

County Weld State Colorado

G.L. 5063

	4.1/2	11.6
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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 Liner Top at 5542 FT  
Adjusted -10 FT to correlate with Liner Top  
Gauge Ring/Junk Basket ran to 7838 FT with no debris  
Log ran from as deep as possible in heel to Surface  
Log ran with 0 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

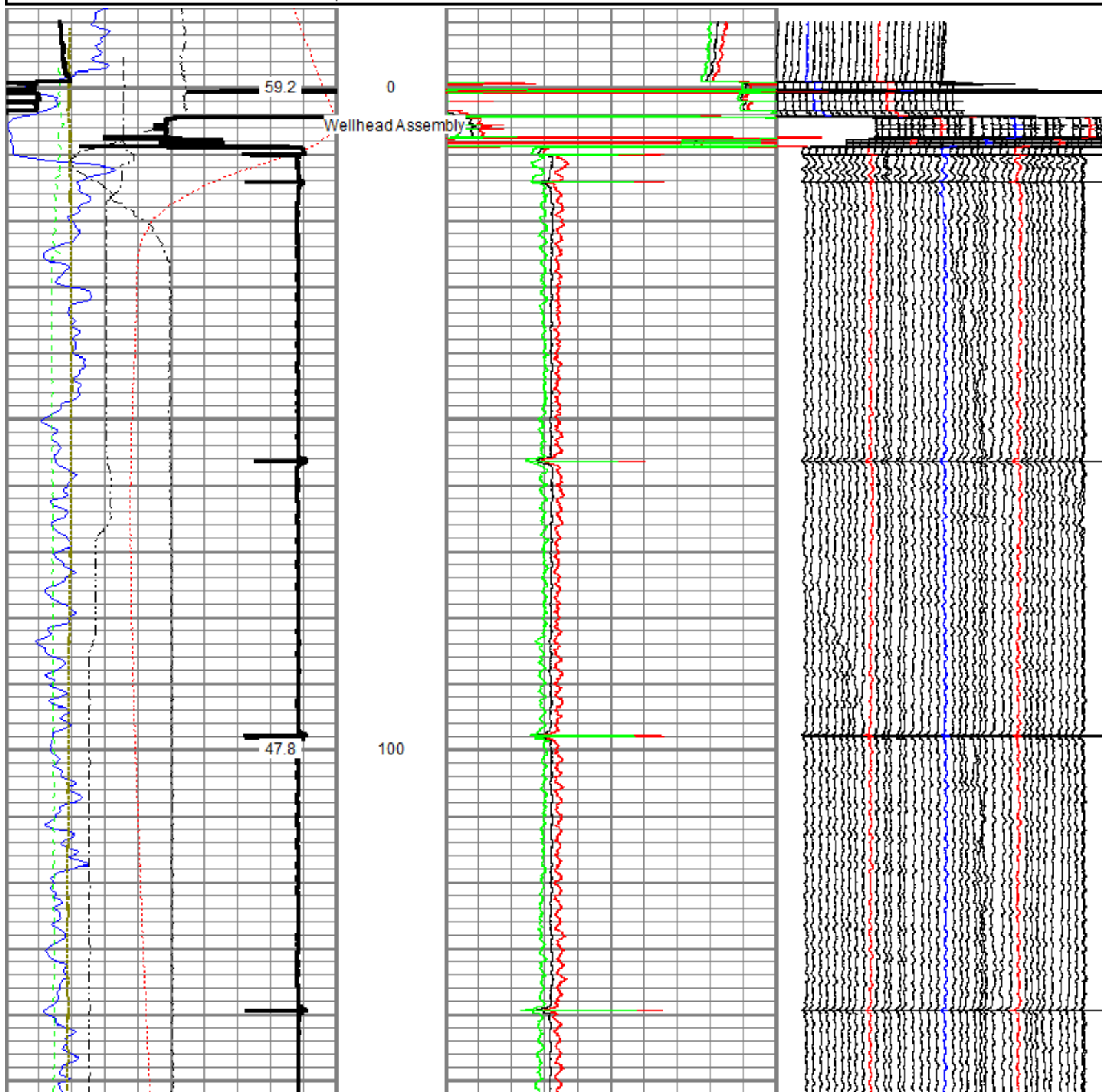


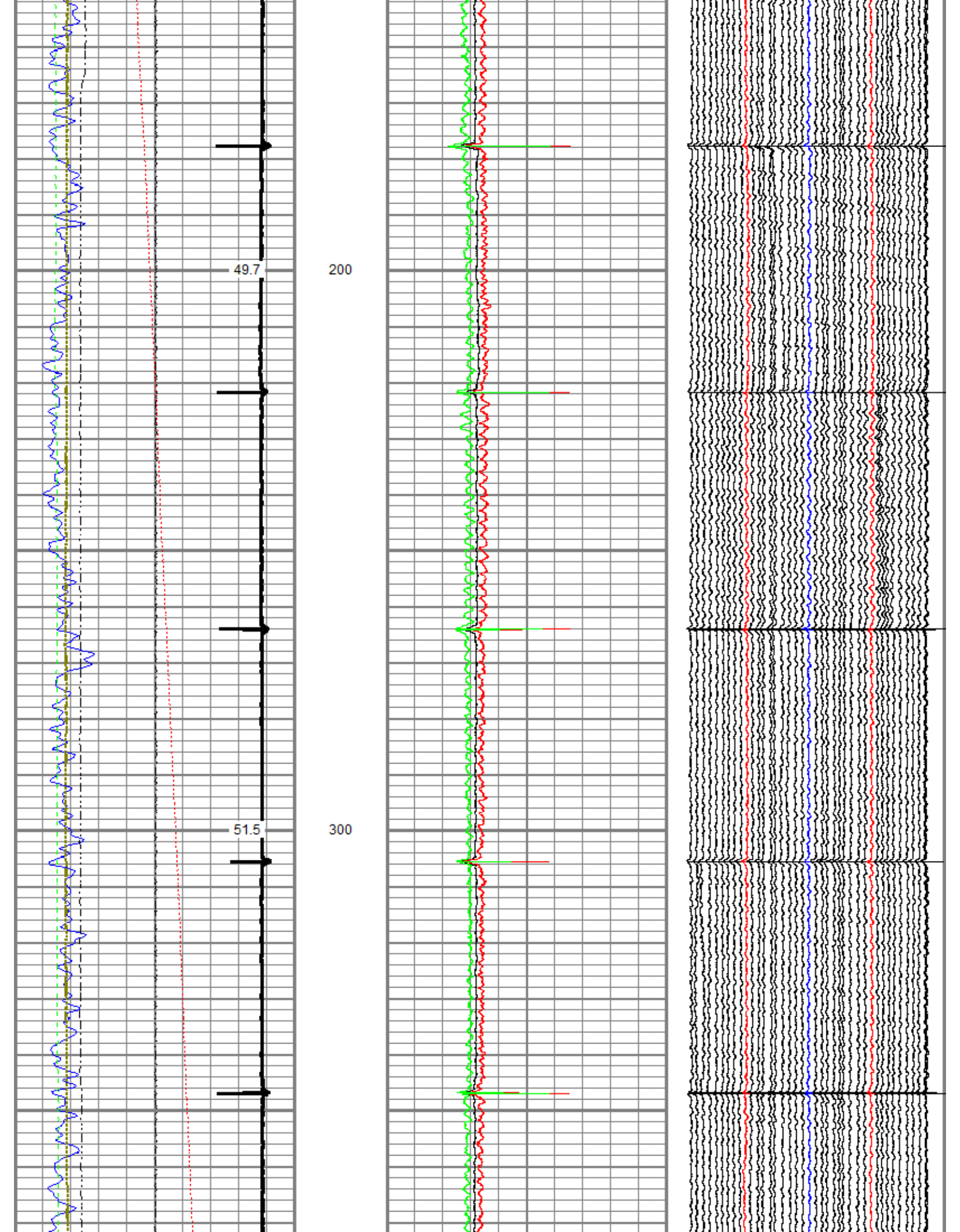
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Dataset Pathname	pass18
Presentation Format	ros_70mit40sx
Dataset Creation	Sun Feb 18 08:43:46 2018
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	120
-100	Line Speed (ft/min)	100
-10	Deviation (deg)	90
0	Line Tension (lb)	2000
-2	Differential Temperature (degF)	2
0	Temperature (degF)	20
Casing Collar Locator		

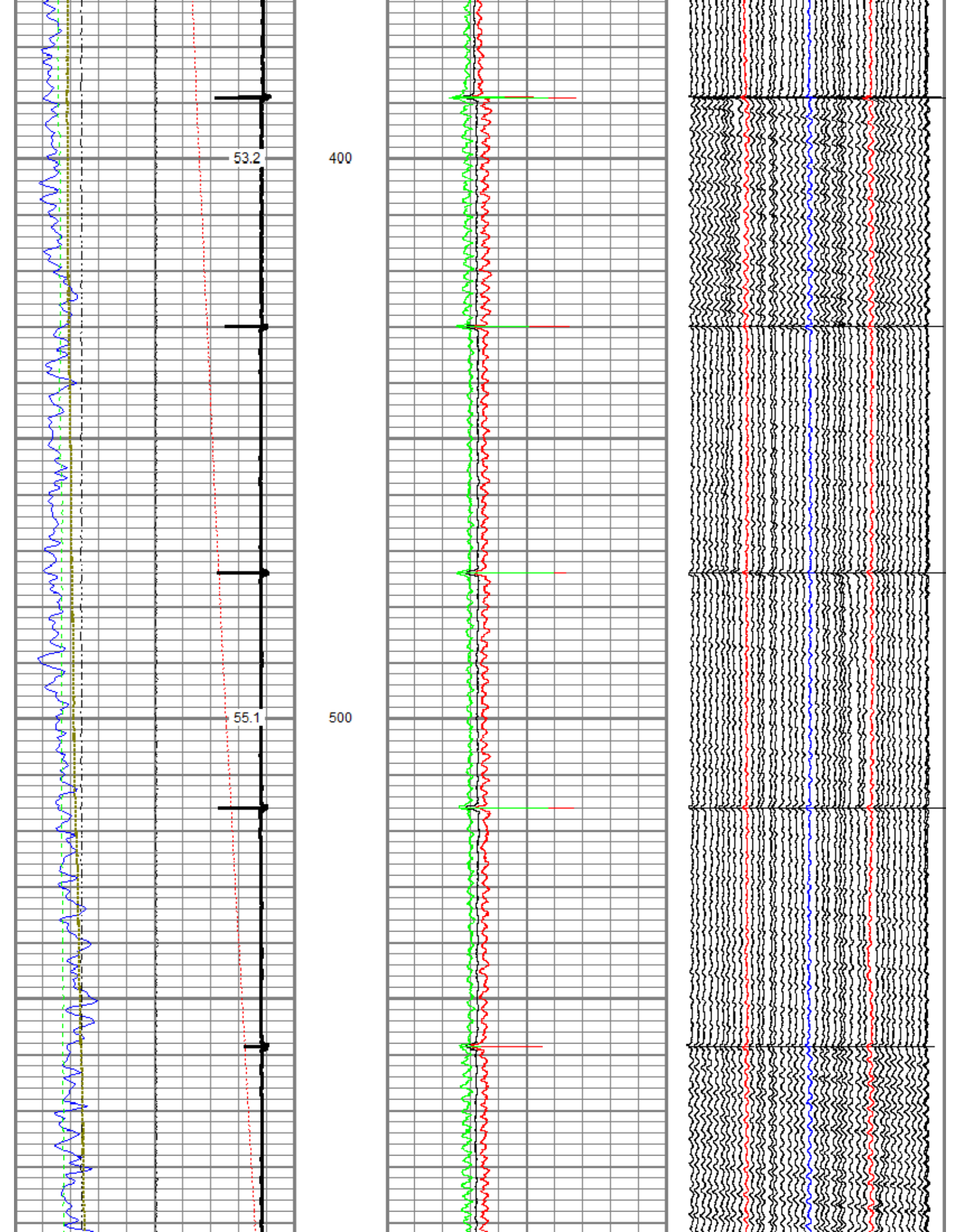
6	Average Diameter (in)	7
6	Maximum Diameter (in)	7
6	Minimum Diameter (in)	7

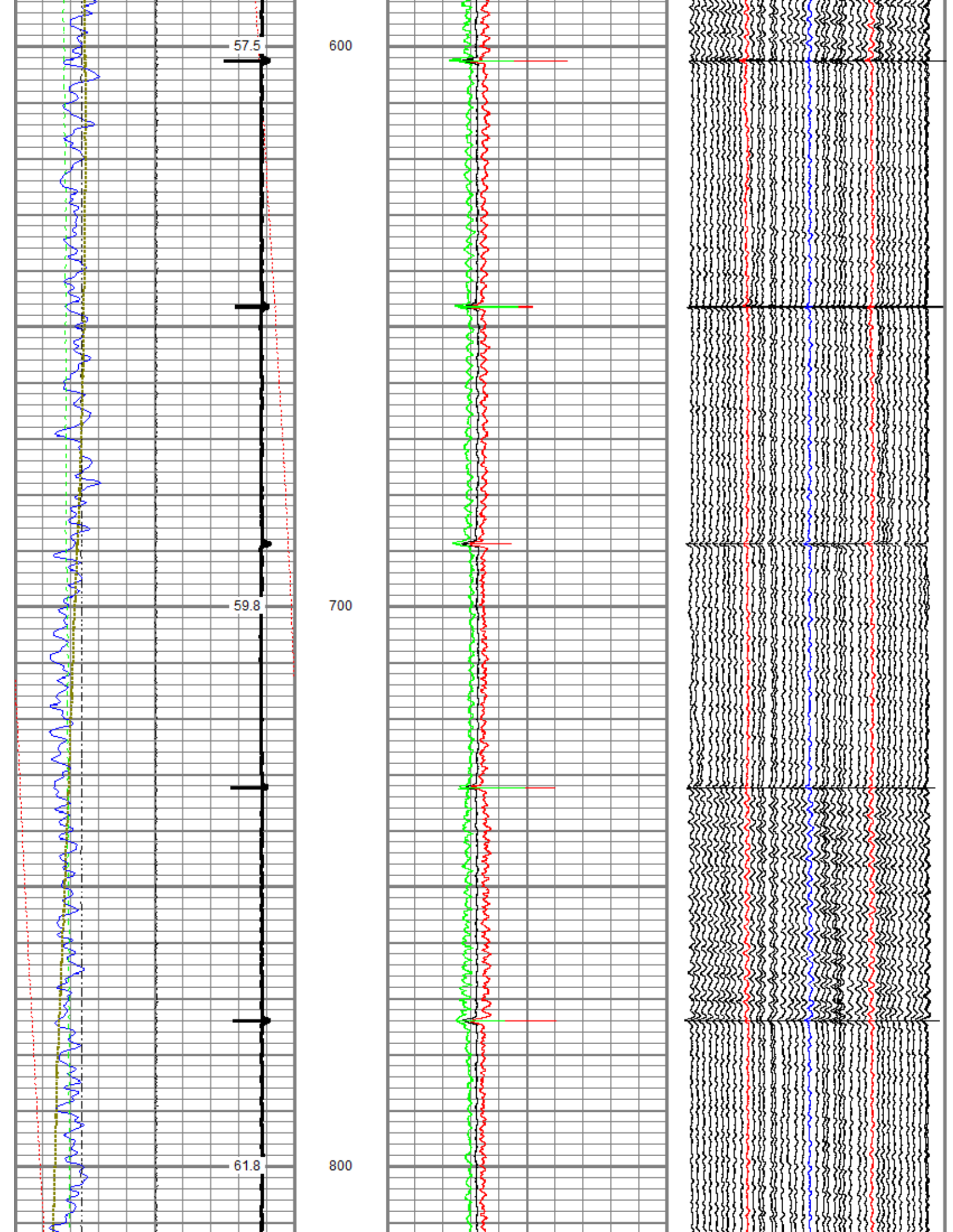
Caliper #10
Caliper #20
Caliper #30



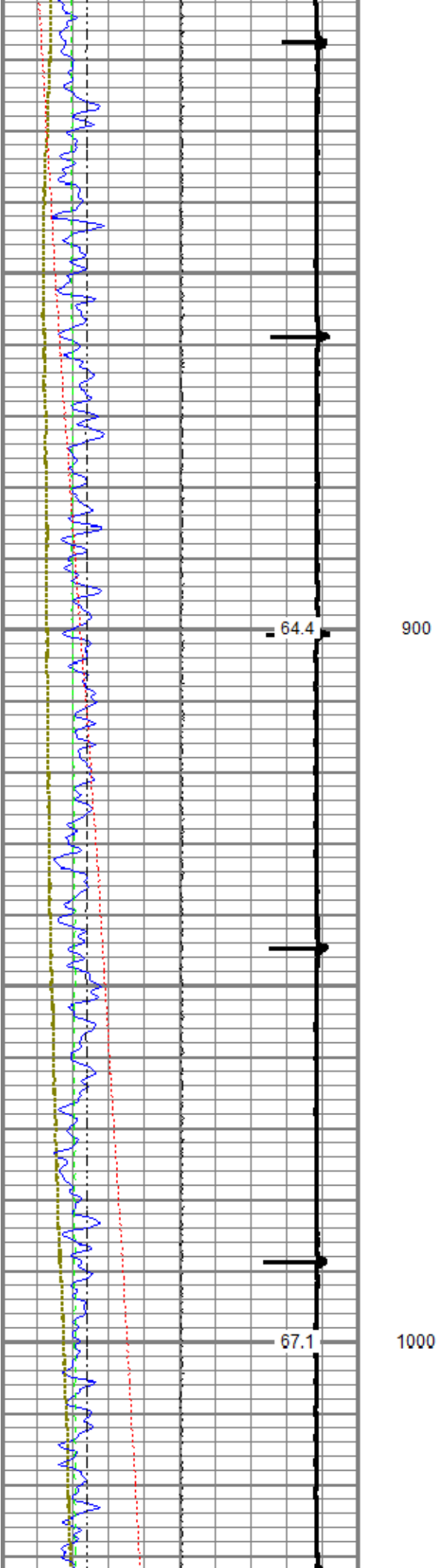
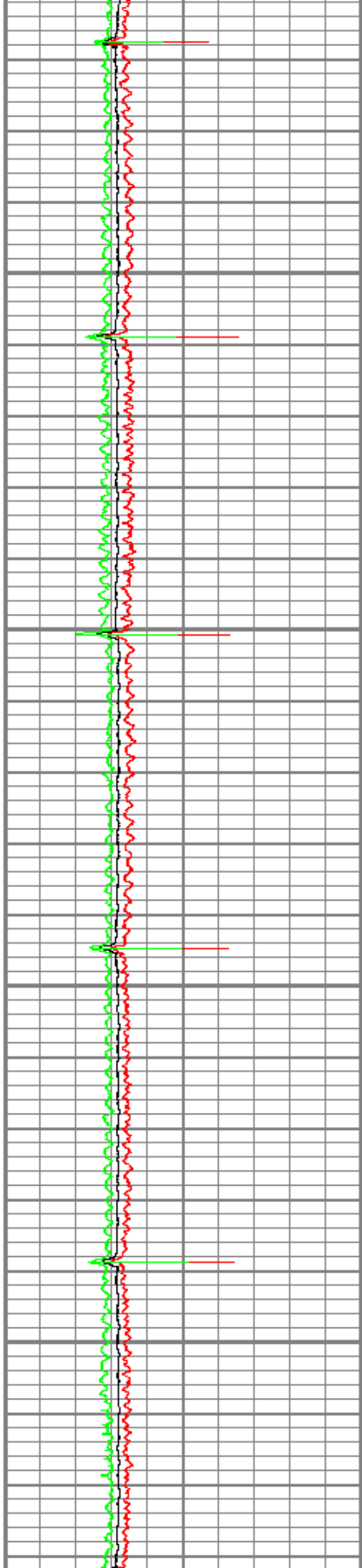
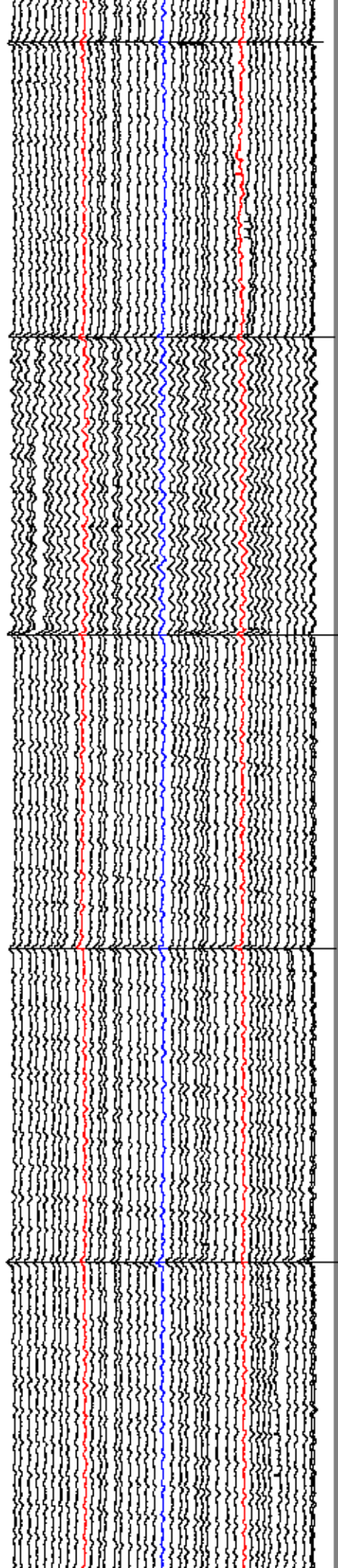


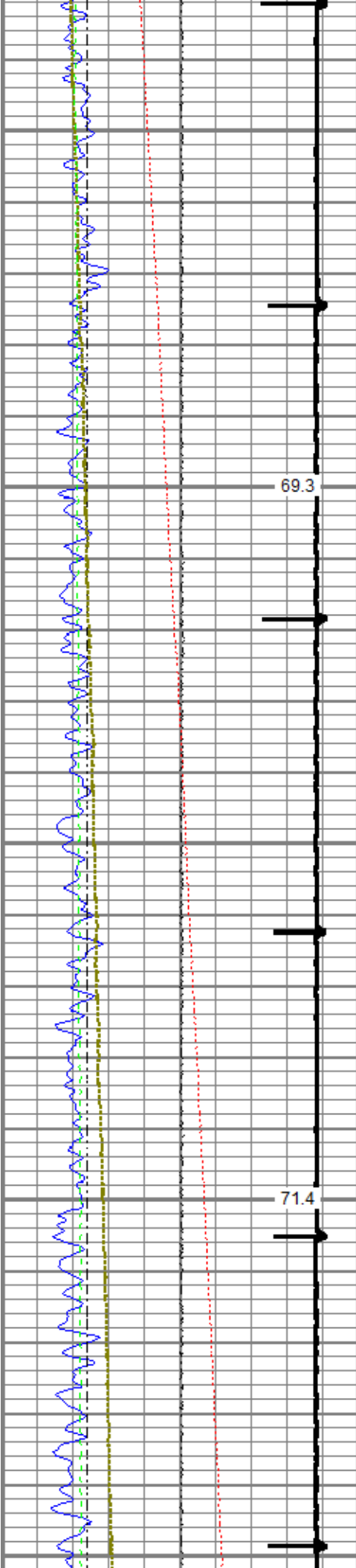






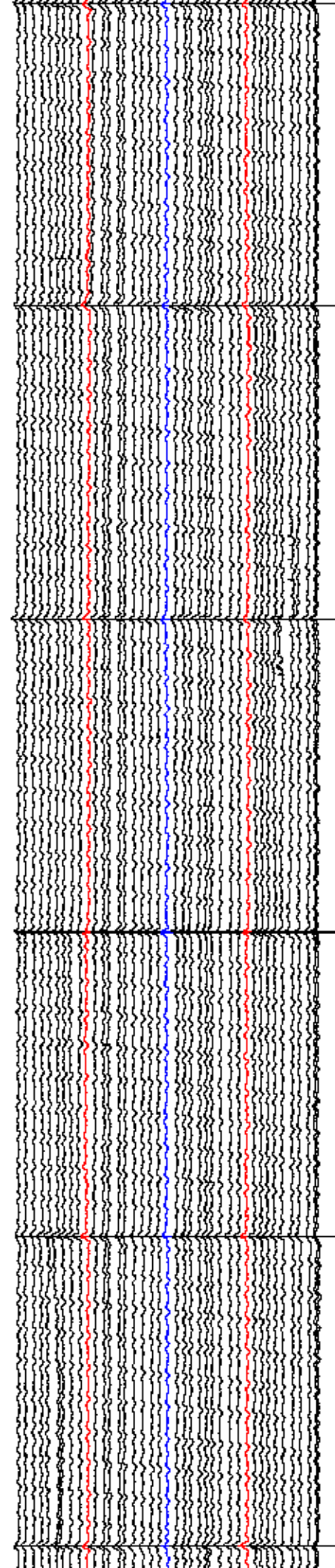
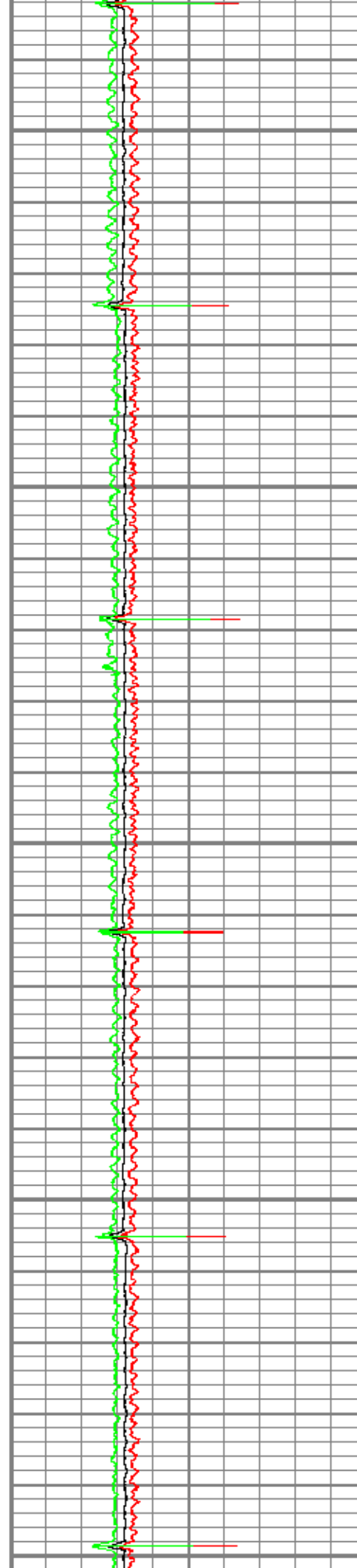


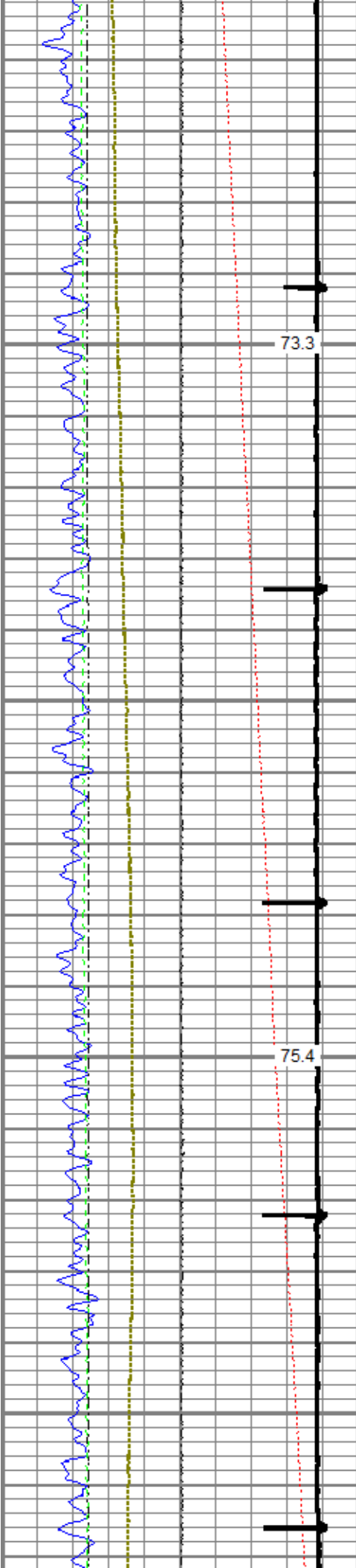




1100

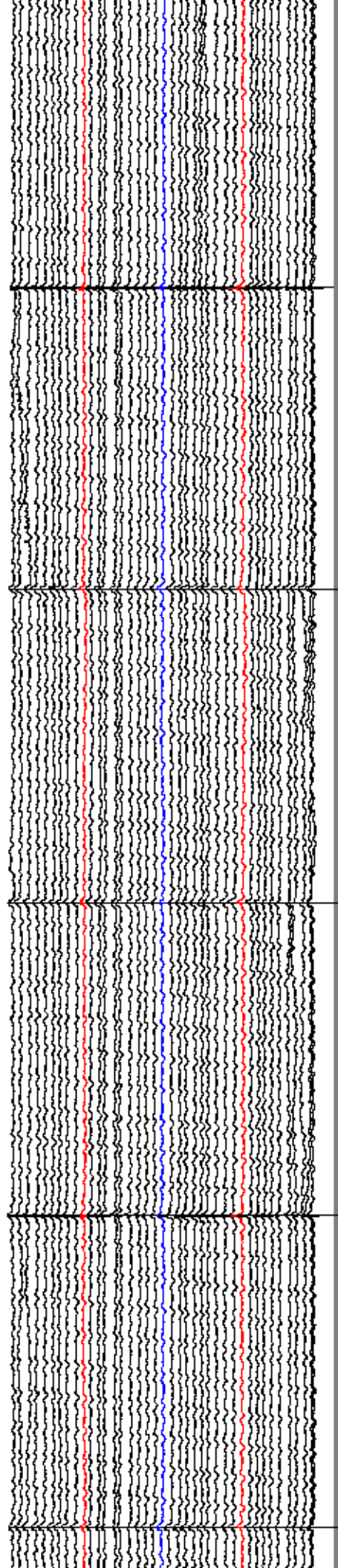
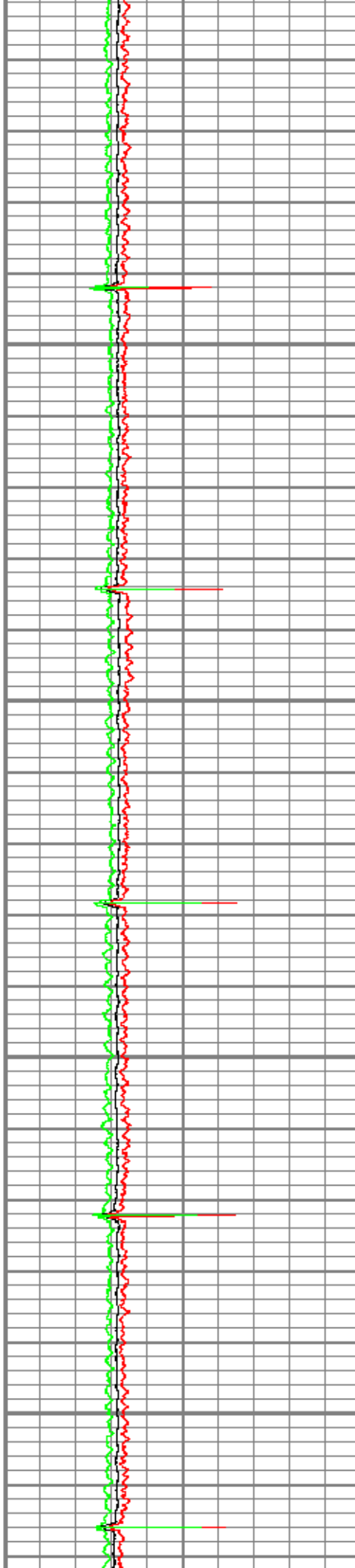
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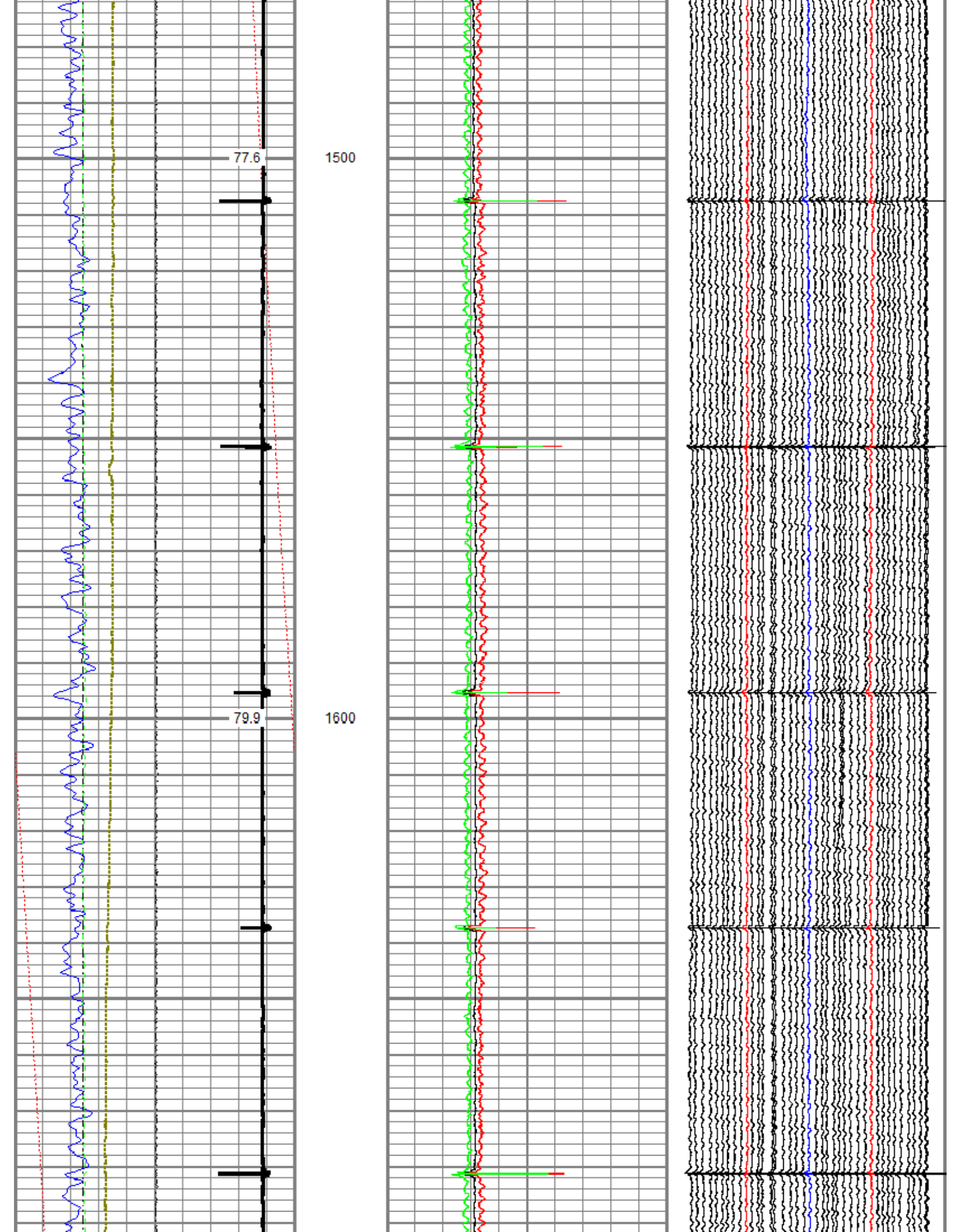


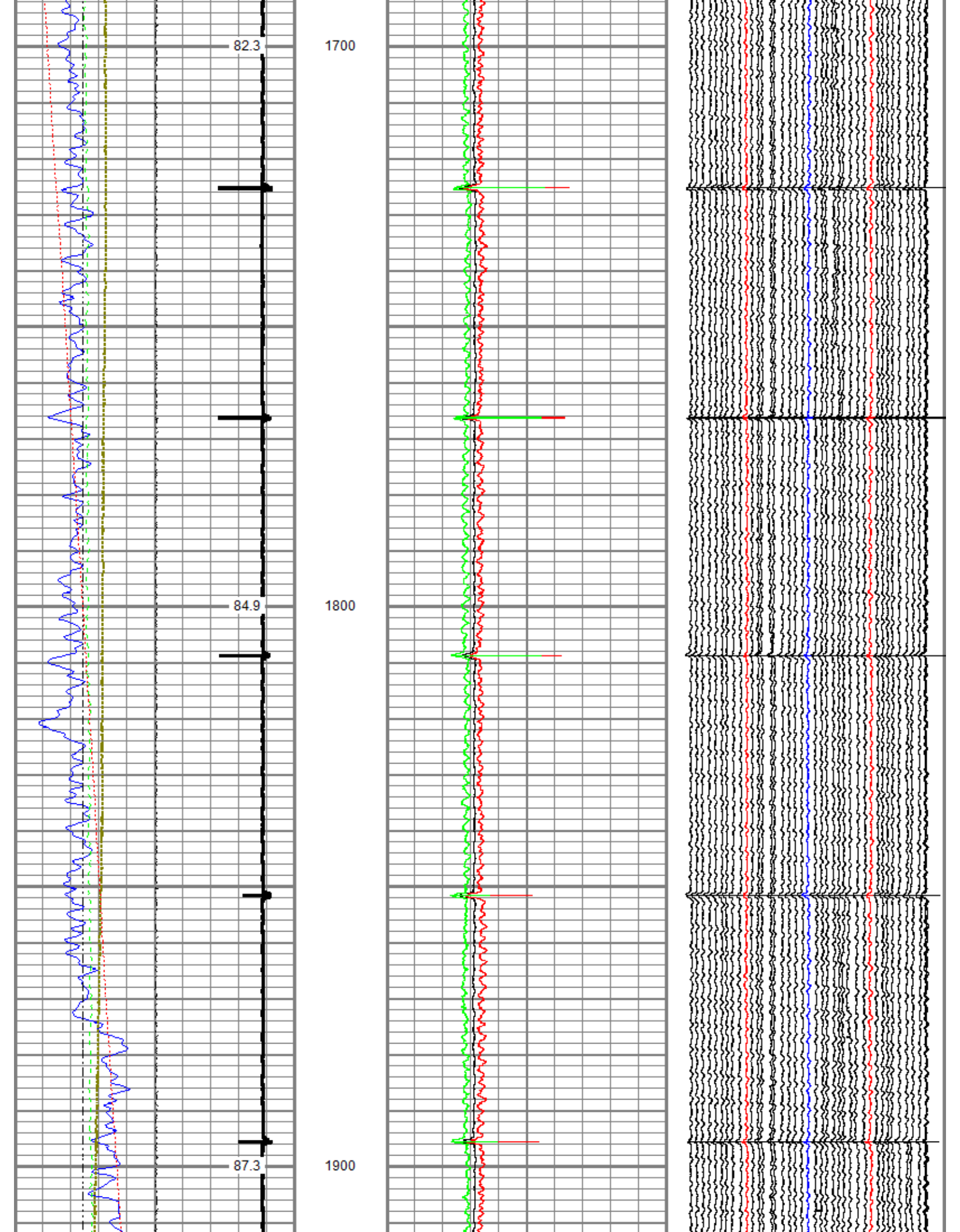
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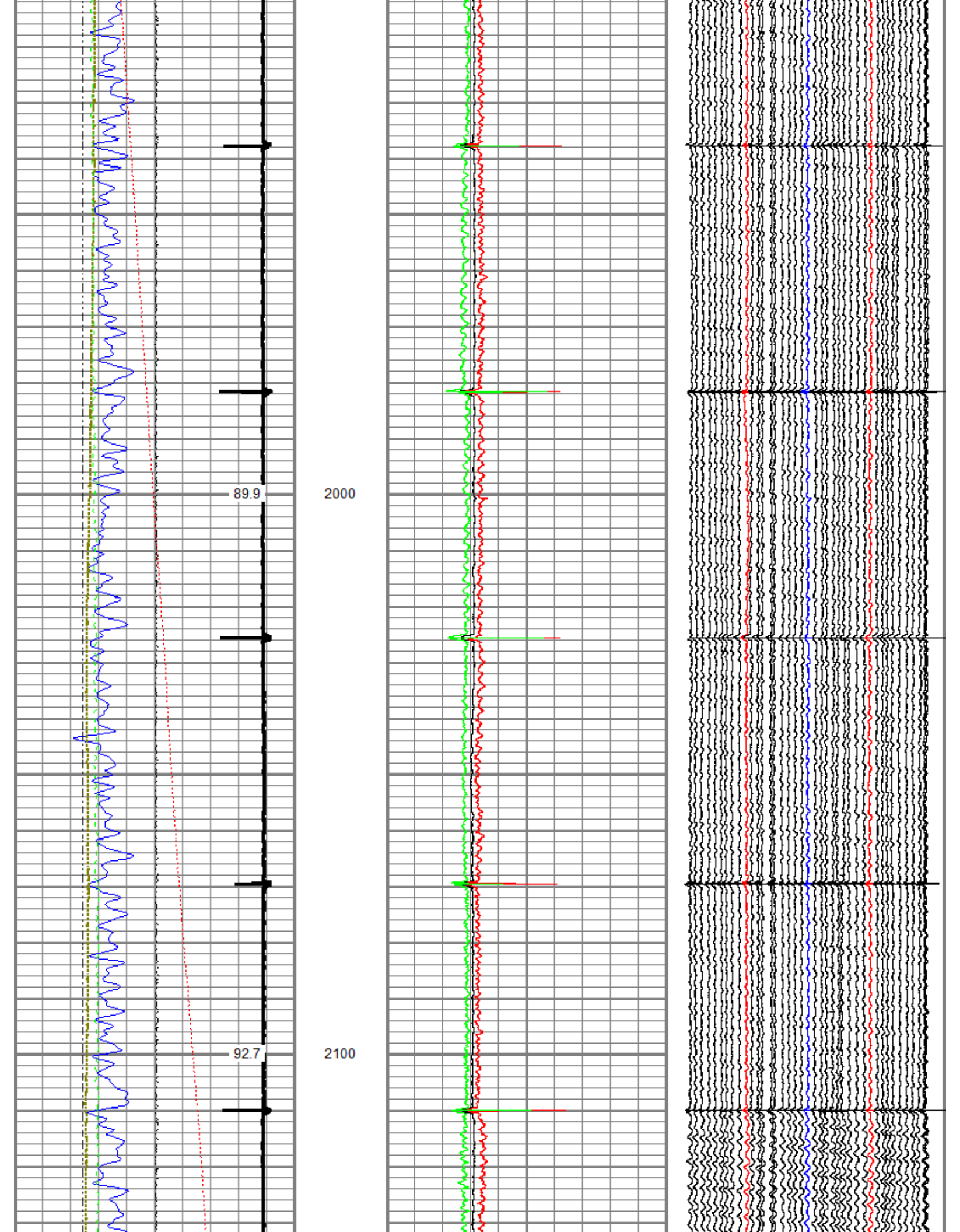
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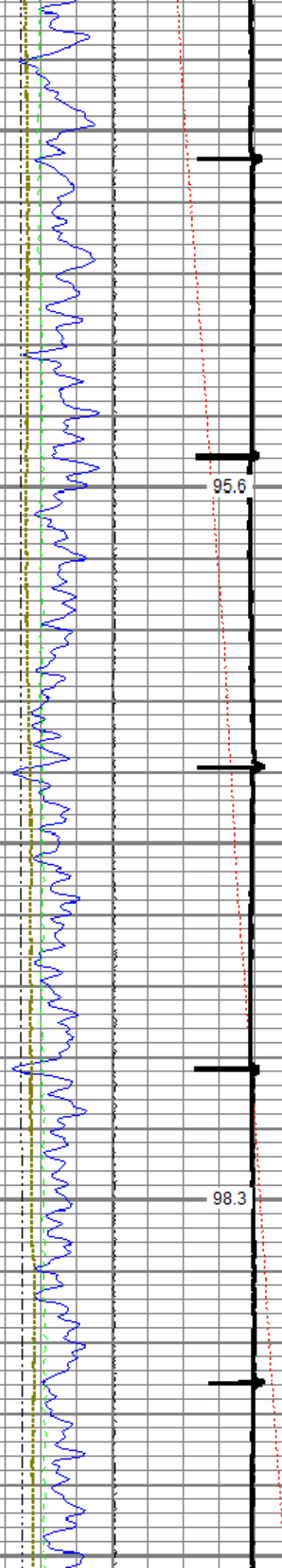










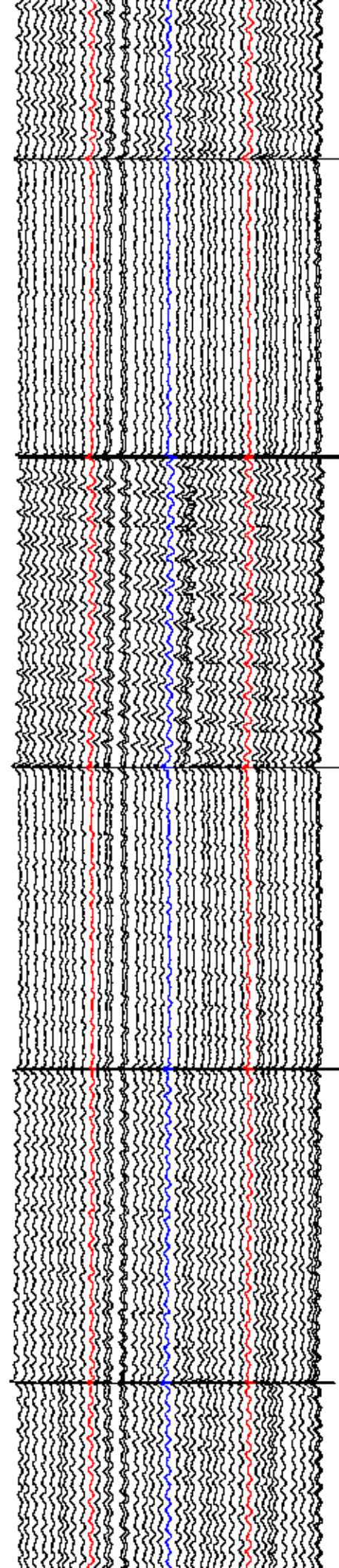
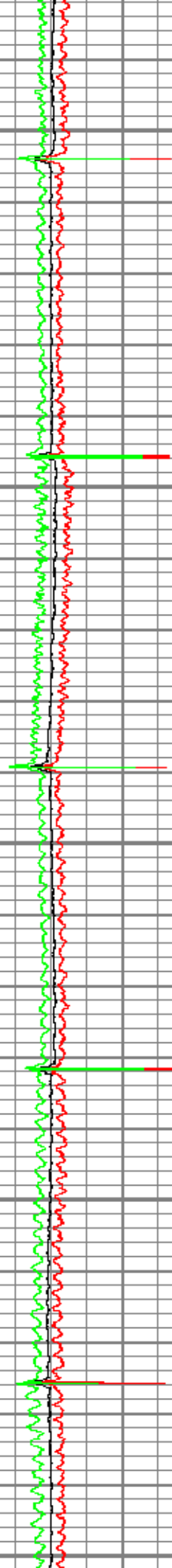


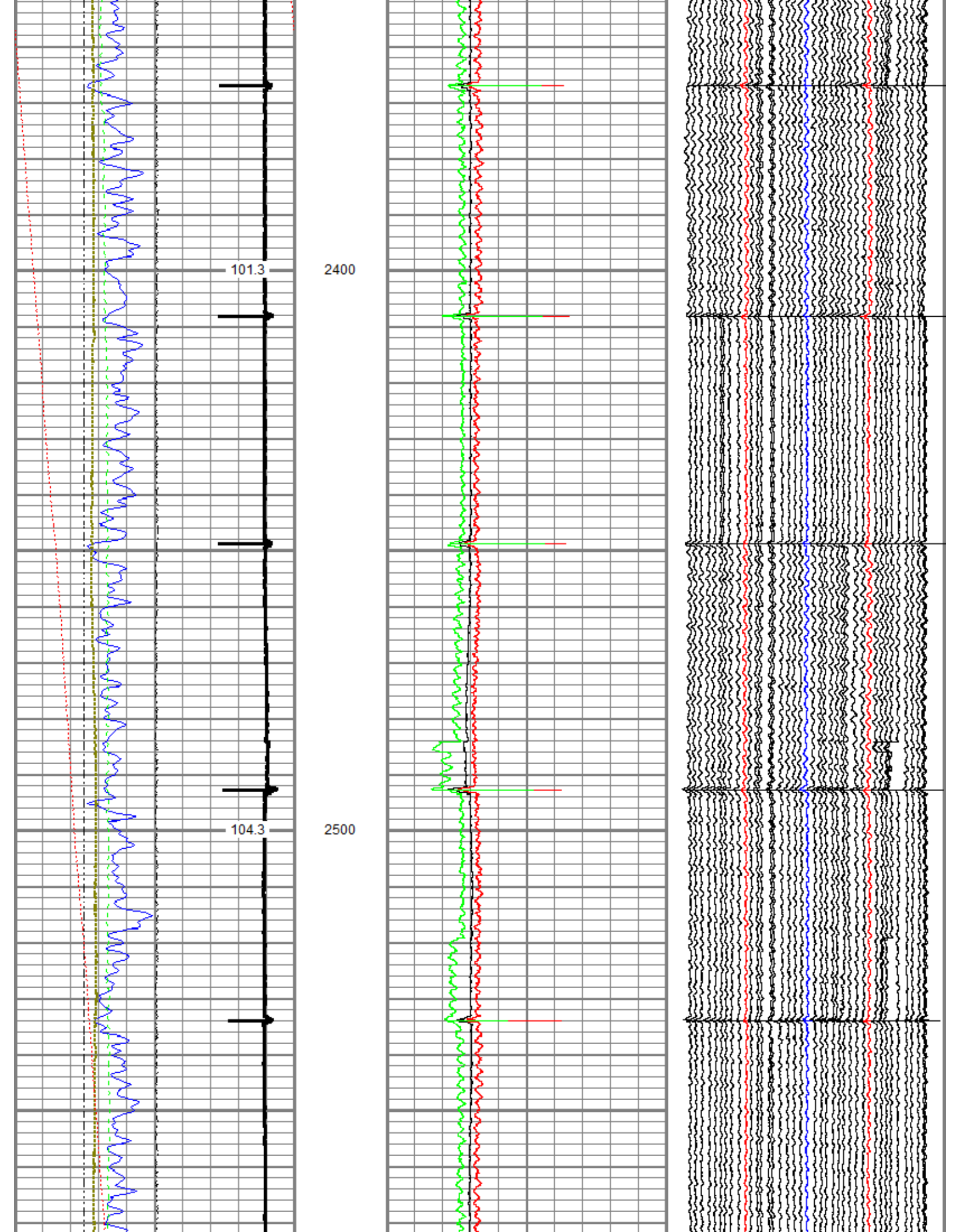
95.6

2200

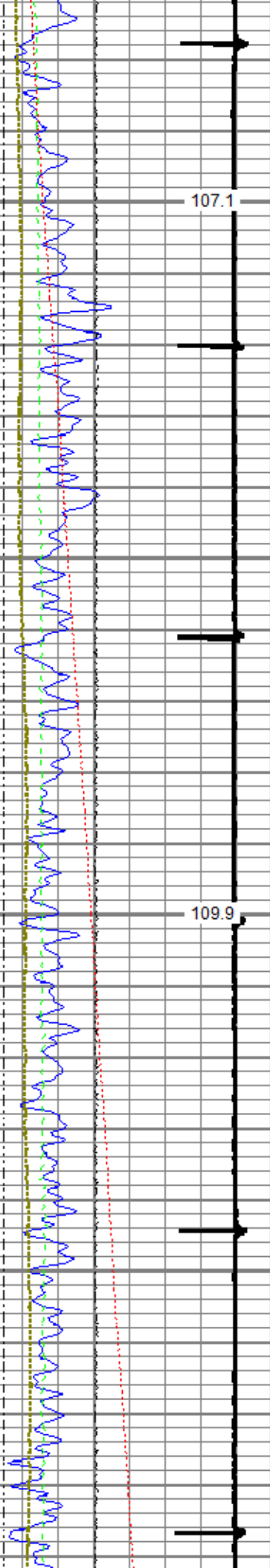
98.3

2300







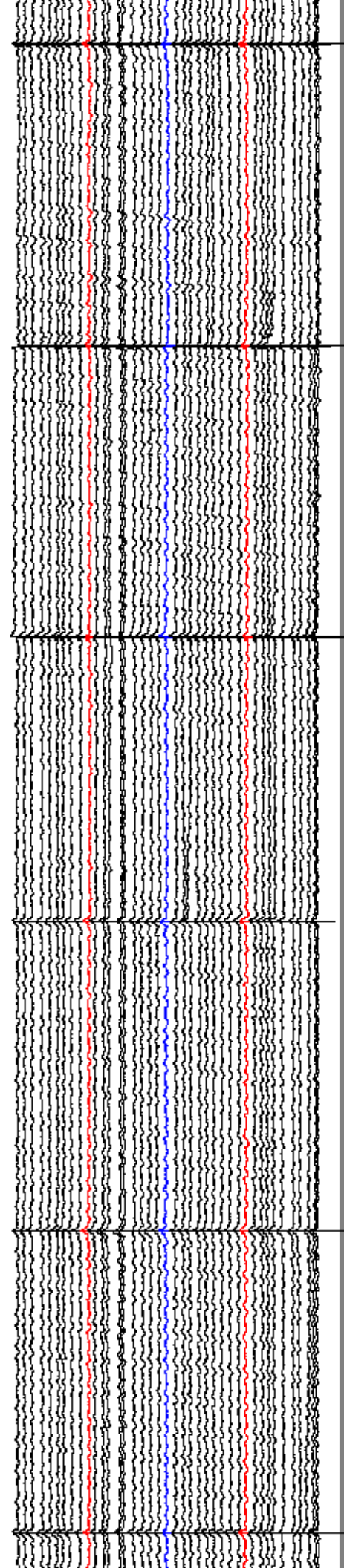
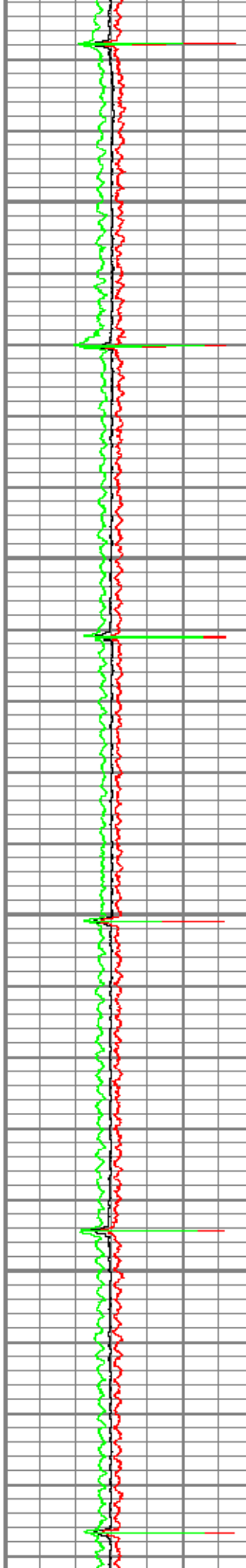


107.1

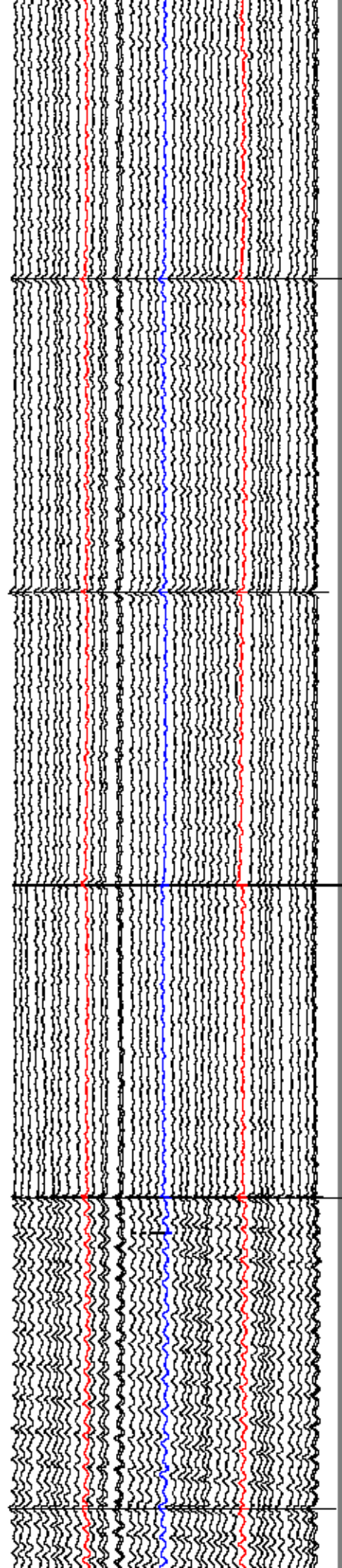
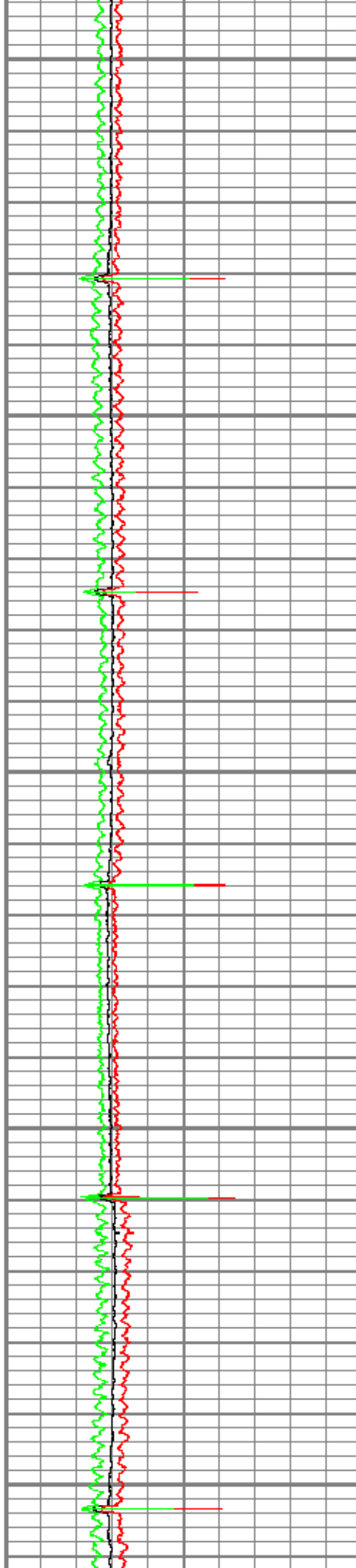
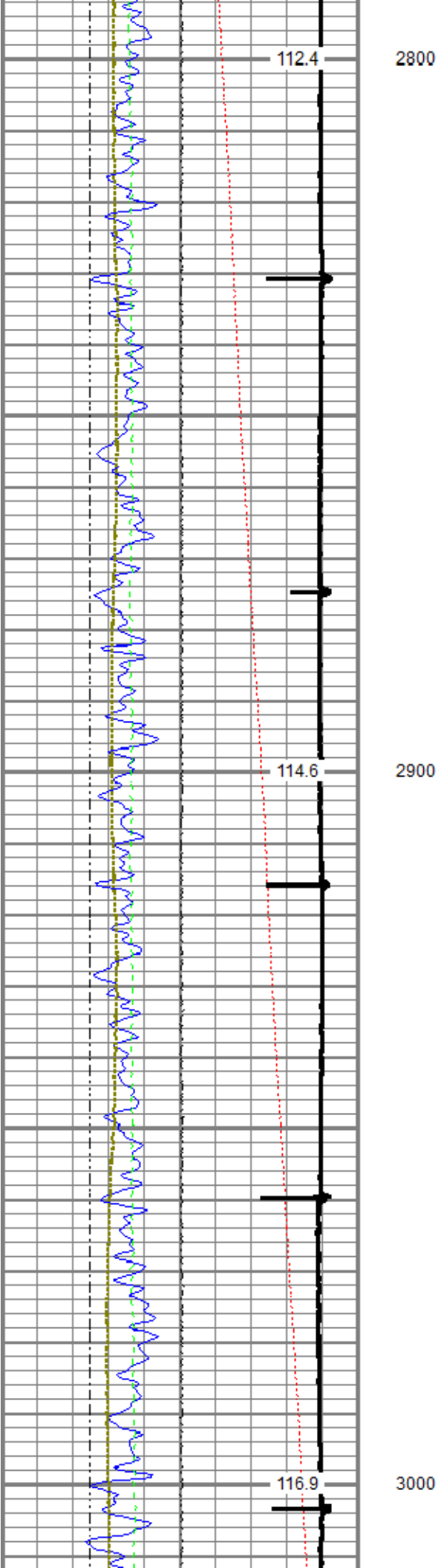
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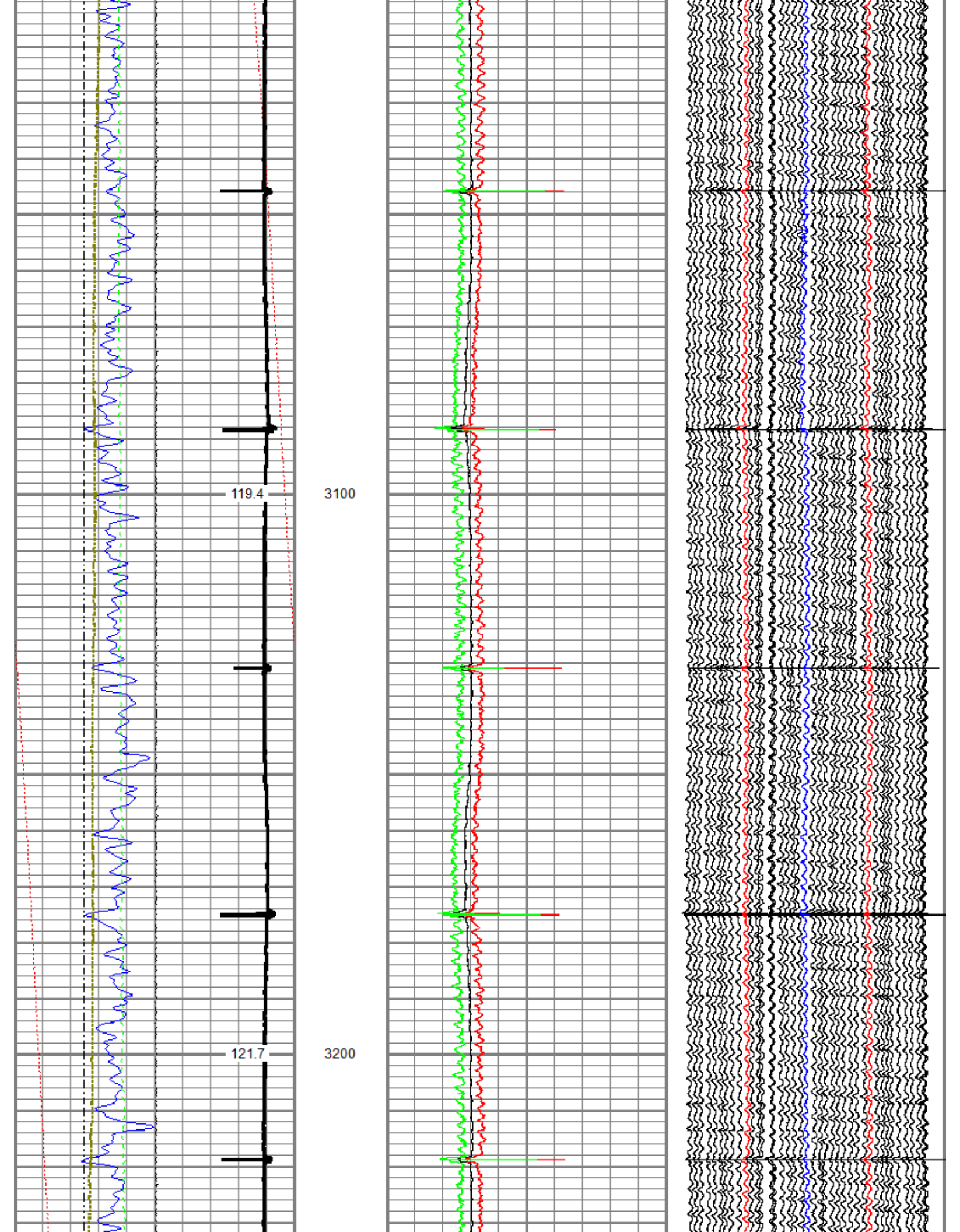
109.9

2700

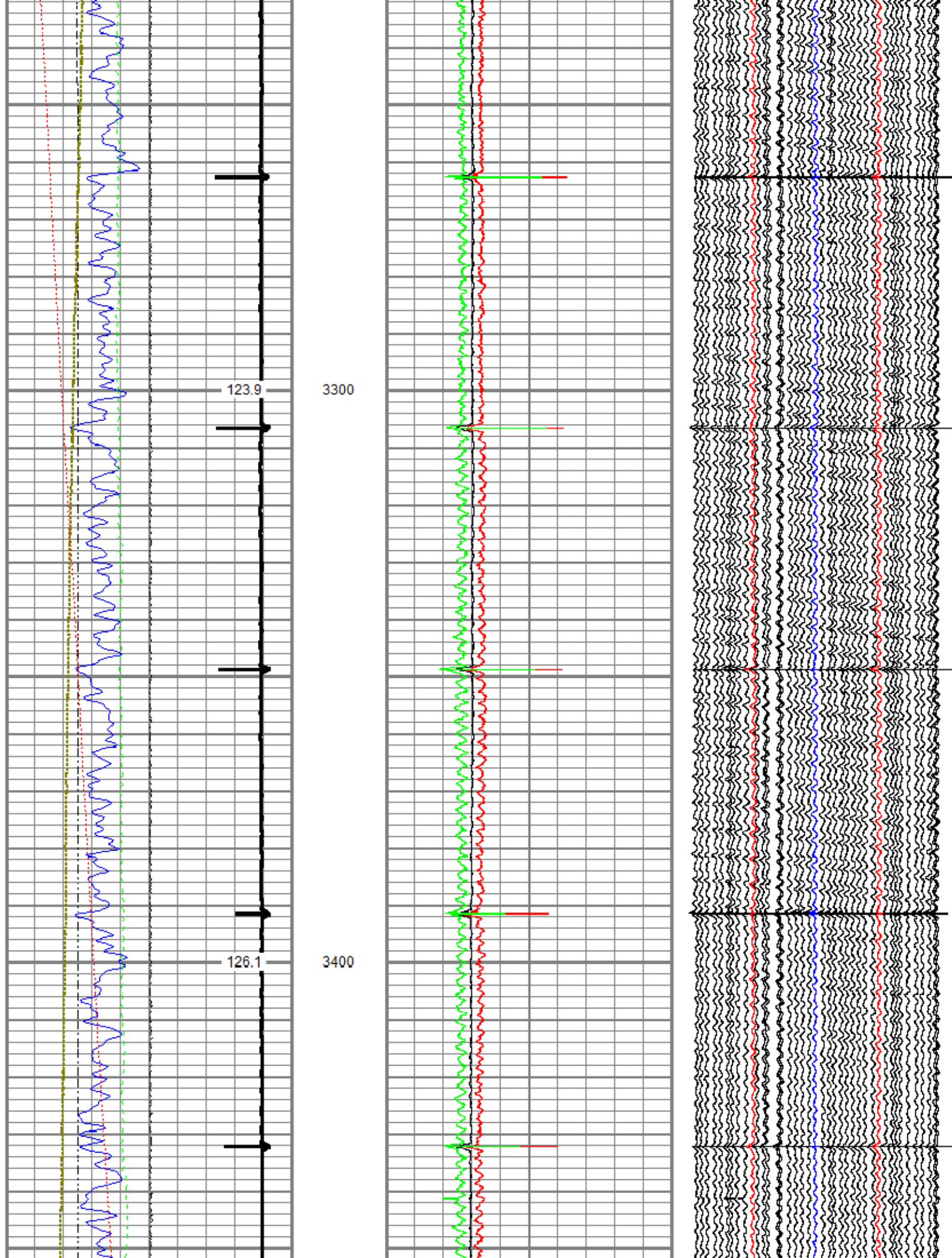




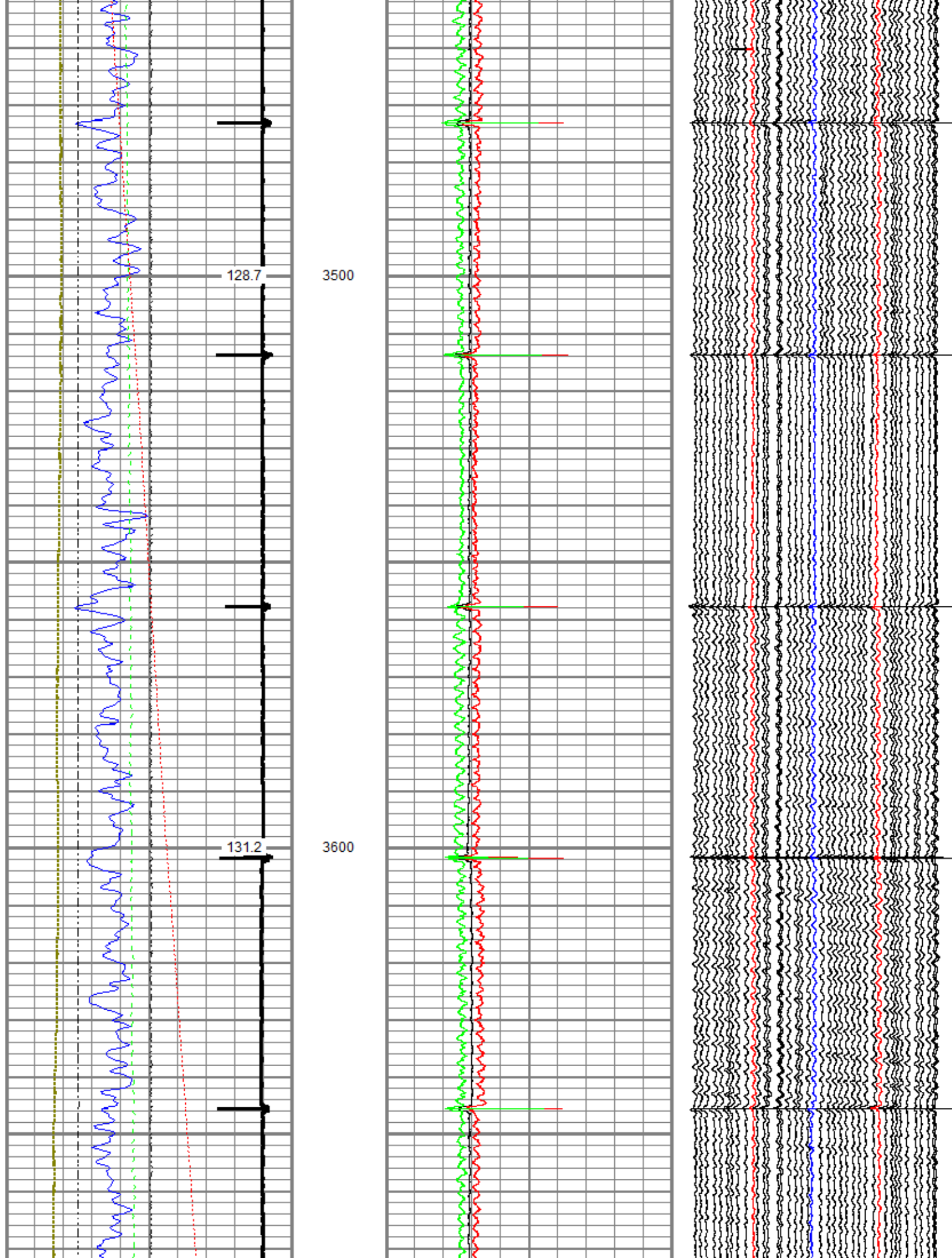


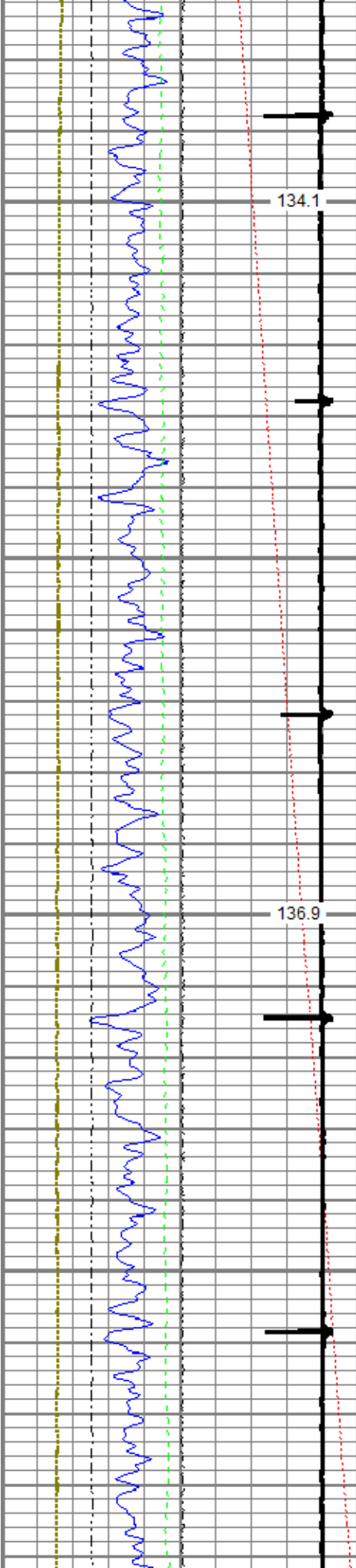






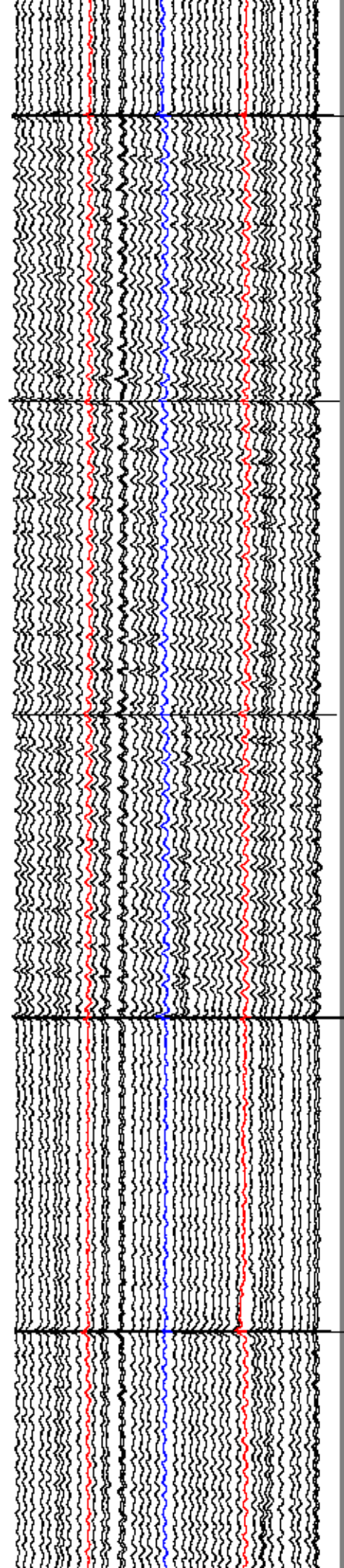
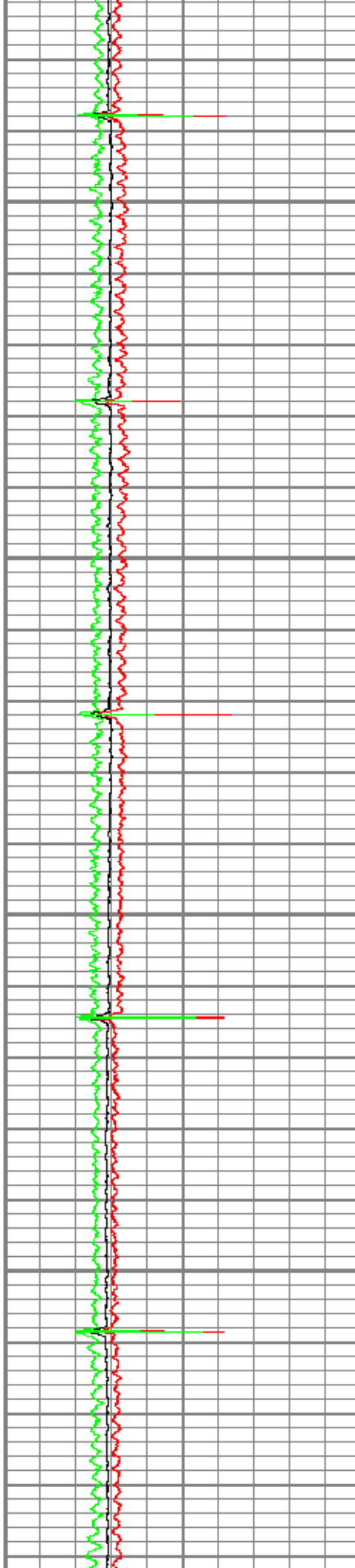




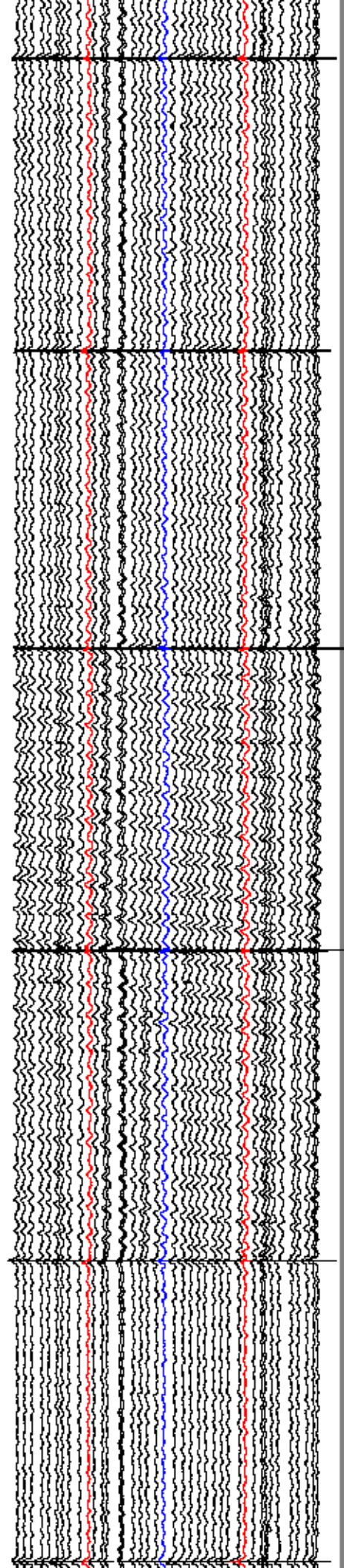
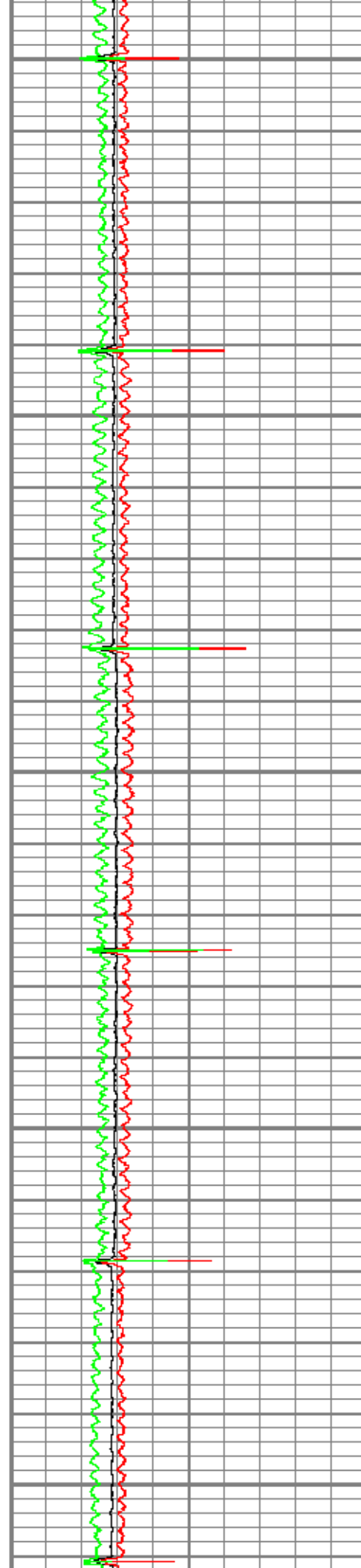
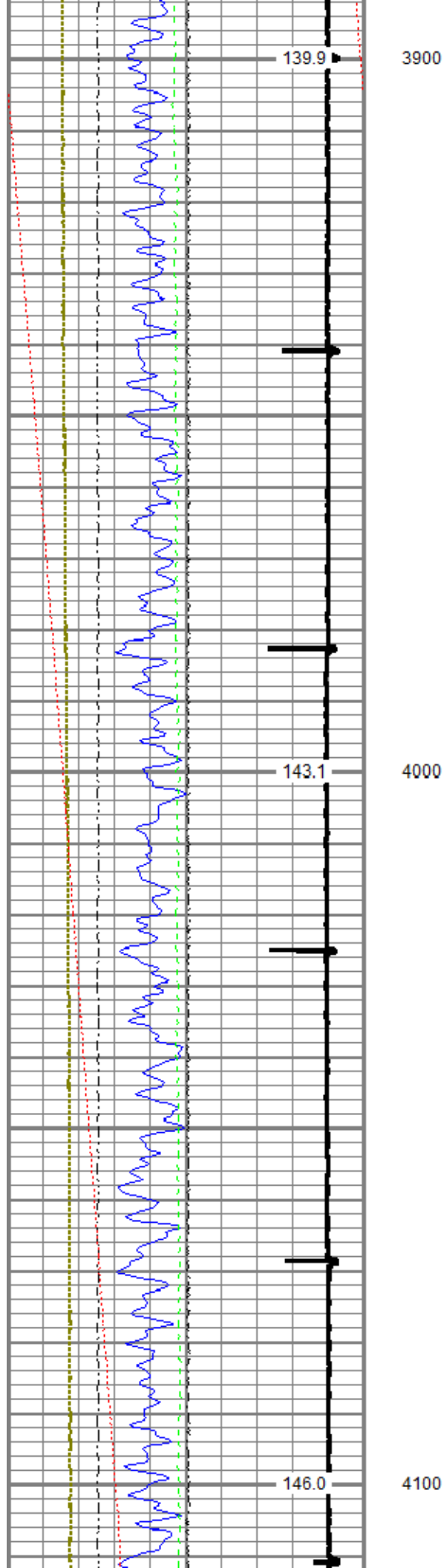


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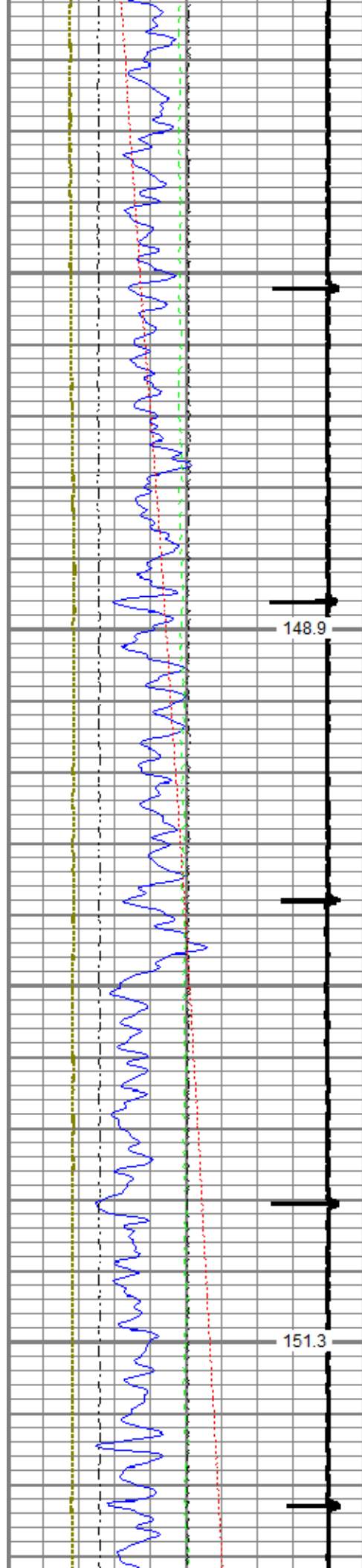
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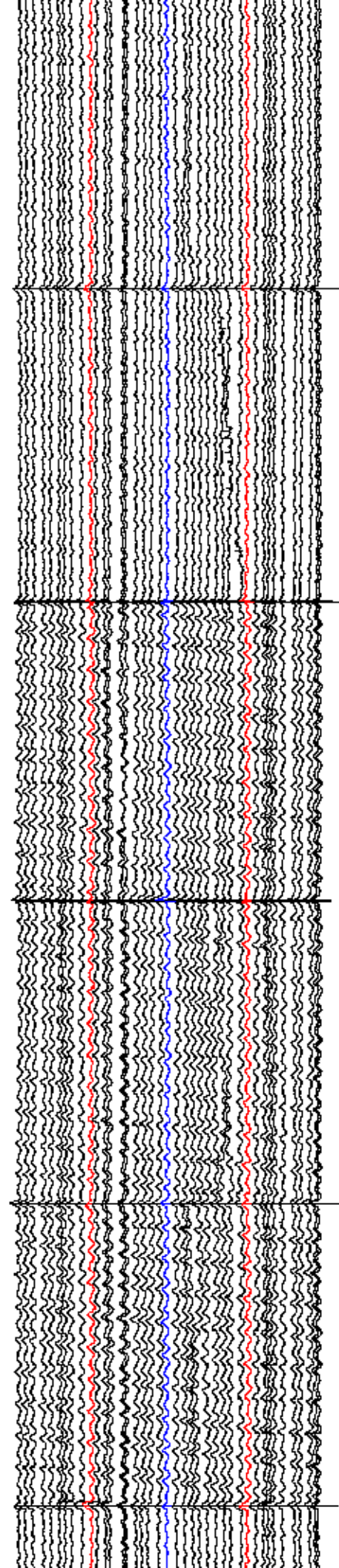
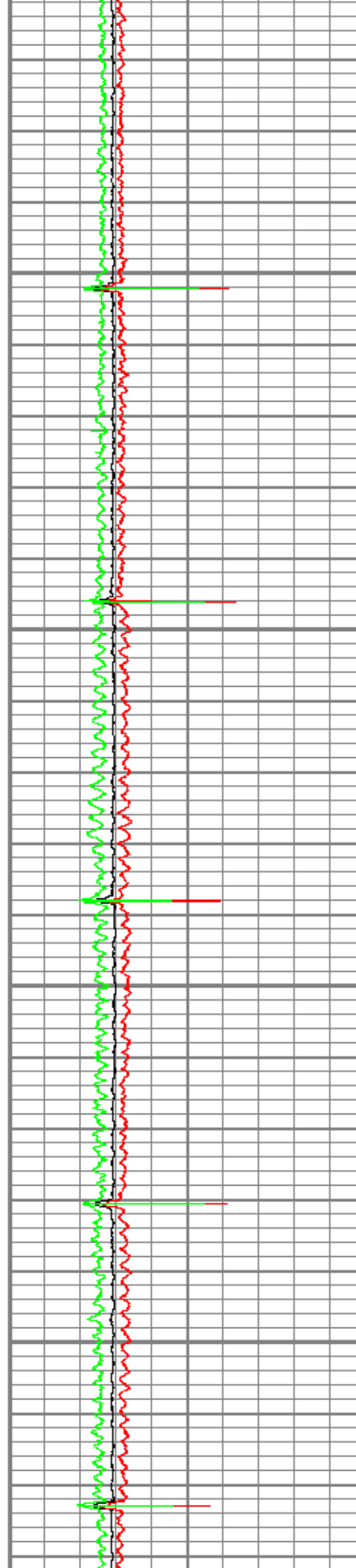


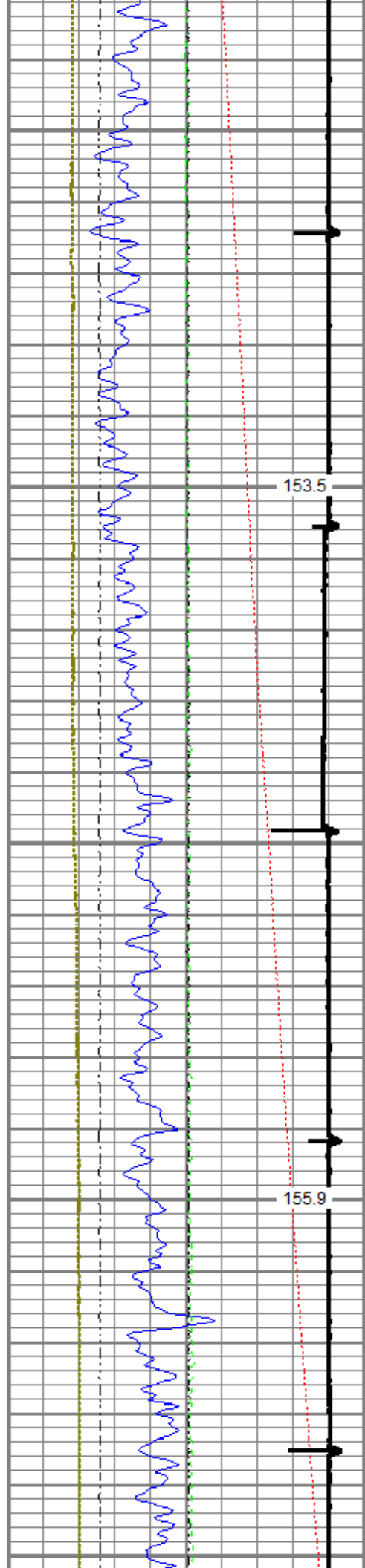
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4200

151.3

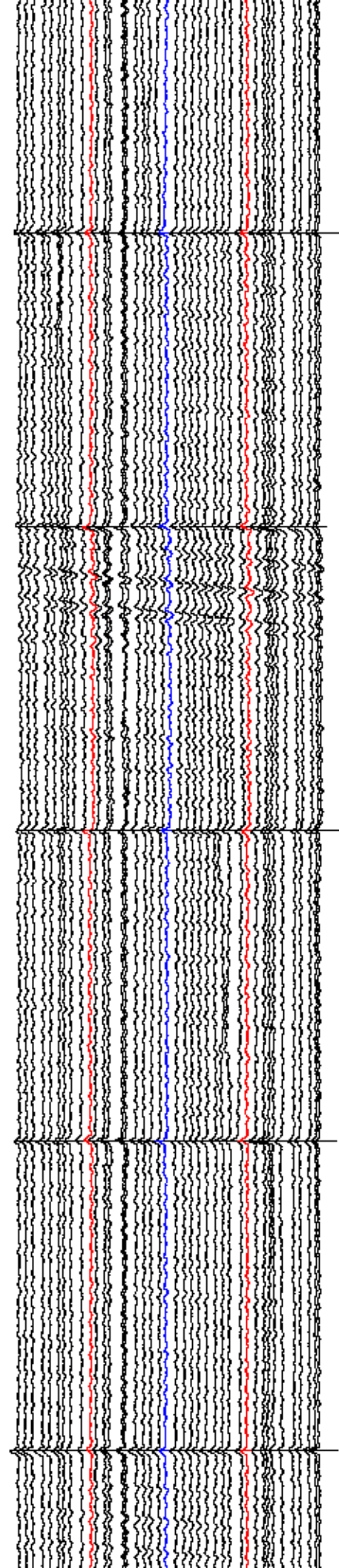
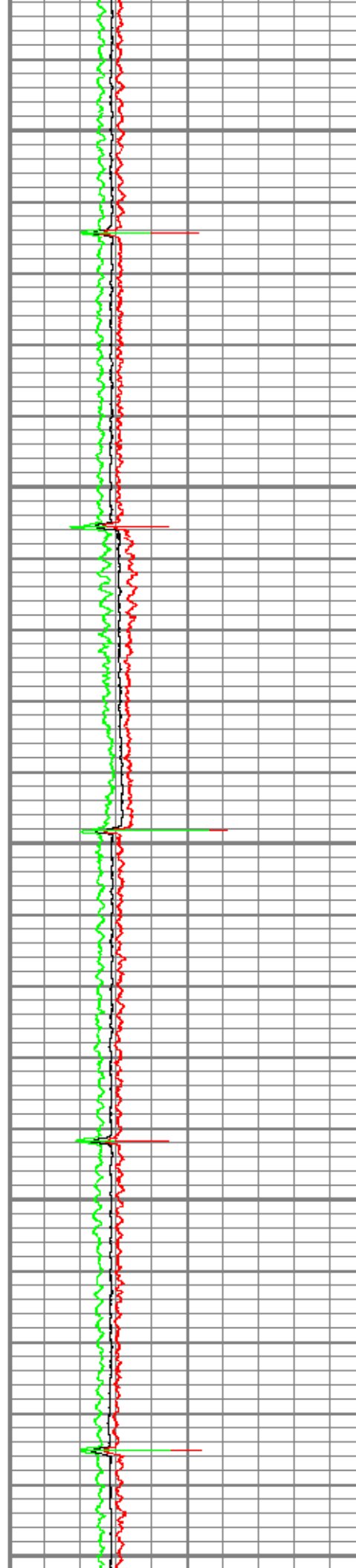
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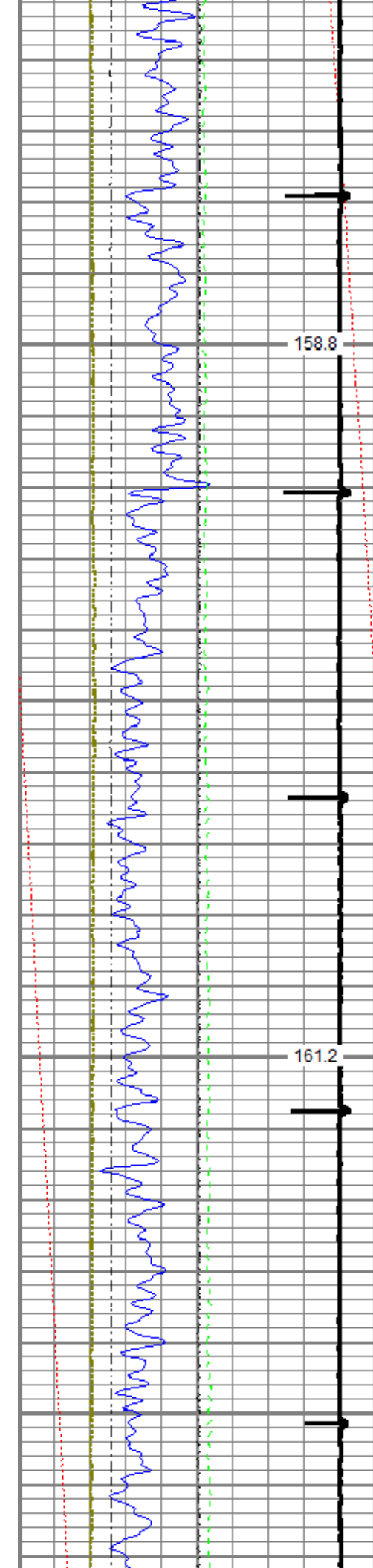




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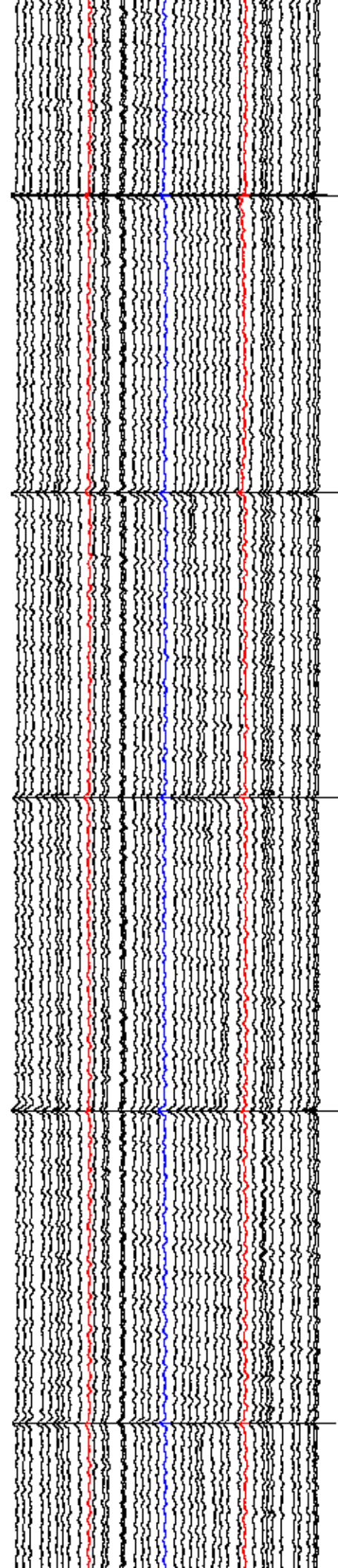
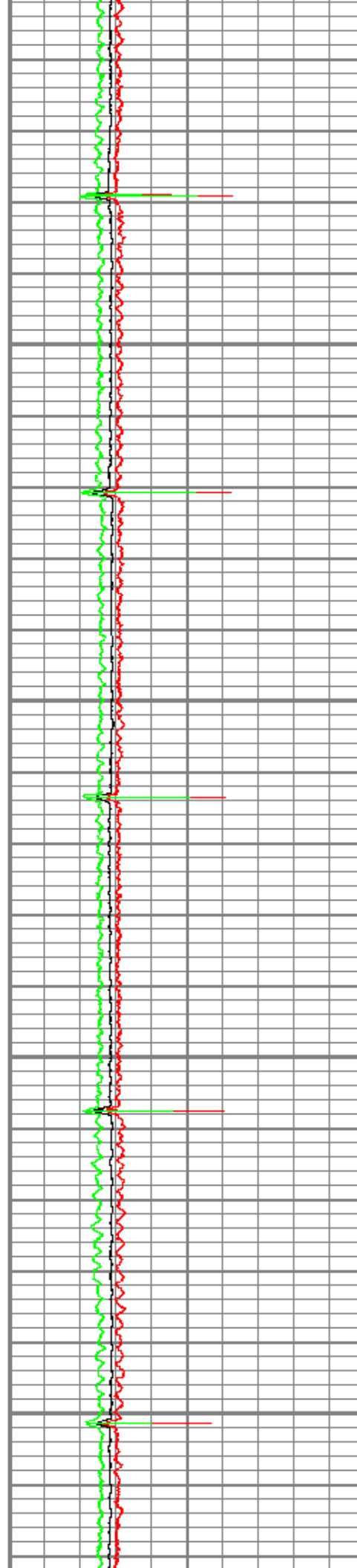
4500



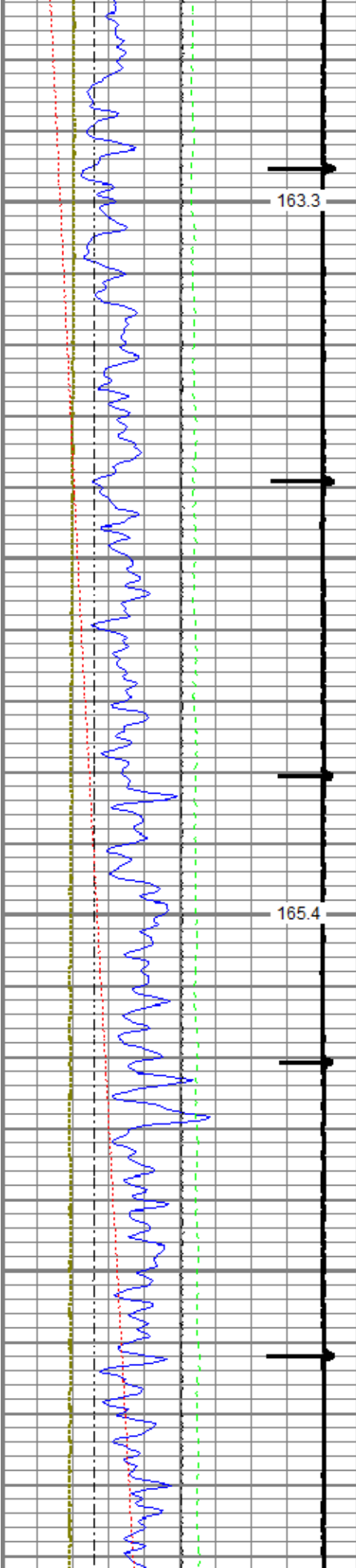


4600

4700

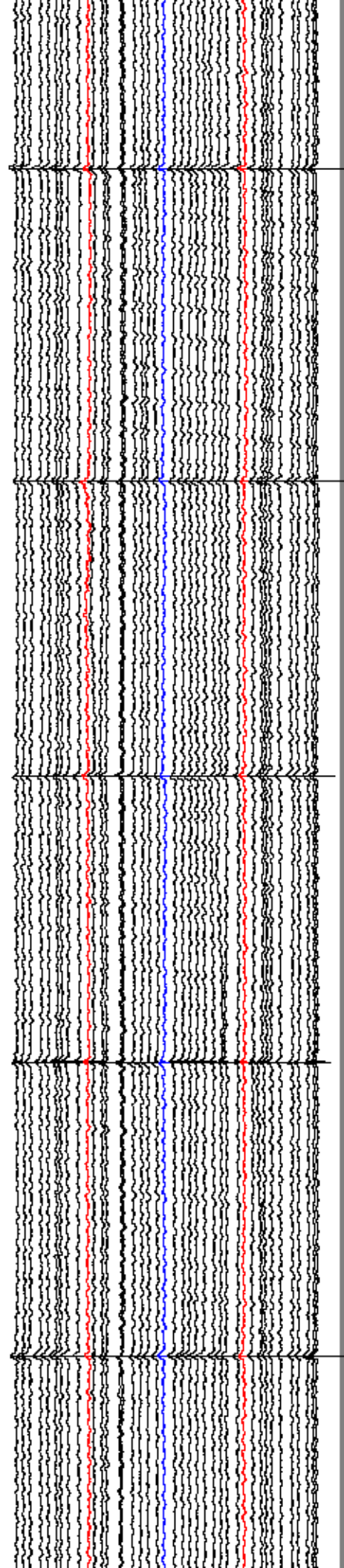
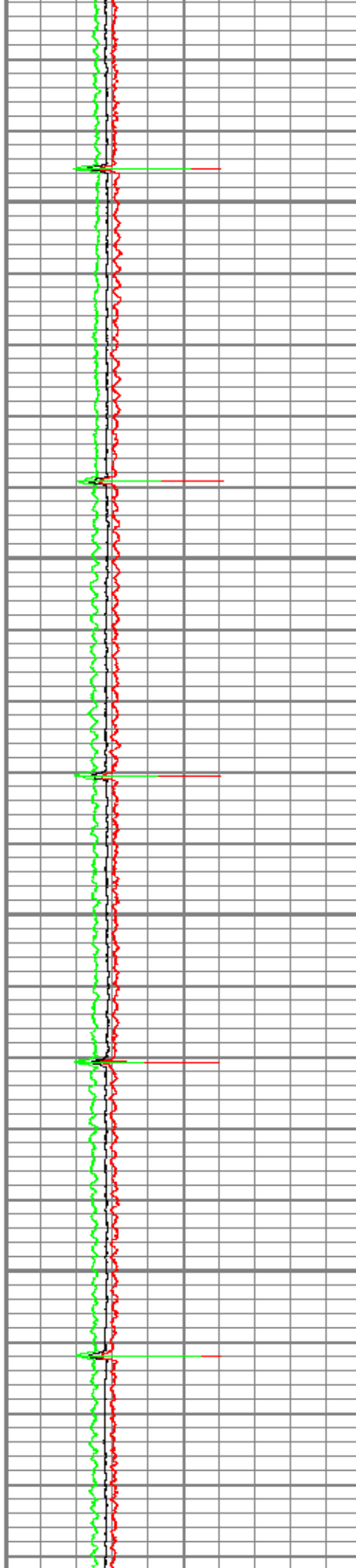


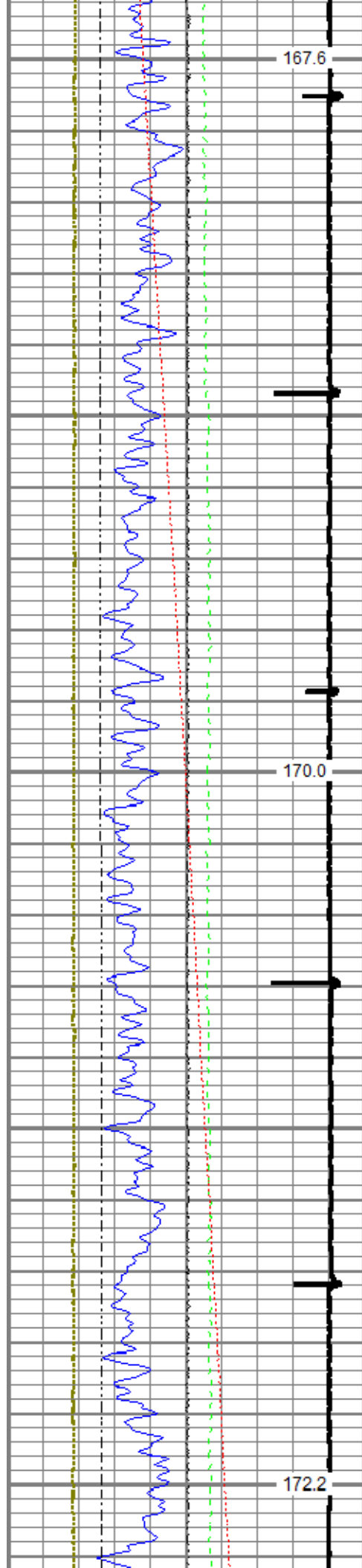




4800

4900

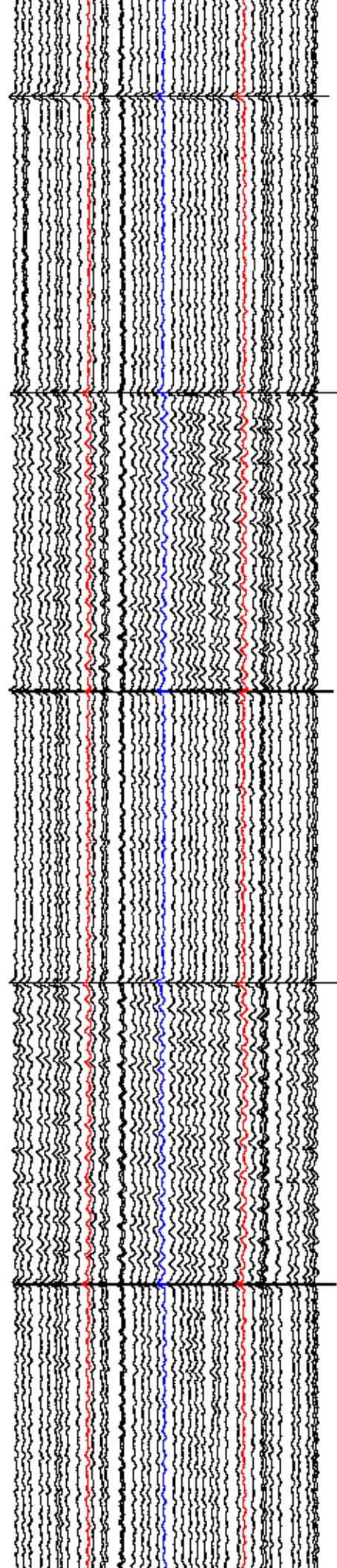
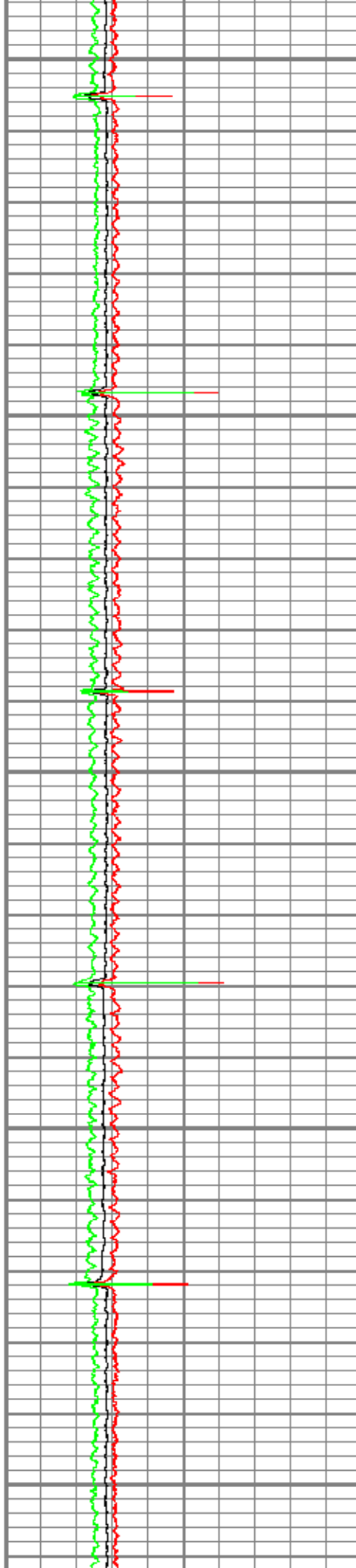


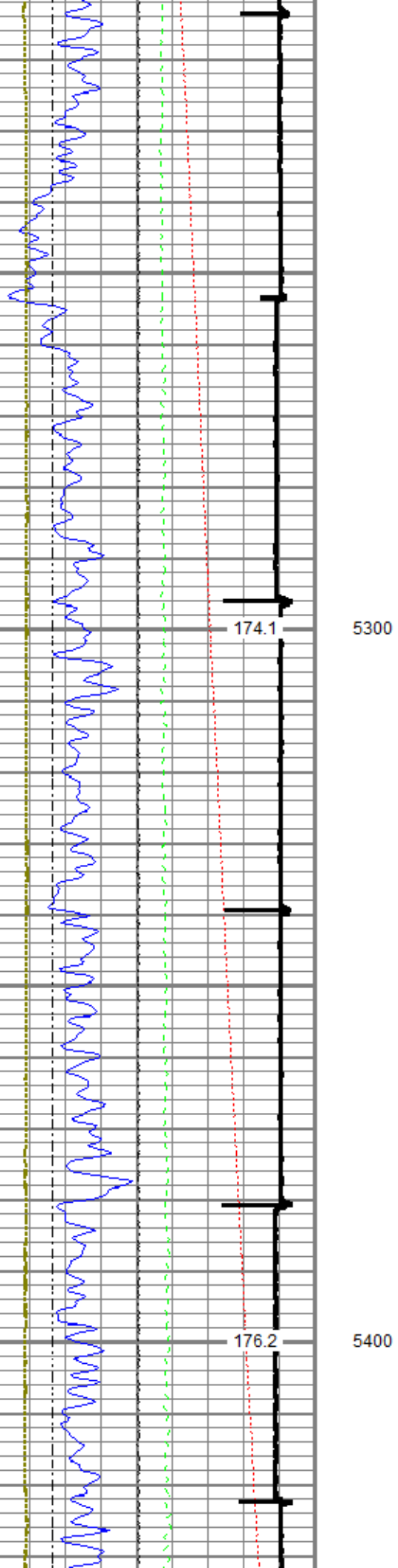


5000

5100

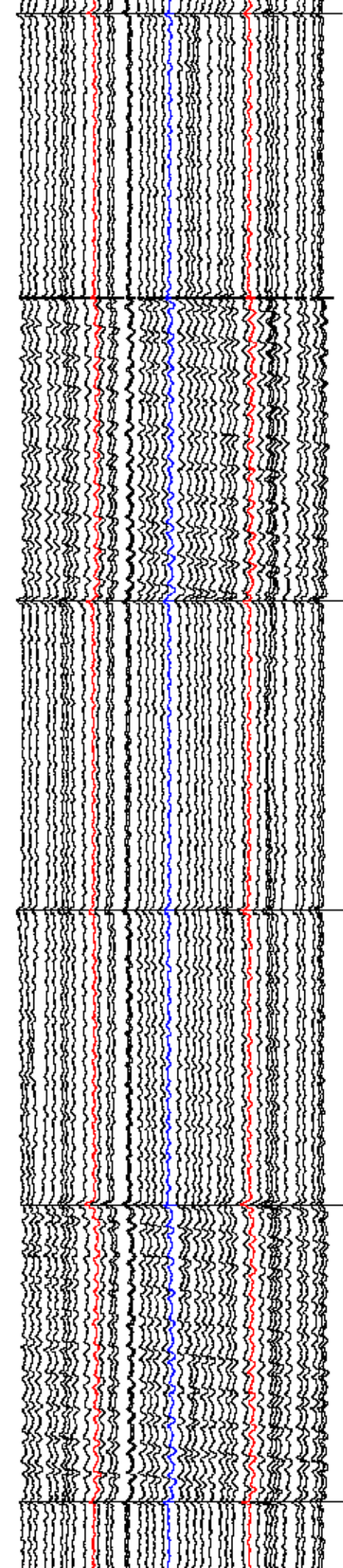
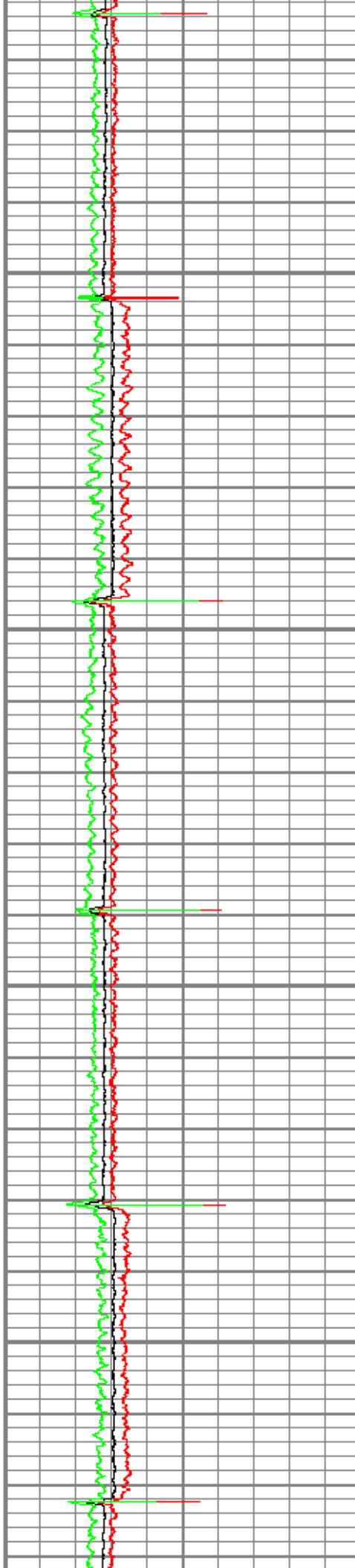
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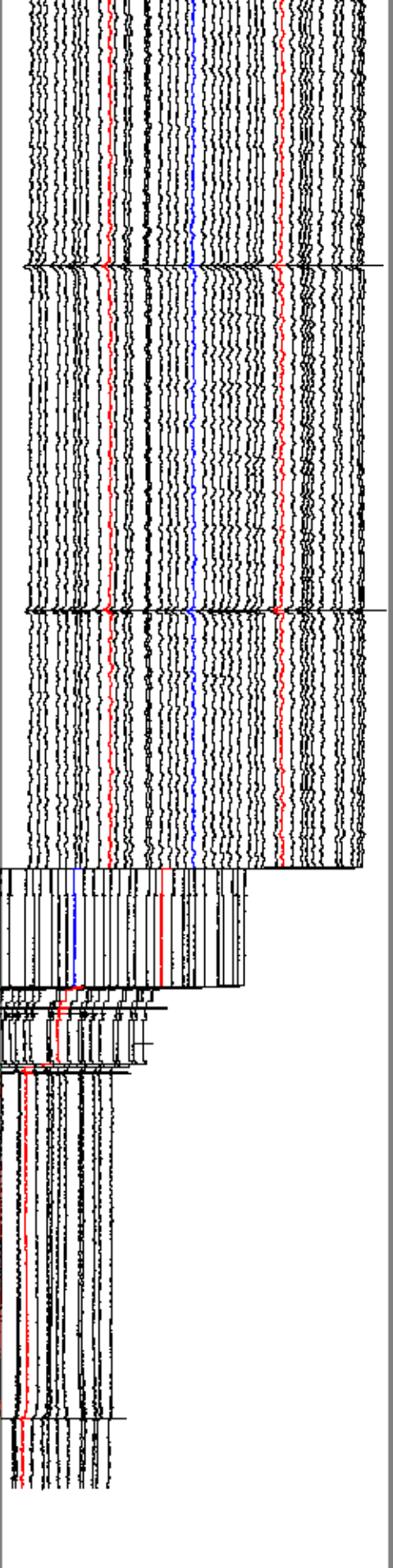
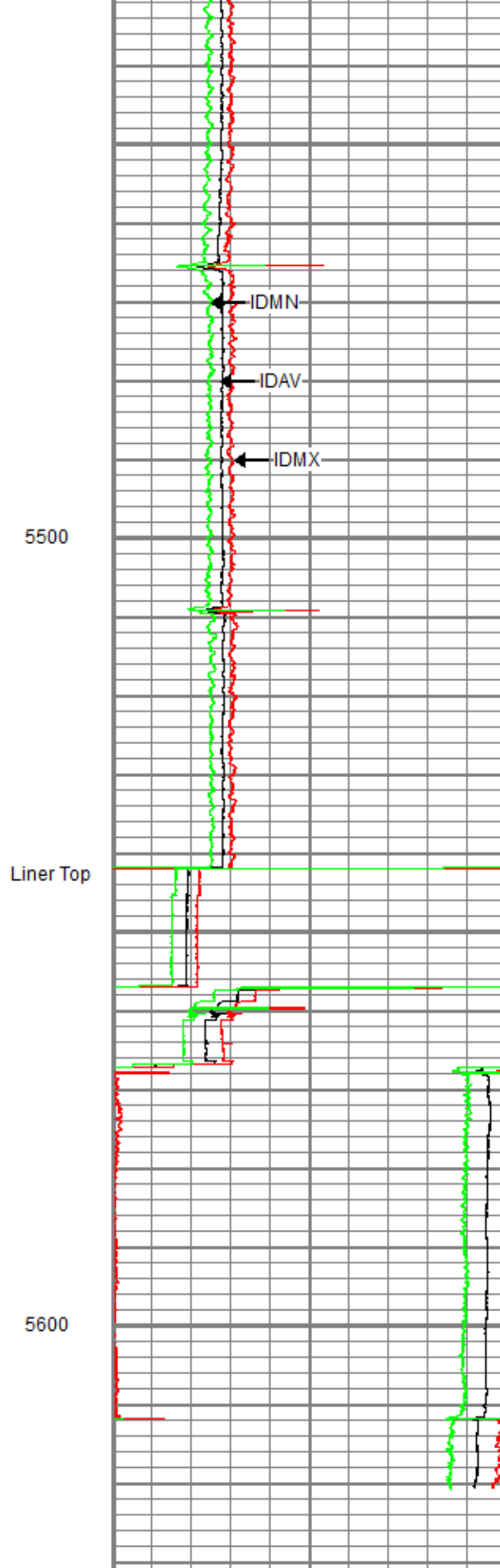
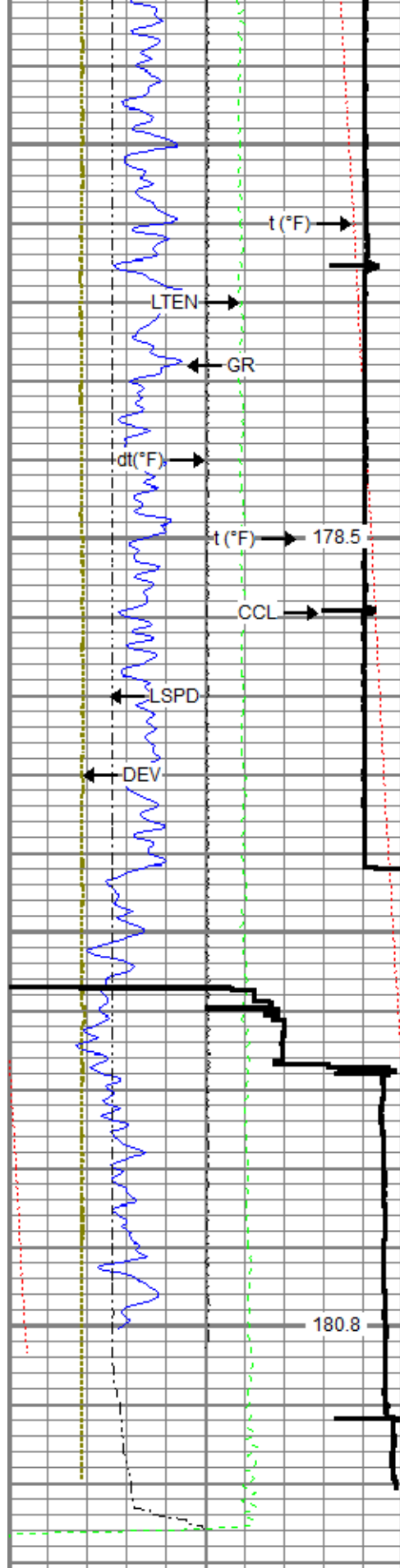


5300

5400







0	Gamma Ray (GAPI)	120
-100	Line Speed (ft/min)	100
-10	Deviation (deg)	90
0	Line Tension (lb)	2000
-2	Differential Temperature (degF)	2

6	Average Diameter (in)	7
6	Maximum Diameter (in)	7
6	Minimum Diameter (in)	7

Caliper #10
Caliper #20
Caliper #30

0	Temperature (degF)	20
	Casing Collar Locator	



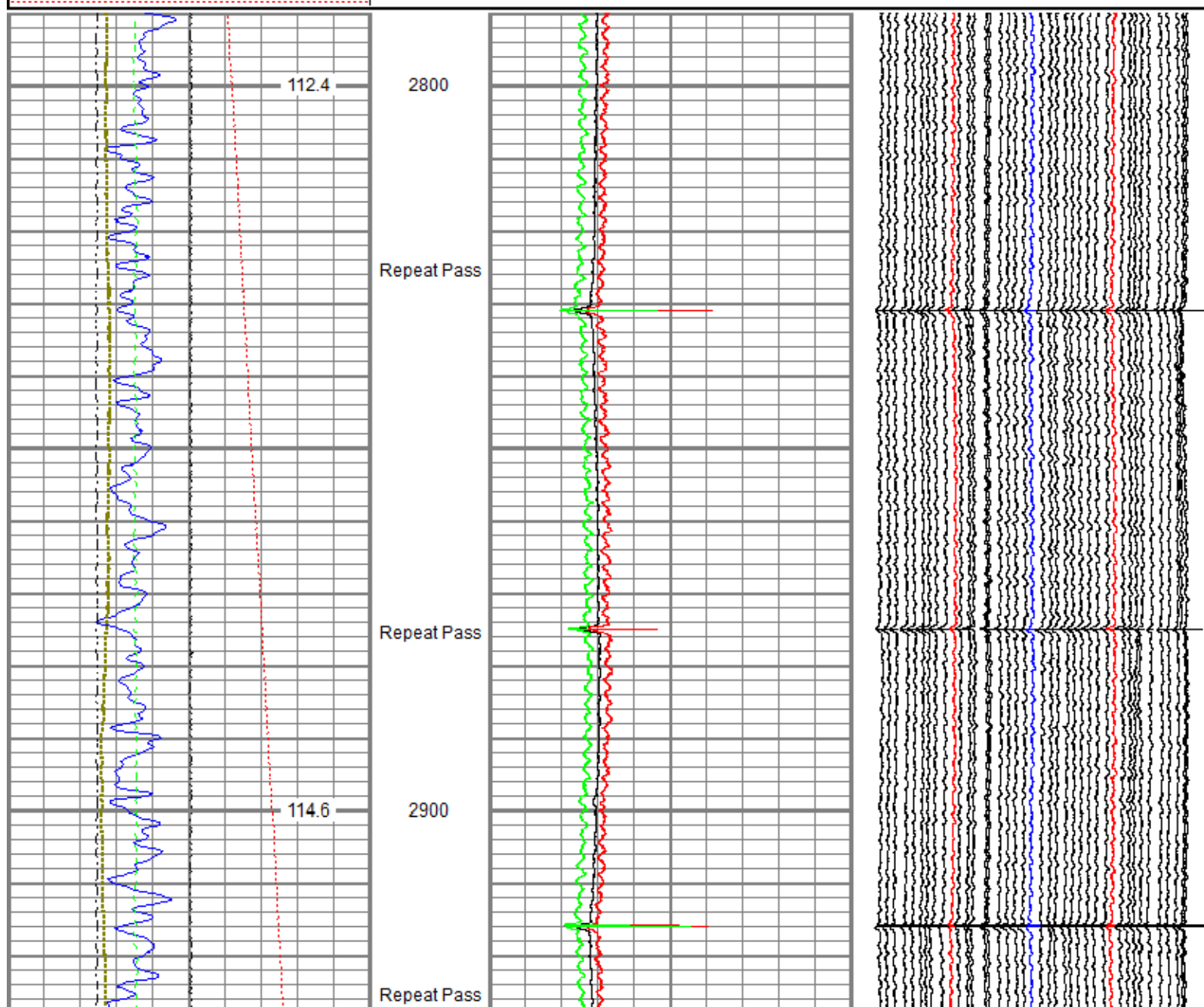
## Repeat Pass

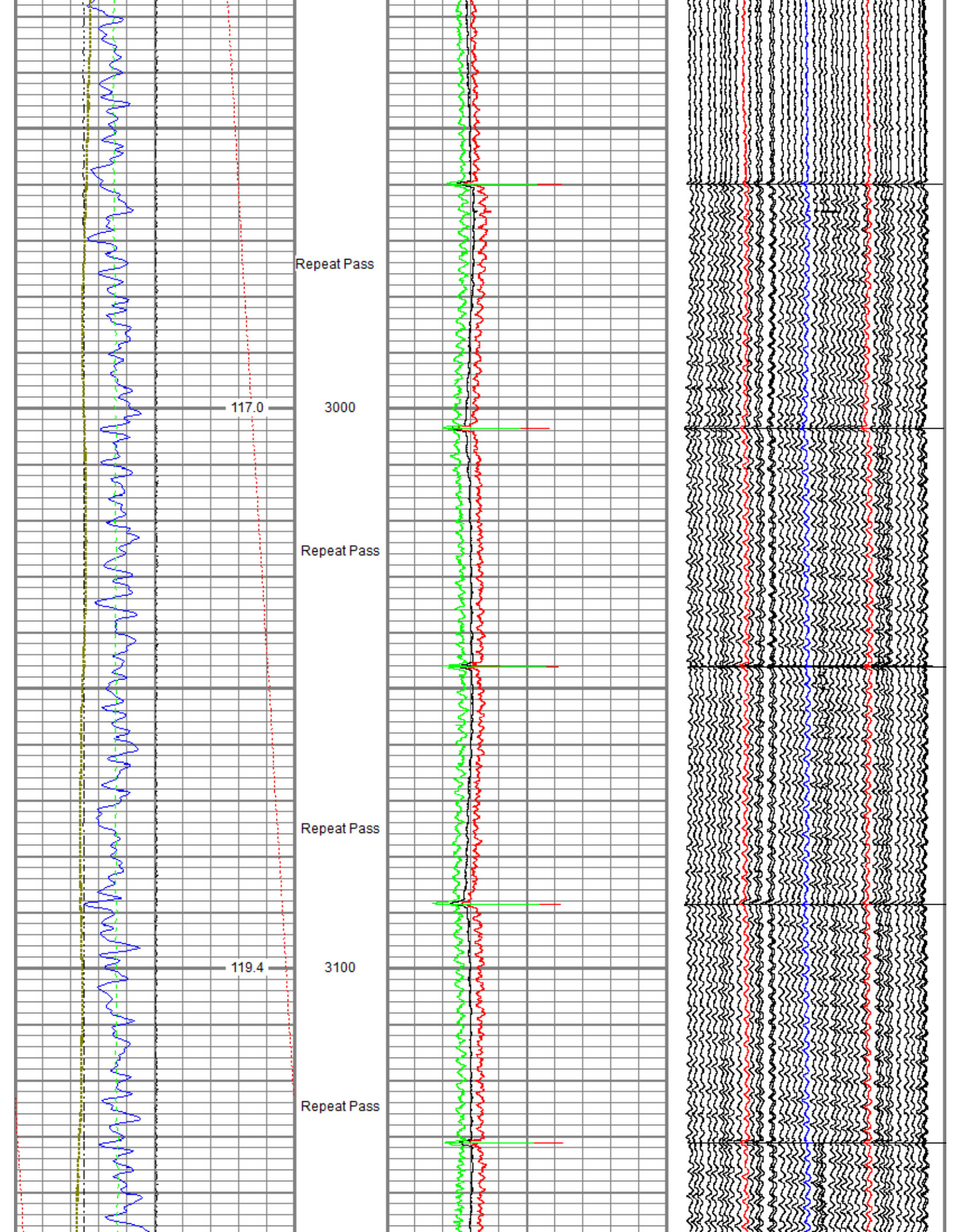
Recorded With 0 PSI Surface Induced Pressure

Database File: anadarko\_yellowhammer 34n-17hz\0512345493\_anadarko\_yellowhammer 34n-17hz\_mit\_02-18-18.db  
 Dataset Pathname: pass15  
 Presentation Format: ros\_70mit40sx  
 Dataset Creation: Sun Feb 18 08:12:47 2018  
 Charted by: Depth in Feet scaled 1:240

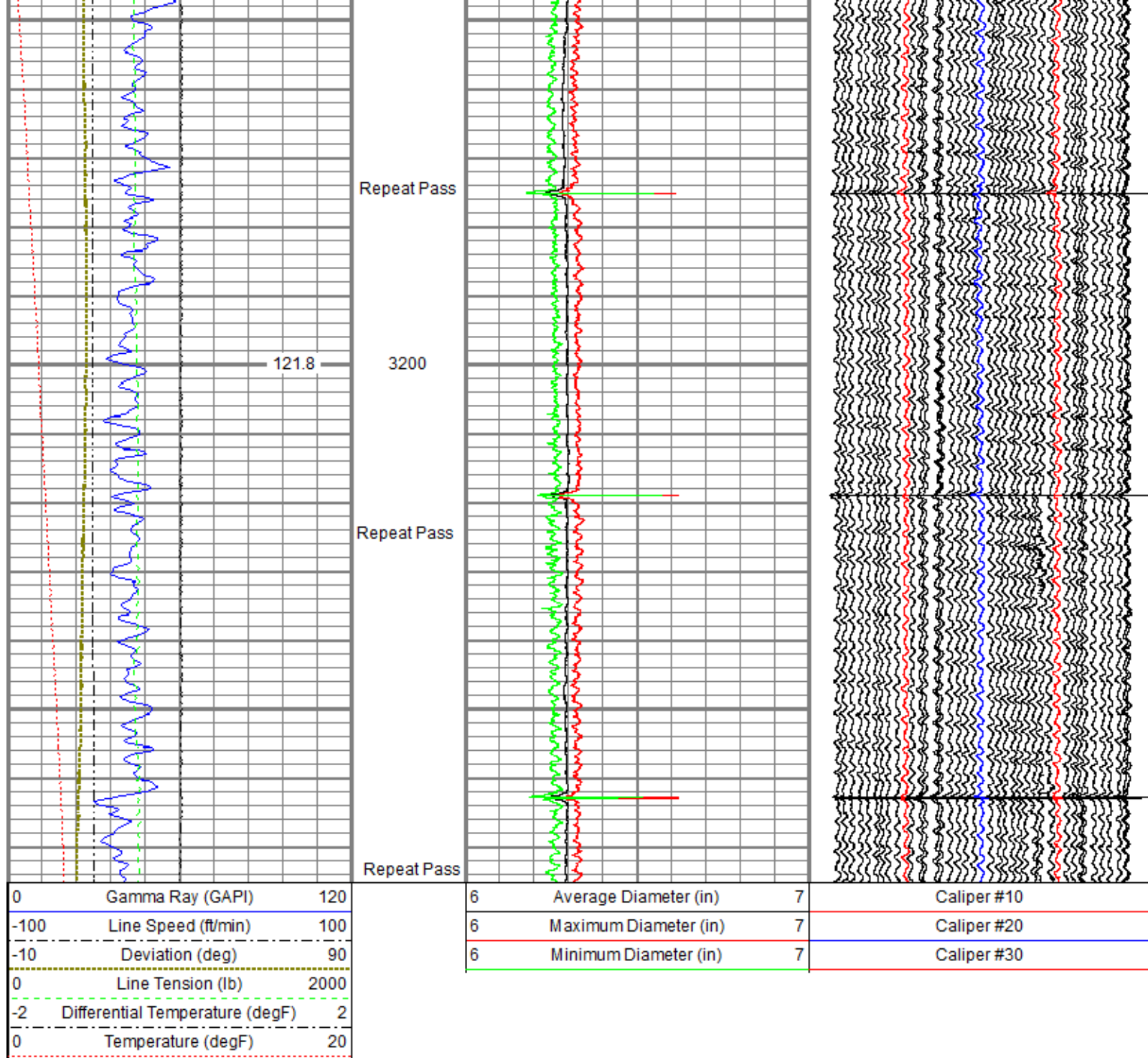
0	Gamma Ray (GAPI)	120
-100	Line Speed (ft/min)	100
-10	Deviation (deg)	90
0	Line Tension (lb)	2000
-2	Differential Temperature (degF)	2
0	Temperature (degF)	20

6	Average Diameter (in)	7	Caliper #10
6	Maximum Diameter (in)	7	Caliper #20
6	Minimum Diameter (in)	7	Caliper #30









Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	23.58		Titan CHD-14375 GO	1.03	1.44	3.60
			Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck			
			UW AGS-001 (211461) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW XTU-002 (10017430) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW PGR-020 (211727) Production Gamma Ray	1.92	1.69	9.50
TEMP	22.18		UW PRT-016 (10025100) Platinum Resistance Thermometer	1.04	1.69	5.20
			UW CENT-DSS RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00

CBLROT	15.15		UW RBT-004 (10013454) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.48	3.13	140.00
CBLTEMP	15.15					
WVFS8	15.15					
WVFS7	15.15					
WVFS6	15.15					
WVFS5	15.15					
WVFS4	15.15					
WVFS3	15.15					
WVFS2	15.15					
WVFS1	15.15					
WVF3FT	15.15					
WVF5FT	14.15					
CBLTEMP	10.02					
MIT	5.27		UW CENT-DSS RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
			UW MIT-40 027 (211111) 40 Multifinger Imaging Tool	4.54	2.75	65.00
			UW CENT-PRC 057 4 Arm 2-3/4" Production Roller Centralizer	2.71	2.75	32.00
TSTAMP	0.00		UW BUL-006 (031422) Sondex Ultrawire Bullnose Terminator Sub	0.22	1.69	1.20
Dataset: 0512345493_Anadarko_Yellowhammer 34N-17HZ_MIT_02-18-18.db: field/well/run1/pass18 Total length: 27.83 ft Total weight: 328.00 lb O.D.: 3.13 in						

Calibration Report			
Database File	C:\ProgramData\Warrior\Data\Anadarko_Yellowhammer 34N-17HZ\0512345493_Anadarko_Yellowhammer 34N-17HZ_MIT_02-		
Dataset Pathname	run2_cals		
Dataset Creation	Sun Feb 18 10:58:46 2018		
Multifinger Imaging Tool Calibration Report			
Serial Number:		211111	
Number of Fingers:		40	
Tool Model:		40 027	
Inclinometer Calibration Report			
Performed:		Mon Nov 18 15:31:59 2013	
Calibration Angle:		46	
		Inc X	Inc Y
Vertical:		1931	1952
Finger 1 up:		1959	2266

Finger 31 up:	1608	1962
Finger 21 up:	1927	1623
Finger 11 up:	2253	1930
Sensitivity ratio:	1.0031	
X-axis angle:	272.845	
Deviation const.:	311.818	

# Finger Calibration Report

Performed: Sun Feb 18 07:41:34 2018

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	978	369.0	1347	393.0	1740	451.0	2191
Finger 02:	1075	370.0	1445	383.0	1828	444.0	2272
Finger 03:	1108	364.0	1472	380.0	1852	444.0	2296
Finger 04:	1054	370.0	1424	384.0	1808	441.0	2249
Finger 05:	1074	370.0	1444	382.0	1826	438.0	2264
Finger 06:	1062	381.0	1443	392.0	1835	455.0	2290
Finger 07:	1186	340.0	1526	354.0	1880	409.0	2289
Finger 08:	1096	362.0	1458	391.0	1849	456.0	2305
Finger 09:	1062	376.0	1438	394.0	1832	440.0	2272
Finger 10:	1113	324.0	1437	339.0	1776	374.0	2150
Finger 11:	1090	377.0	1467	399.0	1866	430.0	2296
Finger 12:	1227	386.0	1613	404.0	2017	427.0	2444
Finger 13:	1178	353.0	1531	381.0	1912	414.0	2326
Finger 14:	1257	338.0	1595	352.0	1947	365.0	2312
Finger 15:	1126	387.0	1513	421.0	1934	452.0	2386
Finger 16:	1194	367.0	1561	399.0	1960	398.0	2358
Finger 17:	1135	381.0	1516	417.0	1933	420.0	2353
Finger 18:	1103	383.0	1486	418.0	1904	419.0	2323
Finger 19:	1120	384.0	1504	426.0	1930	422.0	2352
Finger 20:	1174	368.0	1542	406.0	1948	399.0	2347
Finger 21:	1181	380.0	1561	422.0	1983	408.0	2391
Finger 22:	1112	375.0	1487	423.0	1910	410.0	2320
Finger 23:	906	351.0	1257	414.0	1671	422.0	2093
Finger 24:	1182	368.0	1550	409.0	1959	392.0	2351
Finger 25:	1411	387.0	1798	431.0	2229	421.0	2650
Finger 26:	1217	331.0	1548	370.0	1918	382.0	2300
Finger 27:	1313	361.0	1674	396.0	2070	394.0	2464
Finger 28:	1127	364.0	1491	409.0	1900	411.0	2311
Finger 29:	1381	340.0	1721	366.0	2087	356.0	2443
Finger 30:	1231	344.0	1575	375.0	1950	376.0	2326
Finger 31:	1282	341.0	1623	365.0	1988	367.0	2355
Finger 32:	1268	341.0	1609	360.0	1969	372.0	2341
Finger 33:	1022	320.0	1342	351.0	1693	391.0	2084
Finger 34:	1131	347.0	1478	371.0	1849	392.0	2241
Finger 35:	1330	338.0	1668	354.0	2022	392.0	2414
Finger 36:	1433	402.0	1835	414.0	2249	437.0	2686
Finger 37:	1114	338.0	1452	359.0	1811	423.0	2234
Finger 38:	1443	377.0	1820	381.0	2201	419.0	2620
Finger 39:	1237	342.0	1579	350.0	1929	398.0	2327
Finger 40:	1060	368.0	1428	384.0	1812	431.0	2243

# Post Survey Calibration Check

Performed: Sun Feb 18 10:57:59 2018

Ring size:	4	Nom.	5	Nom.	6	Nom.	7	Nom.
(in)		wear		wear		wear		wear
Finger 01:	3.987	-0.007	5.009	0.004	6.013	0.006	7.004	0.002
Finger 02:	3.981	-0.009	5.002	0.001	6.005	0.003	6.998	-0.001
Finger 03:	3.983	-0.009	5.003	0.002	6.009	0.005	6.977	-0.011
Finger 04:	3.982	-0.009	5.004	0.002	6.009	0.004	7.005	0.003
Finger 05:	3.987	-0.007	5.009	0.005	6.012	0.006	6.989	-0.005
Finger 06:	3.983	-0.009	5.008	0.004	6.013	0.006	6.981	-0.009
Finger 07:	3.970	-0.015	5.000	-0.000	6.003	0.002	6.984	-0.008
Finger 08:	3.975	-0.012	5.005	0.003	6.003	0.002	6.951	-0.025
Finger 09:	3.988	-0.006	5.005	0.003	6.007	0.003	6.987	-0.007
Finger 10:	3.982	-0.009	5.006	0.003	6.008	0.004	6.982	-0.009
Finger 11:	3.979	-0.010	5.003	0.001	6.003	0.001	6.979	-0.011
Finger 12:	3.981	-0.010	5.003	0.002	6.001	0.000	6.984	-0.008
Finger 13:	3.978	-0.011	4.997	-0.001	5.997	-0.002	6.958	-0.021
Finger 14:	3.978	-0.011	4.995	-0.003	6.005	0.003	7.010	0.005
Finger 15:	3.981	-0.010	5.005	0.003	6.004	0.002	6.965	-0.018



Finger 16:	3.982	-0.009	5.000	-0.000	6.005	0.002	6.971	-0.015
Finger 17:	3.992	-0.004	5.004	0.002	6.011	0.005	6.991	-0.004
Finger 18:	3.987	-0.007	5.003	0.001	6.015	0.007	7.000	0.000
Finger 19:	3.987	-0.006	5.004	0.002	6.012	0.006	6.994	-0.003
Finger 20:	3.987	-0.007	5.007	0.004	6.016	0.008	6.989	-0.005
Finger 21:	3.986	-0.007	5.004	0.002	6.013	0.007	7.012	0.006
Finger 22:	3.989	-0.006	5.011	0.006	6.009	0.004	7.000	0.000
Finger 23:	3.987	-0.006	5.013	0.007	6.014	0.007	7.005	0.003
Finger 24:	3.985	-0.007	5.005	0.002	6.008	0.004	7.000	-0.000
Finger 25:	3.976	-0.012	5.009	0.005	6.013	0.007	6.968	-0.016
Finger 26:	3.982	-0.009	5.006	0.003	6.002	0.001	6.950	-0.025
Finger 27:	3.979	-0.011	5.002	0.001	6.000	0.000	6.957	-0.022
Finger 28:	3.978	-0.011	5.004	0.002	6.004	0.002	6.986	-0.007
Finger 29:	3.969	-0.015	4.999	-0.000	5.995	-0.002	6.985	-0.008
Finger 30:	3.980	-0.010	5.002	0.001	6.005	0.003	6.997	-0.001
Finger 31:	3.975	-0.013	4.998	-0.001	6.005	0.003	6.993	-0.004
Finger 32:	3.981	-0.009	5.000	-0.000	6.008	0.004	6.981	-0.010
Finger 33:	3.982	-0.009	4.994	-0.003	6.011	0.005	6.981	-0.009
Finger 34:	3.988	-0.006	5.001	0.001	5.998	-0.001	6.976	-0.012
Finger 35:	3.983	-0.009	5.001	0.001	6.005	0.002	6.968	-0.016
Finger 36:	3.996	-0.002	5.016	0.008	6.017	0.009	7.000	-0.000
Finger 37:	3.985	-0.008	5.011	0.006	6.016	0.008	6.959	-0.020
Finger 38:	3.984	-0.008	5.006	0.003	6.004	0.002	6.990	-0.005
Finger 39:	3.981	-0.009	4.998	-0.001	6.007	0.003	6.988	-0.006
Finger 40:	3.989	-0.006	5.003	0.002	6.012	0.006	7.012	0.006
Average:	3.983	-0.009	5.004	0.002	6.007	0.004	6.985	-0.007

Segmented Cement Bond Log Calibration Report								
Serial Number:			10013454					
Tool Model:			004					
Calibration Casing Diameter:			7.000		in			
Calibration Depth:			-23.563		ft			

Master Calibration, performed Sat Feb 17 13:20:02 2018:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.004	0.773	0.800	62.165	79.765	0.508
5FT	-0.002	0.768	0.800	62.165	79.625	0.994
S1	0.002	0.769	0.000	100.000	130.421	-0.314
S2	0.002	0.788	0.000	100.000	127.244	-0.242
S3	0.002	0.788	0.000	100.000	127.377	-0.311
S4	0.002	0.788	0.000	100.000	127.241	-0.309
S5	0.002	0.776	0.000	100.000	129.232	-0.316
S6	0.001	0.765	0.000	100.000	130.868	-0.165
S7	0.001	0.750	0.000	100.000	133.531	-0.192
S8	0.002	0.755	0.000	100.000	132.799	-0.258

Temperature Calibration Report					
Serial Number:			10025100		
Tool Model:			016		
Performed:			Sun Nov 12 14:30:03 2017		
Point #		Reading	Reference		
1		13249.00	cps	68.00	degF
2		18454.00	cps	104.00	degF
3		29735.00	cps	176.00	degF
4		41457.00	cps	248.00	degF
5		52851.00	cps	320.00	degF
6		59128.00	cps	356.00	degF
7			cps		degF
8			cps		degF
9			cps		degF
10			cps		degF

## Gamma Ray Calibration Report

Serial Number:	211727	
Tool Model:	020	
Performed:	Sun Nov 12 06:37:04 2017	
Calibrator Value:	637.0	GAPI
Background Reading:	78.8	cps
Calibrator Reading:	1069.9	cps
Sensitivity:	0.6427	GAPI/cps



<b>Company</b>	Kerr-McGee Oil & Gas Onshore, L.P.
<b>Well</b>	Yellowhammer 34N-17HZ
<b>Field</b>	Wattenberg
<b>County</b>	Weld
<b>State</b>	Colorado