



5" = 100' FEET MD

COMPANY : ANADARKO
WELL : LAND 28N-29HZ
FIELD : WATTENBERG
COUNTY : WELD
STATE : COLORADO
COUNTRY : U.S.A.
UWI : 05-123-42394

COMPANY : ANADARKO

WELL : LAND 28N-29HZ

FIELD : WATTENBERG

COUNTY : WELD

STATE : COLORADO

COUNTRY : U.S.A.

UWI : 05-123-42394

WELL LOCATION

LAT:40.0990250°N LONG:104.8051990°W

N:14562852.43 ft E:1694892.00 ft

SEC:32

TWP: 2N

RANGE: 66W

OTHER SERVICES

DIRECTIONAL
ROP

DEPTH REF. : RKB

REF. HEIGHT : 20.000 ft

RKB to Ground Level

GROUND LEVEL : 4899.000 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	1869	0 - 16	0	2997
7.875	1869	12948	16 - 0	2997	6671
			0 - 88	6671	7710
			88 - 93	7710	12948

CASING RECORD

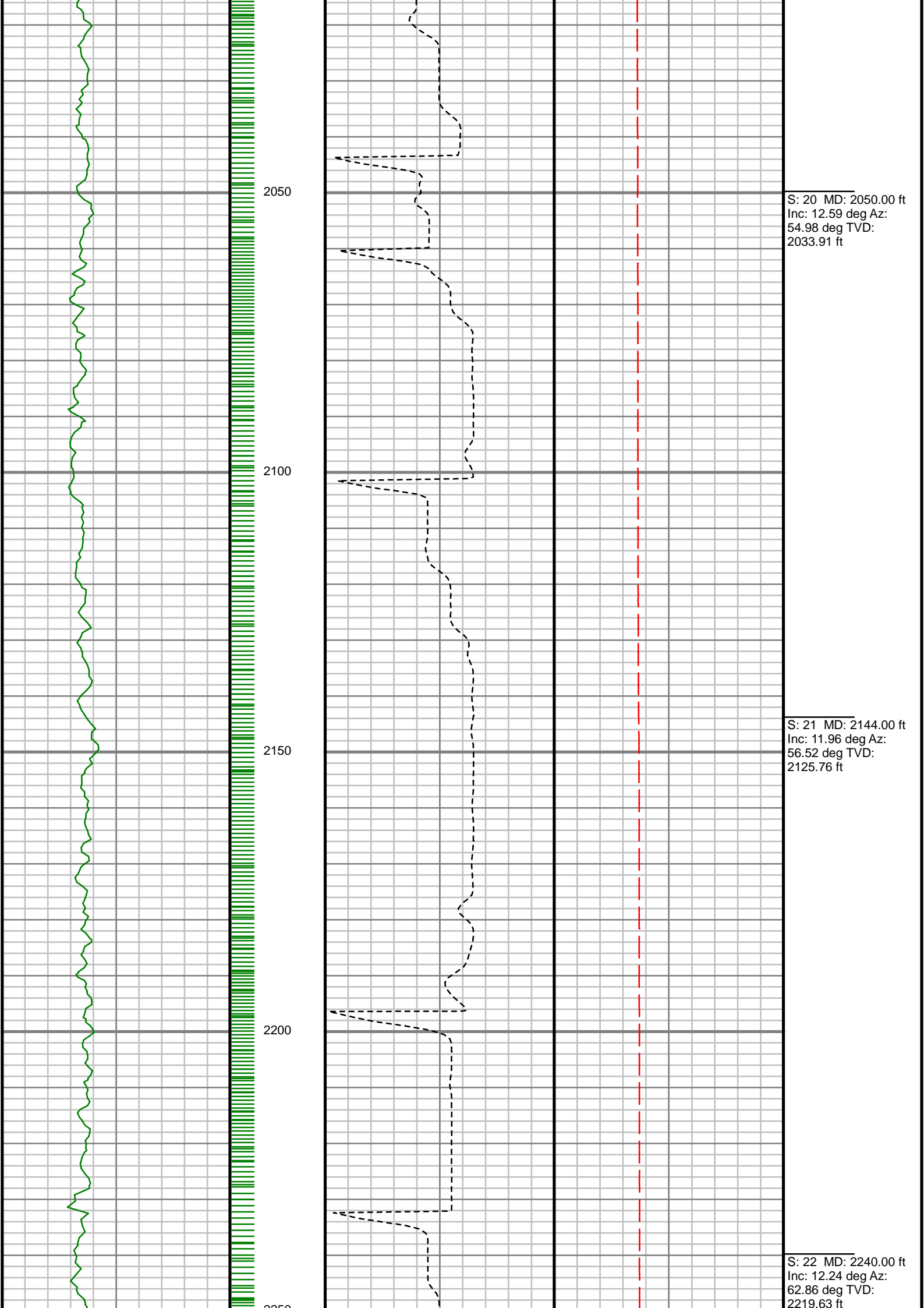
CASING SIZE in	FROM ft	TO ft			
9.625	0	1856			
			DRILLING CO. : PRECISION DRILLING		
			RIG : 461		
			LWD UNIT NO. :	DISTRICT : CASPER	
			SPUD DATE : 05/18/2016		
			LWD START DATE : 07/13/2016	DEPTH : 1950 ft	
			LWD END DATE : 07/16/2016	DEPTH : 12948 ft	
			TOTAL DEPTH : 12948 ft		

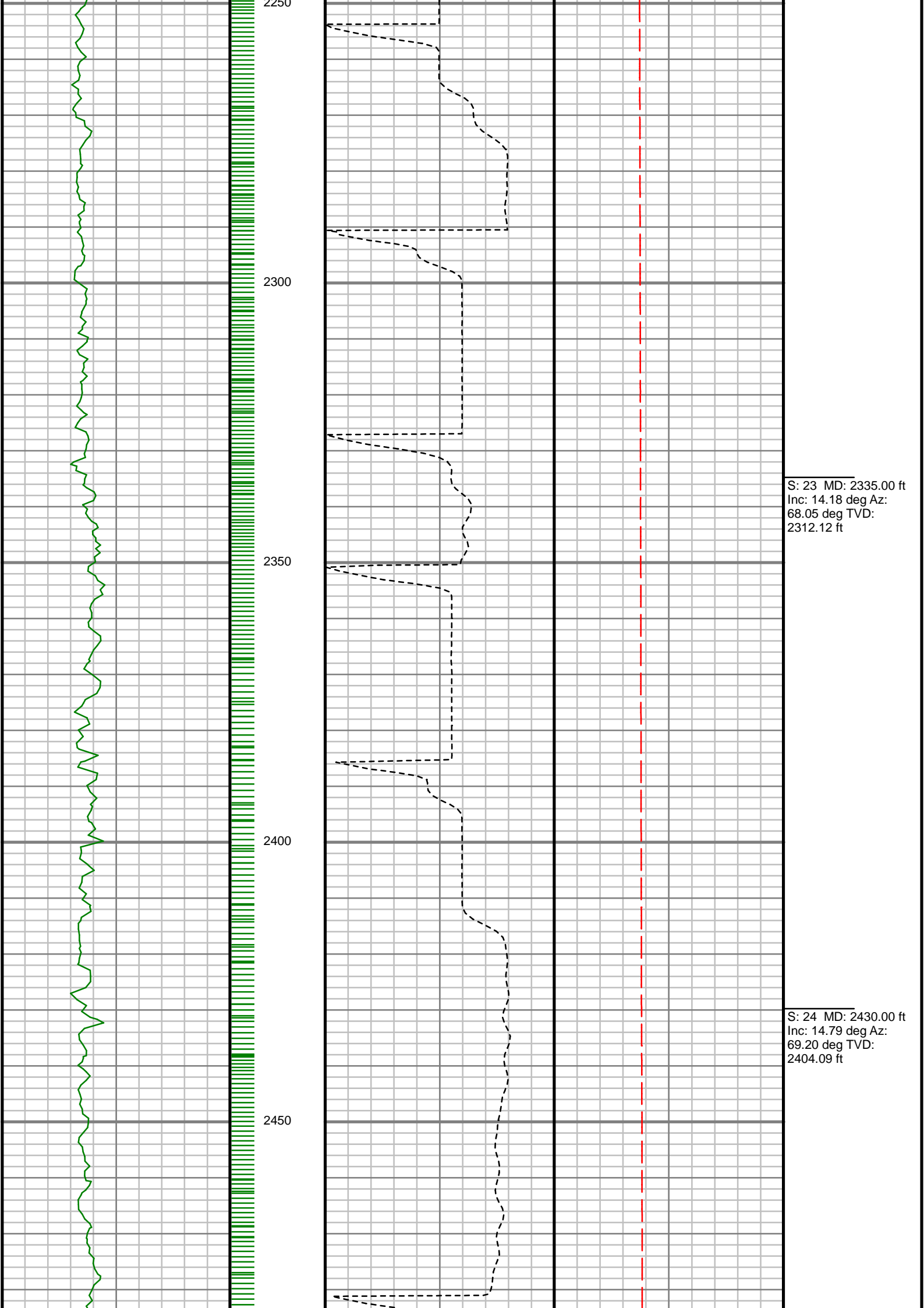
Run Data

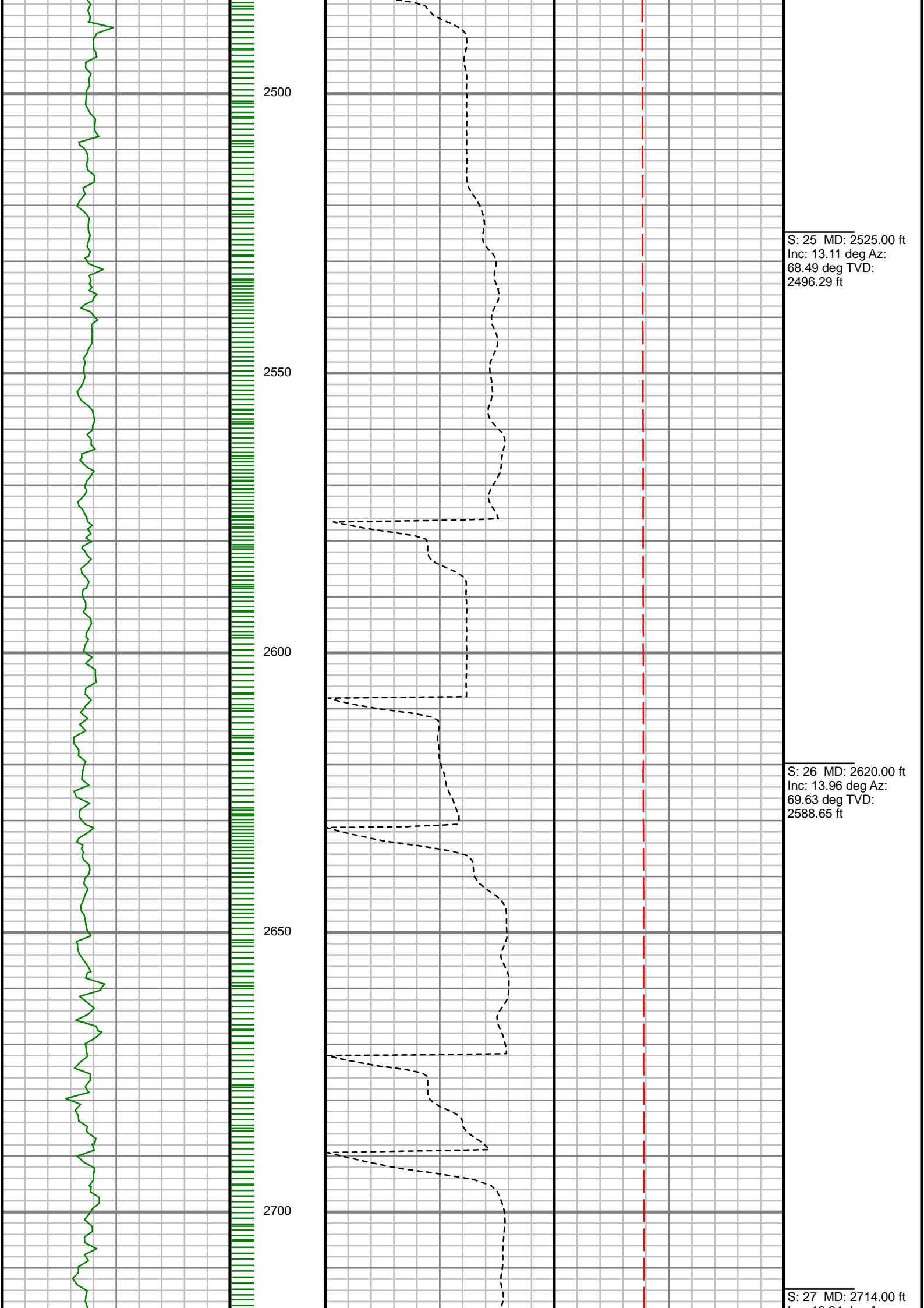
Remarks
ANADARKO PRODUCTION AFE# 2122896
SCIENTIFIC DRILLING INTERNATIONAL JOB# 372193
ALL REFERENCES IN THE DEPTH TRACK ARE AT BIT DEPTH.
ALL DATA IS MEMORY DATA UNLESS STATED OTHERWISE.
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO GAMMA RAY CURVE
RUN #1: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-416 / CONT = 225 / MWD EYE = 0380 / GAMMA RAY = 1212
BIT TO SENSOR OFFSETS: SURVEY = 51.29 FT. / GAMMA RAY = 42.60 FT.
MNEMONICS LIST:
GR = GAMMA RAY
ROP = RATE OF PENETRATION
T-TEMP = TOOL TEMPERATURE
MNEMONICS LIST:
GR = GAMMA RAY
ROP = RATE OF PENETRATION
TEMP = TOOL TEMPERATURE

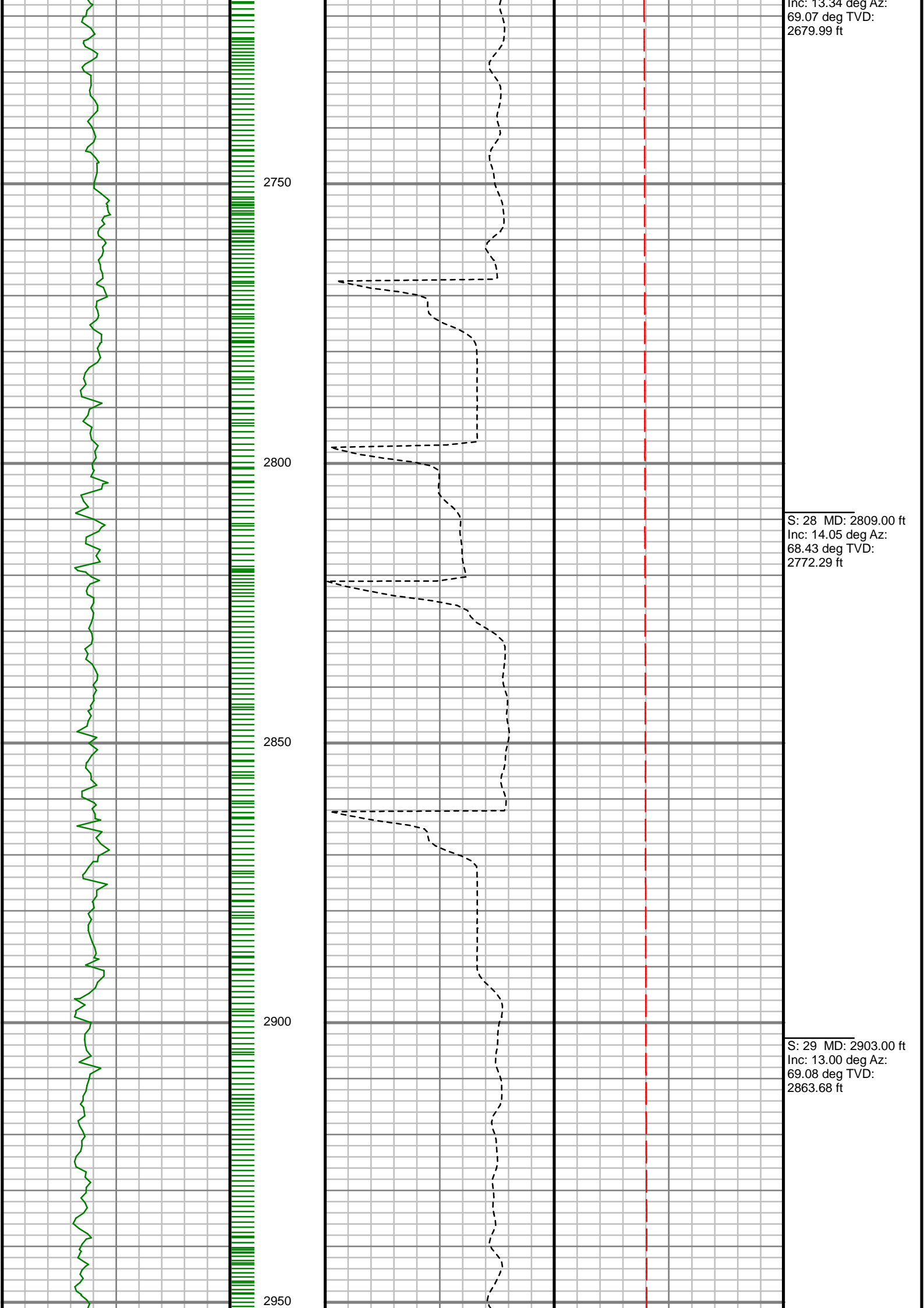
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

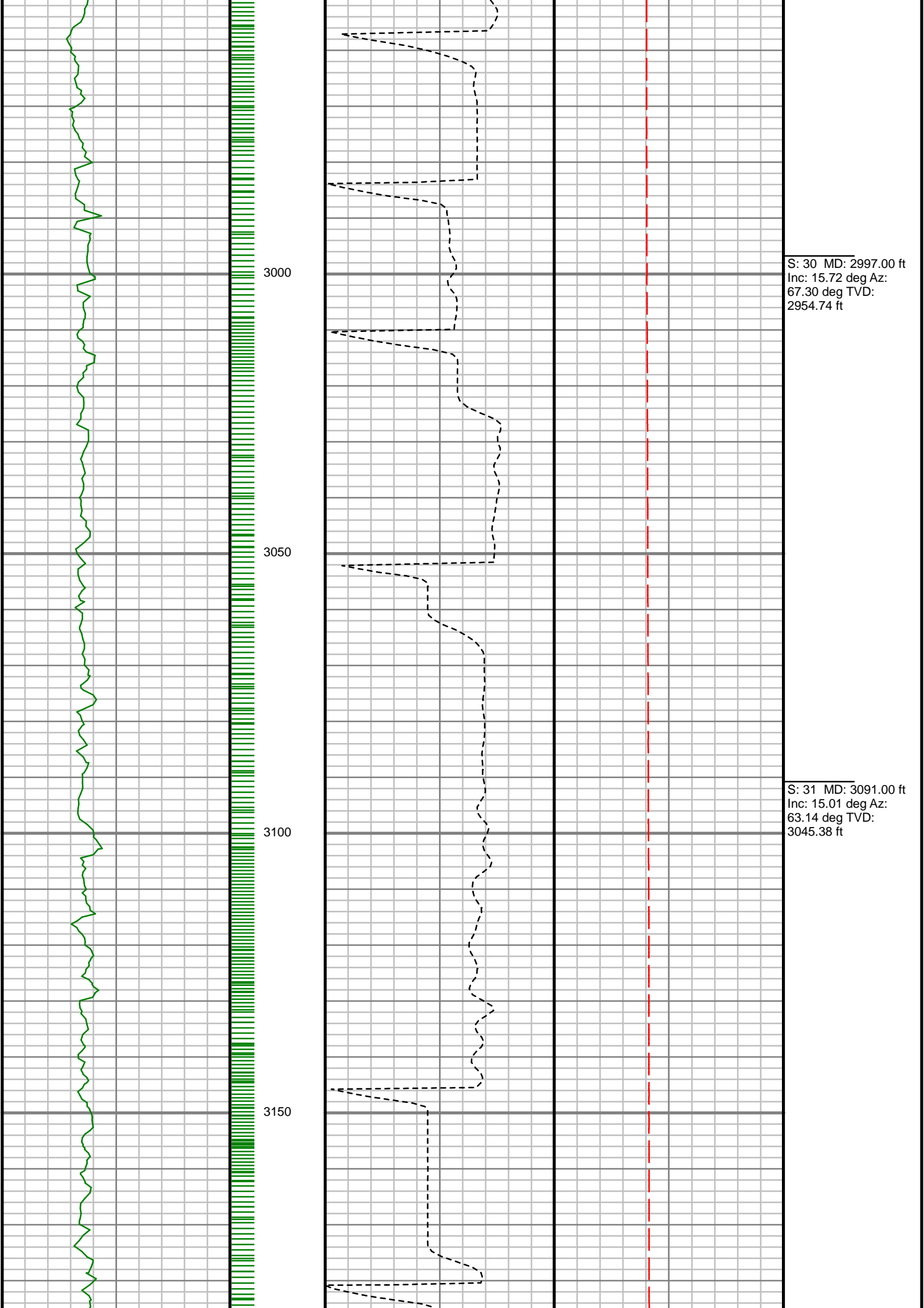
ANADARKO E&P ONSHORE LLC. LAND 28N-29HZ WATTENBERG FIELD WELD COUNTY, COLORADO U.S.A. 0512342394000			
Gamma Ray (GR) 0 Unit = aapi 300	MEASURED DEPTH 1,240 (ft)	Rate of Penetration (ROP) 0 Unit = ft/hr 1000	Tool Temperature (TEMP) 0 Unit = °F 300
S: 19 MD: 1956.00 ft Inc: 11.11 deg Az: 55.12 deg TVD: 1941.91 ft			





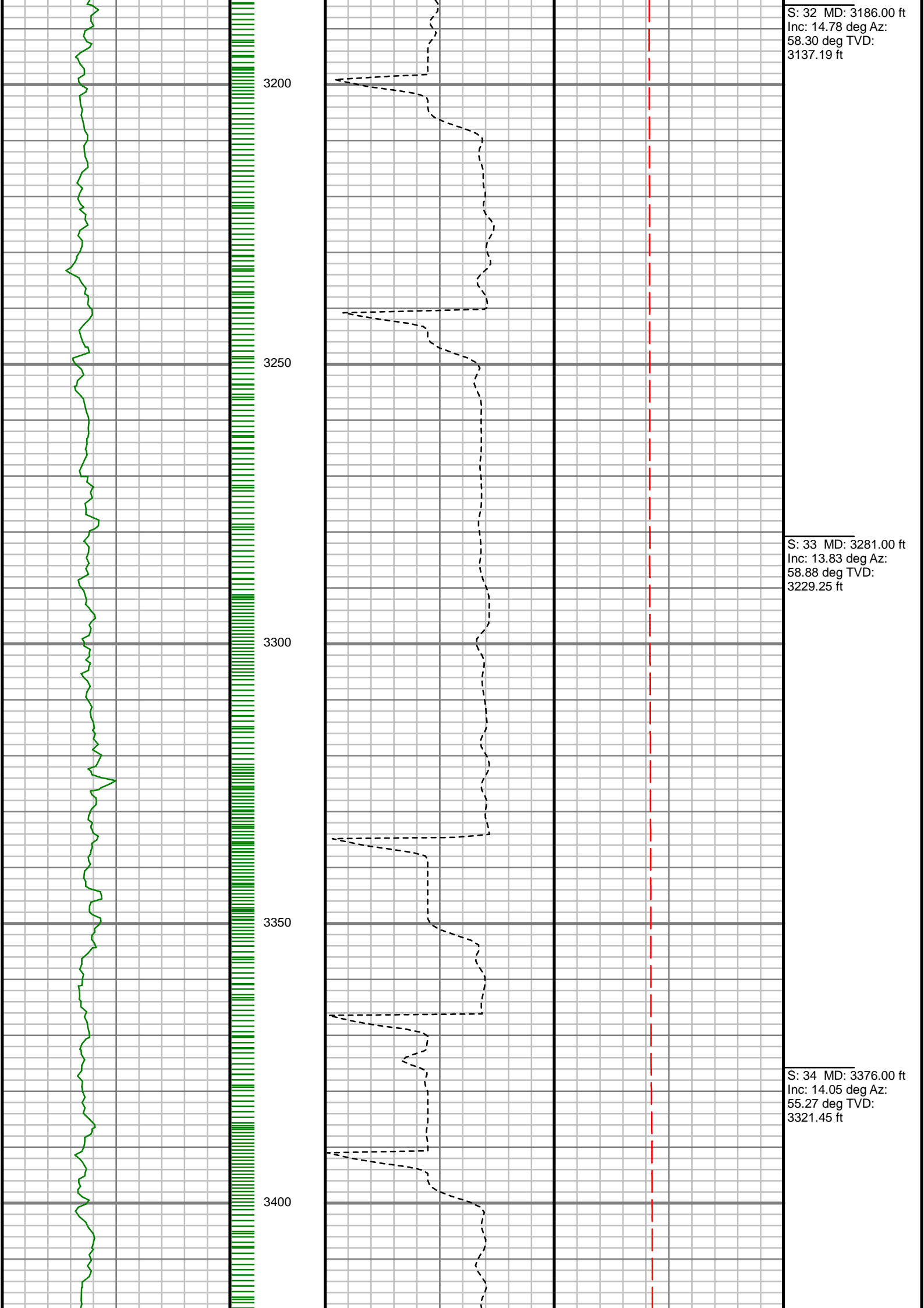


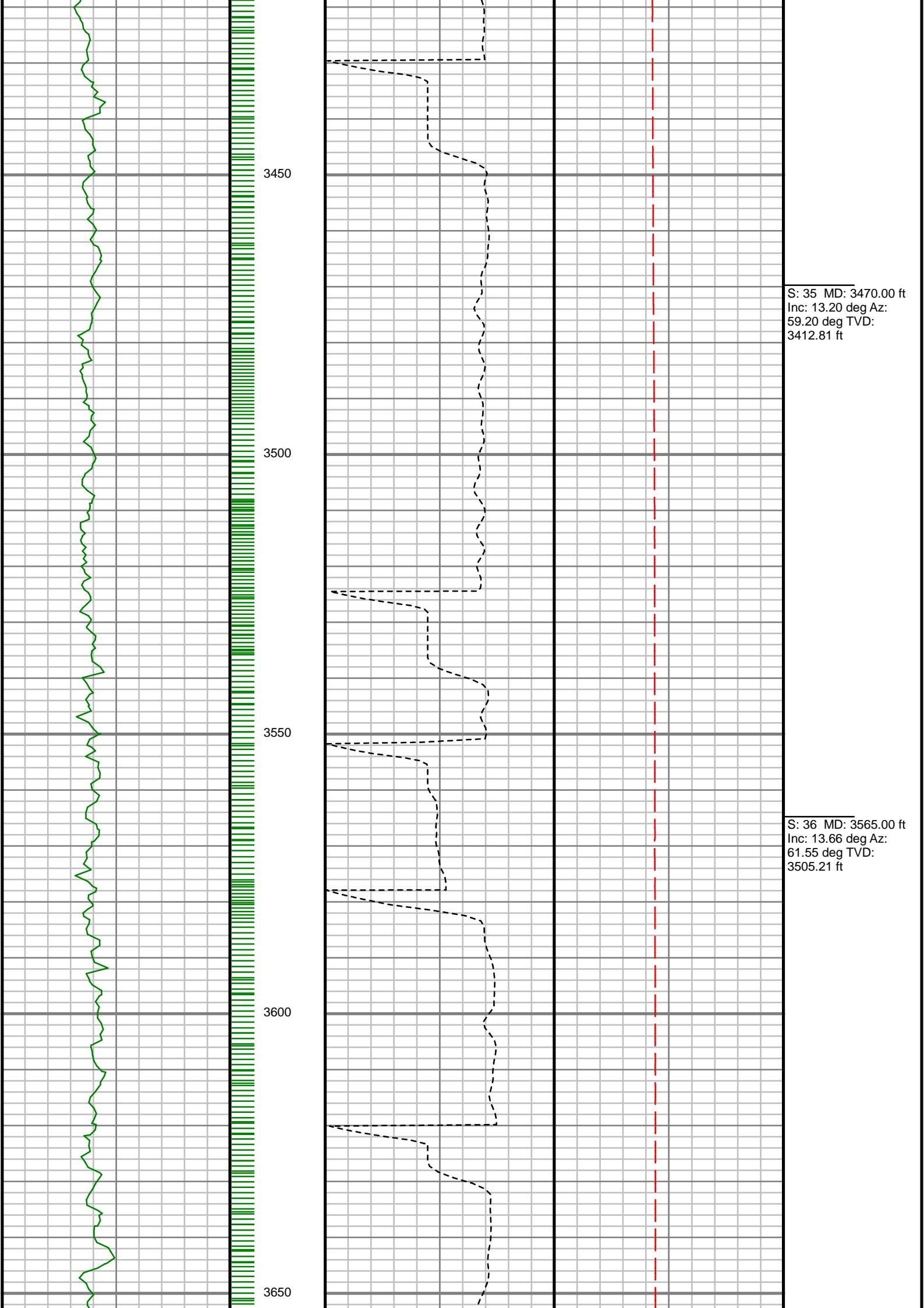


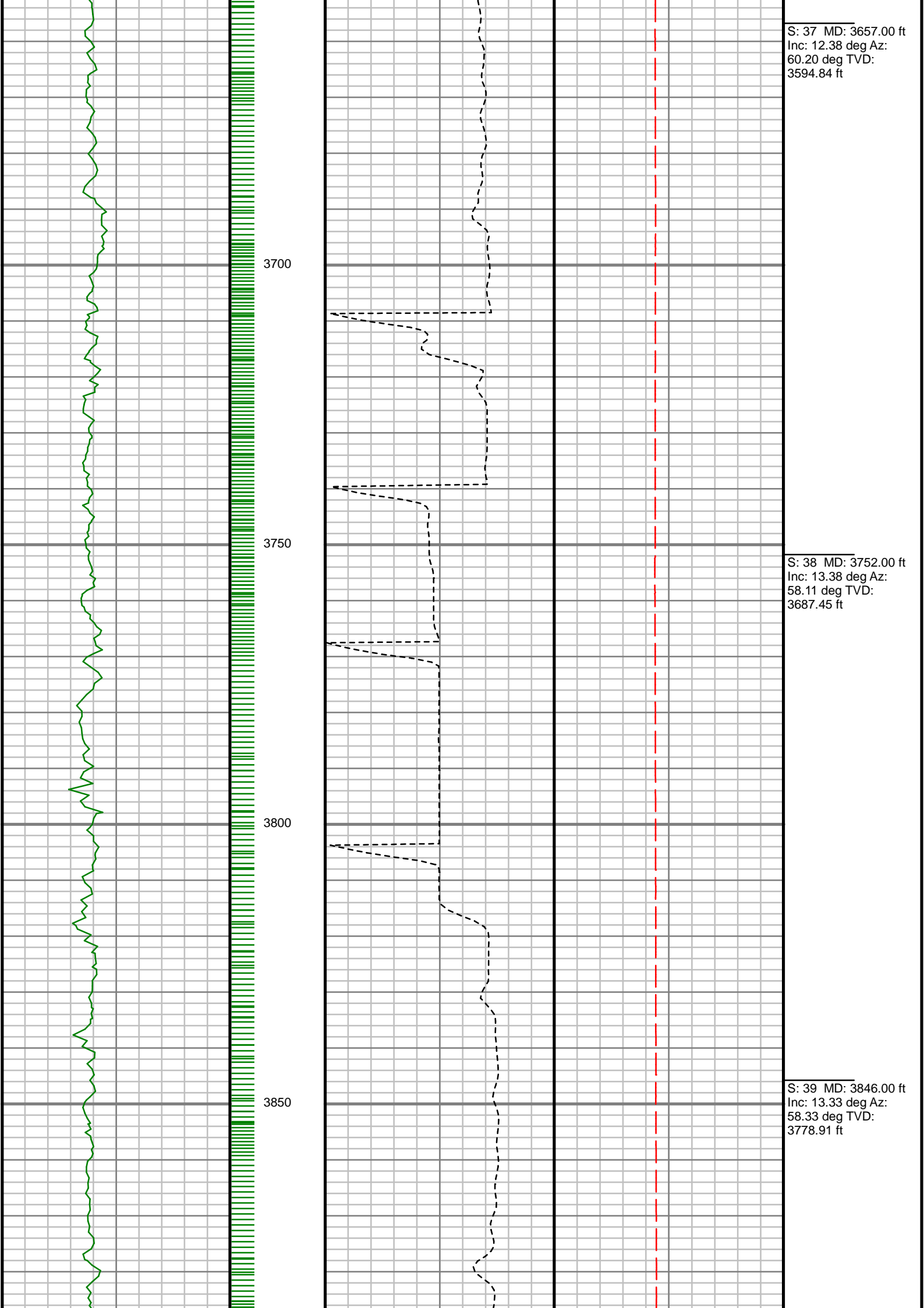


S: 30 MD: 2997.00 ft
Inc: 15.72 deg Az:
67.30 deg TVD:
2954.74 ft

S: 31 MD: 3091.00 ft
Inc: 15.01 deg Az:
63.14 deg TVD:
3045.38 ft



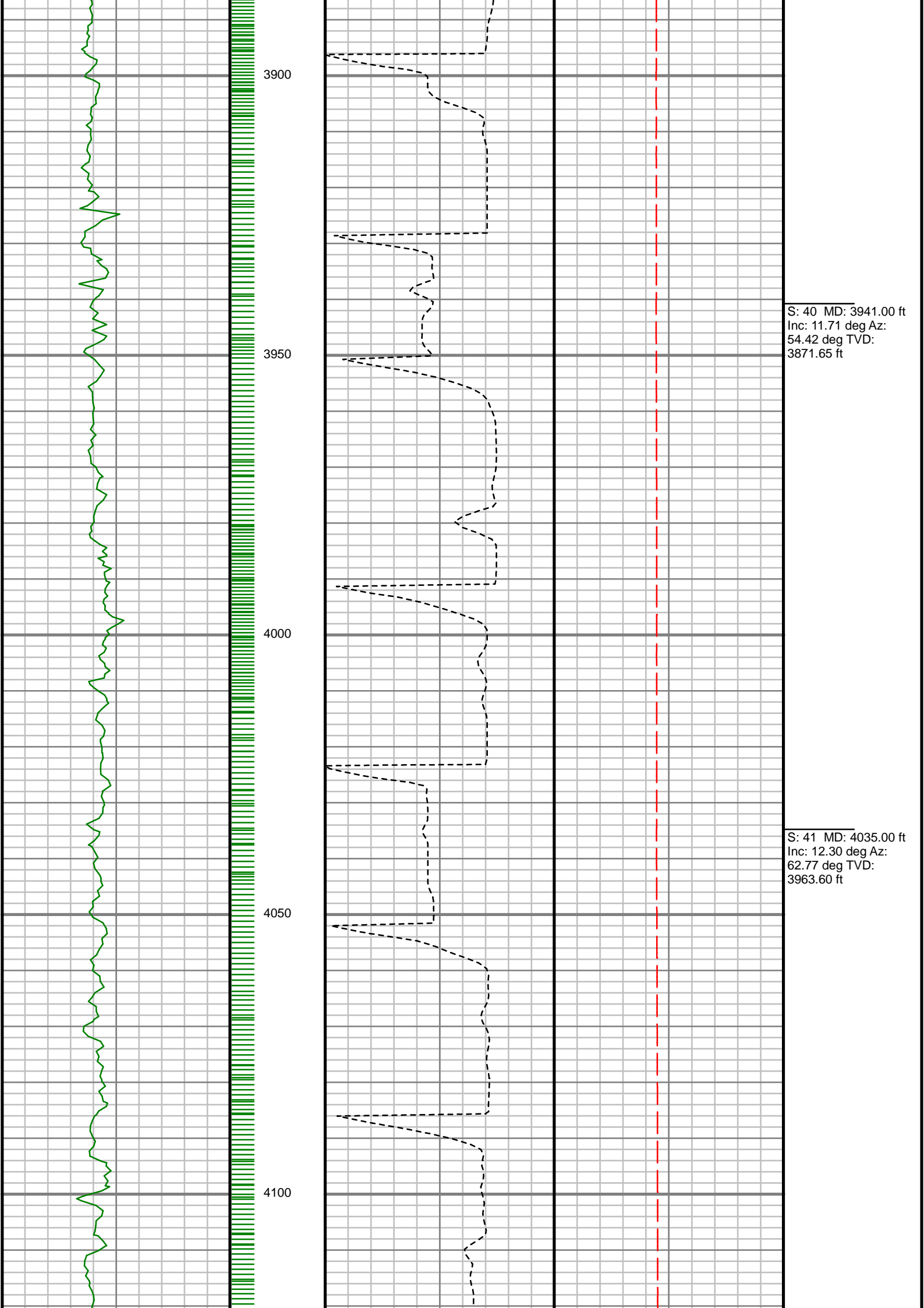




S: 37 MD: 3657.00 ft
Inc: 12.38 deg Az:
60.20 deg TVD:
3594.84 ft

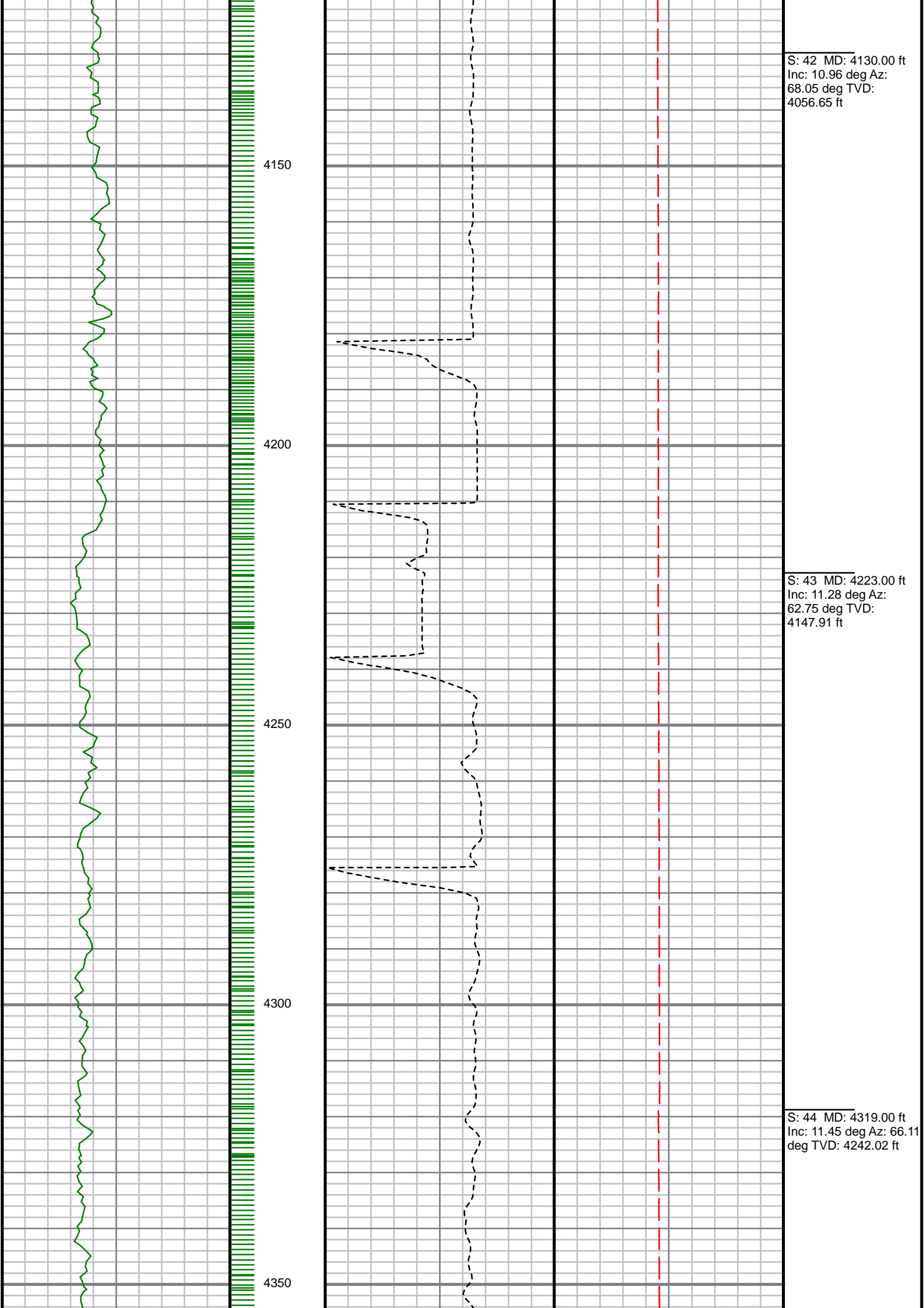
S: 38 MD: 3752.00 ft
Inc: 13.38 deg Az:
58.11 deg TVD:
3687.45 ft

S: 39 MD: 3846.00 ft
Inc: 13.33 deg Az:
58.33 deg TVD:
3778.91 ft



S: 40 MD: 3941.00 ft
Inc: 11.71 deg Az:
54.42 deg TVD:
3871.65 ft

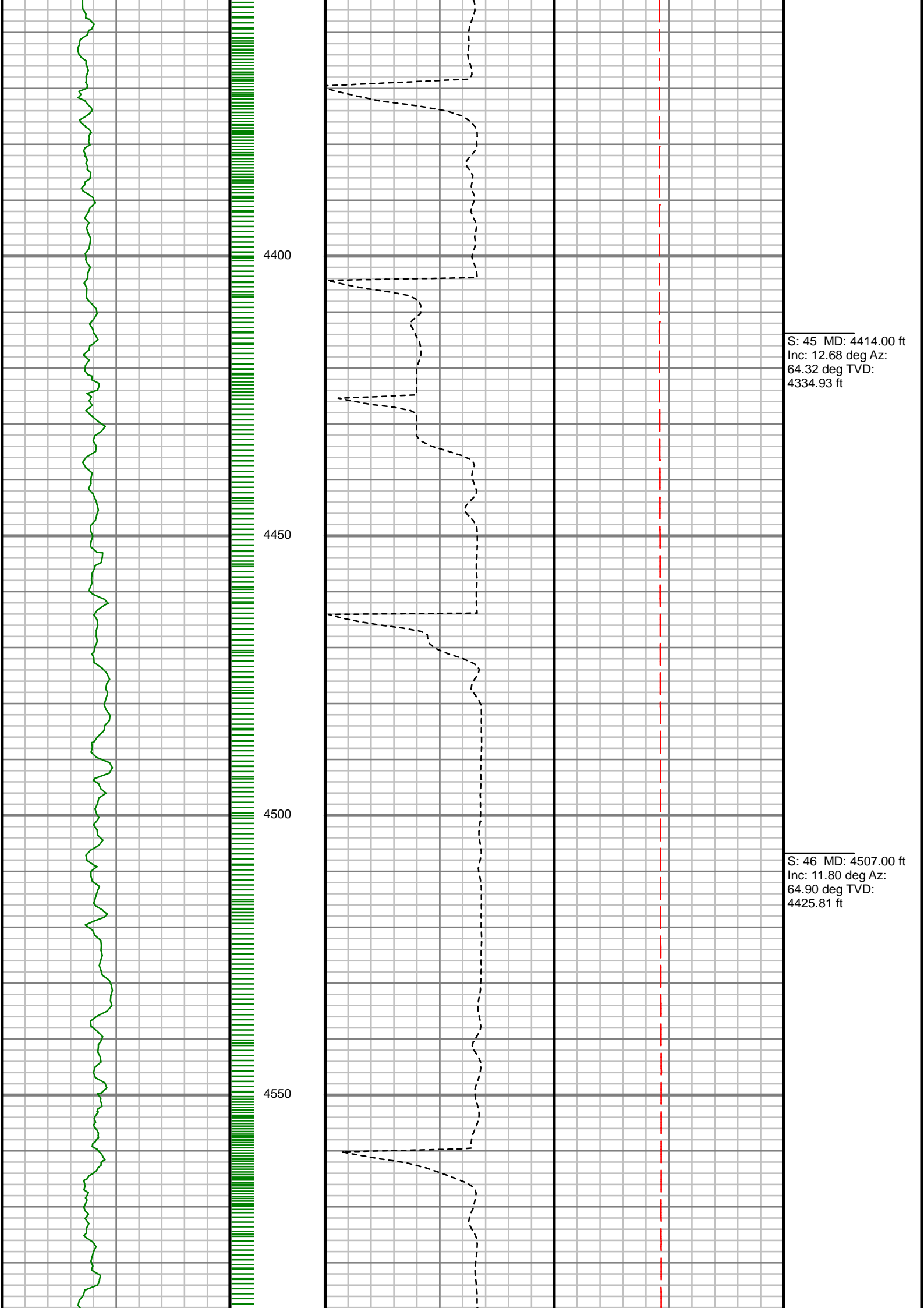
S: 41 MD: 4035.00 ft
Inc: 12.30 deg Az:
62.77 deg TVD:
3963.60 ft



S: 42 MD: 4130.00 ft
Inc: 10.96 deg Az:
68.05 deg TVD:
4056.65 ft

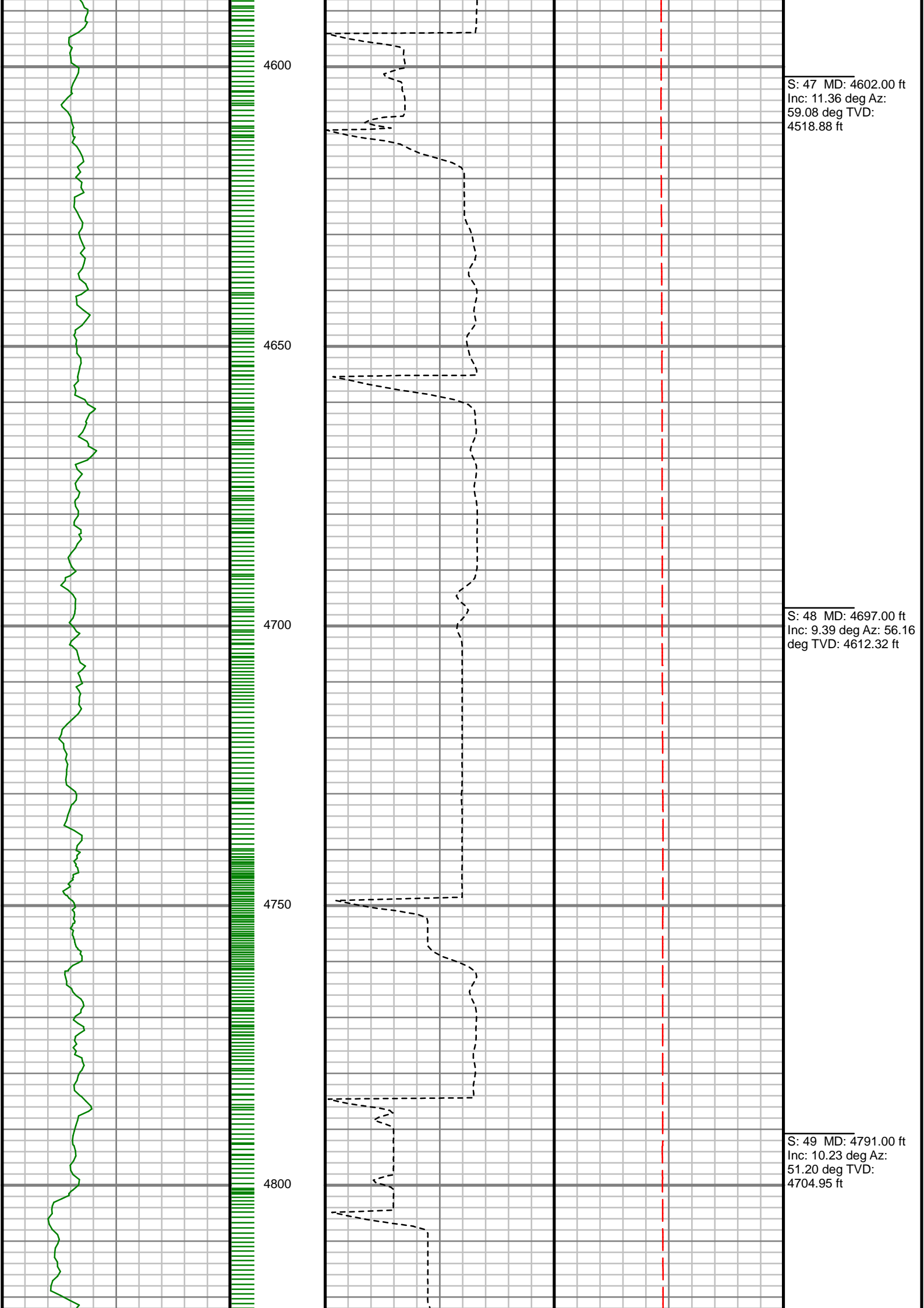
S: 43 MD: 4223.00 ft
Inc: 11.28 deg Az:
62.75 deg TVD:
4147.91 ft

S: 44 MD: 4319.00 ft
Inc: 11.45 deg Az: 66.11
deg TVD: 4242.02 ft



S: 45 MD: 4414.00 ft
Inc: 12.68 deg Az:
64.32 deg TVD:
4334.93 ft

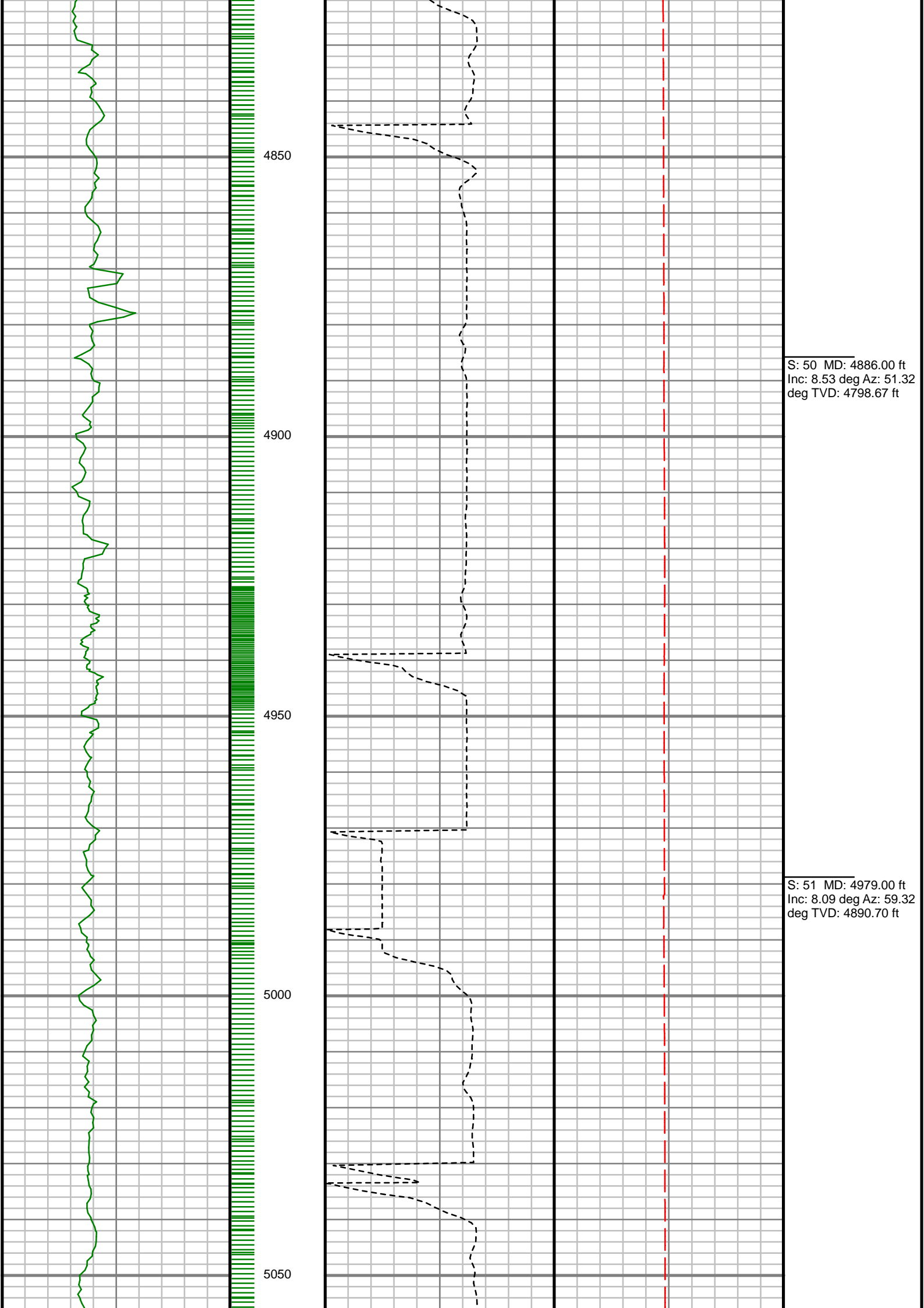
S: 46 MD: 4507.00 ft
Inc: 11.80 deg Az:
64.90 deg TVD:
4425.81 ft

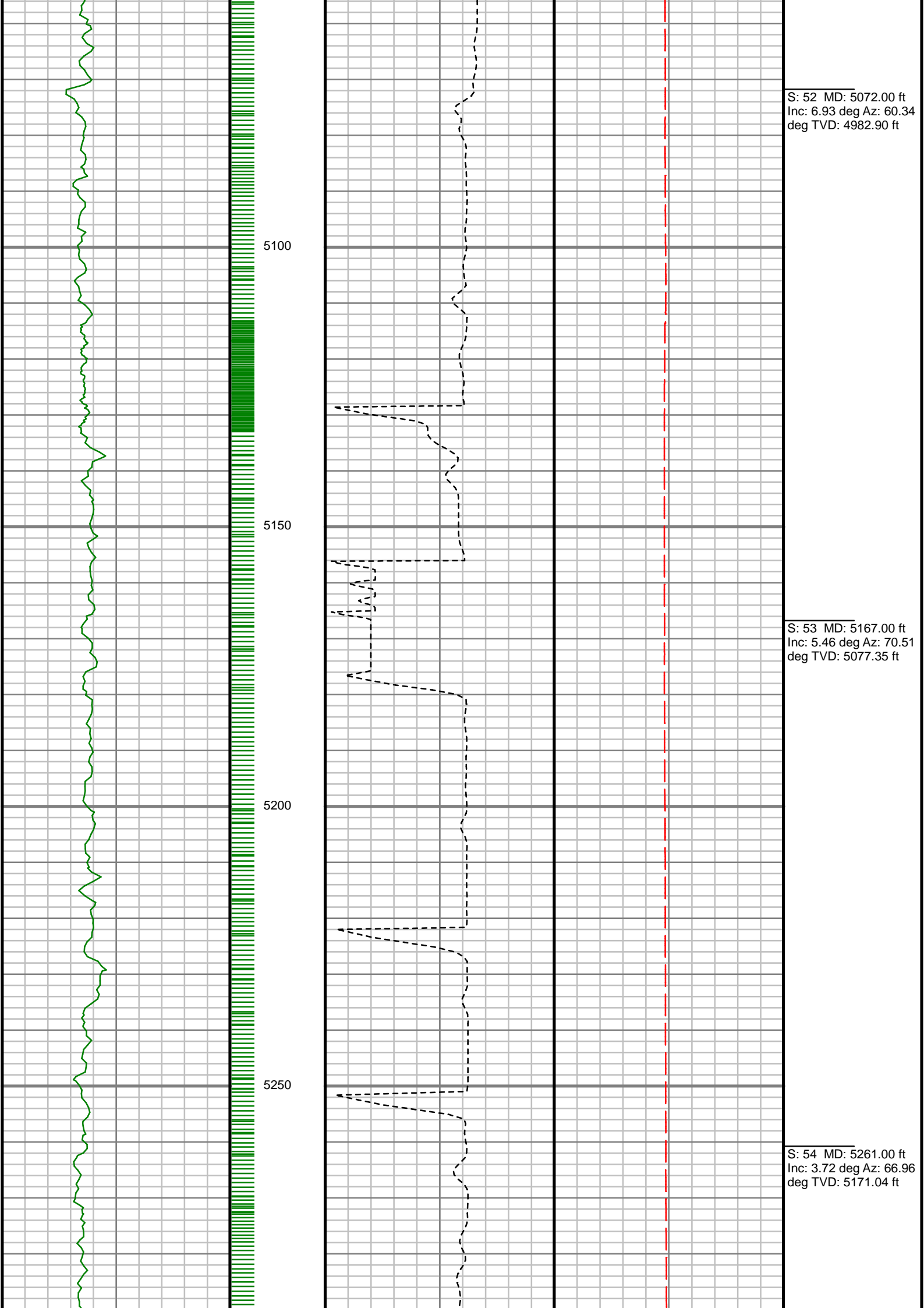


S: 47 MD: 4602.00 ft
Inc: 11.36 deg Az:
59.08 deg TVD:
4518.88 ft

S: 48 MD: 4697.00 ft
Inc: 9.39 deg Az: 56.16
deg TVD: 4612.32 ft

S: 49 MD: 4791.00 ft
Inc: 10.23 deg Az:
51.20 deg TVD:
4704.95 ft

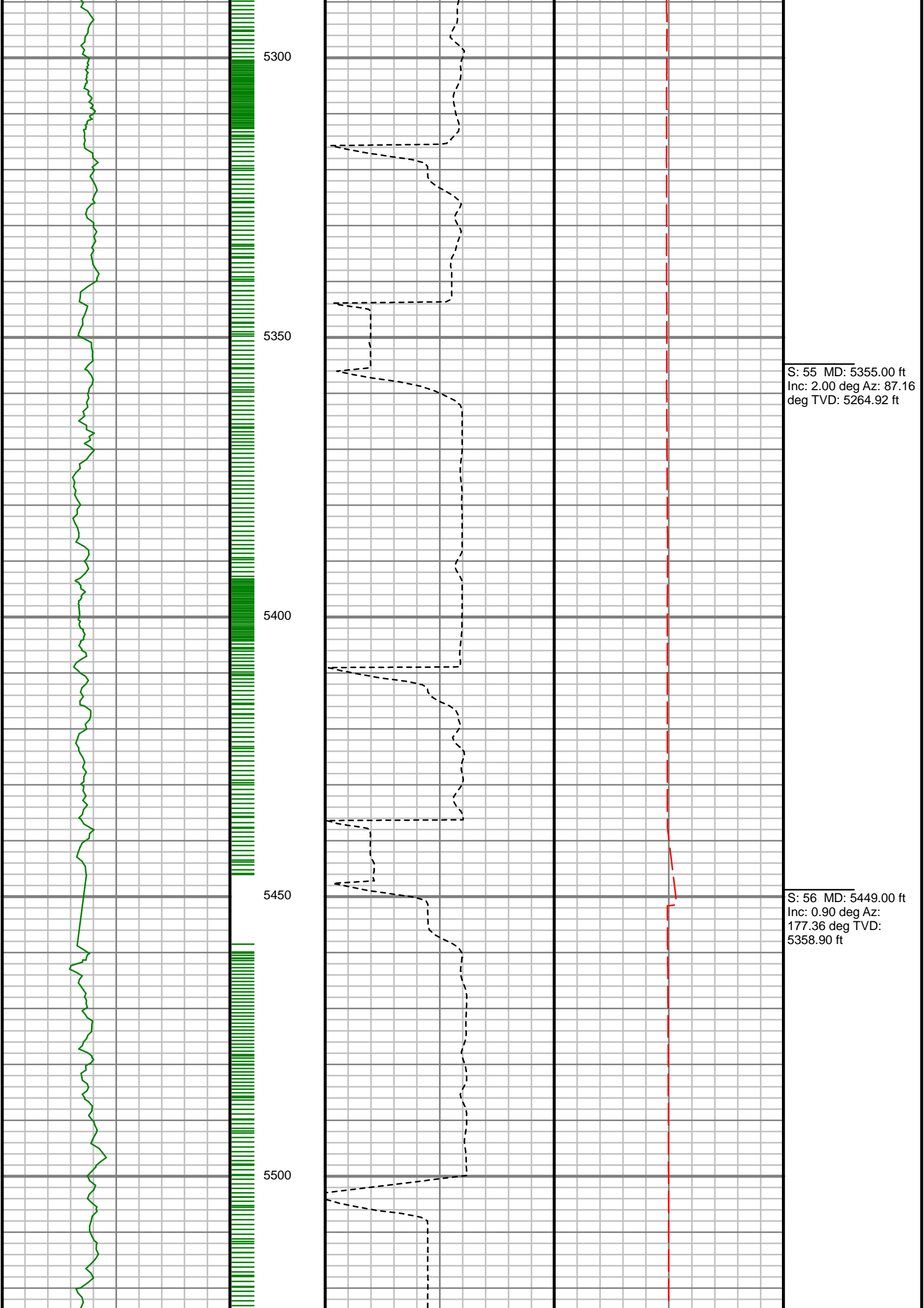




S: 52 MD: 5072.00 ft
Inc: 6.93 deg Az: 60.34
deg TVD: 4982.90 ft

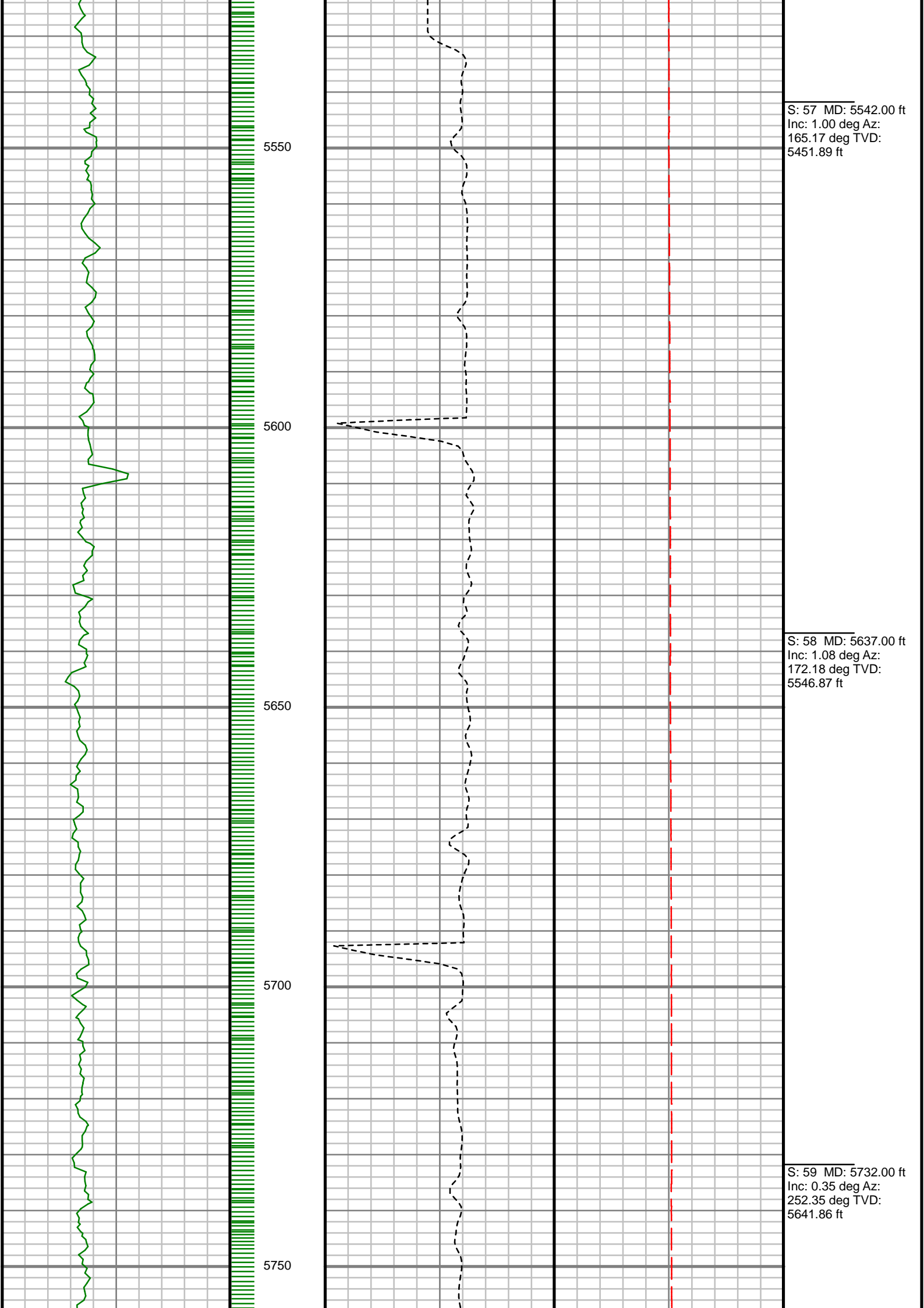
S: 53 MD: 5167.00 ft
Inc: 5.46 deg Az: 70.51
deg TVD: 5077.35 ft

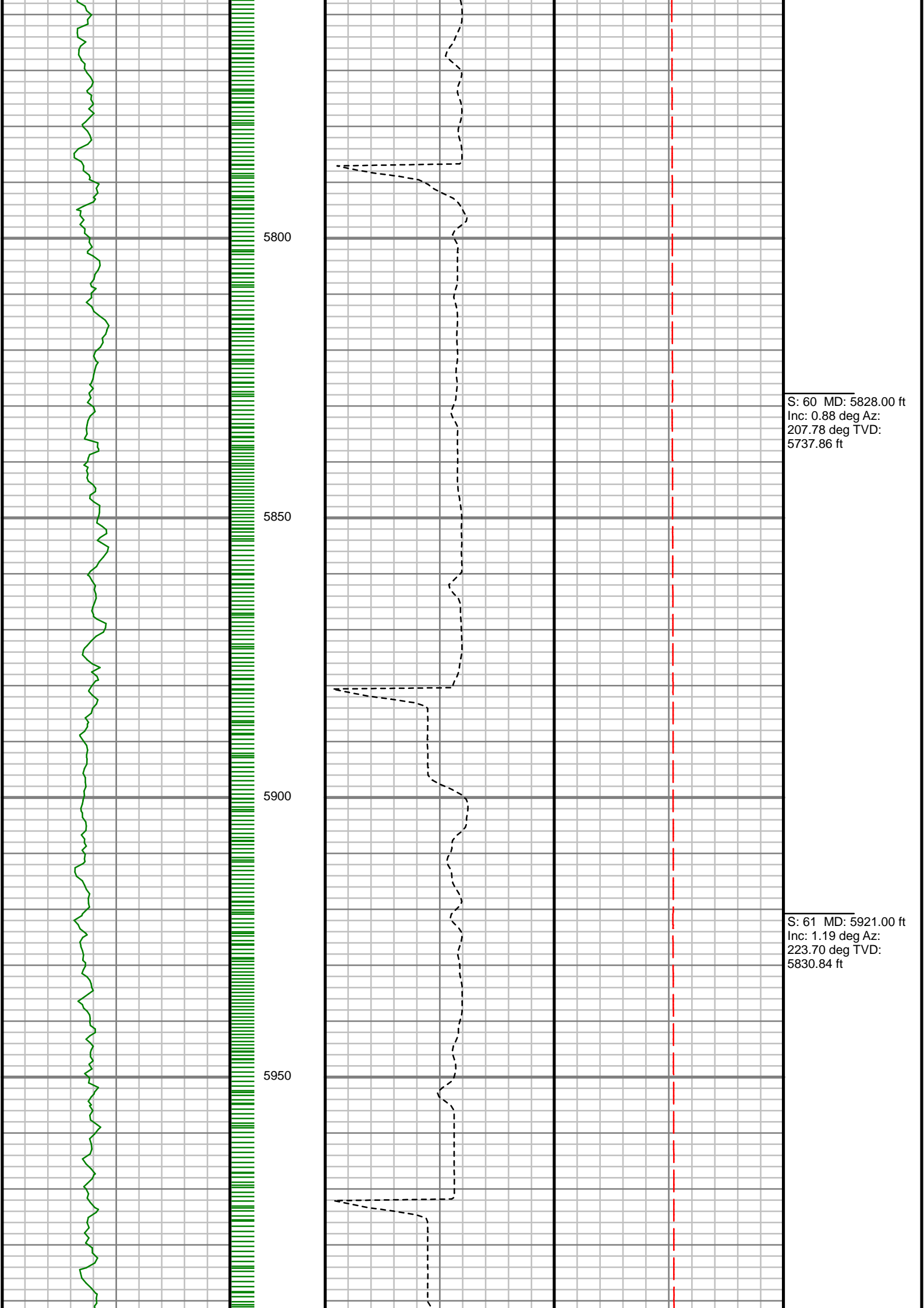
S: 54 MD: 5261.00 ft
Inc: 3.72 deg Az: 66.96
deg TVD: 5171.04 ft

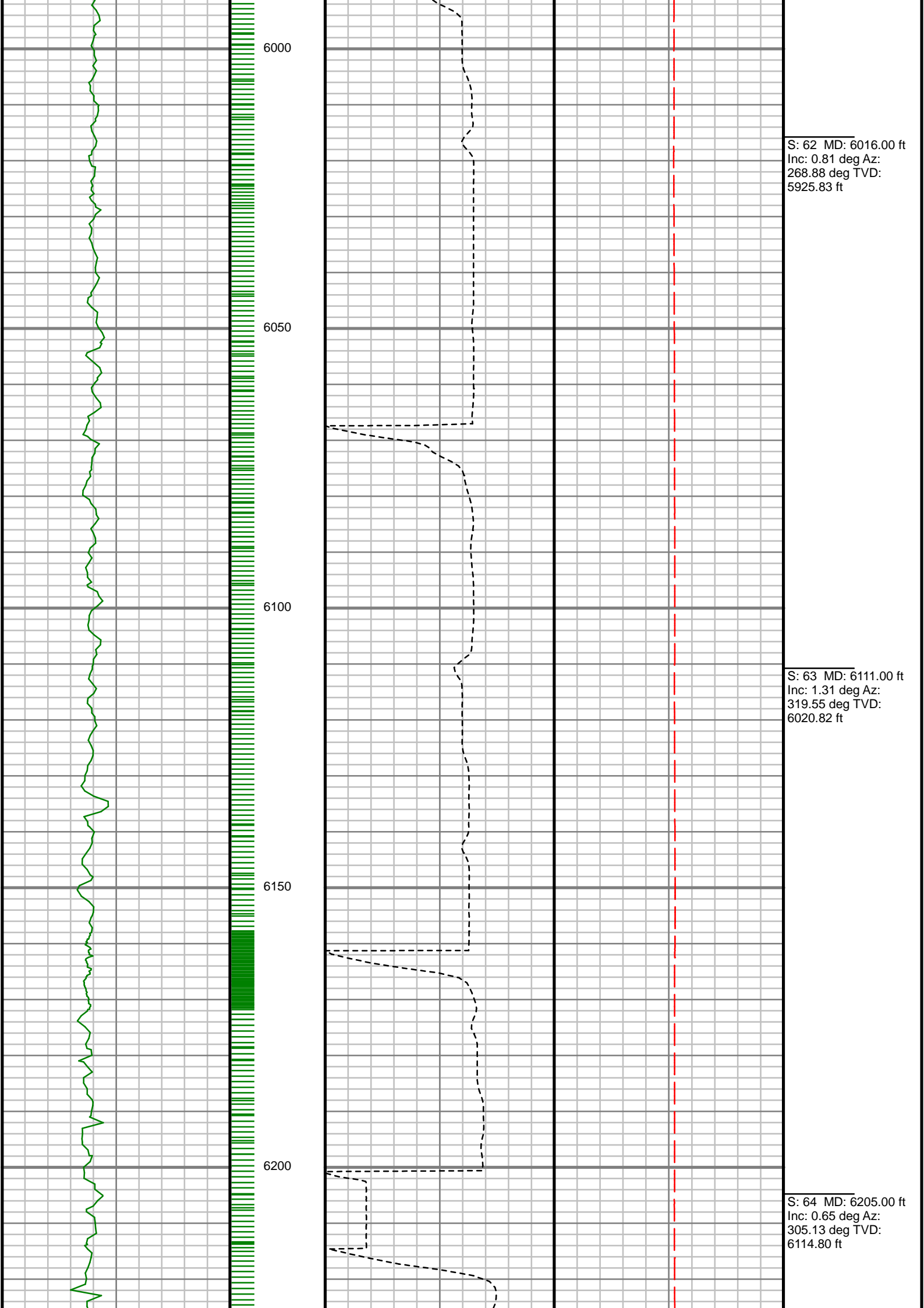


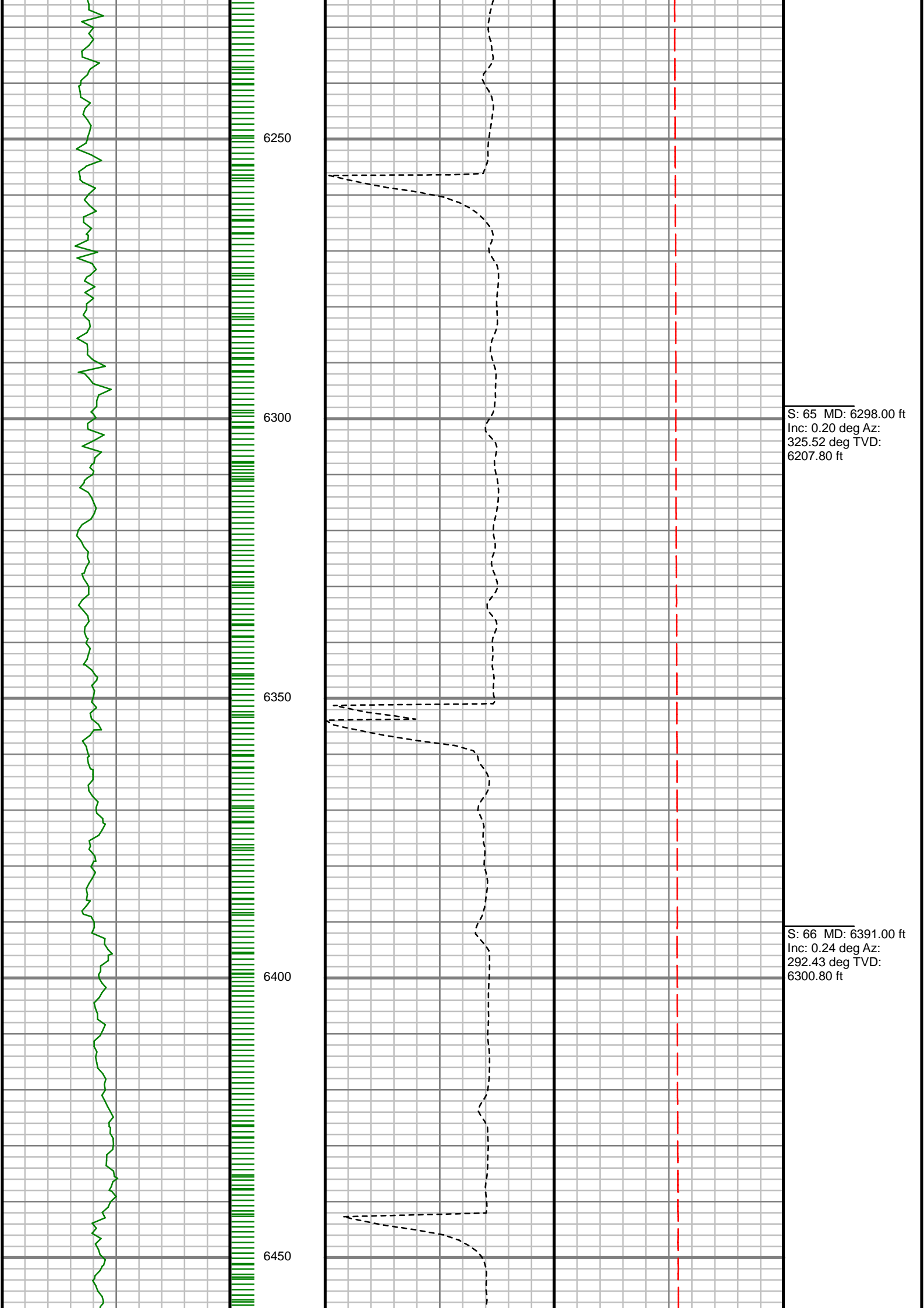
S: 55 MD: 5355.00 ft
Inc: 2.00 deg Az: 87.16
deg TVD: 5264.92 ft

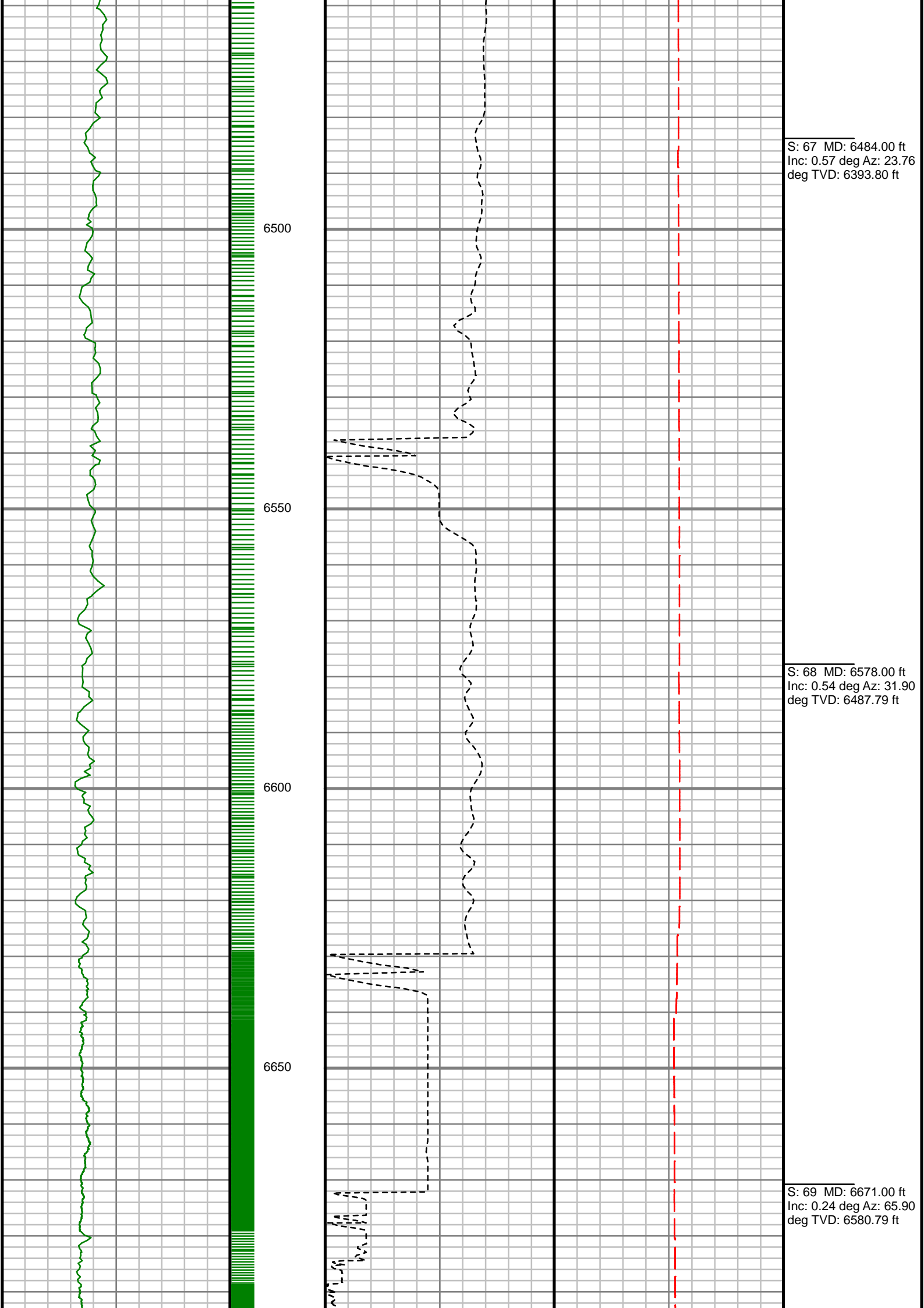
S: 56 MD: 5449.00 ft
Inc: 0.90 deg Az:
177.36 deg TVD:
5358.90 ft

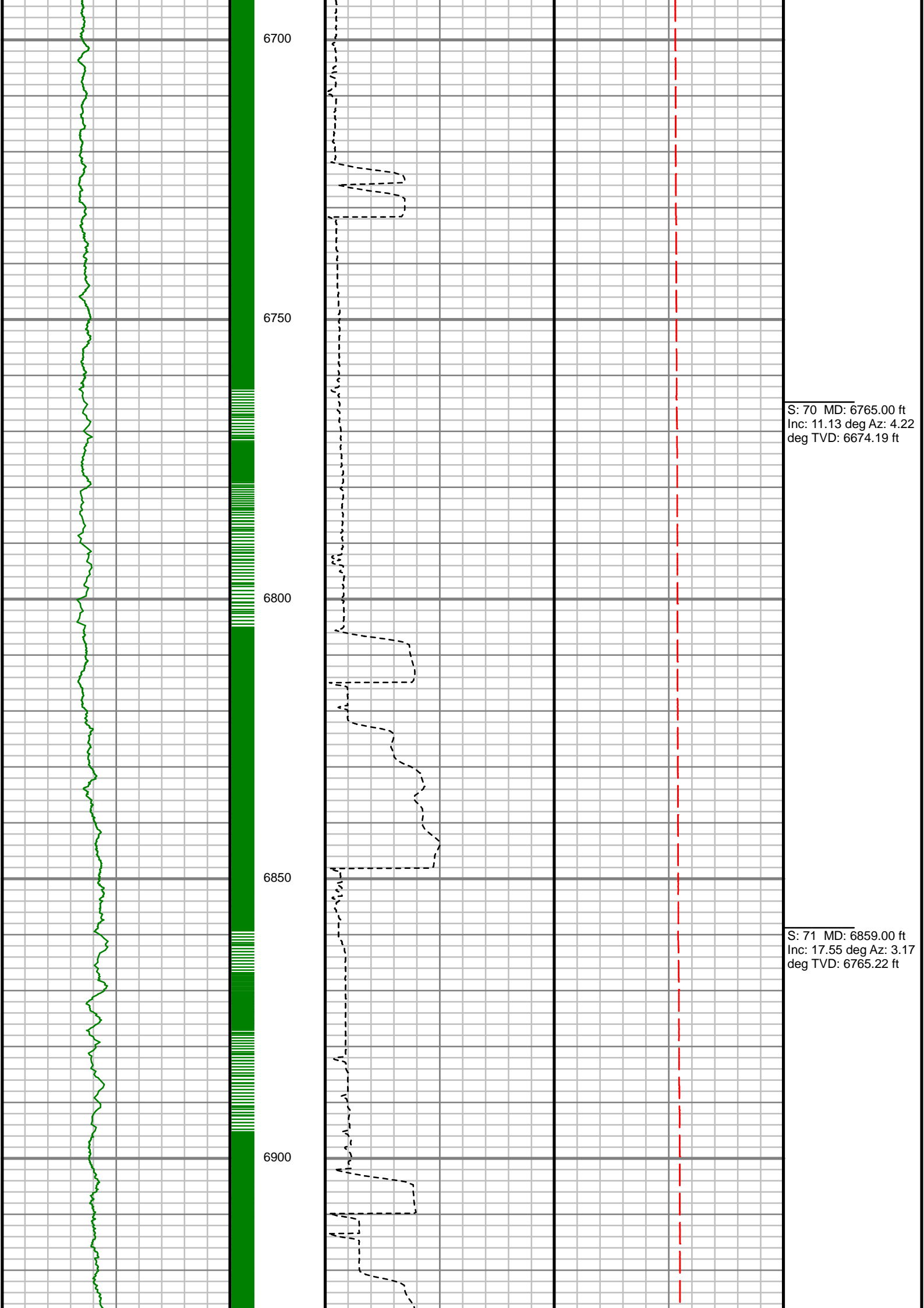


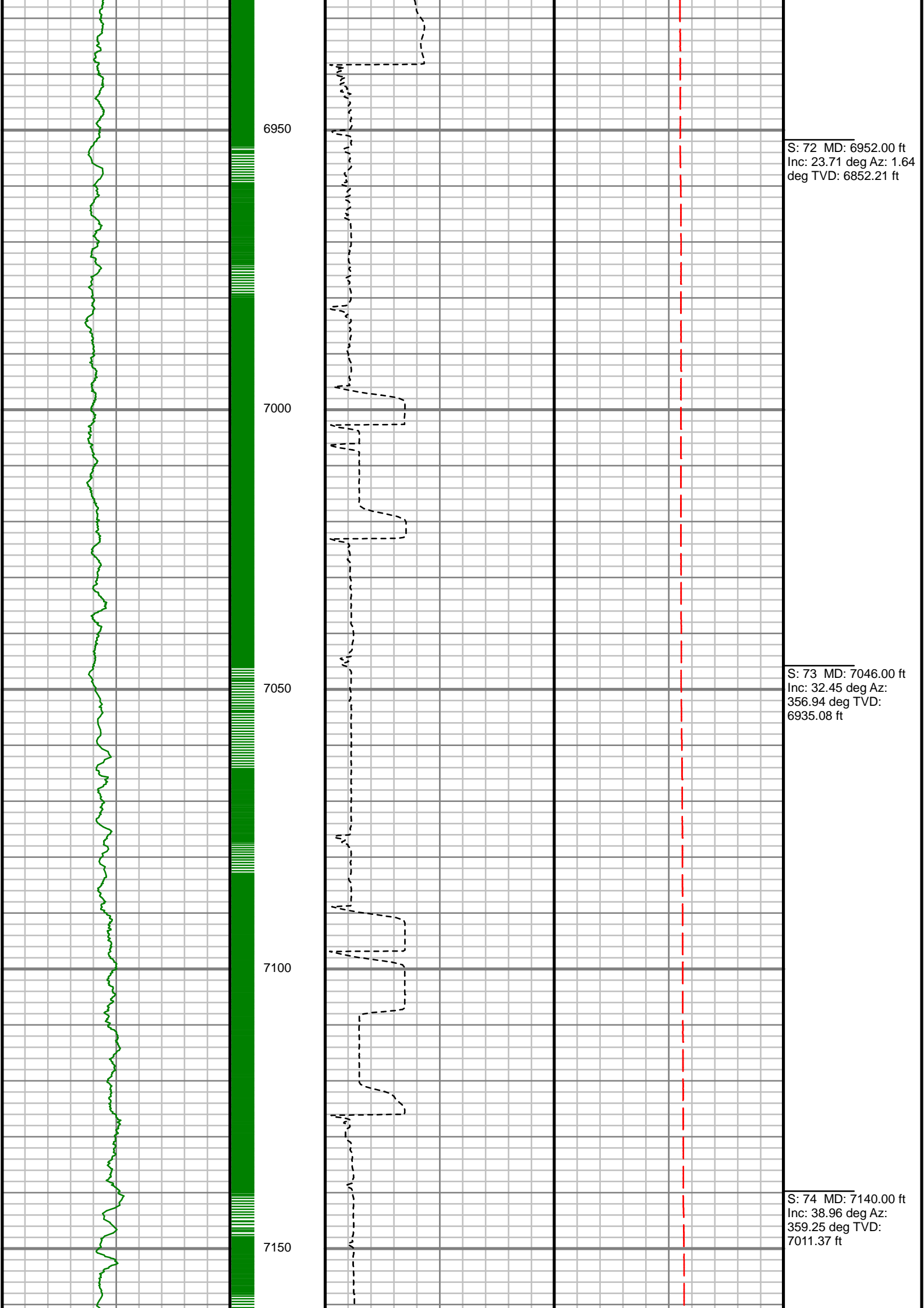


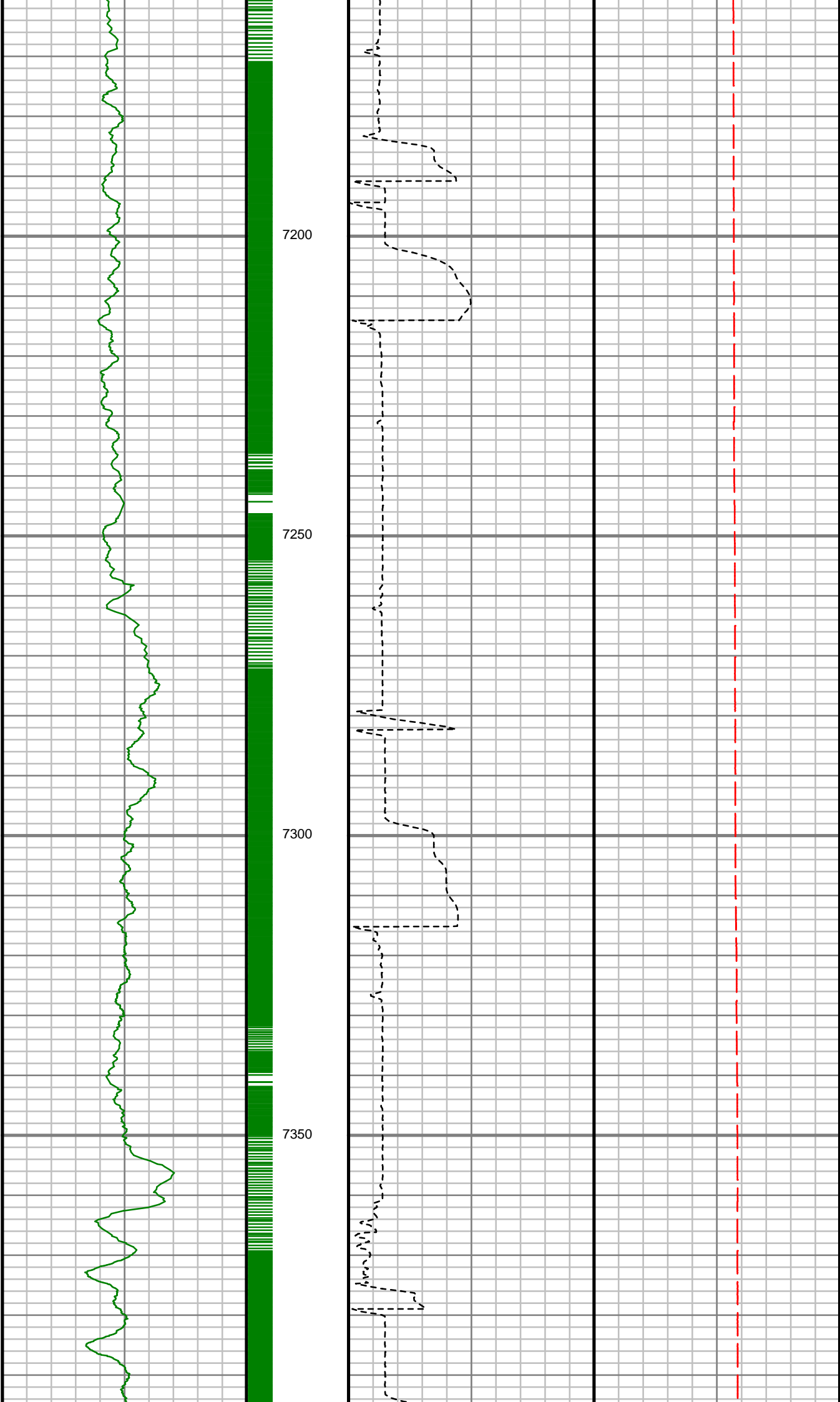






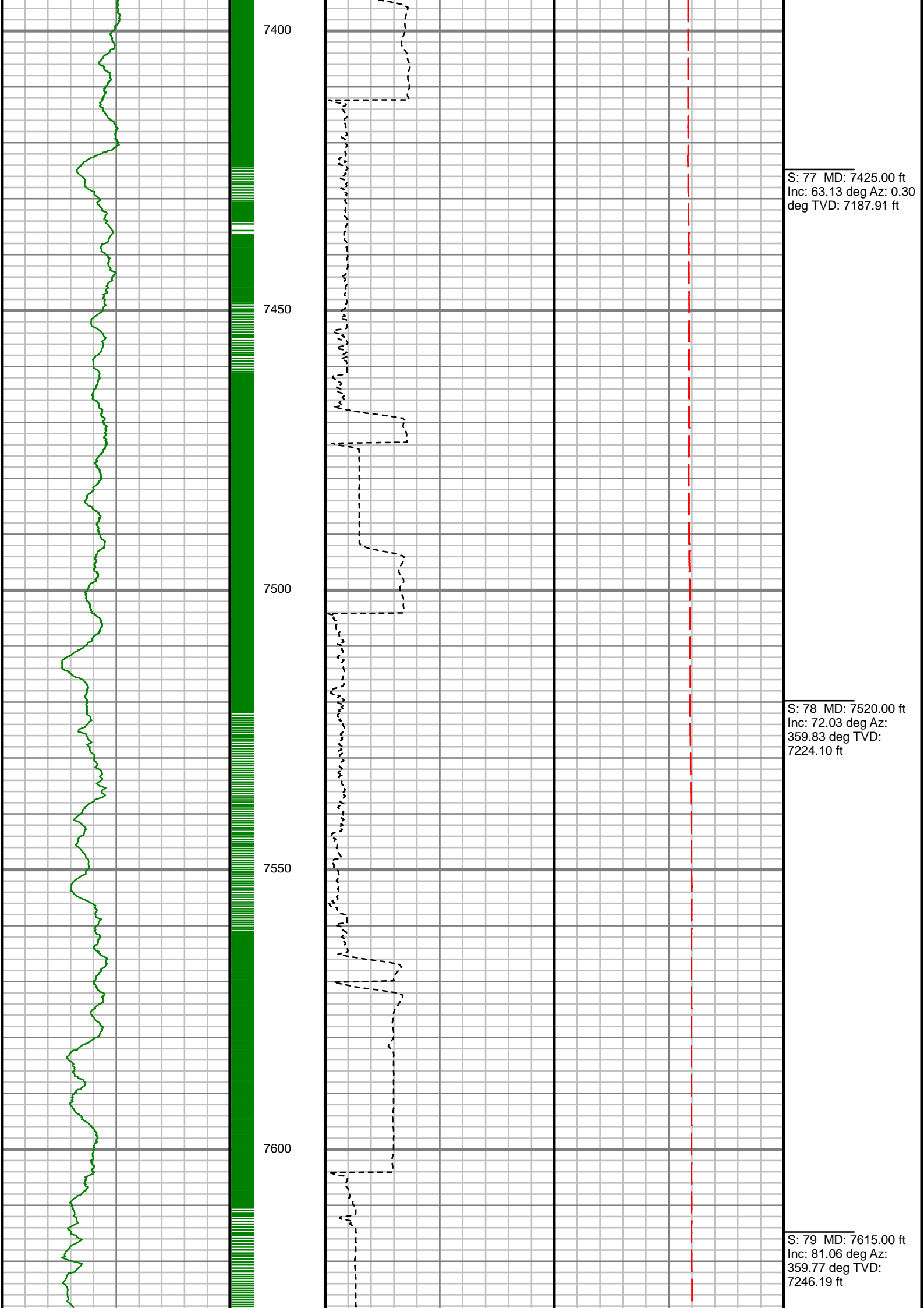


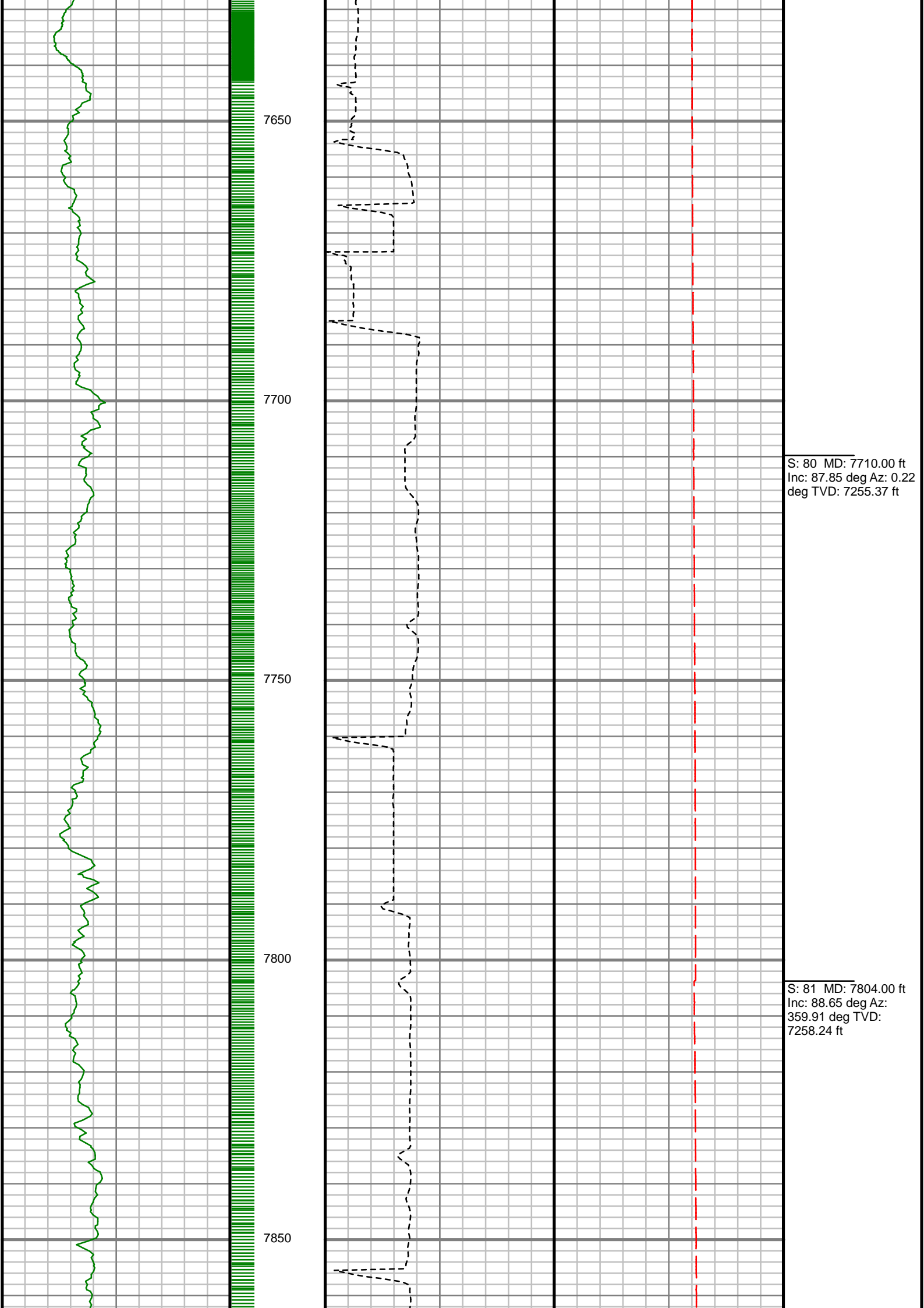


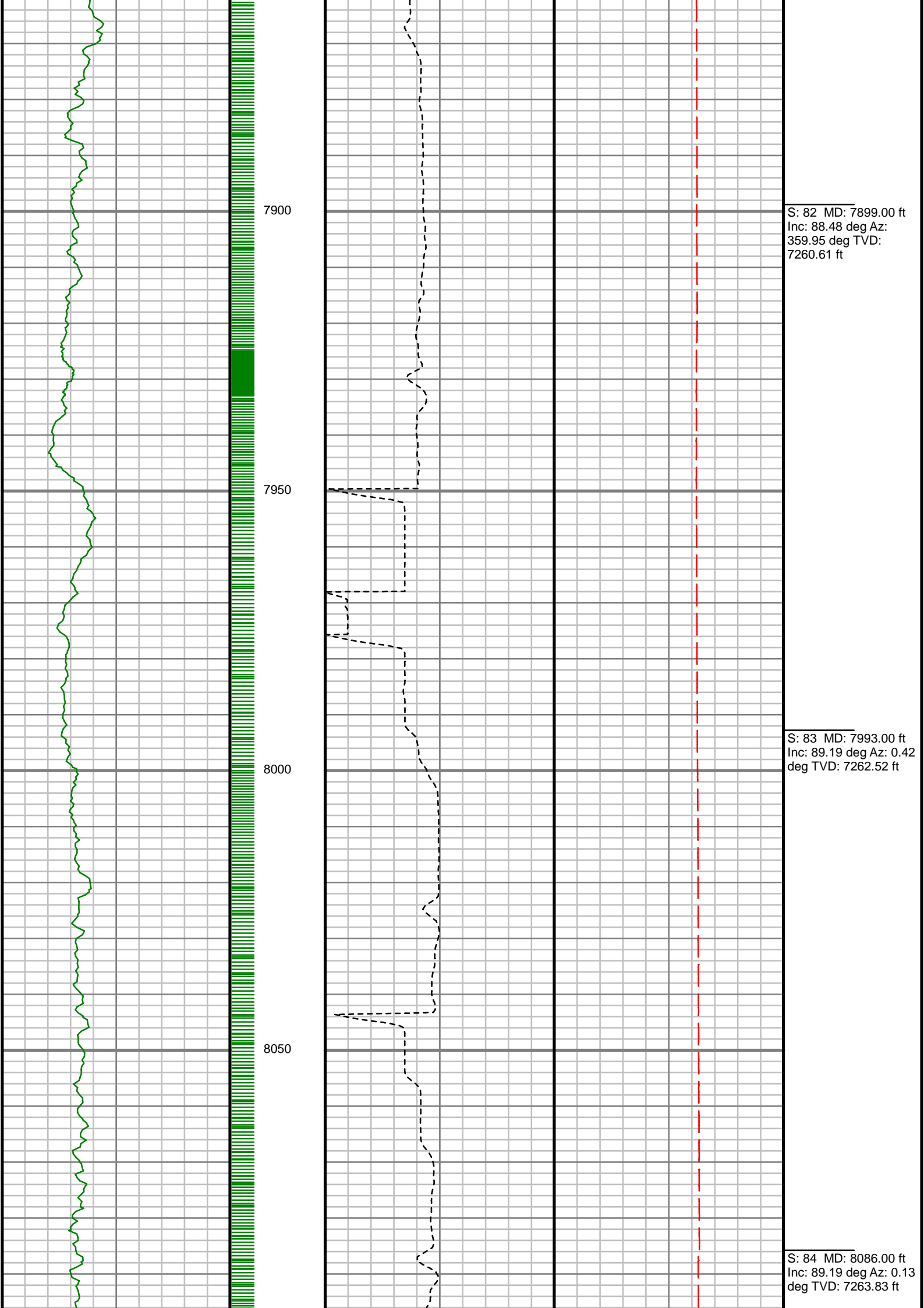


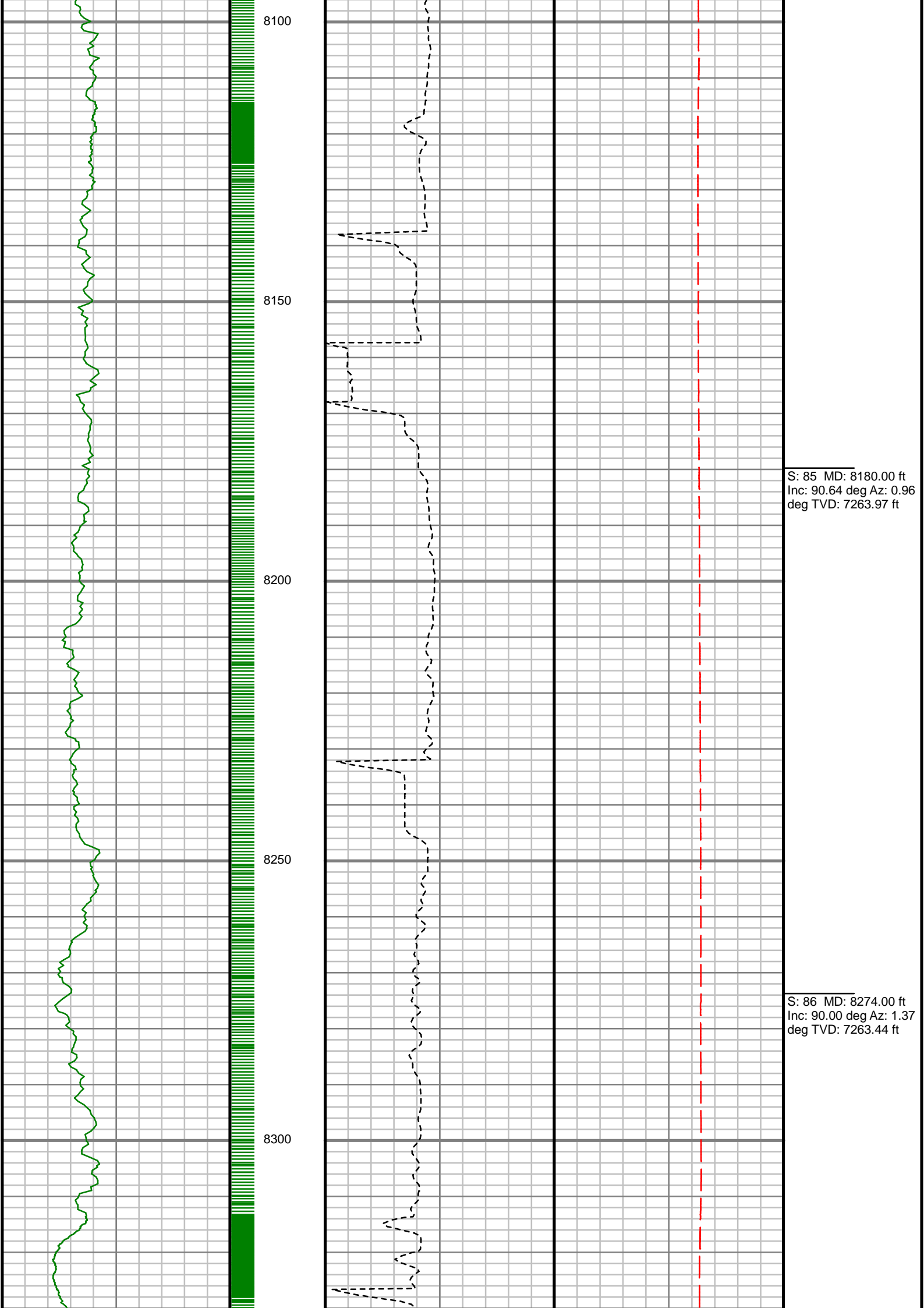
S: 75 MD: 7235.00 ft
Inc: 47.46 deg Az:
359.99 deg TVD:
7080.54 ft

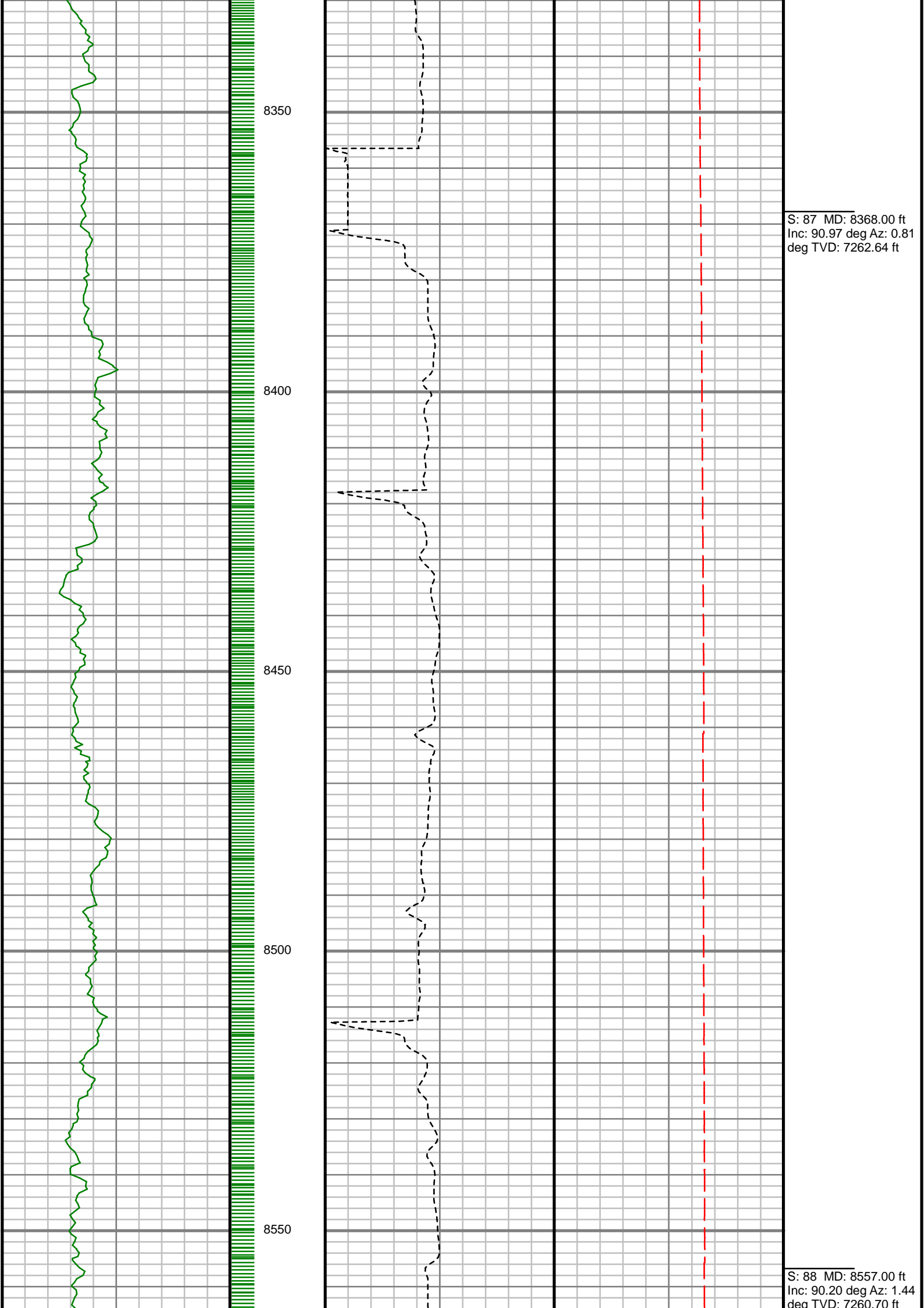
S: 76 MD: 7331.00 ft
Inc: 55.73 deg Az: 2.54
deg TVD: 7140.13 ft

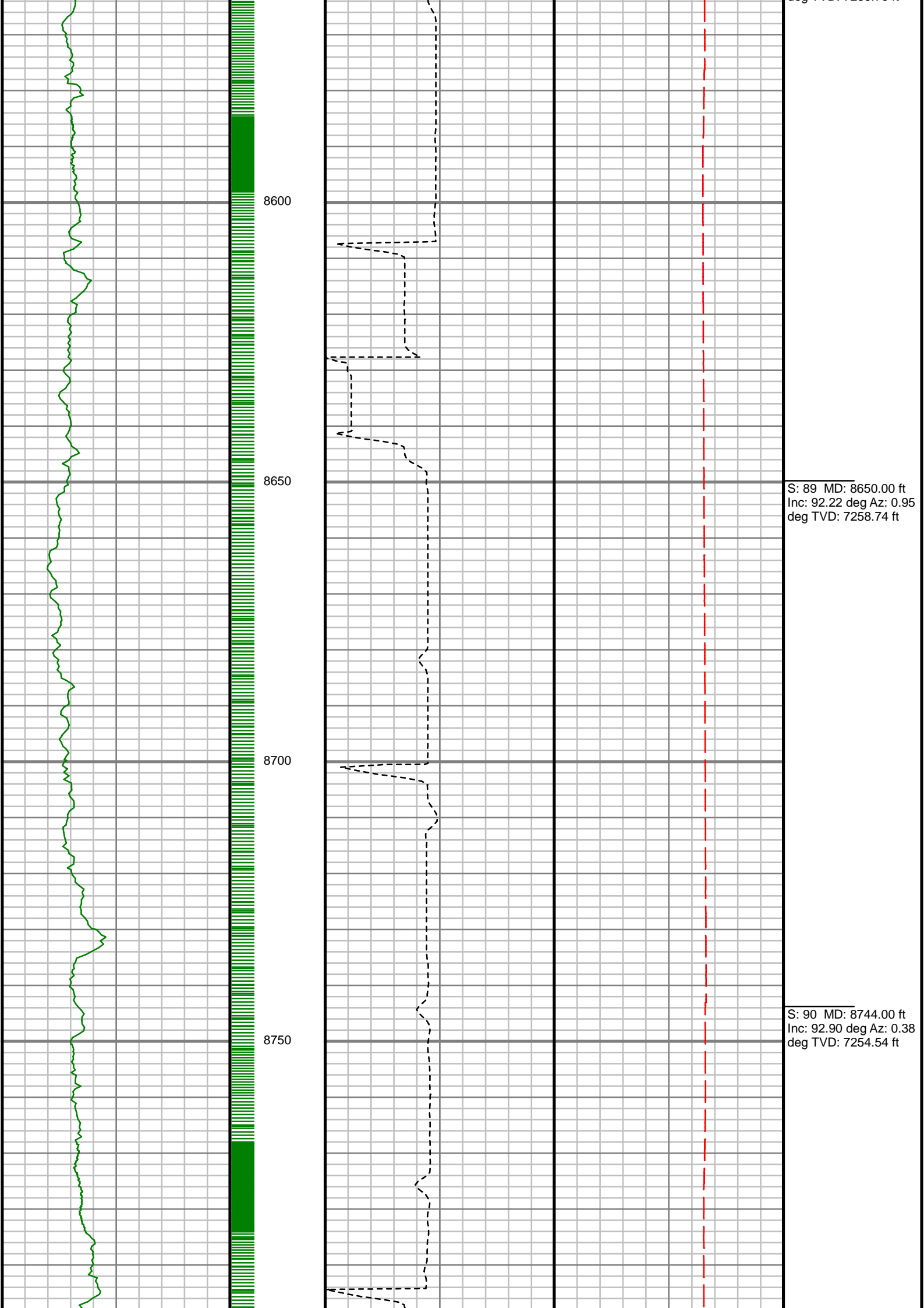


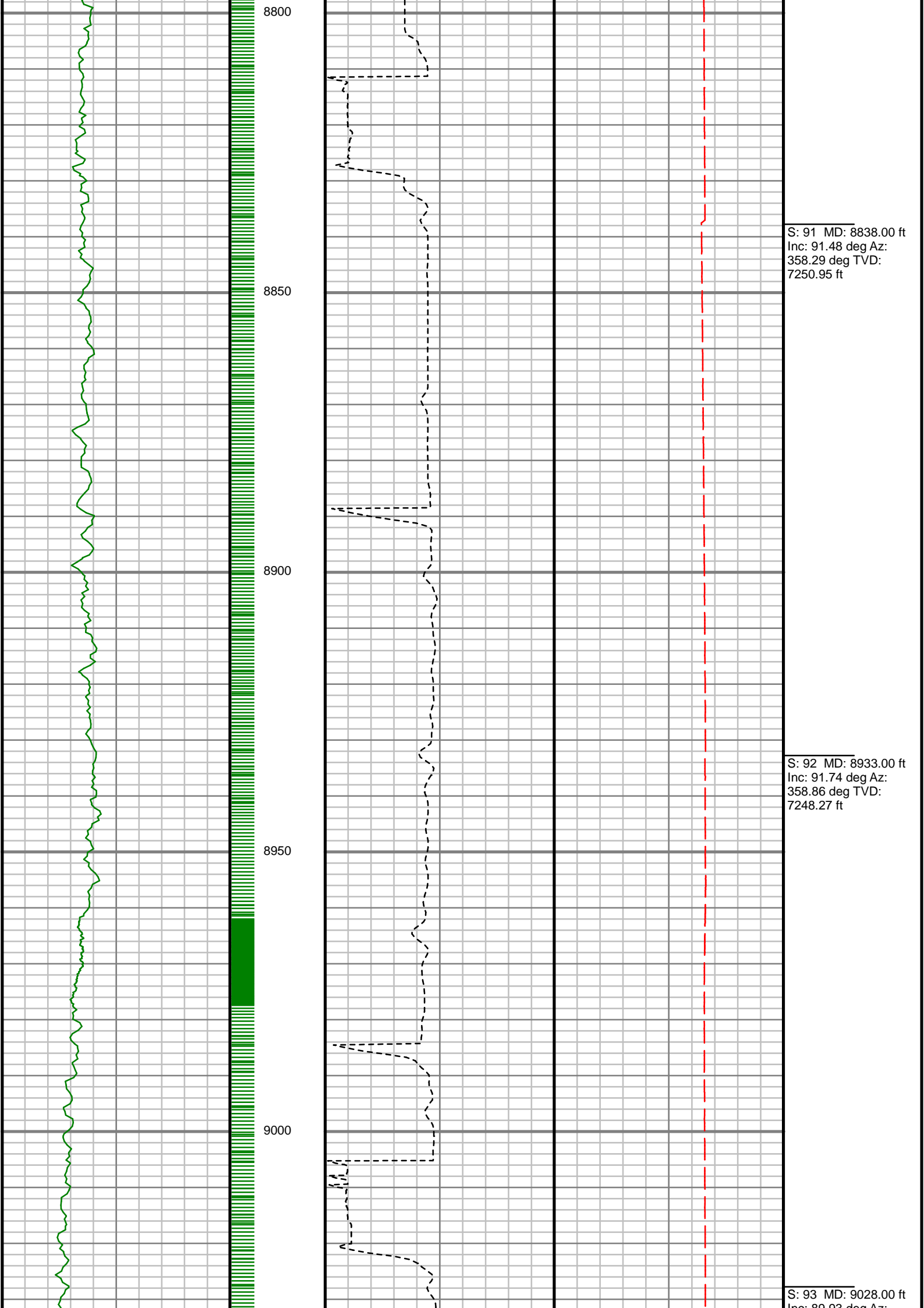


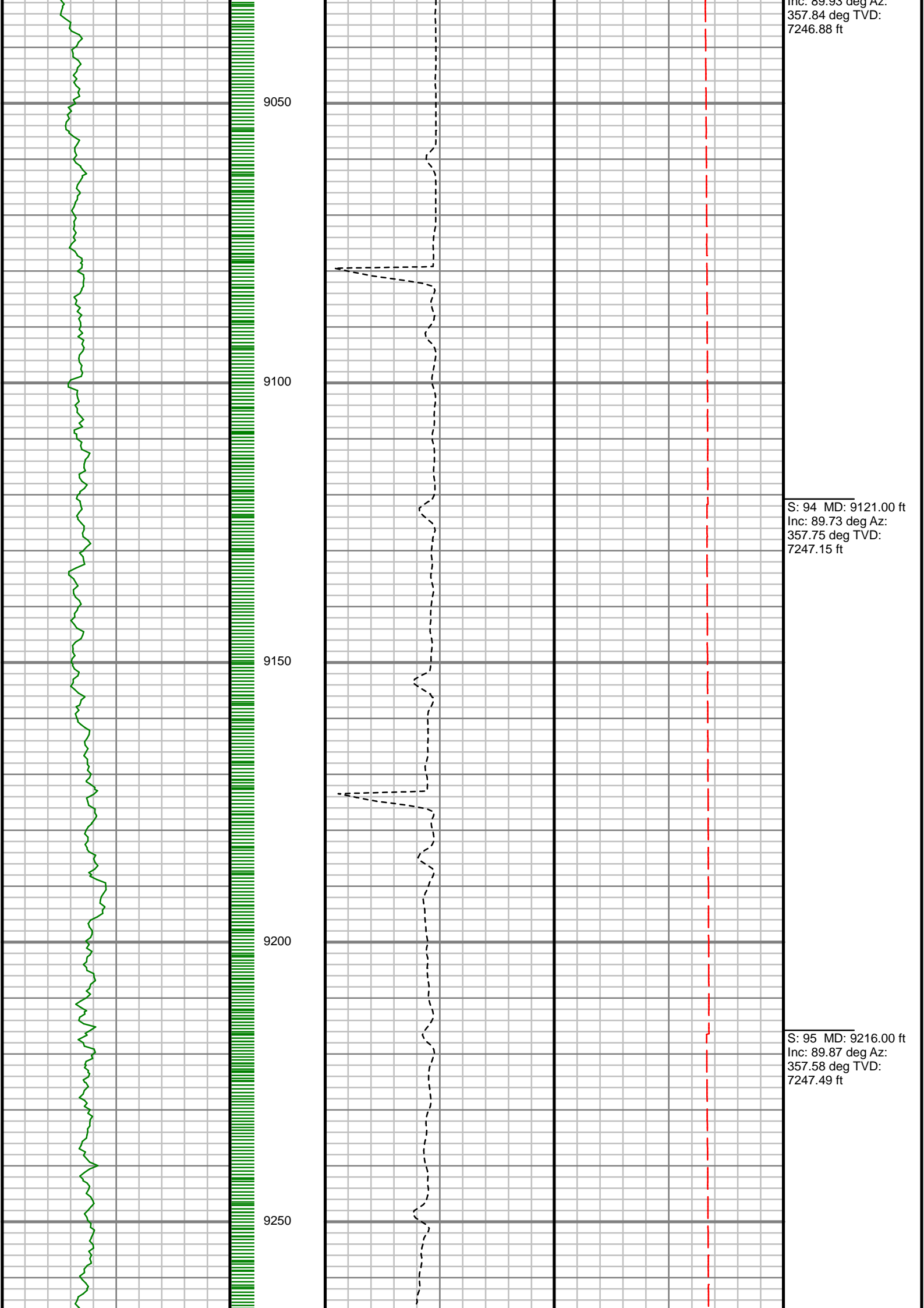


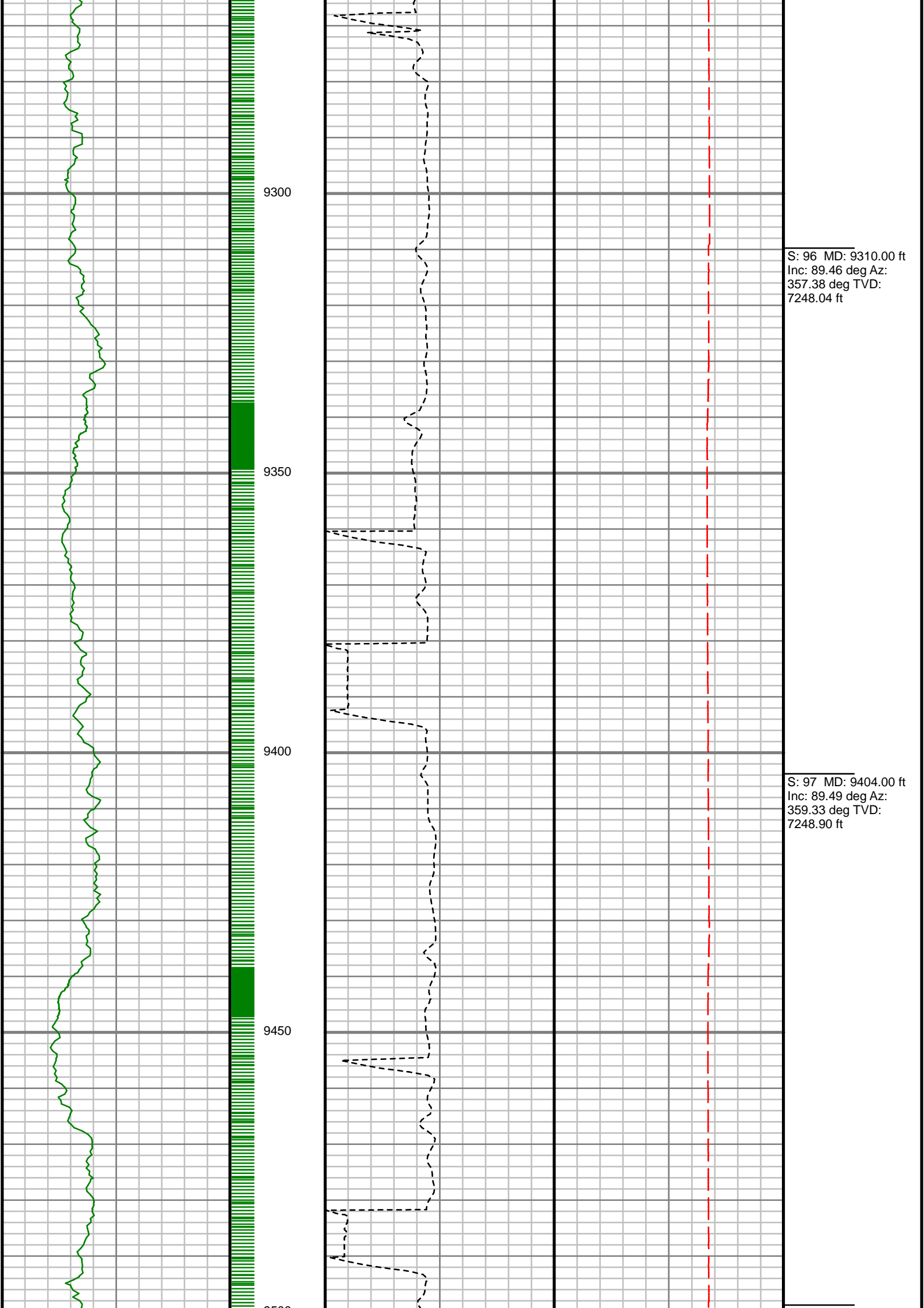


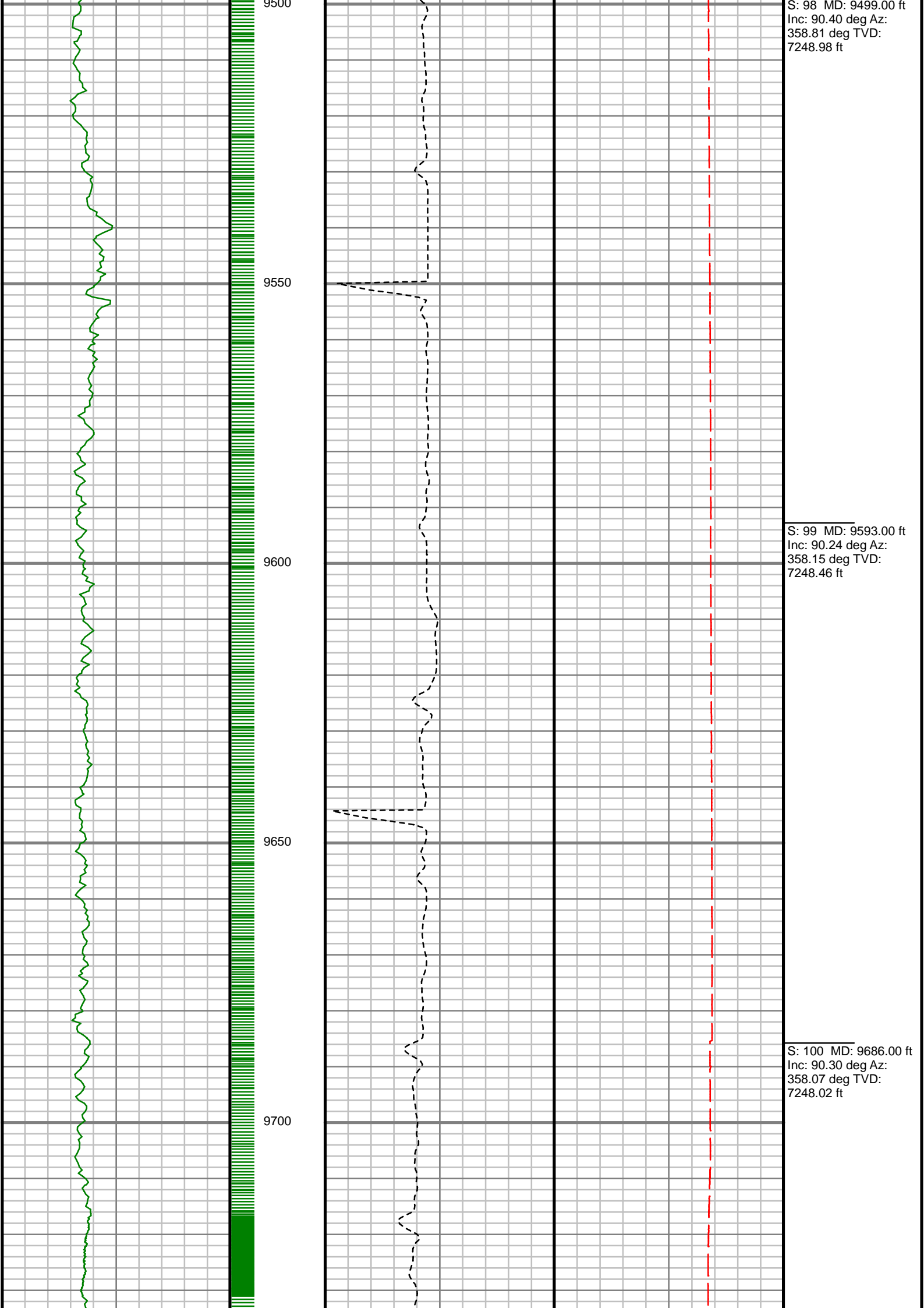


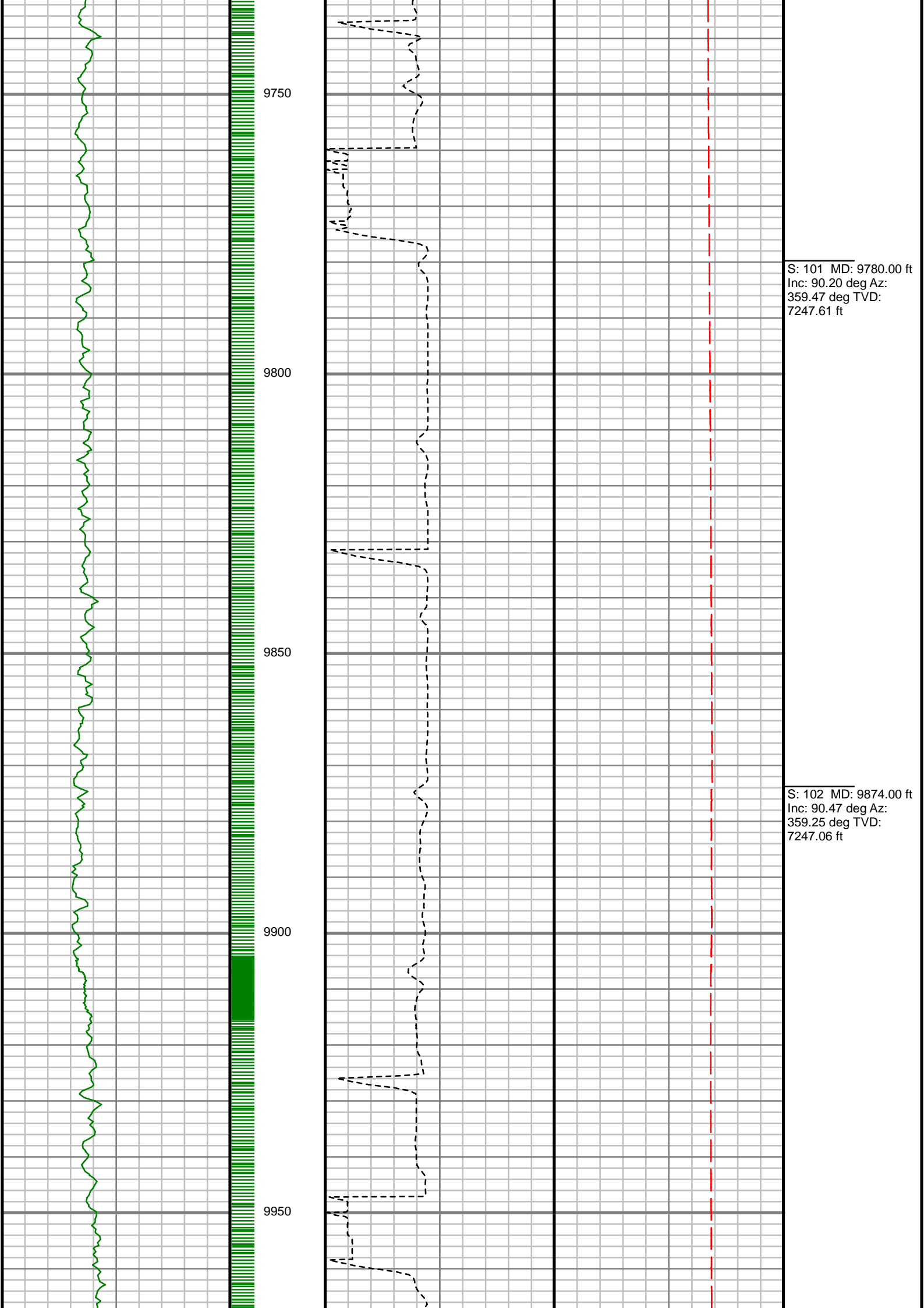


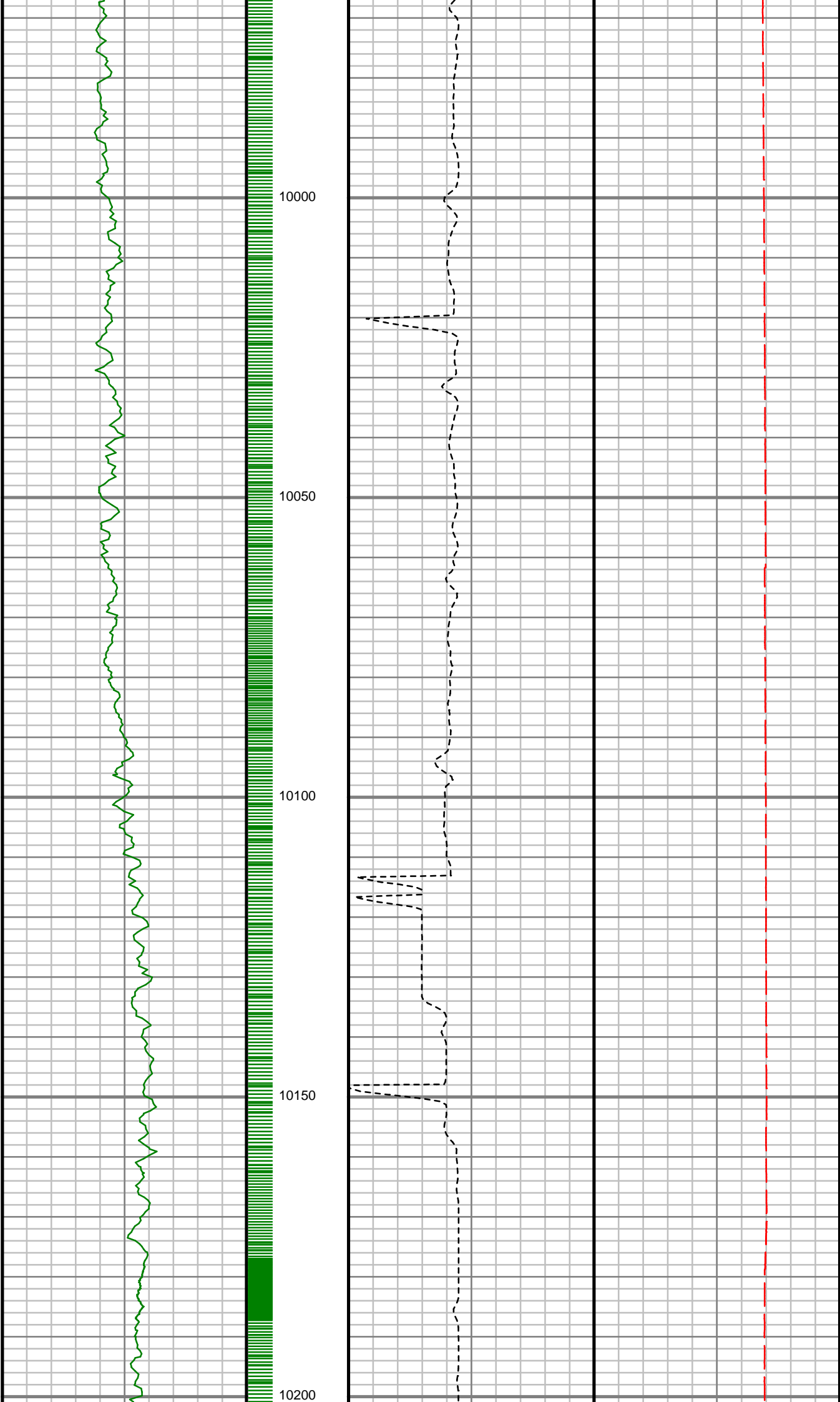








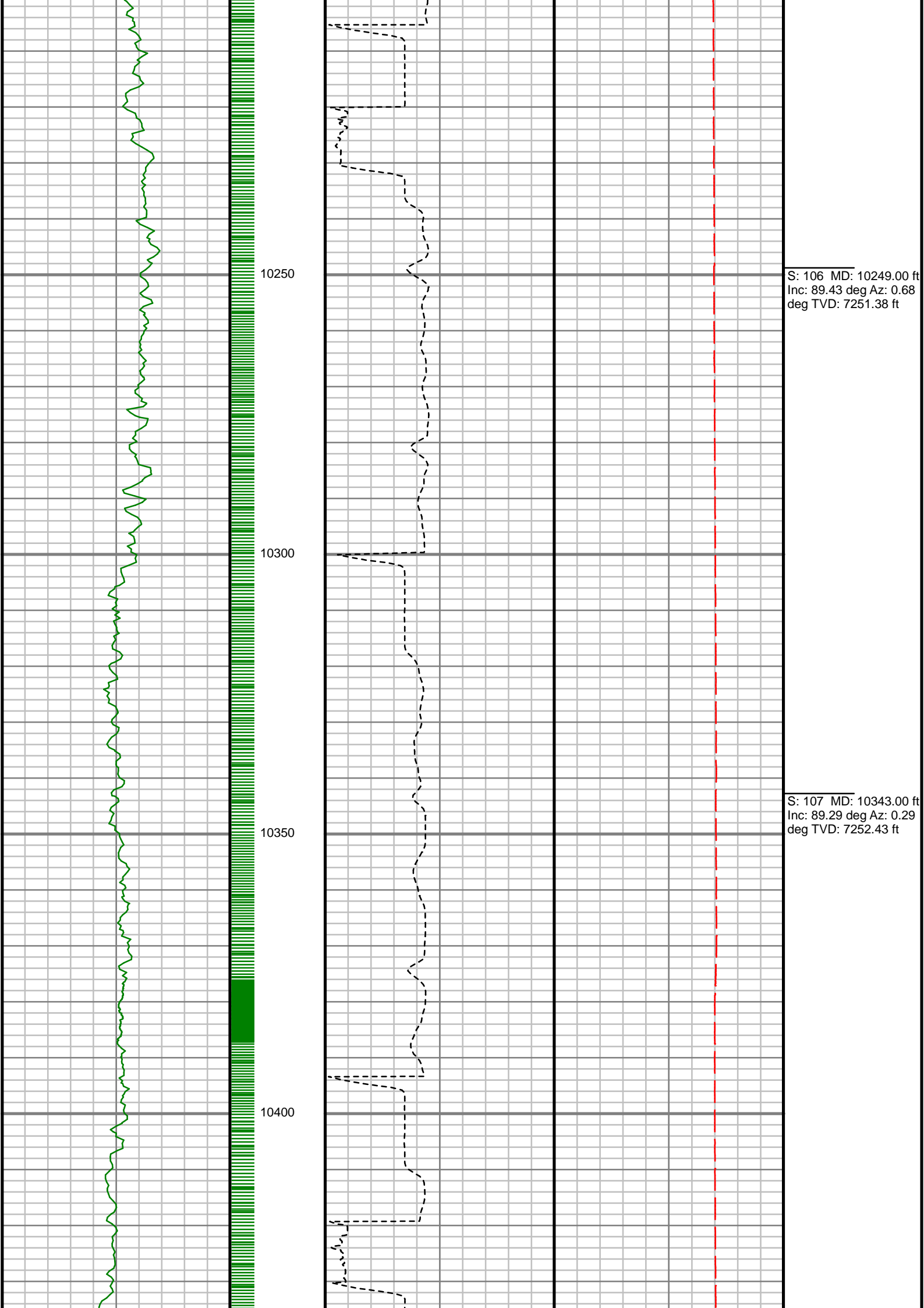


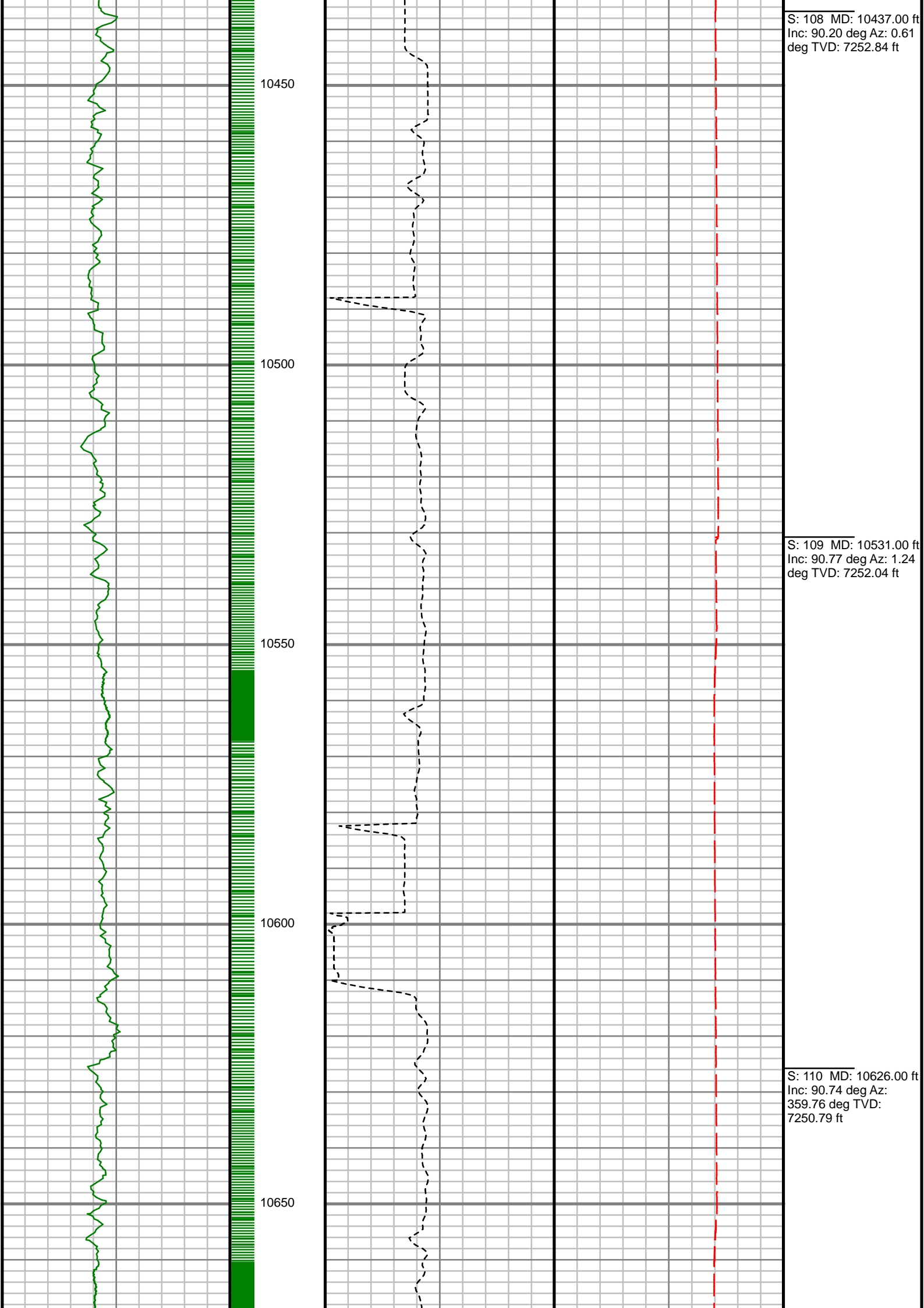


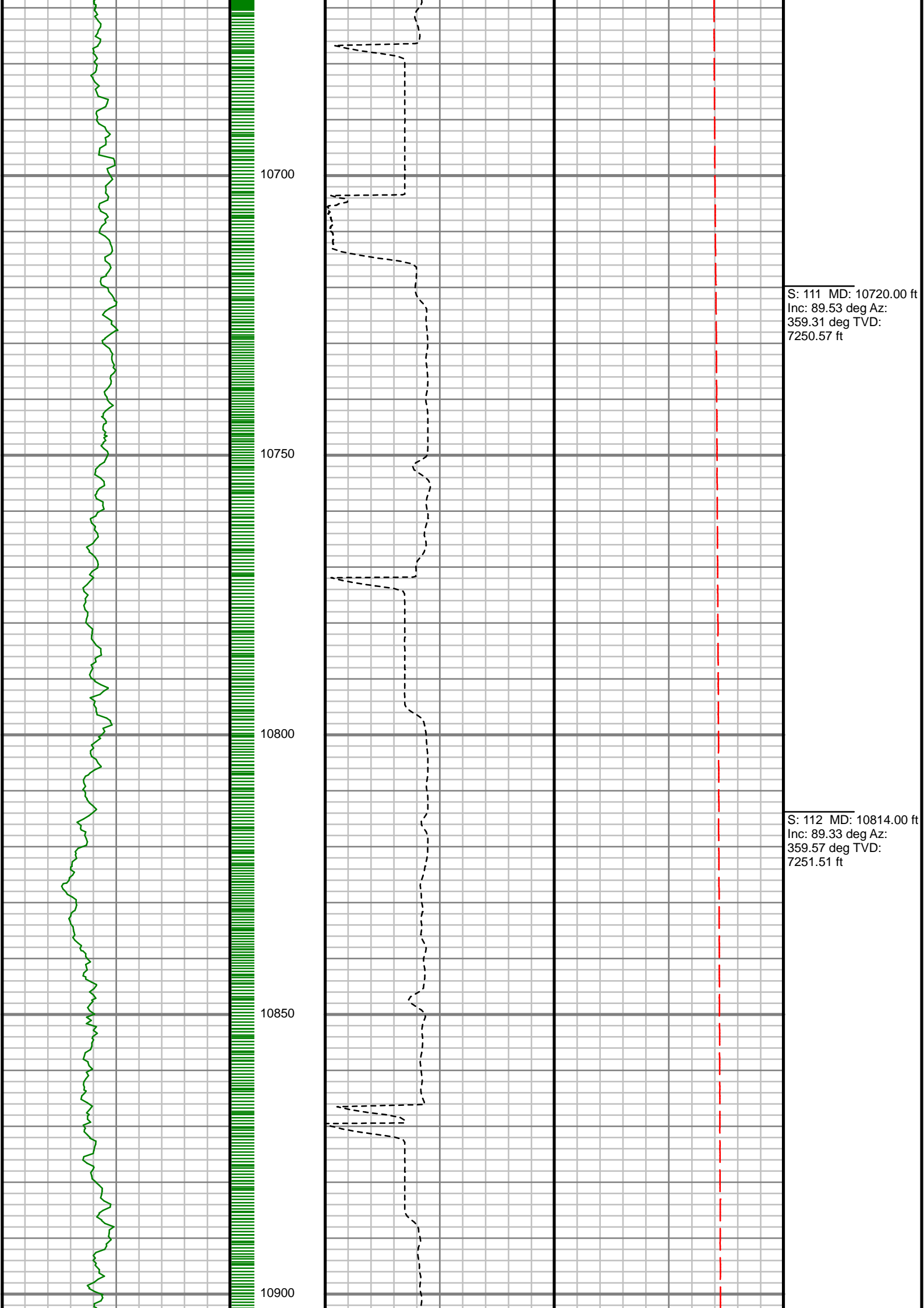
S: 103 MD: 9968.00 ft
Inc: 89.53 deg Az:
359.84 deg TVD:
7247.06 ft

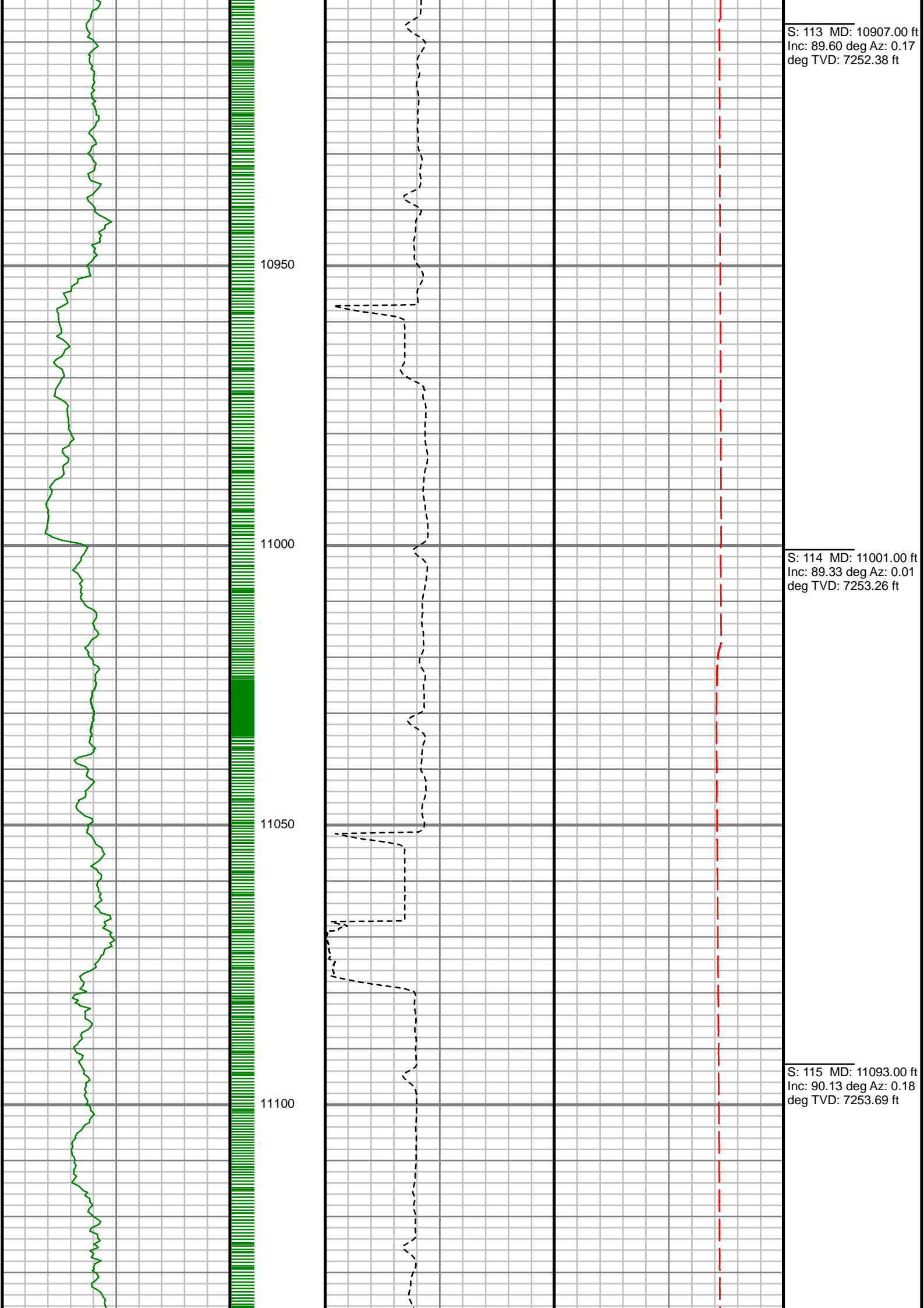
S: 104 MD: 10061.00 ft
Inc: 89.09 deg Az:
359.94 deg TVD:
7248.18 ft

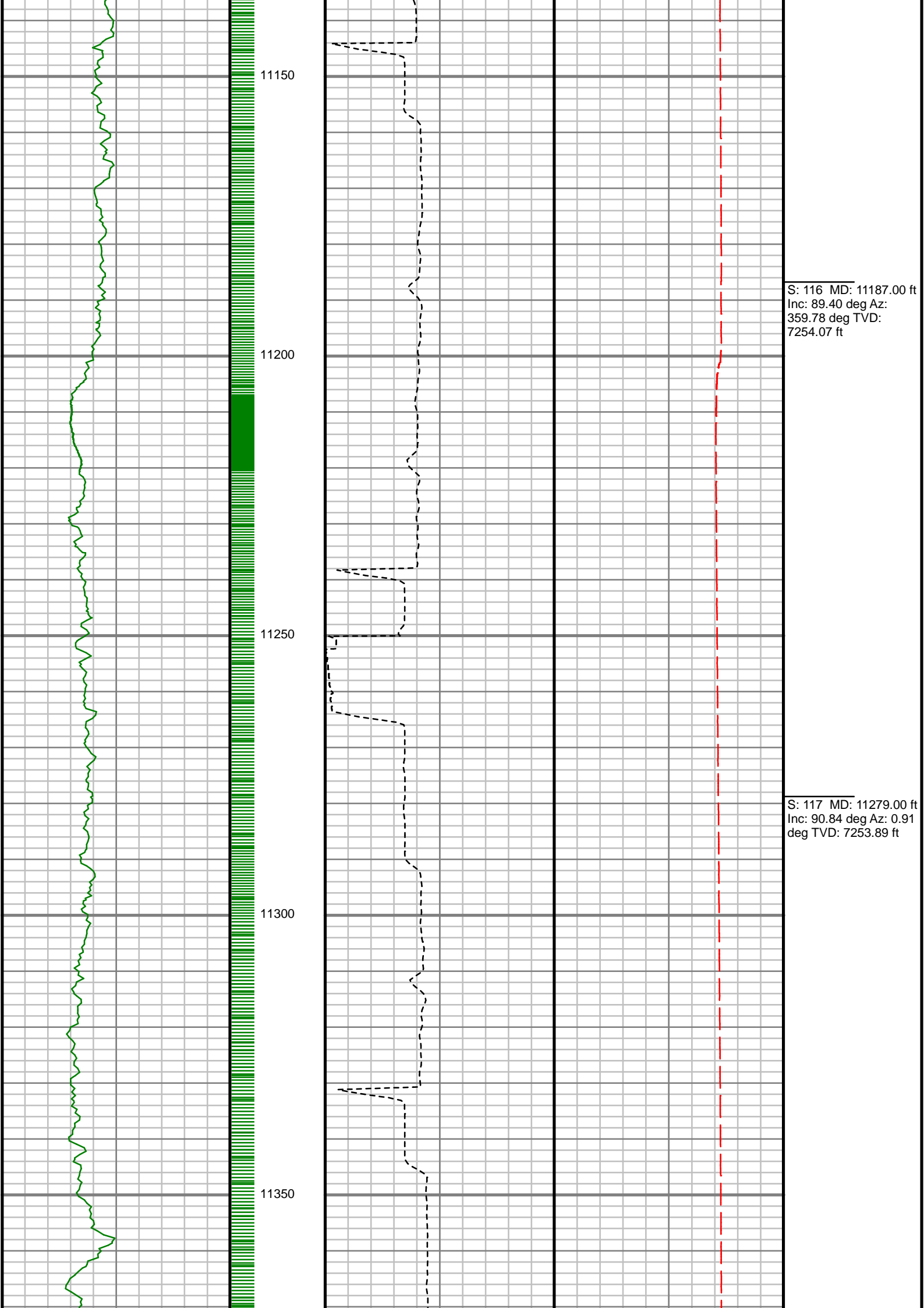
S: 105 MD: 10155.00 ft
Inc: 88.79 deg Az: 0.52
deg TVD: 7249.91 ft

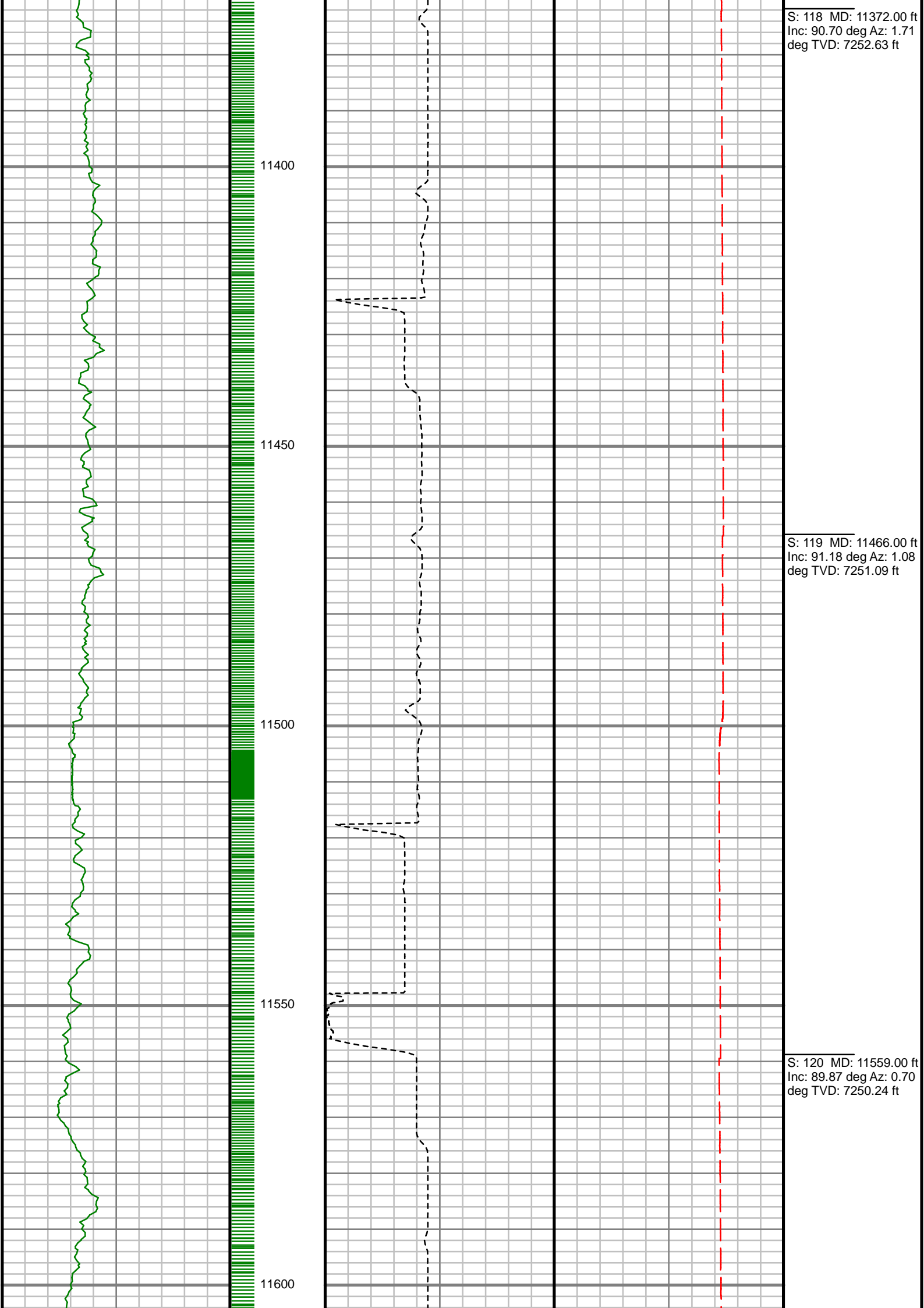


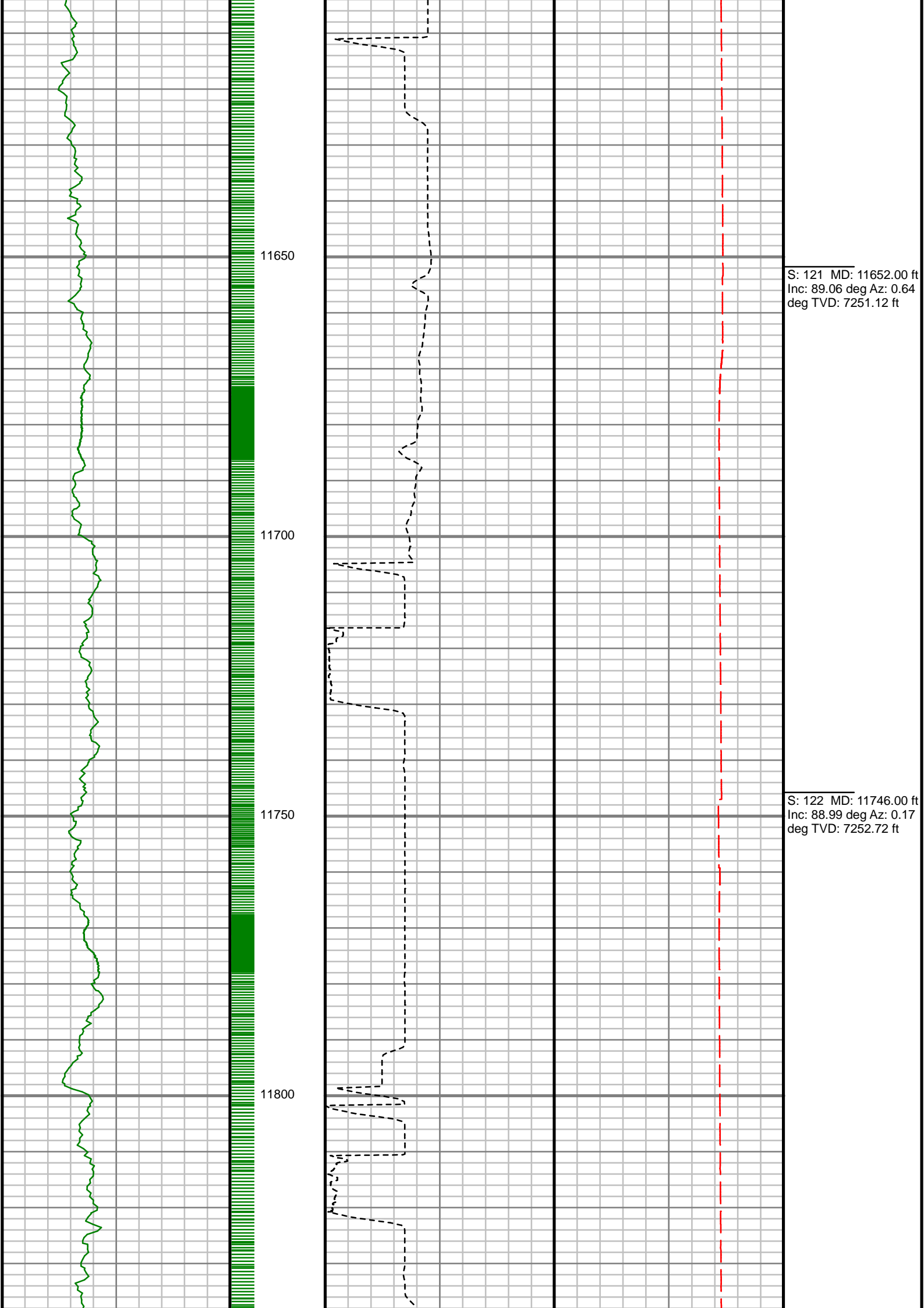


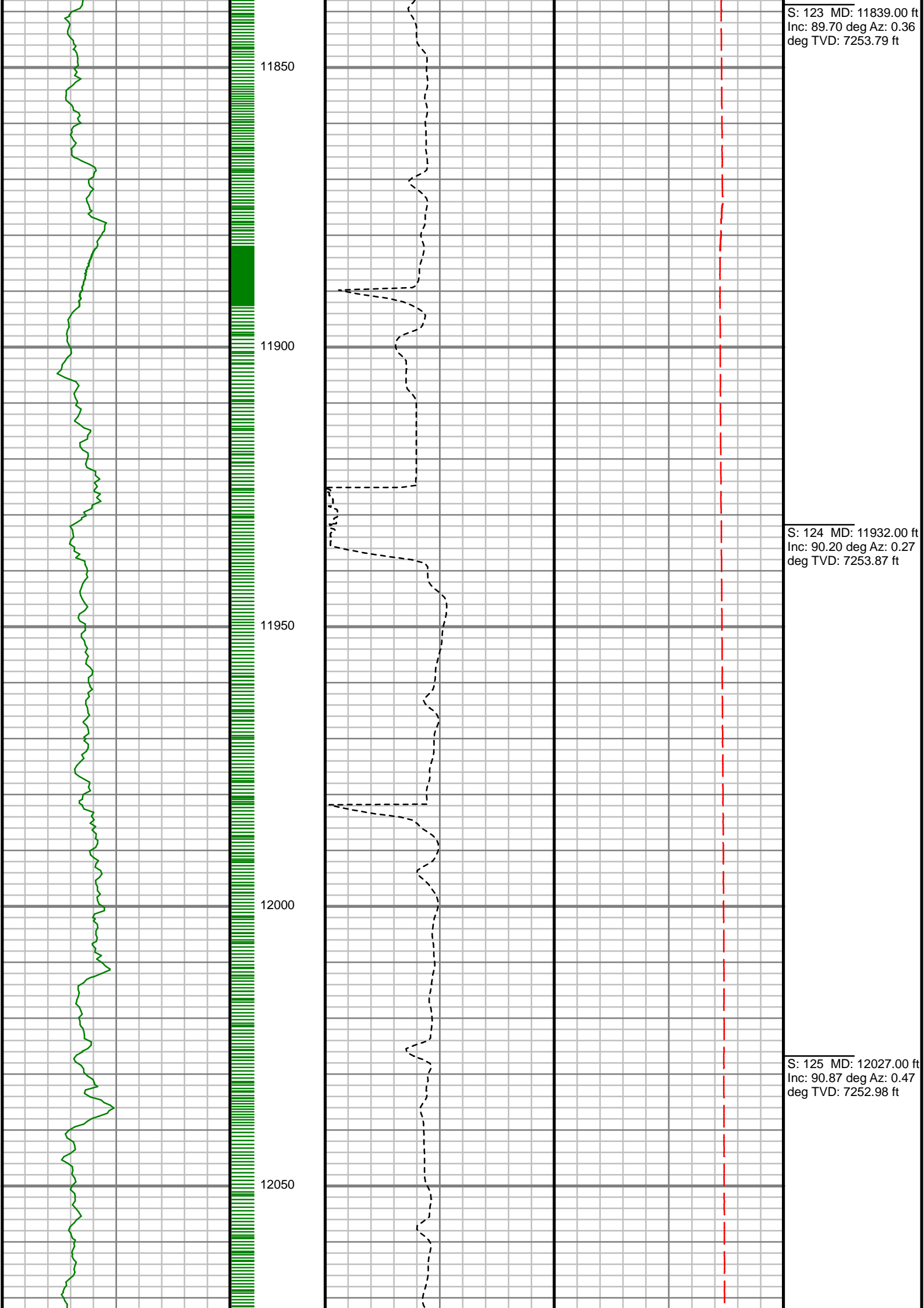








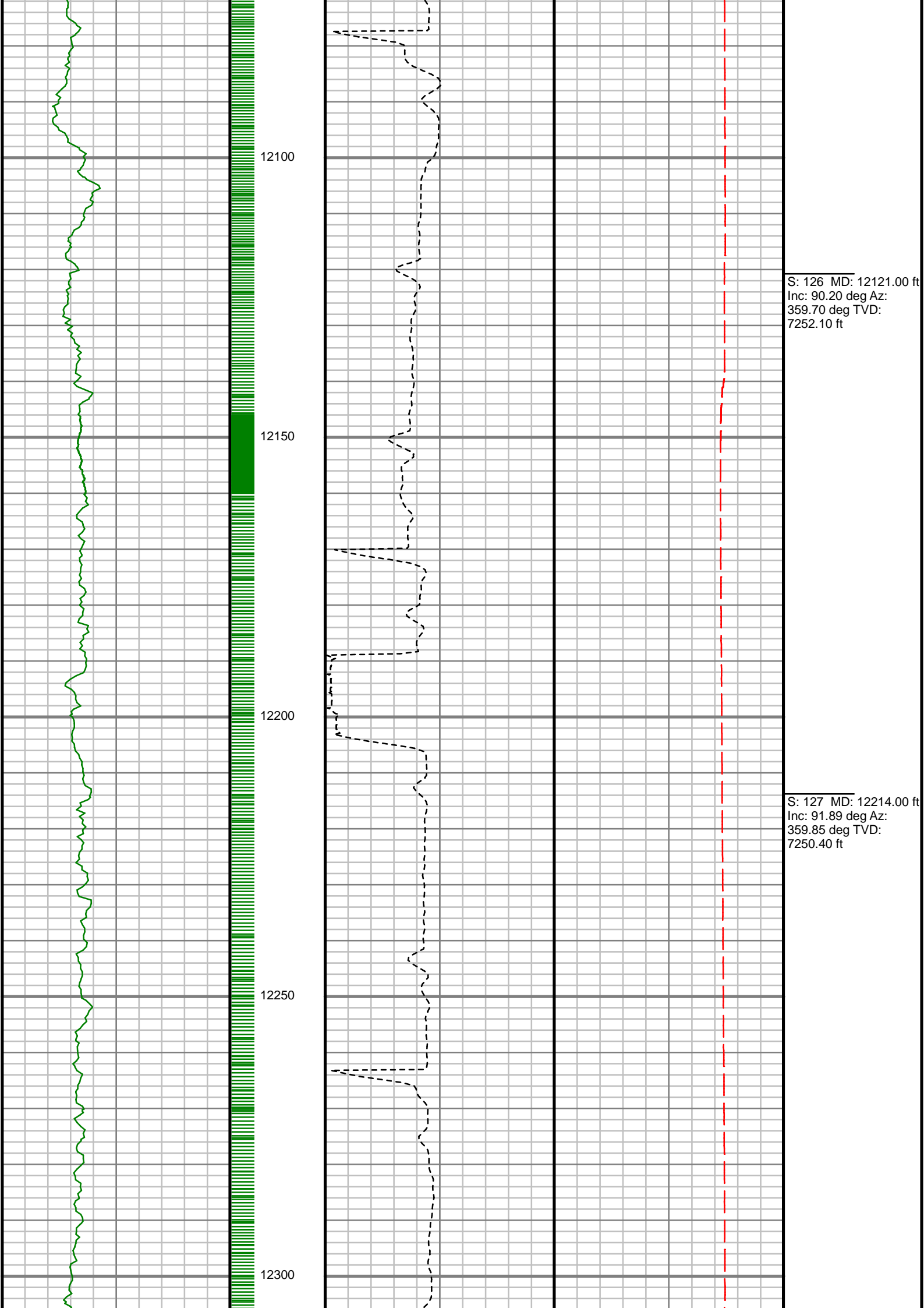


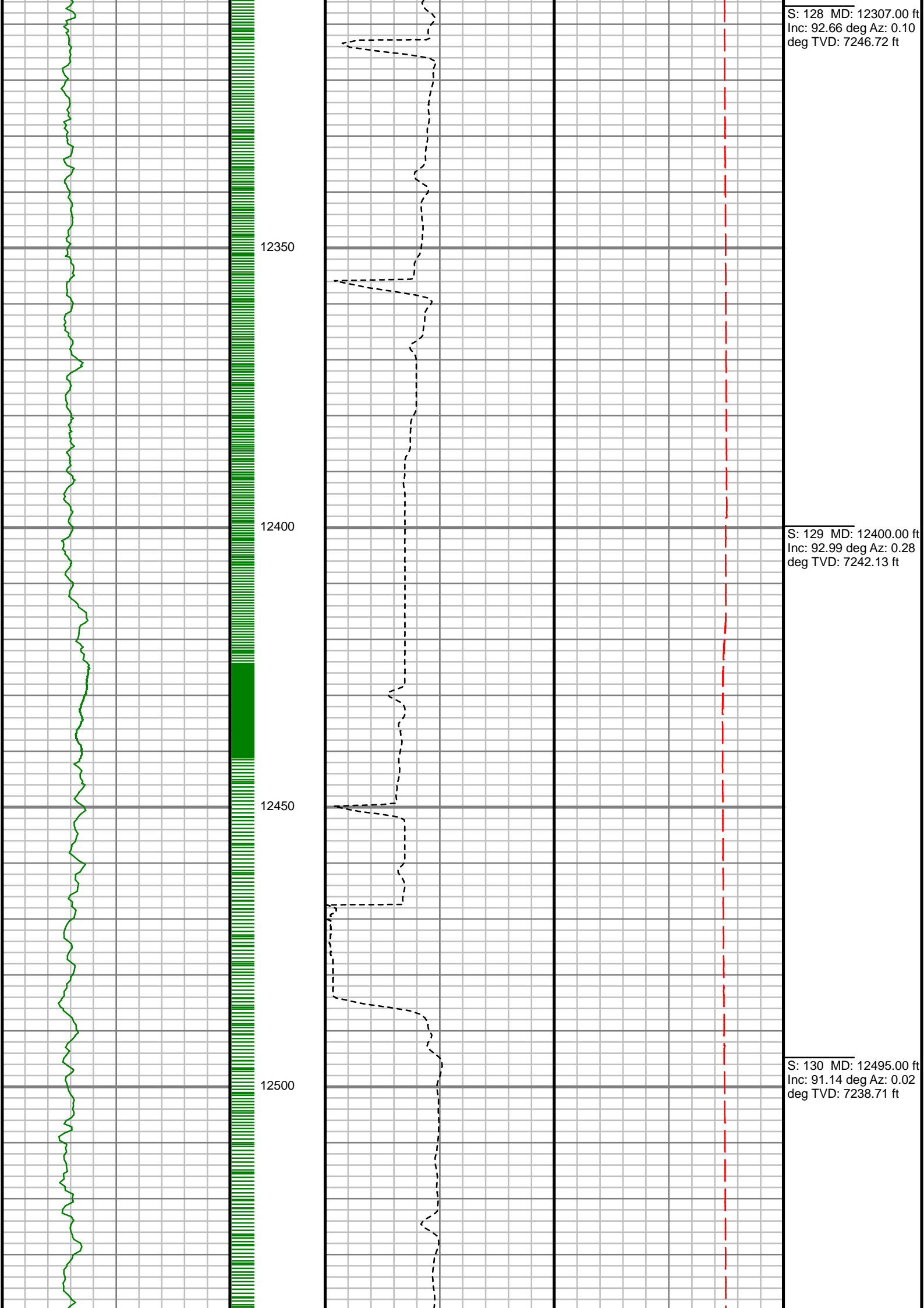


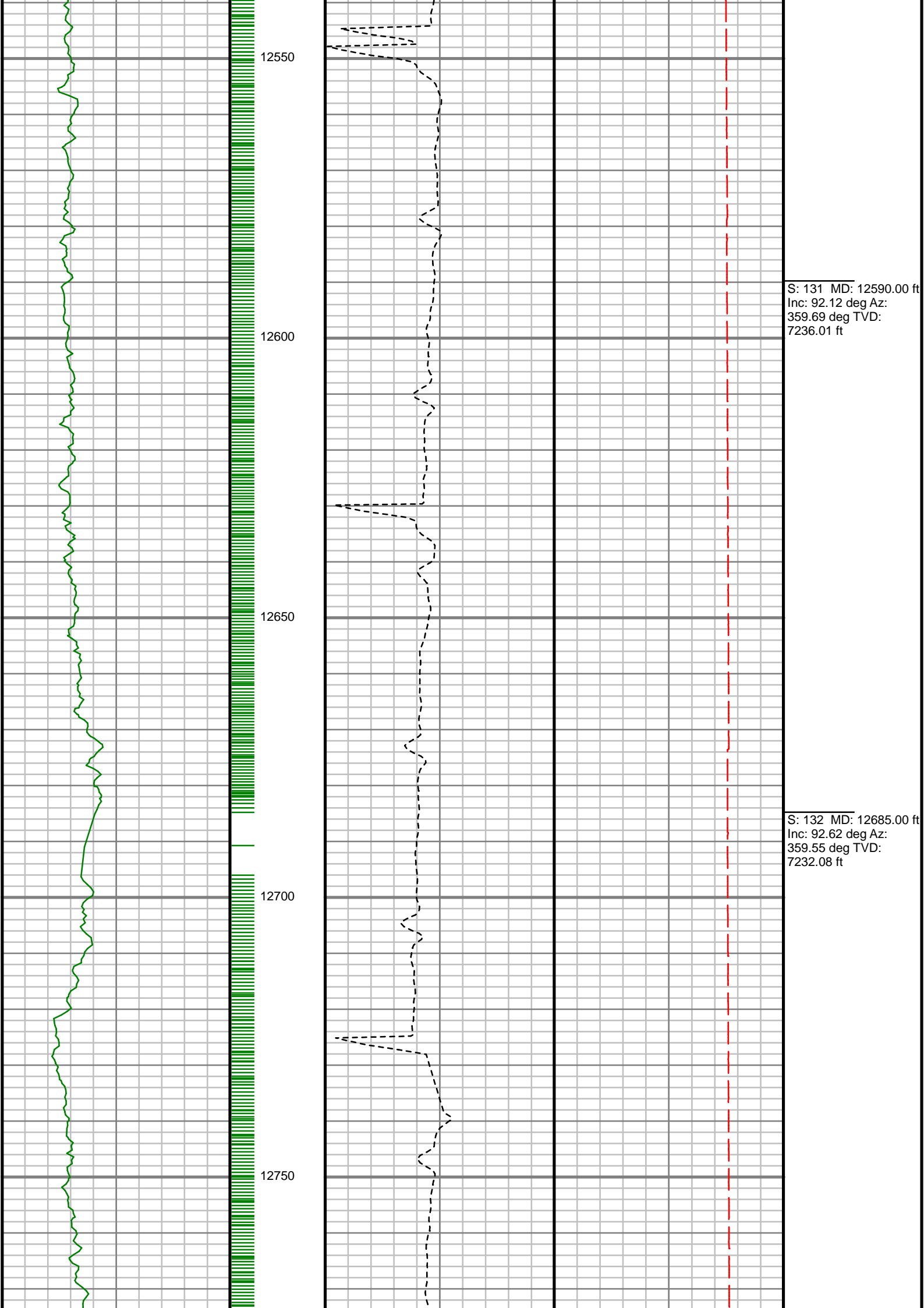
S: 123 MD: 11839.00 ft
Inc: 89.70 deg Az: 0.36
deg TVD: 7253.79 ft

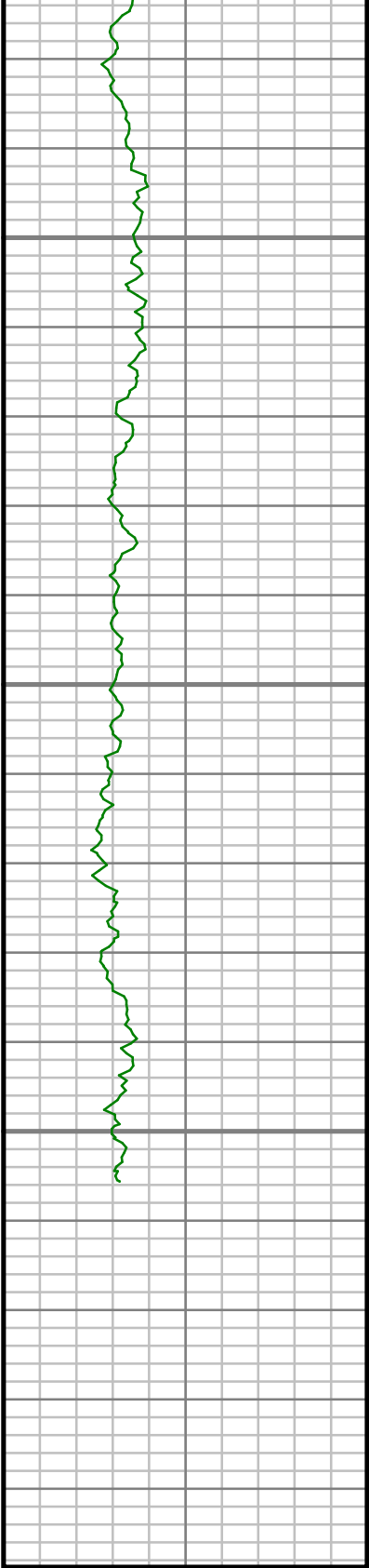
S: 124 MD: 11932.00 ft
Inc: 90.20 deg Az: 0.27
deg TVD: 7253.87 ft

S: 125 MD: 12027.00 ft
Inc: 90.87 deg Az: 0.47
deg TVD: 7252.98 ft







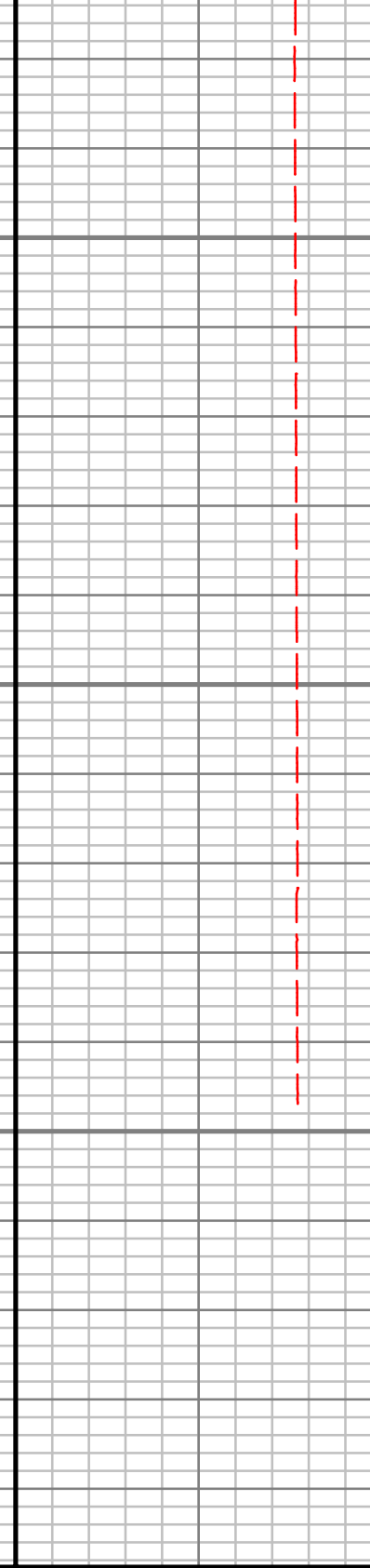


Gamma Ray (GR)		
0	Unit = aapi	300

MEASURED DEPTH
1:240 (#)



Rate of Penetration (ROP)		
0	Unit = ft/hr	1000



Tool Temperature (TEMP)		
0	Unit = °F	300

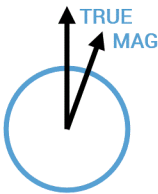
S: 133 MD: 12779.00 ft Inc: 93.12 deg Az: 359.73 deg TVD: 7227.37 ft	Comments
S: 134 MD: 12874.00 ft Inc: 93.29 deg Az: 358.89 deg TVD: 7222.06 ft	
S: 135 MD: 12895.00 ft Inc: 93.23 deg Az: 358.25 deg TVD: 7220.87 ft	

CUSTOMER ANADARKO
PROJECT LAND 28N-29HZ
FIELD WATTENBERG

WELL INFORMATION
Lat/Long 40.099025° N, 104.805199° W
Northing 14,562,852.43 ft
Easting 1,694,892 ft
UWI 05-123-42394

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 359.96°
Calculation Method Minimum Curvature



GEOMAGNETIC REFERENCE INFORMATION Local Gravity: 999.046 mG [computed]

MD	MODEL	DATE	DECLINATION	MAG TO TRUE
0-4318 ft	ANADARKO MAGVAR	12 Jul 2016	8.33°	add 8.33°
4318-5449 ft	ANADARKO MAGVAR	12 Jul 2016	8.34°	add 8.34°
5449-12895 ft	ANADARKO MAGVAR	12 Jul 2016	8.36°	add 8.36°

WELL NOTES

OPERATORS

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
213.00	0.36	290.03	213.00	0.23	0.23	-0.63	0.17
307.00	0.35	259.56	307.00	0.28	0.28	-1.19	0.20
401.00	0.84	290.34	400.99	0.47	0.47	-2.12	0.60
495.00	1.06	275.52	494.98	0.79	0.79	-3.63	0.35
589.00	0.81	65.74	588.97	1.15	1.15	-3.89	1.92
683.00	2.76	76.04	682.92	1.97	1.96	-1.09	2.09
777.00	4.15	72.98	776.75	3.50	3.51	4.36	1.49
871.00	5.48	67.19	870.42	6.23	6.24	11.75	1.50
965.00	6.89	62.11	963.87	10.61	10.62	20.87	1.61
1059.00	7.64	65.49	1057.11	15.83	15.85	31.54	0.92
1153.00	7.28	63.69	1150.32	21.05	21.08	42.57	0.46
1247.00	6.77	63.58	1243.61	26.15	26.19	52.87	0.54
1341.00	7.61	53.95	1336.88	32.27	32.32	62.86	1.56
1434.00	9.23	55.80	1428.87	40.08	40.13	74.01	1.77
1528.00	11.09	58.91	1521.39	48.98	49.04	87.99	2.06
1624.00	10.94	59.79	1615.62	58.32	58.39	103.77	0.23
1719.00	11.08	57.28	1708.88	67.78	67.86	119.24	0.53
1806.00	9.88	59.93	1794.42	76.03	76.12	132.73	1.49
1956.00	11.11	55.12	1941.91	90.72	90.83	155.73	1.01

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
2050.00	12.59	54.98	2033.91	101.77	101.89	171.55	1.57
2144.00	11.96	56.52	2125.76	113.01	113.14	188.06	0.76
2240.00	12.24	62.86	2219.63	123.13	123.27	205.41	1.41
2335.00	14.18	68.05	2312.12	132.06	132.22	225.17	2.40
2430.00	14.79	69.20	2404.09	140.70	140.88	247.30	0.71
2525.00	13.11	68.49	2496.29	148.94	149.13	268.67	1.77
2620.00	13.96	69.63	2588.65	156.87	157.07	289.44	0.93
2714.00	13.34	69.07	2679.99	164.68	164.89	310.19	0.68
2809.00	14.05	68.43	2772.29	172.82	173.05	331.15	0.77
2903.00	13.00	69.08	2863.68	180.77	181.02	351.64	1.13
2997.00	15.72	67.30	2954.74	189.45	189.71	373.26	2.94
3091.00	15.01	63.14	3045.38	199.85	200.13	395.87	1.39
3186.00	14.78	58.30	3137.19	211.76	212.05	417.16	1.33
3281.00	13.83	58.88	3229.25	223.99	224.29	437.20	1.01
3376.00	14.05	55.27	3321.45	236.41	236.73	456.39	0.94
3470.00	13.20	59.20	3412.81	248.39	248.72	474.99	1.33
3565.00	13.66	61.55	3505.21	259.28	259.62	494.17	0.75
3657.00	12.38	60.20	3594.84	269.34	269.70	512.28	1.43
3752.00	13.38	58.11	3687.45	280.20	280.57	530.45	1.16
3846.00	13.33	58.33	3778.91	291.62	292.01	548.91	0.08

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
3941.00	11.71	54.42	3871.65	302.97	303.37	566.08	1.93
4035.00	12.30	62.77	3963.60	313.09	313.49	582.73	1.95
4130.00	10.96	68.05	4056.65	321.08	321.50	600.10	1.80
4223.00	11.28	62.75	4147.91	328.54	328.97	616.39	1.15
4319.00	11.45	66.11	4242.02	336.68	337.12	633.45	0.71
4414.00	12.68	64.32	4334.93	345.01	345.46	651.47	1.36
4507.00	11.80	64.90	4425.81	353.45	353.92	669.28	0.95
4602.00	11.36	59.08	4518.88	362.37	362.85	686.10	1.32
4697.00	9.39	56.16	4612.32	371.48	371.97	700.57	2.14
4791.00	10.23	51.20	4704.95	380.98	381.47	713.45	1.27
4886.00	8.53	51.32	4798.67	390.66	391.16	725.52	1.79
4979.00	8.09	59.32	4890.70	398.30	398.82	736.54	1.33
5072.00	6.93	60.34	4982.90	404.41	404.93	747.04	1.26
5167.00	5.46	70.51	5077.35	408.75	409.28	756.29	1.92
5261.00	3.72	66.96	5171.04	411.43	411.96	763.31	1.88
5355.00	2.00	87.16	5264.92	412.70	413.24	767.76	2.10
5449.00	0.90	177.36	5358.90	412.04	412.58	769.43	2.34
5542.00	1.00	165.17	5451.89	410.52	411.06	769.67	0.24
5637.00	1.08	172.18	5546.87	408.83	409.37	770.00	0.16
5732.00	0.35	252.35	5641.86	407.86	408.40	769.85	1.14

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
5828.00	0.88	207.78	5737.86	407.12	407.66	769.23	0.70
5921.00	1.19	223.70	5830.84	405.79	406.33	768.23	0.46
6016.00	0.81	268.88	5925.83	405.06	405.60	766.87	0.89
6111.00	1.31	319.55	6020.82	405.88	406.41	765.49	1.07
6205.00	0.65	305.13	6114.80	407.00	407.53	764.36	0.74
6298.00	0.20	325.52	6207.80	407.44	407.97	763.84	0.51
6391.00	0.24	292.43	6300.80	407.64	408.17	763.57	0.14
6484.00	0.57	23.76	6393.80	408.14	408.67	763.58	0.67
6578.00	0.54	31.90	6487.79	408.94	409.47	764.00	0.09
6671.00	0.24	65.90	6580.79	409.39	409.93	764.41	0.40
6765.00	11.13	4.22	6674.19	418.55	419.08	765.26	11.72
6859.00	17.55	3.17	6765.22	441.77	442.31	766.71	6.83
6952.00	23.71	1.64	6852.21	474.49	475.03	768.02	6.65
7046.00	32.45	356.94	6935.08	518.65	519.19	767.22	9.58
7140.00	38.96	359.25	7011.37	573.45	573.98	765.49	7.08
7235.00	47.46	359.99	7080.54	638.44	638.97	765.09	8.96
7331.00	55.73	2.54	7140.13	713.57	714.11	766.85	8.86
7425.00	63.13	0.30	7187.91	794.42	794.96	768.79	8.13
7520.00	72.03	359.83	7224.10	882.15	882.69	768.88	9.37
7615.00	81.06	359.77	7246.19	974.45	974.98	768.56	9.51

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
7710.00	87.85	0.22	7255.37	1068.95	1069.48	768.56	7.16
7804.00	88.65	359.91	7258.24	1162.90	1163.44	768.67	0.92
7899.00	88.48	359.95	7260.61	1257.87	1258.41	768.56	0.18
7993.00	89.19	0.42	7262.52	1351.85	1352.39	768.87	0.90
8086.00	89.19	0.13	7263.83	1444.84	1445.38	769.32	0.31
8180.00	90.64	0.96	7263.97	1538.83	1539.37	770.21	1.78
8274.00	90.00	1.37	7263.44	1632.81	1633.35	772.13	0.81
8368.00	90.97	0.81	7262.64	1726.79	1727.33	773.91	1.20
8557.00	90.20	1.44	7260.70	1915.73	1916.28	777.63	0.53
8650.00	92.22	0.95	7258.74	2008.69	2009.23	779.56	2.24
8744.00	92.90	0.38	7254.54	2102.58	2103.13	780.65	0.93
8838.00	91.48	358.29	7250.95	2196.50	2197.05	779.57	2.68
8933.00	91.74	358.86	7248.27	2291.44	2291.98	777.21	0.65
9028.00	89.93	357.84	7246.88	2386.38	2386.93	774.47	2.18
9121.00	89.73	357.75	7247.15	2479.32	2479.86	770.90	0.24
9216.00	89.87	357.58	7247.49	2574.24	2574.78	767.02	0.23
9310.00	89.46	357.38	7248.04	2668.15	2668.68	762.89	0.48
9404.00	89.49	359.33	7248.90	2762.10	2762.64	760.19	2.08
9499.00	90.40	358.81	7248.98	2857.09	2857.62	758.66	1.10
9593.00	90.24	358.15	7248.46	2951.06	2951.59	756.17	0.73

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
9686.00	90.30	358.07	7248.02	3044.01	3044.54	753.11	0.11
9780.00	90.20	359.47	7247.61	3137.99	3138.51	751.10	1.49
9874.00	90.47	359.25	7247.06	3231.98	3232.50	750.05	0.37
9968.00	89.53	359.84	7247.06	3325.98	3326.50	749.30	1.18
10061.00	89.09	359.94	7248.18	3418.97	3419.49	749.12	0.48
10155.00	88.79	0.52	7249.91	3512.95	3513.47	749.49	0.69
10249.00	89.43	0.68	7251.38	3606.93	3607.46	750.48	0.70
10343.00	89.29	0.29	7252.43	3700.92	3701.45	751.27	0.44
10437.00	90.20	0.61	7252.84	3794.92	3795.44	752.01	1.03
10531.00	90.77	1.24	7252.04	3888.90	3889.43	753.53	0.90
10626.00	90.74	359.76	7250.79	3983.88	3984.41	754.35	1.56
10720.00	89.53	359.31	7250.57	4077.88	4078.41	753.59	1.38
10814.00	89.33	359.57	7251.51	4171.87	4172.40	752.67	0.36
10907.00	89.60	0.17	7252.38	4264.87	4265.39	752.46	0.70
11001.00	89.33	0.01	7253.26	4358.86	4359.39	752.60	0.33
11093.00	90.13	0.18	7253.69	4450.86	4451.39	752.75	0.90
11187.00	89.40	359.78	7254.07	4544.86	4545.38	752.72	0.90
11279.00	90.84	0.91	7253.89	4636.85	4637.38	753.27	2.00
11372.00	90.70	1.71	7252.63	4729.82	4730.35	755.40	0.88
11466.00	91.18	1.08	7251.09	4823.77	4824.30	757.69	0.84

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
11559.00	89.87	0.70	7250.24	4916.76	4917.29	759.14	1.47
11652.00	89.06	0.64	7251.12	5009.74	5010.28	760.23	0.87
11746.00	88.99	0.17	7252.72	5103.73	5104.26	760.88	0.50
11839.00	89.70	0.36	7253.79	5196.72	5197.25	761.32	0.79
11932.00	90.20	0.27	7253.87	5289.72	5290.25	761.83	0.55
12027.00	90.87	0.47	7252.98	5384.71	5385.24	762.45	0.74
12121.00	90.20	359.70	7252.10	5478.70	5479.24	762.59	1.09
12214.00	91.89	359.85	7250.40	5571.68	5572.22	762.23	1.82
12307.00	92.66	0.10	7246.72	5664.61	5665.14	762.19	0.87
12400.00	92.99	0.28	7242.13	5757.50	5758.03	762.50	0.41
12495.00	91.14	0.02	7238.71	5852.43	5852.96	762.75	1.97
12590.00	92.12	359.69	7236.01	5947.39	5947.92	762.51	1.08
12685.00	92.62	359.55	7232.08	6042.31	6042.84	761.88	0.55
12779.00	93.12	359.73	7227.37	6136.19	6136.72	761.29	0.57
12874.00	93.29	358.89	7222.06	6231.03	6231.56	760.15	0.90
12895.00	93.23	358.25	7220.87	6251.99	6252.52	759.62	3.05

5" = 100' FEET MD