GAMMA RAY

Scientific Drilling

5" = 100' MD

COMPANY : ANADARKO PETROLEUM CORPORATION
WELL : FL GREENS 28C-5HZ
FIELD : WATTENBERG
COUNTY : WELD
STATE : COLORADO
COUNTRY : U.S.A.
UWI : 05123422740000

COMPANY : ANADARKO PETROLEUM CORPORATION
WELL : FL GREENS 28C-5HZ
FIELD : WATTENBERG
COUNTY : WELD
STATE : COLORADO
COUNTRY : U.S.A.
UWI : 05123422740000

WELL LOCATION NAD83
LAT:40.0701240°N LONG:104.8056360°W
N:14552327.98 ft E:1694792.79 ft
SEC:8 TWP:1N RANGE:66W

OTHER SERVICES

DIRECTIONAL
ROP

DEPTH REF. : RKB
REF. HEIGHT : 20.000 ft RKB to Ground Level
GROUND LEVEL : 4925.000 ft G.L. to MEAN SEA LEVEL

BOREHOLE RECORD

HOLE SIZE in	FROM ft	TO ft
13.5	0	1876
7.875	1876	13255

CASING RECORD

CASING SIZE in	FROM ft	TO ft
9.625	0	1866

DEVIATION RECORD

INCLINATION deg	FROM ft	TO ft
0 - 15	0	3256
15 - 0	3256	6740
0 - 89	6740	7902
89 - 91	7902	13255

DRILLING CO. : PRECISION DRILLING
RIG : 461
LWD UNIT NO. : MWD-00282-DISTRICT : CASPER
SPUD DATE : 06/14/2017
LWD START DATE : 06/17/2017 DEPTH : 1876 ft
LWD END DATE : 06/20/2017 DEPTH : 16198 ft
TOTAL DEPTH : 13255 ft

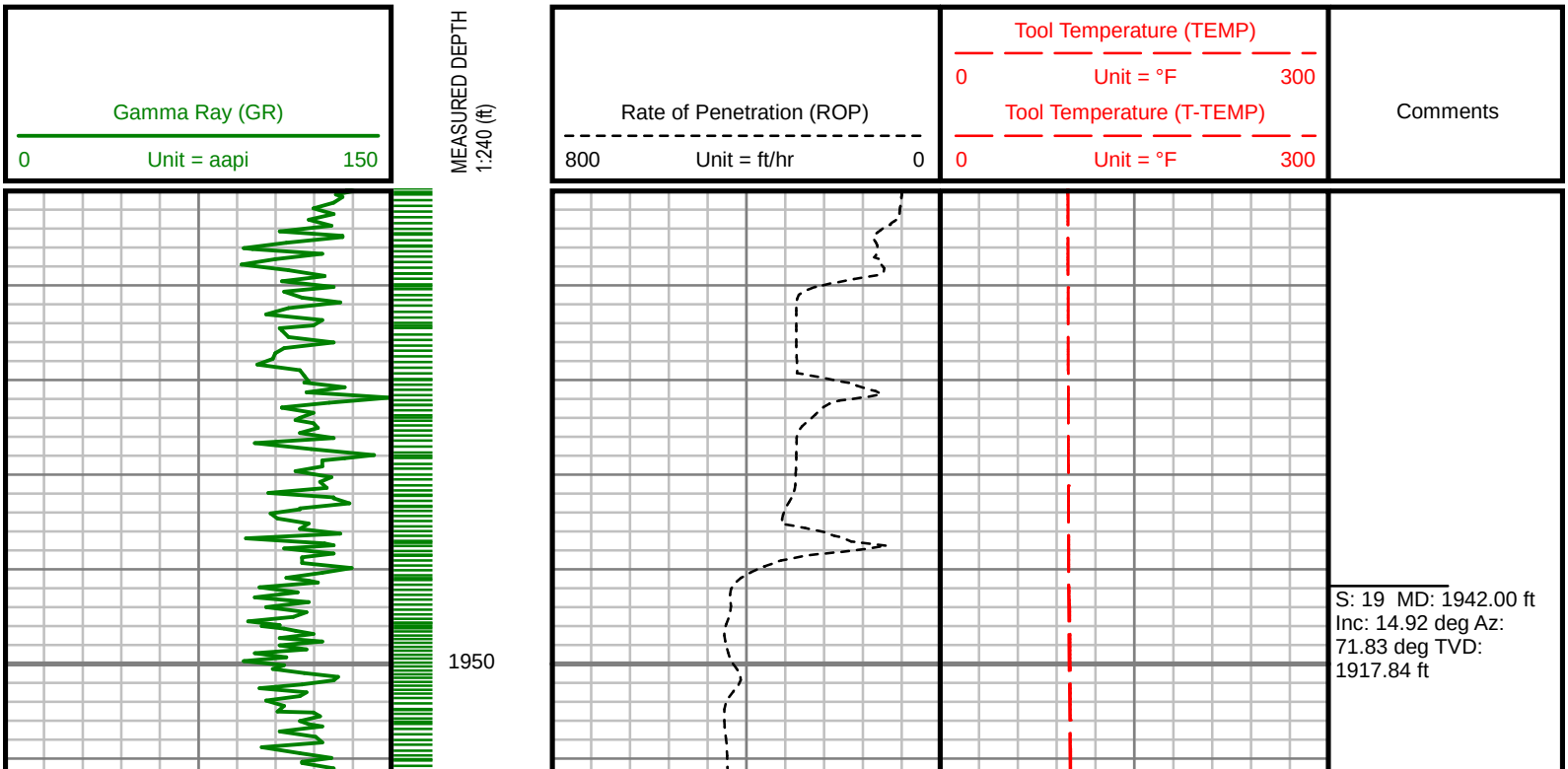
Run Data

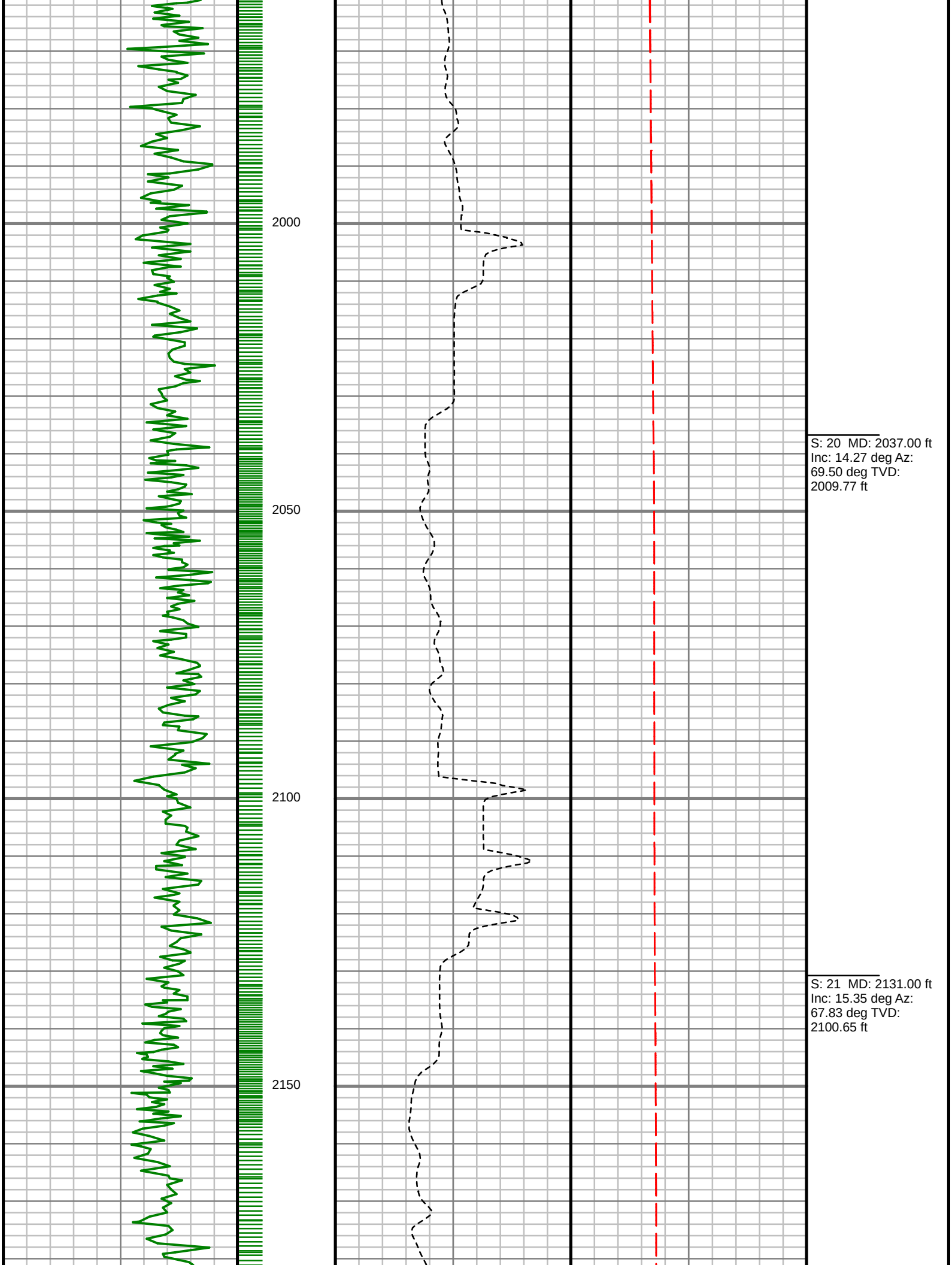
RUN NUMBER	1
START DATE	06/17/2017
START TIME	21:30
END DATE	06/20/2017
END TIME	15:35
DEPTH IN (ft)	1876
DEPTH OUT (ft)	13255
LOG TOP (ft)	1900
LOG BOTTOM (ft)	16198
HOLE SIZE (in)	7.875
MUD DATA @ (ft)	-
MUD TYPE	OIL-BASED
DENSITY (lb / gal)	9.1
VISCOSITY (s / qt)	49
pH	8.4
FLUID LOSS (cm3 / 30)	-
SALINITY (ppm)	162977
Rm (ohmm @ deg F)	-
Rmf (ohmm @ deg F)	-
MAX TEMP (deg F)	253
Rm @ MAX TEMP (ohmm)	-
LWD ENGINEER #1	M. SMITH
LWD ENGINEER #2	L. SHAFFER
LWD ENGINEER #3	-
LOG WITNESS #1	-
LOG WITNESS #2	-

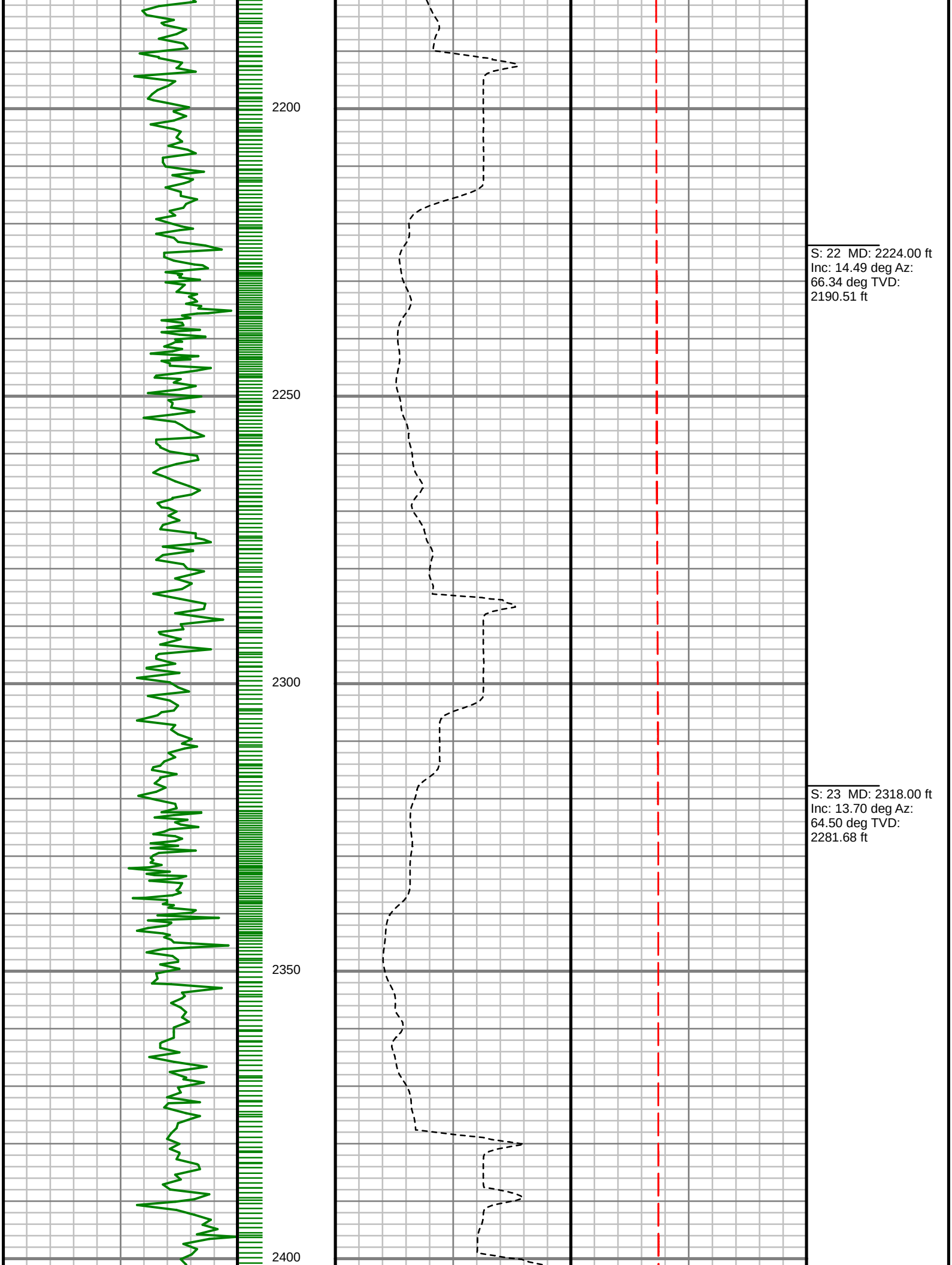
Remarks
ANADARKO PETROLEUM CORPORATION AFE# 2111215
SCIENTIFIC DRILLING INTERNATIONAL JOB# OP.002153
ALL REFERENCES IN THE DEPTH TRACK ARE AT BIT DEPTH.
ALL DATA IS MEMORY DATA UNLESS STATED OTHERWISE.
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO RATE OF PENETRATION CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO TOOL TEMPERATURE CURVE
RUN #1: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-302 / CONT = 174 / MWD EYE = 833 / GAMMA RAY = 1199
BIT TO SENSOR OFFSETS: SURVEY = 60.15 FT. / GAMMA RAY = 56.15 FT.
MNEMONICS LIST:
GR = GAMMA RAY
ROP = RATE OF PENETRATION
TEMP = TOOL TEMPERATURE
T-TEMP = TOOL TEMPERATURE

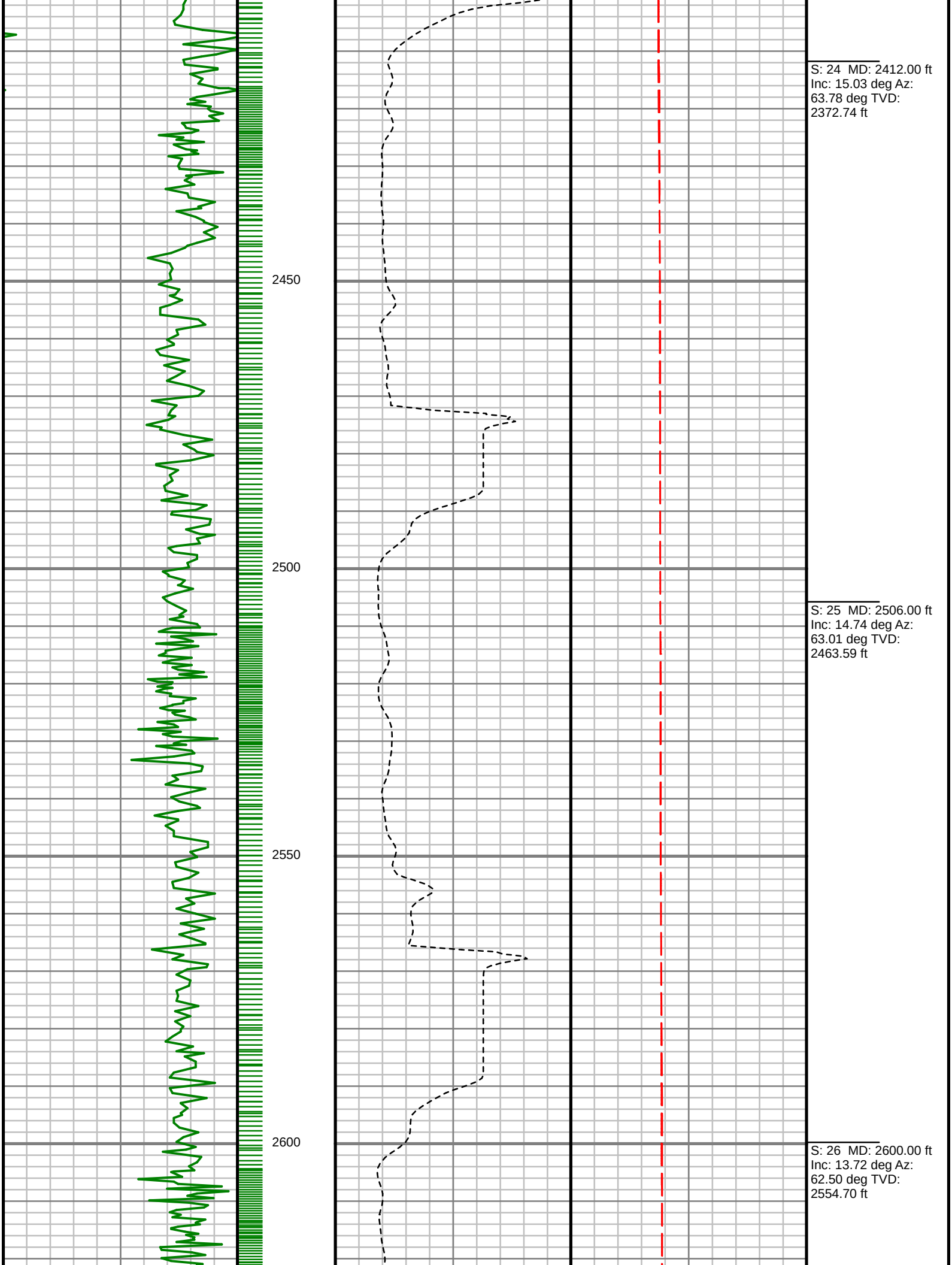
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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.

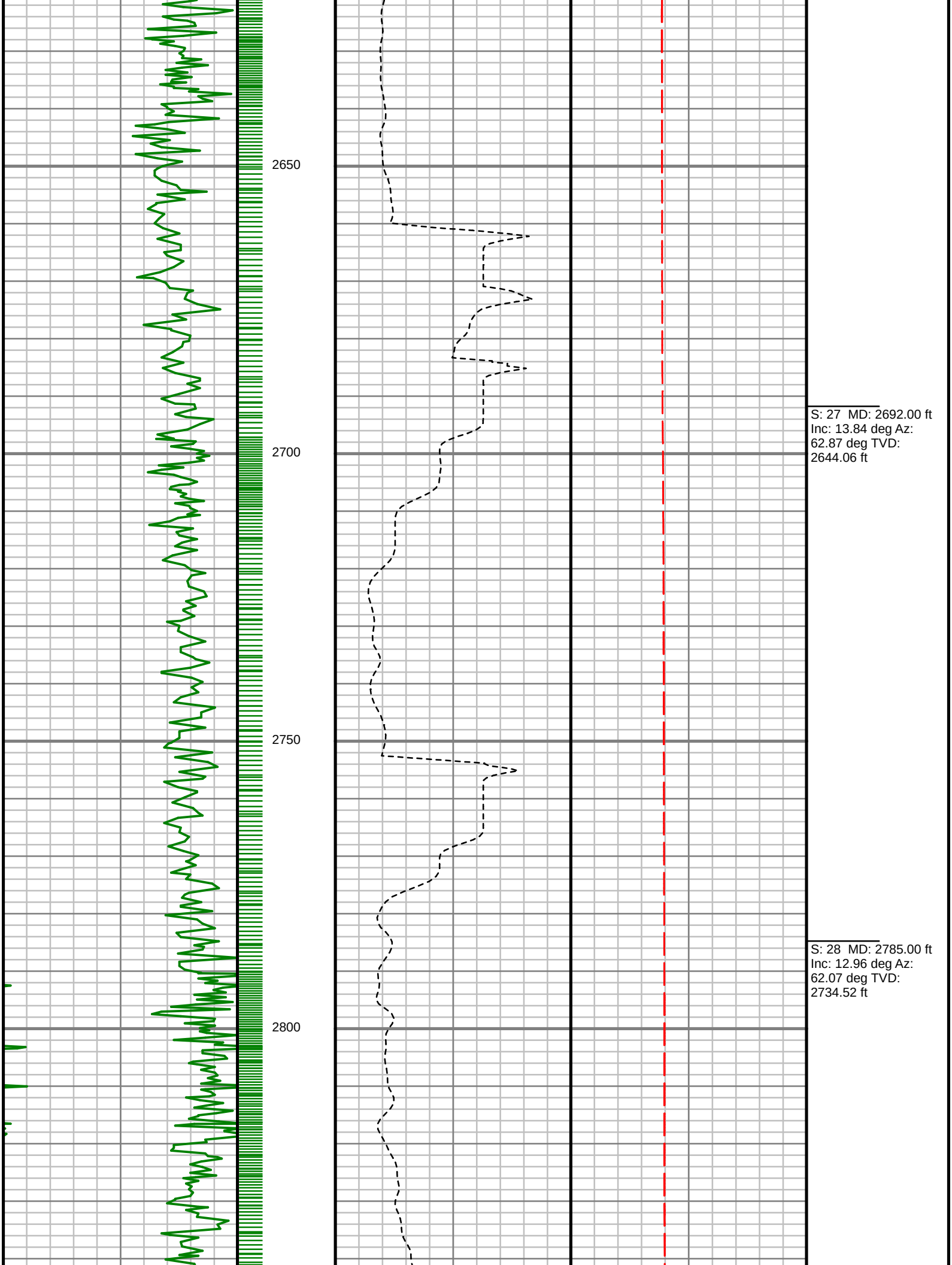
ANADARKO PETROLEUM CORPORATION
FL GREENS 28C-5HZ
WATTENBERG FIELD
WELD COUNTY, COLORADO
API # 05123422740000

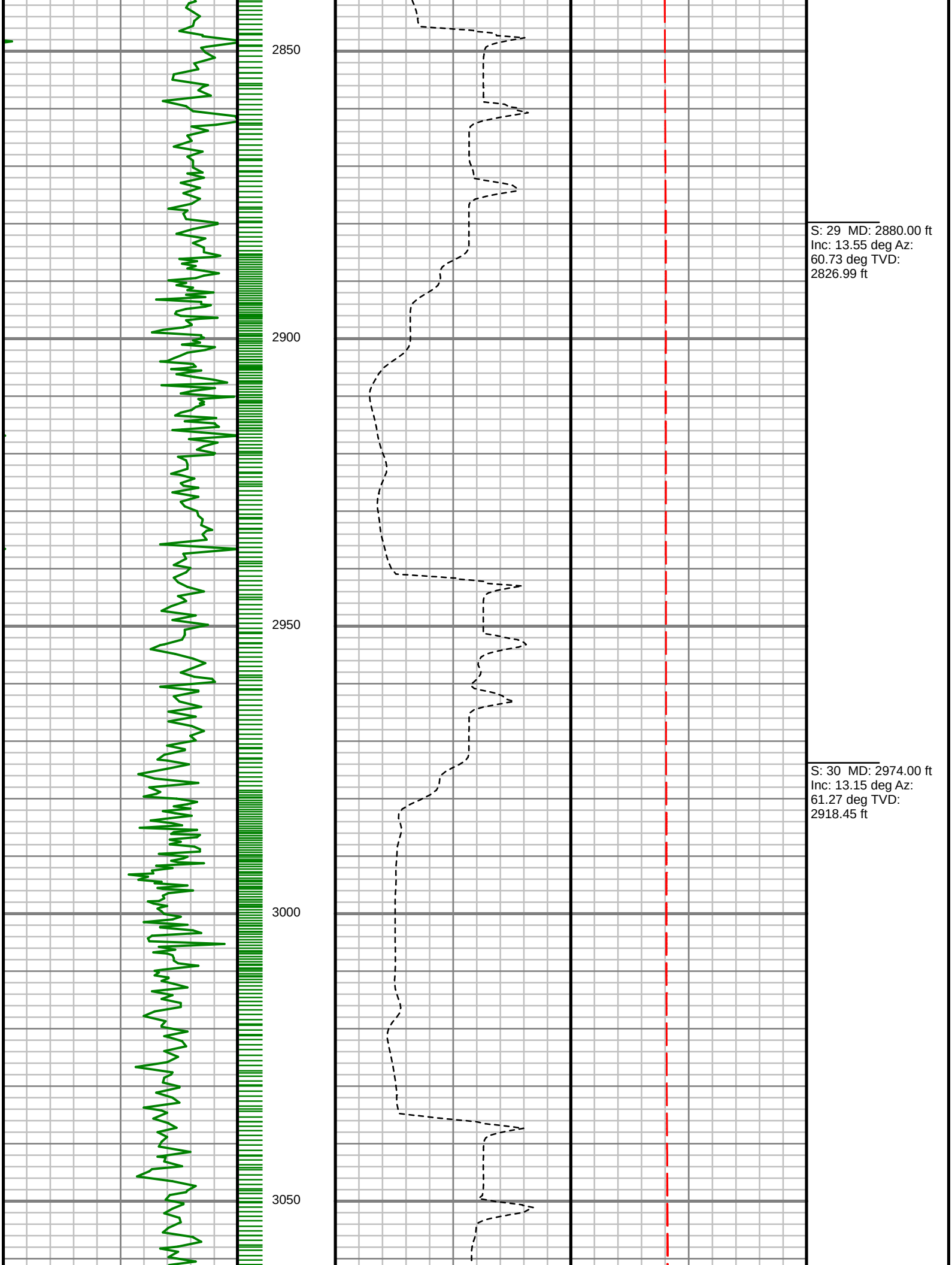


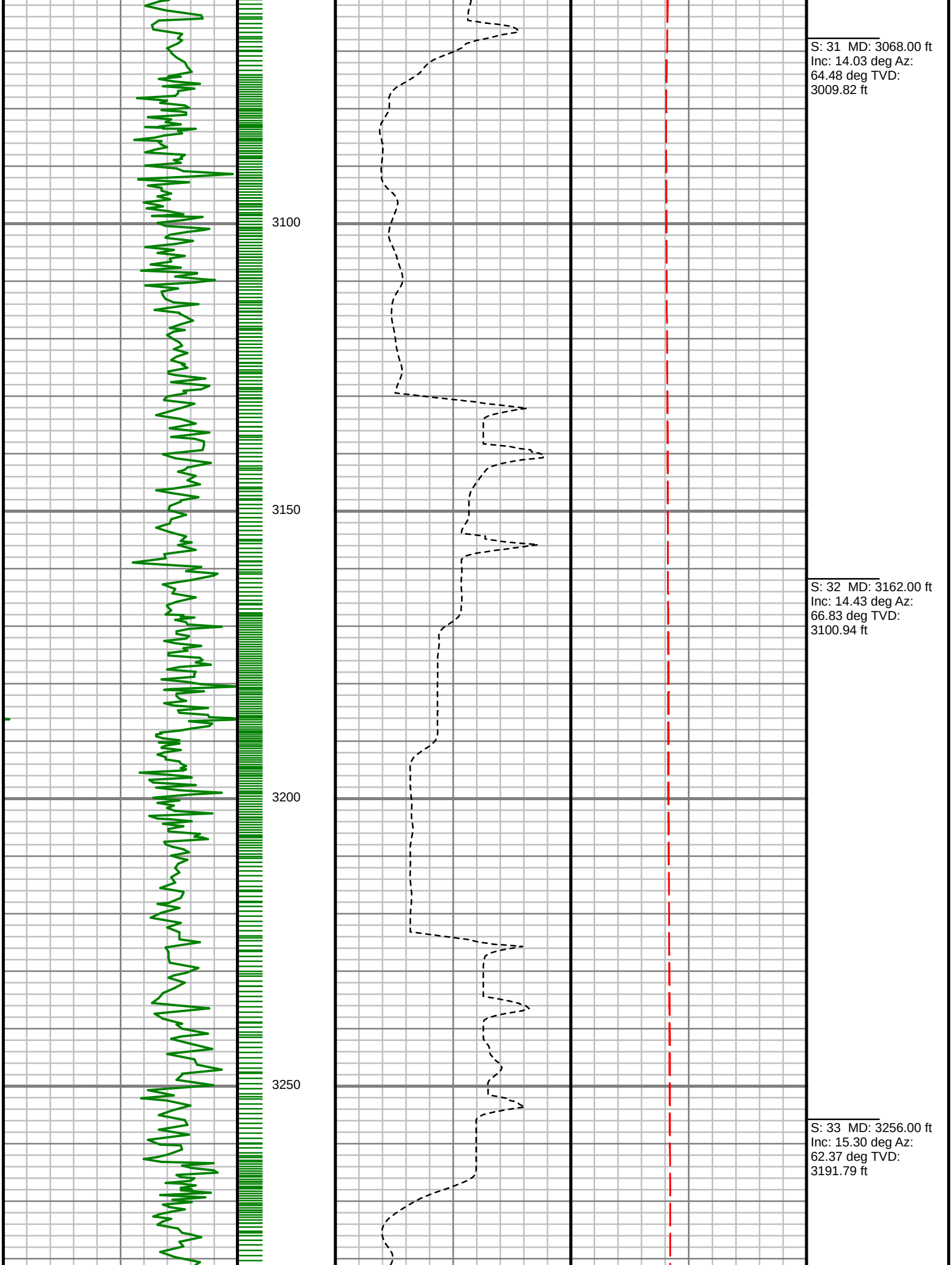

2000
2050
2100
2150
S: 20 MD: 2037.00 ft
Inc: 14.27 deg Az:
69.50 deg TVD:
2009.77 ft
S: 21 MD: 2131.00 ft
Inc: 15.35 deg Az:
67.83 deg TVD:
2100.65 ft

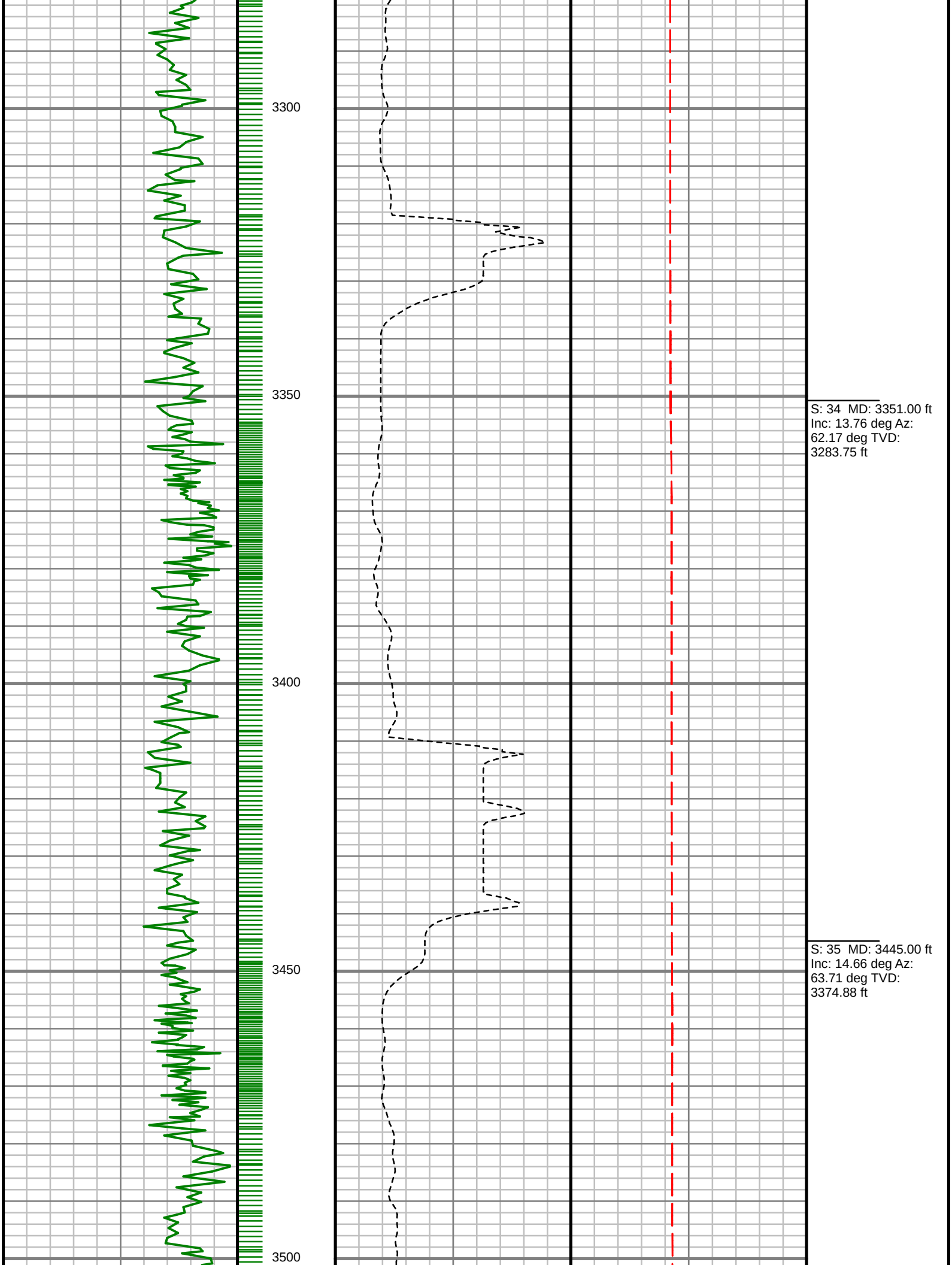

2200
2250
2300
2350
2400
S: 22 MD: 2224.00 ft
Inc: 14.49 deg Az:
66.34 deg TVD:
2190.51 ft
S: 23 MD: 2318.00 ft
Inc: 13.70 deg Az:
64.50 deg TVD:
2281.68 ft

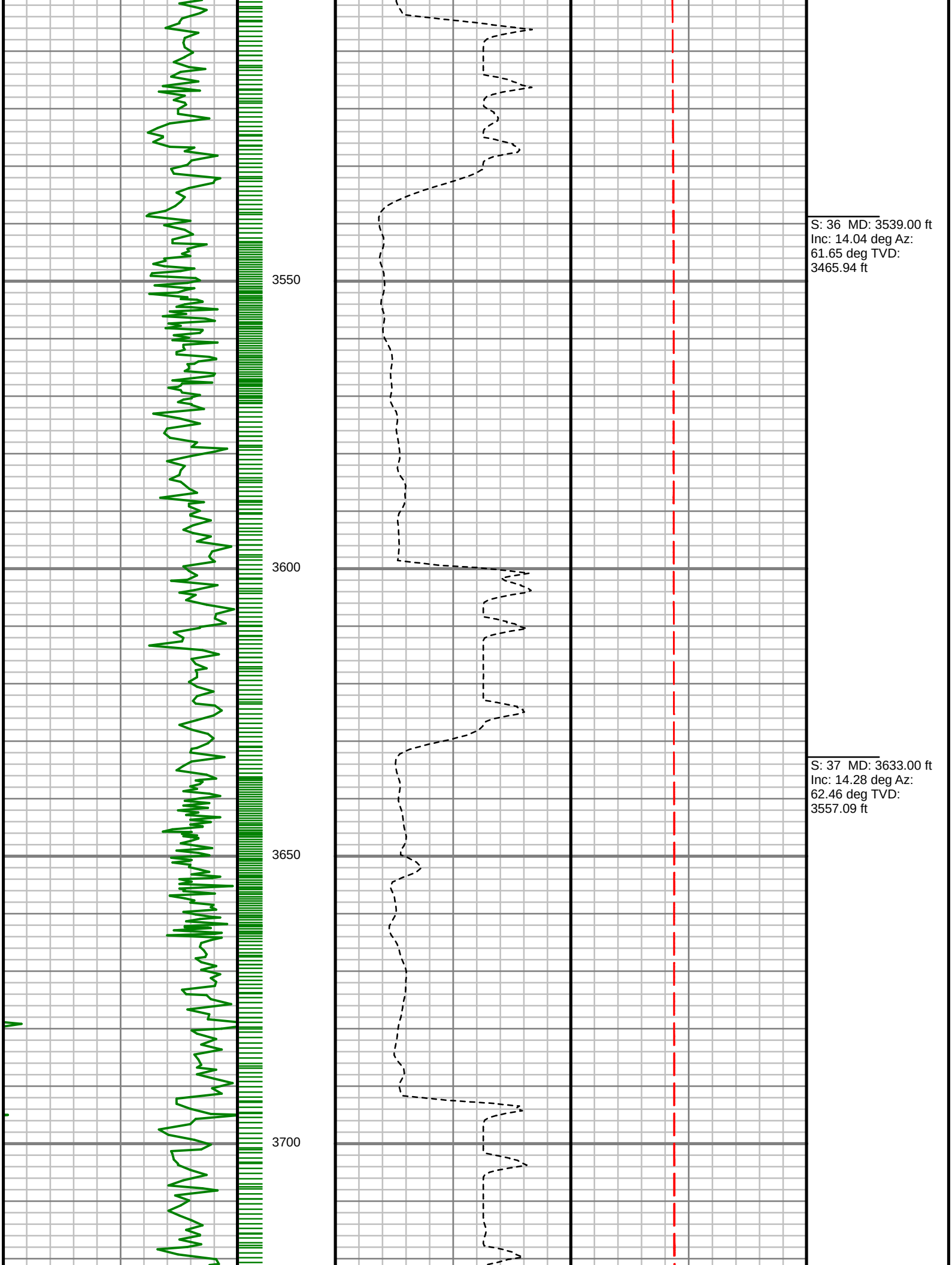

2450
2500
2550
2600
S: 24 MD: 2412.00 ft
Inc: 15.03 deg Az:
63.78 deg TVD:
2372.74 ft
S: 25 MD: 2506.00 ft
Inc: 14.74 deg Az:
63.01 deg TVD:
2463.59 ft
S: 26 MD: 2600.00 ft
Inc: 13.72 deg Az:
62.50 deg TVD:
2554.70 ft

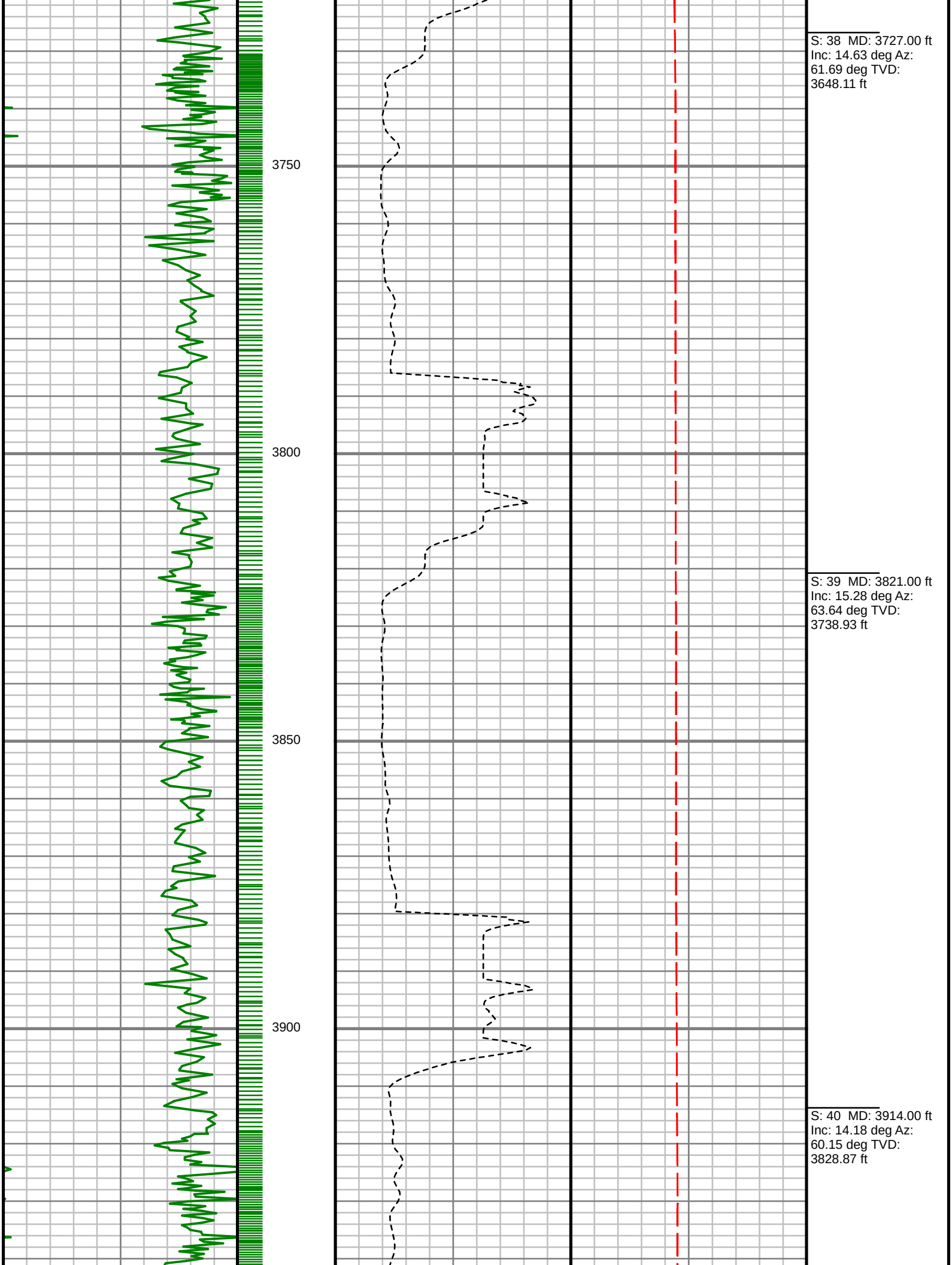

2650
2700
2750
2800
S: 27 MD: 2692.00 ft
Inc: 13.84 deg Az:
62.87 deg TVD:
2644.06 ft
S: 28 MD: 2785.00 ft
Inc: 12.96 deg Az:
62.07 deg TVD:
2734.52 ft

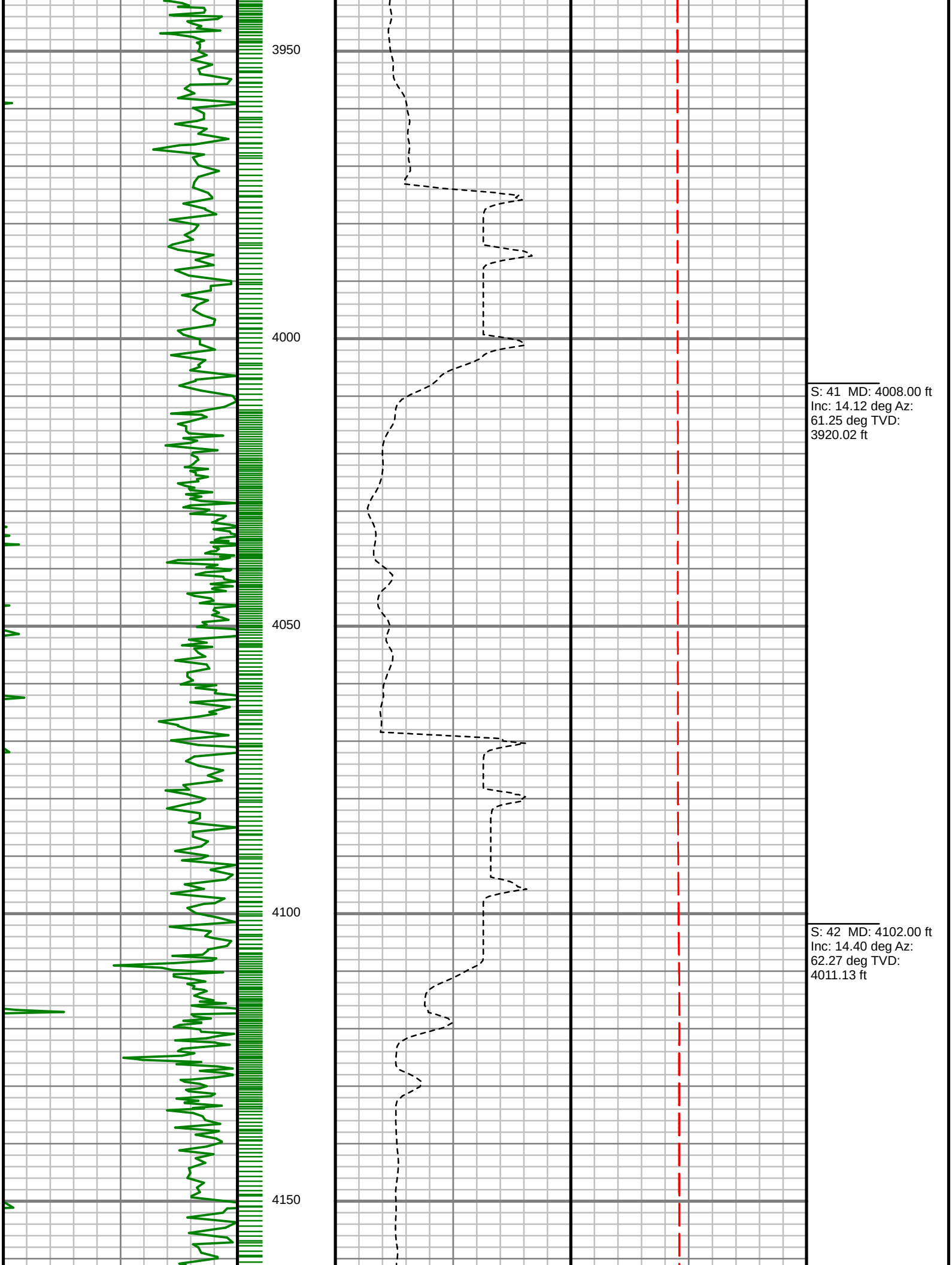

2850
2900
2950
3000
3050
S: 29 MD: 2880.00 ft
Inc: 13.55 deg Az:
60.73 deg TVD:
2826.99 ft
S: 30 MD: 2974.00 ft
Inc: 13.15 deg Az:
61.27 deg TVD:
2918.45 ft

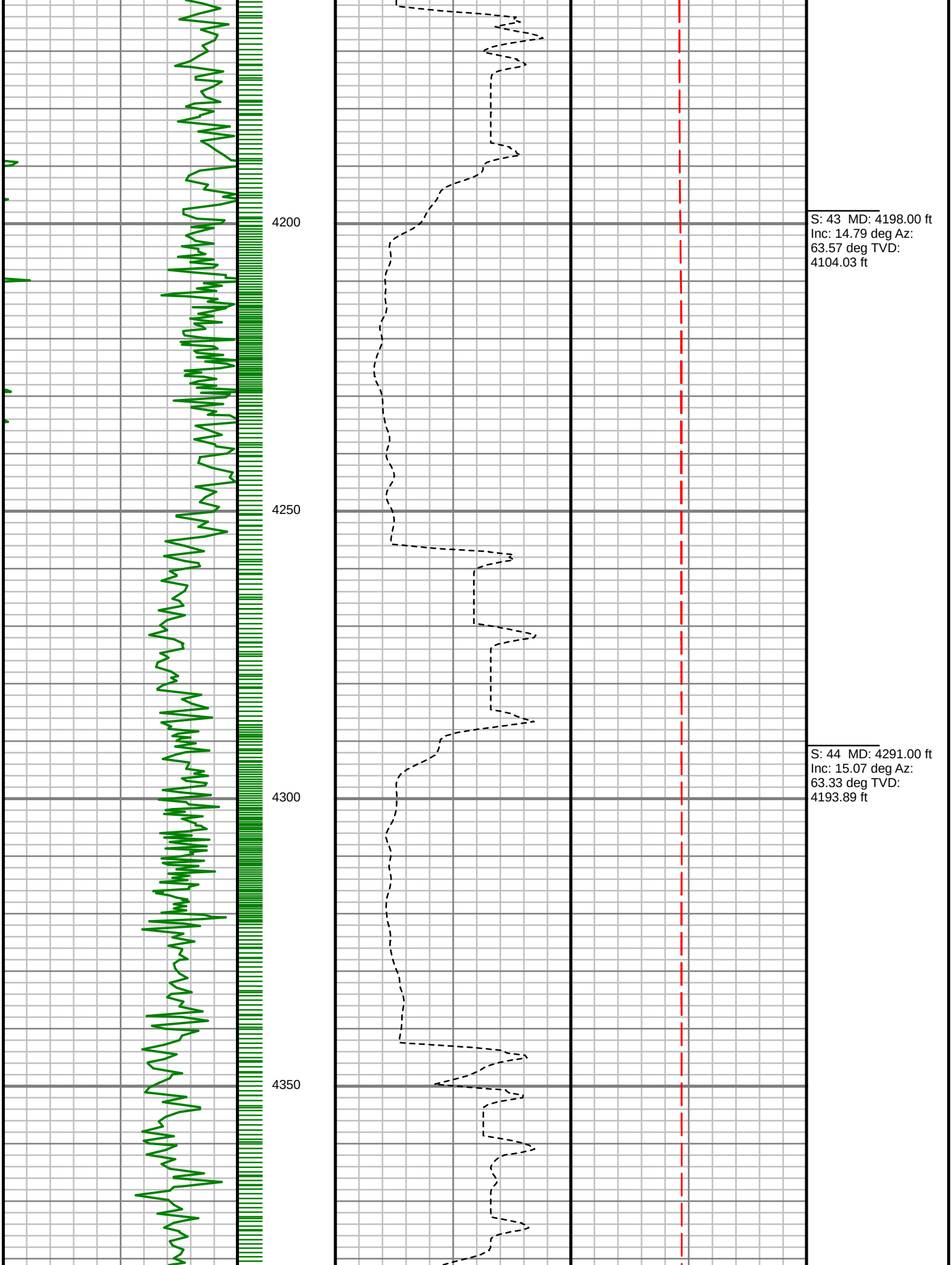

3100
3150
3200
3250
S: 31 MD: 3068.00 ft
Inc: 14.03 deg Az:
64.48 deg TVD:
3009.82 ft
S: 32 MD: 3162.00 ft
Inc: 14.43 deg Az:
66.83 deg TVD:
3100.94 ft
S: 33 MD: 3256.00 ft
Inc: 15.30 deg Az:
62.37 deg TVD:
3191.79 ft

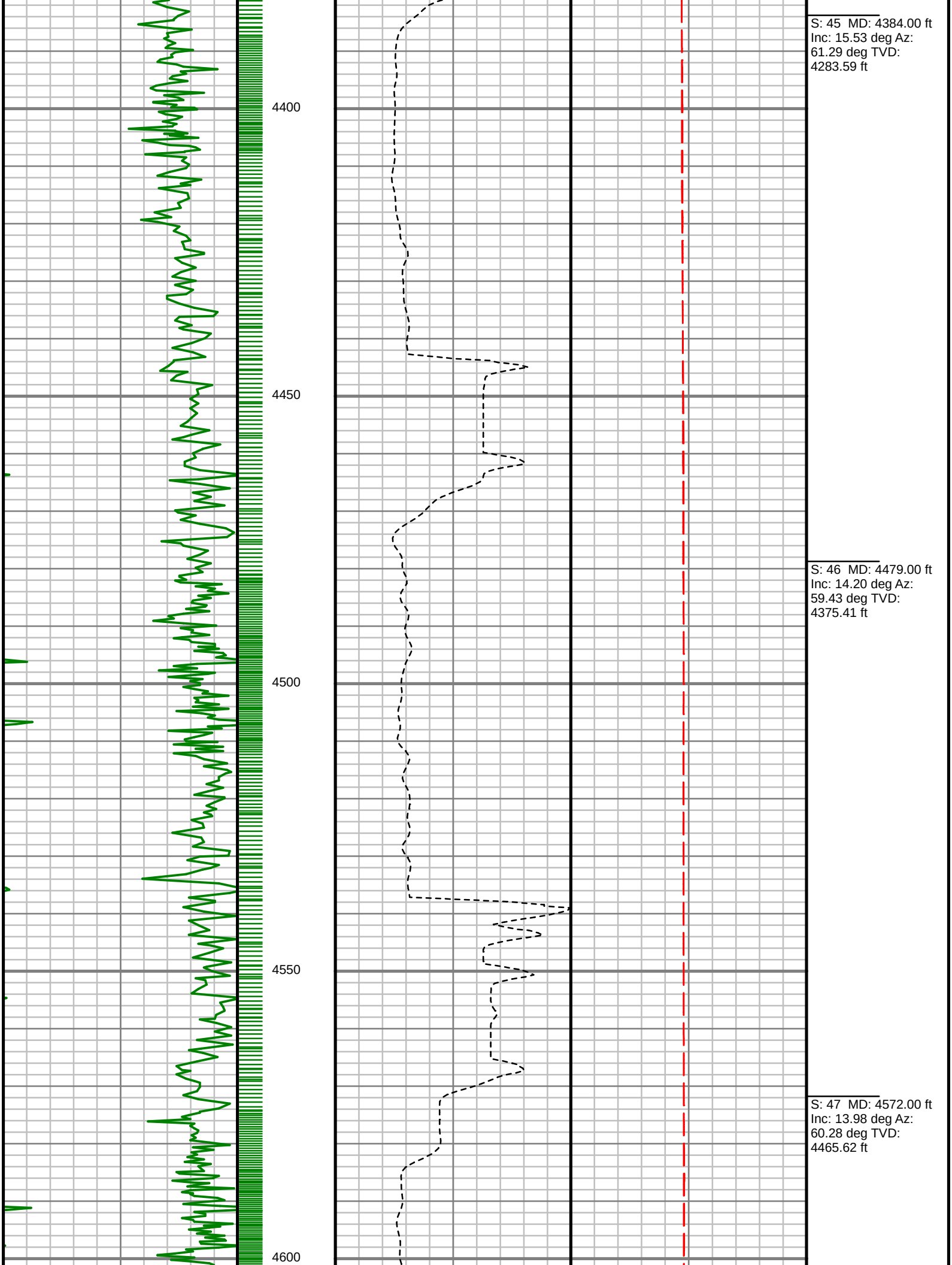

3300
3350
3400
3450
3500
S: 34 MD: 3351.00 ft
Inc: 13.76 deg Az:
62.17 deg TVD:
3283.75 ft
S: 35 MD: 3445.00 ft
Inc: 14.66 deg Az:
63.71 deg TVD:
3374.88 ft

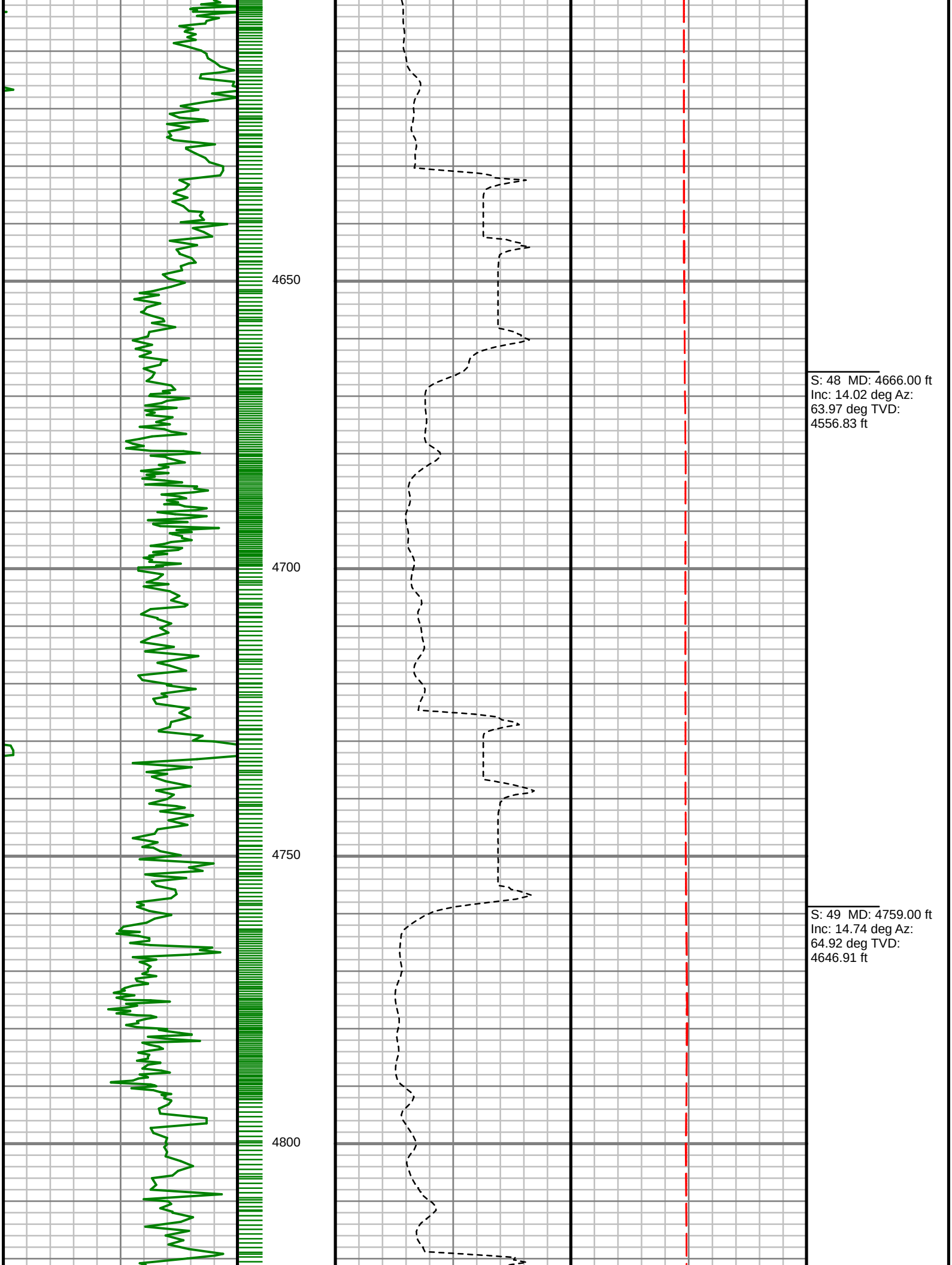

3550
3600
3650
3700
S: 36 MD: 3539.00 ft
Inc: 14.04 deg Az:
61.65 deg TVD:
3465.94 ft
S: 37 MD: 3633.00 ft
Inc: 14.28 deg Az:
62.46 deg TVD:
3557.09 ft

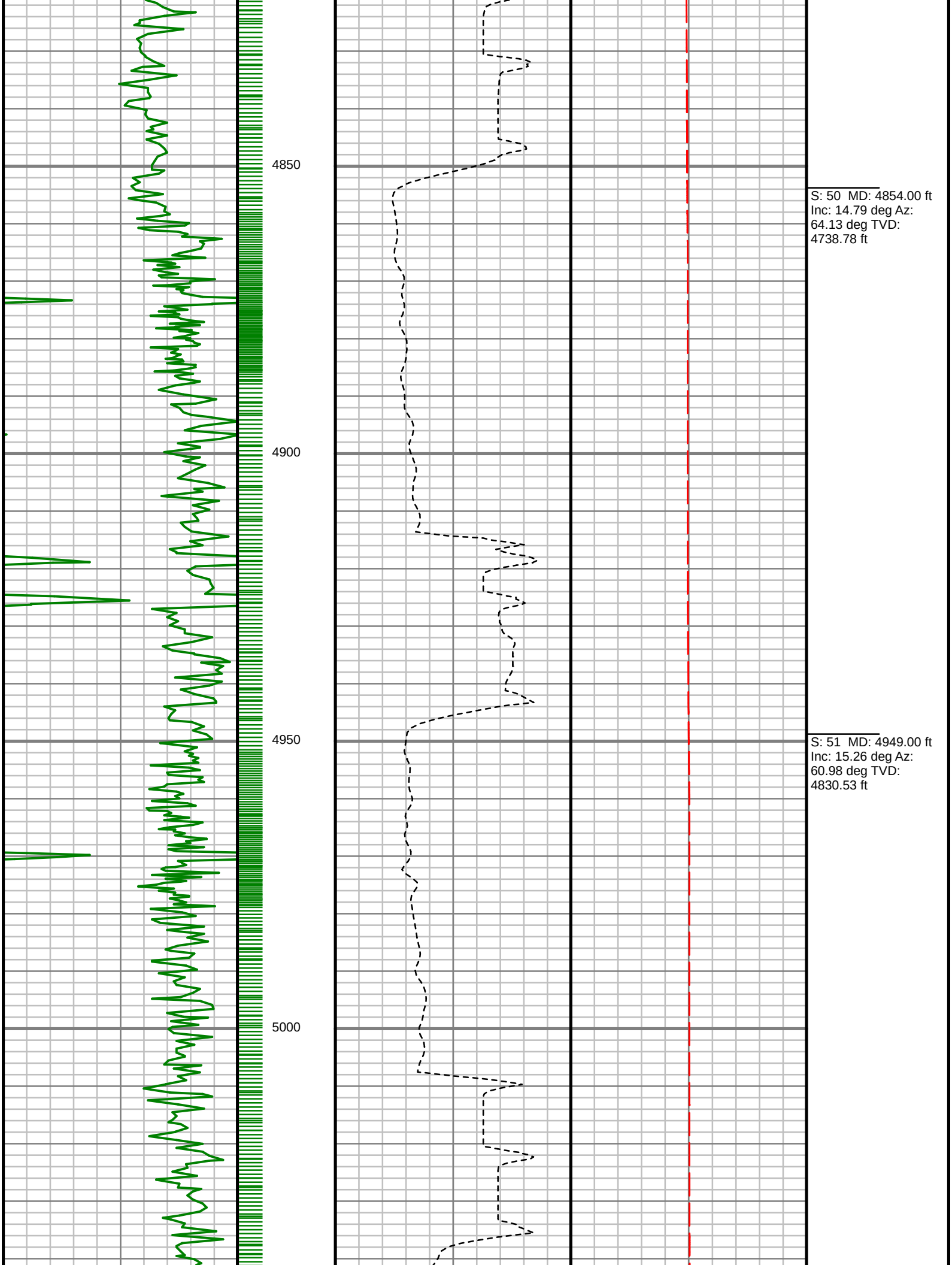

3750
3800
3850
3900
S: 38 MD: 3727.00 ft
Inc: 14.63 deg Az:
61.69 deg TVD:
3648.11 ft
S: 39 MD: 3821.00 ft
Inc: 15.28 deg Az:
63.64 deg TVD:
3738.93 ft
S: 40 MD: 3914.00 ft
Inc: 14.18 deg Az:
60.15 deg TVD:
3828.87 ft

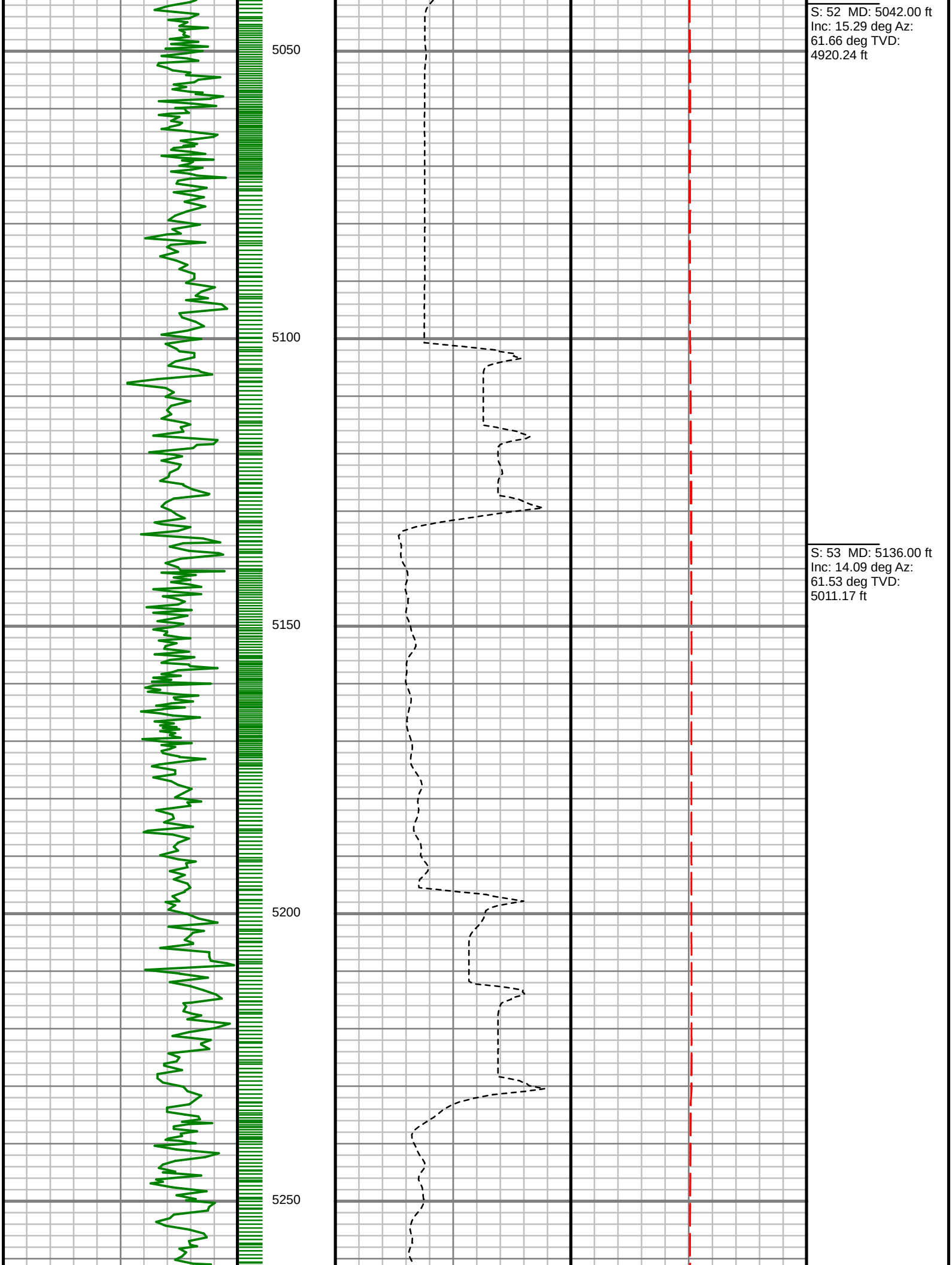

3950
4000
4050
4100
4150
S: 41 MD: 4008.00 ft
Inc: 14.12 deg Az:
61.25 deg TVD:
3920.02 ft
S: 42 MD: 4102.00 ft
Inc: 14.40 deg Az:
62.27 deg TVD:
4011.13 ft

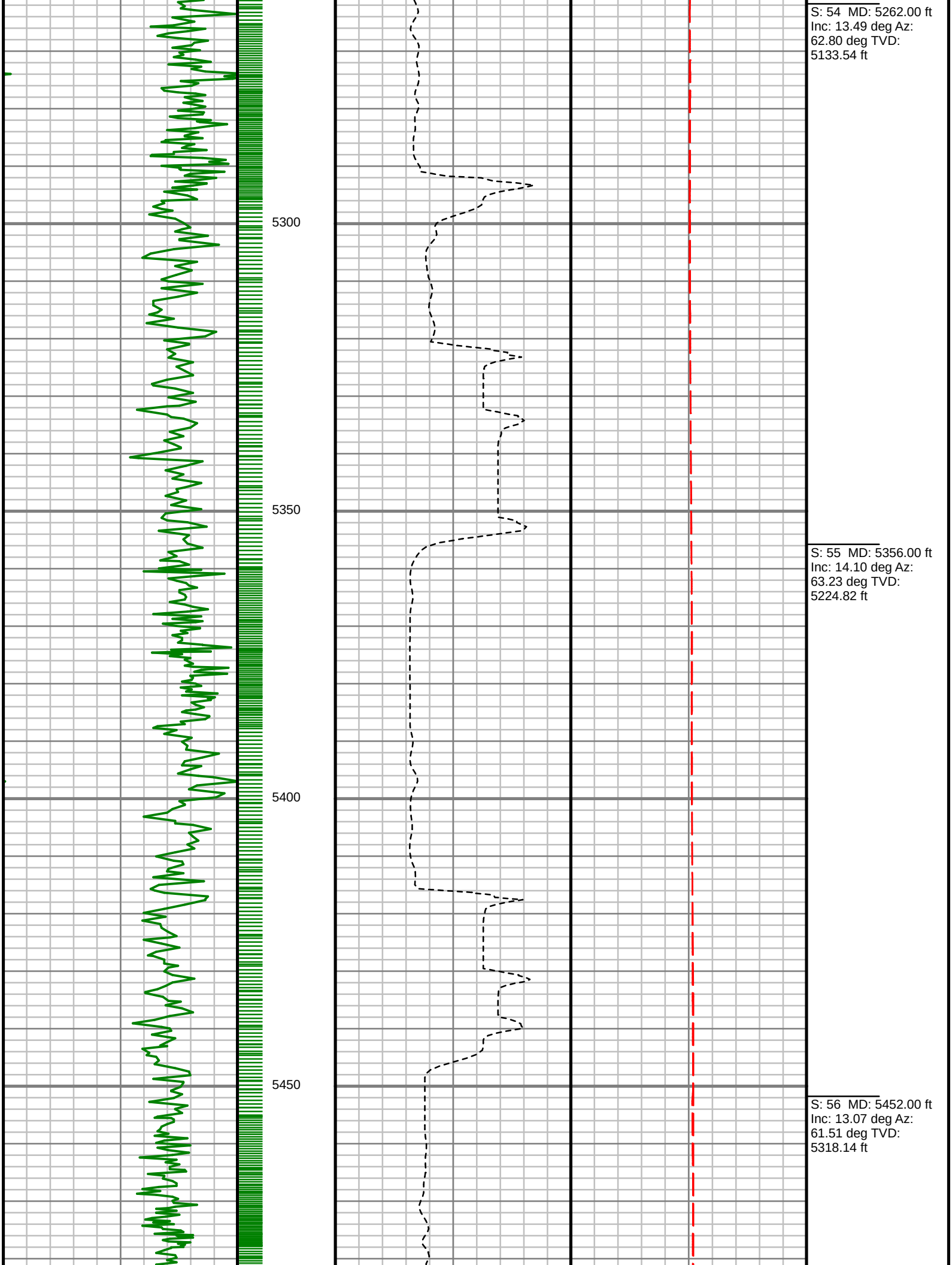

4200
4250
4300
4350
S: 43 MD: 4198.00 ft
Inc: 14.79 deg Az:
63.57 deg TVD:
4104.03 ft
S: 44 MD: 4291.00 ft
Inc: 15.07 deg Az:
63.33 deg TVD:
4193.89 ft

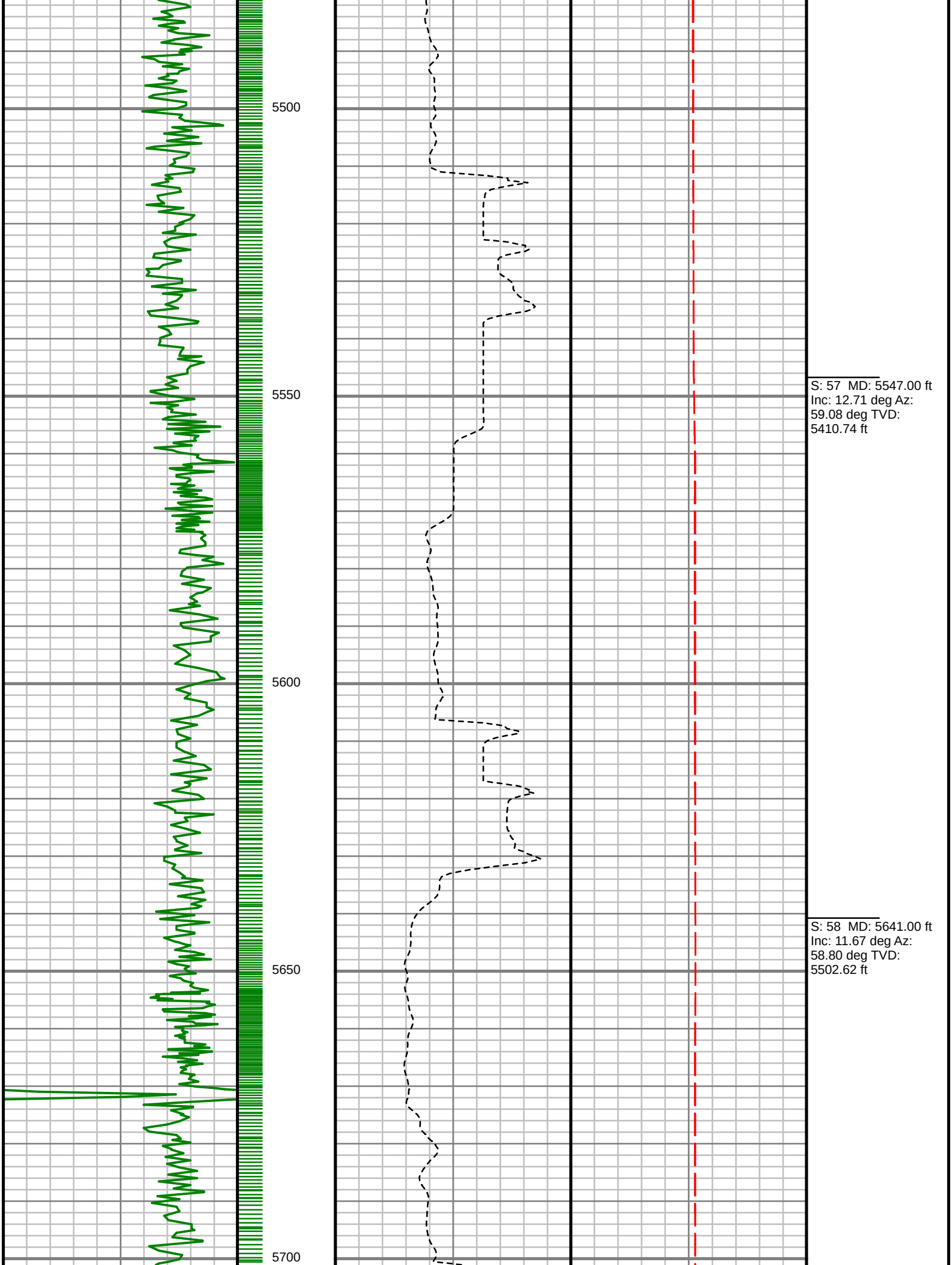

4400
4450
4500
4550
4600
S: 45 MD: 4384.00 ft
Inc: 15.53 deg Az:
61.29 deg TVD:
4283.59 ft
S: 46 MD: 4479.00 ft
Inc: 14.20 deg Az:
59.43 deg TVD:
4375.41 ft
S: 47 MD: 4572.00 ft
Inc: 13.98 deg Az:
60.28 deg TVD:
4465.62 ft

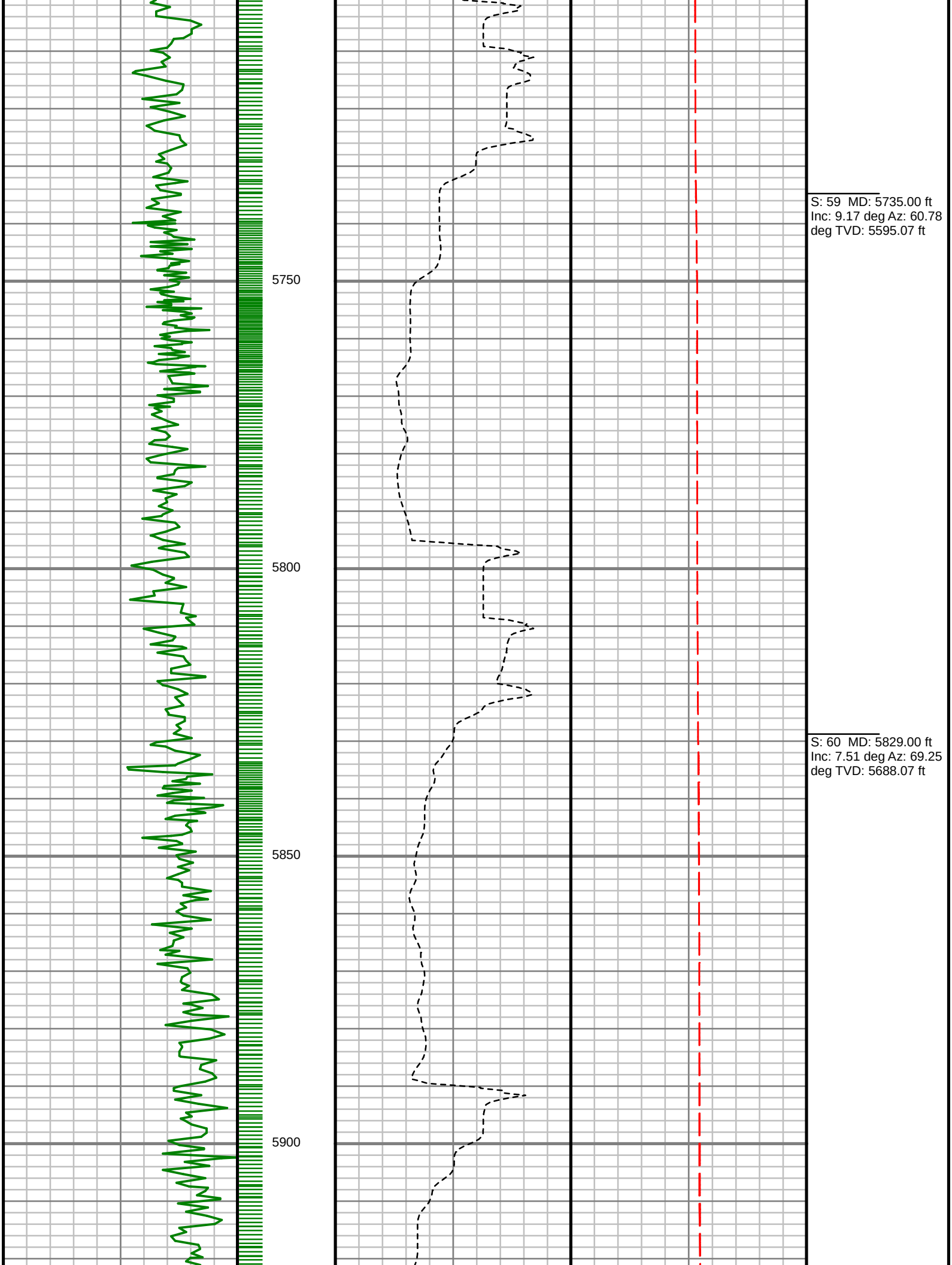

4650
4700
4750
4800
S: 48 MD: 4666.00 ft
Inc: 14.02 deg Az:
63.97 deg TVD:
4556.83 ft
S: 49 MD: 4759.00 ft
Inc: 14.74 deg Az:
64.92 deg TVD:
4646.91 ft

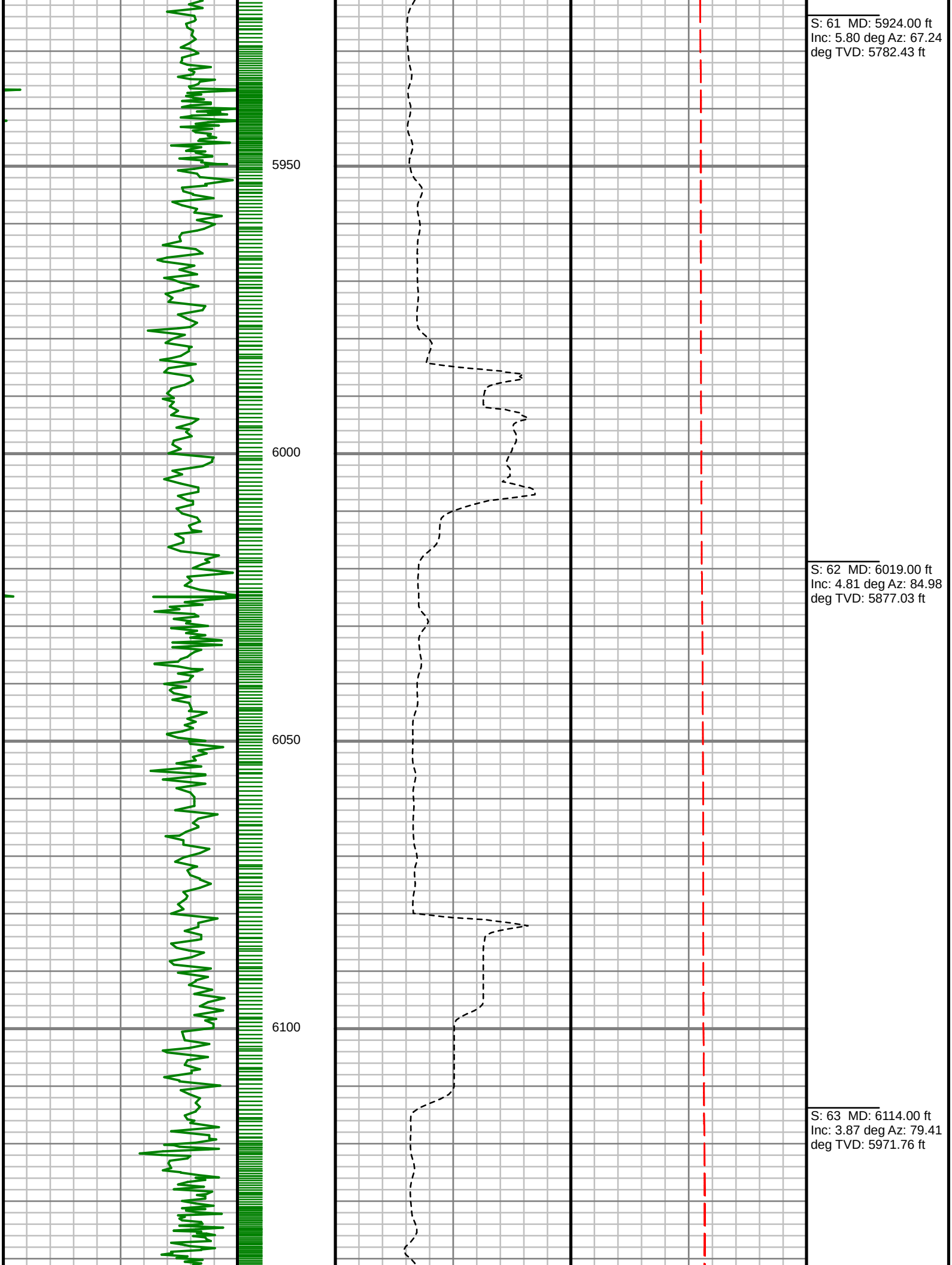

4850
4900
4950
5000
S: 50 MD: 4854.00 ft
Inc: 14.79 deg Az:
64.13 deg TVD:
4738.78 ft
S: 51 MD: 4949.00 ft
Inc: 15.26 deg Az:
60.98 deg TVD:
4830.53 ft

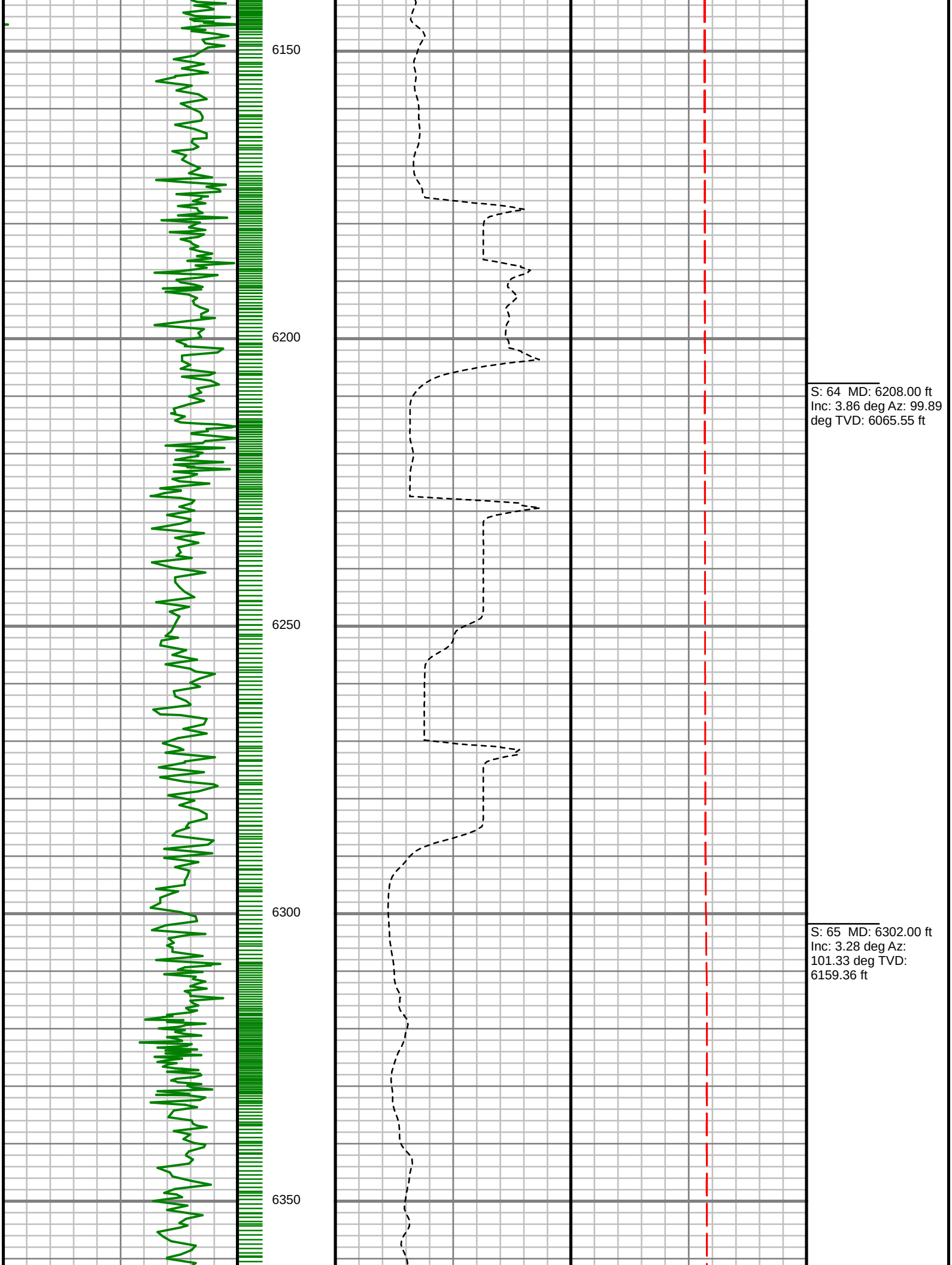

5050
5100
5150
5200
5250
S: 52 MD: 5042.00 ft
Inc: 15.29 deg Az:
61.66 deg TVD:
4920.24 ft
S: 53 MD: 5136.00 ft
Inc: 14.09 deg Az:
61.53 deg TVD:
5011.17 ft

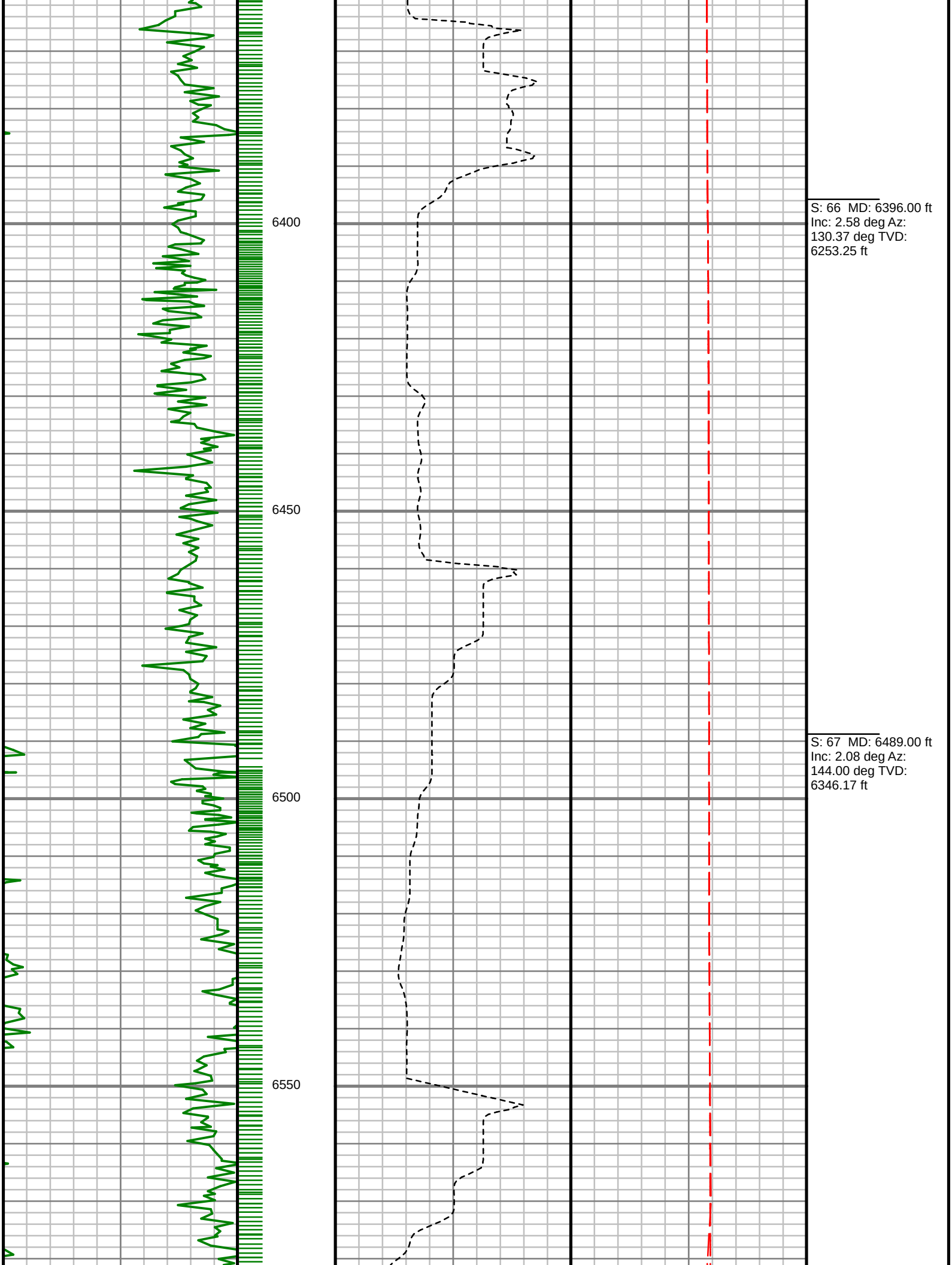

5300
5350
5400
5450
S: 54 MD: 5262.00 ft
Inc: 13.49 deg Az:
62.80 deg TVD:
5133.54 ft
S: 55 MD: 5356.00 ft
Inc: 14.10 deg Az:
63.23 deg TVD:
5224.82 ft
S: 56 MD: 5452.00 ft
Inc: 13.07 deg Az:
61.51 deg TVD:
5318.14 ft

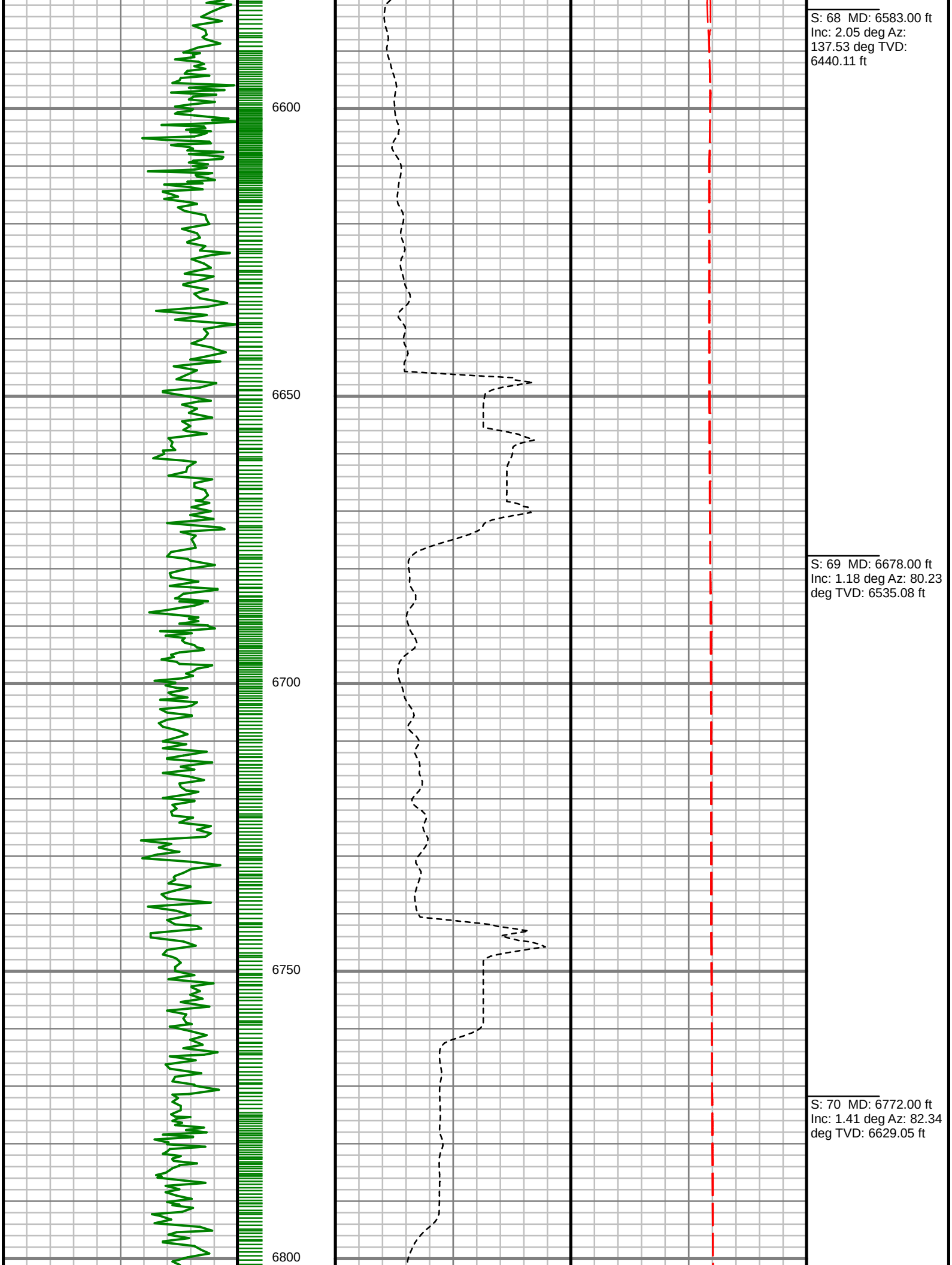

5500
5550
5600
5650
5700
S: 57 MD: 5547.00 ft
Inc: 12.71 deg Az:
59.08 deg TVD:
5410.74 ft
S: 58 MD: 5641.00 ft
Inc: 11.67 deg Az:
58.80 deg TVD:
5502.62 ft

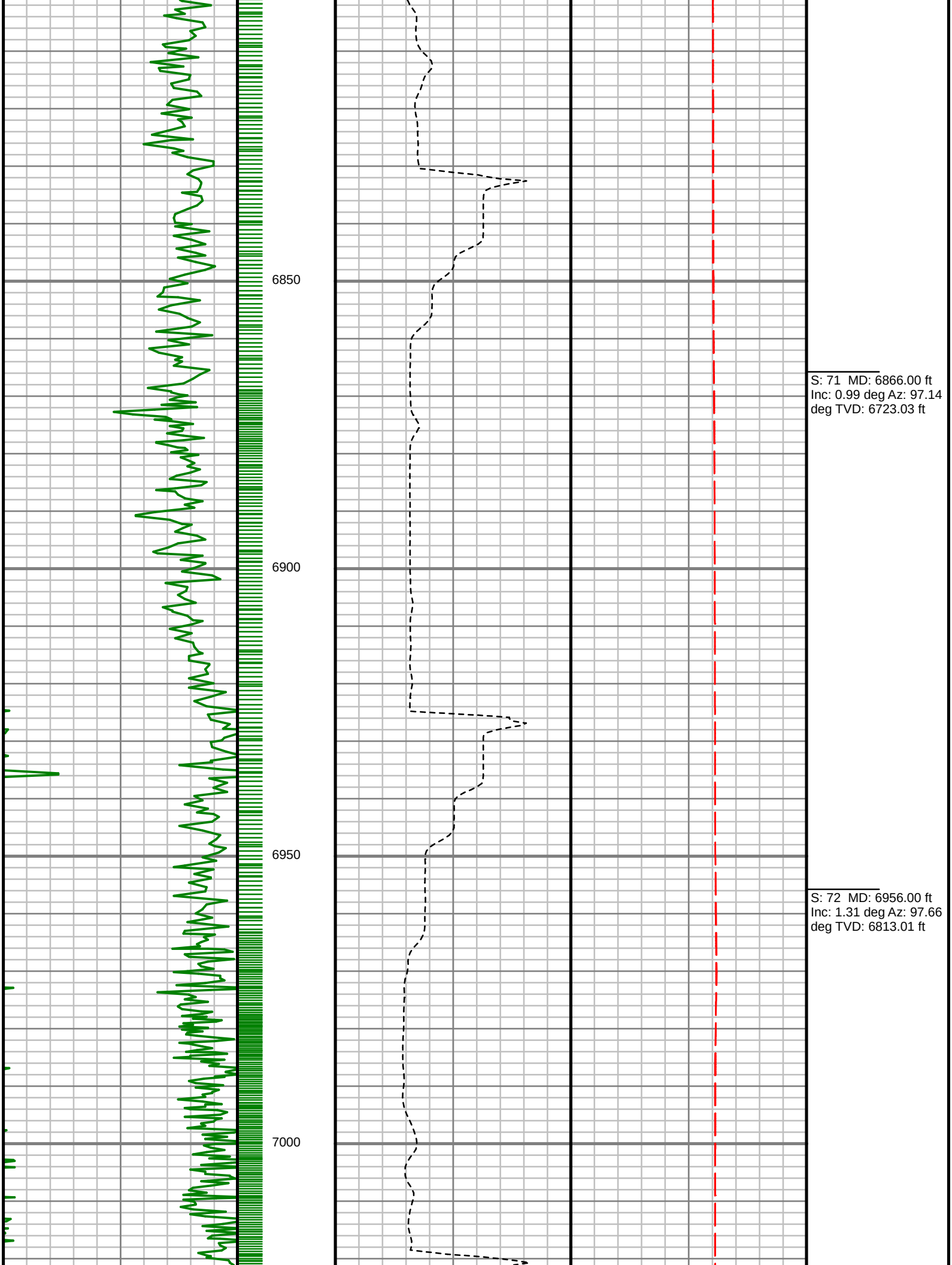

5750
5800
5850
5900
S: 59 MD: 5735.00 ft
Inc: 9.17 deg Az: 60.78
deg TVD: 5595.07 ft
S: 60 MD: 5829.00 ft
Inc: 7.51 deg Az: 69.25
deg TVD: 5688.07 ft

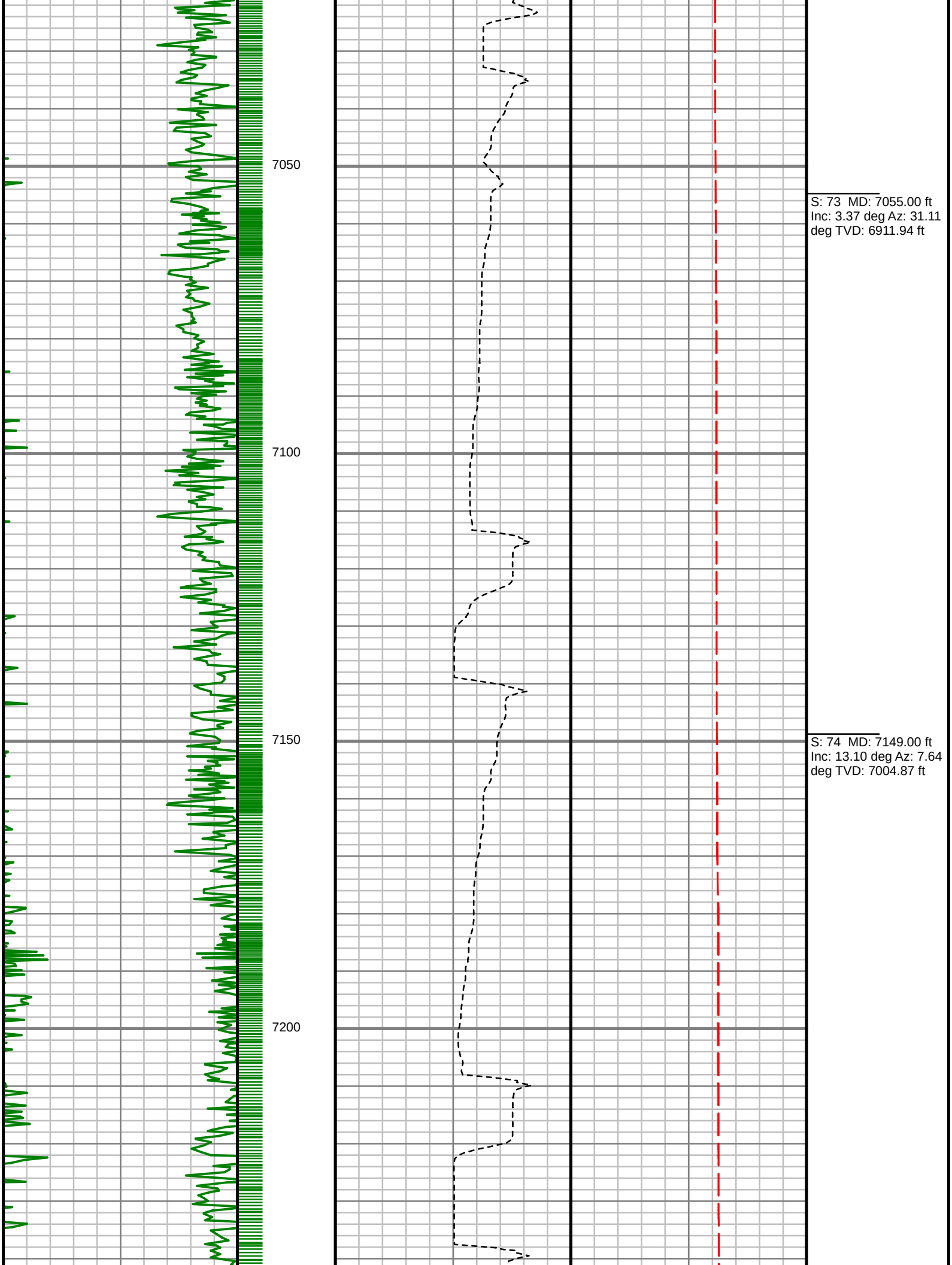

5950
6000
6050
6100
S: 61 MD: 5924.00 ft
Inc: 5.80 deg Az: 67.24
deg TVD: 5782.43 ft
S: 62 MD: 6019.00 ft
Inc: 4.81 deg Az: 84.98
deg TVD: 5877.03 ft
S: 63 MD: 6114.00 ft
Inc: 3.87 deg Az: 79.41
deg TVD: 5971.76 ft

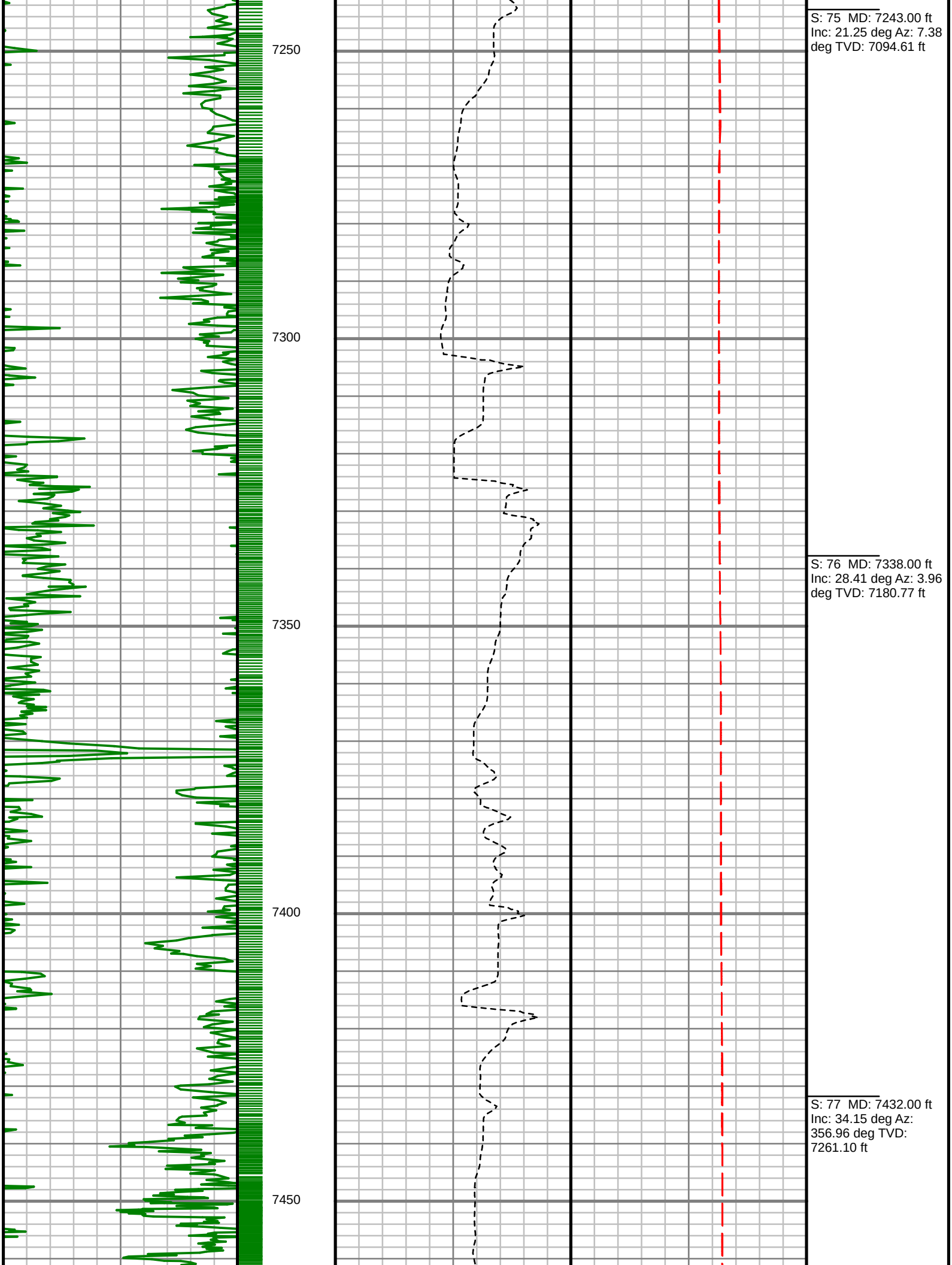

6150
6200
6250
6300
6350
S: 64 MD: 6208.00 ft
Inc: 3.86 deg Az: 99.89
deg TVD: 6065.55 ft
S: 65 MD: 6302.00 ft
Inc: 3.28 deg Az:
101.33 deg TVD:
6159.36 ft

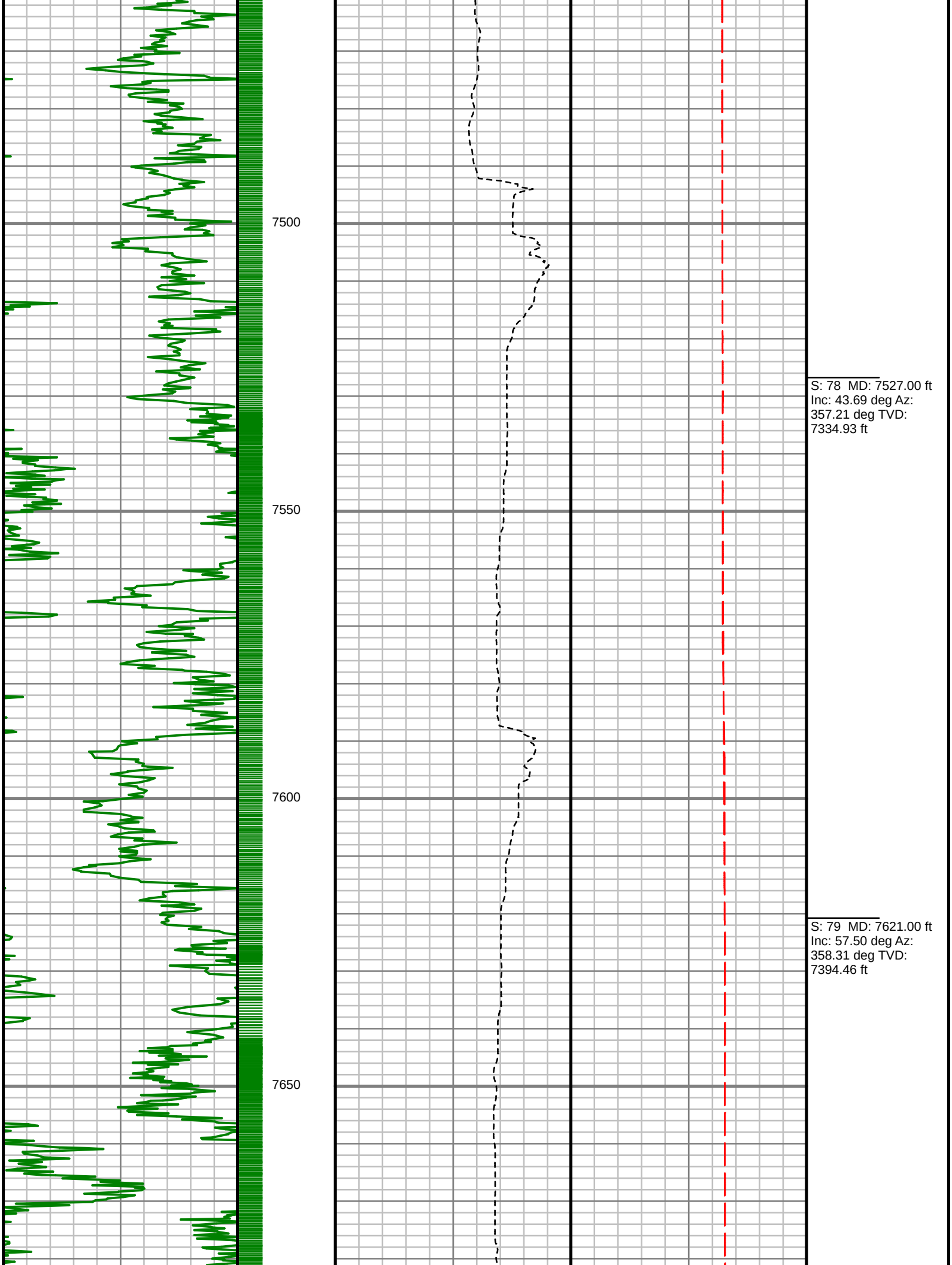

6400
6450
6500
6550
S: 66 MD: 6396.00 ft
Inc: 2.58 deg Az:
130.37 deg TVD:
6253.25 ft
S: 67 MD: 6489.00 ft
Inc: 2.08 deg Az:
144.00 deg TVD:
6346.17 ft

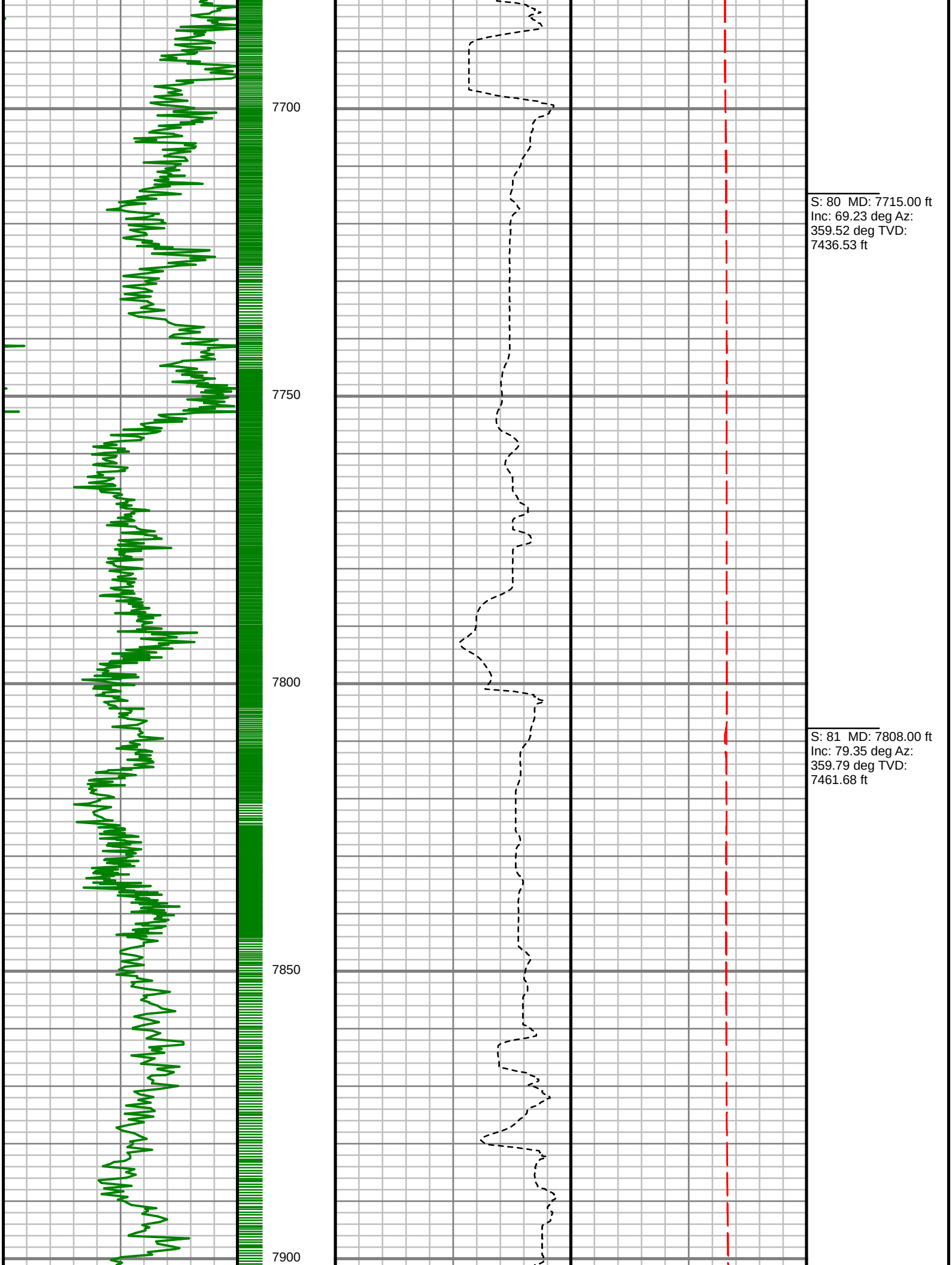

6600
6650
6700
6750
6800
S: 68 MD: 6583.00 ft
Inc: 2.05 deg Az:
137.53 deg TVD:
6440.11 ft
S: 69 MD: 6678.00 ft
Inc: 1.18 deg Az: 80.23
deg TVD: 6535.08 ft
S: 70 MD: 6772.00 ft
Inc: 1.41 deg Az: 82.34
deg TVD: 6629.05 ft

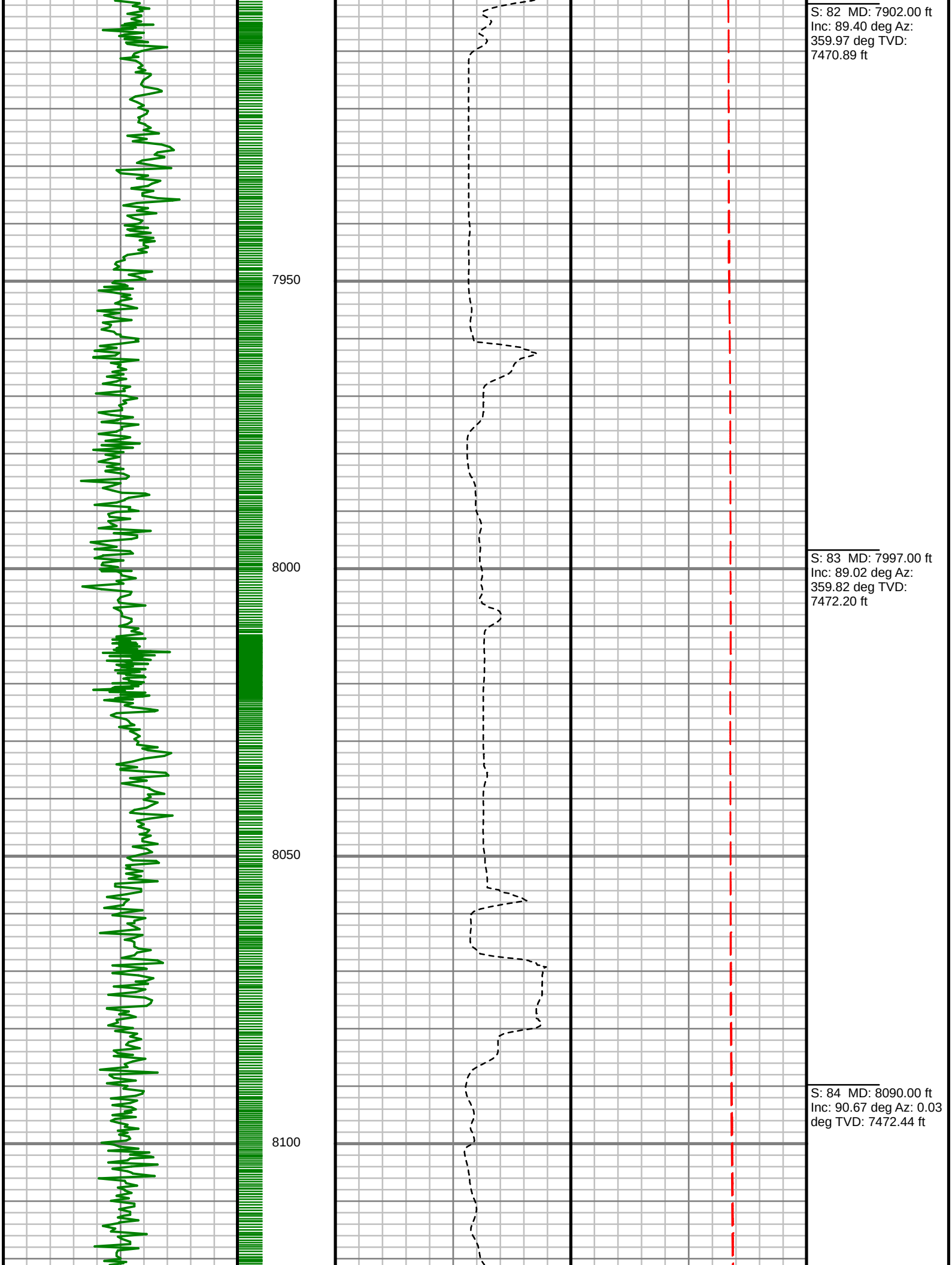

6850
6900
6950
7000
S: 71 MD: 6866.00 ft
Inc: 0.99 deg Az: 97.14
deg TVD: 6723.03 ft
S: 72 MD: 6956.00 ft
Inc: 1.31 deg Az: 97.66
deg TVD: 6813.01 ft

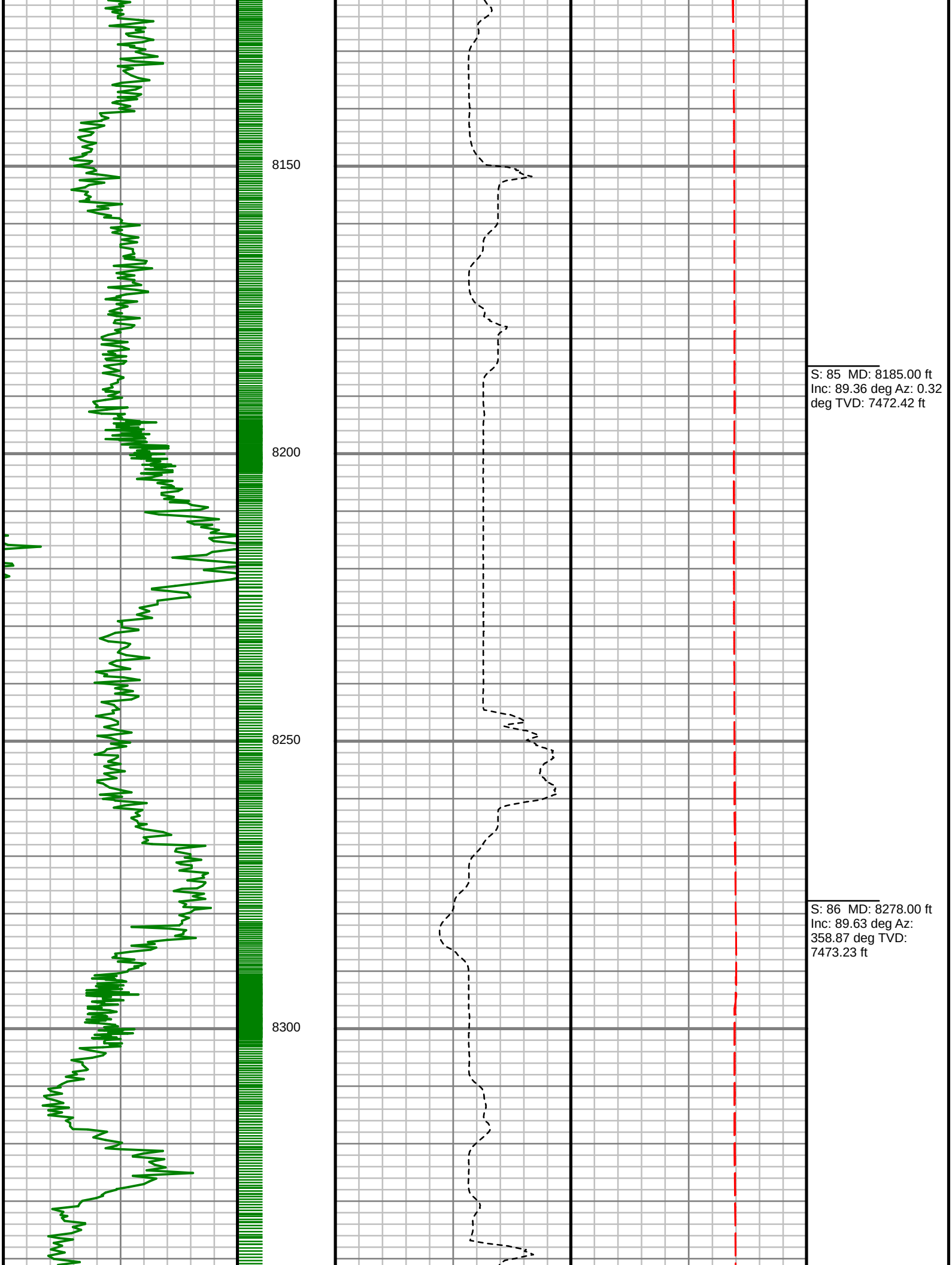

7050
7100
7150
7200
S: 73 MD: 7055.00 ft
Inc: 3.37 deg Az: 31.11
deg TVD: 6911.94 ft
S: 74 MD: 7149.00 ft
Inc: 13.10 deg Az: 7.64
deg TVD: 7004.87 ft

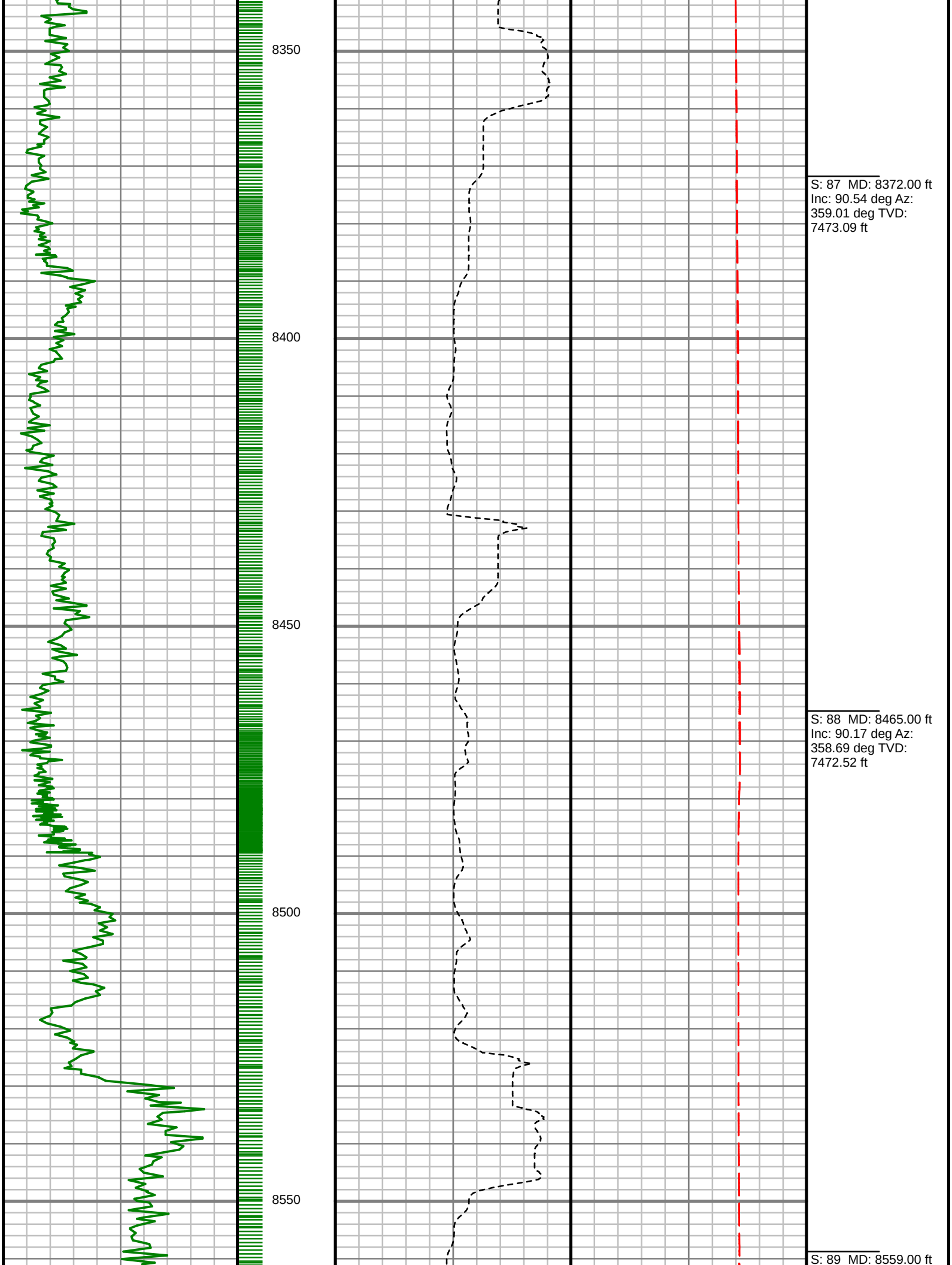

7250
7300
7350
7400
7450
S: 75 MD: 7243.00 ft
Inc: 21.25 deg Az: 7.38
deg TVD: 7094.61 ft
S: 76 MD: 7338.00 ft
Inc: 28.41 deg Az: 3.96
deg TVD: 7180.77 ft
S: 77 MD: 7432.00 ft
Inc: 34.15 deg Az:
356.96 deg TVD:
7261.10 ft

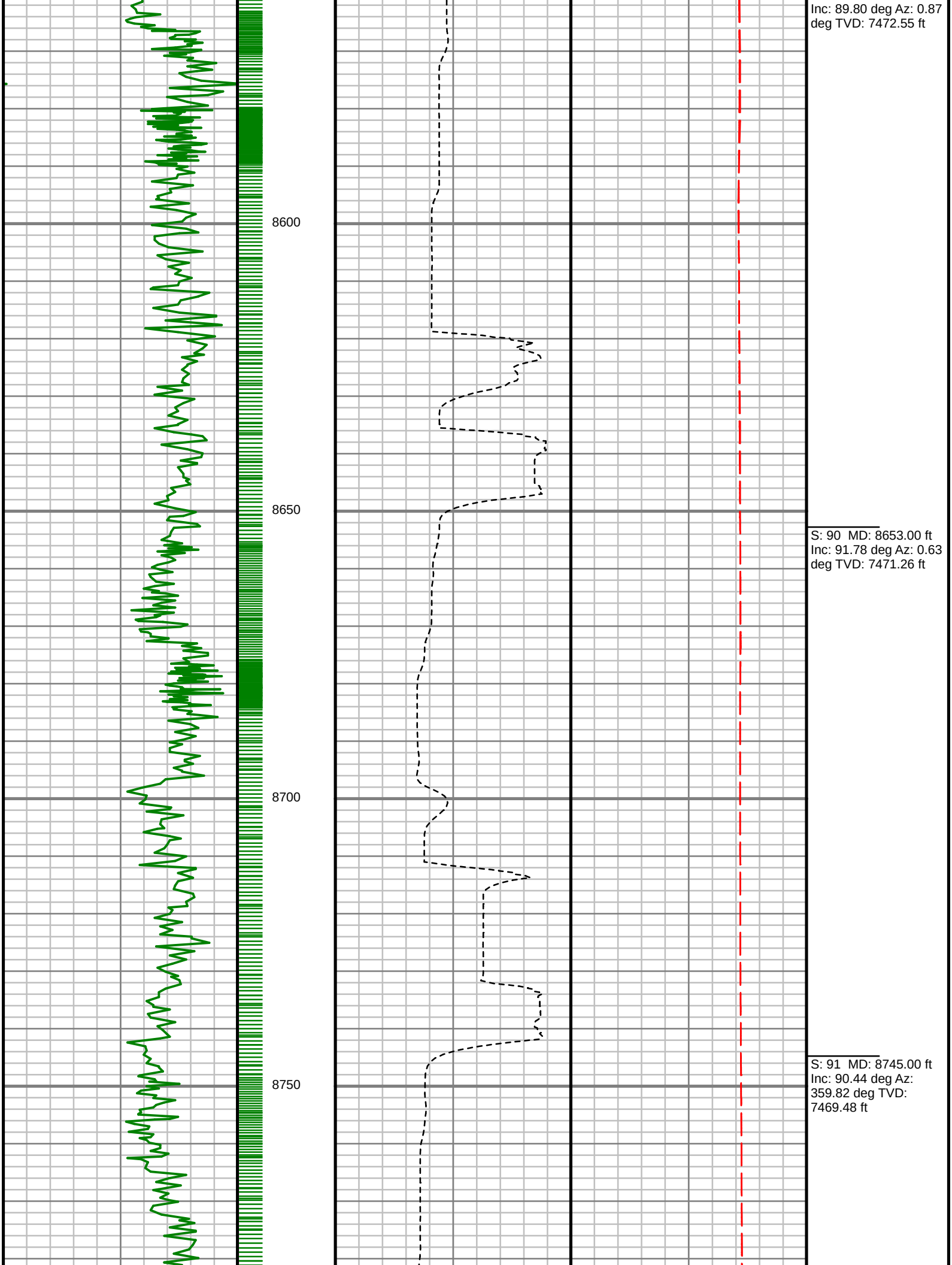

7500
7550
7600
7650
S: 78 MD: 7527.00 ft
Inc: 43.69 deg Az:
357.21 deg TVD:
7334.93 ft
S: 79 MD: 7621.00 ft
Inc: 57.50 deg Az:
358.31 deg TVD:
7394.46 ft

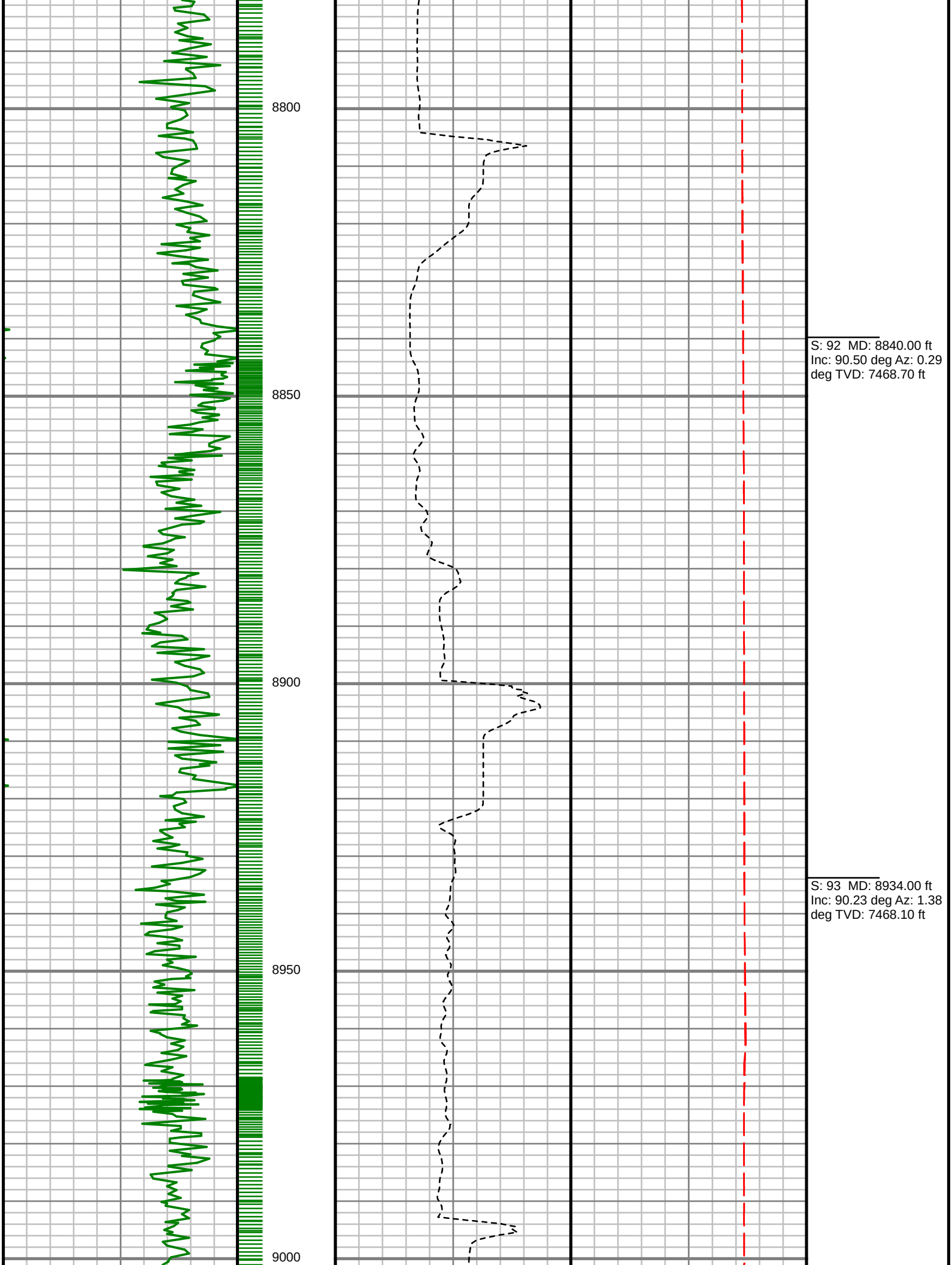

7700
7750
7800
7850
7900
S: 80 MD: 7715.00 ft
Inc: 69.23 deg Az:
359.52 deg TVD:
7436.53 ft
S: 81 MD: 7808.00 ft
Inc: 79.35 deg Az:
359.79 deg TVD:
7461.68 ft

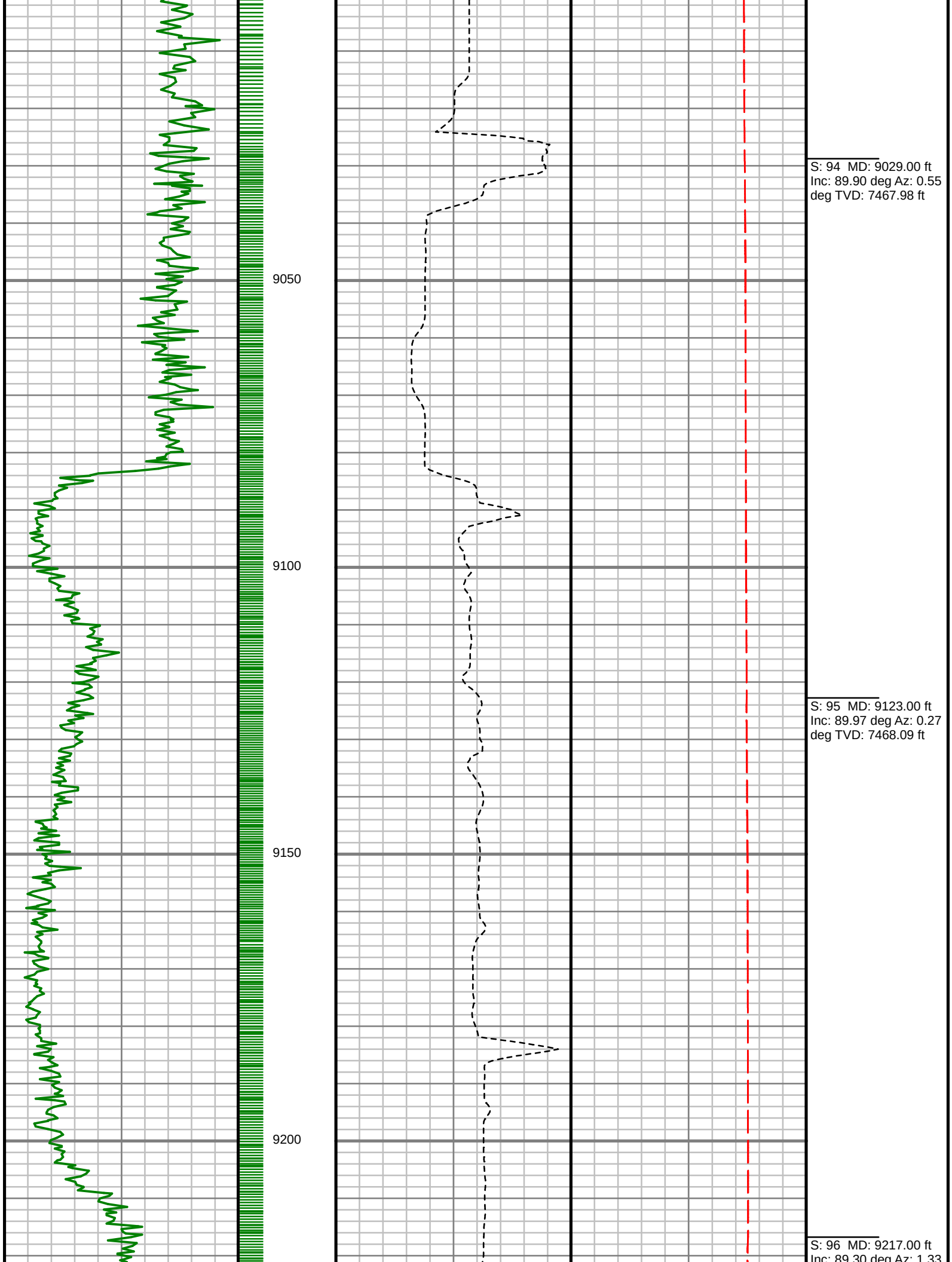

7950
8000
8050
8100
S: 82 MD: 7902.00 ft Inc: 89.40 deg Az: 359.97 deg TVD: 7470.89 ft
S: 83 MD: 7997.00 ft Inc: 89.02 deg Az: 359.82 deg TVD: 7472.20 ft
S: 84 MD: 8090.00 ft Inc: 90.67 deg Az: 0.03 deg TVD: 7472.44 ft

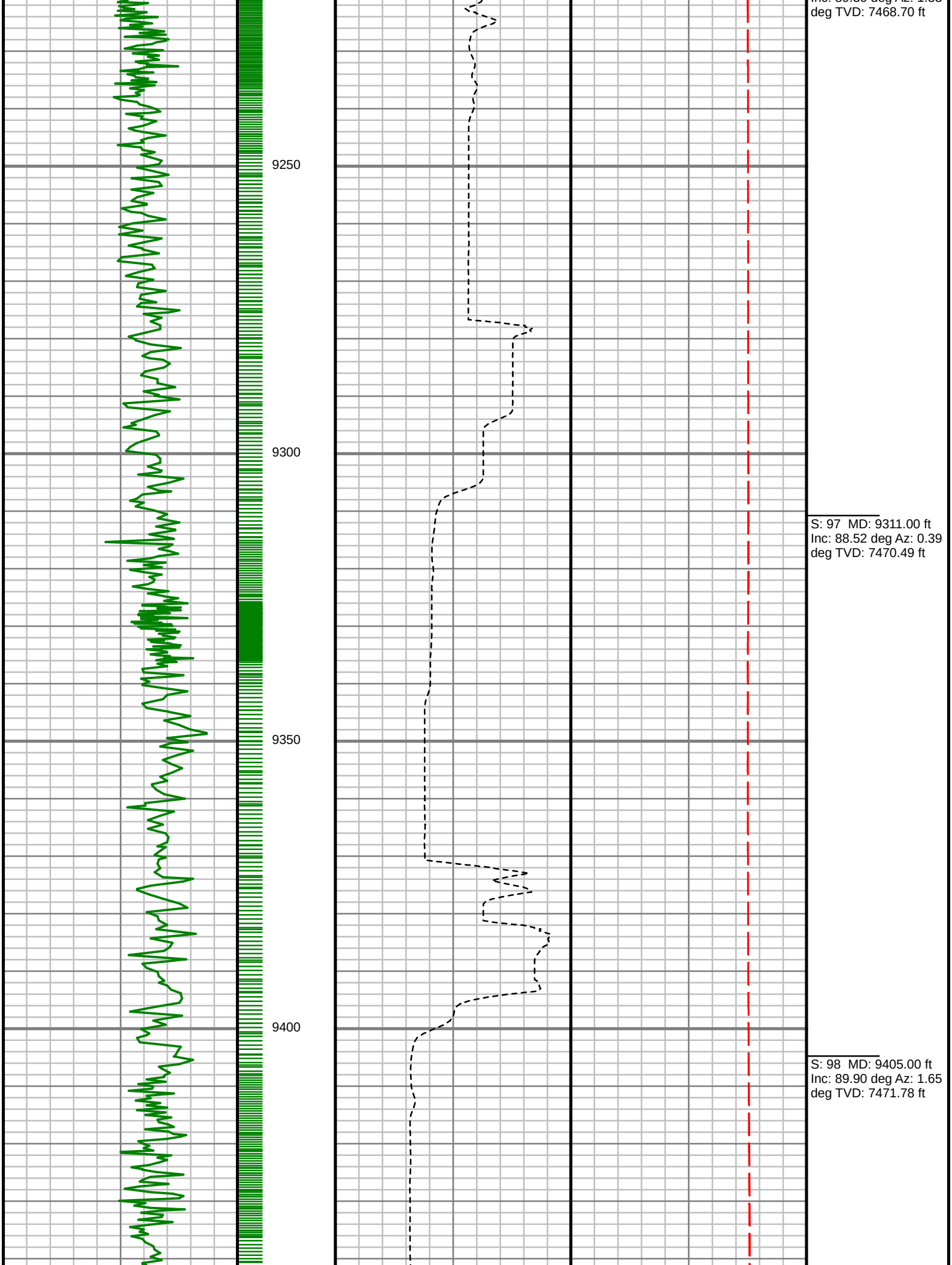

8150
8200
8250
8300
S: 85 MD: 8185.00 ft
Inc: 89.36 deg Az: 0.32
deg TVD: 7472.42 ft
S: 86 MD: 8278.00 ft
Inc: 89.63 deg Az:
358.87 deg TVD:
7473.23 ft

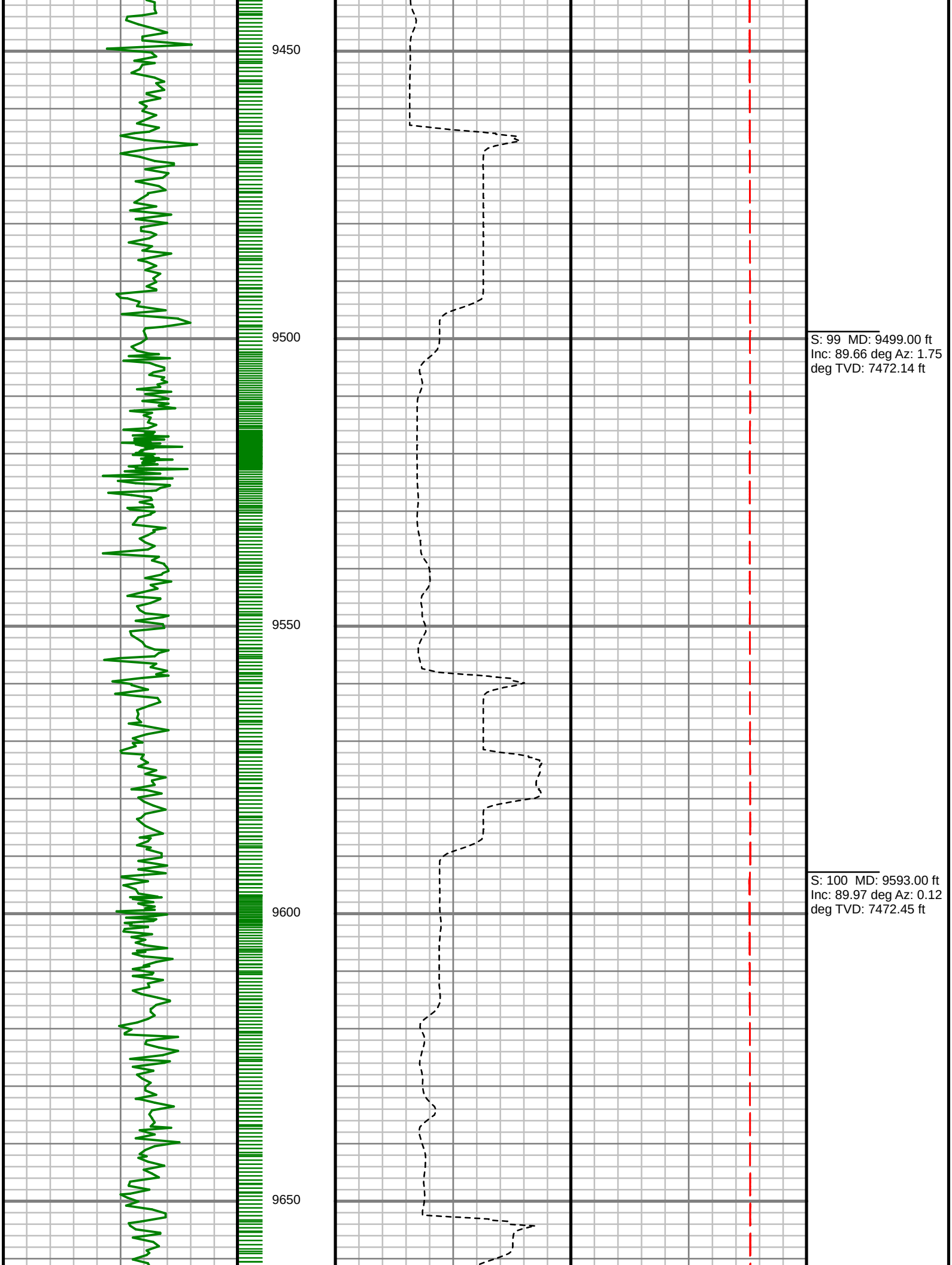

8350
8400
8450
8500
8550
S: 87 MD: 8372.00 ft
Inc: 90.54 deg Az:
359.01 deg TVD:
7473.09 ft
S: 88 MD: 8465.00 ft
Inc: 90.17 deg Az:
358.69 deg TVD:
7472.52 ft
S: 89 MD: 8559.00 ft

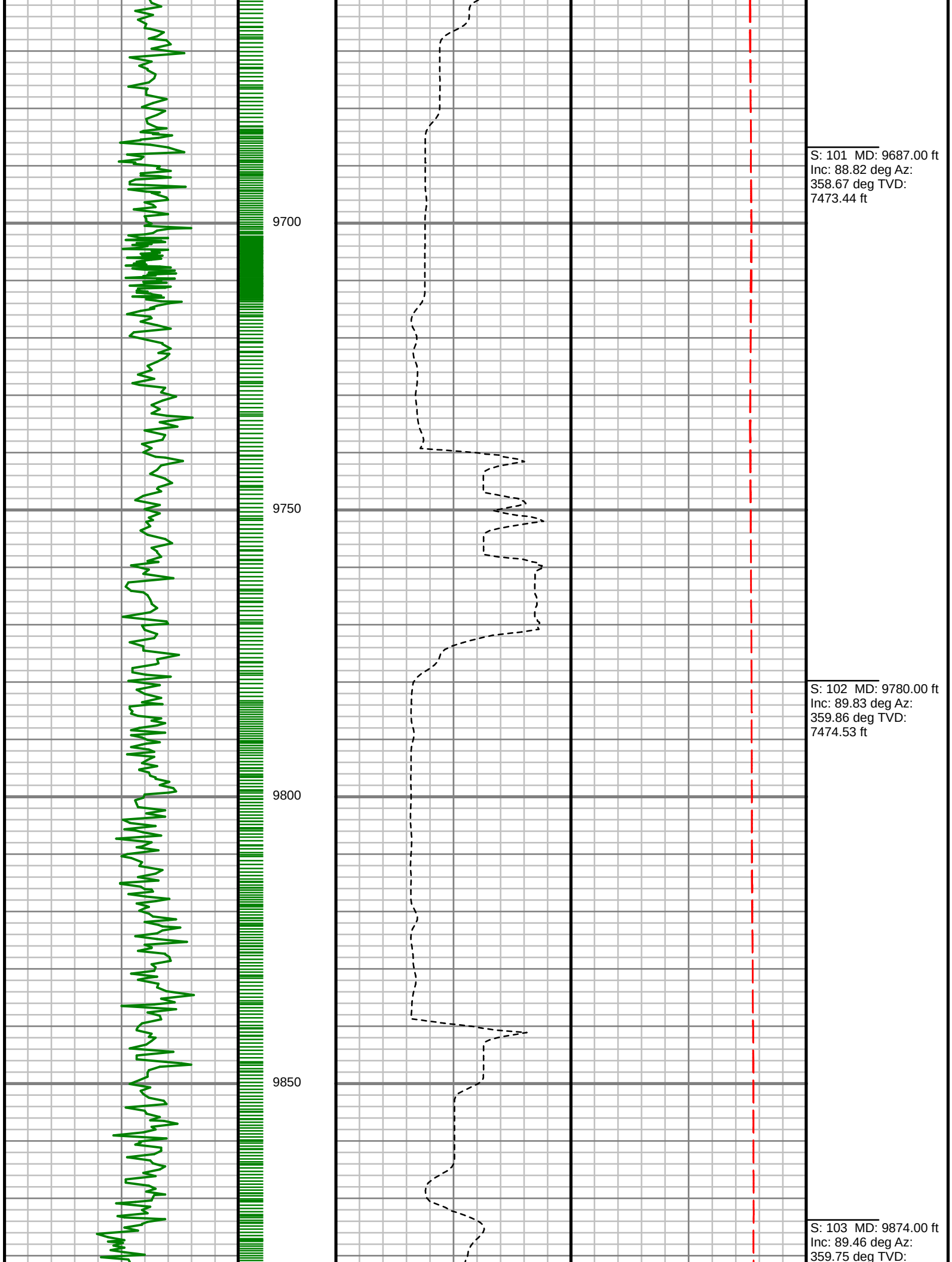

8600
8650
8700
8750
Inc: 89.80 deg Az: 0.87
deg TVD: 7472.55 ft
S: 90 MD: 8653.00 ft
Inc: 91.78 deg Az: 0.63
deg TVD: 7471.26 ft
S: 91 MD: 8745.00 ft
Inc: 90.44 deg Az:
359.82 deg TVD:
7469.48 ft

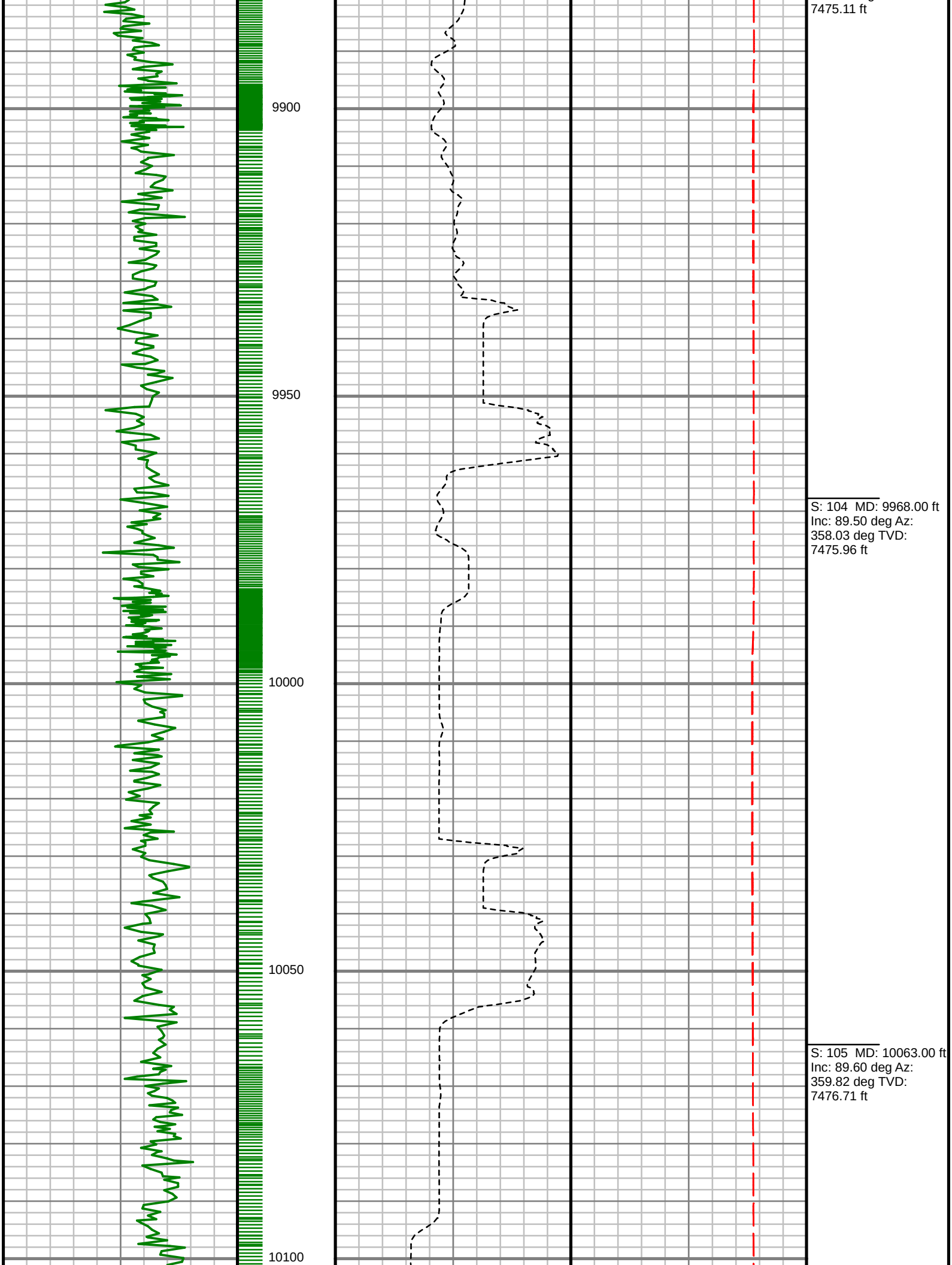

8800
8850
8900
8950
9000
S: 92 MD: 8840.00 ft
Inc: 90.50 deg Az: 0.29
deg TVD: 7468.70 ft
S: 93 MD: 8934.00 ft
Inc: 90.23 deg Az: 1.38
deg TVD: 7468.10 ft

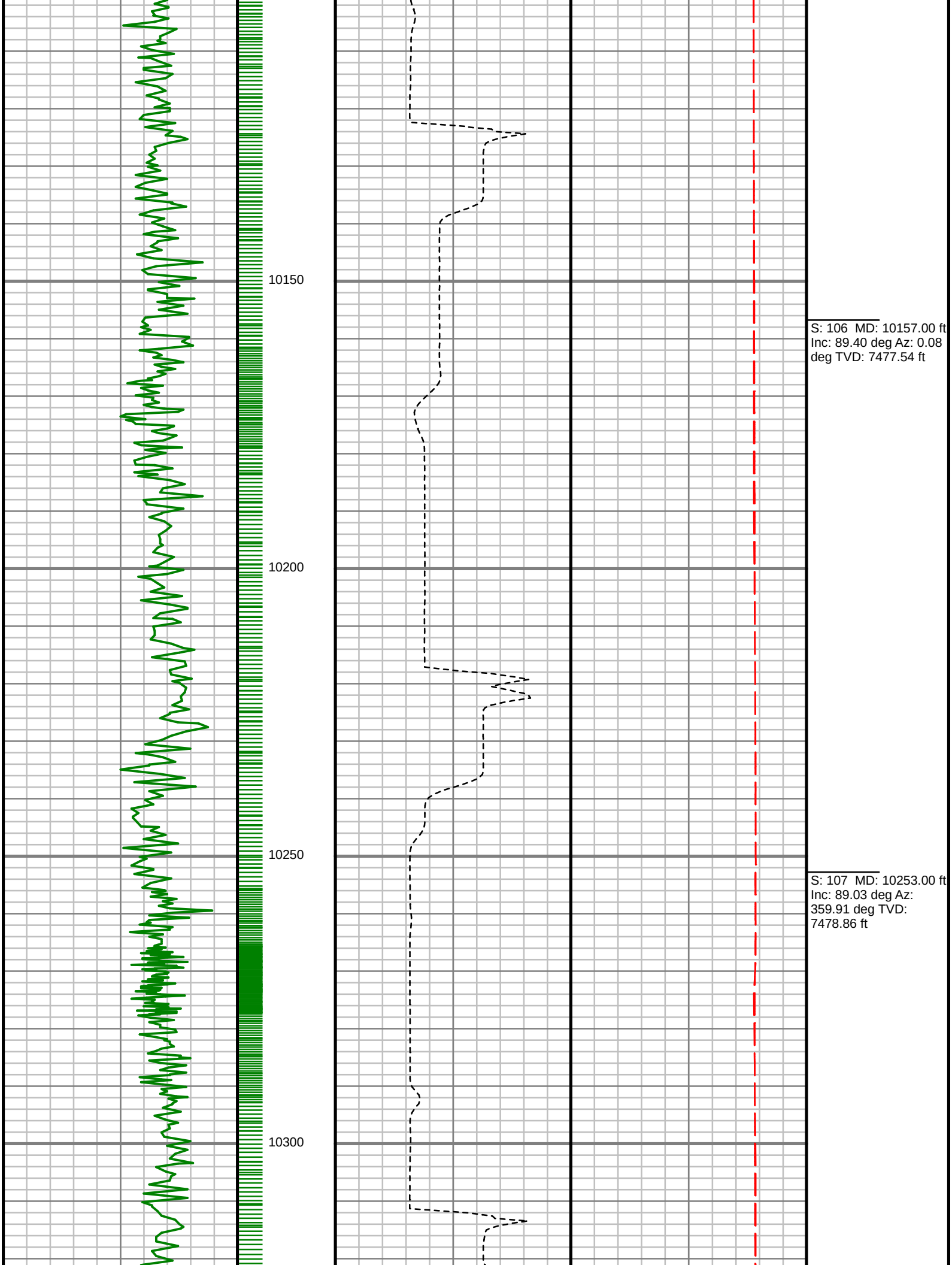

9050
9100
9150
9200
S: 94 MD: 9029.00 ft
Inc: 89.90 deg Az: 0.55
deg TVD: 7467.98 ft
S: 95 MD: 9123.00 ft
Inc: 89.97 deg Az: 0.27
deg TVD: 7468.09 ft
S: 96 MD: 9217.00 ft

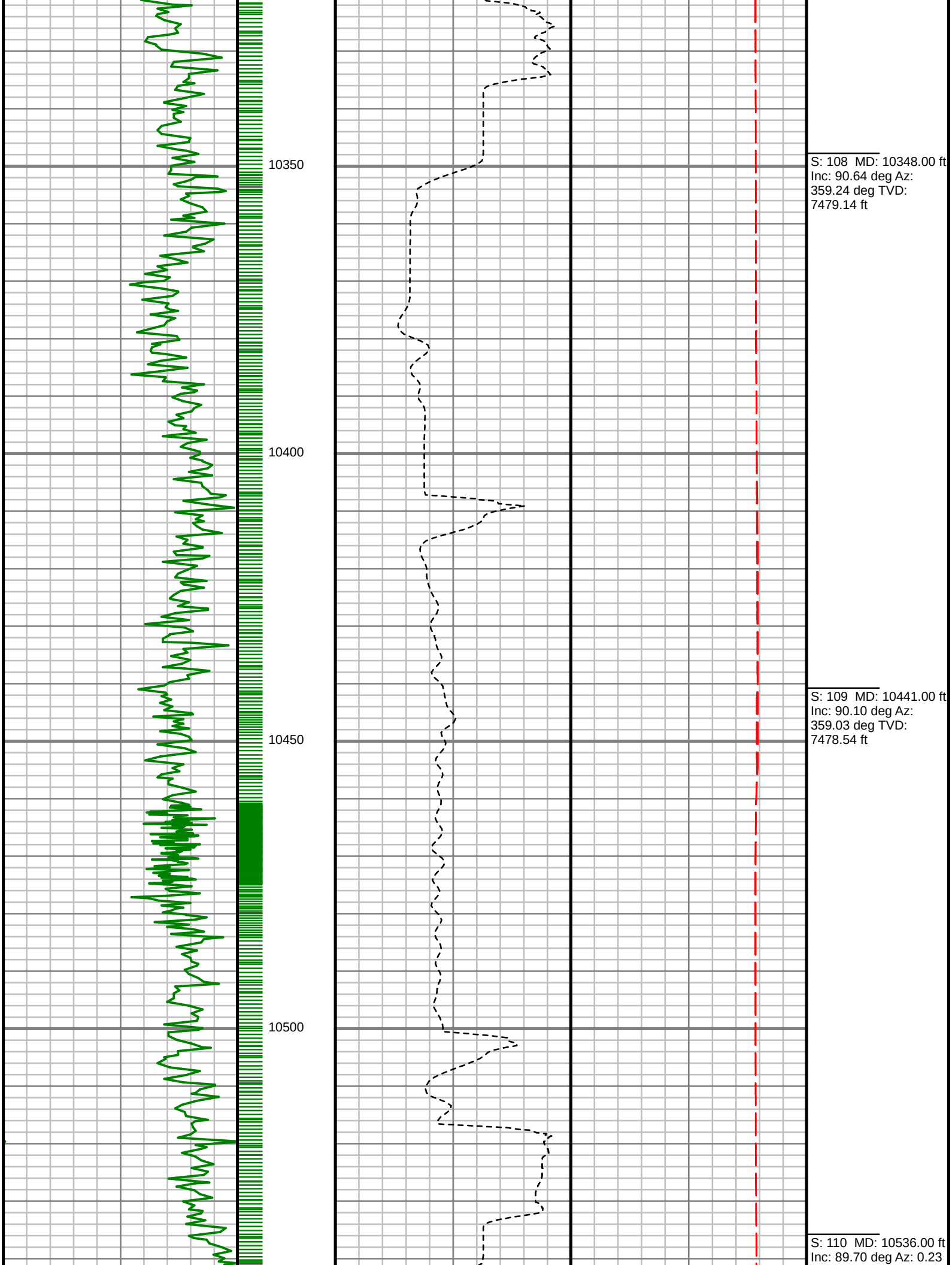

9250
9300
9350
9400
deg TVD: 7468.70 ft
S: 97 MD: 9311.00 ft
Inc: 88.52 deg Az: 0.39
deg TVD: 7470.49 ft
S: 98 MD: 9405.00 ft
Inc: 89.90 deg Az: 1.65
deg TVD: 7471.78 ft

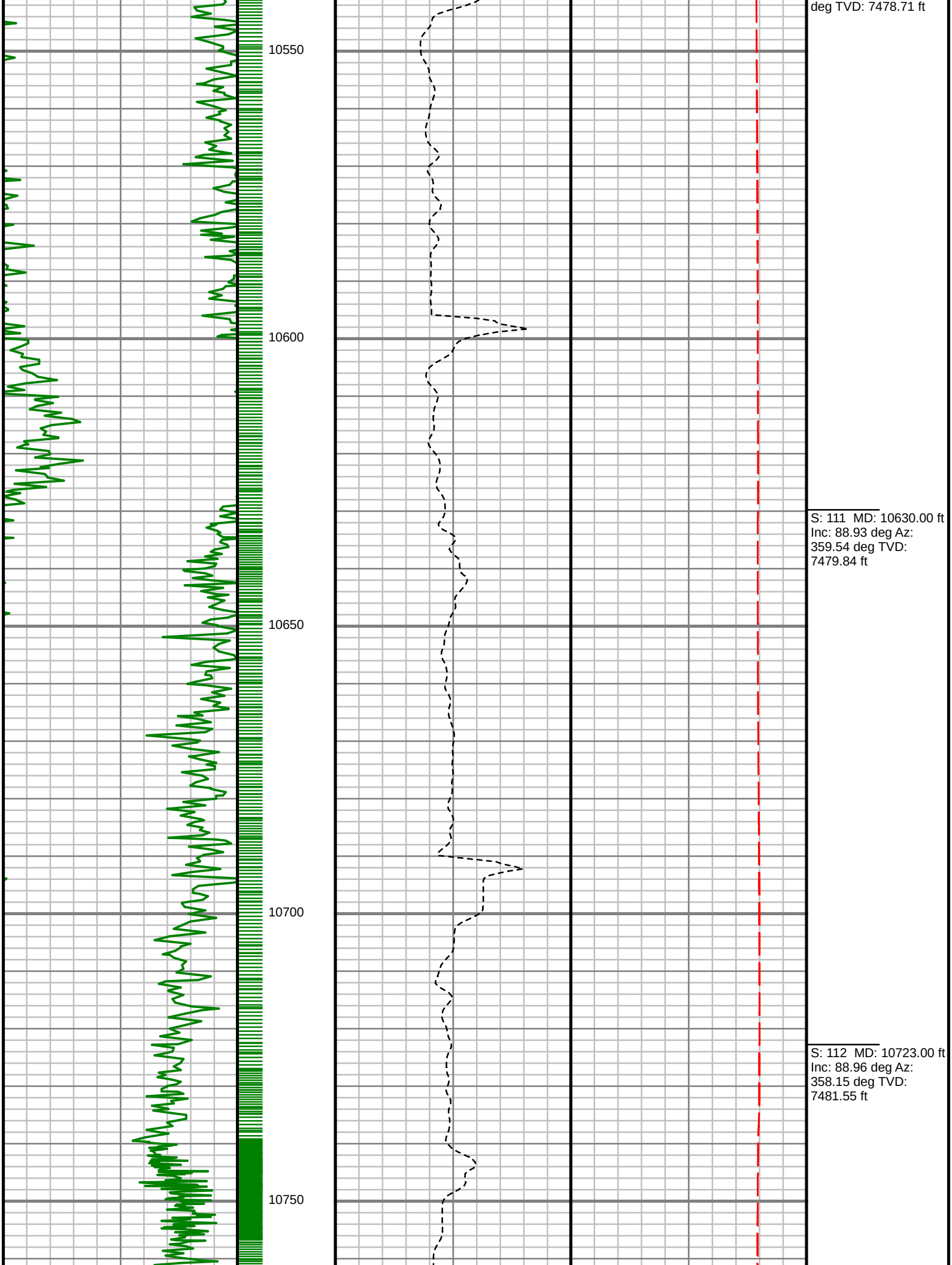

9450
9500
9550
9600
9650
S: 99 MD: 9499.00 ft
Inc: 89.66 deg Az: 1.75
deg TVD: 7472.14 ft
S: 100 MD: 9593.00 ft
Inc: 89.97 deg Az: 0.12
deg TVD: 7472.45 ft

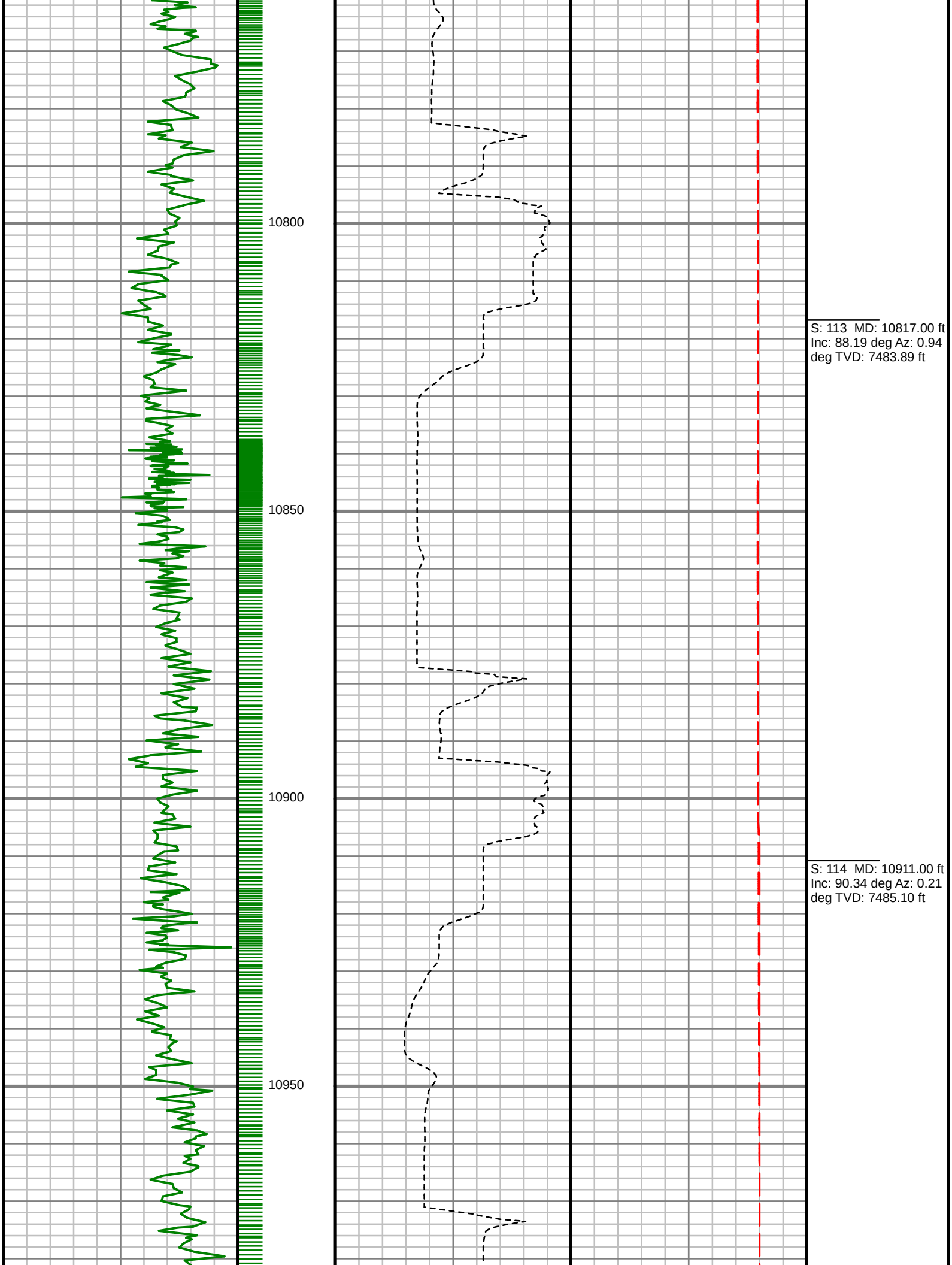

9700
9750
9800
9850
S: 101 MD: 9687.00 ft
Inc: 88.82 deg Az:
358.67 deg TVD:
7473.44 ft
S: 102 MD: 9780.00 ft
Inc: 89.83 deg Az:
359.86 deg TVD:
7474.53 ft
S: 103 MD: 9874.00 ft
Inc: 89.46 deg Az:
359.75 deg TVD:

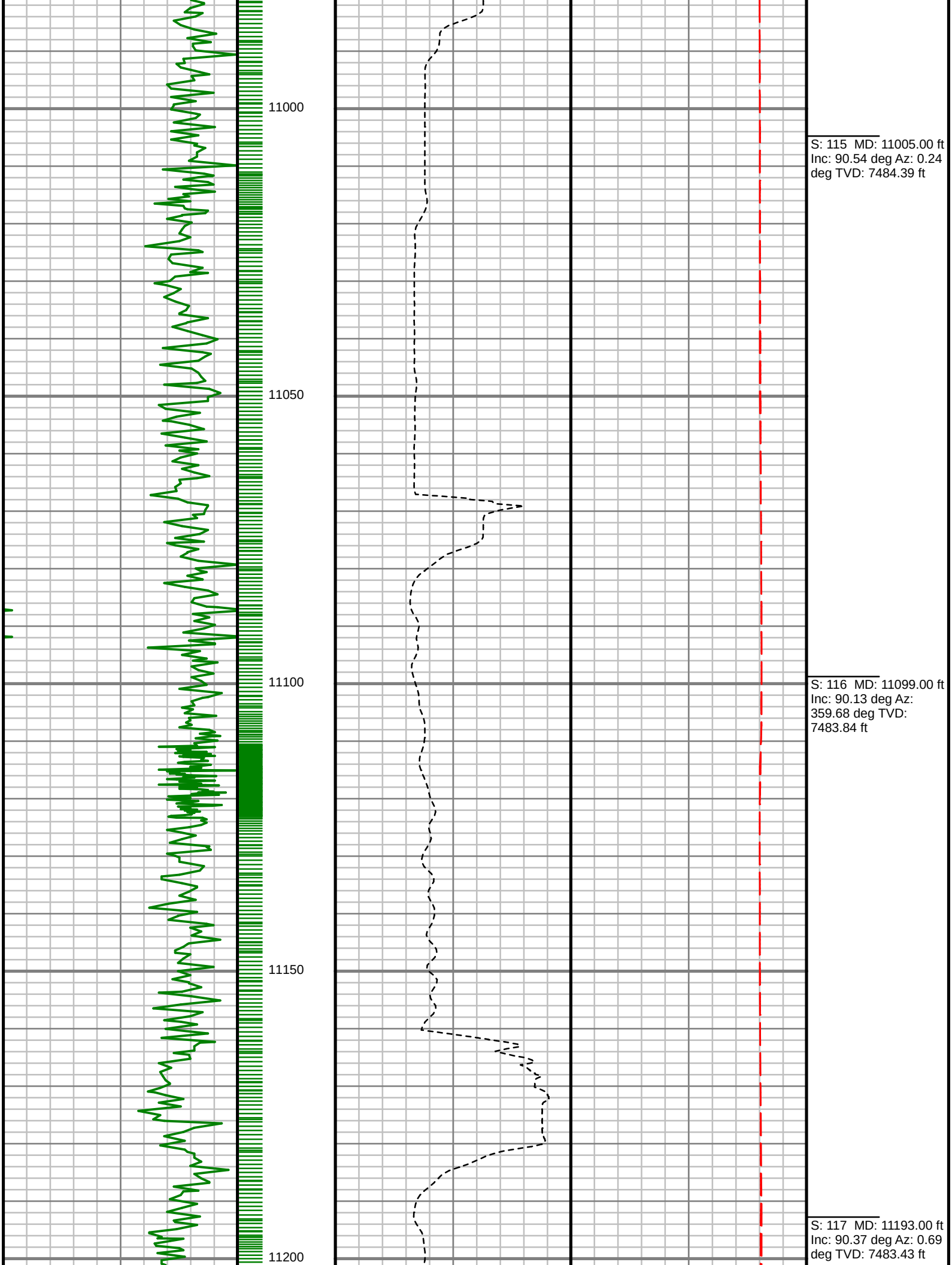

7475.11 ft
9900
9950
S: 104 MD: 9968.00 ft
Inc: 89.50 deg Az:
358.03 deg TVD:
7475.96 ft
10000
10050
S: 105 MD: 10063.00 ft
Inc: 89.60 deg Az:
359.82 deg TVD:
7476.71 ft
10100

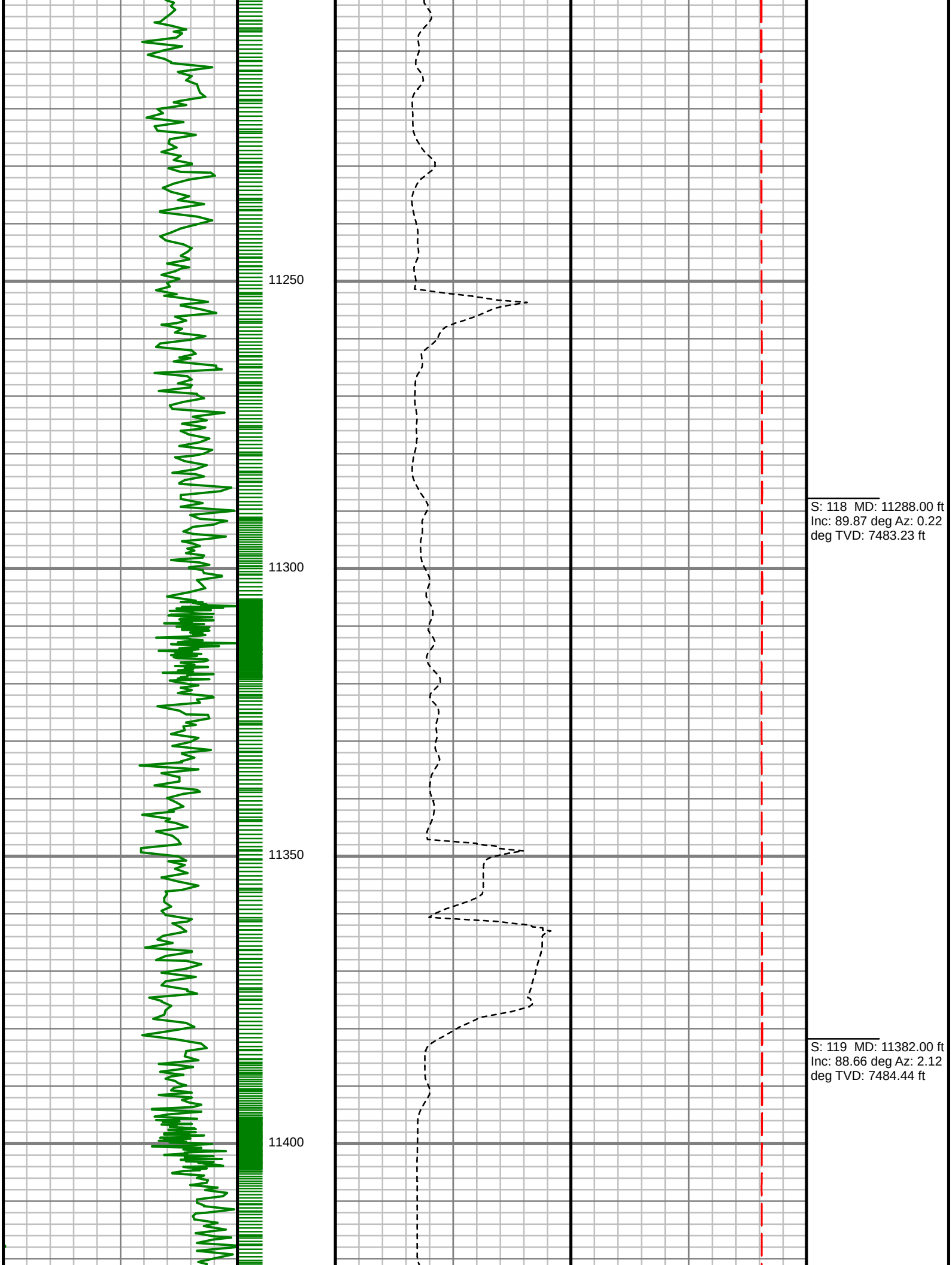

10150
10200
10250
10300
S: 106 MD: 10157.00 ft
Inc: 89.40 deg Az: 0.08
deg TVD: 7477.54 ft
S: 107 MD: 10253.00 ft
Inc: 89.03 deg Az:
359.91 deg TVD:
7478.86 ft

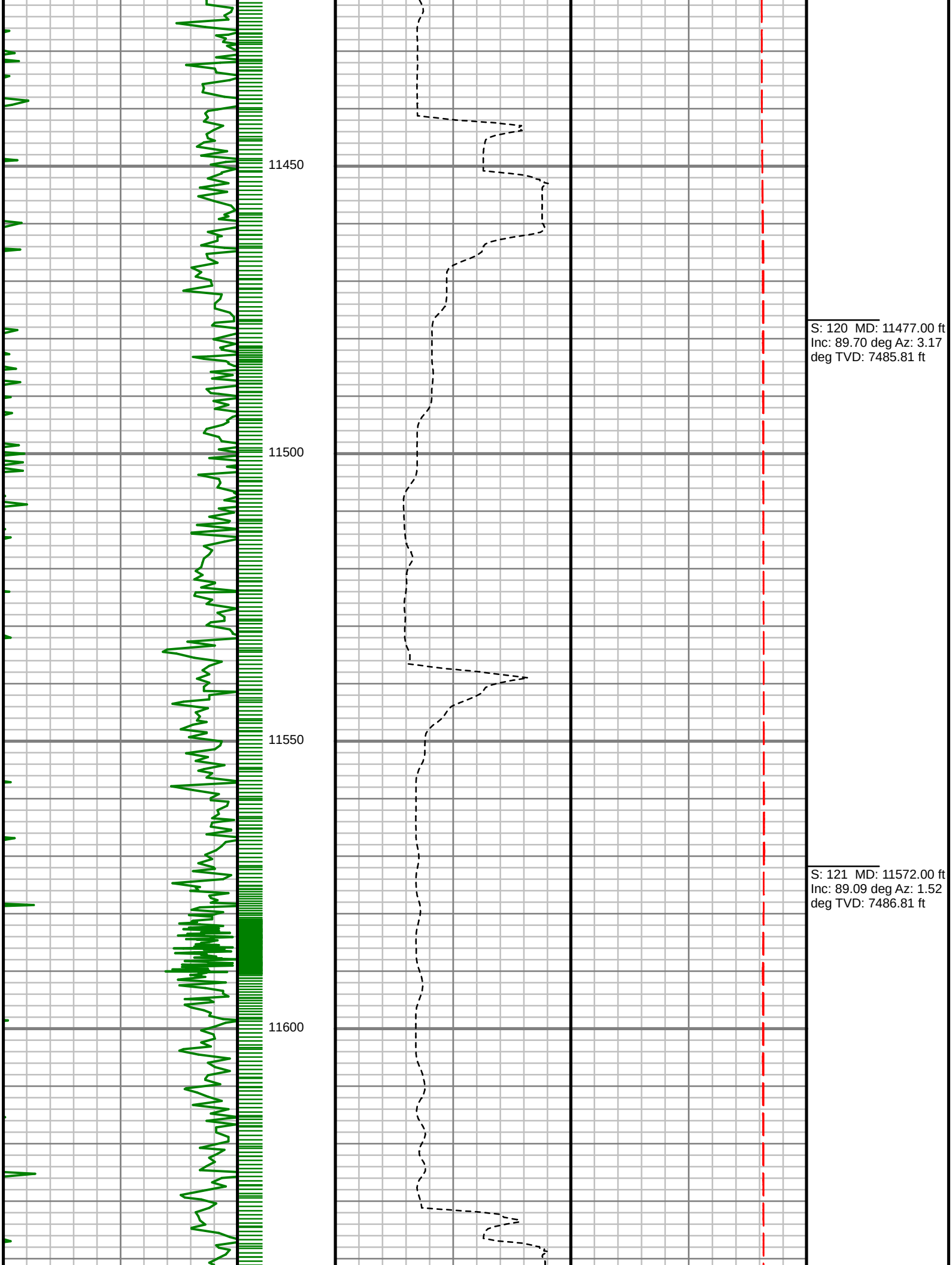

10350
10400
10450
10500
S: 108 MD: 10348.00 ft
Inc: 90.64 deg Az:
359.24 deg TVD:
7479.14 ft
S: 109 MD: 10441.00 ft
Inc: 90.10 deg Az:
359.03 deg TVD:
7478.54 ft
S: 110 MD: 10536.00 ft
Inc: 89.70 deg Az: 0.23

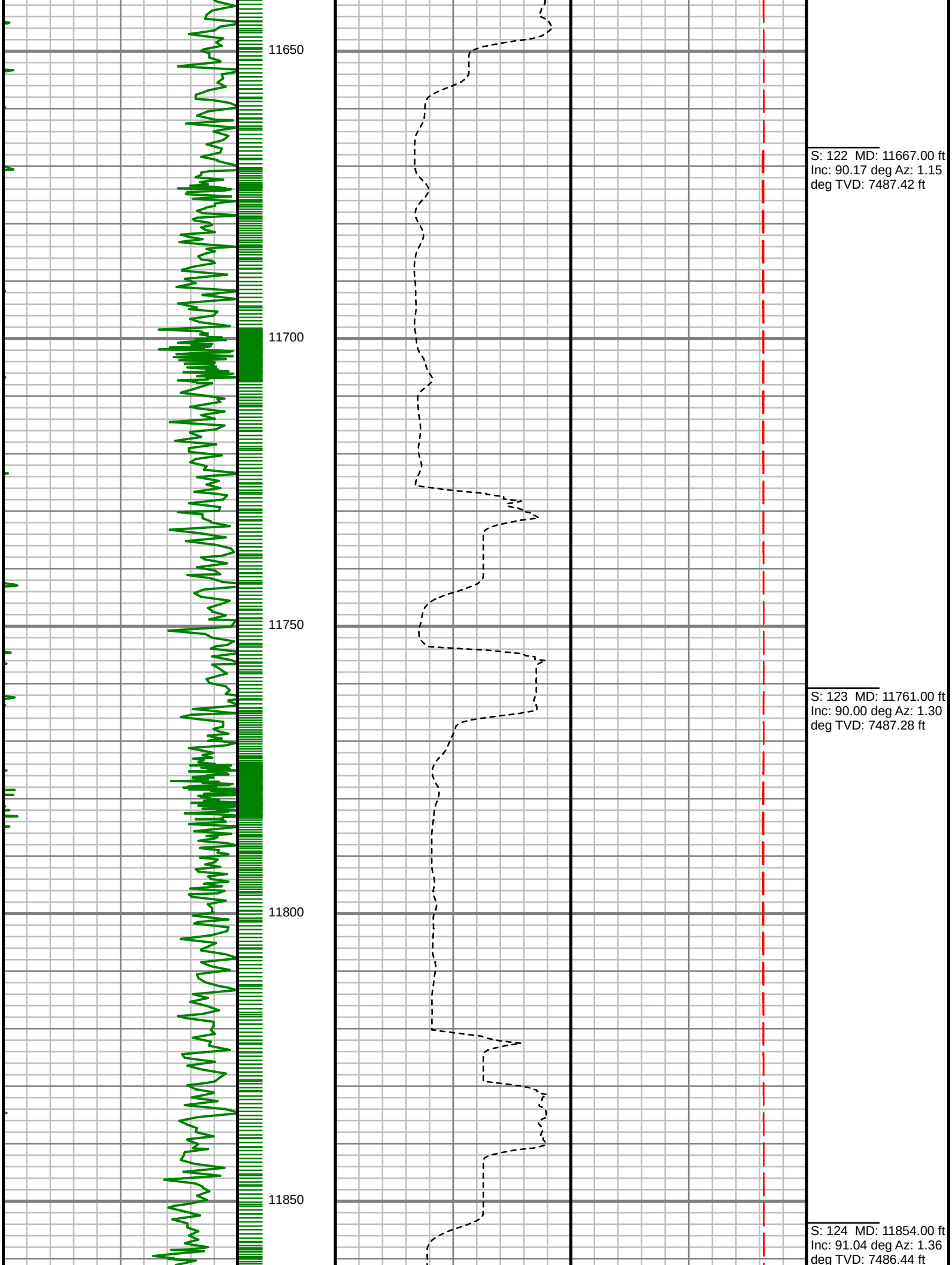

10550
10600
10650
10700
10750
deg TVD: 7478.71 ft
S: 111 MD: 10630.00 ft
Inc: 88.93 deg Az:
359.54 deg TVD:
7479.84 ft
S: 112 MD: 10723.00 ft
Inc: 88.96 deg Az:
358.15 deg TVD:
7481.55 ft

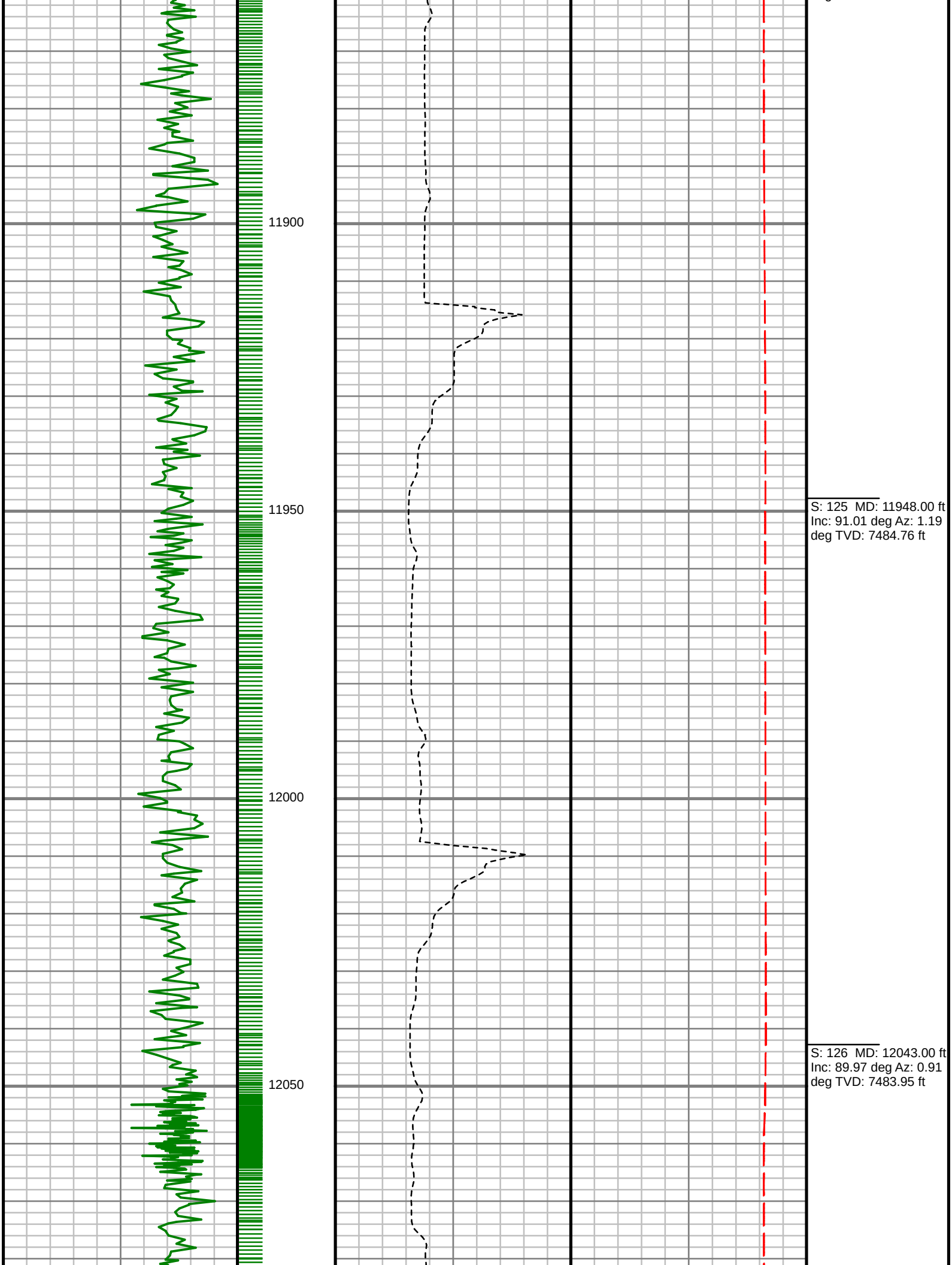

10800
10850
10900
10950
S: 113 MD: 10817.00 ft
Inc: 88.19 deg Az: 0.94
deg TVD: 7483.89 ft
S: 114 MD: 10911.00 ft
Inc: 90.34 deg Az: 0.21
deg TVD: 7485.10 ft

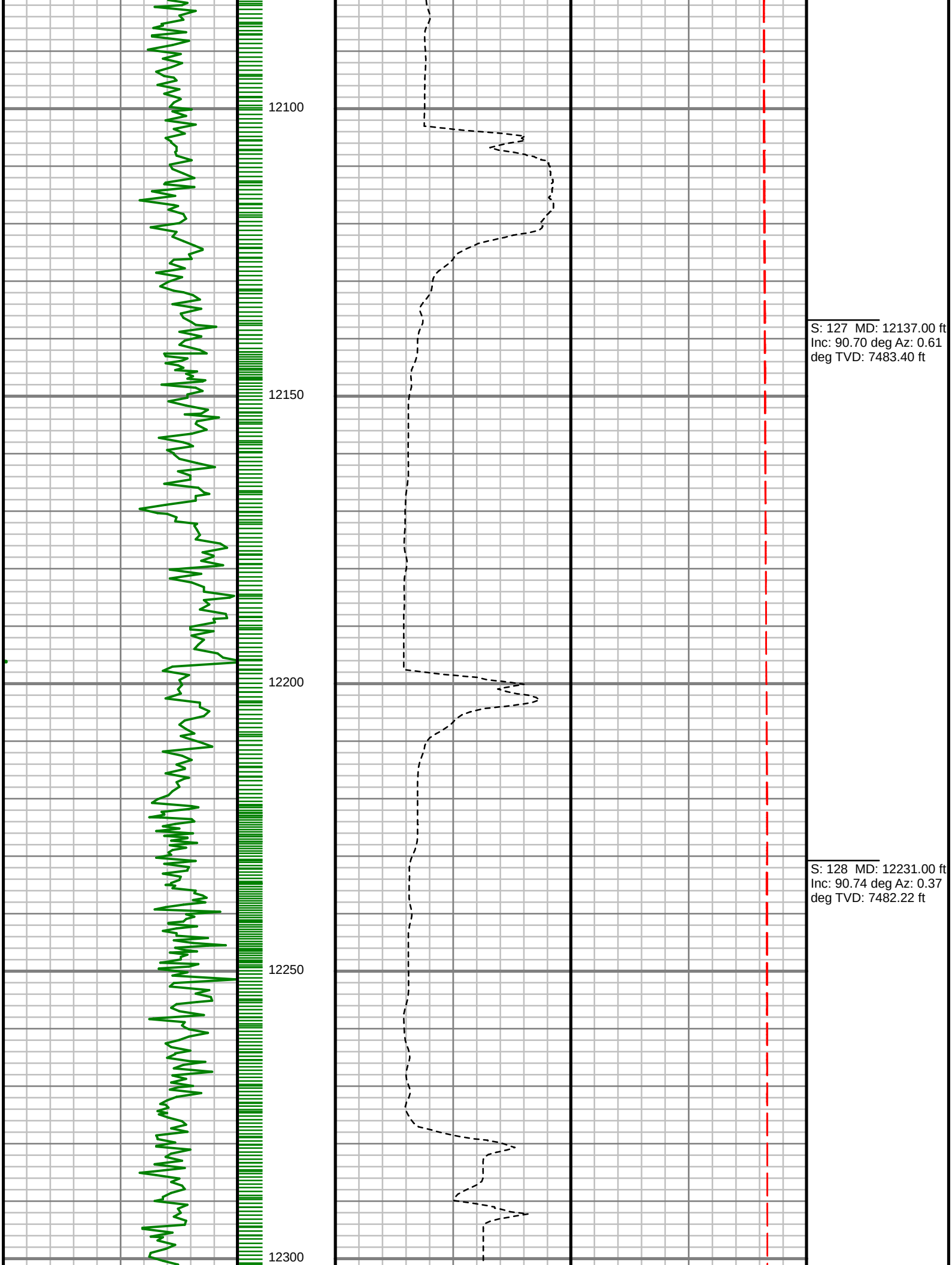

11000
11050
11100
11150
11200
S: 115 MD: 11005.00 ft
Inc: 90.54 deg Az: 0.24
deg TVD: 7484.39 ft
S: 116 MD: 11099.00 ft
Inc: 90.13 deg Az:
359.68 deg TVD:
7483.84 ft
S: 117 MD: 11193.00 ft
Inc: 90.37 deg Az: 0.69
deg TVD: 7483.43 ft

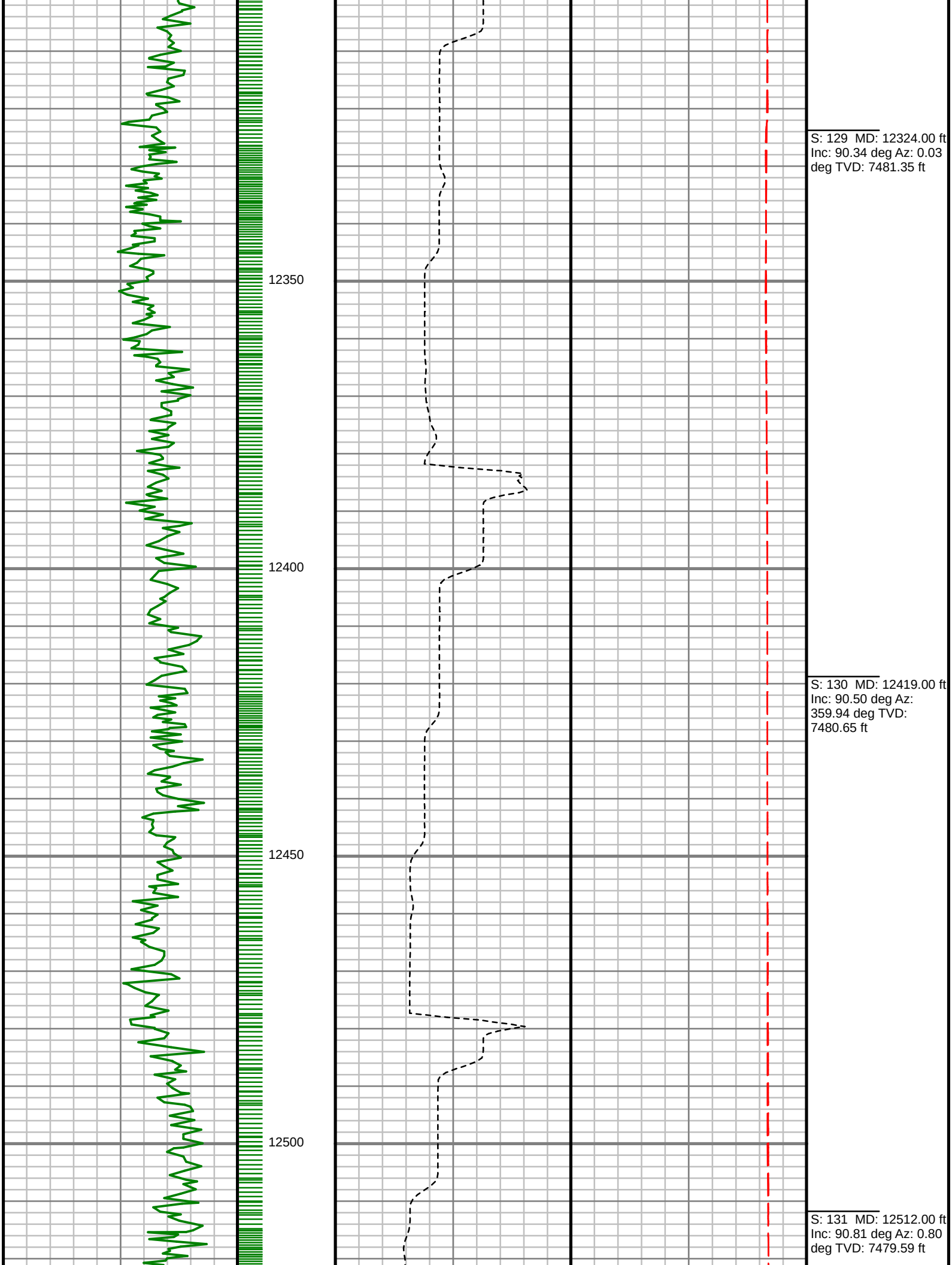

11250
11300
11350
11400
S: 118 MD: 11288.00 ft
Inc: 89.87 deg Az: 0.22
deg TVD: 7483.23 ft
S: 119 MD: 11382.00 ft
Inc: 88.66 deg Az: 2.12
deg TVD: 7484.44 ft

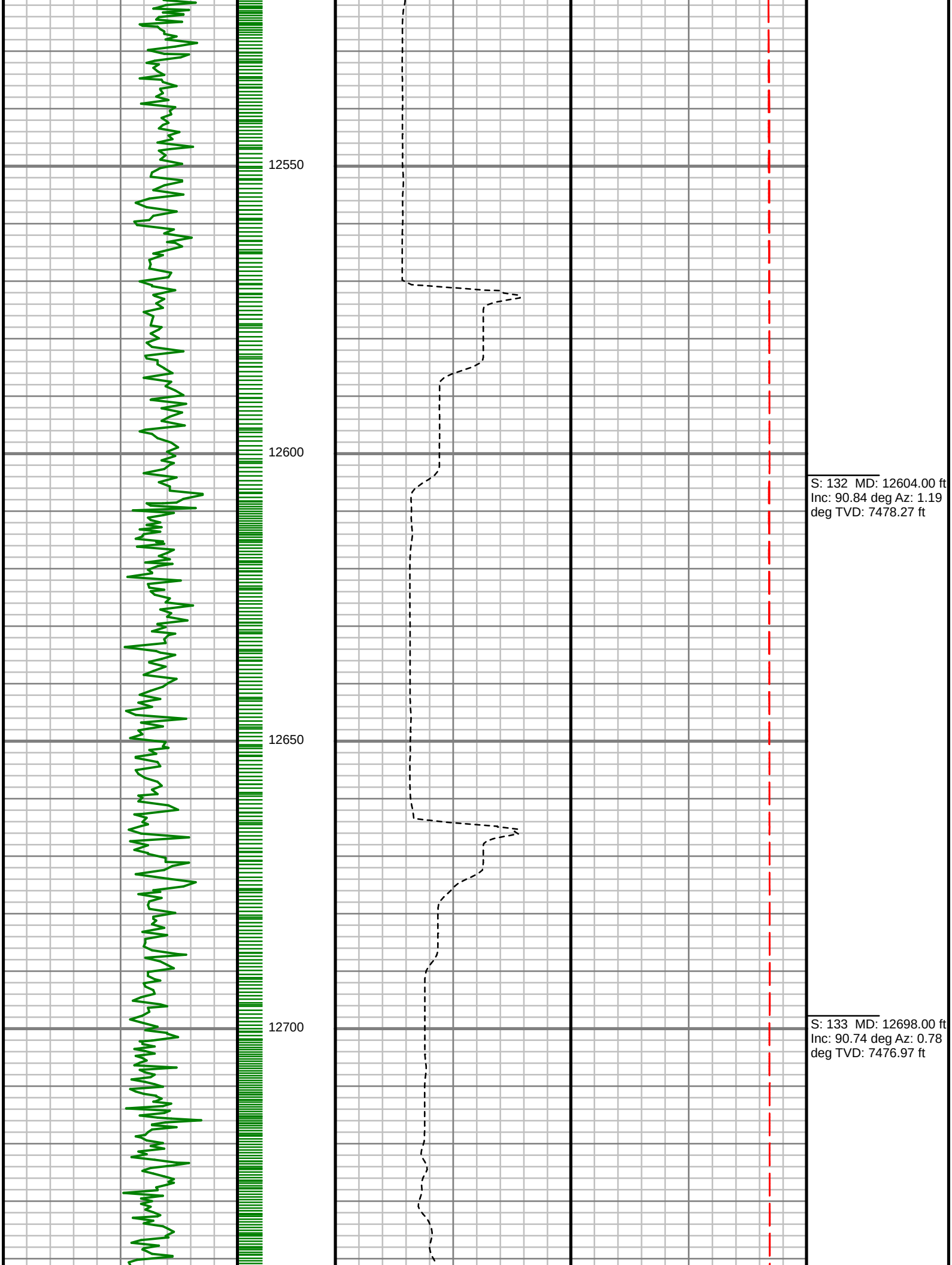

11450
11500
11550
11600
S: 120 MD: 11477.00 ft
Inc: 89.70 deg Az: 3.17
deg TVD: 7485.81 ft
S: 121 MD: 11572.00 ft
Inc: 89.09 deg Az: 1.52
deg TVD: 7486.81 ft

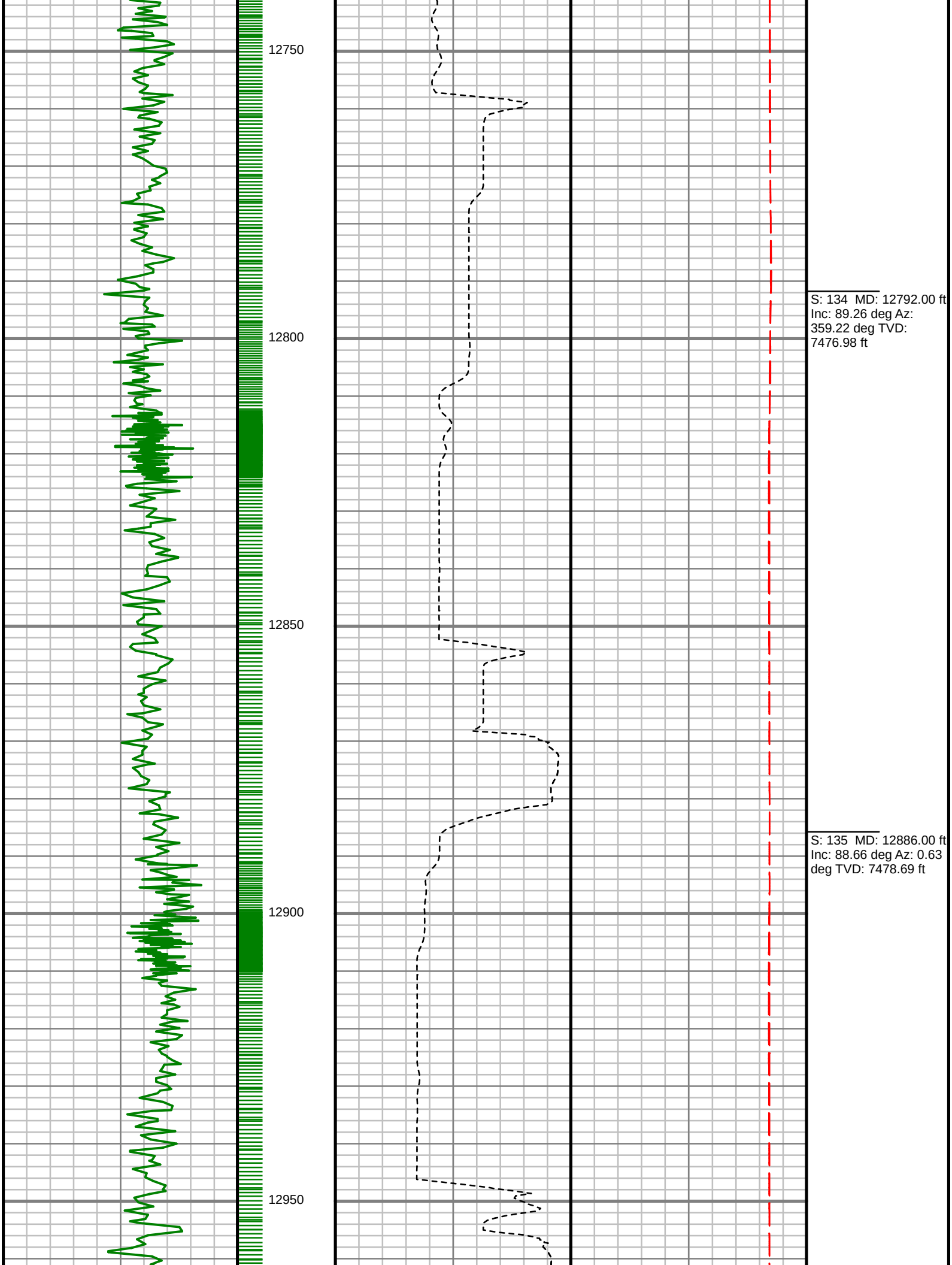

11650
11700
11750
11800
11850
S: 122 MD: 11667.00 ft
Inc: 90.17 deg Az: 1.15
deg TVD: 7487.42 ft
S: 123 MD: 11761.00 ft
Inc: 90.00 deg Az: 1.30
deg TVD: 7487.28 ft
S: 124 MD: 11854.00 ft
Inc: 91.04 deg Az: 1.36
deg TVD: 7486.44 ft

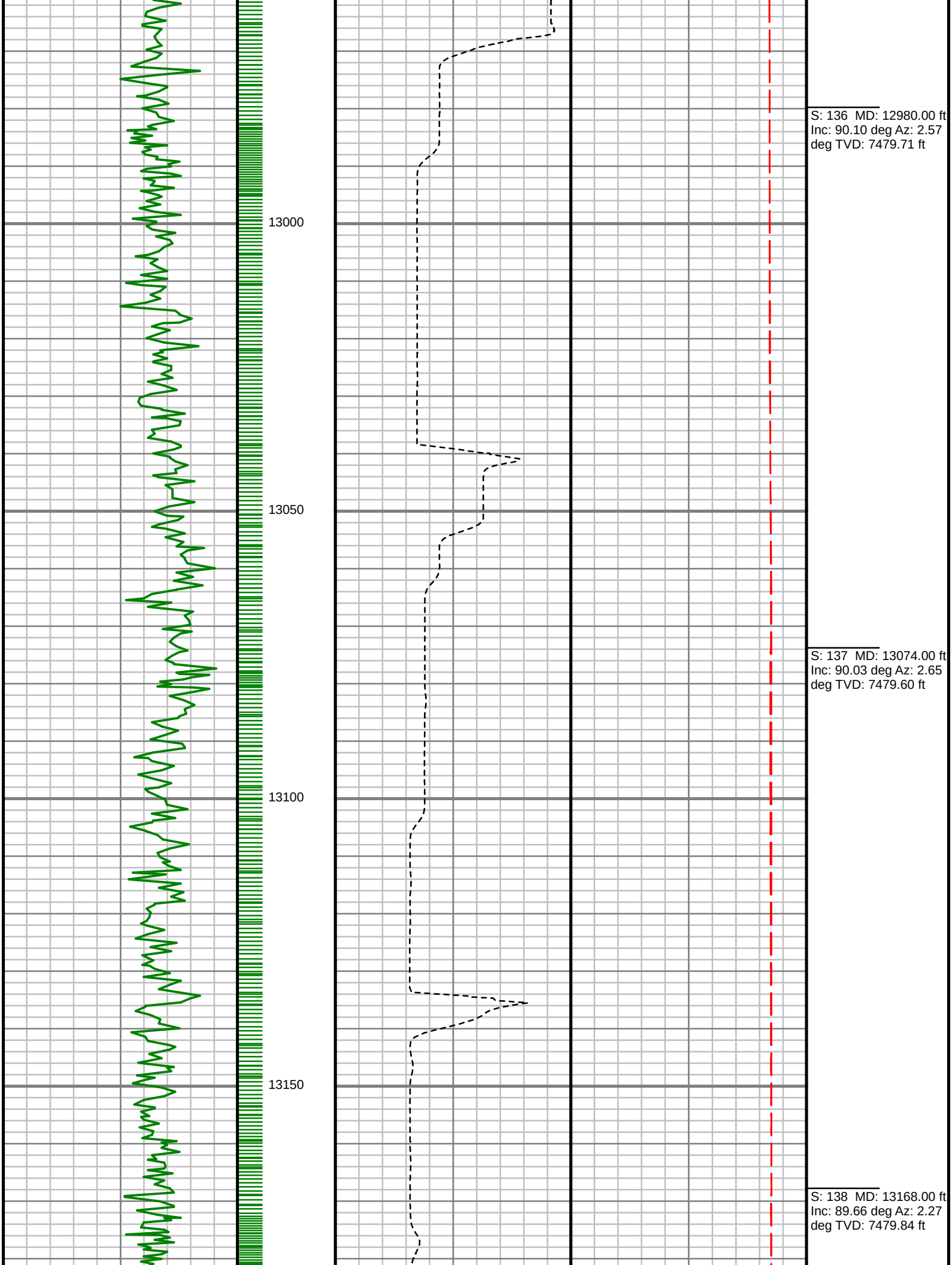

11900
11950
12000
12050
S: 125 MD: 11948.00 ft
Inc: 91.01 deg Az: 1.19
deg TVD: 7484.76 ft
S: 126 MD: 12043.00 ft
Inc: 89.97 deg Az: 0.91
deg TVD: 7483.95 ft

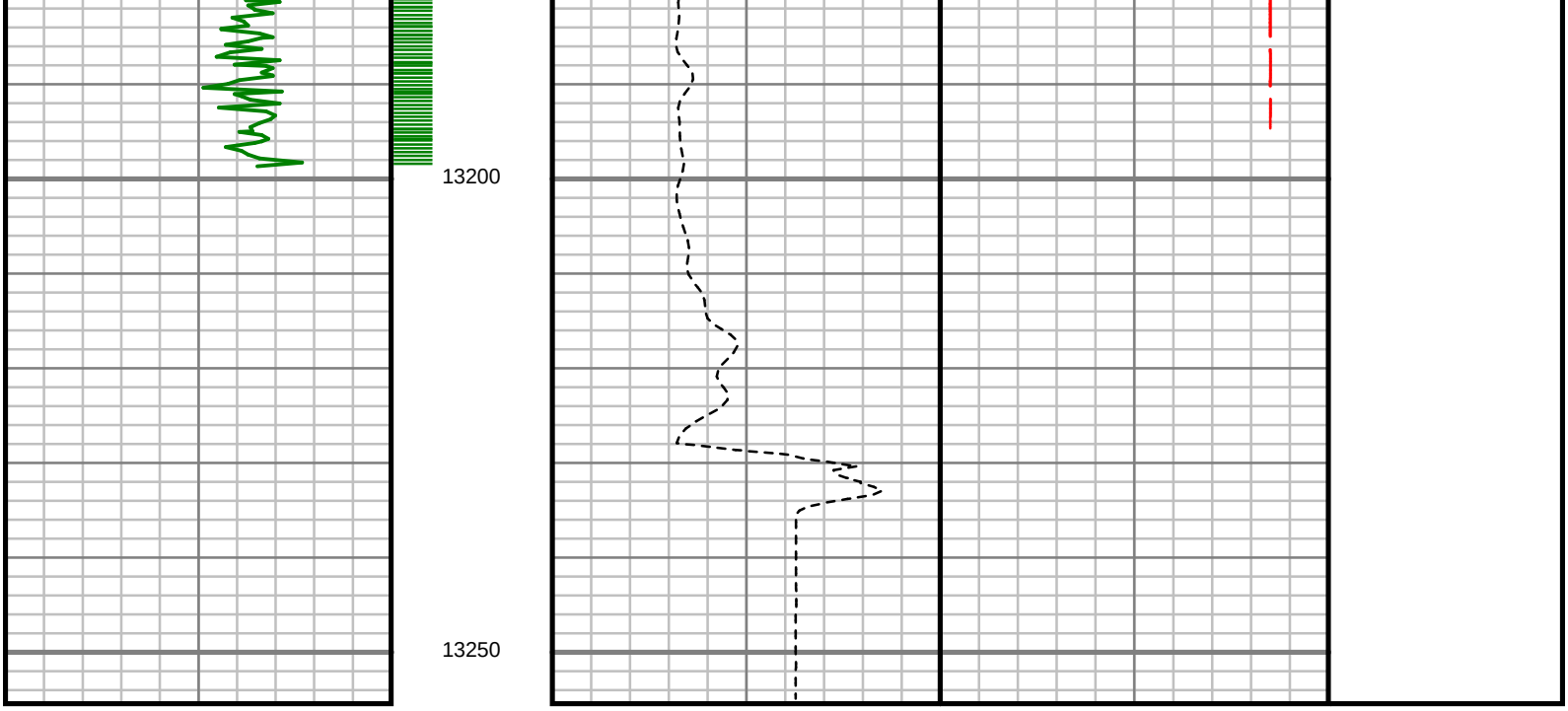

12100
12150
12200
12250
12300
S: 127 MD: 12137.00 ft
Inc: 90.70 deg Az: 0.61
deg TVD: 7483.40 ft
S: 128 MD: 12231.00 ft
Inc: 90.74 deg Az: 0.37
deg TVD: 7482.22 ft


12350
12400
12450
12500
S: 129 MD: 12324.00 ft
Inc: 90.34 deg Az: 0.03
deg TVD: 7481.35 ft
S: 130 MD: 12419.00 ft
Inc: 90.50 deg Az:
359.94 deg TVD:
7480.65 ft
S: 131 MD: 12512.00 ft
Inc: 90.81 deg Az: 0.80
deg TVD: 7479.59 ft


12550
12600
12650
12700
S: 132 MD: 12604.00 ft
Inc: 90.84 deg Az: 1.19
deg TVD: 7478.27 ft
S: 133 MD: 12698.00 ft
Inc: 90.74 deg Az: 0.78
deg TVD: 7476.97 ft


12750
12800
12850
12900
12950
S: 134 MD: 12792.00 ft
Inc: 89.26 deg Az:
359.22 deg TVD:
7476.98 ft
S: 135 MD: 12886.00 ft
Inc: 88.66 deg Az: 0.63
deg TVD: 7478.69 ft


13000
13050
13100
13150
S: 136 MD: 12980.00 ft
Inc: 90.10 deg Az: 2.57
deg TVD: 7479.71 ft
S: 137 MD: 13074.00 ft
Inc: 90.03 deg Az: 2.65
deg TVD: 7479.60 ft
S: 138 MD: 13168.00 ft
Inc: 89.66 deg Az: 2.27
deg TVD: 7479.84 ft



Gamma Ray (GR)	MEASURED DEPTH 1:240 (ft)	Rate of Penetration (ROP)	Tool Temperature (T-TEMP)	Comments
0 Unit = aapi 150		800 Unit = ft/hr 0	0 Unit = °F 300	
			Tool Temperature (TEMP)	
			0 Unit = °F 300	

SURVEY REPORT

FL GREENS 28C-5HZ COMPUTED SURVEY

CUSTOMER	ANADARKO PETROLEUM CORPORATION
PROJECT	FL GREENS
FIELD	WATTENBERG

WELL INFORMATION

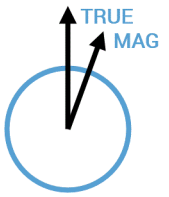
Lat/Long	40.070124° N, 104.805636° W
Northing	14,552,327.98 ft
Easting	1,694,792.79 ft
UWI	05123422740000

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	0.65°
Calculation Method	Minimum Curvature



GEOMAGNETIC REFERENCE INFORMATION

Local Gravity: 999.041 mG [computed]

MD	MODEL	DATE	DECLINATION	MAG TO TRUE
0-1816 ft	ANADARKO MAGVAR	12 Jun 2017	8.19°	add 8.19°
1816-4478 ft	ANADARKO MAGVAR	12 Jun 2017	8.18°	add 8.18°
4478-6489 ft	ANADARKO MAGVAR	12 Jun 2017	8.19°	add 8.19°
[illegible]	ANADARKO	[illegible]	[illegible]	[illegible]

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
215.00	1.87	113.79	214.96	-1.38	-1.42	3.21	0.87
307.00	2.27	128.30	306.90	-3.09	-3.16	6.02	0.72
400.00	3.16	128.51	399.80	-5.78	-5.89	9.47	0.95
494.00	4.02	135.70	493.61	-9.70	-9.86	13.80	1.03
587.00	4.47	144.93	586.36	-14.95	-15.16	18.16	0.88
680.00	5.69	143.77	678.99	-21.58	-21.84	22.96	1.32
773.00	7.02	135.56	771.42	-29.28	-29.62	29.67	1.73
867.00	8.34	132.54	864.57	-37.89	-38.33	38.72	1.47
961.00	9.16	130.75	957.48	-47.26	-47.83	49.41	0.92
1056.00	9.67	124.79	1051.20	-56.61	-57.32	61.69	1.16
1151.00	10.66	120.90	1144.71	-65.52	-66.38	75.78	1.27
1246.00	11.14	117.42	1238.00	-74.08	-75.12	91.47	0.86
1339.00	11.08	109.53	1329.26	-81.02	-82.25	107.87	1.64
1434.00	11.70	103.19	1422.39	-86.06	-87.50	125.85	1.47
1528.00	12.21	96.99	1514.36	-89.23	-90.88	145.00	1.47
1622.00	12.85	89.47	1606.12	-90.11	-92.00	165.32	1.86
1717.00	12.63	82.55	1698.79	-88.43	-90.55	186.18	1.62
1810.00	12.42	72.33	1789.59	-83.86	-86.20	205.79	2.39
1942.00	14.92	71.83	1917.84	-73.91	-76.59	235.46	1.90

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
2037.00	14.27	69.50	2009.77	-65.74	-68.67	258.05	0.92
2131.00	15.35	67.83	2100.65	-56.73	-59.92	280.43	1.24
2224.00	14.49	66.34	2190.51	-47.17	-50.60	302.49	1.02
2318.00	13.70	64.50	2281.68	-37.42	-41.09	323.30	0.96
2412.00	15.03	63.78	2372.74	-27.01	-30.92	344.28	1.43
2506.00	14.74	63.01	2463.59	-15.95	-20.10	365.87	0.38
2600.00	13.72	62.50	2554.70	-5.15	-9.53	386.42	1.09
2692.00	13.84	62.87	2644.06	5.13	0.52	405.89	0.16
2785.00	12.96	62.07	2734.52	15.30	10.48	425.00	0.96
2880.00	13.55	60.73	2826.99	25.95	20.91	444.12	0.70
2974.00	13.15	61.27	2918.45	36.68	31.43	463.10	0.44
3068.00	14.03	64.48	3009.82	46.96	41.48	482.77	1.23
3162.00	14.43	66.83	3100.94	56.71	51.00	503.82	0.74
3256.00	15.30	62.37	3191.79	67.32	61.36	525.57	1.53
3351.00	13.76	62.17	3283.75	78.65	72.45	546.67	1.63
3445.00	14.66	63.71	3374.88	89.36	82.94	567.22	1.04
3539.00	14.04	61.65	3465.94	100.28	93.62	587.91	0.86
3633.00	14.28	62.46	3557.09	111.28	104.39	608.22	0.34
3727.00	14.63	61.69	3648.11	122.51	115.38	628.95	0.42
3821.00	15.28	63.64	3738.93	133.88	126.51	650.50	0.87

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
3914.00	14.18	60.15	3828.87	145.23	137.62	671.36	1.52
4008.00	14.12	61.25	3920.02	156.70	148.87	691.40	0.29
4102.00	14.40	62.27	4011.13	167.89	159.82	711.80	0.41
4198.00	14.79	63.57	4104.03	179.14	170.83	733.34	0.53
4291.00	15.07	63.33	4193.89	190.09	181.54	754.77	0.30
4384.00	15.53	61.29	4283.59	201.74	192.95	776.49	0.76
4479.00	14.20	59.43	4375.41	214.02	204.98	797.68	1.49
4572.00	13.98	60.28	4465.62	225.61	216.35	817.25	0.33
4666.00	14.02	63.97	4556.83	236.46	226.98	837.34	0.95
4759.00	14.74	64.92	4646.91	246.66	236.94	858.18	0.82
4854.00	14.79	64.13	4738.78	257.32	247.35	880.04	0.22
4949.00	15.26	60.98	4830.53	268.92	258.71	901.88	0.99
5042.00	15.29	61.66	4920.24	280.92	270.46	923.38	0.20
5136.00	14.09	61.53	5011.17	292.50	281.80	944.35	1.28
5262.00	13.49	62.80	5133.54	306.83	295.84	970.90	0.53
5356.00	14.10	63.23	5224.82	317.23	306.01	990.88	0.66
5452.00	13.07	61.51	5318.14	327.90	316.45	1010.86	1.15
5547.00	12.71	59.08	5410.74	338.60	326.94	1029.27	0.69
5641.00	11.67	58.80	5502.62	349.03	337.18	1046.27	1.11
5735.00	9.17	60.78	5595.07	357.77	345.76	1060.94	2.69

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
5829.00	7.51	69.25	5688.07	363.74	351.59	1073.22	2.19
5924.00	5.80	67.24	5782.43	367.91	355.65	1083.44	1.82
6019.00	4.81	84.98	5877.03	370.21	357.85	1091.83	2.00
6114.00	3.87	79.41	5971.76	371.23	358.79	1098.95	1.08
6208.00	3.86	99.89	6065.55	371.34	358.83	1105.18	1.46
6302.00	3.28	101.33	6159.36	370.33	357.75	1110.94	0.62
6396.00	2.58	130.37	6253.25	368.48	355.85	1115.19	1.72
6489.00	2.08	144.00	6346.17	365.79	353.14	1117.77	0.80
6583.00	2.05	137.53	6440.11	363.20	350.52	1119.91	0.25
6678.00	1.18	80.23	6535.08	362.14	349.43	1122.01	1.81
6772.00	1.41	82.34	6629.05	362.48	349.75	1124.11	0.26
6866.00	0.99	97.14	6723.03	362.56	349.81	1126.07	0.56
6956.00	1.31	97.66	6813.01	362.34	349.57	1127.86	0.36
7055.00	3.37	31.11	6911.94	364.71	351.91	1130.49	3.12
7149.00	13.10	7.64	7004.87	377.70	364.87	1133.34	10.74
7243.00	21.25	7.38	7094.61	405.24	392.37	1136.95	8.67
7338.00	28.41	3.96	7180.77	444.95	432.04	1140.72	7.68
7432.00	34.15	356.96	7261.10	493.67	480.75	1140.87	7.22
7527.00	43.69	357.21	7334.93	553.17	540.29	1137.85	10.04
7621.00	57.50	358.31	7394.46	625.53	612.69	1135.09	14.72

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
7715.00	69.23	359.52	7436.53	709.37	696.55	1133.55	12.53
7808.00	79.35	359.79	7461.68	798.76	785.96	1133.02	10.88
7902.00	89.40	359.97	7470.89	892.18	879.38	1132.84	10.69
7997.00	89.02	359.82	7472.20	987.16	974.38	1132.67	0.42
8090.00	90.67	0.03	7472.44	1080.15	1067.37	1132.56	1.79
8185.00	89.36	0.32	7472.42	1175.15	1162.37	1132.85	1.41
8278.00	89.63	358.87	7473.23	1268.12	1255.36	1132.19	1.58
8372.00	90.54	359.01	7473.09	1362.08	1349.34	1130.45	0.97
8465.00	90.17	358.69	7472.52	1455.03	1442.32	1128.59	0.53
8559.00	89.80	0.87	7472.55	1549.02	1536.32	1128.23	2.34
8653.00	91.78	0.63	7471.26	1643.00	1630.29	1129.45	2.12
8745.00	90.44	359.82	7469.48	1734.98	1722.27	1129.82	1.70
8840.00	90.50	0.29	7468.70	1829.97	1817.27	1129.91	0.50
8934.00	90.23	1.38	7468.10	1923.97	1911.26	1131.28	1.19
9029.00	89.90	0.55	7467.98	2018.97	2006.24	1132.88	0.94
9123.00	89.97	0.27	7468.09	2112.96	2100.24	1133.56	0.31
9217.00	89.30	1.33	7468.70	2206.96	2194.23	1134.88	1.33
9311.00	88.52	0.39	7470.49	2300.94	2288.20	1136.29	1.29
9405.00	89.90	1.65	7471.78	2394.93	2382.17	1137.97	1.98
9499.00	89.66	1.75	7472.14	2488.91	2476.13	1140.76	0.27

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
9593.00	89.97	0.12	7472.45	2582.90	2570.11	1142.29	1.77
9687.00	88.82	358.67	7473.44	2676.87	2664.10	1141.30	1.96
9780.00	89.83	359.86	7474.53	2769.84	2757.08	1140.10	1.68
9874.00	89.46	359.75	7475.11	2863.82	2851.08	1139.78	0.41
9968.00	89.50	358.03	7475.96	2957.77	2945.05	1137.96	1.83
10063.00	89.60	359.82	7476.71	3052.72	3040.03	1136.18	1.89
10157.00	89.40	0.08	7477.54	3146.71	3134.02	1136.09	0.35
10253.00	89.03	359.91	7478.86	3242.70	3230.01	1136.09	0.42
10348.00	90.64	359.24	7479.14	3337.67	3325.01	1135.38	1.84
10441.00	90.10	359.03	7478.54	3430.64	3418.00	1133.98	0.62
10536.00	89.70	0.23	7478.71	3525.62	3512.99	1133.36	1.33
10630.00	88.93	359.54	7479.84	3619.61	3606.98	1133.17	1.10
10723.00	88.96	358.15	7481.55	3712.54	3699.95	1131.30	1.49
10817.00	88.19	0.94	7483.89	3806.49	3793.90	1130.55	3.07
10911.00	90.34	0.21	7485.10	3900.47	3887.89	1131.50	2.41
11005.00	90.54	0.24	7484.39	3994.47	3981.88	1131.87	0.21
11099.00	90.13	359.68	7483.84	4088.46	4075.88	1131.81	0.73
11193.00	90.37	0.69	7483.43	4182.45	4169.88	1132.11	1.10
11288.00	89.87	0.22	7483.23	4277.45	4264.87	1132.87	0.73
11382.00	88.66	2.12	7484.44	4371.43	4358.84	1134.78	2.40

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
11477.00	89.70	3.17	7485.81	4466.36	4453.73	1139.17	1.56
11572.00	89.09	1.52	7486.81	4561.31	4548.64	1143.06	1.85
11667.00	90.17	1.15	7487.42	4656.30	4643.61	1145.28	1.20
11761.00	90.00	1.30	7487.28	4750.30	4737.59	1147.29	0.24
11854.00	91.04	1.36	7486.44	4843.28	4830.56	1149.45	1.12
11948.00	91.01	1.19	7484.76	4937.26	4924.52	1151.54	0.18
12043.00	89.97	0.91	7483.95	5032.26	5019.50	1153.29	1.13
12137.00	90.70	0.61	7483.40	5126.25	5113.49	1154.54	0.85
12231.00	90.74	0.37	7482.22	5220.25	5207.47	1155.34	0.25
12324.00	90.34	0.03	7481.35	5313.24	5300.47	1155.67	0.57
12419.00	90.50	359.94	7480.65	5408.23	5395.47	1155.65	0.20
12512.00	90.81	0.80	7479.59	5501.22	5488.46	1156.25	0.99
12604.00	90.84	1.19	7478.27	5593.21	5580.43	1157.85	0.42
12698.00	90.74	0.78	7476.97	5687.20	5674.41	1159.46	0.45
12792.00	89.26	359.22	7476.98	5781.19	5768.41	1159.47	2.28
12886.00	88.66	0.63	7478.69	5875.16	5862.39	1159.34	1.62
12980.00	90.10	2.57	7479.71	5969.14	5956.34	1161.96	2.58
13074.00	90.03	2.65	7479.60	6063.08	6050.24	1166.25	0.11
13168.00	89.66	2.27	7479.84	6157.03	6144.15	1170.28	0.57

GAMMA RAY

Scientific Drilling

5" = 100' MD