
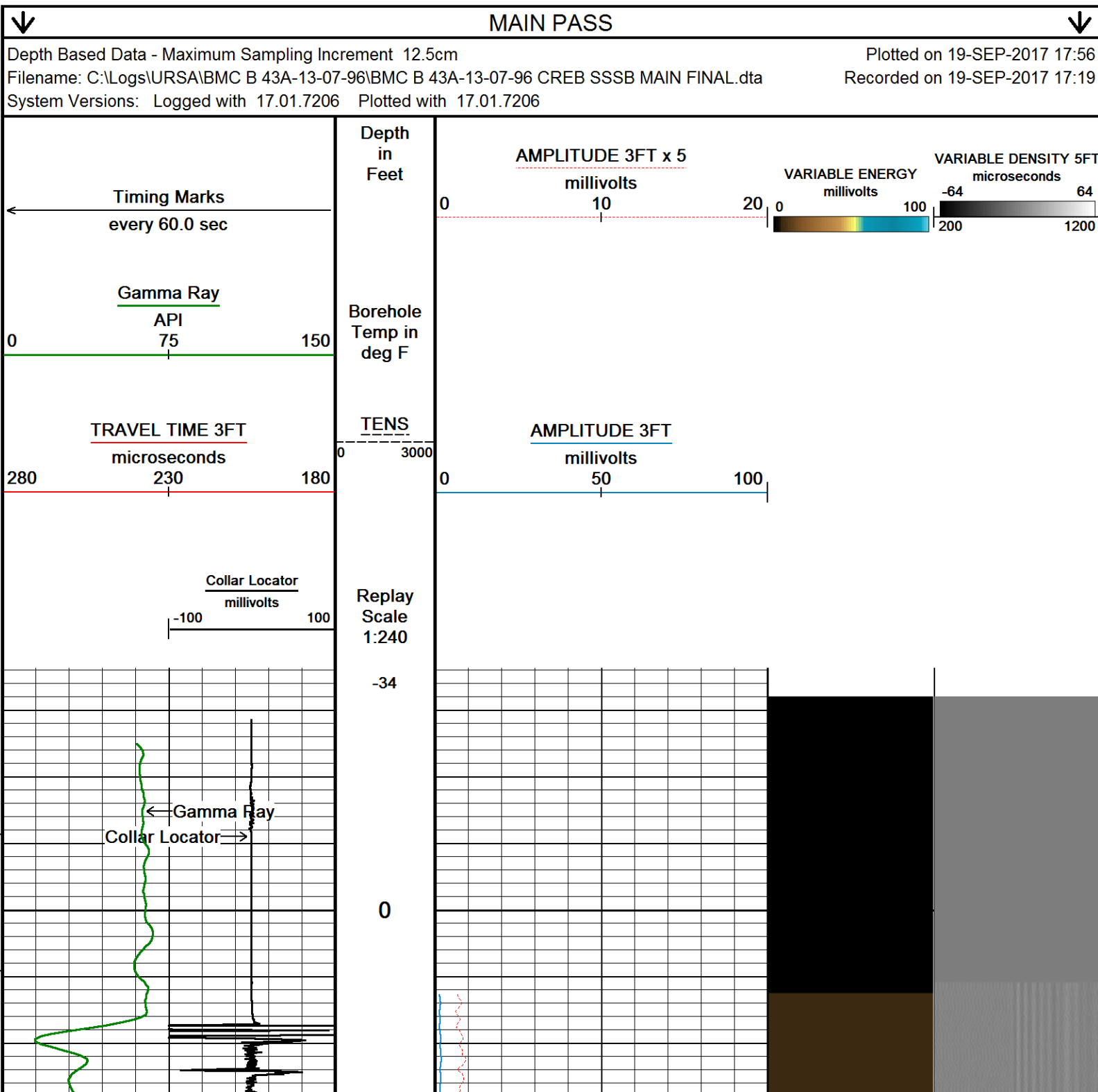


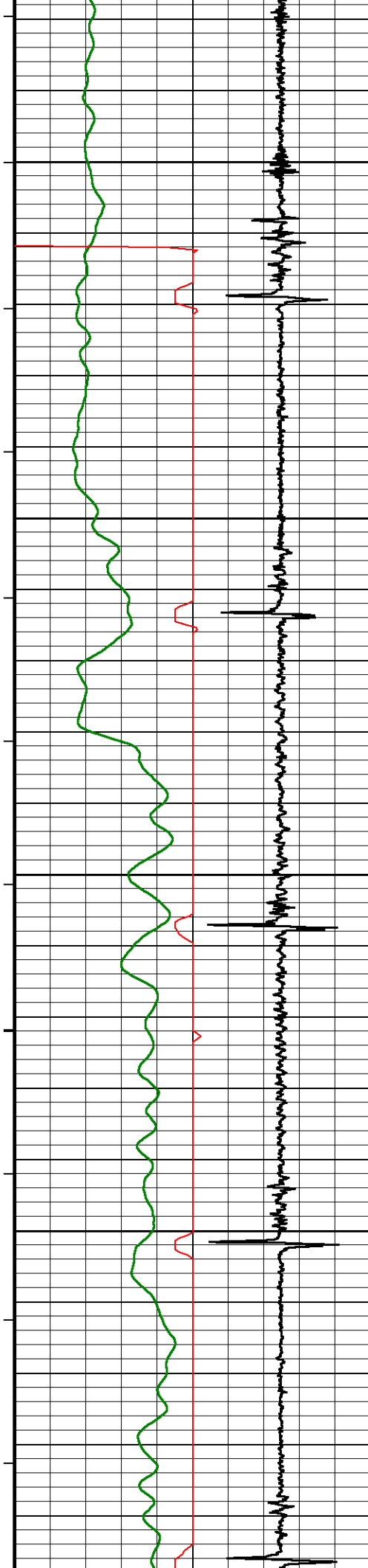
| | | | | | | | |
|--|---------------|--------------|------------------------|--|------------|----------|--|
|  | | | | SLIM SECTOR BOND LOG | | | |
| Weatherford® | | | | | | | |
| COMPANY | | | | URSA OPERATING COMPANY | | | |
| WELL | | | | BMC B 43A-13-07-96 | | | |
| FIELD | | | | WILDCAT | | | |
| PROVINCE/COUNTY | | | | GARFIELD | | | |
| COUNTRY/STATE | | | | USA / COLORADO | | | |
| LOCATION | | | | 2258' FNL & 0693' FWL | | | |
| SEC 18 | TWP 7S | RGE 95W | Other Services CREB | | | | |
| Latitude | | Longitude | | | | | |
| API Number | | 05-045-23483 | | Permanent Datum GROUND LEVEL, Elevation 5100 feet Log Measured From KB, 17.00 feet above Permanent Datum Drilling Measured From KB | | | |
| Permanent Datum GROUND LEVEL, Elevation 5100 feet | | | | | | | |
| Log Measured From KB, 17.00 feet above Permanent Datum | | | | | | | |
| Drilling Measured From KB | | | | | | | |
| Date | | 19-SEP-2017 | | PERFORATION RECORD | | | |
| Run Number | ONE | | Shot | Number | Depth From | Depth To | |
| Service Order | | | Density | of Shots | feet | feet | |
| Type Log | SSSB | | | | | | |
| Depth Driller | 6723.00 | | feet | | | | |
| Depth Logger | 6290.00 | | feet | | | | |
| Top Log Interval | 0.00 | | feet | | | | |
| Bottom Log Interval | 6290.00 | | feet | | | | |
| Hole Fluid Type | WATER | | | | | | |
| Hole Fluid Level | 0.00 | | feet | | | | |
| Restriction ID | 3.875 | | inches | Gun Type | | | |
| Max Recorded Temp | 196.00 | | deg F | Gun Size | | | |
| Well Head Pressure | 0.00 | | psi | 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 | SEE LOG | | 8.625 | 32.00 | 0.00 | 1700.00 | |
| Unit | 14115 | | 4.500 | 11.60 | 0.00 | 6723.00 | |
| Equipment Name | WSS-E | | | | | | |
| Base | CASPER | | | | | | |
| Recorded By | P. MAZUR | | | | | | |
| Witnessed By | NOT WITNESSED | | | | | | |

| CASING / TUBING RECORD | | | | | | |
|------------------------|-------|-----------|----------------|--------------------|--------------------|---------------------|
| Type | Grade | TypeJoint | Size inches | Depth From feet | Shoe Depth feet | Weight pounds/ft |
| SURFACE | | | 8.625 | 0.00 | 1700.00 | 32.00 |
| PRODUCTION | | | 4.500 | 0.00 | 6723.00 | 11.60 |

| REMARKS |
|---|
| SOFTWARE VERSION 17.01.7206 - COMMERCIAL VERSION |
| ALL DEPTH CONTROL PROCEDURES FOR SUBSEQUENT RUN IN HOLE WERE FOLLOWED. LOG RUN FROM 17' K.B. |
| SURFACE SYSTEM USED: WCM-D 160 |
| 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 270 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. 196F |

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.





56°

50

54°

100

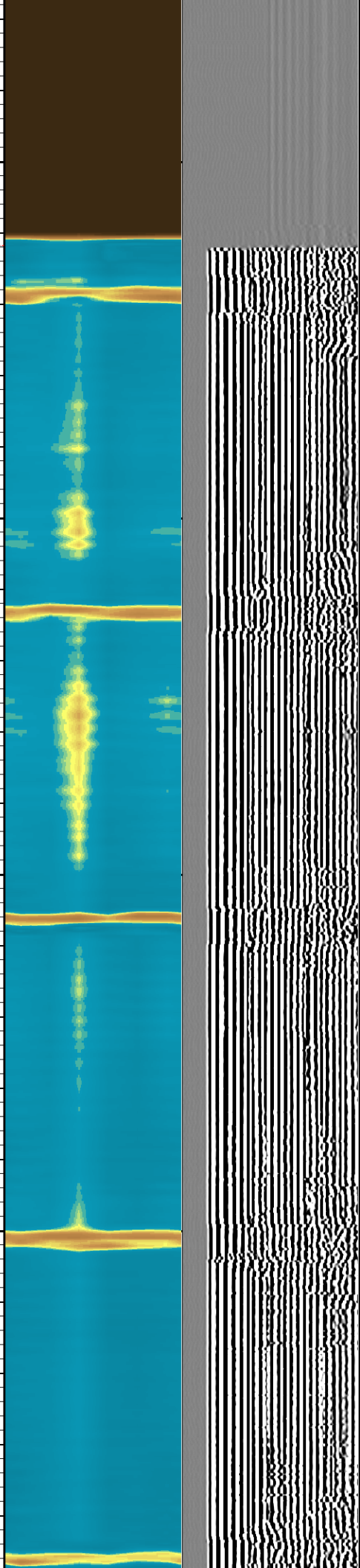
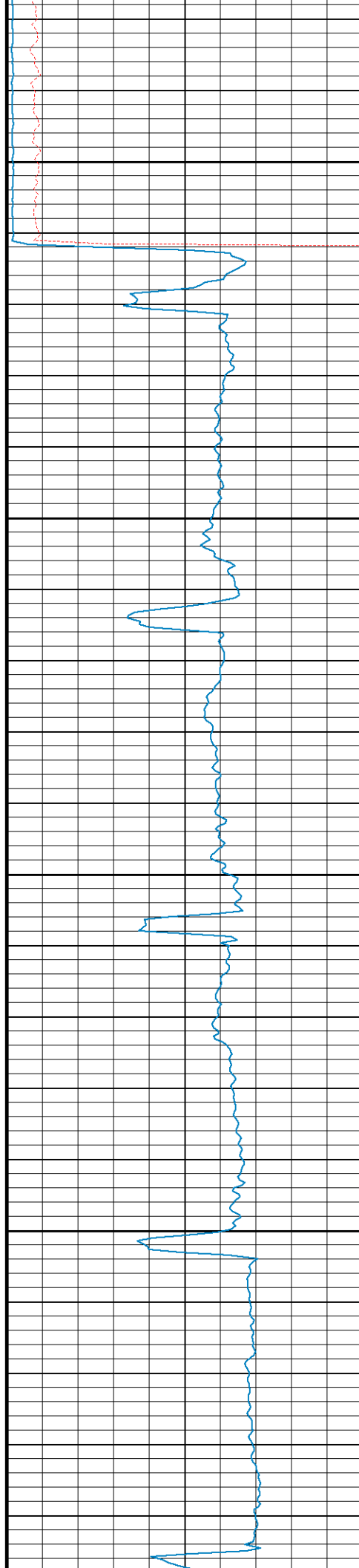
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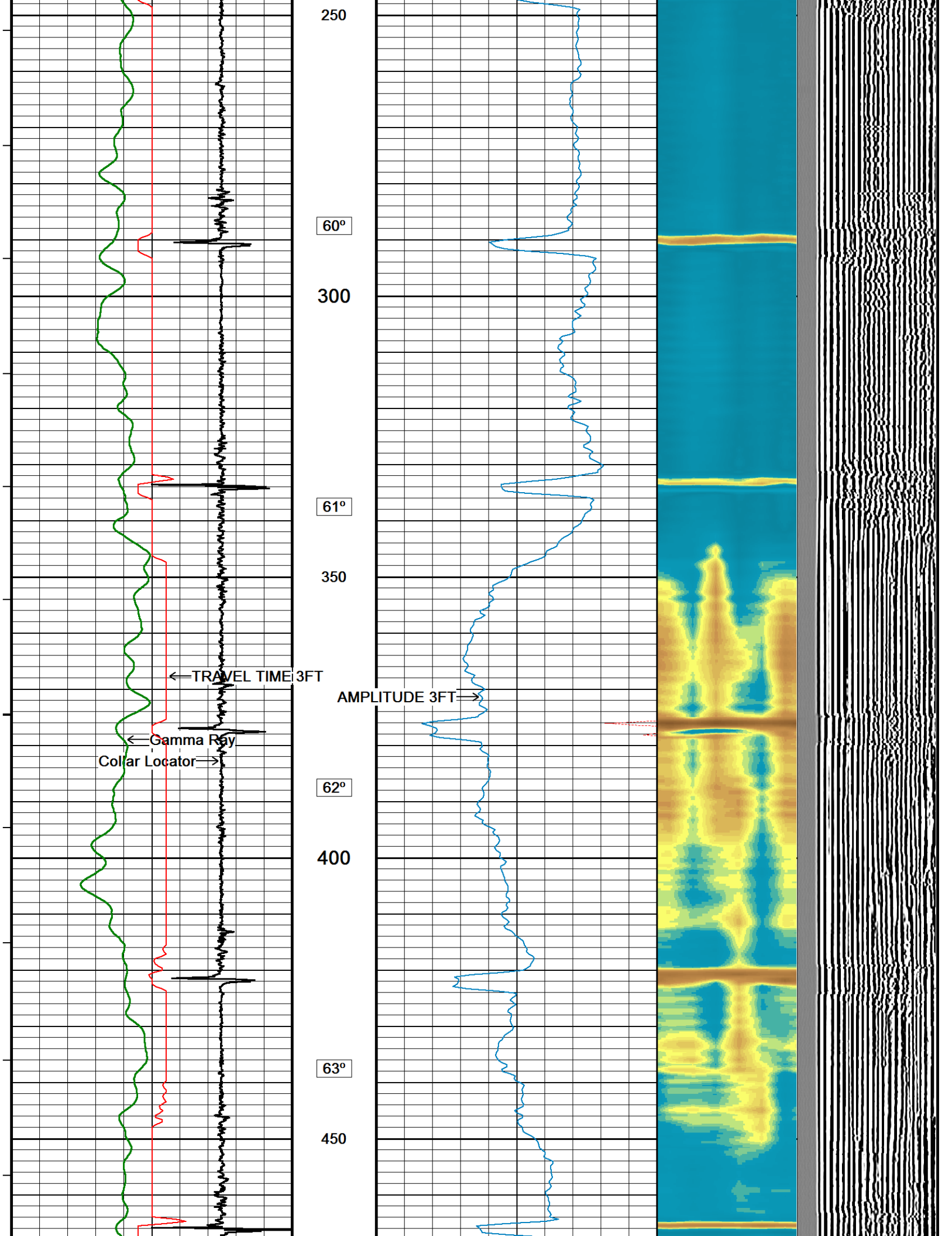
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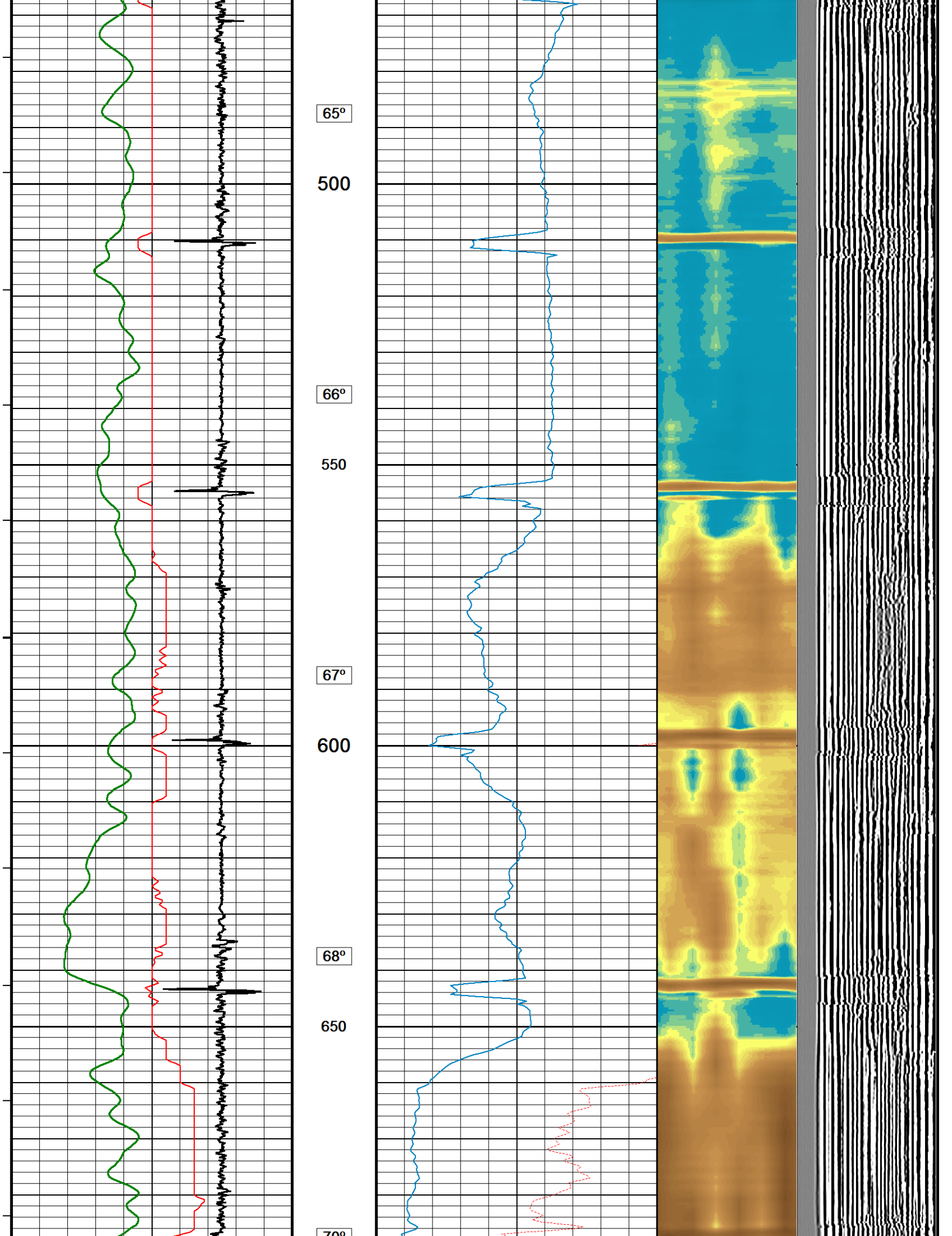
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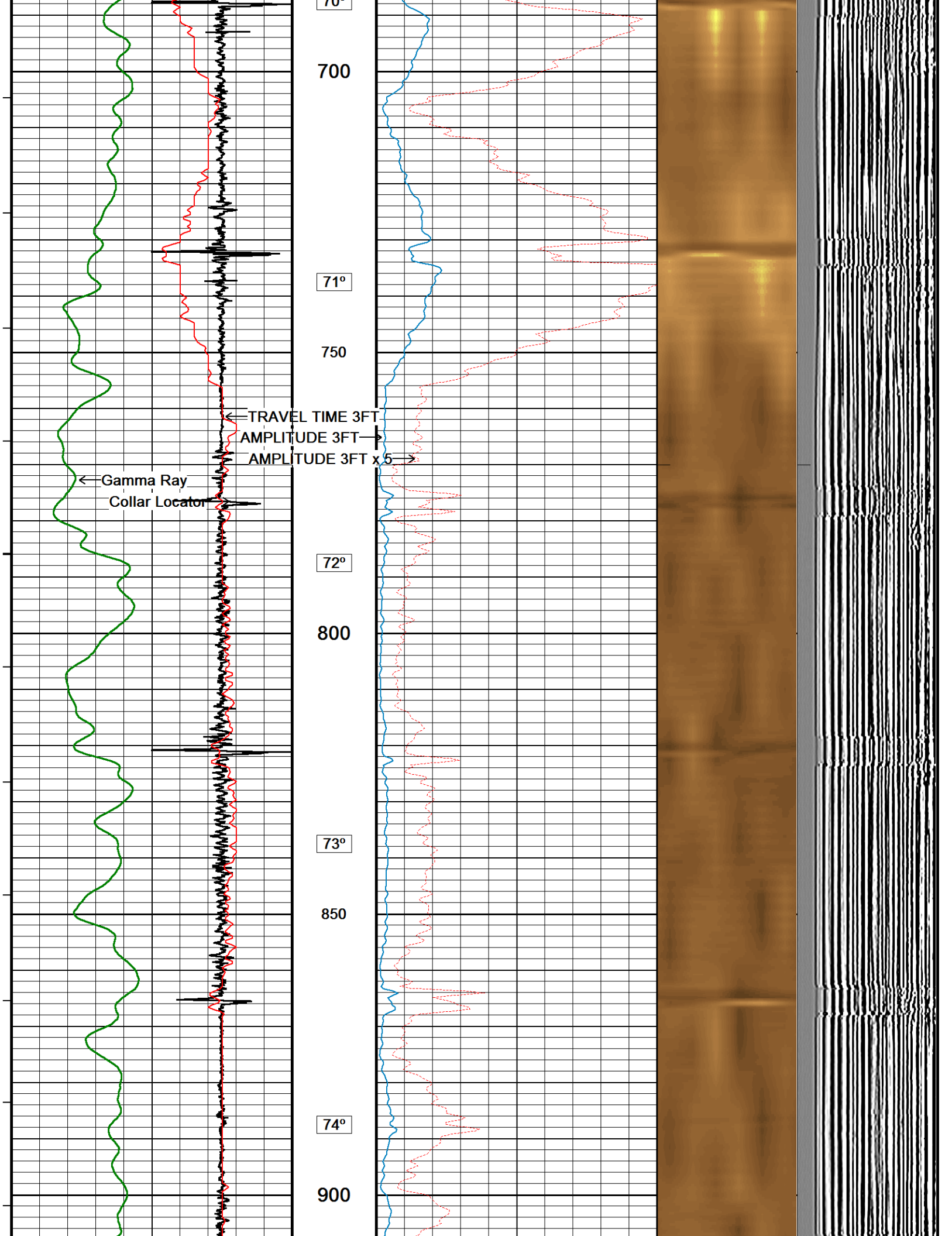
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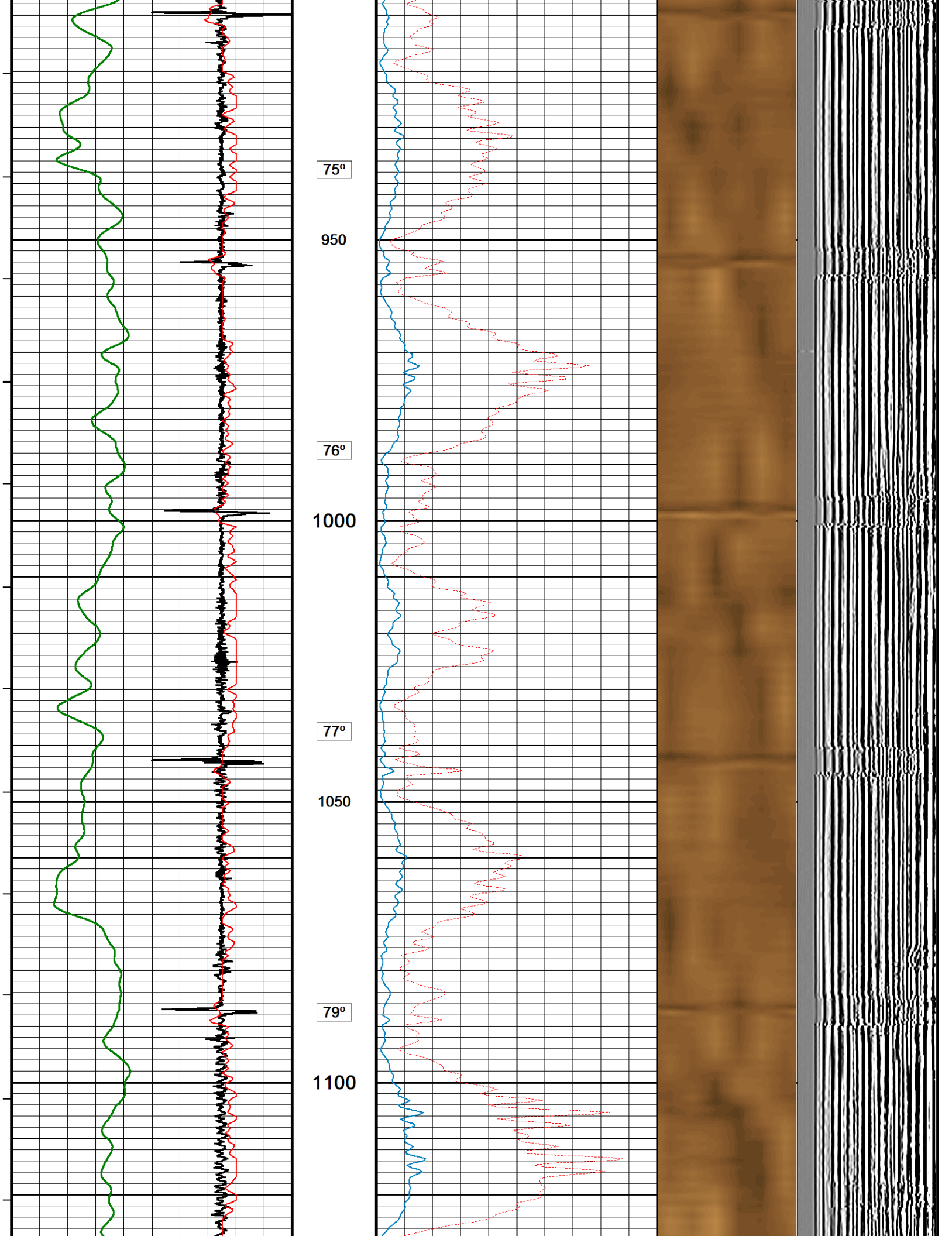
58°

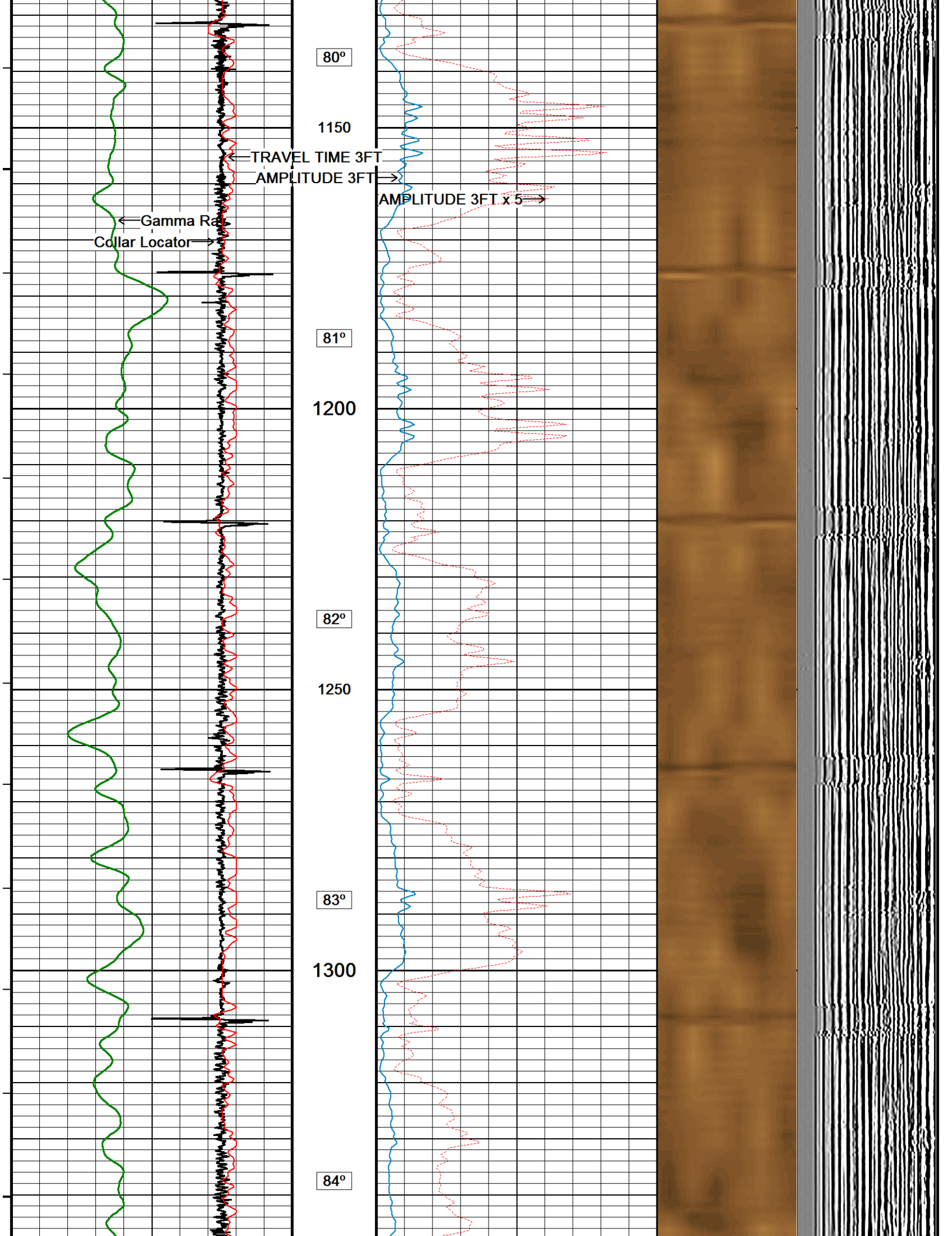


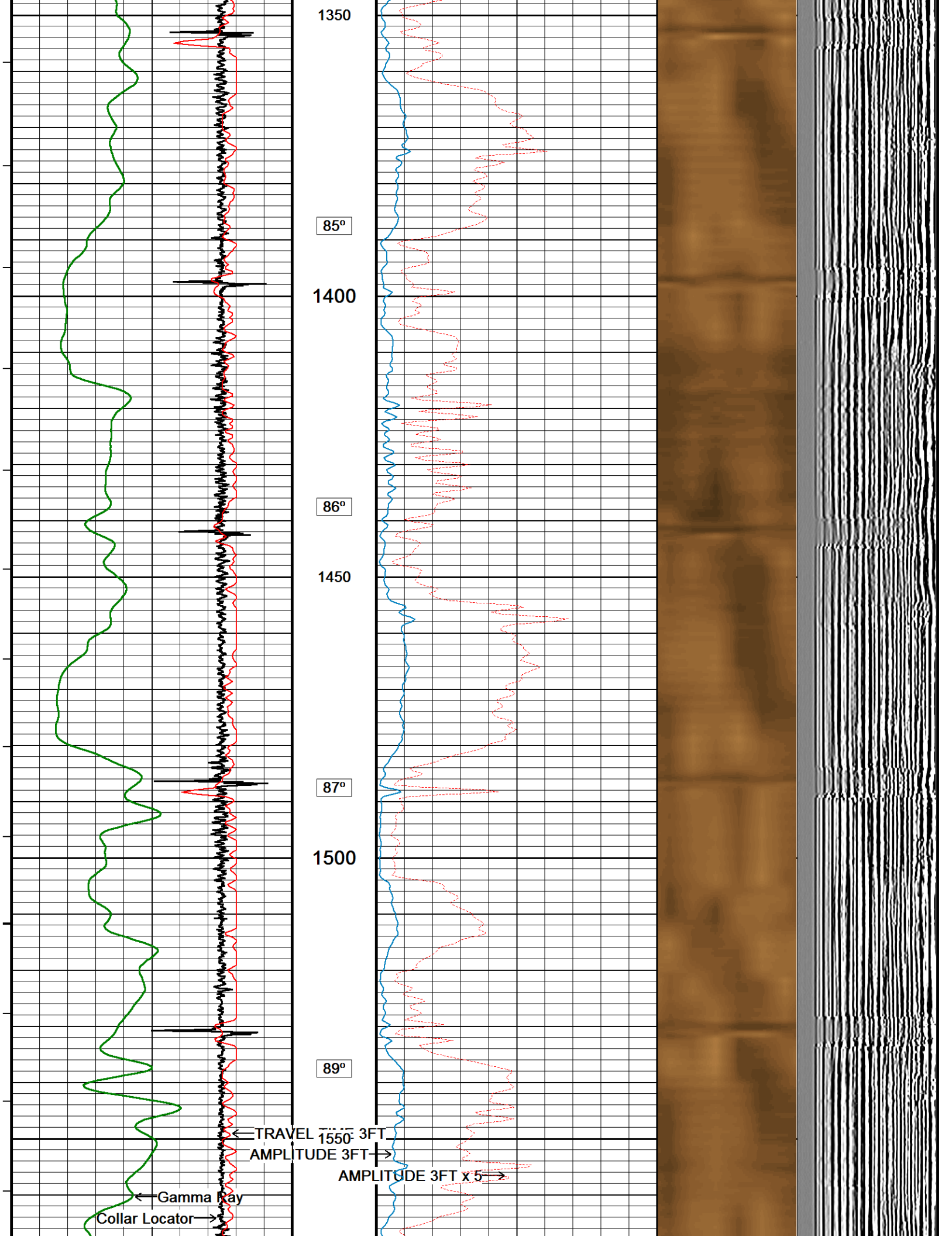


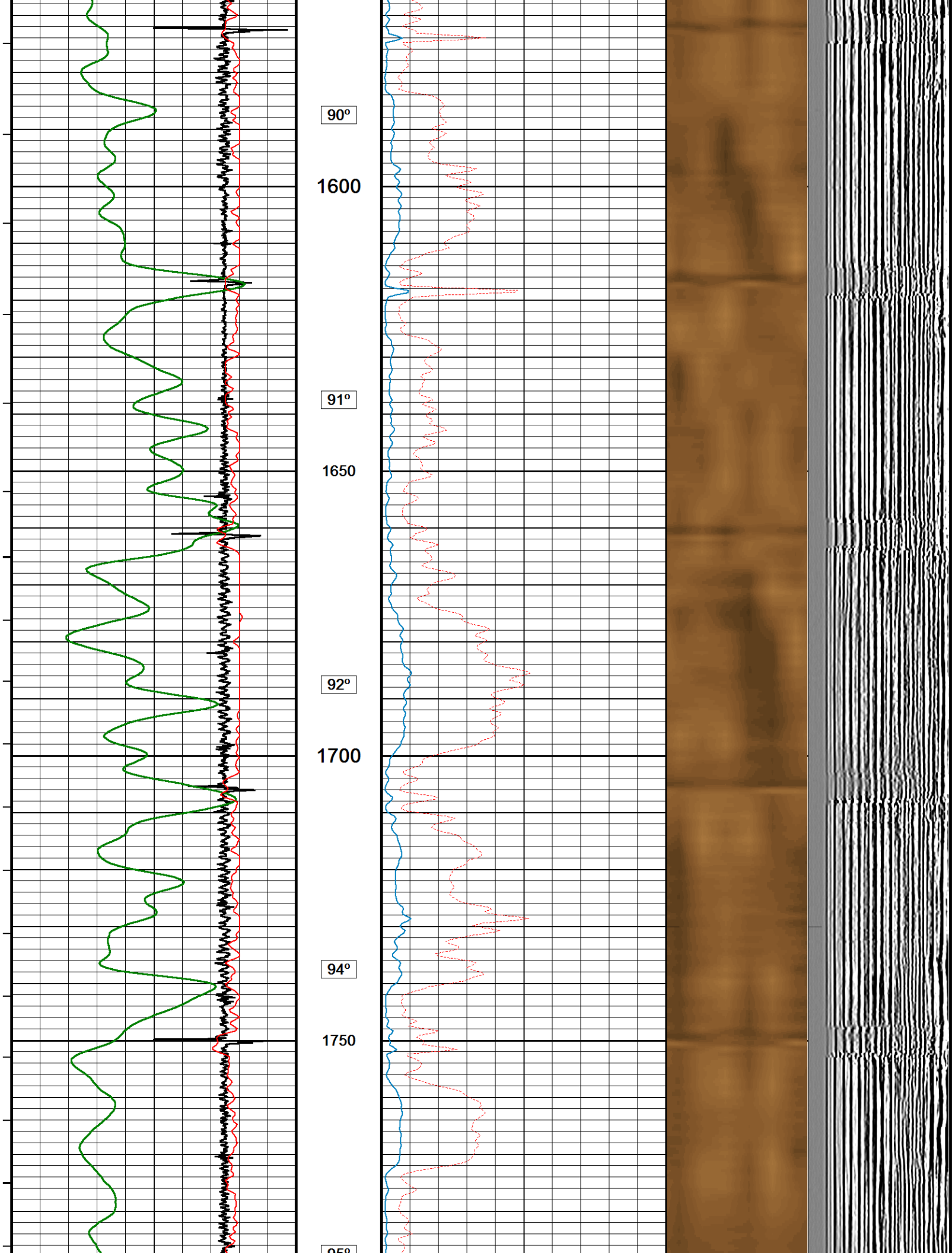


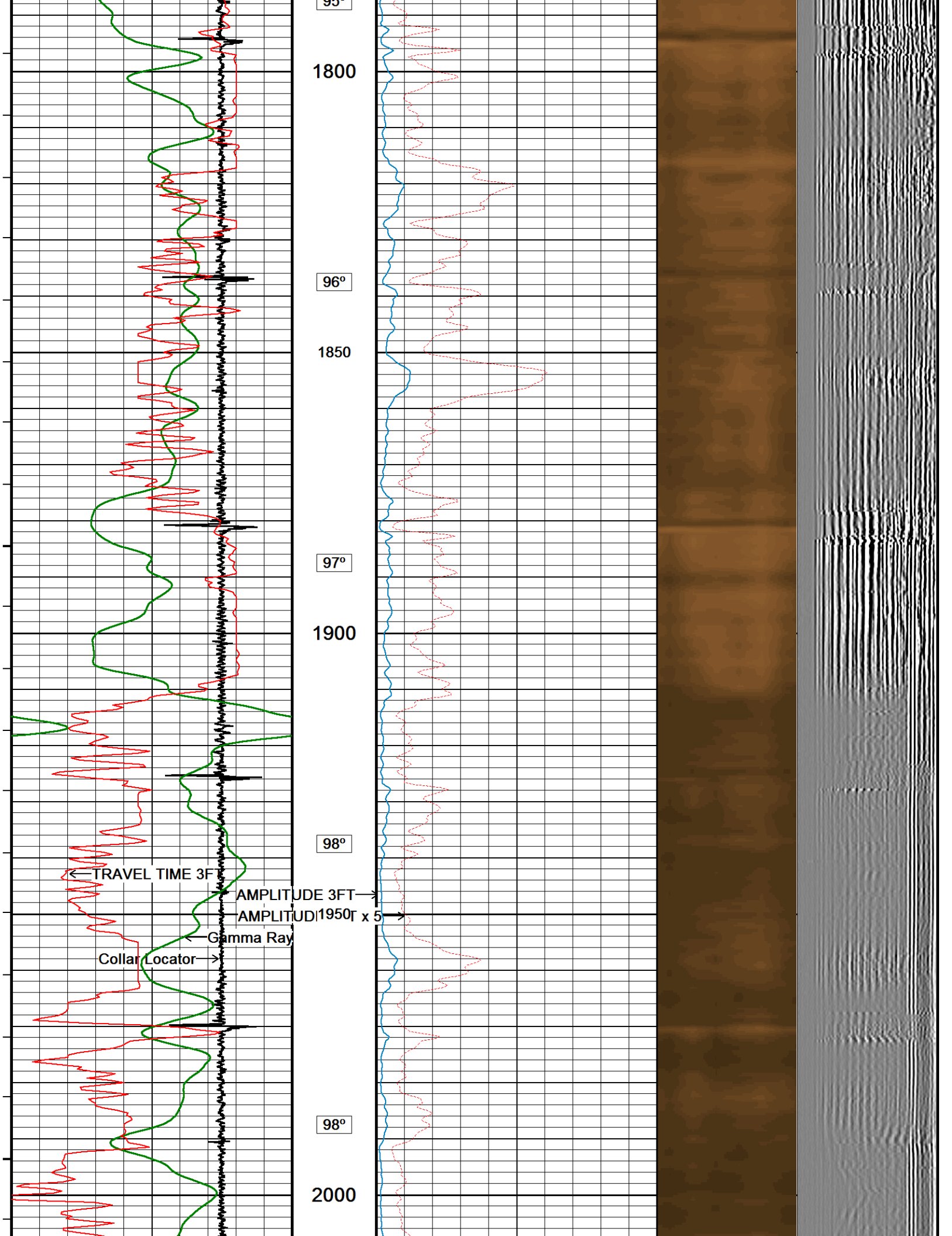


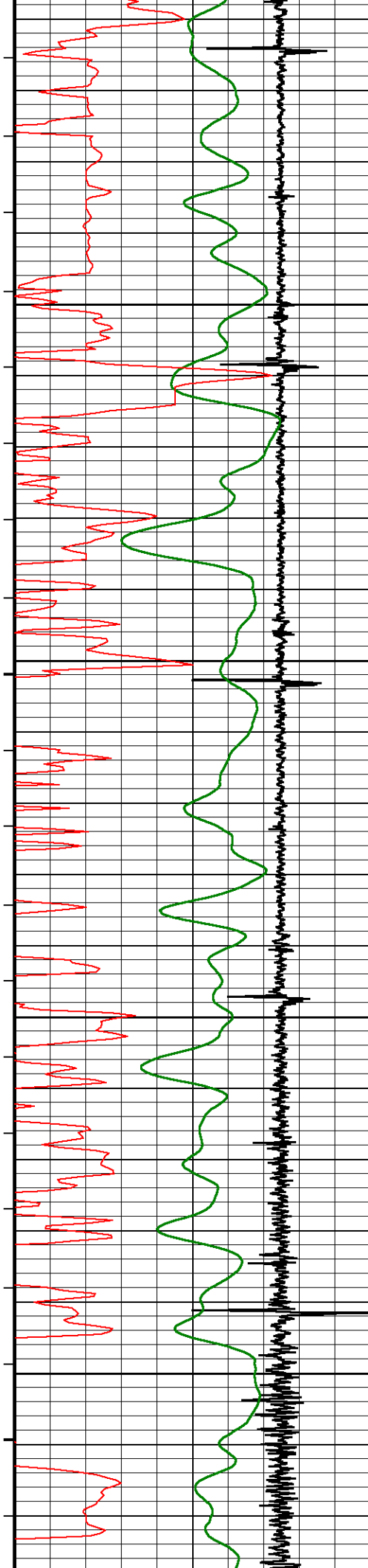












99°

2050

100°

2100

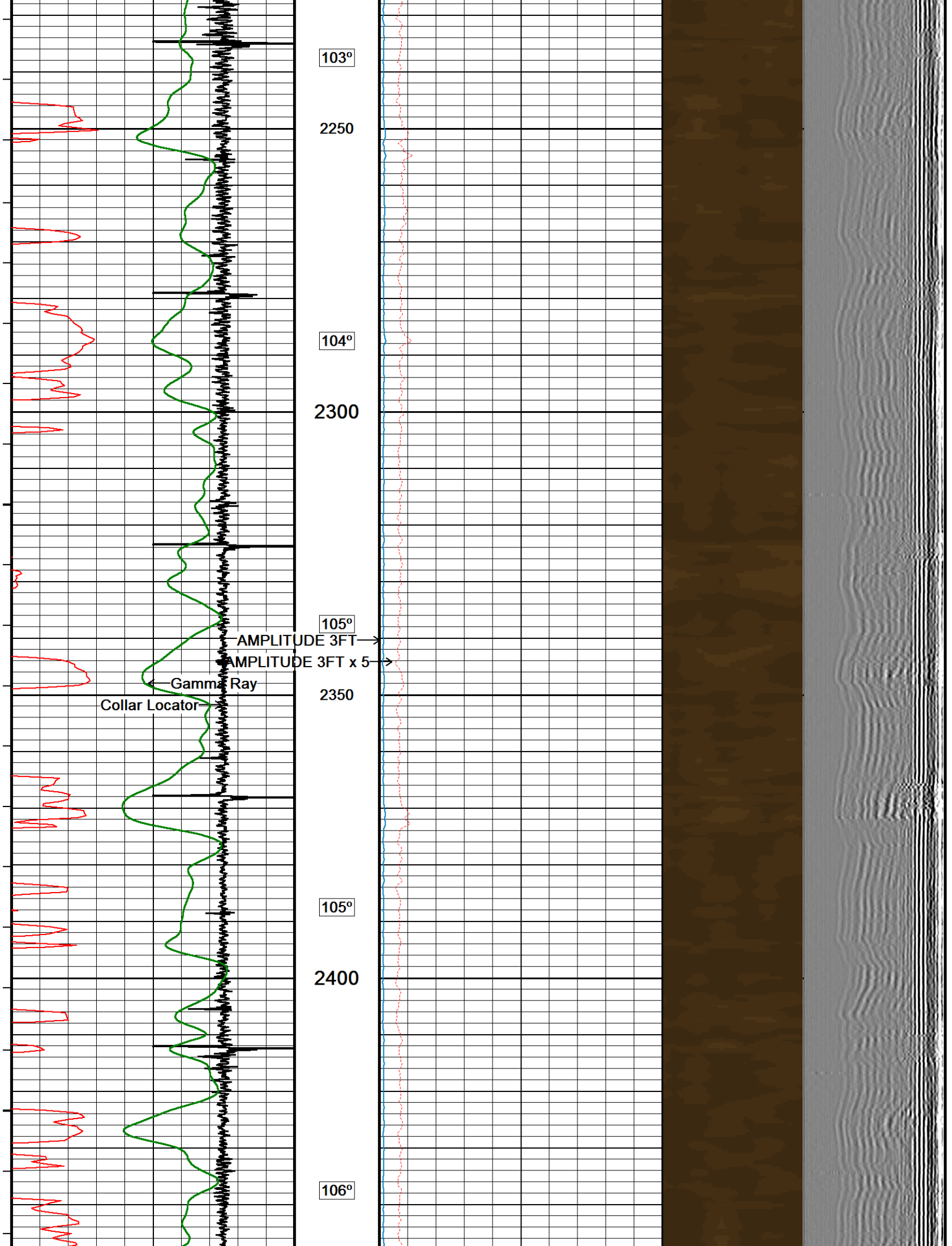
101°

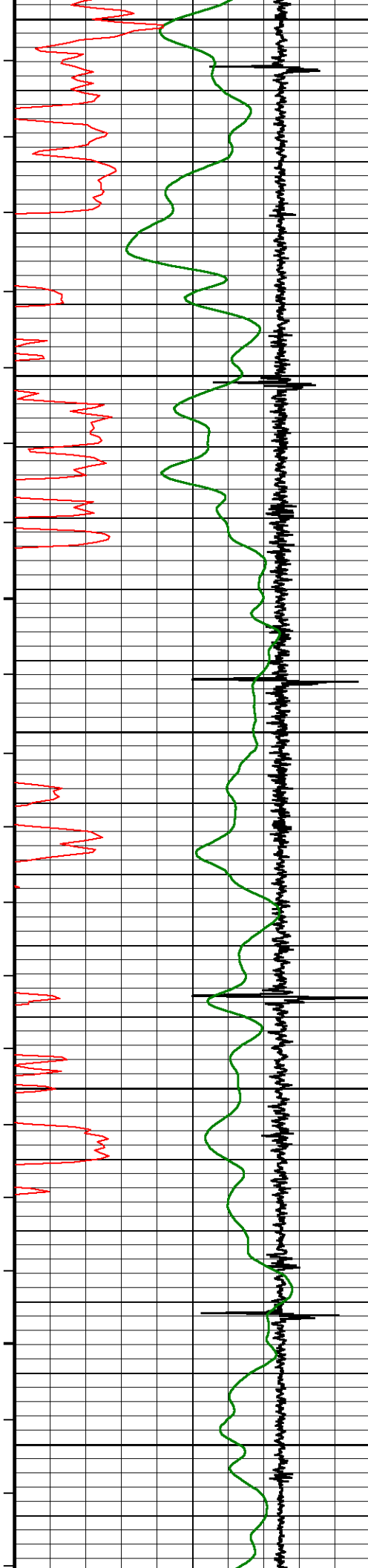
2150

102°

2200







2450

107°

2500

108°

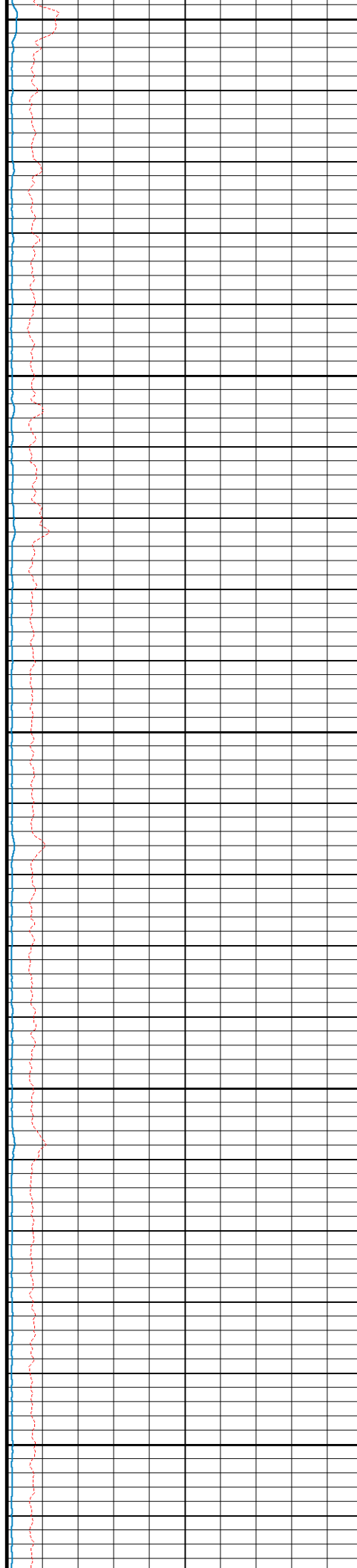
2550

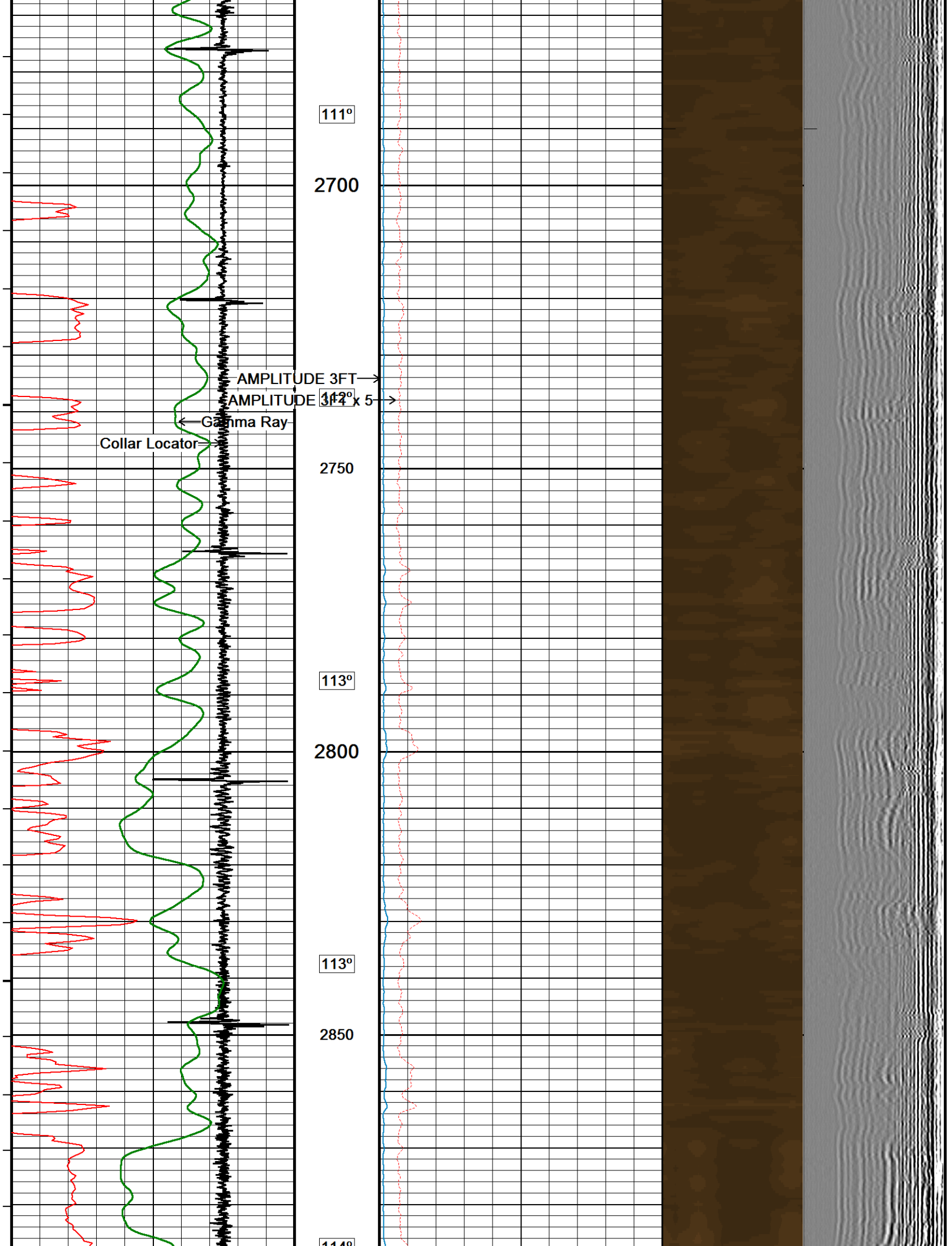
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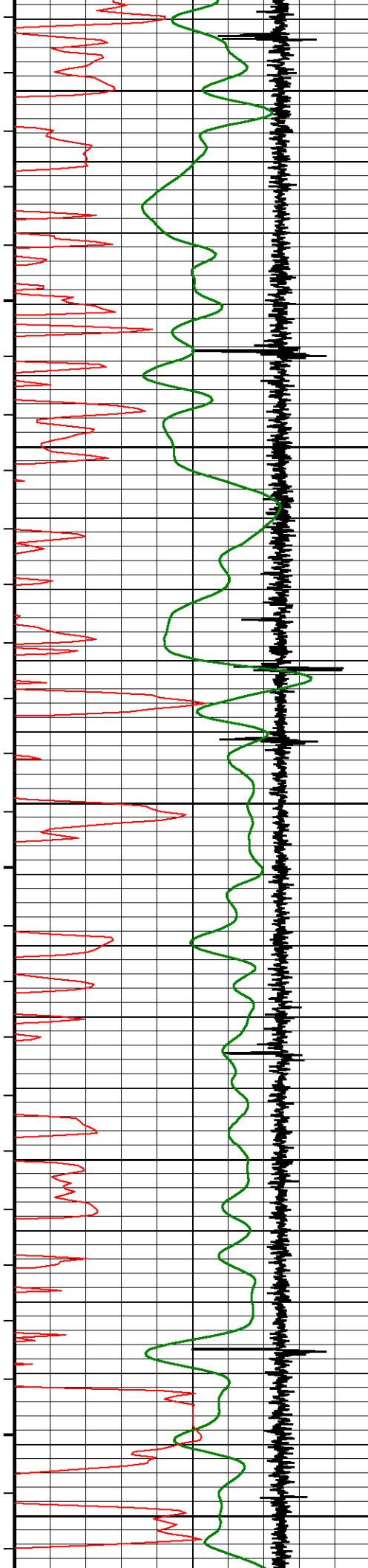
2600

110°

2650







114°

2900

115°

2950

116°

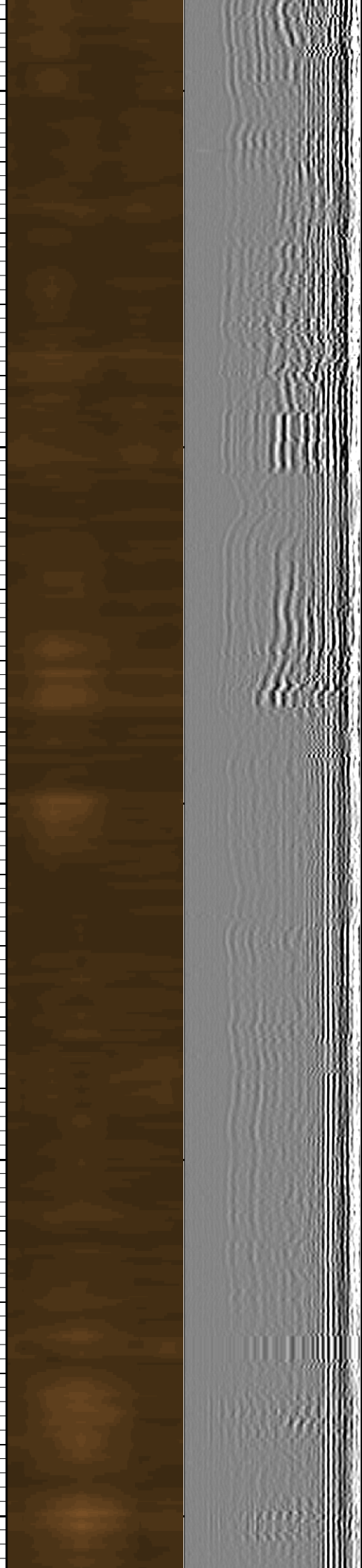
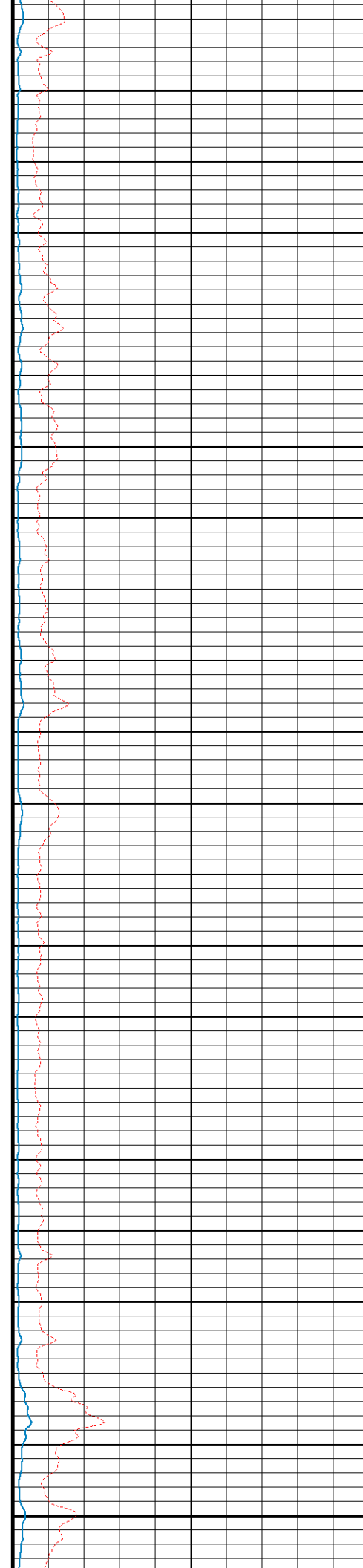
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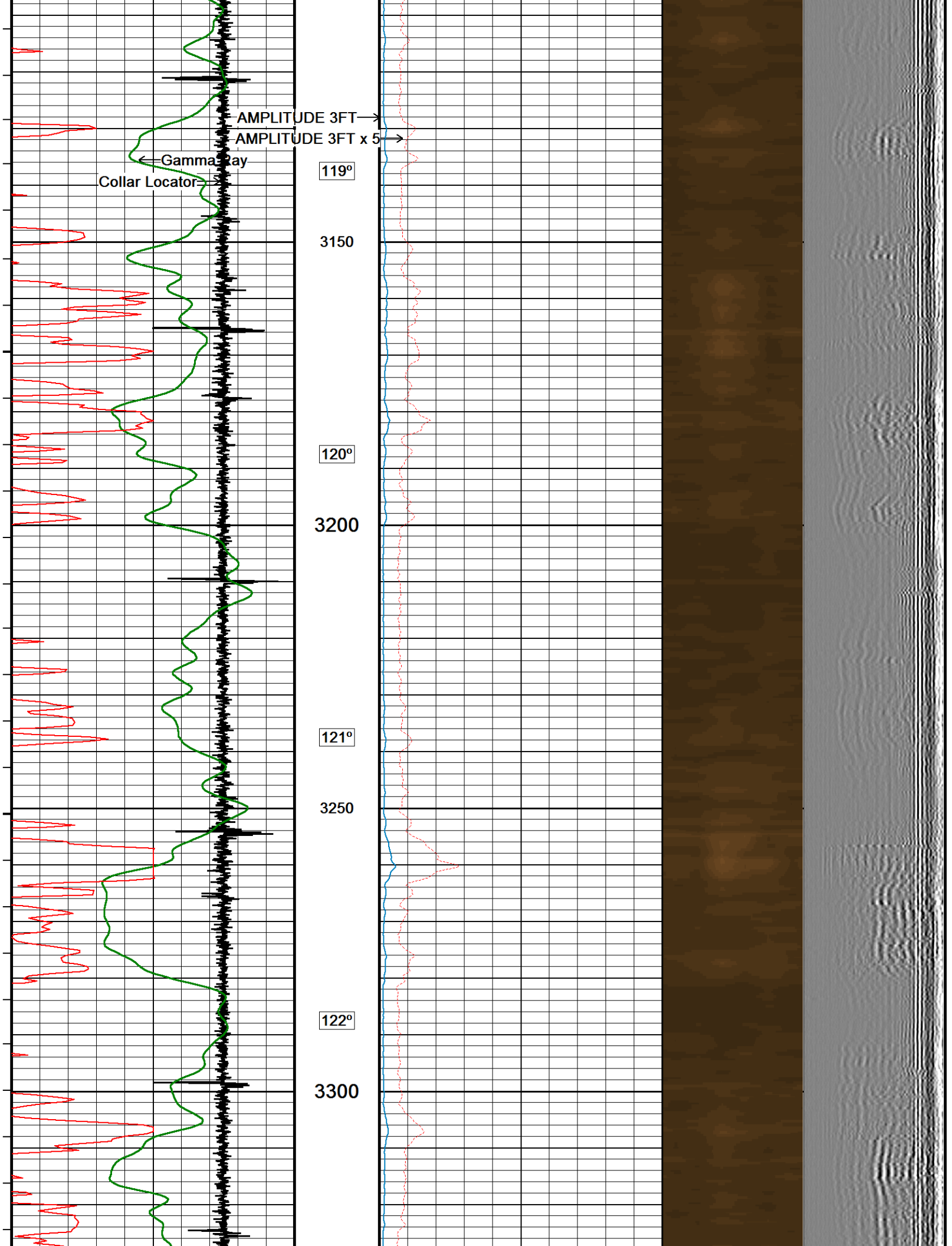
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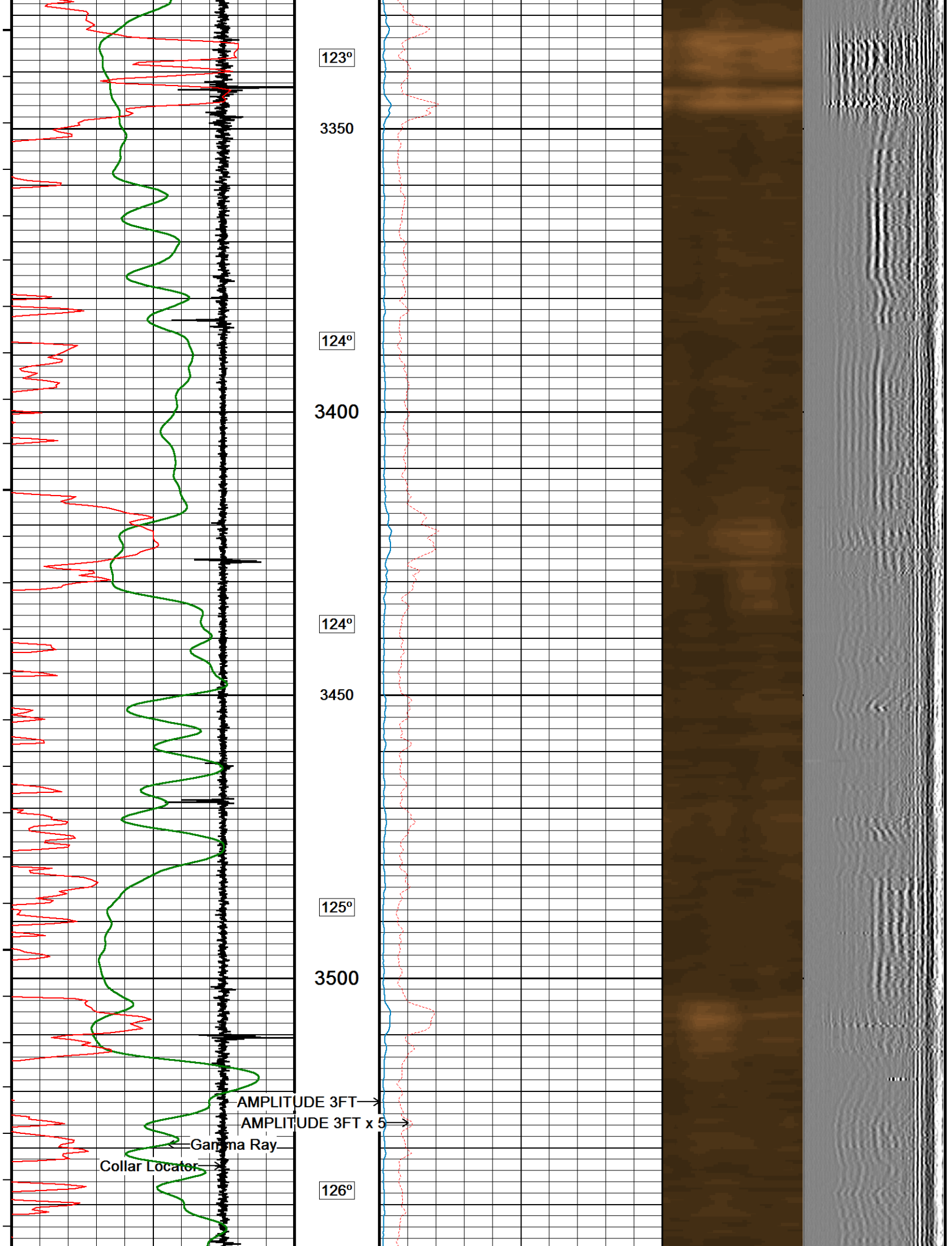
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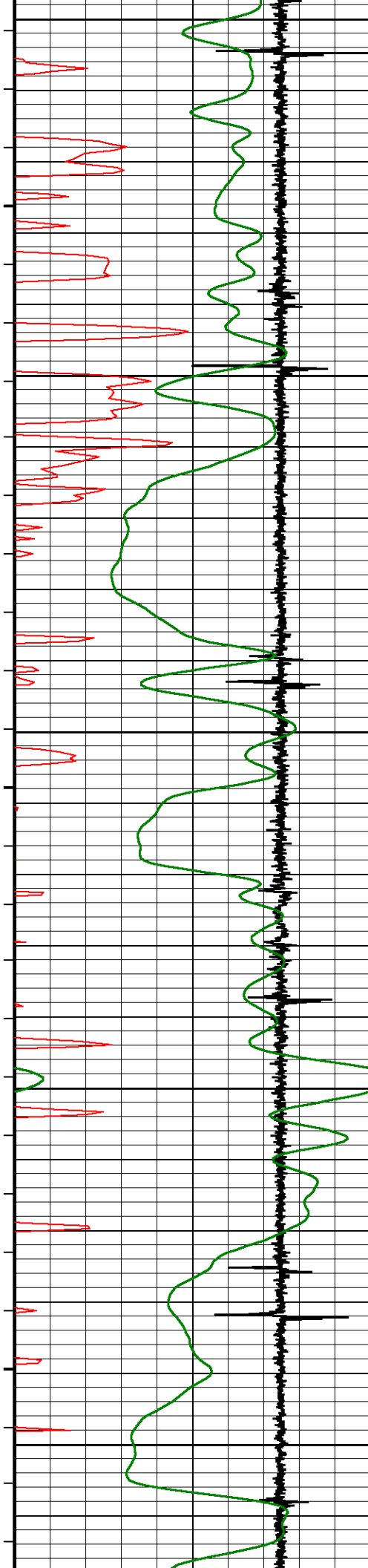
118°

3100









3550

127°

3600

128°

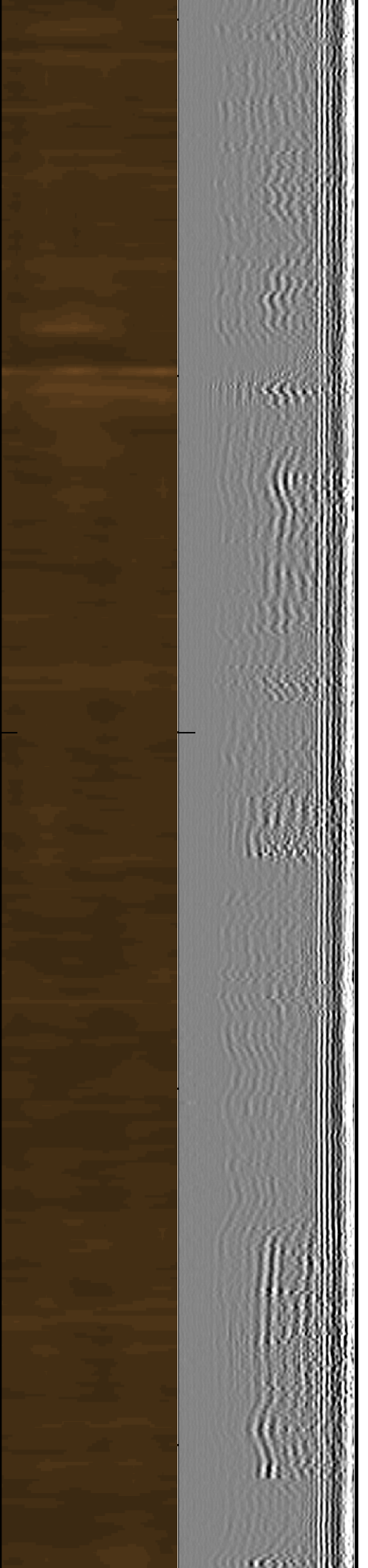
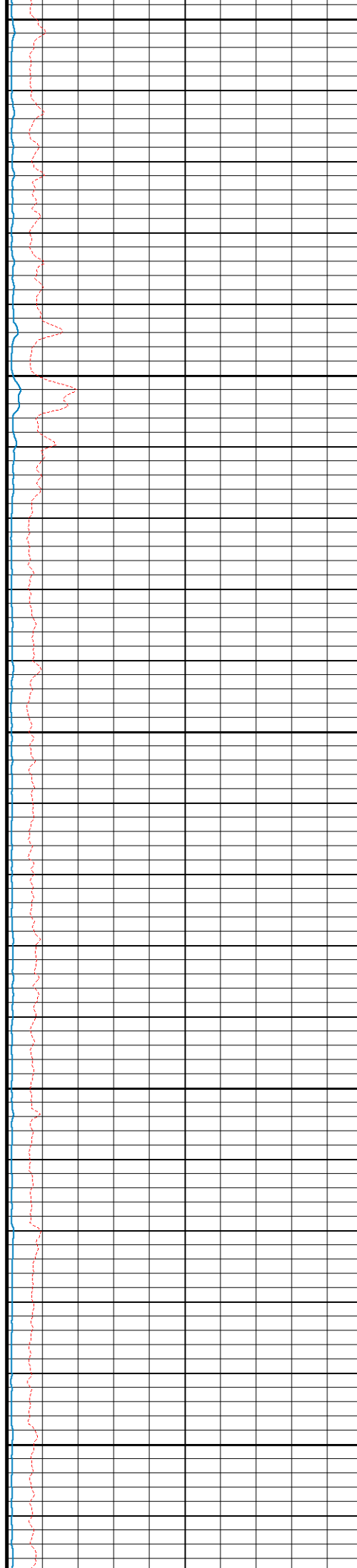
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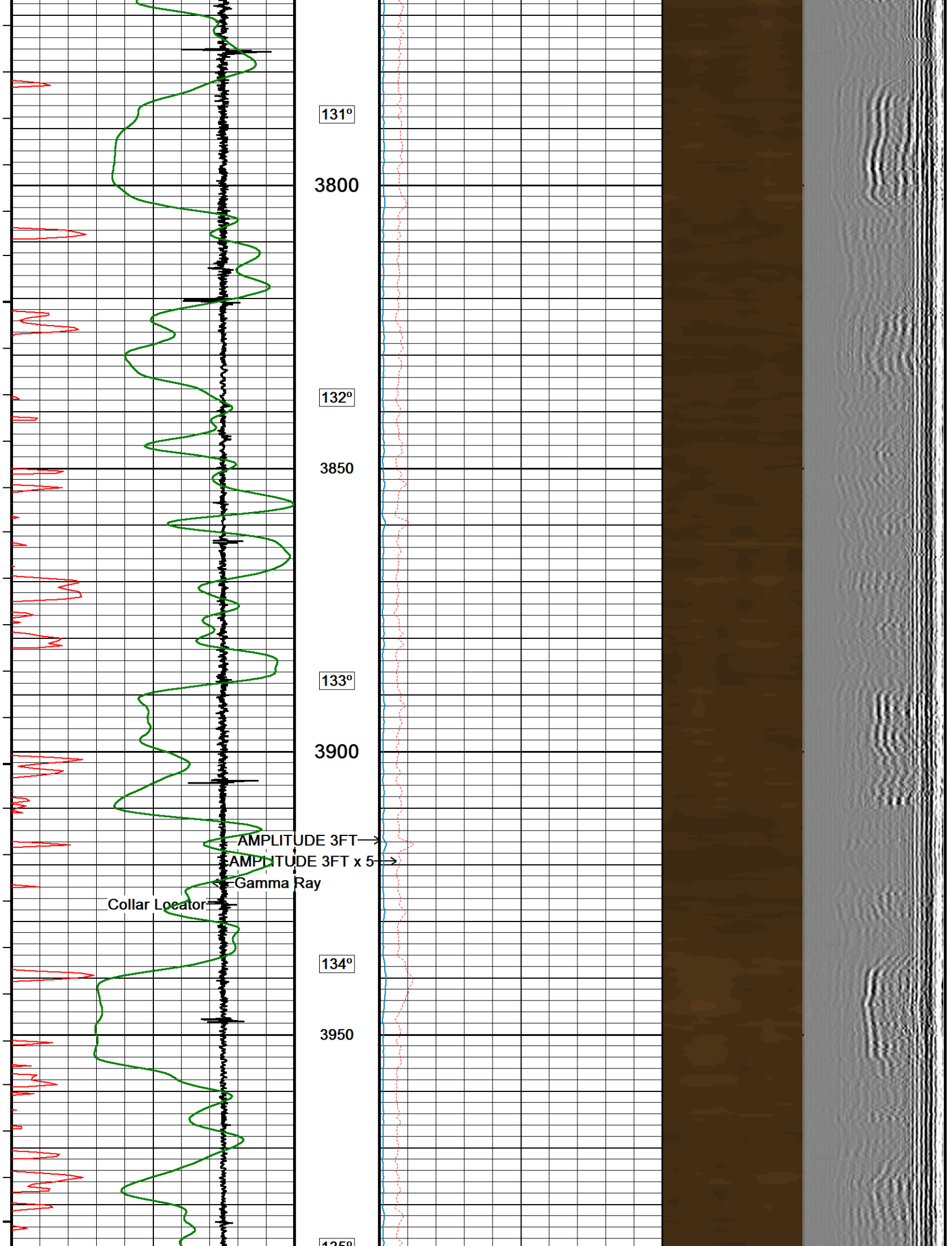
129°

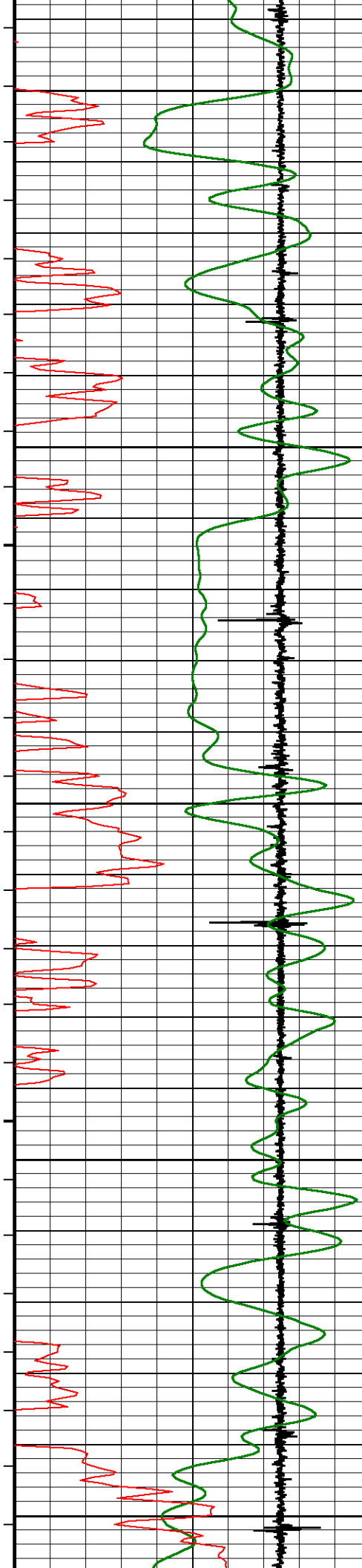
3700

130°

3750







135°

4000

136°

4050

137°

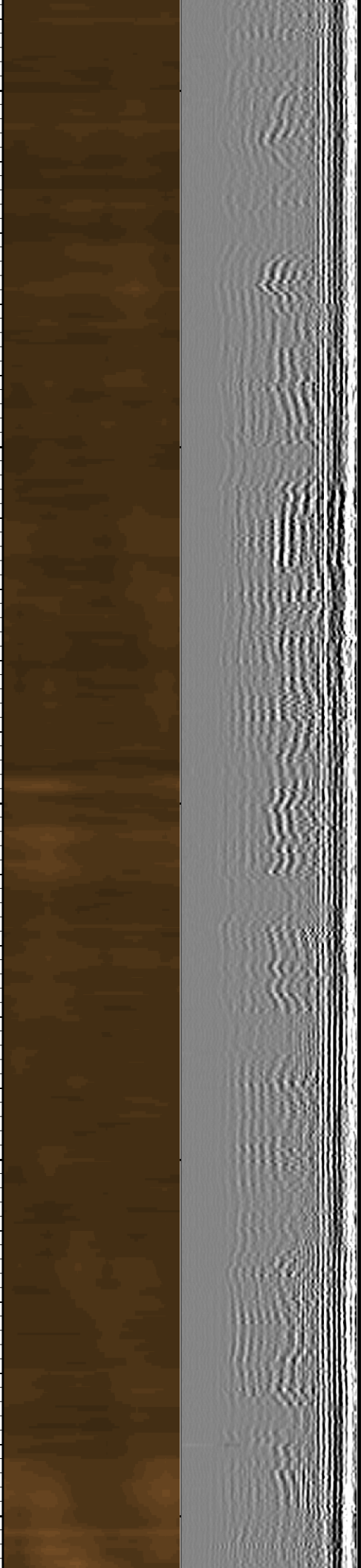
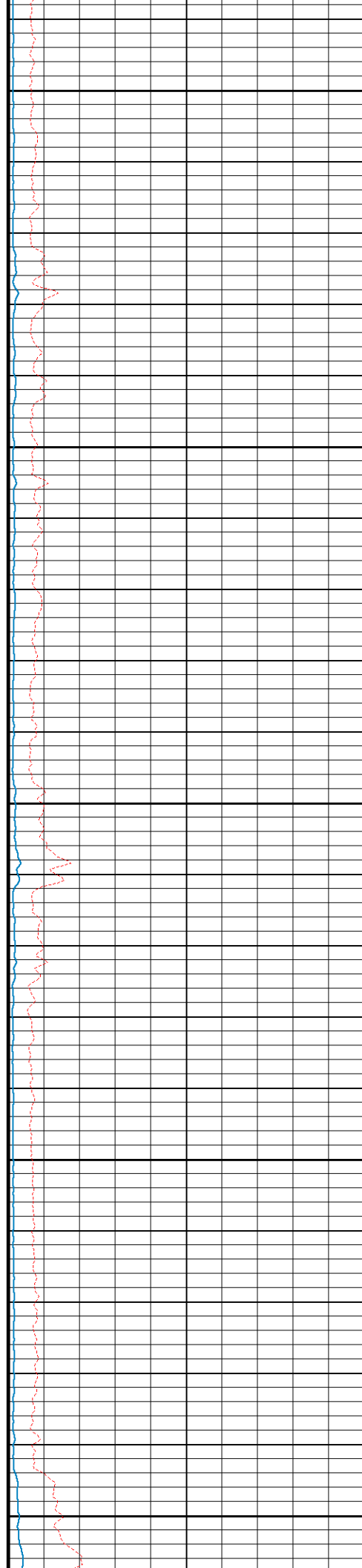
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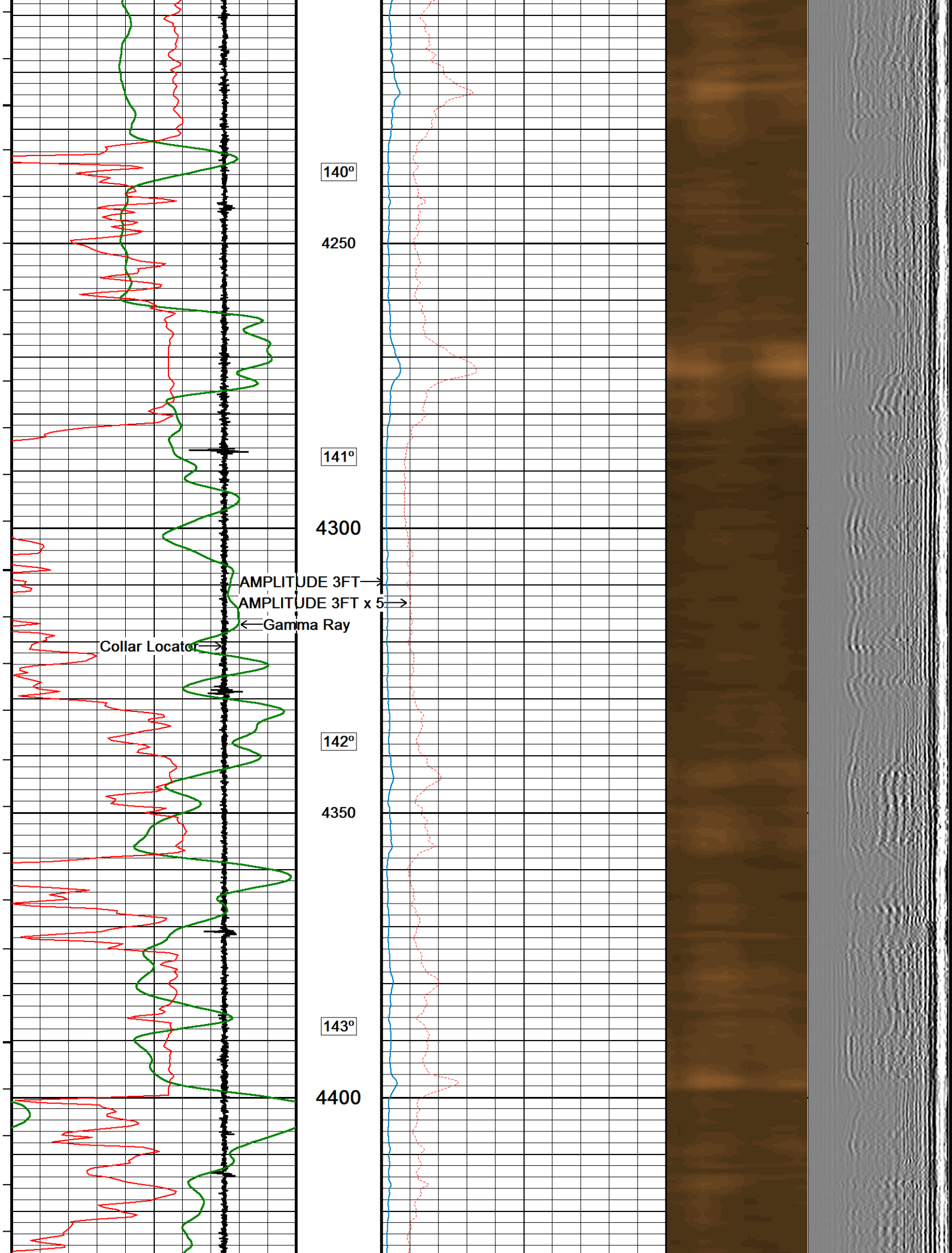
138°

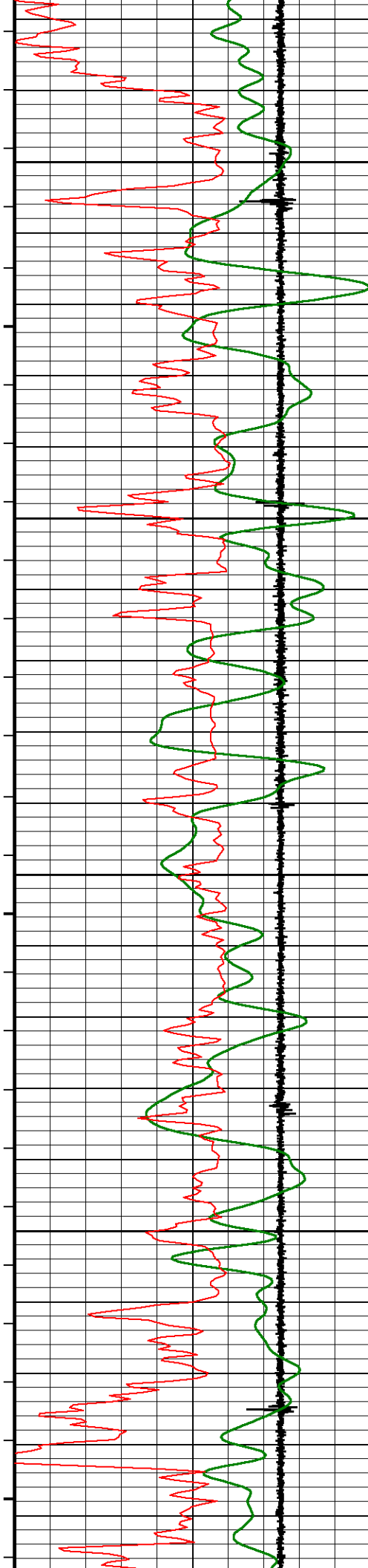
4150

139°

4200







144°

4450

145°

4500

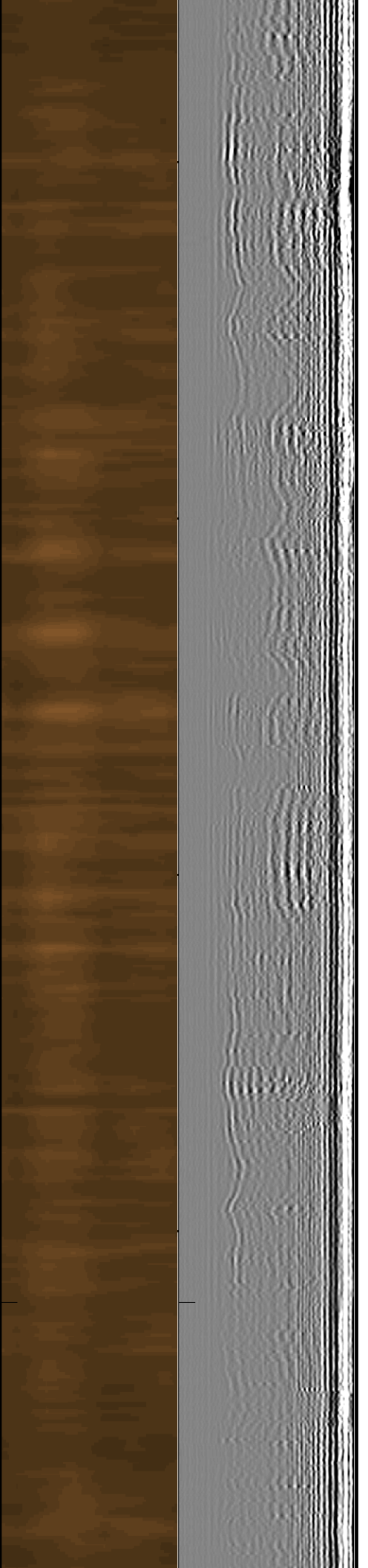
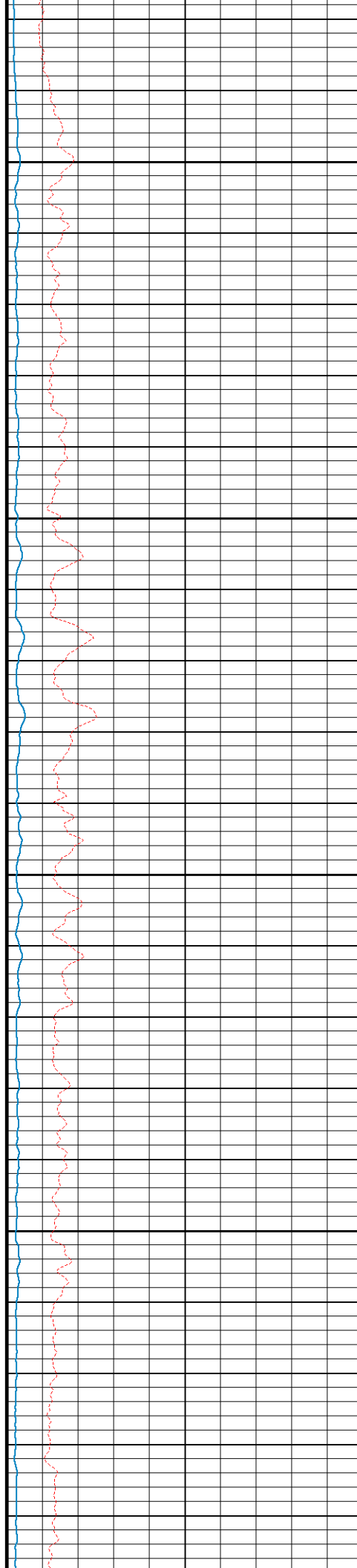
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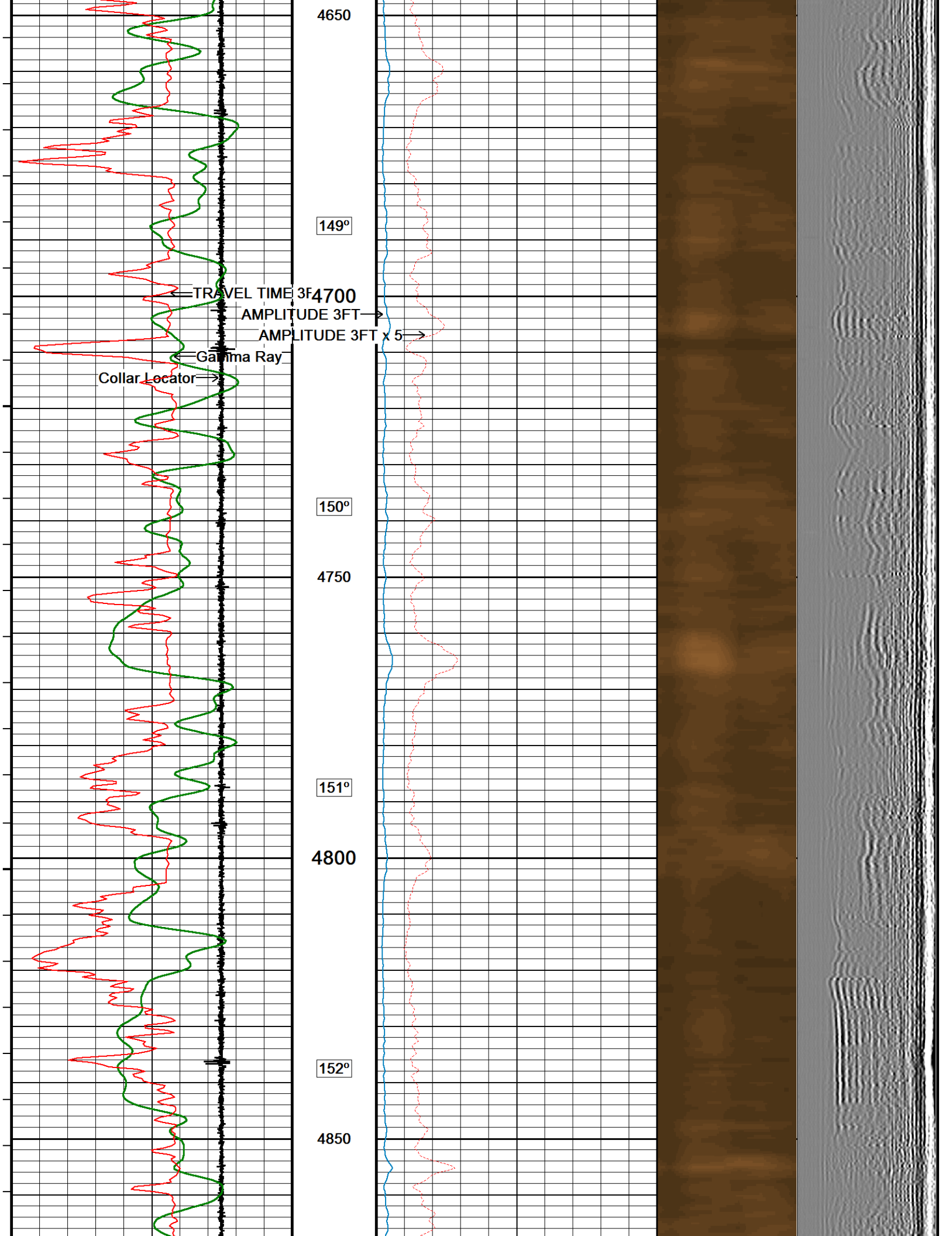
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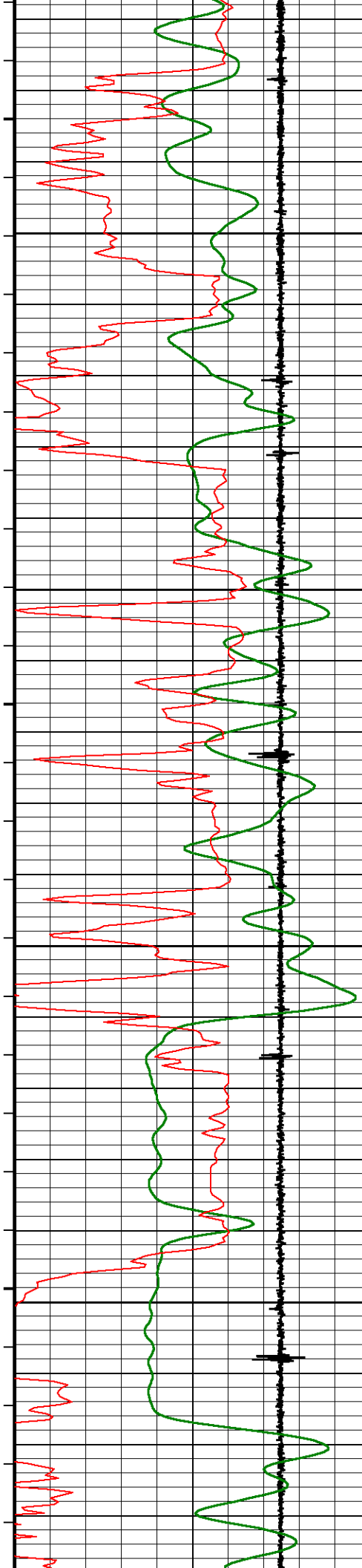
147°

4600

148°







153°

4900

154°

4950

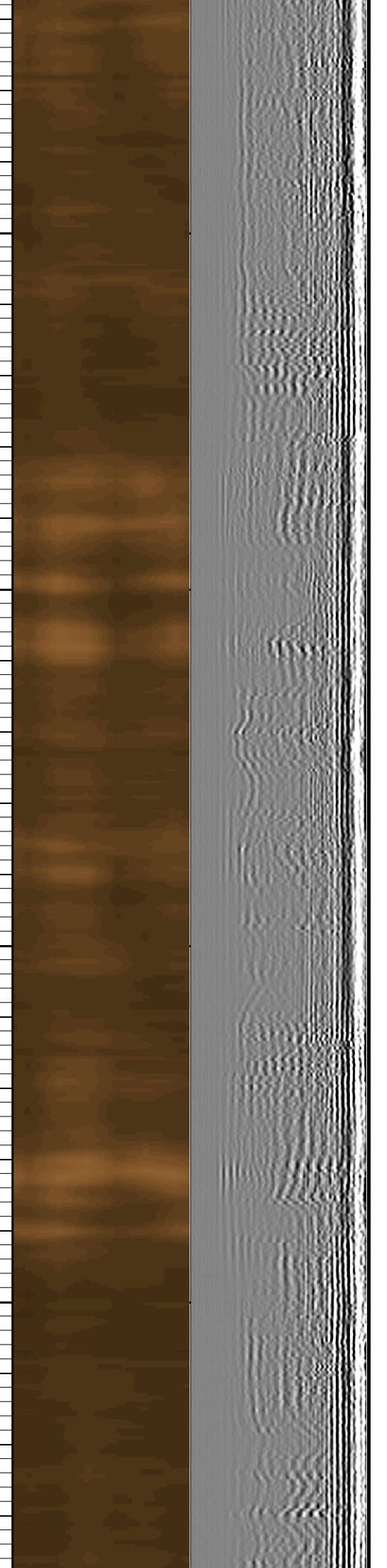
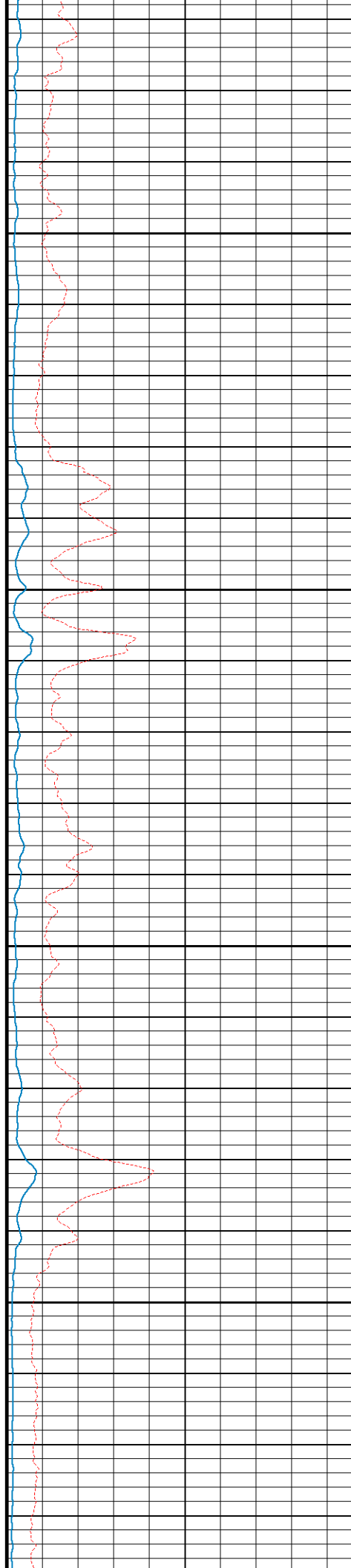
155°

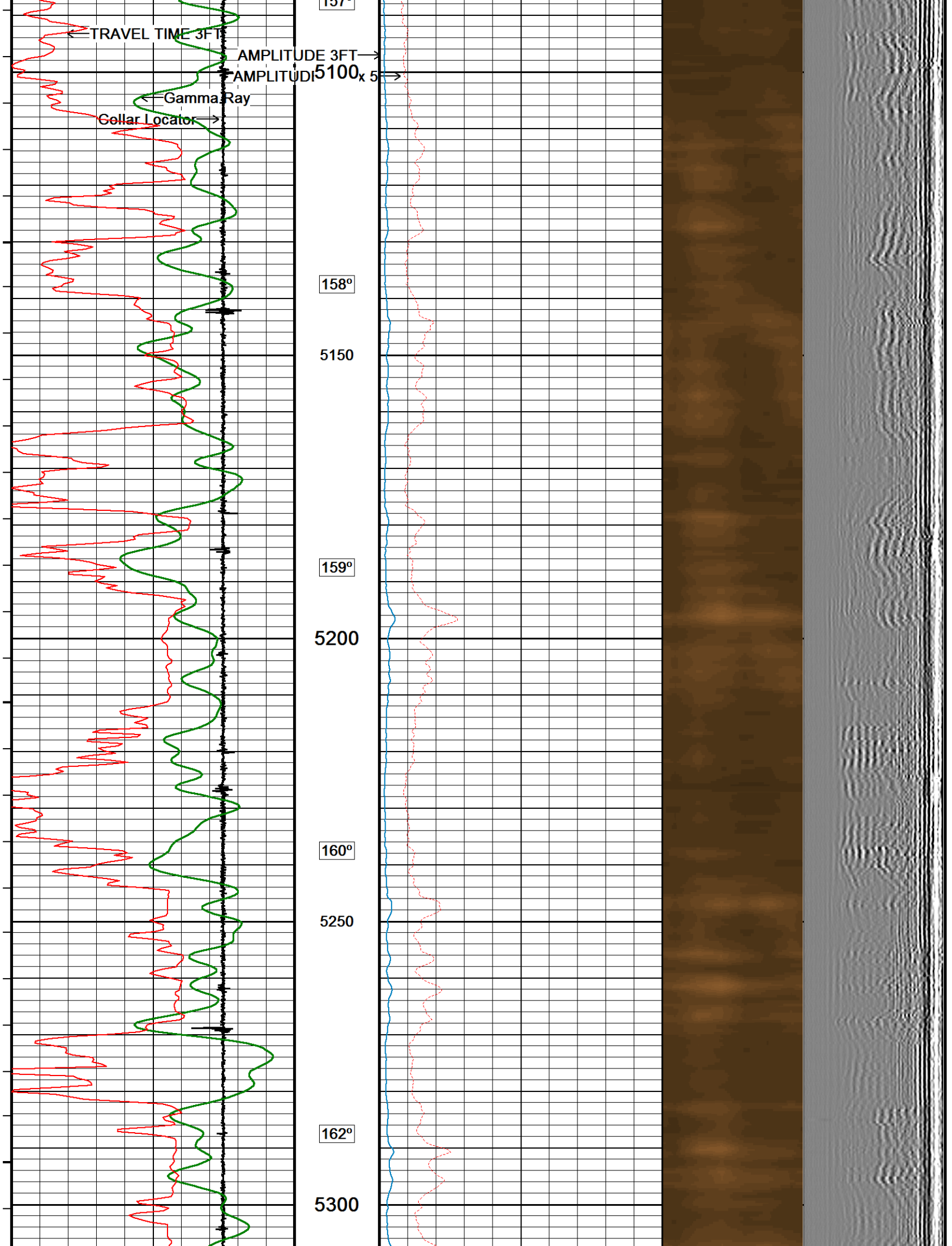
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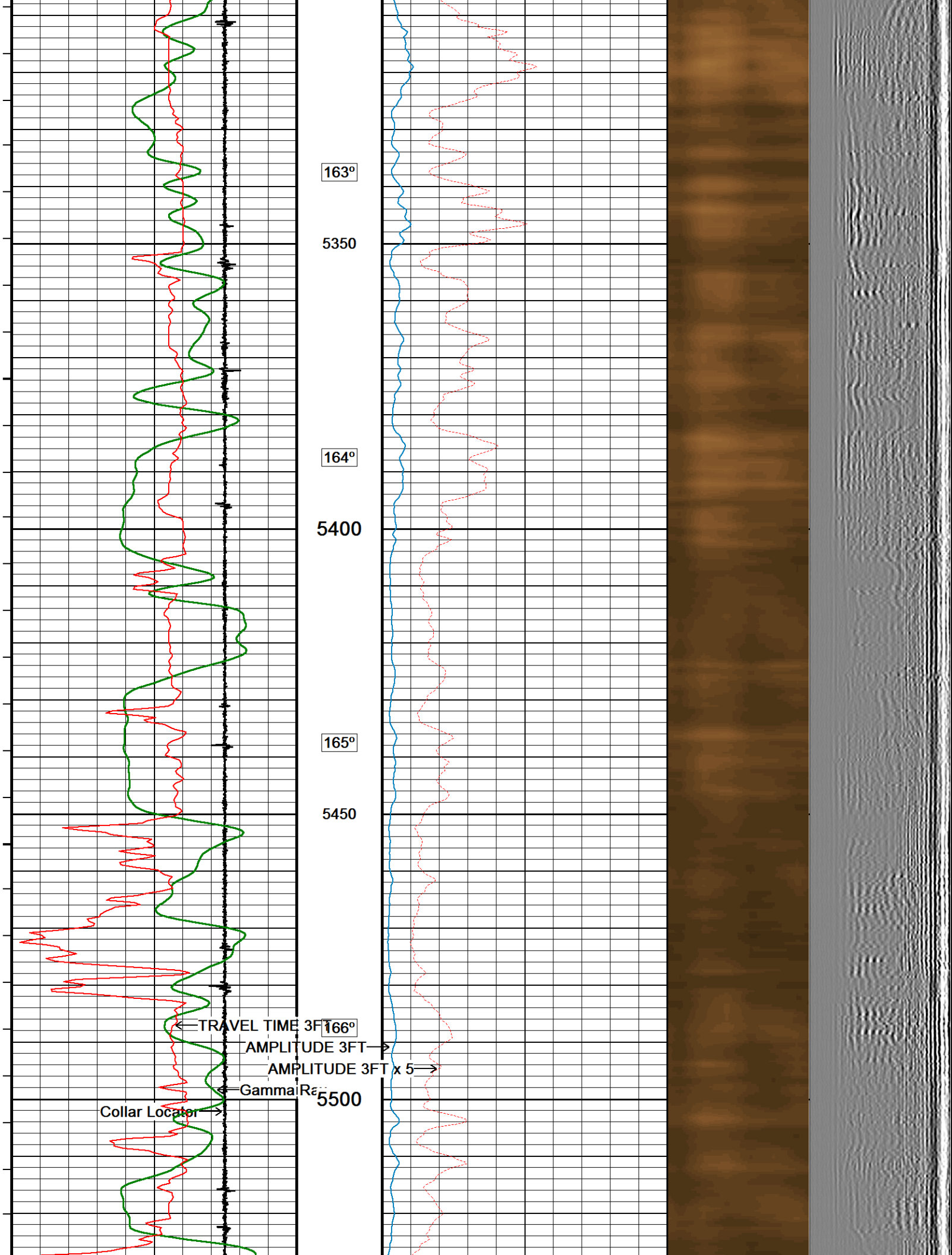
156°

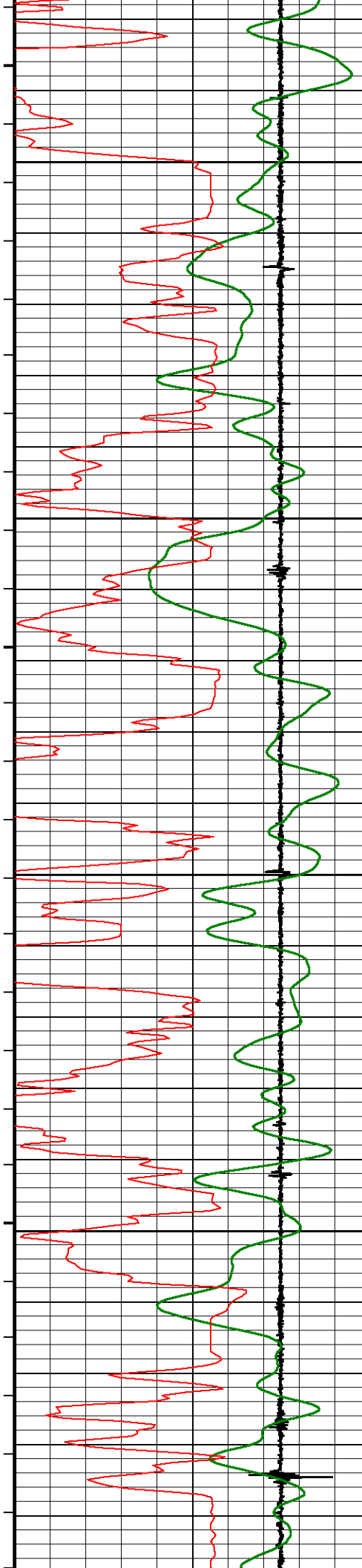
5050

157°









167°

5550

168°

5600

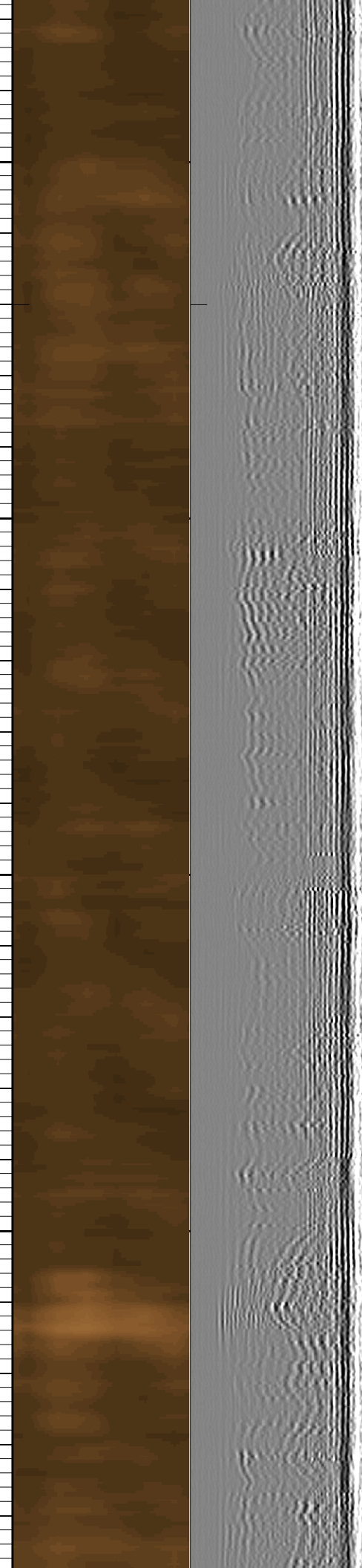
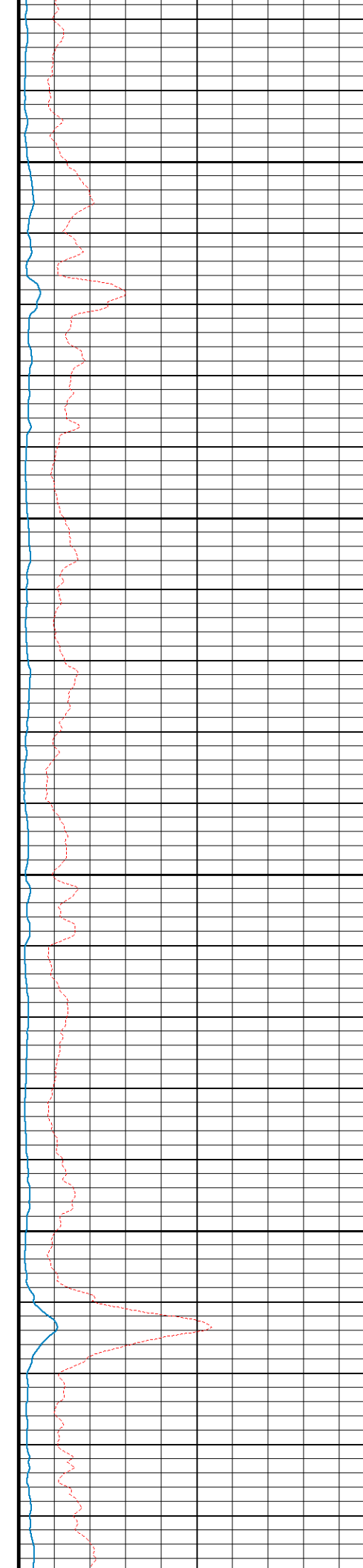
169°

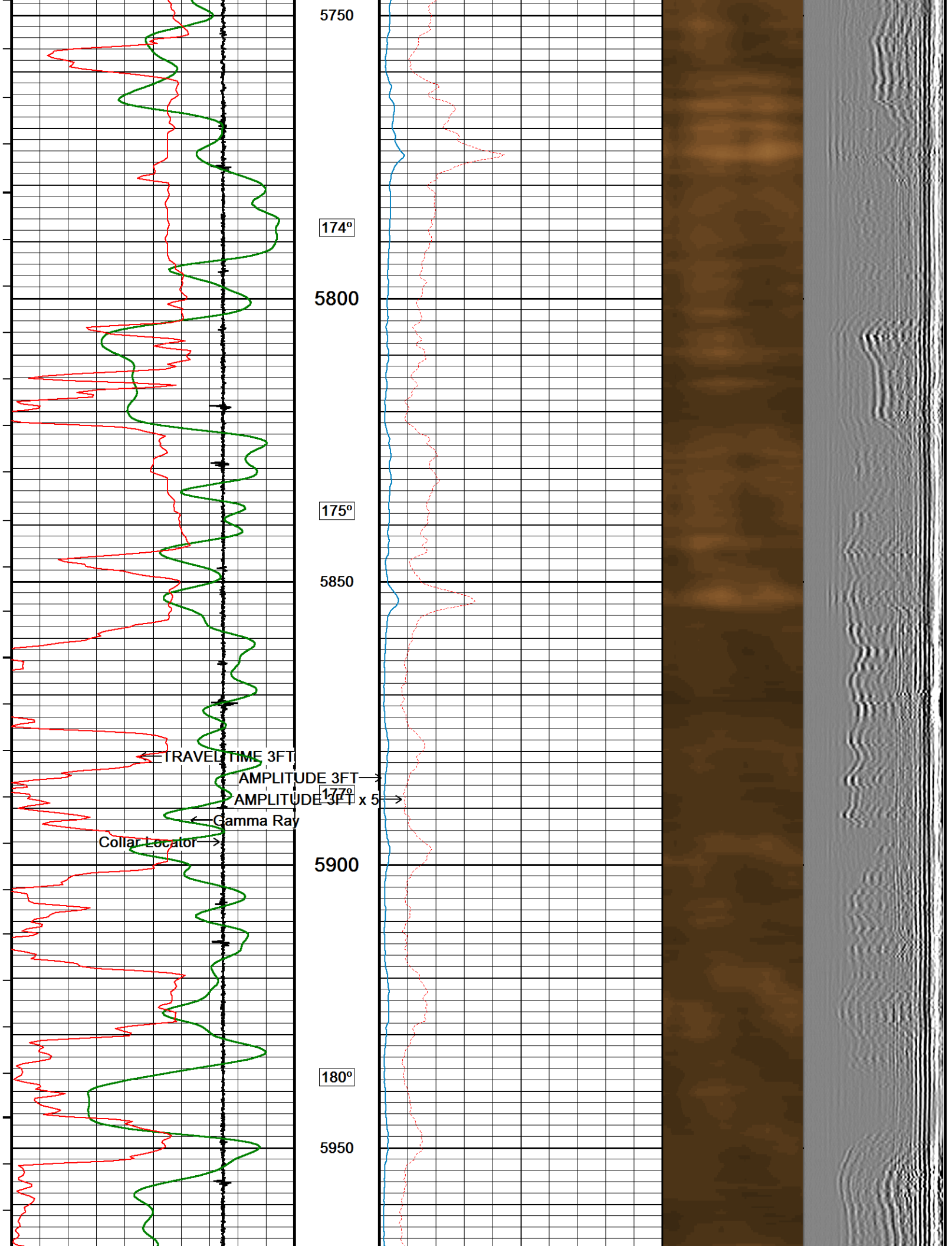
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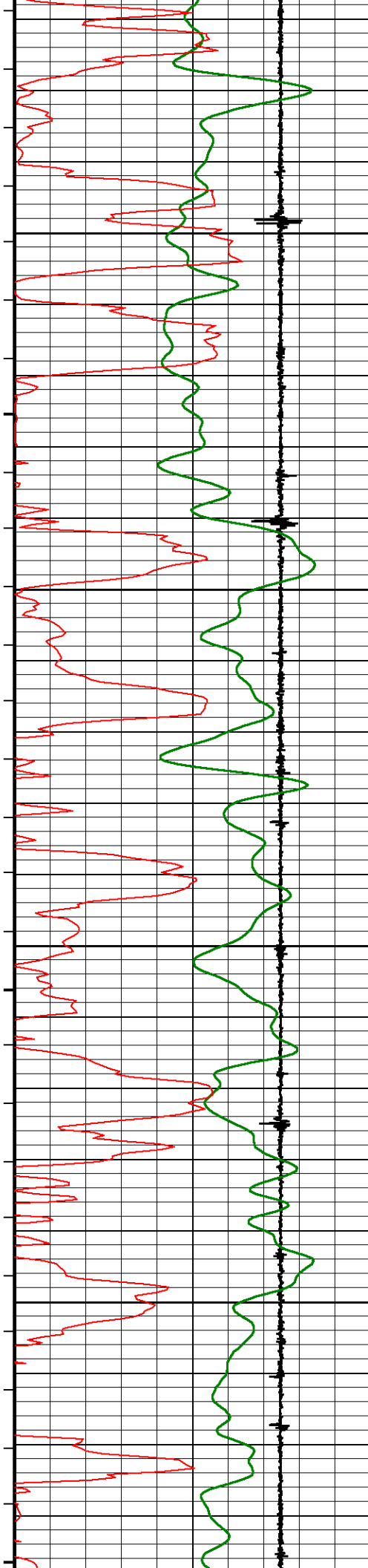
171°

5700

172°







183°

6000

185°

6050

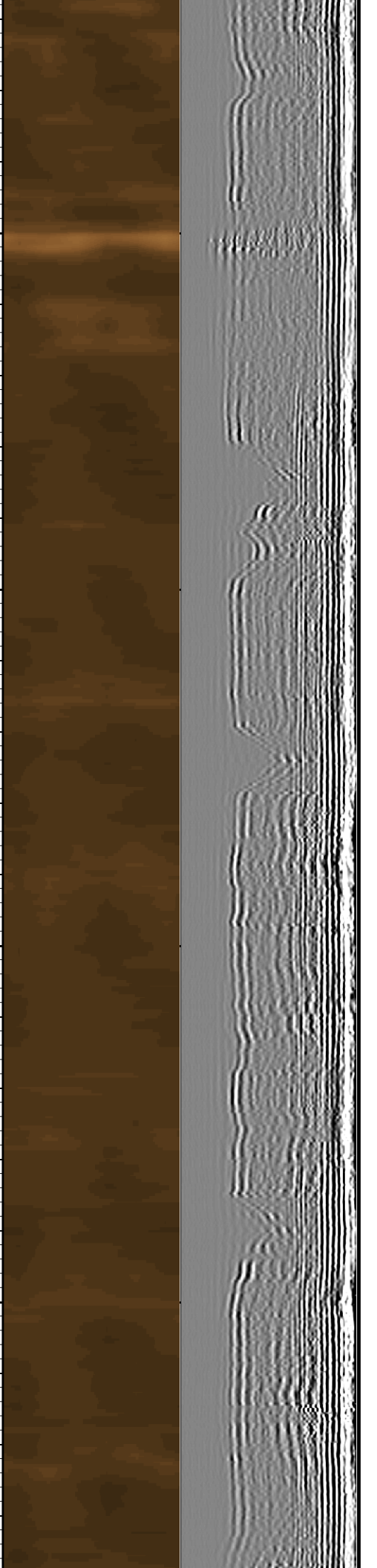
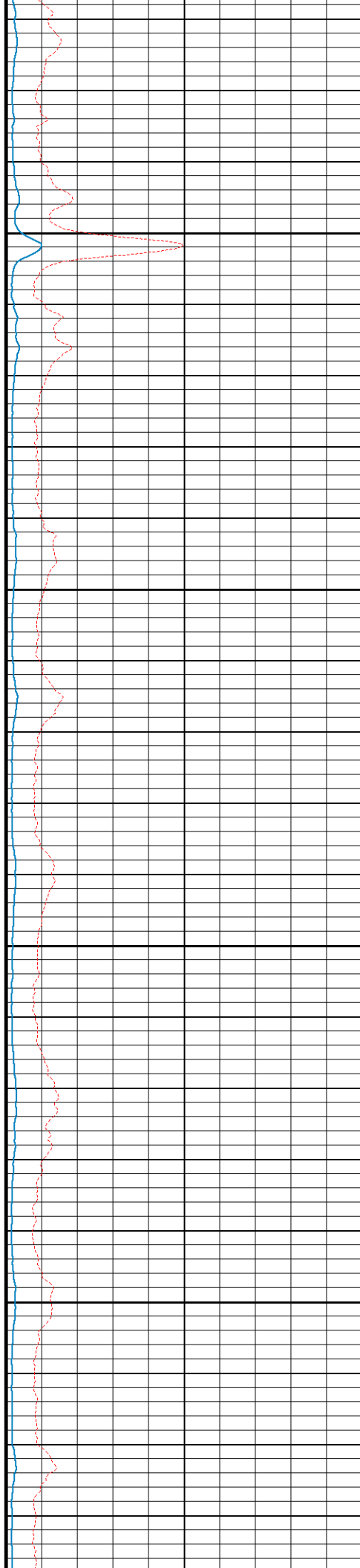
187°

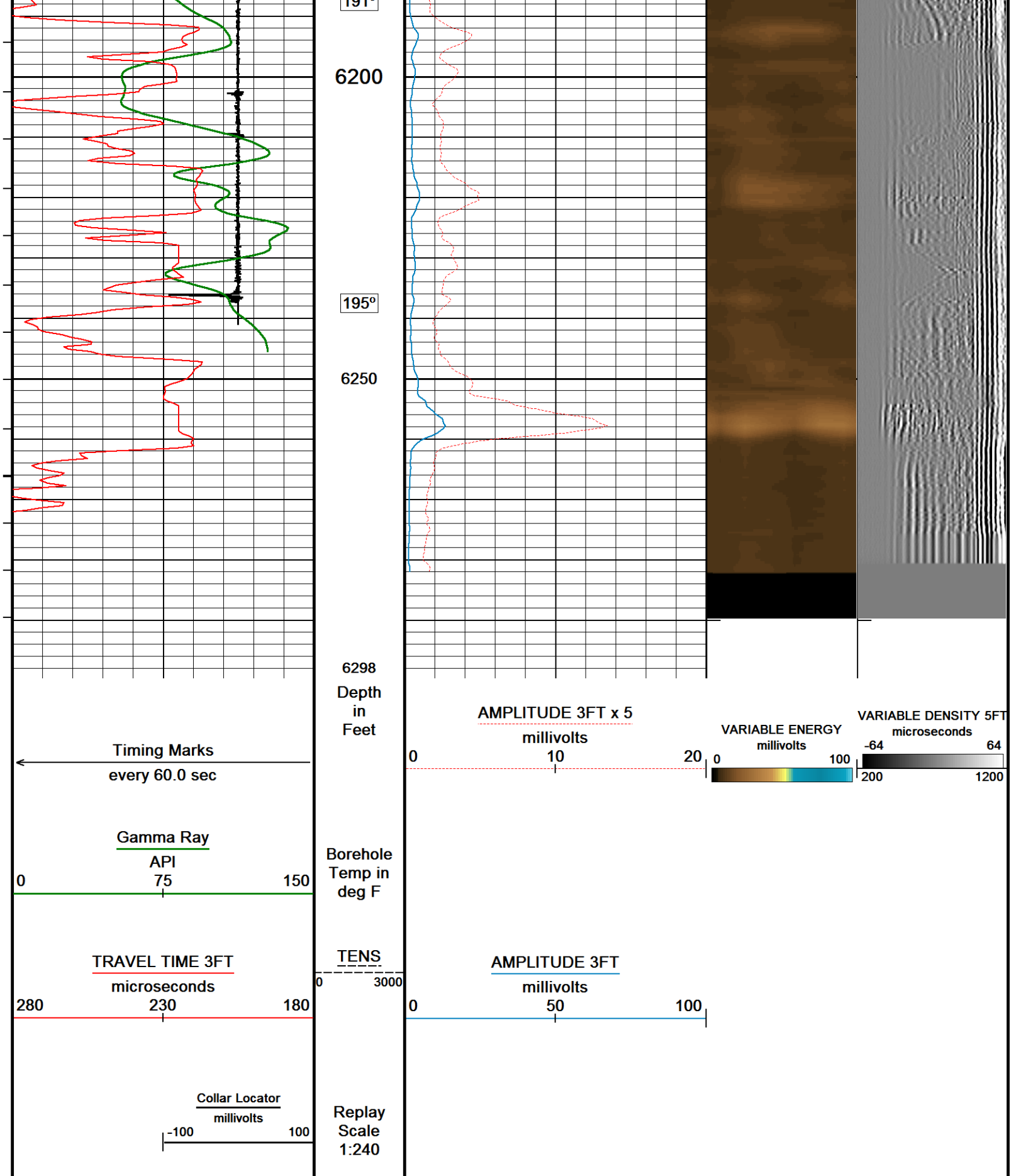
6100

189°

6150

191°



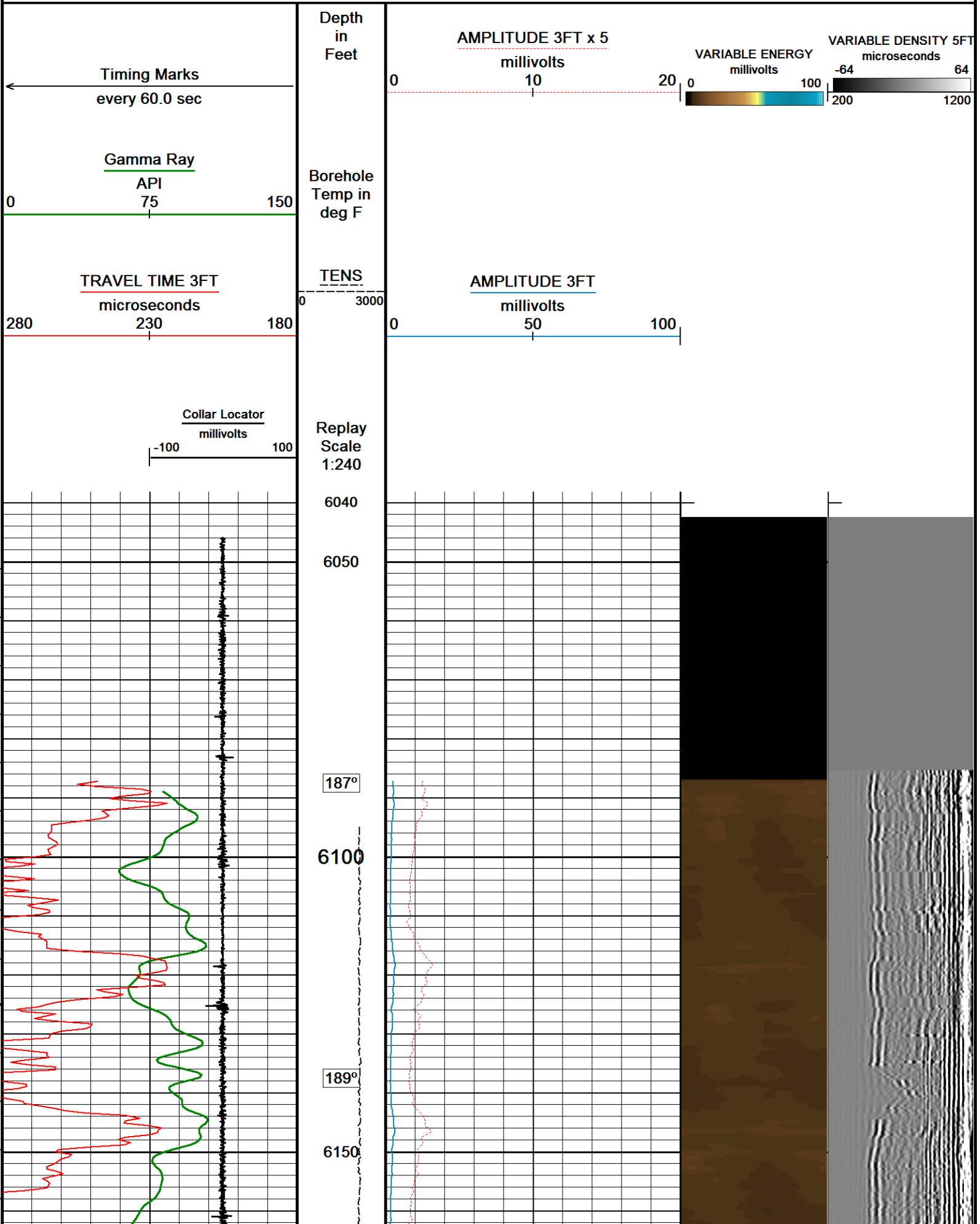


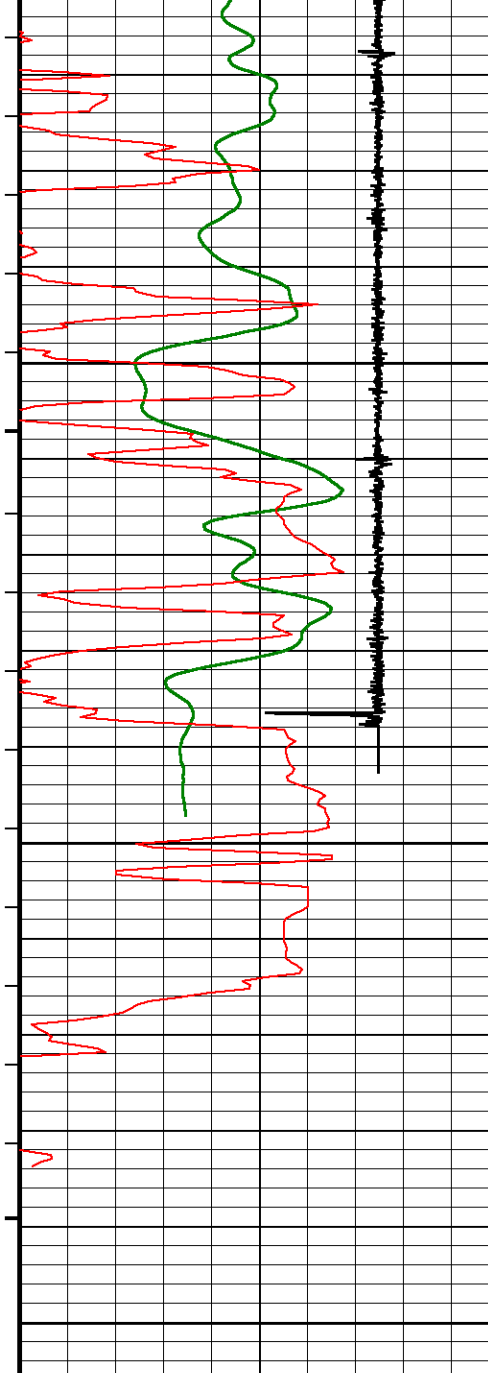
Depth Based Data - Maximum Sampling Increment 12.5cm
Filename: C:\Logs\URSA\BMC B 43A-13-07-96\BMC B 43A-13-07-96 CREB SSSB MAIN FINAL.dta
System Versions: Logged with 17.01.7206 Plotted with 17.01.7206

Plotted on 19-SEP-2017 17:56
Recorded on 19-SEP-2017 17:19

↑ MAIN PASS ↑

↓ REPEAT PASS ↓





191°

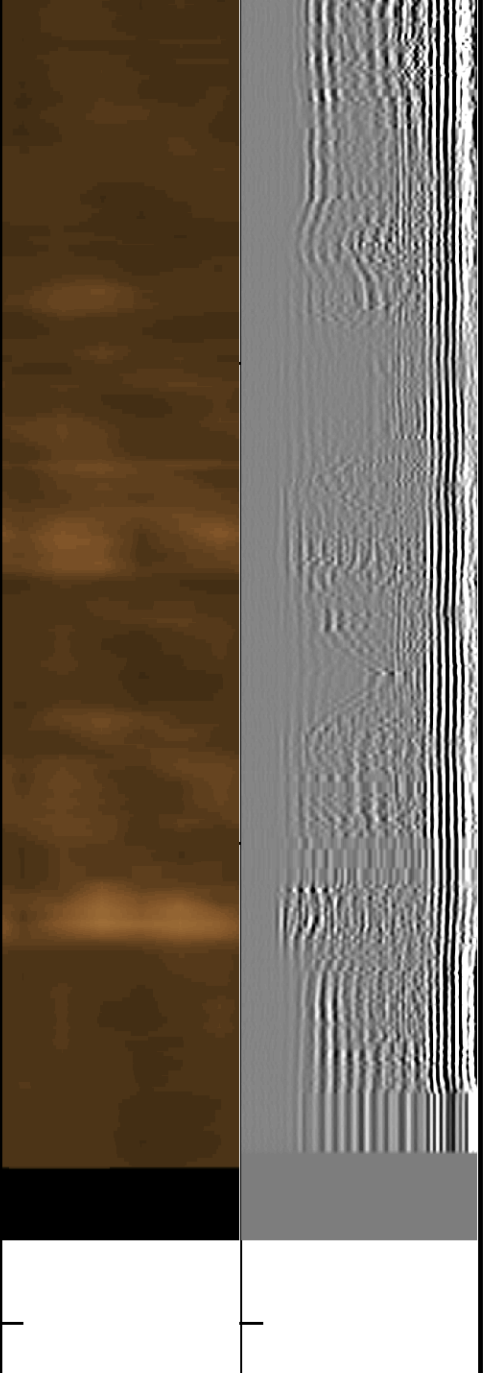
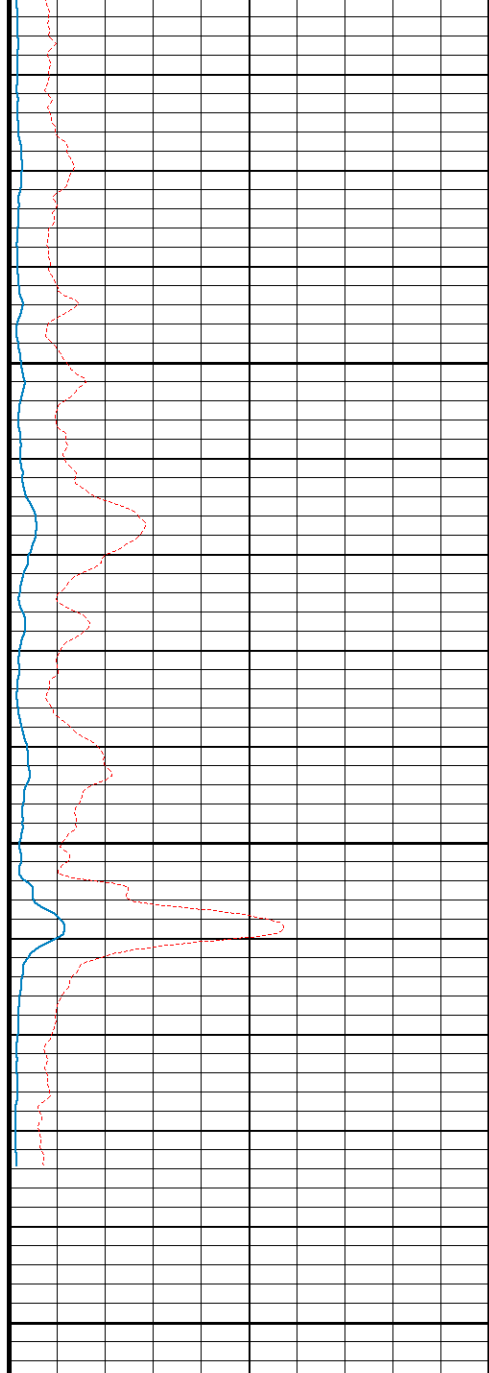
6200

196°

6250

6300

Depth in Feet



Timing Marks
every 60.0 sec

Gamma Ray
API
75

TRAVEL TIME 3FT
microseconds

Collar Locator
millivolts

Borehole
Temp in
deg F

TENS

Replay
Scale

AMPLITUDE 3FT x 5
millivolts

VARIABLE ENERGY
millivolts

VARIABLE DENSITY 5FT
microseconds

AMPLITUDE 3FT
millivolts

Plotted on 19-SEP-2017 17:56

Filename: C:\Logs\URSA\BMC B 43A-13-07-96\BMC B 43A-13-07-96 CREB SSSB REPEAT FINAL.dta

Recorded on 19-SEP-2017 17:30

System Versions: Logged with 17.01.7206 Plotted with 17.01.7206



REPEAT PASS



DOWNHOLE EQUIPMENT

C:\Logs\URSA\BMC B 43A-13-07-96\BMC B 43A-13-07-96 CREB SSSB MAIN FINAL.dta

Mono-Cablehead

MCH-AA 0 LG: 1.03 ft WT: 2.2 lb OD: 1.457 in

Comm Sub

WCC-CB 107 LG: 5.97 ft WT: 24.3 lb OD: 1.693 in

Gamma Ray K

UGR-KA 108 LG: 2.34 ft WT: 17.6 lb OD: 1.693 in

Quartz Press, Dual ITB, 43mm

QPG-EA 106 LG: 2.23 ft WT: 8.8 lb OD: 1.693 in

Centroller, 43mm, ITB, 3-arm Bi-Direct

CR3-BA 138 LG: 2.51 ft WT: 8.8 lb OD: 1.693 in

Tool Temperature, 43mm, 177C, 10-pin ITB

TMP-NA 139 LG: 1.93 ft WT: 8.8 lb OD: 1.693 in

CRE series II processor section

CRP-BA 129 LG: 3.31 ft WT: 15.4 lb OD: 1.654 in

Casing Reservoir Evaluation Tool Sonde

CRM-BA 129 LG: 9.19 ft WT: 46.3 lb OD: 1.693 in

- 48.83 ft CCL - Collar Locator

- 46.39 ft GR - Gamma Ray

- 43.85 ft PRES - QPG Pressure

- 39.48 ft TMPN - Temperature

31.41 ft VC15 - NVis. capt. prox/long

21.41 ft V/P24 N/V/c incl near/far

31.41 ft VB24 - NVis. inel. near/far
31.41 ft VB15 - NVis. inel prx/long
31.41 ft VC24 - NVis. capt. near/far
31.41 ft VRBN - VRBN

Centroller, 43mm, ITB, 3-arm Bi-Direct
CR3-BA 105 LG: 2.51 ft WT: 8.8 lb OD: 1.693 in

Gamma Ray K
UGR-KA 132 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: 1.654 in

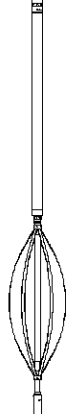
22.38 ft GR2 - Gamma Ray 2

SSB Receiver Sonde
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 370 LG: 2.60 ft WT: 8.8 lb OD: 1.380 in

Total Length: 54.99 ft Weight: 242.5 lb



Tool Zero (0.00ft from bottom)

All measurements relative to tool zero.

SHOP AND FIELD CALIBRATIONS

C:\Logs\URSA\BMC B 43A-13-07-96\BMC B 43A-13-07-96 CREB SSSB MAIN FINAL.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 15-AUG-2017 11:53

Gamma Ray Before Survey Calibration

Tool Type: UGR-KA
calibrator No: 101

Serial No: 108

| Background | calibrator | standard | Units |
|-----------------------------|------------|-----------------|-------|
| 46.3 | 786.0 | 470.2 | API |
| Delta Counts Per Sec: 739.7 | | CPS/API = 1.573 | |

QPG Master Calibration QPG-EA 106

Gauge

Serial Number 220928

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 | T4 |
| P0 | 13.6402 | -0.585455 | -0.0197893 | 9.3116e-006 | |
| P1 | 9.3116e-006 | 42.1819 | -0.0208838 | 2.62627e-005 | |
| P2 | 2.62627e-005 | -5.38063e-008 | -0.00199429 | 8.64228e-006 | |
| P3 | 8.64228e-006 | -3.99023e-008 | 3.69856e-011 | 6.96299e-007 | |
| P4 | | | | | |

Temperature

| | | | Temperature polynomial order 3 | | |
|--|---------|-----------|--------------------------------|---------------|----|
| | T0 | T1 | T2 | T3 | T4 |
| | 25.2302 | -0.731527 | -0.000858522 | -6.86634e-007 | |

Temperature Tool Shop Survey Calibration TMP-NA 139

Temperature Tool Shop Survey Calibration
Tool Type: TMP-NA Serial No: 139

Calibration

| Standard | | Measured |
|----------|------|----------|
| 32 | DEGF | 36714 Hz |
| 212 | DEGF | 50849 Hz |

UGK Before Survey Cal UGR-KA 132

Field Calibration on 15-AUG-2017 12:40

Gamma Ray Before Survey Calibration
Tool Type: UGR-KA Serial No: 132
Calibrator No: 101

| Background | Calibrator | Standard | Units |
|-----------------------------|------------|-----------------|-------|
| 42.6 | 812.4 | 470.2 | API |
| Delta Counts Per Sec: 769.8 | | CPS/API = 1.637 | |

SSBC Field calibration SSS-BA 117

Field Calibration on 08-SEP-2017 15:24

Slim Sector Bond Field Calibration

| | | | |
|-----------|--------|-----------|-----|
| Tool Type | SSS-BA | Serial No | 117 |
|-----------|--------|-----------|-----|

| Sensor | Description | Standard | Measured |
|--------------|-------------|----------|----------|
| AMP 3FT | 100% Bond | 1.00 | 2.30 |
| | Free Pipe | 81.00 | 2688.80 |
| AMP 5FT | 100% Bond | 0.40 | 3.50 |
| | Free Pipe | 54.00 | 4554.50 |
| 1 SECTOR AMP | 100% Bond | 5.00 | 5.60 |
| | Free Pipe | 95.00 | 2263.10 |
| 2 SECTOR AMP | 100% Bond | 5.00 | 7.10 |
| | Free Pipe | 95.00 | 1962.30 |
| 3 SECTOR AMP | 100% Bond | 5.00 | 1.10 |
| | Free Pipe | 95.00 | 1677.90 |
| 4 SECTOR AMP | 100% Bond | 5.00 | 4.80 |
| | Free Pipe | 95.00 | 1907.30 |
| 5 SECTOR AMP | 100% Bond | 5.00 | 6.80 |
| | Free Pipe | 95.00 | 2164.10 |
| 6 SECTOR AMP | 100% Bond | 5.00 | 1.60 |
| | Free Pipe | 95.00 | 2310.10 |

SSBC Constants SSS-BA 117

Last Edited on 00-JAN-1988 00:00

| | |
|----------------------|------------|
| Min Ampl 100% Bond | 3.63 MV |
| Max Ampl 0% Bond | 81.03 MV |
| Casing Size | 4.50 IN |
| Casing Weight | 11.6 LB/F |
| 3' TT Correction | 0.0 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 |
| Cement Weight | 0.00 LB/G |

| | |
|---------|------------------------|
| COMPANY | URSA OPERATING COMPANY |
| WELL | BMC B 43A-13-07-96 |
| FIELD | WILDCAT |

| | |
|-----------------|----------------|
| PROVINCE/COUNTY | GARFIELD |
| COUNTRY/STATE | USA / COLORADO |

| | | | | | |
|-------------------------|------|------|---------------------|---------|------|
| Elevation Kelly Bushing | 5117 | feet | Bottom Log Interval | 6290.00 | feet |
| Elevation Drill Floor | 5117 | feet | Depth Driller | 6723.00 | feet |
| Elevation Ground Level | 5100 | feet | Depth Logger | 6290.00 | feet |



Weatherford®

SLIM SECTOR BOND LOG