				RAPTOR NVISION LOG			
COMPANY				URSA OPERATING COMPANY			
WELL				BMC B 42C-13-07-96			
FIELD				WILDCAT			
PROVINCE/COUNTY				GARFIELD			
COUNTRY/STATE				USA / COLORADO			
LOCATION				2238' FNL & 0617' FWL			
SEC 18	TWP 7S	RGE 95W	Other Services				
Latitude		SSSB					
Longitude							
API Number		05-045-23480					
Permanent Datum GROUND LEVEL, Elevation 5100 feet					Elevations:		
Log Measured From KB, 17.00 feet above Permanent Datum					KB 5117.00		
Drilling Measured From KB					DF 5117.00		
					GL 5100.00		
Date	12-SEP-2017			PERFORATION RECORD			
Run Number	ONE			Shot	Number	Depth From	Depth To
Service Order				Density	of Shots	feet	feet
Type Log	CREB						
Depth Driller	6604.00						
Depth Logger	6120.00						
Top Log Interval	2950.00						
Bottom Log Interval	6120.00						
Hole Fluid Type	WATER						
Hole Fluid Level	0.00						
Restriction ID	3.875			Gun Type			
Max Recorded Temp	191.00			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	SEE LOG			8.625	32.00	0.00	1700.00
Unit	14115			4.500	11.60	0.00	6604.00
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	6604.00	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 220 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. 191F

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.

## MAIN PASS REPEAT PASS

Depth Based Data - Maximum Sampling Increment 12.5cm

Plotted on 13-SEP-2017 00:12

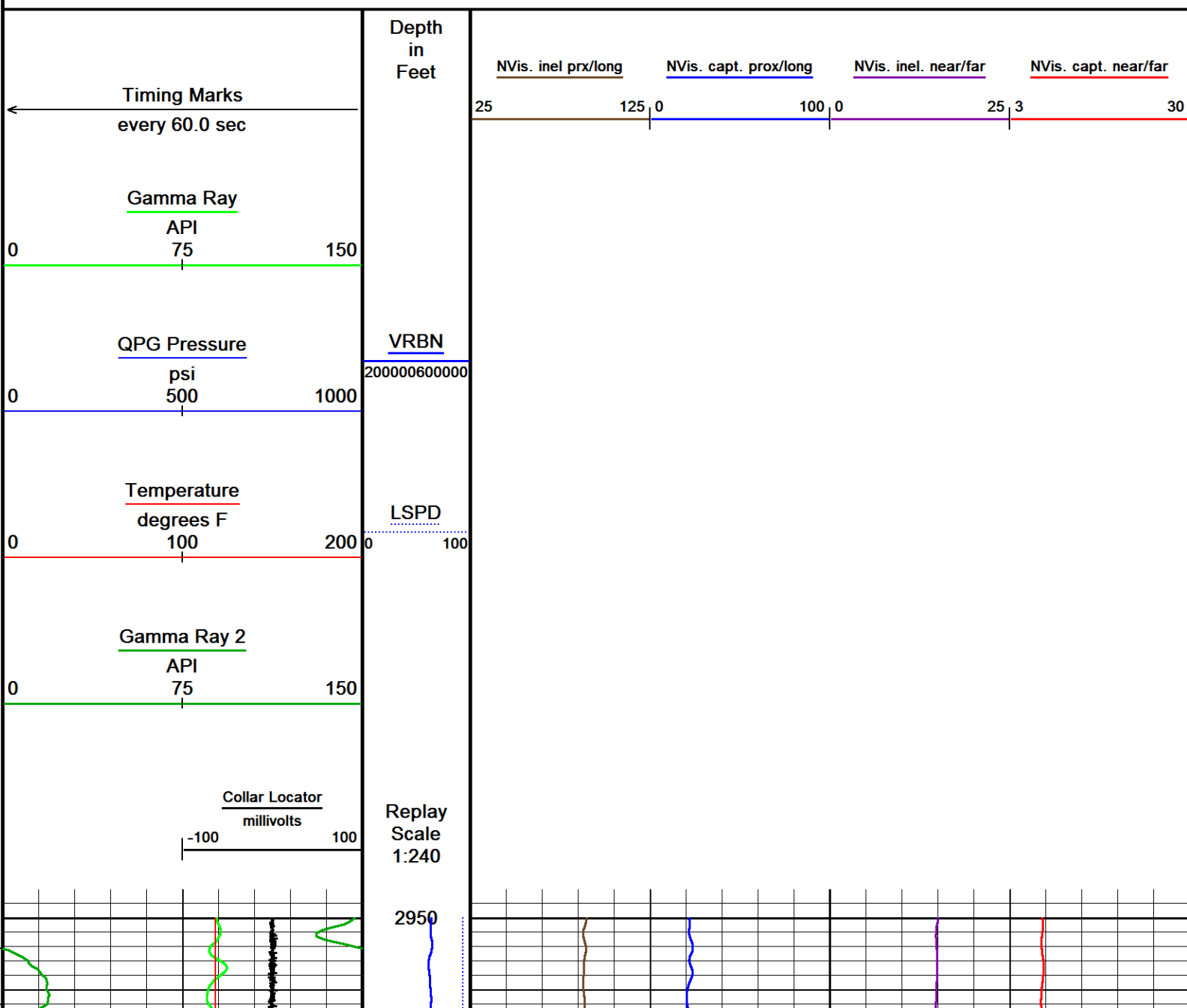
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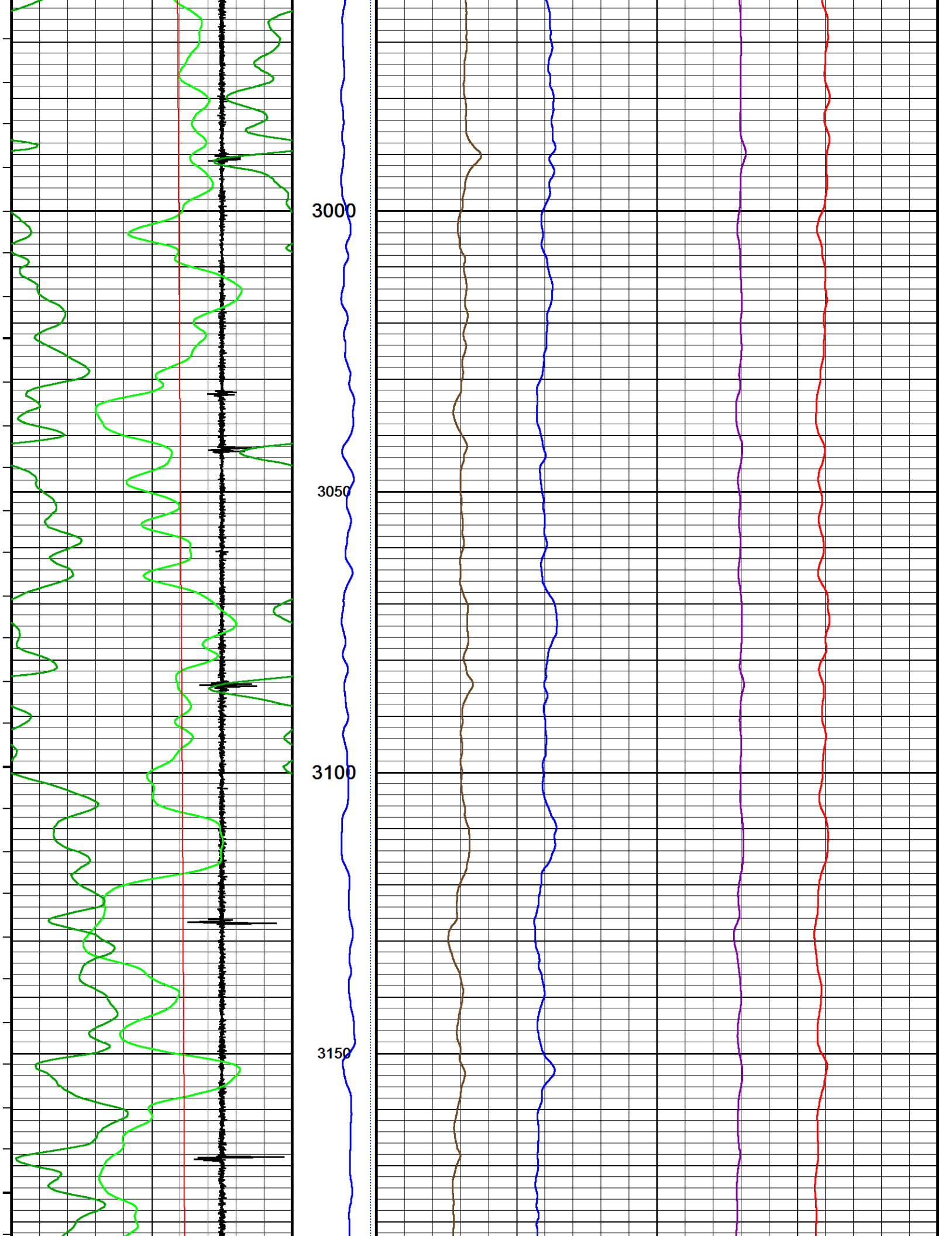
Recorded on 12-SEP-2017 18:35

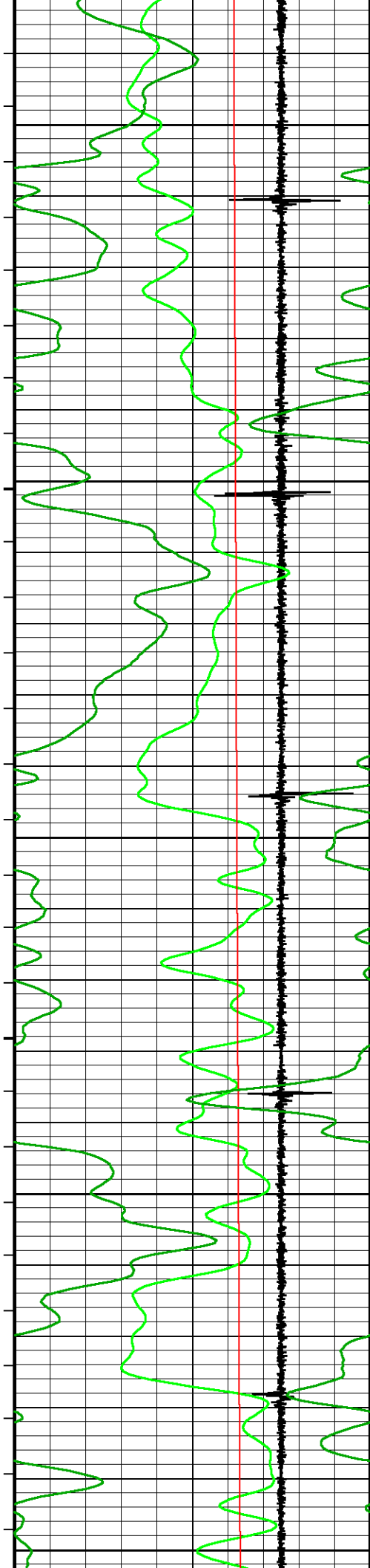
Filename: C:\Logs\URSA\BMC B 42C-13-07-96\BMC B 42C-13-07-96 CREB SSSB REPEAT FINAL.dta

Recorded on 12-SEP-2017 18:52

System Versions: Logged with 17.01.7206 Plotted with 17.01.7206







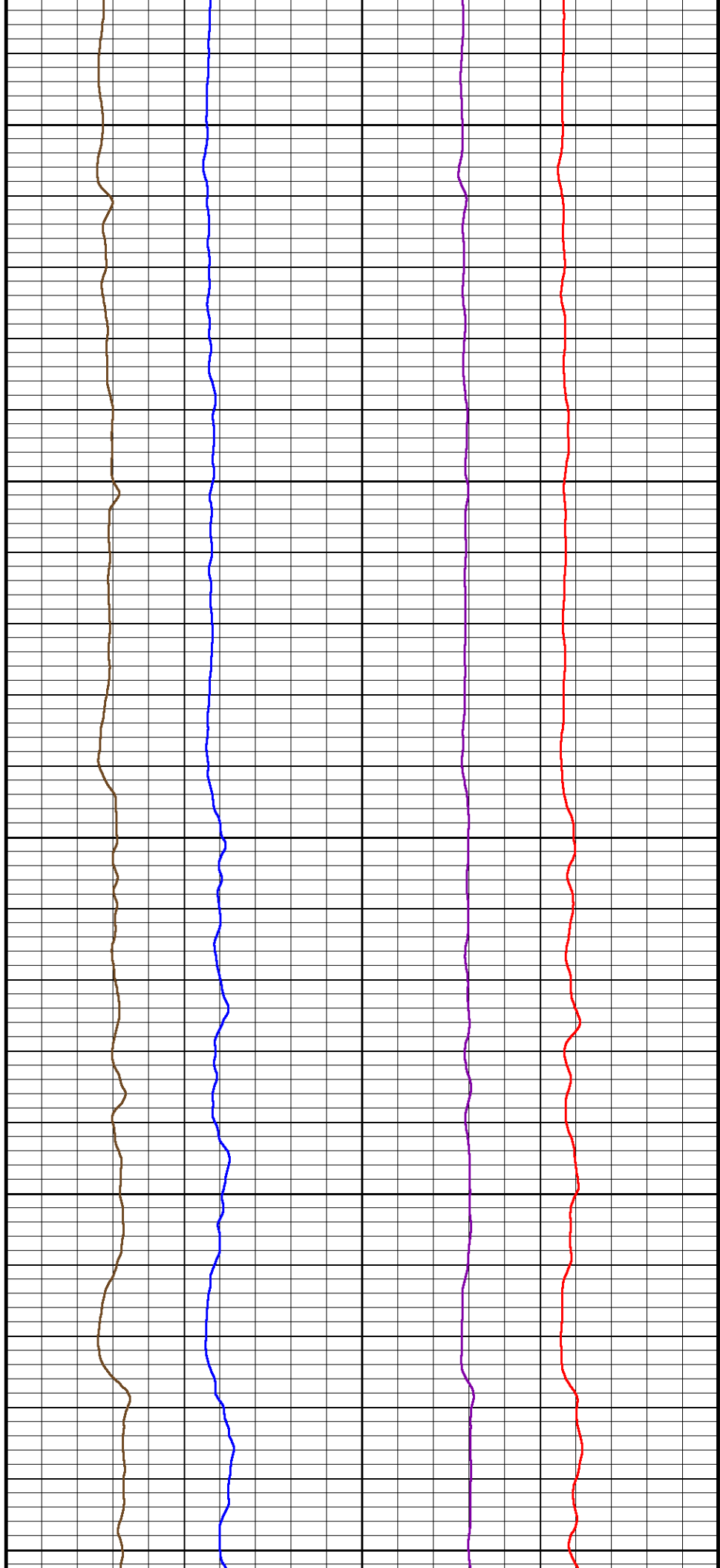
3200

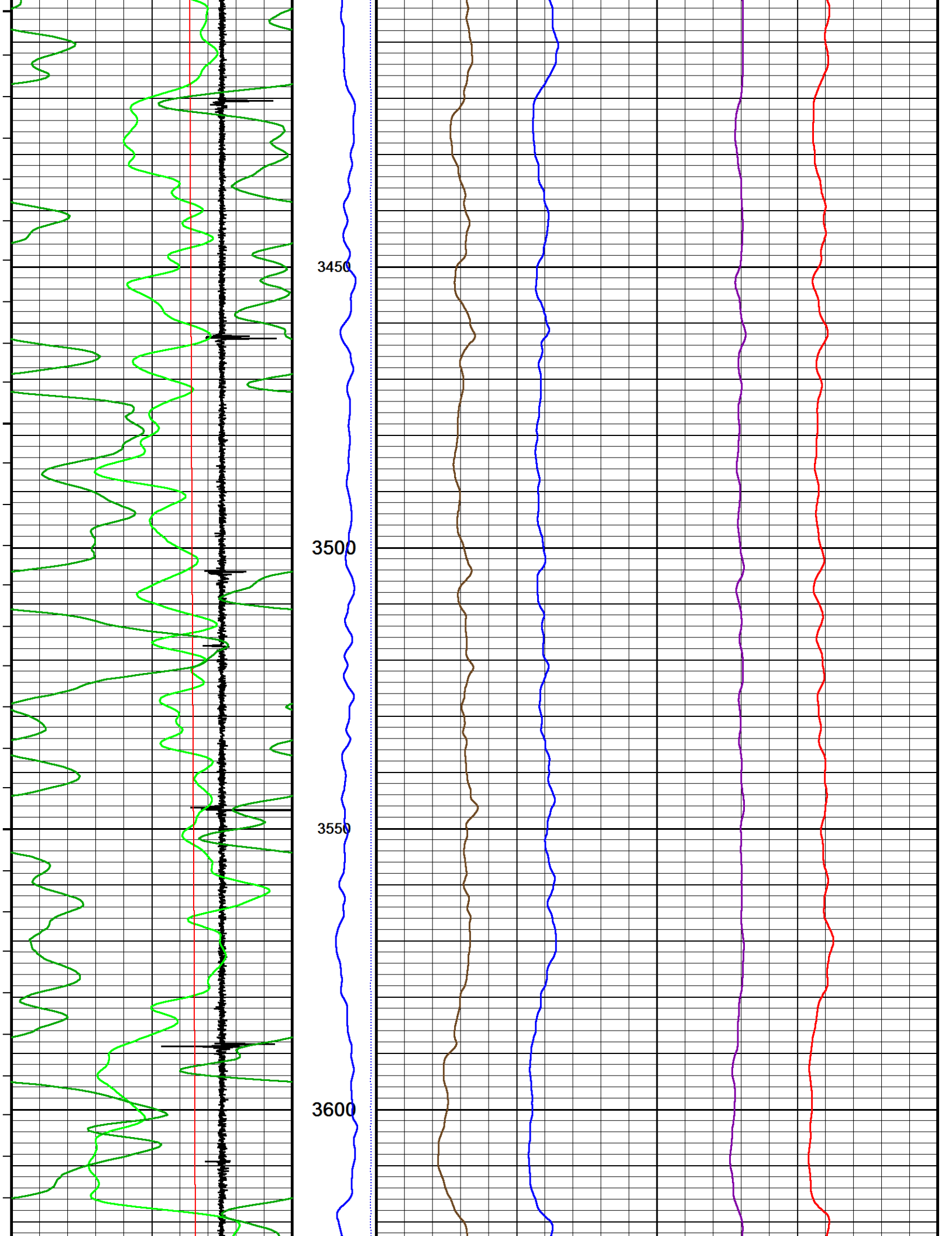
3250

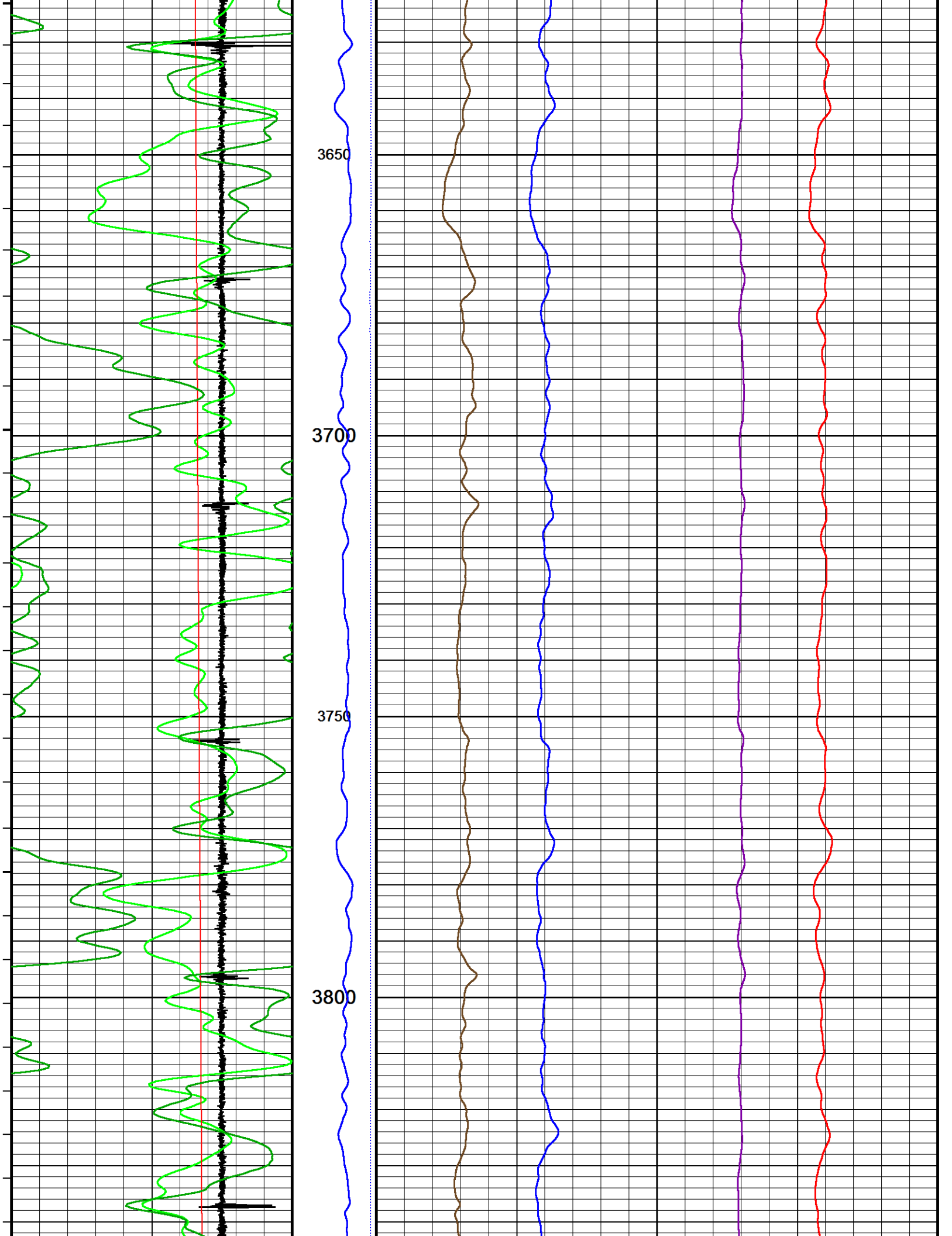
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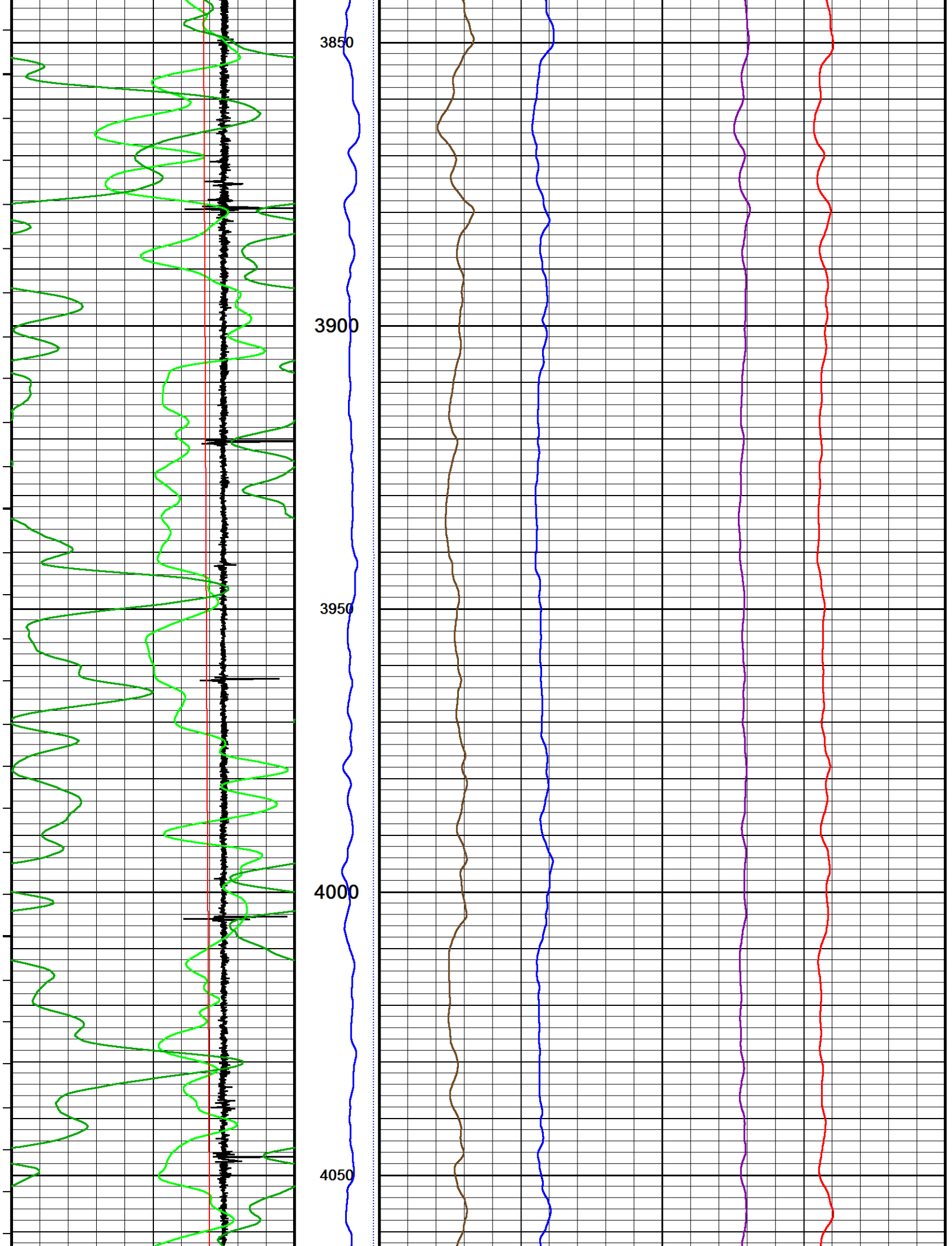
3350

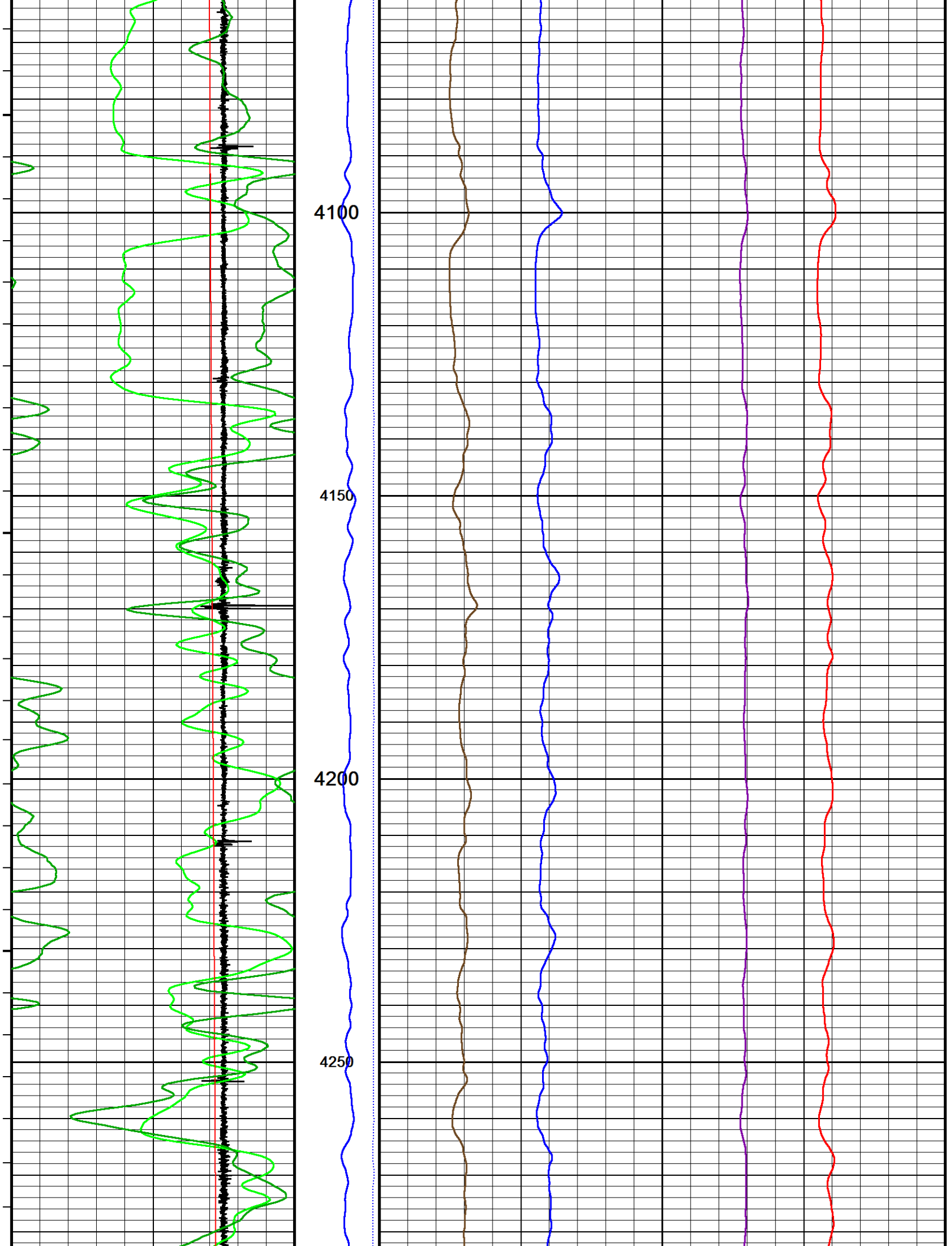
3400



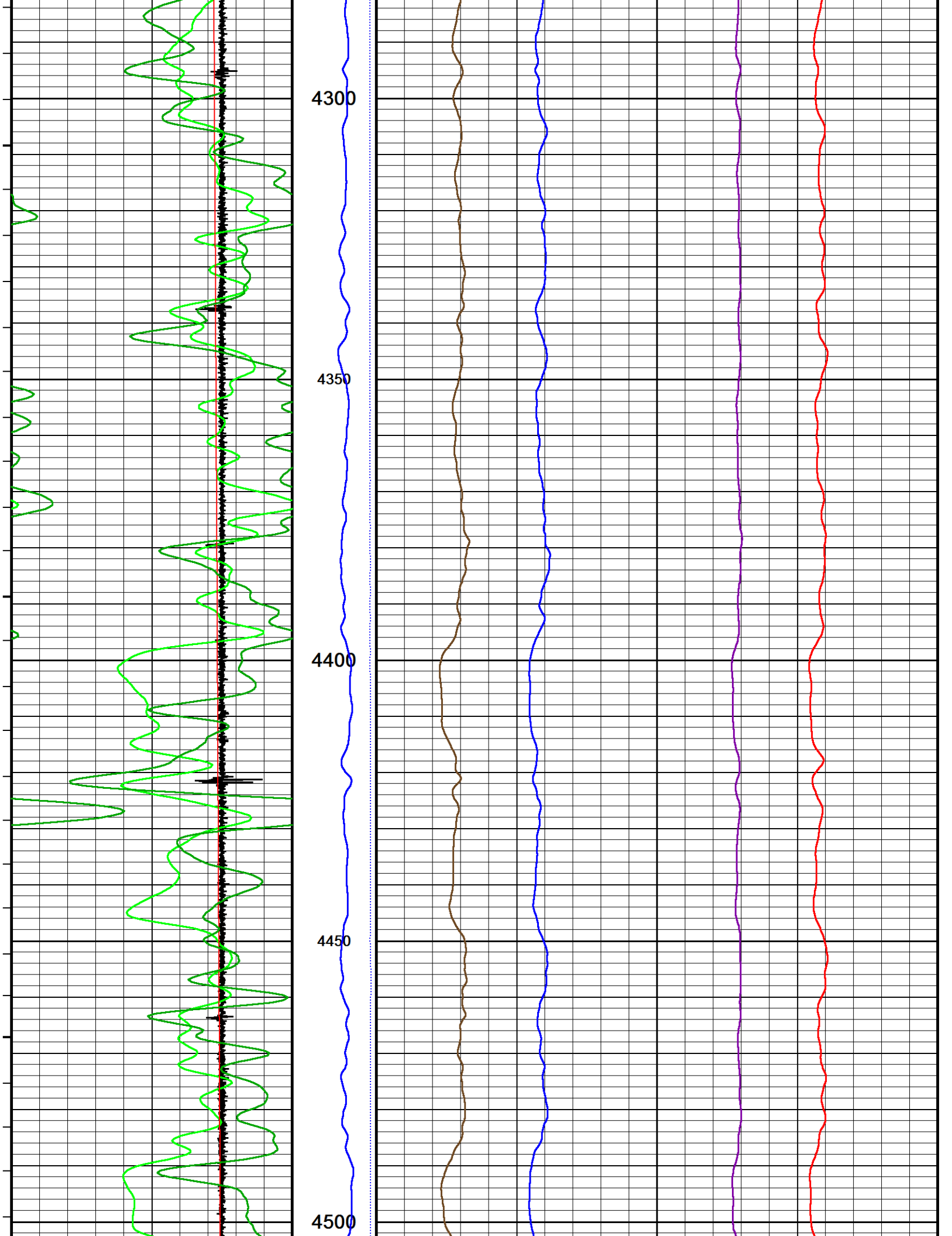


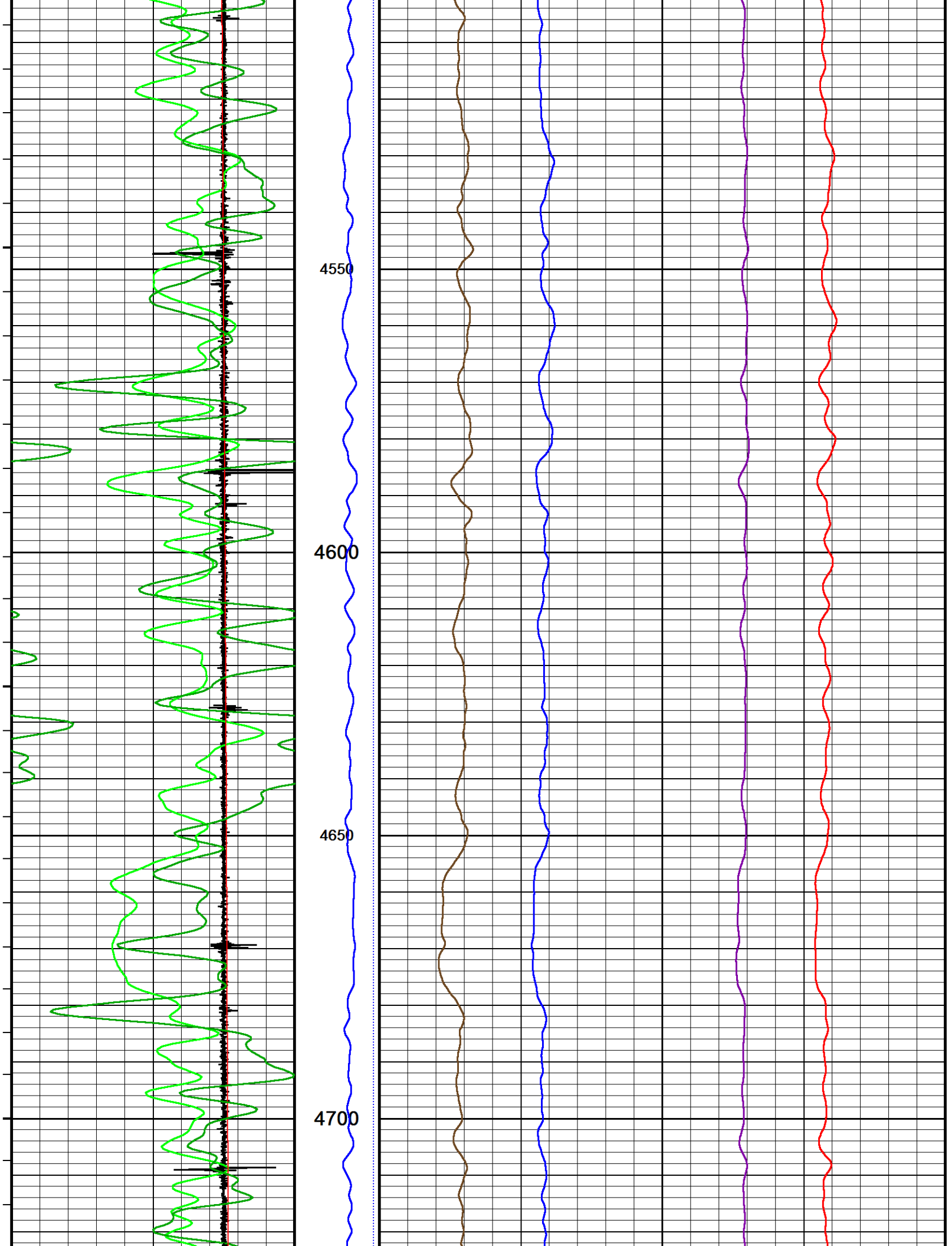


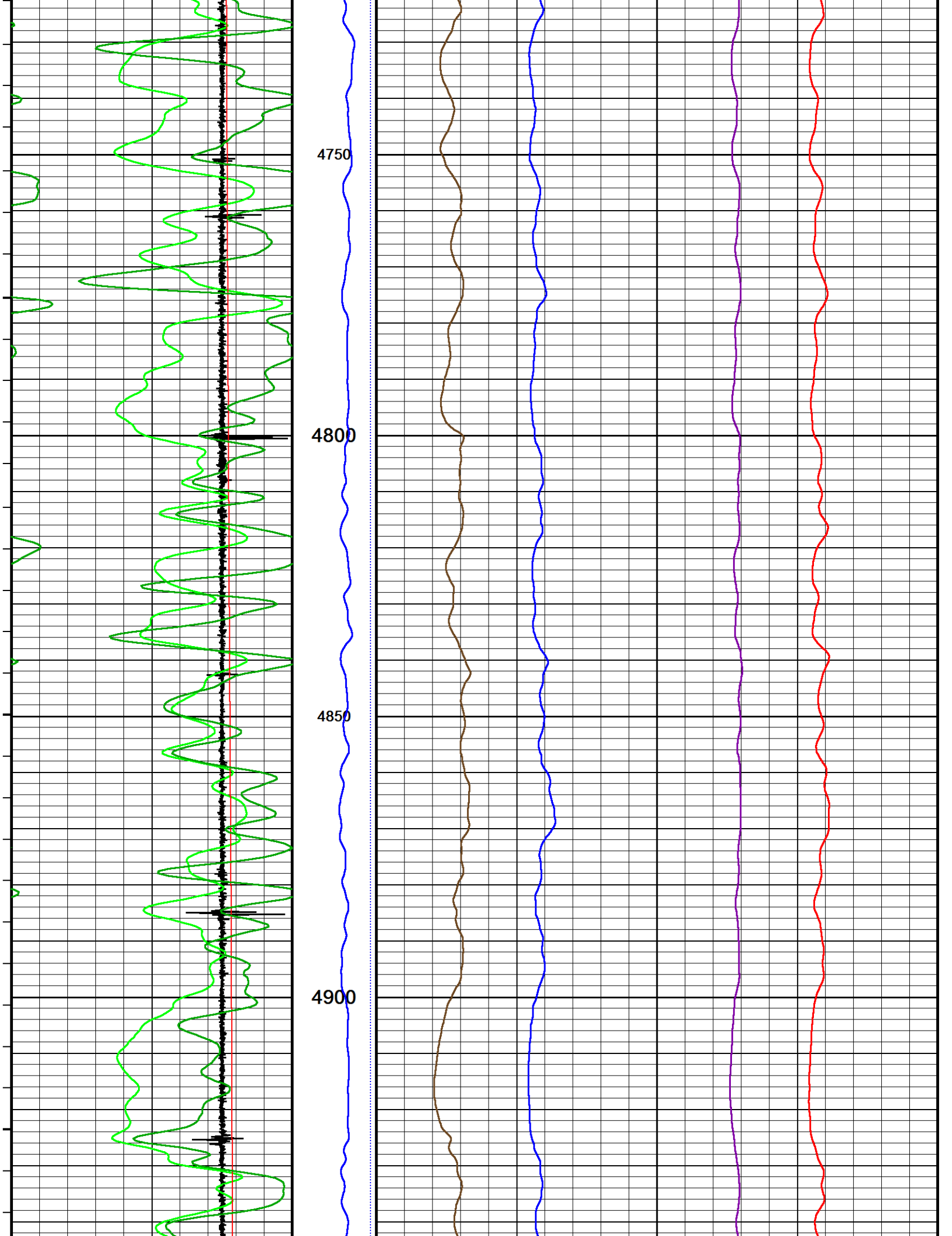


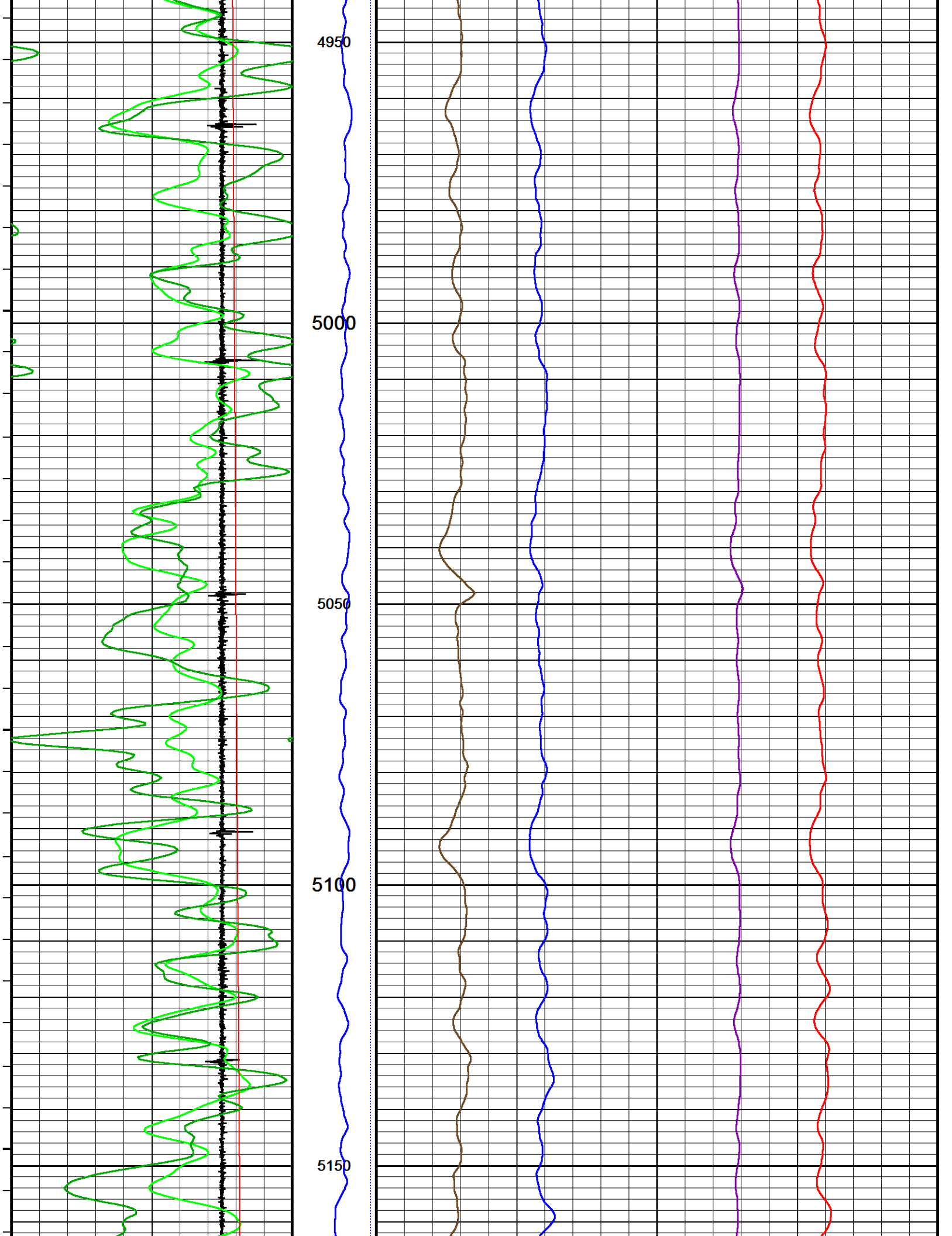


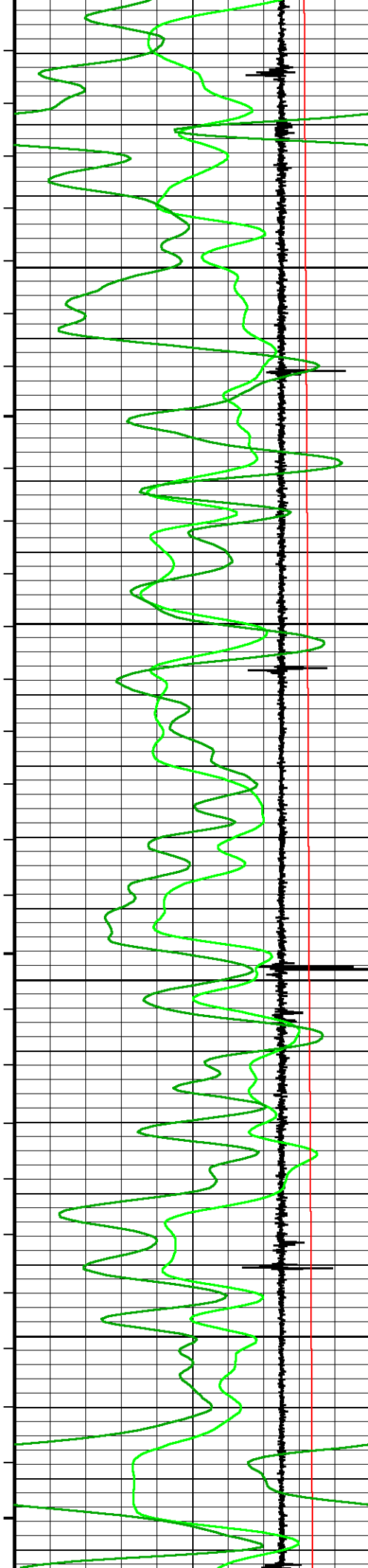










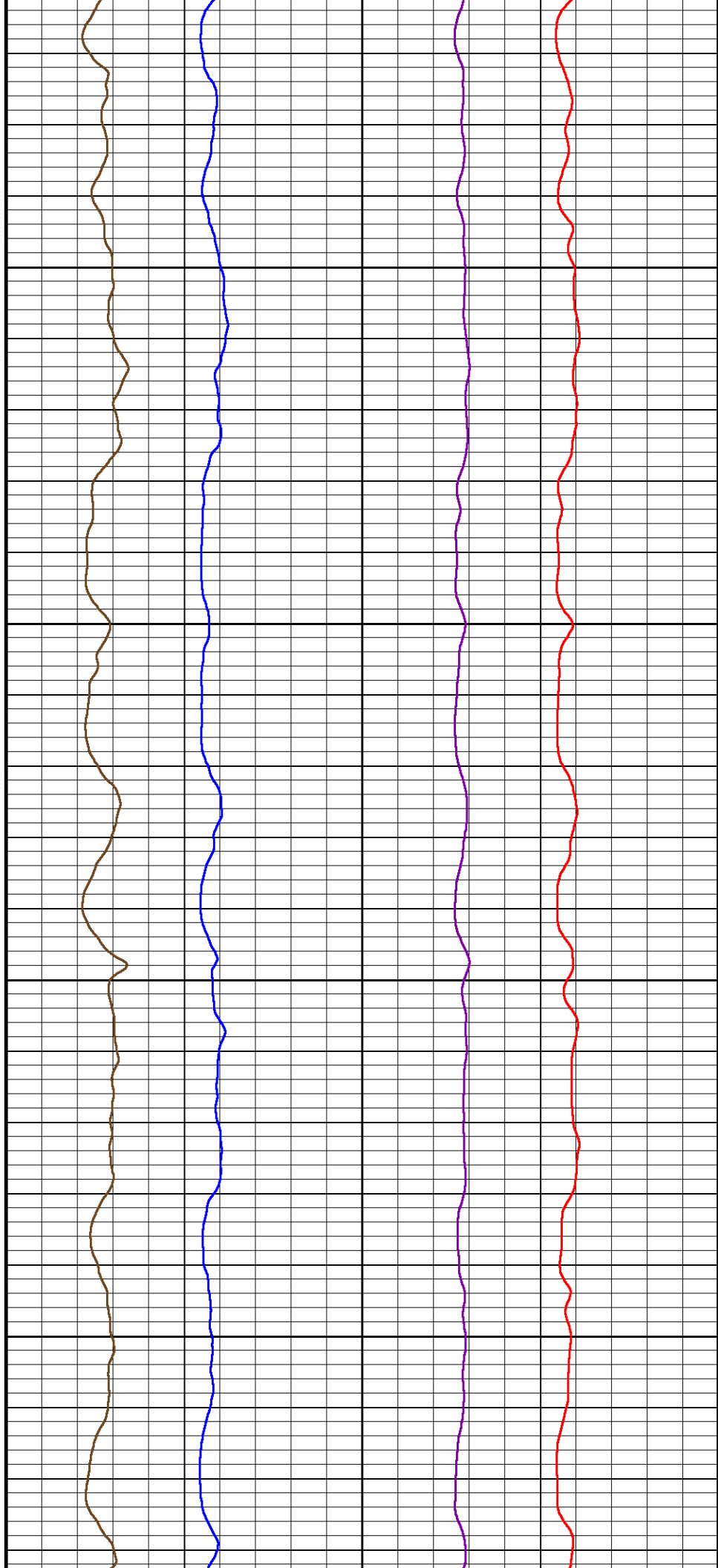


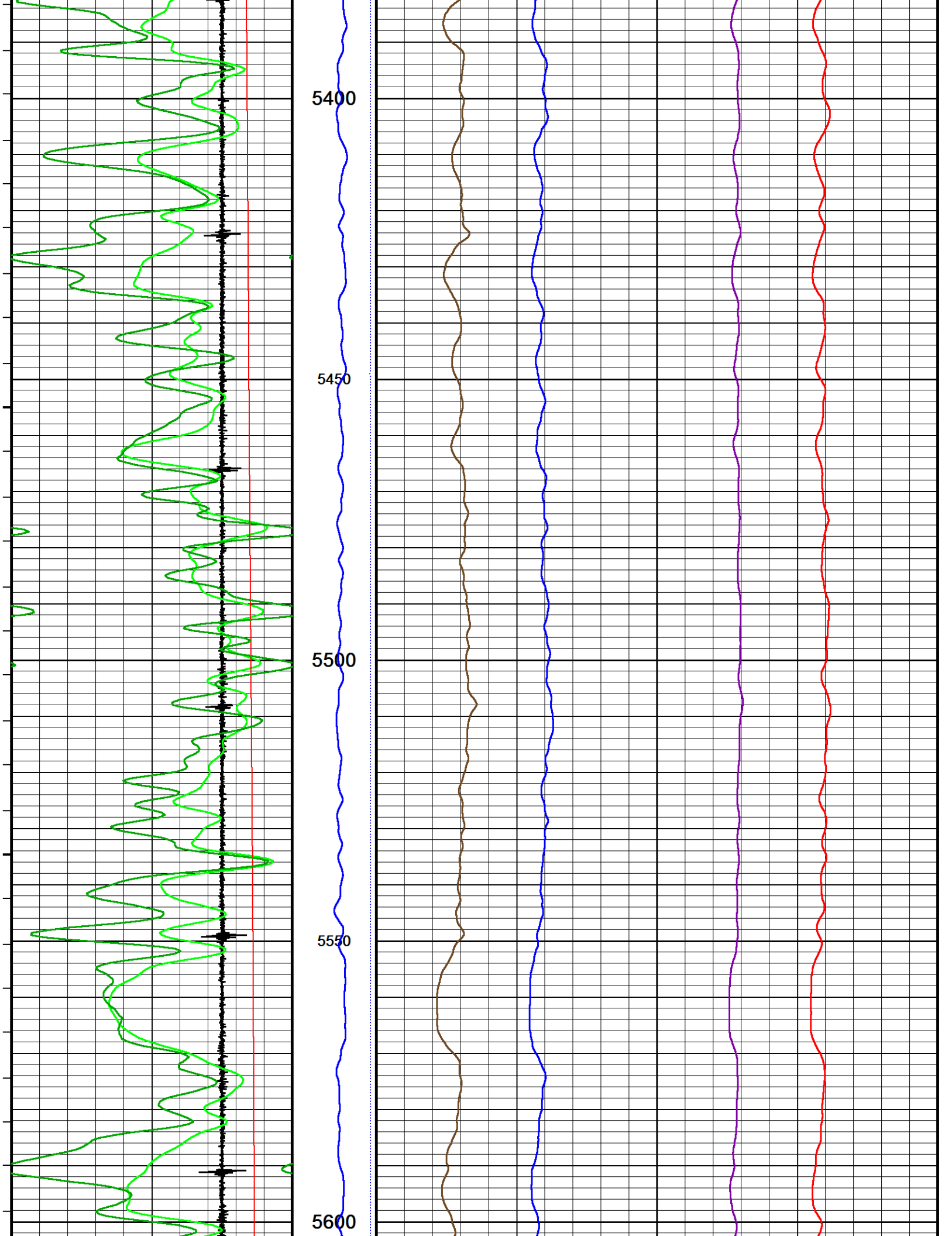
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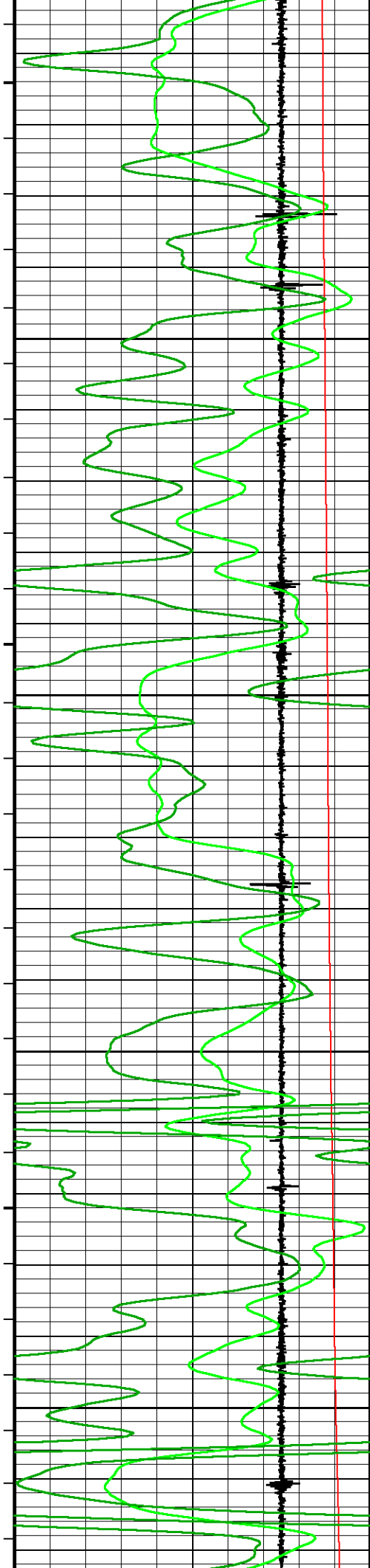
5250

5300

5350





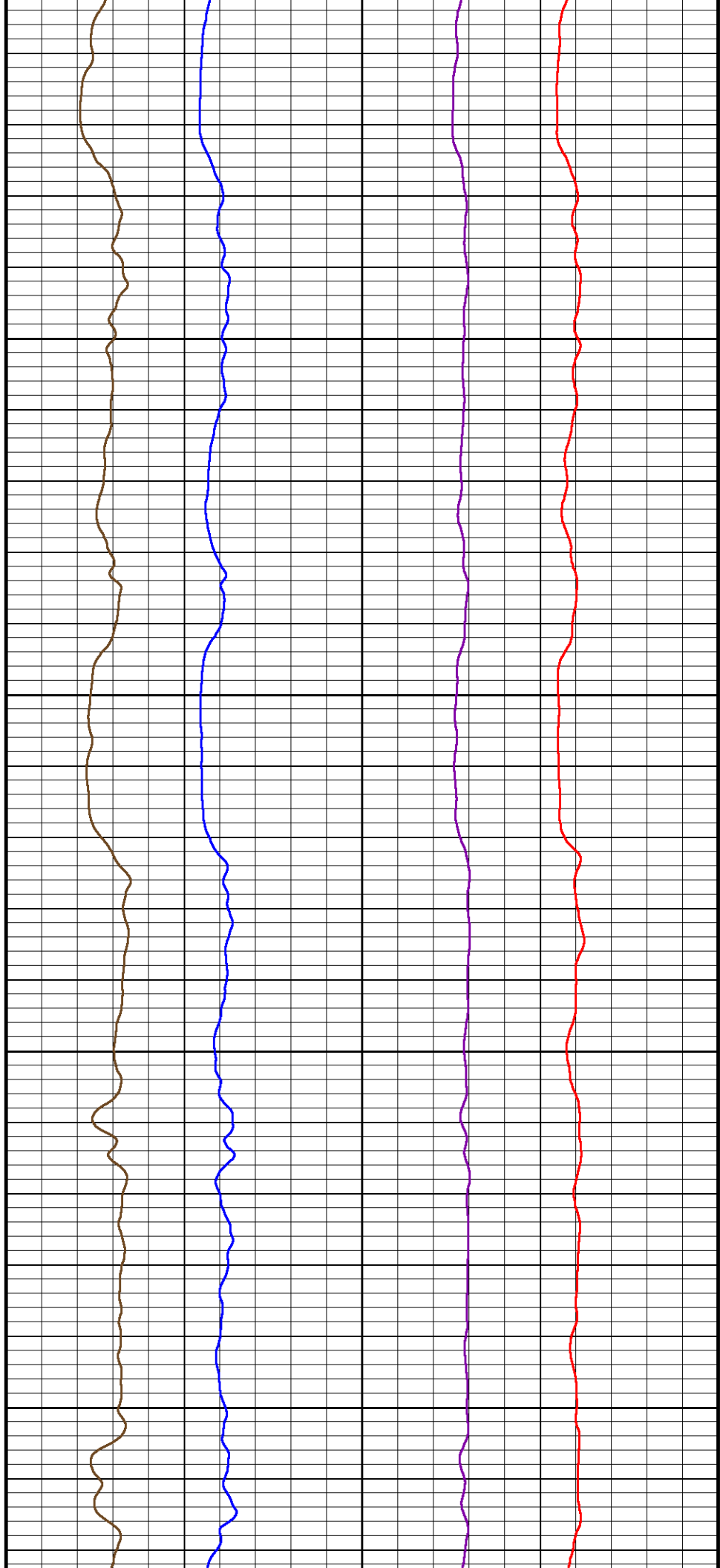


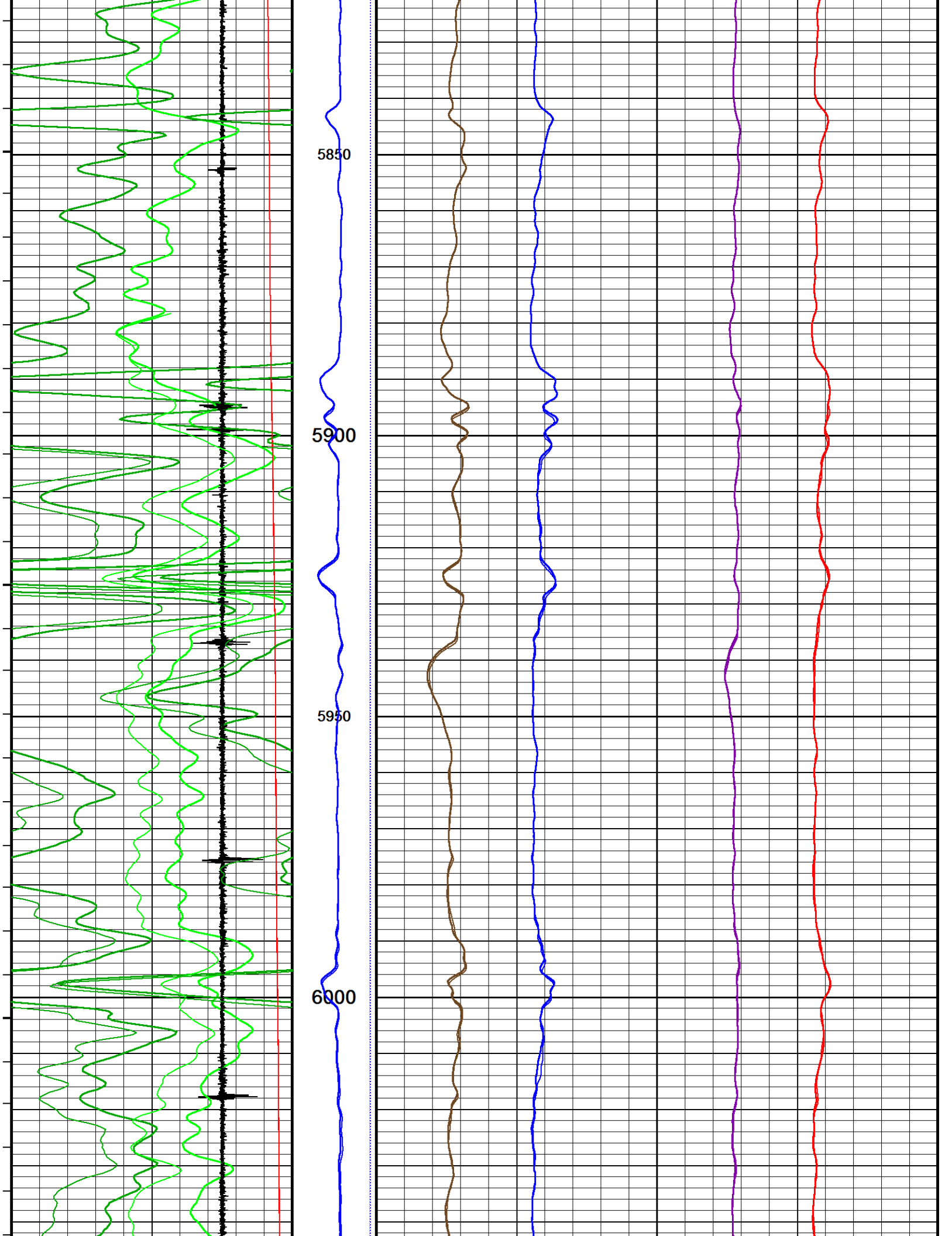
5650

5700

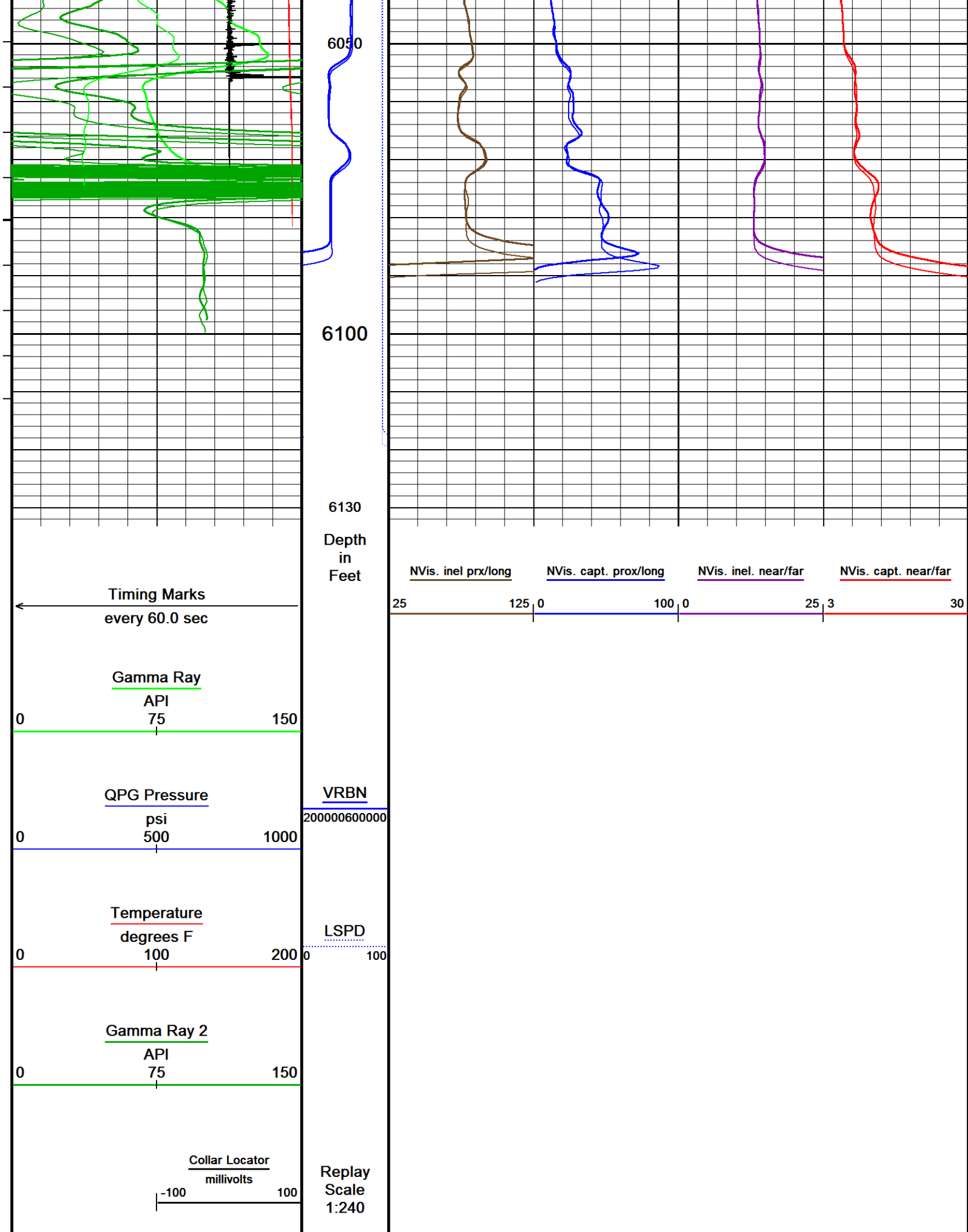
5750

5800









↑

MAIN PASS  
REPEAT PASS

↑

↓

REPEAT PASS

↓

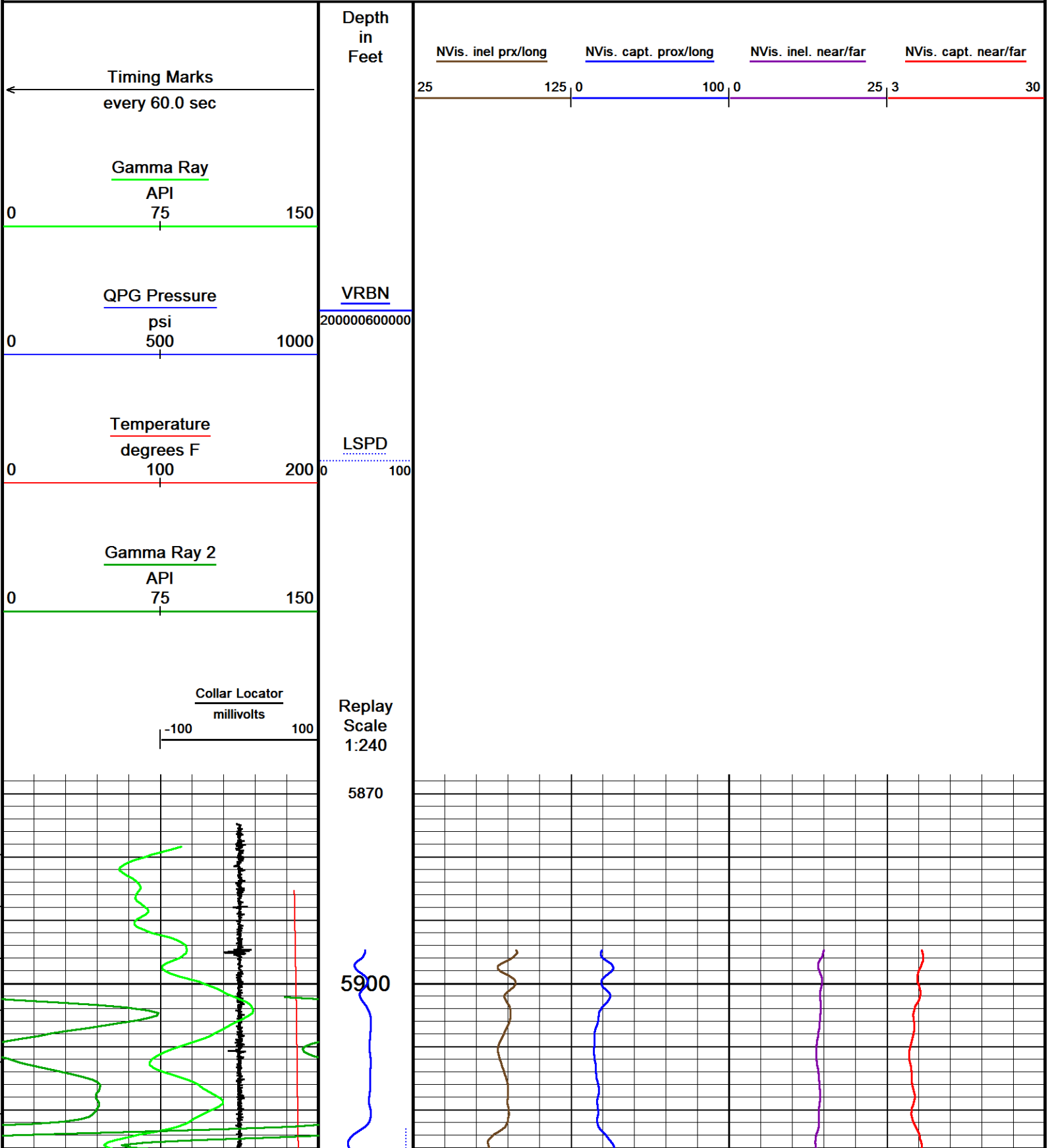
Depth Based Data - Maximum Sampling Increment 12.5cm

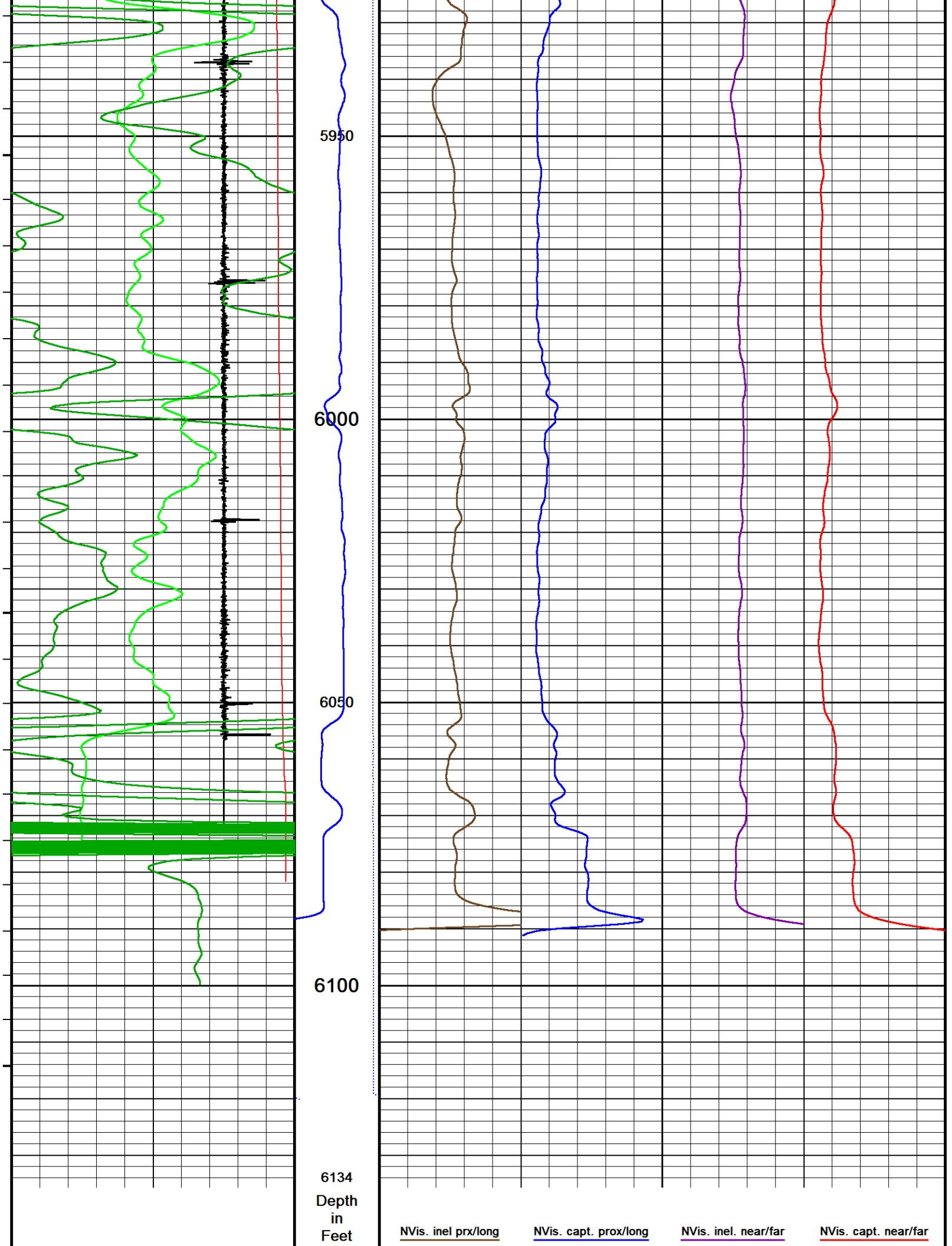
Plotted on 13-SEP-2017 00:12

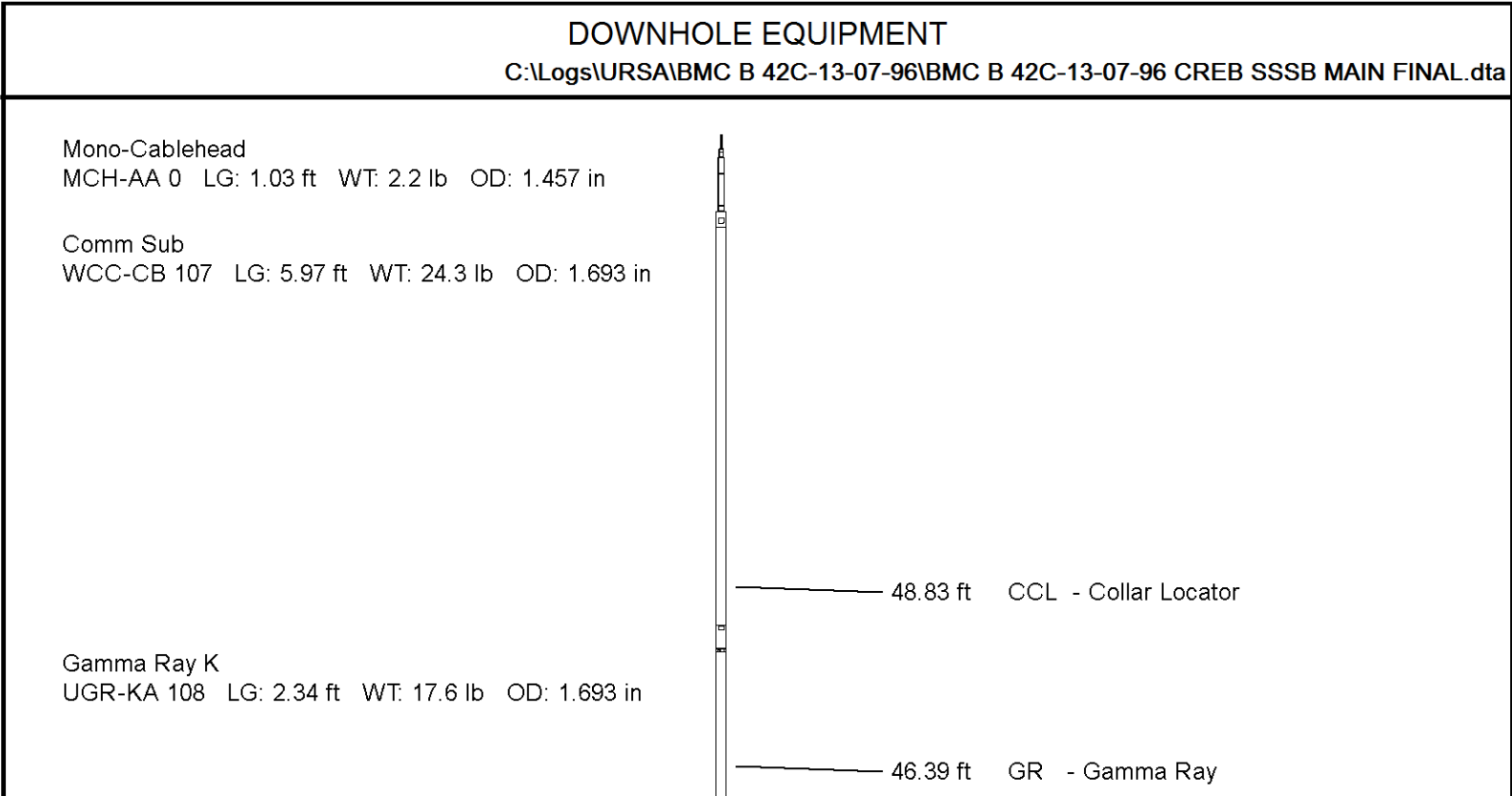
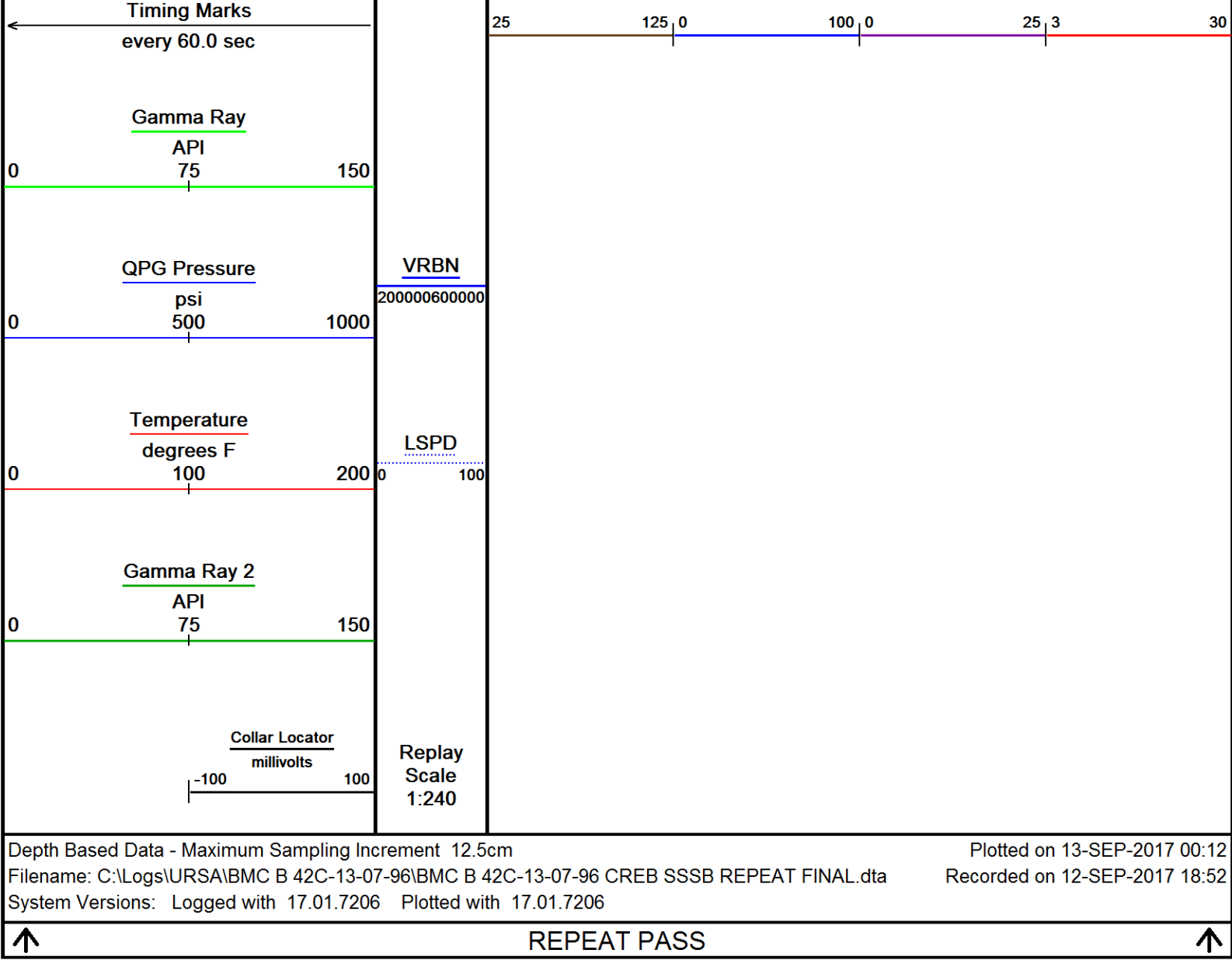
Filename: C:\Logs\URSA\BMC B 42C-13-07-96\BMC B 42C-13-07-96 CREB SSSB REPEAT FINAL.dta

Recorded on 12-SEP-2017 18:52

System Versions: Logged with 17.01.7206 Plotted with 17.01.7206







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 138 LG: 1.93 ft WT: 8.8 lb OD: 1.693 in

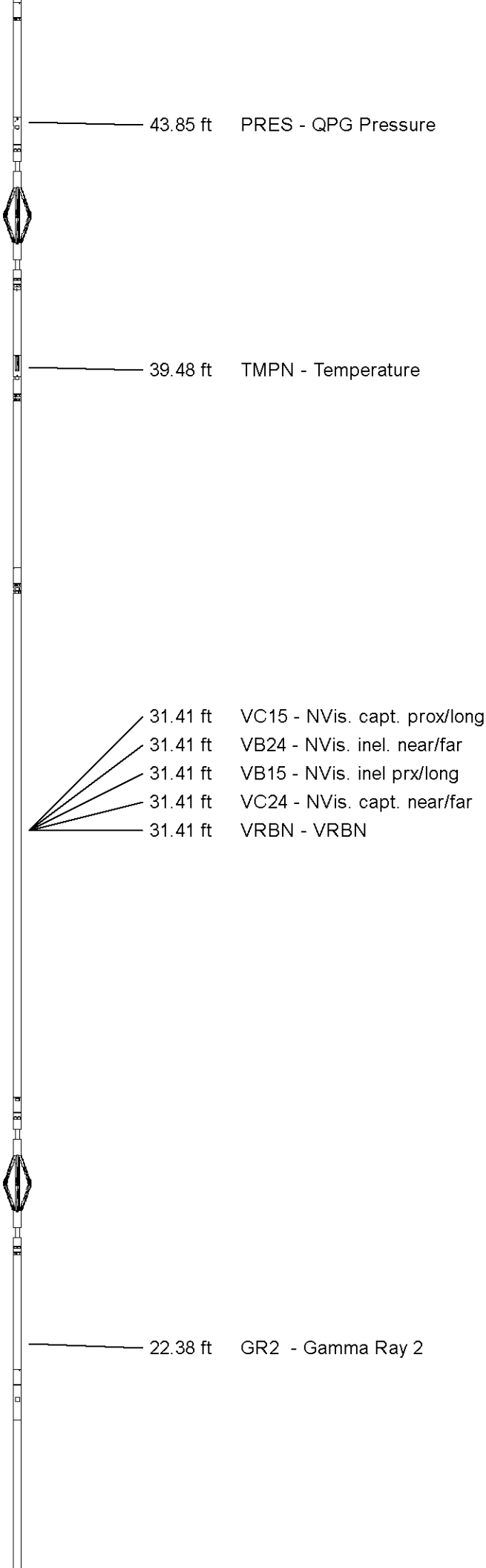
CRE series II processor section  
CRP-BA 129 LG: 3.31 ft WT: 15.4 lb OD: 1.654 in

Casing Reservoir Evaluation Tool Sonde  
CRM-BA 129 LG: 9.19 ft WT: 46.3 lb OD: 1.693 in

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



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 42C-13-07-96\BMC B 42C-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	3675.0 mv	-1.000 G	1288.0 mv
Y Acc	1.000 G	3700.0 mv	-1.000 G	1286.0 mv
Z Acc	1.000 G	3721.0 mv	-1.000 G	1313.0 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 138

Temperature Tool Shop Survey Calibration

Tool Type: TMP-NA

Serial No: 138

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	2.10
	Free Pipe	81.00	3972.30
AMP 5FT	100% Bond	0.40	1.10
	Free Pipe	54.00	2846.30
1 SECTOR AMP	100% Bond	5.00	4.60
	Free Pipe	95.00	1444.10
2 SECTOR AMP	100% Bond	5.00	5.10
	Free Pipe	95.00	1252.40
3 SECTOR AMP	100% Bond	5.00	0.10
	Free Pipe	95.00	1271.20
4 SECTOR AMP	100% Bond	5.00	1.50
	Free Pipe	95.00	939.30
5 SECTOR AMP	100% Bond	5.00	1.30
	Free Pipe	95.00	926.50
6 SECTOR AMP	100% Bond	5.00	0.80
	Free Pipe	95.00	1295.00

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

COMPANY	URSA OPERATING COMPANY
WELL	BMC B 42C-13-07-96
FIELD	WILDCAT
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	USA / COLORADO

Elevation Kelly Bushing	5117	feet	Bottom Log Interval	6120.00	feet
Elevation Drill Floor	5117	feet	Depth Driller	6604.00	feet
Elevation Ground Level	5100	feet	Depth Logger	6120.00	feet



**Weatherford®**

RAPTOR NVISION LOG