				RAPTOR NVISION LOG			
COMPANY WELL FIELD PROVINCE/COUNTY COUNTRY/STATE LOCATION				CAERUS OIL & GAS LLC PUCKETT SWD E1-797 GRAND VALLEY GARFIELD USA / COLORADO SHL: 2104 N 1326 W & BHL: 1965 N 949 FIELD PRINT			
SEC 1	TWP 7S	RGE 97W	Other Services				
Latitude		SSSB					
Longitude							
API Number		5045228480000					
Permanent Datum GROUND LEVEL, Elevation 8329 feet				Elevations: KB 8351.00 DF 8351.00 GL 8329.00			
Log Measured From KB							
Drilling Measured From KB @ 22'							
Date	09-DEC-2015	PERFORATION RECORD					
Run Number	ONE	Shot	Number	Depth From	Depth To		
Service Order	136880948	Density	of Shots	feet	feet		
Type Log	CREB-SSSB						
Depth Driller	6421.00						
Depth Logger	6291.00						
Top Log Interval	2500.00						
Bottom Log Interval	6287.00						
Hole Fluid Type	1.4% KCL						
Hole Fluid Level	0.00						
Restriction ID	4.767						
Max Recorded Temp	171.00						
Well Head Pressure	0.00						
Well Head Equipment	N/A						
Time Well Ready	ROA						
Time Logger Bottom	1541						
Unit	14113						
Equipment Name	WSS-E						
Base	CASPER						
Recorded By	MAZUR						
Witnessed By	NOT WITNESSED						

BOREHOLE RECORD						Last Edited: 10-DEC-2015 04:02
Bit Size inches		Depth From feet		Depth To feet		
14.750		0.00		2509.00		
8.750		2509.00		6422.00		
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	2508.00	36.00
PRODUCTION	SB-80	LT&C	5.500	0.00	6421.00	17.00

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 5964' - 5973'
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 5.5" WITH 17.0 LB/FT CASING: 72 mv

FREE PIPE CALIBRATION DONE AT 2725 FT

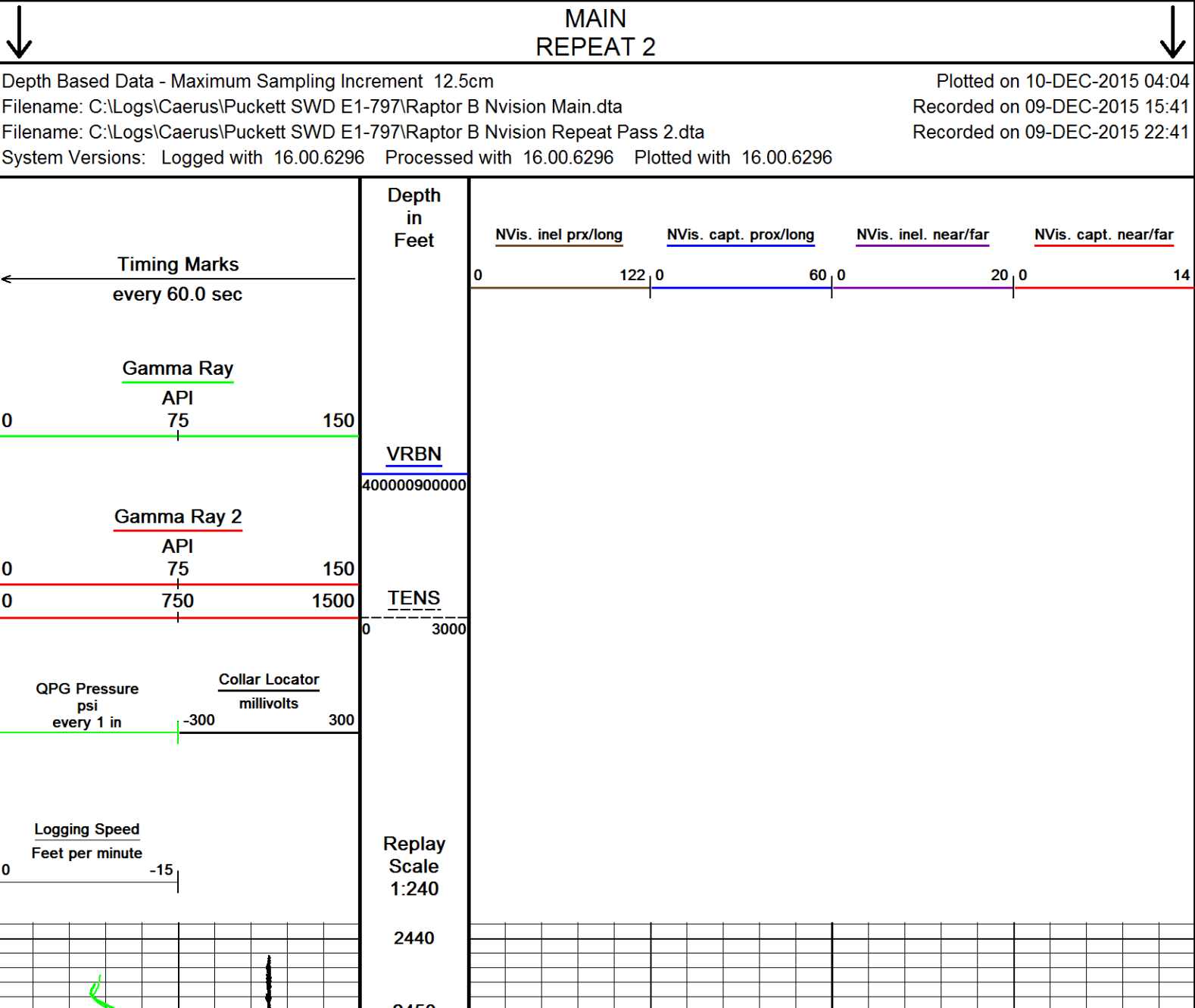
UNKNOWN CEMENT CLASS DUE MISSING DATA FROM CLIENT

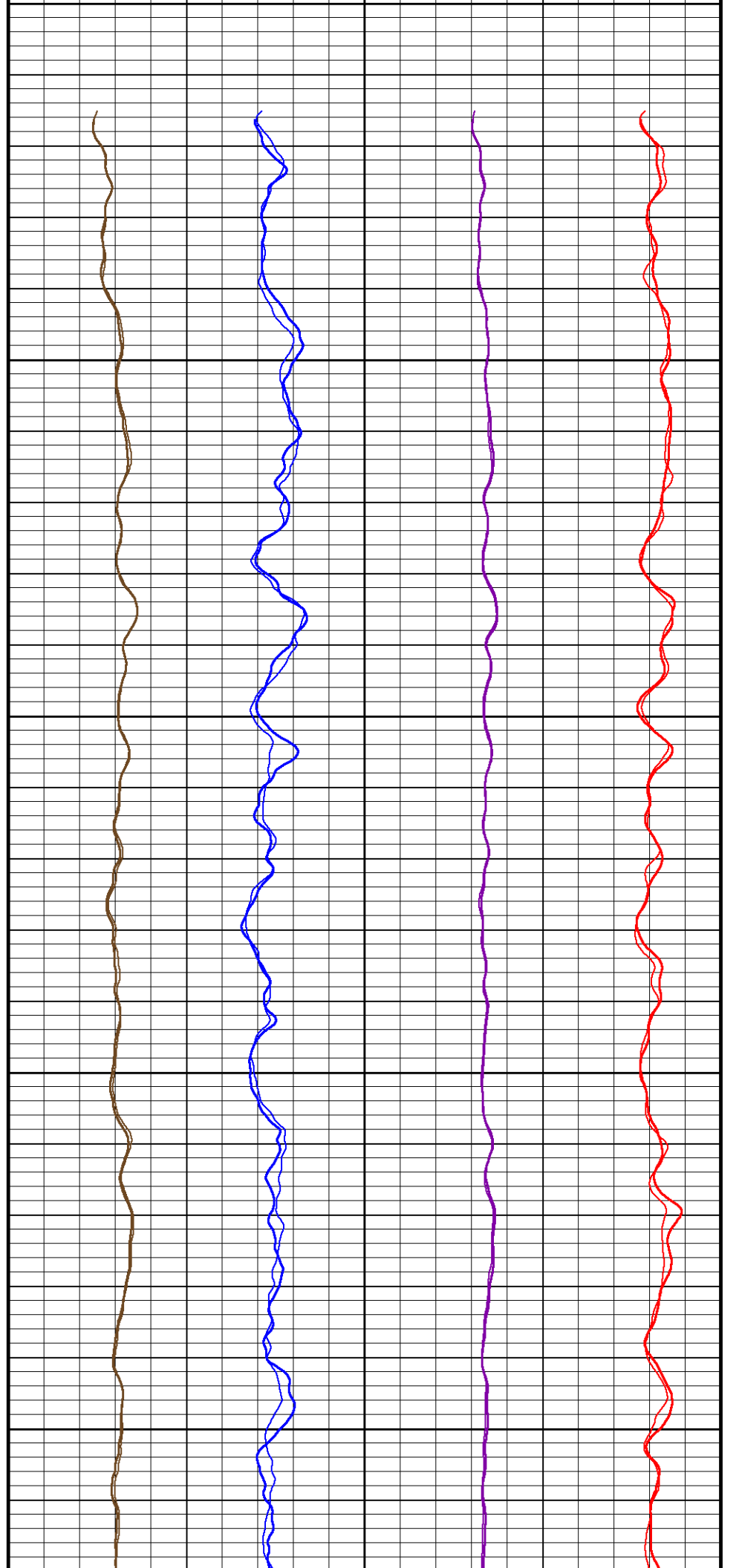
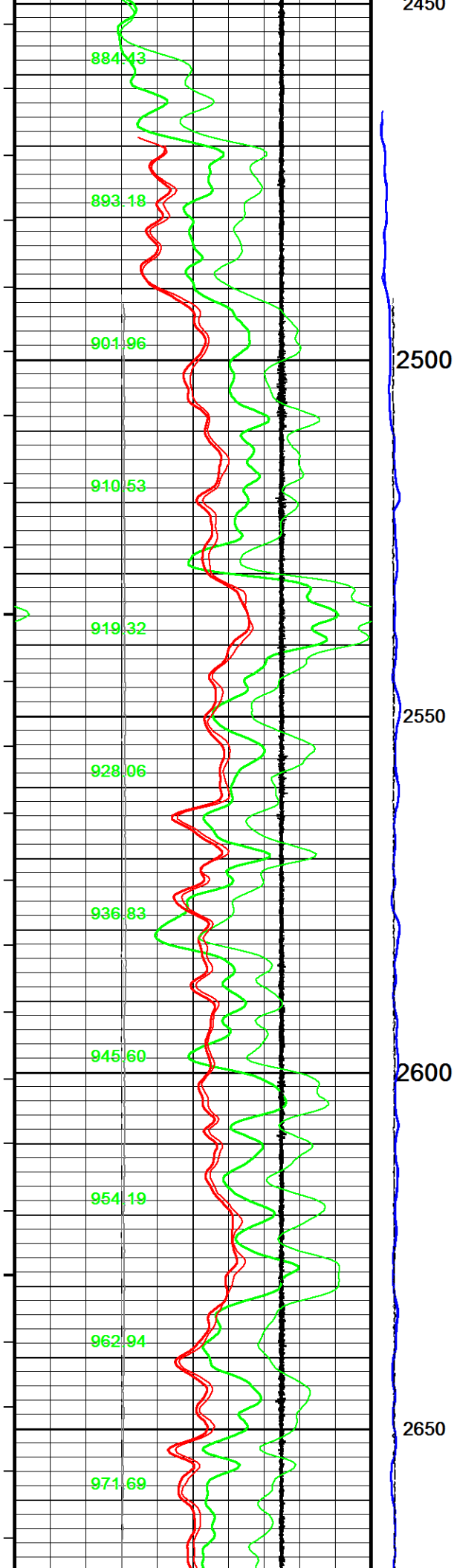
UNKNOWN CEMENT JOB ENDED TIME DUE TO MISSING DATA FROM CLIENT

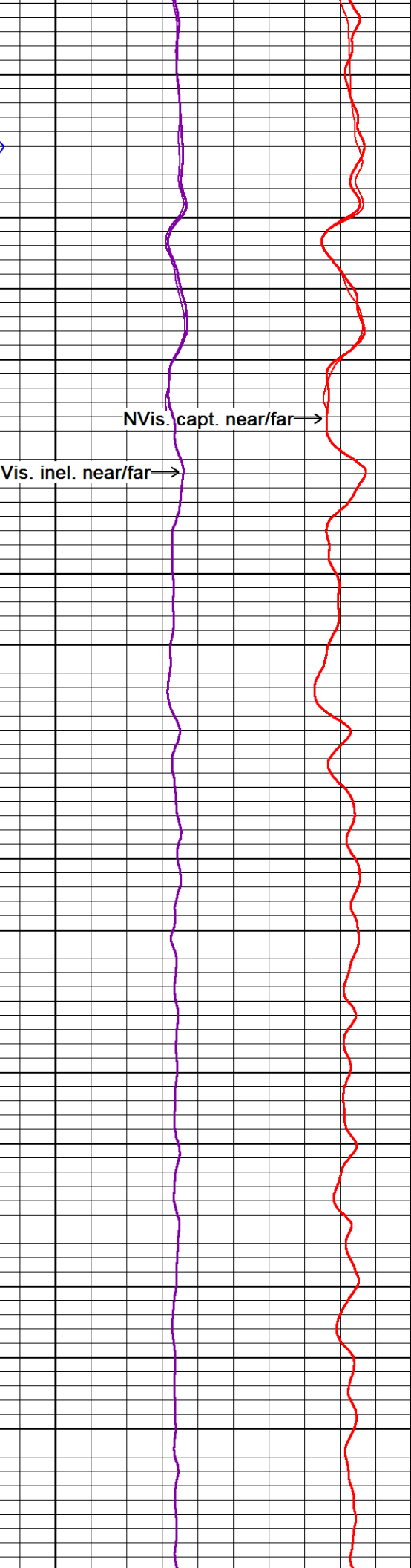
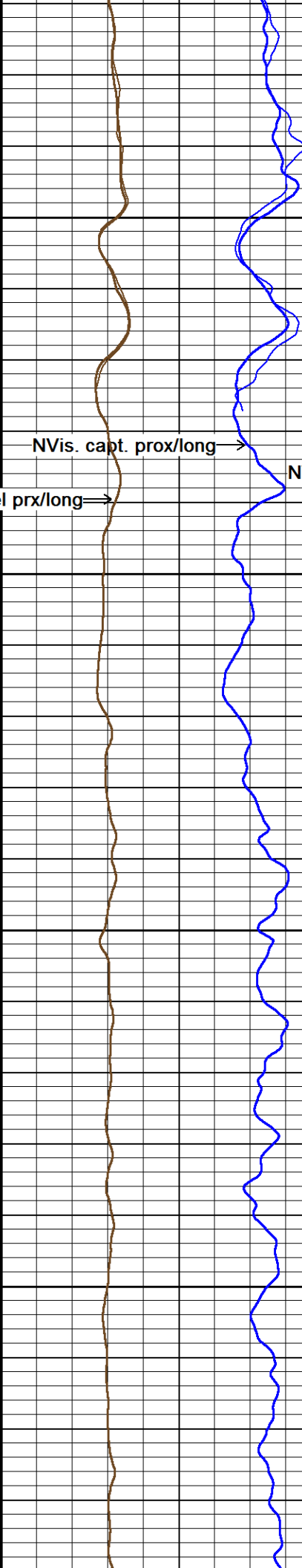
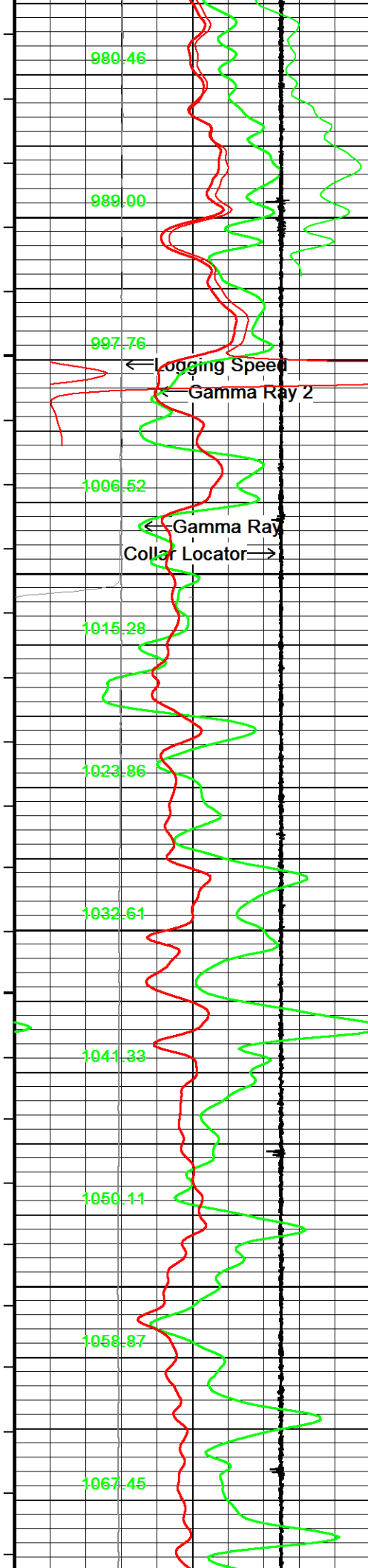
BOTTOM HOLE TEMPERATURE WAS DEG. 171F

CREW: PAUL MAZUR, DARREN BEANS, ZACH MAGNER, 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.







Logging Speed

Gamma Ray 2

Gamma Ray

Collar Locator

NVis. capt. prox/long

NVis. inel prx/long

NVis. inel. near/far

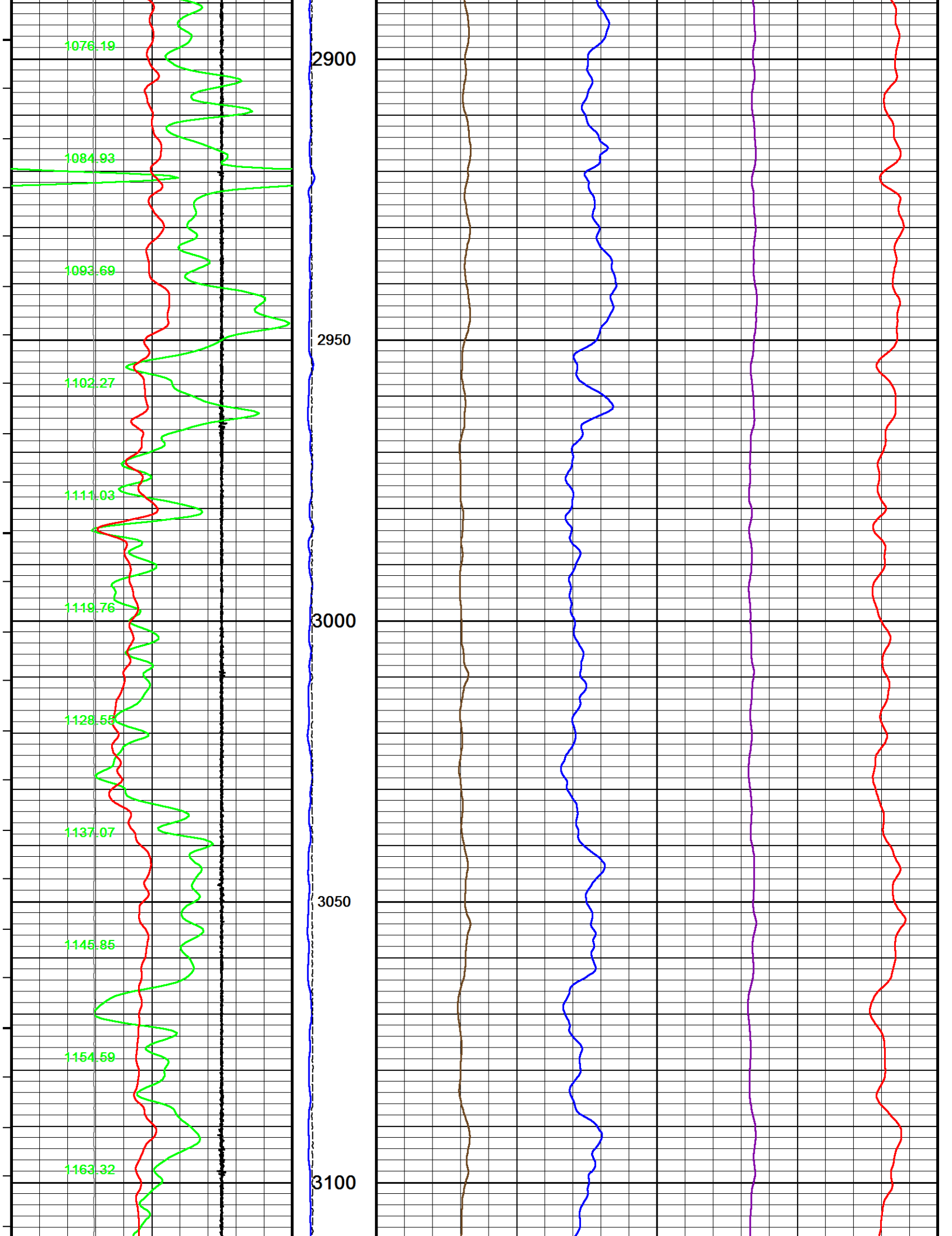
NVis. capt. near/far

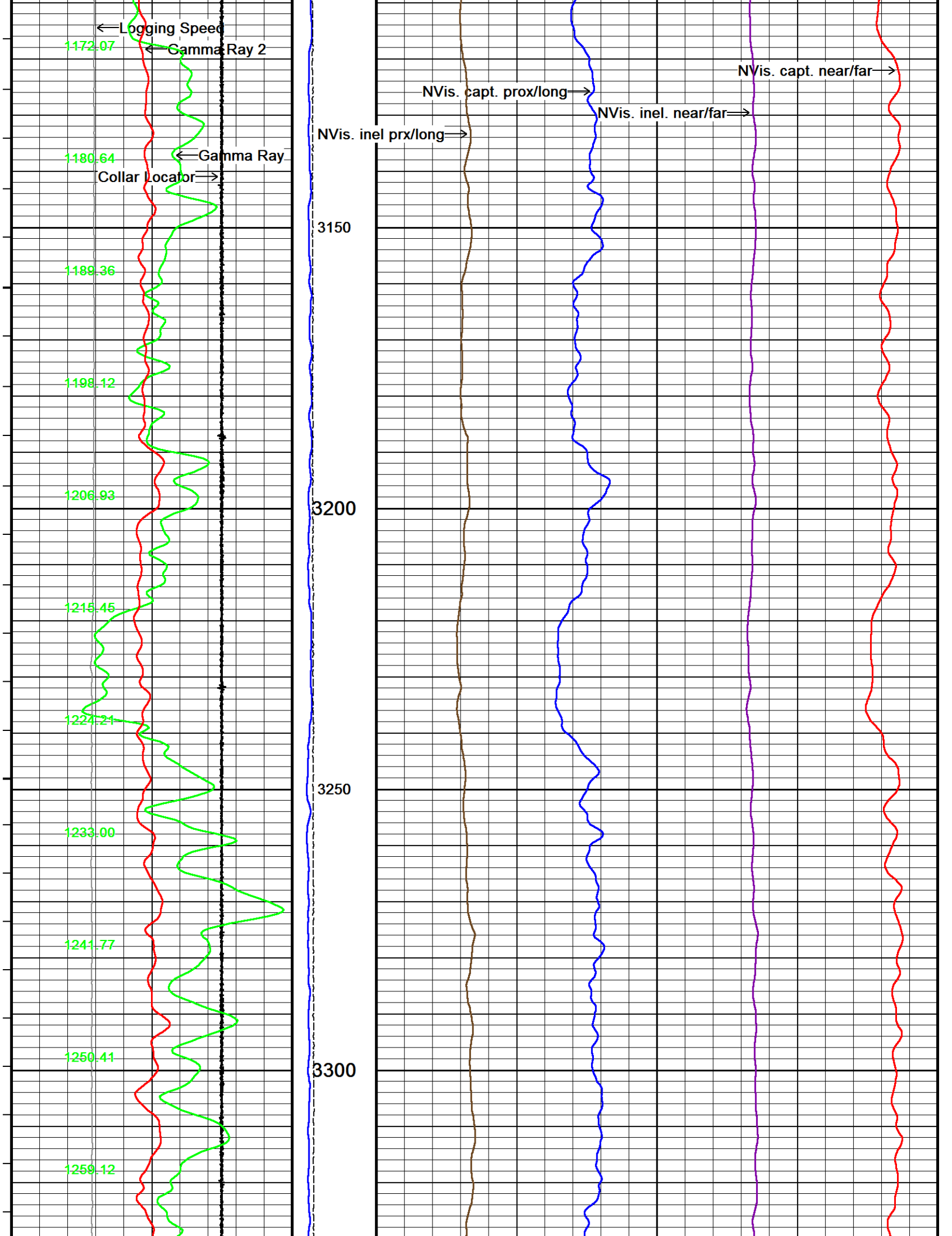
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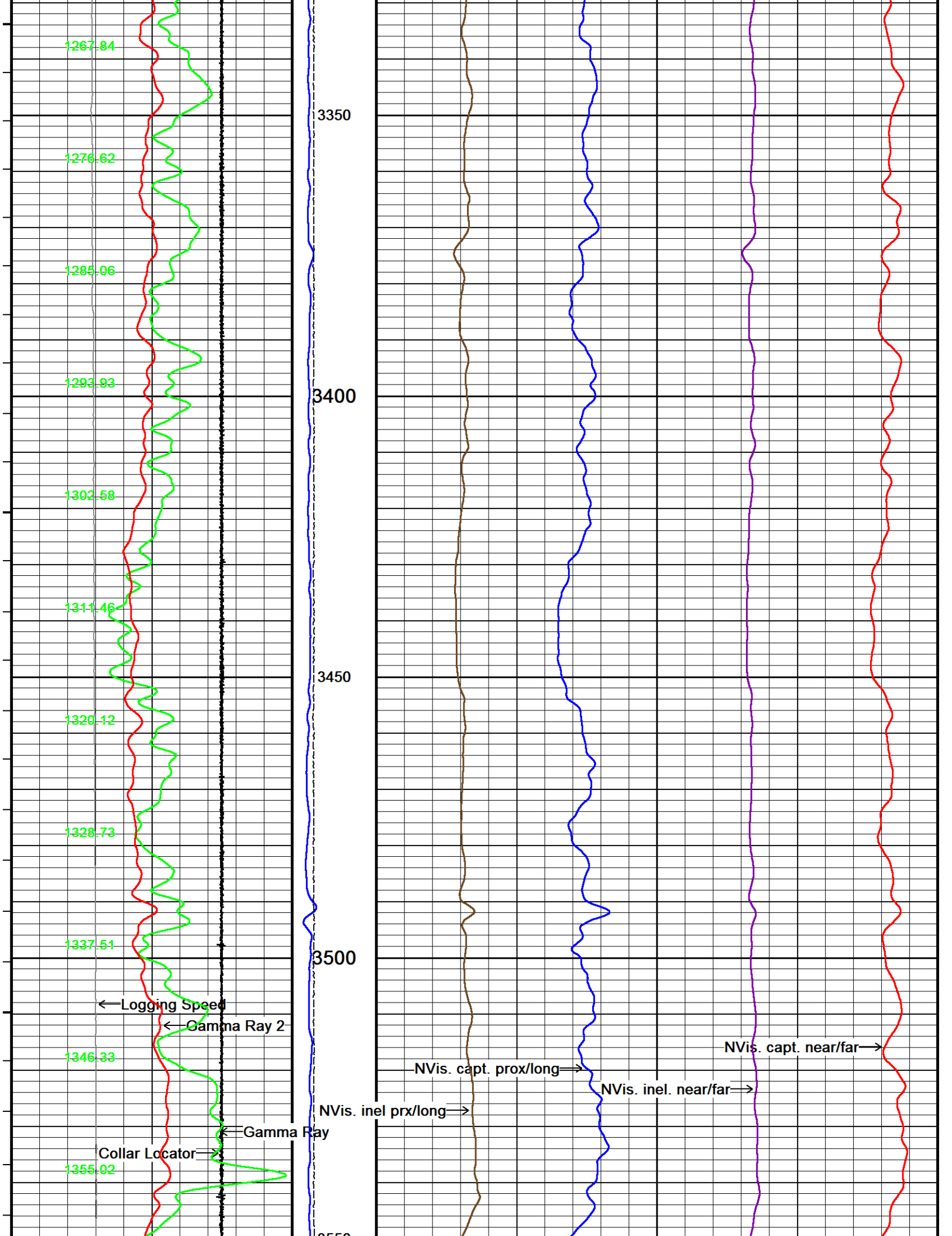
2750

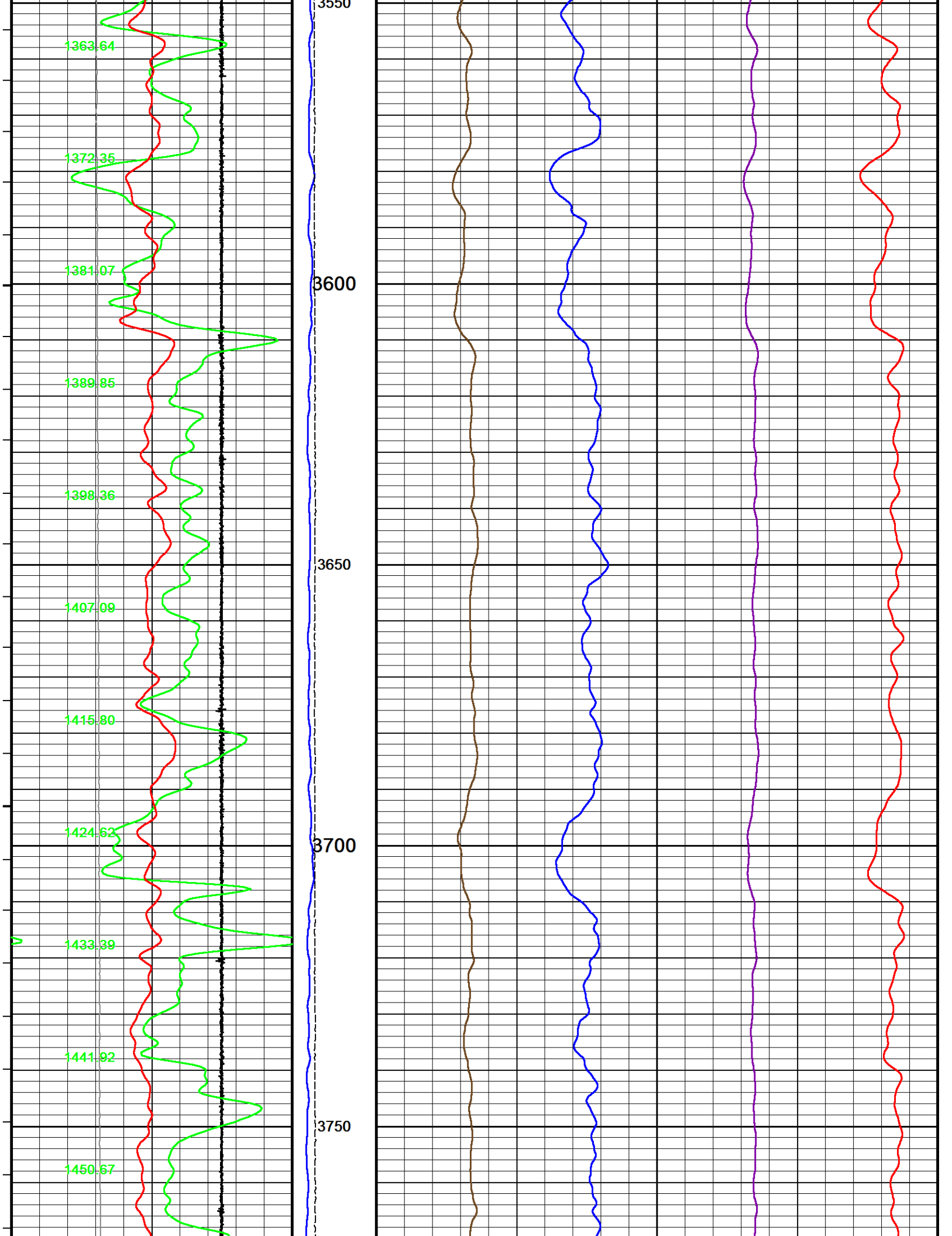
2800

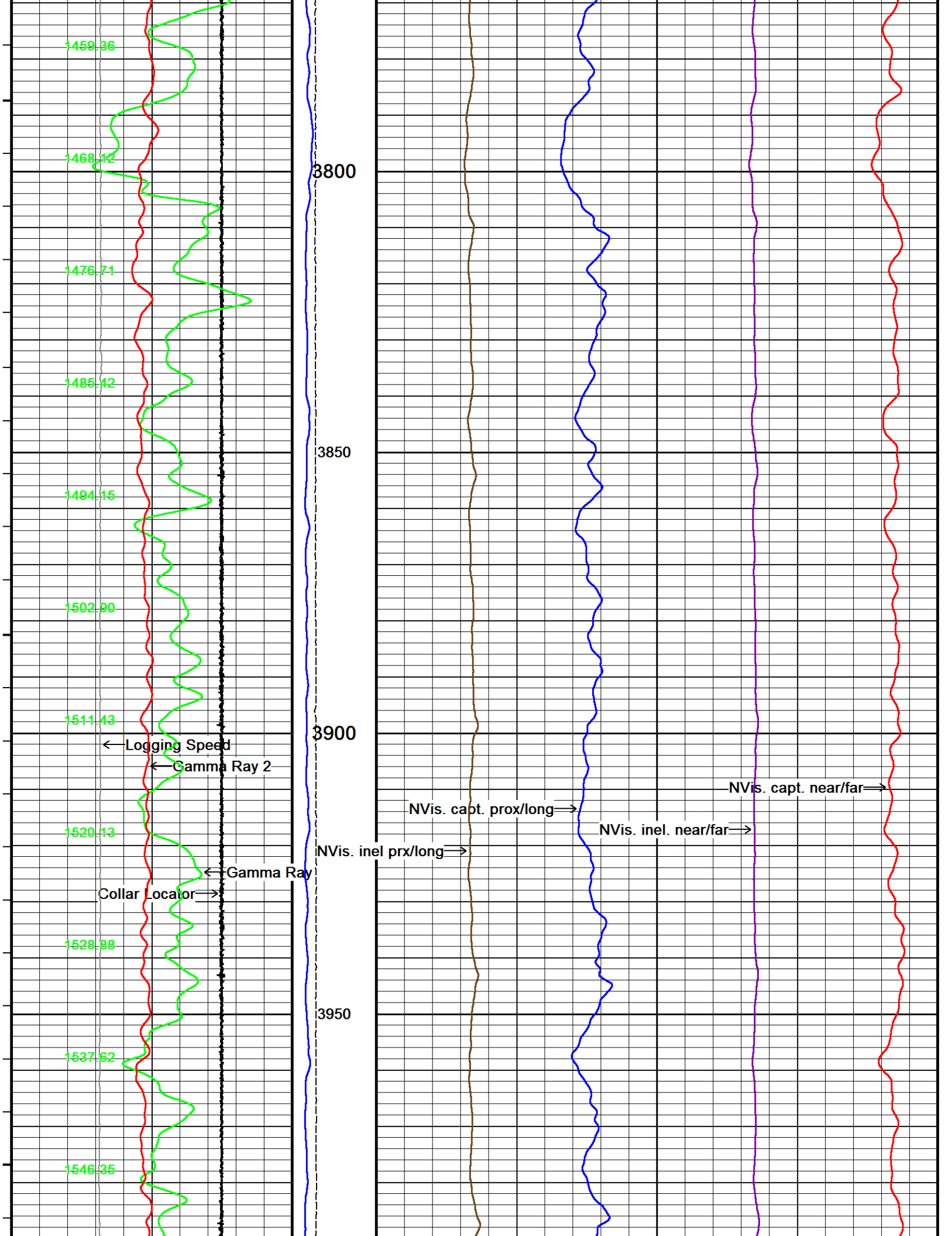
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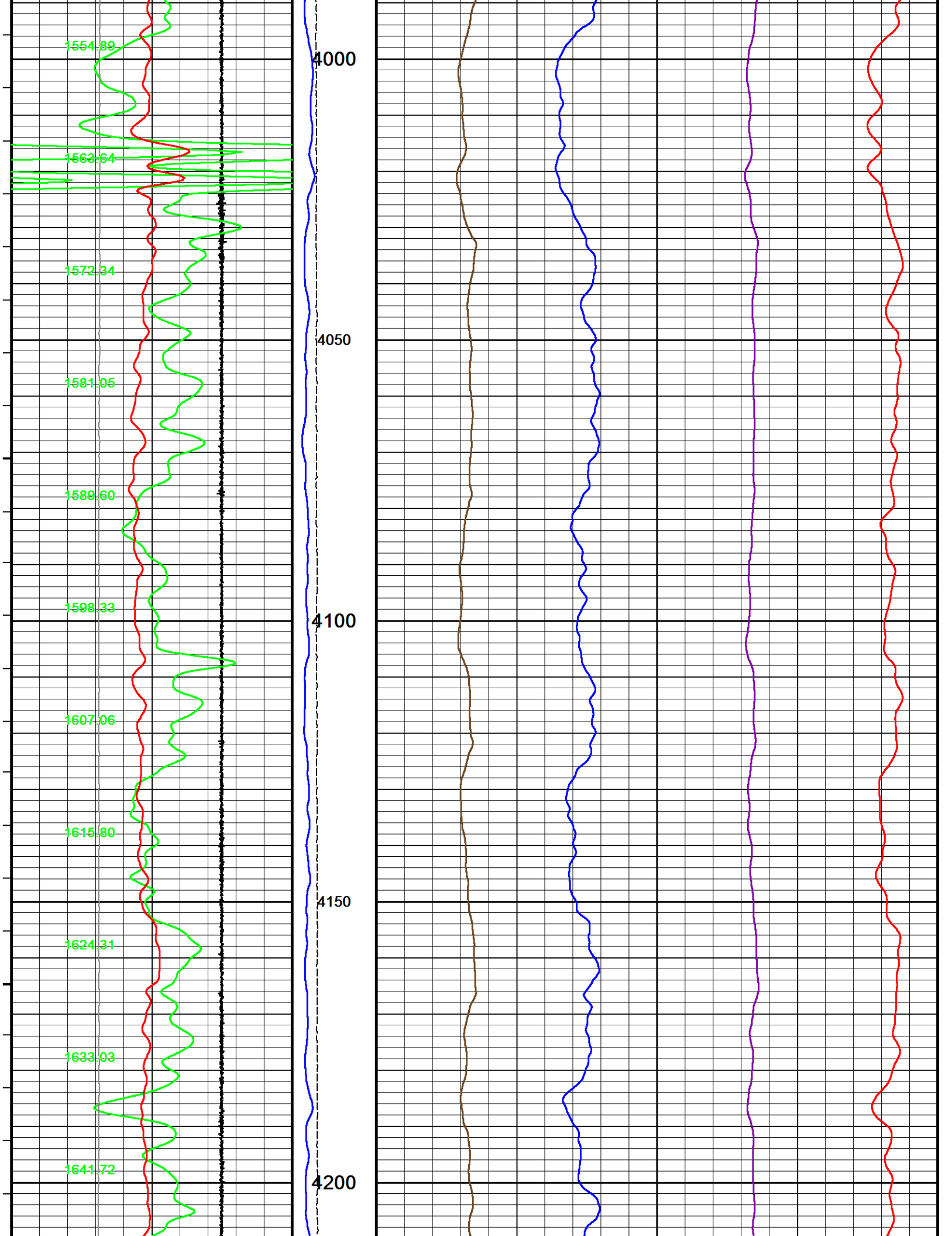


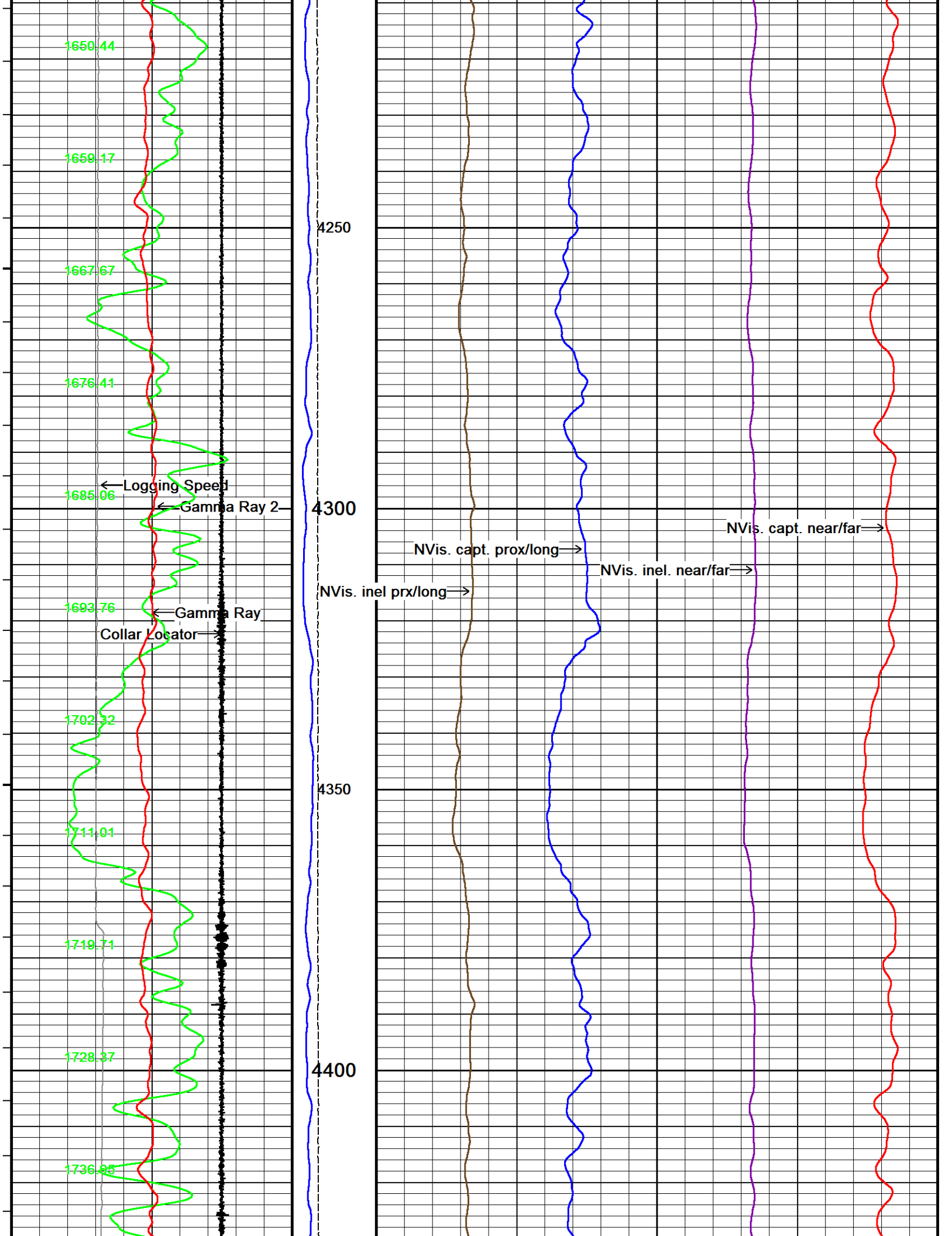


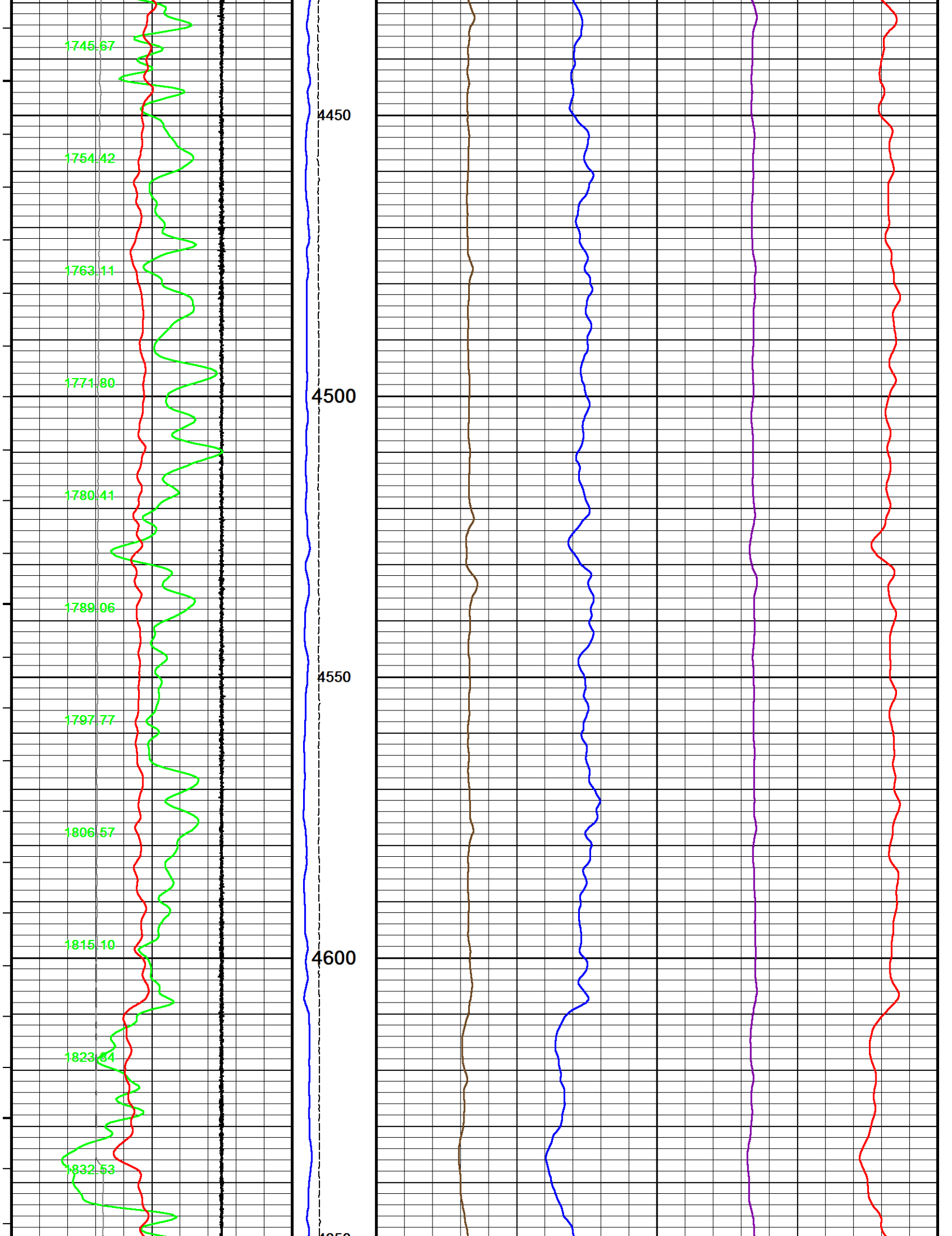


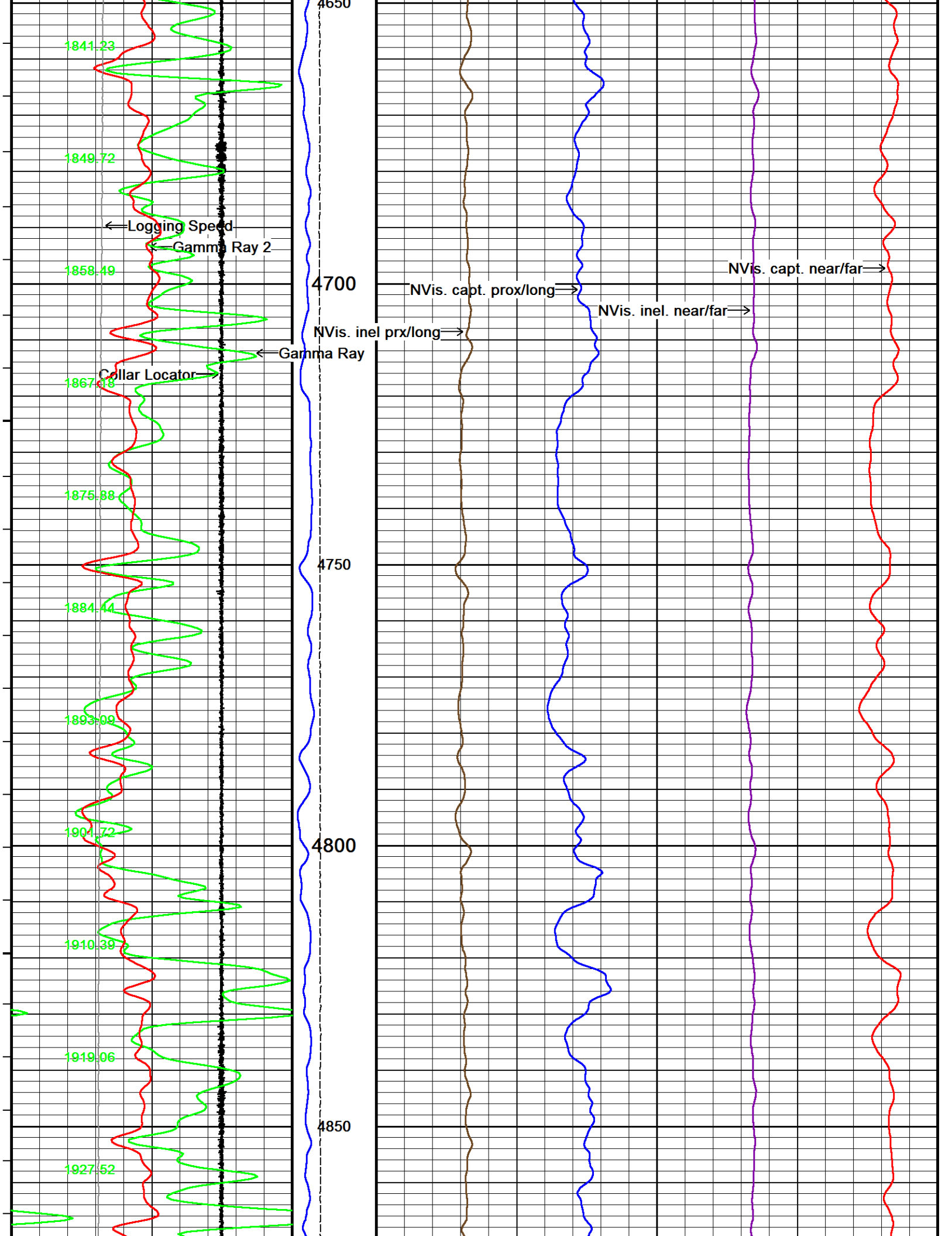


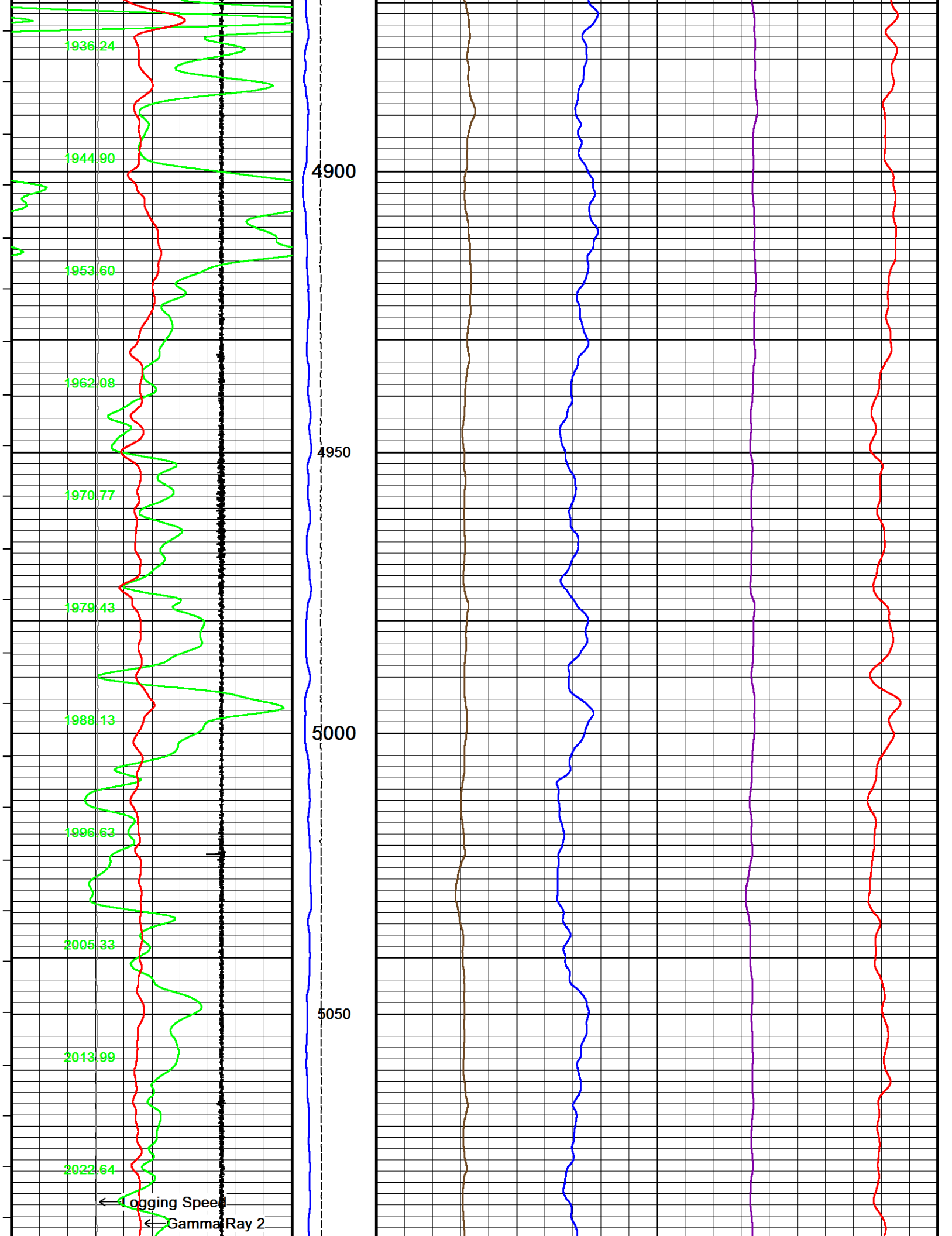


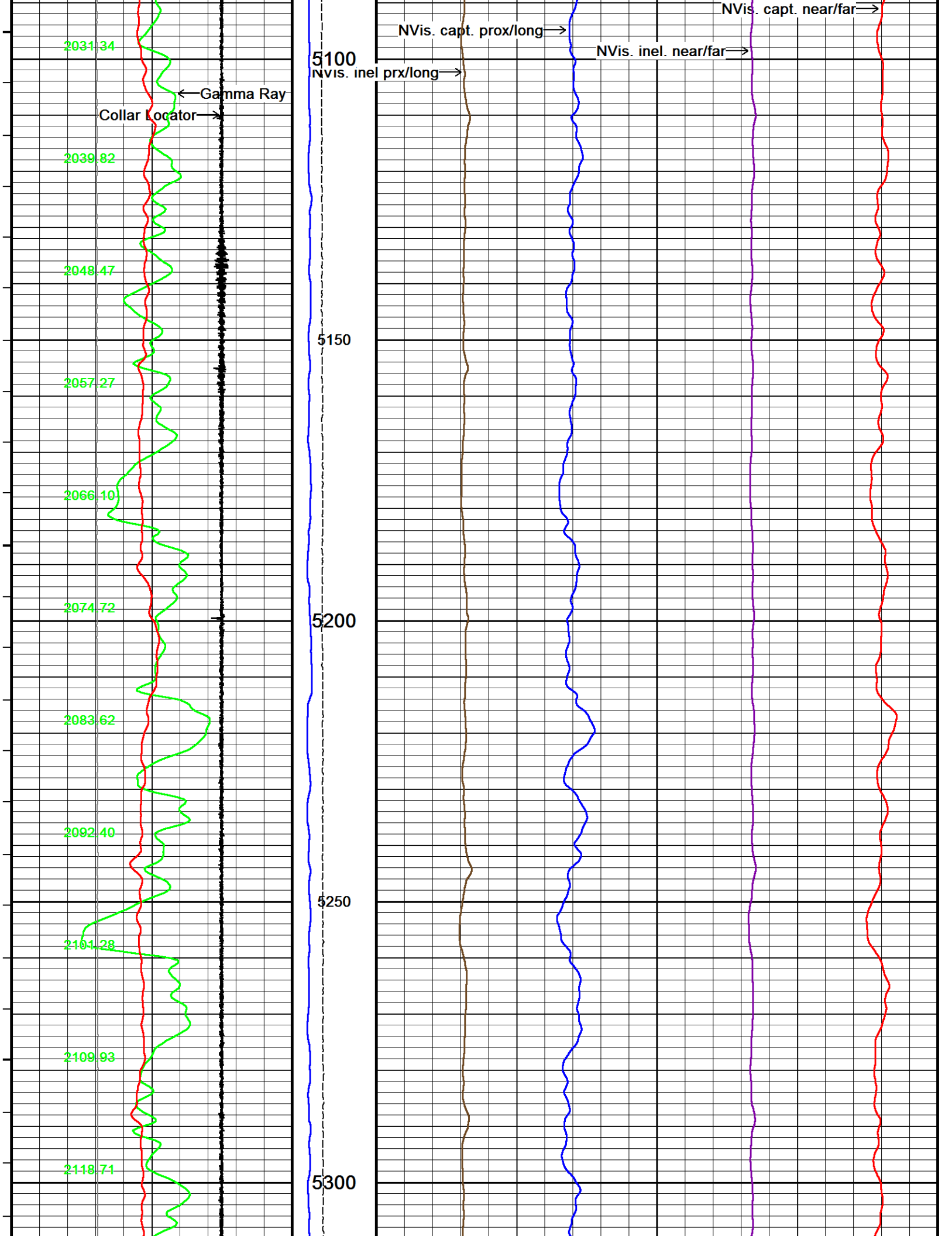


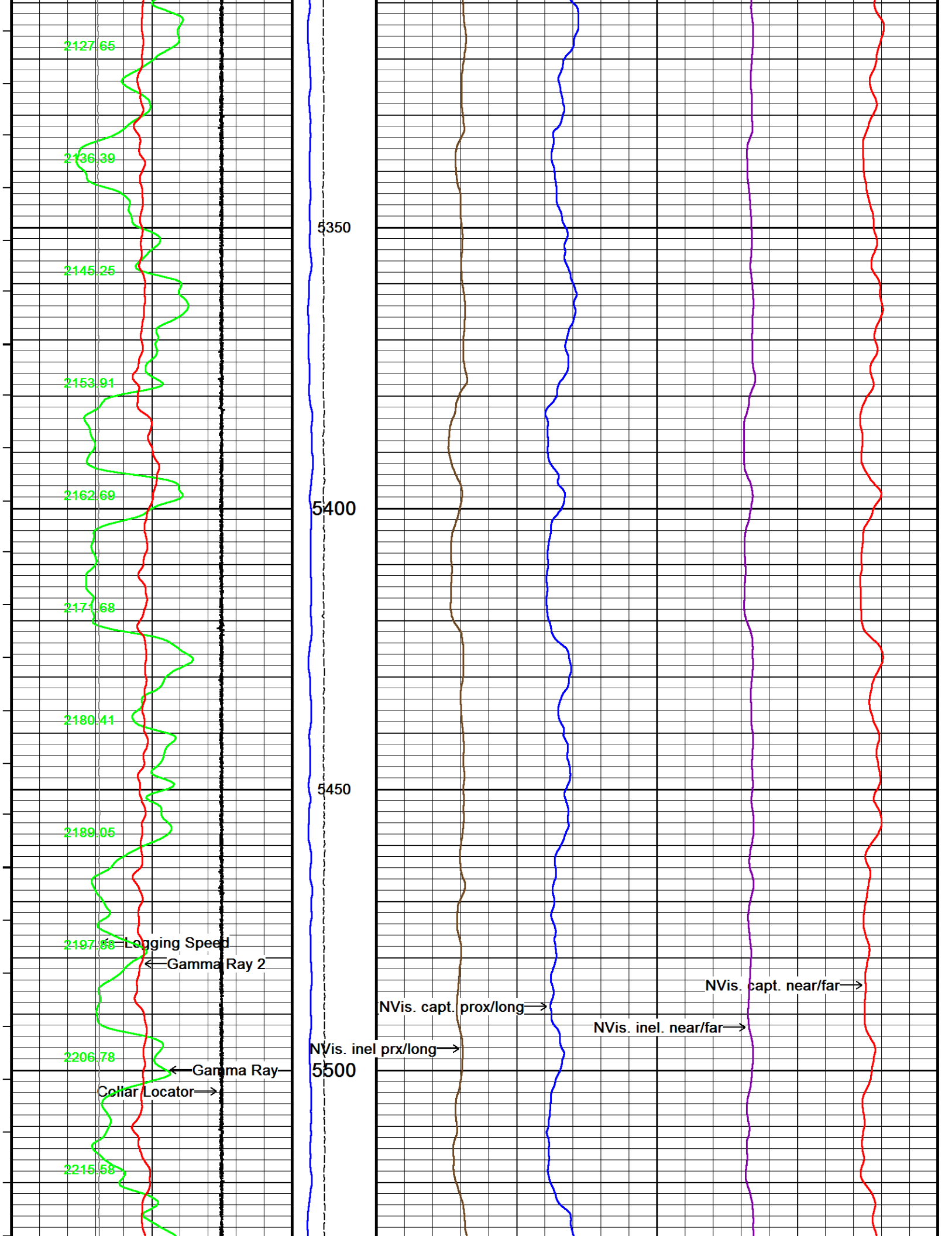


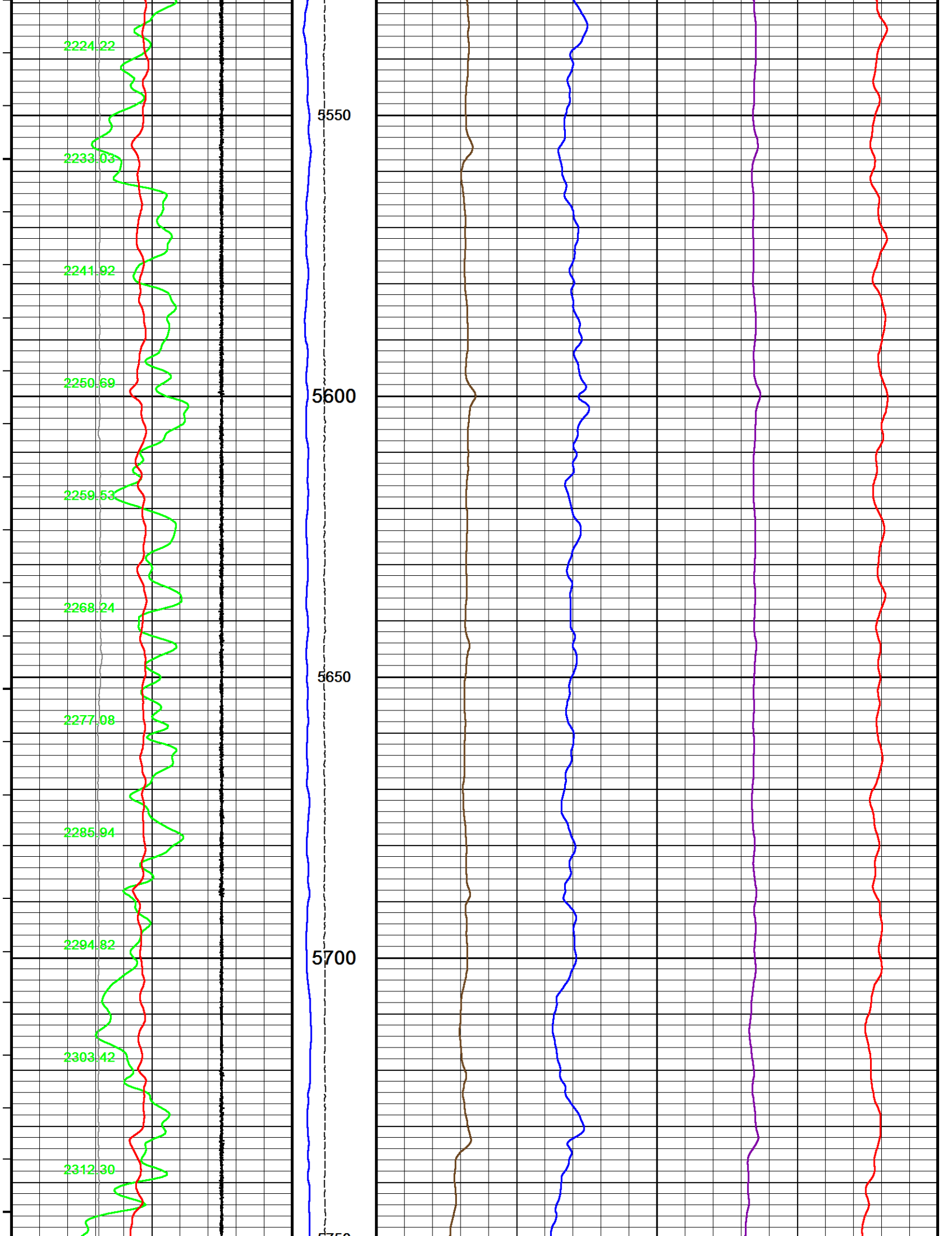


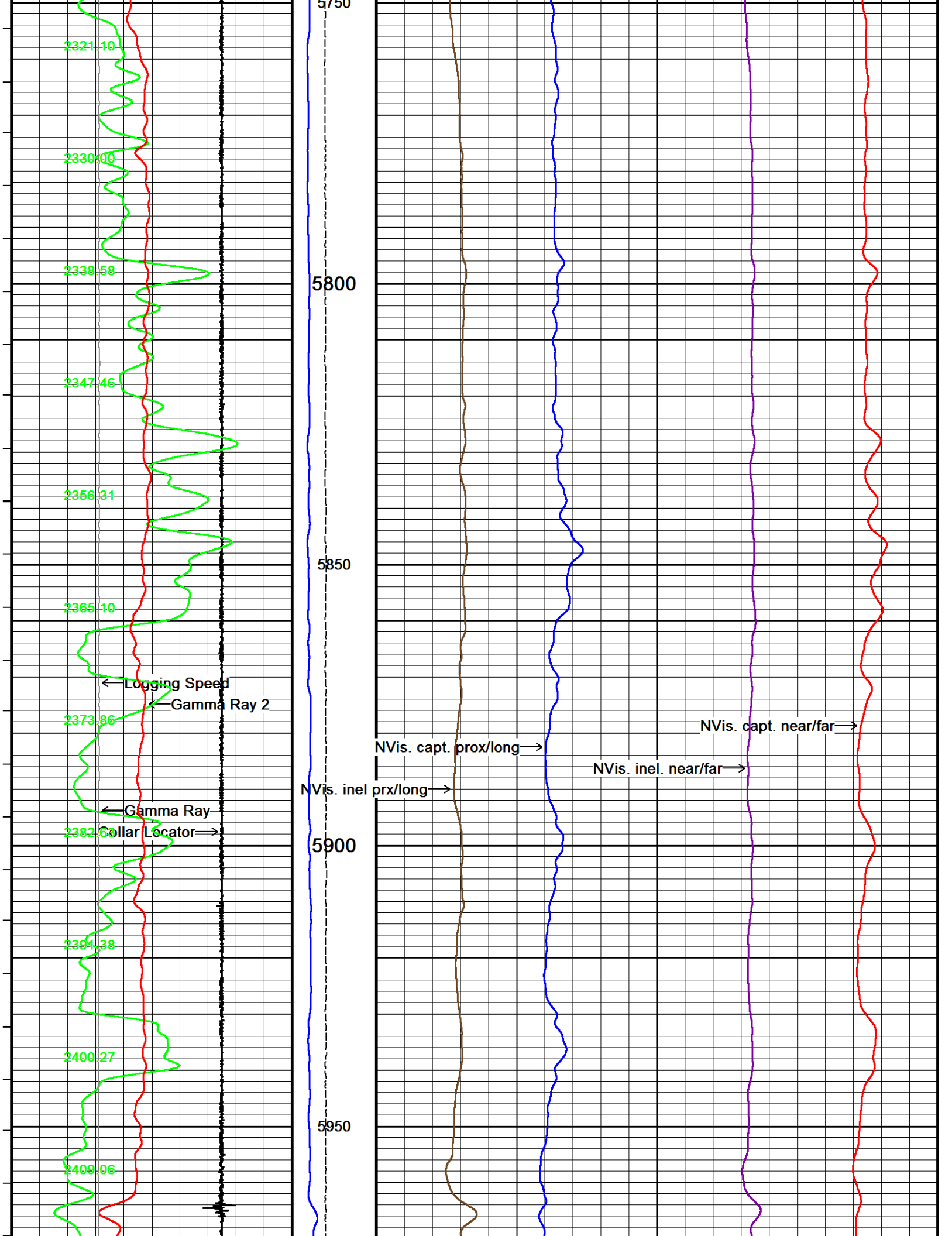


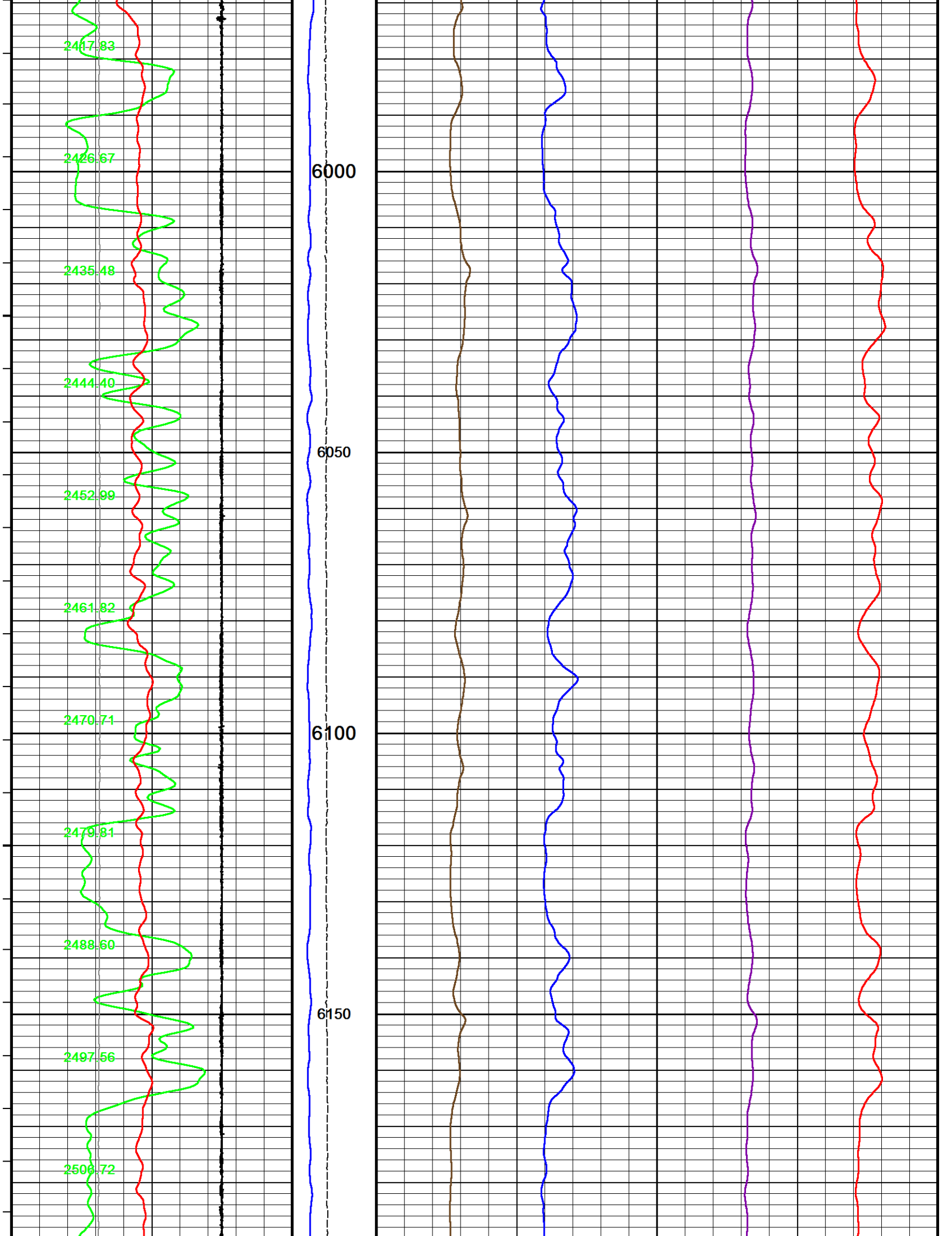


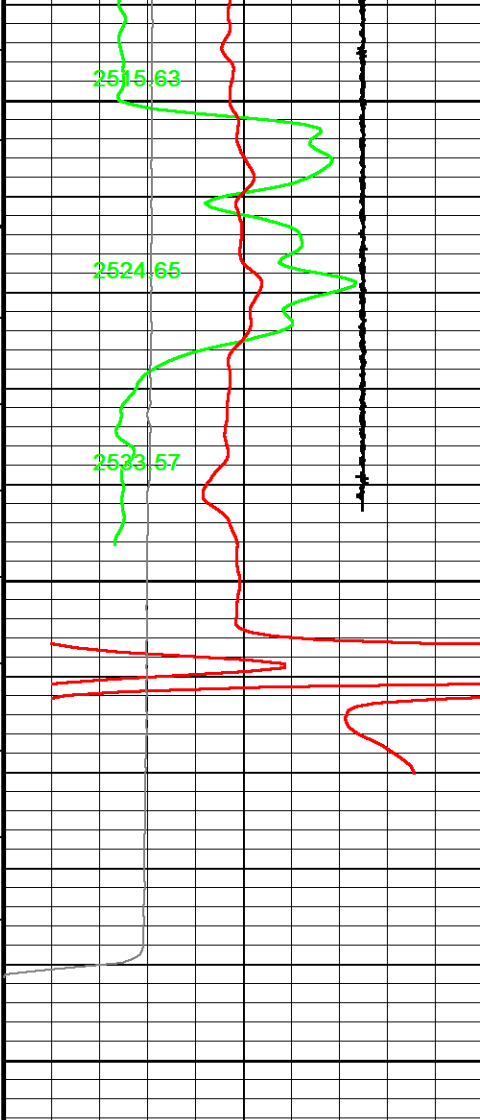












6200

6250

6300

Depth
in
Feet

← Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

Gamma Ray 2
API
0 75 150
0 750 1500

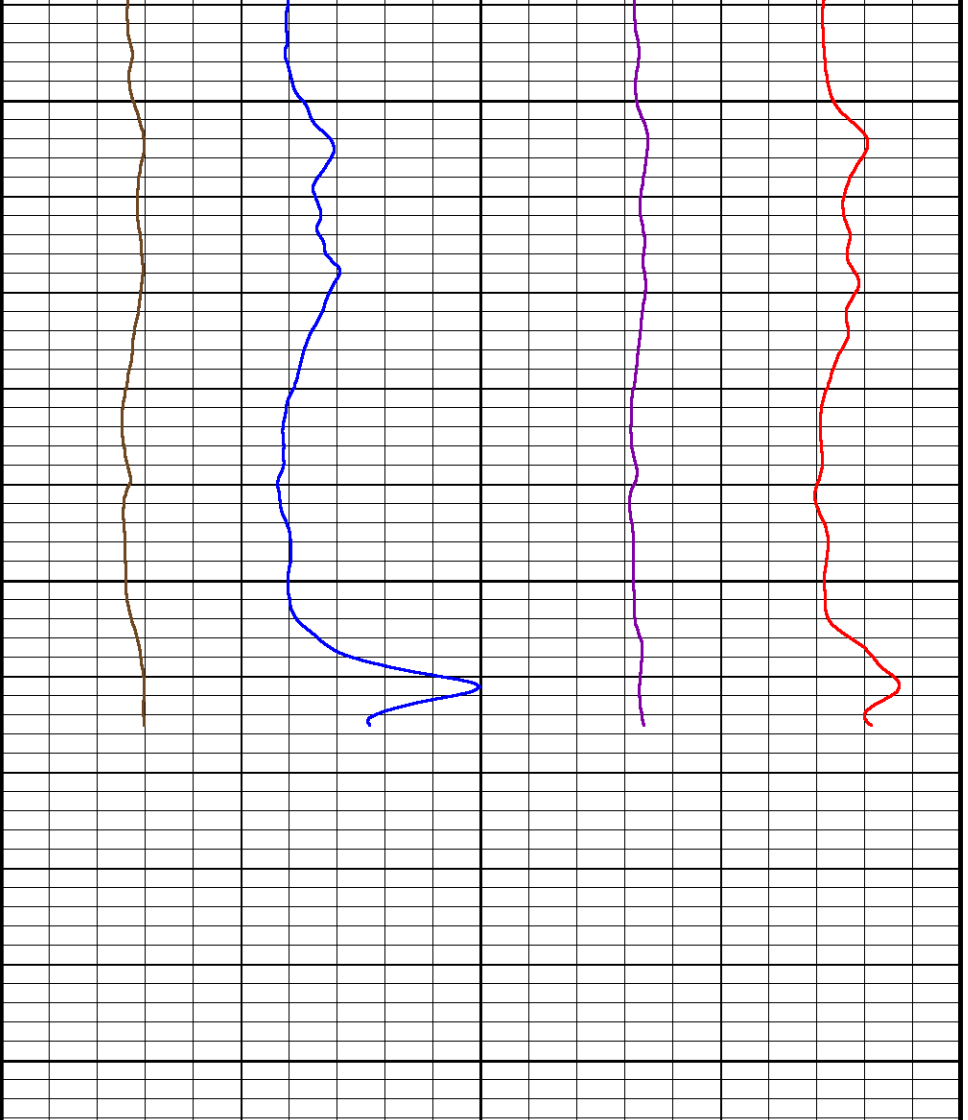
QPG Pressure
psi
every 1 in
Collar Locator
millivolts
-300 300

Logging Speed
Feet per minute
0 -15

VRBN
4000009000000

TENS
0 3000

Replay
Scale
1:240



NVis. inel prx/long 0 122 0 NVis. capt. prox/long 60 0 NVis. inel. near/far 20 0 NVis. capt. near/far 14

↑

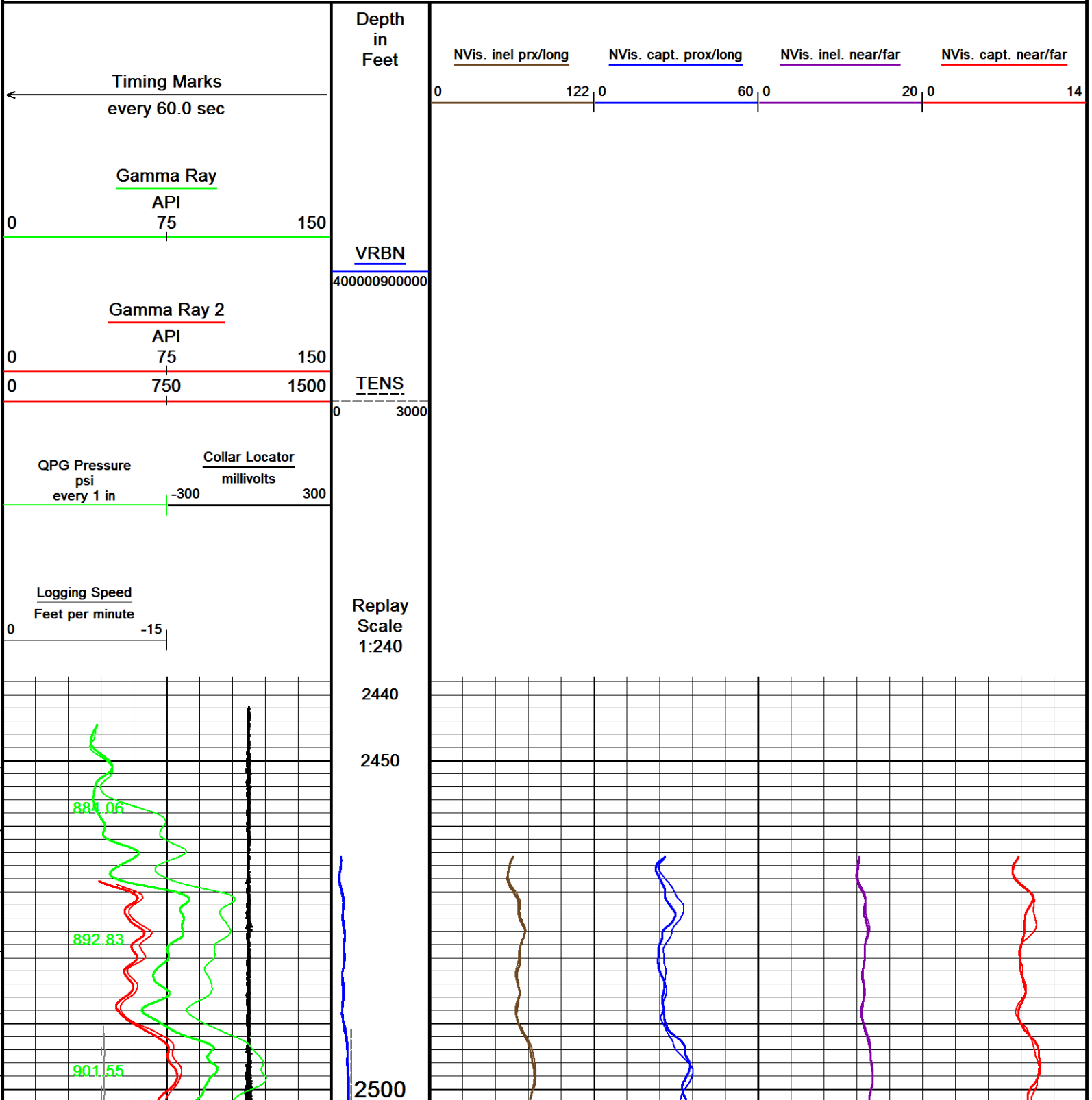
MAIN
REPEAT 2

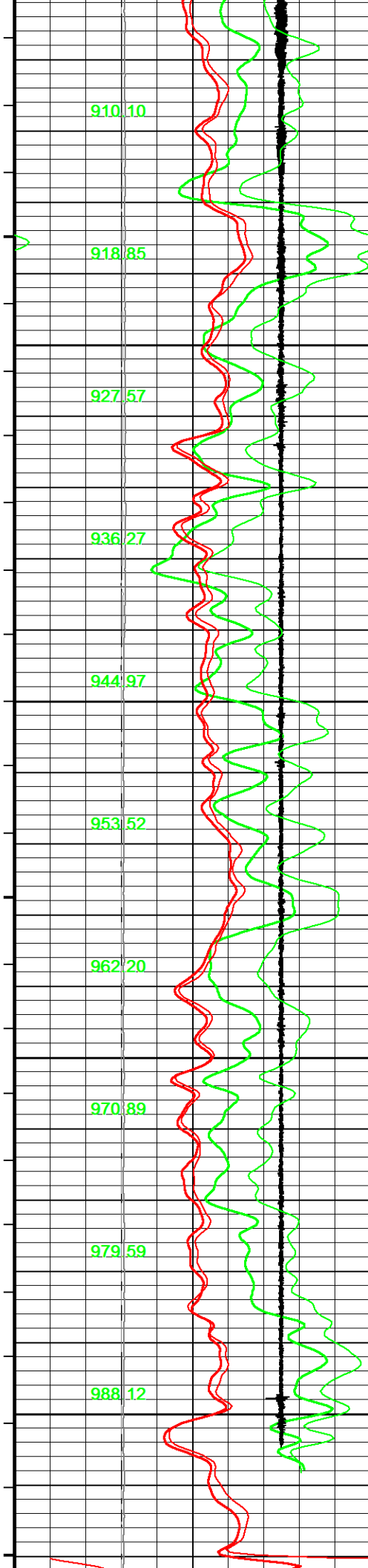
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↓

REPEAT 1
REPEAT 2

↓



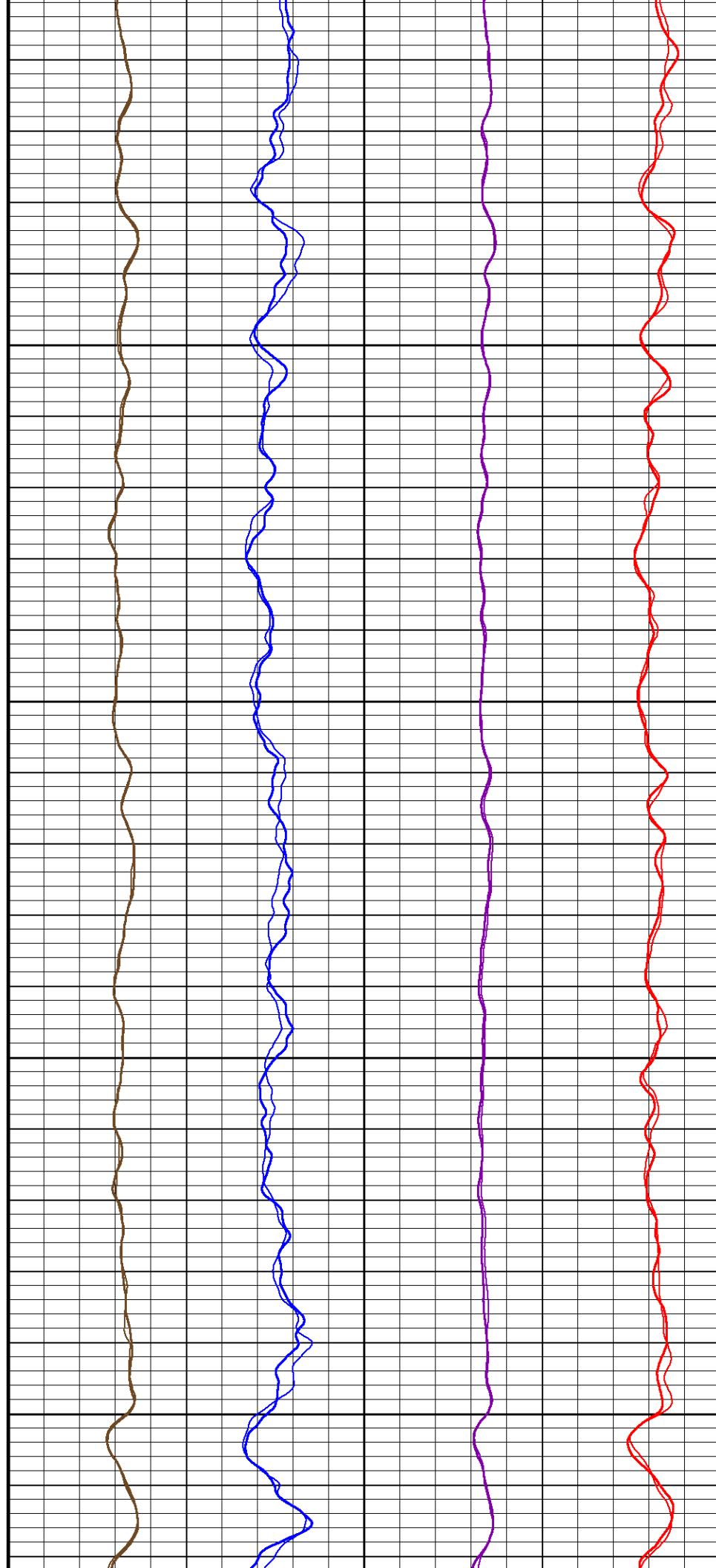


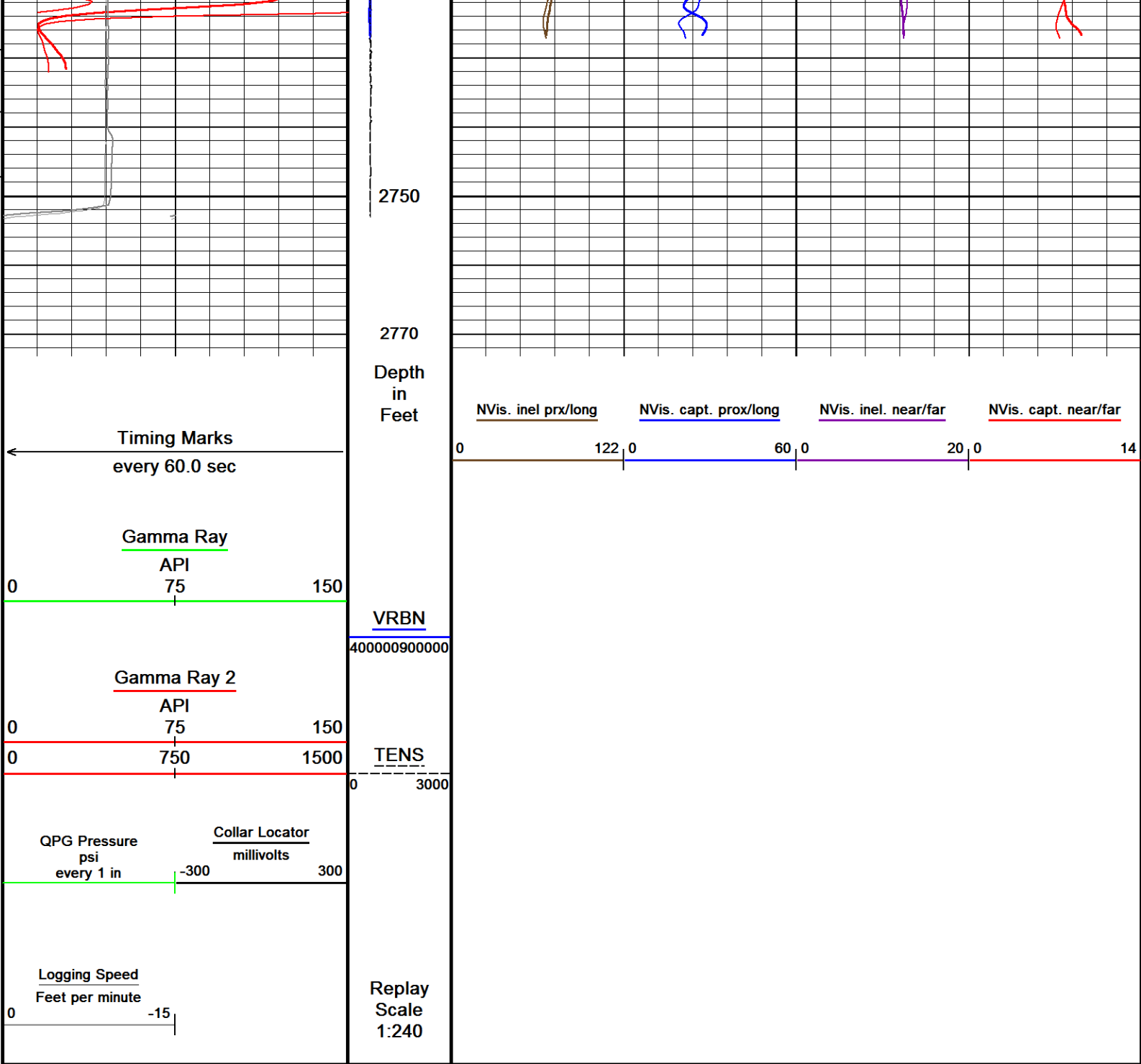
2550

2600

2650

2700





Depth Based Data - Maximum Sampling Increment 12.5cm
Filename: C:\Logs\Caerus\Puckett SWD E1-797\Raptor B Nvision Repeat Pass 1.dta
Filename: C:\Logs\Caerus\Puckett SWD E1-797\Raptor B Nvision Repeat Pass 2.dta
System Versions: Logged with 16.00.6296 Processed with 16.00.6296 Plotted with 16.00.6296

REPEAT 1
REPEAT 2

DOWNHOLE EQUIPMENT

C:\Logs\Caerus\Puckett SWD E1-797\Raptor B Nvision Main.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 107 LG: 2.23 ft WT: 8.8 lb OD: 1.693 in

Centroller, 43mm, ITB, 3-arm Bi-Direct
CR3-BA 106 LG: 2.44 ft WT: 8.8 lb OD: 1.693 in

Tool Temperature, 43mm, 177C, 10-pin ITB
TMP-NA 106 LG: 1.93 ft WT: 8.8 lb OD: 1.693 in

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

48.70 ft CCL - Collar Locator

46.26 ft GR - Gamma Ray

43.72 ft PRES - QPG Pressure

39.41 ft TMPN - Temperature

26.43 ft FV - far V
26.43 ft NV - near V
26.43 ft PV - prox V
26.43 ft BISP - beam I setpoint
26.43 ft REPV - ngc rep V
26.43 ft VRBN - VRBN
26.43 ft VC24 - NVis. capt. near/far
26.43 ft VC15 - NVis. capt. prox/long
26.43 ft VB24 - NVis. incl. near/far
26.43 ft VB15 - NVis. incl. prx/long
26.43 ft BEAM - beam current
26.43 ft BKL - Bkgd long
26.43 ft BKF - Bkgd Far
26.43 ft BKN - Bkgd Near

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

20.43 ft DRN - Drgd Near
26.43 ft LV - long V

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

22.38 ft GR2 - Gamma Ray 2

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

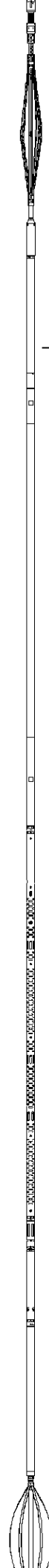
SSB Receiver Sonde
SSS-BA 117 LG: 8.76 ft WT: 30.9 lb OD: 1.693 in

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 220 LG: 2.60 ft WT: 8.8 lb OD: 1.380 in

Total Length: 54.87 ft Weight: 242.5 lb

0.00 ft TENS - Tension
Tool Zero (0.00ft from bottom)



All measurements relative to tool zero.

SHOP AND FIELD CALIBRATIONS

C:\Logs\Caerus\Puckett SWD E1-797\Raptor B Nvision Main.dta

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
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42.7	1067.9	631.5	API
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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	T4
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	T4
	25.2281	-0.730006	-0.000855483	-6.83633e-007	

Temperature Tool Shop Survey Calibration TMP-NA 106	
<div>Temperature Tool Shop Survey Calibration</div> <div>Tool Type: TMP-NA Serial No: 106</div>	

Calibration	
Standard	Measured
32 DEGF	36714 Hz
212 DEGF	50849 Hz

UGK Before survey Cal UGR-KA 131	
<div>Field calibration on 23-OCT-2015 14:59</div> <div>Gamma Ray Before Survey Calibration</div> <div>Tool Type: UGR-KA Serial No: 131</div> <div>Calibrator No: 101</div>	


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			
<div>Field calibration on 19-NOV-2015 17:43</div> <div>Slim Sector Bond Field Calibration</div> <div>Tool Type SSS-BA Serial No 117</div>			
Sensor	Description	Standard	Measured
AMP 3FT	100% Bond	2.70	12.30
	Free Pipe	81.00	310.20
AMP 5FT	100% Bond	1.80	10.80
	Free Pipe	54.00	198.80
1 SECTOR AMP	100% Bond	5.00	47.70
	Free Pipe	95.00	84.90
2 SECTOR AMP	100% Bond	5.00	38.50
	Free Pipe	95.00	87.80
3 SECTOR AMP	100% Bond	5.00	50.10
	Free Pipe	95.00	115.30
4 SECTOR AMP	100% Bond	5.00	20.00
	Free Pipe	95.00	42.70
5 SECTOR AMP	100% Bond	5.00	25.00
	Free Pipe	95.00	58.40

6	SECTOR AMP	100% Bond	5.00	56.10
		Free Pipe	95.00	104.20

SSBC Constants SSS-BA 117				
			Last Edited on 00-JAN-1988 00:00	
Min Ampl	100% Bond	2.00	MV	
Max Ampl	0% Bond	72.00	MV	
	Casing Size	5.50	IN	
	Casing Weight	17.0	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	

COMPANY		CAERUS OIL & GAS LLC		
WELL		PUCKETT SWD E1-797		
FIELD		GRAND VALLEY		
PROVINCE/COUNTY		GARFIELD		
COUNTRY/STATE		USA / COLORADO		
Elevation Kelly Bushing	8351.00	feet	Bottom Log Interval	6287.00 feet
Elevation Drill Floor	8351.00	feet	Depth Driller	6421.00 feet
Elevation Ground Level	8329.00	feet	Depth Logger	6291.00 feet
<div>  <div> <div></div> <div>RAPTOR NVISION LOG</div> </div> </div> <div> <div>Weatherford®</div> </div>				