

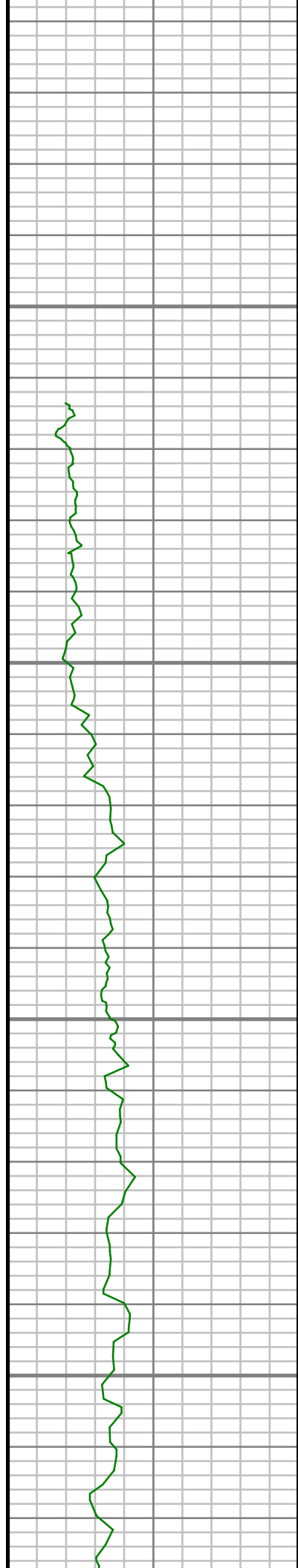
5" = 100' FEET TVD

COMPANY : ANADARKO PETROLEUM CORP.									
WELL : NRC 3C-8HZ									
FIELD : WATTENBERG									
COUNTY : WELD									
STATE : COLORADO									
COUNTRY : U.S.A.									
UWI : 05-123-38945									
OTHER SERVICES									
WELL LOCATION									
LAT:40°3'33.743"N LONG:104°54'57.150"W									
N:1265013.44 ft E:3163501.06 ft									
SEC:8 TWP:T1N RANGE:R67W									
DIRECTIONAL ROP									
DEPTH REF. : RKB									
REF. HEIGHT : 25.000 ft RKB to Ground Level									
GROUND LEVEL : 5052.000 ft G.L. to MEAN SEA LEVEL									
BOREHOLE RECORD						DEVIATION RECORD			
HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft				
12.25	0	1268	0-15	0	7381				
8.75	1268	8190	15-90	7381	8190				
6.125	8190	12929	90-91	8190	12929				
CASING RECORD									
CASING SIZE in	FROM ft	TO ft							
9.625	0	1268							
7	0	8190							
DRILLING CO.: H&P									
RIG: 311									
LWD UNIT NO.: C46						DISTRICT: CASPER			
SPUD DATE: 03/16/2014									
LWD START DATE: 03/25/2014						DEPTH: 1203 ft			
LWD END DATE: 03/31/2014						DEPTH: 12929 ft			
TOTAL DEPTH: 12929 ft									

Remarks
ANADARKO PETROLEUM CORP. PRODUCTION AFE# 2085765
SCIENTIFIC DRILLING INTERNATIONAL JOB# 131367
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
RUN # 1: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-042 / CONT = 603 / MWD EYE = 298 / GAMMA RAY =1076
BIT TO SENSOR OFFSETS: SURVEY = 62.75 FT. / GAMMA RAY = 53.50 FT.
RUN # 2: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 078-029 / CONT = 819 / MWD EYE = 826 / GAMMA RAY =1101
BIT TO SENSOR OFFSETS: SURVEY = 59.9 FT. / GAMMA RAY = 48.65 FT.
SURVEY WELL NOTES:
SURVEYS FROM 0.0 FT. TO 1268 FT. WERE ACQUIRED BY MS GYRO MWD.
SURVEYS FROM 1268 FT. TO 12867 FT. WERE ACQUIRED BY SCIENTIFIC DRILLING INTERNATIONAL MWD.
MNEMONICS LIST:
GR = GAMMA RAY
ROP = RATE OF PENETRATION
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.

[illegible]

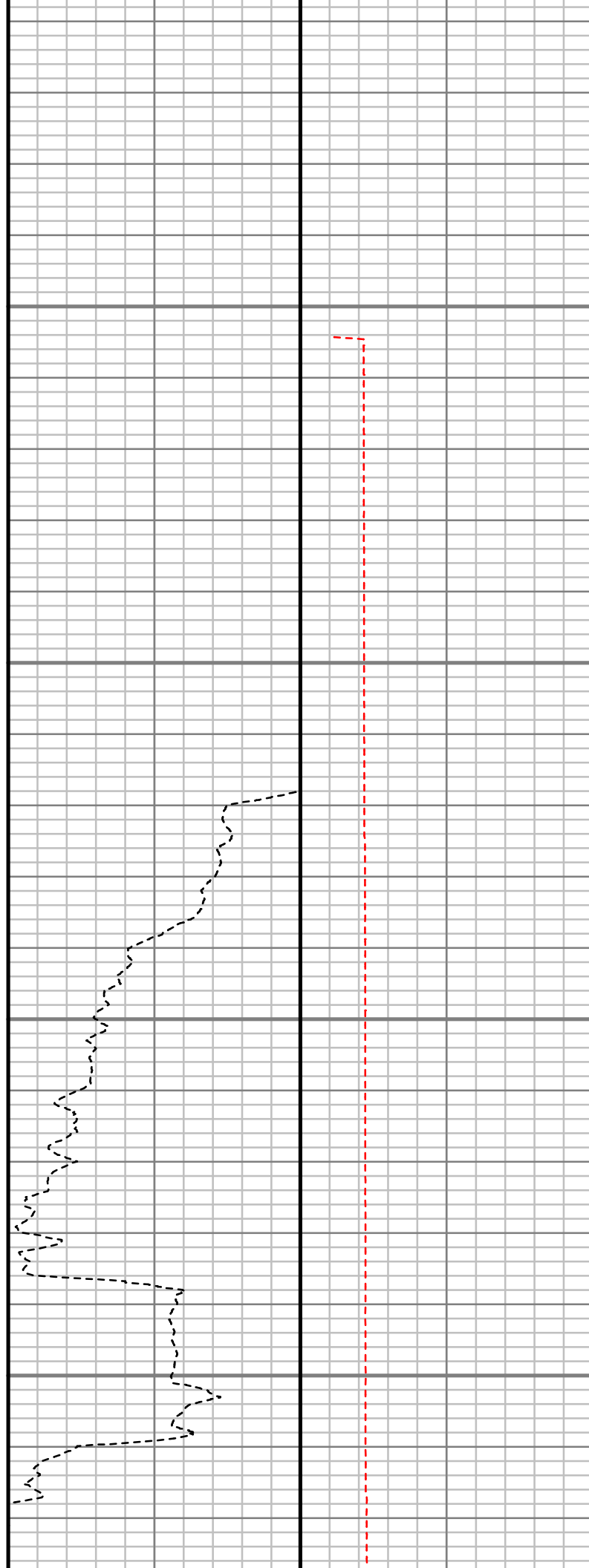


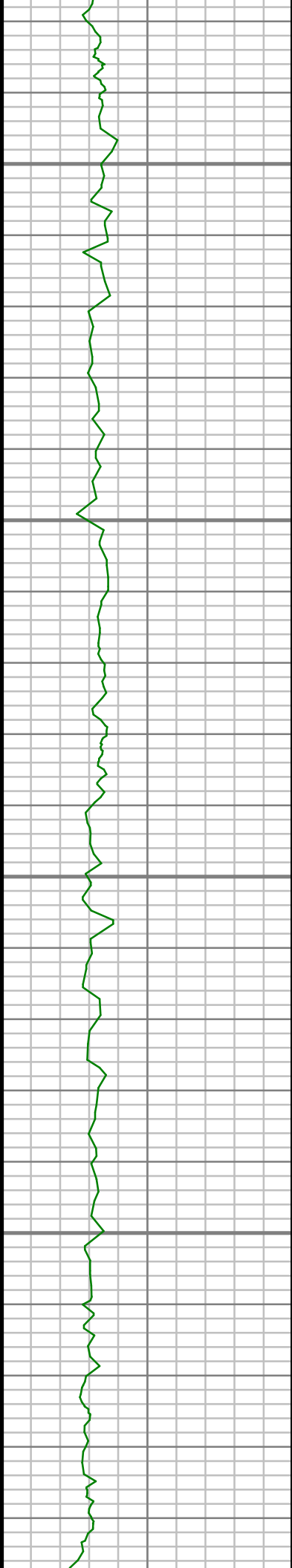
1200

1250

1300

1350



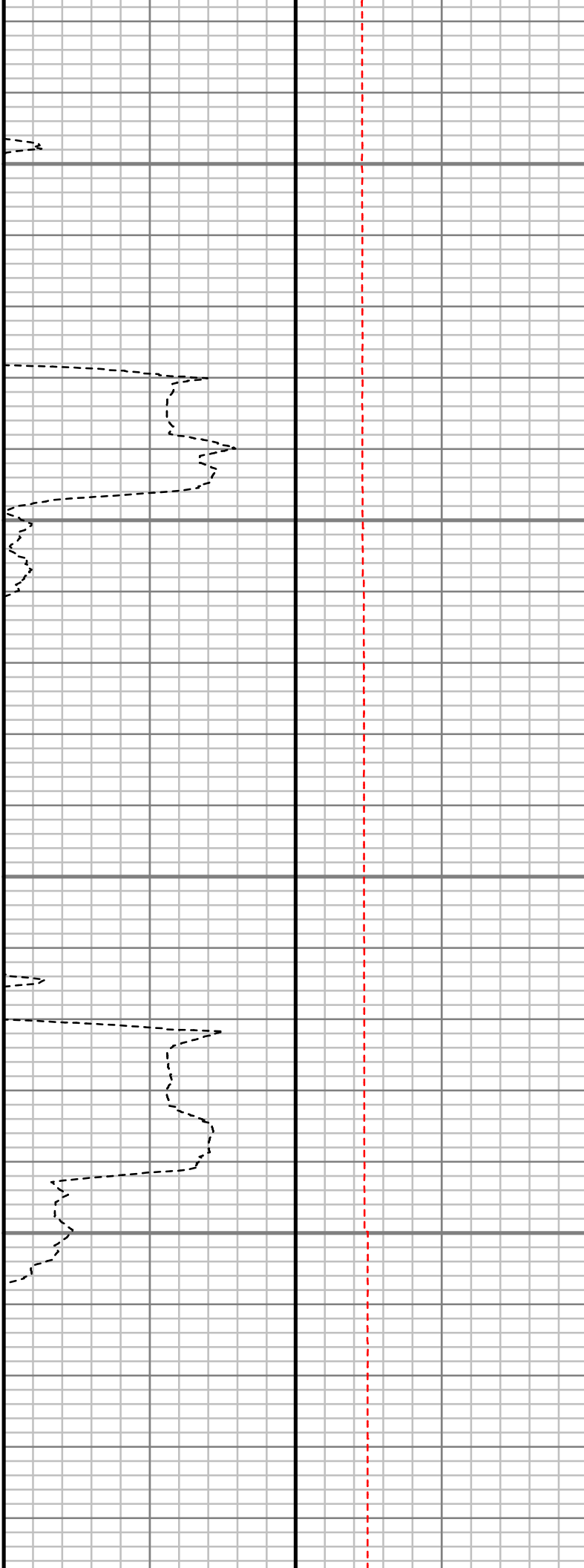


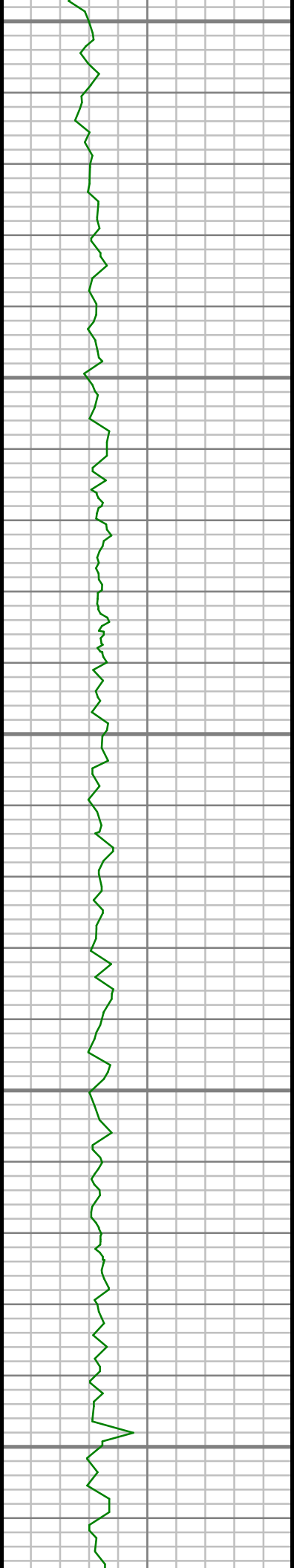
1400

1450

1500

1550





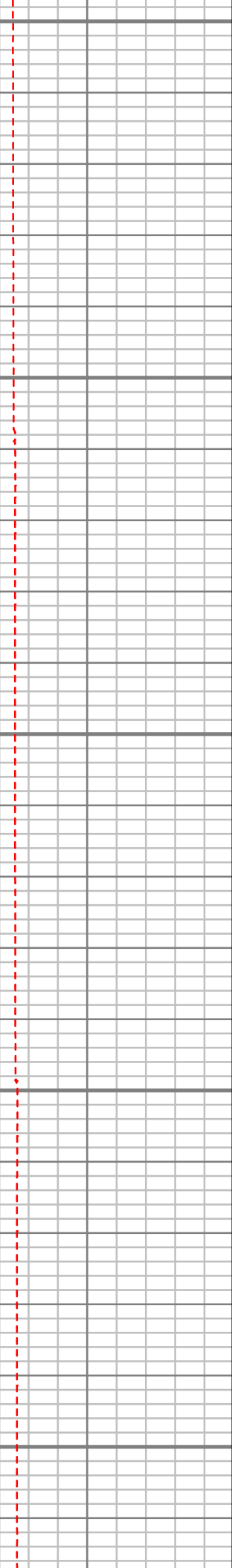
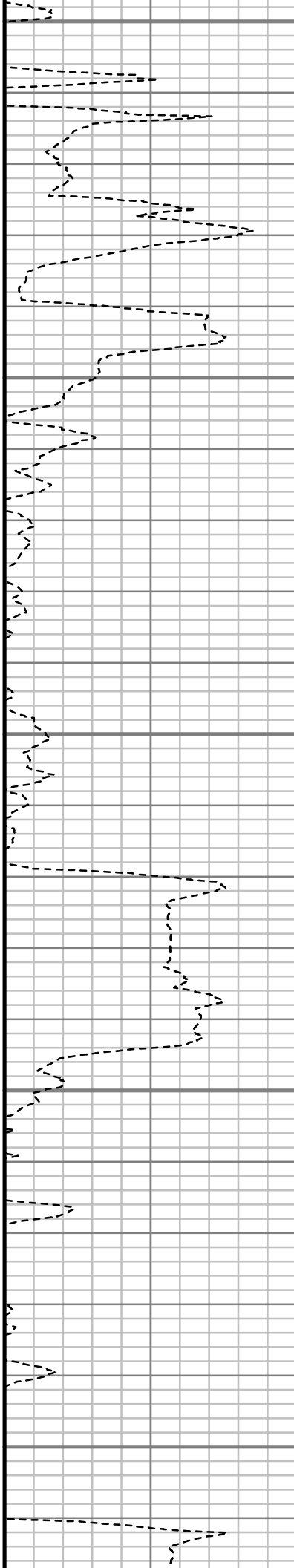
1600

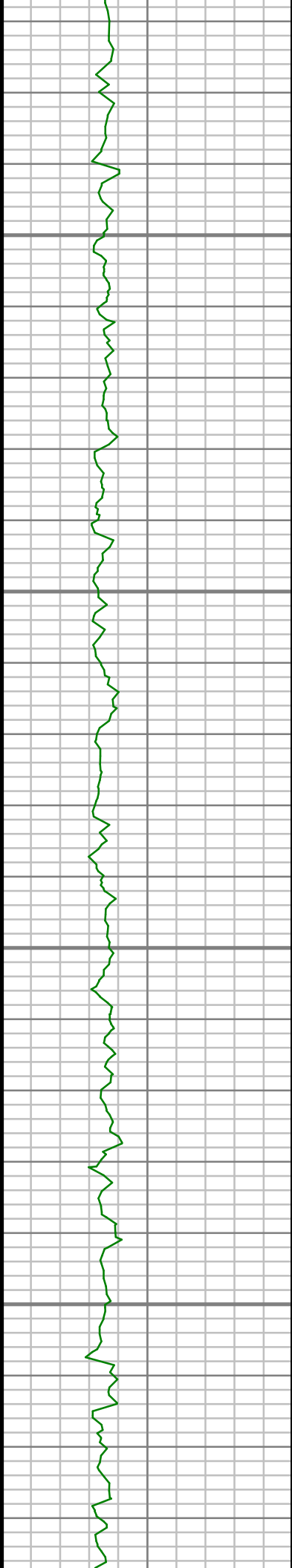
1650

1700

1750

1800



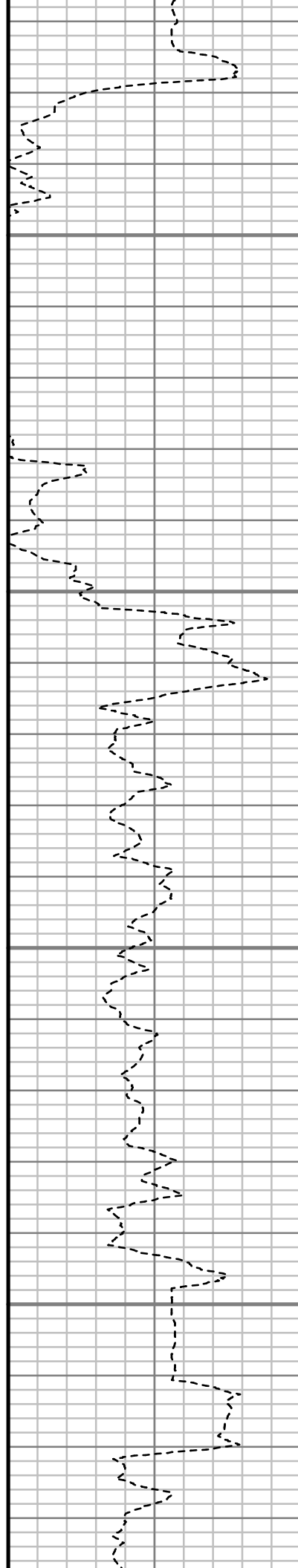


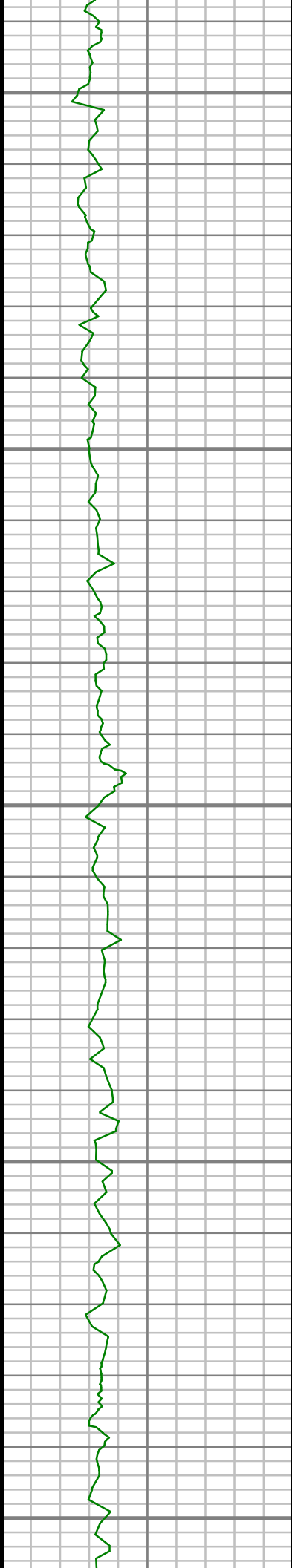
1850

1900

1950

2000





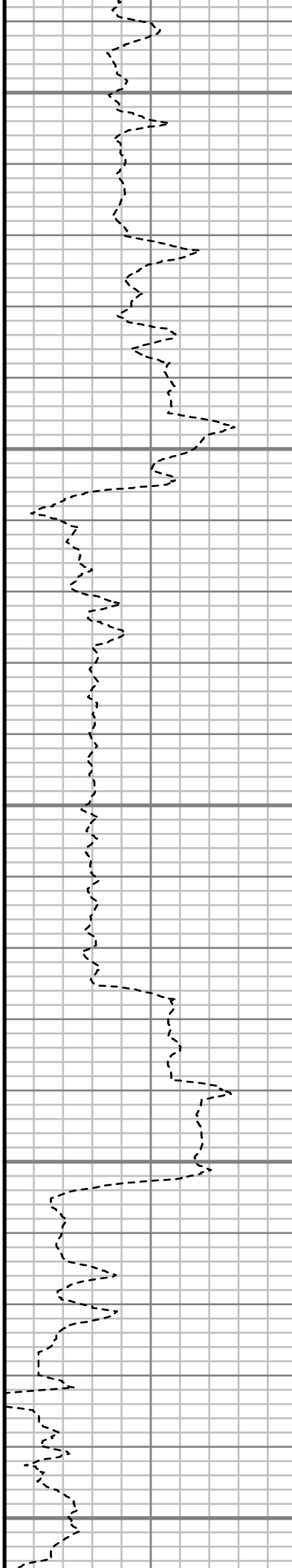
2050

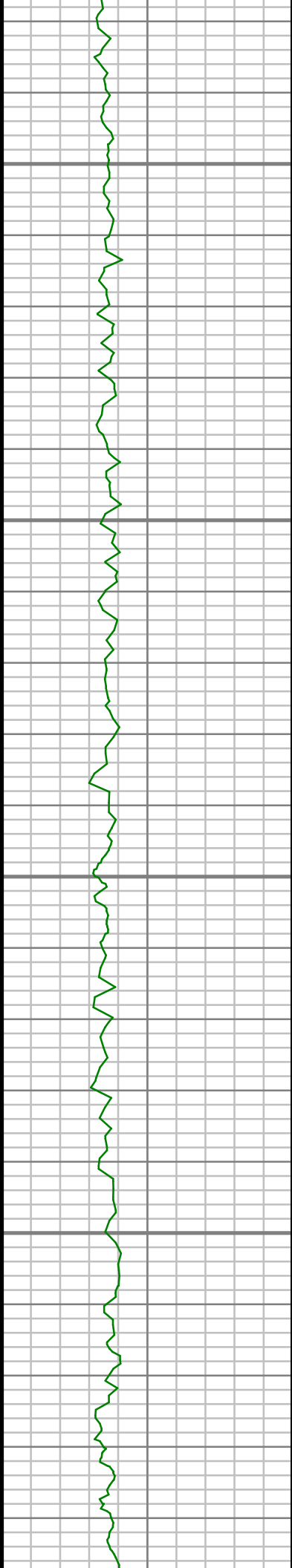
2100

2150

2200

2250



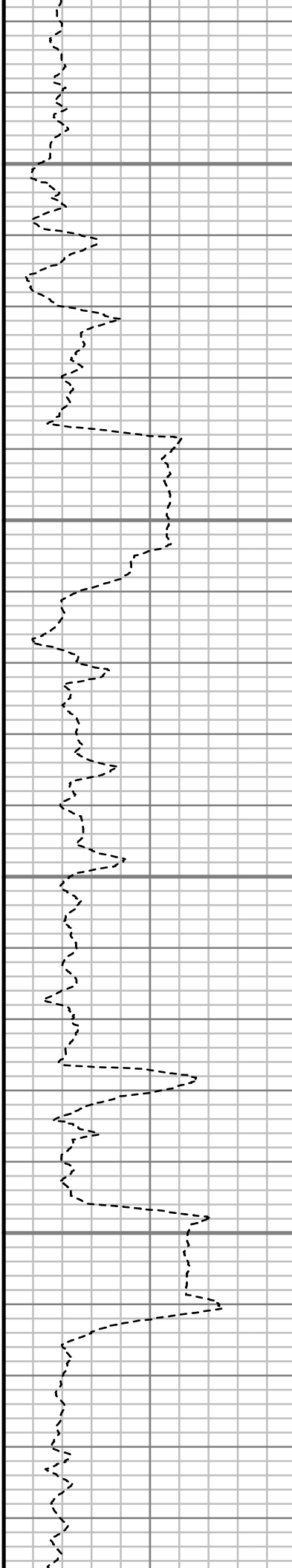


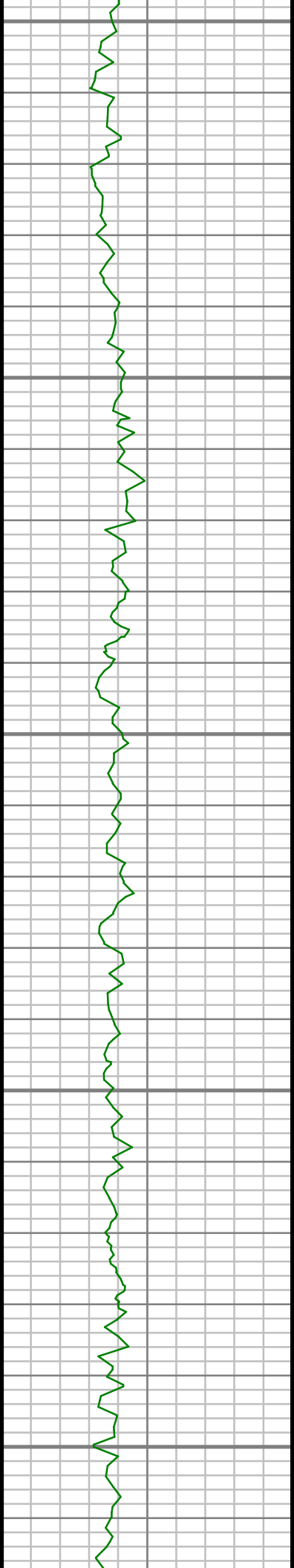
2500

2550

2600

2650





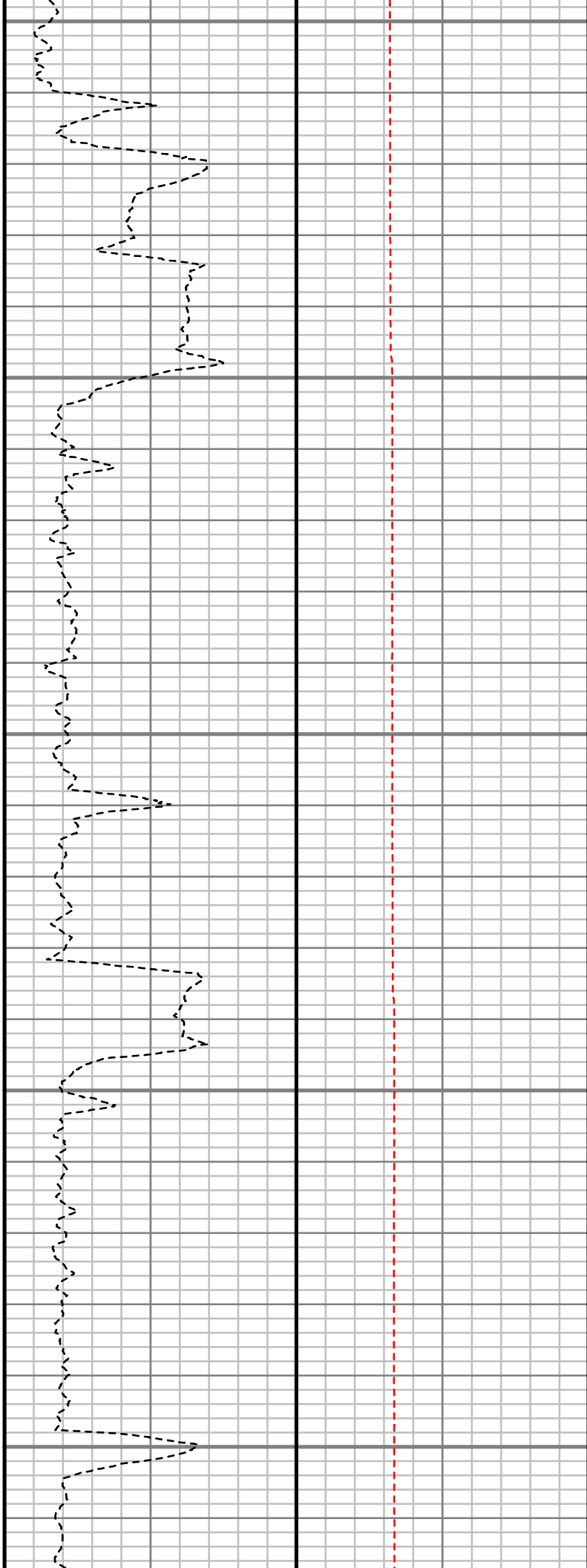
2700

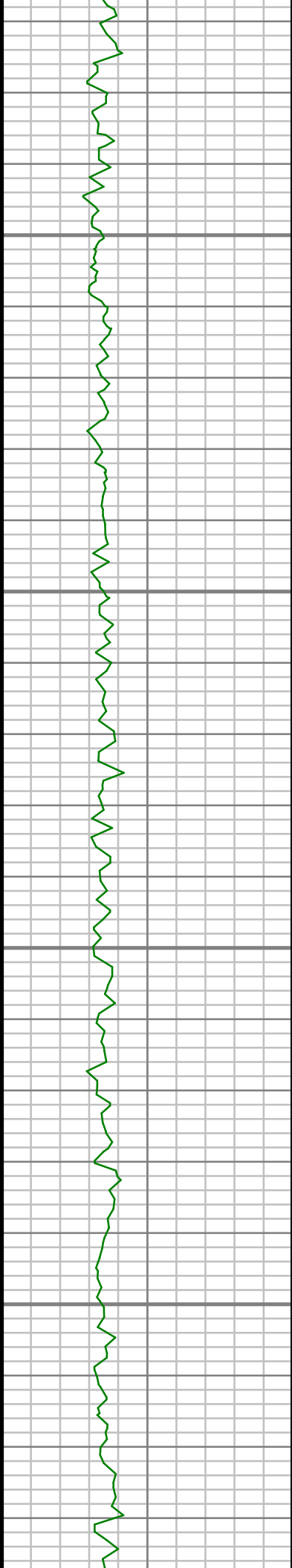
2750

2800

2850

2900



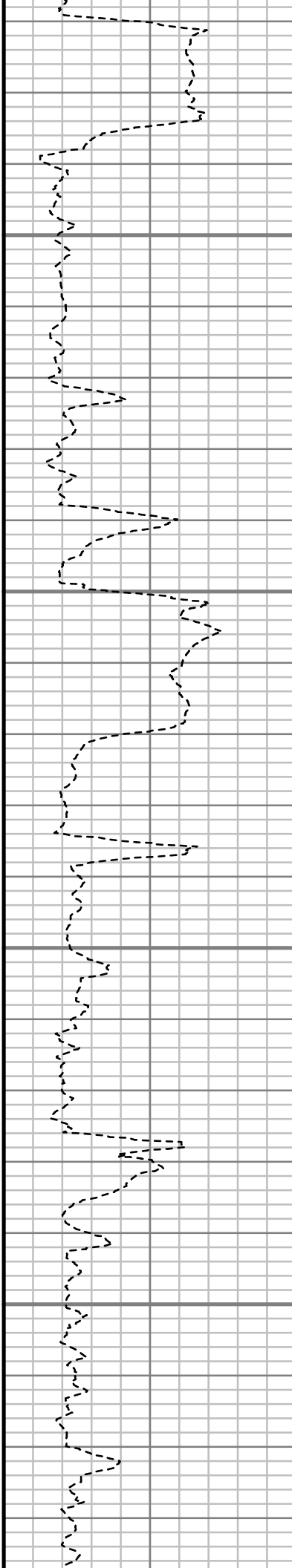


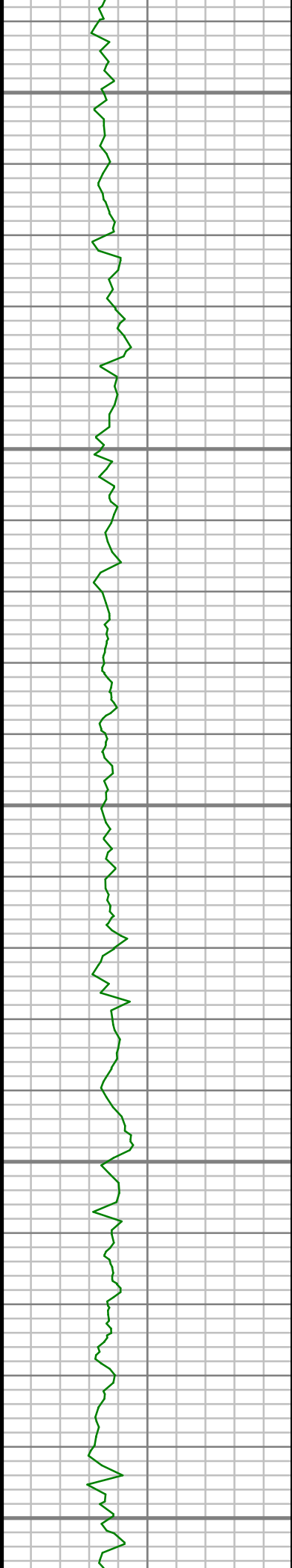
2950

3000

3050

3100





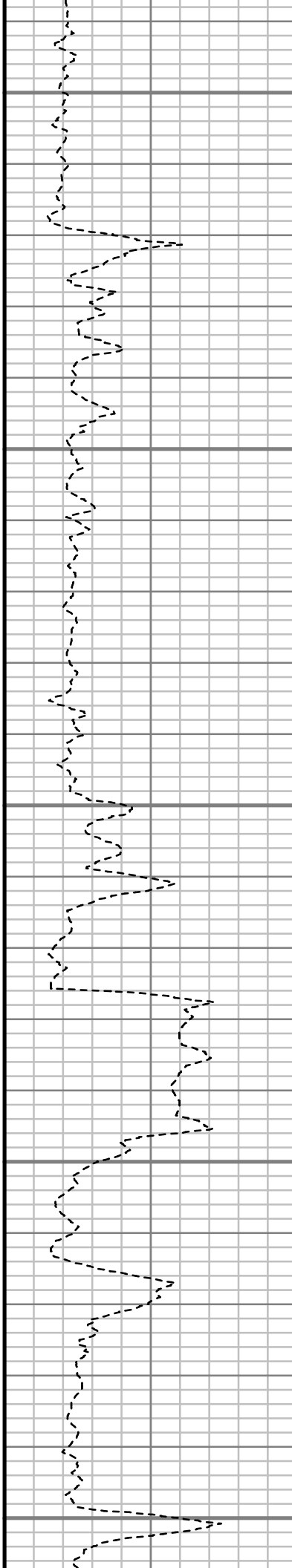
3150

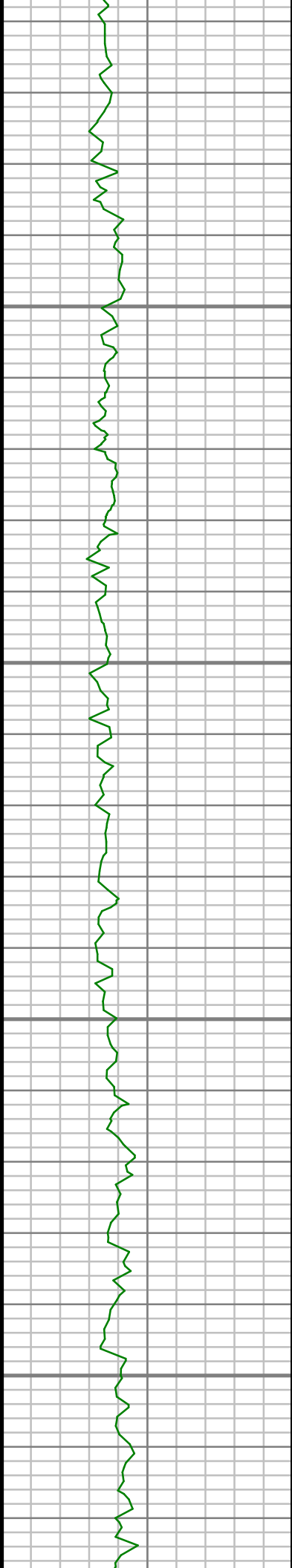
3200

3250

3300

3350



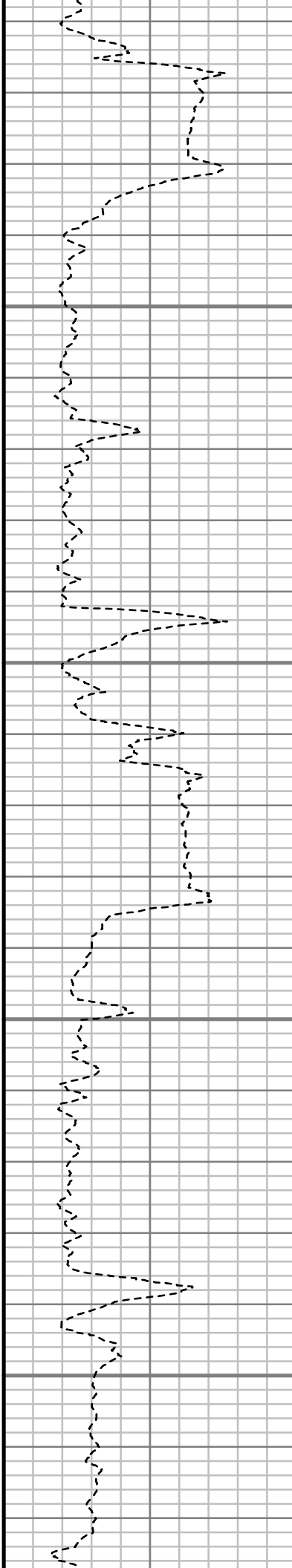


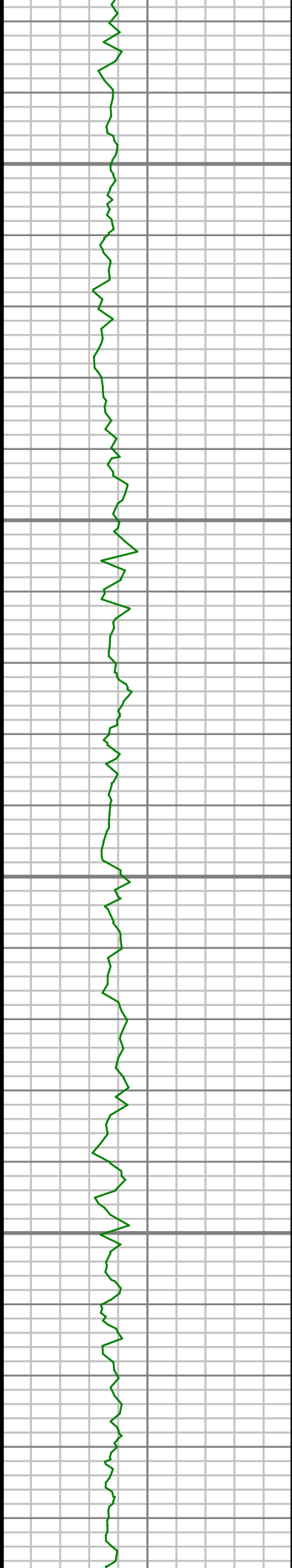
3400

3450

3500

3550



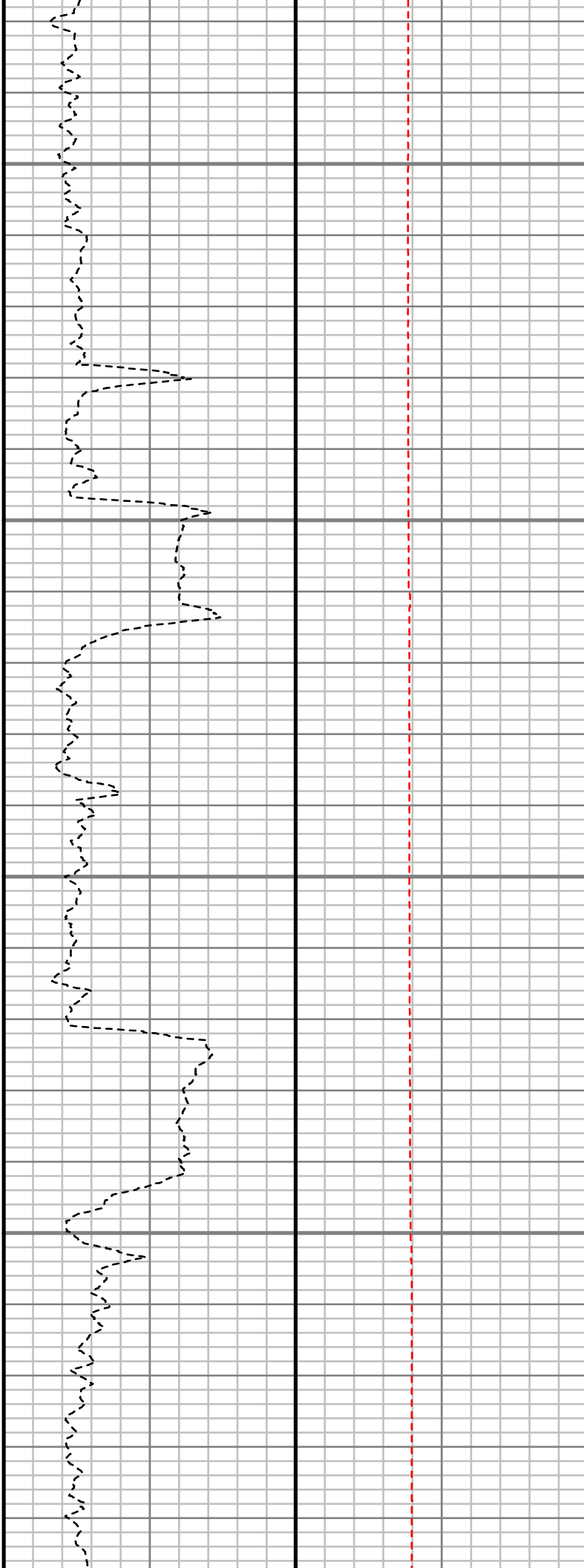


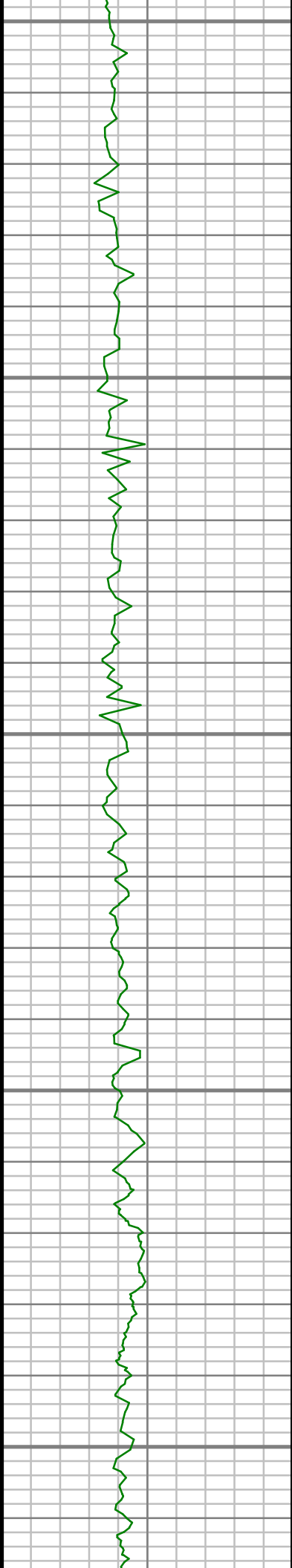
3600

3650

3700

3750





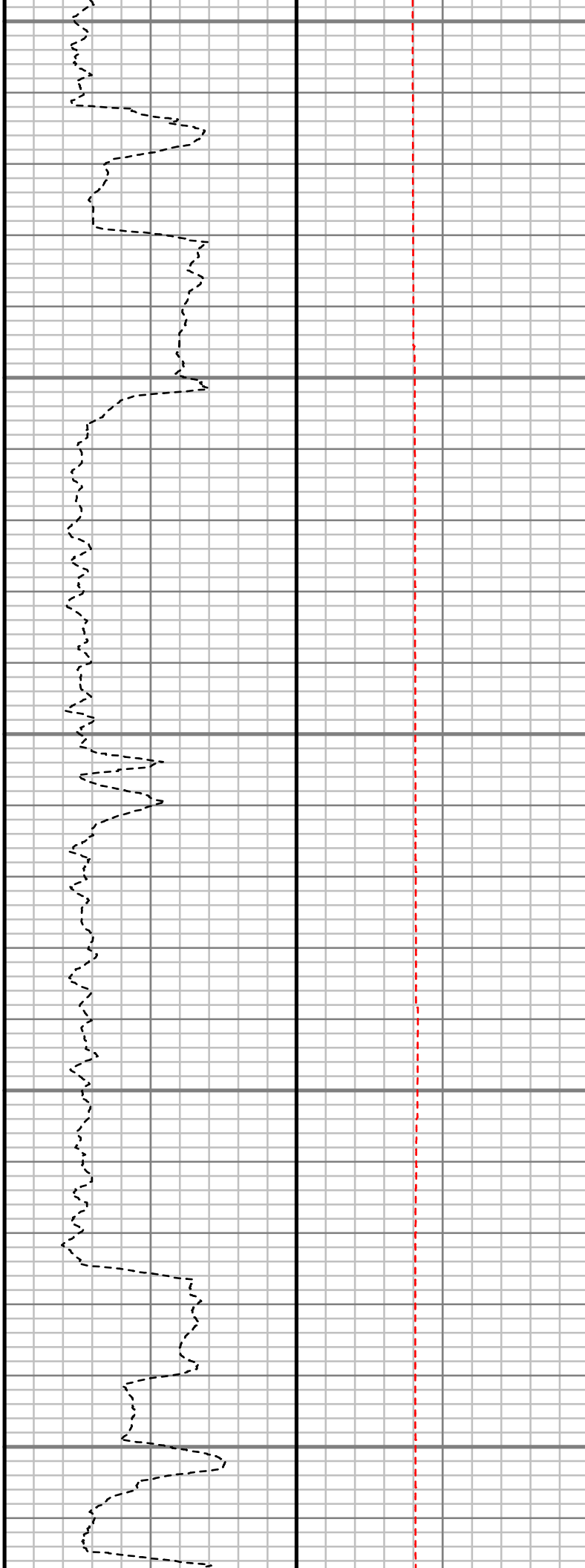
3800

3850

3900

3950

4000



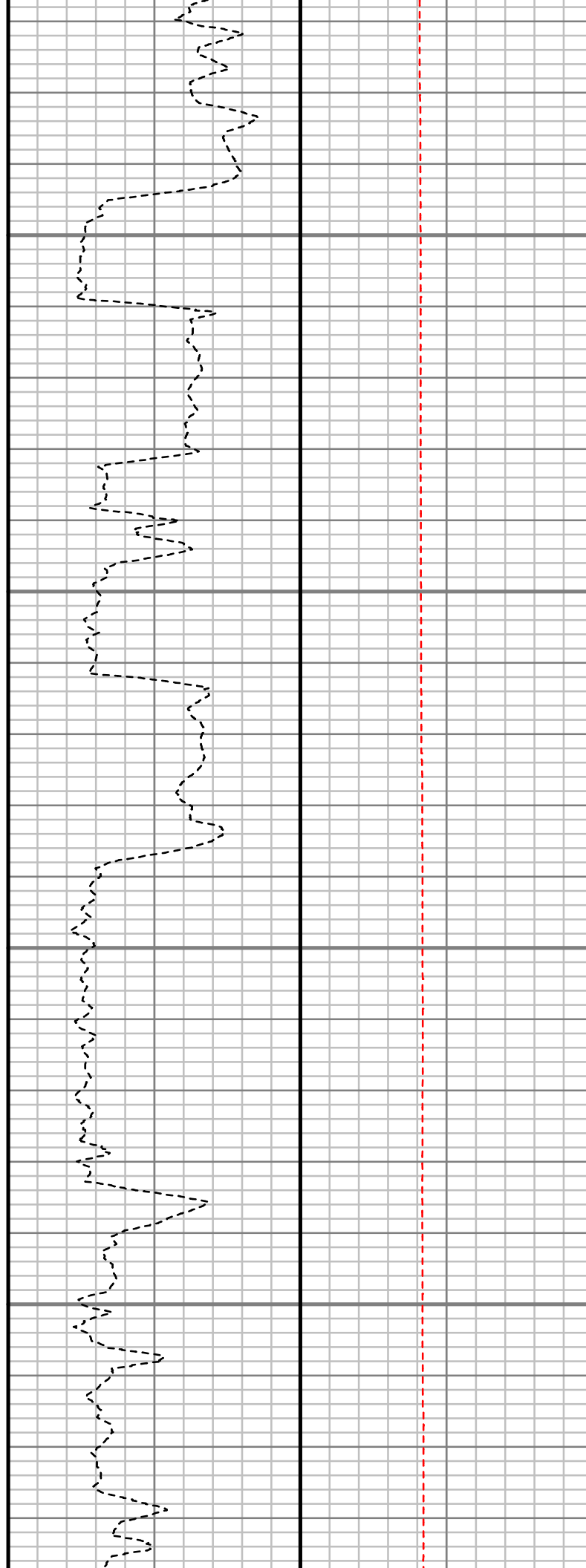


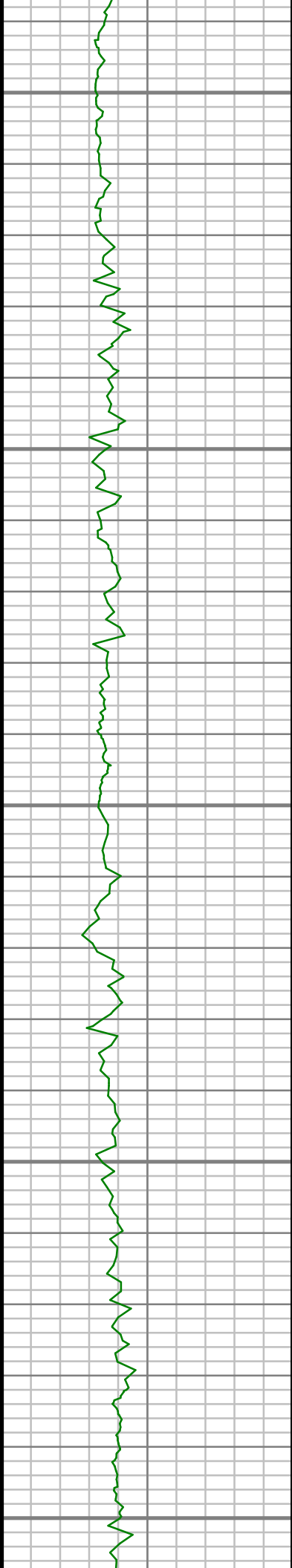
4050

4100

4150

4200





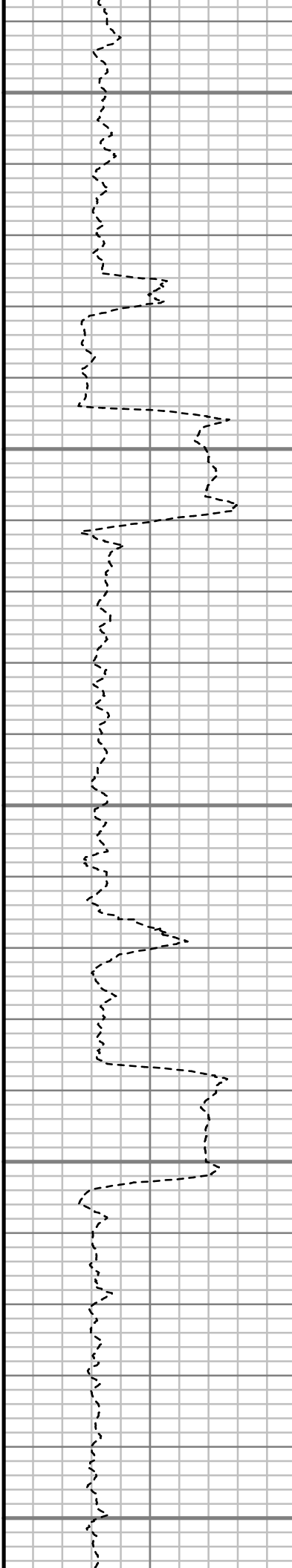
4250

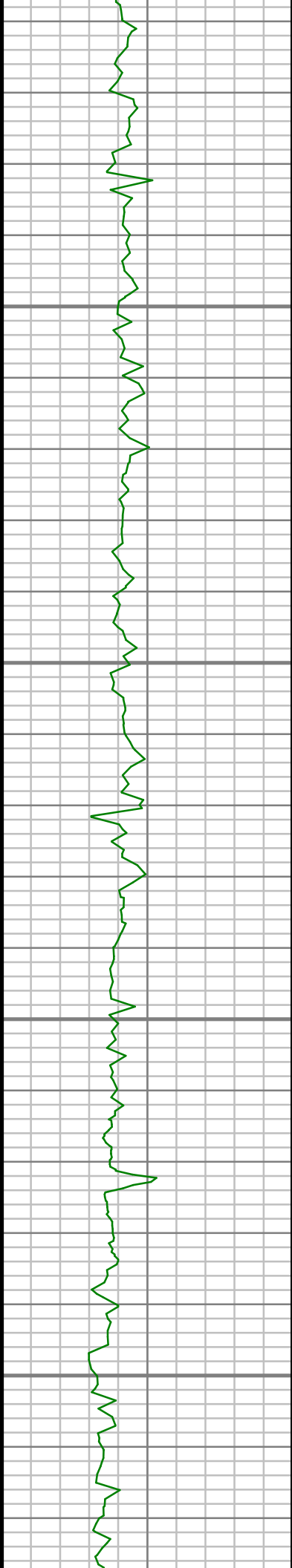
4300

4350

4400

4450



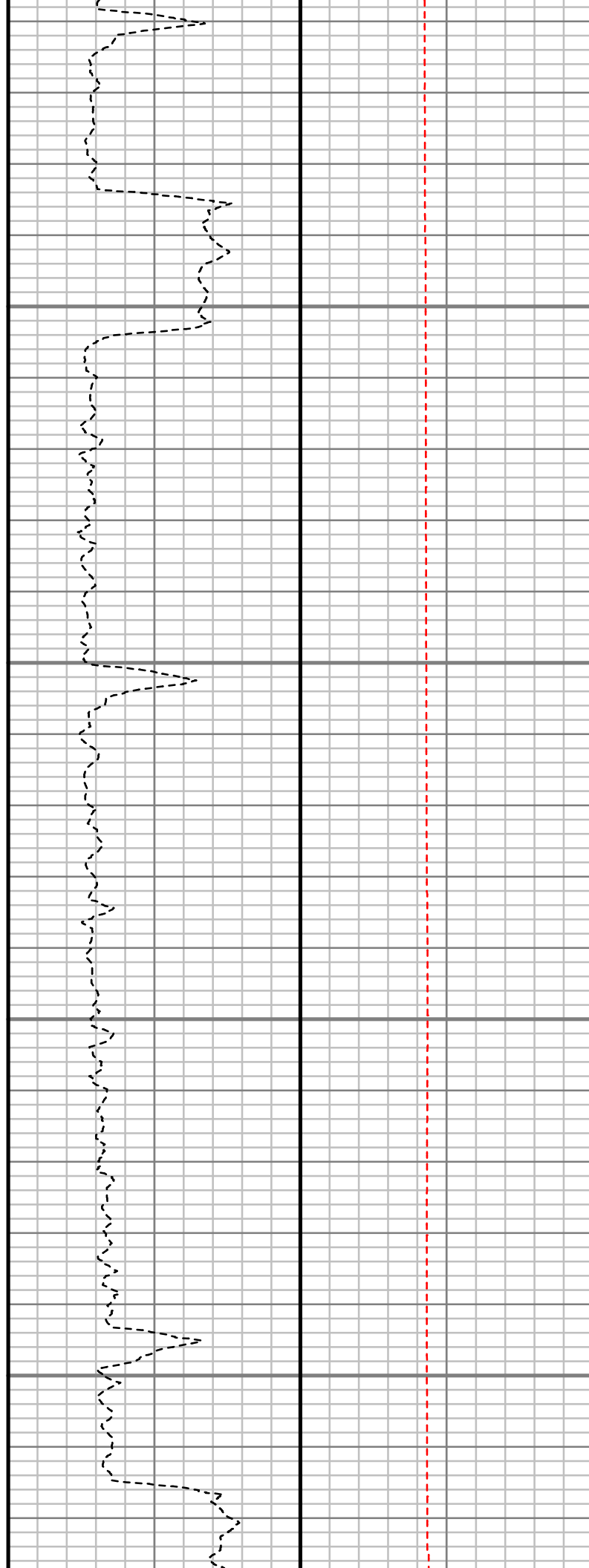


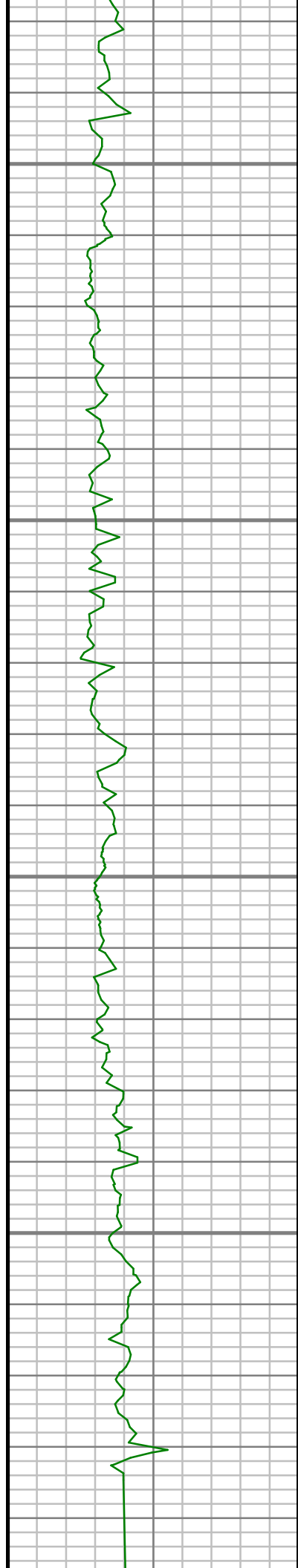
4500

4550

4600

4650



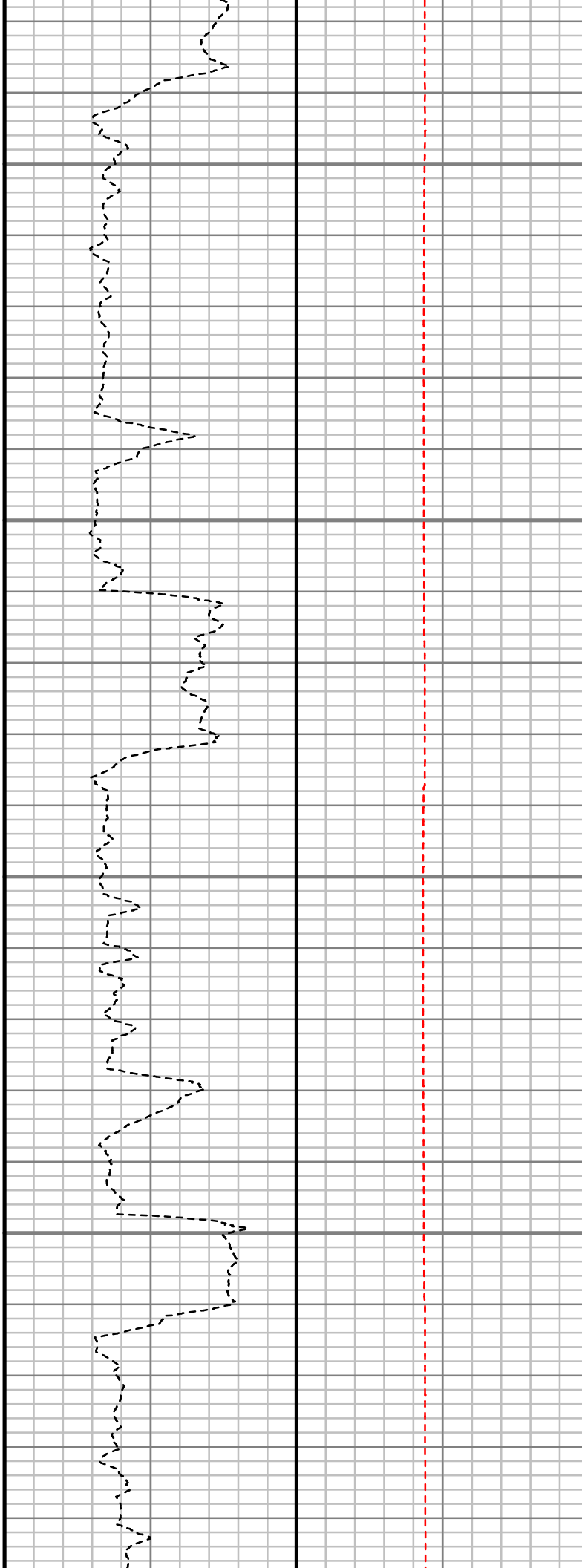


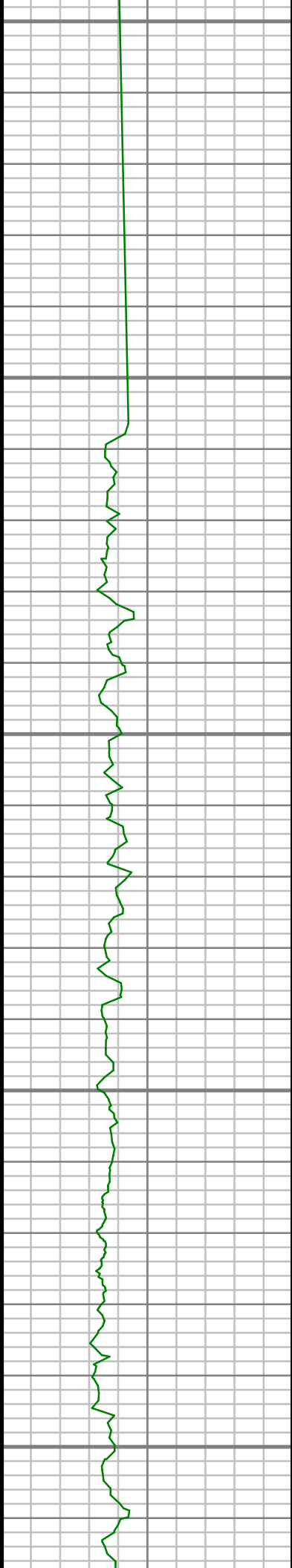
4700

4750

4800

4850





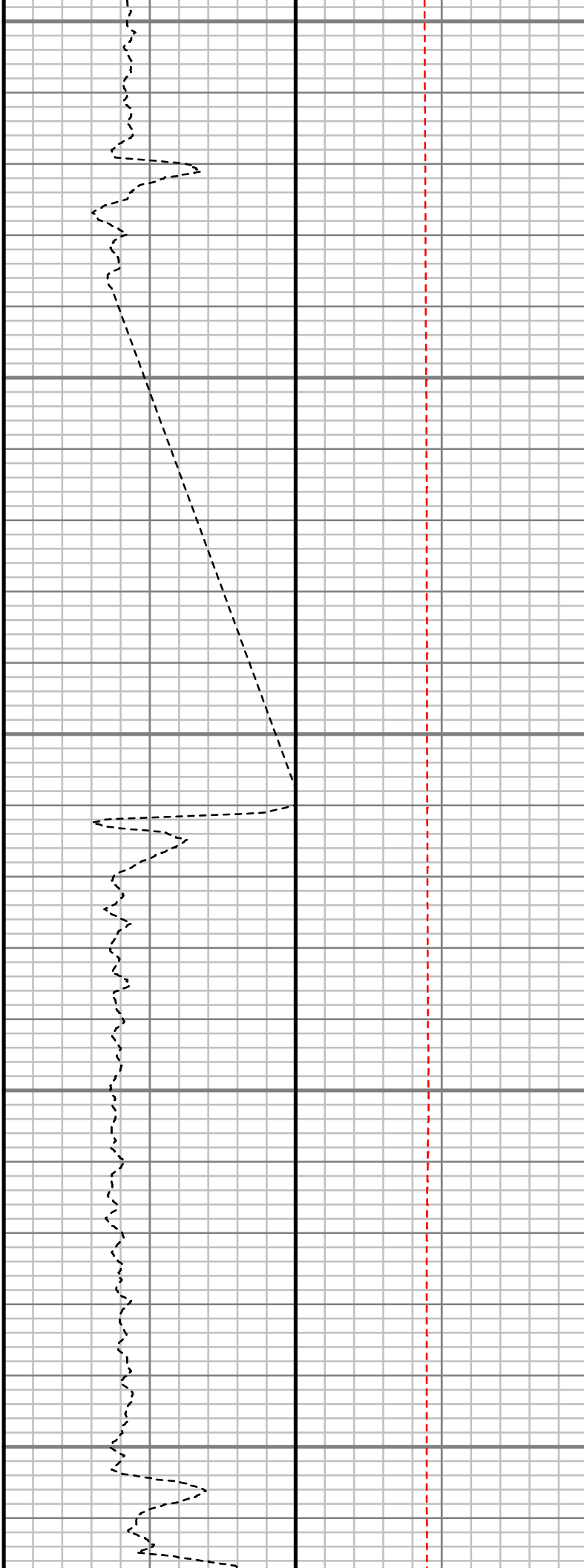
4900

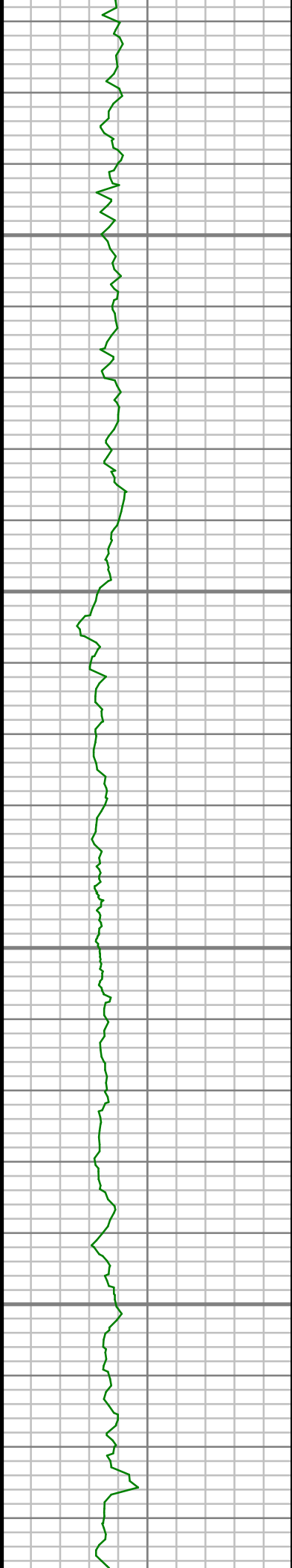
4950

5000

5050

5100



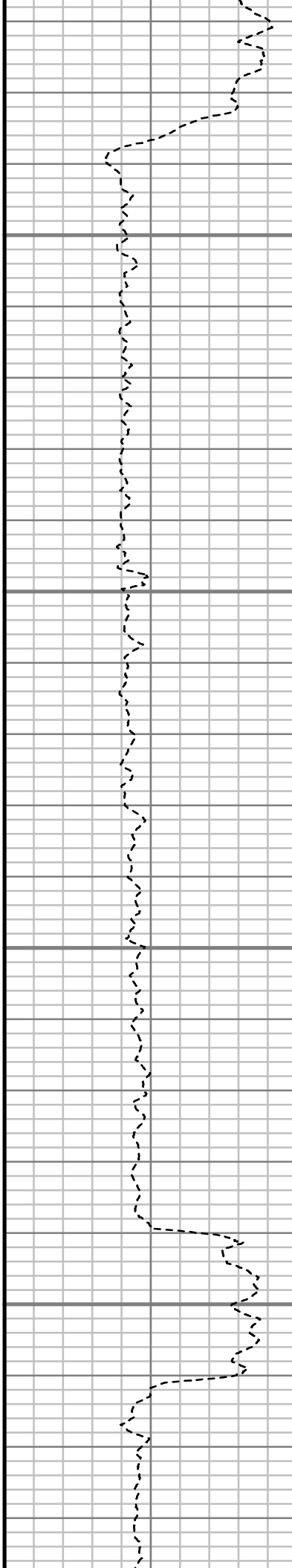


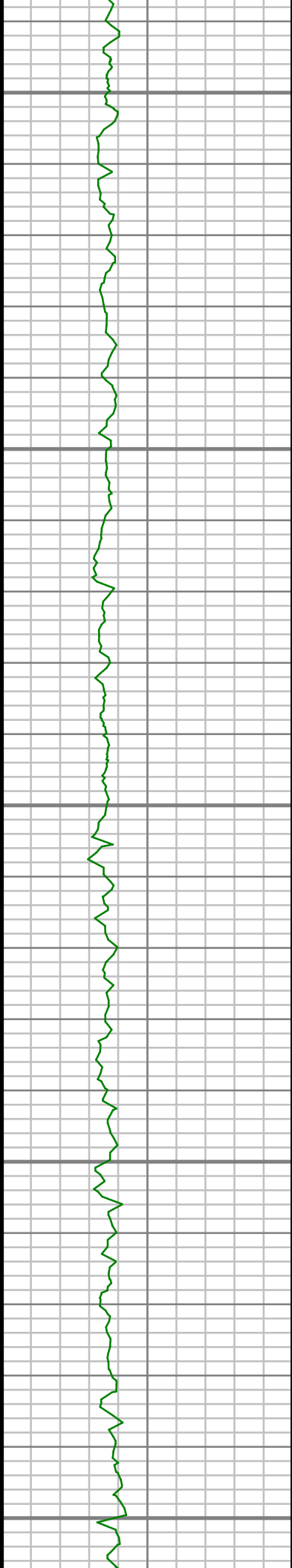
5150

5200

5250

5300





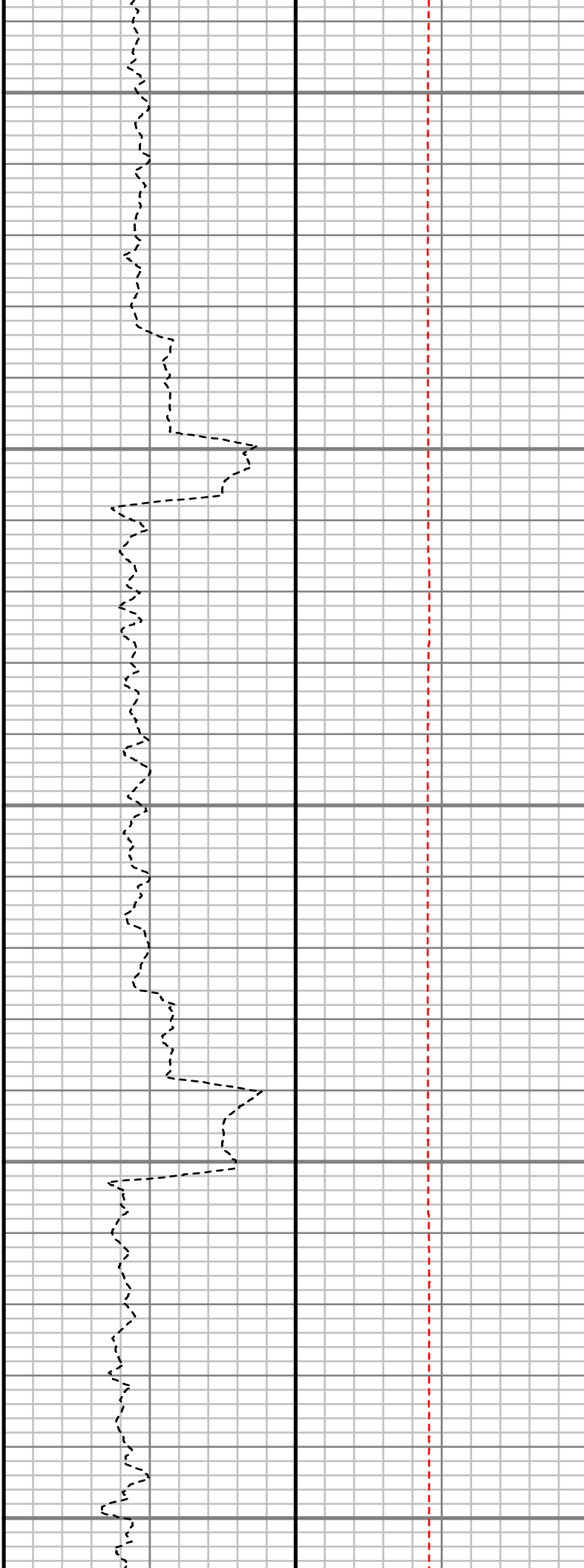
5350

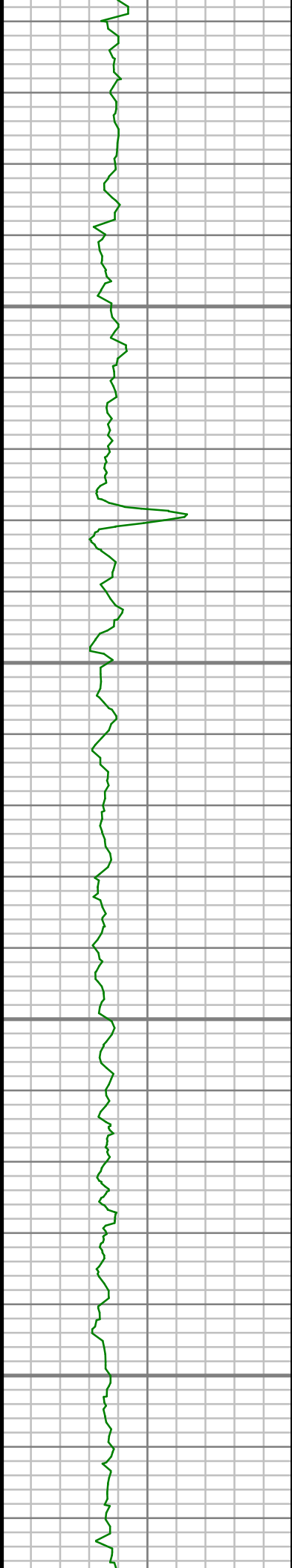
5400

5450

5500

5550



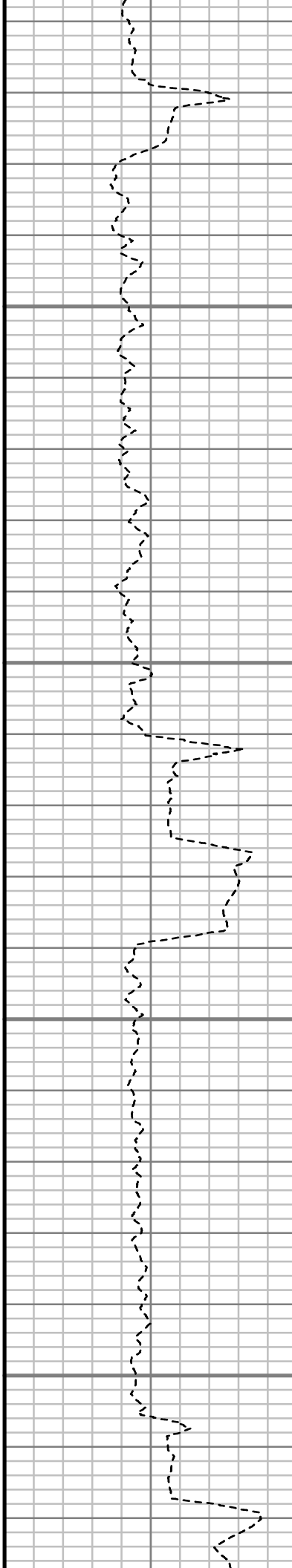


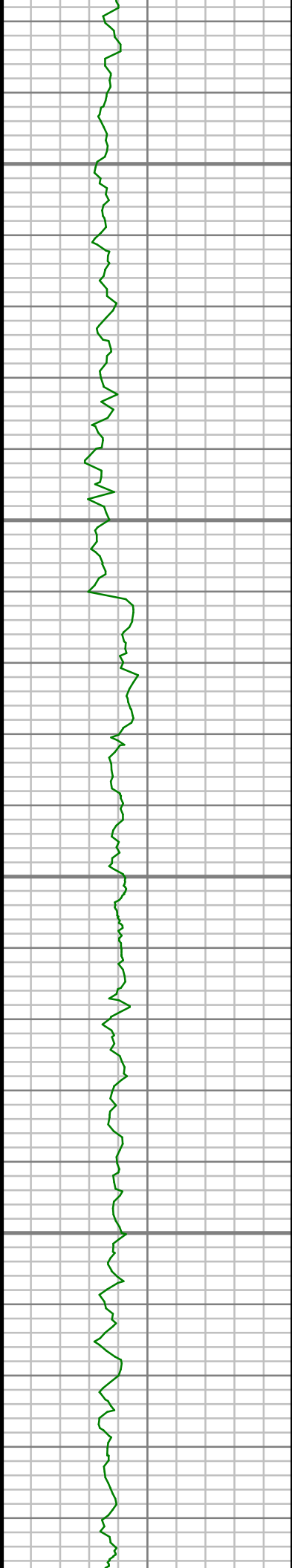
5600

5650

5700

5750



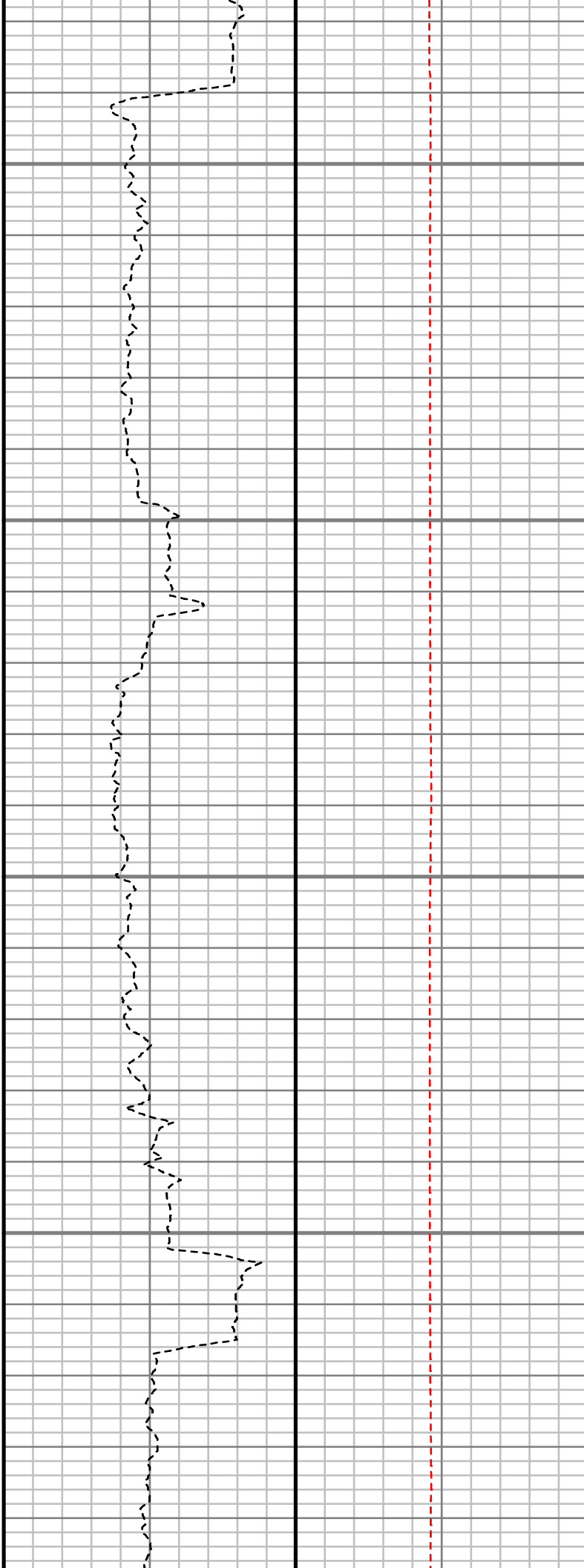


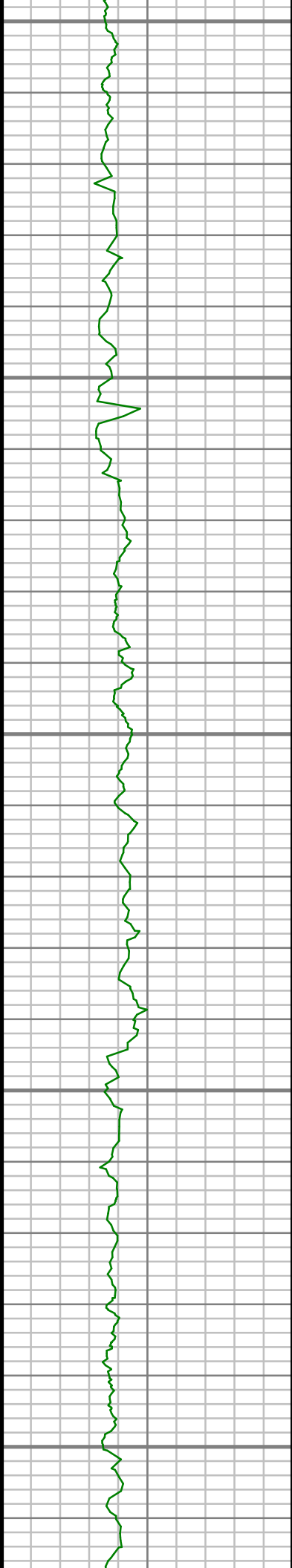
5800

5850

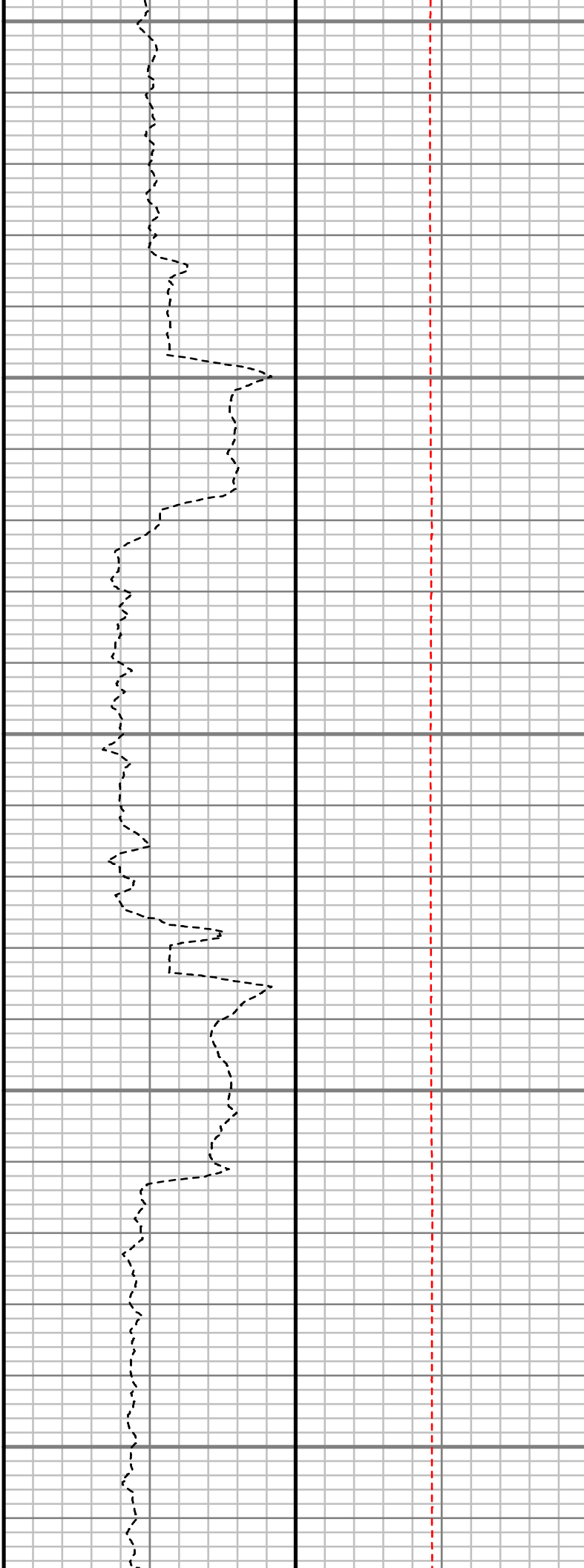
5900

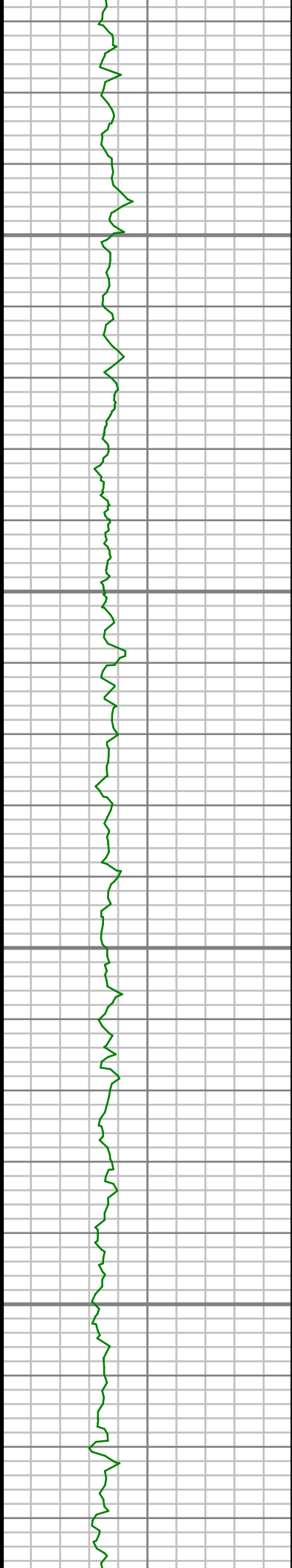
5950





6000
6050
6100
6150
6200



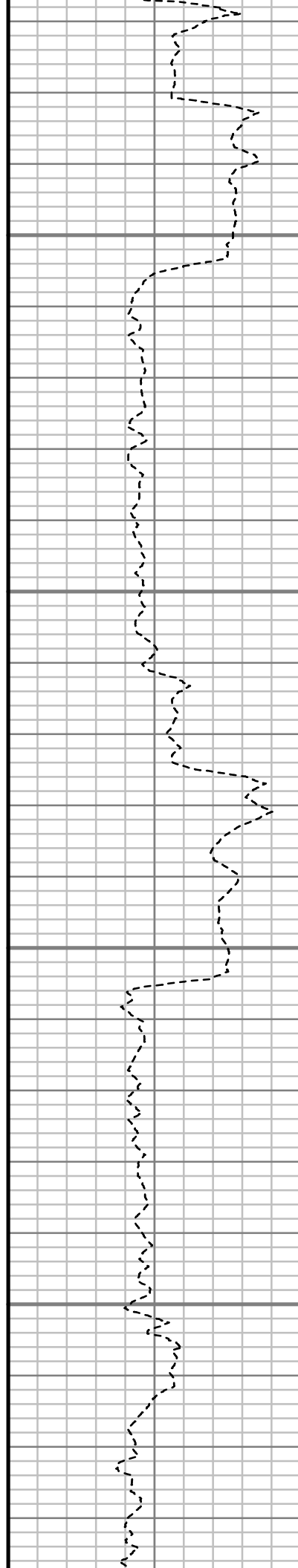


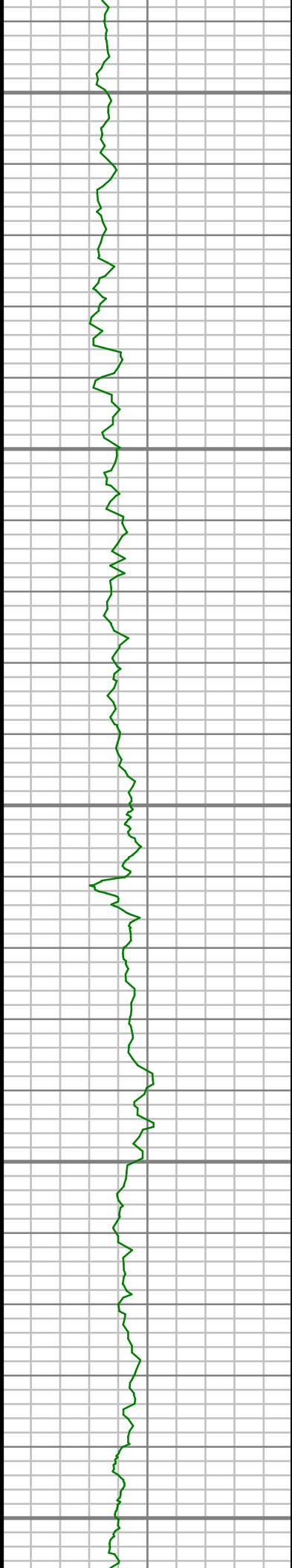
6250

6300

6350

6400





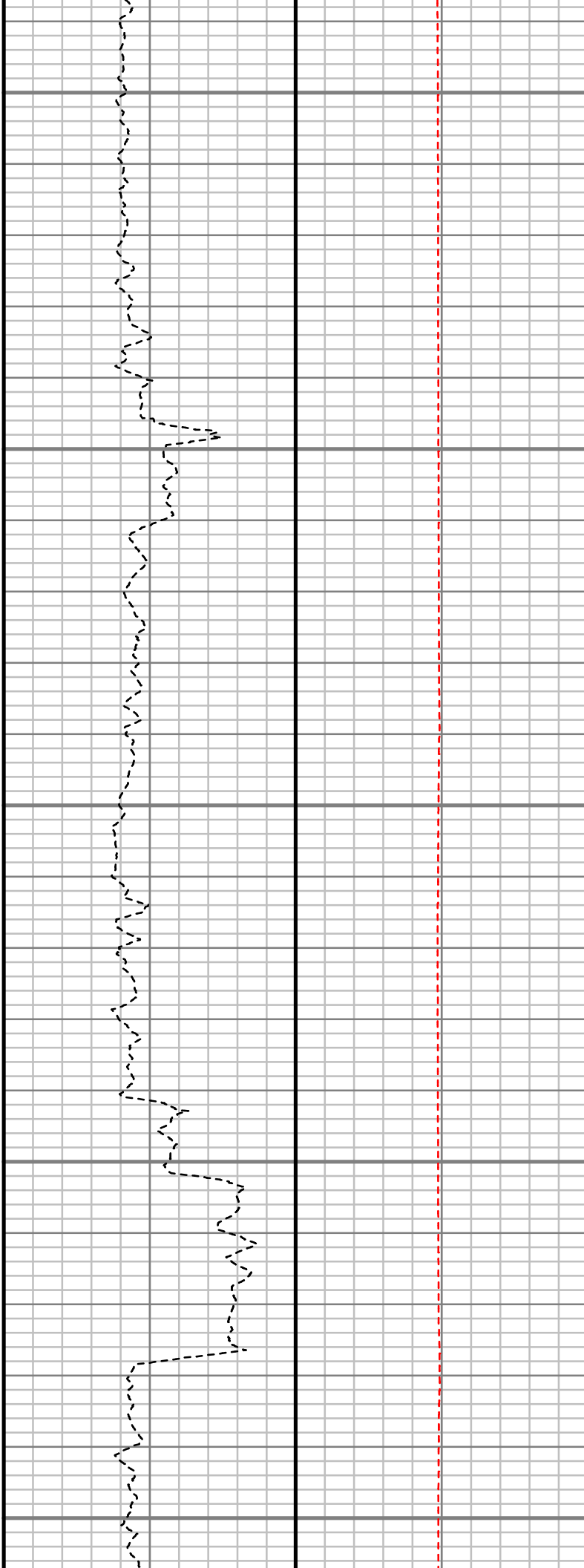
6450

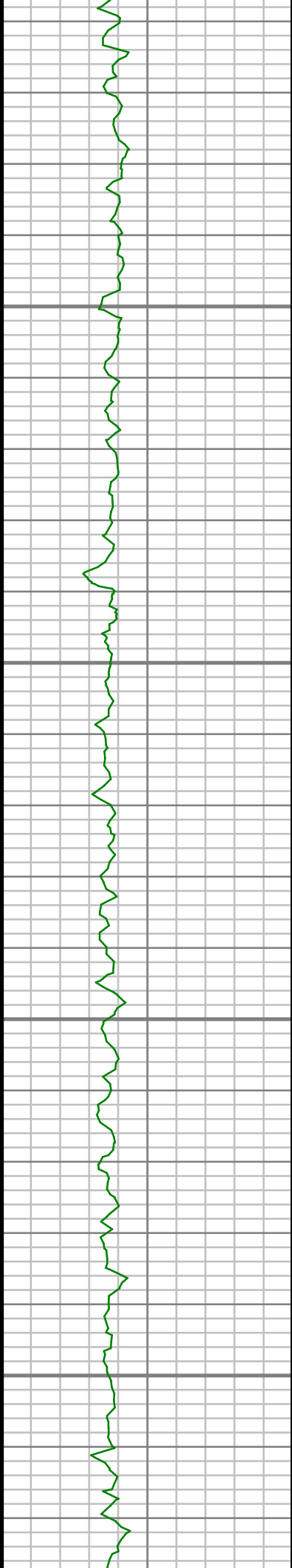
6500

6550

6600

6650



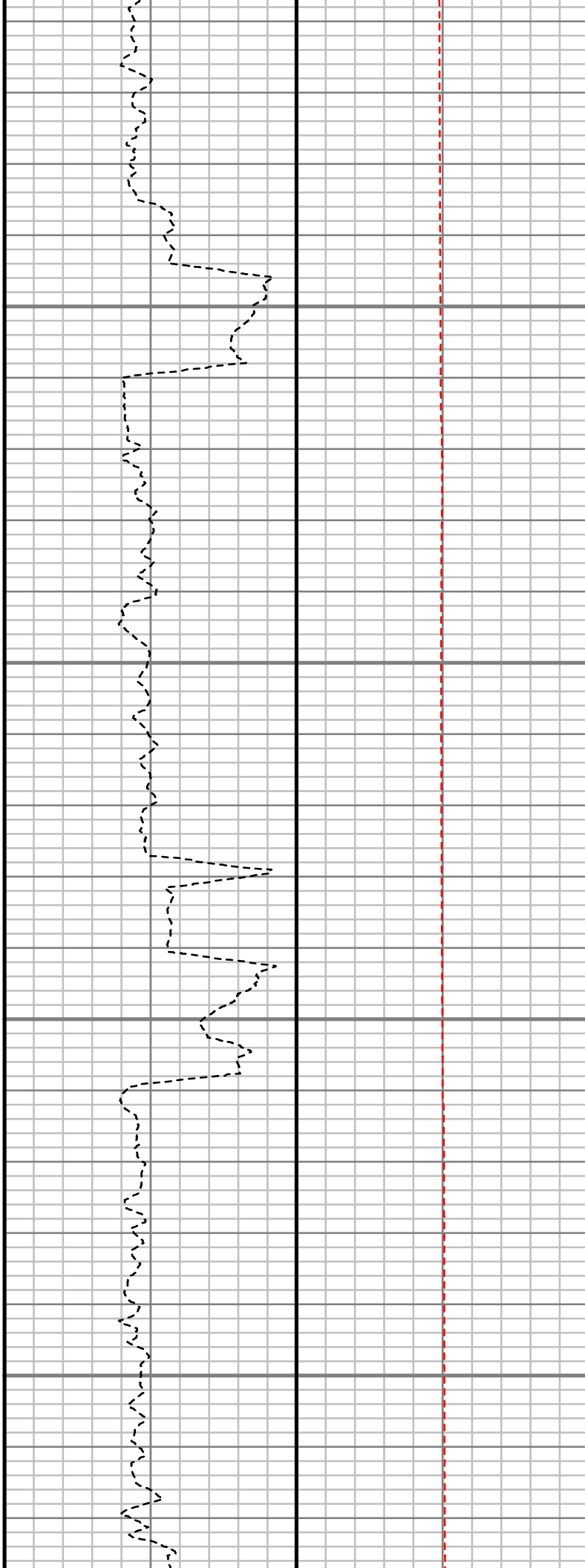


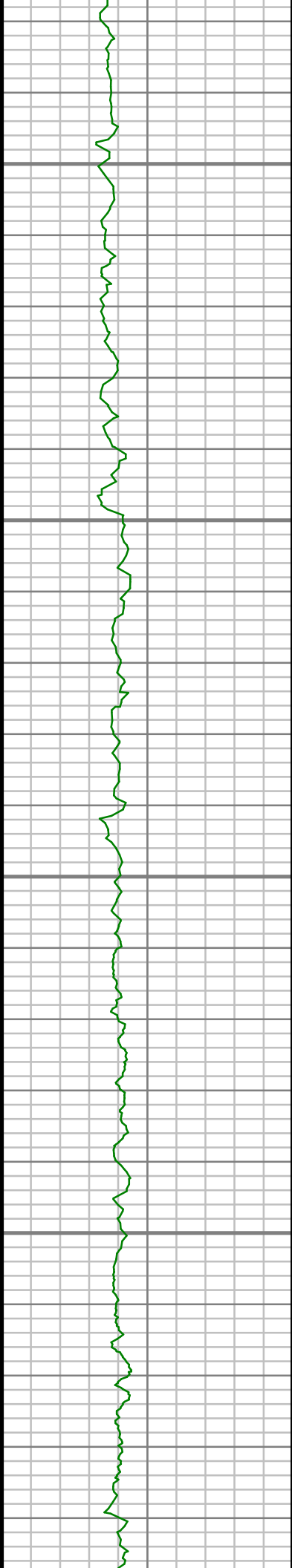
6700

6750

6800

6850



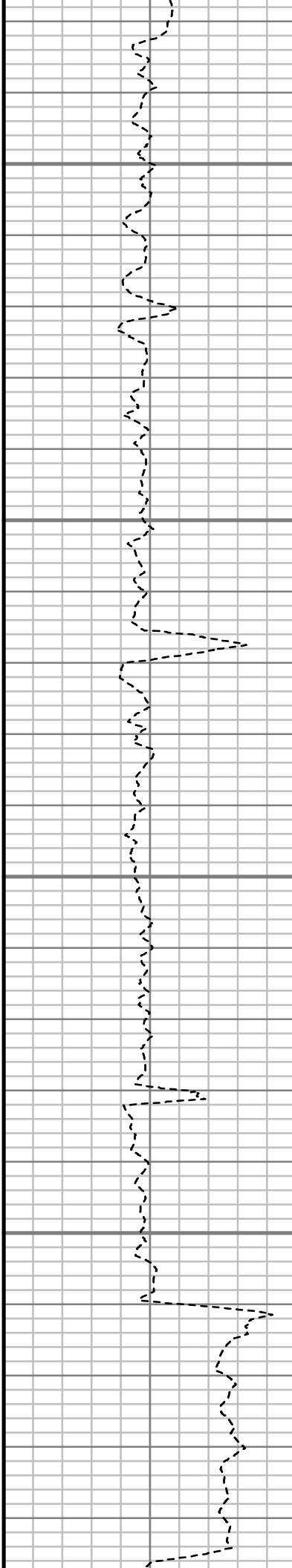


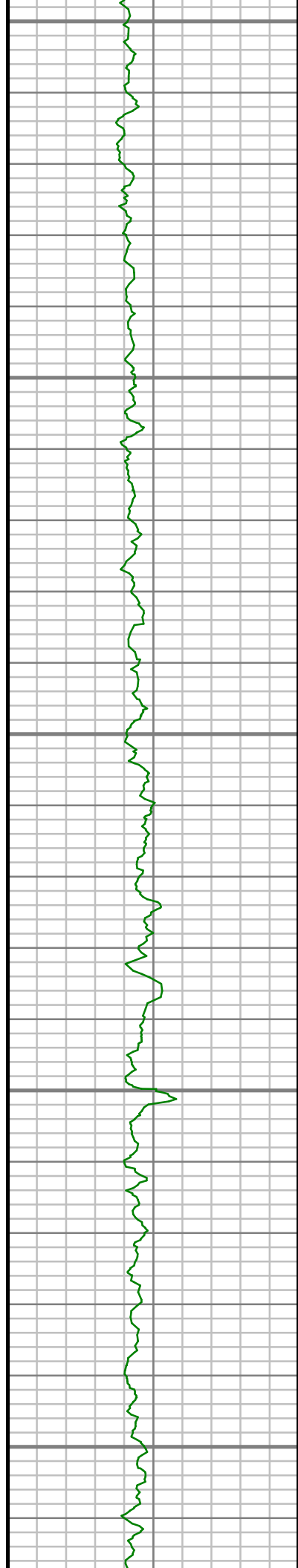
6900

6950

7000

7050





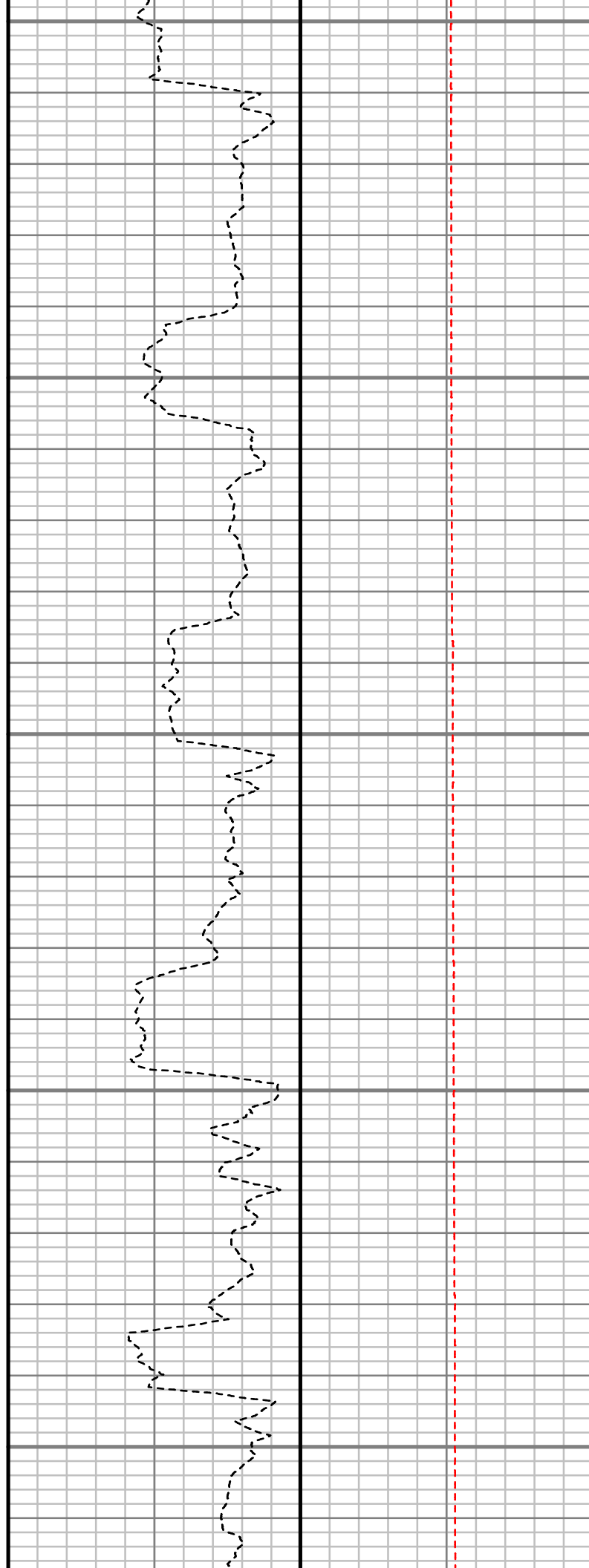
7100

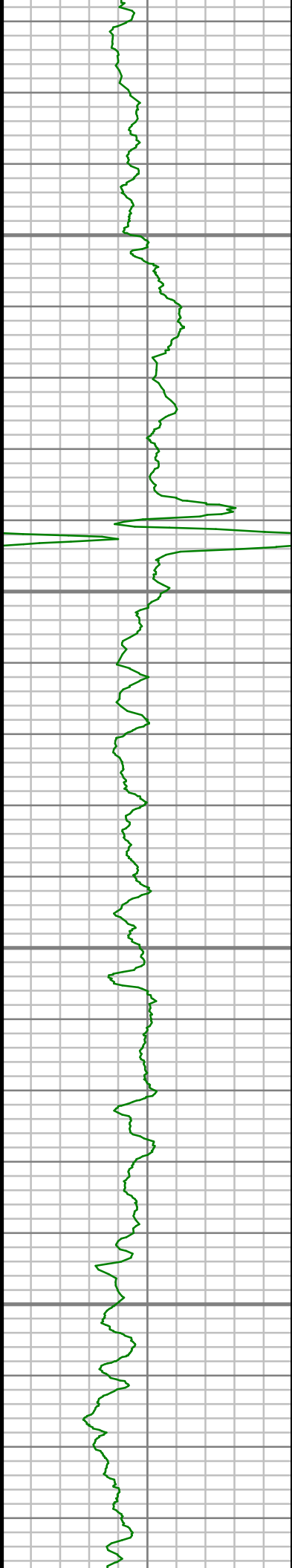
7150

7200

7250

7300



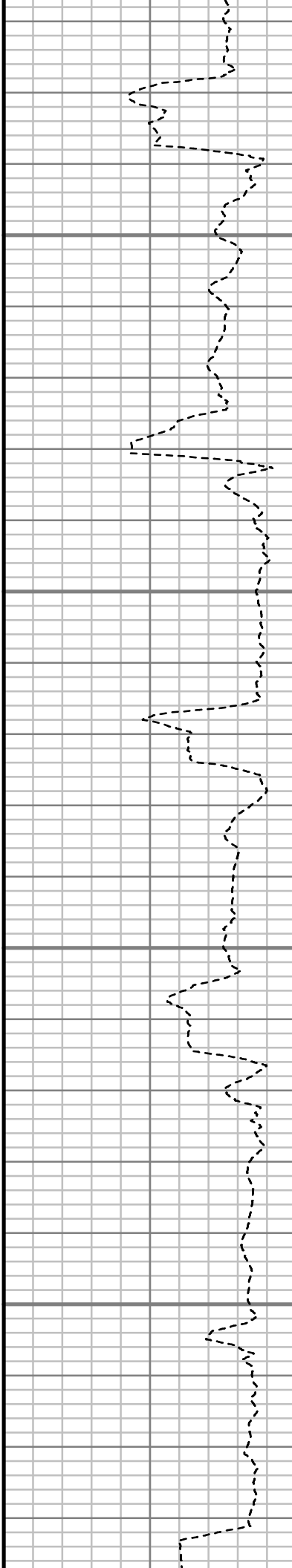


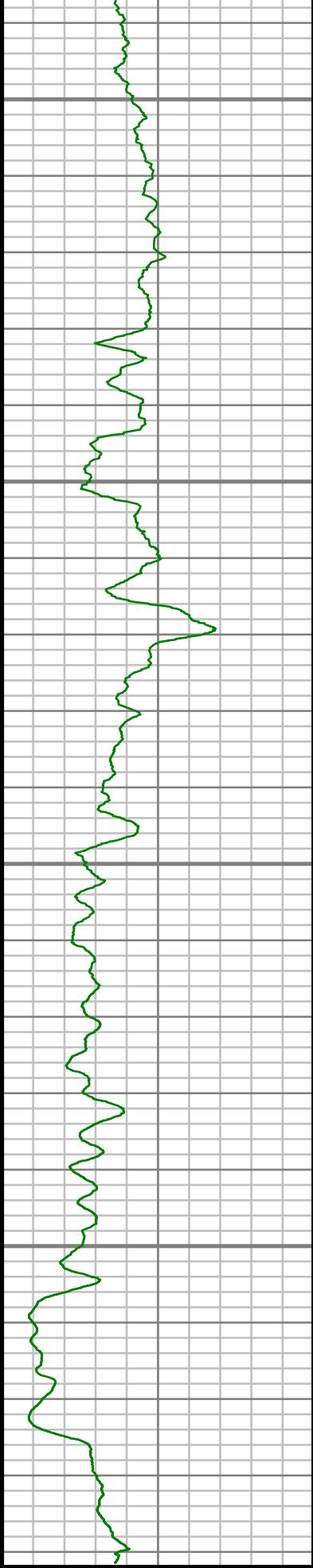
7350

7400

7450

7500





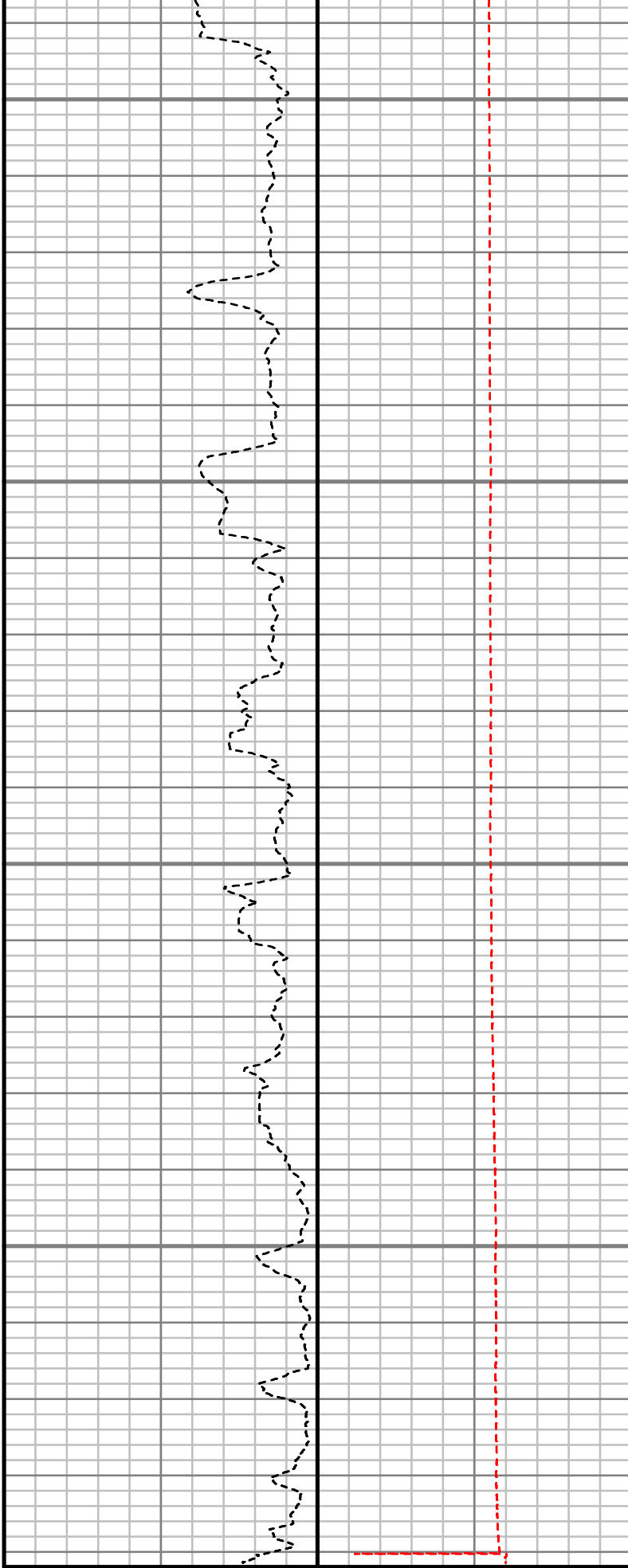
7550

7600

7650

7700

TRUE VERTICAL
1:240 (ft)



Rate of Penetration (ROP)

800 Unit = ft/hr 0

Tool Temperature (T-TEMP)

0 Unit = °F 300

Comments

Gamma Ray (GR)
0 Unit = aapi 150

--

UL DEPTH

--

--

--

Survey Report

Customer Name:	ANADARKO PETROLEUM CORP.						
Site Name:	NRC 14-8HZ PAD						
Well Name:	NRC 3C-8HZ						
Survey:	NRC 3C-8HZ						
Survey Date:	3/25/2014						
Magnetic Declination:	8.51 deg						
North Reference:	True North						
Calculation Method:	Minimum Curvature						
Section (VS) Ref:	0.00N (ft), 0.00E (ft), 0.00Azim (deg)						
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
100.00	0.49	184.19	100.00	-0.43	-0.43	-0.03	0.49
200.00	0.21	302.16	200.00	-0.76	-0.76	-0.22	0.62
300.00	0.45	143.72	300.00	-0.97	-0.97	-0.14	0.65
400.00	0.36	301.33	400.00	-1.13	-1.13	-0.18	0.79
500.00	0.74	155.94	499.99	-1.55	-1.55	-0.18	1.06
600.00	0.22	281.85	599.99	-2.10	-2.10	-0.11	0.89
700.00	0.70	148.63	699.99	-2.59	-2.59	0.02	0.87
800.00	0.26	329.14	799.99	-2.91	-2.91	0.23	0.96

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
900.00	0.62	189.41	899.99	-3.25	-3.25	0.02	0.84
1000.00	0.44	53.94	999.98	-3.56	-3.56	0.24	0.98
1100.00	0.51	295.00	1099.98	-3.15	-3.15	0.15	0.82
1134.00	0.61	323.62	1133.98	-2.94	-2.94	-0.09	0.86
1363.00	1.61	186.81	1362.95	-5.15	-5.15	-1.20	0.92
1455.00	3.21	182.15	1454.87	-9.01	-9.01	-1.45	1.75
1564.00	5.17	188.13	1563.57	-16.92	-16.92	-2.26	1.84
1656.00	6.13	188.73	1655.13	-25.88	-25.88	-3.59	1.04
1747.00	6.98	183.85	1745.53	-36.19	-36.19	-4.70	1.12
1839.00	7.42	179.87	1836.81	-47.71	-47.71	-5.06	0.72
1930.00	6.75	177.82	1927.11	-58.94	-58.94	-4.84	0.79
2023.00	6.19	180.73	2019.52	-69.41	-69.41	-4.70	0.70
2114.00	6.67	187.47	2109.95	-79.55	-79.55	-5.45	0.98
2206.00	7.49	193.15	2201.25	-90.69	-90.69	-7.51	1.17
2298.00	8.91	192.49	2292.30	-103.48	-103.48	-10.41	1.54
2389.00	9.84	187.82	2382.09	-118.05	-118.05	-12.99	1.32
2480.00	10.84	184.79	2471.61	-134.28	-134.28	-14.77	1.26
2572.00	9.91	183.76	2562.11	-150.80	-150.80	-16.01	1.04
2756.00	10.89	177.43	2743.09	-183.96	-183.96	-16.26	0.82
2848.00	10.18	179.63	2833.54	-200.77	-200.77	-15.82	0.89

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
2940.00	10.35	181.31	2924.07	-217.17	-217.17	-15.96	0.38
3032.00	12.15	186.77	3014.30	-235.04	-235.04	-17.29	2.26
3124.00	11.40	189.89	3104.36	-253.61	-253.61	-19.99	1.07
3215.00	9.59	193.58	3193.84	-269.84	-269.84	-23.31	2.12
3402.00	9.69	188.66	3378.20	-300.54	-300.54	-29.34	0.44
3496.00	11.03	191.15	3470.67	-317.18	-317.18	-32.27	1.51
3590.00	9.97	191.56	3563.09	-333.98	-333.98	-35.64	1.13
3684.00	8.96	180.41	3655.82	-349.27	-349.27	-37.32	2.22
3779.00	10.55	188.75	3749.45	-365.27	-365.27	-38.70	2.23
3873.00	11.27	184.87	3841.75	-382.92	-382.92	-40.79	1.09
3967.00	9.75	185.83	3934.17	-399.99	-399.99	-42.37	1.62
4156.00	13.17	182.36	4119.37	-437.44	-437.44	-44.89	1.84
4250.00	12.74	185.83	4210.98	-458.45	-458.45	-46.38	0.95
4344.00	12.40	179.48	4302.73	-478.85	-478.85	-47.34	1.51
4439.00	14.18	174.72	4395.19	-500.64	-500.64	-46.18	2.20
4533.00	13.29	181.45	4486.51	-522.91	-522.91	-45.39	1.95
4627.00	10.87	188.40	4578.42	-542.49	-542.49	-46.96	2.99
4816.00	12.33	179.11	4763.57	-580.31	-580.31	-49.25	1.25
4910.00	14.48	179.13	4855.00	-602.10	-602.10	-48.92	2.29

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
5099.00	11.05	181.40	5039.31	-643.85	-643.85	-49.00	1.83
5194.00	10.41	185.59	5132.65	-661.49	-661.49	-50.06	1.06
5288.00	9.47	185.08	5225.23	-677.65	-677.65	-51.57	1.01
5382.00	10.41	182.04	5317.82	-693.83	-693.83	-52.56	1.15
5477.00	9.80	184.96	5411.35	-710.47	-710.47	-53.56	0.84
5571.00	10.06	190.60	5503.94	-726.51	-726.51	-55.76	1.07
5666.00	8.81	188.54	5597.66	-741.86	-741.86	-58.37	1.36
5760.00	9.36	189.78	5690.48	-756.51	-756.51	-60.74	0.62
5854.00	11.38	188.83	5782.94	-773.21	-773.21	-63.46	2.15
5948.00	10.03	184.89	5875.30	-790.52	-790.52	-65.58	1.63
6042.00	9.35	183.59	5967.96	-806.29	-806.29	-66.76	0.76
6137.00	10.17	187.53	6061.59	-822.31	-822.31	-68.34	1.12
6231.00	10.06	191.85	6154.13	-838.57	-838.57	-71.11	0.82
6326.00	11.44	188.19	6247.46	-856.03	-856.03	-74.16	1.62
6420.00	11.08	189.06	6339.65	-874.18	-874.18	-76.91	0.43
6514.00	9.50	186.03	6432.13	-890.81	-890.81	-79.15	1.78
6609.00	6.97	179.94	6526.15	-904.36	-904.36	-79.96	2.81
6703.00	7.10	179.94	6619.44	-915.88	-915.88	-79.95	0.14
6798.00	6.10	187.84	6713.81	-926.75	-926.75	-80.63	1.42
6892.00	4.16	200.94	6807.43	-934.88	-934.88	-82.53	2.40

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
6986.00	2.99	196.73	6901.25	-940.41	-940.41	-84.46	1.28
7081.00	1.57	178.16	6996.17	-944.08	-944.08	-85.13	1.66
7128.00	1.18	176.80	7043.16	-945.21	-945.21	-85.08	0.84
7175.00	2.99	7.63	7090.14	-944.48	-944.48	-84.89	8.85
7222.00	7.38	0.36	7136.94	-940.24	-940.24	-84.71	9.41
7269.00	10.92	358.45	7183.34	-932.77	-932.77	-84.81	7.56
7316.00	14.25	359.63	7229.20	-922.53	-922.53	-84.96	7.09
7364.00	16.56	356.03	7275.47	-909.80	-909.80	-85.48	5.22
7411.00	19.06	1.32	7320.22	-895.44	-895.44	-85.77	6.32
7458.00	22.47	5.77	7364.16	-878.83	-878.83	-84.69	8.00
7505.00	25.12	359.43	7407.17	-859.91	-859.91	-83.88	7.83
7553.00	29.23	354.24	7449.87	-838.05	-838.05	-85.16	9.87
7600.00	32.60	350.56	7490.19	-814.13	-814.13	-88.39	8.22
7647.00	39.11	350.14	7528.26	-787.01	-787.01	-93.01	13.87
7694.00	43.69	348.68	7563.51	-756.47	-756.47	-98.74	9.95
7741.00	49.85	350.31	7595.69	-722.81	-722.81	-104.95	13.36
7788.00	53.56	353.85	7624.81	-686.29	-686.29	-110.01	9.85
7836.00	57.69	356.55	7651.91	-646.82	-646.82	-113.30	9.78
7883.00	61.52	358.43	7675.69	-606.33	-606.33	-115.06	8.84

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
7930.00	65.54	0.25	7696.64	-564.27	-564.27	-115.53	9.24
7977.00	70.78	1.01	7714.12	-520.66	-520.66	-115.05	11.24
8024.00	76.76	0.98	7727.25	-475.56	-475.56	-114.26	12.73
8119.00	87.95	0.98	7739.87	-381.57	-381.57	-112.65	11.78
8238.00	90.81	0.07	7741.16	-262.60	-262.60	-111.56	2.52
8333.00	90.84	0.83	7739.79	-167.61	-167.61	-110.81	0.79
8427.00	91.75	0.80	7737.67	-73.65	-73.65	-109.48	0.96
8522.00	92.49	1.18	7734.16	21.27	21.27	-107.83	0.88
8616.00	90.84	359.94	7731.43	115.23	115.23	-106.91	2.20
8711.00	89.56	357.92	7731.10	210.20	210.20	-108.69	2.51
8805.00	89.60	356.28	7731.79	304.08	304.08	-113.44	1.74
8899.00	88.99	354.55	7732.95	397.76	397.76	-120.95	1.95
8993.00	90.17	356.11	7733.63	491.44	491.44	-128.61	2.07
9088.00	90.77	356.26	7732.85	586.23	586.23	-134.93	0.66
9182.00	90.81	354.90	7731.56	679.94	679.94	-142.18	1.45
9277.00	88.89	354.28	7731.81	774.51	774.51	-151.14	2.12
9371.00	88.22	354.19	7734.18	868.00	868.00	-160.57	0.72
9466.00	88.39	355.60	7736.99	962.58	962.58	-169.02	1.49
9560.00	89.53	356.77	7738.70	1056.36	1056.36	-175.27	1.74
9654.00	89.80	358.05	7739.25	1150.26	1150.26	-179.52	1.38

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
9749.00	90.23	359.36	7739.22	1245.23	1245.23	-181.67	1.46
9843.00	91.17	0.39	7738.07	1339.22	1339.22	-181.87	1.48
9938.00	91.61	2.36	7735.76	1434.16	1434.16	-179.60	2.12
10032.00	90.60	3.96	7733.94	1528.00	1528.00	-174.42	2.01
10127.00	90.81	3.10	7732.77	1622.81	1622.81	-168.57	0.92
10221.00	91.45	3.06	7730.92	1716.65	1716.65	-163.52	0.68
10315.00	88.76	1.21	7730.76	1810.58	1810.58	-160.03	3.47
10410.00	88.32	0.10	7733.18	1905.54	1905.54	-158.94	1.26
10504.00	89.06	359.07	7735.33	1999.51	1999.51	-159.62	1.34
10599.00	89.43	358.20	7736.58	2094.47	2094.47	-161.88	1.00
10693.00	89.56	359.27	7737.41	2188.44	2188.44	-163.96	1.15
10787.00	90.67	0.33	7737.21	2282.44	2282.44	-164.28	1.63
10881.00	91.44	359.26	7735.48	2376.42	2376.42	-164.61	1.40
10976.00	89.50	358.85	7734.70	2471.40	2471.40	-166.17	2.09
11070.00	89.93	0.35	7735.17	2565.40	2565.40	-166.83	1.66
11165.00	89.26	0.64	7735.84	2660.39	2660.39	-166.02	0.77
11259.00	89.87	3.02	7736.56	2754.33	2754.33	-163.02	2.62
11353.00	90.60	2.85	7736.17	2848.21	2848.21	-158.20	0.81
11448.00	91.38	1.07	7734.53	2943.13	2943.13	-154.95	2.04

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
11542.00	90.87	0.96	7732.69	3037.10	3037.10	-153.29	0.55
11637.00	89.16	2.44	7732.66	3132.05	3132.05	-150.47	2.38
11731.00	90.03	2.08	7733.32	3225.97	3225.97	-146.76	1.01
11826.00	90.77	0.80	7732.65	3320.94	3320.94	-144.38	1.55
11920.00	89.97	359.79	7732.05	3414.93	3414.93	-143.90	1.37
12014.00	89.63	358.59	7732.38	3508.92	3508.92	-145.23	1.33
12109.00	90.44	0.68	7732.32	3603.91	3603.91	-145.83	2.36
12203.00	90.71	359.70	7731.38	3697.91	3697.91	-145.52	1.09
12298.00	88.69	358.50	7731.88	3792.89	3792.89	-147.01	2.47
12392.00	88.89	357.17	7733.87	3886.80	3886.80	-150.56	1.43
12486.00	89.73	359.00	7735.00	3980.73	3980.73	-153.70	2.14
12580.00	90.67	357.91	7734.67	4074.70	4074.70	-156.23	1.53
12674.00	89.53	359.49	7734.50	4168.67	4168.67	-158.37	2.07
12769.00	89.83	358.53	7735.03	4263.65	4263.65	-160.00	1.06
12867.00	90.77	357.56	7734.51	4361.59	4361.59	-163.34	1.38

5" = 100' FEET TVD