				SLIM SECTOR BOND LOG			
COMPANY WELL FIELD PROVINCE/COUNTY COUNTRY/STATE LOCATION				CAERUS OIL & GAS LLC PUCKETT 21A-1 GRAND VALLEY GARFIELD USA / COLORADO SHL: 2069 N 1345 W & BHL: 180 N 2025 W			
SEC 1	TWP 7S	RGE 97W	Other Services RAPTOR B		Elevations: KB 8351.00 DF 8351.00 GL 8329.00		
Latitude		Longitude					
API Number		5045228650000					
Permanent Datum GROUND LEVEL, Elevation 8329 feet							
Log Measured From KB							
Drilling Measured From KB @ 22'							
Date	04-DEC-2015			PERFORATION RECORD			
Run Number	ONE			Shot	Number	Depth From	Depth To
Service Order	136456150			Density	of Shots	feet	feet
Type Log	CREB-SSSB						
Depth Driller	9224.00						
Depth Logger	9147.00						
Top Log Interval	2500.00						
Bottom Log Interval	9143.00						
Hole Fluid Type	1.4% KCL						
Hole Fluid Level	0.00						
Restriction ID	3.875			Gun Type			
Max Recorded Temp	229.00			Gun Size			
Well Head Pressure	0.00			CASING / TUBING RECORD			
Well Head Equipment	N/A			Size	Weight	Depth From	Depth To
Time Well Ready	ROA			inches	pounds/ft	feet	feet
Time Logger Bottom	0012			9.625	36.00	0.00	2515.00
Unit	14113			4.500	11.60	0.00	9224.00
Equipment Name	WSS-E						
Base	CASPER						
Recorded By	MAZUR						
Witnessed By	NOT WITNESSED						

BOREHOLE RECORD						Last Edited: 04-DEC-2015 14:54
Bit Size inches		Depth From feet		Depth To feet		
14.750		0.00		2516.00		
8.750		2516.00		9406.00		
CASING / TUBING RECORD						
Type	Grade	TypeJoint	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	J-55	LT&C	9.625	0.00	2515.00	36.00
PRODUCTION	P-110	LT&C	4.500	0.00	9224.00	11.60

REMARKS
SOFTWARE VERSION 16.00.6296 - DEVELOPMENT BUILD VERSION
ALL DEPTH CONTROL PROCEDURES FOR SUBSEQUENT RUN IN HOLE WERE FOLLOWED. LOG RUN FROM 22' K.B.
SHORT JOINT LOCATED AT 4664' - 4675'
SURFACE SYSTEM USED: WCM-D 307
TOOLS RUN: WCCC, UGRK, QPGE, CR3B, TMPN, CRPB, CRMB, CR3B, UGRK, SUEC, SSSB, STEB, CENA WERE RAN IN COMBINATION
GAMMA RAY COUNTS ON SUBSEQUENT PASSES ARE AFFECTED BY RESIDUAL NEUTRON ACTIVATION CAUSED BY THE PREVIOUS PASS
PREDICTED 3' AMPLITUDE FOR 4.5" WITH 11.6 LB/FT CASING: 81 mv

FREE PIPE CALIBRATION DONE AT 3545 FT

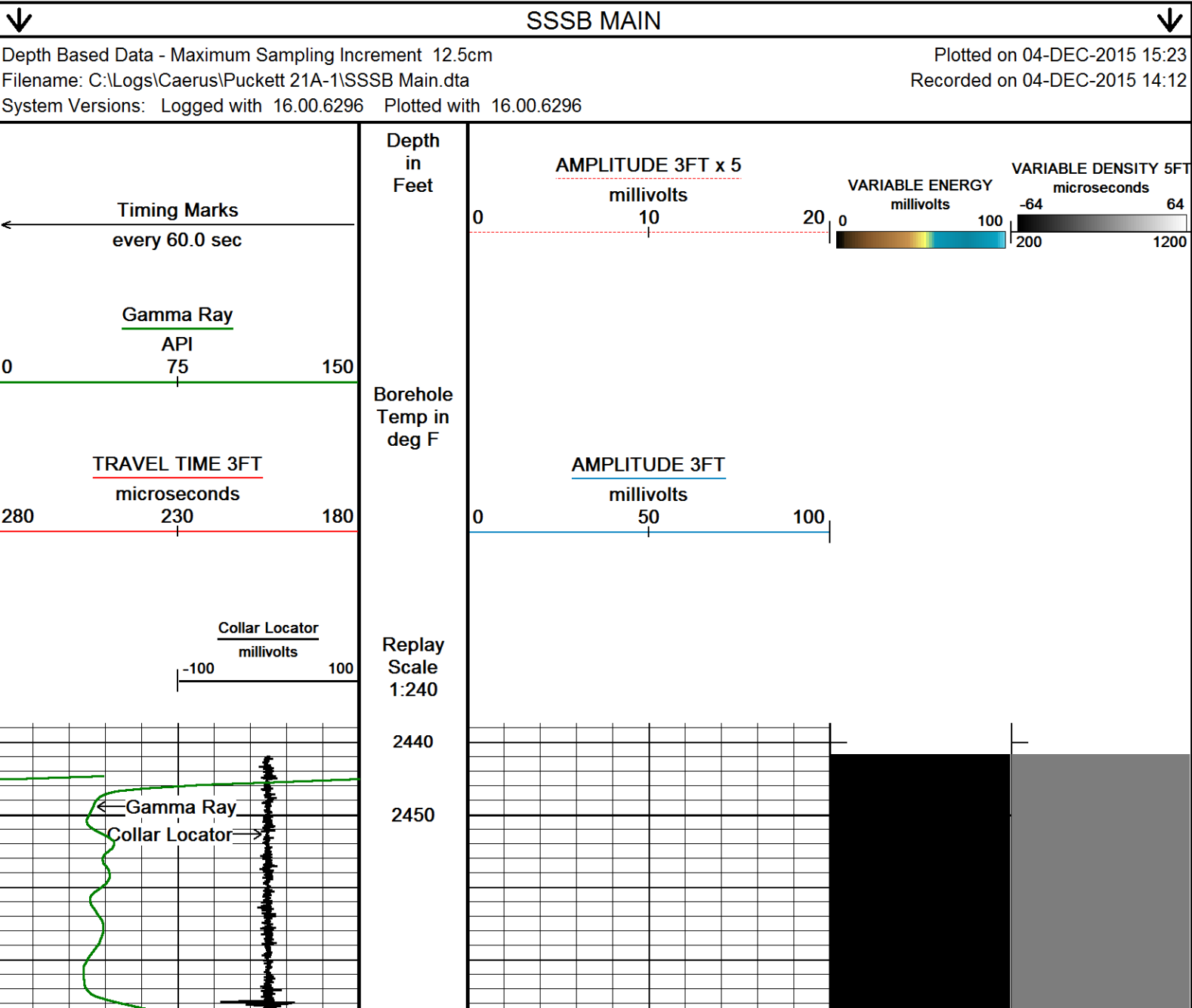
UNKNOWNEN CEMENT CLASS DUE MISSING DATA FROM CLIENT

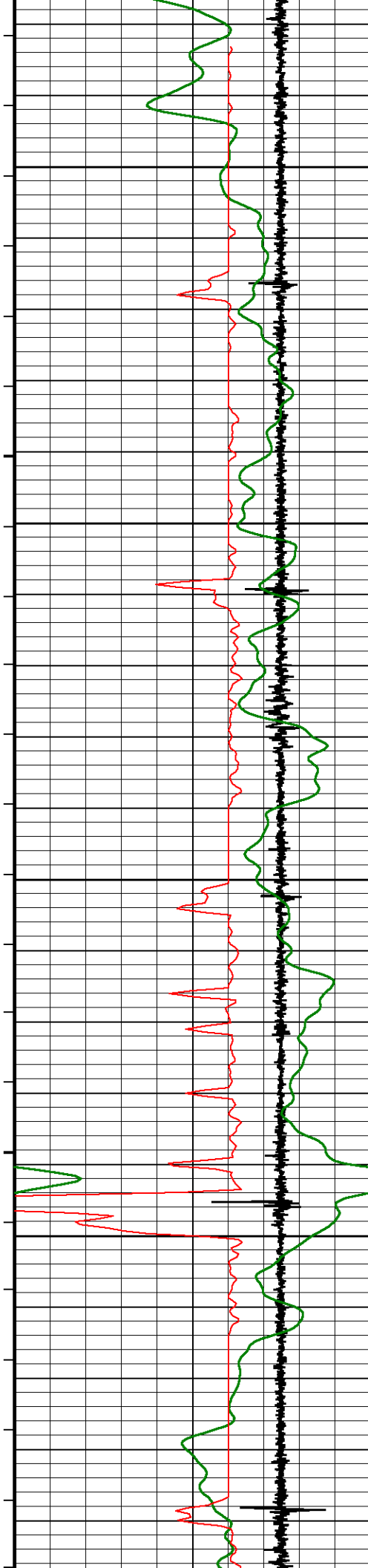
UNKNOWNEN CEMENT JOB ENDED TIME DUE TO MISSING DATA FROM CLIENT

BOTTOM HOLE TEMPERATURE WAS DEG. 229F

CREW: PAUL MAZUR, DARREN BEANS, BRYAN DIESBURG, JAMES BARNETT

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.





95°

2500

95°

2550

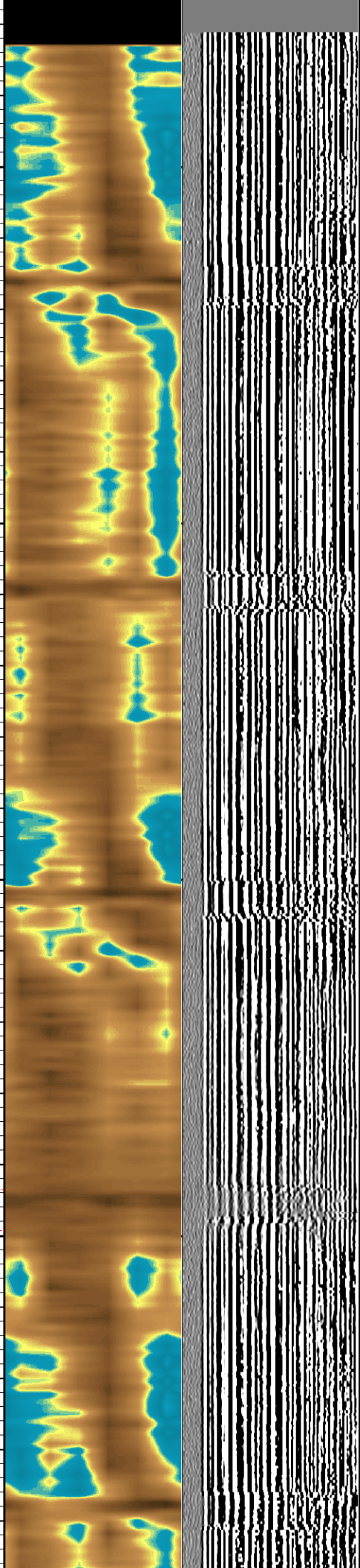
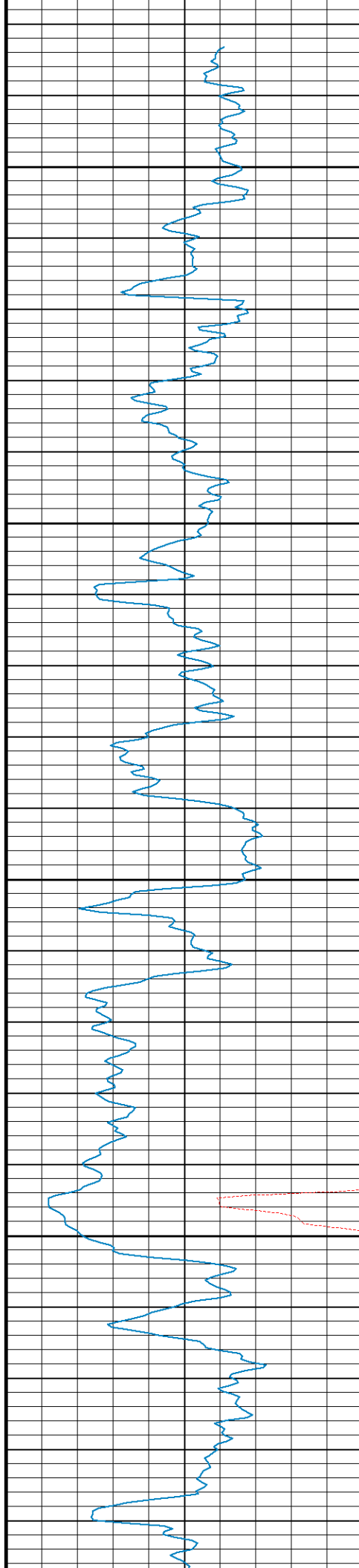
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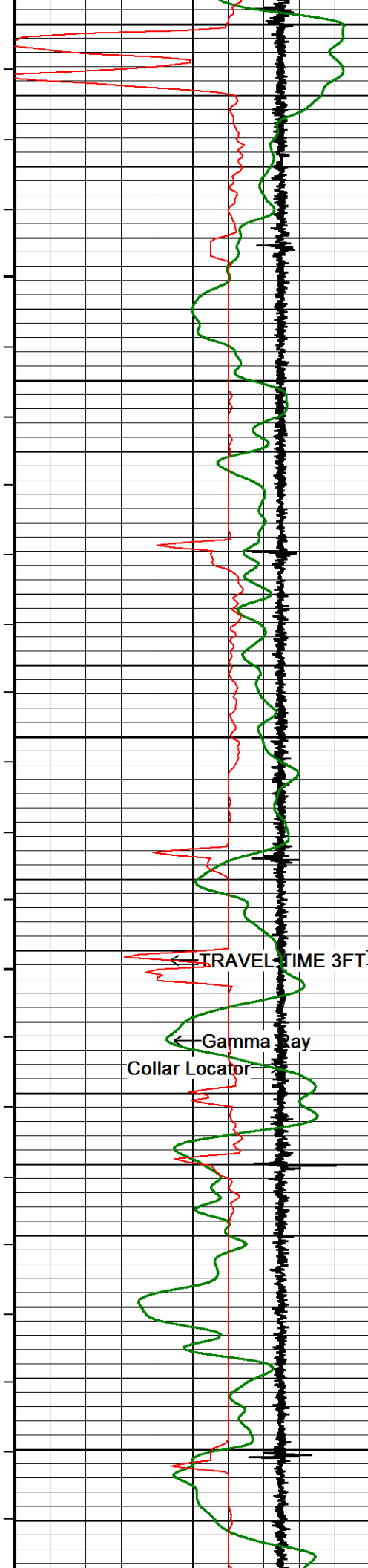
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97°

2650

98°





2700

98°

2750

99°

2800

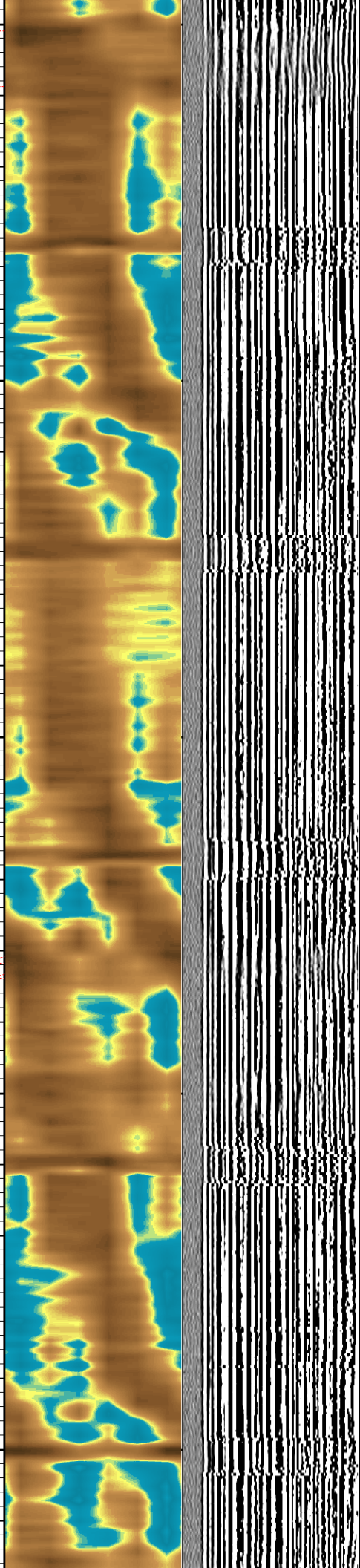
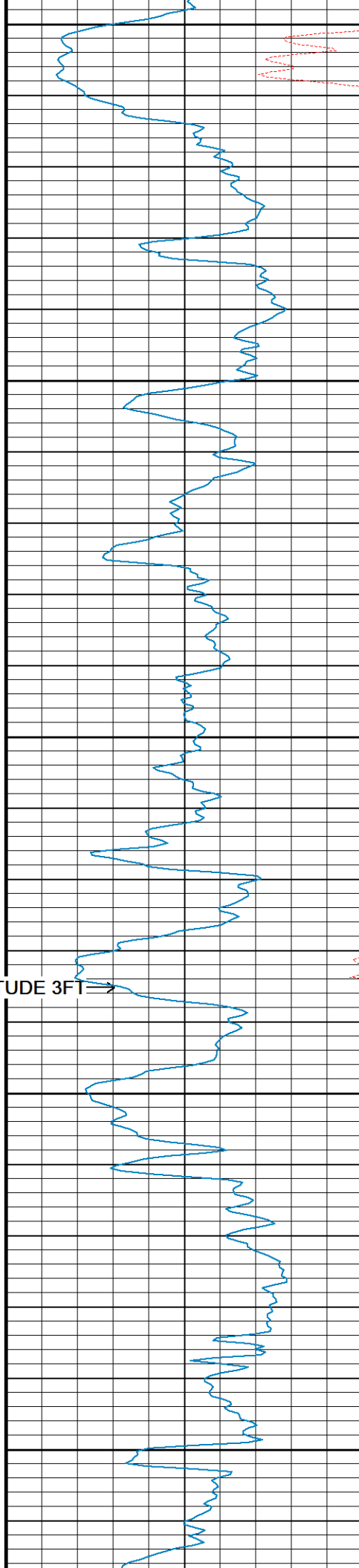
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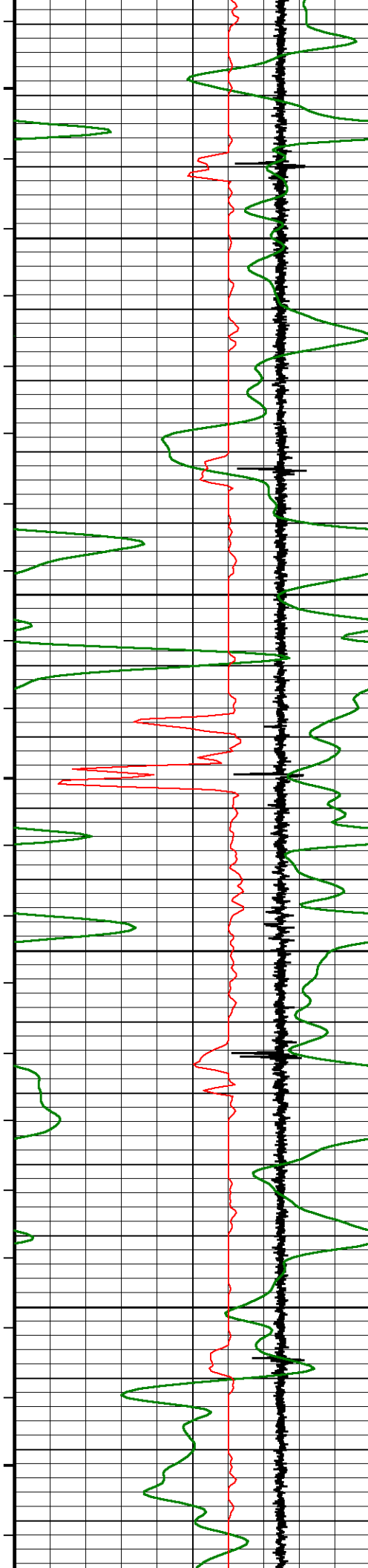
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2850

101°

2900





102°

2950

103°

3000

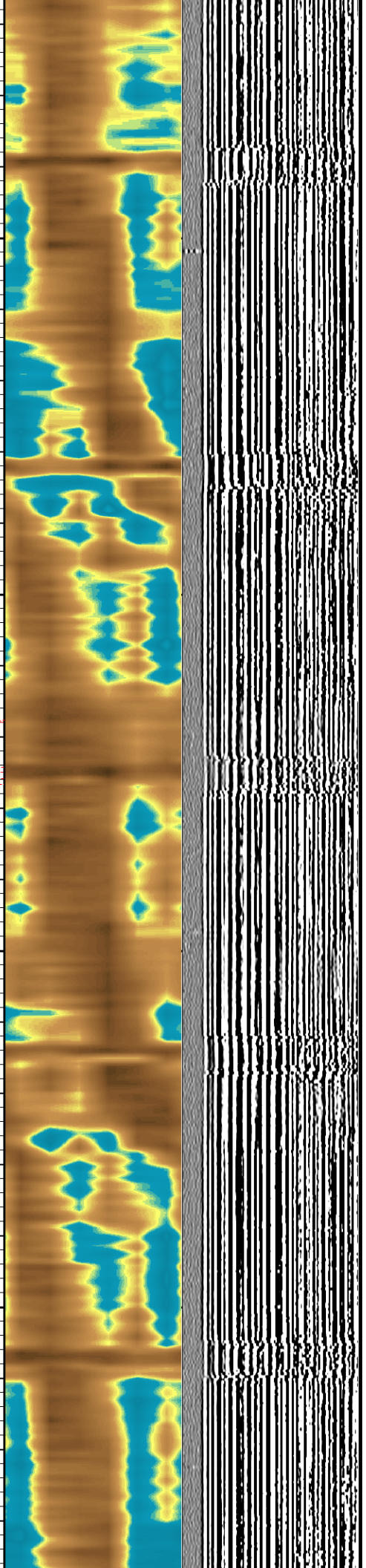
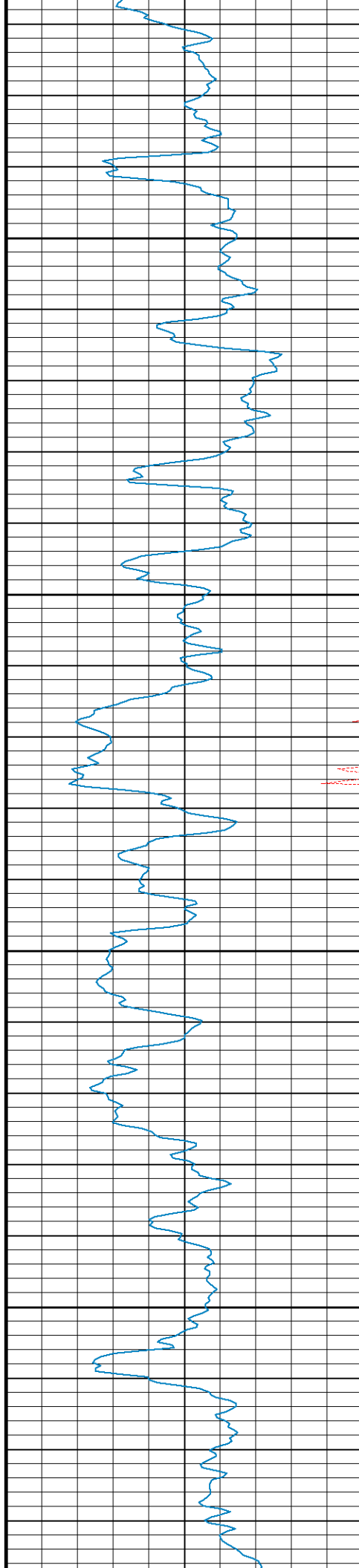
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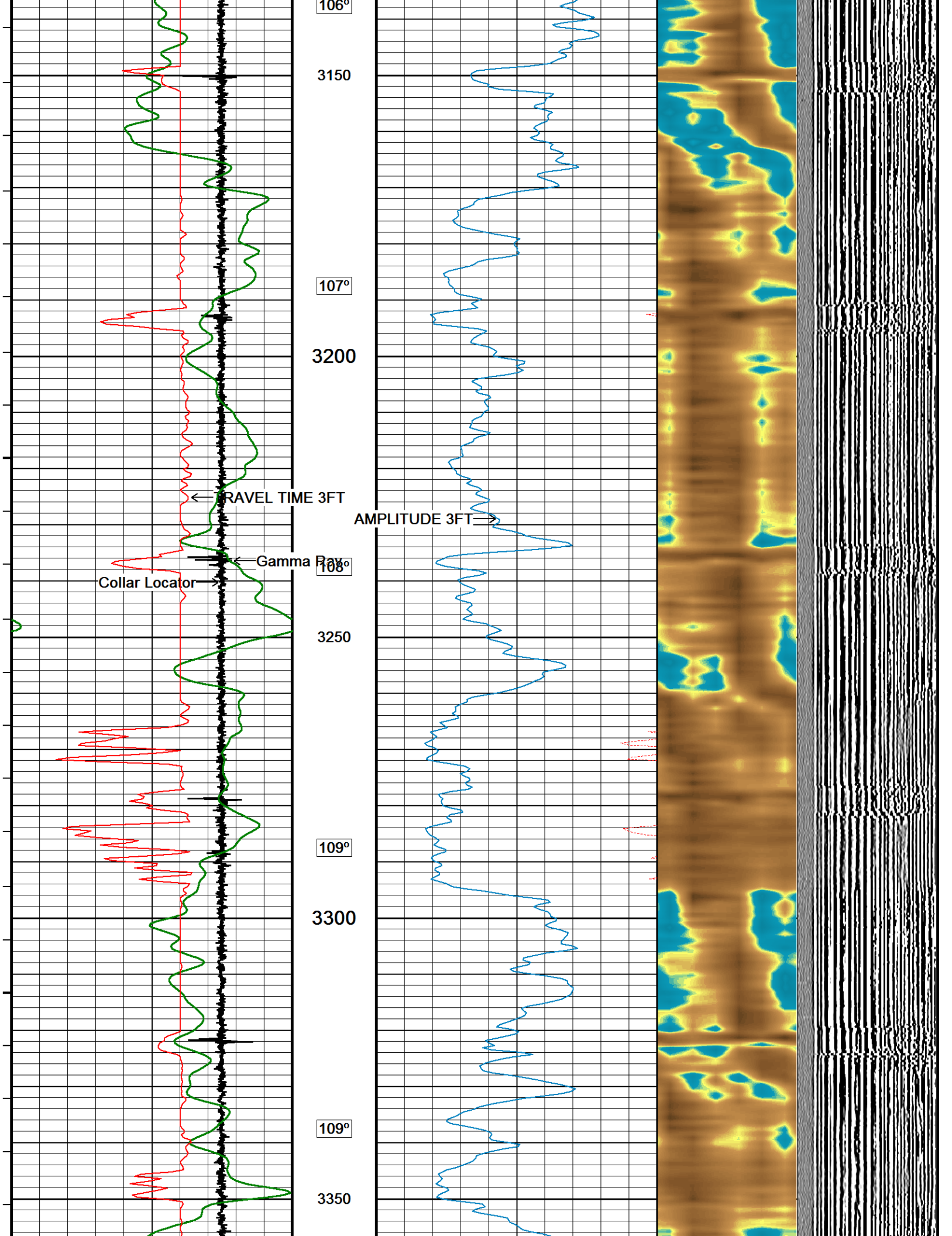
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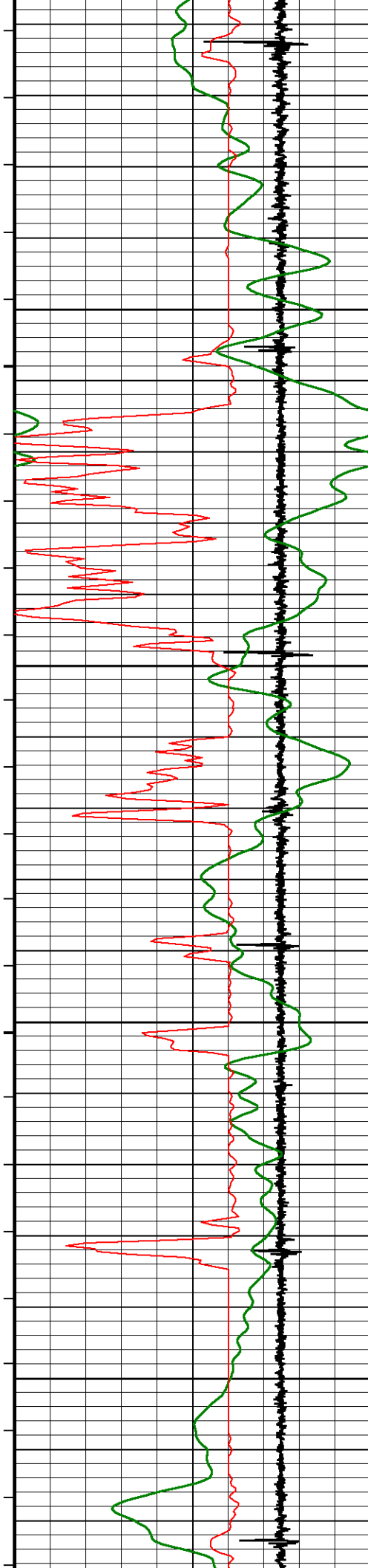
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3100

3150







110°

3400

111°

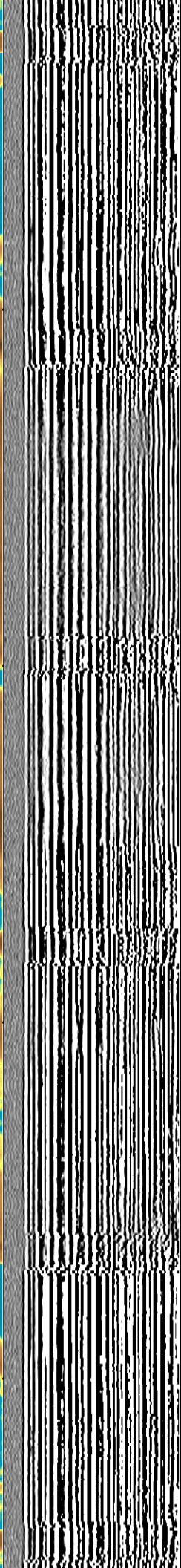
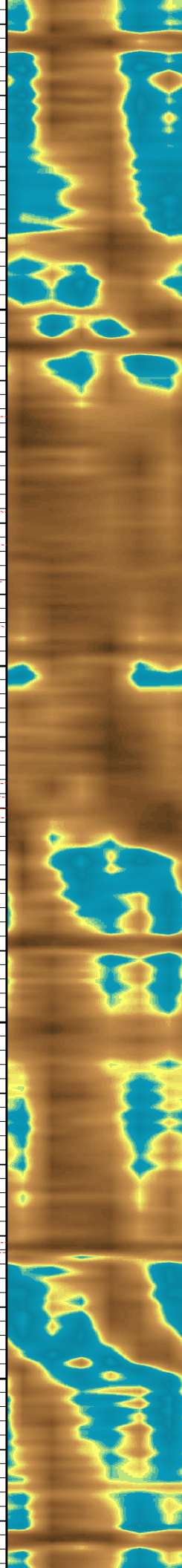
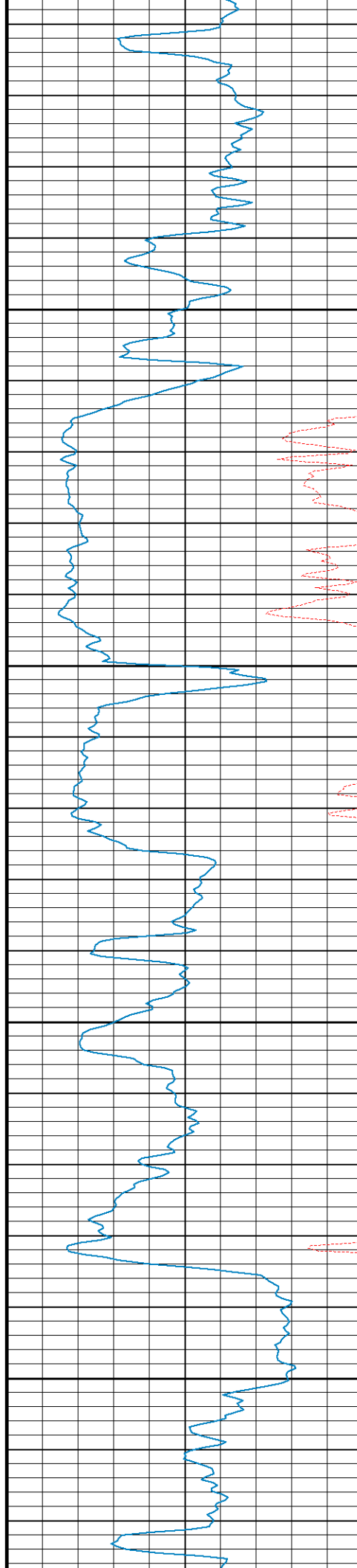
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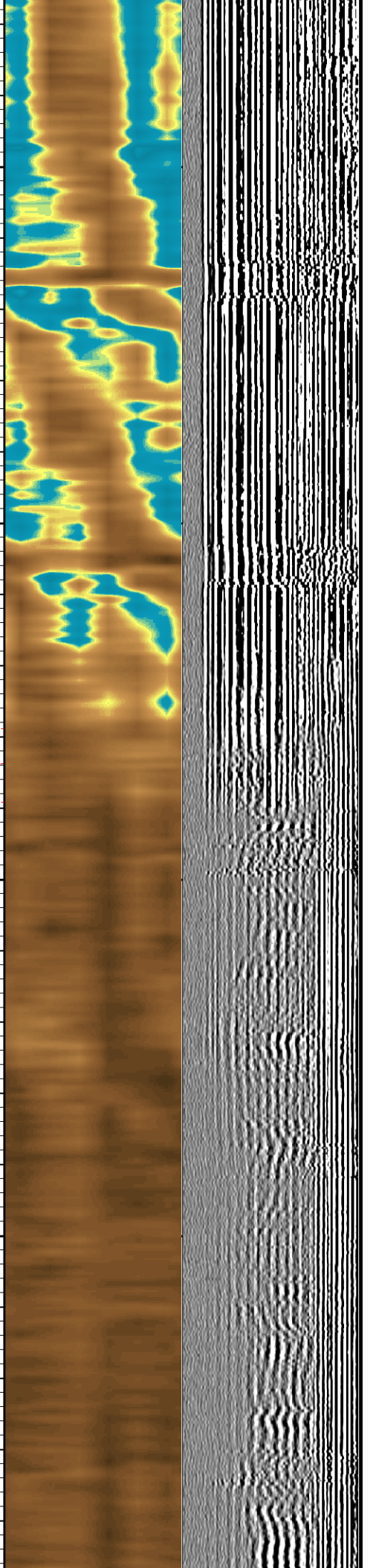
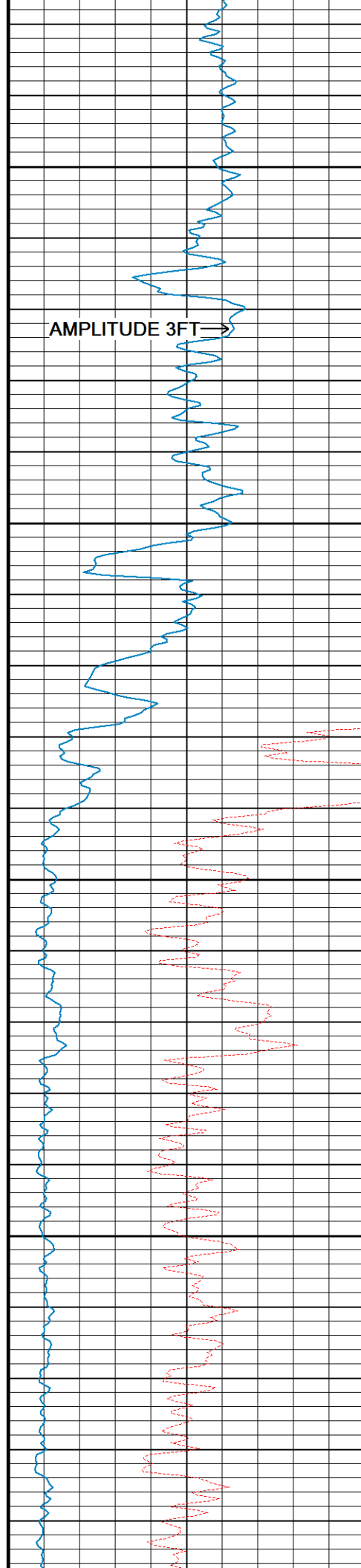
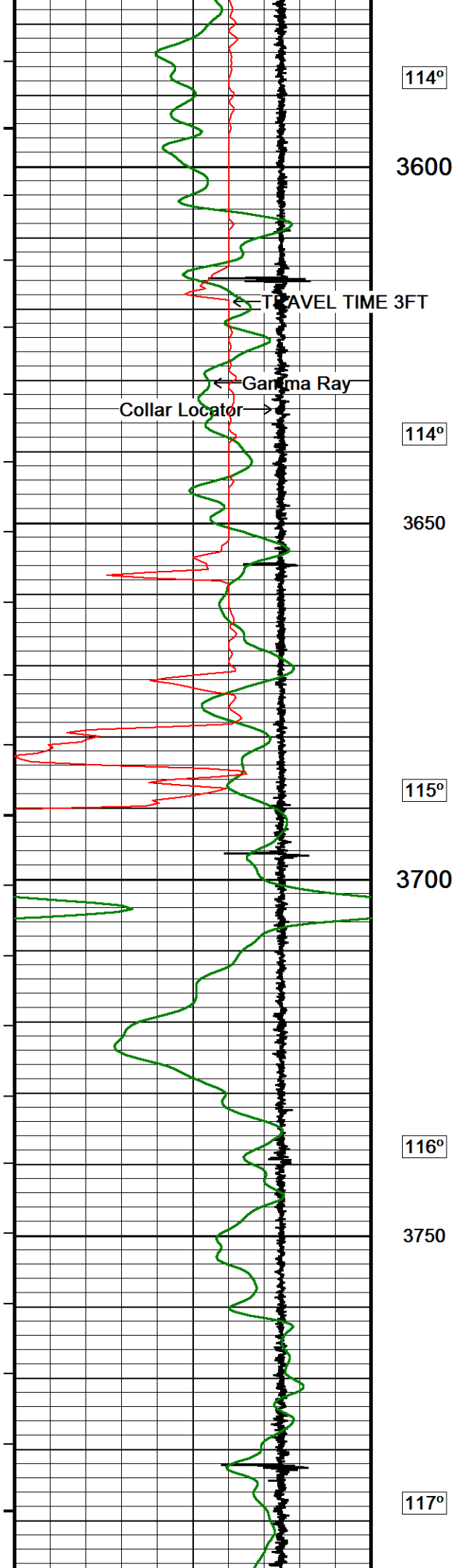
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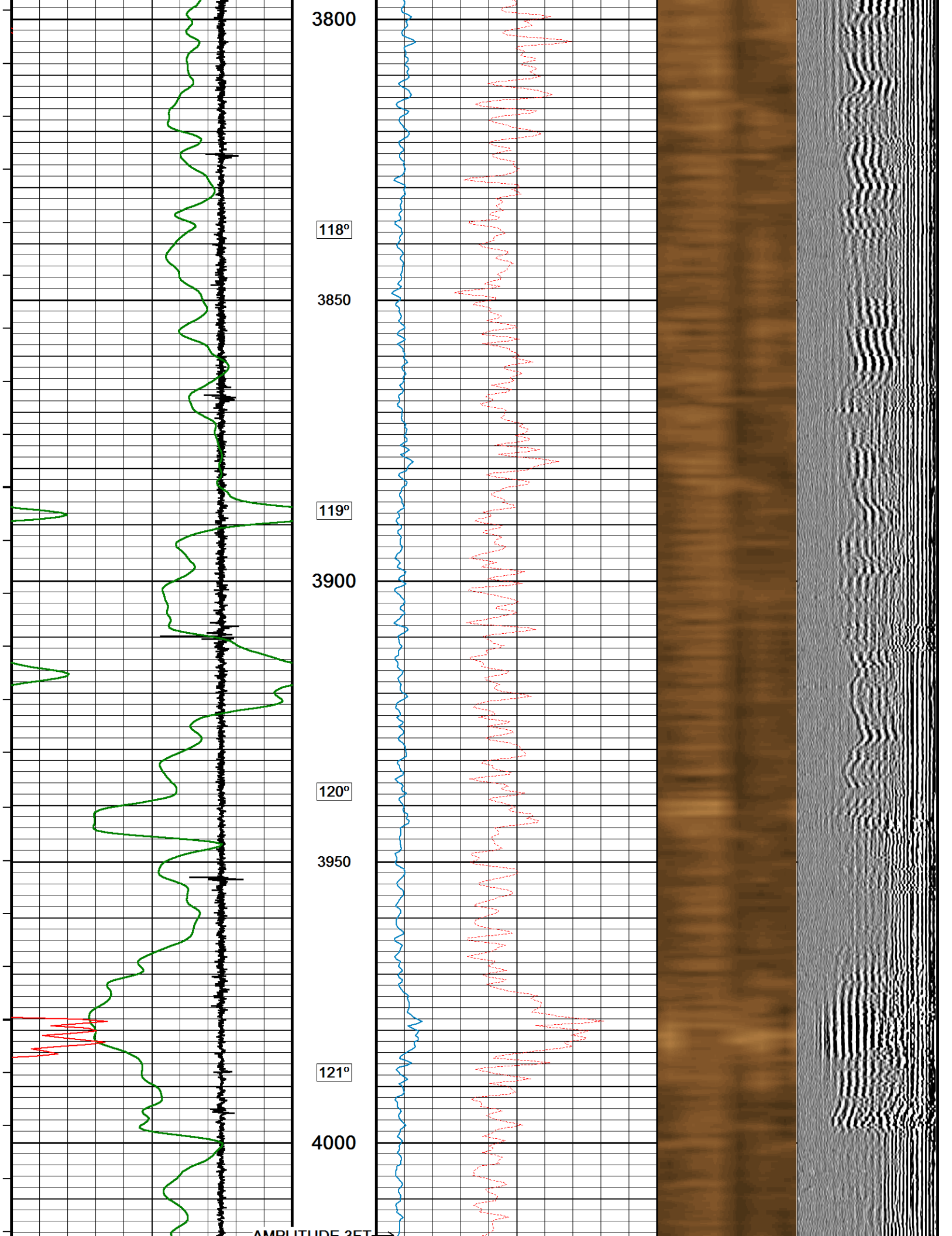
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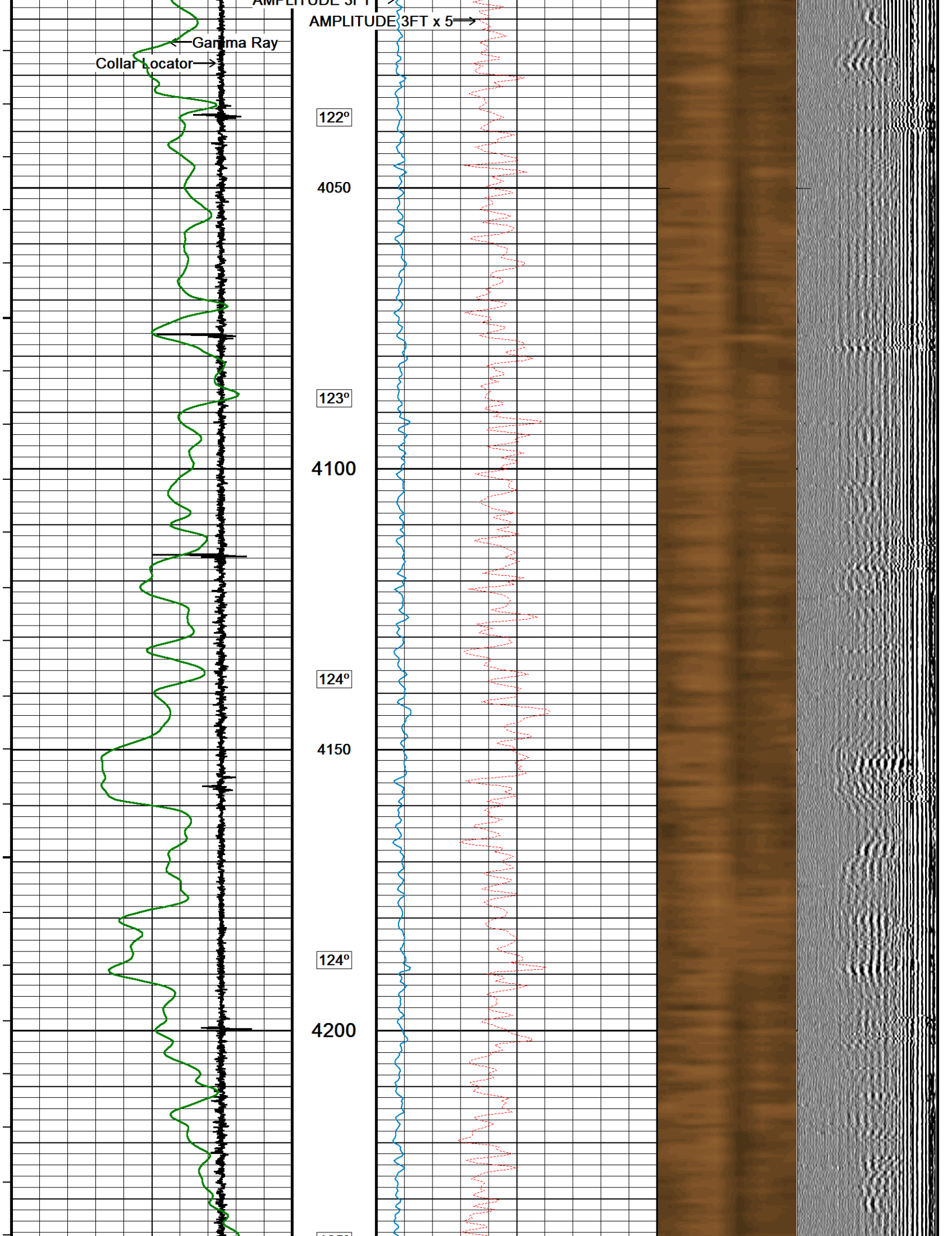
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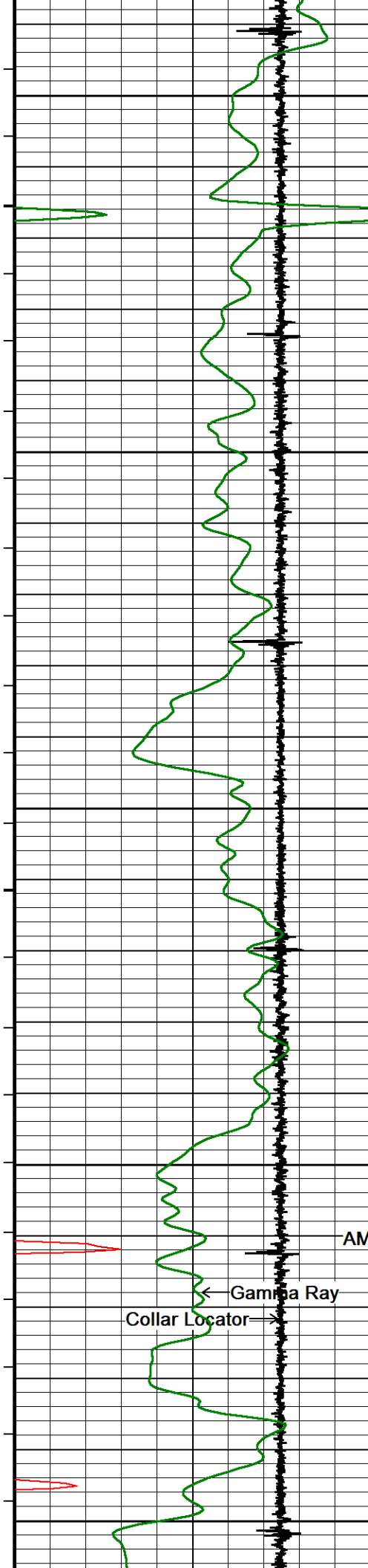
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125°

4250

127°

4300

127°

4350

128°

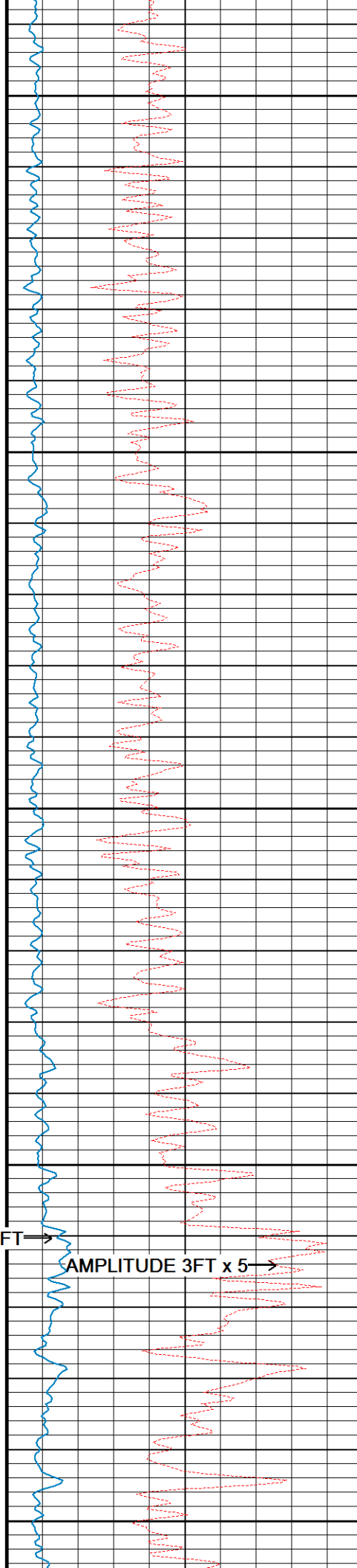
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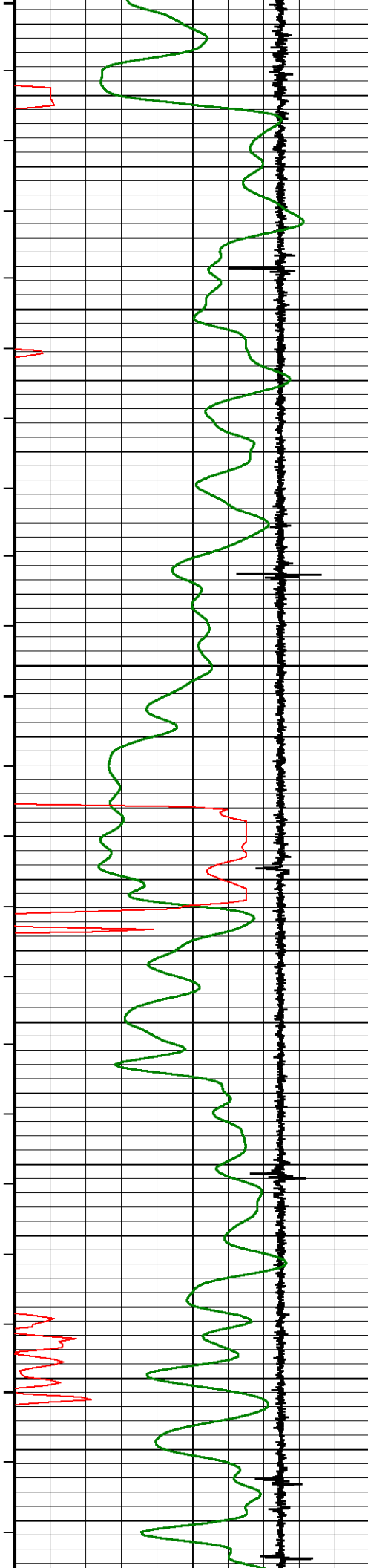
← Gamma Ray
Collar Locator →

129°

4450



AMPLITUDE 3FT x 5 →



130°

4500

131°

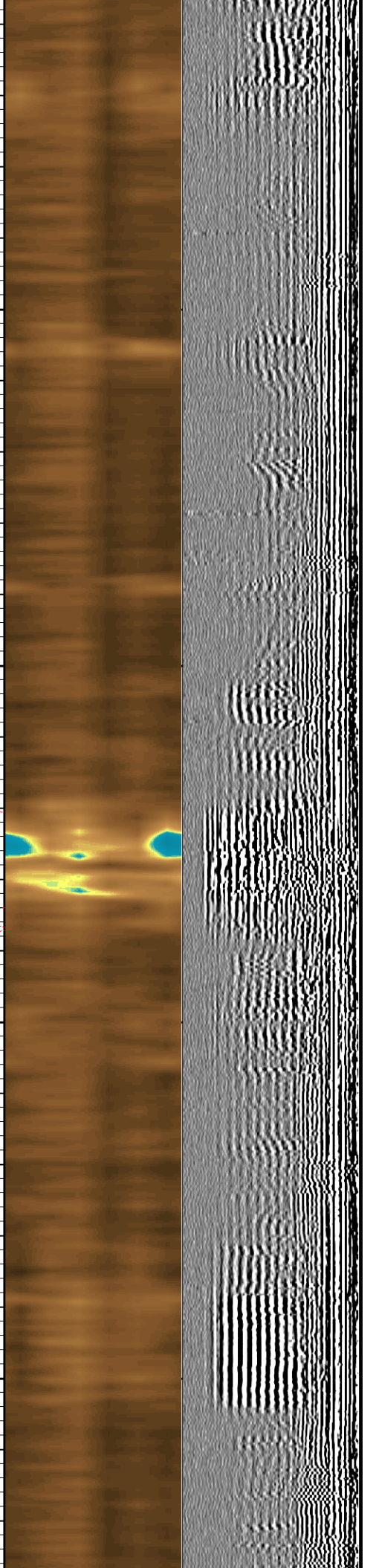
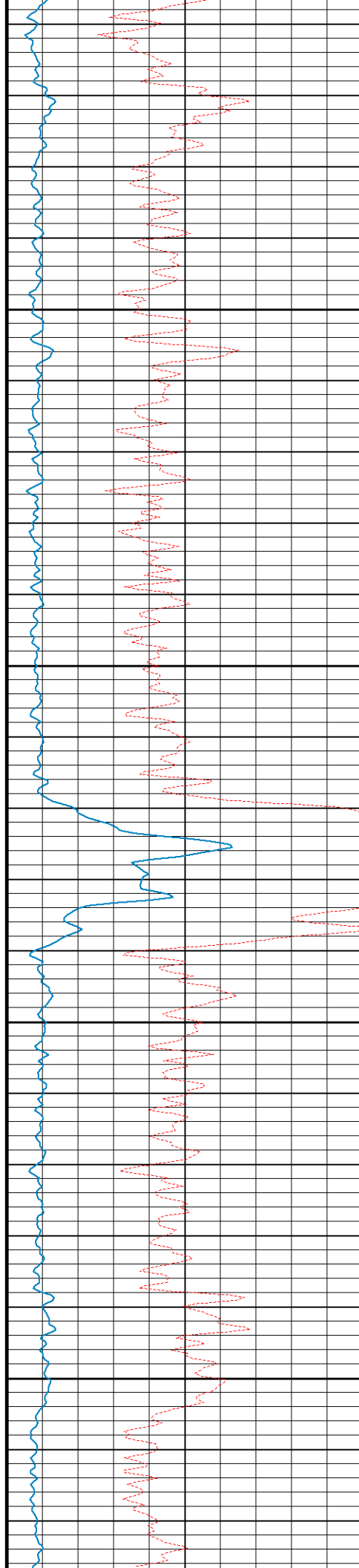
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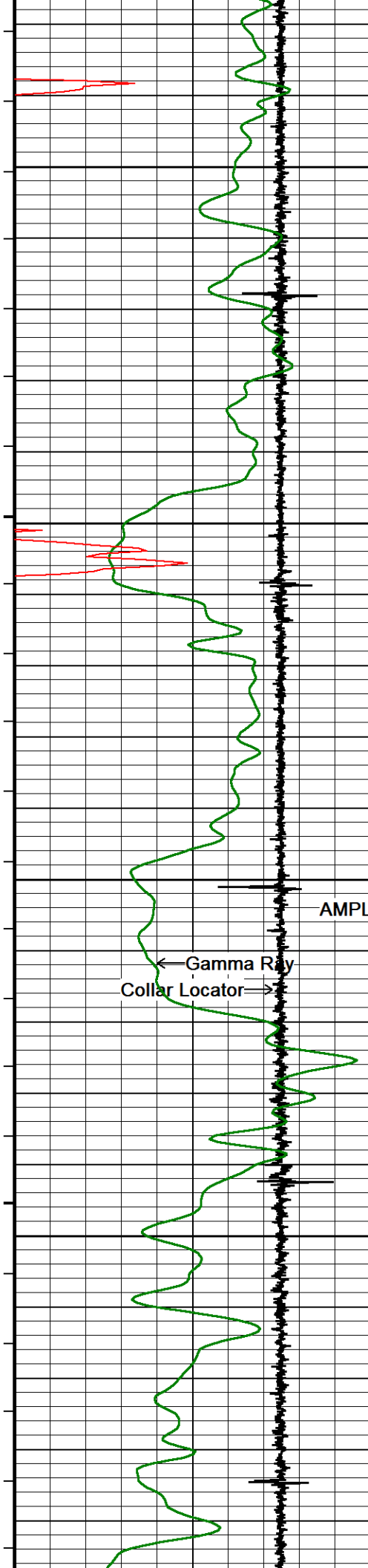
132°

4600

133°

4650





134°

4700

135°

4750

135°

4800

AMPLITUDE 3FT →

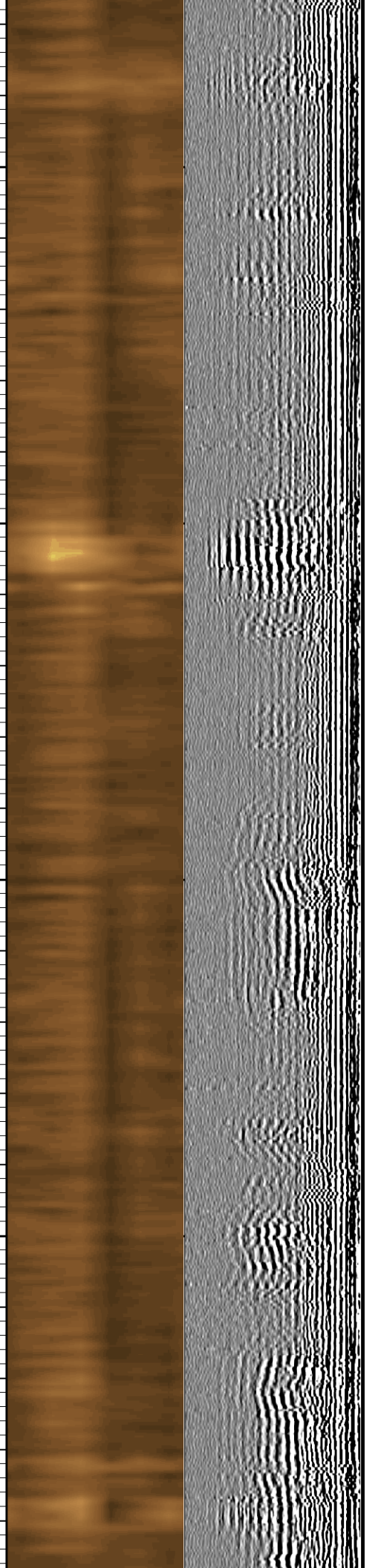
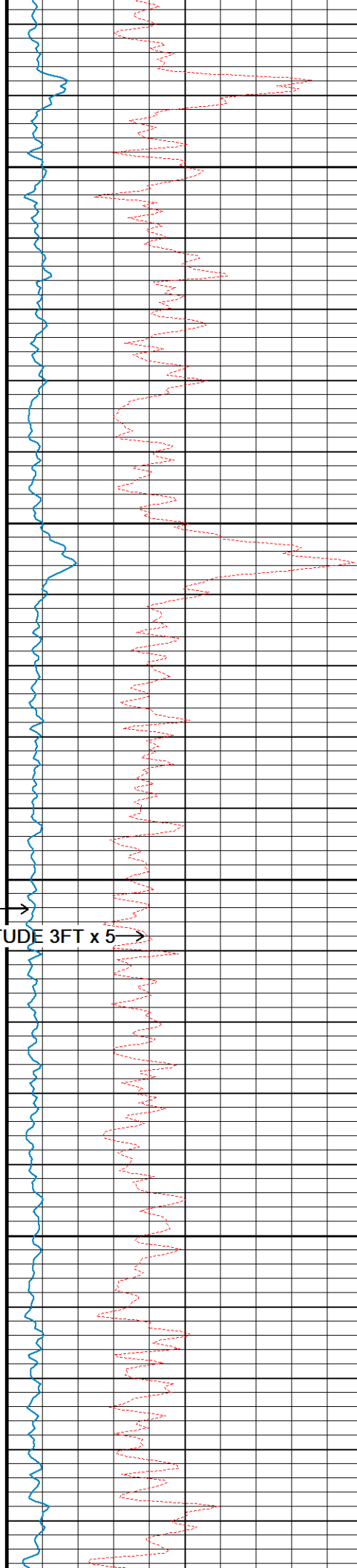
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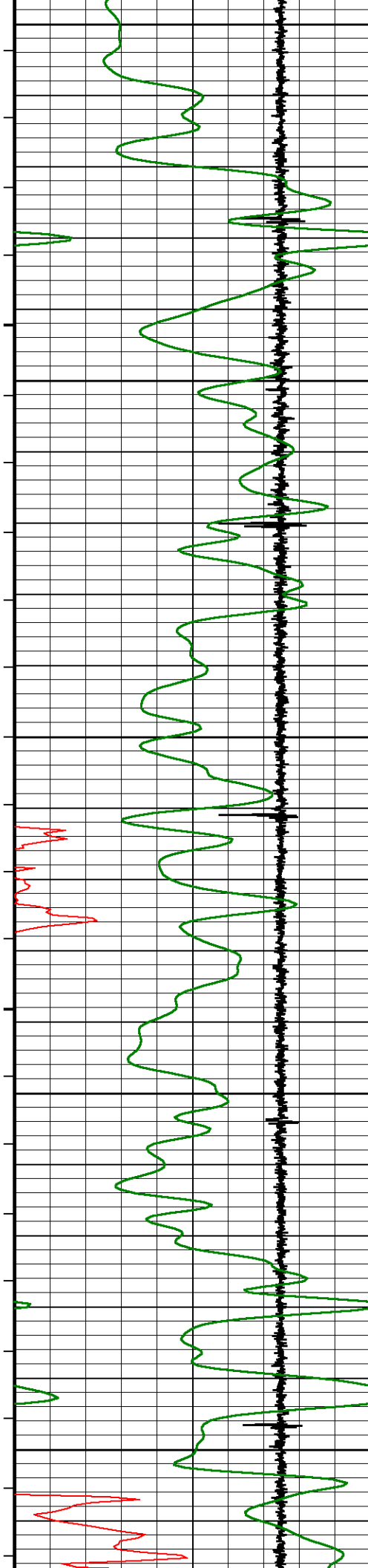
← Gamma Ray
Collar Locator →

136°

4850

137°





4900

139°

4950

140°

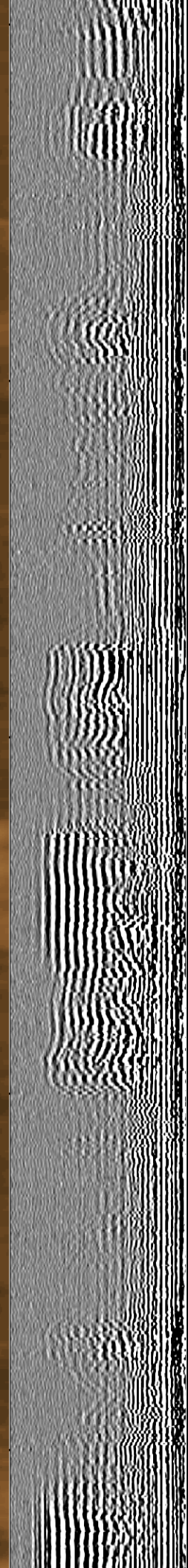
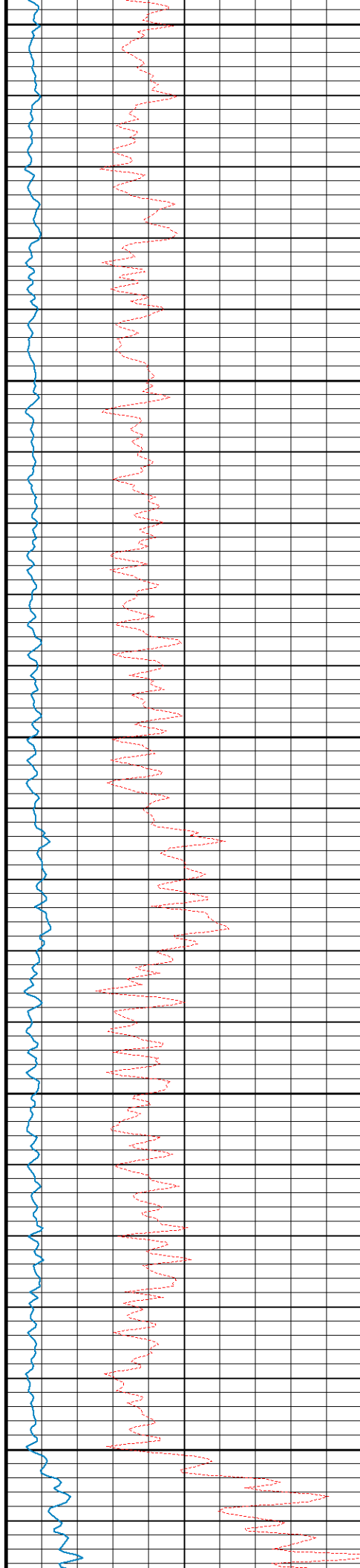
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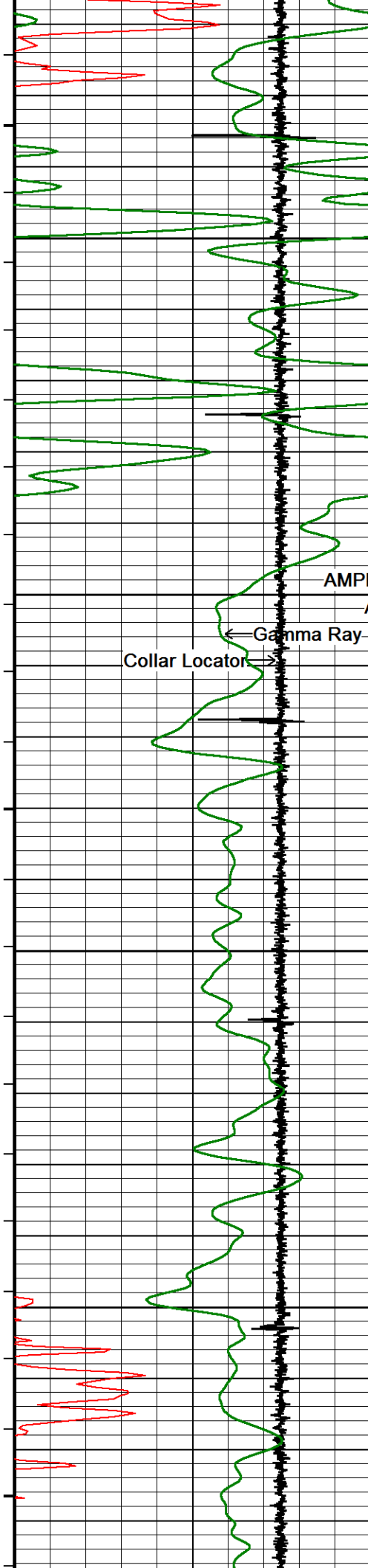
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145°

5100





146°

5150

148°

5200

149°

5250

150°

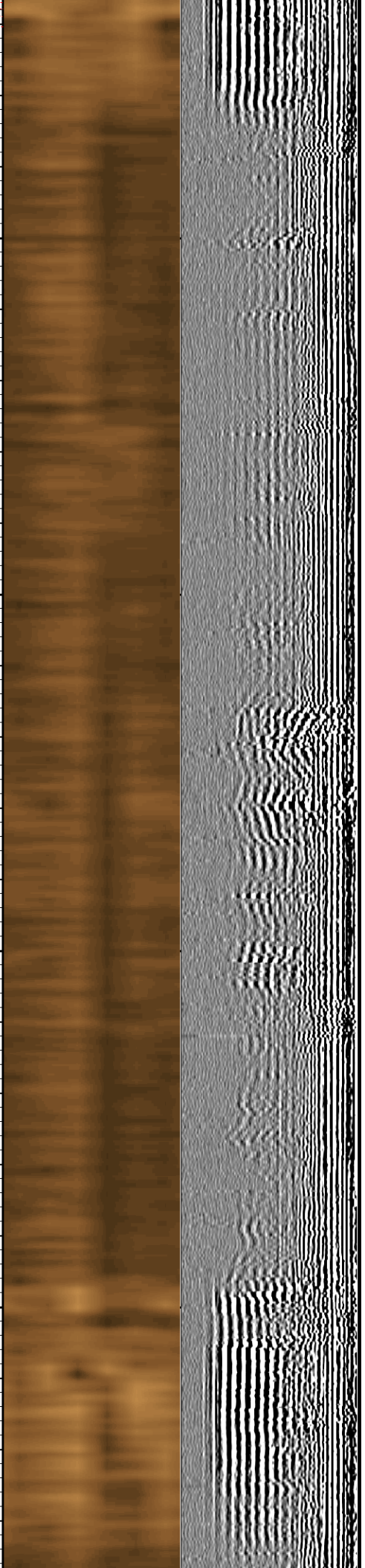
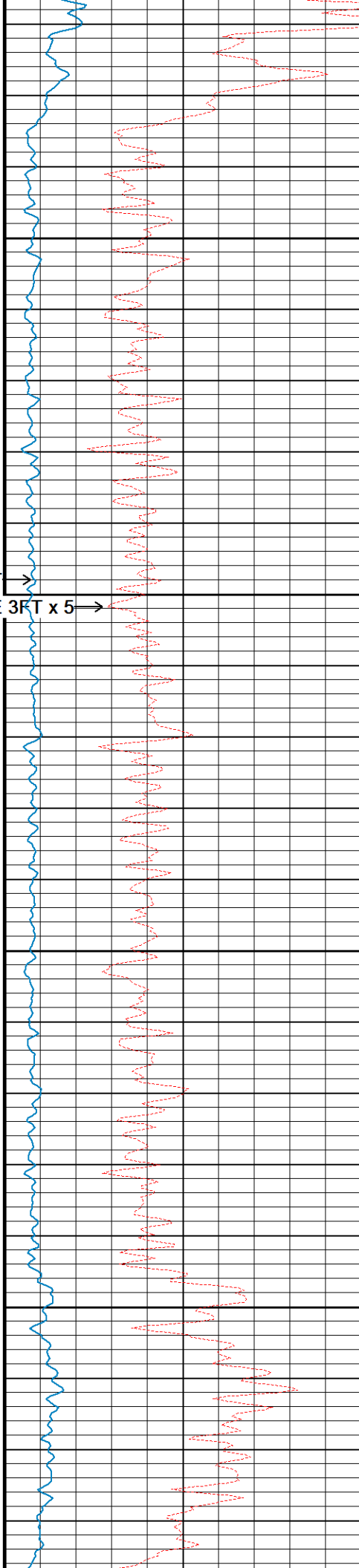
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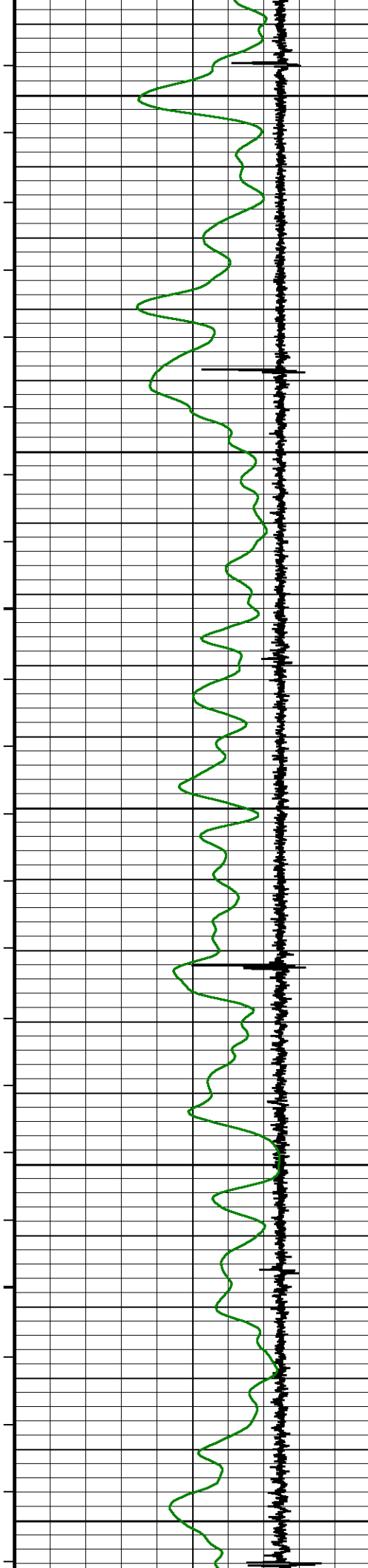
AMPLITUDE 3FT →

AMPLITUDE 3FT x 5 →

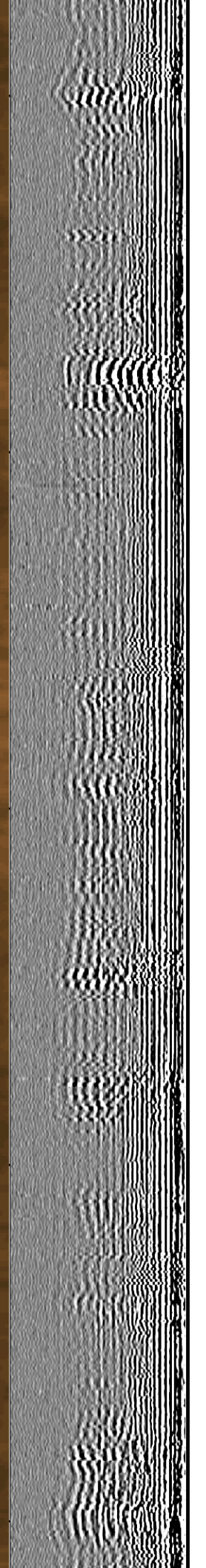
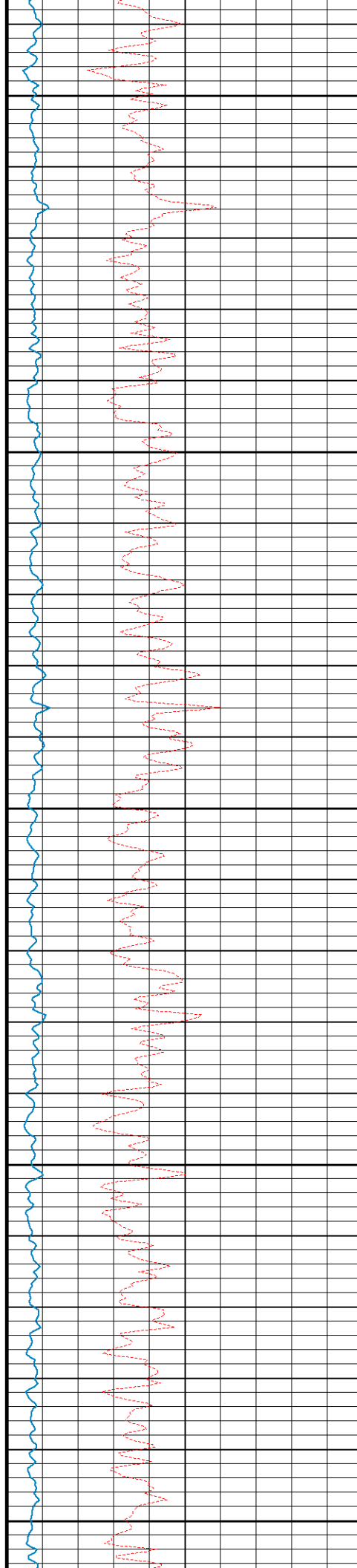
← Gamma Ray

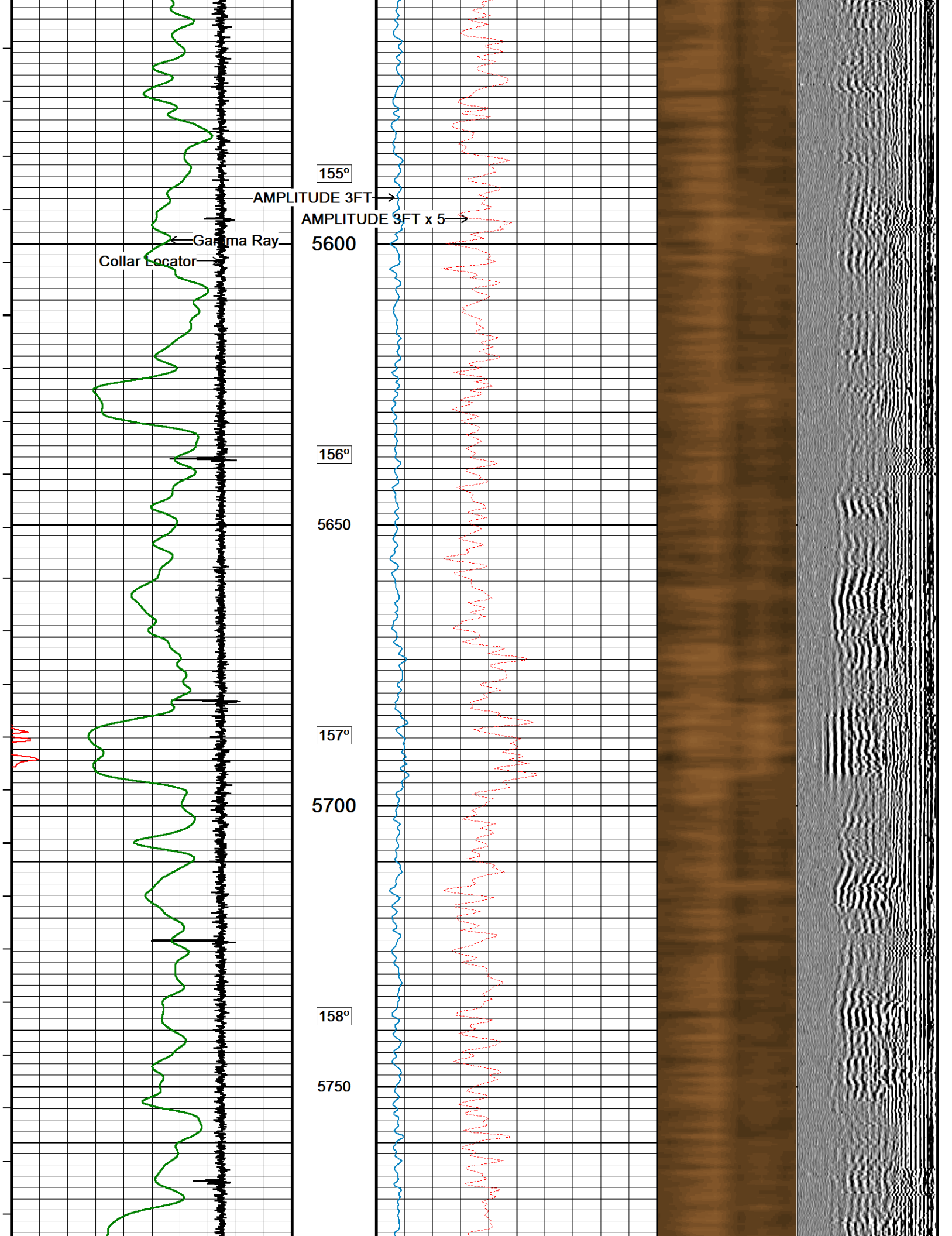
Collar Locator →

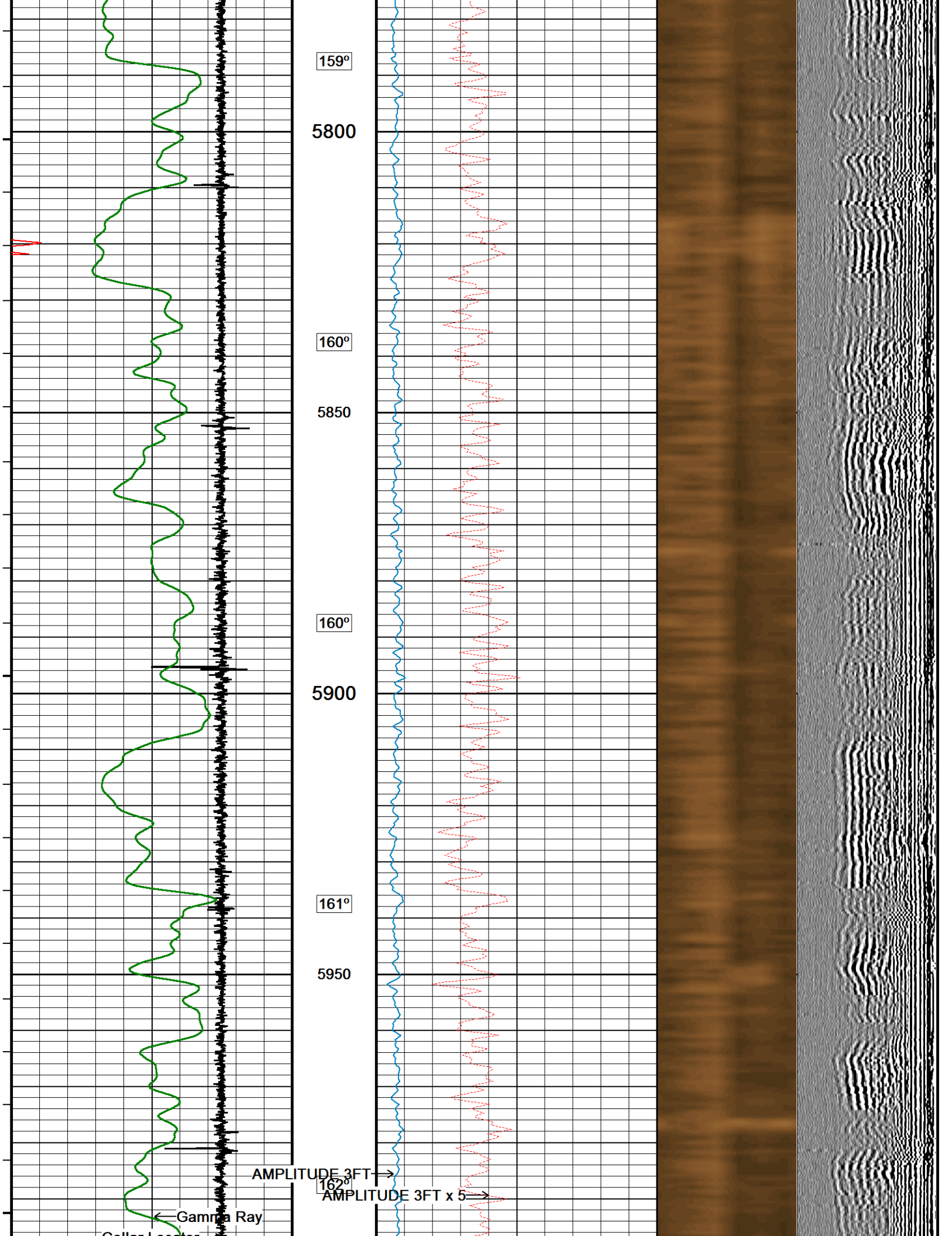


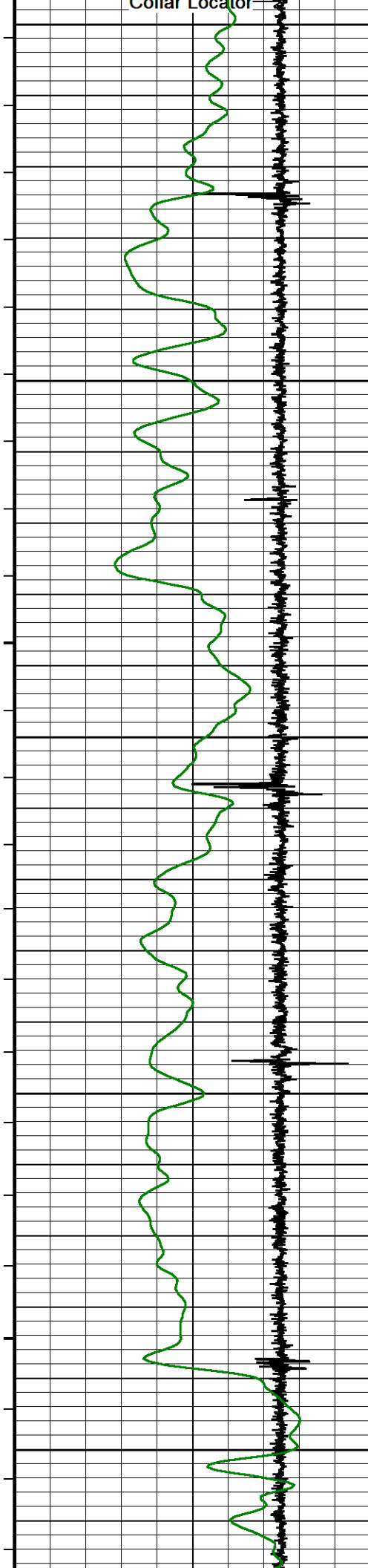


151°
5350
152°
5400
152°
5450
153°
5500
154°
5550









6000

163°

6050

164°

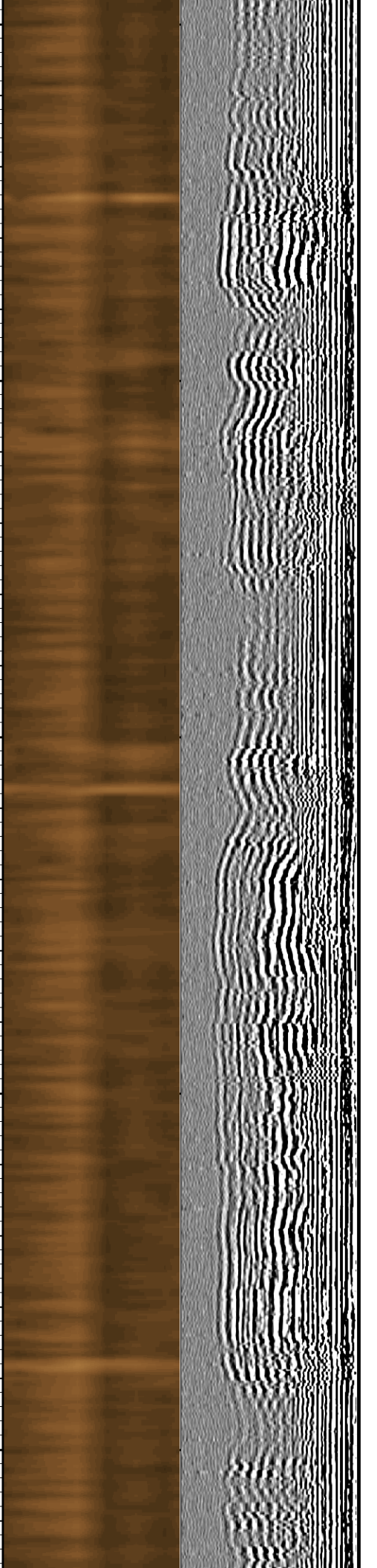
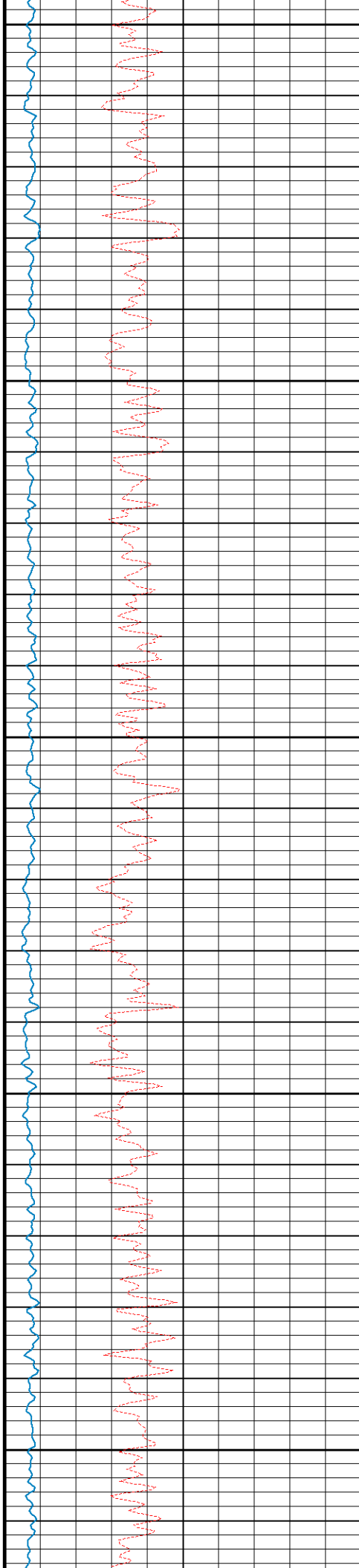
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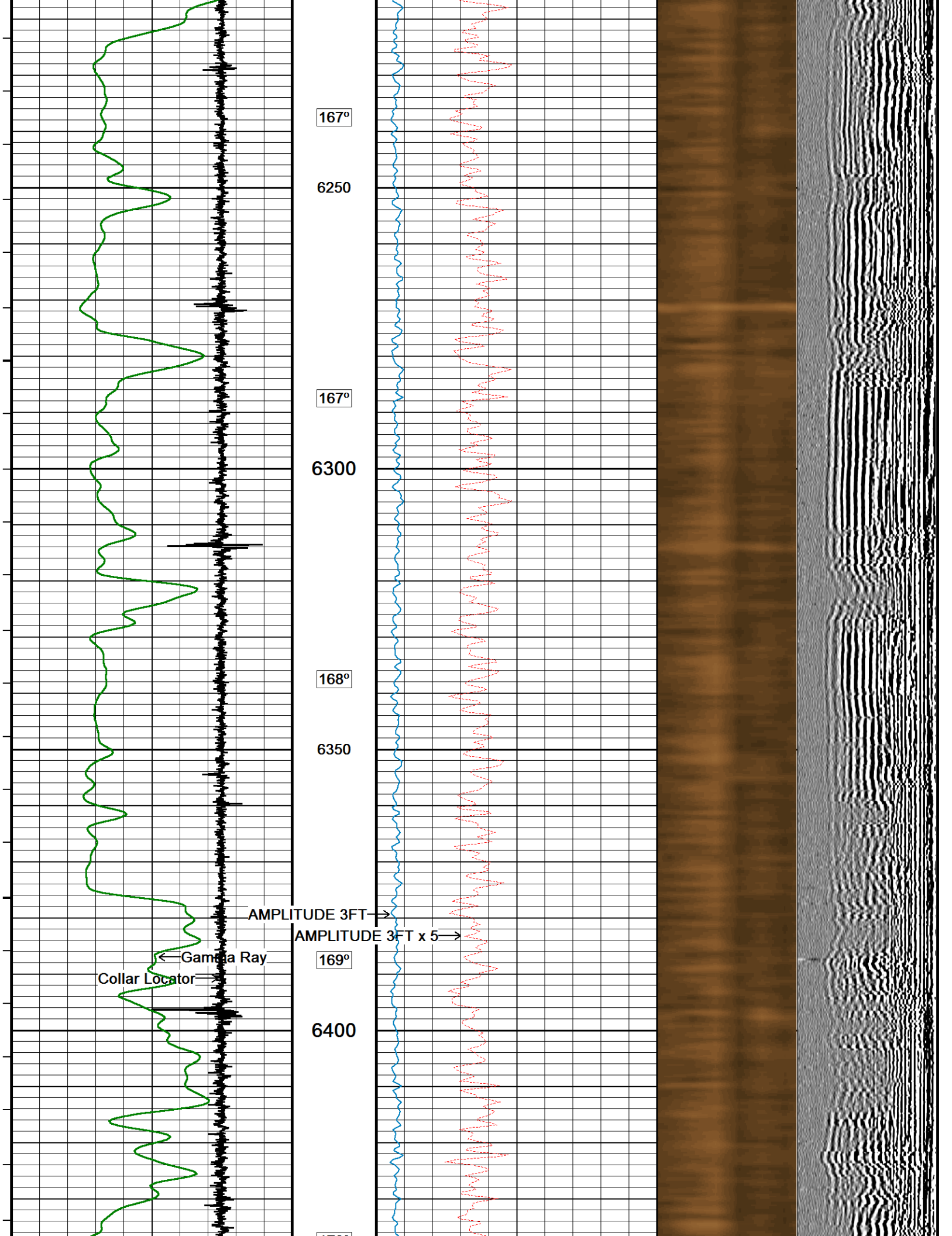
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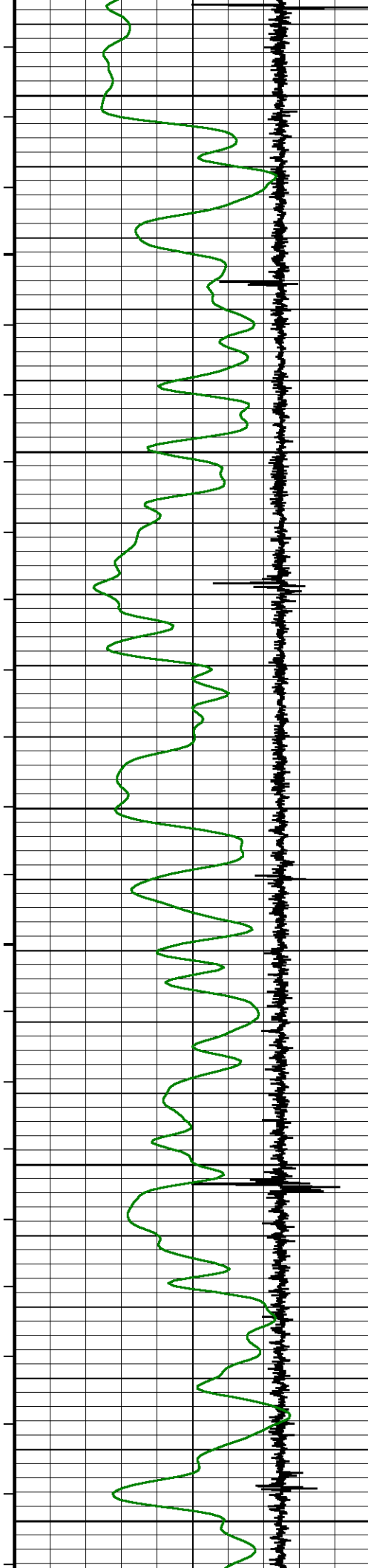
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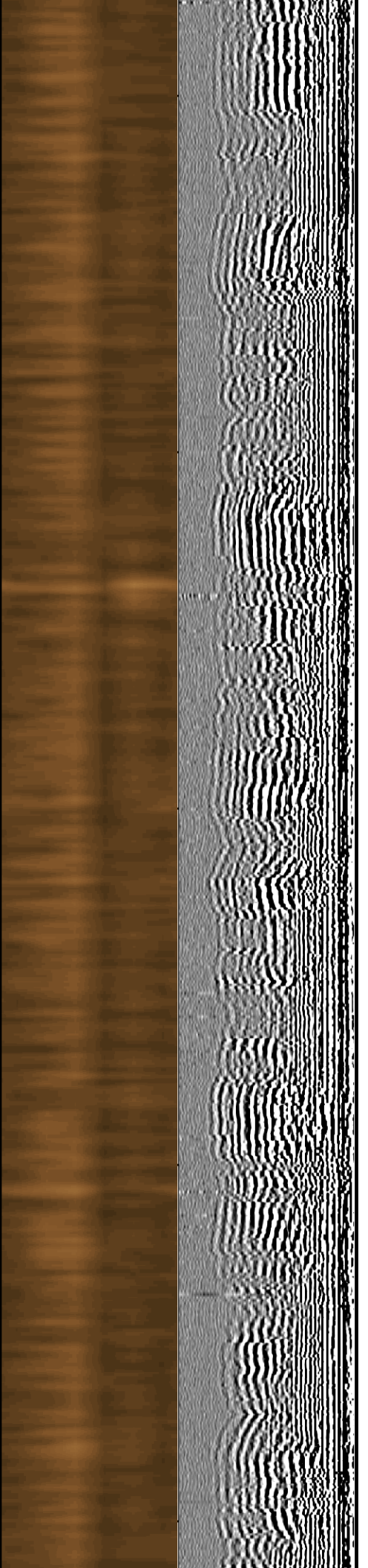
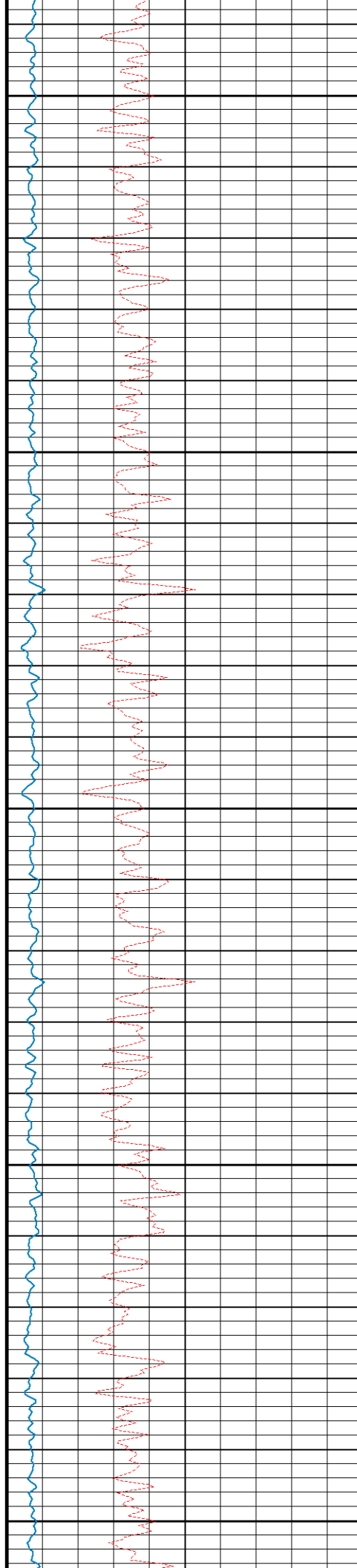
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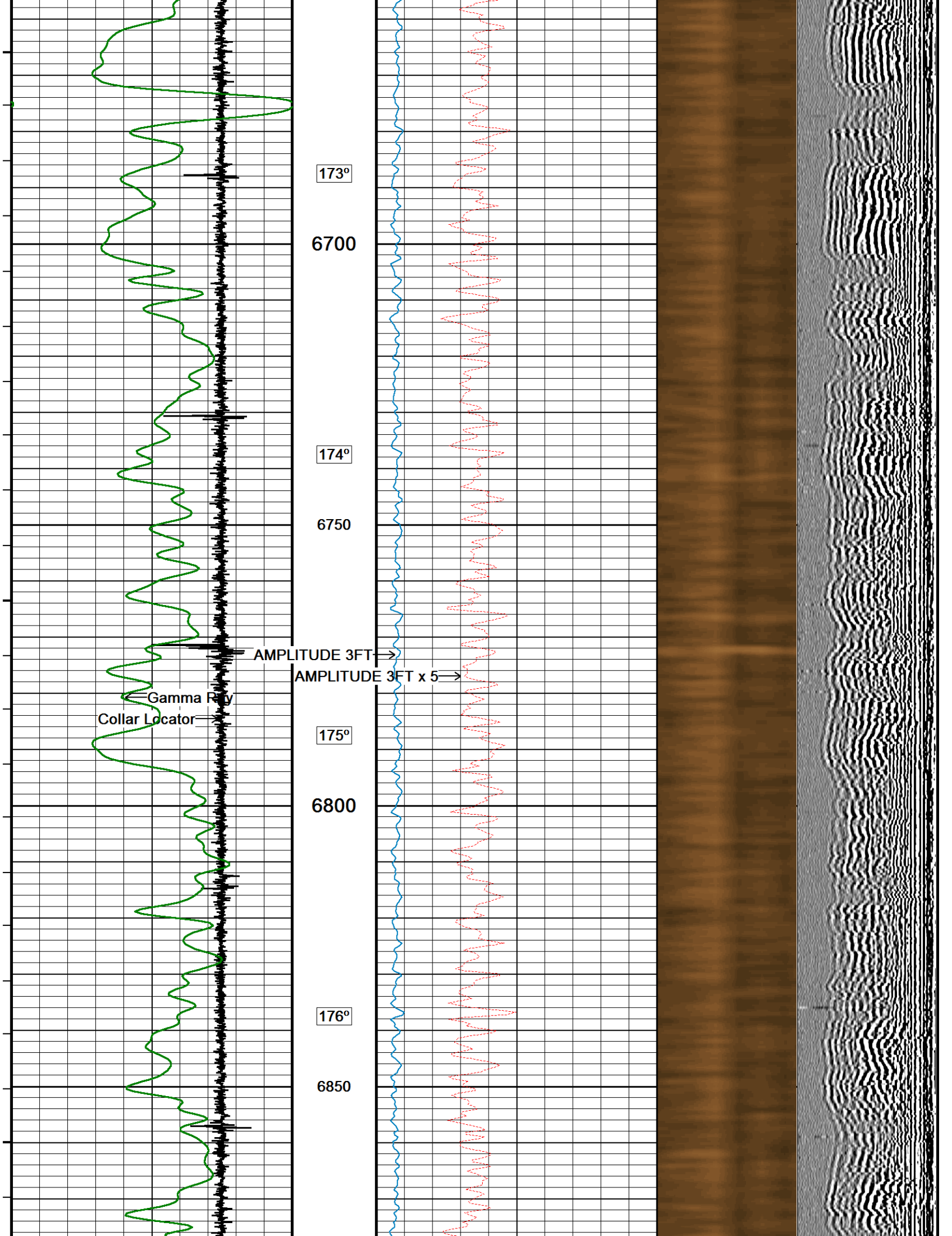


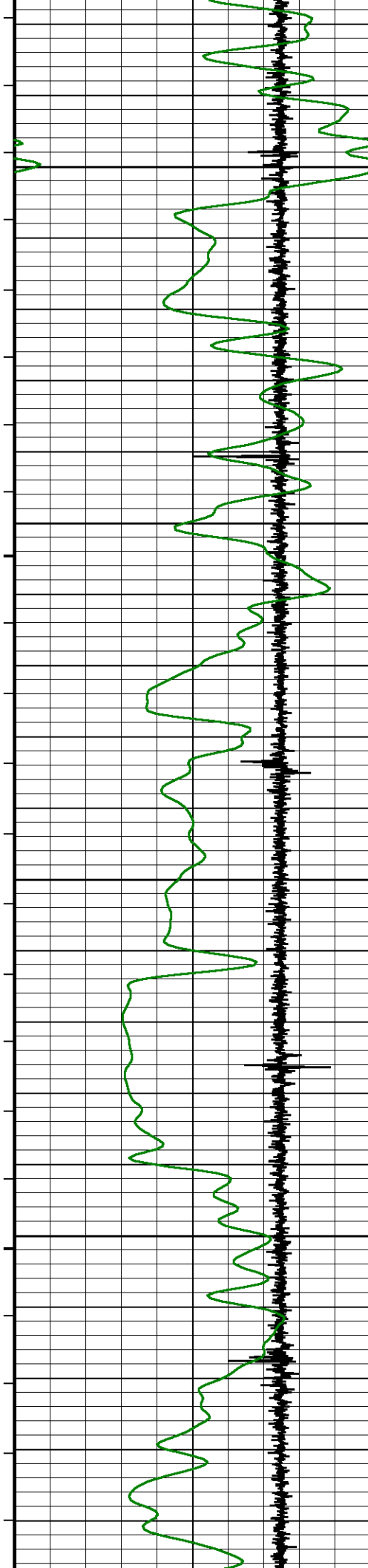




170°
6450
171°
6500
171°
6550
172°
6600
173°
6650







177°

6900

178°

6950

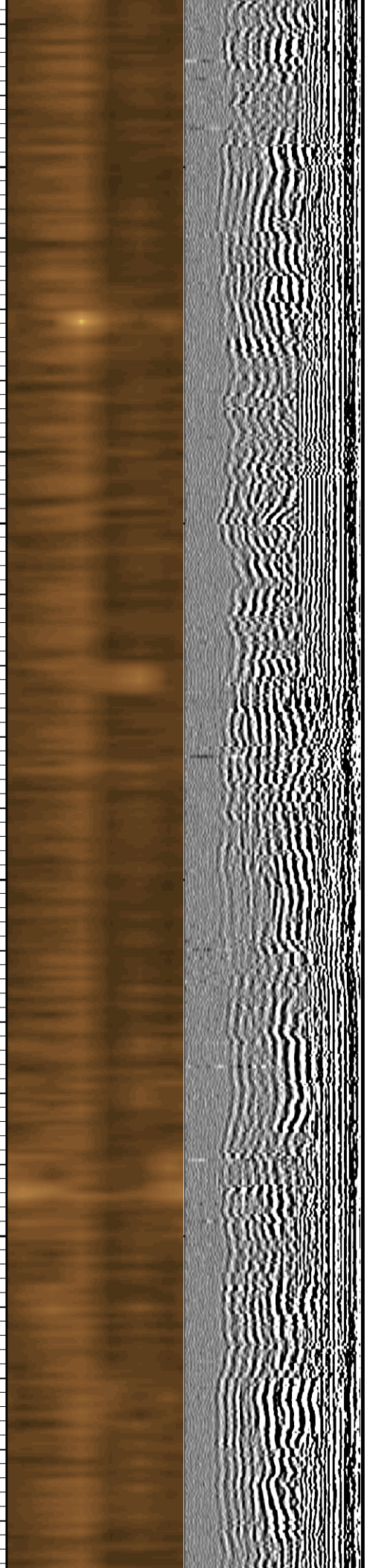
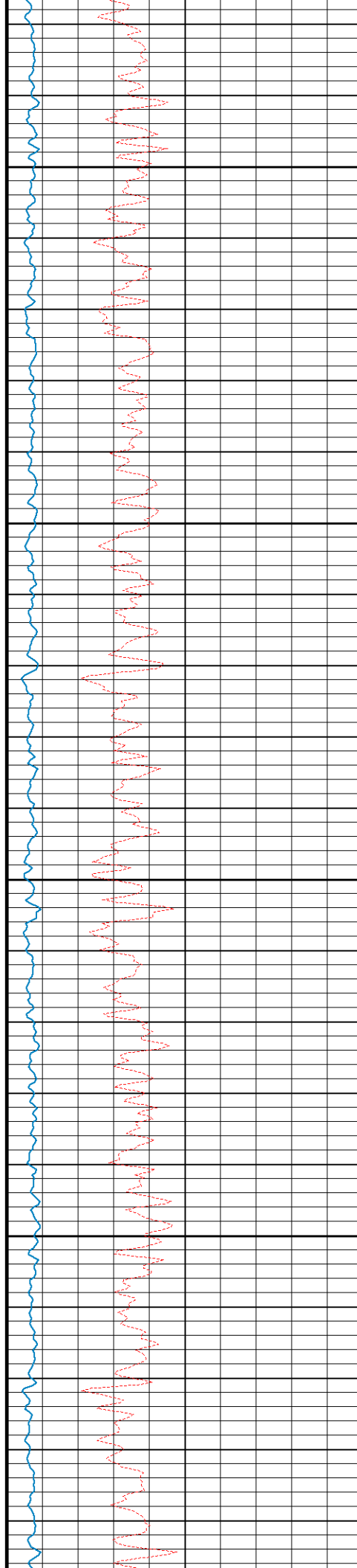
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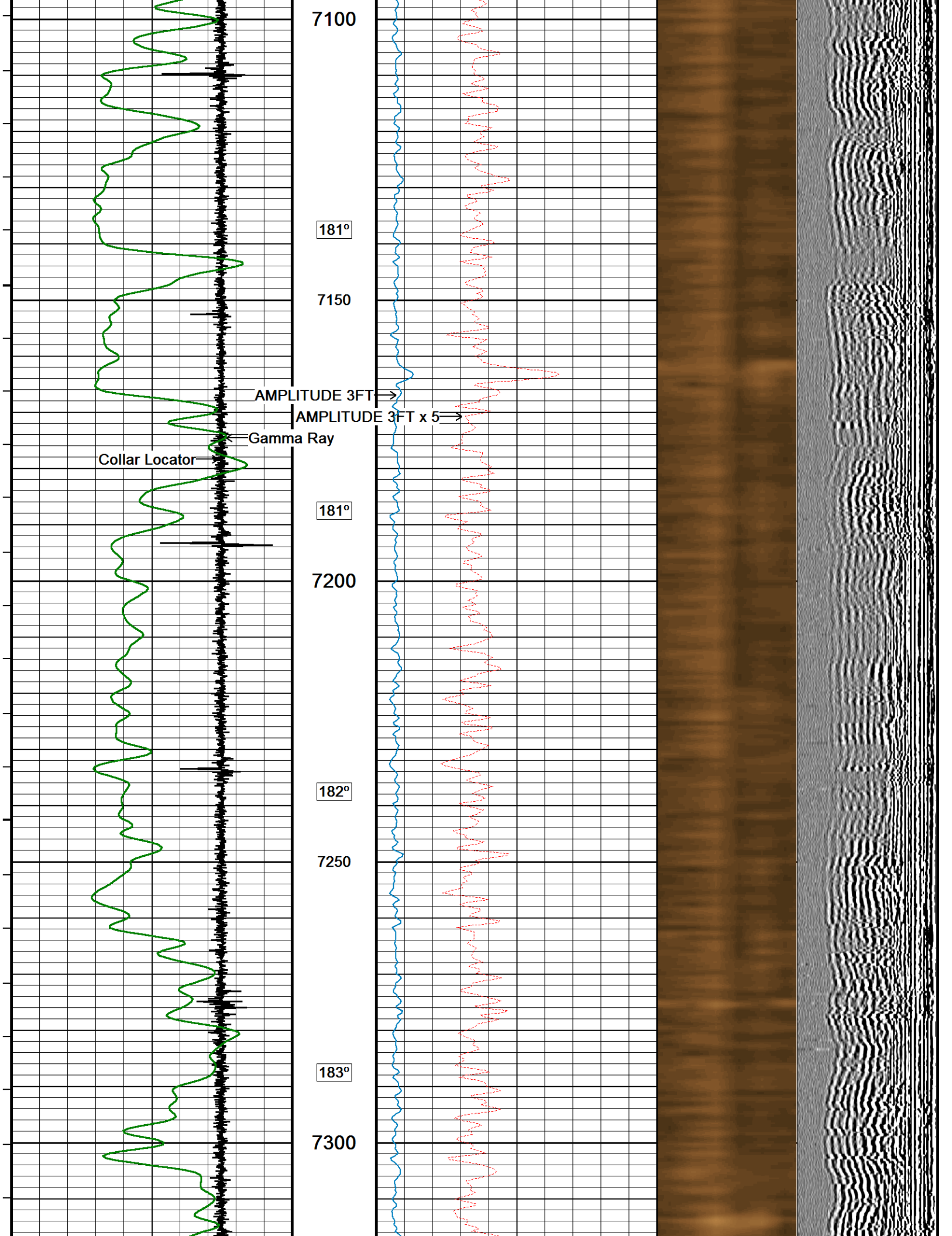
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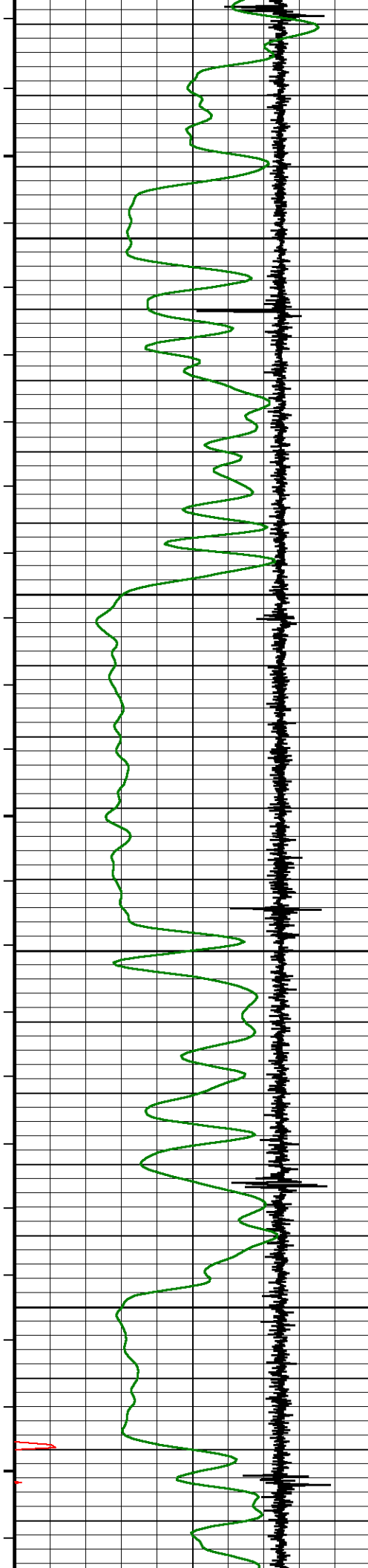
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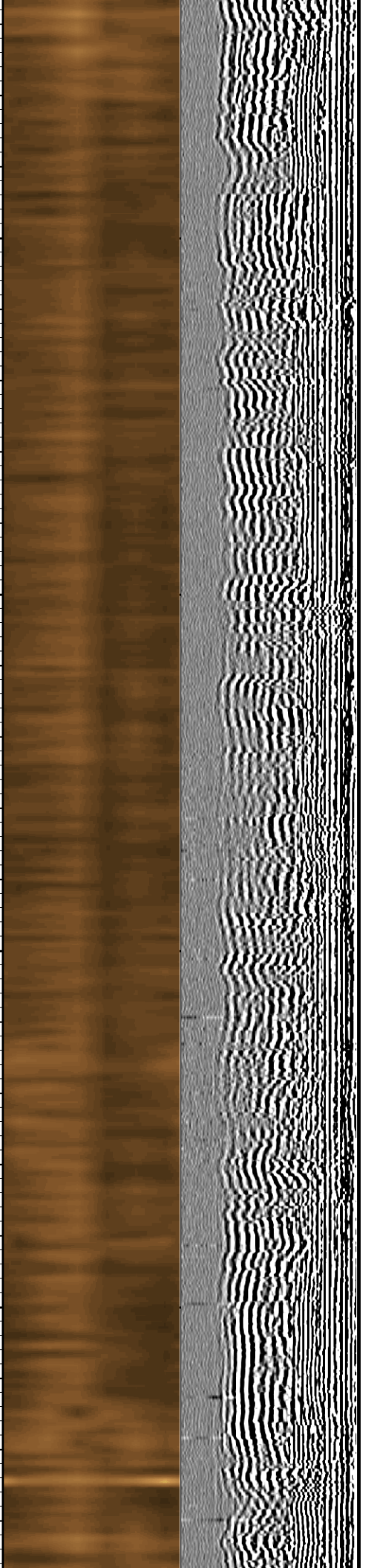
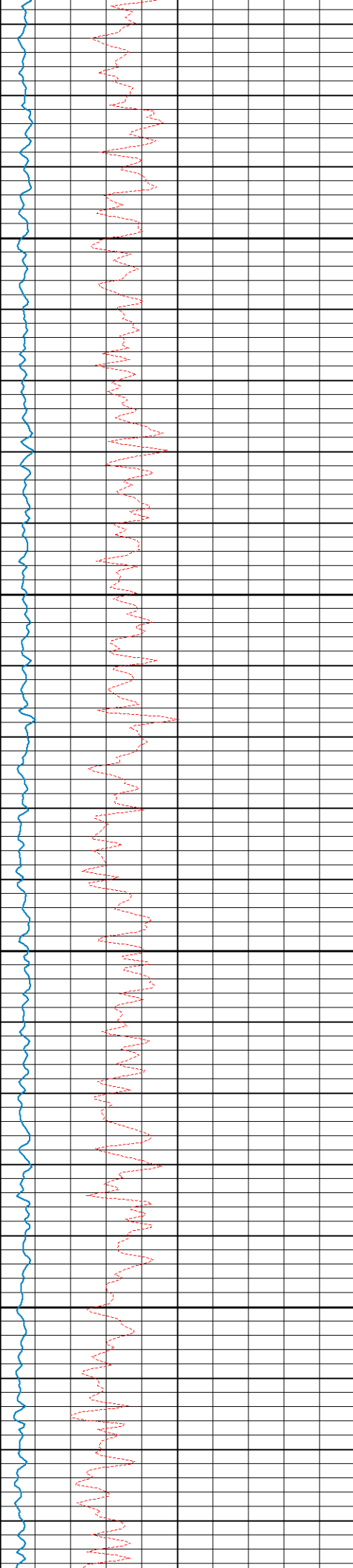
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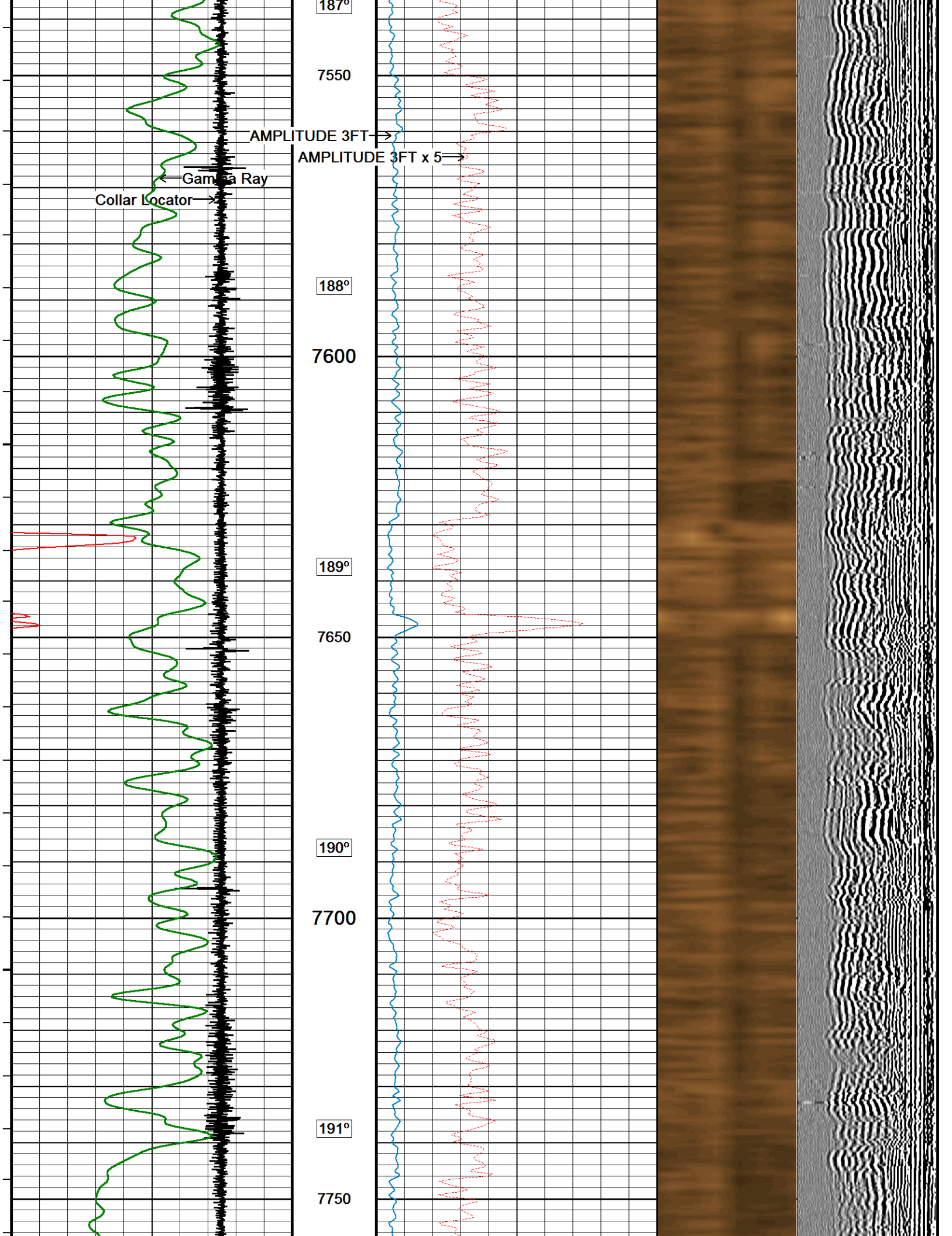
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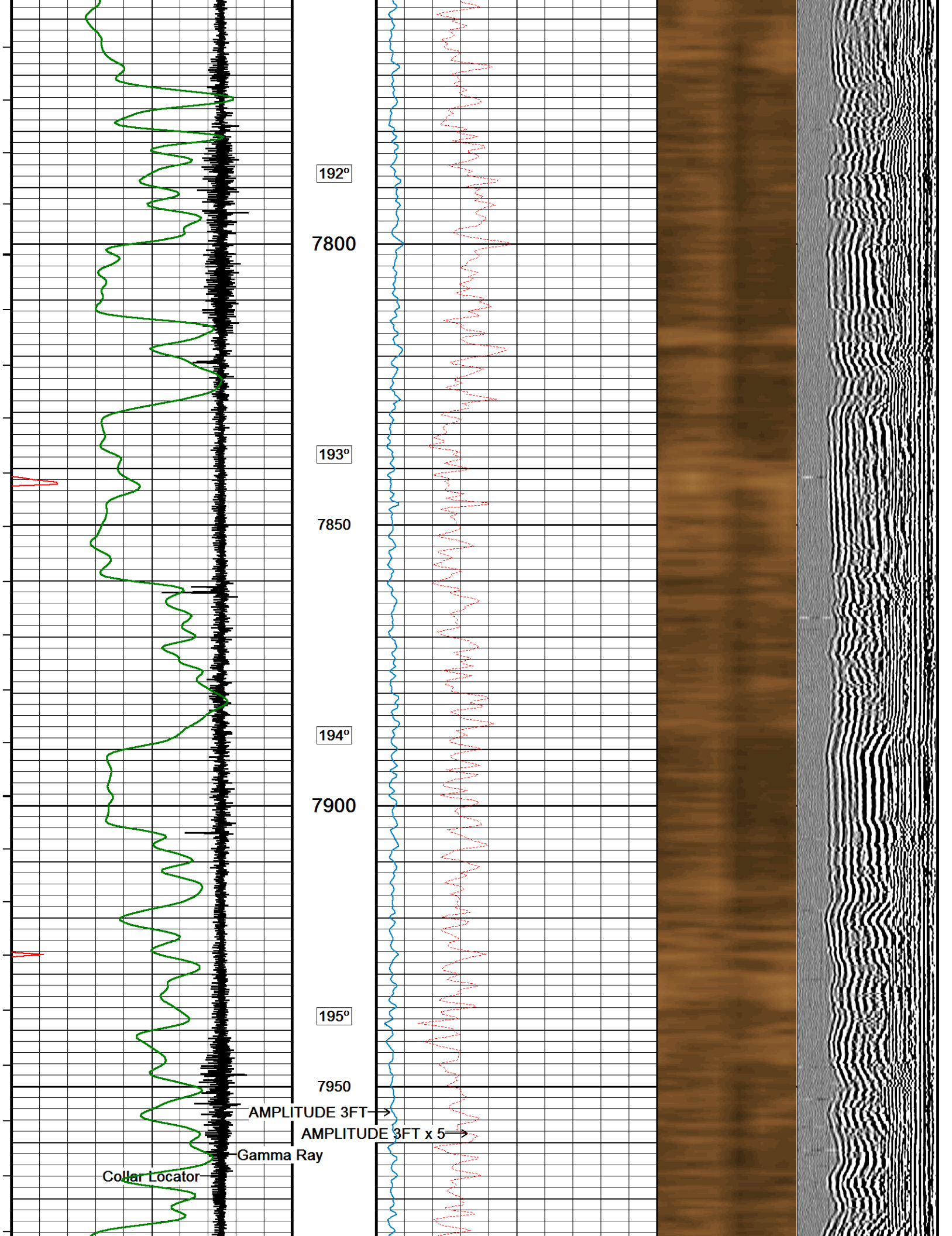
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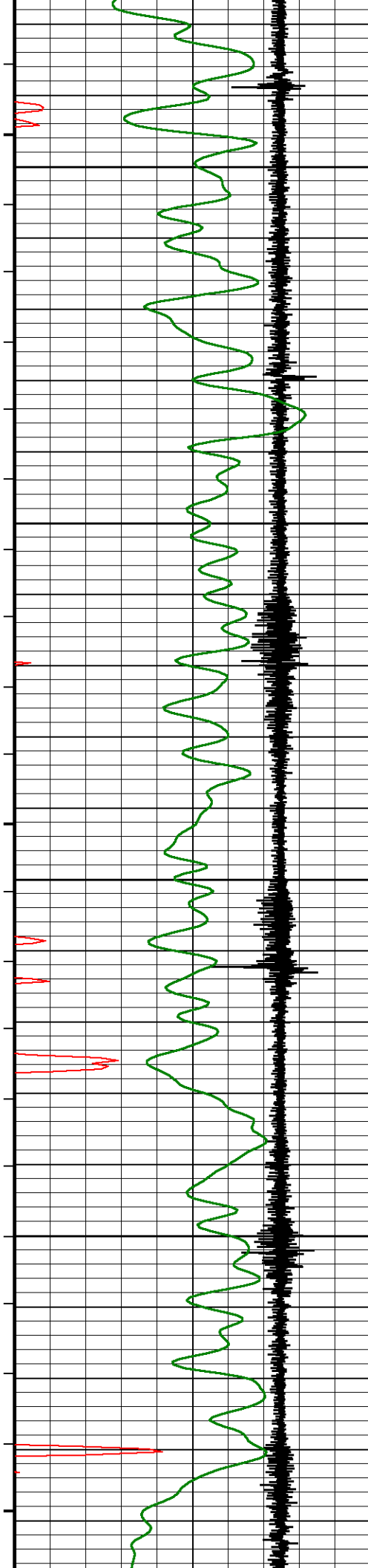
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7500









196°

8000

197°

8050

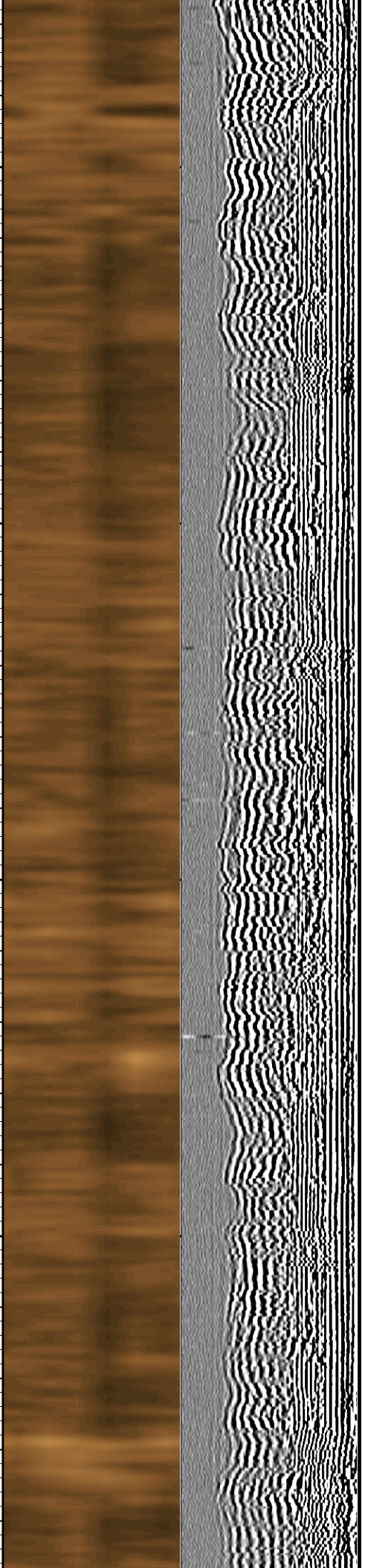
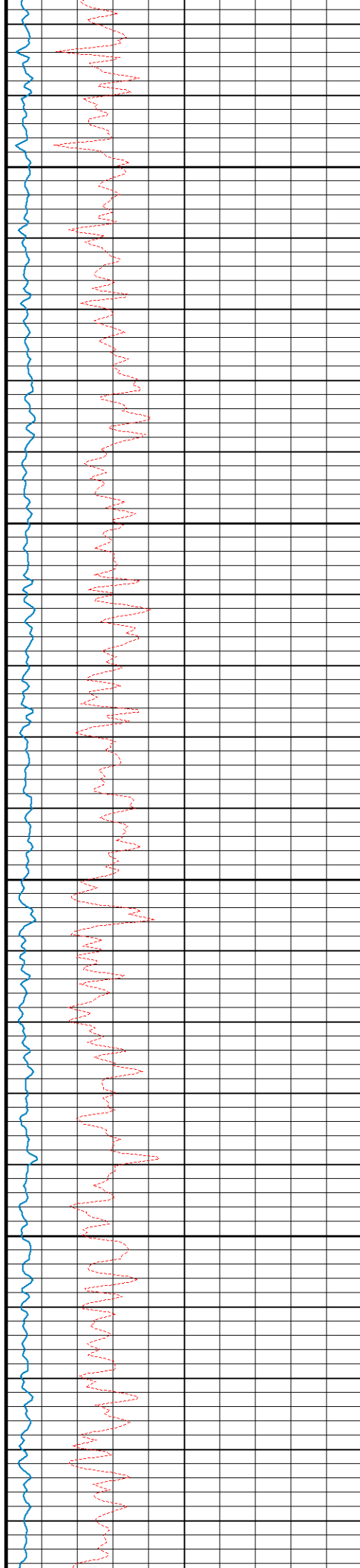
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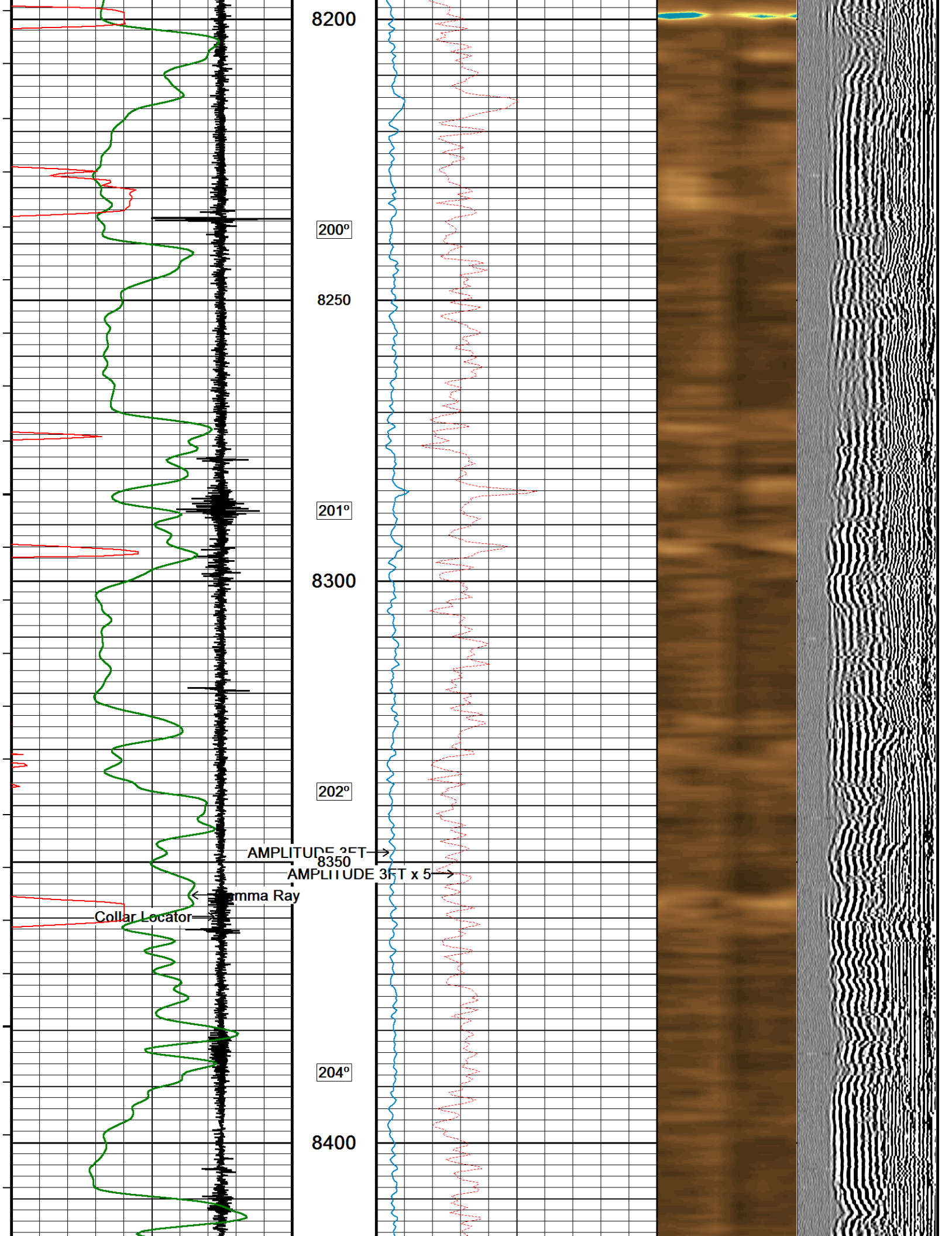
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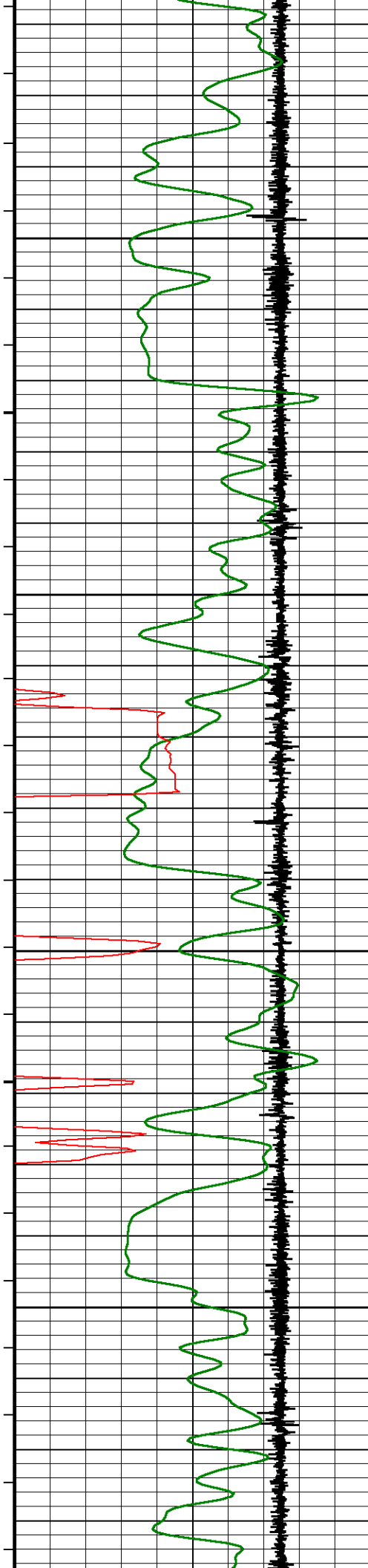
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8150

200°







205°

8450

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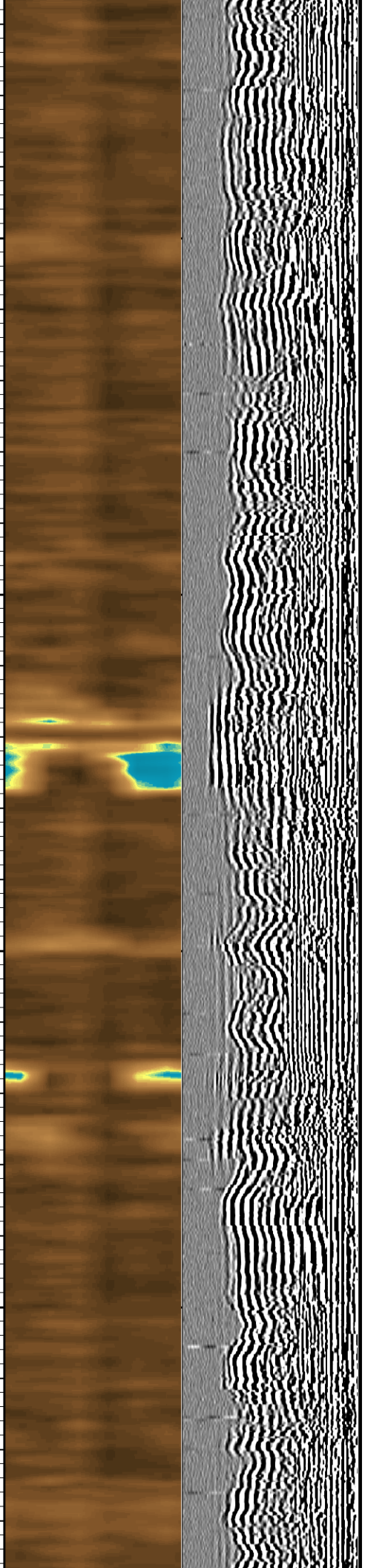
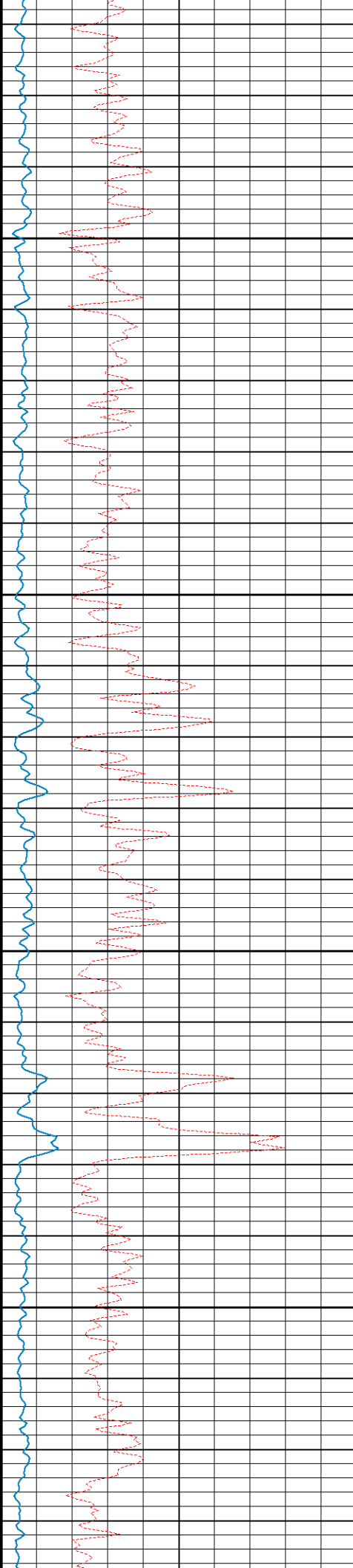
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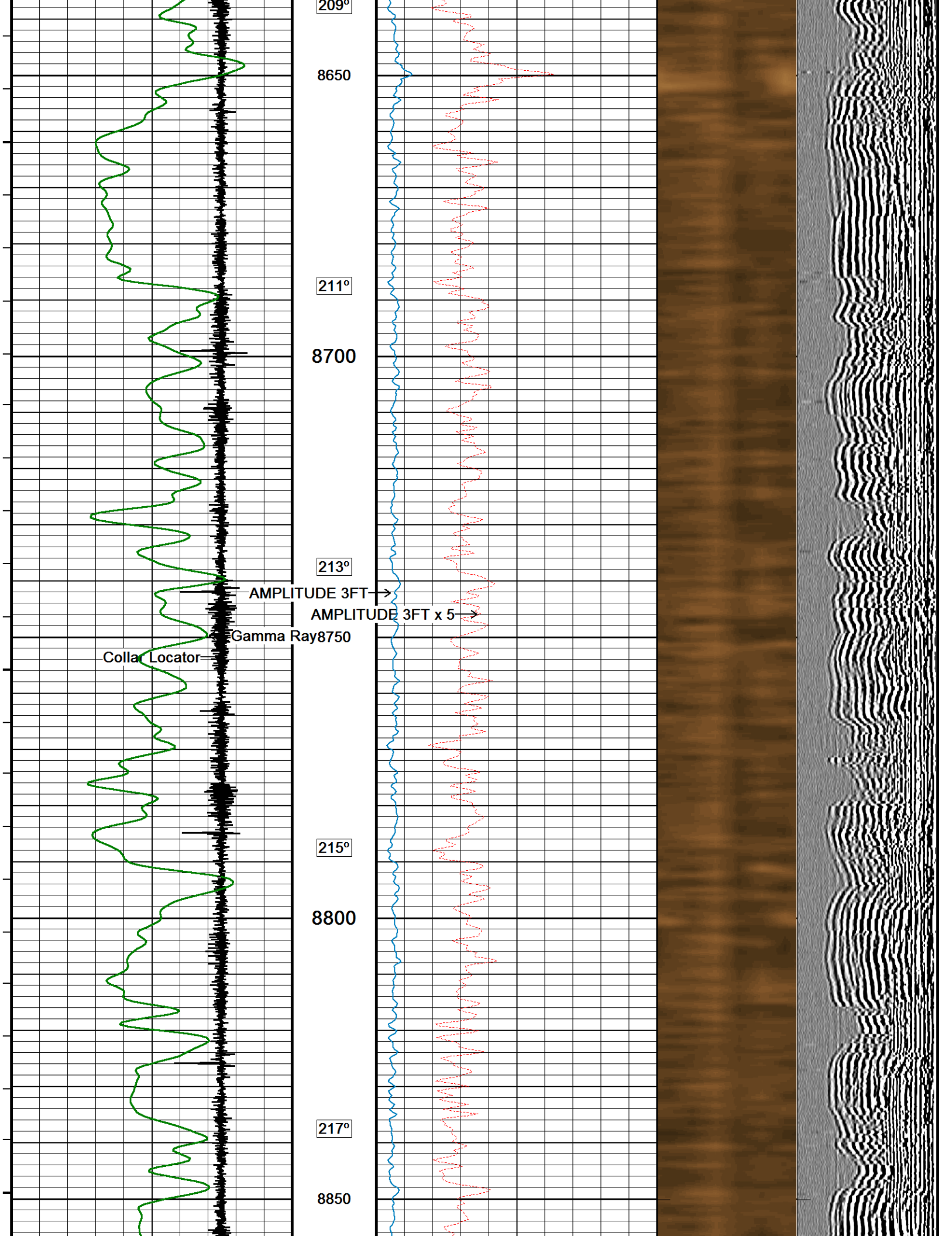
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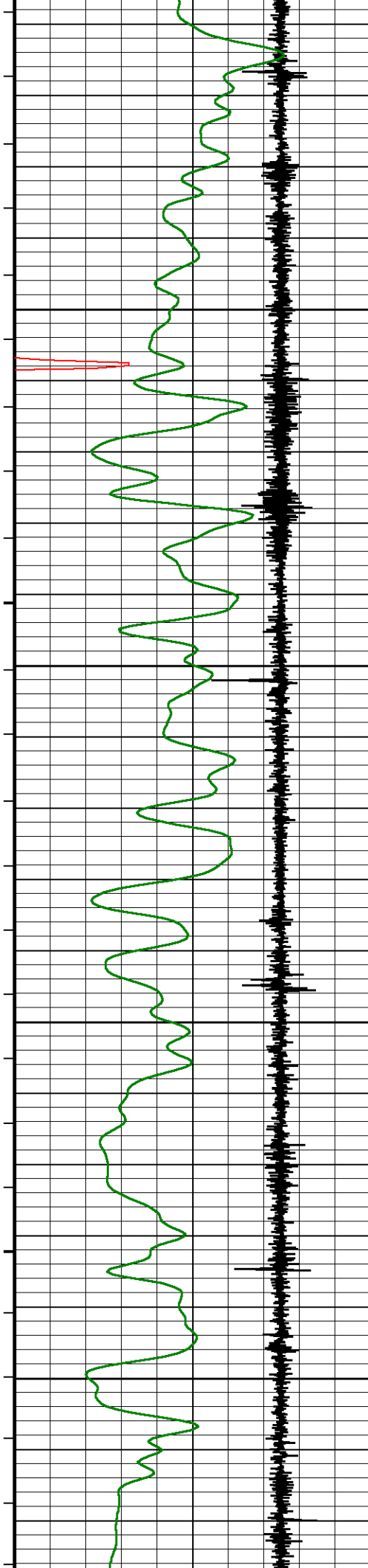
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208°

8600







218°

8900

221°

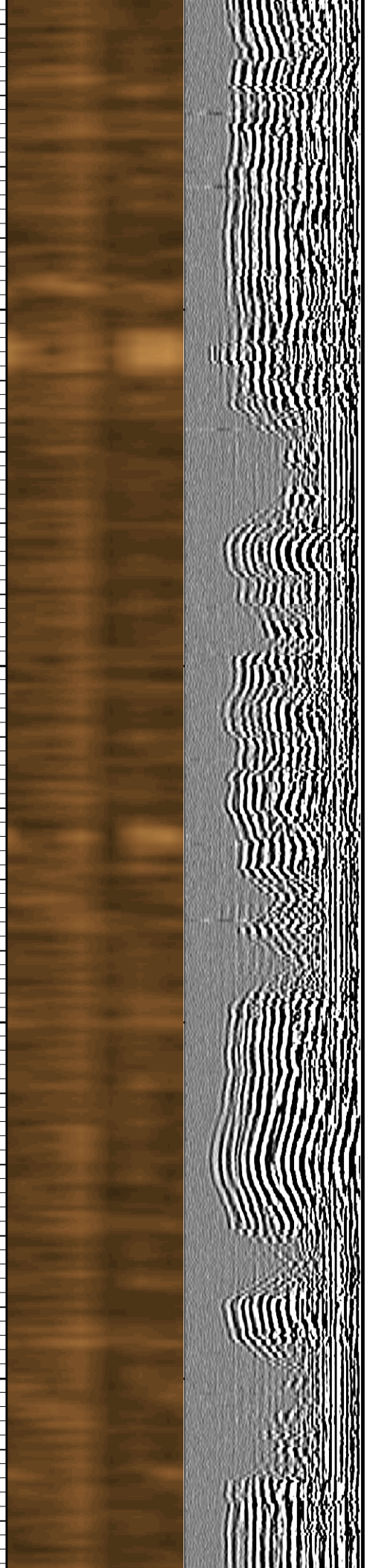
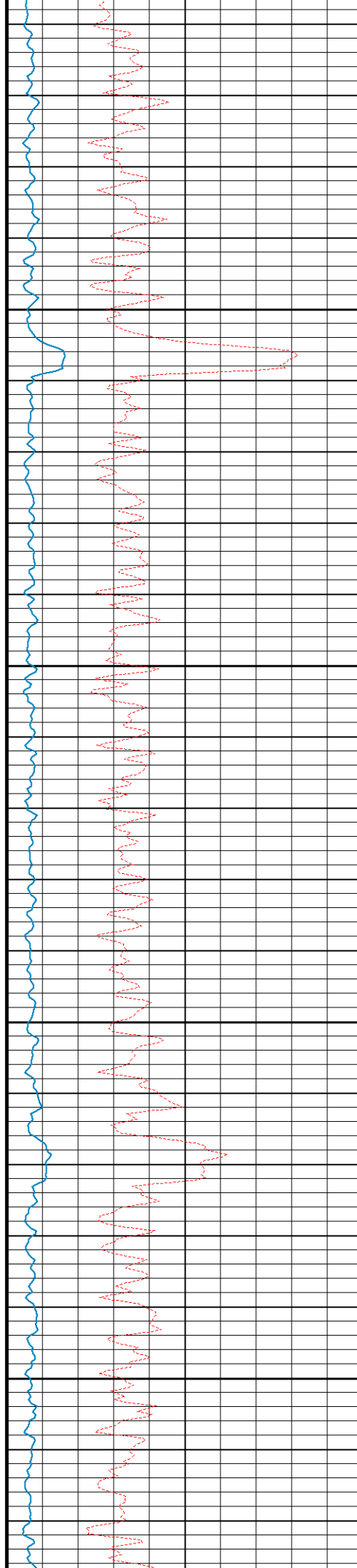
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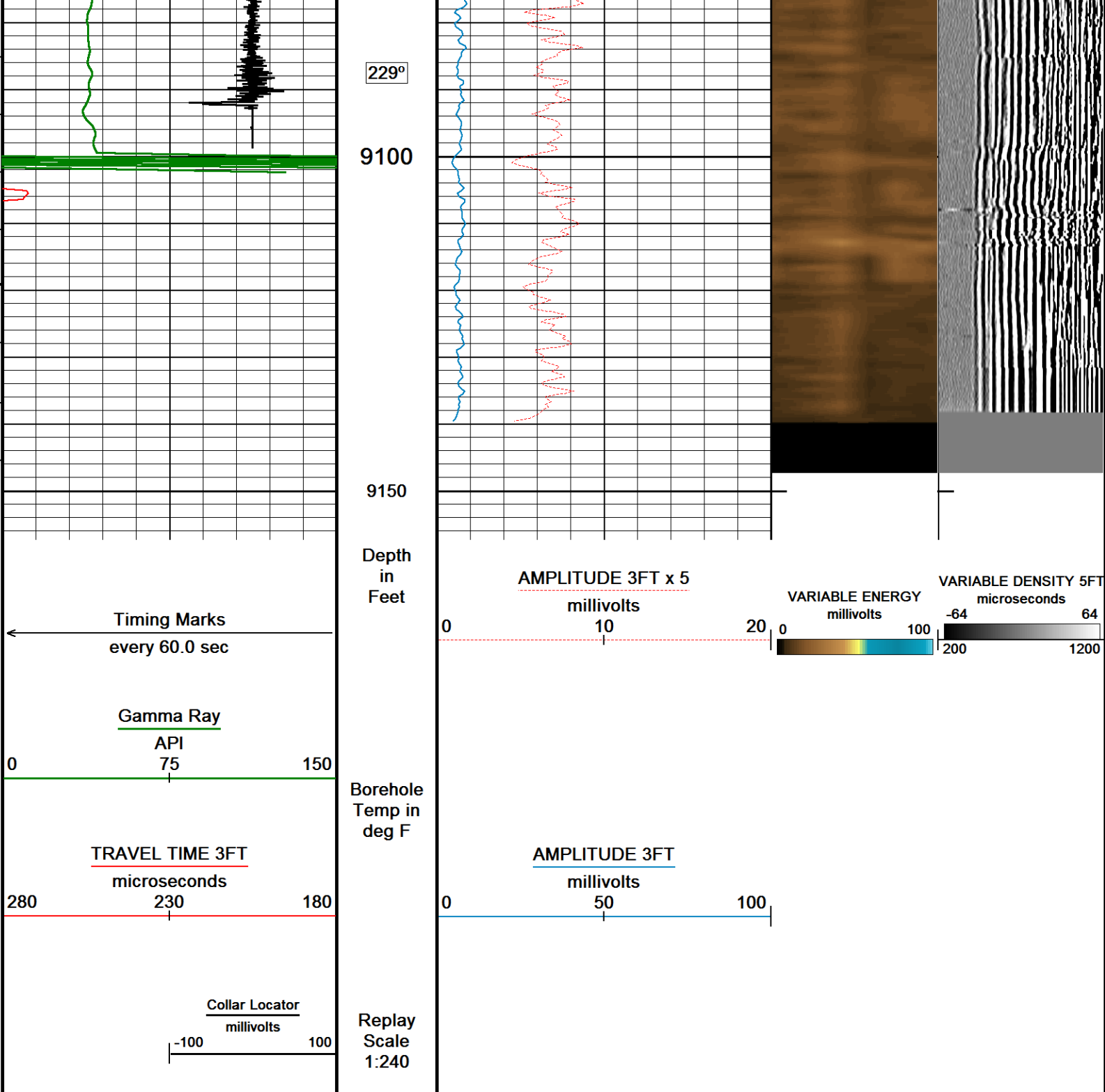
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226°

9050



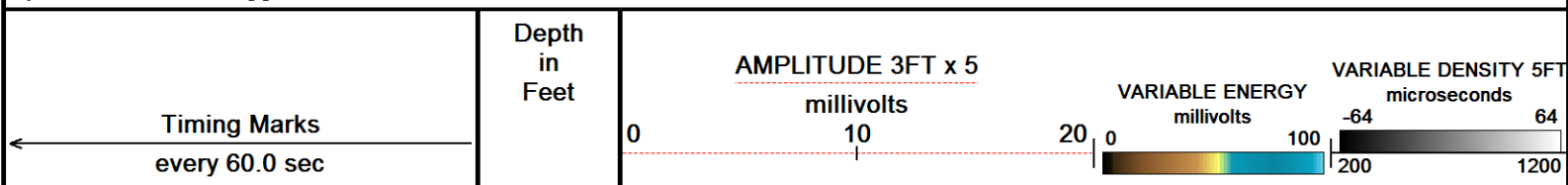


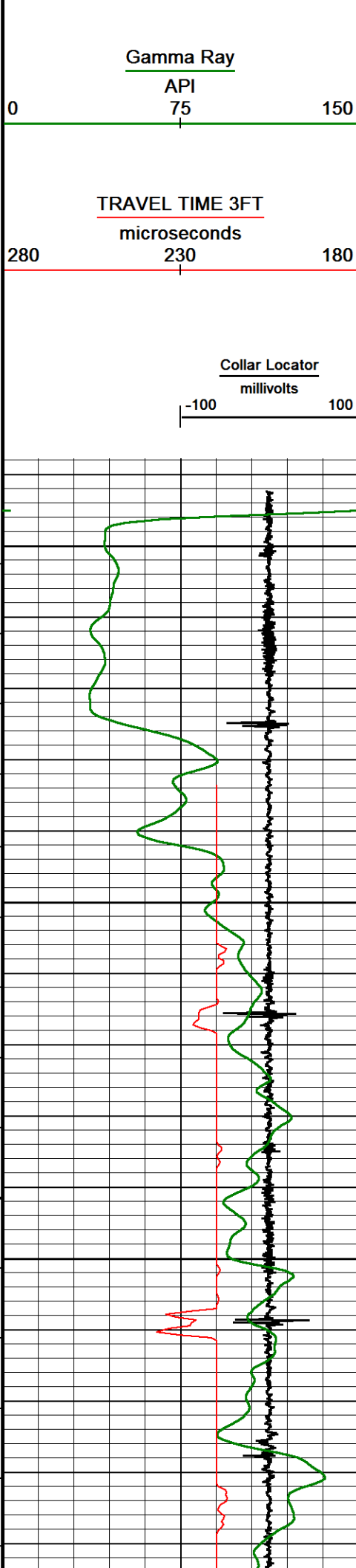
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Filename: C:\Logs\Caerus\Puckett 21A-1\SSSB Main.dta
System Versions: Logged with 16.00.6296 Plotted with 16.00.6296

SSSB MAIN

SSSB REPEAT

Depth Based Data - Maximum Sampling Increment 12.5cm
Filename: C:\Logs\Caerus\Puckett 21A-1\SSSB Repeat.dta
System Versions: Logged with 16.00.6296 Plotted with 16.00.6296





Borehole
Temp in
deg F

Replay
Scale
1:240

2440

2450

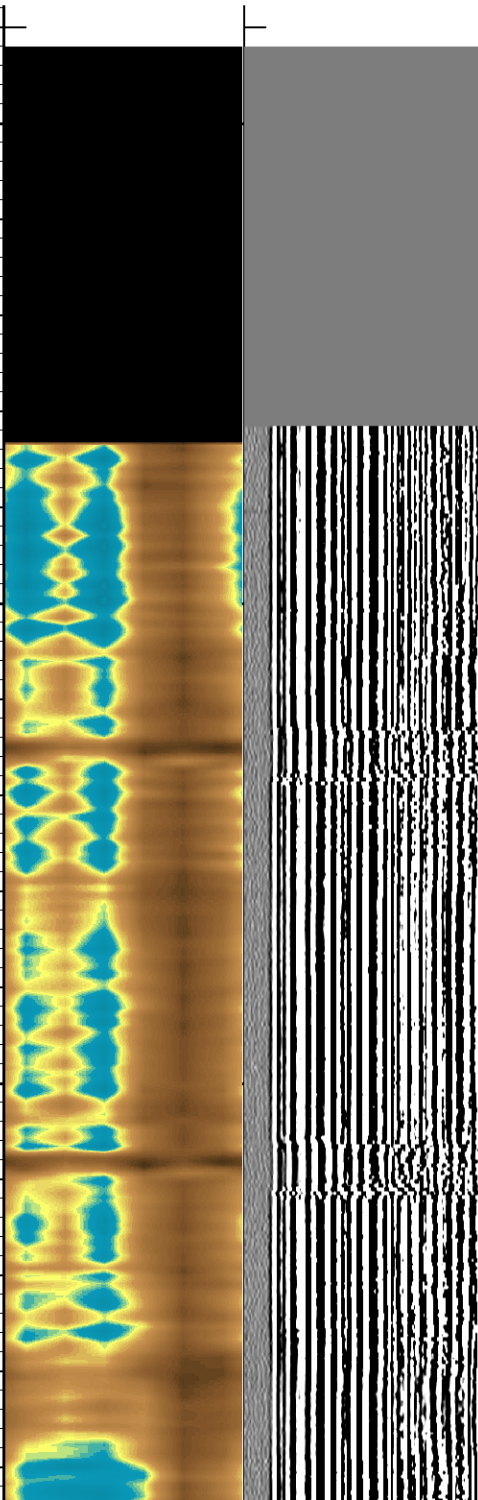
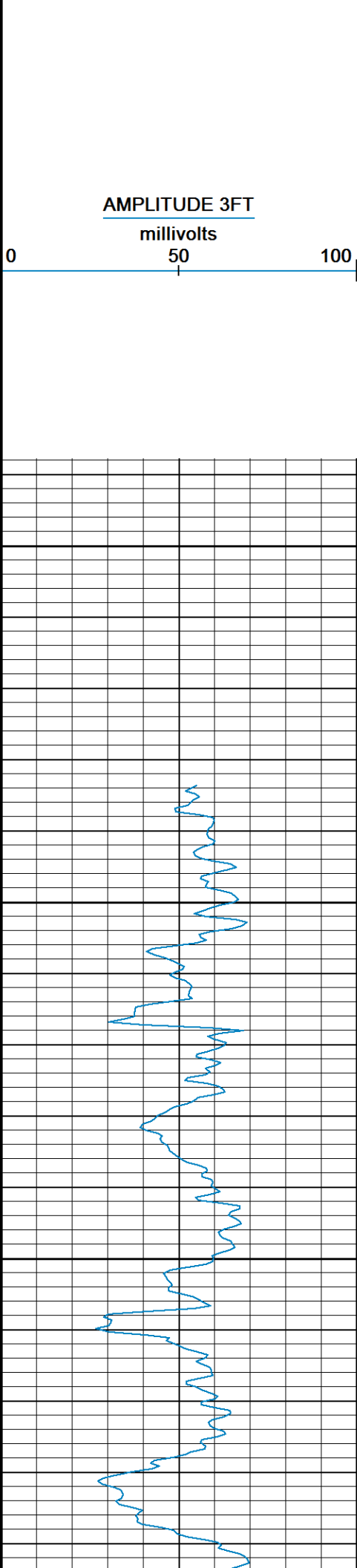
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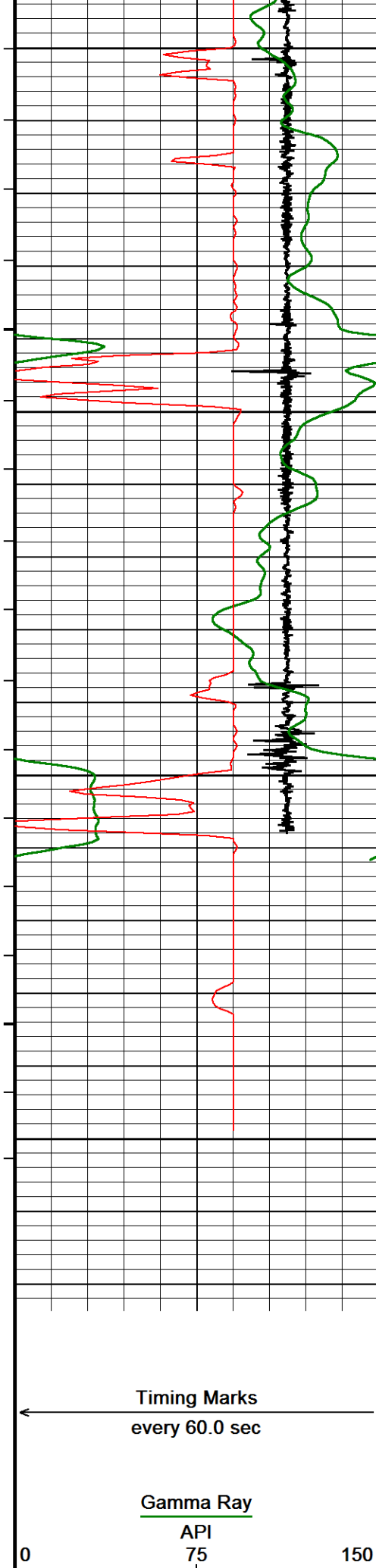
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96°

2550

96°





2600

97°

2650

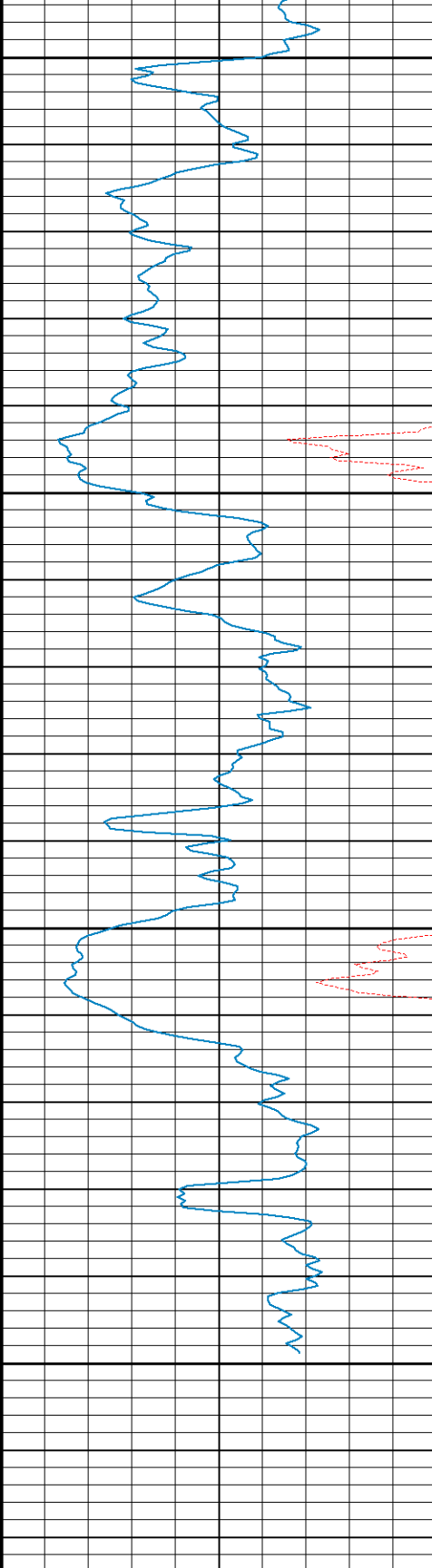
98°

2700

2750

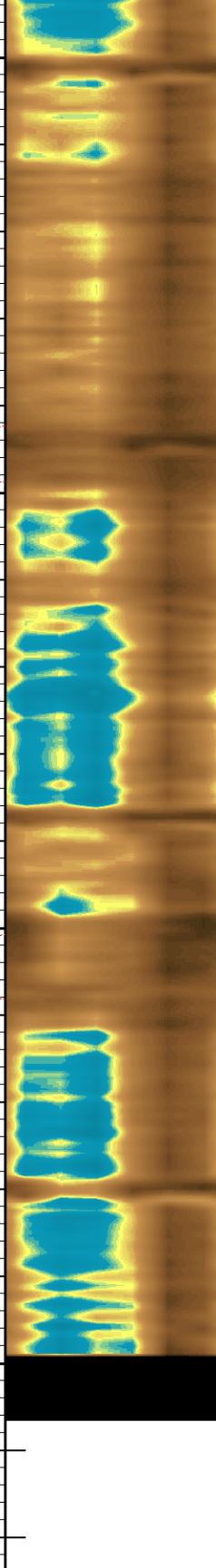
2772
Depth
in
Feet

Borehole



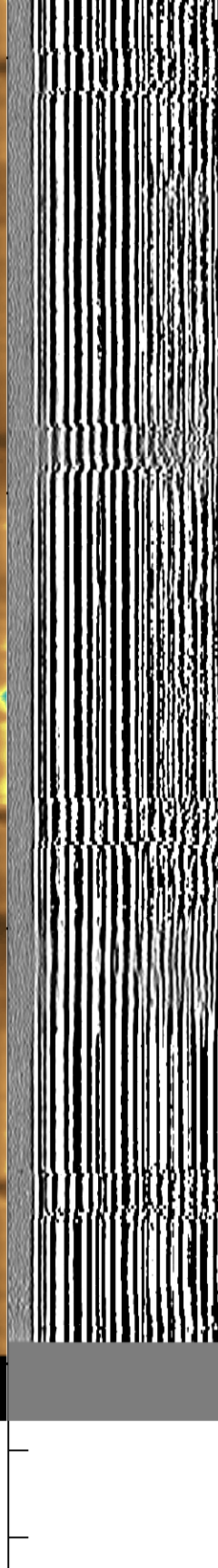
AMPLITUDE 3FT x 5
millivolts

0 10 20



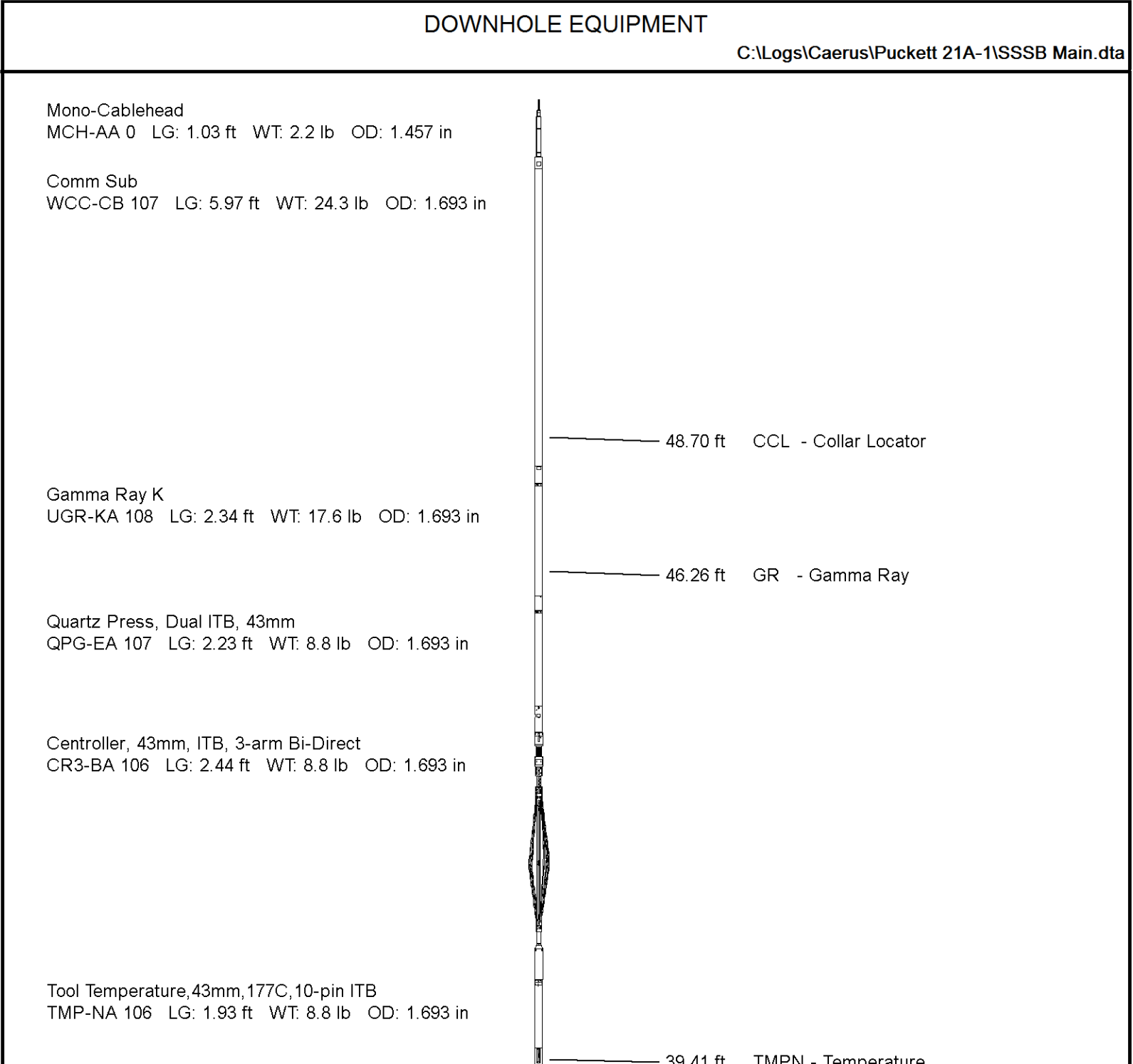
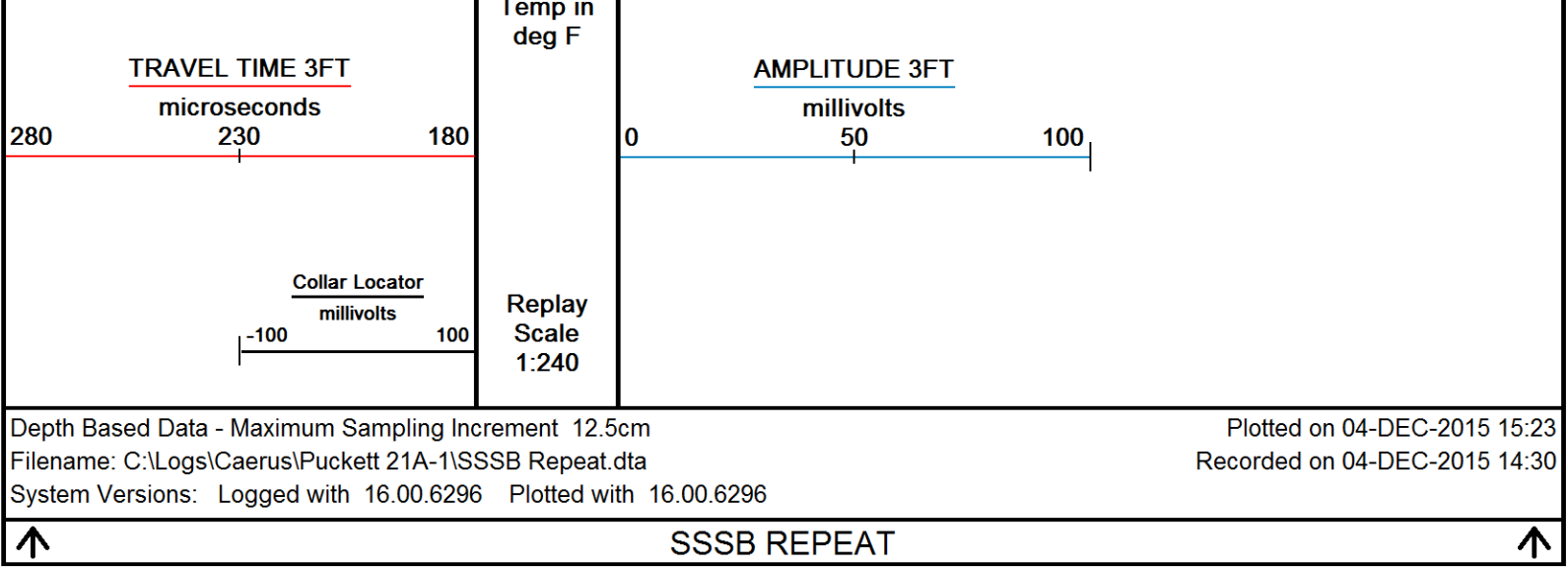
VARIABLE ENERGY
millivolts

0 100 200



VARIABLE DENSITY 5FT
microseconds

-64 64
200 1200



CRE series II processor section
CRP-BA 2 LG: 3.31 ft WT: 15.4 lb OD: 1.654 in

Casing Reservoir Evaluation Tool Sonde
CRM-BA 2 LG: 9.19 ft WT: 46.3 lb OD: 1.693 in

Centroller, 43mm, ITB, 3-arm Bi-Direct
CR3-BA 107 LG: 2.44 ft WT: 8.8 lb OD: 1.693 in

Gamma Ray K
UGR-KA 131 LG: 2.34 ft WT: 17.6 lb OD: 1.693 in

SSB Upper Electronics, ITB
SUE-CA 137 LG: 7.64 ft WT: 26.5 lb OD: 1.650 in

SSB Receiver Sonde



55.4 ft HWL N Temperature

SSS-BA 117 LG: 8.76 ft WT: 30.9 lb OD: 1.693 in

SSB Transmitter Section

STE-BA 129 LG: 2.64 ft WT: 17.6 lb OD: 1.654 in

Centralizer, 35mm, ITB, uni-directional

CEN-LA 220 LG: 2.60 ft WT: 8.8 lb OD: 1.380 in

Total Length: 54.87 ft Weight: 242.5 lb



9.37 ft VDL5 - VARIABLE DENSITY 5FT

8.37 ft AM3F - AMPLITUDE 3FT

8.37 ft TT3F - TRAVEL TIME 3FT

7.87 ft VAMP - VARIABLE ENERGY

Tool Zero (0.00ft from bottom)

All measurements relative to tool zero.

SHOP AND FIELD CALIBRATIONS

C:\Logs\Caerus\Puckett 21A-1\SSSB Main.dta

WCC Shop calibration WCC-CB 107

Calibration on 00-JAN-1988 00:00

Tension Compression Shop calibration

Tool Type: WCC-CB

Serial No: 107

	Standard	+1G Measured	Standard	-1G Measured
X Acc	1.000 G	250000.0 mv	-1.000 G	0.0 mv
Y Acc	1.000 G	250000.0 mv	-1.000 G	0.0 mv
Z Acc	1.000 G	250000.0 mv	-1.000 G	0.0 mv

UGK Before Survey cal UGR-KA 108

Field calibration on 05-OCT-2015 16:31

Gamma Ray Before Survey Calibration

Tool Type: UGR-KA
calibrator No: 99

Serial No: 108

Background		Calibrator	Standard	Units
42.7		1067.9	631.5	API
Delta Counts Per Sec: 1025.2		CPS/API = 1.623		
QPG Master Calibration QPG-EA 107				
Gauge				
Serial Number	220929		Calibration Date	15 Sep 2012
Gauge Type	QHB108-16-177		Base Check Date	
Max Pressure	16000 PSI		Max Temperature	177 Deg C
Min Pressure	13 PSI		Min Temperature	25 Deg C
Pressure				
Pressure polynomial order 3			Temperature polynomial order 3	
	T0	T1	T2	T3
P0	14.1363	-0.231359	-0.0199948	9.69338e-006
P1	9.69338e-006	42.6942	-0.0212493	2.7973e-005
P2	2.7973e-005	-5.21212e-008	-0.00210258	8.46866e-006
P3	8.46866e-006	-4.68837e-008	2.25752e-011	7.55316e-007
P4				
Temperature				
			Temperature polynomial order 3	
	T0	T1	T2	T3
	25.2281	-0.730006	-0.000855483	-6.83633e-007
Temperature Tool Shop survey Calibration TMP-NA 106				
Temperature Tool Shop Survey calibration				
Tool Type: TMP-NA			Serial No: 106	
calibration				
Standard		Measured		
32	DEGF	36714 Hz		
212	DEGF	50849 Hz		
UGK Before Survey Cal UGR-KA 131				

Gamma Ray Before Survey Calibration

Tool Type: UGR-KA
Calibrator No: 101

Serial No: 131

Background Calibrator Standard Units

43.9 778.4 470.2 API

Delta Counts Per Sec: 734.5 CPS/API = 1.562

SSBC Field Calibration SSS-BA 117

Field Calibration on 19-NOV-2015 17:43

Slim Sector Bond Field Calibration

Tool Type SSS-BA Serial No 117

Sensor	Description	Standard	Measured
AMP 3FT	100% Bond	2.70	3.70
	Free Pipe	81.00	356.10
AMP 5FT	100% Bond	1.80	2.20
	Free Pipe	54.00	240.70
1 SECTOR AMP	100% Bond	5.00	7.10
	Free Pipe	95.00	139.80
2 SECTOR AMP	100% Bond	5.00	9.70
	Free Pipe	95.00	152.30
3 SECTOR AMP	100% Bond	5.00	5.10
	Free Pipe	95.00	114.80
4 SECTOR AMP	100% Bond	5.00	1.10
	Free Pipe	95.00	129.60
5 SECTOR AMP	100% Bond	5.00	2.80
	Free Pipe	95.00	120.30
6 SECTOR AMP	100% Bond	5.00	3.20
	Free Pipe	95.00	117.50

SSBC Constants SSS-BA 117

Last Edited on 00-JAN-1988 00:00

Min Ampl 100% Bond	2.00 MV
Max Ampl 0% Bond	81.00 MV
Casing Size	4.50 IN
Casing Weight	11.6 LB/F
3' TT Correction	-999.3 US
DT Fluid	200.0 US/F
Fast Formation TT	38.5 US/F
Cement Cmpr Strength	580 PSI
Casing Velocity	57.00 US/F
Maximum Attenuation	12.00 DB/F

SMS Constants SMS-A 0

Last Edited on 00-JAN-1988 00:00

Cement Weight	0.00 LB/G
Cement Weight	0.00 LB/G

COMPANY	CAERUS OIL & GAS LLC
WELL	PUCKETT 21A-1
FIELD	GRAND VALLEY
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	USA / COLORADO

Elevation Kelly Bushing	8351.00	feet	Bottom Log Interval	9143.00	feet
Elevation Drill Floor	8351.00	feet	Depth Driller	9224.00	feet
Elevation Ground Level	8329.00	feet	Depth Logger	9147.00	feet



Weatherford®

SLIM SECTOR BOND LOG