



**EWR Electromagnetic Wave Resistivity  
DGR Dual Gamma Ray  
ACAL Acoustic Caliper  
BAT Bi-Modal Acoustic Sonic**

[illegible]

## WELL INFORMATION

MWD Run Number	200				
Date run completed	26-Nov-03				
Rig Bit Number	3				
Bit Size (mm)	311				
Tool Nominal OD (mm)	203				
Log Start Depth (MD, m)	831.00				
Log End Depth (MD, m)	2,546.00				
Drill or Wipe	Drilling				
Drill/Wipe Start Date and Time	22-Nov-03 16:42				
Drill/Wipe End Date and Time	26-Nov-03 10:30				
Min Inc (deg) @ Depth (MD, m)	0.09 @ 845.67				
Max Inc (deg) @ Depth (MD, m)	4.02 @ 1,458.10				
Bit TFA(in2) / Bit Type	1.2 / Security 2563				
Flow Rate (gpm)	880				
Max AV (mpm) / CV (mpm) @ MWD	82.7 / 153.6				
Fluid Type	Aqua-Drill				
Density (sg) / Viscosity (spl)	1.1 / 79				
Filtrate CL (ppm)	39400				
pH / Fluid Loss (cptm)	9.25 / 5.0				
PV (cp) / YP (lhf2)	21 / 33				
% Solids / % Sand	5.5 / 0.25				
% Oil / Oil:Water Ratio	N/A / N/A:100				
Rm @ Measured Temp (degC)	0.14 @ 18.00				
Rmf @ Measured Temp (degC)	0.08 @ 18.00				
Rmc @ Measured Temp (degC)	0.36 @ 18.00				
Max Tool Temp (degC) / Source	67.00 / EWR-P4				
Rm @ Max Tool Temp (degC)	0.06 @ 67.00				
Lead MWD Engineer	F. Besanger				
Customer Representative	P.Devine				

## SENSOR INFORMATION

### Downhole Processor Information

Tool Type	HCIM				
Software Version	66.37				
Sub Serial Number	198841				
Insert Serial Number	10503669				
Logging String Serial Number	DM90031515XHBNRL				
Date and Time Initialized	22-Nov-03 05:15				
Date and Time Read	26-Nov-03 20:20				

### Directional Sensor Information

Tool Type	DM				
Distance From Bit (m)	41.20				
Software Version	3.15				
Sub Serial Number	DM90026200F8				
Sonde Serial Number	85267				
Sensor ID Number	185535				
Survey String Serial Number	DM1708KF8				
Toolface Offset (deg)	N/A				

### Gamma Ray Sensor Information

Tool Type	DGR				
Distance From Bit (m)	25.30				
Recorded Sample Period (sec)	10				
Software Version	N/A				
Sub Serial Number	082377				
Insert/Sonde Serial Number	132474				

### Resistivity Sensor Information

Tool Type	EWR-P4				
Distance From Bit (m)	31.68				
Recorded Sample Period (sec)	12				
Software Version	1.38				
Sub Serial Number	82377				
Receiver Insert Serial Number	144719				
Transmitter Insert Serial Number	79562				
Receiver Orientation	Down				

### Caliper Sensor Information

Tool Type	ACAL				
Distance From Bit (m)	36.93				
Software Version	2.05				
Sub Serial Number	87524				
Insert Serial Number	113416				

### Sonic Sensor Information

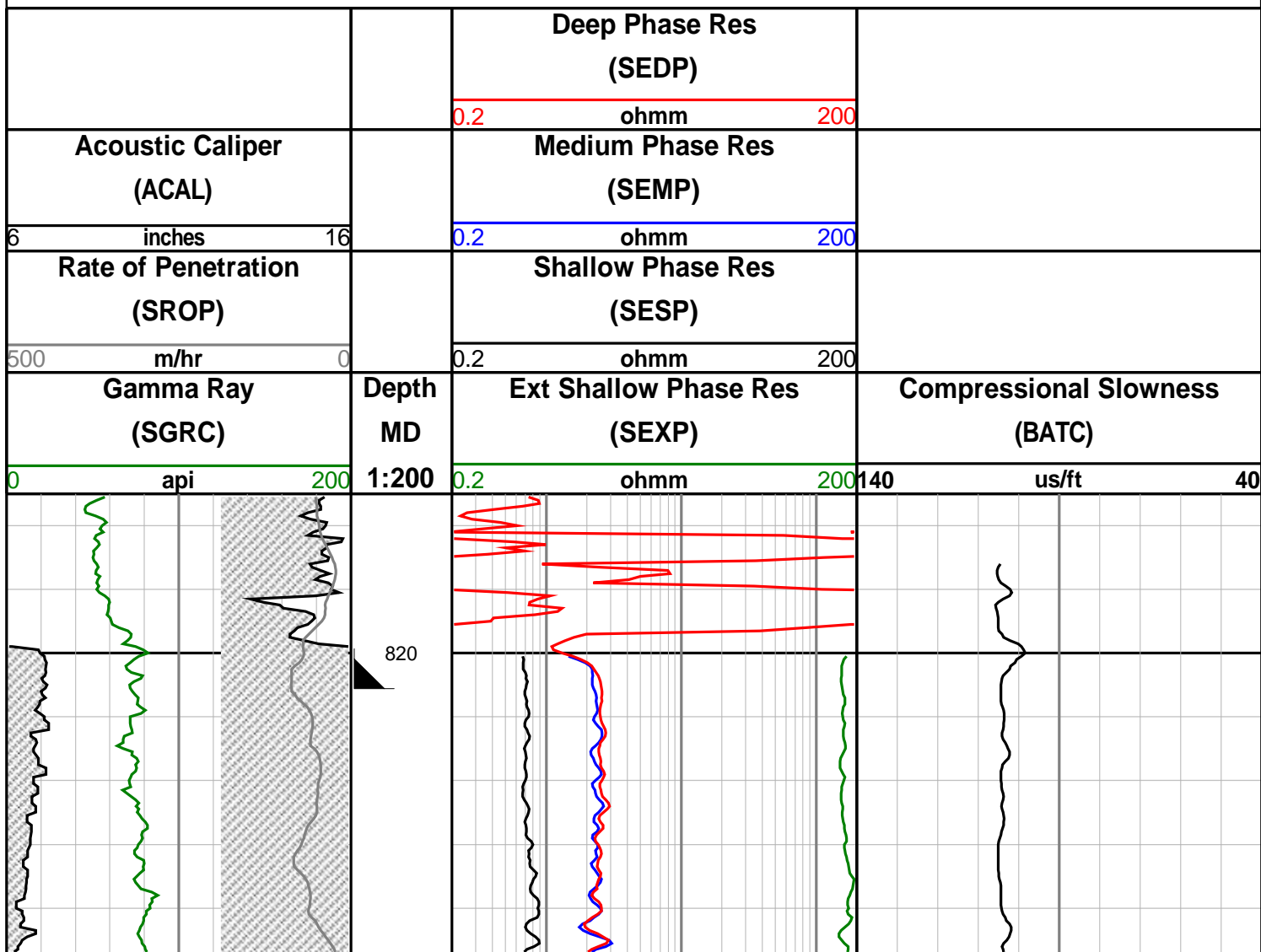
Tool Type	BAT				
Distance From Bit (m)	49.16				
Recorded Sample Period (sec)	22				
Software Version	4.41				
Sub Serial Number	187219				
Receiver Insert Serial Number	180818				
Transmitter Insert Serial Number	179659				

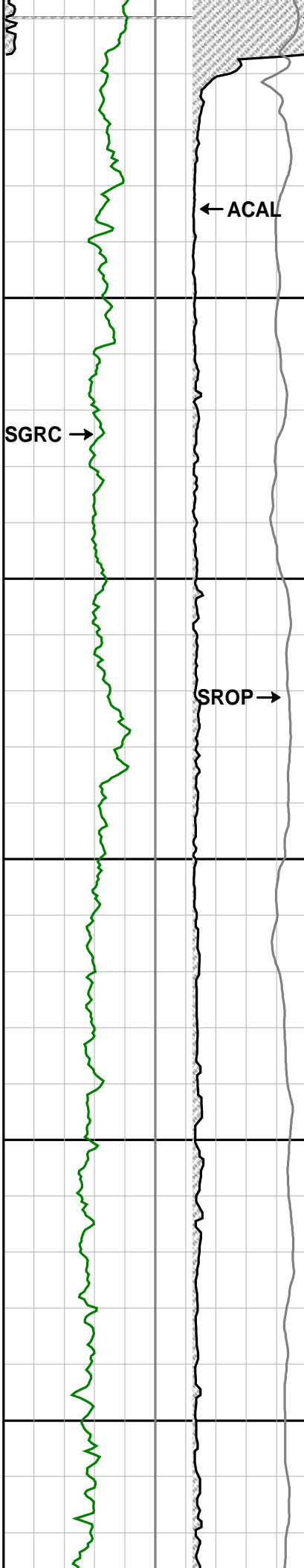
## REMARKS

1. All depths are bit depths and referenced to the drillers pipe tally.
2. AV/CV is calculated at the MWD collar using the Power Law for water based muds and the Bingham's Plastic Law for oil based muds.
3. Curve mnemonics are :
  - SGRC - Smoothed Gamma Ray Combined, api
  - SEXP - Smoothed Extra Shallow Phase-Shift Derived Resistivity, ohm-m
  - SESP - Smoothed Shallow Phase-Shift Derived Resistivity, ohm-m
  - SEMP - Smoothed Medium Phase-Shift Derived Resistivity, ohm-m
  - SEDP - Smoothed Deep Phase-Shift Derived Resistivity, ohm-m
  - SROP - Smoothed Rate of Penetration, m/hr
  - ACAL - Acoustic Caliper, inches.
  - BATC - Bi-Modal Acoustic Compressional Slowness, usec/ft
4. EWR-P4 memory filled @ 2355.0 mMDRT. No data presented below this depth.

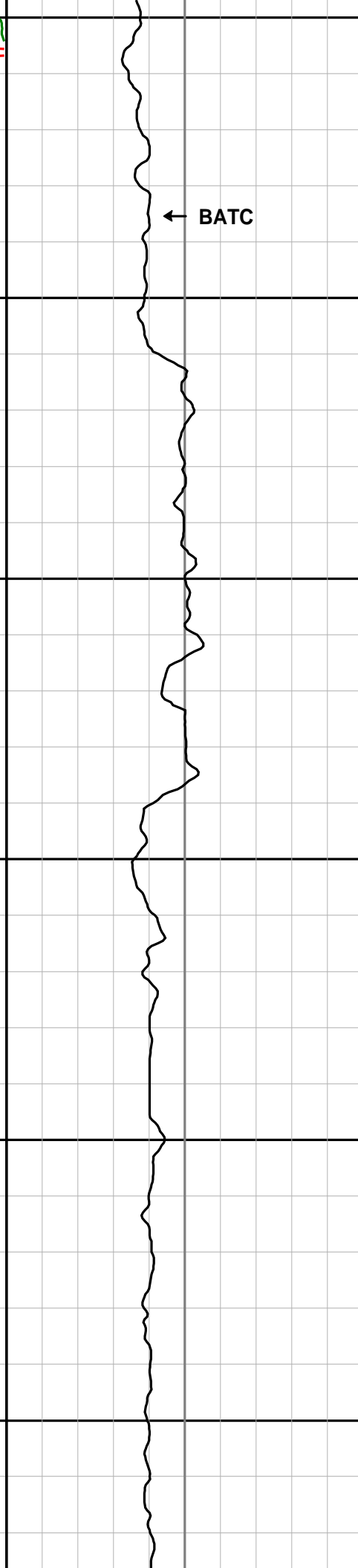
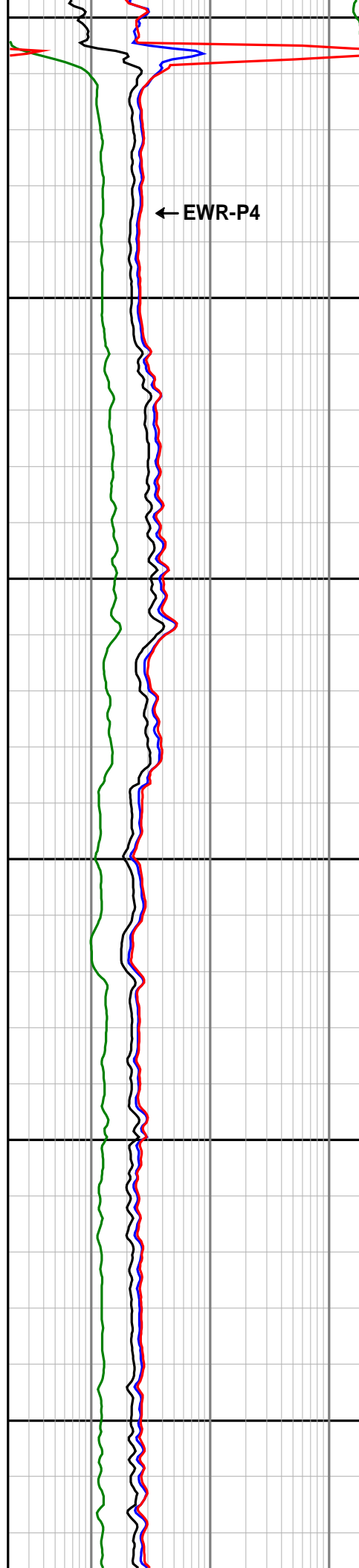
## WARRANTY

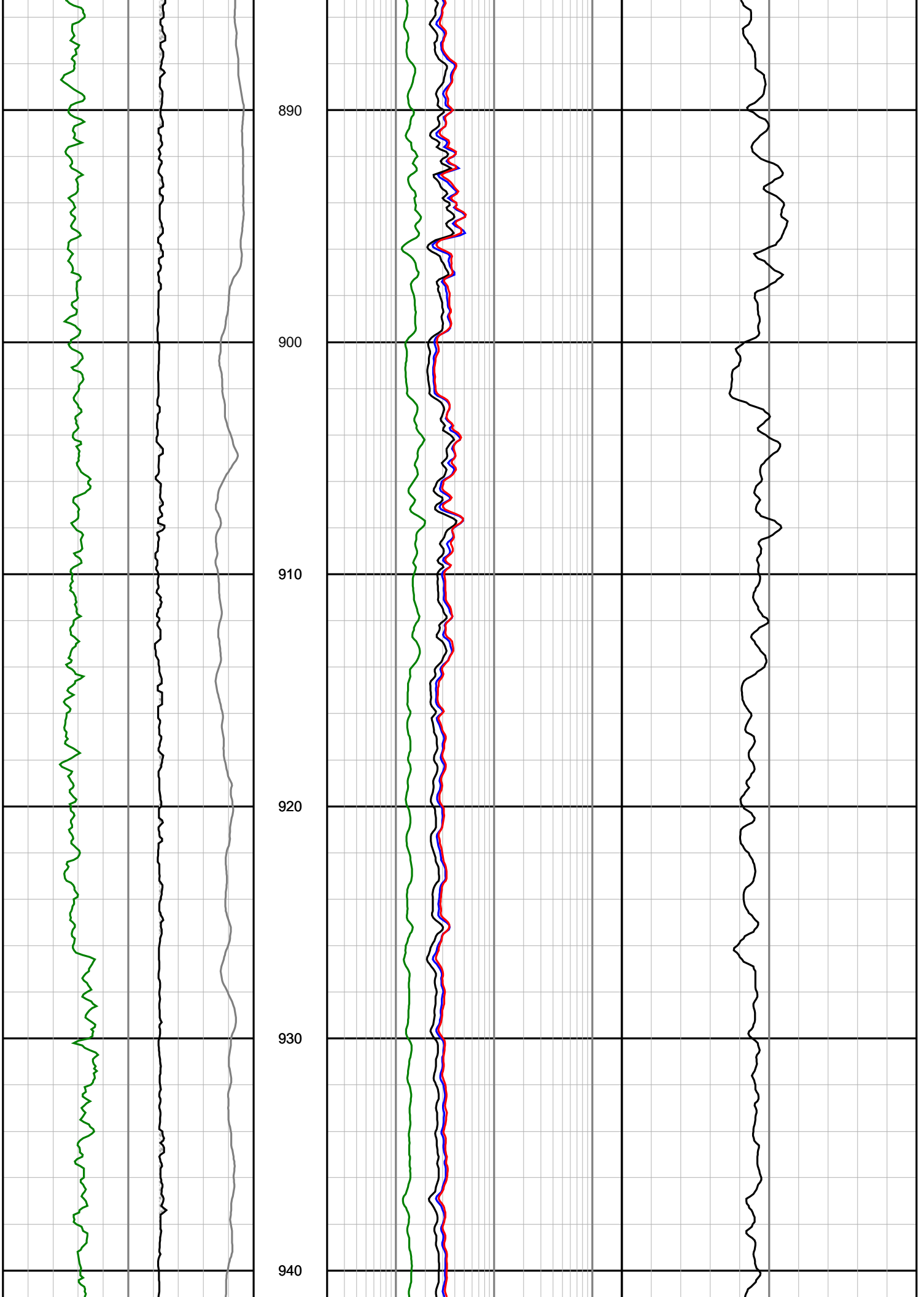
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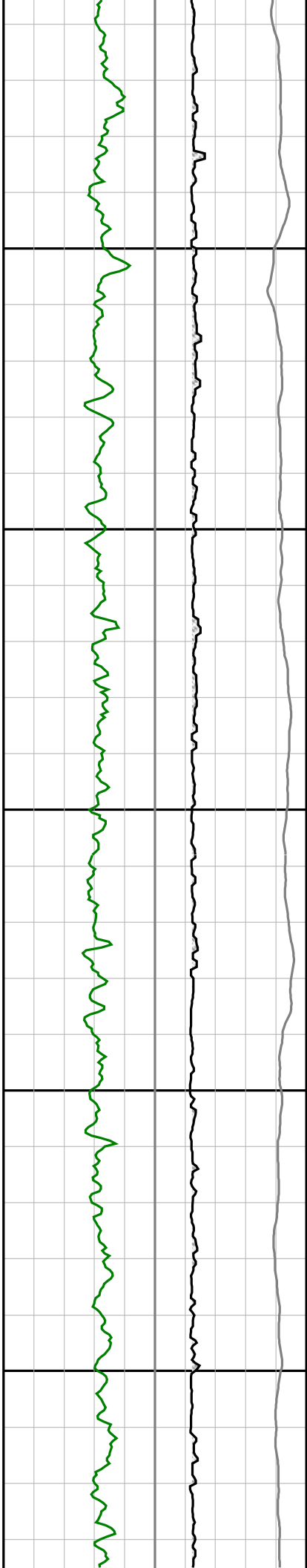




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840  
850  
860  
870  
880







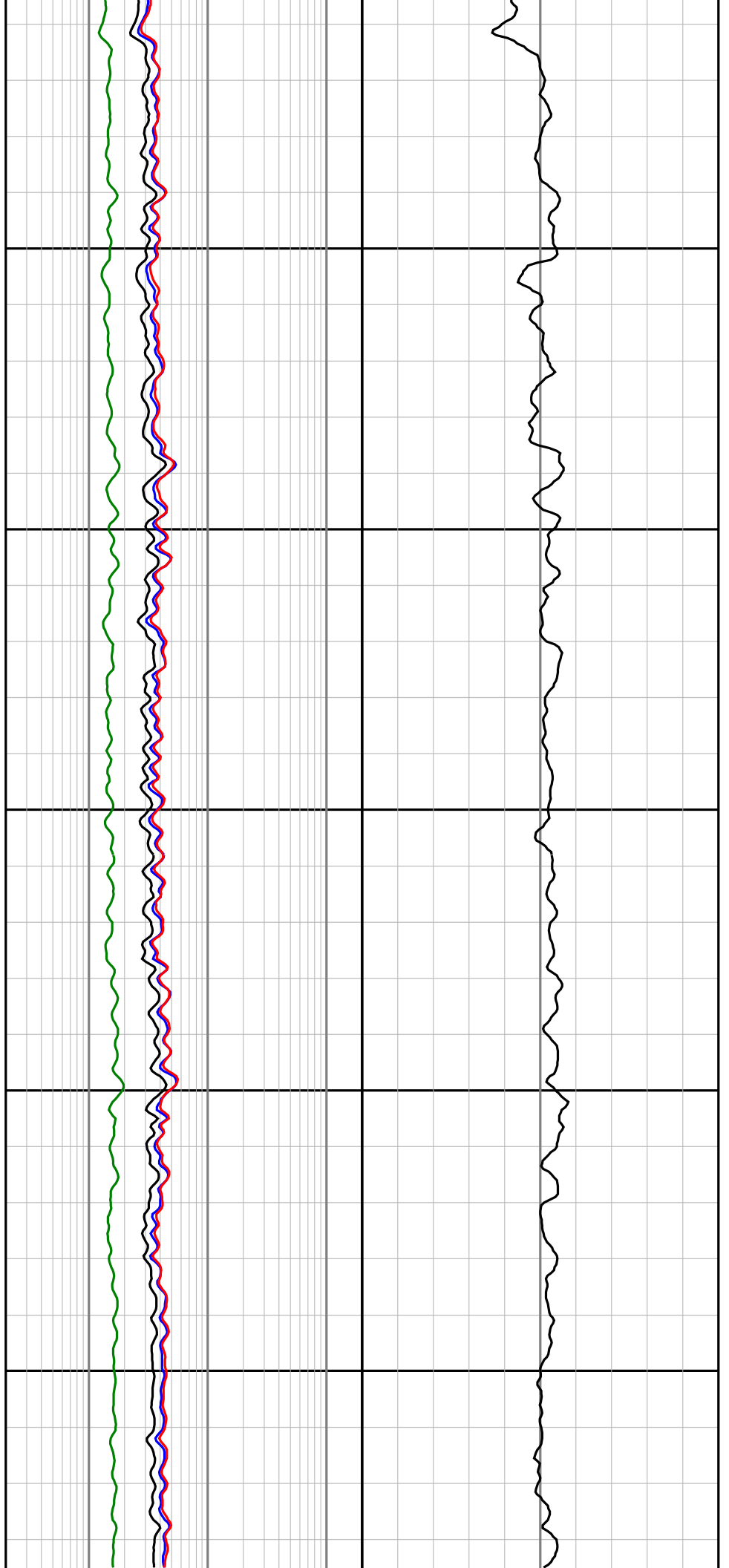
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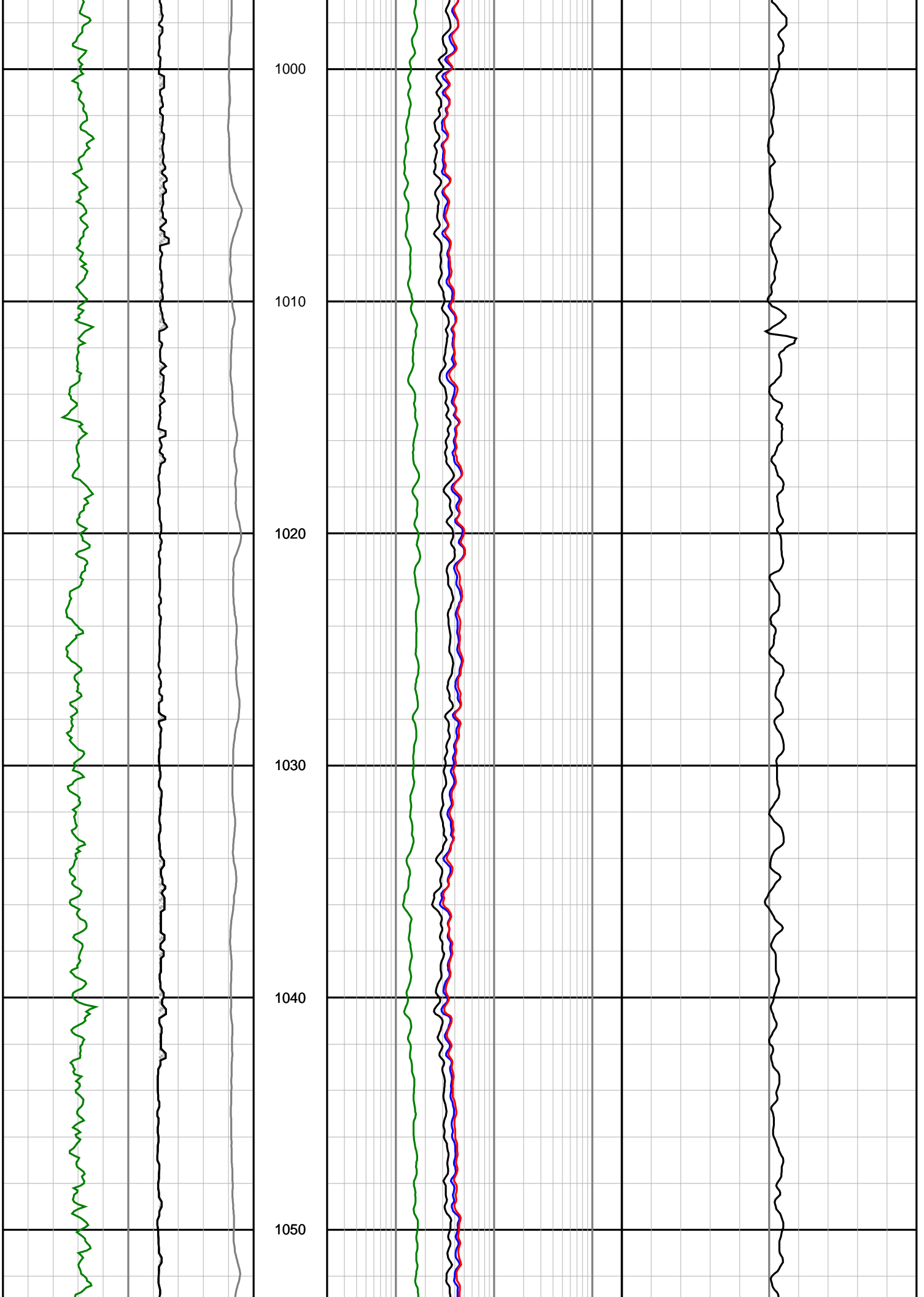
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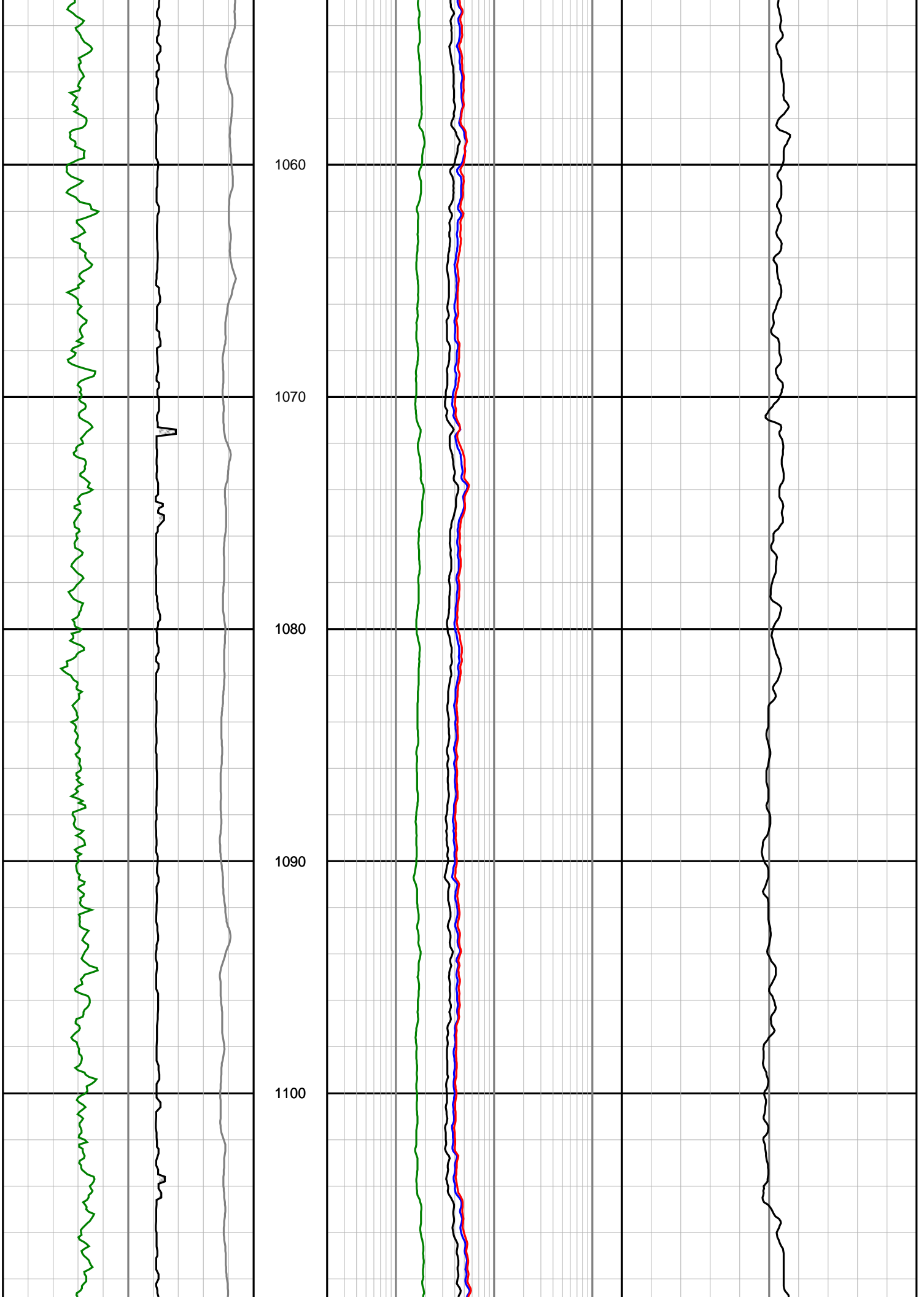
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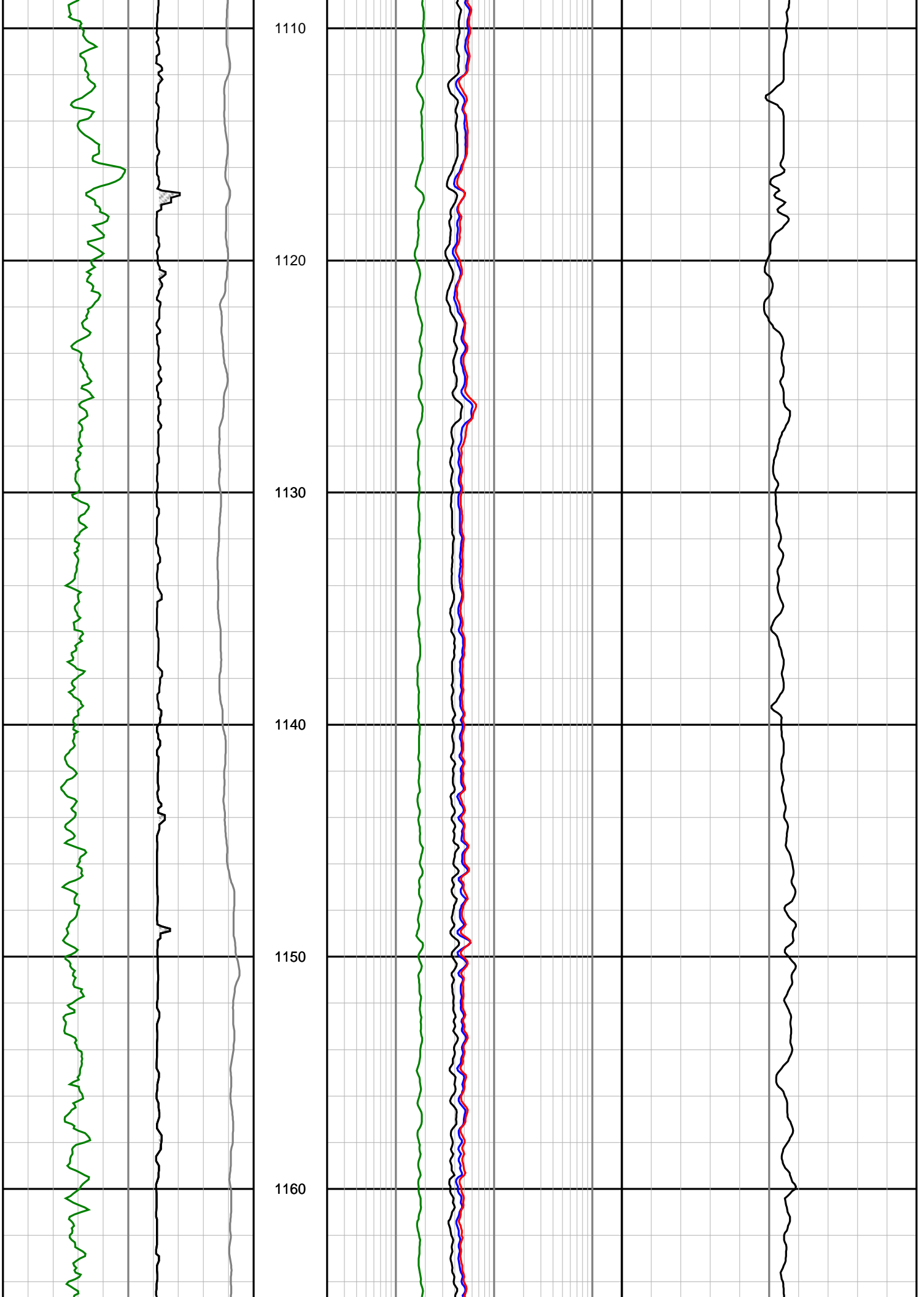
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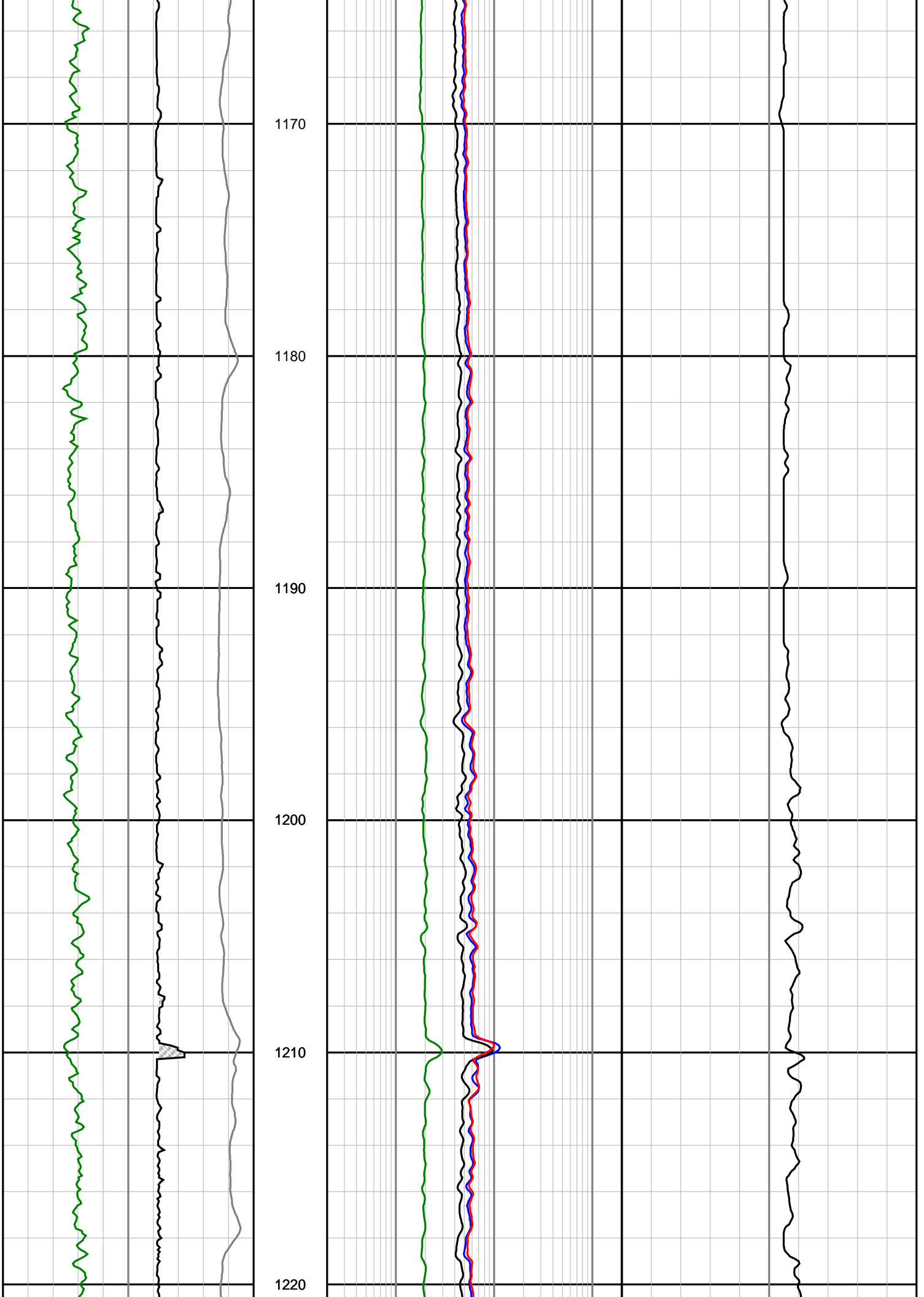


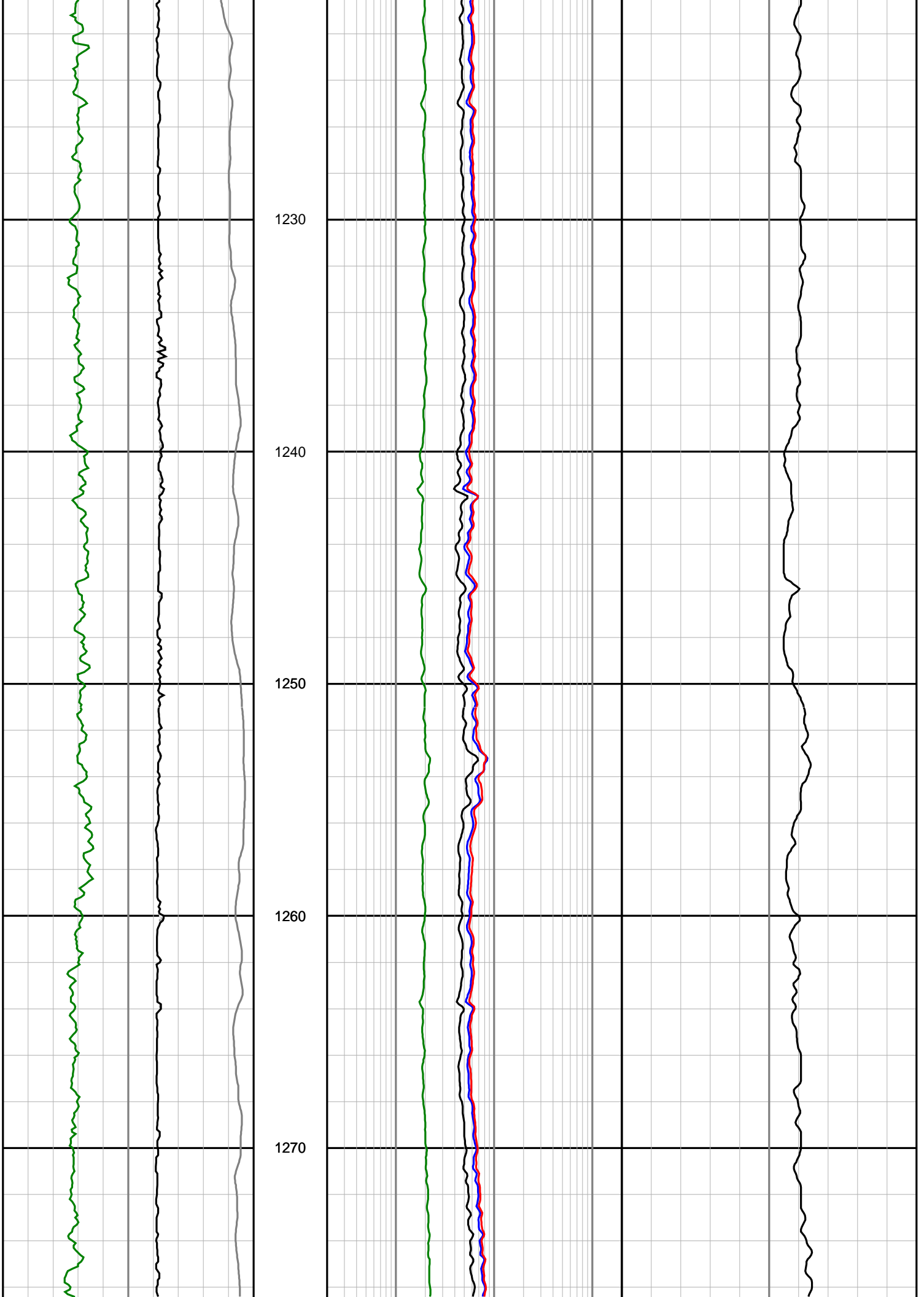


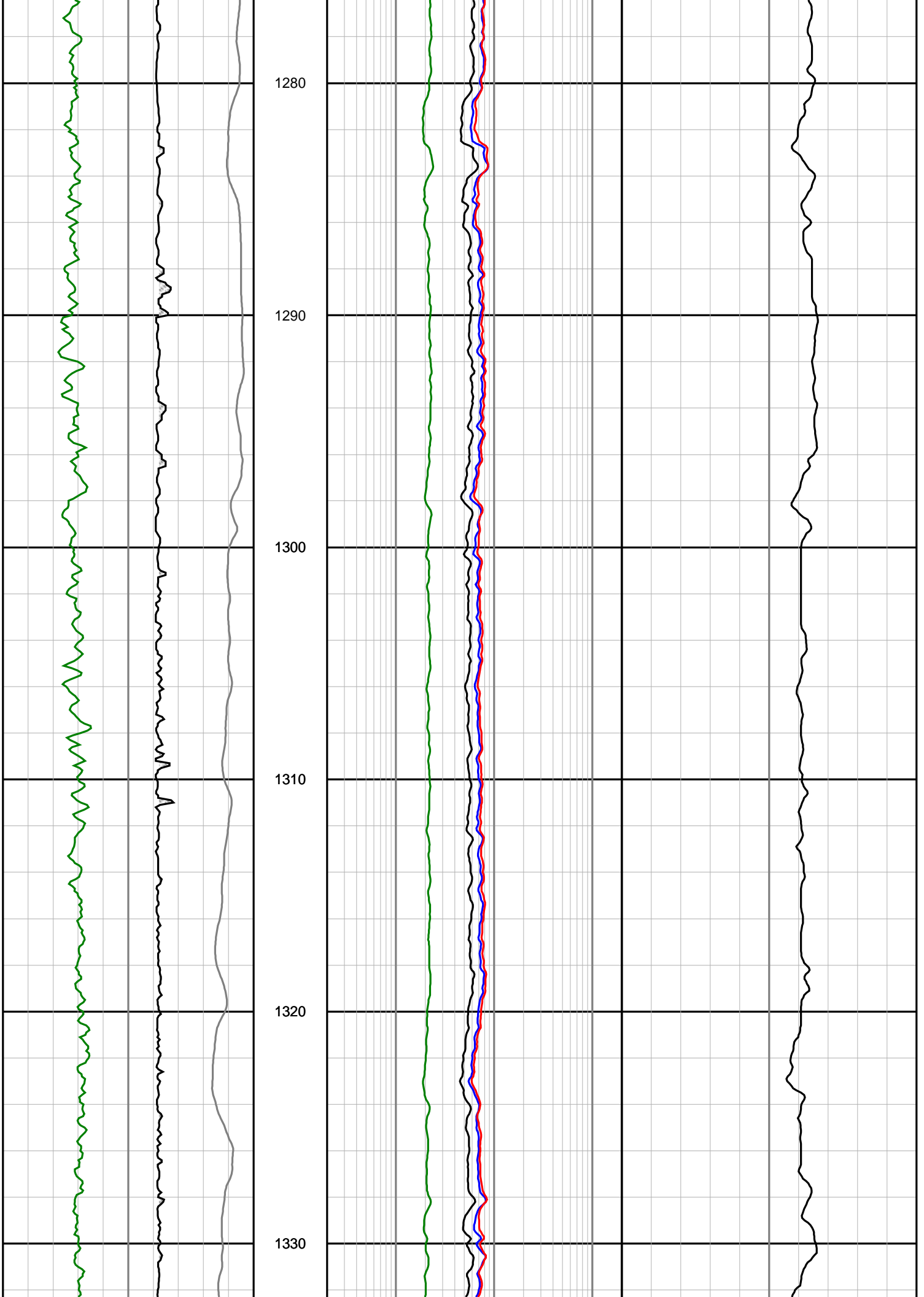


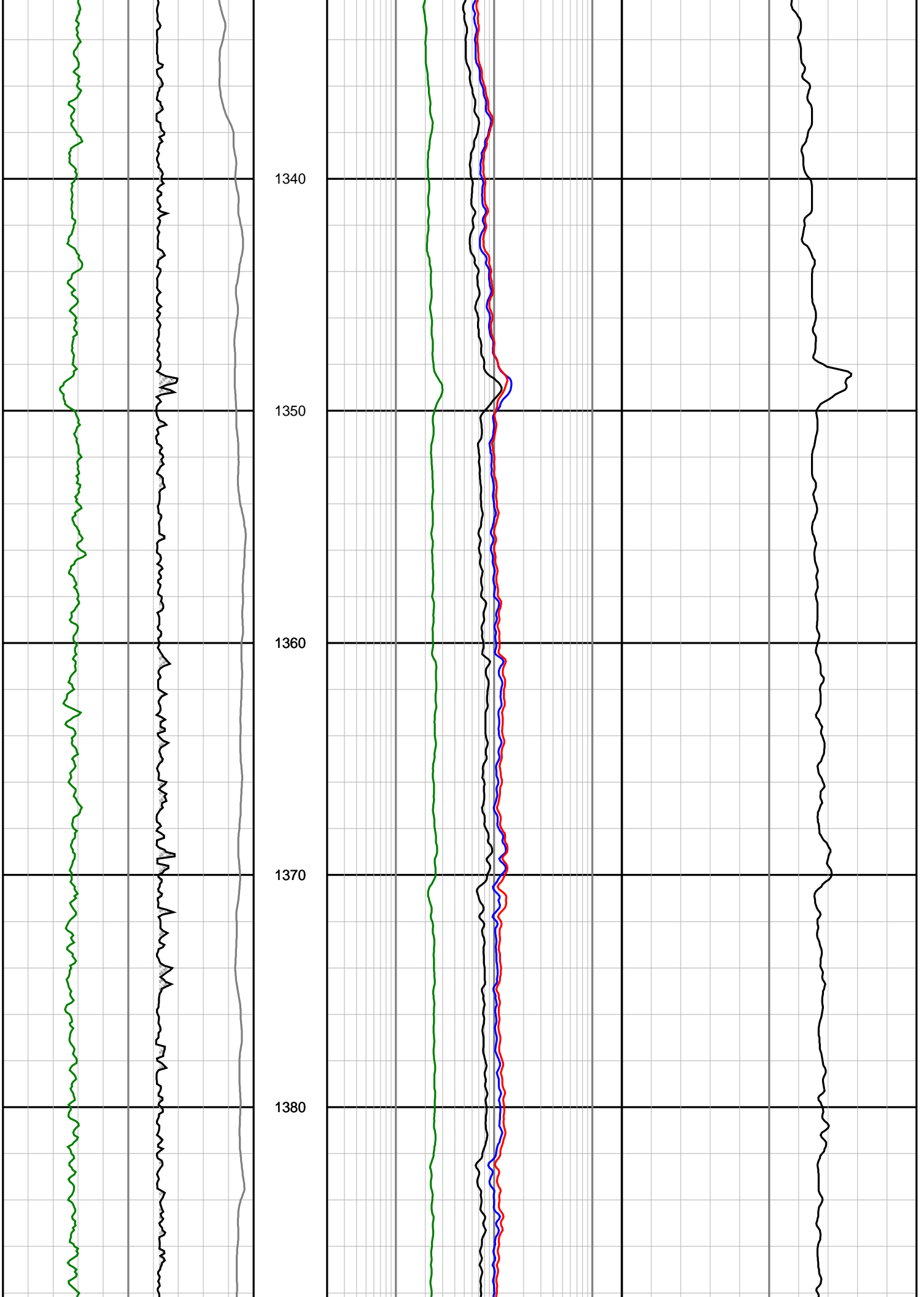


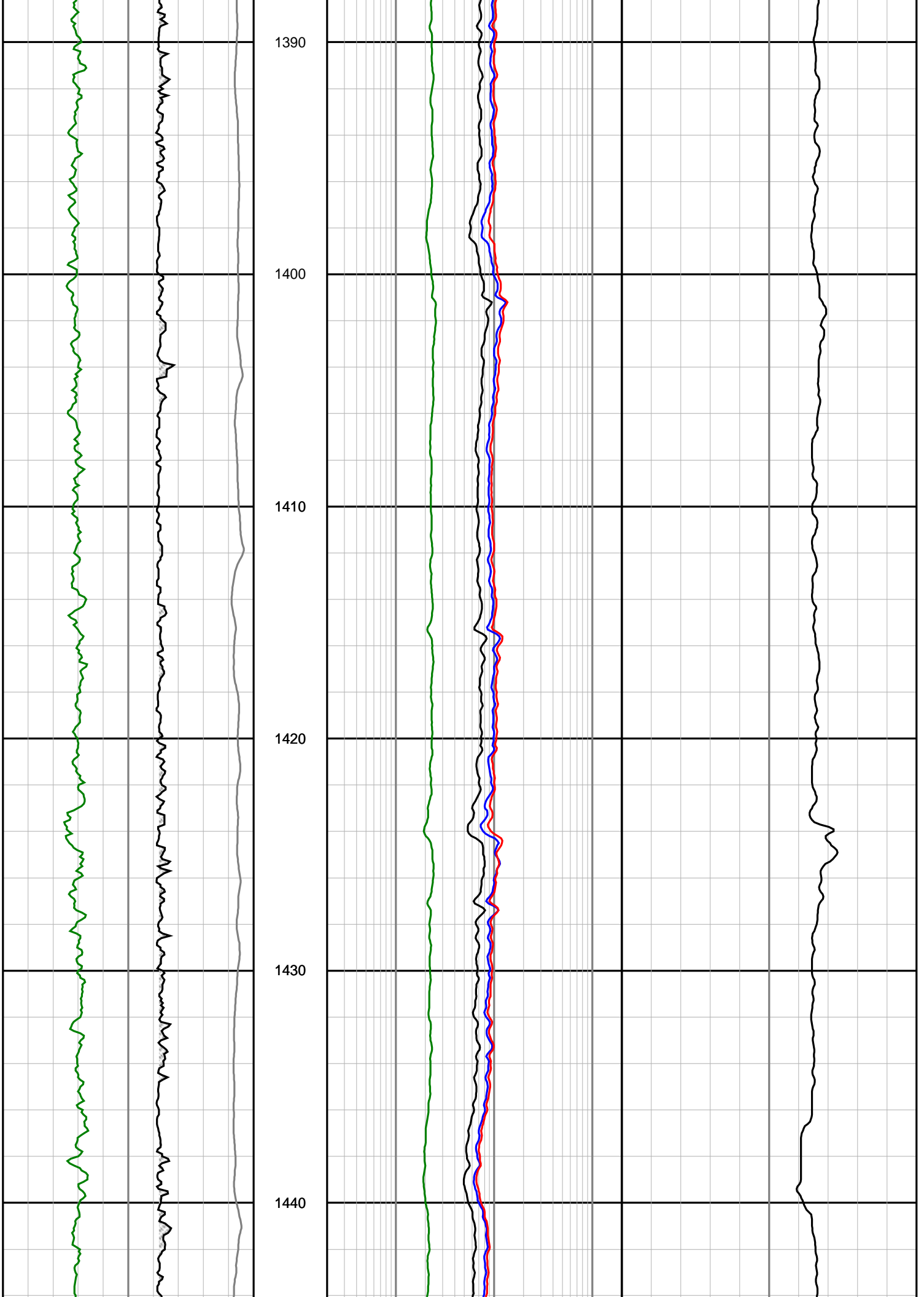


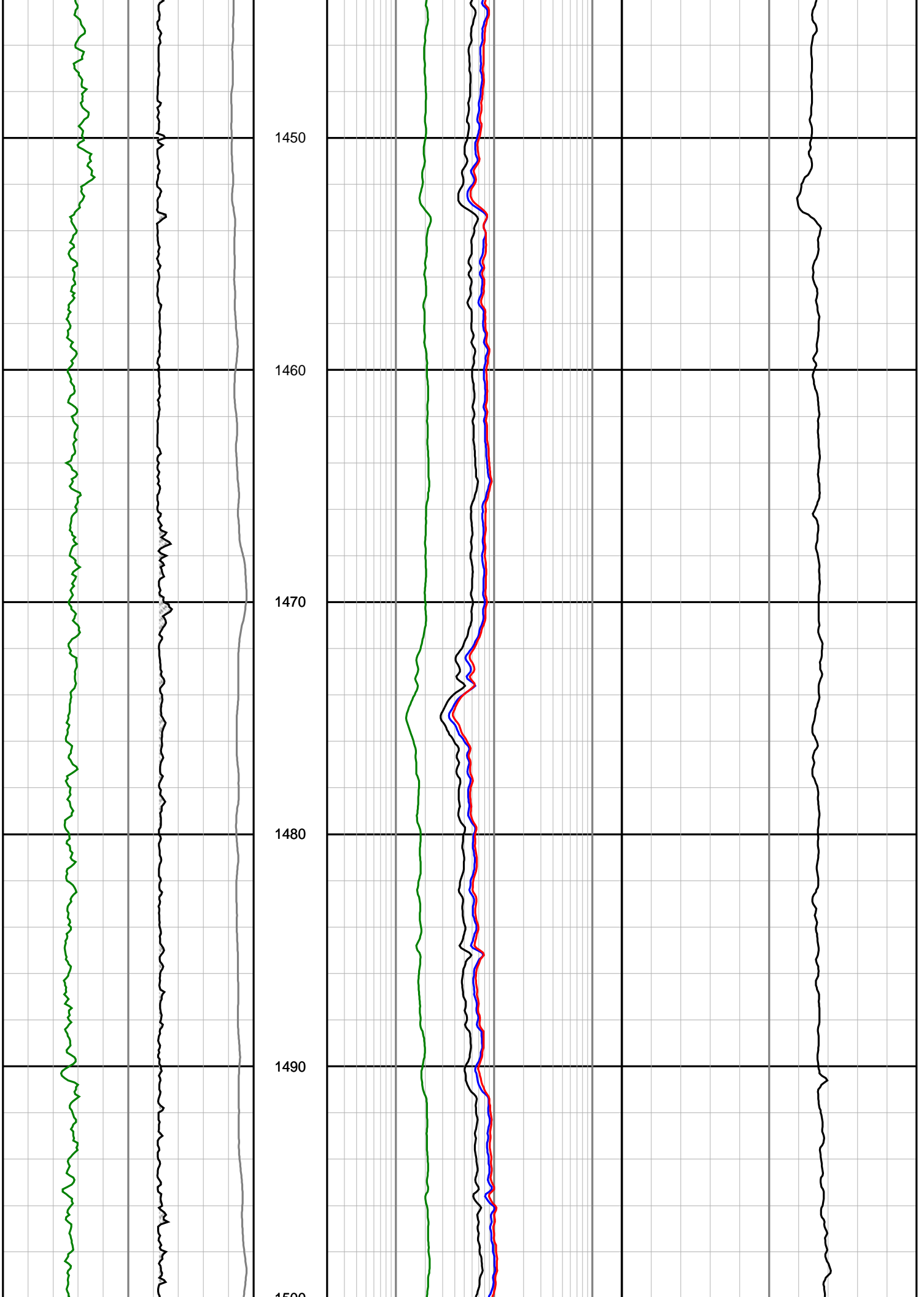


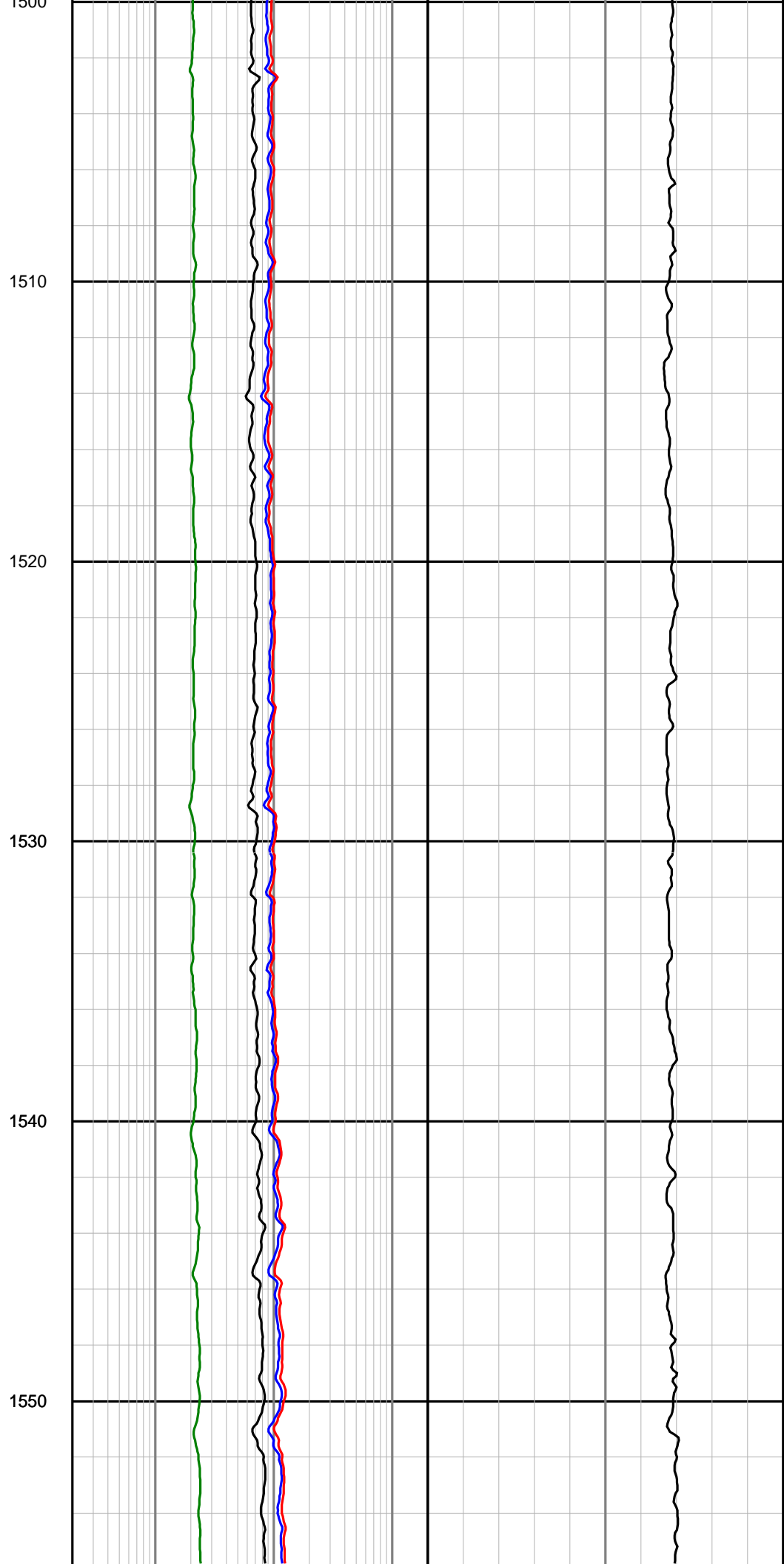
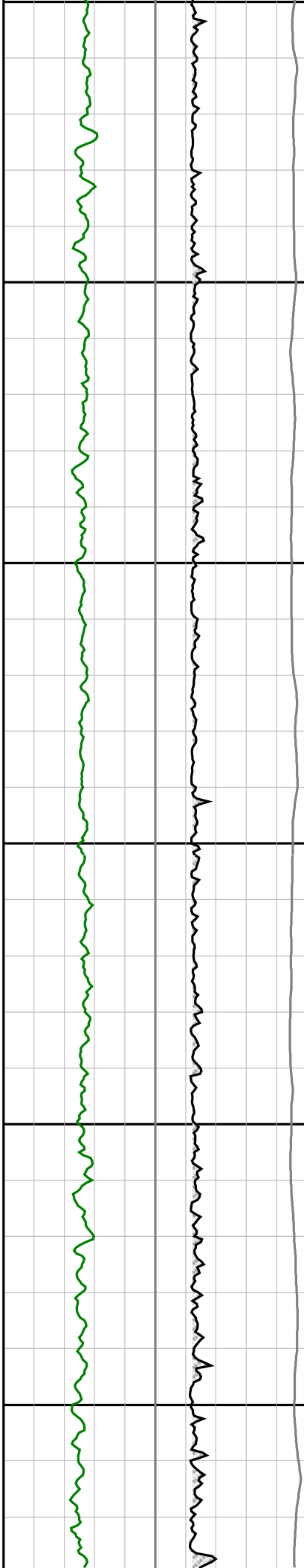




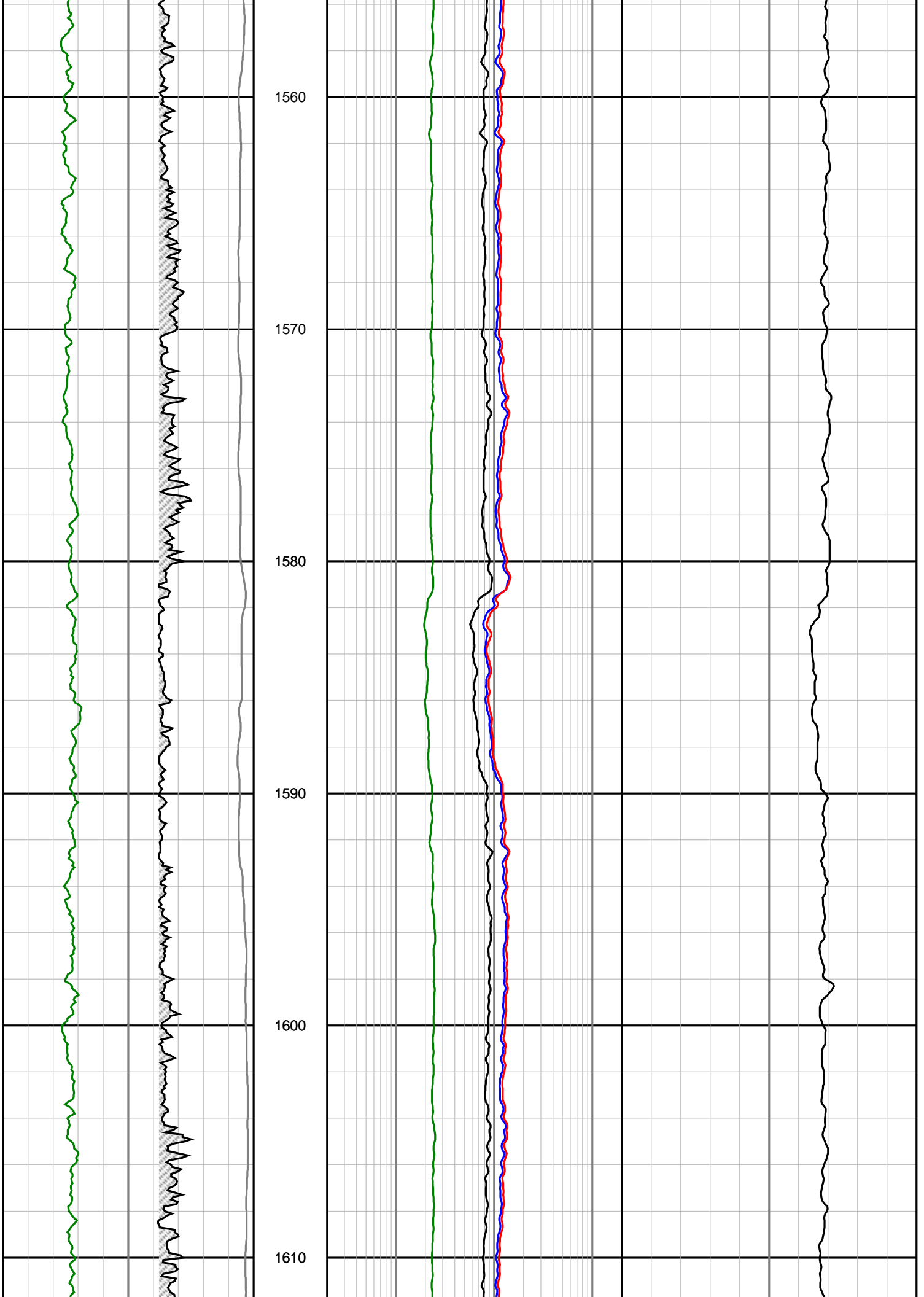


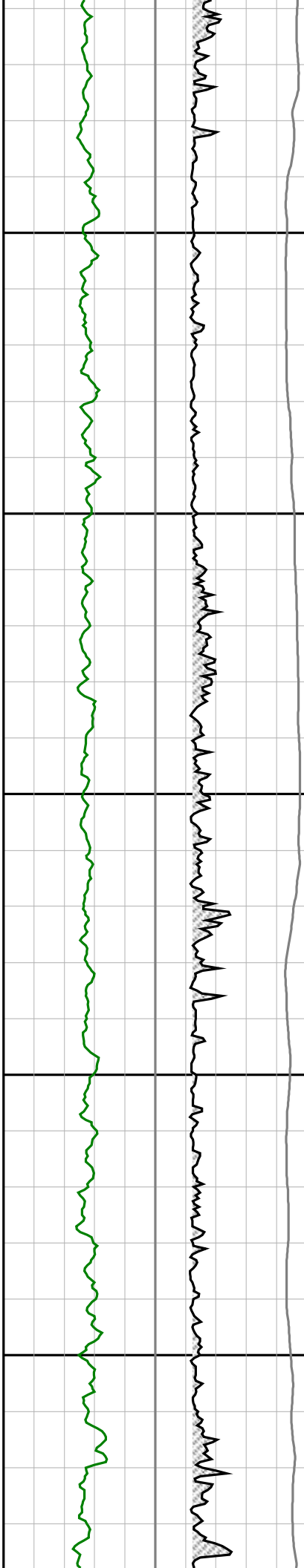












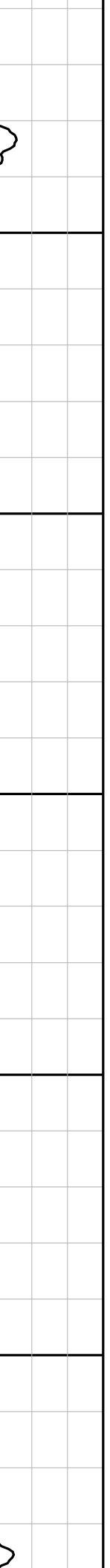
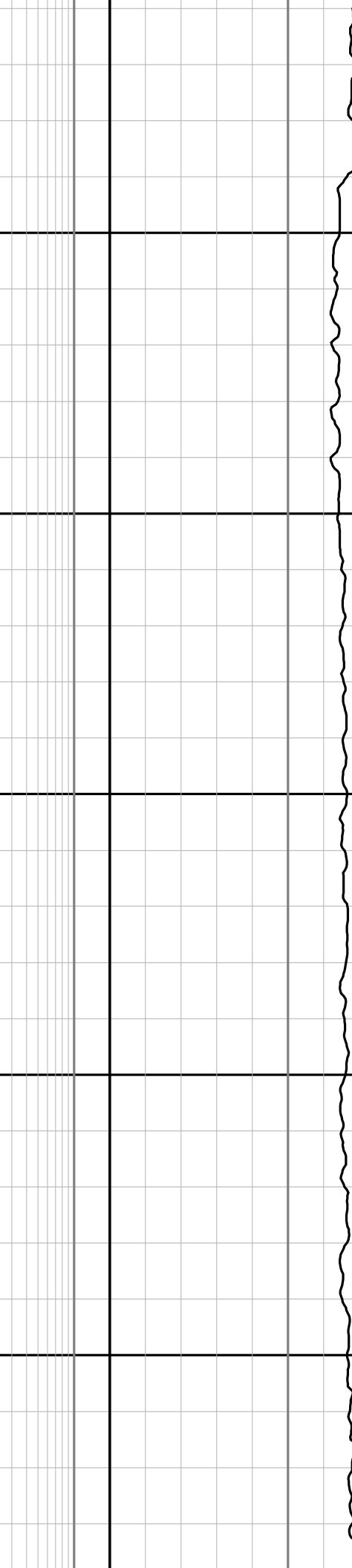
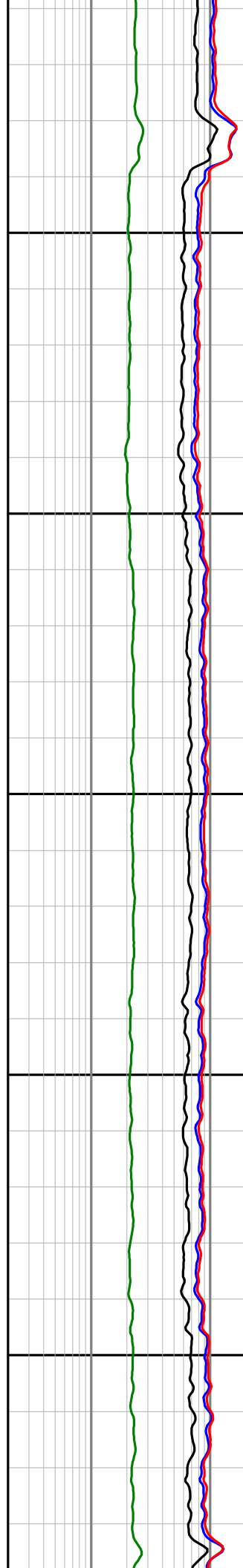
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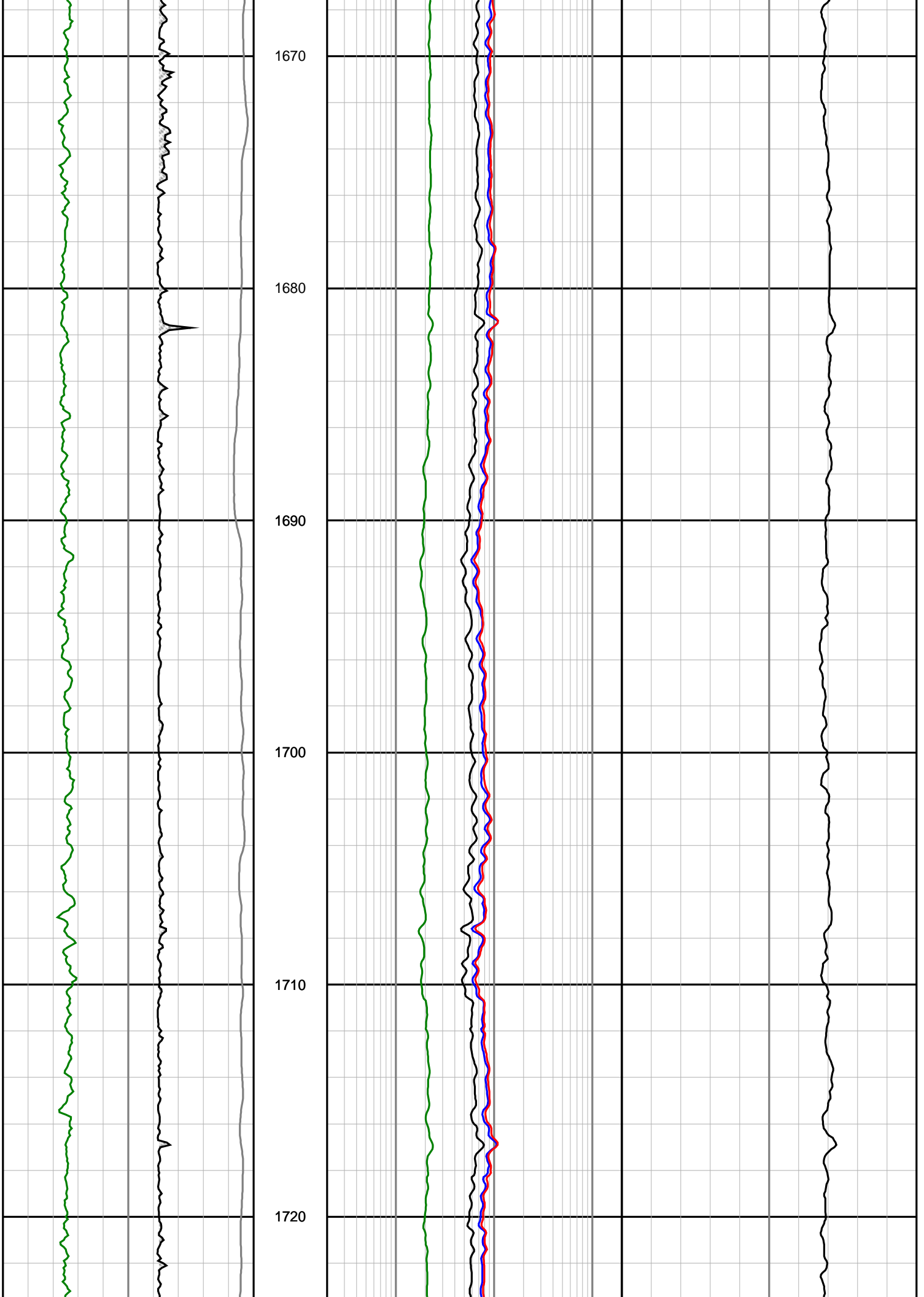
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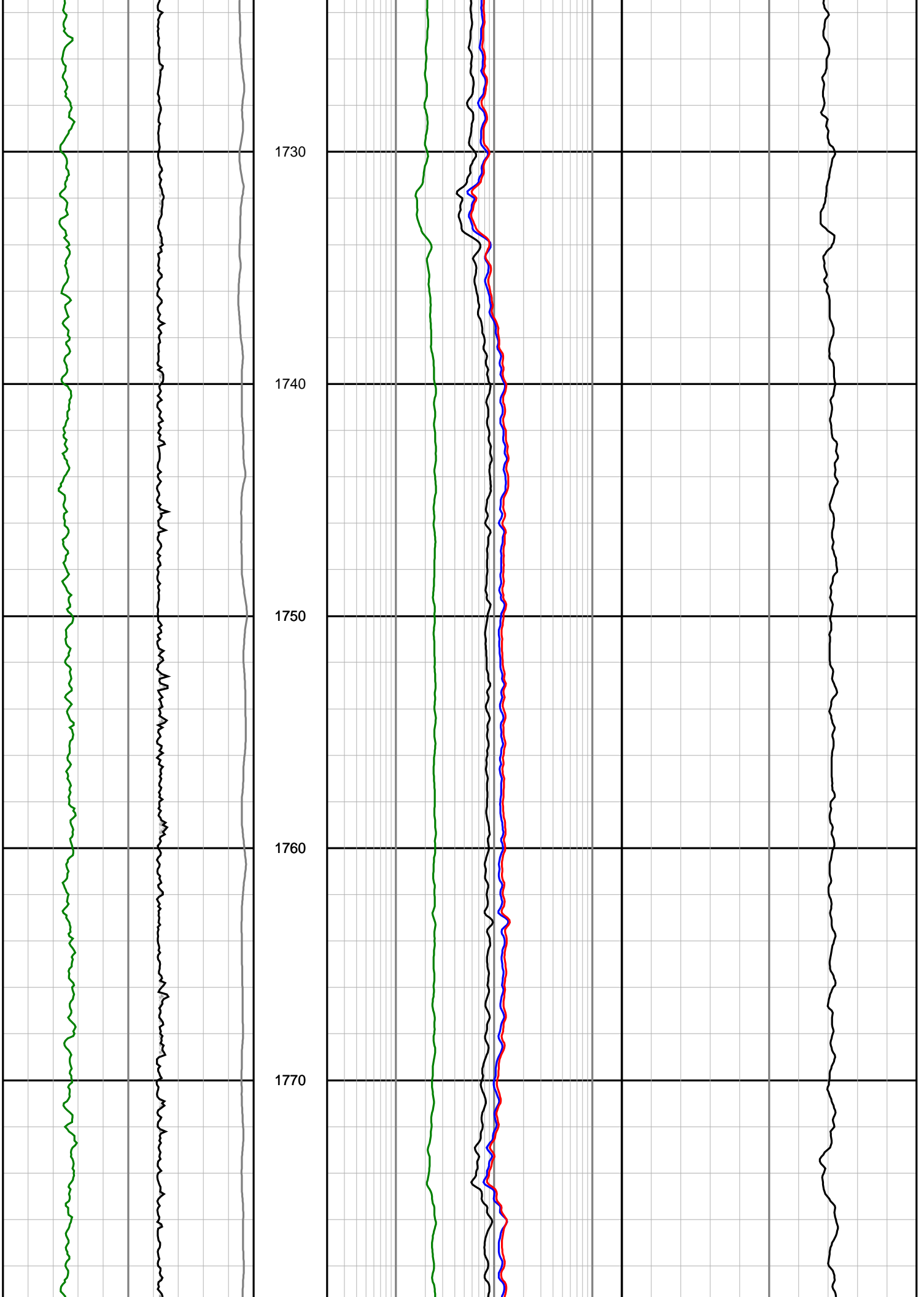
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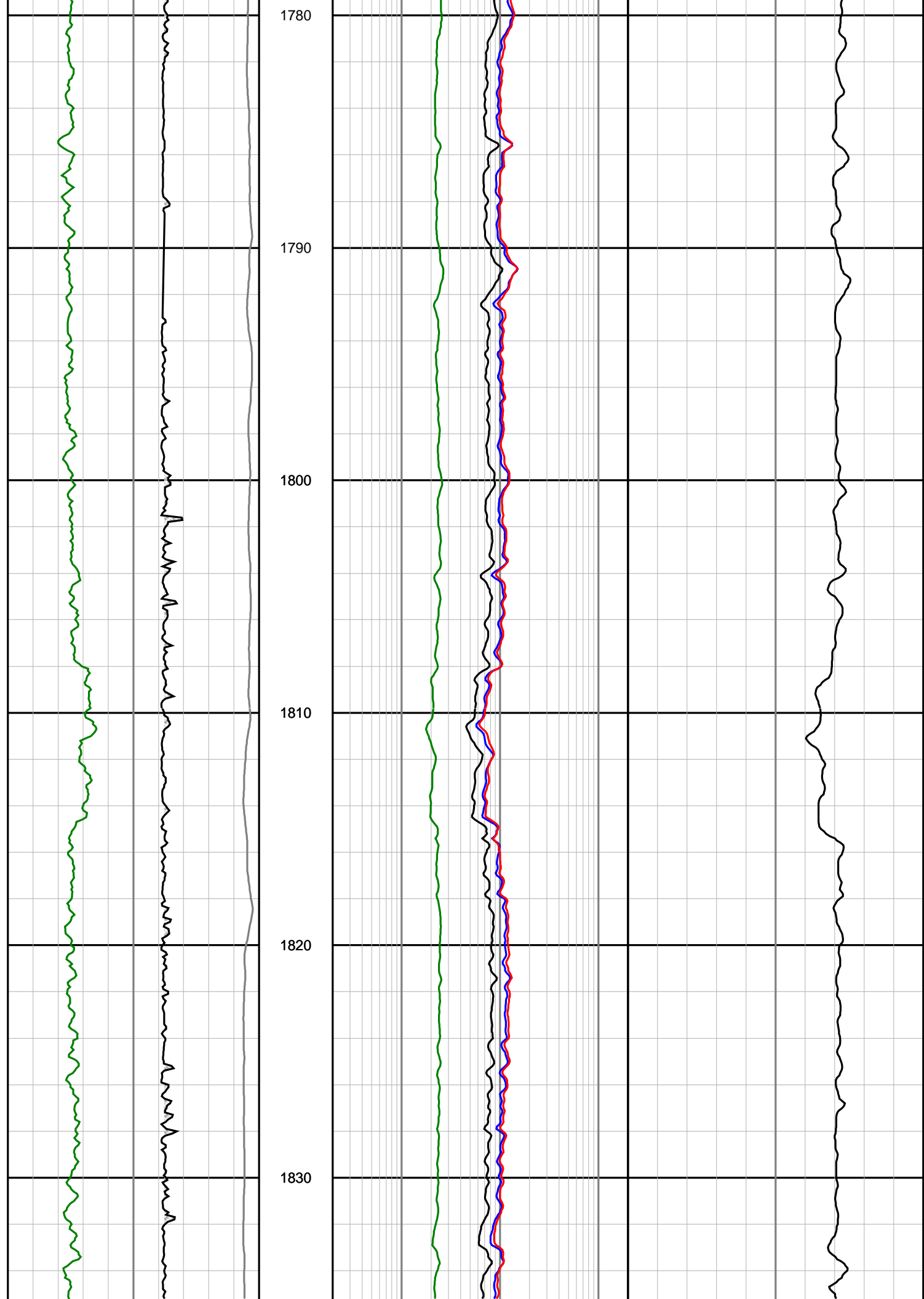
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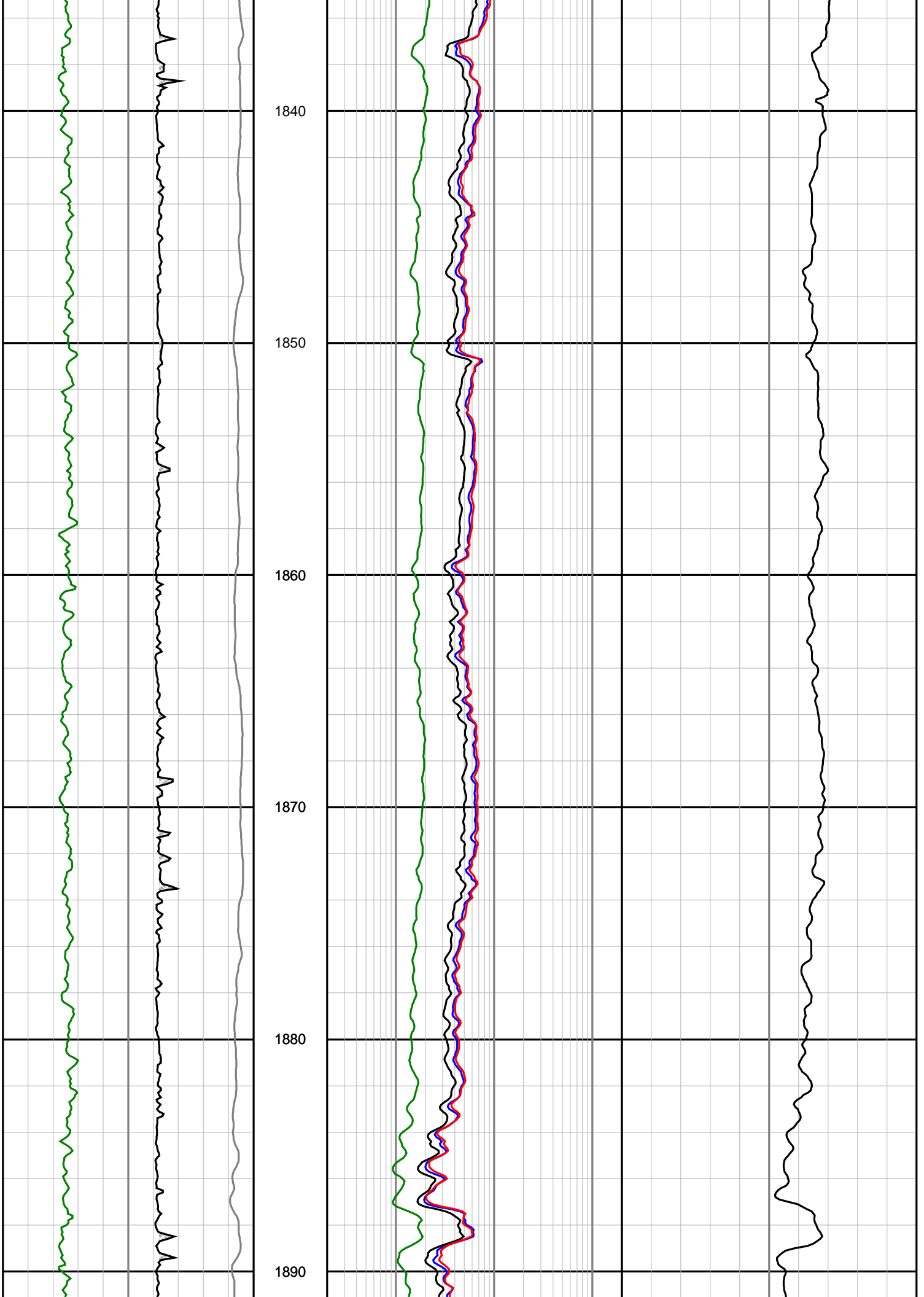
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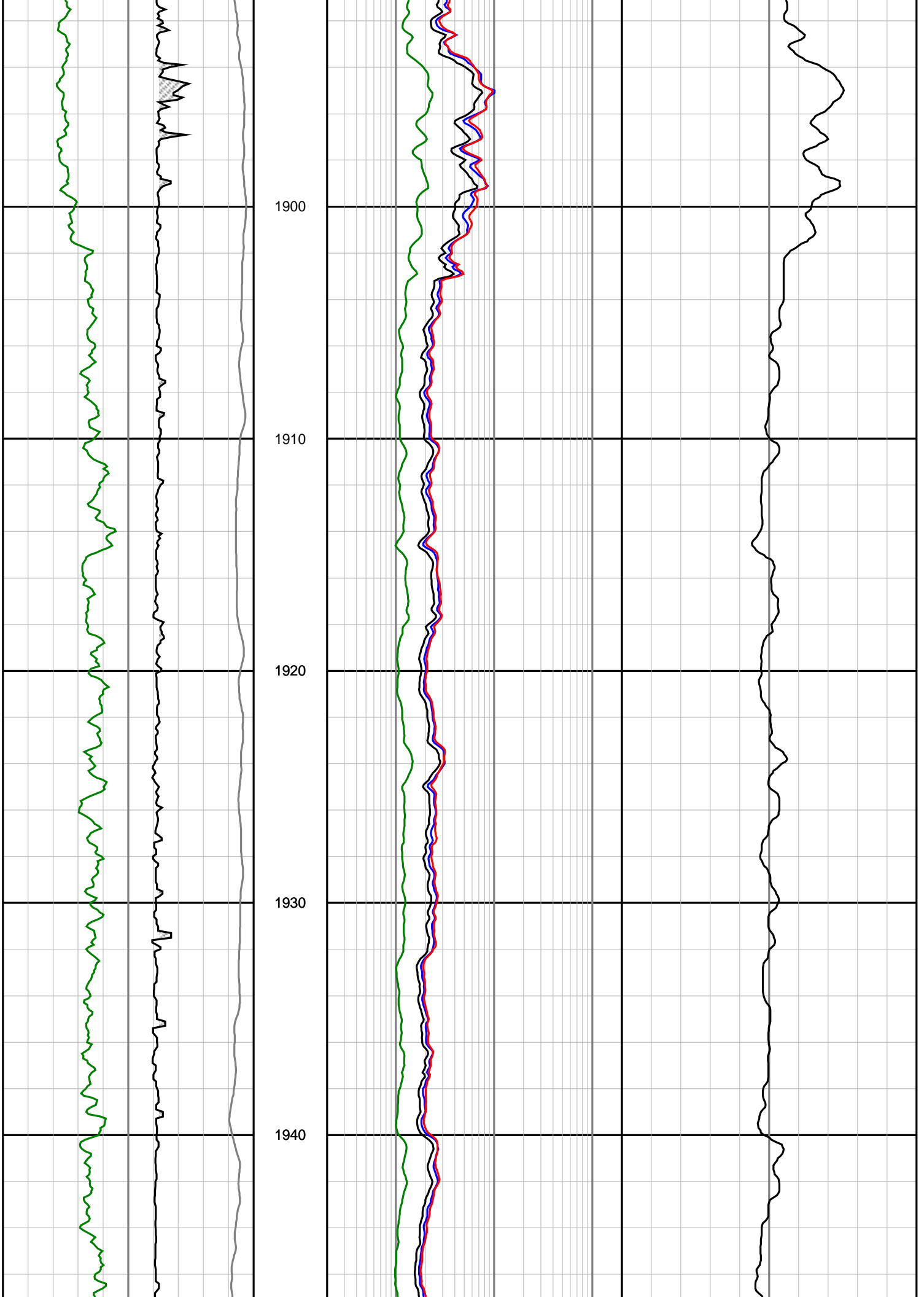


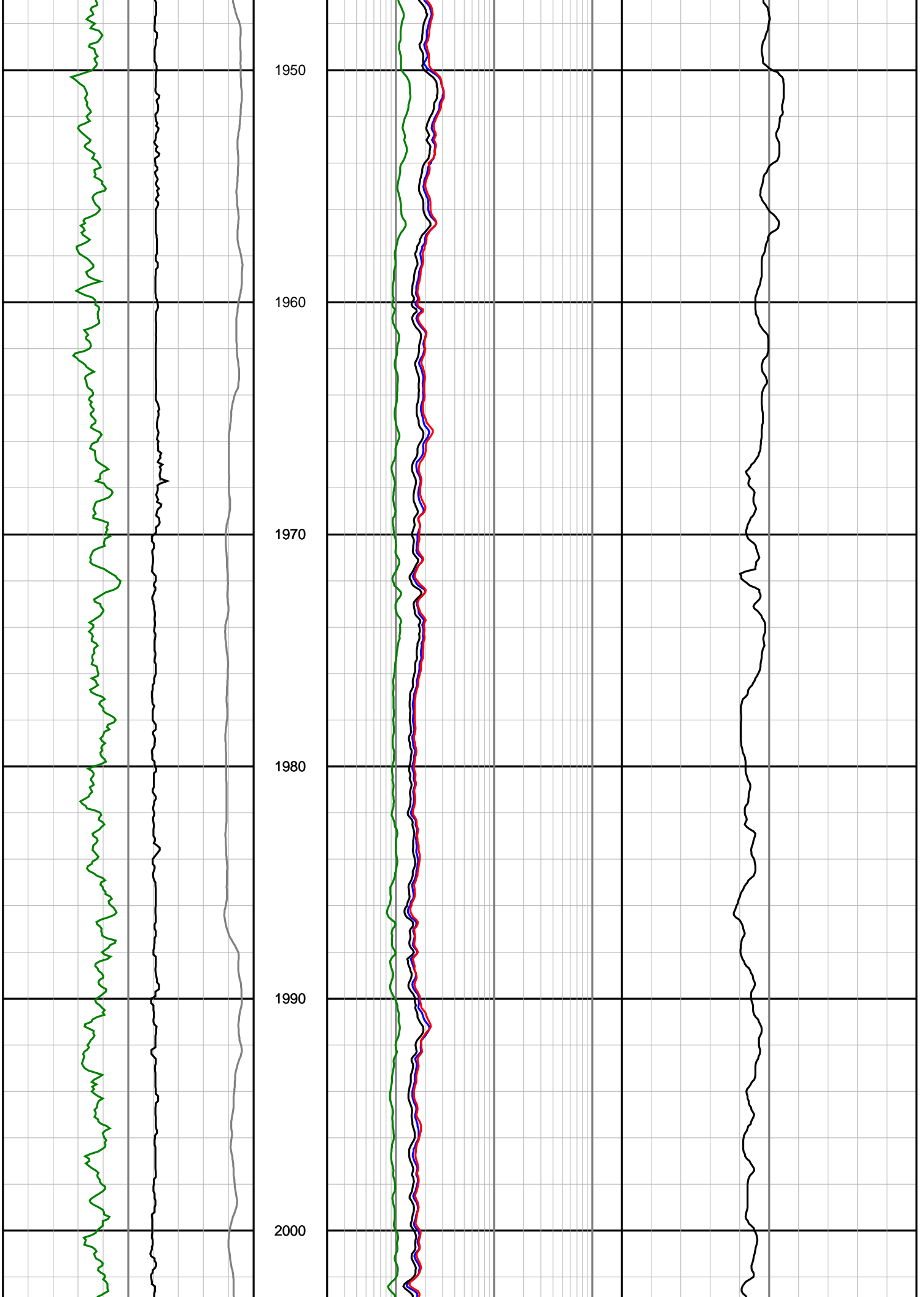




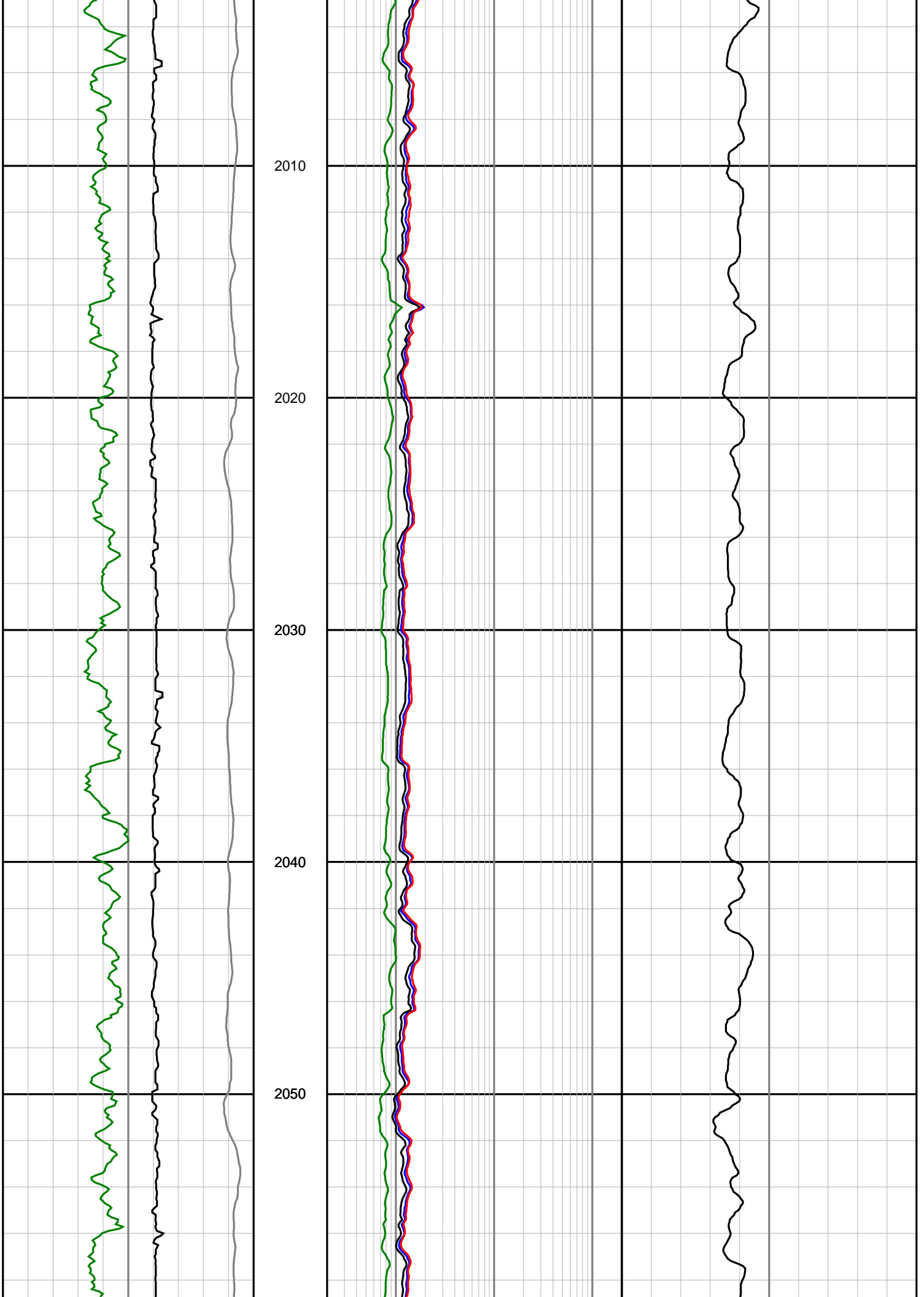


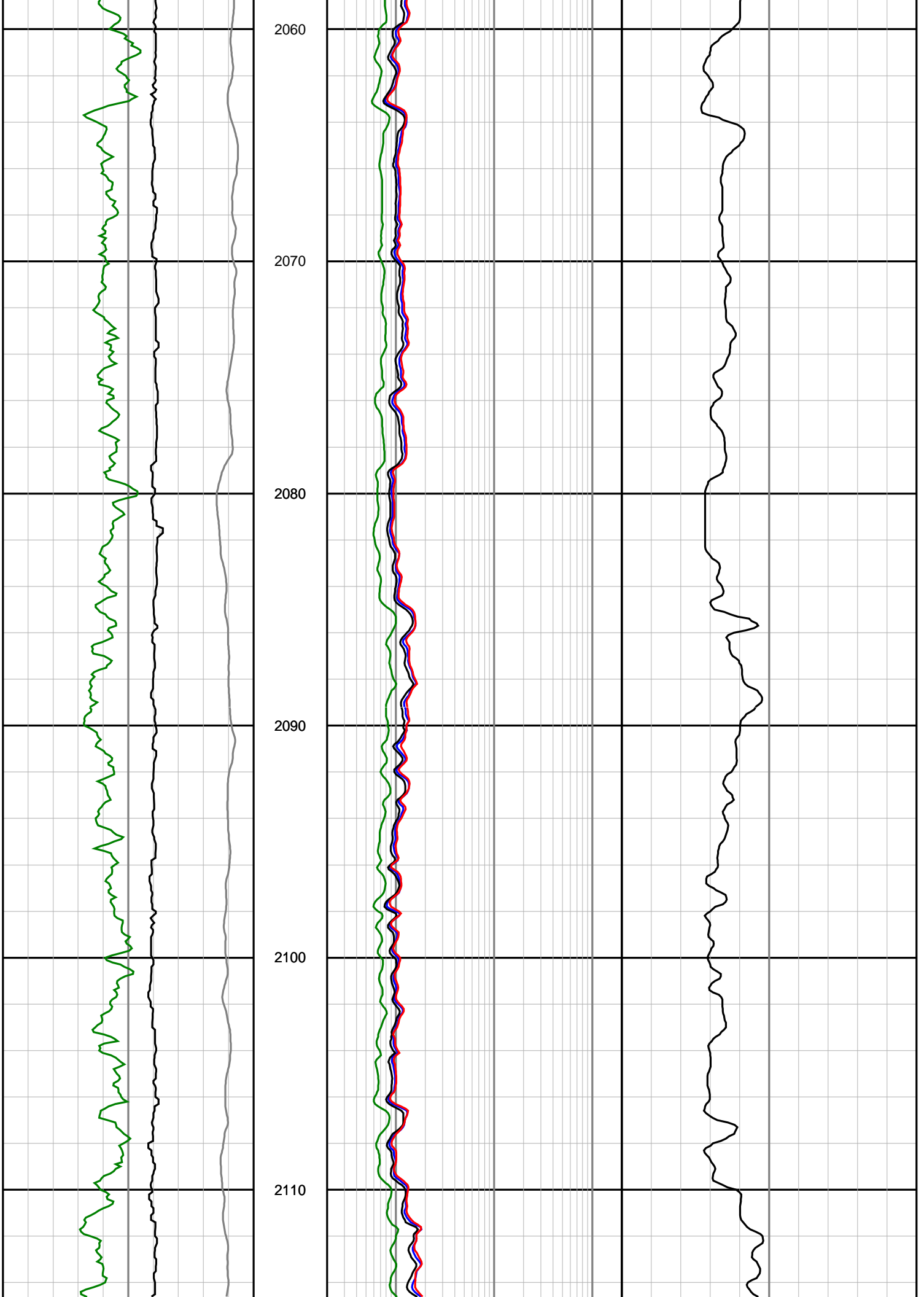


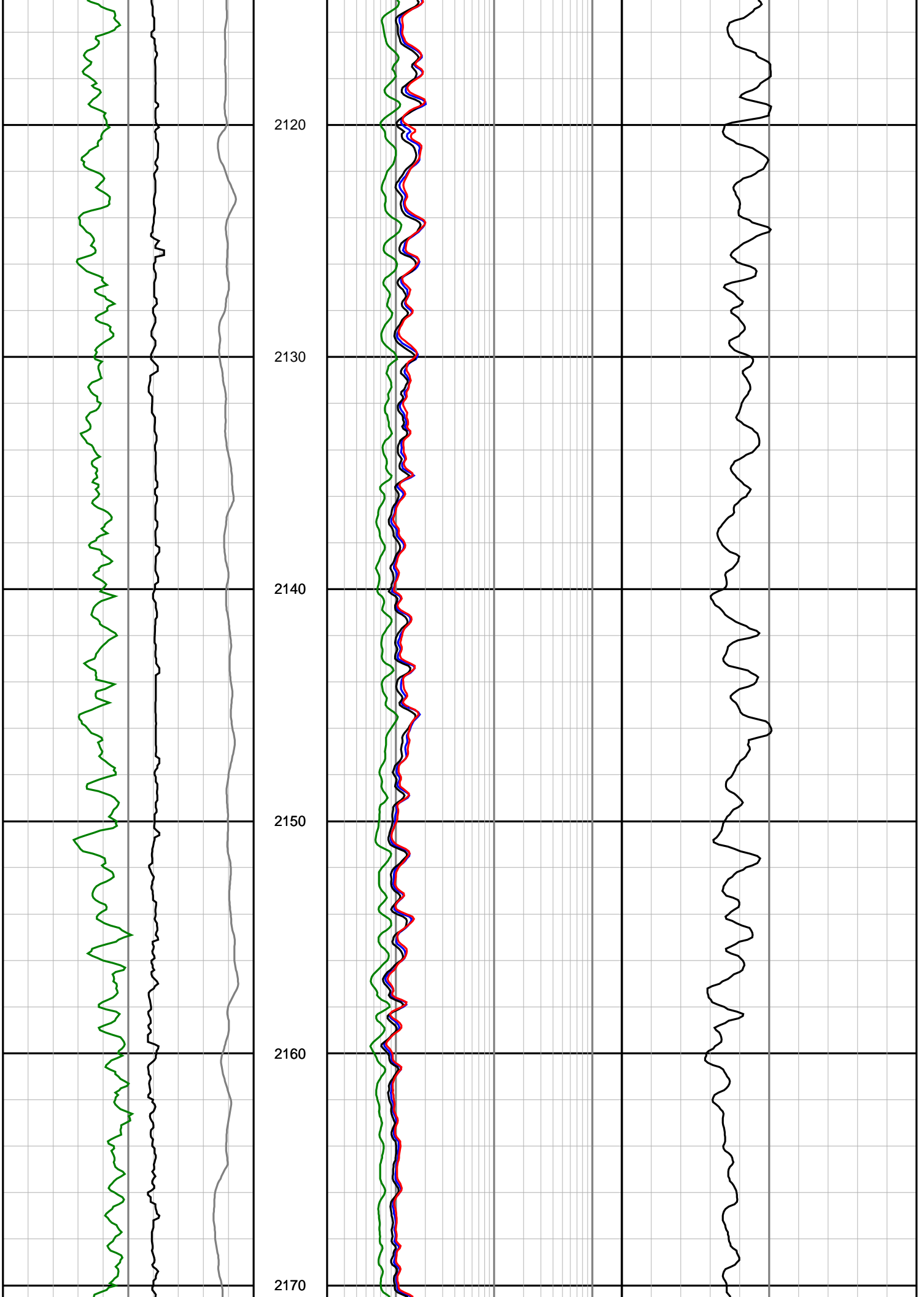


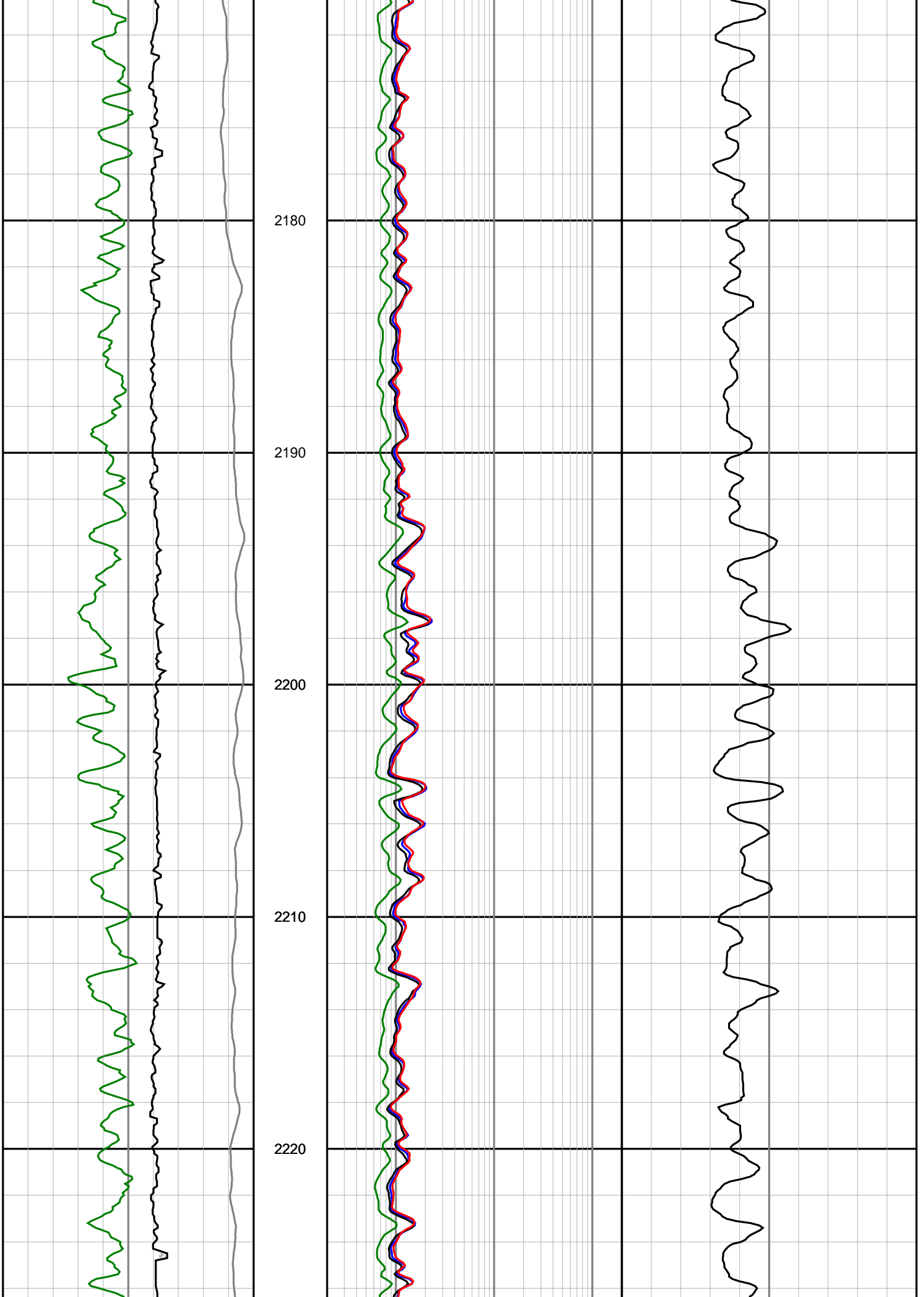


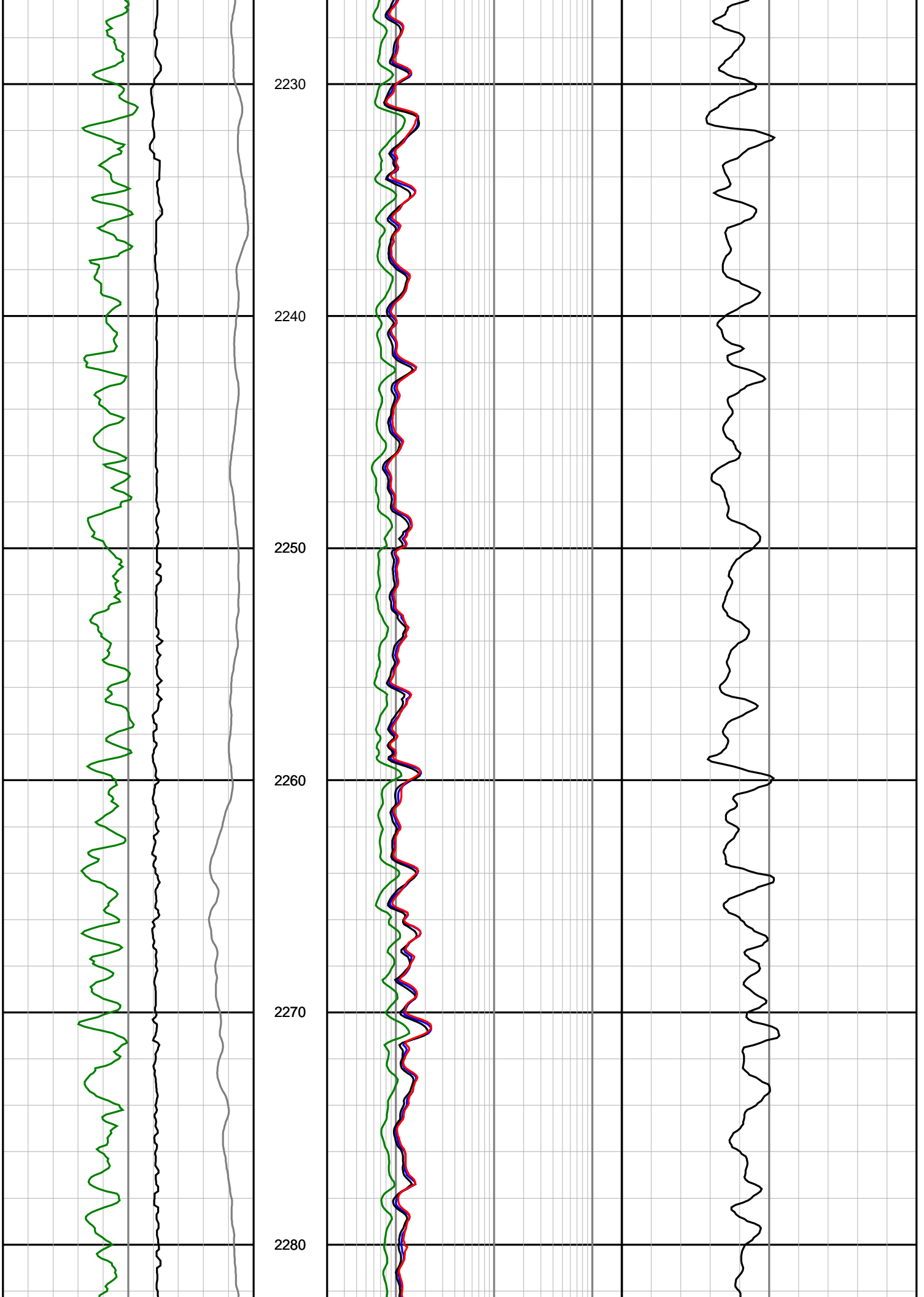


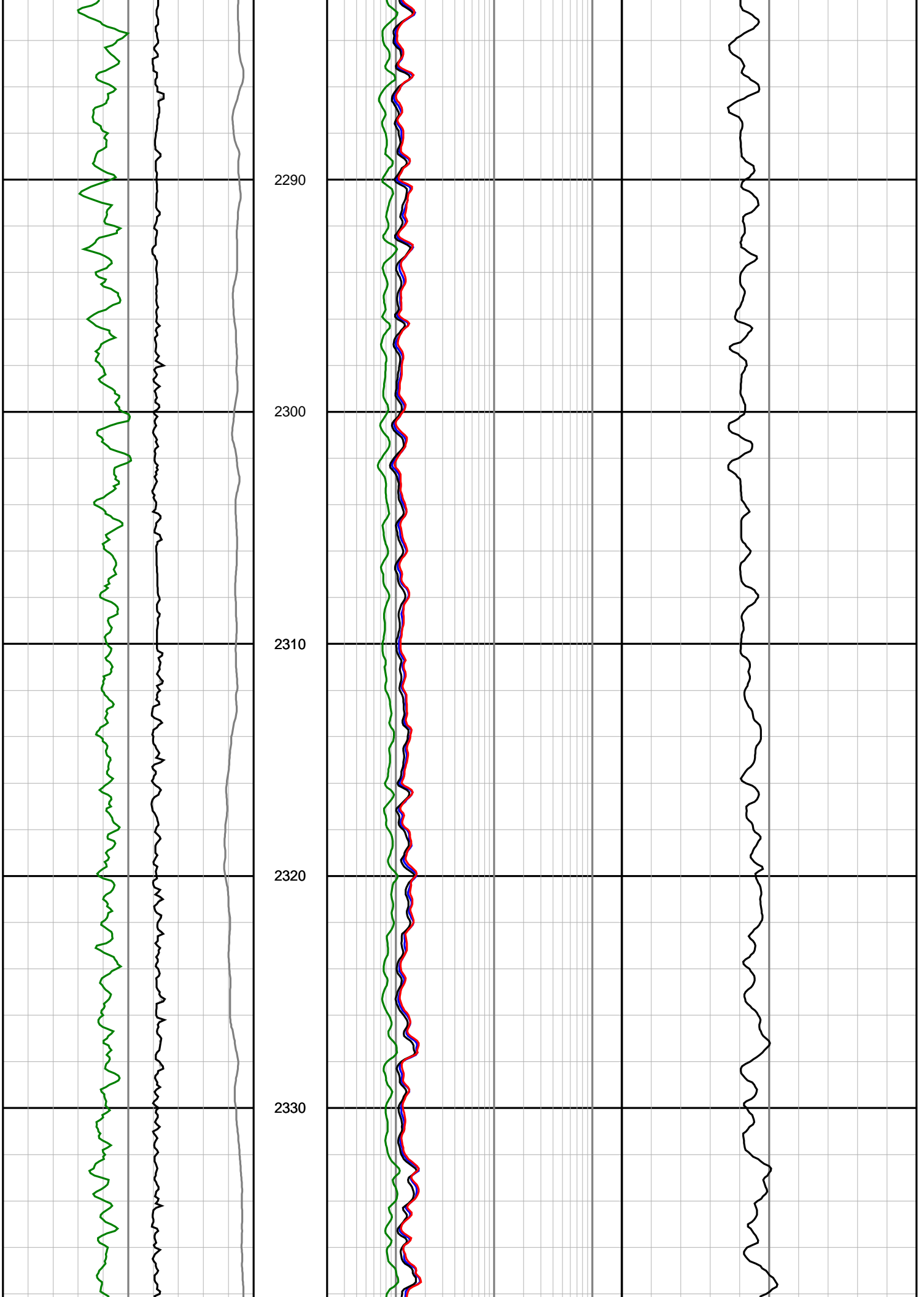


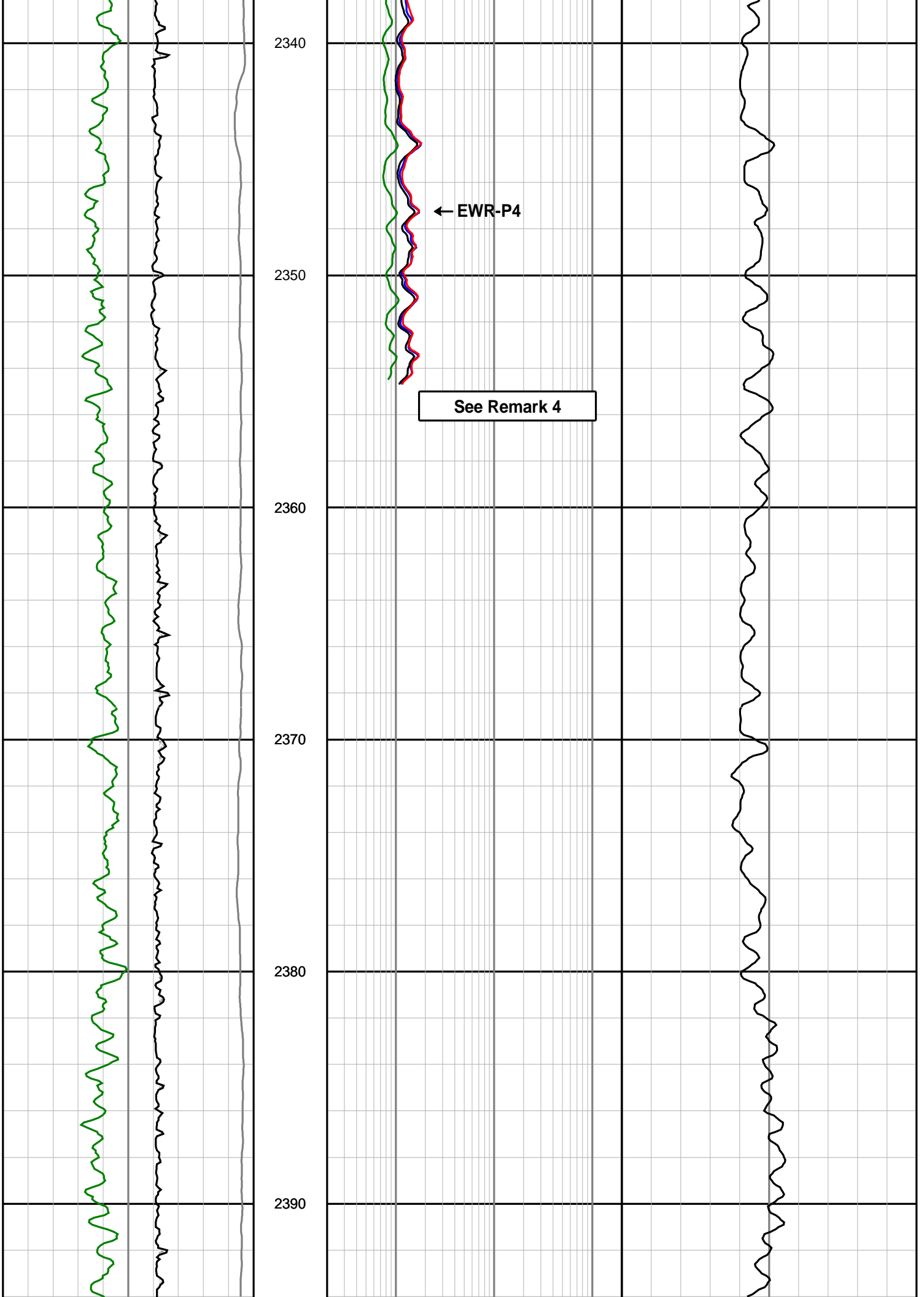


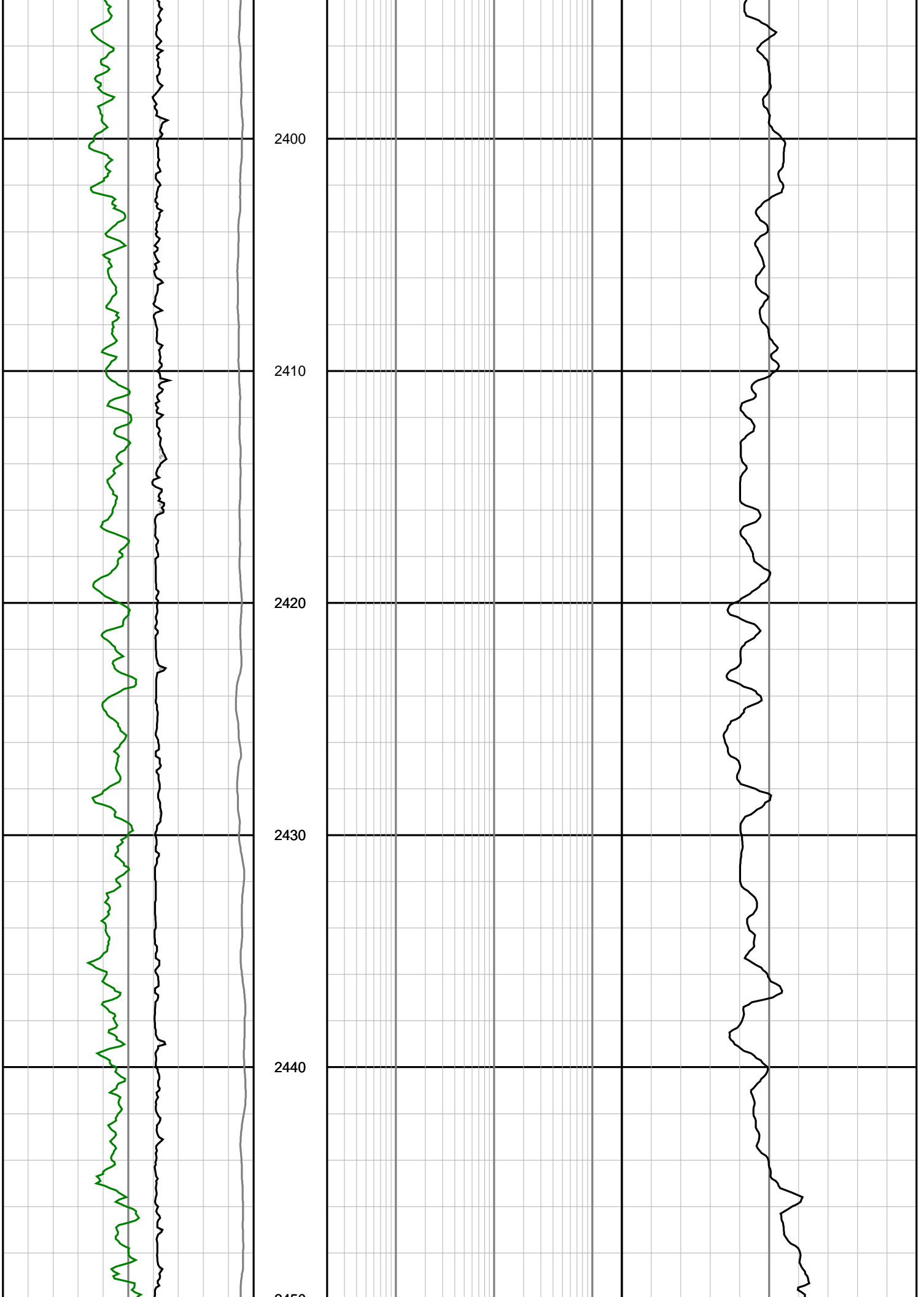




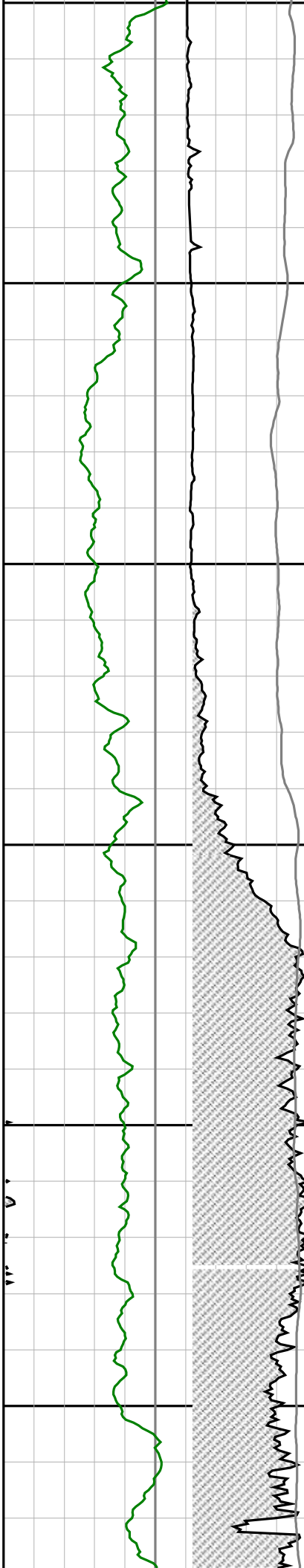












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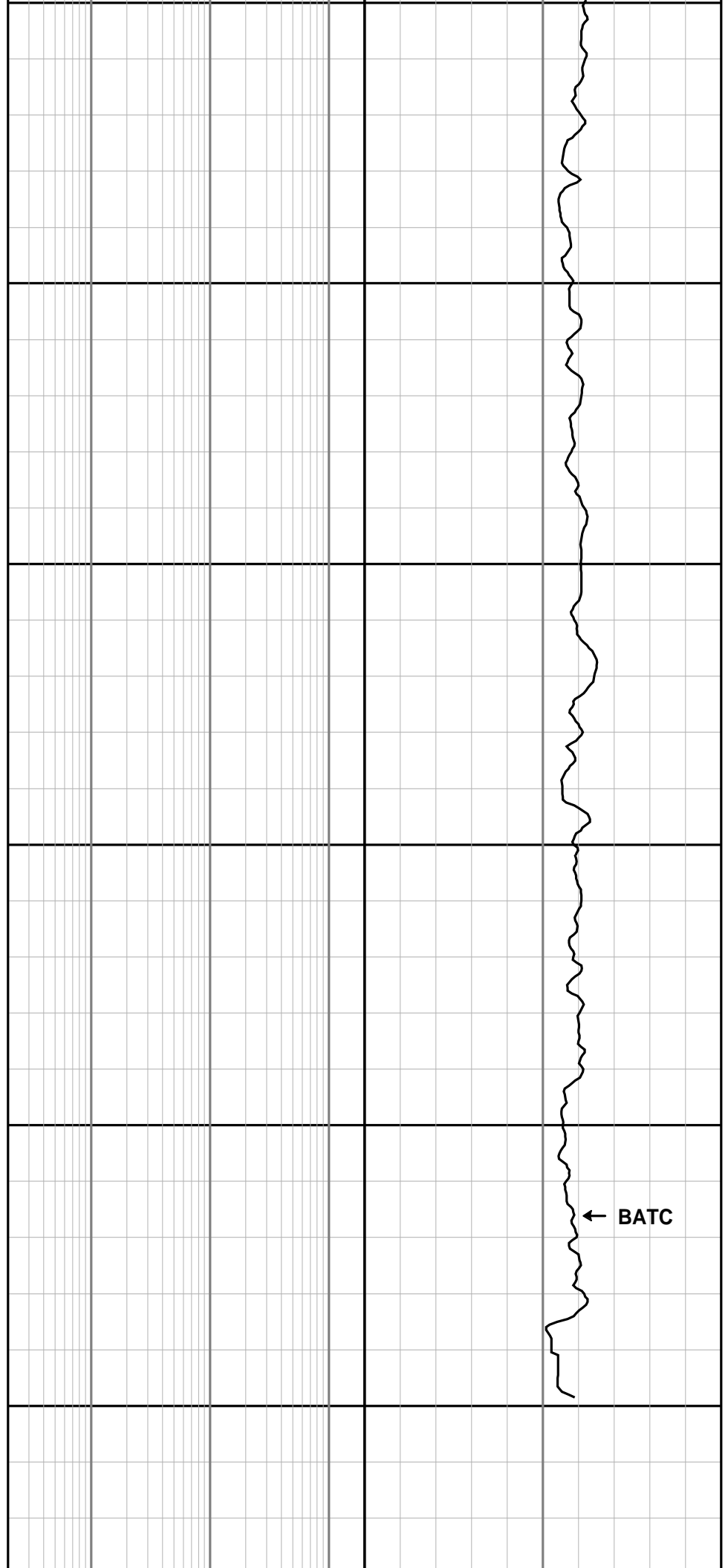
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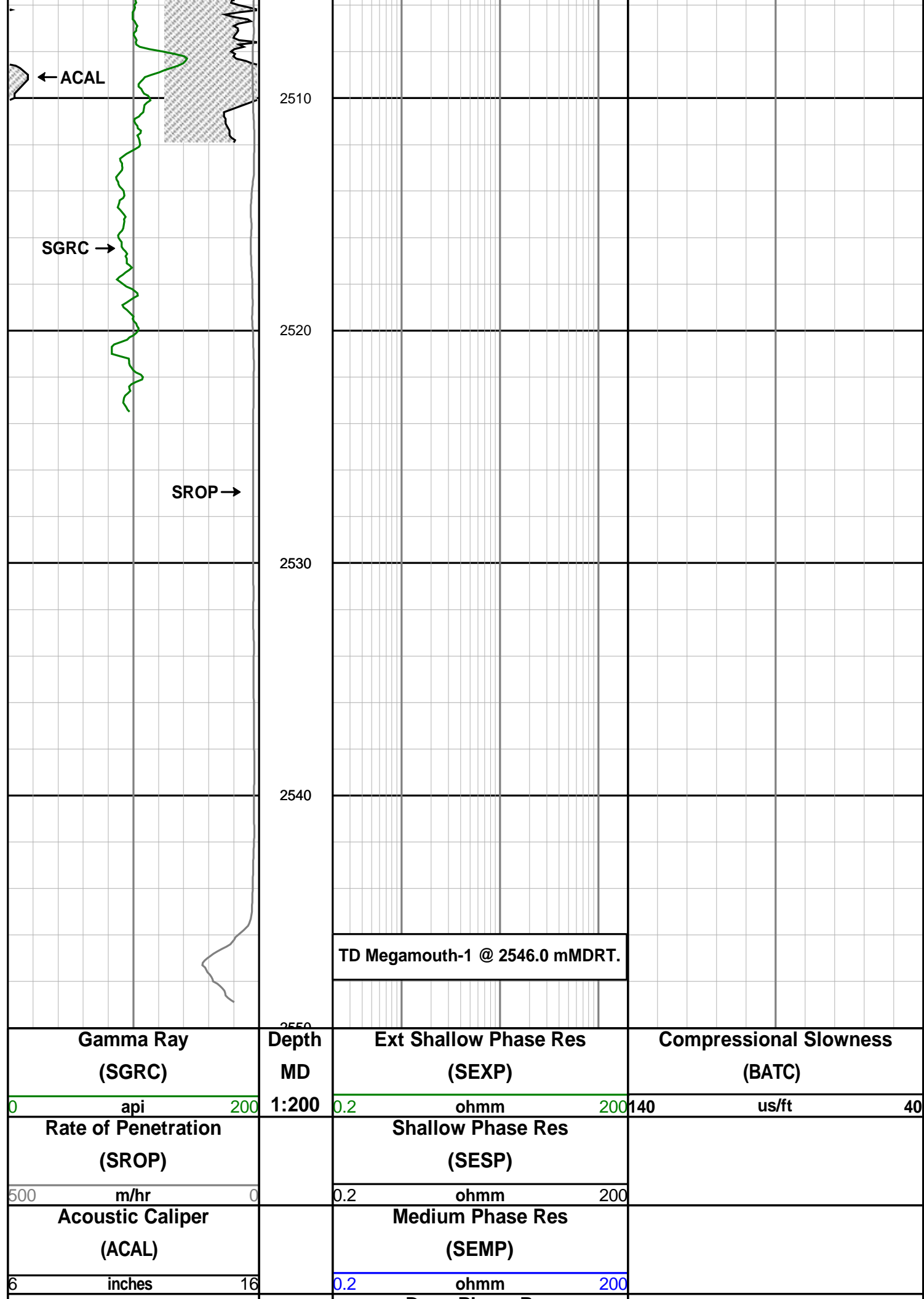
2470

2480

2490

2500





# Deep Phase Res (SEDP)

0.2 ohmm 200



## DIRECTIONAL SURVEY REPORT

BHP Billiton  
Megamouth-1  
Exploration  
Victoria  
Australia  
AU-FE-0002723564  
Final Survey Projected to TD

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
0.000	0.00	0.00	0.000	0.000 N	0.000 E	0.000	TIE-IN
81.500	0.00	0.00	81.500	0.000 N	0.000 E	0.000	0.00
166.000	0.62	207.17	165.998	0.408 S	0.209 W	-0.398	0.22
195.900	0.61	179.98	195.897	0.711 S	0.283 W	-0.698	0.29
250.500	0.57	192.84	250.494	1.266 S	0.344 W	-1.250	0.07
279.300	0.44	183.73	279.293	1.517 S	0.383 W	-1.499	0.16
367.300	0.37	206.52	367.291	2.109 S	0.532 W	-2.084	0.06
454.000	0.50	187.15	453.988	2.735 S	0.704 W	-2.701	0.07
541.500	0.15	197.89	541.487	3.226 S	0.788 W	-3.188	0.12
628.700	0.26	209.80	628.686	3.512 S	0.924 W	-3.469	0.04
684.500	0.13	189.38	684.486	3.687 S	0.999 W	-3.640	0.08
714.200	0.13	239.71	714.186	3.737 S	1.033 W	-3.689	0.11
821.000	0.19	228.46	820.985	3.916 S	1.270 W	-3.857	0.02
827.400	0.20	228.02	827.385	3.930 S	1.286 W	-3.870	0.02
845.670	0.09	72.72	845.655	3.947 S	1.296 W	-3.886	0.45
875.610	0.14	47.32	875.595	3.916 S	1.248 W	-3.857	0.07
905.100	0.26	40.22	905.085	3.842 S	1.180 W	-3.786	0.12
933.830	0.28	47.23	933.814	3.746 S	1.087 W	-3.695	0.04
962.400	0.35	27.79	962.384	3.622 S	0.996 W	-3.575	0.13
991.890	0.31	21.75	991.874	3.467 S	0.924 W	-3.424	0.05
1021.900	0.50	21.35	1021.883	3.269 S	0.846 W	-3.229	0.18
1049.700	0.49	8.82	1049.682	3.038 S	0.784 W	-3.001	0.12
1107.730	0.64	8.83	1107.709	2.472 S	0.696 W	-2.439	0.07
1136.800	0.91	4.66	1136.776	2.082 S	0.653 W	-2.052	0.29
1195.400	1.47	359.86	1195.363	0.868 S	0.617 W	-0.841	0.29
1282.000	2.90	3.60	1281.898	2.429 N	0.482 W	2.448	0.50
1312.100	3.07	3.39	1311.957	3.995 N	0.386 W	4.008	0.17
1397.400	3.67	2.54	1397.109	9.004 N	0.130 W	9.001	0.21
1458.100	4.02	1.09	1457.673	13.074 N	0.003 W	13.061	0.18
1484.800	3.92	0.93	1484.308	14.922 N	0.030 E	14.906	0.12
1514.410	3.77	0.58	1513.852	16.906 N	0.056 E	16.888	0.15
1539.660	3.69	1.00	1539.048	18.550 N	0.078 E	18.529	0.10
1570.320	3.85	1.88	1569.642	20.565 N	0.129 E	20.539	0.16
1597.800	3.86	0.11	1597.060	22.410 N	0.161 E	22.381	0.13
1627.800	3.73	359.86	1626.994	24.394 N	0.161 E	24.363	0.13
1654.500	3.53	1.04	1653.641	26.082 N	0.173 E	26.050	0.24
1716.000	2.75	0.13	1715.048	29.449 N	0.211 E	29.411	0.38
1744.200	2.57	359.92	1743.218	30.758 N	0.212 E	30.719	0.19
1773.870	2.29	358.46	1772.861	32.015 N	0.195 E	31.976	0.29
1801.500	2.06	358.97	1800.471	33.064 N	0.171 E	33.025	0.25
1831.750	1.87	355.50	1830.703	34.098 N	0.123 E	34.060	0.23
1861.750	1.82	353.71	1860.688	35.058 N	0.032 E	35.022	0.08
1887.010	1.74	356.67	1885.936	35.838 N	0.034 W	35.805	0.14
1917.630	1.57	355.94	1916.543	36.719 N	0.090 W	36.688	0.17
1949.310	1.51	352.76	1948.212	37.566 N	0.174 W	37.538	0.10

**Megamouth-1**

<i>Measured Depth (metres)</i>	<i>Inclination (degrees)</i>	<i>Direction (degrees)</i>	<i>Vertical Depth (metres)</i>	<i>Latitude (metres)</i>	<i>Departure (metres)</i>	<i>Vertical Section (metres)</i>	<i>Dogleg (deg/30m)</i>
1974.670	1.50	351.45	1973.563	38.226 N	0.265 W	38.201	0.04
2003.170	1.49	349.21	2002.053	38.958 N	0.390 W	38.937	0.06
2032.800	1.37	350.27	2031.674	39.685 N	0.522 W	39.669	0.12
2121.700	1.27	350.42	2120.550	41.704 N	0.865 W	41.702	0.03
2209.500	1.05	346.85	2208.332	43.447 N	1.210 W	43.458	0.08
2297.700	0.88	349.11	2296.520	44.899 N	1.522 W	44.922	0.06
2354.830	0.88	347.07	2353.643	45.757 N	1.703 W	45.788	0.02
2383.080	0.83	351.30	2381.890	46.171 N	1.783 W	46.205	0.09
2466.600	0.69	350.51	2465.402	47.265 N	1.957 W	47.305	0.05
2546.000	0.69	350.51	2544.797	48.208 N	2.115 W	48.255	0.00

**CALCULATION BASED ON MINIMUM CURVATURE METHOD**

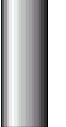


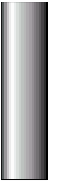



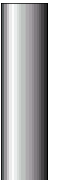



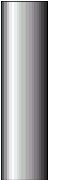
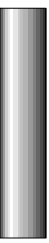

**SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT  
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT**

**VERTICAL SECTION RELATIVE TO WELL HEAD  
VERTICAL SECTION IS COMPUTED ALONG A CLOSURE OF 357.49 DEGREES (GRID)  
A TOTAL CORRECTION OF 14.07 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.  
HORIZONTAL DISPLACEMENT(CLOSURE) AT 2546.000 METRES  
IS 48.255 METRES ALONG 357.49 DEGREES (GRID)**

**MWD RUN 200 - BHA**
**MWD RUN 200 - MWD**

	<b>Component Length (m)</b>		<b>Sensor Measure Point Distance To Bit (m)</b>
HWDP	132.420	Sonic	
Sub	.640		
HWDP	9.470	MWD	
Sub	1.110		
Drill Collar	18.920	Directional	
Jar	9.750	Processor	

Drill Collar		55.780	MWD		
Sub		1.920			
MWD		28.560	Neutron		34.640
Reamer		2.740	Resistivity		31.680
Drill Collar		9.020			
Reamer		2.900	Density		28.710
Sub		.770			
Motor		8.290	Gamma Ray		25.300
Bit		.360			