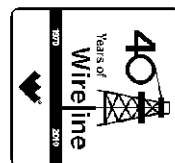




Weatherford

CALIPER LOG



COMPANY

WELL

FIELD

PROVINCE/COUNTY

COUNTRY/STATE

LOCATION

WEXPRO COMPANY

CARL ALLEN 41

POWDER WASH

MOFFAT

USA/COLORADO

SHL: 1054' FSL & 710' FWL

SEC

28

TWP

12N

RGE

97W

Other Services

MAI

CXD

API Number

0508107644

Permit Number

MDN

Permanent Datum G.L., Elevation 6660 feet

Log Measured From KB

Drilling Measured From KB

Elevations:

KB 6689.00

DF 6689.00

GL 6660.00

Date

24-JAN-2012

Run Number

1

Depth Driller

9520.00

feet

Depth Logger

6880.00

feet

First Reading

6821.00

feet

Last Reading

1532.00

feet

Casing Driller

1534.00

feet

Casing Logger

1532.00

feet

Bit Size

7.875

inches

Hole Fluid Type

WBM

Density / Viscosity

10.30 lb/USg

42.00 CP

PH / Fluid Loss

10.30

6.80 cc/30min

Sample Source

FLOWLINE

Rm @ Measured Temp

2.60 @ 73.8

ohm-m

Rmf @ Measured Temp

2.08 @ 73.8

ohm-m

Rmc @ Measured Temp

3.12 @ 73.8

ohm-m

Source Rmf / Rmc

CALC

CALC

Rm @ BHT

1.19 @165.0

ohm-m

Time Since Circulation

6 HOURS

Max Recorded Temp

165.00

deg F

Equipment Name

COMPACT

Equipment / Base

13144

RK SPR

Recorded By

A.VAN BRUNT

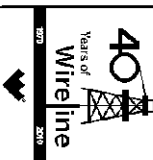
J.LIU

Witnessed By

S.LAWS

40 Years of Wireline

1973 2013



BOREHOLE RECORD

Last Edited: 24-JAN-2012 05:41

Bit Size inches	Depth From feet	Depth To feet
7.875	1534.00	9520.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	1534.00	36.00

REMARKS

SOFTWARE VERSION 12.02.4401

TOOLS RUN: SHA, MCG, MDN, MPD, MIS-D, SKJ, MIS-B, SKJ, CXD, MFE, MAI RUN IN COMBINATION.

HARDWARE: MPD: 8" PROFILE PLATE USED.
MAI: TWO 1 INCH STANDOFFS USED.
MFE: ONE 1 INCH STANDOFF USED.
MDN: DUAL BOWSPRING USED.
CXD: TWO CENTRALIZING BASKETS

2.65 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.

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

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

BRIDGED AT 6880FT. LOGGED UP FROM THERE

TOTAL HOLE VOLUME FROM BRIDGE @ 6880FT TO SURFACE CASING =2040 CUBIC FEET

ANNULAR VOLUME WITH 4.5 INCH PRODUCTION CASING FROM BRIDGE @ 6880FT TO SURFACE CASING = 1450 CUBIC FEET

SERVICE ORDER: #3531975

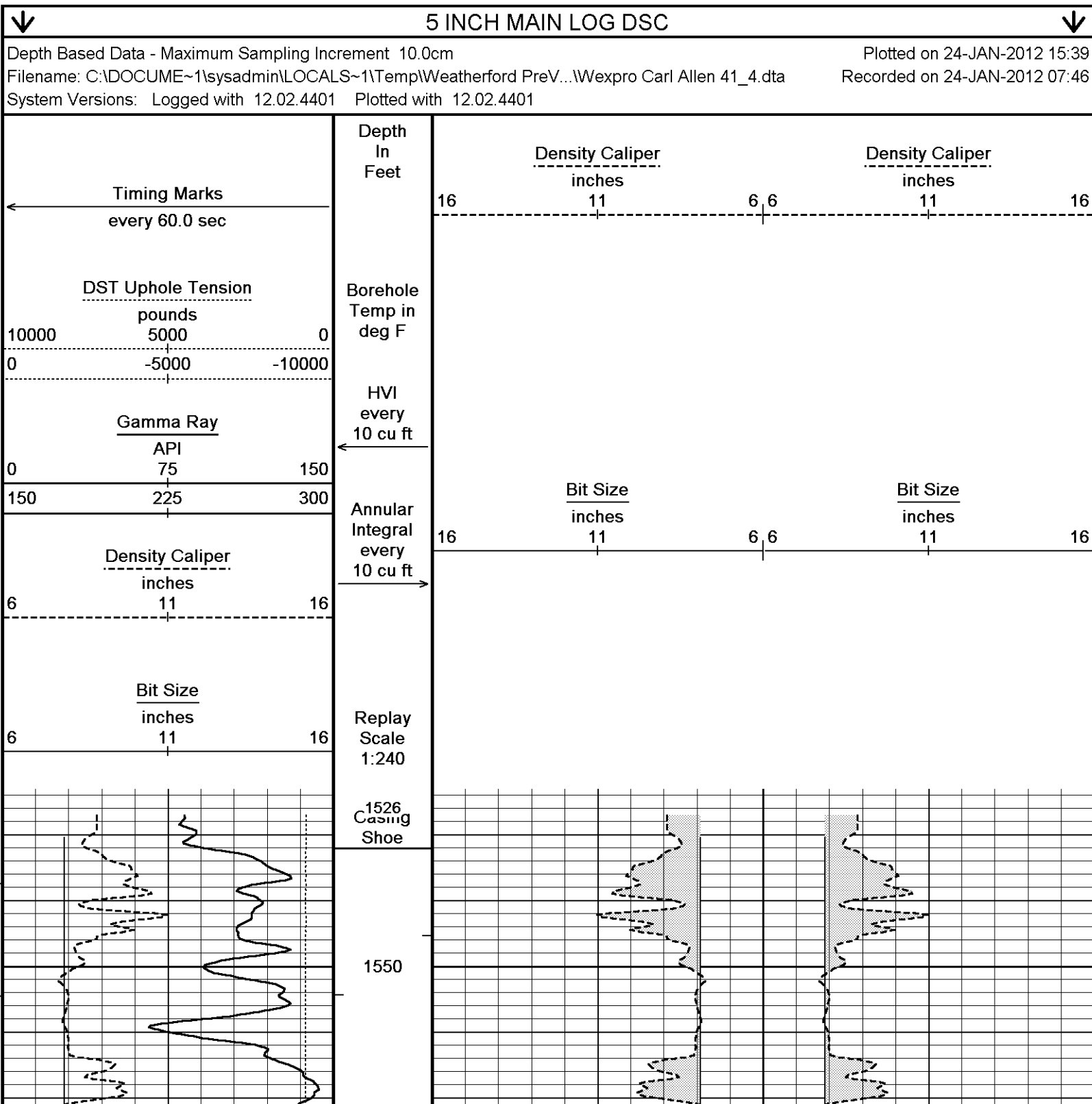
OPERATOR: R.MORITZ

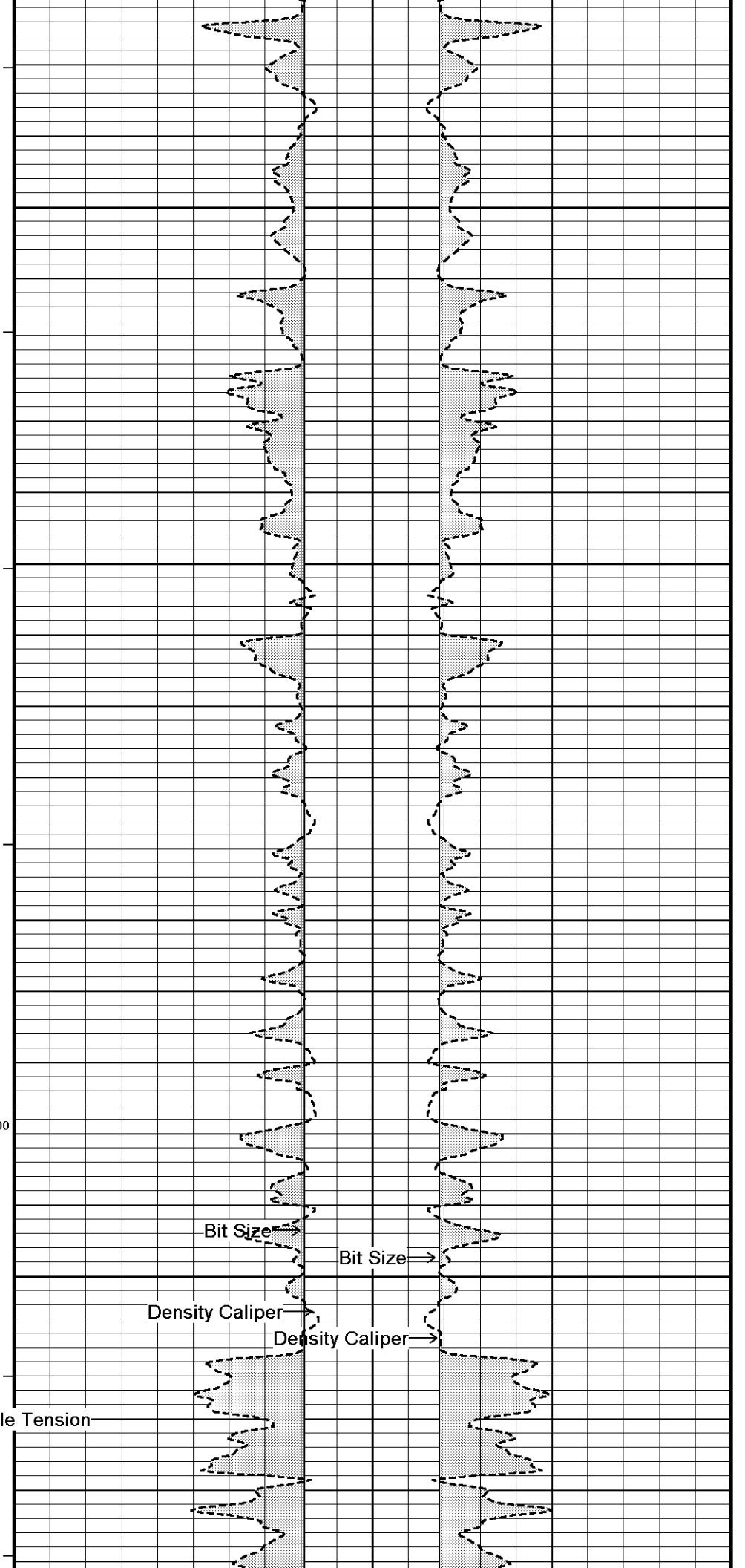
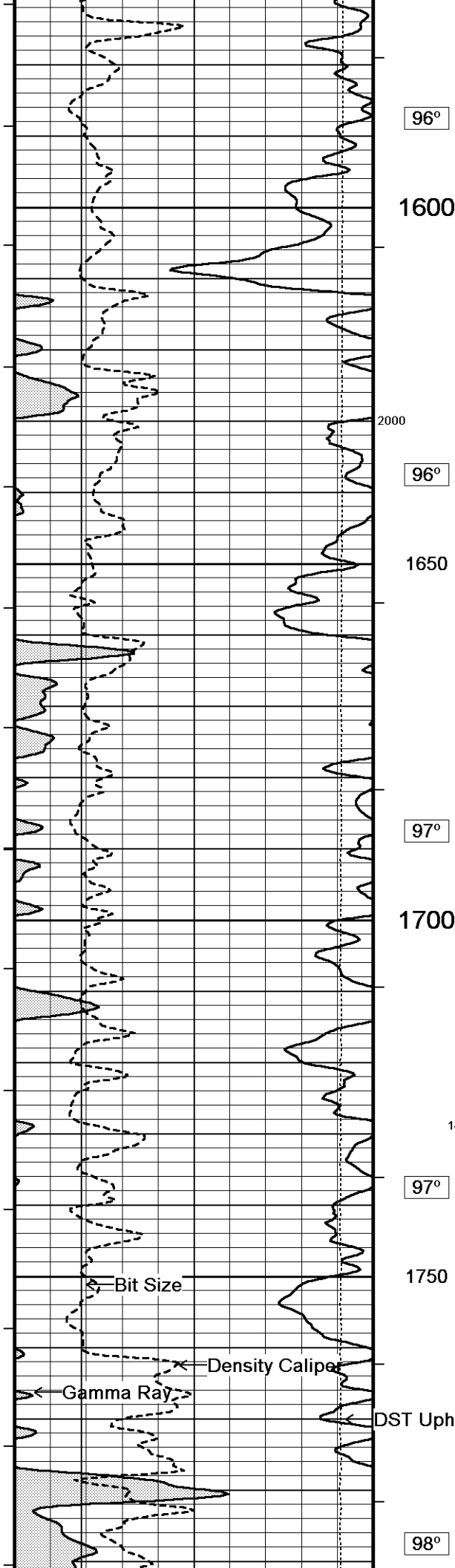
M.LAMOREAUX

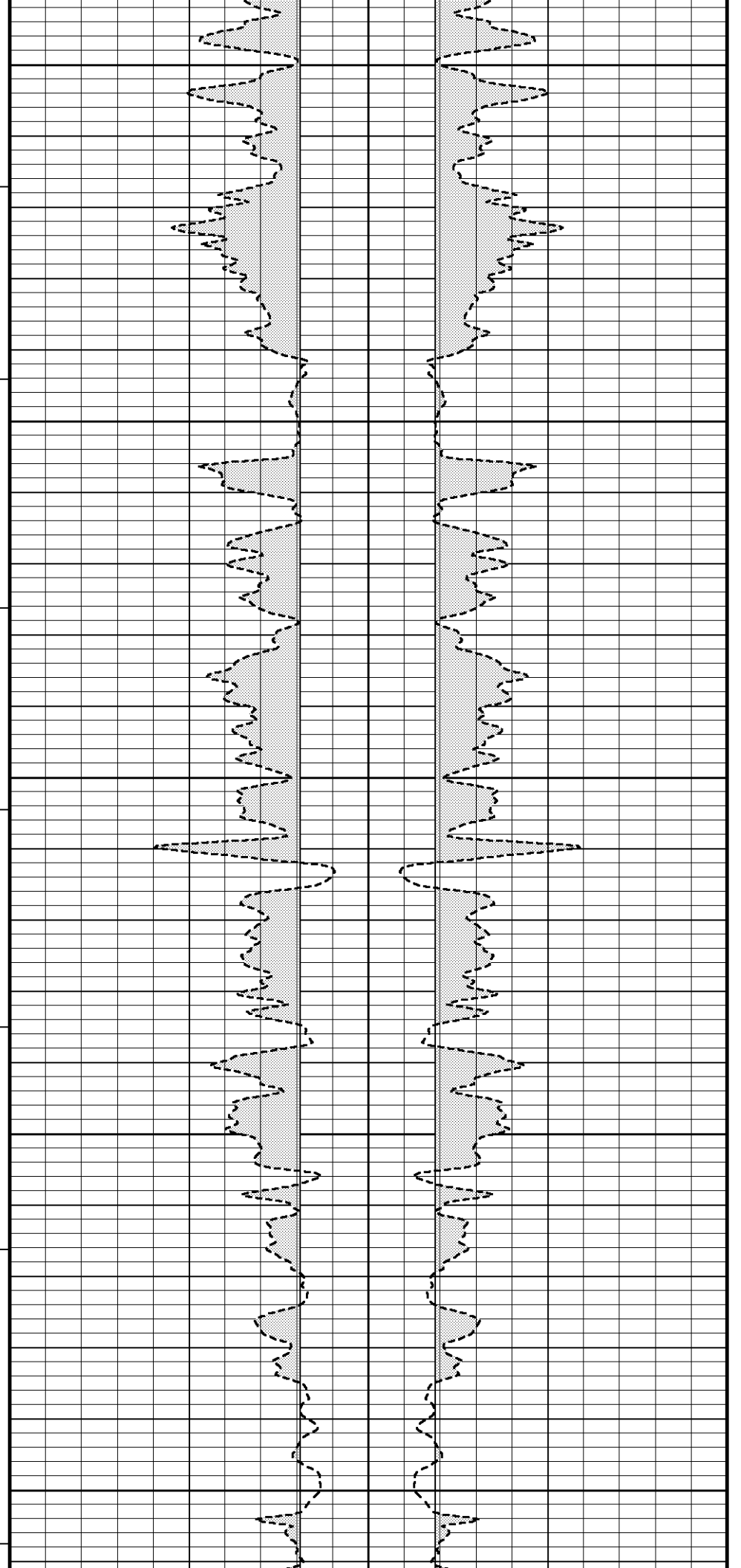
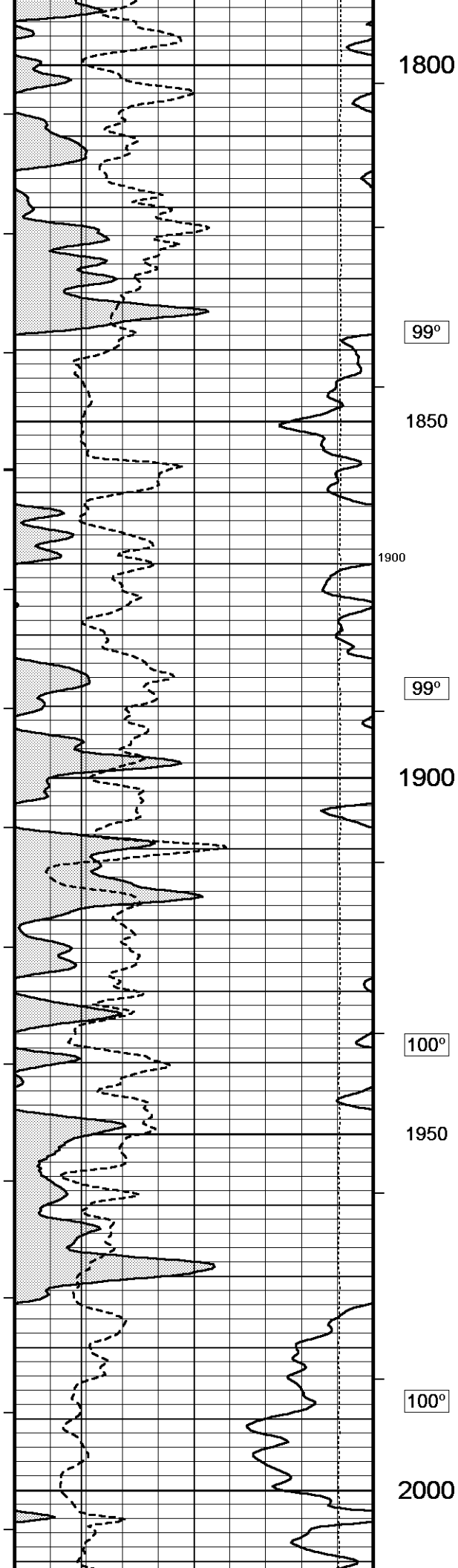
T.BENICH

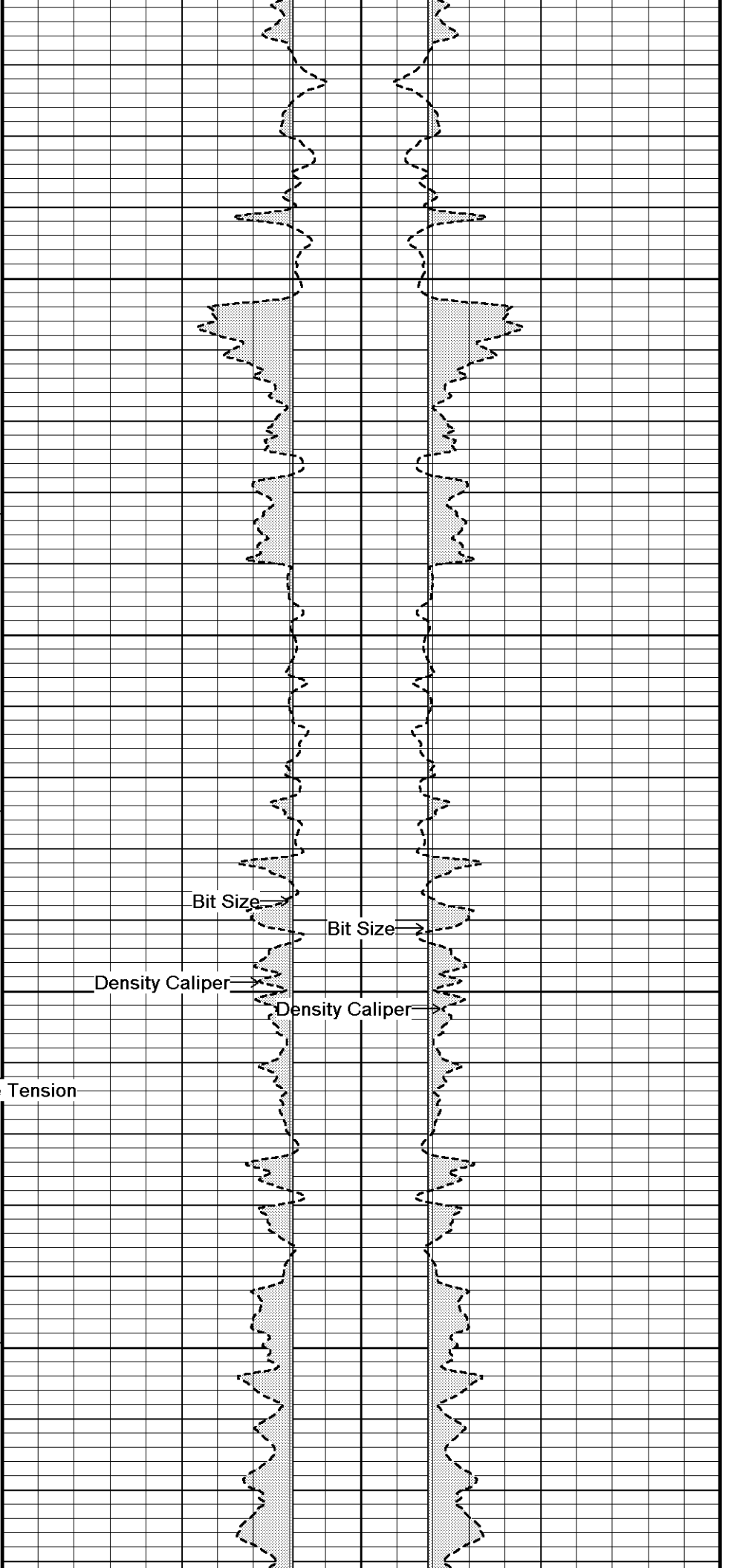
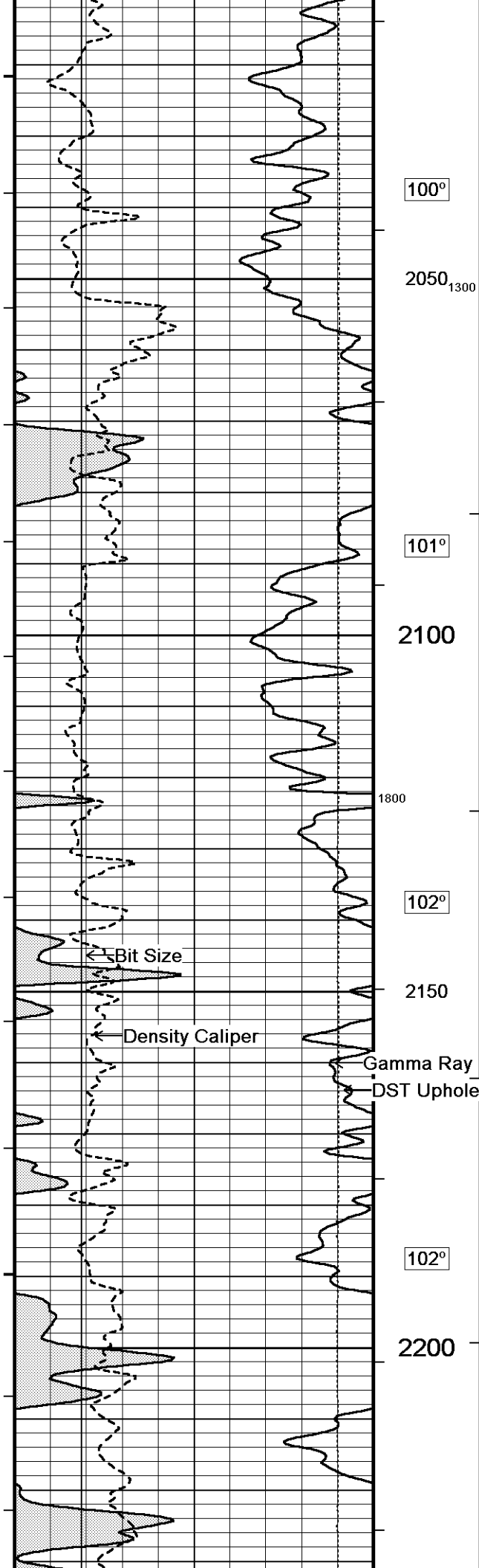
RIG: SST 88

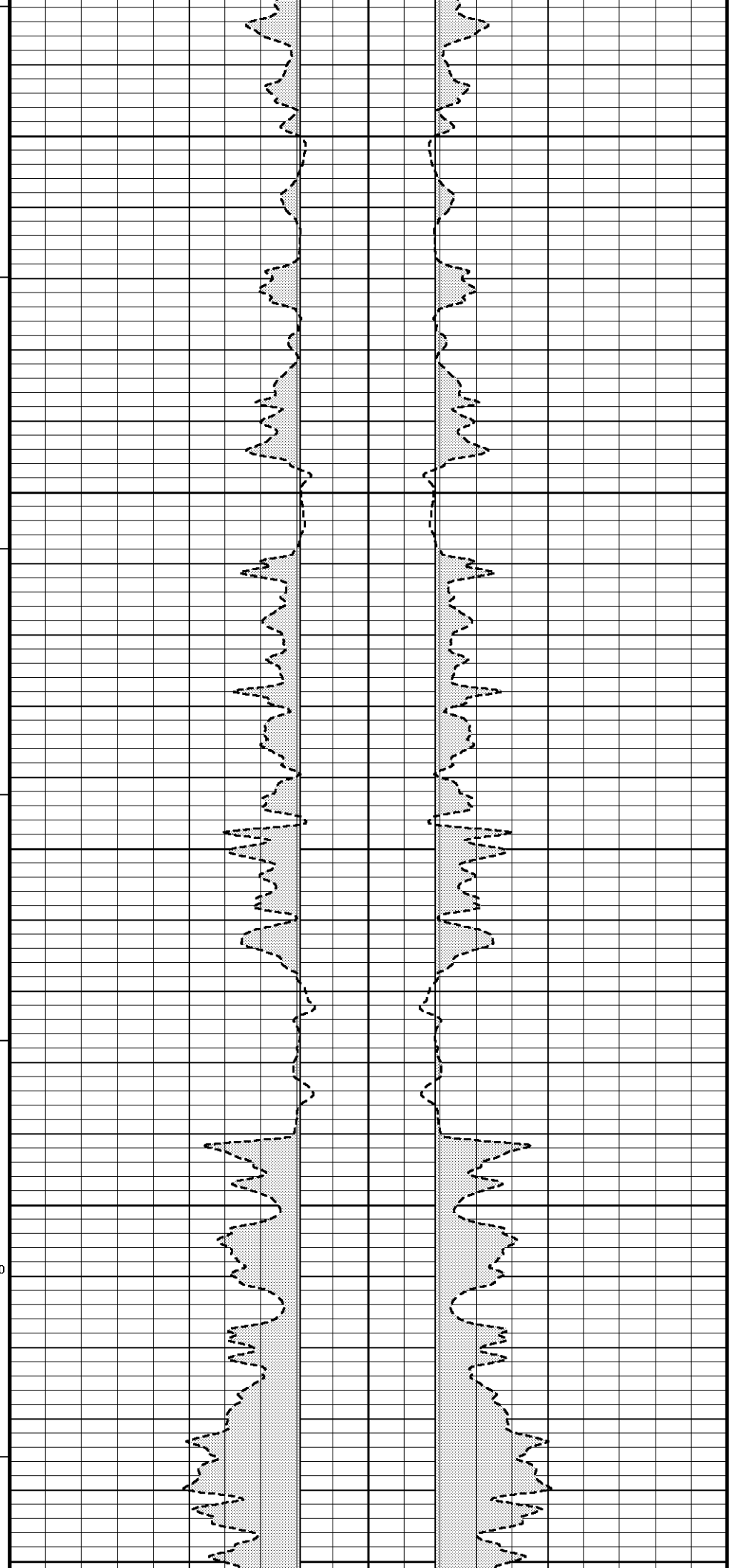
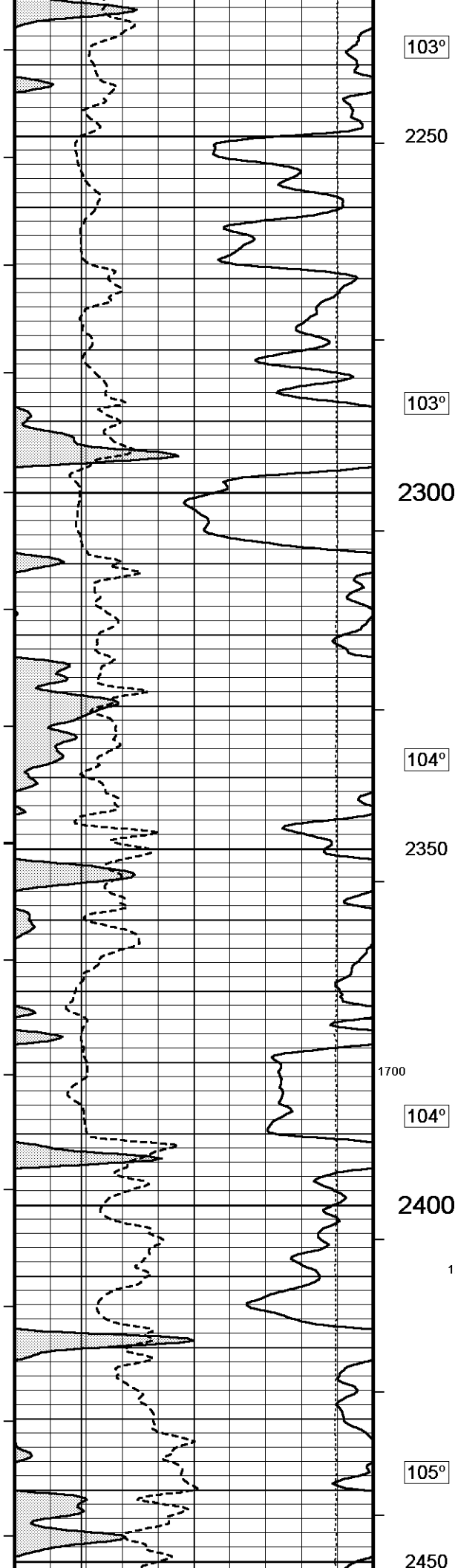
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.

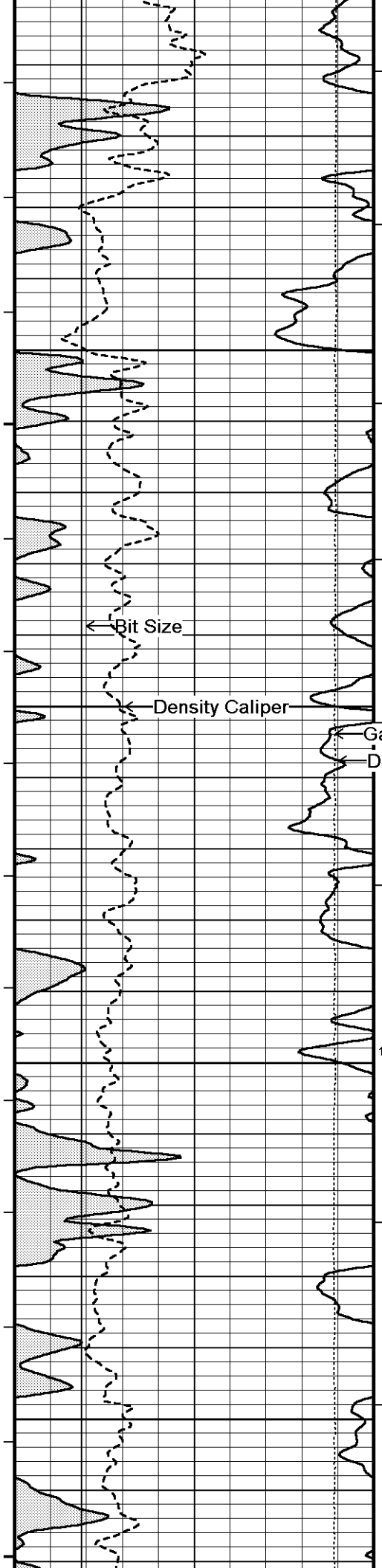












106°

2500

107°

2550

107°

2600

108°

2650

Bit Size

Density Caliper

Gamma Ray

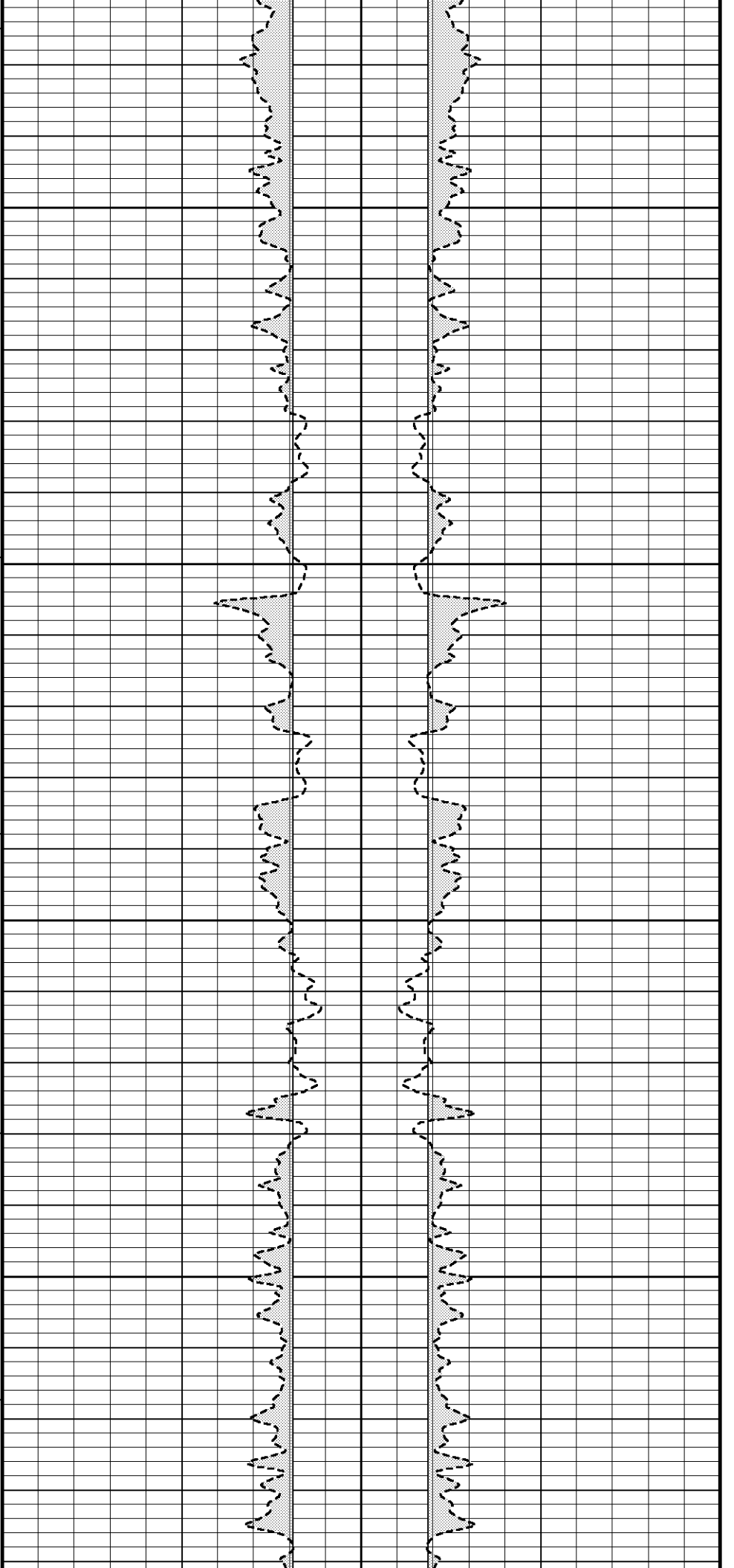
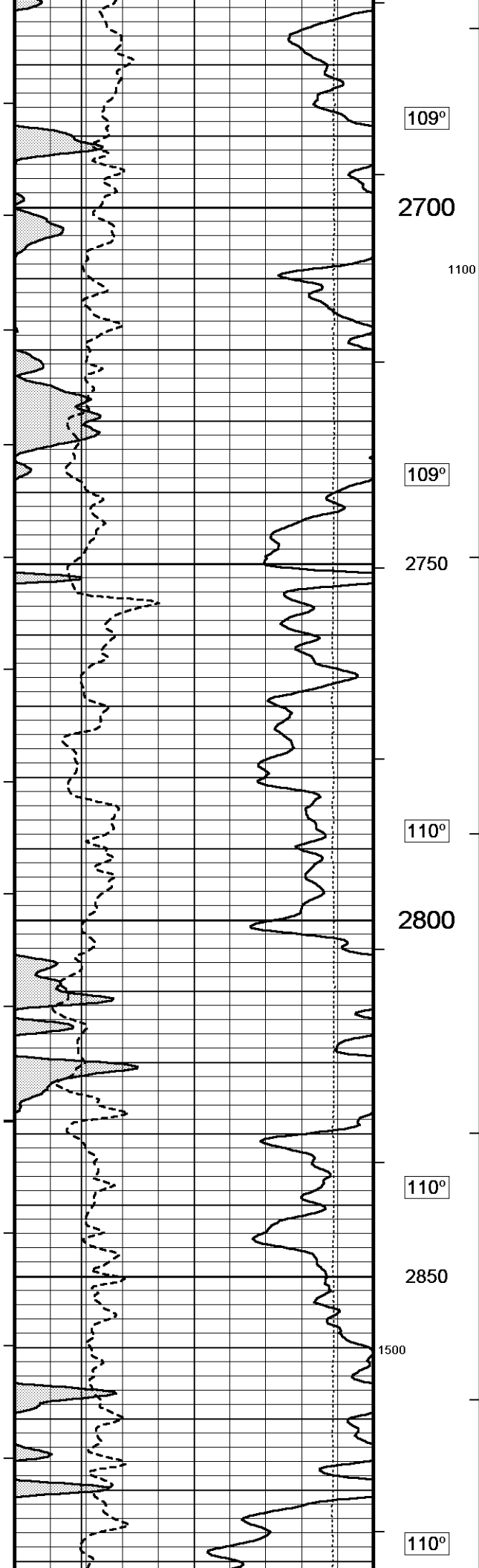
DST Uphole Tension

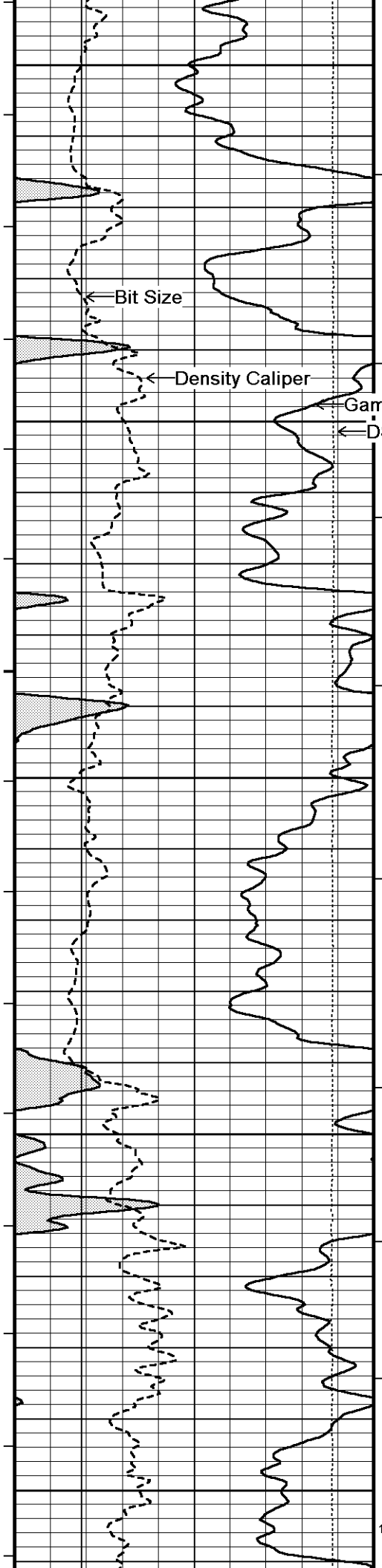
Bit Size

Density Caliper

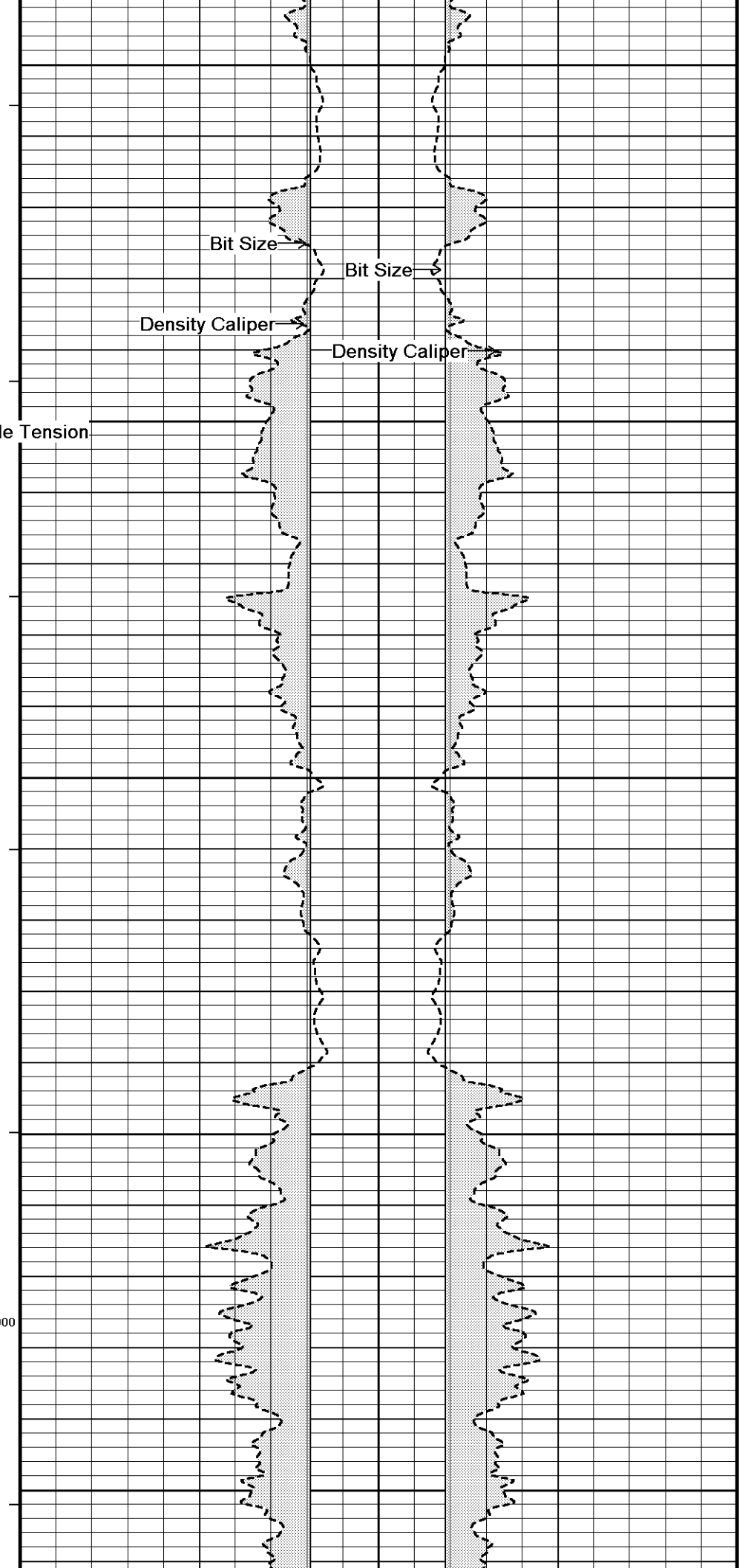
Density Caliper

Bit Size

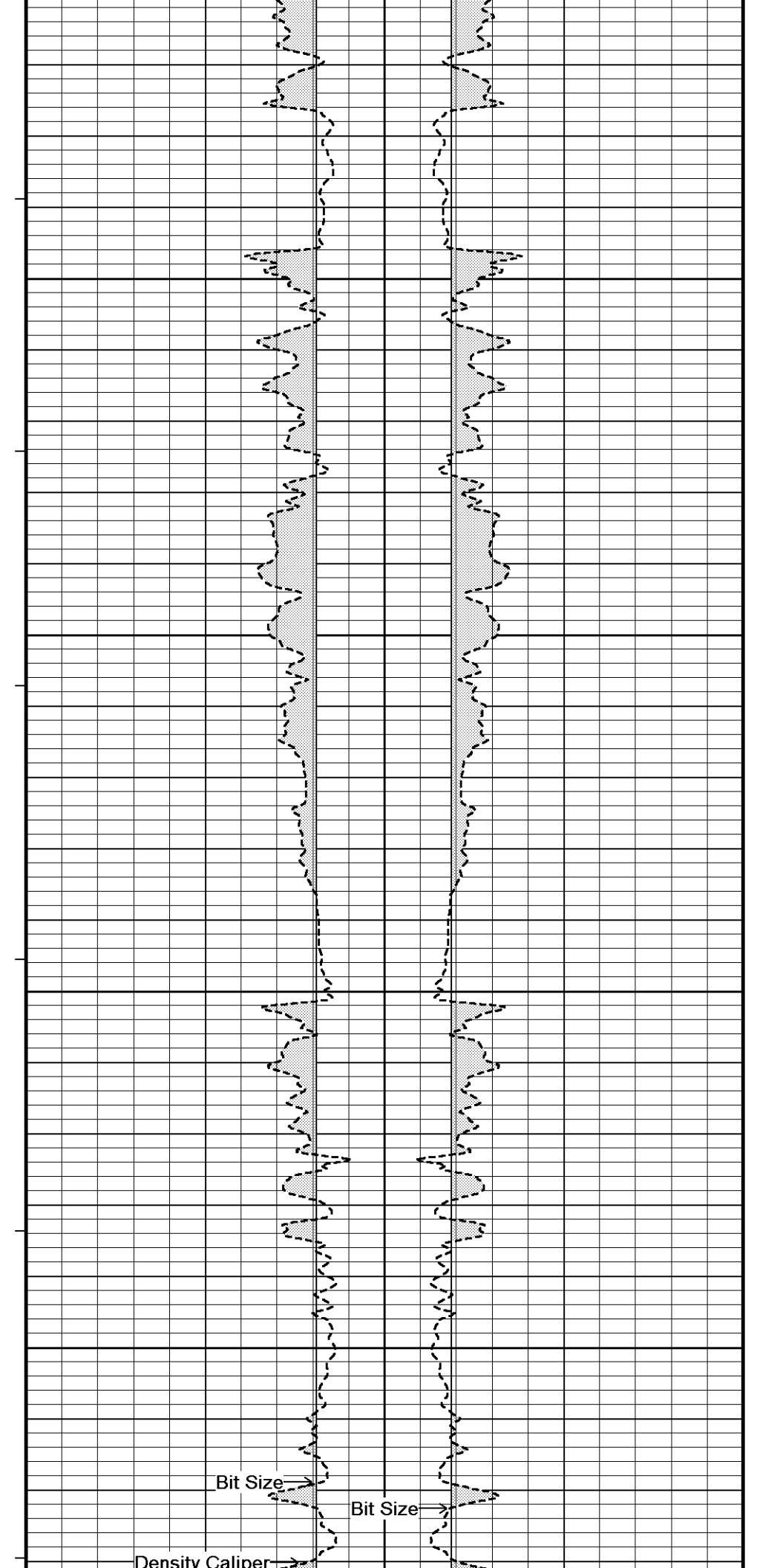
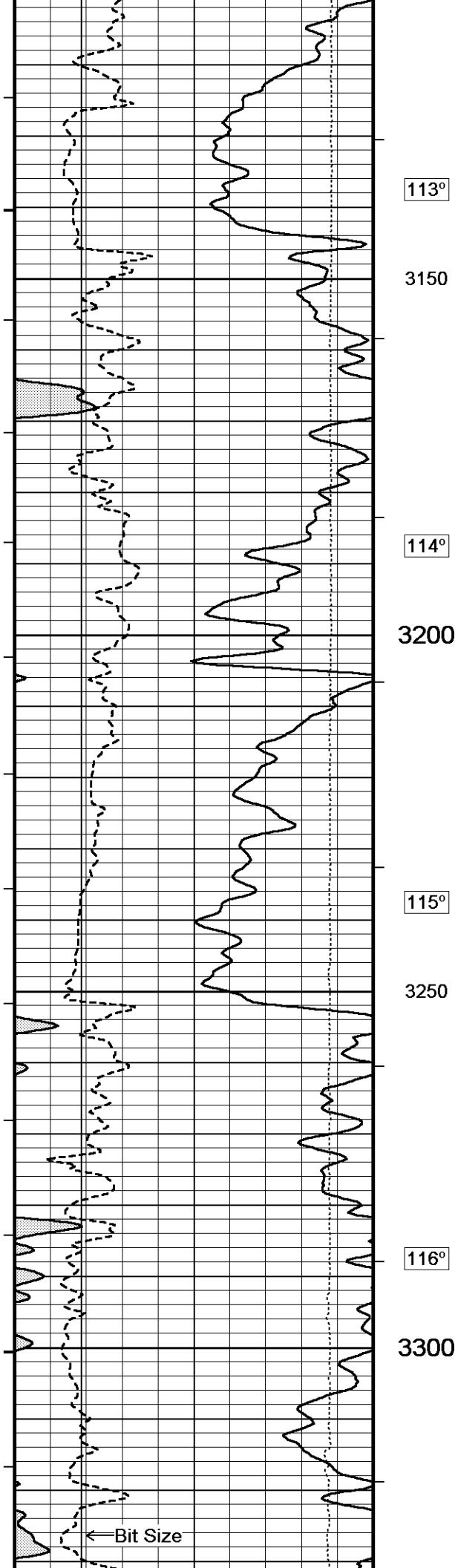


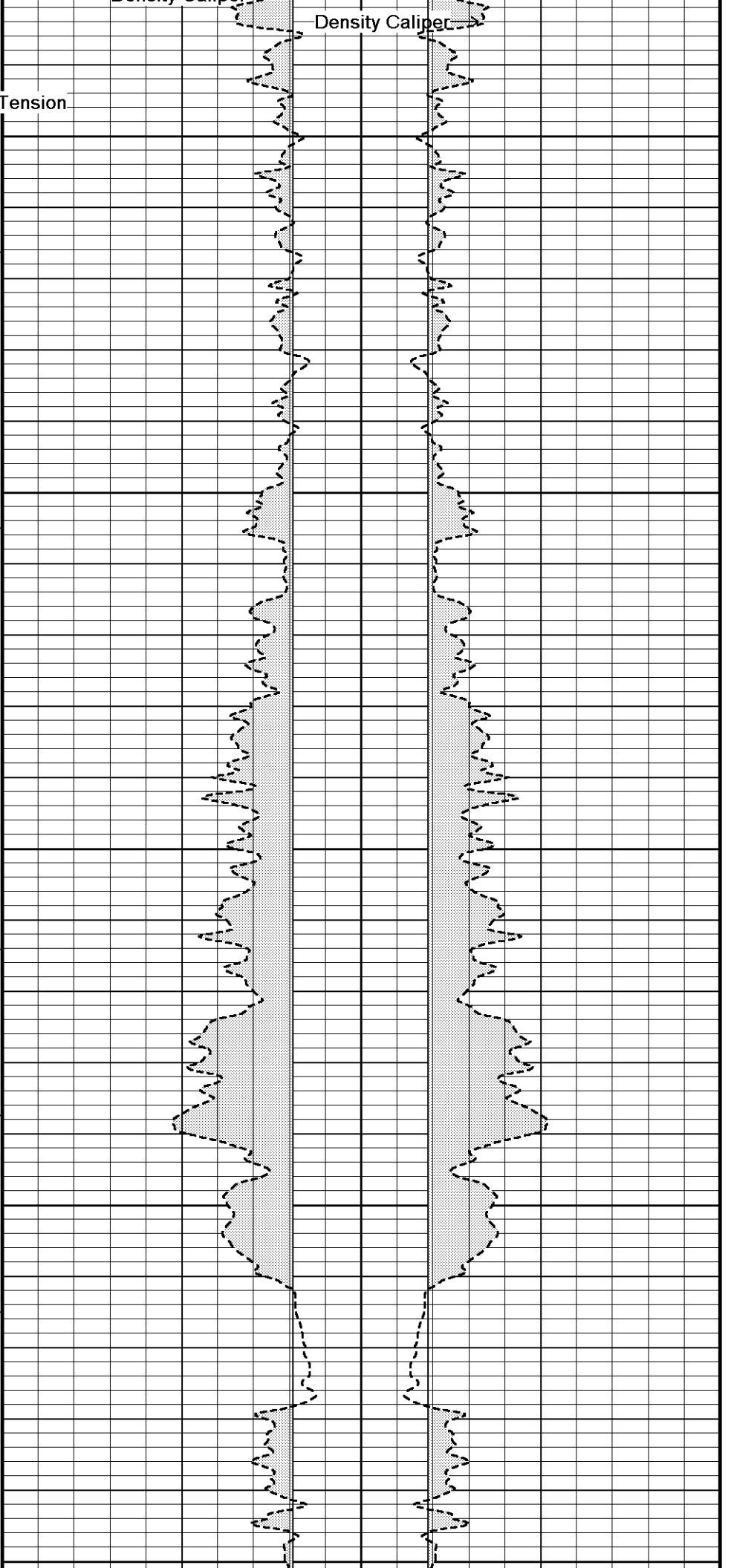
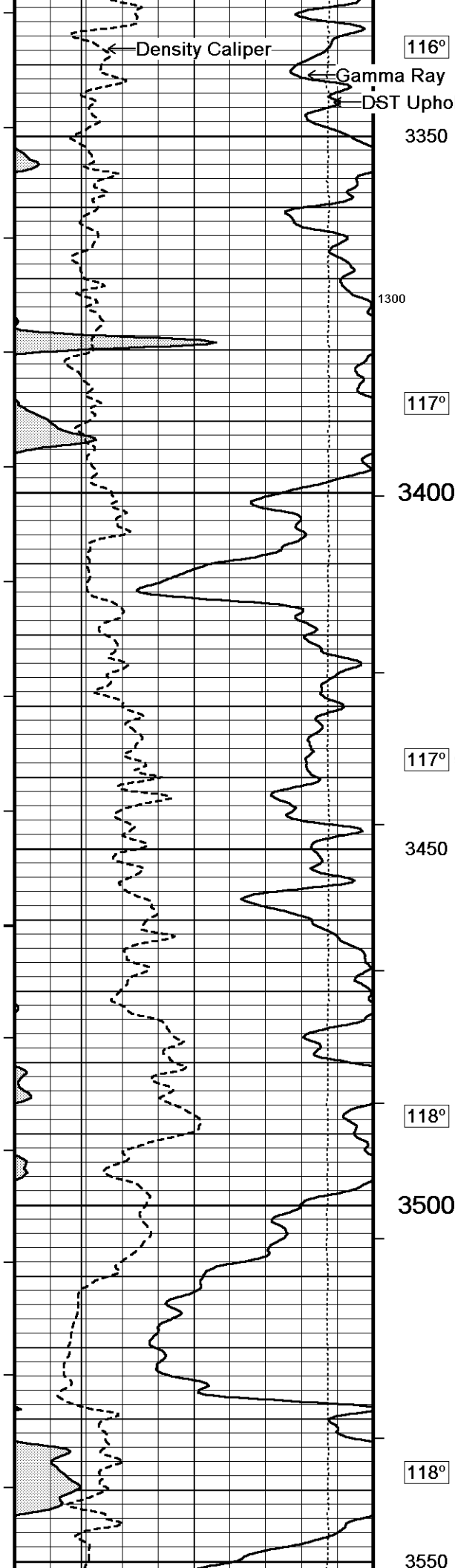


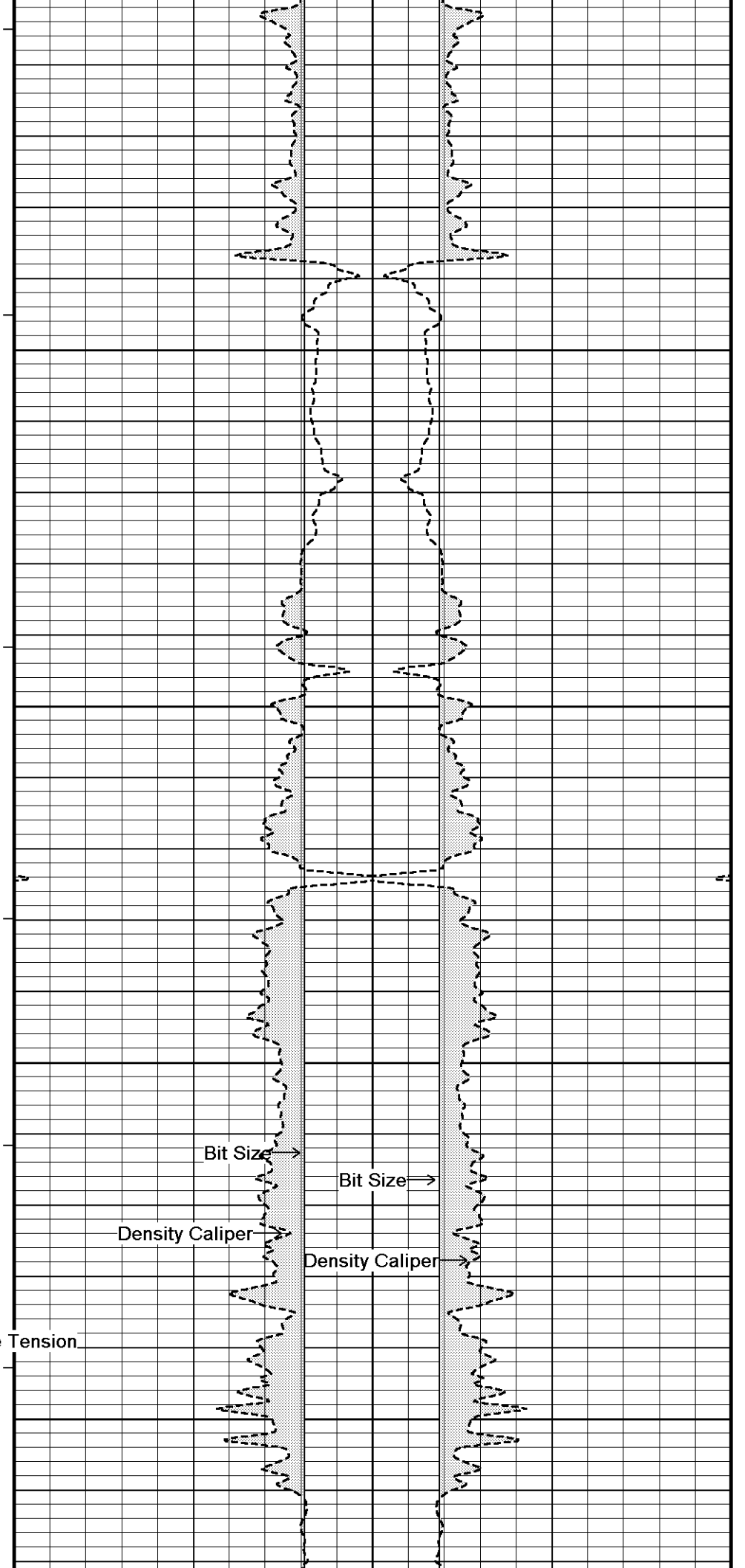
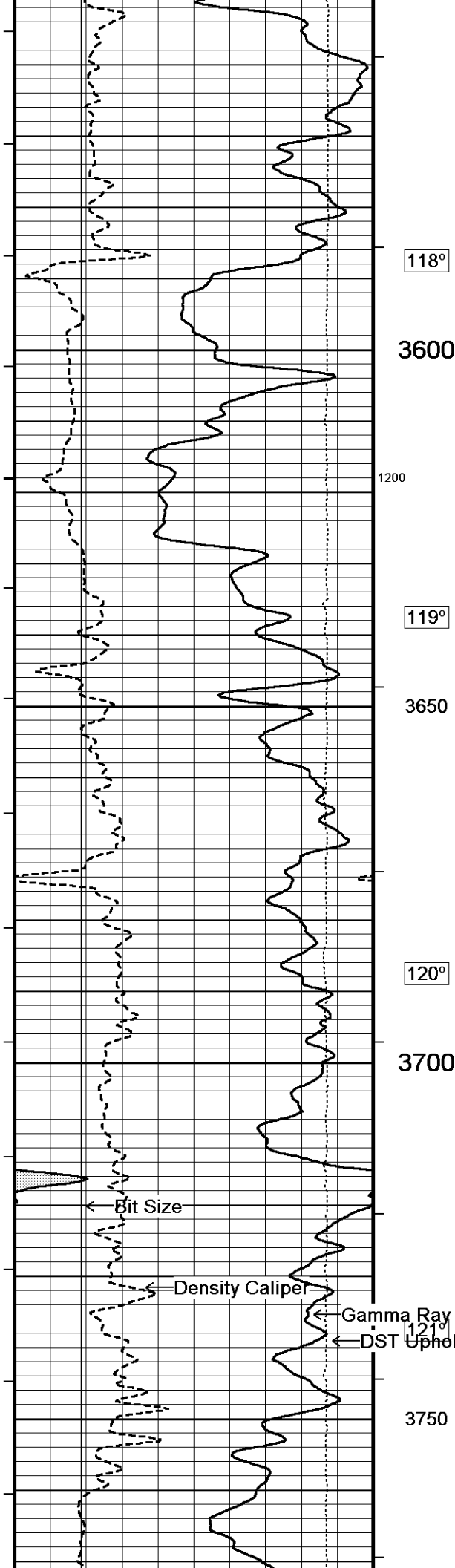
2900
111°
112°
3000
112°
3050
1000
113°
3100
1400

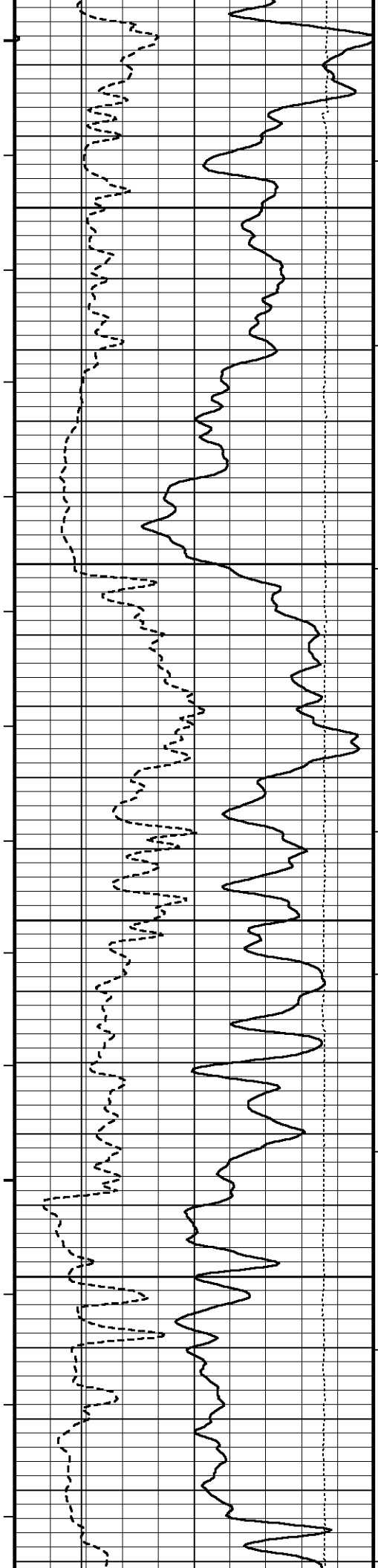


Bit Size
Density Caliper
Bit Size
Density Caliper









121°

3800

122°

3850

1100

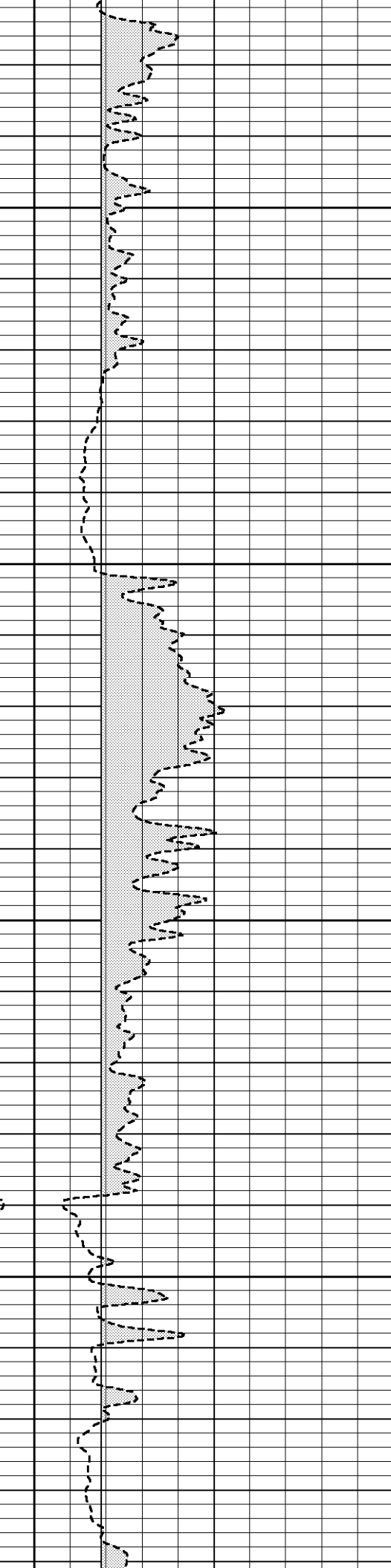
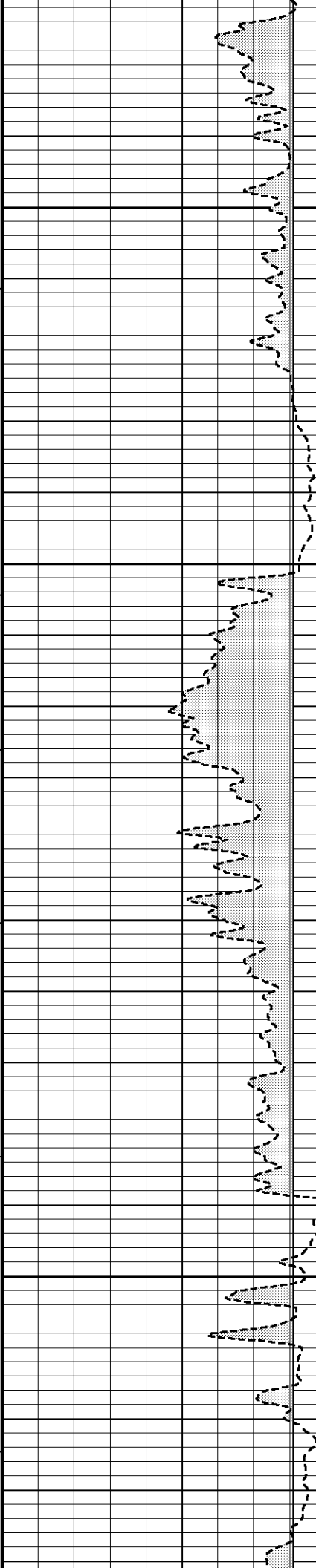
122°

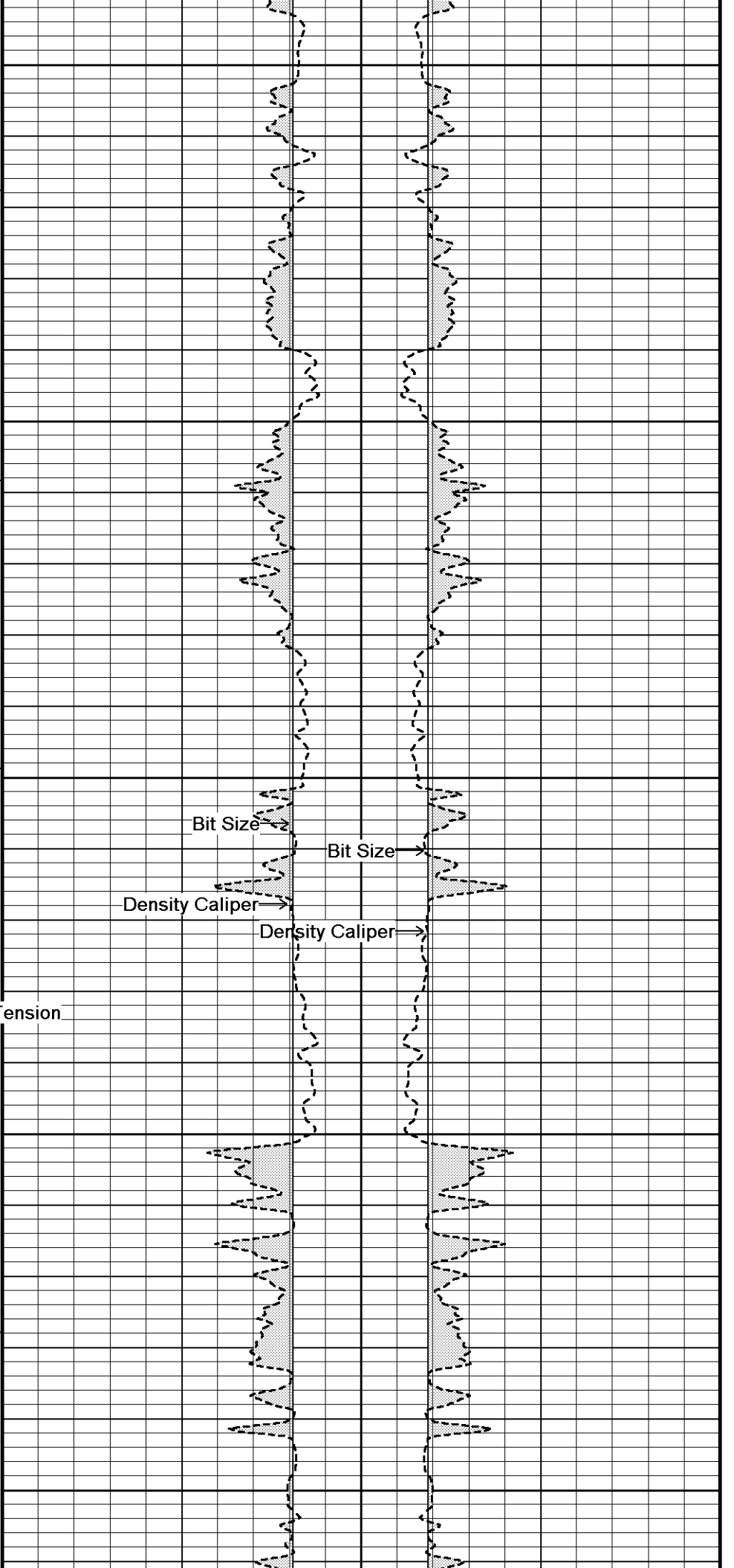
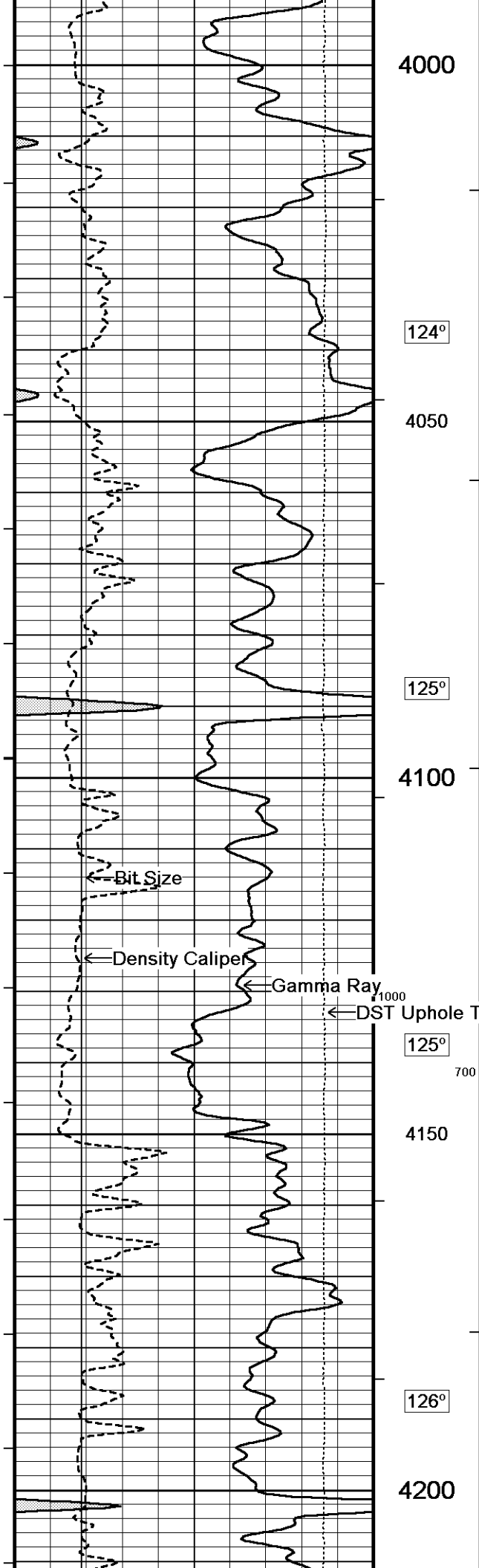
3900

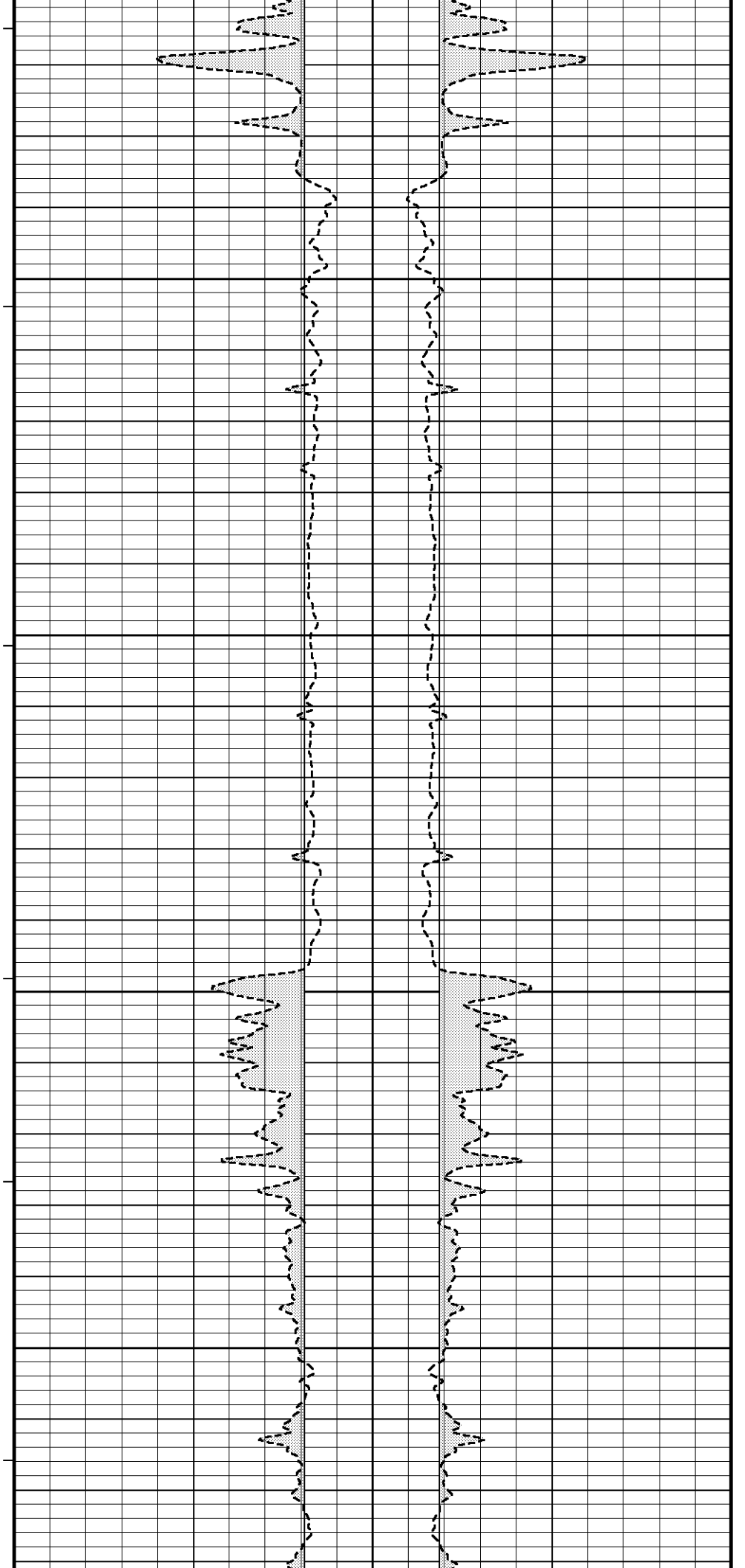
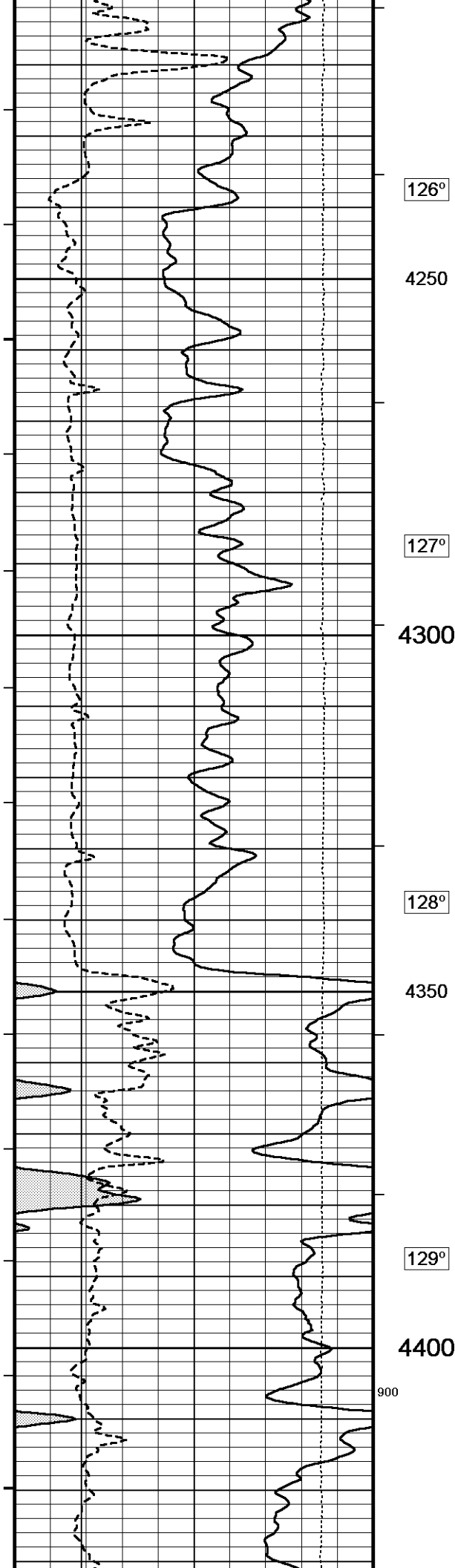
123°

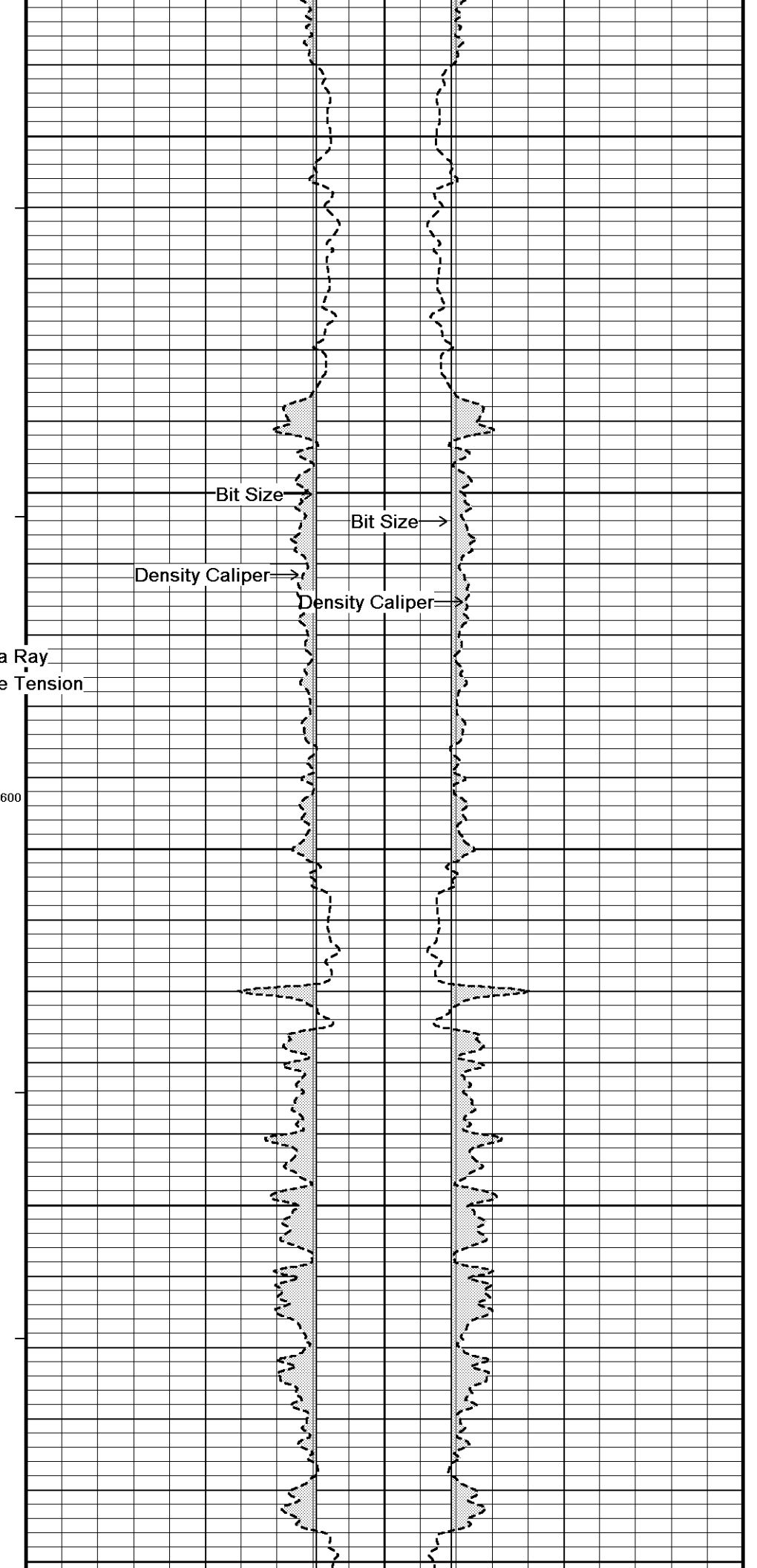
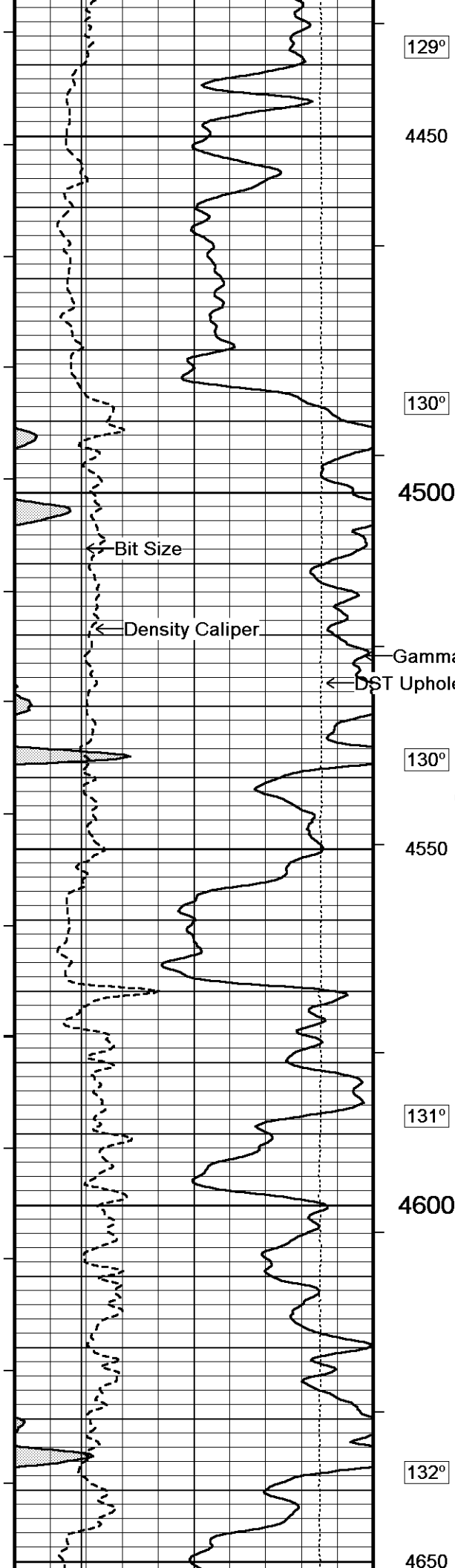
3950

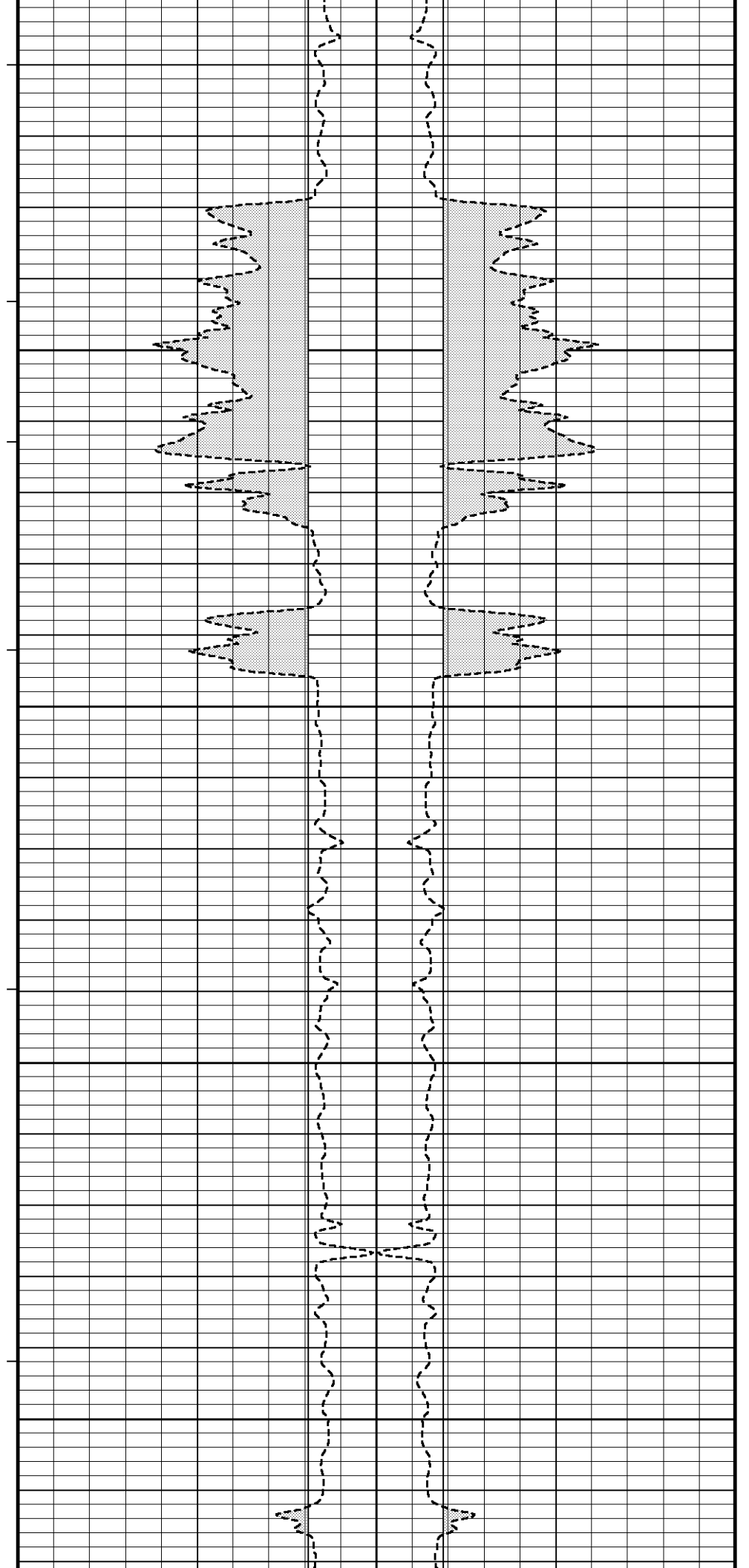
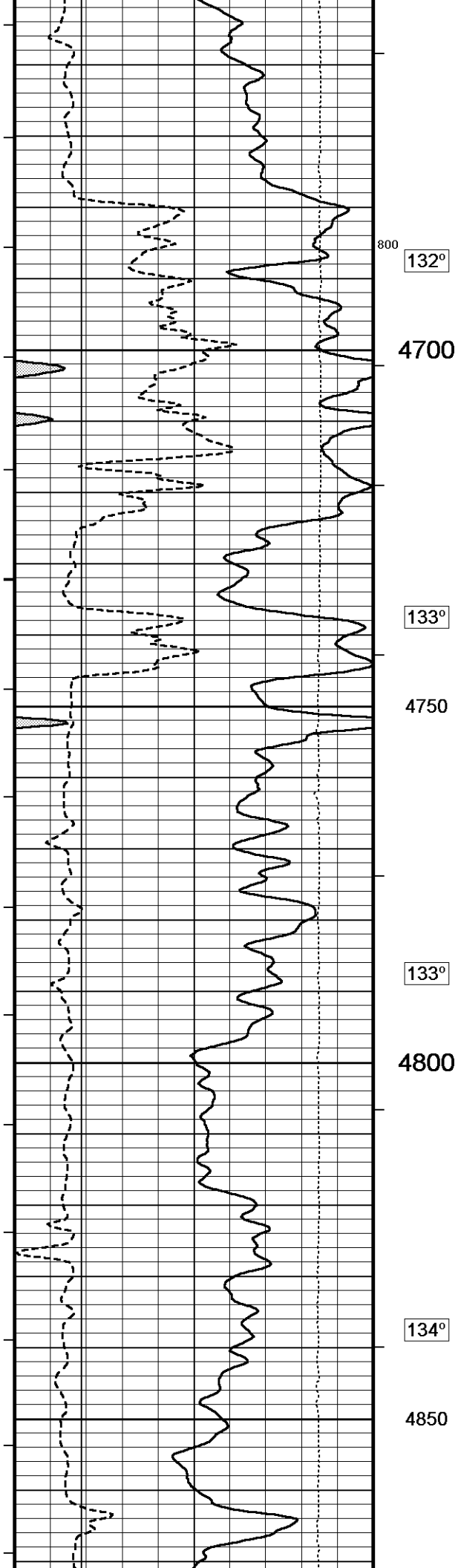
124°

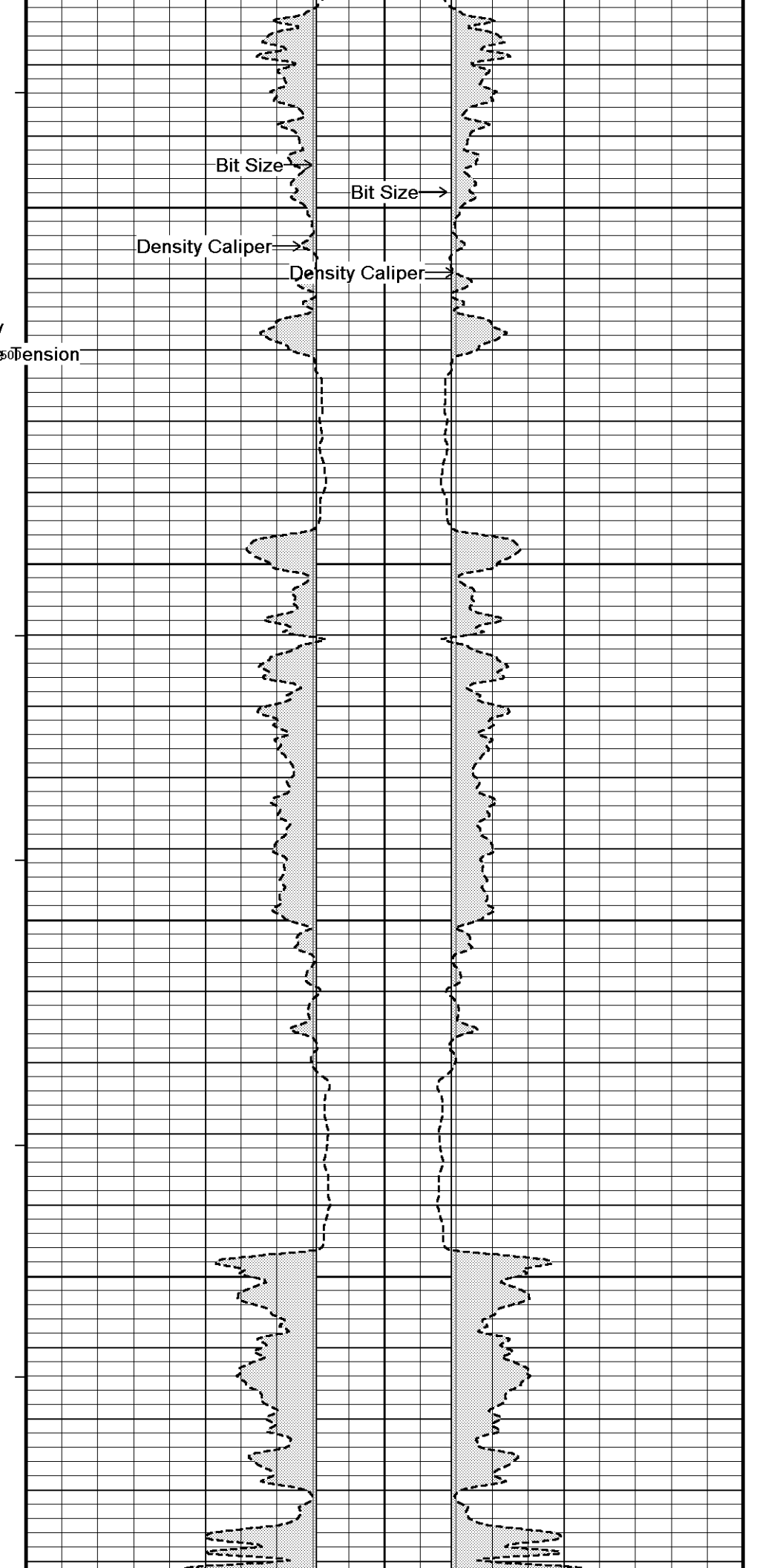
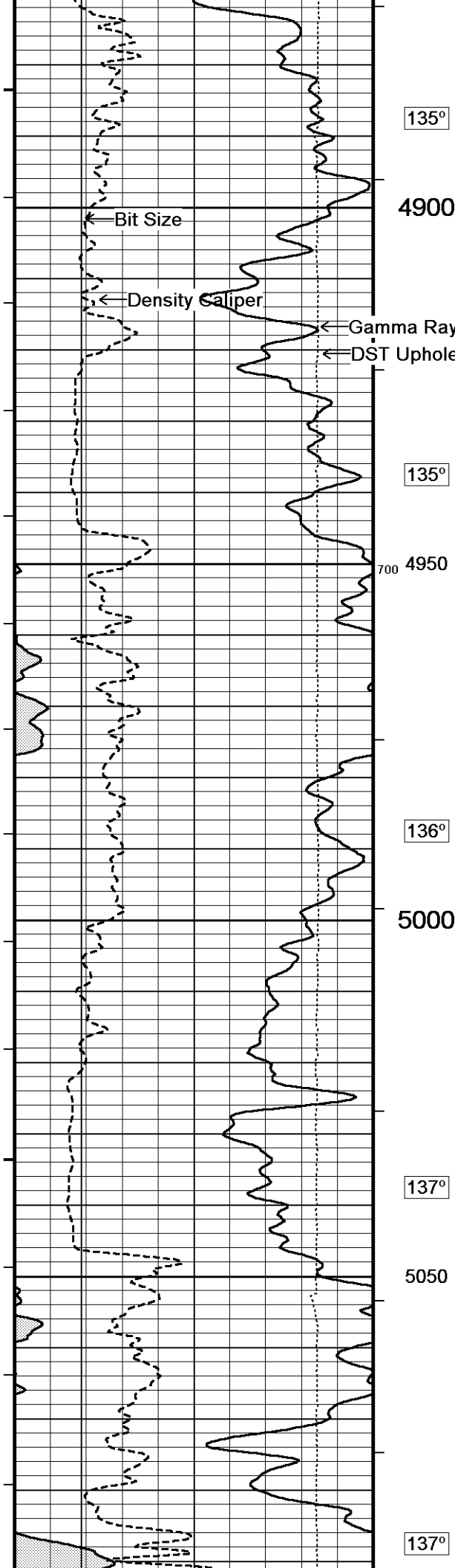


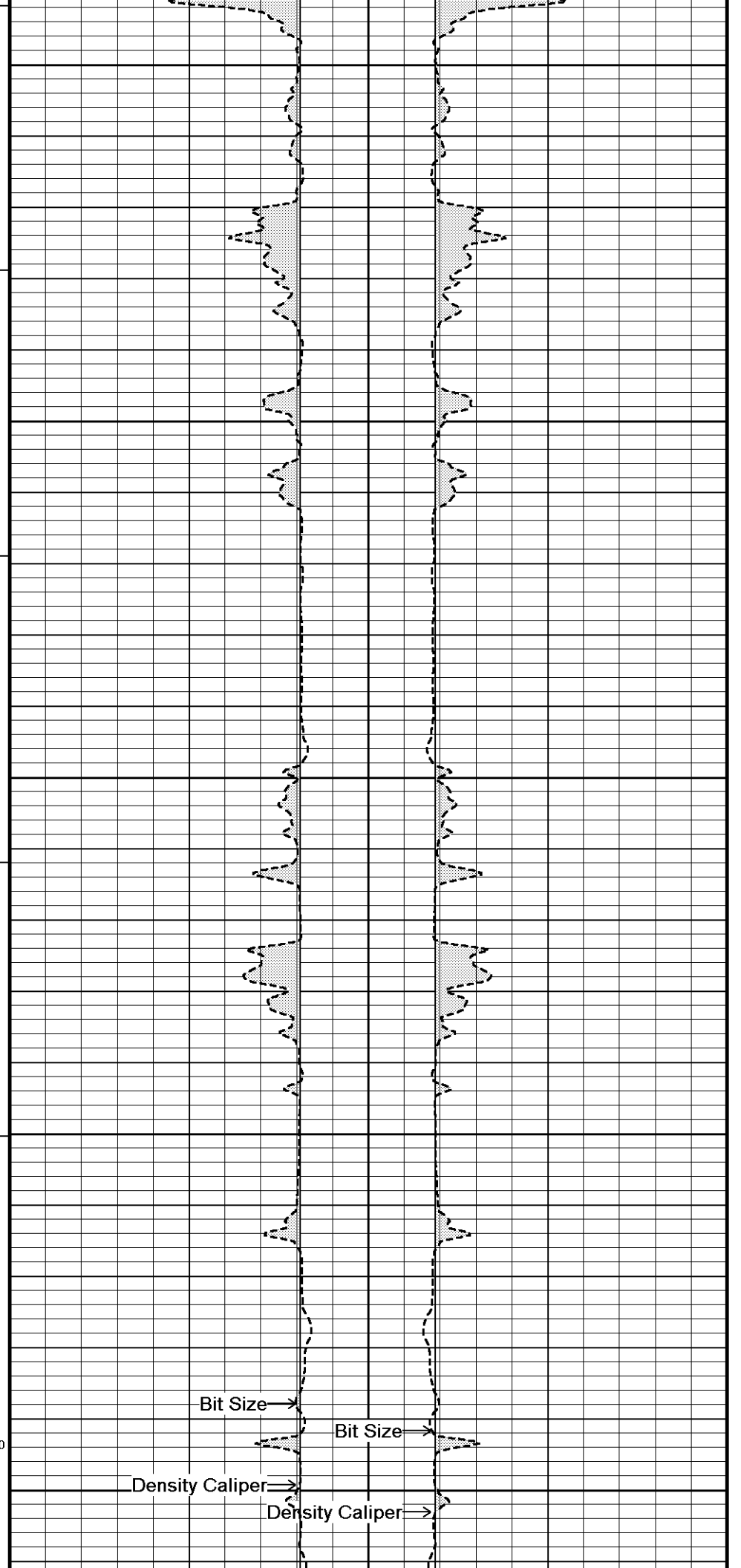
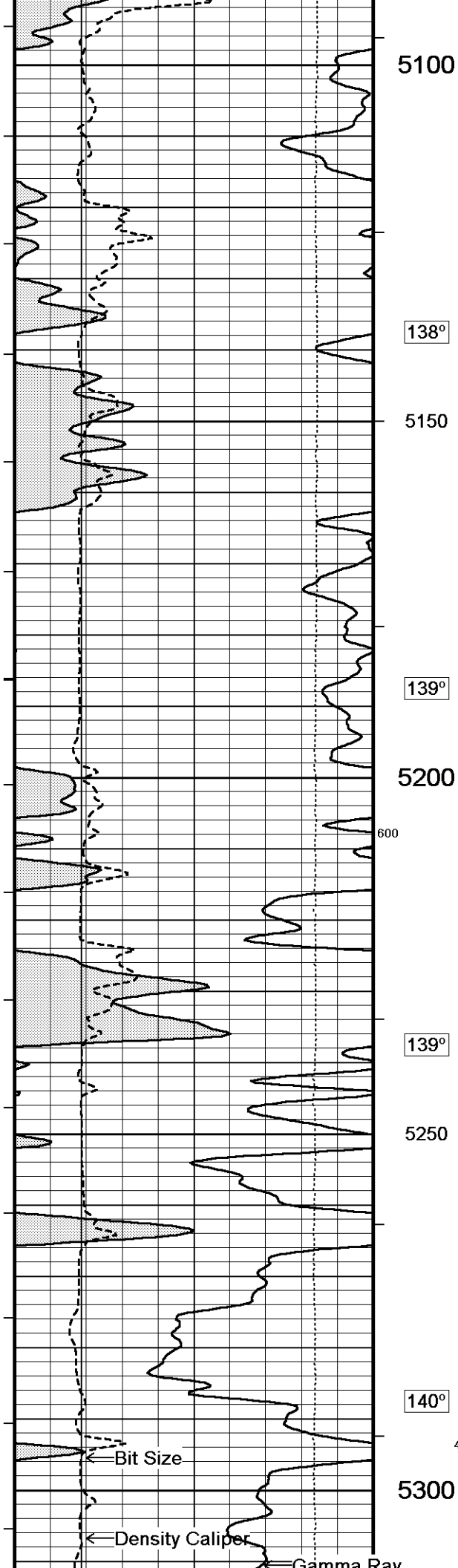


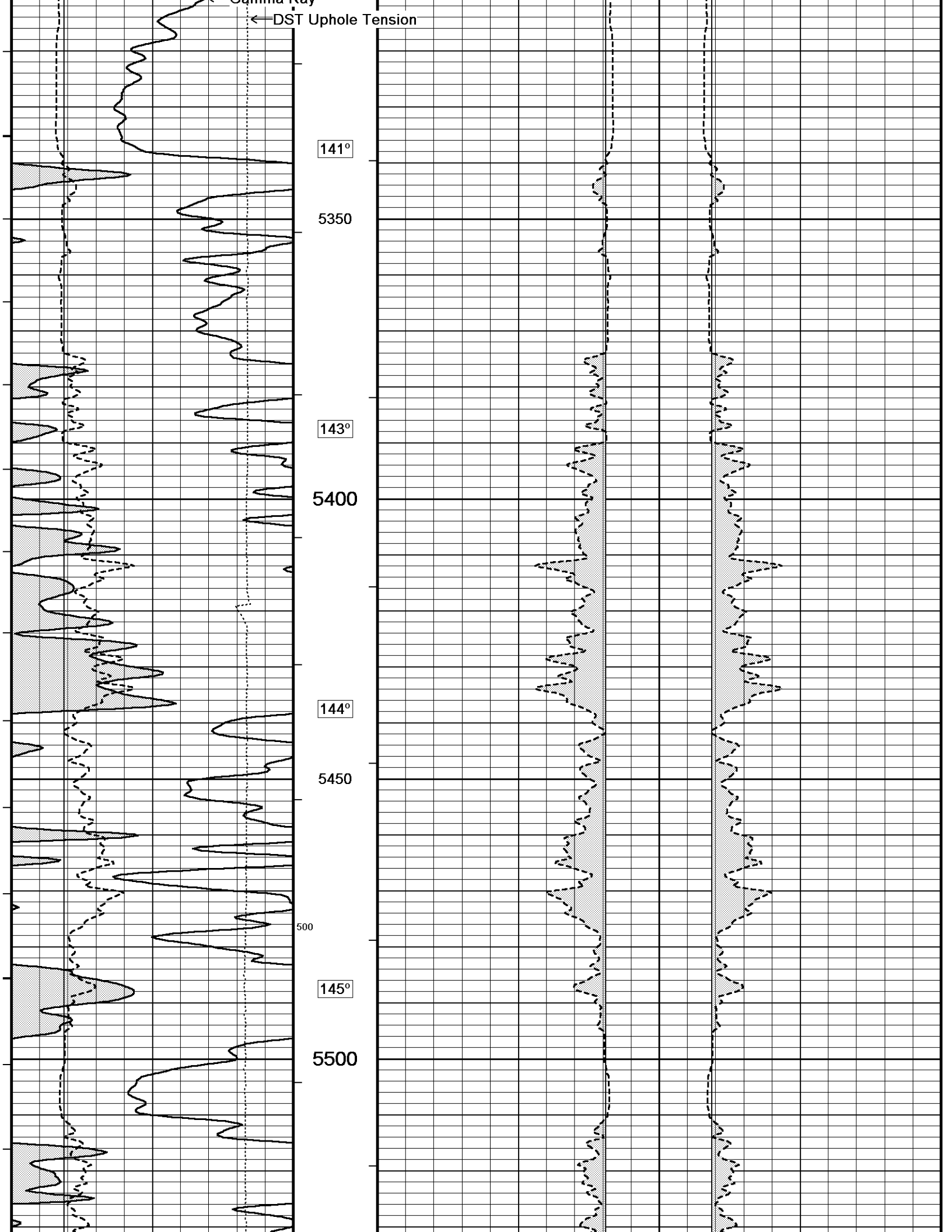


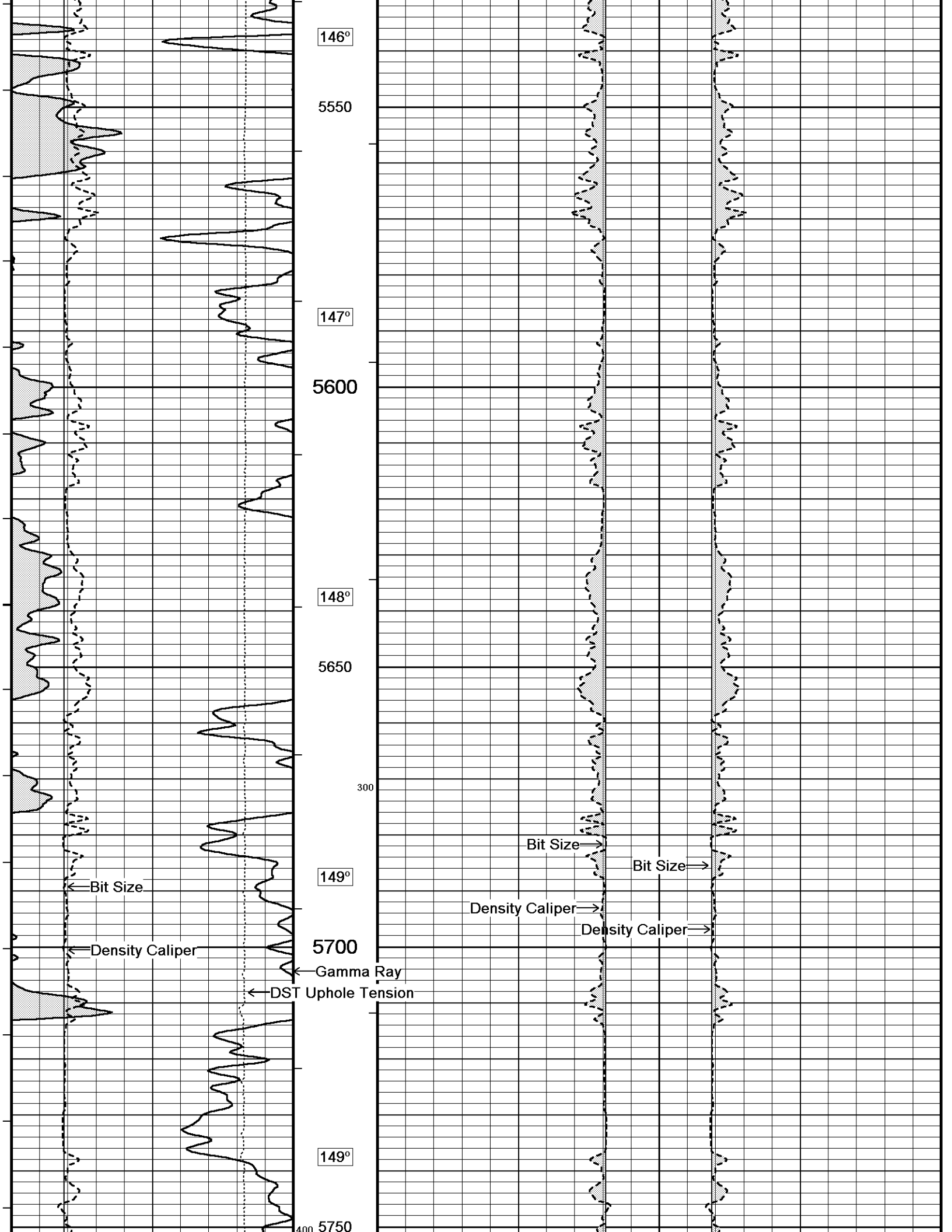


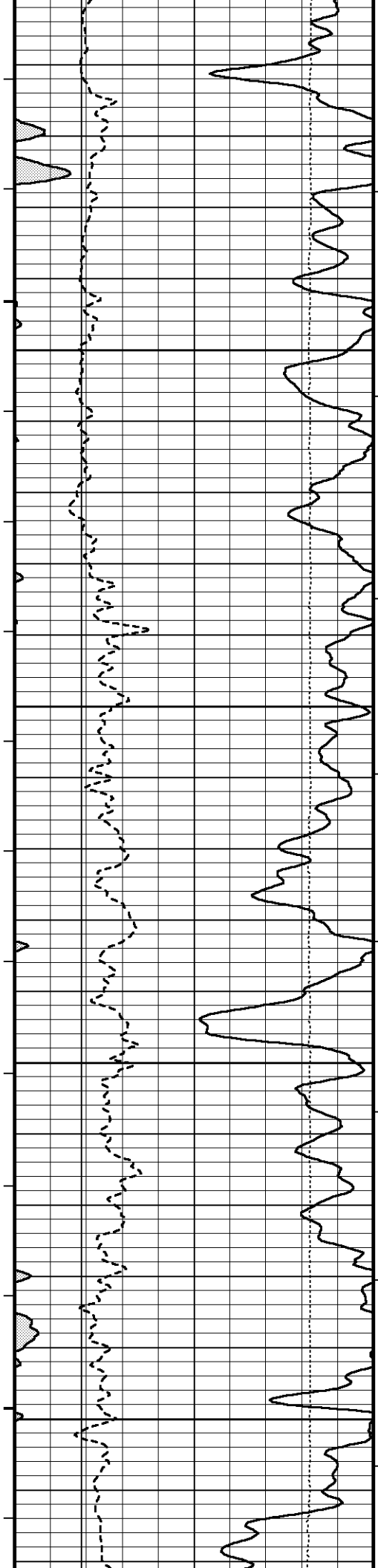












150°

5800

151°

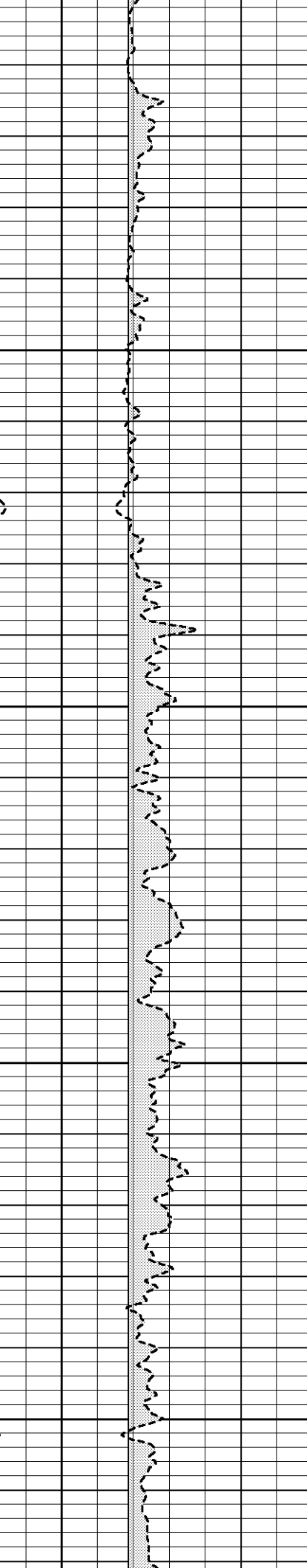
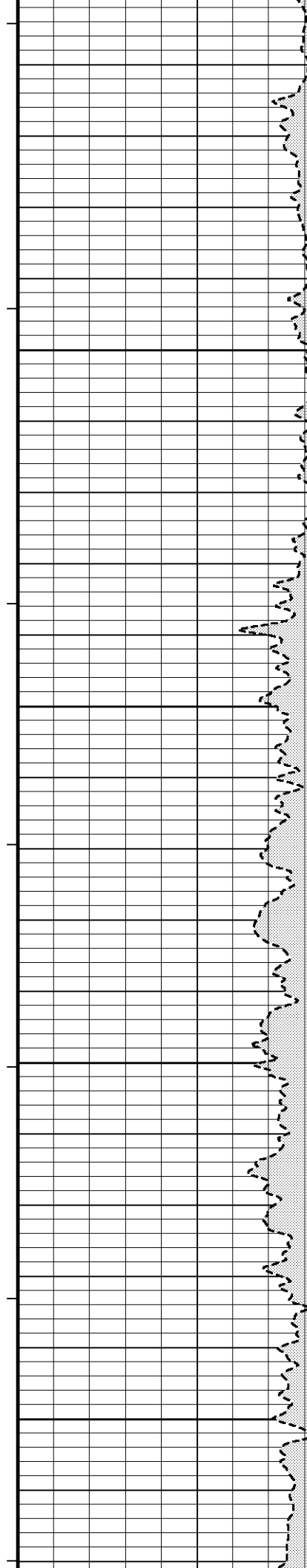
5850

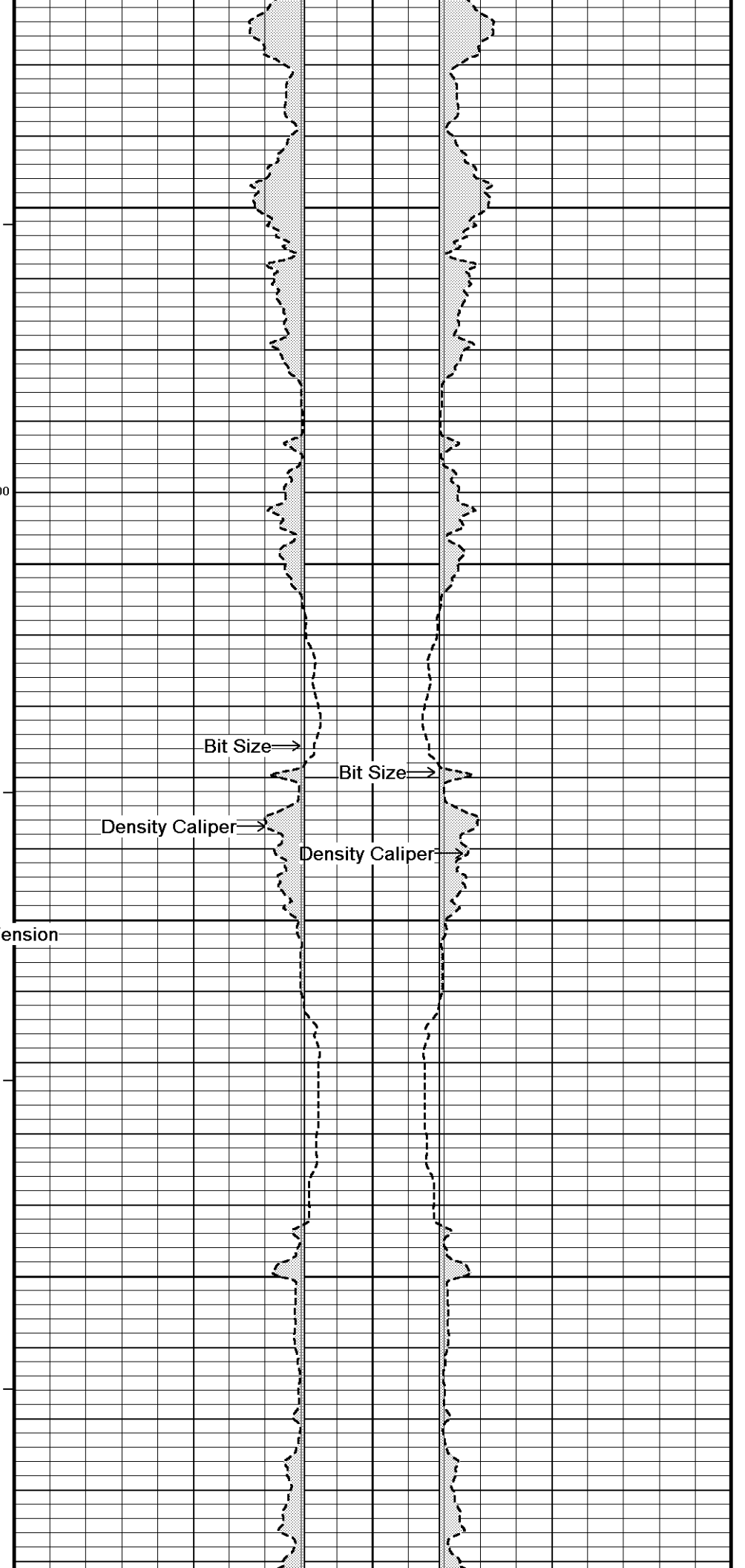
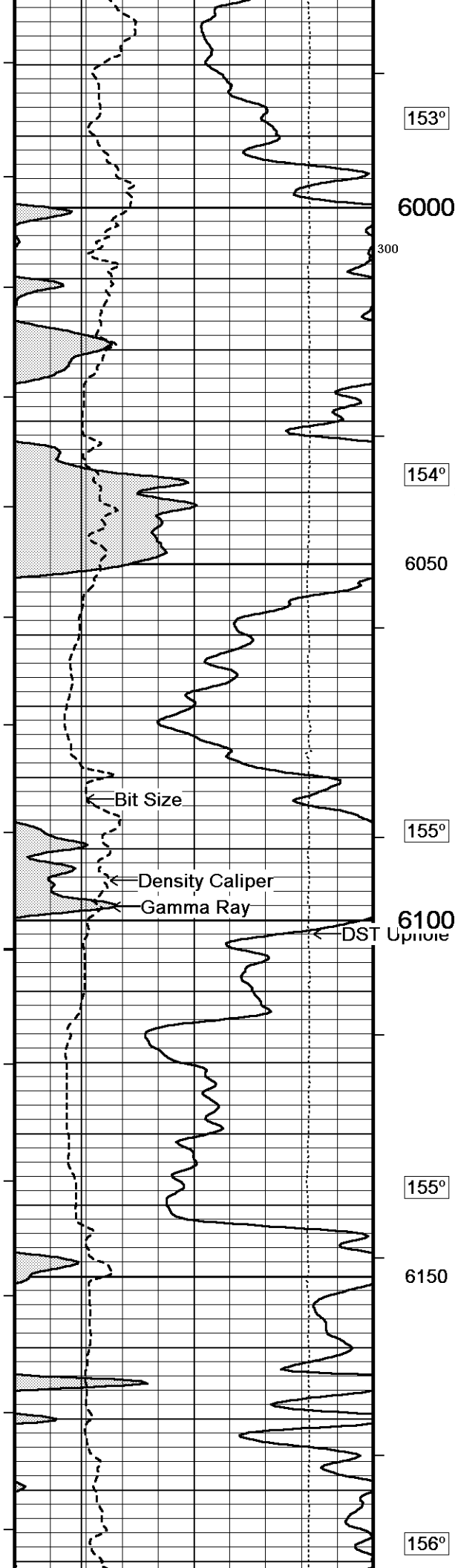
152°

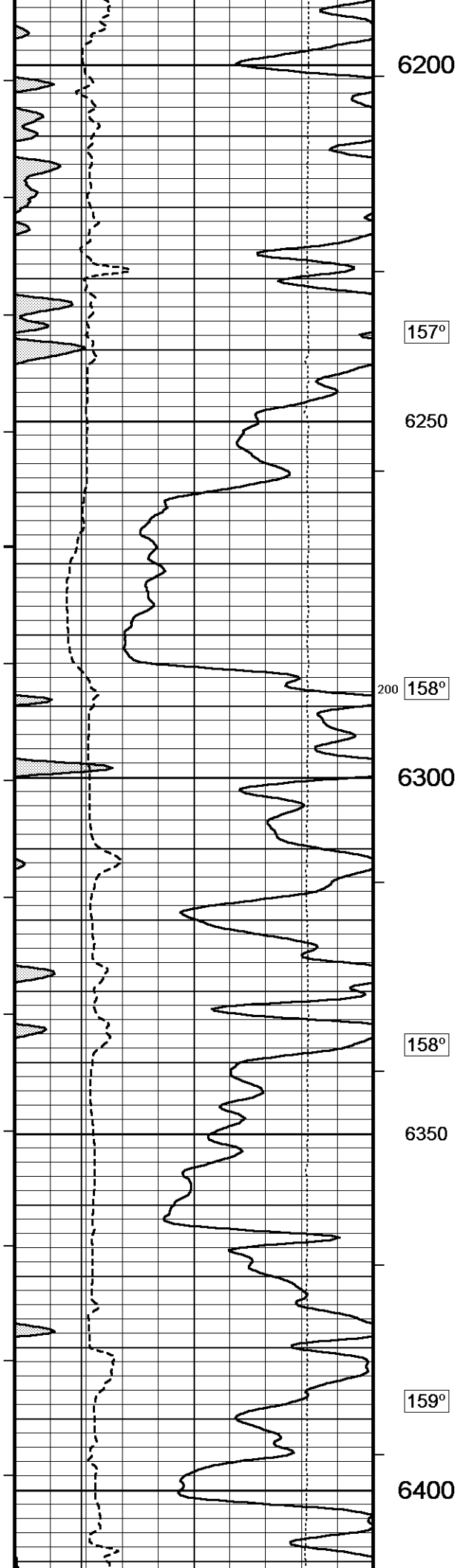
5900

152°

5950







6200

157°

6250

200 158°

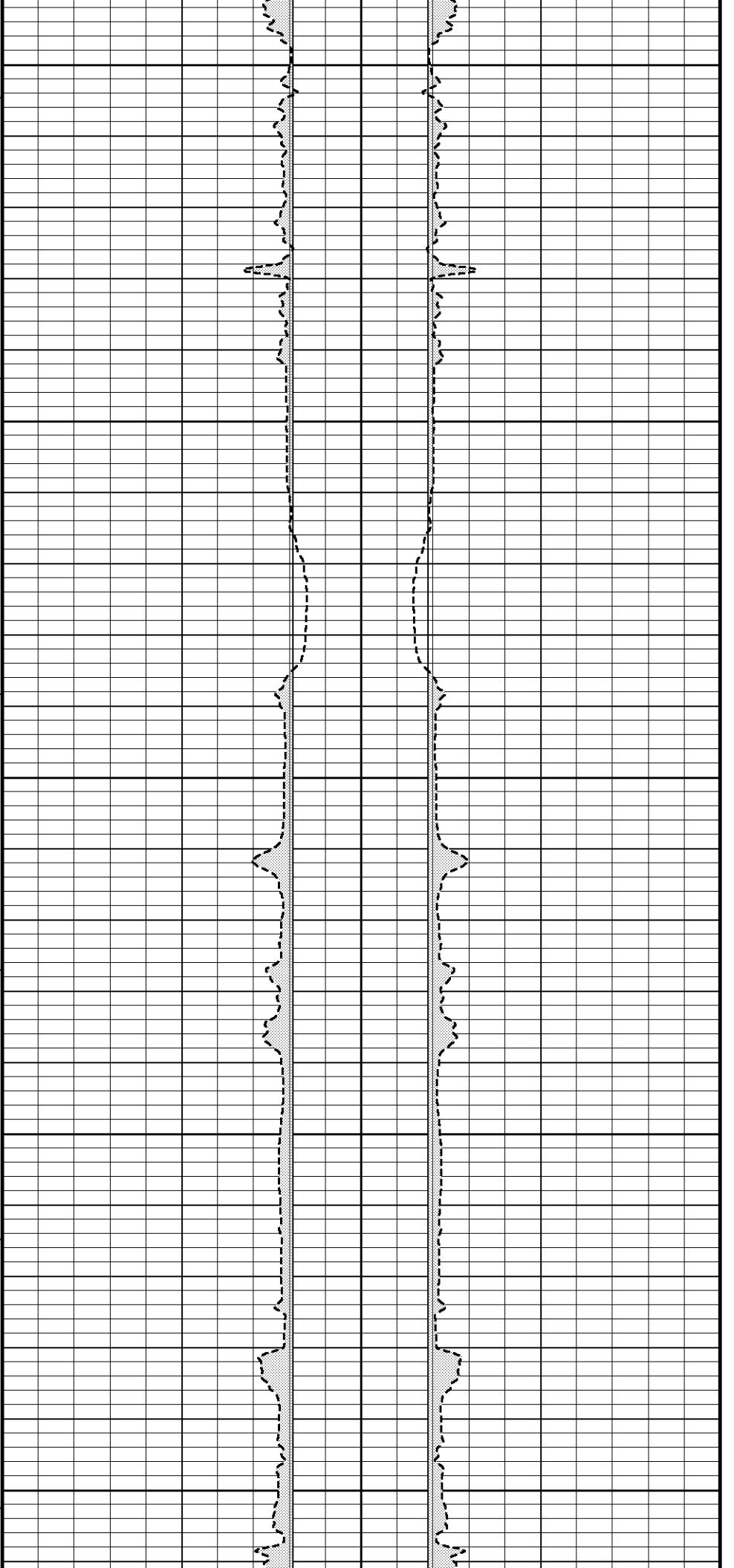
6300

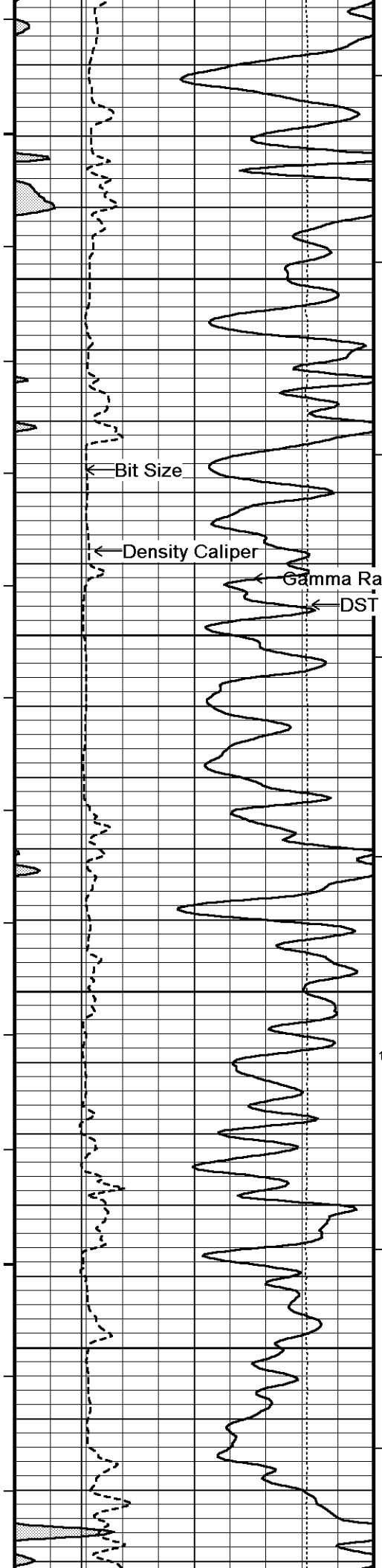
158°

6350

159°

6400





160°

100

6450

Bit Size

Density Caliper

161°

Gamma Ray

DST Uphole Tension

6500

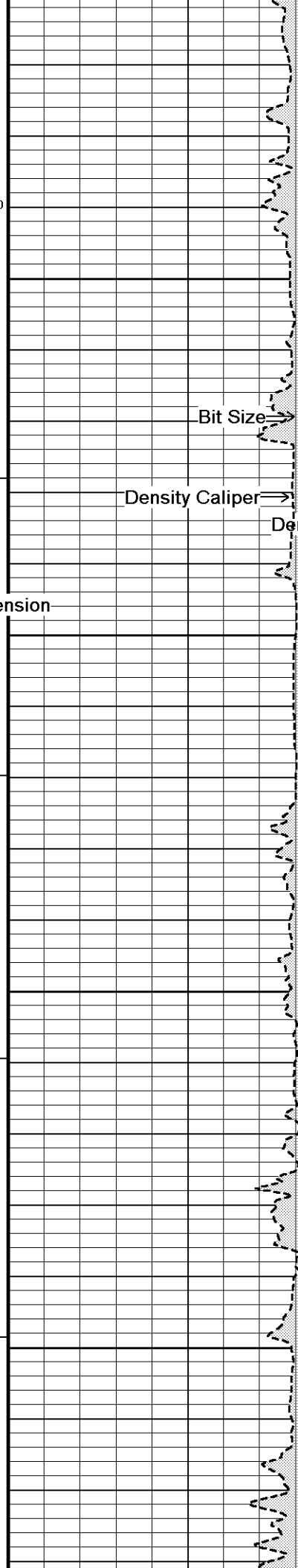
162°

6550

100

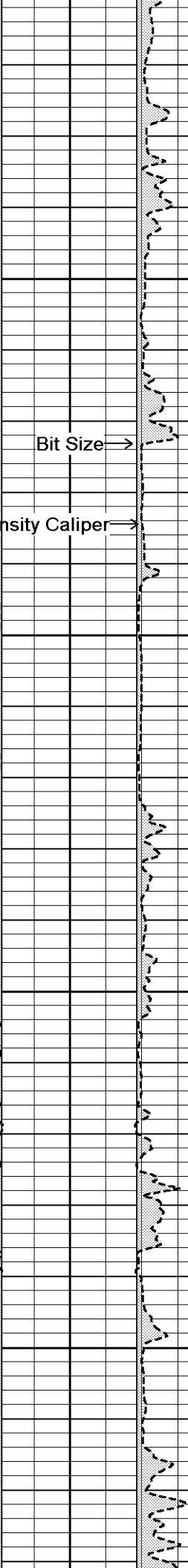
163°

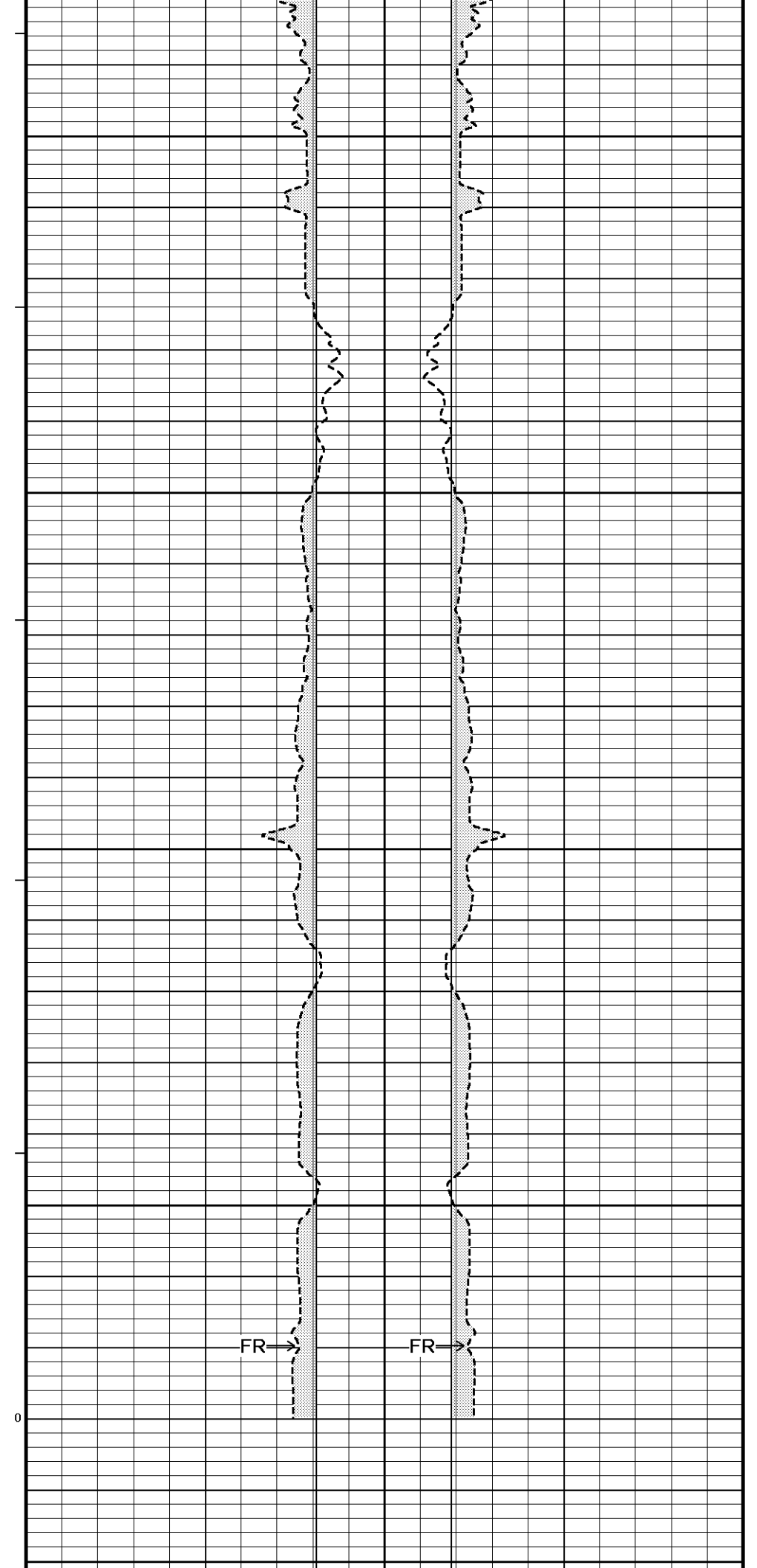
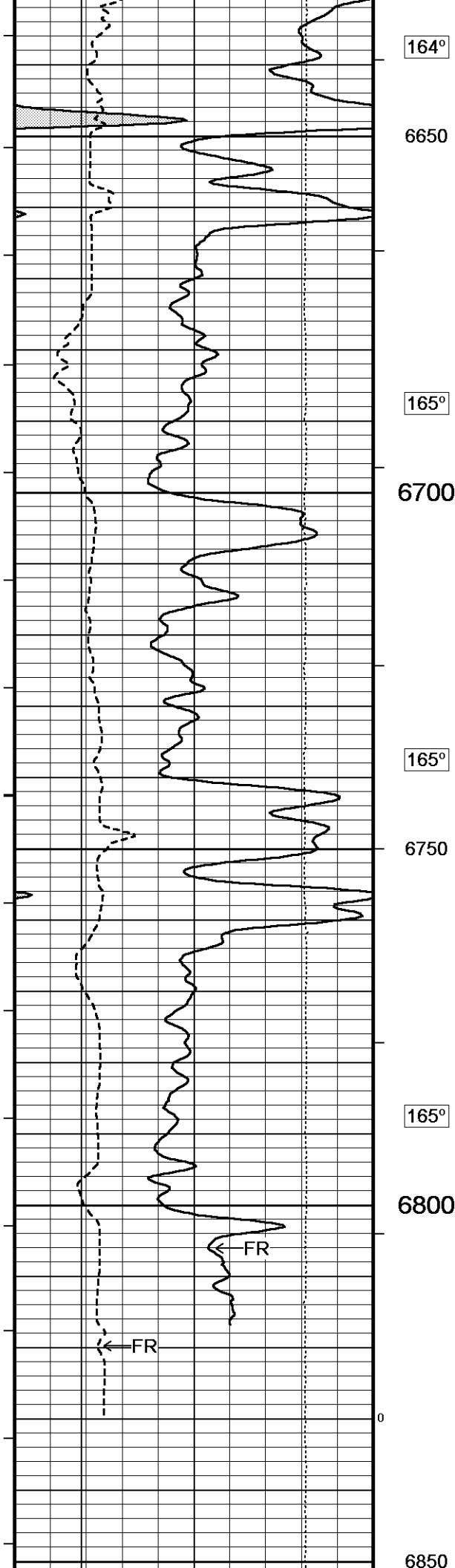
6600

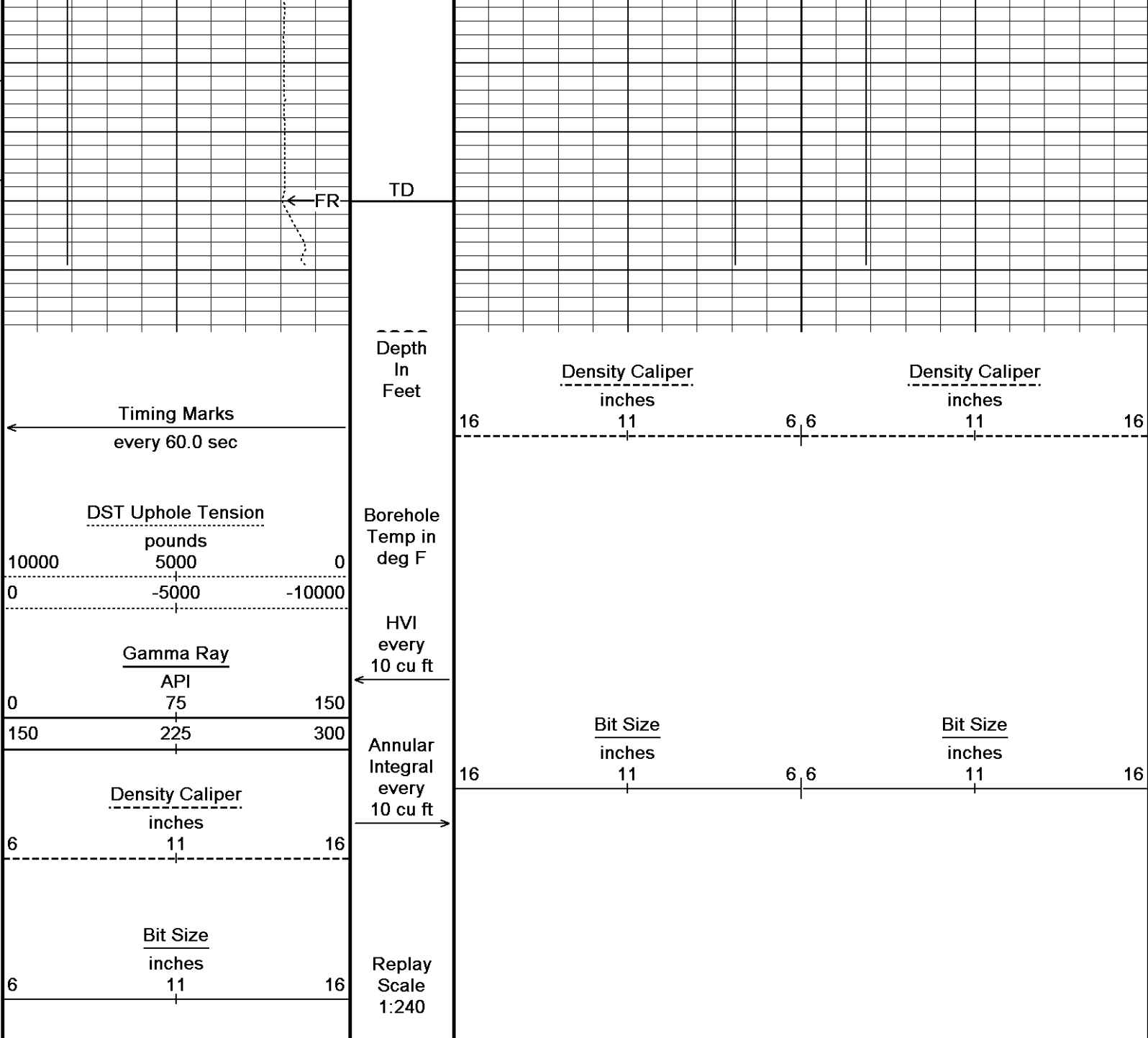


Bit Size

Density Caliper







Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\DOCUME~1\sysadmin\LOCALS~1\Temp\Weatherford PreV...Wexpro Carl Allen 41_4.dta
System Versions: Logged with 12.02.4401 Plotted with 12.02.4401
Plotted on 24-JAN-2012 15:39
Recorded on 24-JAN-2012 07:46

5 INCH MAIN LOG DSC

BEFORE SURVEY CALIBRATION		
C:\DOCUME~1\sysadmin\LOCALS~1\Temp\Weatherford PreView\0\Wexpro Carl Allen 41_4.dta		
Down-hole Tension Calibration All 000		
Reading No	Measured	Calibrated (lbs)
1	15659.85	0.00
2	15734.68	370.00
Field Calibration on 24-OCT-2010 03:34		
General Constants All 000		
Last Edited on 24-JAN-2012 05:35		
General Parameters		
Mud Resistivity	2.600	ohm-metres
Mud Resistivity Temperature	73.800	degrees F
Water Level	0.000	feet

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 None

Rwa Parameters

Porosity used Base Density Porosity
 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 24-JAN-2012 05:20

Reading No	Measured	Calibrated (lbs)
1	17467.09	0.00
2	18929.16	660.00

Gamma Calibration MCG-D.K 424

Field Calibration on 23-JAN-2012 14:46

	Measured	Calibrated (API)
Background	71	47
Calibrator (Gross)	851	566
Calibrator (Net)	780	519

Gamma Constants MCG-D.K 424

Last Edited on 24-JAN-2012 04:33

Gamma Calibrator Number	GRCC 119	
Mud Density	1.00	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

High Resolution Temperature Calibration MCG-D.K 424

Field Calibration on 03-SEP-2011 14:47

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

High Resolution Temperature Constants MCG-D.K 424

Last Edited on 03-SEP-2011 14:35

Pre-filter Length	11
-------------------	----

SP Calibration MCG-D.K 424

Field Calibration on 16-OCT-2011 14:34

	Measured	Calibrated (mV)
Reference 1	97.5	100.0
Reference 2	-97.8	-100.0

Neutron Calibration MDN-B.J 374

Base Calibration on 04-JAN-2012 18:16

Field Check on 23-JAN-2012 14:35

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
Ratio	2870	88	3714	110
	32.435		33.764	

Field Calibrator at Base

	Calibrated (cps)
Ratio	2324 3462
	0.671

Field Check

	Calibrated (cps)
Ratio	2279 3426
	0.665

Neutron Constants MDN-B.J 374

Last Edited on 24-JAN-2012 05:02

Neutron Source Id	P31115B
Neutron Jig Number	NJ5529
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	7.00	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	None	
Temperature	N/A	degrees F
Mud Salinity	0.00	kppm
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	
Salinity Correction	Not Applied	

FE Calibration MFE-B.A 248

Base Calibration on 04-JAN-2012 13:45

Field Check on 23-JAN-2012 13:26

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	965.1	126.8
Base Check		281.3
Field Check		281.3

FE Constants MFE-B.A 248

Last Edited on 24-JAN-2012 06:36

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	1.0	inches

Induction Calibration MAI-B.J 362

Base Calibration on 02-SEP-2011 14:29

Field Check on 23-JAN-2012 13:20

Base Calibration

Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel		Low	High	Low	High
1		16.0	468.7	9.3	966.2
2		6.2	374.5	7.6	821.4
3		3.6	258.3	5.2	566.0
4		1.8	133.1	2.6	279.2

Array Temperature 74.8 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	15.0	3873.2
2	0.0	0.0	30.5	3605.3
3	0.0	0.0	28.4	3069.1
4	0.0	0.0	19.7	2079.0
Deep	0.0	0.0	17.5	1954.3
Medium	0.0	0.0	41.1	4076.8
Shallow	0.0	0.0	45.5	5399.6

Array Temperature 0.0 16.1 Deg F

Induction Constants MAI-B.J 362

Last Edited on 24-JAN-2012 06:36

Induction Model	RtAP-WBM	
Caliper for Borehole Corr.	Density Caliper	
Hole Size for Borehole Correction	N/A	inches
Tool Centred	Yes	
Stand-off Type	N/A	
Stand-off	N/A	inches
Number of Fins on Stand-off	N/A	
Stand-off Fin Angle	N/A	degrees
Stand-off Fin Width	N/A	inches
Borehole Corr. Rm Source	Temperature Corr	

Temp. for Rm Corr.	MCG External Temperature	0.0020	mhos/metre
Squasher Start		N/A	mhos/metre
Squasher Offset			
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 362			Field Calibration on 28-SEP-2011 08:20
	Measured	Calibrated(Deg F)	
Lower	10.00	50.00	
Upper	100.00	212.00	

High Resolution Temperature Constants MAI-B.J 362		Last Edited on
Pre-filter Length	11	

Caliper Calibration MPD-B 183		Base Calibration on 06-JAN-2012 18:24
		Field Calibration on 23-JAN-2012 13:42
Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	18208	3.99
2	28048	5.96
3	38240	7.99
4	47744	9.86
5	58880	11.93
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.93	7.96

Photo Density Calibration MPD-B 183					Base Calibration on 06-JAN-2012 18:08	
					Field Check on 23-JAN-2012 13:39	
Density Calibration						
Base Calibration		Measured		Calibrated (sdu)		
		Near	Far	Near	Far	
	Reference 1	39679	13053	52994	19128	
	Reference 2	18069	1723	25185	2558	
Field Check at Base						
		651.0	764.9			
Field Check						
		650.6	762.5			
PE Calibration						
Base Calibration		Measured		Calibrated		
	WS	WH	Ratio	Ratio		
	Background	118	586			
	Reference 1	13846	39582	0.352	0.309	

Reference 2 5300 17996 0.298 0.274

Field Check at Base

118.4 585.6

Field Check

121.1 590.2

Density Constants MPD-B 183

Last Edited on 24-JAN-2012 05:02

Density Source Id	P15771B	
Nylon Calibrator Number	527	
Aluminium Calibrator Number	527	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.23	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	
Matrix Density (gm/cc)	Depth (ft)	
2.68		
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	

Dipole Constants and Gains MRD-A.A 126

Logging Mode	Standard	
Semblance Parameters		
Window Start	1.00	milliseconds
Window Width	15	milliseconds

Discriminator Levels

M1C Discriminator	0.1	mV
M2C Discriminator	0.1	mV
M3C Discriminator	0.1	mV
M4C Discriminator	0.1	mV

Monopole Receiver Gains

MR1A	1.000000	MR1B	1.000000	MR1C	1.000000	MR1D	1.000000
MR2A	1.000000	MR2B	1.000000	MR2C	1.000000	MR2D	1.000000
MR3A	1.000000	MR3B	1.000000	MR3C	1.000000	MR3D	1.000000
MR4A	1.000000	MR4B	1.000000	MR4C	1.000000	MR4D	1.000000
MR5A	1.000000	MR5B	1.000000	MR5C	1.000000	MR5D	1.000000
MR6A	1.000000	MR6B	1.000000	MR6C	1.000000	MR6D	1.000000
MR7A	1.000000	MR7B	1.000000	MR7C	1.000000	MR7D	1.000000
MR8A	1.000000	MR8B	1.000000	MR8C	1.000000	MR8D	1.000000

DOWNHOLE EQUIPMENT

C:\DOCUME~1\sysadmin\LOCALS~1\Temp\Weatherford PreView\0\Wexpro Carl Allen 41_4.dta

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 225 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.K 424 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in



73.07 ft

70.16 ft

GRGC - Gamma Ray

CGXT - MCG External Temperature

Compact Neutron
MDN-B.J 374 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 183 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

MIS-D.A Compact Inline Bowspring sub
MIS-D.A 437 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 89 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-B Compact Inline Standoff sub
MIS-B 200 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 112 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Dipole Memory
MDM-A.A 126 LG: 4.48 ft WT: 39.7 lb OD: 2.24 in

Compact Dipole Receiver
MRD-A.A 126 LG: 8.89 ft WT: 88.2 lb OD: 2.24 in

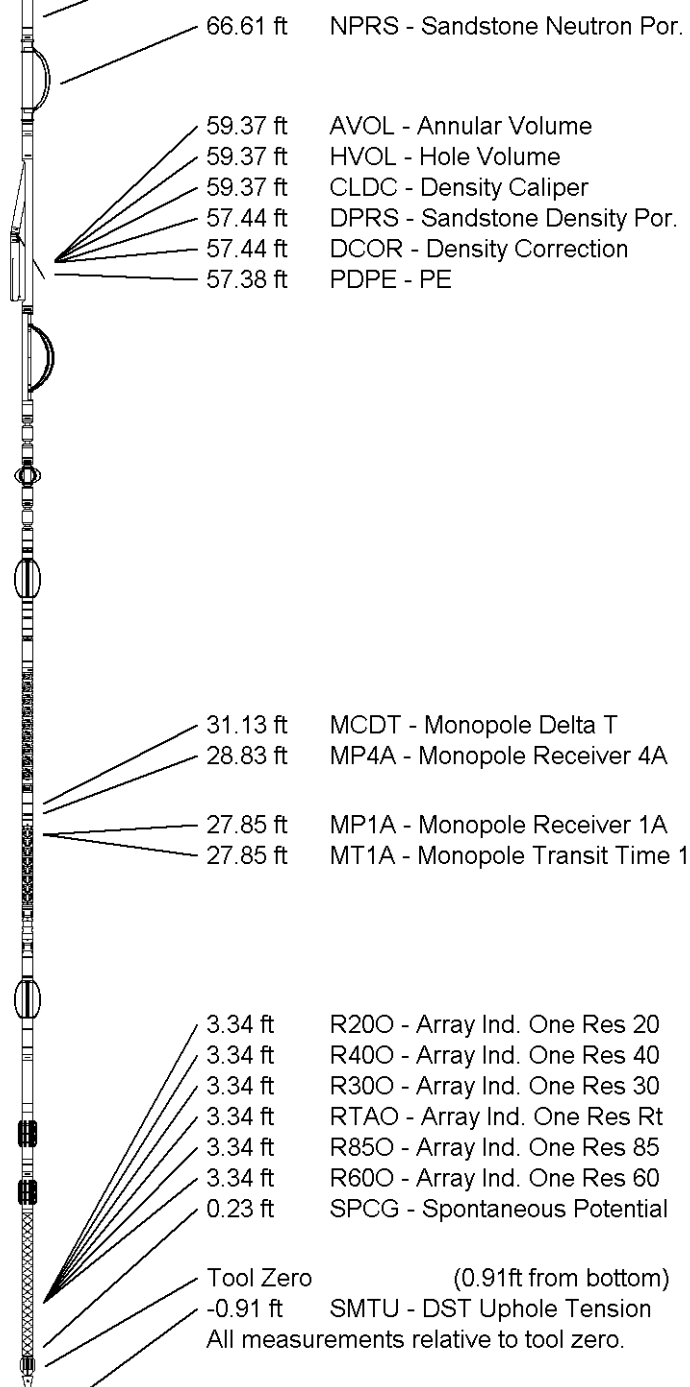
Compact Dipole Transmitter
MTD-A.A 126 LG: 12.63 ft WT: 110.2 lb OD: 2.24 in

Compact Focussed Electric
MFE-B.A 248 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-B.J 362 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Compact Hole Finder
HFS 1 LG: 0.78 ft WT: 2.2 lb OD: 2.24 in

Total Length: 81.43 ft Weight: 661.4 lb



COMPANY	WEXPRO COMPANY
WELL	CARL ALLEN 41
FIELD	POWDER WASH
PROVINCE/COUNTY	MOFFAT
COUNTRY/STATE	USA/COLORADO

Elevation Kelly Bushing	6689.00	feet	First Reading	6821.00	feet
Elevation Drill Floor	6689.00	feet	Depth Driller	9520.00	feet
Elevation Ground Level	6660.00	feet	Depth Logger	6880.00	feet



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LOG

