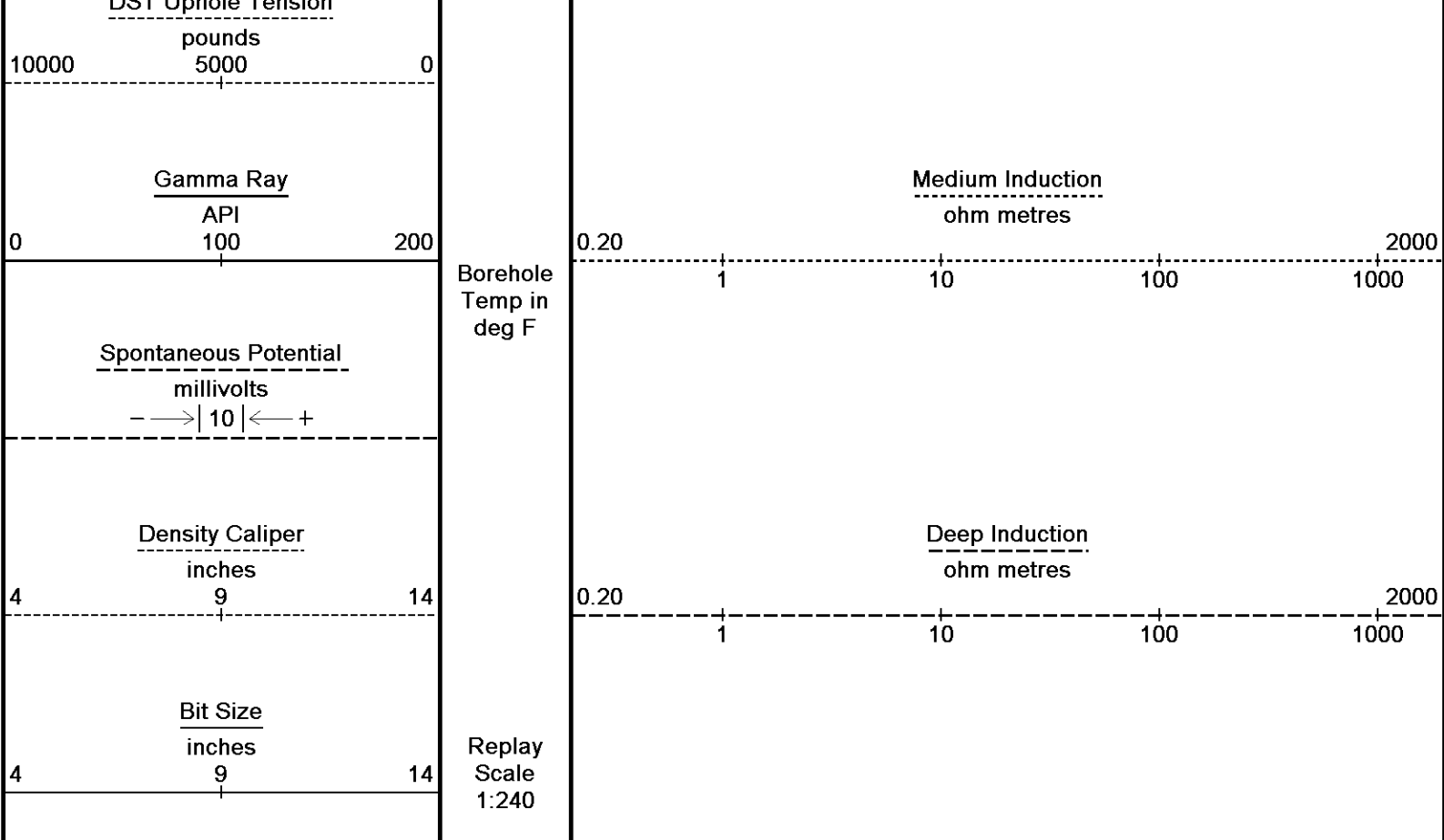
194°

9000

9050

9072
Depth
in
Feet





Depth Based Data - Maximum Sampling Increment 10.0cm	Plotted on 06-APR-2008 17:50
Filename: C:\DOCUME~1\brunshb\LOCALS~1\Temp\Weatherford Pr...\Wexpro Carl Allen #28_001.dta	Recorded on 05-APR-2008 07:42
System Versions: Logged with 8.00.0052 Processed with 8.00.0052 Plotted with 8.01.0091	

↑

BOTTOM OVERLAY

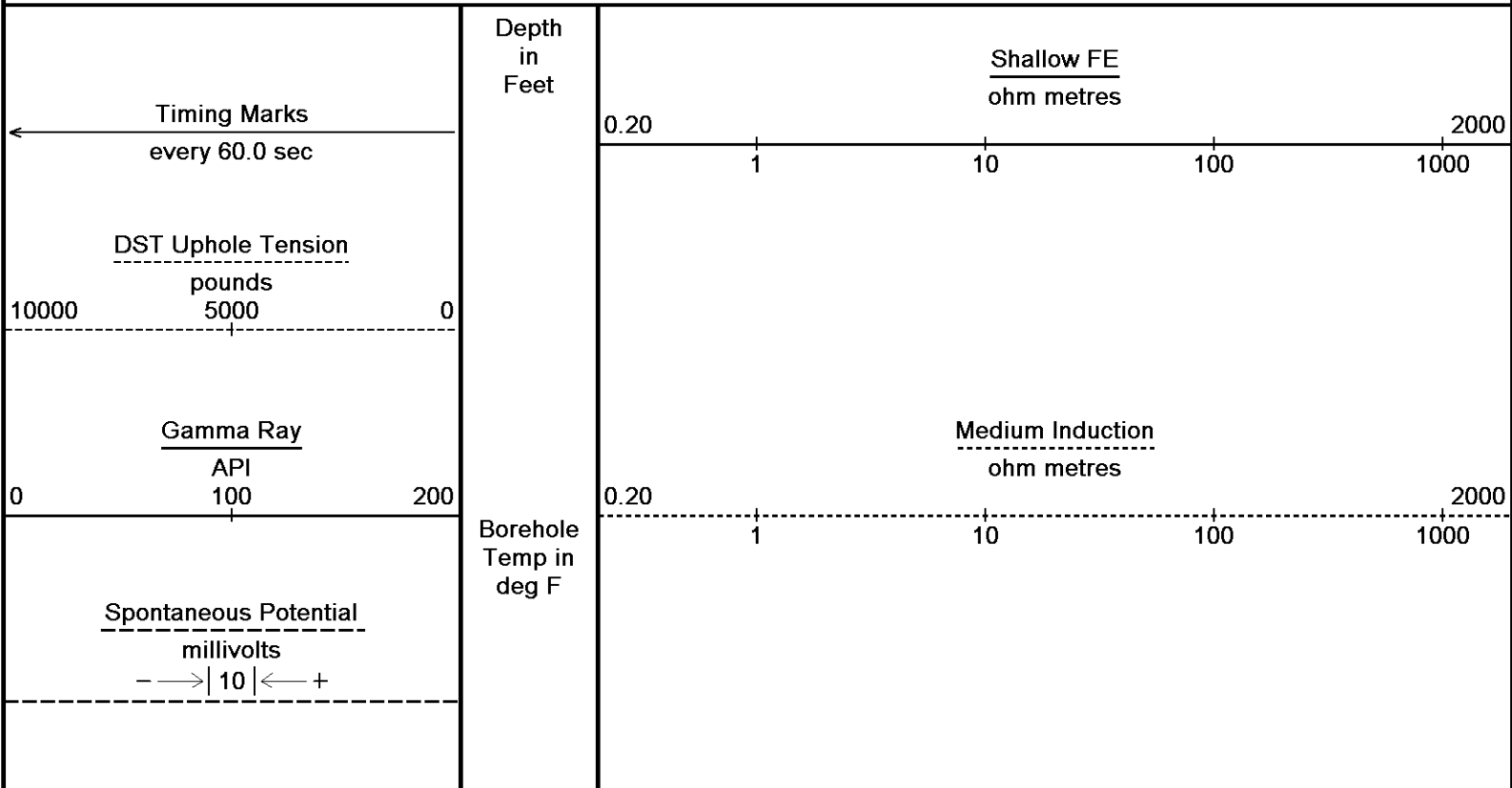
↑

↓

BOTTOM REPEAT SECTION

↓

Depth Based Data - Maximum Sampling Increment 10.0cm	Plotted on 06-APR-2008 17:50
Filename: C:\DOCUME~1\brunshb\LOCALS~1\Temp\Weatherford Pr...\Wexpro Carl Allen #28_001.dta	Recorded on 05-APR-2008 07:42
System Versions: Logged with 8.00.0052 Processed with 8.00.0052 Plotted with 8.01.0091	



Density Caliper

inches

4 9 14

Bit Size

inches

4 9 14

Replay
Scale
1:240

8800

193°

8850

193°

8900

194°

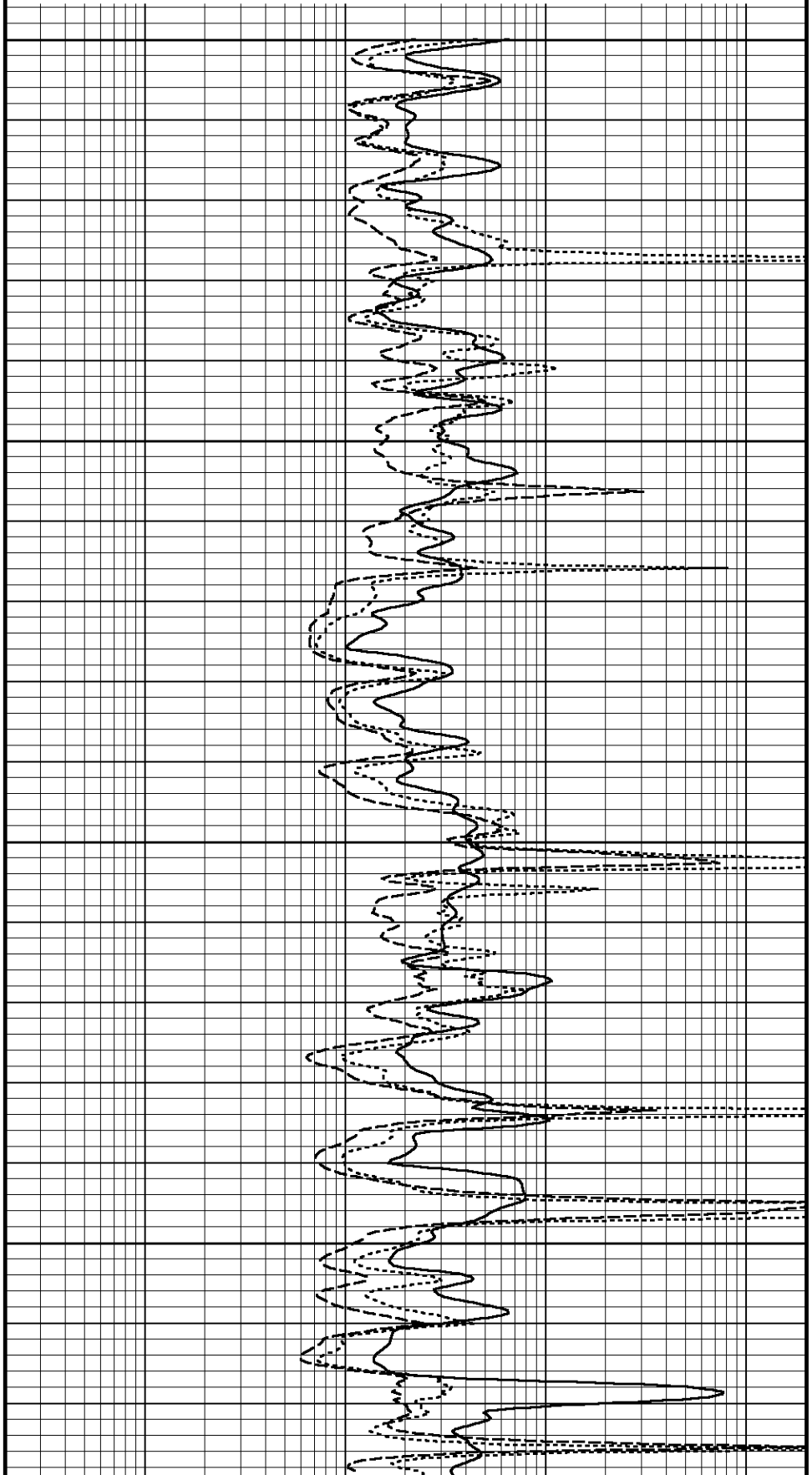
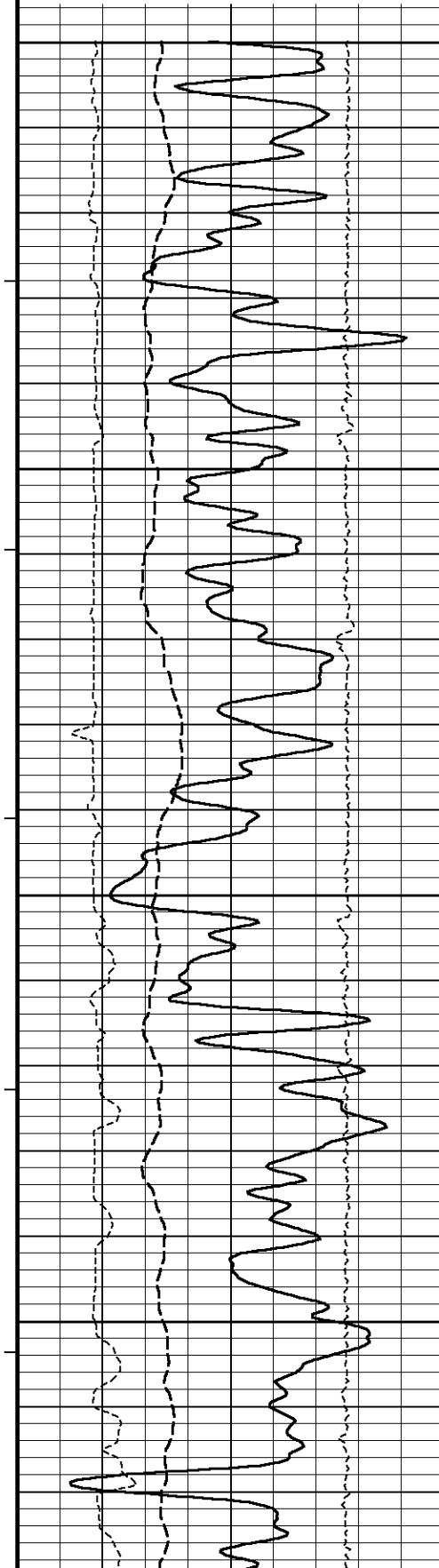
8950

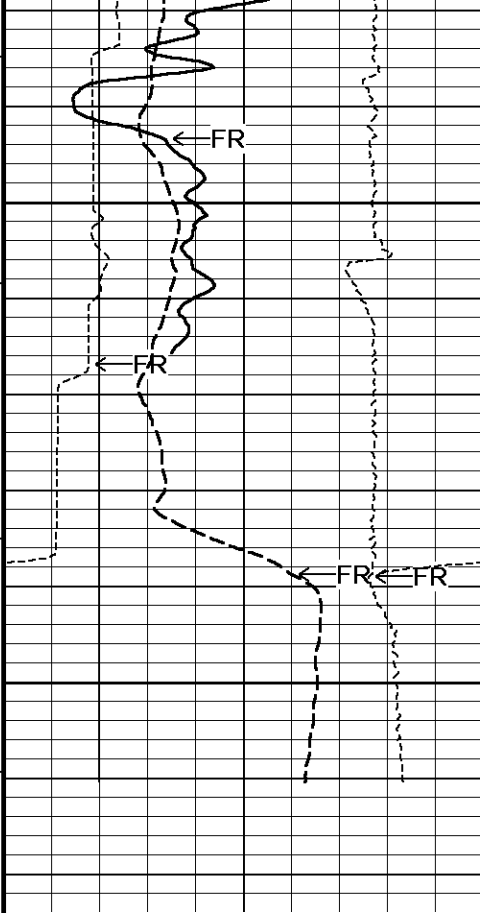
194°

Deep Induction

ohm metres

0.20 1 10 100 1000 2000





9000

9050

9072
Depth
in
Feet

Timing Marks
every 60.0 sec

DST Uphole Tension
pounds

10000 5000 0

Gamma Ray

API

0 100 200

Spontaneous Potential
millivolts

— — — — — 10 — — — — — +

Density Caliper

inches

4 9 14

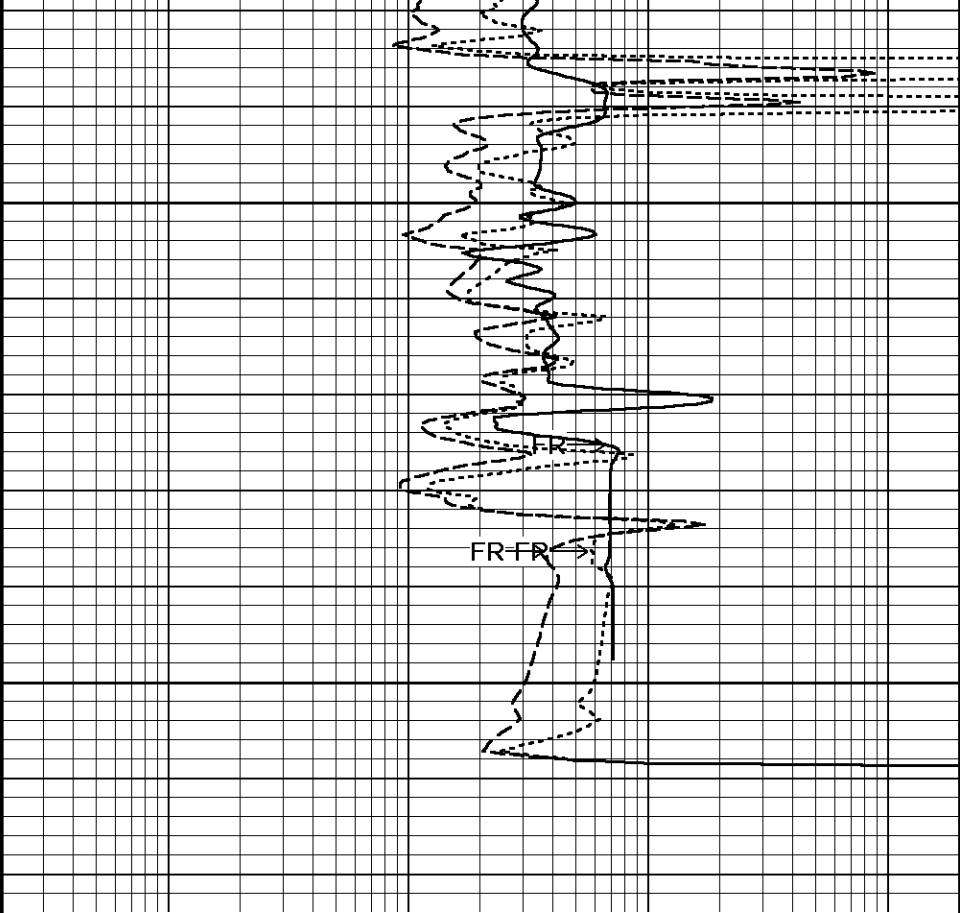
Bit Size

inches

4 9 14

Borehole
Temp in
deg F

Replay
Scale
1:240



Shallow FE
ohm metres

0.20 1 10 100 1000 2000

Medium Induction
ohm metres

0.20 1 10 100 1000 2000

Deep Induction
ohm metres

0.20 1 10 100 1000 2000

↑ **BOTTOM REPEAT SECTION** ↑

BEFORE SURVEY CALIBRATION
 C:\DOCUME~1\brunshb\LOCALS~1\Temp\Weatherford PreView\0\Wexpro Carl Allen #28_001.dta

General Constants All 000			Last Edited on 5-APR-2008,12:12
General Parameters			
Mud Resistivity	0.390	ohm-metres	
Mud Resistivity Temperature	58.500	degrees F	
Water Level	0.000	feet	
Density/Neutron Processing	Wet Hole		
Hole/Annular Volume and Differential Caliper Parameters			
HVOL Caliper 1	Density Caliper		
HVOL Caliper 2	None		
Annular Volume Diameter	4.500	inches	
Caliper for Differential Caliper	None		
Rwa Parameters			
Porosity used	Sandstone Density Por.		
Resistivity used	Deep Induction		
RWA Constant A	0.610		
RWA Constant M	2.150		

Down-hole Tension Calibration SMS 000		Field Calibration on 12-MAR-2008 02:23	
Reading No	Measured	Calibrated (lbs)	
1	14234.77	0.00	
2	16672.25	715.00	

High Resolution Temperature Calibration MCG 145		Field Calibration on 5-APR-2008,05:52	
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	75.00	75.00	

High Resolution Temperature Constants MCG 145	
Pre-filter Length	11

SP Calibration MCG 145		Field Calibration on 5-APR-2008,05:51	
	Measured	Calibrated (mV)	
Reference 1	104.4	102.0	
Reference 2	-97.1	-102.0	

Gamma Calibration MCG 145		Field Calibration on 5-APR-2008,05:51	
	Measured	Calibrated (API)	
Background	71	49	
Calibrator (Gross)	771	529	
Calibrator (Net)	700	480	

Gamma Constants MCG 145		Last Edited on 5-APR-2008,00:31	
Gamma Calibrator Number	GRCC-112		
Mud Density	1.00	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	

Micro Laterolog Calibration MMR 068				Base Calibration on Field Check on	
Base Calibration					
	Measured		Calibrated (ohm-m)		
	Ref 1	Ref 2	Ref 1	Ref 2	
	0.0	0.0	0.0	0.0	

Base Check (ohm-m) 0.0		Field Check (ohm-m) 0.0			
Micro Laterolog Constants MMR 068				Last Edited on 29-OCT-2007 22:27	
Micro Laterolog K Factor		0.0128			
Standoff Offset		0.0000		inches	
Borehole Correction Constants					
Mud Cake Source		Constant Value			
Mud Cake Thickness		0.4000		inches	
Mud Cake Thickness Caliper		N/A			
Mud Cake Resistivity		0.1500		ohm-m	
Caliper Calibration MMR 068				Base Calibration on 4-APR-2008 08:57 Field Calibration on 5-APR-2008,06:20	
Base Calibration					
Reading No		Measured		Calibrator Size (in)	
1		14032		5.97	
2		17245		7.96	
3		20456		9.86	
4		24380		11.92	
5		0		0.00	
6		N/A		N/A	
Field Calibration					
		Measured Caliper (in)		Actual Caliper (in)	
		5.95		5.97	
Micro Normal and Micro Inverse Calibration MMR 068				Base Calibration on 4-APR-2008 15:37 Field Check on 5-APR-2008,06:20	
Base Calibration					
Channel		Resistor 1		Measured	
		Resistor 2		Calibrated (ohm-m)	
Micro Normal		10.1		49.6	
Micro Inverse		9.8		49.4	
				3.4	
				16.9	
Channel		Base Check (ohm-m)		Field Check (ohm-m)	
Micro Normal		94.1		94.1	
Micro Inverse		62.2		62.2	
Micro Normal and Micro Inverse Constants MMR 068				Last Edited on 29-OCT-2007 22:28	
Micro Normal K Factor		0.5110			
Micro Inverse K Factor		0.3380			
Standoff Offset		0.0000		inches	
Neutron Calibration MDN 193				Base Calibration on 18-MAR-2008 10:00 Field Check on 5-APR-2008,06:20	
Base Calibration					
		Measured		Calibrated (cps)	
		Near		Near	
		Far		Far	
		2574		3714	
		79		110	
Ratio		32.437		33.764	
Field Calibrator at Base				Calibrated (cps)	
				2704	
				3947	
Ratio				0.685	
Field Check				Calibrated (cps)	
				2715	
				3983	
Ratio				0.682	
Neutron Constants MDN 193				Last Edited on 4-APR-2008 16:04	
Neutron Source Id		728			
Neutron Jig Number		NJ5239			
Epithermal Neutron		No			
Caliper Source for Processing		Bit Size			
Stand-off		0.00		inches	
Mud Density		1.00		gm/cc	
Limestone Sigma		7.10		cu	

Sandstone Sigma	7.00	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	0.00	kpsi
Temperature Source	None	
Temperature	20.00	degrees F
Mud Salinity	0.00	kppm
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

Caliper Calibration MPD 195

Base Calibration on 4-APR-2008 10:31
Field Calibration on 5-APR-2008,06:21

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	9356	3.99
2	17888	5.97
3	26288	7.96
4	34608	9.86
5	43840	11.92
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	5.95	5.97

Photo Density Calibration MPD 195

Base Calibration on 18-MAR-2008 12:05
Field Check on 5-APR-2008,06:20

Density Calibration				
Base Calibration		Measured	Calibrated (sdu)	
		Near	Far	
Reference 1	54080	27744	60276	31815
Reference 2	22051	2799	24760	2550
Field Check at Base				
	1444.2	1587.2		
Field Check				
	1448.1	1583.9		
PE Calibration				
Base Calibration		Measured	Calibrated	
	WS	WH	Ratio	Ratio
Background	258	1283		
Reference 1	21161	53850	0.398	0.366
Reference 2	5916	21880	0.275	0.269
Field Check at Base				
	258.4	1282.5		
Field Check				
	256.7	1284.7		

Density Constants MPD 195

Last Edited on 5-APR-2008,08:45

Density Source Id	237
Nylon Calibrator Number	DNC-E-658
Aluminium/Fe Calibrator Number	DAC-D-658
Density Shoe Profile	8 inch
Caliper Source for Processing	Density Caliper
PE Correction to Density	Not Applied
Mud Density	1.27 gm/cc
Mud Density Z/A Correction	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)
2.65	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

FE Calibration MFE 076			Base Calibration on 17-MAR-2008 14:08 Field Check on 5-APR-2008,06:21		
Base Calibration					
	Measured	Calibrated (ohm-m)			
Reference 1	0.0	0.0			
Reference 2	959.8	126.8			
Base Check		279.7			
Field Check		279.7			

FE Constants MFE 076				Last Edited on 4-APR-2008,10:40	
Caliper Source for FE correction		Density Caliper			
Rm Source for FE correction		Temperature Corr			
Temp. for Rm Corr.		MCG External Temperature			
Stand-off		0.5		inches	

High Resolution Temperature Calibration MAI 192			Field Calibration on 5-APR-2008,06:21		
	Measured		Calibrated(Deg F)		
Lower	50.00		50.00		
Upper	75.00		75.00		

High Resolution Temperature Constants MAI 192	
Pre-filter Length	11

Induction Calibration MAI 192			Base Calibration on 17-MAR-2008,15:22		
			Field Check on 5-APR-2008,06:21		
Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	17.6	480.1	9.3	966.2	
2	6.4	394.6	7.6	821.4	
3	3.6	267.1	5.2	566.0	
4	2.2	137.7	2.6	279.2	
Array Temperature		79.7	Deg F		
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	11.2	3801.6	12.3	3802.3	
2	28.9	3430.9	29.1	3431.1	
3	27.7	2975.3	27.9	2975.4	
4	18.6	2018.4	18.6	2018.2	
Deep	16.7	1961.5	16.8	1961.5	
Medium	41.1	3905.7	41.2	3905.7	
Shallow	43.5	5042.6	43.8	5043.0	
Array Temperature		55.2	69.7		Deg F

Induction Constants MAI 192				Last Edited on 5-APR-2008,06:21	
Induction Model		ENHANCED			
Caliper for Borehole Corr.		Density Caliper			
Hole Size for Borehole Correction		N/A		inches	
Stand-off		0.50		inches	
Number of Fins on Stand-off		6.0000			
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	
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

DOWNHOLE EQUIPMENT

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SHA-F Compact Swivel Head Adaptor

SHA 97 Length: 2.74 ft Weight: 26.5 lb

Compact Gamma

MCG 145 Length: 8.70 ft Weight: 63.9 lb

Compact Micro-Resistivity

MMR 68 Length: 8.59 ft Weight: 81.6 lb

Compact Neutron

MDN 193 Length: 5.04 ft Weight: 50.7 lb

Compact Density/Caliper

MPD 195 Length: 9.59 ft Weight: 90.4 lb

SKJ-D.A Compact Knuckle Joint

SKJ 115 Length: 2.17 ft Weight: 24.3 lb

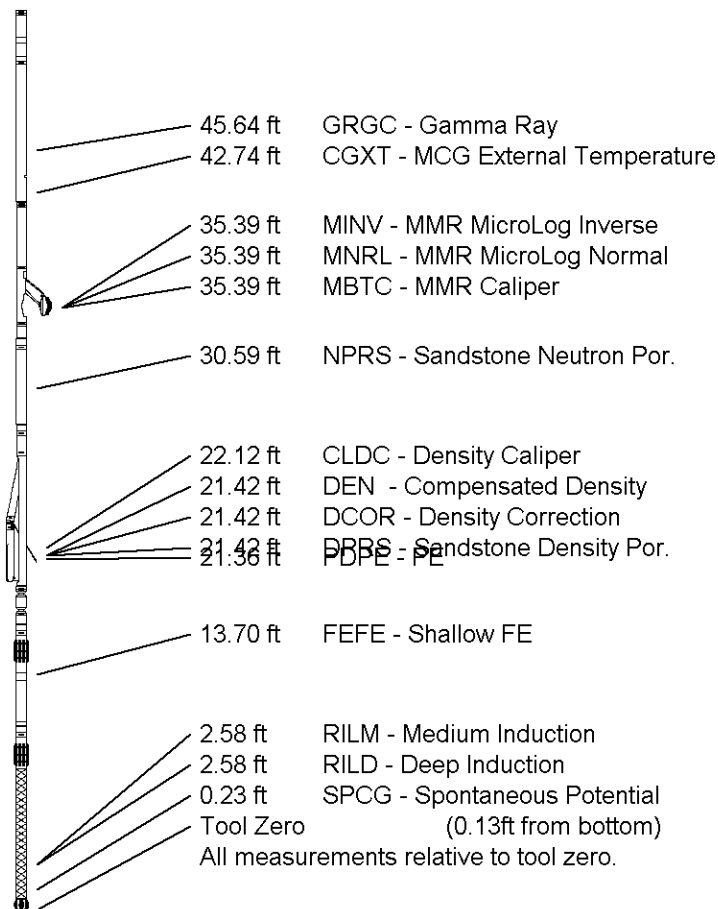
Compact Focussed Electric

MFE 76 Length: 6.03 ft Weight: 48.5 lb

Compact Induction

MAI 192 Length: 10.81 ft Weight: 48.5 lb

Total Length: 53.67 ft Weight: 434.3 lb



COMPANY

WEXPRO COMPANY

WELL

CARL ALLEN #28

FIELD

POWDER WASH UNIT

PROVINCE/COUNTY

MOFFAT

COUNTRY/STATE

U.S.A. / COLORADO

Elevation Kelly Bushing 6666.00 feet

Elevation Drill Floor 6665.00 feet

Elevation Ground Level 6653.00 feet

First Reading feet

Depth Driller 9058.00 feet

Depth Logger 9033.00 feet



Weatherford®



ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

COMPANY		WEXPRO COMPANY	
WELL		CARL ALLEN #28	
FIELD		POWDER WASH UNIT	
PROVINCE/COUNTRY		MOFFAT	
COUNTRY/STATE		U.S.A. / COLORADO	
LOCATION		2346' FSL & 783' FWL	
SEC	TYPE	FACE	Other Services
28	12N	SVW	MP/DMDN
API Number		05-081-07-00900	
Permit Number		MML	
Permanent Datum G.L. Elevation 6653 feet			
Log Measured From K.B. @ 13 FEET above Permanent Datum			
Drilling Measured From K.B.			
Date 05-APR-2008			
Run Number	ONE		
Depth Driller	9059.00	feet	
Depth Logger	9033.00	feet	
First Reading	9030.00		
Last Reading	488.00	feet	
Casing Driller	482.00	feet	
Casing Logger	488.00	feet	
Bit Size	7.88	inches	
Hole Fluid Type	KCL / POLY		
Density / Viscosity	10.60 lb/ft ³ g	53.00 CP	
PH / Fluid Loss	9.50	6.80 ml/30min	
Sample Source FLOWLINE			
Rm @ Measured Temp	0.39 @ 58.5	ohm-m	
Rmt @ Measured Temp	0.31 @ 58.5	ohm-m	
Rmc @ Measured Temp	0.46 @ 58.5	ohm-m	
Source Rmt / Rmc	CALC	CALC	
Rm @ BHT	0.12 @ 195.0	ohm-m	
Time Since Circulation	8 HOURS	deg F	
Max Recorded Temp	195.00	deg F	
Equipment Name	COMPACT		
Equipment / Base	13056	RK SPR	
Recorded By	C. FERREYRA		
Witnessed By	R. LARSON		
Last Title	Last Line		

1 INCH MAIN LOG

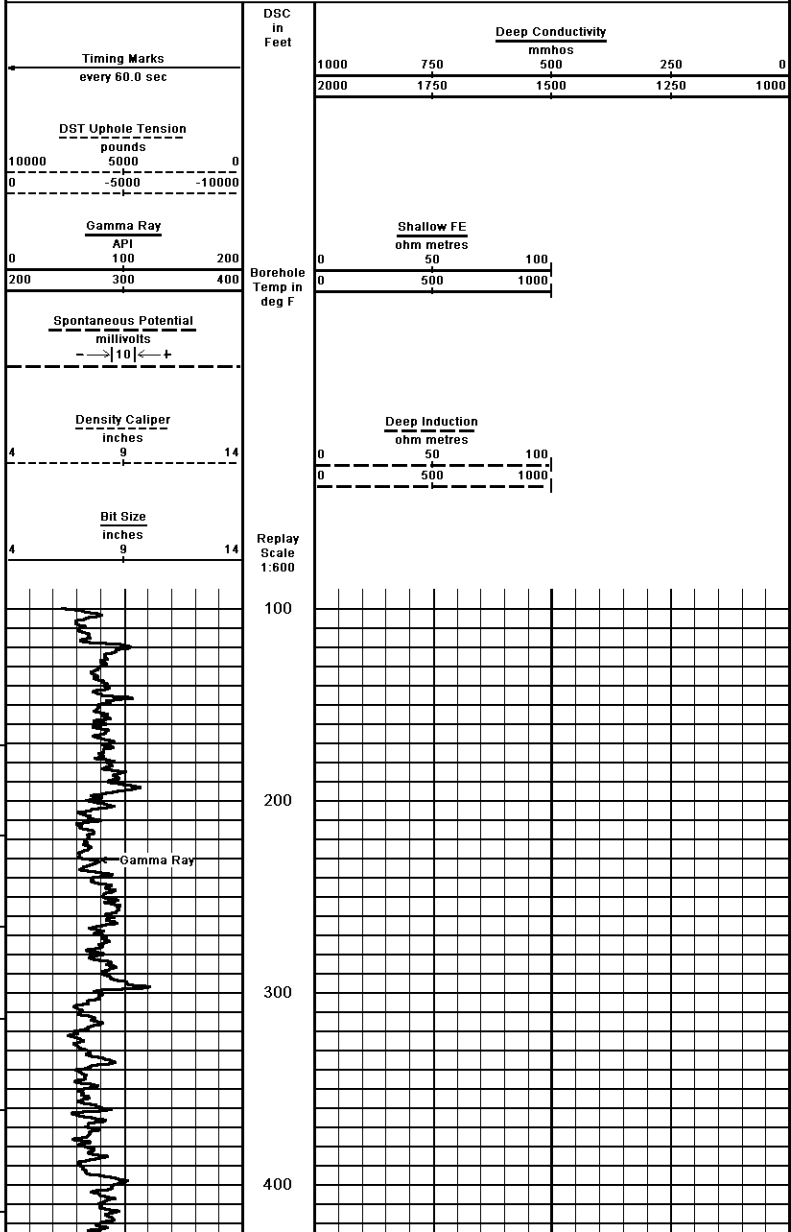
Depth Based Data - Maximum Sampling Increment 10.0cm

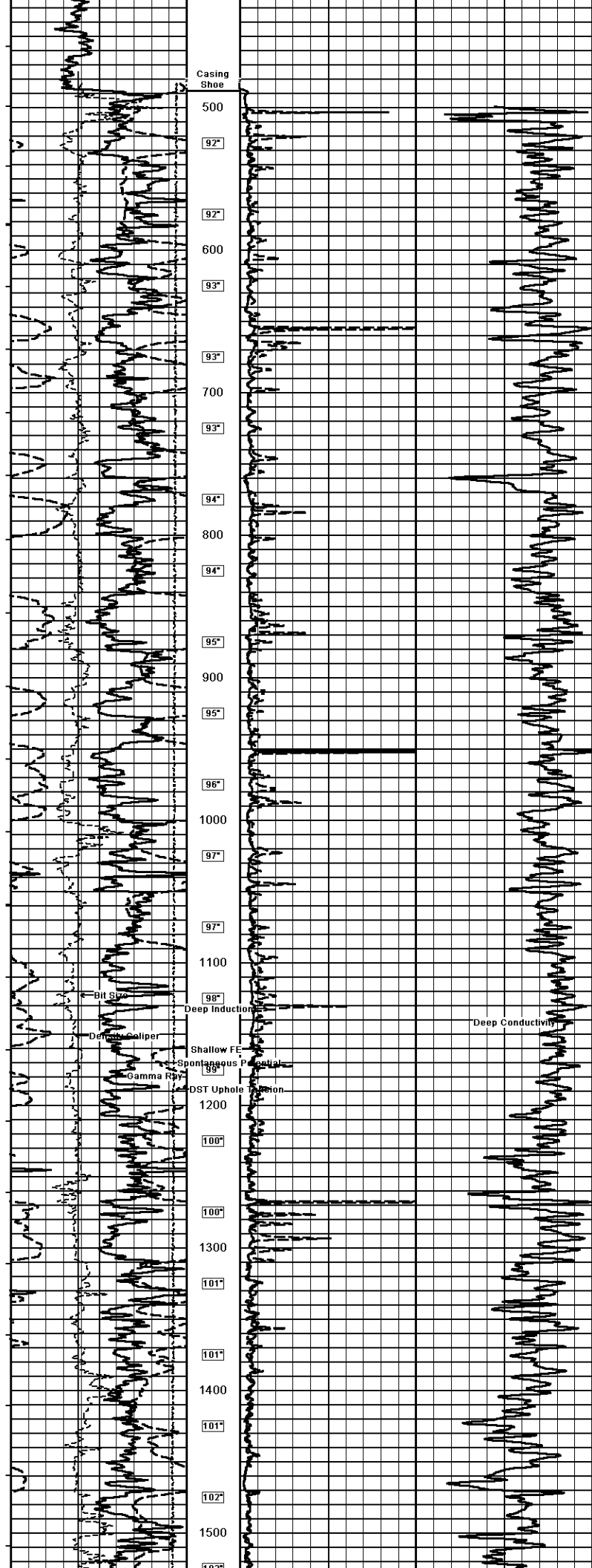
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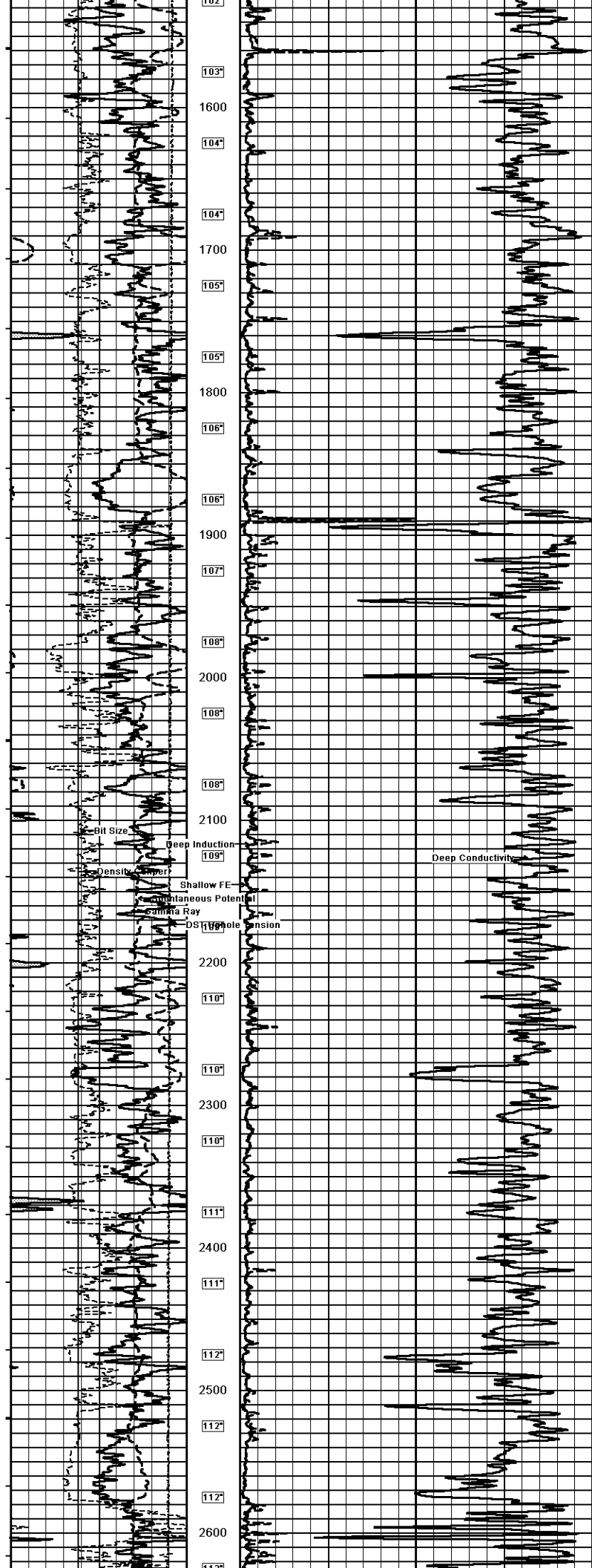
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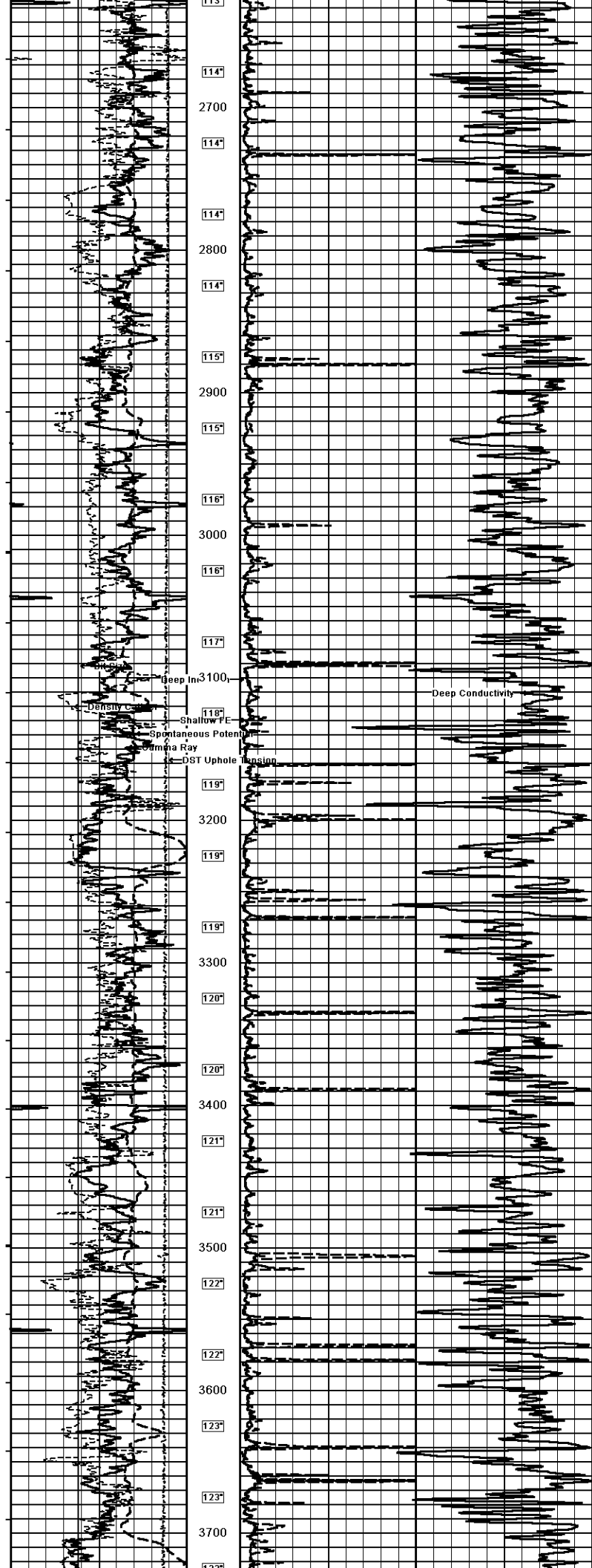
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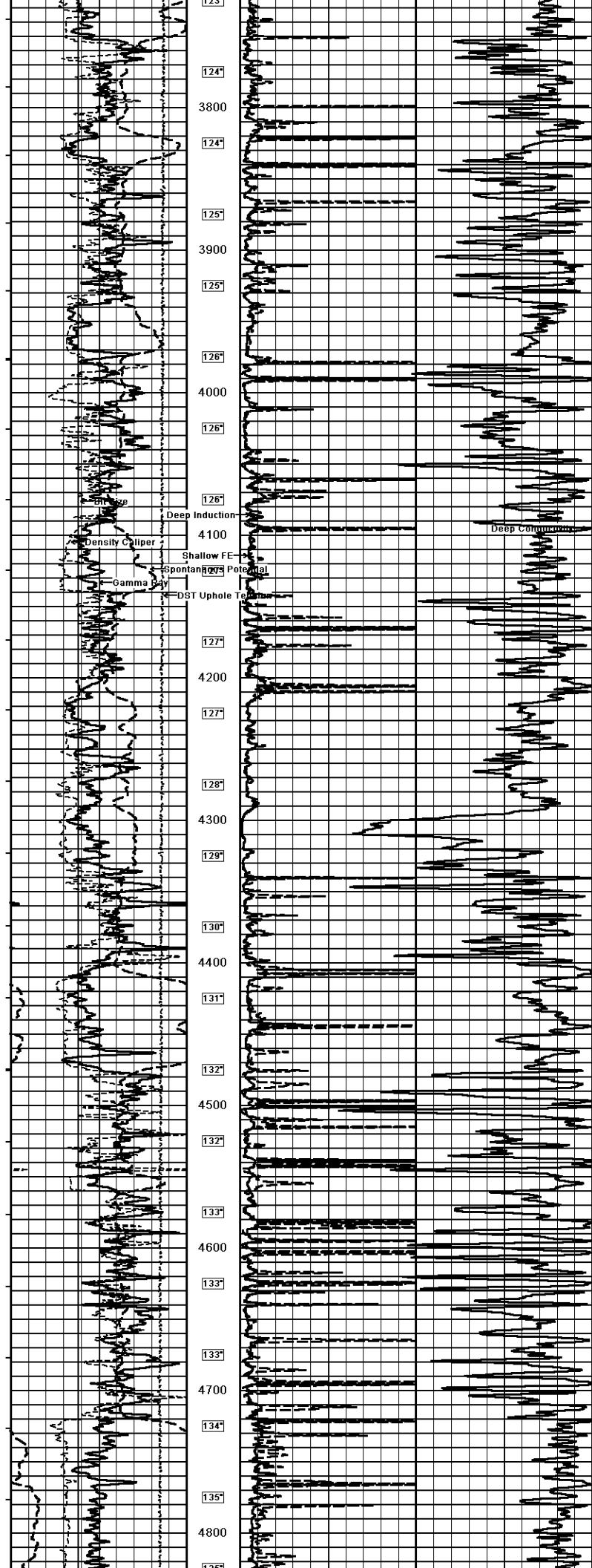
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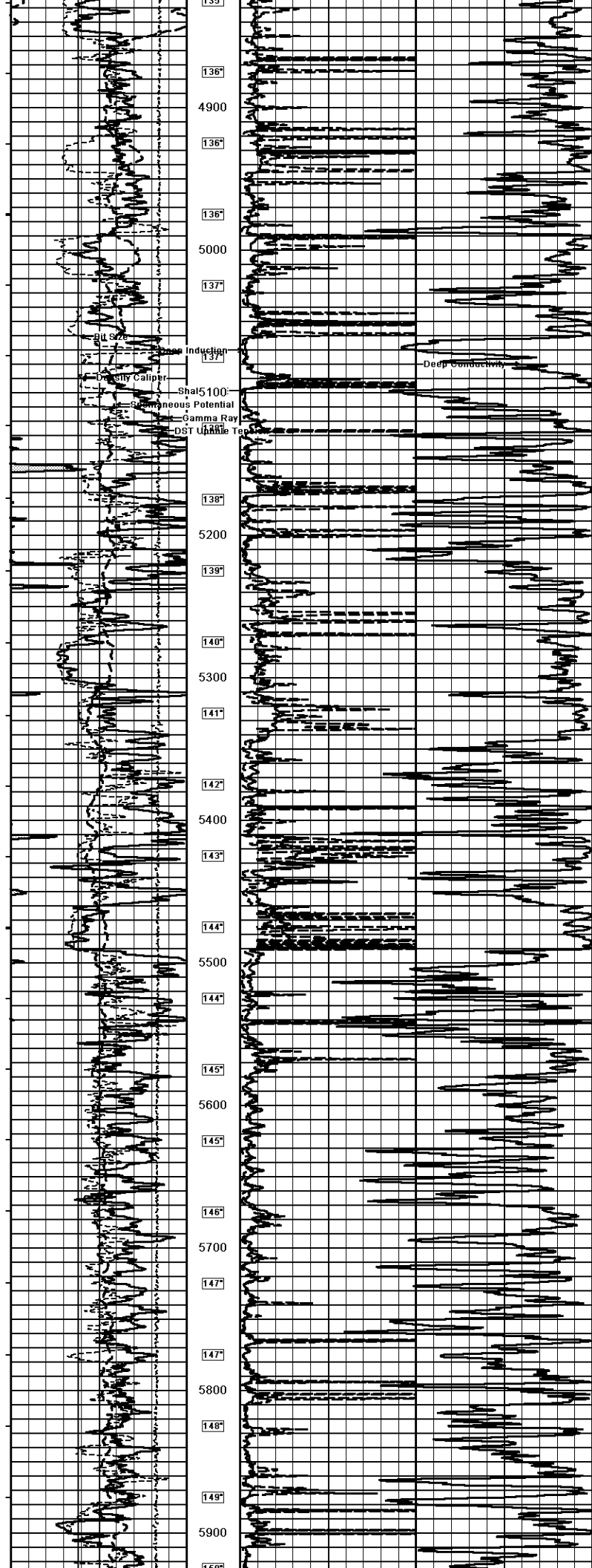


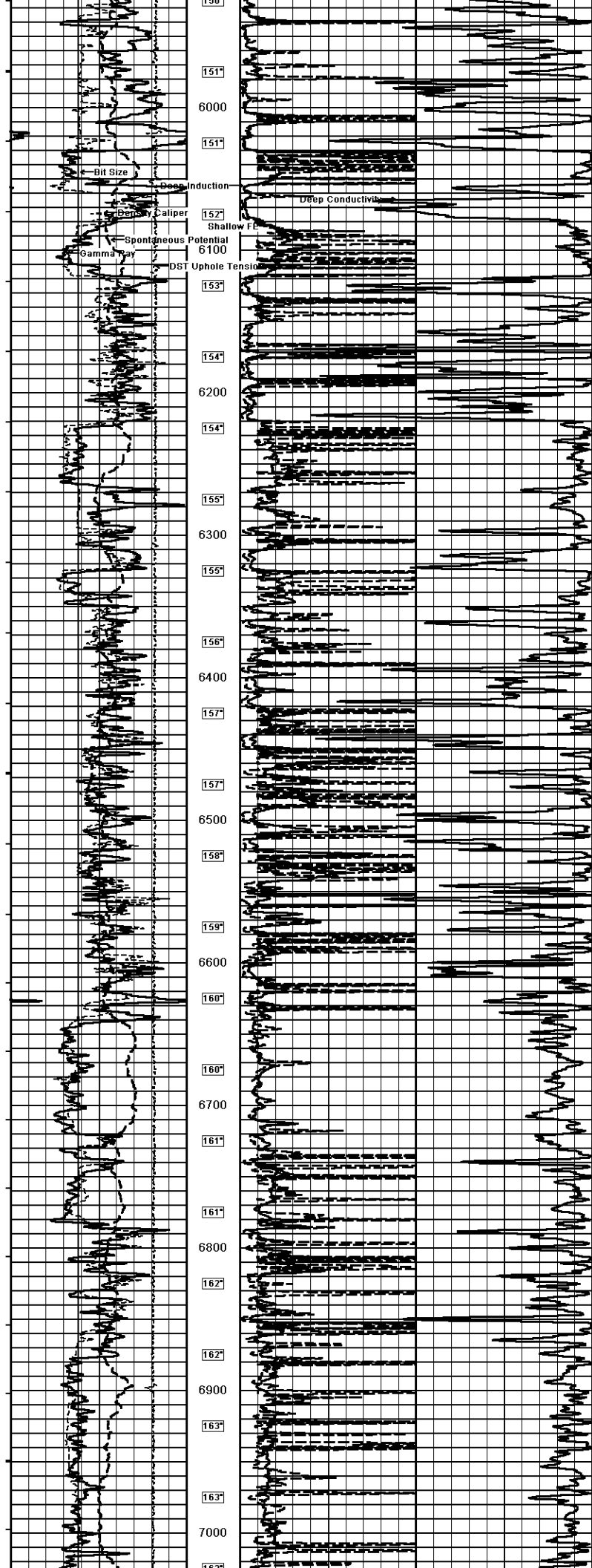


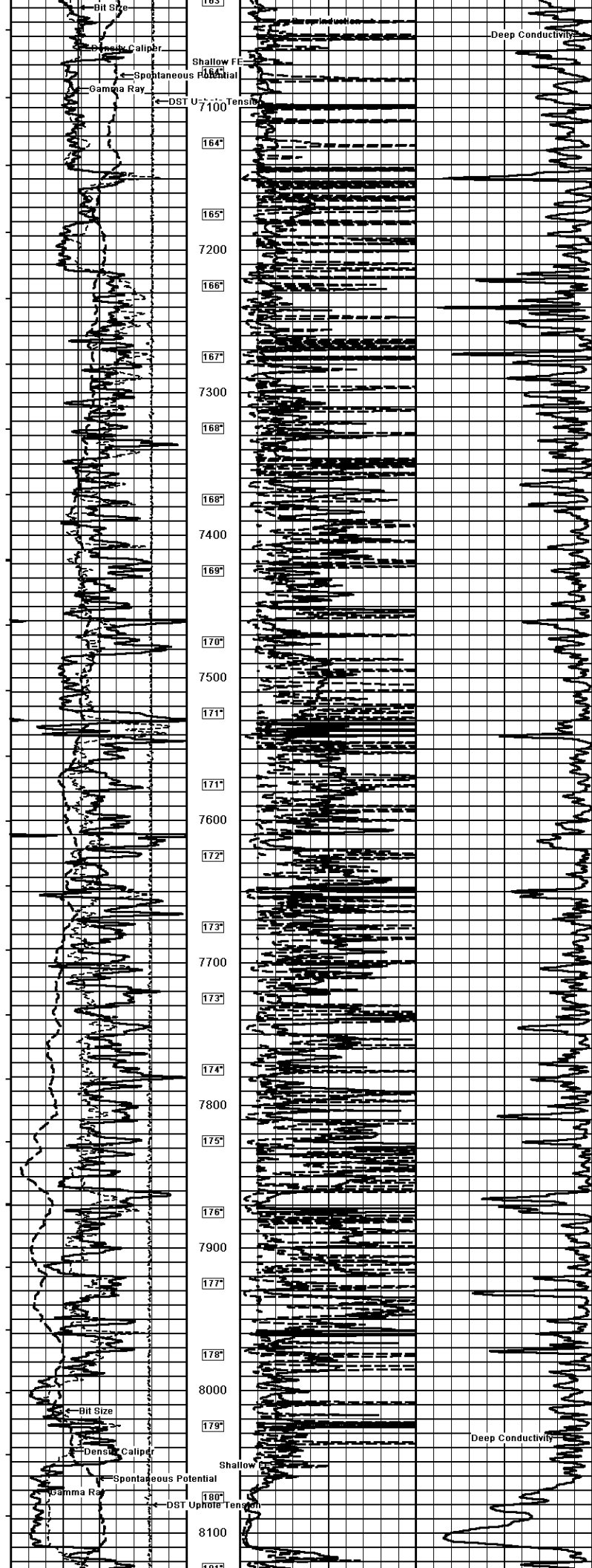


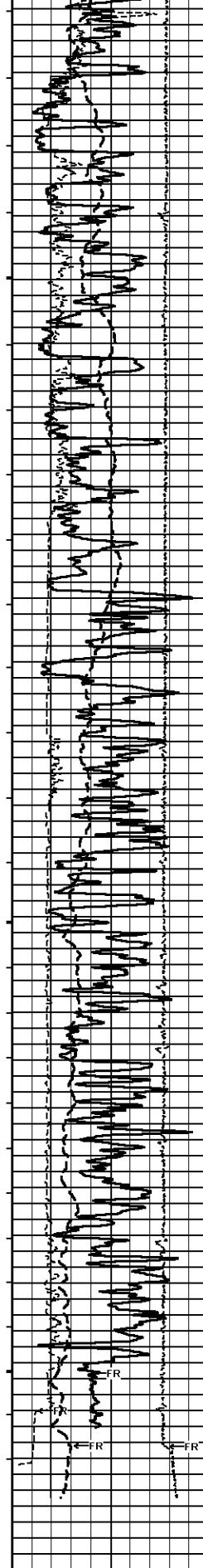




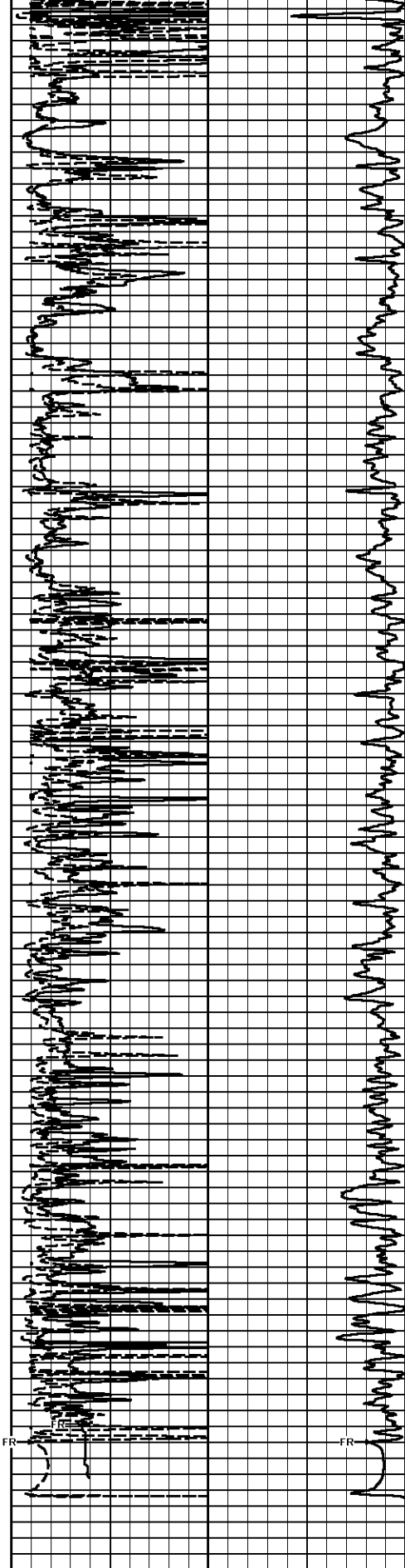








181"
182"
8200
182"
183"
8300
184"
185"
8400
186"
186"
8500
187"
188"
8600
189"
190"
8700
191"
193"
8800
194"
194"
8900
195"
195"
9000
9100



Timing Marks
every 60.0 sec

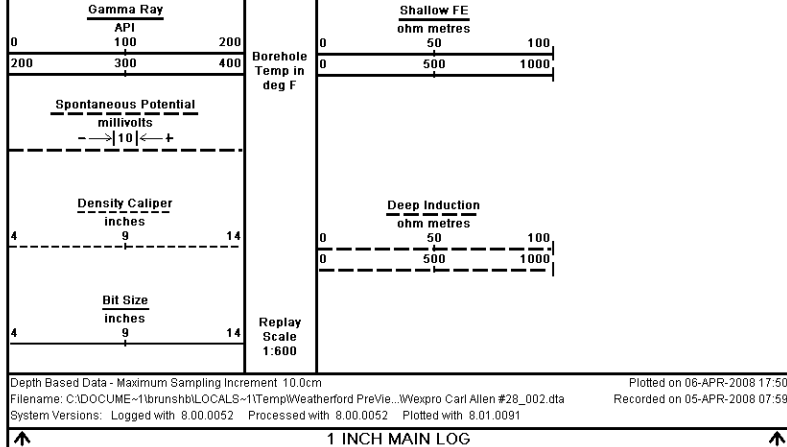
DST Uphole Tension
pounds

10000 5000 0
0 -5000 -10000

DSC
in
Feet

Deep Conductivity
mmhos

1000 750 500 250 0
2000 1750 1500 1250 1000



COMPANY

WELL

FIELD

PROVINCE/COUNTY

COUNTRY/STATE

Elevation Kelly Bushing	6666.00	feet
Elevation Drill Floor	6665.00	feet
Elevation Ground Level	6653.00	feet

First Reading		
Depth Driller	9058.00	feet
Depth Logger	9033.00	feet



Weatherford