

5" = 100' MD

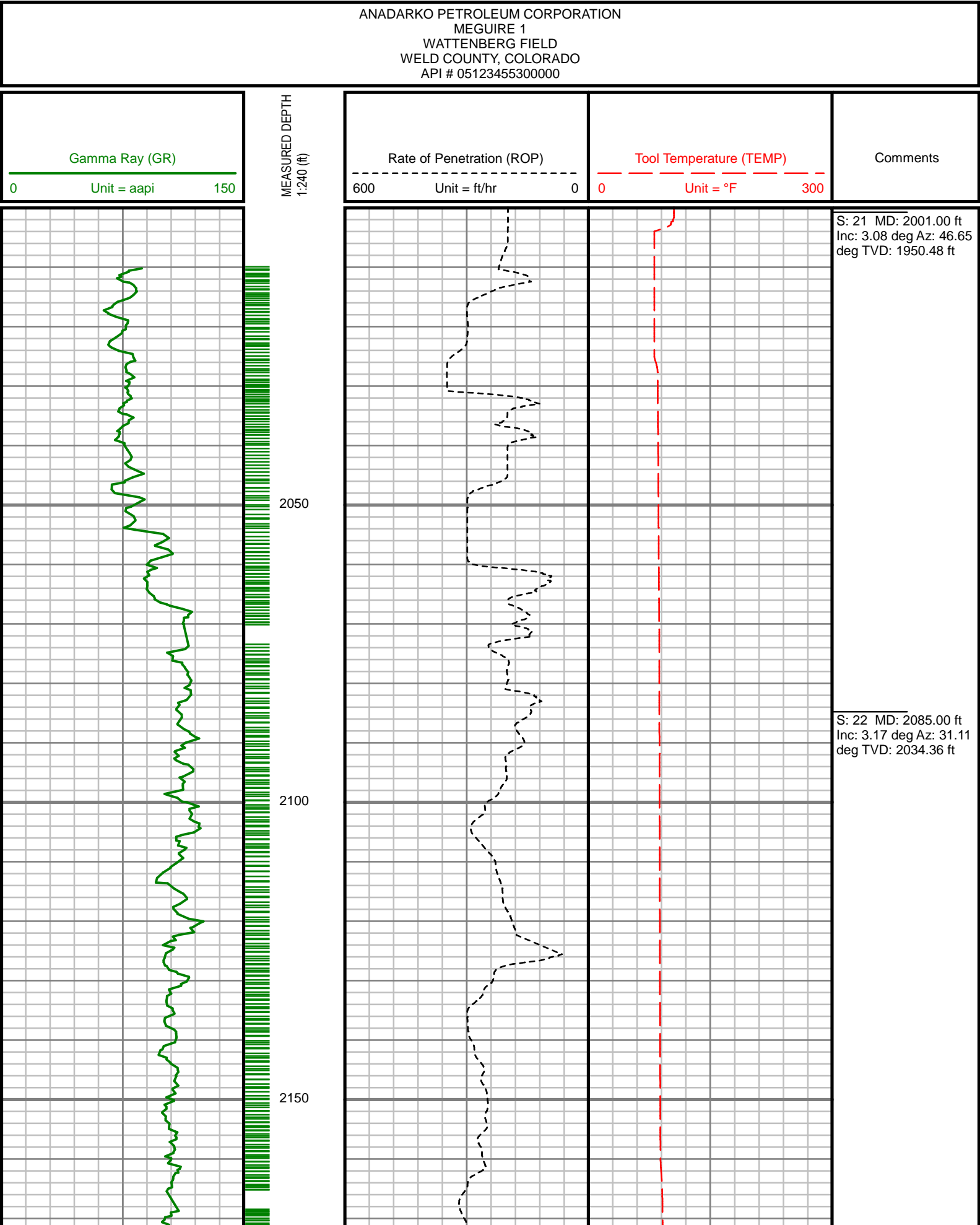
COMPANY : ANADARKO PETROLEUM CORPORATION WELL : MEGUIRE 1 FIELD : WATTENBERG COUNTY : WELD STATE : COLORADO COUNTRY : U.S.A. UWI : 05123455300000				COMPANY : ANADARKO PETROLEUM CORPORATION WELL : MEGUIRE 1 FIELD : WATTENBERG COUNTY : WELD STATE : COLORADO COUNTRY : U.S.A. UWI : 05123455300000			
DEPTH REF. : RKB REF. HEIGHT : 20.000 ft GROUND LEVEL : 4896.600 ft				WELL LOCATION LAT:40.1247020°N LONG:104.6767730°W N:14572307.25 ft E:1730771.90 ft SEC:21 TWP:2N RANGE:65W			
BOREHOLE RECORD HOLE SIZE in FROM ft TO ft 13.5 0 2062 8.5 2062 4740				OTHER SERVICES NAD83 GYRO DIRECTIONAL ROP			
DEVIATION RECORD INCLINATION deg FROM ft TO ft 0 - 21 0 983 21 - 1 983 2371 1 - 2 2371 4462 2 - 10 4462 4732				CASING RECORD CASING SIZE in FROM ft TO ft 9.625 0 2053 7 0 4736			
DRILLING CO. : PRECISION DRILLING RIG : 461 LMD UNIT NO. : KIT MUD PUDISTRICT : CASPER SPUD DATE : 09/26/2017 LMD START DATE : 09/27/2017 LMD END DATE : 10/12/2017				DEPTH : 2062 ft DEPTH : 4740 ft TOTAL DEPTH : 4796 ft			

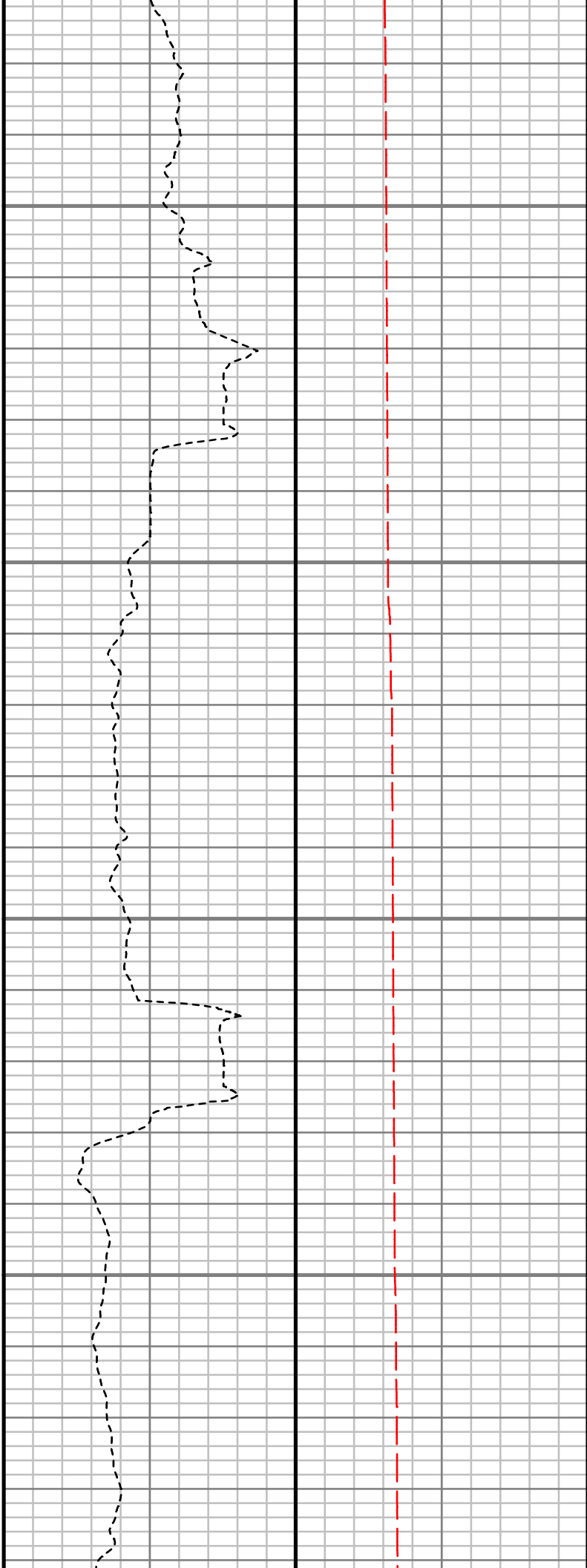
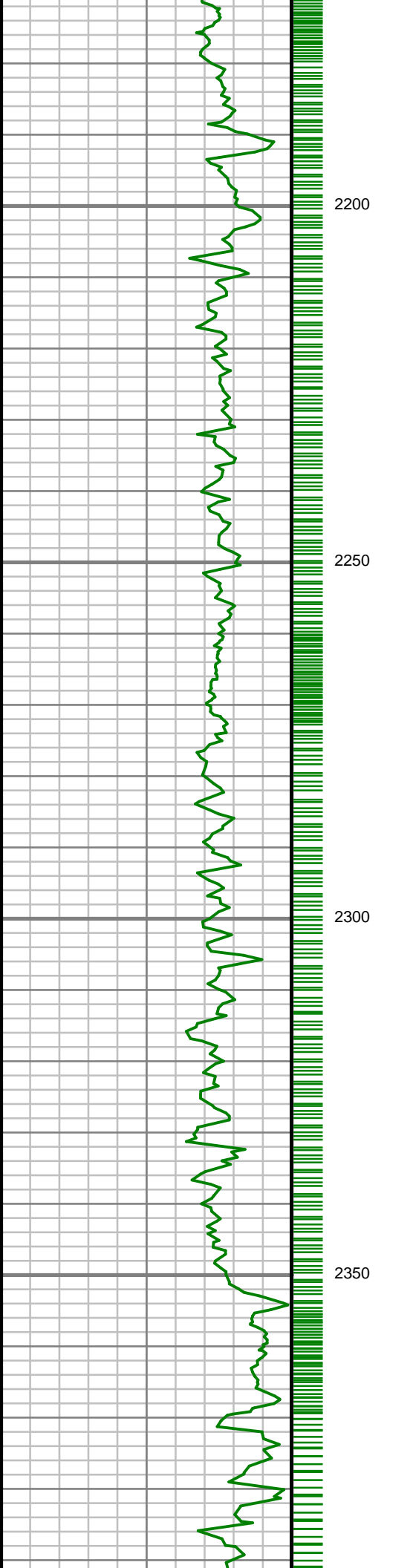
Run Data						
RUN NUMBER	1	2	3	4		
START DATE	09/27/2015	09/27/2017	09/29/2017	10/04/2017		
START TIME	03:40	13:45	02:40	15:30		
END DATE	09/27/2017	09/28/2017	10/04/2017	10/07/2017		
END TIME	11:45	02:30	15:20	18:00		
DEPTH IN (ft)	83	583	2062	4550		
DEPTH OUT (ft)	583	2062	4550	4740		
LOG TOP (ft)	-	-	2062	4500		
LOG BOTTOM (ft)	-	-	4498	4688		
HOLE SIZE (in)	13.5	13.5	8.5	8.5		
MUD DATA @ (ft)	1231	1231	4550	4740		
MUD TYPE	OIL-BASED	OIL-BASED	OIL-BASED	OIL-BASED		
DENSITY (lb / gal)	8.5	8.5	9.7	9.56		
VISCOSITY (s / qt)	30	30	85	85		
pH	7	7	-	-		
FLUID LOSS (cm3 / 30)	-	-	-	-		
SALINITY (ppm)	-	-	-	-		
Rm (ohmm @ deg F)	-	-	-	-		
Rmf (ohmm @ deg F)	-	-	-	-		
MAX TEMP (deg F)	106	106	137	155		
Rm @ MAX TEMP (ohmm)	-	-	-	-		
LWD ENGINEER #1	M. SMITH	M. SMITH	M. SMITH	M. SMITH		
LWD ENGINEER #2	L. SHAFFER	L. SHAFFER	L. SHAFFER	L. SHAFFER		
LWD ENGINEER #3	-	-	-	-		
LOG WITNESS #1	-	-	-	-		
LOG WITNESS #2	-	-	-	-		

Remarks
ANADARKO PETROLEUM CORPORATION AFE# 2137641
SCIENTIFIC DRILLING INTERNATIONAL JOB# OP.004641
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
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 / DIRECTIONAL RUN
SENSORS S/N: PULSER = 79-136 / CONT = 290 / MWD EYE = 1554
BIT TO SENSOR OFFSETS: SURVEY = 58.68 FT.
RUN #2: MWD / DIRECTIONAL RUN
SENSORS S/N: PULSER = 79-136 / CONT = 290 / MWD EYE = 1554
BIT TO SENSOR OFFSETS: SURVEY = 59.27 FT.
RUN #3: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-384 / CONT = 290 / MWD EYE = 1554 / GAMMA RAY = 1242 / GYRO = 549
BIT TO SENSOR OFFSETS: SURVEY = 55.98 FT. / GAMMA RAY = 51.98 FT / GYRO = 38.46 FT.
RUN #4: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-232 / CONT = 174 / MWD EYE = 1537 / GAMMA RAY = 1199 / GYRO = 514
BIT TO SENSOR OFFSETS: SURVEY = 55.98 FT. / GAMMA RAY = 51.98 FT / GYRO = 38.46 FT.

[illegible]

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

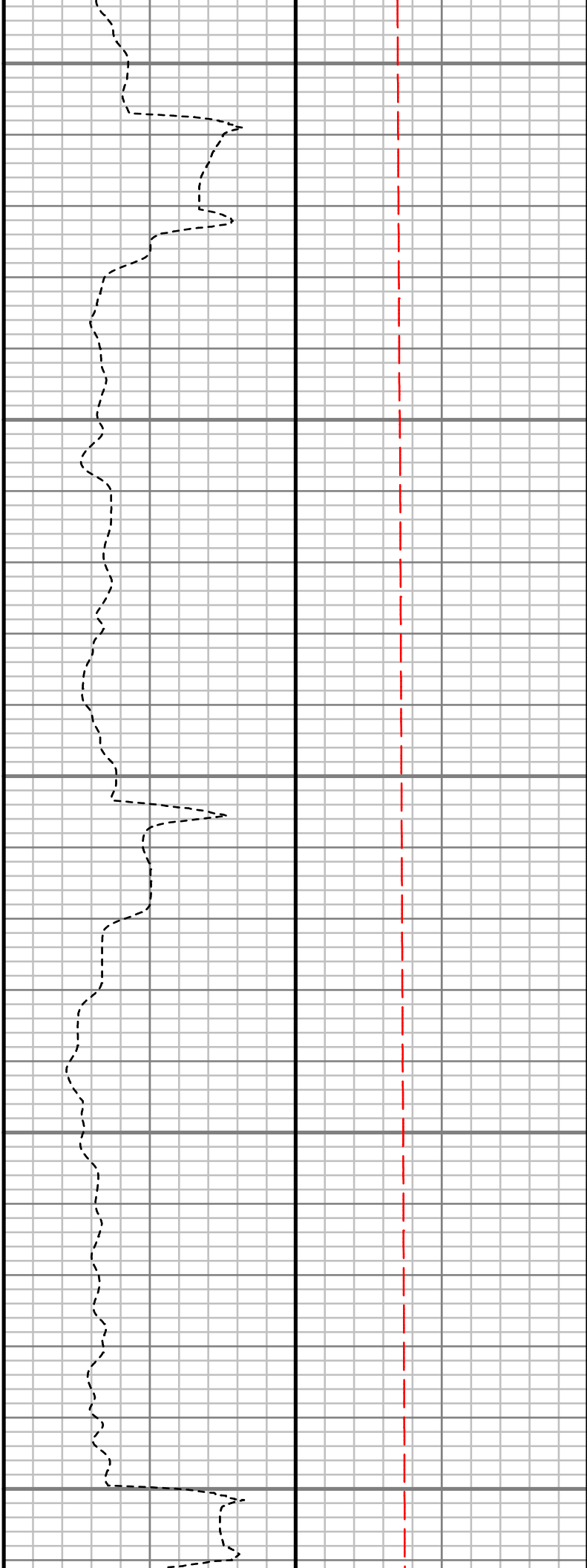
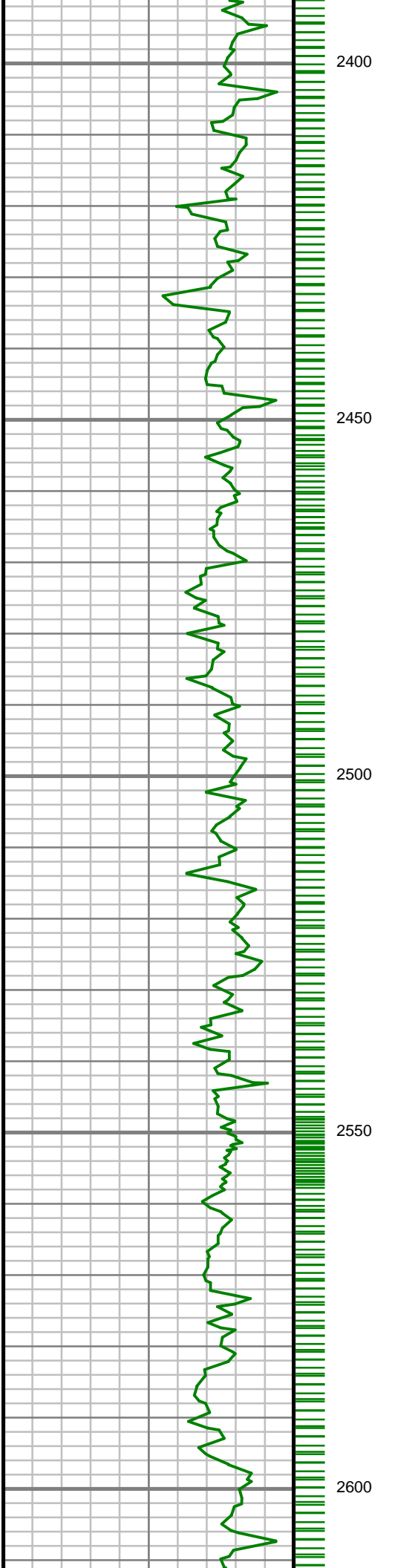




S: 23 MD: 2180.00 ft
Inc: 3.08 deg Az: 29.53
deg TVD: 2129.22 ft

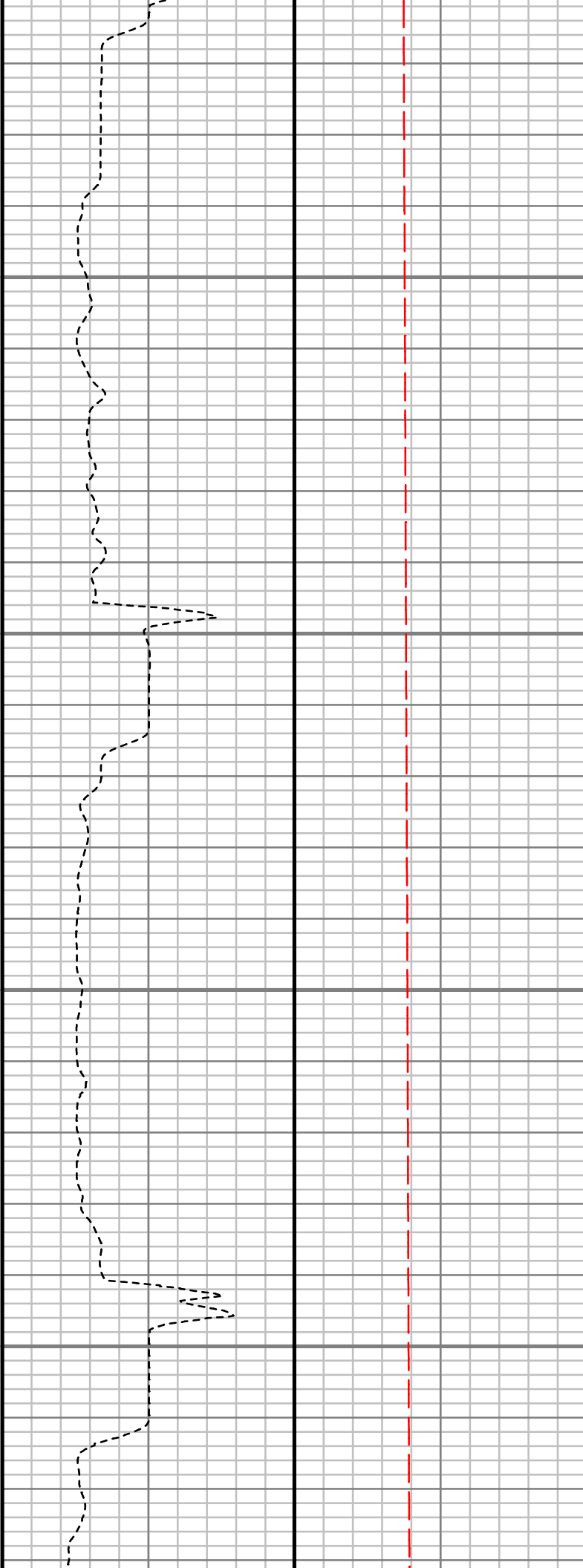
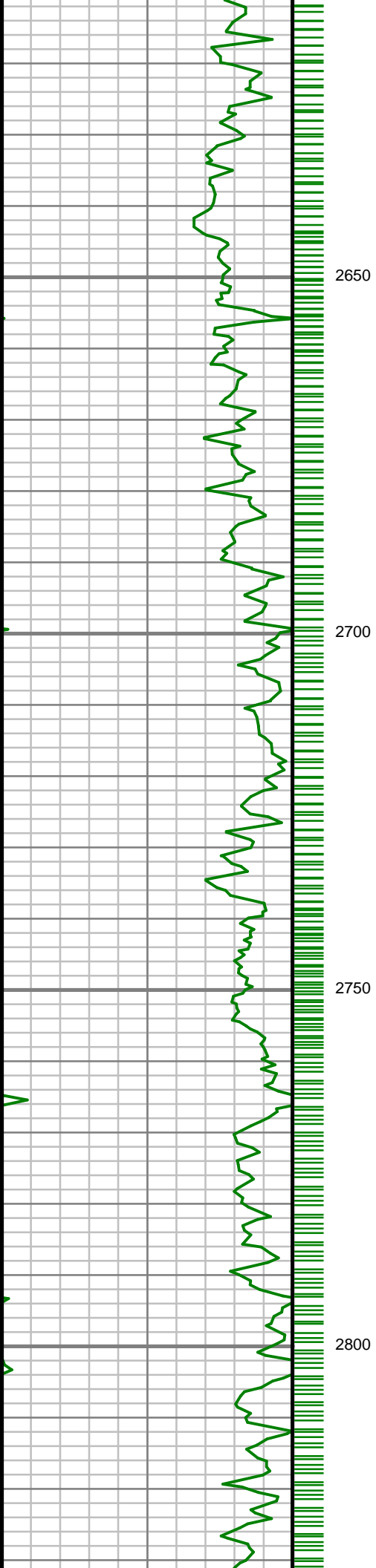
S: 24 MD: 2275.00 ft
Inc: 2.90 deg Az: 31.11
deg TVD: 2224.09 ft

S: 25 MD: 2371.00 ft
Inc: 1.94 deg Az: 26.10
deg TVD: 2320.00 ft



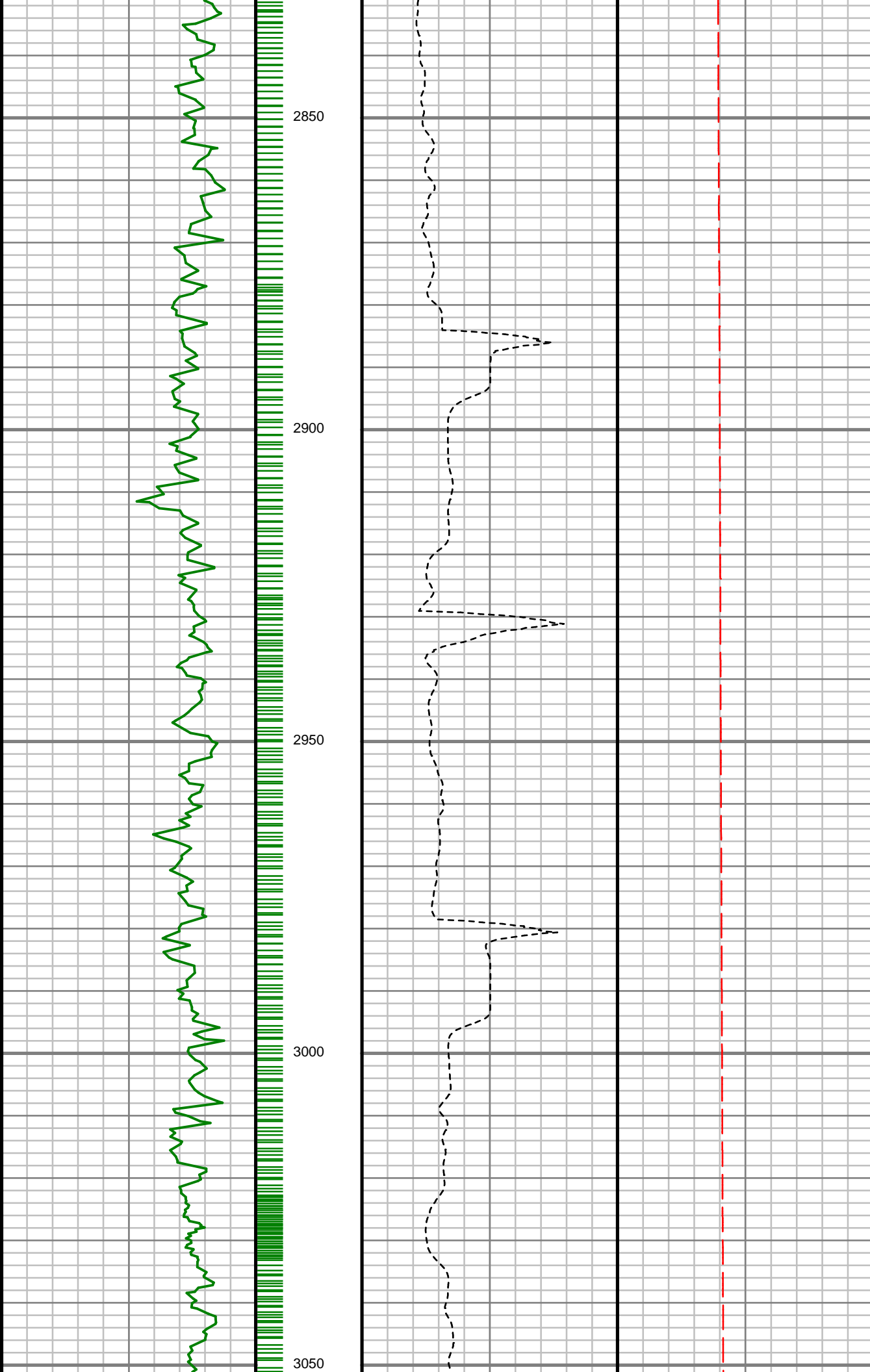
S: 26 MD: 2466.00 ft
Inc: 1.58 deg Az: 60.38
deg TVD: 2414.96 ft

S: 27 MD: 2562.00 ft
Inc: 1.76 deg Az: 58.45
deg TVD: 2510.92 ft



S: 28 MD: 2657.00 ft
Inc: 1.85 deg Az: 40.08
deg TVD: 2605.87 ft

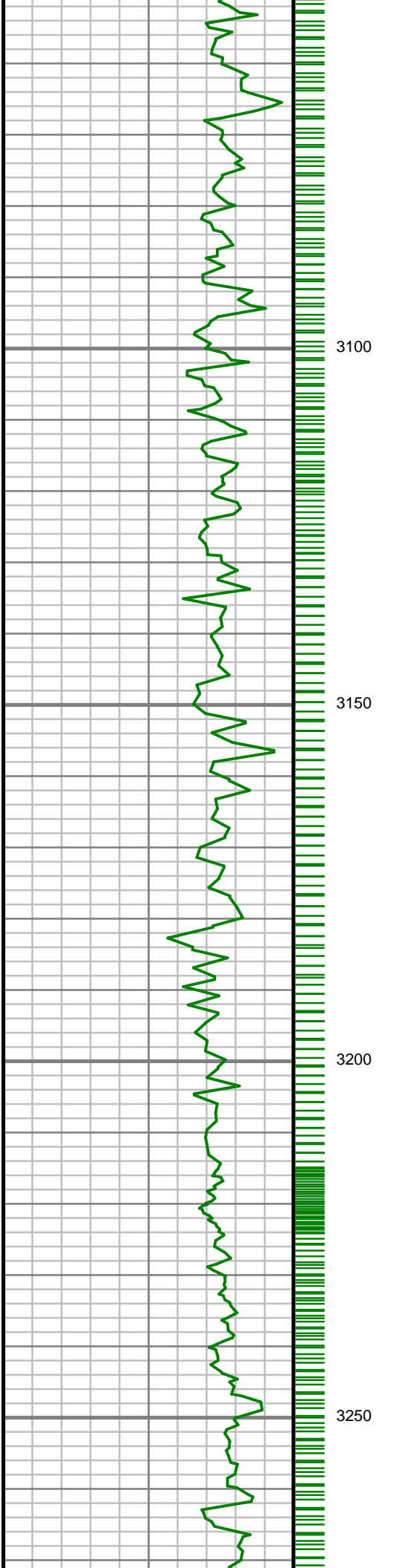
S: 29 MD: 2752.00 ft
Inc: 1.58 deg Az: 31.64
deg TVD: 2700.83 ft



S: 30 MD: 2847.00 ft
Inc: 1.32 deg Az: 30.23
deg TVD: 2795.80 ft

S: 31 MD: 2941.00 ft
Inc: 1.23 deg Az: 30.94
deg TVD: 2889.77 ft

S: 32 MD: 3036.00 ft
Inc: 1.32 deg Az: 25.05
deg TVD: 2984.75 ft



S: 33 MD: 3132.00 ft
Inc: 1.58 deg Az: 45.70
deg TVD: 3080.72 ft

S: 34 MD: 3227.00 ft
Inc: 1.50 deg Az: 41.84
deg TVD: 3175.69 ft

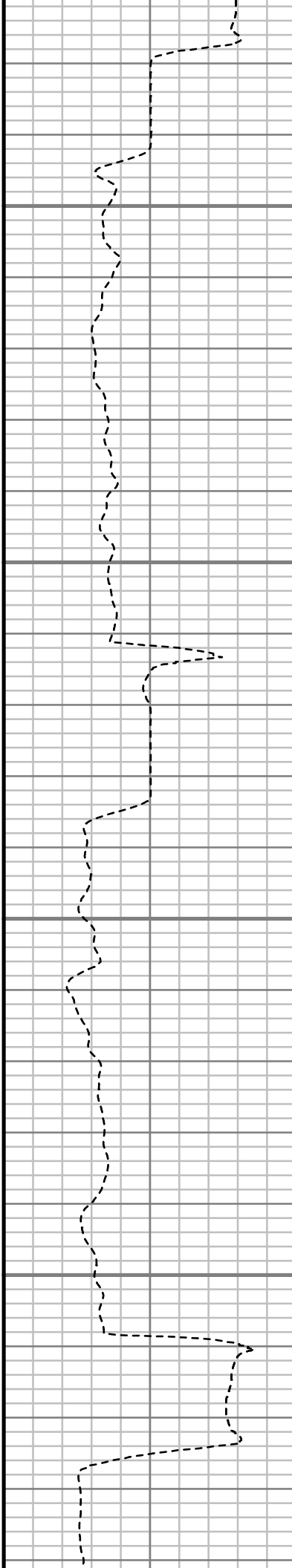


3300

3350

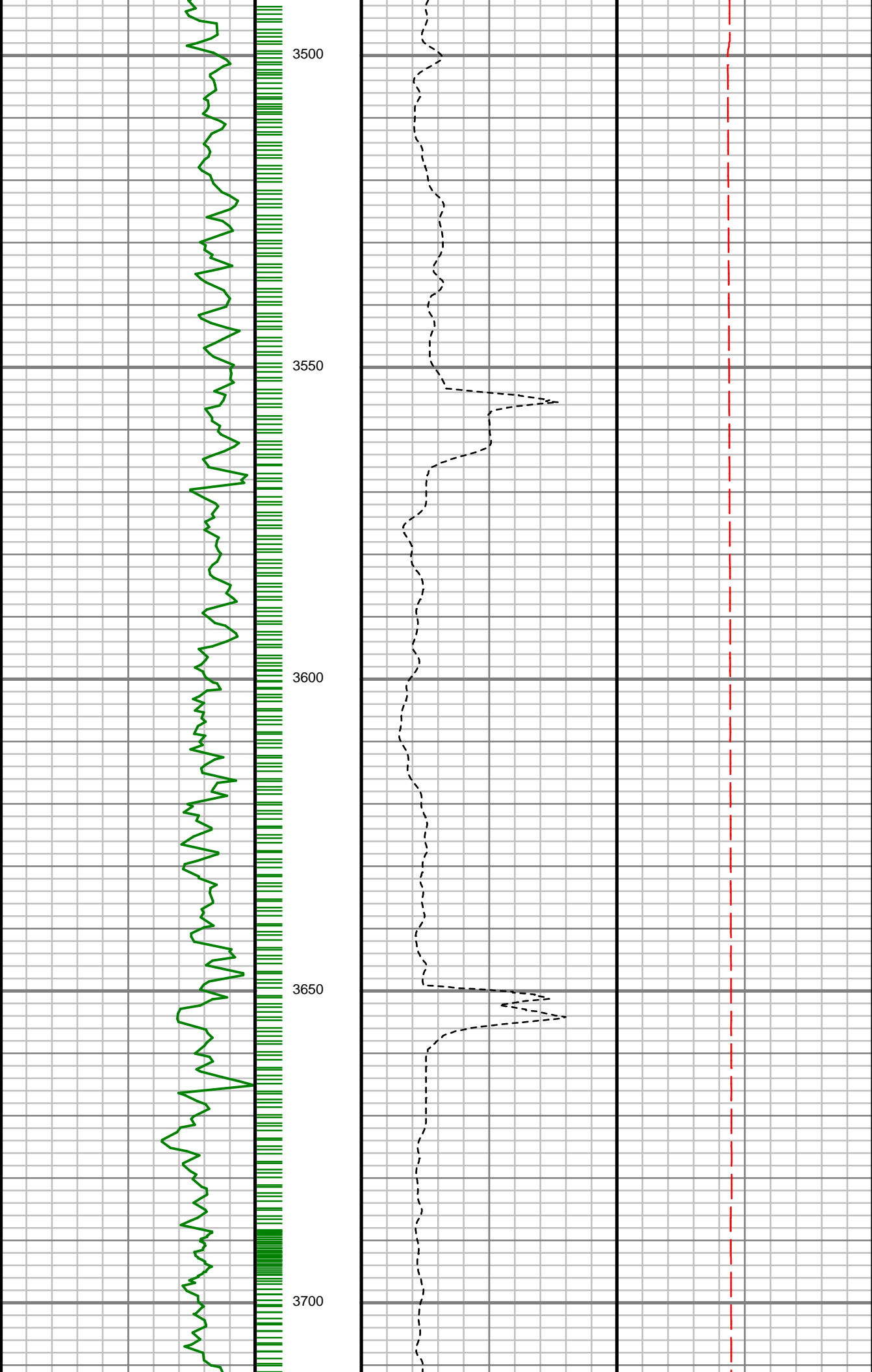
3400

3450



S: 35 MD: 3321.00 ft
Inc: 1.85 deg Az: 39.29
deg TVD: 3269.64 ft

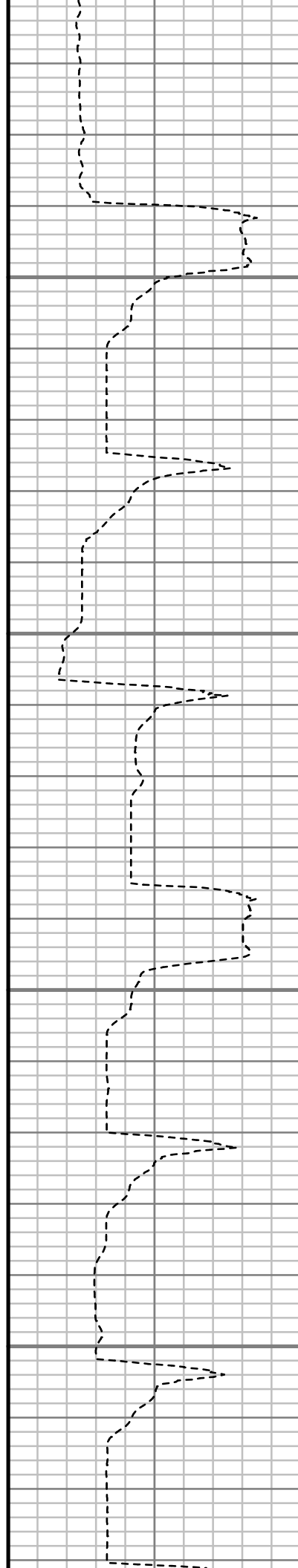
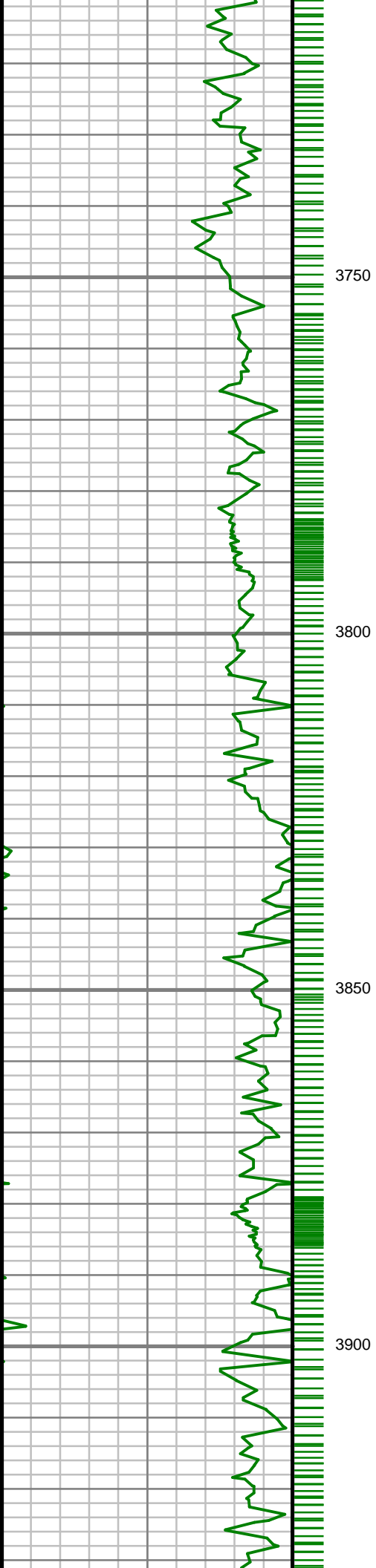
S: 36 MD: 3417.00 ft
Inc: 1.58 deg Az: 37.71
deg TVD: 3365.60 ft



S: 37 MD: 3512.00 ft
Inc: 2.64 deg Az: 32.26
deg TVD: 3460.54 ft

S: 38 MD: 3608.00 ft
Inc: 2.29 deg Az: 32.43
deg TVD: 3556.45 ft

S: 39 MD: 3703.00 ft
Inc: 2.02 deg Az: 27.25
deg TVD: 3651.38 ft



S: 40 MD: 3735.00 ft
Inc: 2.02 deg Az: 23.99
deg TVD: 3683.36 ft

S: 41 MD: 3767.00 ft
Inc: 2.20 deg Az: 25.66
deg TVD: 3715.34 ft

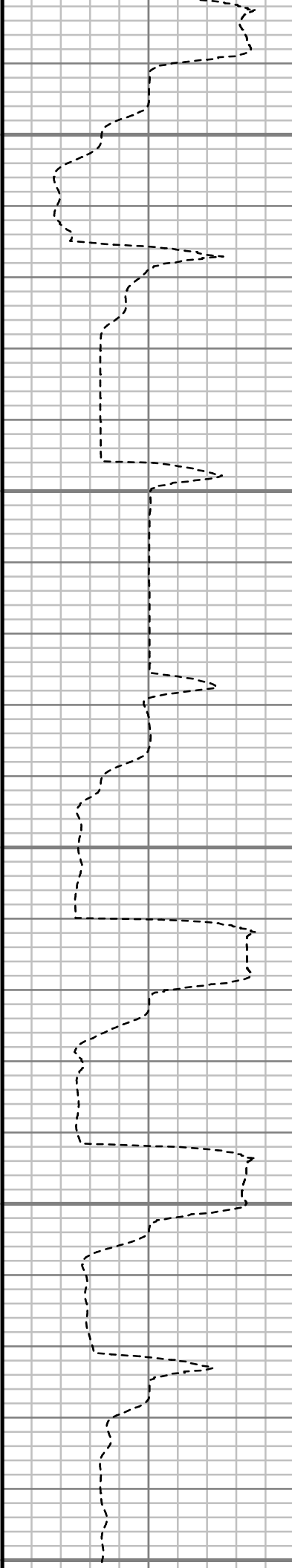
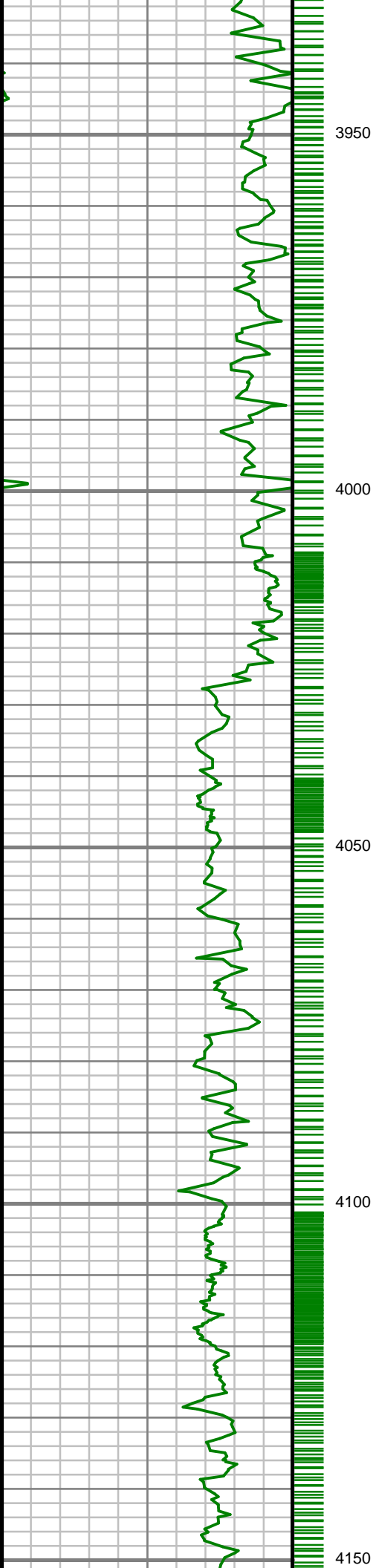
S: 42 MD: 3799.00 ft
Inc: 2.11 deg Az: 23.91
deg TVD: 3747.32 ft

S: 43 MD: 3830.00 ft
Inc: 2.11 deg Az: 24.96
deg TVD: 3778.29 ft

S: 44 MD: 3862.00 ft
Inc: 2.38 deg Az: 26.81
deg TVD: 3810.27 ft

S: 45 MD: 3894.00 ft
Inc: 2.20 deg Az: 28.74
deg TVD: 3842.24 ft

S: 46 MD: 3925.00 ft
Inc: 2.29 deg Az: 27.86
deg TVD: 3873.22 ft



S: 47 MD: 3957.00 ft
Inc: 2.46 deg Az: 24.08
deg TVD: 3905.19 ft

S: 48 MD: 3989.00 ft
Inc: 2.55 deg Az: 25.22
deg TVD: 3937.16 ft

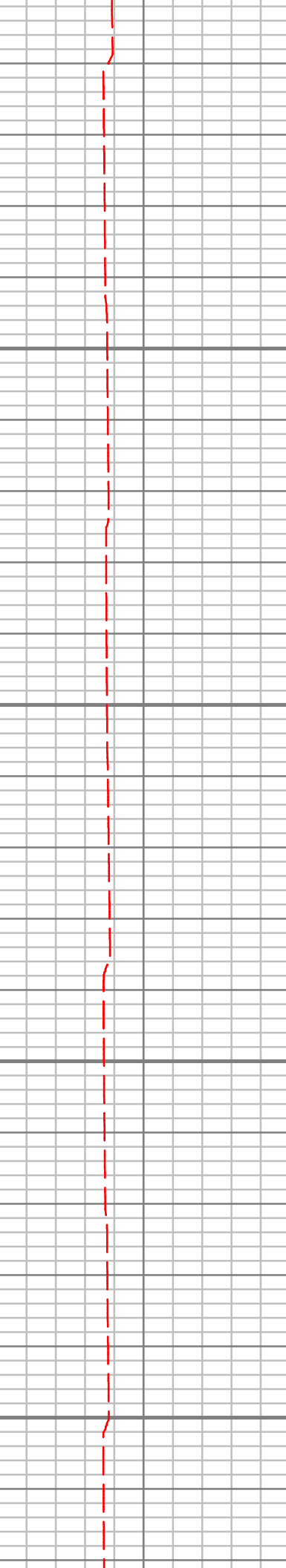
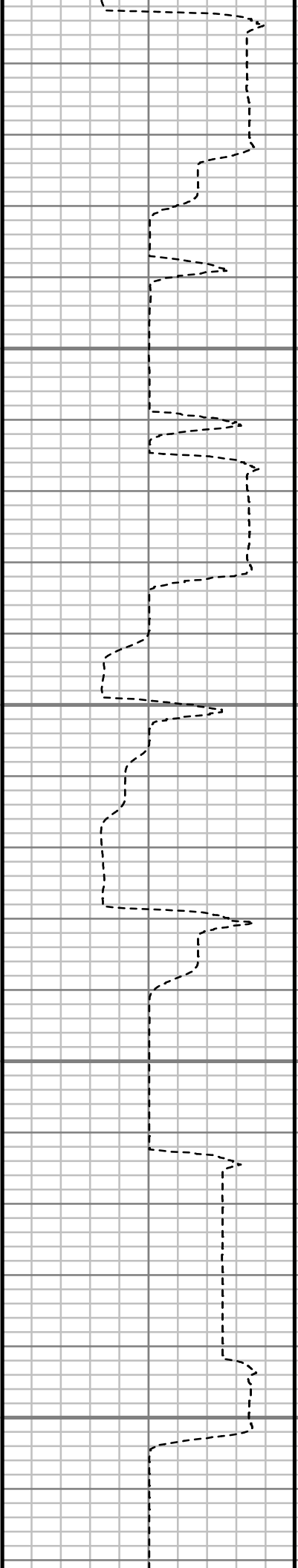
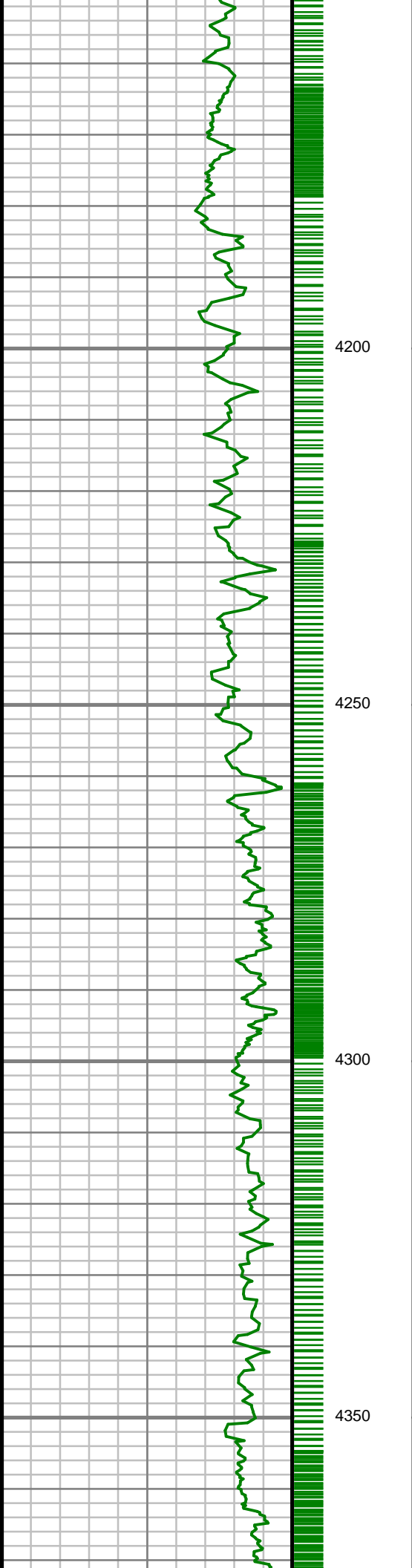
S: 49 MD: 4021.00 ft
Inc: 2.38 deg Az: 24.17
deg TVD: 3969.13 ft

S: 50 MD: 4053.00 ft
Inc: 2.46 deg Az: 25.05
deg TVD: 4001.10 ft

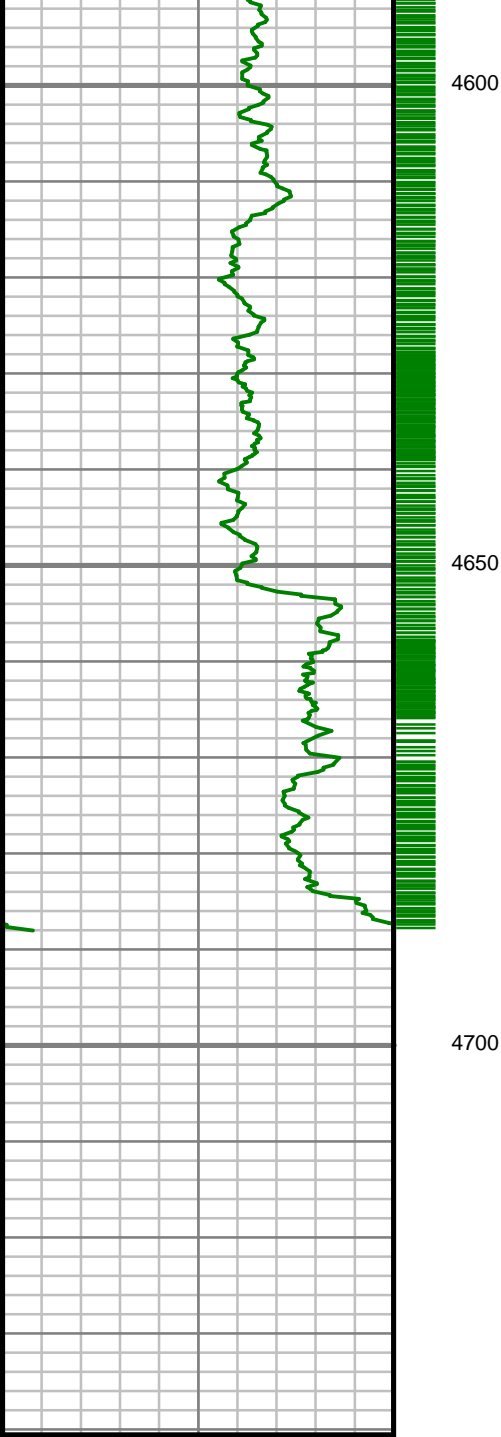
S: 51 MD: 4084.00 ft
Inc: 2.90 deg Az: 26.37
deg TVD: 4032.07 ft

S: 52 MD: 4114.00 ft
Inc: 2.99 deg Az: 24.52
deg TVD: 4062.03 ft

S: 53 MD: 4147.00 ft
Inc: 3.08 deg Az: 18.02

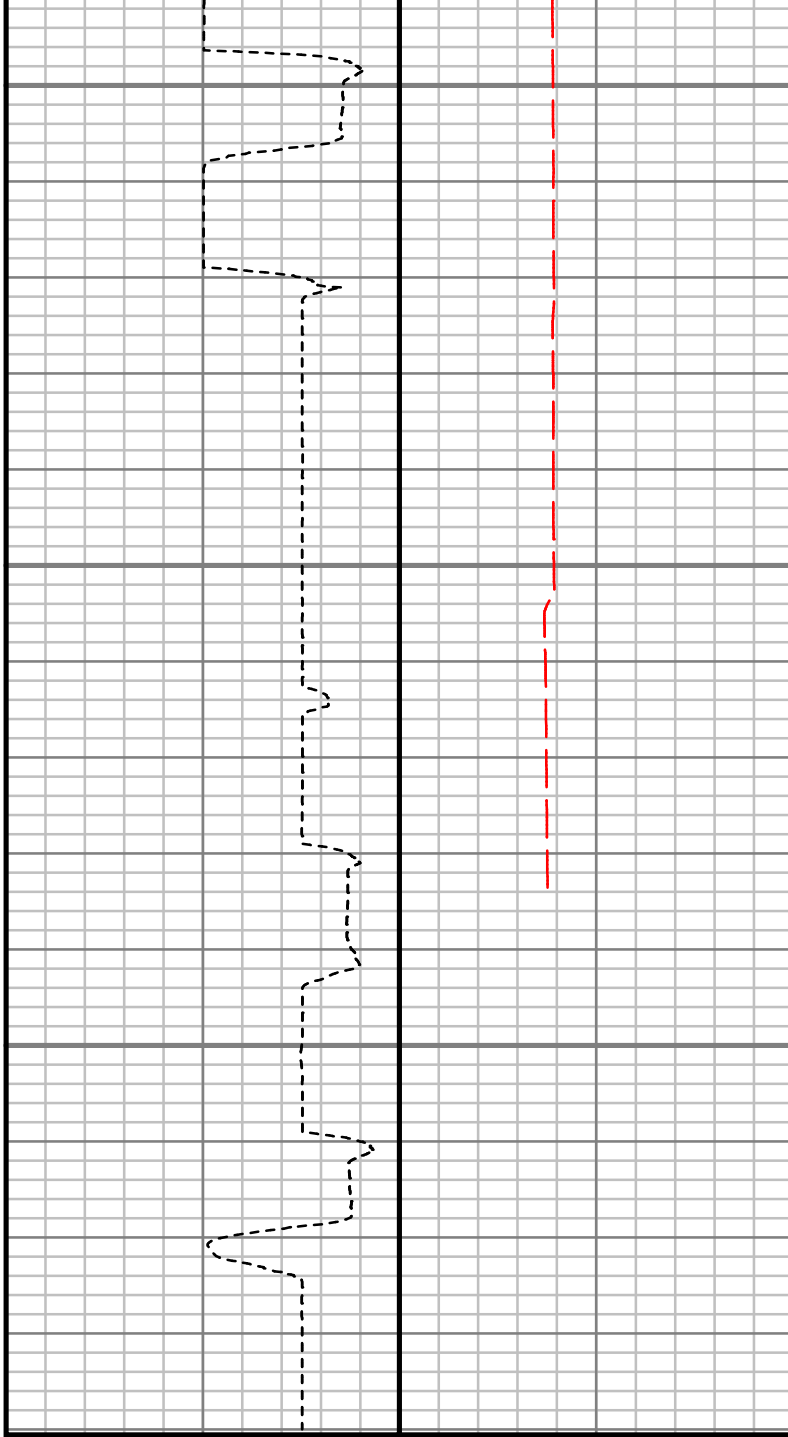


Inc: 8.93 deg Az: 1.02 deg TVD: 4094.98 ft
S: 54 MD: 4176.00 ft Inc: 2.99 deg Az: 358.68 deg TVD: 4123.94 ft
S: 55 MD: 4210.00 ft Inc: 2.99 deg Az: 344.44 deg TVD: 4157.90 ft
S: 56 MD: 4240.00 ft Inc: 2.73 deg Az: 324.14 deg TVD: 4187.86 ft
S: 57 MD: 4273.00 ft Inc: 2.82 deg Az: 319.83 deg TVD: 4220.82 ft
S: 58 MD: 4302.00 ft Inc: 2.90 deg Az: 320.27 deg TVD: 4249.79 ft
S: 59 MD: 4337.00 ft Inc: 2.82 deg Az: 324.49 deg TVD: 4284.74 ft
S: 60 MD: 4367.00 ft Inc: 2.55 deg Az:



Gamma Ray (GR)		
150	Unit = aapi	300

MEASURED DEPTH
1,240 (ft)



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

Tool Temperature (TEMP)		
0	Unit = °F	300

S: 69 MD: 4612.00 ft
Inc: 9.41 deg Az:
346.73 deg TVD:
4558.55 ft

S: 70 MD: 4623.00 ft
Inc: 9.33 deg Az:
347.52 deg TVD:
4569.40 ft

S: 71 MD: 4640.00 ft
Inc: 9.41 deg Az:
347.26 deg TVD:
4586.17 ft

S: 72 MD: 4672.00 ft
Inc: 9.68 deg Az:
347.17 deg TVD:
4617.73 ft

S: 73 MD: 4682.00 ft
Inc: 9.59 deg Az:
346.38 deg TVD:
4627.59 ft

S: 74 MD: 4692.00 ft
Inc: 9.50 deg Az:
342.25 deg TVD:
4637.45 ft

S: 75 MD: 4702.00 ft
Inc: 9.59 deg Az:
343.65 deg TVD:
4647.31 ft

S: 76 MD: 4712.00 ft
Inc: 9.85 deg Az:
342.77 deg TVD:
4657.17 ft

S: 77 MD: 4732.00 ft
Inc: 10.21 deg Az:
341.54 deg TVD:
4676.00 ft

Comments

SURVEY REPORT

CUSTOMER ANADARKO PETROLEUM CORPORATION
PROJECT MEGUIRE
FIELD WATTENBERG

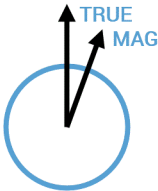
WELL INFORMATION
Lat/Long 40.124702° N, 104.676773° W
Northing 14,572,307.25 ft
Easting 1,730,771.9 ft
UWI 05123455300000

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 53.92°
Calculation Method Minimum Curvature



GEOMAGNETIC REFERENCE INFORMATION

Local Gravity: 999.049 mG [computed]

MD	MODEL	DATE	DECLINATION	MAG TO TRUE
0-2062 ft	ANADARKO MAG VAR	22 Sep 2017	8.04°	add 8.04°
2062-4772 ft	ANADARKO MAG VAR	22 Sep 2017	8.02°	add 8.02°

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
154.00	0.63	73.78	154.00	0.80	0.24	0.81	0.41
245.00	1.55	91.60	244.98	2.24	0.34	2.52	1.07
339.00	4.35	79.90	338.85	6.45	0.93	7.31	3.03
430.00	5.70	84.12	429.50	13.46	2.00	15.20	1.54
521.00	6.63	84.47	519.97	21.89	2.97	24.92	1.02
611.00	9.88	81.34	609.02	33.22	4.63	37.73	3.64
702.00	13.25	77.90	698.17	49.69	8.00	55.65	3.78
795.00	15.81	72.79	788.19	71.42	13.98	78.18	3.08
889.00	19.75	68.82	877.68	98.89	23.51	105.23	4.38
983.00	21.62	69.67	965.62	130.91	35.27	136.28	2.01
1077.00	20.97	69.60	1053.20	163.77	47.15	168.29	0.69
1170.00	20.37	67.42	1140.22	195.53	59.16	198.83	1.05
1263.00	18.13	64.56	1228.01	225.50	71.59	226.85	2.61
1356.00	16.75	62.43	1316.74	252.97	84.01	251.79	1.63
1451.00	15.17	60.79	1408.07	278.86	96.42	274.78	1.73
1545.00	12.96	58.12	1499.25	301.58	107.99	294.47	2.45
1638.00	10.70	56.13	1590.27	320.61	118.31	310.49	2.47
1732.00	8.56	59.26	1682.94	336.30	126.75	323.75	2.34
1827.00	6.56	53.12	1777.11	348.77	133.62	334.17	2.27

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
1921.00	4.58	51.70	1870.66	357.89	139.17	341.41	2.11
2001.00	3.08	46.65	1950.48	363.21	142.62	345.48	1.92
2085.00	3.17	31.11	2034.36	367.59	146.16	348.32	1.01
2180.00	3.08	29.53	2129.22	372.33	150.63	350.94	0.13
2275.00	2.90	31.11	2224.09	376.87	154.90	353.44	0.20
2371.00	1.94	26.10	2320.00	380.55	158.44	355.41	1.03
2466.00	1.58	60.38	2414.96	383.27	160.53	357.25	1.15
2562.00	1.76	58.45	2510.92	386.06	161.96	359.66	0.19
2657.00	1.85	40.08	2605.87	389.00	163.89	361.89	0.61
2752.00	1.58	31.64	2700.83	391.70	166.18	363.57	0.38
2847.00	1.32	30.23	2795.80	393.92	168.25	364.81	0.28
2941.00	1.23	30.94	2889.77	395.84	170.05	365.87	0.10
3036.00	1.32	25.05	2984.75	397.74	171.91	366.86	0.17
3132.00	1.58	45.70	3080.72	400.02	173.84	368.28	0.61
3227.00	1.50	41.84	3175.69	402.53	175.68	370.04	0.14
3321.00	1.85	39.29	3269.64	405.19	177.77	371.82	0.38
3417.00	1.58	37.71	3365.60	407.97	180.02	373.61	0.28
3512.00	2.64	32.26	3460.54	411.26	182.90	375.58	1.13
3608.00	2.29	32.43	3556.45	415.10	186.39	377.79	0.37
3703.00	2.02	27.25	3651.38	418.36	189.48	379.57	0.35

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
3735.00	2.02	23.99	3683.36	419.35	190.50	380.06	0.36
3767.00	2.20	25.66	3715.34	420.38	191.57	380.56	0.58
3799.00	2.11	23.91	3747.32	421.43	192.66	381.06	0.34
3830.00	2.11	24.96	3778.29	422.43	193.70	381.53	0.13
3862.00	2.38	26.81	3810.27	423.53	194.83	382.08	0.86
3894.00	2.20	28.74	3842.24	424.68	195.96	382.68	0.60
3925.00	2.29	27.86	3873.22	425.77	197.03	383.25	0.30
3957.00	2.46	24.08	3905.19	426.94	198.22	383.83	0.74
3989.00	2.55	25.22	3937.16	428.17	199.49	384.41	0.32
4021.00	2.38	24.17	3969.13	429.37	200.74	384.99	0.57
4053.00	2.46	25.05	4001.10	430.54	201.97	385.55	0.30
4084.00	2.90	26.37	4032.07	431.82	203.28	386.18	1.43
4114.00	2.99	24.52	4062.03	433.18	204.67	386.85	0.43
4147.00	3.08	18.02	4094.98	434.65	206.30	387.48	1.08
4176.00	2.99	358.68	4123.94	435.71	207.79	387.70	3.53
4210.00	2.99	344.44	4157.90	436.53	209.53	387.44	2.18
4240.00	2.73	324.14	4187.86	436.80	210.87	386.81	3.47
4273.00	2.82	319.83	4220.82	436.75	212.12	385.83	0.68
4302.00	2.90	320.27	4249.79	436.65	213.23	384.90	0.31
4337.00	2.82	324.49	4284.74	436.60	214.61	383.84	0.65

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
4367.00	2.55	324.84	4314.71	436.62	215.76	383.02	0.88
4401.00	2.55	327.13	4348.68	436.68	217.01	382.18	0.30
4430.00	2.73	326.69	4377.65	436.75	218.13	381.45	0.61
4462.00	2.90	326.34	4409.61	436.82	219.44	380.58	0.55
4496.00	4.49	335.39	4443.54	437.12	221.37	379.55	4.95
4510.00	5.28	337.76	4457.49	437.38	222.46	379.08	5.84
4542.00	6.69	338.99	4489.31	438.22	225.56	377.85	4.42
4558.00	8.09	342.77	4505.18	438.82	227.51	377.19	9.30
4580.00	8.62	344.88	4526.94	439.91	230.58	376.30	2.77
4612.00	9.41	346.73	4558.55	441.79	235.44	375.07	2.63
4623.00	9.33	347.52	4569.40	442.49	237.19	374.67	1.42
4640.00	9.41	347.26	4586.17	443.59	239.89	374.07	0.58
4672.00	9.68	347.17	4617.73	445.69	245.06	372.89	0.83
4682.00	9.59	346.38	4627.59	446.34	246.69	372.51	1.59
4692.00	9.50	342.25	4637.45	446.92	248.29	372.06	6.90
4702.00	9.59	343.65	4647.31	447.46	249.87	371.58	2.49
4712.00	9.85	342.77	4657.17	448.02	251.49	371.09	3.03
4732.00	10.21	341.54	4676.86	449.11	254.81	370.02	2.06
4747.00	10.47	342.25	4691.62	449.94	257.36	369.18	1.95
4757.00	10.56	342.07	4701.45	450.51	259.10	368.63	0.94

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
4762.00	10.82	342.51	4706.37	450.80	259.98	368.34	5.52
4772.00	10.91	343.30	4716.19	451.42	261.79	367.79	1.73

5" = 100' MD