



Compensated Neutron
Pulsed Decay Neutron
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.		
Well	Cook 15C-28HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Location:		API # : 05-123-42141	Other Services None
SEC 16 TWP 2N RGE 65W		Ground Level	Elevation 4885'
Permanent Datum		Ground Level	Elevation 4885'
Log Measured From		Kelly Bushing	25 FT
Drilling Measured From		Kelly Bushing	

Date	18-AUG-2016	12-AUG-2016
Run Number	One	One
Depth Driller	18013 FT	18013 FT
Depth Logger	2060 FT	7463 FT
Bottom Logged Interval	2059 FT	7463 FT
Top Log Interval	Surface	1800 FT
Open Hole Size	7.875"	7.875"
Type Fluid	Water	Water
Density / Viscosity	8.34 lbm/gal	8.34 lbm/gal
Max. Recorded Temp.	101°F	---
Estimated Cement Top	---	---
Time Well Ready	ROA	ROA
Time Logger on Bottom	16:00	11:30
Equipment Number	HD-0361	HD-311
Location	Fort Lupton, CO	Fort Lupton, CO
Recorded By	Sam Hopper	Aaron Elsworth
Witnessed By	Chris Hayes	Jim Stuhr

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top	Bottom		
Surface Casing	9 5/8	36	J-55 LTC	Surface	1890 FT		
Intermediate #1	5 1/2	17	HCP-110 LTC	Surface	18003 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
CNL log ran from 2000 FT to surface
Depth referenced to Reliance PDN log dated 08-12-16
Recorded with 0 PSI surface induced pressure

PDN log ran from as deep as possible in heel to 1800 FT
Depth referenced to Casing Tally Reported Marker Joint at 6514 FT
Adjusted log +14 FT to correlate to Marker Joint
Recorded with 1500 PSI surface induced pressure

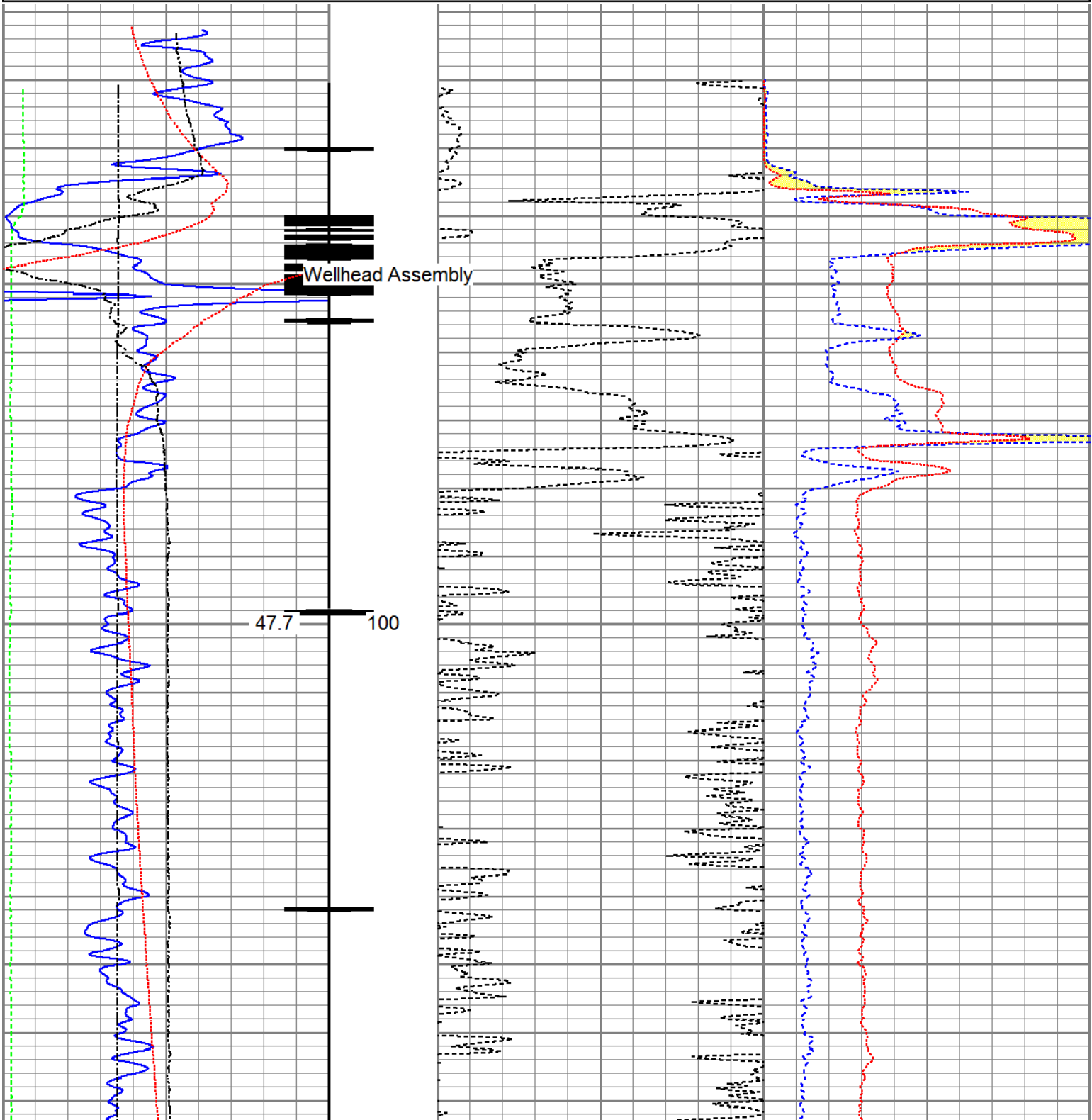
Logging tools were clean and free of any debris upon completion of operations
Thank you for choosing Reliance Oilfield Services, LLC!!

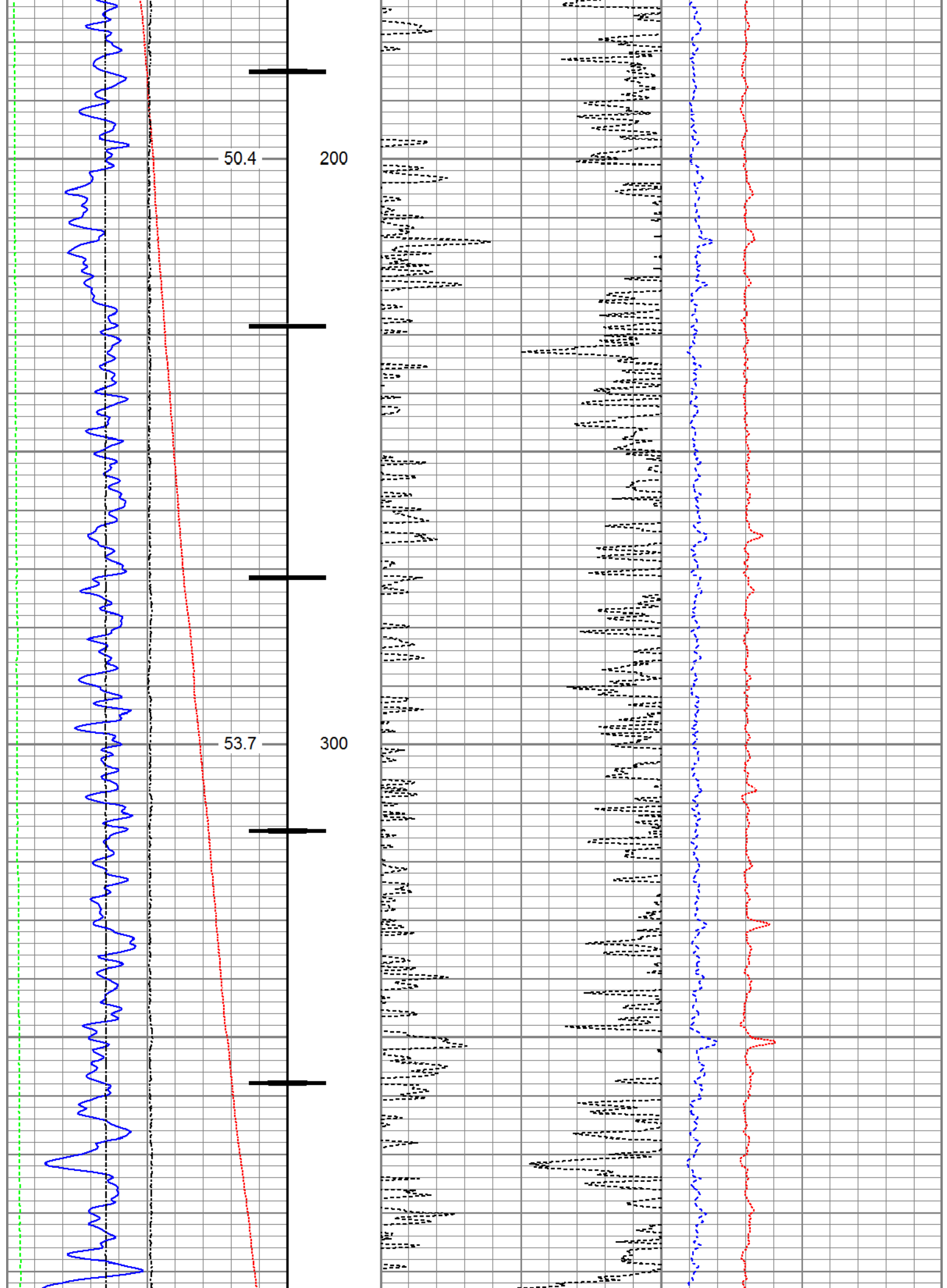


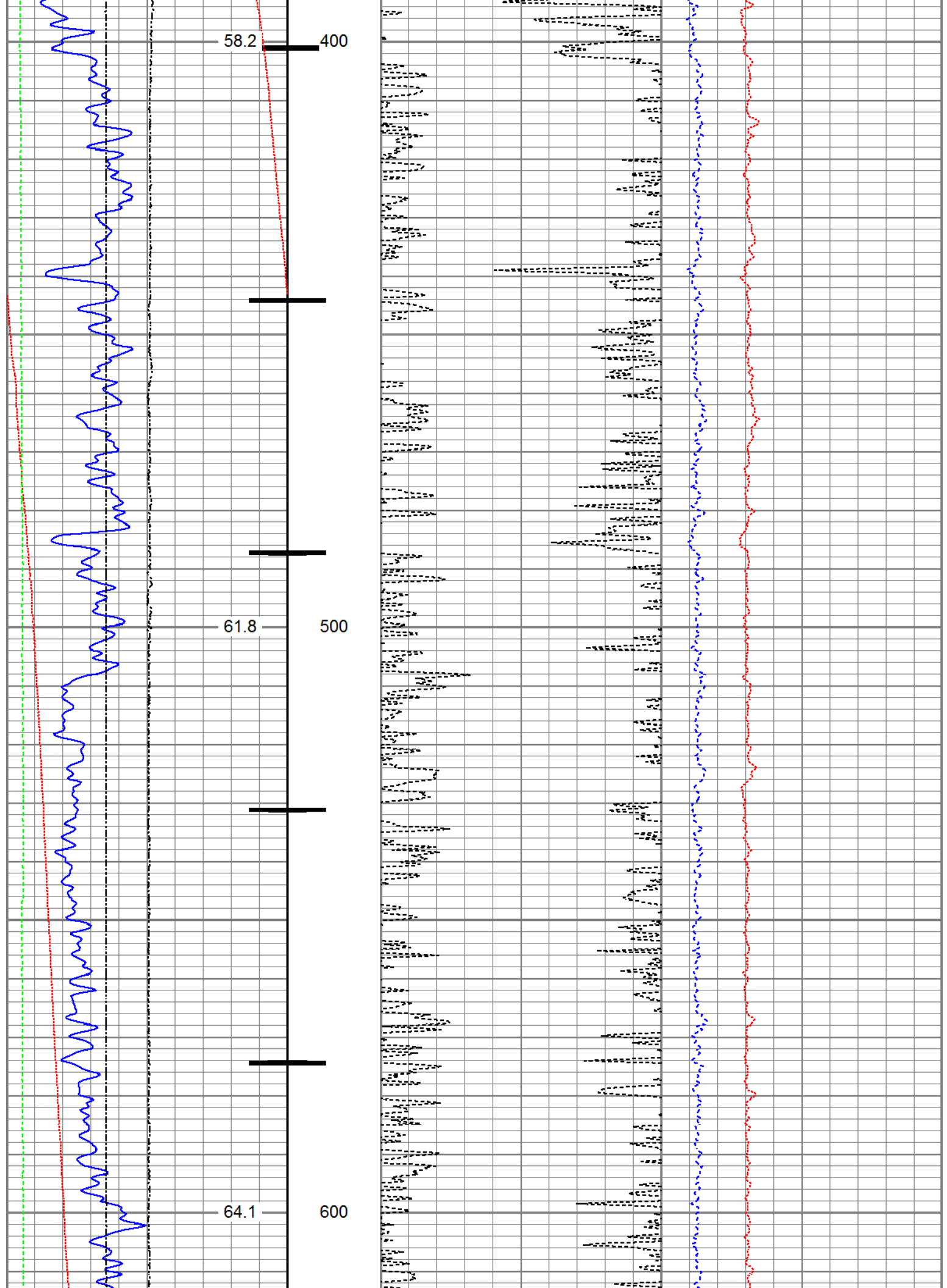
Main Pass - CNL (2000 FT - Surface)

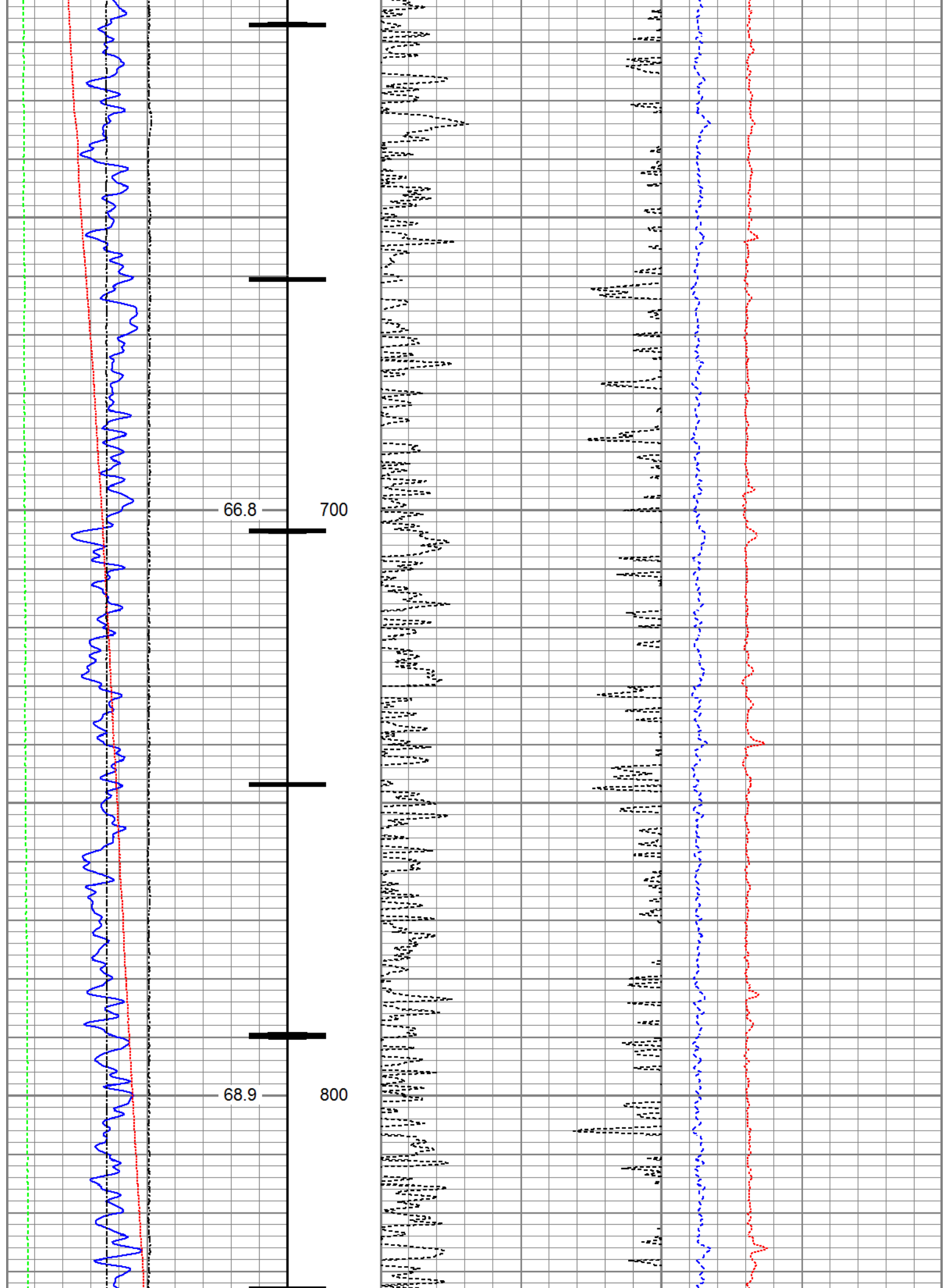
Recorded with 0 PSI Surface Induced Pressure

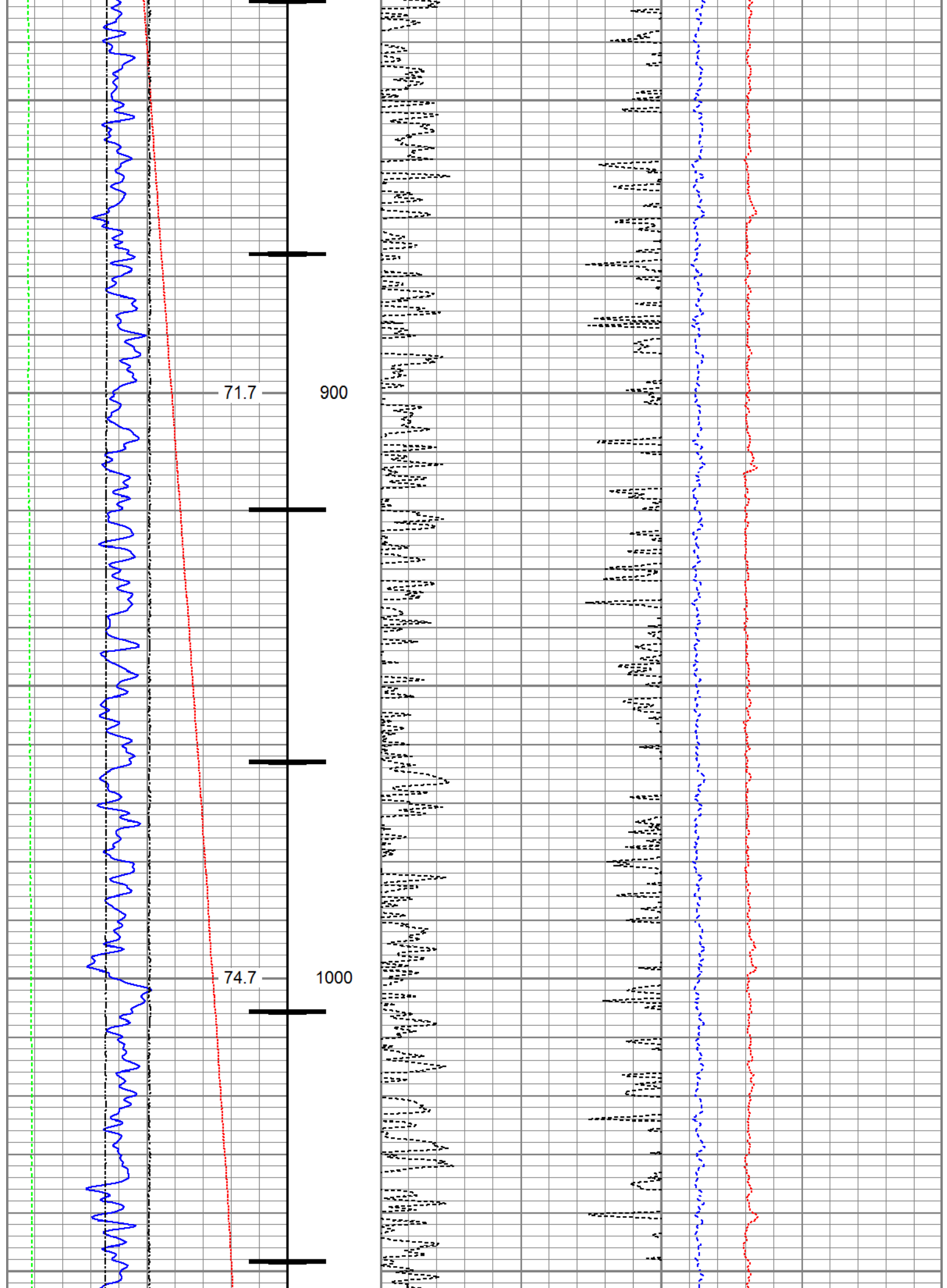
0	Gamma Ray (GAPI)	120	60	Neutron Porosity (pu)	0	0	Far Neutron (cps)	1000
Casing Collar Locator						0	Near Neutron (cps)	10000
0	Temperature (degF)	20						
-100	Line Speed (ft/min)	100						
0	Line Tension (lb)	2000						
Differential Temperature								
-2	(degF)	2						

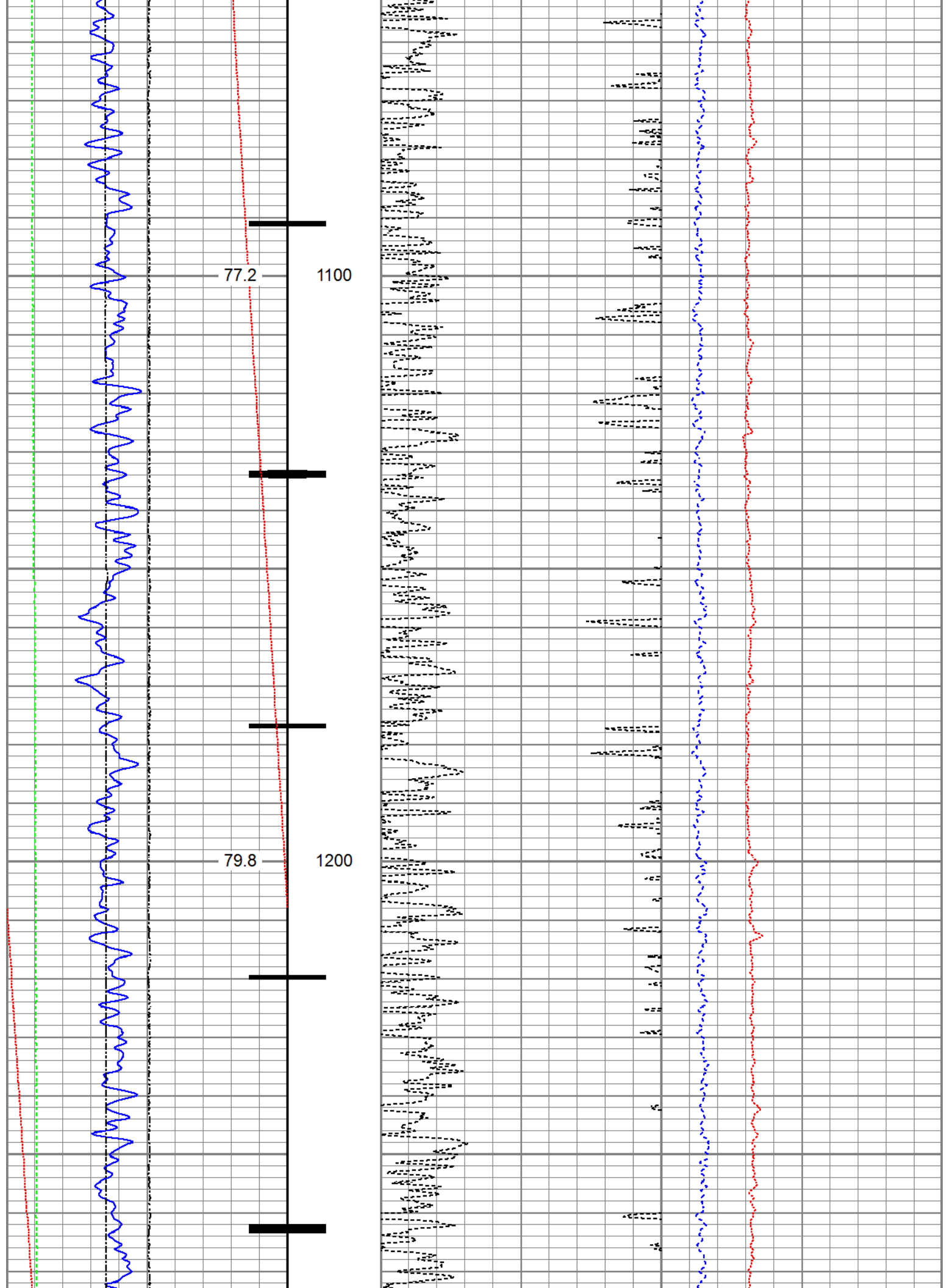


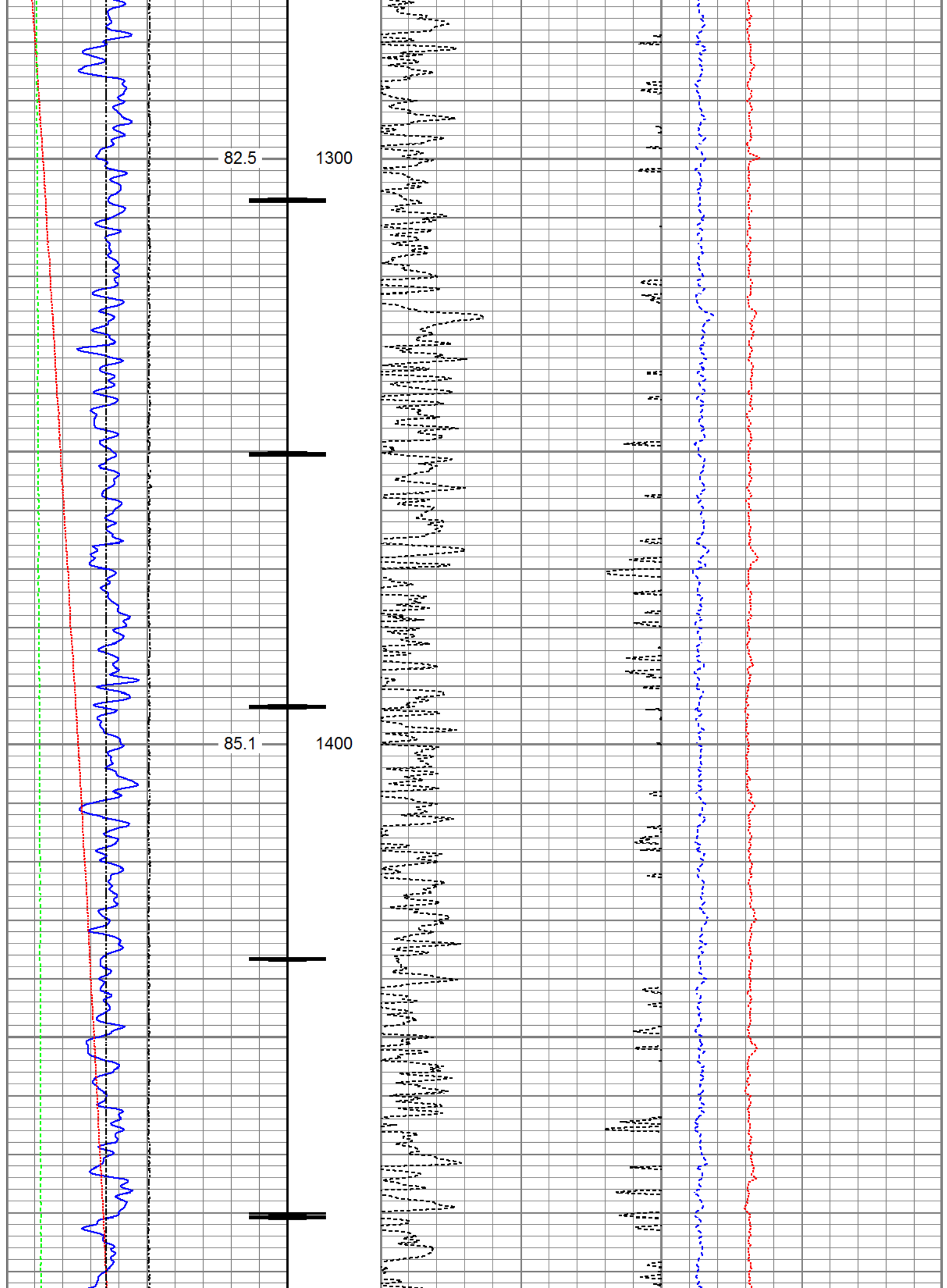


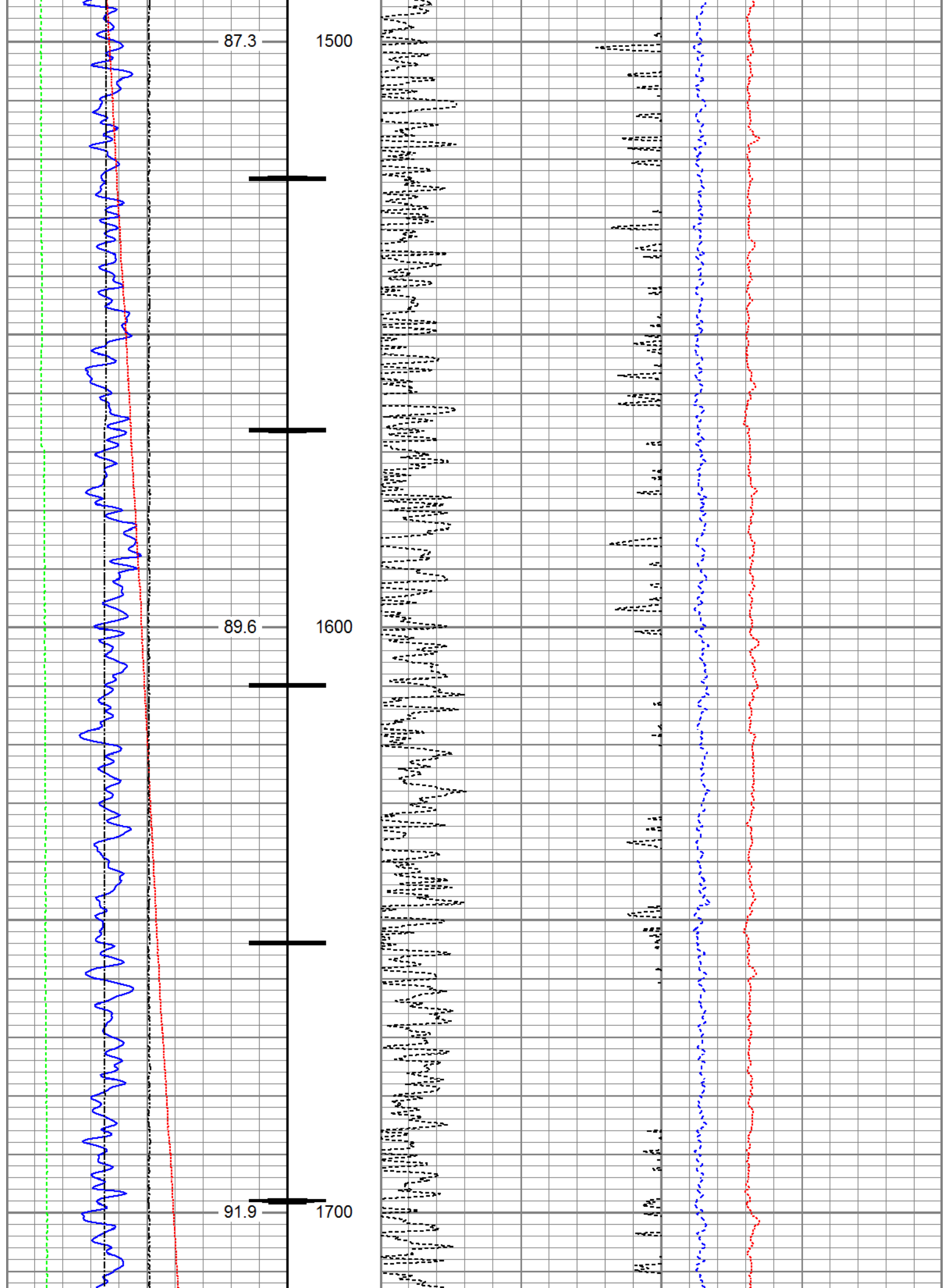


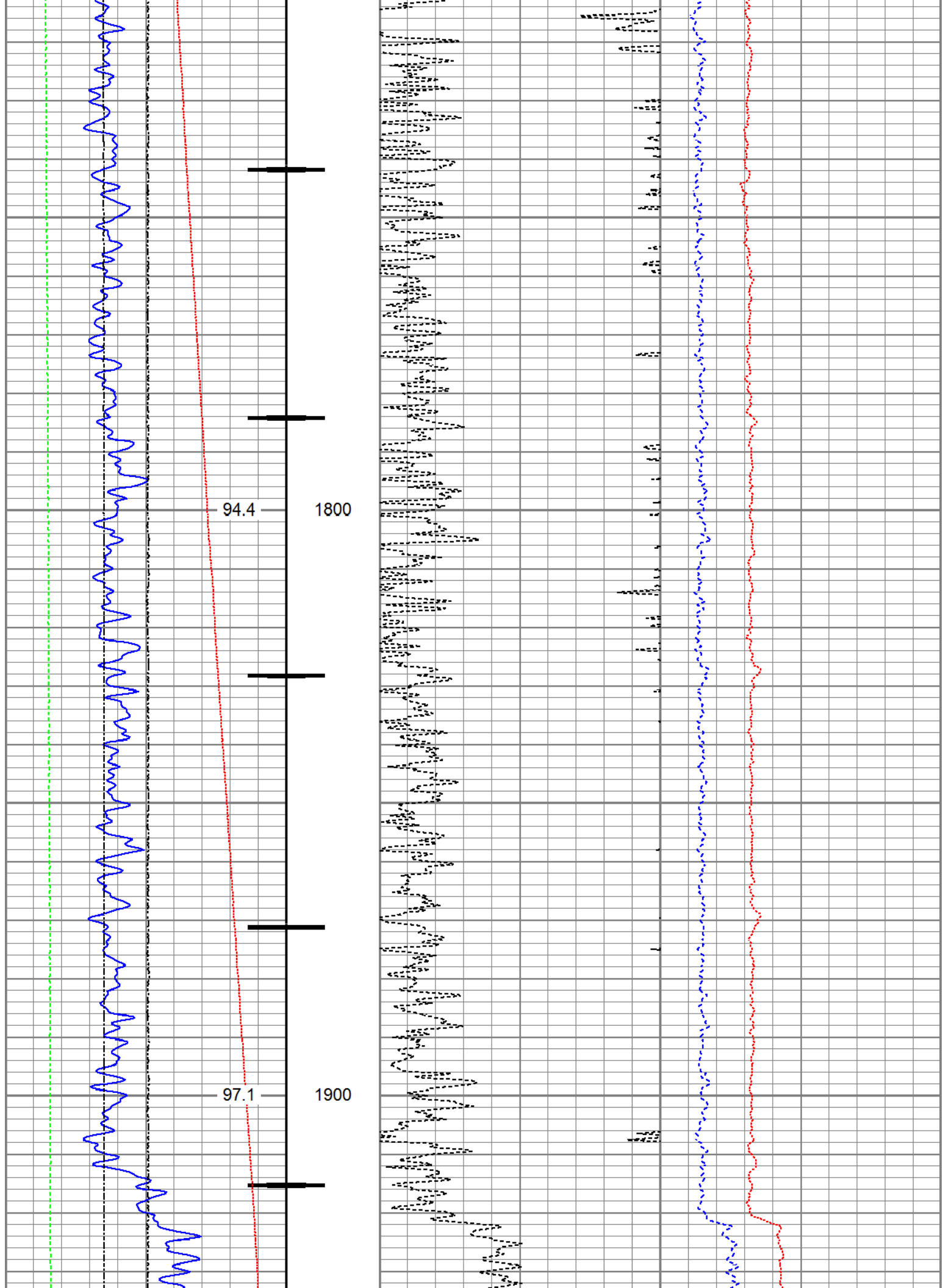


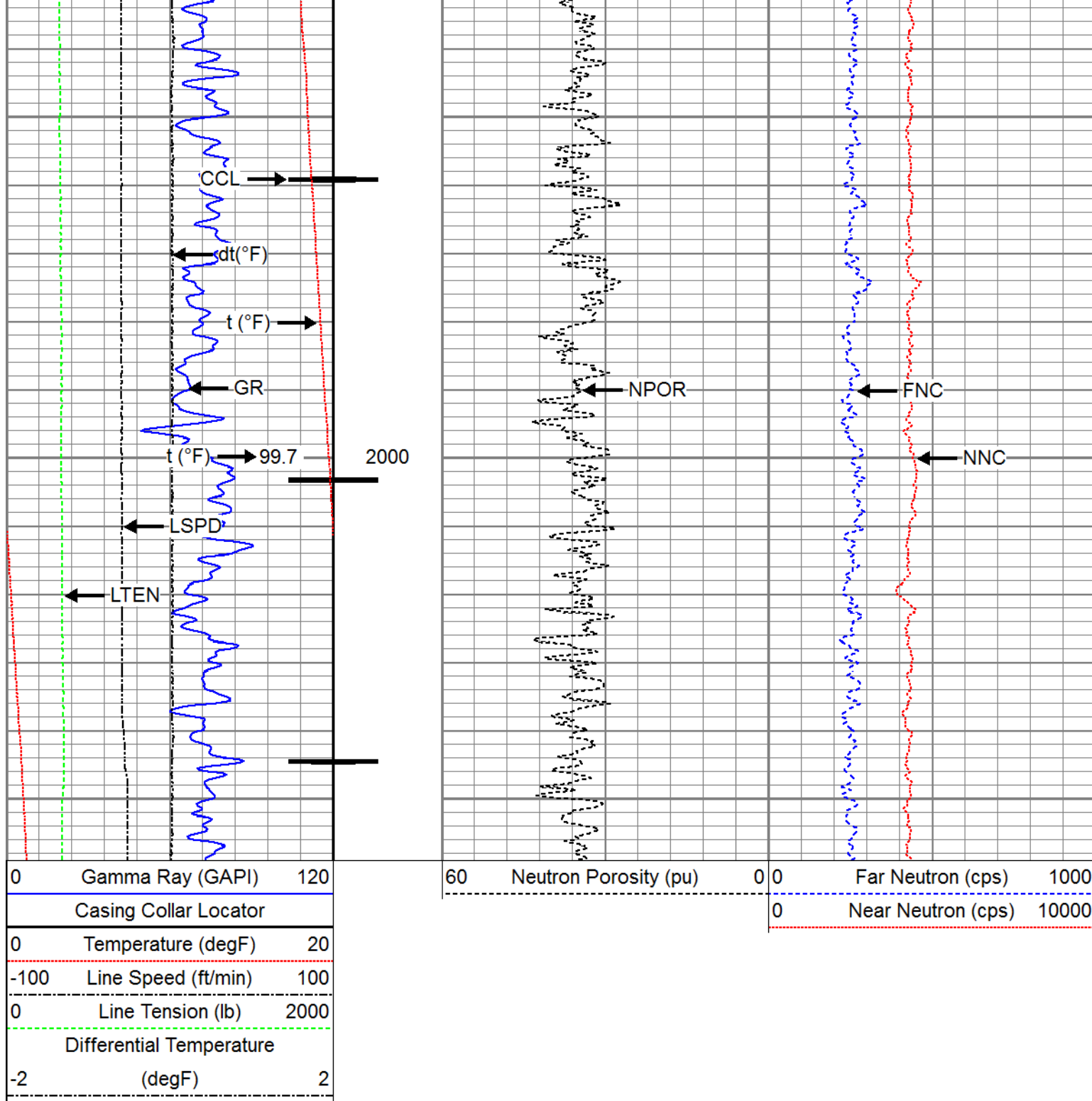








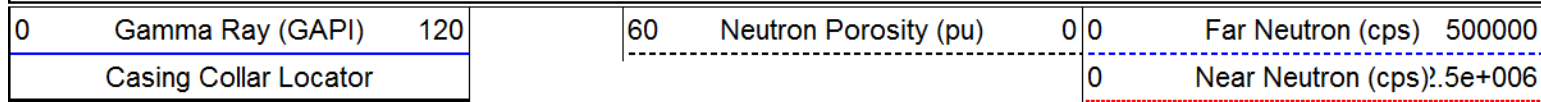




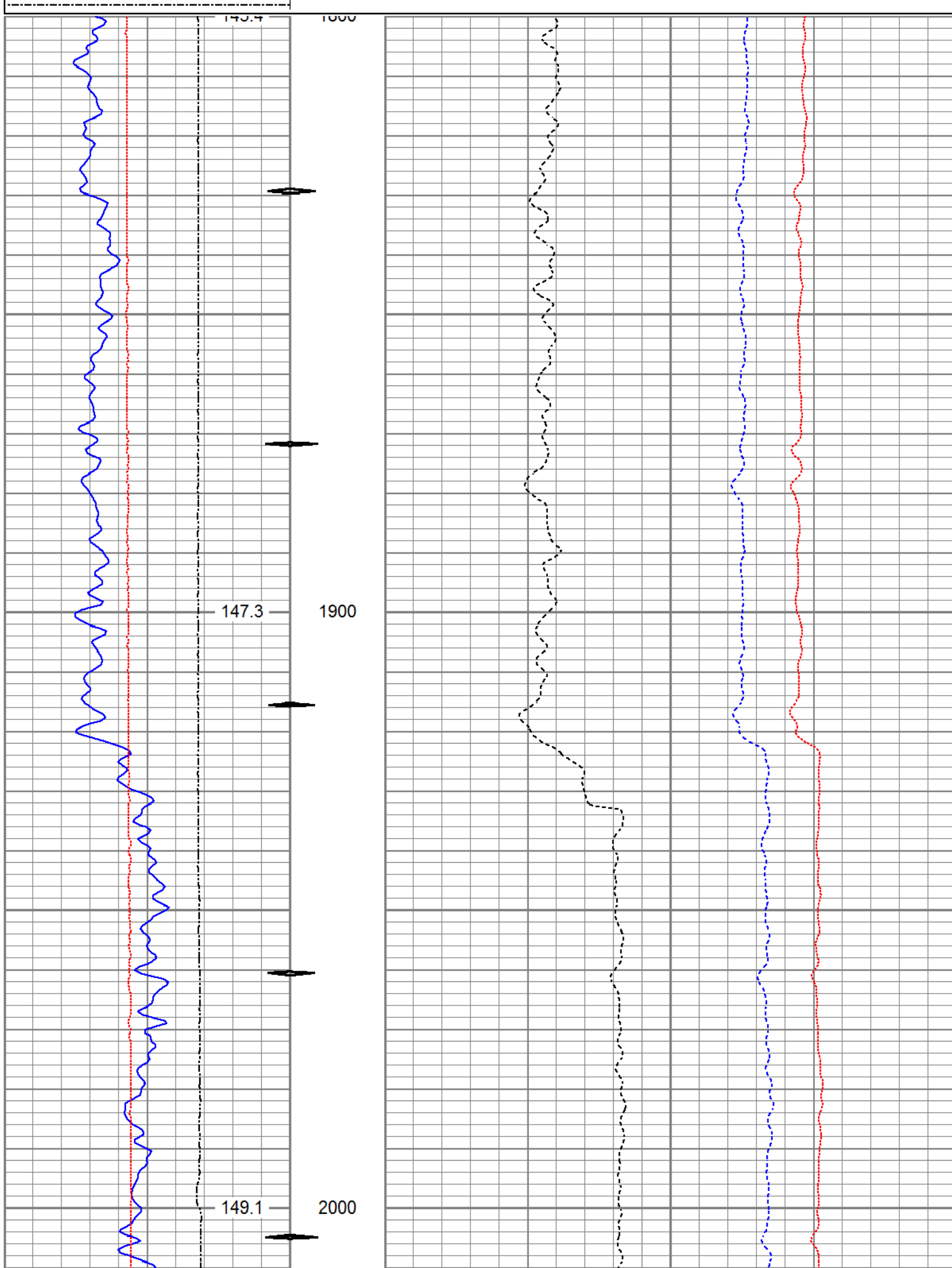
Main Pass - PDN (7455 FT - 1800 FT)

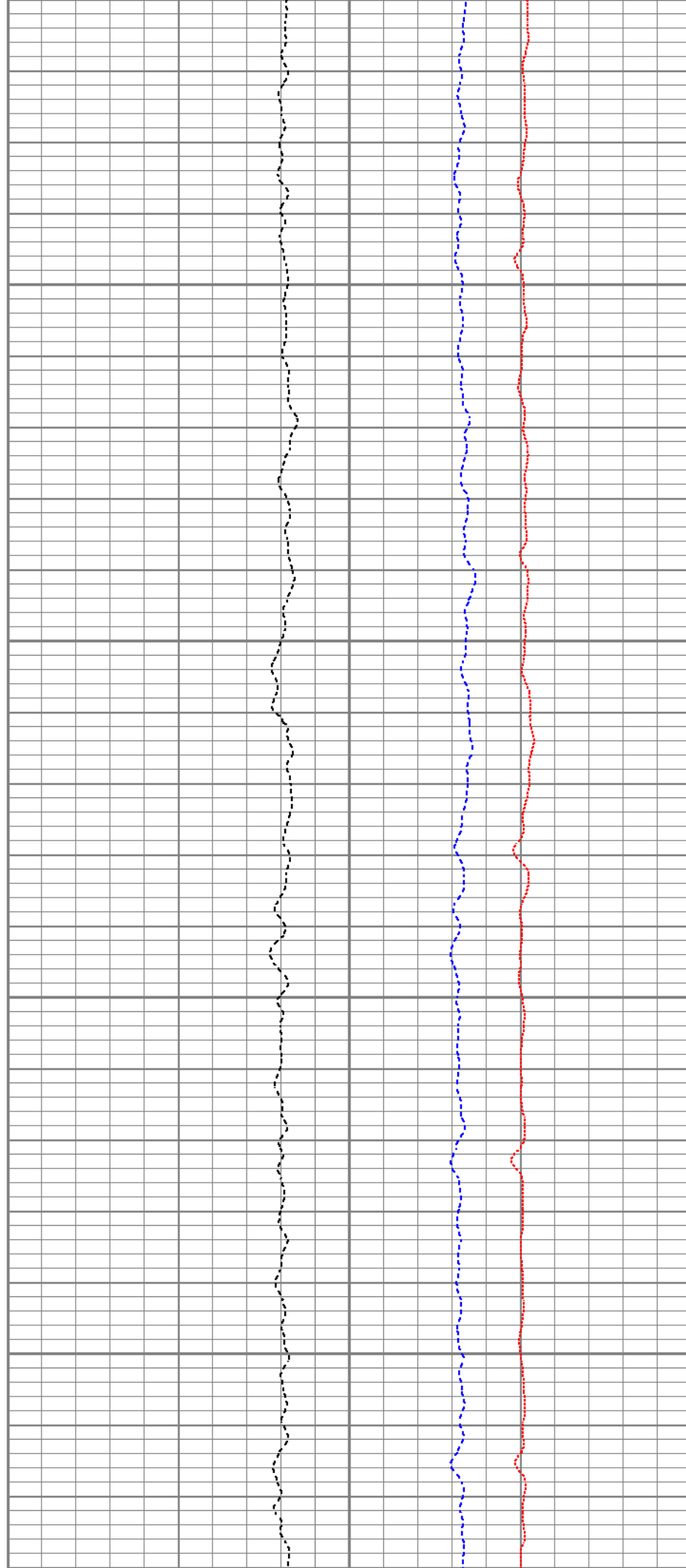
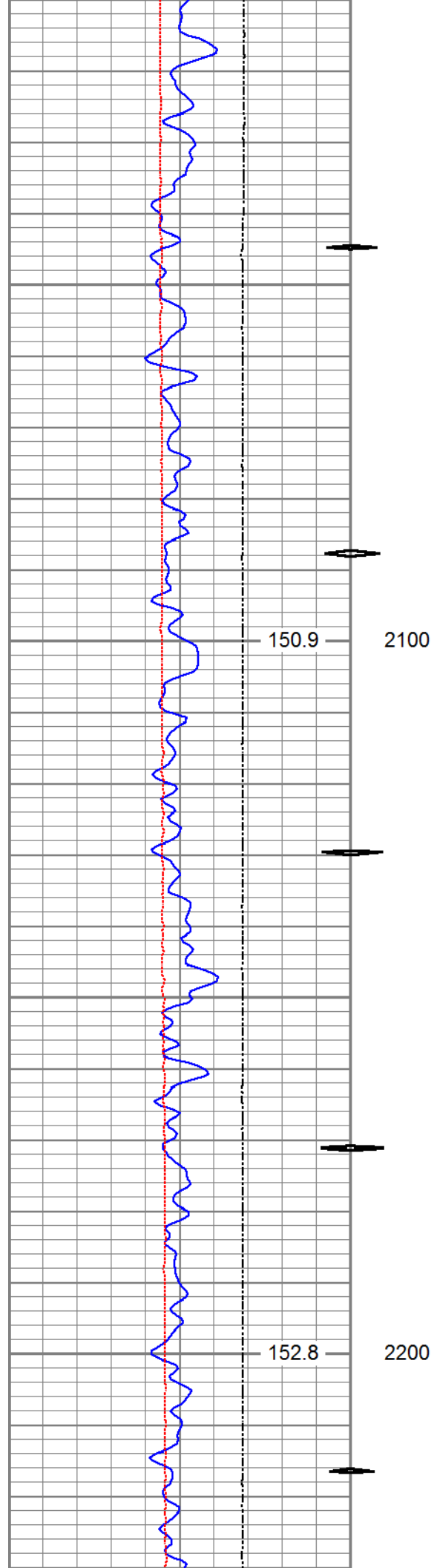
Recorded with 1500 PSI Surface Induced Pressure

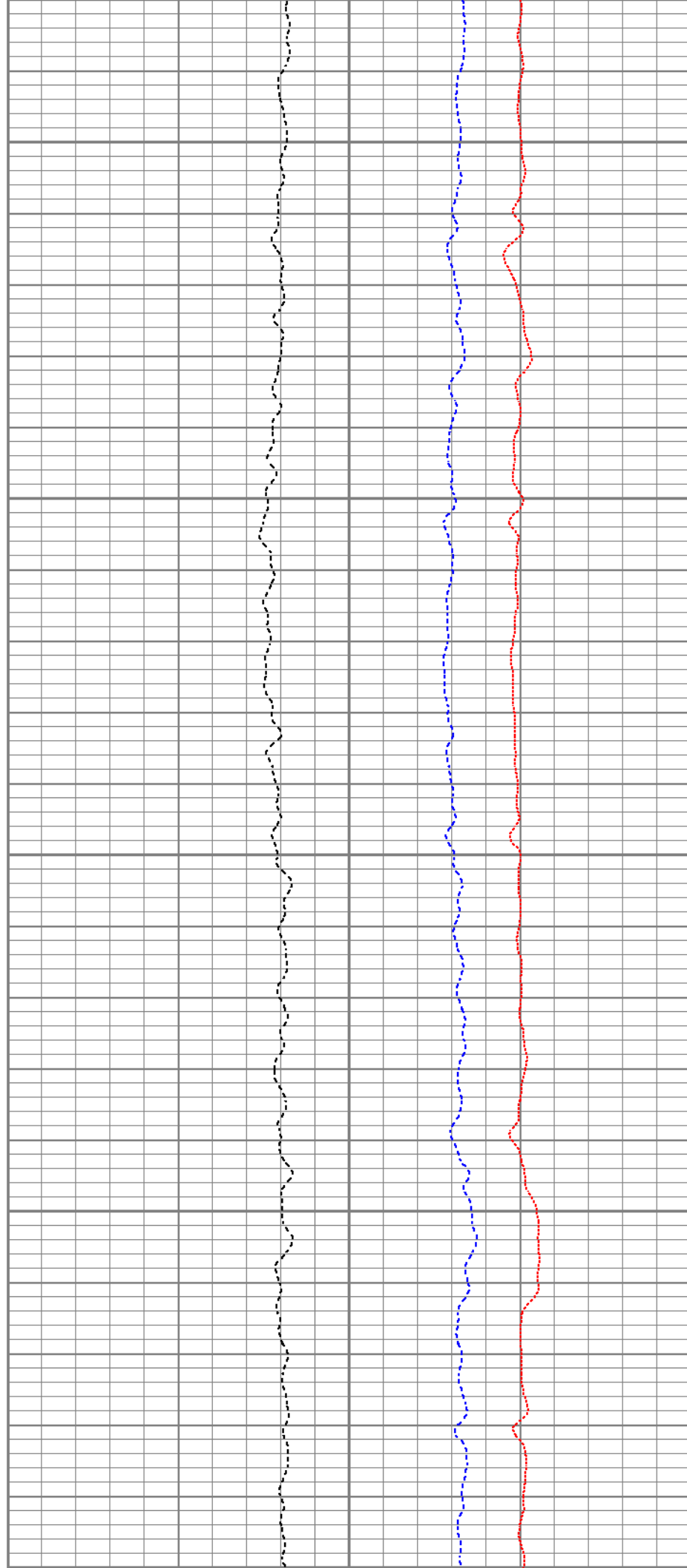
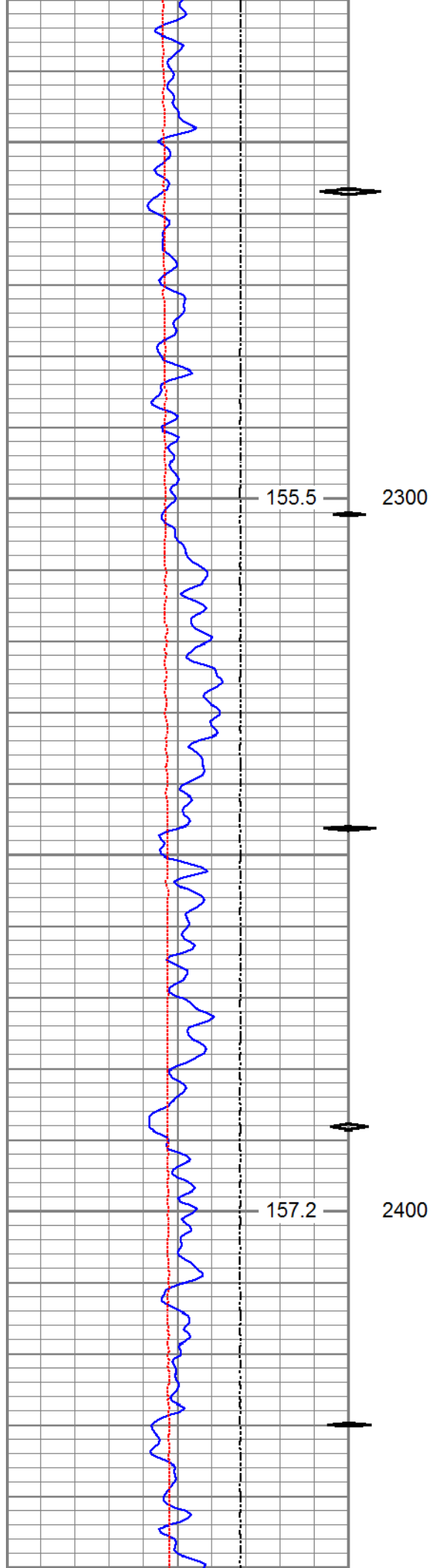
Database File: anadarko_cook 15c-28hz_08-12-2016_rcbl-pdn\processed_anadarko_cook 15c-28hz_08-18-16_cnl
 Dataset Pathname: passPDN
 Presentation Format: ros_cnl_sx
 Dataset Creation: Fri Aug 19 10:47:28 2016
 Charted by: Depth in Feet scaled 1:240

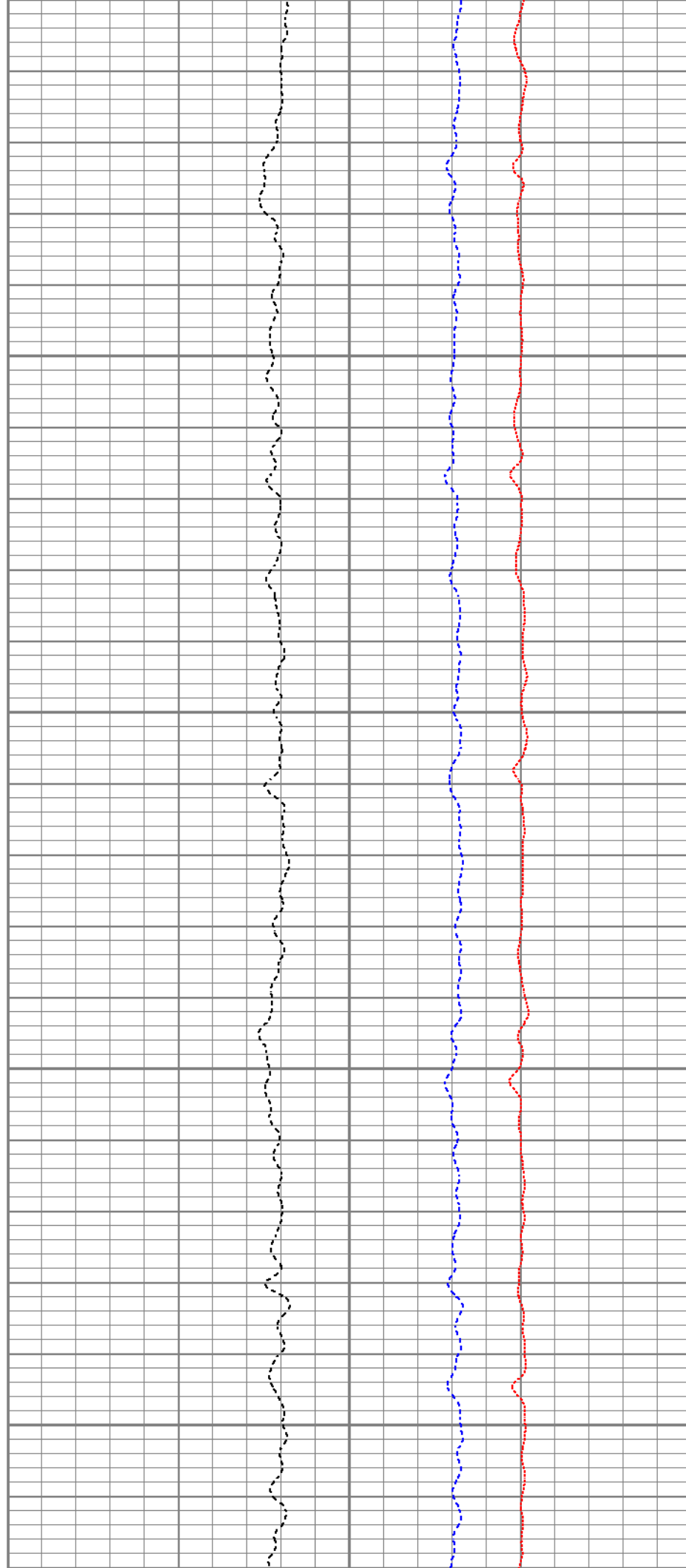
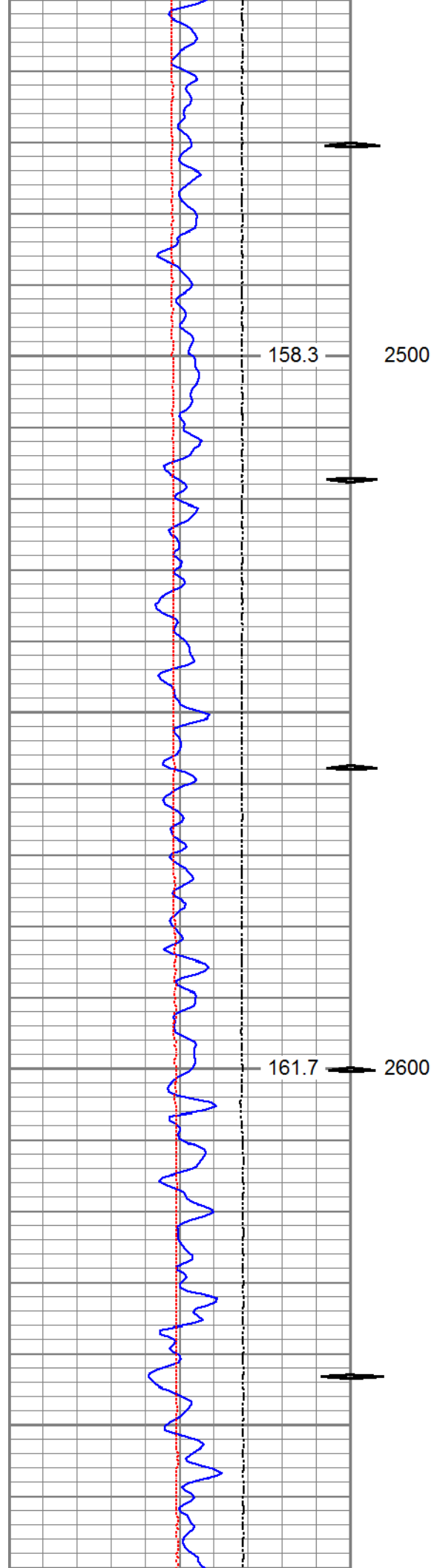


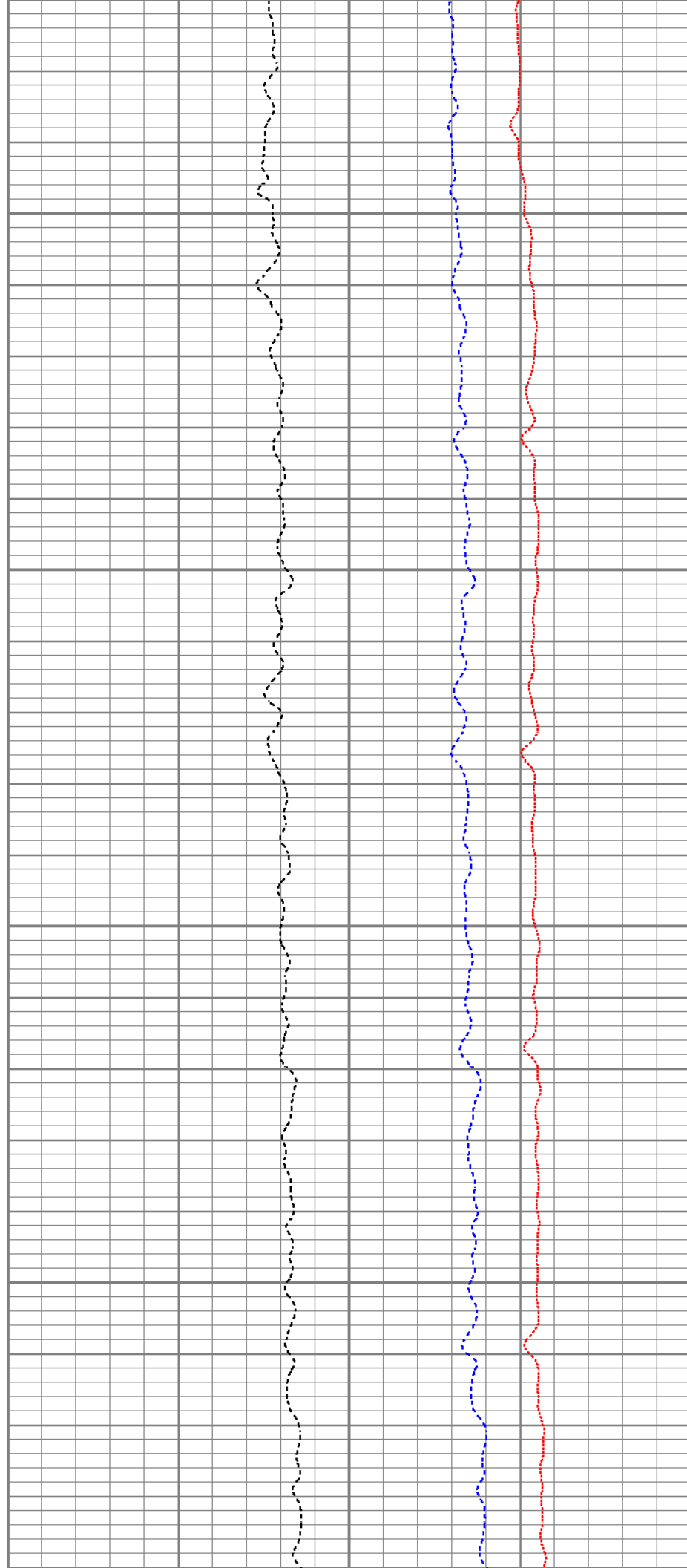
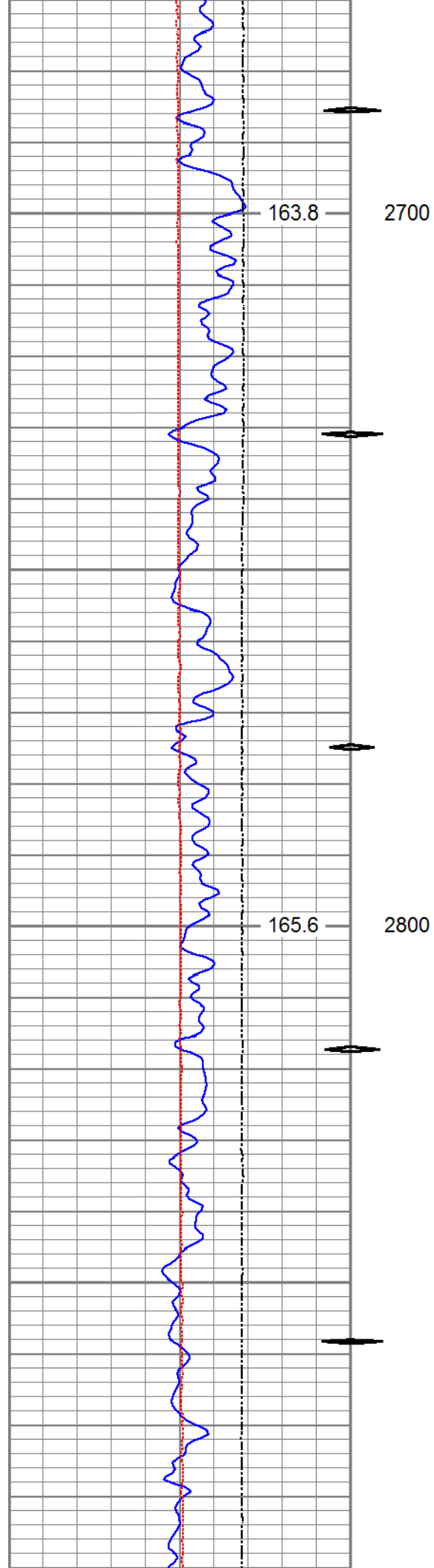
30 Temperature (degF) 300
-100 Line Speed (ft/min) 100

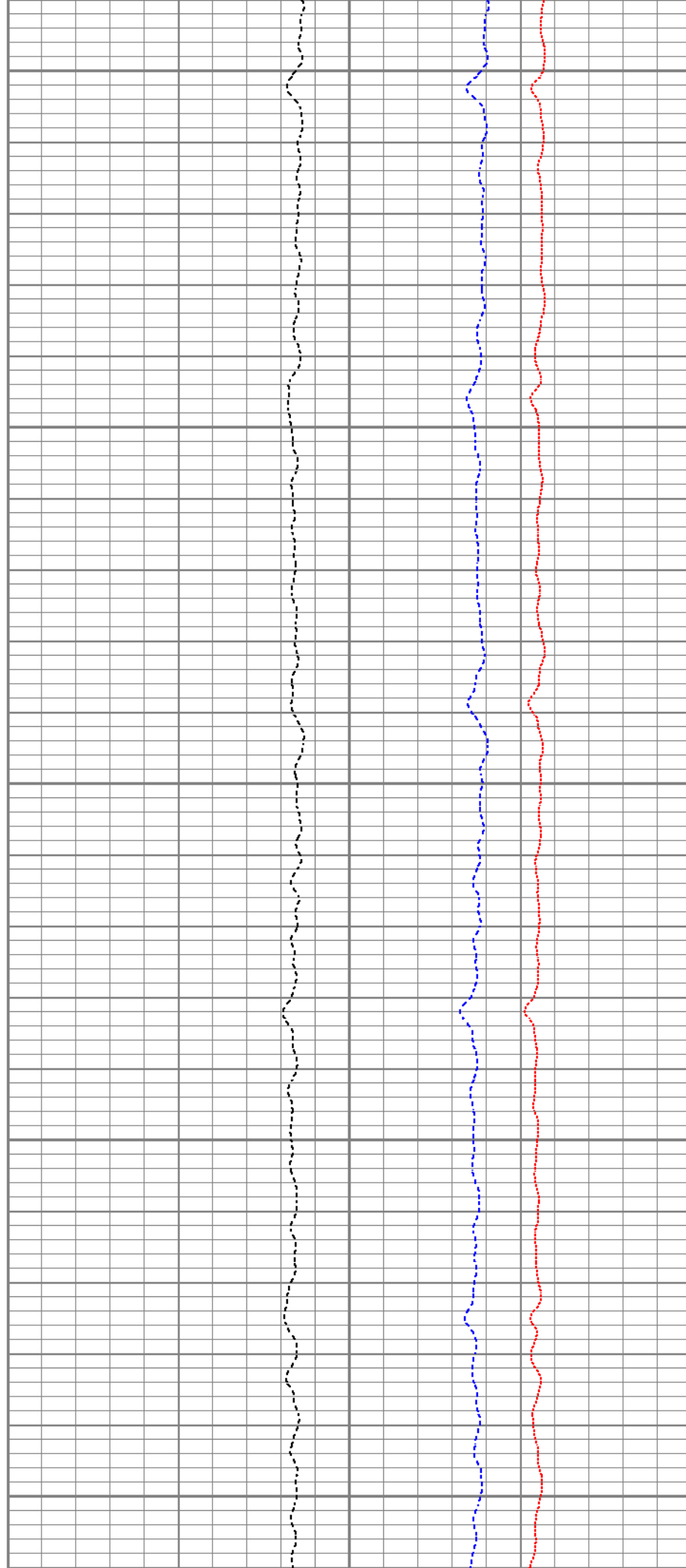
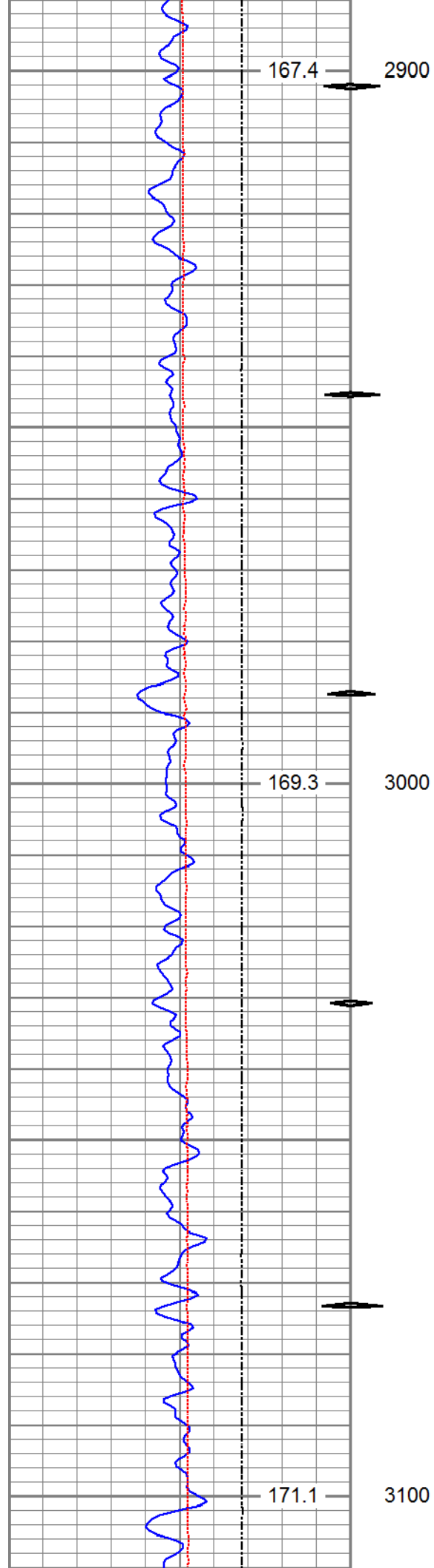


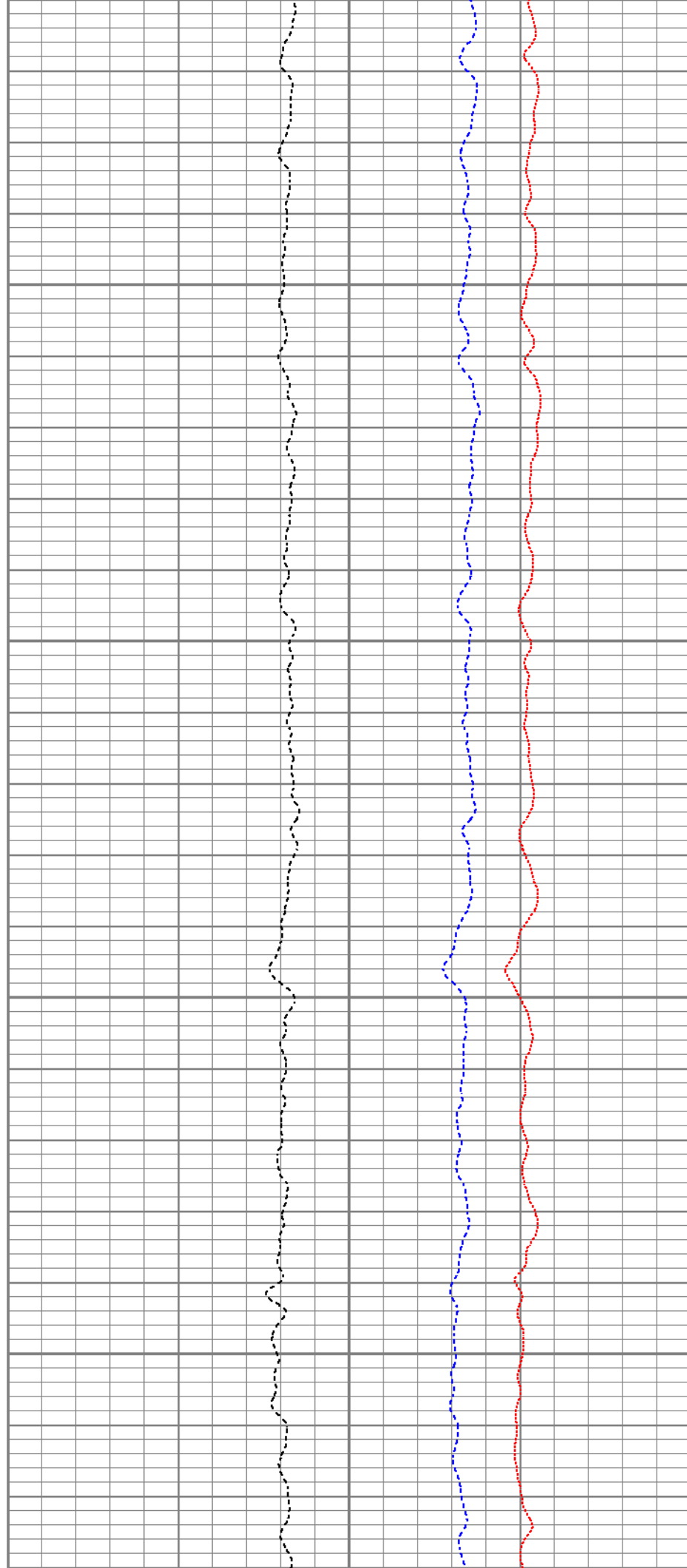
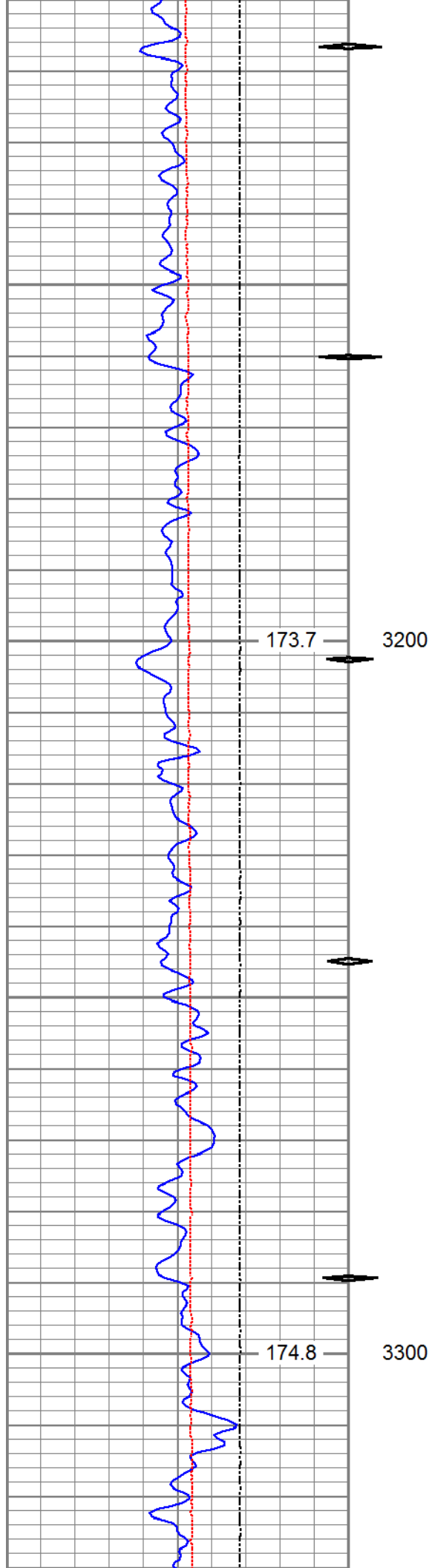


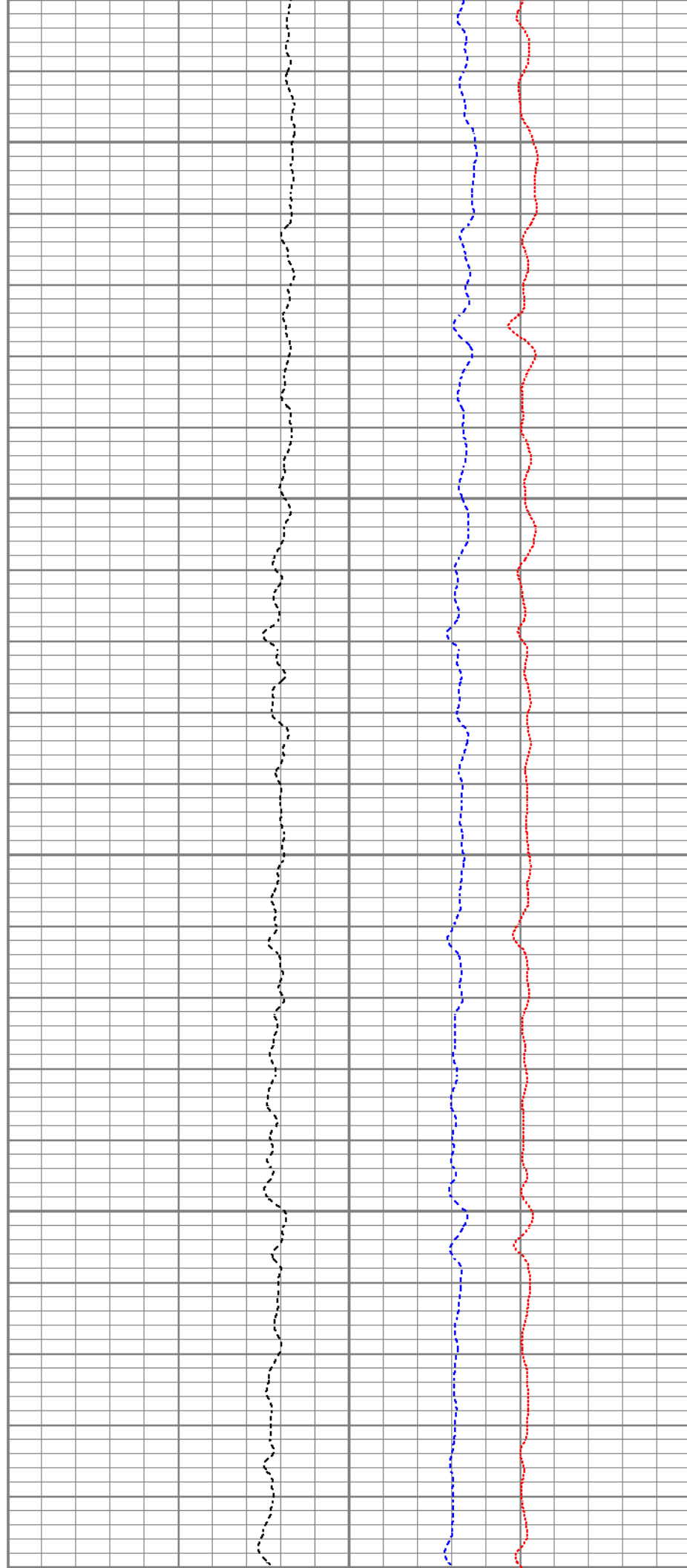
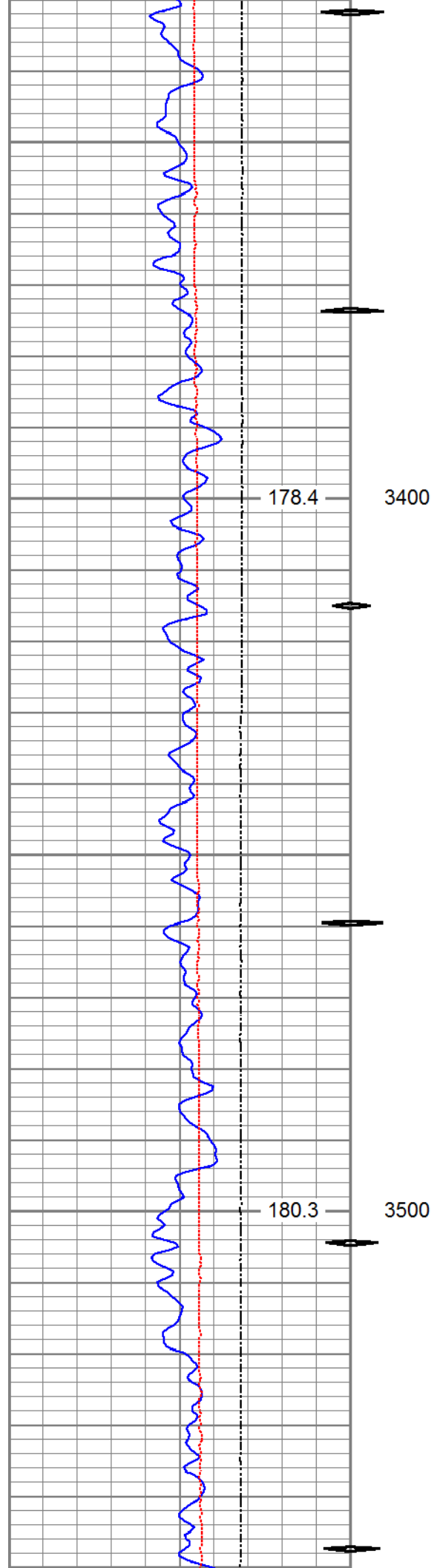


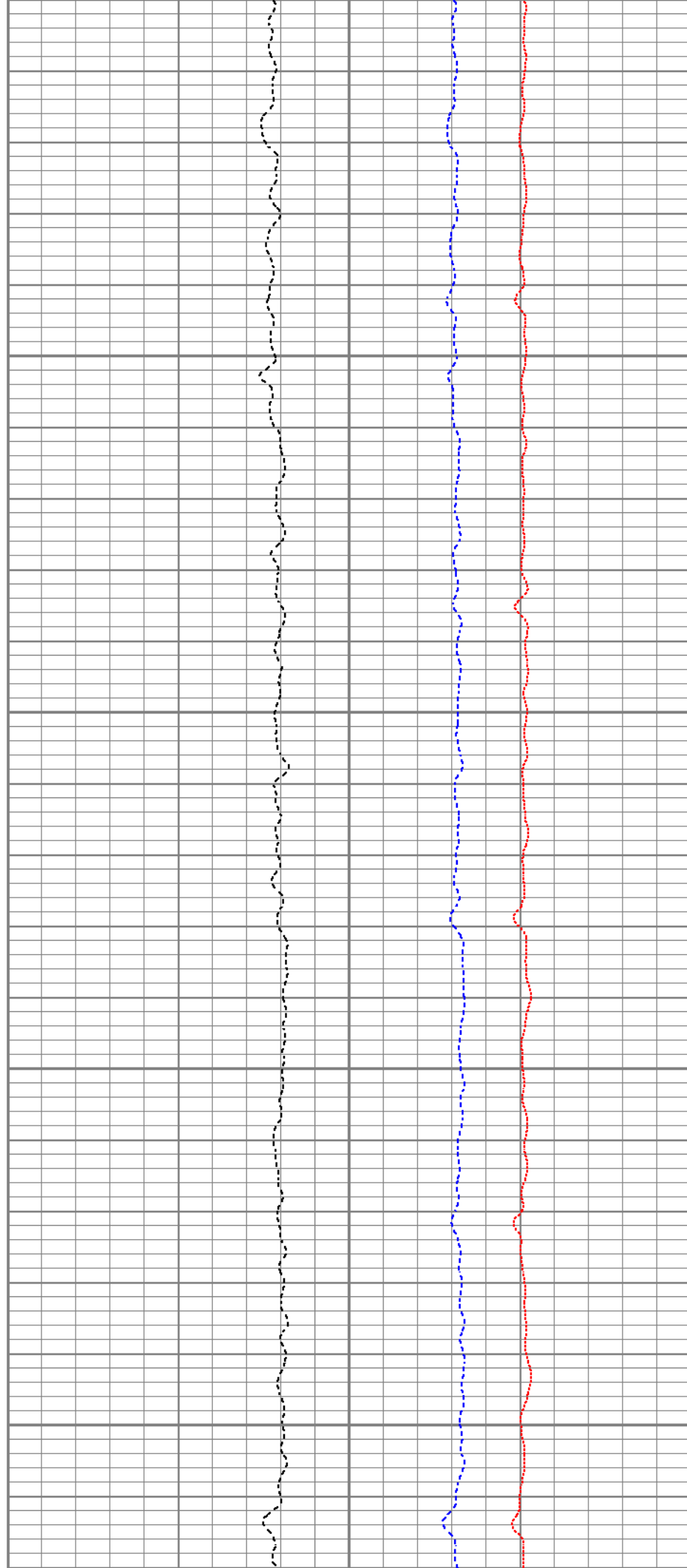
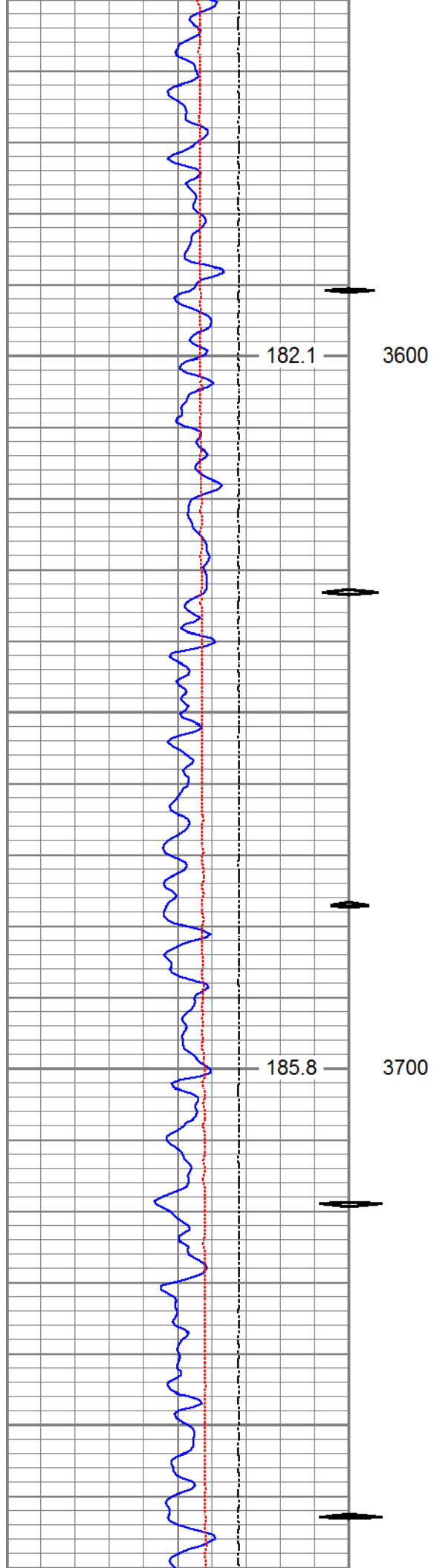


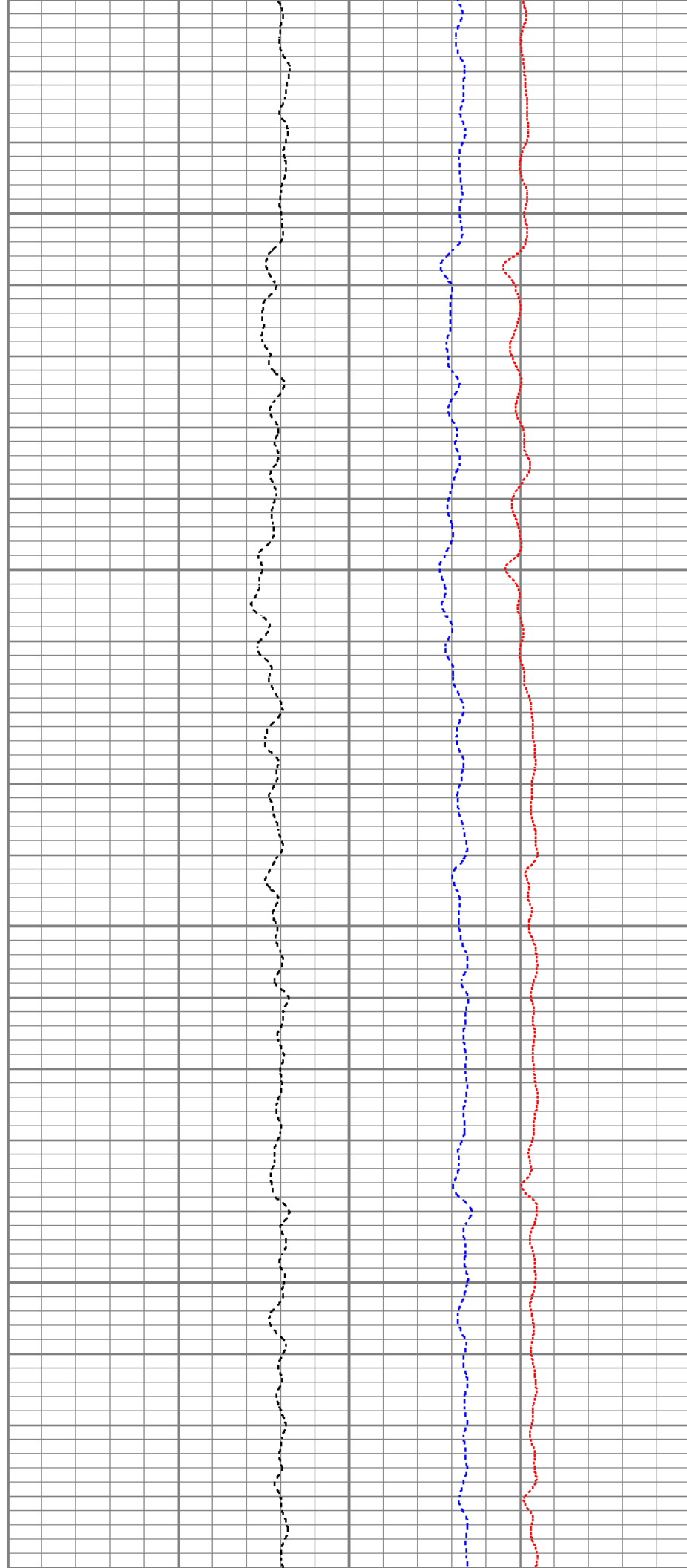
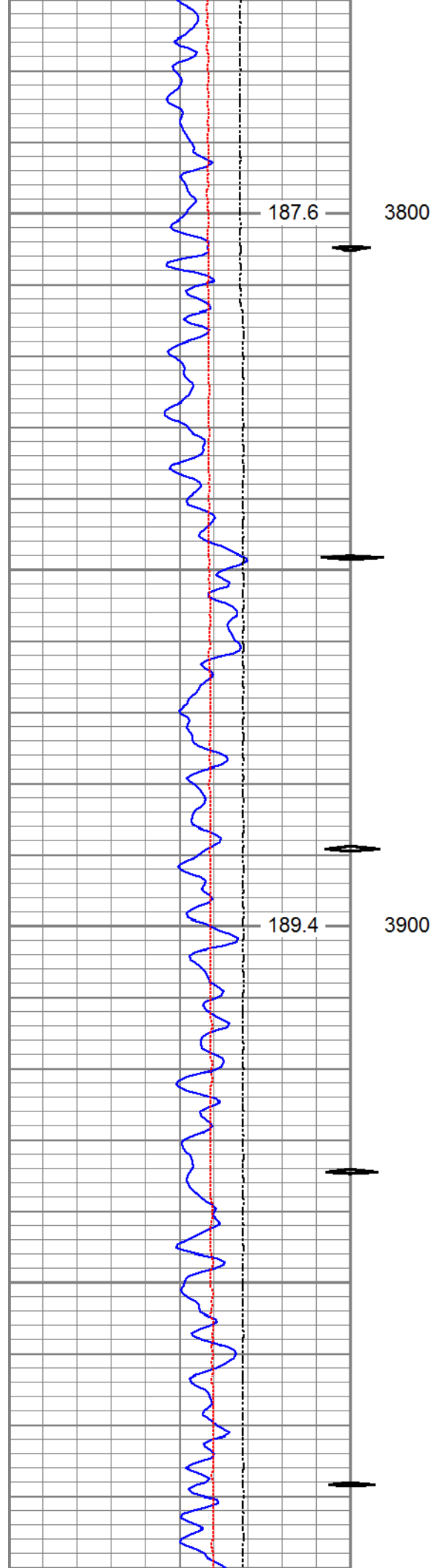


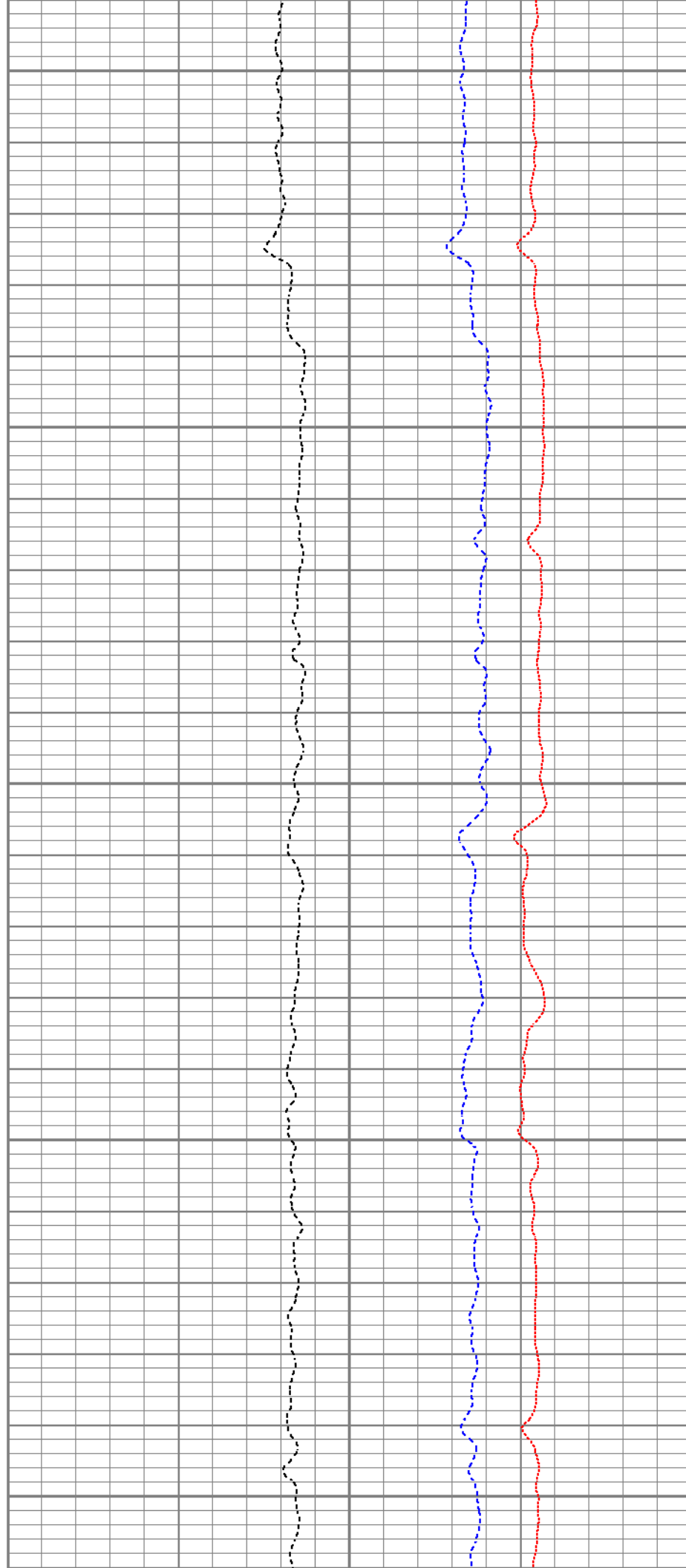
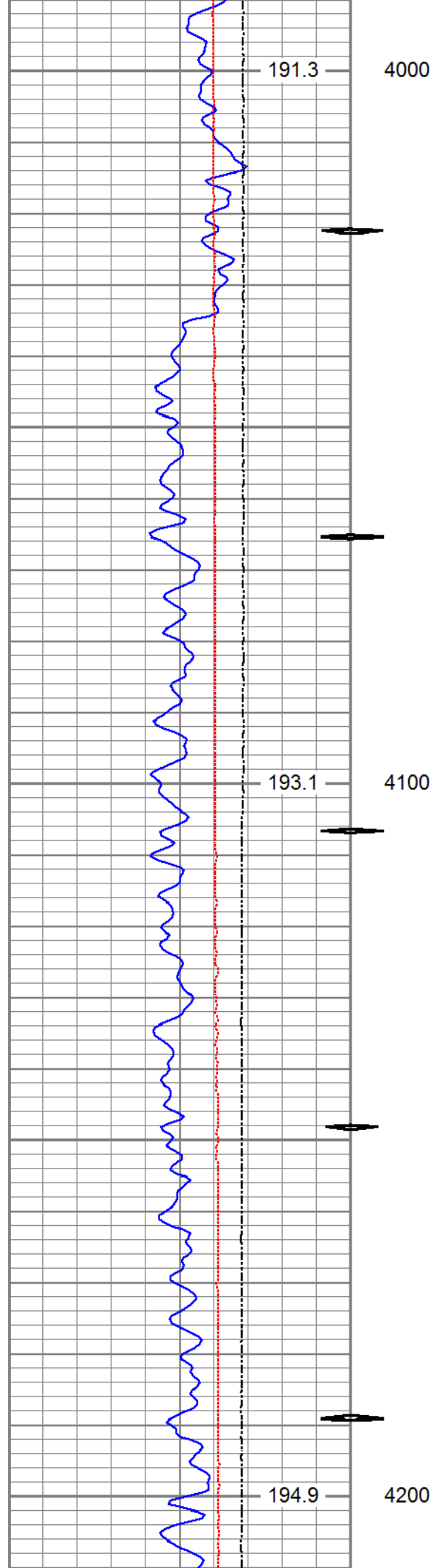


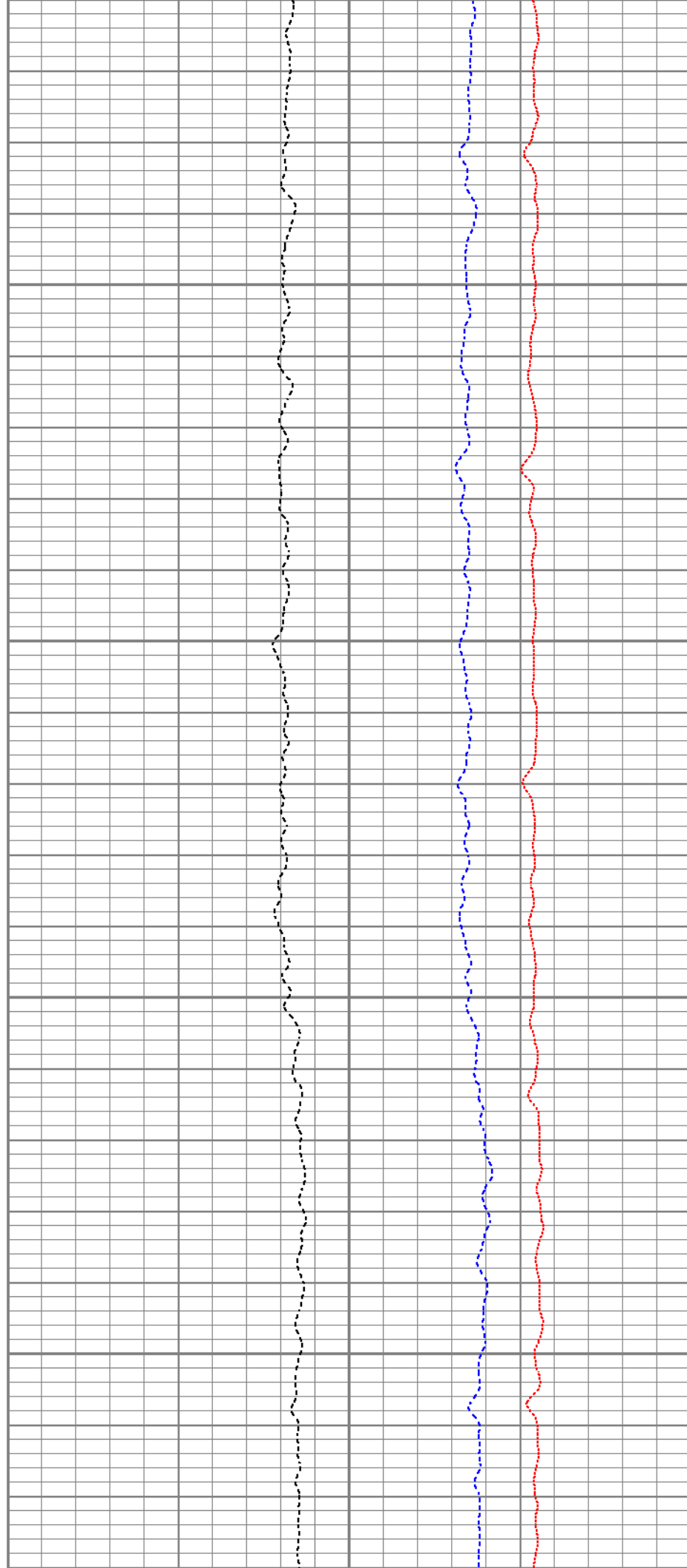
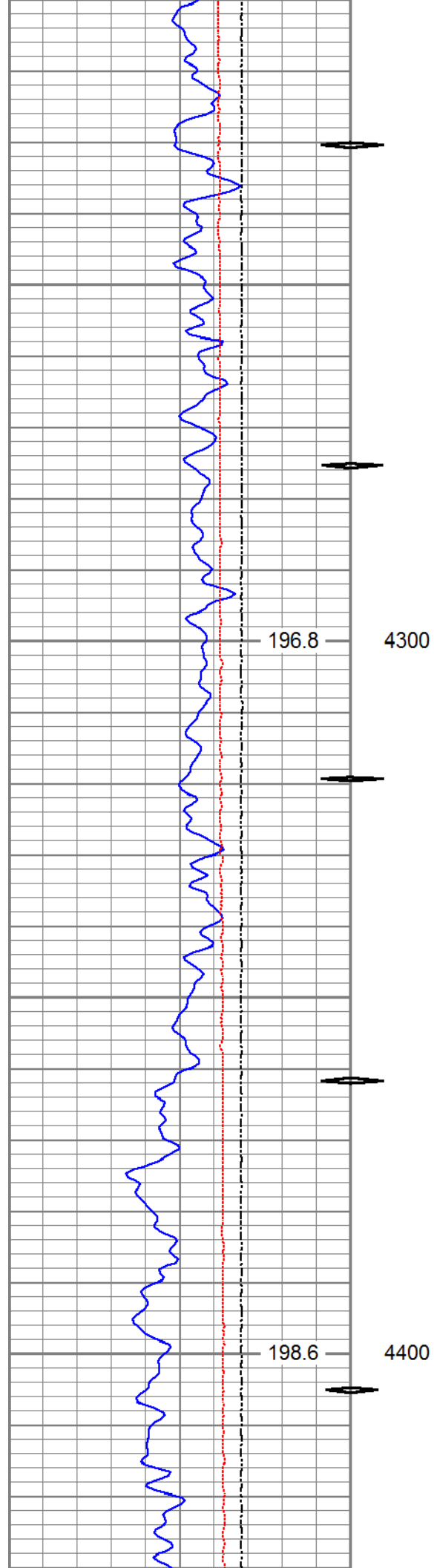


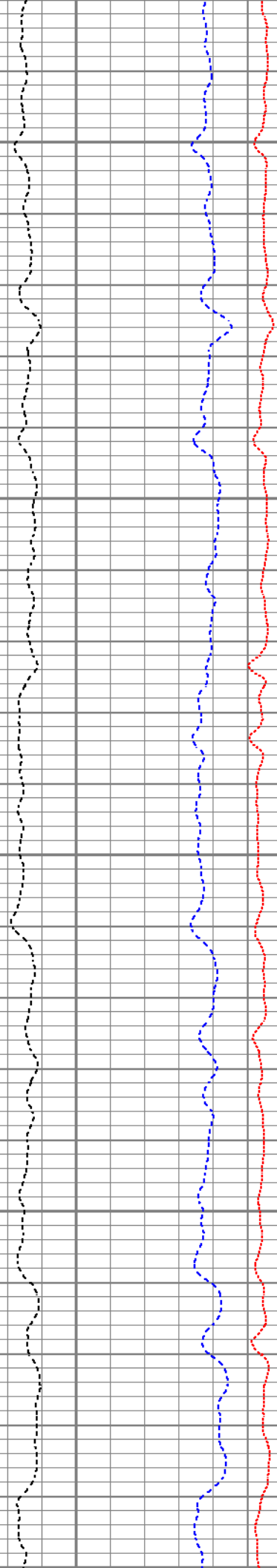
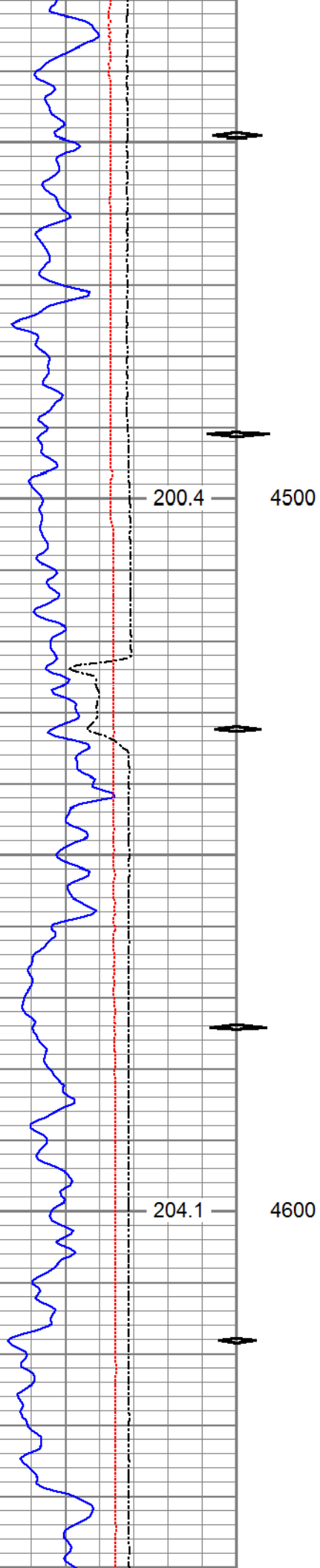


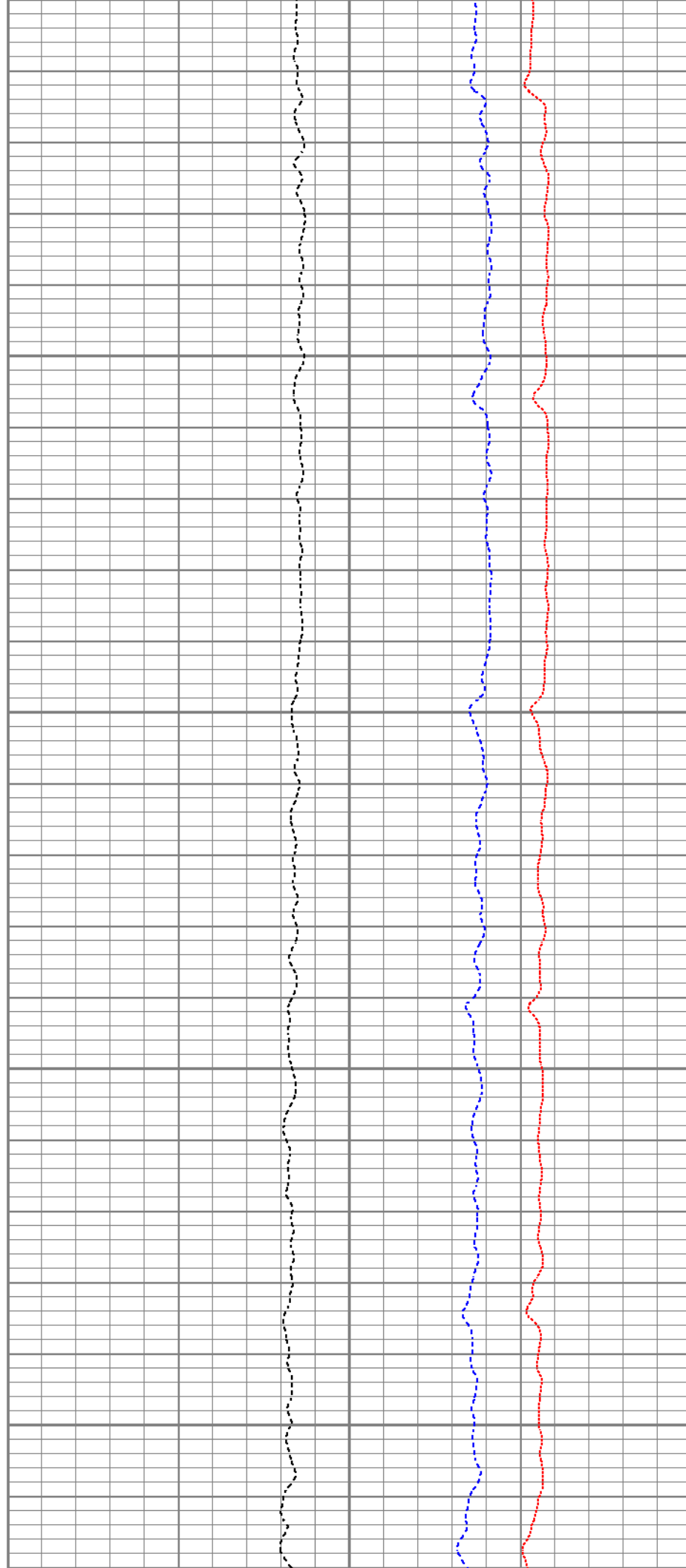
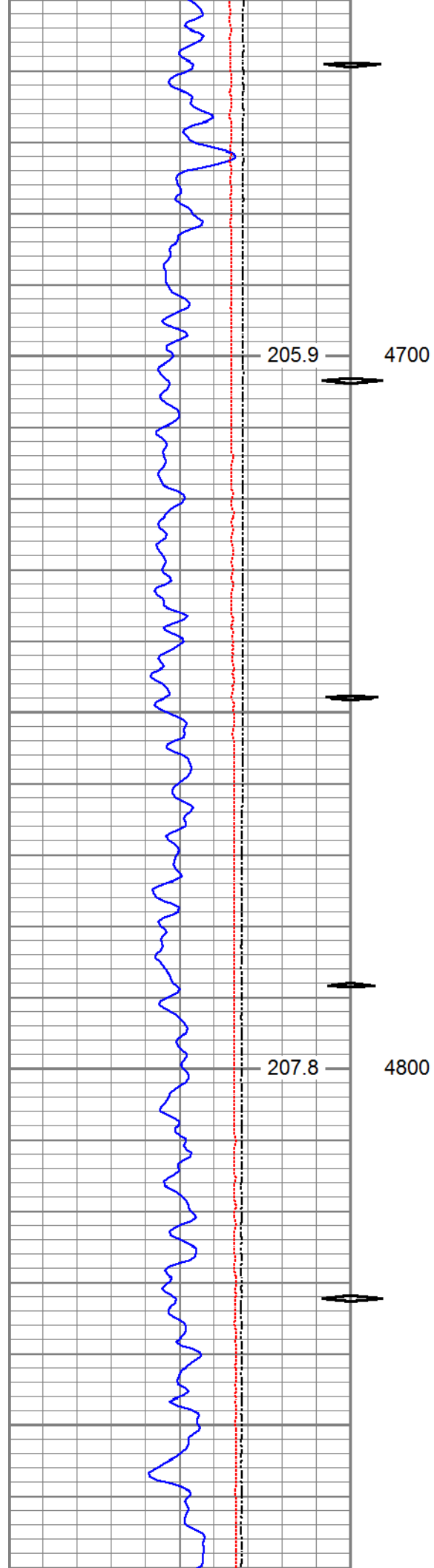


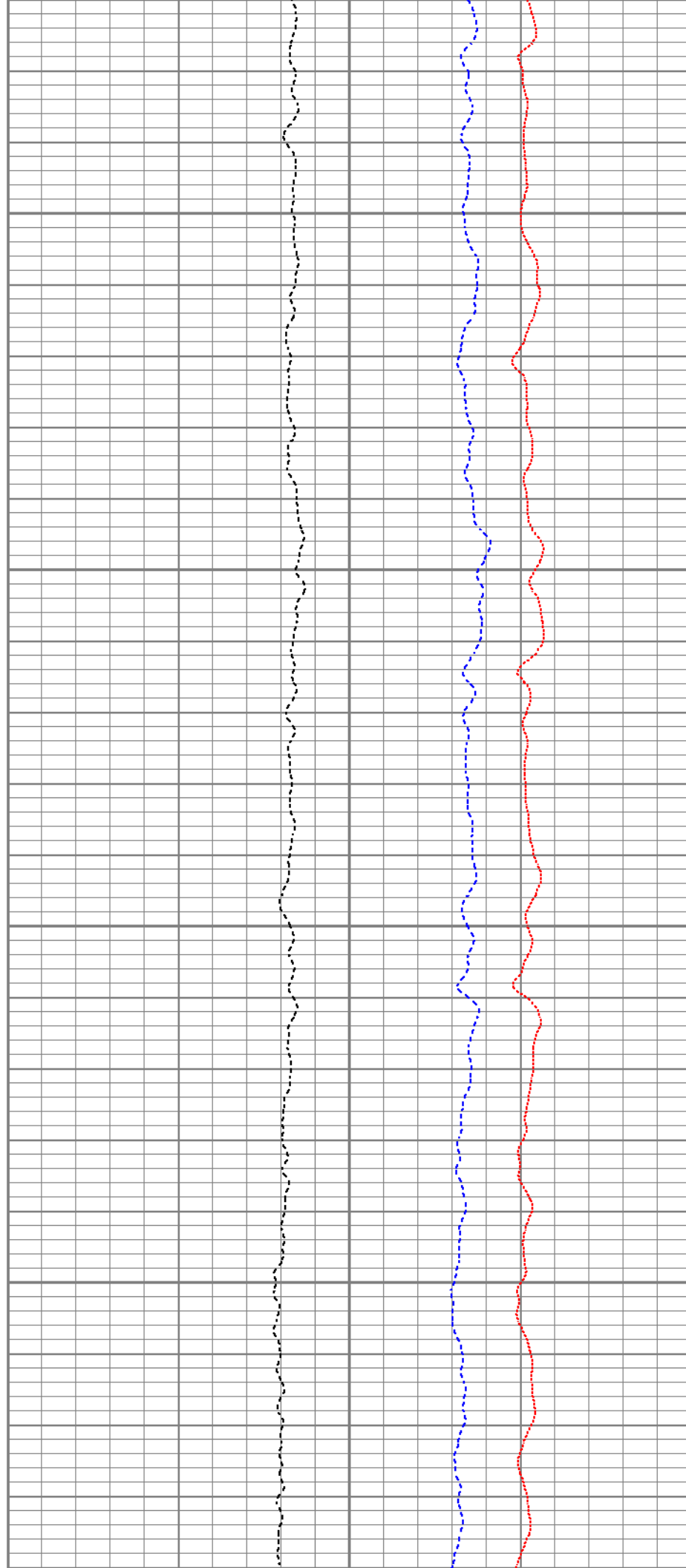
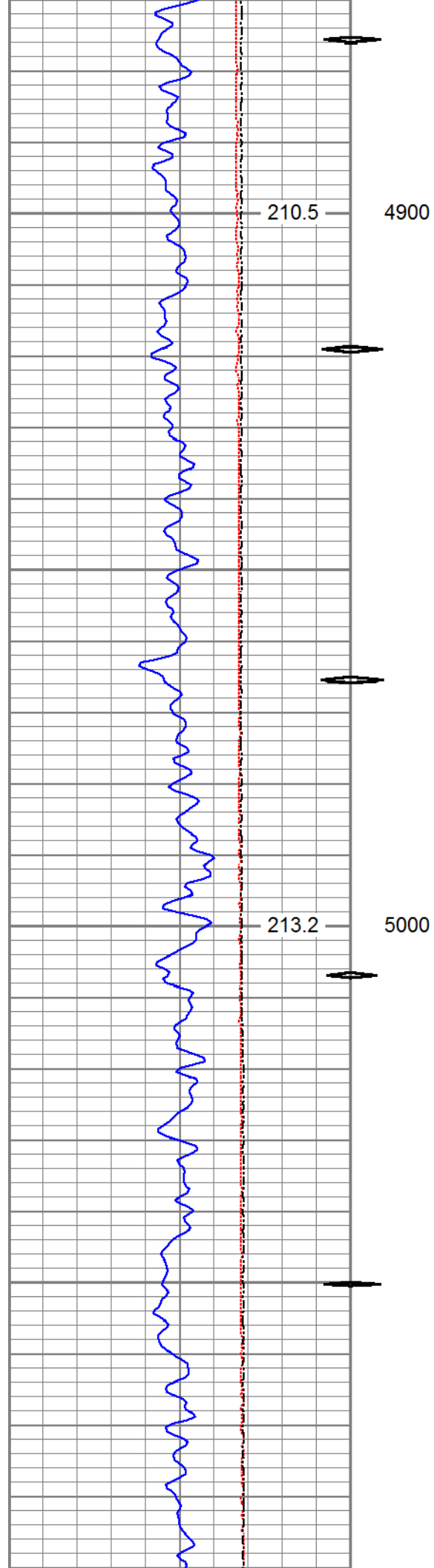


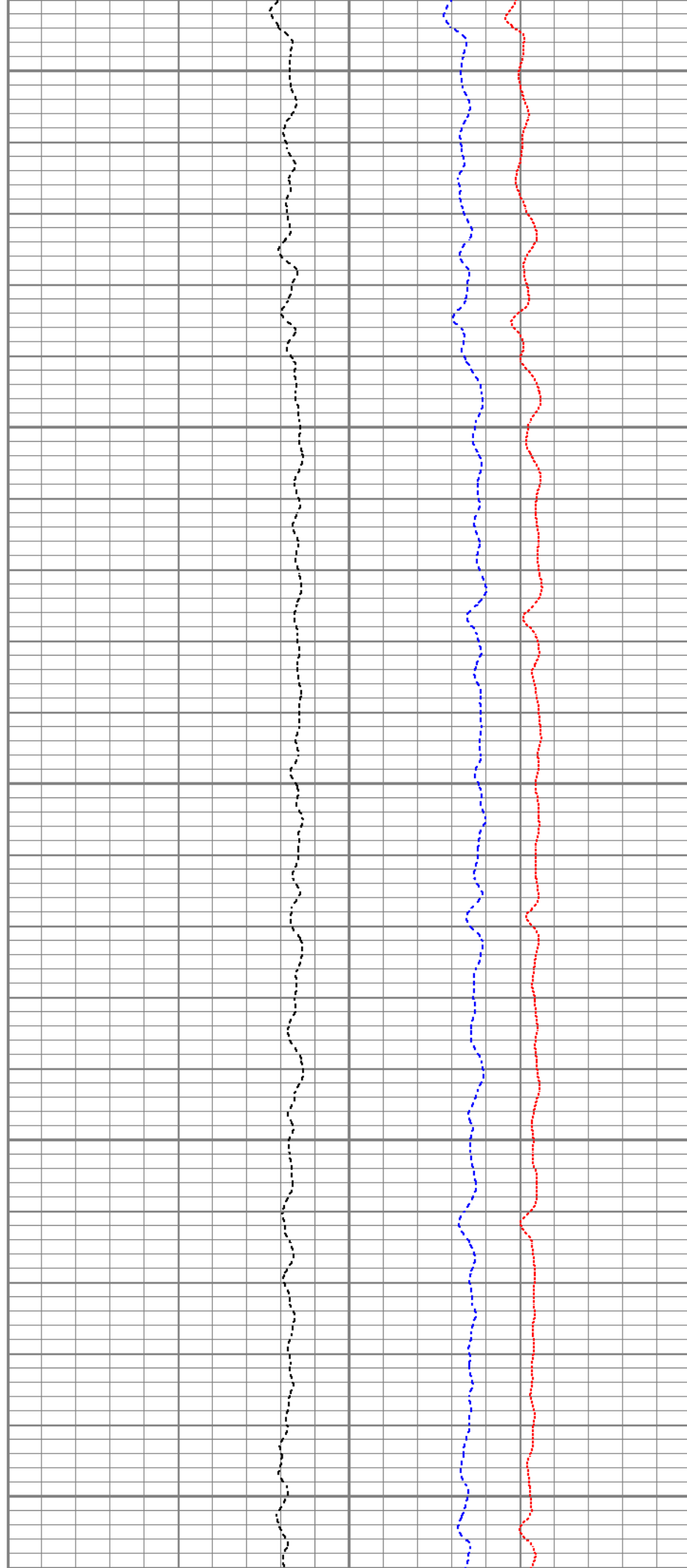
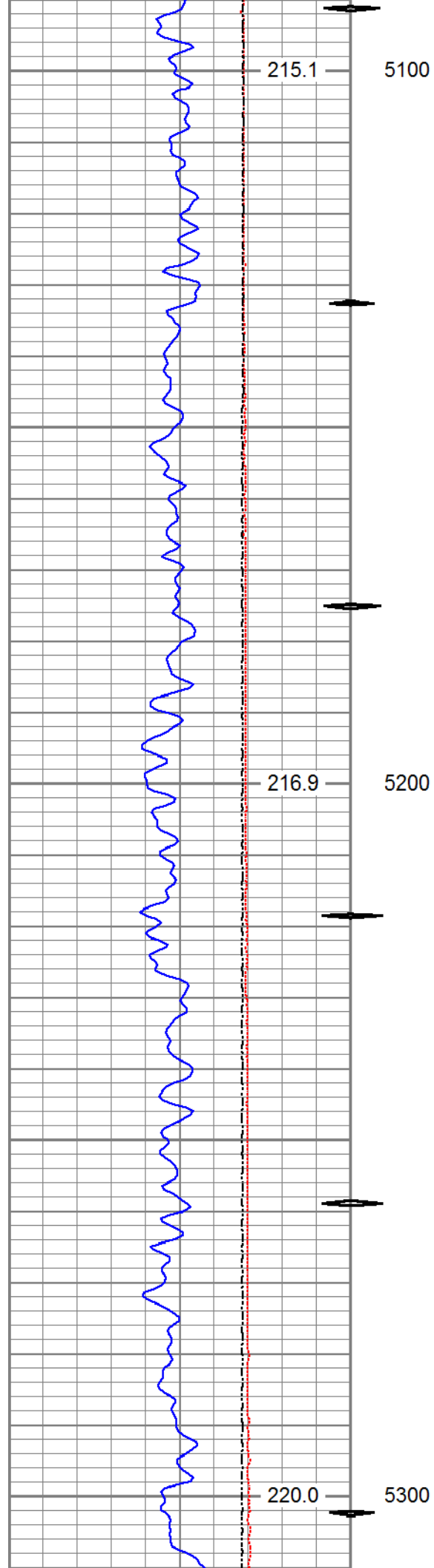


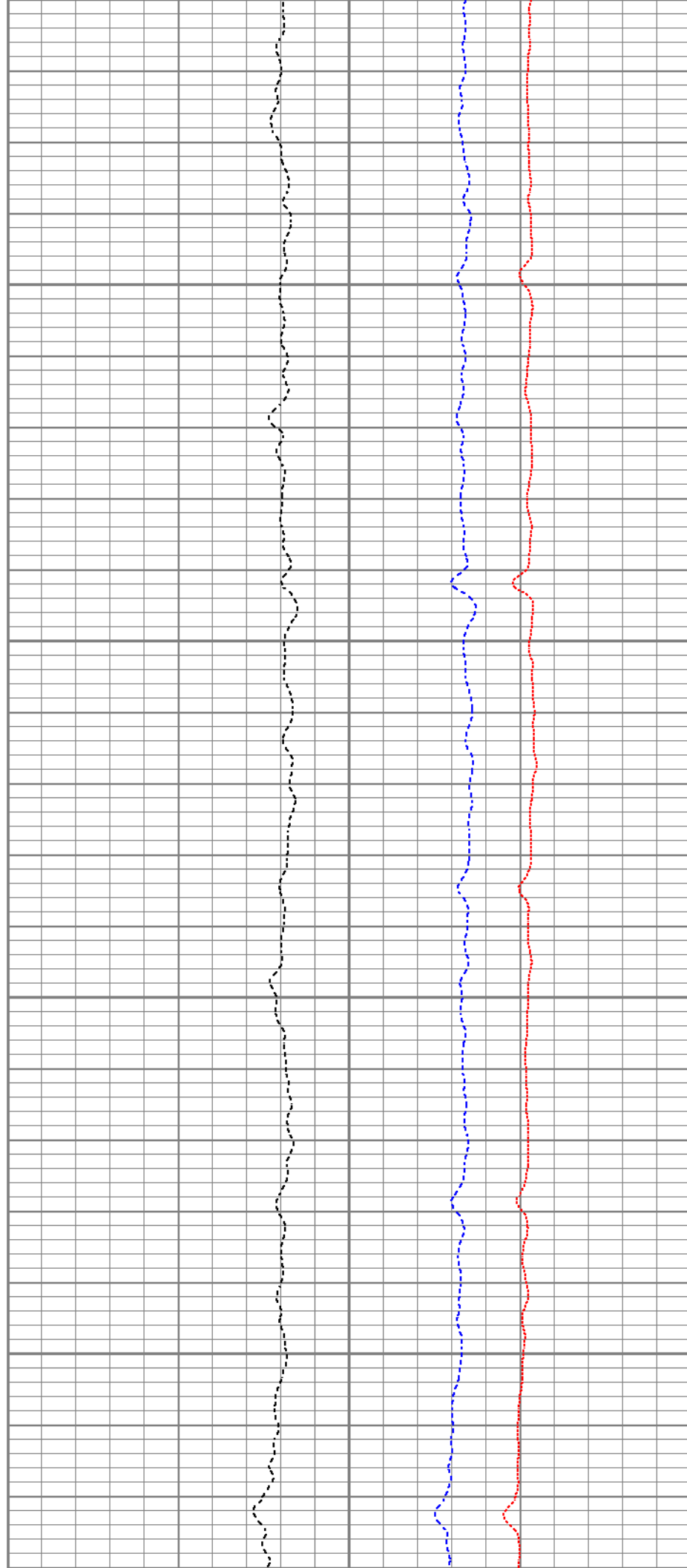
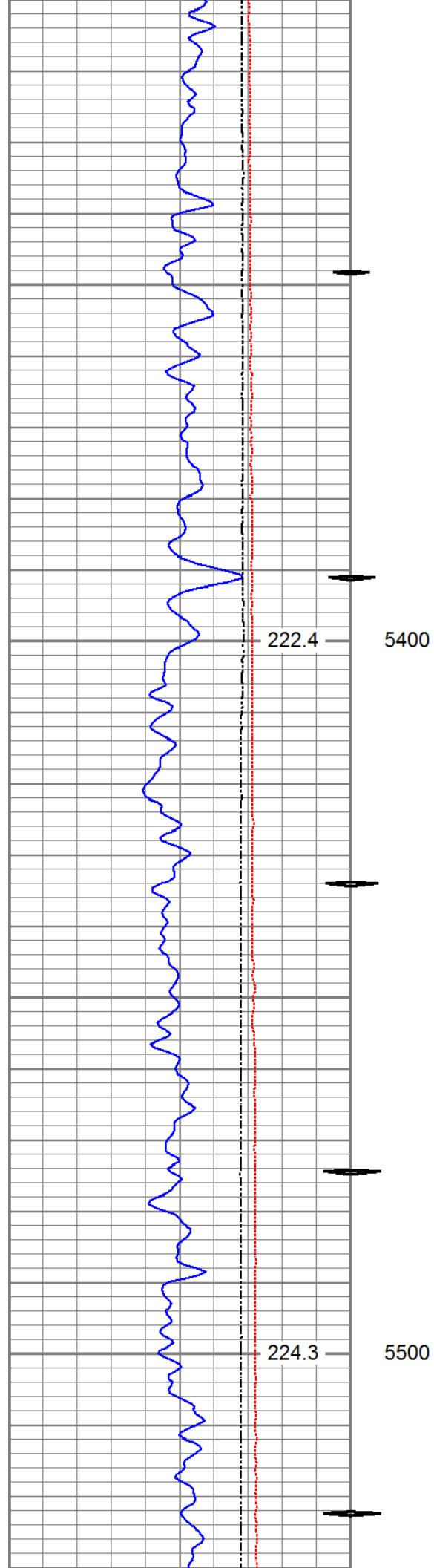


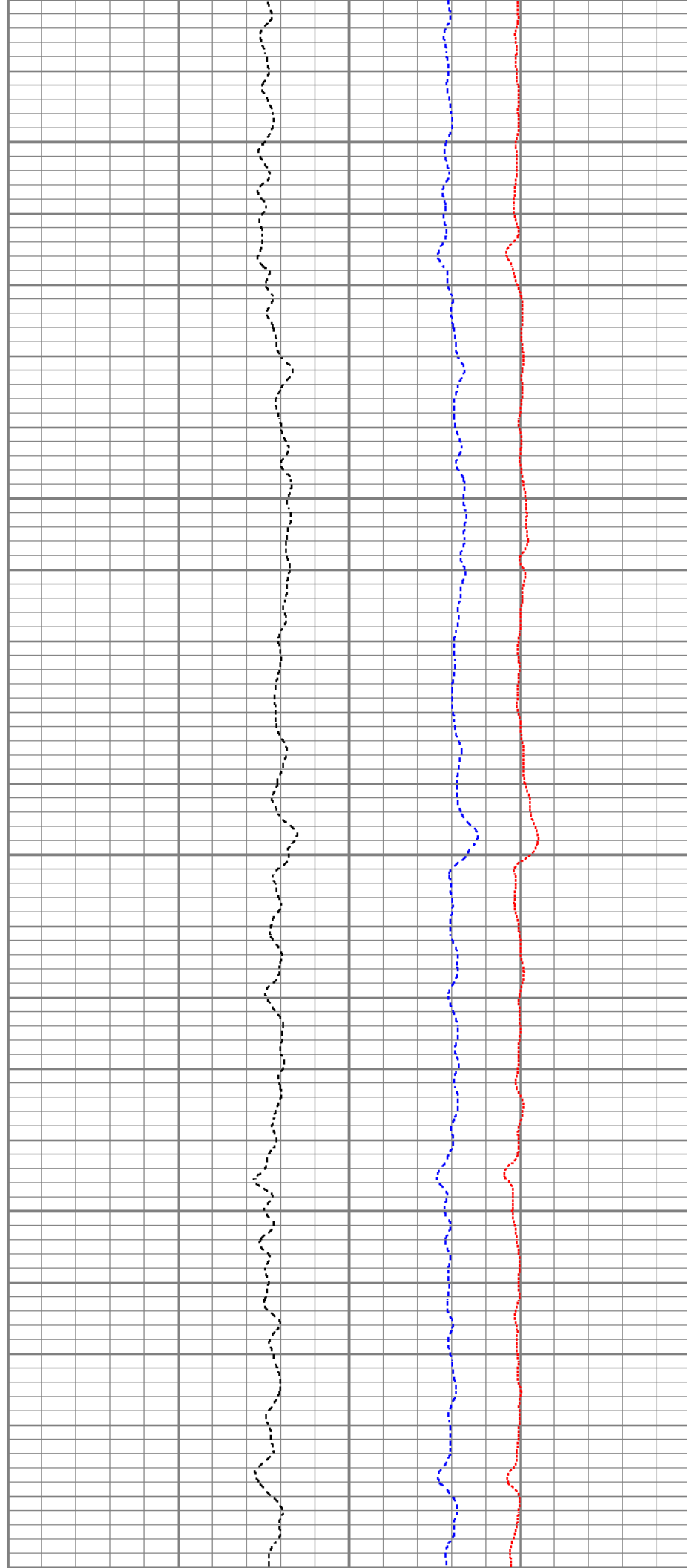
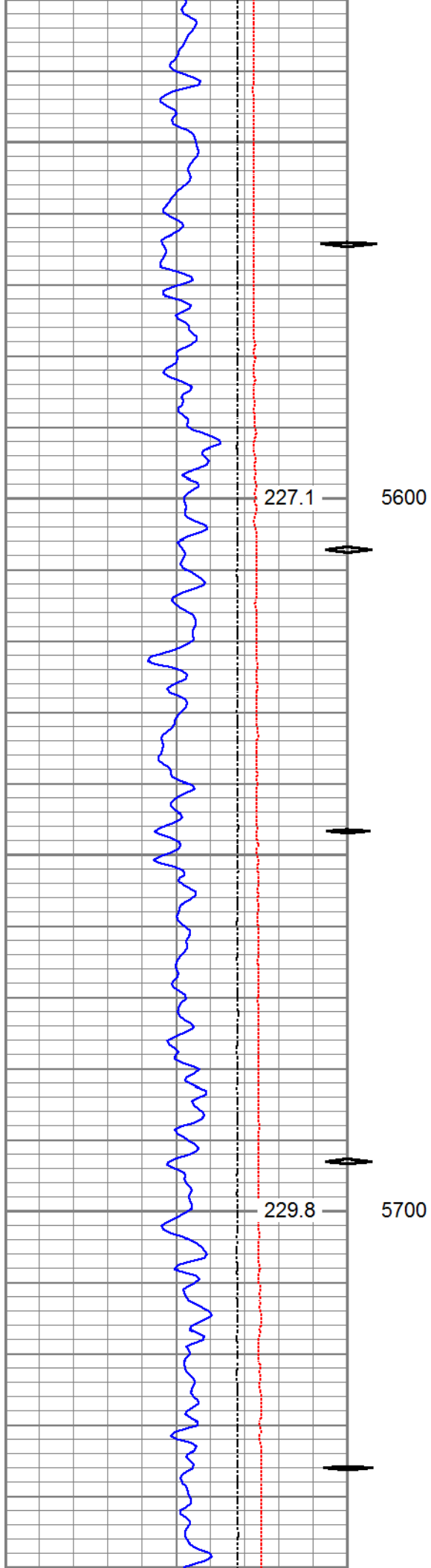


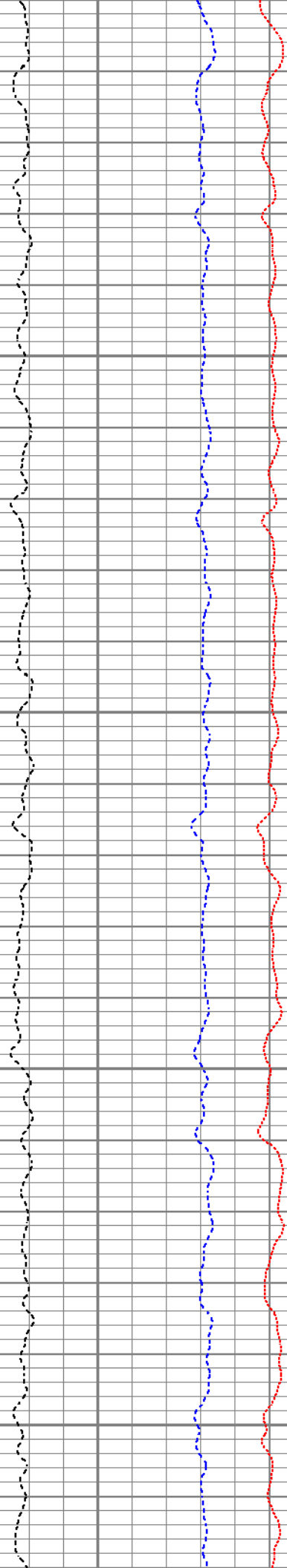
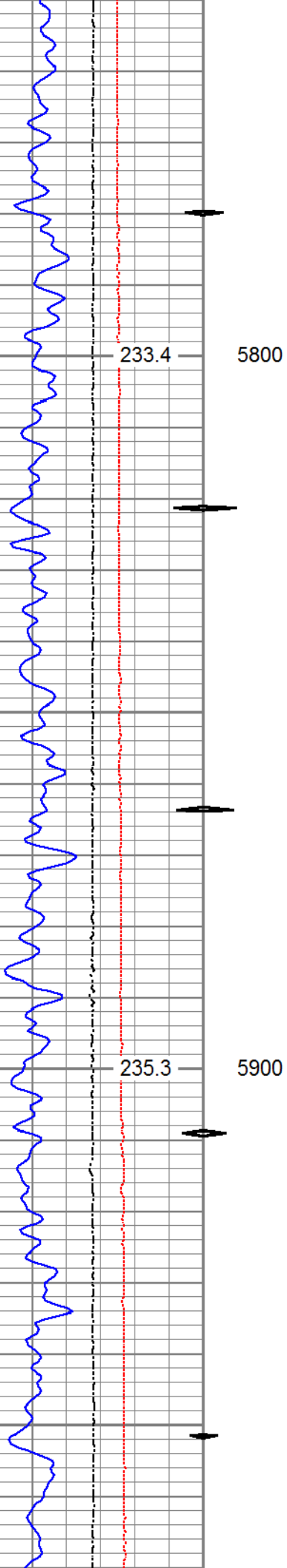


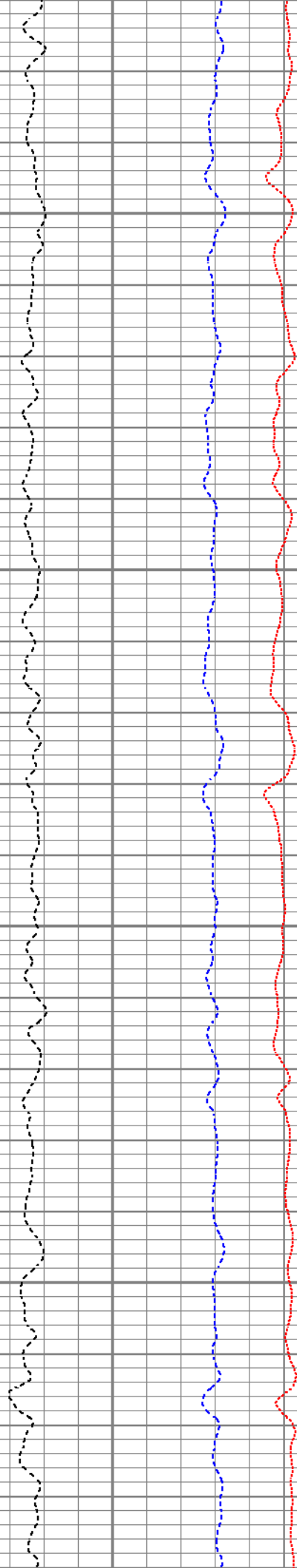
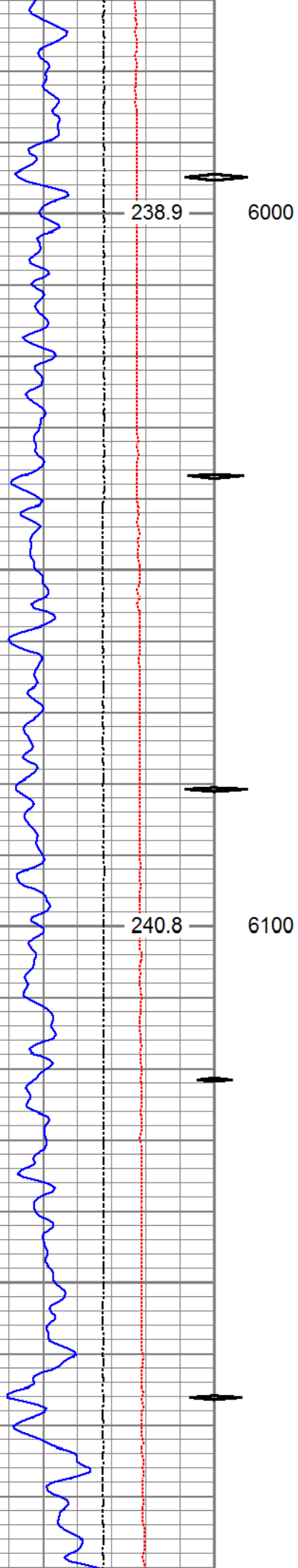


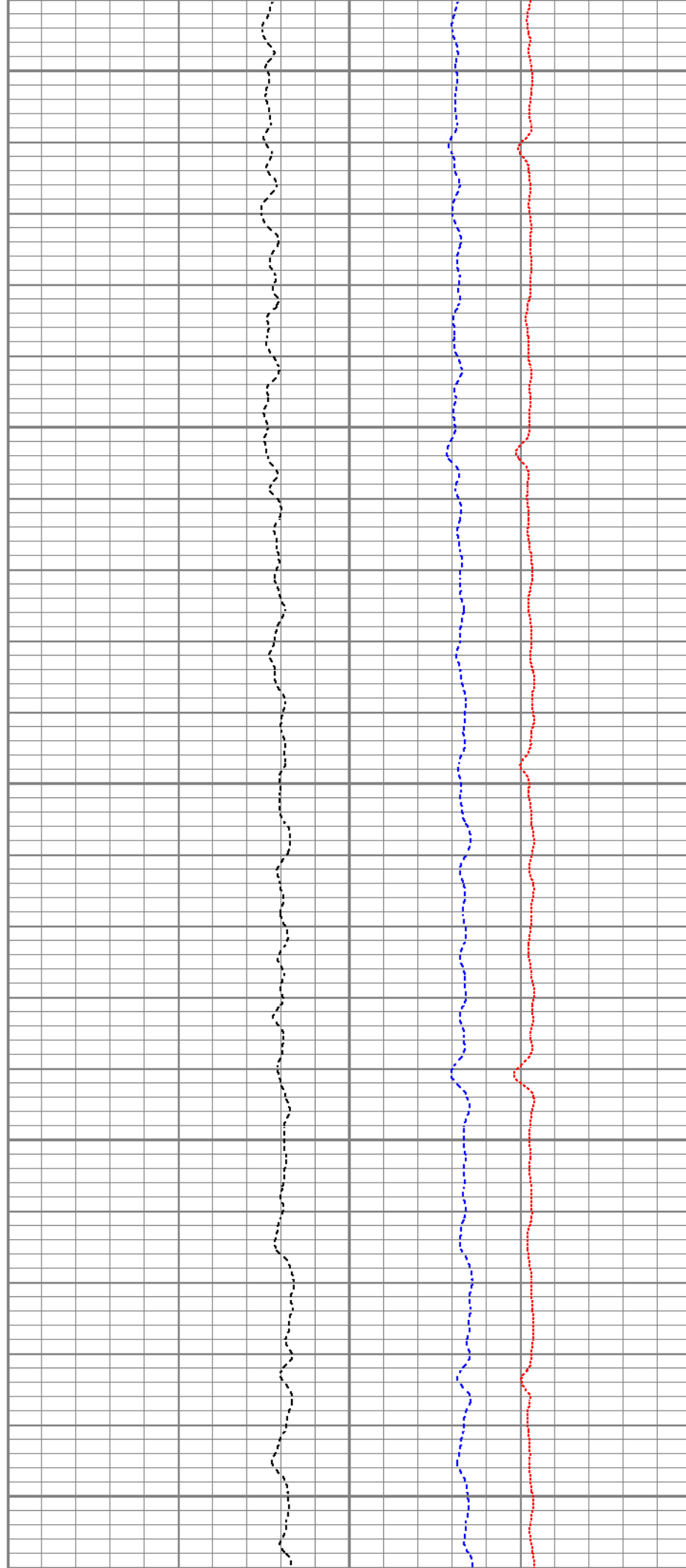
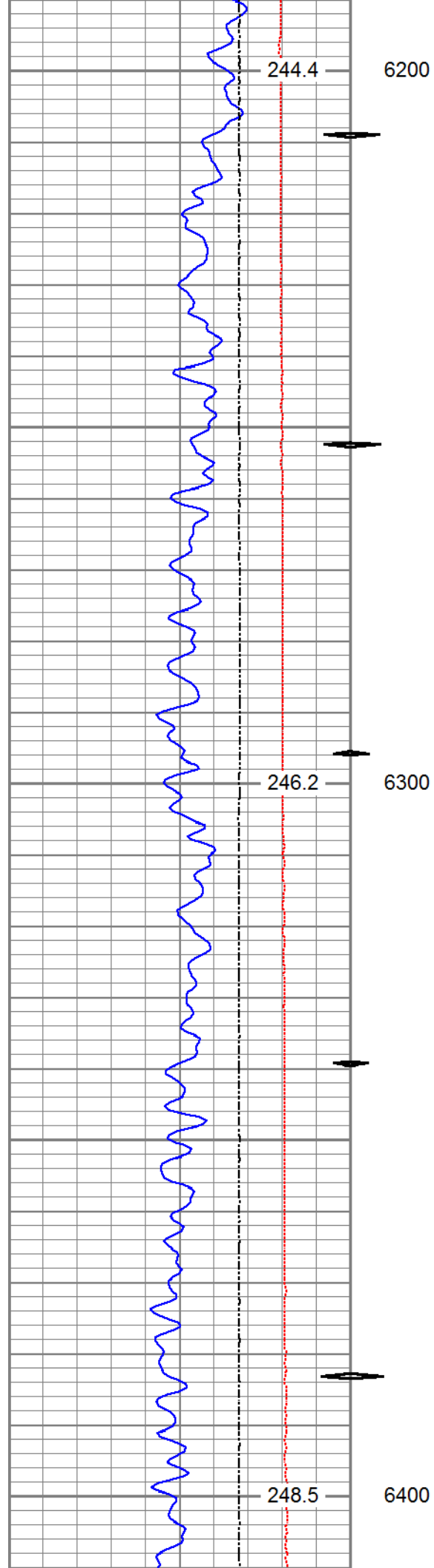


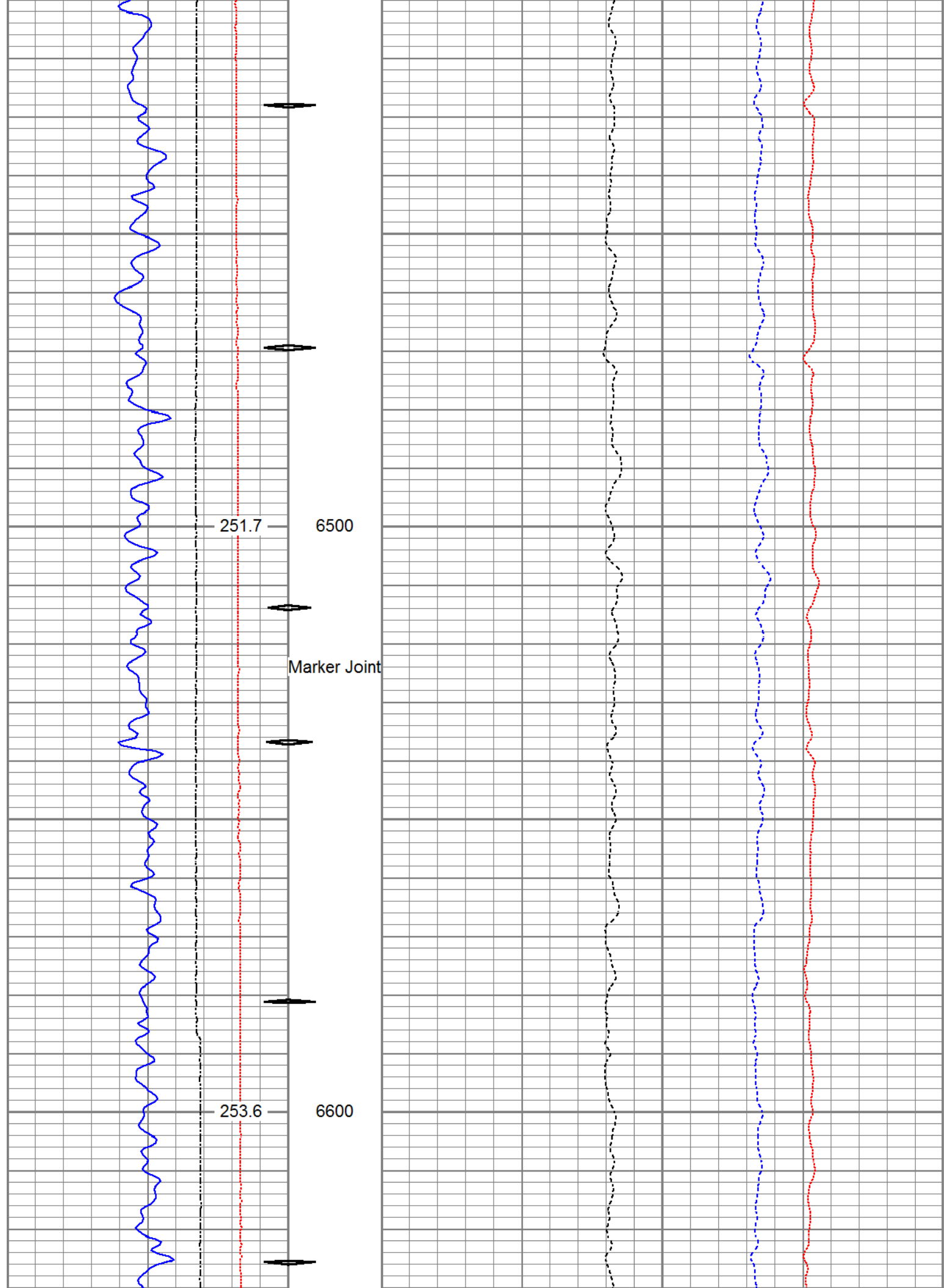


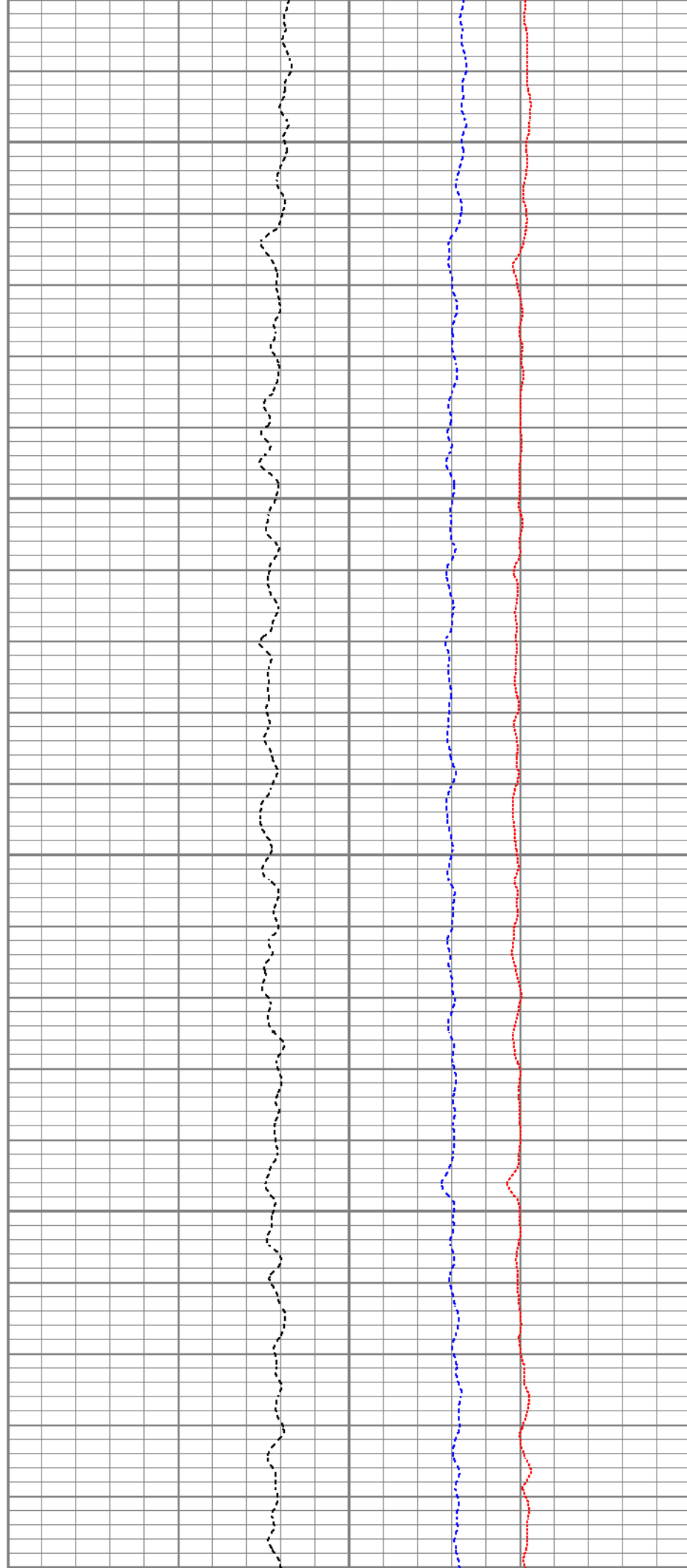
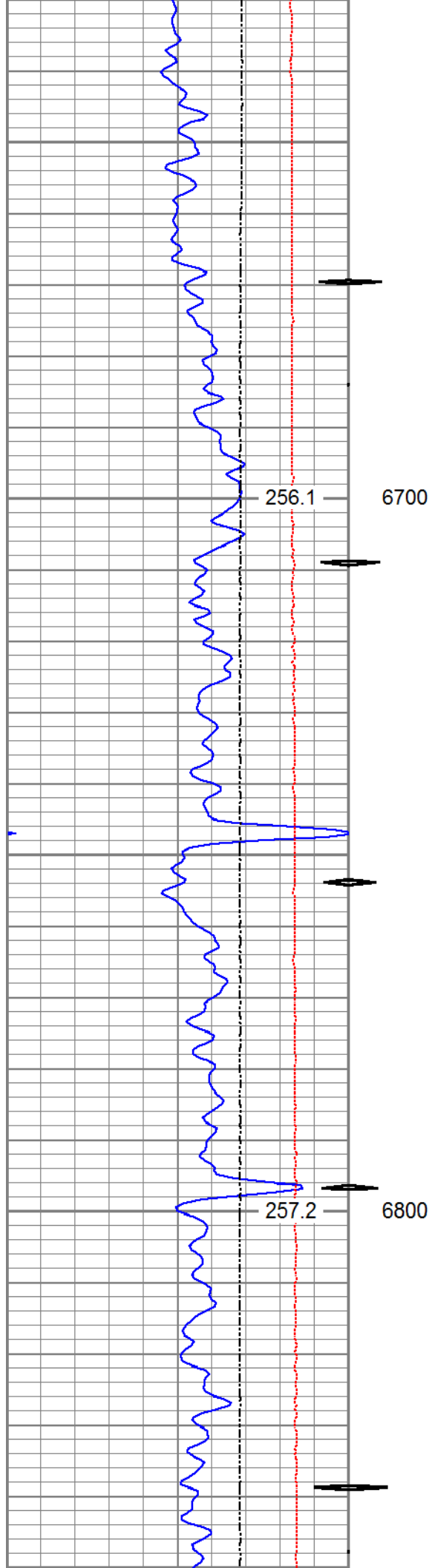


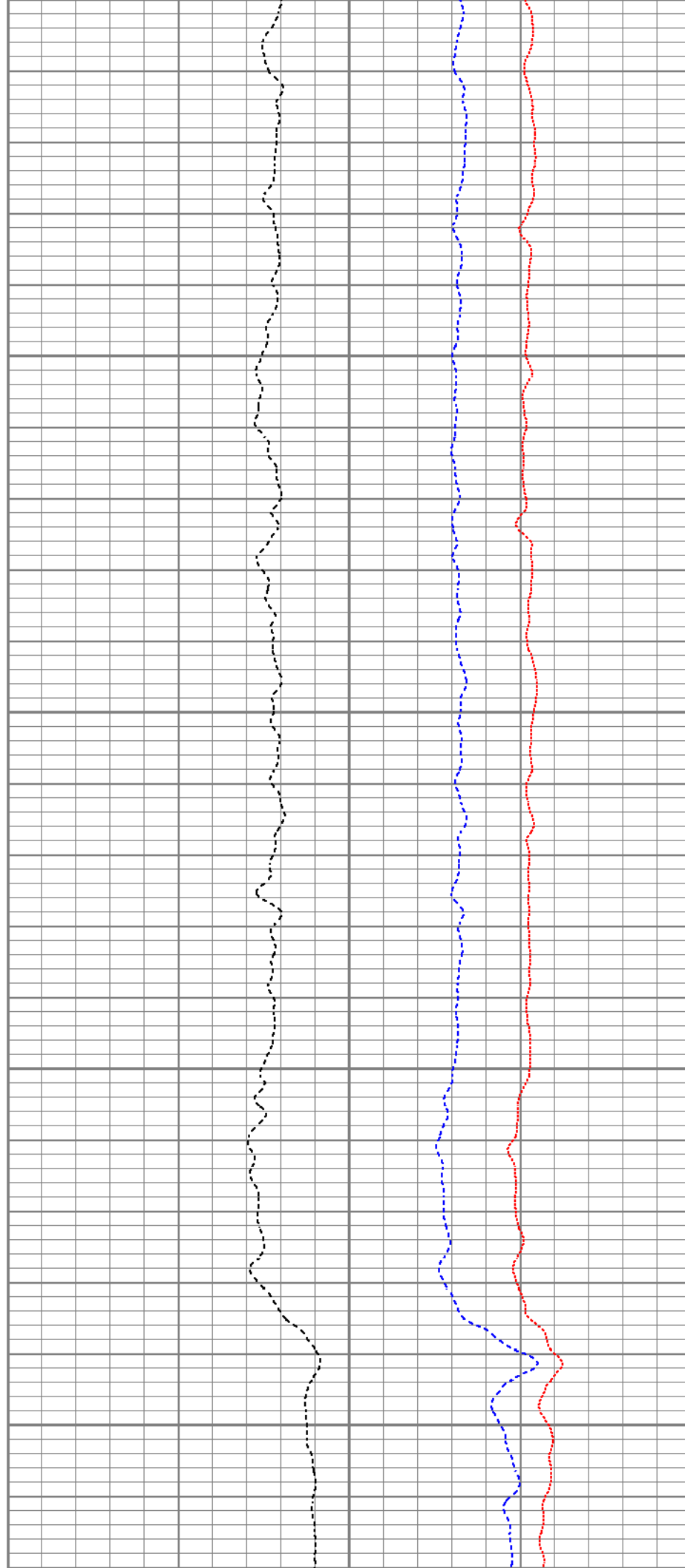
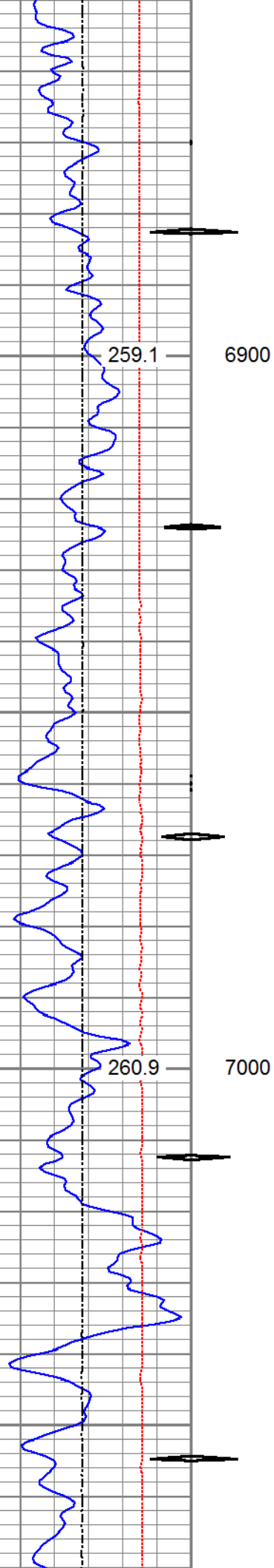


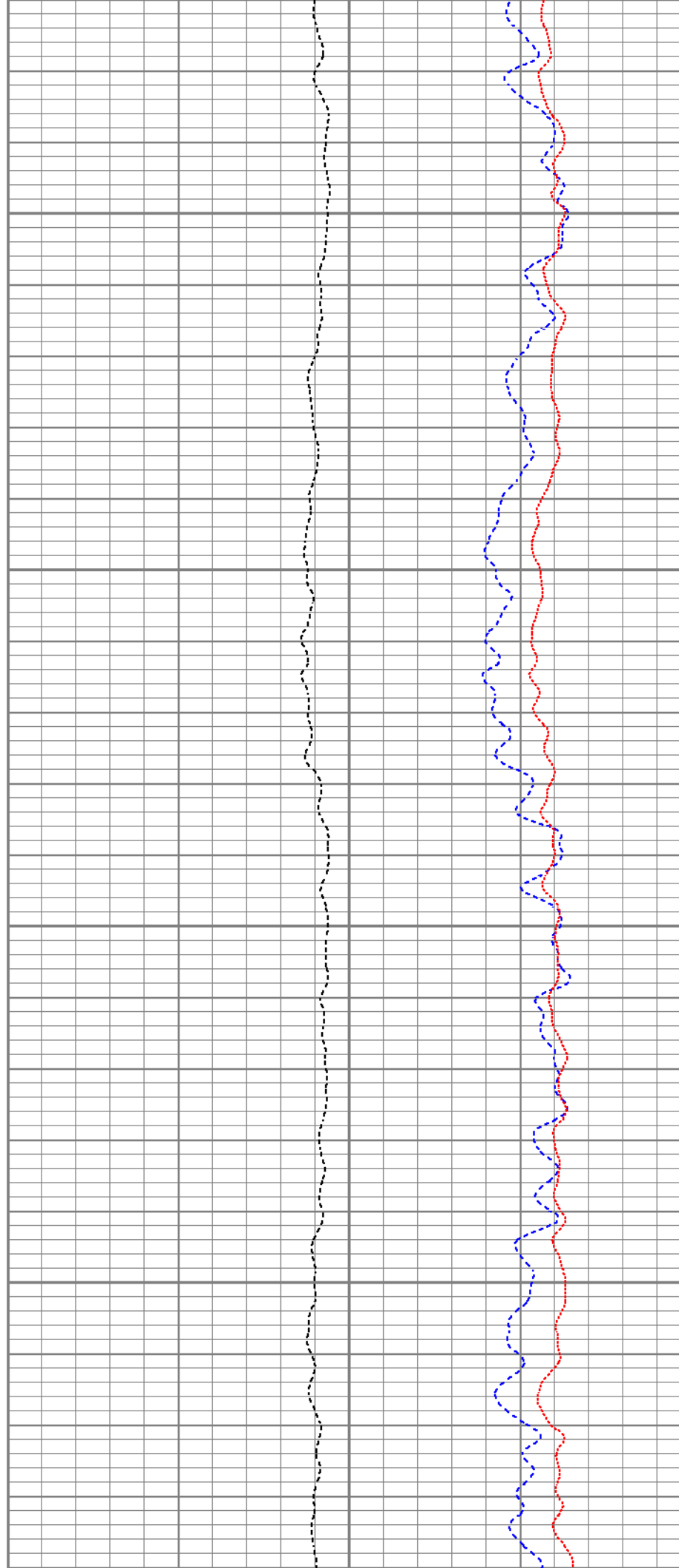
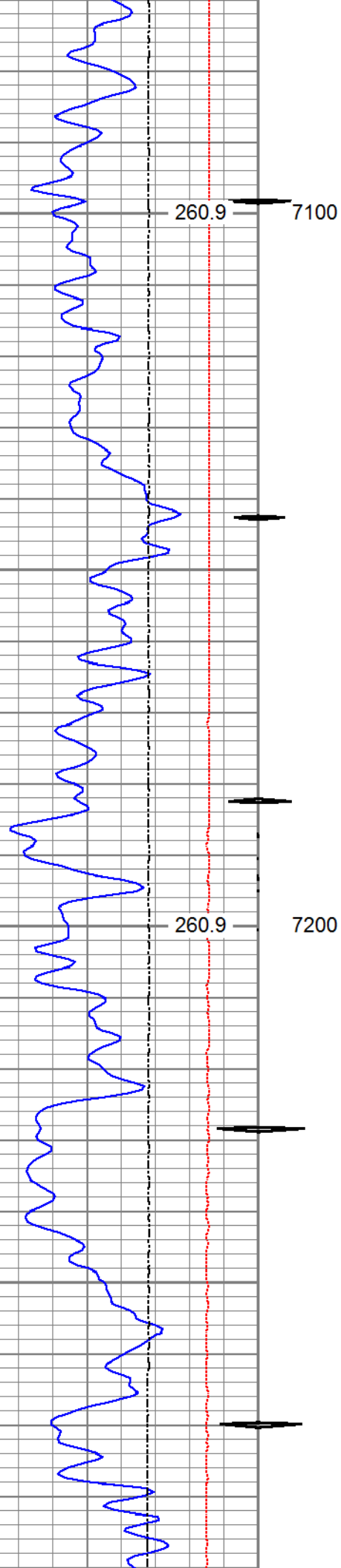


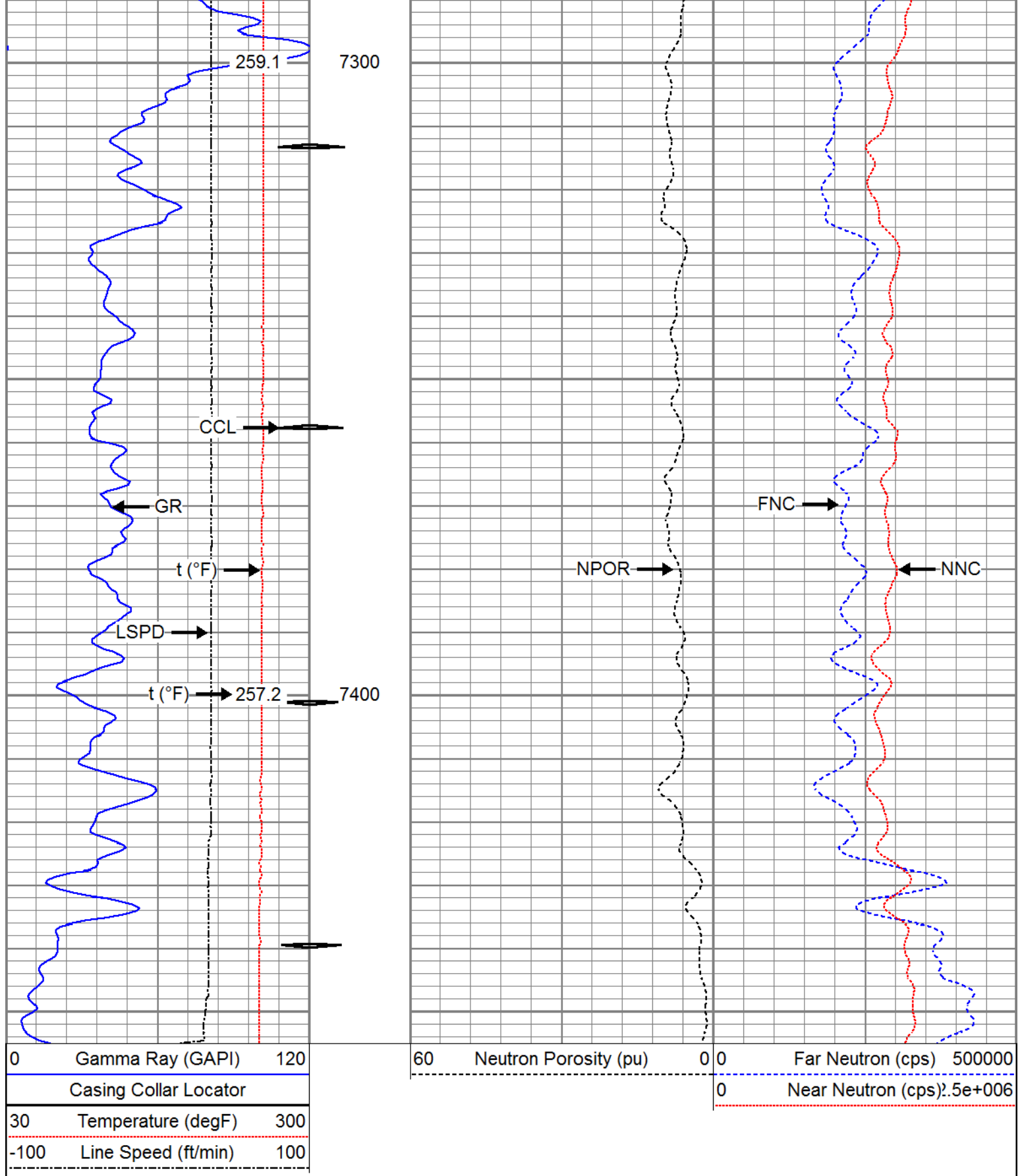













Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan_Electric_Cable_Heads-Titan_1-11/16" Electric Cable Head with 1" Fishing Neck	1.03	1.69	5.40
			UW_AGS-UW_AGS_001 (219135) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00

			UW_XTU-UW_XTU_002 (219135) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
GR	9.76		UW_PGR-UW_PGR_020 (10013899) Production Gamma Ray	1.92	1.69	9.50
TEMP	8.37		UW_PRT-PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20
CCL	7.12		UW_CCL-UW_CCL_028 (10018437) 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					
HVOLTX	0.00					
ITEMPX	0.00					
TSTAMP	0.00					
Dataset: PROCESSED_Anadarko_Cook 15C-28HZ_08-18-16_CNL_PDN.db: field/well/run1/pass4 Total length: 14.01 ft Total weight: 93.60 lb O.D.: 3.13 in						

Calibration Report	
Database File	C:\ProgramData\Warrior\Data\Anadarko_Cook 15C-28HZ_08-12-2016_RCBL-PDN\PROCESSED_A
Dataset Pathname	pass4
Dataset Creation	Thu Aug 18 16:04:56 2016
Compensated Neutron Calibration Report	

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	
	0.8150	Sleeve: 1.0000	
CNRAT Gain K	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:	10025097		
	Tool Model:	PRT_016		
	Performed:	Sun Oct 11 12:34:58 2015		
Point #	Reading		Reference	
1	13053.00	cps	68.00	degF
2	18014.00	cps	104.00	degF
3	29668.00	cps	176.00	degF
4	41181.00	cps	248.00	degF
5	52983.00	cps	320.00	degF
6	58931.00	cps	356.00	degF
7		cps		degF
8		cps		degF
9		cps		degF
10		cps		degF

Gamma Ray Calibration Report

Serial Number:	10013899		
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	Cook 15C-28HZ
Field	Wattenberg
County	Weld
State	Colorado