

**Premier Directional Drilling**

12941 North Freeway  
#400  
Houston, TX 77060  
281-673-4000

**BAT 3N2-9HZ**  
**Scale 5":100' - MD**  
**6/1/2015 6:47 AM**

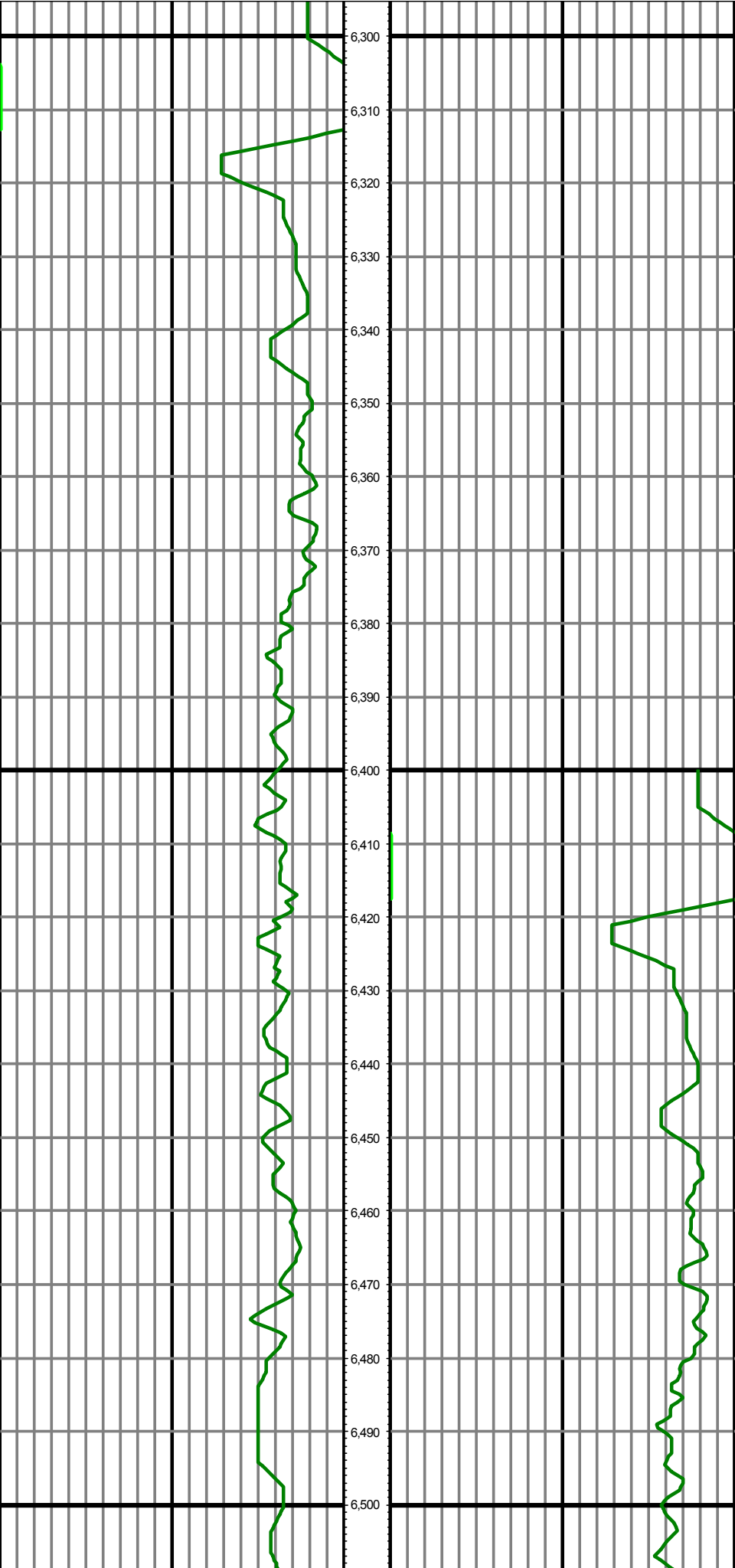
**Oper. Company:** Anadarko Petroleum Corporation**State:** CO**Well:** BAT 3N2-9HZ**County:** Weld**Field:** Wattenberg/Niobrara**Country:** USA**Rig:** H&P 311**Location:** 1N 65W Sect.9**Well ID:** 05123412870000**Start Date:** 05/30/2015 21:49:00**Job Number:** R15242**End Date:** 06/01/2015 04:55:00

**Notes:** LWD Real Time Log  
Gamma Correction Determined by Pipe ID & OD, Mud Weight & Bit Size

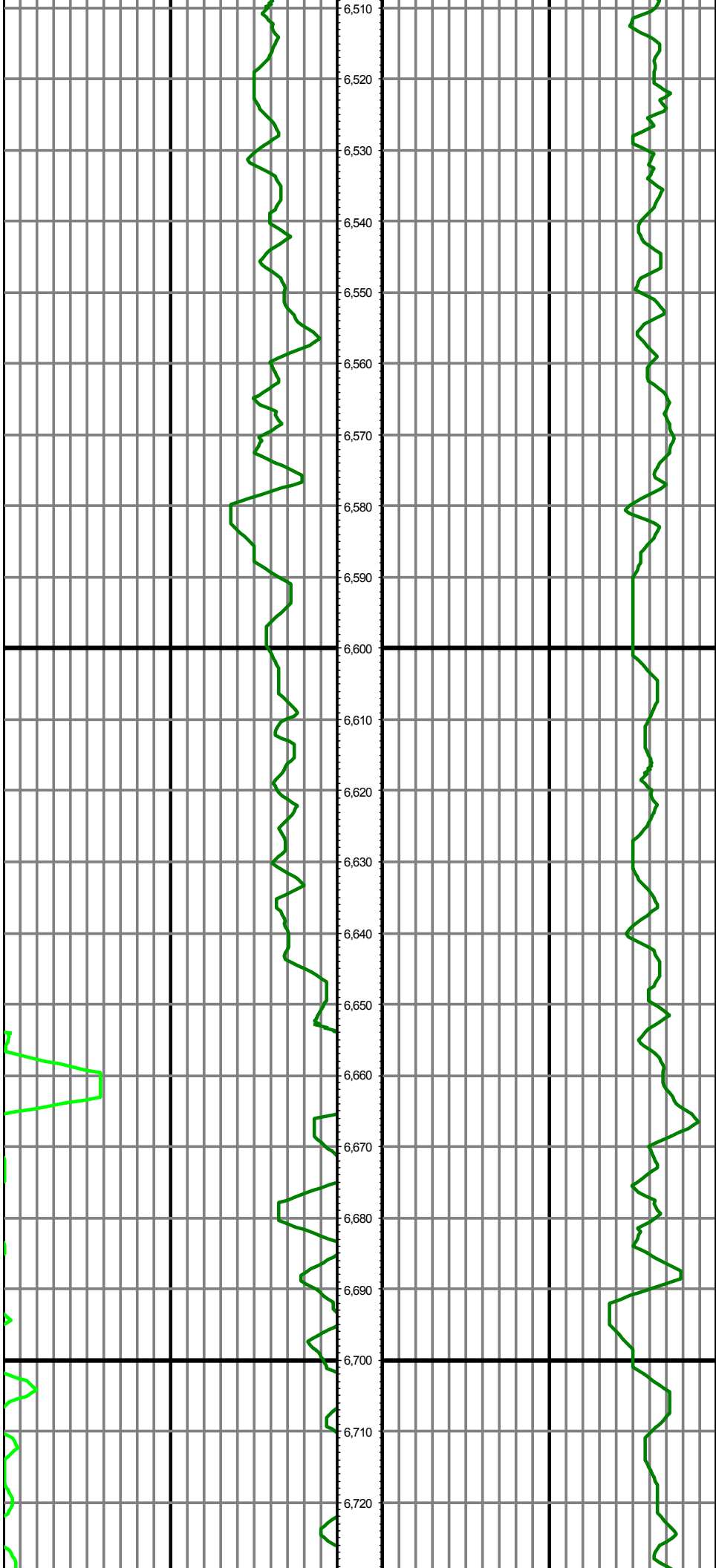
**Latitude:** 40.060444**Elev KB:** 4956'**Longitude:** -104.668863**Elev DF:** 4956'**Elev GL:** 4931'**Notes:** Datum: NAD 1983Map Zone: 13N (108W to 102W)Total Correction: 8.13°(Mean Mag Var)Grid Convergence: 0.00° (True N)**Operator 1:** Robert Grossman**Operator 2:** Mike Gunther**Notes:** Smoothing: 7Gap Fill: 10Survey Tool Type: Mud PulseCalculation Method: Minimum Curvature

Tool Run Data	Run #1	Run #2	Run #3	Run #4	Run #5
Tool S/N	214				
Bit Size	7 7/8				
Cal Factor	5.369				
Gamma Offset	50.00				
Resistivity Offset	0.00				
Start Depth	1596.00				
StartDate	5/30/2015				
StartTime	1:15 AM				
EndDepth	11878.00				
EndDate	6/1/2015				
EndTime	3:00 PM				
Mud Type	OBM				
Mud Weight	9.5				
Funnel Viscosity	55				
Plastic Viscosity	17				
Yield Point	10				
Gel Strength	NA				
Solids Content	7.9				
Sand Content	NA				
Mud Alkalinity	3.2				
Filtrate Alkalinity	NA				
Chlorides	53000				
Mud RM	NA				
Mud RMF	NA				
Mud RMC	NA				
Mud RM at BHT	NA				
Temperature	NA				
Hole Data			Casing Data		
Size	From	To	Size	From	To
13.5	0.00	1596.00	9.625	0.00	1581.00
7.875	1596.00	11878.00	5.5	0.00	11878.00

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 interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from an interpretation made by any of our officers, agents, or employees.

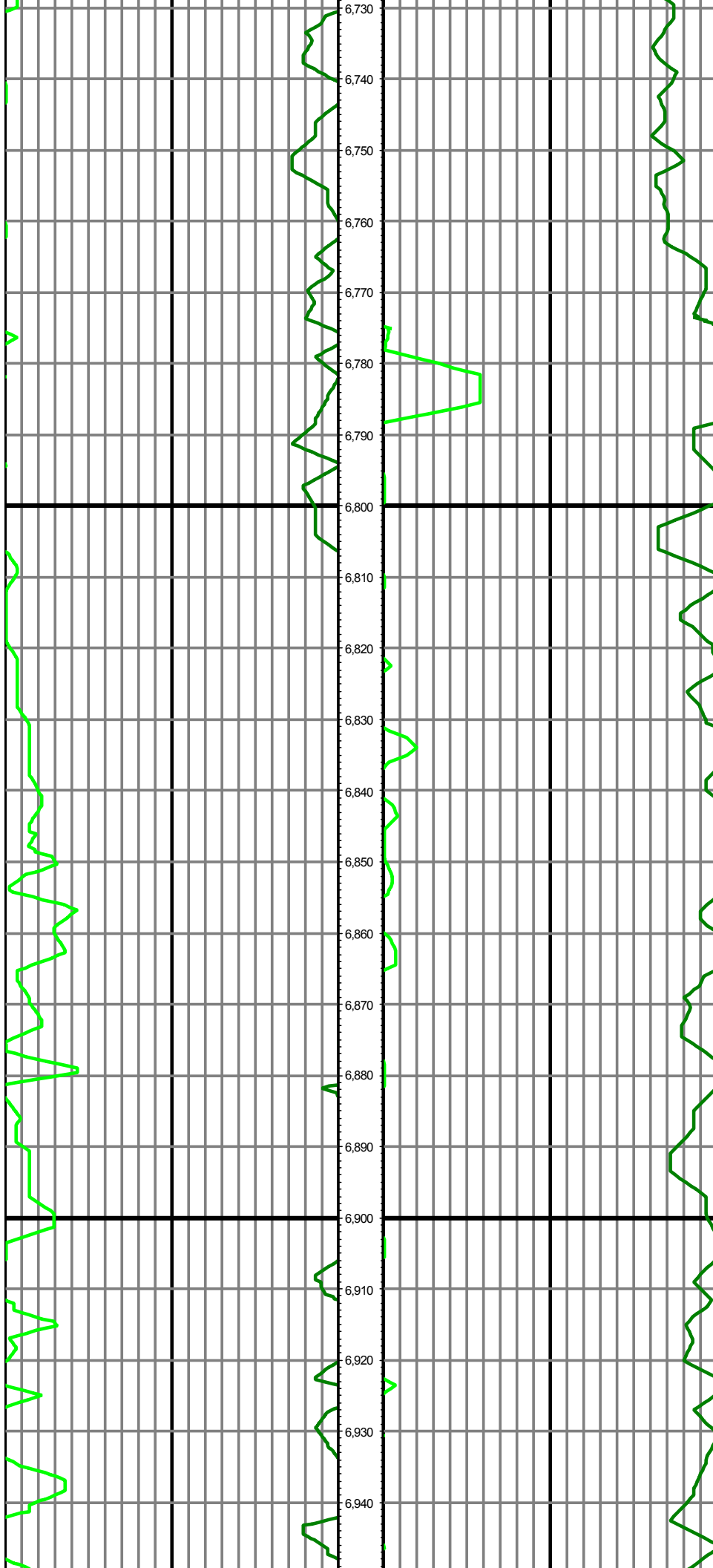


MD: 6484.00 INC: 0.40 AZ: 329.20 TVD: 6379.27 VS: -797.03



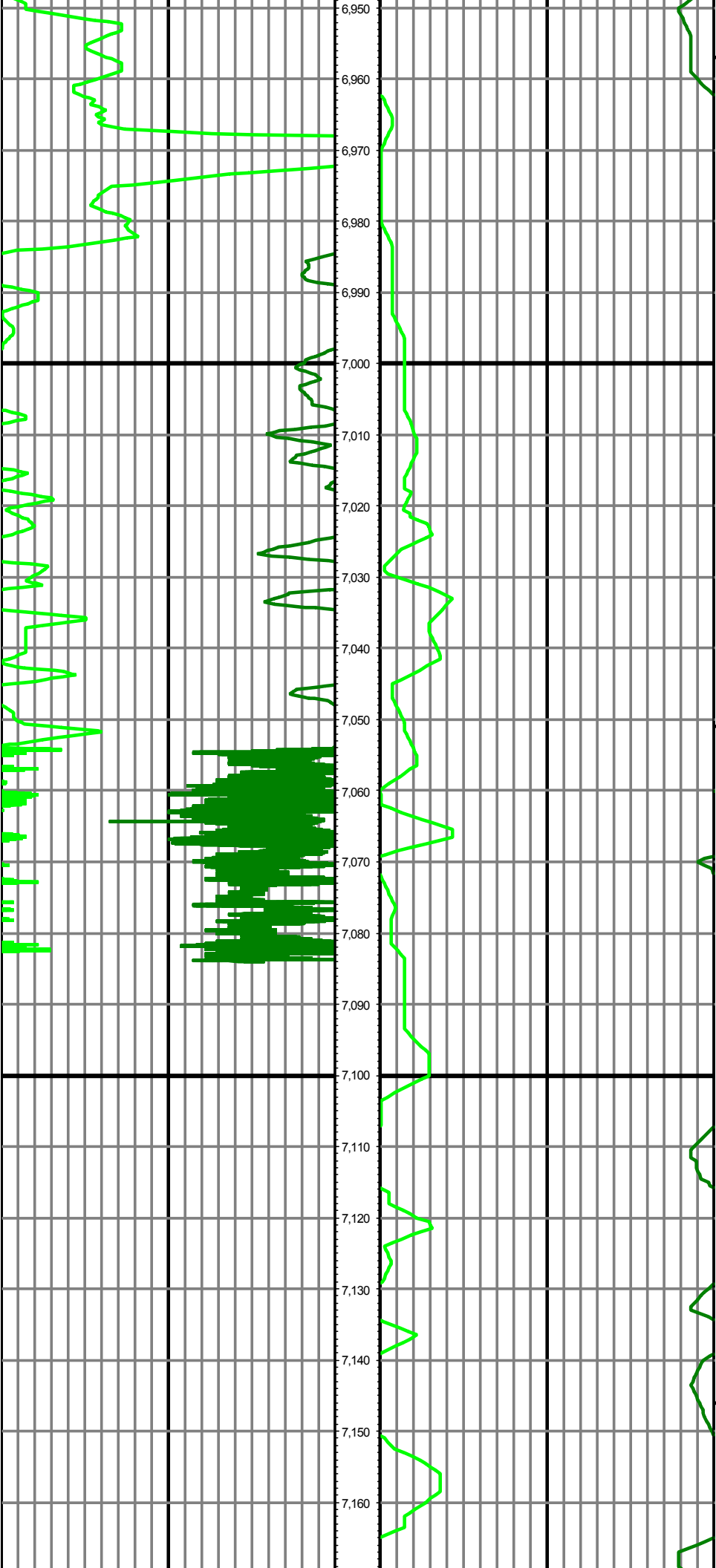
MD: 6579.00 INC: 13.80 AZ: 10.00 TVD: 6473.34 VS: -785.55

MD: 6673.00 INC: 22.30 AZ: 6.30 TVD: 6562.63 VS: -756.77



MD: 6768.00 INC: 29.10 AZ: 2.80 TVD: 6648.19 VS: -715.76

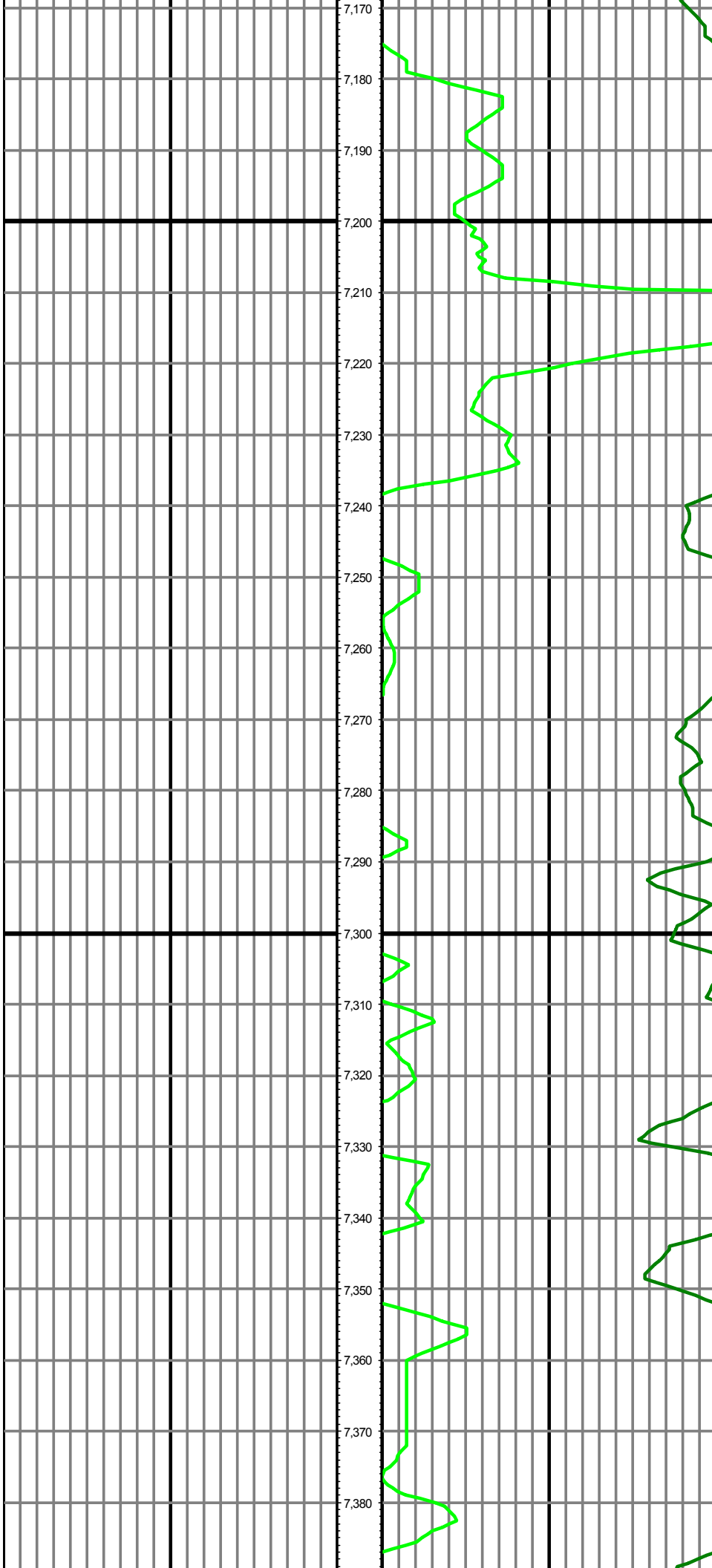
MD: 6862.00 INC: 34.70 AZ: 359.70 TVD: 6727.97 VS: -666.14



MD: 6957.00 INC: 41.60 AZ: 3.60 TVD: 6802.64 VS: -607.56

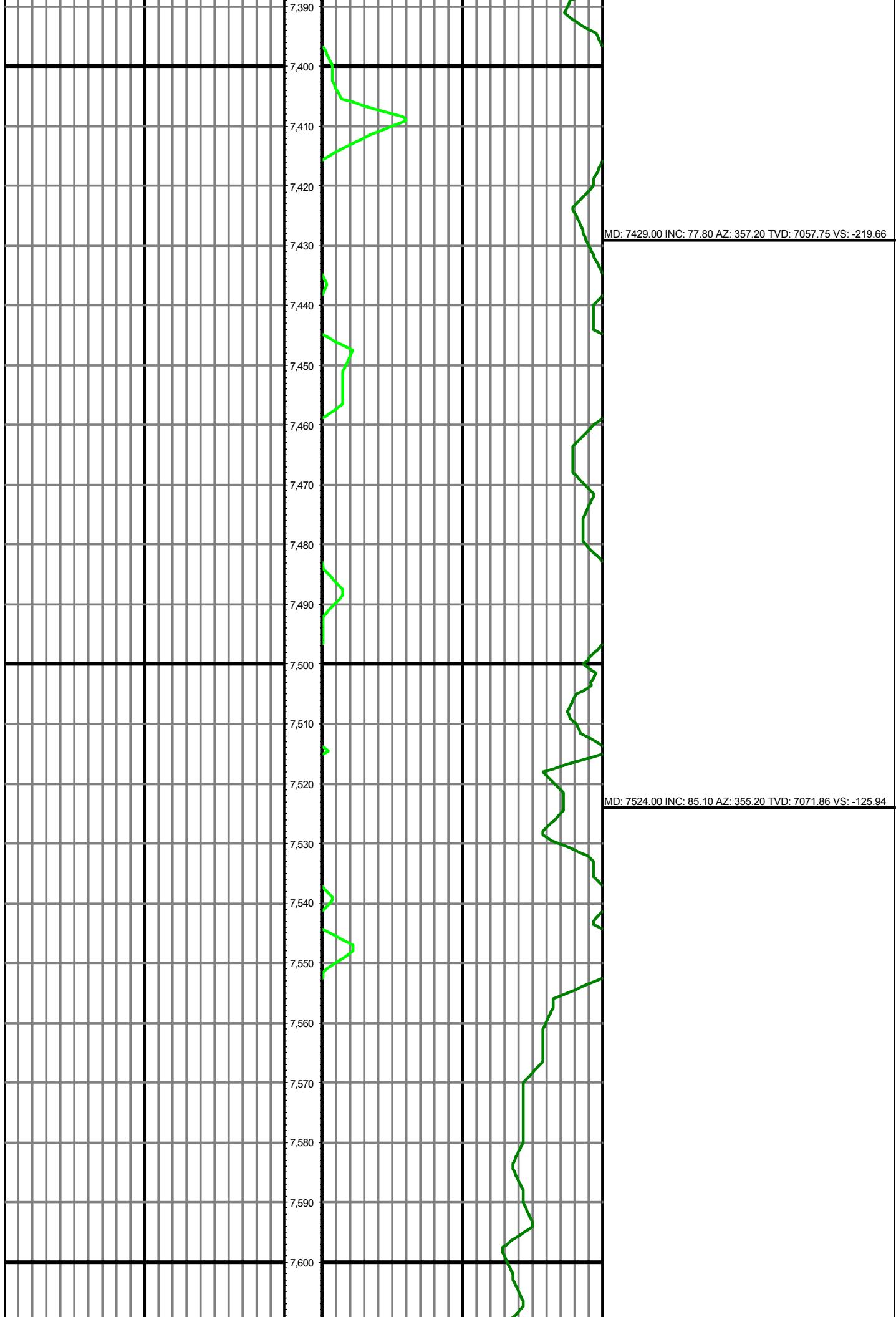
MD: 7051.00 INC: 47.60 AZ: 6.00 TVD: 6869.55 VS: -541.89

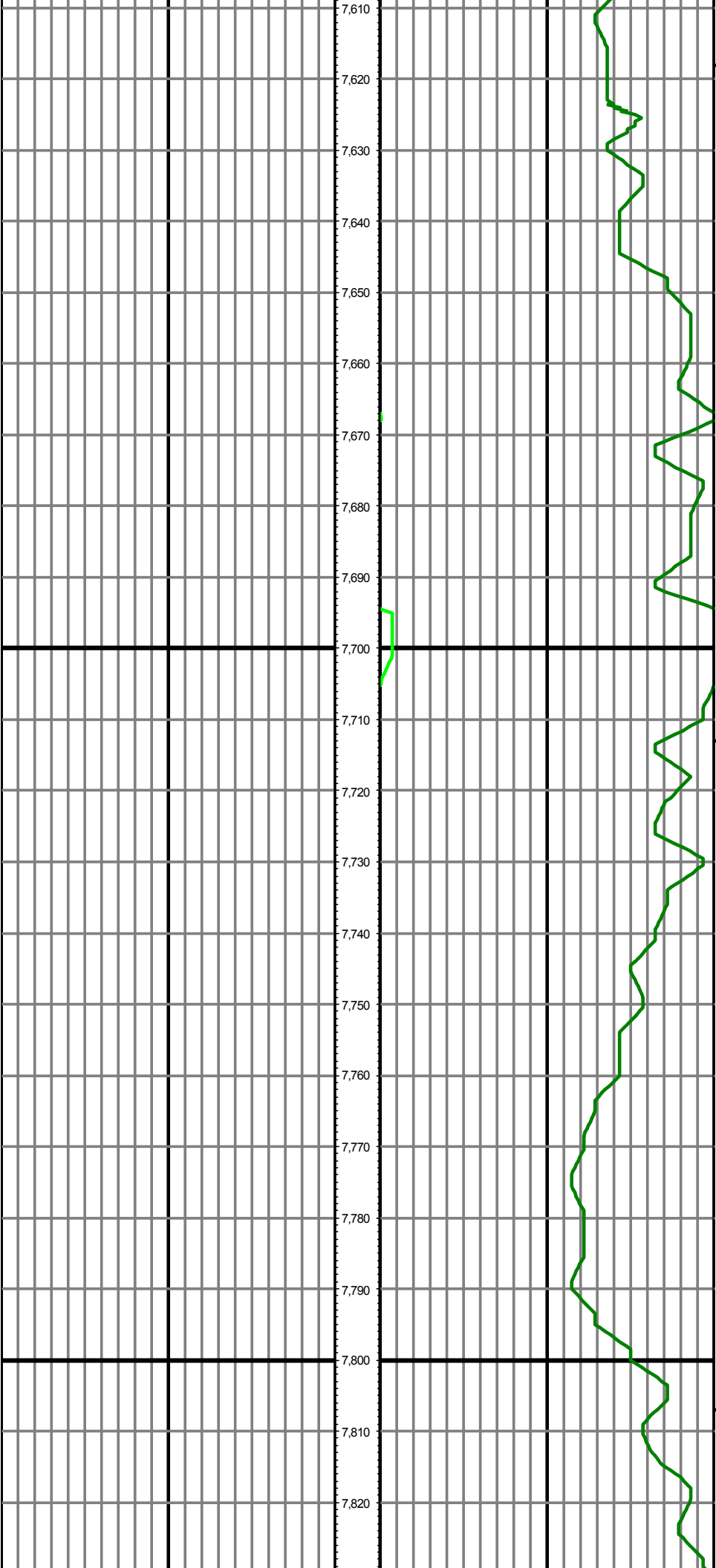
MD: 7146.00 INC: 51.60 AZ: 1.10 TVD: 6931.13 VS: -469.78



MD: 7240.00 INC: 57.60 AZ: 0.60 TVD: 6985.55 VS: -393.21

MD: 7335.00 INC: 67.20 AZ: 358.00 TVD: 7029.52 VS: -309.13



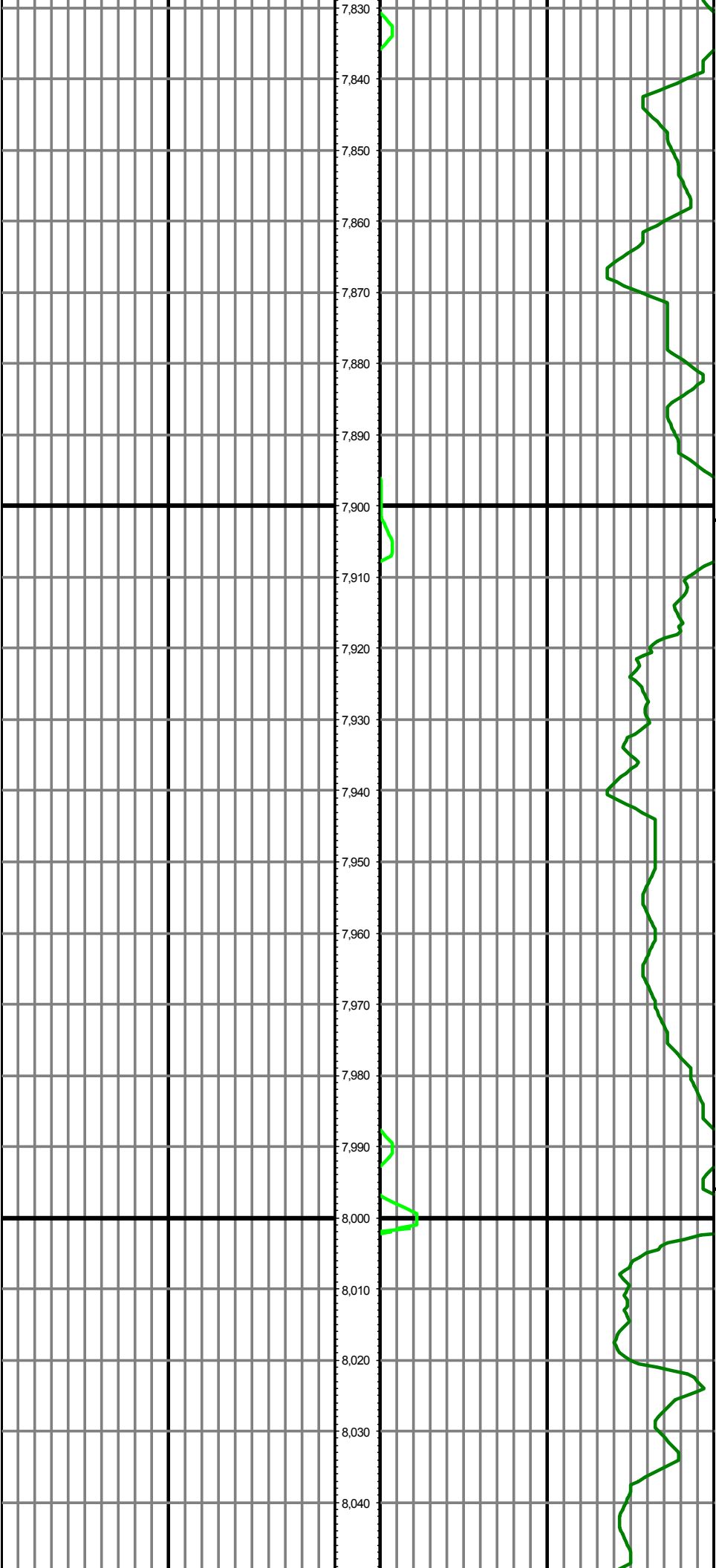


MD: 7618.00 INC: 90.20 AZ: 357.10 TVD: 7075.72 VS: -32.21

MD: 7713.00 INC: 89.90 AZ: 357.60 TVD: 7075.63 VS: 62.72

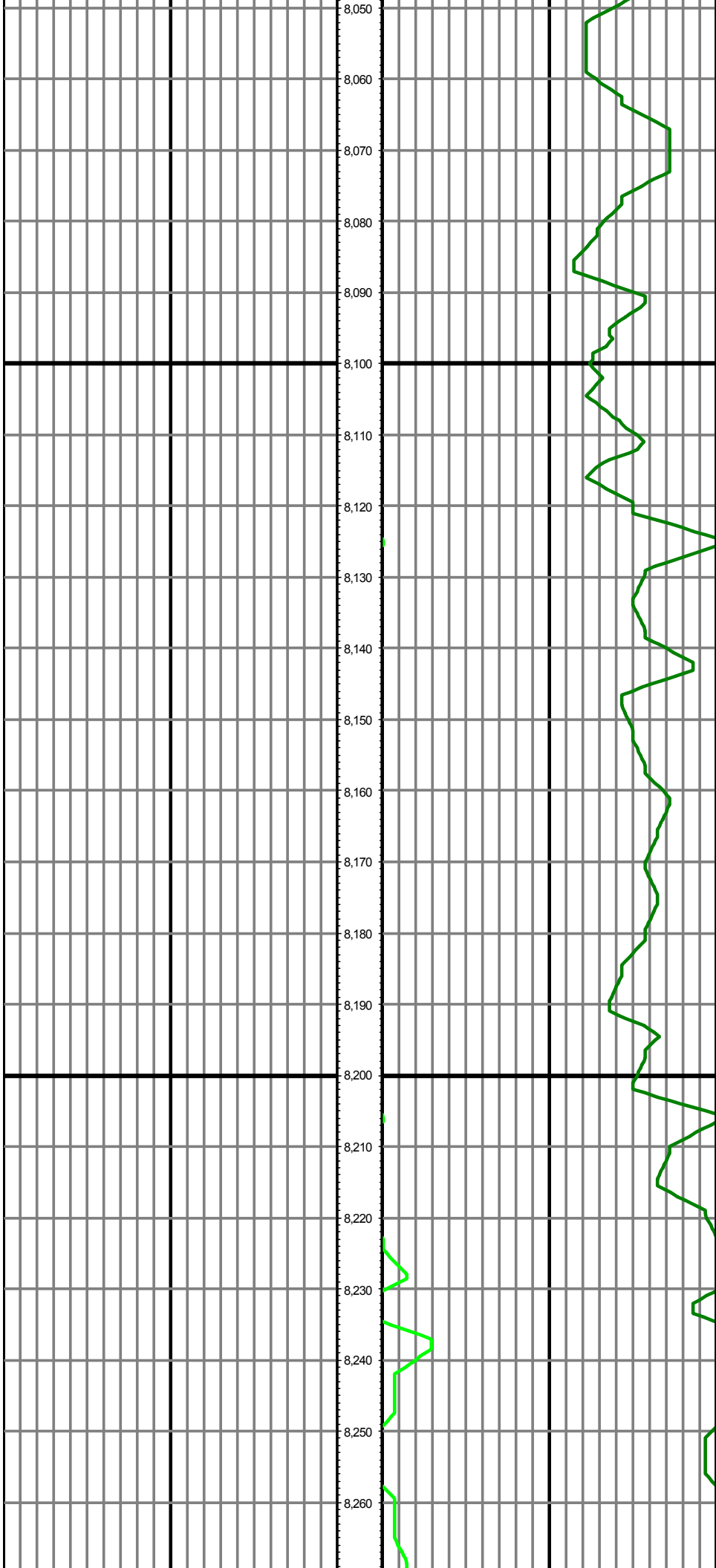
MD: 7807.00 INC: 89.40 AZ: 357.60 TVD: 7076.21 VS: 156.67





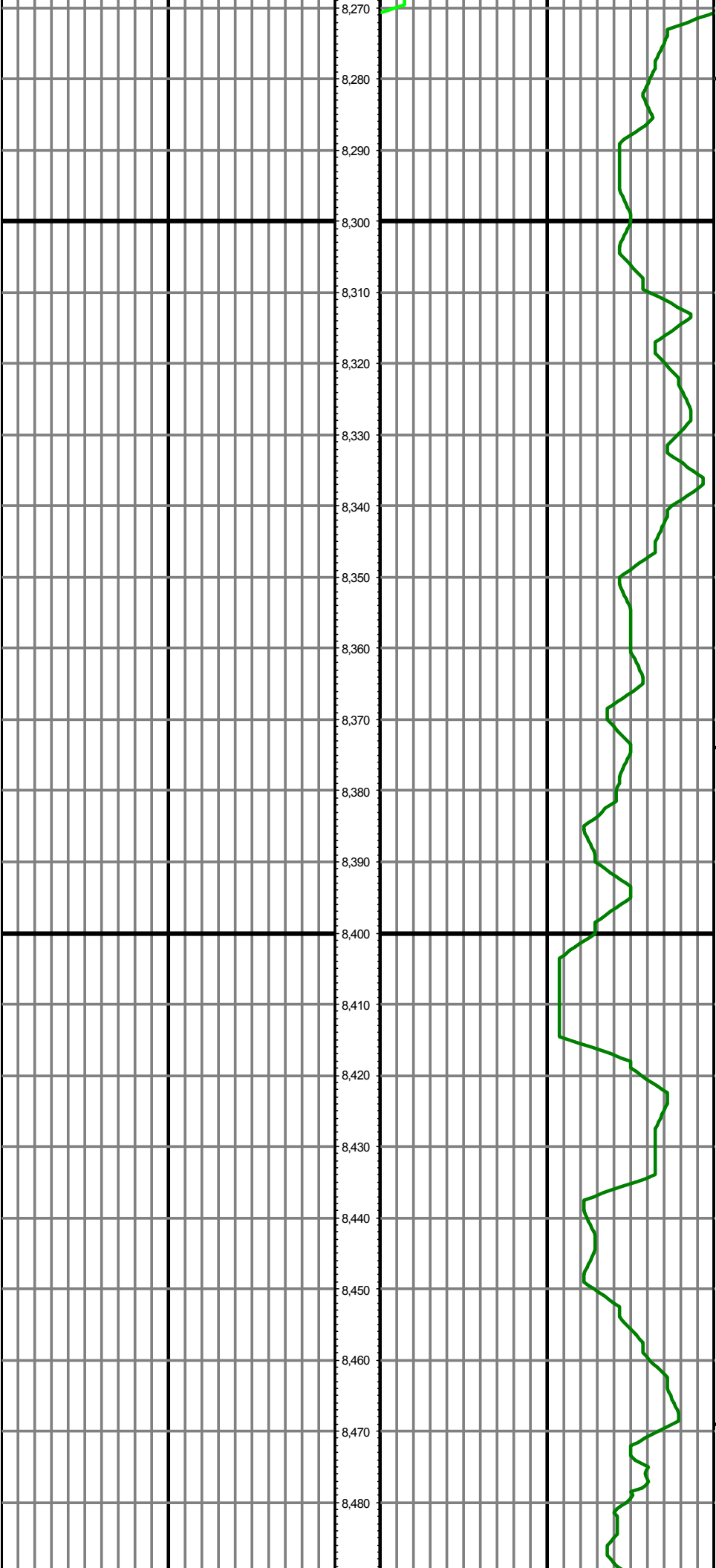
MD: 7902.00 INC: 88.40 AZ: 357.10 TVD: 7078.03 VS: 251.59

MD: 7996.00 INC: 87.30 AZ: 0.30 TVD: 7081.56 VS: 345.50



MD: 8091.00 INC: 89.80 AZ: 0.60 TVD: 7083.96 VS: 440.45

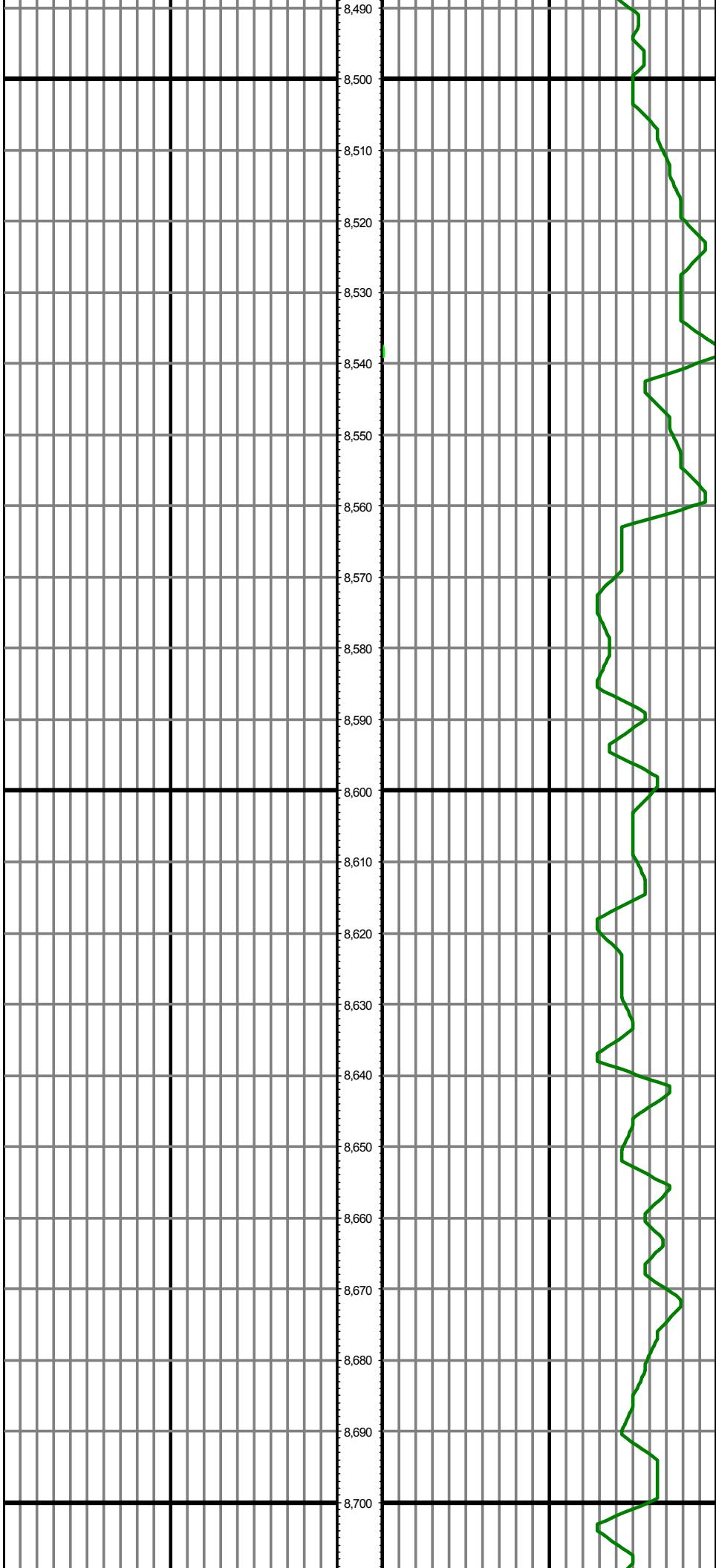
MD: 8185.00 INC: 91.20 AZ: 1.70 TVD: 7083.14 VS: 534.40



MD: 8280.00 INC: 90.50 AZ: 1.20 TVD: 7081.73 VS: 629.33

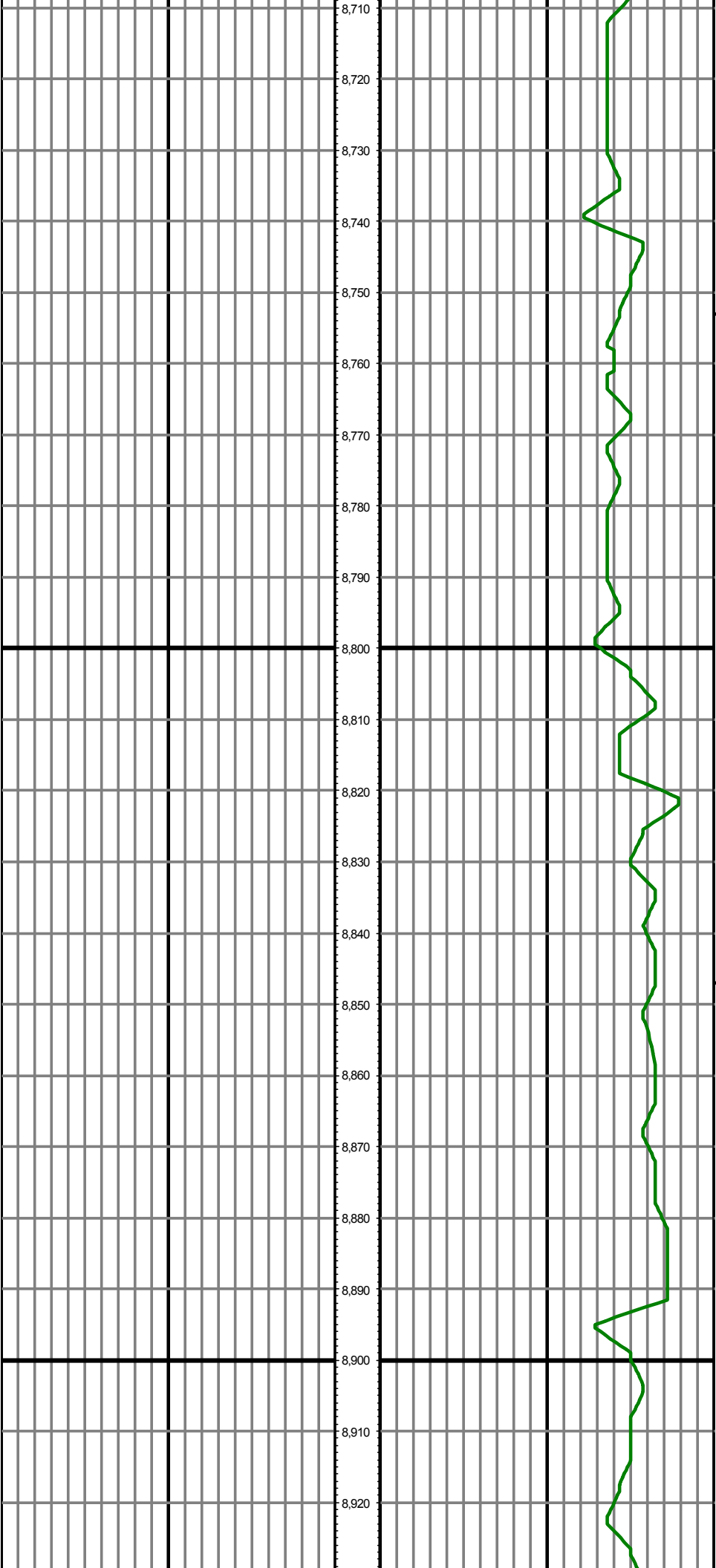
MD: 8374.00 INC: 89.90 AZ: 0.40 TVD: 7081.41 VS: 723.30

MD: 8469.00 INC: 88.80 AZ: 359.90 TVD: 7082.48 VS: 818.29



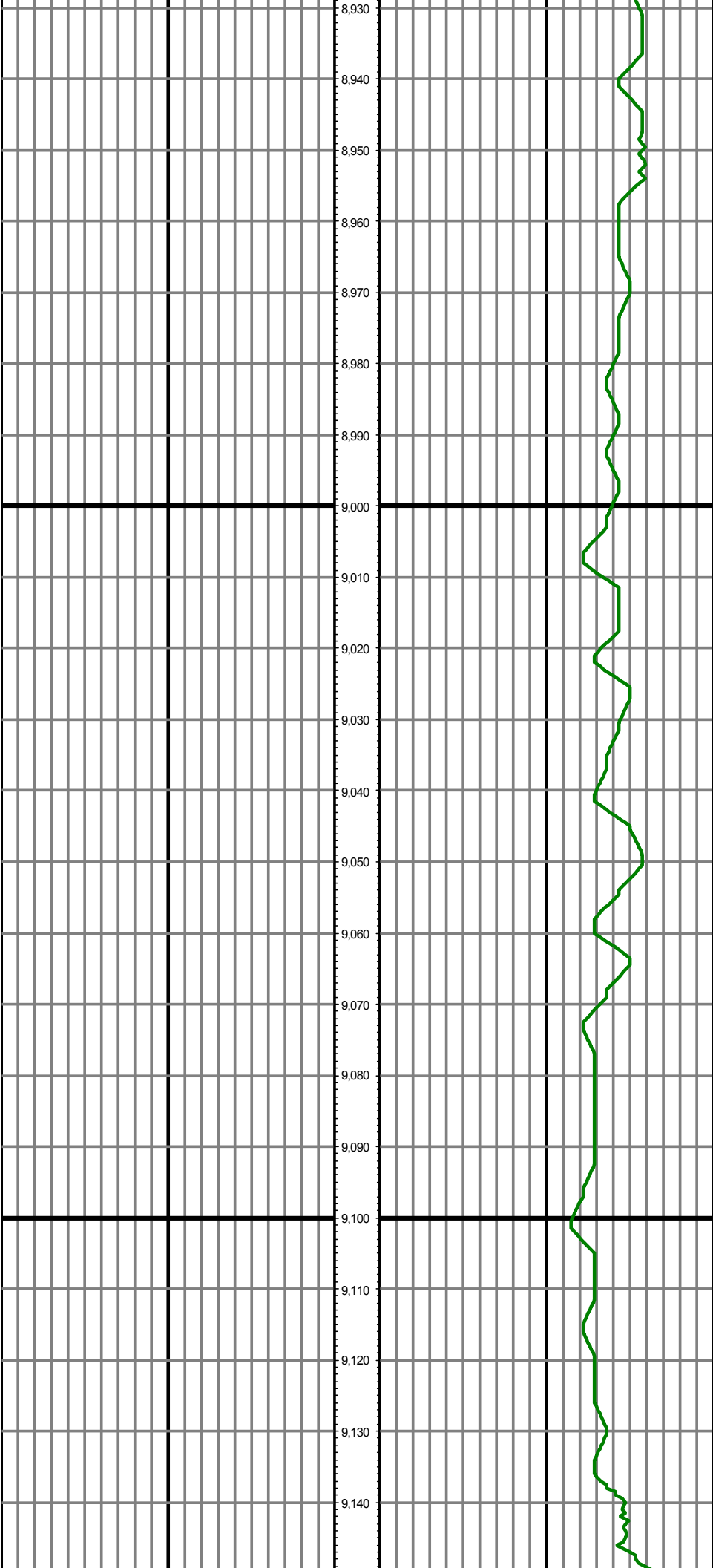
MD: 8563.00 INC: 91.10 AZ: 1.10 TVD: 7082.57 VS: 912.27

MD: 8658.00 INC: 91.00 AZ: 0.80 TVD: 7080.82 VS: 1007.22



MD: 8753.00 INC: 90.80 AZ: 0.00 TVD: 7079.33 VS: 1102.19

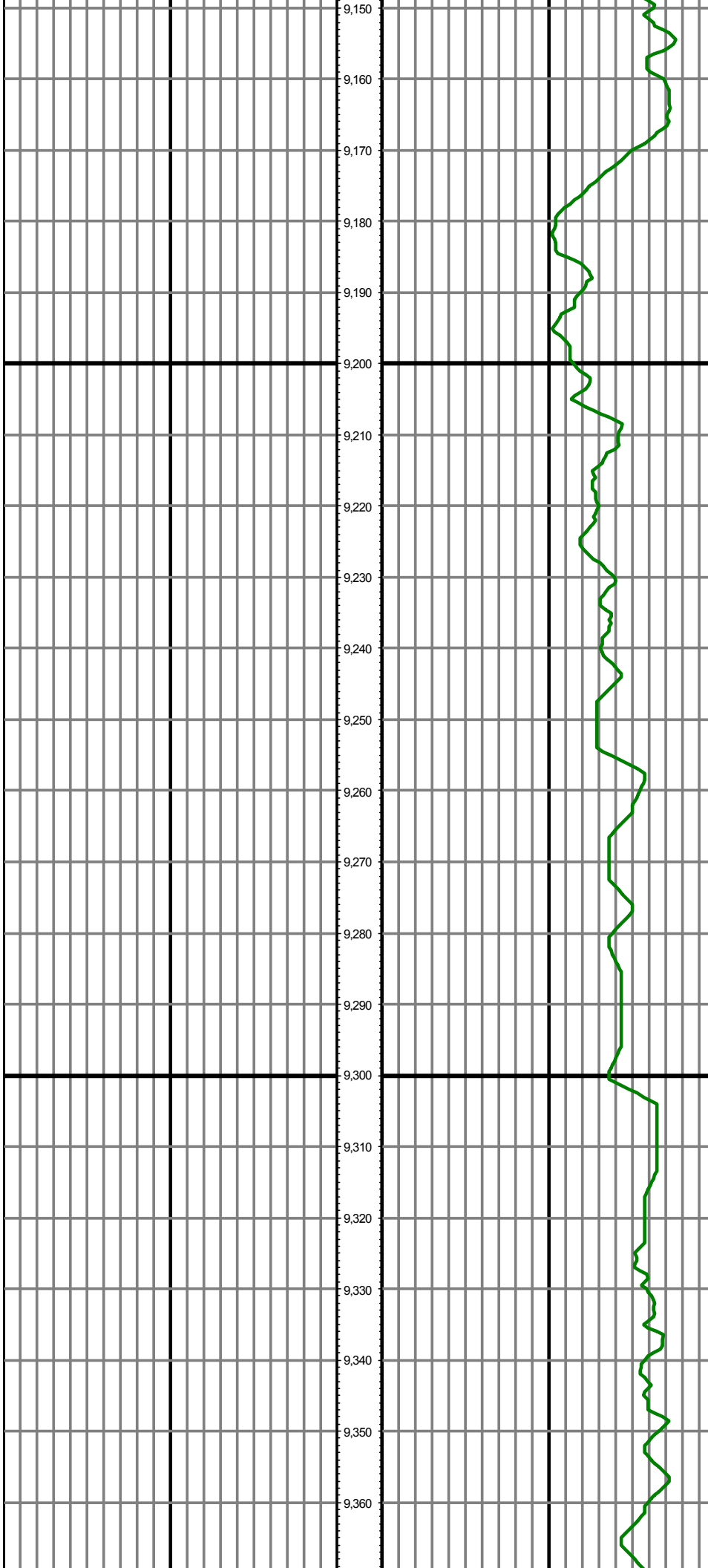
MD: 8847.00 INC: 91.70 AZ: 359.80 TVD: 7077.28 VS: 1196.17



MD: 8942.00 INC: 92.10 AZ: 359.90 TVD: 7074.13 VS: 1291.11

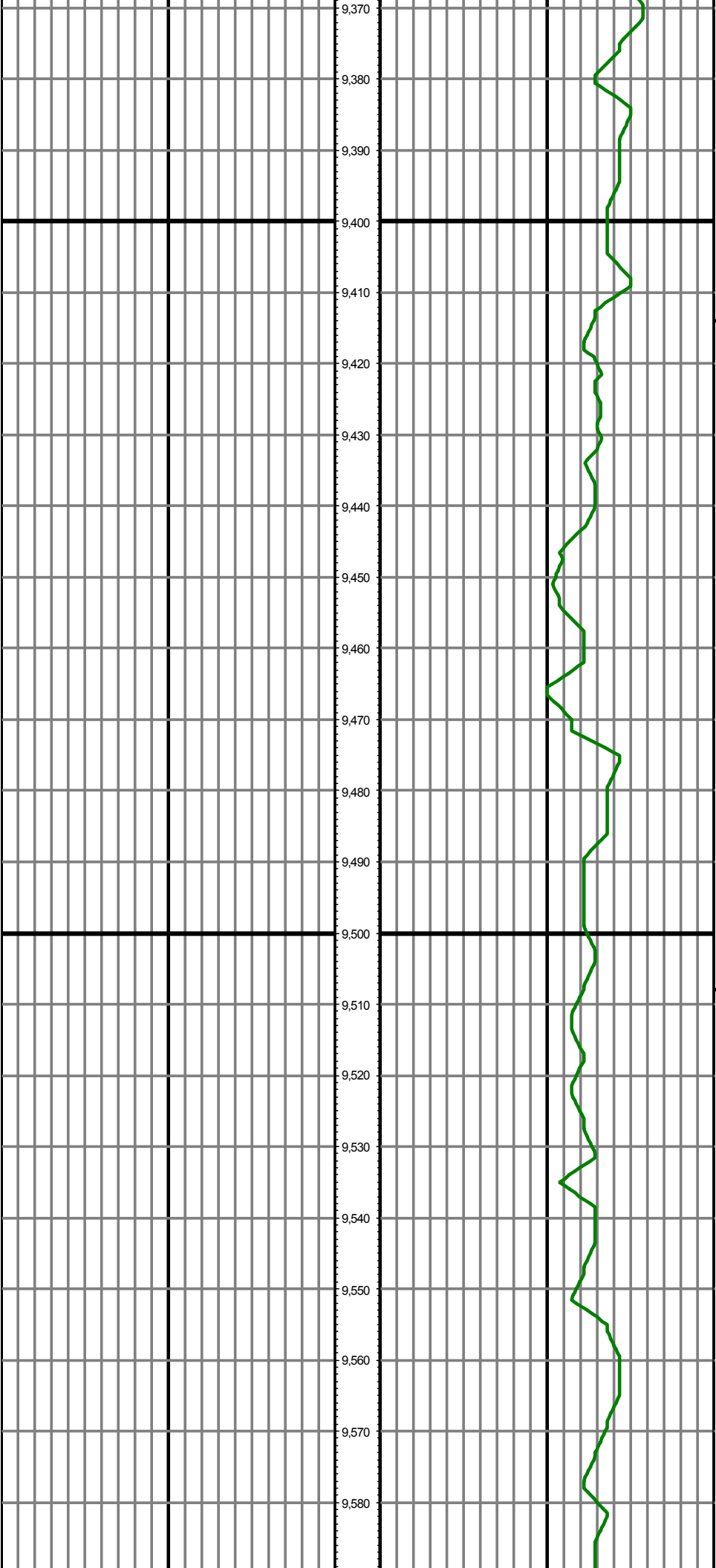
MD: 9036.00 INC: 90.90 AZ: 357.40 TVD: 7071.67 VS: 1385.06

MD: 9130.00 INC: 92.20 AZ: 357.00 TVD: 7069.13 VS: 1478.95



MD: 9225.00 INC: 91.70 AZ: 356.10 TVD: 7065.90 VS: 1573.77

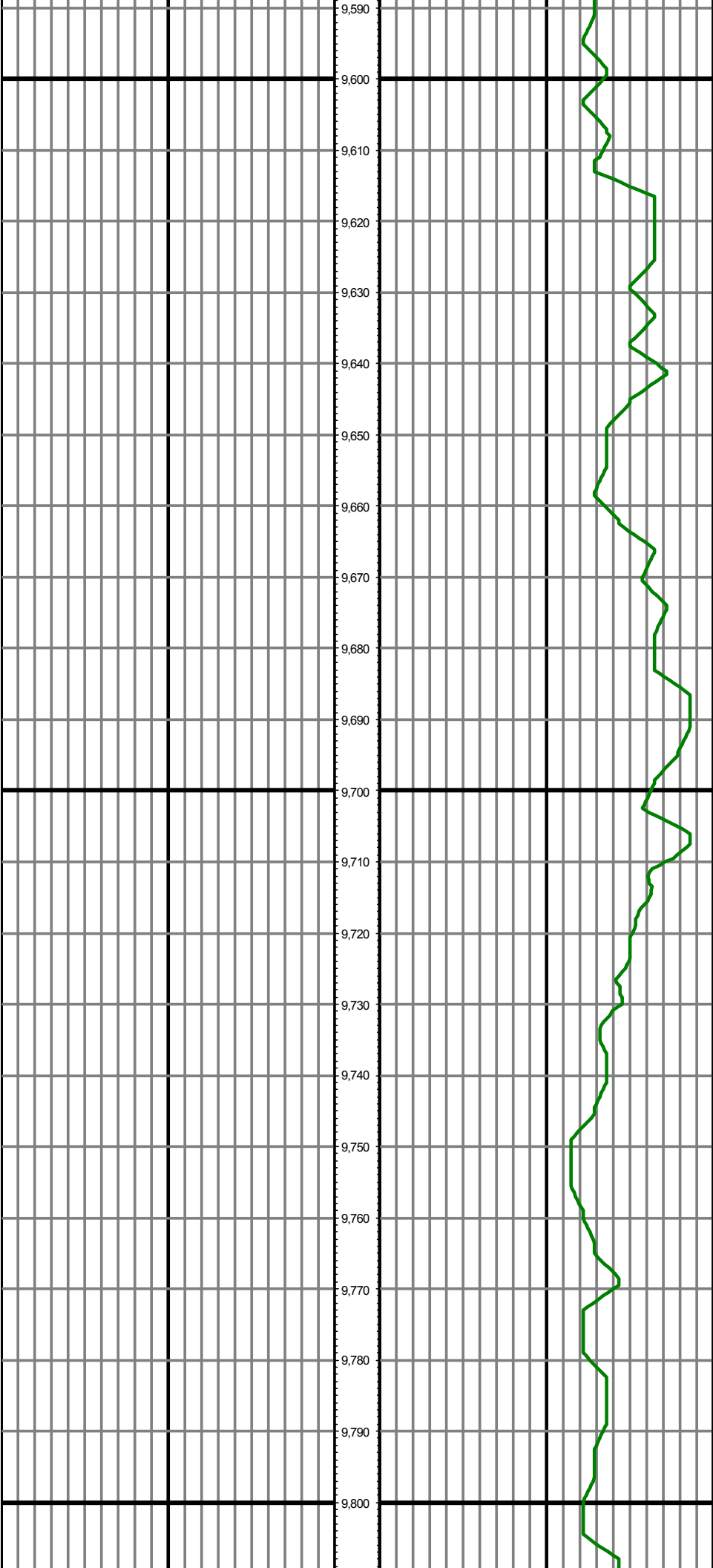
MD: 9319.00 INC: 89.80 AZ: 355.70 TVD: 7064.67 VS: 1667.58



MD: 9414.00 INC: 88.20 AZ: 357.30 TVD: 7066.32 VS: 1762.43

MD: 9508.00 INC: 90.60 AZ: 359.10 TVD: 7067.31 VS: 1856.39

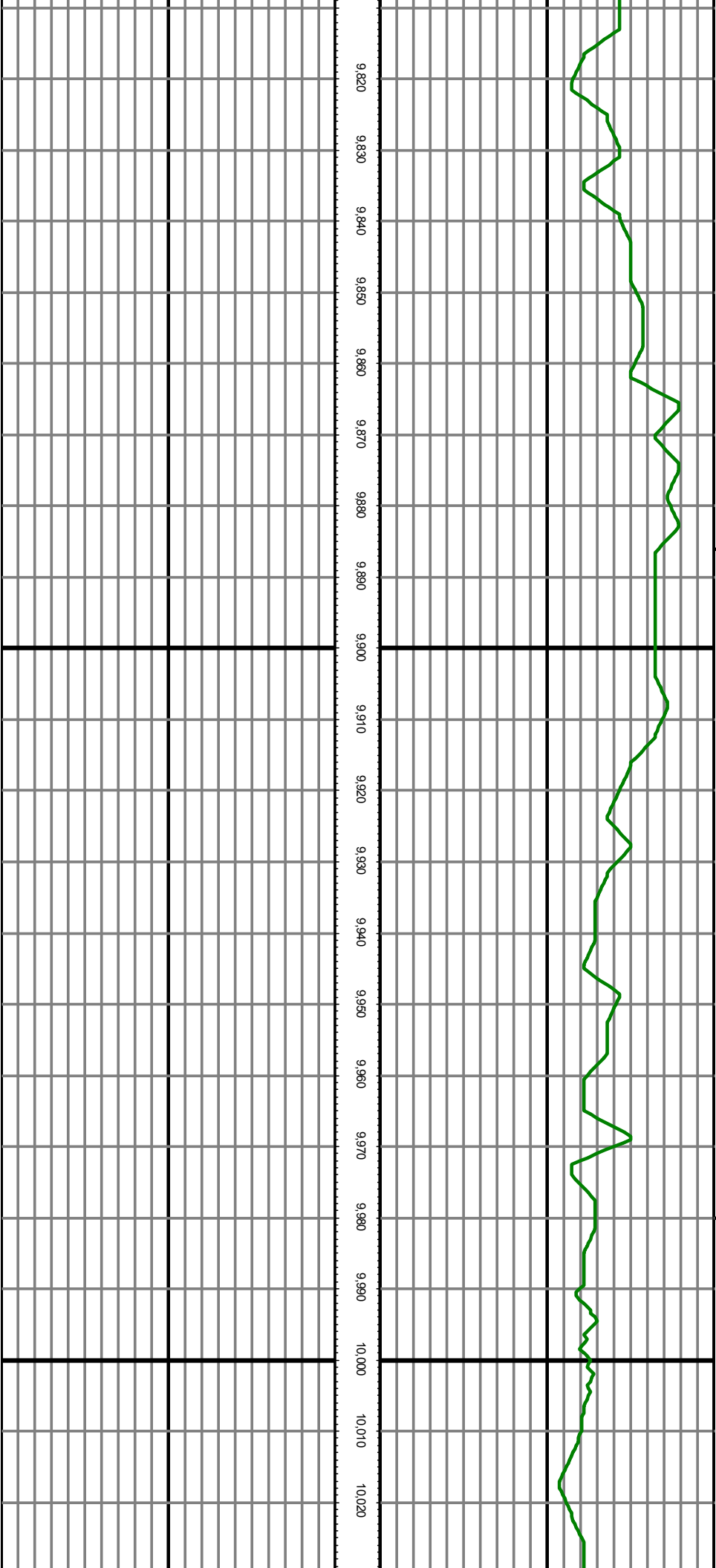




MD: 9602.00 INC: 90.20 AZ: 358.50 TVD: 7066.65 VS: 1950.38

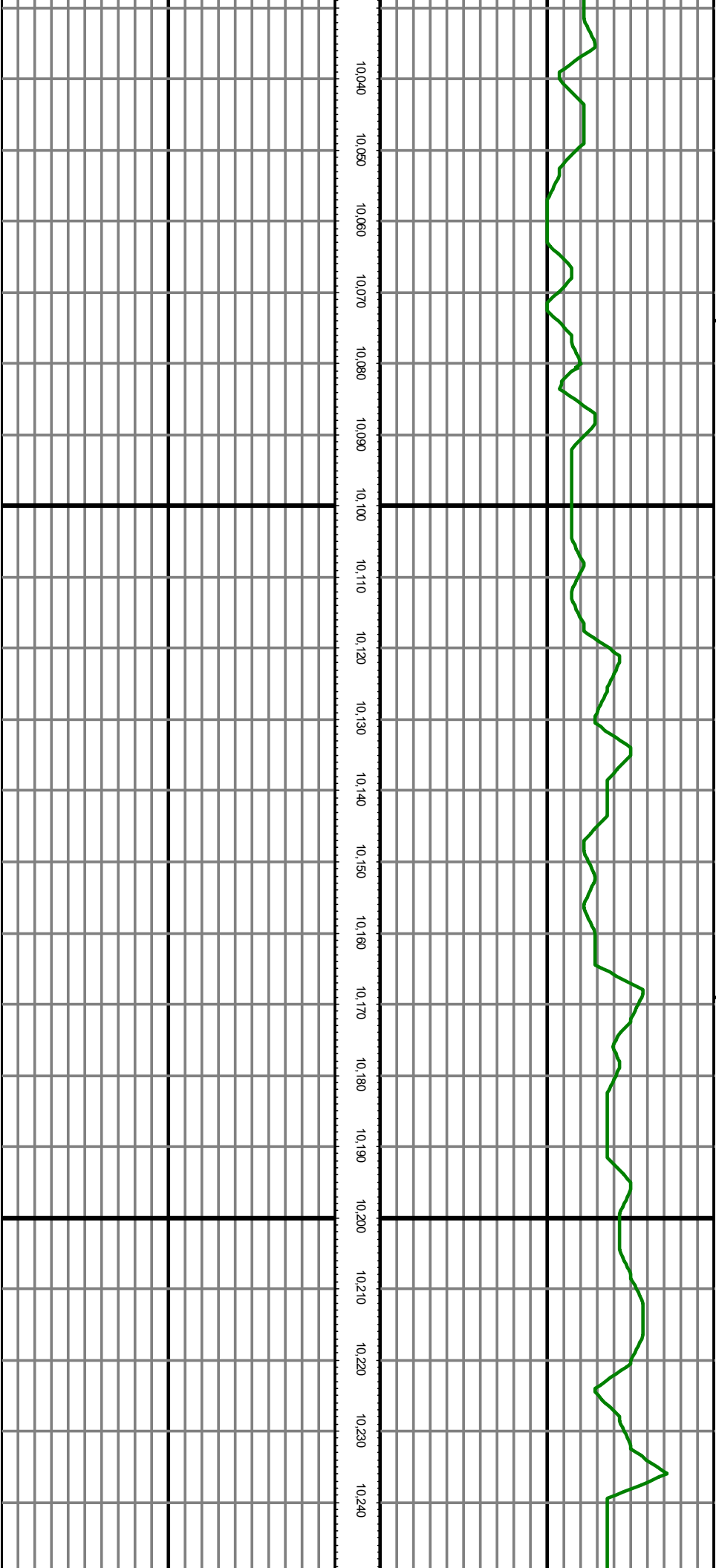
MD: 9697.00 INC: 89.00 AZ: 357.30 TVD: 7067.31 VS: 2045.34

MD: 9791.00 INC: 91.00 AZ: 359.80 TVD: 7067.31 VS: 2139.31



MD: 9886.00 INC: 91.40 AZ: 359.30 TVD: 7065.33 VS: 2234.29

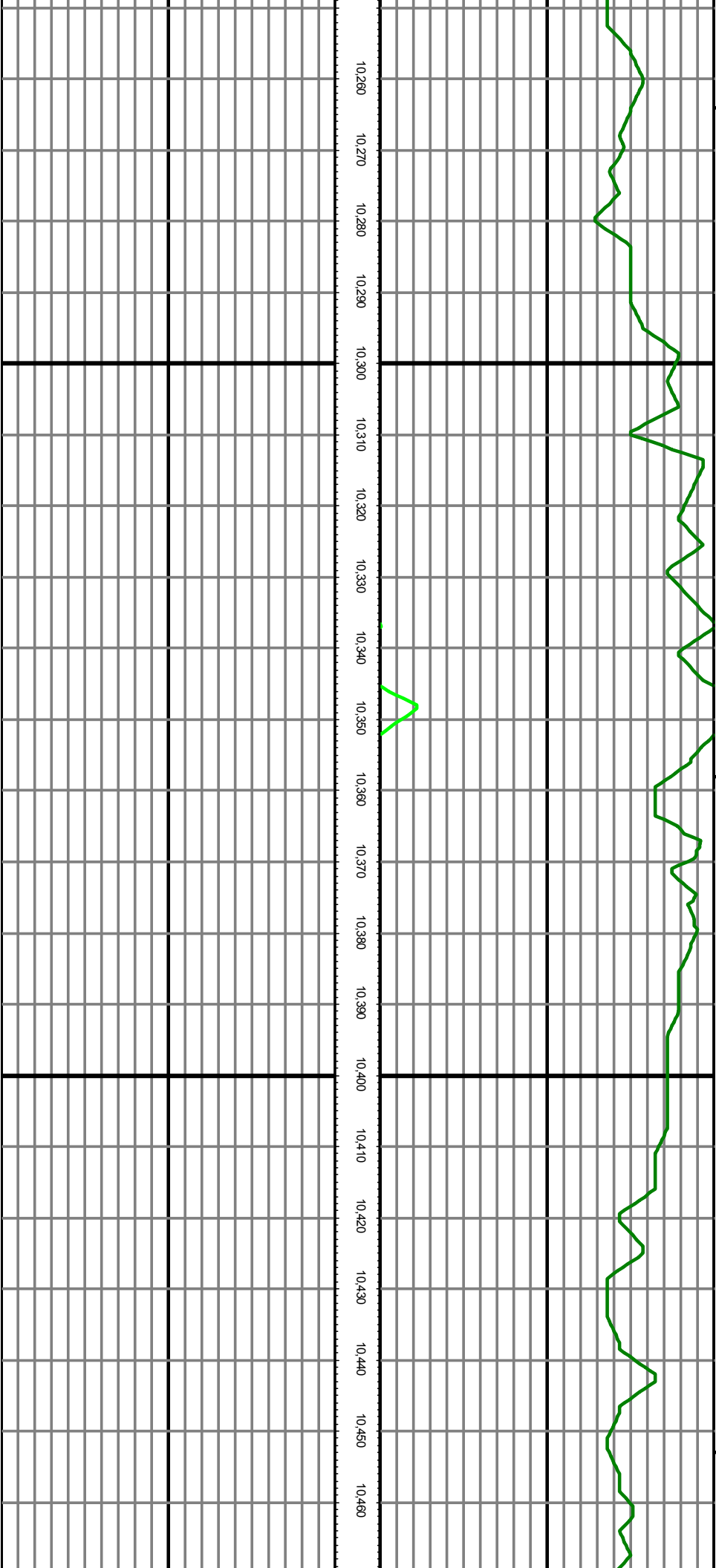
MD: 9980.00 INC: 90.30 AZ: 358.50 TVD: 7063.93 VS: 2328.28



10,040 10,050 10,060 10,070 10,080 10,090 10,100 10,110 10,120 10,130 10,140 10,150 10,160 10,170 10,180 10,190 10,200 10,210 10,220 10,230 10,240

MD: 10074.00 INC: 91.00 AZ: 1.30 TVD: 7062.86 VS: 2422.26

MD: 10169.00 INC: 91.20 AZ: 0.40 TVD: 7061.04 VS: 2517.21

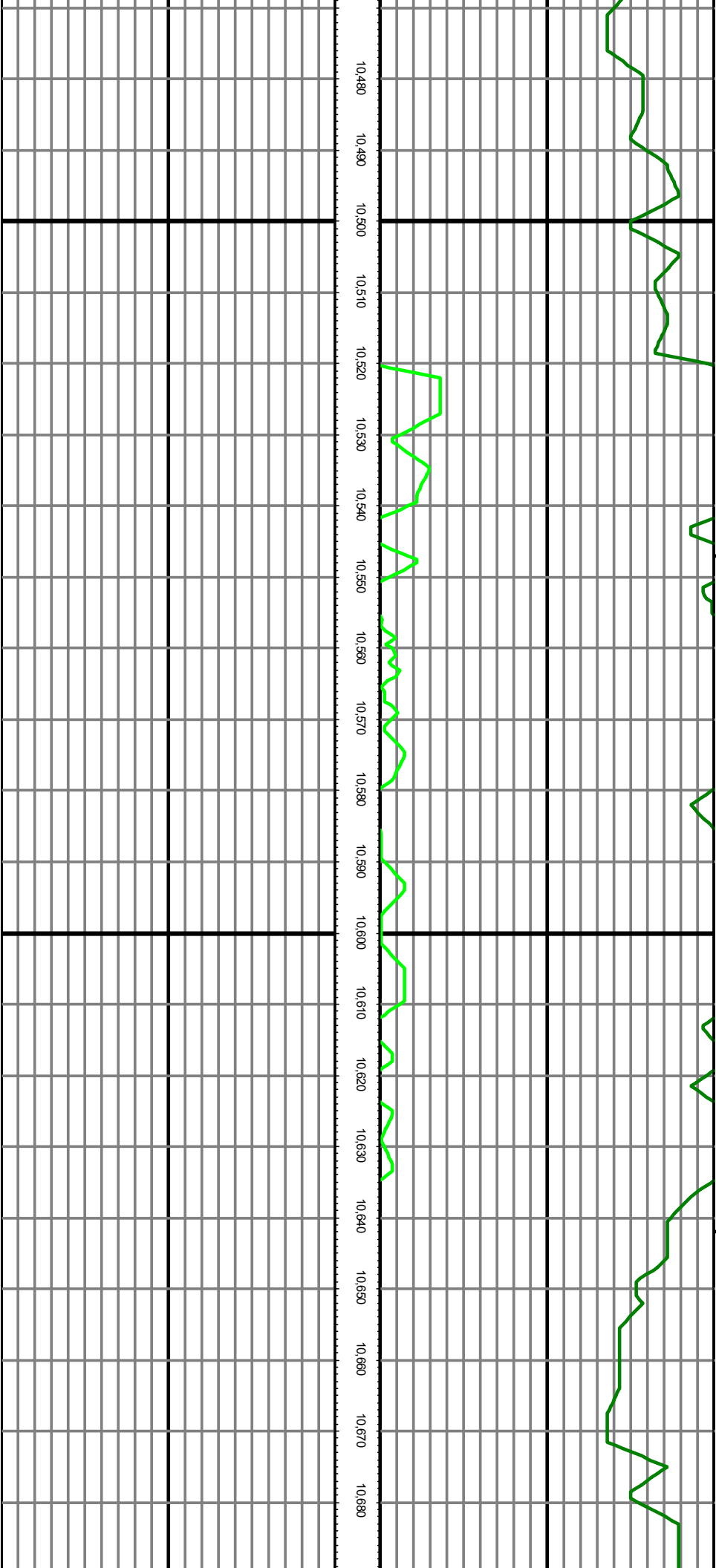


10,260  
10,270  
10,280  
10,290  
10,300  
10,310  
10,320  
10,330  
10,340  
10,350  
10,360  
10,370  
10,380  
10,390  
10,400  
10,410  
10,420  
10,430  
10,440  
10,450  
10,460

MD: 10264.00 INC: 91.30 AZ: 0.10 TVD: 7058.97 VS: 2612.18

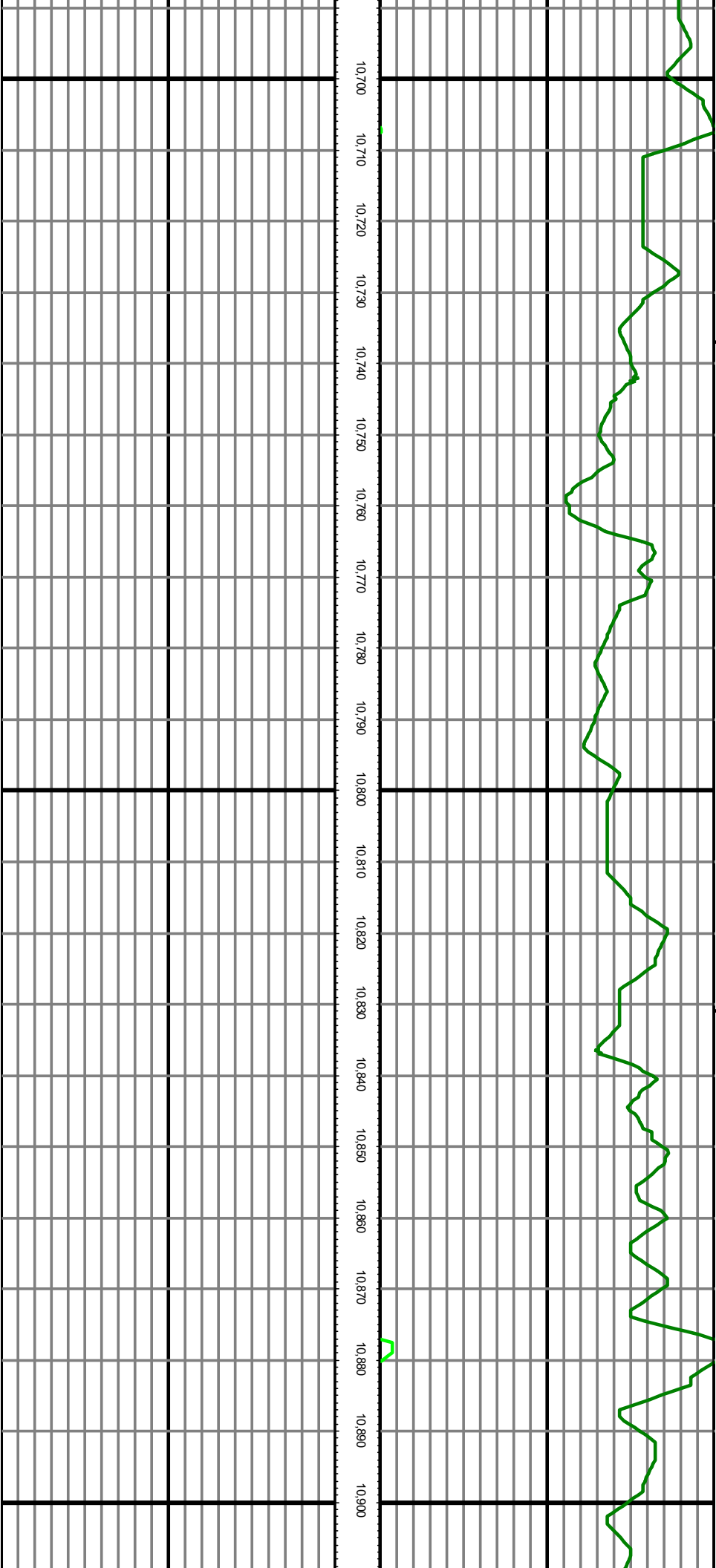
MD: 10358.00 INC: 91.40 AZ: 359.80 TVD: 7056.75 VS: 2706.15

MD: 10453.00 INC: 90.80 AZ: 1.20 TVD: 7054.93 VS: 2801.11



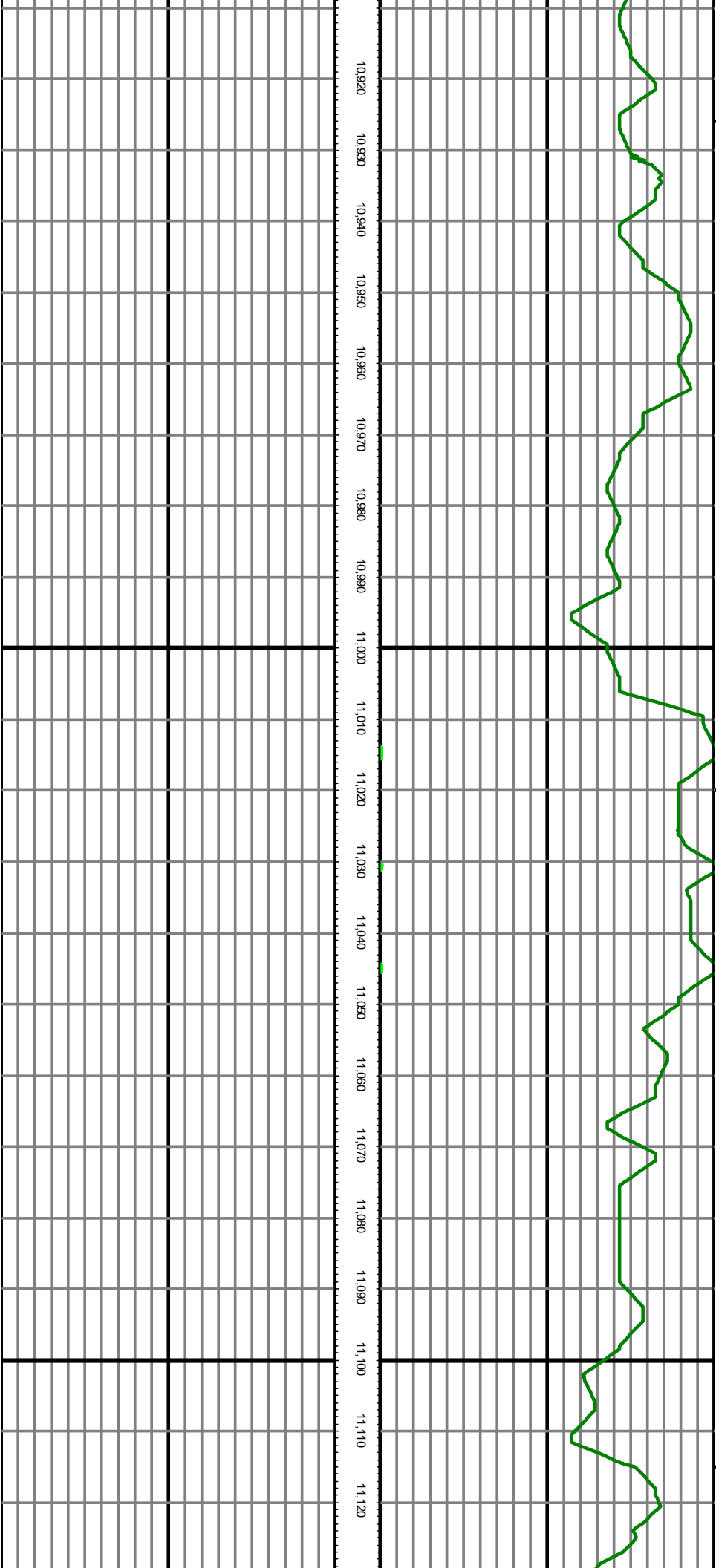
MD: 10547.00 INC: 90.30 AZ: 0.10 TVD: 7054.03 VS: 2895.09

MD: 10642.00 INC: 88.30 AZ: 0.10 TVD: 7055.19 VS: 2990.07



MD: 10737.00 INC: 87.60 AZ: 359.20 TVD: 7058.59 VS: 3085.01

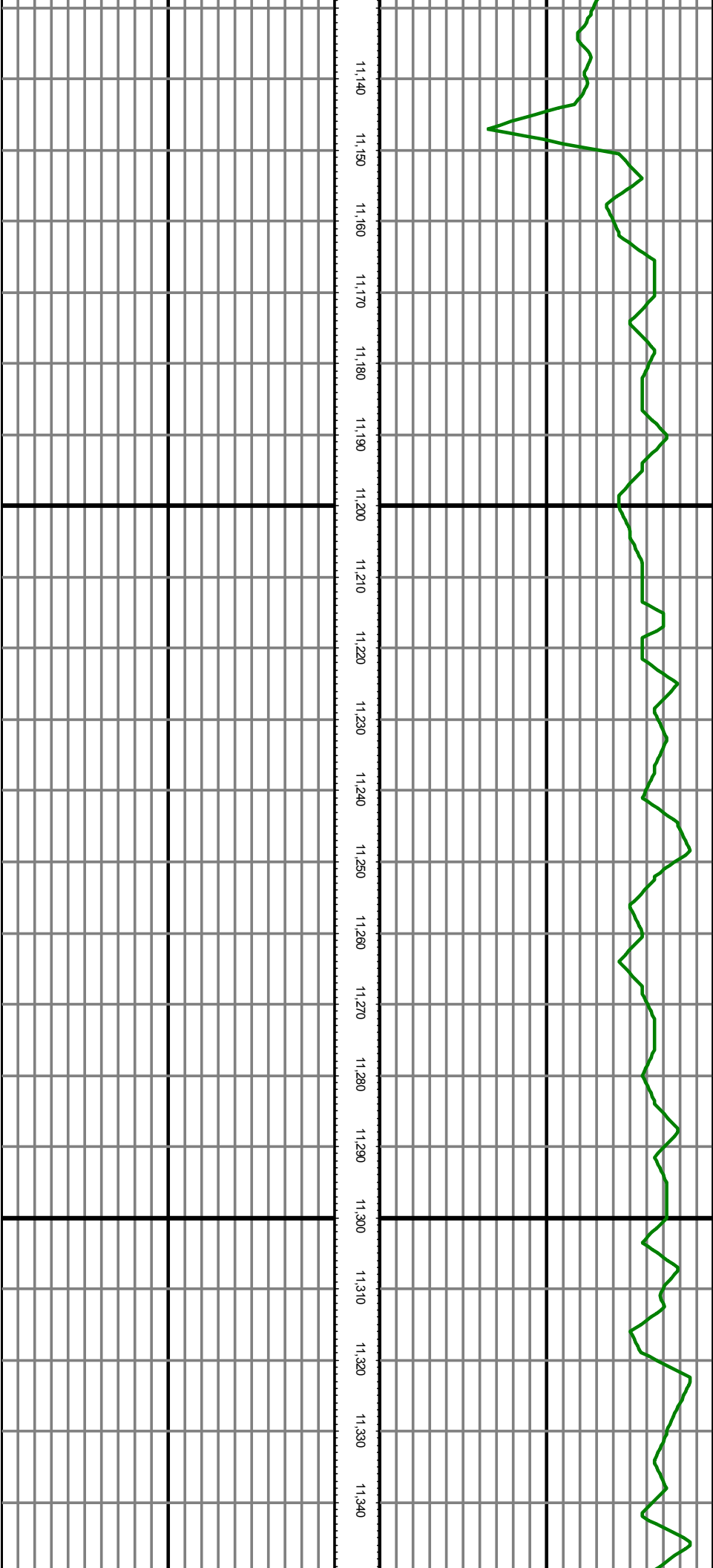
MD: 10831.00 INC: 88.70 AZ: 359.30 TVD: 7061.62 VS: 3178.96



MD: 10926.00 INC: 90.40 AZ: 0.20 TVD: 7062.37 VS: 3273.95

MD: 11020.00 INC: 89.40 AZ: 359.40 TVD: 7062.53 VS: 3367.94

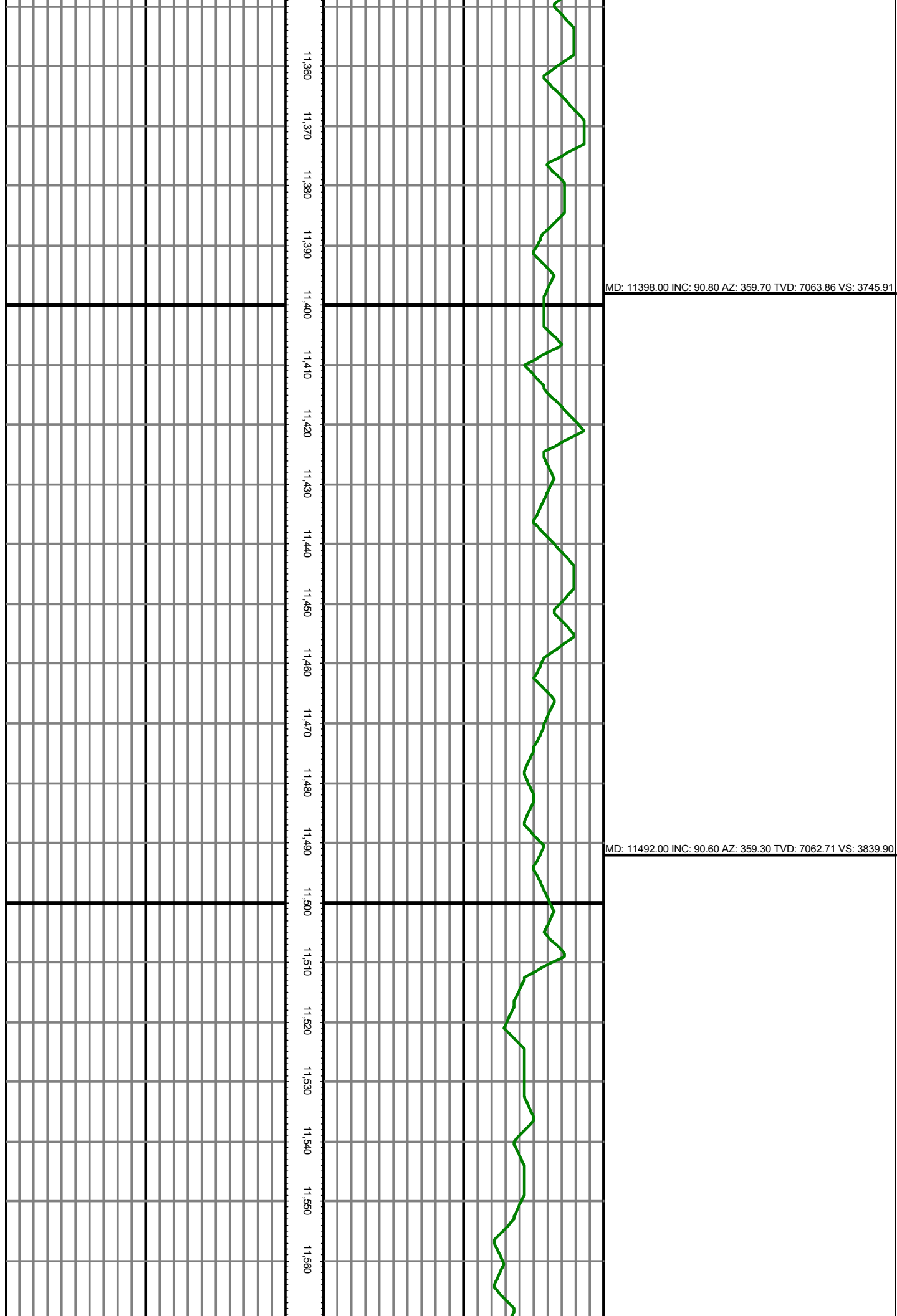
MD: 11115.00 INC: 88.80 AZ: 358.90 TVD: 7064.02 VS: 3462.93

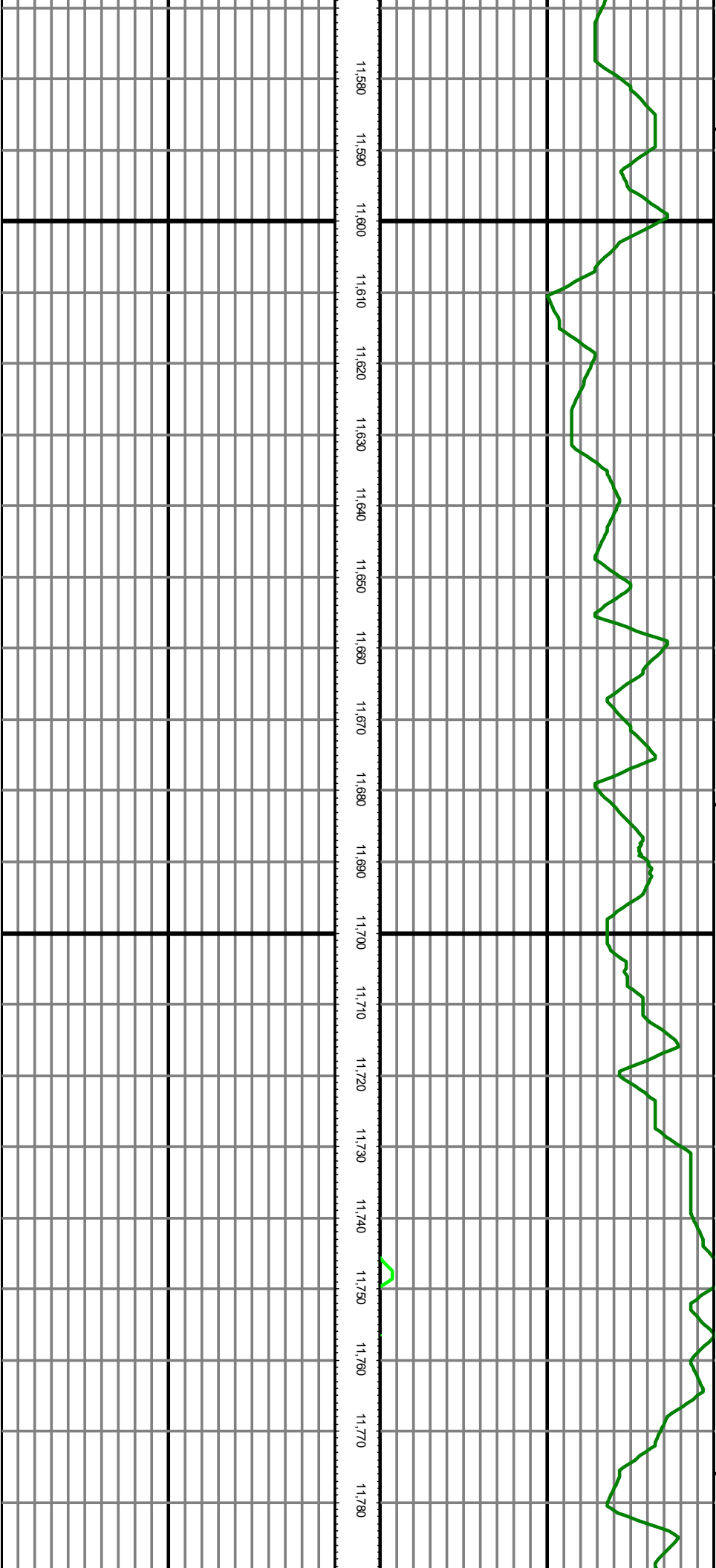


MD: 11209.00 INC: 90.10 AZ: 0.60 TVD: 7064.93 VS: 3556.92

MD: 11304.00 INC: 90.20 AZ: 359.80 TVD: 7064.68 VS: 3651.91







11,580  
11,590  
11,600  
11,610  
11,620  
11,630  
11,640  
11,650  
11,660  
11,670  
11,680  
11,690  
11,700  
11,710  
11,720  
11,730  
11,740  
11,750  
11,760  
11,770  
11,780

MD: 11587.00 INC: 91.30 AZ: 359.10 TVD: 7061.13 VS: 3934.88

MD: 11682.00 INC: 91.90 AZ: 359.00 TVD: 7058.48 VS: 4029.84

MD: 11776.00 INC: 91.20 AZ: 358.10 TVD: 7055.94 VS: 4123.80

