



Weatherford®

**MEASURED DEPTH
X-Y CALIPER
HOLE VOLUME LOG**

COMPANY		WHITTING OIL AND GAS CORPORATION			
WELL		RAZOR 21C-0908			
FIELD		REDTAIL			
PROVINCE/COUNTY		WELD			
COUNTRY/STATE		U.S.A. / COLORADO			
LOCATION		329' FNL & 1098' FWL			
SEC 21	TWP 10N	RGE 58W	Other Services INDUCTION IMAGER NEUTRON/DENSITY		SPECTRAL GAMMA
API Number		05-123-39523		NEUTRON/DENSITY	
Permanent Datum G.L., Elevation 4844 feet				Elevations: KB 4861.00 DF 4861.00 GL 4844.00	
Log Measured From KB					
Drilling Measured From K.B. @ 17 FEET					
Date	17-AUG-2014				
Run Number	ONE				
Service Order	4725-95388534				
Depth Driller	14236.00			feet	
Depth Logger	14236.00			feet	
First Reading	14149.00			feet	
Last Reading	6209.00			feet	
Casing Driller	6213.00			feet	
Casing Logger	6209.00			feet	
Bit Size	6.000			inches	
Hole Fluid Type	WBM				
Density / Viscosity	9.50 lb/USg		38.00	type in	
PH / Fluid Loss	9.00		6.40	ml/30Min	
Sample Source	FLOWLINE				
Rm @ Measured Temp	0.92 @ 81.0			ohm-m	
Rmf @ Measured Temp	0.74 @ 81.0			ohm-m	
Rmc @ Measured Temp	1.10 @ 81.0			ohm-m	
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	0.34 @224.0			ohm-m	
Time Since Circulation	1 HOUR				
Max Recorded Temp	224.00		deg F		
Equipment / Base	18086		Casper		
Recorded By	K. SALLER				
Witnessed By	P. BUCKNAM			GEOLOGIST	
WSL	B. MILLER			WSL	

BOREHOLE RECORD			Last Edited: 17-AUG-2014 16:28	
Bit Size inches	Depth From feet		Depth To feet	
6.000	6213.00		14236.00	
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
INTERMED	7.000	1704.00	6213.00	29.00
SURFACE	9.625	0.00	1704.00	40.00

REMARKS
LOGGED WITH WLS 14.01.3220
LOGGED USING MESSENGER SHUTTLE METHOD OF DEPLOYMENT
HARDWARE: MDN: MIS-A SINGLE BOWSPRING USED ABOVE MDN MPD: 4INCH PROFILE PLATE USED, MIS-A SINGLE BOWSPRING USED BELOW MPD CMI: OVER BODY BASKET AND MIS-D BASKETS PLACED ABOVE AND BELOW FOR CENTRALIZATION SGS: RAN BELOW CMI. ECCENTRALIZED WITH SKJ.
2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY
ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST
LONGITUDE: -103.871036 LATITUDE: 40.830142

DEPTH CODE: 40.030142

DRILL PIPE DEPTH DURING DEPLOYMENT: 14,112 FEET
LOGGING TOOL DEPTH AFTER DEPLOYMENT: 14,216 FEET

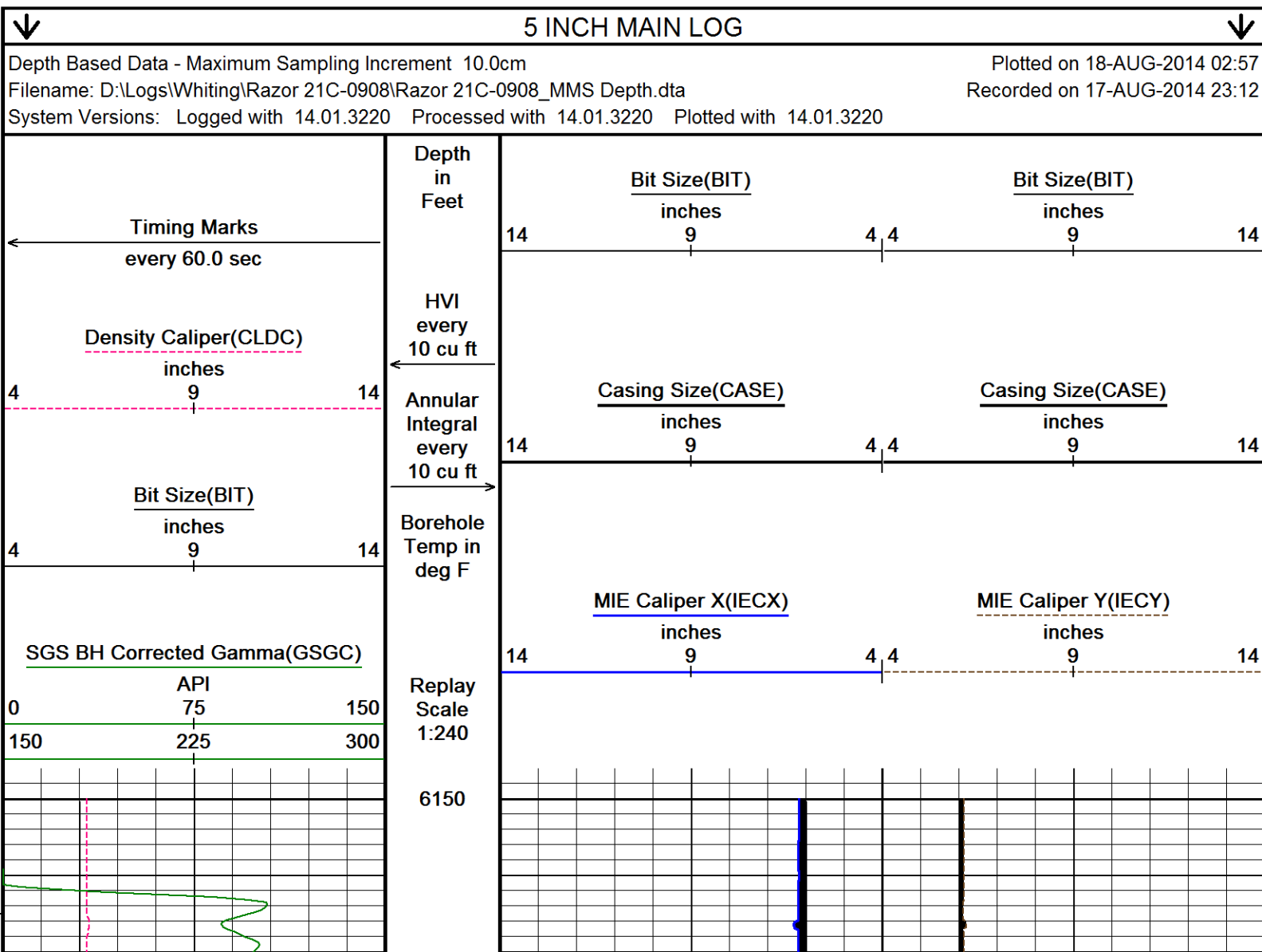
ROTATED LAST 23 STANDS DOWN AT 15RPM TO REACH TD - EXCESSIVE STICK/SLIP SEEN WHEN NOT ROTATING
ROTATING 15RPM FOR FIRST 1500FT WHILE LOGGING DUE TO EXCESSIVE STICK/SLIP OFF BOTTOM IN ATTEMPT TO IMPROVE
MICRO-IMAGER DATA.

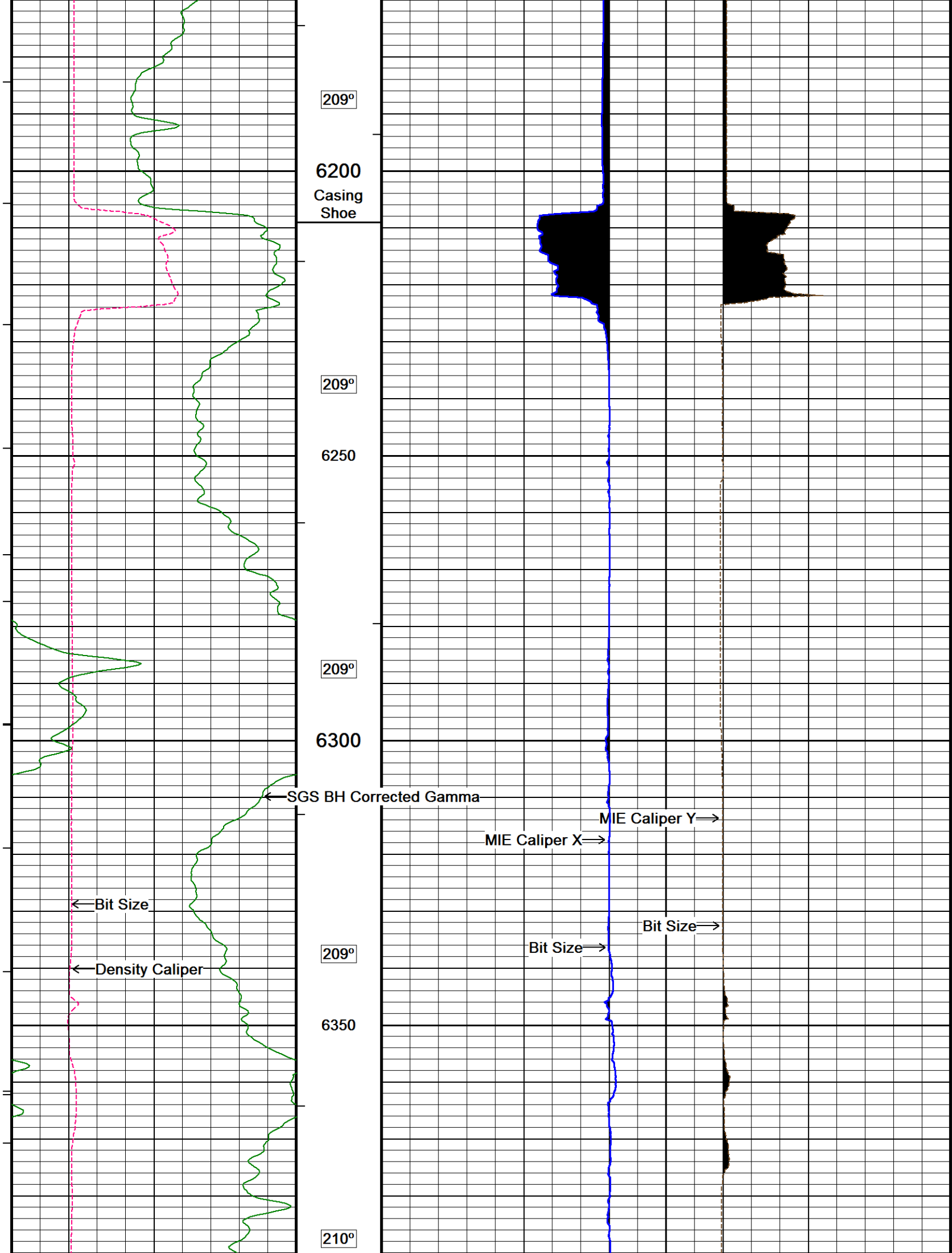
ANNULAR HOLE VOLUME FROM TD TO 7"-29# CASING AT 6209 FEET = 675 CUBIC FEET.
TOTAL HOLE VOLUME FROM TD TO 7"-29# CASING AT 6209 FEET = 1560 CUBIC FEET.

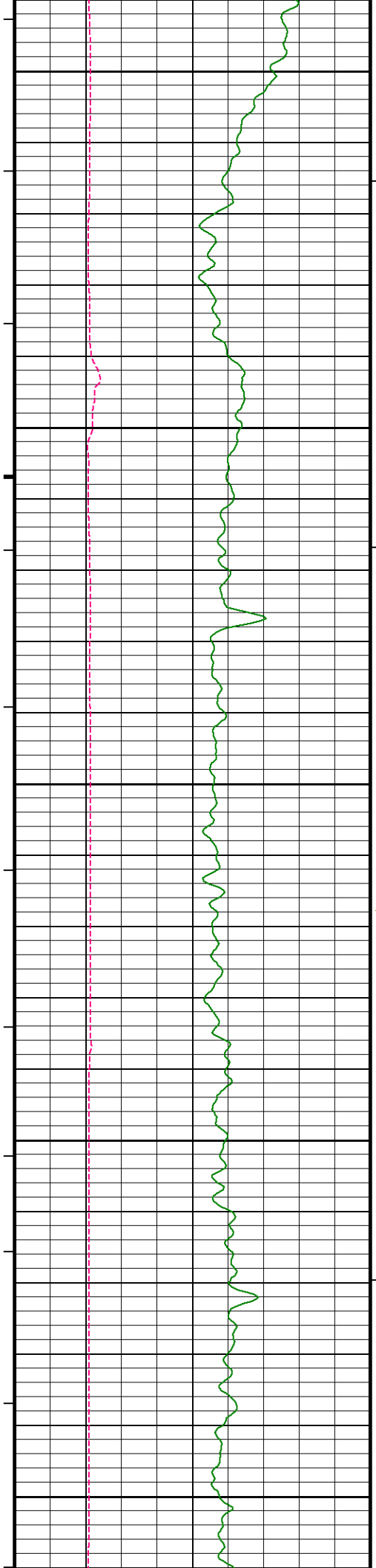
OPERATORS: S.LANDON, J. GERDES

RIG:CADE 23

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.







6400

210°

6450

210°

6500

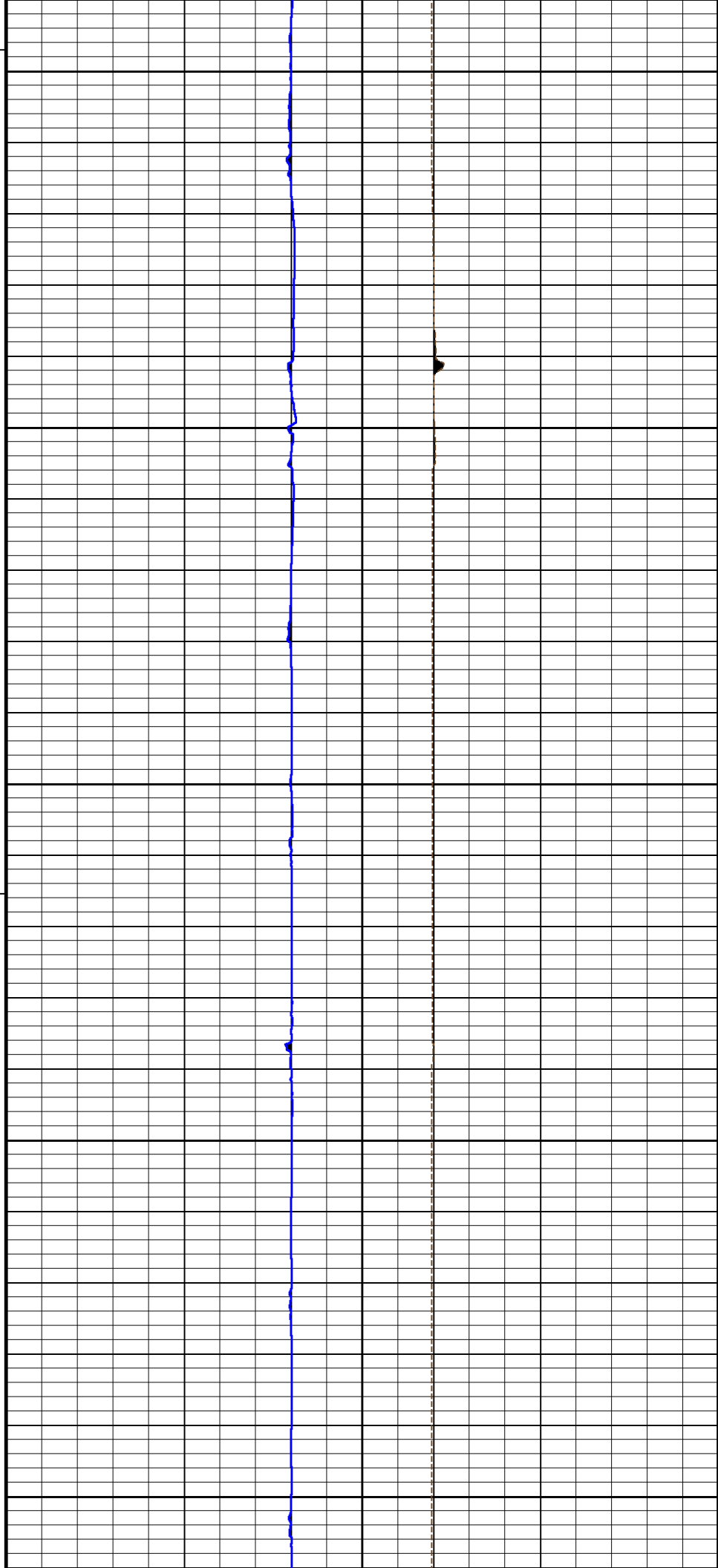
1500

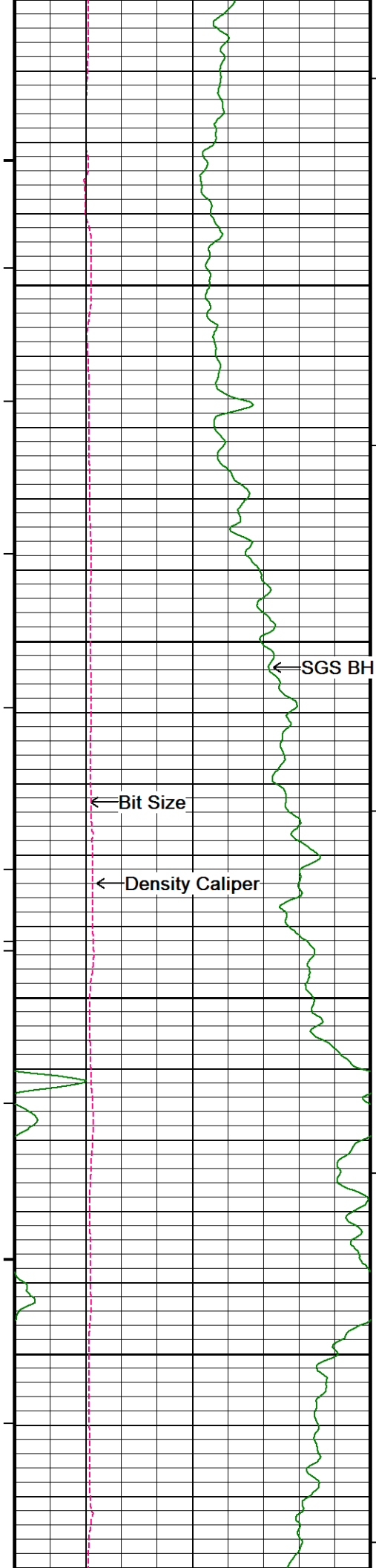
210°

6550

211°

6600





211°

6650

211°

6700

← SGS BH Corrected Gamma

← Bit Size

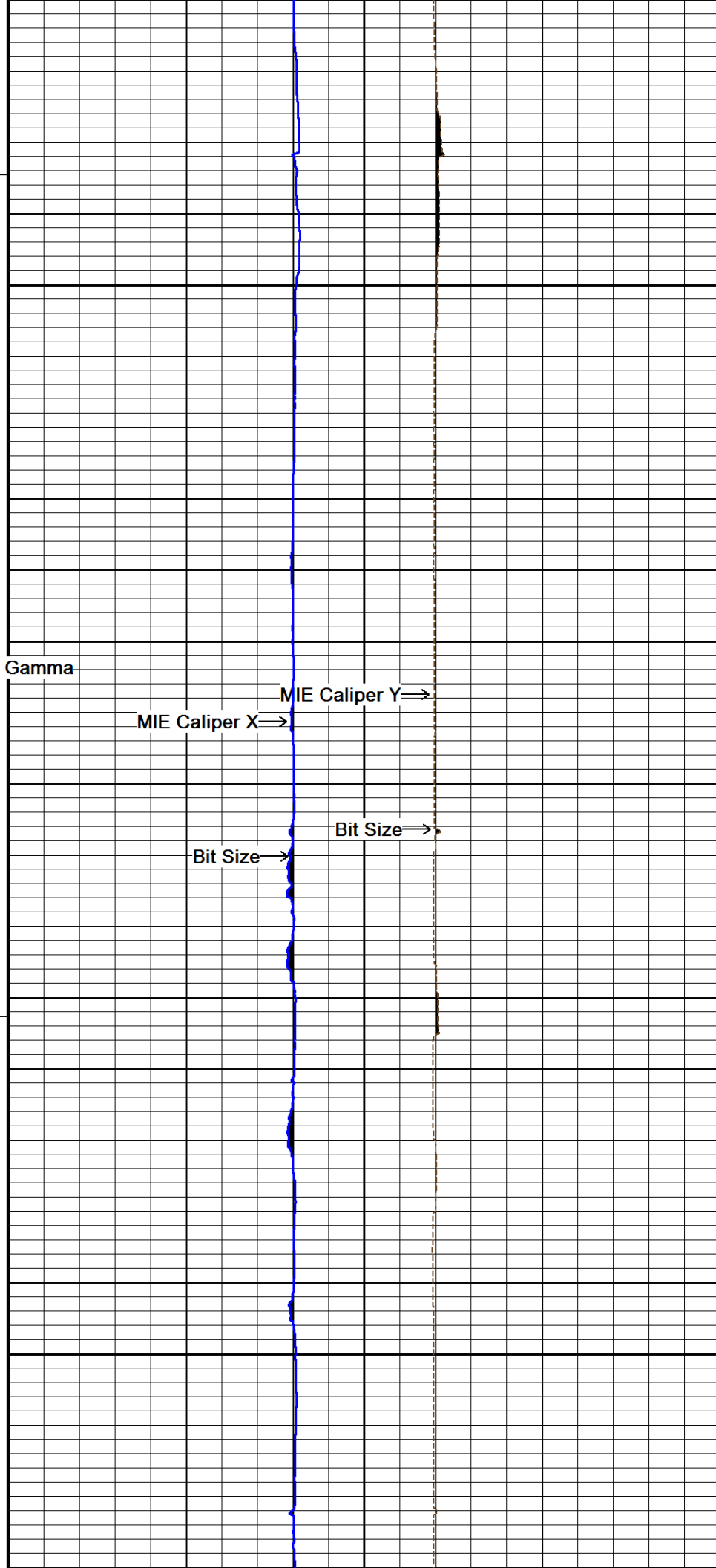
← Density Caliper

211°

6750

211°

6800

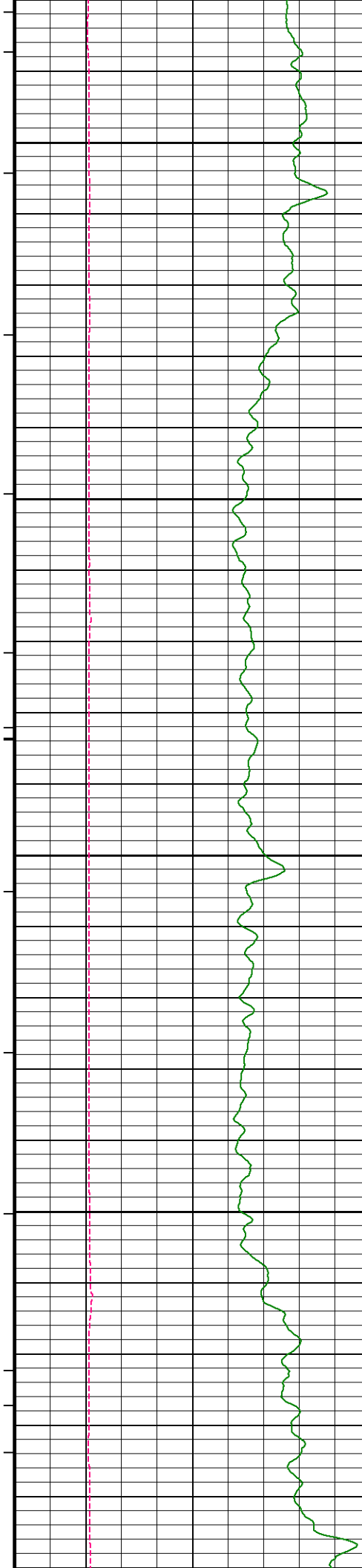


MIE Caliper Y⇒

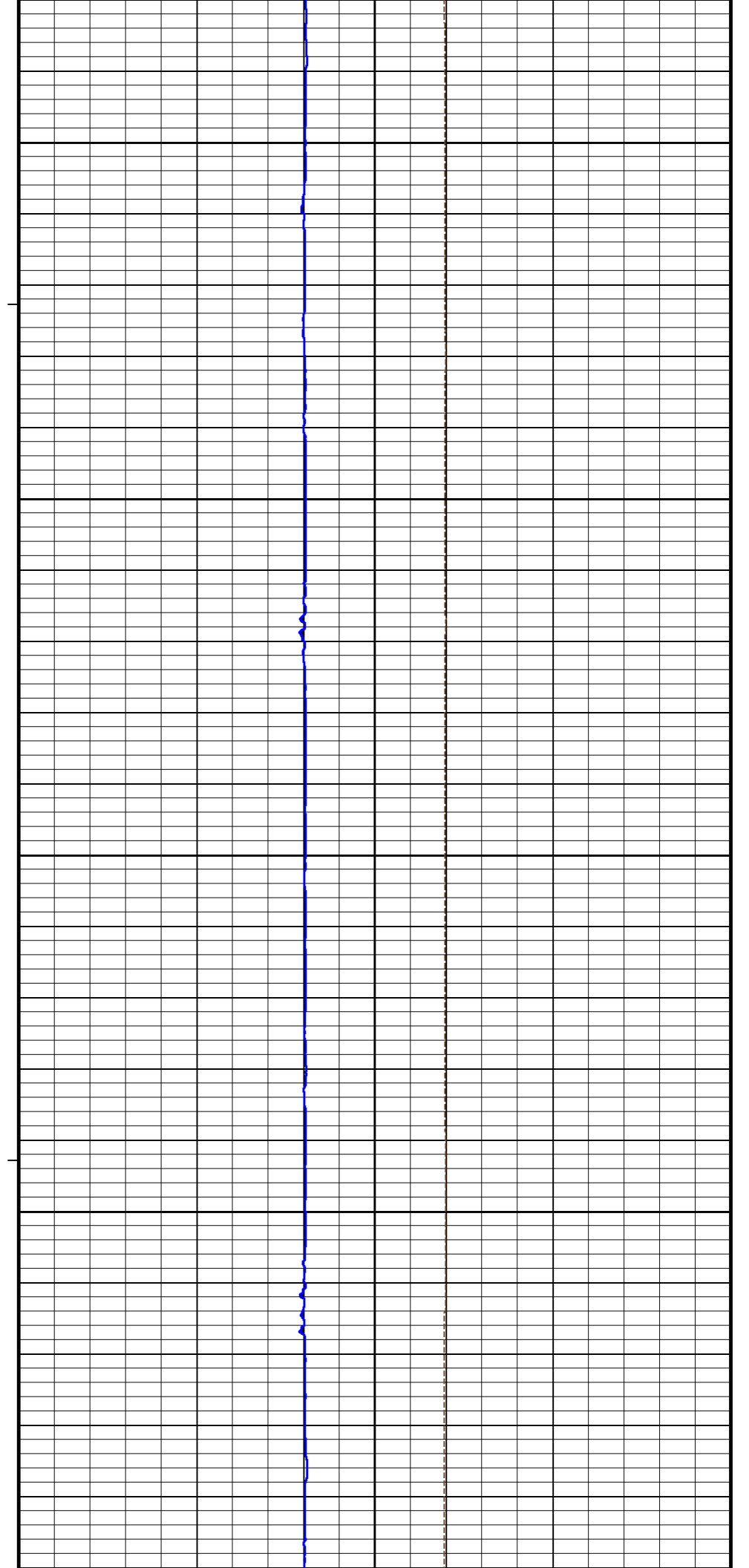
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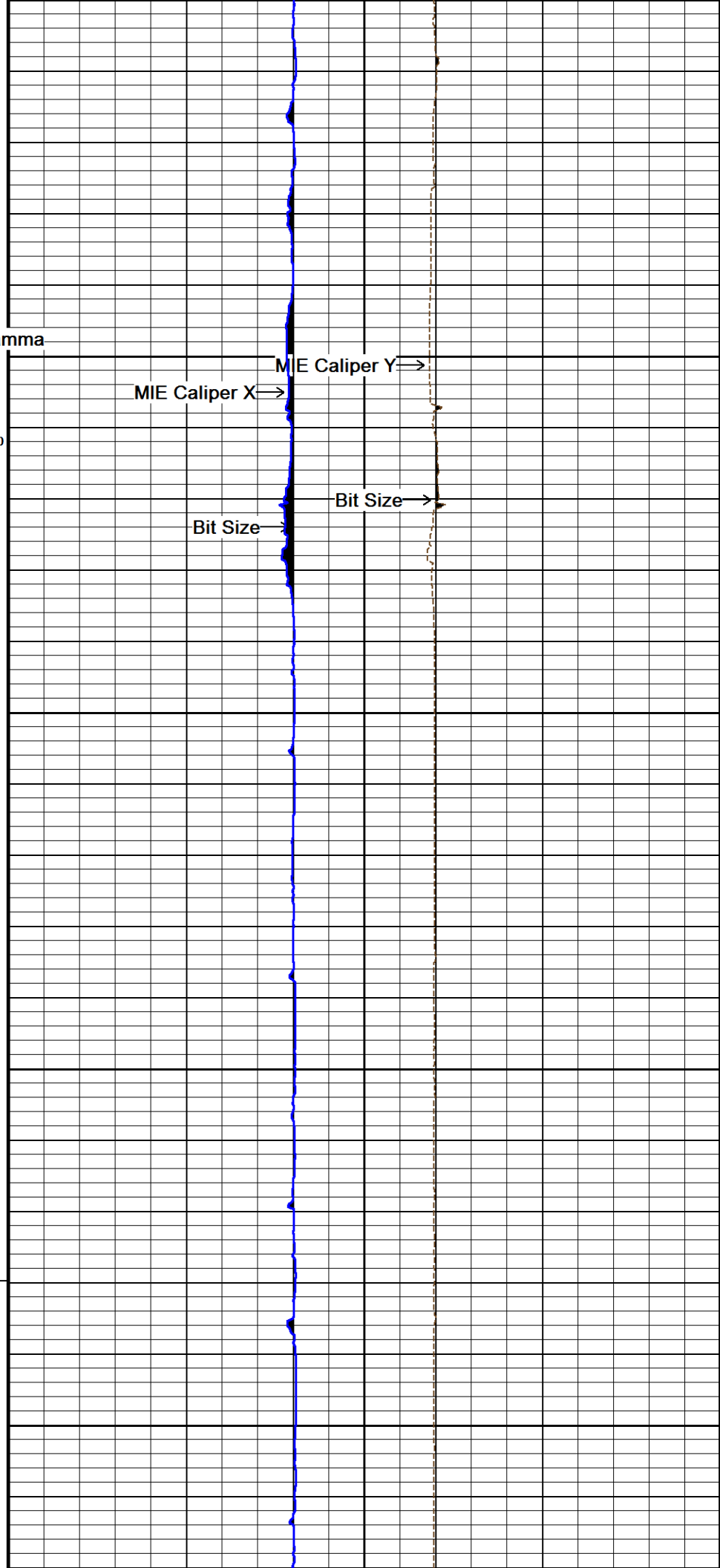
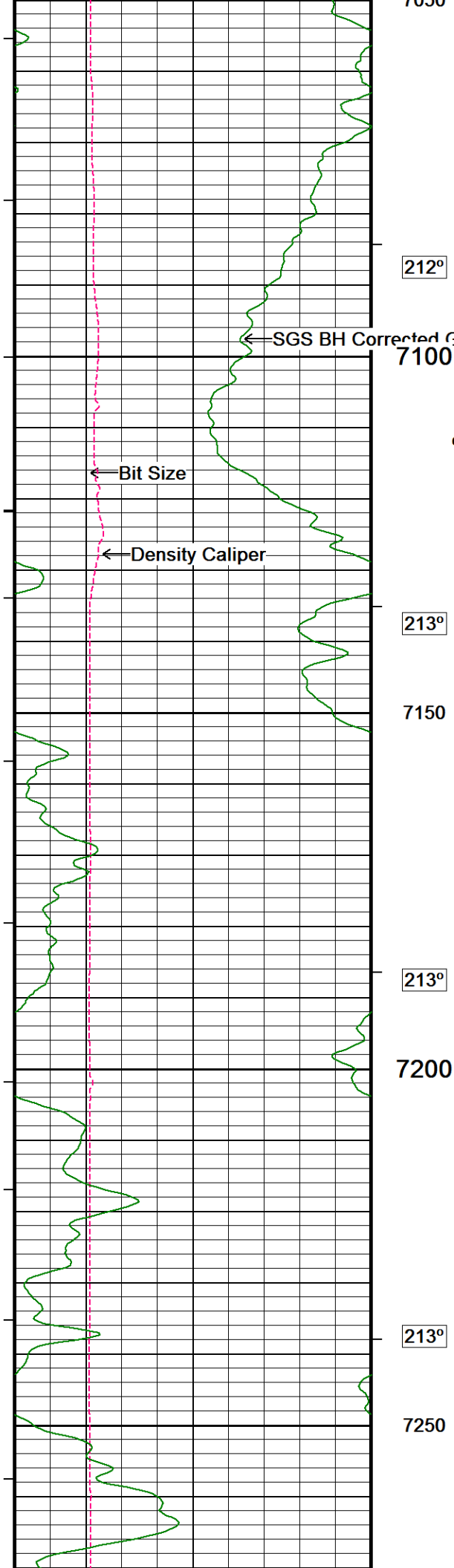
Bit Size⇒

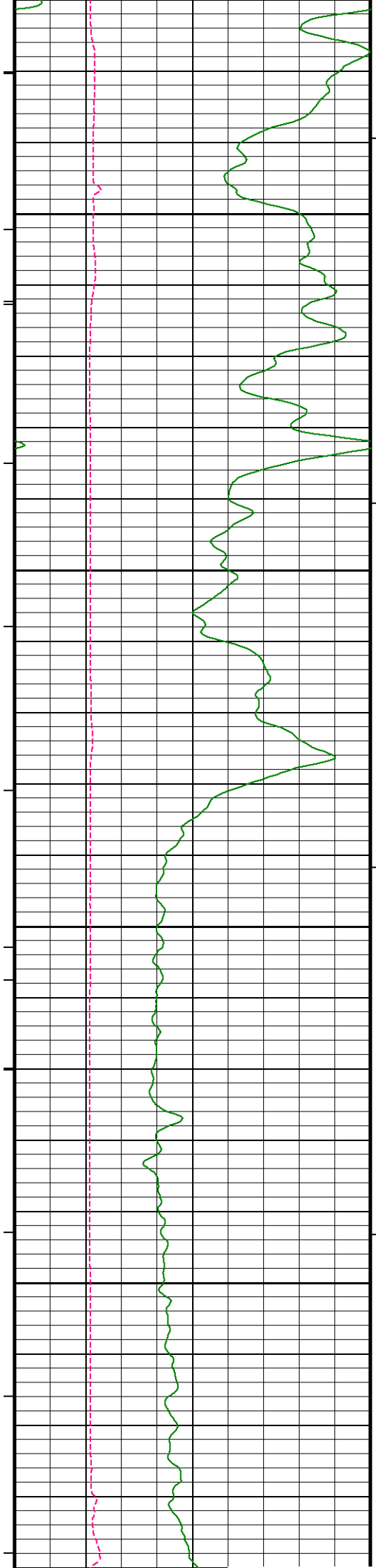
Bit Size⇒



212°
6850
212°
6900
212°
6950
212°
7000
1400
212°
7050







213°

7300

213°

7350

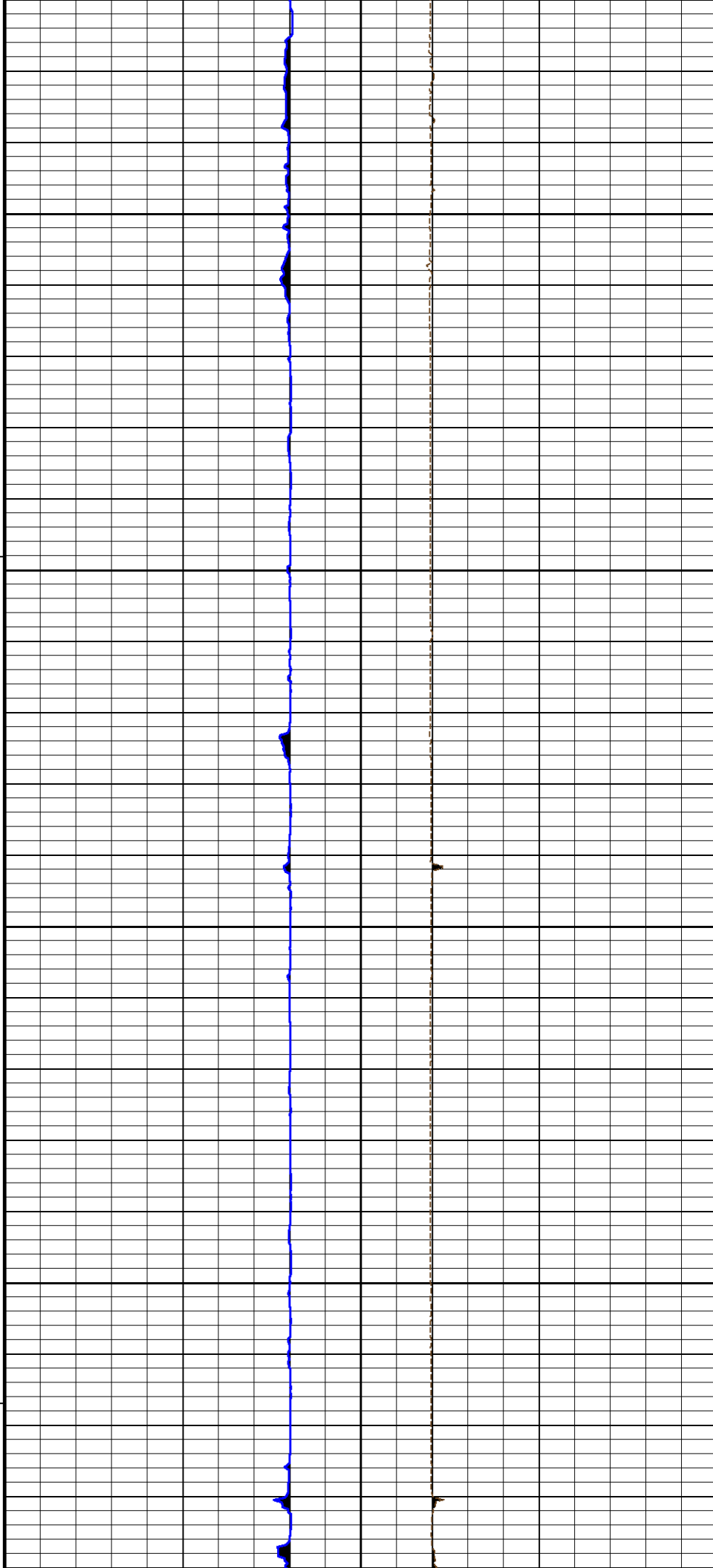
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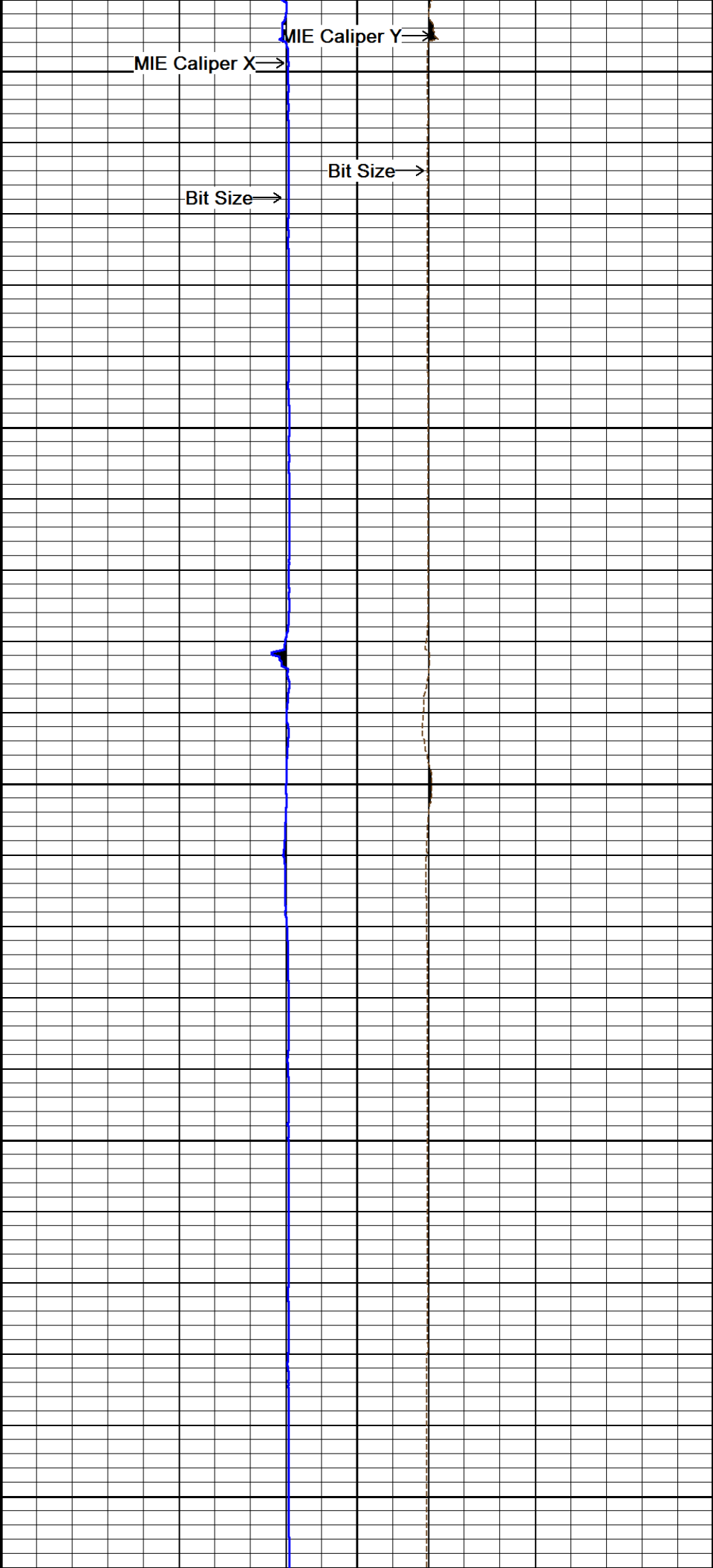
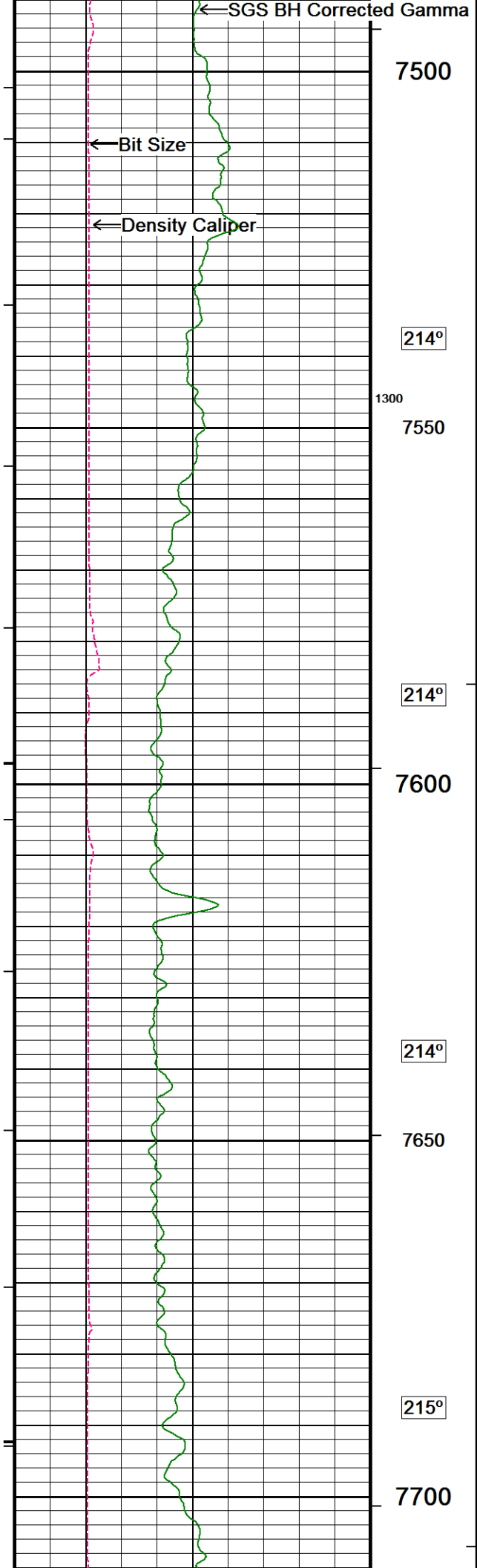
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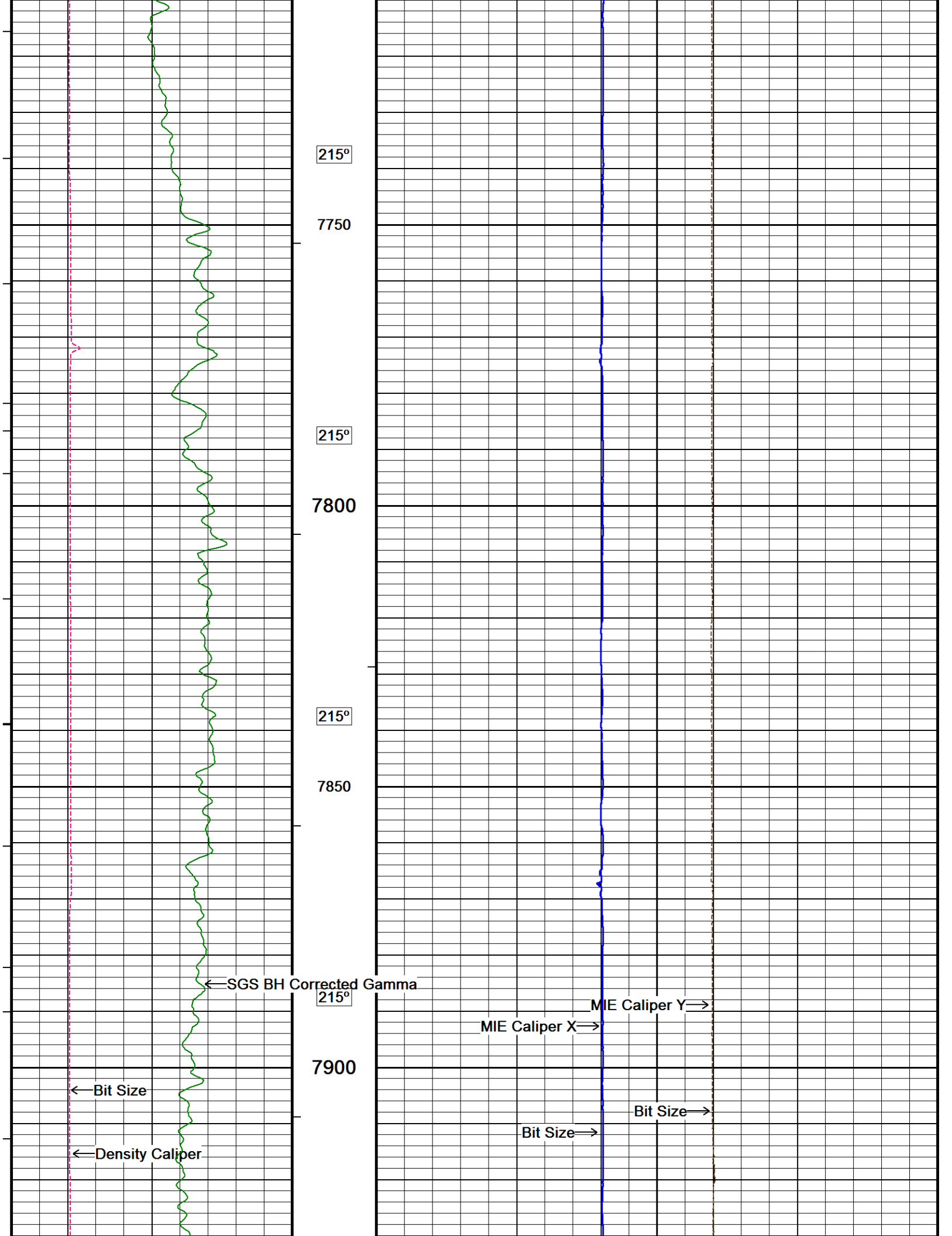
214°

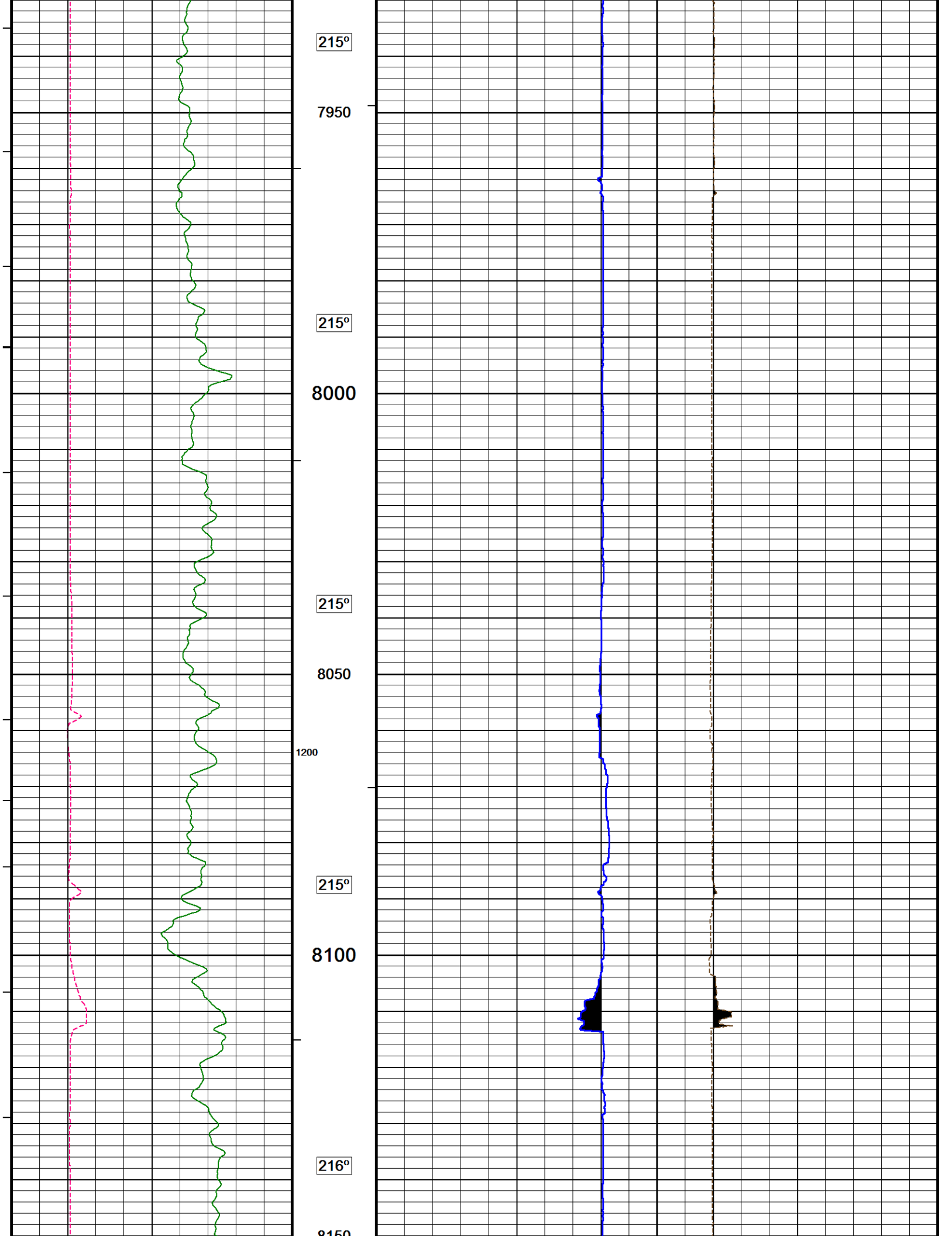
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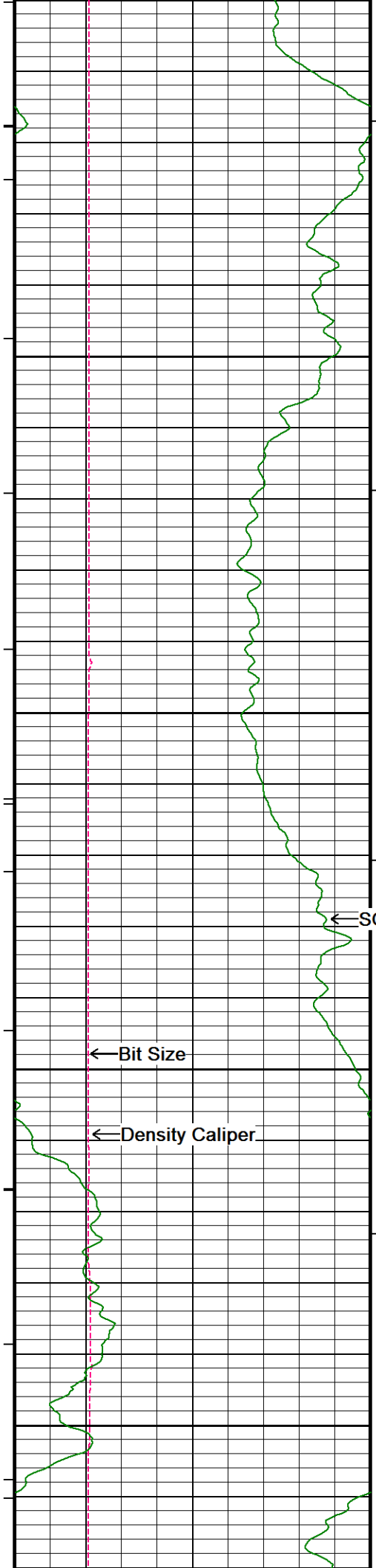
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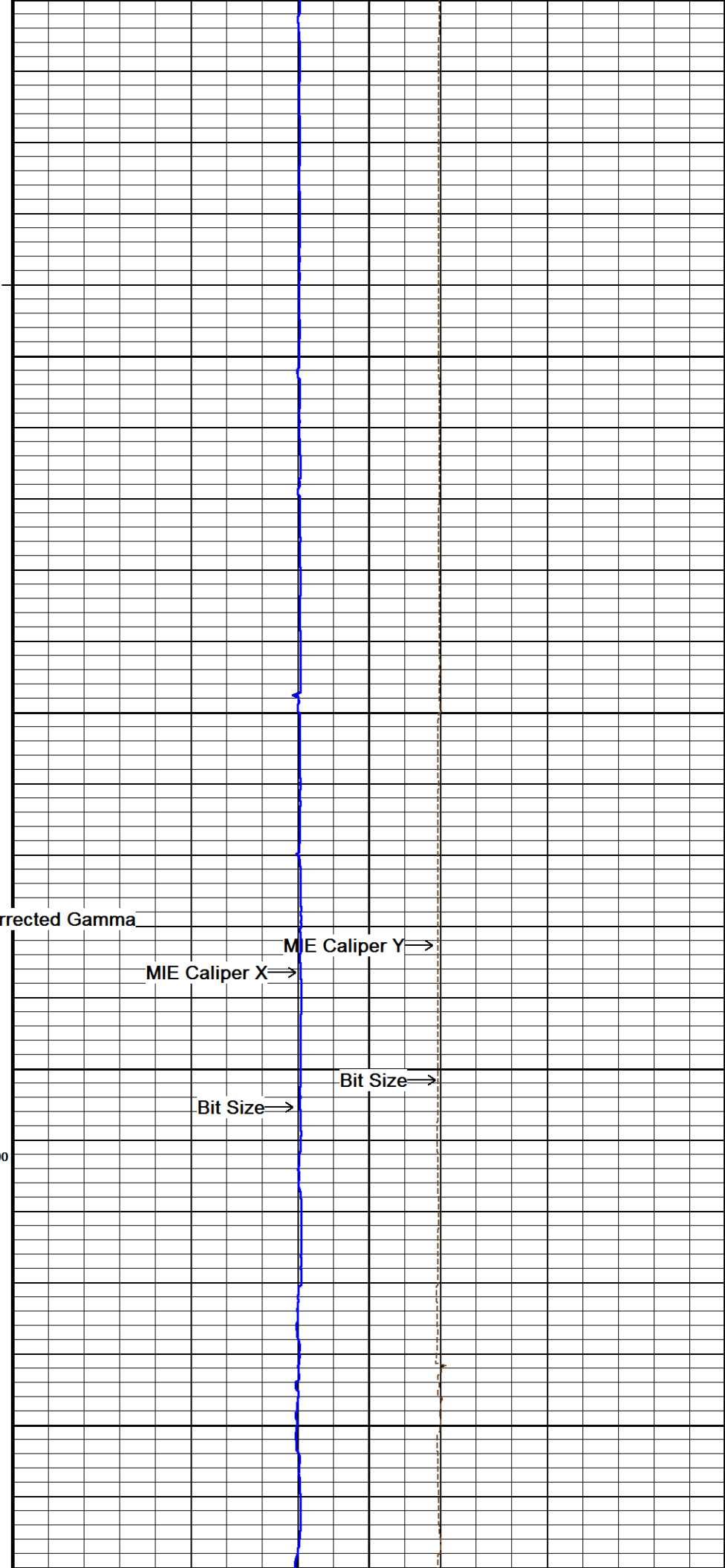




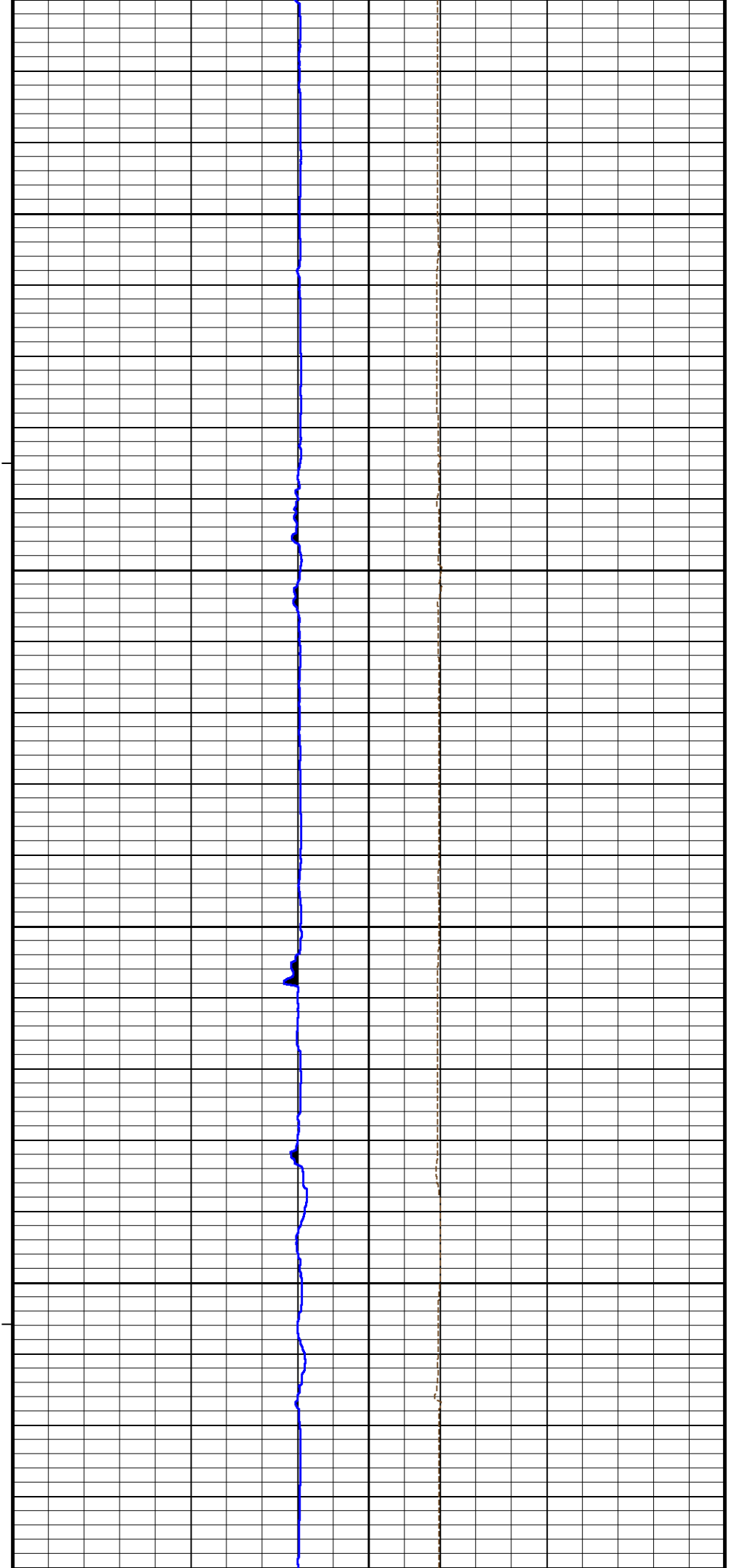
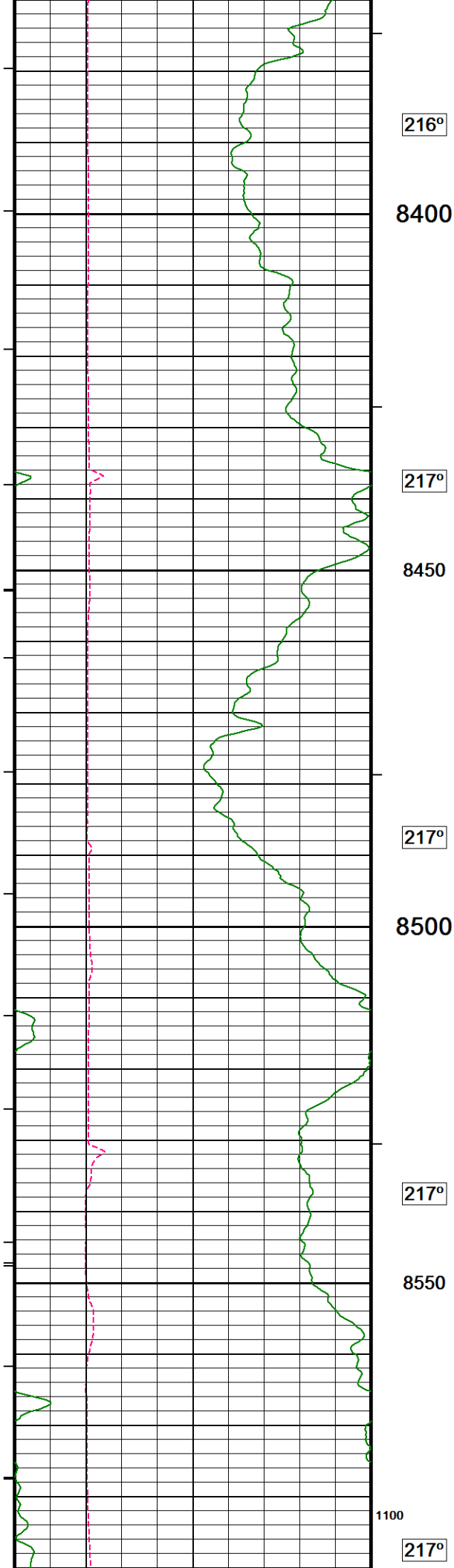


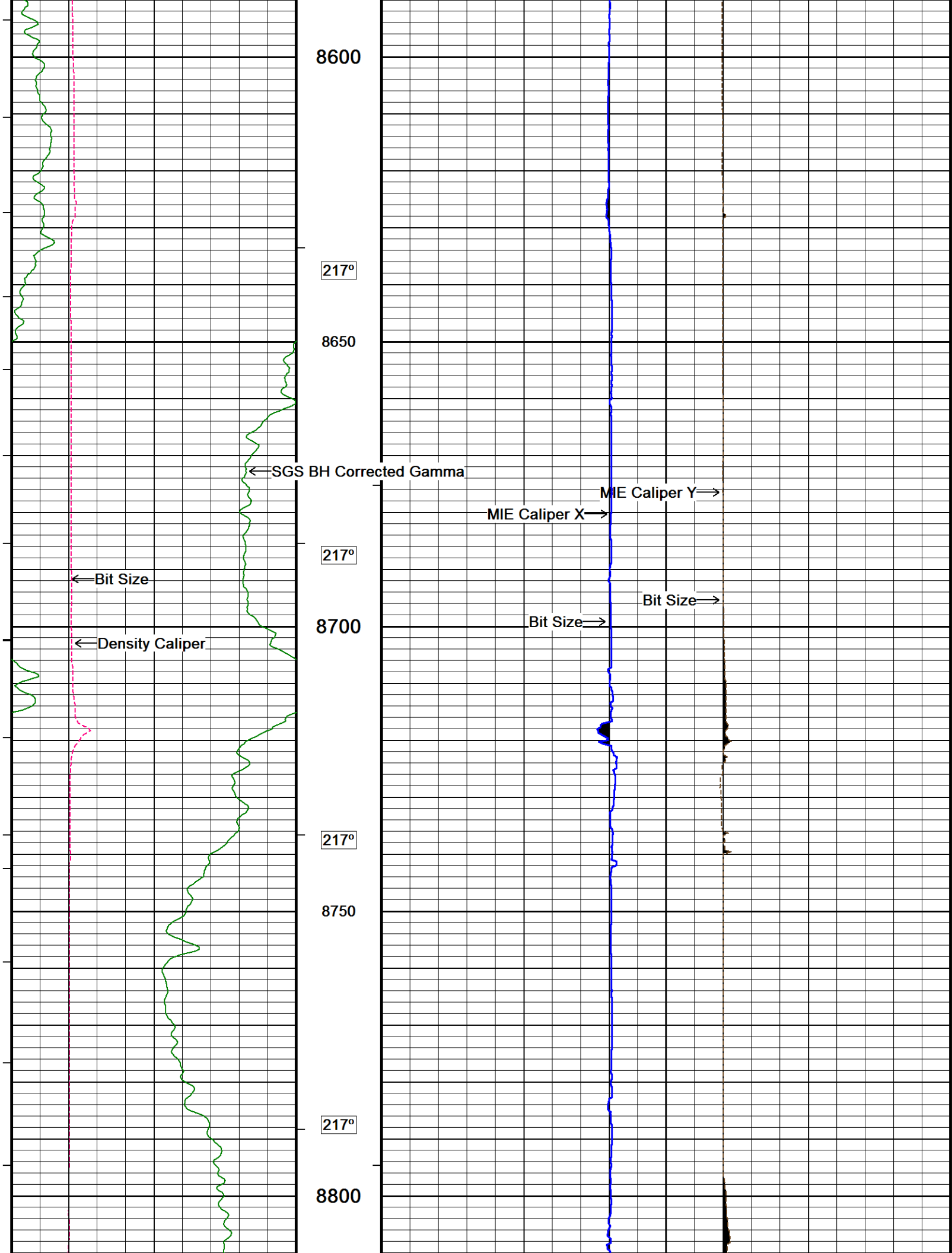


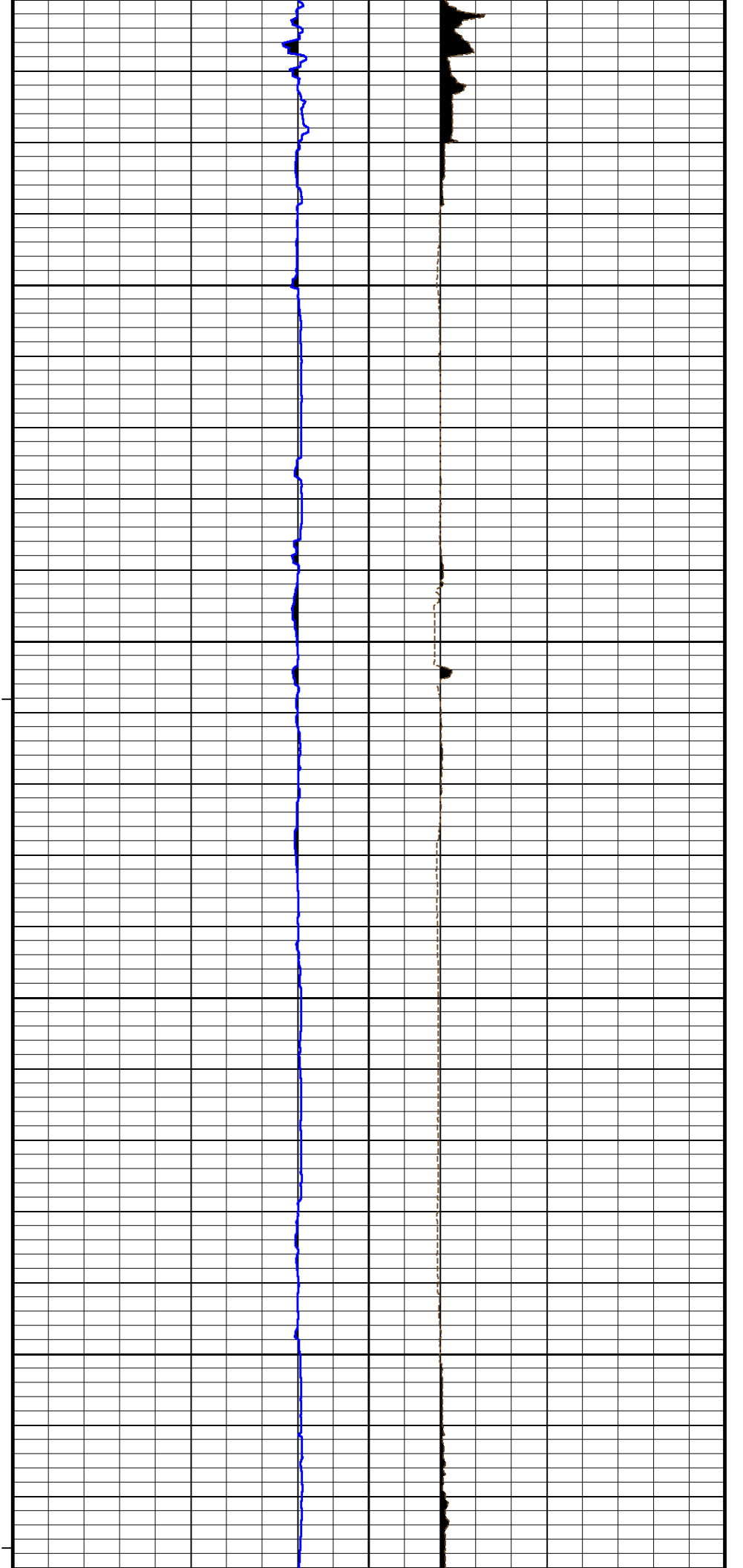
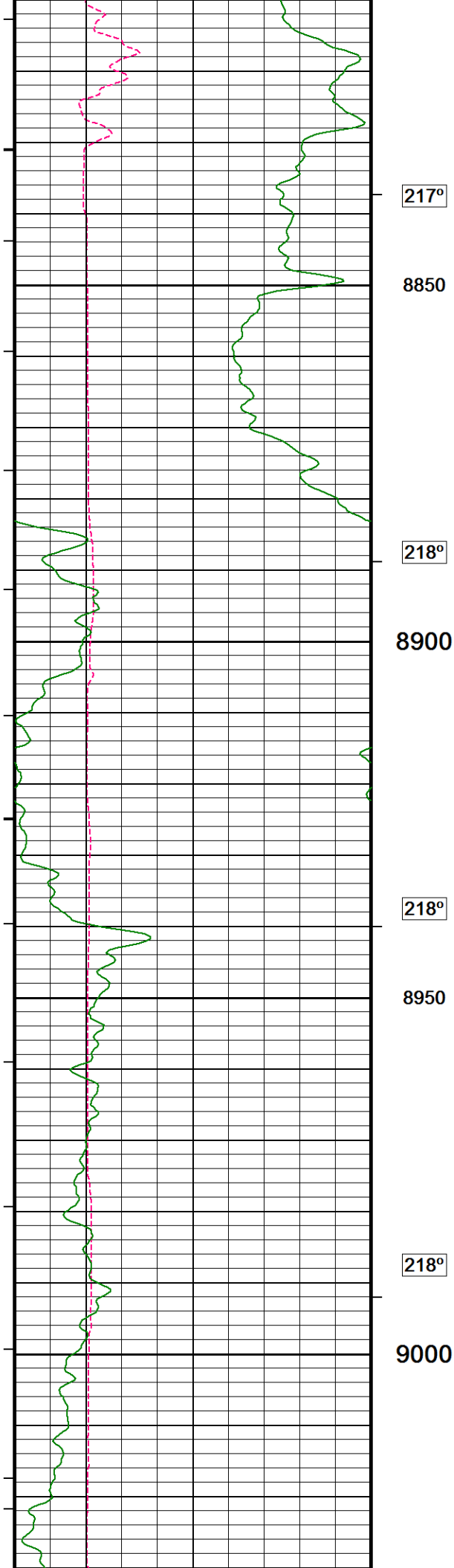
8150
216°
8200
216°
8250
←SGS BH Corrected Gamma
216°
8300
500
216°
8350

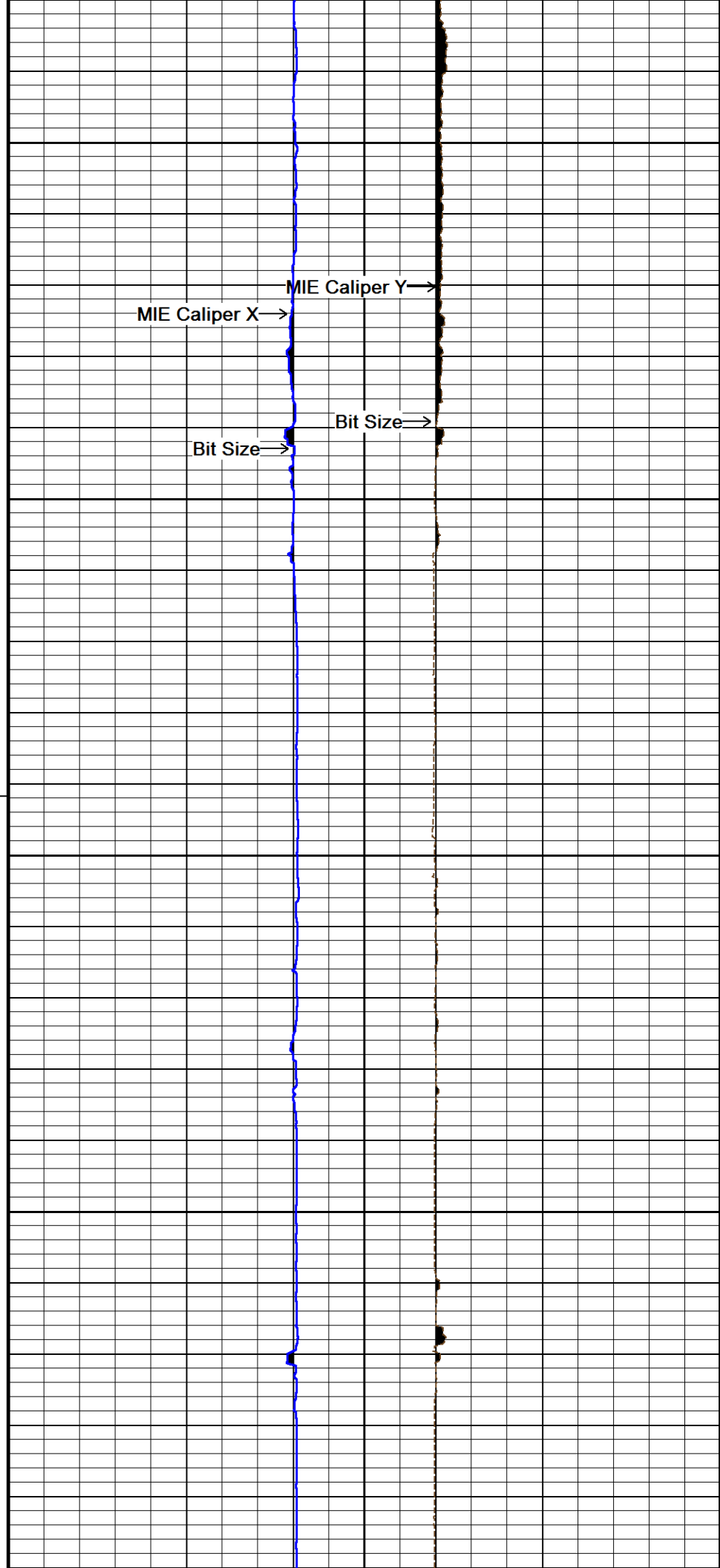
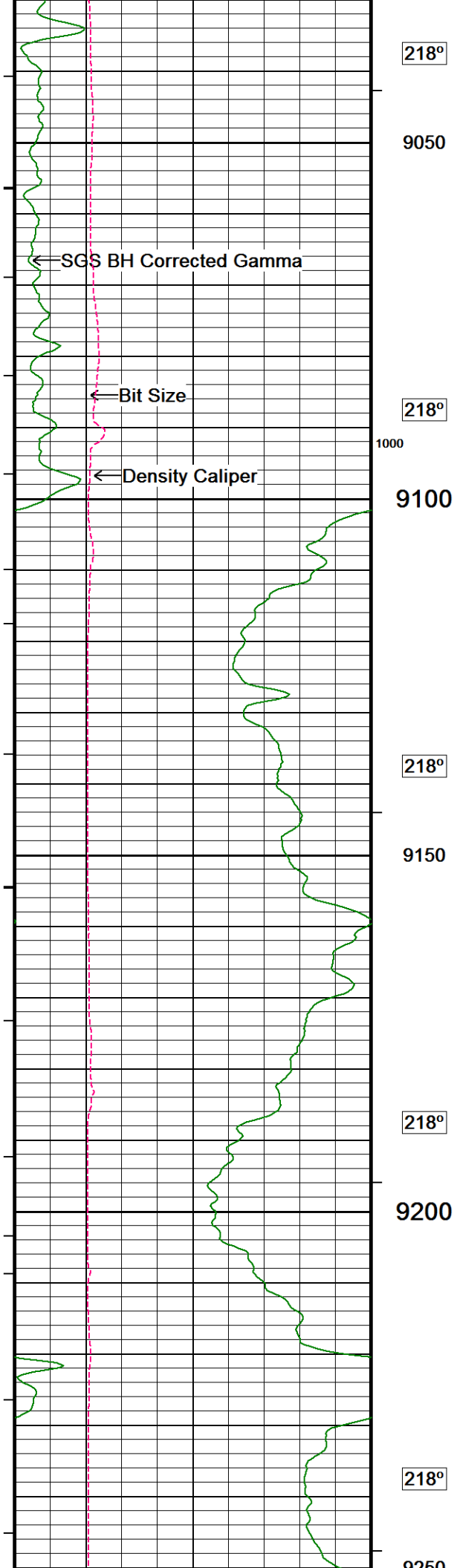


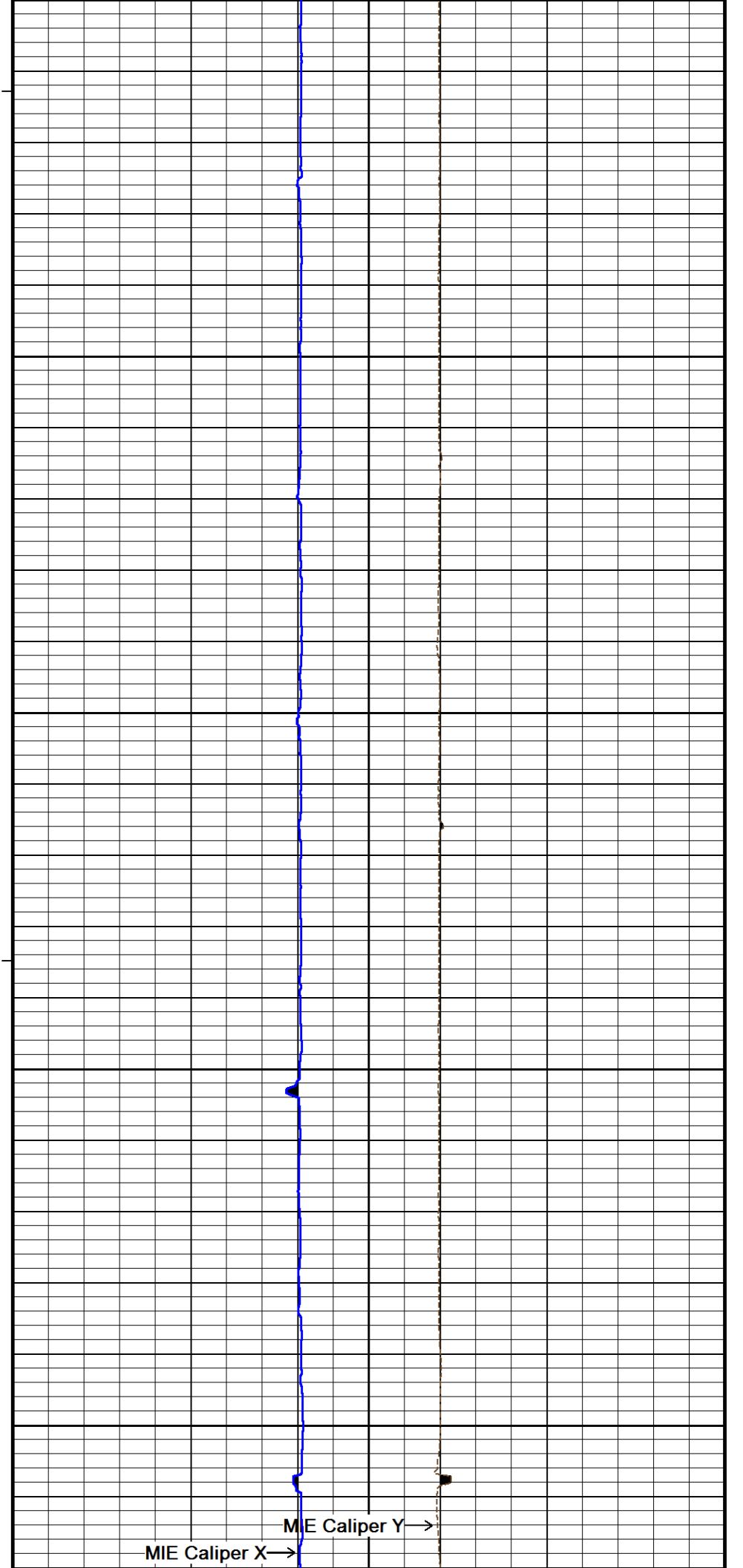
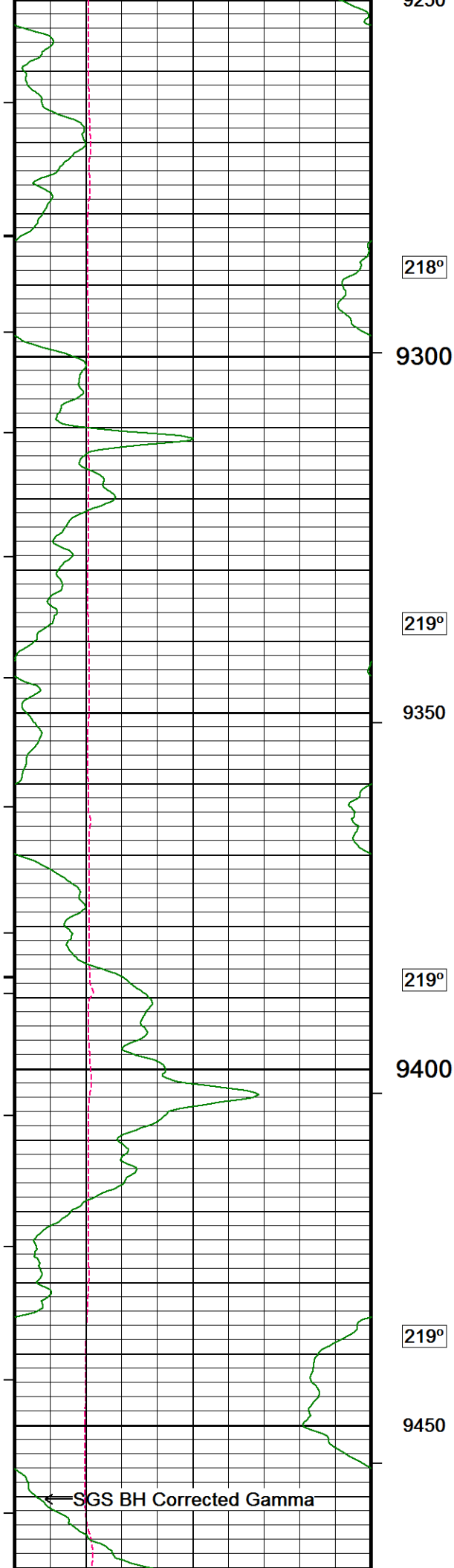
M/E Caliper Y→
M/E Caliper X→
Bit Size→
Bit Size→

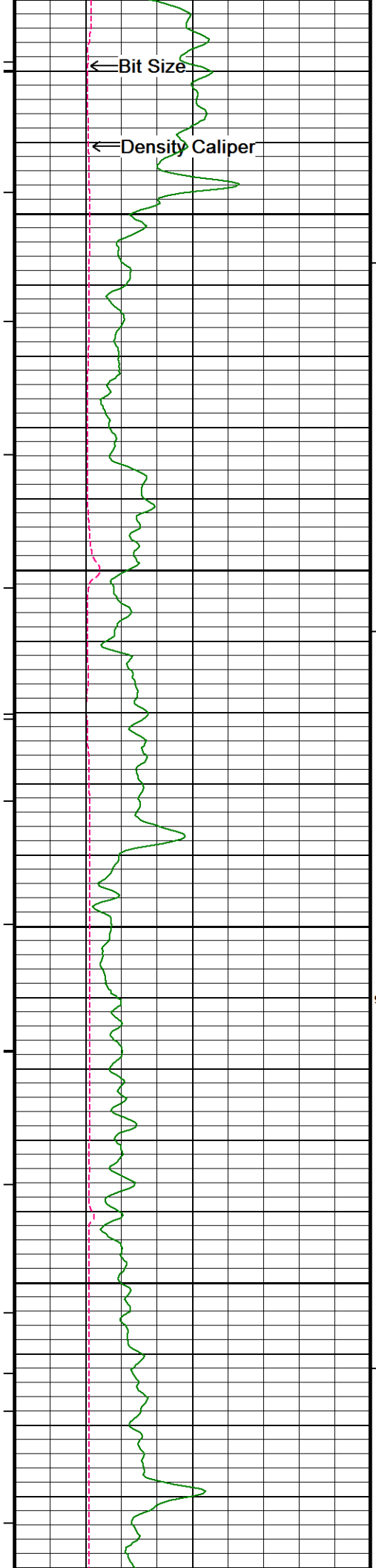




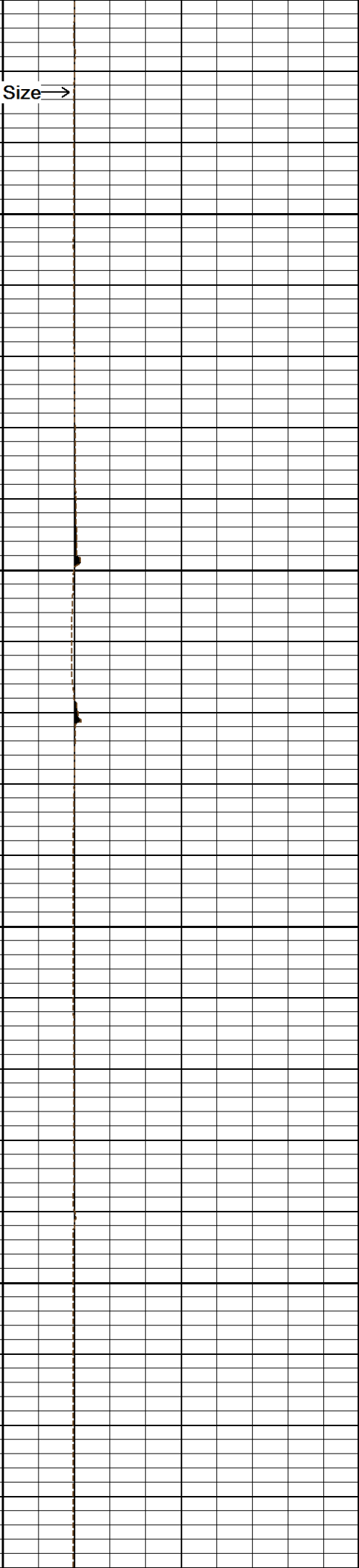
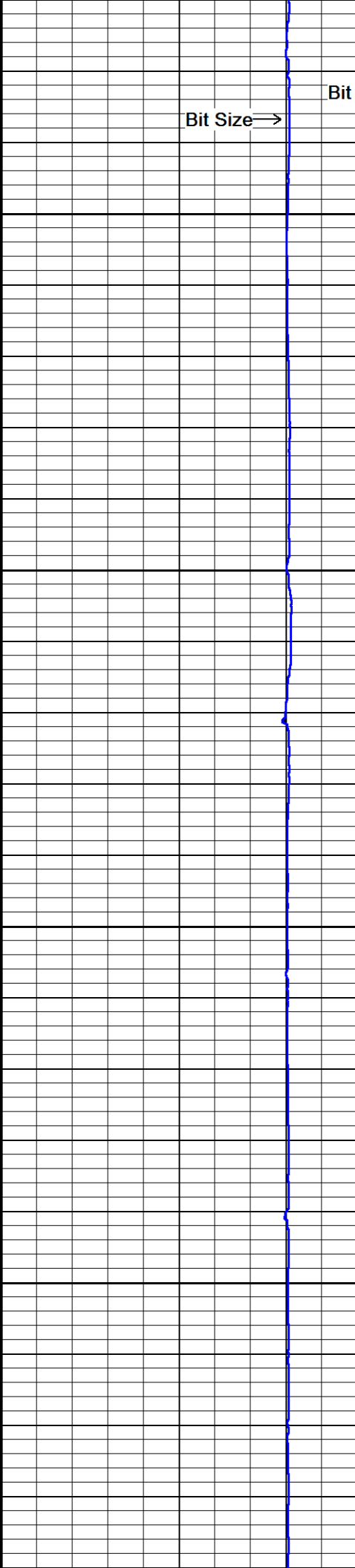


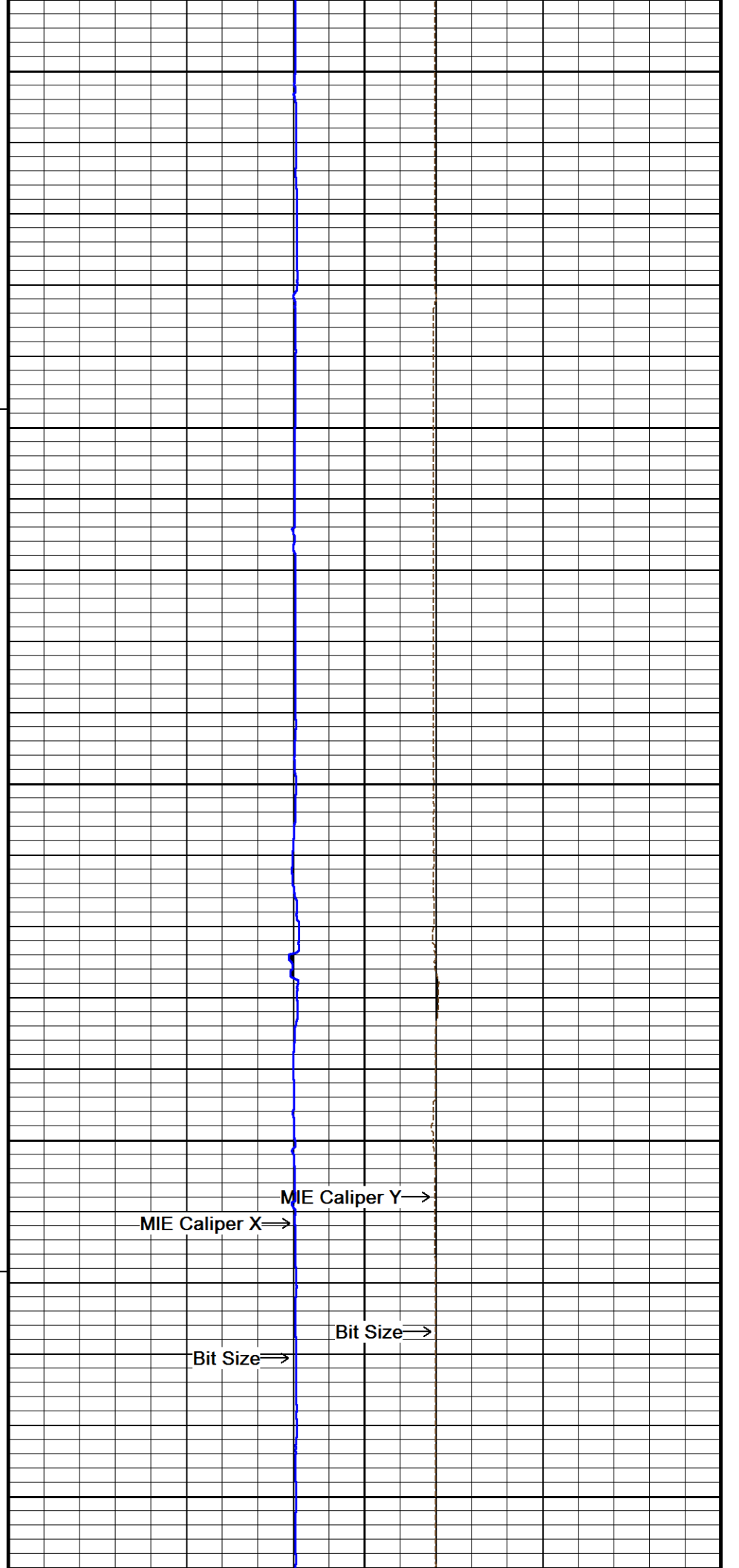
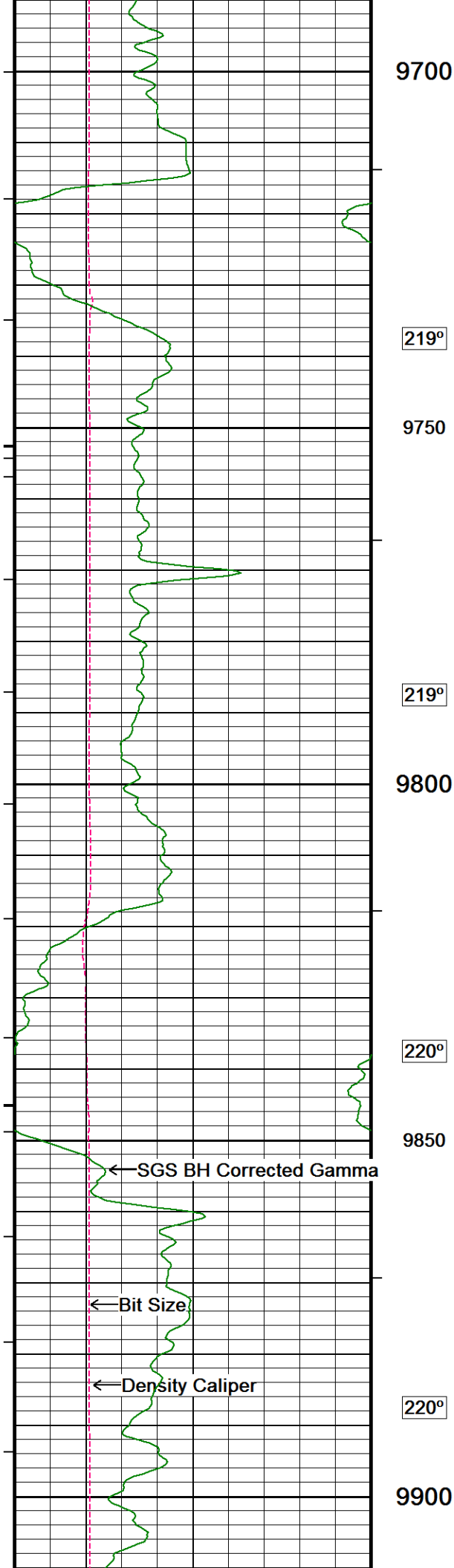


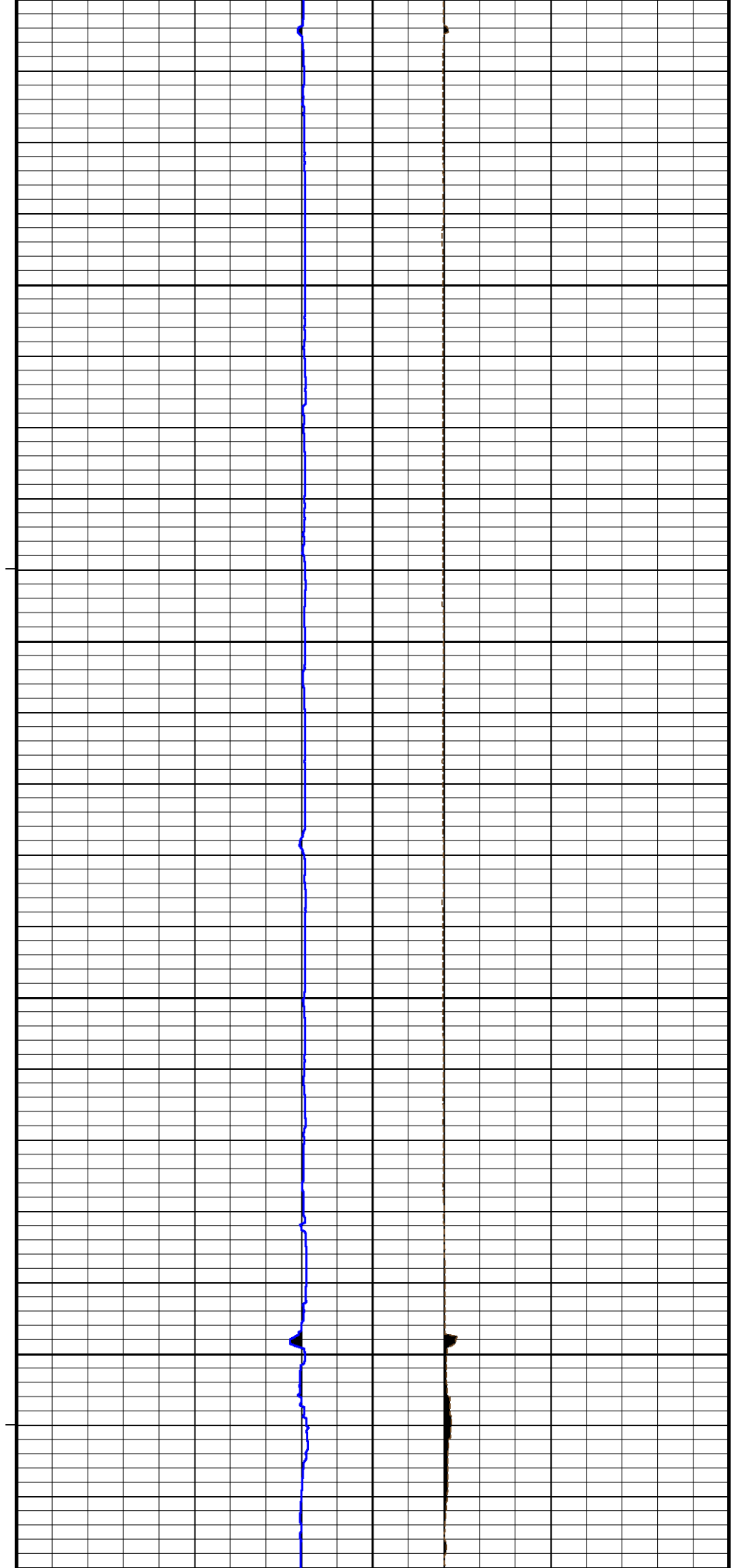
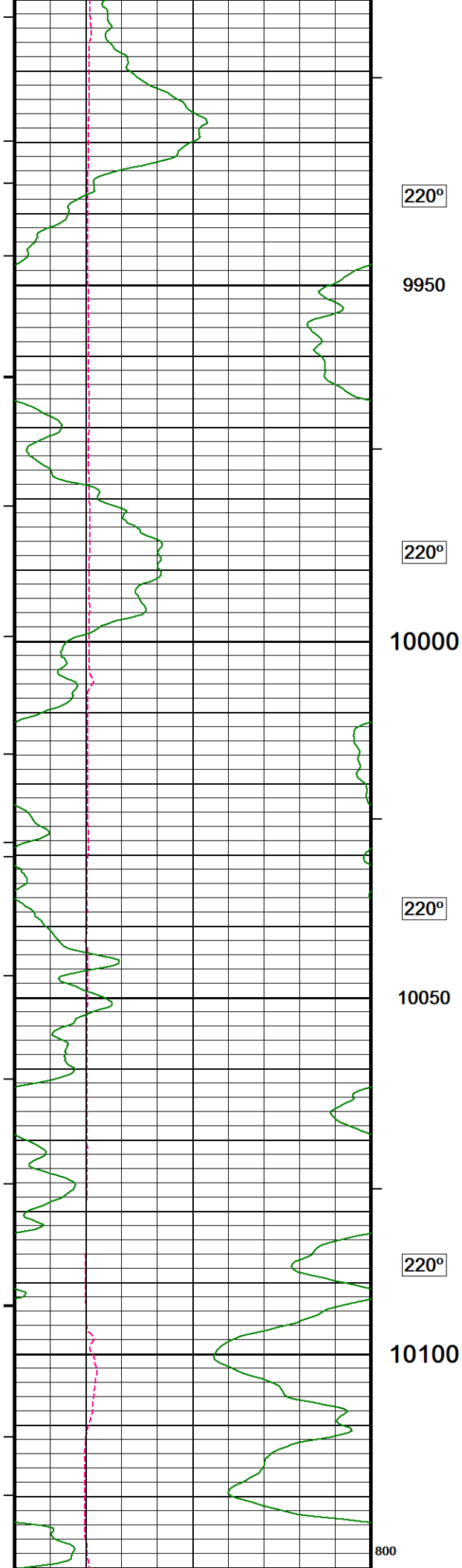


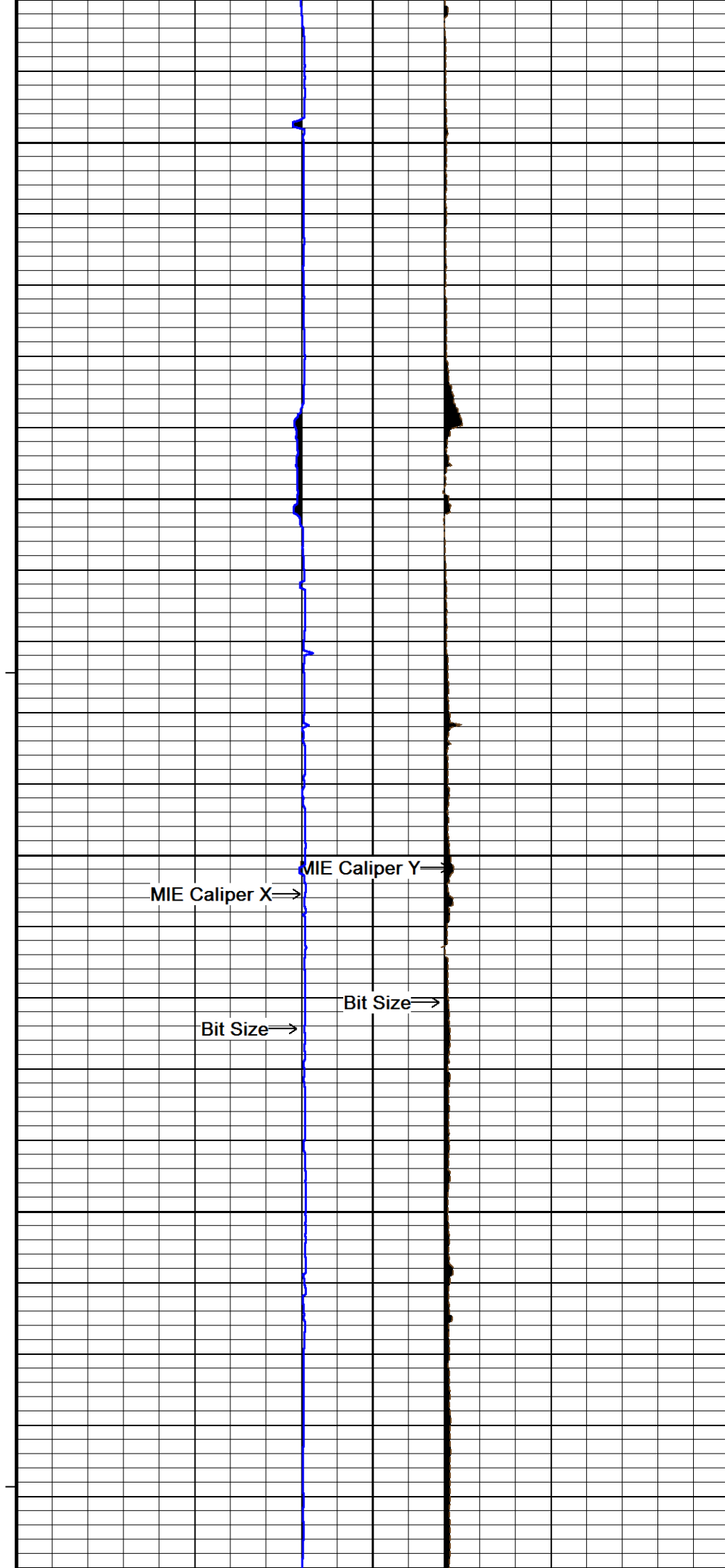
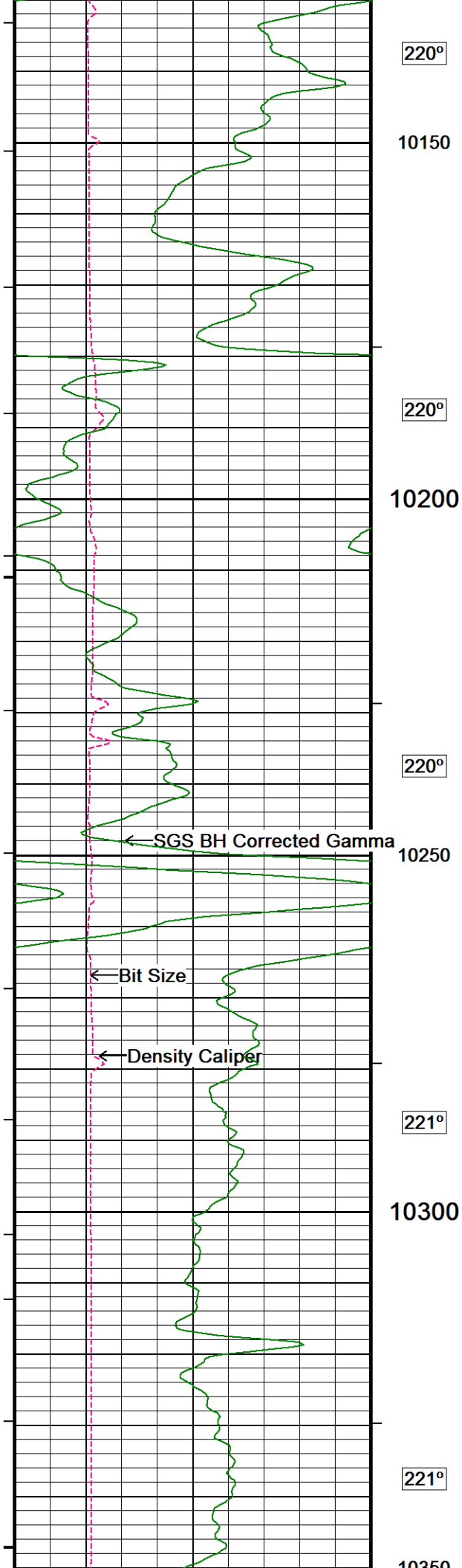


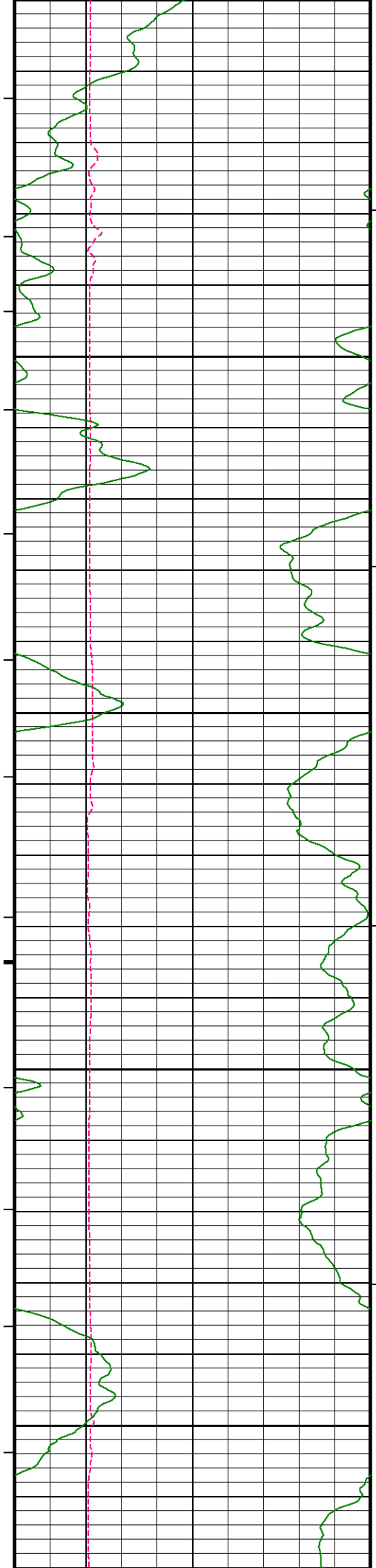
219°
9500
400
219°
9550
219°
9600
900
219°
9650
219°



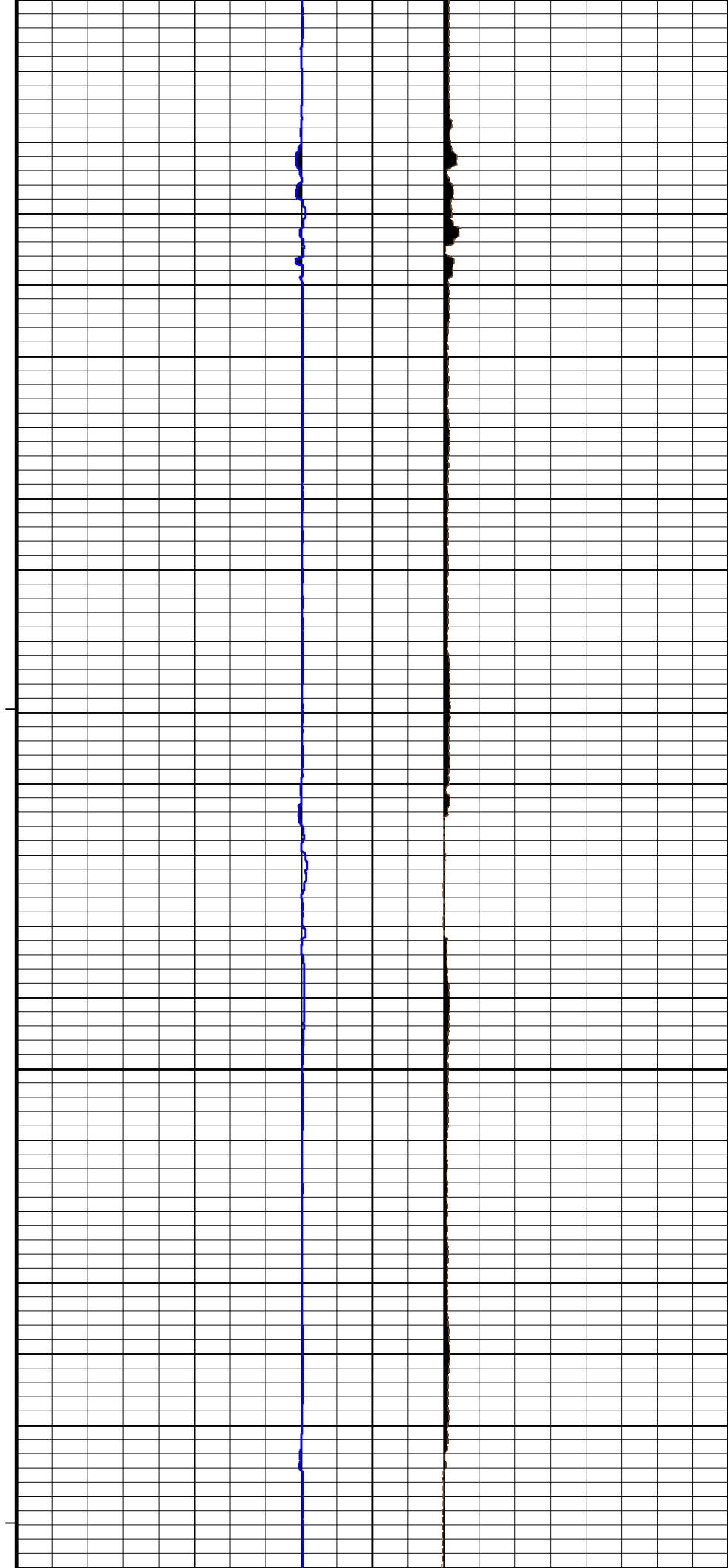


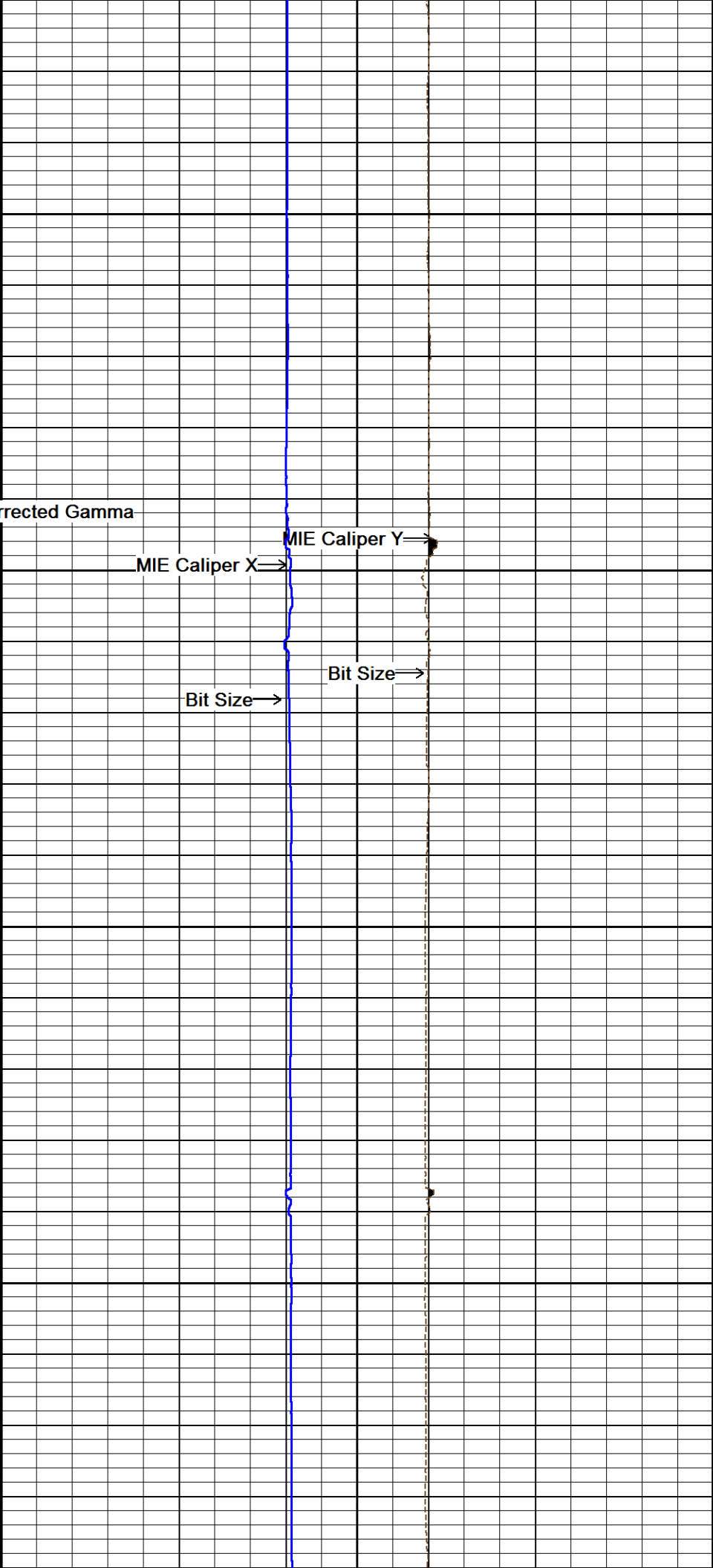
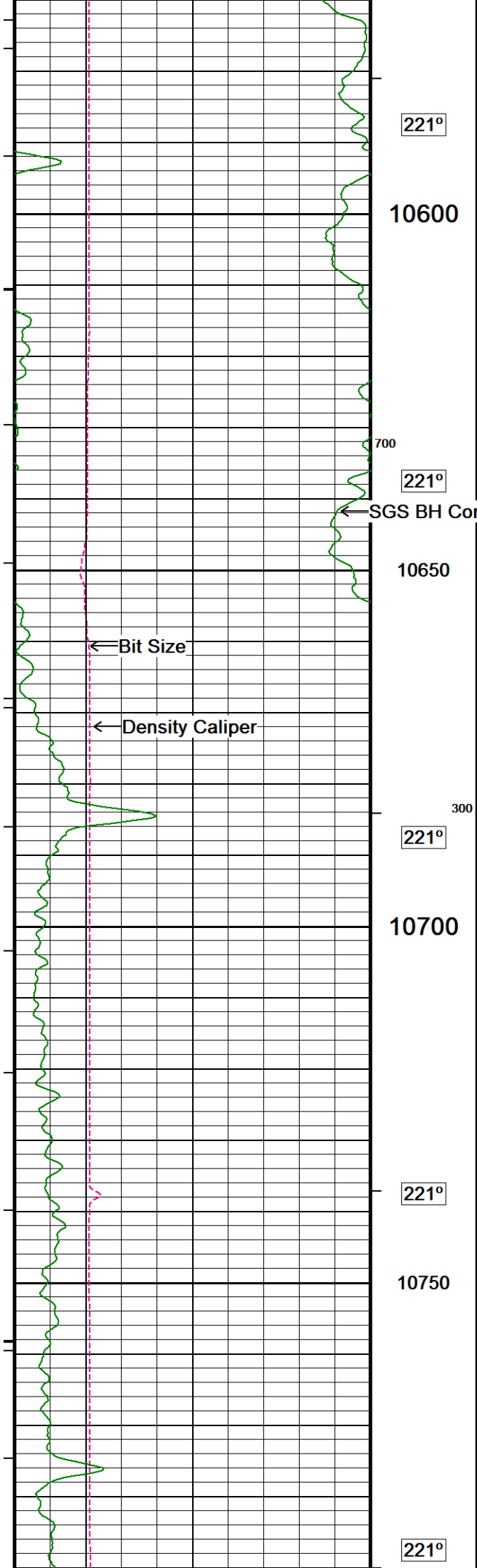


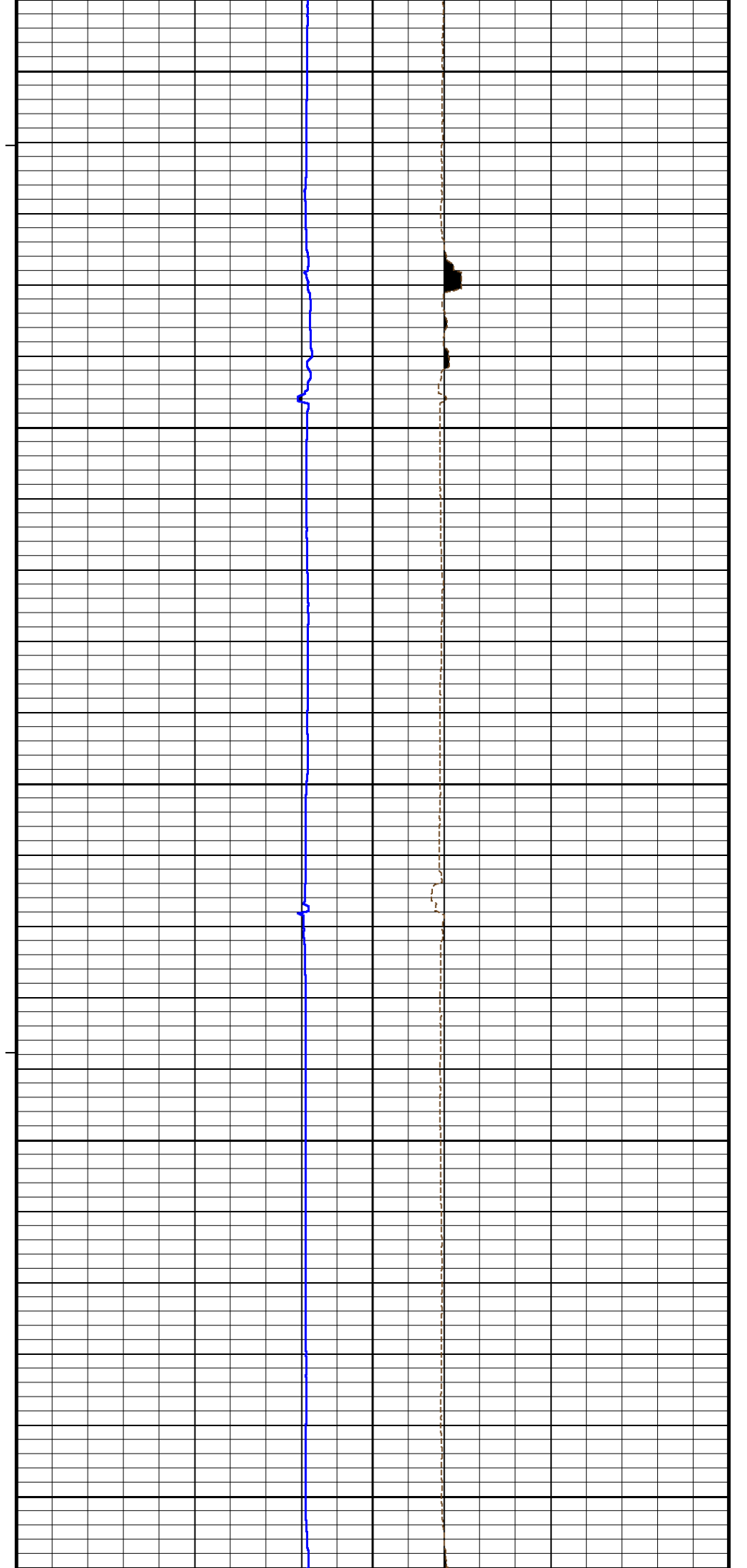
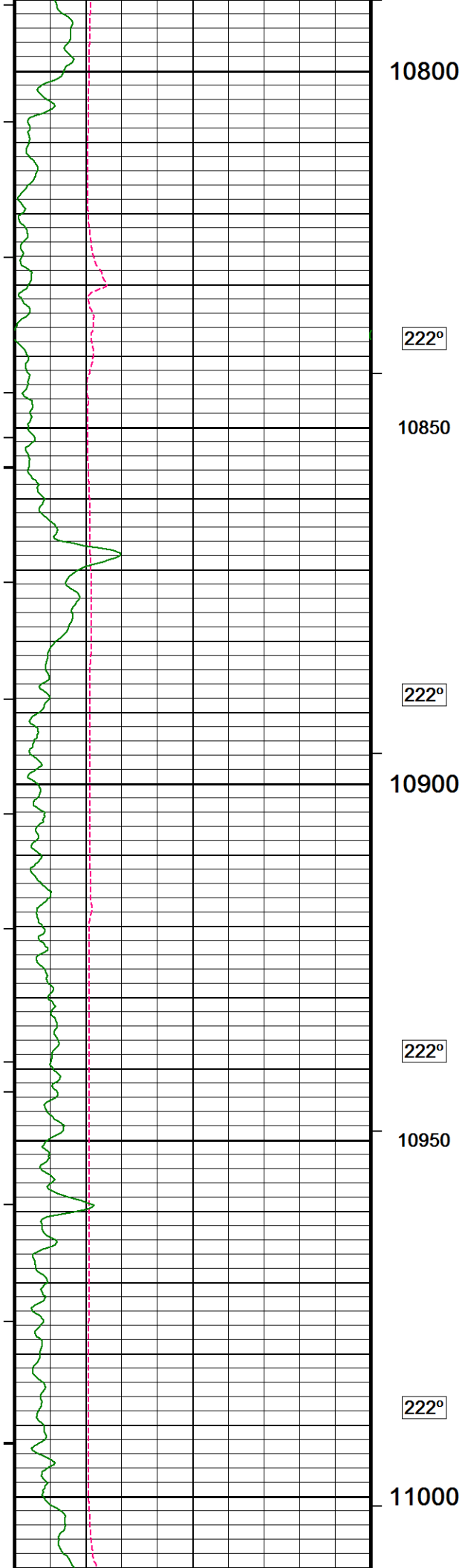


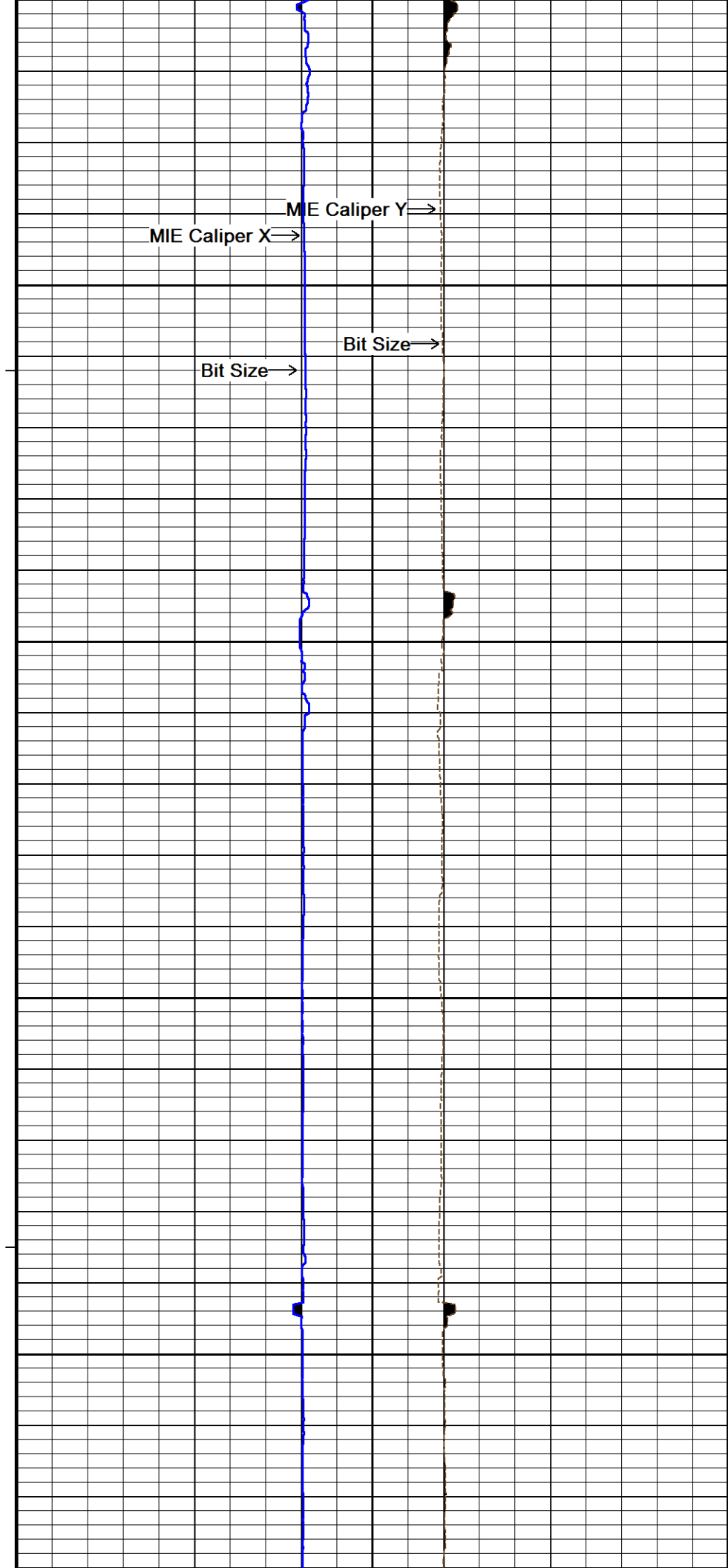
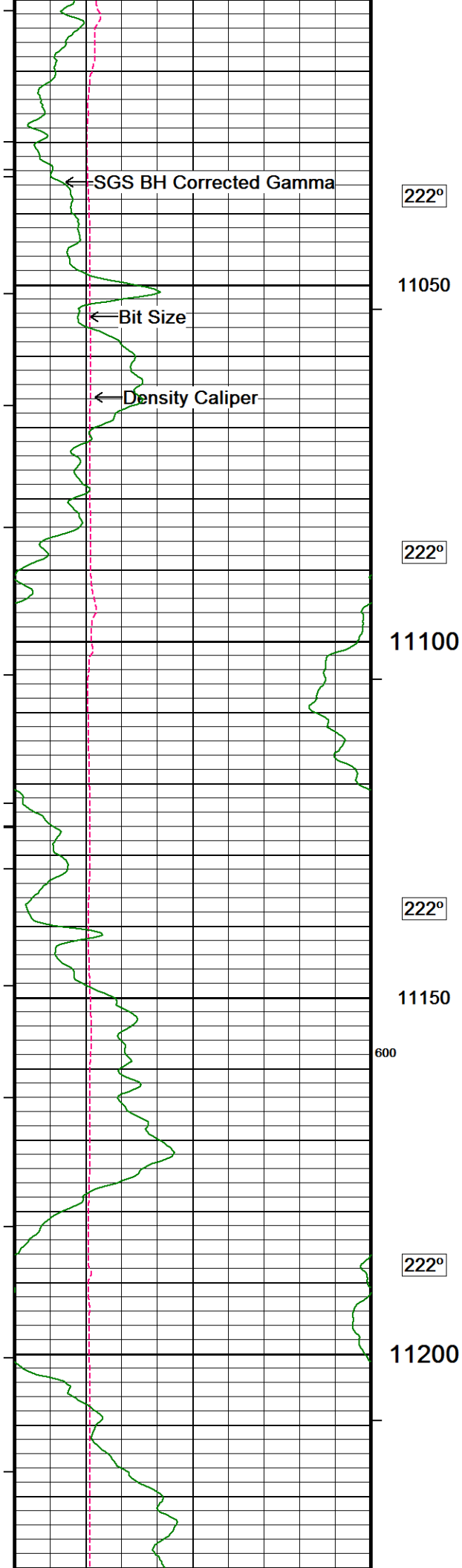


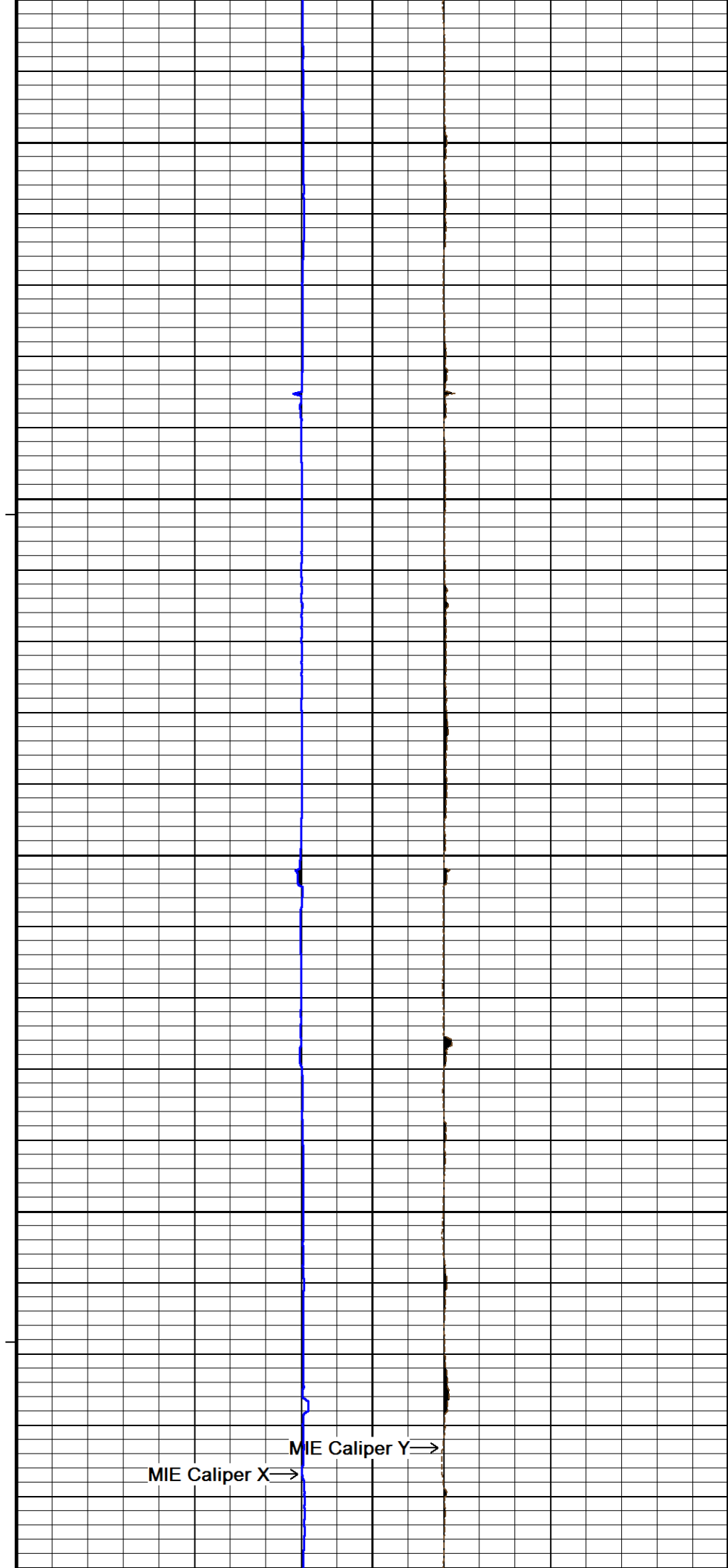
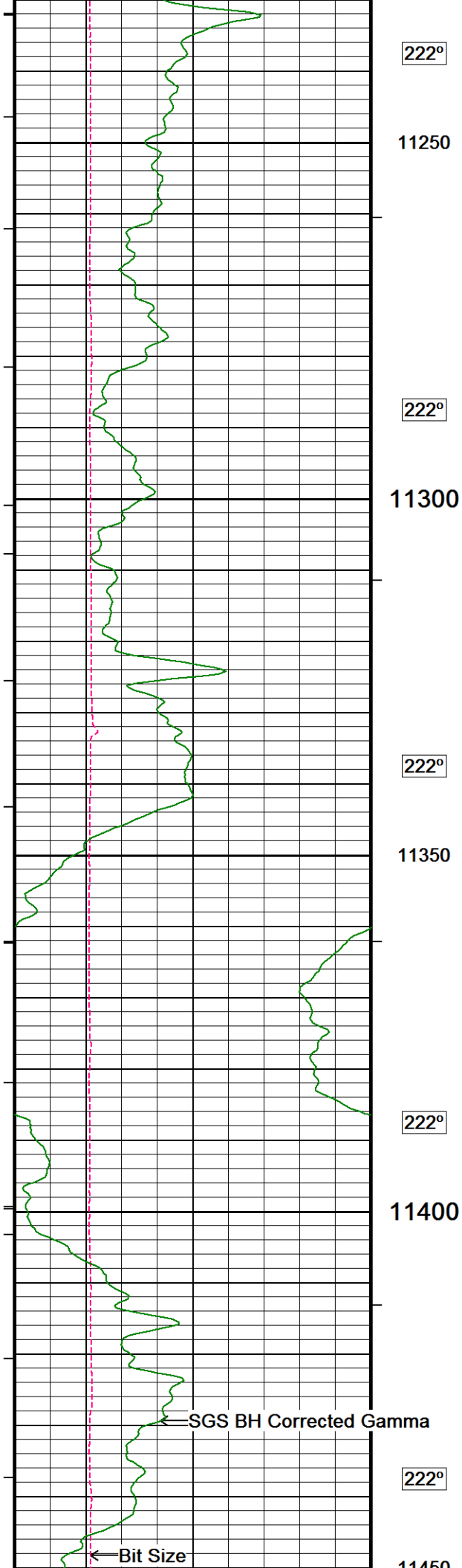
10350
221°
10400
221°
10450
221°
10500
221°
10550

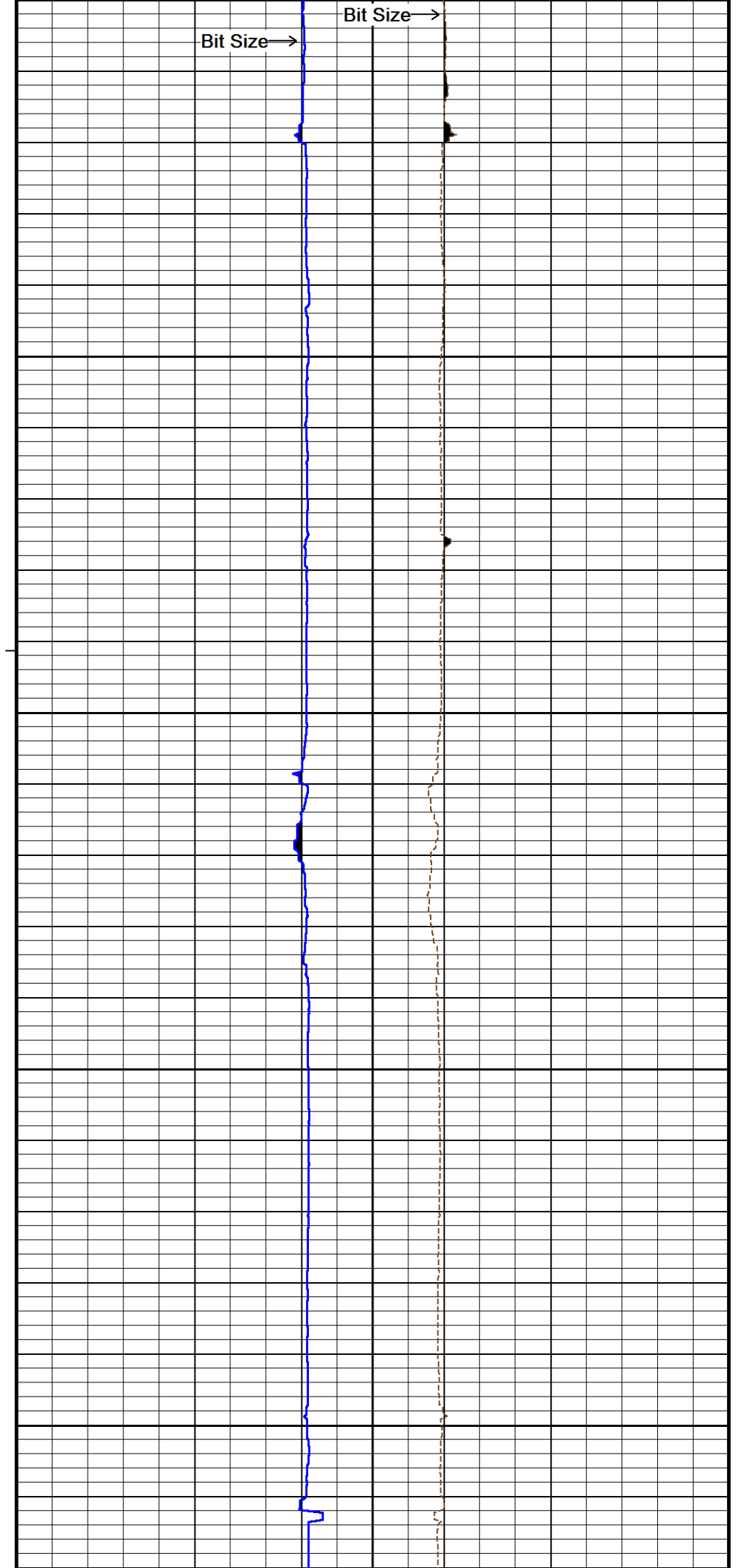
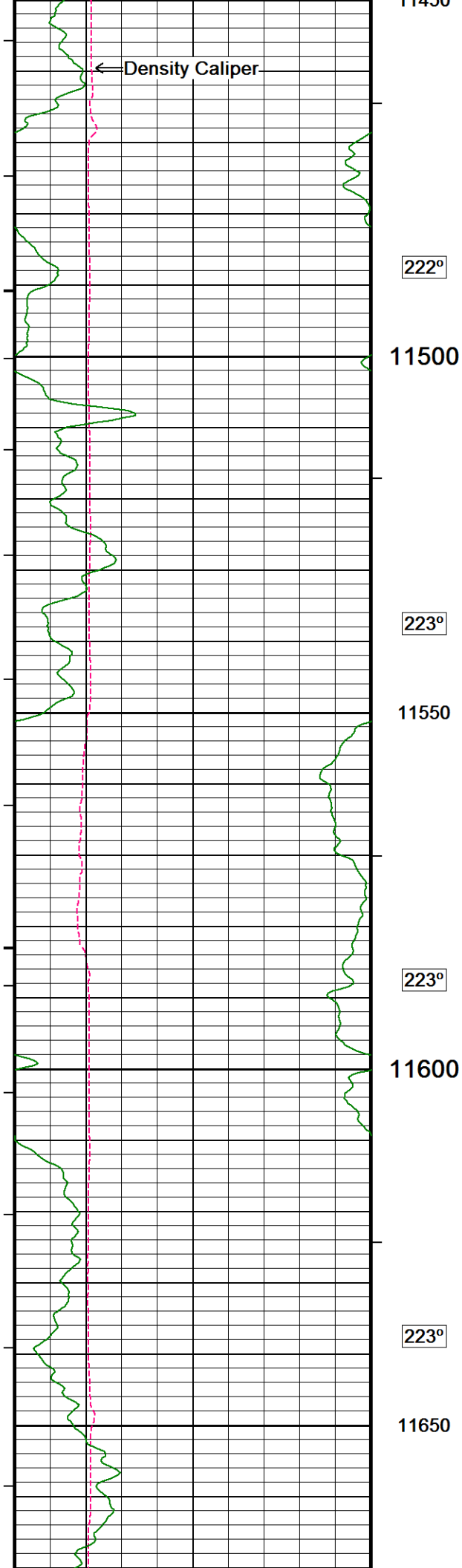


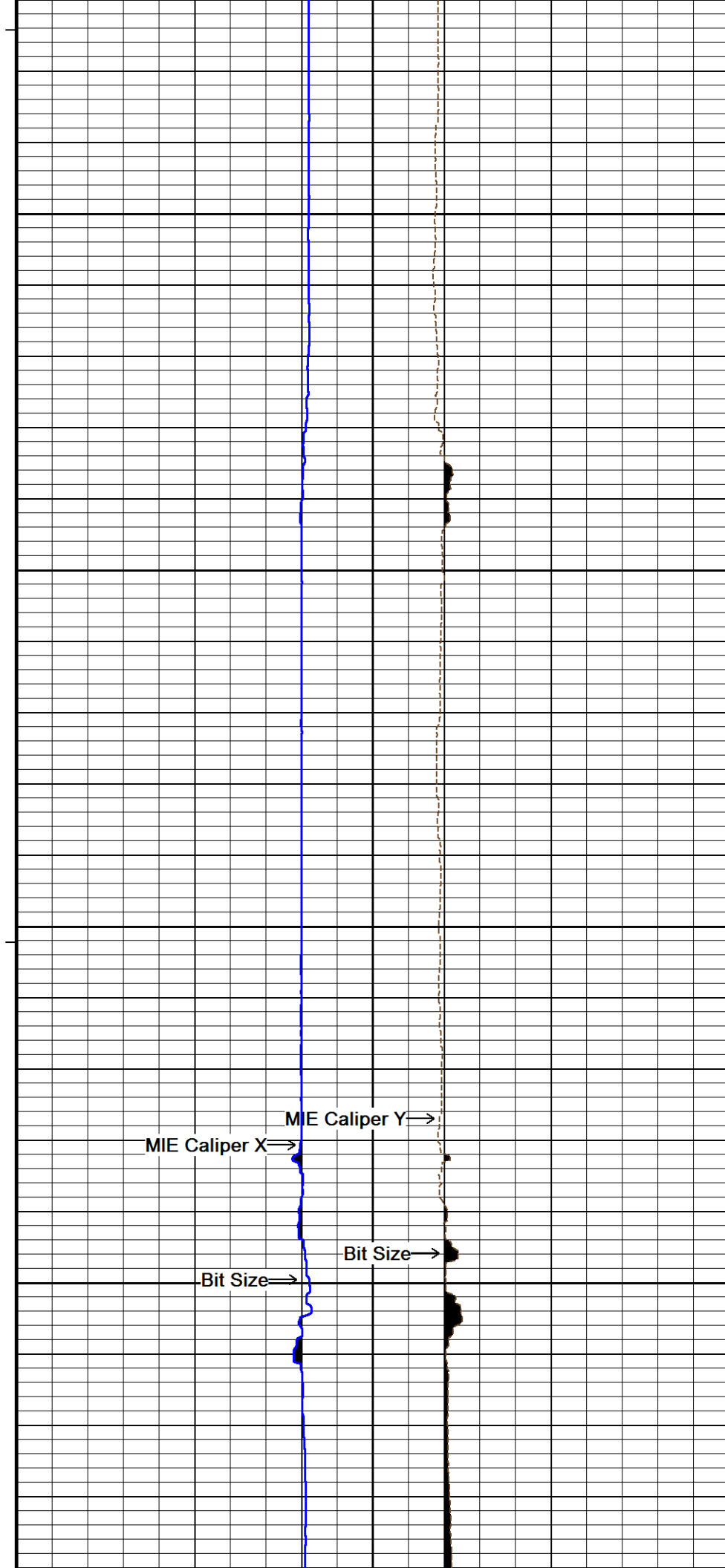
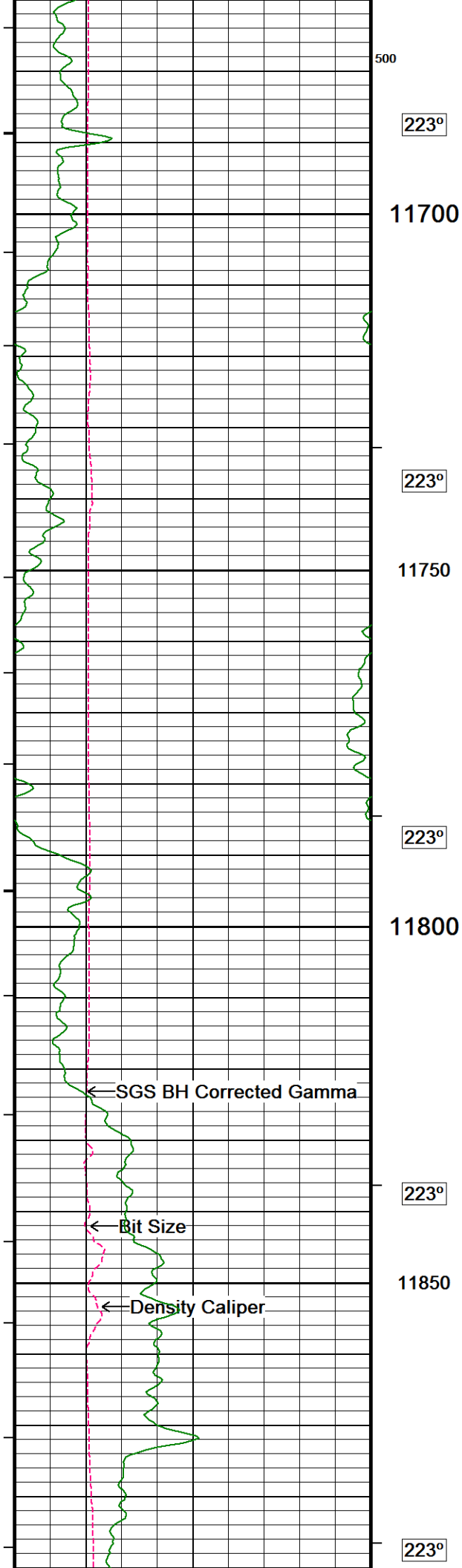


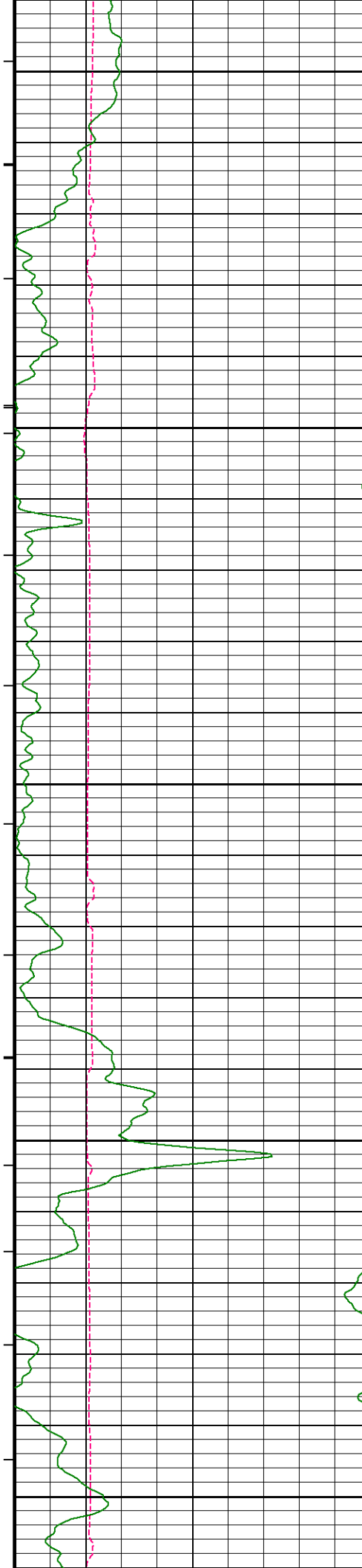












11900

200

223°

11950

223°

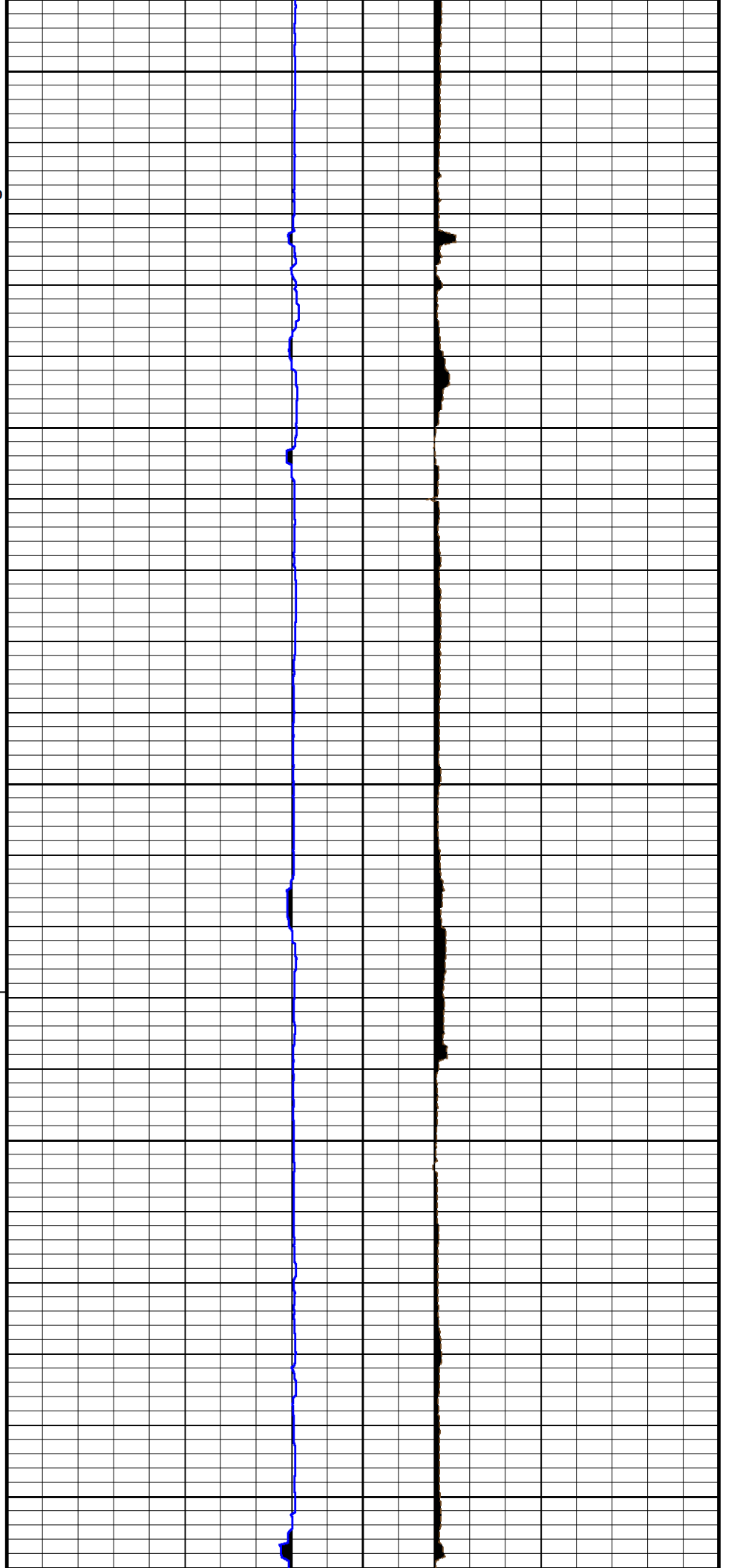
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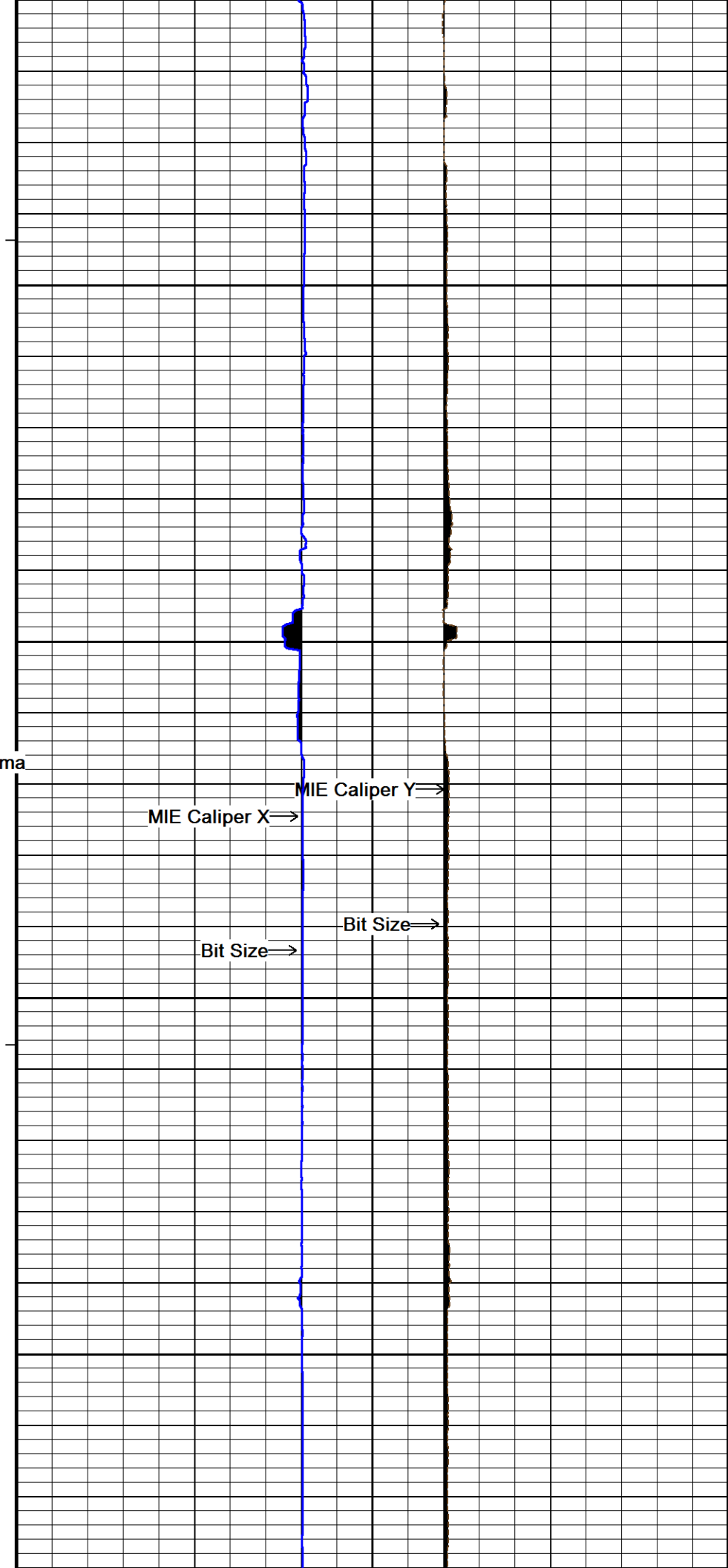
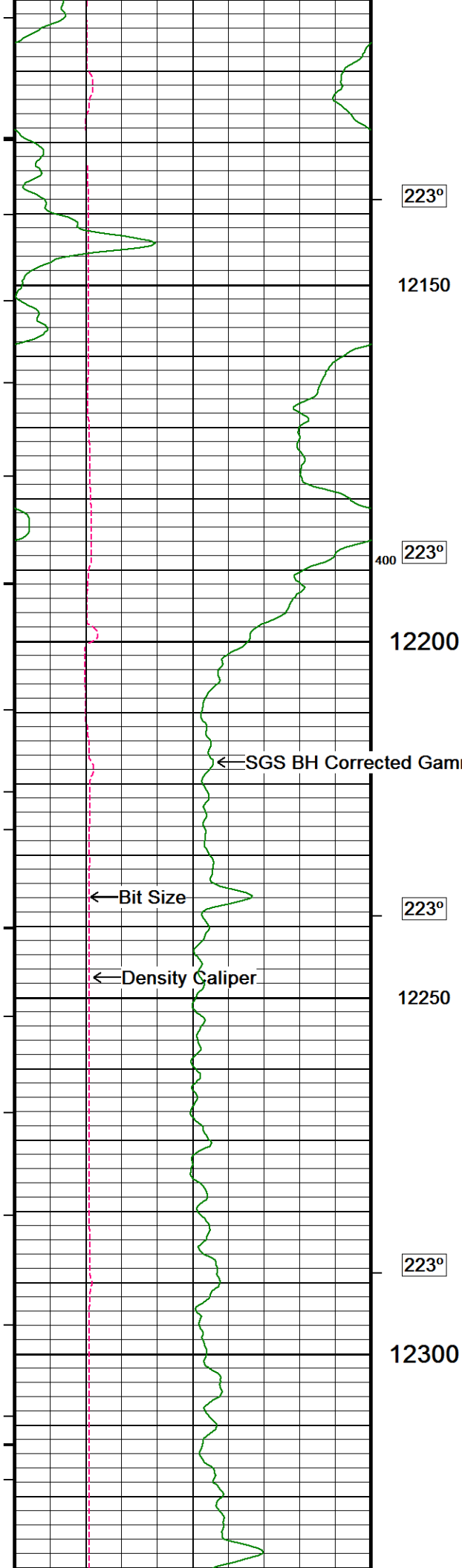
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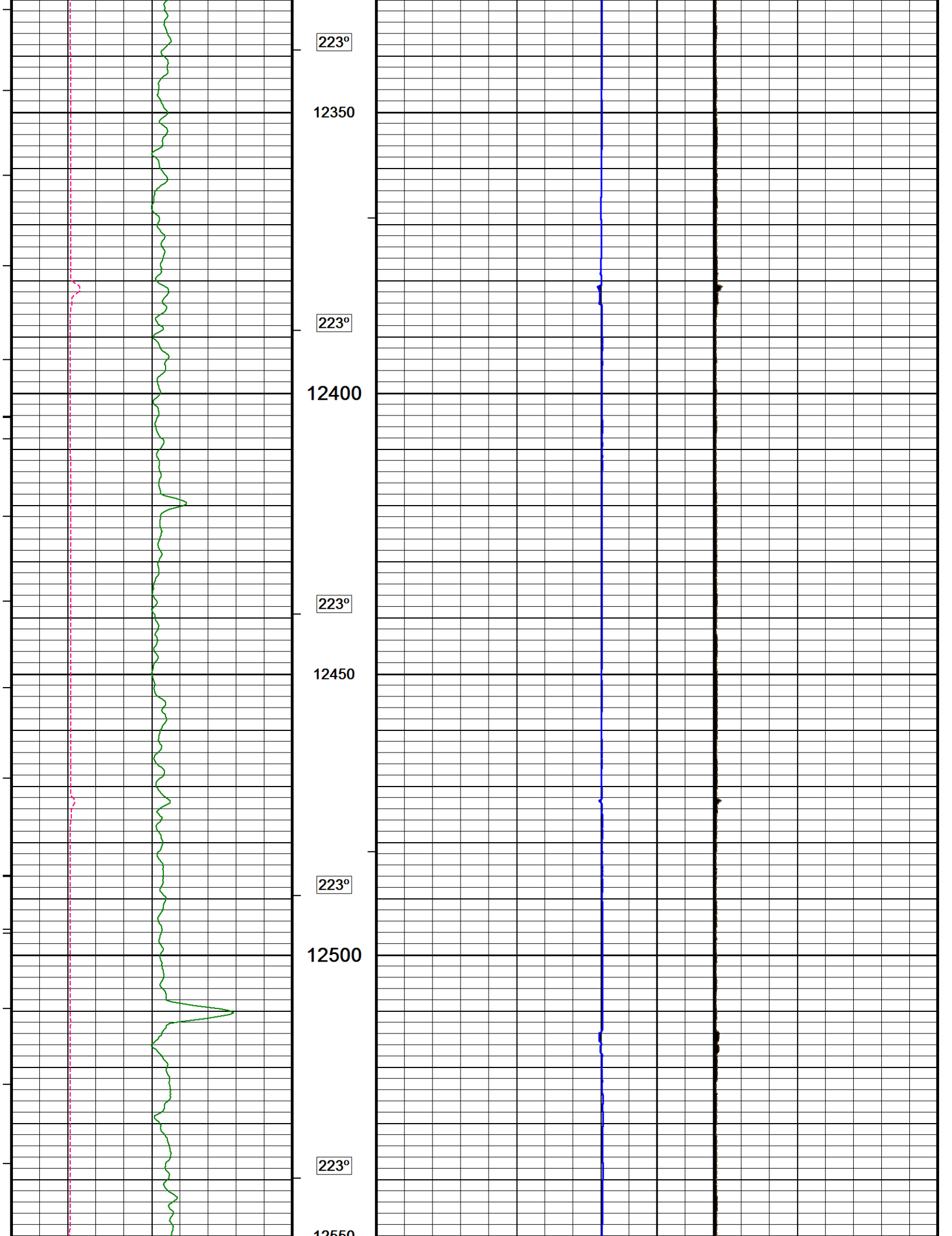
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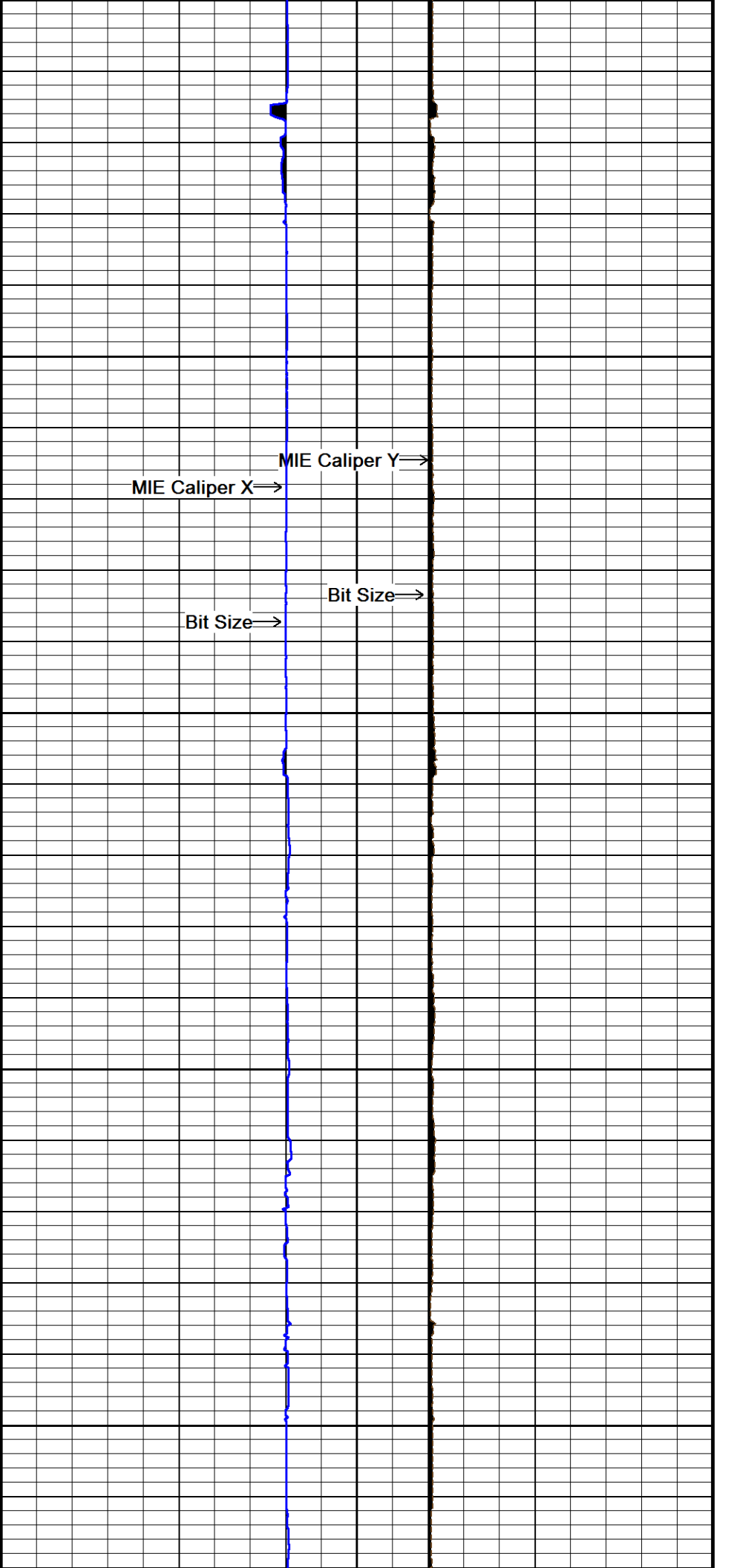
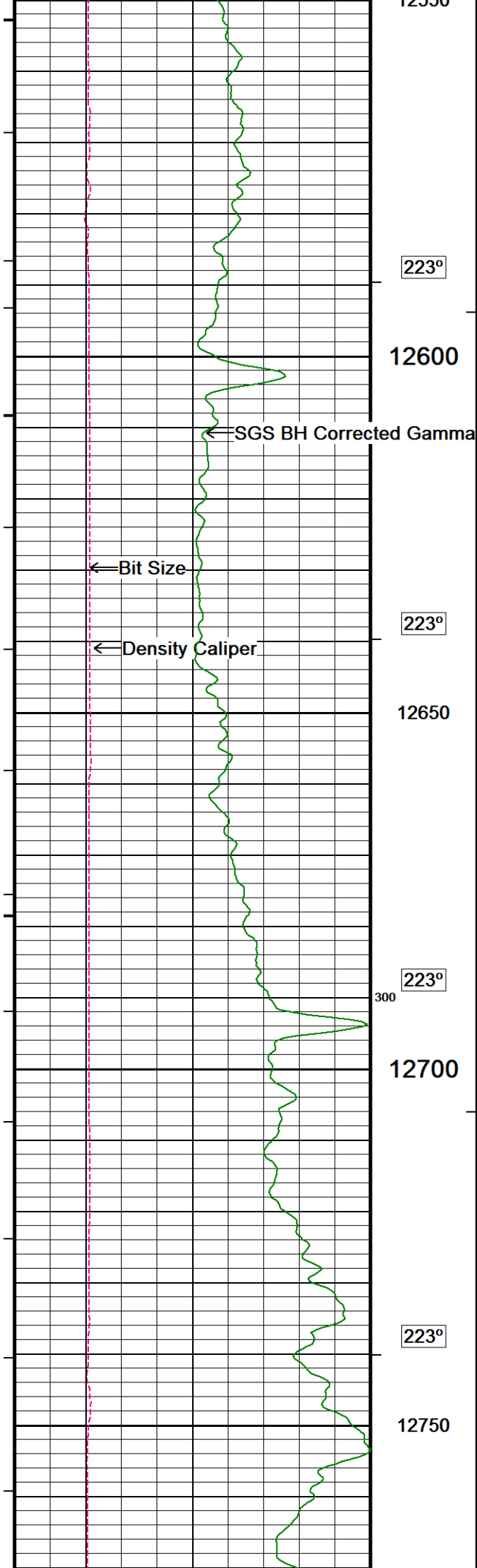
223°

12100



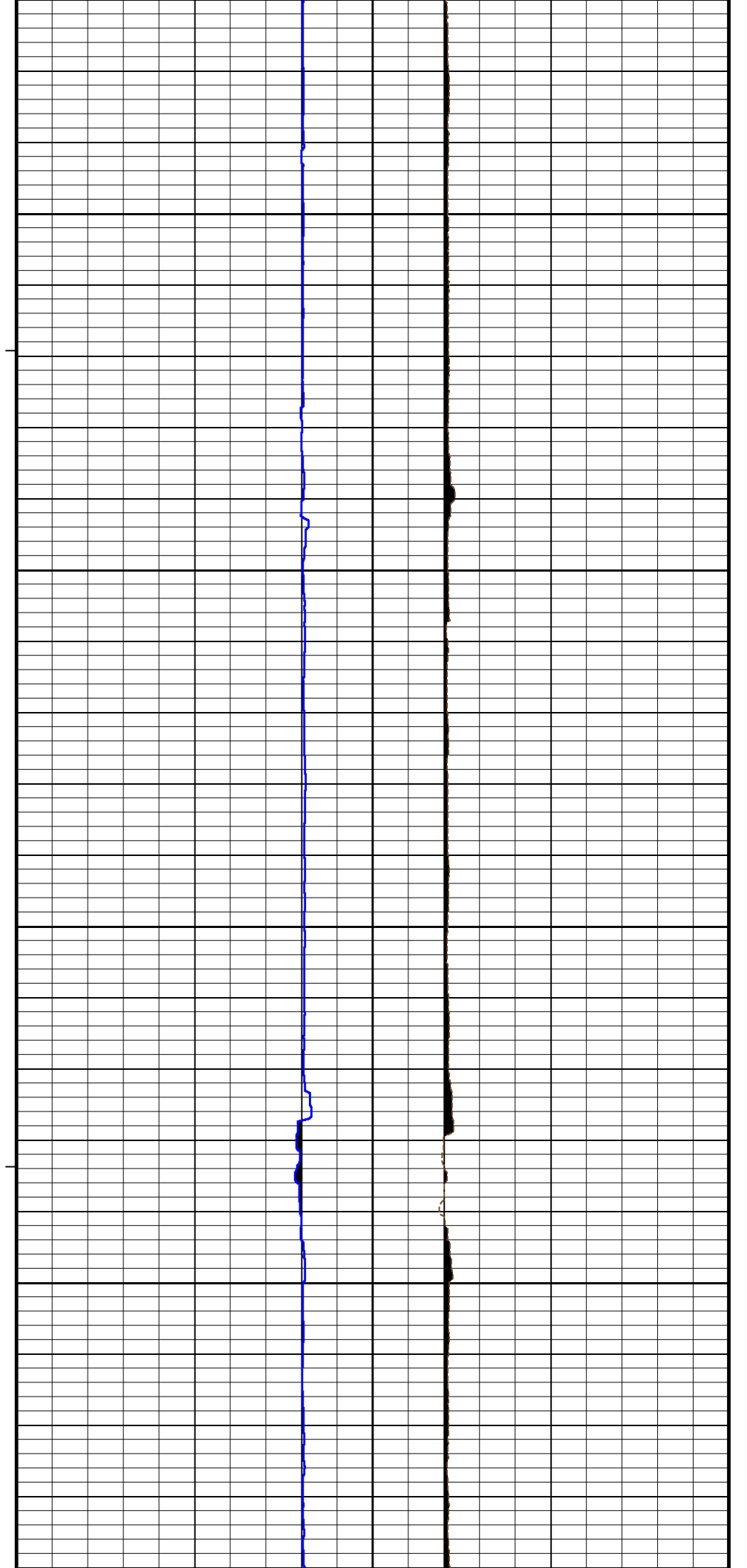


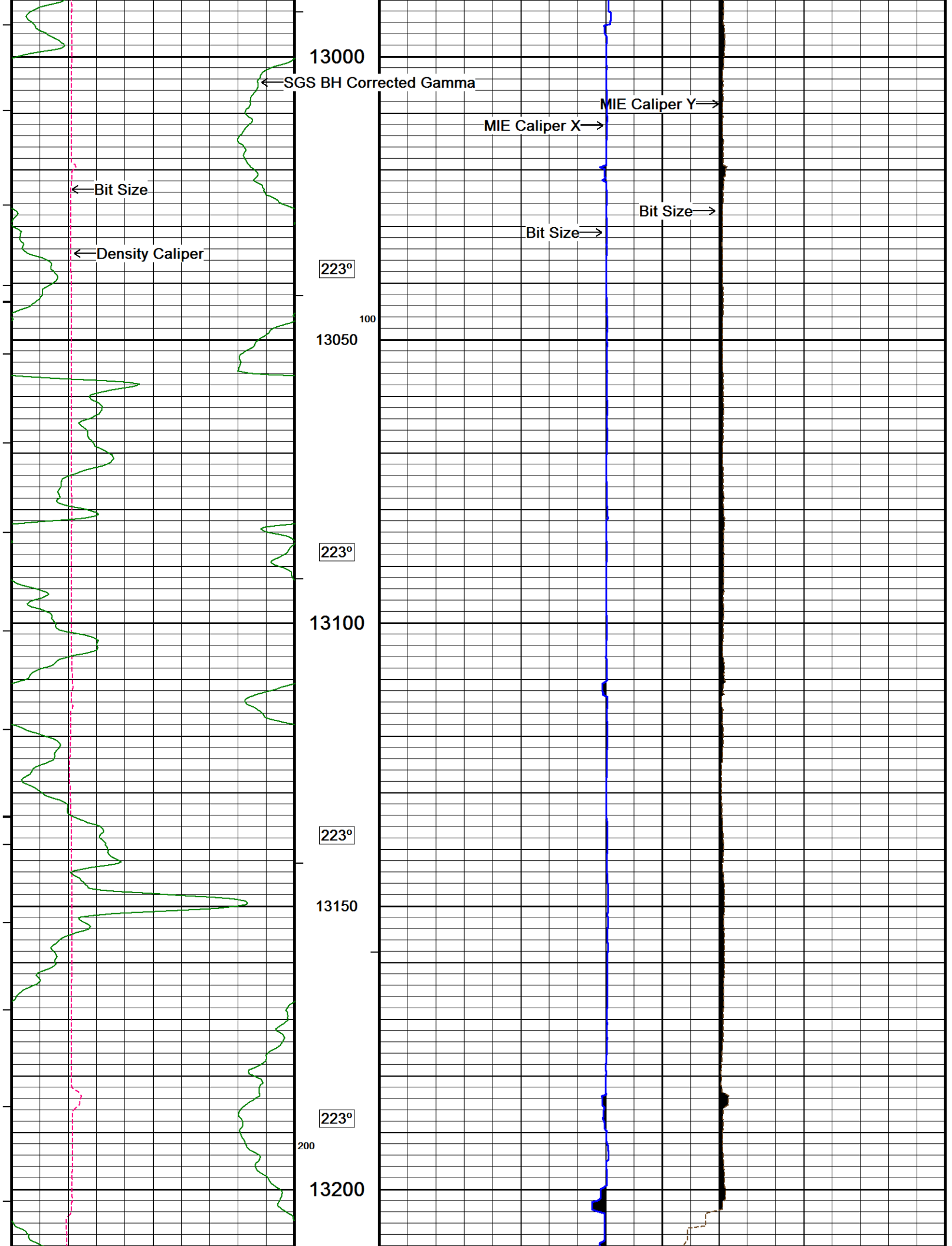


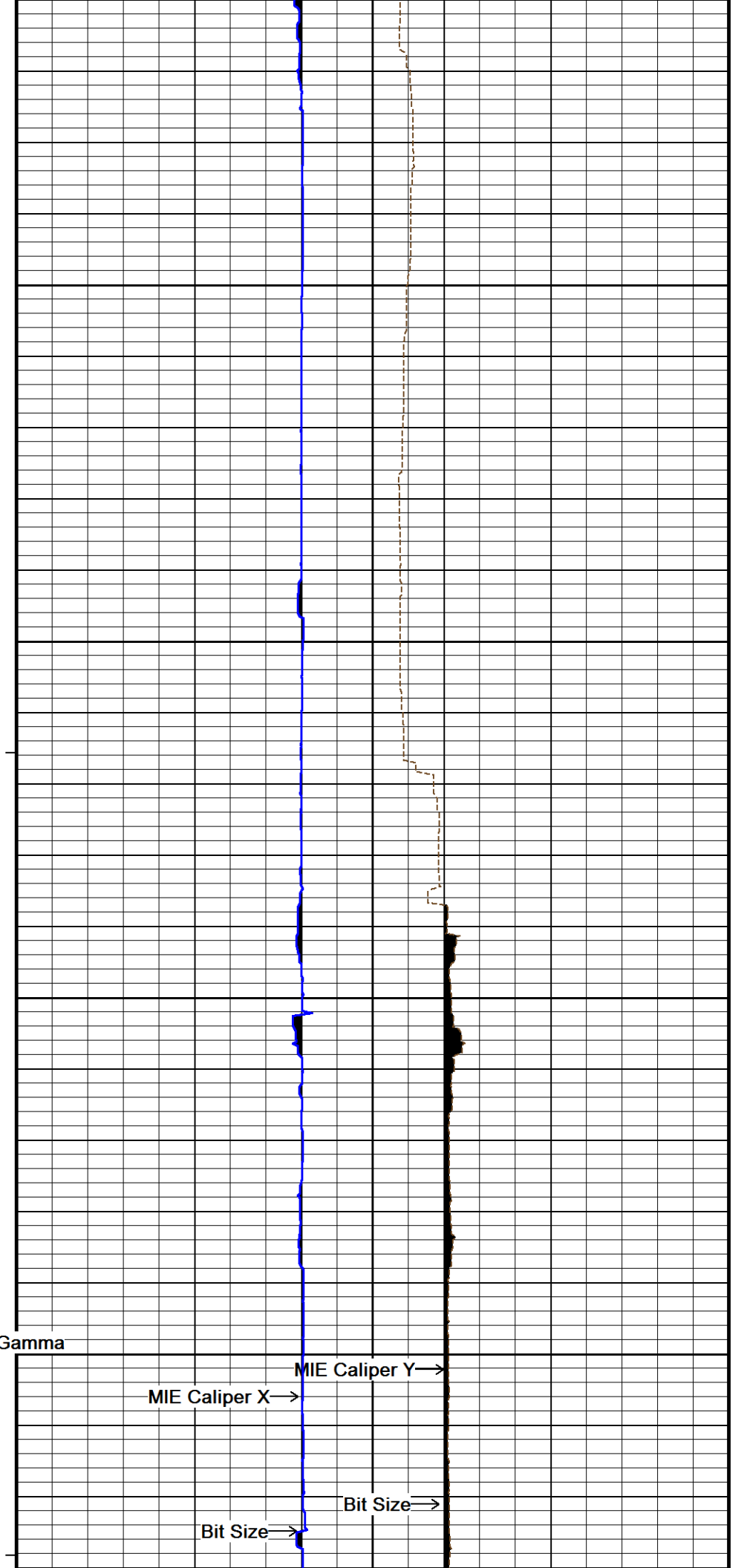
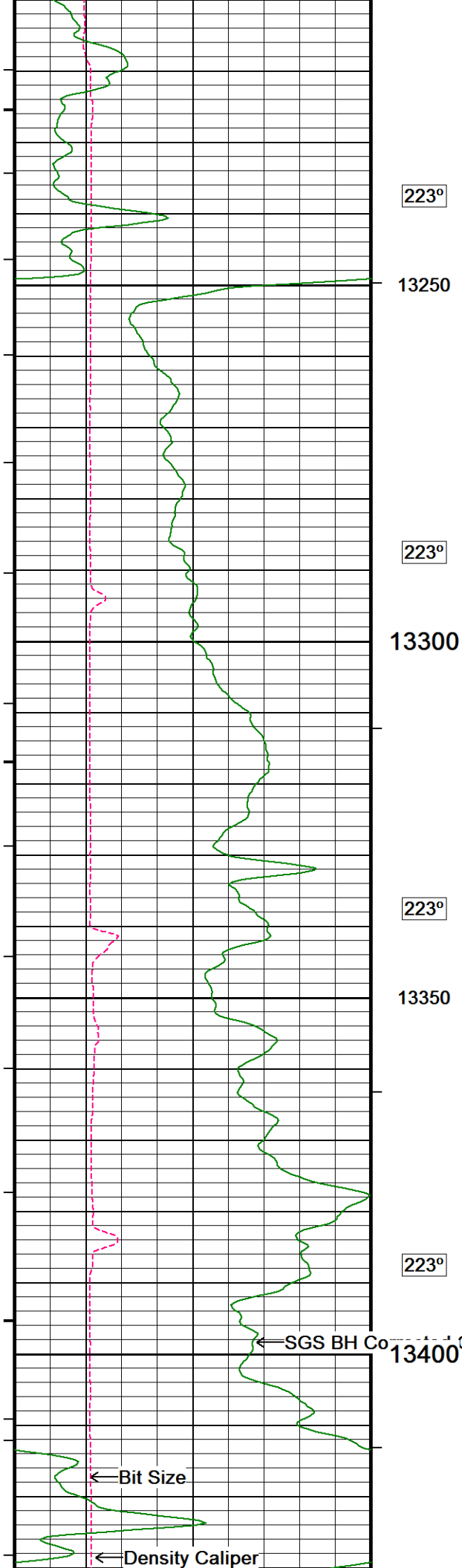


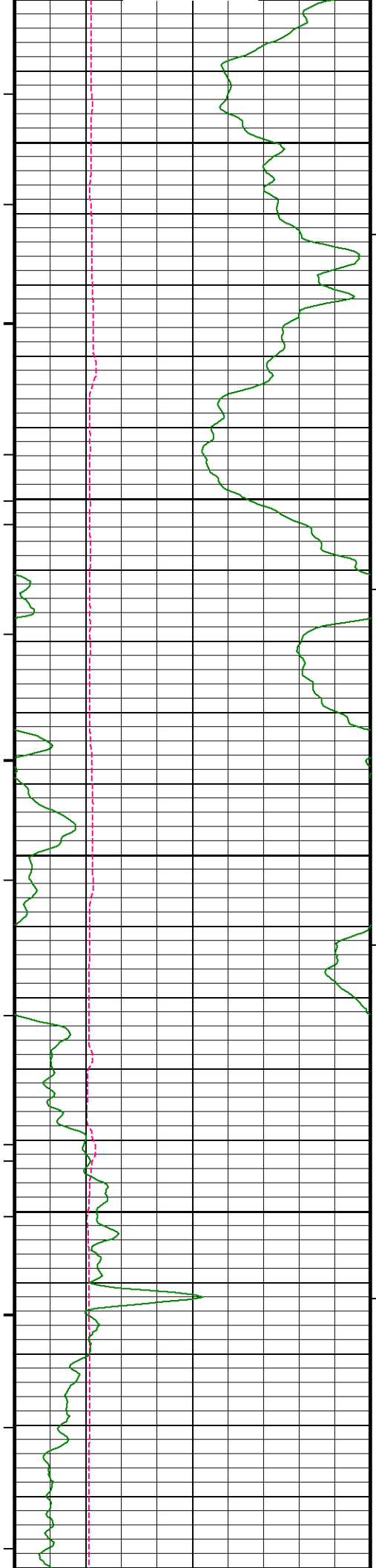


223°
12800
223°
12850
223°
12900
223°
12950
223°

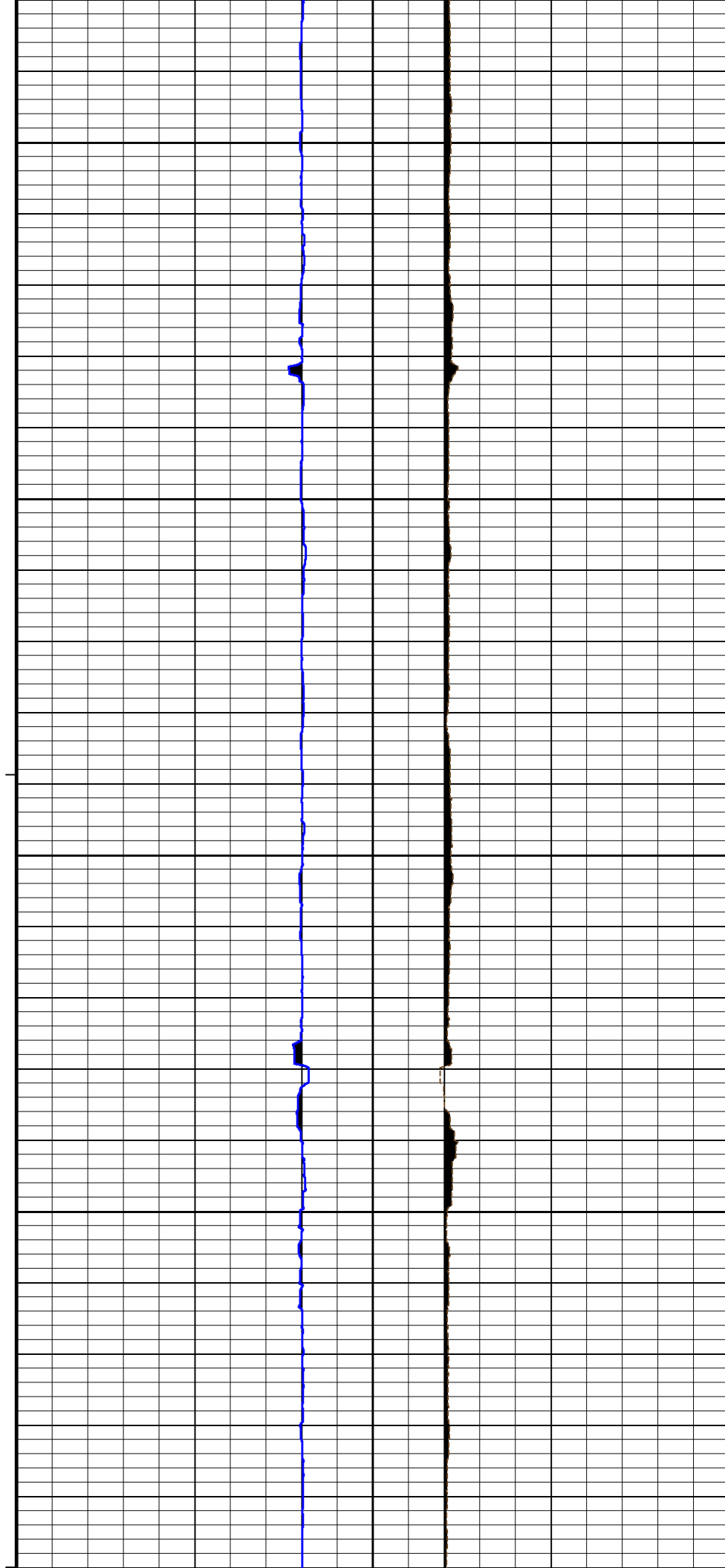


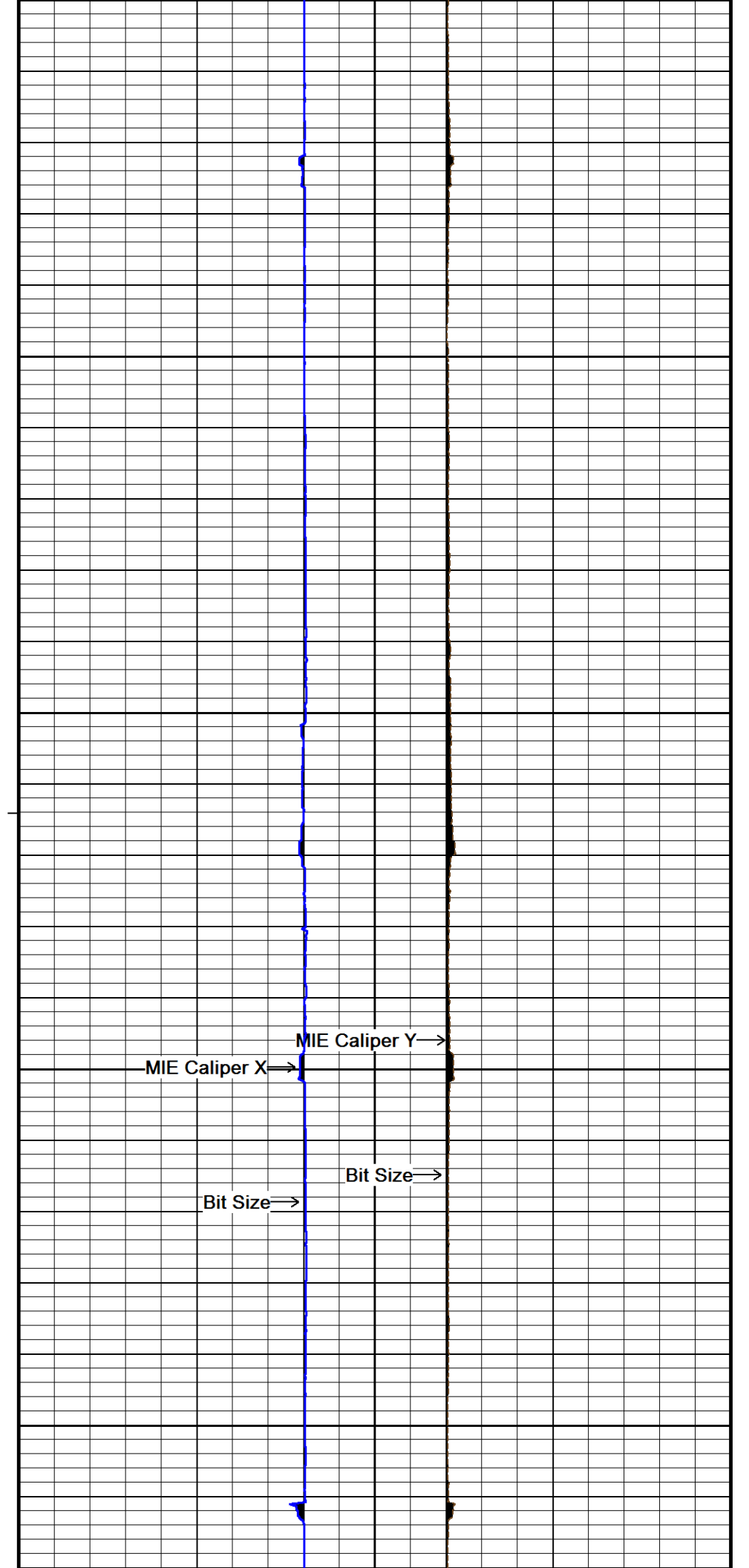
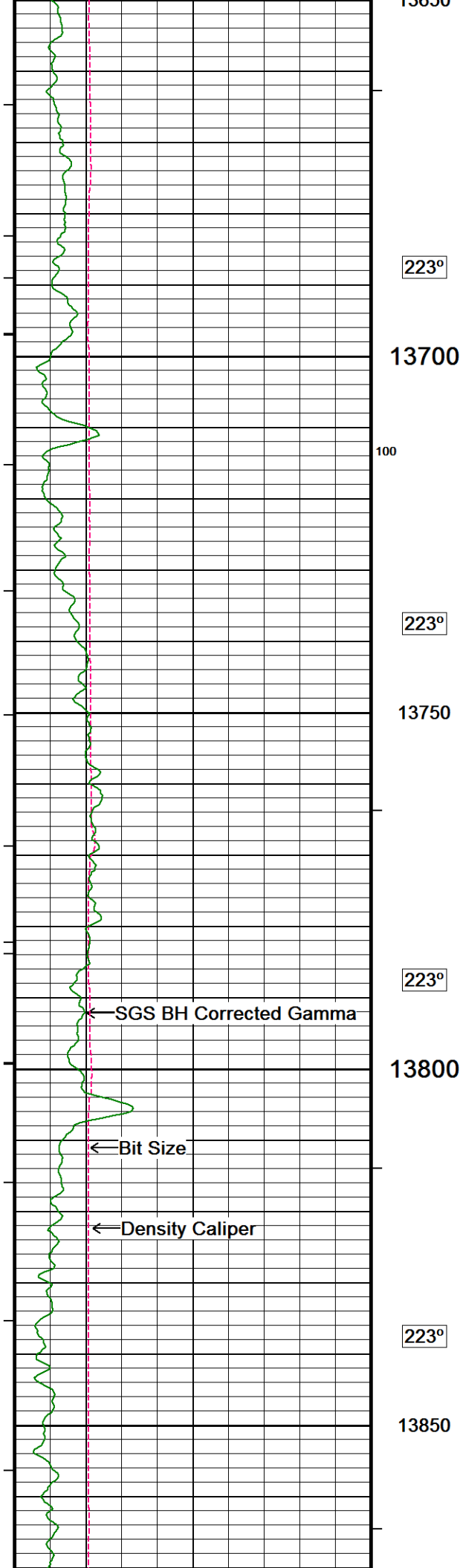


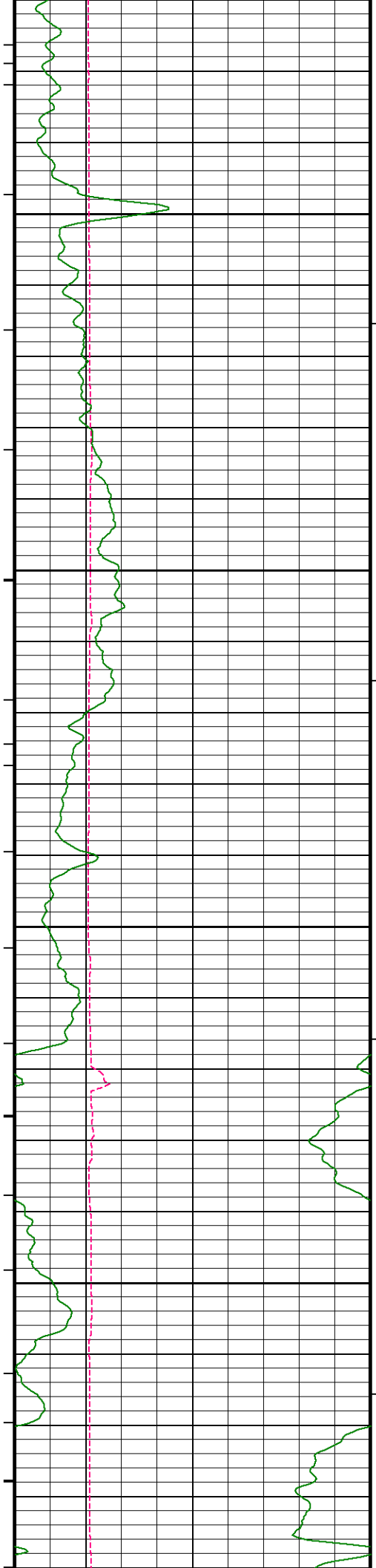




223°
13450
223°
13500
223°
13550
223°
13600
223°
13650







222°

13900

223°

13950

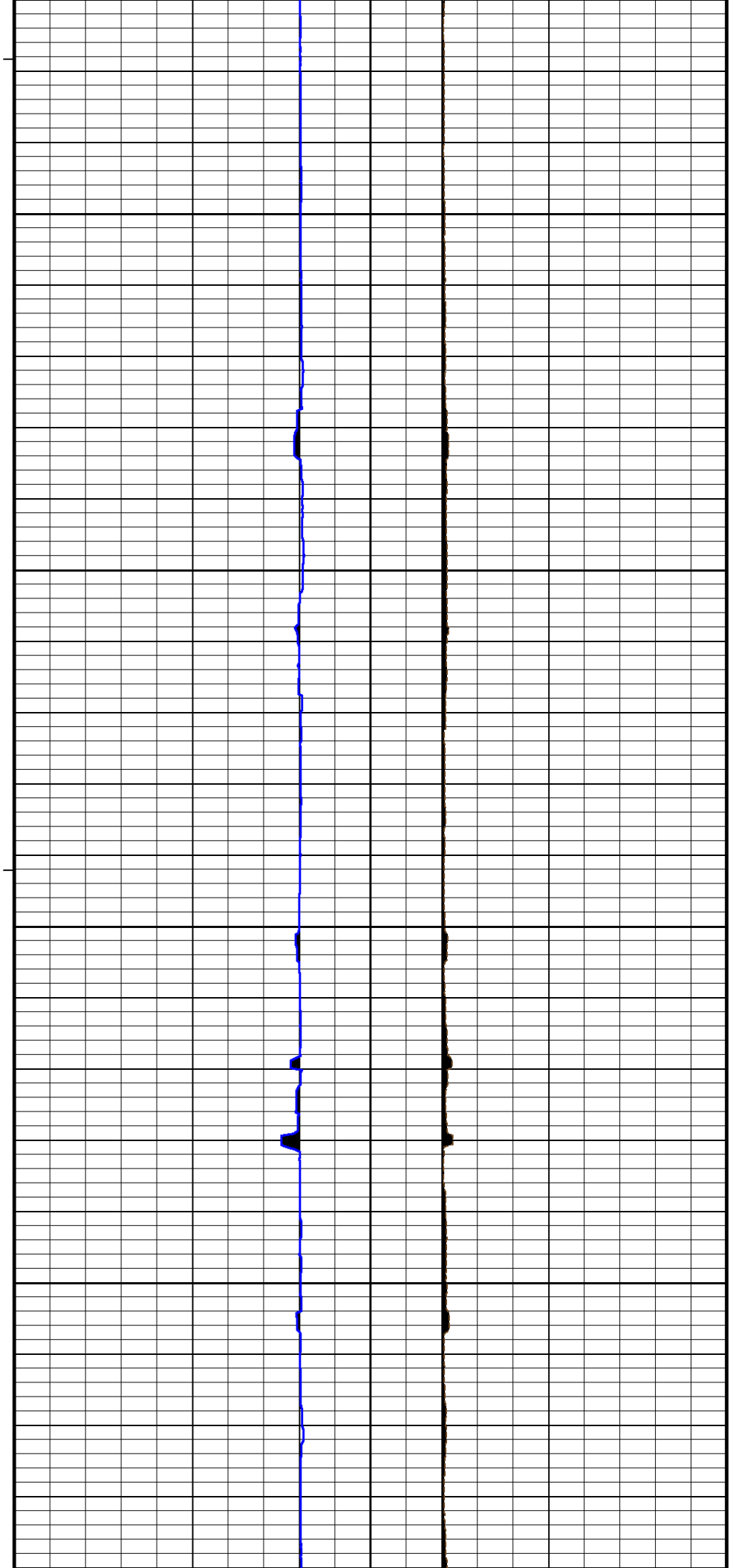
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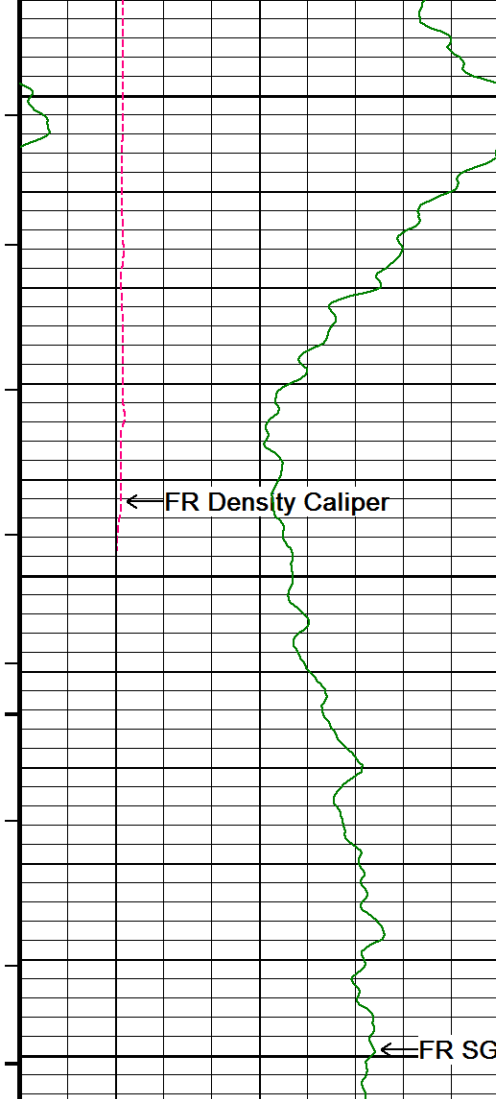
14000

223°

14050

224°

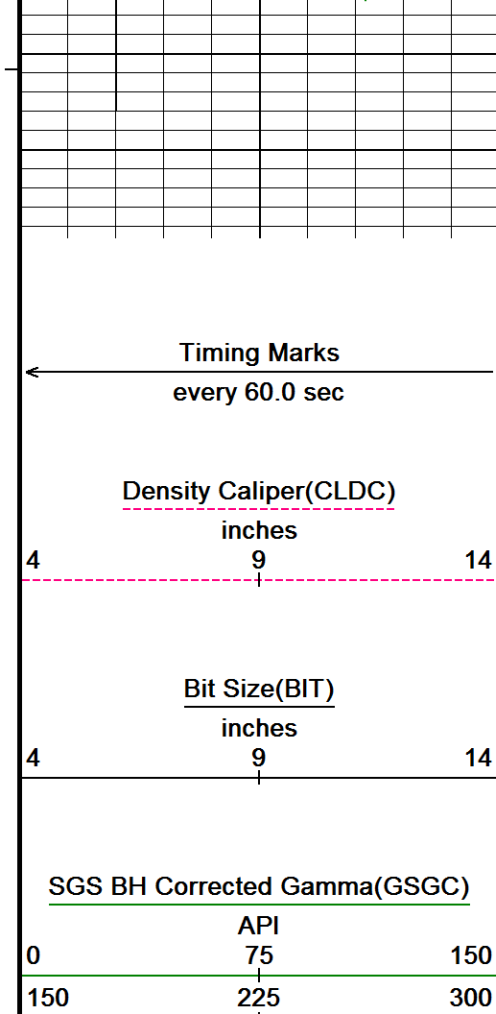
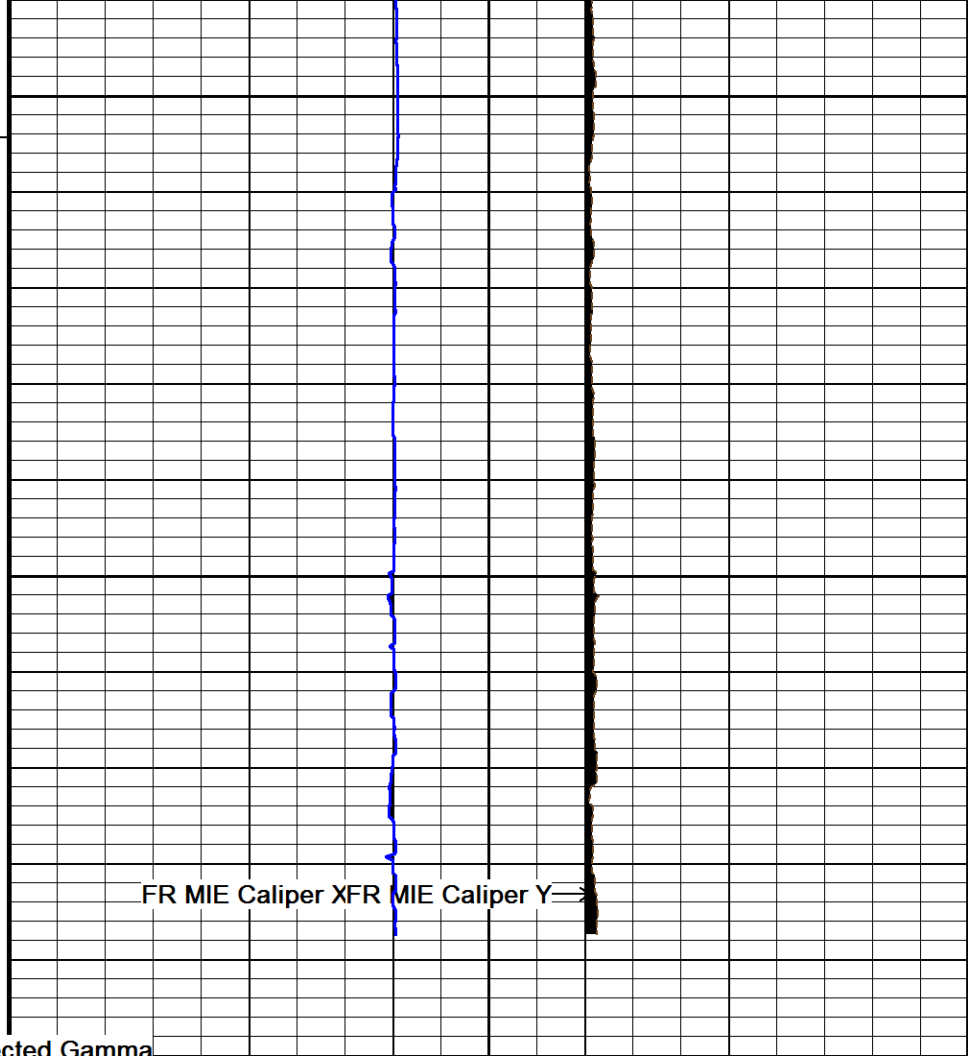




14100

14150

←FR SGS 14200 Corrected Gamma



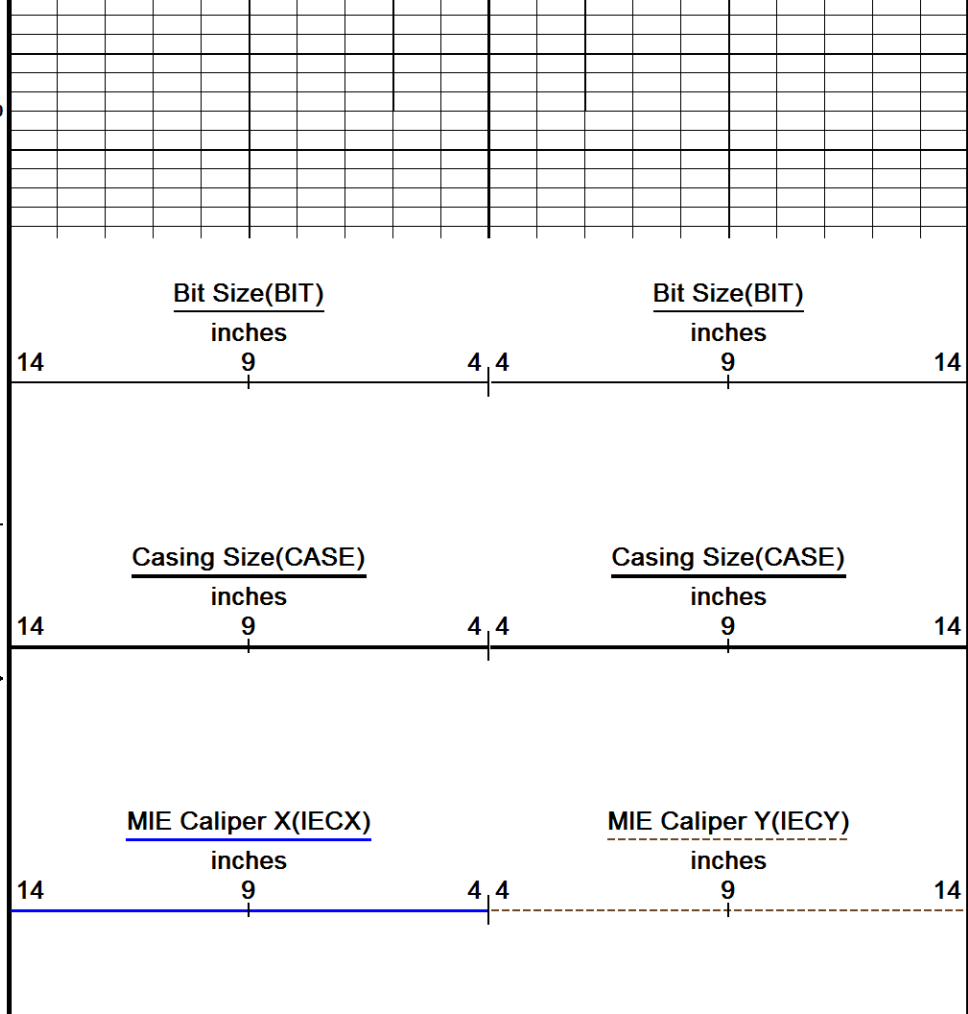
0
14226
Depth in Feet

← HVI every 10 cu ft

Annular Integral every 10 cu ft →

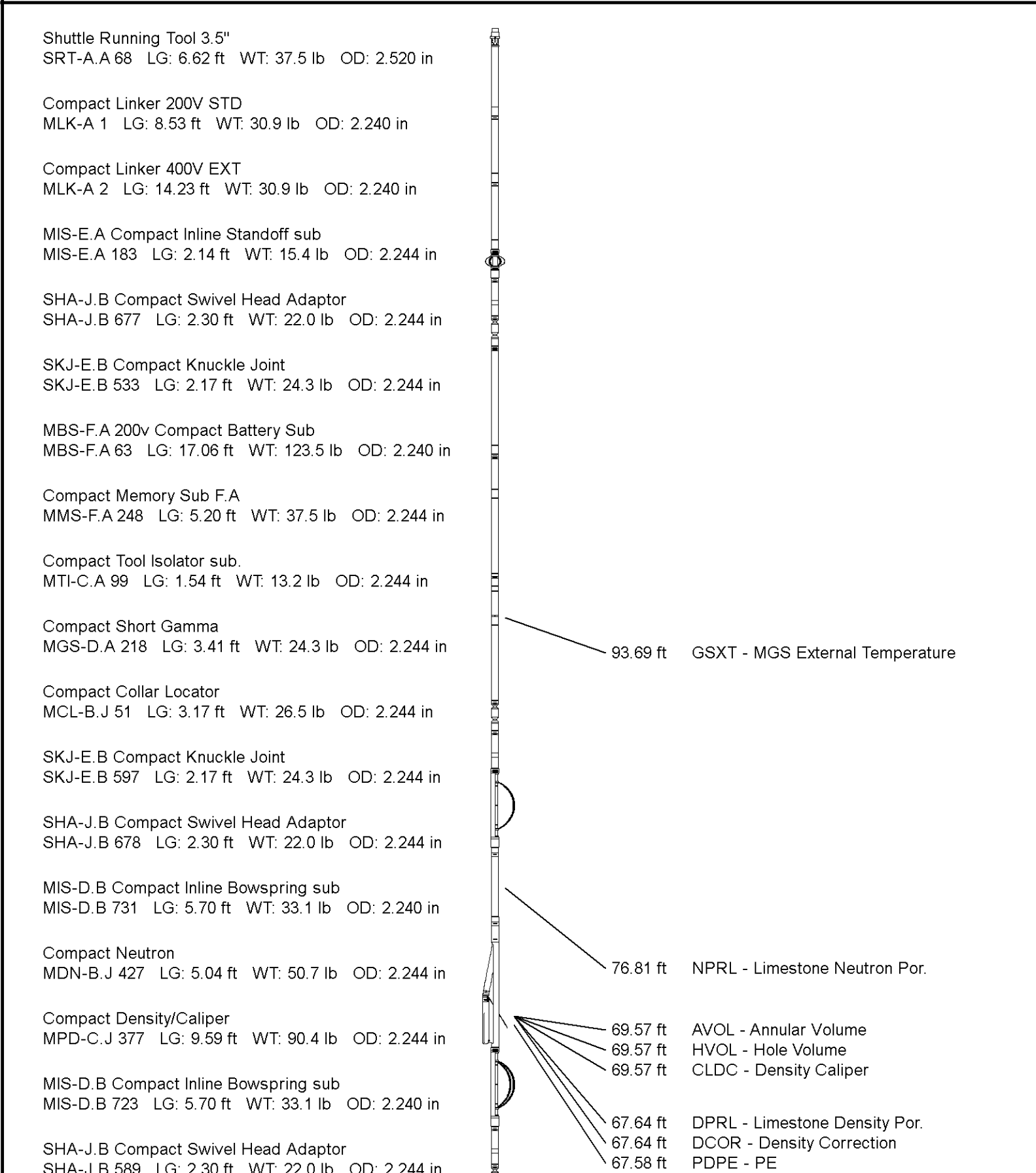
Borehole Temp in deg F

Replay Scale 1:240



↑
 5 INCH MAIN LOG
 ↑

DOWNHOLE EQUIPMENT
 D:\Logs\Whiting\Razor 21C-0908\Razor 21C-0908_MMS Depth.dta



SKJ-E.B Compact Knuckle Joint
SKJ-E.B 612 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 693 LG: 2.14 ft WT: 15.4 lb OD: 2.244 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 244 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

MIS-D.A Compact Inline Bowspring sub
MIS-D.A 437 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact MMI Memory Section
MIM-A.A 125 LG: 4.65 ft WT: 26.5 lb OD: 2.244 in

Compact MMI Electrode Section
MIE-A.A 125 LG: 13.96 ft WT: 99.2 lb OD: 4.094 in

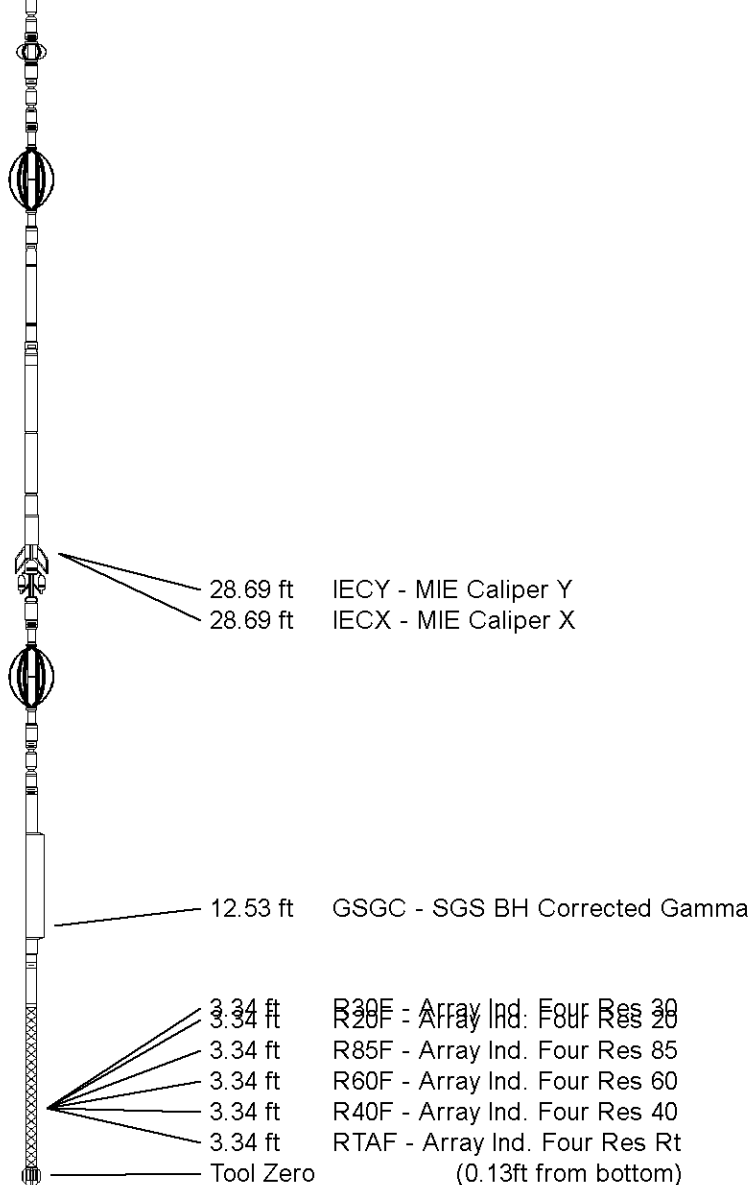
MIS-D.B Compact Inline Bowspring sub
MIS-D.B 654 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 245 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

Spectral Gamma Ray Sub
SGS-E.J 135 LG: 7.78 ft WT: 105.8 lb OD: 3.543 in

Compact Induction
MAI-B.J 434 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 156.38 ft Weight: 1095.7 lb



COMPANY	WHITING OIL AND GAS CORPORATION
WELL	RAZOR 21C-0908
FIELD	REDTAIL
PROVINCE/COUNTY	WELD
COUNTRY/STATE	U.S.A. / COLORADO

Elevation Kelly Bushing	4861.00	feet	First Reading	14149.00	feet
Elevation Drill Floor	4861.00	feet	Depth Driller	14236.00	feet
Elevation Ground Level	4844.00	feet	Depth Logger	14236.00	feet



Weatherford®

MEASURED DEPTH
X-Y CALIPER
HOLE VOLUME LOG

