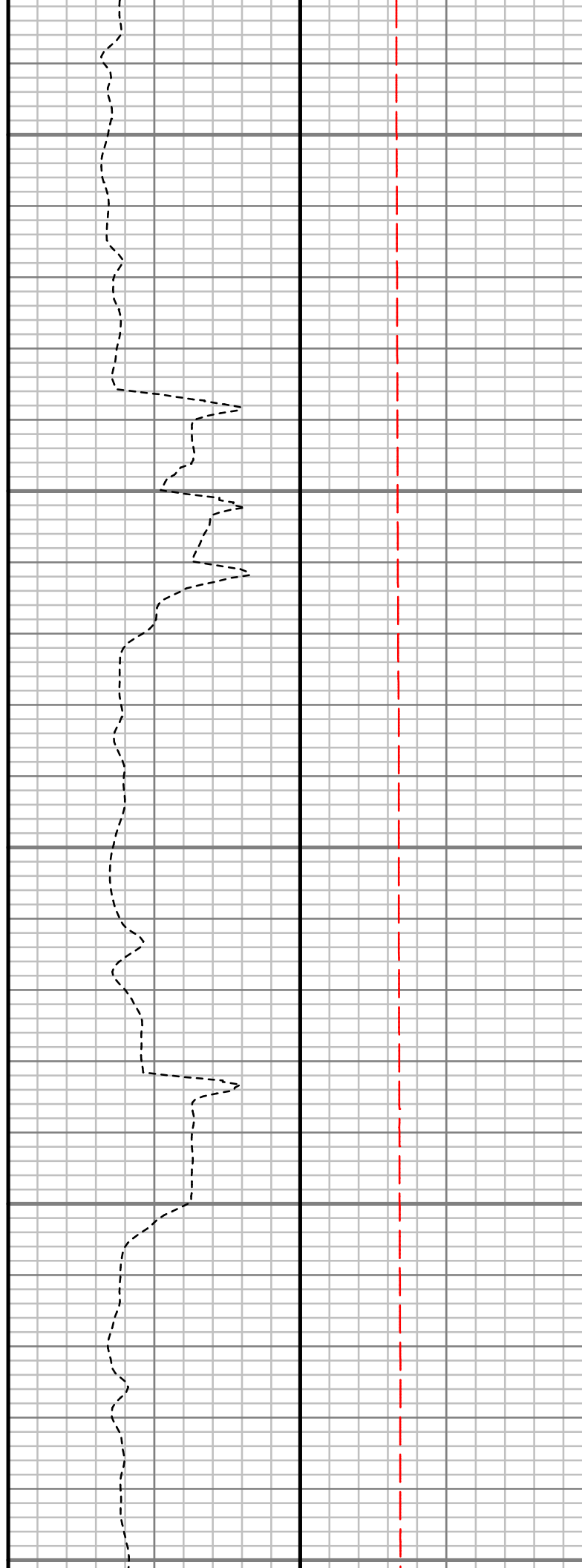
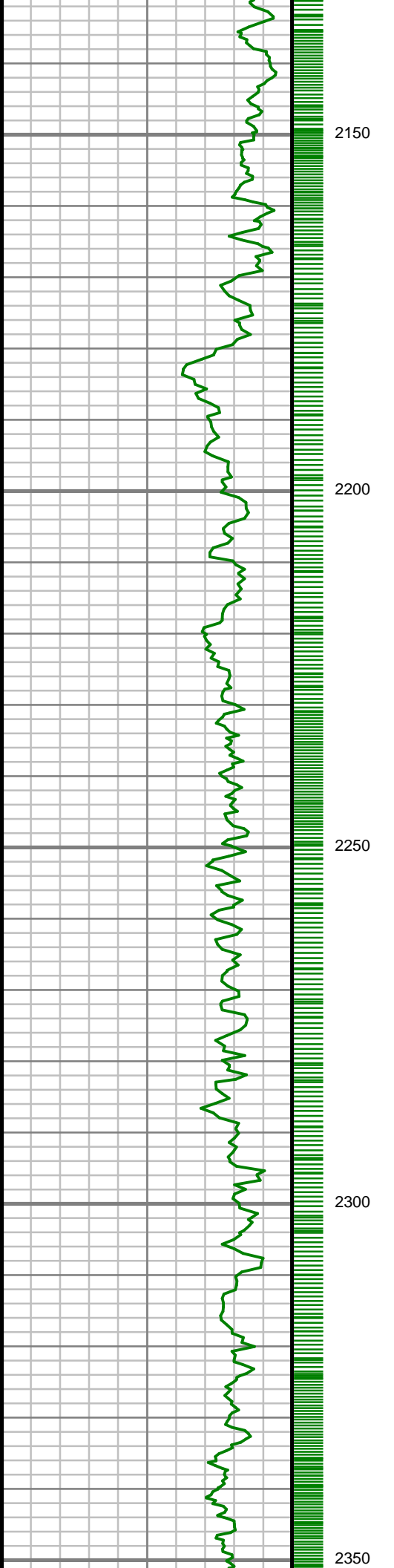


S: 21 MD: 1938.00 ft  
Inc: 6.25 deg Az: 89.22  
deg TVD: 1933.78 ft

S: 22 MD: 2032.00 ft  
Inc: 6.86 deg Az: 91.42  
deg TVD: 2027.17 ft

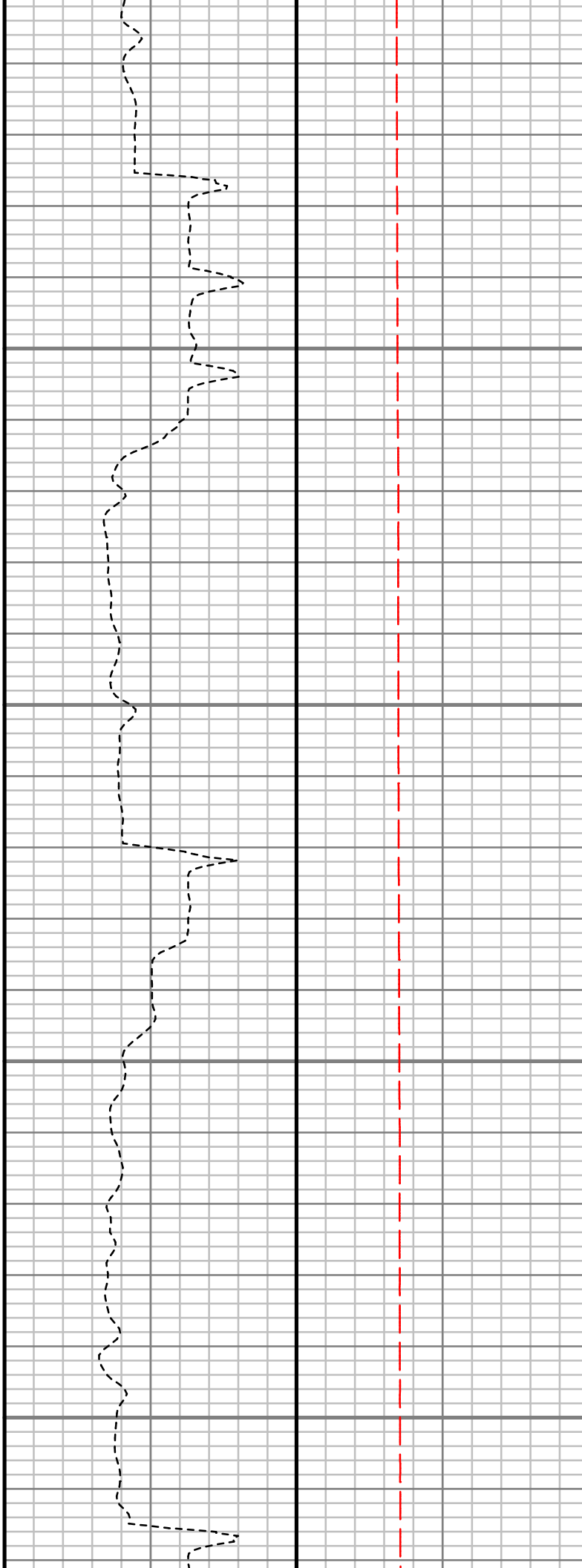
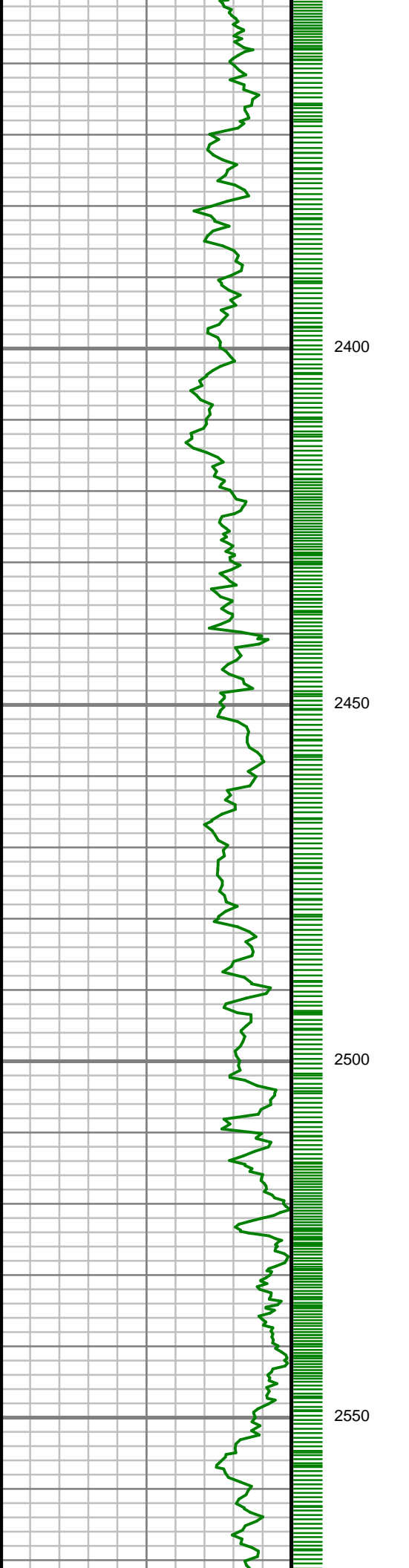
S: 23 MD: 2127.00 ft  
Inc: 9.03 deg Az: 89.67



Inc: 9.80 deg Az: 88.85  
deg TVD: 2121.25 ft

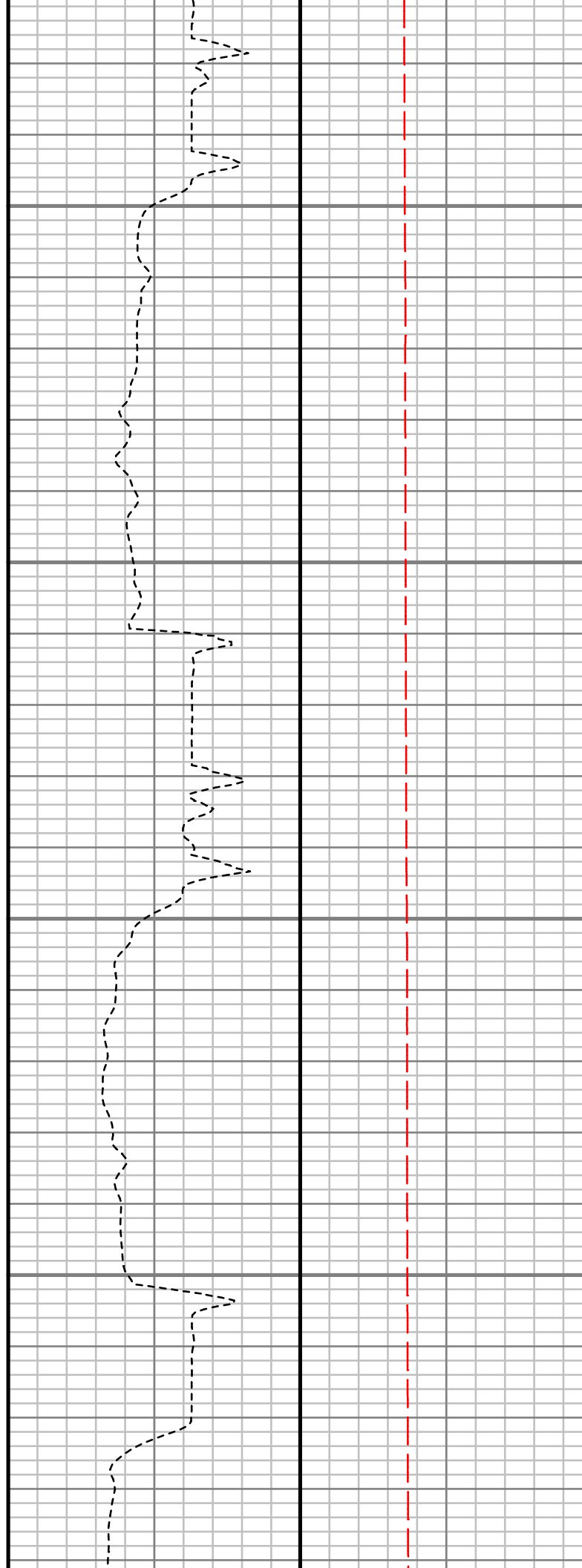
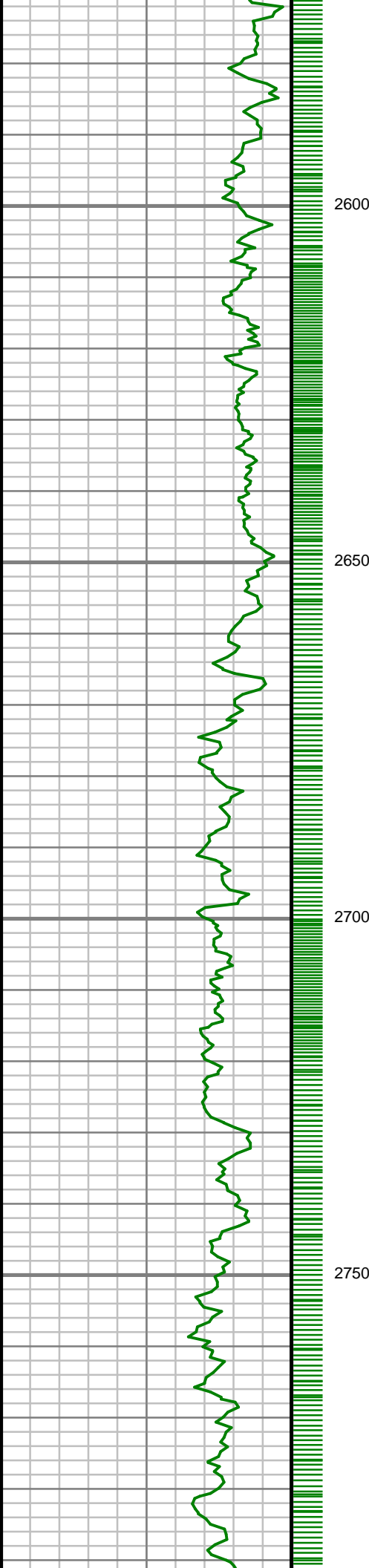
S: 24 MD: 2222.00 ft  
Inc: 9.80 deg Az: 88.85  
deg TVD: 2214.97 ft

S: 25 MD: 2315.00 ft  
Inc: 9.19 deg Az: 85.72  
deg TVD: 2306.70 ft



S: 26 MD: 2408.00 ft  
Inc: 9.92 deg Az: 86.60  
deg TVD: 2398.41 ft

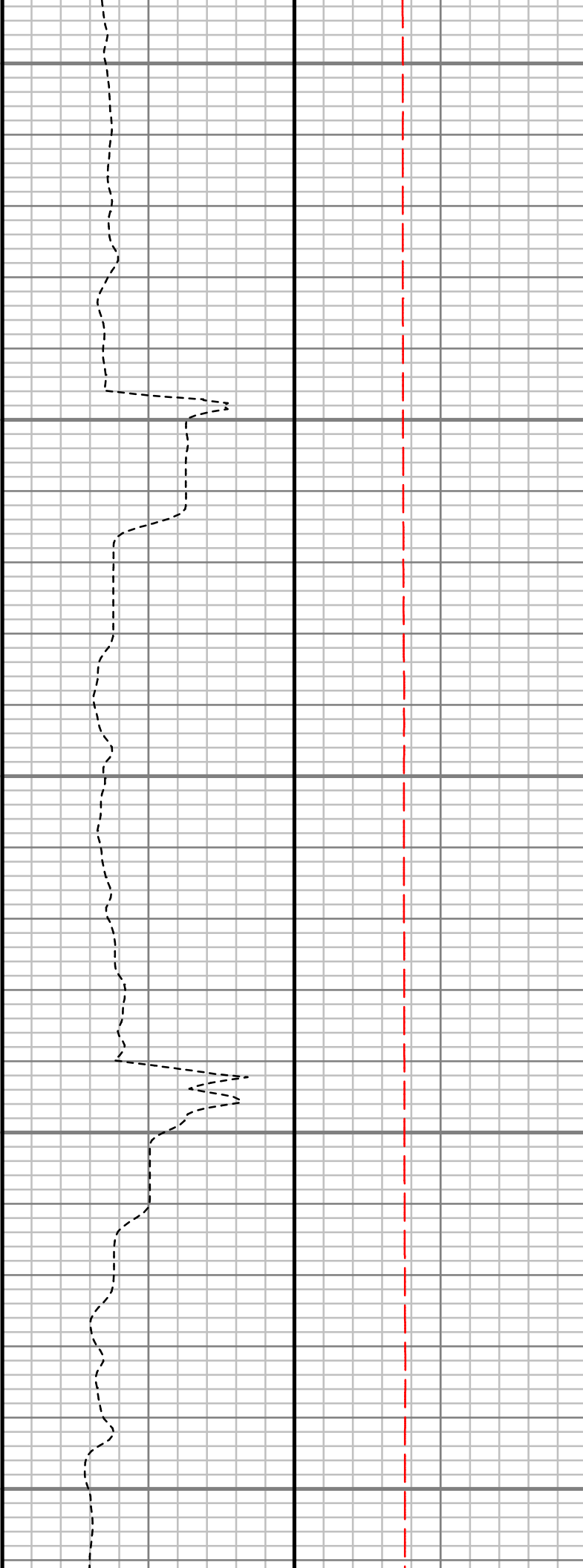
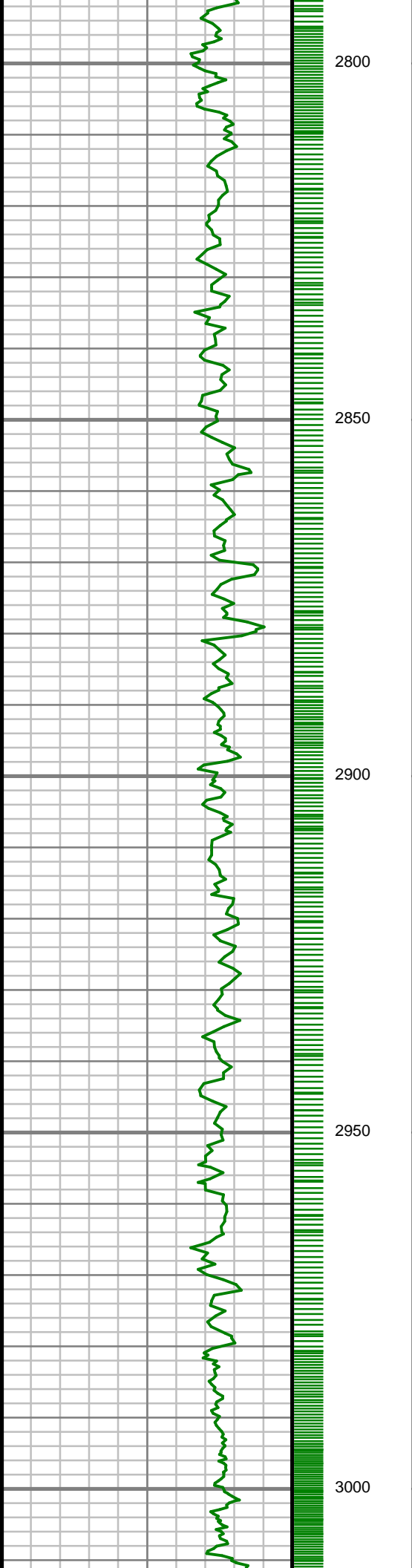
S: 27 MD: 2503.00 ft  
Inc: 9.33 deg Az: 84.29  
deg TVD: 2492.07 ft



S: 28 MD: 2597.00 ft  
Inc: 9.83 deg Az: 80.69  
deg TVD: 2584.76 ft

S: 29 MD: 2691.00 ft  
Inc: 10.57 deg Az:  
79.22 deg TVD:  
2677.27 ft

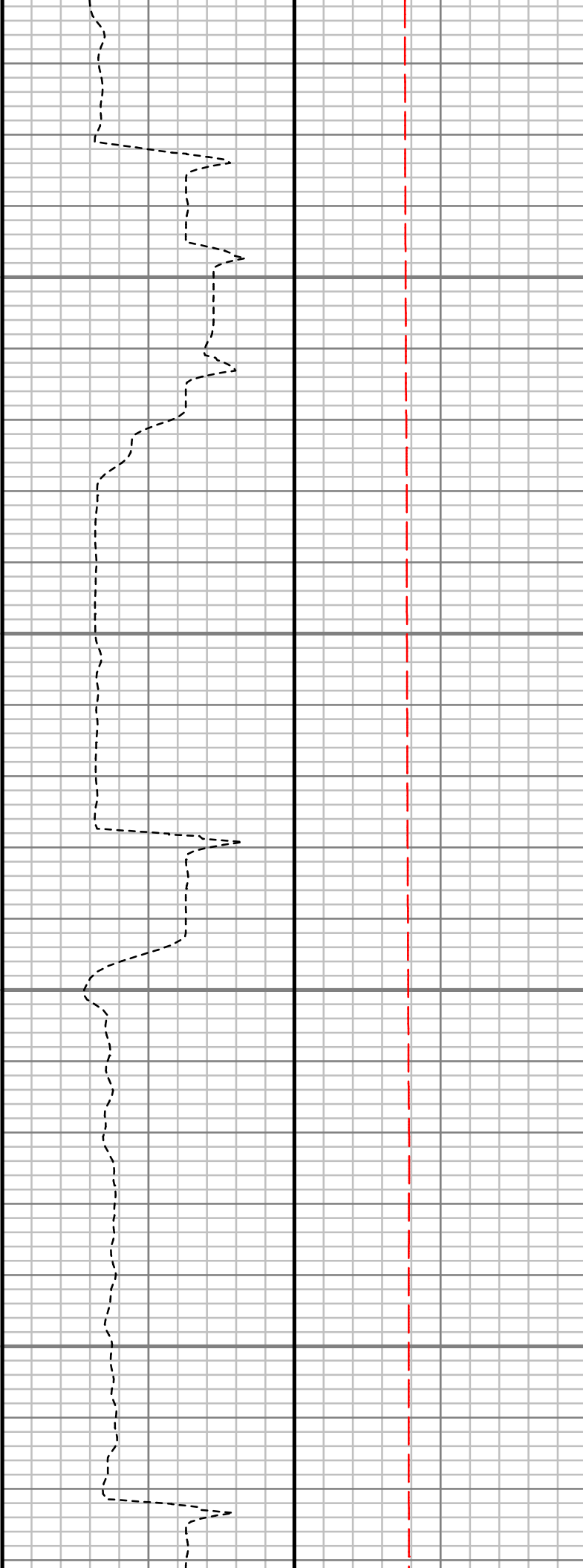
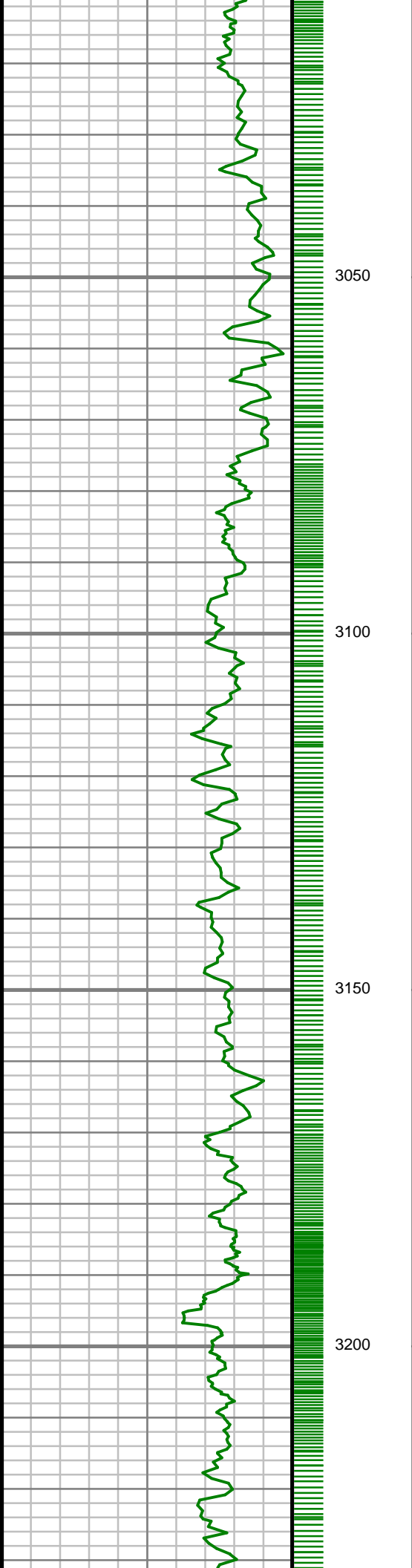
S: 30 MD: 2785.00 ft  
Inc: 10.21 deg Az:  
78.80 deg TVD:



76.89 deg TVD:  
2769.73 ft

S: 31 MD: 2879.00 ft  
Inc: 9.89 deg Az: 77.34  
deg TVD: 2862.29 ft

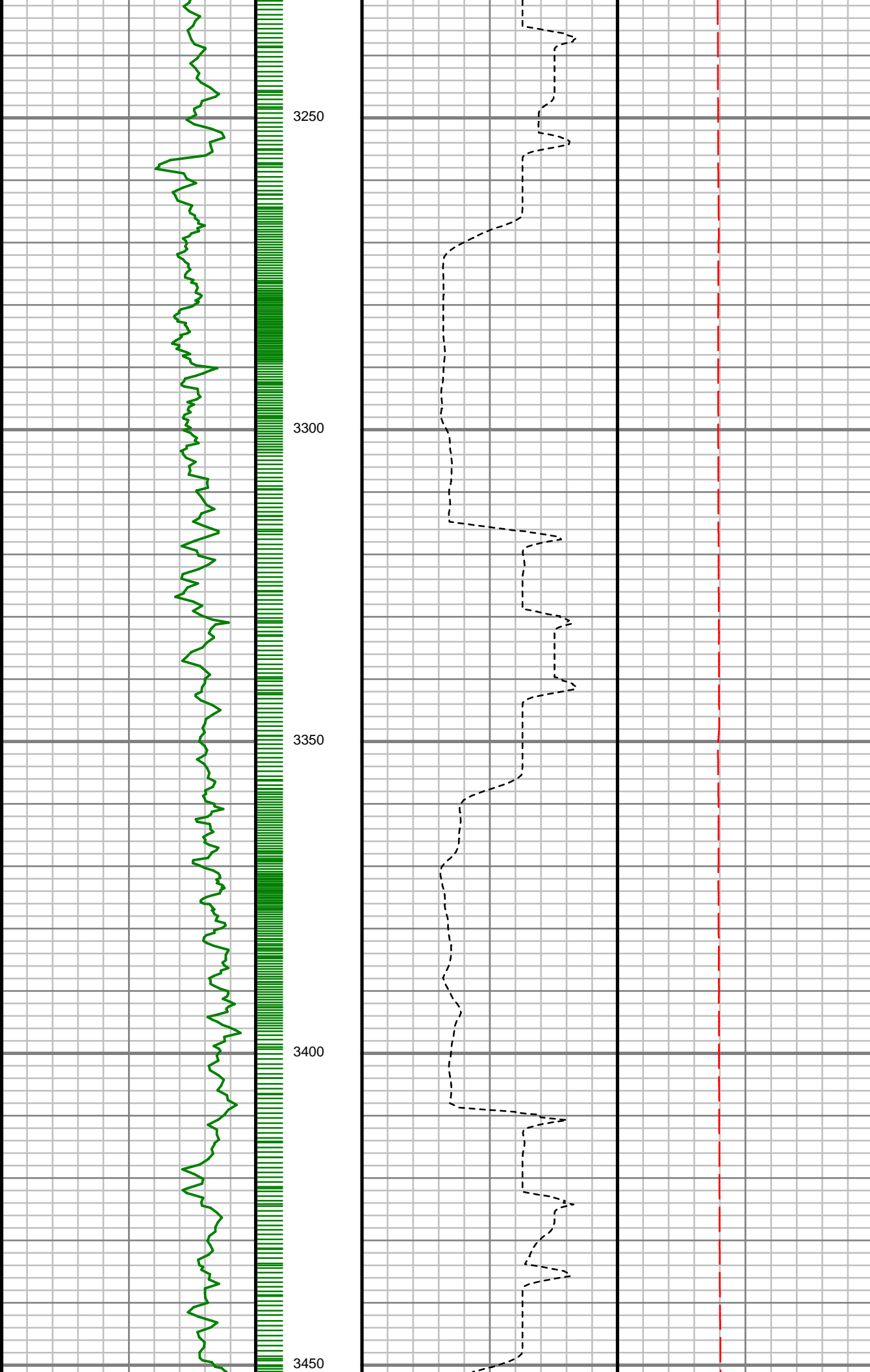
S: 32 MD: 2973.00 ft  
Inc: 9.39 deg Az: 77.35  
deg TVD: 2954.96 ft



S: 33 MD: 3068.00 ft  
Inc: 9.41 deg Az: 84.34  
deg TVD: 3048.69 ft

S: 34 MD: 3162.00 ft  
Inc: 8.96 deg Az: 83.20  
deg TVD: 3141.48 ft

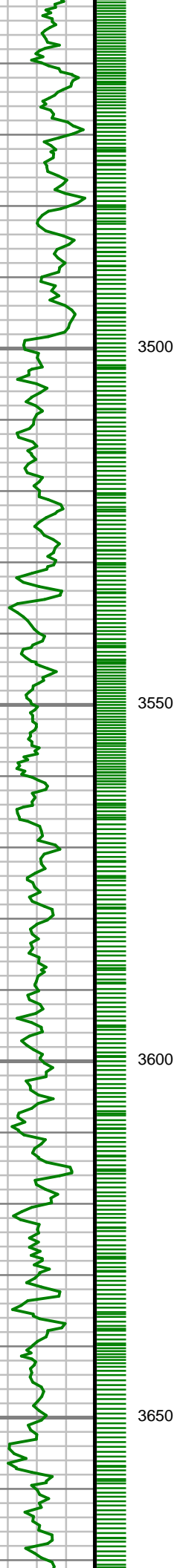




S: 35 MD: 3256.00 ft  
Inc: 8.88 deg Az: 96.60  
deg TVD: 3234.35 ft

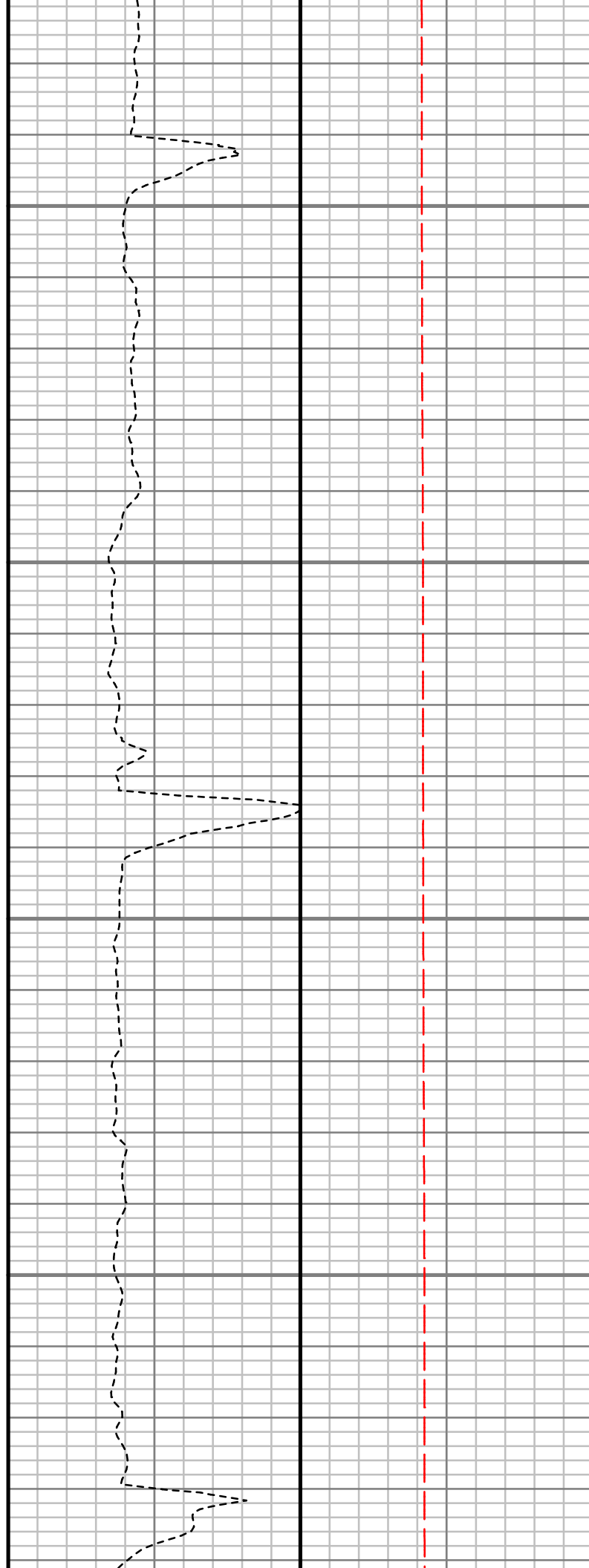
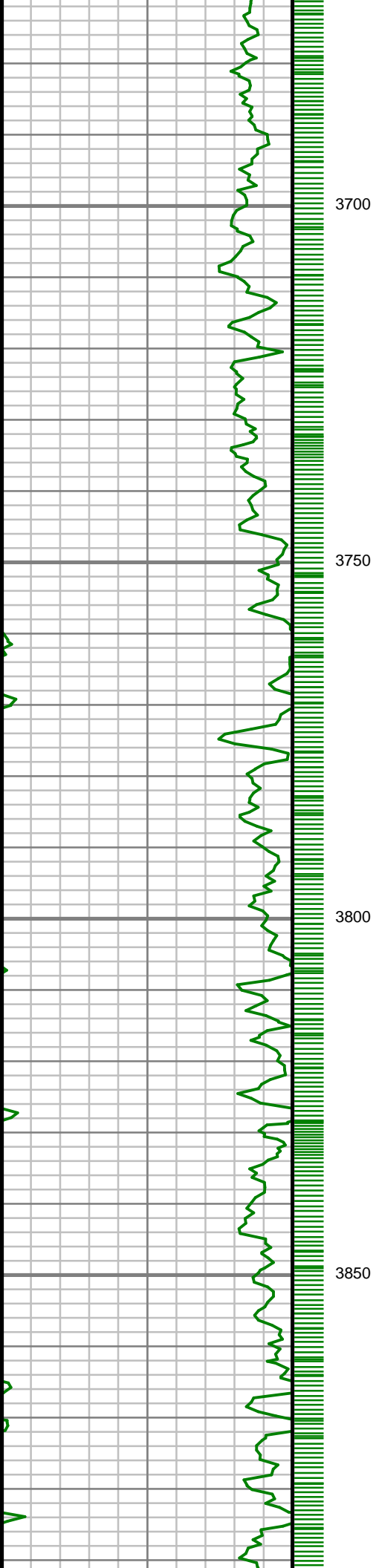
S: 36 MD: 3349.00 ft  
Inc: 9.07 deg Az: 98.63  
deg TVD: 3326.22 ft

S: 37 MD: 3441.00 ft  
Inc: 9.06 deg Az:  
102.96 deg TVD:  
3417.07 ft



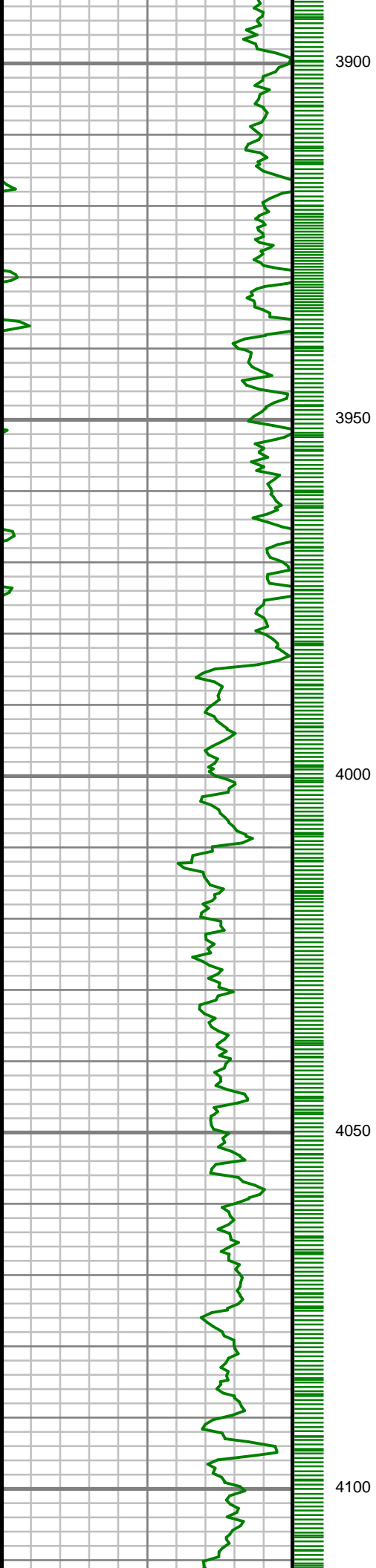
S: 38 MD: 3535.00 ft  
Inc: 8.16 deg Az:  
102.88 deg TVD:  
3510.01 ft

S: 39 MD: 3630.00 ft  
Inc: 6.95 deg Az:  
102.04 deg TVD:  
3604.18 ft



S: 40 MD: 3723.00 ft  
Inc: 5.35 deg Az: 98.90  
deg TVD: 3696.64 ft

S: 41 MD: 3818.00 ft  
Inc: 4.39 deg Az: 97.28  
deg TVD: 3791.30 ft



3900

3950

4000

4050

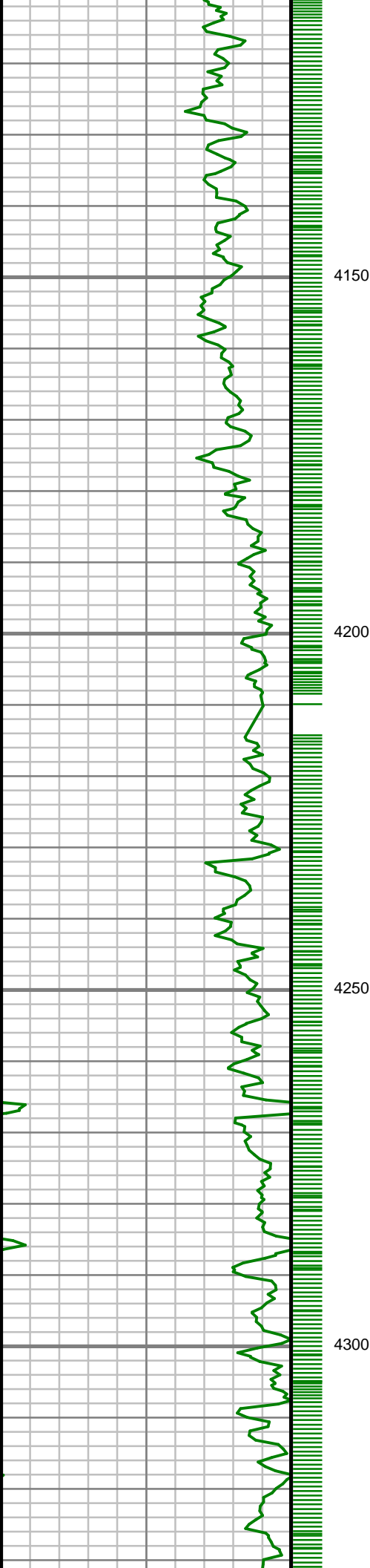
4100



S: 42 MD: 3910.00 ft  
Inc: 3.84 deg Az: 99.10  
deg TVD: 3883.06 ft

S: 43 MD: 4005.00 ft  
Inc: 3.19 deg Az: 96.21  
deg TVD: 3977.88 ft

S: 44 MD: 4100.00 ft  
Inc: 2.91 deg Az: 93.76  
deg TVD: 4072.75 ft



4150

4200

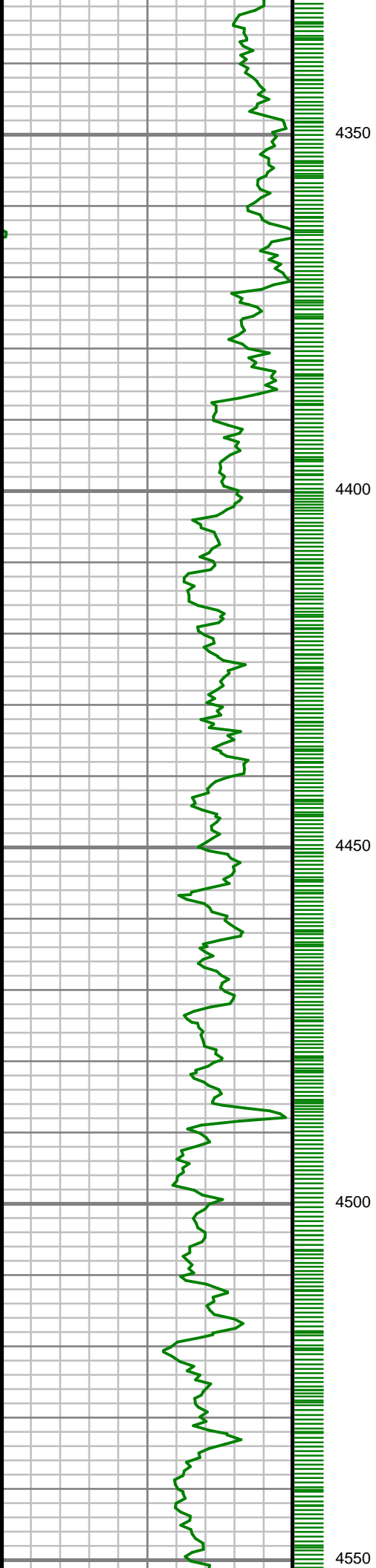
4250

4300



S: 45 MD: 4194.00 ft  
Inc: 2.43 deg Az: 89.40  
deg TVD: 4166.64 ft

S: 46 MD: 4288.00 ft  
Inc: 1.98 deg Az: 86.96  
deg TVD: 4260.57 ft



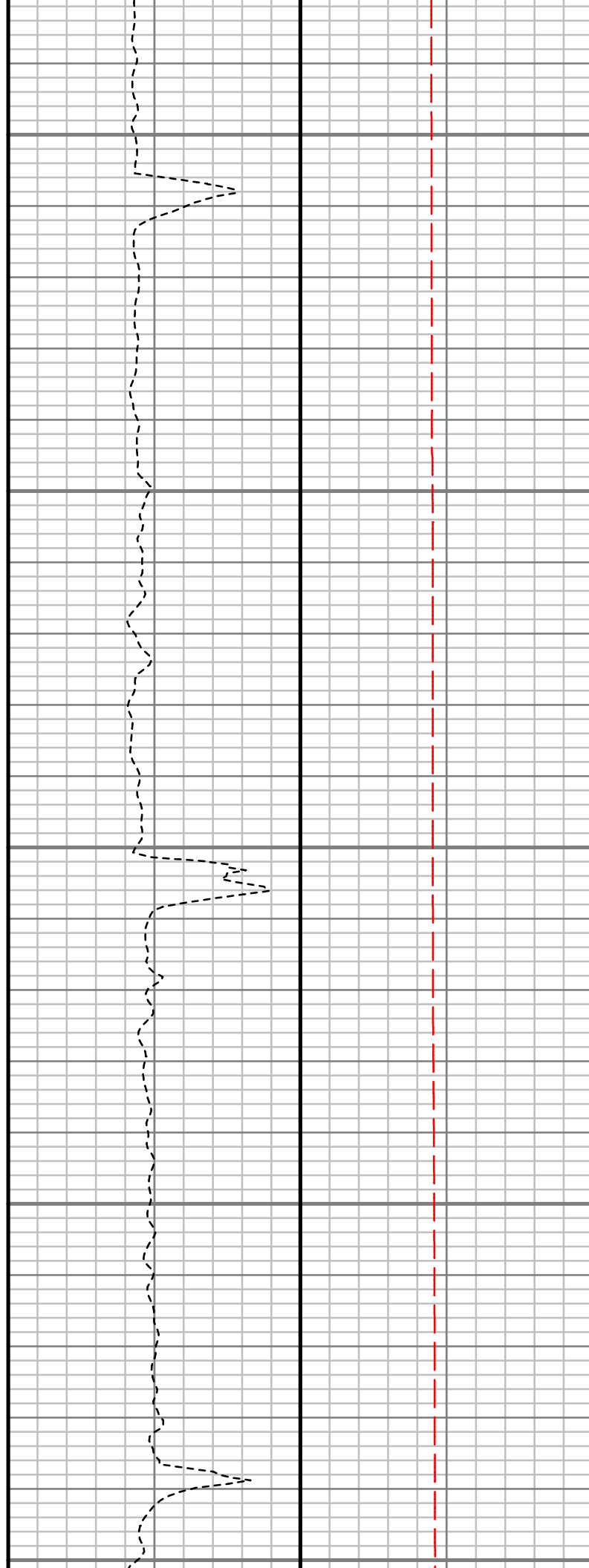
4350

4400

4450

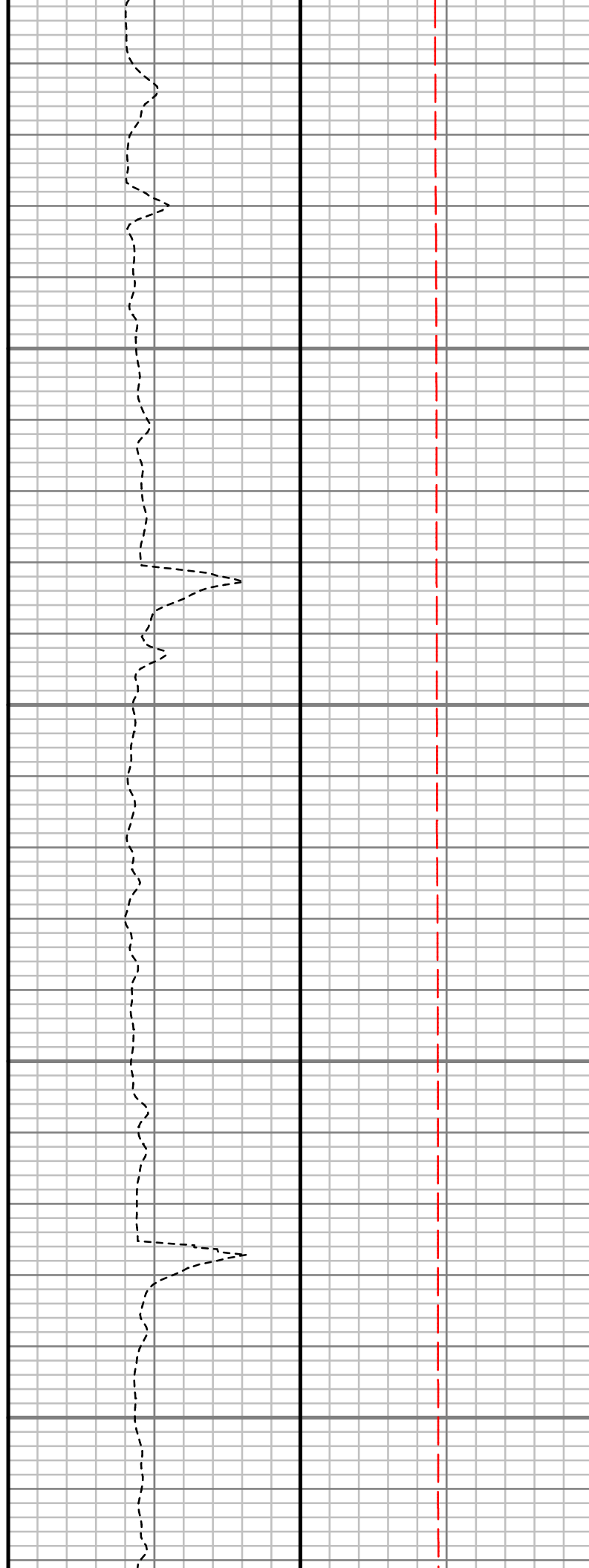
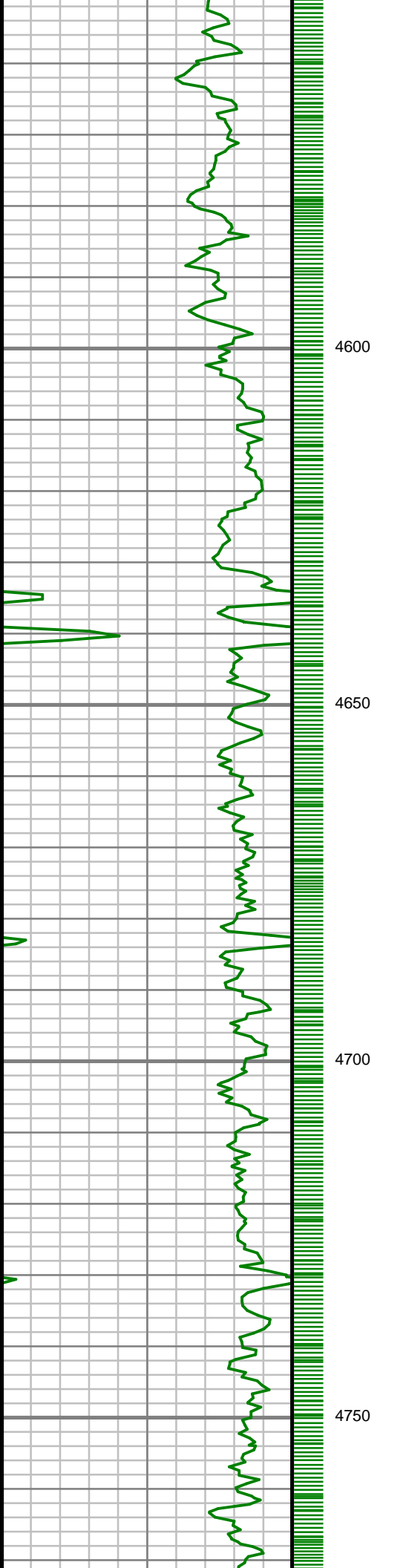
4500

4550



S: 47 MD: 4383.00 ft  
Inc: 1.58 deg Az: 97.48  
deg TVD: 4355.53 ft

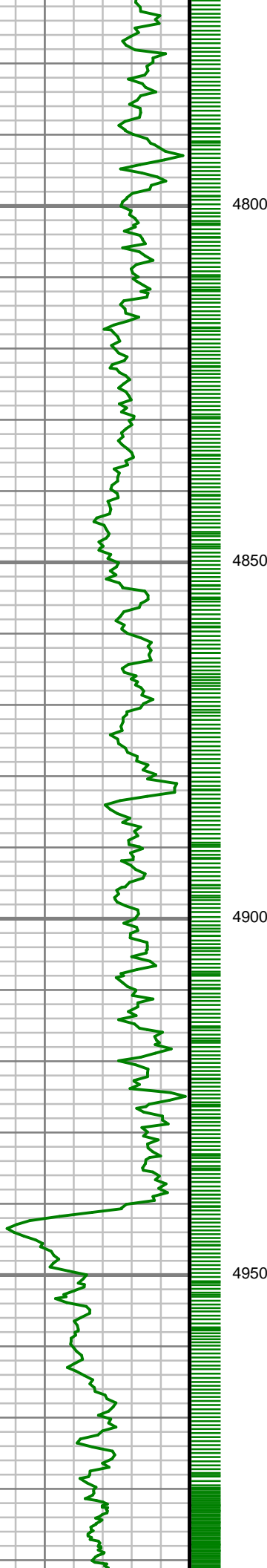
S: 48 MD: 4478.00 ft  
Inc: 1.38 deg Az: 91.05  
deg TVD: 4450.50 ft



S: 49 MD: 4572.00 ft  
Inc: 0.78 deg Az: 70.69  
deg TVD: 4544.48 ft

S: 50 MD: 4666.00 ft  
Inc: 0.65 deg Az: 71.84  
deg TVD: 4638.47 ft

S: 51 MD: 4759.00 ft  
Inc: 0.48 deg Az: 68.64  
deg TVD: 4731.47 ft



4800

4850

4900

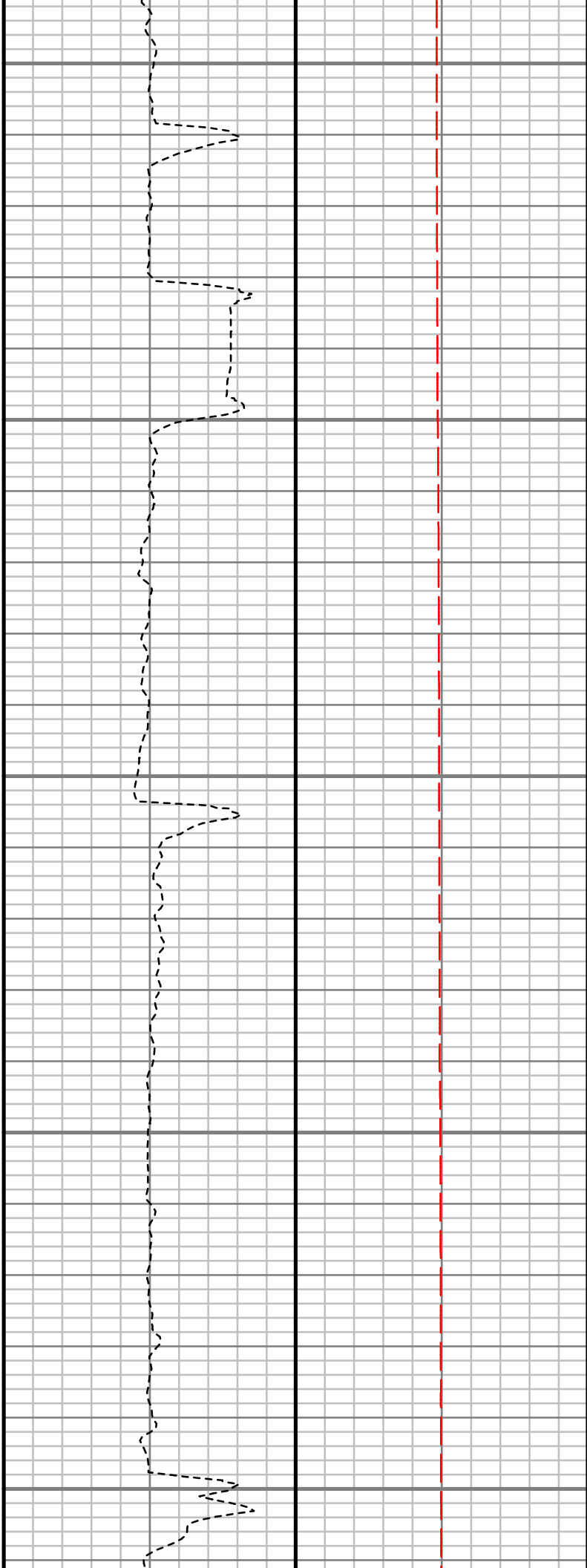
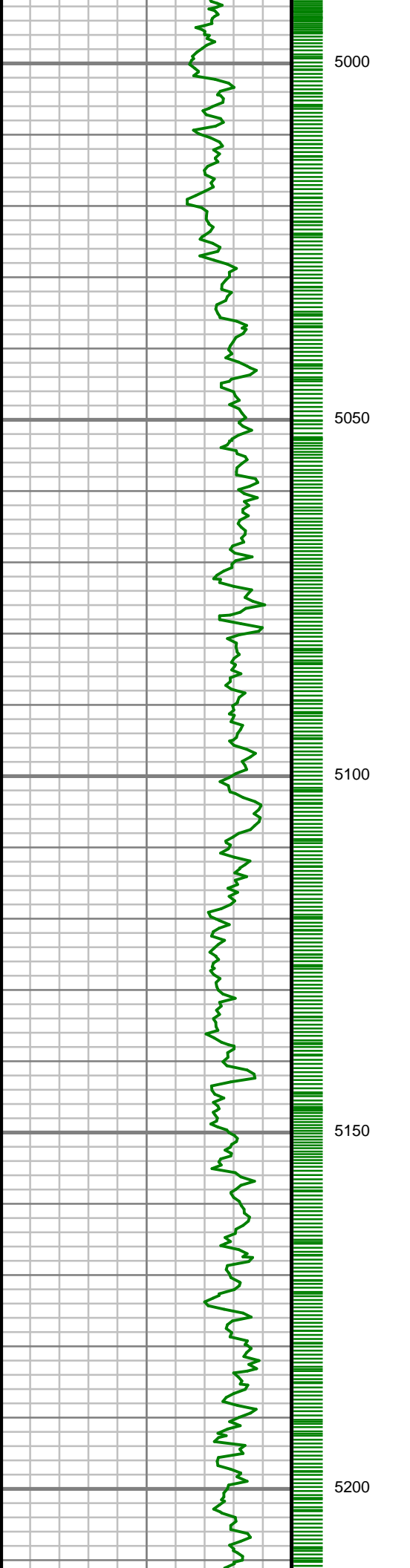
4950



S: 52 MD: 4854.00 ft  
Inc: 0.69 deg Az: 34.90  
deg TVD: 4826.46 ft

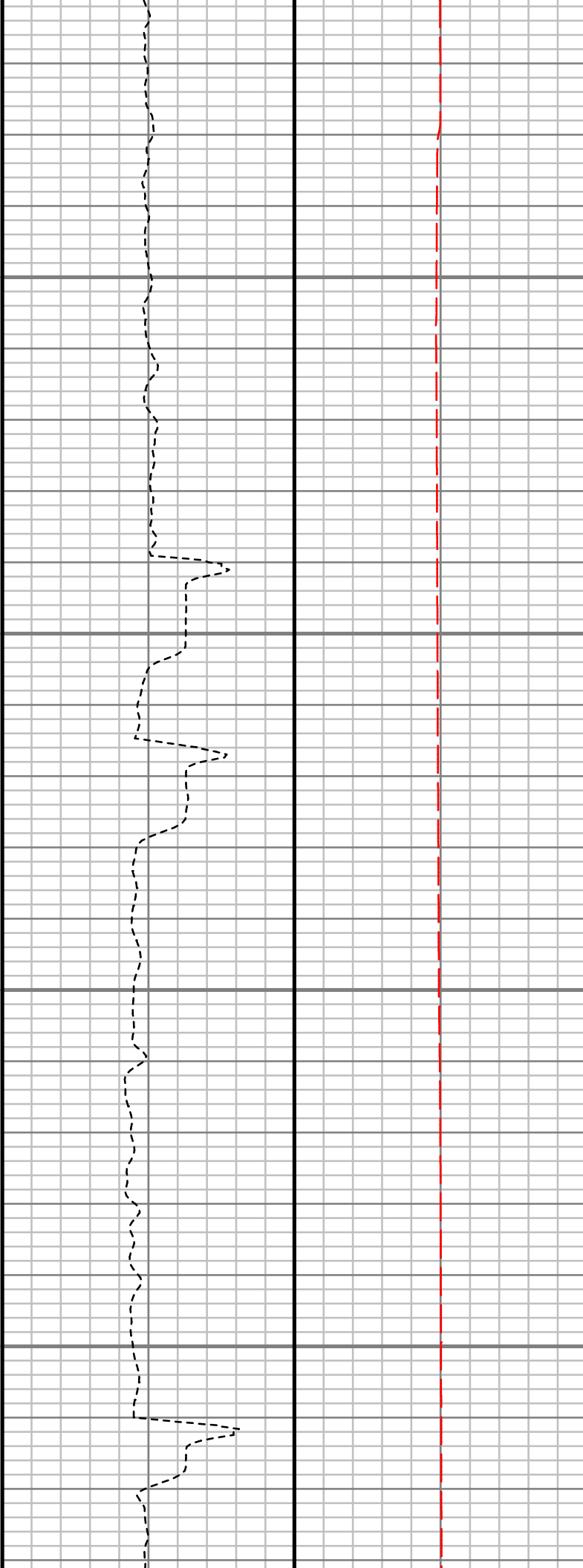
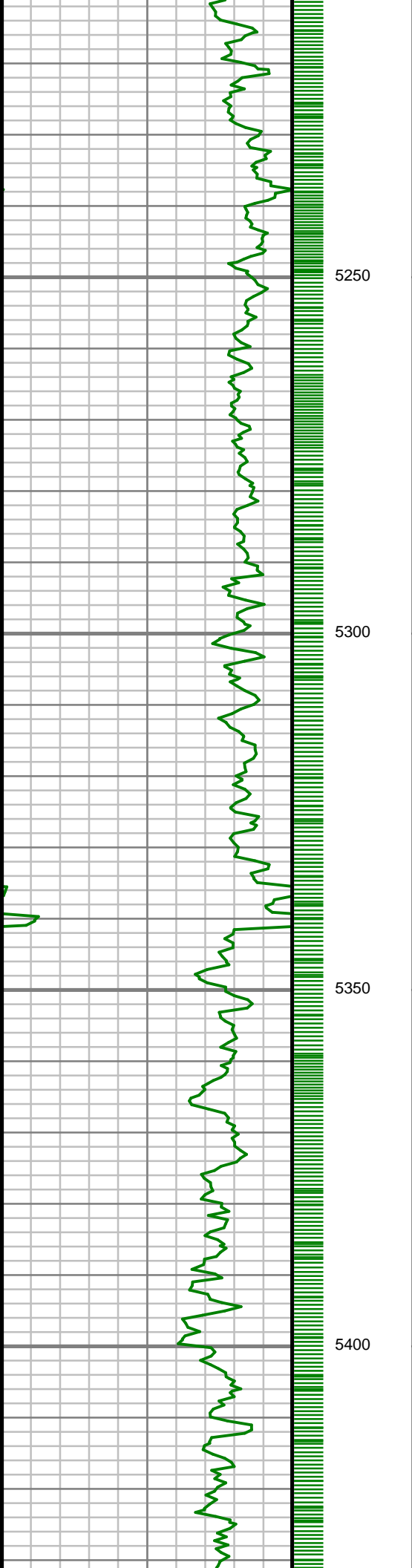
S: 53 MD: 4948.00 ft  
Inc: 1.24 deg Az: 21.68  
deg TVD: 4920.45 ft





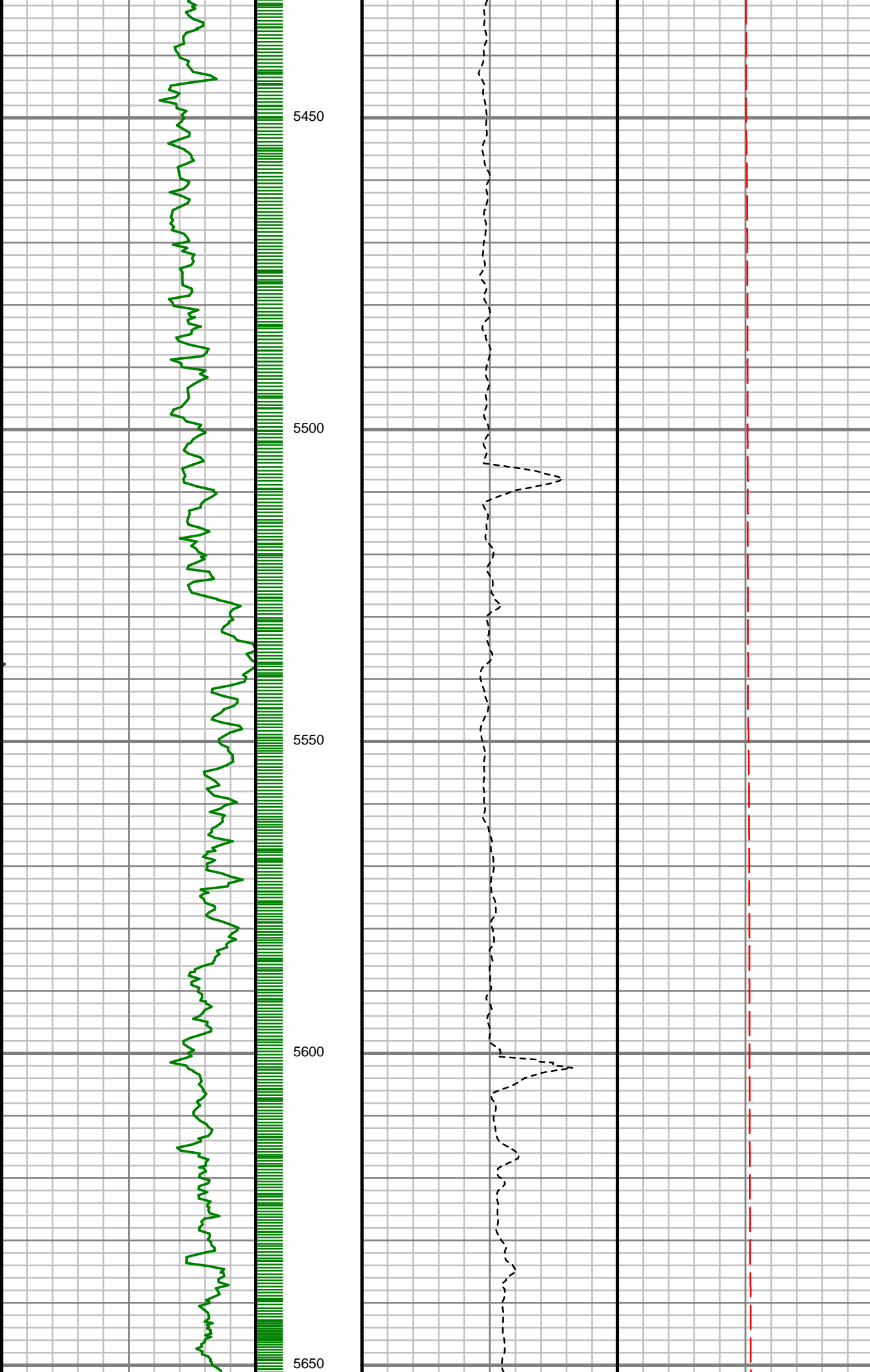
S: 54 MD: 5043.00 ft  
Inc: 0.96 deg Az:  
233.06 deg TVD:  
5015.44 ft

S: 55 MD: 5137.00 ft  
Inc: 1.18 deg Az:  
227.58 deg TVD:  
5109.43 ft



S: 56 MD: 5256.00 ft  
Inc: 0.79 deg Az:  
226.95 deg TVD:  
5228.41 ft

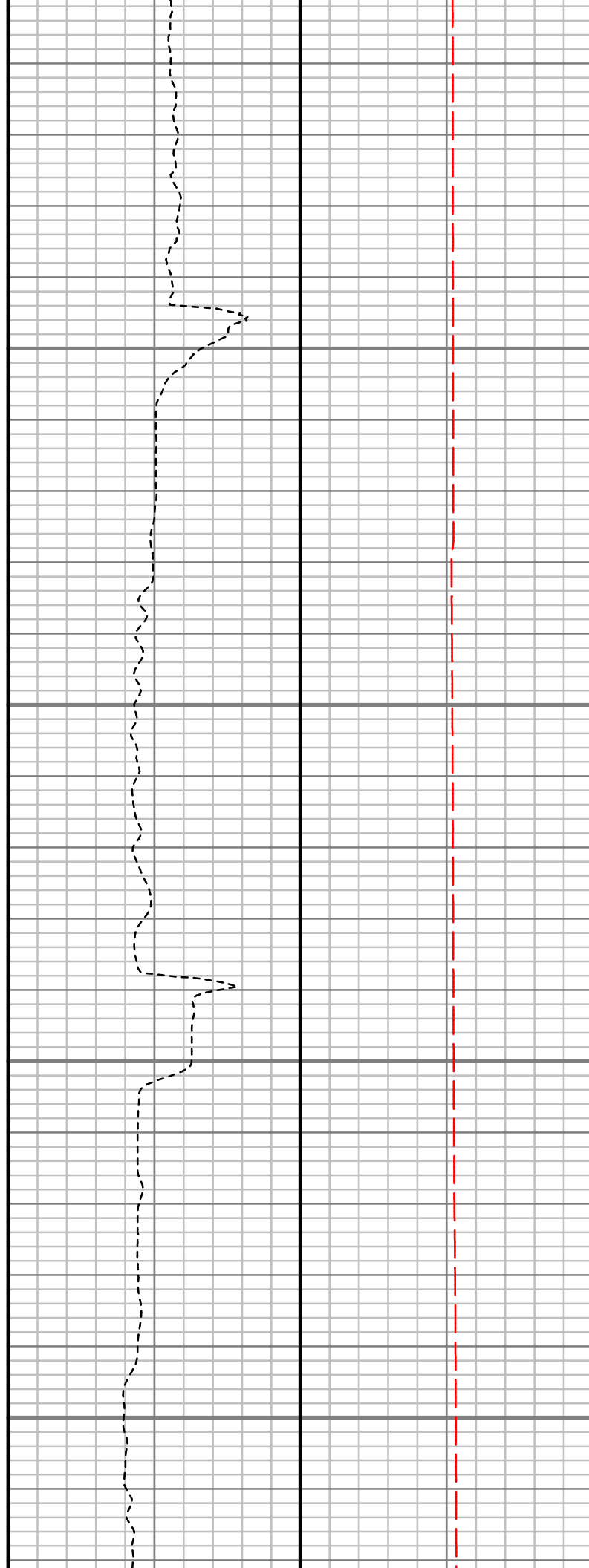
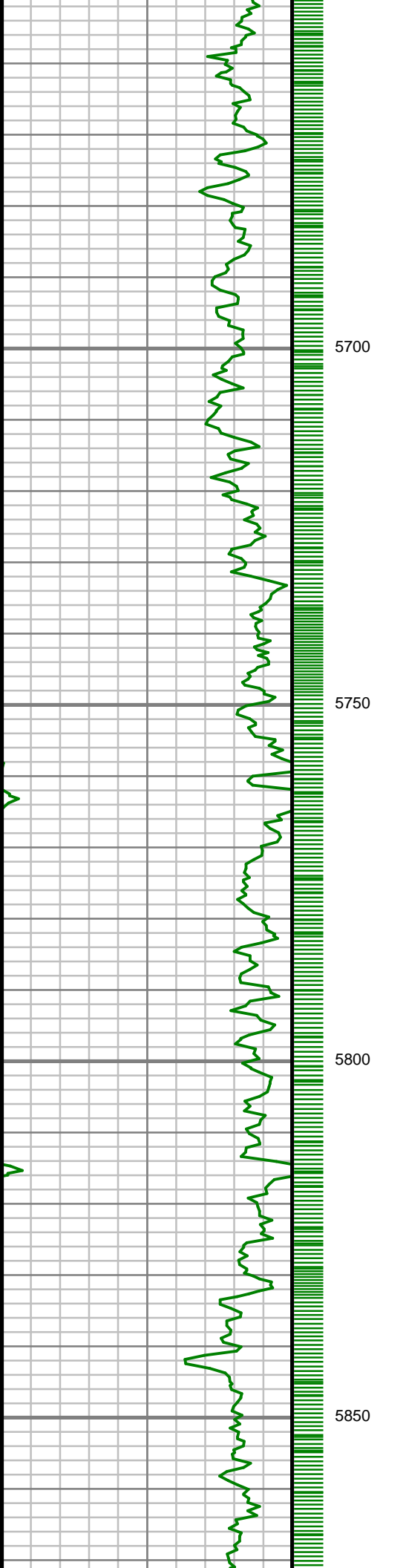
S: 57 MD: 5351.00 ft  
Inc: 0.38 deg Az:  
223.03 deg TVD:  
5323.40 ft



S: 58 MD: 5447.00 ft  
Inc: 0.32 deg Az:  
238.81 deg TVD:  
5419.40 ft

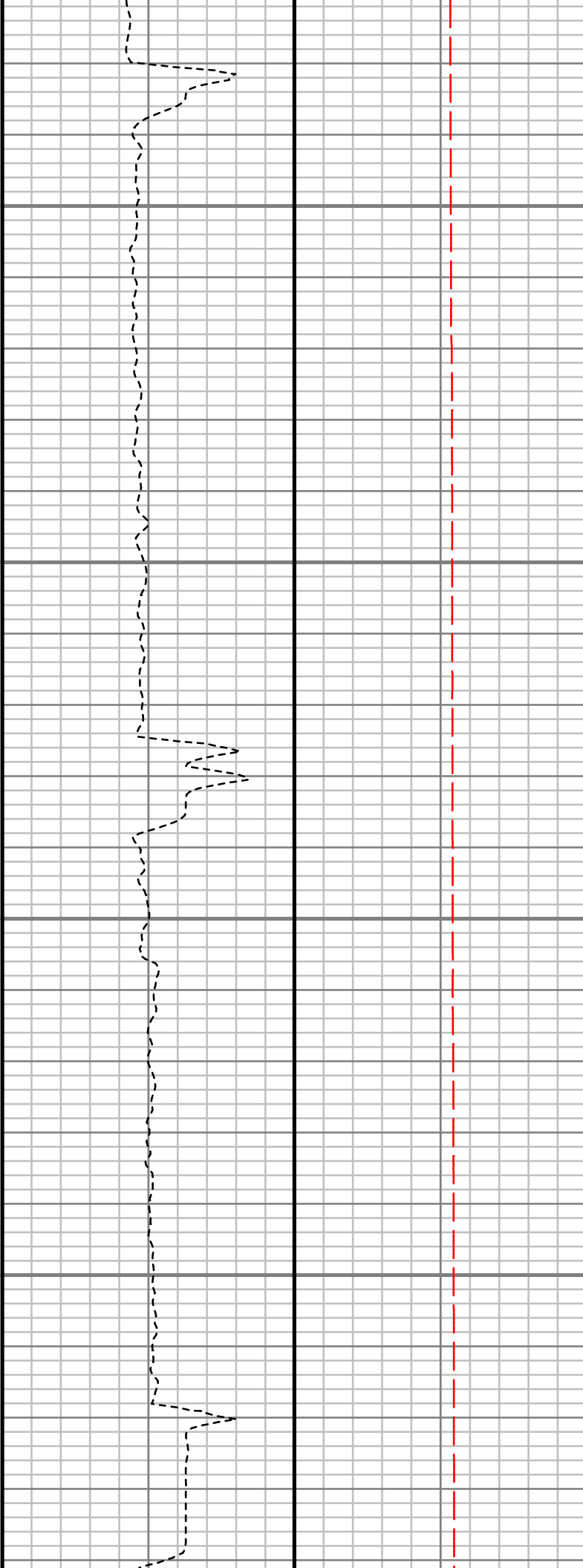
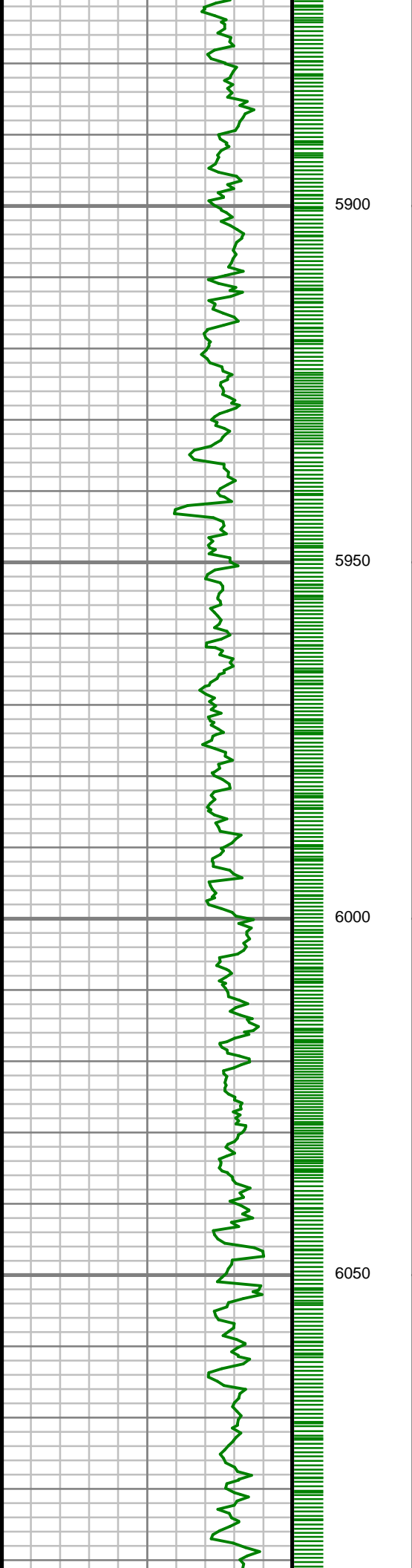
S: 59 MD: 5541.00 ft  
Inc: 0.08 deg Az:  
158.02 deg TVD:  
5513.40 ft

S: 60 MD: 5635.00 ft  
Inc: 0.24 deg Az:  
124.65 deg TVD:  
5607.40 ft



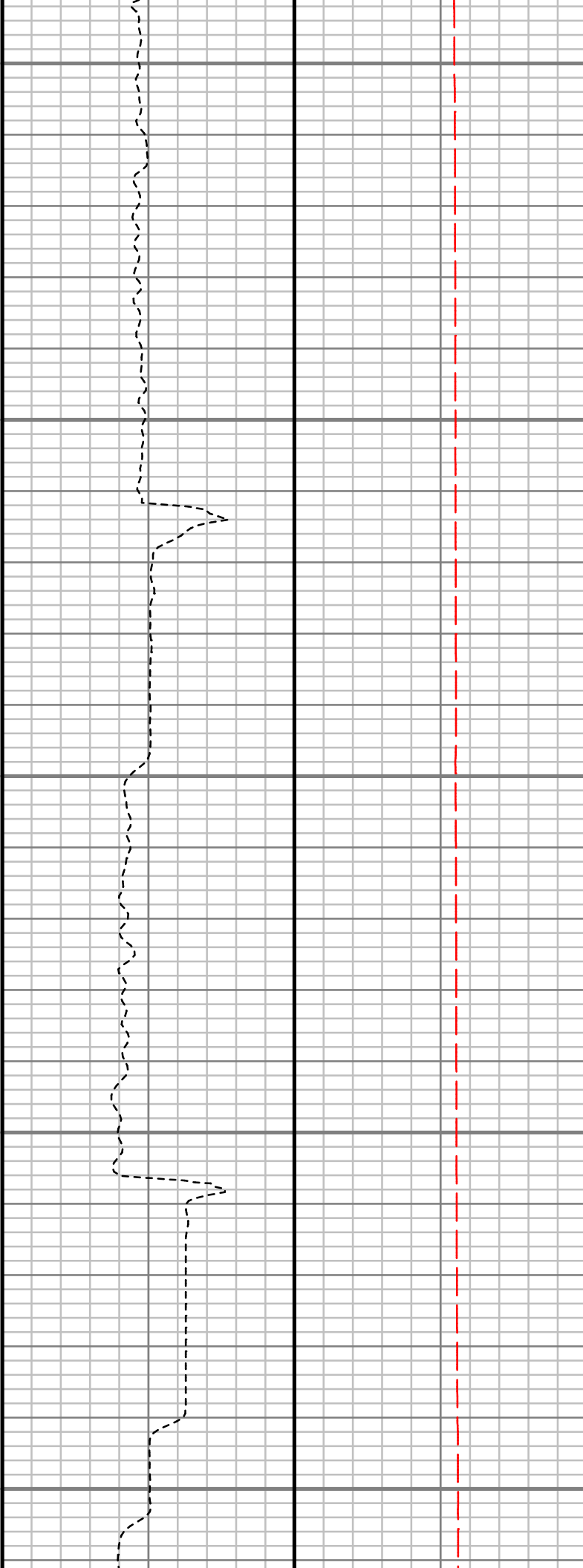
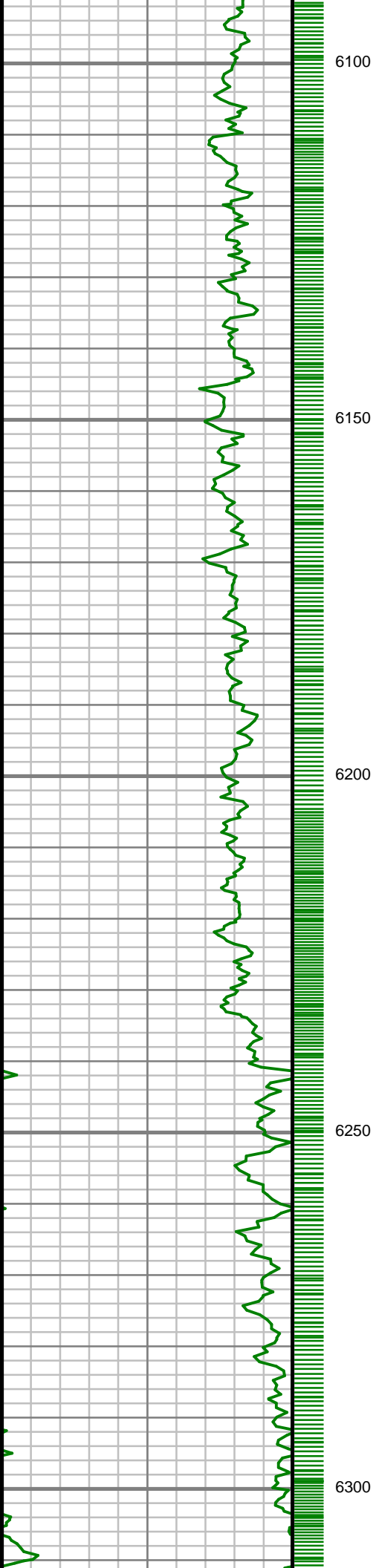
S: 61 MD: 5727.00 ft  
Inc: 0.39 deg Az: 88.60  
deg TVD: 5699.40 ft

S: 62 MD: 5819.00 ft  
Inc: 0.54 deg Az: 63.06  
deg TVD: 5791.40 ft



S: 63 MD: 5913.00 ft  
Inc: 0.76 deg Az: 81.68  
deg TVD: 5885.39 ft

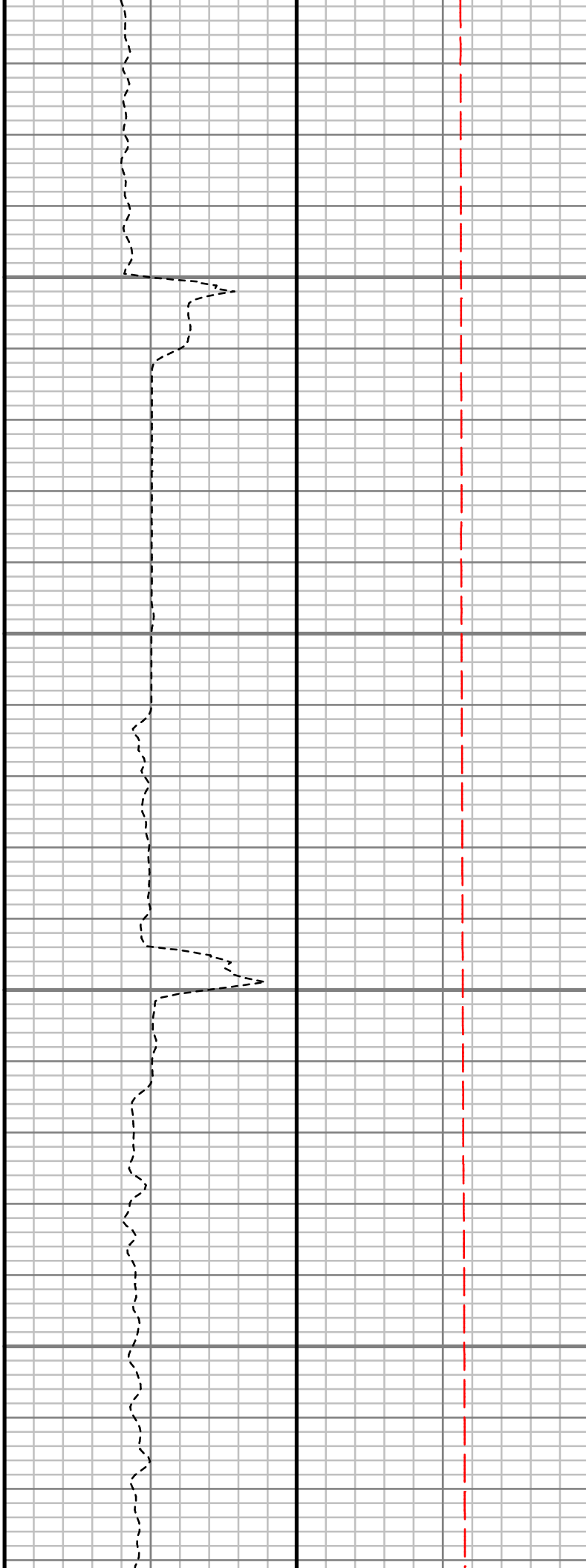
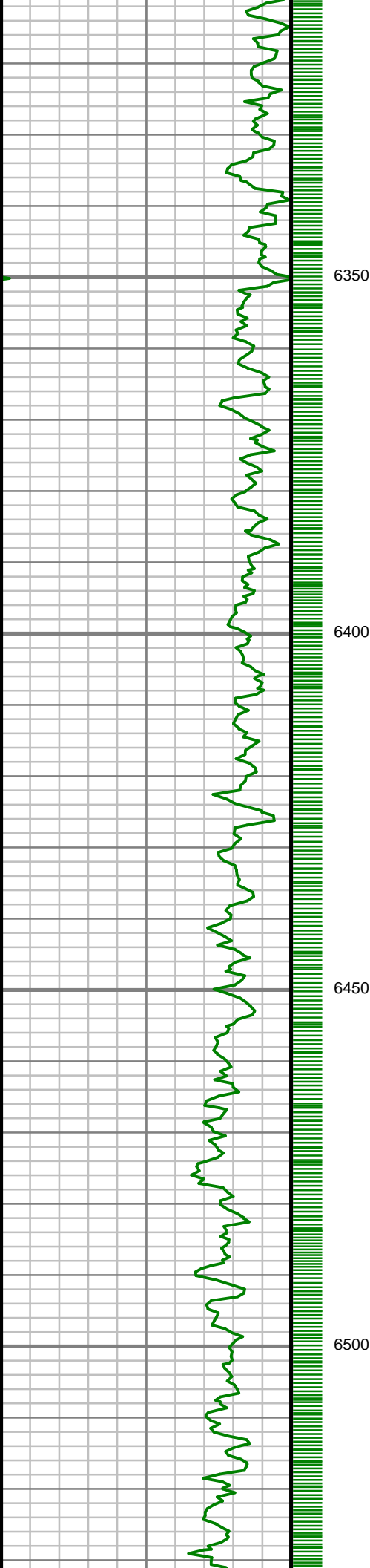
S: 64 MD: 6007.00 ft  
Inc: 0.80 deg Az: 122.53  
deg TVD: 5979.38 ft



S: 65 MD: 6100.00 ft  
Inc: 0.67 deg Az:  
119.22 deg TVD:  
6072.37 ft

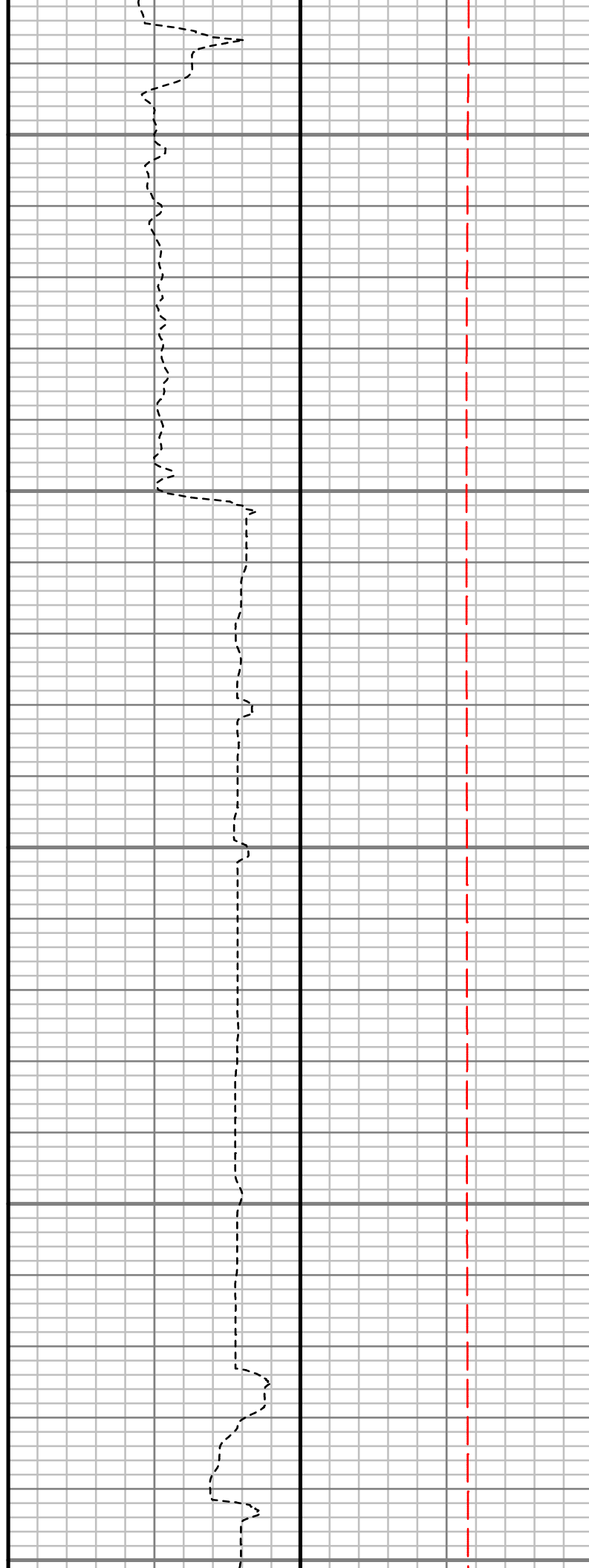
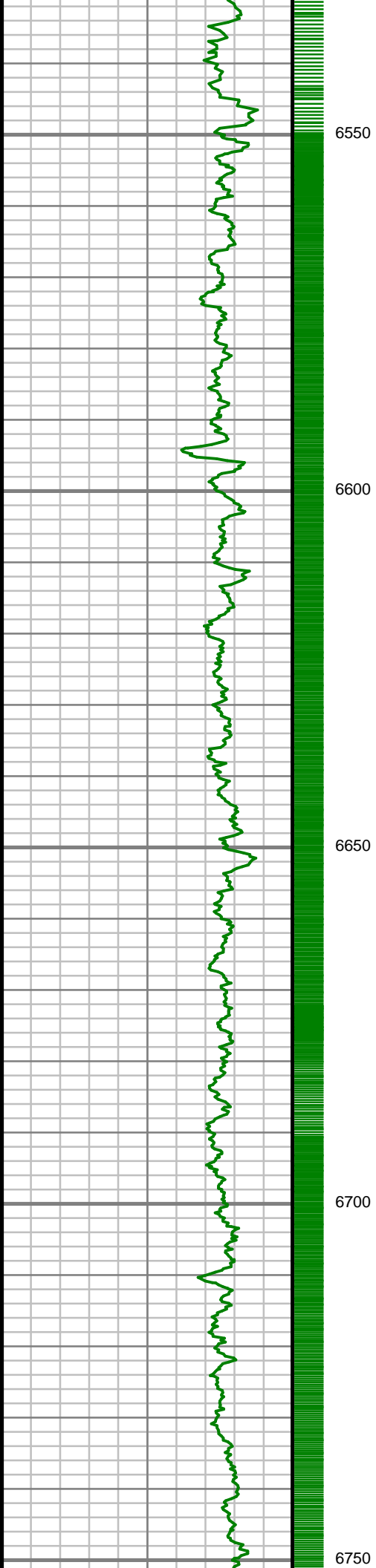
S: 66 MD: 6194.00 ft  
Inc: 0.46 deg Az:  
104.41 deg TVD:  
6166.37 ft

S: 67 MD: 6288.00 ft  
Inc: 0.57 deg Az:  
101.87 deg TVD:  
6260.37 ft



S: 68 MD: 6382.00 ft  
Inc: 0.59 deg Az: 84.17  
deg TVD: 6354.36 ft

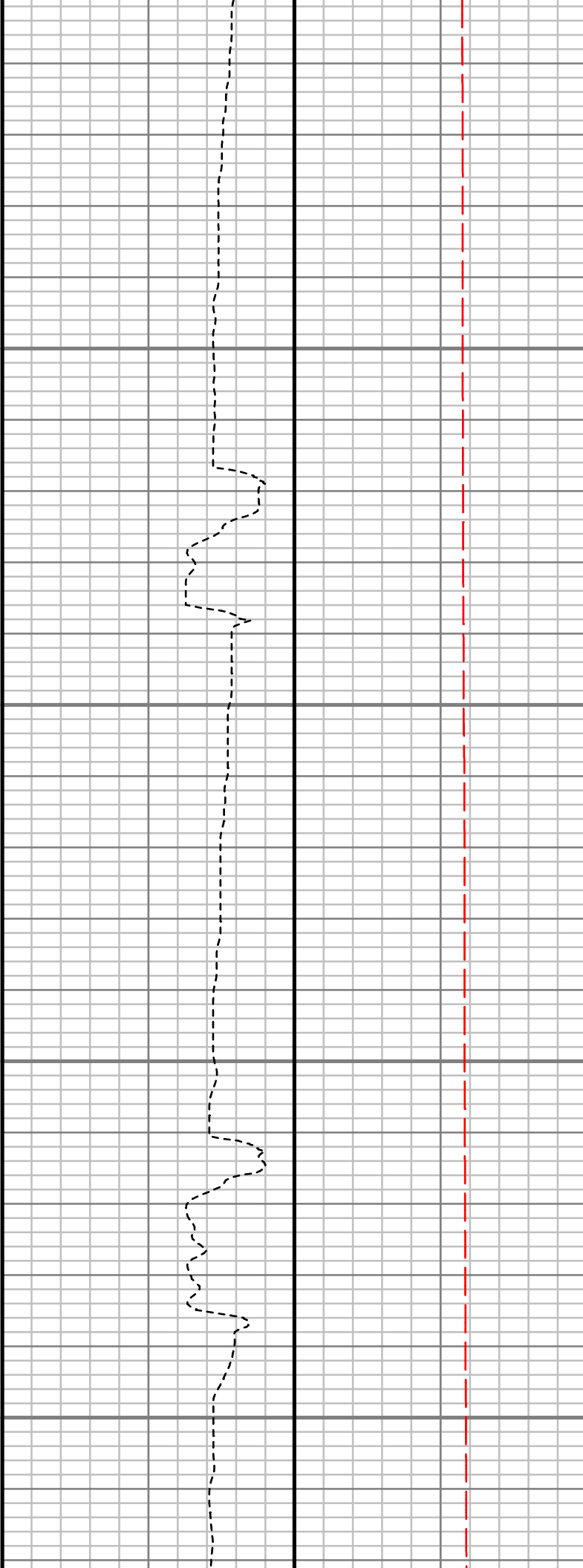
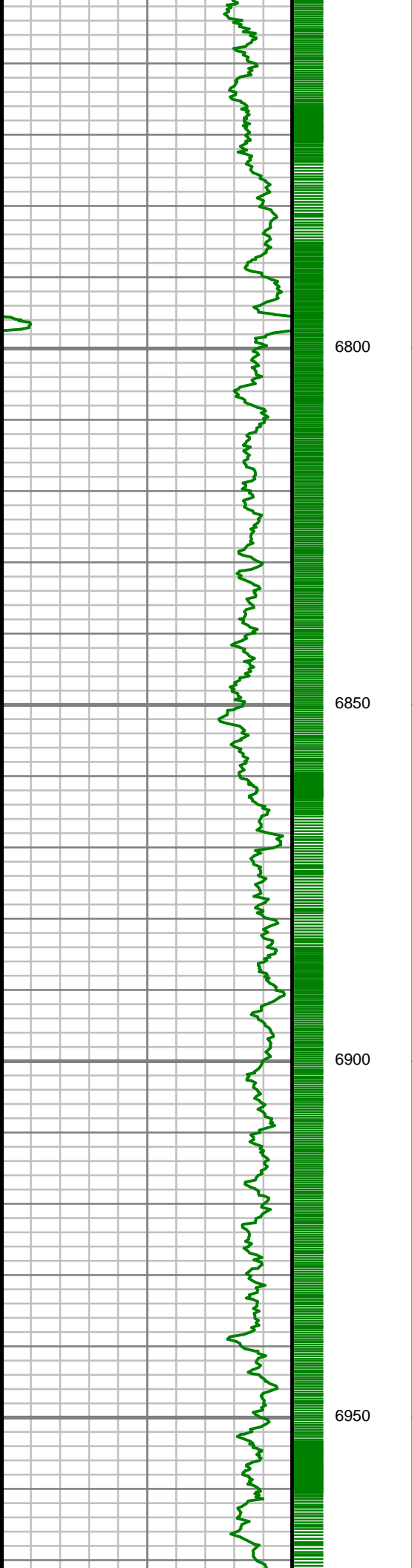
S: 69 MD: 6476.00 ft  
Inc: 0.62 deg Az: 81.58  
deg TVD: 6448.36 ft



S: 70 MD: 6570.00 ft  
Inc: 0.71 deg Az: 76.05  
deg TVD: 6542.35 ft

S: 71 MD: 6664.00 ft  
Inc: 9.49 deg Az:  
355.49 deg TVD:  
6635.91 ft

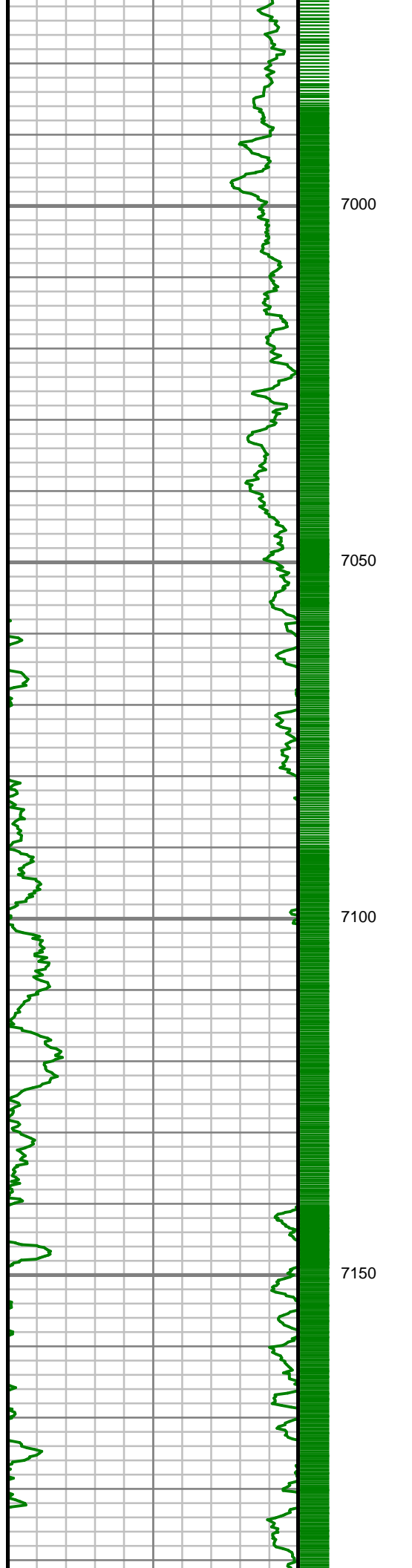




S: 72 MD: 6757.00 ft  
Inc: 18.93 deg Az:  
359.32 deg TVD:  
6725.96 ft

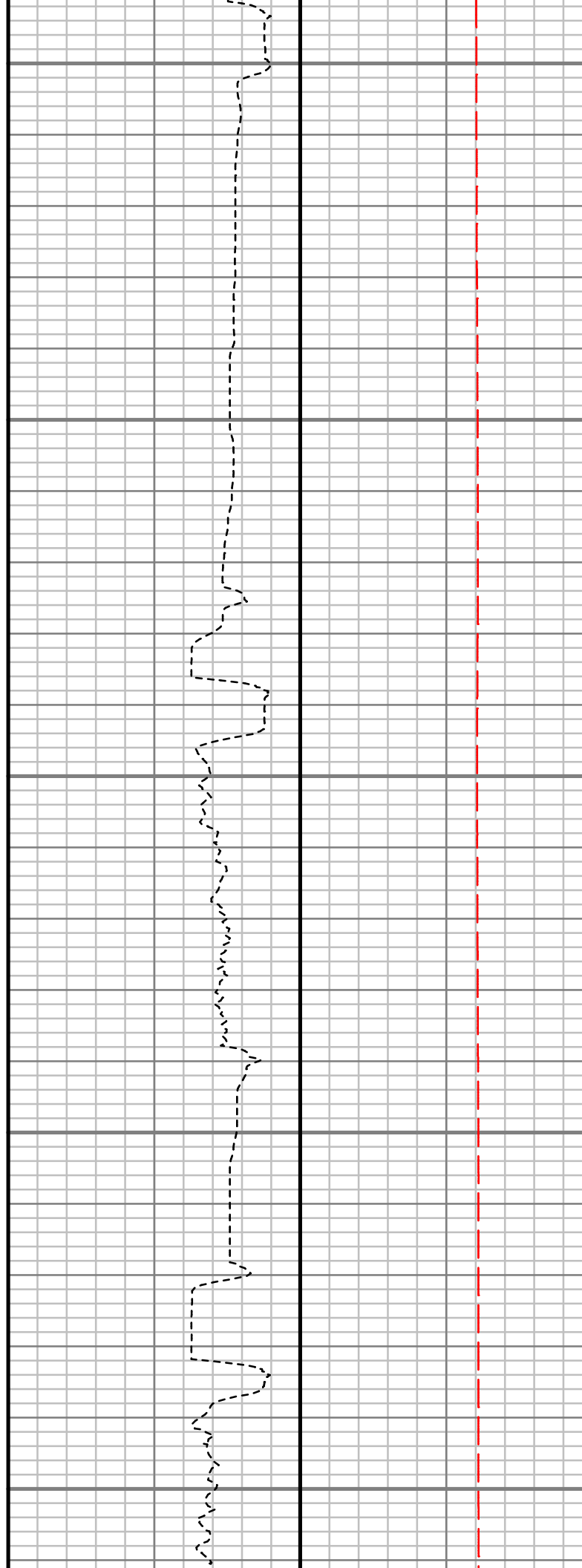
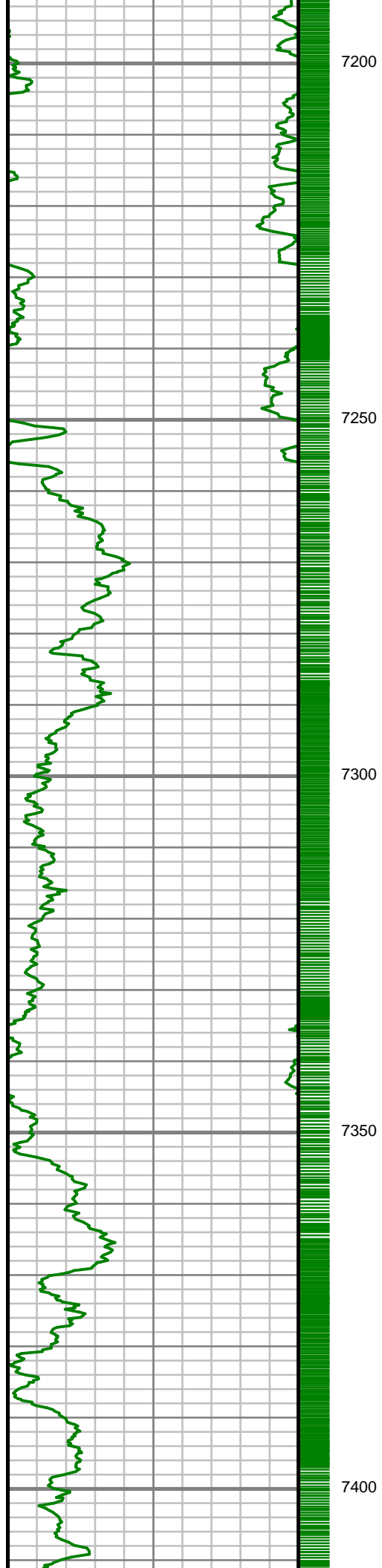
S: 73 MD: 6851.00 ft  
Inc: 27.46 deg Az:  
359.75 deg TVD:  
6812.29 ft

S: 74 MD: 6946.00 ft  
Inc: 35.01 deg Az:  
356.68 deg TVD:  
6893.46 ft



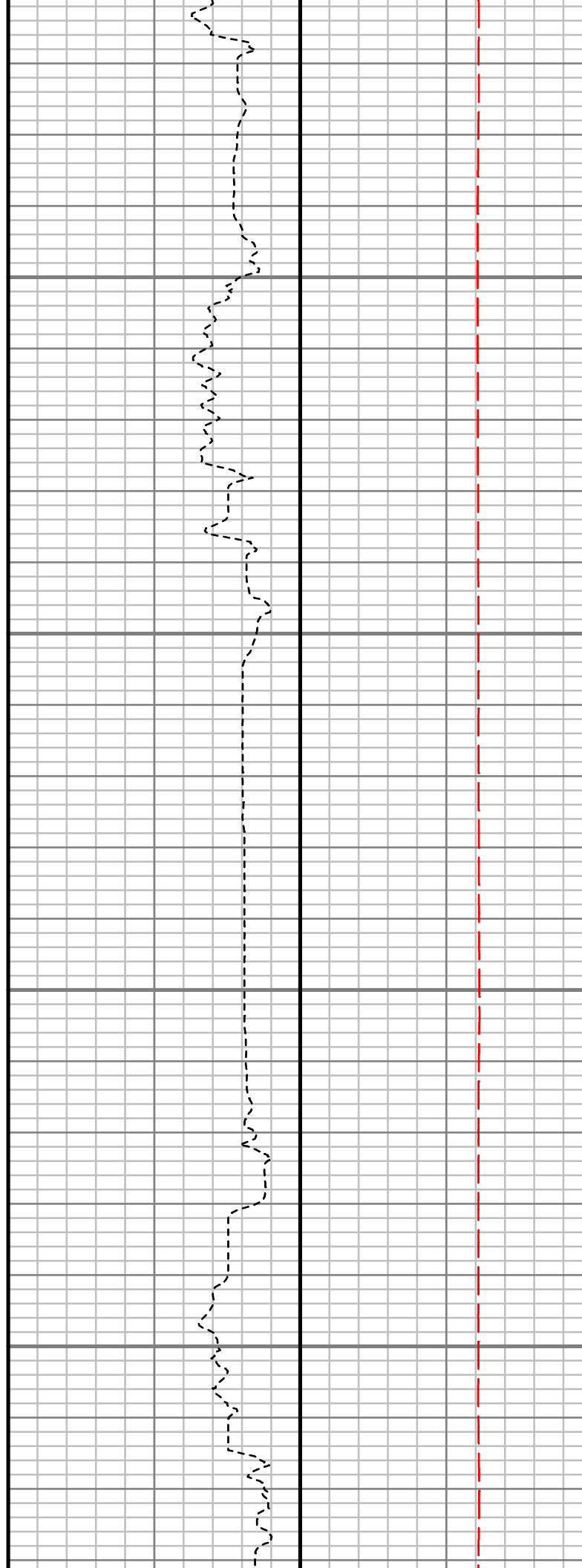
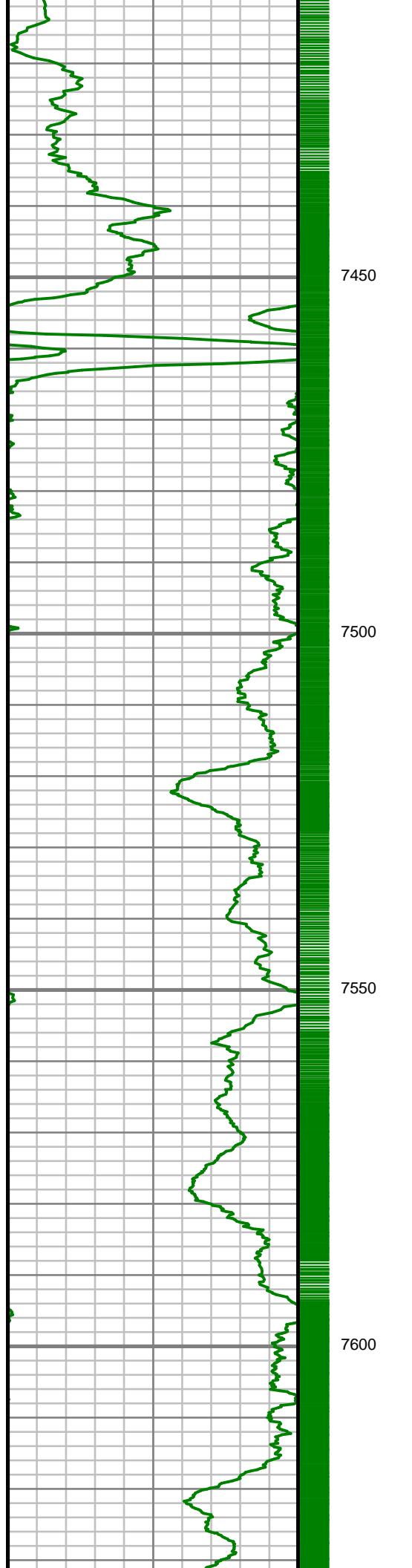
S: 75 MD: 7039.00 ft  
Inc: 41.81 deg Az:  
355.51 deg TVD:  
6966.29 ft

S: 76 MD: 7133.00 ft  
Inc: 47.40 deg Az: 1.44  
deg TVD: 7033.22 ft



S: 77 MD: 7227.00 ft  
Inc: 56.51 deg Az: 0.97  
deg TVD: 7091.09 ft

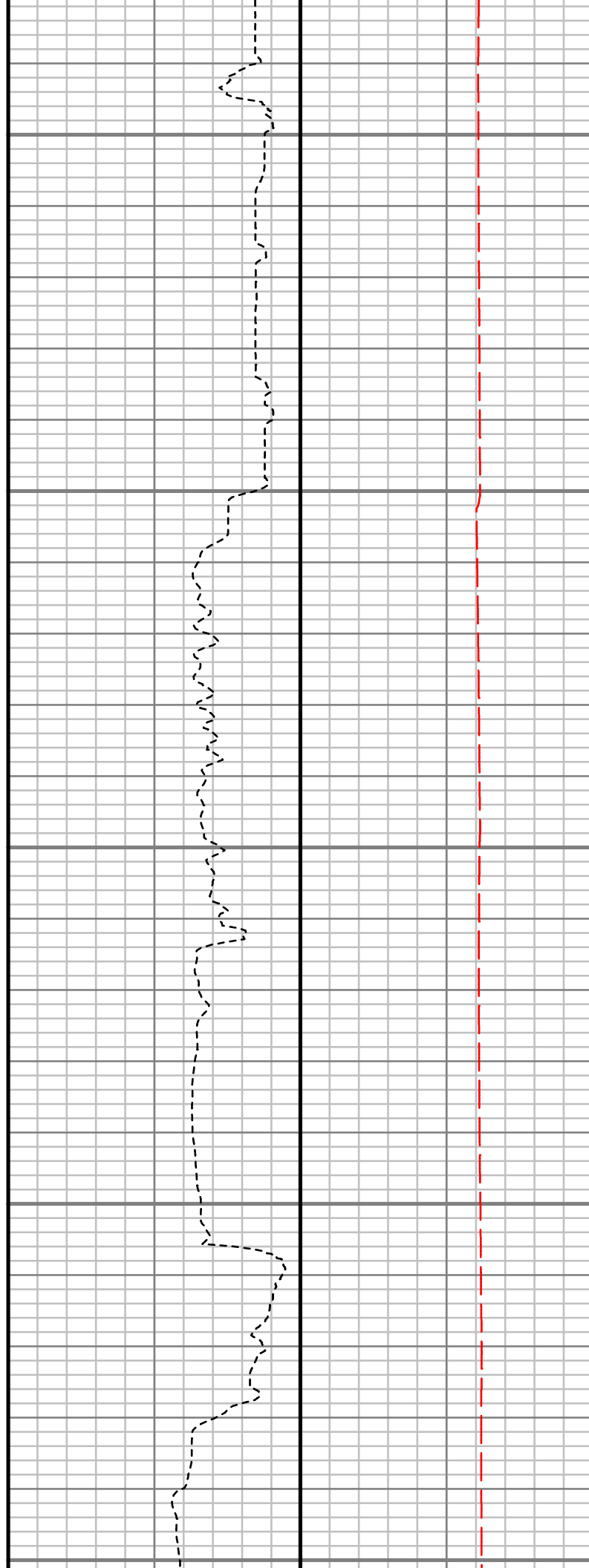
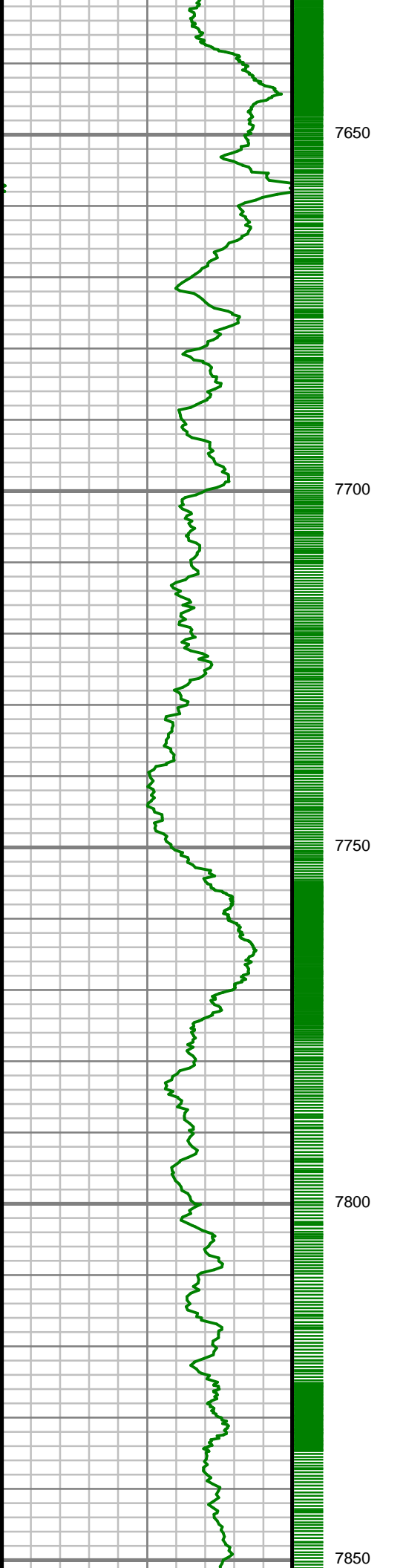
S: 78 MD: 7323.00 ft  
Inc: 62.03 deg Az: 1.90  
deg TVD: 7140.12 ft



S: 79 MD: 7417.00 ft  
Inc: 66.69 deg Az: 2.99  
deg TVD: 7180.78 ft

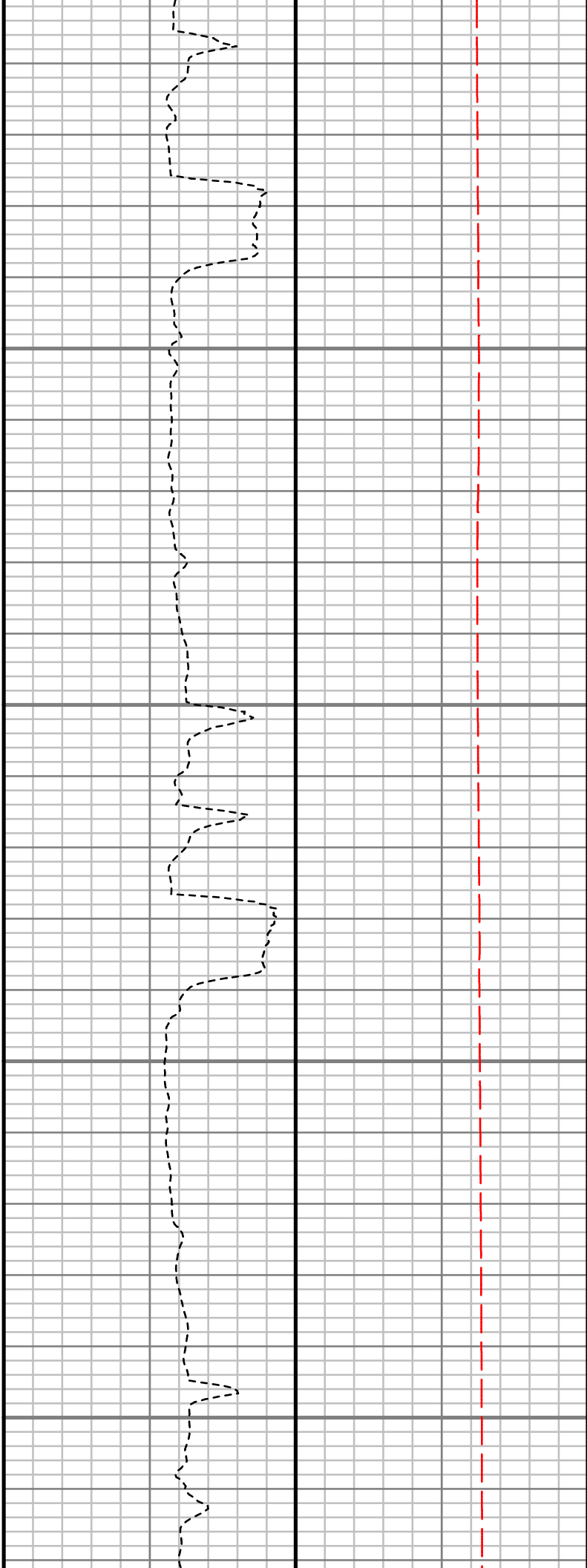
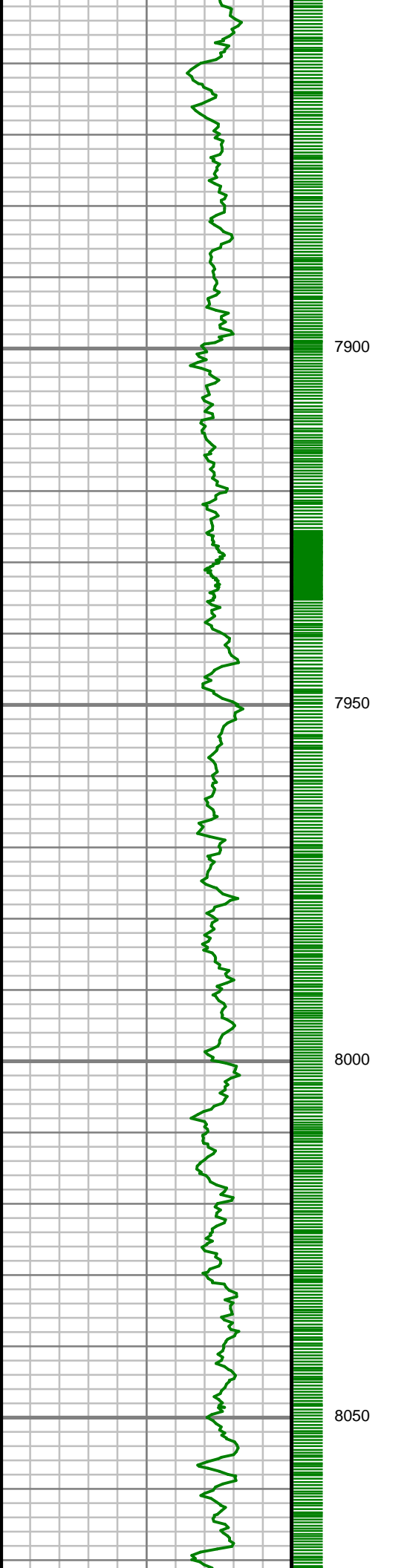
S: 80 MD: 7512.00 ft  
Inc: 72.31 deg Az: 0.43  
deg TVD: 7214.04 ft

S: 81 MD: 7605.00 ft  
Inc: 80.68 deg Az: 0.35  
deg TVD: 7235.73 ft



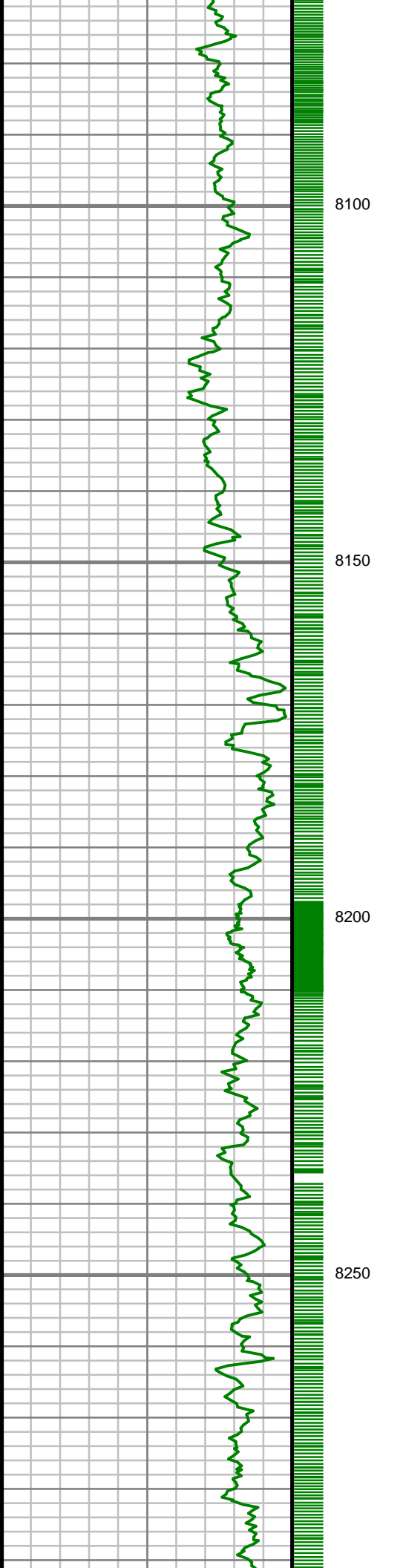
S: 82 MD: 7700.00 ft  
Inc: 86.77 deg Az:  
358.87 deg TVD:  
7246.10 ft

S: 83 MD: 7795.00 ft  
Inc: 86.74 deg Az:  
359.16 deg TVD:  
7251.48 ft



S: 84 MD: 7889.00 ft  
Inc: 90.54 deg Az:  
359.98 deg TVD:  
7253.71 ft

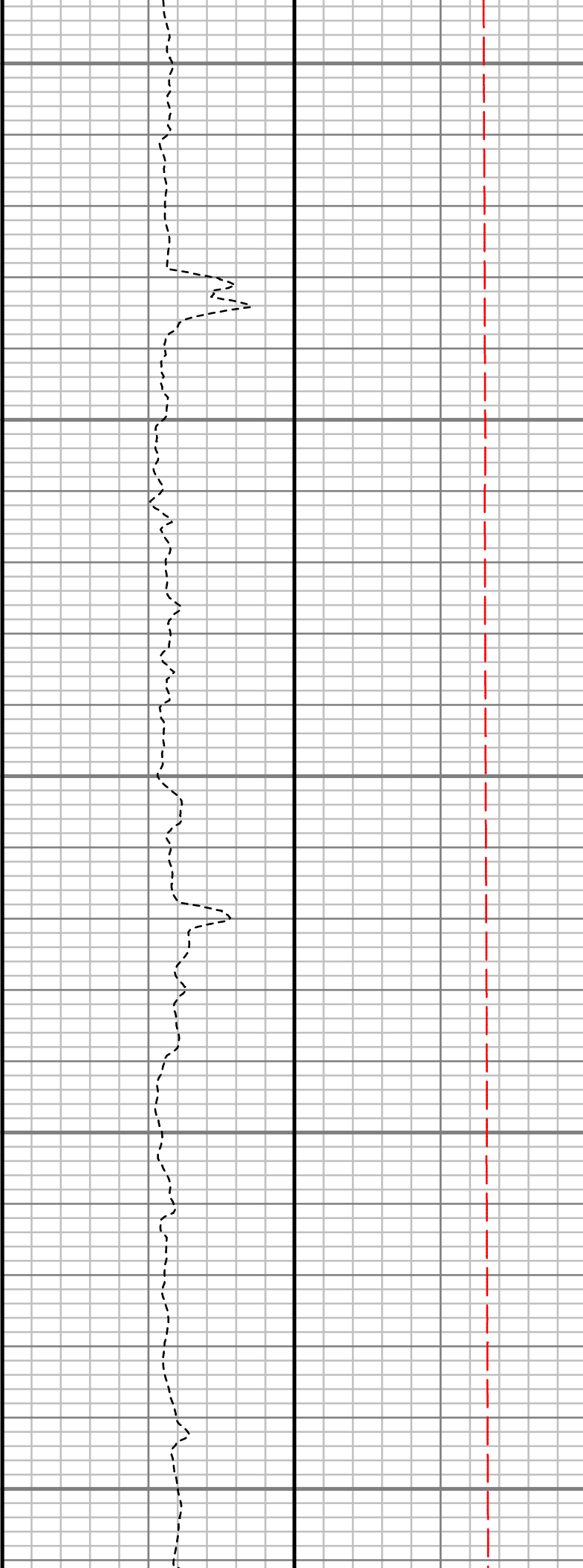
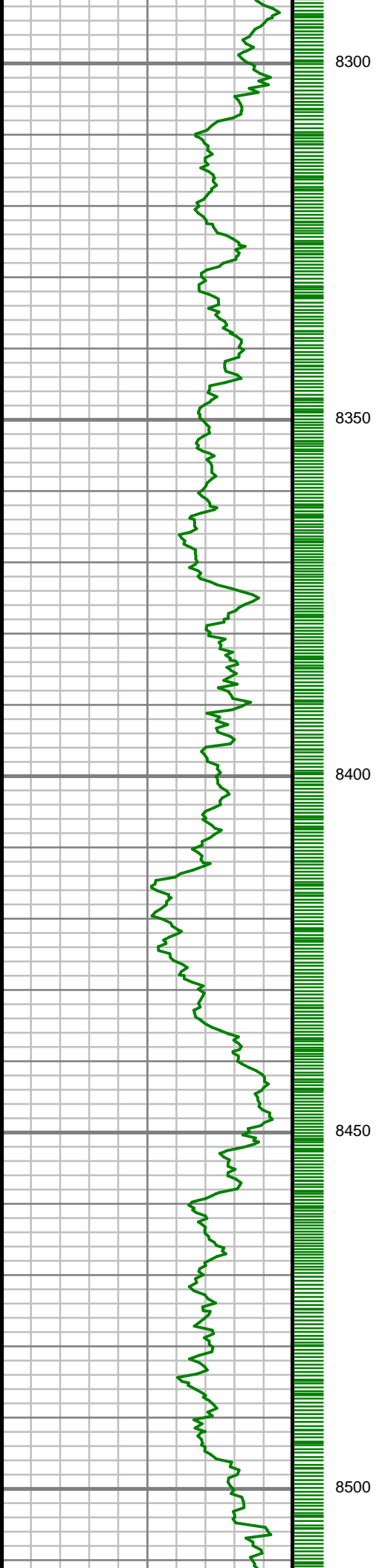
S: 85 MD: 7983.00 ft  
Inc: 89.73 deg Az: 0.60  
deg TVD: 7253.49 ft



S: 86 MD: 8077.00 ft  
Inc: 89.06 deg Az: 0.51  
deg TVD: 7254.48 ft

S: 87 MD: 8172.00 ft  
Inc: 88.52 deg Az: 0.71  
deg TVD: 7256.49 ft

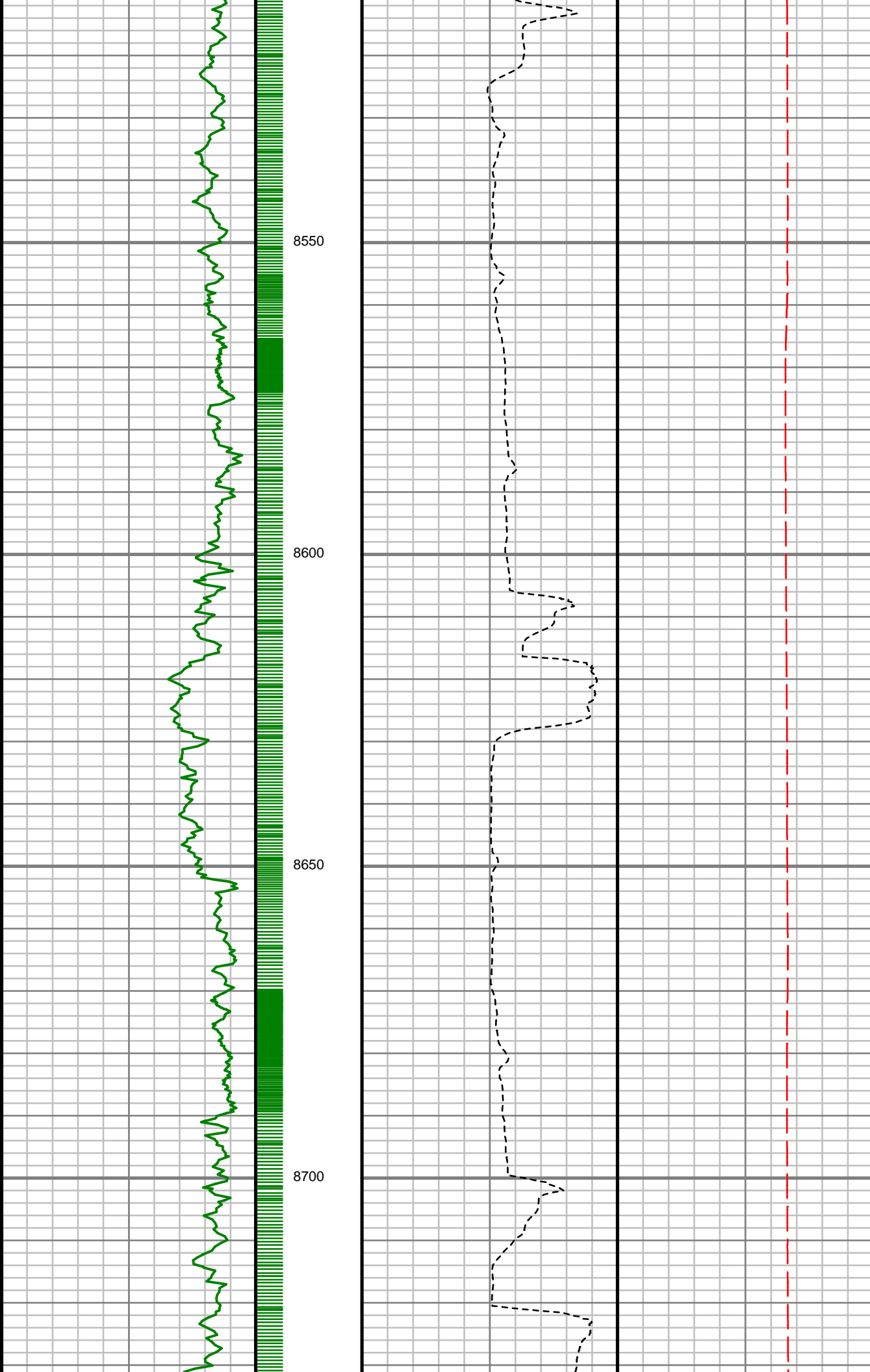
S: 88 MD: 8265.00 ft  
Inc: 89.90 deg Az: 0.74  
deg TVD: 7257.77 ft



S: 89 MD: 8359.00 ft  
Inc: 90.30 deg Az: 0.81  
deg TVD: 7257.61 ft

S: 90 MD: 8452.00 ft  
Inc: 90.74 deg Az: 0.69  
deg TVD: 7256.76 ft





8550

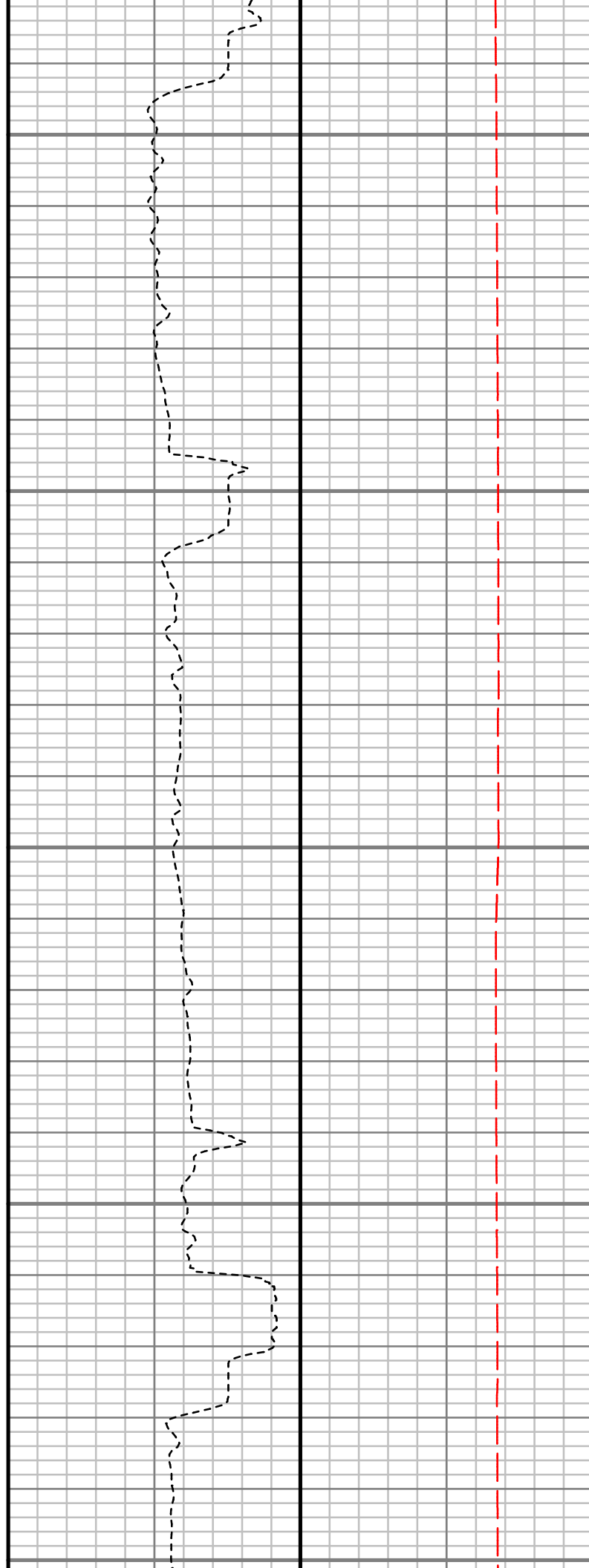
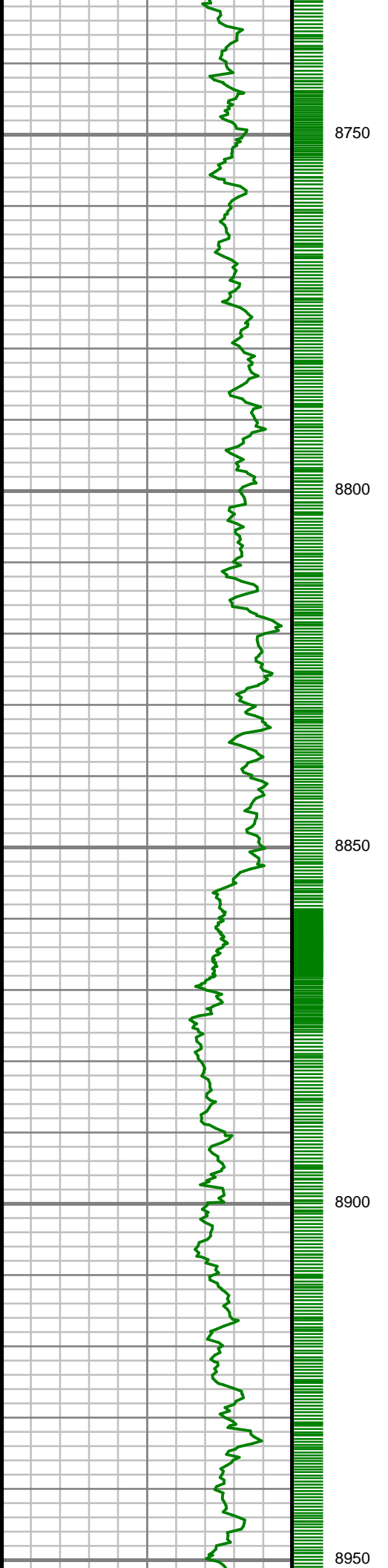
8600

8650

8700

S: 91 MD: 8548.00 ft  
Inc: 91.04 deg Az: 0.52  
deg TVD: 7255.27 ft

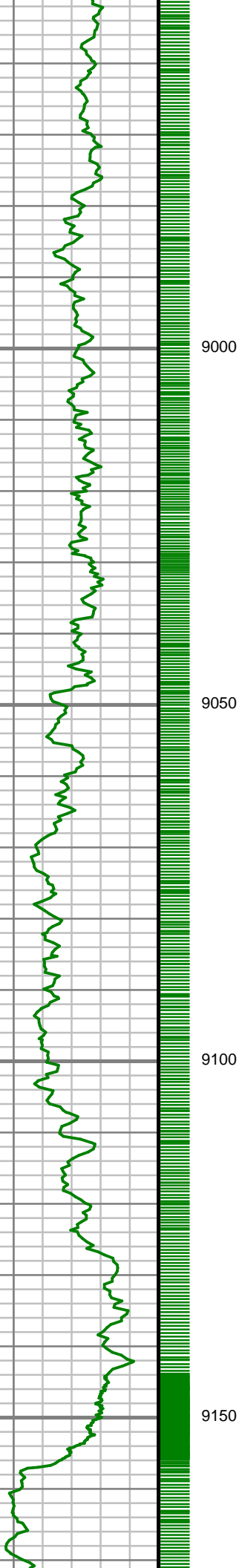
S: 92 MD: 8641.00 ft  
Inc: 89.63 deg Az: 0.91  
deg TVD: 7254.72 ft



S: 93 MD: 8736.00 ft  
Inc: 90.30 deg Az:  
359.71 deg TVD:  
7254.78 ft

S: 94 MD: 8830.00 ft  
Inc: 91.17 deg Az:  
359.16 deg TVD:  
7253.57 ft

S: 95 MD: 8925.00 ft  
Inc: 90.40 deg Az:  
359.45 deg TVD:  
7252.26 ft



9000

9050

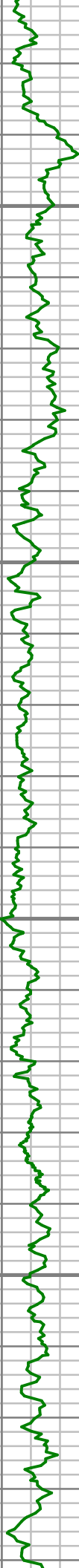
9100

9150



S: 96 MD: 9020.00 ft  
Inc: 90.91 deg Az:  
359.70 deg TVD:  
7251.17 ft

S: 97 MD: 9114.00 ft  
Inc: 91.21 deg Az: 0.82  
deg TVD: 7249.44 ft

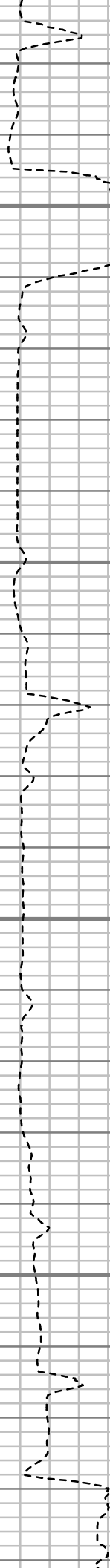


9200

9250

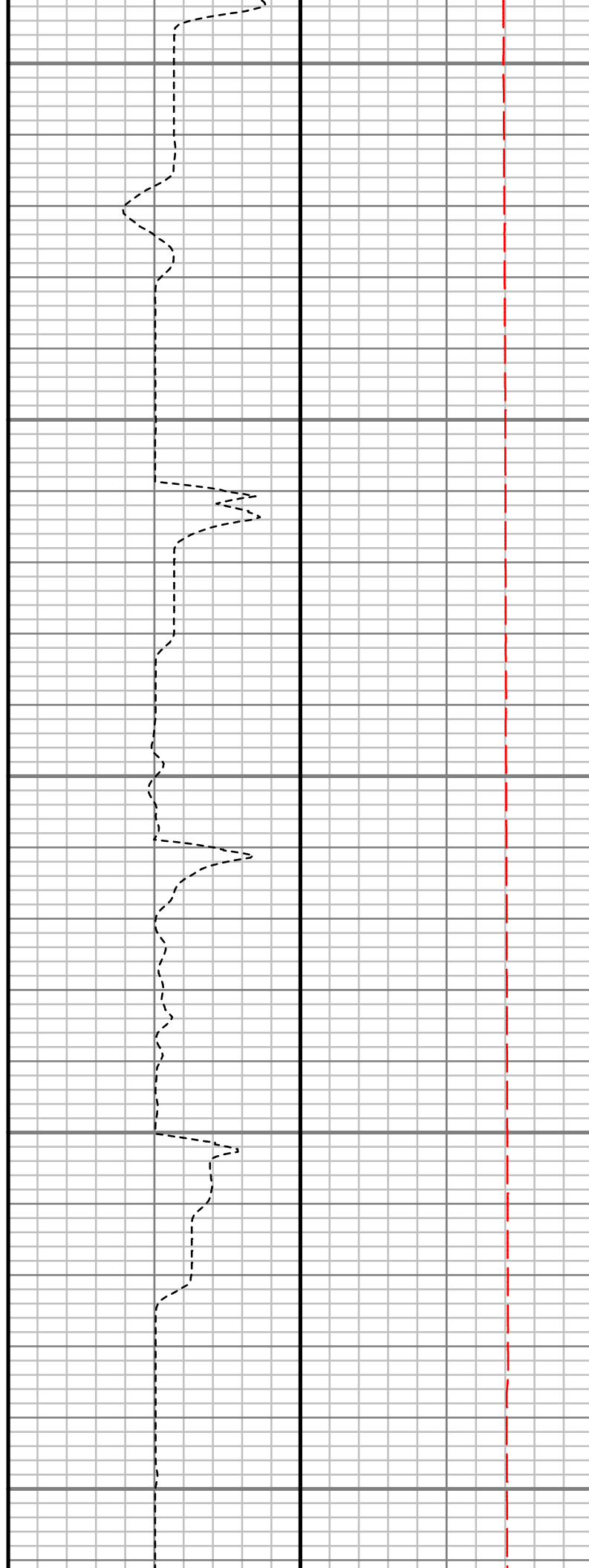
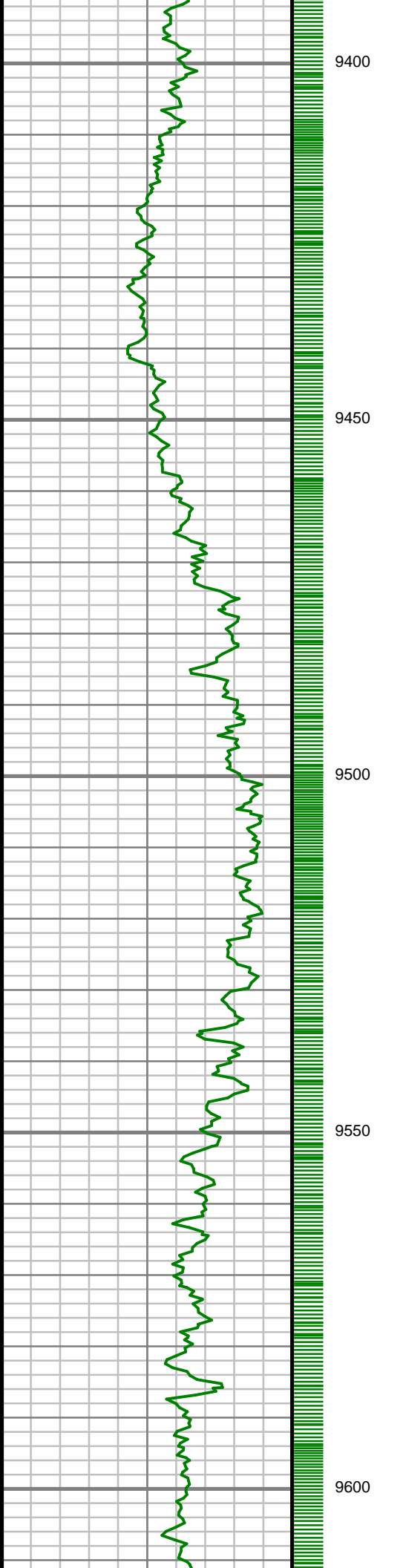
9300

9350



S: 98 MD: 9208.00 ft  
Inc: 89.87 deg Az: 0.04  
deg TVD: 7248.56 ft

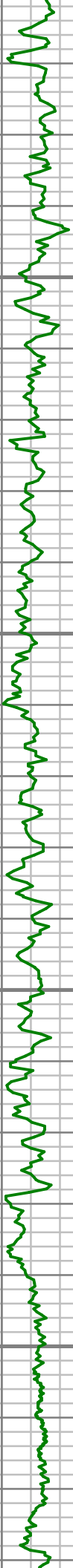
S: 99 MD: 9302.00 ft  
Inc: 90.91 deg Az: 0.64  
deg TVD: 7247.93 ft



S: 100 MD: 9397.00 ft  
Inc: 89.16 deg Az:  
359.53 deg TVD:  
7247.87 ft

S: 101 MD: 9492.00 ft  
Inc: 89.29 deg Az:  
359.81 deg TVD:  
7249.16 ft

S: 102 MD: 9586.00 ft  
Inc: 89.63 deg Az:  
359.45 deg TVD:  
7250.04 ft

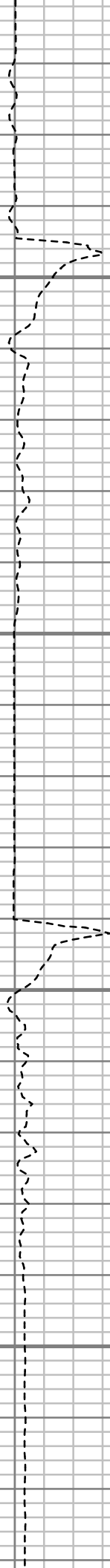


9650

9700

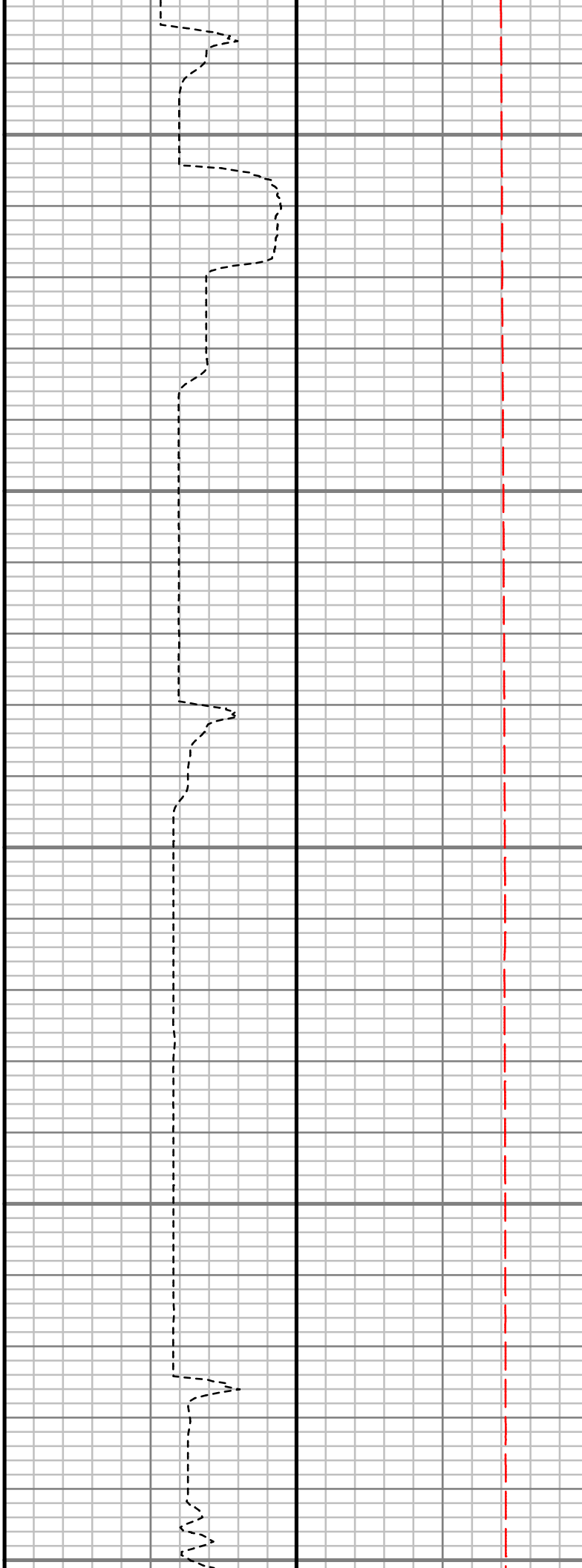
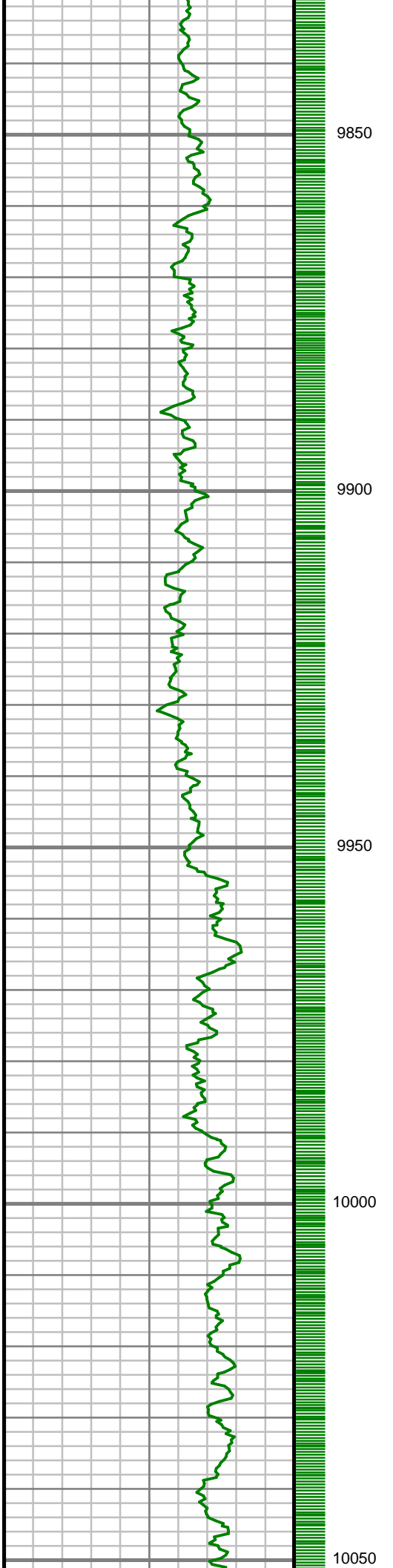
9750

9800



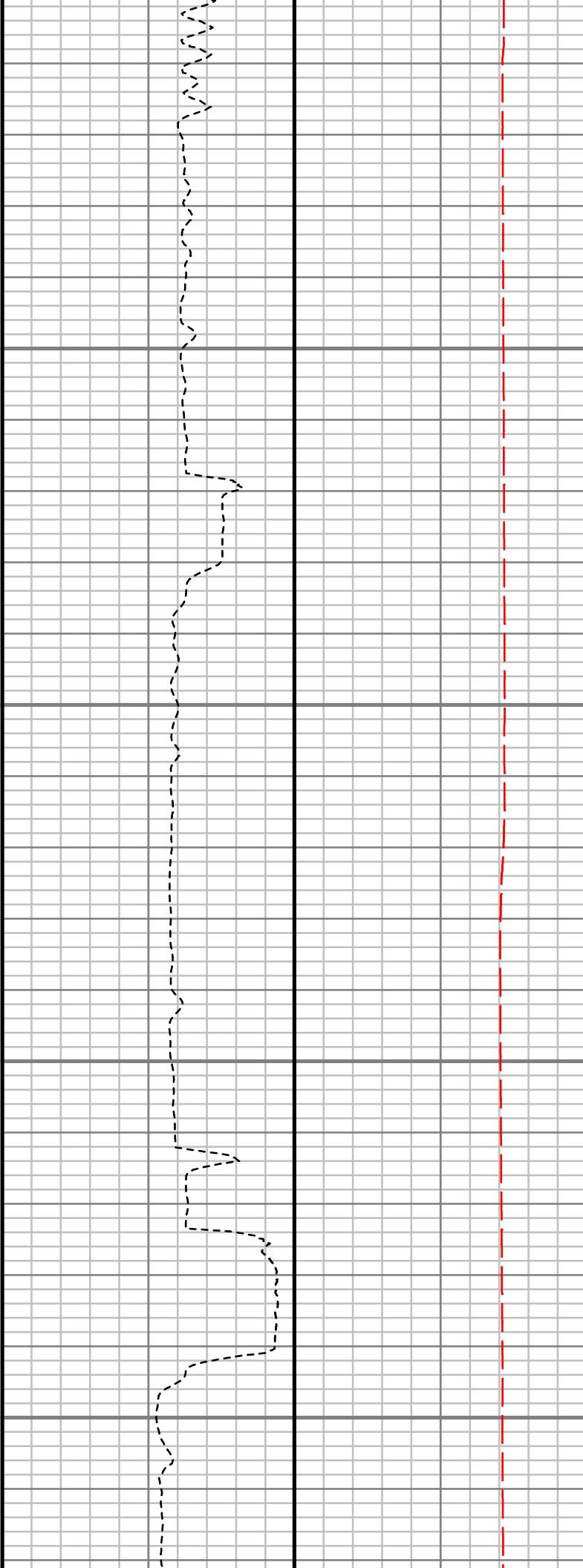
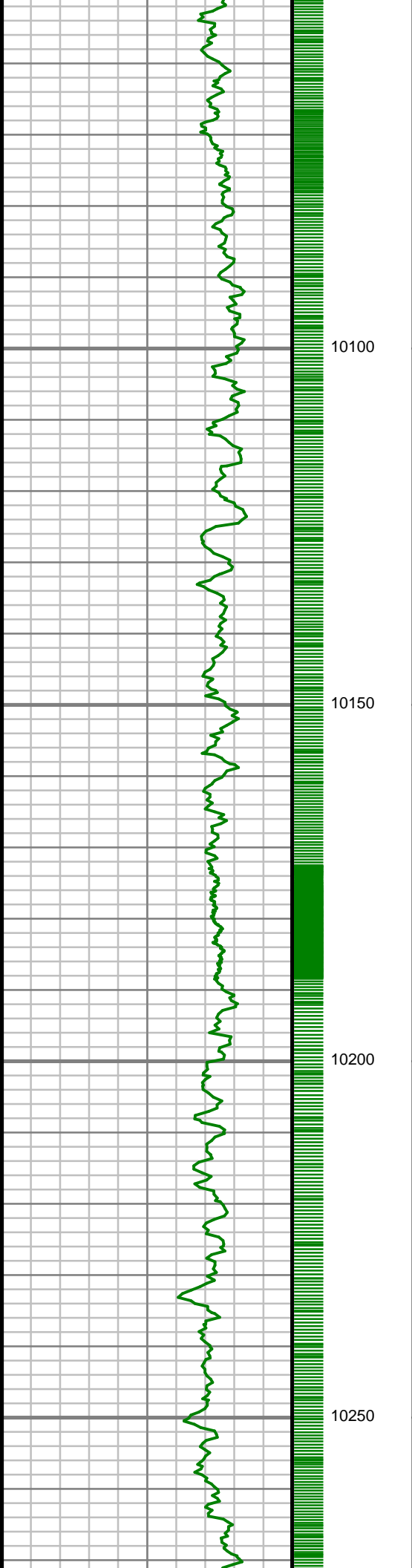
S: 103 MD: 9681.00 ft  
Inc: 89.80 deg Az:  
359.72 deg TVD:  
7250.51 ft

S: 104 MD: 9775.00 ft  
Inc: 90.91 deg Az:  
359.38 deg TVD:  
7249.93 ft



S: 105 MD: 9869.00 ft  
Inc: 89.36 deg Az: 0.37  
deg TVD: 7249.71 ft

S: 106 MD: 9963.00 ft  
Inc: 89.03 deg Az: 0.63  
deg TVD: 7251.03 ft

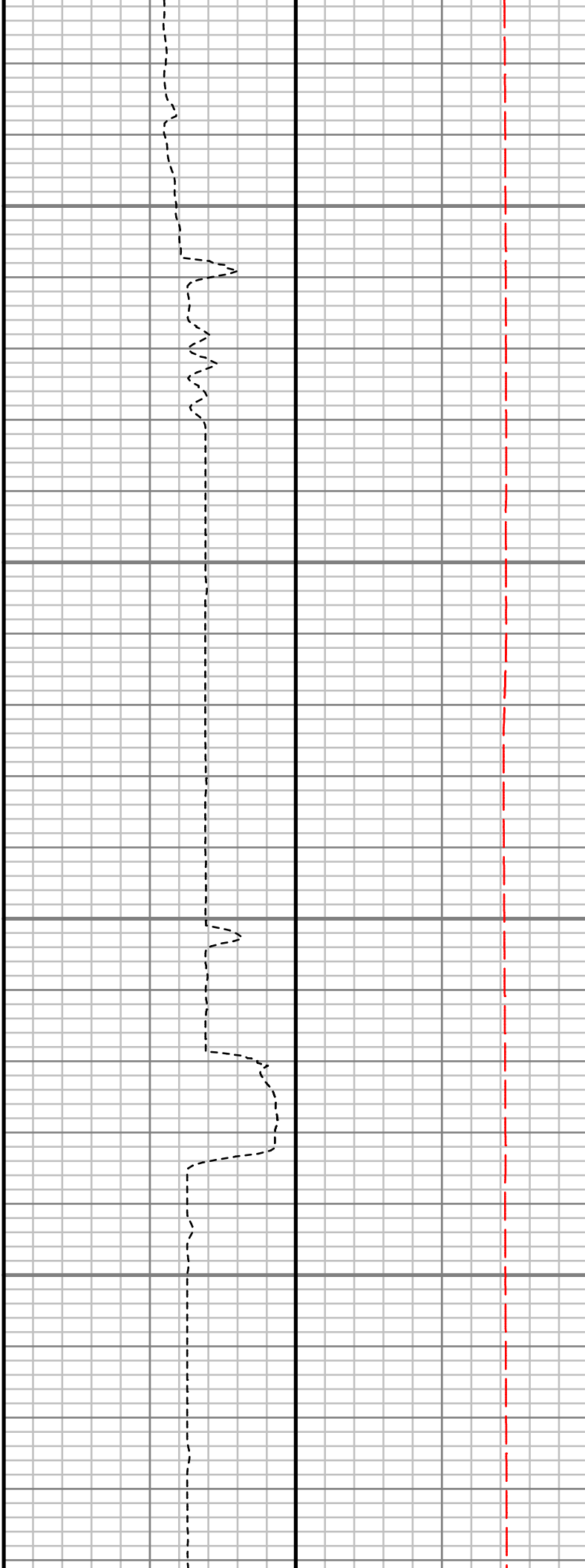
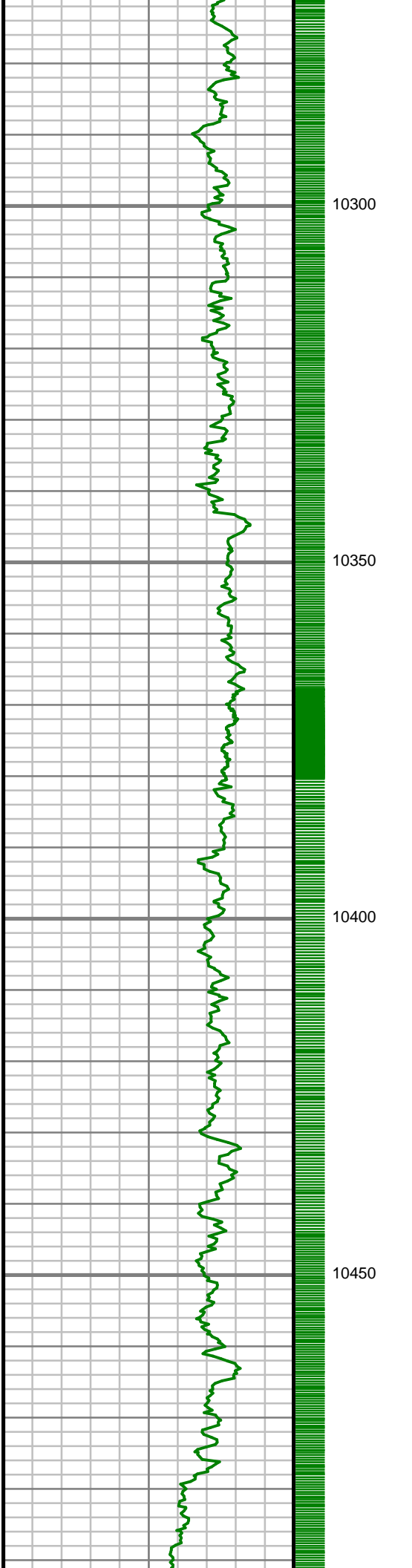


S: 107 MD: 10057.00 ft  
Inc: 89.09 deg Az: 0.53  
deg TVD: 7252.57 ft

S: 108 MD: 10150.00 ft  
Inc: 89.06 deg Az: 1.19  
deg TVD: 7254.07 ft

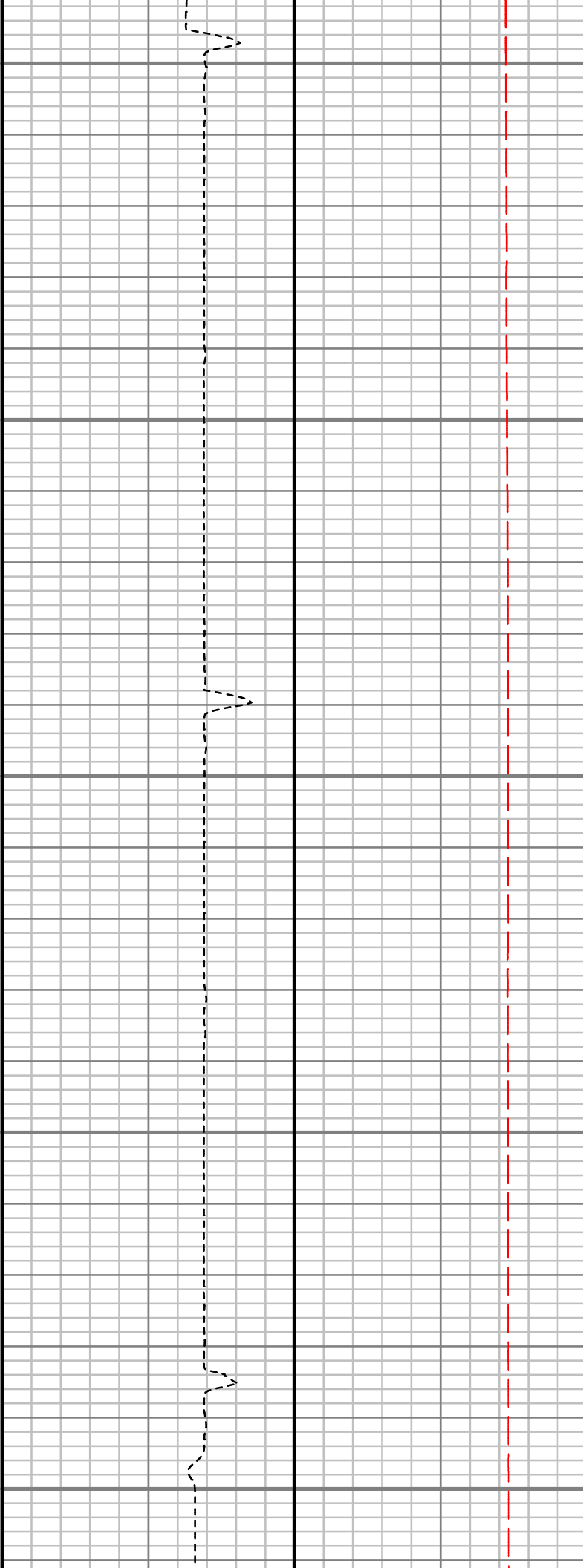
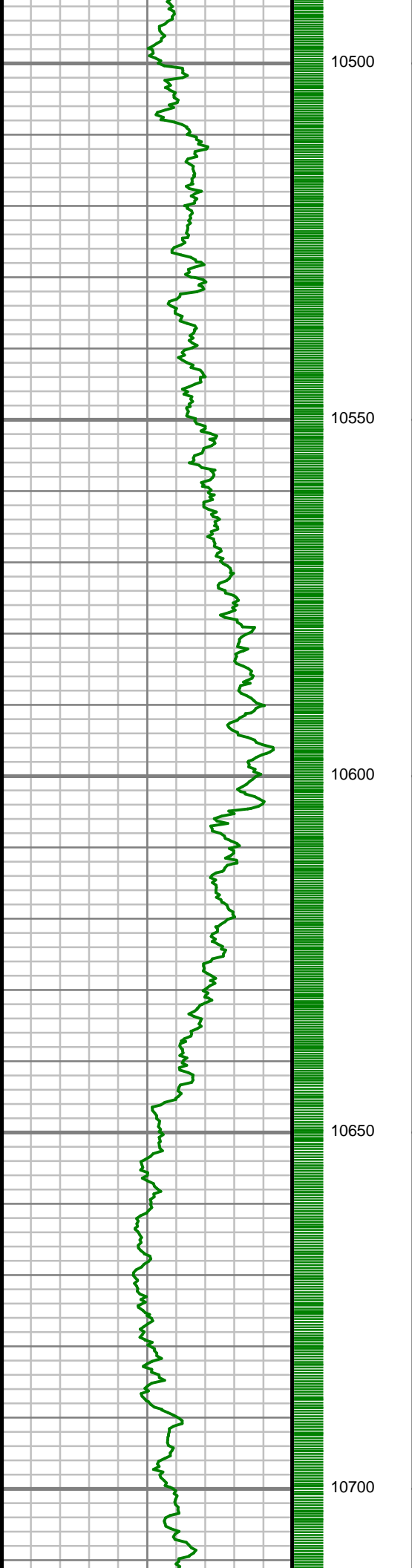
S: 109 MD: 10245.00 ft  
Inc: 90.98 deg Az:  
359.93 deg TVD:  
7254.04 ft





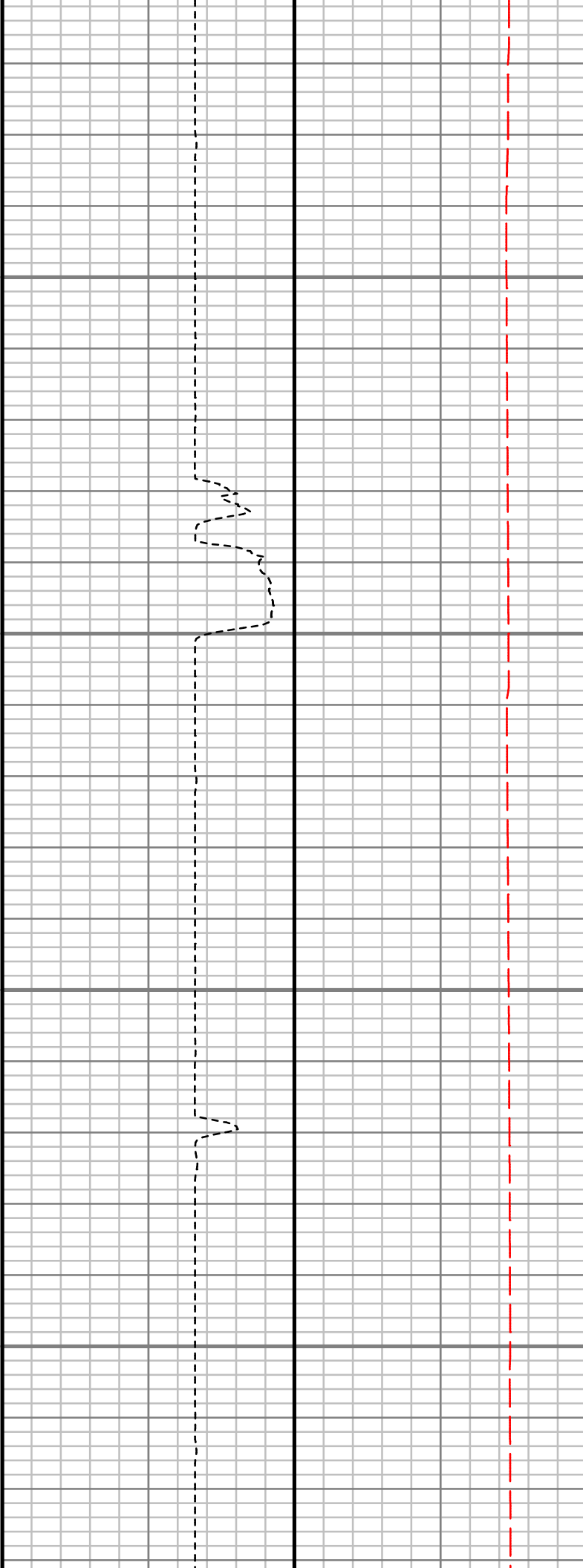
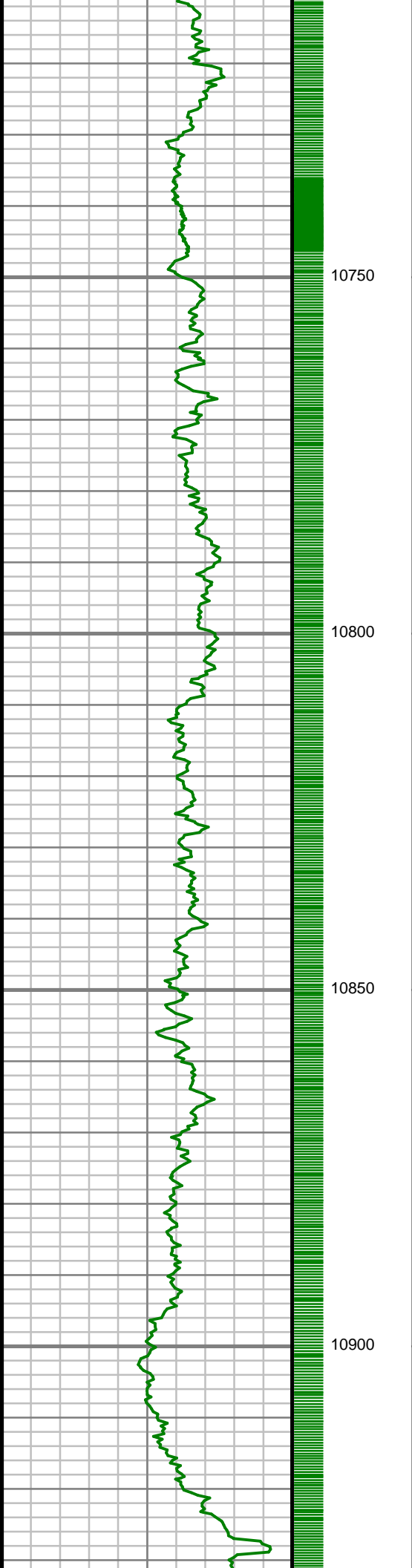
S: 110 MD: 10338.00 ft  
Inc: 90.94 deg Az: 0.47  
deg TVD: 7252.49 ft

S: 111 MD: 10433.00 ft  
Inc: 91.04 deg Az:  
358.82 deg TVD:  
7250.84 ft



S: 112 MD: 10525.00 ft  
Inc: 91.24 deg Az:  
358.47 deg TVD:  
7249.01 ft

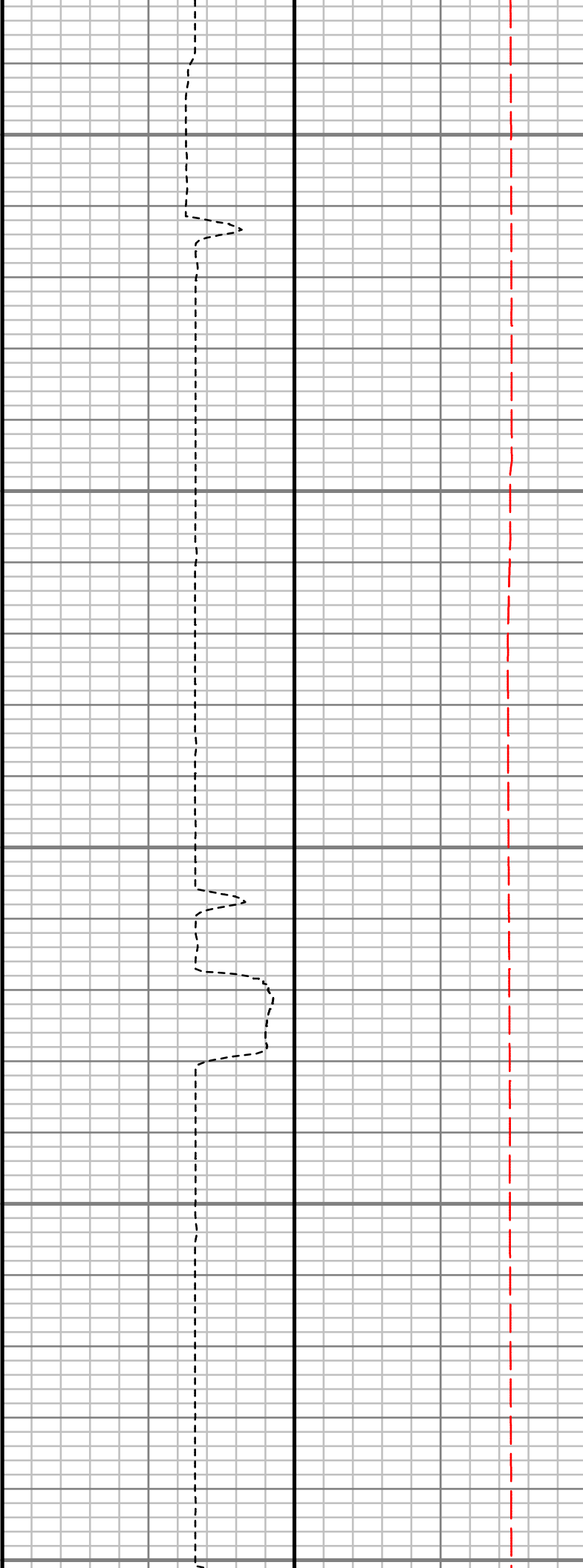
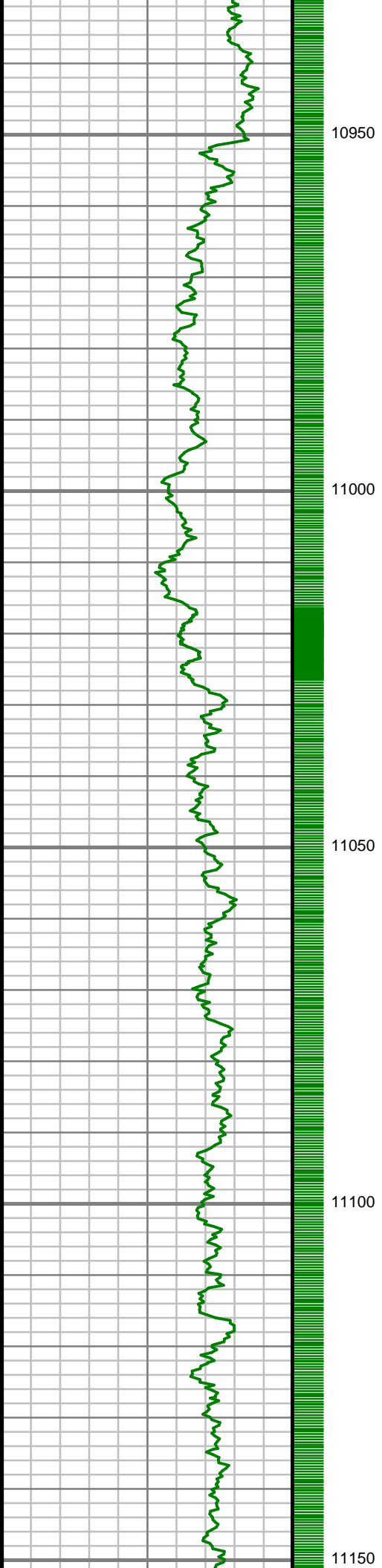
S: 113 MD: 10620.00 ft  
Inc: 91.14 deg Az:  
358.88 deg TVD:  
7247.03 ft



S: 114 MD: 10715.00 ft  
Inc: 91.38 deg Az:  
359.04 deg TVD:  
7244.94 ft

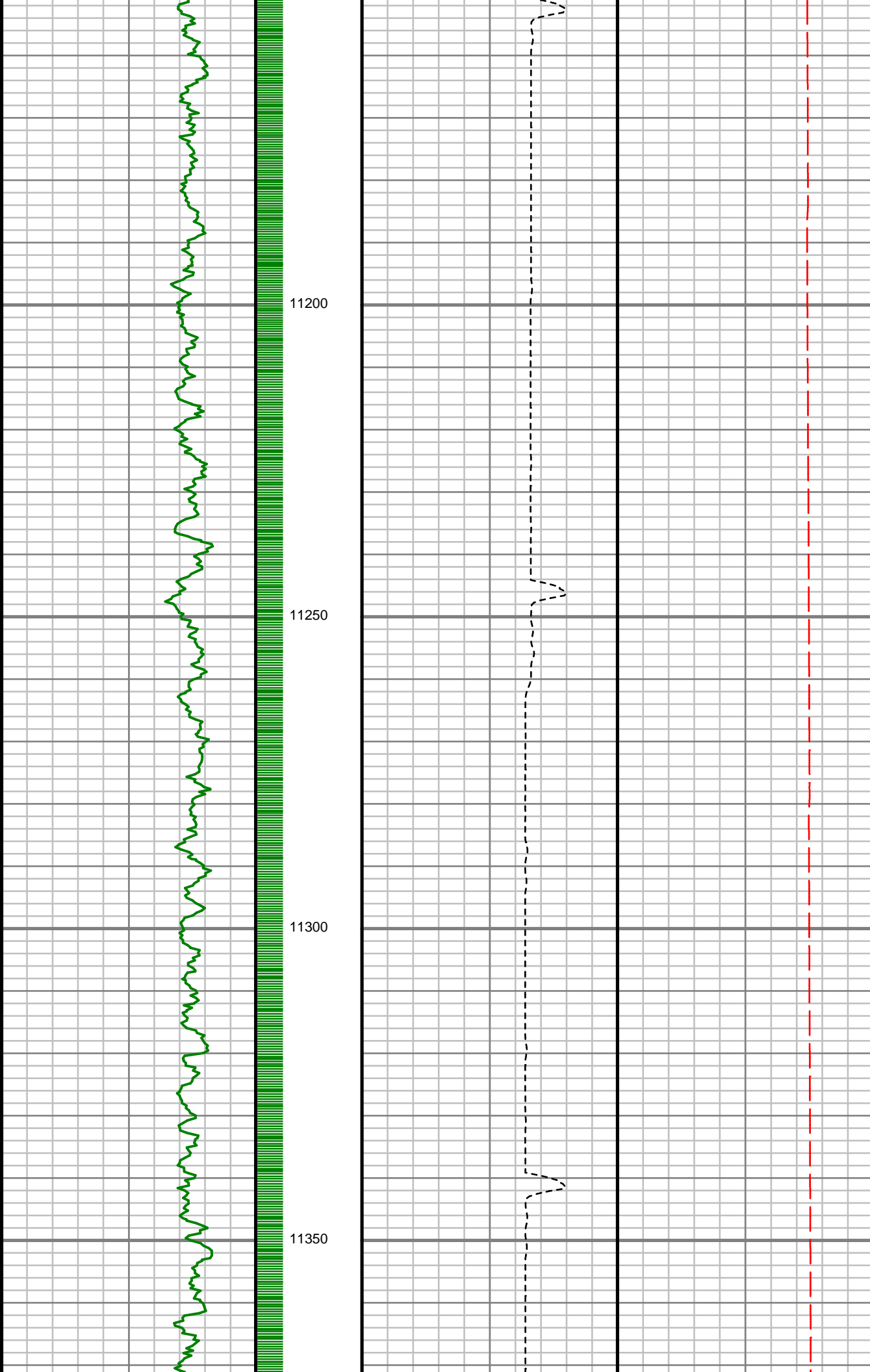
S: 115 MD: 10809.00 ft  
Inc: 89.13 deg Az:  
359.42 deg TVD:  
7244.52 ft

S: 116 MD: 10903.00 ft  
Inc: 88.72 deg Az:  
359.37 deg TVD:  
7246.29 ft



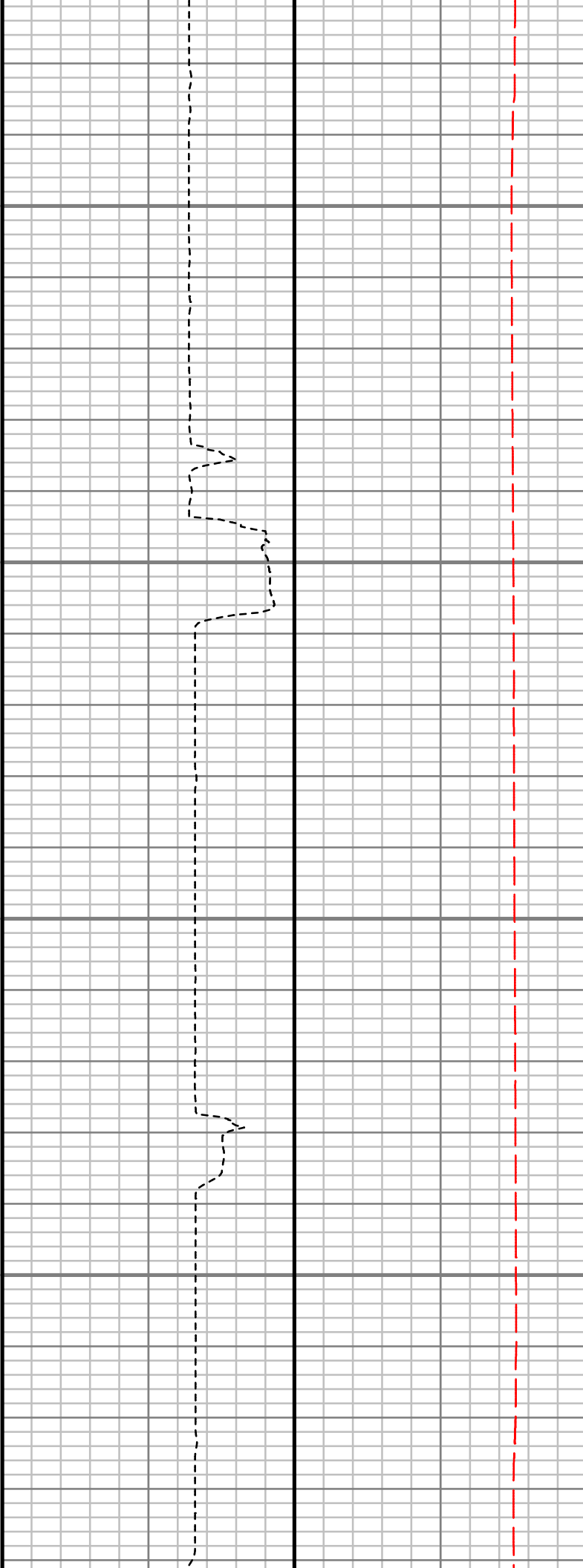
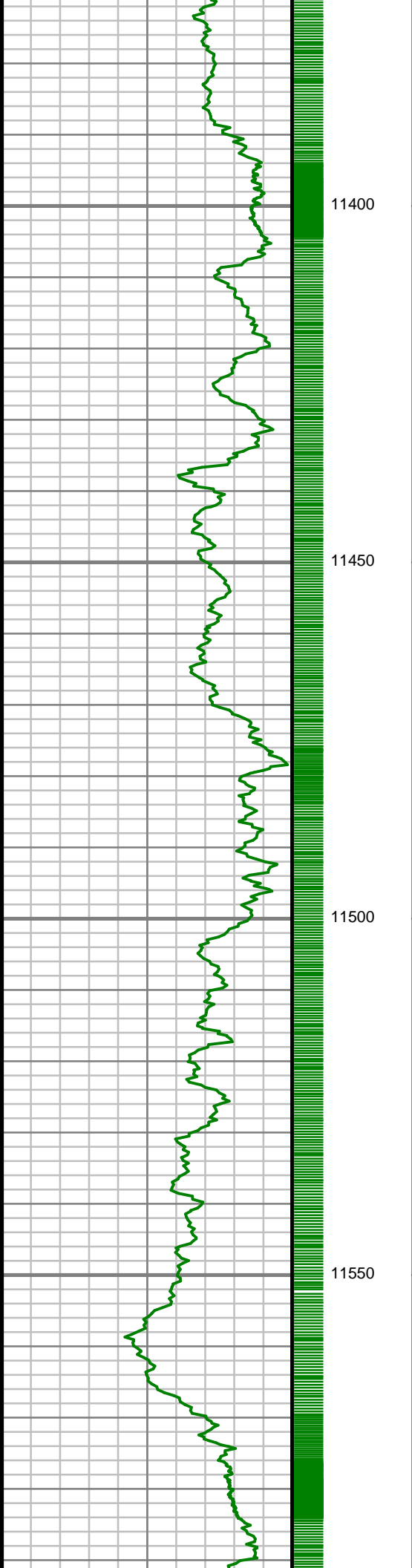
S: 117 MD: 10997.00 ft  
Inc: 88.39 deg Az:  
359.73 deg TVD:  
7248.66 ft

S: 118 MD: 11091.00 ft  
Inc: 89.80 deg Az:  
359.37 deg TVD:  
7250.15 ft

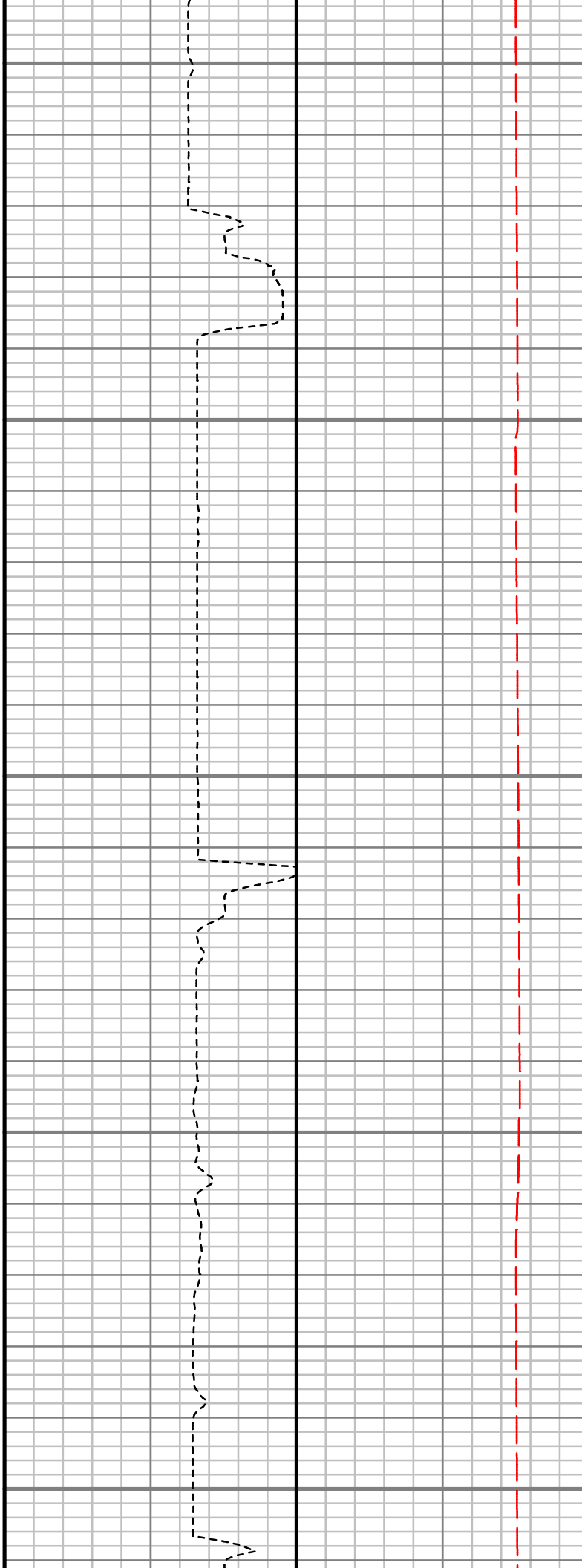
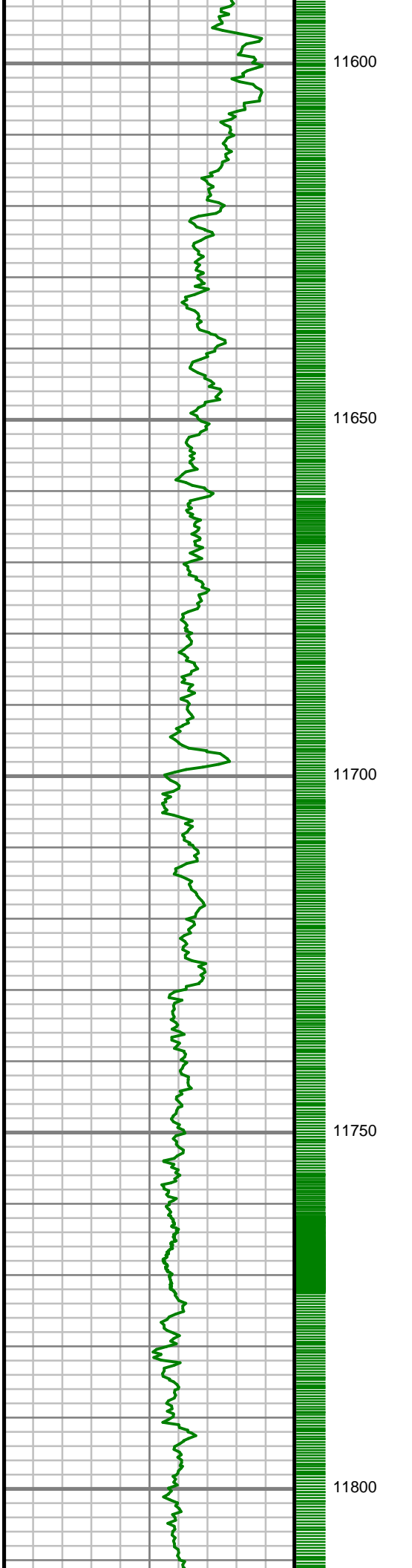


S: 119 MD: 11185.00 ft  
Inc: 90.00 deg Az:  
359.80 deg TVD:  
7250.31 ft

S: 120 MD: 11279.00 ft  
Inc: 89.36 deg Az:  
359.88 deg TVD:  
7250.84 ft

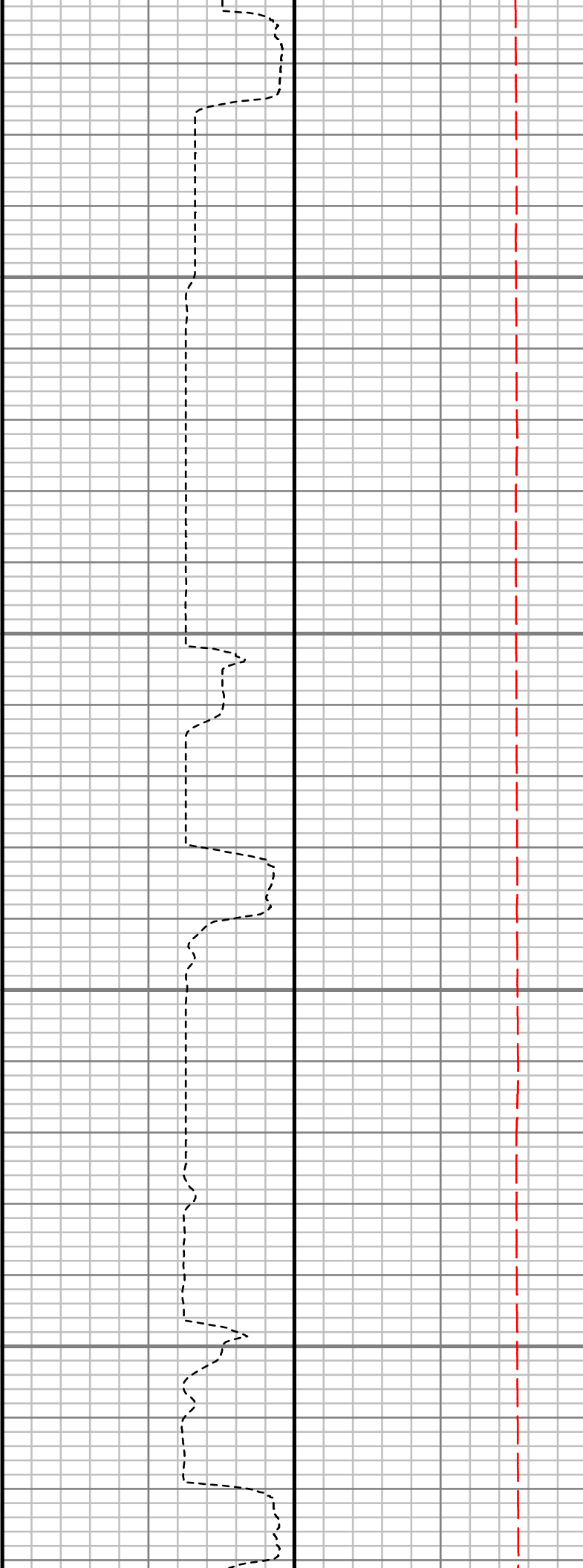
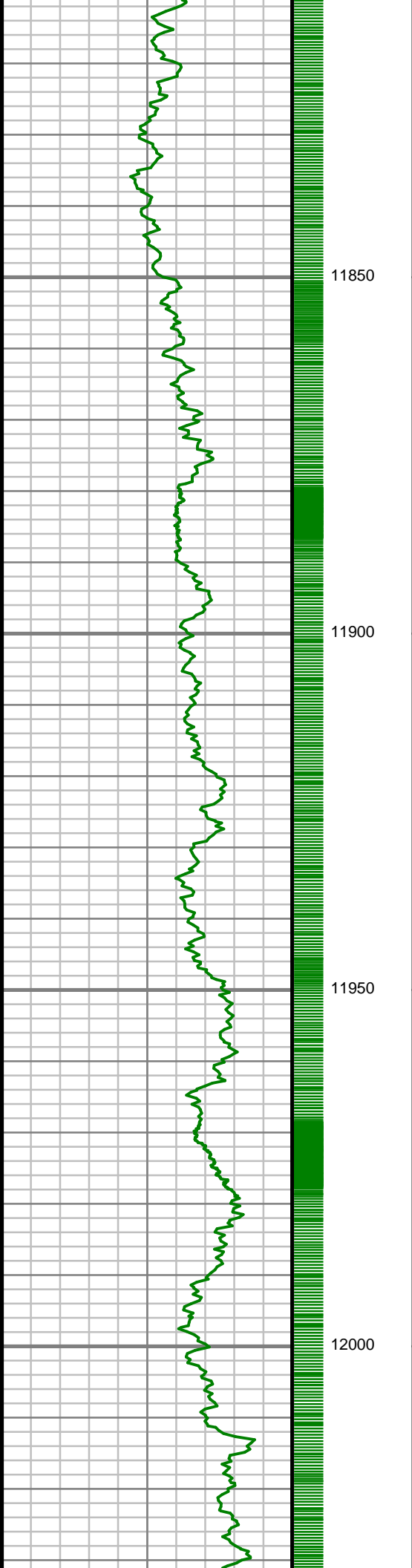


S: 121	MD: 11373.00 ft
Inc: 89.19 deg	Az: 359.88 deg
TVD: 7252.02 ft	
S: 122	MD: 11466.00 ft
Inc: 90.34 deg	Az: 359.60 deg
TVD: 7252.41 ft	
S: 123	MD: 11559.00 ft
Inc: 89.97 deg	Az: 0.01 deg
TVD: 7252.16 ft	



S: 124 MD: 11652.00 ft  
Inc: 90.84 deg Az: 0.35  
deg TVD: 7251.50 ft

S: 125 MD: 11745.00 ft  
Inc: 90.13 deg Az: 0.47  
deg TVD: 7250.71 ft

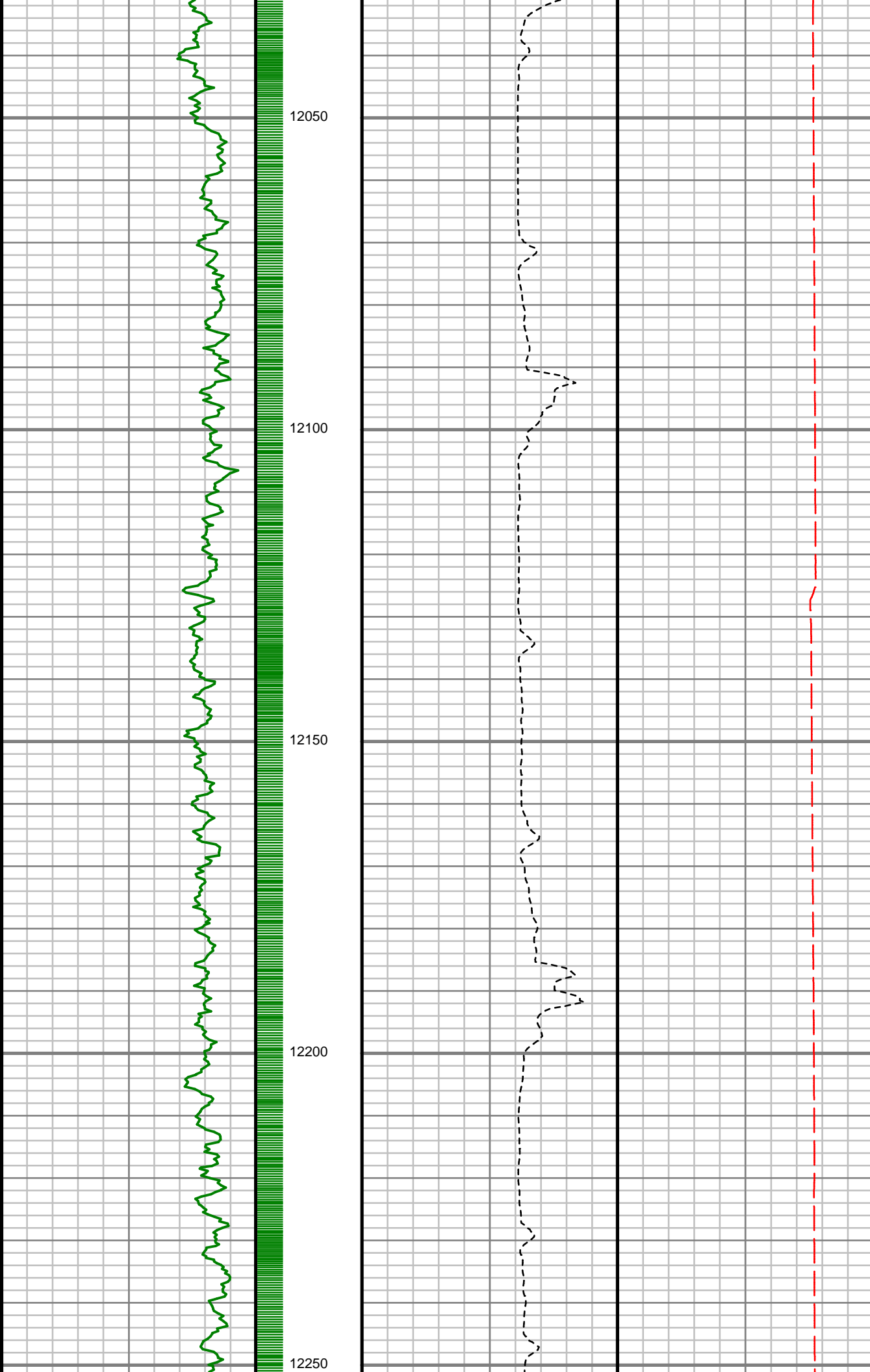


S: 126 MD: 11840.00 ft  
Inc: 91.72 deg Az:  
359.96 deg TVD:  
7249.18 ft

S: 127 MD: 11934.00 ft  
Inc: 91.68 deg Az:  
359.14 deg TVD:  
7246.39 ft

S: 128 MD: 12028.00 ft

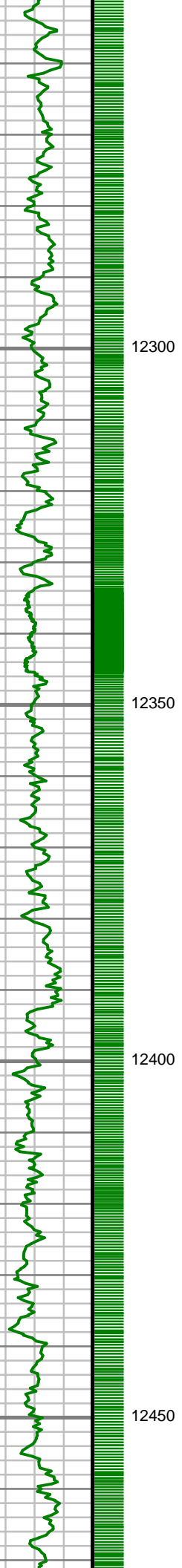




Inc: 90.24 deg Az:  
359.05 deg TVD:  
7244.81 ft

S: 129 MD: 12122.00 ft  
Inc: 90.20 deg Az:  
358.59 deg TVD:  
7244.46 ft

S: 130 MD: 12217.00 ft  
Inc: 90.34 deg Az:  
358.26 deg TVD:  
7244.01 ft

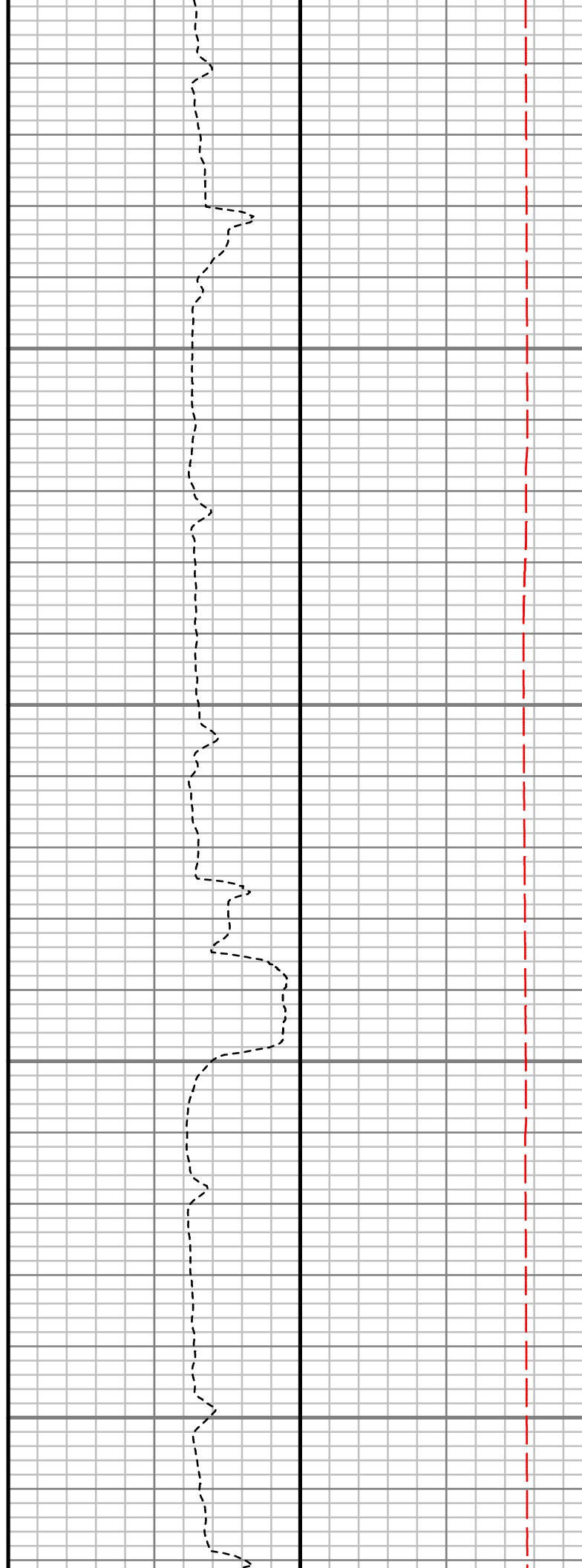


12300

12350

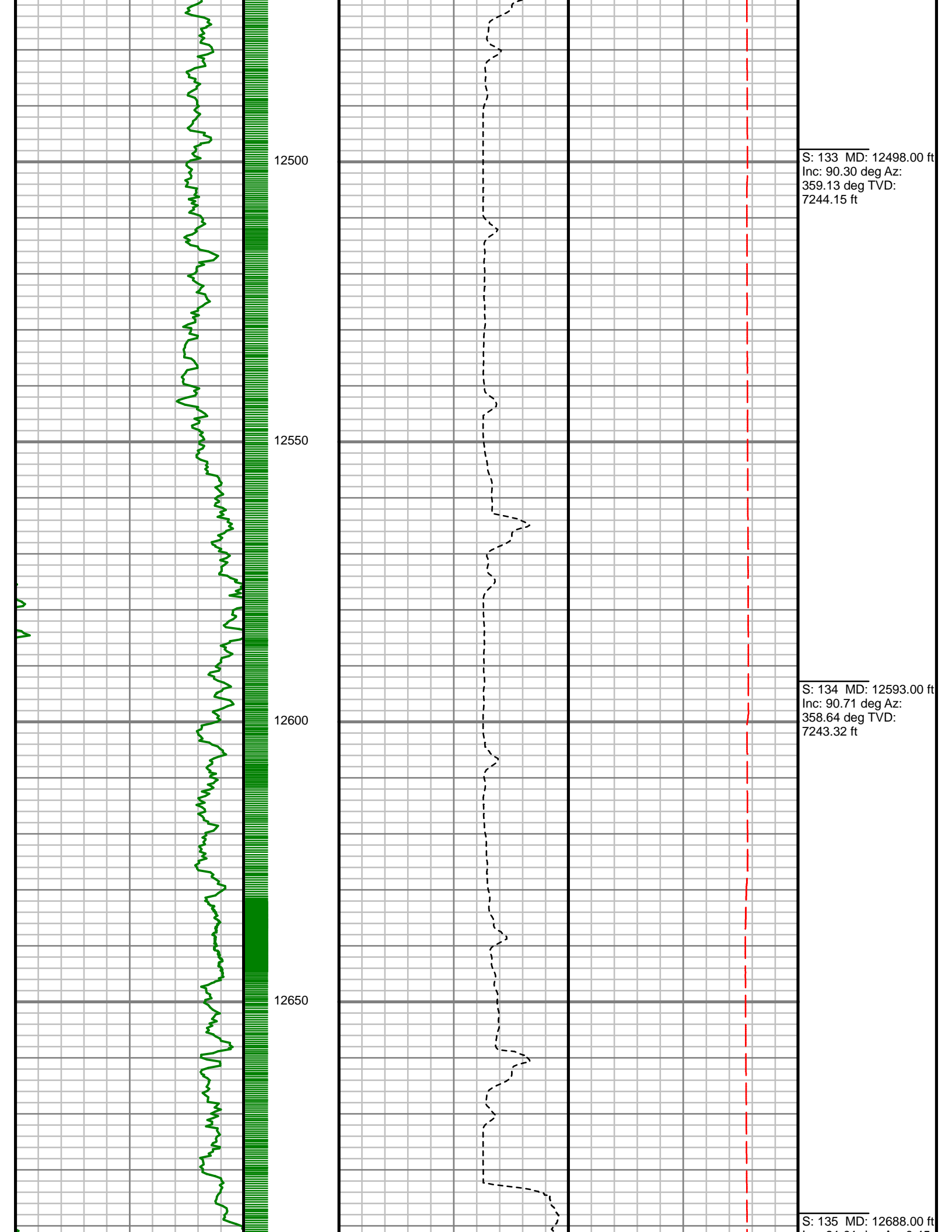
12400

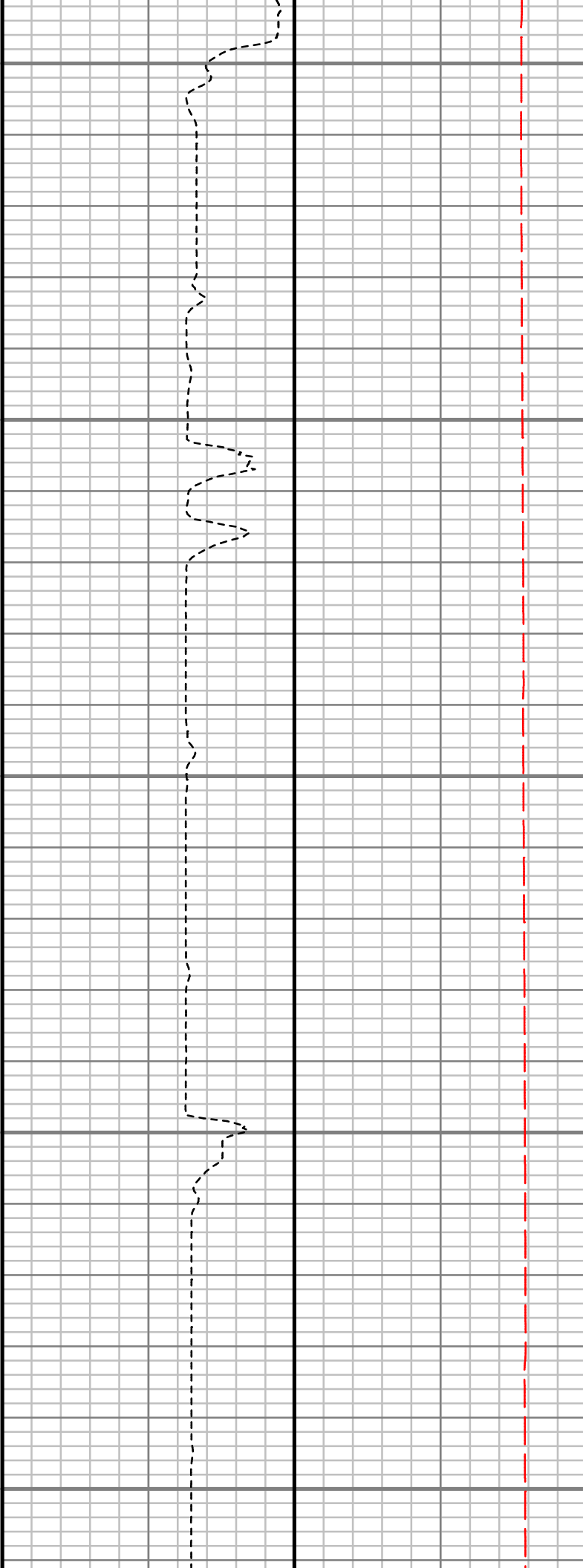
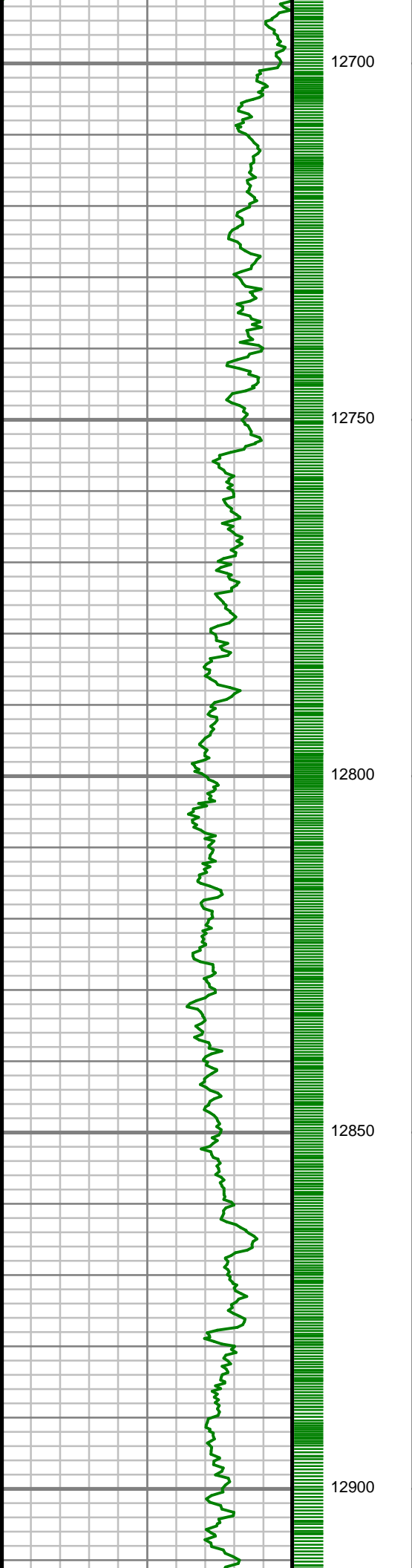
12450



S: 131 MD: 12310.00 ft  
Inc: 90.00 deg Az:  
357.55 deg TVD:  
7243.74 ft

S: 132 MD: 12404.00 ft  
Inc: 89.60 deg Az:  
359.27 deg TVD:  
7244.07 ft

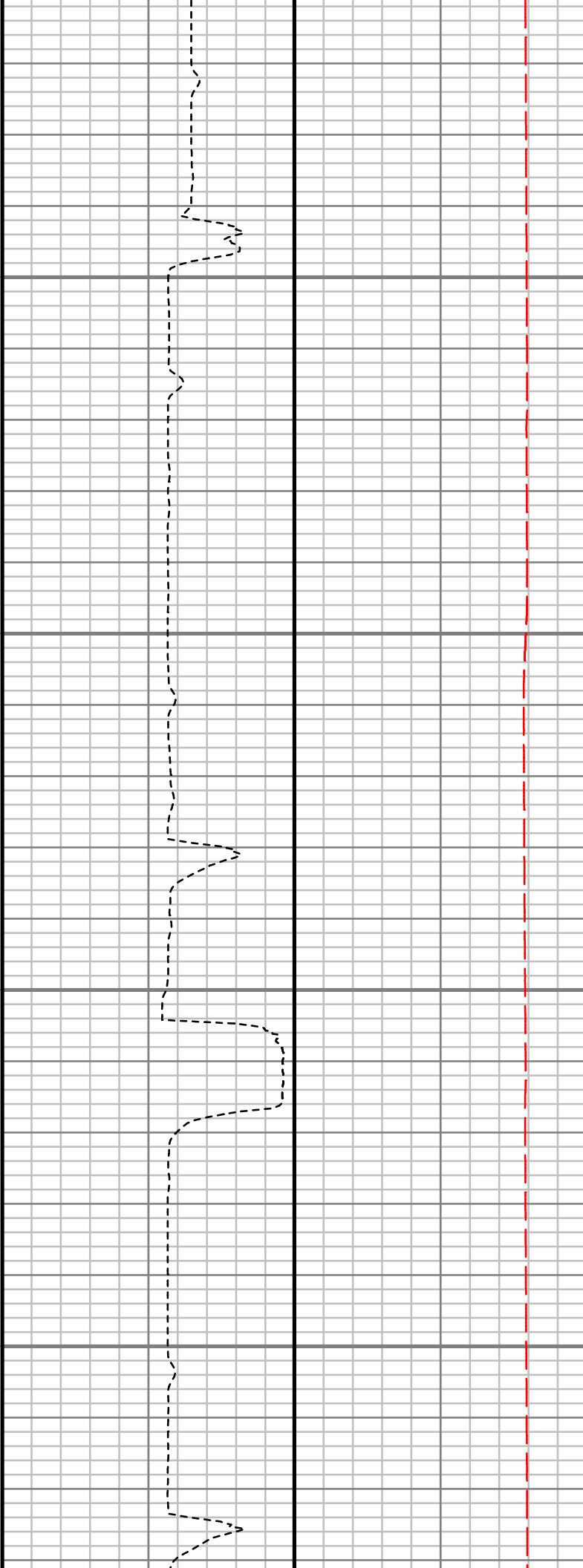
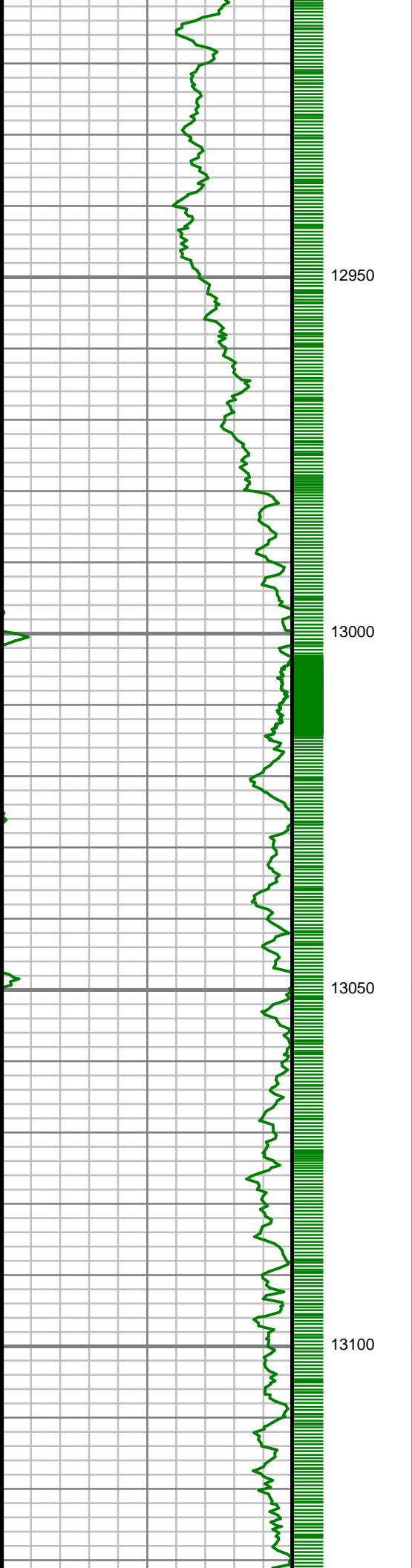




Inc: 91.01 deg Az: 0.45  
deg TVD: 7241.90 ft

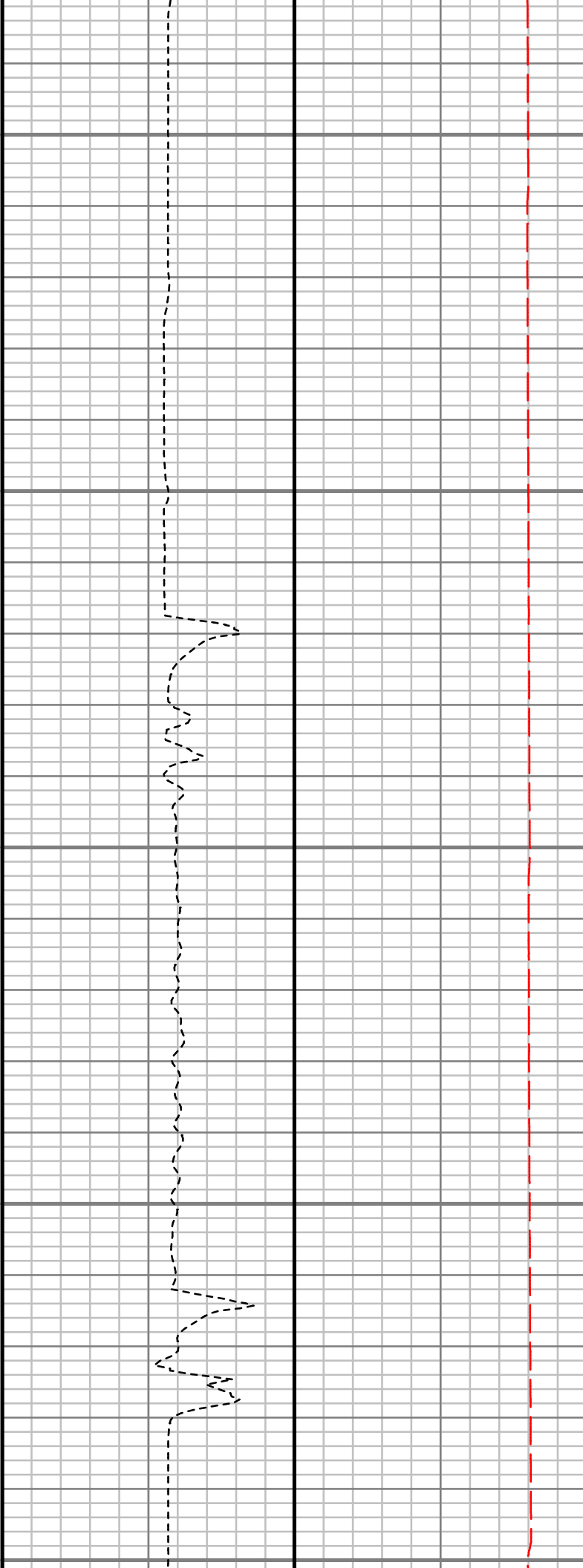
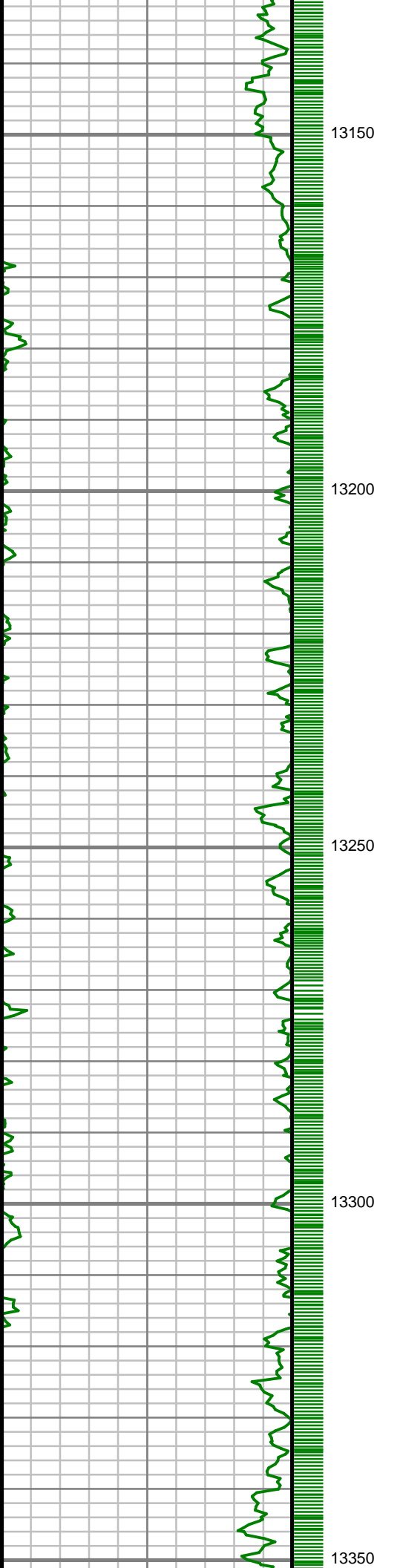
S: 136 MD: 12782.00 ft  
Inc: 90.60 deg Az: 0.95  
deg TVD: 7240.57 ft

S: 137 MD: 12875.00 ft  
Inc: 91.21 deg Az: 1.00  
deg TVD: 7239.10 ft



S: 138 MD: 12970.00 ft  
Inc: 91.08 deg Az: 1.14  
deg TVD: 7237.21 ft

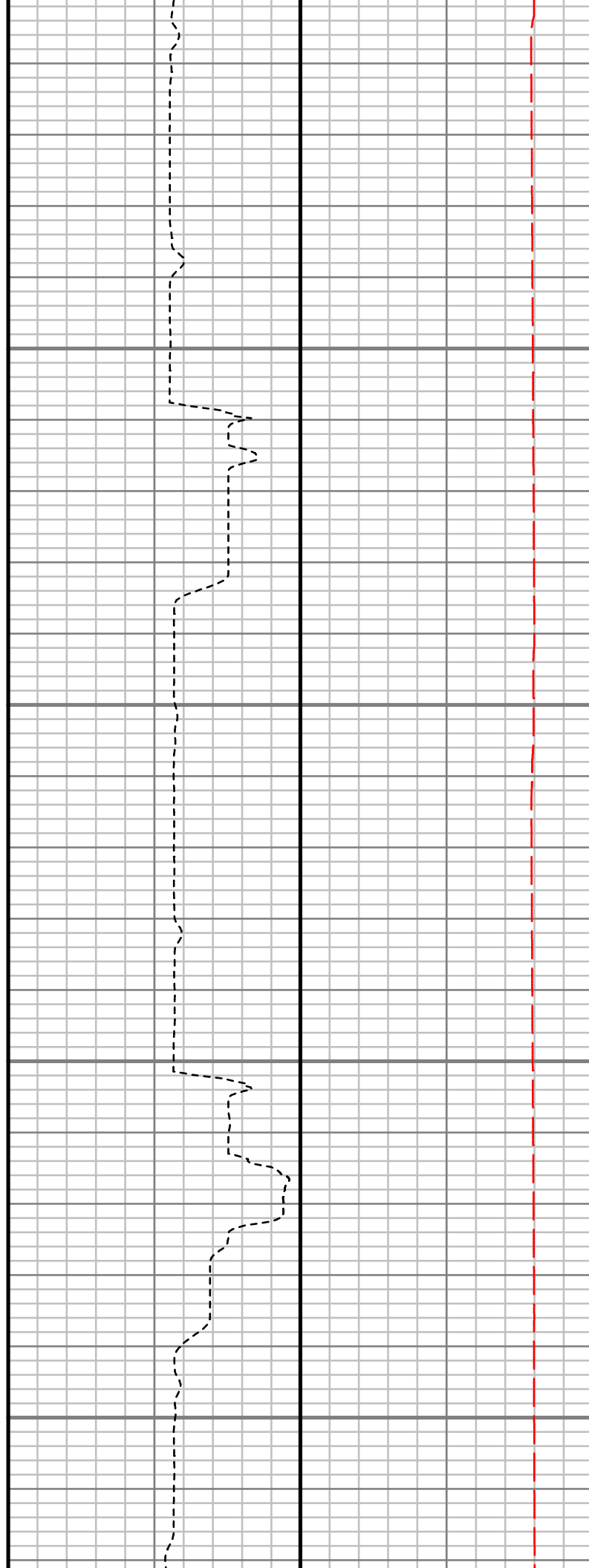
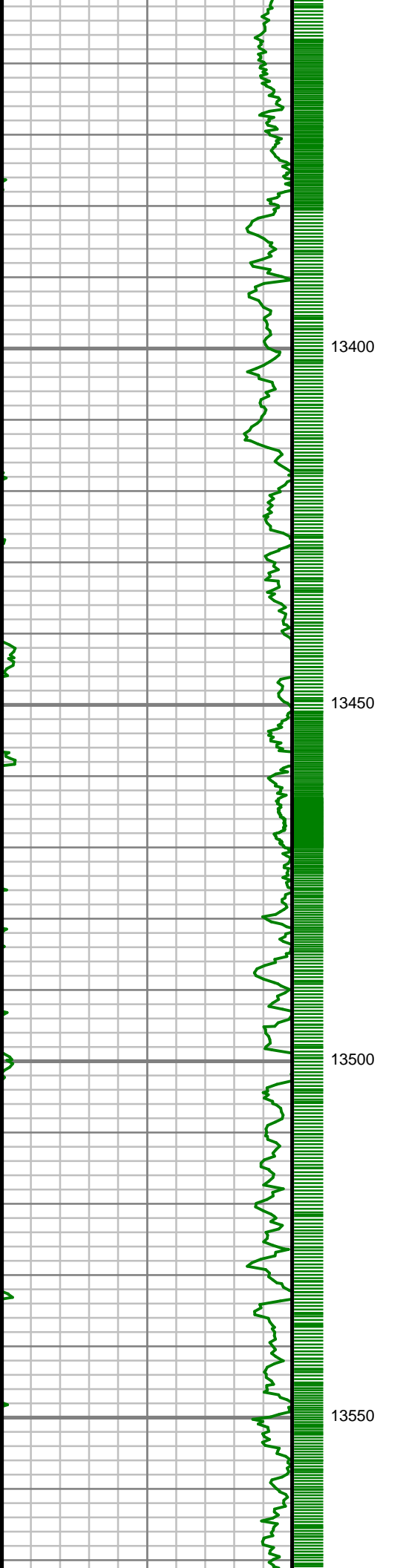
S: 139 MD: 13065.00 ft  
Inc: 89.53 deg Az: 0.71  
deg TVD: 7236.70 ft



S: 140 MD: 13159.00 ft  
Inc: 90.44 deg Az: 1.29  
deg TVD: 7236.73 ft

S: 141 MD: 13253.00 ft  
Inc: 89.87 deg Az: 0.88  
deg TVD: 7236.48 ft

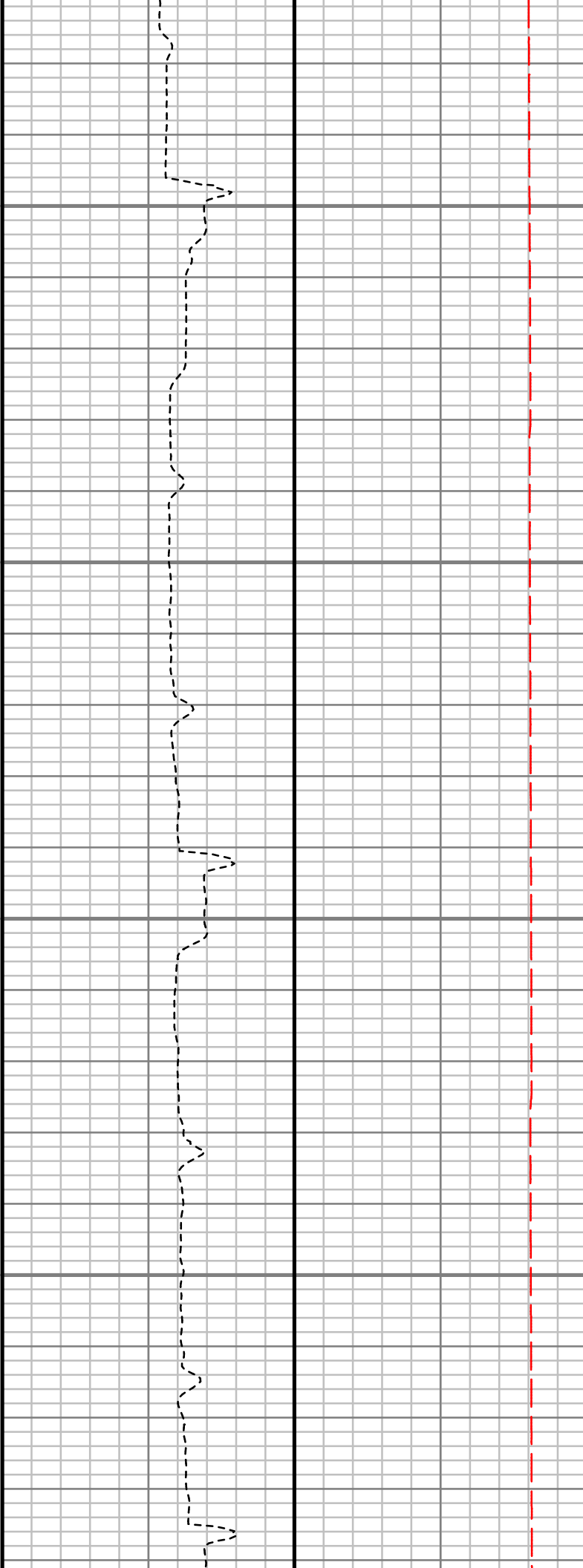
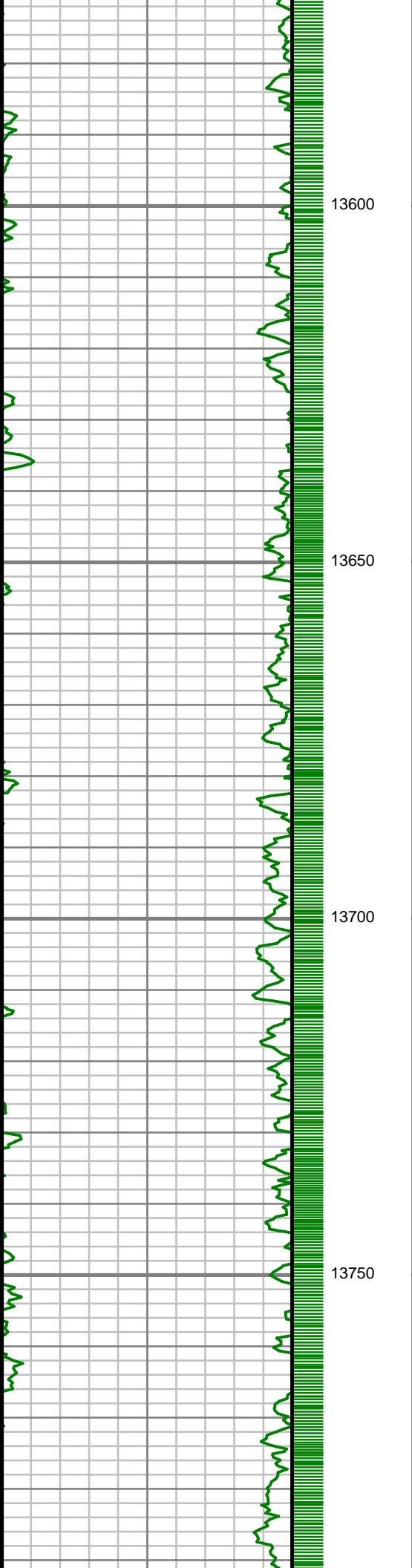
S: 142 MD: 13348.00 ft



Inc: 89.83 deg Az: 0.98  
deg TVD: 7236.73 ft

S: 143 MD: 13442.00 ft  
Inc: 90.50 deg Az: 1.26  
deg TVD: 7236.46 ft

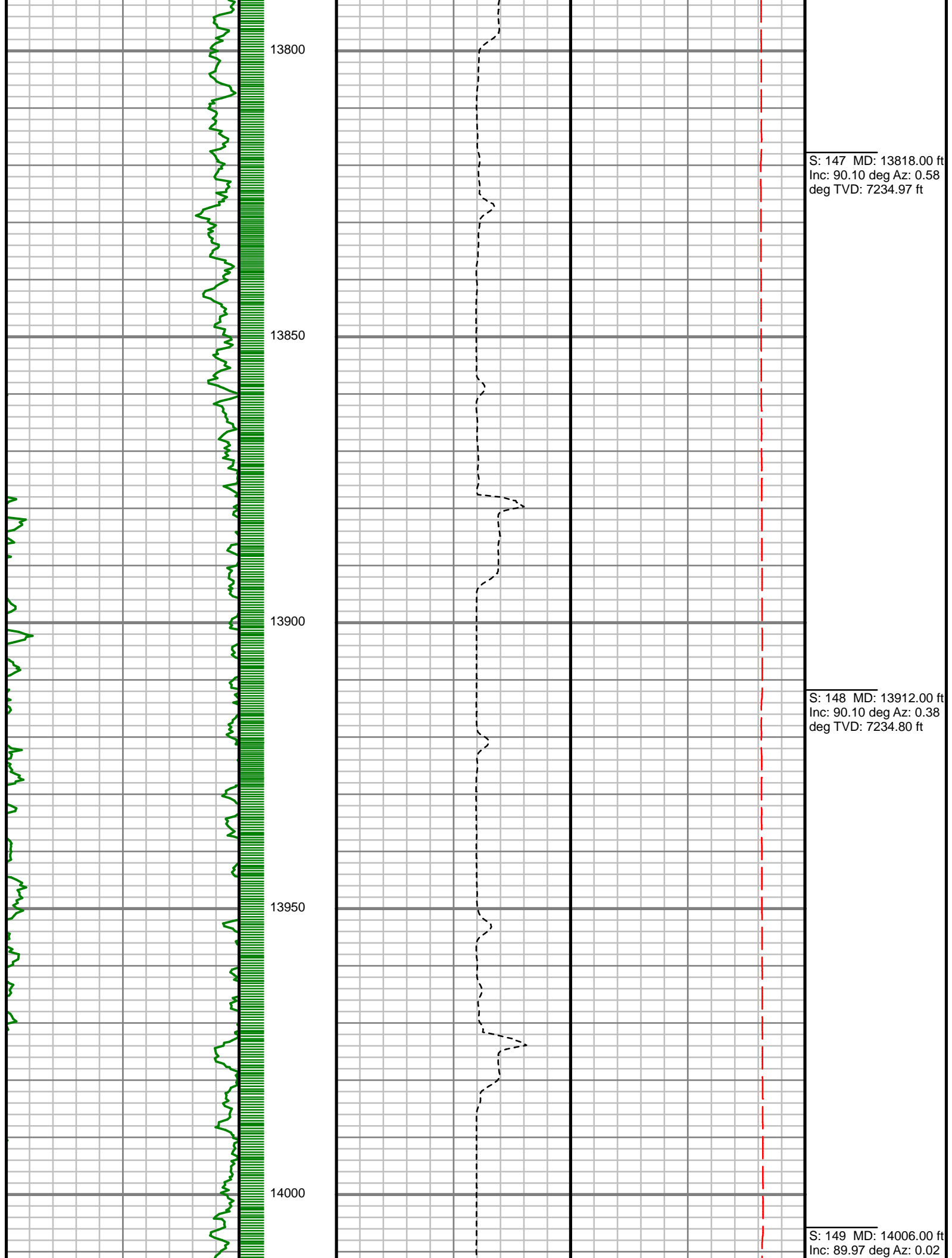
S: 144 MD: 13536.00 ft  
Inc: 90.34 deg Az: 0.35  
deg TVD: 7235.77 ft



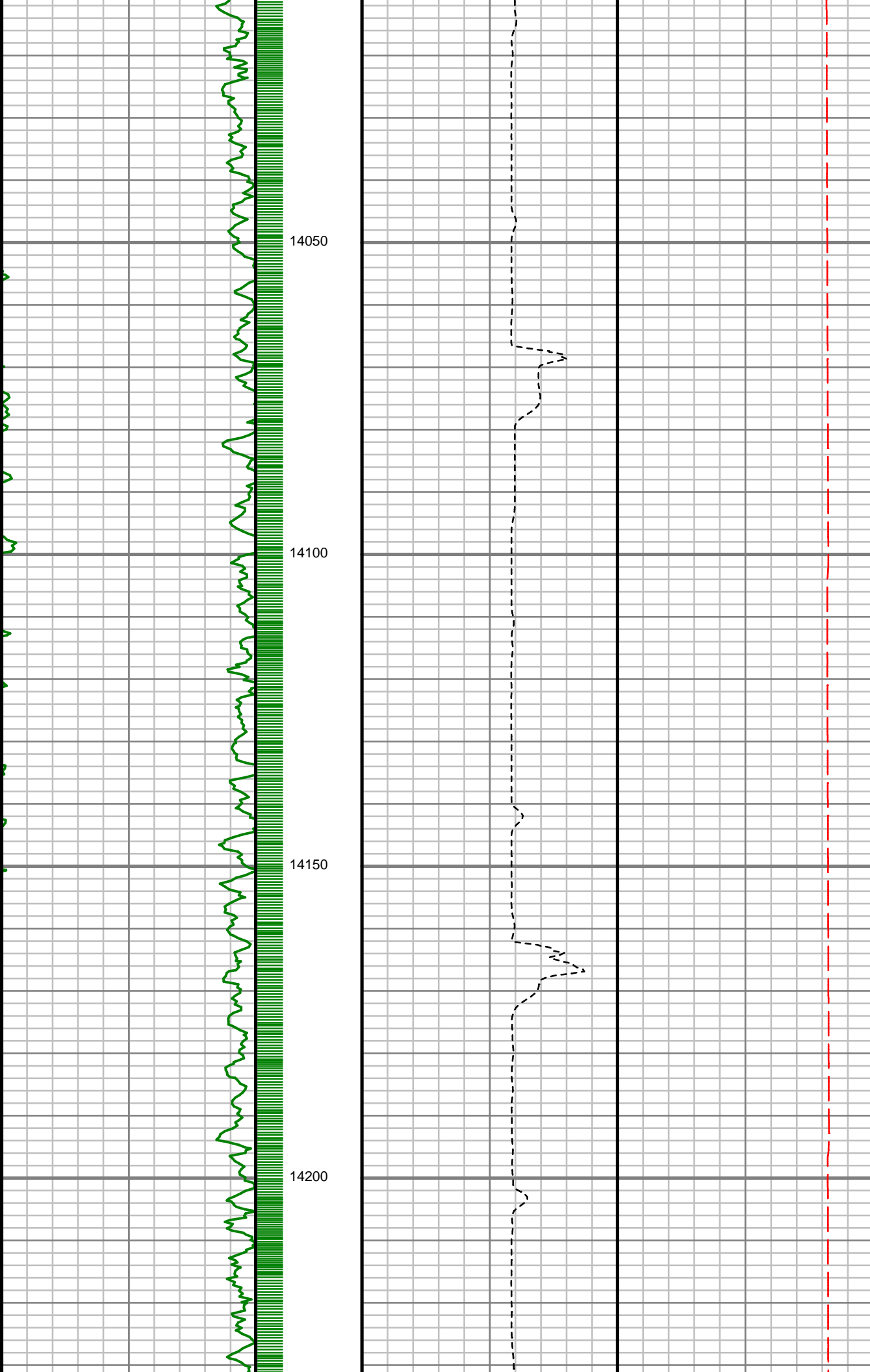
S: 145 MD: 13630.00 ft  
Inc: 90.30 deg Az: 0.50  
deg TVD: 7235.25 ft

S: 146 MD: 13725.00 ft  
Inc: 89.97 deg Az: 1.17  
deg TVD: 7235.02 ft





deg TVD: 7234.75 ft



14050

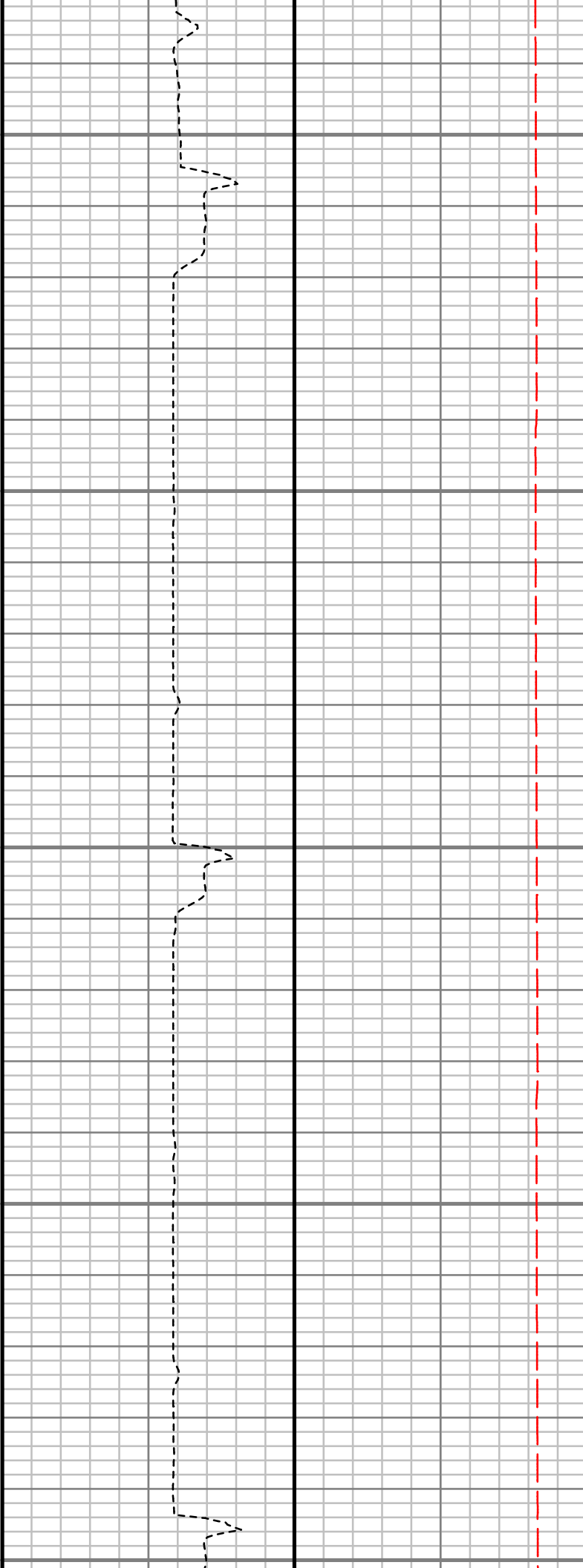
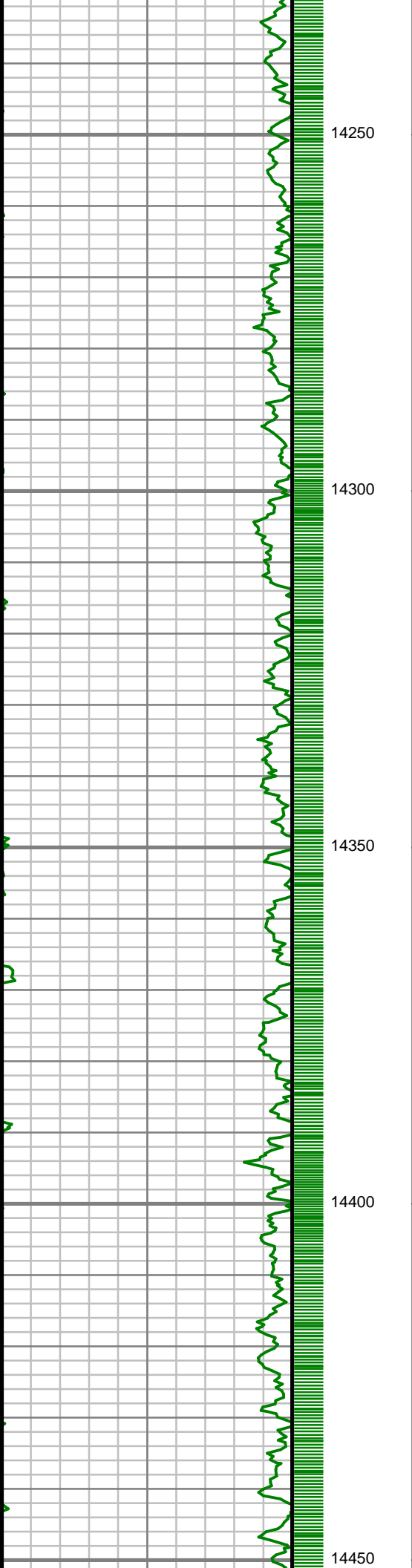
14100

14150

14200

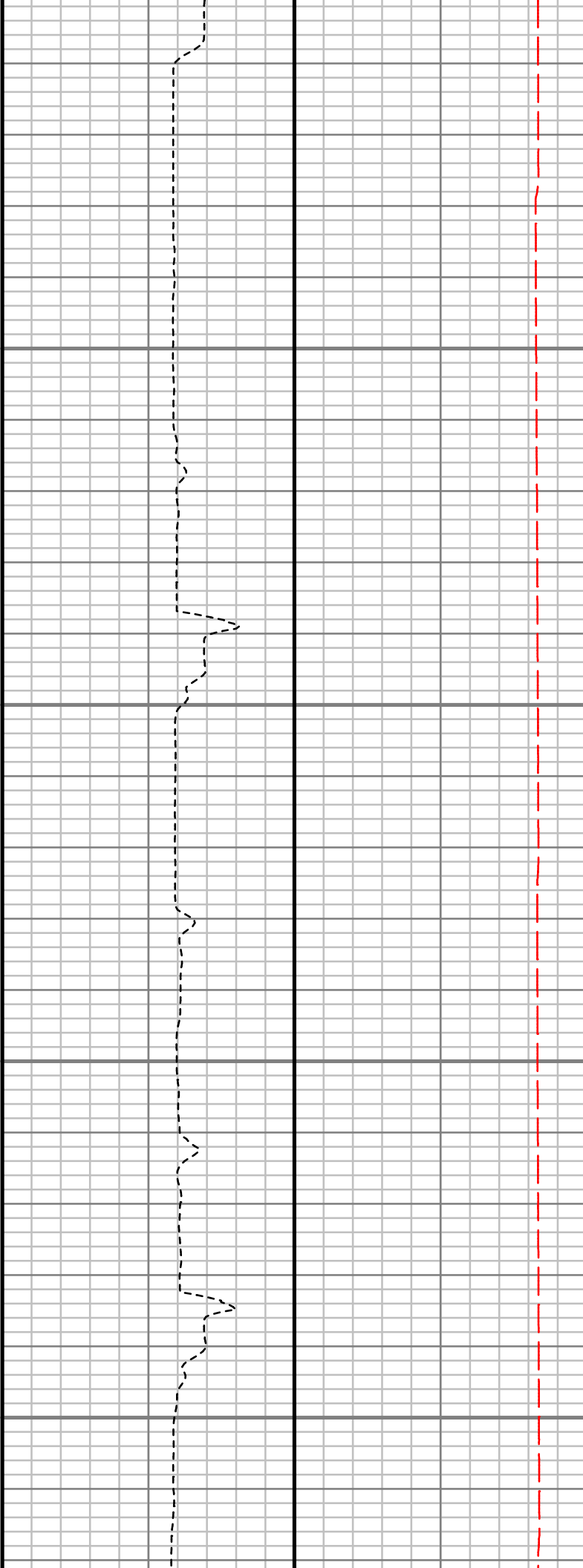
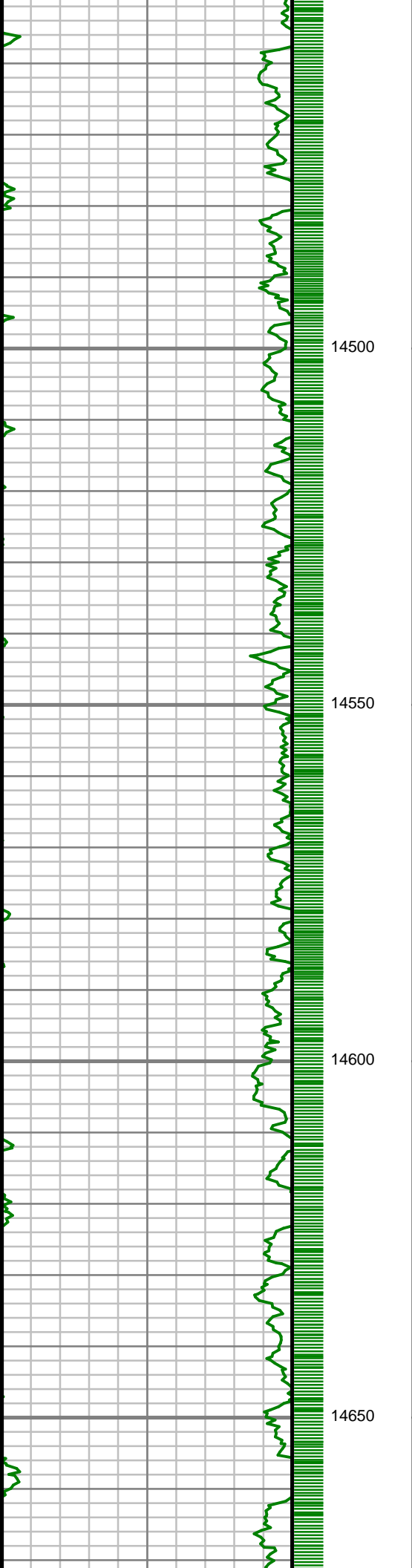
S: 150 MD: 14101.00 ft  
Inc: 90.03 deg Az:  
359.89 deg TVD:  
7234.75 ft

S: 151 MD: 14196.00 ft  
Inc: 90.07 deg Az: 0.21  
deg TVD: 7234.66 ft



S: 152 MD: 14290.00 ft  
Inc: 89.97 deg Az: 0.53  
deg TVD: 7234.64 ft

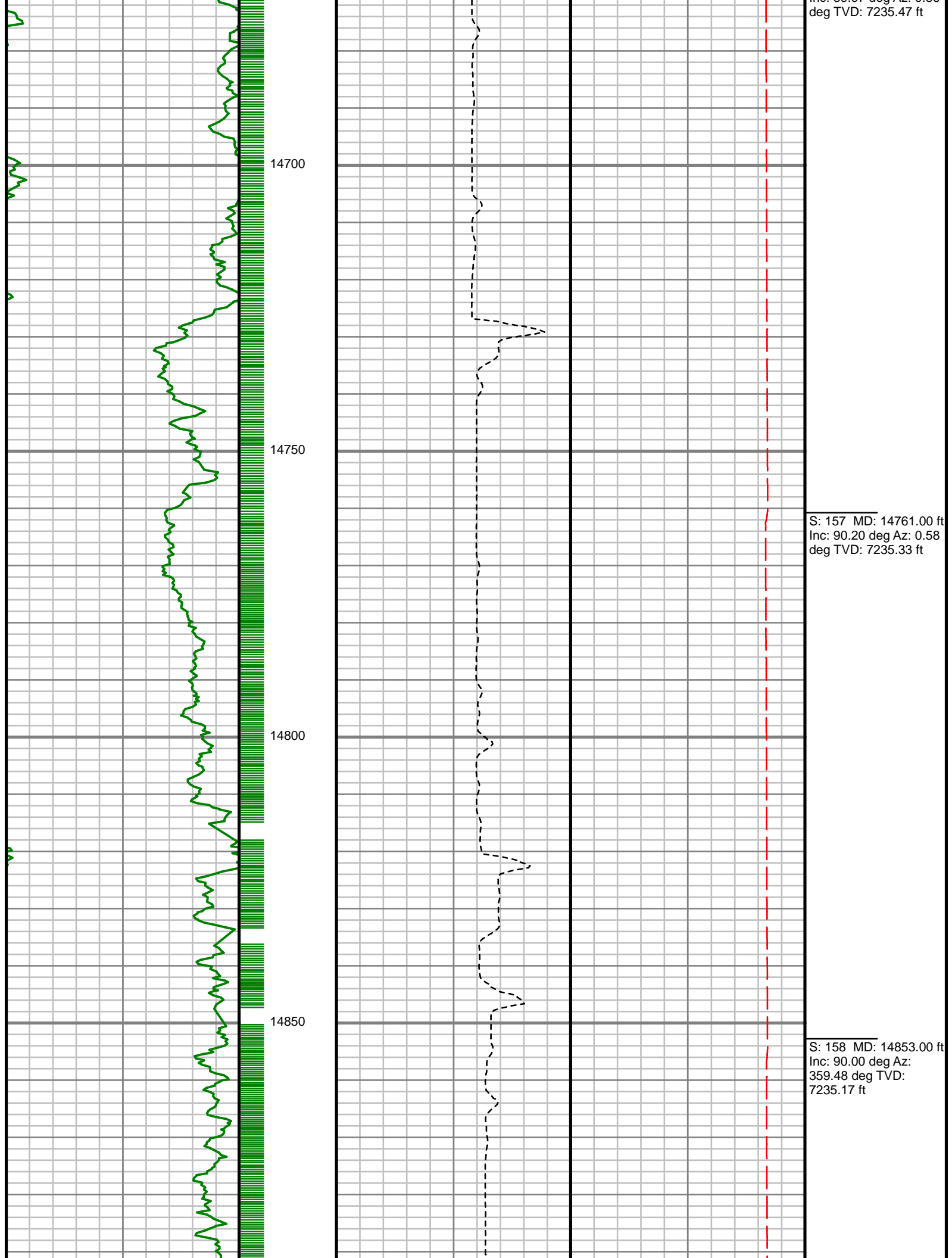
S: 153 MD: 14384.00 ft  
Inc: 89.87 deg Az: 0.72  
deg TVD: 7234.77 ft

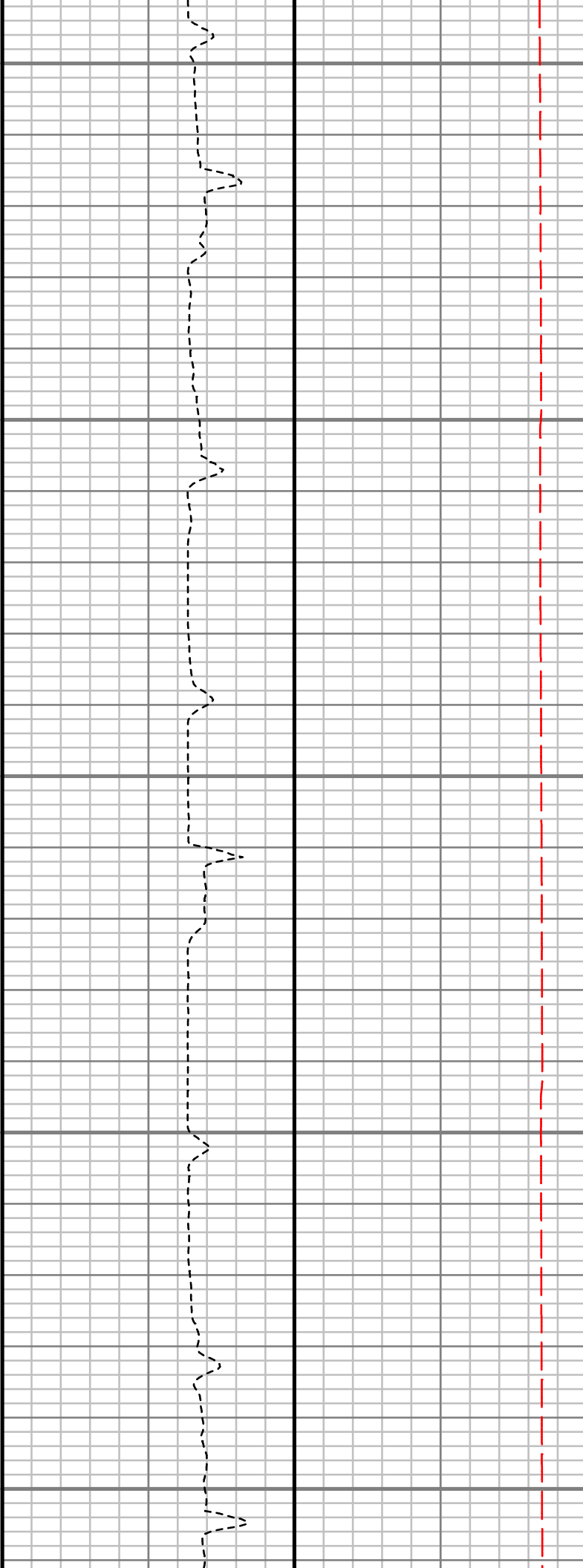
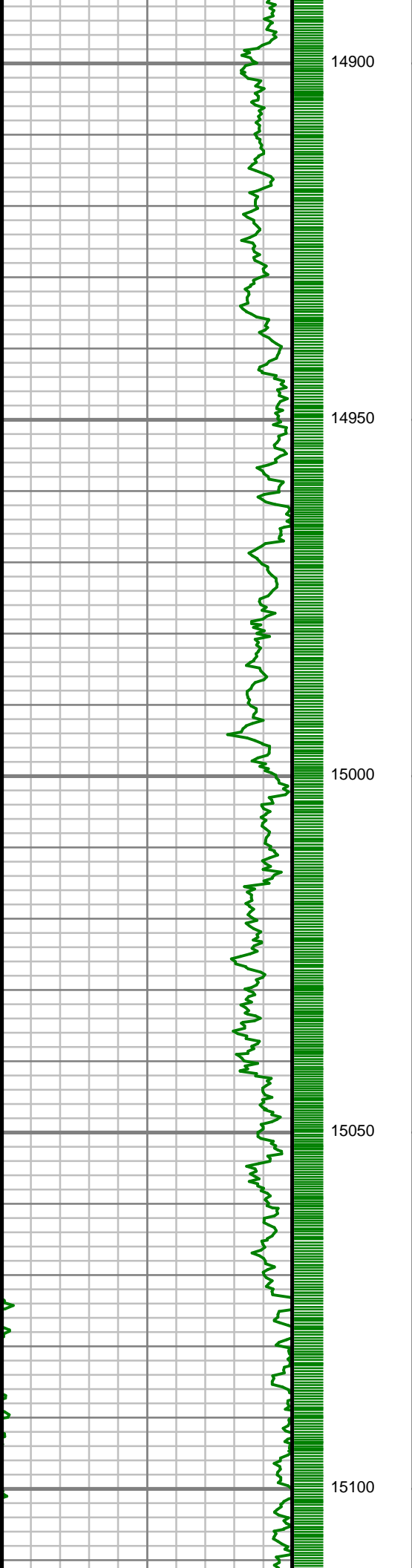


S: 154 MD: 14478.00 ft  
Inc: 89.80 deg Az: 0.69  
deg TVD: 7235.05 ft

S: 155 MD: 14573.00 ft  
Inc: 89.87 deg Az: 1.00  
deg TVD: 7235.33 ft

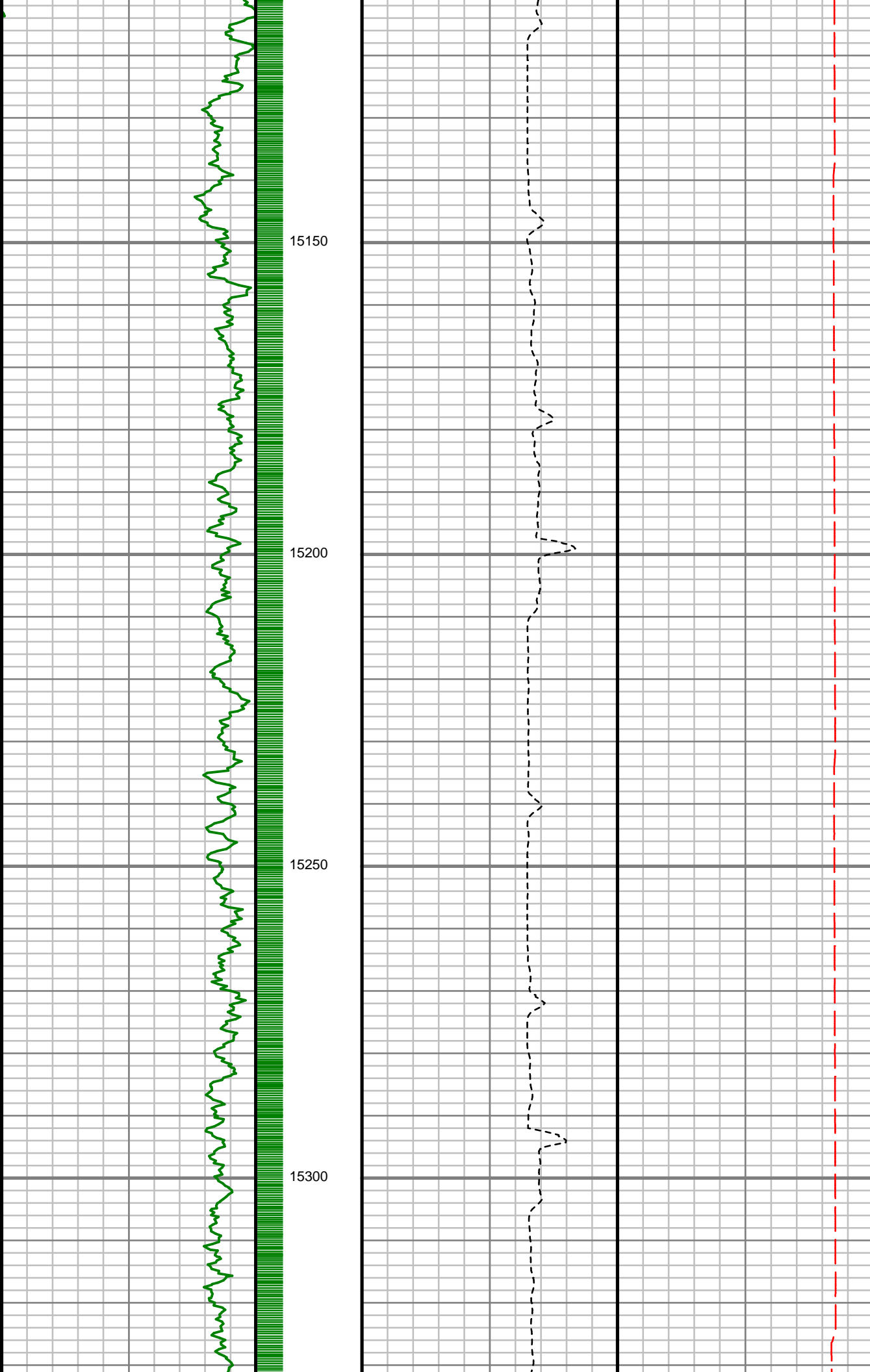
S: 156 MD: 14667.00 ft  
Inc: 89.97 deg Az: 0.86





S: 159 MD: 14947.00 ft  
Inc: 90.00 deg Az:  
359.76 deg TVD:  
7235.17 ft

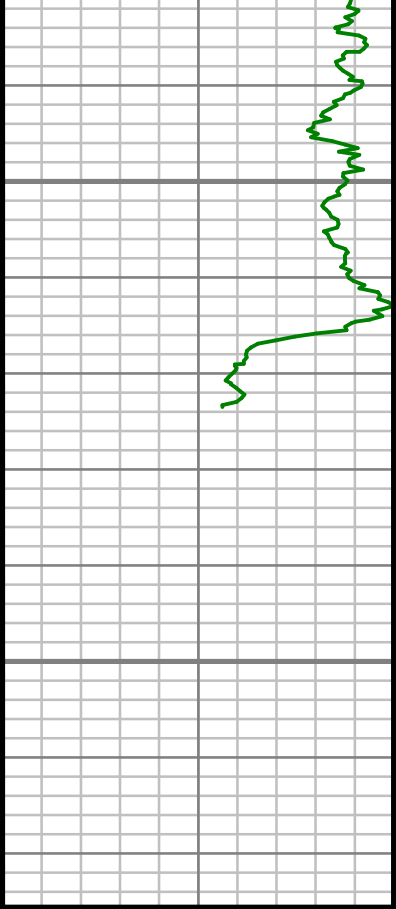
S: 160 MD: 15040.00 ft  
Inc: 90.17 deg Az:  
359.50 deg TVD:  
7235.03 ft



S: 161 MD: 15134.00 ft  
Inc: 90.24 deg Az:  
359.35 deg TVD:  
7234.70 ft

S: 162 MD: 15229.00 ft  
Inc: 90.30 deg Az:  
359.36 deg TVD:  
7234.26 ft

S: 163 MD: 15321.00 ft  
Inc: 89.33 deg Az:  
358.60 deg TVD:  
7234.55 ft

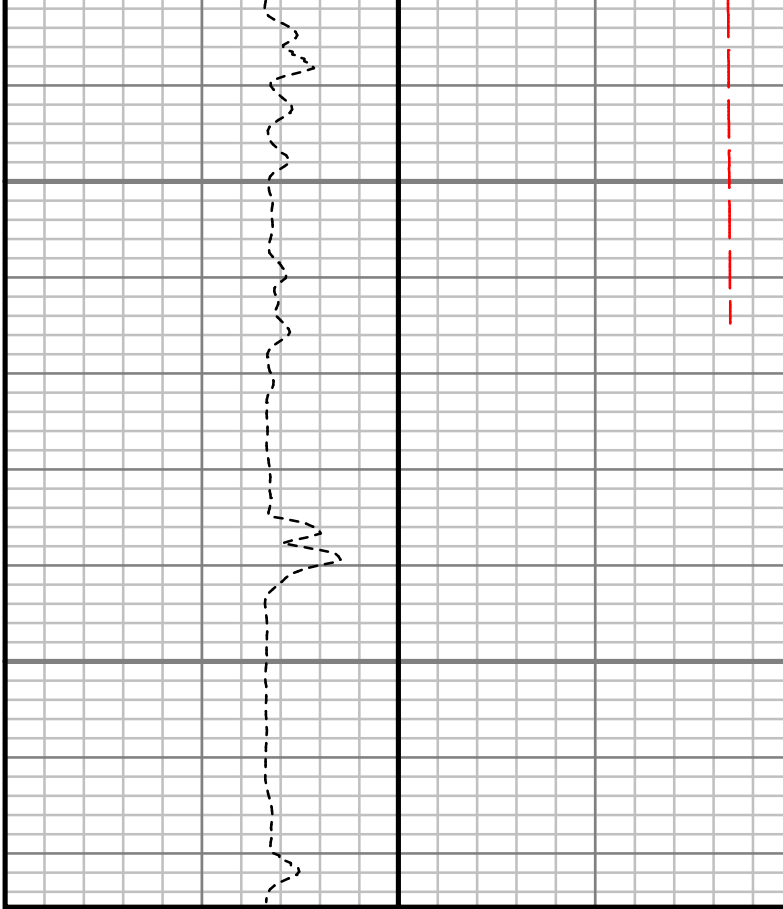


15350

15400

MEASURED DEPTH  
1,240 (ft)

Gamma Ray (GR)		
0	Unit = aapi	150



S: 164 MD: 15363.00 ft  
Inc: 88.92 deg Az:  
358.46 deg TVD:  
7235.19 ft


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

Tool Temperature (TEMP)		
0	Unit = °F	300

Comments
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CUSTOMER	ANADARKO PETROLEUM CORPORATION	WELL INFORMATION	
PROJECT	BUTTERBALL	Lat/Long	40.158268° N, 104.869543° W
FIELD	WATTENBERG	Northing	14,584,392.8 ft
		Easting	1,676,866.79 ft
		UWI	05123443160000

MAP INFORMATION		VERTICAL SECTION REFERENCE		
North Reference	True North	+N/-S	0 ft	
Grid Correction		+E/-W	0 ft	
System	Universal Transverse Mercator (US Survey Feet)	Proposal Direction	0.05°	
Datum	North American Datum 1983 (GRS 1980)	Calculation Method	Minimum Curvature	
Map Zone	Zone 13N (108 W to 102 W)			

GEOMAGNETIC REFERENCE INFORMATION

Local Gravity: 999.050 mG [computed]

MD	MODEL	DATE	DECLINATION	MAG TO TRUE
0-3723 ft	ANADARKO MAGVAR	13 May 2017	8.36°	add 8.36°
3723-11652 ft	ANADARKO MAGVAR	13 May 2017	8.37°	add 8.37°
11652-15363 ft	ANADARKO MAGVAR	13 May 2017	8.34°	add 8.34°

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
153.00	0.26	252.12	153.00	-0.11	-0.11	-0.33	0.17
239.00	0.07	143.03	239.00	-0.21	-0.21	-0.48	0.34
328.00	0.29	317.35	328.00	-0.09	-0.09	-0.60	0.40
459.00	0.89	290.28	458.99	0.51	0.51	-1.78	0.49
548.00	0.78	274.26	547.98	0.79	0.79	-3.04	0.29
637.00	0.60	277.75	636.98	0.90	0.90	-4.10	0.21
723.00	0.17	291.25	722.97	1.01	1.01	-4.67	0.51
810.00	0.28	170.76	809.97	0.84	0.85	-4.75	0.45
899.00	0.29	268.71	898.97	0.62	0.63	-4.94	0.48
987.00	0.67	124.47	986.97	0.33	0.33	-4.74	1.05
1076.00	1.17	96.45	1075.96	-0.07	-0.07	-3.41	0.74
1165.00	2.28	89.42	1164.92	-0.15	-0.15	-0.74	1.27
1253.00	3.12	86.01	1252.82	0.04	0.03	3.40	0.97
1340.00	4.05	89.98	1339.65	0.21	0.20	8.84	1.11
1425.00	5.20	82.37	1424.37	0.73	0.71	15.66	1.53
1511.00	6.27	80.04	1509.94	2.06	2.04	24.15	1.27
1598.00	6.62	80.35	1596.39	3.73	3.70	33.77	0.40
1685.00	6.96	84.51	1682.78	5.09	5.05	43.96	0.69
1773.00	7.83	87.34	1770.05	5.89	5.84	55.25	1.07

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
1794.00	7.70	87.03	1790.85	6.03	5.98	58.09	0.65
1938.00	6.25	89.22	1933.78	6.65	6.58	75.57	1.02
2032.00	6.86	91.42	2027.17	6.59	6.51	86.29	0.69
2127.00	9.03	89.67	2121.25	6.50	6.42	99.42	2.31
2222.00	9.80	88.85	2214.97	6.72	6.62	114.97	0.82
2315.00	9.19	85.72	2306.70	7.45	7.34	130.29	0.86
2408.00	9.92	86.60	2398.41	8.49	8.36	145.69	0.80
2503.00	9.33	84.29	2492.07	9.76	9.62	161.52	0.74
2597.00	9.83	80.69	2584.76	11.83	11.67	177.02	0.83
2691.00	10.57	79.22	2677.27	14.75	14.58	193.41	0.84
2785.00	10.21	78.89	2769.73	17.99	17.80	210.06	0.39
2879.00	9.89	77.34	2862.29	21.38	21.18	226.12	0.45
2973.00	9.39	77.35	2954.96	24.84	24.63	241.48	0.54
3068.00	9.41	84.34	3048.69	27.31	27.09	256.76	1.20
3162.00	8.96	83.20	3141.48	28.95	28.71	271.68	0.52
3256.00	8.88	96.60	3234.35	29.00	28.75	286.16	2.21
3349.00	9.07	98.63	3326.22	27.08	26.82	300.54	0.40
3441.00	9.06	102.96	3417.07	24.38	24.11	314.77	0.74
3535.00	8.16	102.88	3510.01	21.25	20.96	328.49	0.96
3630.00	6.95	102.04	3604.18	18.55	18.26	340.68	1.27

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
3723.00	5.35	98.90	3696.64	16.72	16.41	350.48	1.76
3818.00	4.39	97.28	3791.30	15.58	15.26	358.46	1.02
3910.00	3.84	99.10	3883.06	14.65	14.33	364.99	0.62
4005.00	3.19	96.21	3977.88	13.87	13.54	370.76	0.70
4100.00	2.91	93.76	4072.75	13.43	13.10	375.80	0.32
4194.00	2.43	89.40	4166.64	13.29	12.96	380.17	0.56
4288.00	1.98	86.96	4260.57	13.41	13.07	383.79	0.48
4383.00	1.58	97.48	4355.53	13.32	12.99	386.73	0.55
4478.00	1.38	91.05	4450.50	13.14	12.80	389.17	0.27
4572.00	0.78	70.69	4544.48	13.33	12.99	390.91	0.75
4666.00	0.65	71.84	4638.47	13.71	13.37	392.02	0.14
4759.00	0.48	68.64	4731.47	14.02	13.67	392.89	0.19
4854.00	0.69	34.90	4826.46	14.63	14.29	393.59	0.41
4948.00	1.24	21.68	4920.45	16.04	15.70	394.28	0.63
5043.00	0.96	233.06	5015.44	16.52	16.18	394.03	2.23
5137.00	1.18	227.58	5109.43	15.40	15.05	392.69	0.26
5256.00	0.79	226.95	5228.41	14.01	13.67	391.19	0.33
5351.00	0.38	223.03	5323.40	13.34	12.99	390.50	0.43
5447.00	0.32	238.81	5419.40	12.96	12.62	390.06	0.12
5541.00	0.08	158.02	5513.40	12.77	12.43	389.86	0.33

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
5635.00	0.24	124.65	5607.40	12.60	12.26	390.04	0.19
5727.00	0.39	88.60	5699.40	12.50	12.16	390.51	0.27
5819.00	0.54	63.06	5791.40	12.71	12.37	391.22	0.27
5913.00	0.76	81.68	5885.39	13.00	12.66	392.23	0.32
6007.00	0.80	122.53	5979.38	12.74	12.40	393.39	0.58
6100.00	0.67	119.22	6072.37	12.13	11.79	394.41	0.15
6194.00	0.46	104.41	6166.37	11.77	11.43	395.25	0.27
6288.00	0.57	101.87	6260.37	11.58	11.24	396.07	0.13
6382.00	0.59	84.17	6354.36	11.53	11.19	397.02	0.19
6476.00	0.62	81.58	6448.36	11.66	11.31	398.01	0.04
6570.00	0.71	76.05	6542.35	11.88	11.53	399.08	0.12
6664.00	9.49	355.49	6635.91	19.76	19.42	399.03	10.00
6757.00	18.93	359.32	6725.96	42.55	42.20	398.25	10.20
6851.00	27.46	359.75	6812.29	79.54	79.19	397.97	9.07
6946.00	35.01	356.68	6893.46	128.72	128.37	396.30	8.12
7039.00	41.81	355.51	6966.29	186.32	185.98	392.32	7.36
7133.00	47.40	1.44	7033.22	252.23	251.89	390.73	7.42
7227.00	56.51	0.97	7091.09	326.16	325.82	392.27	9.70
7323.00	62.03	1.90	7140.12	408.63	408.28	394.35	5.81
7417.00	66.69	2.99	7180.78	493.27	492.93	397.98	5.07

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
7512.00	72.31	0.43	7214.04	582.18	581.83	400.60	6.43
7605.00	80.68	0.35	7235.73	672.53	672.18	401.21	9.00
7700.00	86.77	358.87	7246.10	766.91	766.56	400.56	6.60
7795.00	86.74	359.16	7251.48	861.74	861.39	398.93	0.31
7889.00	90.54	359.98	7253.71	955.69	955.35	398.22	4.14
7983.00	89.73	0.60	7253.49	1049.69	1049.34	398.70	1.08
8077.00	89.06	0.51	7254.48	1143.68	1143.33	399.61	0.72
8172.00	88.52	0.71	7256.49	1238.66	1238.31	400.62	0.60
8265.00	89.90	0.74	7257.77	1331.64	1331.29	401.79	1.48
8359.00	90.30	0.81	7257.61	1425.63	1425.28	403.05	0.44
8452.00	90.74	0.69	7256.76	1518.62	1518.27	404.26	0.49
8548.00	91.04	0.52	7255.27	1614.60	1614.25	405.27	0.36
8641.00	89.63	0.91	7254.72	1707.59	1707.24	406.42	1.58
8736.00	90.30	359.71	7254.78	1802.59	1802.23	406.94	1.45
8830.00	91.17	359.16	7253.57	1896.57	1896.22	406.00	1.10
8925.00	90.40	359.45	7252.26	1991.56	1991.20	404.85	0.87
9020.00	90.91	359.70	7251.17	2086.55	2086.20	404.15	0.59
9114.00	91.21	0.82	7249.44	2180.53	2180.18	404.58	1.23
9208.00	89.87	0.04	7248.56	2274.52	2274.17	405.29	1.65
9302.00	90.91	0.64	7247.93	2368.51	2368.16	405.84	1.28

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
9397.00	89.16	359.53	7247.87	2463.51	2463.16	405.99	2.18
9492.00	89.29	359.81	7249.16	2558.50	2558.15	405.44	0.33
9586.00	89.63	359.45	7250.04	2652.49	2652.14	404.84	0.52
9681.00	89.80	359.72	7250.51	2747.49	2747.14	404.15	0.34
9775.00	90.91	359.38	7249.93	2841.48	2841.13	403.42	1.24
9869.00	89.36	0.37	7249.71	2935.48	2935.12	403.22	1.95
9963.00	89.03	0.63	7251.03	3029.46	3029.11	404.04	0.45
10057.00	89.09	0.53	7252.57	3123.45	3123.09	404.98	0.13
10150.00	89.06	1.19	7254.07	3216.42	3216.07	406.37	0.71
10245.00	90.98	359.93	7254.04	3311.41	3311.06	407.30	2.41
10338.00	90.94	0.47	7252.49	3404.40	3404.05	407.63	0.59
10433.00	91.04	358.82	7250.84	3499.38	3499.03	407.04	1.75
10525.00	91.24	358.47	7249.01	3591.34	3590.98	404.86	0.44
10620.00	91.14	358.88	7247.03	3686.29	3685.94	402.67	0.44
10715.00	91.38	359.04	7244.94	3781.25	3780.90	400.94	0.30
10809.00	89.13	359.42	7244.52	3875.23	3874.88	399.68	2.43
10903.00	88.72	359.37	7246.29	3969.21	3968.86	398.69	0.44
10997.00	88.39	359.73	7248.66	4063.17	4062.83	397.95	0.52
11091.00	89.80	359.37	7250.15	4157.16	4156.81	397.22	1.55
11185.00	90.00	359.80	7250.31	4251.15	4250.81	396.54	0.51

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
11279.00	89.36	359.88	7250.84	4345.15	4344.81	396.28	0.68
11373.00	89.19	359.88	7252.02	4439.14	4438.80	396.09	0.18
11466.00	90.34	359.60	7252.41	4532.14	4531.79	395.66	1.27
11559.00	89.97	0.01	7252.16	4625.14	4624.79	395.35	0.59
11652.00	90.84	0.35	7251.50	4718.13	4717.79	395.63	1.01
11745.00	90.13	0.47	7250.71	4811.13	4810.78	396.30	0.77
11840.00	91.72	359.96	7249.18	4906.11	4905.77	396.66	1.75
11934.00	91.68	359.14	7246.39	5000.06	4999.72	395.93	0.87
12028.00	90.24	359.05	7244.81	5094.04	5093.69	394.45	1.54
12122.00	90.20	358.59	7244.46	5188.01	5187.67	392.52	0.49
12217.00	90.34	358.26	7244.01	5282.97	5282.64	389.92	0.37
12310.00	90.00	357.55	7243.74	5375.91	5375.57	386.52	0.85
12404.00	89.60	359.27	7244.07	5469.87	5469.53	383.91	1.89
12498.00	90.30	359.13	7244.15	5563.85	5563.52	382.60	0.77
12593.00	90.71	358.64	7243.32	5658.83	5658.50	380.75	0.67
12688.00	91.01	0.45	7241.90	5753.81	5753.48	379.99	1.94
12782.00	90.60	0.95	7240.57	5847.80	5847.47	381.14	0.68
12875.00	91.21	1.00	7239.10	5940.77	5940.44	382.72	0.65
12970.00	91.08	1.14	7237.21	6035.74	6035.41	384.49	0.20
13065.00	89.53	0.71	7236.70	6130.72	6130.39	386.02	1.69

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	%/100ft
13159.00	90.44	1.29	7236.73	6224.71	6224.37	387.66	1.14
13253.00	89.87	0.88	7236.48	6318.69	6318.35	389.44	0.75
13348.00	89.83	0.98	7236.73	6413.68	6413.34	390.98	0.11
13442.00	90.50	1.26	7236.46	6507.66	6507.32	392.81	0.77
13536.00	90.34	0.35	7235.77	6601.65	6601.31	394.13	0.98
13630.00	90.30	0.50	7235.25	6695.65	6695.31	394.82	0.16
13725.00	89.97	1.17	7235.02	6790.64	6790.30	396.20	0.79
13818.00	90.10	0.58	7234.97	6883.63	6883.28	397.62	0.65
13912.00	90.10	0.38	7234.80	6977.63	6977.28	398.40	0.21
14006.00	89.97	0.02	7234.75	7071.63	7071.28	398.73	0.41
14101.00	90.03	359.89	7234.75	7166.62	7166.28	398.65	0.16
14196.00	90.07	0.21	7234.66	7261.62	7261.28	398.73	0.34
14290.00	89.97	0.53	7234.64	7355.62	7355.28	399.34	0.36
14384.00	89.87	0.72	7234.77	7449.62	7449.27	400.36	0.23
14478.00	89.80	0.69	7235.05	7543.61	7543.26	401.51	0.08
14573.00	89.87	1.00	7235.33	7638.60	7638.25	402.91	0.33
14667.00	89.97	0.86	7235.47	7732.59	7732.24	404.43	0.18
14761.00	90.20	0.58	7235.33	7826.58	7826.23	405.61	0.39
14853.00	90.00	359.48	7235.17	7918.58	7918.23	405.65	1.21
14947.00	90.00	359.76	7235.17	8012.58	8012.23	405.03	0.29

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
15040.00	90.17	359.50	7235.03	8105.58	8105.23	404.43	0.33
15134.00	90.24	359.35	7234.70	8199.57	8199.22	403.49	0.17
15229.00	90.30	359.36	7234.26	8294.56	8294.22	402.43	0.07
15321.00	89.33	358.60	7234.55	8386.54	8386.20	400.79	1.35
15363.00	88.92	358.46	7235.19	8428.53	8428.18	399.71	1.01

5" = 100' MD