



Weatherford

CALIPER LOG

COMPANY			O'BRIEN RESOURCES, LLC		
WELL			JECHA 4-1		
FIELD			WILDCAT		
PROVINCE/COUNTY			RUSH		
COUNTRY/STATE			U.S.A. / KANSAS		
LOCATION			2400' FNL & 1850' FWL OF THE SE SW SE NW		
SEC 4	TWP 19S	RGE 17W	Other Services		
Latitude			MPD/MDN	MML	
Longitude			MAI/MFE		
API Number	15-165-22058		MSS		
Permanent Datum GL, Elevation 2053 feet					
Log Measured From KB					
Drilling Measured From KB @ 5 FEET					
Date	05-MAR-2014		Elevations: KB 2058.00 DF 2056.00 GL 2053.00		
Run Number	ONE				
Service Order	5872-81241285				
Depth Driller	3851.00		feet		
Depth Logger	3851.00		feet		
First Reading	3830.00		feet		
Last Reading	259.00		feet		
Casing Driller	259.00		feet		
Casing Logger	259.00		feet		
Bit Size	7.875		inches		
Hole Fluid Type	CHEM				
Density / Viscosity	9.40 lb/USg		50.00 CP		
PH / Fluid Loss	9.50		6.80 ml/30Min		
Sample Source	PIT				
Rm @ Measured Temp	1.0 @ 48.0		ohm-m		
Rmf @ Measured Temp	0.80 @ 48.0		ohm-m		
Rmc @ Measured Temp	1.20 @ 48.0		ohm-m		
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	0.48 @ 99.0		ohm-m		
Time Since Circulation	4 HRS				
Max Recorded Temp	99.00		deg F		
Equipment / Base	13057		LIB		
Recorded By	D. COLE				
Witnessed By	K. TALBOTT		A. BRITTAN		
JOB #	LB 14-064				

BOREHOLE RECORD					Last Edited: 05-MAR-2014 20:13
Bit Size inches		Depth From feet		Depth To feet	
7.875		259.00		3851.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
CASING	8.625	0.00	259.00	24.00	

REMARKS
- SOFTWARE ISSUE: WLS 13.08.211.
- RUN ONE: MCG ANS MSS RAN IN COMBINATION. - HARDWARE: TWO 0.5 INCH STANDOFFS USED ON MSS.
- RUN TWO: MCG, MML, MDN, MPD, MFE AND MAI RUN IN COMBINATION. - HARDWARE: DUAL BOWSPRING USED ON MDN. 0.5 INCH STANDOFF USED ON MFE. 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 2800: 415 CU.FT.

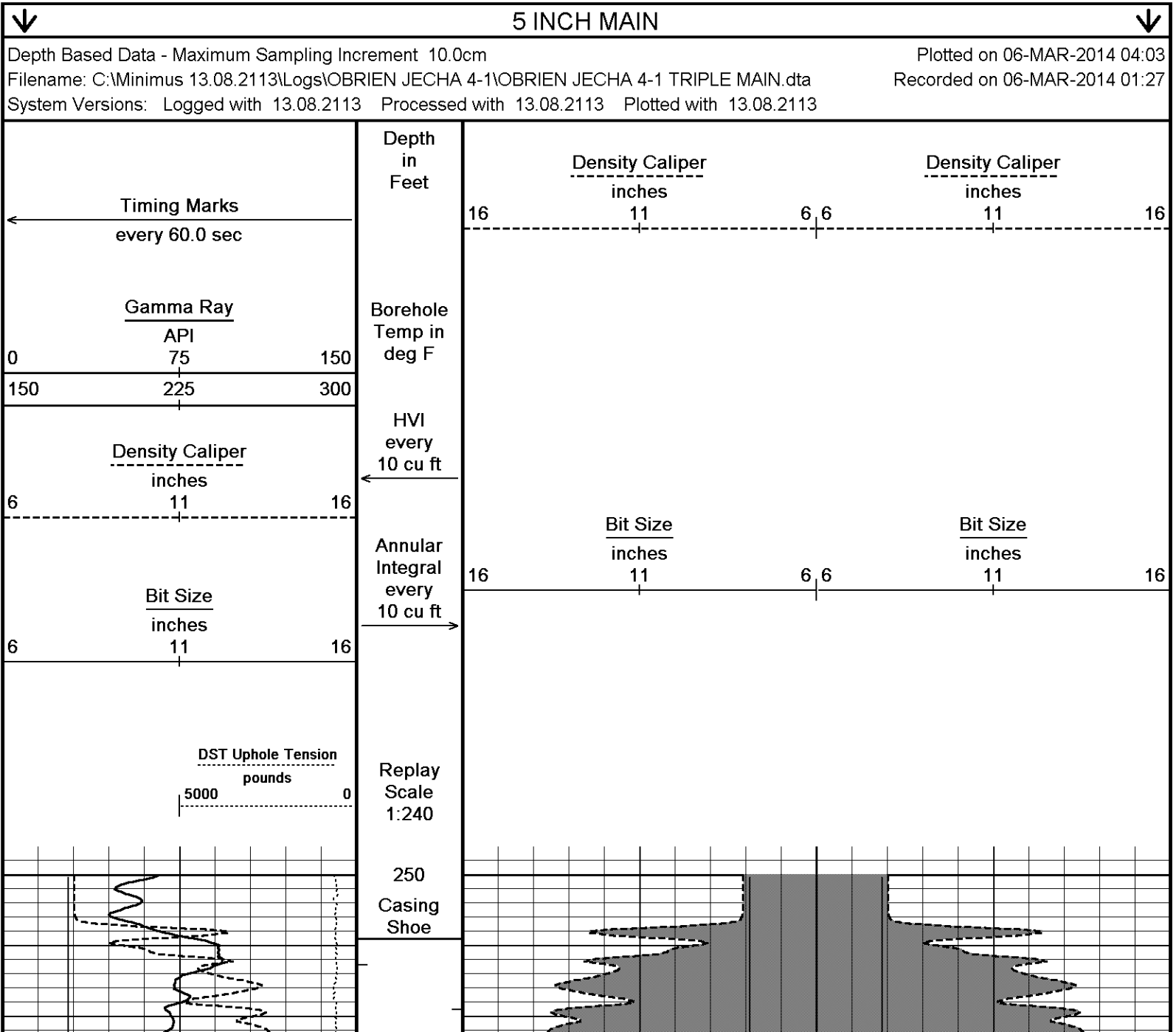
- ANNULAR HOLE VOLUME WITH 4.5 INCH PRODUCTION CASING FROM TD TO 2800: 300 CU.FT.

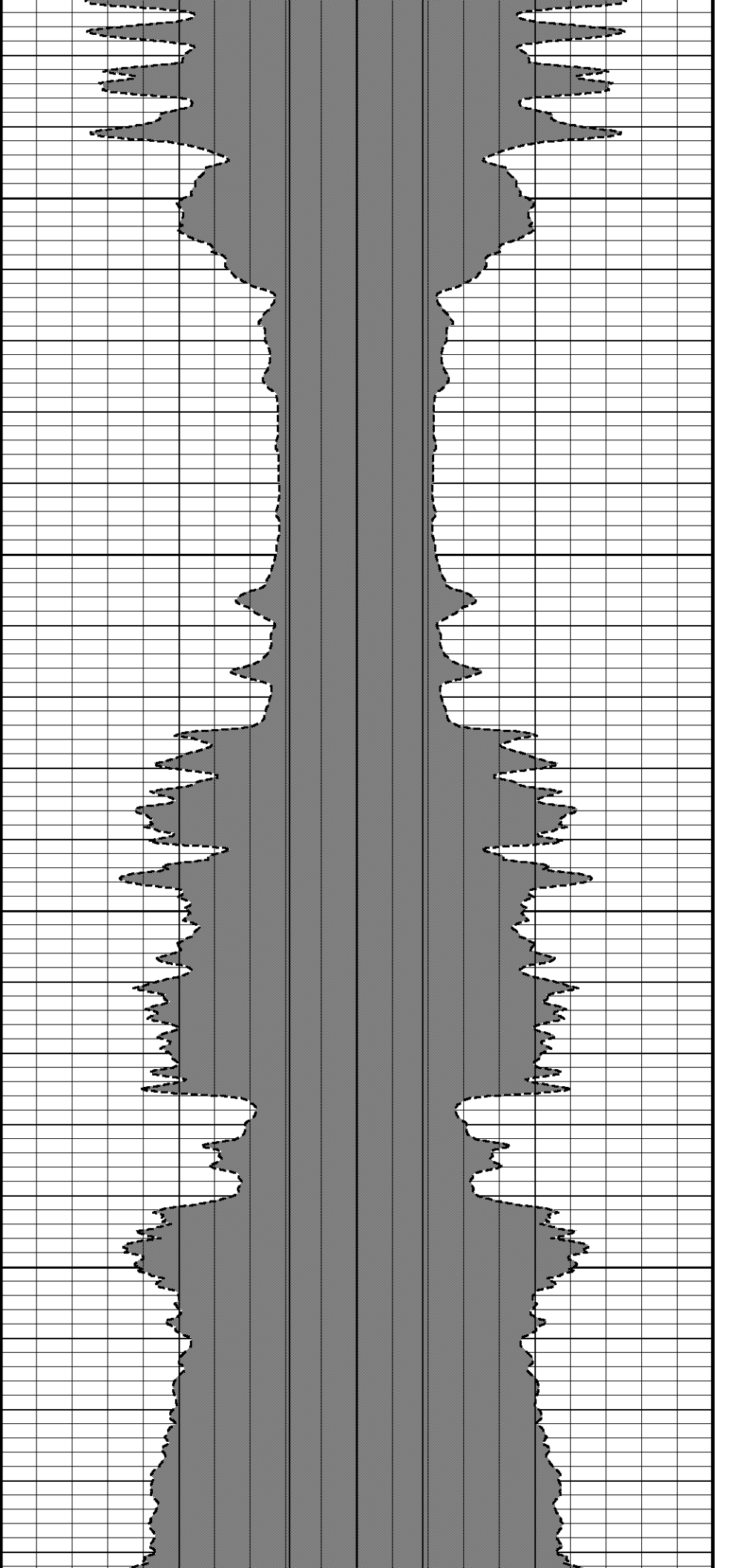
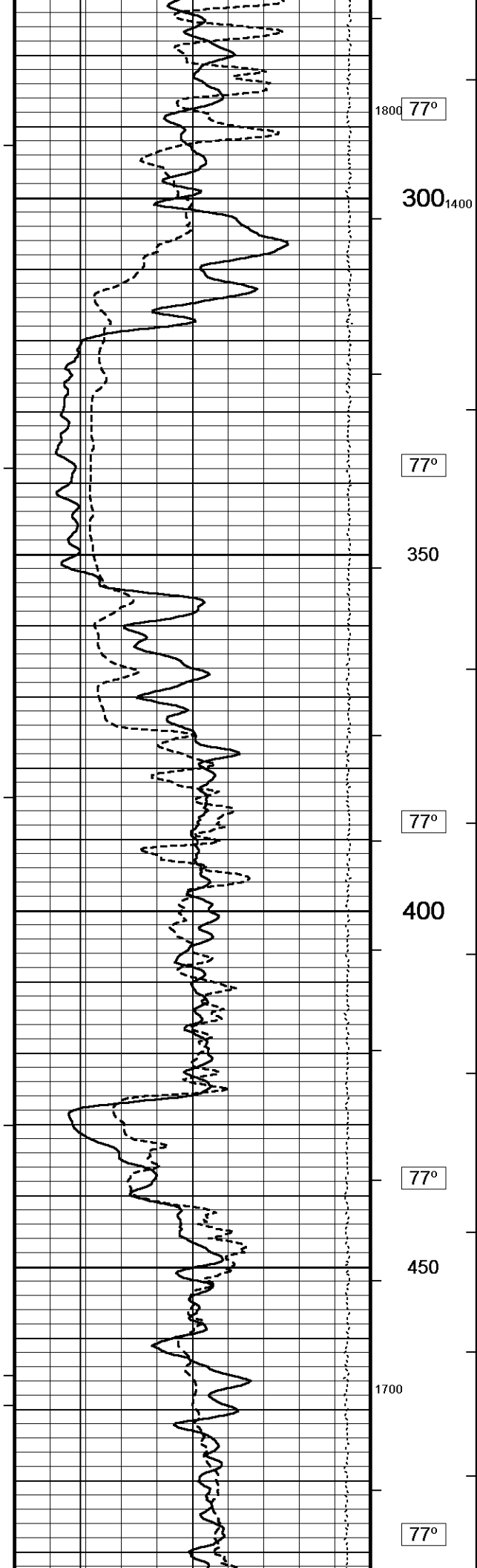
- RIG: MURFIN 16

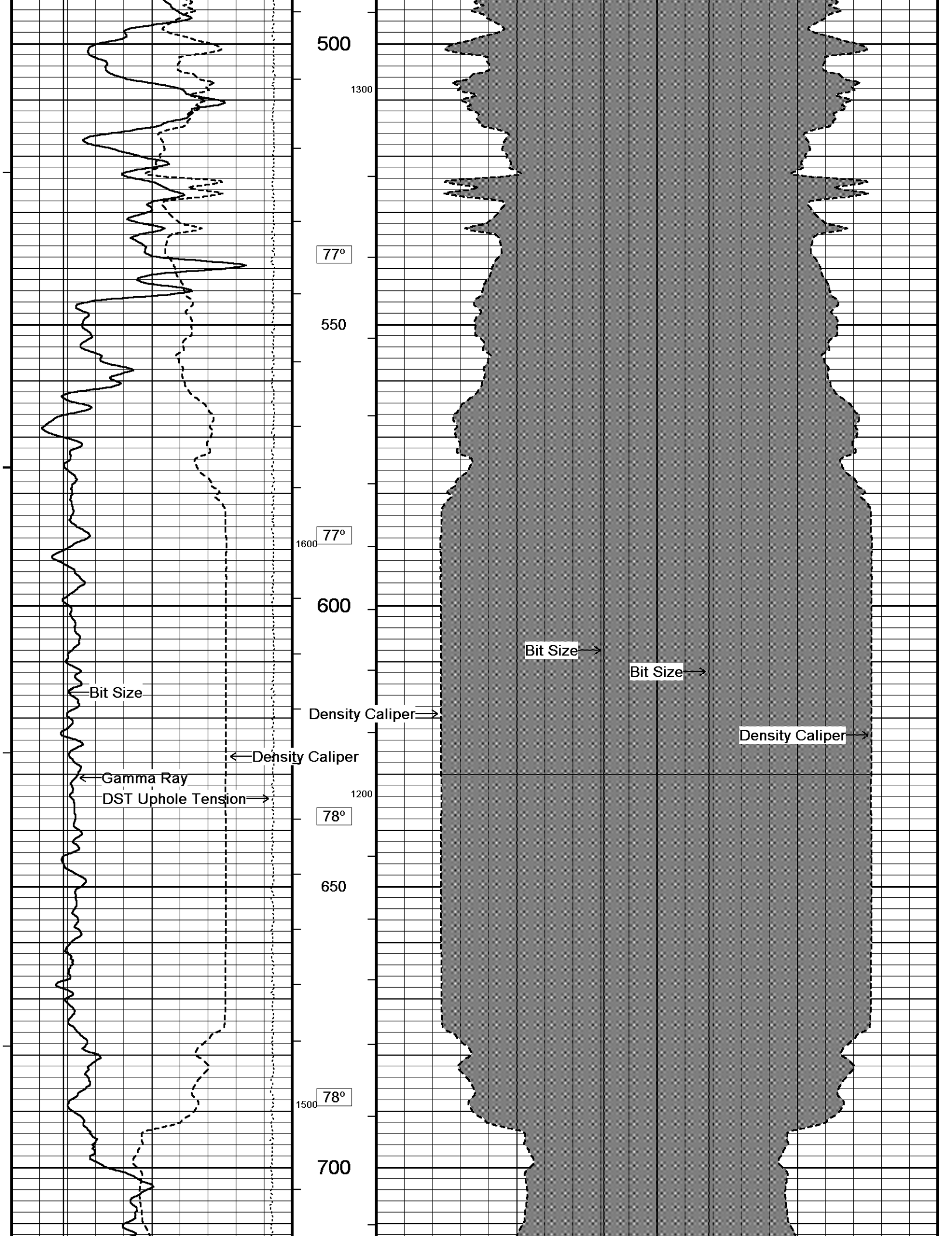
- ENGINEER: D. COLE.

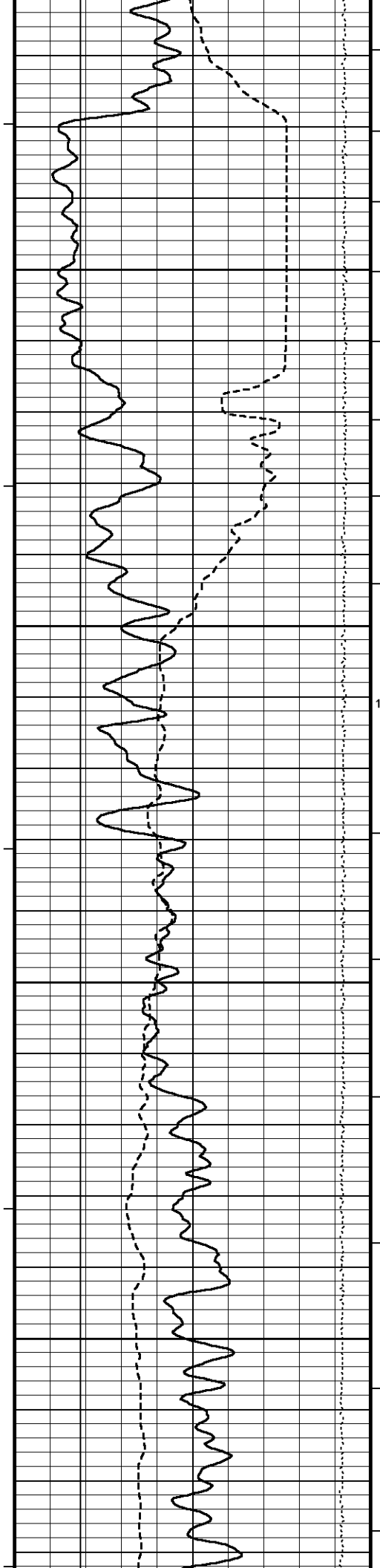
- OPERATOR: C. RAMIREZ.

In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.









79°

750

1100

79°

800

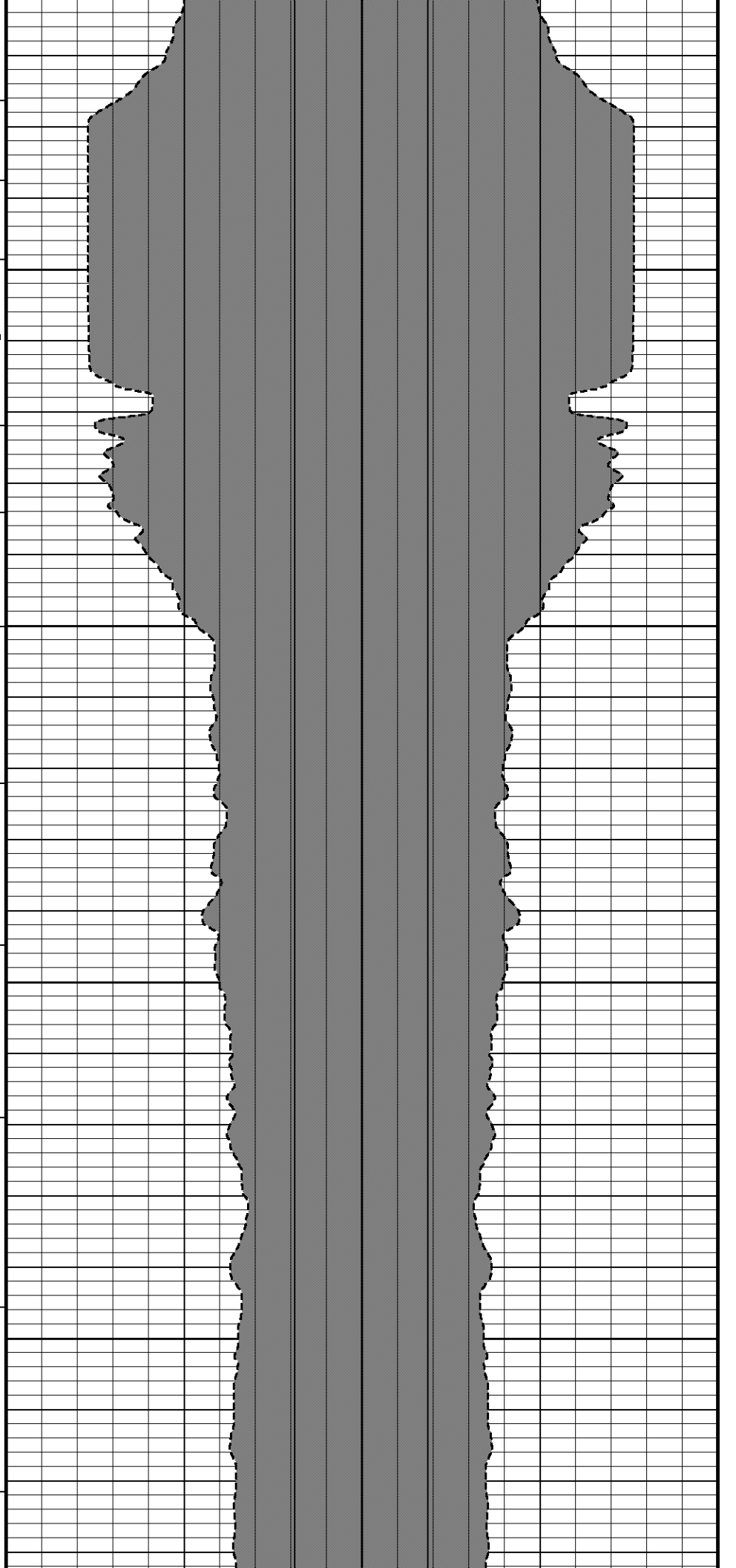
1400

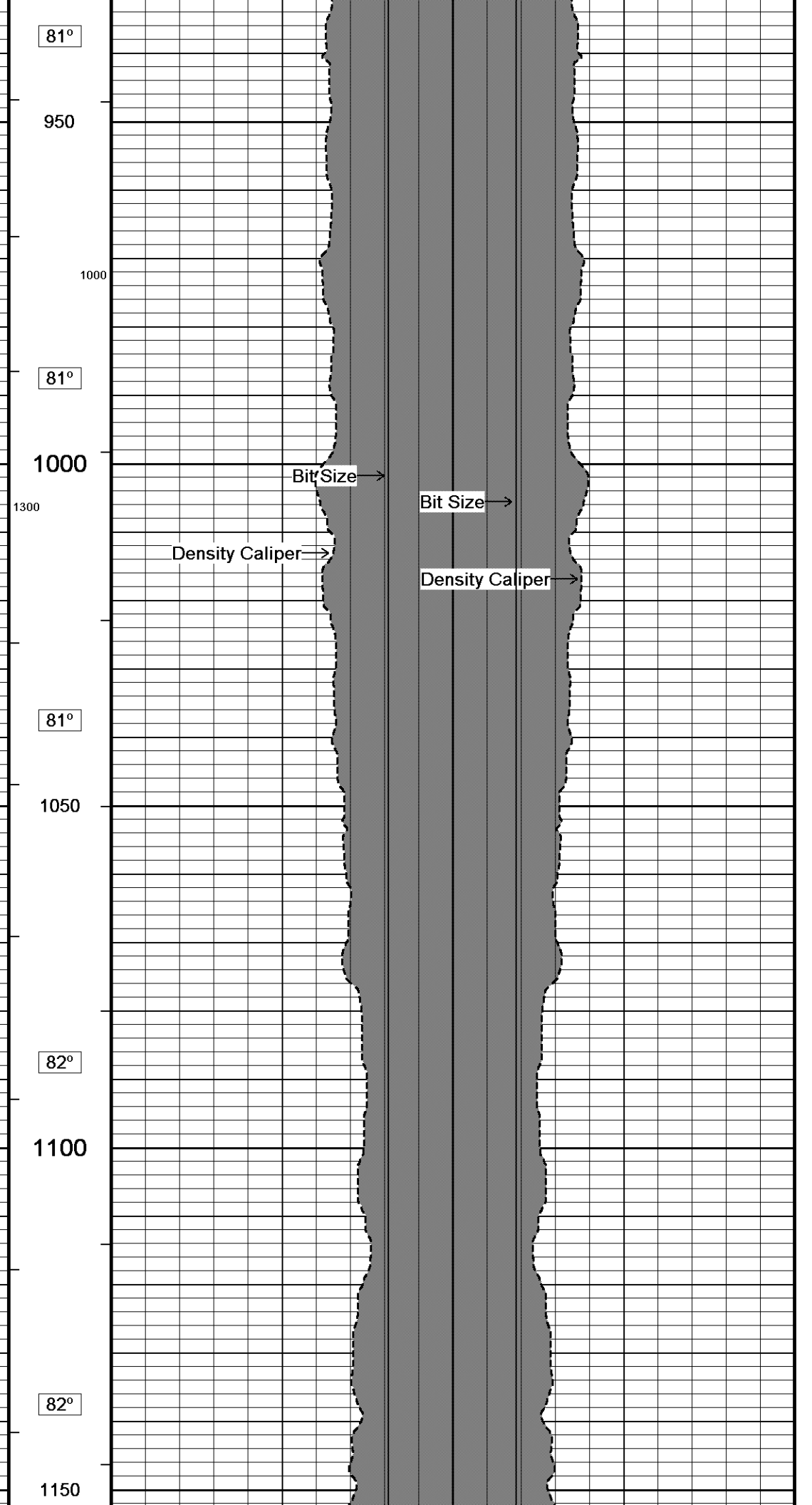
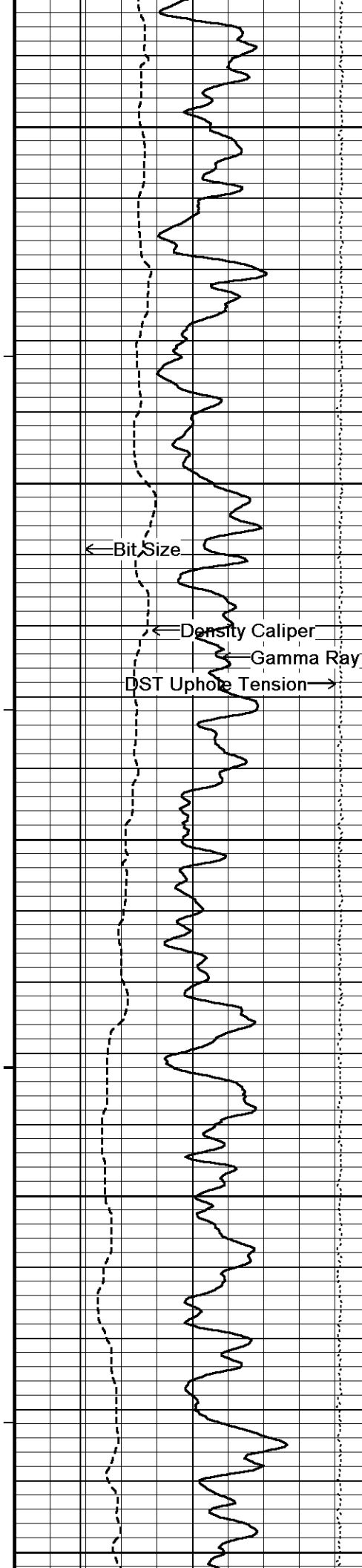
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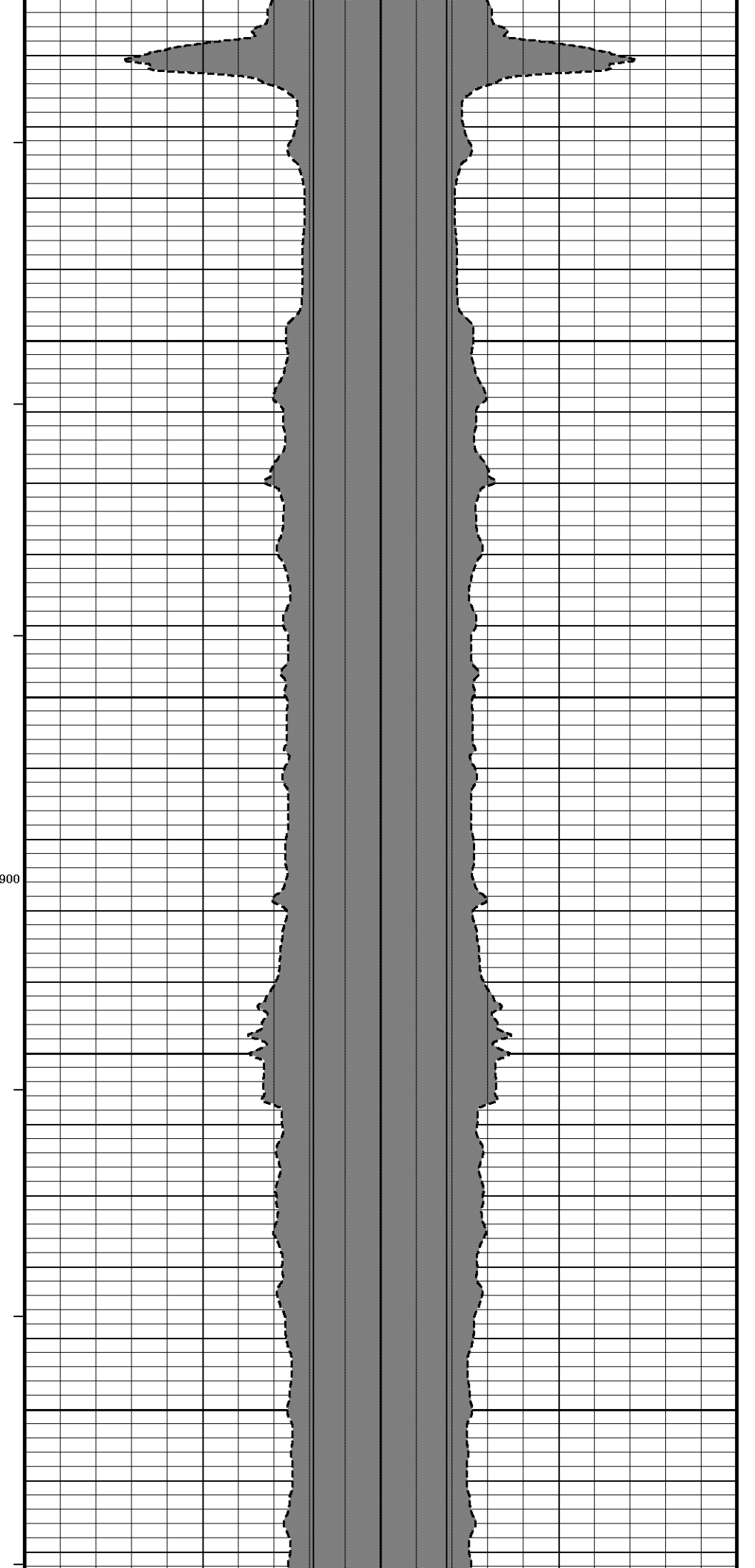
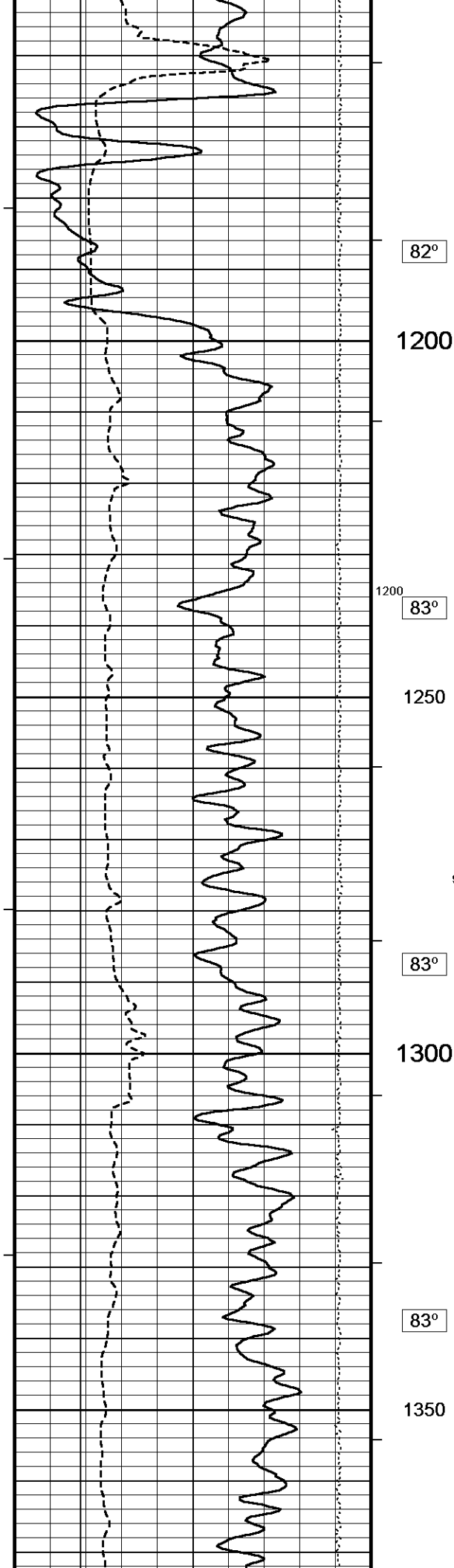
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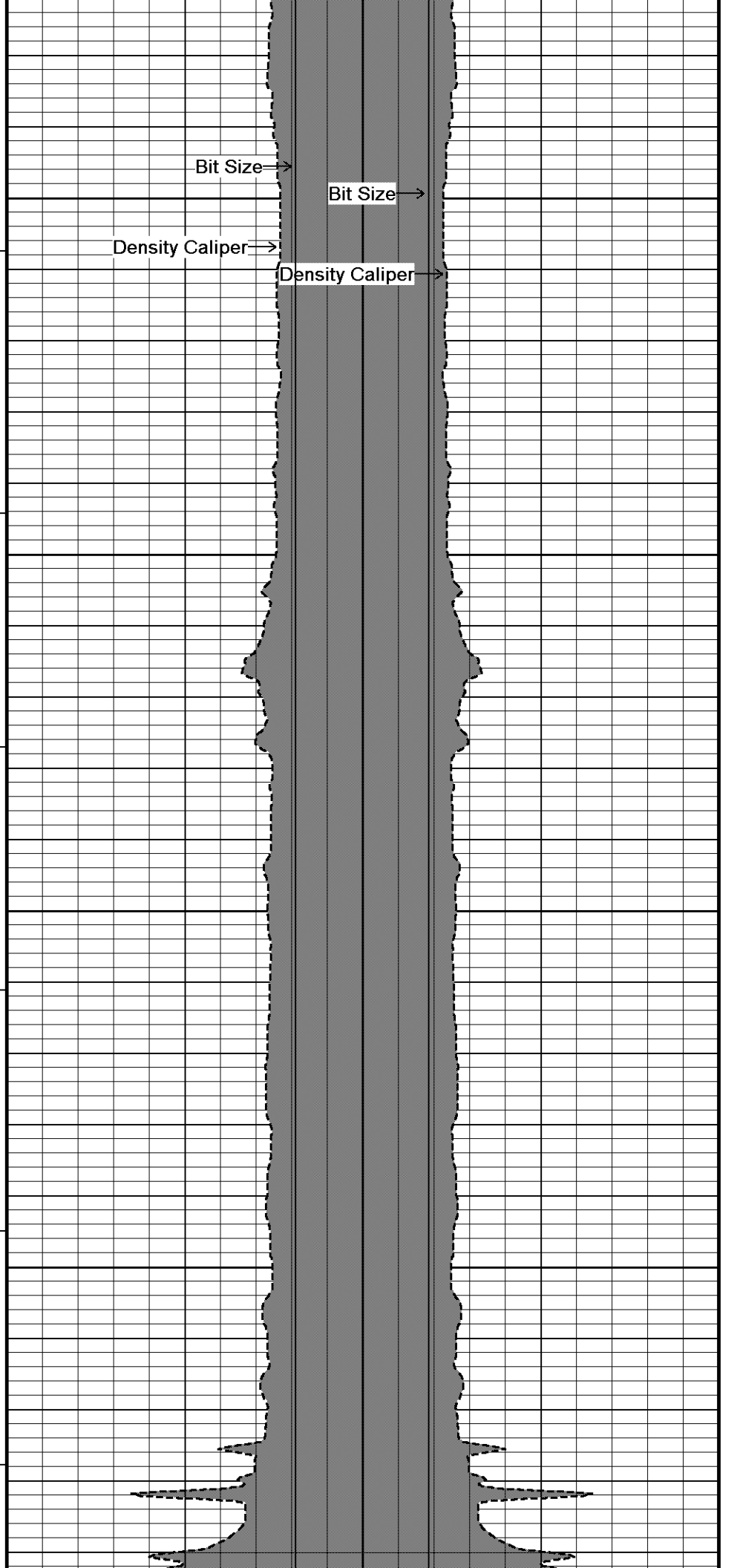
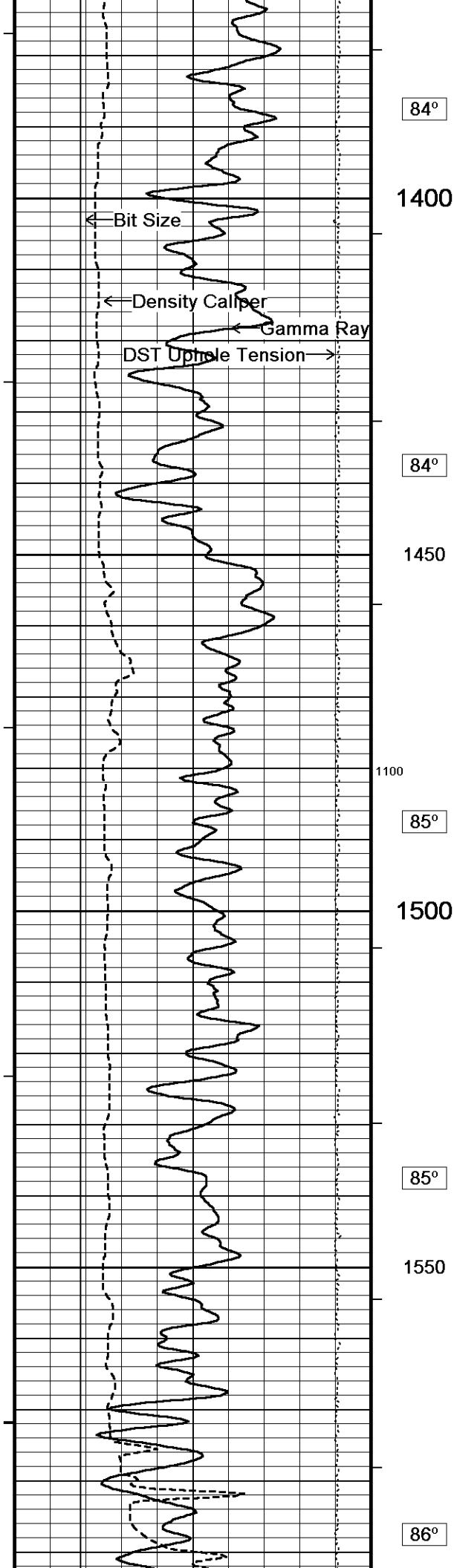
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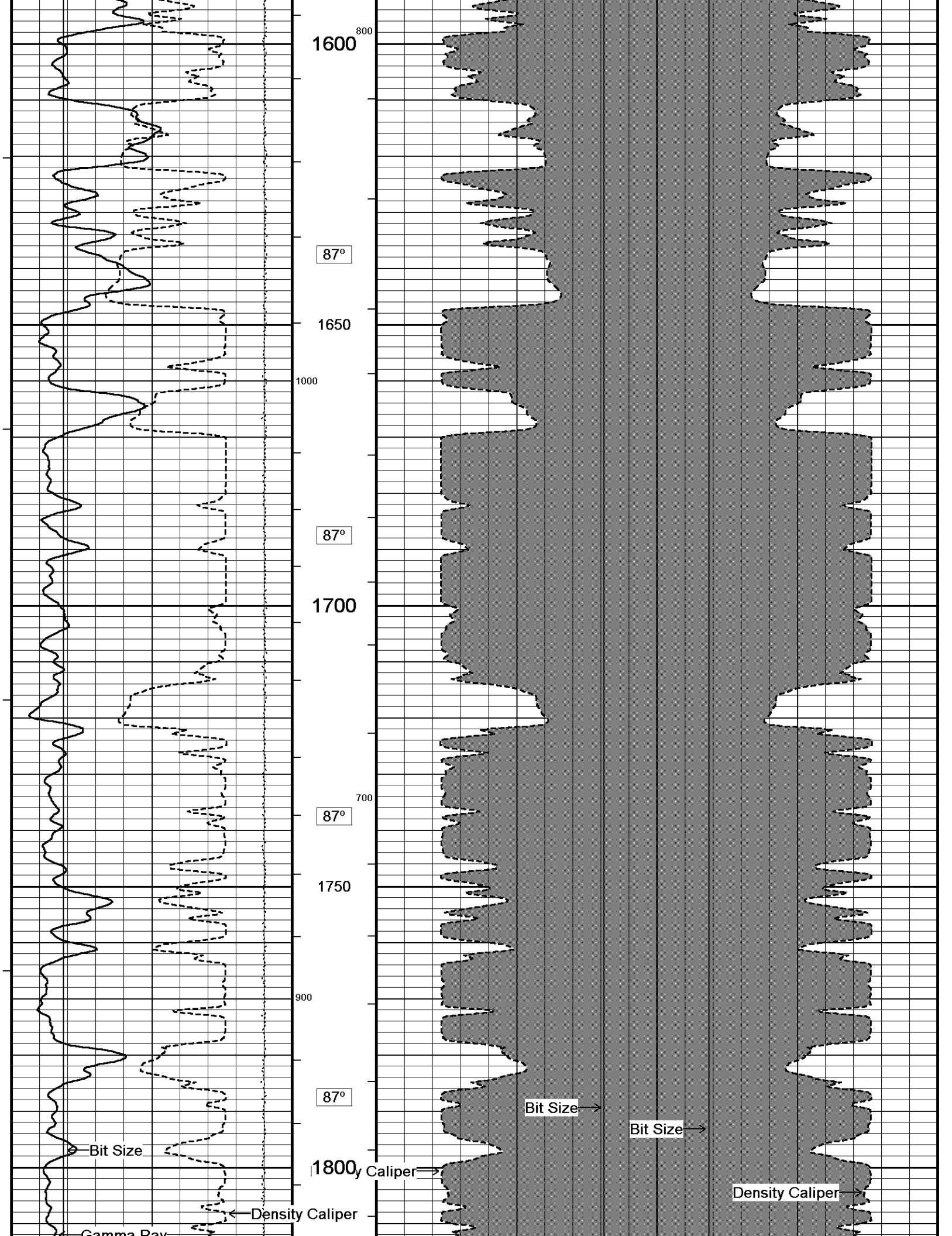
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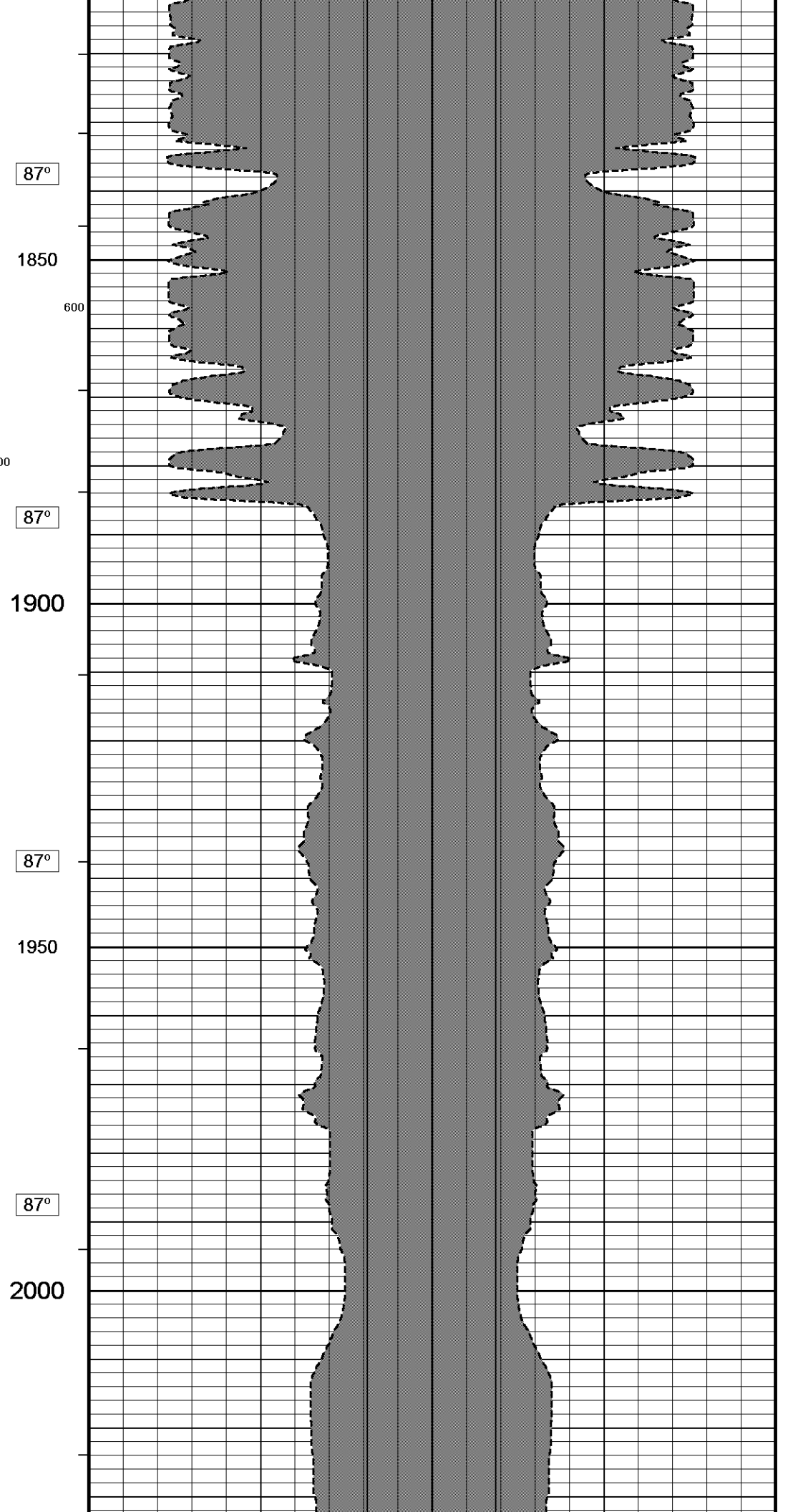
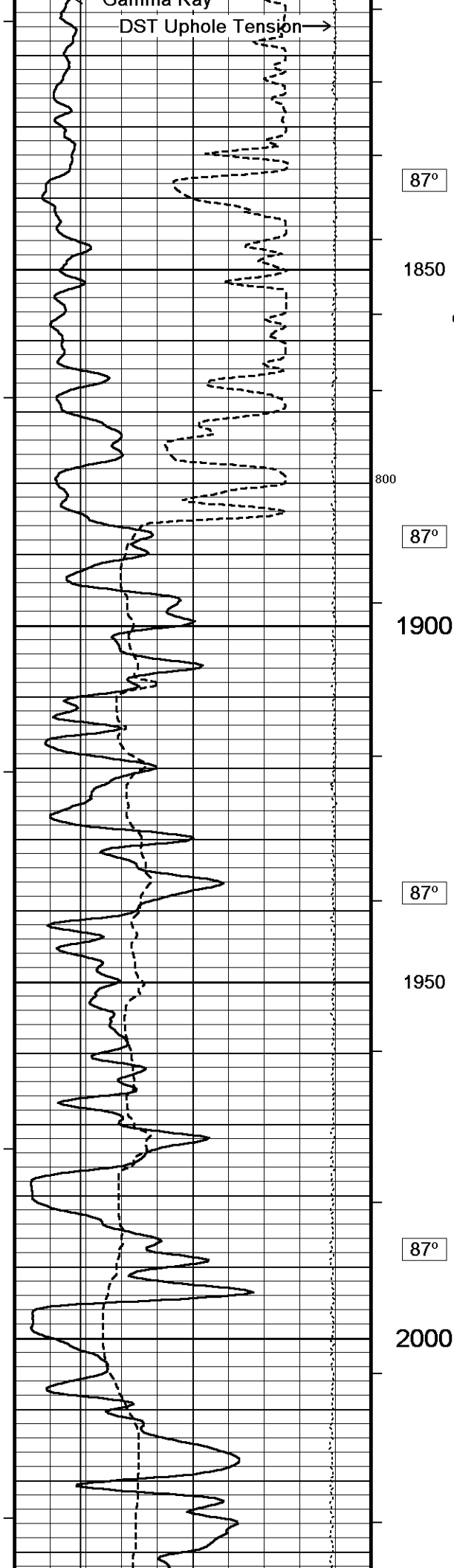


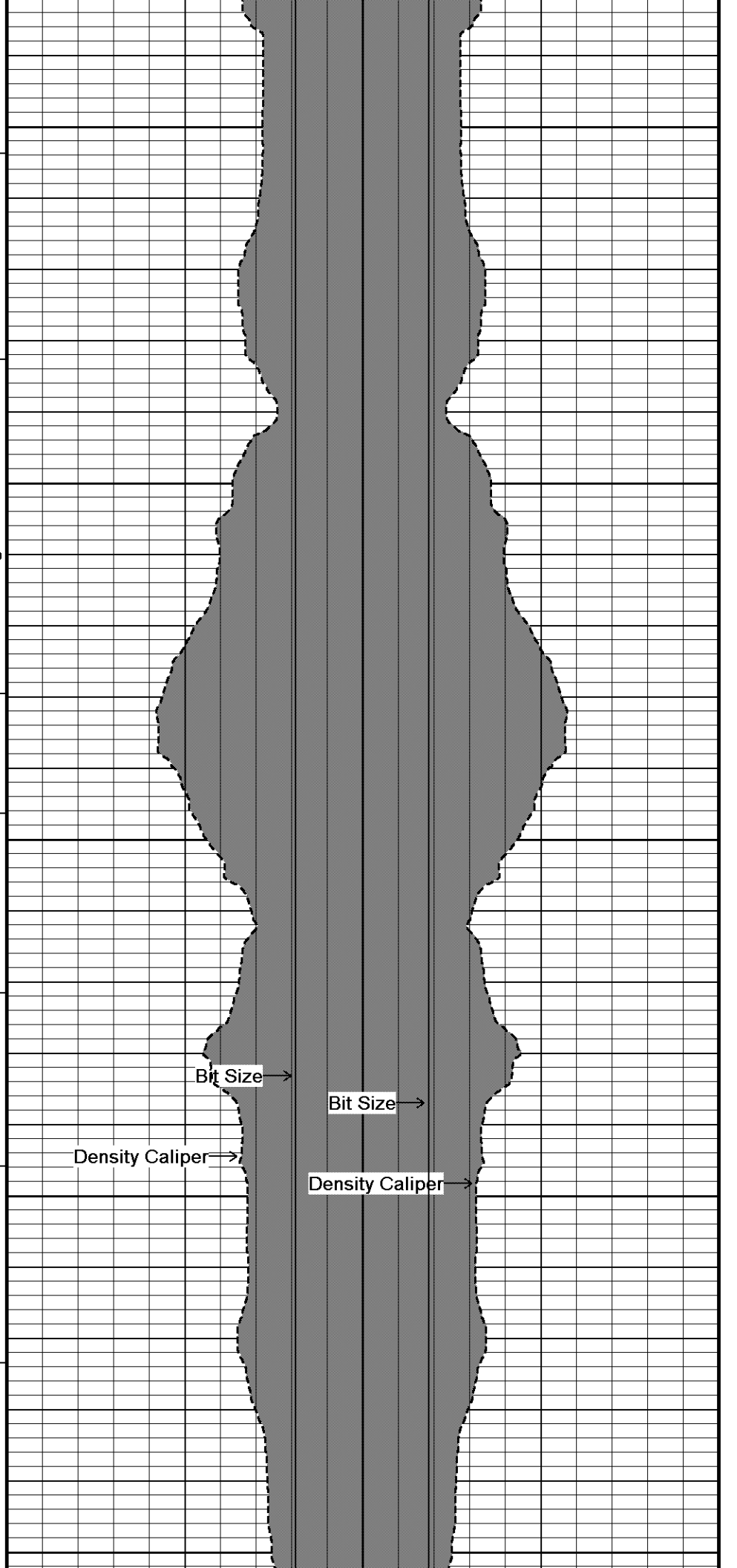
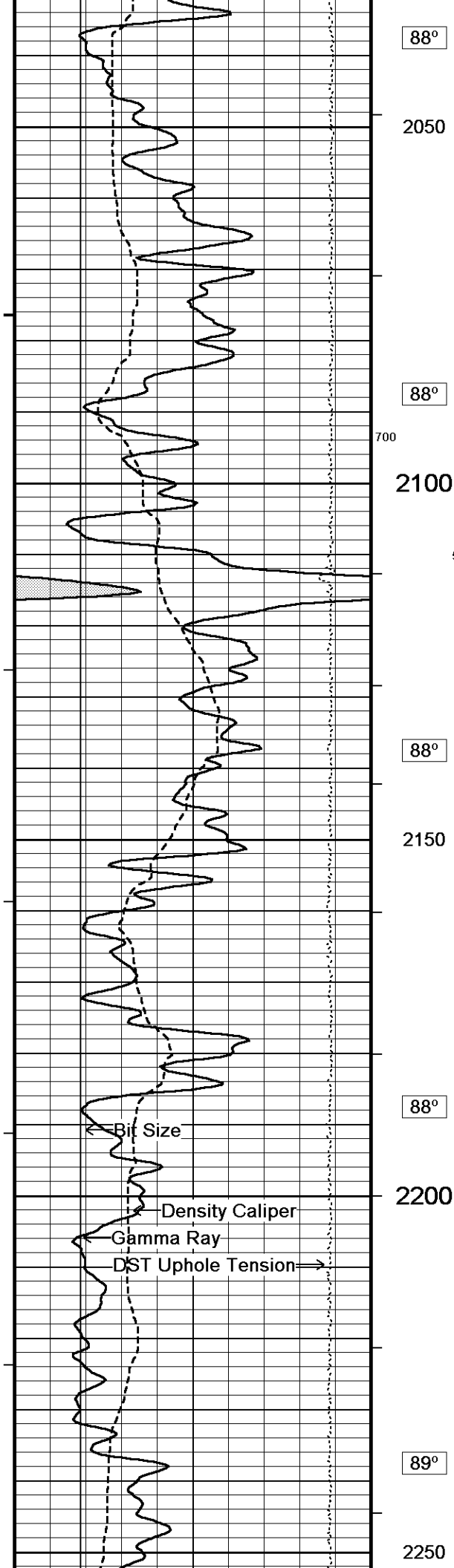


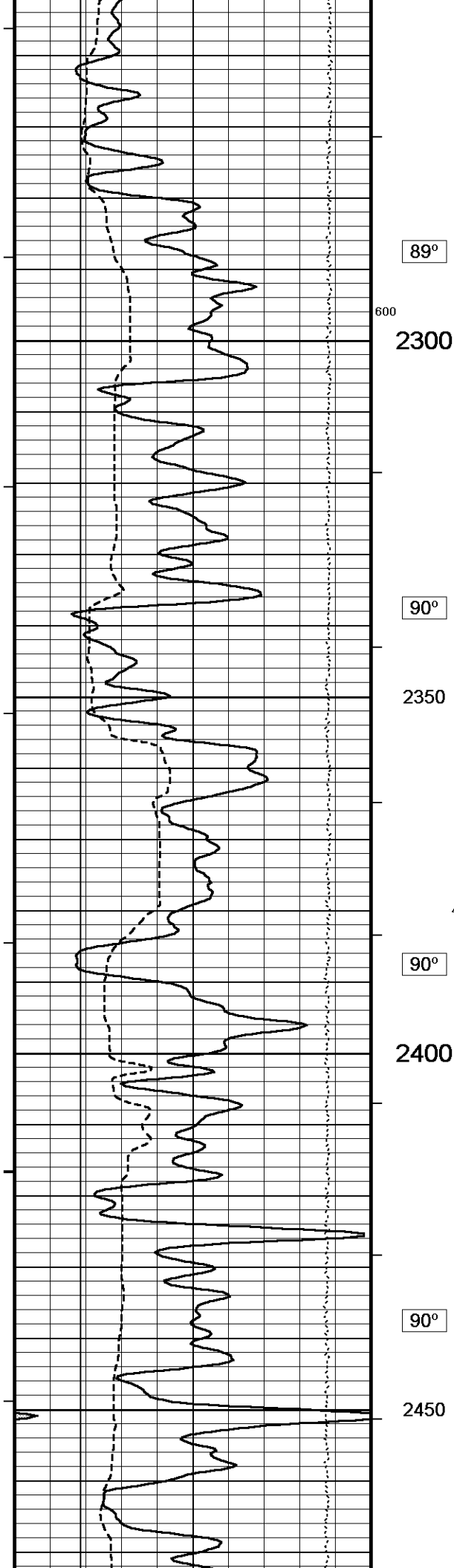












89°

2300

90°

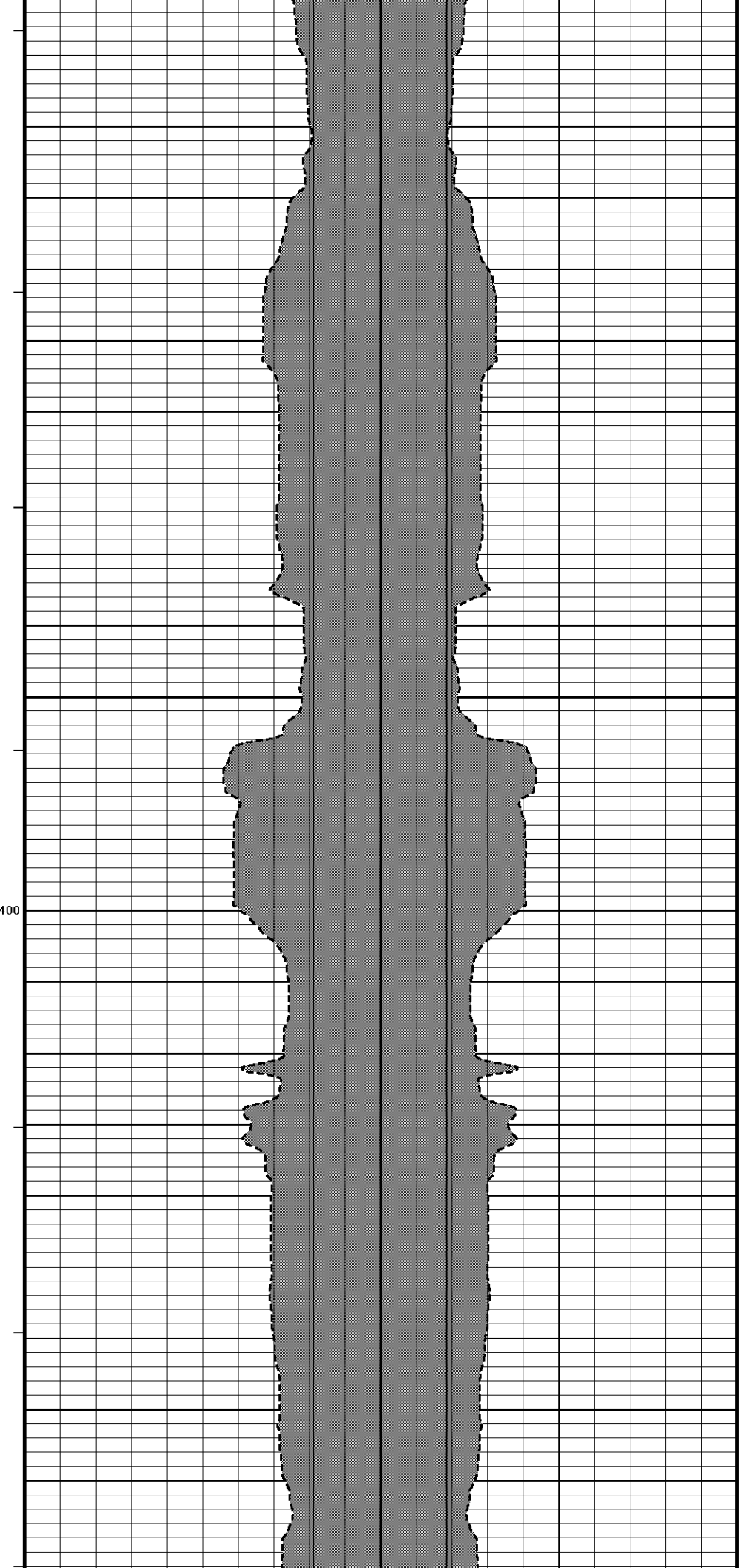
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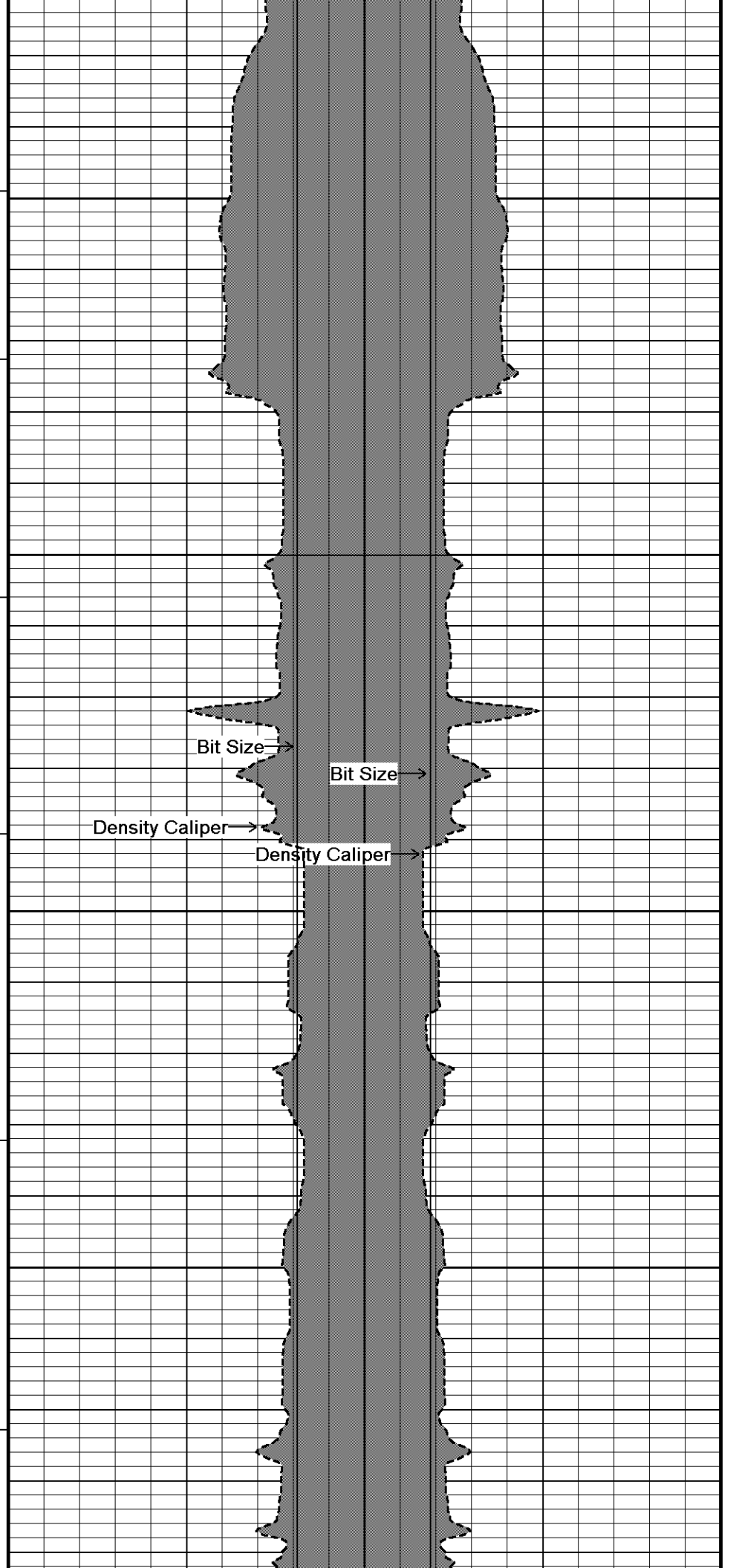
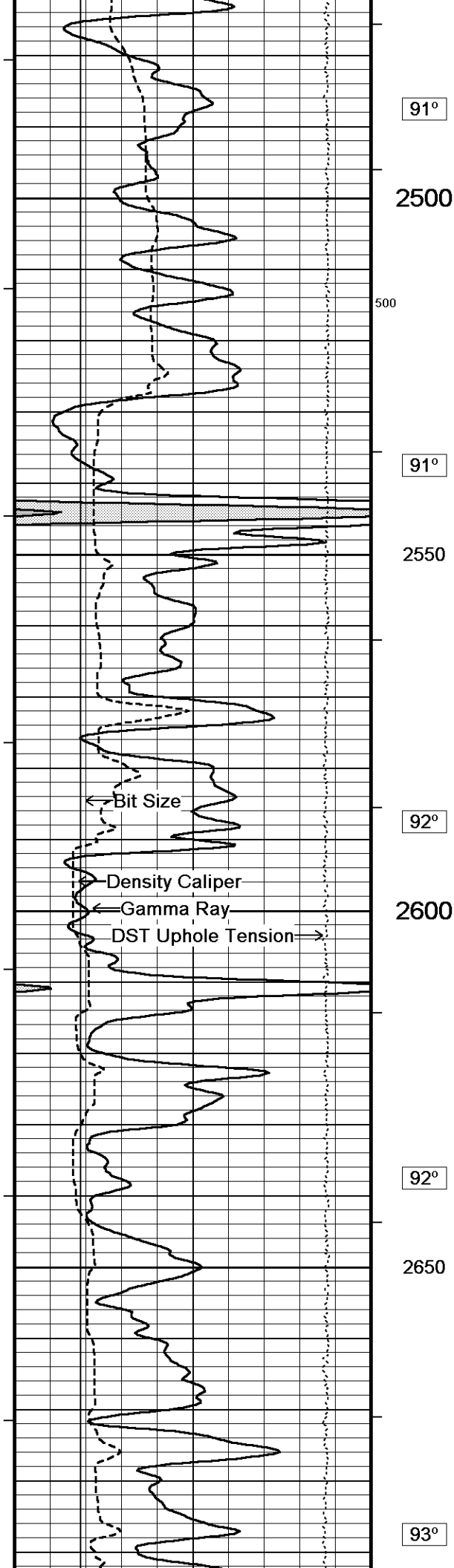
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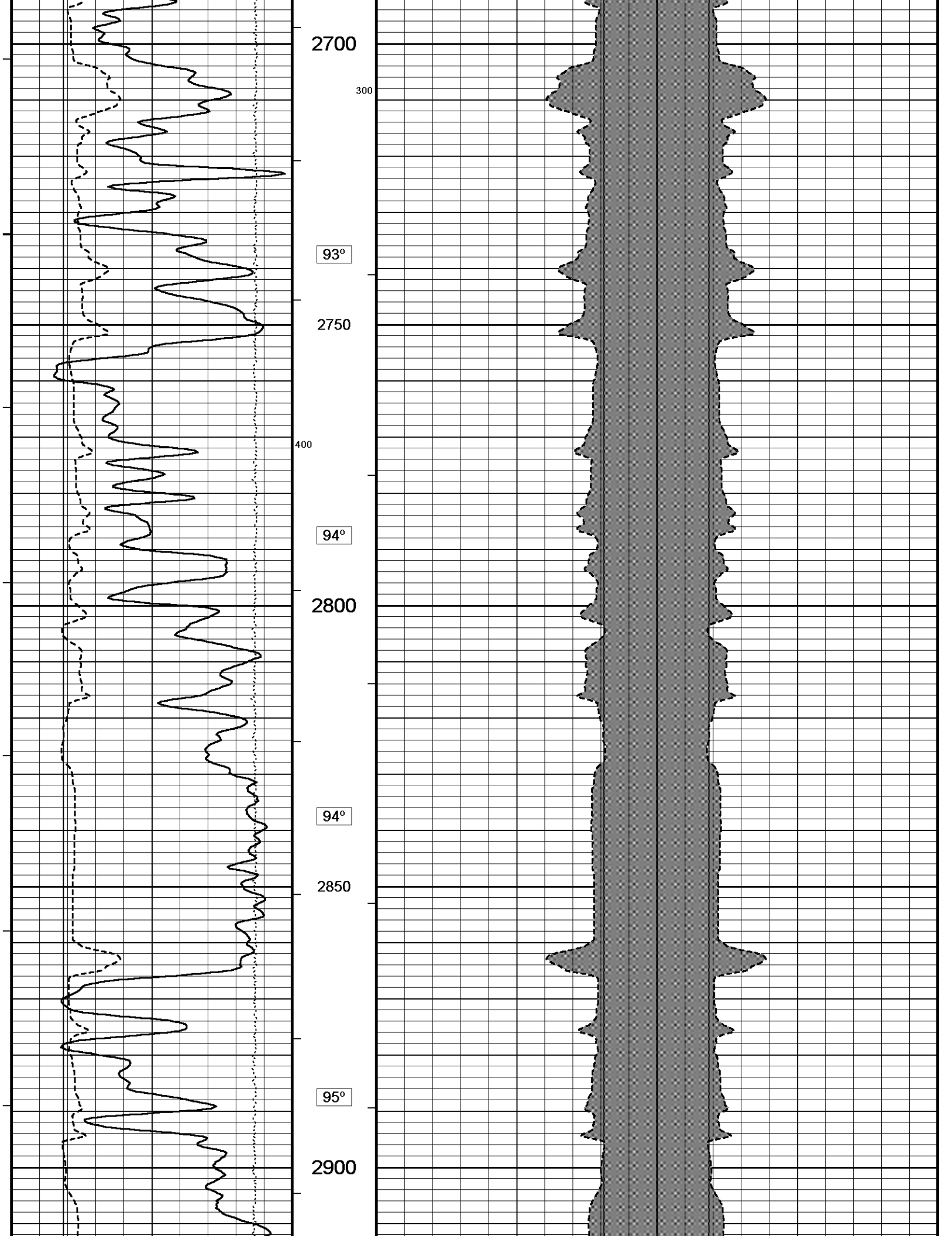
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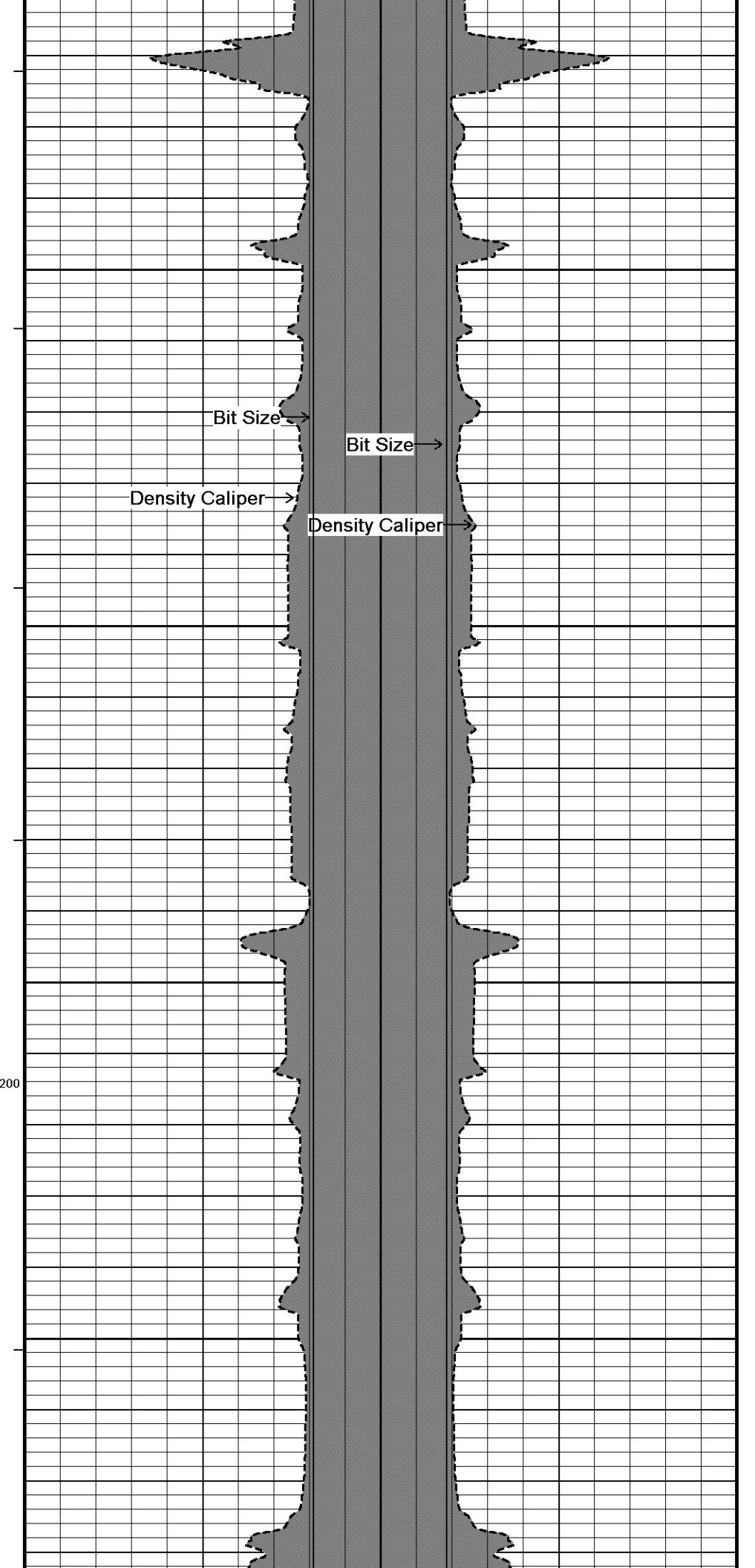
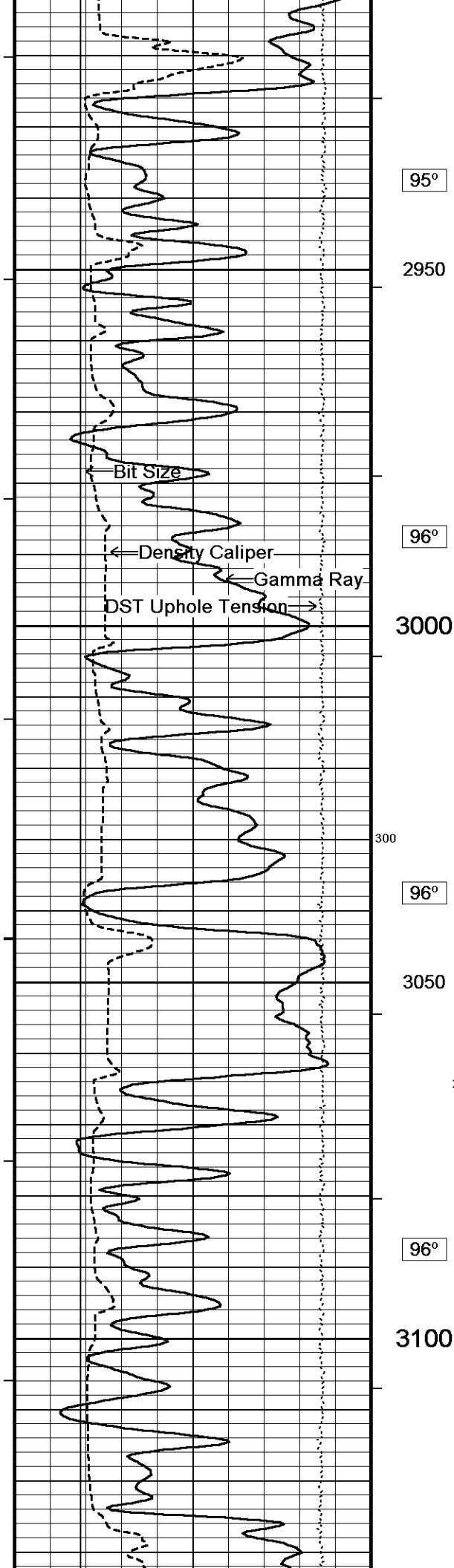
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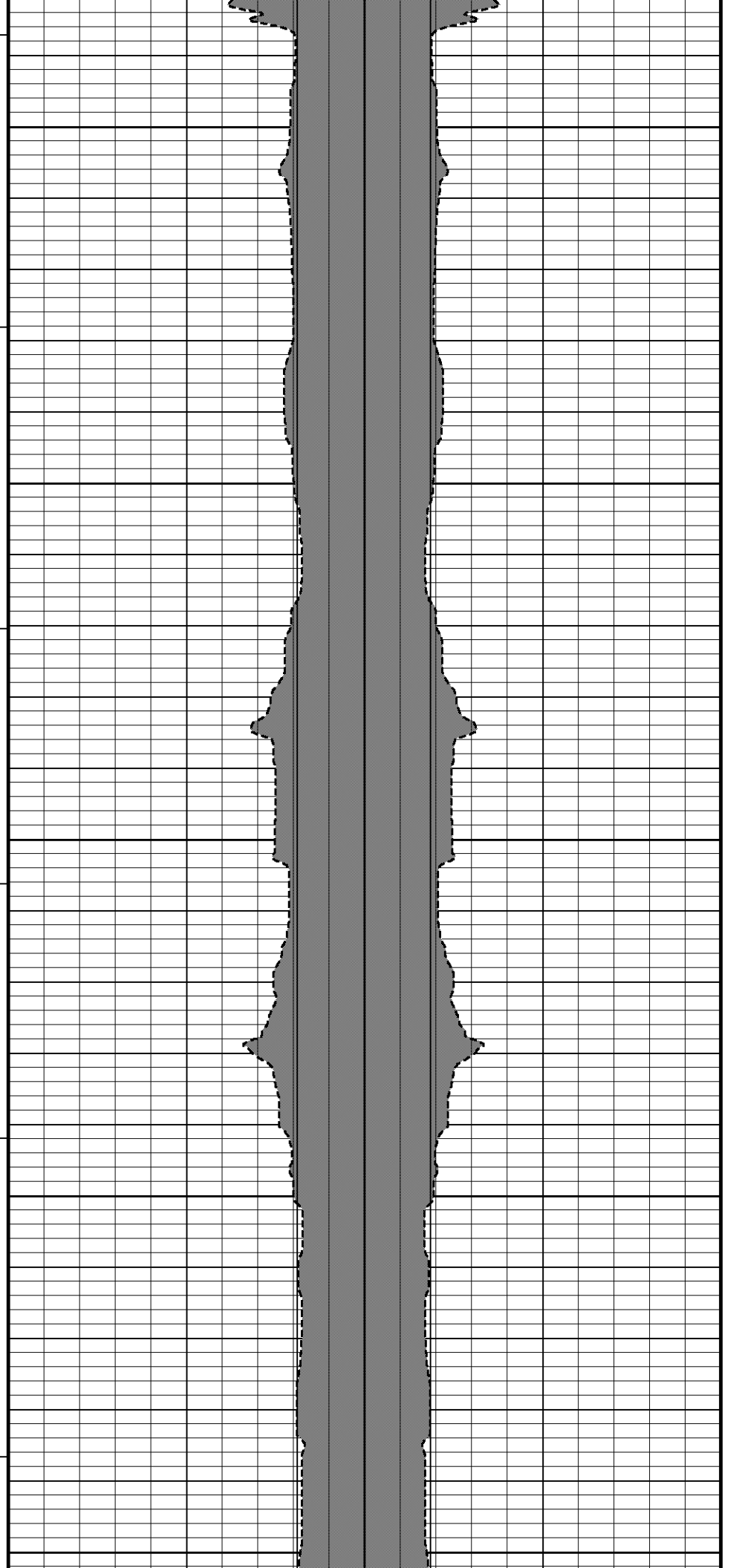
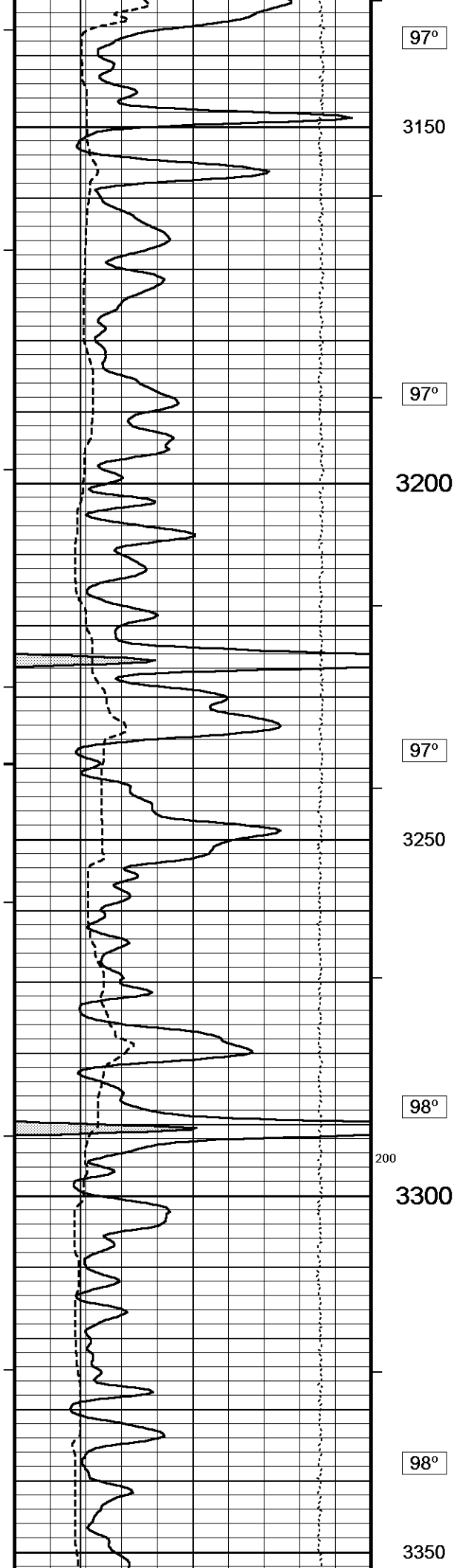
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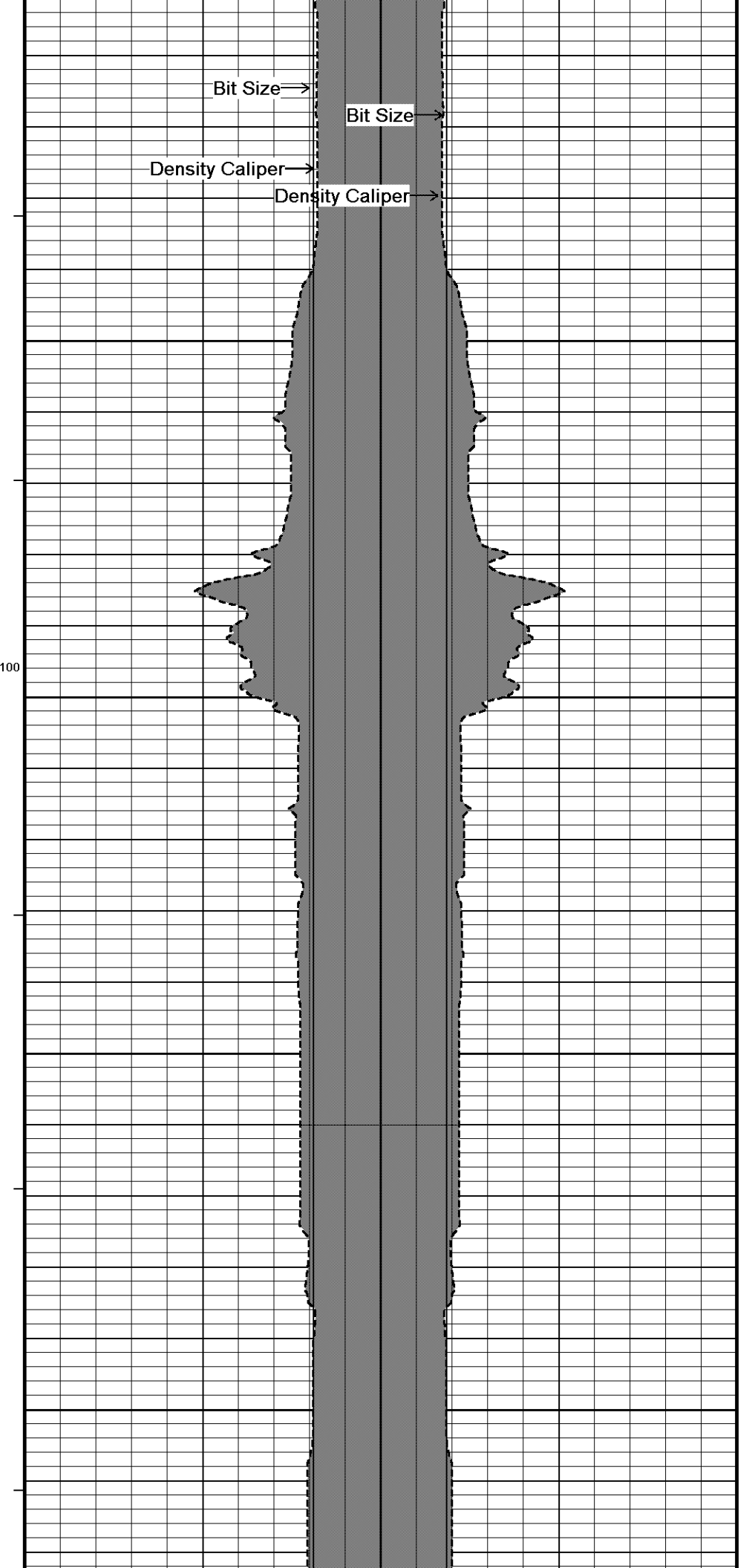
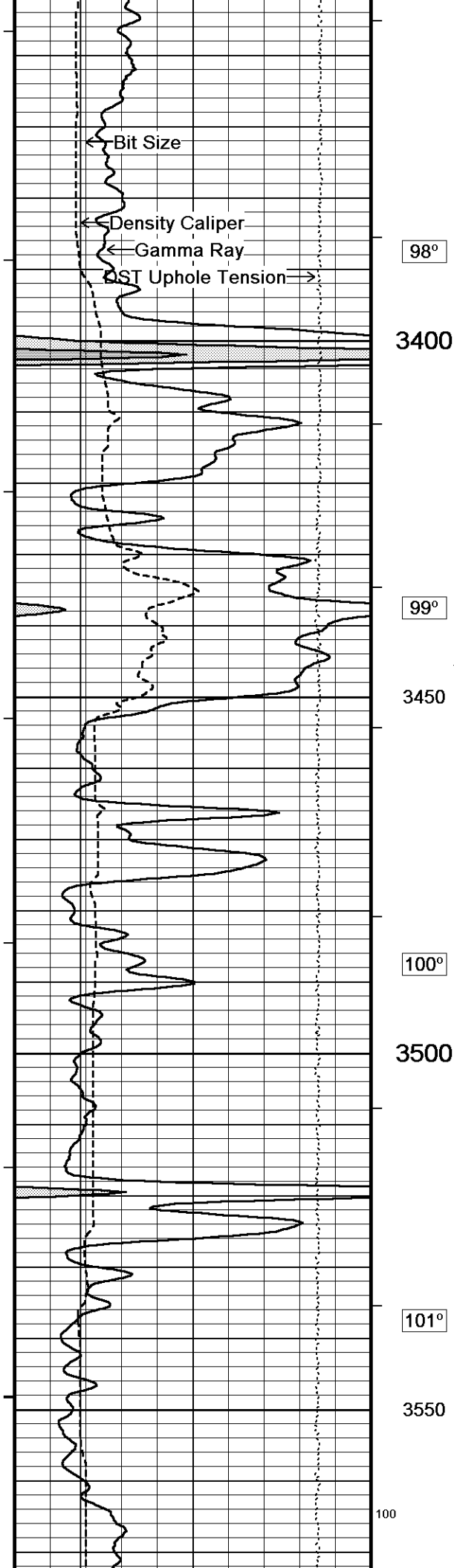


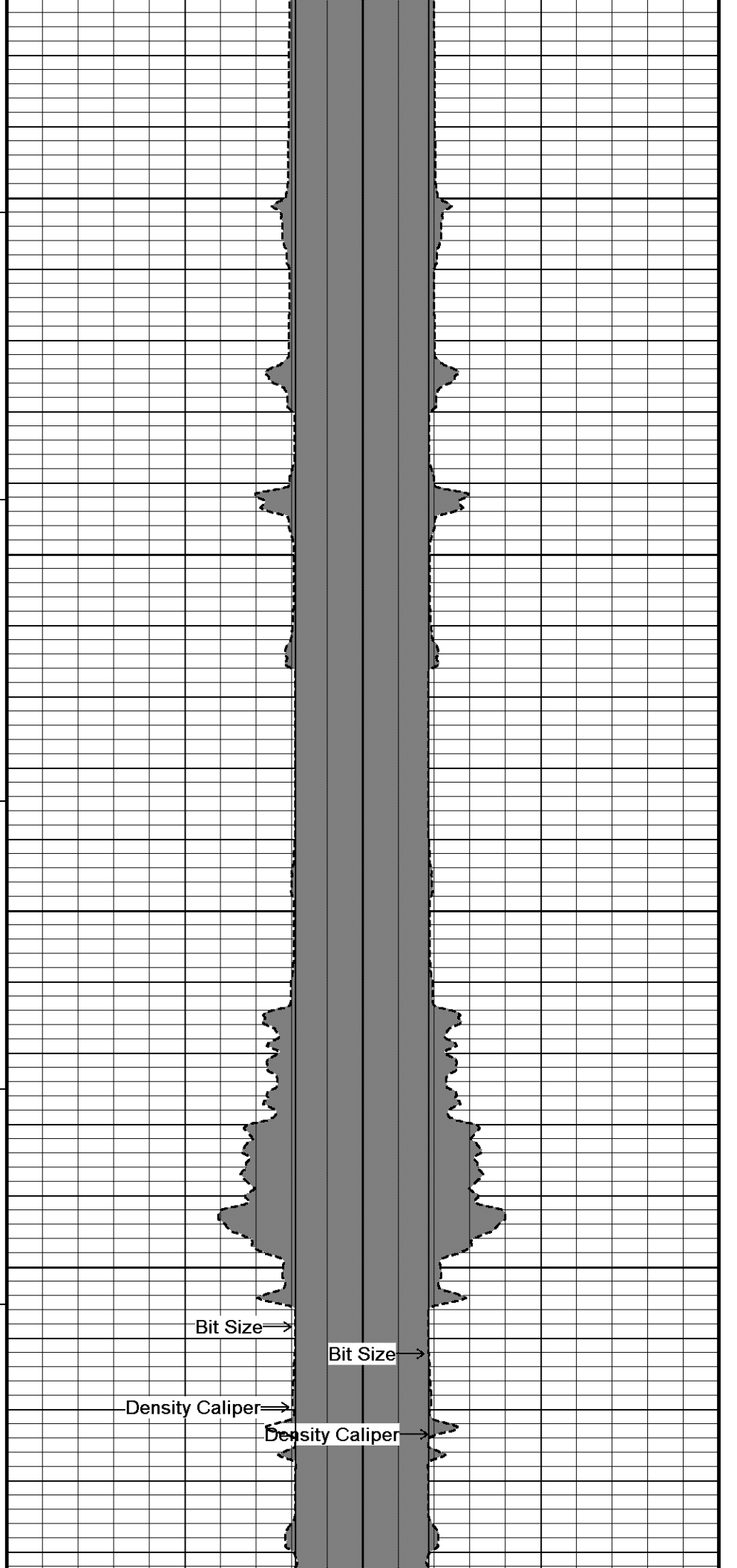
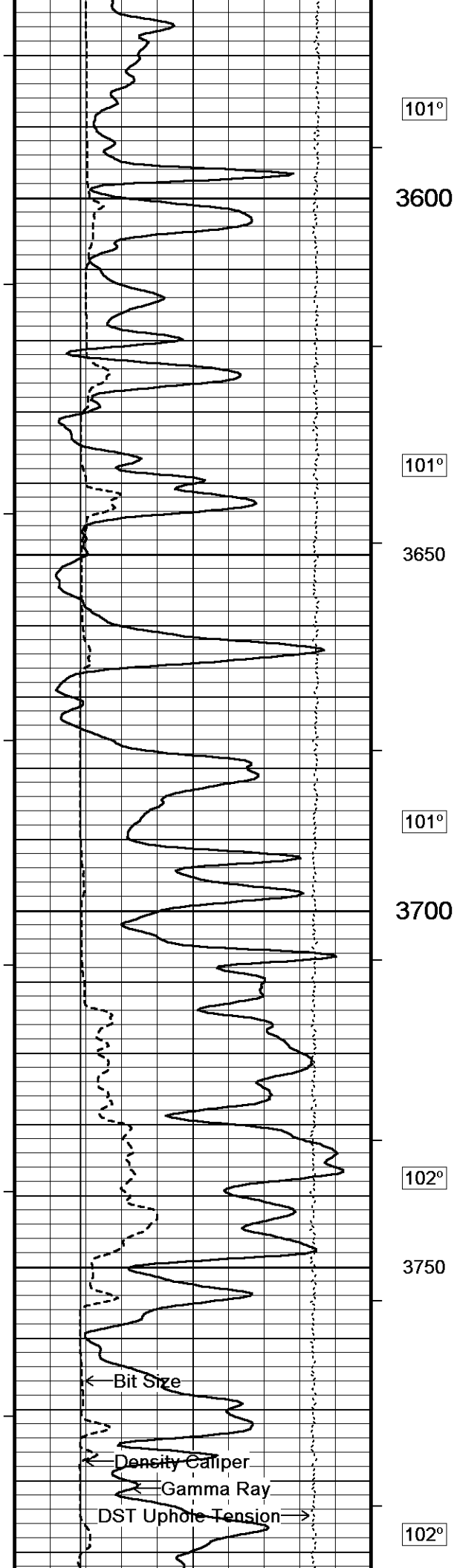












MCB-A 11B Tension Cablehead
MCB-A 170 LG: 2.18 ft WT: 19.8 lb OD: 2.240 in

Compact Comms Gamma
MCG-D.K 443 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-Resistivity
MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

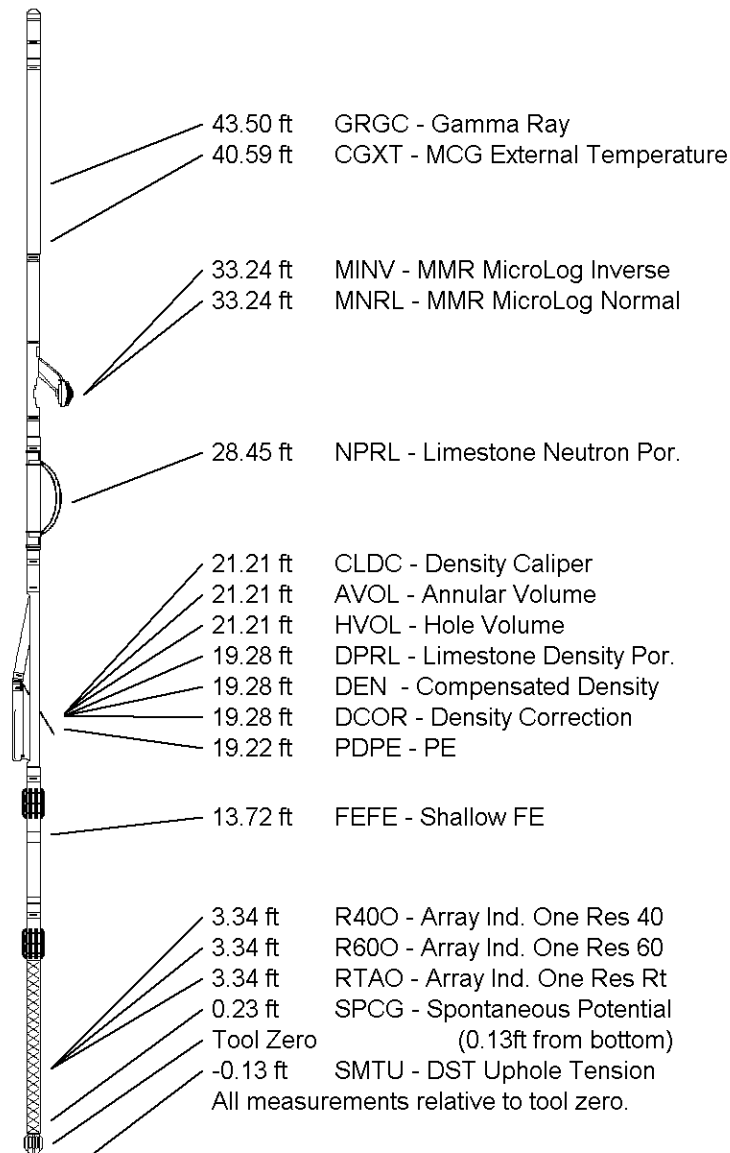
Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 50.96 ft Weight: 403.4 lb



BEFORE SURVEY CALIBRATION

C:\Minimus 13.08.2113\Logs\OBRIEN JECHA 4-1\OBRIEN JECHA 4-1 TRIPLE REPEAT.dta

General Constants All 000

Last Edited on 06-MAR-2014,00:28

General Parameters

Mud Resistivity	1.000	ohm-metres
Mud Resistivity Temperature	48.000	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	4.500	inches
Caliper for Differential Caliper	MMR Caliper	

Rwa Parameters

Porosity used	Base Density Porosity
Resistivity used	Array Ind. Four Res Rt
RWA Constant A	0.610
RWA Constant M	2.150
SW/APOR Tool Source	0.000

Gamma Calibration MCG-D.K 443

Field Calibration on 05-MAR-2014,20:49

	Measured	Calibrated (API)
Background	75	48

Calibrator (Gross)	1215	773
Calibrator (Net)	1140	725

Gamma Constants MCG-D.K 443

Last Edited on 06-MAR-2014,00:28

Gamma Calibrator Number	GRC38	
Mud Density	1.12	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Centred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MCG-D.K 443

Field Calibration on 05-MAR-2014,20:50

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

High Resolution Temperature Constants MCG-D.K 443

Last Edited on 05-MAR-2014,20:50

Pre-filter Length	11
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Caliper Calibration MPD-B 31

Base Calibration on 05-MAR-2014 10:47

Field Calibration on 06-MAR-2014,03:11

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	18528	3.99
2	26688	5.98
3	34842	7.97
4	43098	9.86
5	52480	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.94	7.71

COMPANY O'BRIEN RESOURCES, LLC

WELL JECHA 4-1

FIELD WILDCAT

PROVINCE/COUNTY RUSH

COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	2058.00	feet	First Reading	3830.00	feet
Elevation Drill Floor	2056.00	feet	Depth Driller	3851.00	feet
Elevation Ground Level	2053.00	feet	Depth Logger	3851.00	feet



CALIPER LOG

Weatherford®