sperry-sun
DRILLING SERVICES
A Halliburton Company

INSITE

MWD

1 : 200

EWR Electromagnetic Wave Resistivity
DGR Dual Gamma Ray
SLD Stabilized Litho-Density
CNP Compensated Neutron Porosity
ACAL Acoustic Caliper
BAT Bi-Modal Acoustic Tool

Company	: Apache Energy Ltd
Rig	: Ocean Patriot
Well	: Longtom-2
Field	: Exploration
Country	: Australia
DOE Number	:

Country	: Australia
Field	: Exploration
Location	: Lat: 38° 6' 11.89" South Long: 148° 19' 0.92" East
Well	: Longtom-2
Company	: Apache Energy Ltd
Rig	: Ocean Patriot

LOCATION

Latitude	: 38° 6' 11.89" South
Longitude	: 148° 19' 0.92" East
UTM Easting =	615,462.43 m
UTM Northing =	5,781,904.33 m

Other Services
Surface Data Logging

Permanent Datum	: AHD
Log Measured From	: Drill Floor
Drilling Measured From	: Drill Floor

Elevation : 0.00 m
21.50 m Above Permanent Datum

MD LOG

Depth Logged	: 111.00 m	To	2,422.00 m
Date Logged	: 12-Nov-04	To	20-Nov-04
Total Depth MD	: 2,422.00 m	TVD :	2,406.63 m
Spud Date	: 09-Nov-04		

Unit No. : 174
Plot Type : Final
Plot Date : 22-Mar-05

Job No. : AU-FE-0003298447

Elev.
KB
DF 21.50 m
GL
WD 56.80 m

Borehole Record (MD)

Run No.	Size	From	To
2	311.000 mm	111.00 m	1,009.00 m
3	216.000 mm	1,009.00 m	2,312.00 m
4	216.000 mm	2,312.00 m	2,422.00 m

Casing Record (MD)

Run No.	Size	Weight	From	To
	508.000 mm	198.00 kg/m	SURFACE	109.90 m
	340.000 mm	101.00 kg/m	SURFACE	995.30 m
	178.000 mm	43.00 kg/m	877.00 m	2,420.00 m

Borehole Record (MD)

Size	From	To

WELL INFORMATION

MWD Run Number	100	200	300		
Date run completed	12-Nov-04	18-Nov-04	20-Nov-04		
Rig Bit Number	2	3	4		
Bit Size (mm)	311	216	216		
Tool Nominal OD (mm)	203	171	171		
Log Start Depth (MD, m)	111.00	1,009.00	2,312.00		
Log End Depth (MD, m)	1,009.00	2,312.00	2,422.00		
Drill or Wipe	Drilling	Drilling	Drilling		
Drill/Wipe Start Date and Time	11-Nov-04 12:45	14-Nov-04 23:23	18-Nov-04 17:05		
Drill/Wipe End Date and Time	12-Nov-04 04:45	16-Nov-04 17:00	19-Nov-04 15:00		
Min Inc (deg) @ Depth (MD, m)	0.25 @ 795.70	1.38 @ 1,025.79	11.96 @ 2,376.11		
Max Inc (deg) @ Depth (MD, m)	1.0700 @ 968.35	13.75 @ 2,232.27	13.36 @ 2,292.01		
Bit TFA(in2) / Bit Type	0.79 / Hycalog PDC	0.57 / REED PDC	0.59 / Security MR6520		
Flow Rate (gpm)	910	550	550		
Max AV (mpm) / CV (mpm) @ MWD	73.8 / 13.2	168.0 / 129.0	154.3 / 117.6		
Fluid Type	Sea Water	KCl/Idecap	KCl/Idecap		
Density (sg) / Viscosity (spl)	1.04 / 1.06	1.3 / 47.00	1.4 / 45.00		
Filtrate CL (ppm)	42,000	48,000	54,000		
pH / Fluid Loss (cptm)	8.00 / 2.0	8.70 / 4.2	9.00 / 4.8		
PV (cp) / YP (pa)	20 / 0.5	19 / 10.50	21 / 16.50		
% Solids / % Sand	9 / N/A	11 / 0.4	16 / 0.65		
% Oil / Oil:Water Ratio	N/A / N/A:91	N/A / N/A:89	N/A / N/A:84		
Rm @ Measured Temp (degC)	N/A @ N/A	0.10 @ 28.00	0.11 @ 23.30		
Rmf @ Measured Temp (degC)	N/A @ N/A	0.08 @ 28.00	0.10 @ 20.00		
Rmc @ Measured Temp (degC)	N/A @ N/A	0.15 @ 28.00	0.40 @ 24.50		
Max Tool Temp (degC) / Source	26.00 / EWR-P4	99.00 / EWR-P4	90.00 / EWR-P4		
Rm @ Max Tool Temp (degC)	N/A @ 26.00	0.04 @ 99.00	0.04 @ 90.00		
Lead MWD Engineer	T.Oborne	T.Oborne	T.Oborne		
Customer Representative	H.Everhart	H.Everhart	H.Everhart		

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM	HCIM		
Software Version	67.88	67.88	67.88		
Sub Serial Number	198840	197929	197929		
Insert Serial Number	132884	161828	161828		
Logging String Serial Number	62057XHGVR8	62270XH1NRGV6	62270XH1NRGV6		
Date and Time Initialized	11-Nov-04 09:40	14-Nov-04 08:42	18-Nov-04 06:54		
Date and Time Read	12-Nov-04 09:57:27	18-Nov-04 04:38:00	20-Nov-04 03:45:19		

Directional Sensor Information

Tool Type	PM	PM	PM		
Distance From Bit (m)	30.19	33.62	25.28		
Software Version	1.08	1.08	1.08		
Sub Serial Number	111363	194447	194447		
Sonde Serial Number	134019	175717	175717		
Sensor ID Number	182591	149865	44645		
Survey String Serial Number	DM90061055M8	DM90062415M6	DM90062415M6		
Toolface Offset (deg)	N/A	N/A	N/A		

Gamma Ray Sensor Information

Tool Type	DGR	DGR	DGR		
Distance From Bit (m)	17.71	11.49	3.15		
Recorded Sample Period (sec)	12	12	12		
Software Version	N/A	N/A	N/A		
Sub Serial Number	10505993	1	1		
Insert/Sonde Serial Number	172498	53520	53520		

Resistivity Sensor Information

Tool Type	EWR-P4	EWR-P4	EWR-P4		
Distance From Bit (m)	14.68	17.54	9.20		
Recorded Sample Period (sec)	12	12	12		
Software Version	1.38	1.38	1.38		
Sub Serial Number	174309	60579	60579		
Receiver Insert Serial Number	123481	99881	99881		
Transmitter Insert Serial Number	159149	144695	144695		
Receiver Orientation	Down	Down	Down		

Neutron Sensor Information

Tool Type		CNP	CNP		
Distance From Bit (m)		20.52	12.18		
Recorded Sample Period (sec)		12	12		
Sub Serial Number		177933	177933		
Insert Serial Number		87644	87644		
Source Serial Number		4070NK	4070NK		
Source Factor		1.1400	1.1400		
Pin Orientation		Down	Down		

Density Sensor Information

Tool Type		SLD	SLD		
Distance From Bit (m)		14.79	6.45		
Recorded Sample Period (sec)		14	14		
Software Version		11.00	11.00		
Sub Serial Number		121000	121000		
Insert Serial Number		77135	77135		
Sensor ID Number		324	324		
Source Serial Number		3085GW	3085GW		
Pin Orientation		Up	Up		
Stabilizer Blade O.D. (mm)		209.550	209.550		
DPA Offset		N/A	N/A		

Caliper Sensor Information

Tool Type	ACAL	ACAL	ACAL		

Distance From Bit (m)	27.26	30.70	22.36		
Software Version	2.05	2.05	2.05		
Sub Serial Number	165483	138157	138157		
Insert Serial Number	141729	113417	113417		

Sonic Sensor Information

Tool Type	BAT	BAT	BAT		
Distance From Bit (m)	23.06	26.91	18.57		
Recorded Sample Period (sec)	18	18	18		
Software Version	4.00	4.00	4.00		
Sub Serial Number	144401	132327	132327		
Receiver Insert Serial Number	136555	161198	161198		
Transmitter Insert Serial Number	143996	116793	116793		

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 Powers Law for water based muds and the Binghams Plastic Law for oil based muds.

3. Curve mnemonics are:
SGRC - Smoothed Gamma Ray Combined, api
SEXP - Smoothed Extra Shallow Phase Resistivity, ohm-m
SESP - Smoothed Shallow Phase Resistivity, ohm-m
SEMP - Smoothed Medium Phase Resistivity, ohm-m
SEDP - Smoothed Deep Phase Resistivity, ohm-m
SROP - Smoothed Rate of Penetration, m/hr
ACAL - Acoustic Caliper, inches
BATC - Bi-Modal Acoustic Compressional Slowness, usec/ft
SBD2 - Smoothed Best Bin Bulk Density Compensated, g/cc
SCO2 - Smoothed Best Bin Stand-off Correction, g/cc
SNP2 - Smoothed Best Bin Near Photoelectric Effect, b/e
NUCL - Smoothed Porosity (Limestone Matrix) corrected for Salinity, Temperature and Pressure, v/v
STEM - Smoothed Medium Phase Resistivity Temperature, degC

4. CNP data processed using the CNP-E algorithim using the following parameters and is based on a Limestone Matrix:
MW = 1.25 - 1.40 sg
Formation Salinity = 25000 ppm, Cl
Mud Salinity = 43000 - 54000 ppm, Cl
Matrix Density = 2.71 g/cc
Fluid Density = 1.00 g/cc

5. CNP data has been reprocessed using data from the Caliper (ACAL) tool for borehole diameter.

6. Surface depth tracking system damaged.

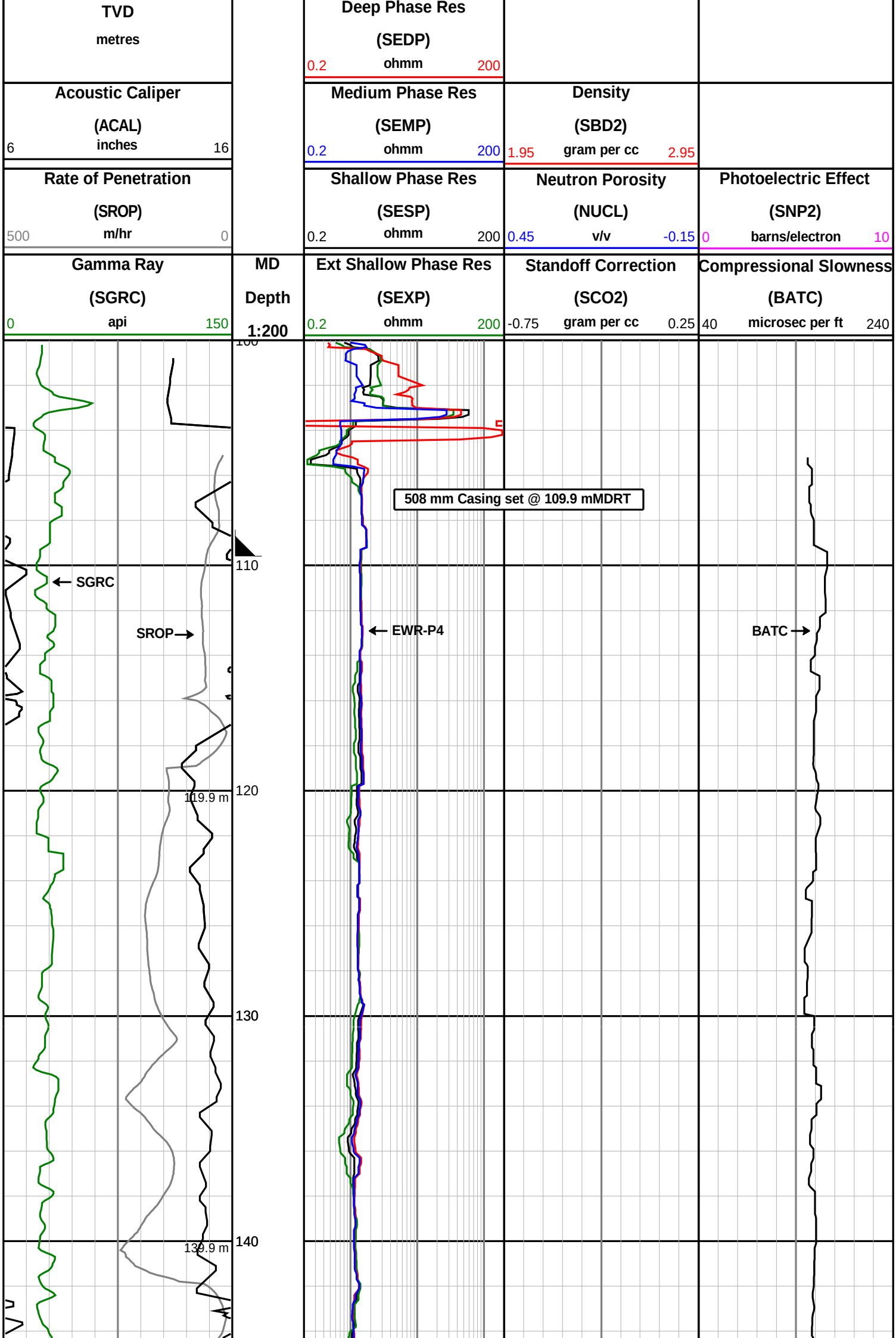
7. Gap in density data due to intermittent problems with density (SLD) tool.

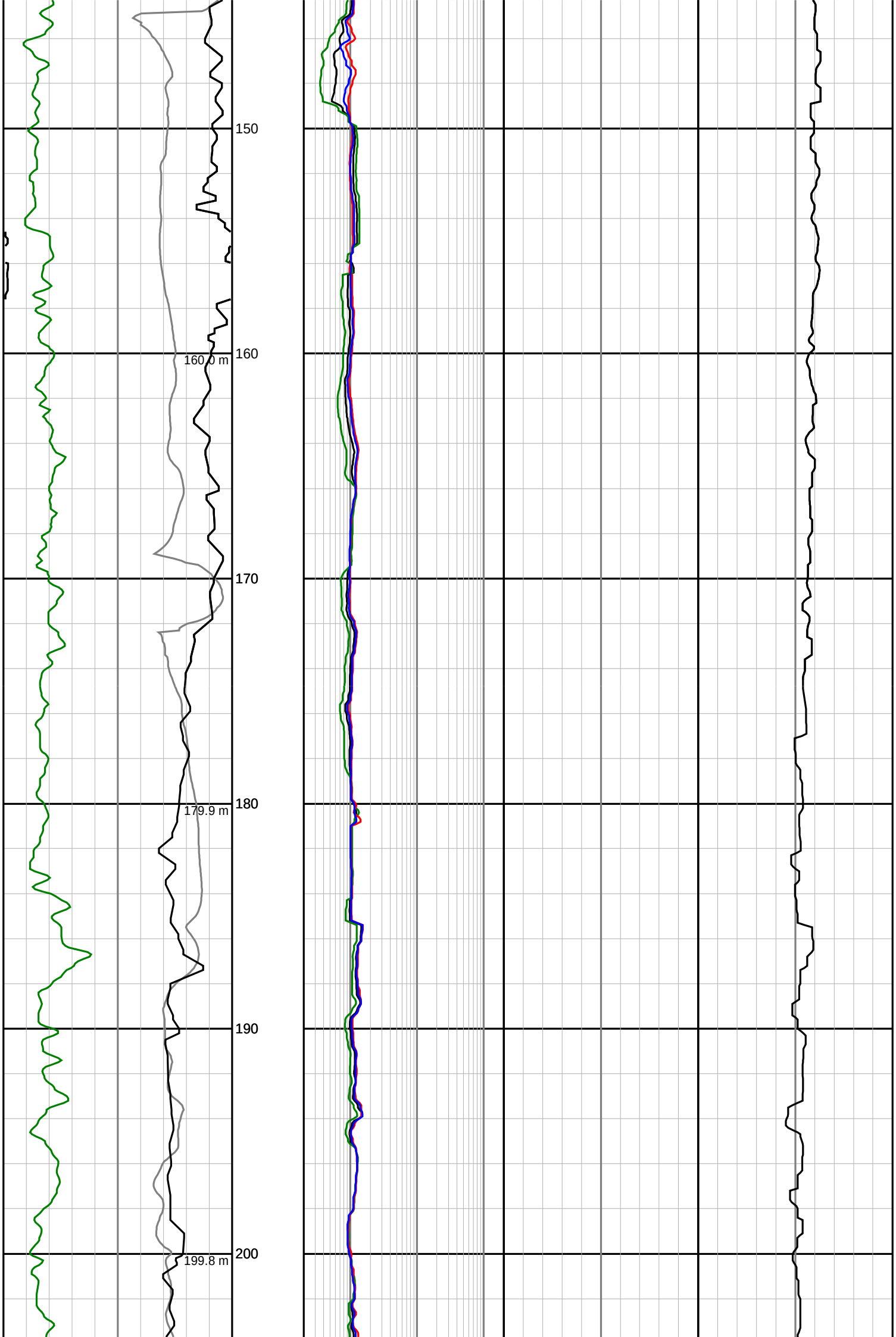
8. Density (SLD) tool failed while running in hole prior to Run 300.

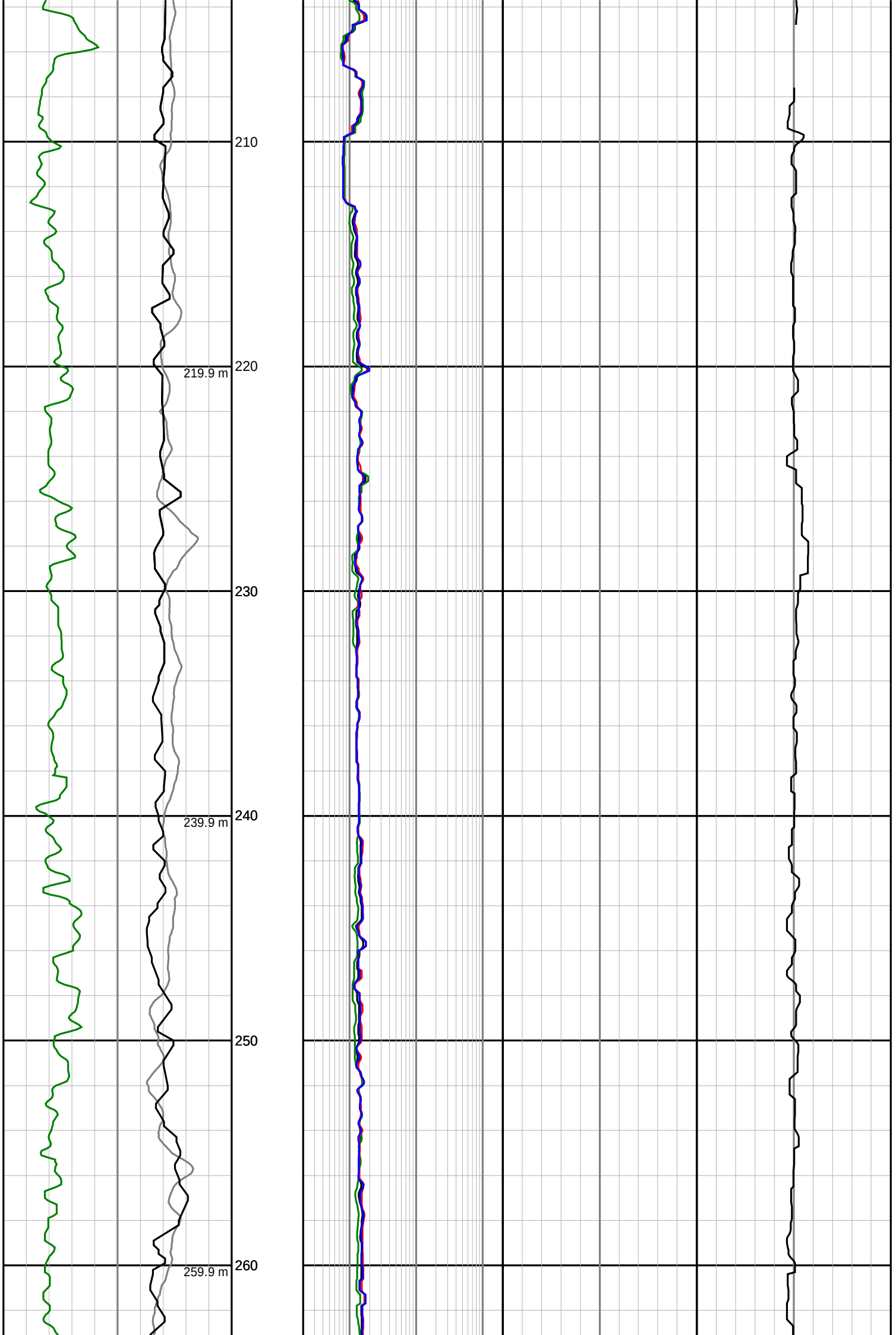
9. Gaps in compressional slowness (BATC) data due to weak signal.

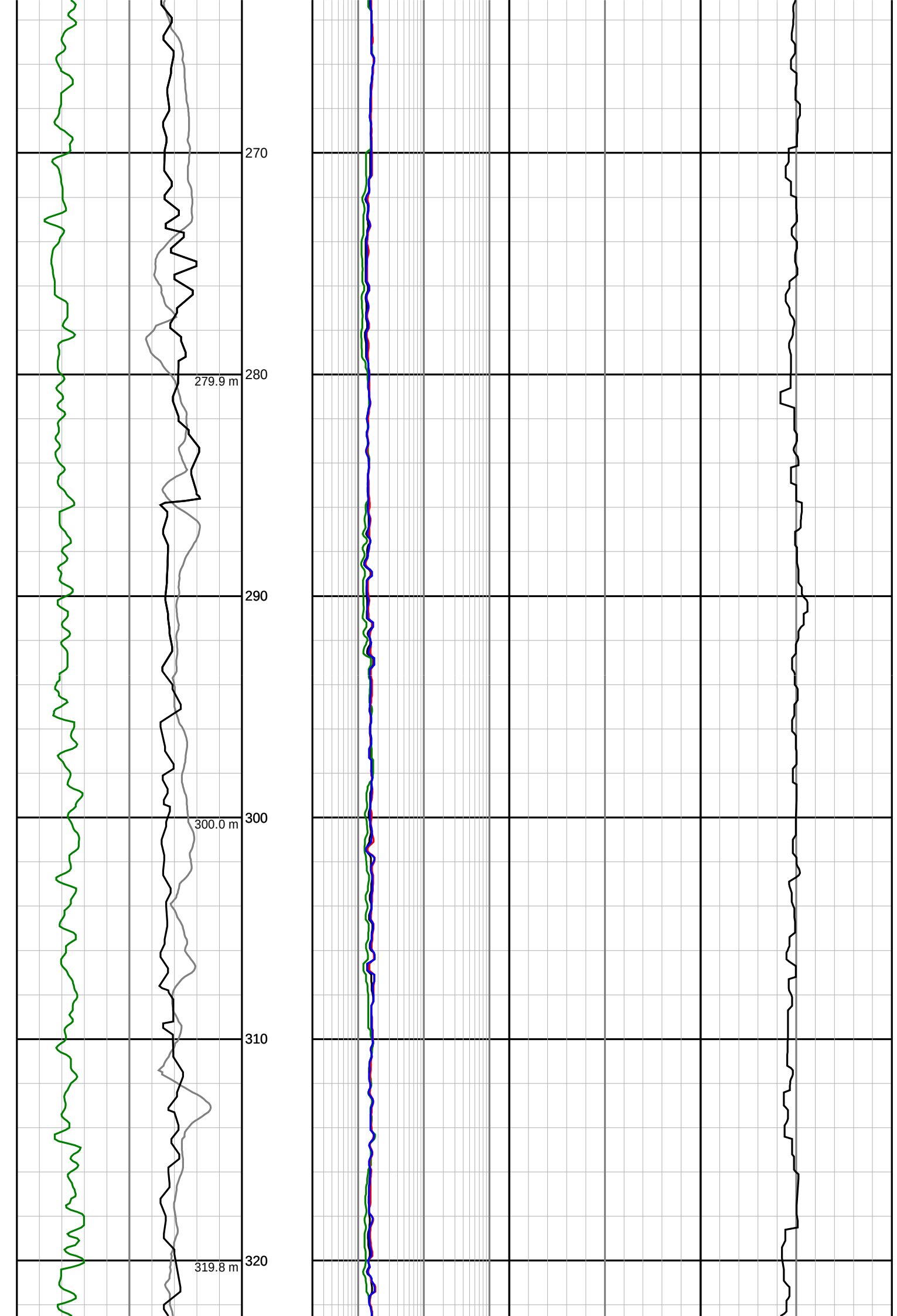
10. Repeat sections from 2100.0 to 2160.0 and 2210 to 2300 mMDRT @ 18:20 to 21:38 16-Nov-04 was wiped while pulling out of hole with no rotary and no pumps after LWD Run 200.

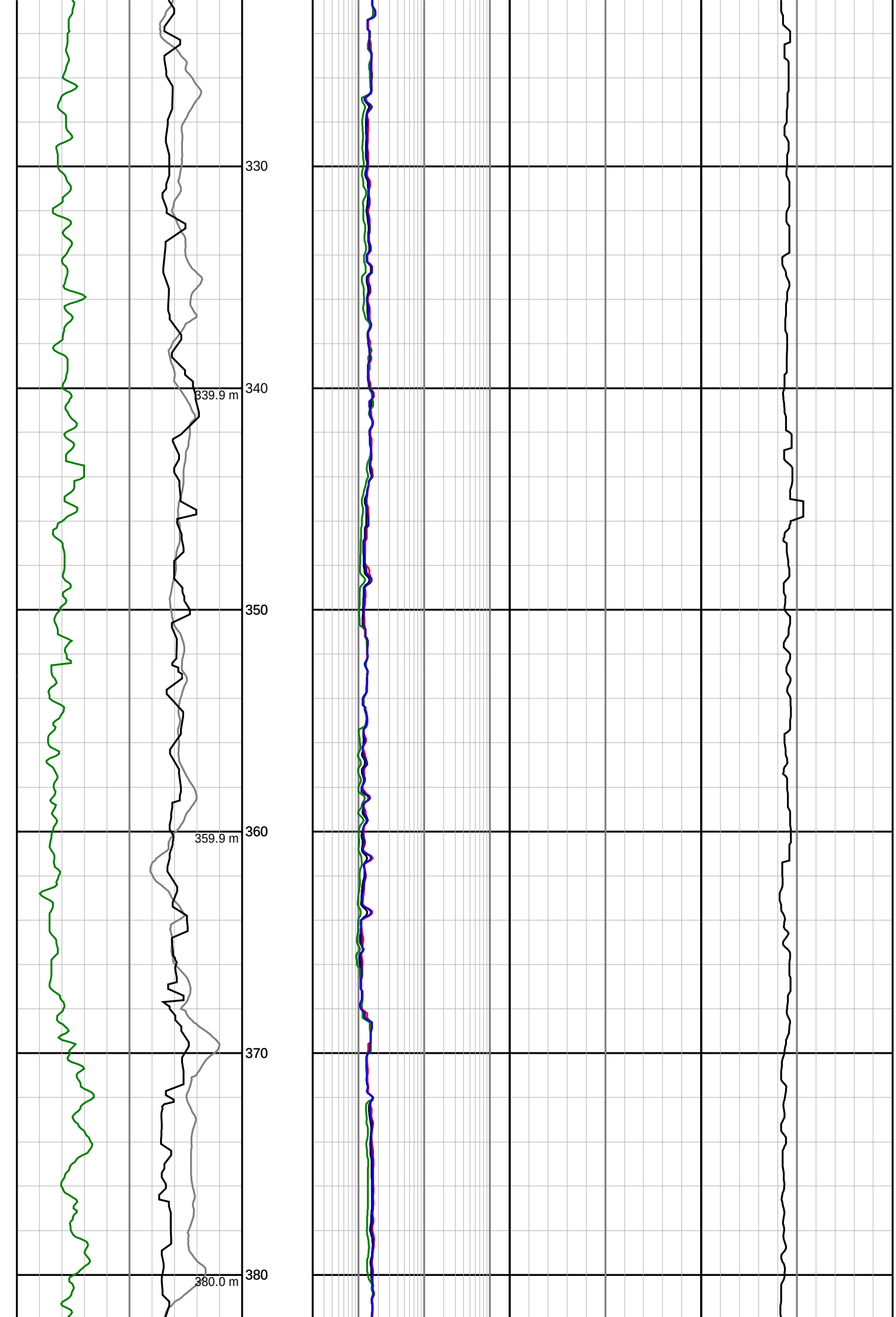
WARRANTY

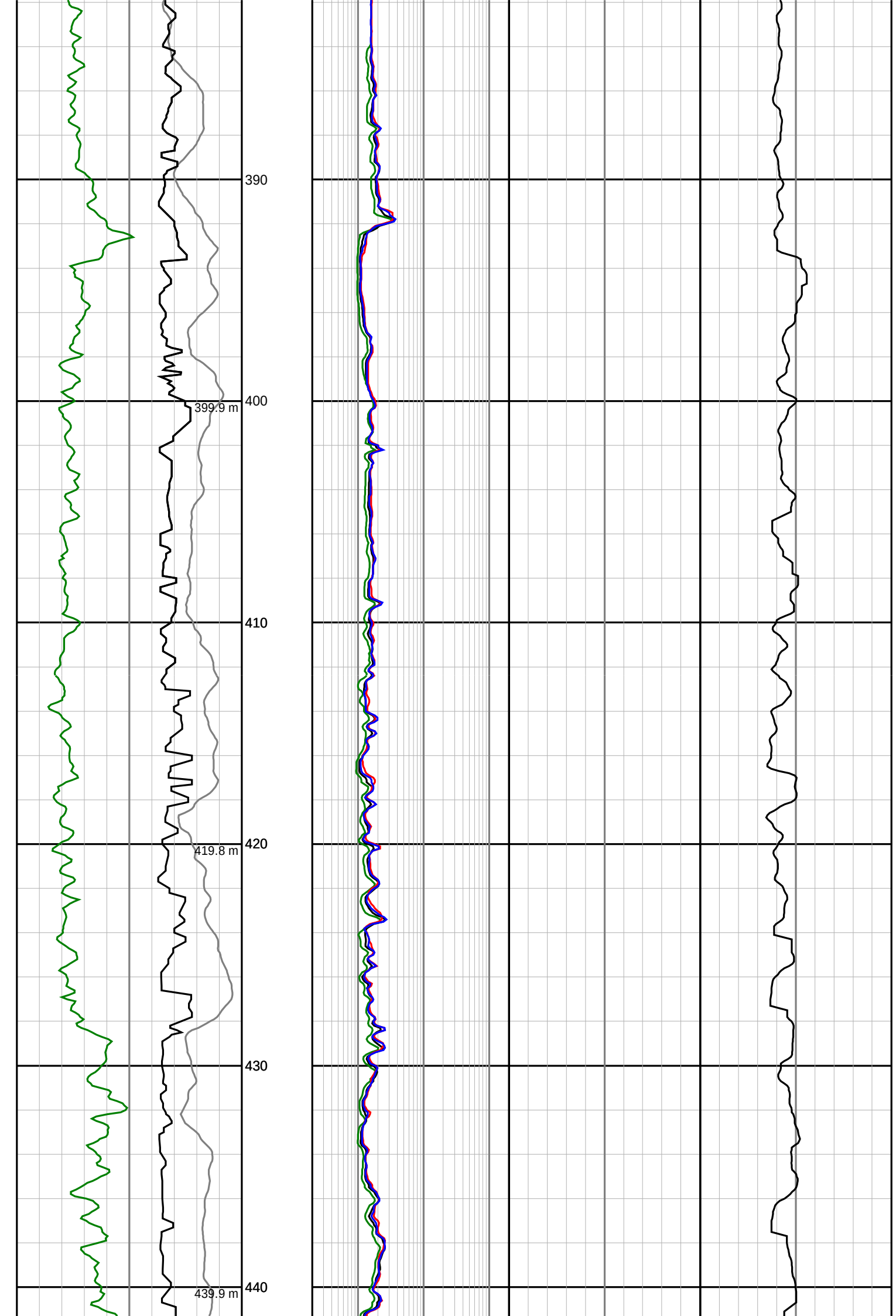

TVD
metres
Deep Phase Res
(SEDP)
0.2
ohmm
200
Acoustic Caliper
(ACAL)
6
inches
16
Medium Phase Res
(SEMP)
0.2
ohmm
200
Density
(SBD2)
1.95
gram per cc
2.95
Rate of Penetration
(SROP)
500
m/hr
0
Shallow Phase Res
(SESP)
0.2
ohmm
200
Neutron Porosity
(NUCL)
0.45
v/v
-0.15
Photoelectric Effect
(SNP2)
0
barns/electron
10
Gamma Ray
(SGRC)
0
api
150
MD
Depth
1:200
Ext Shallow Phase Res
(SEXP)
0.2
ohmm
200
Standoff Correction
(SCO2)
-0.75
gram per cc
0.25
Compressional Slowness
(BATC)
40
microsec per ft
240
508 mm Casing set @ 109.9 mMDRT
SGRC
SROP
EWR-P4
BATC
119.9 m
139.9 m
110
120
130
140


150
160
160.0 m
170
179.9 m
180
190
199.8 m
200


210
219.9 m
220
230
239.9 m
240
250
259.9 m
260


270
279.9 m
280
290
300.0 m
300
310
319.8 m
320


330
339.9 m
340
350
359.9 m
360
370
380.0 m
380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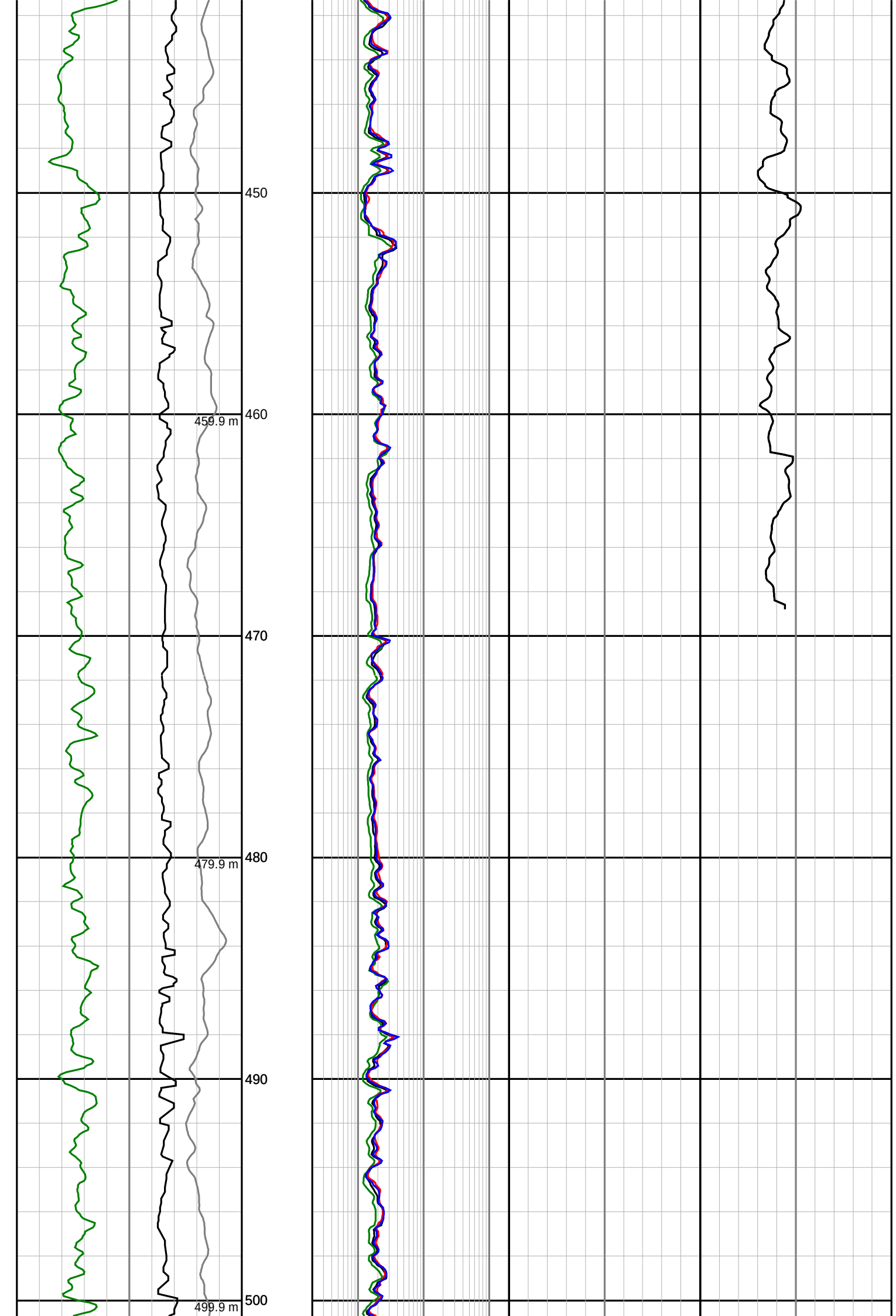
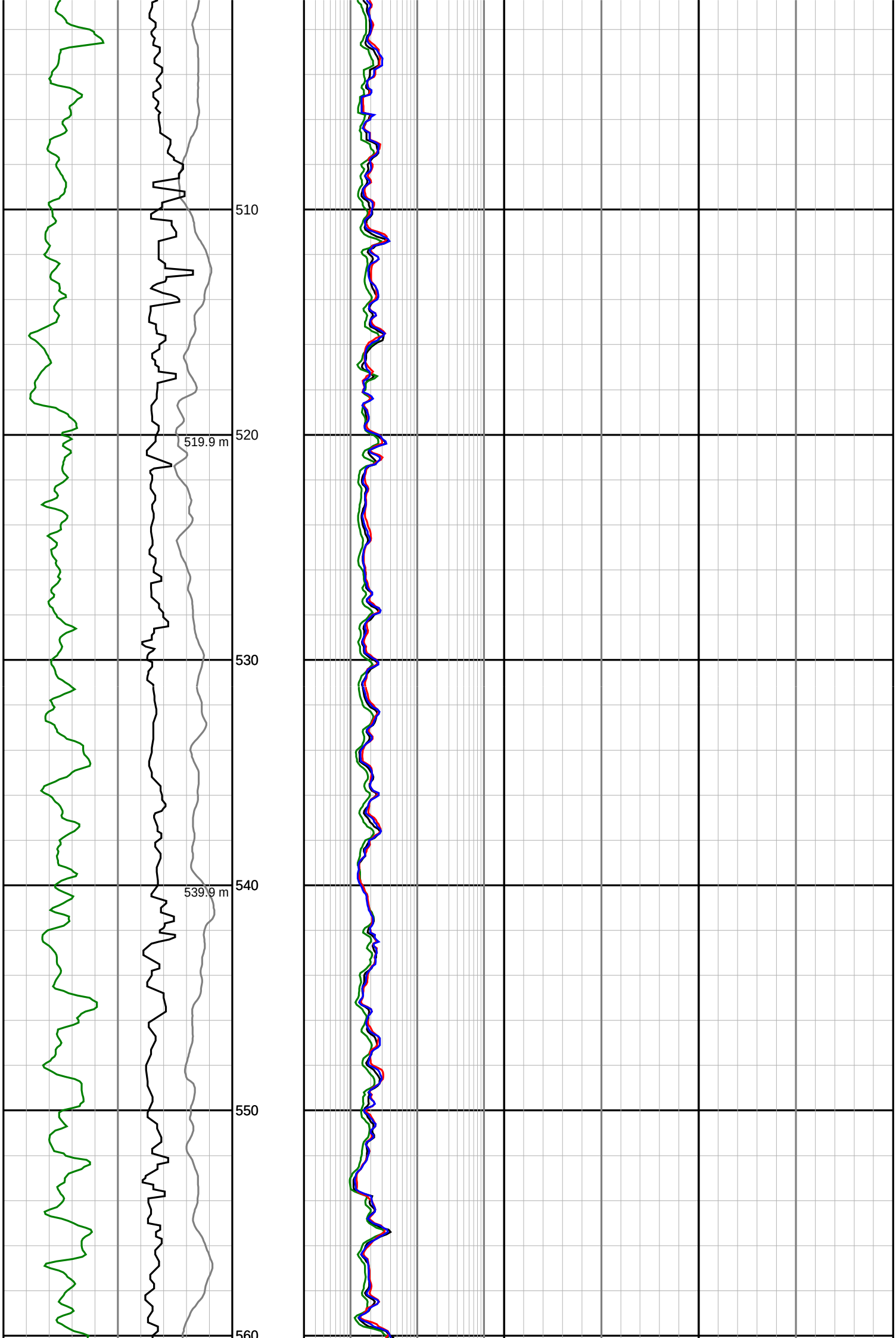
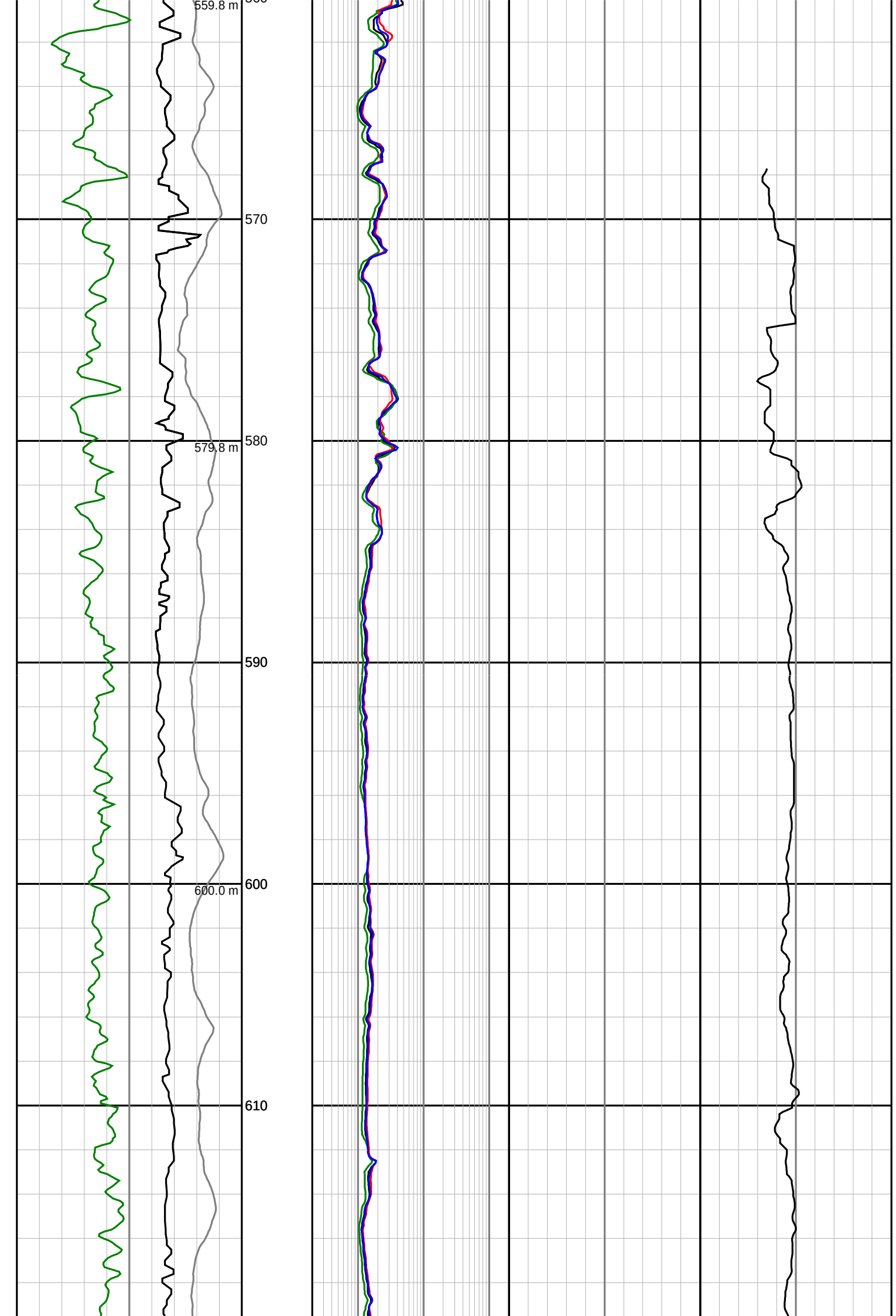
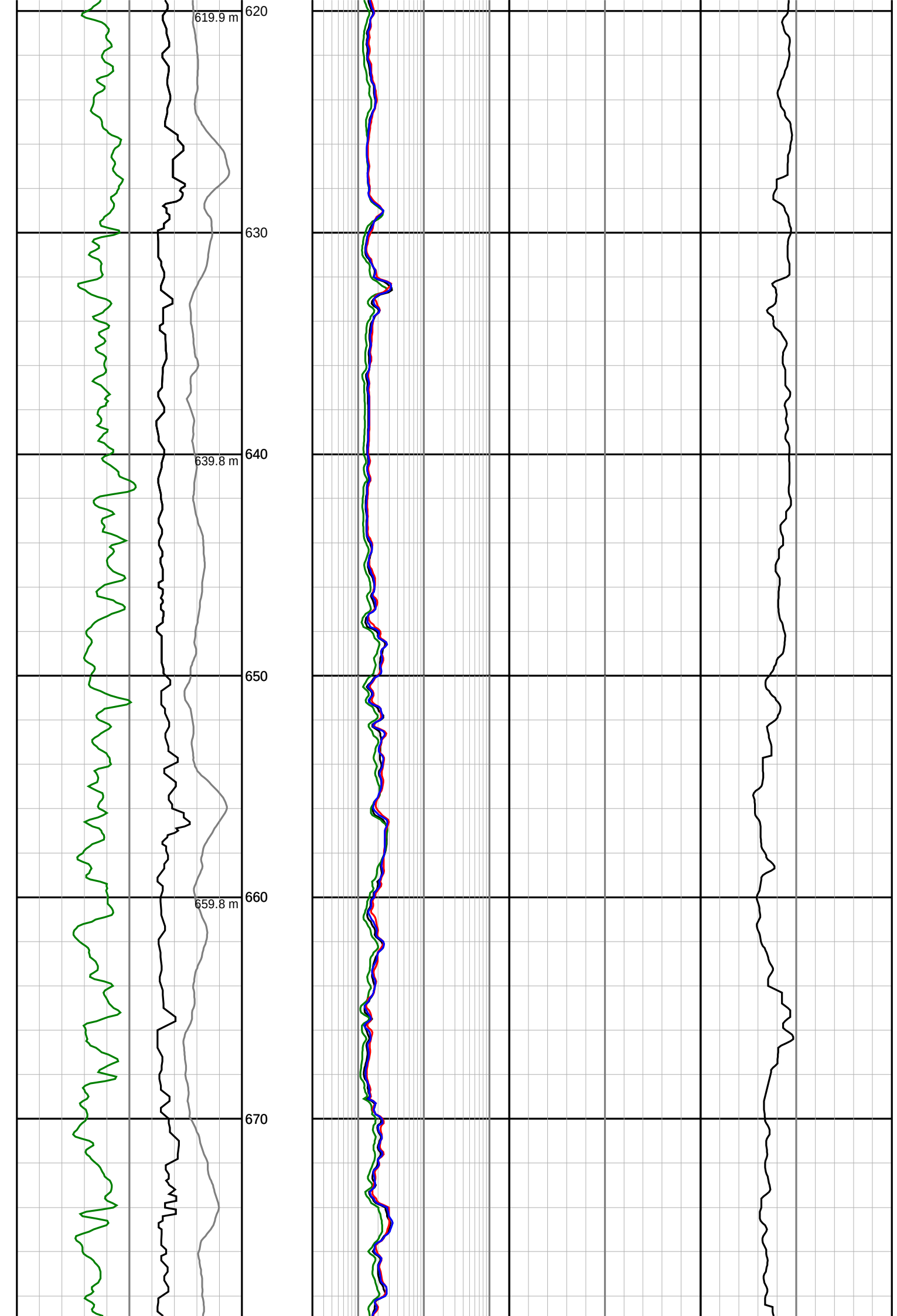
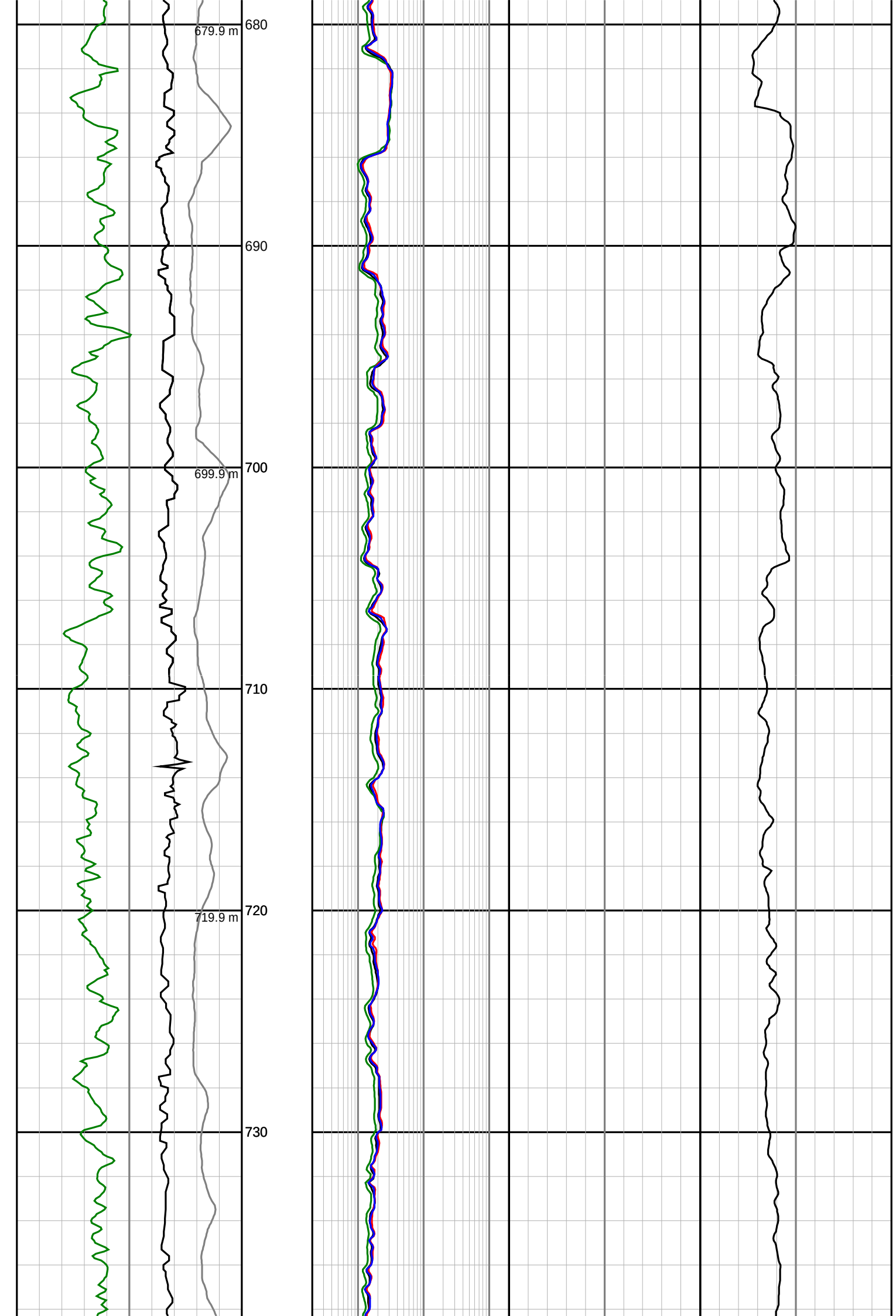
399.9 m
400
410
419.8 m
420
430
439.9 m
440

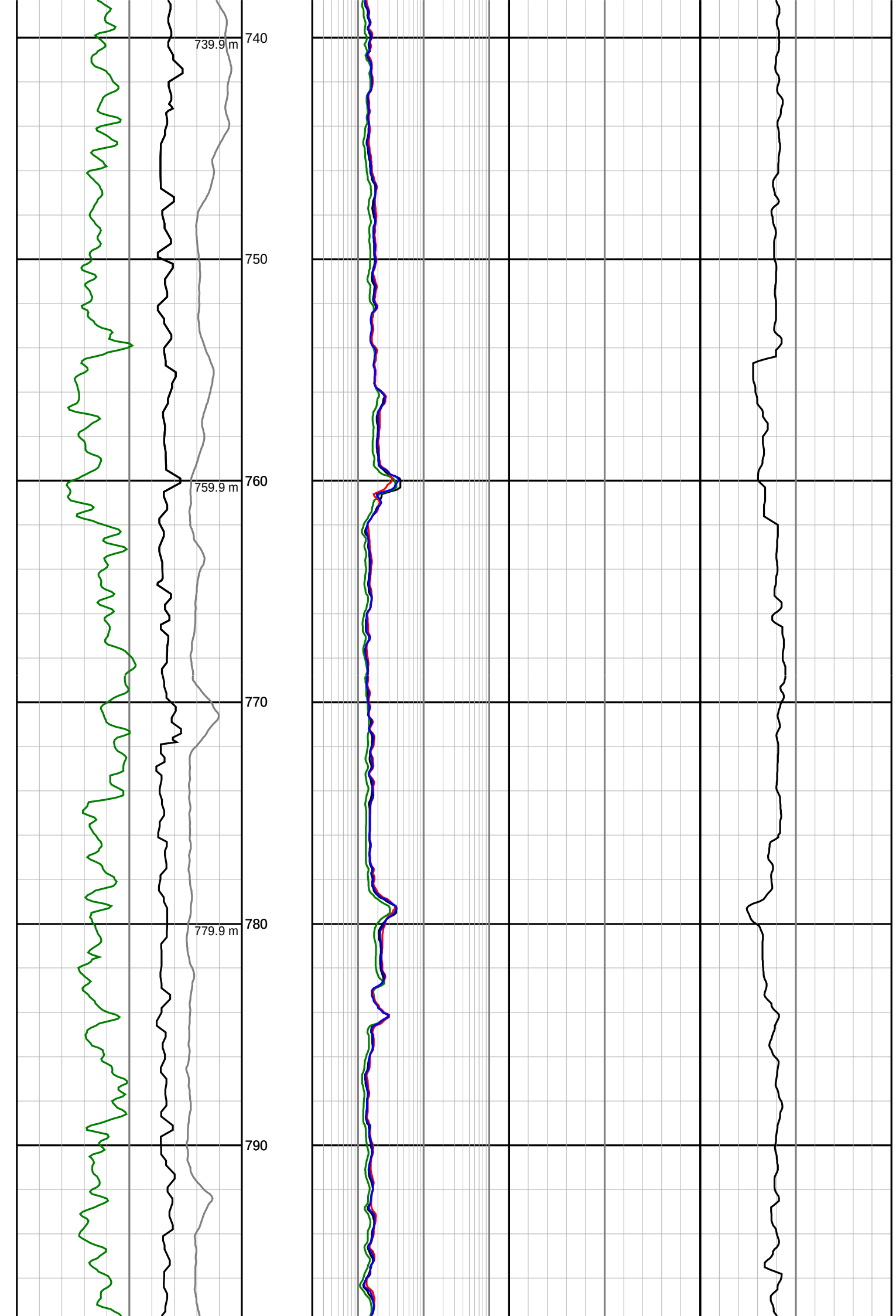

450
459.9 m
460
470
479.9 m
480
490
499.9 m
500

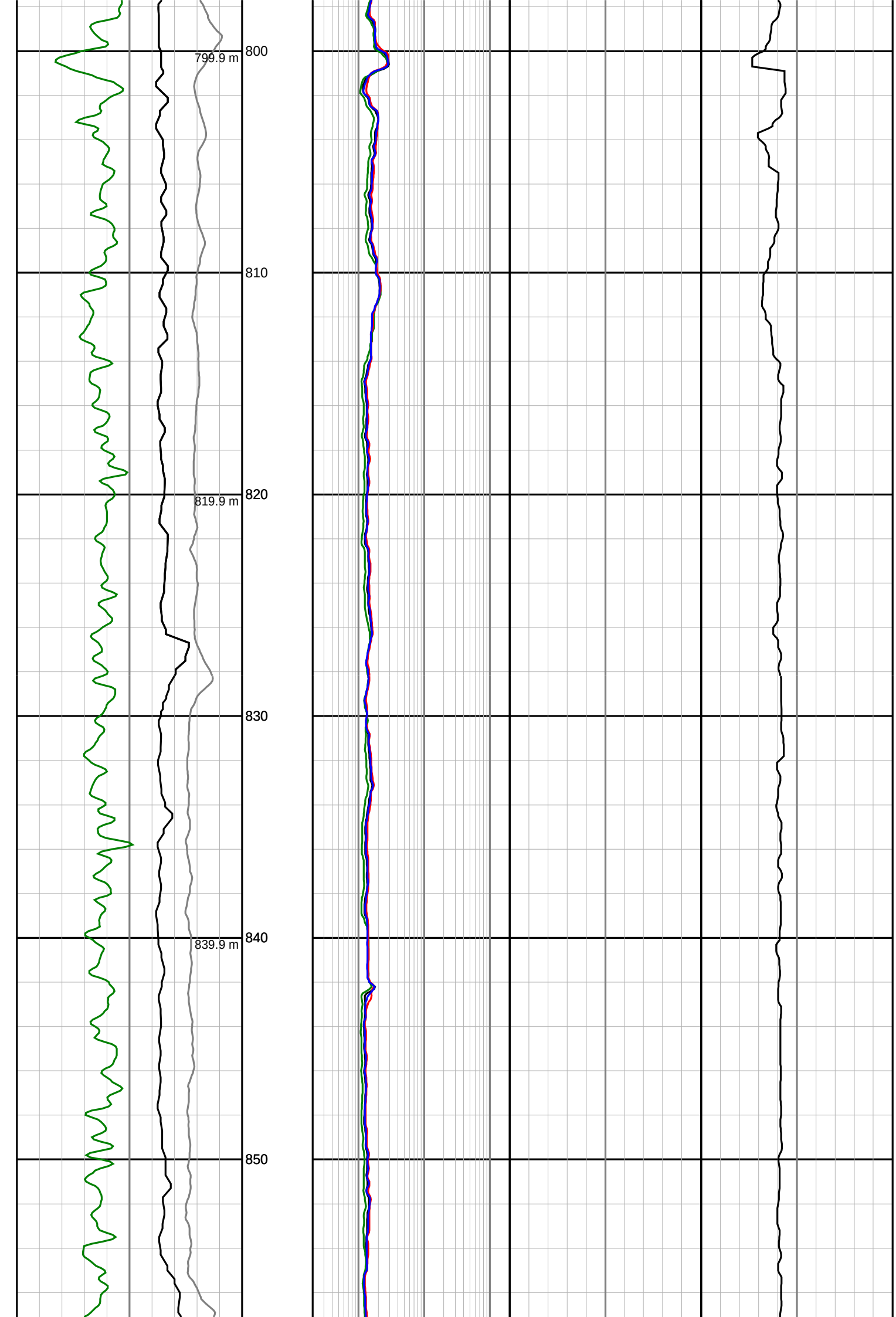

510
519.9 m
520
530
539.9 m
540
550
560

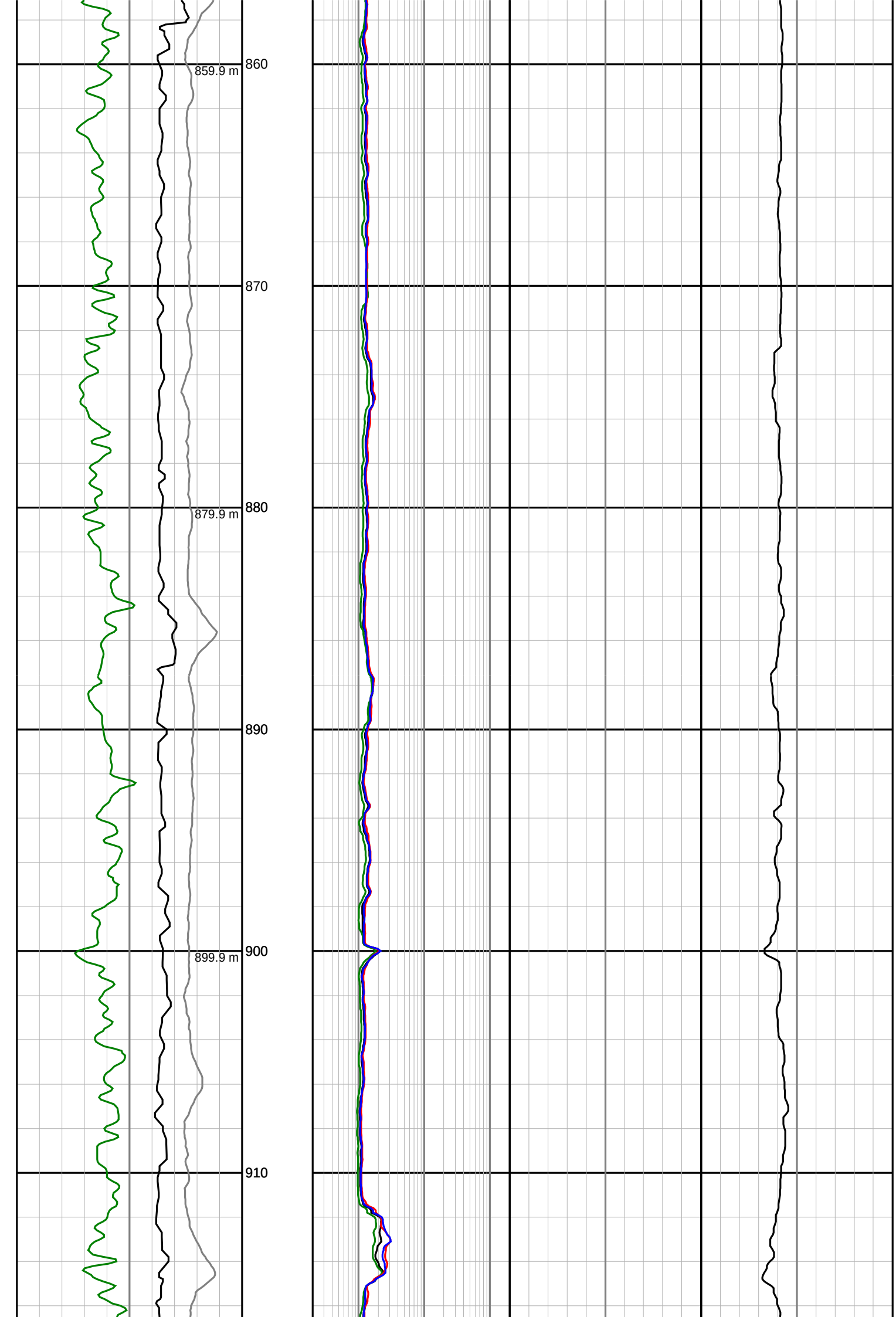

559.8 m
570
579.8 m
580
590
600.0 m
600
610

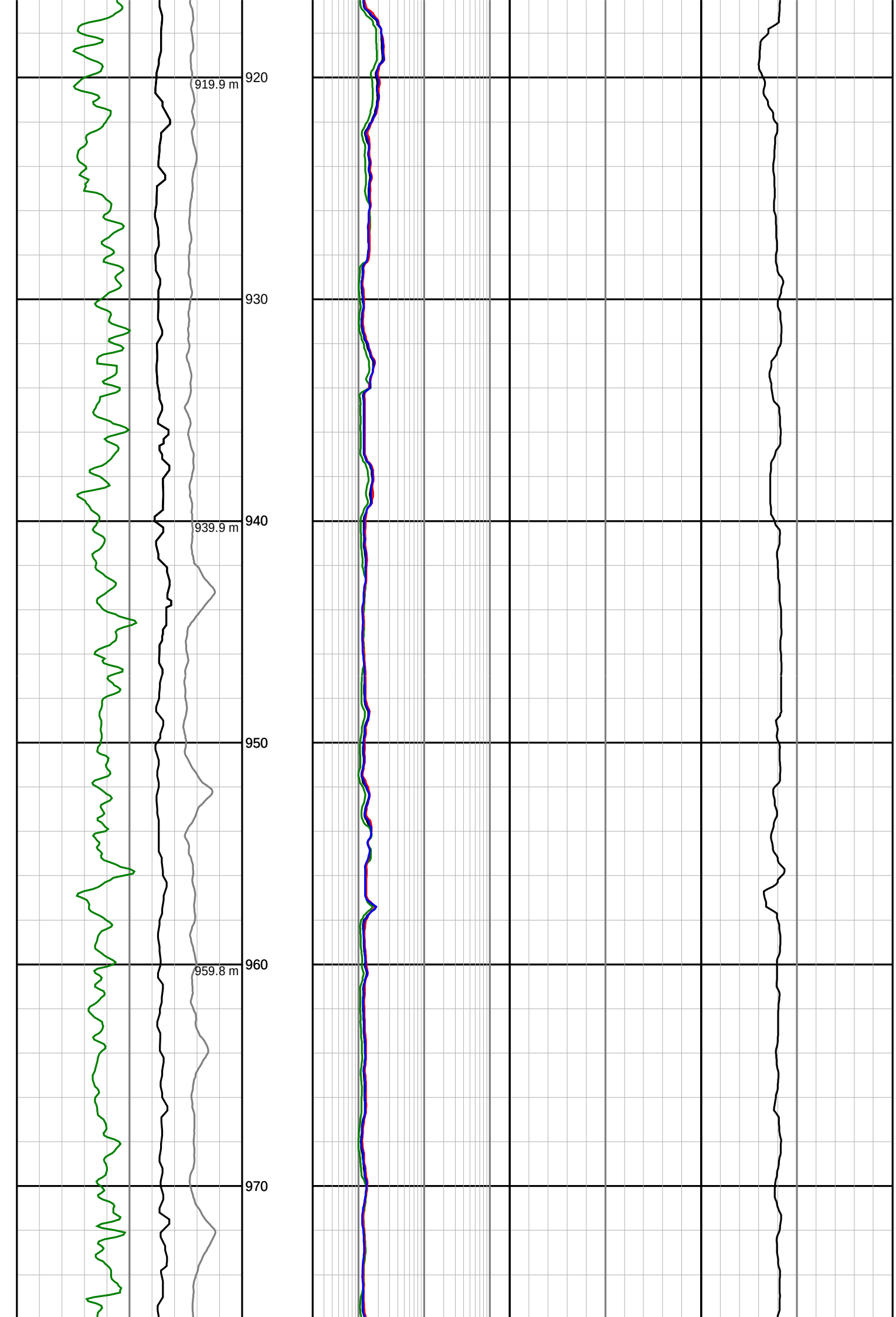

619.9 m
620
630
639.8 m
640
650
659.8 m
660
670


679.9 m
680
690
699.9 m
700
710
719.9 m
720
730


739.9 m
740
750
759.9 m
760
770
779.9 m
780
790


799.9 m
800
810
819.9 m
820
830
839.9 m
840
850


859.9 m
860
870
879.9 m
880
890
899.9 m
900
910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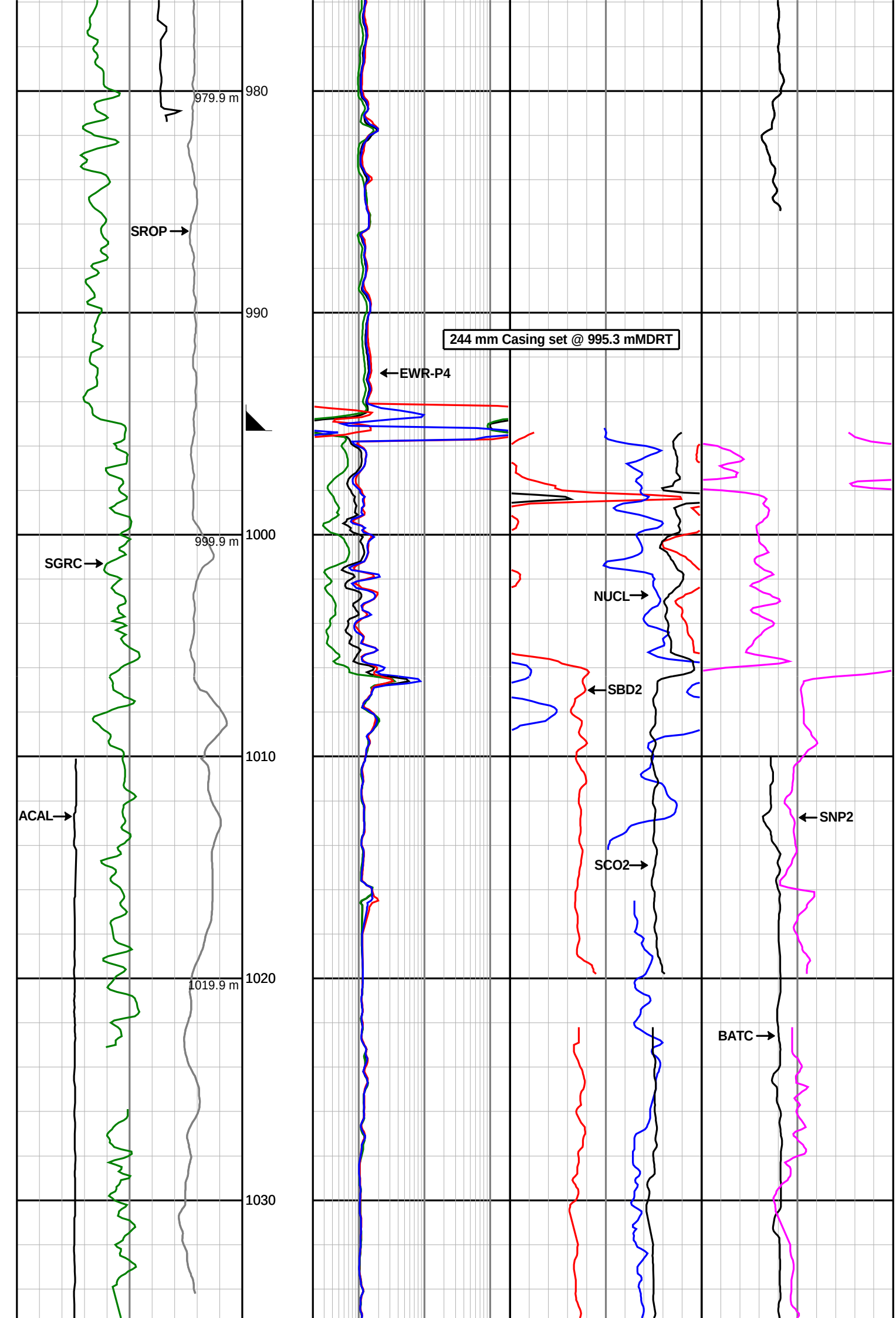
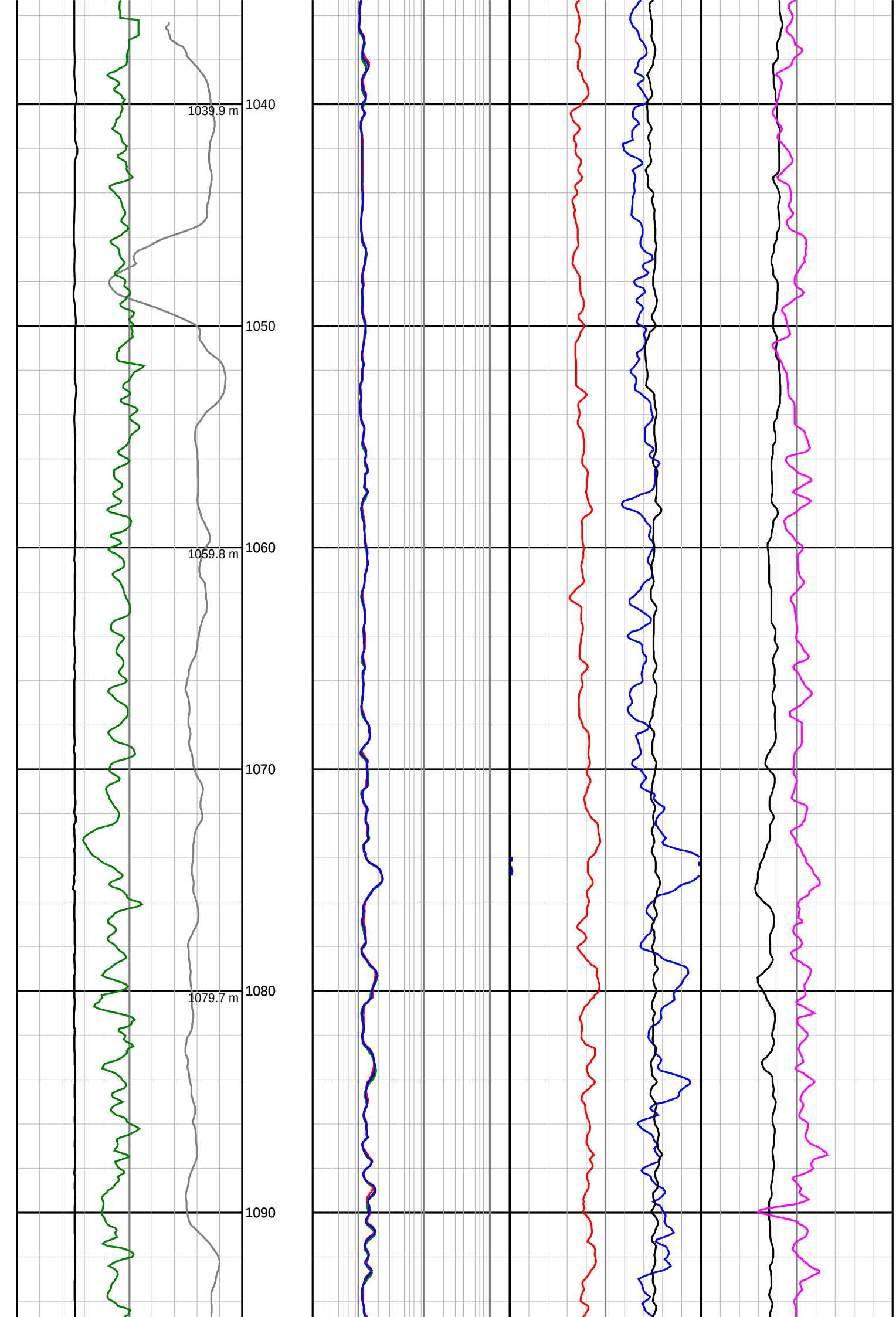
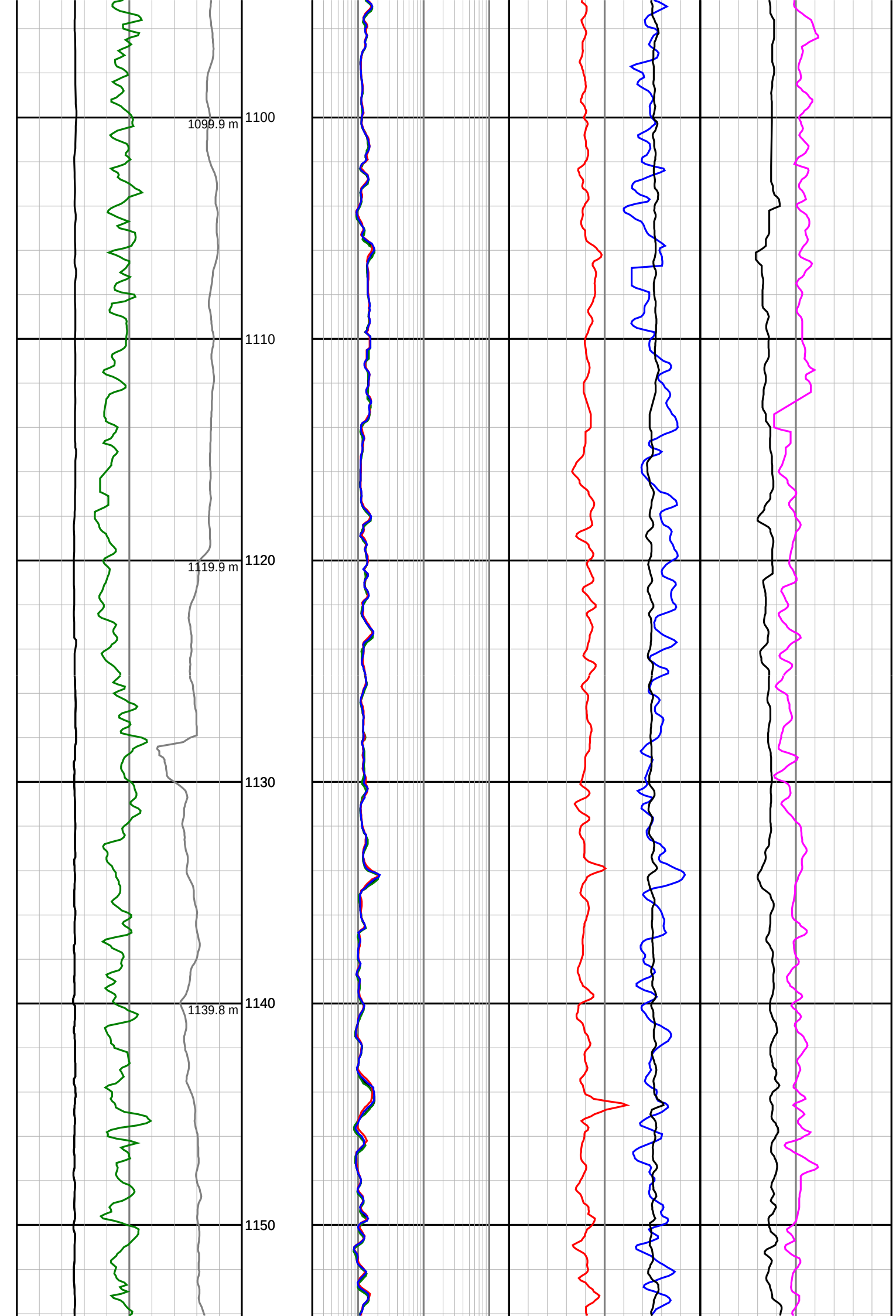
920
930
939.9 m
940
950
959.8 m
960
970


980
990
1000
1010
1020
1030
979.9 m
999.9 m
1019.9 m
SROP
SGRC
ACAL
244 mm Casing set @ 995.3 mMDRT
EWR-P4
NUCL
SBD2
SCO2
SNP2
BATC


1039.9 m
1040
1050
1059.8 m
1060
1070
1079.7 m
1080
1090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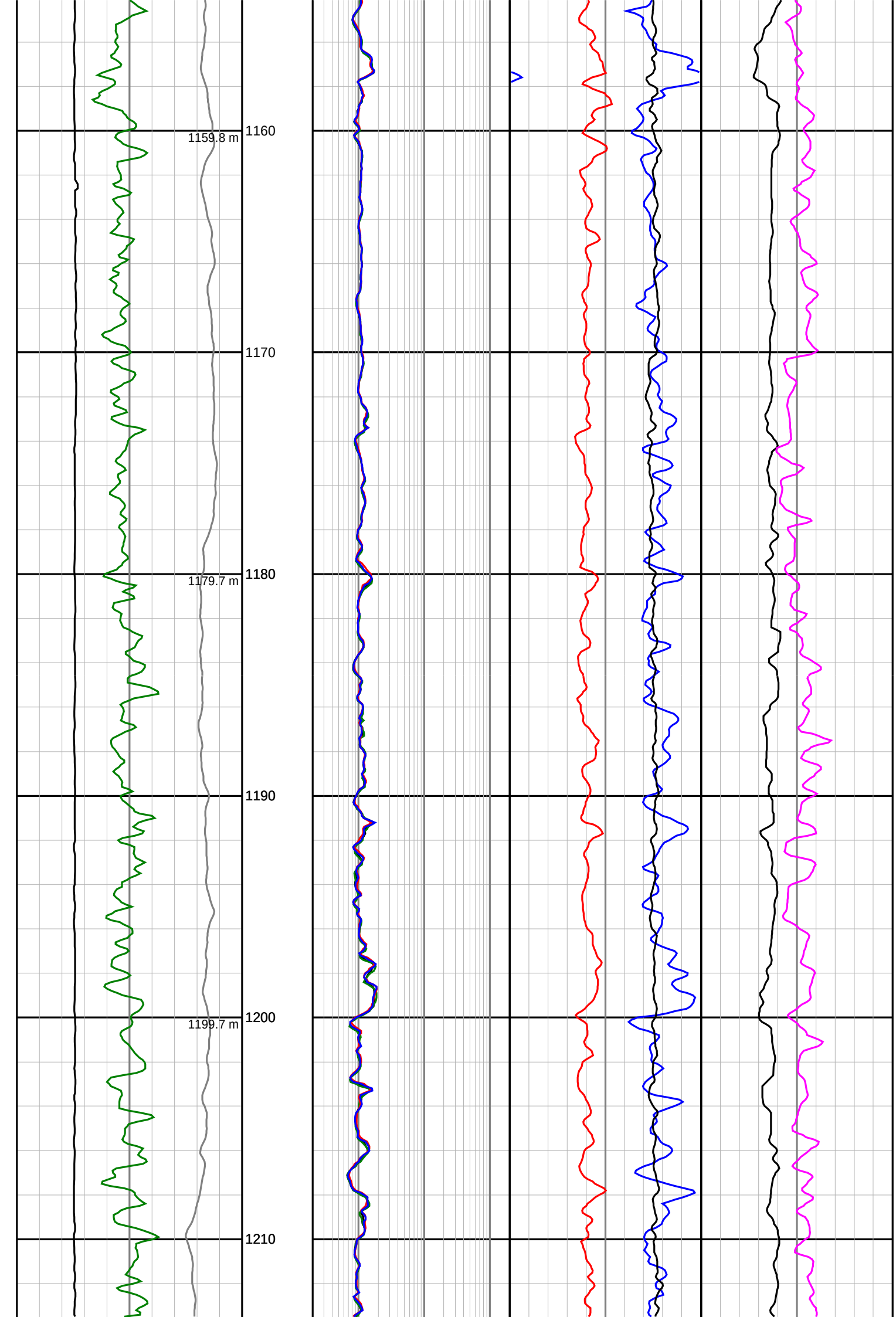
1100
1110
1119.9 m
1120
1130
1139.8 m
1140
1150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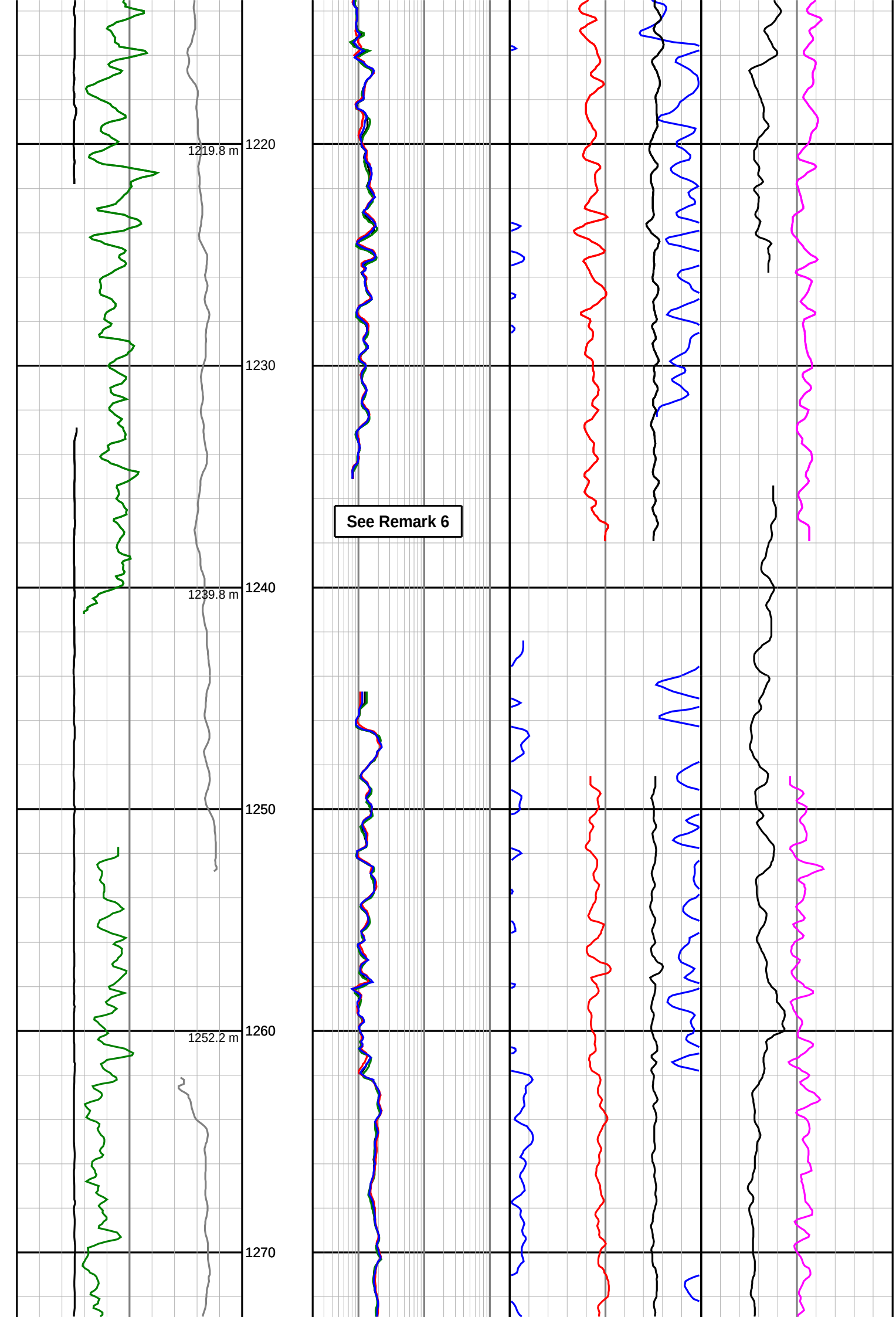
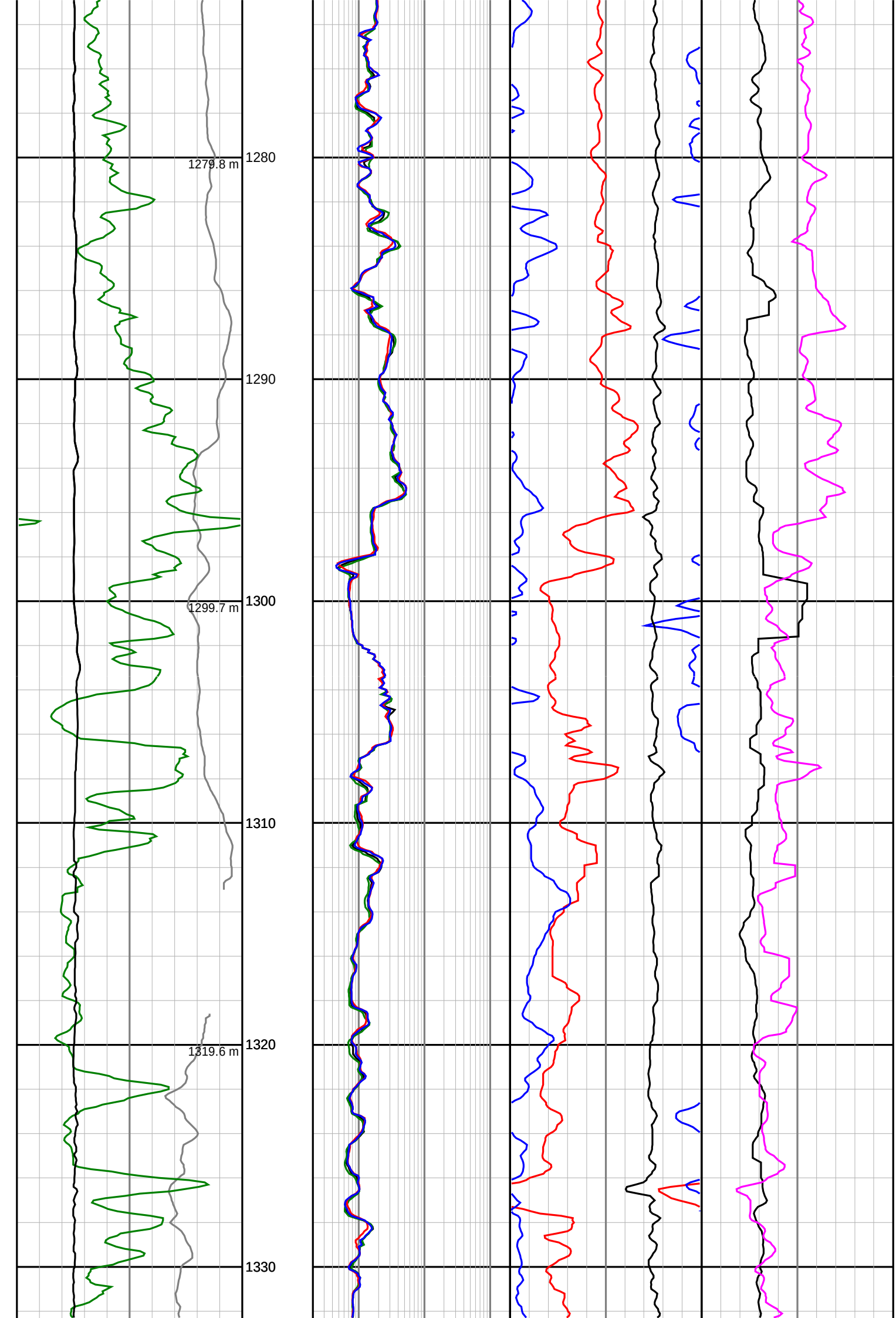
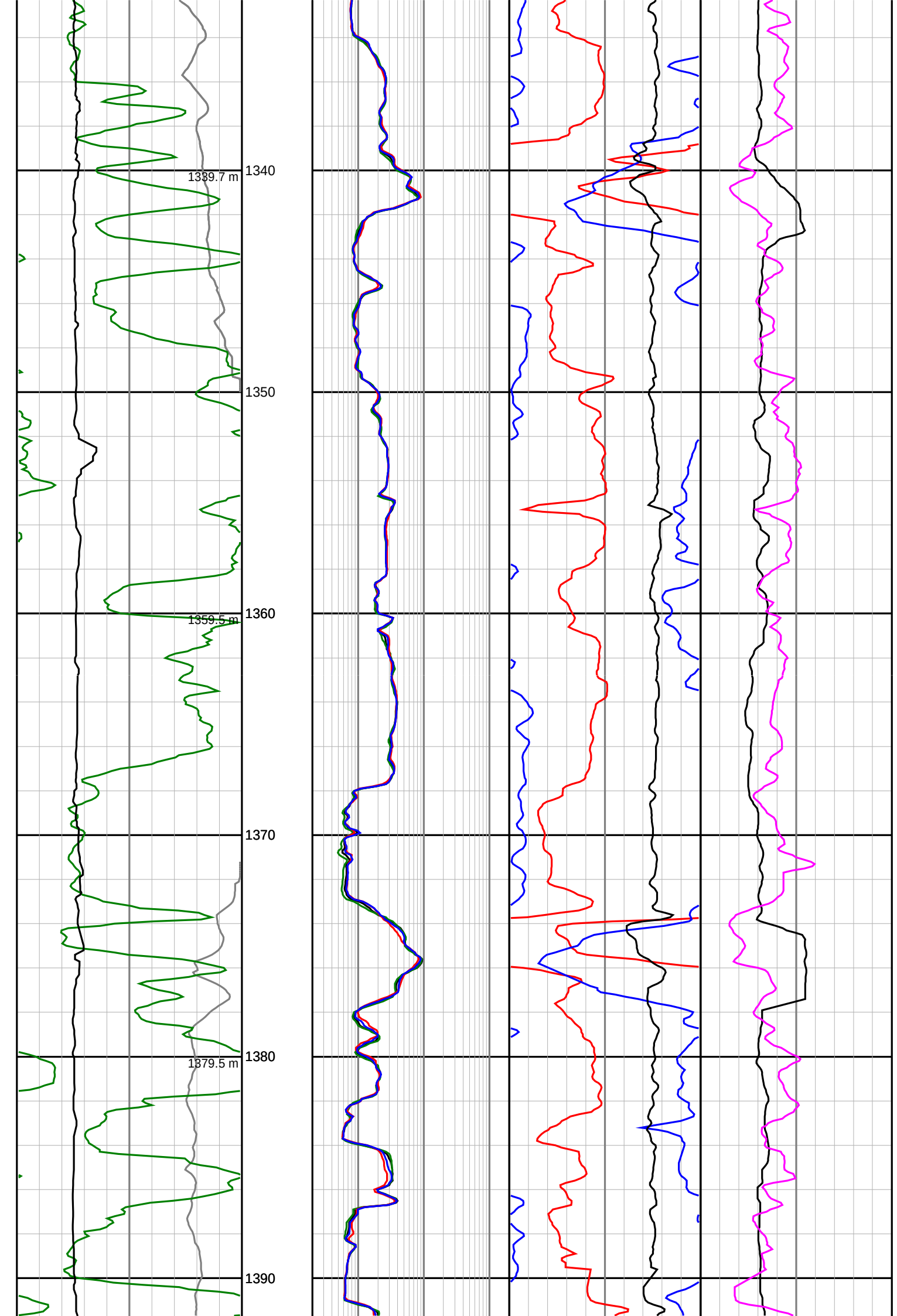
1179.7 m
1180
1190
1199.7 m
1200
1210


1219.8 m
1220
1230
See Remark 6
1239.8 m
1240
1250
1252.2 m
1260
1270


1279.8 m
1280
1290
1299.7 m
1300
1310
1319.6 m
1320
1330


1339.7 m
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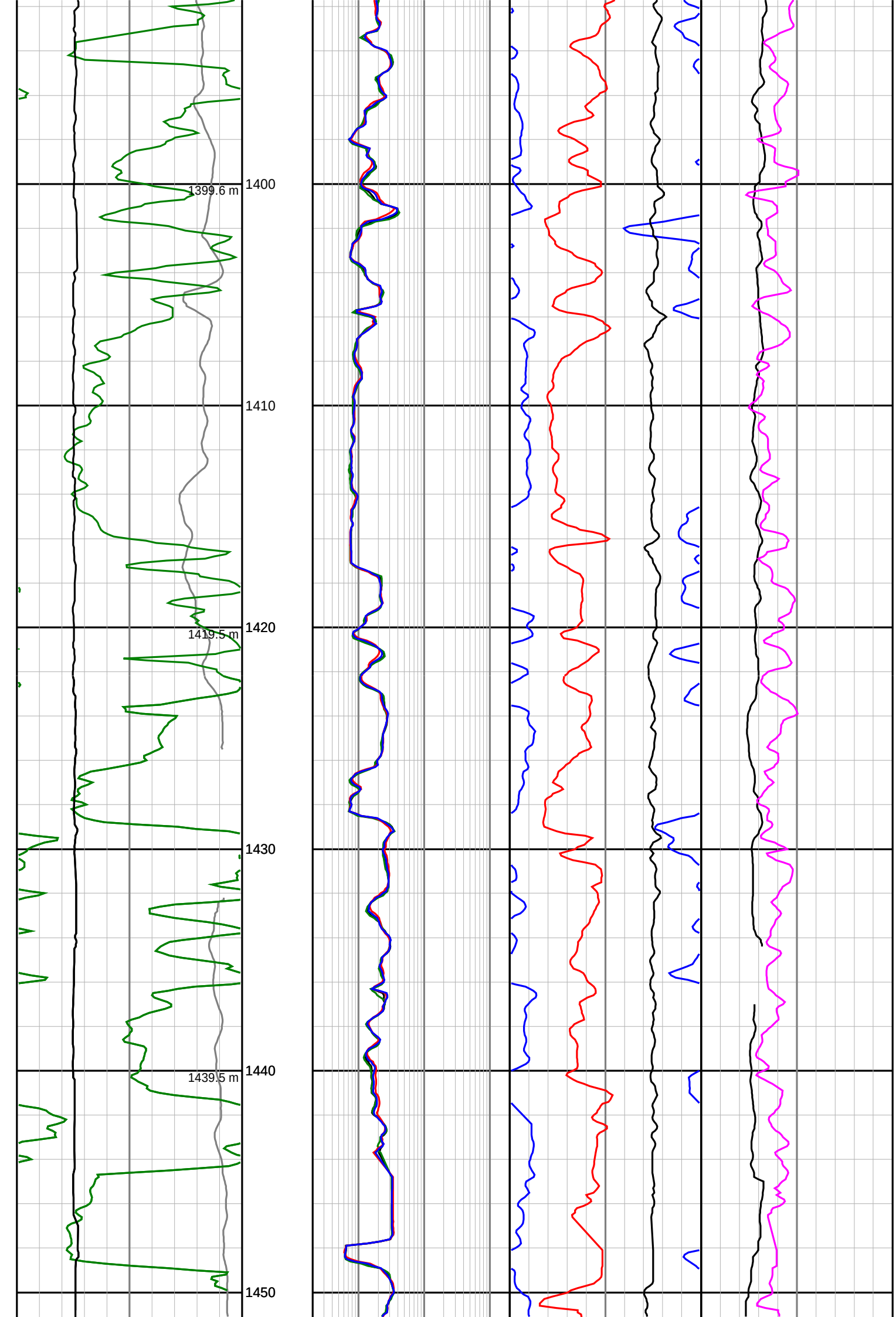
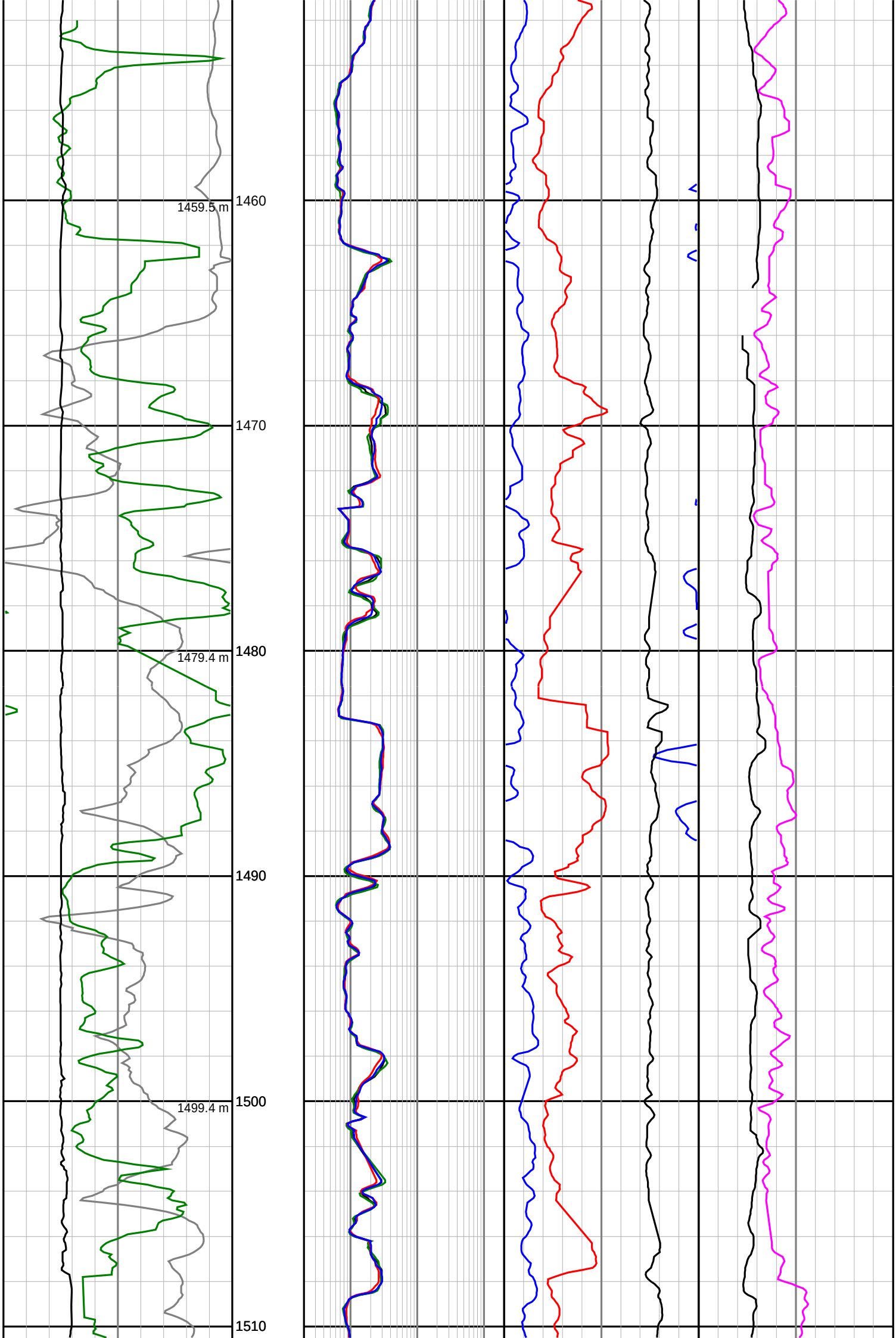
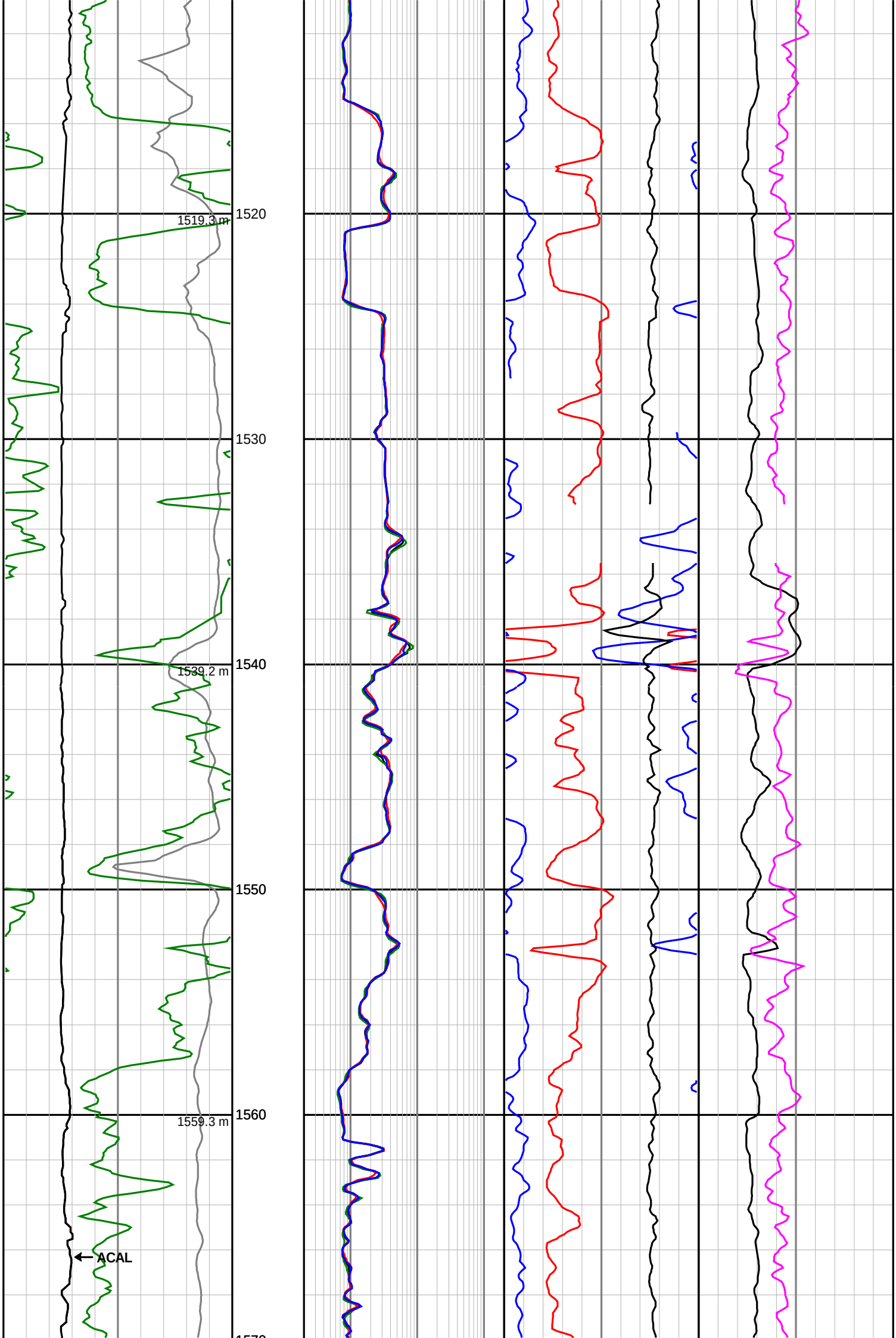
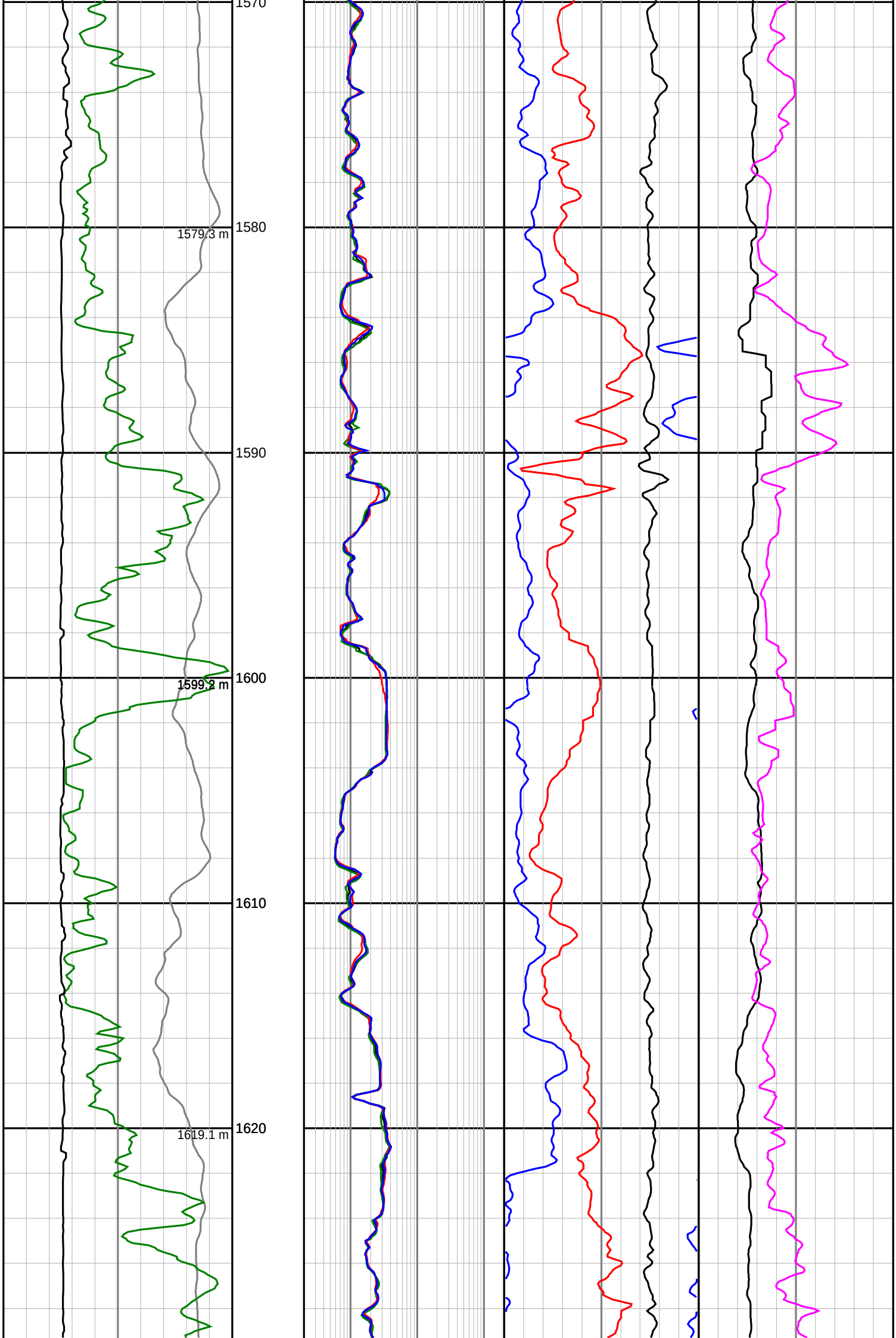
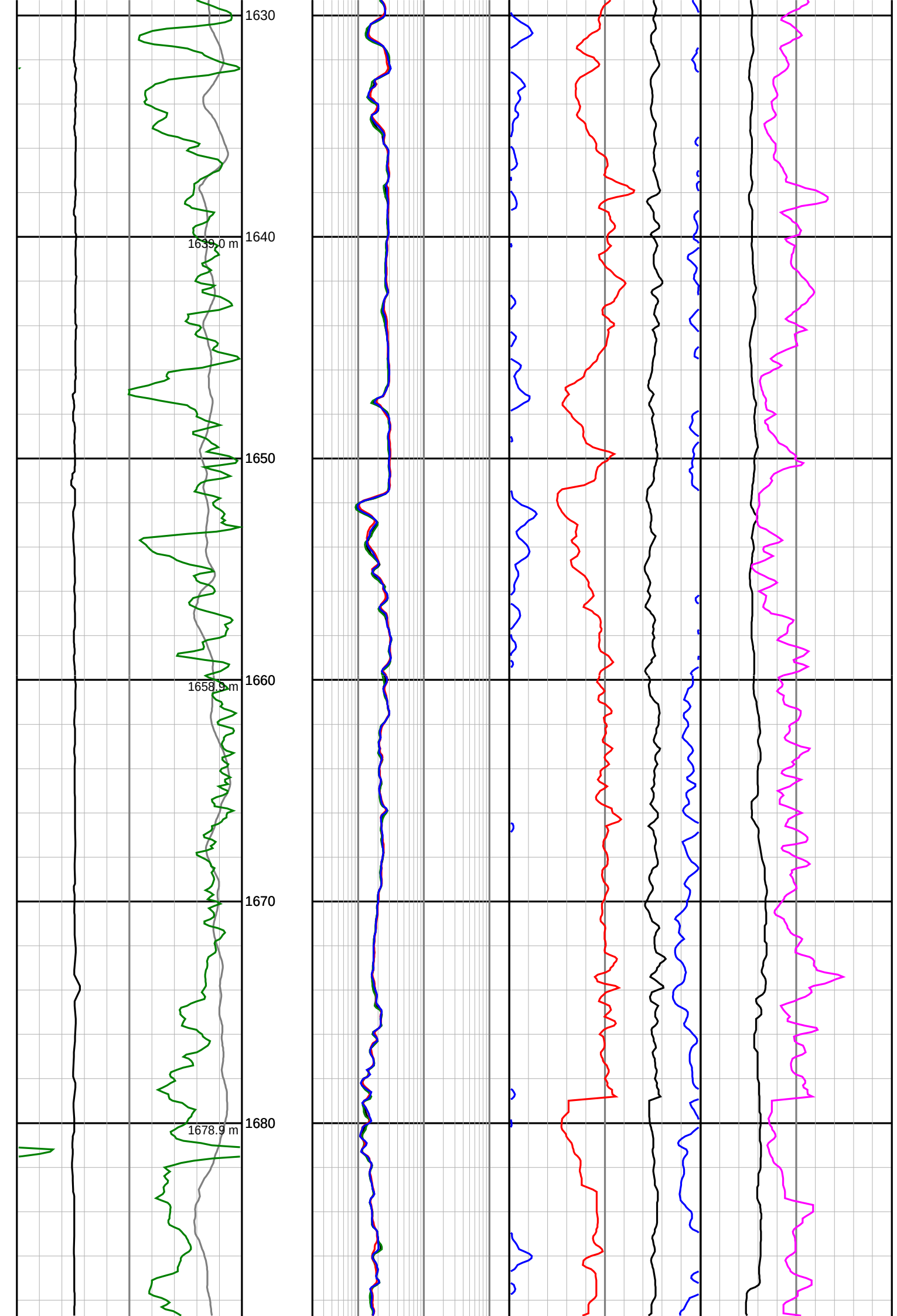
1350
1359.5 m
1360
1370
1379.5 m
1380
1390

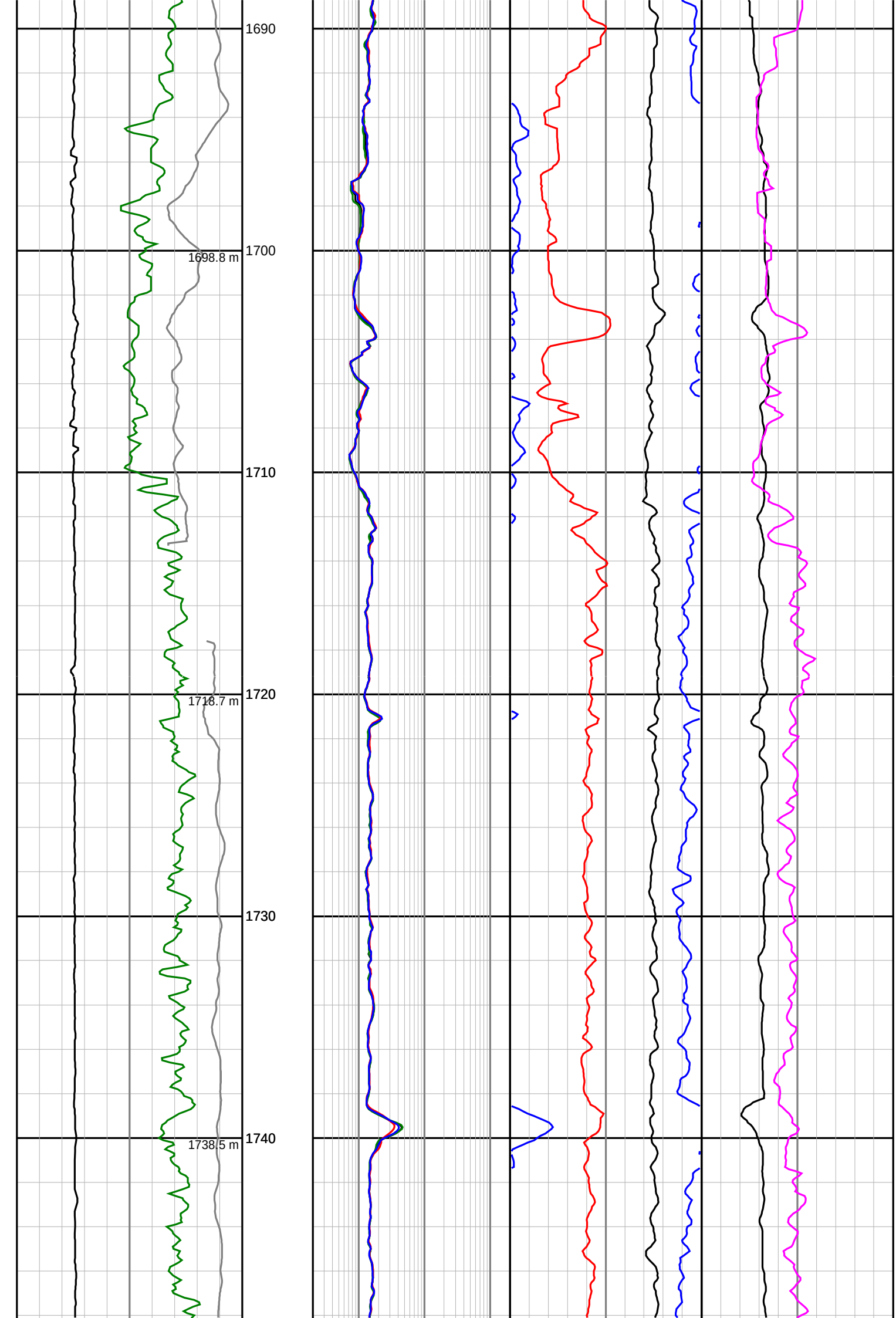

1399.6 m
1400
1410
1419.5 m
1420
1430
1439.5 m
1440
1450

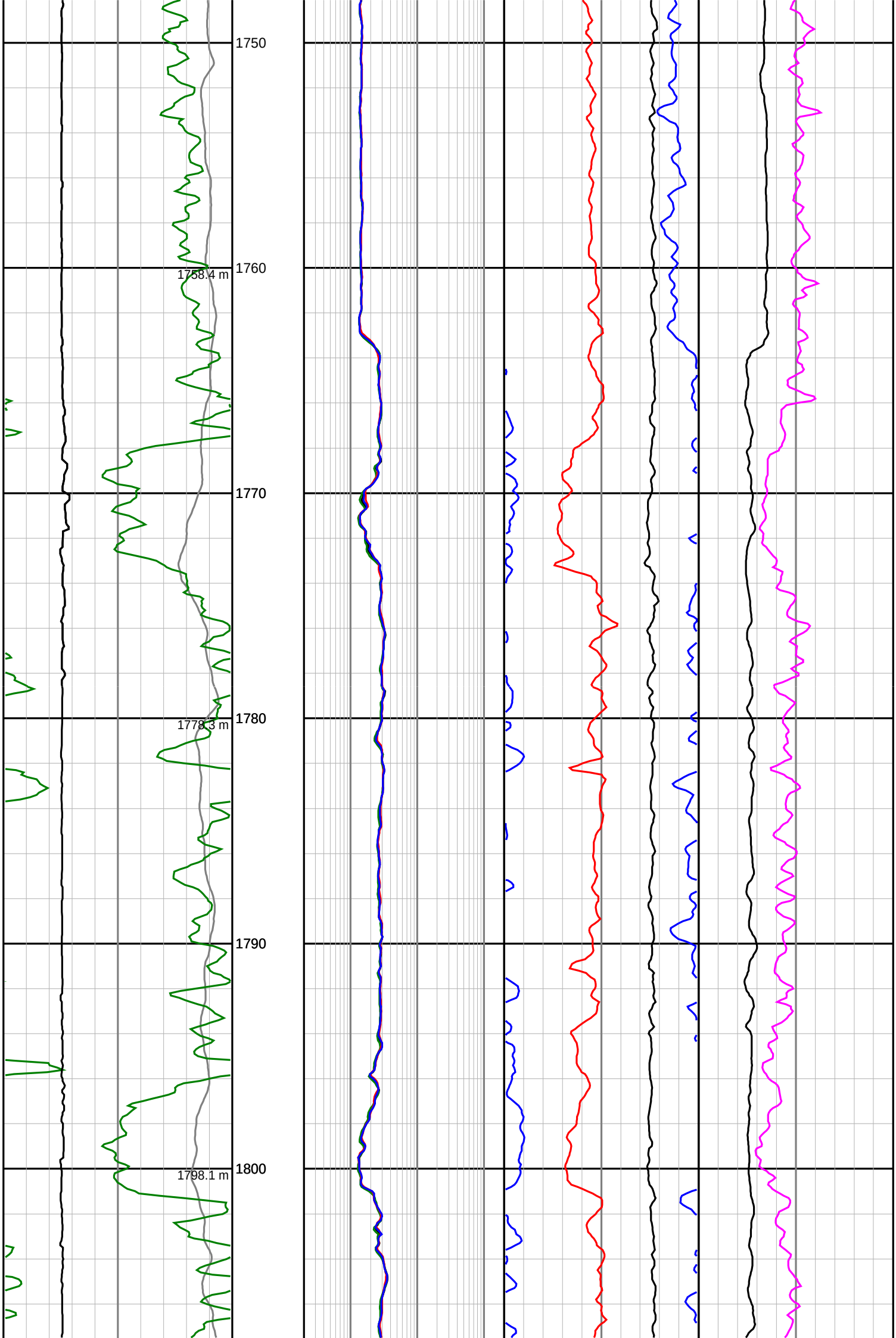

1459.5 m
1460
1470
1479.4 m
1480
1490
1499.4 m
1500
1510

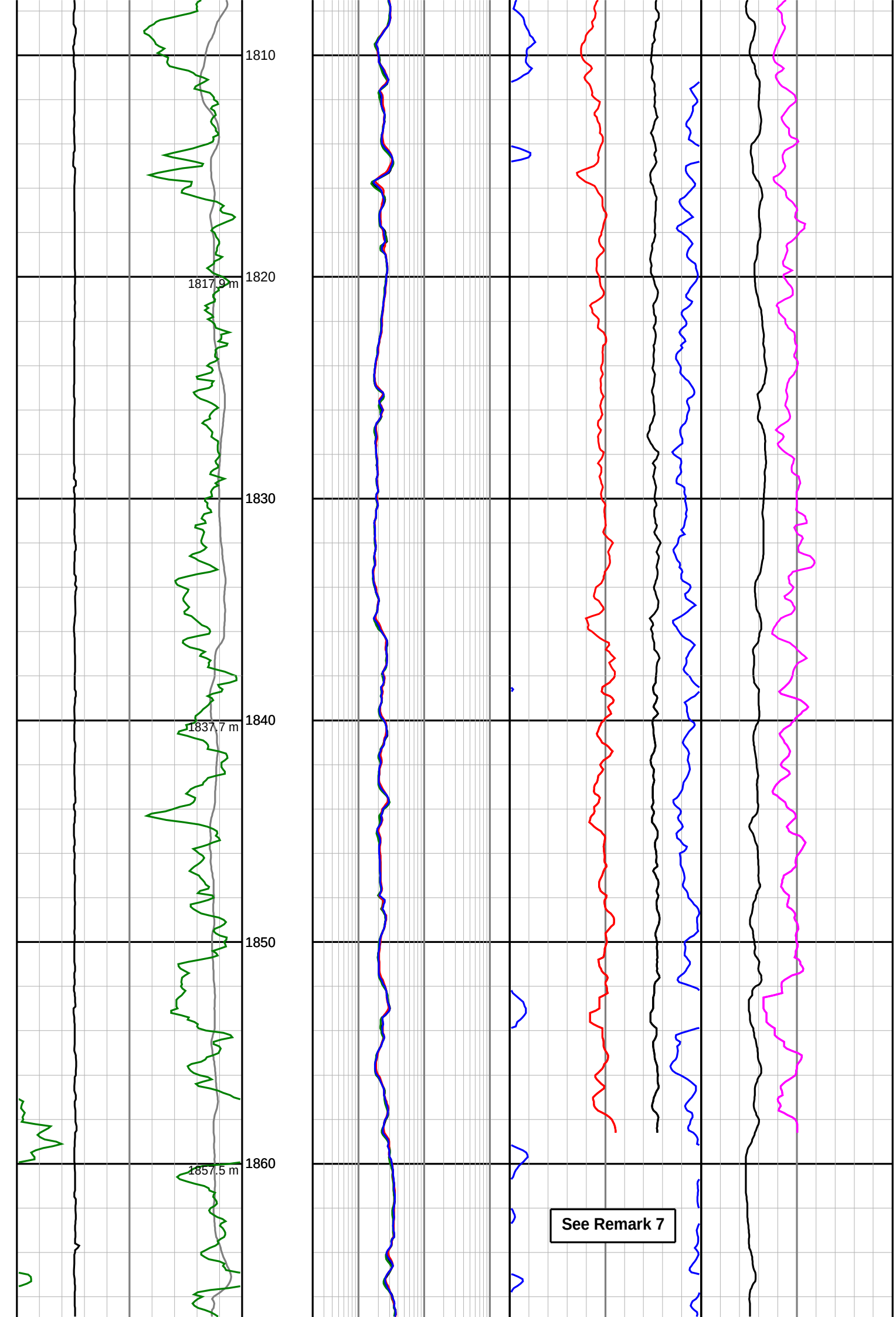

1519.3 m
1520
1530
1539.2 m
1540
1550
1559.3 m
1560
ACAL

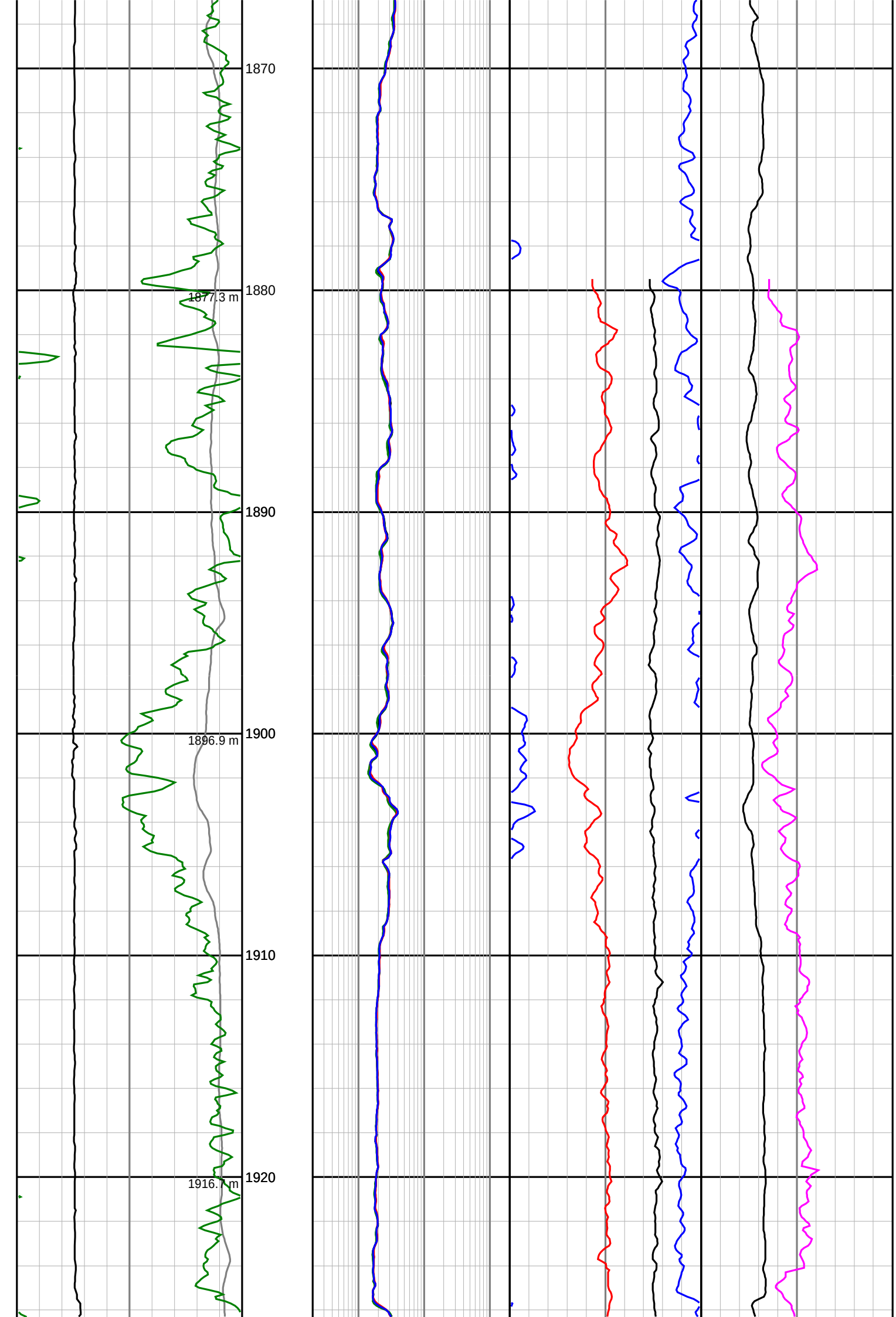

1570
1579.3 m
1580
1590
1599.3 m
1600
1610
1619.1 m
1620

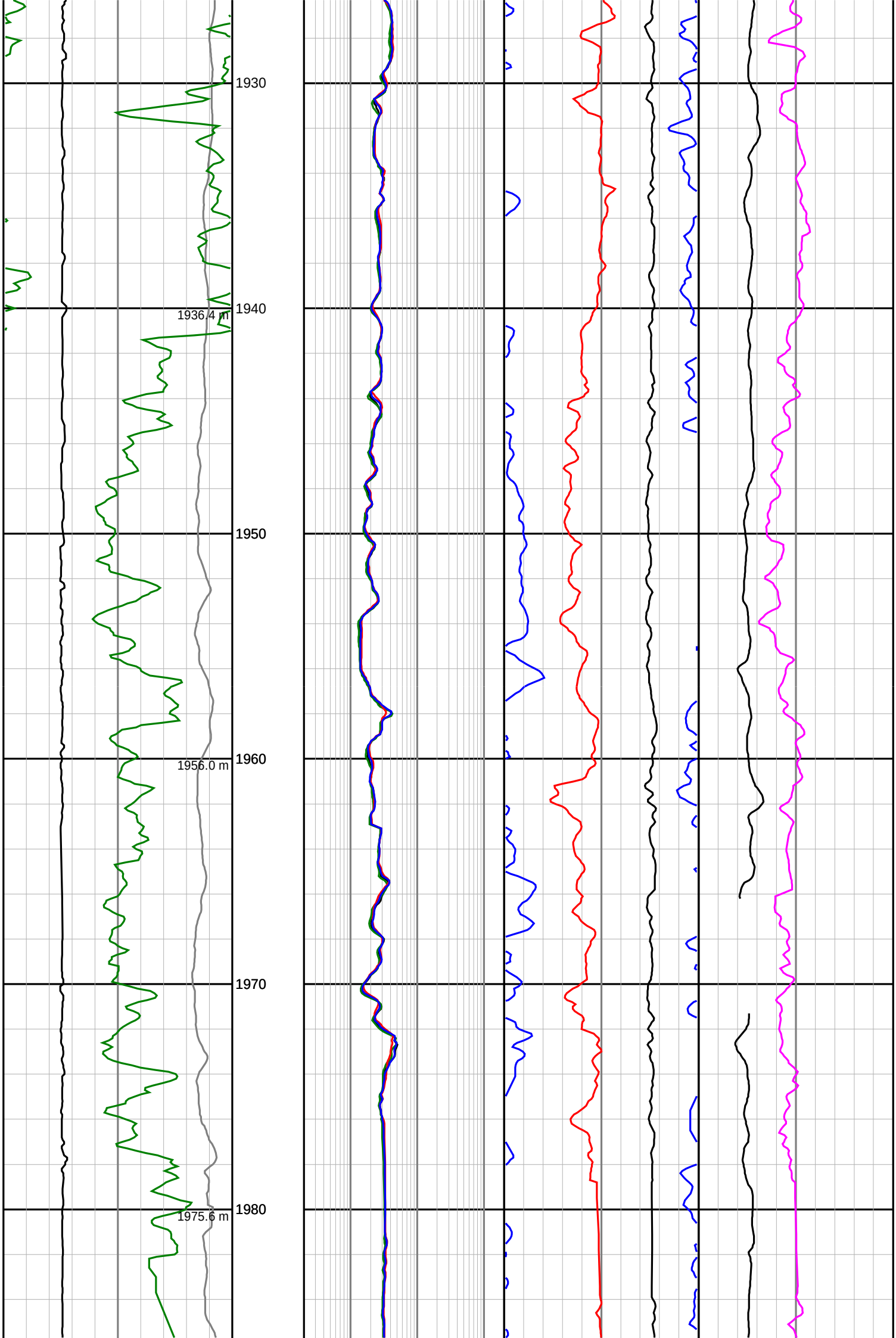

1630
1639.0 m
1640
1650
1658.9 m
1660
1670
1678.9 m
1680

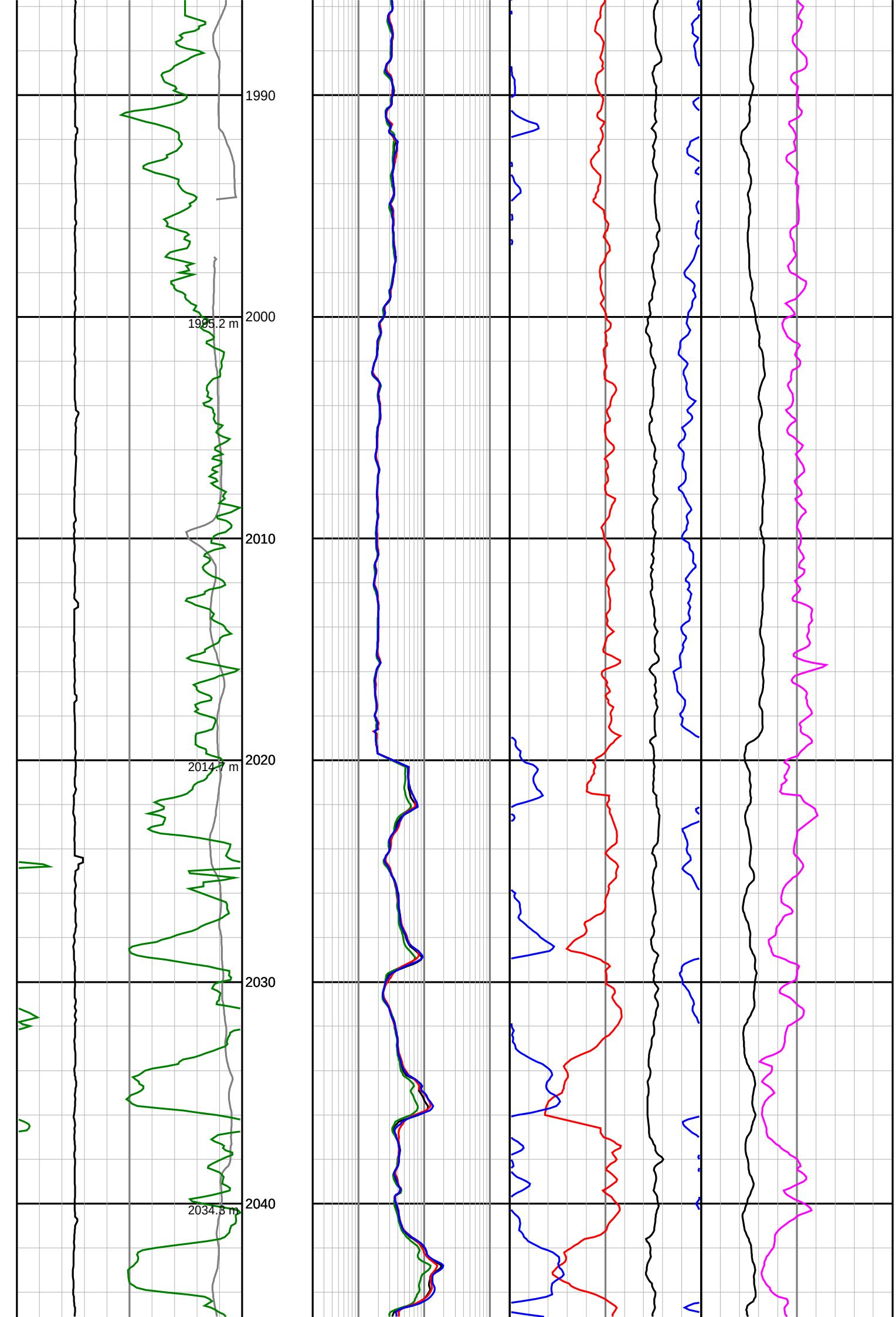

1690
1700
1698.8 m
1710
1720
1718.7 m
1730
1740
1738.5 m

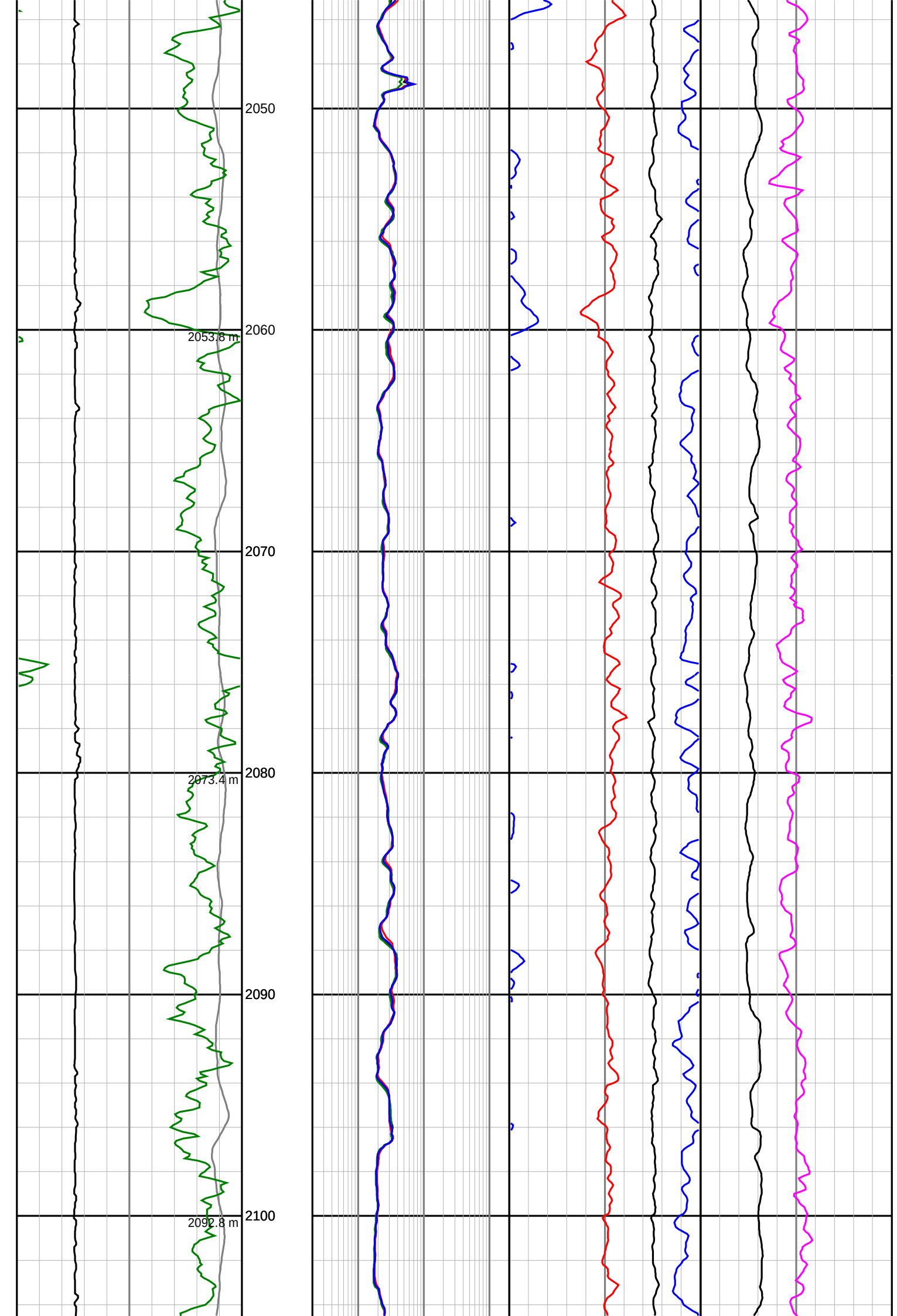

1750
1760
1758.4 m
1770
1780
1778.3 m
1790
1800
1798.1 m

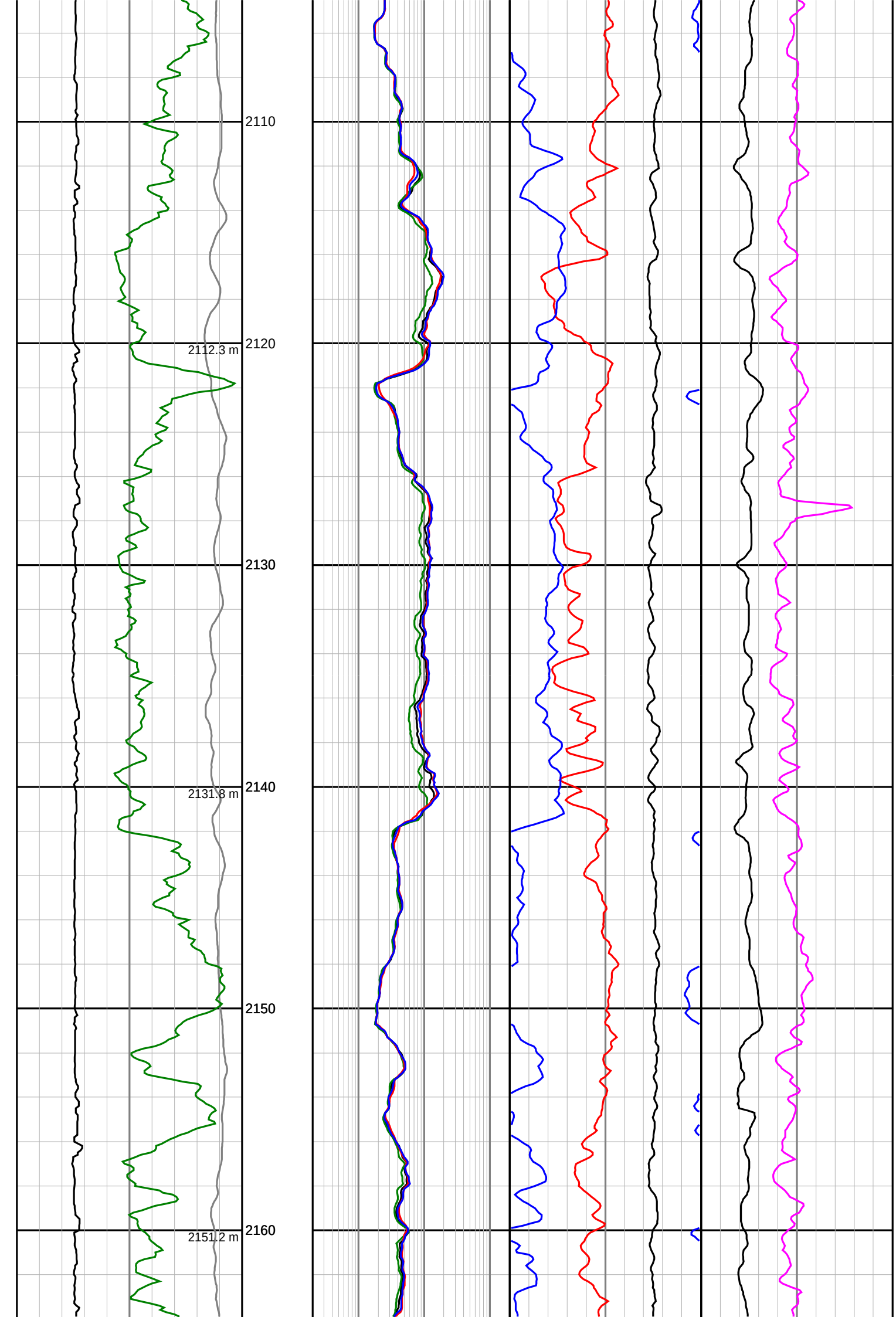

1810
1820
1817.9 m
1830
1840
1837.7 m
1850
1860
1857.5 m
See Remark 7

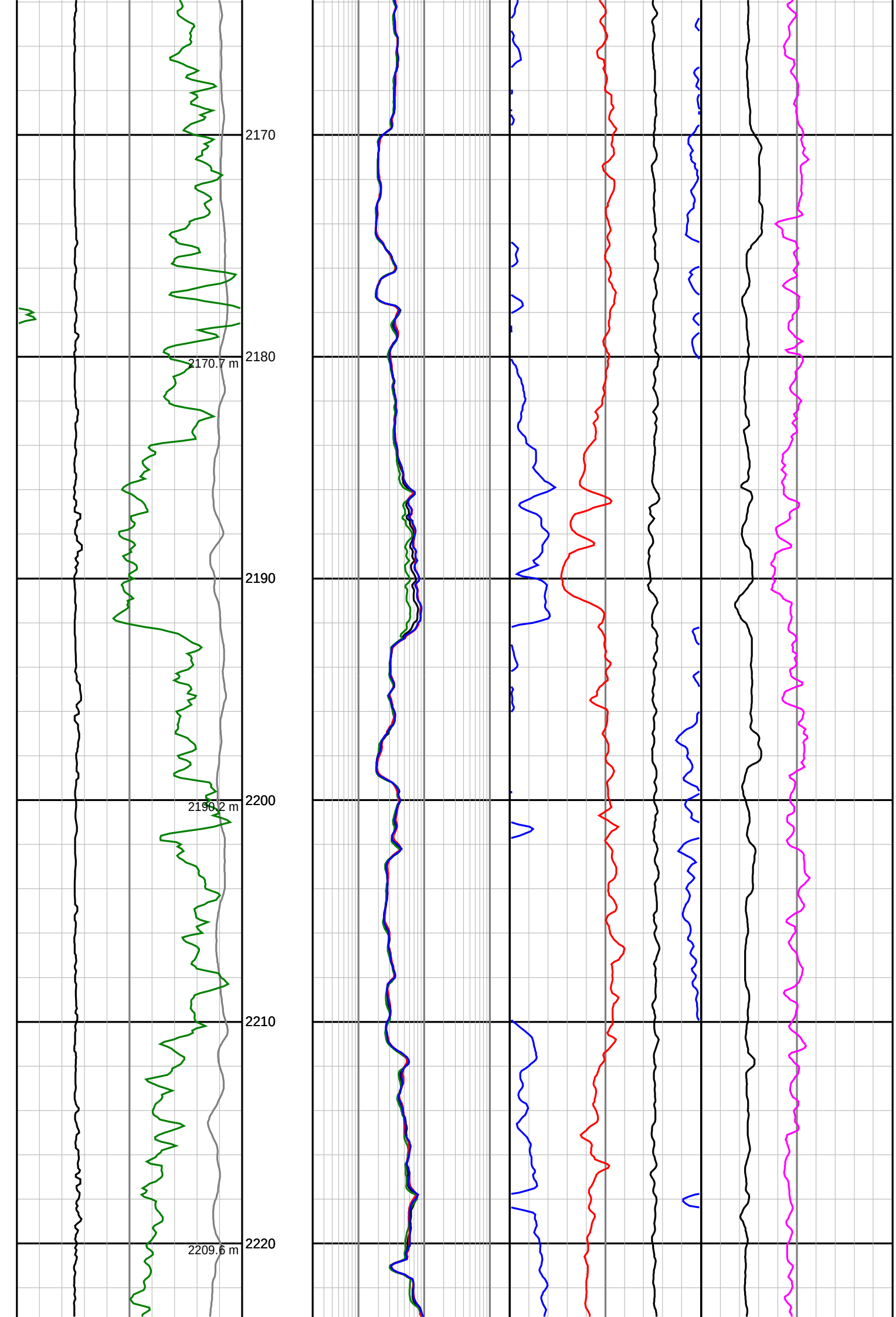

1870
1880
1877.3 m
1890
1900
1896.9 m
1910
1920
1916.7 m

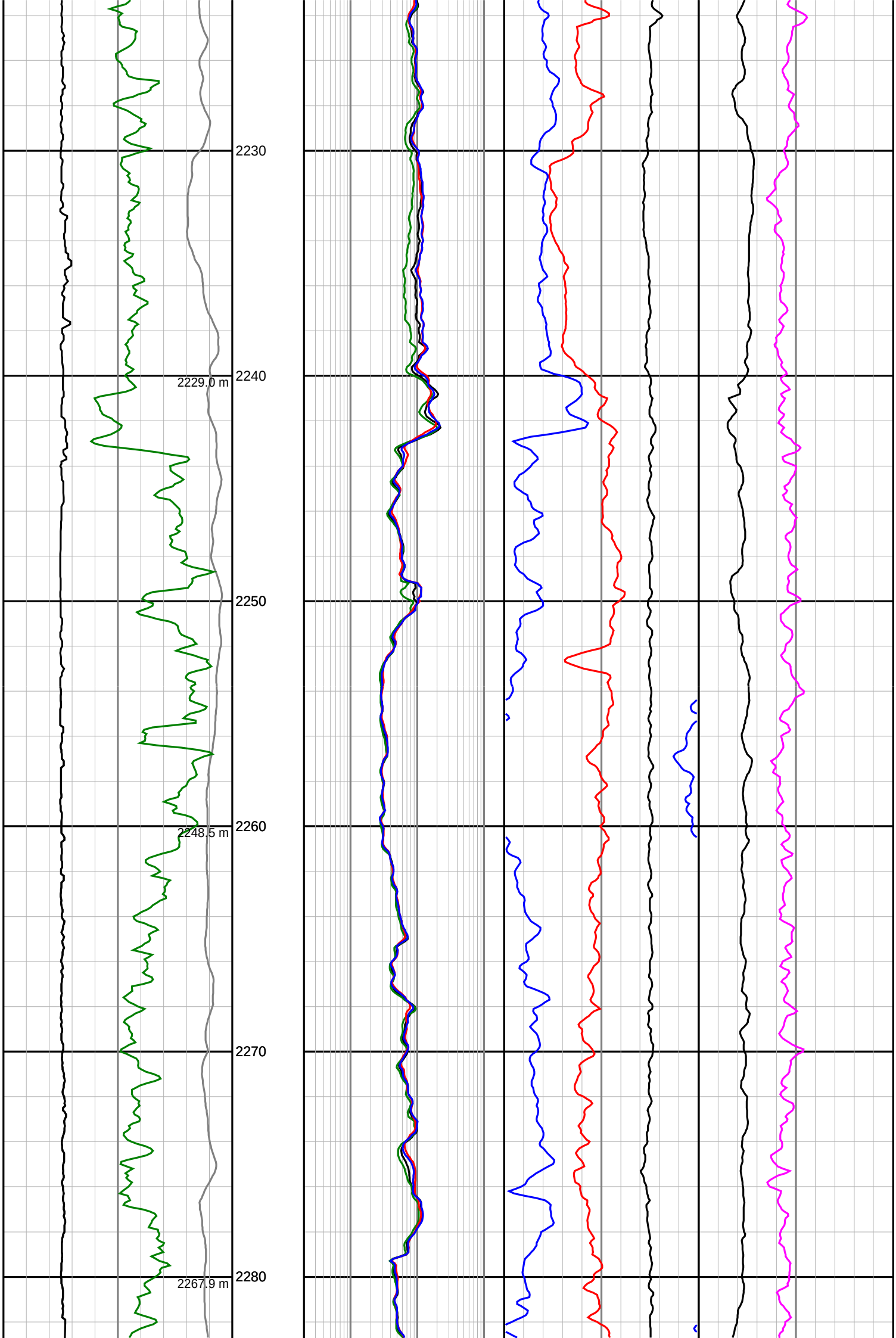

1930
1936.4 m
1940
1950
1956.0 m
1960
1970
1975.6 m
1980

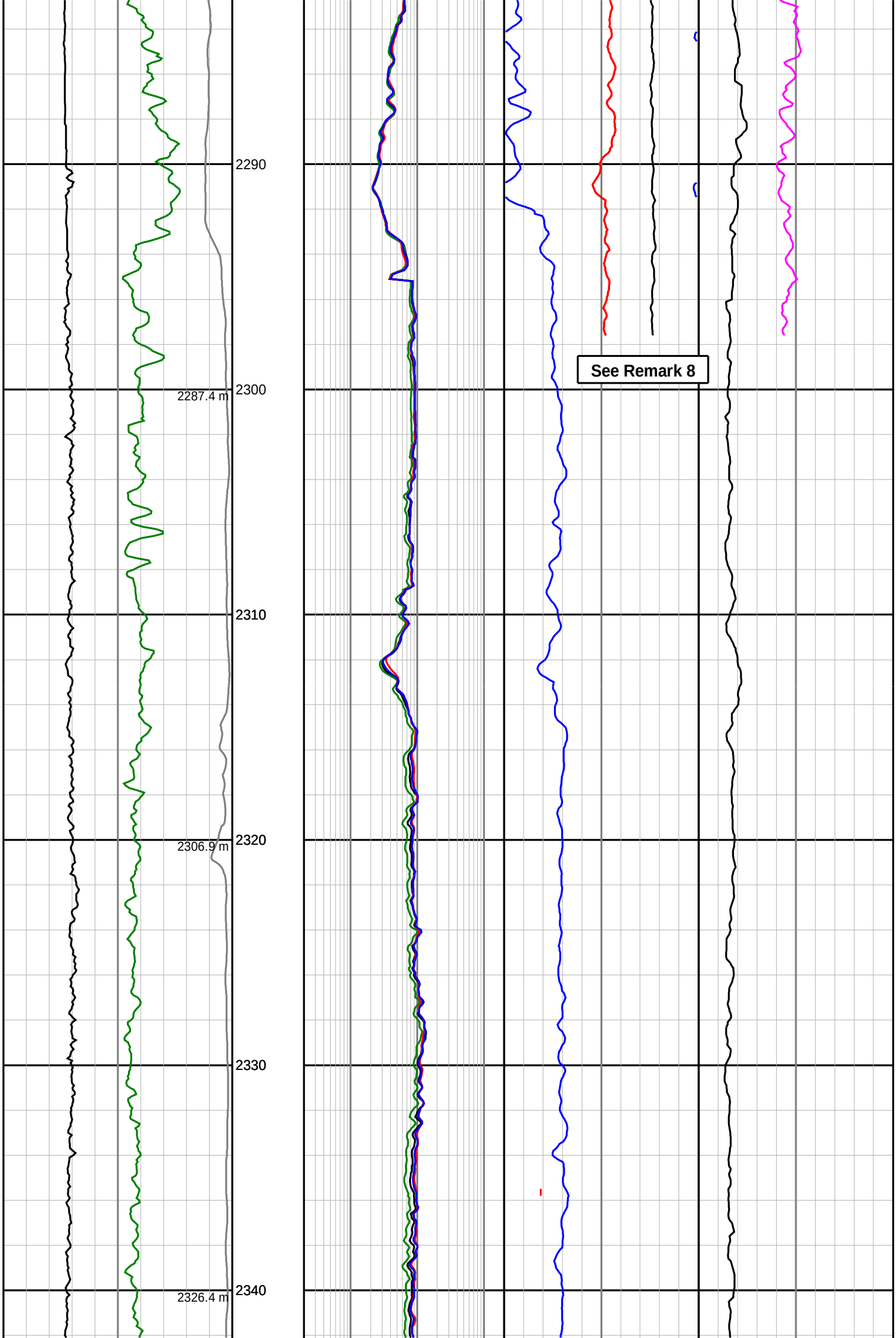

1990
2000
1995.2 m
2010
2020
2014.7 m
2030
2040
2034.3 m

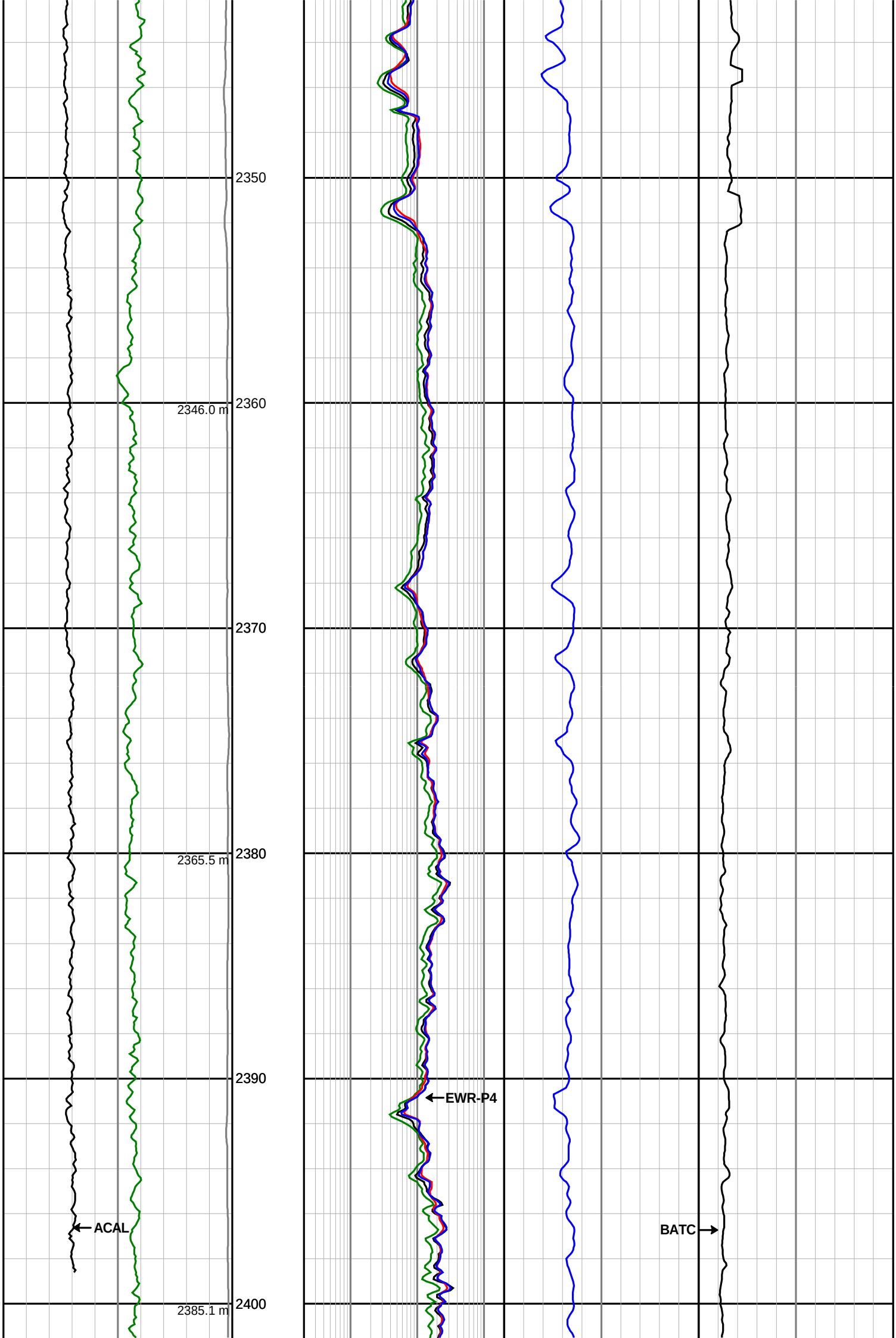

2050
2053.8 m
2060
2070
2073.4 m
2080
2090
2092.8 m
2100

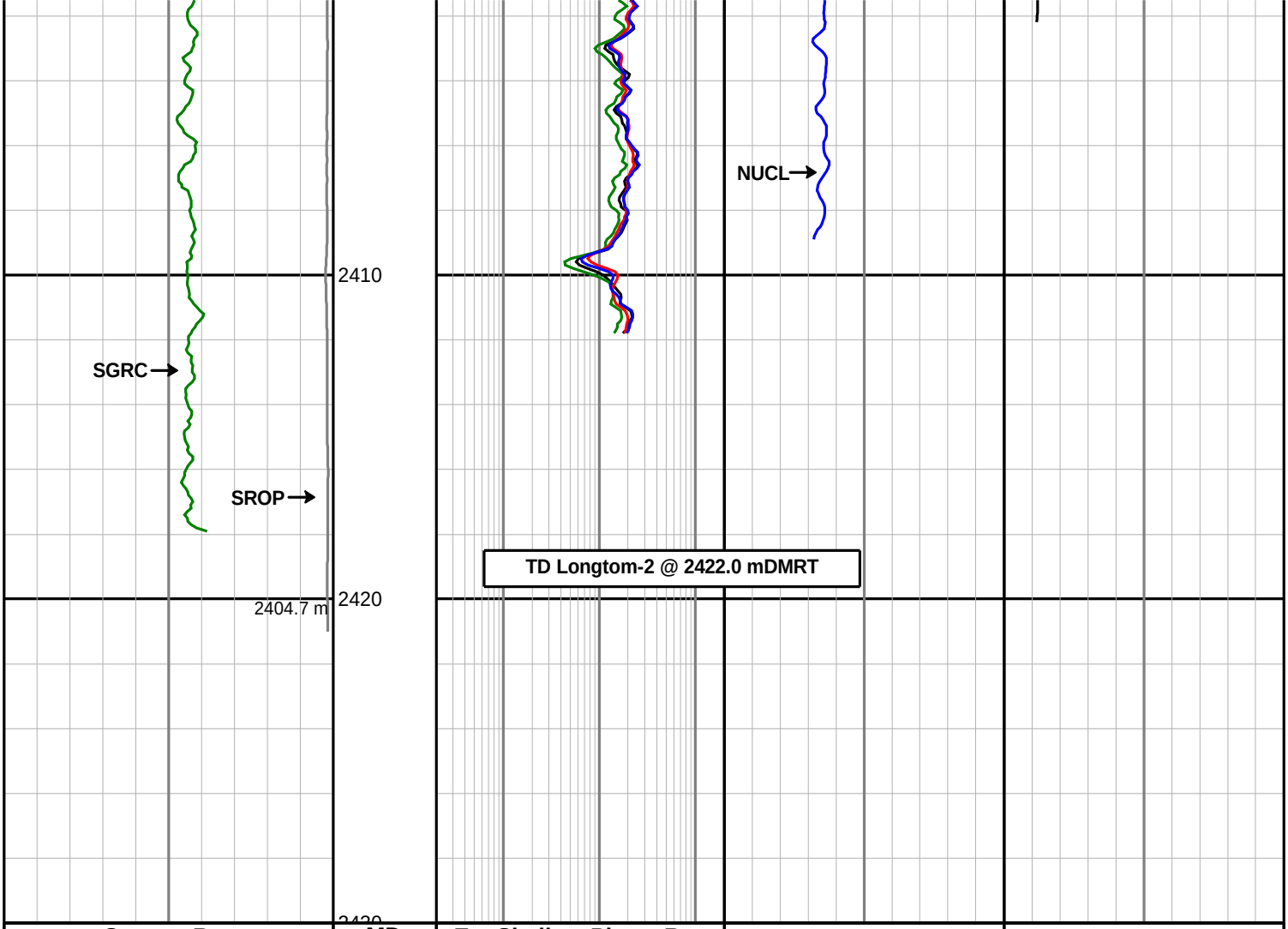

2110
2112.3 m
2120
2130
2131.8 m
2140
2150
2151.2 m
2160


2170
2170.7 m
2180
2190
2190.2 m
2200
2210
2209.6 m
2220


2230
2240
2229.0 m
2250
2260
2248.5 m
2270
2280
2267.9 m


2290
2300
2310
2320
2330
2340
2287.4 m
2306.9 m
2326.4 m
See Remark 8


2350
2346.0 m
2360
2370
2365.5 m
2380
2390
EWR-P4
ACAL
BATC
2385.1 m
2400



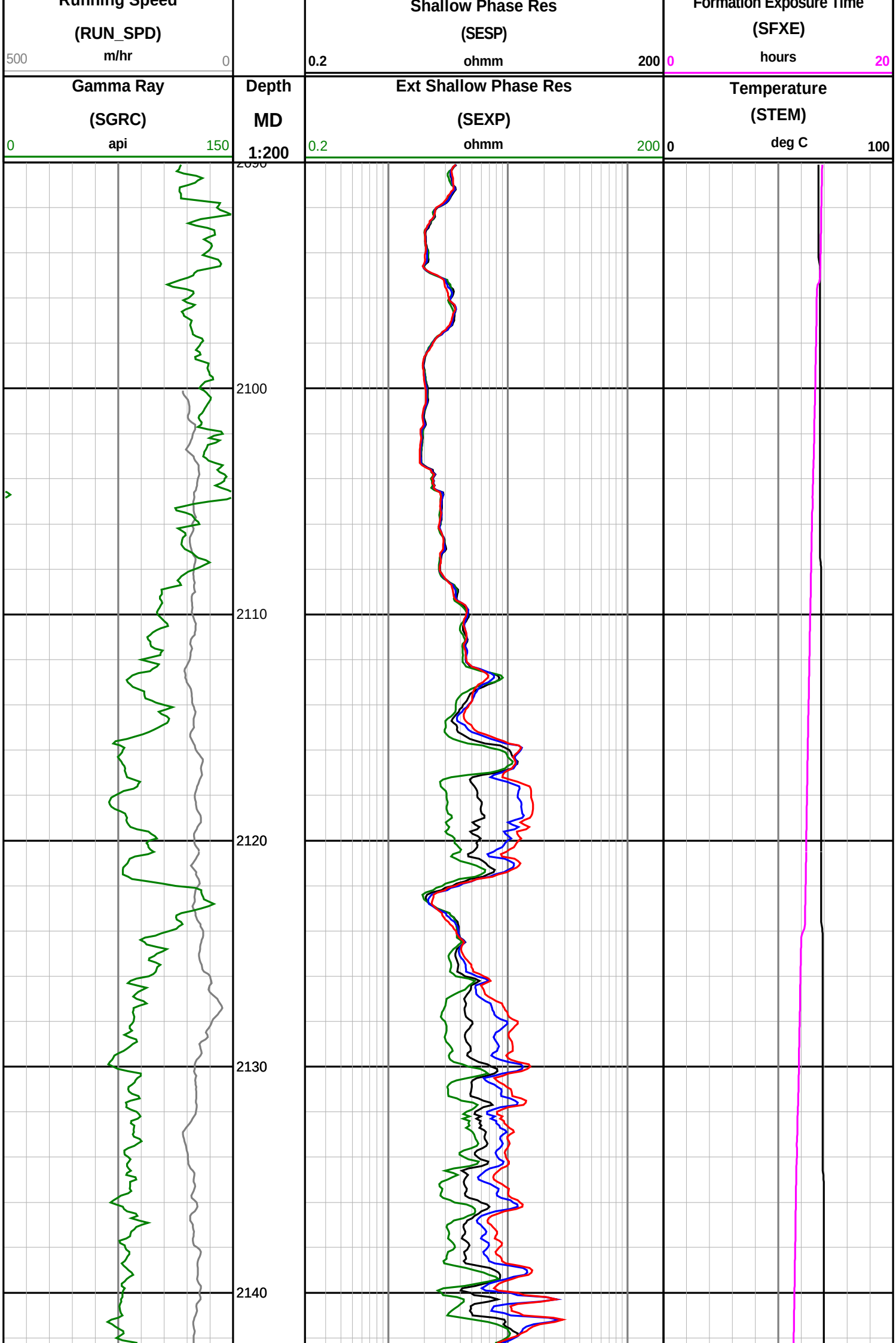
Gamma Ray (SGRC)	MD Depth 1:200	Ext Shallow Phase Res (SEXP)	Standoff Correction (SCO2)	Compressional Slowness (BATC)
0 api 150		0.2 ohmm 200	-0.75 gram per cc 0.25	40 microsec per ft 240
Rate of Penetration (SROP)		**Shallow Phase Res (SESP)**	**Neutron Porosity (NUCL)**	**Photoelectric Effect (SNP2)**
500 m/hr 0		0.2 ohmm 200	0.45 v/v -0.15	0 barns/electron 10
Acoustic Caliper (ACAL)		**Medium Phase Res (SEMP)**	**Density (SBD2)**	
6 inches 16		0.2 ohmm 200	1.95 gram per cc 2.95	
TVD		**Deep Phase Res (SEDP)**		
metres		0.2 ohmm 200		

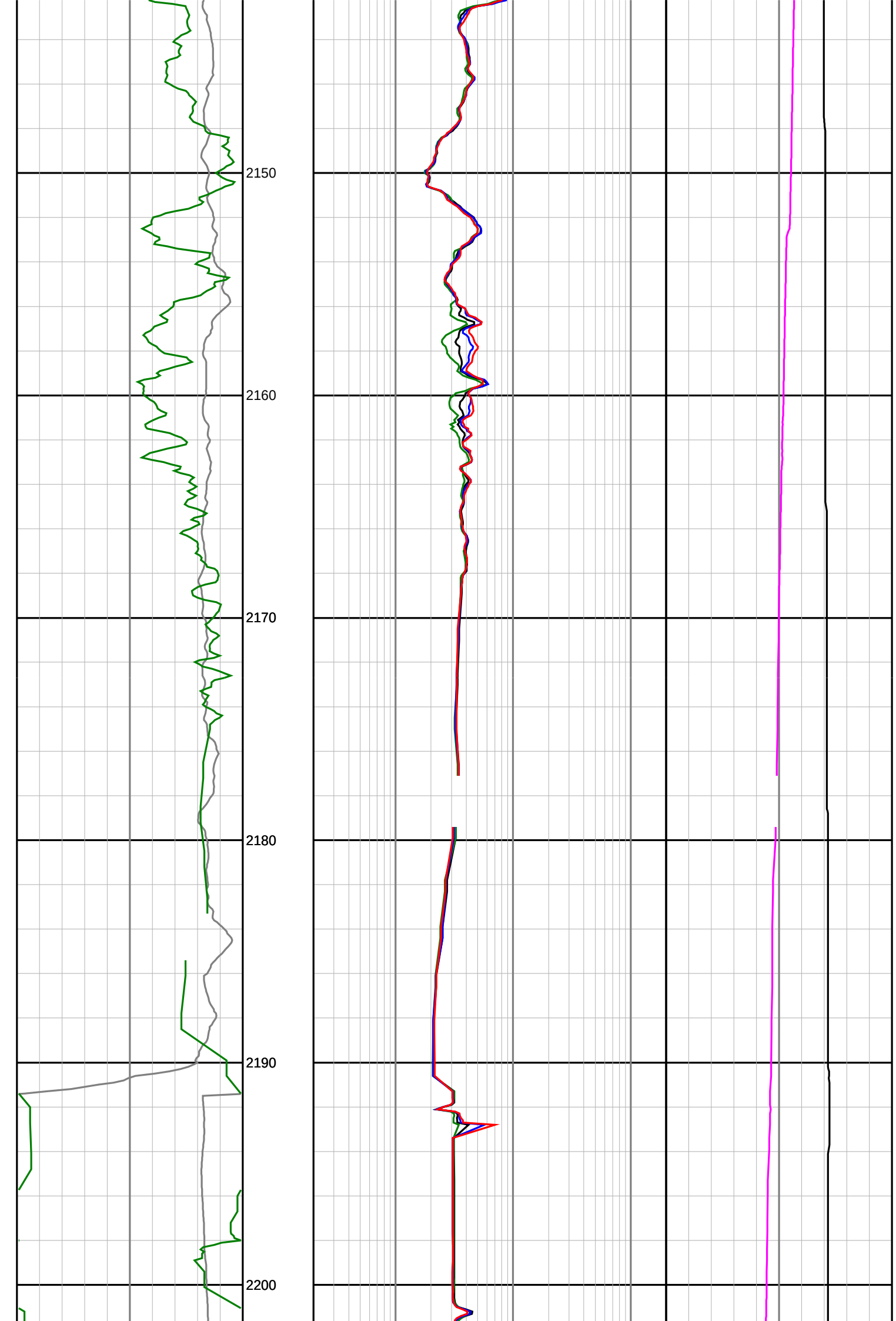
Apache Energy Ltd
Longtom-2

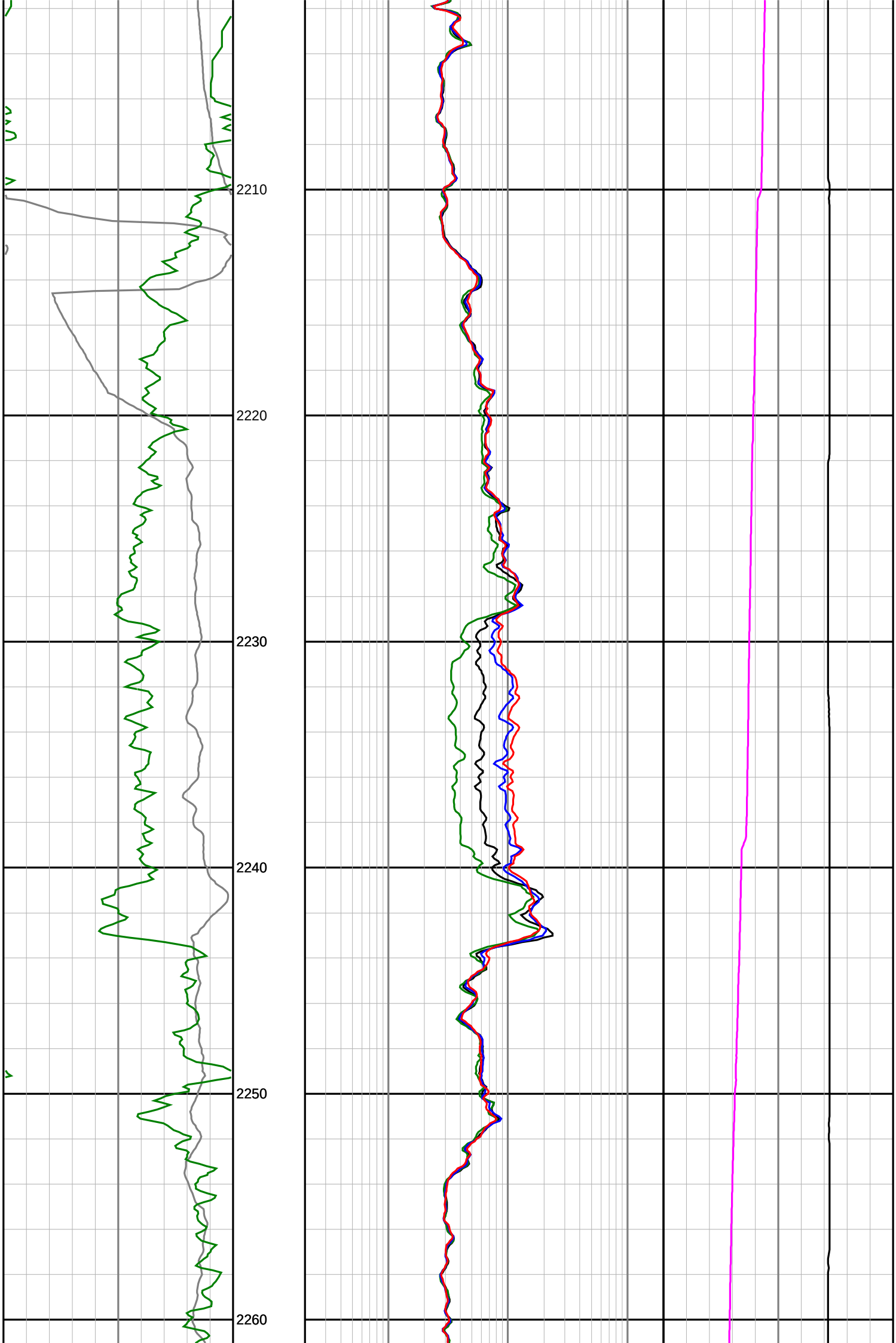
Repeat Section - 1, 2210.0 to 2300.0 mMDRT
Repeat Section - 2, 2100.0 to 2160.0 mMDRT

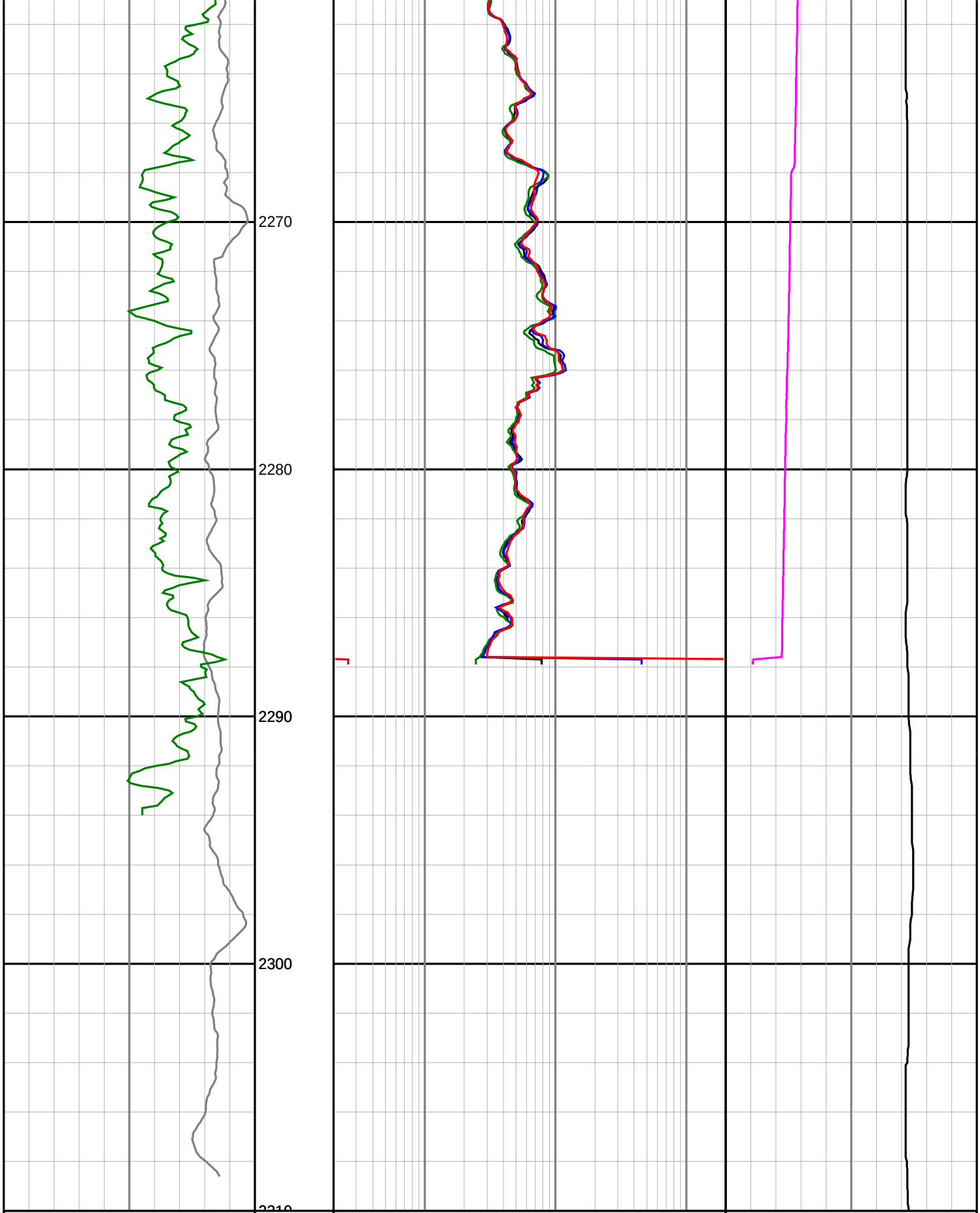
Wiped at 18:20 to 21:38 while pulling out of the whole with no rotary and no pumps after LWD Run 200

Deep Phase Res (SEDP)	
0.2 ohmm 200	
Medium Phase Res (SEMP)	
0.2 ohmm 200	
Running Speed	**Formation Exposure Time**


Running Speed
(RUN_SPD)
500
m/hr
0
Shallow Phase Res
(SESP)
0.2
ohmm
200
Formation Exposure Time
(SFXE)
0
hours
20
Gamma Ray
(SGRC)
0
api
150
Depth
MD
1:200
Ext Shallow Phase Res
(SEXP)
0.2
ohmm
200
Temperature
(STEM)
0
deg C
100
2100
2110
2120
2130
2140


2150
2160
2170
2180
2190
2200


2210
2220
2230
2240
2250
2260



Gamma Ray (SGRC)	Depth	Ext Shallow Phase Res (SEXP)	Temperature (STEM)
0 api 150	MD 1:200	0.2 ohmm 200	0 deg C 100
Running Speed (RUN_SPD)		**Shallow Phase Res (SESP)**	**Formation Exposure Time (SFXE)**
500 m/hr 0		0.2 ohmm 200	0 hours 20
		Medium Phase Res (SEMP)	

DIRECTIONAL SURVEY REPORT

Apache Energy Ltd
Longtom-2
Exploration
Victoria
Australia
AU-FE-0003298447
Final survey is projected to TD.

Measured Depth (metres)	*Inclination (degrees)*	*Direction (degrees)*	*Vertical Depth (metres)*	*Latitude (metres)*	*Departure (metres)*	*Vertical Section (metres)*	*Dogleg (deg/30m)*
78.300	0.00	0.00	78.300	0.000 N	0.000 E	0.000	TIE-IN
82.553	0.97	258.66	82.553	0.007 S	0.035 W	-0.031	6.83
112.760	0.85	147.07	112.758	0.244 S	0.164 W	-0.287	1.49
141.180	0.89	146.91	141.174	0.605 S	0.070 E	-0.362	0.05
167.690	1.01	154.86	167.681	0.990 S	0.282 E	-0.469	0.21
195.240	1.07	154.25	195.226	1.442 S	0.497 E	-0.620	0.06
280.640	0.94	157.28	280.613	2.804 S	1.113 E	-1.098	0.05
309.214	0.77	146.69	309.184	3.183 S	1.310 E	-1.212	0.24
337.704	0.79	157.77	337.671	3.526 S	1.490 E	-1.315	0.16
366.421	0.60	172.17	366.386	3.859 S	1.586 E	-1.472	0.27
424.641	0.46	168.46	424.604	4.391 S	1.674 E	-1.770	0.07
481.270	0.60	185.70	481.230	4.907 S	1.691 E	-2.110	0.11
566.250	0.73	188.21	566.205	5.883 S	1.569 E	-2.864	0.05
594.890	0.71	181.73	594.842	6.241 S	1.538 E	-3.131	0.09
623.800	0.70	174.98	623.750	6.597 S	1.548 E	-3.367	0.09
651.930	0.71	178.96	651.878	6.944 S	1.566 E	-3.590	0.05
680.500	0.56	173.05	680.446	7.261 S	1.587 E	-3.791	0.17
709.360	0.46	168.63	709.305	7.515 S	1.627 E	-3.936	0.12
738.170	0.32	152.68	738.114	7.700 S	1.686 E	-4.018	0.18
767.010	0.31	146.16	766.954	7.837 S	1.767 E	-4.052	0.04
795.700	0.25	96.83	795.644	7.909 S	1.873 E	-4.024	0.25
824.740	0.30	87.28	824.683	7.913 S	2.011 E	-3.926	0.07
853.150	0.47	59.73	853.093	7.851 S	2.185 E	-3.756	0.26
881.850	0.65	65.06	881.791	7.723 S	2.434 E	-3.487	0.20
910.570	0.94	47.41	910.509	7.494 S	2.756 E	-3.095	0.40
968.350	1.07	52.66	968.280	6.844 S	3.536 E	-2.081	0.08
1025.790	1.38	33.86	1025.707	5.944 S	4.349 E	-0.873	0.26
1055.310	1.47	38.91	1055.218	5.354 S	4.785 E	-0.152	0.16
1084.150	1.45	38.45	1084.048	4.779 S	5.245 E	0.577	0.02
1110.420	1.50	43.02	1110.309	4.267 S	5.686 E	1.249	0.14
1140.980	1.63	41.28	1140.858	3.649 S	6.245 E	2.079	0.14
1169.600	1.90	39.20	1169.464	2.976 S	6.813 E	2.954	0.29
1198.150	2.05	43.59	1197.997	2.239 S	7.465 E	3.932	0.22
1227.480	1.96	42.91	1227.309	1.492 S	8.168 E	4.956	0.10
1285.120	2.78	45.34	1284.900	0.212 N	9.833 E	7.336	0.43
1342.670	2.75	51.91	1342.383	2.044 N	11.911 E	10.106	0.17
1428.080	3.43	52.87	1427.668	4.852 N	15.563 E	14.691	0.24
1457.250	3.55	48.99	1456.784	5.972 N	16.941 E	16.463	0.27
1515.810	3.87	57.08	1515.222	8.236 N	19.967 E	20.220	0.31
1601.750	4.29	57.36	1600.944	11.544 N	25.106 E	26.235	0.15
1630.370	4.38	57.32	1629.482	12.711 N	26.927 E	28.362	0.10
1659.040	5.12	55.38	1658.054	14.028 N	28.900 E	30.703	0.79
1687.660	5.81	50.90	1686.544	15.666 N	31.074 E	33.410	0.85
1716.340	5.98	52.62	1715.072	17.488 N	33.387 E	36.344	0.26
1773.640	6.99	49.61	1772.005	21.558 N	38.413 E	42.796	0.56

HALLIBURTON

Longtom-2

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
1802.390	7.25	48.26	1800.534	23.899 N	41.098 E	46.356	0.32
1831.130	8.02	46.49	1829.019	26.486 N	43.904 E	50.173	0.84
1888.710	9.67	44.64	1885.912	32.695 N	50.218 E	59.025	0.87
1917.470	10.45	43.25	1914.229	36.314 N	53.704 E	64.042	0.85
1946.130	11.23	41.77	1942.377	40.288 N	57.343 E	69.415	0.86
1974.870	11.30	41.50	1970.564	44.484 N	61.073 E	75.004	0.10
2001.480	11.64	41.34	1996.642	48.452 N	64.573 E	80.270	0.38
2031.150	12.13	40.39	2025.676	53.073 N	68.570 E	86.345	0.54
2088.390	12.90	39.67	2081.556	62.571 N	76.545 E	98.655	0.41
2174.270	13.47	40.33	2165.172	77.574 N	89.136 E	118.096	0.21
2203.500	13.66	40.55	2193.587	82.794 N	93.584 E	124.908	0.20
2232.270	13.75	40.70	2221.538	87.967 N	98.022 E	131.682	0.09
2292.010	13.36	41.52	2279.614	98.516 N	107.226 E	145.608	0.22
2319.460	12.54	43.59	2306.365	103.050 N	111.383 E	151.740	1.03
2348.120	12.18	45.64	2334.361	107.418 N	115.692 E	157.870	0.59
2376.110	11.96	45.76	2361.732	111.507 N	119.881 E	163.723	0.24
2422.000	11.96	45.76	2406.625	118.142 N	126.695 E	173.232	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 47.00 DEGREES (GRID)
A TOTAL CORRECTION OF 13.97 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 2422.000 METRES
IS 173.232 METRES ALONG 47.00 DEGREES (GRID)

MWD RUN 100 - BHA

Cumulative Length (m)

HWDP — 257.54

Cross Over Sub — 118.47

Drill Collar — 117.34

Drilling Jars — 90.29

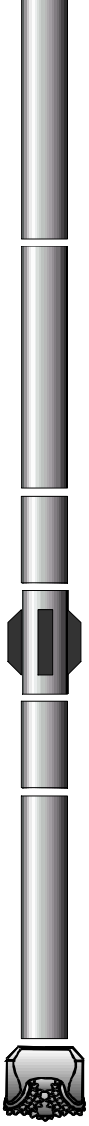
MWD RUN 100 - MWD

Sensor Measure Point Distance To Bit (m)

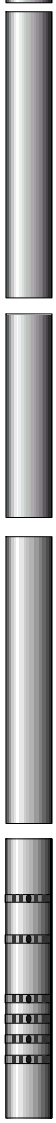
8 DGWD 650 System

PM — 30.190

ACAL — 27.260

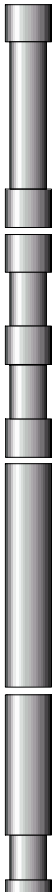


Drill collar	80.43
MWD	34.61
Float Sub	12.83
Integral Blade Stabilizer	12.05
Cross Over Sub	9.74
9-5/8" SperryDrill Lobe 3/4 - 4M	8.87
PDC	0.29



BAT	
HCIM	
DGR	17.710
EWR-P4	14.680

MWD RUN 200 - BHA

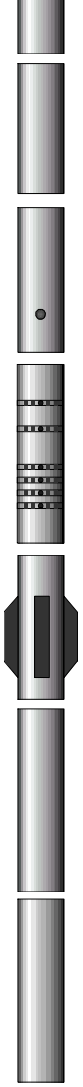


	Cumulative Length (m)
Drill Pipe (E)	390.90
HWDP	290.90
Drill Collar	151.53
Drilling Jars	132.74

MWD RUN 200 - MWD

	Sensor Measure Point Distance To Bit (m)
Positive Pulser	
TM	
Hang-off Sub	
PM	33.620
ACAL	30.700
BAT	

Drill Collar	123.23
Integral Blade Stabilizer	39.66
MWD	38.03
Float Sub	10.43
Integral Blade Stabilizer	9.93
6-3/4" SperryDrill Lobe 1/2 - 3M	7.91
PDC	0.23



HCIM	
CNP	20.520
EWR-P4	17.540
SLD	14.790
DDS	0
DGR	11.490

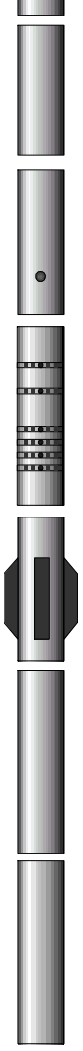
MWD RUN 300 - BHA

	Cumulative Length (m)
Drill Pipe (E)	382.10
HWDP	282.10
Drill Collar	143.09
Drilling Jars	124.30

MWD RUN 300 - MWD

	Sensor Measure Point Distance To Bit (m)
Positive Pulser	
TM	
Hang-off Sub	
PM	25.280
ACAL	22.360
BAT	

Drill Collar	114.79
Integral Blade Stabilizer	31.32
MWD	29.69
Float Sub	2.09
Integral Blade Stabilizer	1.59
Tricone	0.25



HCIM	
CNP	12.180
EWR-P4	9.200
SLD	6.450
DDS	0
DGR	3.150