

SlimPulse - Gamma Ray

2 in. / 100 ft and 5 in. / 100 ft True Vertical Depth



Recorded Mode, Composite Log

Company: Noble Energy INC

Well: NCLP AA06-64-1AHNA

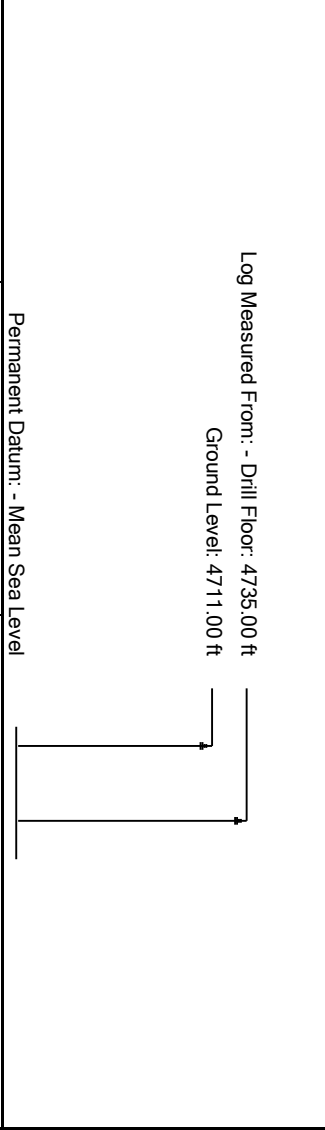
Field: Wattenberg #90750

County: Weld #123

State: Colorado

Country: USA

Section:	4	APIN:	05-123-39027
Township:	6N	Rig Name:	H&P 277
Range:	63W	Rig Type:	Top Drive
FL:	NAD83 Colorado State Plane, Northern Zone, US Feet		
FL1:	Latitude: N 40° 30' 52.42", Northing: 1432020.385 ftUS		
FL2:	Longitude: W 104° 27' 3.10", Easting: 3291695.777 ftUS		



Permanent Datum: - Mean Sea Level

Acquisition Dates:	27-Jul-2014 -- 04-Aug-2014	Other Services:	
Log Interval:	839.00(ft)TVD to 6679.00(ft)TVD	Directional Drilling	
Index Types:	True Vertical Depth	Surveys / Continuous D&I	
Index Scales:	1:600 2" / 100'; 1:240 5" / 100'	Downhole Temperature	
Depth Source:	Driller's Depth	Downhole Shocks	
Depth Sensor:	PASON		
Print Type:	Final		
Spud Date:	27-Jul-2014		



Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

Contents

- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Borehole Size/Casing/Tubing Record
- 5. Operational Run Summary
- 6. Borehole Fluids
- 7. Remarks and Equipment Summary
- 8. Well Composite
  - 8.1 Integration Summary
  - 8.2 Software Version
  - 8.3 Composite Summary
  - 8.4 Log ( Final TVD Log )
  - 8.5 Parameter Listing
- 9. Well Composite
  - 9.1 Integration Summary
  - 9.2 Software Version
  - 9.3 Composite Summary

9.4 Log ( Final TVD Log )	
9.5 Parameter Listing	
10. Survey Record	
11. Calibration Report	
12. Tail	

Borehole Size/Casing Record						
Bit						
Bit Size ( in )	13.5	8.75	6.125			
Top Driller ( ft )	24	840	6980			
Bottom Driller ( ft )	840	6980	16309			
Casing						
Size ( in )	9.625	7				
Weight ( lbm/ft )	36	36				
Inner Diameter ( in )	8.921	6.28				
Grade	N/A	N/A				
Top Driller ( ft )	24	24				
Bottom Driller ( ft )	840	6968				

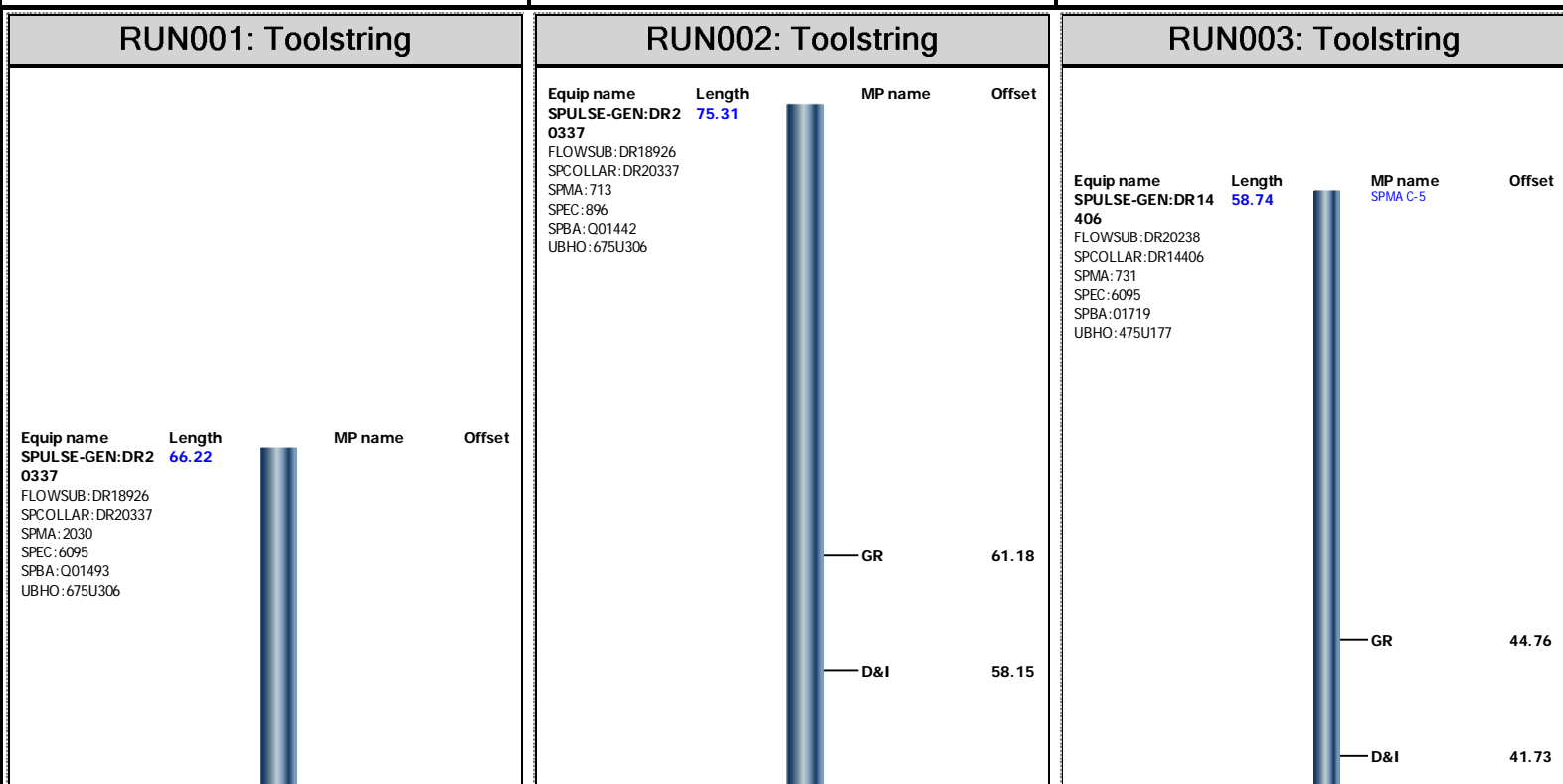
Operational Run Summary						
Parameter ( unit )	RUN001	RUN002	RUN003			
Date Log Started	27-Jul-2014	28-Jul-2014	31-Jul-2014			
Time Log Started	12:43:25	21:10:04	07:20:19			
Date Log Finished	28-Jul-2014	30-Jul-2014	04-Aug-2014			
Time Log Finished	15:58:03	04:30:44	19:03:00			
Bit Size ( in )	8.750	8.750	6.125			
Bit Start Depth ( ft )	840.00	5993.00	6980.00			
Bit Stop Depth ( ft )	5993.00	6980.00	16309.00			
Top Log Interval ( ft )	840.00	5940.00	6918.00			
Bottom Log Interval ( ft )	5940.00	6918.00	16264.00			
Max Hole Deviation ( deg )	10.90	80.85	91.44			
Azimuth of Max Deviation ( deg )	198.34	268.67	268.81			
Logging Unit Number	Command Center	Command Center	Command Center			
Logging Unit Location	Zone 2	Zone 2	Zone 2			
Recorded By	N COOPER	N COOPER	N COOPER			
Witnessed By	Cliff Kester	CLIFF KESTER	CLIFF KESTER			
Service Order Number	14CCO0607	14CCO0607	14CCO0607			

Borehole Fluids						
Parameter( unit )	RUN001	RUN002	RUN003			
Fluid Type	Water	Water	Water			
Max Recorded Temperatures ( degF )	104	116	100			
Source of Sample	Active Tank	Active Tank	Active Tank			
Salinity ( ppm )	34972.17	34972.17	34972.17			

## Remarks and Equipment Summary

Depth Reference: Driller's Depth.

RUN001: Remarks	RUN002: Remarks	RUN003: Remarks
Run Objective: Drill Vertical Section.	Run Objective: Drill Curve Section.	Run Objective: Drill Lateral Section.
Bit to GR: 52.09 ft. Bit to D&I: 49.06 ft.	Bit to GR: 61.18 ft. Bit to D&I: 58.15 ft.	Bit to GR: 44.76 ft. Bit to D&I: 41.73 ft.
Drilled from: 840 ft MD to 5993 ft MD. Logged from: 840 ft MD to 5940 ft MD.	Drilled from: 5993 ft MD to 6980 ft MD. Logged from: 5940 ft MD to 6918 ft MD.	Drilled from: 6980 ft MD to 16309 ft MD. Logged from: 6918 ft MD to 16264 ft MD.
SlimPulse Software: SPEC V11.0 SlimPulse UGR Calibrated: May 23, 2014 SlimPulse UDI Calibrated: May 18, 2014	SlimPulse Software: SPEC V11.0 SlimPulse UGR Calibrated: July 25, 2014 SlimPulse UDI Calibrated: January 11, 2014	SlimPulse Software: SPEC V11.0 SlimPulse UGR Calibrated: May 23, 2014 SlimPulse UDI Calibrated: May 18, 2014
PathFinder A Schlumberger Co. Personnel: MWD: Nicholas Cooper & Dennis Lipcovski. DD: Charles Mitchell & Tony Butler.	PathFinder A Schlumberger Co. Personnel: MWD: Nicholas Cooper & Dennis Lipcovski. DD: Charles Mitchell & Tony Butler.	PathFinder A Schlumberger Co. Personnel: MWD: Nicholas Cooper & Dennis Lipcovski. DD: Charles Mitchell & Tony Butler.
Reason for POOH: Vertical Section TD.	Reason for POOH: Curve Section TD.	Reason for POOH: Well TD.





		Patch-Hotfix_overwrite_survey_for_petrolink-23199-4.0.9530.3000	
		Patch-Hotfix_MRT_SP3-23306-4.0.9530.3002	
Tool Elements	Description	Software Version	Firmware Version
DRILLING_SURFACE	DRILLING_SURFACE	4.0.9469.3000	
SPEC	SlimPulse Electronics Cartridge	4.0.9469.3000	

## Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Include Parallel Data
RUN001	Drilling	Down	840.17 ft	5993.50 ft	27-Jul-2014 2:49:22 PM	28-Jul-2014 3:58:03 PM	No
RUN001	Ream Down 1	Down	840.08 ft	841.33 ft	27-Jul-2014 2:51:58 PM	27-Jul-2014 2:52:58 PM	No
RUN002	Drilling	Down	5993.67 ft	6980.33 ft	29-Jul-2014 12:53:54 AM	30-Jul-2014 4:30:44 AM	No
RUN002	Ream Down 1	Down	5904.08 ft	5993.58 ft	29-Jul-2014 12:33:35 AM	29-Jul-2014 12:53:54 AM	No
RUN003	Ream Down 1	Down	6969.75 ft	6978.00 ft	31-Jul-2014 1:47:50 PM	31-Jul-2014 2:41:55 PM	No
RUN003	Drilling	Down	6978.00 ft	16311.50 ft	31-Jul-2014 2:41:55 PM	04-Aug-2014 7:03:00 PM	No

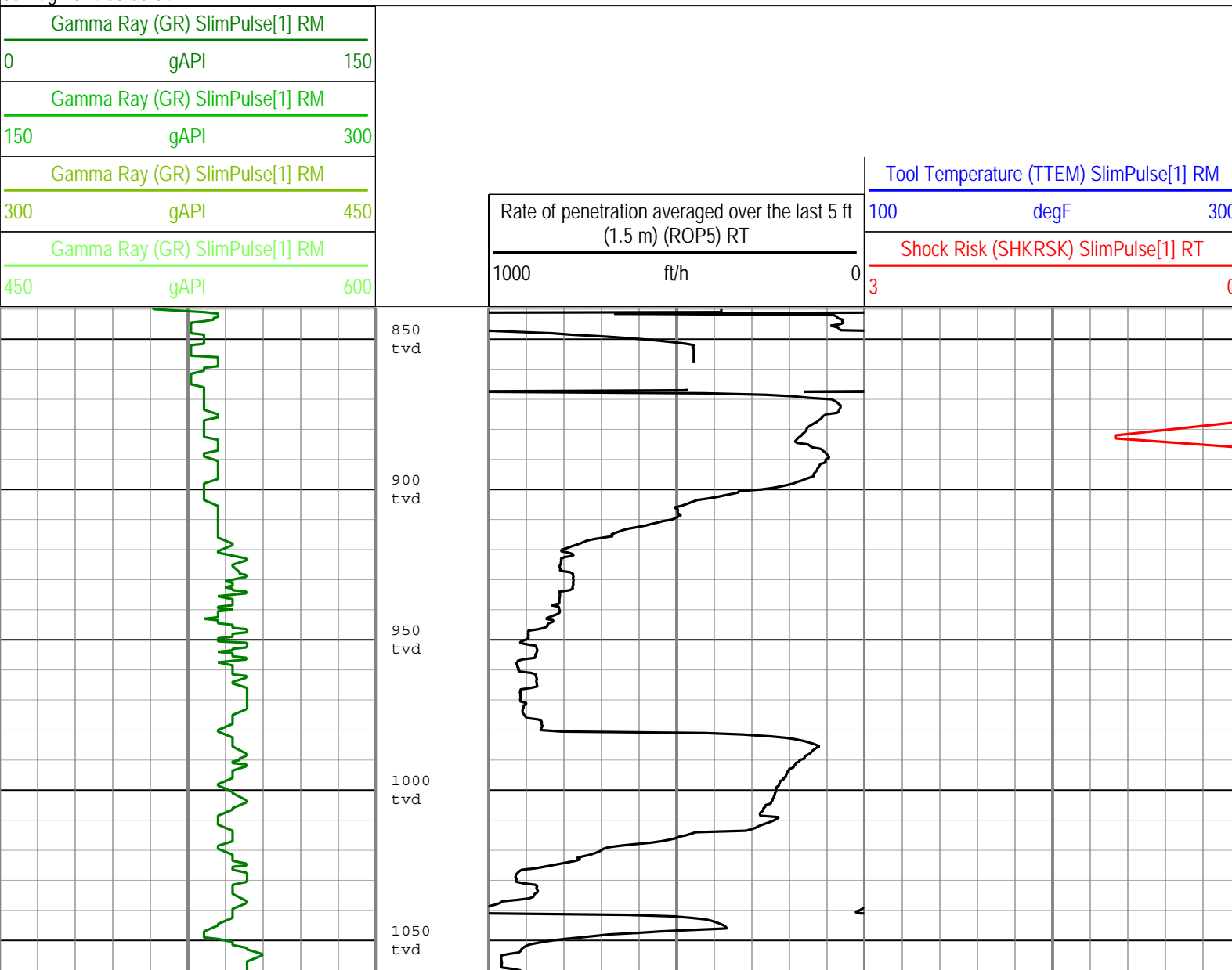
All depths are referenced to toolstring zero

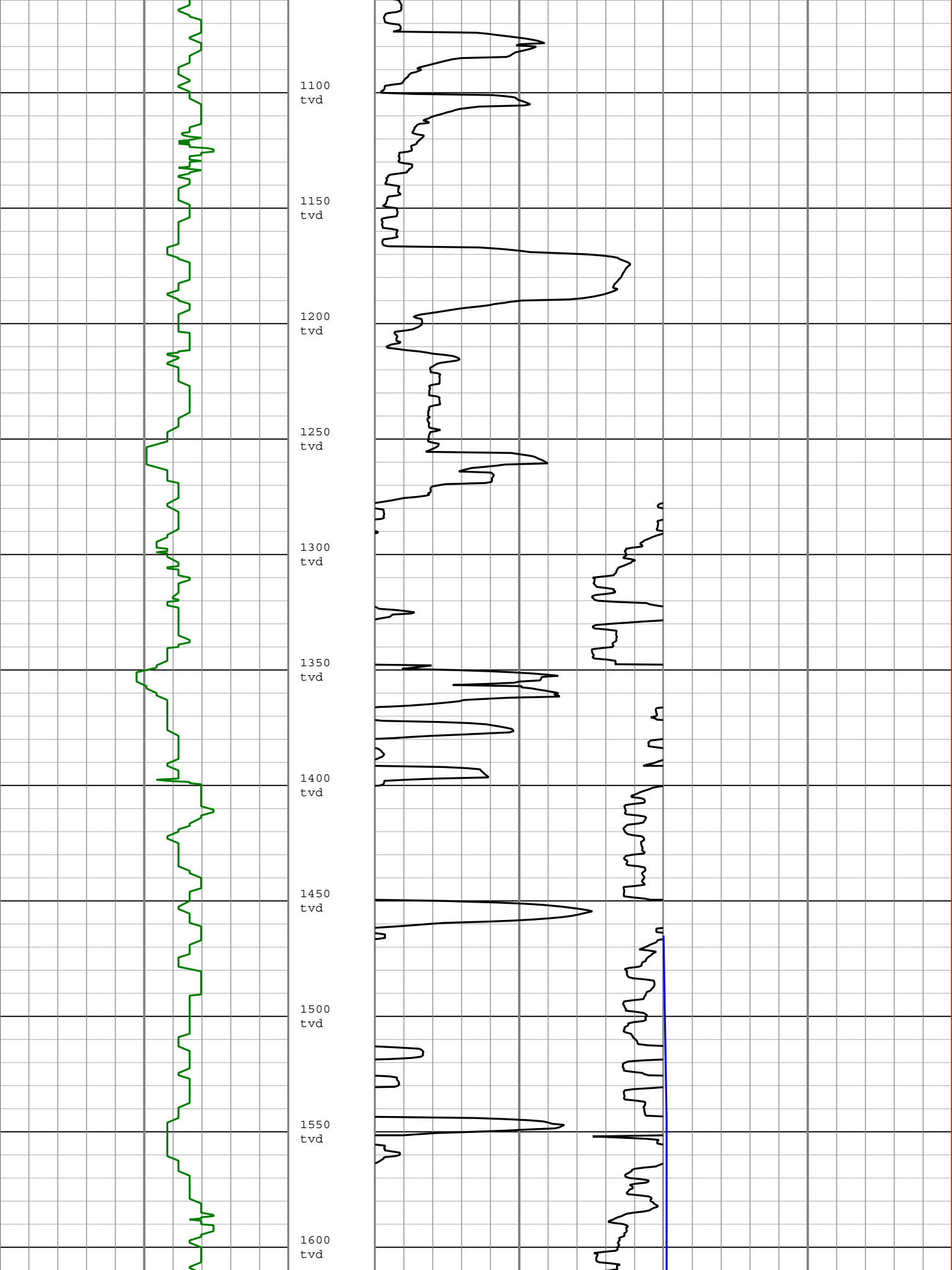
## Log

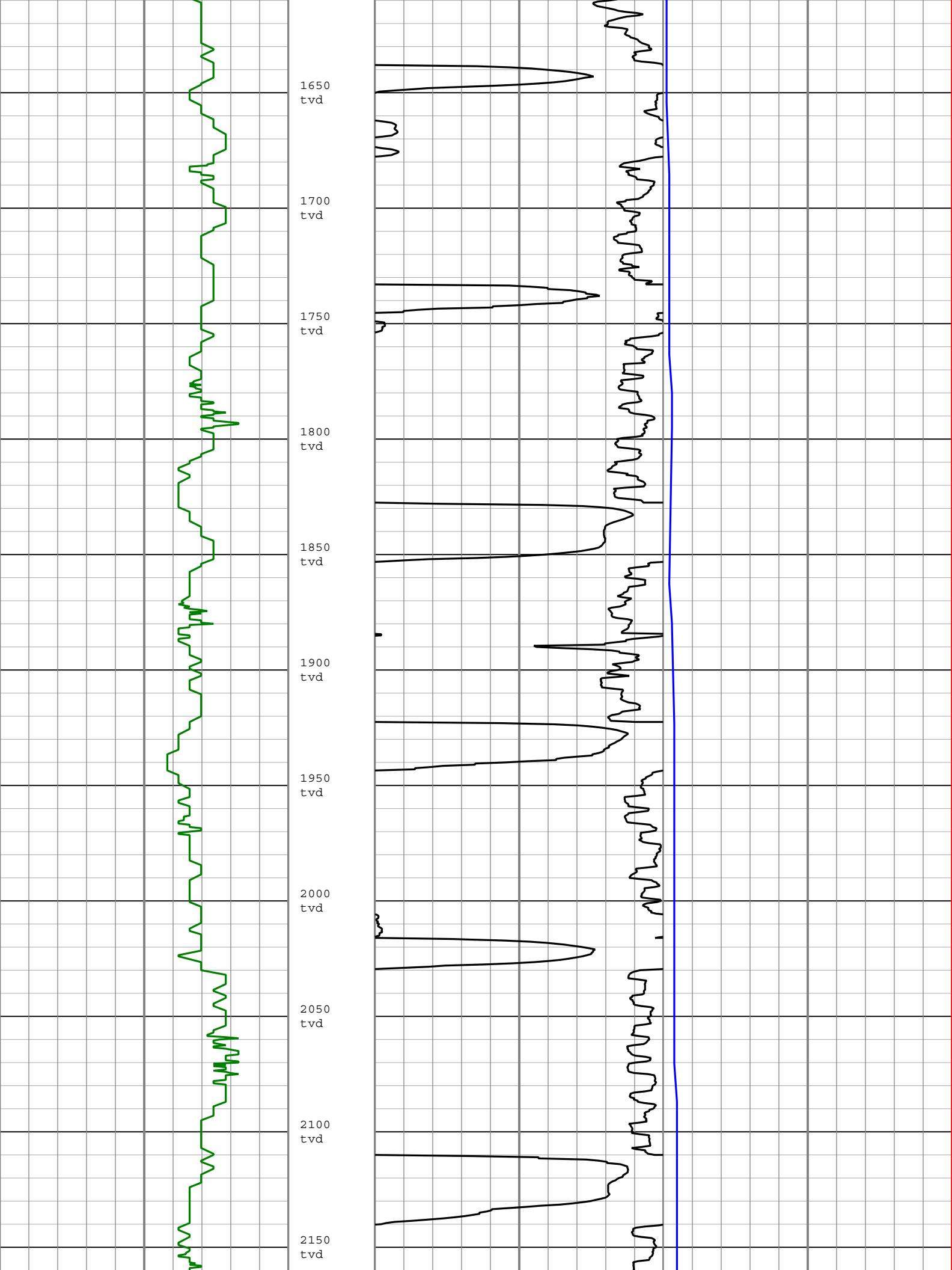
Company:Noble Energy INC      Well:NCLP AA06-64-1AHNA

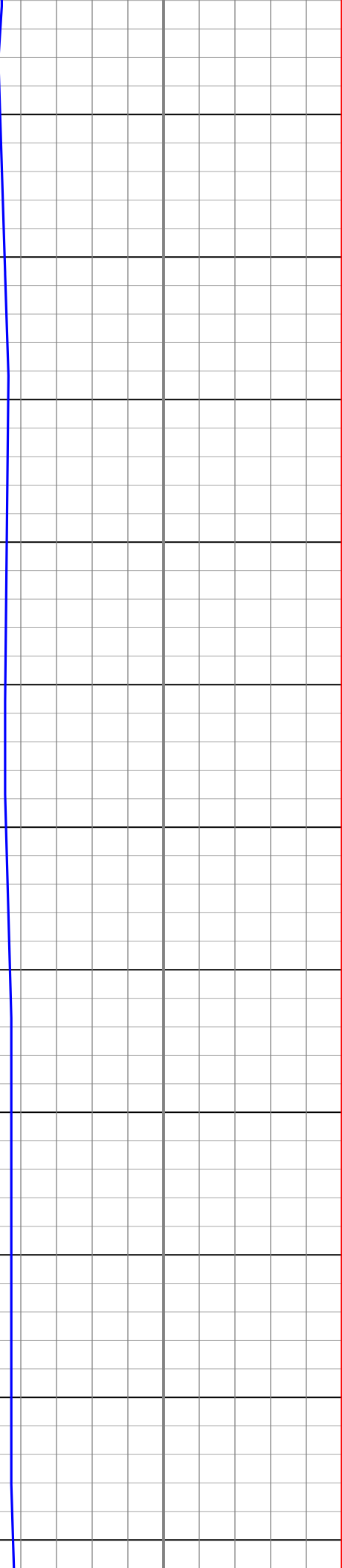
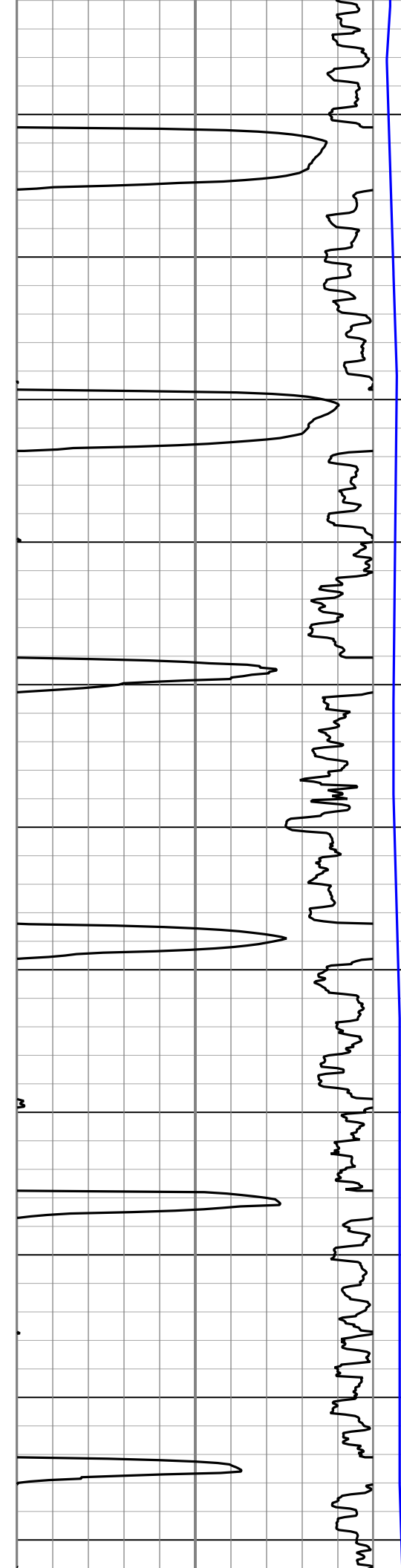
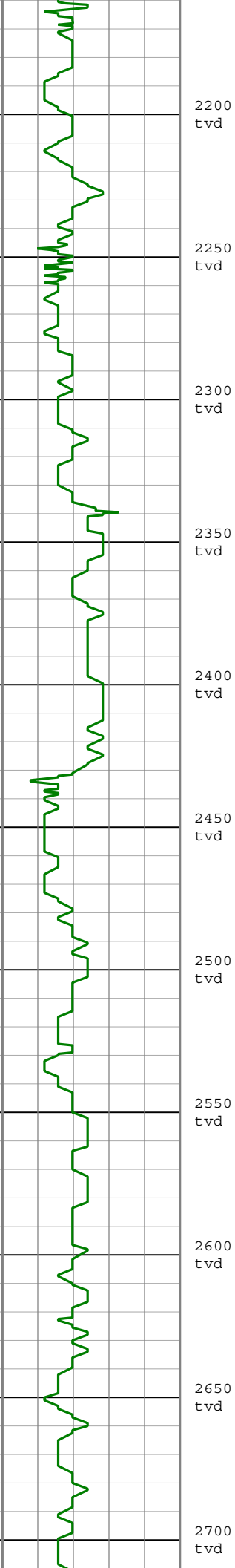
Well Composite:S222

Description: SlimPulse Gamma Ray 1    Format: Log ( Final TVD Log )    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: TVD    Creation Date: 05-Aug-2014 03:00:34

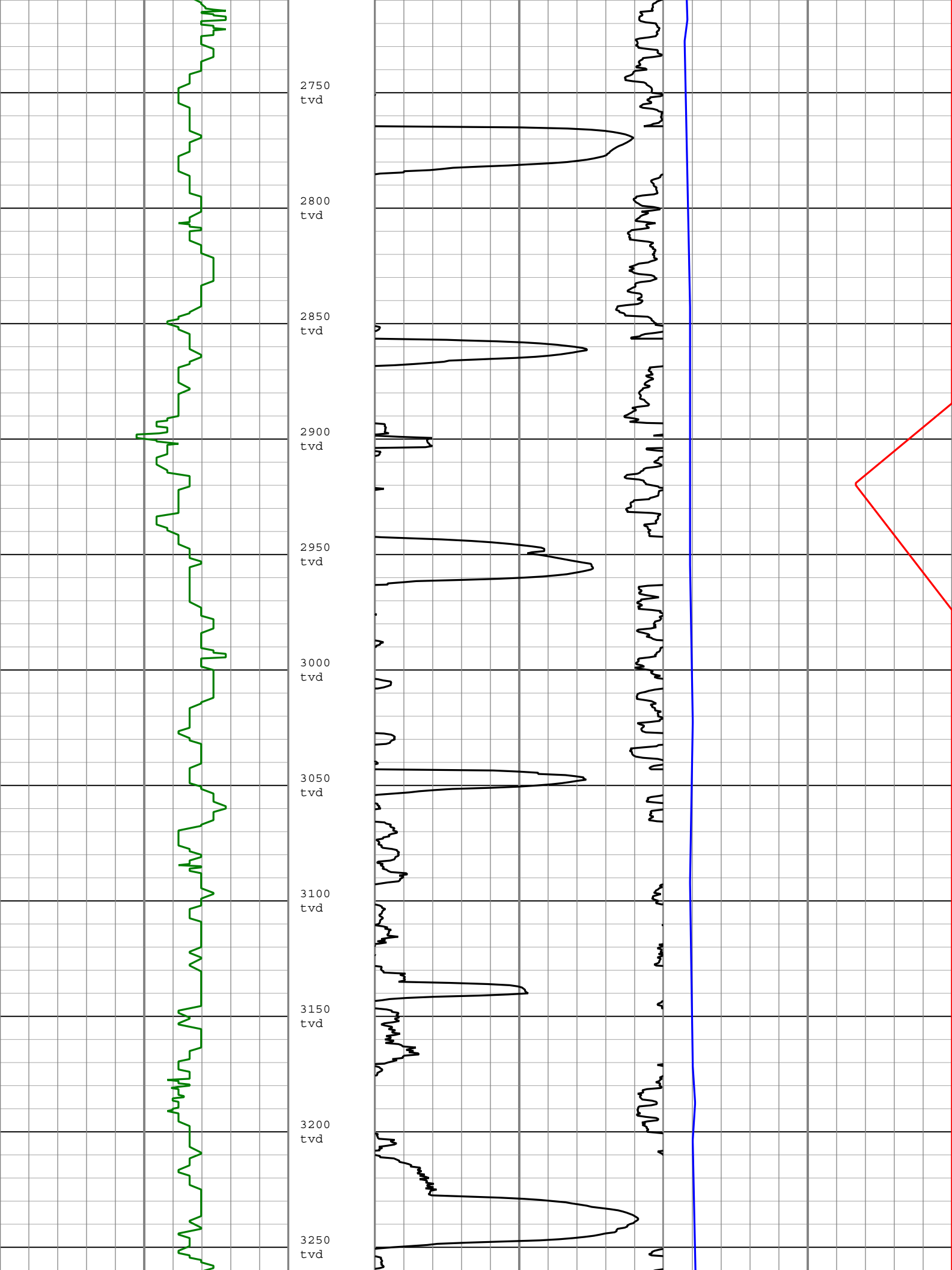


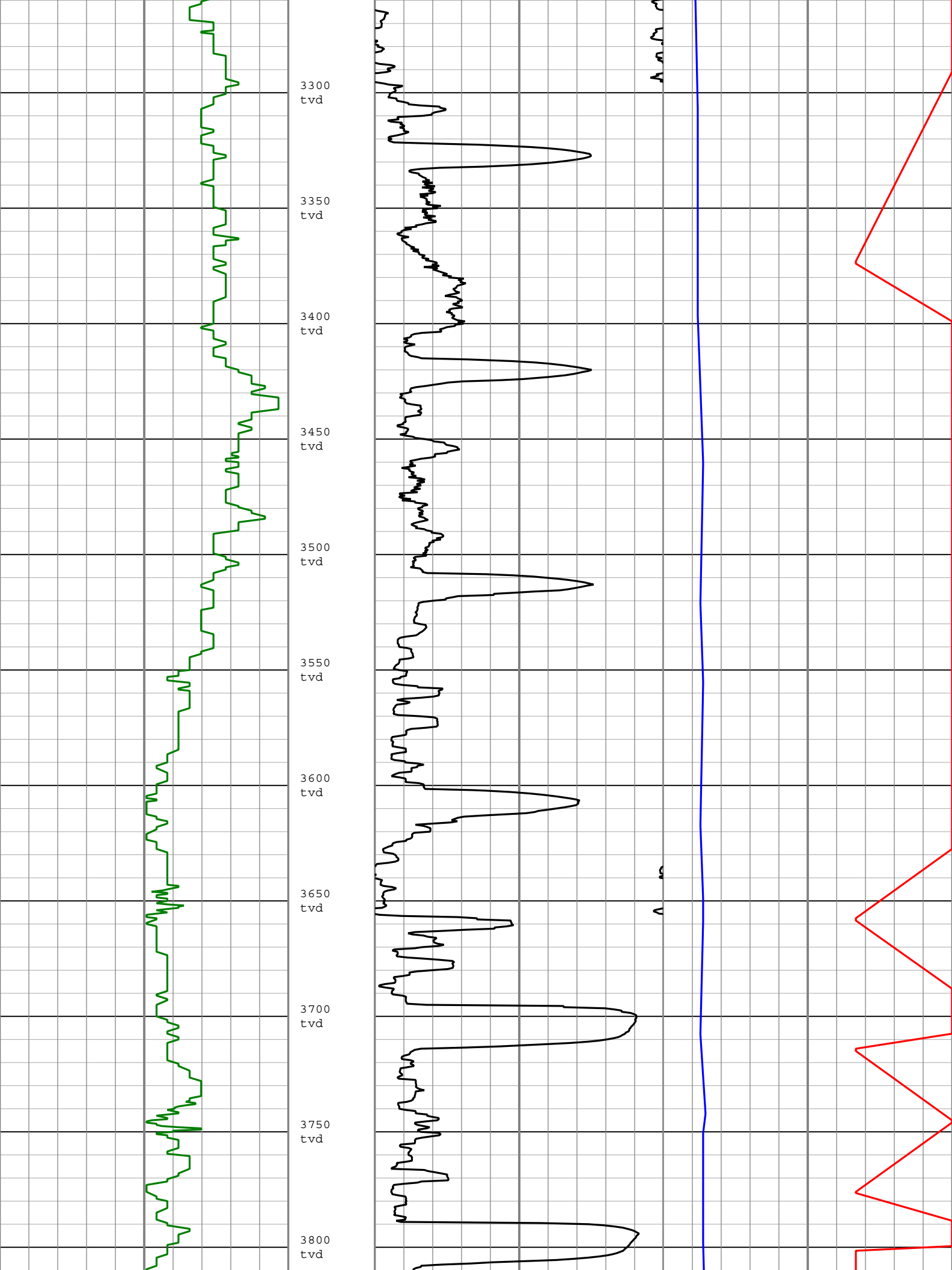


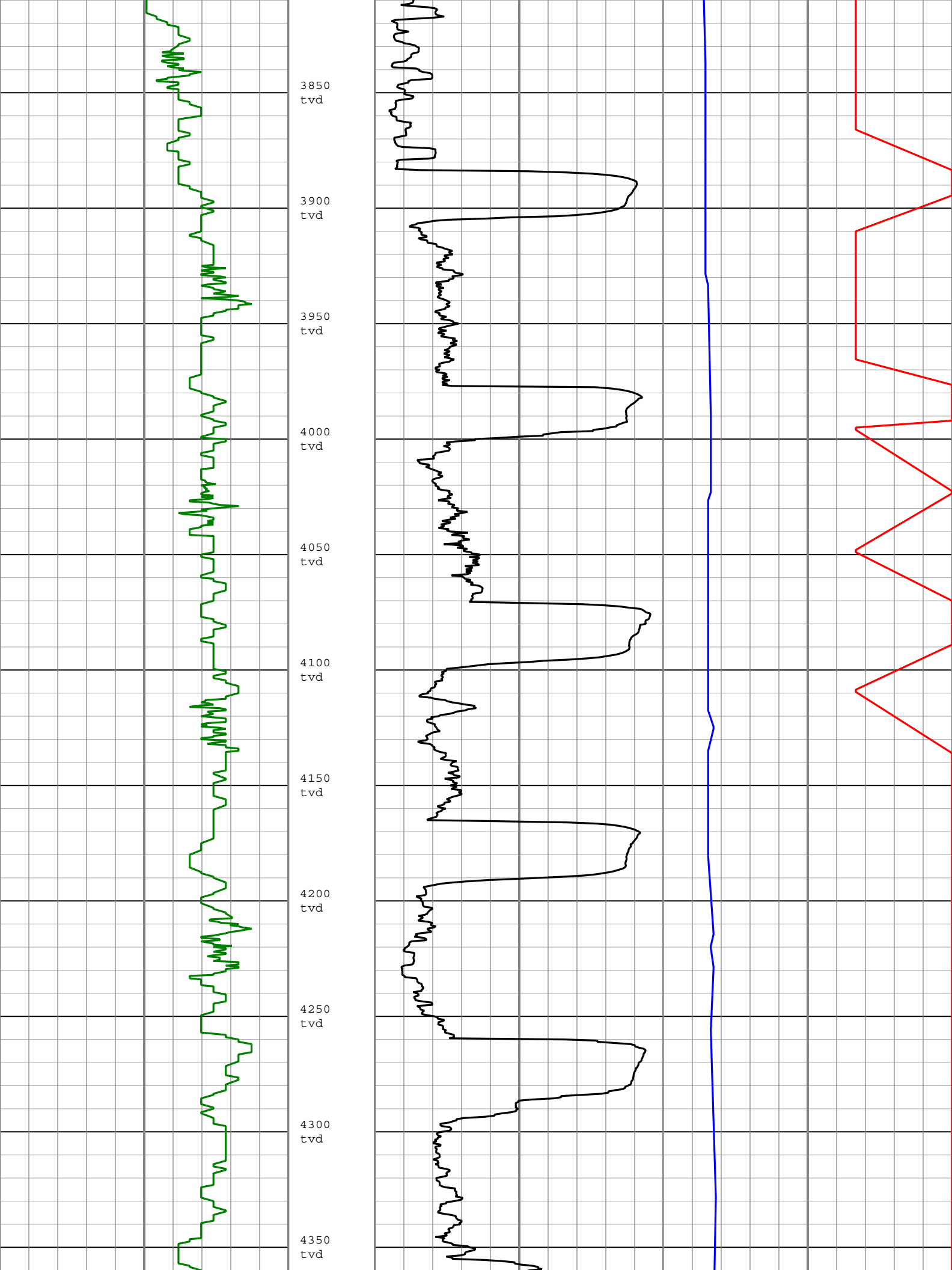


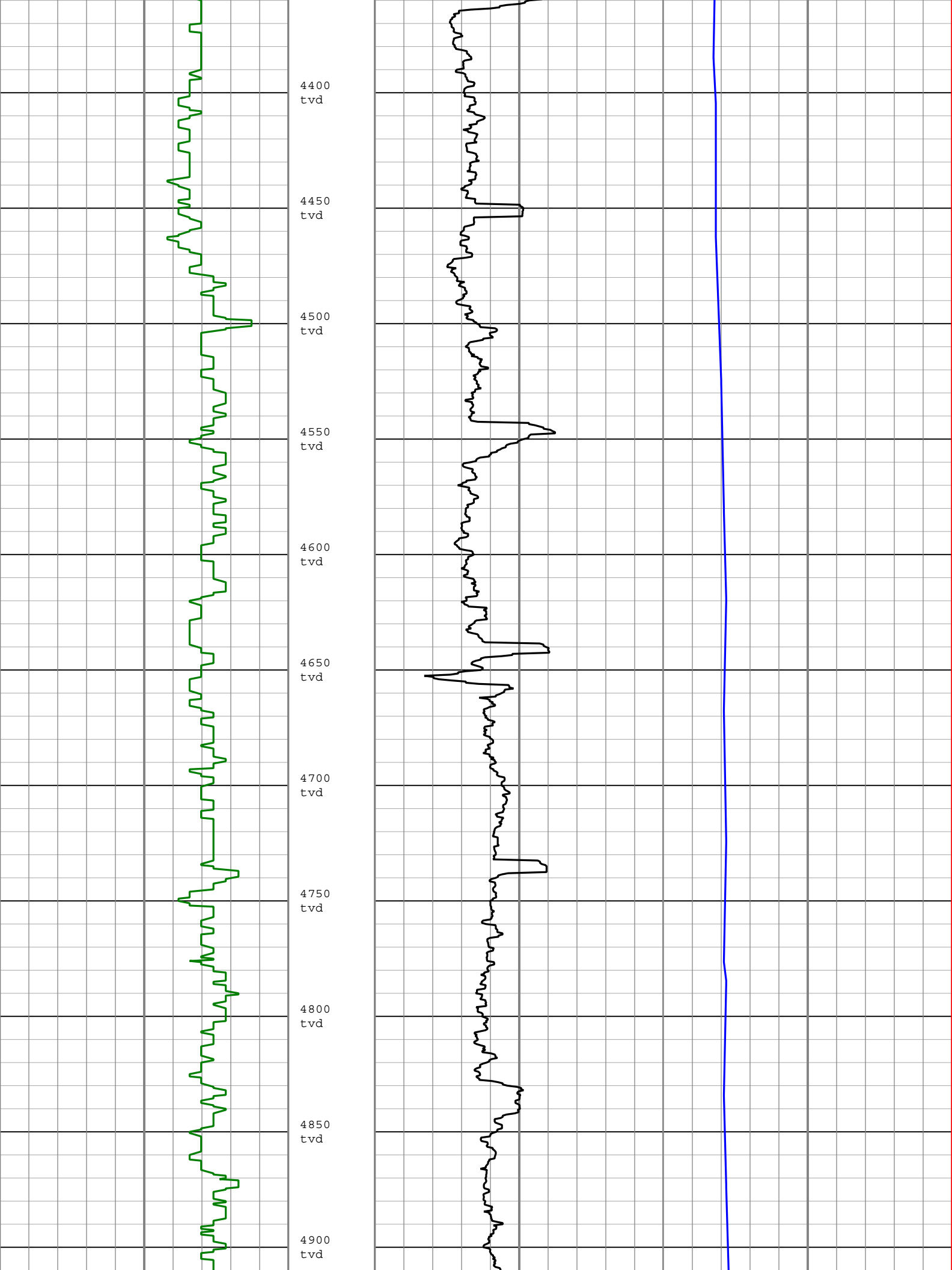


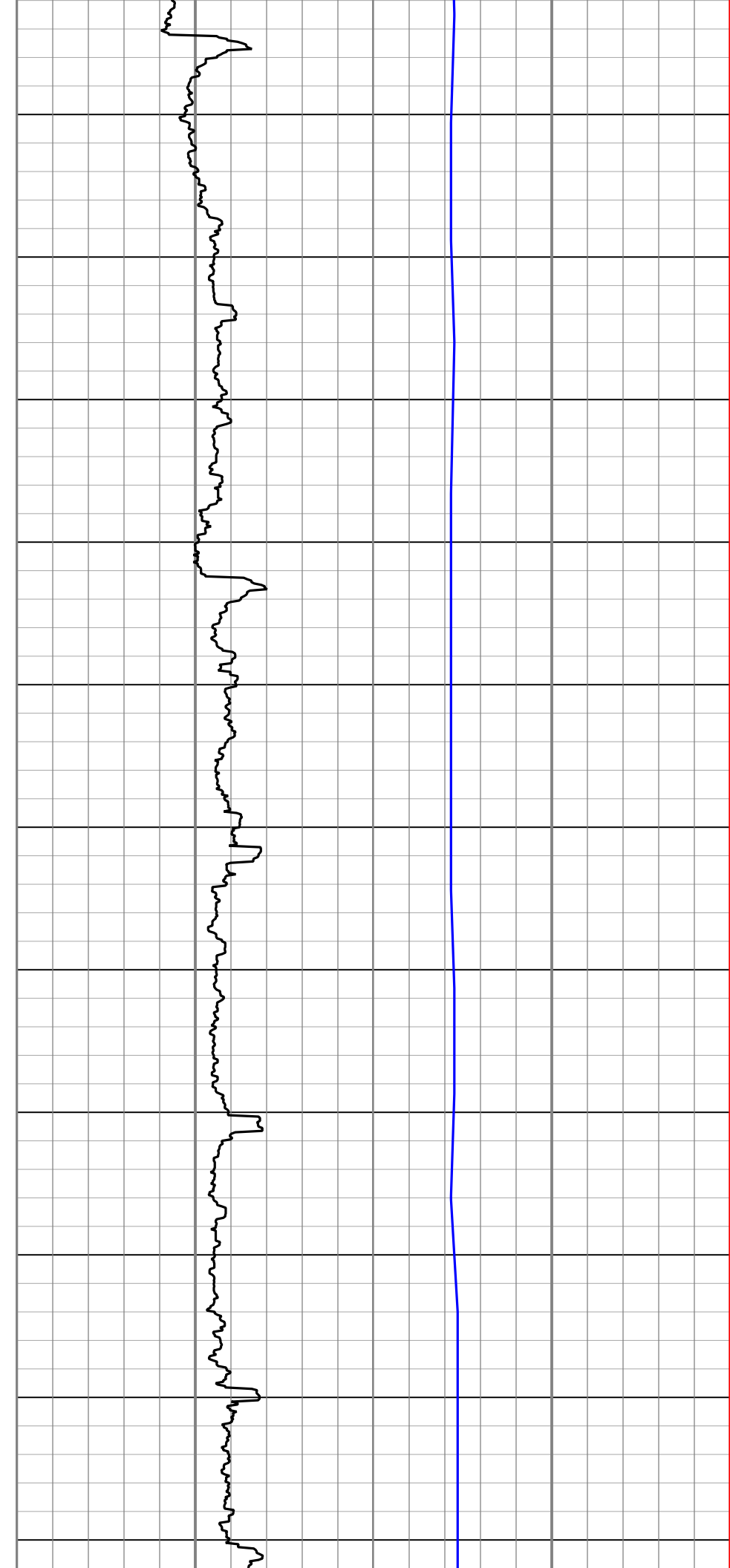
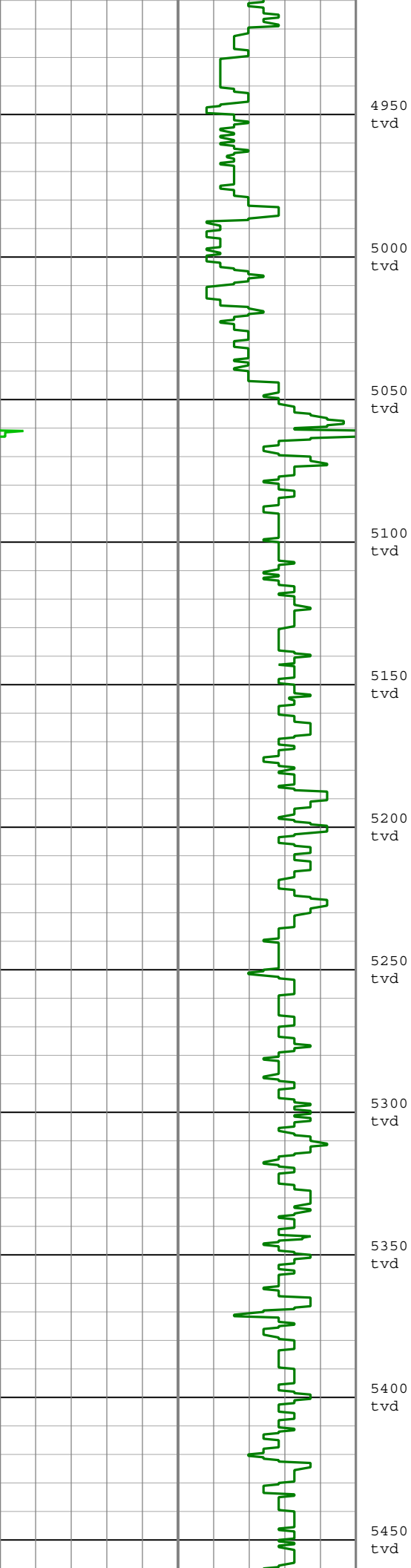


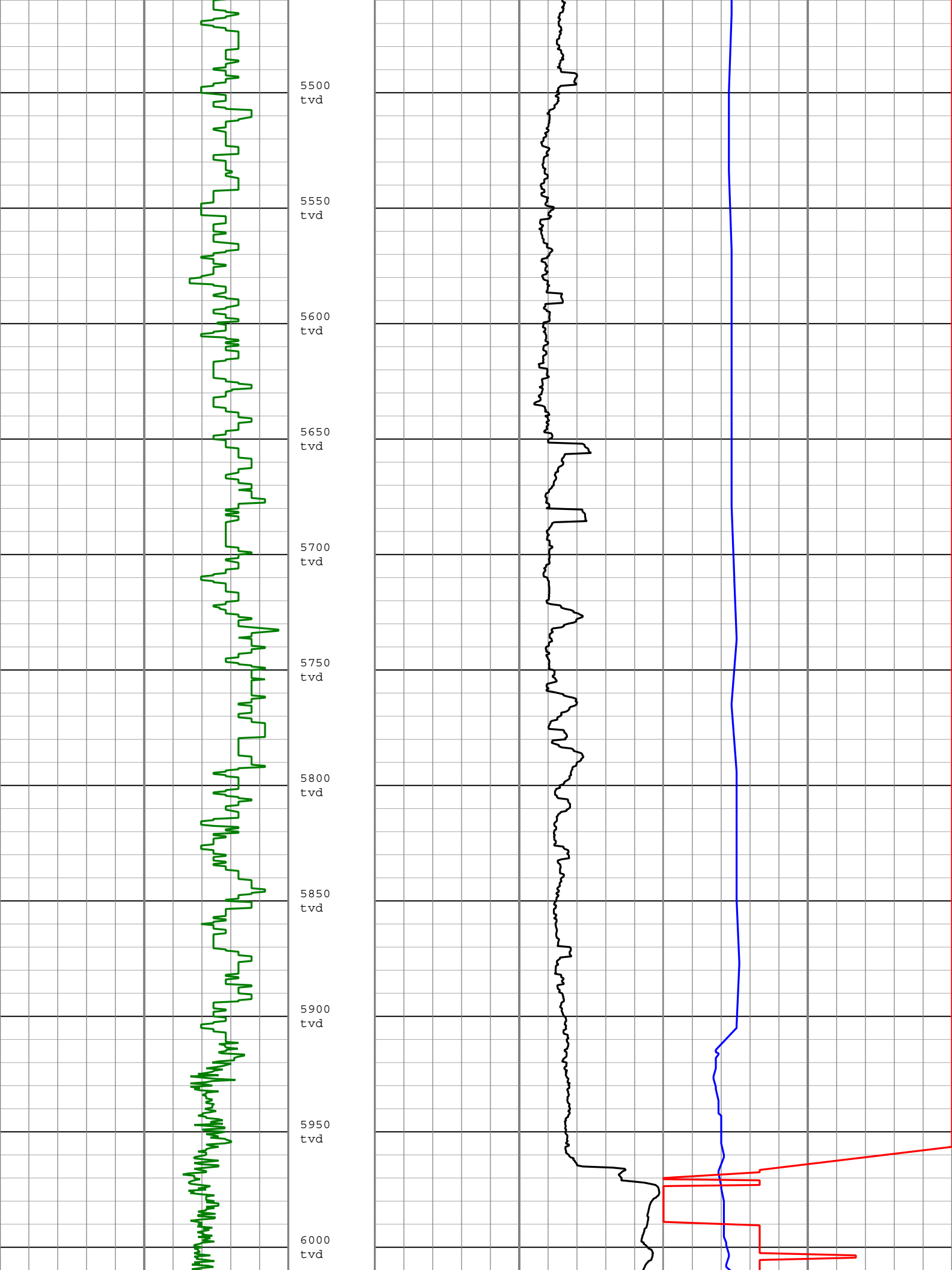


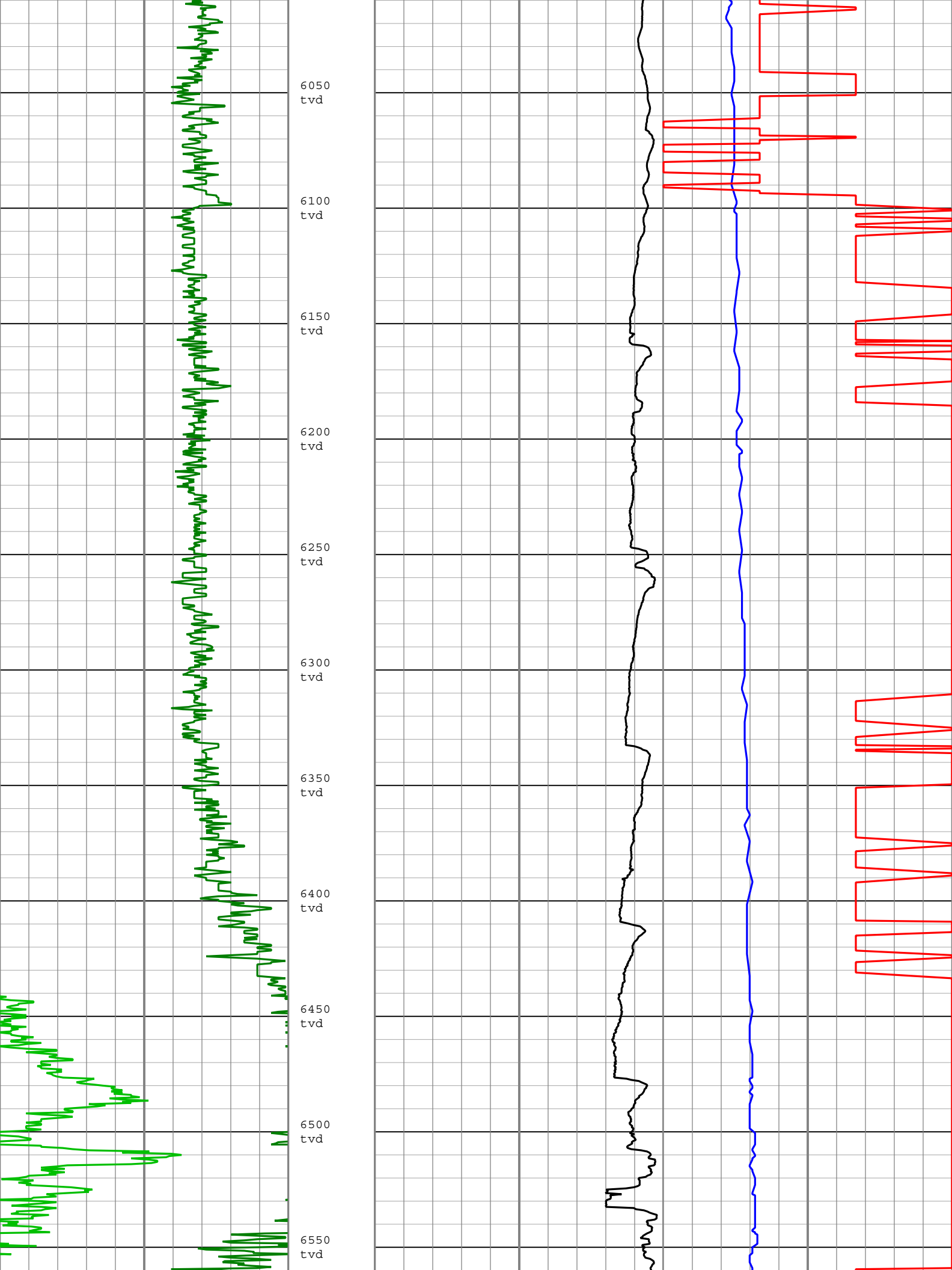


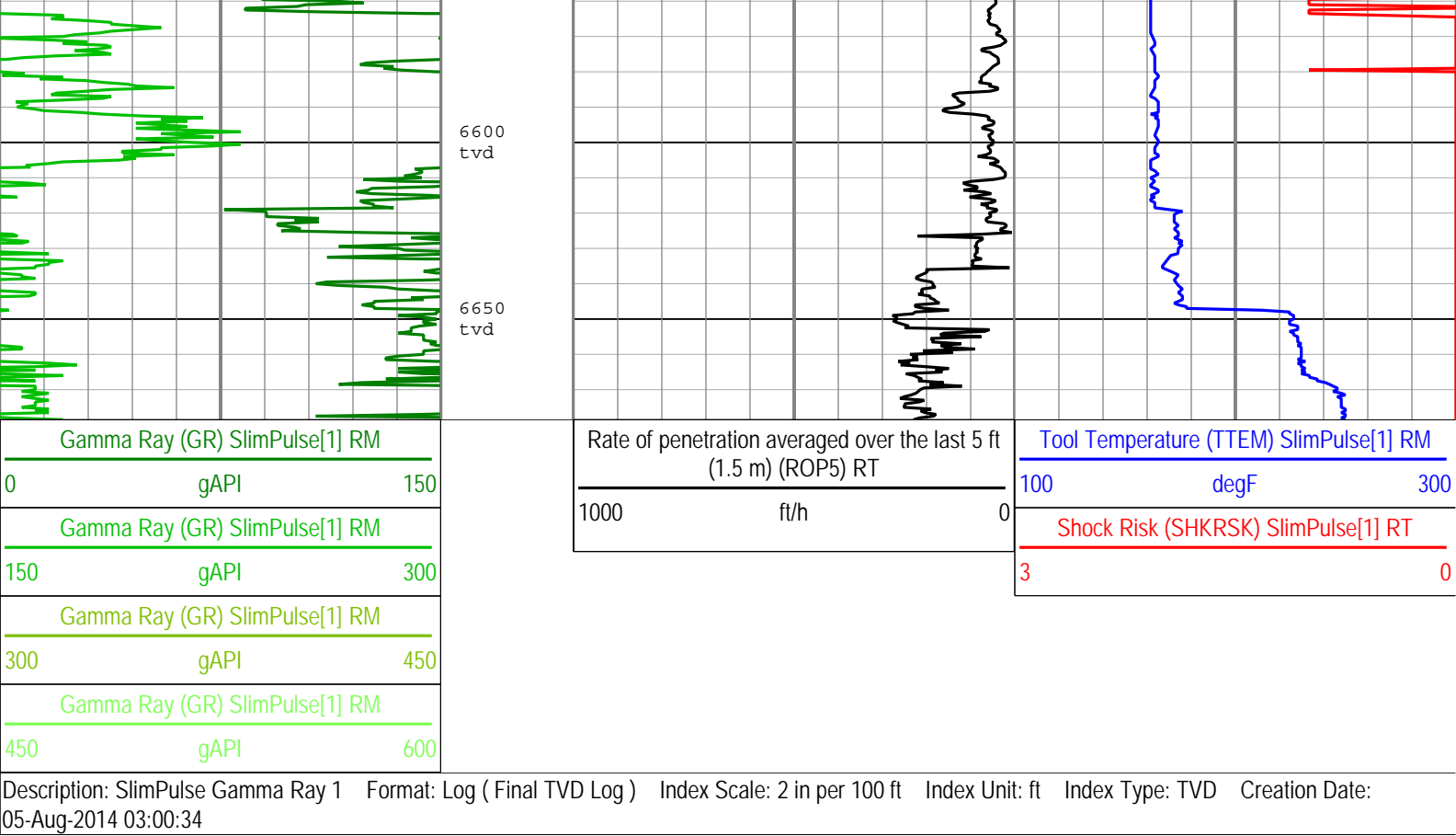












Description: SlimPulse Gamma Ray 1    Format: Log ( Final TVD Log )    Index Scale: 2 in per 100 ft    Index Unit: ft    Index Type: TVD    Creation Date: 05-Aug-2014 03:00:34

RUN001: Parameters				
Parameter	Description	Tool	Value	Unit
BS	Bit Size	DNMSESSION	8.75	in
DFD	Drilling Fluid Density	Borehole	8.8	lbm/gal
GR_SRC	GR Source Selection	SPULSE-GEN	GAMMA_EXT	
RUN002: Parameters				
Parameter	Description	Tool	Value	Unit
BS	Bit Size	DNMSESSION	8.75	in
DFD	Drilling Fluid Density	Borehole	10	lbm/gal
GR_SRC	GR Source Selection	SPULSE-GEN	GAMMA_EXT	
RUN003: Parameters				
Parameter	Description	Tool	Value	Unit
BS	Bit Size	DNMSESSION	Depth Zoned	in
DFD	Drilling Fluid Density	Borehole	9.8	lbm/gal
GR_SRC	GR Source Selection	SPULSE-GEN	GAMMA_EXT	
RUN003Depth Zoned Parameters				
Parameter	Value	Start ( ft )	Stop ( ft )	
BS	8.75	6616.95	6626.57	
BS	6.125	6626.57	6678.89	
All depth are actual.				

## Tool Control Parameters

## Well Composite

## Gamma Ray

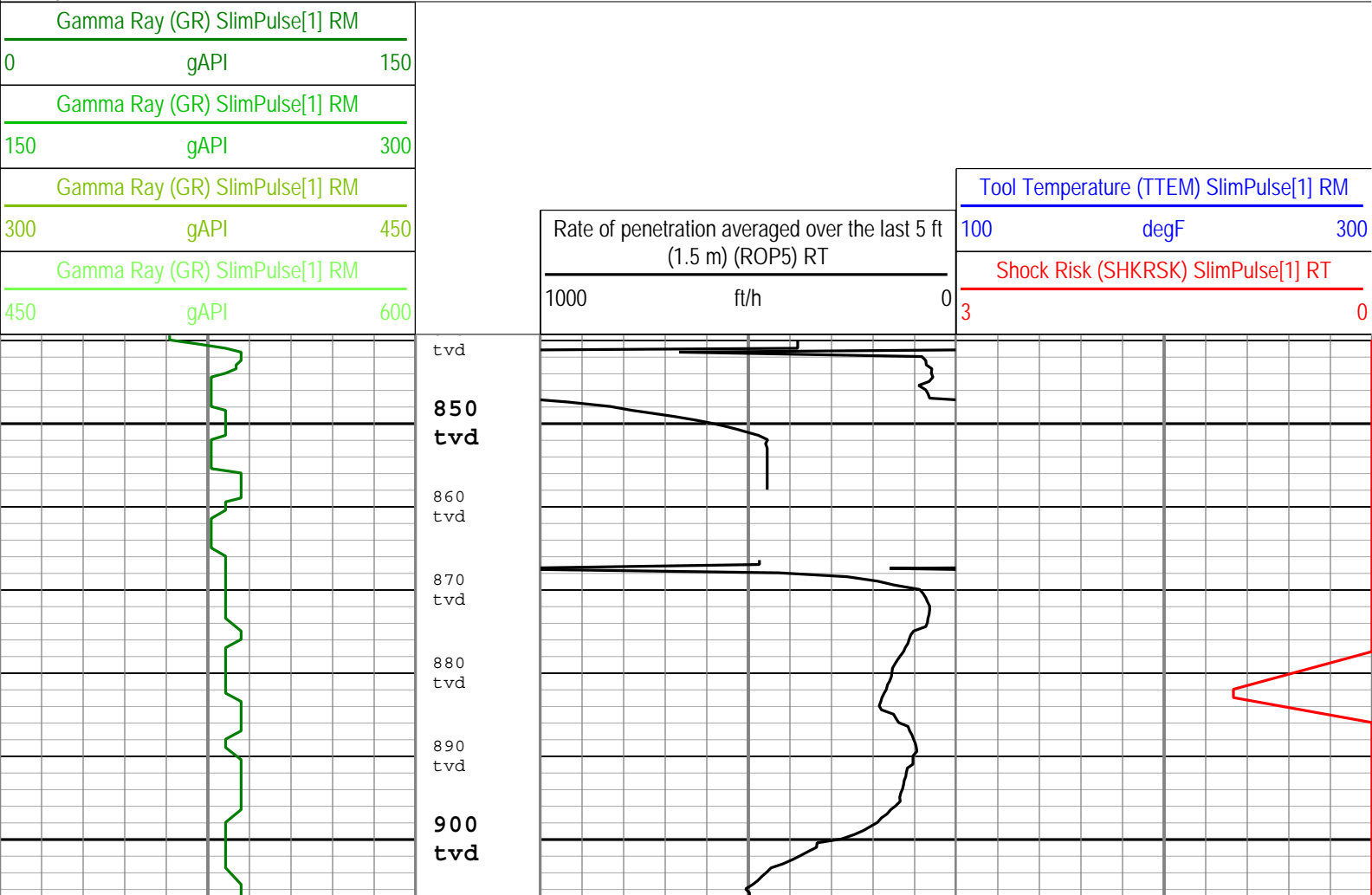


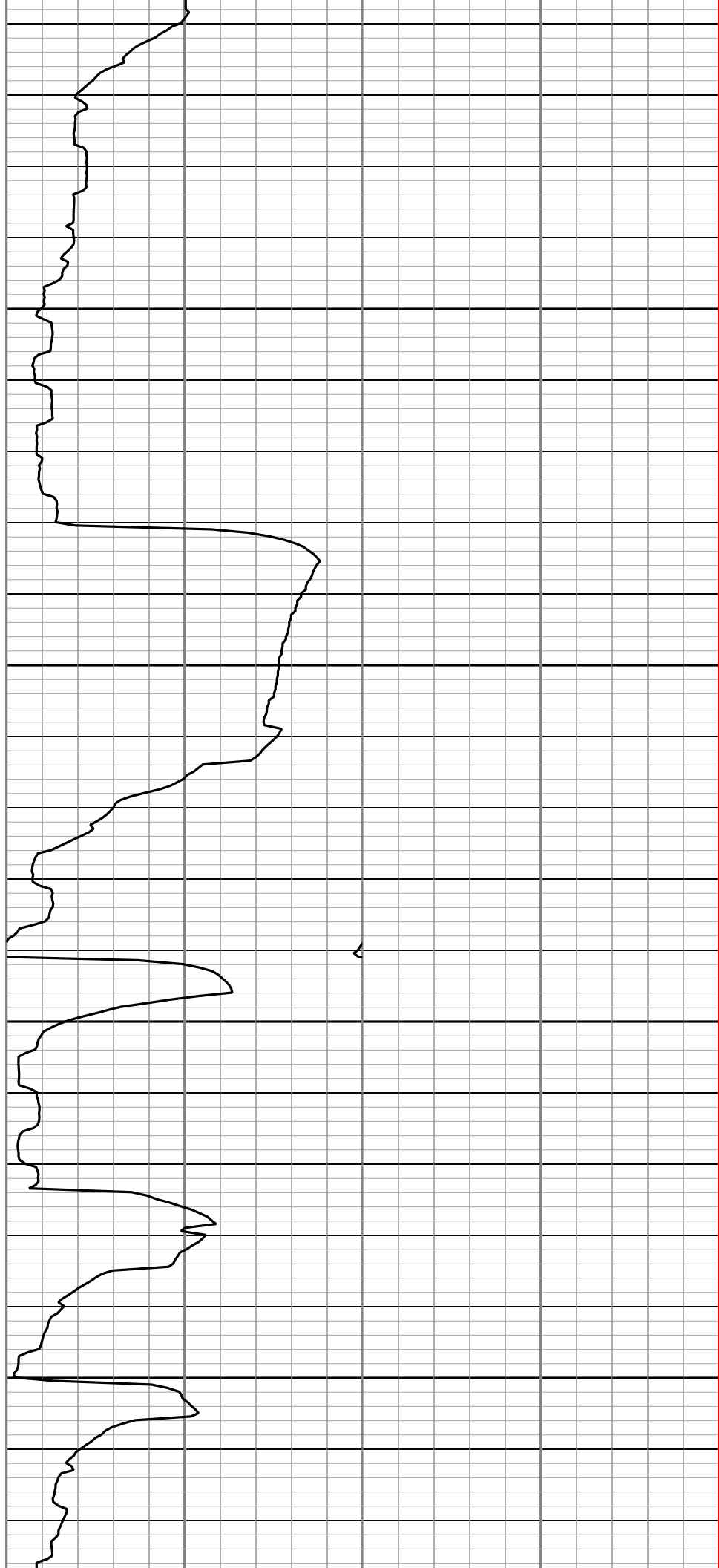
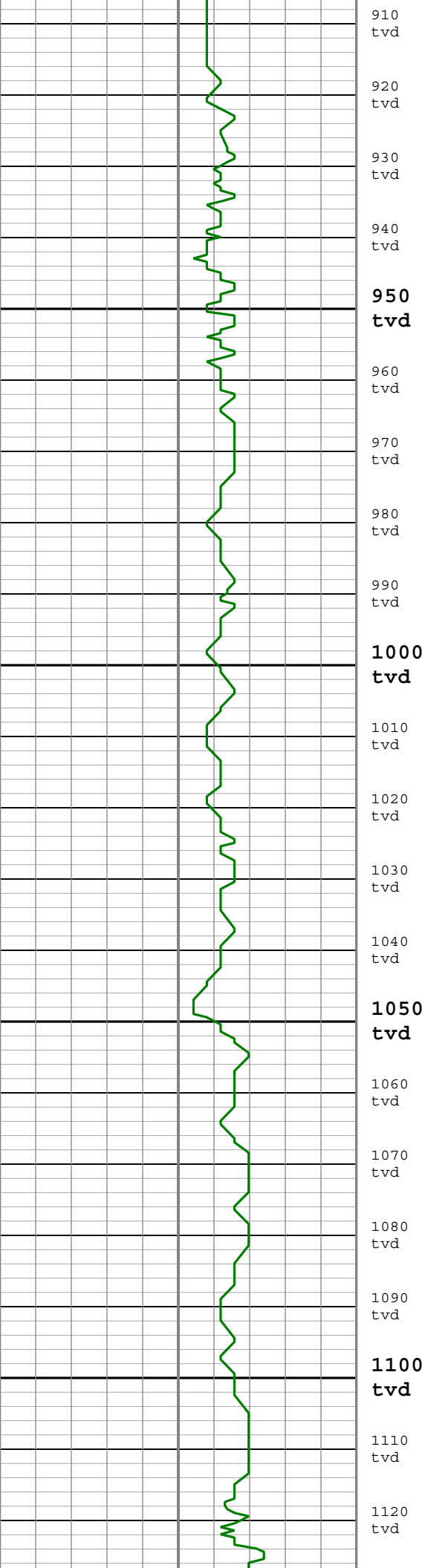
Software Version			
Acquisition System		Version	
MaxWell		4.0.9163.3000	
Application Patch		Patch-SP-10767_22480-4.0.9163.3001	
		Patch-NPD_ADN8D_SP3-23661-4.0.9530.3002	
		Patch-Hotfix_overwrite_survey_for_petrolink-23199-4.0.9530.3002	
		Patch-Hotfix_MRT_SP3-23306-4.0.9530.3002	
Tool Elements	Description	Software Version	Firmware Version
DRILLING_SURFACE	DRILLING_SURFACE	4.0.9469.3000	
SPEC	SlimPulse Electronics Cartridge	4.0.9469.3000	

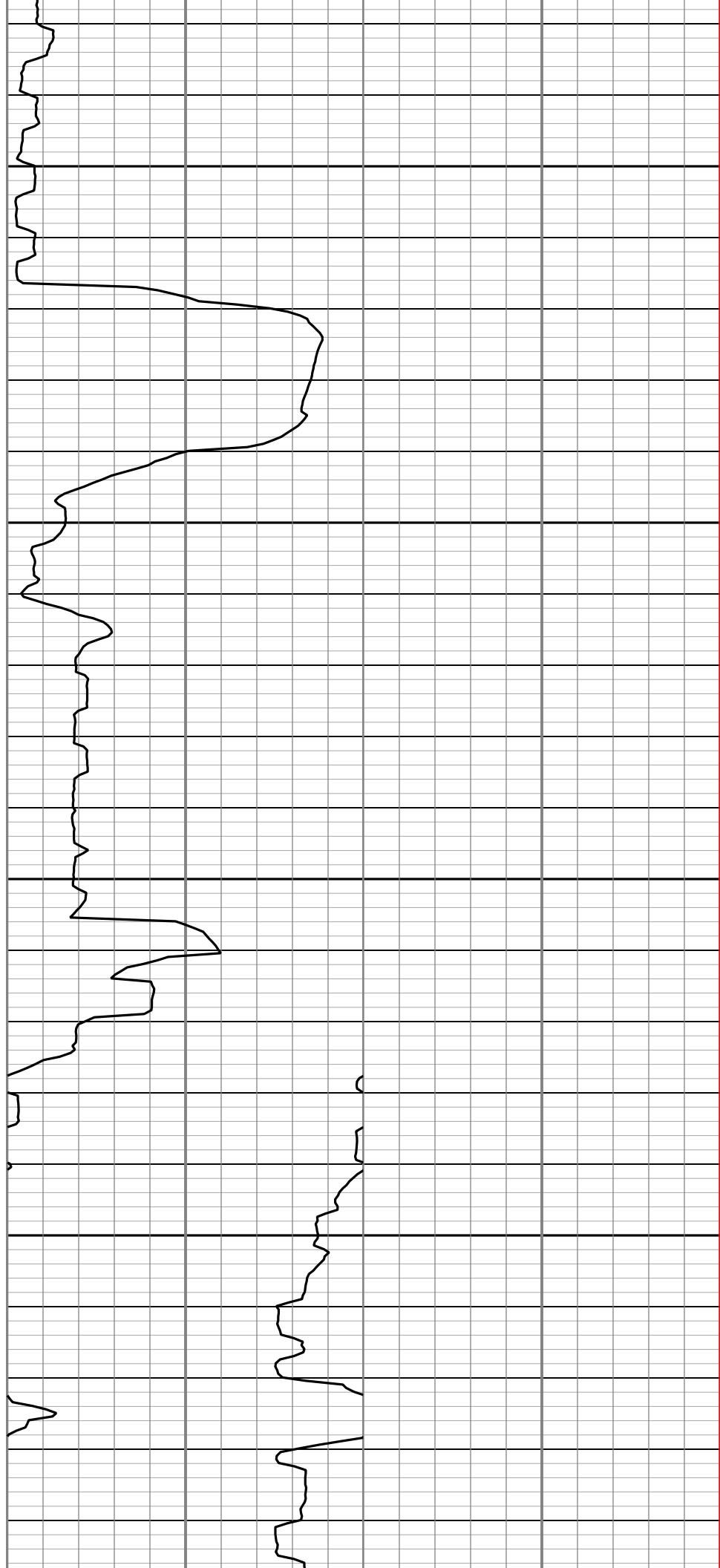
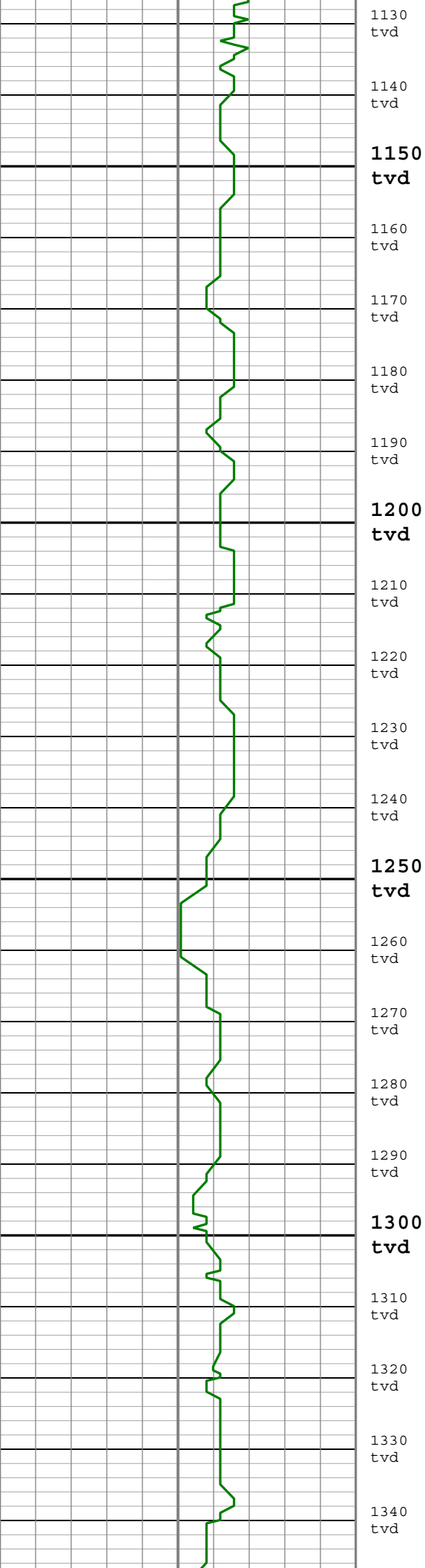
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Include Parallel Data
RUN001	Drilling	Down	840.17 ft	5993.50 ft	27-Jul-2014 2:49:22 PM	28-Jul-2014 3:58:03 PM	No
RUN001	Ream Down 1	Down	840.08 ft	841.33 ft	27-Jul-2014 2:51:58 PM	27-Jul-2014 2:52:58 PM	No
RUN002	Drilling	Down	5993.67 ft	6980.33 ft	29-Jul-2014 12:53:54 AM	30-Jul-2014 4:30:44 AM	No
RUN002	Ream Down 1	Down	5904.08 ft	5993.58 ft	29-Jul-2014 12:33:35 AM	29-Jul-2014 12:53:54 AM	No
RUN003	Ream Down 1	Down	6969.75 ft	6978.00 ft	31-Jul-2014 1:47:50 PM	31-Jul-2014 2:41:55 PM	No
RUN003	Drilling	Down	6978.00 ft	16311.50 ft	31-Jul-2014 2:41:55 PM	04-Aug-2014 7:03:00 PM	No

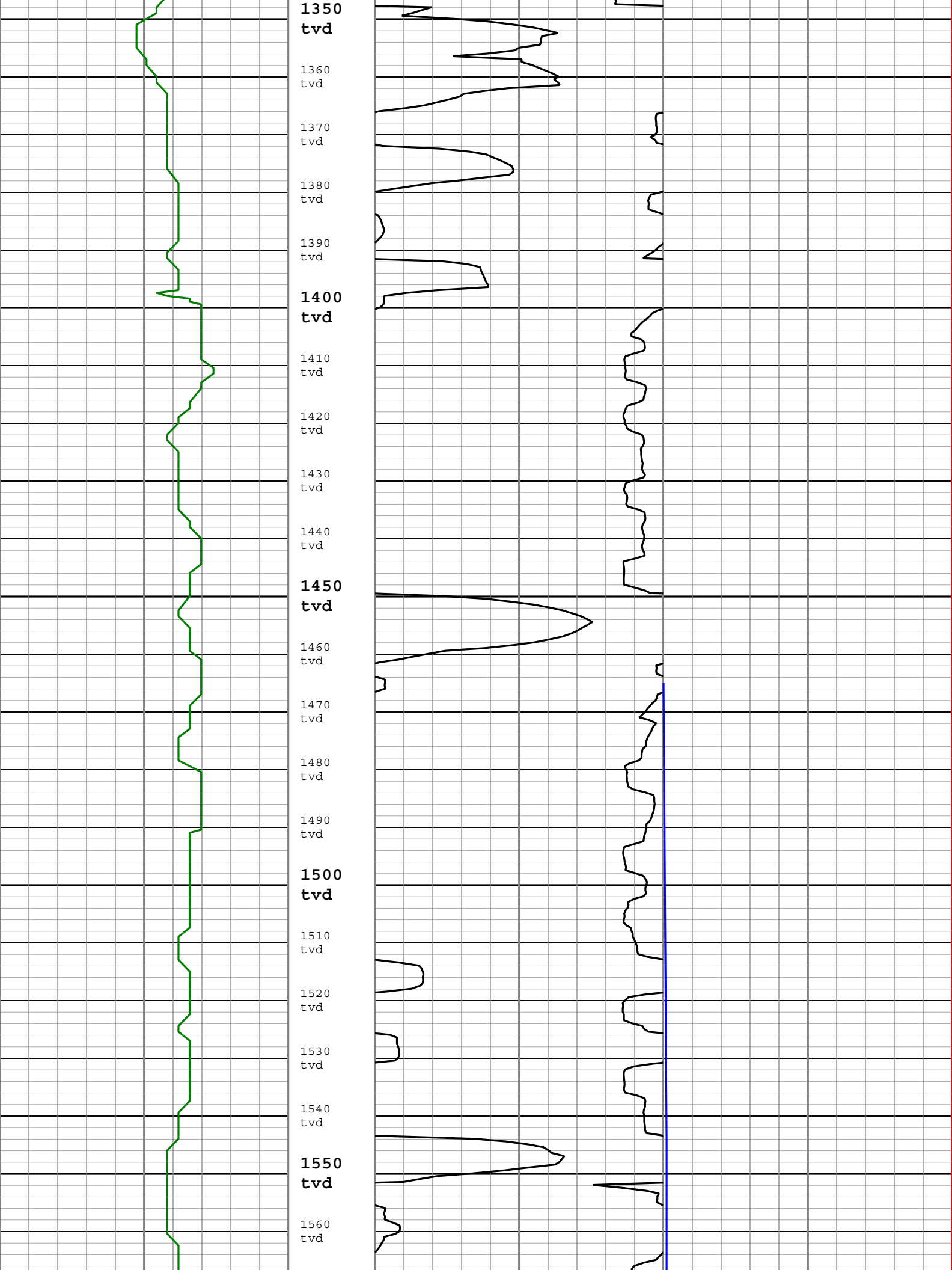
Log	Company:Noble Energy INC	Well:NCLP AA06-64-1AHNA
		Well Composite:S222

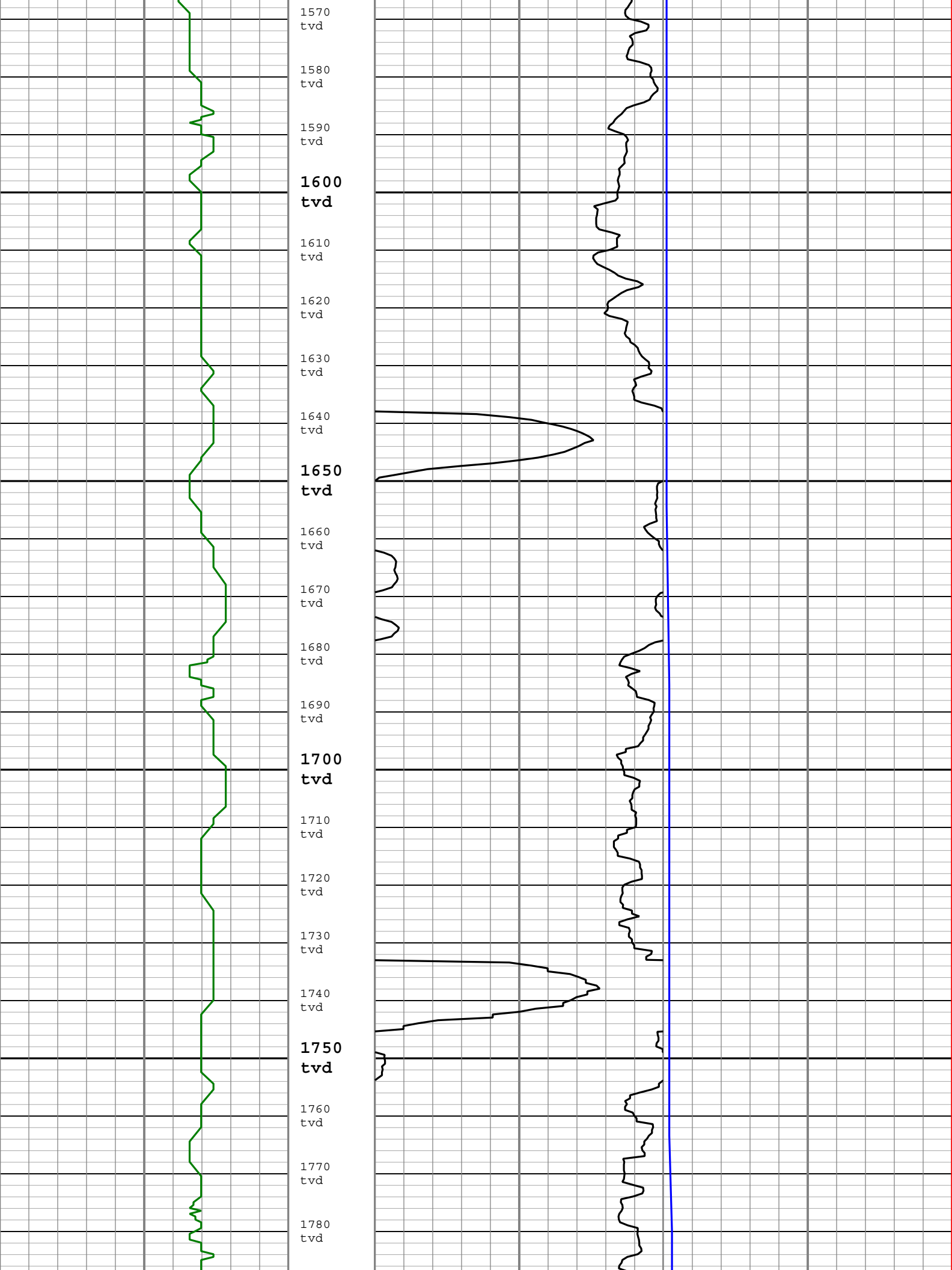
Description: SlimPulse Gamma Ray 1	Format: Log ( Final TVD Log )	Index Scale: 5 in per 100 ft	Index Unit: ft	Index Type: TVD	Creation Date: 05-Aug-2014 03:00:38
------------------------------------	-------------------------------	------------------------------	----------------	-----------------	-------------------------------------

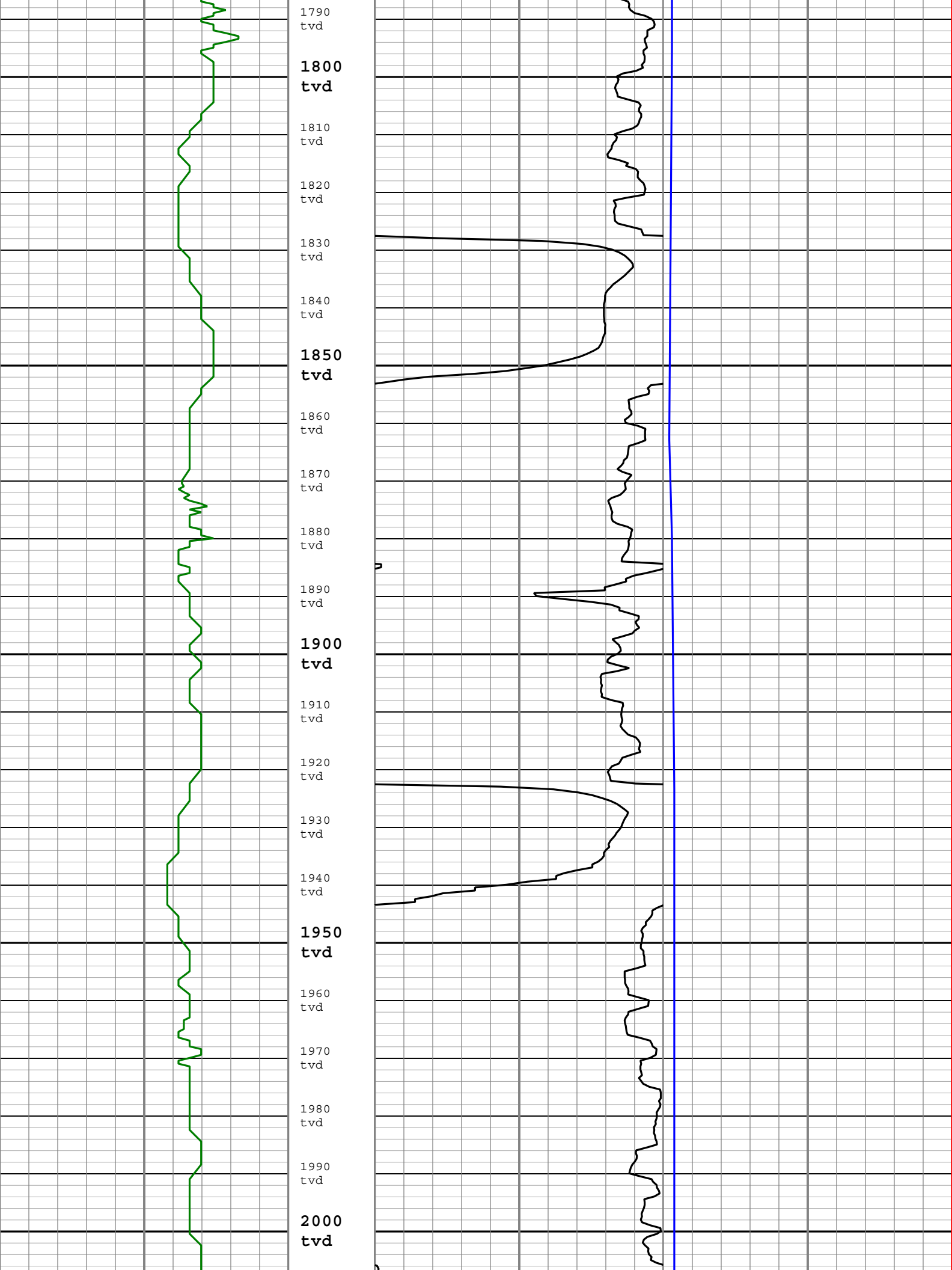


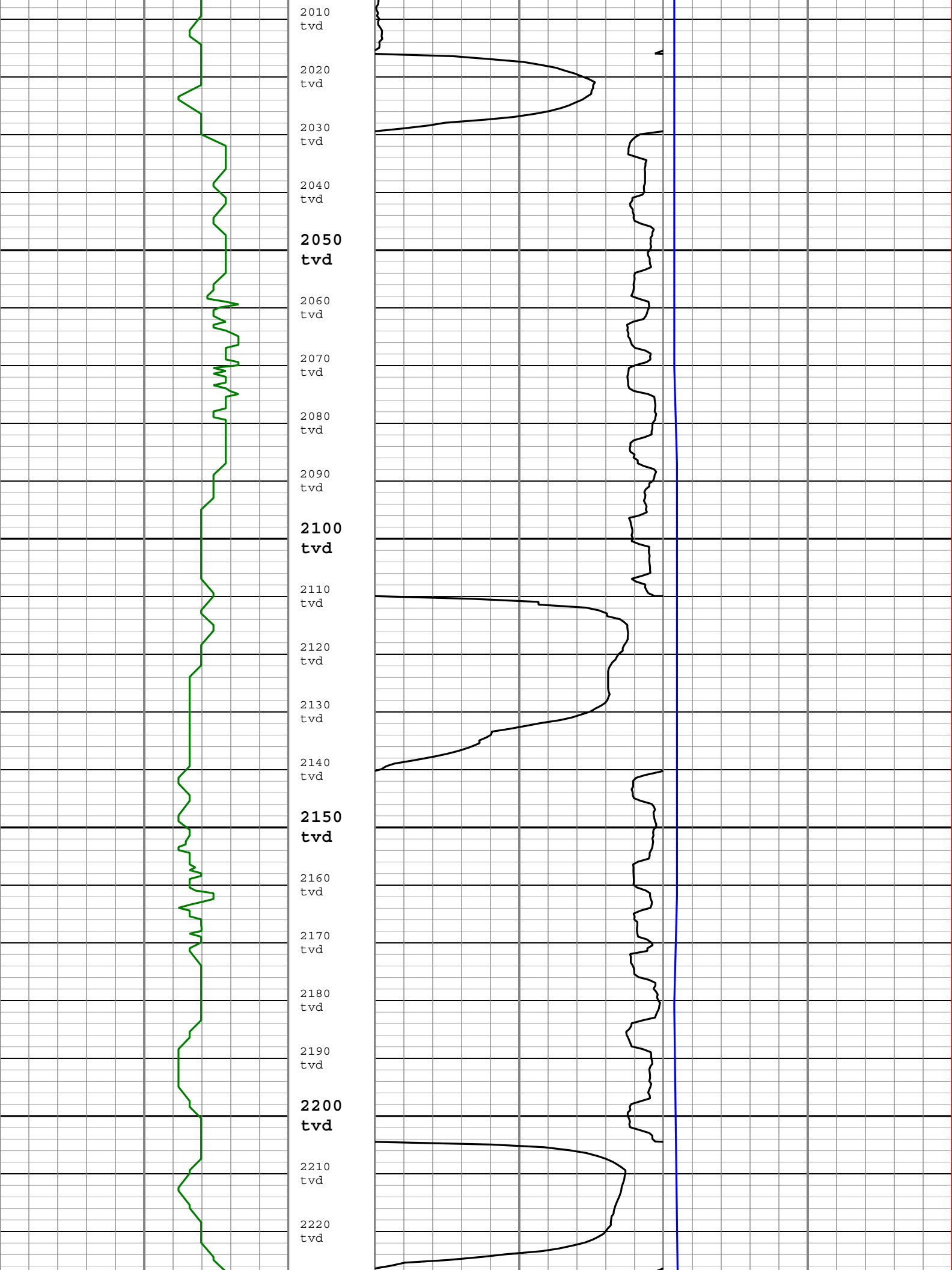


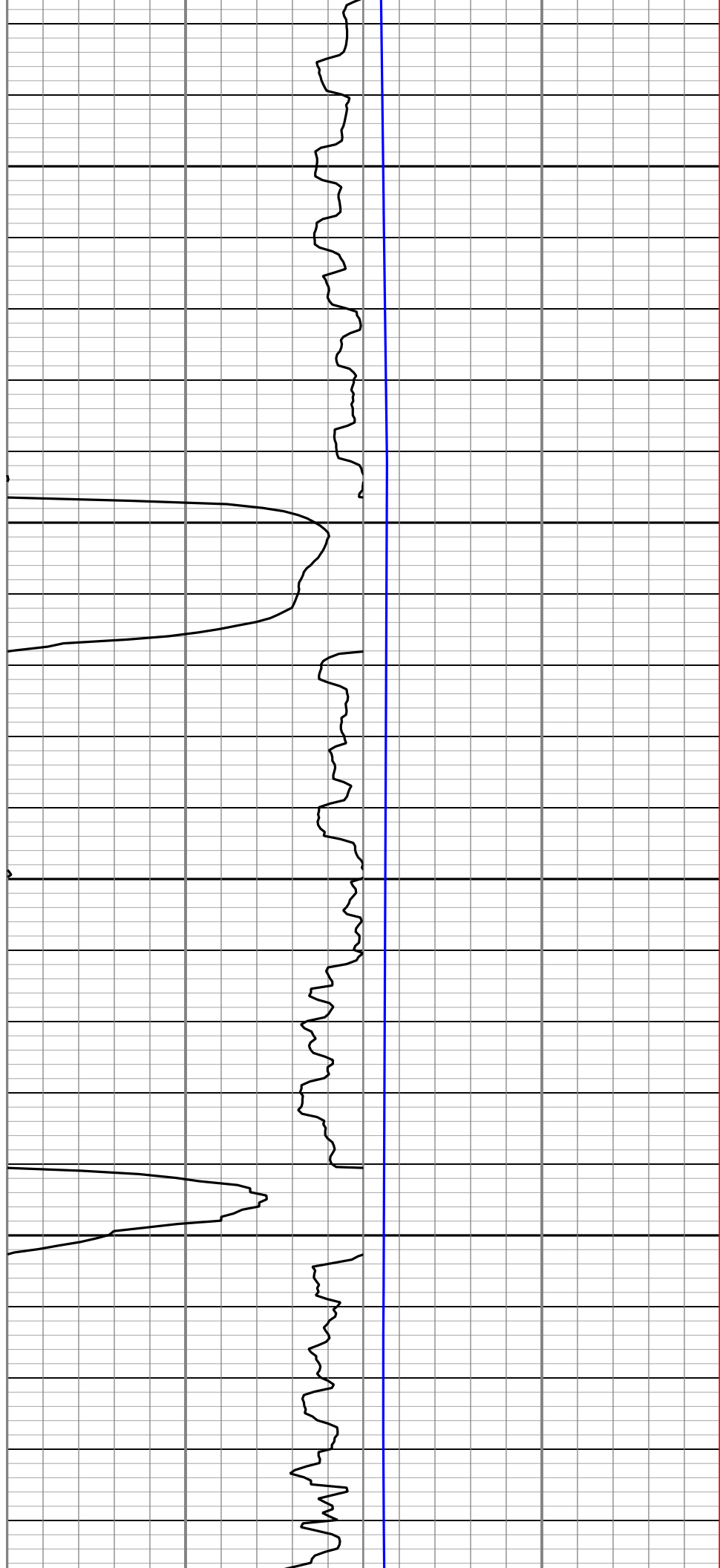
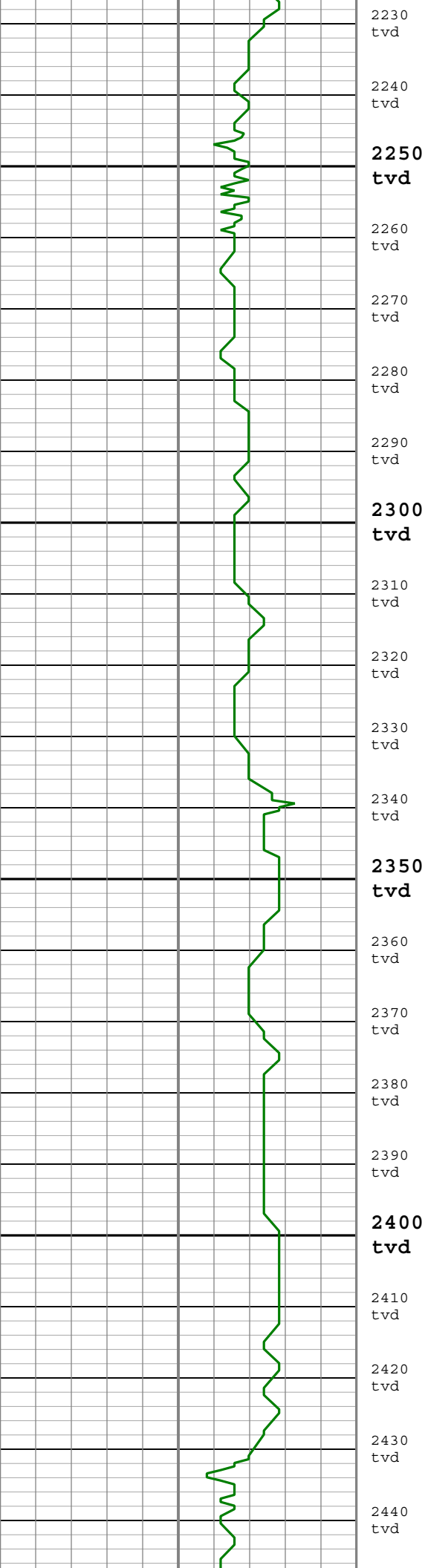




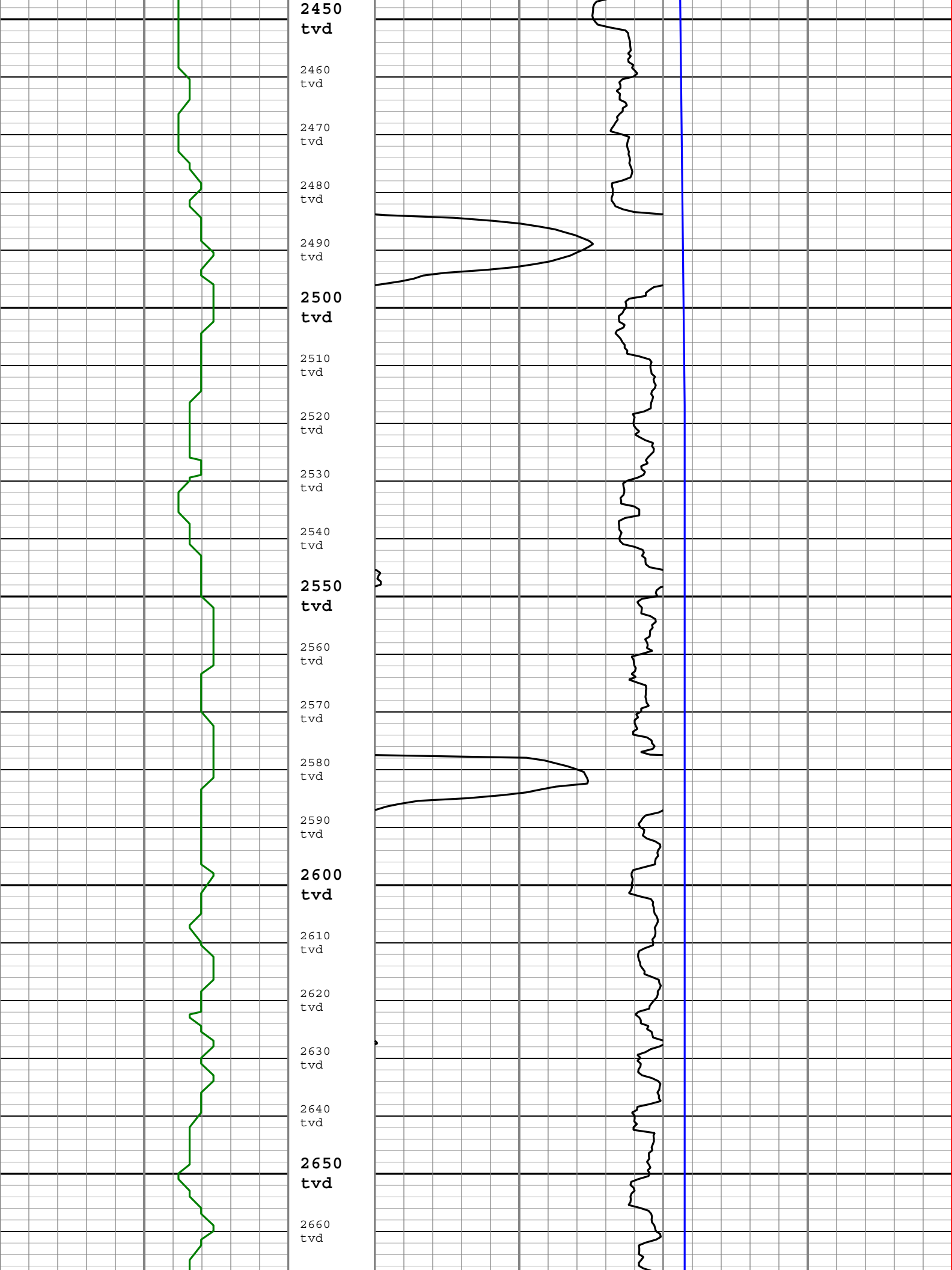


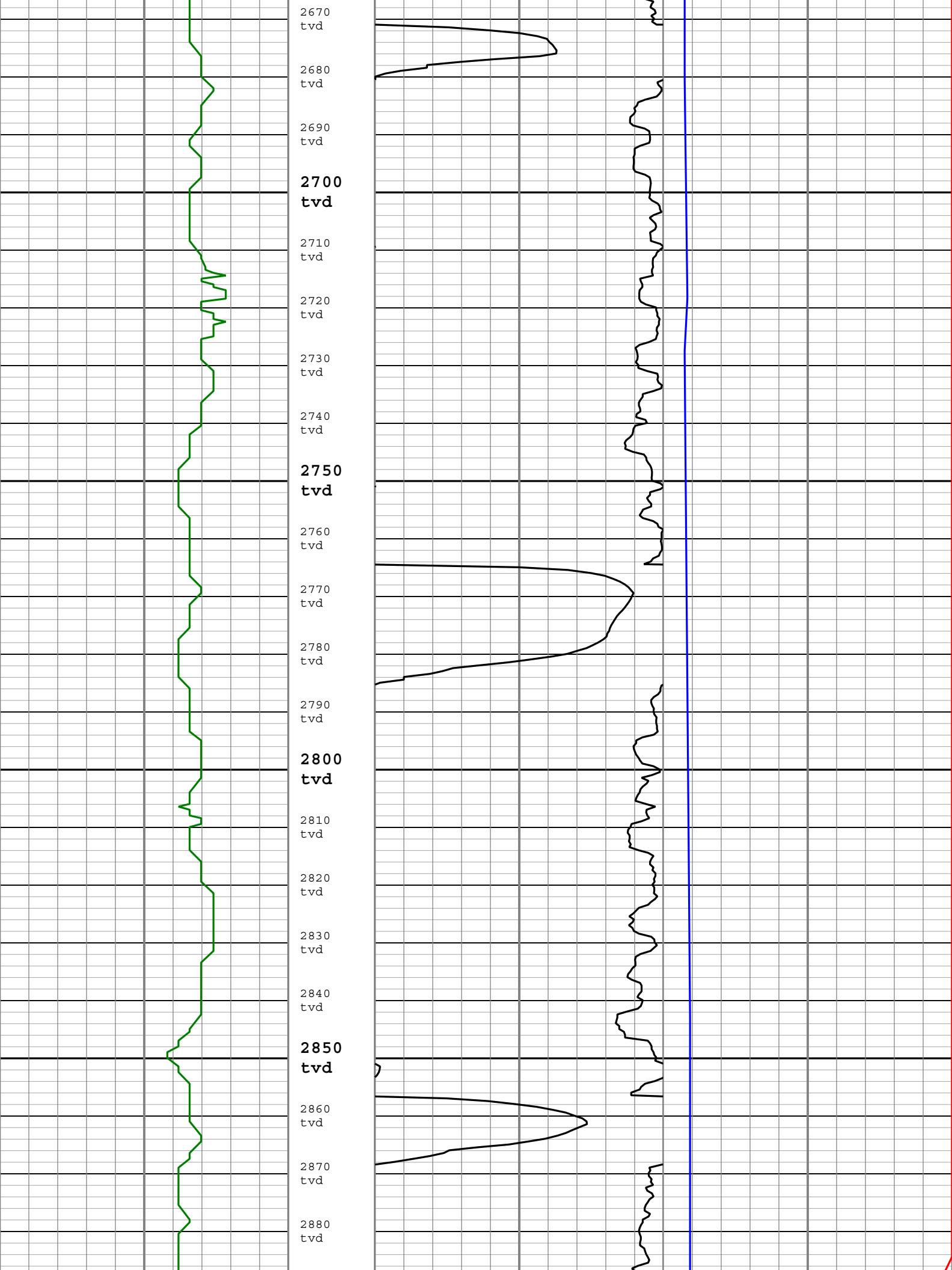


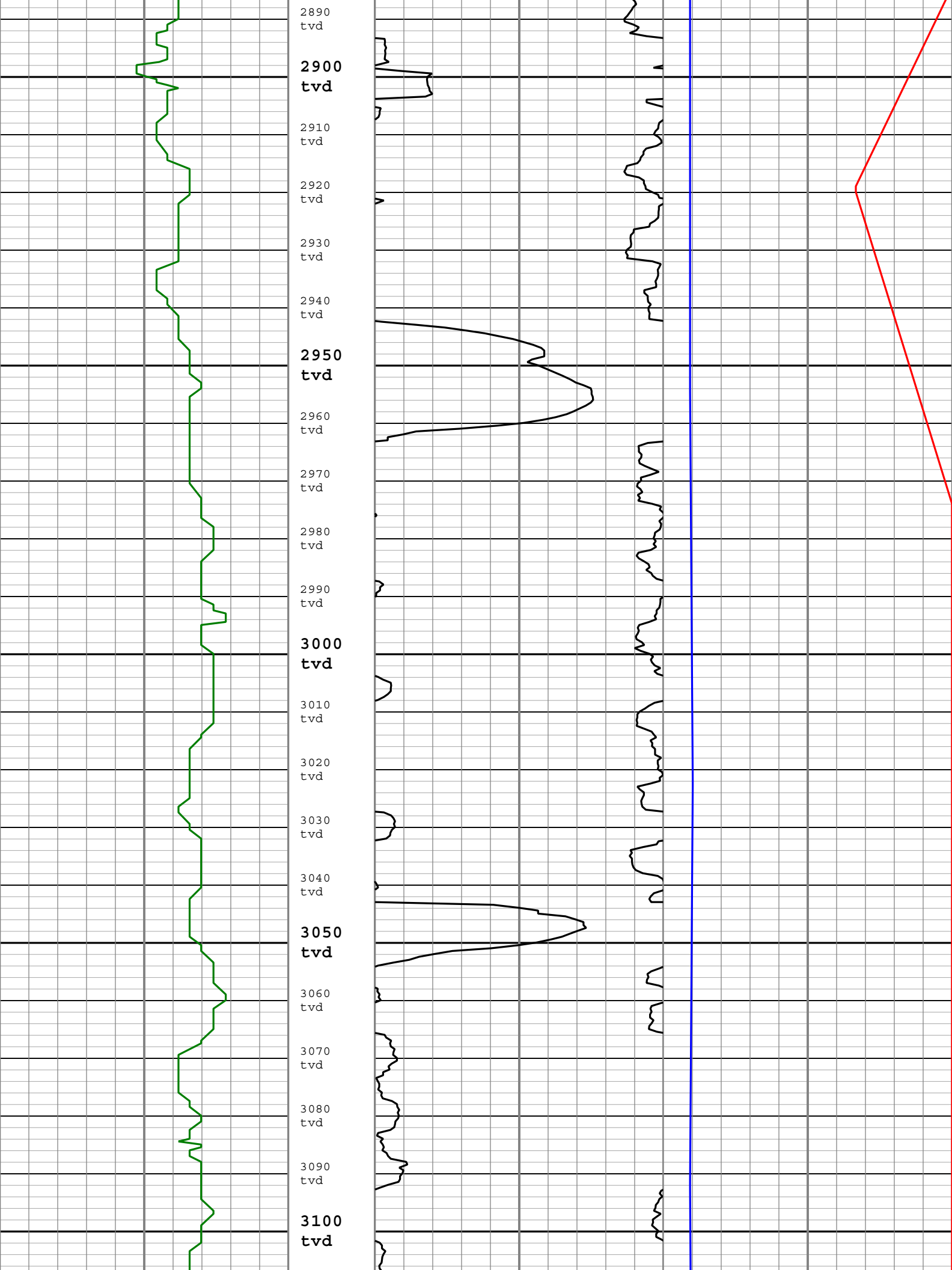


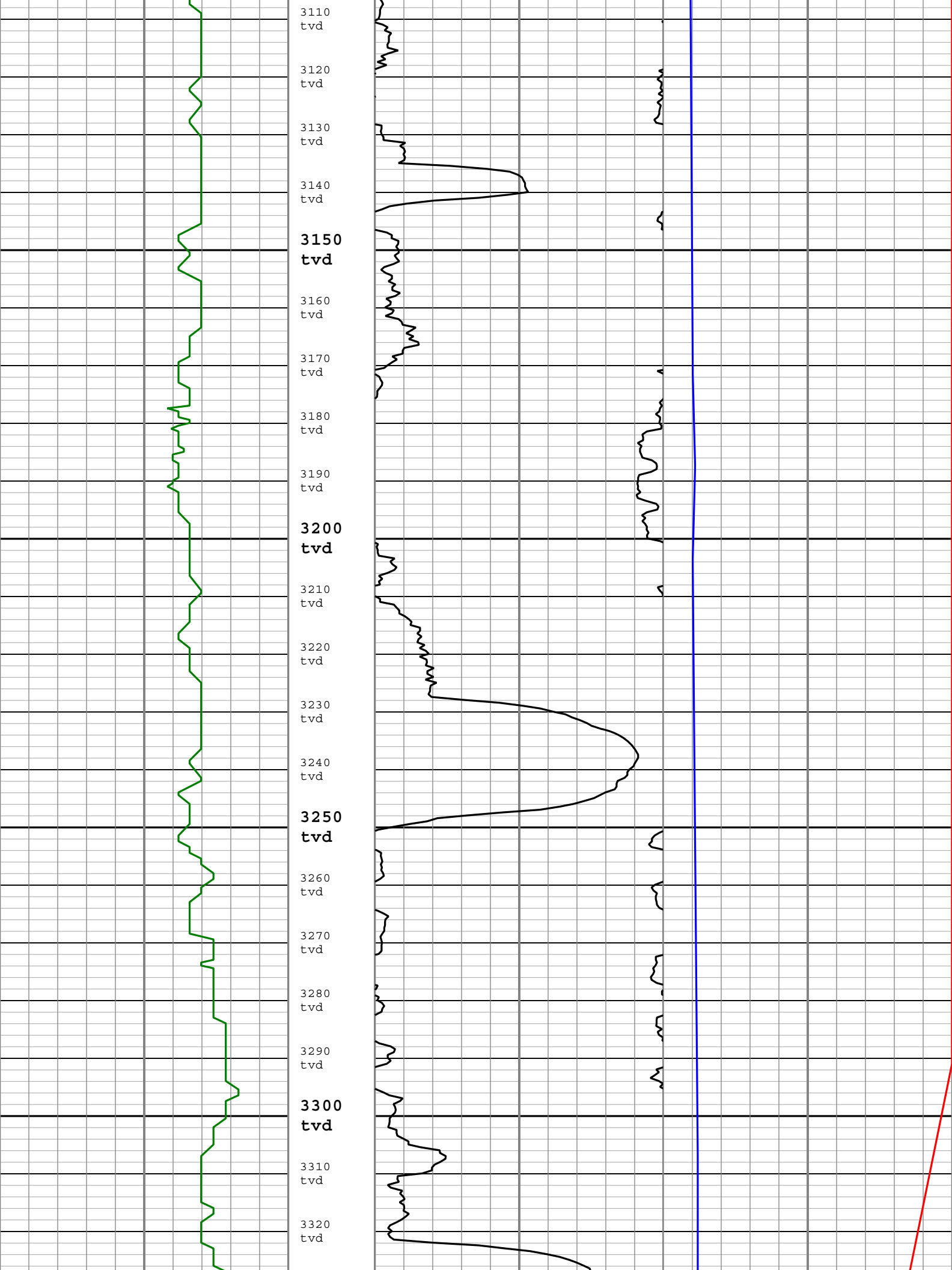


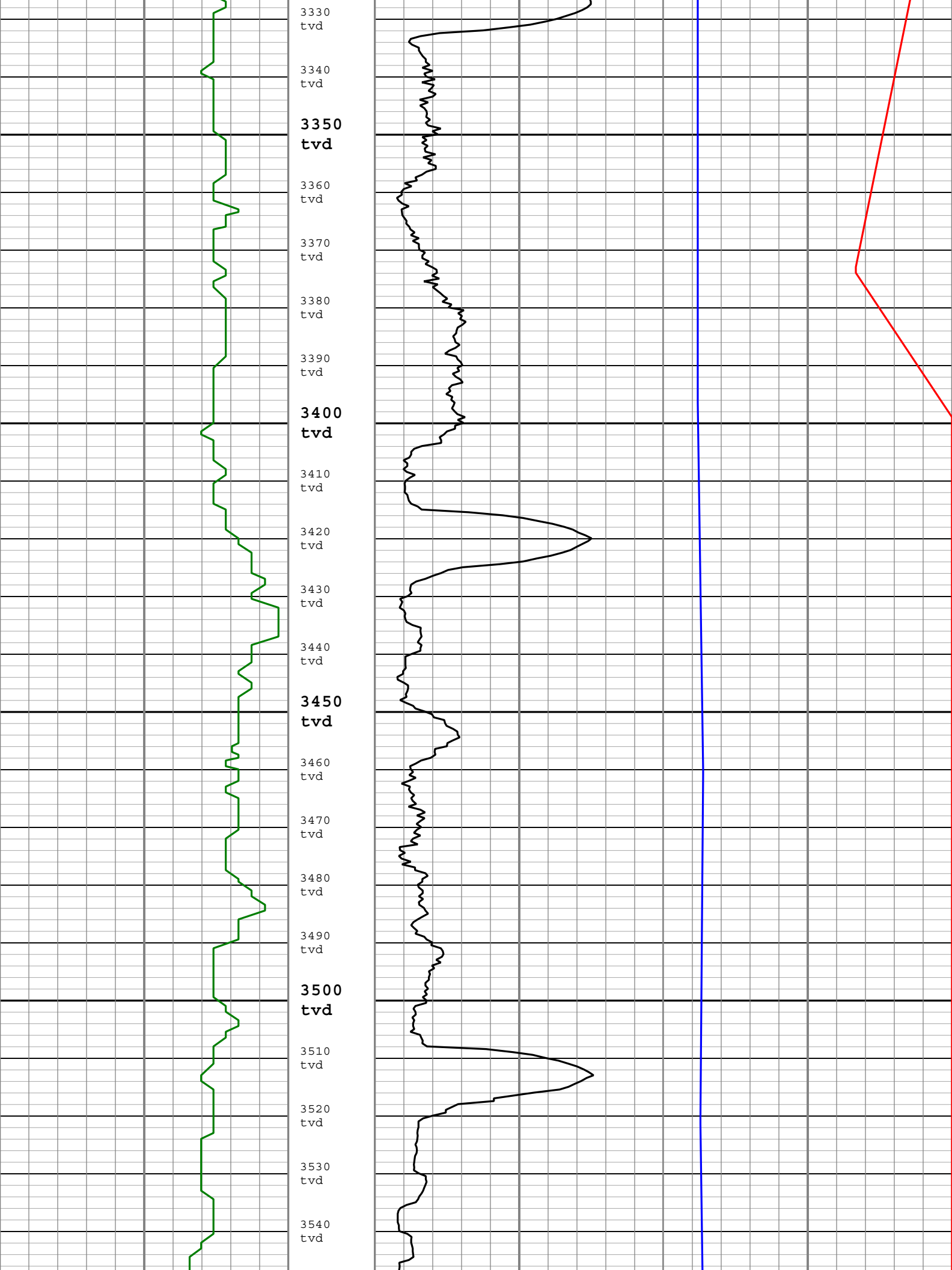


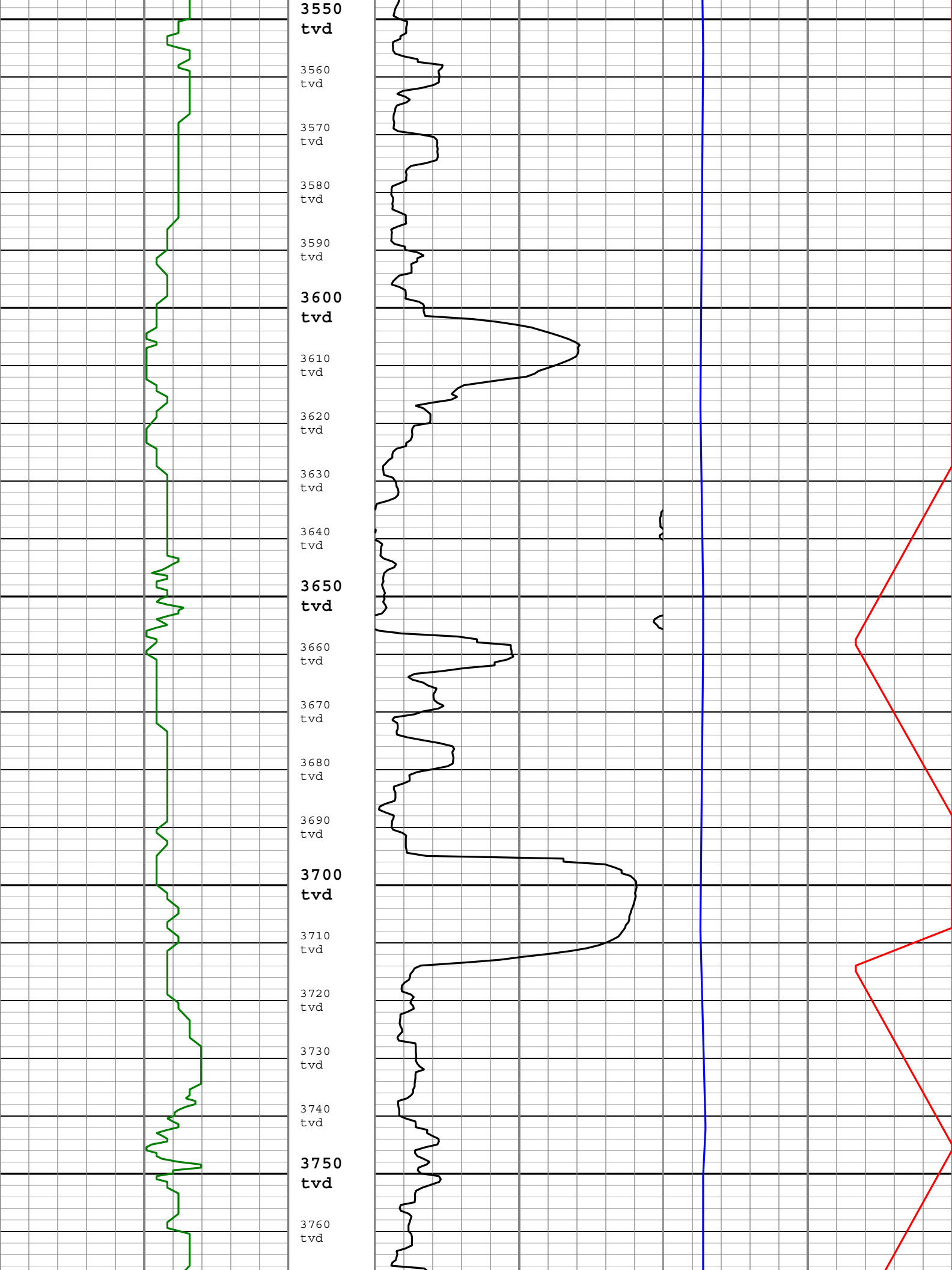


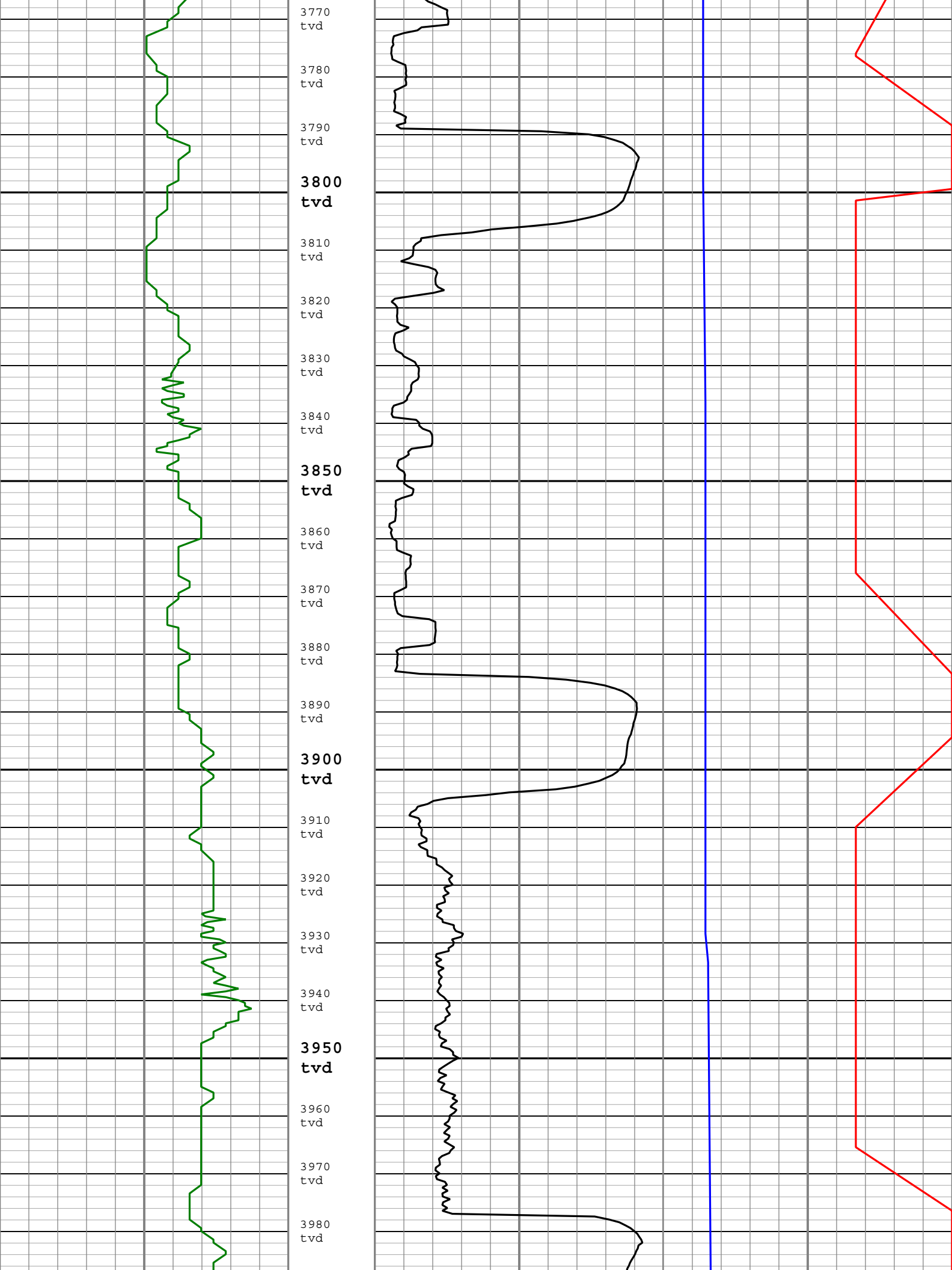


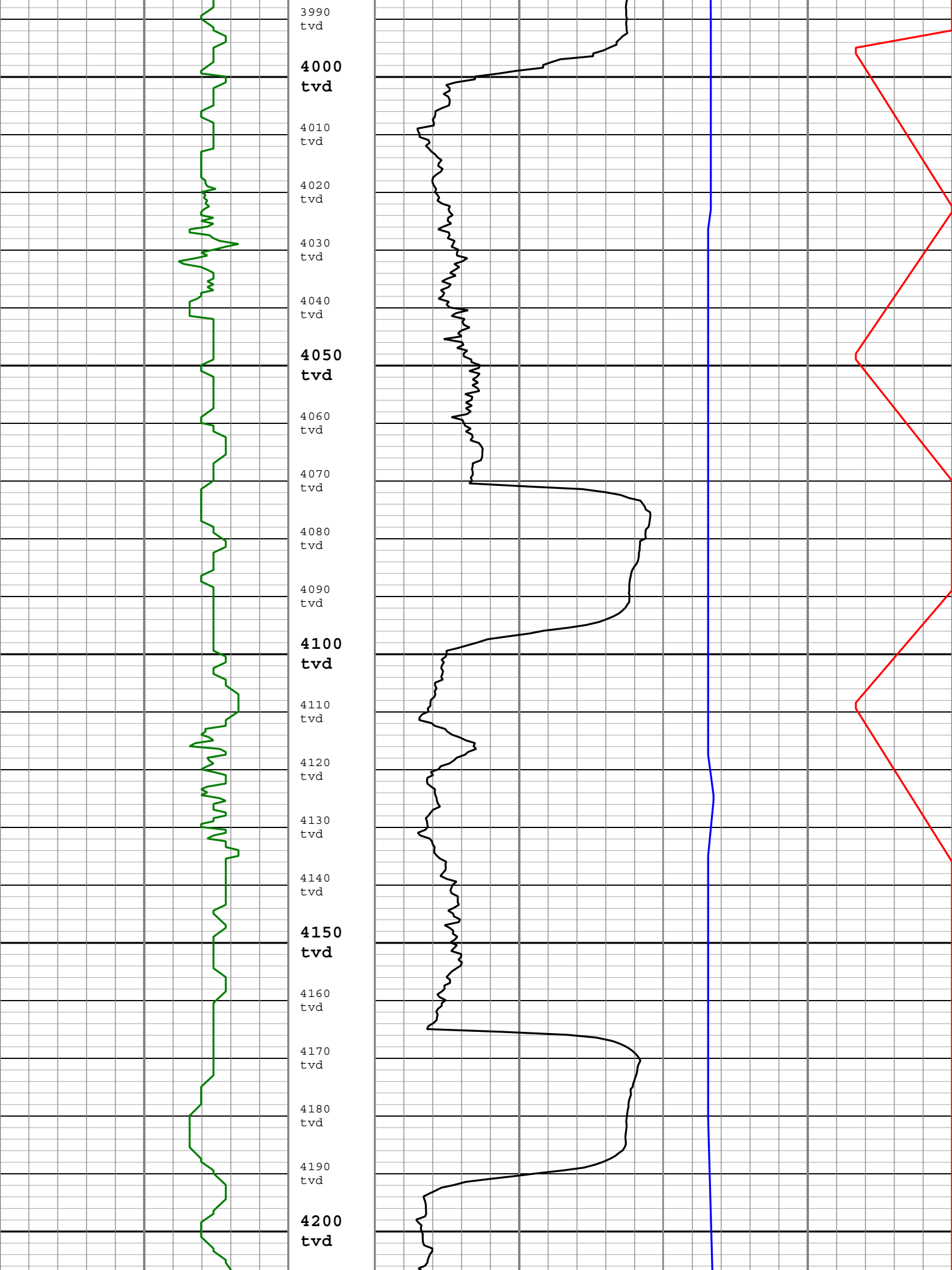




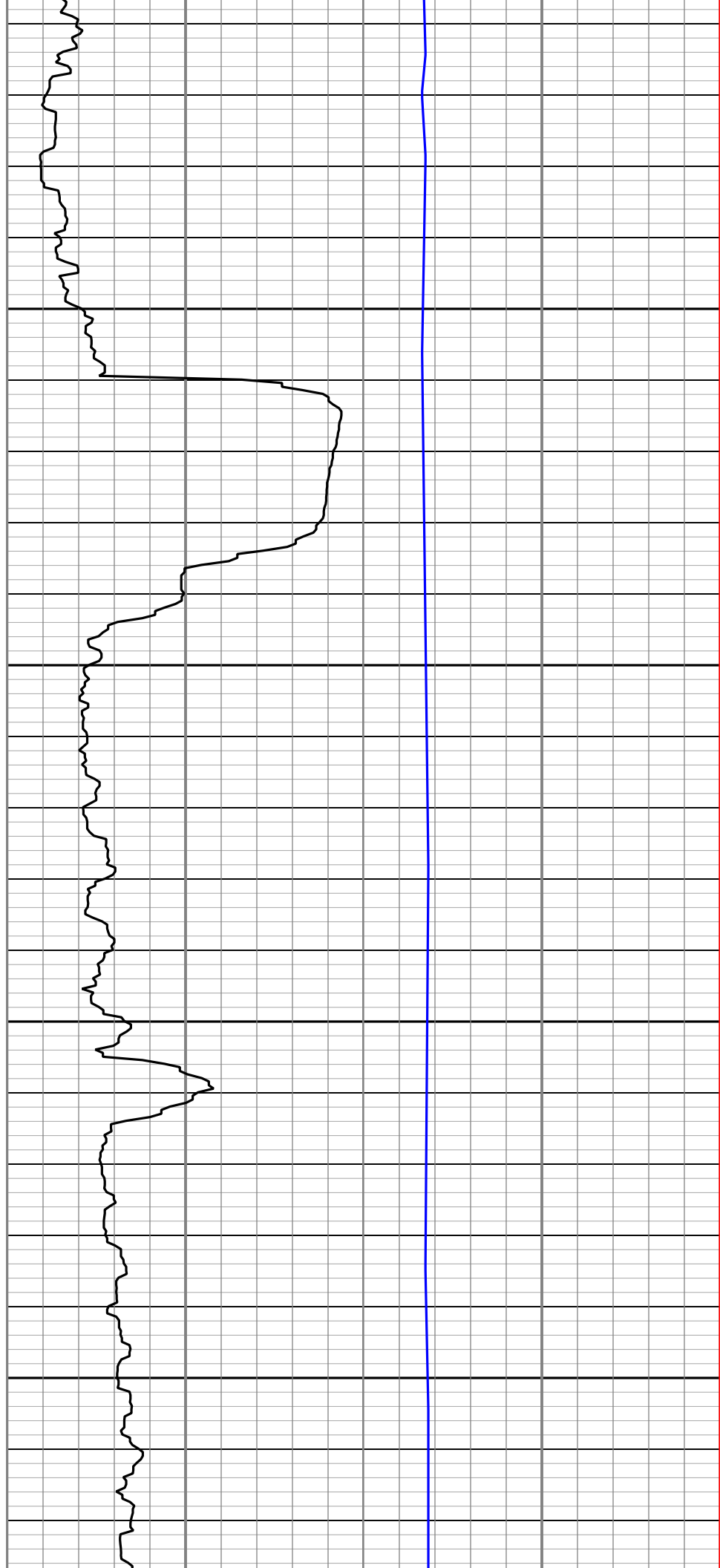
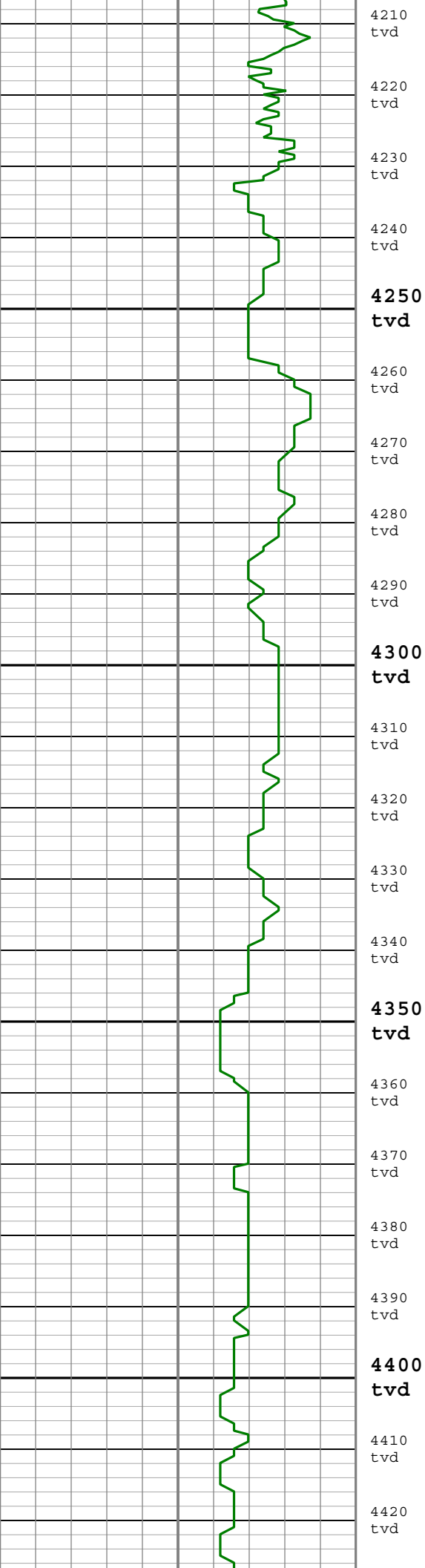


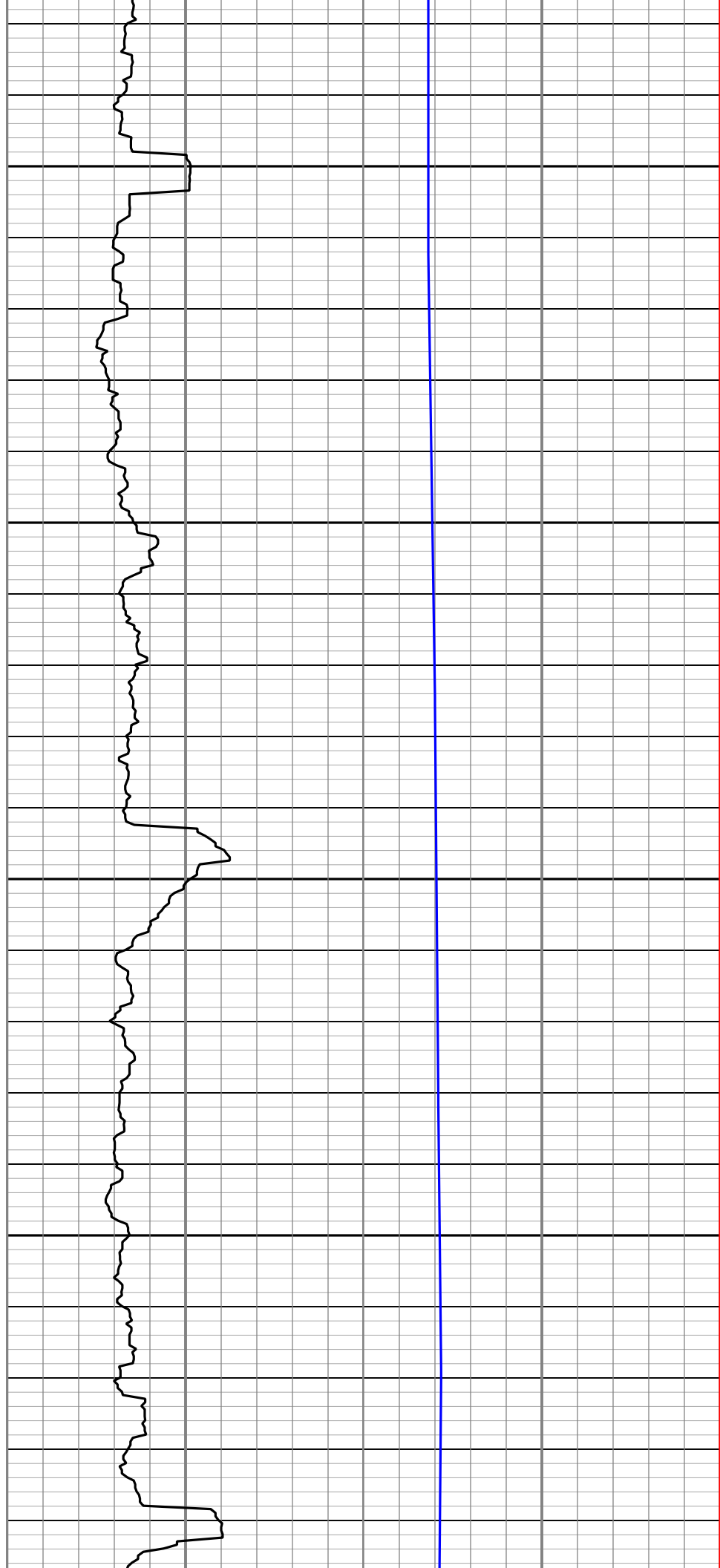
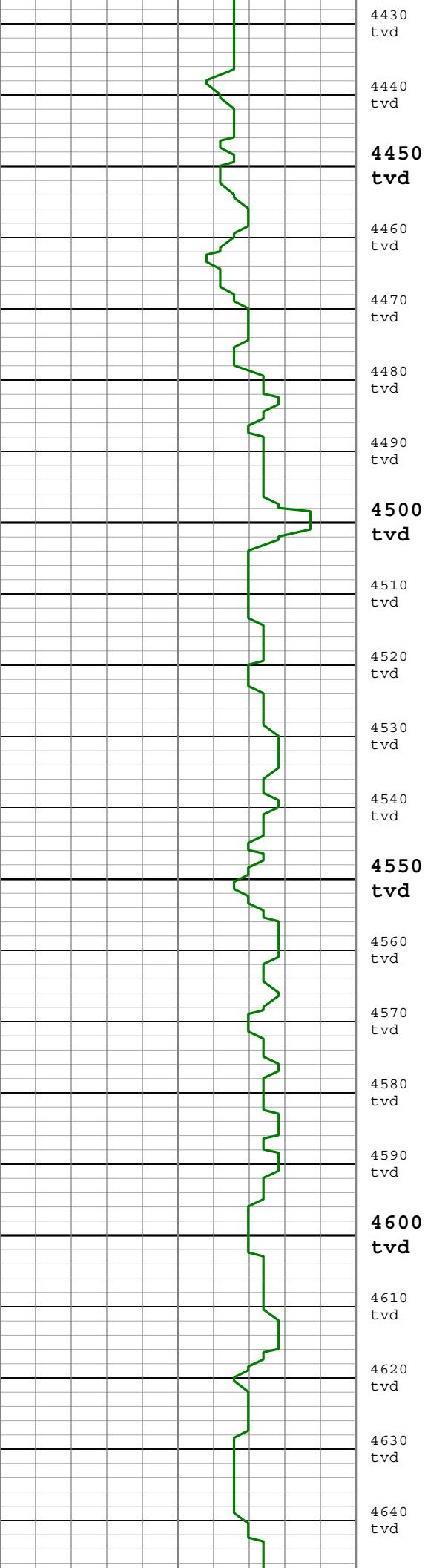


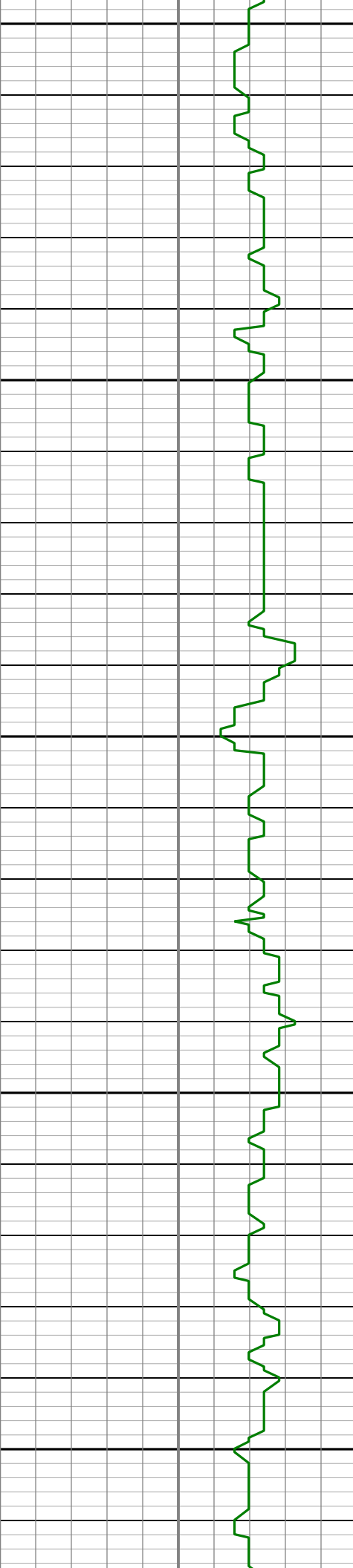












4650  
tvd

4660  
tvd

4670  
tvd

4680  
tvd

4690  
tvd

4700  
tvd

4710  
tvd

4720  
tvd

4730  
tvd

4740  
tvd

4750  
tvd

4760  
tvd

4770  
tvd

4780  
tvd

4790  
tvd

4800  
tvd

4810  
tvd

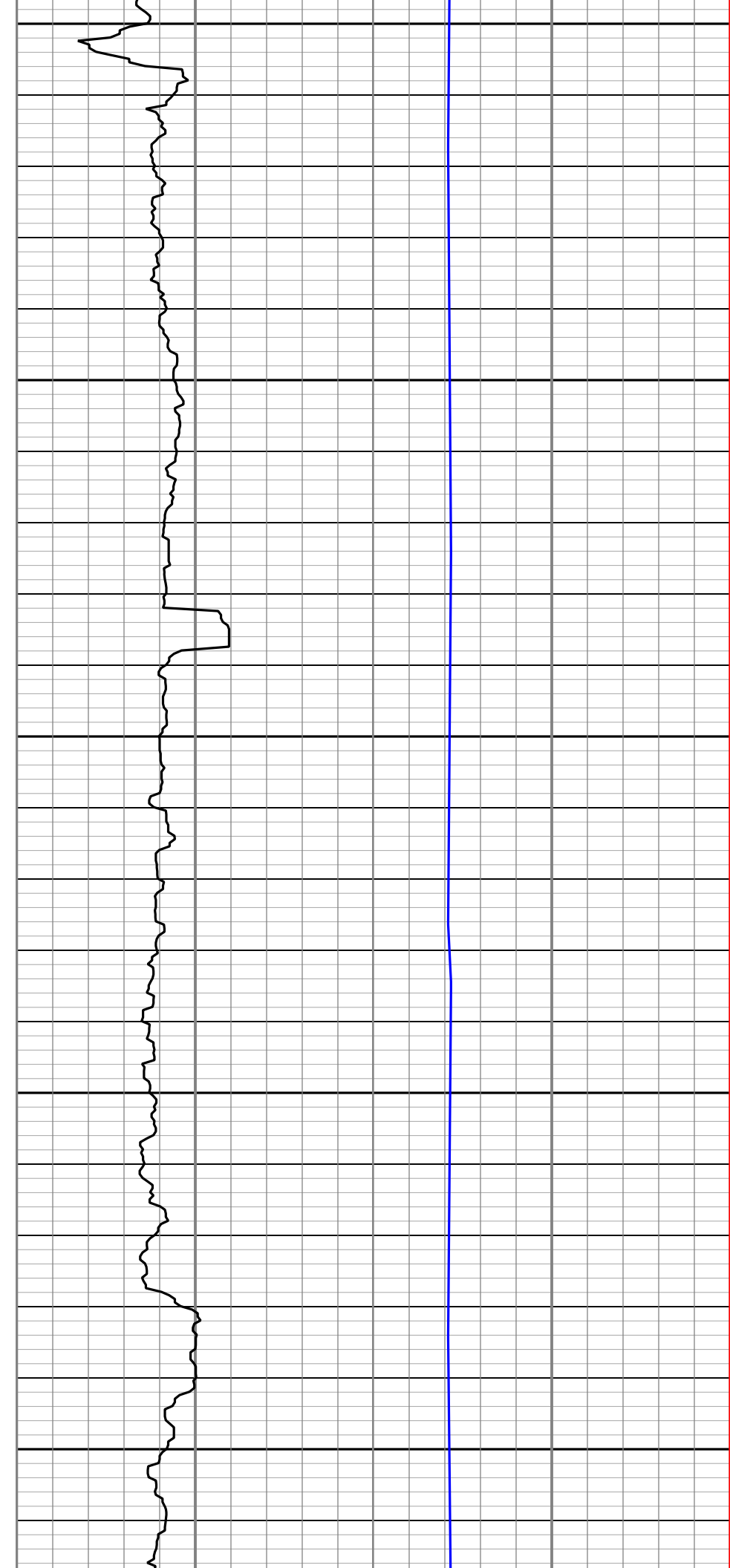
4820  
tvd

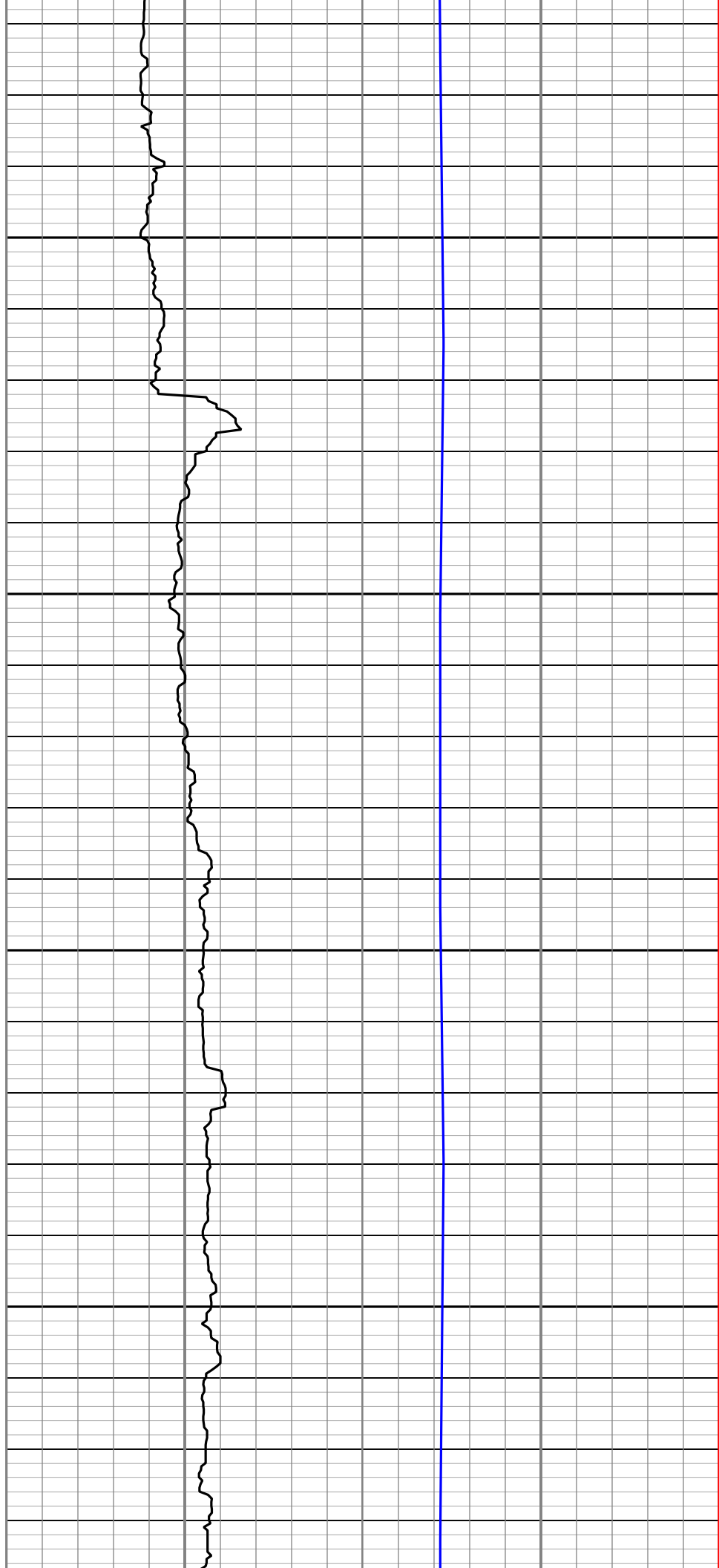
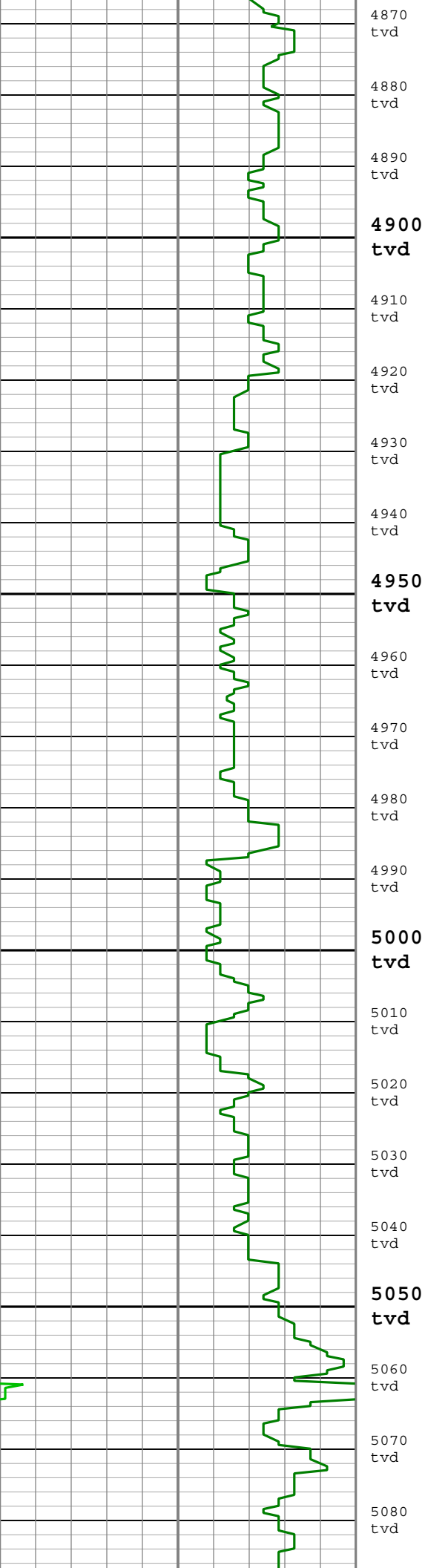
4830  
tvd

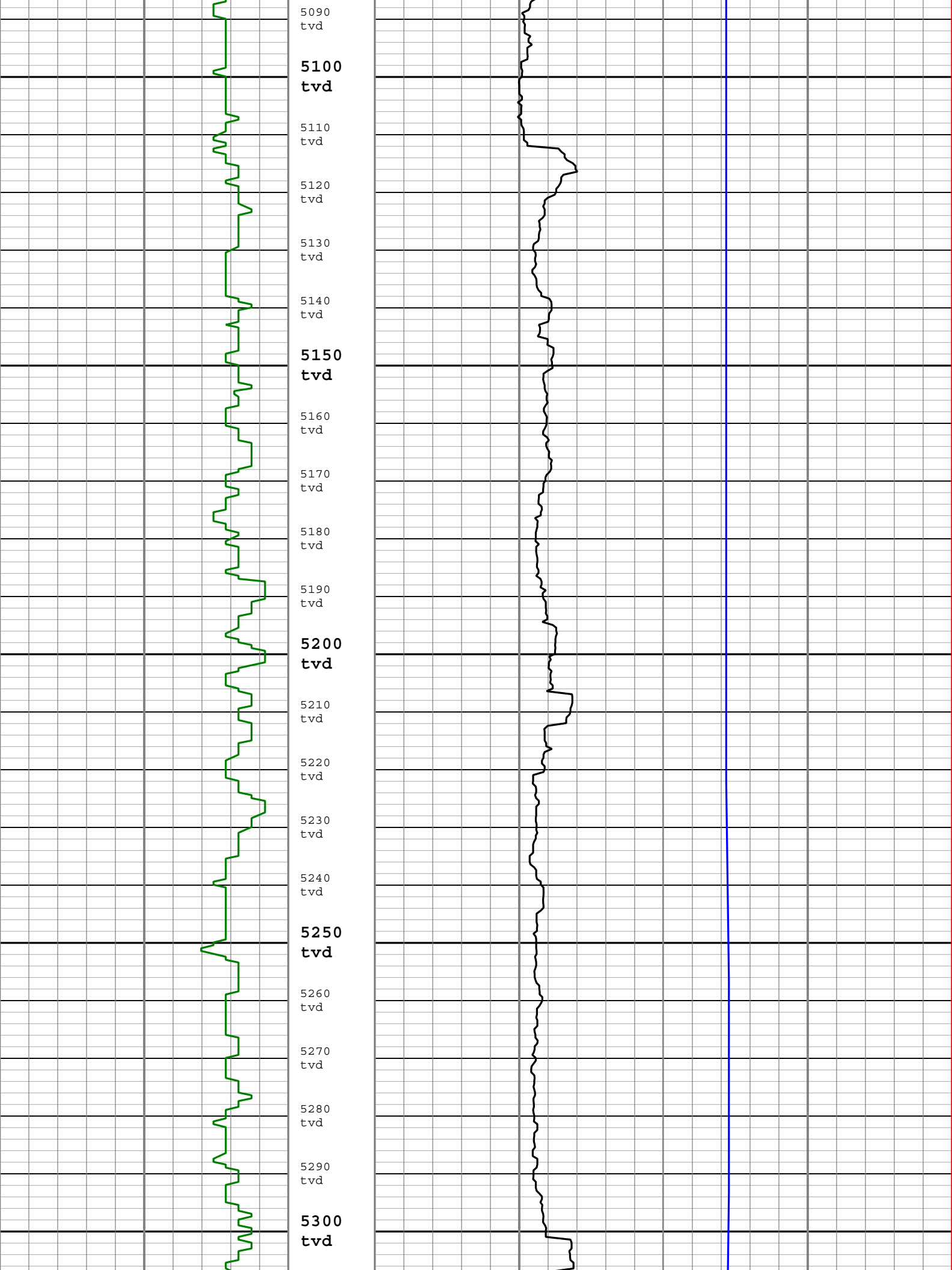
4840  
tvd

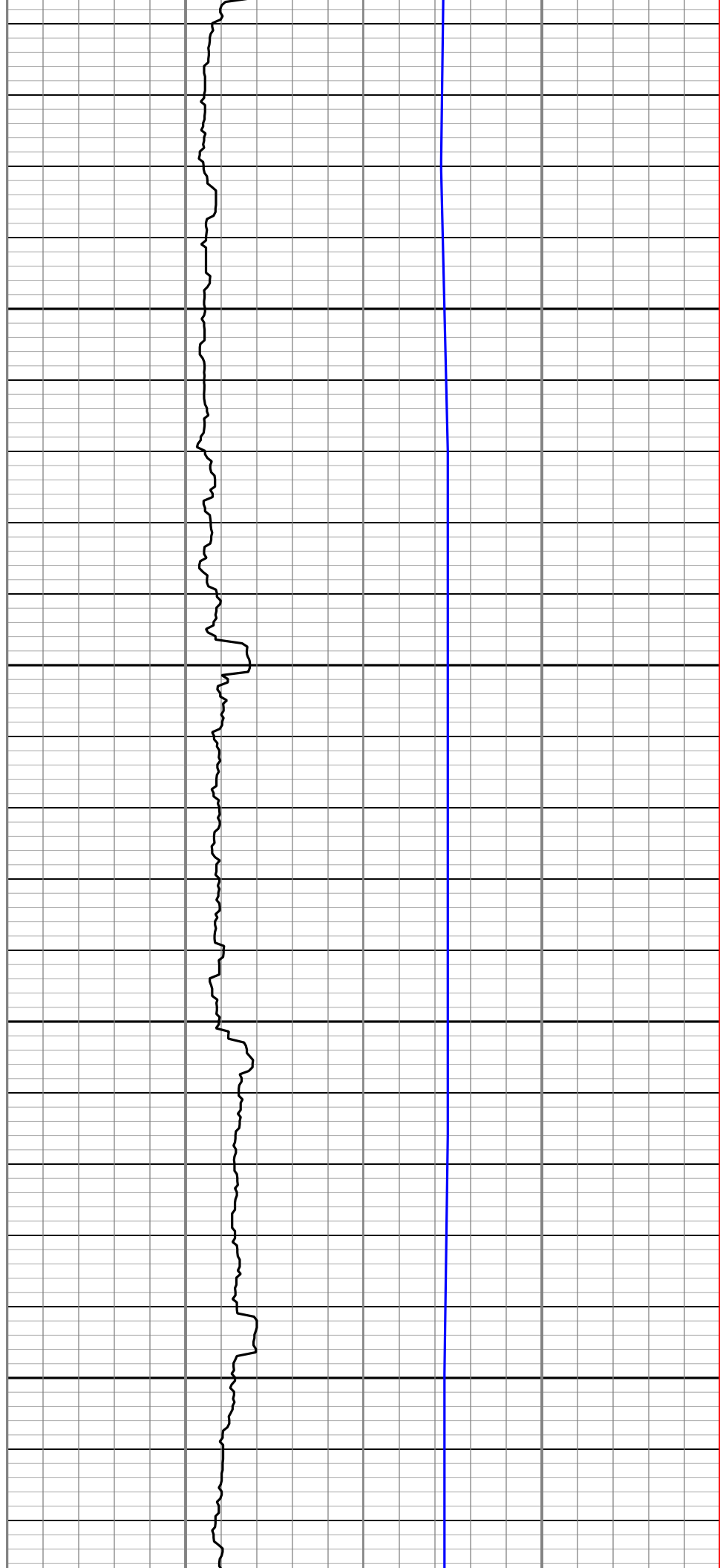
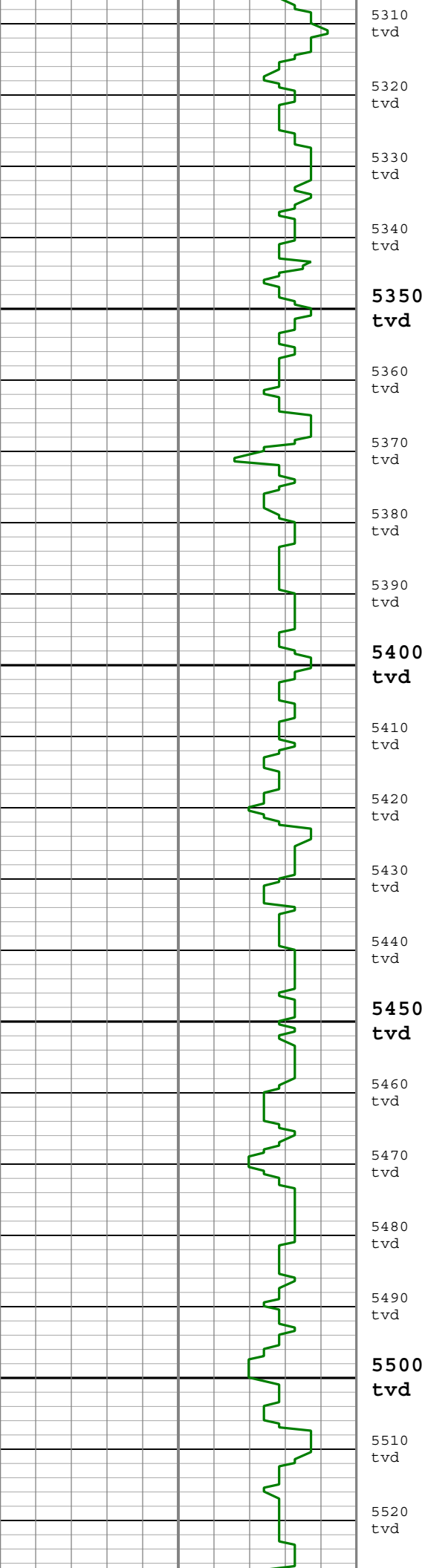
4850  
tvd

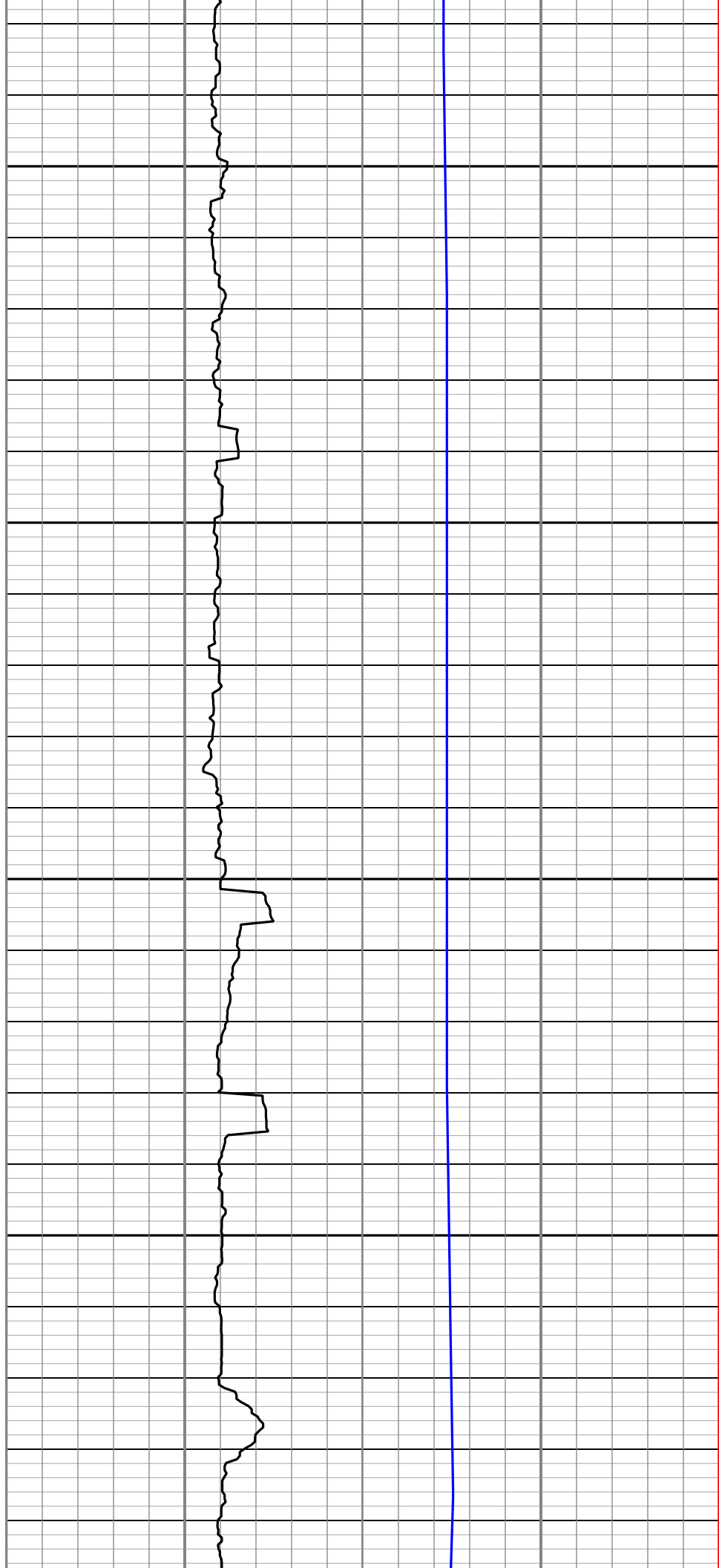
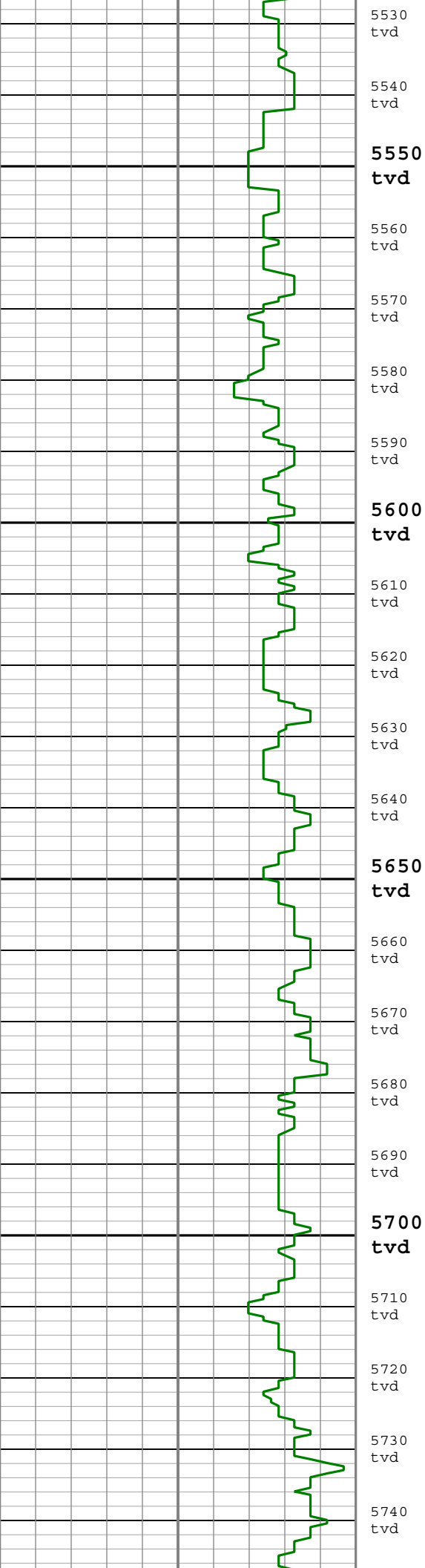
4860  
tvd

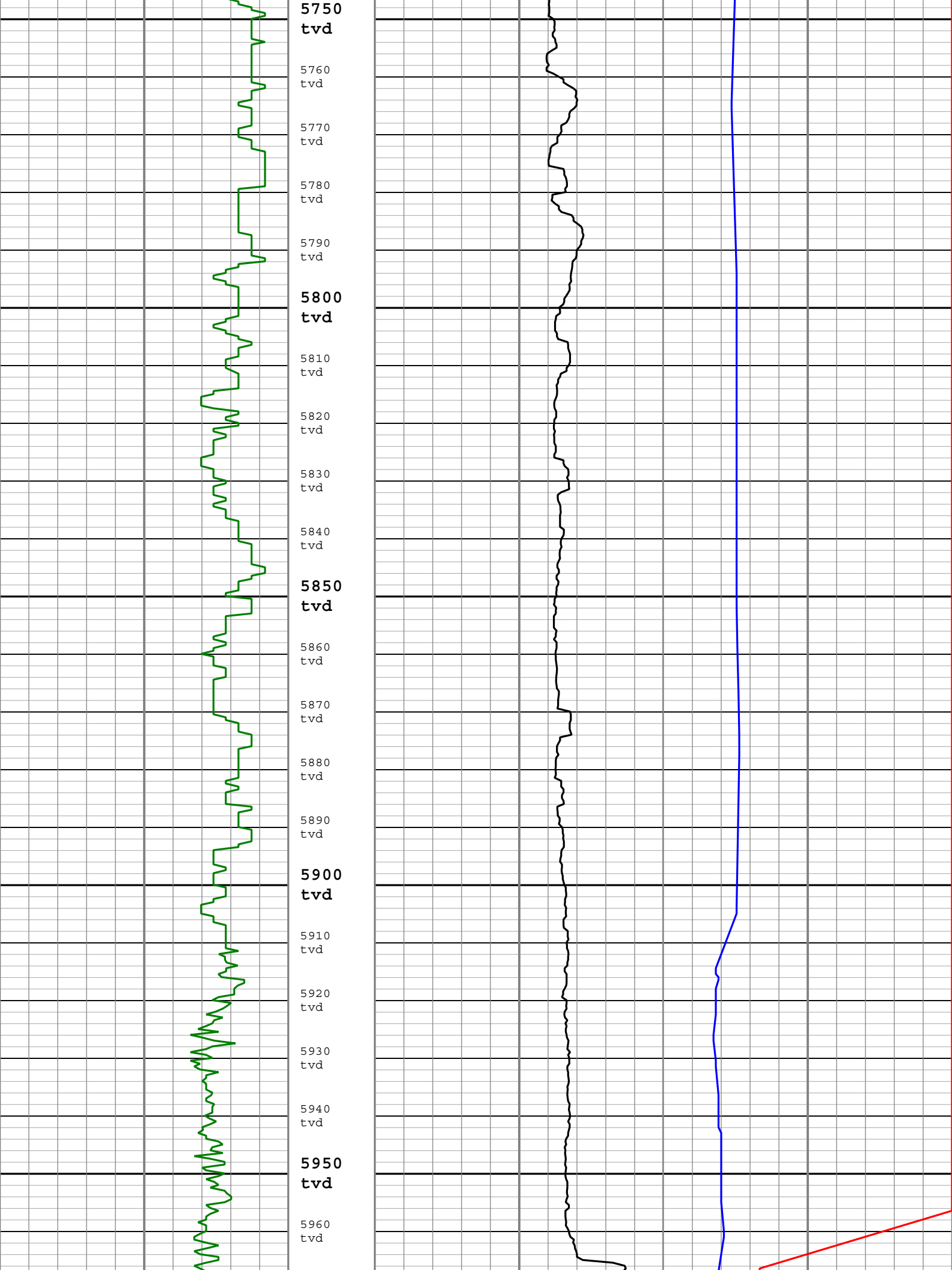




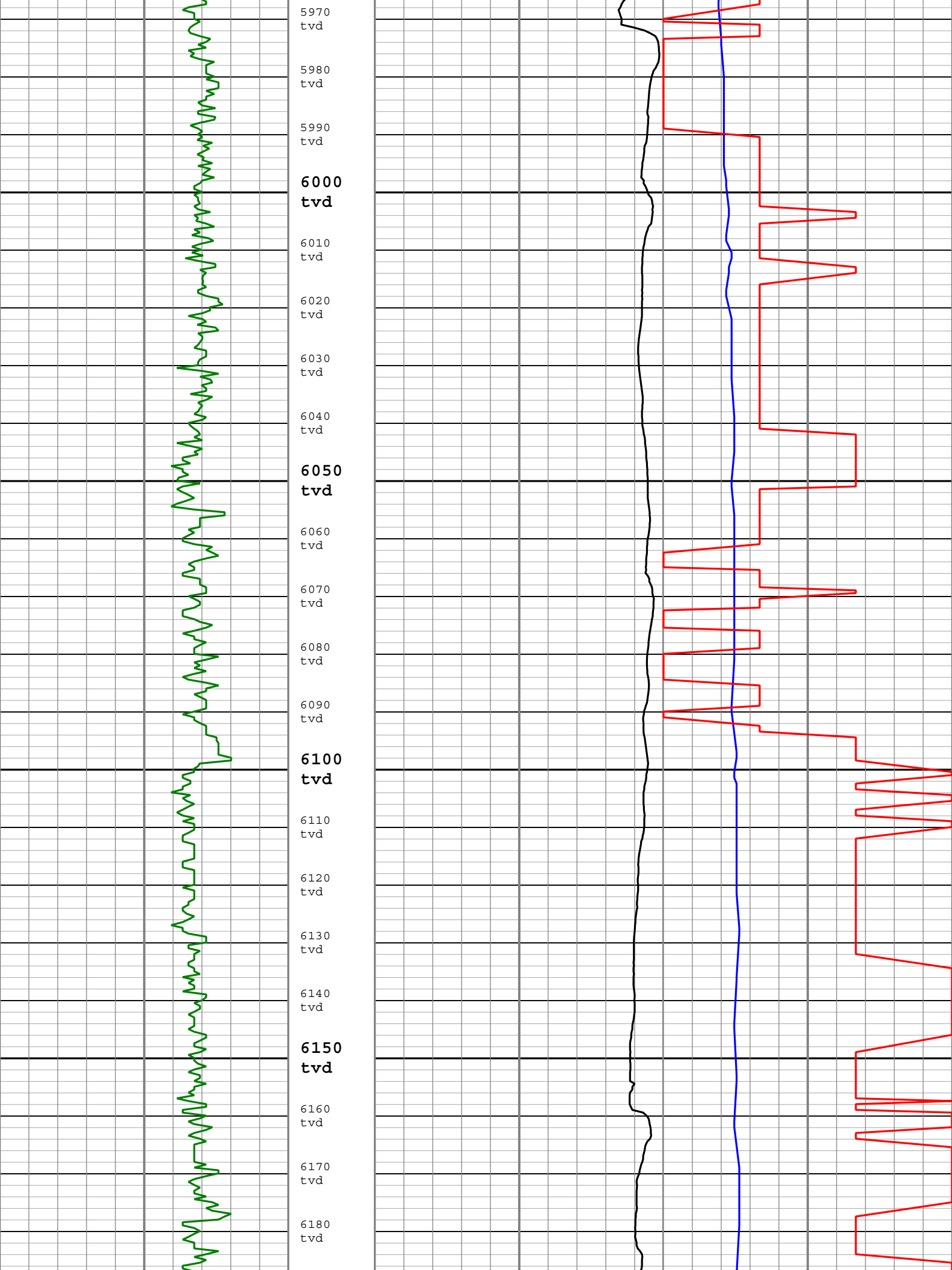


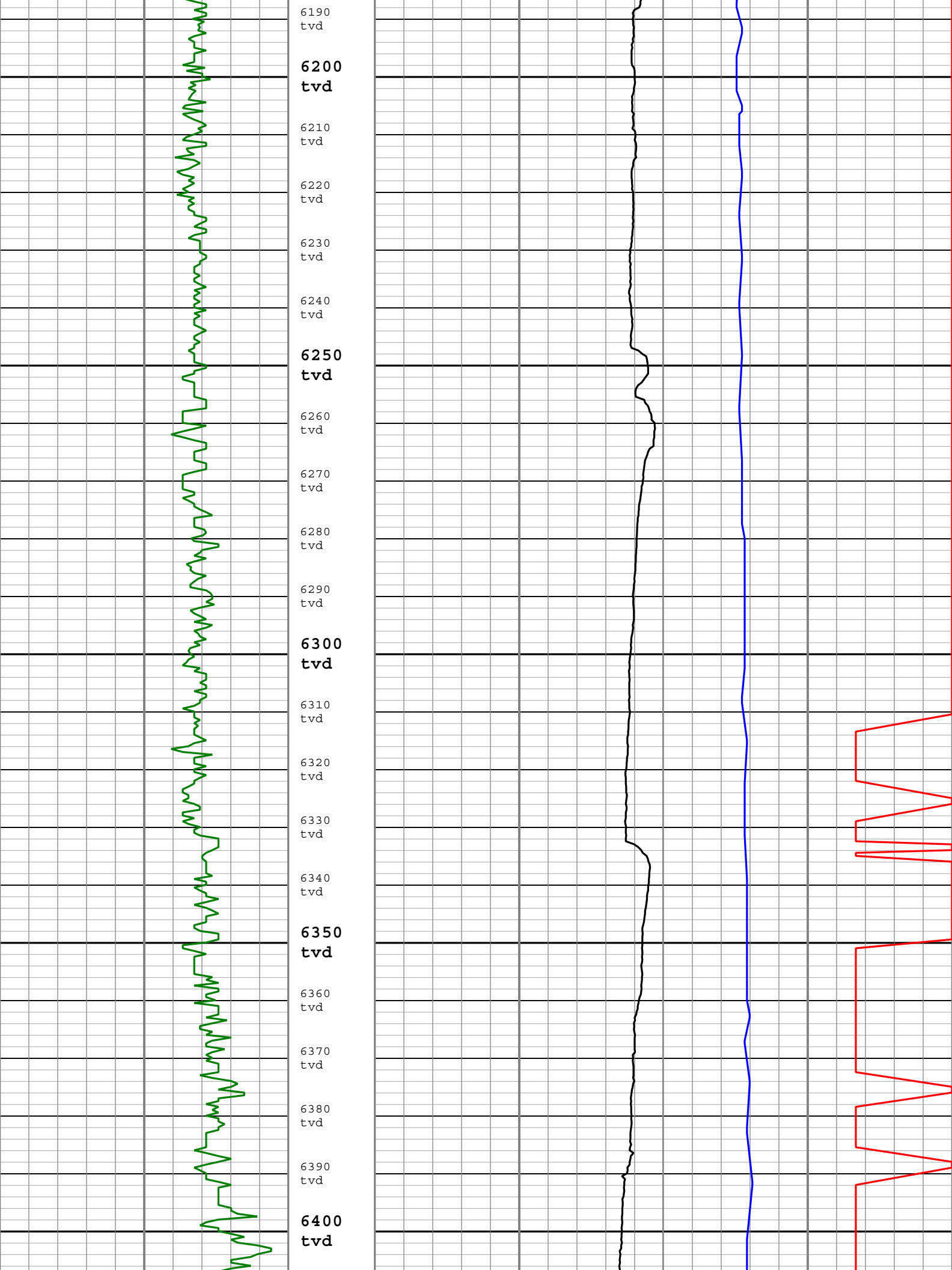


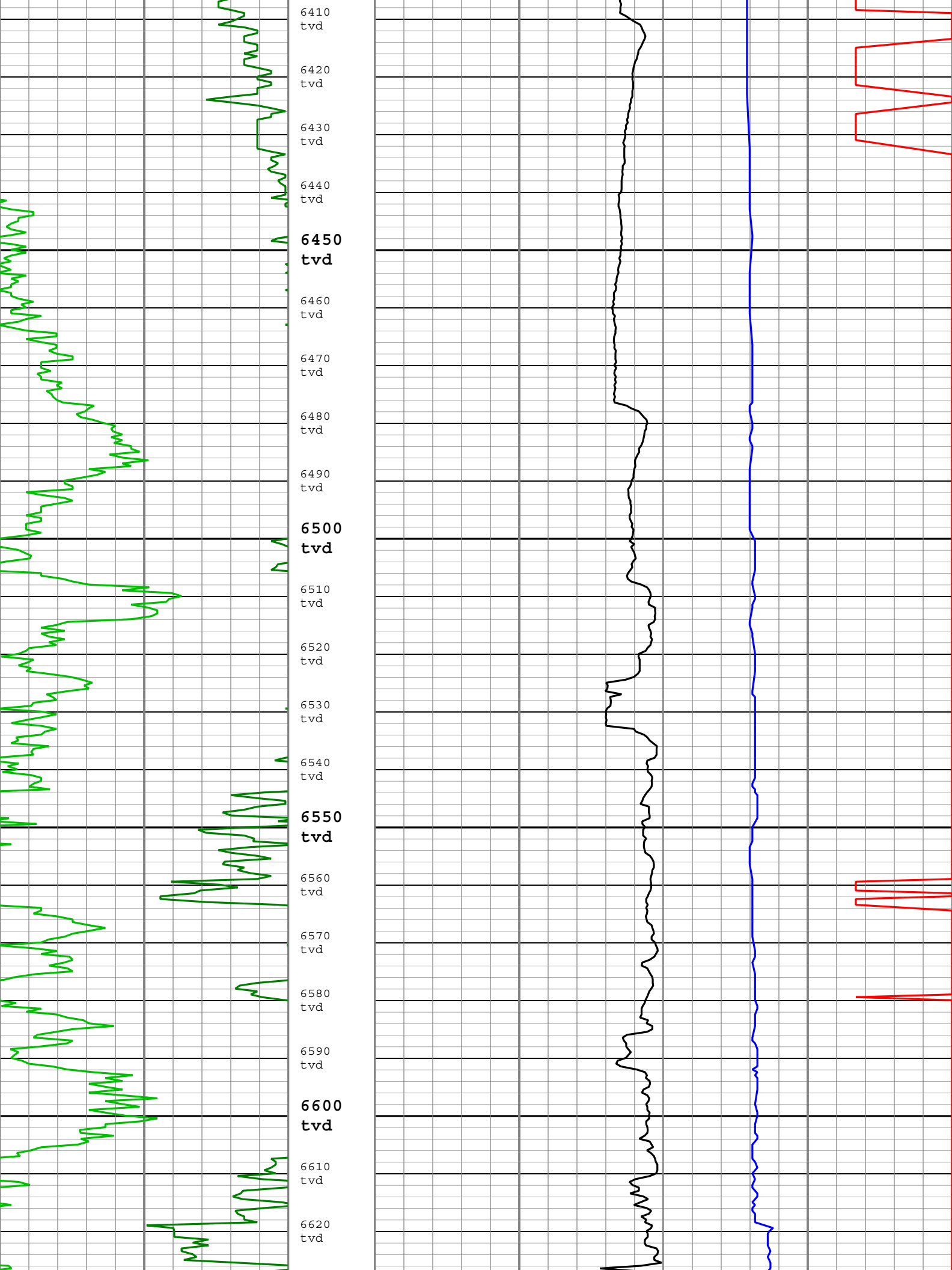


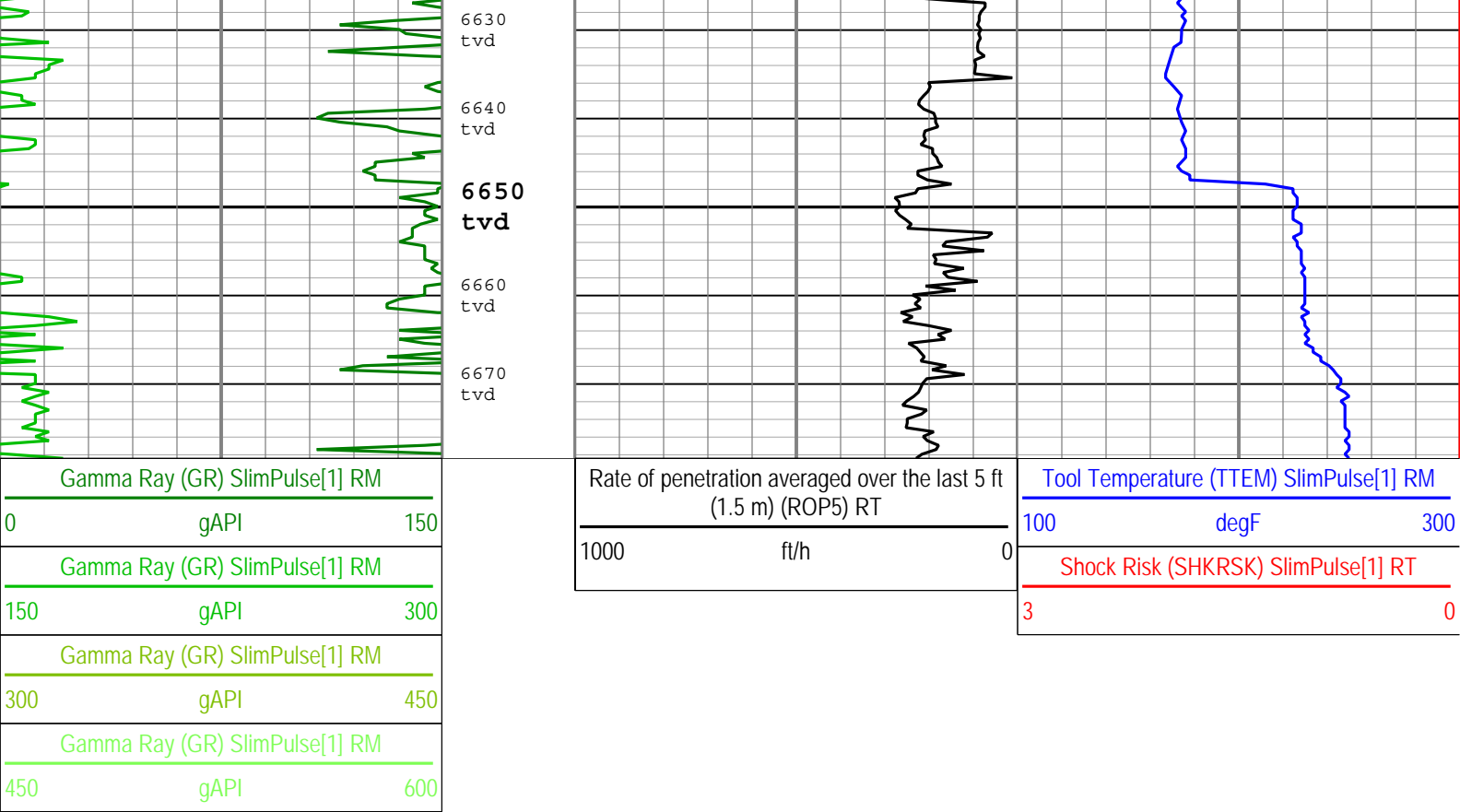












North Reference :				Grid North				Total Correction Formula :				Magnetic Dec - Grid Convergence			
Grid Convergence :				0.68 deg											
Rig Location															
Latitude :				40° 30' 52.416" N				Longitude :				104° 27' 3.096" W			
Tie In Point															
Measured Depth:		0.00 ft		Inclination:		0.00 deg		Azimuth:		0.00 deg					
True Vertical Depth:		0.00 ft		North Displacement:		0.00 ft		East Displacement:		0.00 ft					
N-S VSec Origin:		0.00 ft		E-W VSec Origin:		0.00 ft		Vertical Section Azimuth:		266.36 deg					
D&I Inits Computed and Values Used - RUN001															
Geomagnetic Model :				BGGM 2014				Geomagnetic Date :				26-Jul-2014			
Computed Location B :				52796.57 nT +/- 300.00nT				Used Location B :				52543.00 nT +/- 300.00nT			
Computed Location G :				999.56 mgn +/- 2.50mgn				Used Location G :				999.56 mgn +/- 2.50mgn			
Computed Magnetic Dip :				67.08 deg +/- 0.45deg				Used Magnetic Dip :				67.15 deg +/- 0.45deg			
Computed Magnetic Dec :				8.37 deg				Used Magnetic Dec :				8.14 deg			
Computed Total Correction :				7.69 deg				Used Total Correction :				7.46 deg			
D&I Inits Computed and Values Used - RUN002															
Geomagnetic Model :				BGGM 2014				Geomagnetic Date :				28-Jul-2014			
Computed Location B :				52795.82 nT +/- 300.00nT				Used Location B :				52543.00 nT +/- 300.00nT			
Computed Location G :				999.56 mgn +/- 2.50mgn				Used Location G :				999.56 mgn +/- 2.50mgn			
Computed Magnetic Dip :				67.08 deg +/- 0.45deg				Used Magnetic Dip :				67.15 deg +/- 0.45deg			
Computed Magnetic Dec :				8.37 deg				Used Magnetic Dec :				8.14 deg			
Computed Total Correction :				7.69 deg				Used Total Correction :				7.46 deg			
D&I Inits Computed and Values Used - RUN003															
Geomagnetic Model :				BGGM 2014				Geomagnetic Date :				31-Jul-2014			
Computed Location B :				52794.71 nT +/- 300.00nT				Used Location B :				52543.00 nT +/- 300.00nT			
Computed Location G :				999.56 mgn +/- 2.50mgn				Used Location G :				999.56 mgn +/- 2.50mgn			
Computed Magnetic Dip :				67.08 deg +/- 0.45deg				Used Magnetic Dip :				67.15 deg +/- 0.45deg			
Computed Magnetic Dec :				8.37 deg				Used Magnetic Dec :				8.14 deg			
Computed Total Correction :				7.69 deg				Used Total Correction :				7.46 deg			
Survey Quality Index															
0 : Long Survey passed all criteria				2 : Long Survey failed mag criteria				9 : Manual							
28 : Tie-In Point															
Survey Correction Index															
0 : No correction															
Survey Description Index															
0 : Not Flagged Survey				7 : Projection to Bit				13 : Inclination Only Survey							
Seq	MD (ft)	Incl (deg)	Azim (deg)	Course (ft)	TVD (ft)	V Sec (ft)	N/ -S (ft)	E/ -W (ft)	Closure (ft)	at Azim (deg)	DLS deg/100ft	Tool Type	QI	CI	DI
1	0.00	0.00	0.00	- - - -	0.00	0.00	0.00	0.00	0.00	90.00	0.00	TIP	28	0	0
2	100.00	0.32	14.67	100.00	100.00	-0.09	0.27	0.07	0.30	14.67	0.32	GyroTool	9	0	0
3	200.00	0.32	40.77	100.00	200.00	-0.37	0.75	0.32	0.82	23.30	0.14	GyroTool	9	0	0
4	300.00	0.10	20.68	100.00	300.00	-0.60	1.04	0.54	1.18	27.20	0.23	GyroTool	9	0	0
5	400.00	0.55	26.37	100.00	400.00	-0.88	1.56	0.78	1.74	26.64	0.45	GyroTool	9	0	0
6	500.00	1.37	46.76	100.00	499.98	-2.04	2.81	1.87	3.38	33.61	0.88	GyroTool	9	0	0
7	600.00	2.24	48.31	100.00	599.93	-4.50	4.92	4.20	6.46	40.43	0.87	GyroTool	9	0	0
8	700.00	3.33	52.33	100.00	699.81	-8.45	8.00	7.95	11.29	44.84	1.11	GyroTool	9	0	0
9	780.00	4.41	52.02	80.00	779.63	-12.91	11.31	12.22	16.63	47.20	1.35	GyroTool	9	0	0
10	836.00	5.08	52.23	56.00	835.43	-16.74	14.16	15.87	21.26	48.28	1.20	SlimPulse	9	0	13
11	931.00	2.97	59.87	95.00	930.20	-22.43	17.97	21.33	27.89	49.89	2.29	SlimPulse	9	0	0
12	1026.00	0.65	187.90	95.00	1025.16	-24.52	18.67	23.38	29.92	51.40	3.59	SlimPulse	9	0	0
13	1119.00	0.59	190.91	93.00	1118.15	-24.30	17.68	23.22	29.17	52.72	0.07	SlimPulse	9	0	0
14	1212.00	2.42	221.34	93.00	1211.12	-22.79	15.73	21.83	26.90	54.22	2.08	SlimPulse	9	0	0
15	1306.00	2.61	226.28	94.00	1305.03	-19.75	12.76	18.97	22.87	56.07	0.31	SlimPulse	9	0	0
16	1401.00	2.52	223.76	95.00	1399.93	-16.56	9.76	15.97	18.70	58.57	0.15	SlimPulse	9	0	0
17	1494.00	2.32	225.39	93.00	1492.85	-13.63	6.96	13.21	14.93	62.22	0.23	SlimPulse	9	0	0
18	1588.00	2.43	223.76	94.00	1586.77	-10.73	4.19	10.48	11.29	68.23	0.14	SlimPulse	9	0	0
19	1683.00	2.60	227.43	95.00	1681.68	-7.57	1.27	7.50	7.61	80.37	0.25	SlimPulse	9	0	0

	20	1777.00	2.54	226.90	94.00	1775.58	-4.30	-1.59	4.41	4.69	109.85	0.07	SlimPulse	9	0	0
	21	1872.00	4.41	208.63	95.00	1870.40	-0.72	-6.24	1.12	6.33	169.80	2.26	SlimPulse	9	0	0
	22	1967.00	5.93	200.05	95.00	1965.02	3.20	-14.05	-2.31	14.24	189.34	1.79	SlimPulse	9	0	0
	23	2061.00	6.06	199.22	94.00	2058.50	7.08	-23.30	-5.61	23.95	193.53	0.17	SlimPulse	9	0	0
	24	2156.00	7.62	203.33	95.00	2152.82	11.88	-33.82	-9.75	35.20	196.09	1.72	SlimPulse	9	0	0
	25	2251.00	9.09	199.15	95.00	2246.81	17.65	-46.69	-14.71	48.95	197.49	1.67	SlimPulse	9	0	0
	26	2345.00	10.13	194.74	94.00	2339.50	23.13	-61.70	-19.25	64.63	197.33	1.35	SlimPulse	9	0	0
	27	2440.00	9.74	194.65	95.00	2433.07	28.29	-77.56	-23.41	81.00	196.79	0.41	SlimPulse	9	0	0
	28	2535.00	9.45	195.03	95.00	2526.74	33.31	-92.86	-27.46	96.85	196.47	0.31	SlimPulse	9	0	0
	29	2629.00	9.54	193.92	94.00	2619.45	38.13	-107.88	-31.34	112.34	196.20	0.22	SlimPulse	9	0	0
	30	2723.00	9.20	194.03	94.00	2712.20	42.77	-122.73	-35.03	127.62	195.93	0.36	SlimPulse	9	0	0
	31	2818.00	10.34	192.75	95.00	2805.82	47.48	-138.41	-38.76	143.73	195.64	1.22	SlimPulse	9	0	0
	32	2912.00	10.54	193.32	94.00	2898.26	52.37	-155.01	-42.60	160.76	195.37	0.24	SlimPulse	9	0	0
	33	3007.00	10.86	195.85	95.00	2991.61	57.89	-172.07	-47.05	178.38	195.29	0.60	SlimPulse	9	0	0
	34	3102.00	10.77	196.69	95.00	3084.93	63.96	-189.18	-52.04	196.19	195.38	0.19	SlimPulse	9	0	0
	35	3196.00	10.90	197.95	94.00	3177.25	70.28	-206.05	-57.30	213.88	195.54	0.29	SlimPulse	9	0	0
	36	3291.00	10.14	196.18	95.00	3270.65	76.43	-222.63	-62.40	231.20	195.66	0.87	SlimPulse	9	0	0
	37	3386.00	9.82	194.68	95.00	3364.21	81.81	-238.49	-66.78	247.67	195.64	0.43	SlimPulse	9	0	0
	38	3480.00	9.14	196.57	94.00	3456.93	86.91	-253.40	-70.94	263.16	195.64	0.80	SlimPulse	9	0	0
	39	3575.00	9.35	192.84	95.00	3550.70	91.71	-268.16	-74.81	278.41	195.59	0.67	SlimPulse	9	0	0
	40	3670.00	9.91	195.23	95.00	3644.36	96.54	-283.57	-78.67	294.29	195.51	0.72	SlimPulse	9	0	0
	41	3764.00	8.45	196.06	94.00	3737.15	101.49	-298.02	-82.71	309.28	195.51	1.56	SlimPulse	9	0	0
	42	3859.00	7.53	189.69	95.00	3831.23	105.28	-310.86	-85.69	322.44	195.41	1.34	SlimPulse	9	0	0
	43	3953.00	6.40	186.73	94.00	3924.54	107.64	-322.13	-87.34	333.76	195.17	1.26	SlimPulse	9	0	0
	44	4048.00	5.12	193.79	95.00	4019.06	109.86	-331.51	-88.97	343.24	195.02	1.54	SlimPulse	9	0	0
	45	4143.00	3.50	201.50	95.00	4113.78	112.37	-338.32	-91.04	350.36	195.06	1.81	SlimPulse	9	0	0
	46	4237.00	2.22	160.96	94.00	4207.67	113.10	-342.72	-91.50	354.72	194.95	2.46	SlimPulse	9	0	0
	47	4332.00	0.48	26.09	95.00	4302.65	112.42	-344.10	-90.72	355.87	194.77	2.72	SlimPulse	9	0	0
	48	4426.00	0.56	8.57	94.00	4396.65	112.12	-343.29	-90.48	355.02	194.77	0.19	SlimPulse	9	0	0
	49	4521.00	0.51	347.50	95.00	4491.65	112.09	-342.42	-90.50	354.17	194.81	0.21	SlimPulse	9	0	0
	50	4616.00	0.69	317.00	95.00	4586.64	112.52	-341.59	-90.99	353.51	194.92	0.38	SlimPulse	9	0	0
	51	4711.00	0.59	278.42	95.00	4681.63	113.36	-341.10	-91.86	353.25	195.07	0.46	SlimPulse	9	0	0
	52	4805.00	0.63	253.46	94.00	4775.63	114.34	-341.17	-92.83	353.58	195.22	0.28	SlimPulse	9	0	0
	53	4900.00	0.35	147.60	95.00	4870.63	114.71	-341.57	-93.18	354.04	195.26	0.84	SlimPulse	9	0	0
	54	4995.00	0.37	141.58	95.00	4965.63	114.39	-342.05	-92.83	354.43	195.18	0.05	SlimPulse	9	0	0
	55	5090.00	0.48	138.44	95.00	5060.62	113.97	-342.59	-92.38	354.82	195.09	0.12	SlimPulse	9	0	0
	56	5185.00	0.58	133.51	95.00	5155.62	113.40	-343.22	-91.77	355.28	194.97	0.12	SlimPulse	9	0	0
	57	5279.00	0.83	127.29	94.00	5249.61	112.56	-343.96	-90.88	355.77	194.80	0.28	SlimPulse	9	0	0
	58	5374.00	0.71	101.11	95.00	5344.60	111.47	-344.49	-89.75	356.00	194.60	0.39	SlimPulse	9	0	0
	59	5469.00	0.53	72.50	95.00	5439.60	110.48	-344.47	-88.76	355.71	194.45	0.37	SlimPulse	9	0	0
	60	5564.00	0.14	78.72	95.00	5534.60	109.94	-344.32	-88.22	355.45	194.37	0.41	SlimPulse	9	0	0
	61	5658.00	0.56	43.89	94.00	5628.59	109.48	-343.96	-87.79	354.99	194.32	0.48	SlimPulse	9	0	0
	62	5753.00	0.36	34.80	95.00	5723.59	108.96	-343.38	-87.30	354.30	194.26	0.22	SlimPulse	9	0	0
	63	5848.00	0.40	38.09	95.00	5818.59	108.55	-342.88	-86.93	353.74	194.23	0.05	SlimPulse	9	0	0
	64	5942.00	0.51	44.84	94.00	5912.59	108.02	-342.32	-86.43	353.05	194.17	0.13	SlimPulse	9	0	0
	65	6035.00	3.49	287.44	93.00	6005.53	110.35	-341.18	-88.84	352.56	194.59	4.03	SlimPulse	0	0	0
	66	6129.00	11.22	278.71	94.00	6098.69	121.96	-338.93	-100.62	353.54	196.53	8.29	SlimPulse	0	0	0
	67	6224.00	18.17	274.77	95.00	6190.53	145.68	-336.30	-124.55	358.63	200.32	7.39	SlimPulse	0	0	0
	68	6319.00	24.80	272.25	95.00	6278.88	180.19	-334.28	-159.26	370.28	205.47	7.03	SlimPulse	2	0	0
	69	6414.00	33.21	270.05	95.00	6361.89	226.05	-333.48	-205.26	391.60	211.61	8.93	SlimPulse	2	0	0
	70	6508.00	42.97	268.43	94.00	6435.79	283.89	-334.33	-263.17	425.49	218.21	10.44	SlimPulse	2	0	0
	71	6603.00	54.46	267.54	95.00	6498.37	355.13	-336.88	-334.39	474.67	224.79	12.11	SlimPulse	2	0	0
	72	6698.00	62.01	268.72	95.00	6548.35	435.80	-339.48	-415.06	536.22	230.72	8.02	SlimPulse	2	0	0
	73	6792.00	70.04	266.86	94.00	6586.52	521.59	-342.83	-500.80	606.92	235.61	8.73	SlimPulse	2	0	0

74	6887.00	78.25	267.47	95.00	6612.45	612.88	-347.34	-592.00	686.38	239.60	8.67	SlimPulse	2	0	0
75	6919.00	80.85	268.67	32.00	6618.25	644.34	-348.40	-623.45	714.21	240.80	8.92	SlimPulse	2	0	0
76	7002.00	84.46	271.21	83.00	6628.86	726.47	-348.48	-705.75	787.11	243.72	5.30	SlimPulse	2	0	0
77	7097.00	85.18	270.66	95.00	6637.44	820.78	-346.94	-800.34	872.31	246.56	0.95	SlimPulse	2	0	0
78	7192.00	87.08	270.08	95.00	6643.85	915.33	-346.33	-895.12	959.78	248.85	2.09	SlimPulse	0	0	0
79	7287.00	88.97	269.71	95.00	6647.13	1010.09	-346.50	-990.06	1048.95	250.71	2.03	SlimPulse	2	0	0
80	7381.00	90.93	269.25	94.00	6647.22	1103.94	-347.36	-1084.05	1138.35	252.23	2.14	SlimPulse	2	0	0
81	7476.00	91.44	268.81	95.00	6645.25	1198.82	-348.97	-1179.02	1229.59	253.51	0.71	SlimPulse	2	0	0
82	7571.00	91.20	268.12	95.00	6643.05	1293.73	-351.51	-1273.96	1321.56	254.57	0.77	SlimPulse	2	0	0
83	7666.00	91.03	268.12	95.00	6641.20	1388.66	-354.63	-1368.89	1414.07	255.48	0.18	SlimPulse	2	0	0
84	7760.00	91.10	267.81	94.00	6639.45	1482.61	-357.96	-1462.81	1505.97	256.25	0.34	SlimPulse	2	0	0
85	7855.00	90.76	267.82	95.00	6637.92	1577.57	-361.58	-1557.73	1599.15	256.93	0.36	SlimPulse	2	0	0
86	7949.00	90.38	267.57	94.00	6636.98	1671.54	-365.35	-1651.65	1691.57	257.53	0.48	SlimPulse	2	0	0
87	8044.00	90.00	267.88	95.00	6636.67	1766.51	-369.12	-1746.57	1785.14	258.07	0.52	SlimPulse	2	0	0
88	8139.00	89.69	267.66	95.00	6636.93	1861.48	-372.81	-1841.50	1878.87	258.56	0.40	SlimPulse	2	0	0
89	8233.00	89.42	267.58	94.00	6637.66	1955.45	-376.71	-1935.42	1971.75	258.99	0.31	SlimPulse	2	0	0
90	8328.00	89.86	267.55	95.00	6638.26	2050.43	-380.75	-2030.33	2065.72	259.38	0.47	SlimPulse	2	0	0
91	8423.00	90.14	267.80	95.00	6638.26	2145.40	-384.60	-2125.25	2159.78	259.74	0.39	SlimPulse	2	0	0
92	8518.00	90.03	267.87	95.00	6638.12	2240.37	-388.19	-2220.18	2253.87	260.08	0.13	SlimPulse	2	0	0
93	8613.00	90.62	268.59	95.00	6637.57	2335.32	-391.13	-2315.14	2347.93	260.41	0.98	SlimPulse	2	0	0
94	8707.00	90.31	268.79	94.00	6636.81	2429.24	-393.28	-2409.11	2441.01	260.73	0.39	SlimPulse	2	0	0
95	8802.00	89.59	268.14	95.00	6636.90	2524.17	-395.83	-2504.07	2535.17	261.02	1.02	SlimPulse	2	0	0
96	8897.00	89.48	268.16	95.00	6637.67	2619.12	-398.89	-2599.02	2629.46	261.27	0.11	SlimPulse	2	0	0
97	8991.00	89.21	267.07	94.00	6638.74	2713.09	-402.80	-2692.93	2722.90	261.49	1.20	SlimPulse	2	0	0
98	9086.00	89.90	267.49	95.00	6639.48	2808.08	-407.30	-2787.82	2817.42	261.69	0.85	SlimPulse	2	0	0
99	9181.00	90.14	267.78	95.00	6639.45	2903.05	-411.22	-2882.74	2911.91	261.88	0.39	SlimPulse	2	0	0
100	9276.00	89.17	266.80	95.00	6640.02	2998.03	-415.71	-2977.63	3006.50	262.05	1.45	SlimPulse	2	0	0
101	9370.00	88.59	266.49	94.00	6641.86	3092.02	-421.22	-3071.45	3100.20	262.19	0.71	SlimPulse	2	0	0
102	9465.00	89.93	267.26	95.00	6643.08	3187.00	-426.40	-3166.30	3194.88	262.33	1.63	SlimPulse	2	0	0
103	9560.00	90.10	267.43	95.00	6643.05	3281.99	-430.79	-3261.20	3289.53	262.47	0.25	SlimPulse	2	0	0
104	9655.00	90.10	267.31	95.00	6642.88	3376.97	-435.15	-3356.10	3384.19	262.61	0.13	SlimPulse	2	0	0
105	9749.00	90.45	267.59	94.00	6642.43	3470.95	-439.34	-3450.00	3477.85	262.74	0.47	SlimPulse	2	0	0
106	9844.00	90.34	267.34	95.00	6641.78	3565.93	-443.54	-3544.91	3572.54	262.87	0.28	SlimPulse	2	0	0
107	9939.00	90.82	266.98	95.00	6640.81	3660.92	-448.25	-3639.78	3667.29	262.98	0.64	SlimPulse	2	0	0
108	10034.00	90.45	266.77	95.00	6639.75	3755.91	-453.43	-3734.64	3762.07	263.08	0.45	SlimPulse	2	0	0
109	10129.00	89.79	266.99	95.00	6639.55	3850.90	-458.60	-3829.49	3856.86	263.17	0.73	SlimPulse	2	0	0
110	10223.00	89.73	267.07	94.00	6639.95	3944.90	-463.47	-3923.37	3950.66	263.26	0.11	SlimPulse	2	0	0
111	10318.00	89.83	267.04	95.00	6640.32	4039.89	-468.34	-4018.24	4045.44	263.35	0.11	SlimPulse	2	0	0
112	10413.00	89.66	266.91	95.00	6640.75	4134.88	-473.36	-4113.11	4140.26	263.43	0.23	SlimPulse	2	0	0
113	10508.00	89.93	267.14	95.00	6641.09	4229.87	-478.29	-4207.98	4235.07	263.52	0.38	SlimPulse	2	0	0
114	10602.00	89.42	267.74	94.00	6641.62	4323.85	-482.49	-4301.88	4328.87	263.60	0.84	SlimPulse	2	0	0
115	10697.00	89.45	268.23	95.00	6642.56	4418.81	-485.83	-4396.82	4423.59	263.69	0.52	SlimPulse	2	0	0
116	10791.00	89.14	268.83	94.00	6643.72	4512.74	-488.24	-4490.78	4517.26	263.80	0.72	SlimPulse	2	0	0
117	10885.00	89.00	269.19	94.00	6645.24	4606.62	-489.86	-4584.75	4610.86	263.90	0.41	SlimPulse	2	0	0
118	10979.00	89.55	269.17	94.00	6646.42	4700.50	-491.20	-4678.74	4704.46	264.01	0.59	SlimPulse	2	0	0
119	11074.00	89.76	269.66	95.00	6646.99	4795.36	-492.16	-4773.73	4799.05	264.11	0.56	SlimPulse	2	0	0
120	11168.00	89.35	269.64	94.00	6647.73	4889.20	-492.73	-4867.73	4892.59	264.22	0.44	SlimPulse	2	0	0
121	11260.00	89.38	269.87	92.00	6648.75	4981.04	-493.13	-4959.72	4984.19	264.32	0.25	SlimPulse	2	0	0
122	11355.00	89.79	269.05	95.00	6649.43	5075.89	-494.02	-5054.71	5078.81	264.42	0.96	SlimPulse	2	0	0
123	11449.00	89.52	268.26	94.00	6649.99	5169.81	-496.23	-5148.68	5172.54	264.49	0.90	SlimPulse	2	0	0
124	11542.00	89.55	267.63	93.00	6650.75	5262.78	-499.56	-5241.62	5265.39	264.56	0.67	SlimPulse	2	0	0
125	11636.00	89.45	267.80	94.00	6651.57	5356.75	-503.31	-5335.54	5359.22	264.61	0.21	SlimPulse	2	0	0
126	11728.00	89.48	267.61	92.00	6652.42	5448.72	-506.99	-5427.46	5451.08	264.66	0.21	SlimPulse	2	0	0
127	11821.00	89.66	267.32	93.00	6653.12	5541.70	-511.10	-5520.37	5543.96	264.71	0.36	SlimPulse	2	0	0

127	11821.00	89.00	267.32	95.00	6655.12	5341.70	-511.10	-5320.37	5345.30	264.71	0.30	SlimPulse	2	0	0
128	11916.00	89.07	267.84	95.00	6654.17	5636.67	-515.12	-5615.28	5638.85	264.76	0.83	SlimPulse	2	0	0
129	12011.00	89.31	269.68	95.00	6655.51	5731.57	-517.17	-5710.24	5733.63	264.82	1.95	SlimPulse	2	0	0
130	12106.00	89.24	269.78	95.00	6656.71	5826.40	-517.62	-5805.23	5828.28	264.90	0.13	SlimPulse	2	0	0
131	12201.00	89.28	269.87	95.00	6657.93	5921.22	-517.91	-5900.23	5922.90	264.98	0.10	SlimPulse	2	0	0
132	12295.00	89.52	268.51	94.00	6658.92	6015.09	-519.24	-5994.21	6016.67	265.05	1.47	SlimPulse	2	0	0
133	12390.00	89.24	267.99	95.00	6659.94	6110.04	-522.15	-6089.16	6111.52	265.10	0.62	SlimPulse	2	0	0
134	12485.00	89.31	267.72	95.00	6661.14	6205.00	-525.71	-6184.08	6206.40	265.14	0.29	SlimPulse	2	0	0
135	12580.00	89.45	267.92	95.00	6662.16	6299.96	-529.32	-6279.01	6301.28	265.18	0.26	SlimPulse	2	0	0
136	12675.00	89.24	267.99	95.00	6663.25	6394.92	-532.71	-6373.94	6396.16	265.22	0.23	SlimPulse	2	0	0
137	12770.00	89.45	267.77	95.00	6664.33	6489.88	-536.22	-6468.87	6491.04	265.26	0.32	SlimPulse	2	0	0
138	12864.00	89.66	267.88	94.00	6665.06	6583.84	-539.78	-6562.80	6584.97	265.30	0.25	SlimPulse	2	0	0
139	12959.00	89.83	269.27	95.00	6665.49	6678.77	-542.15	-6657.77	6679.79	265.34	1.47	SlimPulse	2	0	0
140	13054.00	89.86	269.51	95.00	6665.75	6773.63	-543.16	-6752.76	6774.57	265.40	0.26	SlimPulse	2	0	0
141	13149.00	90.00	269.71	95.00	6665.86	6868.48	-543.81	-6847.76	6869.32	265.46	0.25	SlimPulse	2	0	0
142	13243.00	89.83	269.87	94.00	6666.00	6962.31	-544.16	-6941.76	6963.06	265.52	0.25	SlimPulse	2	0	0
143	13338.00	89.76	269.82	95.00	6666.34	7057.13	-544.42	-7036.76	7057.78	265.58	0.09	SlimPulse	2	0	0
144	13432.00	90.38	269.38	94.00	6666.23	7150.98	-545.07	-7130.76	7151.54	265.63	0.81	SlimPulse	2	0	0
145	13526.00	90.31	268.87	94.00	6665.67	7244.87	-546.51	-7224.74	7245.37	265.67	0.55	SlimPulse	0	0	0
146	13621.00	89.83	268.18	95.00	6665.55	7339.80	-548.95	-7319.71	7340.26	265.71	0.88	SlimPulse	2	0	0
147	13716.00	89.72	267.77	95.00	6665.92	7434.76	-552.31	-7414.65	7435.20	265.74	0.45	SlimPulse	2	0	0
148	13810.00	90.00	268.03	94.00	6666.15	7528.73	-555.75	-7508.59	7529.13	265.77	0.41	SlimPulse	2	0	0
149	13905.00	89.62	267.95	95.00	6666.46	7623.69	-559.08	-7603.53	7624.05	265.79	0.41	SlimPulse	2	0	0
150	13999.00	89.62	267.96	94.00	6667.08	7717.65	-562.43	-7697.47	7717.98	265.82	0.00	SlimPulse	2	0	0
151	14093.00	89.86	267.99	94.00	6667.50	7811.61	-565.76	-7791.41	7811.91	265.85	0.26	SlimPulse	2	0	0
152	14188.00	89.97	267.96	95.00	6667.65	7906.57	-569.12	-7886.35	7906.86	265.87	0.11	SlimPulse	2	0	0
153	14283.00	90.31	268.25	95.00	6667.42	8001.53	-572.26	-7981.29	8001.77	265.90	0.47	SlimPulse	2	0	0
154	14377.00	89.69	268.11	94.00	6667.42	8095.48	-575.25	-8075.25	8095.70	265.93	0.68	SlimPulse	2	0	0
155	14472.00	89.72	267.98	95.00	6667.90	8190.44	-578.50	-8170.19	8190.65	265.95	0.14	SlimPulse	0	0	0
156	14567.00	89.86	267.87	95.00	6668.24	8285.40	-581.93	-8265.13	8285.60	265.97	0.18	SlimPulse	2	0	0
157	14662.00	89.79	267.95	95.00	6668.53	8380.37	-585.40	-8360.06	8380.54	265.99	0.11	SlimPulse	2	0	0
158	14757.00	89.86	268.08	95.00	6668.81	8475.33	-588.70	-8455.00	8475.46	266.02	0.15	SlimPulse	0	0	0
159	14852.00	89.76	268.40	95.00	6669.13	8570.27	-591.61	-8549.96	8570.41	266.04	0.36	SlimPulse	2	0	0
160	14947.00	89.69	267.41	95.00	6669.58	8665.24	-595.09	-8644.89	8665.35	266.06	1.05	SlimPulse	2	0	0
161	15041.00	89.73	267.76	94.00	6670.06	8759.21	-599.05	-8738.81	8759.32	266.08	0.38	SlimPulse	2	0	0
162	15136.00	89.90	267.91	95.00	6670.38	8854.18	-602.64	-8833.74	8854.27	266.10	0.24	SlimPulse	2	0	0
163	15231.00	89.79	267.89	95.00	6670.63	8949.15	-606.12	-8928.68	8949.21	266.12	0.11	SlimPulse	0	0	0
164	15326.00	89.73	267.50	95.00	6671.03	9044.12	-609.95	-9023.60	9044.19	266.13	0.42	SlimPulse	2	0	0
165	15420.00	89.69	267.67	94.00	6671.51	9138.10	-613.91	-9117.51	9138.16	266.15	0.19	SlimPulse	2	0	0
166	15515.00	89.52	266.95	95.00	6672.17	9233.08	-618.36	-9212.41	9233.14	266.16	0.78	SlimPulse	0	0	0
167	15610.00	89.45	266.92	95.00	6673.02	9328.07	-623.43	-9307.27	9328.12	266.17	0.08	SlimPulse	2	0	0
168	15705.00	89.55	267.32	95.00	6673.85	9423.06	-628.21	-9402.14	9423.10	266.18	0.43	SlimPulse	0	0	0
169	15800.00	89.35	266.57	95.00	6674.76	9518.05	-633.27	-9497.00	9518.08	266.19	0.82	SlimPulse	2	0	0
170	15895.00	89.07	268.18	95.00	6676.07	9613.02	-637.63	-9591.89	9613.06	266.20	1.72	SlimPulse	2	0	0
171	15990.00	89.55	269.20	95.00	6677.21	9707.94	-639.79	-9686.86	9707.97	266.22	1.19	SlimPulse	2	0	0
172	16085.00	89.69	269.84	95.00	6677.83	9802.79	-640.59	-9781.85	9802.79	266.25	0.68	SlimPulse	0	0	0
173	16180.00	89.69	269.78	95.00	6678.35	9897.61	-640.90	-9876.85	9897.60	266.29	0.06	SlimPulse	2	0	0
174	16265.00	89.79	269.62	85.00	6678.73	9982.47	-641.35	-9961.85	9982.48	266.32	0.23	SlimPulse	2	0	0
175	16309.00	89.79	269.62	44.00	6678.89	10026.40	-641.64	-10005.85	10026.41	266.33	0.01	SlimPulse	9	0	7

Calibration Report

SPULSE-GEN (SlimPulse with Generic Collar) Calibration - Run RUN001

Primary Equipment :	Elec. cartridge, 150C max with GR	SPEC	6095
---------------------	-----------------------------------	------	------



**GRGain - Gamma Ray: Blanket**

Master (Time Frame File): 12:00:00 23-May-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Gamma Ray Calibration Gain		Master	1.0000	0.9000	1.0736	1.1000	

**SPULSE-GEN (SlimPulse with Generic Collar) Calibration - Run RUN002**

Primary Equipment :

Elec. cartridge, 150C max with GR

SPEC

896

**GRGain - Gamma Ray: Blanket**

Master (Time Frame File): 12:00:00 25-Jul-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Gamma Ray Calibration Gain		Master	1.0000	0.9000	1.0309	1.1000	

**SPULSE-GEN (SlimPulse with Generic Collar) Calibration - Run RUN003**

Primary Equipment :

Elec. cartridge, 150C max with GR

SPEC

6095

**GRGain - Gamma Ray: Blanket**

Master (Time Frame File): 12:00:00 23-May-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Gamma Ray Calibration Gain		Master	1.0000	0.9000	1.0736	1.1000	

**Company:** Noble Energy INC**Well:** NCLP AA06-64-1AHNA**Field:** Wattenberg #90750**County:** Weld #123**State:** Colorado**Country:** USA**Schlumberger****SlimPulse - Gamma Ray**

2 in. / 100 ft and 5 in. / 100 ft True Vertical Depth

**Recorded Mode, Composite Log**