

GAMMA RAY

$$5'' = 100' \text{ MD}$$

COMPANY : ANADARKO PETROLEUM CORPORATION
WELL : WHISTON 16N-33HZ
FIELD : WATTENBERG
COUNTY : WELD
STATE : COLORADO
COUNTRY : U.S.A.
UWI : 051234340300000

COMPANY : ANADARKO PETROLEUM CORPORATION

WELL : WHISTON 16N-33HZ

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COUNTRY : U.S.A.

UWI : 05123440300000

WELL LOCATION	NAD83
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LAT:40.1678490°N LONG:104.8915580°W

N:14587873.45 ft E:1670711.46 ft

SEC:4 TWP:2N RANGE:67W

OTHER SERVICES

DIRECTIONAL ROP

DEPTH REF. : RKB

REF. HEIGHT : 20.000 ft RKB to Ground Level

GROUND LEVEL : 4905.000 ft G.L. to MEAN SEA LEVEL

BOREHOLE RECORD

DEVIATION RECORD

HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft
13.5	0	1870	0 - 19	0	4300
7.875	1870	13343	19 - 0	4300	6733
			0 - 87	6733	7998
			87 - 92	7998	13343

CASING RECORD

CASING SIZE in	FROM ft	TO ft			
9.625	0	1860			
			DRILLING CO. : PRECISION DRILLING		
			RIG : 461		
			LWD UNIT NO. : MWD-00282-DISTRICT : CASPER		
			SPUD DATE : 01/24/2017		
			LWD START DATE : 03/29/2017	DEPTH : 1870 ft	
			LWD END DATE : 04/01/2017	DEPTH : 13343 ft	
			TOTAL DEPTH : 13343 ft		

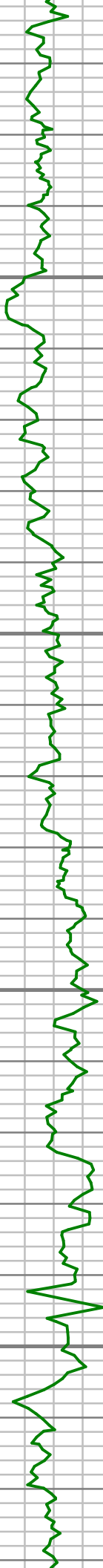
Run Data

[illegible]

[illegible]

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions as set out in our current price schedule.

ANADARKO PETROLEUM CORPORATION WHISTON 16N-33HZ WATTENBERG FIELD WELD COUNTY, COLORADO API # 05123440300000				
Gamma Ray (GR) 0 Unit = aapi 150	MEASURED DEPTH 1:240 (ft)	Rate of Penetration (ROP) 800 Unit = ft/hr 0	Tool Temperature (TEMP) 0 Unit = °F 300	Comments
				<p>S: 19 MD: 1947.00 ft Inc: 17.08 deg Az: 139.90 deg TVD: 1899.73 ft</p>

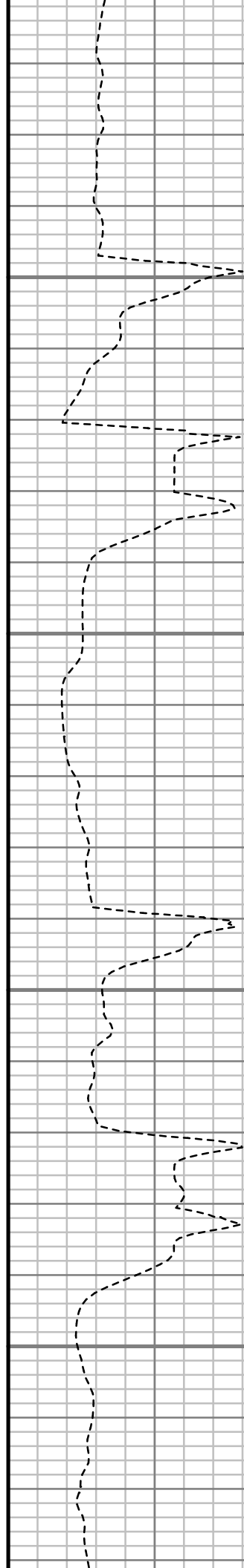


2000

2050

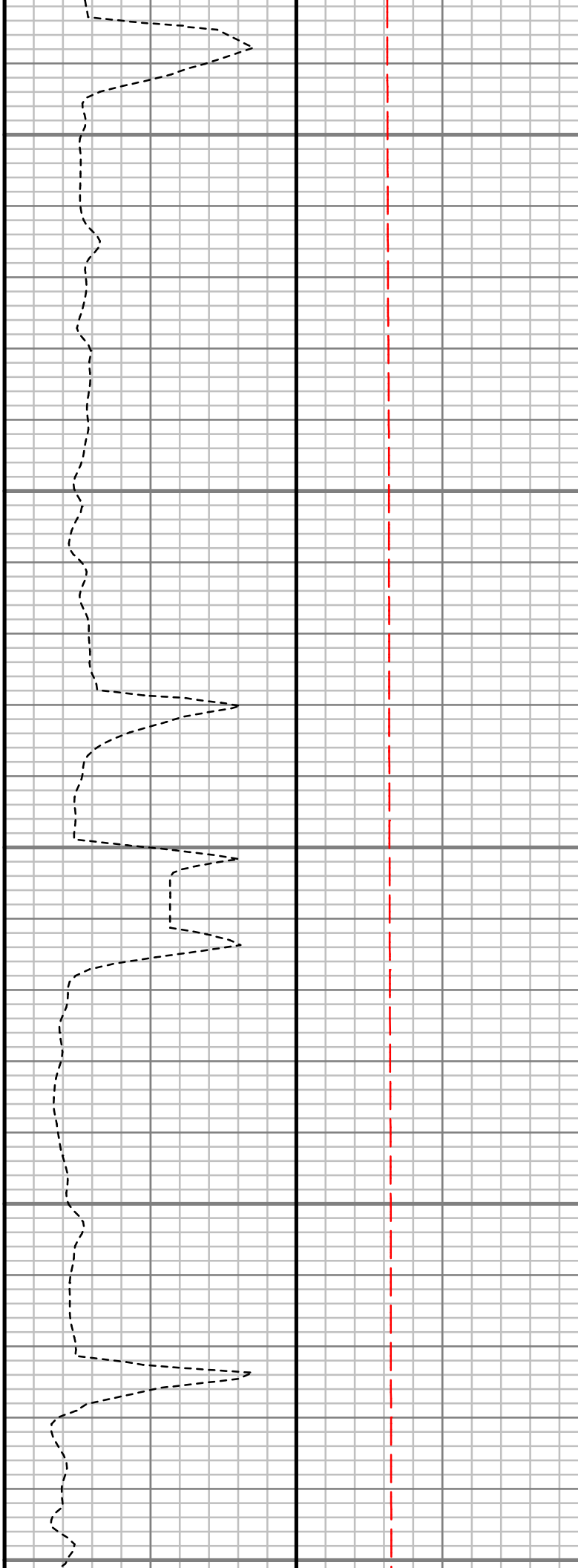
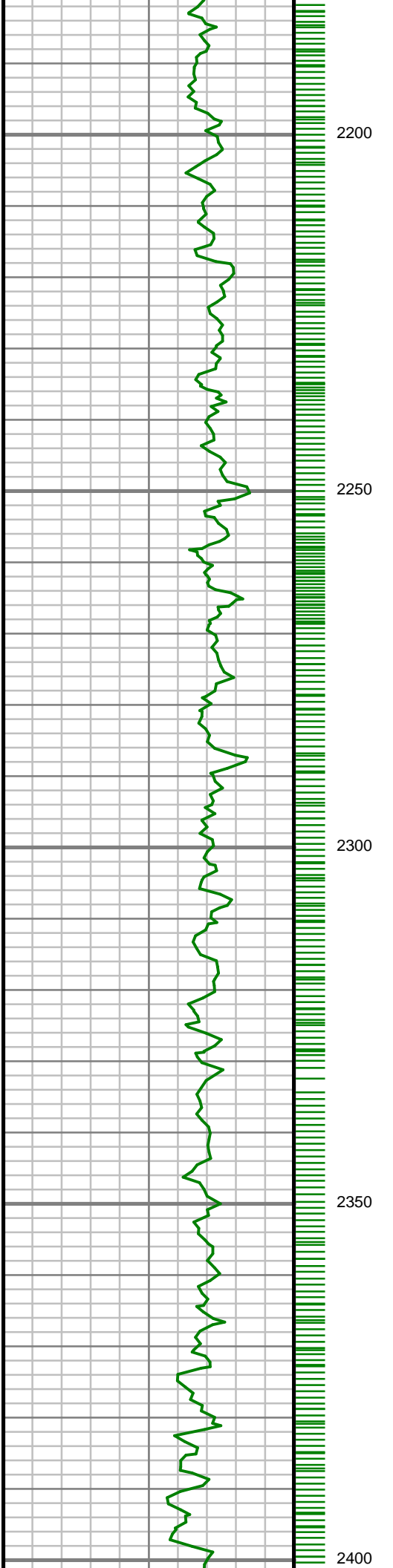
2100

2150



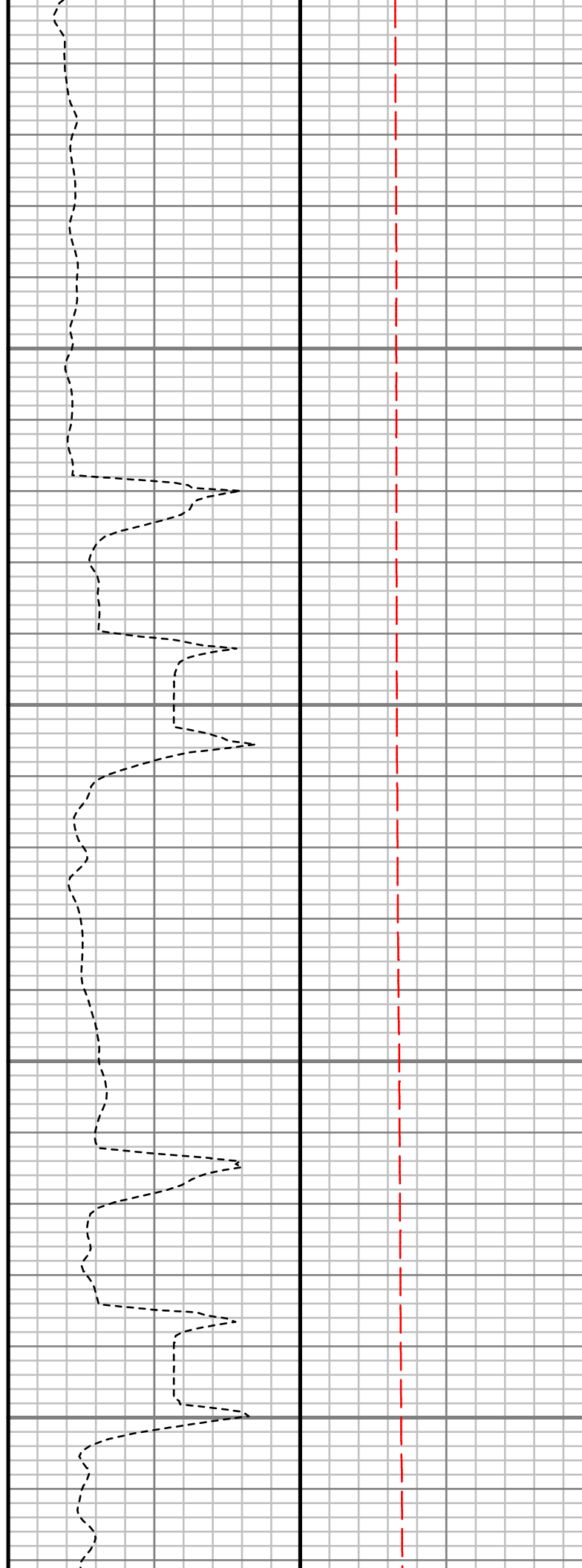
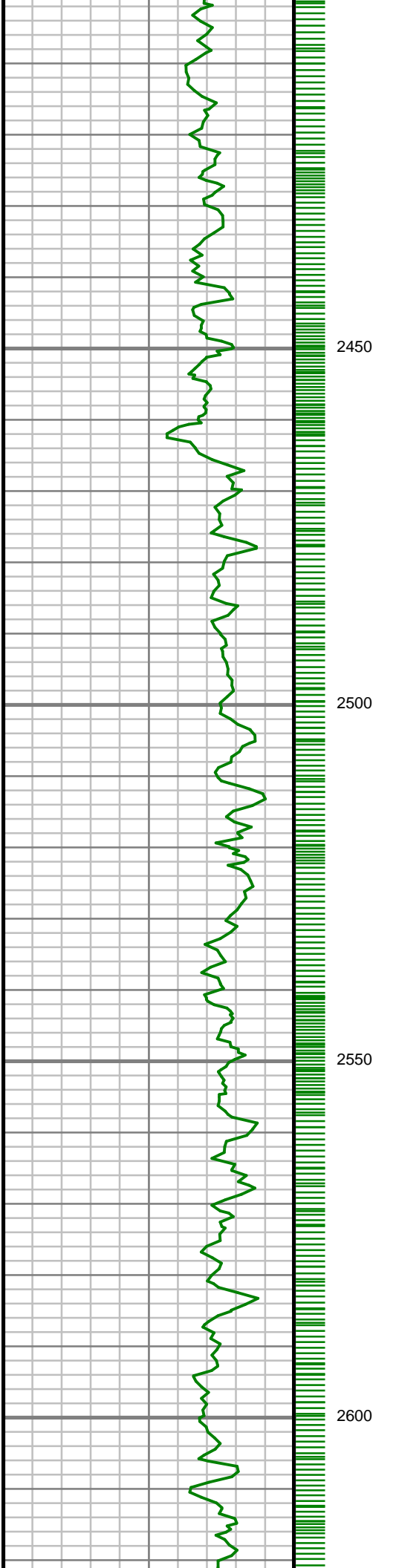
S: 20 MD: 2041.00 ft
Inc: 17.69 deg Az:
142.37 deg TVD:
1989.44 ft

S: 21 MD: 2135.00 ft
Inc: 18.06 deg Az:
142.17 deg TVD:
2078.90 ft



S: 22 MD: 2228.00 ft
Inc: 17.77 deg Az:
141.98 deg TVD:
2167.40 ft

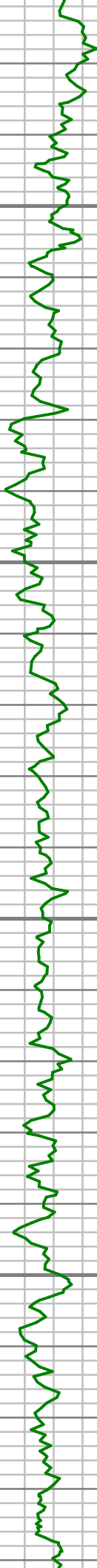
S: 23 MD: 2323.00 ft
Inc: 18.39 deg Az:
143.17 deg TVD:
2257.70 ft



S: 24 MD: 2417.00 ft
Inc: 17.33 deg Az:
142.06 deg TVD:
2347.17 ft

S: 25 MD: 2512.00 ft
Inc: 17.77 deg Az:
142.90 deg TVD:
2437.75 ft

S: 26 MD: 2606.00 ft
Inc: 17.71 deg Az:
146.48 deg TVD:
2527.28 ft

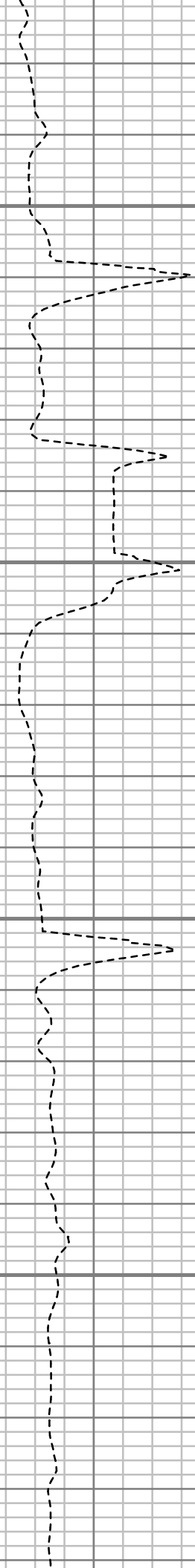


2650

2700

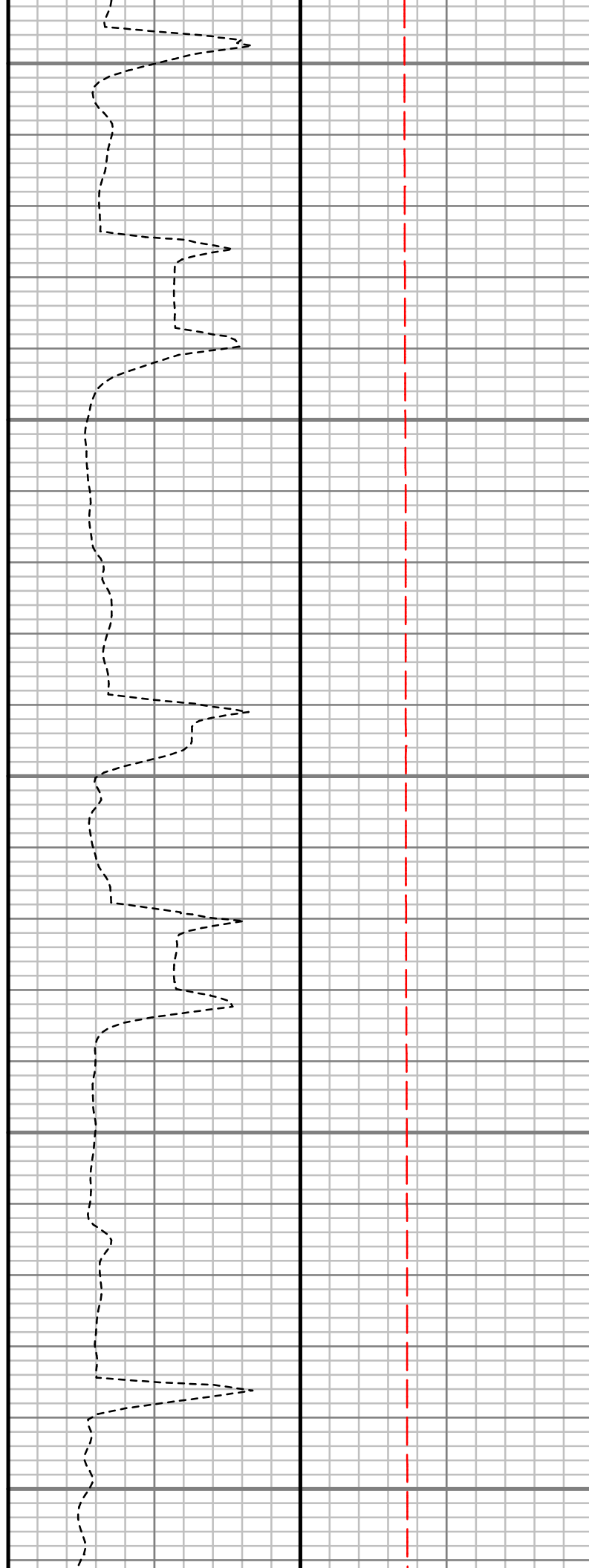
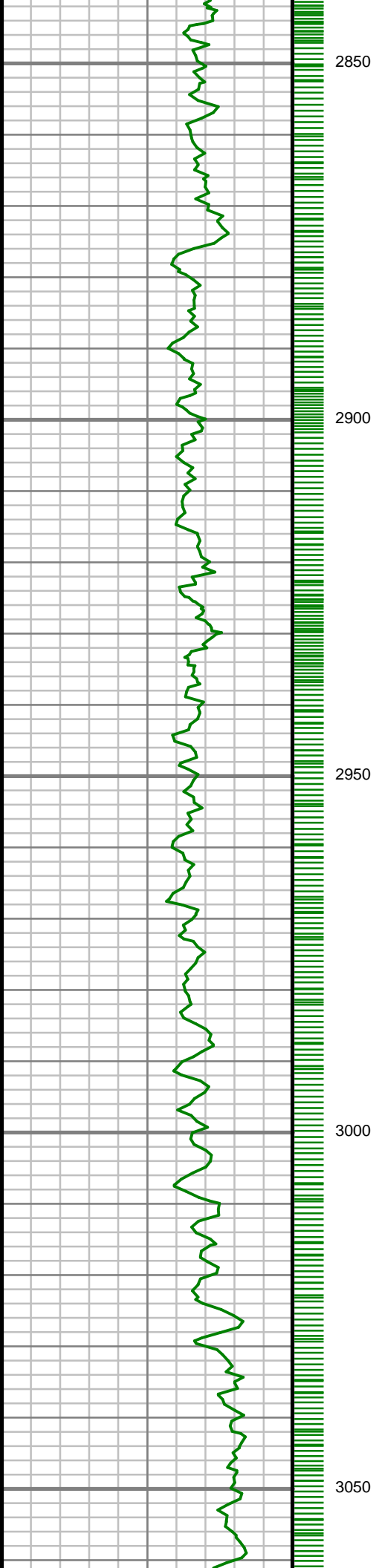
2750

2800



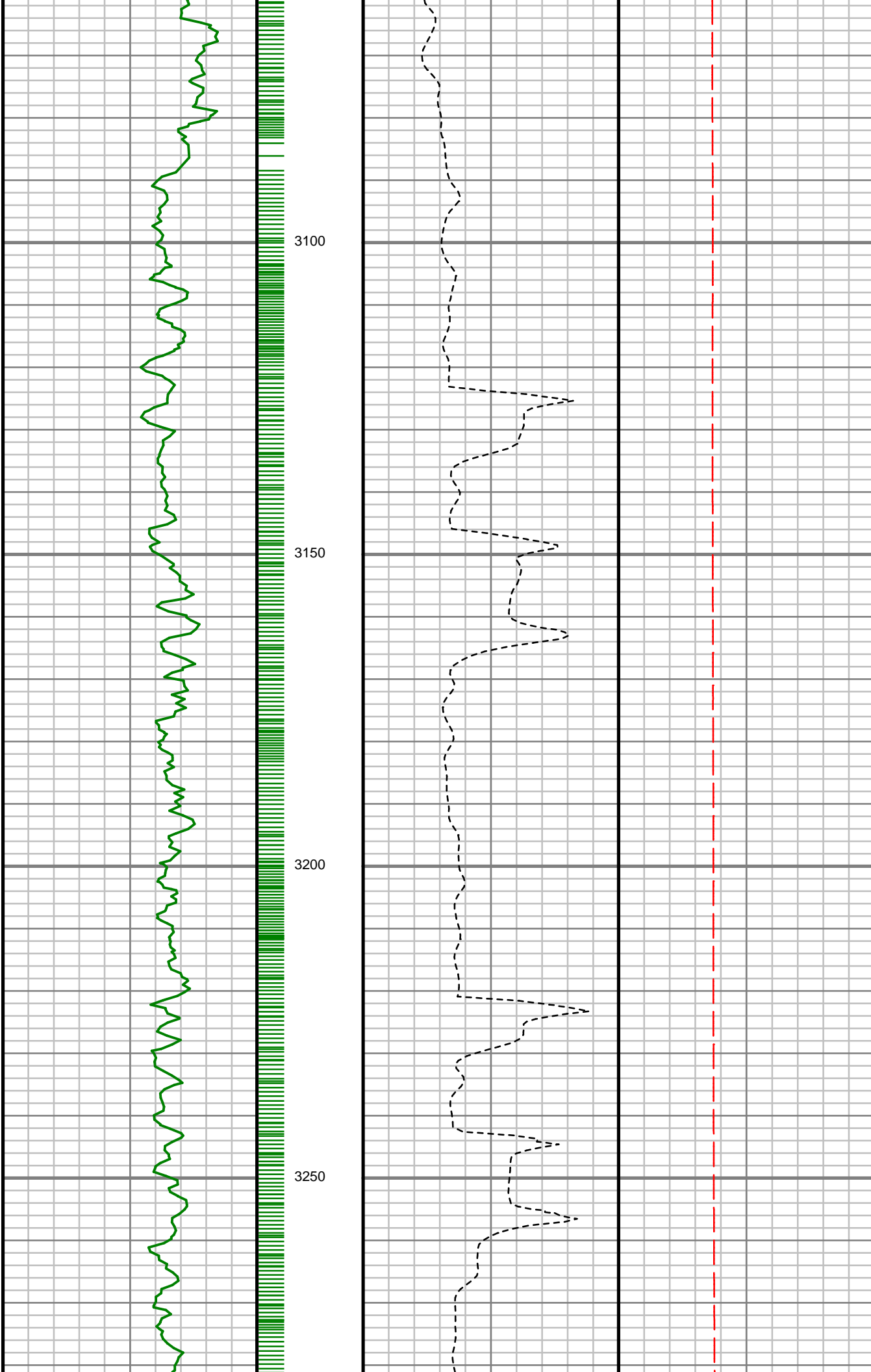
S: 27 MD: 2701.00 ft
Inc: 18.80 deg Az:
148.88 deg TVD:
2617.50 ft

S: 28 MD: 2795.00 ft
Inc: 18.26 deg Az:
148.35 deg TVD:
2706.63 ft



S: 29 MD: 2889.00 ft
Inc: 18.75 deg Az:
149.90 deg TVD:
2795.77 ft

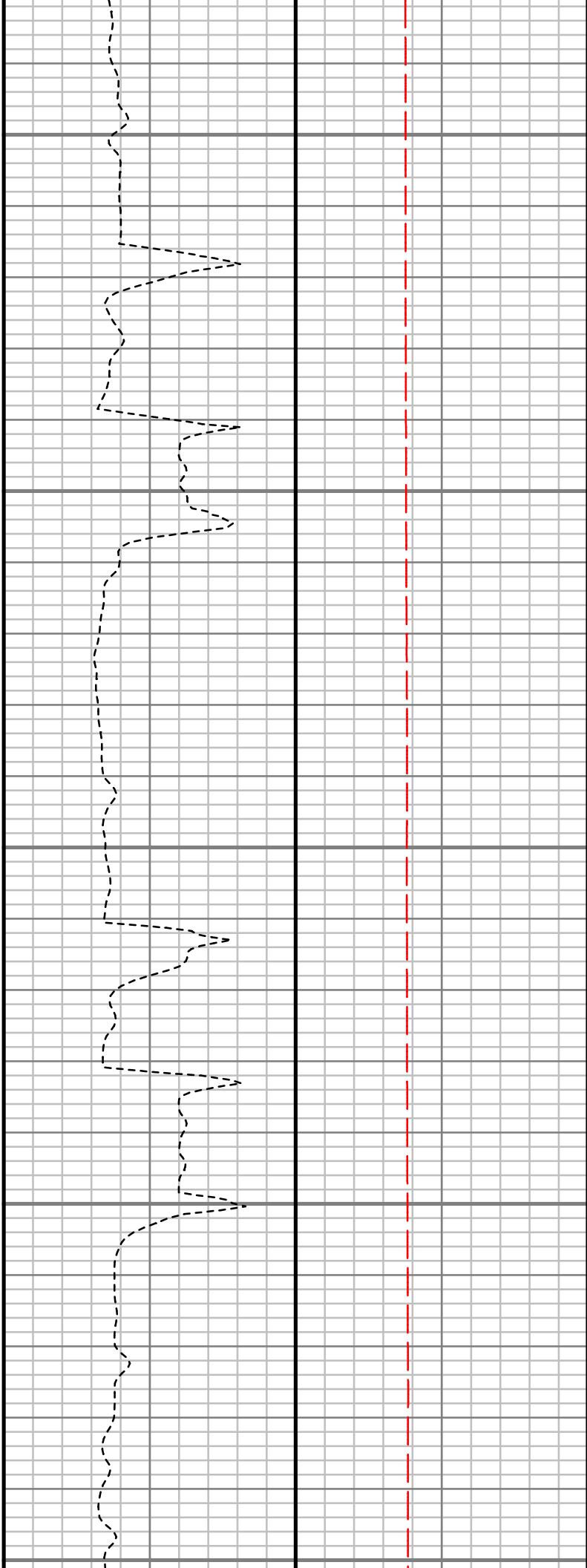
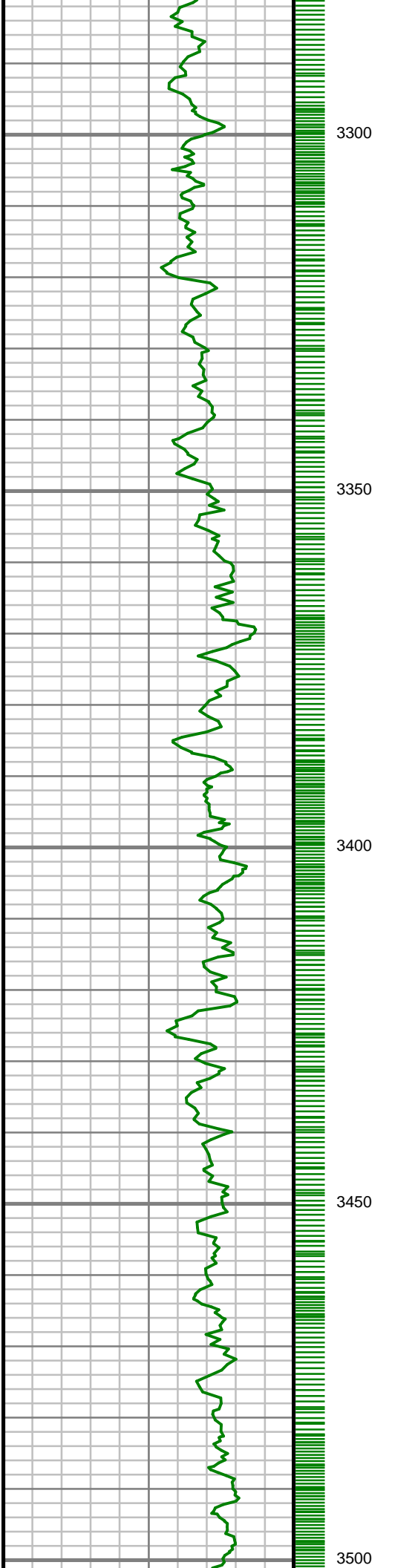
S: 30 MD: 2982.00 ft
Inc: 19.08 deg Az:
148.77 deg TVD:
2883.75 ft



S: 31 MD: 3077.00 ft
Inc: 17.48 deg Az:
145.70 deg TVD:
2973.95 ft

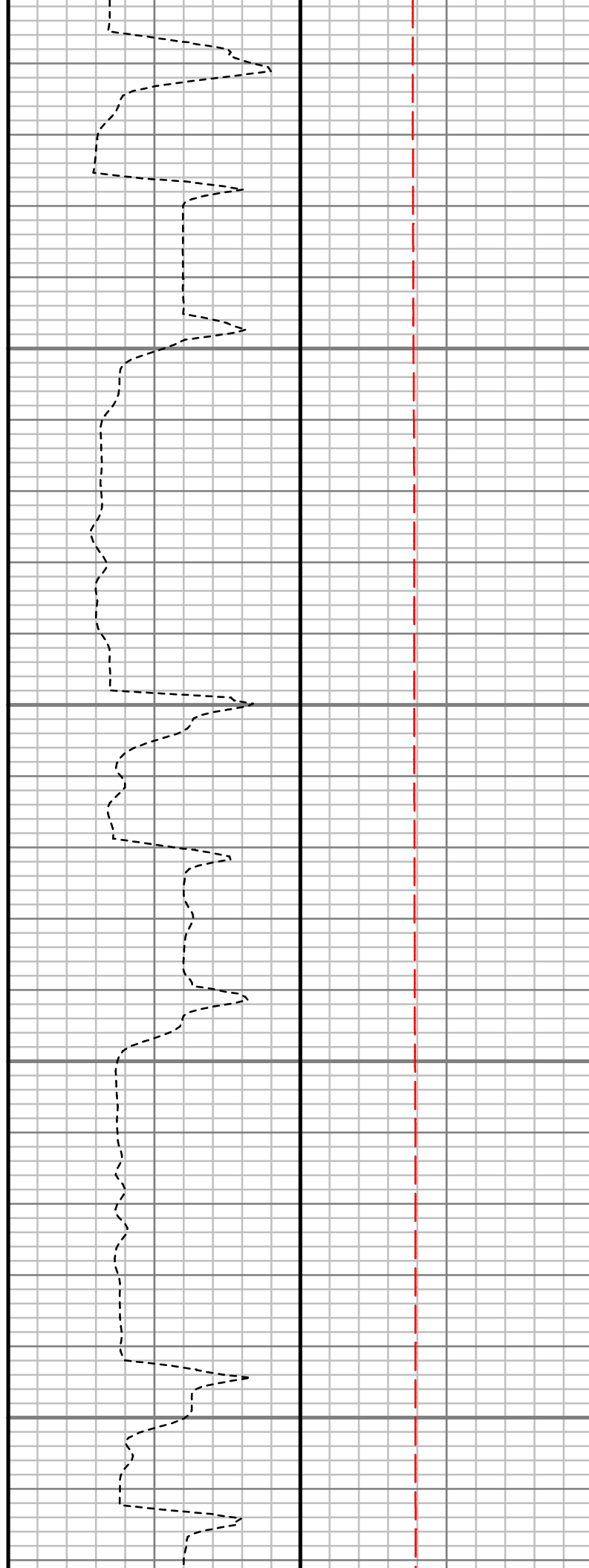
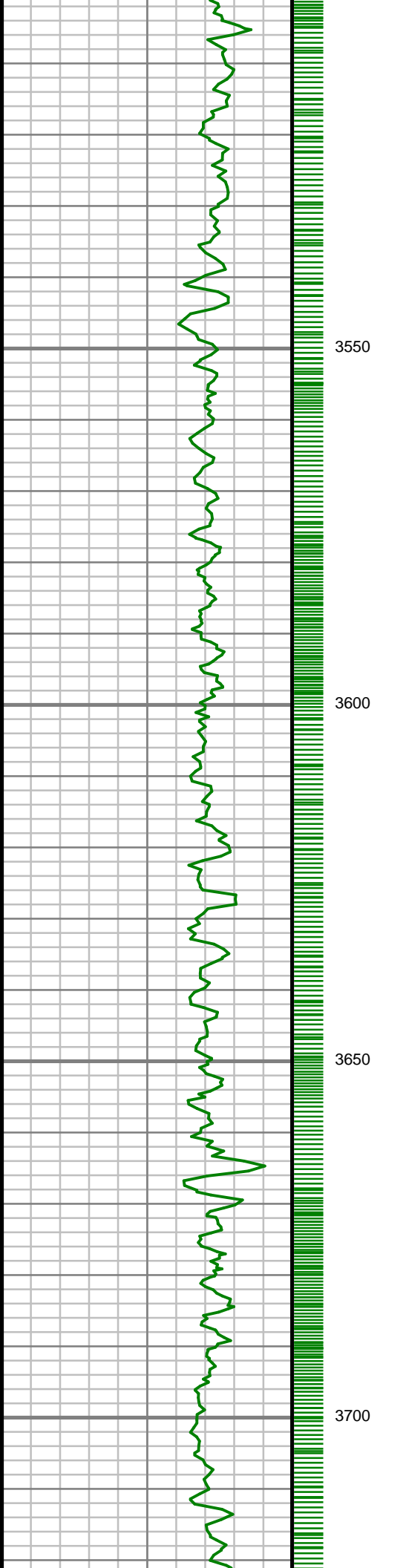
S: 32 MD: 3170.00 ft
Inc: 17.91 deg Az:
146.45 deg TVD:
3062.55 ft

S: 33 MD: 3265.00 ft
Inc: 17.62 deg Az:
145.08 deg TVD:
3153.02 ft



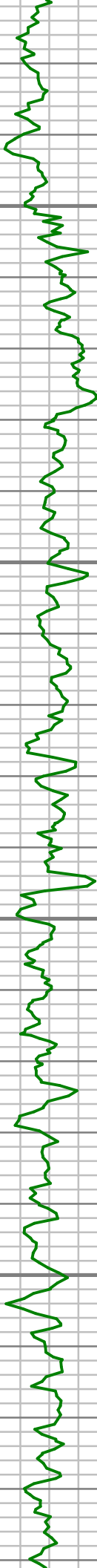
S: 34 MD: 3359.00 ft
Inc: 16.83 deg Az:
144.34 deg TVD:
3242.81 ft

S: 35 MD: 3454.00 ft
Inc: 16.69 deg Az:
144.25 deg TVD:
3333.77 ft



S: 36 MD: 3548.00 ft
Inc: 16.26 deg Az:
146.67 deg TVD:
3423.91 ft

S: 37 MD: 3643.00 ft
Inc: 16.69 deg Az:
147.19 deg TVD:
3515.01 ft

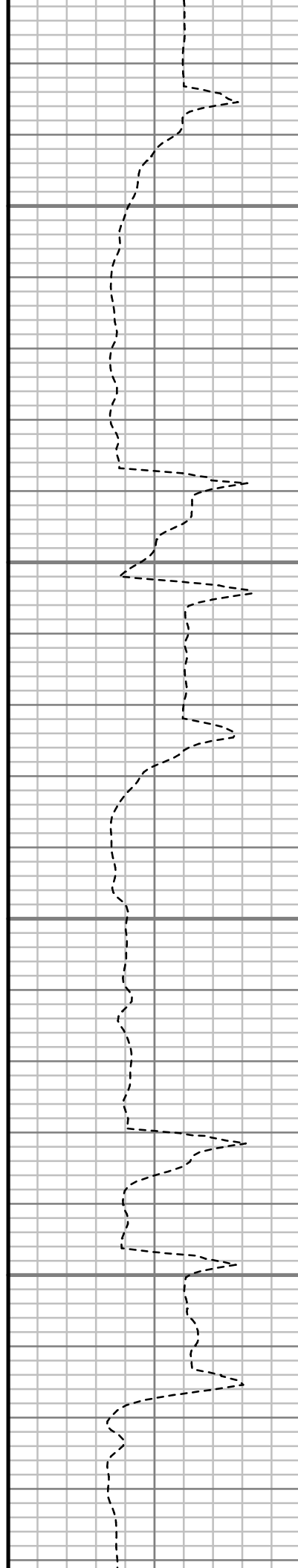


3750

3800

3850

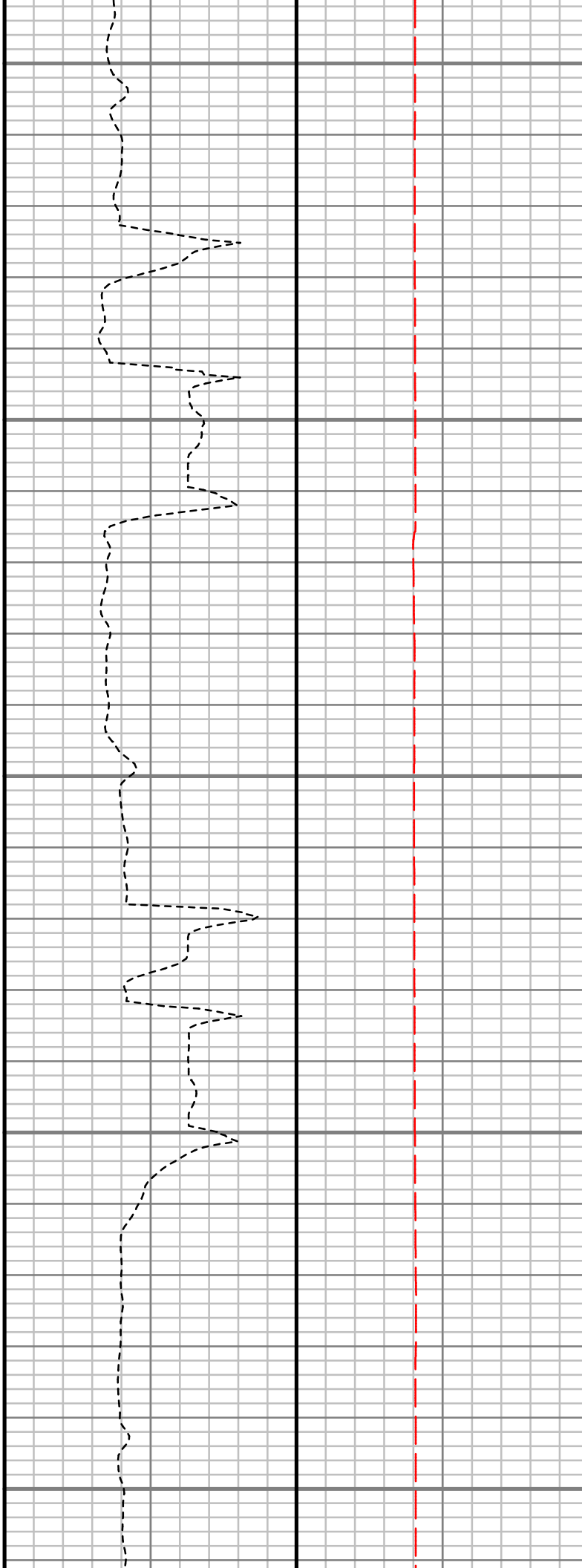
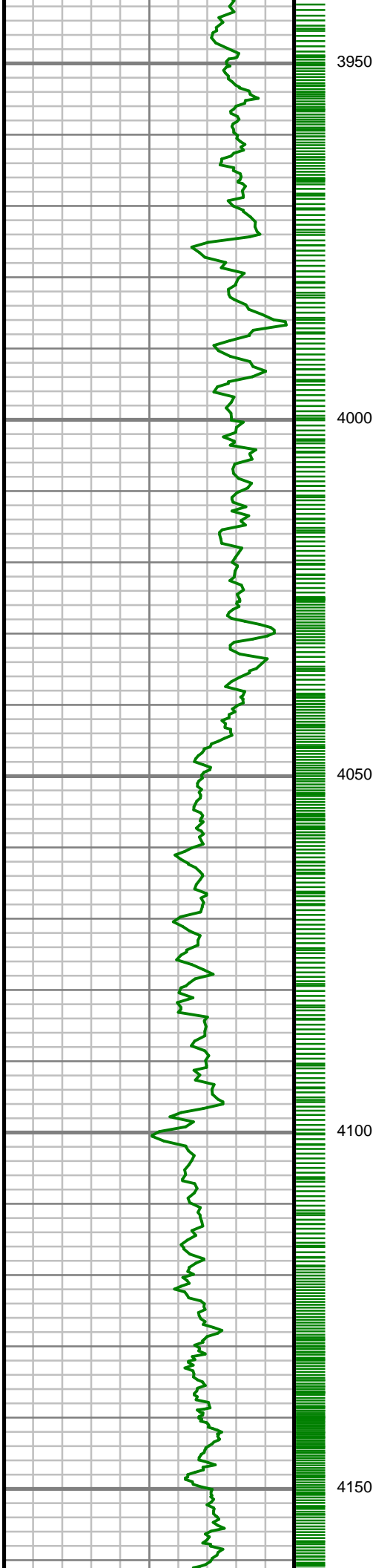
3900



S: 38 MD: 3736.00 ft
Inc: 17.08 deg Az:
143.29 deg TVD:
3604.01 ft

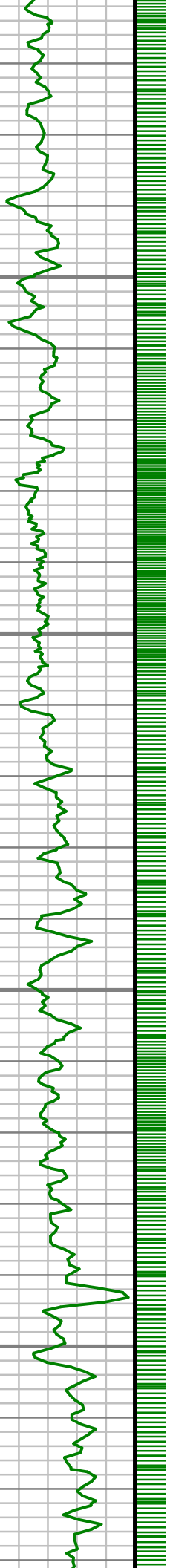
S: 39 MD: 3829.00 ft
Inc: 17.84 deg Az:
145.77 deg TVD:
3692.72 ft

S: 40 MD: 3923.00 ft
Inc: 17.18 deg Az:
144.18 deg TVD:
3782.37 ft



S: 41 MD: 4017.00 ft
Inc: 16.48 deg Az:
145.66 deg TVD:
3872.34 ft

S: 42 MD: 4111.00 ft
Inc: 16.86 deg Az:
147.93 deg TVD:
3962.39 ft

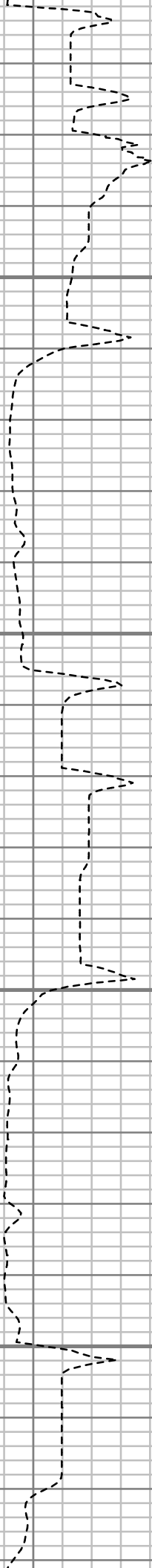


4200

4250

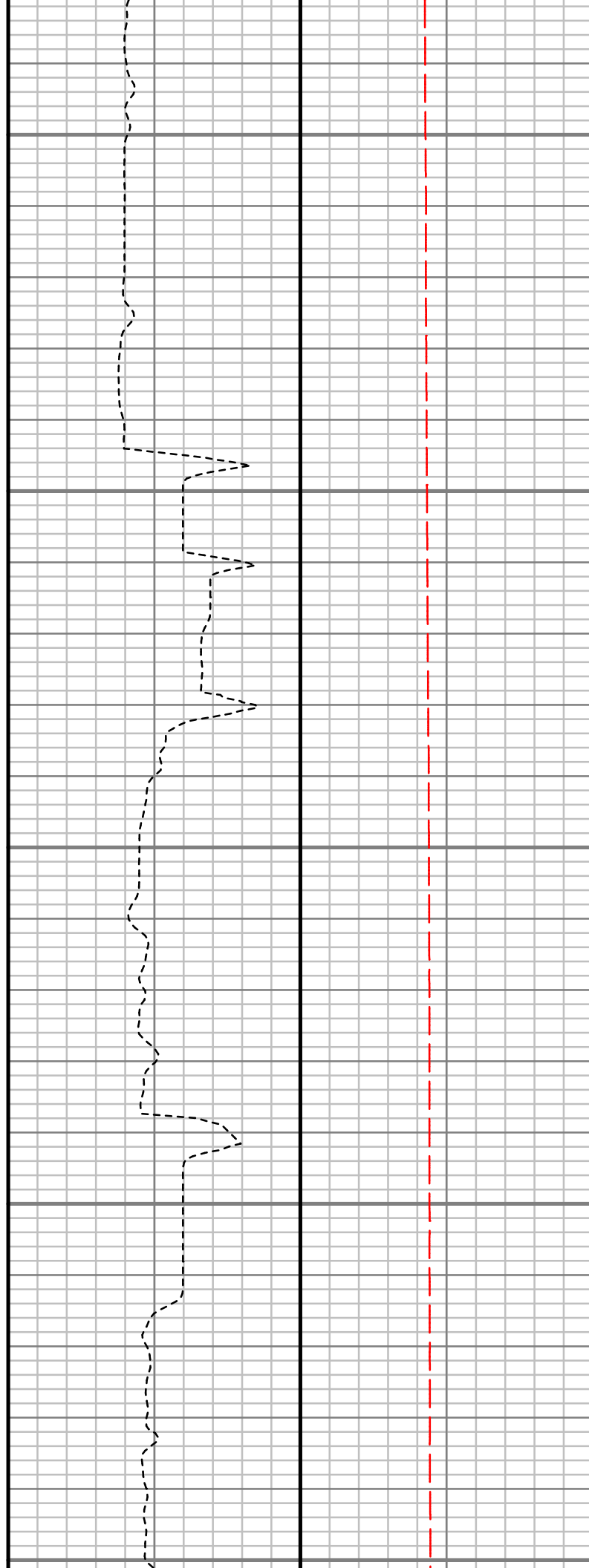
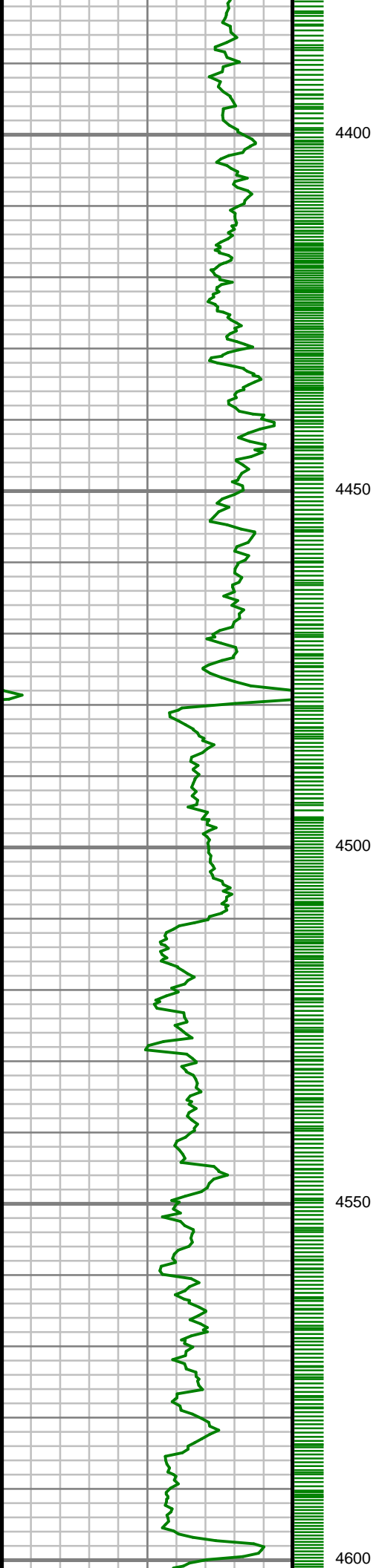
4300

4350



S: 43 MD: 4204.00 ft
Inc: 16.87 deg Az:
155.53 deg TVD:
4051.41 ft

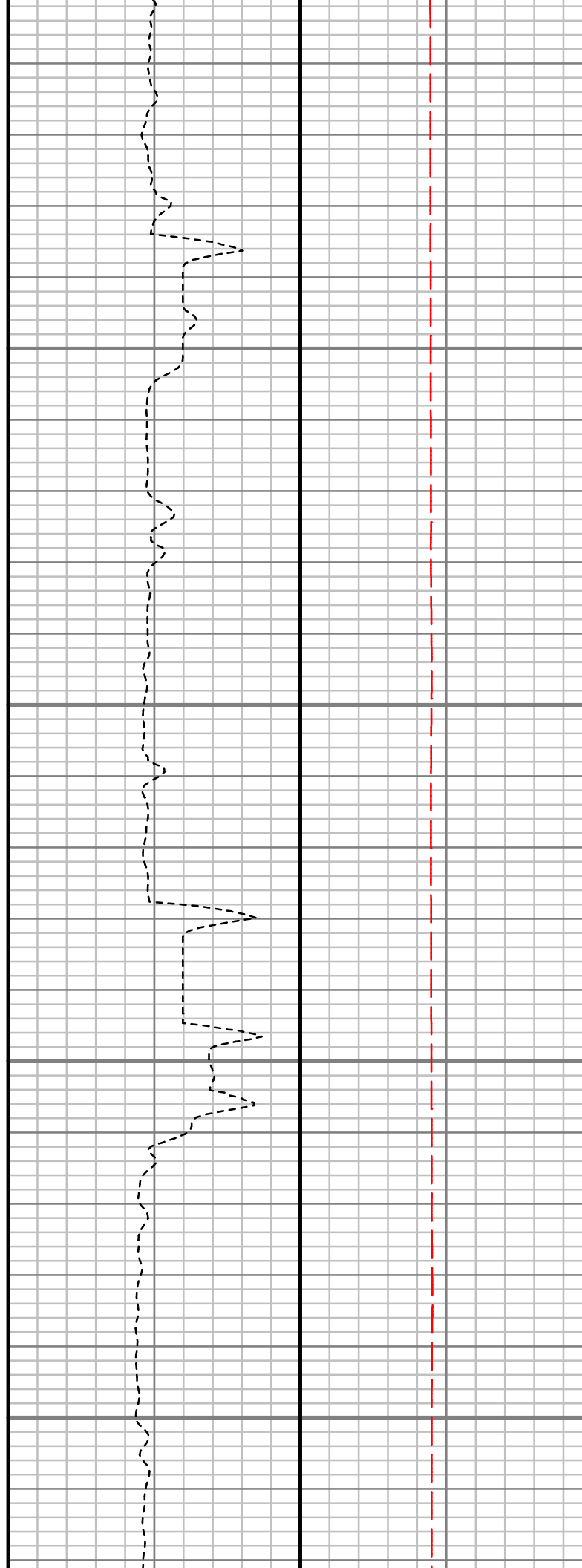
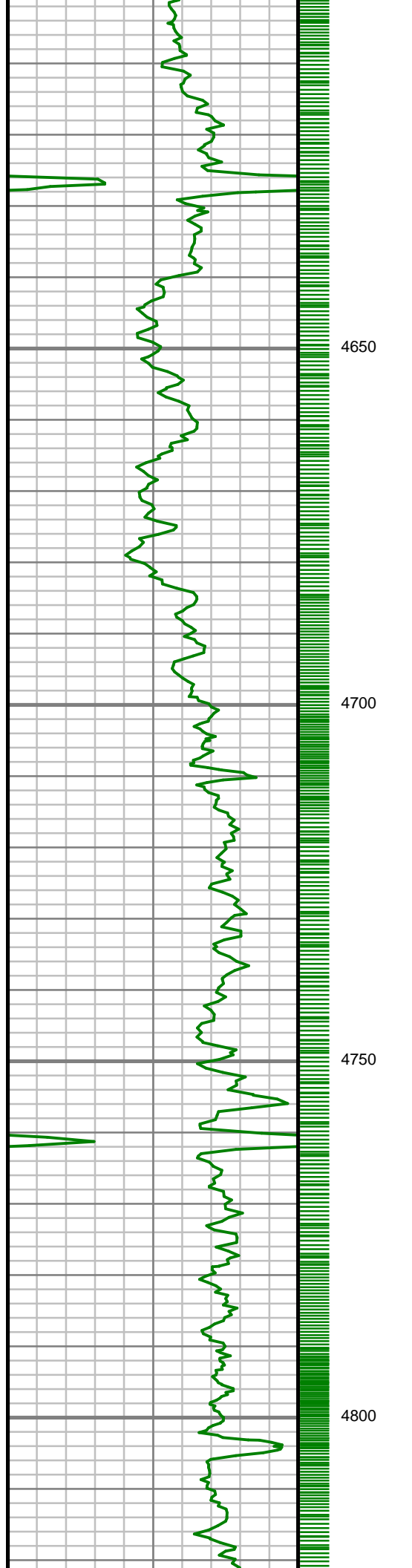
S: 44 MD: 4298.00 ft
Inc: 19.41 deg Az:
157.09 deg TVD:
4140.73 ft



S: 45 MD: 4393.00 ft
Inc: 17.66 deg Az:
156.69 deg TVD:
4230.80 ft

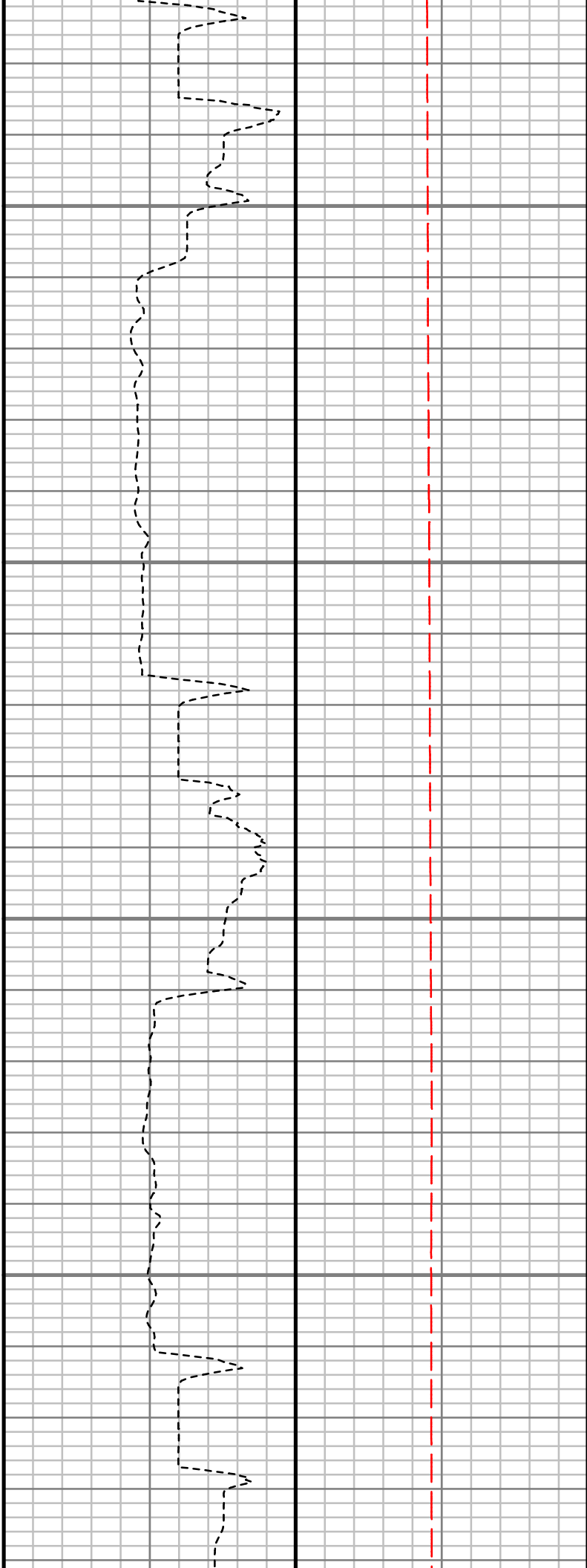
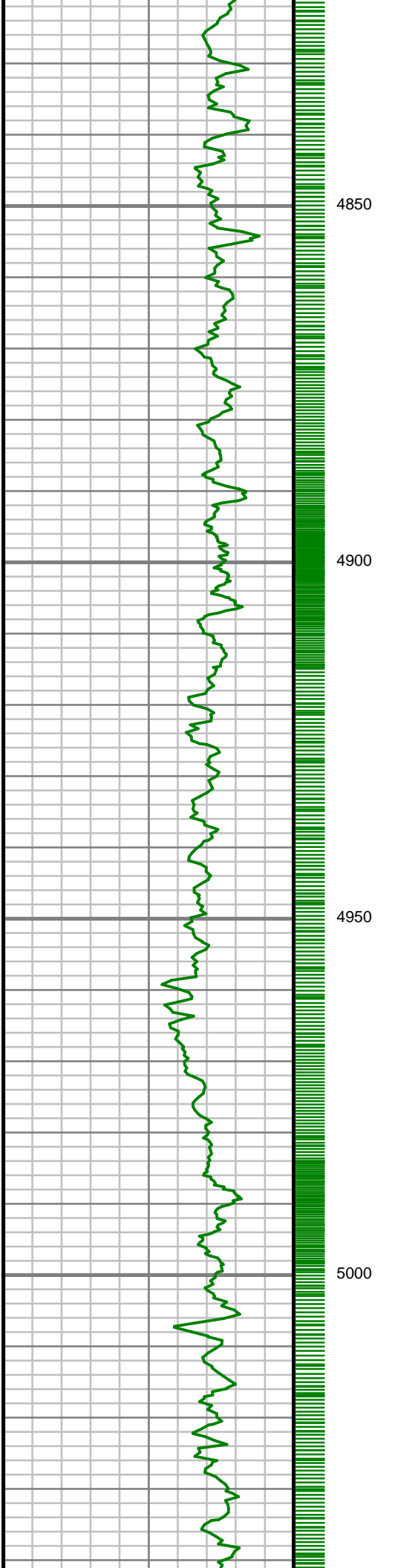
S: 46 MD: 4487.00 ft
Inc: 15.57 deg Az:
143.45 deg TVD:
4320.90 ft

S: 47 MD: 4582.00 ft
Inc: 13.67 deg Az:
143.99 deg TVD:
4412.82 ft



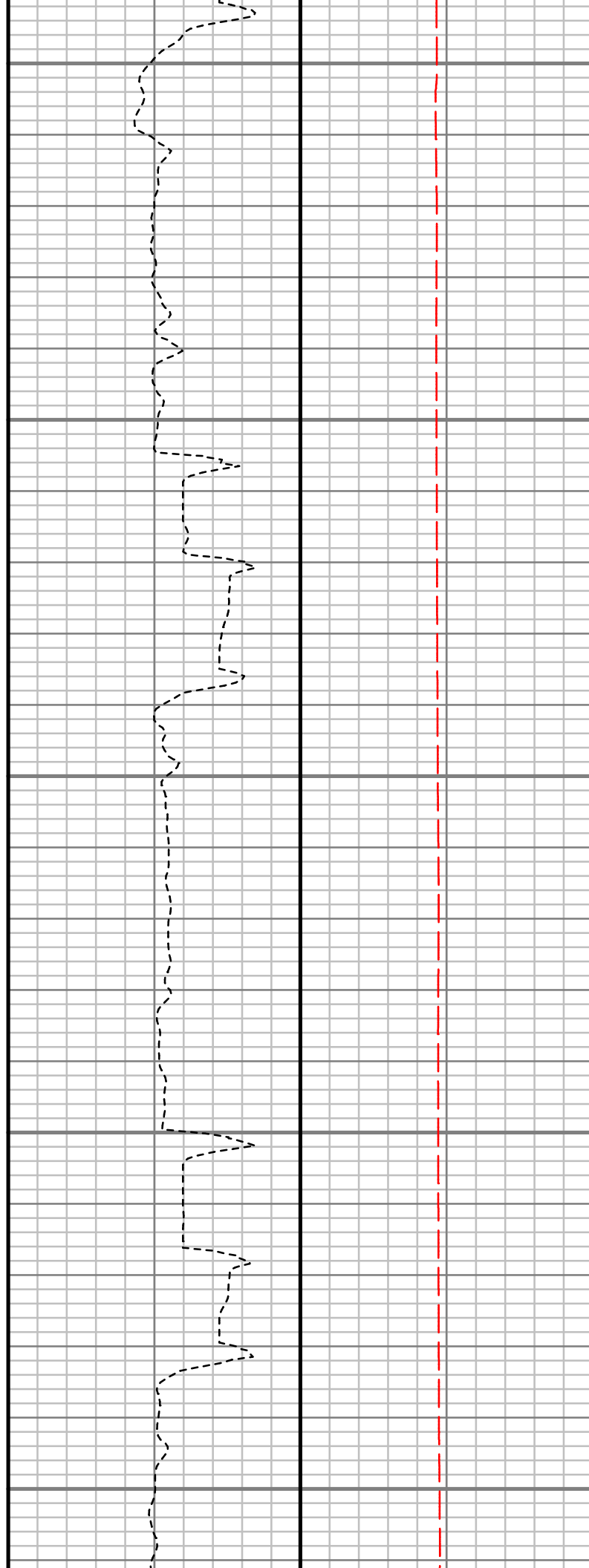
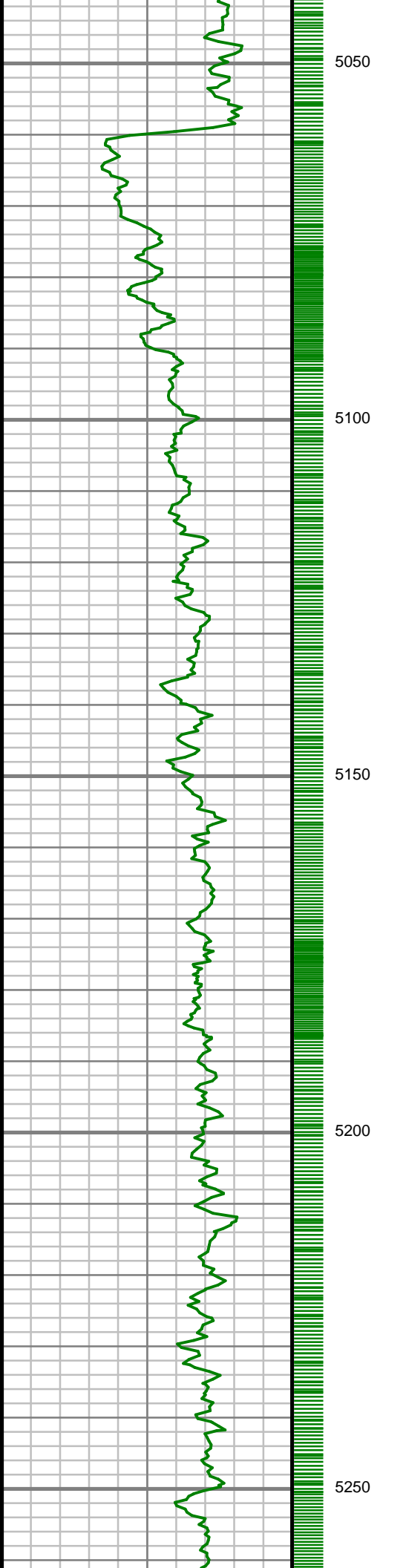
S: 48 MD: 4676.00 ft
Inc: 12.44 deg Az:
143.31 deg TVD:
4504.39 ft

S: 49 MD: 4769.00 ft
Inc: 11.12 deg Az:
146.89 deg TVD:
4595.43 ft



S: 50 MD: 4863.00 ft
Inc: 9.90 deg Az:
151.92 deg TVD:
4687.85 ft

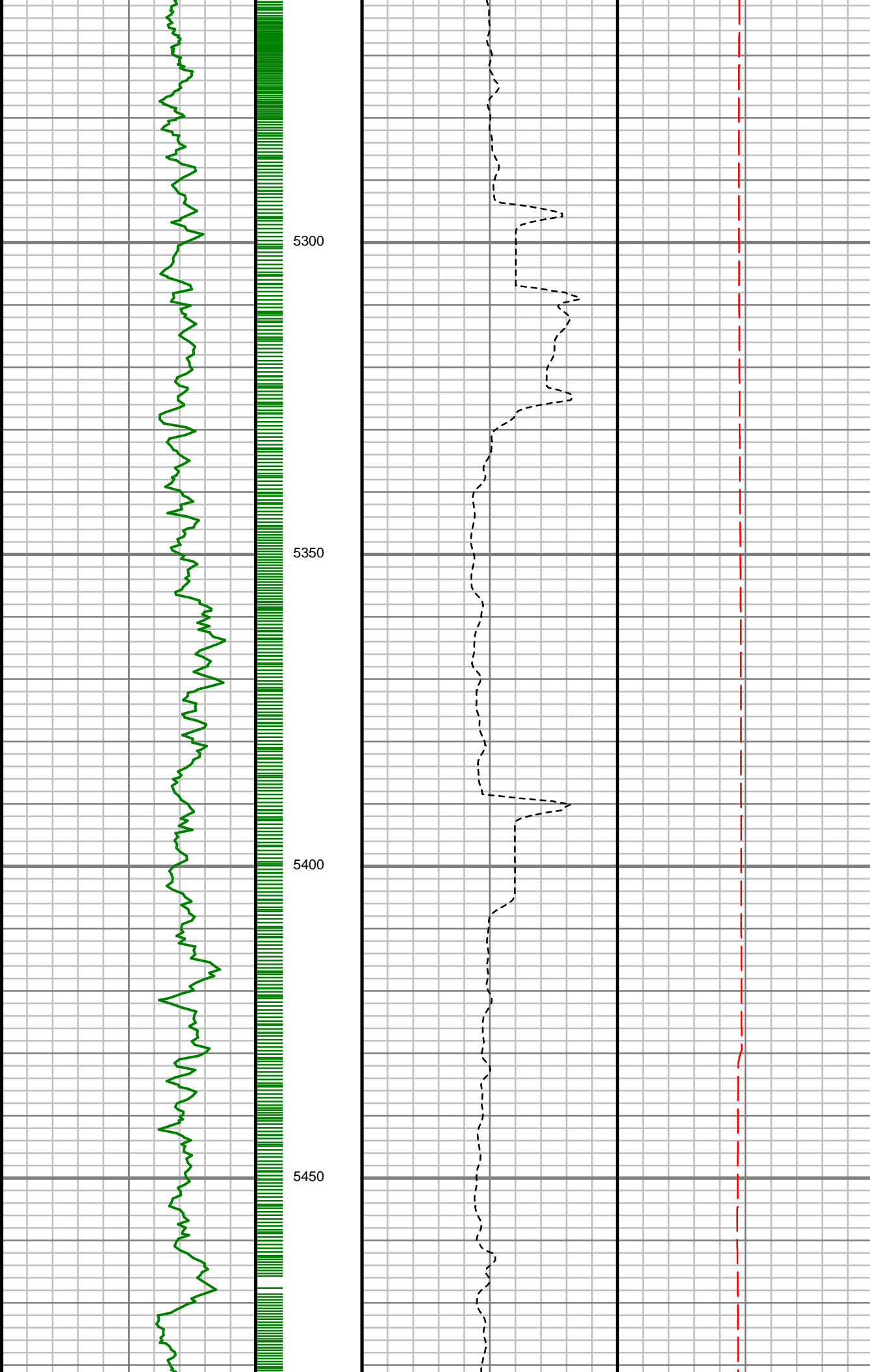
S: 51 MD: 4958.00 ft
Inc: 8.36 deg Az:
159.56 deg TVD:
4781.65 ft



S: 52 MD: 5052.00 ft
Inc: 6.57 deg Az:
148.55 deg TVD:
4874.86 ft

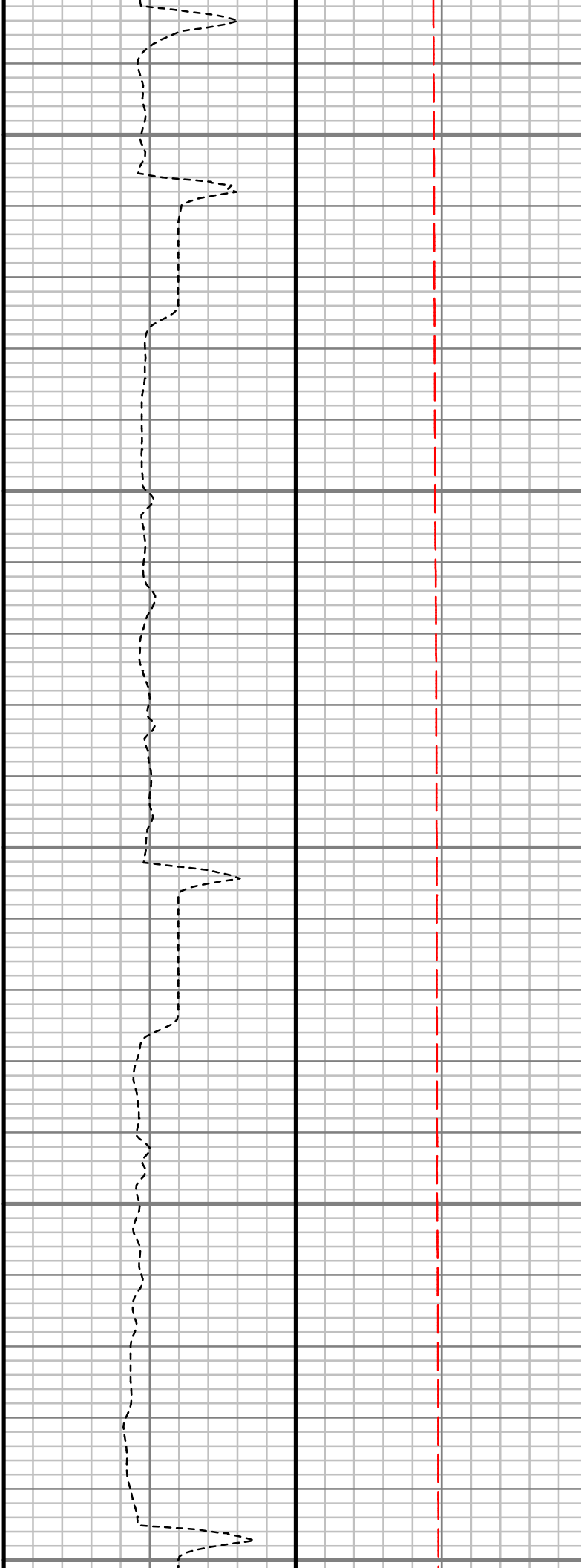
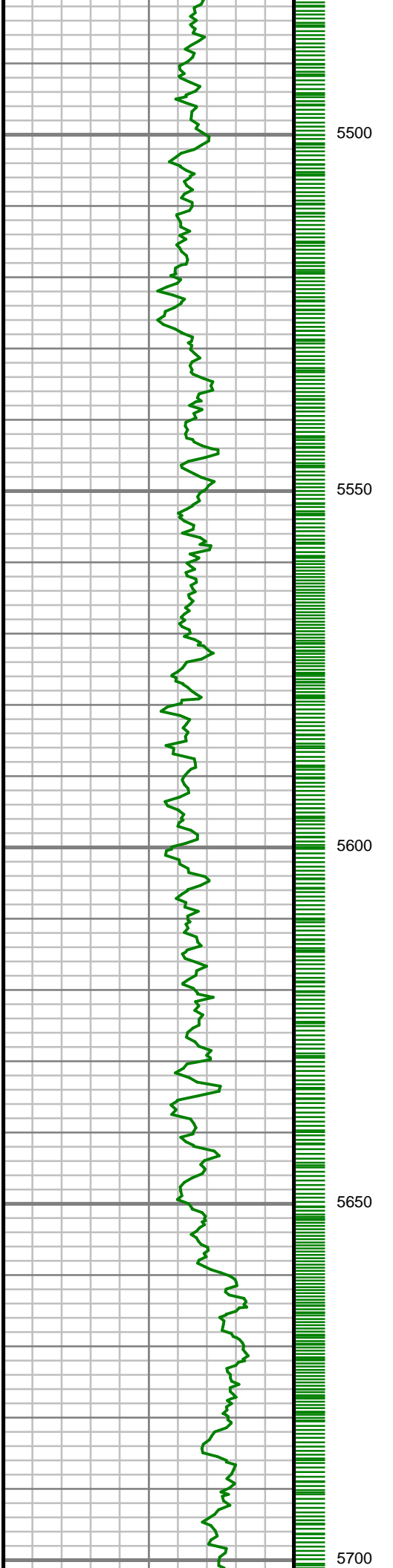
S: 53 MD: 5146.00 ft
Inc: 4.09 deg Az:
135.59 deg TVD:
4968.45 ft

S: 54 MD: 5242.00 ft
Inc: 2.09 deg Az:
124.73 deg TVD:
5064.30 ft



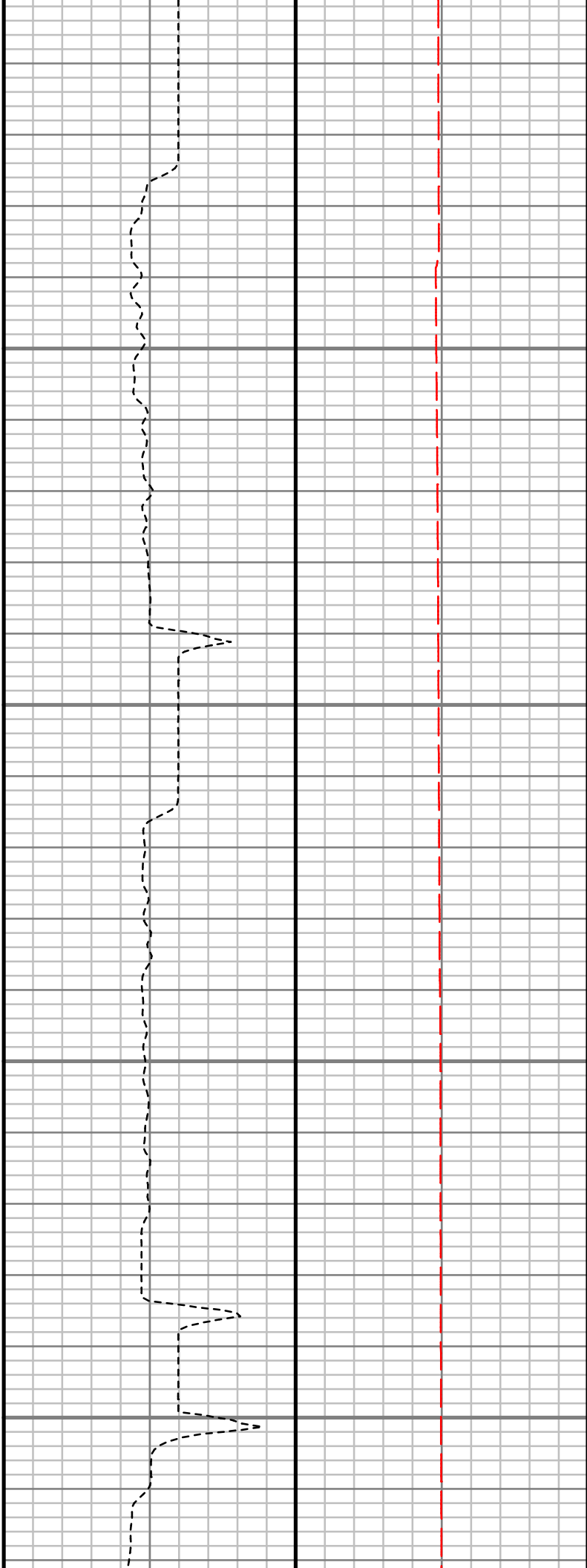
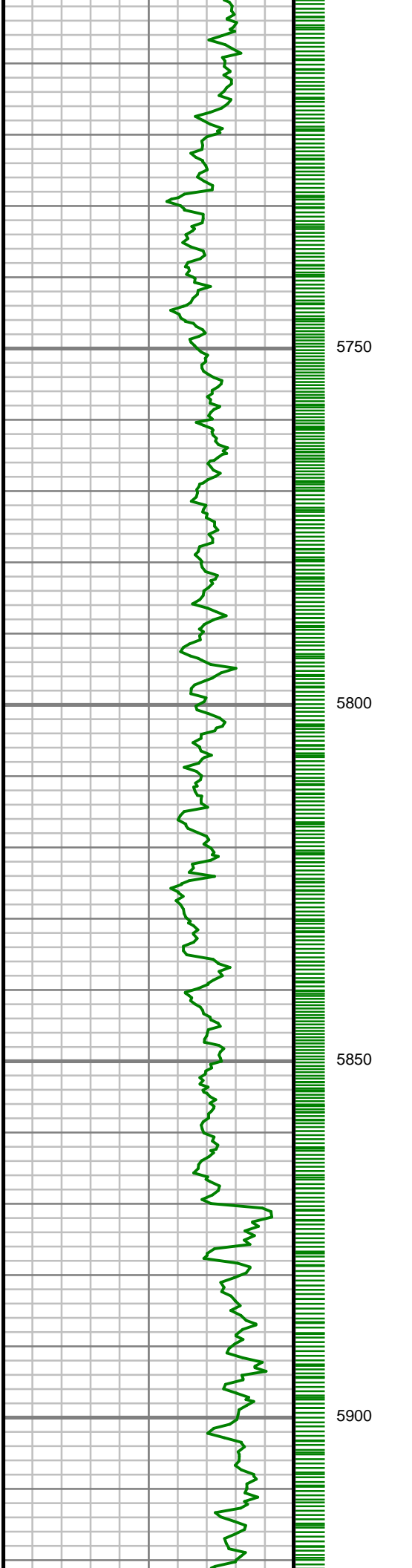
S: 55 MD: 5337.00 ft
Inc: 0.61 deg Az: 95.83
deg TVD: 5159.27 ft

S: 56 MD: 5458.00 ft
Inc: 0.03 deg Az:
262.99 deg TVD:
5280.27 ft



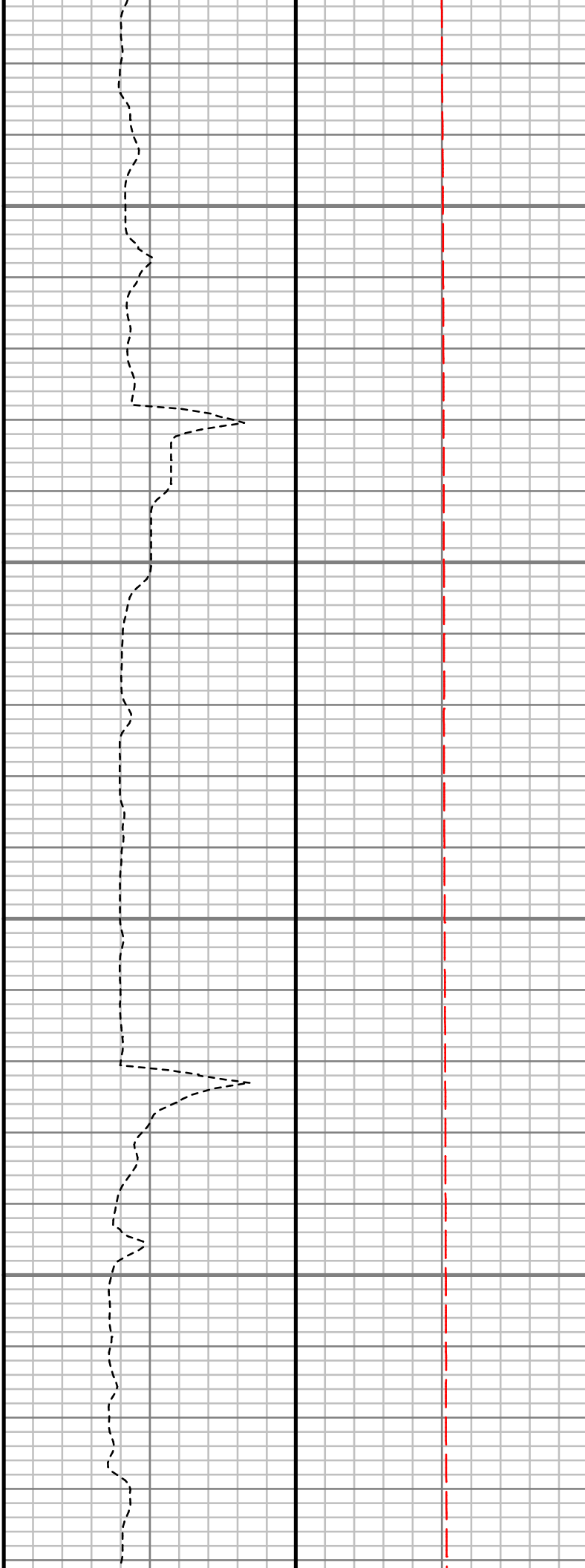
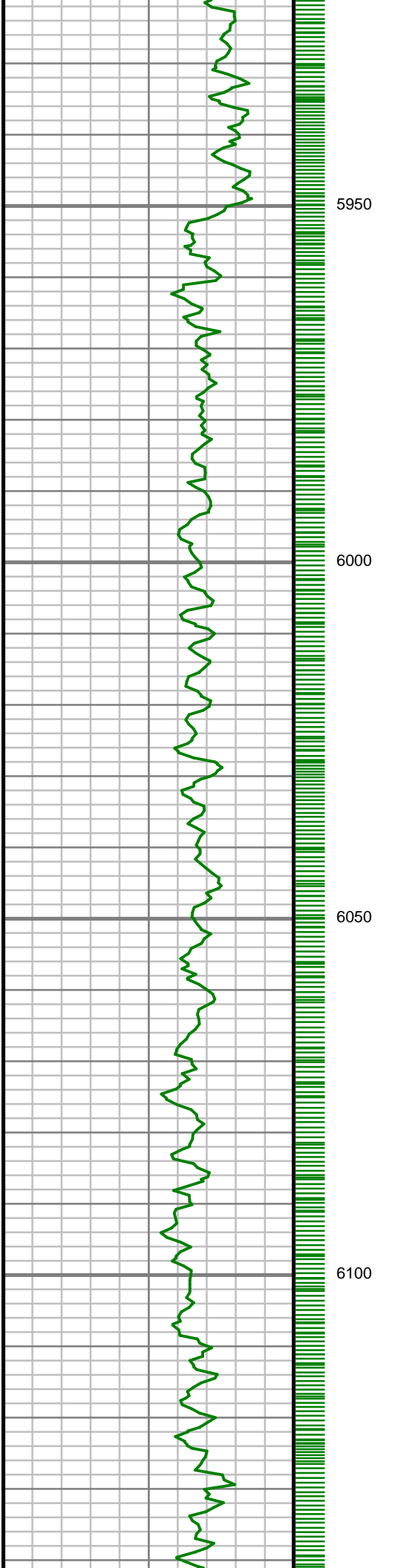
S: 57 MD: 5551.00 ft
Inc: 0.18 deg Az:
168.38 deg TVD:
5373.27 ft

S: 58 MD: 5646.00 ft
Inc: 0.11 deg Az:
122.13 deg TVD:
5468.27 ft



S: 59 MD: 5739.00 ft
Inc: 0.56 deg Az:
336.95 deg TVD:
5561.27 ft

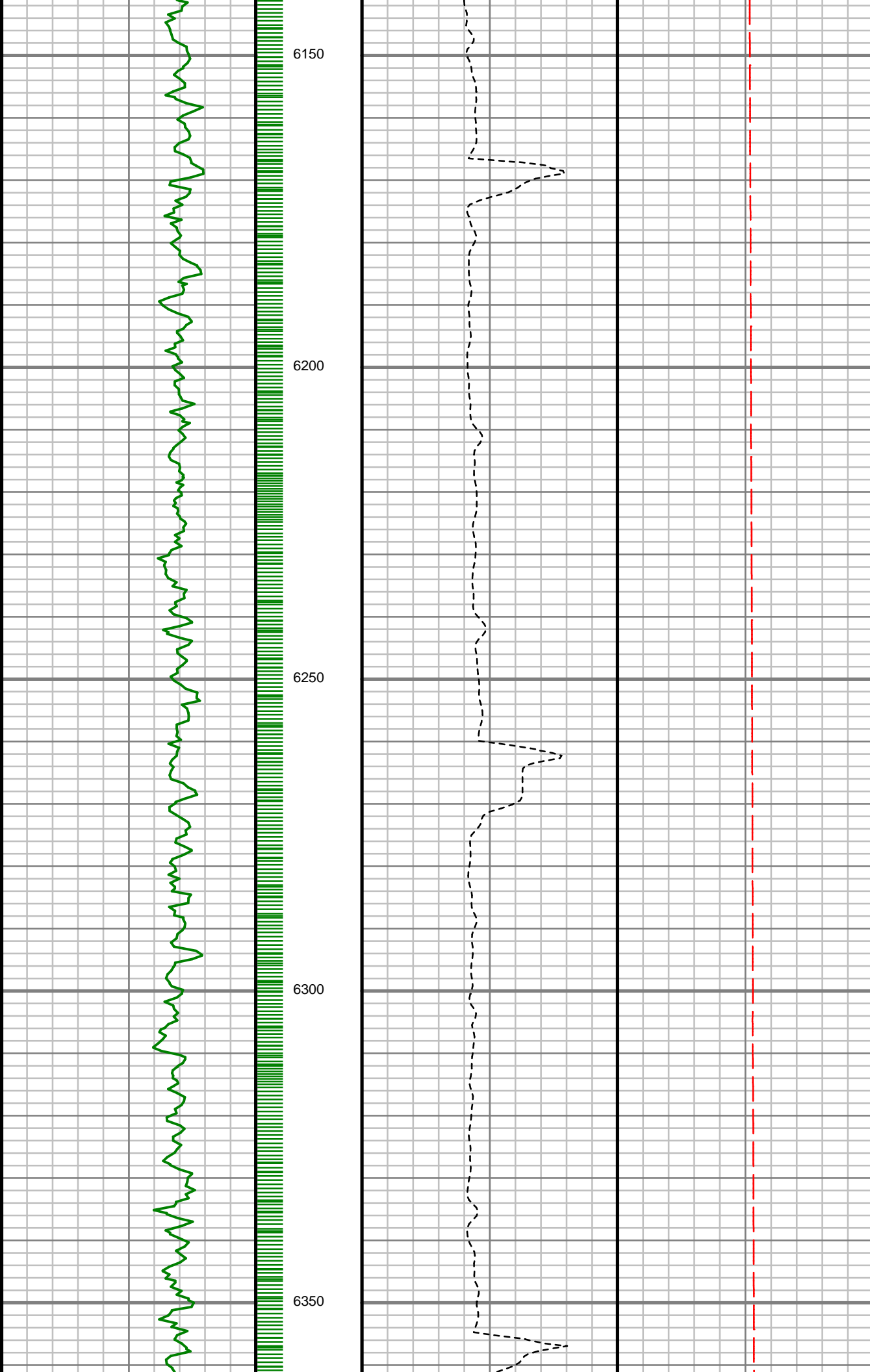
S: 60 MD: 5832.00 ft
Inc: 0.60 deg Az:
287.77 deg TVD:
5654.27 ft



S: 61 MD: 5928.00 ft
Inc: 0.94 deg Az:
307.97 deg TVD:
5750.26 ft

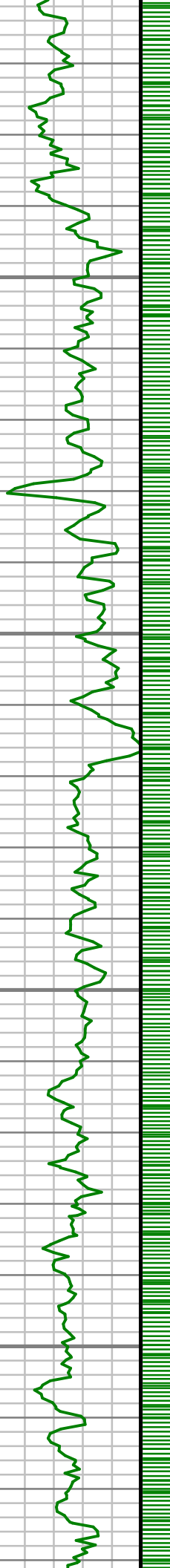
S: 62 MD: 6021.00 ft
Inc: 0.08 deg Az:
266.82 deg TVD:
5843.25 ft

S: 63 MD: 6115.00 ft
Inc: 0.68 deg Az:
320.72 deg TVD:
5937.25 ft



S: 64 MD: 6210.00 ft
Inc: 0.69 deg Az:
314.33 deg TVD:
6032.24 ft

S: 65 MD: 6302.00 ft
Inc: 0.77 deg Az:
342.40 deg TVD:
6124.24 ft

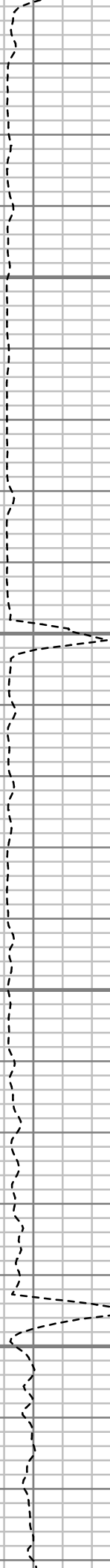


6400

6450

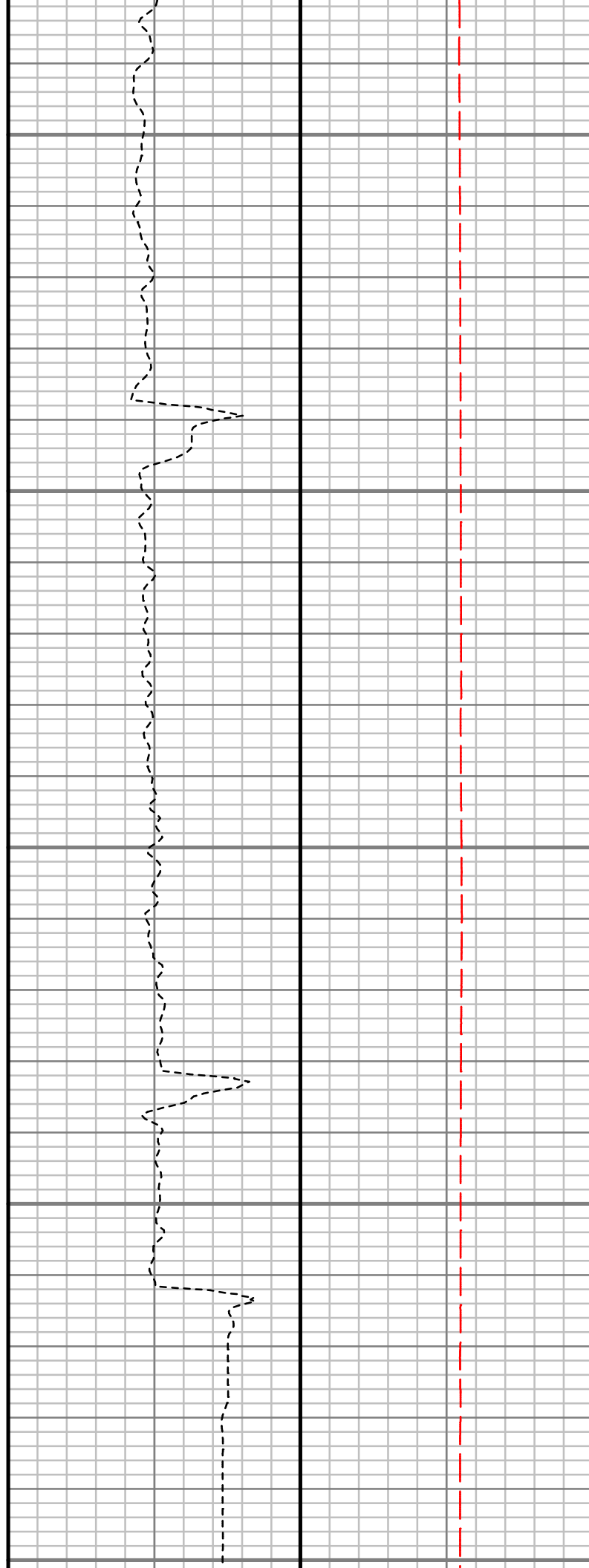
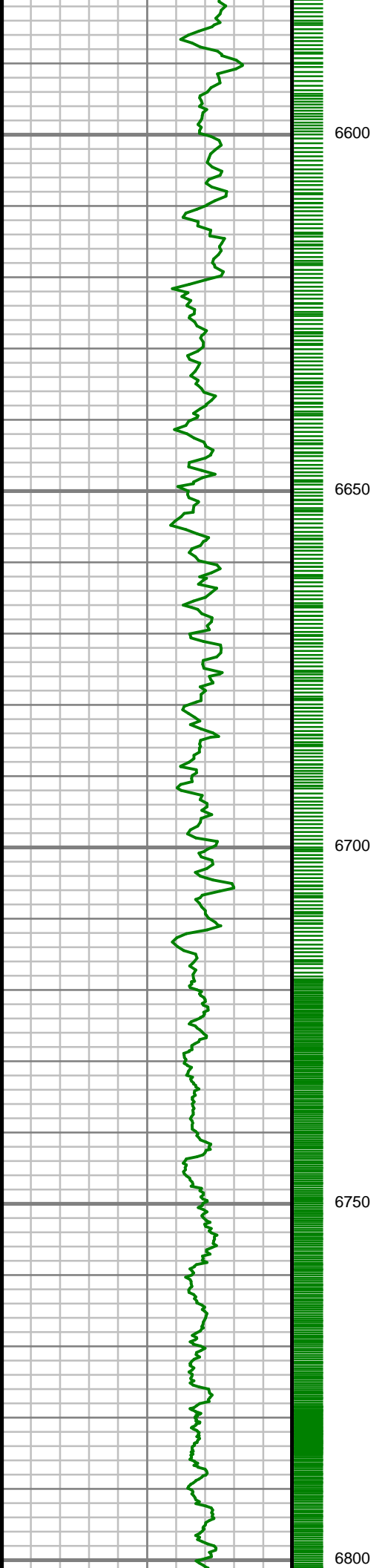
6500

6550



S: 66 MD: 6397.00 ft
Inc: 0.17 deg Az: 2.09
deg TVD: 6219.23 ft

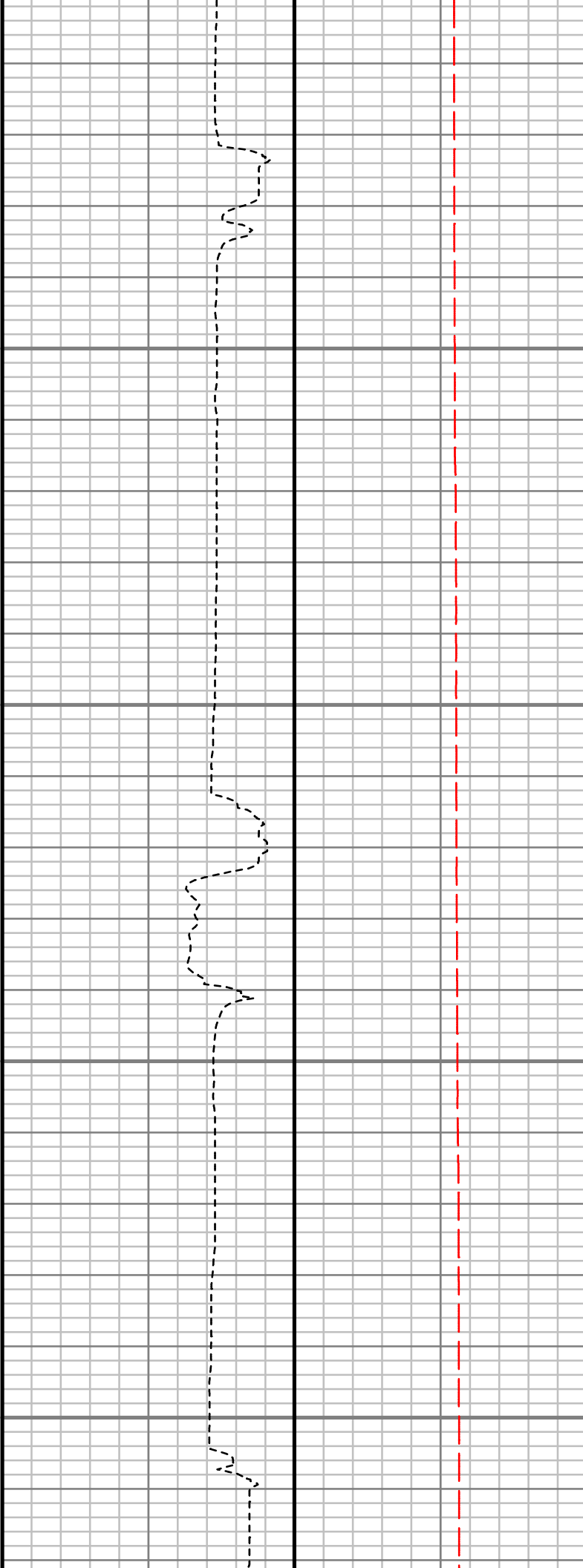
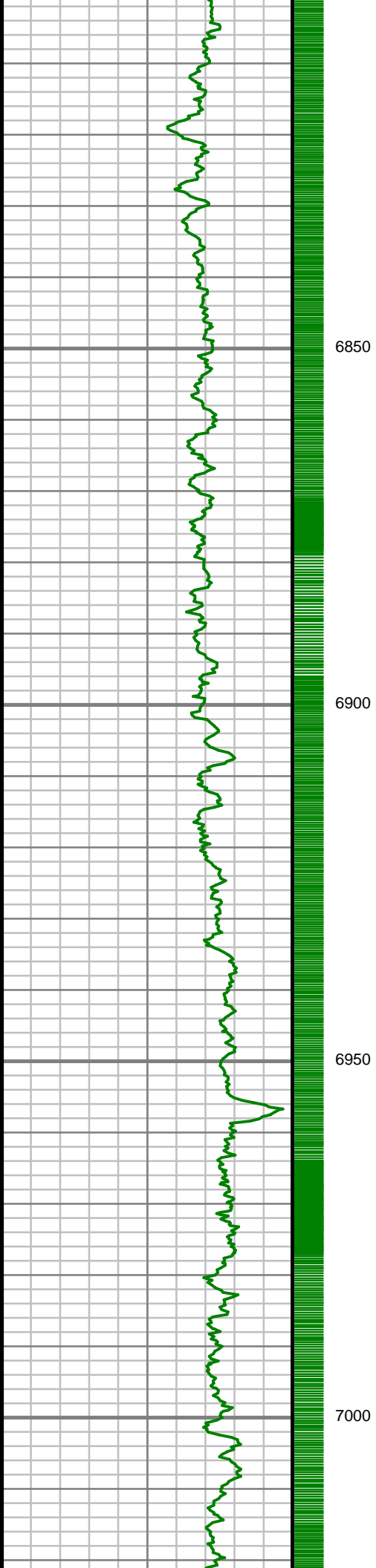
S: 67 MD: 6492.00 ft
Inc: 0.63 deg Az:
335.94 deg TVD:
6314.23 ft



S: 68 MD: 6586.00 ft
Inc: 0.46 deg Az:
312.80 deg TVD:
6408.23 ft

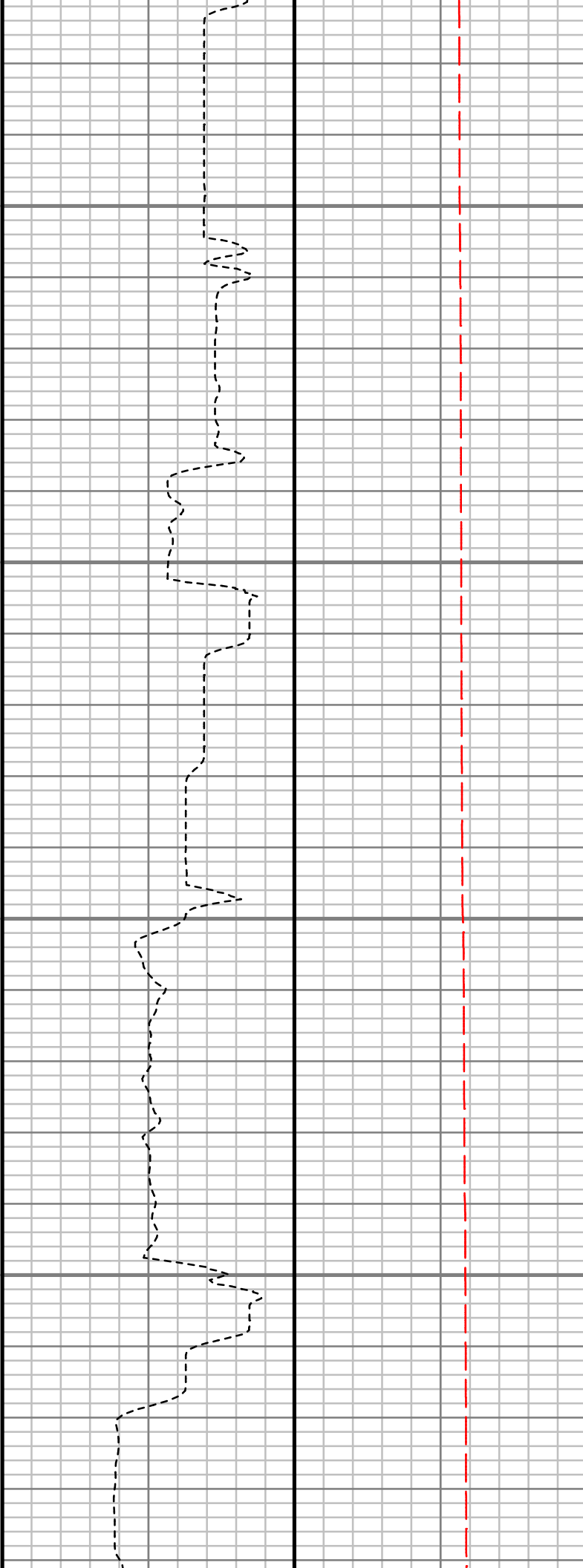
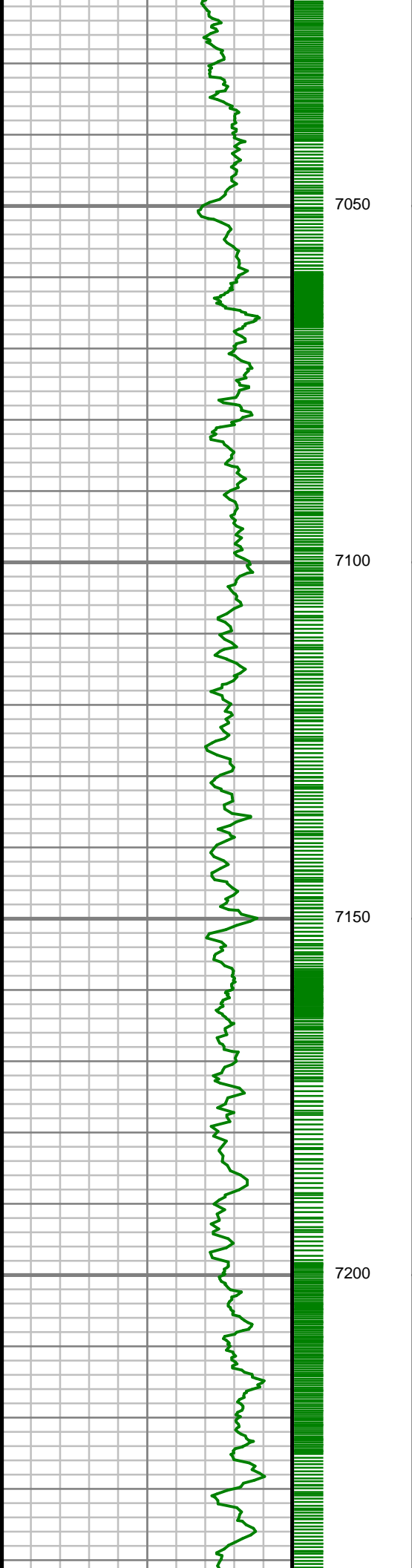
S: 69 MD: 6679.00 ft
Inc: 0.55 deg Az:
318.02 deg TVD:
6501.22 ft

S: 70 MD: 6772.00 ft
Inc: 2.08 deg Az:
340.52 deg TVD:
6594.20 ft



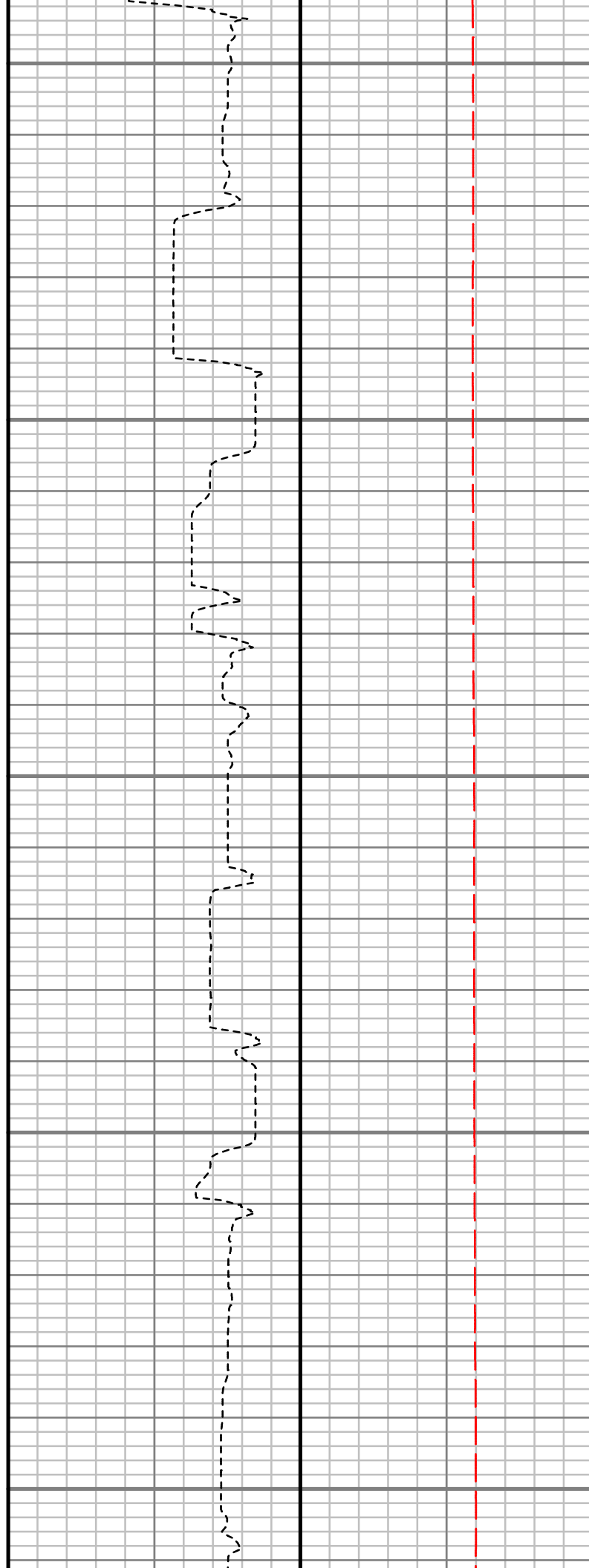
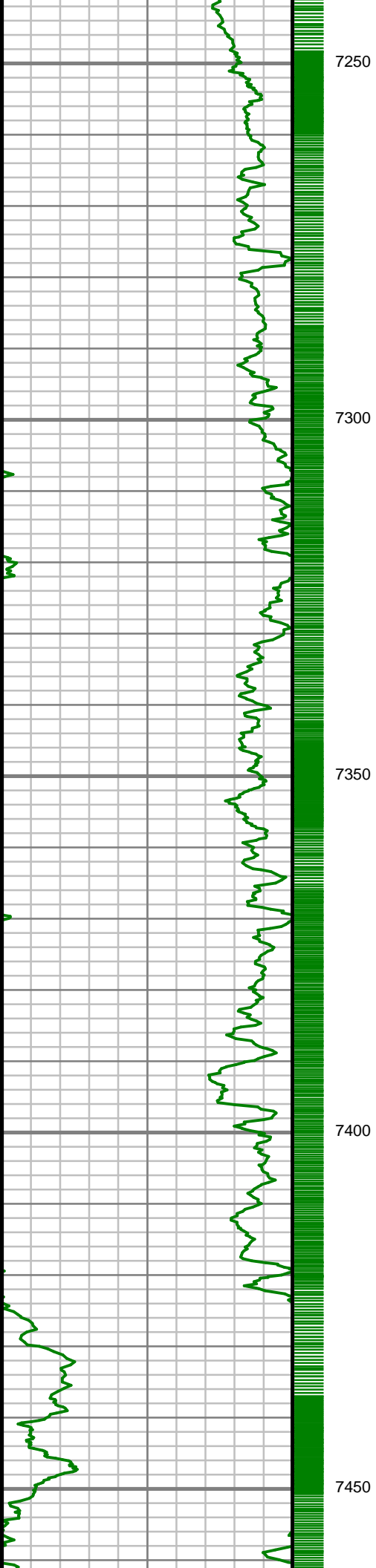
S: 71 MD: 6864.00 ft
Inc: 16.93 deg Az: 2.64
deg TVD: 6684.69 ft

S: 72 MD: 6957.00 ft
Inc: 28.99 deg Az: 5.61
deg TVD: 6770.17 ft



S: 73 MD: 7052.00 ft
Inc: 38.23 deg Az: 2.49
deg TVD: 6849.20 ft

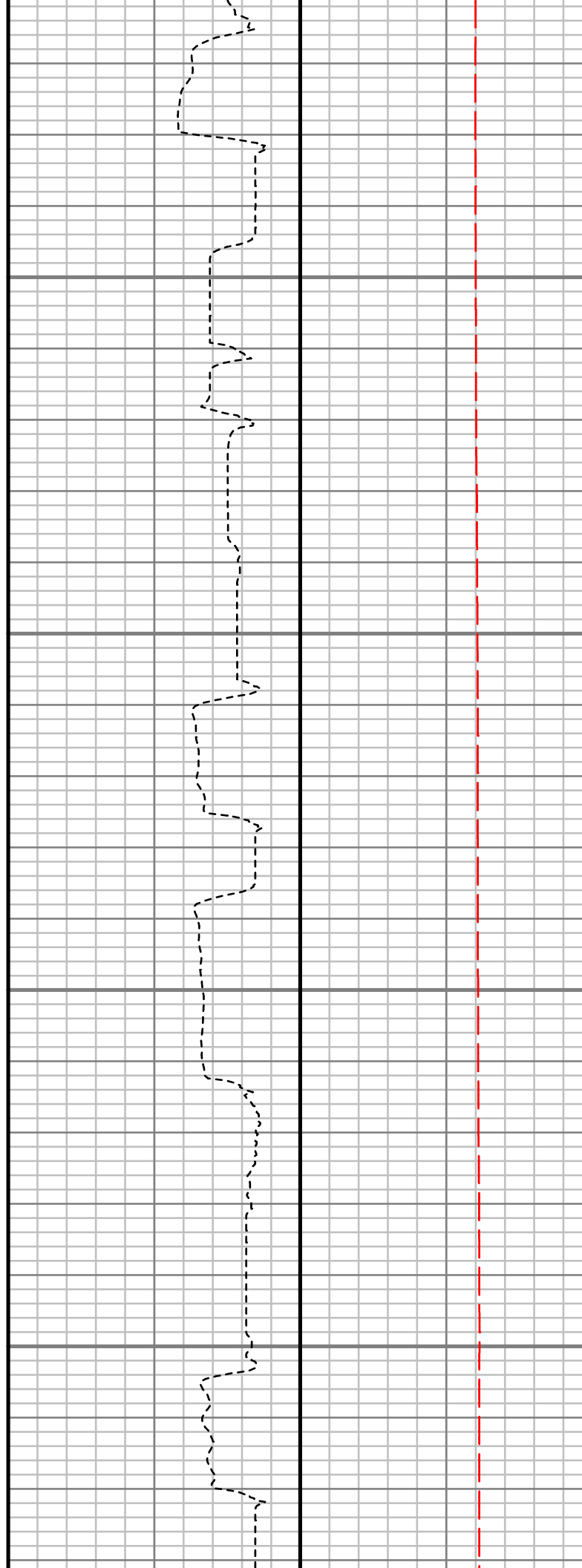
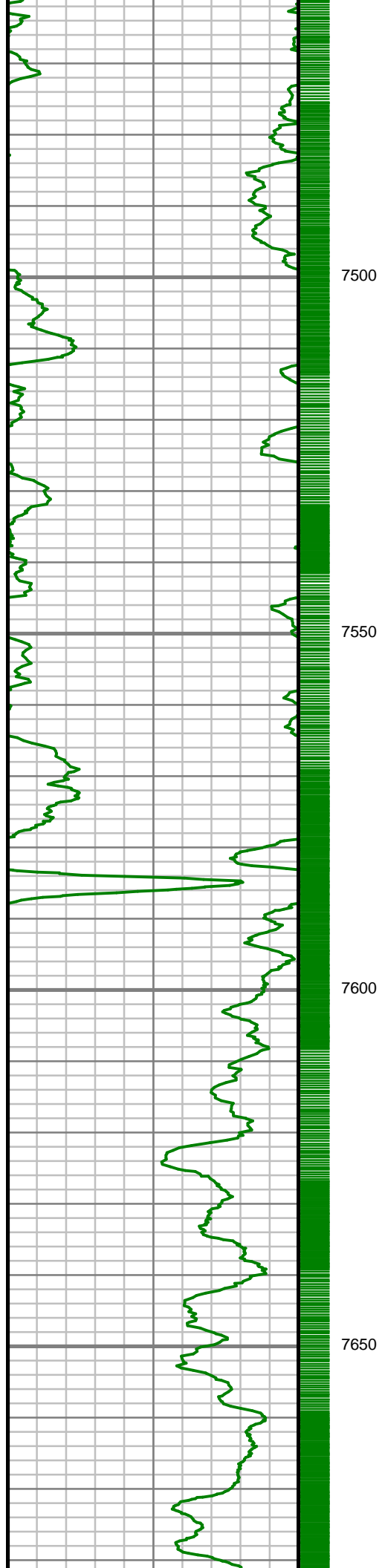
S: 74 MD: 7146.00 ft
Inc: 42.02 deg Az: 0.50
deg TVD: 6921.07 ft



S: 75 MD: 7241.00 ft
Inc: 40.85 deg Az:
358.68 deg TVD:
6992.29 ft

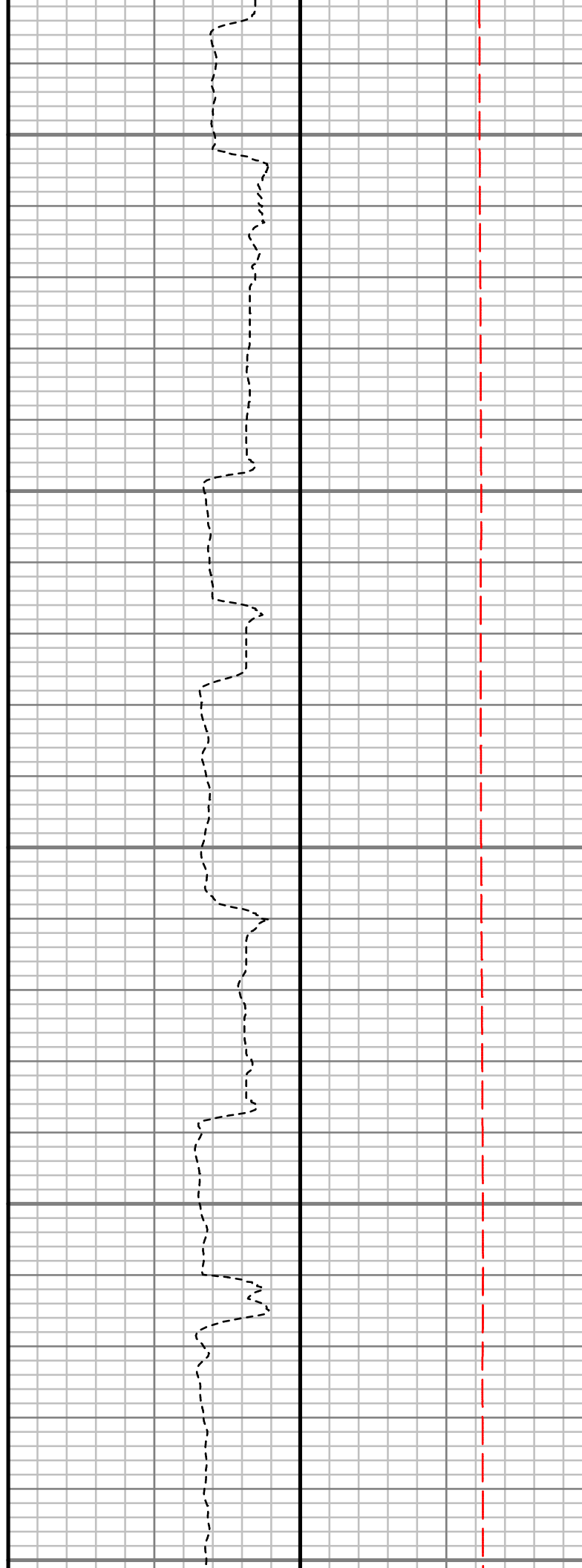
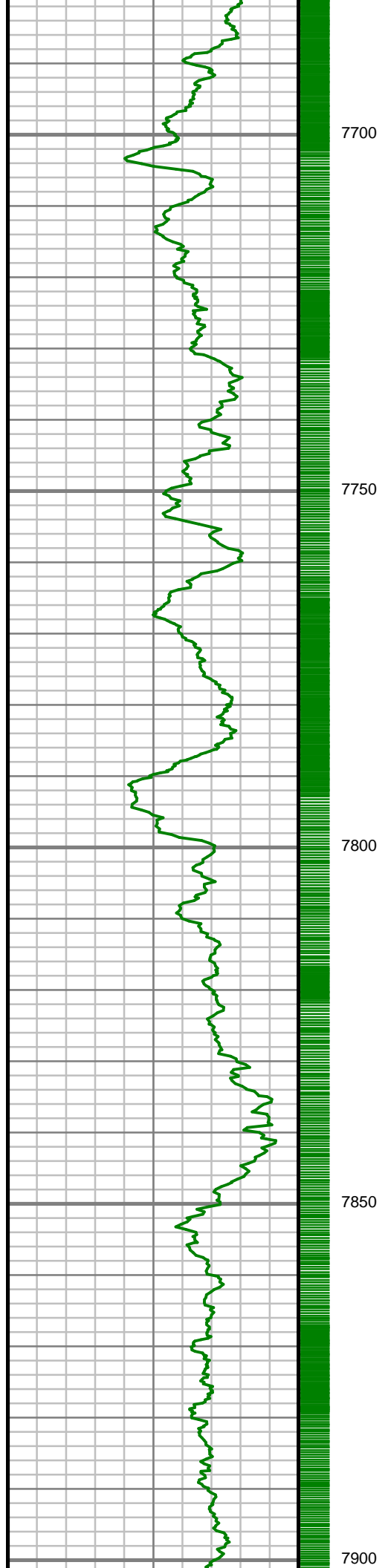
S: 76 MD: 7336.00 ft
Inc: 44.20 deg Az:
357.83 deg TVD:
7062.30 ft

S: 77 MD: 7430.00 ft
Inc: 49.86 deg Az:
358.13 deg TVD:
7126.35 ft



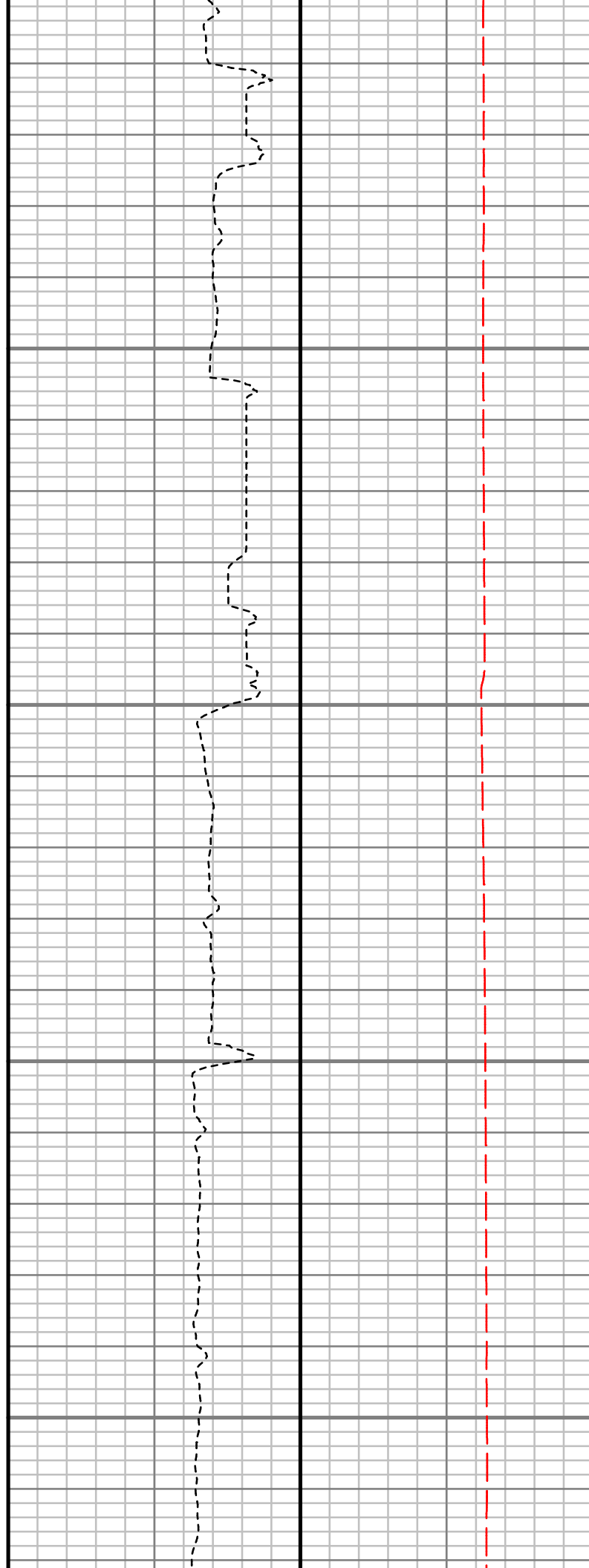
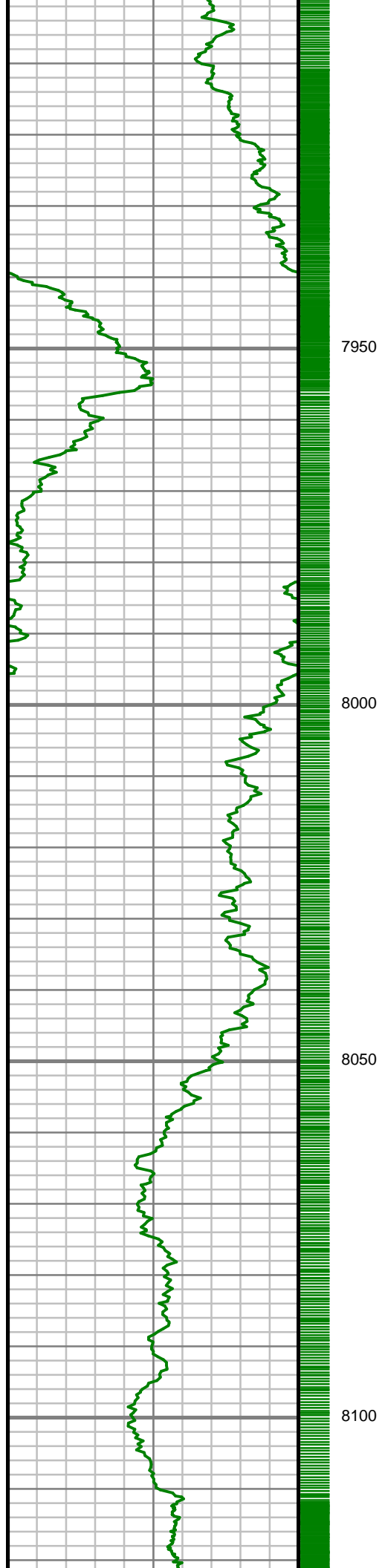
S: 78 MD: 7525.00 ft
Inc: 56.44 deg Az:
358.90 deg TVD:
7183.29 ft

S: 79 MD: 7620.00 ft
Inc: 62.47 deg Az:
359.11 deg TVD:
7231.55 ft



S: 80 MD: 7714.00 ft
Inc: 70.95 deg Az:
358.54 deg TVD:
7268.68 ft

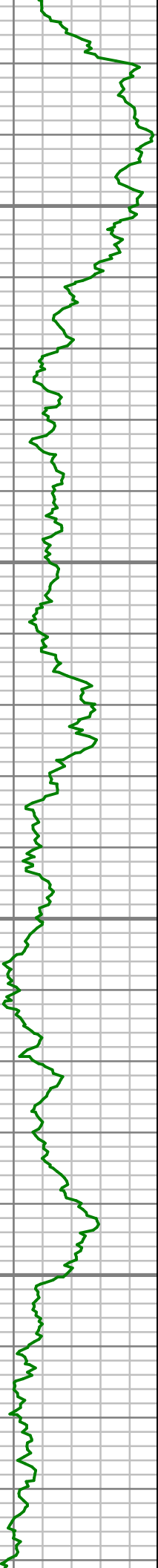
S: 81 MD: 7809.00 ft
Inc: 78.69 deg Az:
359.74 deg TVD:
7293.54 ft



S: 82 MD: 7904.00 ft
Inc: 84.29 deg Az: 0.24
deg TVD: 7307.60 ft

S: 83 MD: 7998.00 ft
Inc: 87.48 deg Az: 1.33
deg TVD: 7314.35 ft

S: 84 MD: 8093.00 ft
Inc: 87.98 deg Az: 1.76
deg TVD: 7318.11 ft

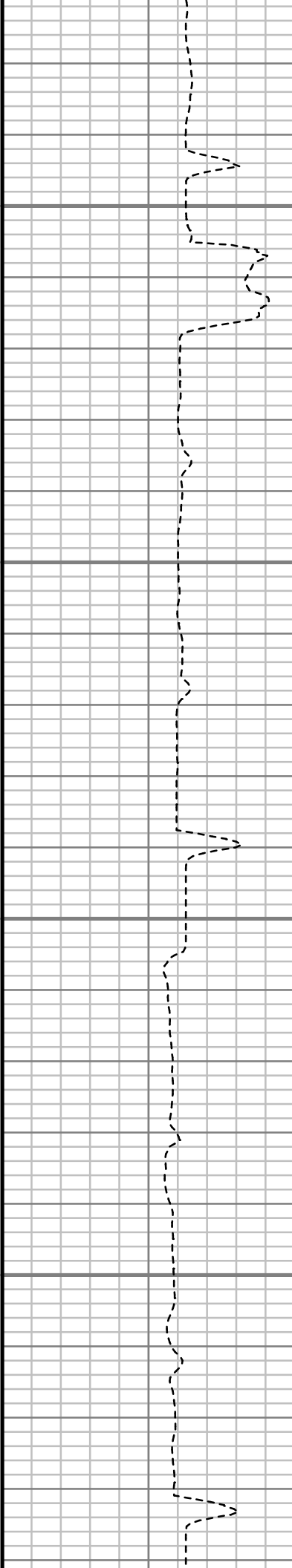


8150

8200

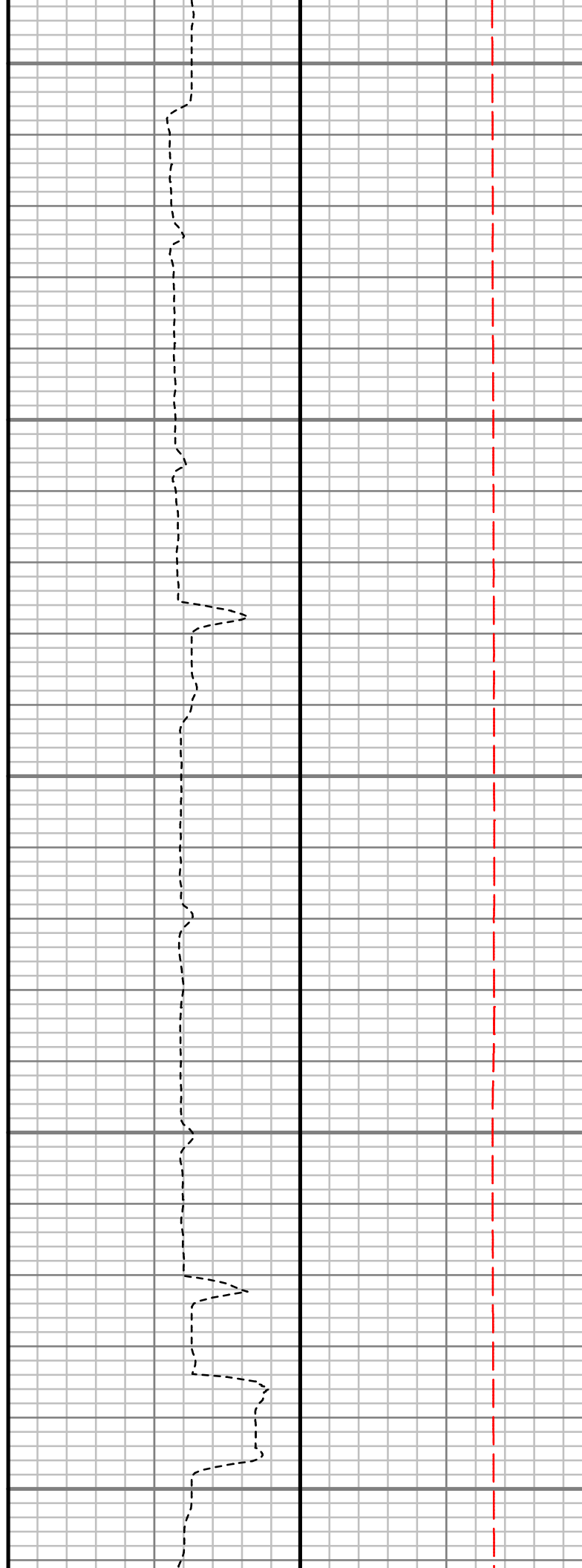
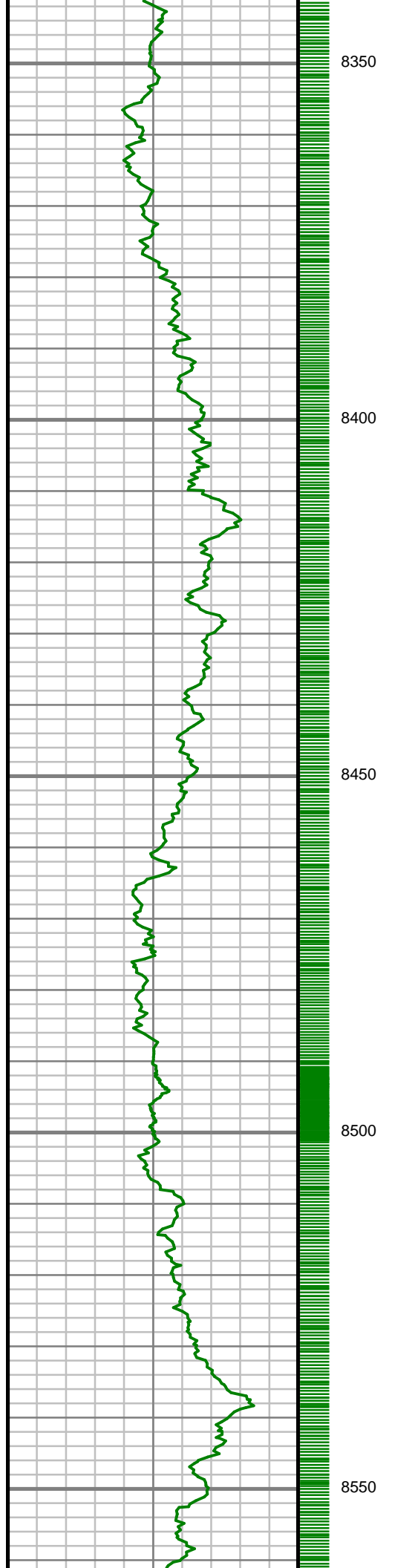
8250

8300



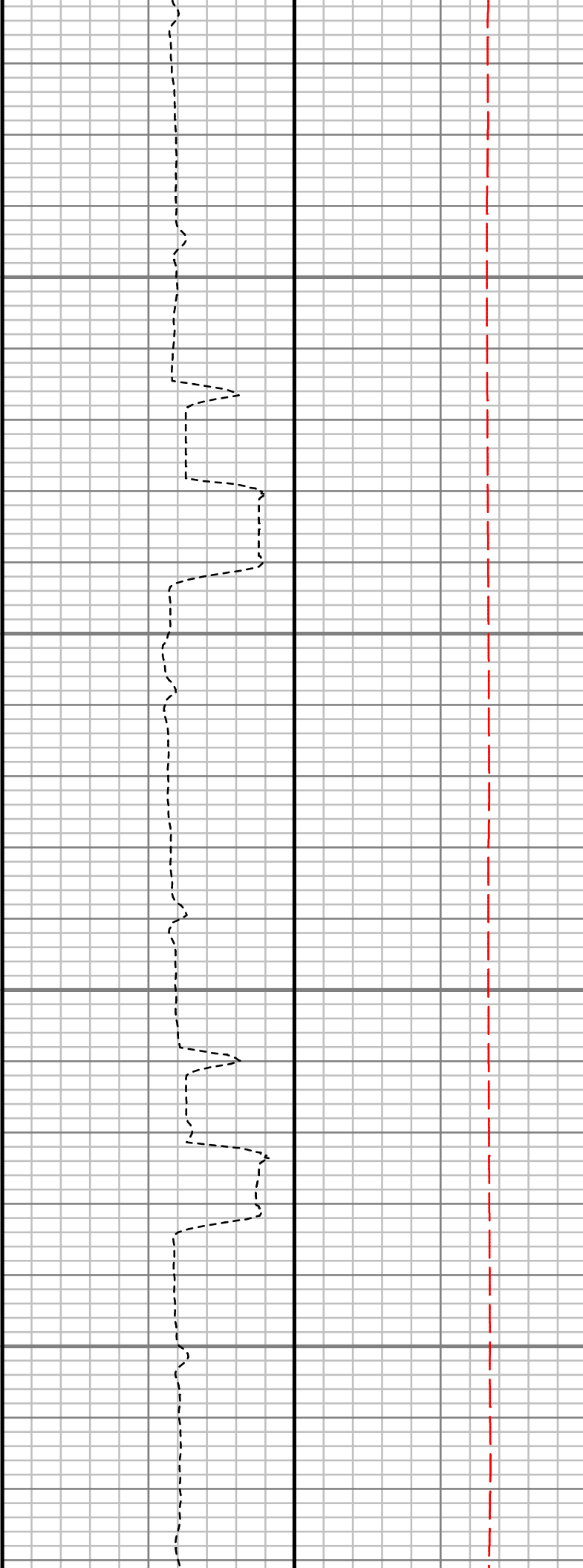
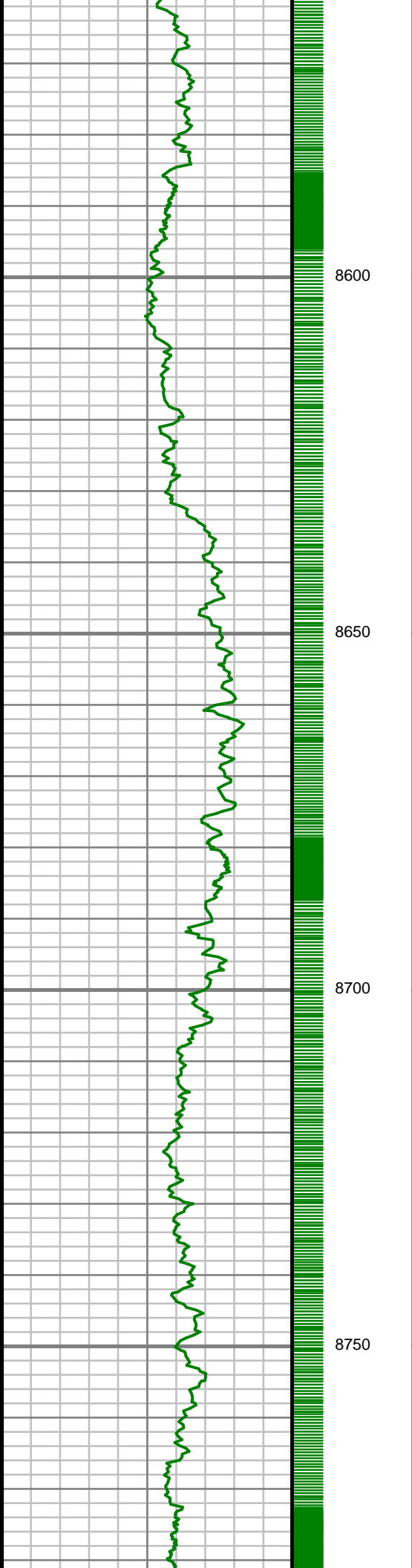
S: 85 MD: 8187.00 ft
Inc: 88.76 deg Az: 1.02
deg TVD: 7320.78 ft

S: 86 MD: 8280.00 ft
Inc: 89.23 deg Az: 0.65
deg TVD: 7322.41 ft



S: 87 MD: 8376.00 ft
Inc: 90.10 deg Az:
359.92 deg TVD:
7322.98 ft

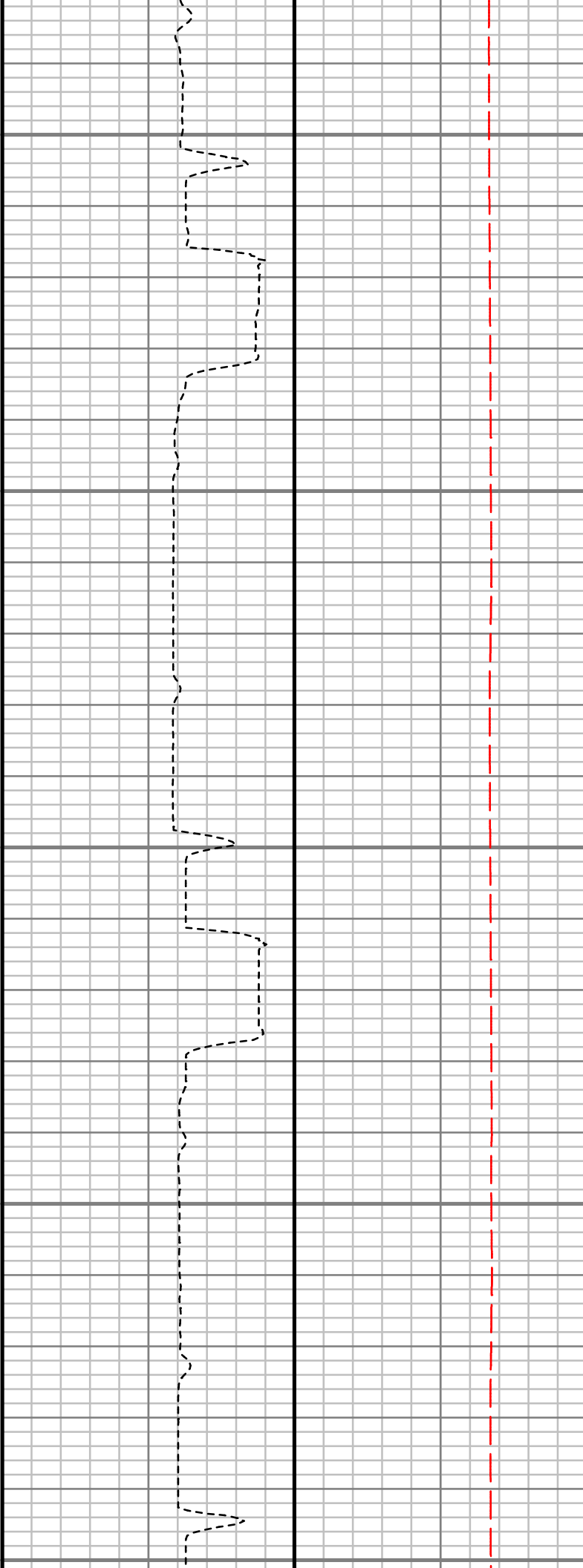
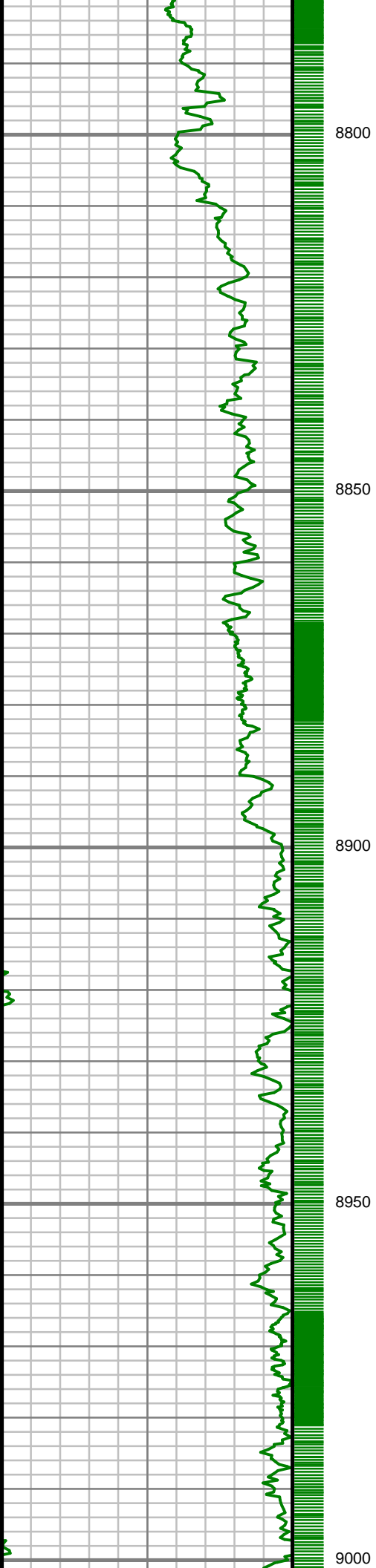
S: 88 MD: 8469.00 ft
Inc: 91.44 deg Az: 0.00
deg TVD: 7321.72 ft



S: 89 MD: 8564.00 ft
Inc: 91.34 deg Az:
359.30 deg TVD:
7319.41 ft

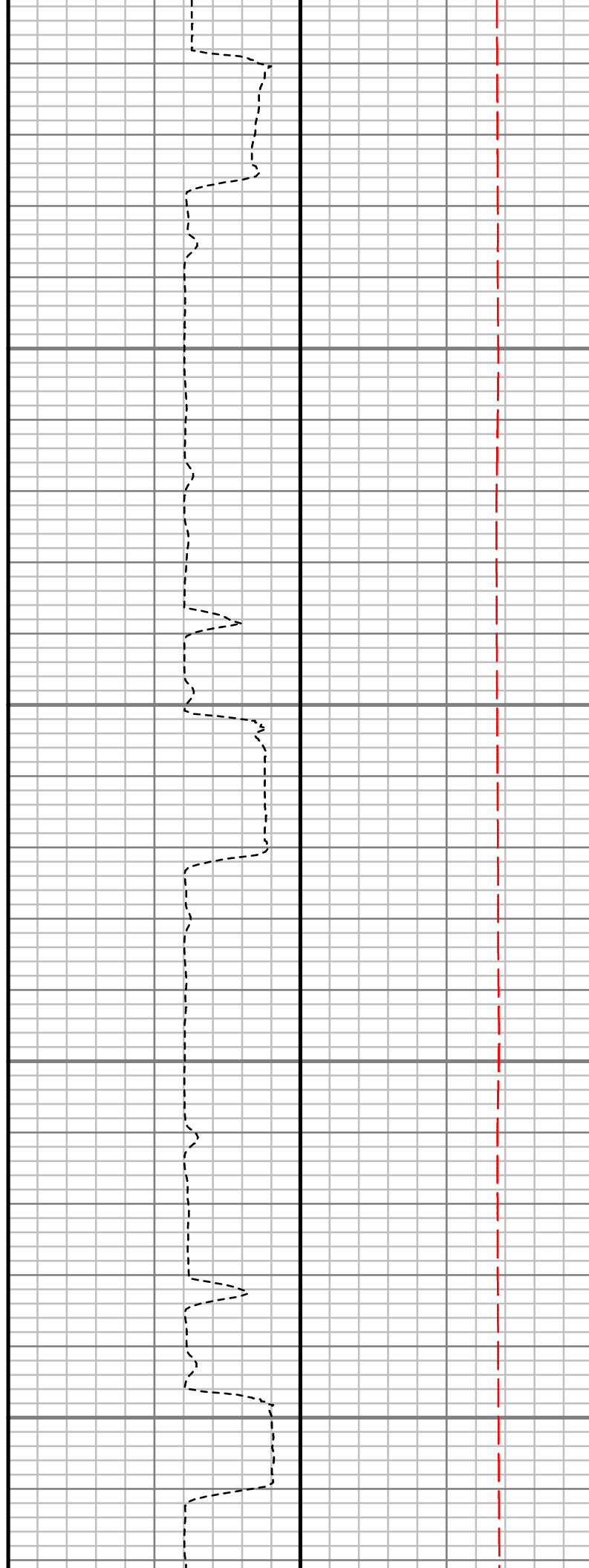
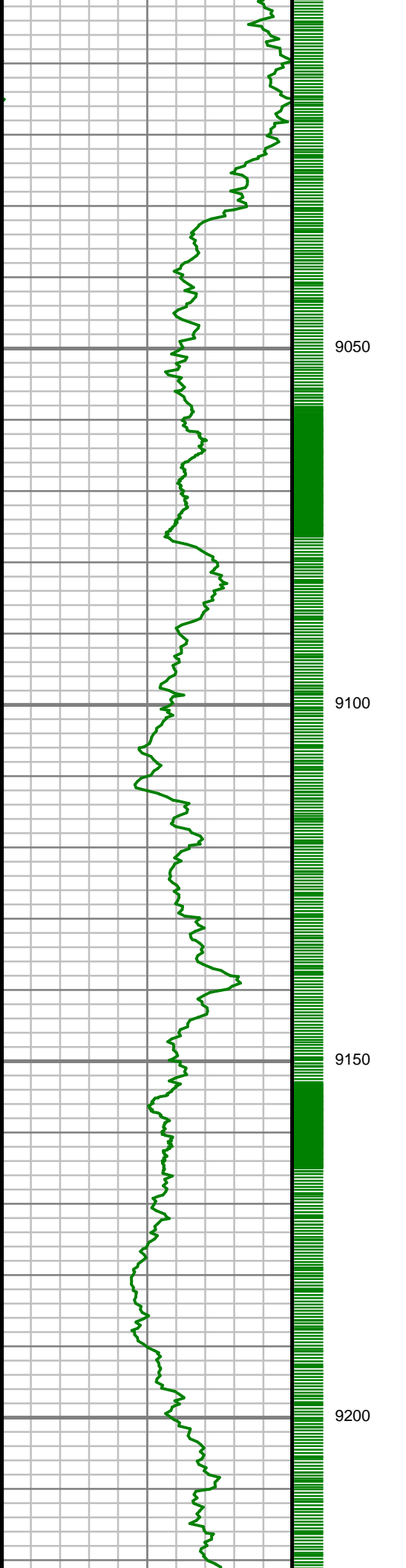
S: 90 MD: 8657.00 ft
Inc: 90.37 deg Az:
359.78 deg TVD:
7318.02 ft

S: 91 MD: 8752.00 ft
Inc: 91.27 deg Az: 0.54
deg TVD: 7316.66 ft



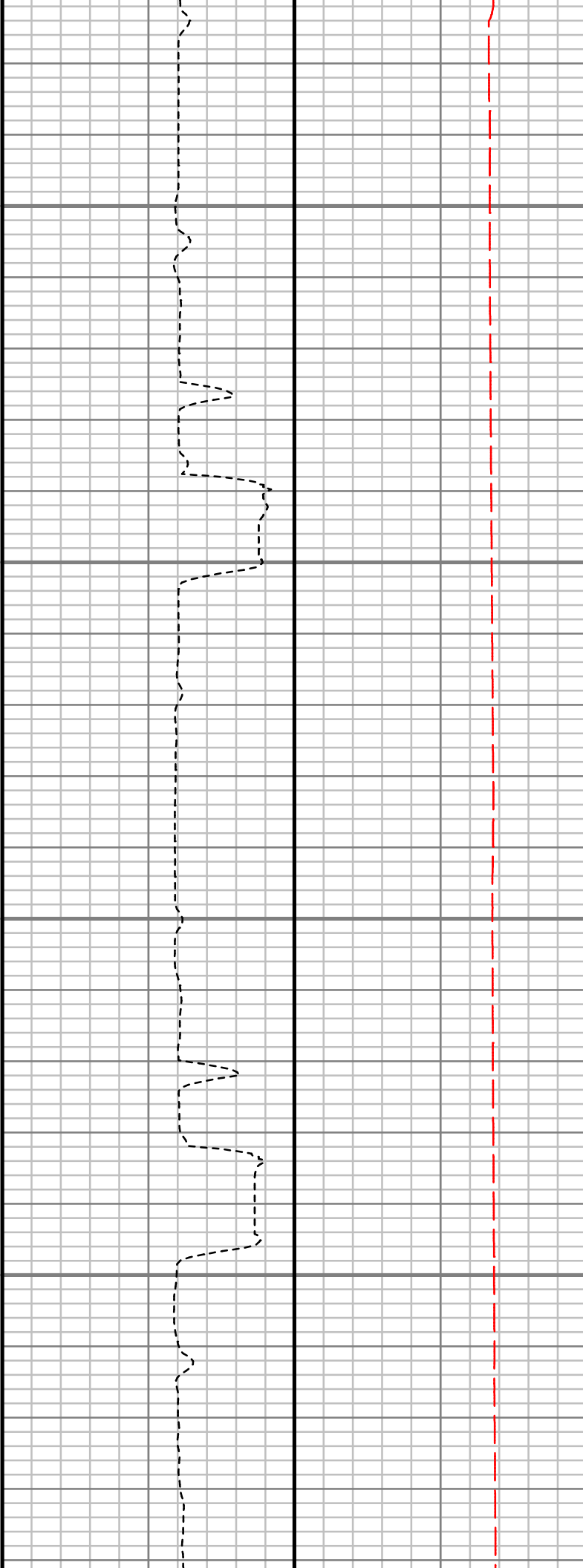
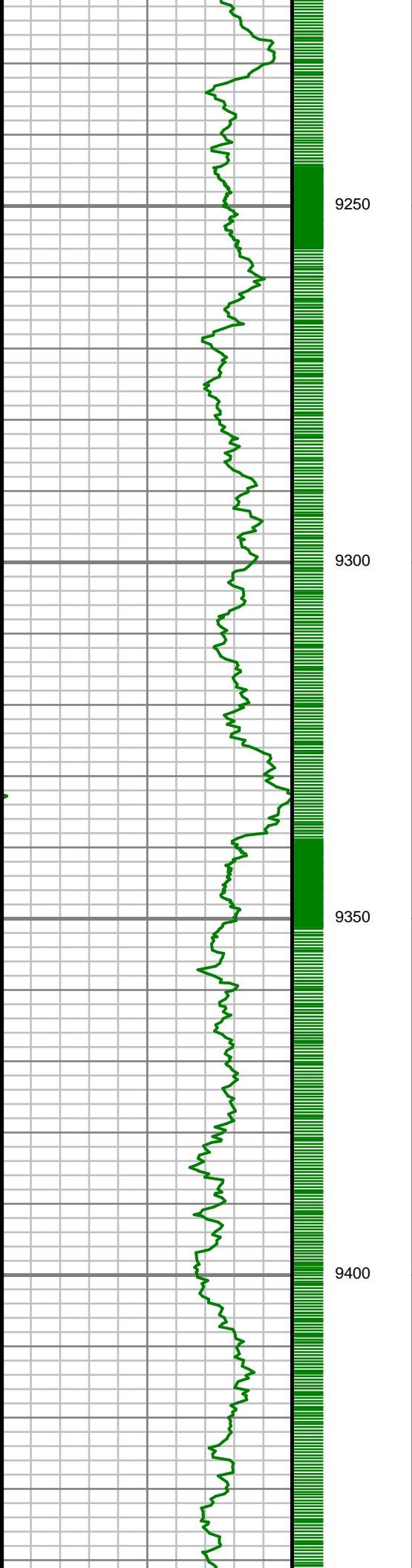
S: 92 MD: 8845.00 ft
Inc: 90.50 deg Az: 0.23
deg TVD: 7315.22 ft

S: 93 MD: 8940.00 ft
Inc: 90.74 deg Az: 2.18
deg TVD: 7314.19 ft



S: 94 MD: 9034.00 ft
Inc: 88.02 deg Az:
359.33 deg TVD:
7315.20 ft

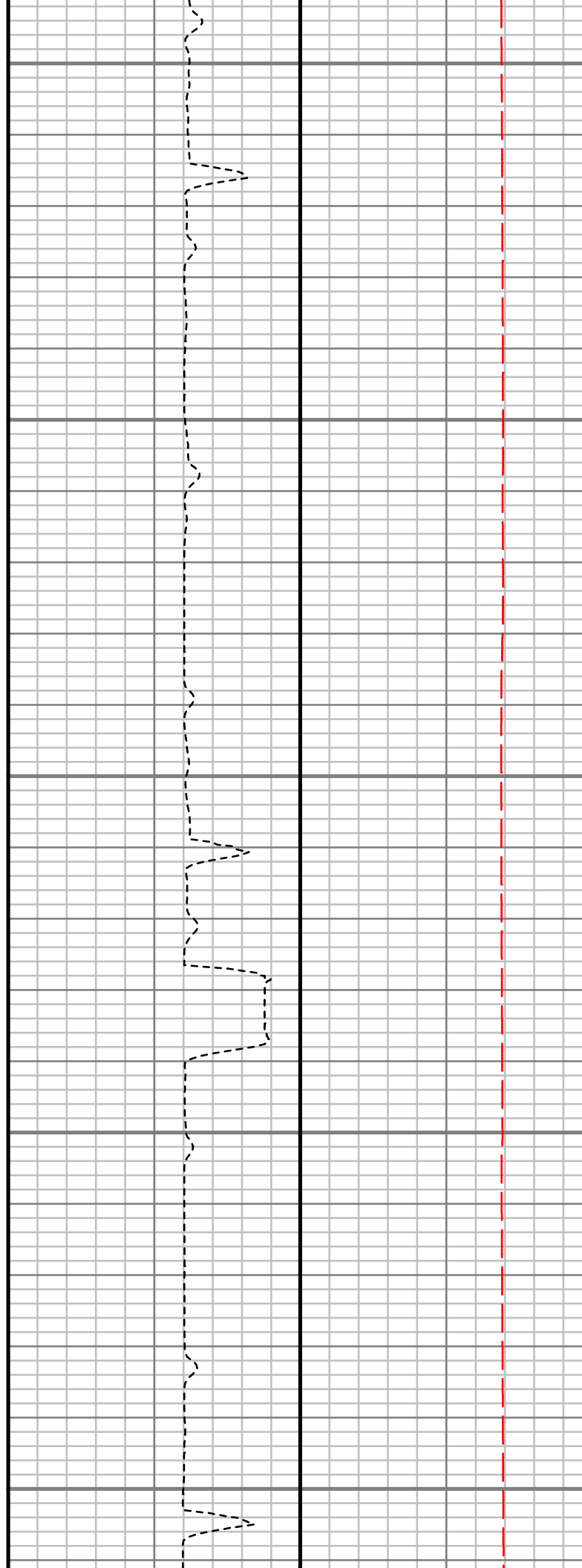
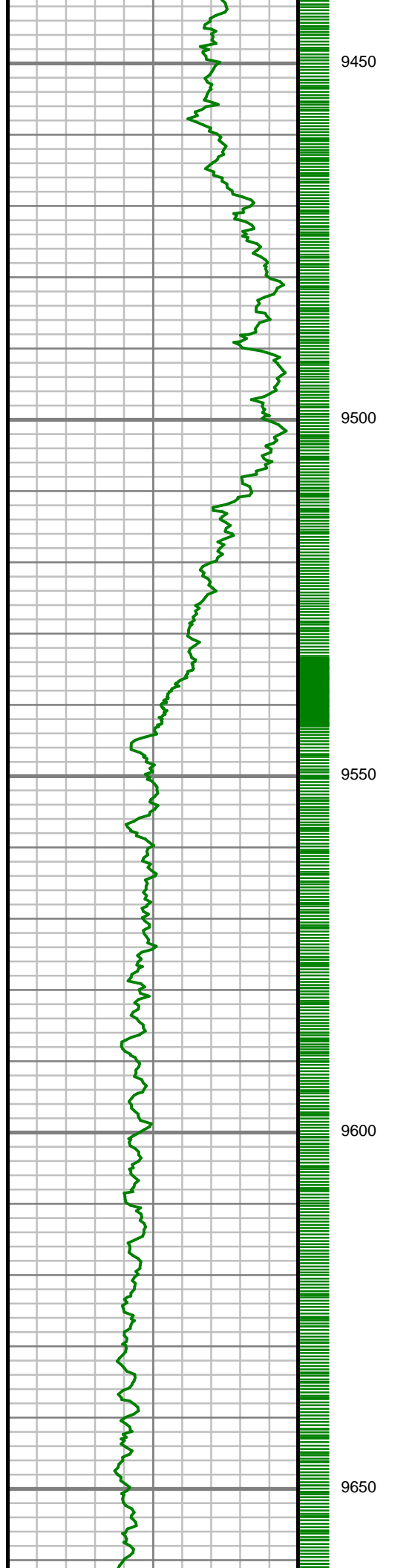
S: 95 MD: 9128.00 ft
Inc: 88.72 deg Az: 0.68
deg TVD: 7317.87 ft



S: 96 MD: 9222.00 ft
Inc: 89.16 deg Az: 2.38
deg TVD: 7319.61 ft

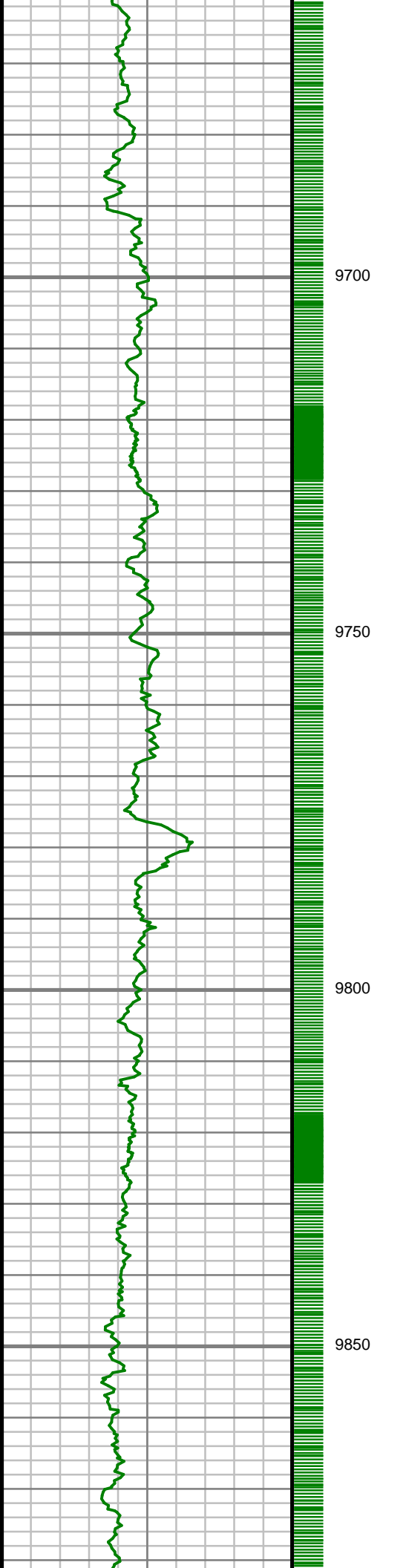
S: 97 MD: 9316.00 ft
Inc: 89.83 deg Az: 3.66
deg TVD: 7320.44 ft

S: 98 MD: 9410.00 ft
Inc: 89.09 deg Az: 4.62
deg TVD: 7321.32 ft



S: 99 MD: 9505.00 ft
Inc: 89.19 deg Az: 4.33
deg TVD: 7322.74 ft

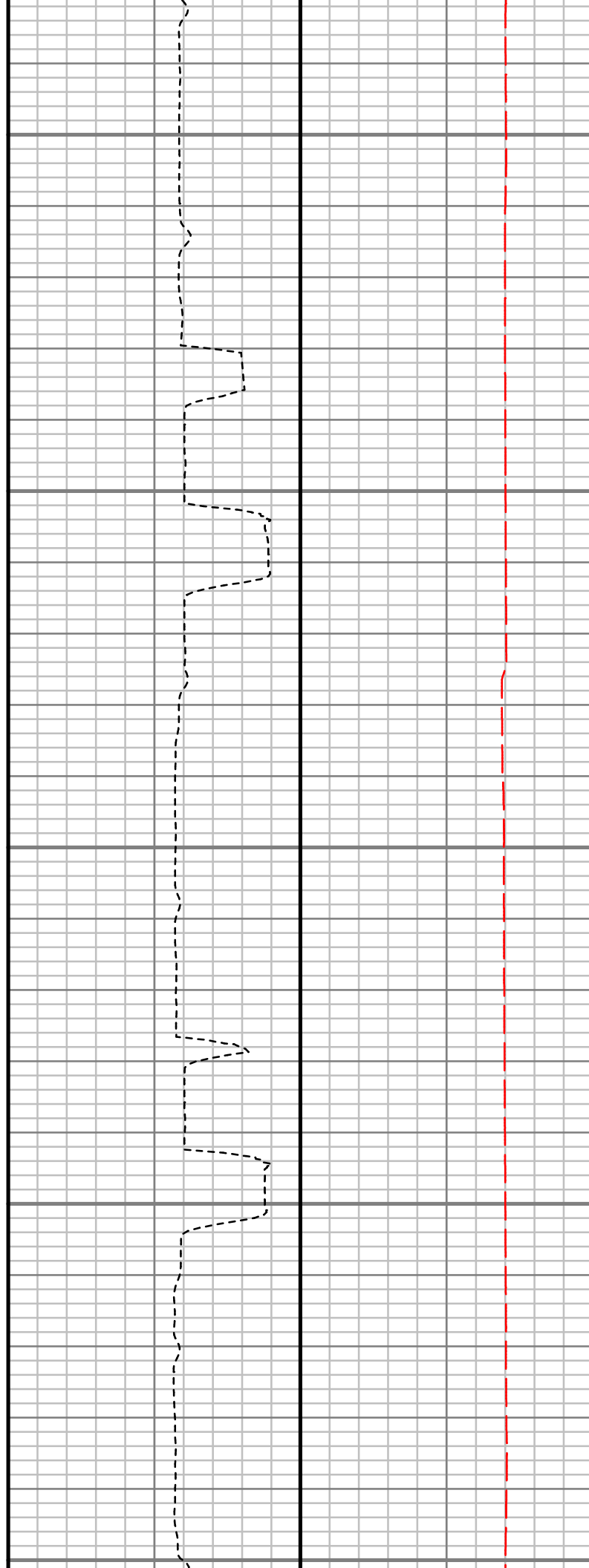
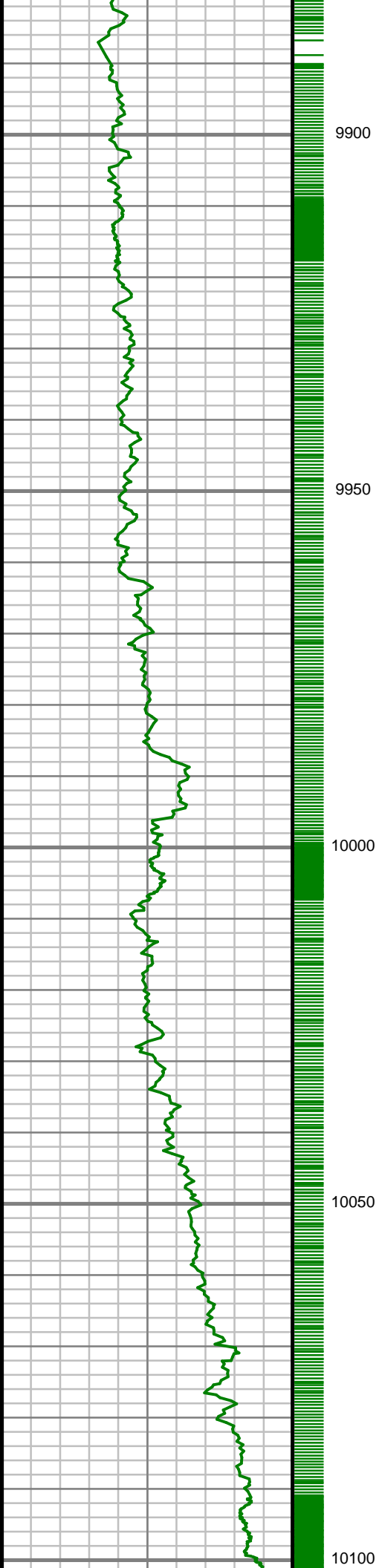
S: 100 MD: 9599.00 ft
Inc: 90.44 deg Az: 4.76
deg TVD: 7323.04 ft



S: 101 MD: 9692.00 ft
Inc: 91.38 deg Az: 4.19
deg TVD: 7321.57 ft

S: 102 MD: 9786.00 ft
Inc: 90.30 deg Az: 3.98
deg TVD: 7320.19 ft

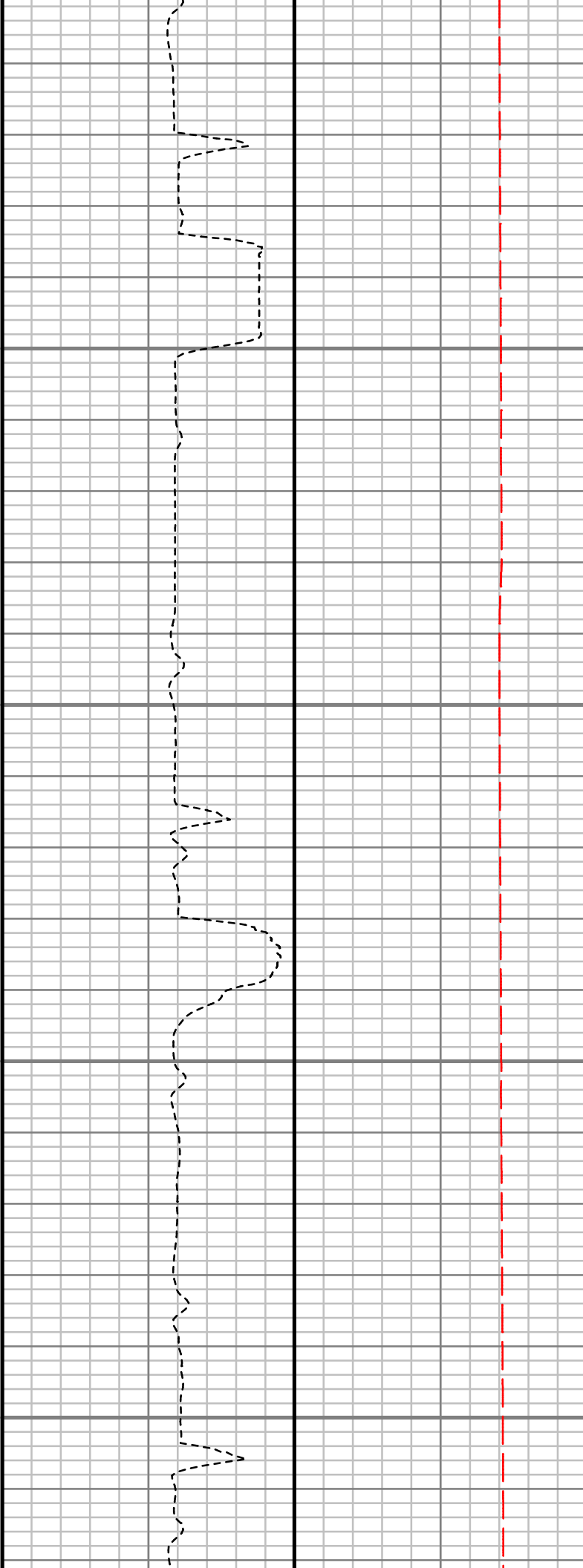
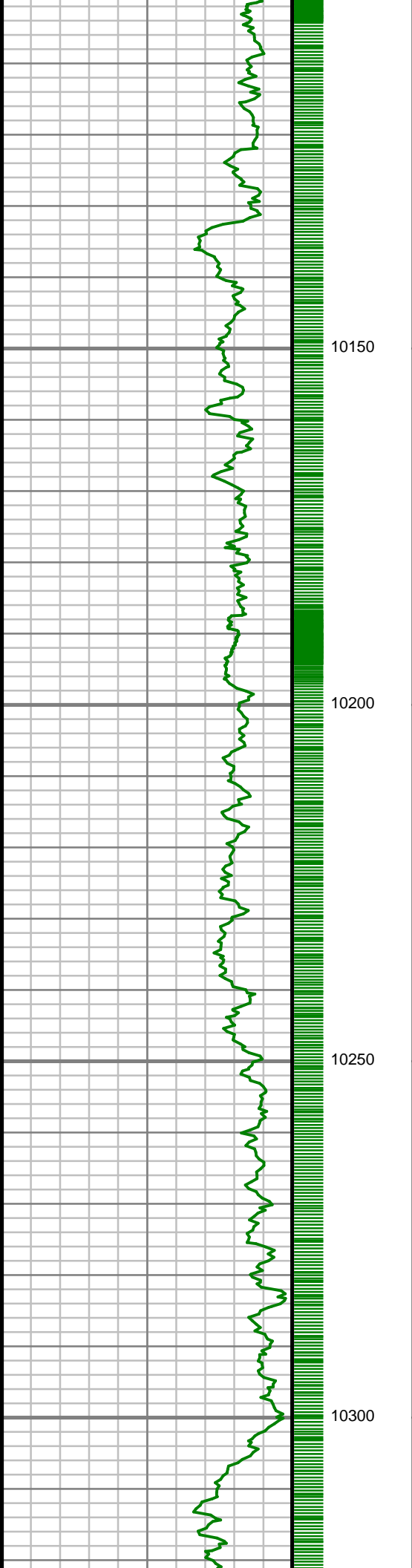
S: 103 MD: 9878.00 ft



Inc: 91.31 deg Az: 5.17
deg TVD: 7318.89 ft

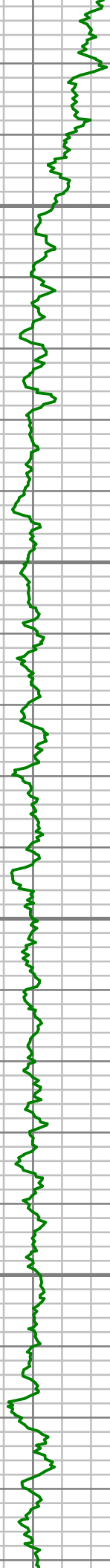
S: 104 MD: 9973.00 ft
Inc: 91.55 deg Az: 5.94
deg TVD: 7316.52 ft

S: 105 MD: 10066.00 ft
Inc: 91.78 deg Az: 5.31
deg TVD: 7313.83 ft



S: 106 MD: 10159.00 ft
Inc: 90.70 deg Az: 3.40
deg TVD: 7311.81 ft

S: 107 MD: 10253.00 ft
Inc: 89.73 deg Az: 4.19
deg TVD: 7311.46 ft

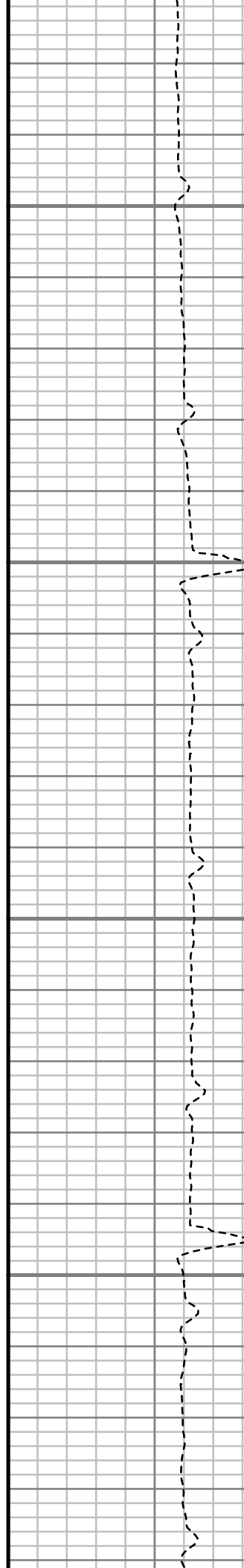


10350

10400

10450

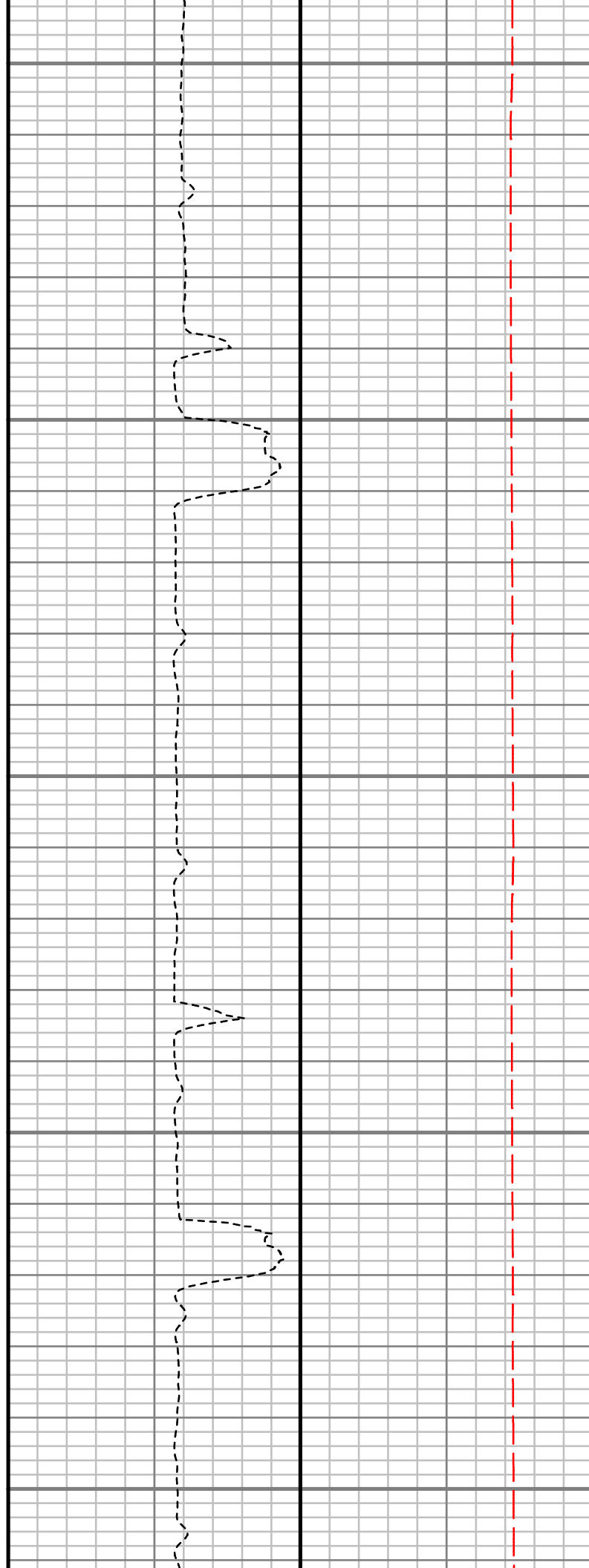
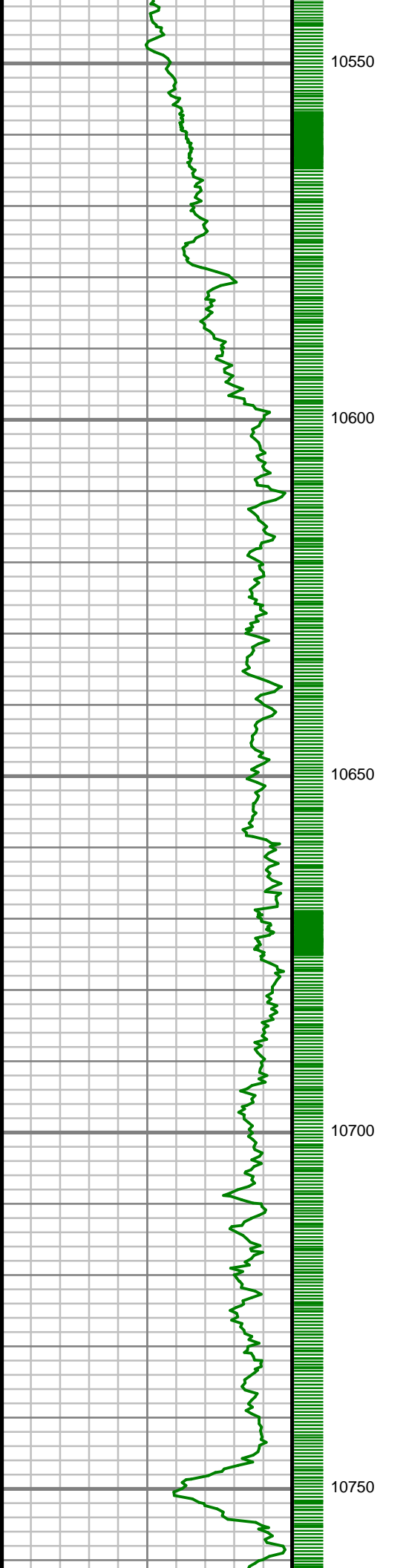
10500



S: 108 MD: 10348.00 ft
Inc: 89.77 deg Az: 4.54
deg TVD: 7311.87 ft

S: 109 MD: 10442.00 ft
Inc: 90.60 deg Az: 5.20
deg TVD: 7311.57 ft

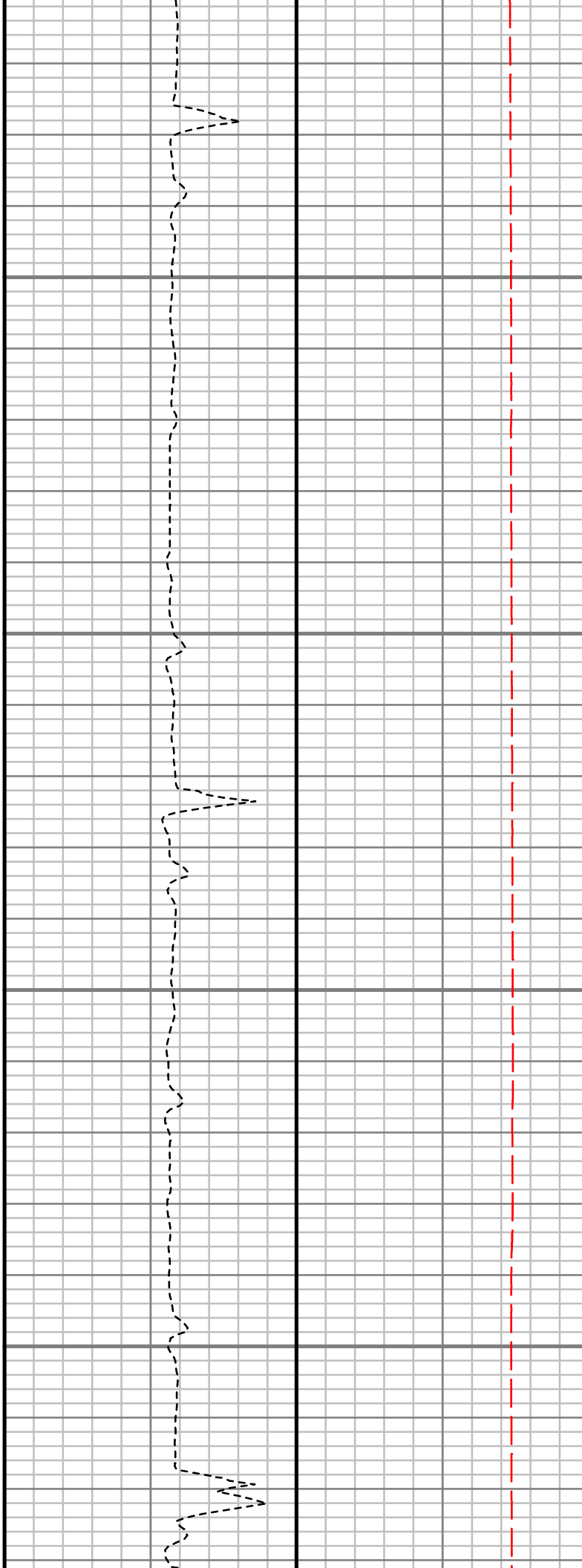
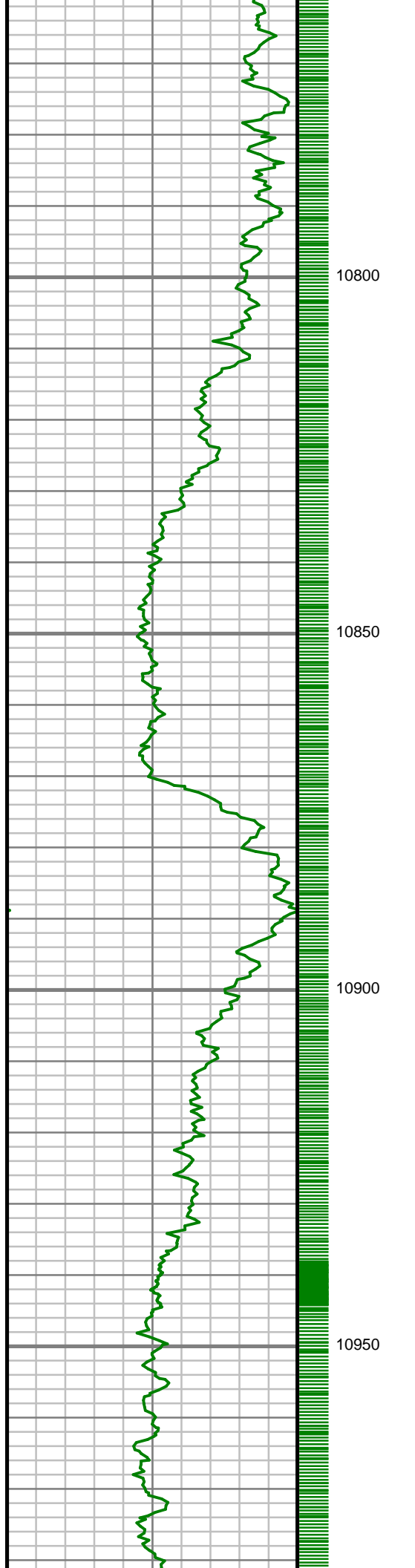
S: 110 MD: 10537.00 ft
Inc: 91.38 deg Az: 5.98
deg TVD: 7311.27 ft



Inc: 91.00 deg Az: 5.00
deg TVD: 7309.93 ft

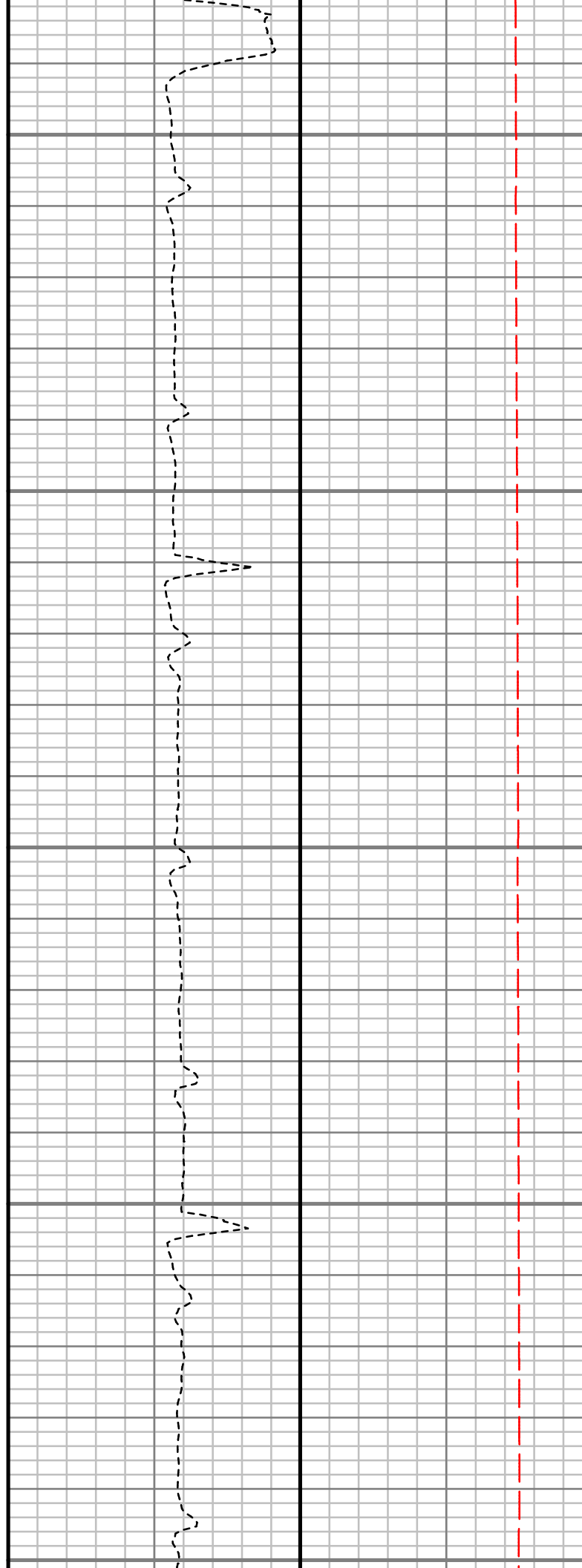
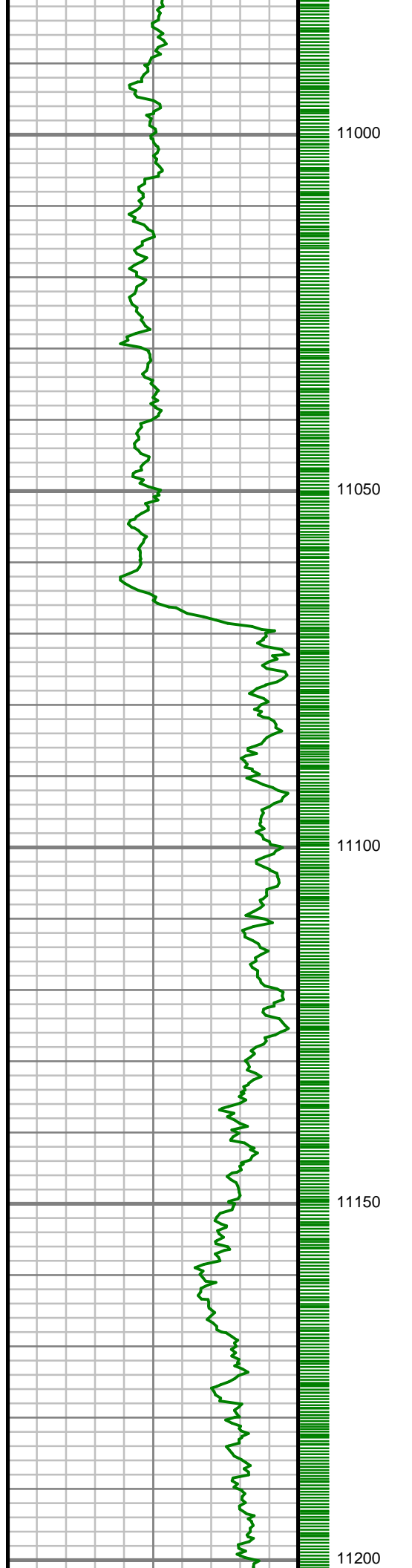
S: 111 MD: 10631.00 ft
Inc: 90.94 deg Az: 5.07
deg TVD: 7308.03 ft

S: 112 MD: 10724.00 ft
Inc: 90.40 deg Az: 5.24
deg TVD: 7306.94 ft



S: 113 MD: 10820.00 ft
Inc: 90.10 deg Az: 4.42
deg TVD: 7306.52 ft

S: 114 MD: 10914.00 ft
Inc: 89.83 deg Az: 4.18
deg TVD: 7306.57 ft

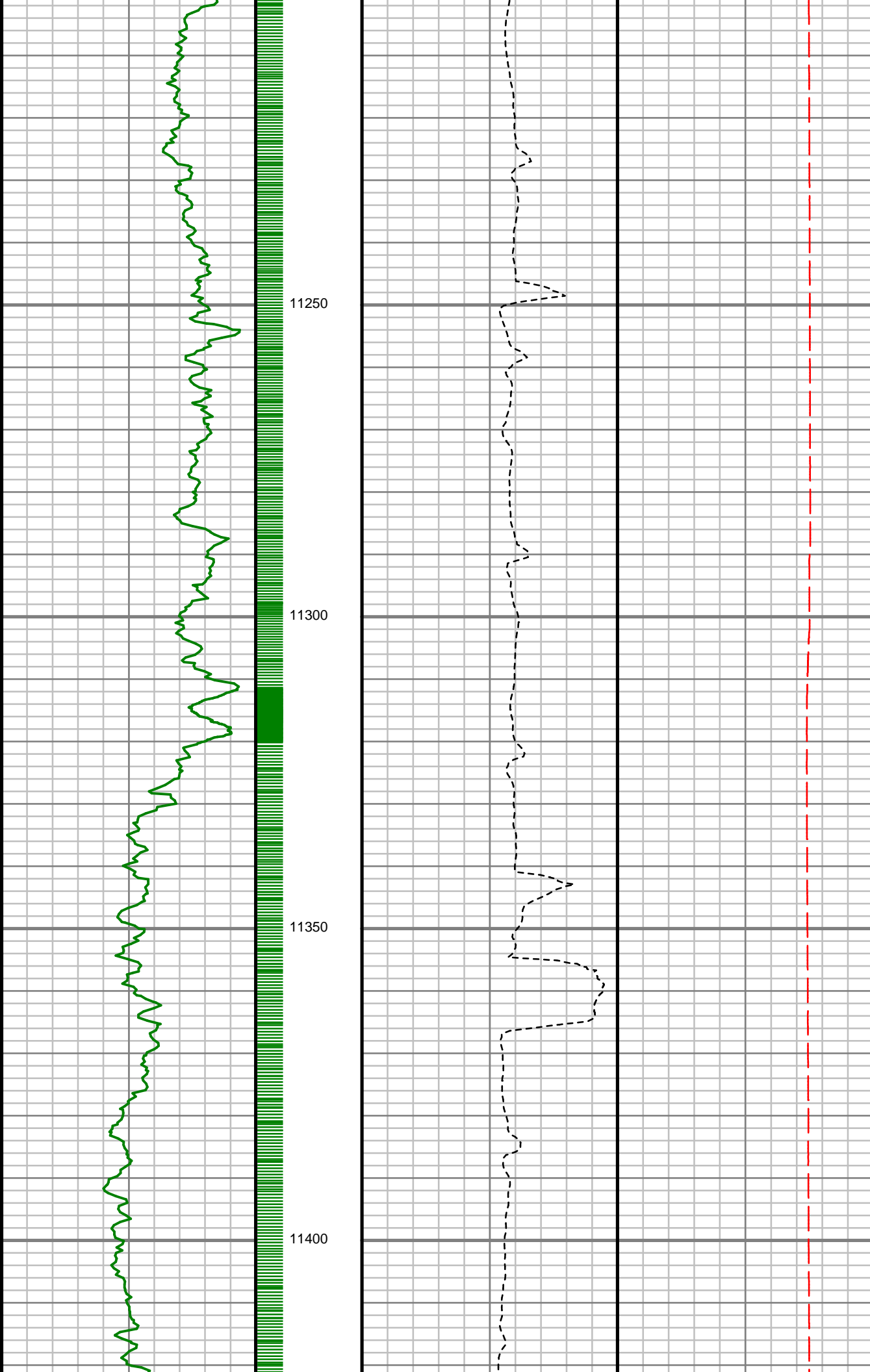


S: 115 MD: 11009.00 ft
Inc: 90.61 deg Az: 4.92
deg TVD: 7306.21 ft

S: 116 MD: 11103.00 ft
Inc: 90.57 deg Az: 4.90
deg TVD: 7305.24 ft

S: 117 MD: 11196.00 ft
Inc: 91.01 deg Az: 5.17

deg TVD: 7303.96 ft



11250

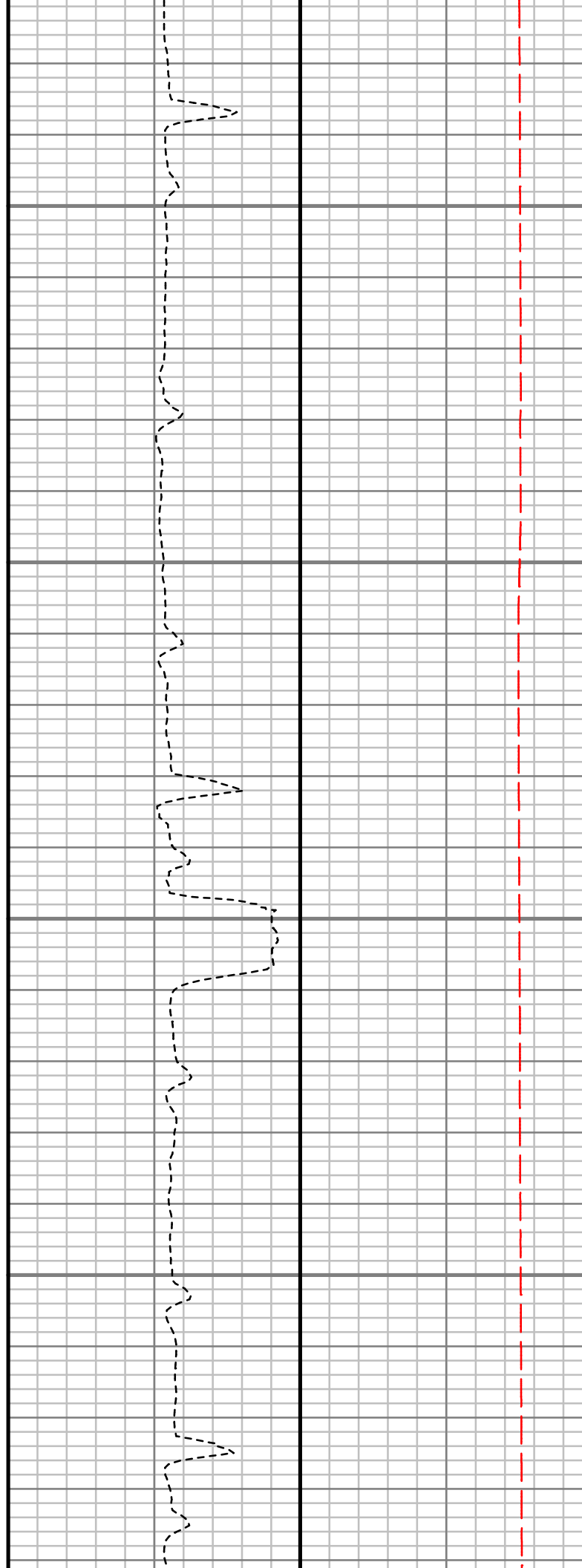
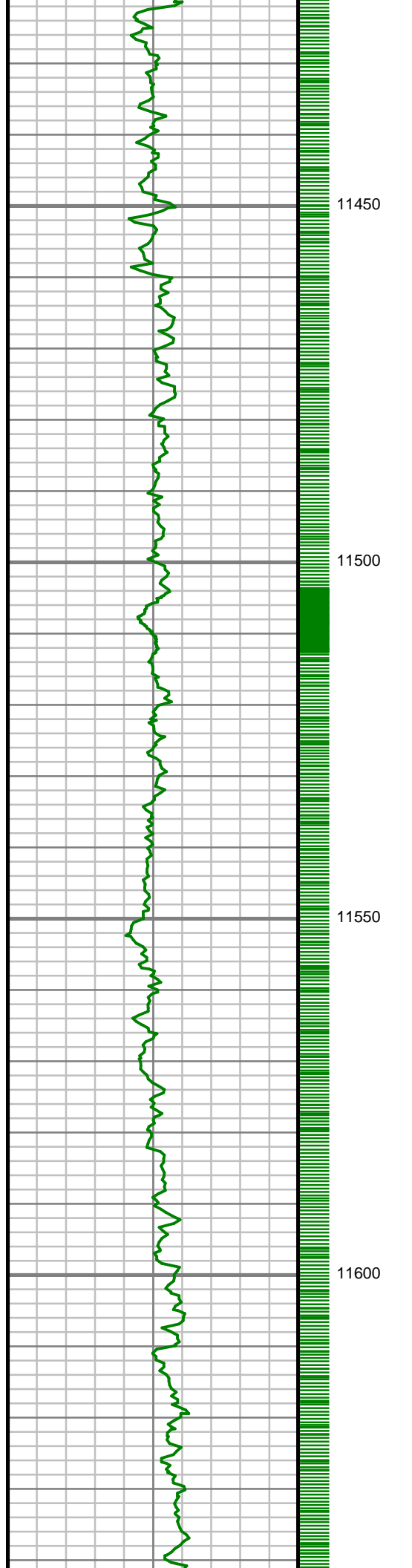
11300

11350

11400

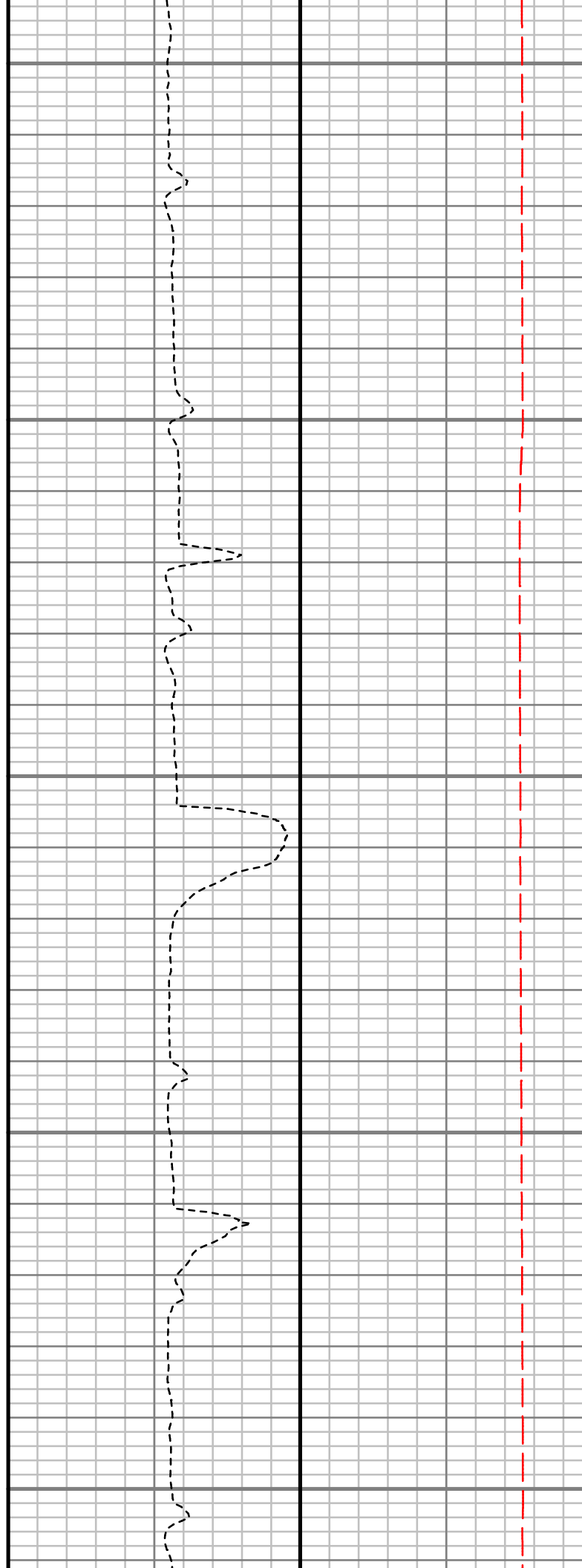
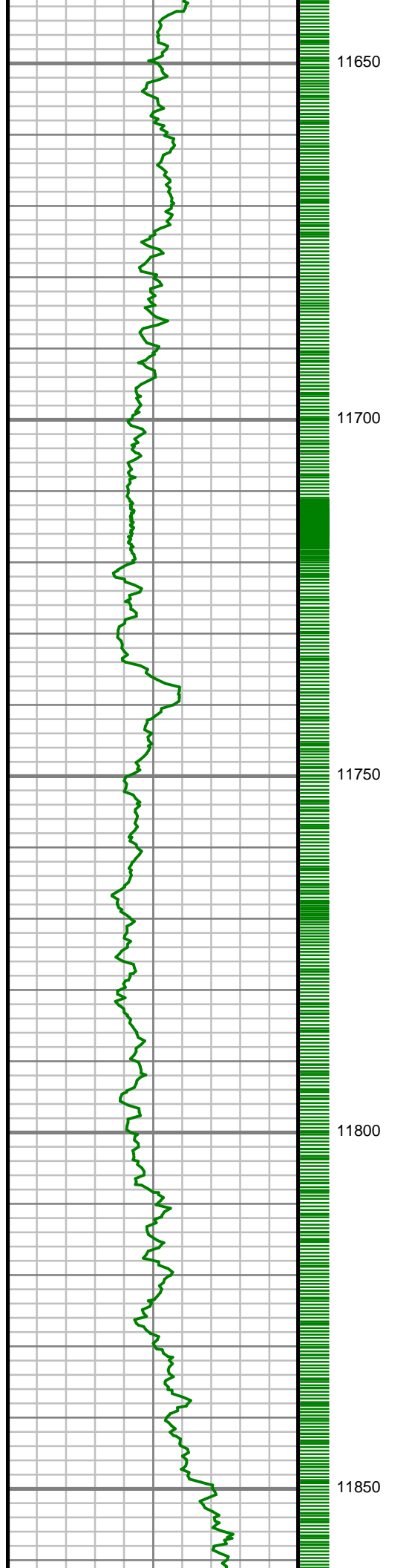
S: 118 MD: 11291.00 ft
Inc: 91.21 deg Az: 5.45
deg TVD: 7302.12 ft

S: 119 MD: 11386.00 ft
Inc: 90.94 deg Az: 3.39
deg TVD: 7300.34 ft



S: 120 MD: 11480.00 ft
Inc: 90.20 deg Az: 2.52
deg TVD: 7299.41 ft

S: 121 MD: 11573.00 ft
Inc: 90.24 deg Az: 3.53
deg TVD: 7299.05 ft

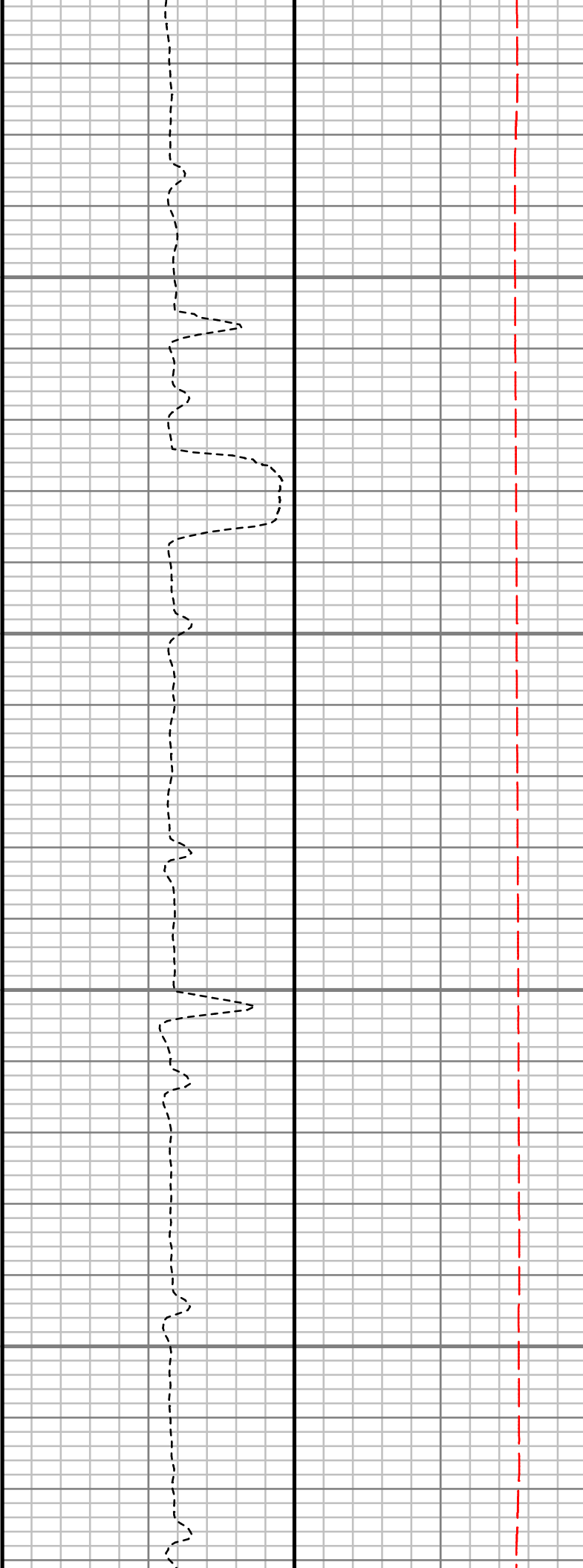
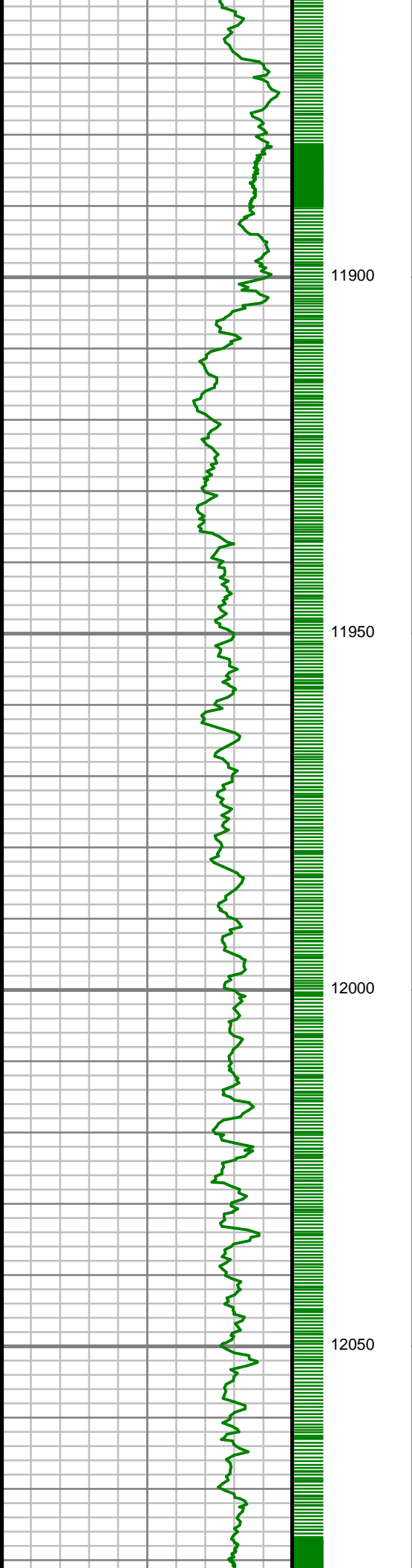


S: 122 MD: 11667.00 ft
Inc: 90.27 deg Az: 3.31
deg TVD: 7298.64 ft

S: 123 MD: 11761.00 ft
Inc: 90.91 deg Az: 3.77
deg TVD: 7297.68 ft

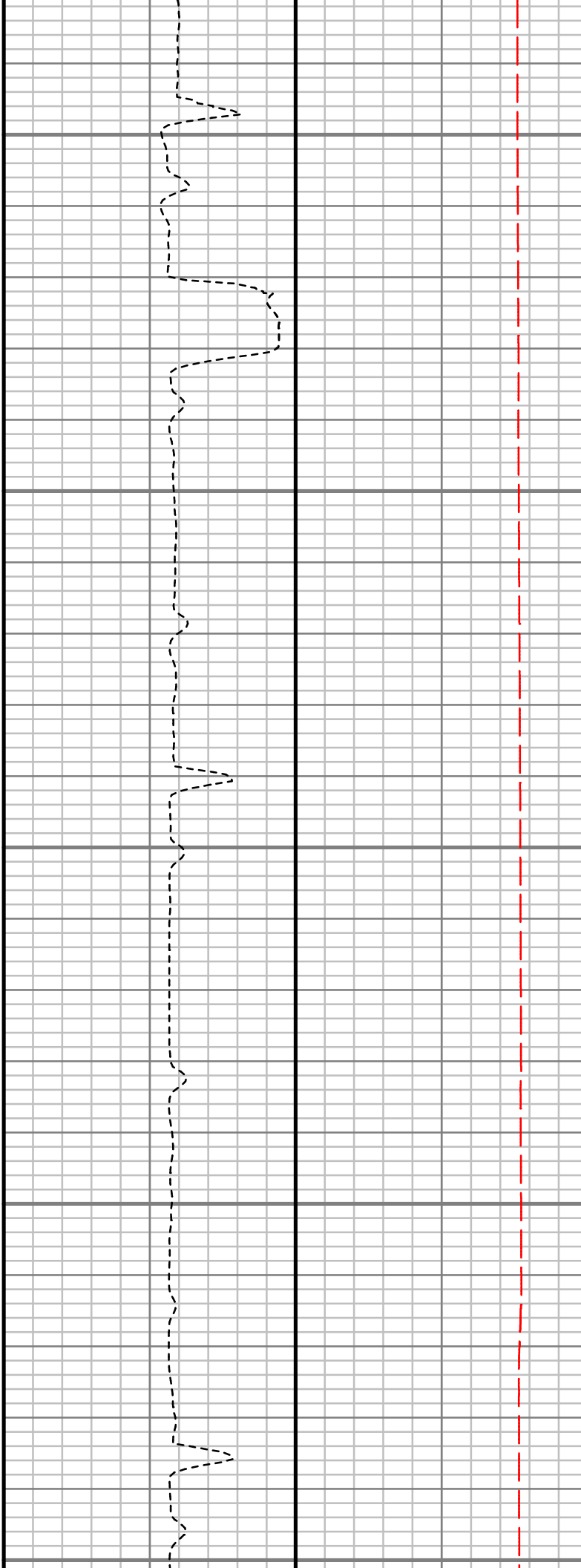
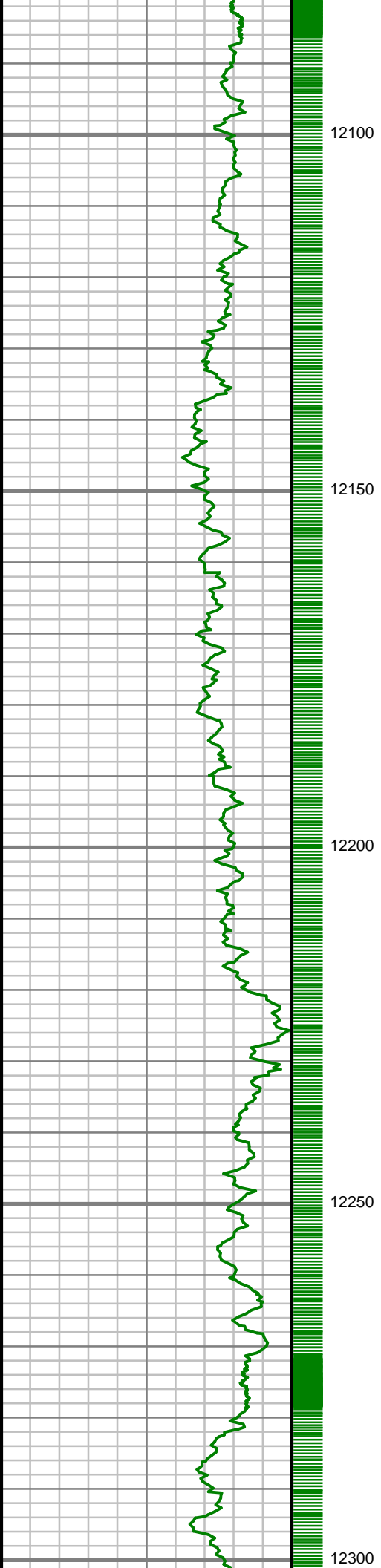
S: 124 MD: 11855.00 ft
Inc: 91.84 deg Az: 4.49
deg TVD: 7295.42 ft

deg TVD: 7293.42 ft



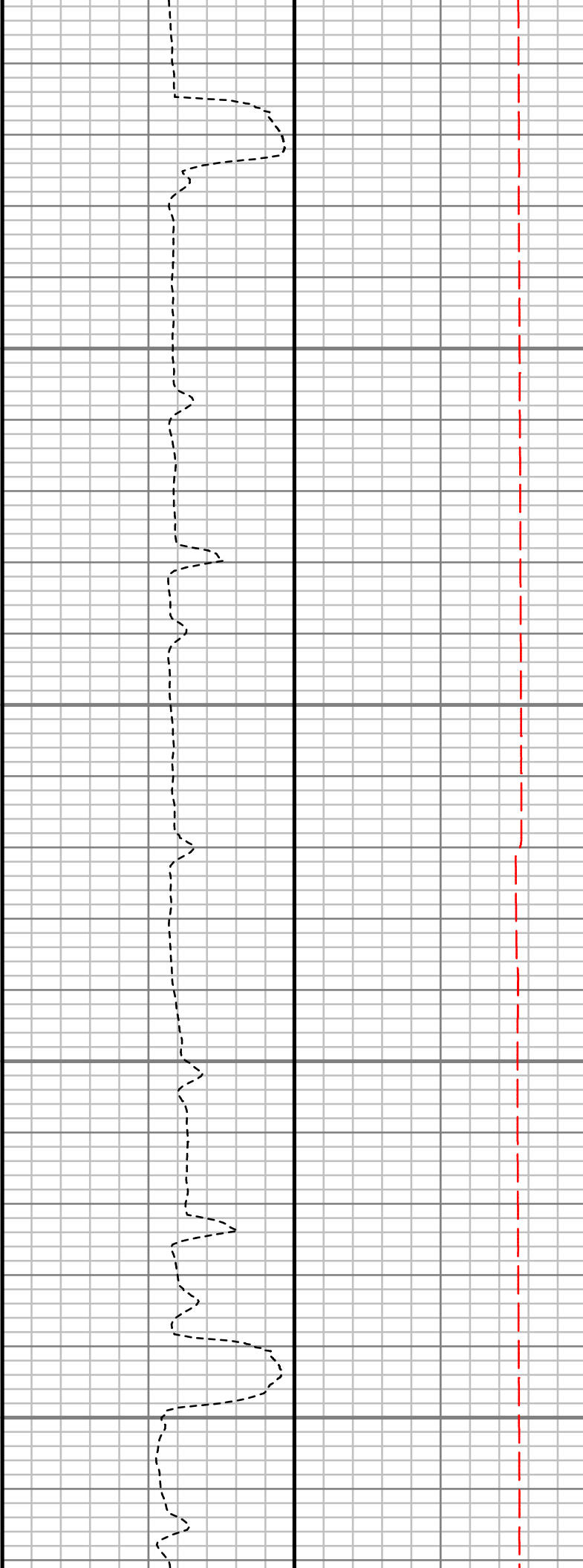
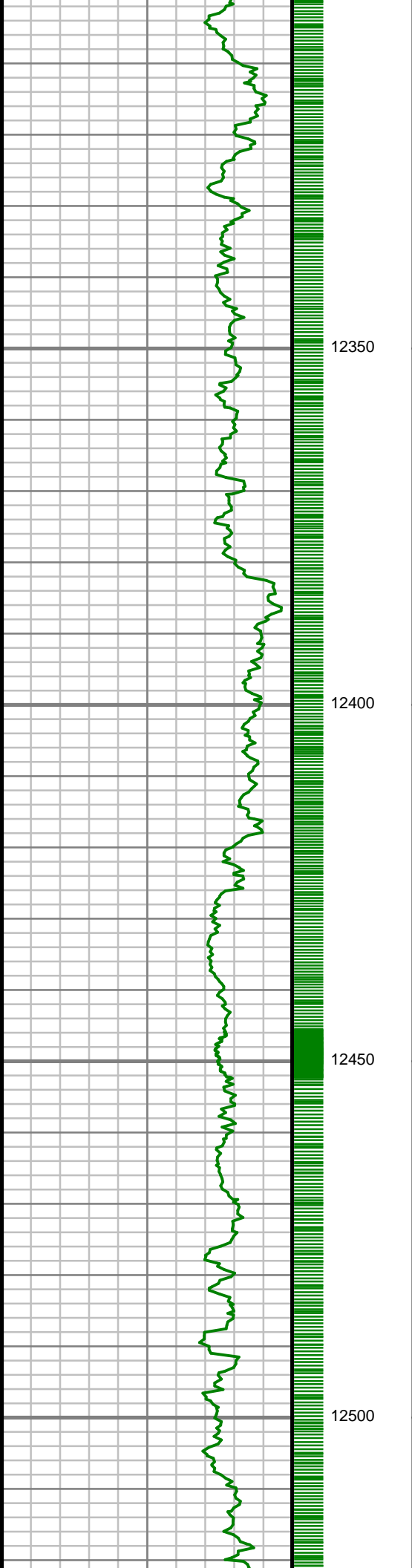
S: 125 MD: 11950.00 ft
Inc: 90.74 deg Az: 4.30
deg TVD: 7293.28 ft

S: 126 MD: 12045.00 ft
Inc: 90.74 deg Az: 3.60
deg TVD: 7292.06 ft



S: 127 MD: 12138.00 ft
Inc: 91.04 deg Az: 5.26
deg TVD: 7290.61 ft

S: 128 MD: 12233.00 ft
Inc: 91.31 deg Az: 5.48
deg TVD: 7288.66 ft

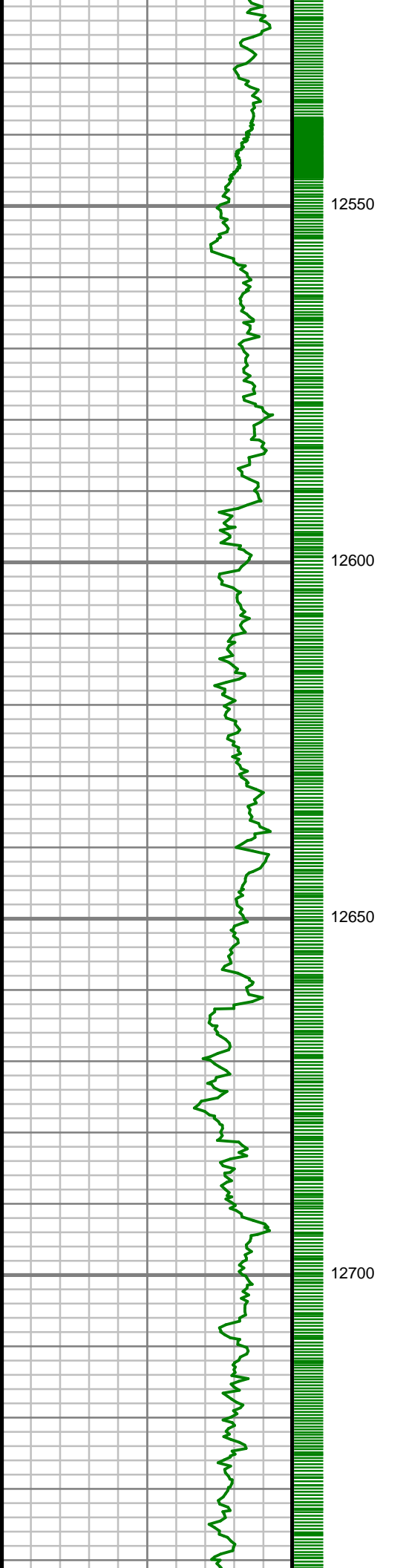


S: 129 MD: 12327.00 ft
Inc: 90.34 deg Az: 4.51
deg TVD: 7287.32 ft

S: 130 MD: 12421.00 ft
Inc: 91.04 deg Az: 3.50
deg TVD: 7286.19 ft

S: 131 MD: 12515.00 ft
Inc: 89.36 deg Az: 3.33
deg TVD: 7285.86 ft

deg TVD: 7285.86 ft

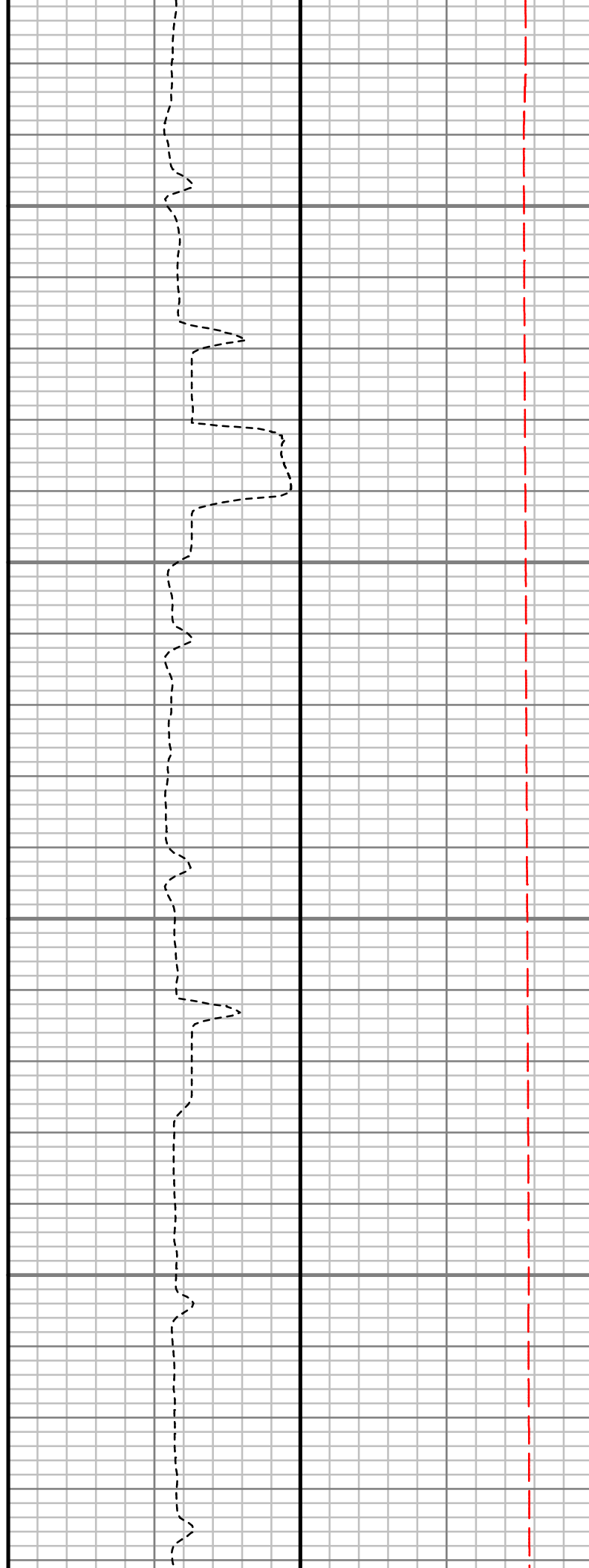


12550

12600

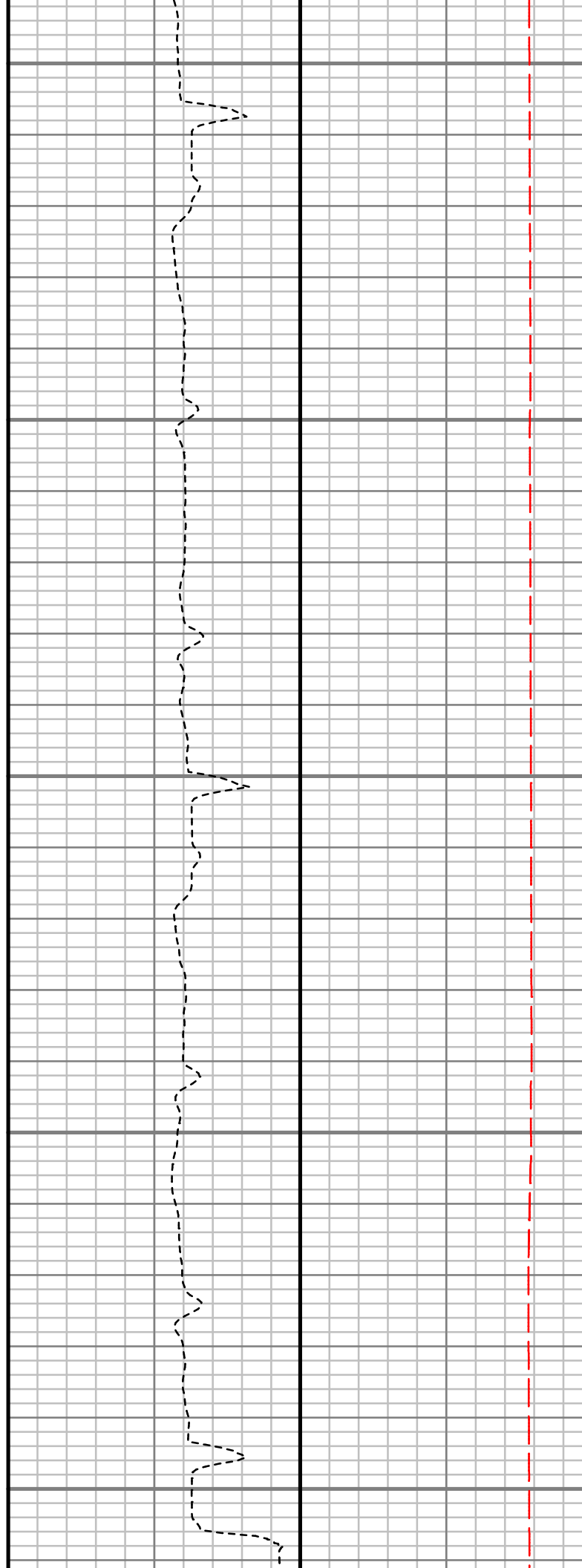
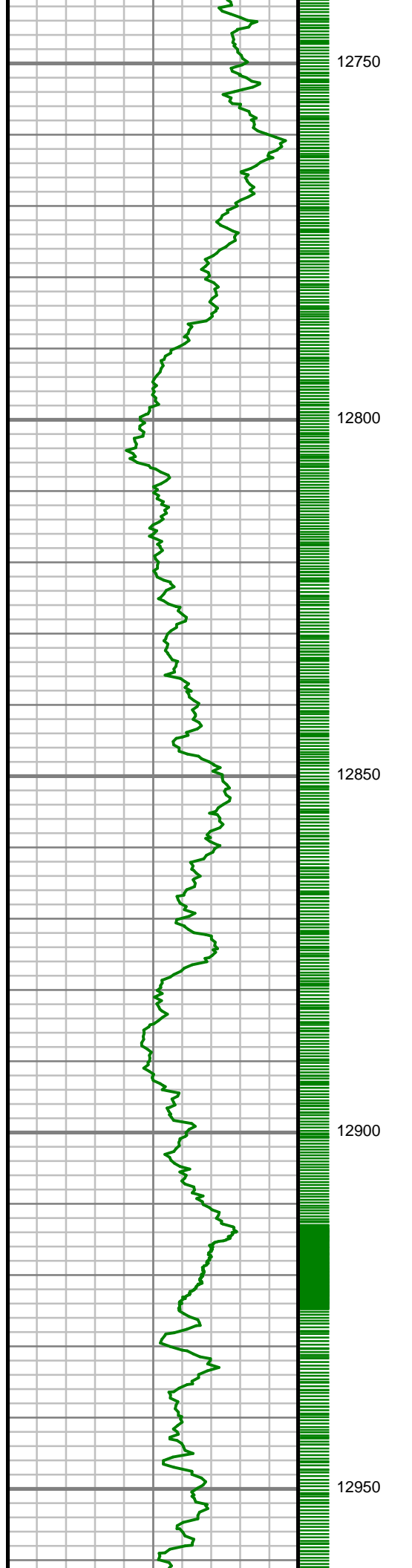
12650

12700



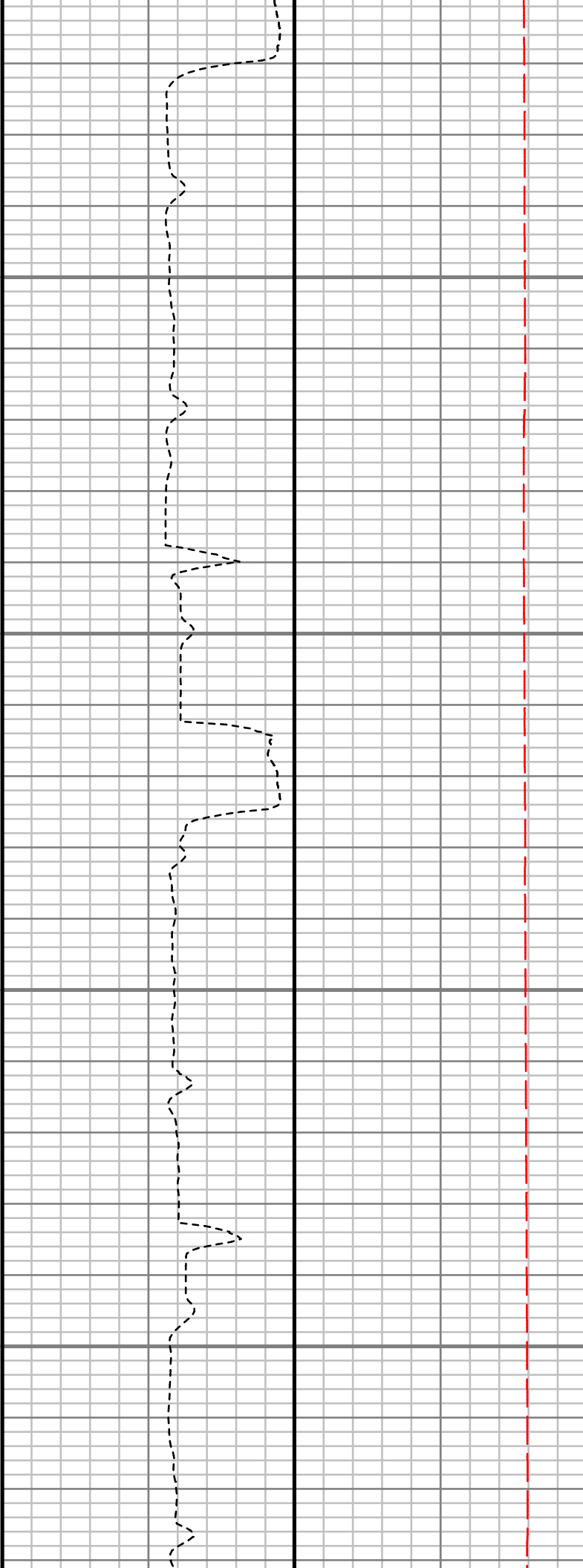
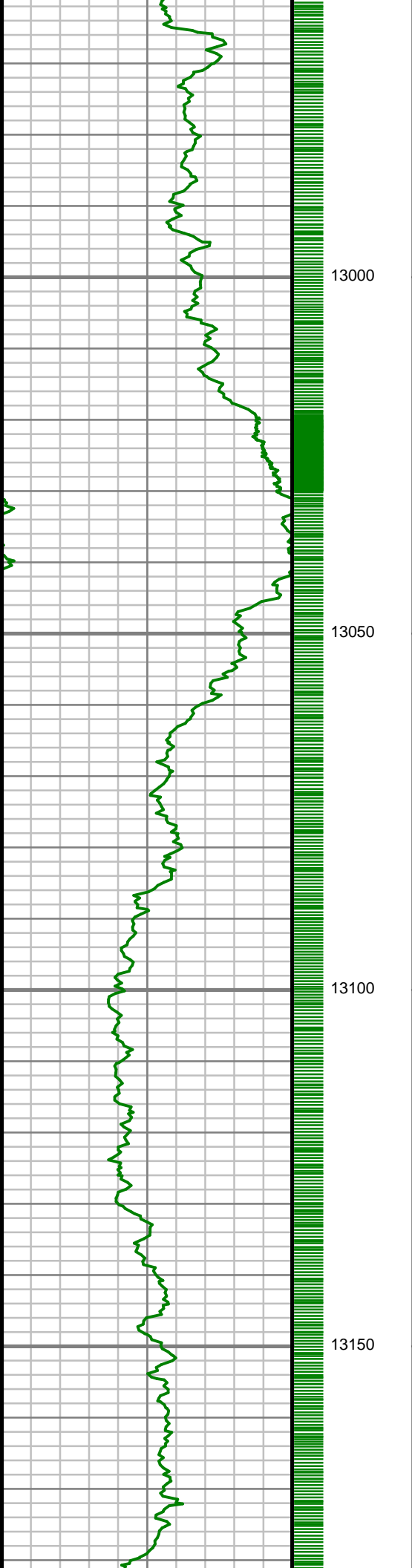
S: 132 MD: 12611.00 ft
Inc: 90.94 deg Az: 3.53
deg TVD: 7285.60 ft

S: 133 MD: 12706.00 ft
Inc: 91.04 deg Az: 3.66
deg TVD: 7283.96 ft



S: 134 MD: 12800.00 ft
Inc: 91.41 deg Az: 3.64
deg TVD: 7281.95 ft

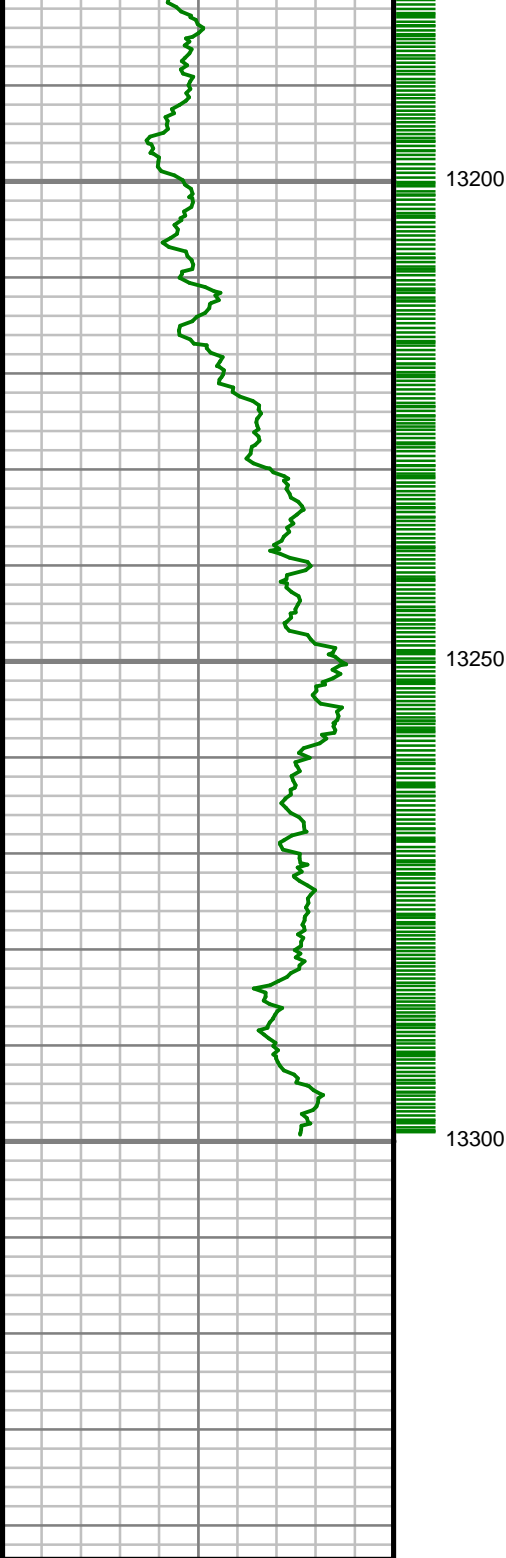
S: 135 MD: 12893.00 ft
Inc: 92.18 deg Az: 3.08
deg TVD: 7279.04 ft



S: 136 MD: 12988.00 ft
Inc: 91.48 deg Az: 3.42
deg TVD: 7276.01 ft

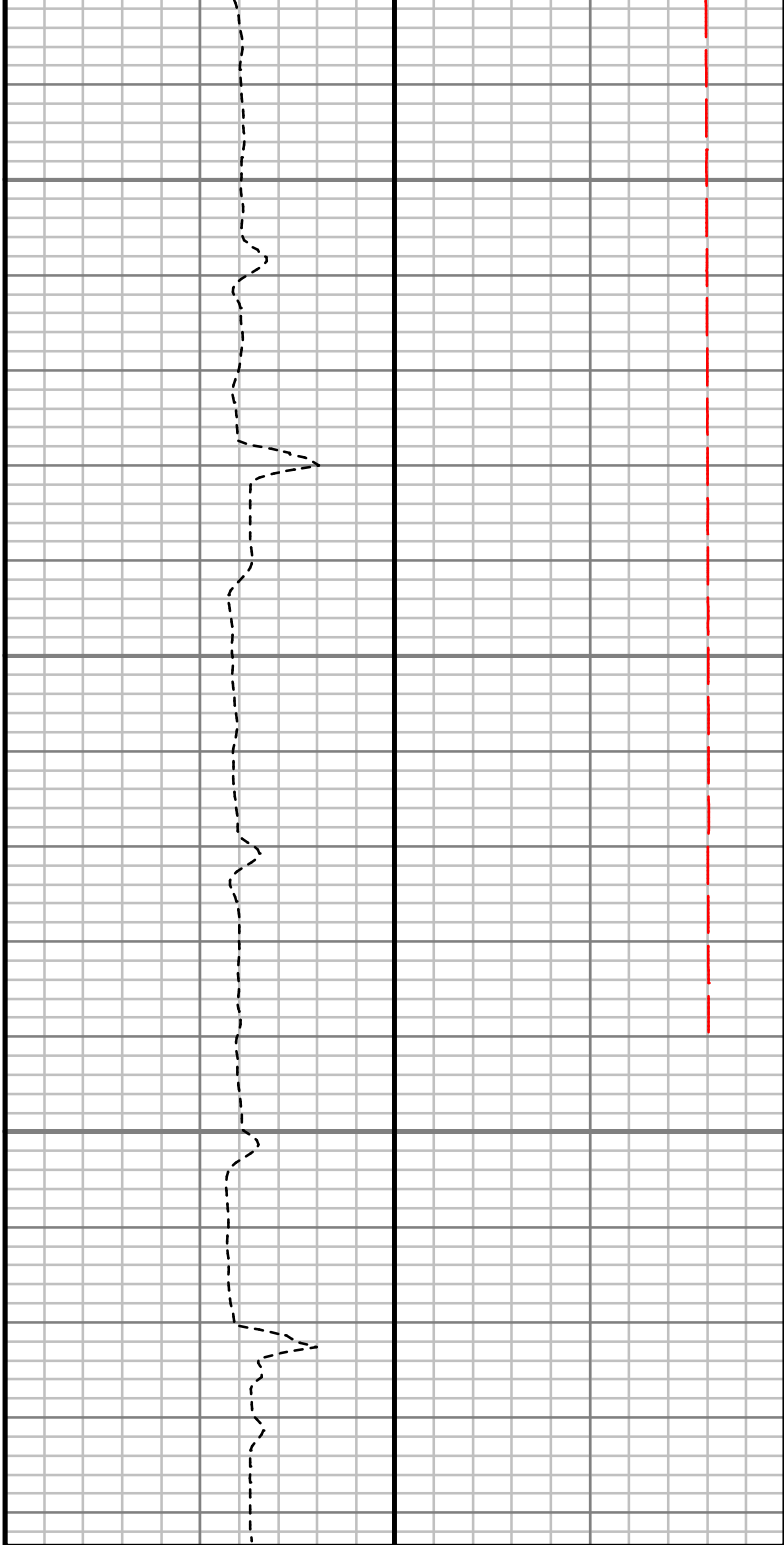
S: 137 MD: 13083.00 ft
Inc: 90.94 deg Az: 2.89
deg TVD: 7274.01 ft

S: 138 MD: 13177.00 ft
Inc: 91.64 deg Az: 2.35



Gamma Ray (GR)		
0	Unit = aapi	150

MEASURED DEPTH
1:240 (ft)



Rate of Penetration (ROP)		
800	Unit = ft/hr	0

Tool Temperature (TEMP)		
0	Unit = °F	300

Comments

S: 139 MD: 13269.00 ft
Inc: 92.21 deg Az: 2.00
deg TVD: 7271.89 ft

S: 140 MD: 13289.00 ft
Inc: 92.29 deg Az: 1.85
deg TVD: 7268.01 ft

CUSTOMER ANADARKO PETROLEUM CORPORATION
PROJECT WHISTON
FIELD WATTENBERG

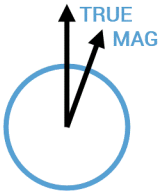
WELL INFORMATION
Lat/Long 40.167849° N, 104.891558° W
Northing 14,587,873.45 ft
Easting 1,670,711.46 ft
UWI 05123440300000

MAP INFORMATION

North Reference True North
Grid Correction System Universal Transverse Mercator (US Survey Feet)
Datum North American Datum 1983 (GRS 1980)
Map Zone Zone 13N (108 W to 102 W)

VERTICAL SECTION REFERENCE

+N/-S 0 ft
+E/-W 0 ft
Proposal Direction 4.18°
Calculation Method Minimum Curvature



GEOMAGNETIC REFERENCE INFORMATION

Local Gravity: 999.052 mG [computed]

MD	MODEL	DATE	DECLINATION	MAG TO TRUE
0-4486 ft	ANADARKO MAGVAR	27 Mar 2017	8.37°	add 8.37°
4486-9878 ft	ANADARKO MAGVAR	27 Mar 2017	8.39°	add 8.39°
9878-13289 ft	ANADARKO MAGVAR	27 Mar 2017	8.36°	add 8.36°

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
150.00	0.46	139.04	150.00	-0.42	-0.45	0.39	0.31
232.00	0.96	147.53	231.99	-1.21	-1.28	0.98	0.62
538.00	5.51	147.13	537.42	-15.00	-15.79	10.33	1.49
582.00	6.21	143.10	581.19	-18.48	-19.47	12.91	1.84
669.00	7.42	135.48	667.58	-25.73	-27.24	19.67	1.73
804.00	10.03	140.56	801.01	-40.00	-42.54	33.26	2.01
844.00	10.97	141.11	840.34	-45.30	-48.19	37.86	2.36
889.00	11.10	141.32	884.51	-51.60	-54.90	43.25	0.30
1019.00	13.03	140.68	1011.63	-71.41	-76.01	60.36	1.49
1108.00	14.62	140.54	1098.05	-86.82	-92.45	73.86	1.79
1195.00	16.15	139.71	1181.93	-103.40	-110.15	88.66	1.78
1282.00	17.36	138.62	1265.23	-121.12	-129.12	105.07	1.44
1370.00	17.71	139.80	1349.14	-139.88	-149.20	122.39	0.57
1459.00	18.07	140.03	1433.84	-159.46	-170.11	139.99	0.41
1546.00	18.01	141.96	1516.56	-179.10	-191.05	156.95	0.69
1635.00	17.54	143.02	1601.31	-199.39	-212.60	173.49	0.64
1721.00	17.10	143.28	1683.42	-218.70	-233.08	188.85	0.52
1812.00	16.59	144.68	1770.51	-238.84	-254.41	204.36	0.72
1947.00	17.08	139.90	1899.73	-267.90	-285.30	228.27	1.09

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
2041.00	17.69	142.37	1989.44	-288.43	-307.17	245.88	1.02
2135.00	18.06	142.17	2078.90	-309.89	-329.98	263.53	0.40
2228.00	17.77	141.98	2167.40	-331.12	-352.54	281.11	0.31
2323.00	18.39	143.17	2257.70	-353.16	-375.96	299.02	0.76
2417.00	17.33	142.06	2347.17	-374.74	-398.87	316.52	1.18
2512.00	17.77	142.90	2437.75	-396.13	-421.59	333.96	0.54
2606.00	17.71	146.48	2527.28	-418.22	-444.96	350.51	1.16
2701.00	18.80	148.88	2617.50	-442.15	-470.11	366.40	1.39
2795.00	18.26	148.35	2706.63	-466.45	-495.61	381.96	0.60
2889.00	18.75	149.90	2795.77	-490.88	-521.22	397.26	0.73
2982.00	19.08	148.77	2883.75	-515.62	-547.15	412.64	0.53
3077.00	17.48	145.70	2973.95	-539.44	-572.21	428.73	1.97
3170.00	17.91	146.45	3062.55	-561.68	-595.67	444.50	0.52
3265.00	17.62	145.08	3153.02	-584.40	-619.63	460.80	0.53
3359.00	16.83	144.34	3242.81	-605.89	-642.36	476.88	0.87
3454.00	16.69	144.25	3333.77	-626.91	-664.60	492.87	0.15
3548.00	16.26	146.67	3423.91	-647.70	-686.55	507.98	0.86
3643.00	16.69	147.19	3515.01	-669.14	-709.13	522.68	0.48
3736.00	17.08	143.29	3604.01	-690.13	-731.30	538.08	1.29
3829.00	17.84	145.77	3692.72	-711.62	-754.03	554.26	1.14

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
3923.00	17.18	144.18	3782.37	-733.54	-777.19	570.48	0.86
4017.00	16.48	145.66	3872.34	-754.60	-799.45	586.12	0.88
4111.00	16.86	147.93	3962.39	-776.03	-822.01	600.88	0.80
4204.00	16.87	155.53	4051.41	-798.75	-845.73	613.63	2.37
4298.00	19.41	157.09	4140.73	-824.63	-872.53	625.36	2.75
4393.00	17.66	156.69	4230.80	-851.47	-900.31	637.21	1.85
4487.00	15.57	143.45	4320.90	-873.69	-923.55	650.37	4.59
4582.00	13.67	143.99	4412.82	-891.92	-942.87	664.57	2.01
4676.00	12.44	143.31	4504.39	-908.06	-959.97	677.14	1.32
4769.00	11.12	146.89	4595.43	-922.77	-975.52	688.03	1.62
4863.00	9.90	151.92	4687.85	-936.82	-990.24	696.78	1.62
4958.00	8.36	159.56	4781.65	-950.00	-1003.91	703.04	2.06
5052.00	6.57	148.55	4874.86	-960.58	-1014.90	708.23	2.43
5146.00	4.09	135.59	4968.45	-967.17	-1021.88	713.38	2.91
5242.00	2.09	124.73	5064.30	-970.32	-1025.33	717.21	2.16
5337.00	0.61	95.83	5159.27	-971.22	-1026.36	719.14	1.66
5458.00	0.03	262.99	5280.27	-971.24	-1026.43	719.75	0.53
5551.00	0.18	168.38	5373.27	-971.39	-1026.58	719.75	0.20
5646.00	0.11	122.13	5468.27	-971.57	-1026.77	719.86	0.14
5739.00	0.56	336.95	5561.27	-971.21	-1026.41	719.75	0.69

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
5832.00	0.60	287.77	5654.27	-970.70	-1025.84	719.12	0.52
5928.00	0.94	307.97	5750.26	-970.14	-1025.21	718.02	0.45
6021.00	0.08	266.82	5843.25	-969.73	-1024.74	717.36	0.95
6115.00	0.68	320.72	5937.25	-969.34	-1024.32	716.95	0.68
6210.00	0.69	314.33	6032.24	-968.56	-1023.49	716.19	0.08
6302.00	0.77	342.40	6124.24	-967.63	-1022.51	715.60	0.40
6397.00	0.17	2.09	6219.23	-966.89	-1021.75	715.41	0.65
6492.00	0.63	335.94	6314.23	-966.29	-1021.14	715.21	0.50
6586.00	0.46	312.80	6408.23	-965.60	-1020.41	714.72	0.29
6679.00	0.55	318.02	6501.22	-965.06	-1019.83	714.15	0.11
6772.00	2.08	340.52	6594.20	-963.21	-1017.90	713.29	1.70
6864.00	16.93	2.64	6684.69	-948.20	-1002.87	713.35	16.33
6957.00	28.99	5.61	6770.17	-912.00	-966.78	716.19	13.03
7052.00	38.23	2.49	6849.20	-859.48	-914.38	719.72	9.89
7146.00	42.02	0.50	6921.07	-798.99	-853.83	721.26	4.26
7241.00	40.85	358.68	6992.29	-736.33	-790.97	720.83	1.77
7336.00	44.20	357.83	7062.30	-672.48	-726.81	718.86	3.58
7430.00	49.86	358.13	7126.35	-604.13	-658.10	716.45	6.03
7525.00	56.44	358.90	7183.29	-528.52	-582.15	714.50	6.96
7620.00	62.47	359.11	7231.55	-447.08	-500.38	713.08	6.35

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
7714.00	70.95	358.54	7268.68	-361.19	-414.14	711.30	9.04
7809.00	78.69	359.74	7293.54	-269.93	-322.54	709.95	8.23
7904.00	84.29	0.24	7307.60	-176.26	-228.62	709.94	5.92
7998.00	87.48	1.33	7314.35	-82.69	-134.89	711.22	3.59
8093.00	87.98	1.76	7318.11	12.14	-39.99	713.78	0.70
8187.00	88.76	1.02	7320.78	105.99	53.94	716.06	1.14
8280.00	89.23	0.65	7322.41	198.82	146.91	717.41	0.65
8376.00	90.10	359.92	7322.98	294.59	242.91	717.89	1.18
8469.00	91.44	0.00	7321.72	387.33	335.90	717.83	1.45
8564.00	91.34	359.30	7319.41	482.00	430.87	717.25	0.75
8657.00	90.37	359.78	7318.02	574.69	523.85	716.50	1.17
8752.00	91.27	0.54	7316.66	669.44	618.84	716.76	1.24
8845.00	90.50	0.23	7315.22	762.22	711.83	717.39	0.89
8940.00	90.74	2.18	7314.19	857.09	806.80	719.38	2.07
9034.00	88.02	359.33	7315.20	950.89	900.76	720.62	4.19
9128.00	88.72	0.68	7317.87	1044.60	994.72	720.63	1.62
9222.00	89.16	2.38	7319.61	1138.48	1088.67	723.14	1.87
9316.00	89.83	3.66	7320.44	1232.46	1182.53	728.09	1.54
9410.00	89.09	4.62	7321.32	1326.45	1276.28	734.87	1.29
9505.00	89.19	4.33	7322.74	1421.44	1370.98	742.28	0.32

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
9599.00	90.44	4.76	7323.04	1515.44	1464.69	749.72	1.40
9692.00	91.38	4.19	7321.57	1608.42	1557.39	756.97	1.18
9786.00	90.30	3.98	7320.19	1702.41	1651.14	763.67	1.17
9878.00	91.31	5.17	7318.89	1794.40	1742.83	771.00	1.69
9973.00	91.55	5.94	7316.52	1889.34	1837.36	780.19	0.85
10066.00	91.78	5.31	7313.83	1982.27	1929.87	789.30	0.72
10159.00	90.70	3.40	7311.81	2075.24	2022.57	796.36	2.35
10253.00	89.73	4.19	7311.46	2169.24	2116.37	802.58	1.33
10348.00	89.77	4.54	7311.87	2264.24	2211.09	809.81	0.37
10442.00	90.60	5.20	7311.57	2358.23	2304.75	817.79	1.14
10537.00	91.38	5.98	7309.93	2453.18	2399.28	827.05	1.16
10631.00	90.94	5.07	7308.03	2547.14	2492.82	836.10	1.07
10724.00	90.40	5.24	7306.94	2640.12	2585.44	844.46	0.61
10820.00	90.10	4.42	7306.52	2736.11	2681.10	852.55	0.92
10914.00	89.83	4.18	7306.57	2830.11	2774.83	859.60	0.38
11009.00	90.61	4.92	7306.21	2925.10	2869.53	867.14	1.12
11103.00	90.57	4.90	7305.24	3019.09	2963.18	875.18	0.04
11196.00	91.01	5.17	7303.96	3112.07	3055.81	883.34	0.55
11291.00	91.21	5.45	7302.12	3207.03	3150.39	892.13	0.36
11386.00	90.94	3.39	7300.34	3302.01	3245.08	899.45	2.18

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
11480.00	90.20	2.52	7299.41	3395.98	3338.95	904.29	1.22
11573.00	90.24	3.53	7299.05	3488.96	3431.82	909.20	1.09
11667.00	90.27	3.31	7298.64	3582.95	3525.65	914.81	0.23
11761.00	90.91	3.77	7297.68	3676.94	3619.47	920.61	0.83
11855.00	91.84	4.49	7295.42	3770.91	3713.19	927.38	1.26
11950.00	90.74	4.30	7293.28	3865.89	3807.89	934.65	1.18
12045.00	90.74	3.60	7292.06	3960.88	3902.66	941.19	0.74
12138.00	91.04	5.26	7290.61	4053.86	3995.36	948.37	1.82
12233.00	91.31	5.48	7288.66	4148.82	4089.93	957.26	0.36
12327.00	90.34	4.51	7287.32	4242.80	4183.56	965.45	1.46
12421.00	91.04	3.50	7286.19	4336.79	4277.32	972.01	1.31
12515.00	89.36	3.33	7285.86	4430.78	4371.15	977.60	1.79
12611.00	90.94	3.53	7285.60	4526.77	4466.97	983.34	1.66
12706.00	91.04	3.66	7283.96	4621.75	4561.77	989.30	0.18
12800.00	91.41	3.64	7281.95	4715.72	4655.56	995.28	0.39
12893.00	92.18	3.08	7279.04	4808.67	4748.35	1000.73	1.03
12988.00	91.48	3.42	7276.01	4903.61	4843.15	1006.12	0.82
13083.00	90.94	2.89	7274.01	4998.57	4937.99	1011.35	0.80
13177.00	91.64	2.35	7271.89	5092.51	5031.86	1015.64	0.94
13269.00	92.21	2.00	7268.80	5184.40	5123.74	1019.13	0.73

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
13289.00	92.29	1.85	7268.01	5204.37	5143.72	1019.80	0.83

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft

5" = 100' MD