



Compensated Neutron
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Butterball 40C-34HZ
Field Wattenberg
County Weld
State Colorado

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Location: API #: 05-123-44319
SEC 10 TWP 2N RGE 67W
Permanent Datum Ground Level Elevation 4916'
Log Measured From Kelly Bushing 20 FT
Drilling Measured From Kelly Bushing
Other Services
Gauge Ring
Junk Basket
Elevation
K.B. 4936 FT
D.F. 4935 FT
G.L. 4916 FT

Date	06-JUL-2017						
Run Number	Two						
Depth Driller	15629 FT						
Depth Logger	7565 FT						
Bottom Logged Interval	7564 FT						
Top Log Interval	Surface						
Open Hole Size	7.875"						
Type Fluid	Water						
Density / Viscosity	8.34 lb/gal						
Max. Recorded Temp.	238°F						
Estimated Cement Top	---						
Time Well Ready	ROA						
Time Logger on Bottom	14:35						
Equipment Number	HD-325						
Location	Fort Lupton, CO						
Recorded By	W.Wacker / S. Hopper						
Witnessed By	Erik Wenzel						
Borehole Record					Tubing Record		
Run Number	Bit	From	To	Size (in)	Weight (lb/ft)	From	To
Casing Record	Size (in)		Wgt (lb/ft)		Grade	Top	Bottom
Surface Casing	9 5/8		36		J-55	Surface	1828 FT
Intermediate #1	5 1/2		17		HC P110	Surface	15619 FT
Intermediate #2							
Liner							

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Log ran as per customer request
Depth referenced to Casing Tally reported Marker Joint at 6620 FT
Adjusted +2 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7677 FT with no debris
Log ran from as deep as possible in heel to surface
Log ran with no surface induced pressure
Logging tools were clean and free of any debris upon completion of operations

Thank you for choosing Reliance Oilfield Services, LLC!!

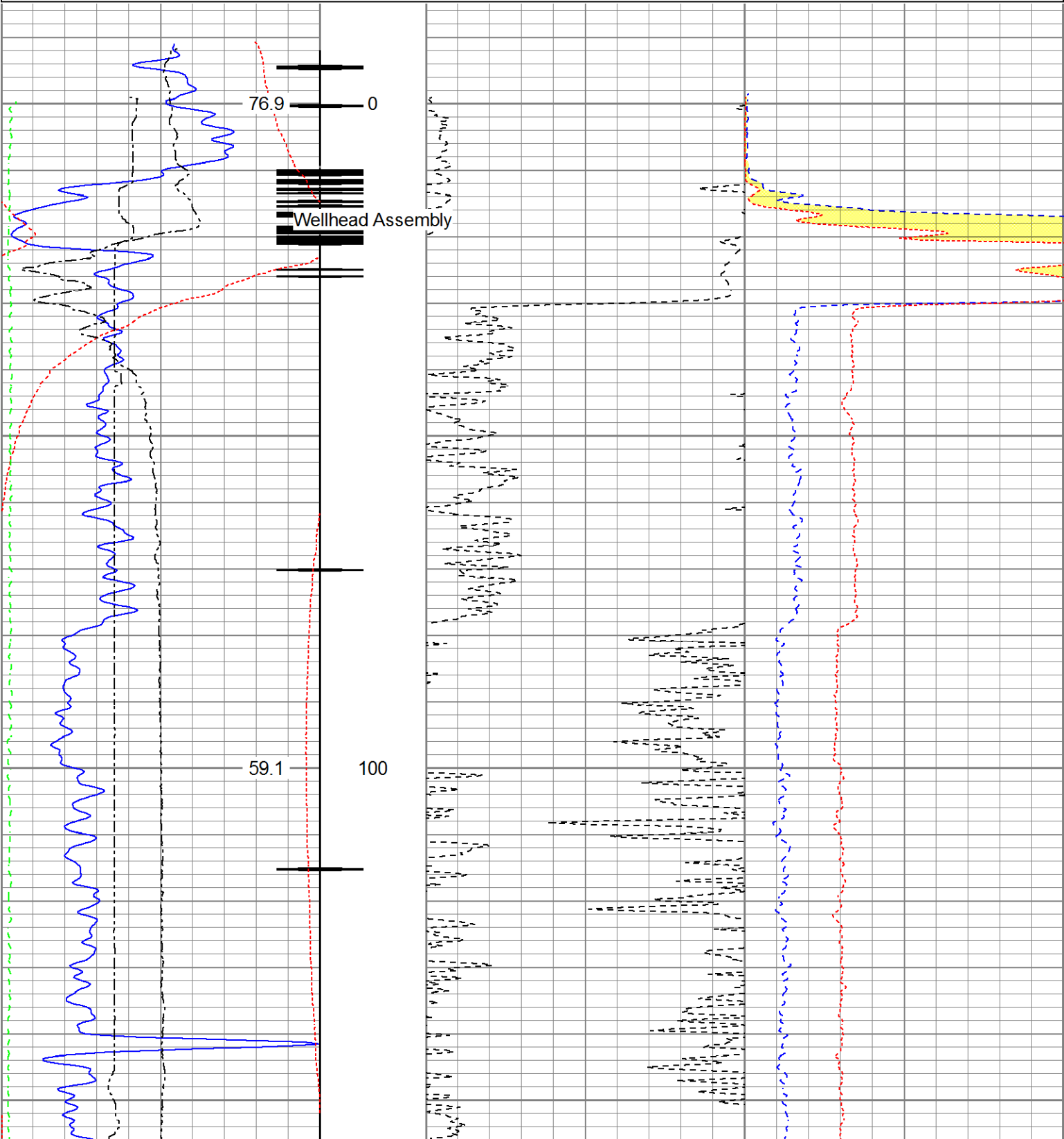


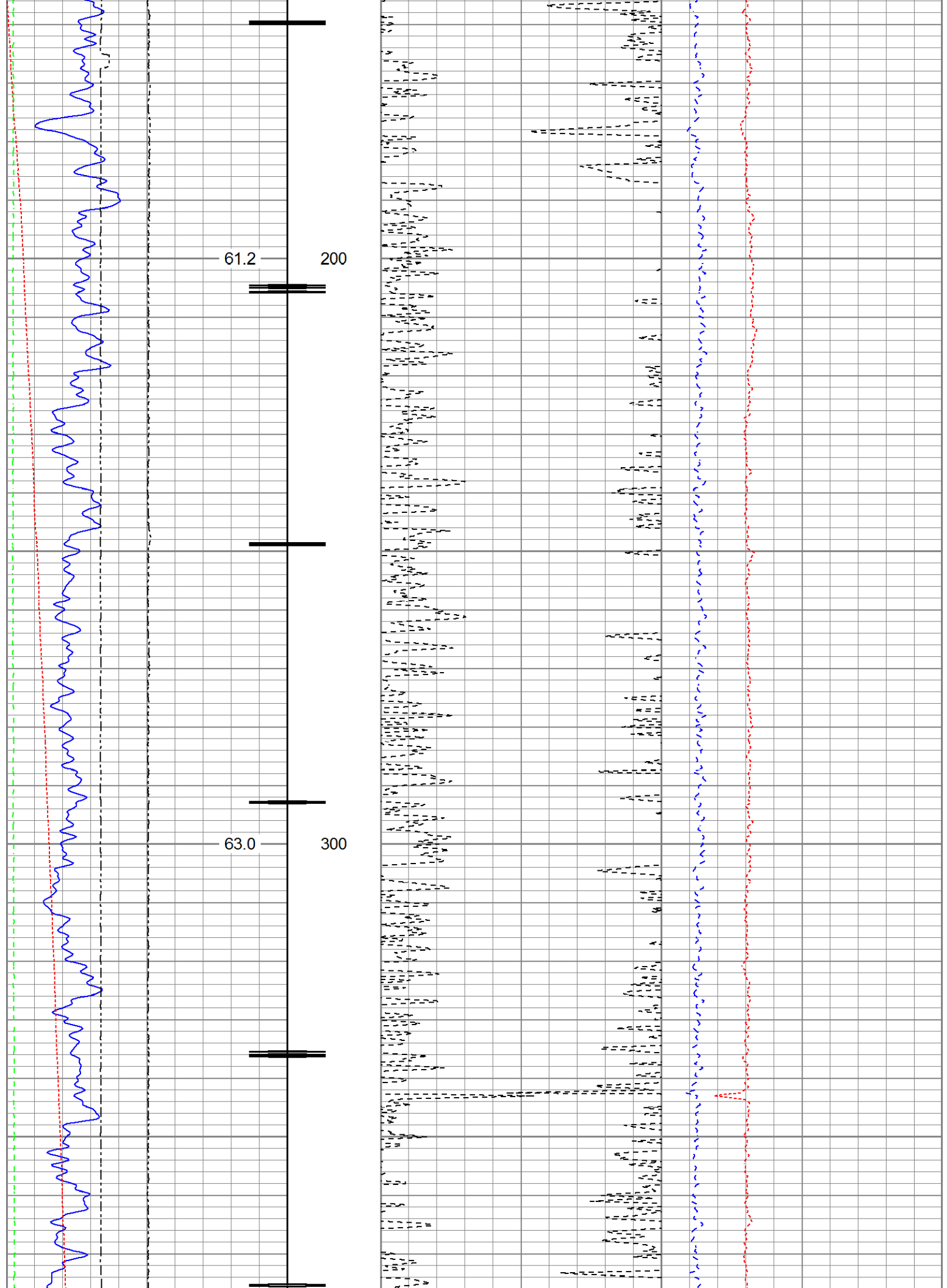
Main Pass

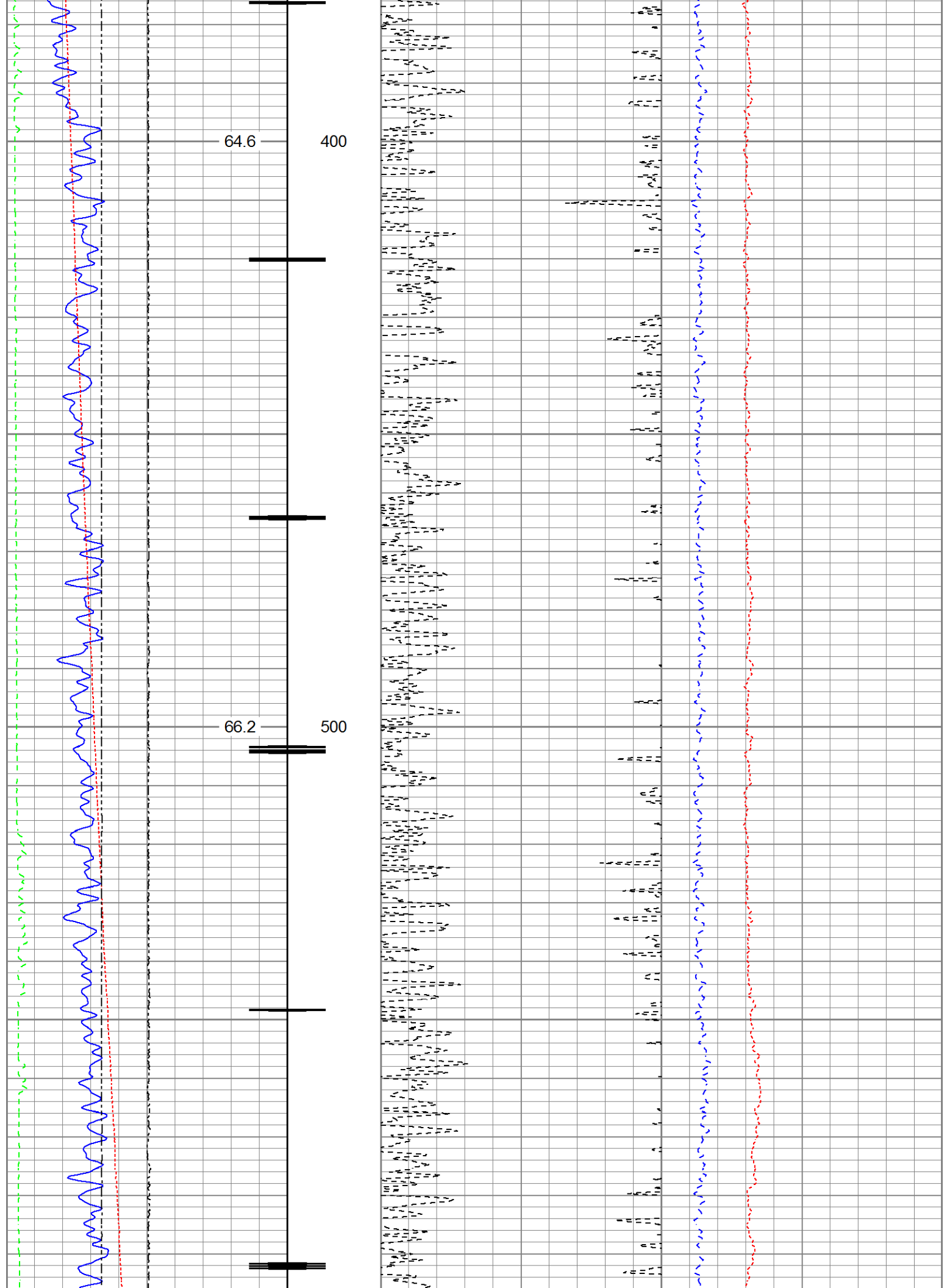
Recorded With No Surface Induced Pressure

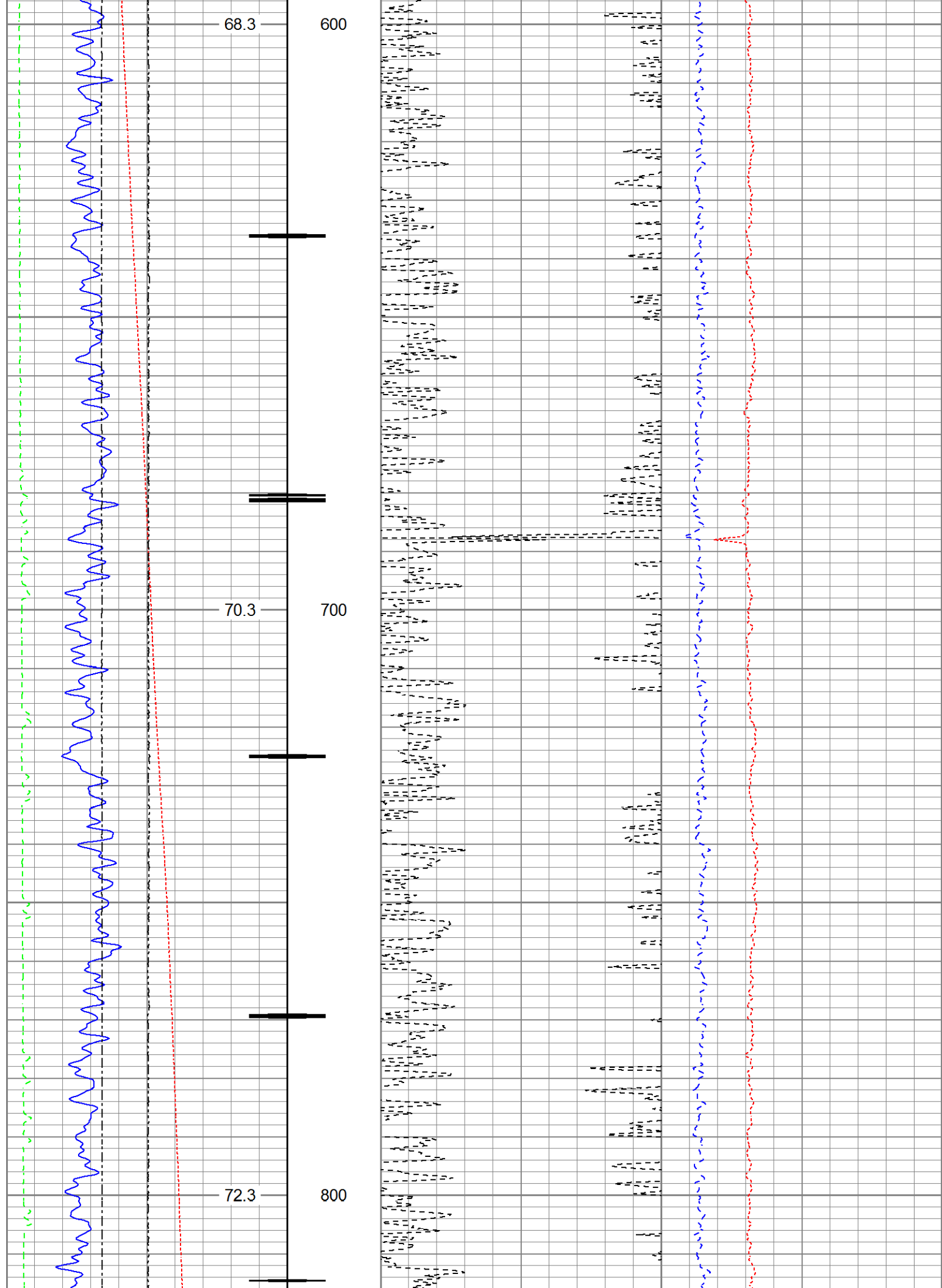
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Dataset Pathname	main
Presentation Format	ros_cnl_sx
Dataset Creation	Thu Jul 06 14:16:23 2017
Charted by	Depth in Feet scaled 1:240

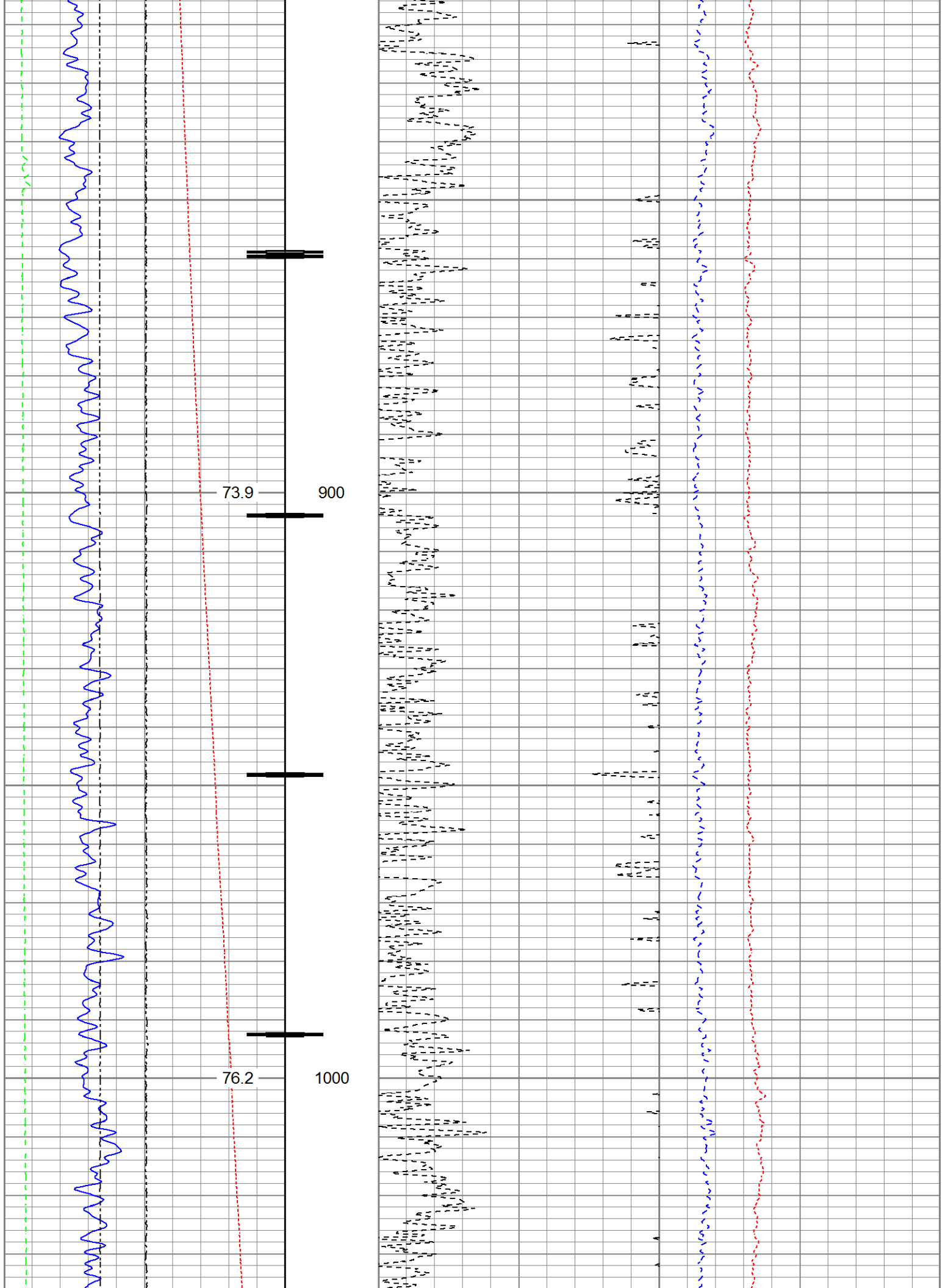
0	Gamma Ray (GAPI)	120	60	Neutron Porosity (pu)	0	0	Far Neutron (cps)	1000
Casing Collar Locator						0	Near Neutron (cps)	10000
0	Temperature (degF)	20						
-100	Line Speed (ft/min)	100						
0	Line Tension (lb)	2000						
-2	Differential Temperature (degF)	2						

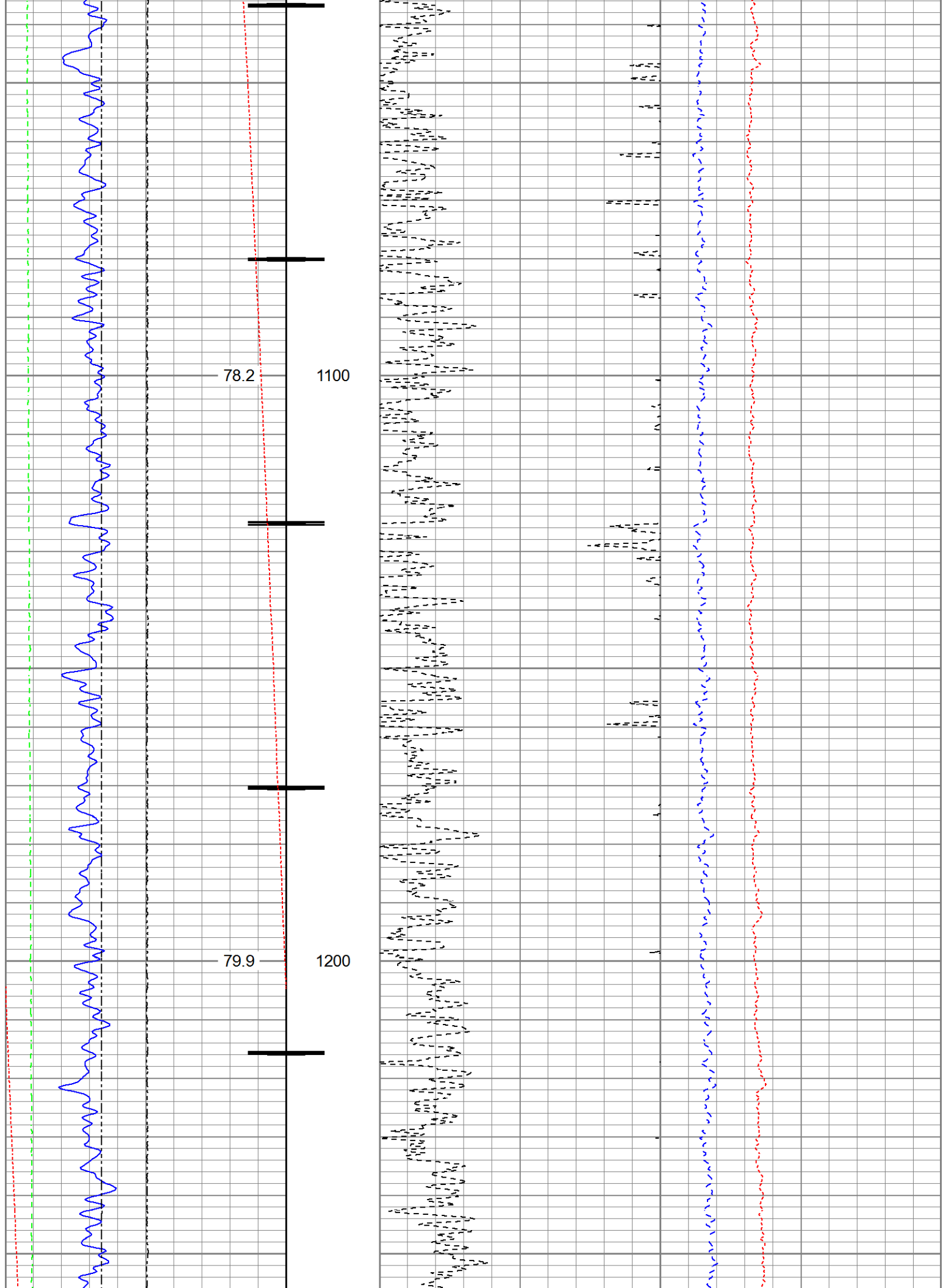


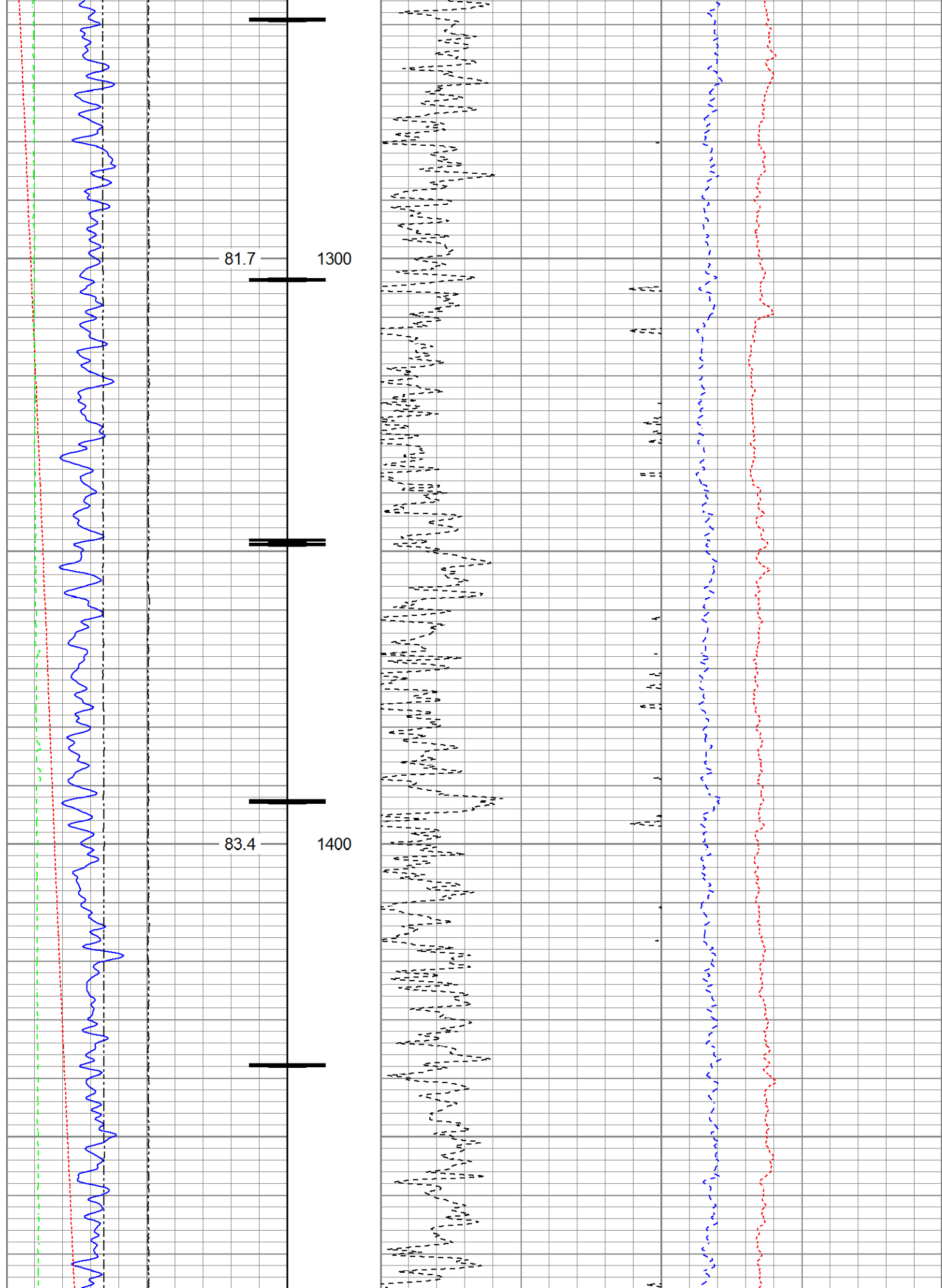


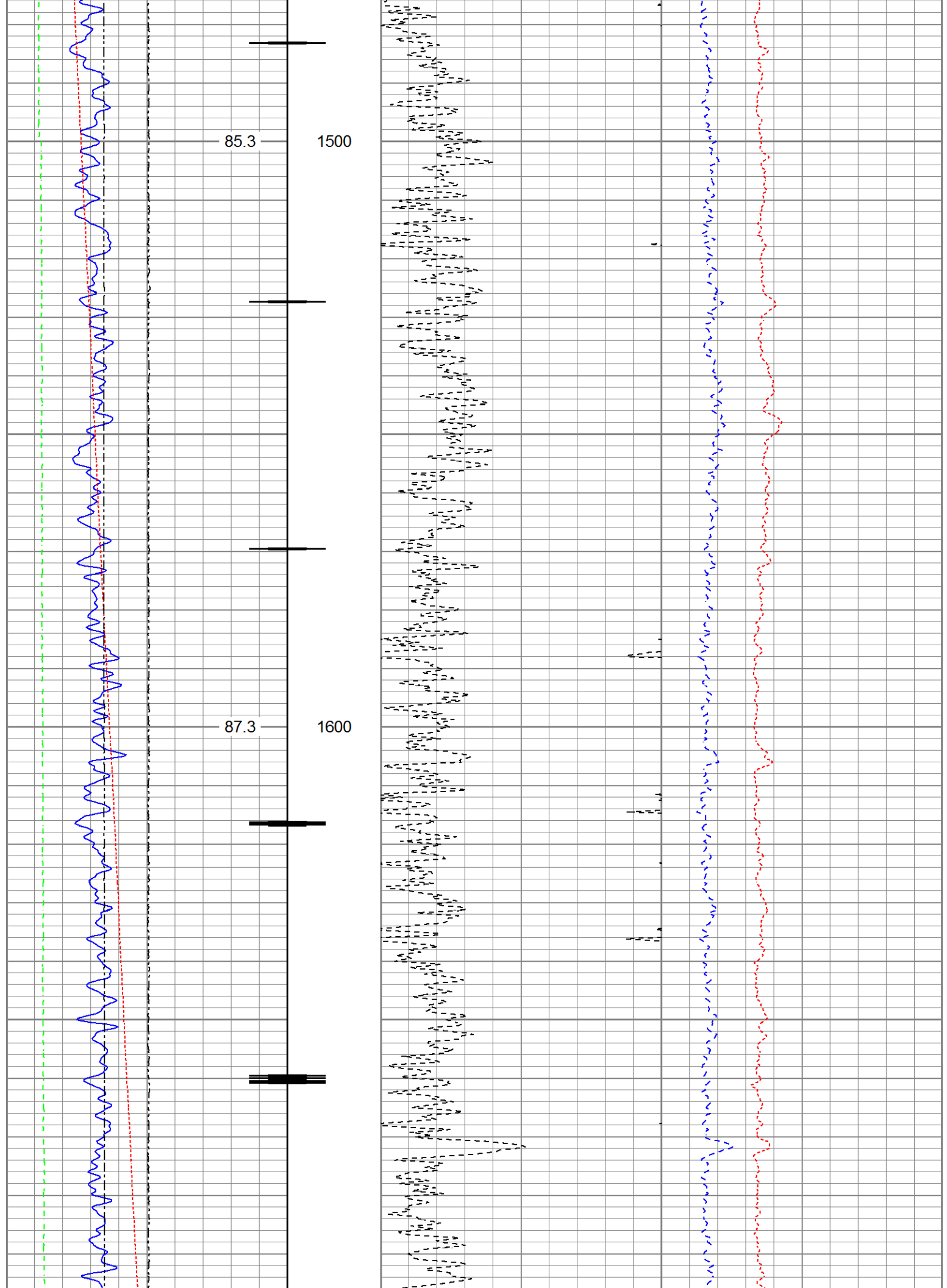


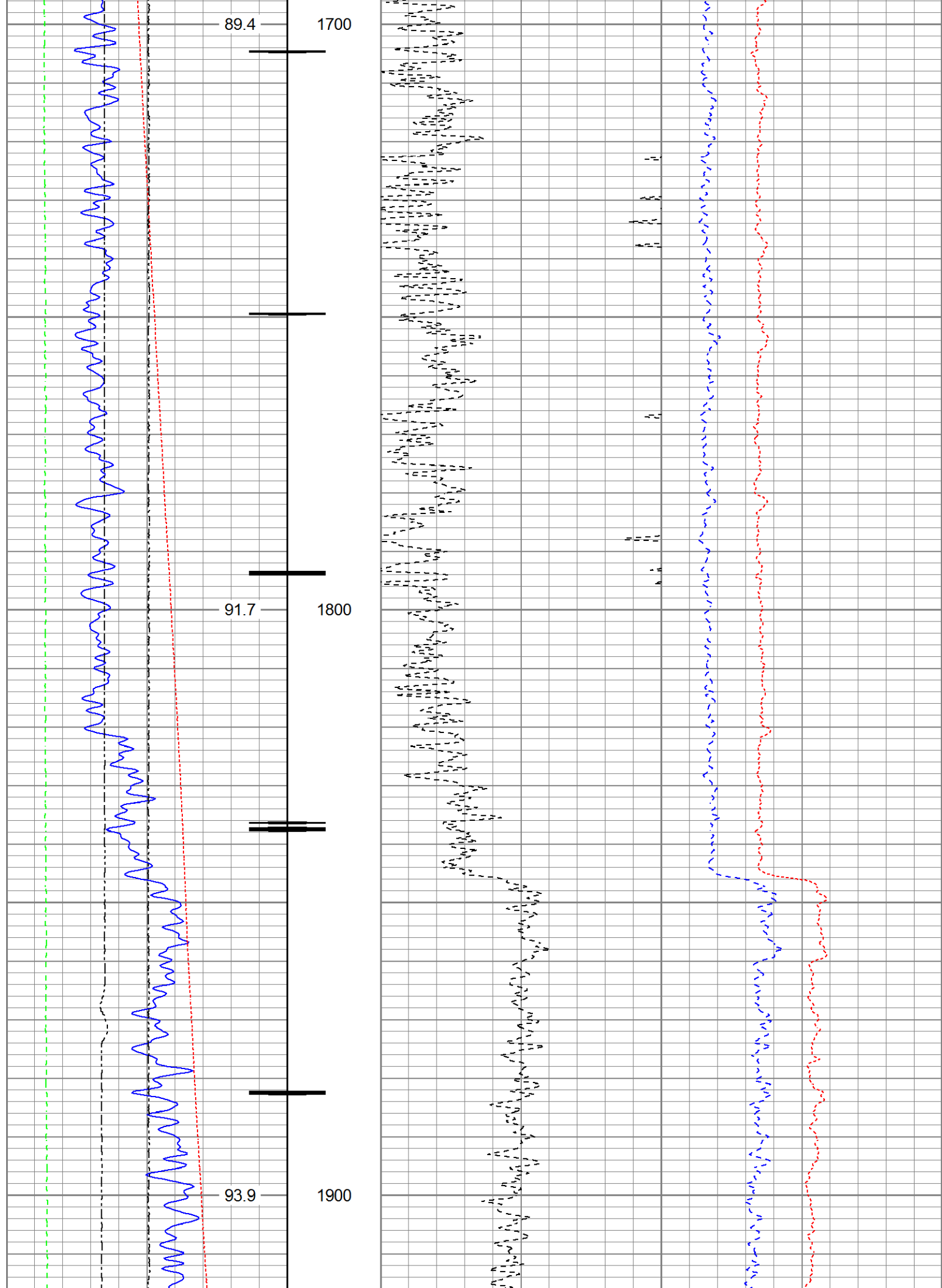


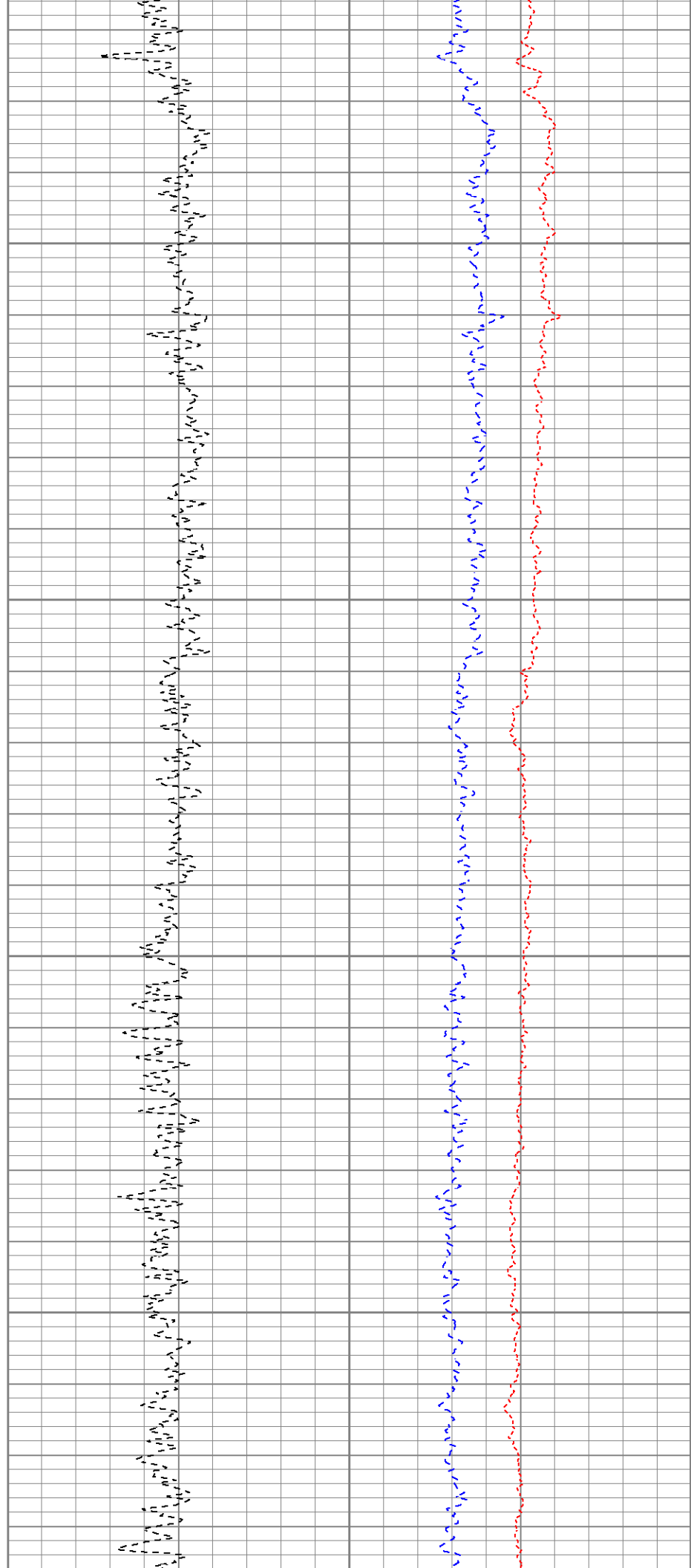
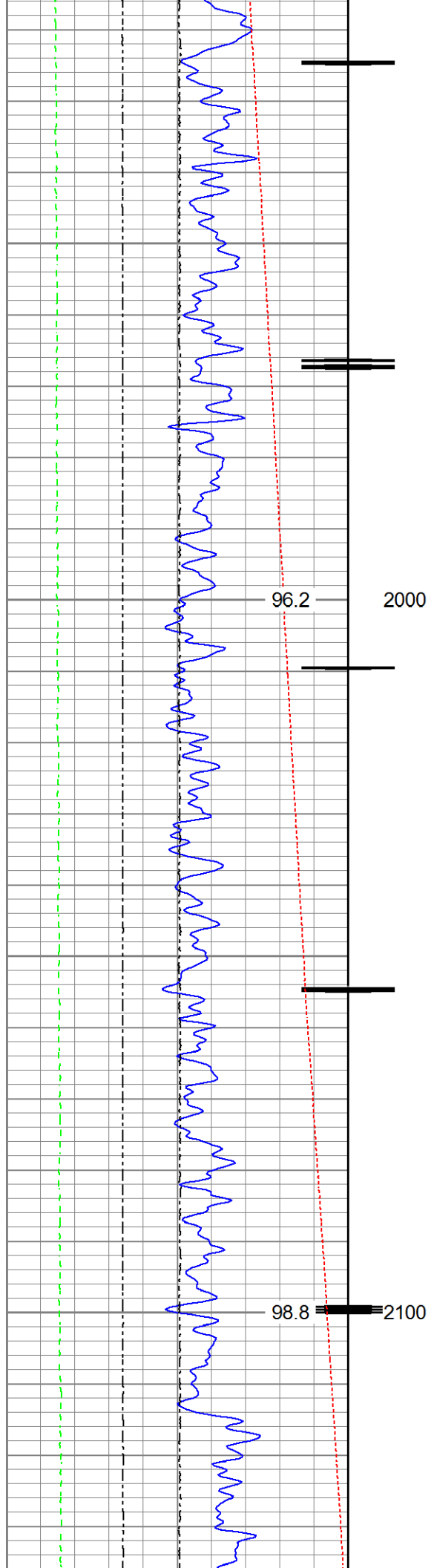


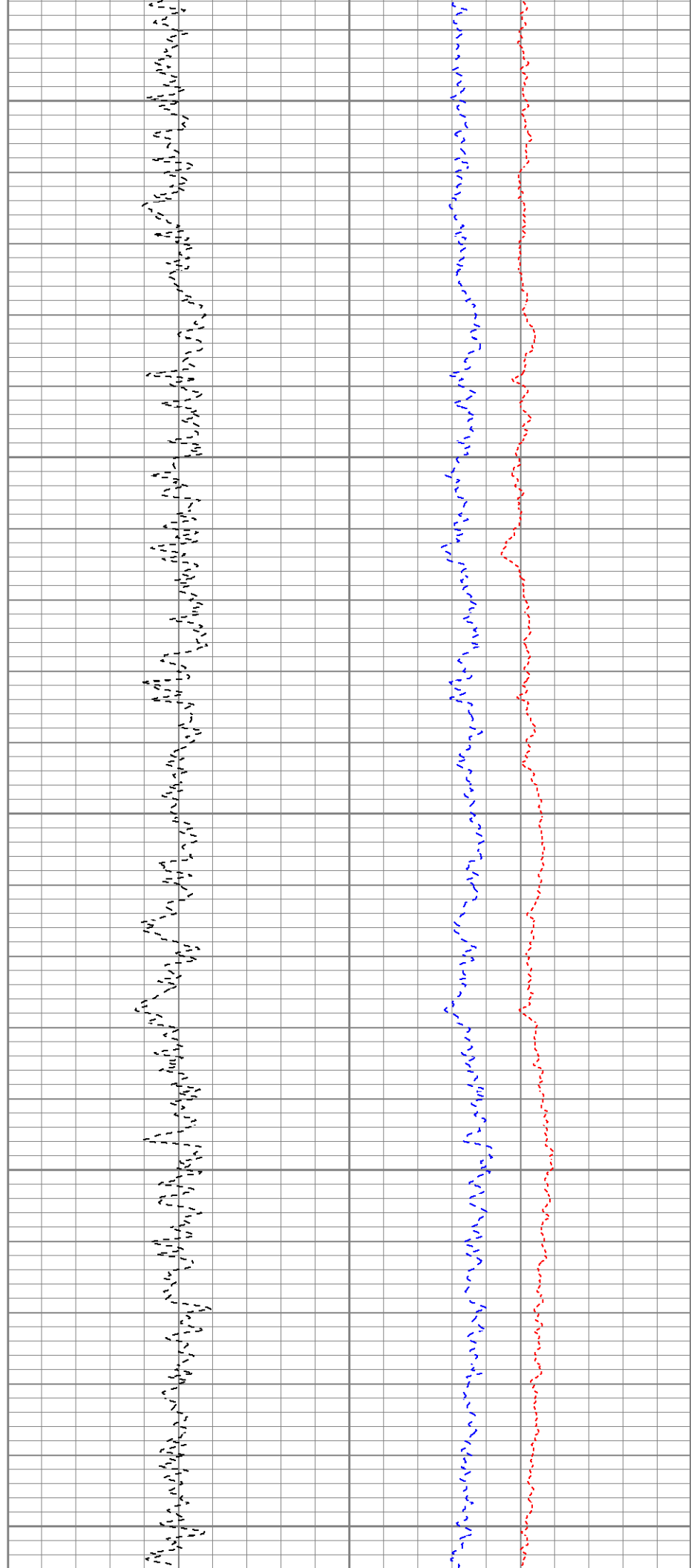
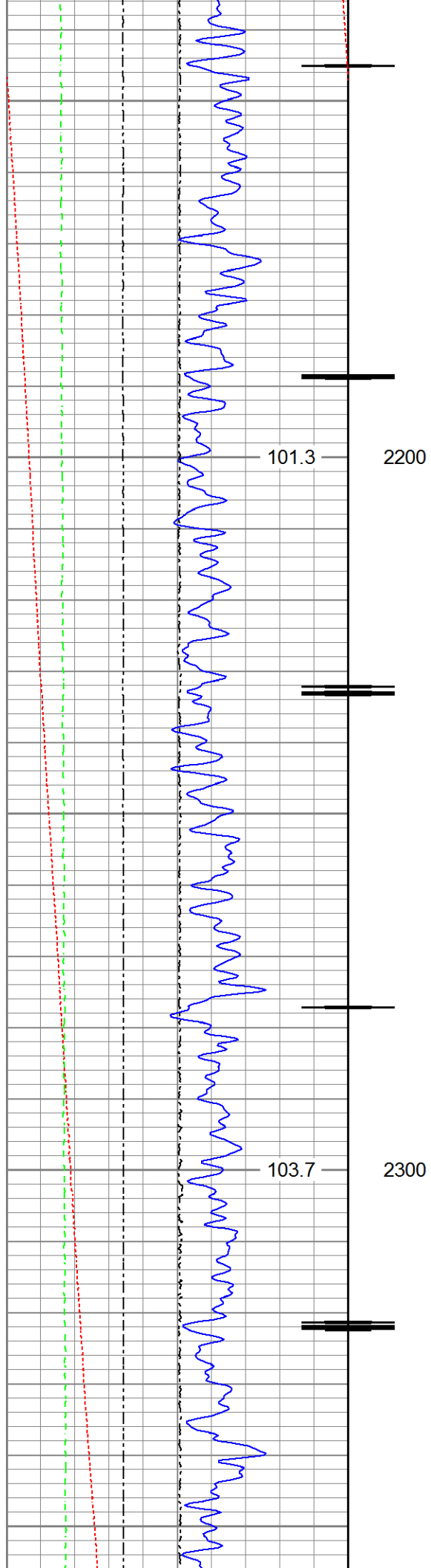


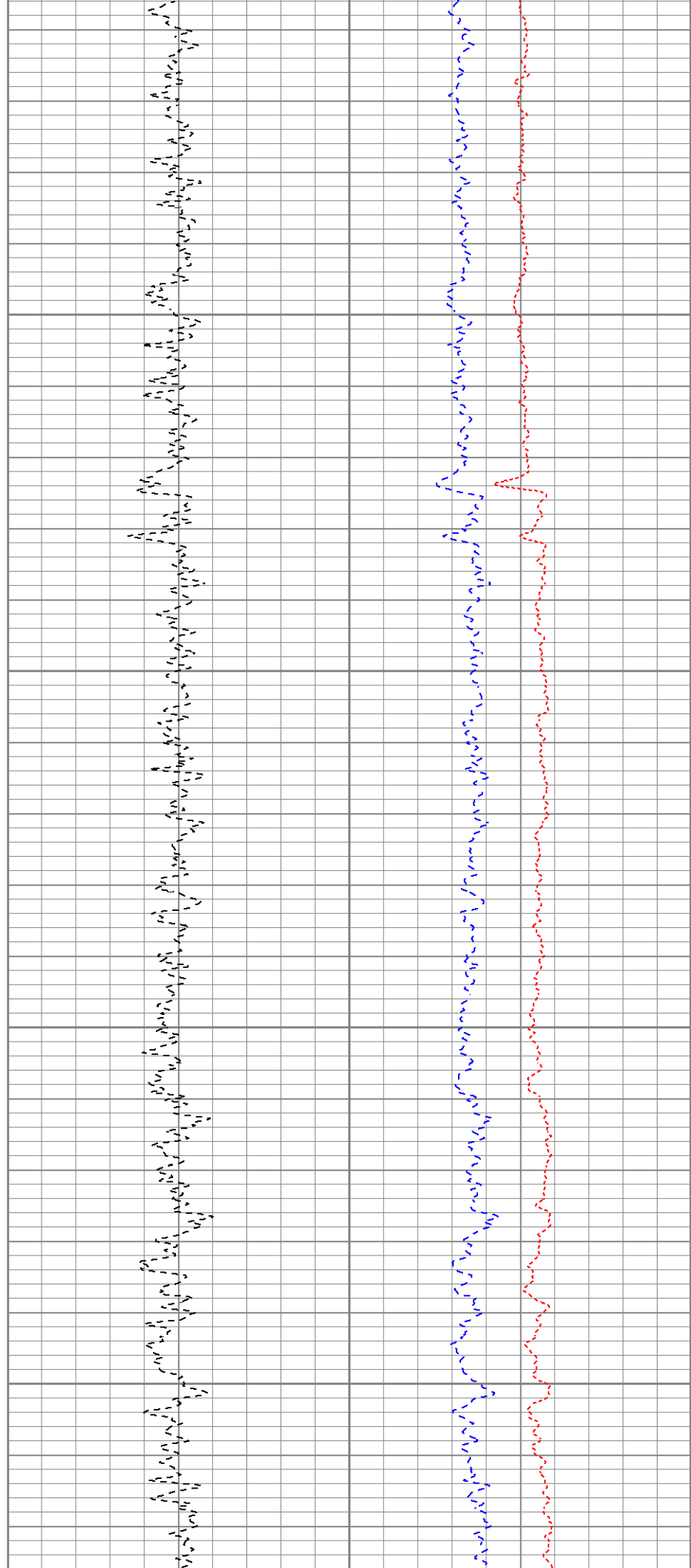
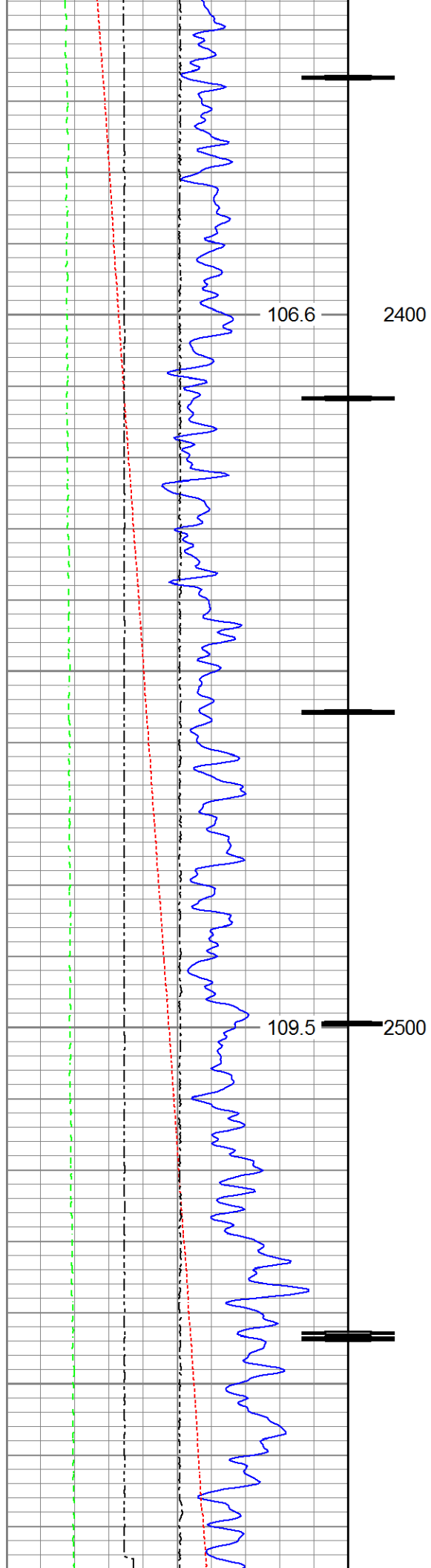


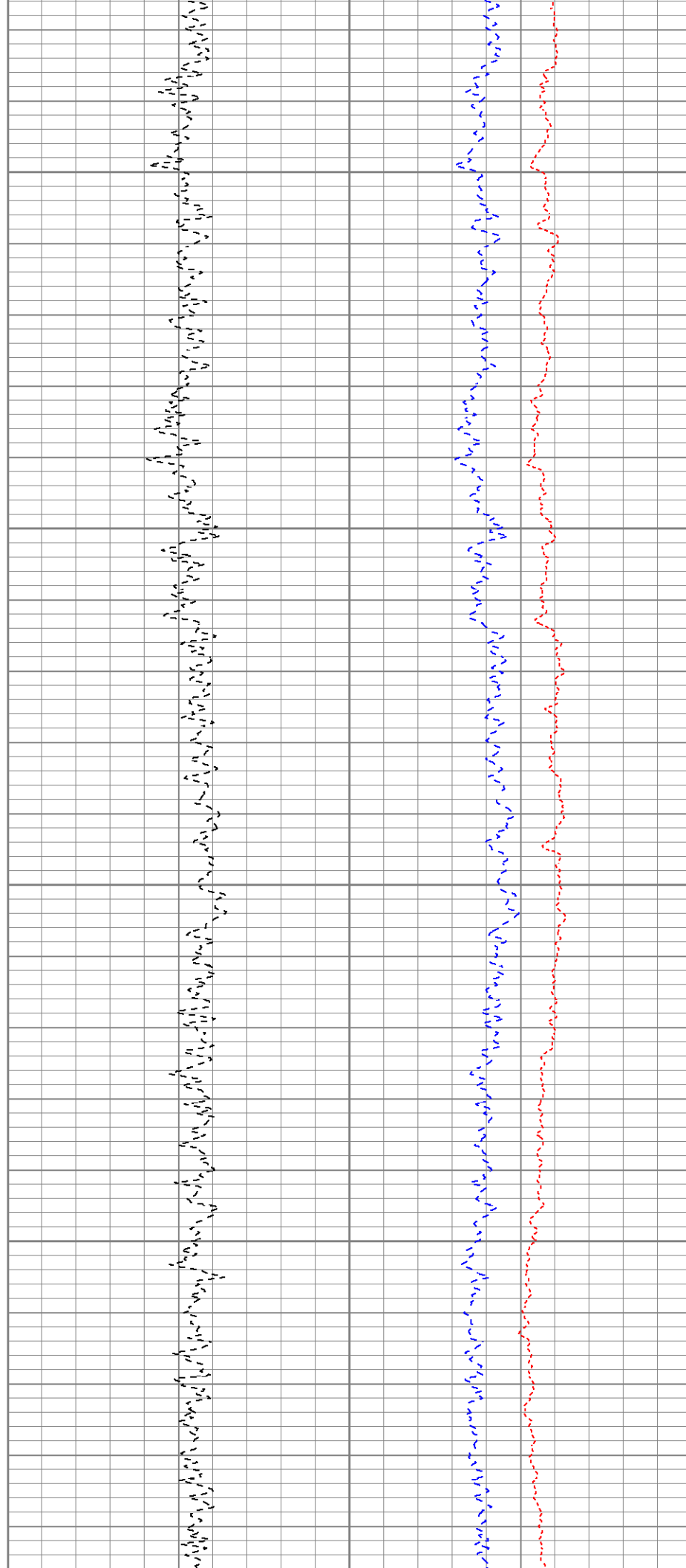
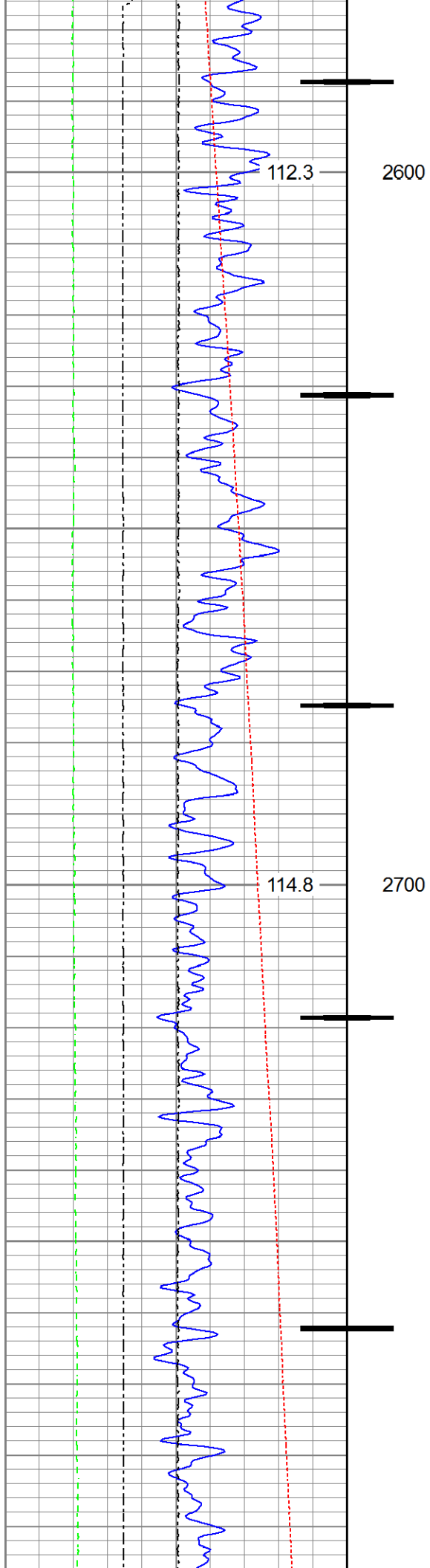


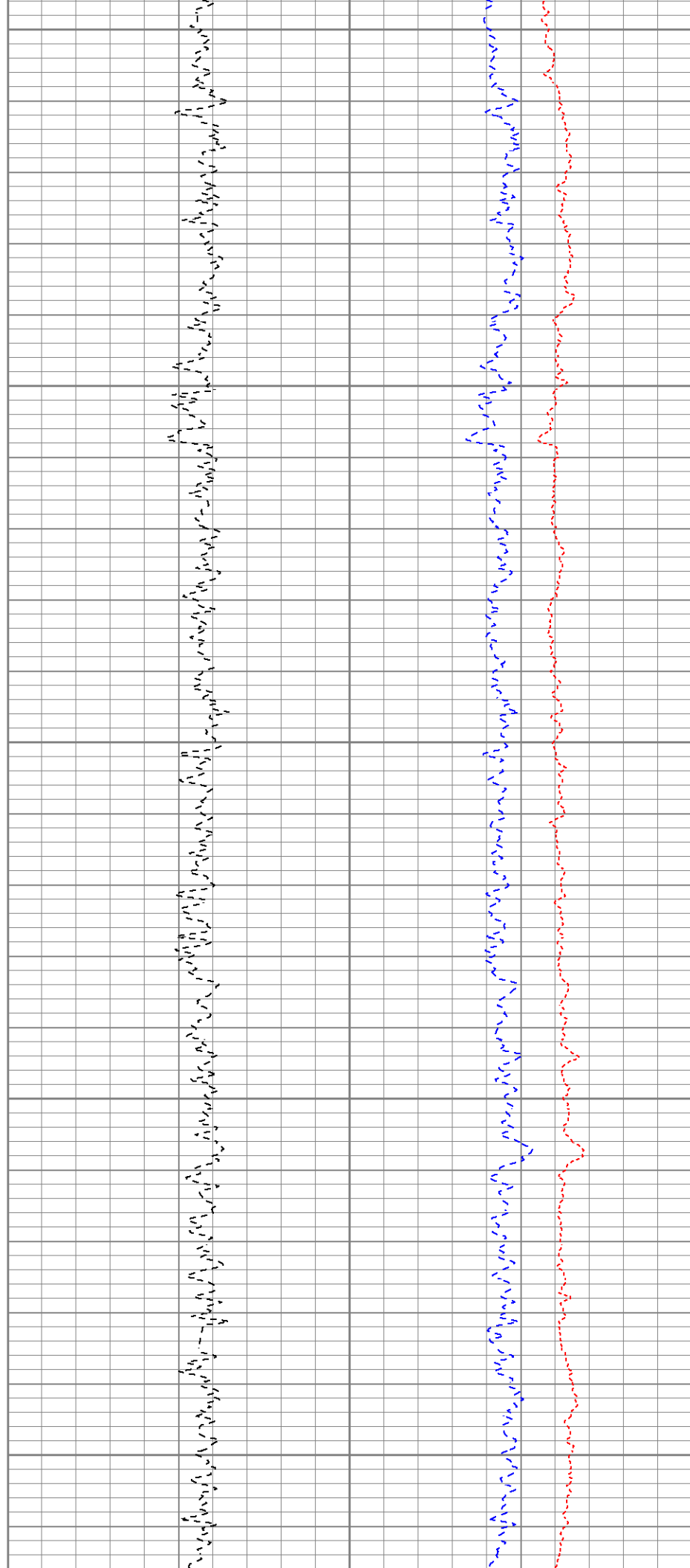
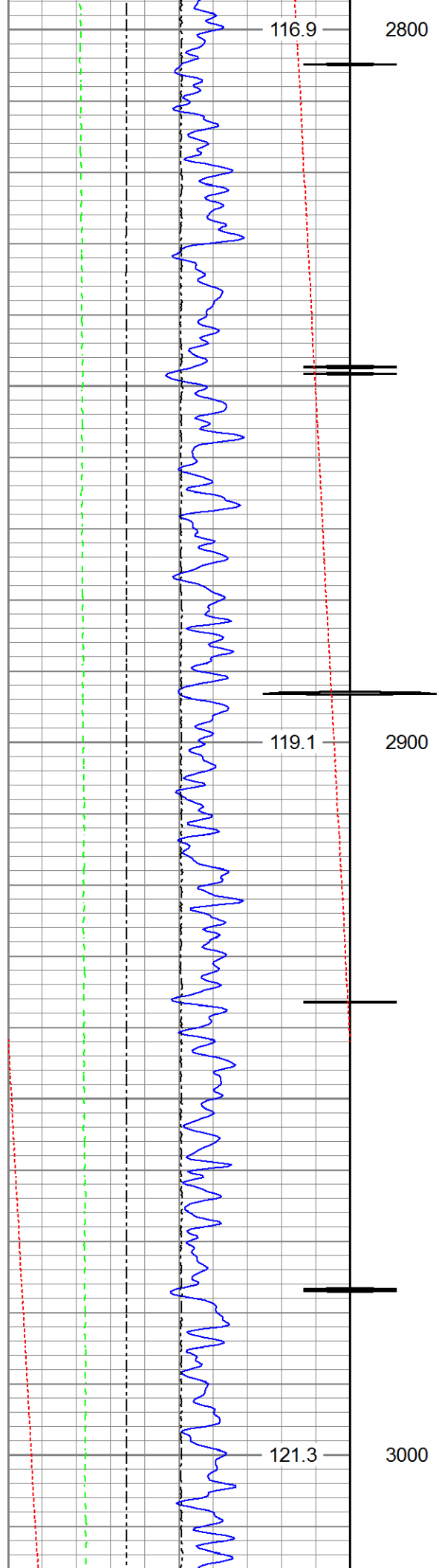


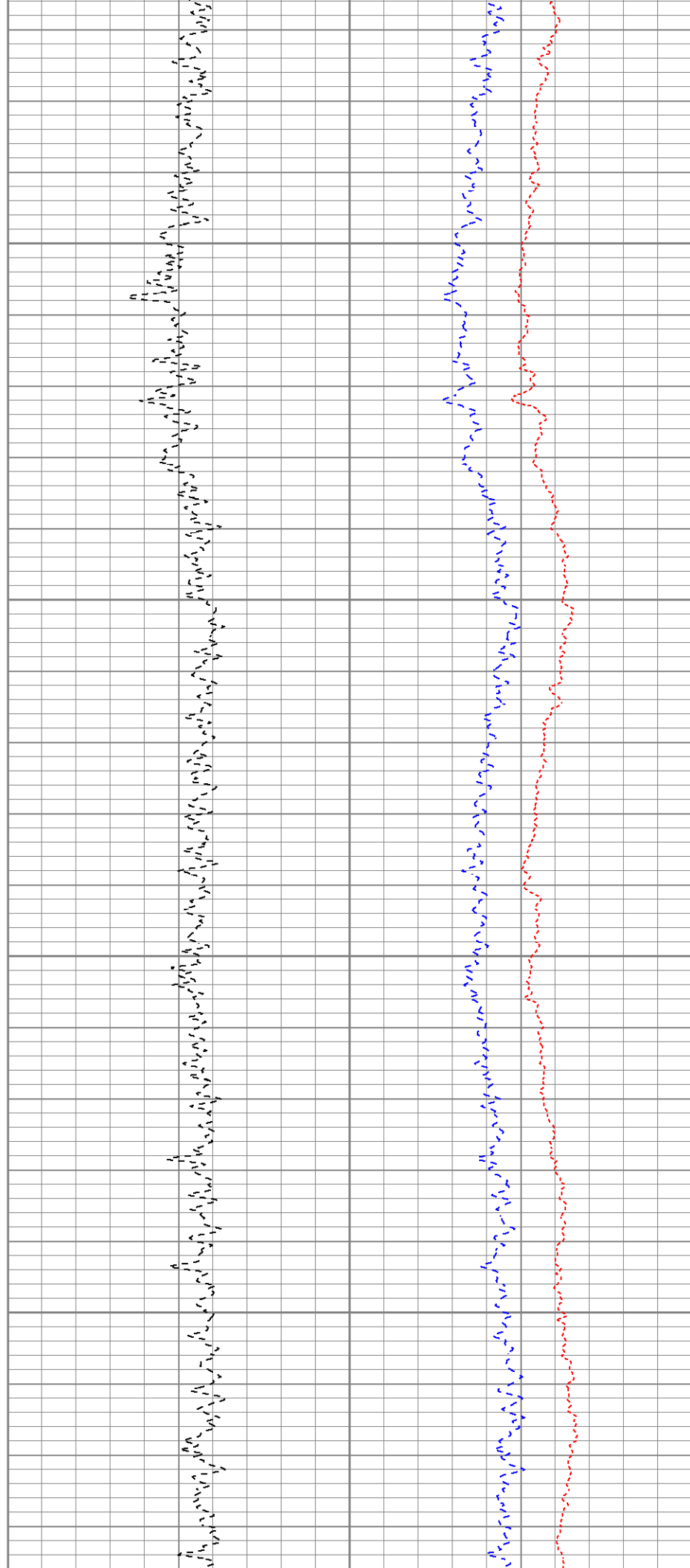
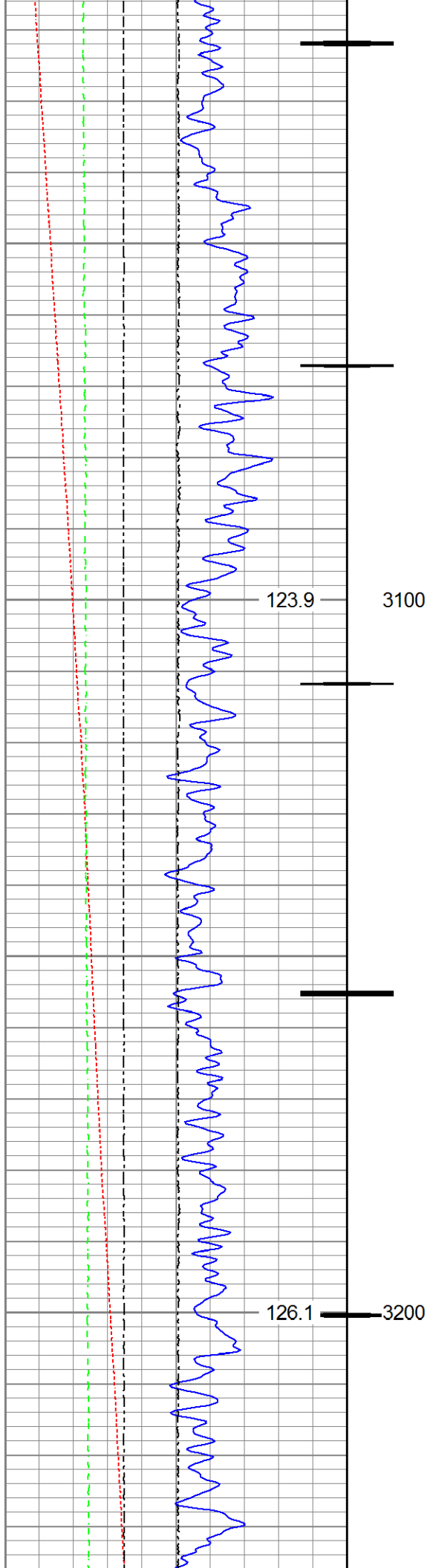


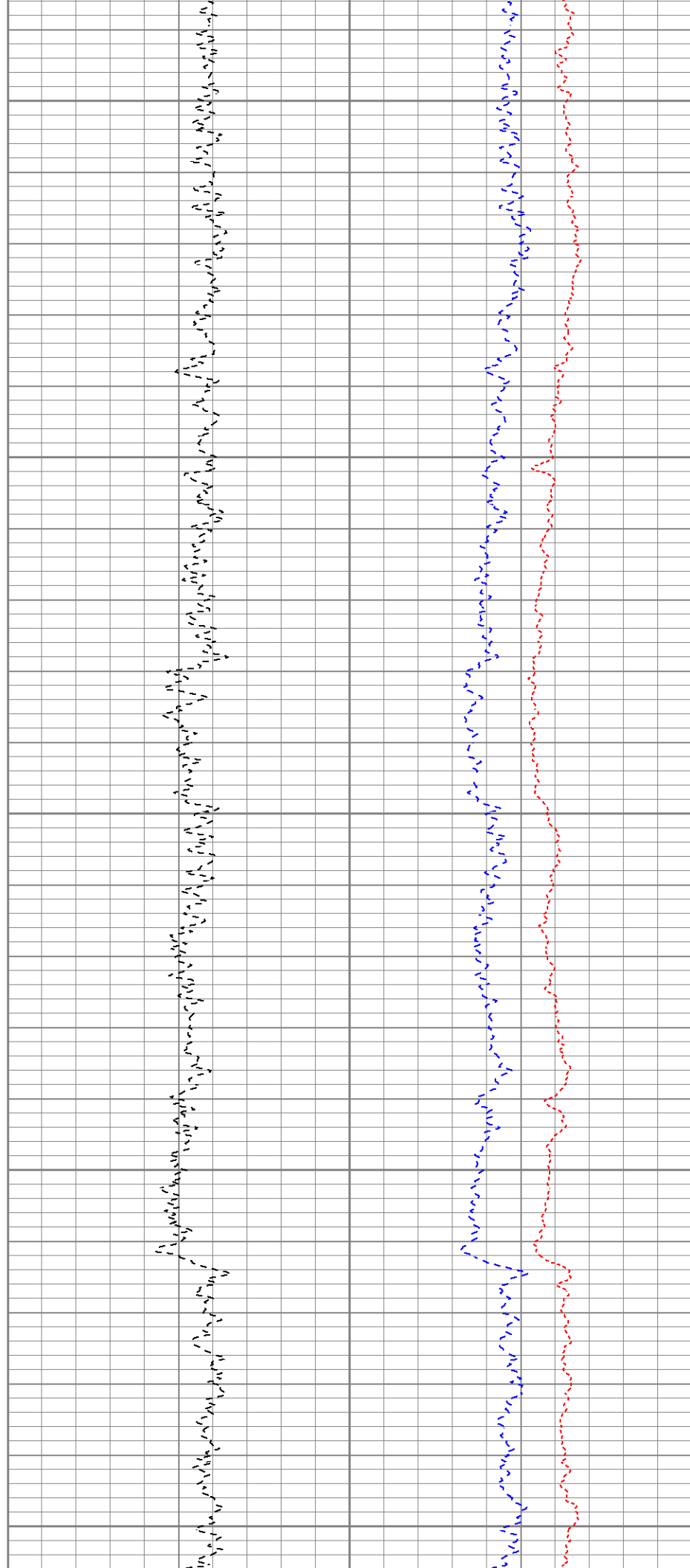
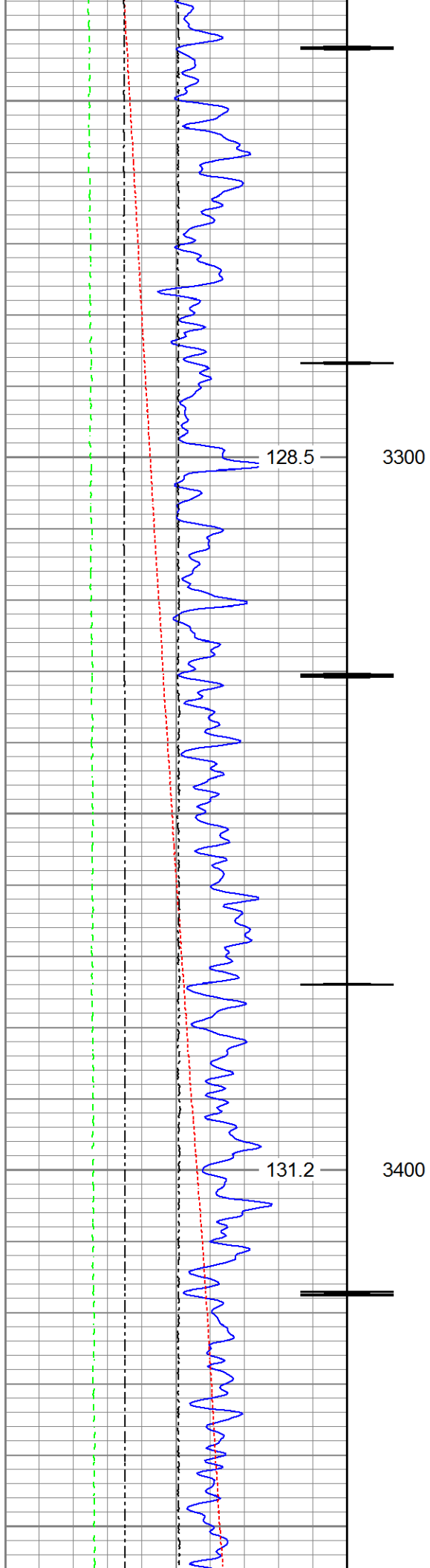


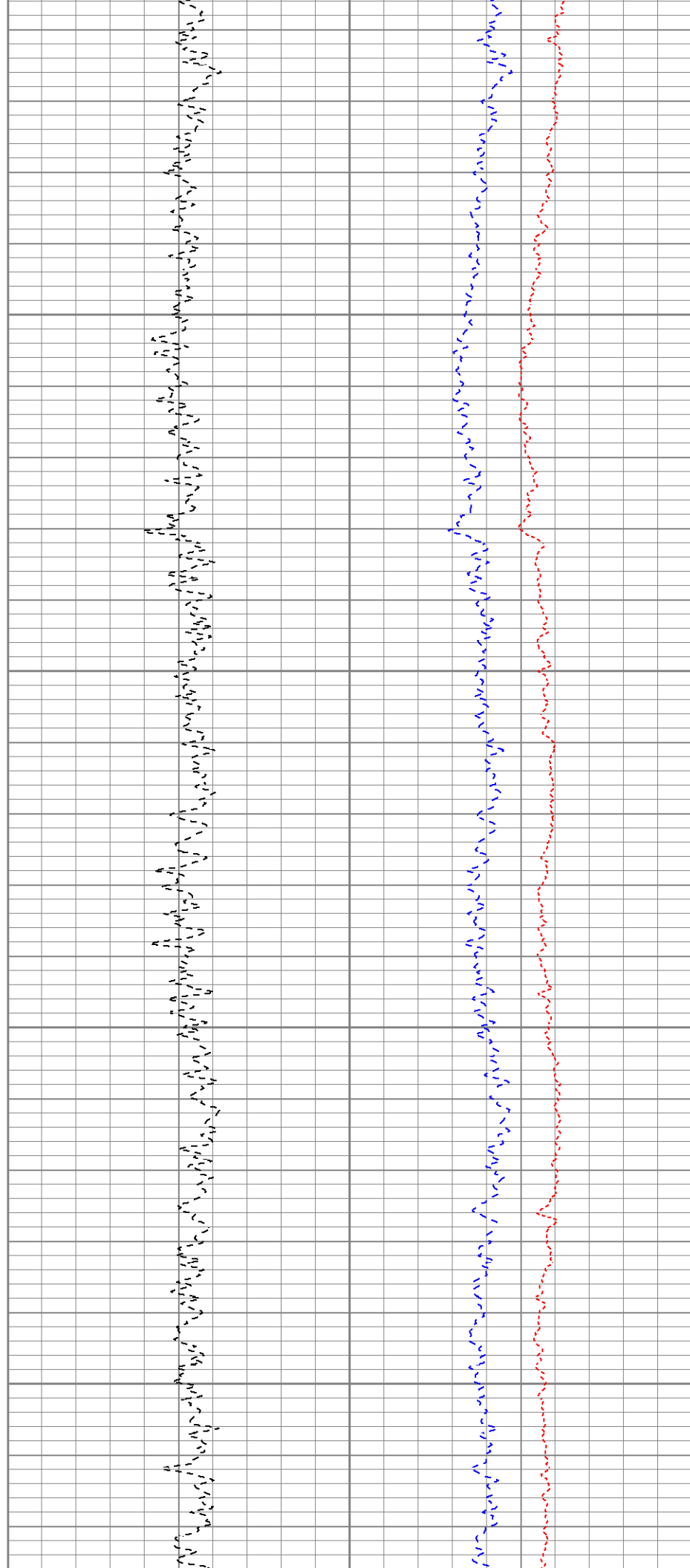
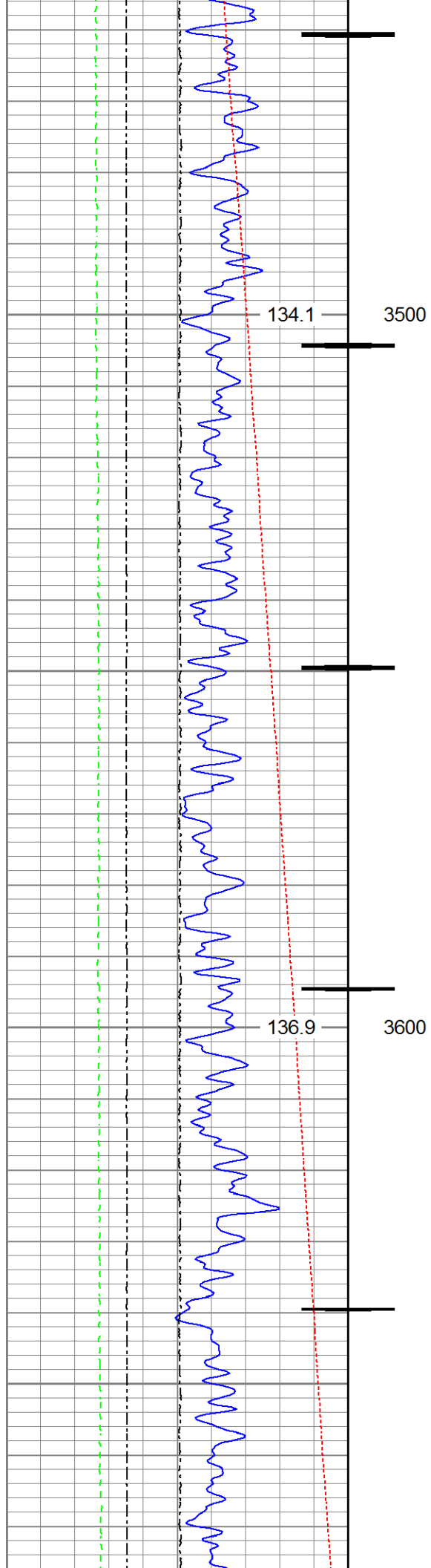


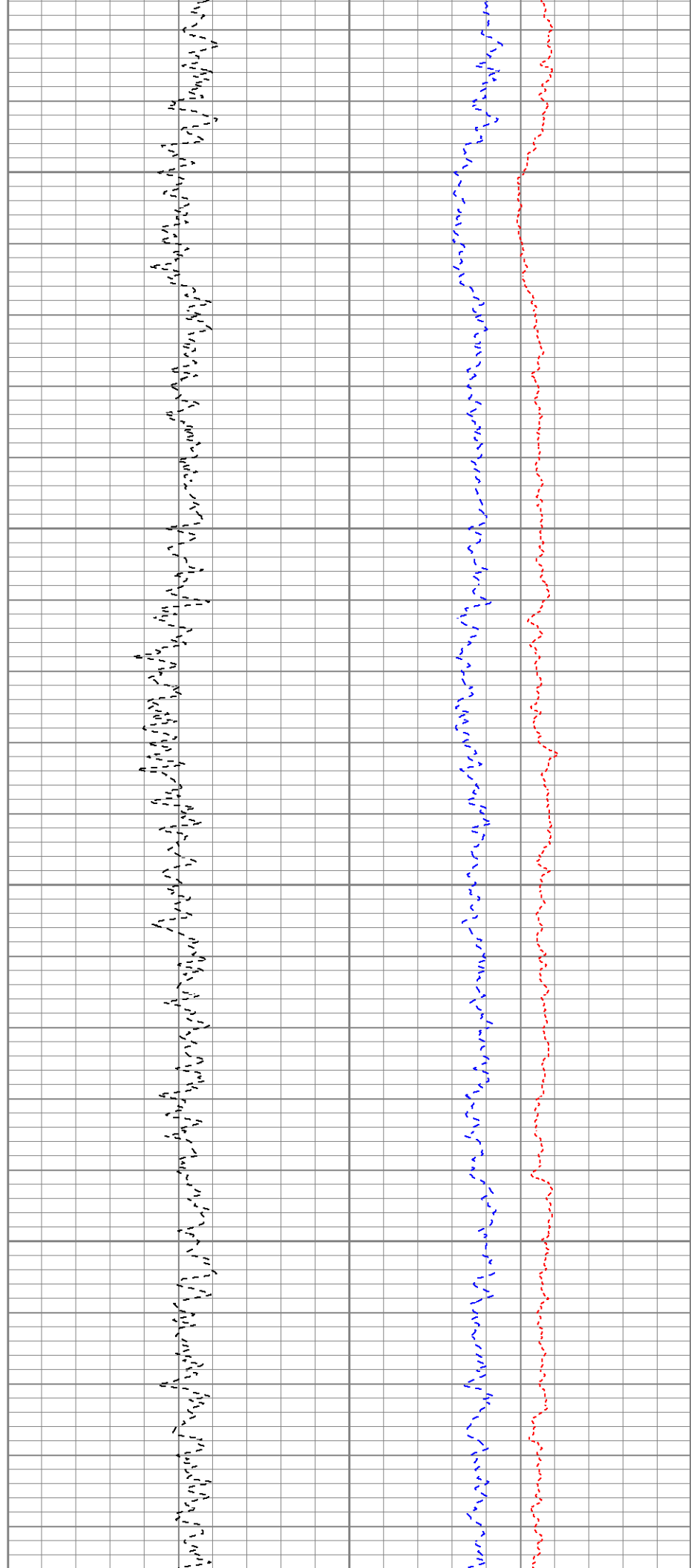
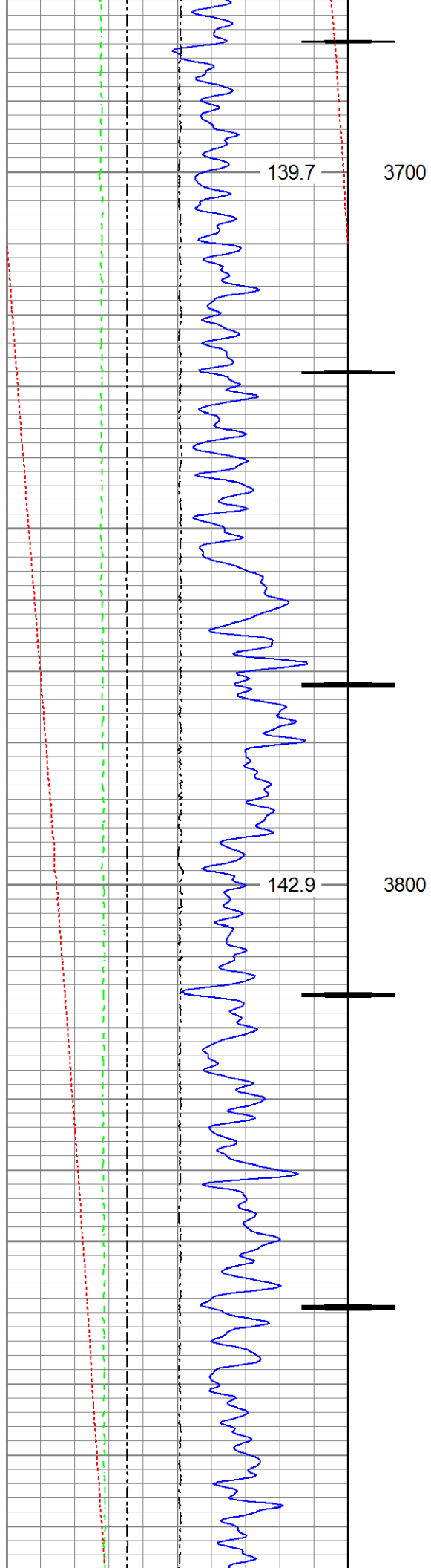


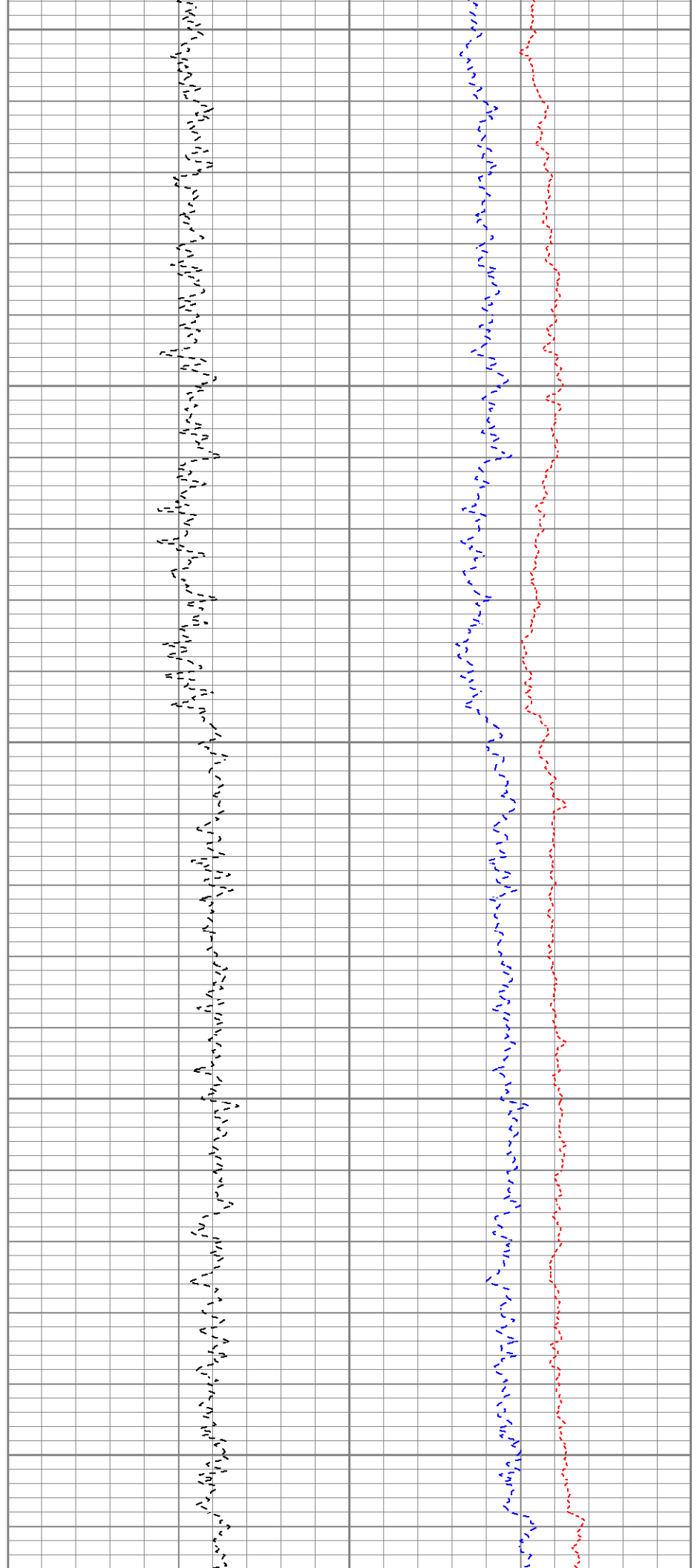
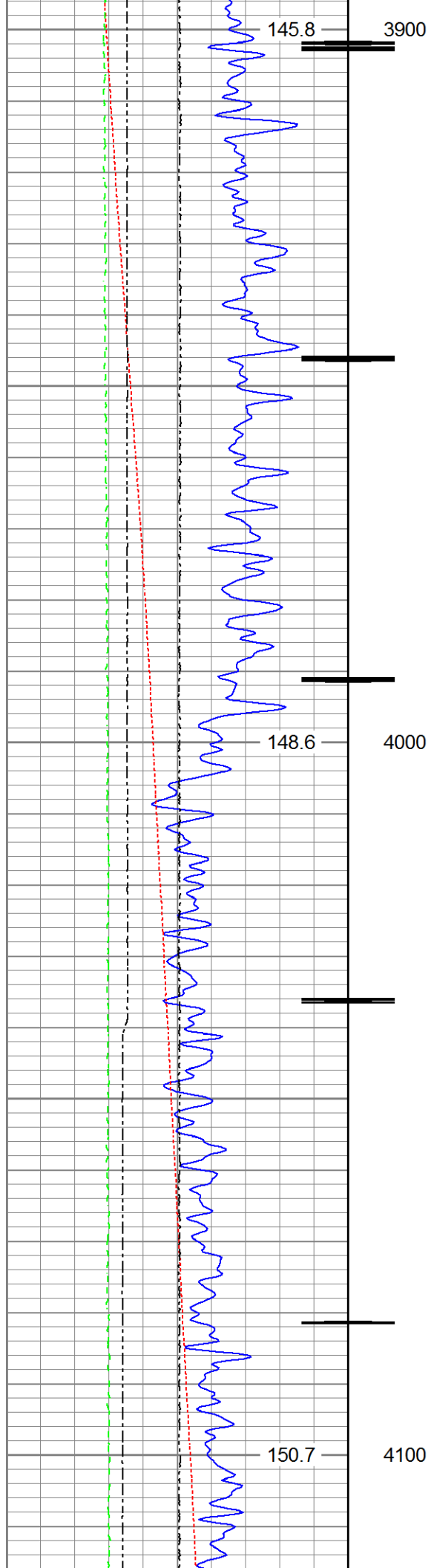


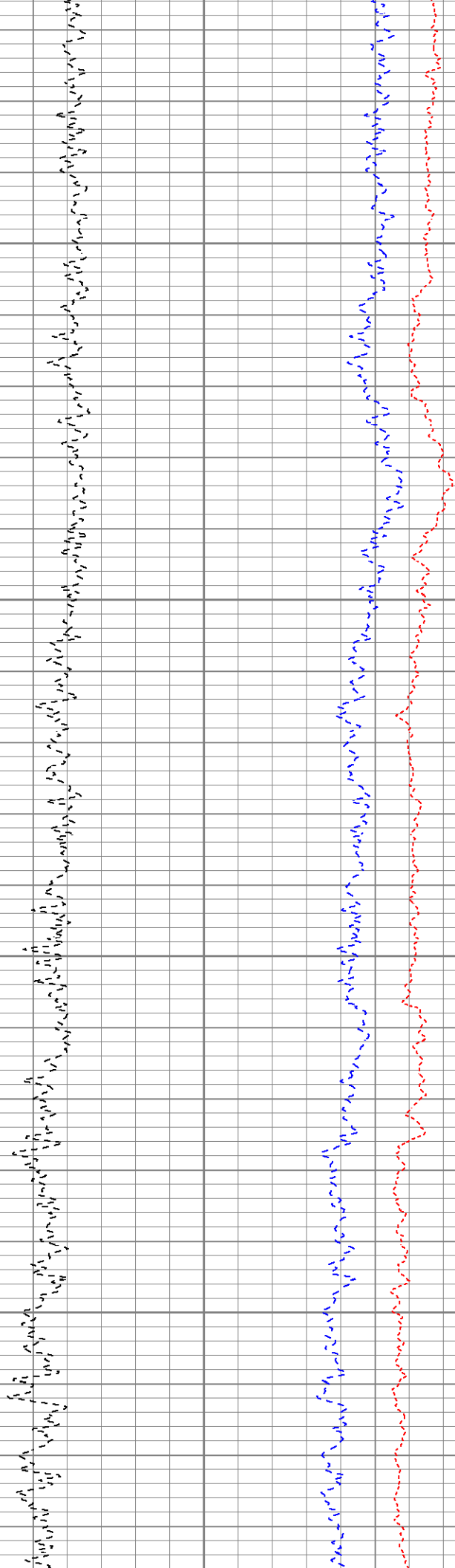
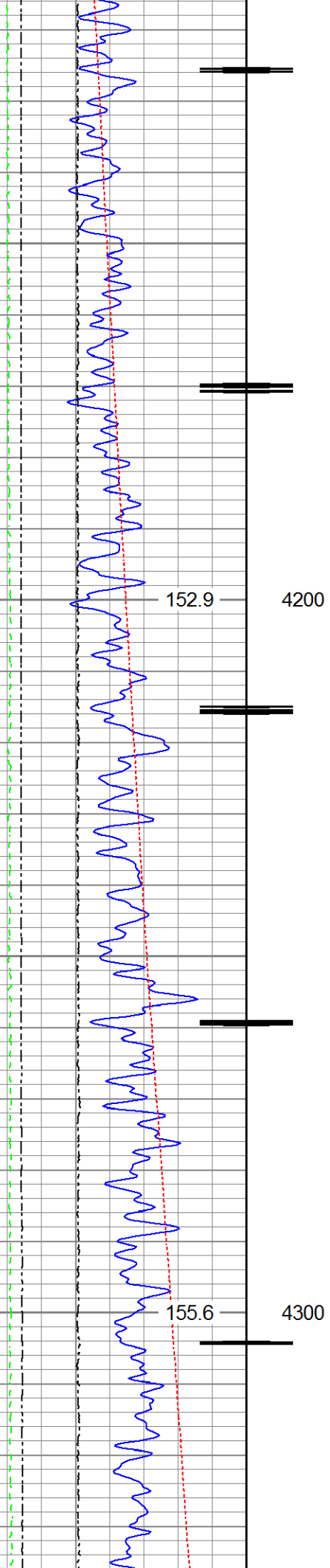


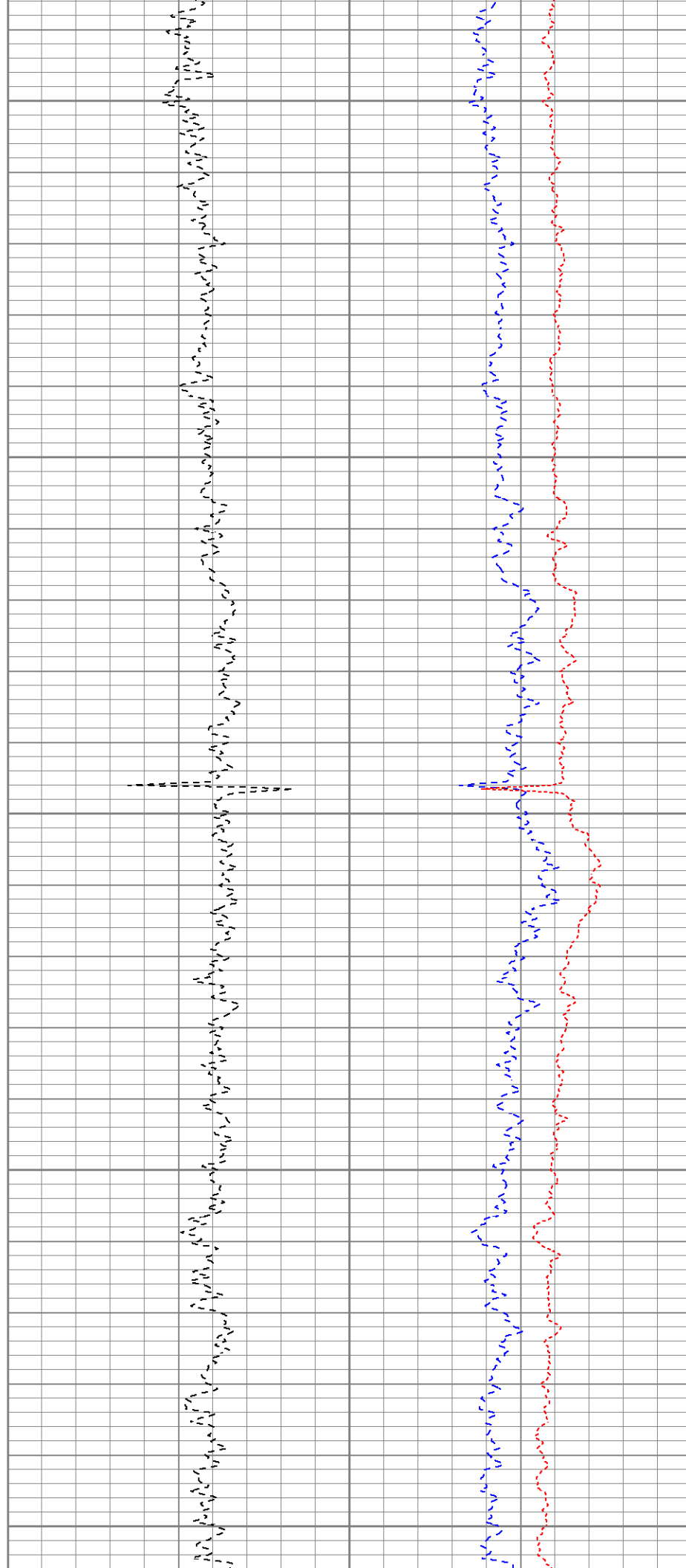
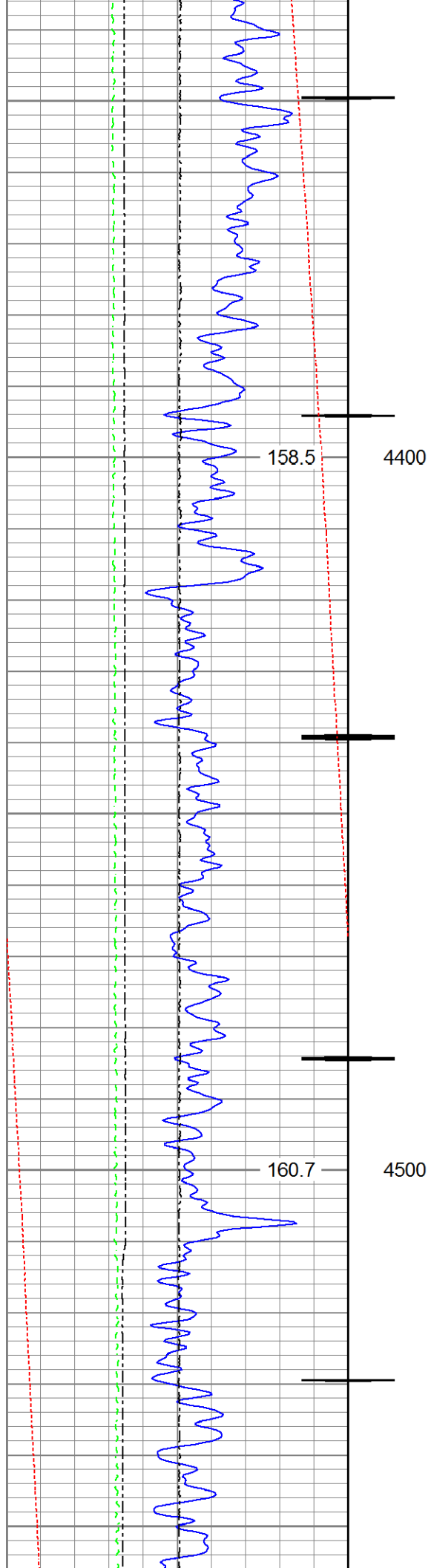


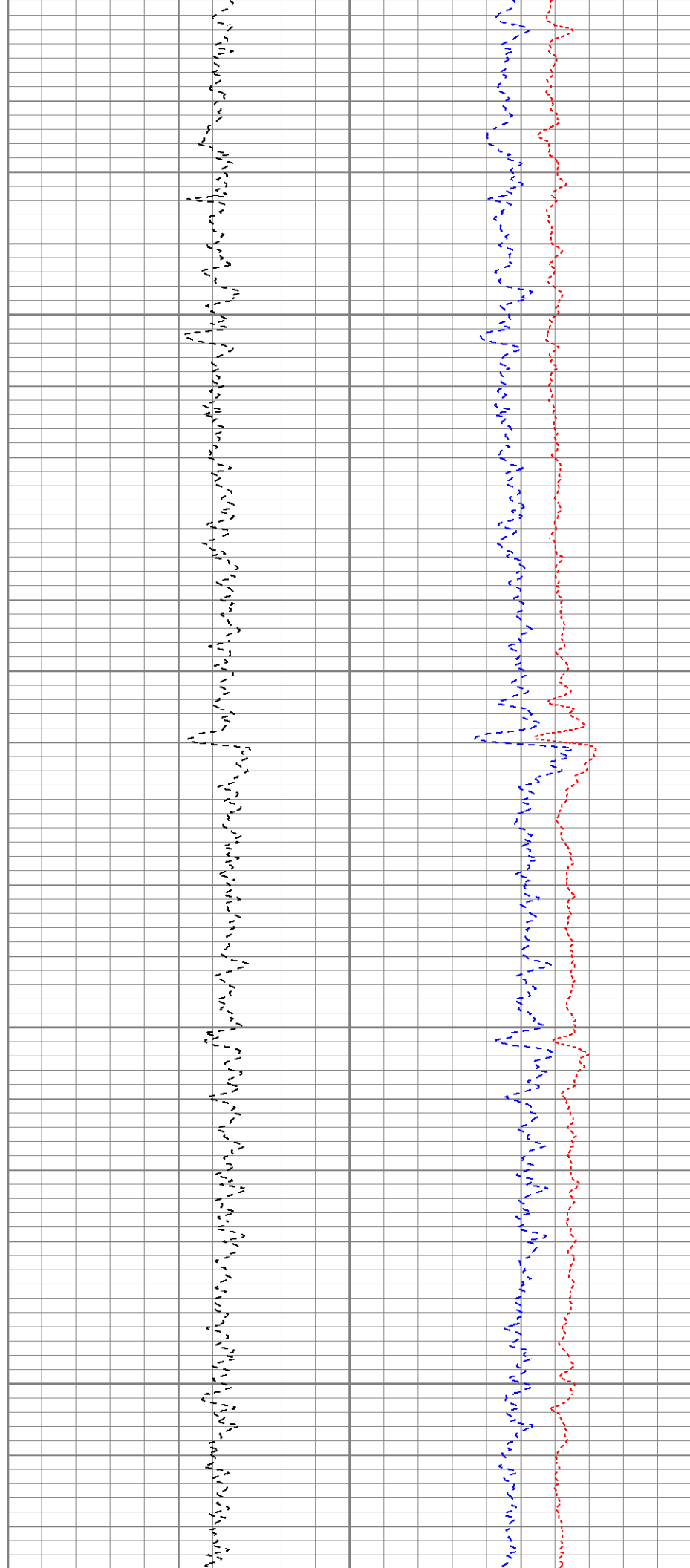
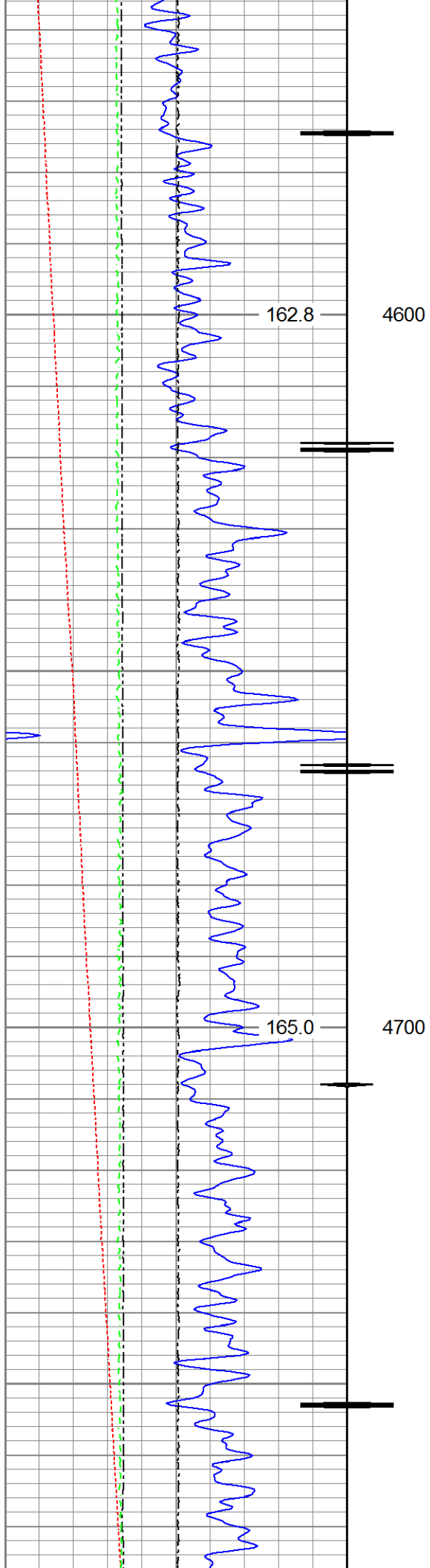


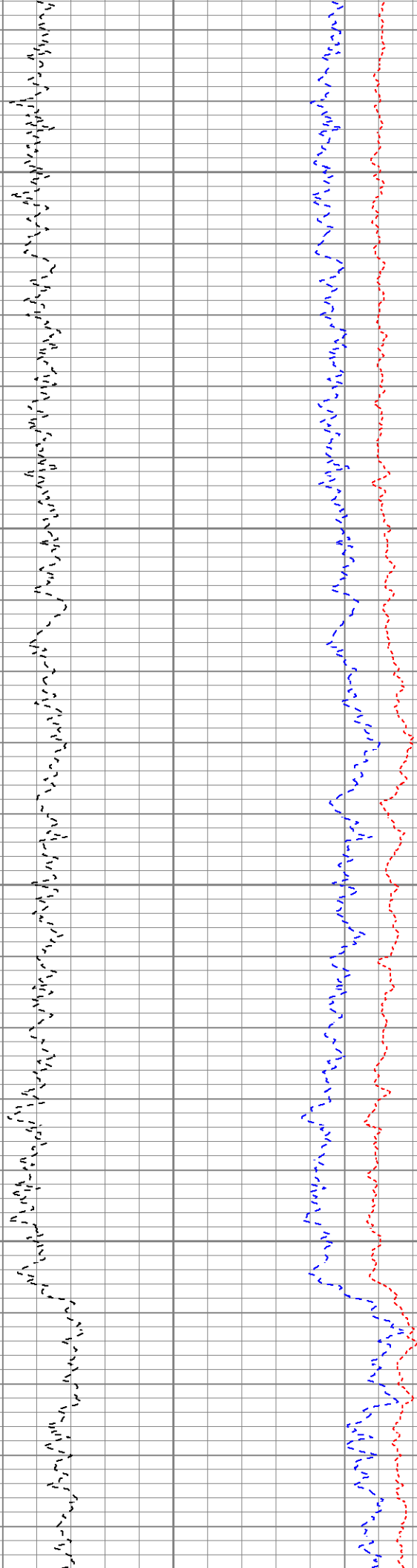
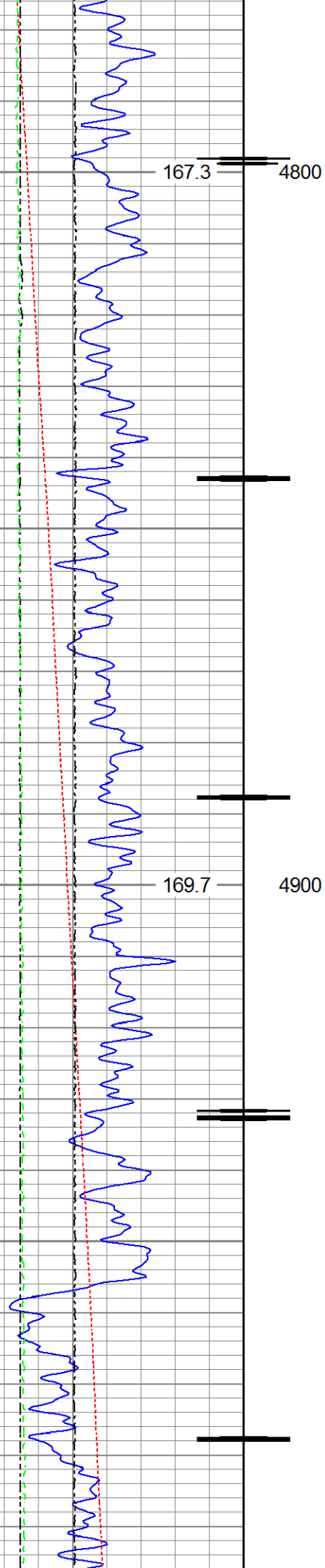


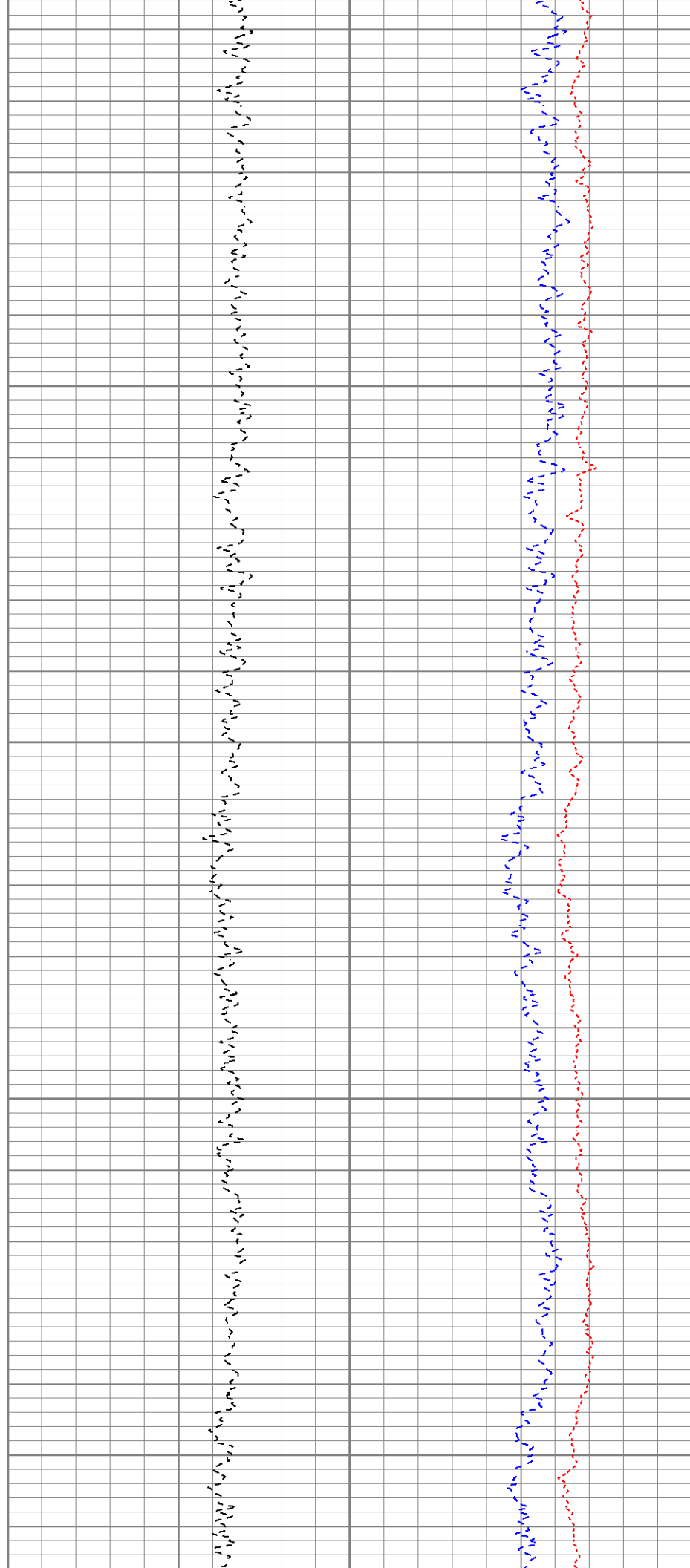
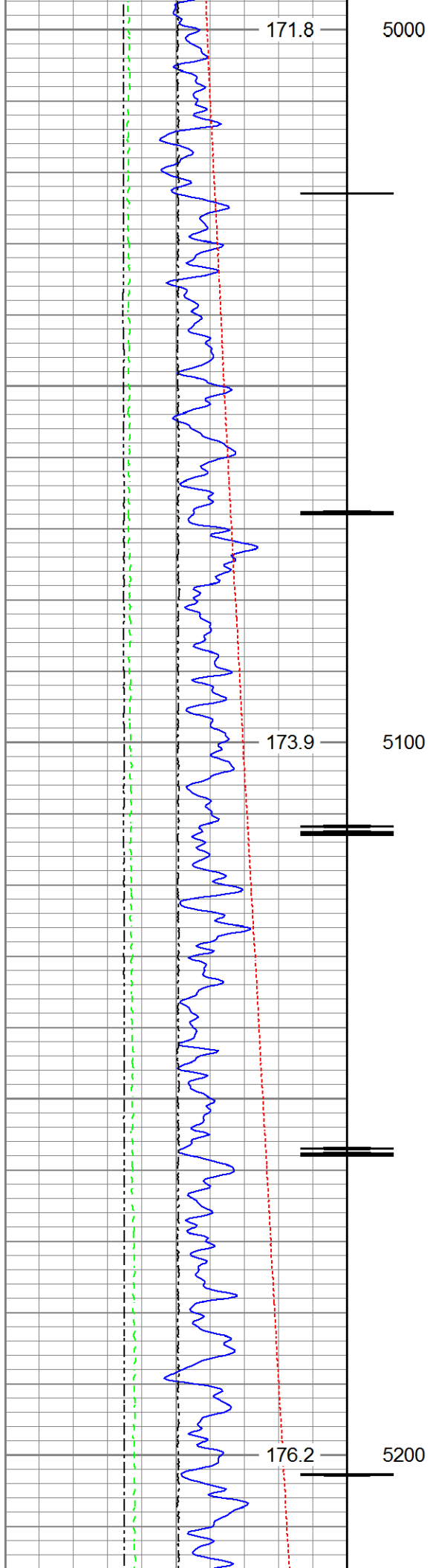


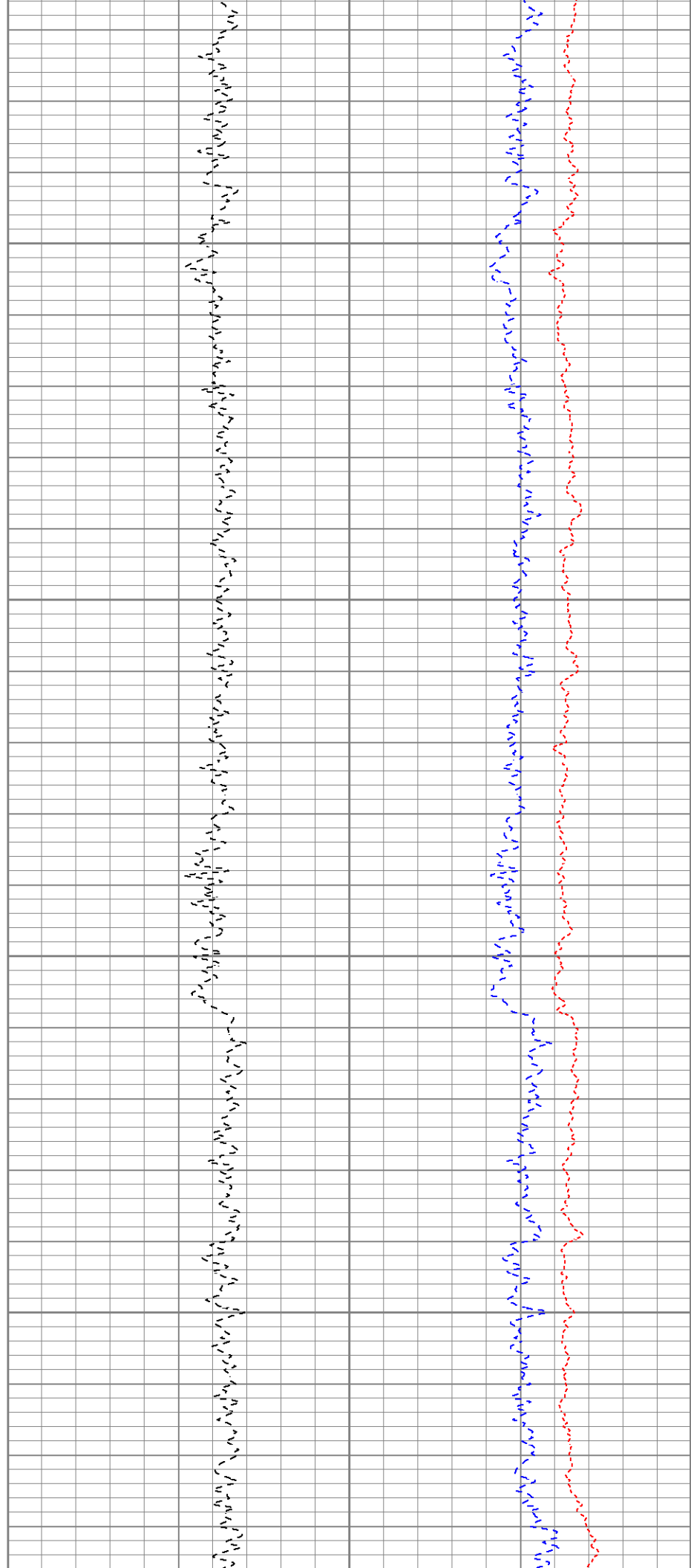
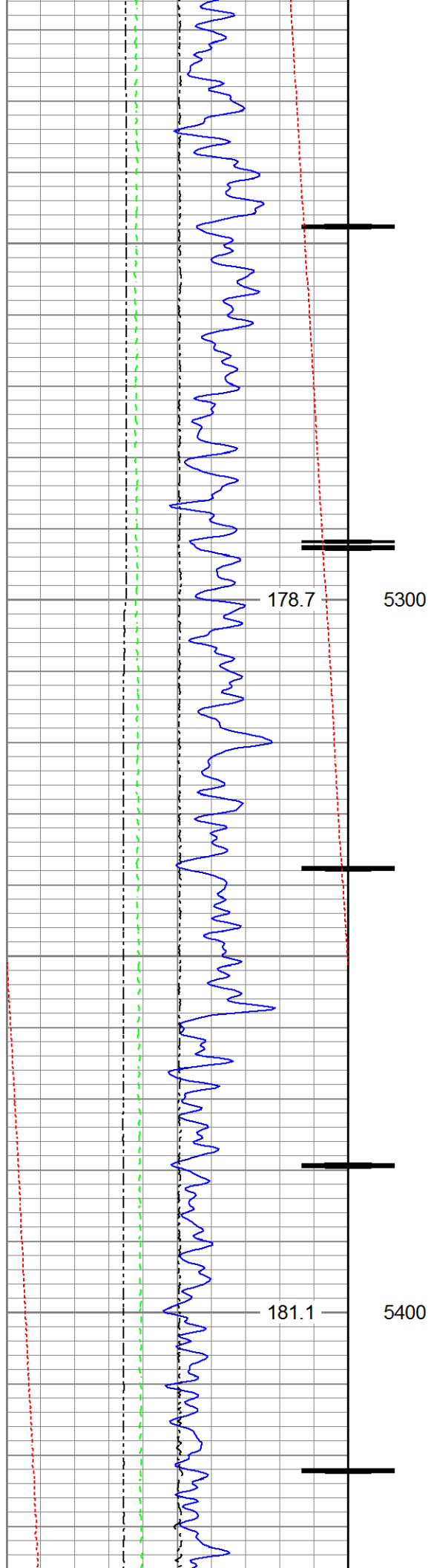


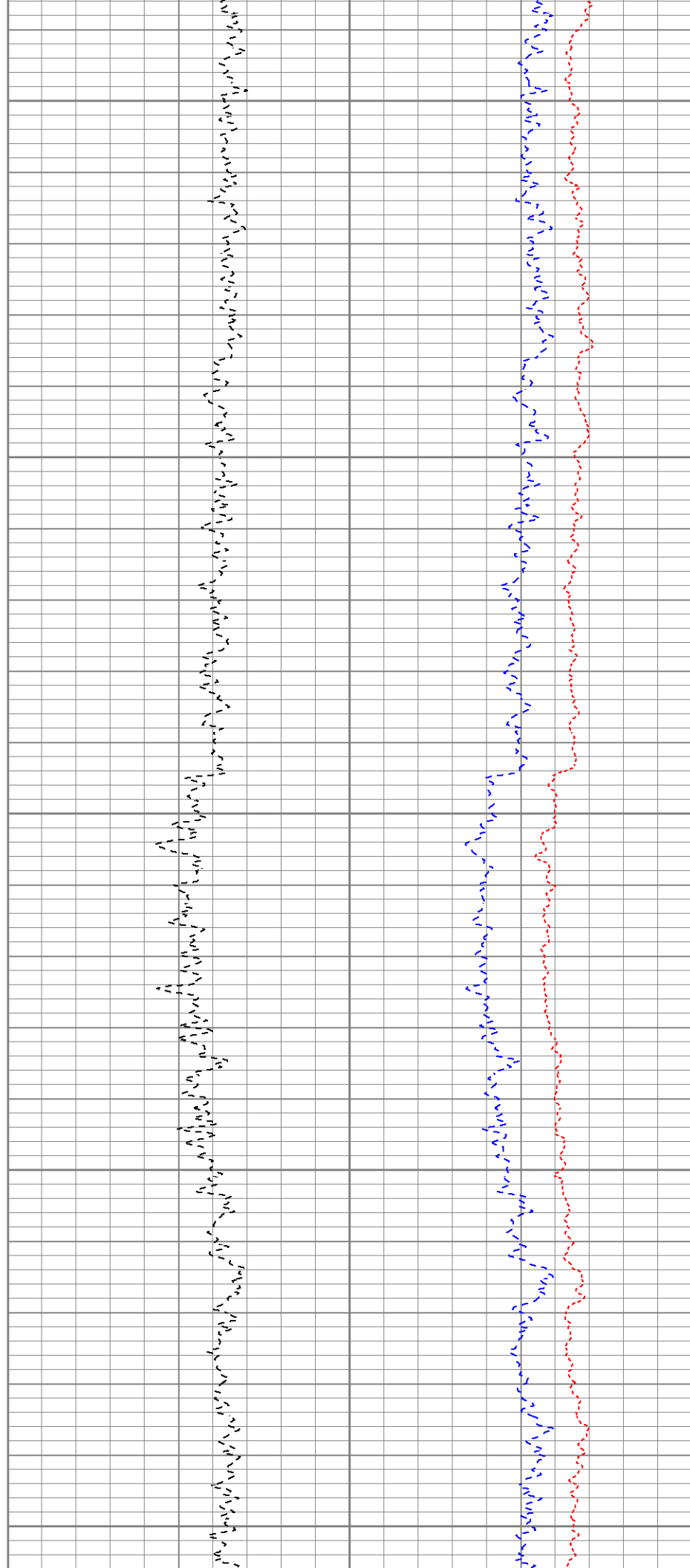
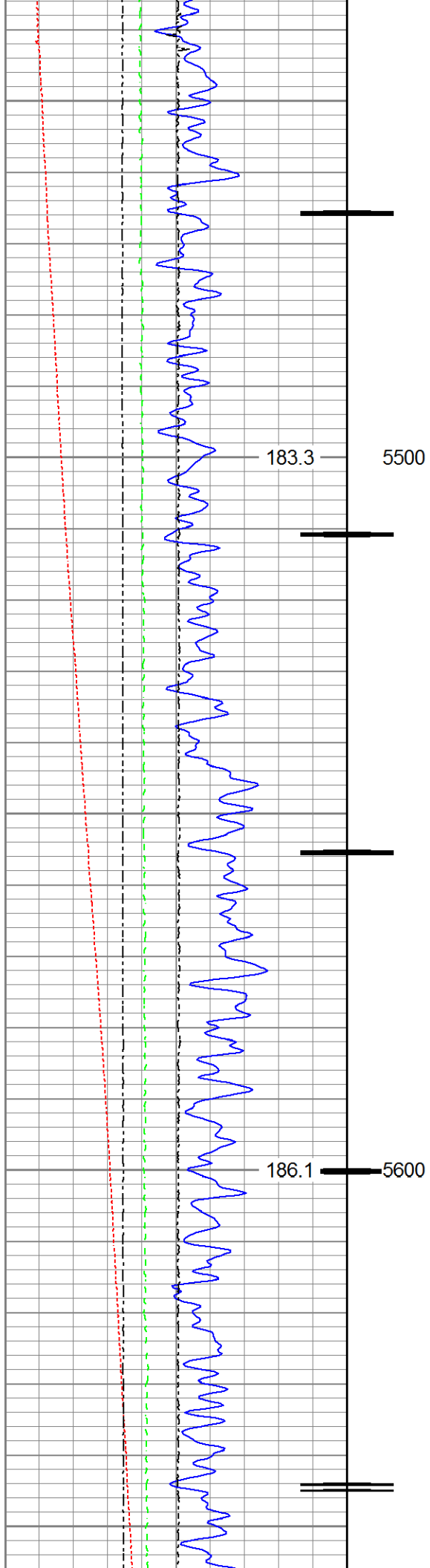


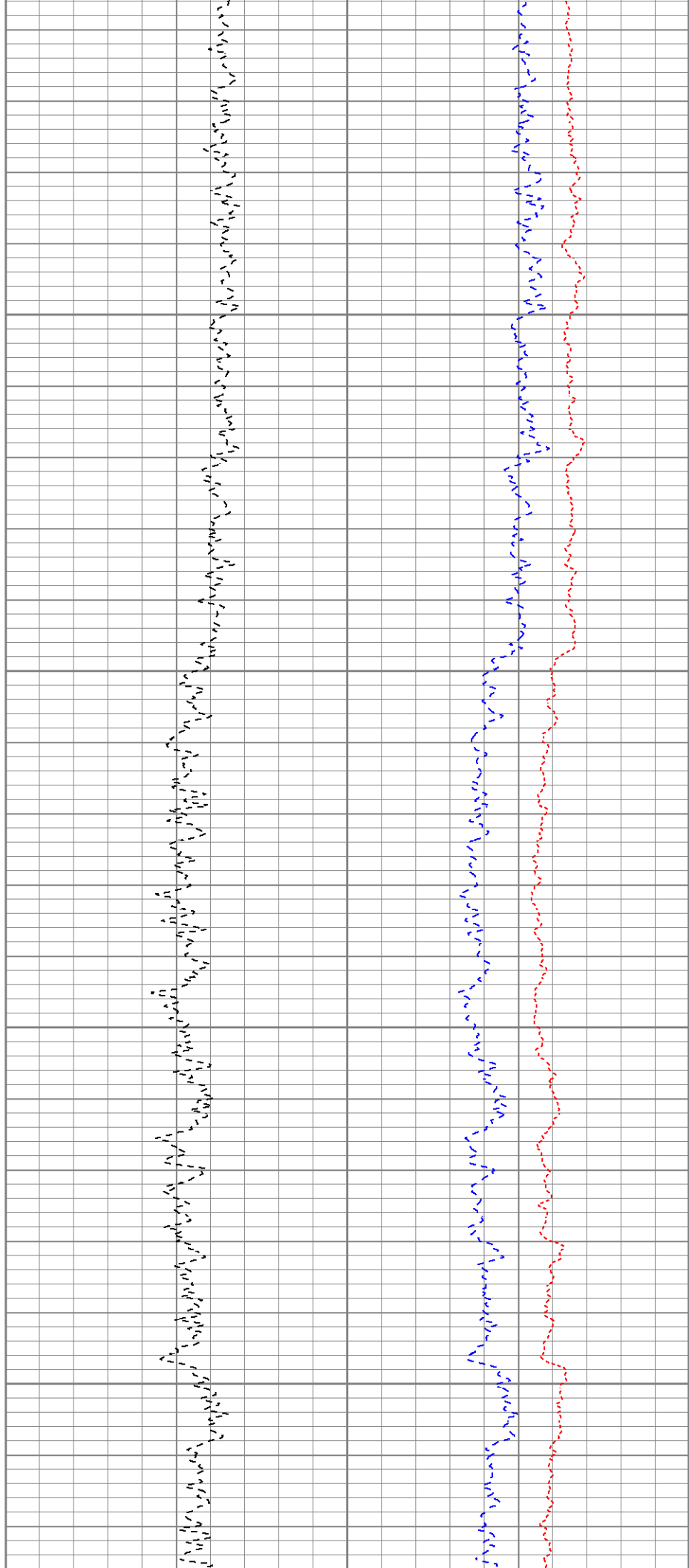
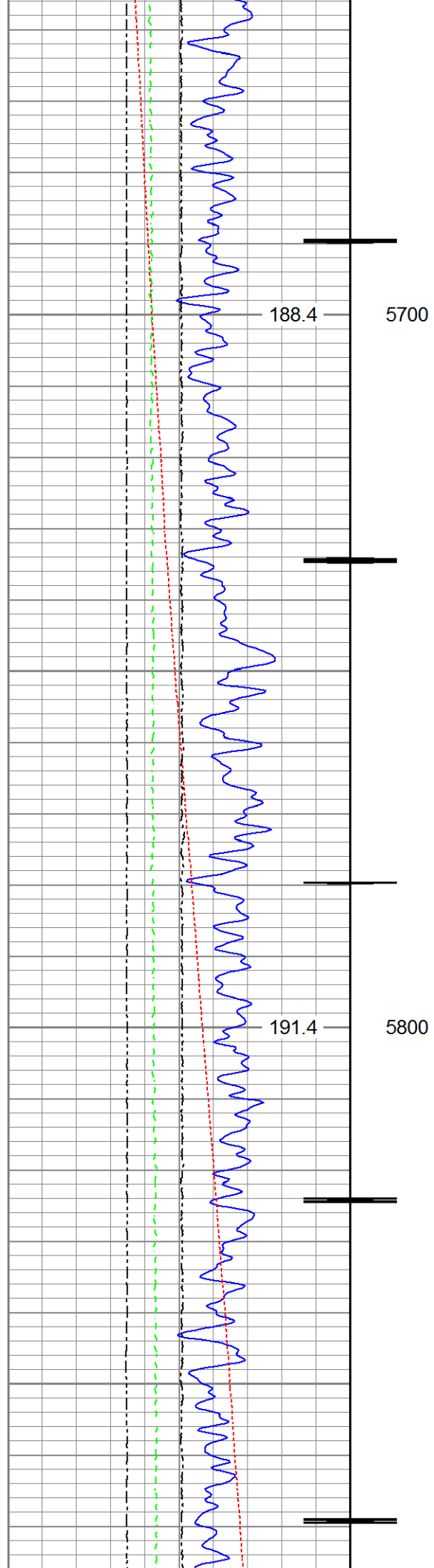


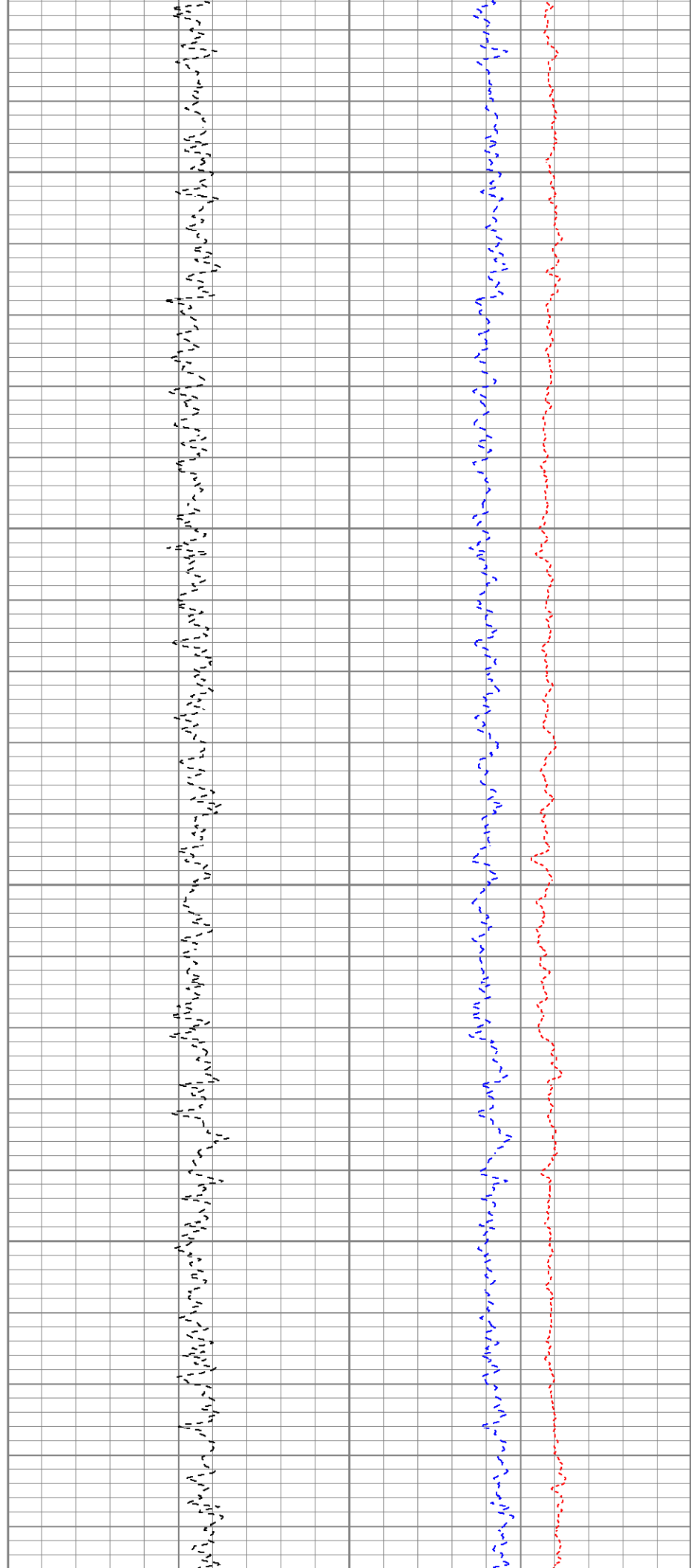
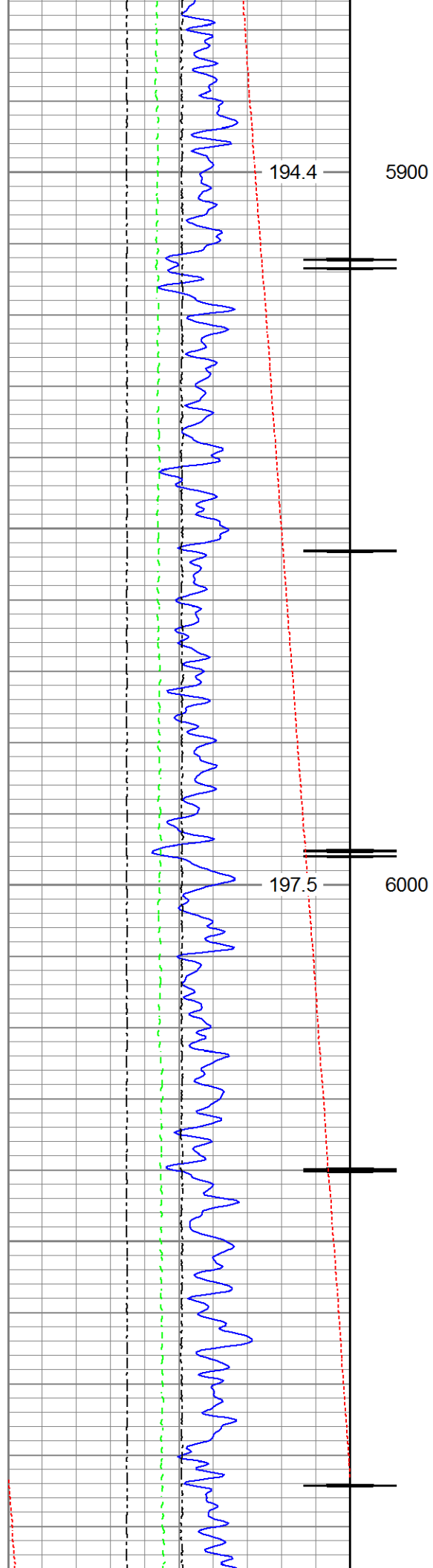


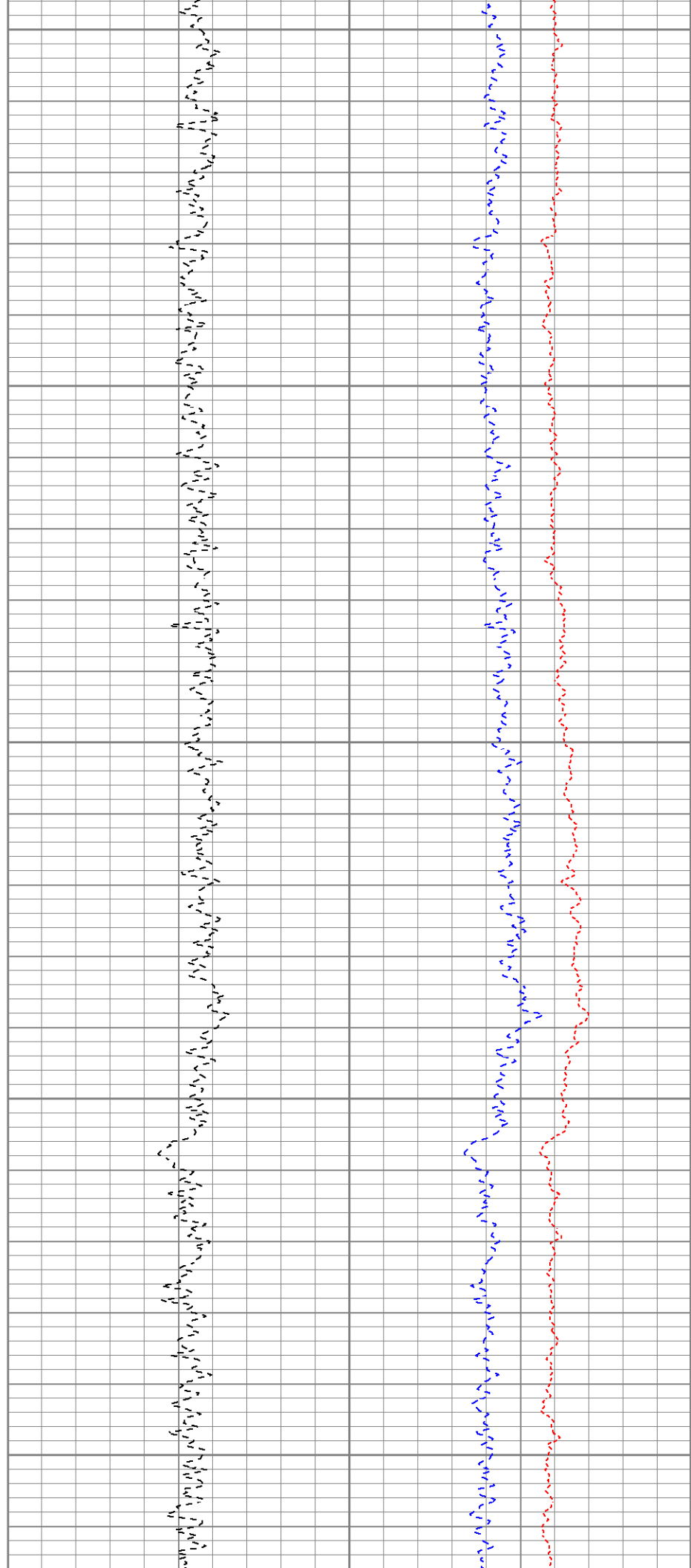
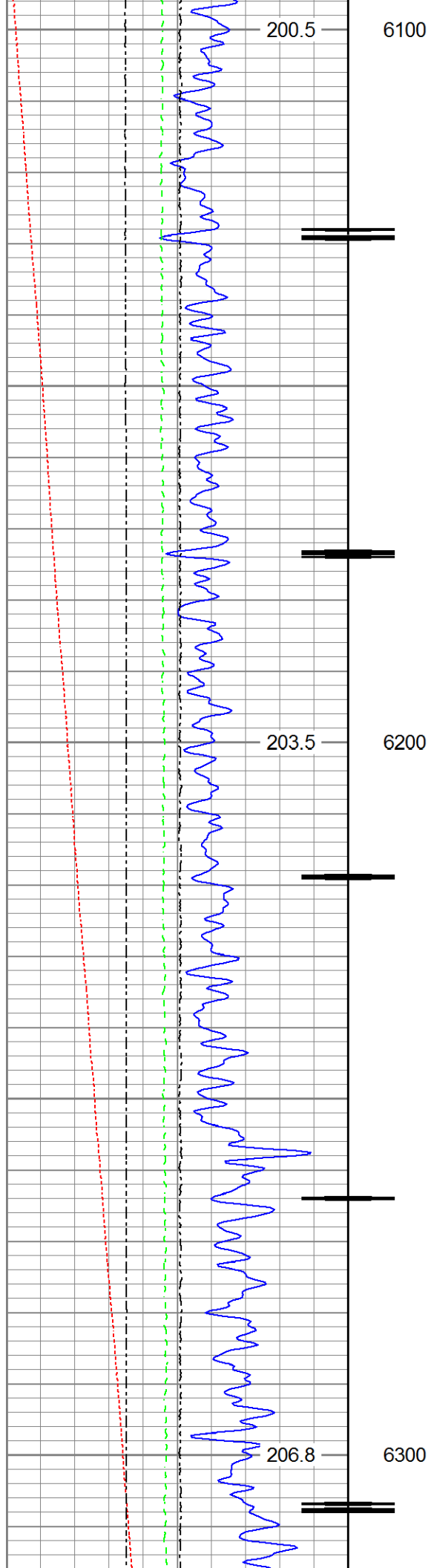


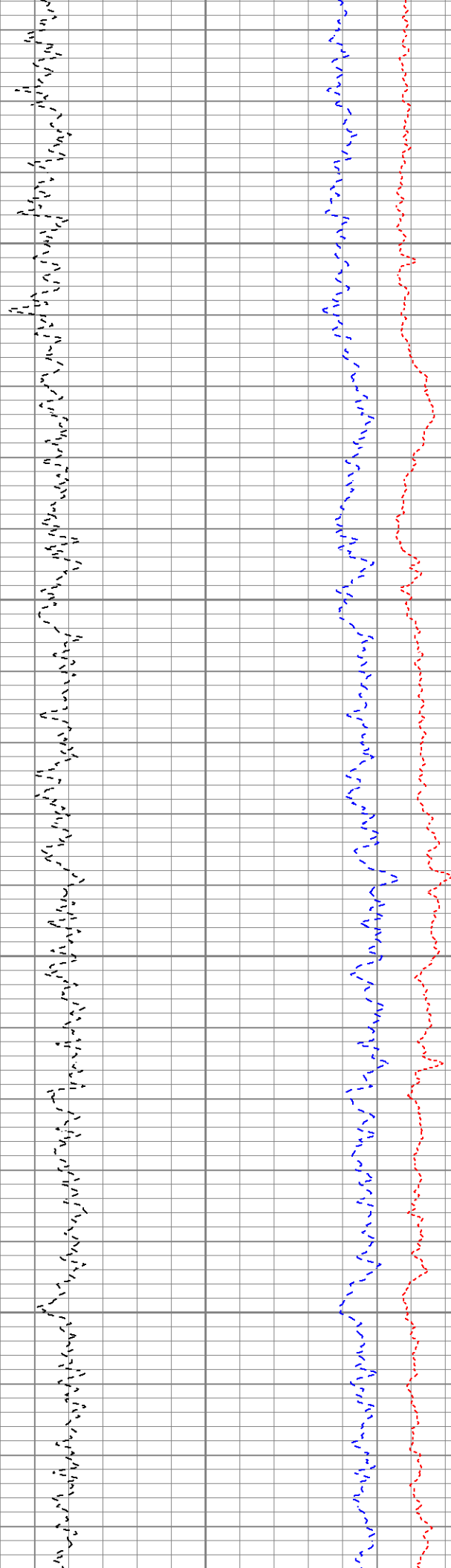
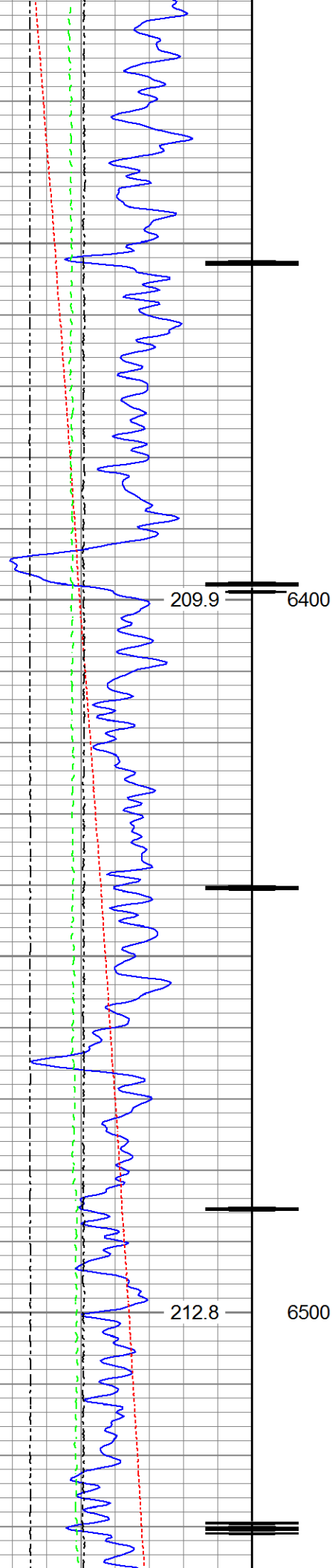


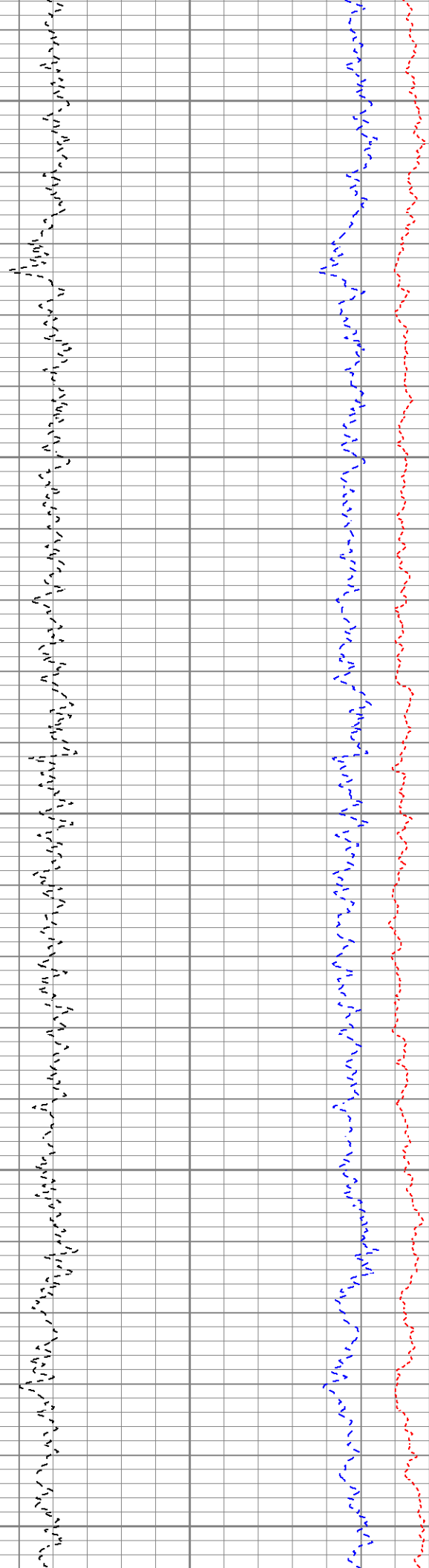
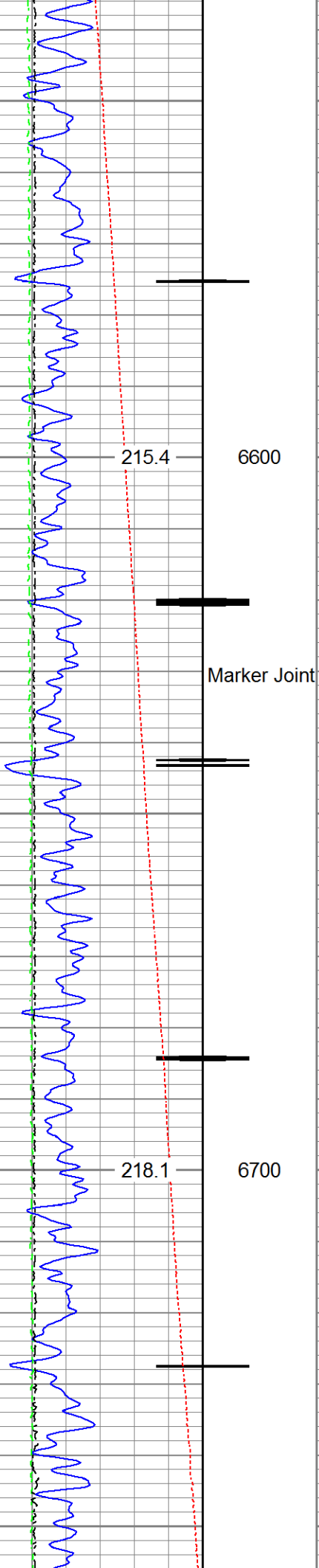


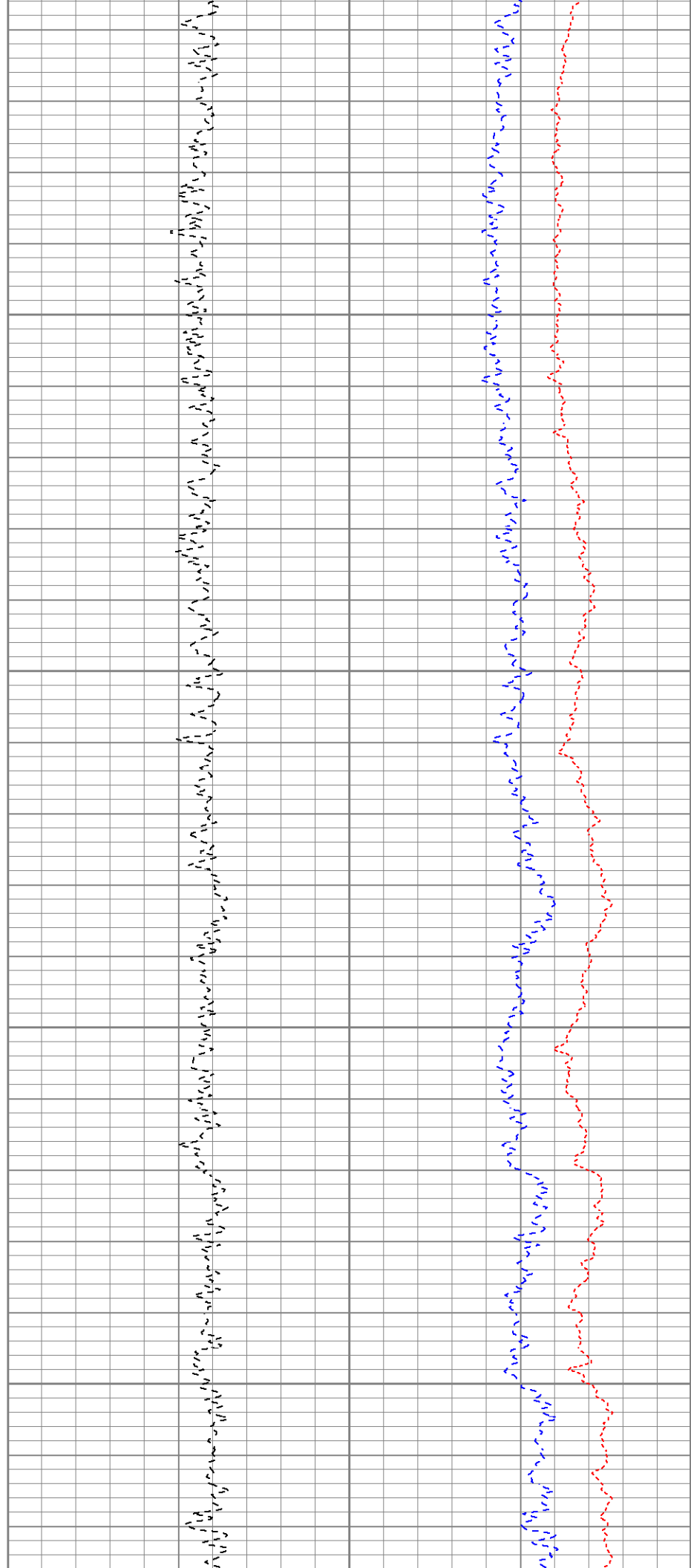
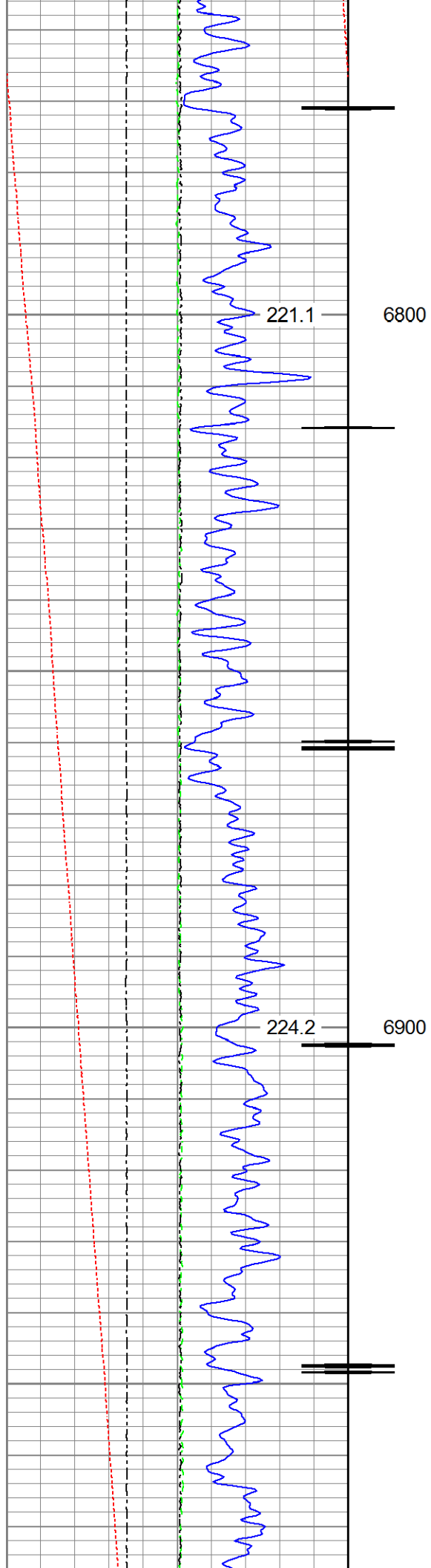


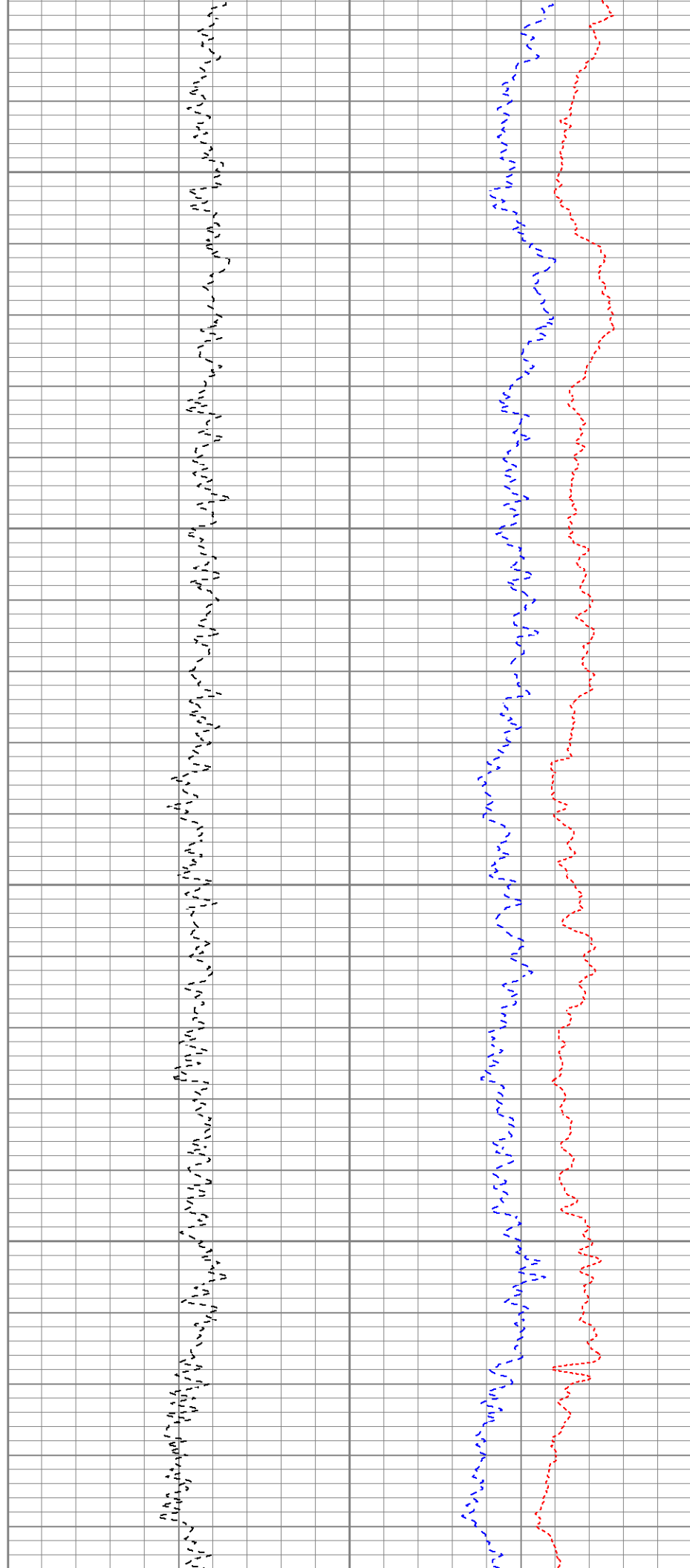
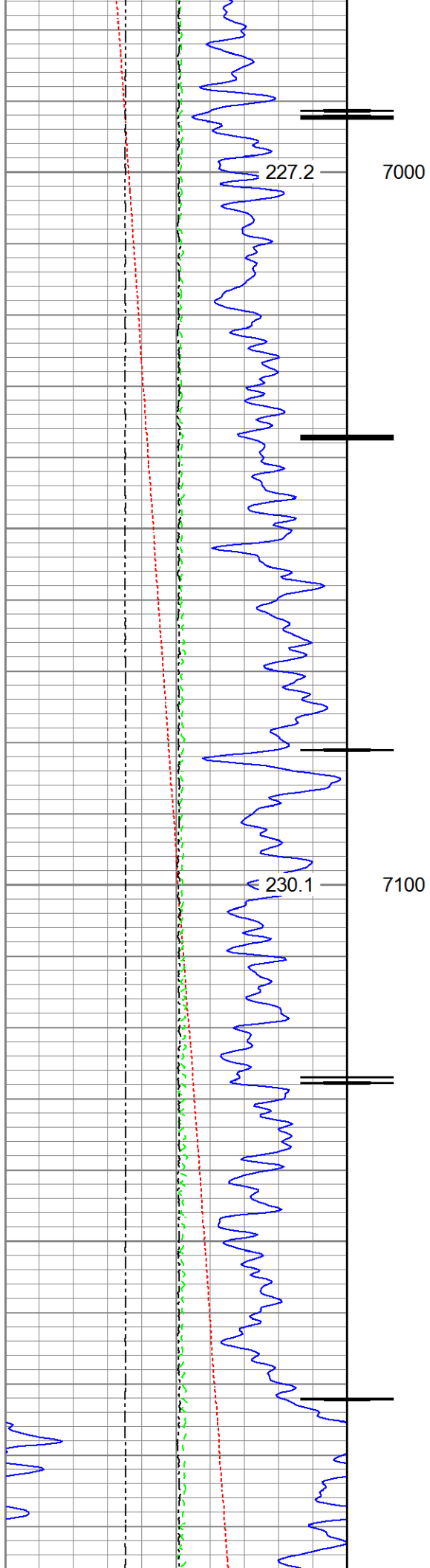


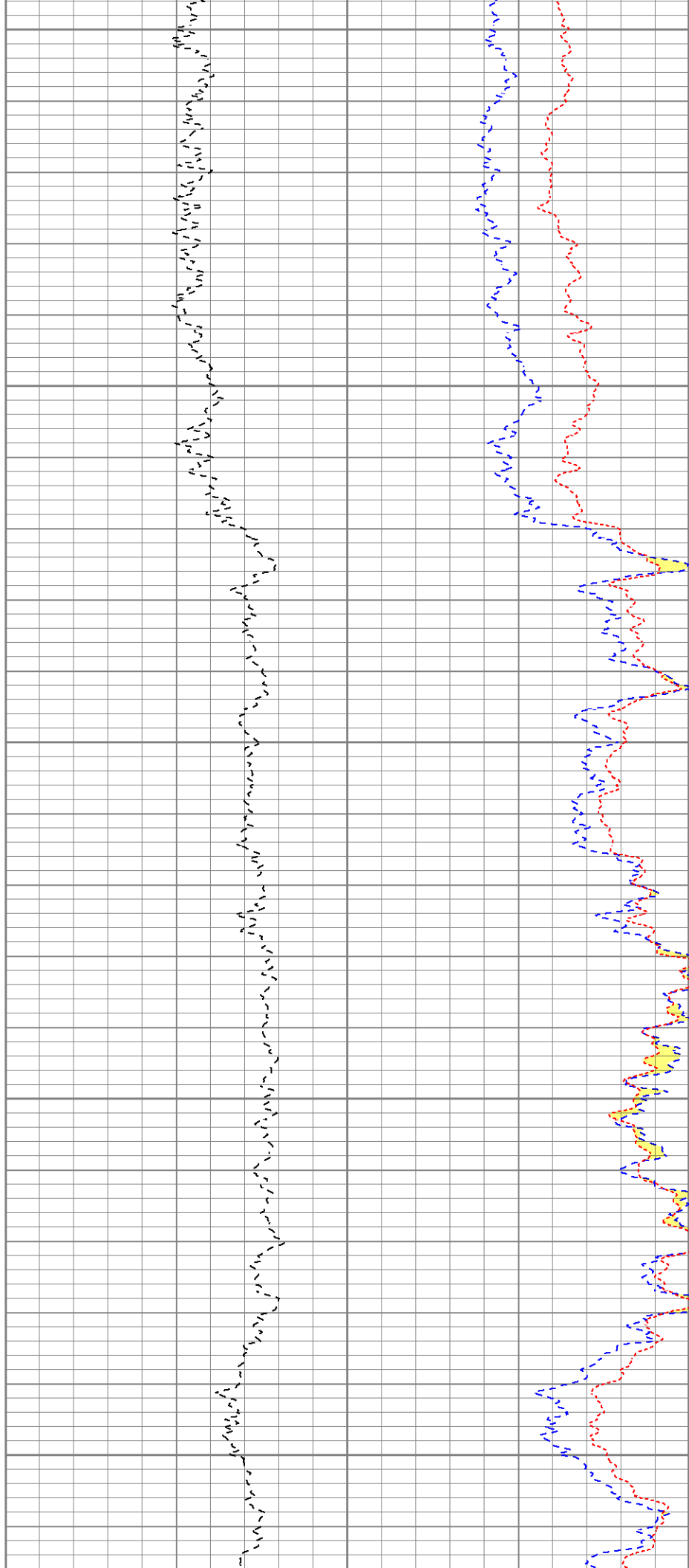
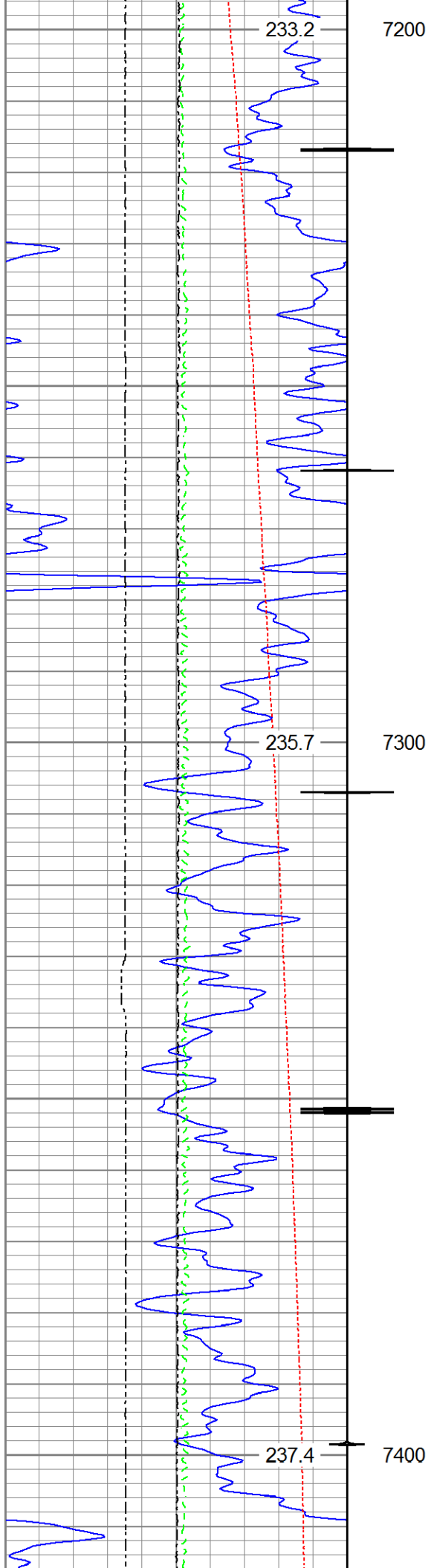


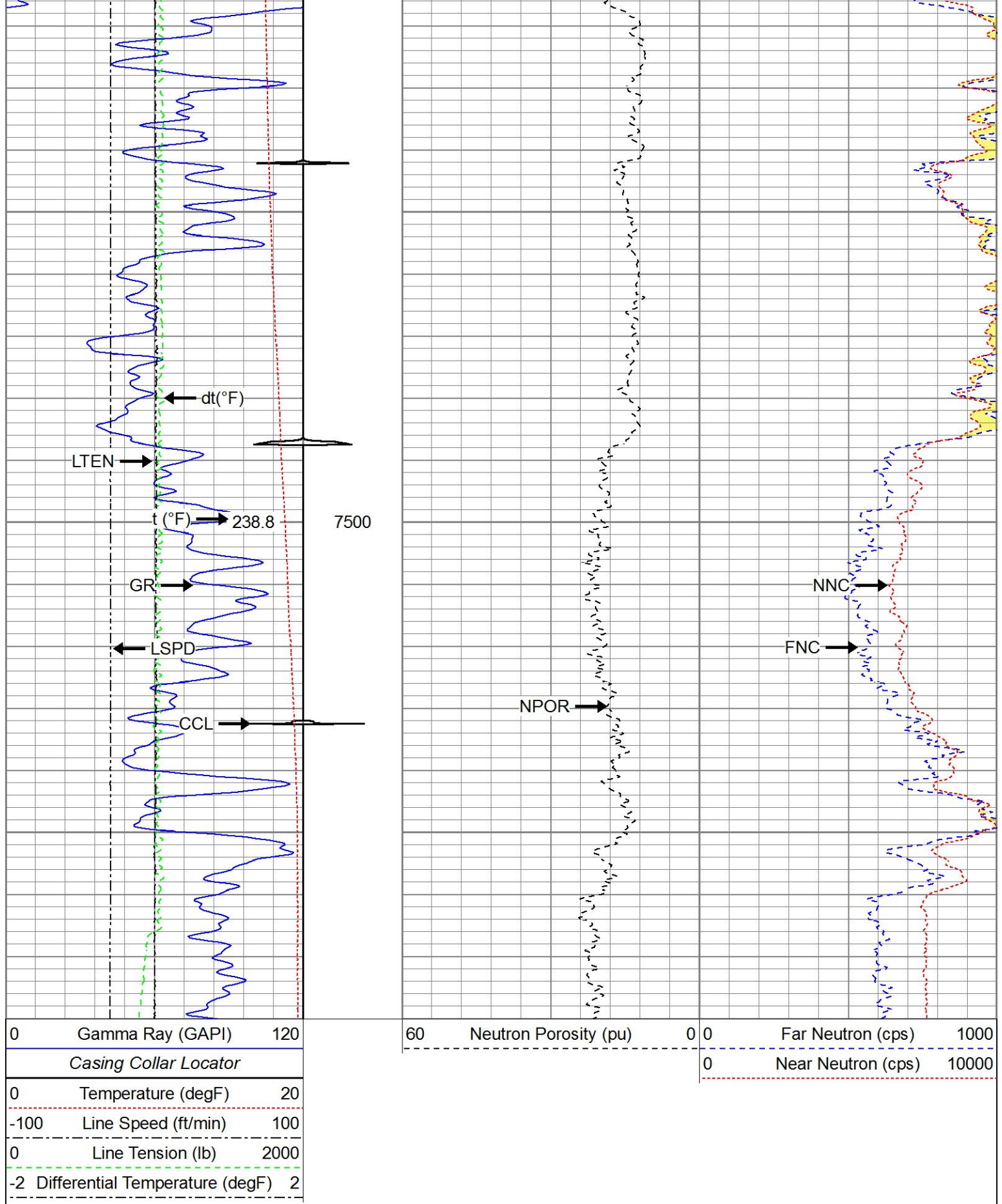




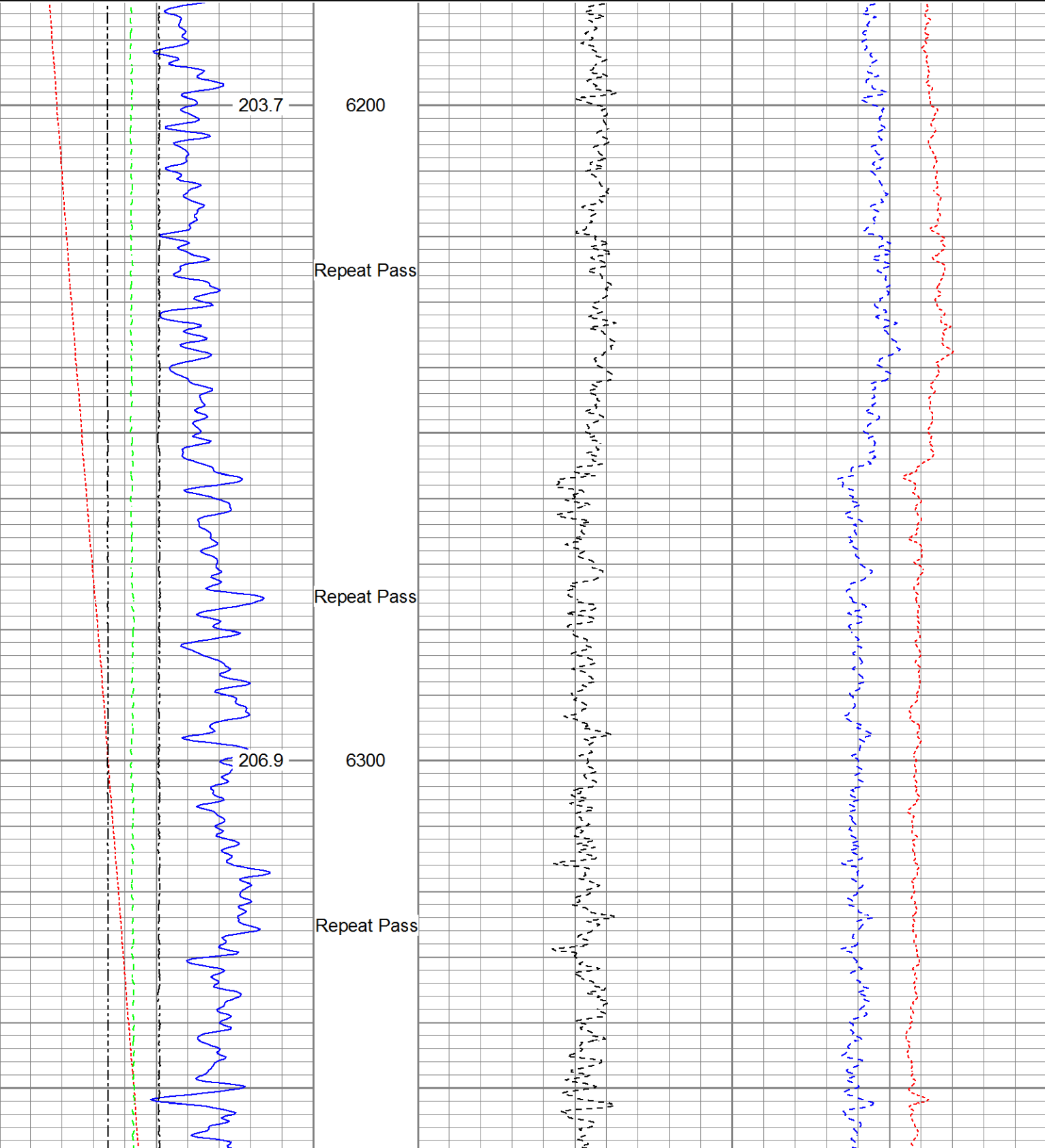


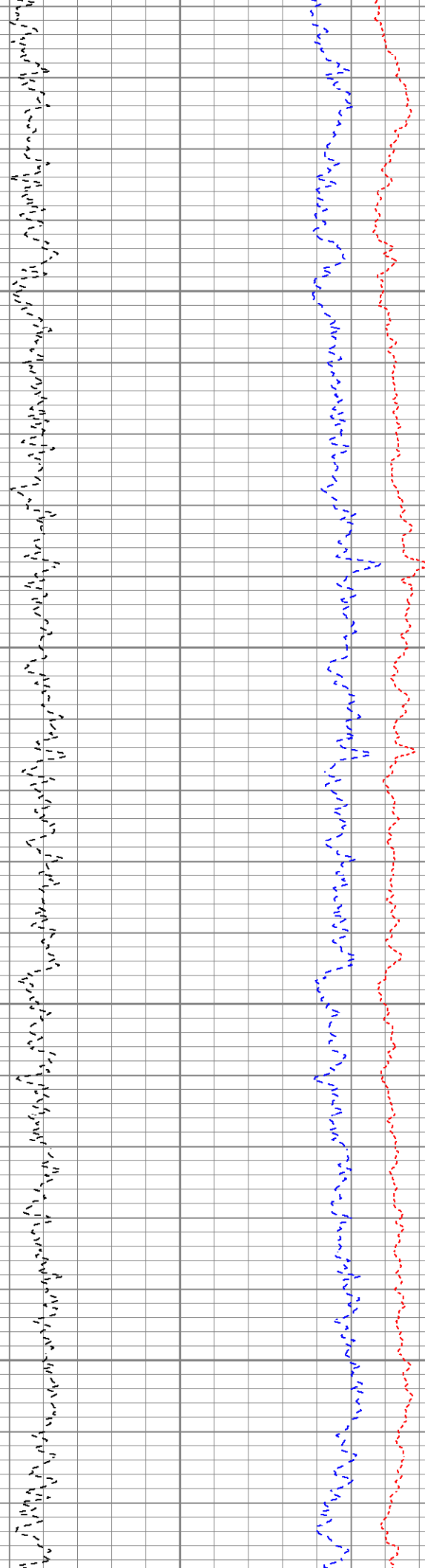
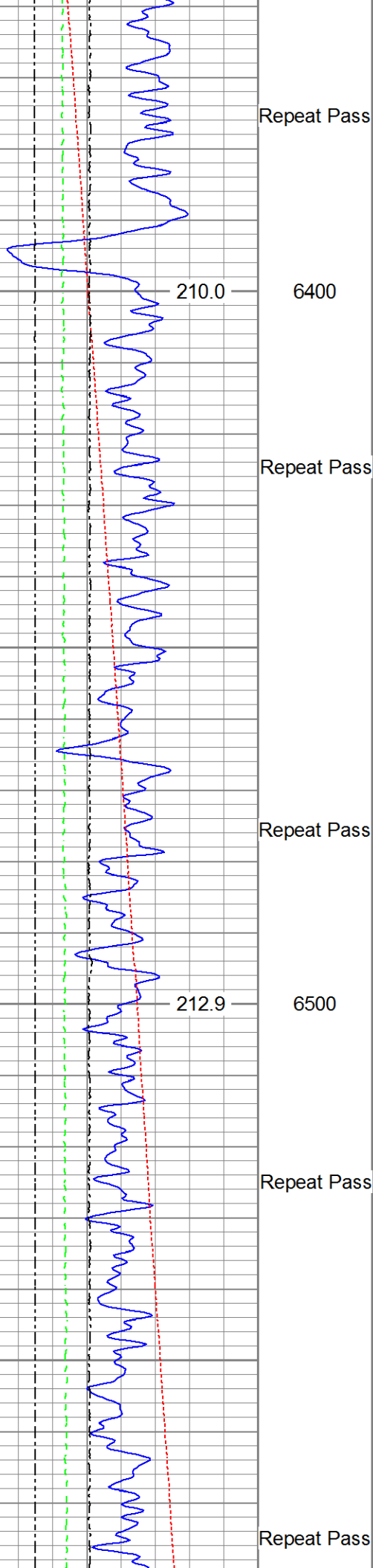


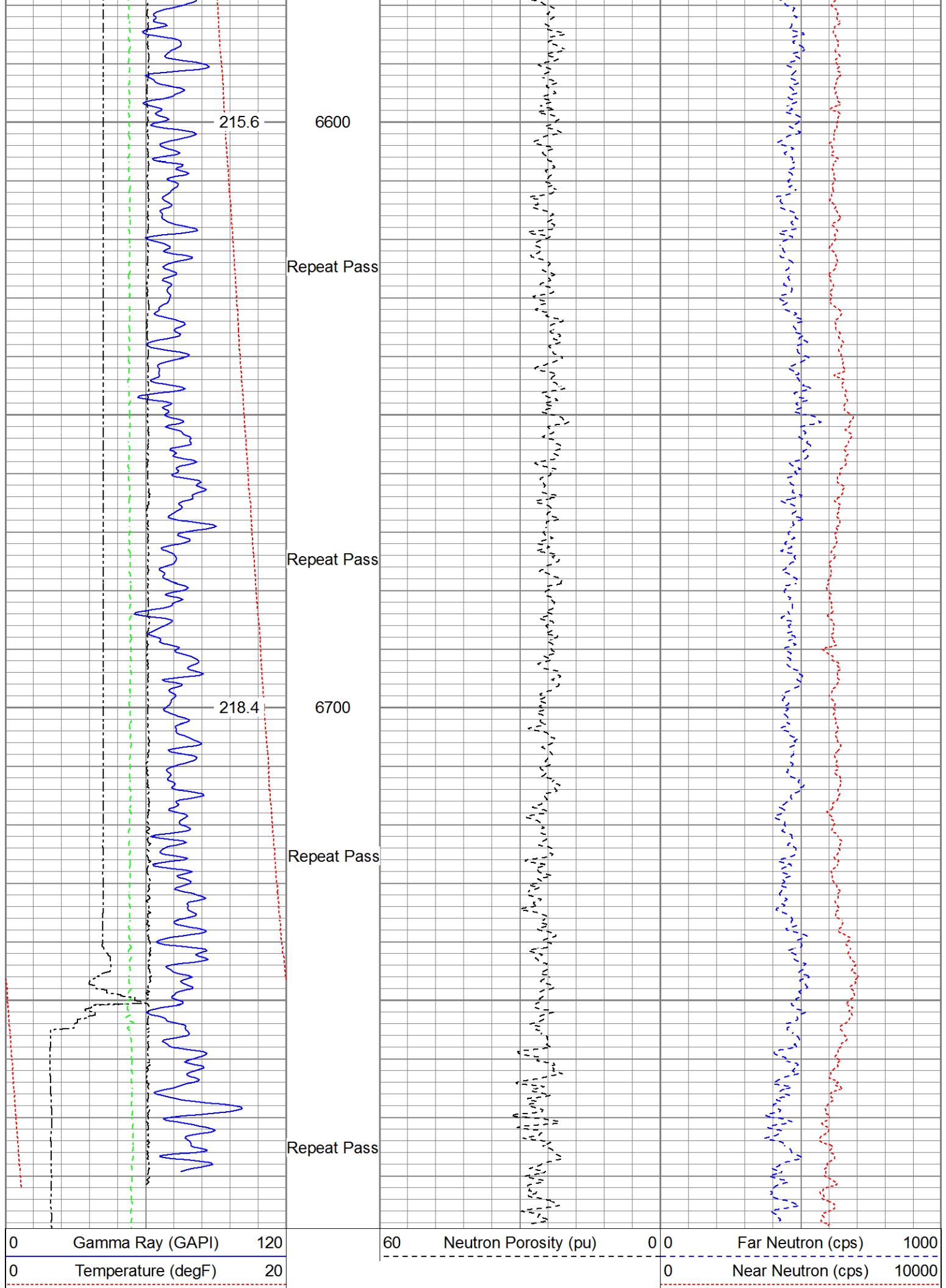





0	Gamma Ray (GAPI)	120	60	Neutron Porosity (pu)	0	0	Far Neutron (cps)	1000
0	Temperature (degF)	20				0	Near Neutron (cps)	10000
-100	Line Speed (ft/min)	100						
0	Line Tension (lb)	2000						
-2	Differential Temperature (degF)	2						







-100	Line Speed (ft/min)	100
0	Line Tension (lb)	2000
-2	Differential Temperature (degF)	2

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	9.76		Titan_Electric_Cable_Heads-Titan_1-11/16 Electric Cable Head with 1" Fishing Neck	161.03	1.69	5.40
			UW_AGS-UW_AGS_001 (218874) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTU-UW_XTU_002 (218874) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (10013902) Production Gamma Ray	1.92	1.69	9.50
			UW_PRT-PRT_016 (10024052) Platinum Resistance Thermometer	1.04	1.69	5.20
TEMP	8.37					
CCL	7.12		UW_CCL-UW_CCL_028 (10026417) 3-1/8" Ultrawire Casing Collar Locator	1.61	3.13	36.00
			UW_CNL-UW_CNL_007 (1005) Sondex Compensated Neutron Logging Tool	6.61	1.69	30.00
CNLSC	1.53					
CNSSC	1.12					
TOTAL	0.00					

STAMP	0.00				
Dataset:	0512344319_Anadarko_Butterball 40C-34HZ_CNL_07-06-17_w8.db: field/well/run1/main				
Total length:	14.01 ft				
Total weight:	93.60 lb				
O.D.:	3.13 in				

Calibration Report	
Database File	D:\Warrior\Data\Anadarko Butterball 40C-34HZ\0512344319_Anadarko_Butterball 40C-34HZ_CNL_07-06-17
Dataset Pathname	repeat
Dataset Creation	Thu Jul 06 13:49:25 2017

Compensated Neutron Calibration Report
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Serial Number:	1005
Tool Model:	UW_CNL_007

Master Calibration	Sun Feb 07 11:39:11 2016		
Detector	Readings		
Short Space	240.87	cps	
Long Space	303.55	cps	
Ratio	Measured	Reference	
CNRAT Gain K	0.8150	Sleeve: 1.0000	
	1.0271		

Before Survey			
Detector	Readings		
Short Space		cps	
Long Space		cps	
Ratio	Measured	Reference	

After Survey			
Detector	Readings		
Short Space		cps	
Long Space		cps	
Ratio	Measured	Reference	

Temperature Calibration Report

Serial Number:		10024052	
Tool Model:		PRT_016	
Performed:		Sun Oct 11 12:16:39 2015	
Point #	Reading	Reference	
1	12242.00 cps	68.00	degF
2	18329.00 cps	104.00	degF
3	29563.00 cps	176.00	degF
4	41222.00 cps	248.00	degF
5	52988.00 cps	320.00	degF
6	58824.00 cps	356.00	degF
7	cps		degF
8	cps		degF
9	cps		degF
10	cps		degF

Gamma Ray Calibration Report

Serial Number:	10013902	
Tool Model:	UW_PGR_020	
Performed:	(Not Performed)	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps



Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Butterball 40C-34HZ
Field	Wattenberg
County	Weld
State	Colorado