Weatherford

CALIPER LOG

COMPANY	GRAND MESA OPERATING COMPANY
WELL	BETTY #1-15
FIELD	WILDCAT
PROVINCE/COUNTY	LINCOLN
COUNTRY/STATE	U.S.A. / COLORADO
LOCATION	263' FSL & 2172' FWL

SEC	TWP	RGE	Other Services
15	7S	55W	

Latitude
Longitude
API Number 05-073-06750

Permanent Datum GL, Elevation 5465 feet
Log Measured From KB, 19.00 feet above Permanent Datum
Drilling Measured From KB

Elevations:	feet
KB	5484.00
DF	5482.00
GL	5465.00

Date	06-SEP-2018			
Run Number	ONE			
Service Order	4558-22342051			
Depth Driller	8541.00	feet		
Depth Logger	8526.00	feet		
First Reading	8492.00	feet		
Last Reading	474.00	feet		
Casing Driller	473.00	feet		
Casing Logger	474.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.40 lb/USg		63.00 CP	
PH / Fluid Loss	9.50		7.20 ml/30Min	
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.80 @ 75.0	ohm-m		
Rmf @ Measured Temp	0.64 @ 75.0	ohm-m		
Rmc @ Measured Temp	0.96 @ 75.0	ohm-m		
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	0.32 @190.0	ohm-m		
Time Since Circulation	5 HOURS			
Max Recorded Temp	190.00	deg F		
Equipment / Base	13096		LIB	
Recorded By	ADAM SILL			
Witnessed By	GARET DINKEL			

BOREHOLE RECORD

Last Edited: 06-SEP-2018 13:11

Bit Size inches	Depth From feet	Depth To feet
7.875	473.00	8541.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	473.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 18.01.6830.

- RUN ONE: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION.
  - HARDWARE: DUAL BOWSPRING USED ON MDN.
    0.5 INCH STANDOFF USED ON MFE.
    TWO 0.5 INCH STANDOFFS USED ON MSS.
    0.5 INCH STANDOFF USED ON MAI.

- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.

- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.

- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 3619 CU.FT.

- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO SURFACE CASING: 2296 CU.FT.

- RIG: WW DRILLING #20.

- ENGINEER: A. SILL.

- OPERATOR: B. TOVAR, B. COPELAND.

**** RIG LOST DRILL BIT IN THE HOLE AT TD, STOPPED WIRELINE 15 FEET ABOVE TD TO AVOID TAGGING DRILL BIT. LOGGED OUT FROM DEEPEST DEPTH REACHED OF 8526 FEET. ****

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 06-SEP-2018 21:09

Filename: C:\Minimus 18.01.6830\Data\Grand Mesa Betty #1-15\Grand Mesa Betty #1-15_002.dta — Recorded on 06-SEP-2018 16:03

System Versions: Logged with 18.01.6830 Plotted with 18.01.6830

Timing Marks every 60.0 sec

Gamma Ray API 0 75 150 / 150 225 300

Density Caliper inches 6 11 16

Bit Size inches 6 11 16

DST Uphole Tension pounds 5000 0

Depth In Feet

Borehole Temp in deg F

HVI every 10 cu ft

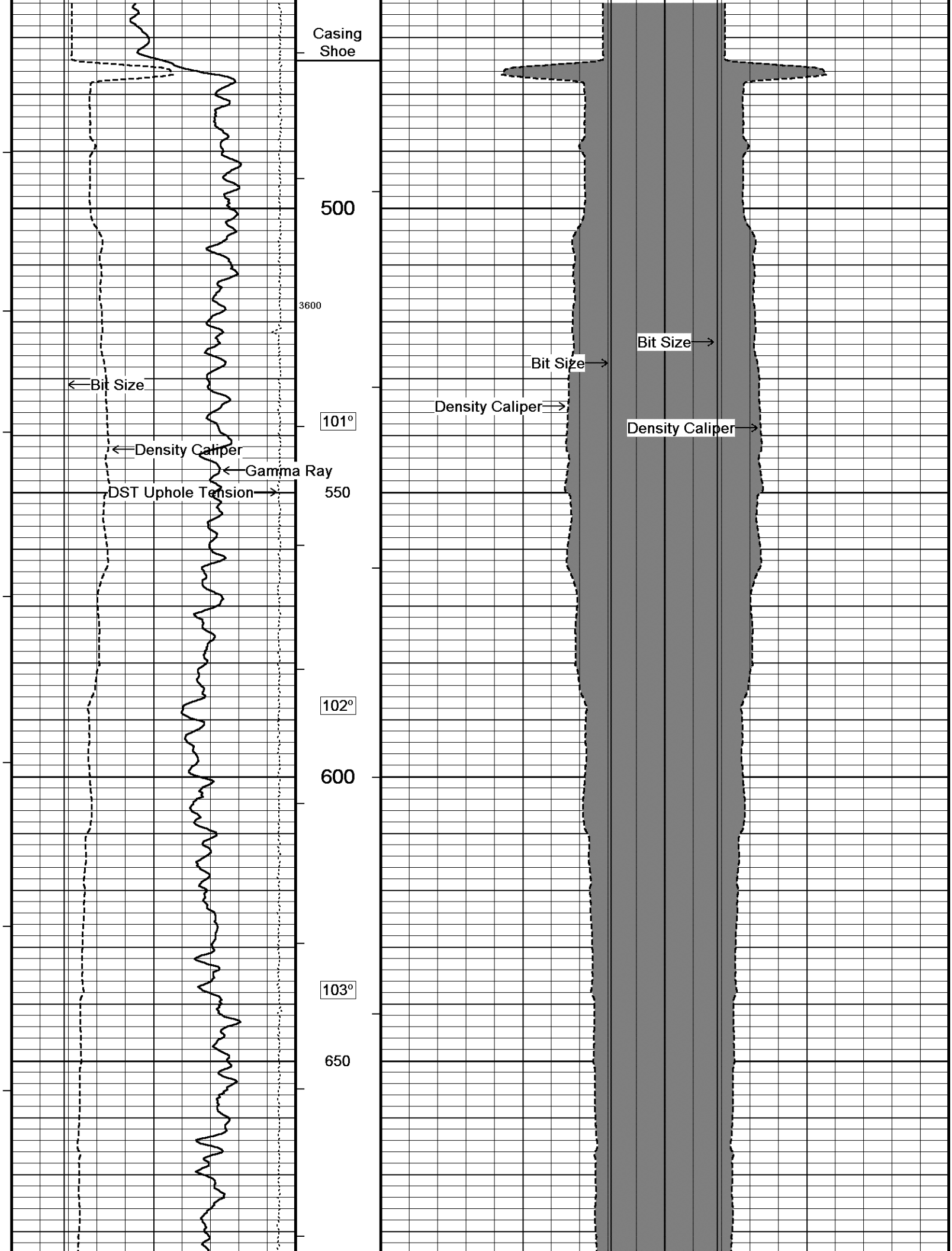
Annular Integral every 10 cu ft

Replay Scale 1:240

462

Density Caliper inches 16 11 6 — Density Caliper inches 6 11 16

Bit Size inches 16 11 6 — Bit Size inches 6 11 16


Casing
Shoe
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Bit Size
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Density Caliper
Gamma Ray
DST Uphole Tension
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600
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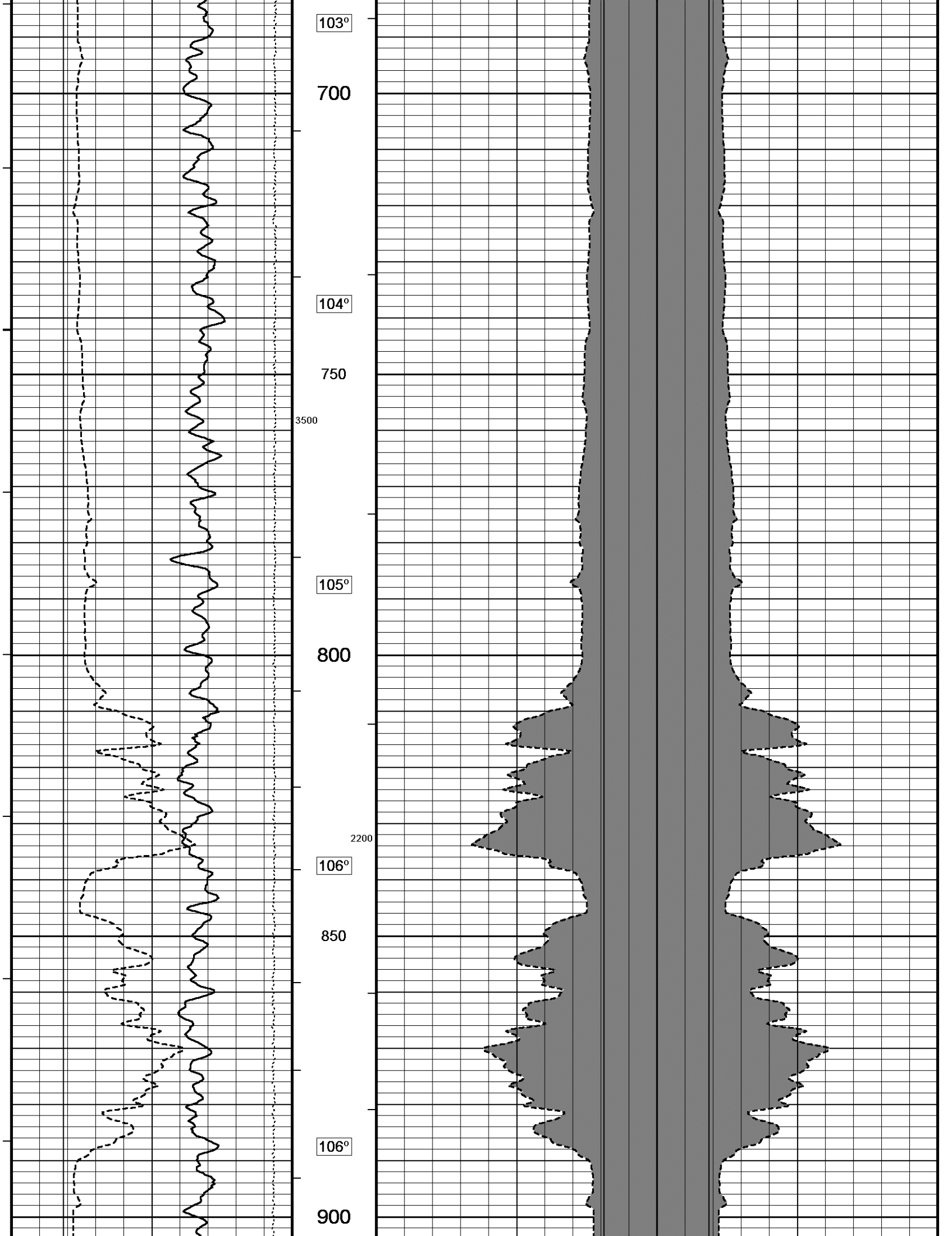
650
Bit Size
Bit Size
Density Caliper
Density Caliper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106°
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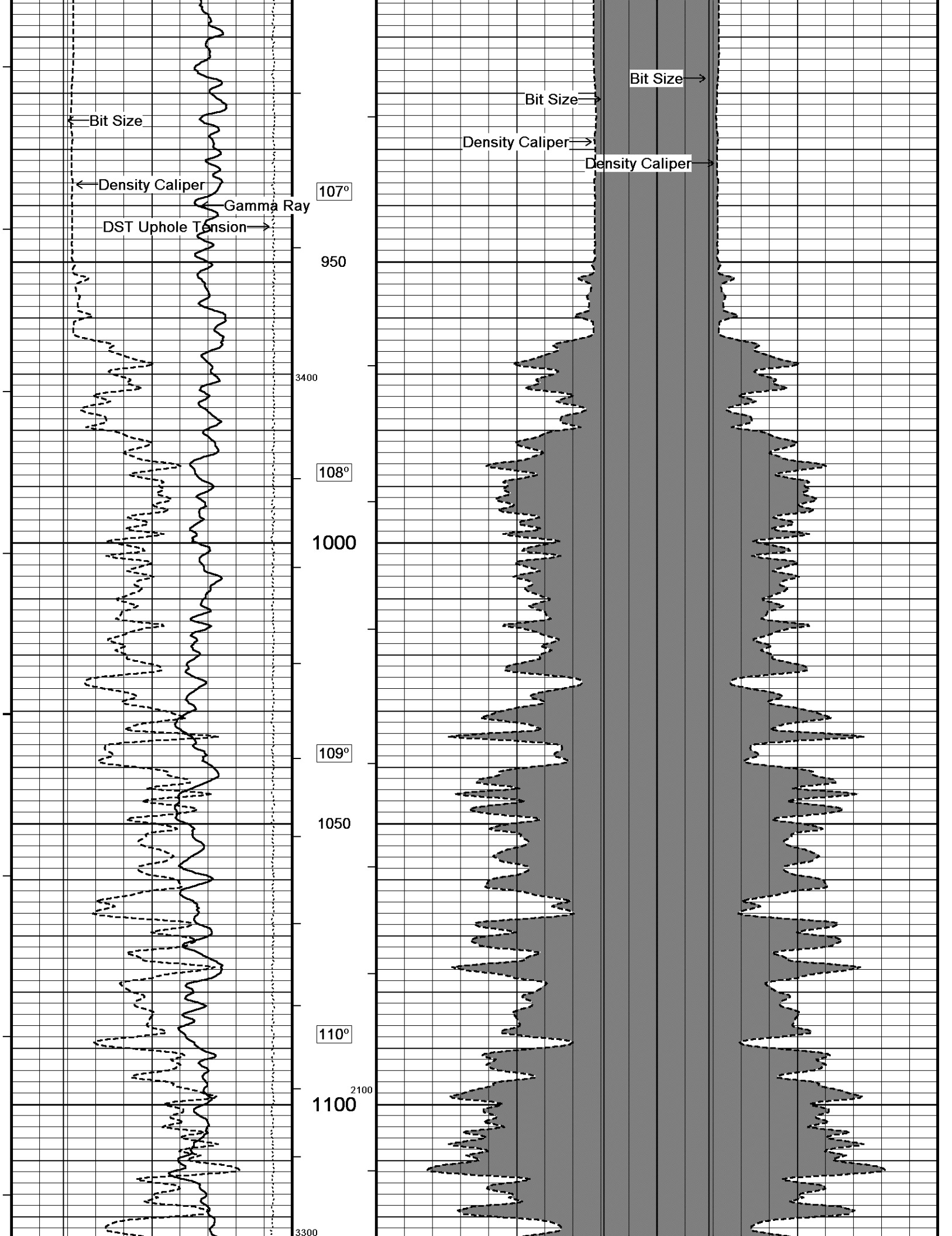
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Density Caliper
Gamma Ray
DST Uphole Tension
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1000
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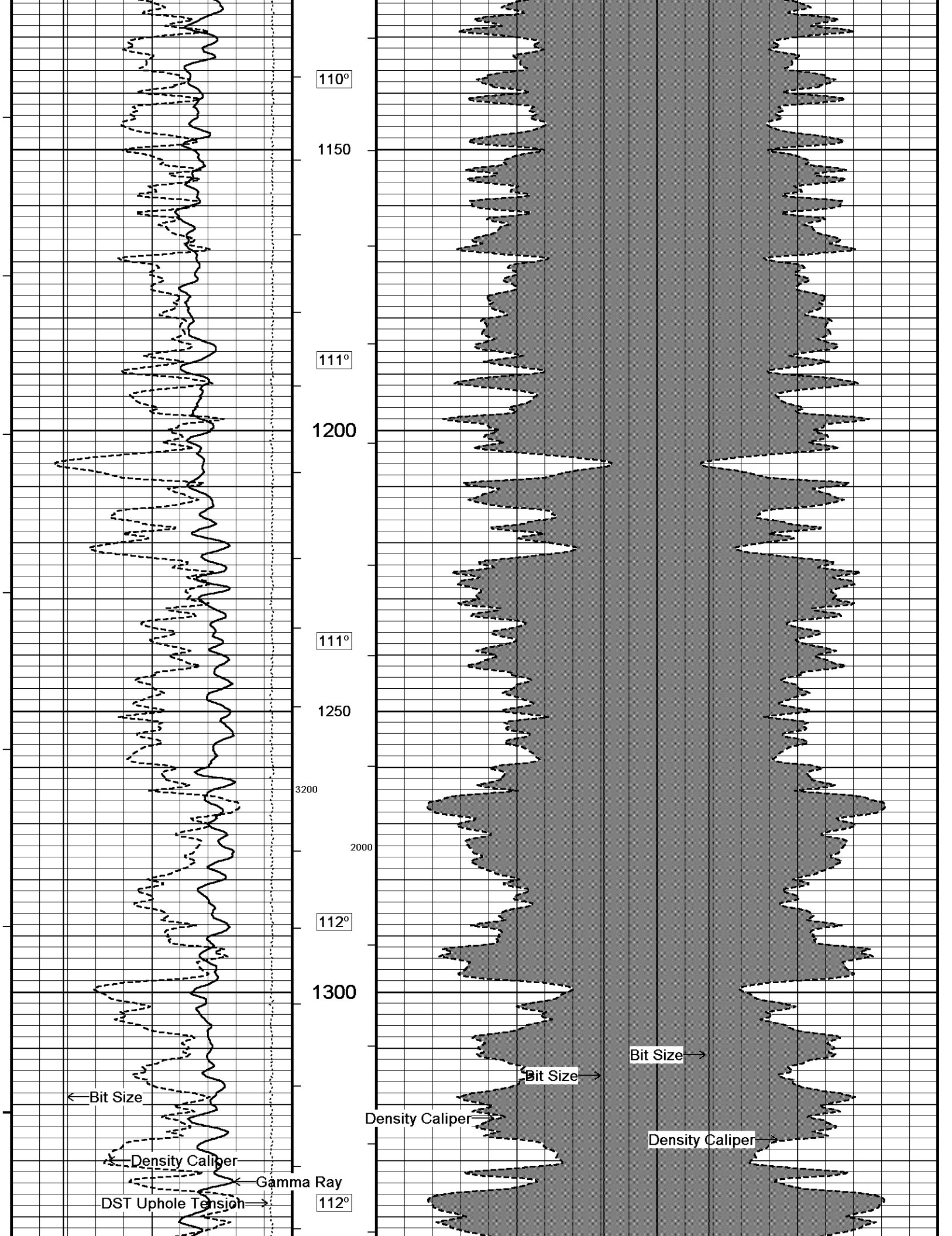
Bit Size
Bit Size
Density Caliper
Density Caliper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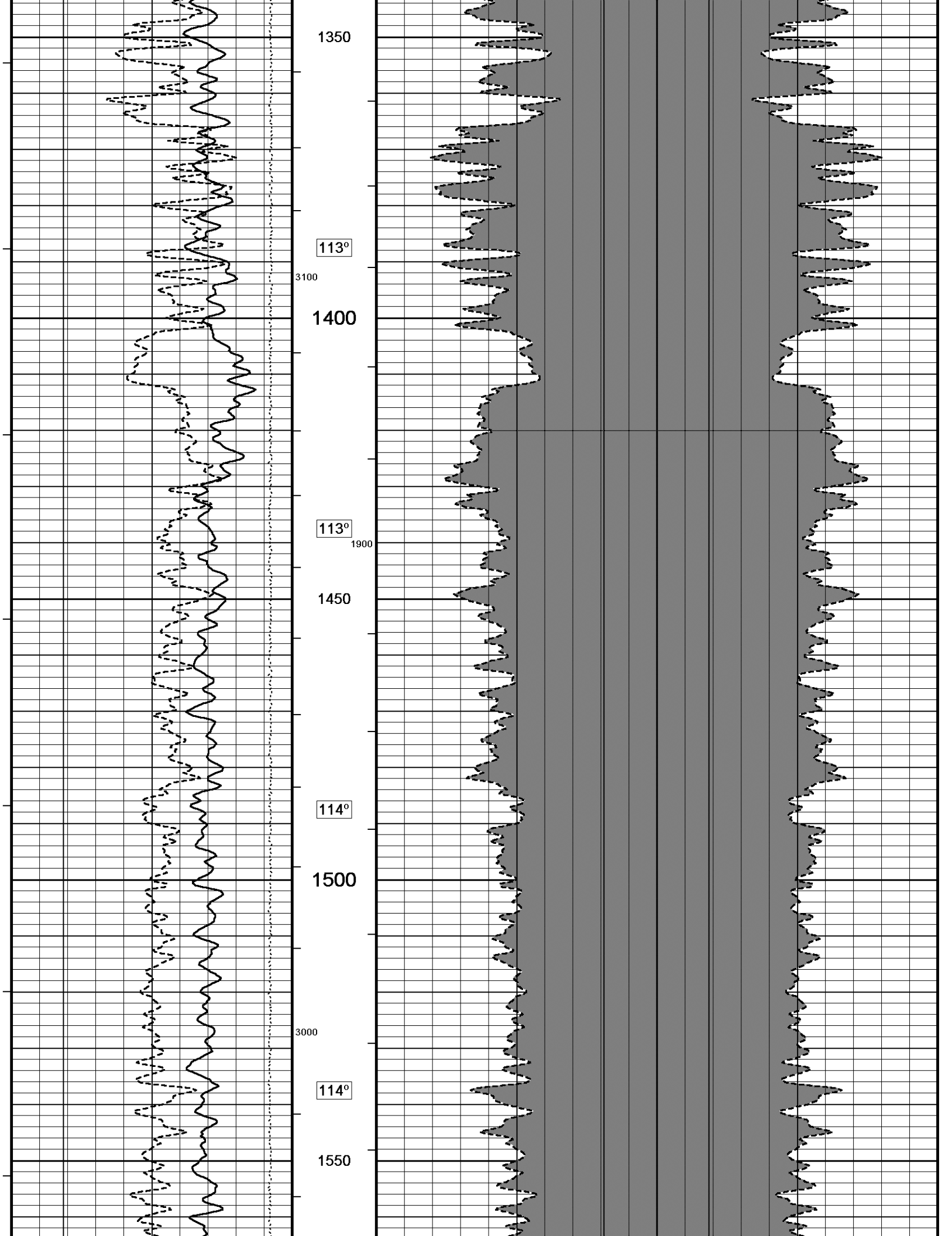
Gamma Ray
DST Uphole Tension
Bit Size
Bit Size
Density Caliper
Density Caliper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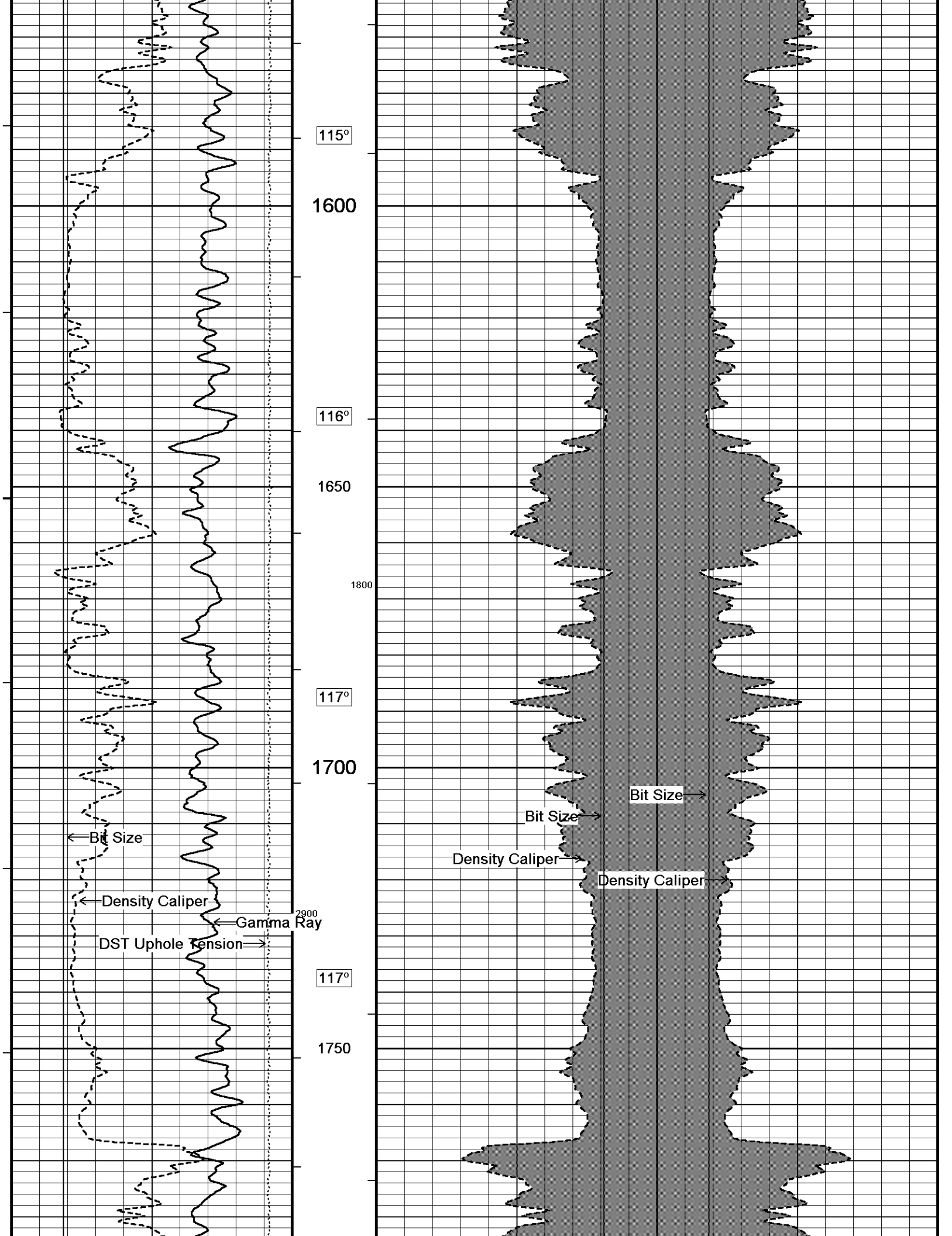
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1600
116°
1650
1800
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1700
Bit Size
Bit Size
Density Caliper
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Bit Size
Density Caliper
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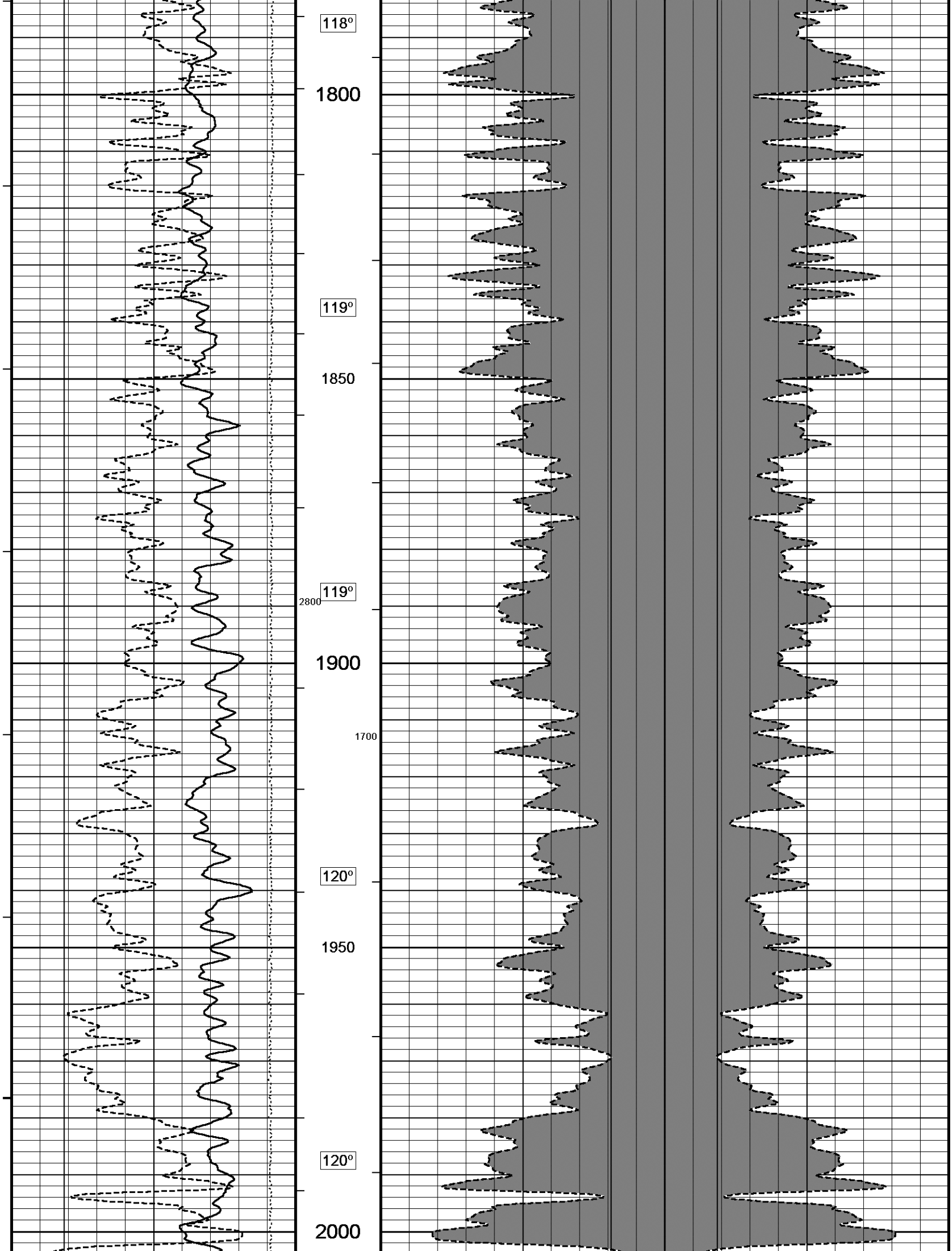
Gamma Ray
DST Uphole Tension
117°
1750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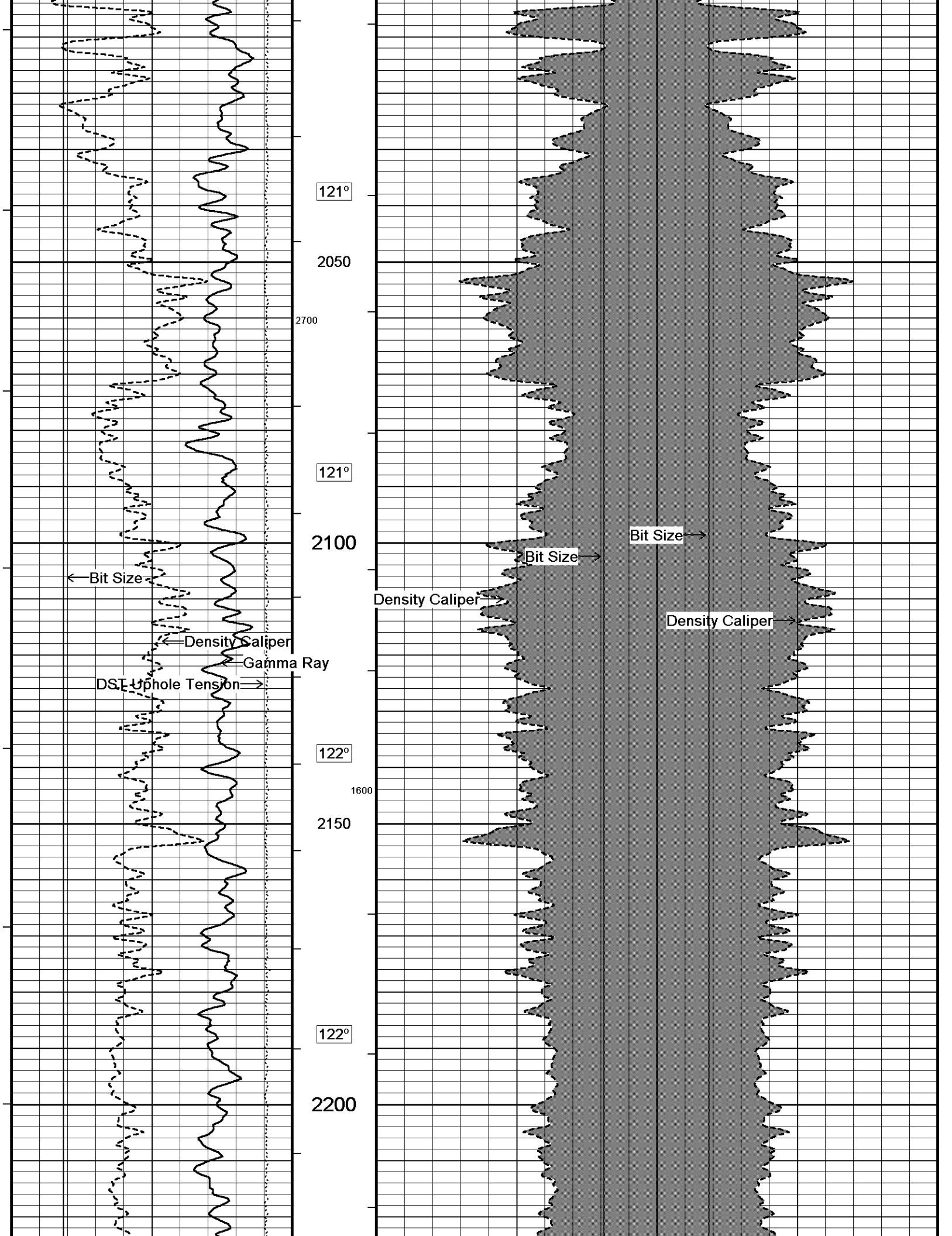
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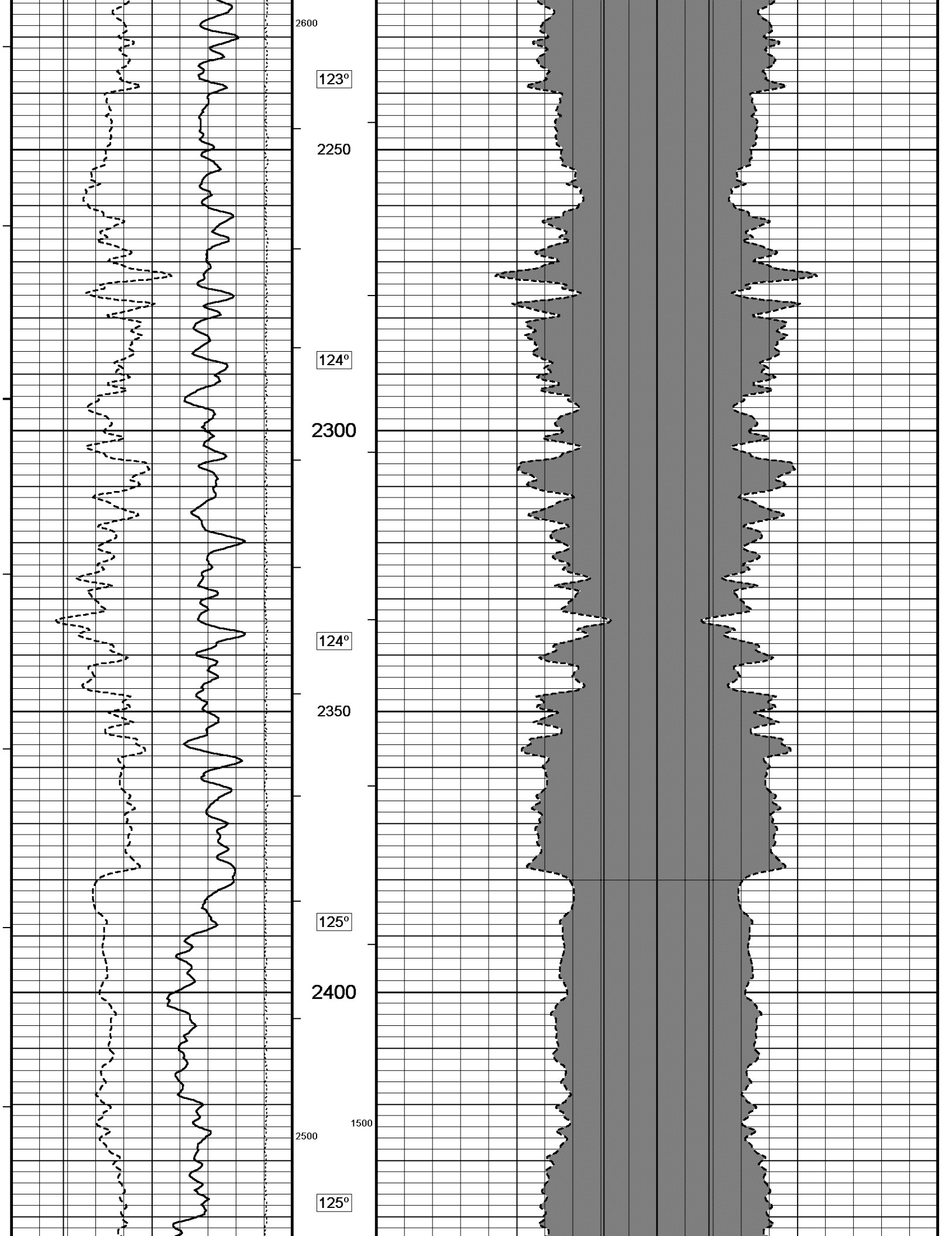
Density Caliper
Density Caliper
Gamma Ray
DST Uphole Tension
122°
1600
2150
122°
2200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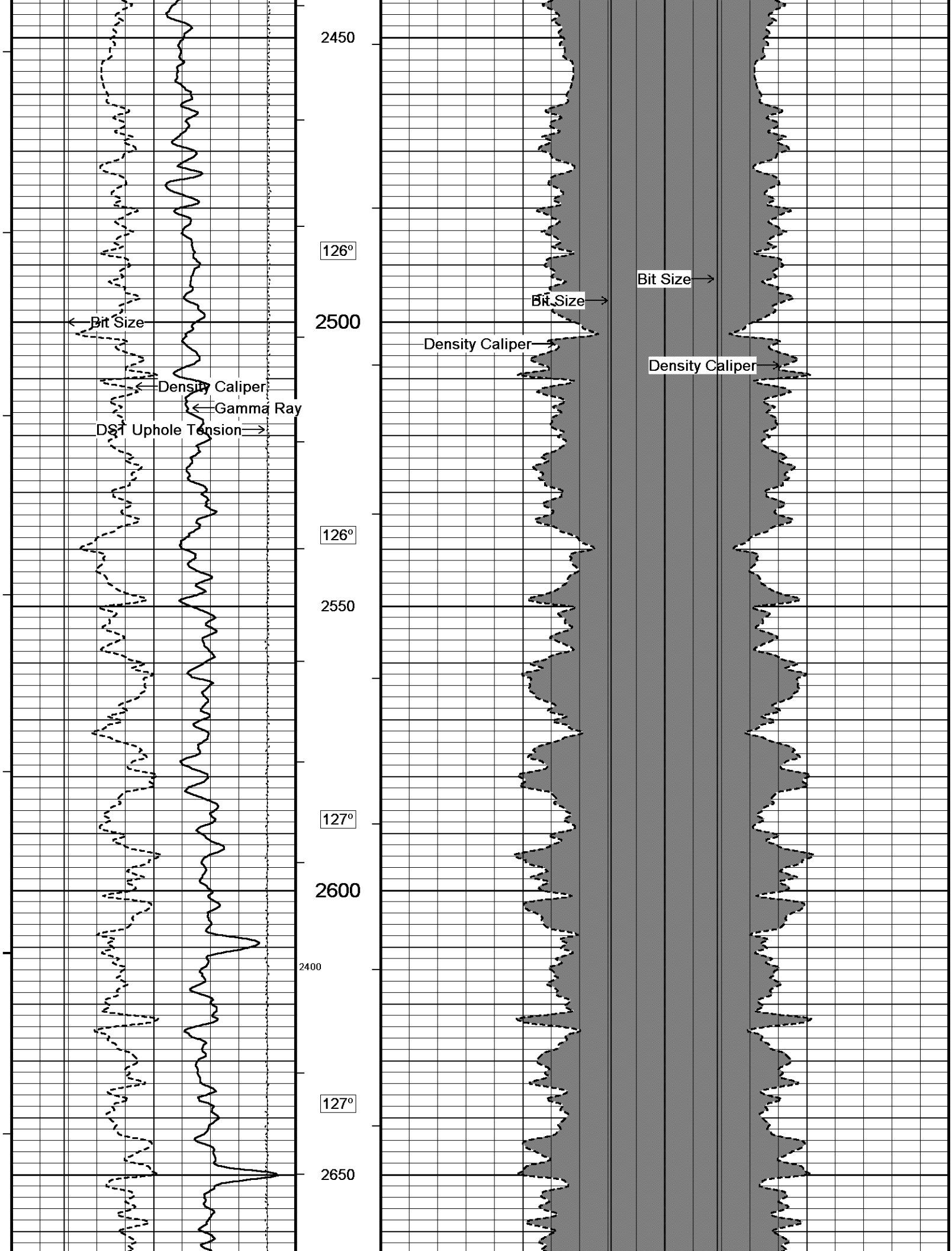
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Density Caliper
Gamma Ray
DST Uphole Tension
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Bit Size
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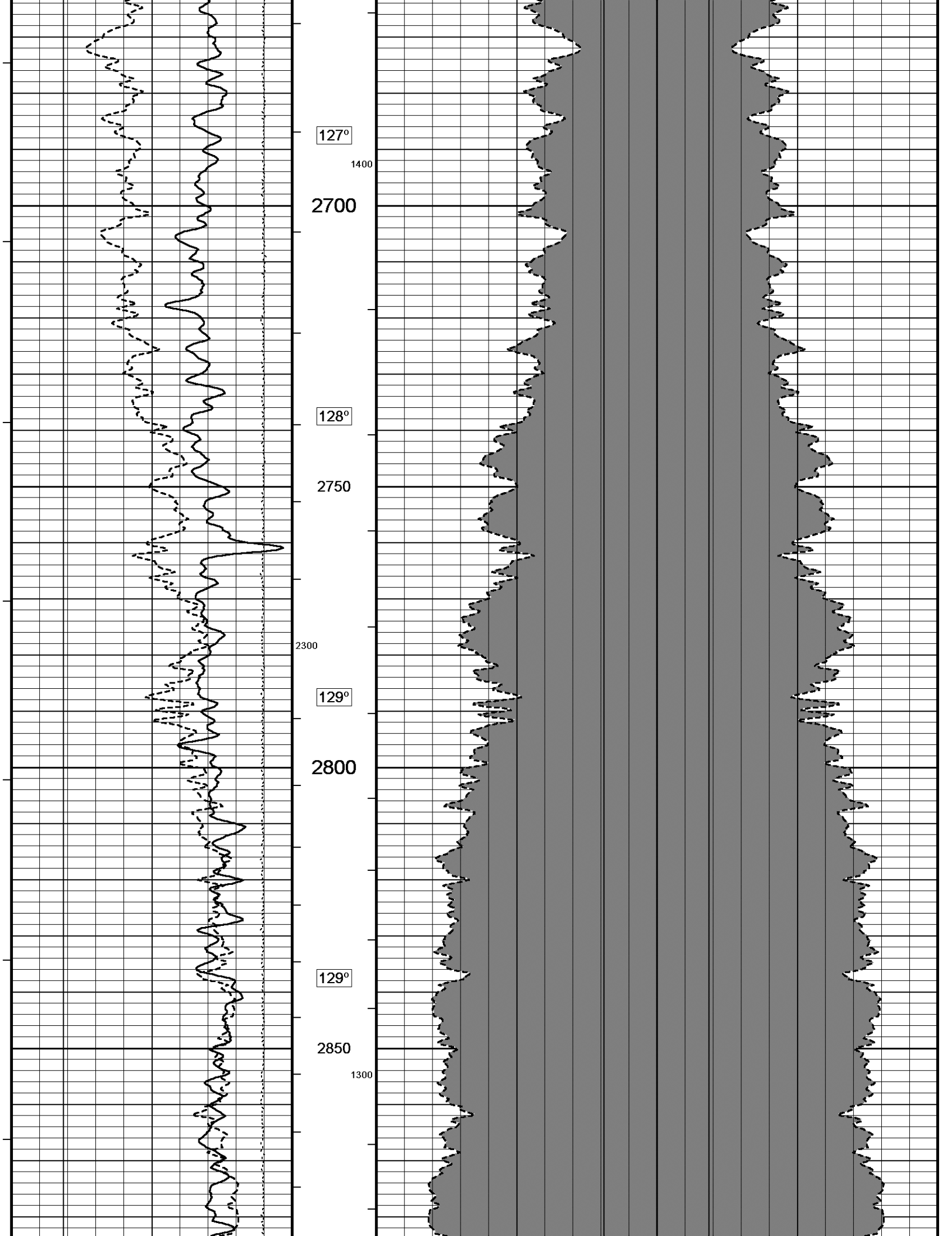
Density Caliper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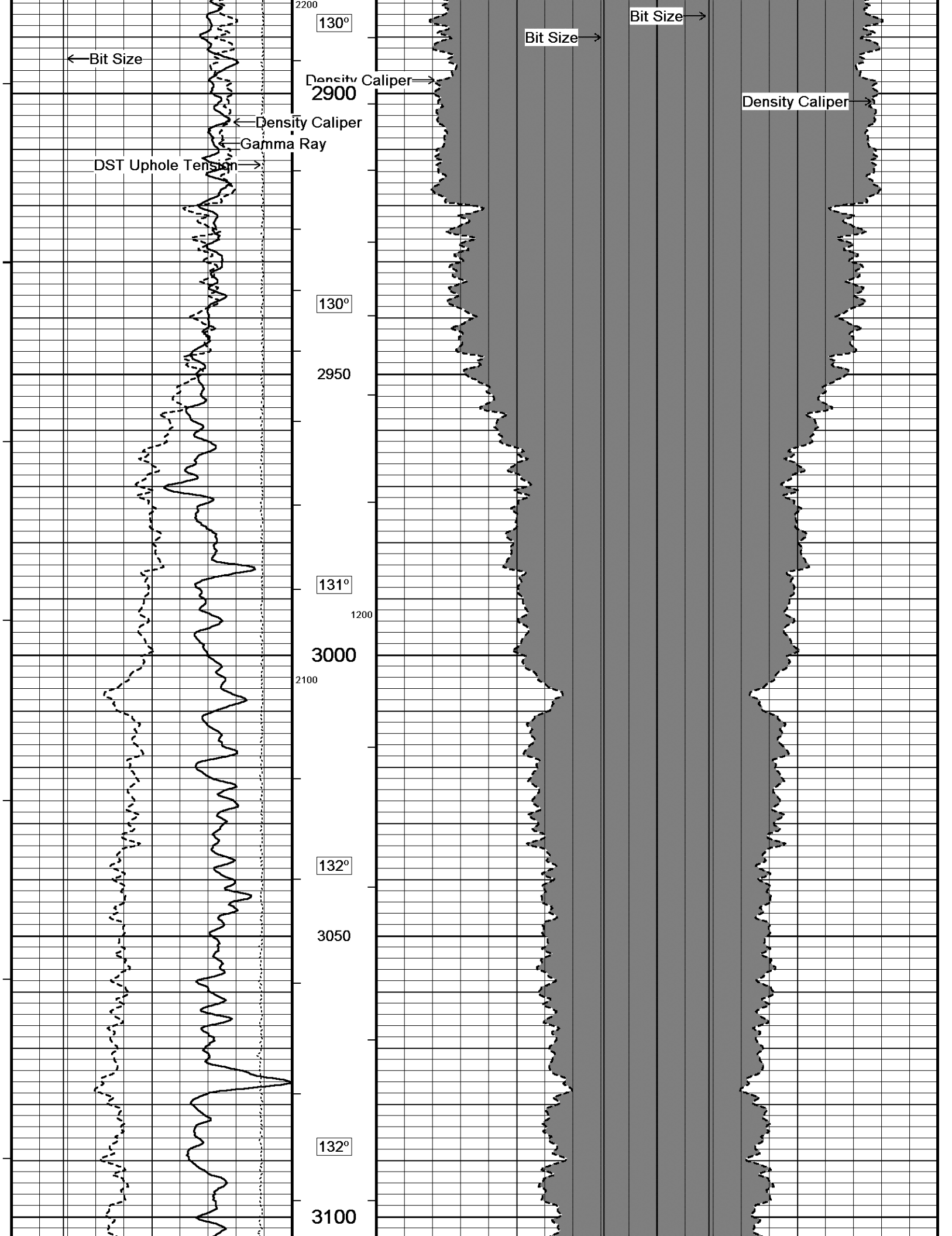
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Density Caliper
Gamma Ray
DST Uphole Tension
Bit Size
Bit Size
Density Caliper
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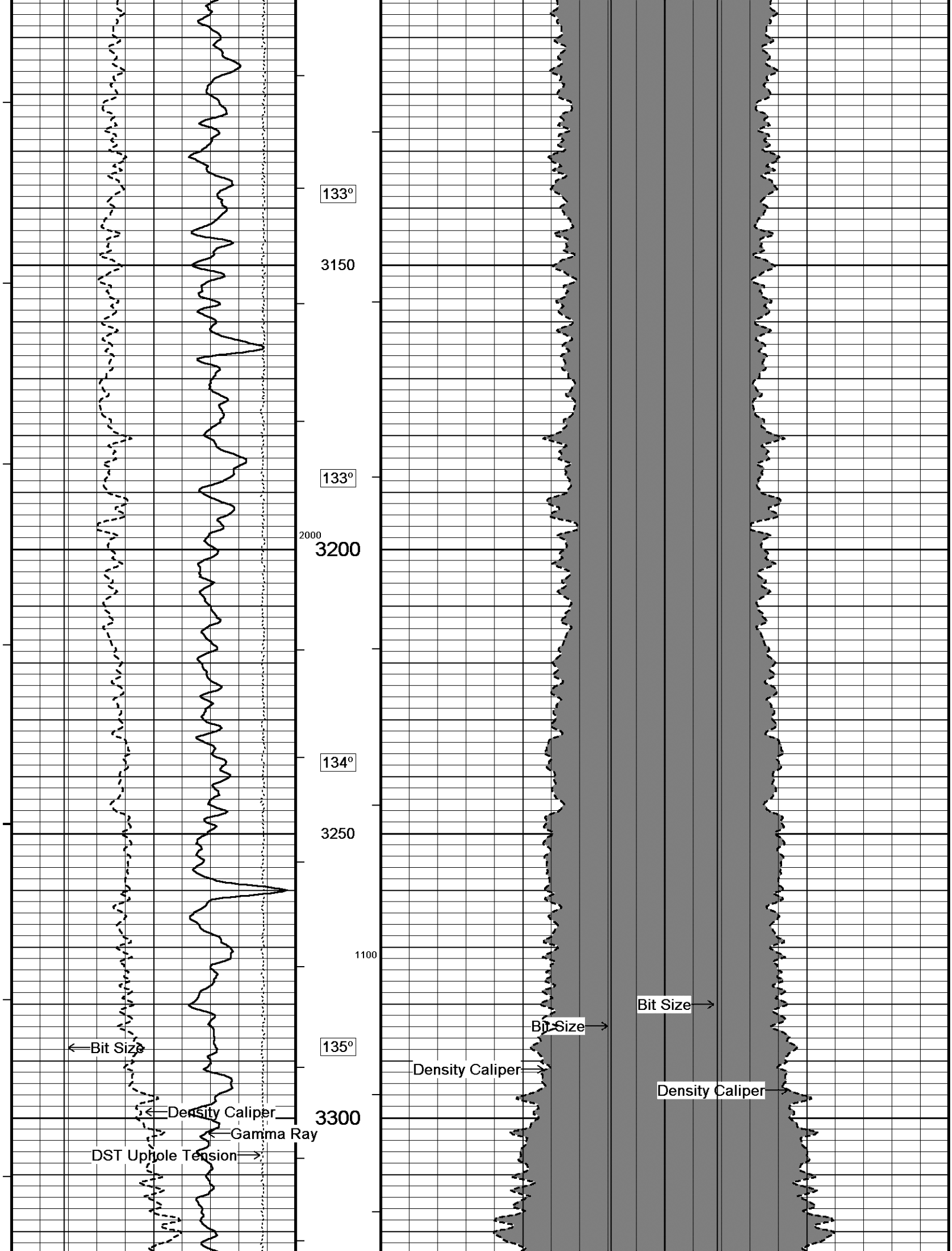
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Bit Size
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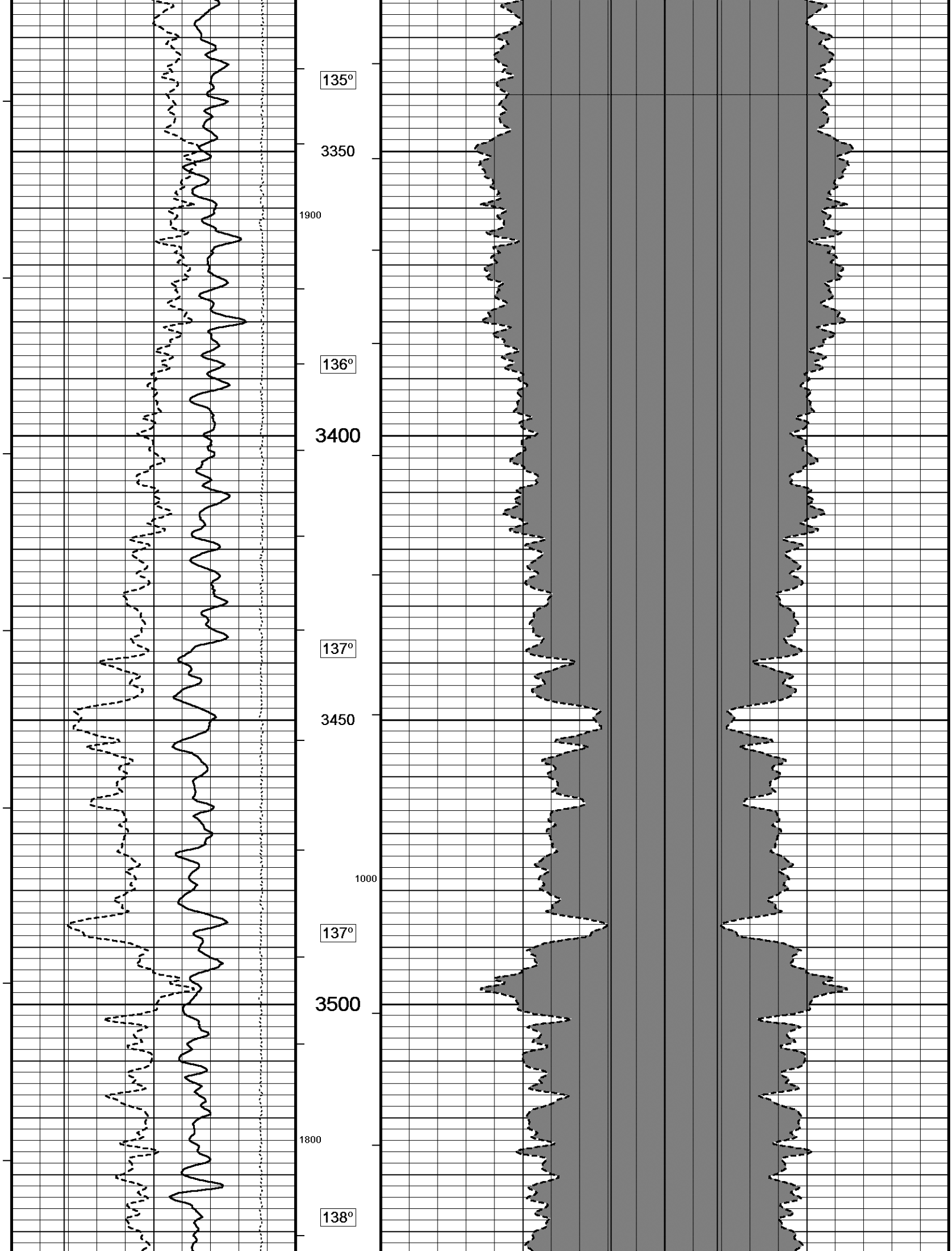
Density Caliper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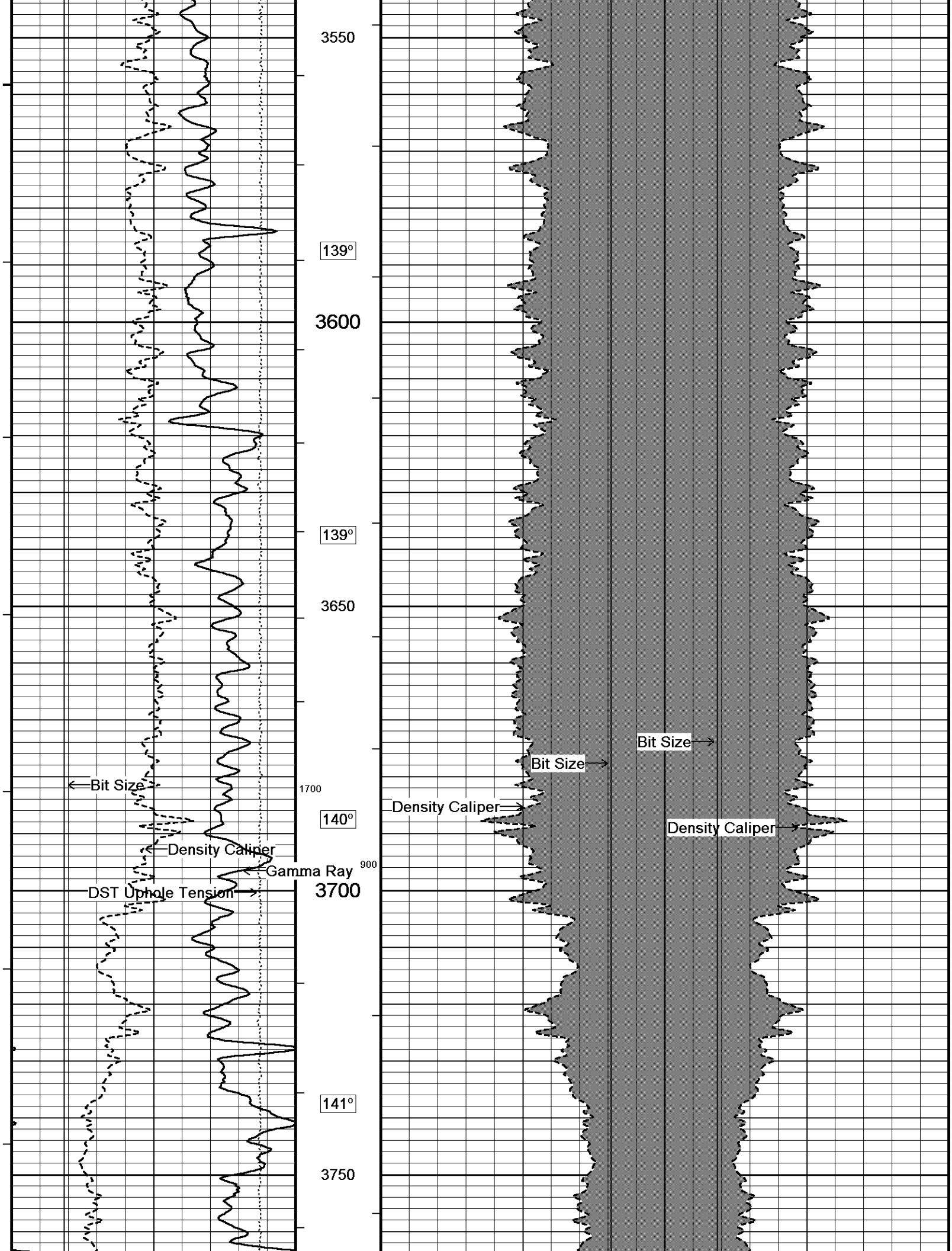
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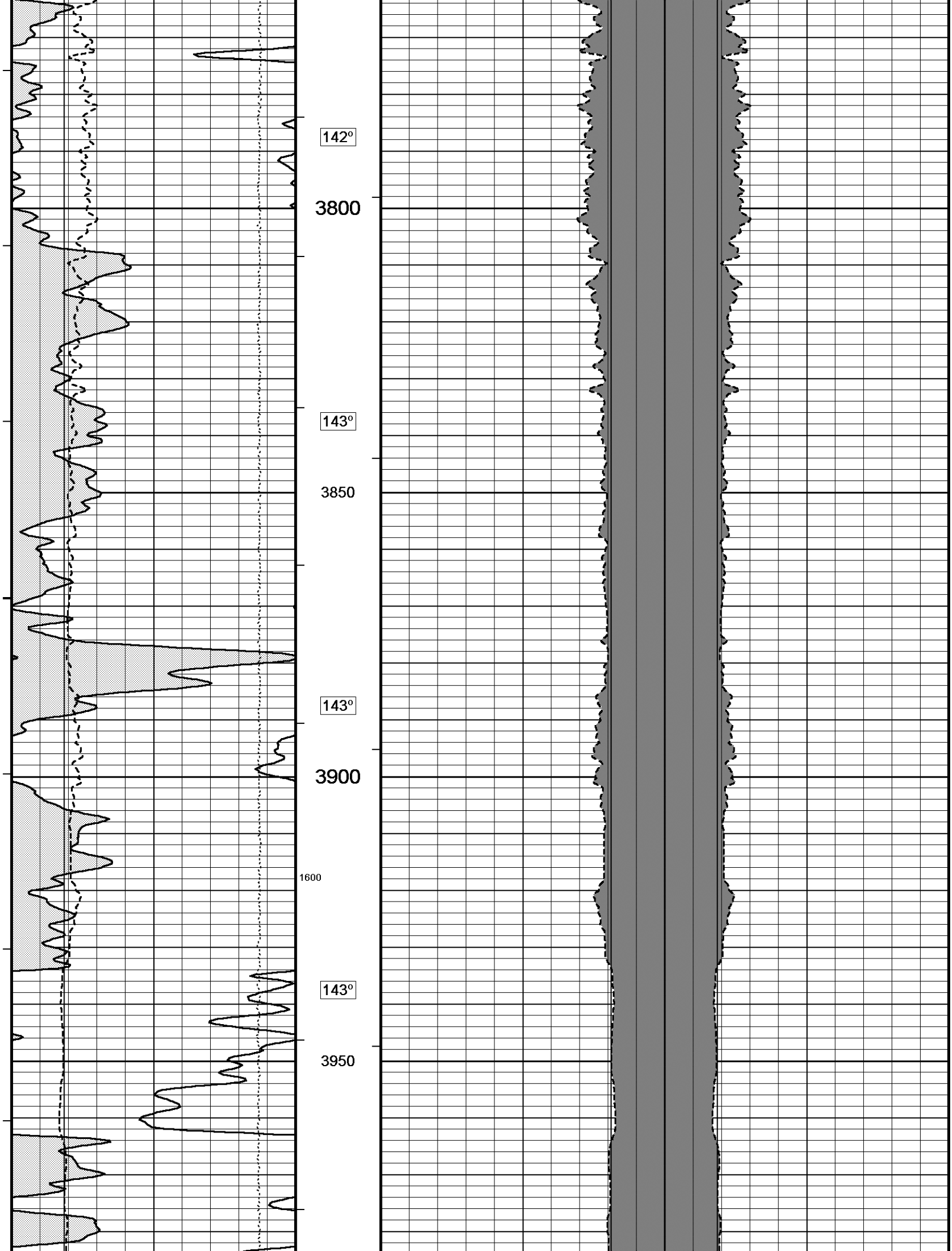
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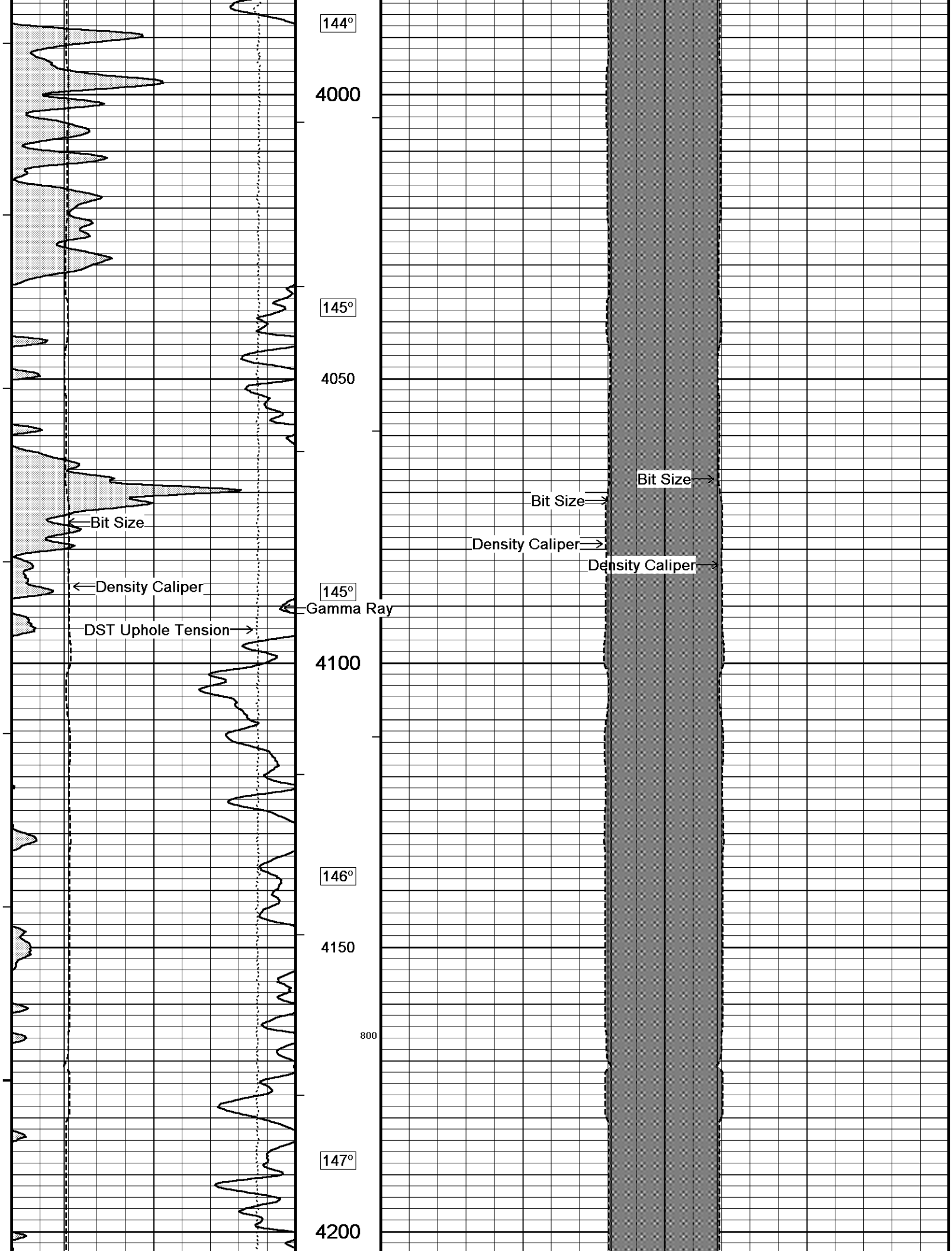
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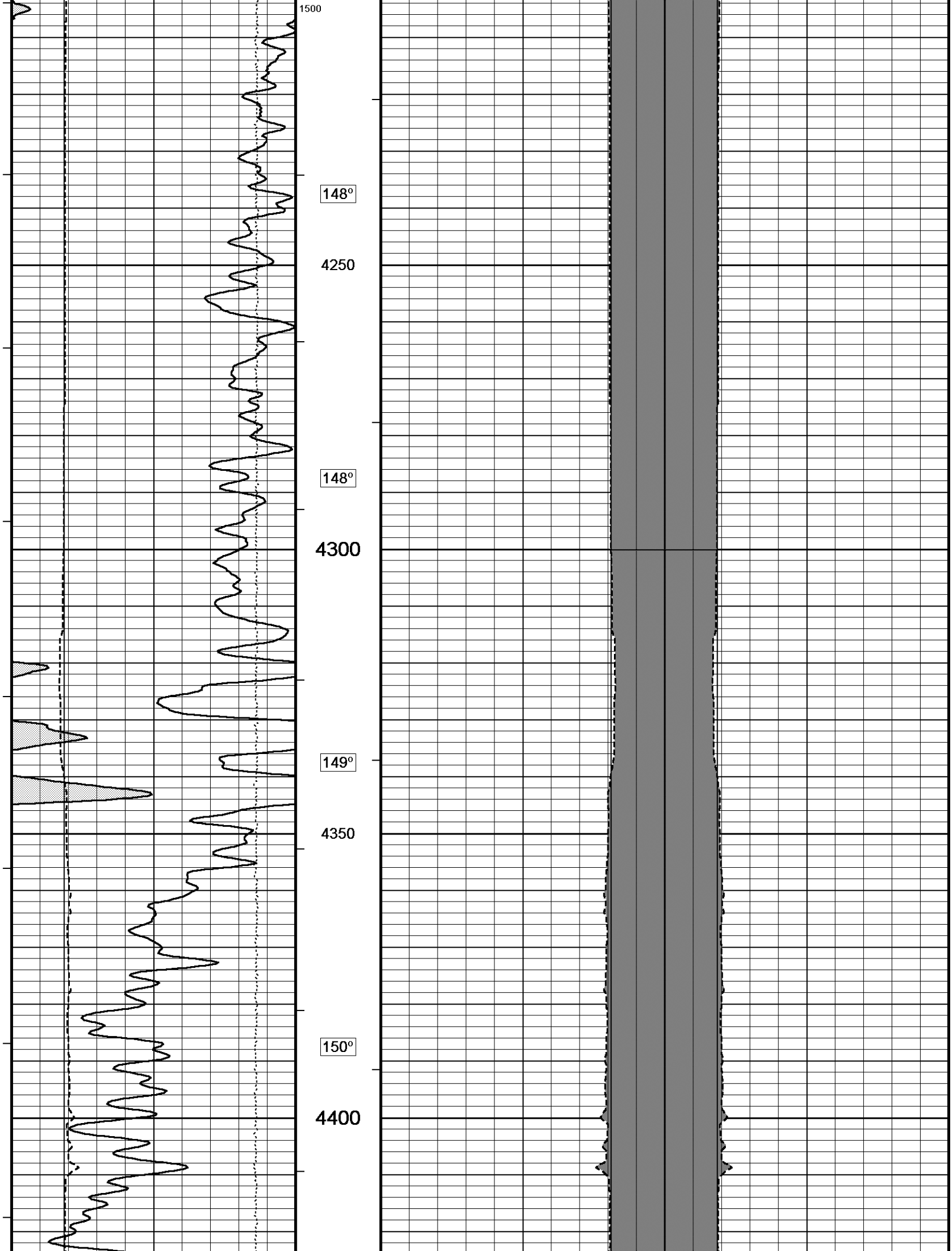
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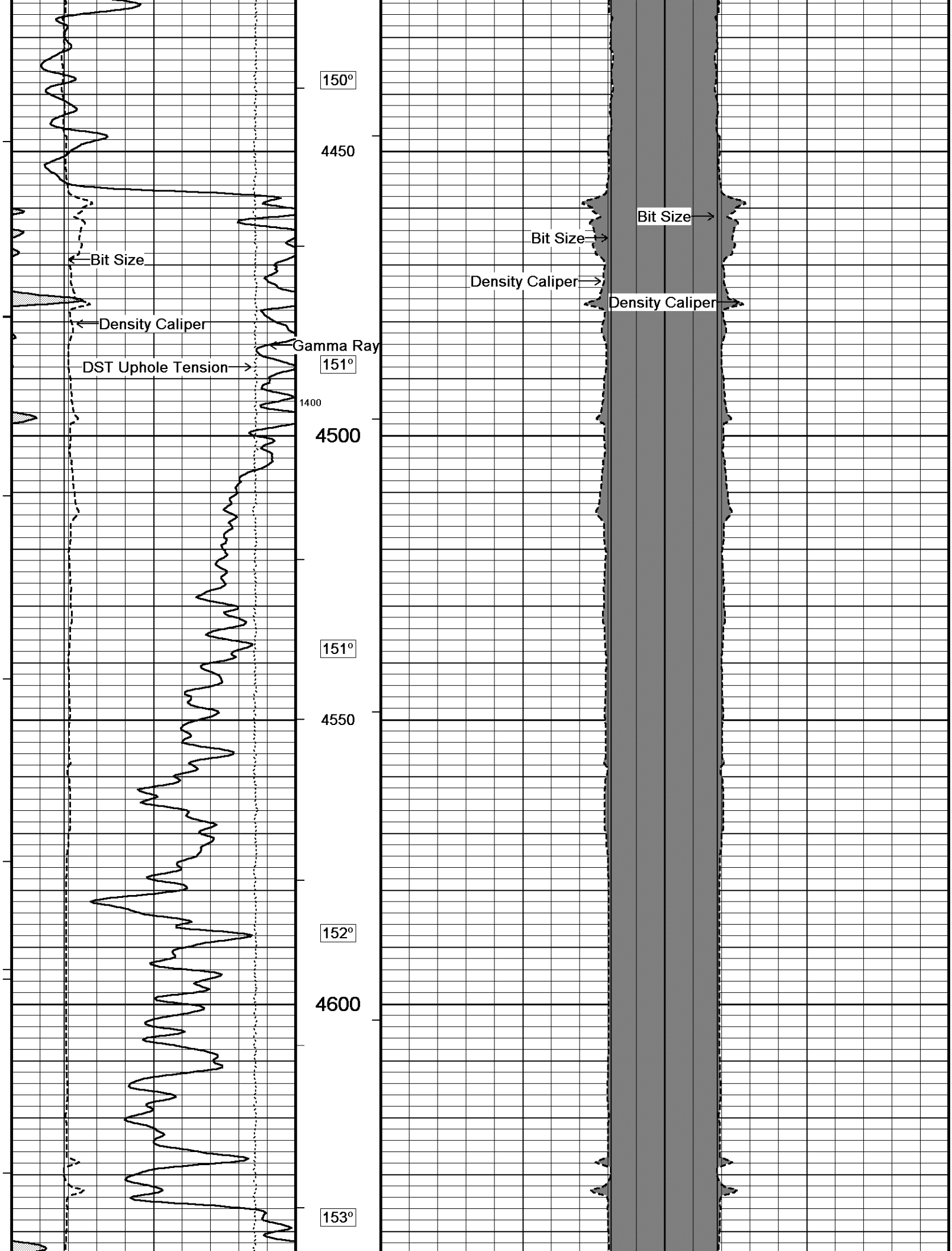
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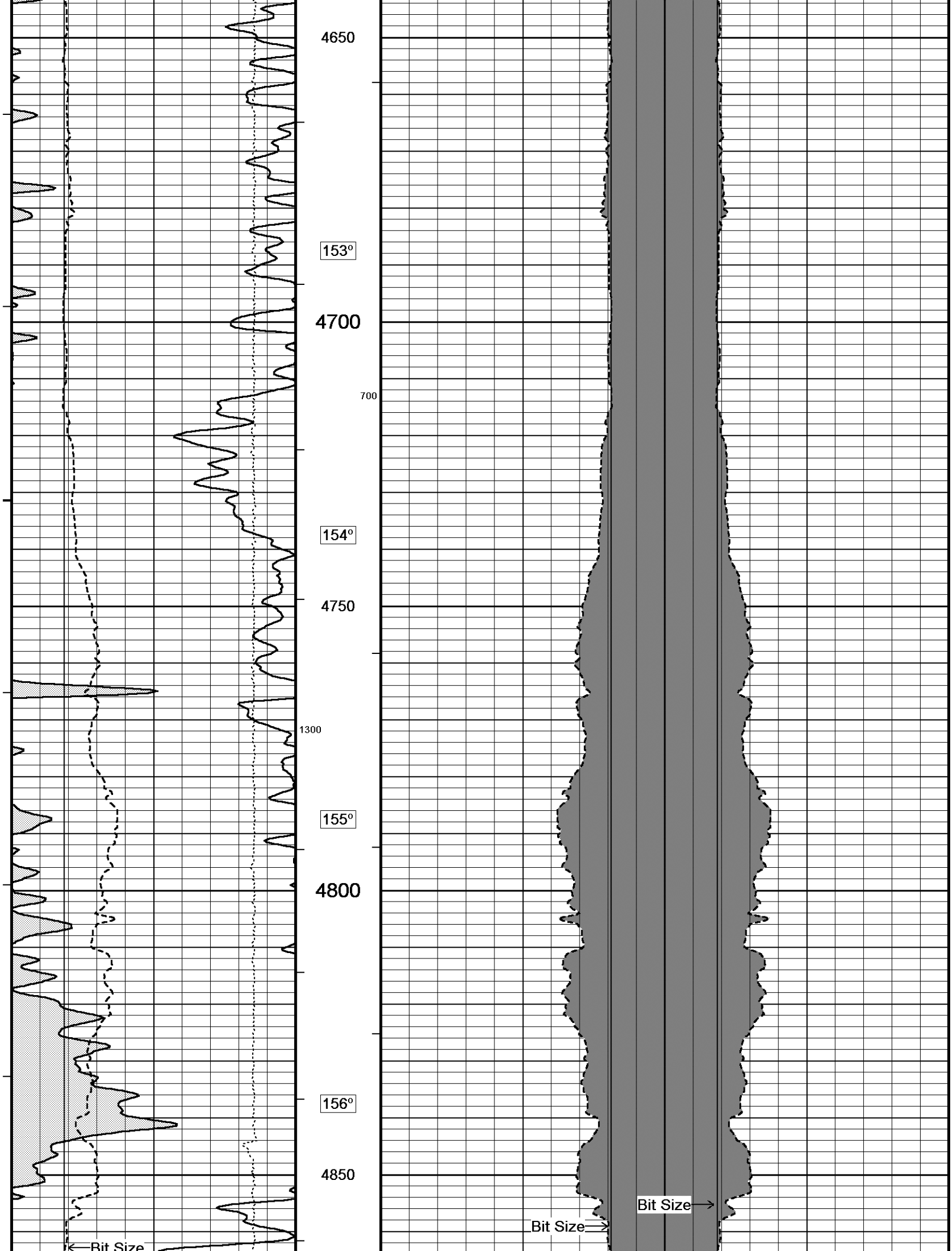
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Bit Size
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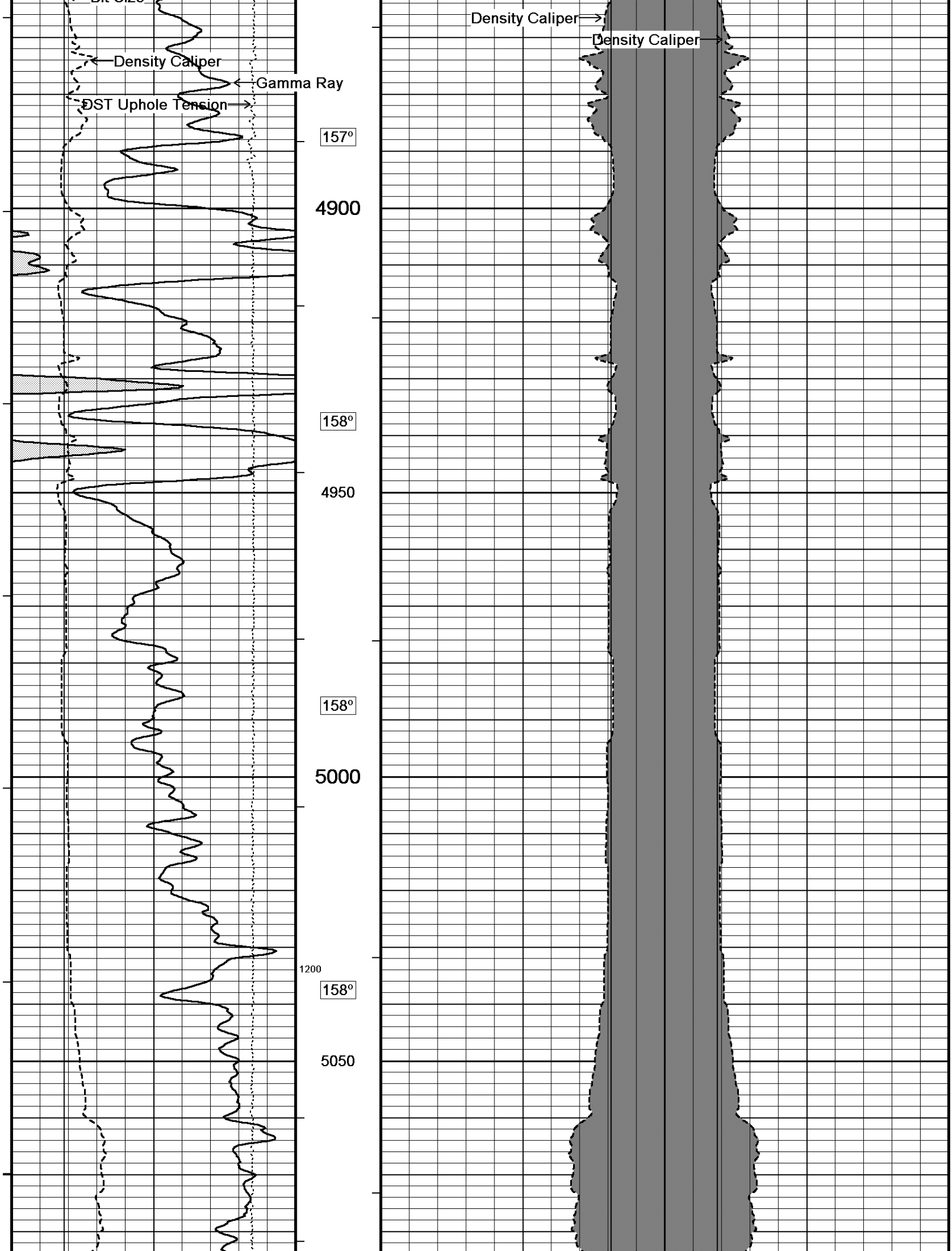
Density Caliper
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158°
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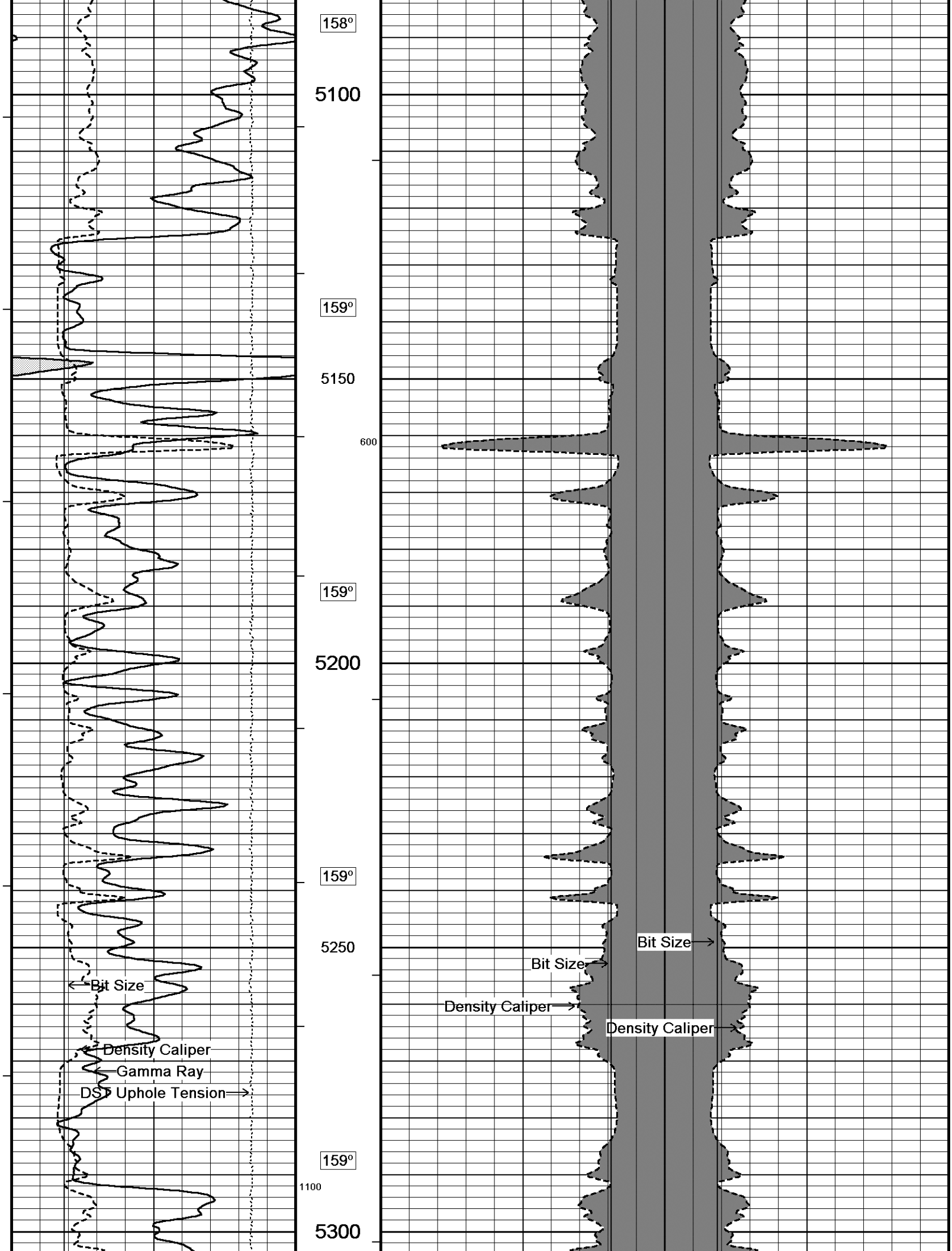
Density Caliper
Density Caliper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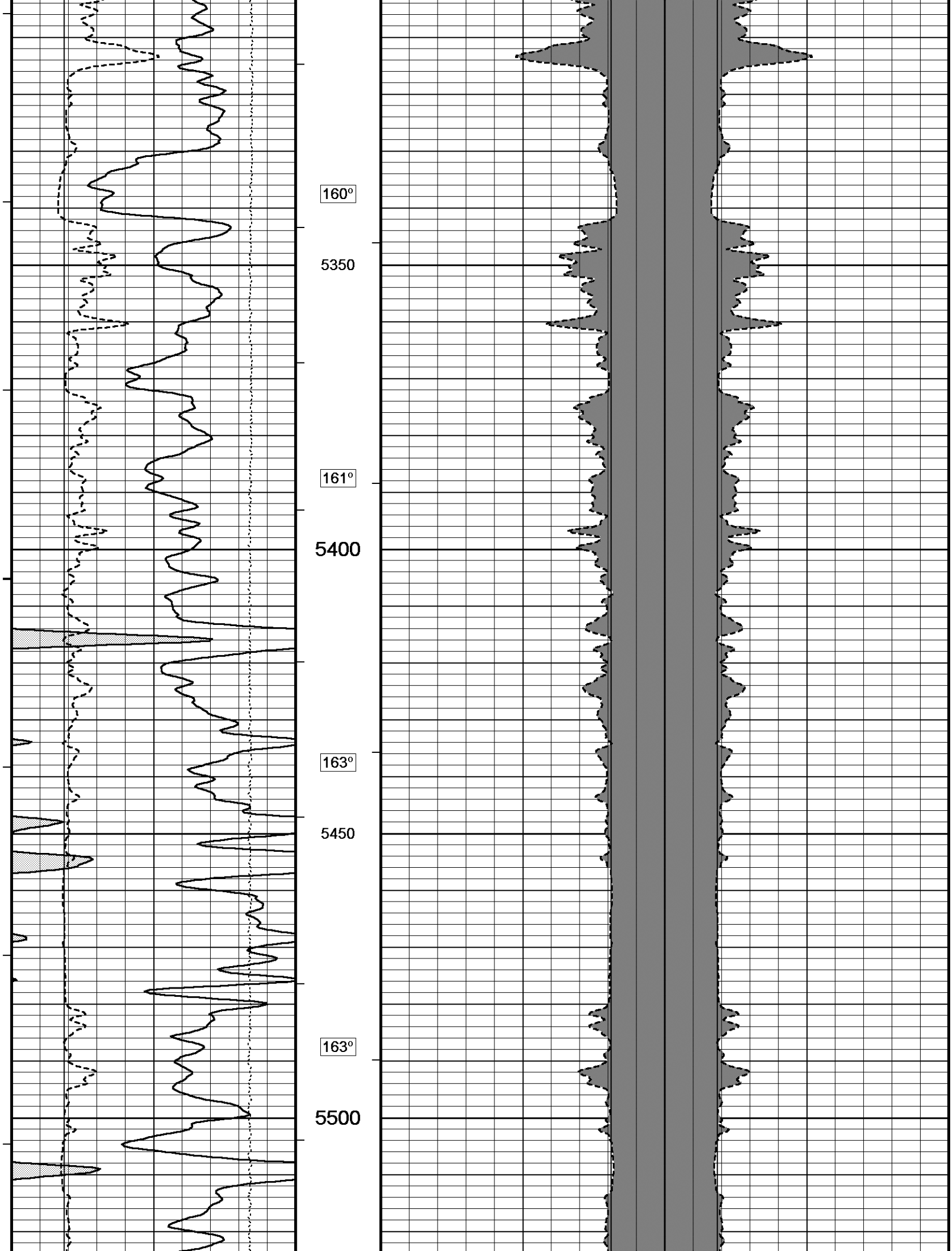
Density Caliper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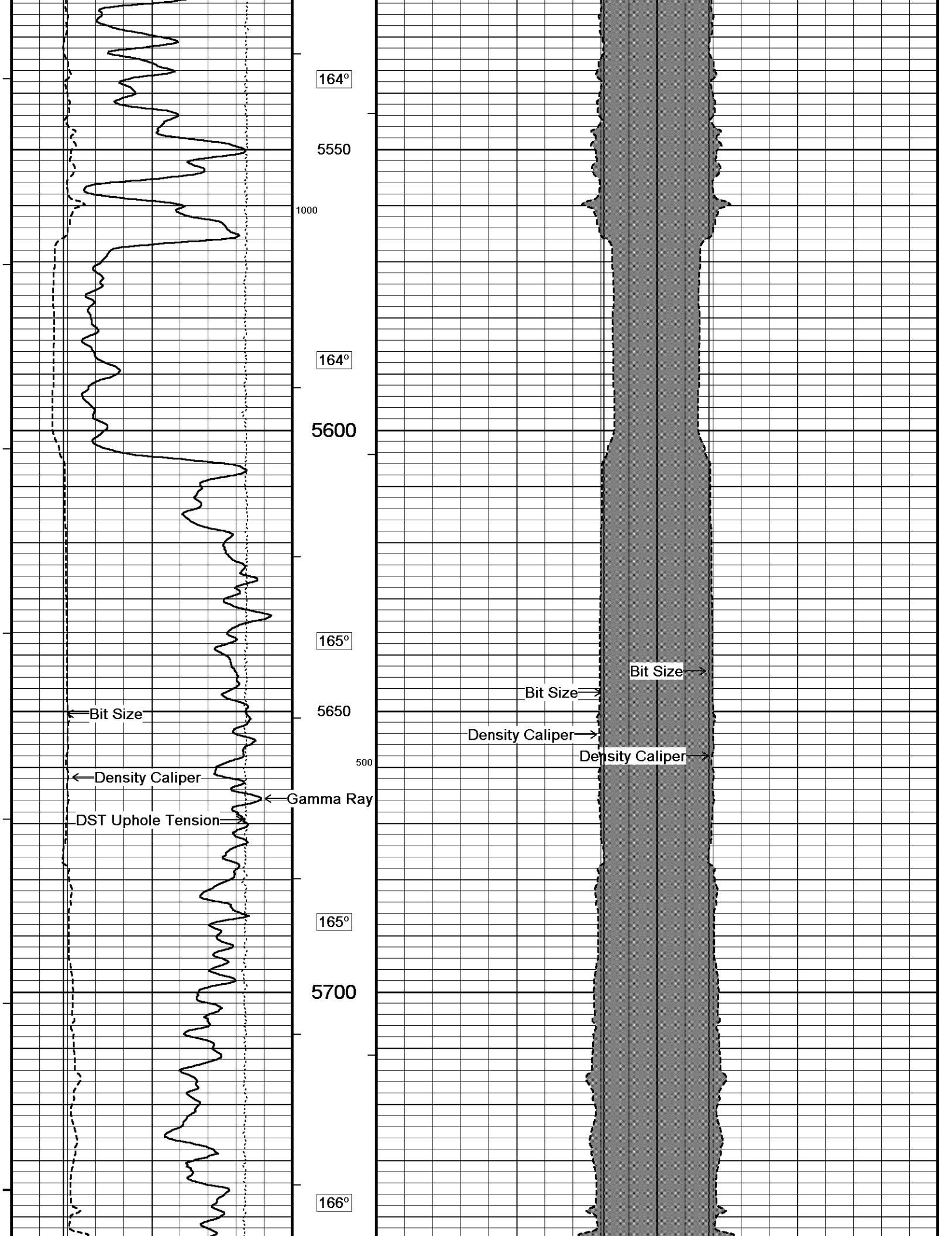
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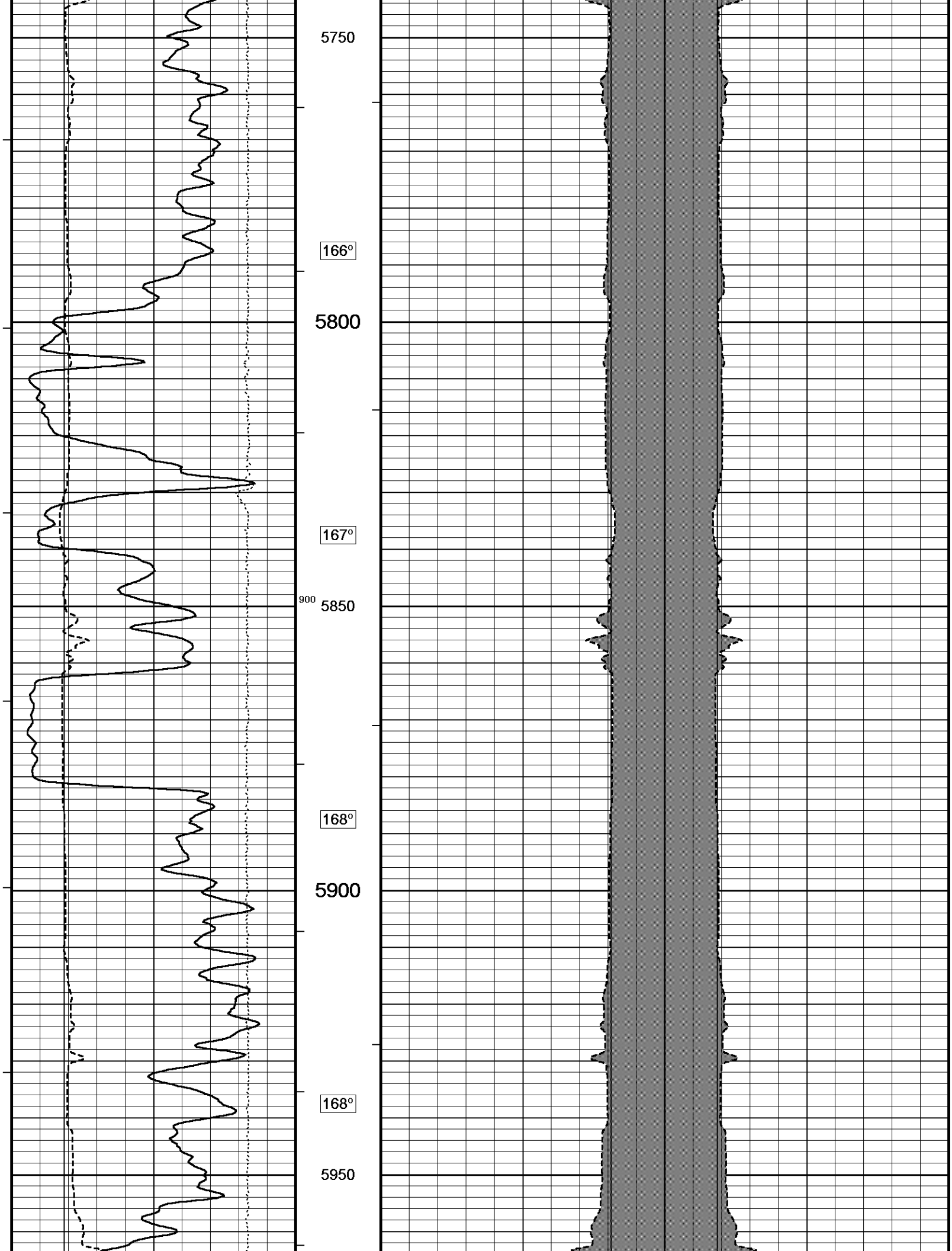
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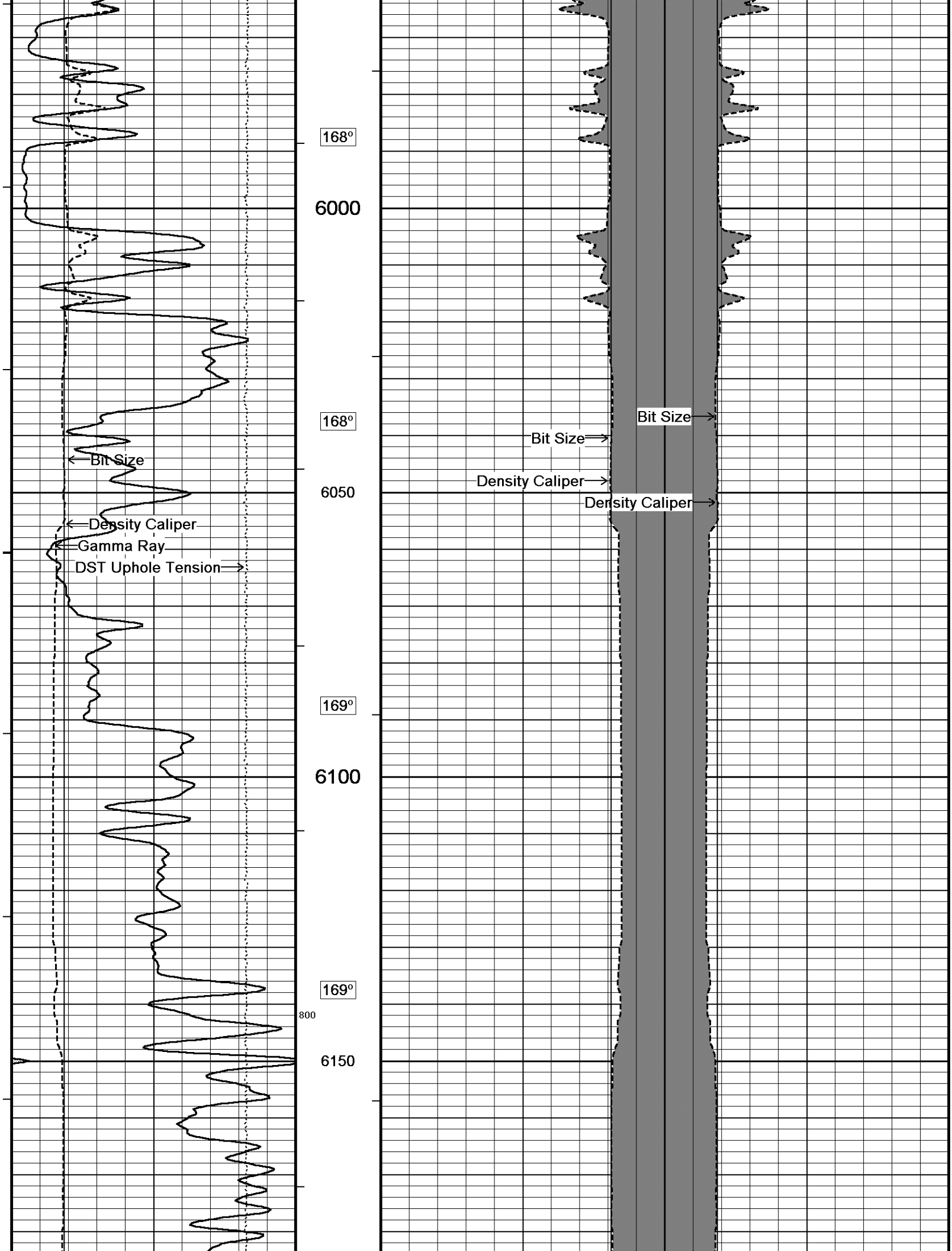
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DST Uphole Tension
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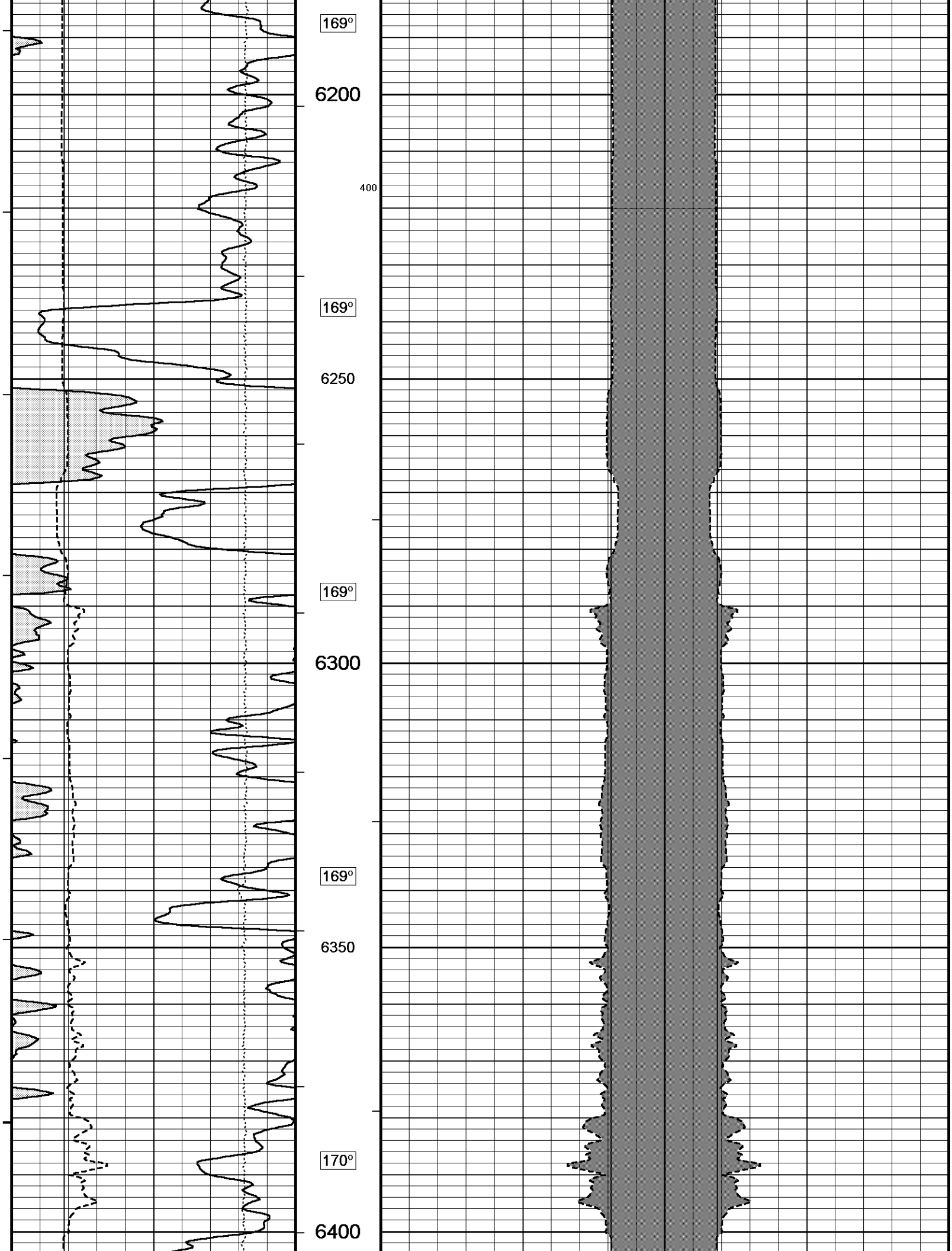
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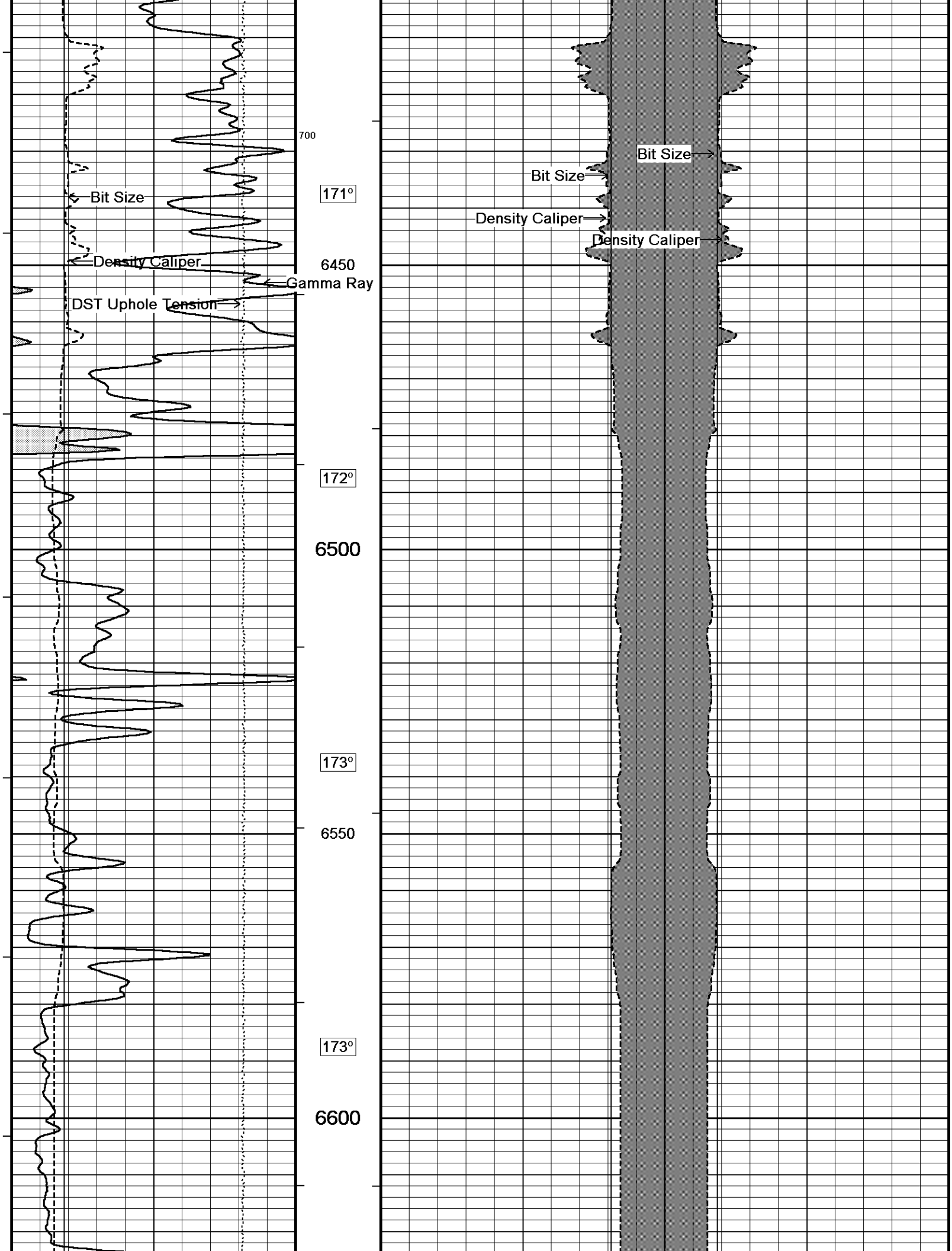
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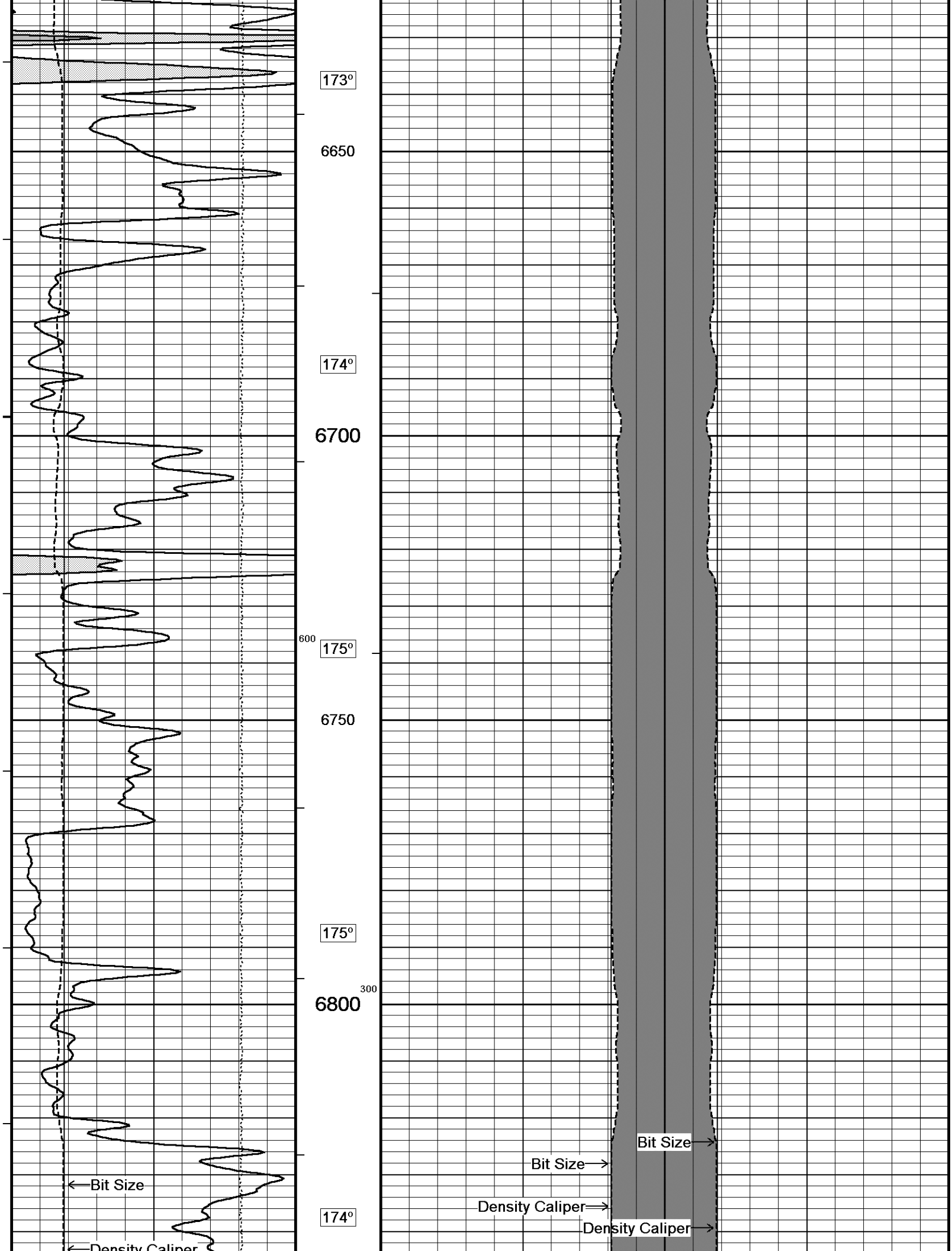
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Density Caliper
Bit Size
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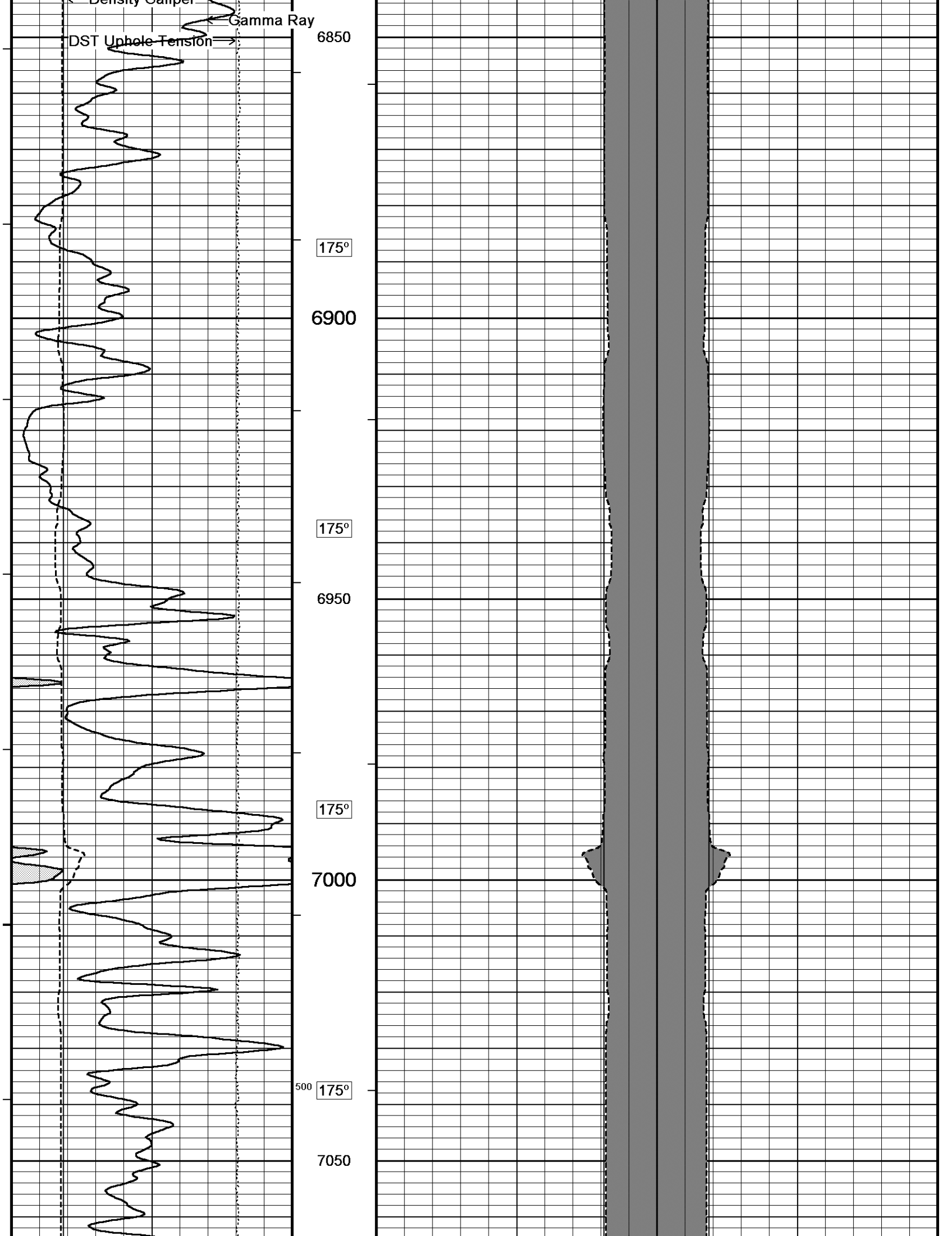
Density Caliper
Density Caliper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DST Uphole Tension
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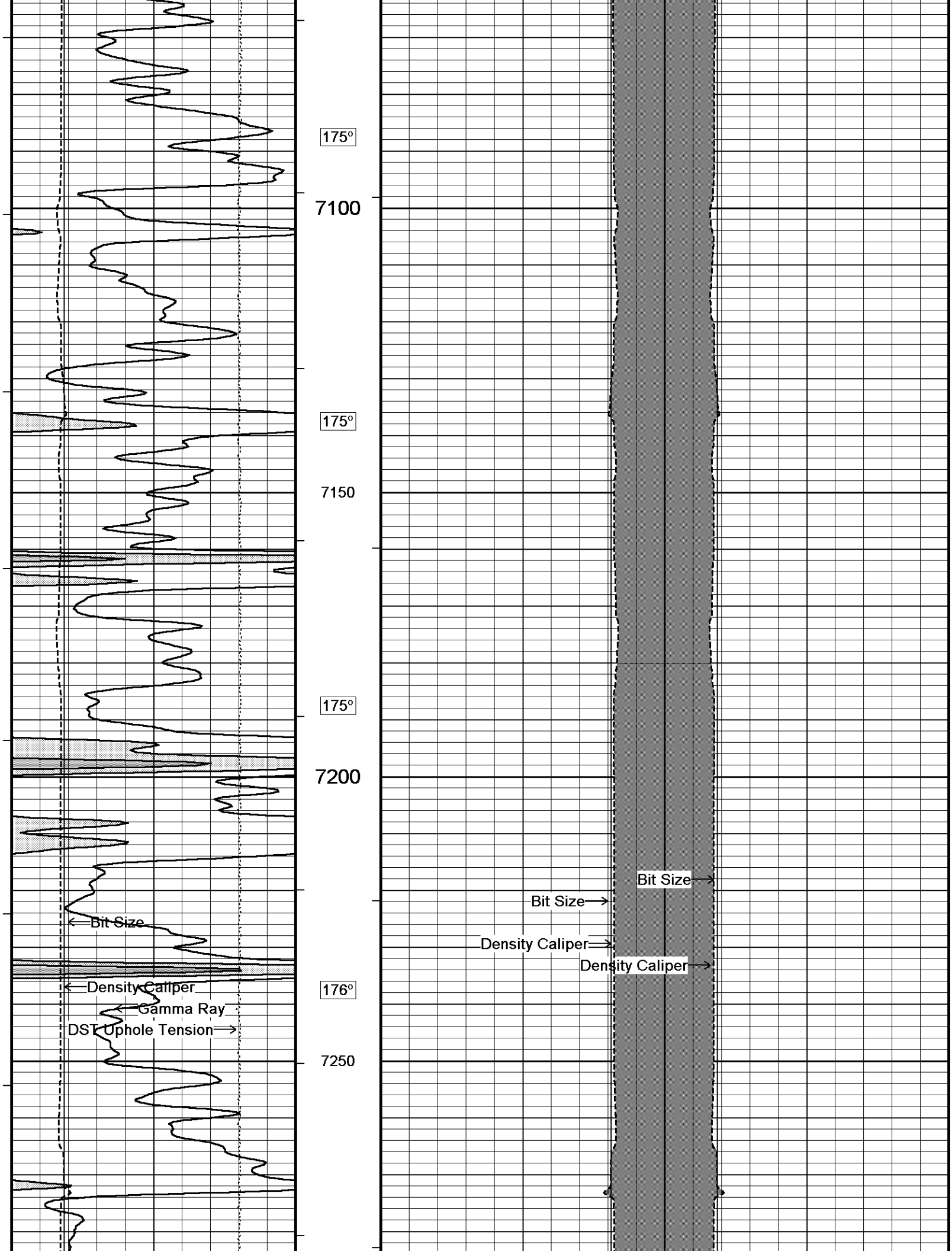
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Bit Size
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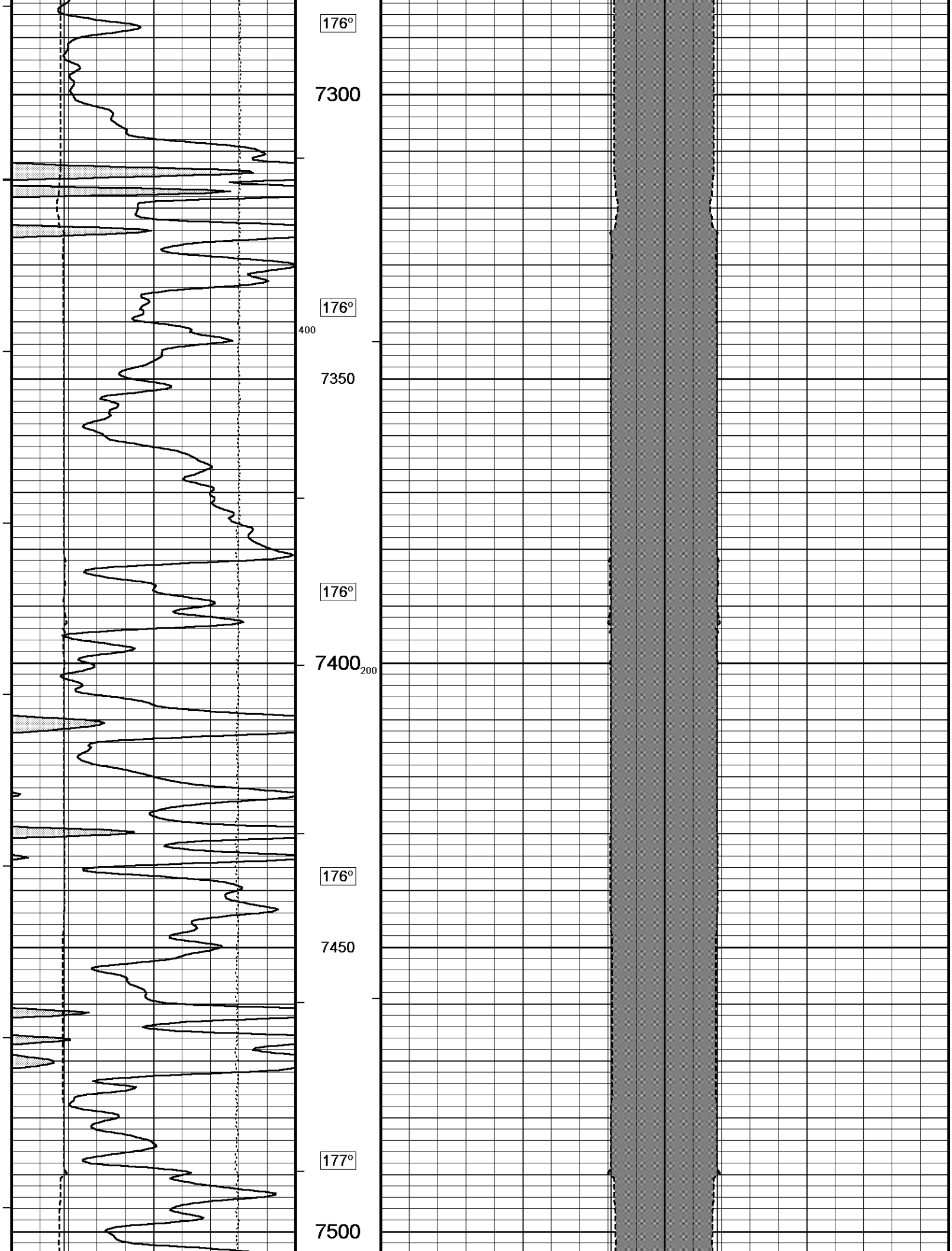
Density Caliper
Density Caliper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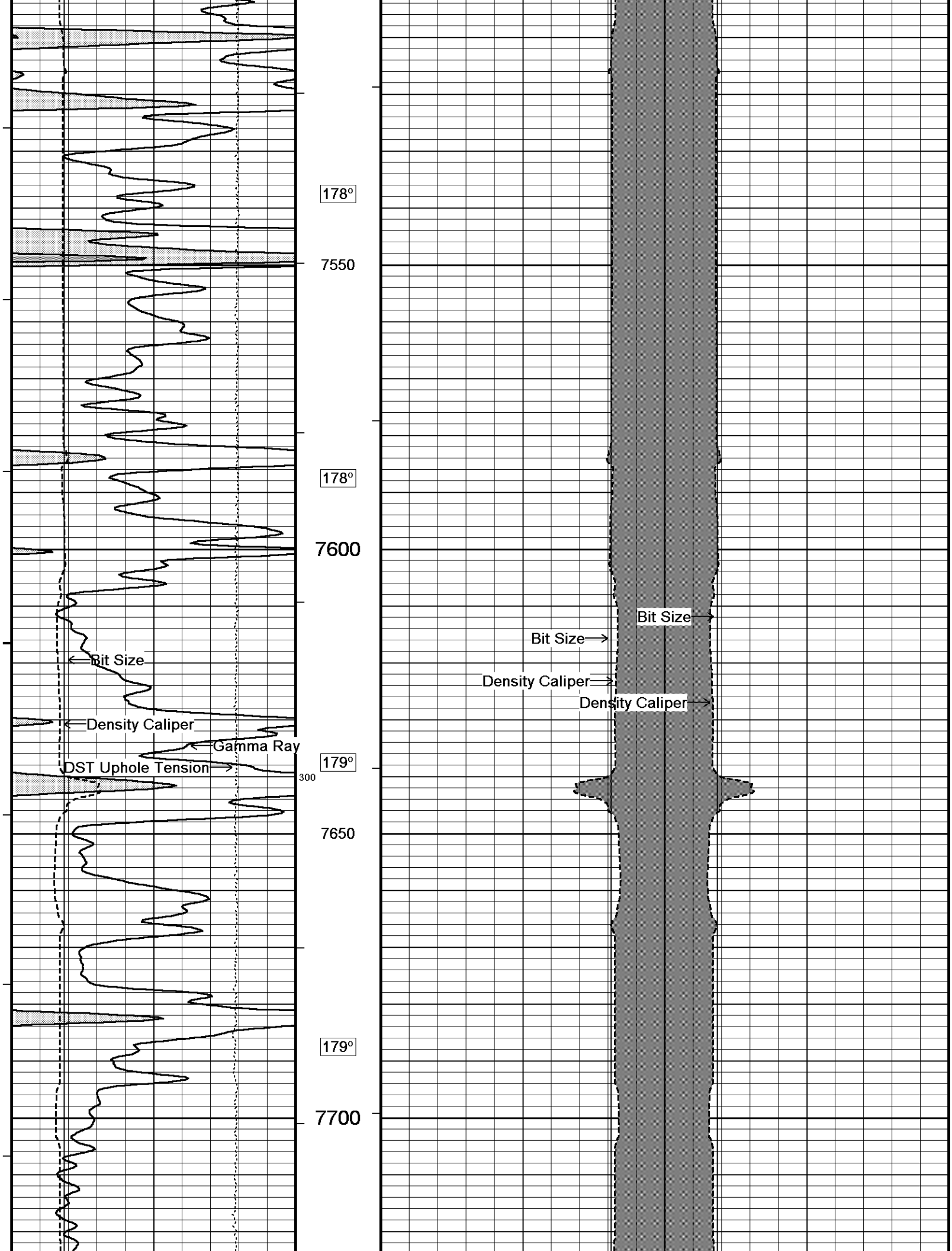
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Bit Size
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DST Uphole Tension
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7650
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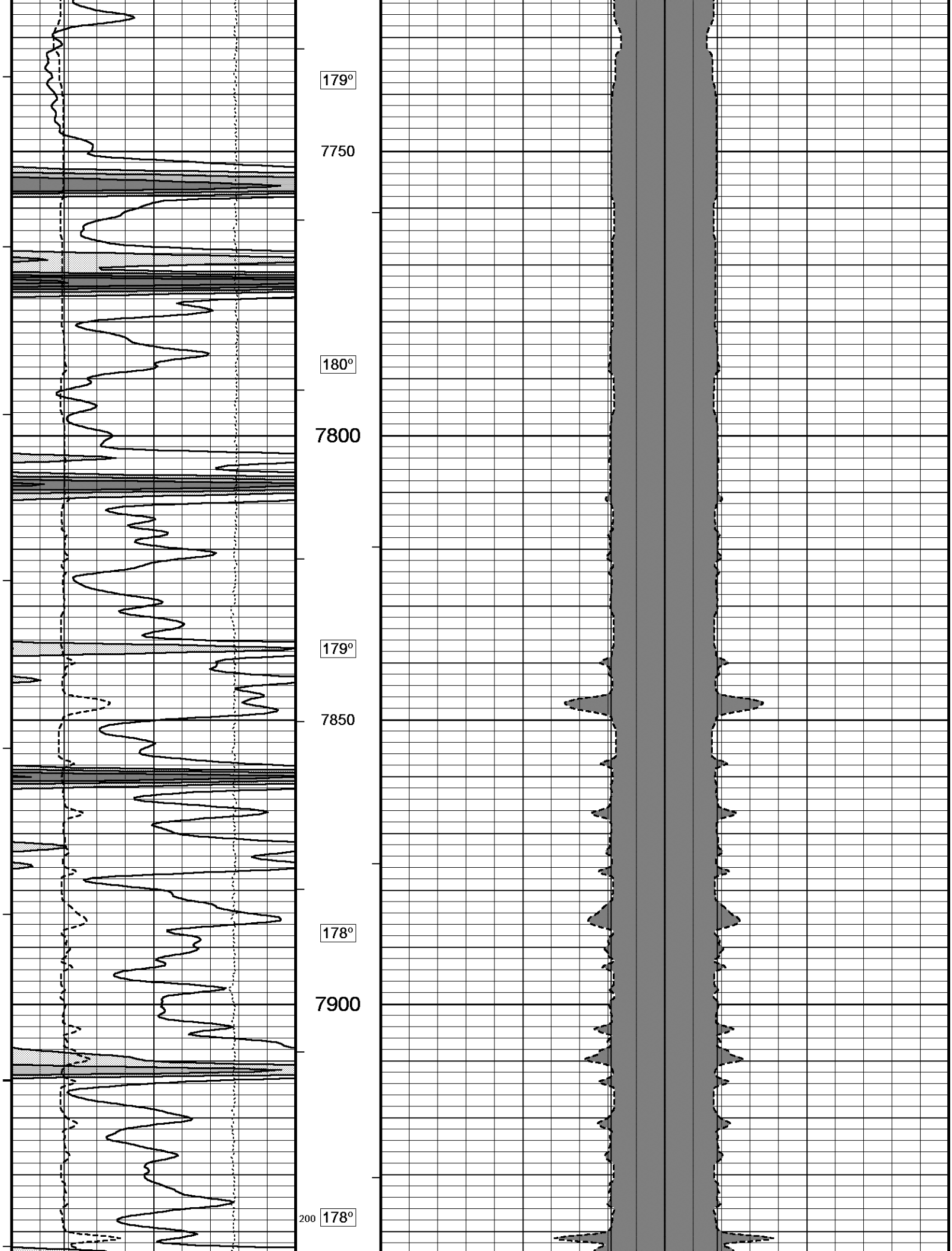
Bit Size
Bit Size
Density Caliper
Density Caliper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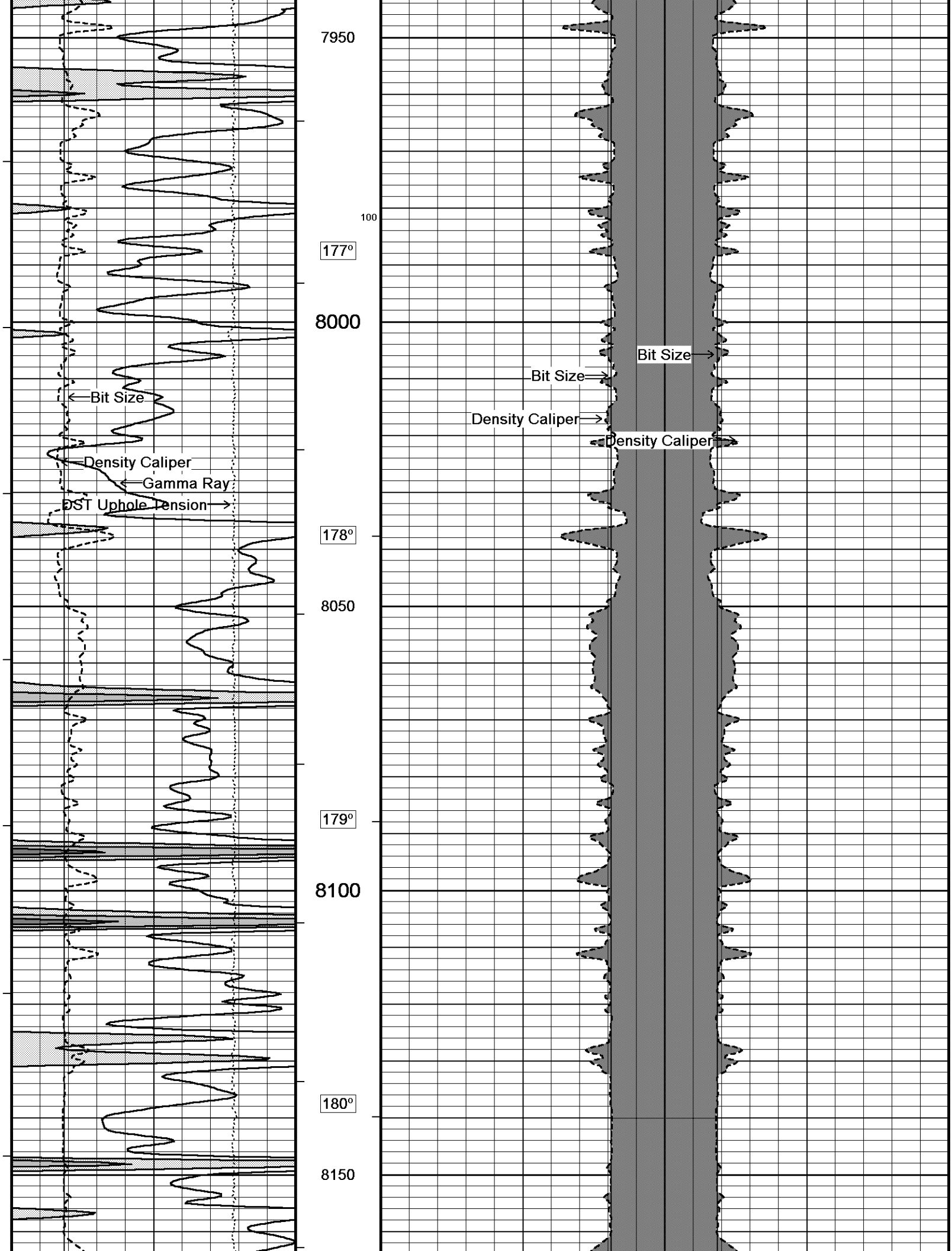
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100
177°
8000
Bit Size
Bit Size
Density Caliper
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Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
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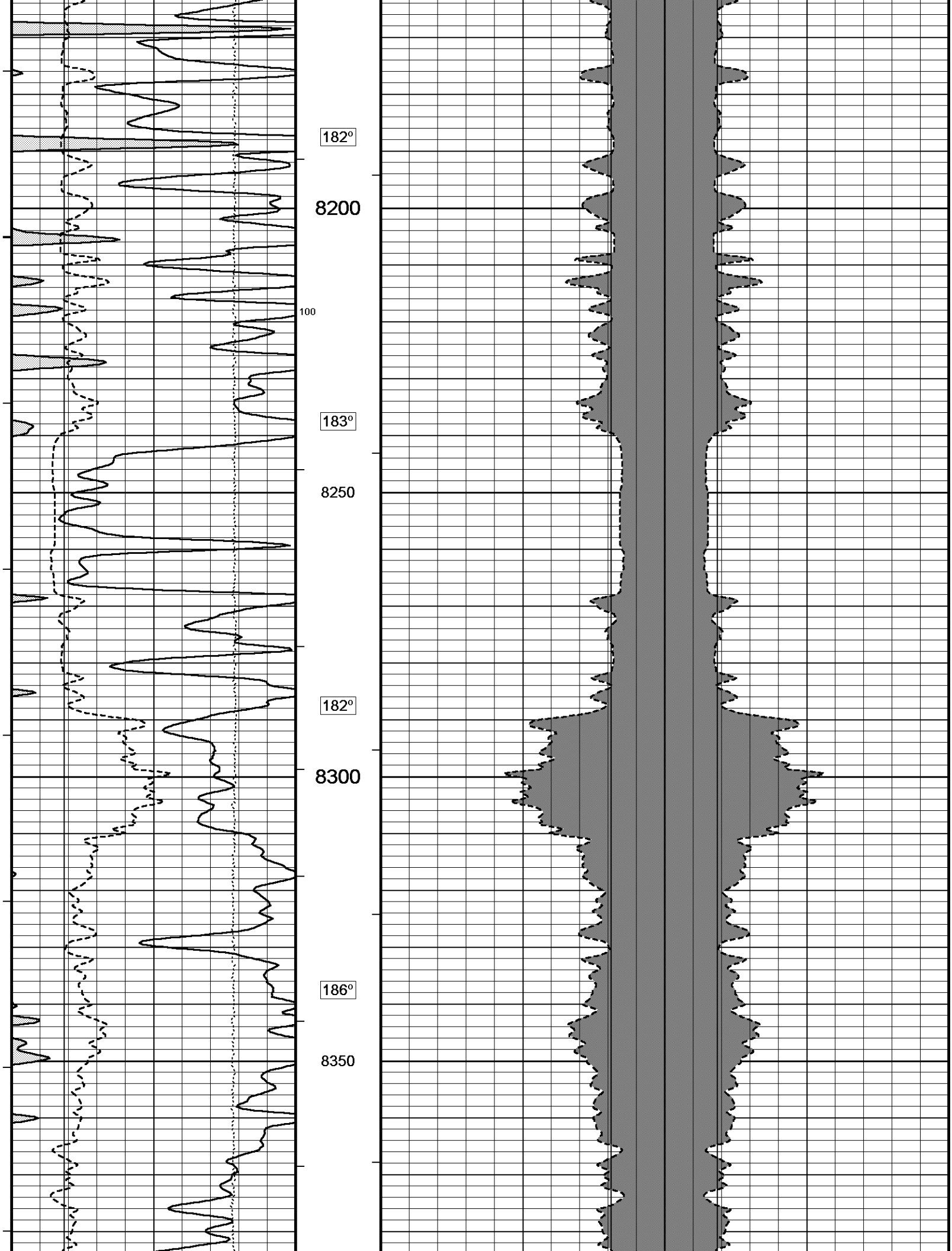
180°
8150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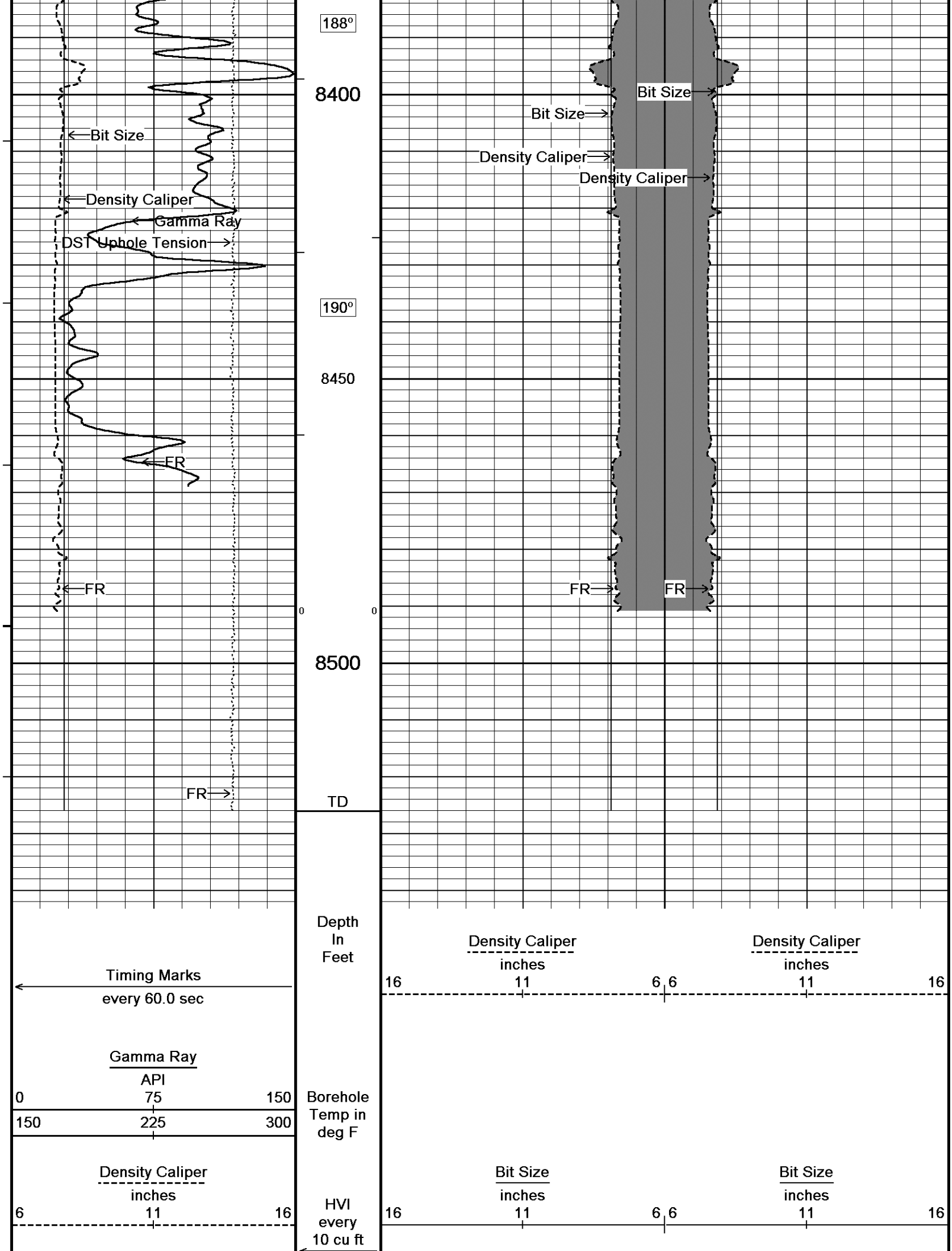
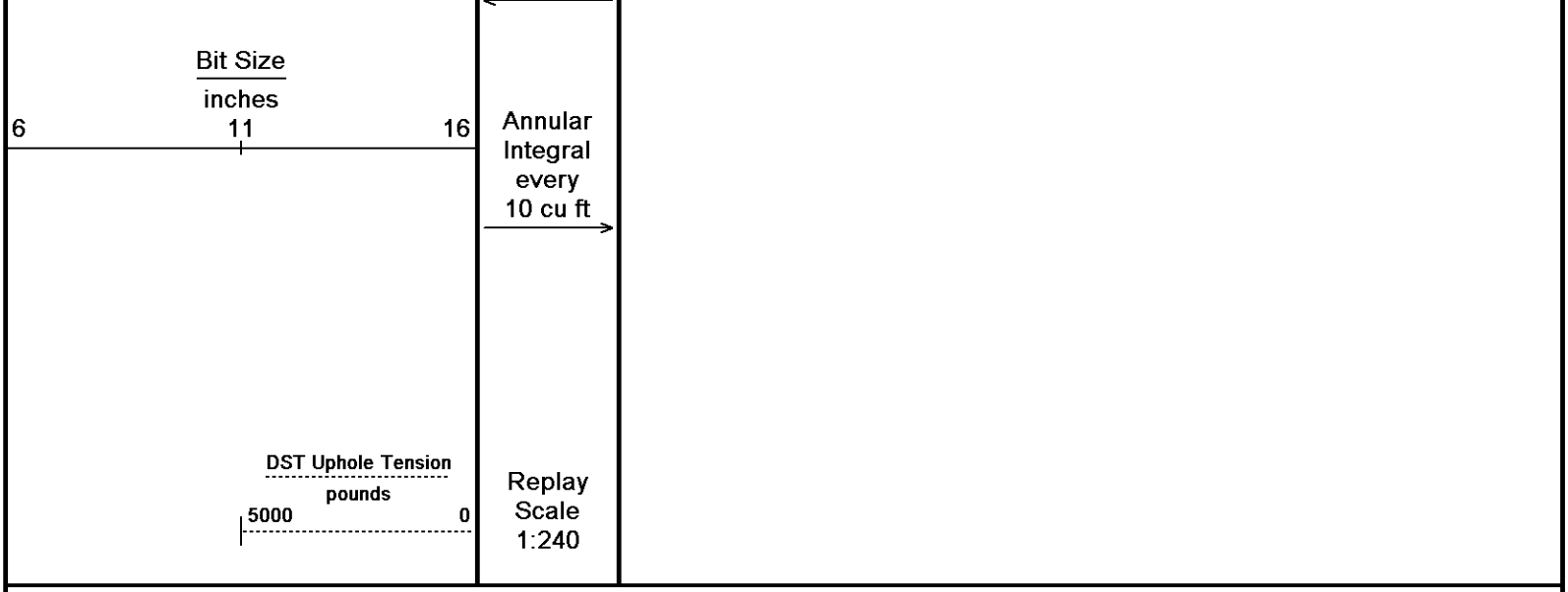
8250
182°
8300
186°
8350


188°
8400
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
190°
8450
FR
FR
0
0
8500
FR
TD
Bit Size
Bit Size
Density Caliper
Density Caliper
FR
FR
Timing Marks
every 60.0 sec
Depth
In
Feet
Density Caliper
inches
16
11
6
6
Density Caliper
inches
11
16
Gamma Ray
API
0
75
150
150
225
300
Borehole
Temp in
deg F
Density Caliper
inches
6
11
16
HVI
every
10 cu ft
Bit Size
inches
16
11
6
6
Bit Size
inches
11
16



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 06-SEP-2018 21:09
Filename: C:\Minimus 18.01.6830\Data\Grand Mesa Betty #1-15\Grand Mesa Betty #1-15_002.dta — Recorded on 06-SEP-2018 16:03
System Versions: Logged with 18.01.6830 Plotted with 18.01.6830

5 INCH MAIN

BEFORE SURVEY CALIBRATION

C:\Minimus 18.01.6830\Data\Grand Mesa Betty #1-15\Grand Mesa Betty #1-15_001.dta

General Constants All 000

Last Edited on 06-SEP-2018,14:45

General Parameters		
Mud Resistivity	0.800	ohm-metres
Mud Resistivity Temperature	75.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	5.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. Two Res Rt	
RWA Constant A	0.620	
RWA Constant M	2.150	
SW/APOR Tool Source	0.000	

Down-hole Tension Calibration SMS 0

Field Calibration on 06-SEP-2018 14:13

Reading No	Measured	Calibrated (lbs)
1	14944.57	0.00
2	15736.14	527.00

Gamma Calibration MCG-D.A 246

Field Calibration on 06-SEP-2018,04:31

	Measured	Calibrated (API)
Background	107	75
Calibrator (Gross)	763	531
Calibrator (Net)	656	456

Gamma Calibration Tolerances MCG-D.A 246

Ratio 1.438 (1.40 – 1.475 – 1.55) Counts/API

Gamma Constants MCG-D.A 246

Last Edited on 06-SEP-2018,13:19

Gamma Calibrator Number	MCGCRCC141

Gamma Calibrator Number	MCGGRCC141	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.13	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MCG-D.A 246

Field Calibration on 01-AUG-2018,13:29

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

High Resolution Temperature Constants MCG-D.A 246

Last Edited on 07-JUN-2018,10:42

Pre-filter Length	11

SP Calibration MCG-D.A 246

Field Calibration on 01-AUG-2018,13:35

	Measured	Calibrated (mV)
Reference 1	103.5	100.0
Reference 2	-96.9	-100.1

Micro Normal and Micro Inverse Calibration MMR-B.A 91

Base Calibration on 02-SEP-2018,10:16
Field Check on 06-SEP-2018,04:26

	Resistor 1 (ohm)	Resistor 2 (ohm)
	10.0	50.0

Base Calibration

	Measured		Calibrated (ohm-m)	
Micro Normal	10.0	49.5	5.1	25.6
Micro Inverse	9.9	49.4	3.4	16.9

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	94.2	94.2
Micro Inverse	62.4	62.4

Micro Normal & Micro Inverse Calibration Tolerance MMR-B.A 91

Micro Normal Res. 1 10.0 ohm (-5% 10.0 +5%)
Micro Inverse Res. 1 9.9 ohm (-5% 10.0 +5%)
Micro Normal Res. 2 49.5 ohm (-5% 50.0 +5%)
Micro Inverse Res. 2 49.4 ohm (-5% 50.0 +5%)

Micro Normal Base Check 94.2 ohm-m (-2% 93.95 +2%)
Micro Inverse Base Check 62.4 ohm-m (-2% 62.29 +2%)

Micro Normal Field Check 94.2 ohm-m (-2% 94.2 +2%)
Micro Inverse Field Check 62.4 ohm-m (-2% 62.4 +2%)

Micro Normal and Micro Inverse Constants MMR-B.A 91

Last Edited on 13-APR-2018,05:04

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	0.0000	inches

Caliper Calibration MMR-B.A 91

Base Calibration on 02-SEP-2018,10:13
Field Calibration on 06-SEP-2018,04:26

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14044	5.98
2	17381	7.97
3	20681	9.86
4	24528	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.99	7.97

Caliper Calibration Tolerances MMR-B.A 91

Short Arm Field Cal.	7.99	7.77 7.97 8.17	in

Micro-Resistivity Caliper Constants MMR-B.A 91

Sonde Configuration	Resistivity Mode

Micro Laterolog Calibration MMR-B.A 91

Base Calibration on 31-DEC-1999 00:00
Field Check on 31-DEC-1999 00:00

	Resistor 1 (ohm)	Resistor 2 (ohm)
	0.0	0.0

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)	Field Check (ohm-m)
0.0	0.0

Micro Laterolog Constants MMR-B.A 91

Pad Type	6 in Solid Nylon B23059	
Standoff Offset	0.0000	inches
Micro Laterolog K Factor	0.0128	
Micro Laterolog Rm K Factor	N/A	

Mudcake Thickness Correction Constants

Mud Cake Source	Constant Value	
Mud Cake Thickness	0.4000	inches
Mud Cake Thickness Caliper		
Mud Cake Resistivity	0.1500	ohm-m
Mud Cake Resistivity Temp.	20.00	Degrees C
Mud Cake Resistivity Source	Constant Value	
Temp. for Rmc Corr.	MCG External Temperature	

Neutron Calibration MDN-B.A 292

Base Calibration on 02-SEP-2018,10:44
Field Check on 06-SEP-2018,04:24

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	2951	93	3714	110
Ratio	31.695		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	2190	3136
Ratio	0.698	

Field Check

	Calibrated (cps)	
	2180	3125
Ratio	0.698	

Neutron Calibration Tolerances MDN-B.A 292

Ratio	31.695	-5% 33 +5%	
Base Check	0.698	0.65 0.7 0.75	
Field Check	0.698	0.678 0.698 0.718	

Neutron Constants MDN-B.A 292

Last Edited on 06-SEP-2018,13:20

Neutron Source Id	P0204NN	
Neutron Jig Number	NJ5736	
Air Hole Processing	Legacy	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu

Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 135

Base Calibration on 02-SEP-2018,10:12
Field Check on 06-SEP-2018,04:16

	Resistor 1 (ohm)	Resistor 2 (ohm)
	0.0	1000.0
Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	962.9	126.8
Base Check		281.0
Field Check		281.1

FE Calibration Tolerances MFE-A.A 135

Reference 2	962.9	-3% 980.0 +3%	ohm
Base Check	281.0	-2% 277.0 +2%	ohm-m
Field Check	281.1	-2% 281.0 +2%	ohm-m

FE Constants MFE-A.A 135

Last Edited on 06-SEP-2018,13:20

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Borehole Correction Constants		
Sonde Position	0.5	inches
Hole Size Source	Density Caliper	
Hole Size Constant Value	N/A	inches
Rm Source	Global Value: Temperature Corrected	
Temp. for Rm Corr.	MCG External Temperature	

Sonic Constants MSS-C.K 319

Last Edited on 08-JUL-2018,09:57

Maximum Boundary Contrast	70.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-5' Compensated	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	0.00	micro-sec
MX3FT	1500.00	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft
Sonde Mode	Compensated	
Hole Type	Open Hole	

Sonde Parameters

	Measured	Calibrated
Offset		0.0000
Free Pipe	0.0000	

Peak Amplitude Source

Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)
3'	N/A	N/A	N/A	N/A	N/A
4'	N/A	N/A	N/A	N/A	N/A
5'	N/A	N/A	N/A	N/A	N/A

6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

Waveform Used For Processing N/A

Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	Depth (ft)
0.00	0.00	0.00	
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	

Full Waveform Parameters

Use 3' Waveform to derive TR	No	
Use 4' Waveform to derive TR	No	
Use 5' Waveform to derive TR	No	
Use 6' Waveform to derive TR	No	
3' Waveform Discriminator Level	0.30	mV
4' Waveform Discriminator Level	0.30	mV
5' Waveform Discriminator Level	0.15	mV
6' Waveform Discriminator Level	0.15	mV
Waveform Discriminator Filter	Not Applied	
Semblance Window Width	150.00	micro-sec
Semblance Processing Enabled	Yes	
Tracking Boxes Enabled In Processing	Yes	

High Resolution Temperature Calibration MAI-A.A 111

Field Calibration on 01-AUG-2018,13:29

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

High Resolution Temperature Constants MAI-A.A 111

Last Edited on 26-JUN-2014,15:06

Pre-filter Length	11

Induction Calibration MAI-A.A 111

Factory Loop Calibration 09-AUG-2018 16:18
Field Check on 06-SEP-2018,04:15

Factory Loop Calibration

High Conductivity Reference Resistor	3.3	ohm
Low Conductivity Reference Resistor	333.3	ohm

	Measured Signal (unitless)		Reference Conductivity (mmho/m)		Calibration	
Array	Low	High	Low	High	Gain	Offset
1 (near)	17.6	473.6	9.3	966.2	0.000	0.0
2	6.4	385.9	7.6	821.4	0.000	0.0
3	3.2	264.0	5.2	566.0	0.000	0.0
4 (far)	2.1	135.5	2.6	279.2	0.000	0.0

Array Temperature 23.0 Deg F

Tool Checks

	Factory Reference (mmho/m)		Before Survey (mmho/m)	
Array	Low	High	Low	High
1 (near)	9.8	3840.7	8.8	3839.2
2	27.9	3498.4	27.0	3497.5
3	27.5	2996.0	26.7	2994.9
4 (far)	18.1	2040.7	17.6	2040.3
Array Temperature		87.9		85.9 Deg F

Induction Check Tolerances MAI-A.A 111

Low Array 1	8.8	8.3 9.8 11.3	mmho/m	High Array 1	3839.2	-0.5% 3840.7 +0.5% mmho/m
Low Array 2	27.0	26.4 27.9 29.4	mmho/m	High Array 2	3497.5	-0.5% 3498.4 +0.5% mmho/m
Low Array 3	26.7	26.0 27.5 29.0	mmho/m	High Array 3	2994.9	-0.5% 2996.0 +0.5% mmho/m
Low Array 4	17.6	16.6 18.1 19.6	mmho/m	High Array 4	2040.3	-0.5% 2040.7 +0.5% mmho/m

Induction Constants MAI-A.A 111

Last Edited on 06-SEP-2018,13:20

Induction Model	RtAP-WBM	

Borehole Correction Constants

Tool Centred	No	
Hole Size Source	Density Caliper	
Hole Size Constant Value	N/A	inches
Stand-off Type	Fins	
Stand-off	0.50	inches
Number of Fins on Stand-off	8.0000	
Stand-off Fin Angle	45.00	degrees
Stand-off Fin Width	0.5000	inches
Rm Source	Global Value: Temperature Corrected	
Temp. for Rm Corr.	Borehole Temp. Unfilt.	
Borehole Correction Method	Default	

Squasher Start	0.0020	mhos/metre
Squasher Offset	N/A	mhos/metre

Borehole Normalisation

DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Symmetrised Receiver Gains

Receiver 1	1.00
Receiver 2	1.00
Receiver 3	1.00
Receiver 4	1.00

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	

Caliper Calibration MPD-C.A 216

Base Calibration on 02-SEP-2018,10:42
Field Calibration on 06-SEP-2018,04:16

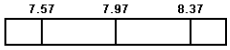
Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14688	3.99
2	23495	5.98
3	32176	7.97
4	40480	9.86
5	49713	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.97	7.97

Caliper Calibration Tolerances MPD-C.A 216

Long Arm Field Cal. 7.97 

in

Photo Density Calibration MPD-C.A 216

Base Calibration on 02-SEP-2018,10:27
Field Check on 06-SEP-2018,04:18

Density Calibration

Base Calibration	Measured	Calibrated (sdu)

	Near	Far	Near	Far
Background	1002	1196		
Reference 1	49599	24164	59556	30836
Reference 2	19816	2269	24941	2541

Field Check at Base

	1002.2	1196.2

Field Check

	1009.6	1208.8

PE Calibration

Base Calibration

	WS	Measured WH	Ratio	Calibrated Ratio
Background	183	902		
Reference 1	21103	49447	0.431	0.371
Reference 2	5778	19707	0.298	0.272

Field Check at Base

	183.1	901.7

Field Check

	187.2	908.2

Photo Density Calibration Tolerances MPD-C.A 216

Near Density Ratio	2.58	-5% 2.52 +5%	Far Density Ratio	21.41	-5% 21.00 +5%
PE Calibration	0.125	0.089 0.110 0.131			
Near Den. Field Check	1009.6	-3% 1002.2 +3%	Far Den. Field Check	1208.8	-3% 1196.2 +3%
PE WS Field Check	187.2	-6% 183.1 +6%	PE WH Field Check	908.2	-6% 901.7 +6%

Density Constants MPD-C.A 216

Last Edited on 06-SEP-2018,13:20

Density Source Id	P50557B	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.13	gm/cc
Mud Density Type		
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	
Precision Enhanced Density Processing	Applied	

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

DOWNHOLE EQUIPMENT

C:\Minimus 18.01.6830\Data\Grand Mesa Betty #1-15\Grand Mesa Betty #1-15_001.dta

Cablehead, 11 pin
CBH-C 0 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

Compact Swivel Head Adaptor
SHA-J B 595 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

Compact Comms Gamma
MCG-D.A 246 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-Resistivity
MMR-B.A 91 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

Compact Neutron
MDN-B.A 292 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.913 in

Compact Knuckle Joint
SKJ-D.A 167 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

Compact Focussed Electric
MFE-A.A 135 LG: 6.05 ft WT: 48.5 lb OD: 2.240 in

Compact Sonic
MSS-C.K 319 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in

Compact Induction
MAI-A.A 111 LG: 10.81 ft WT: 48.5 lb OD: 2.240 in

Total Length: 68.16 ft Weight: 526.9 lb

58.18 ft	GRGC - MCG Gamma Ray
55.28 ft	CGXT - MCG External Temperature
48.92 ft	MBTC - MMR Caliper
47.93 ft	MINV - Micro-inverse
47.93 ft	MNRL - Micro-normal
43.13 ft	NPRL - Limestone Neutron Por.
35.89 ft	AVOL - Annular Volume
35.89 ft	HVOL - Hole Volume
35.89 ft	CLDC - Density Caliper
33.96 ft	DPRL - Limestone Density Por.
33.96 ft	DEN - Compensated Density
33.96 ft	DCOR - Density Correction
33.90 ft	PDPE - PE
26.24 ft	FEFE - Shallow FE
16.96 ft	TR11 - 4' Transit Time
16.46 ft	TR21 - 3' Transit Time
15.95 ft	TR12 - 6' Transit Time
15.46 ft	TR22 - 5' Transit Time
12.96 ft	SPRL - Wyllie Lime. Sonic Por.
12.96 ft	DT35 - 3-5' Compensated Sonic
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	R60O - Array Ind. One Res 60
3.34 ft	CTAO - Array Ind. One Cond Ct
3.34 ft	RTAO - Array Ind. One Res Rt
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	GRAND MESA OPERATING COMPANY
WELL	BETTY #1-15
FIELD	WILDCAT
PROVINCE/COUNTY	LINCOLN
COUNTRY/STATE	U.S.A. / COLORADO

Elevation Kelly Bushing	5484	feet	First Reading	8492.00	feet
Elevation Drill Floor	5482	feet	Depth Driller	8541.00	feet
Elevation Ground Level	5465	feet	Depth Logger	8526.00	feet

Weatherford®

CALIPER LOG