



Premier Directional Drilling

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

Cook 36N-28HZ

Scale 5":100' - MD

11/21/2015 5:32 PM

Oper. Company: Anadarko Petroleum

State: Colorado

Well: Cook 36N-28HZ

County: Weld

Field: Wattenberg

Country: USA

Rig: HP 307

Location: SWSE Sec 16_T2N-R65W

Well ID: 05123421420000

Start Date: 11/12/2015 12:10:00

Job Number: R15424

End Date: 11/19/2015 18:00:00

Notes: Recorded Mode Log
 Gamma Correction Determined by Pipe ID & OD, Mud Weight, & Bit Size

Latitude: 40.132882

Elev KB: 4909'

Longitude: -104.666496

Elev DF: 4909'

Elev GL: 4884'

Notes: Datum: NAD 1983Map Zone: 13N (108 W to 102 W)Total Correction: 8.18° (Mean MagVar)Grid Correction: 0.21°

Operator 1: Robert Grossman

Operator 2: Jim Thammavong

Notes: Smoothing: 7Gap Fill: 10Survey Tool Type: Evo1 Dual Telemetry ToolCalculation Method: Minimum Curvature

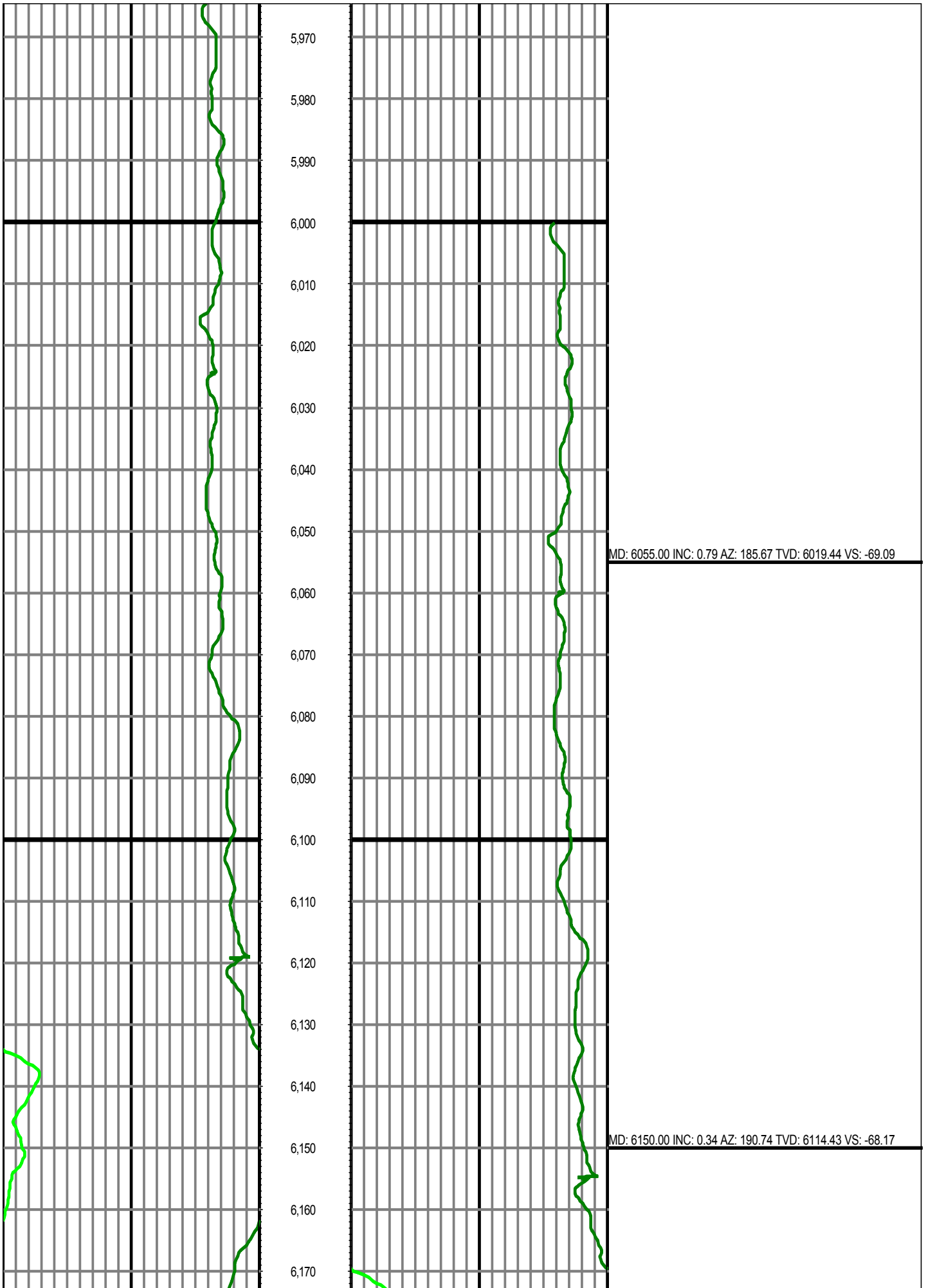
Tool Run Data	Run #1	Run #2	Run #3	Run #4	Run #5
Tool S/N	EGNF 0148	EGNF0073			
Bit Size	8 1/2	8 1/2			
Cal Factor	4.282	4.282			
Survey Offset:	77.00	77.00			
Gamma Offset	72.72	72.72			
Resisitivity Offset	0.00	0.00			
Start Depth	1890.00	15565.00			
StartDate	11/12/2015	11/17/2015			
StartTime	12:10	14:50			
EndDepth	15565.00	17903.00			
EndDate	11/17/2015	11/19/2015			
EndTime	00:00	18:00			
Mud Type	OBM	OBM			
Mud Weight	9.5	9.6			
Funnel Viscosity	51	65			
Plastic Viscosity	18	18			
Yield Point	10	9			
Gel Strength	NA	NA			
Solids Content	6.5	9.2			
Sand Content	NA	NA			
Mud Alkalinity	NA	NA			
Filtrate Alkalinity	NA	NA			
Chlorides	58500	59000			
Mud RM	NA	NA			
Mud RMF	NA	NA			
Mud RMC	NA	NA			
Mud RM at BHT	NA	NA			
Temperature	226	245			
Hole Data			Casing Data		
Size	From	To	Size	From	To
12 1/4	0.00	1890.00	9 5/8	0.00	1890.00
8 1/2	1890.00	17903.00	5 1/2	0.00	17903.00

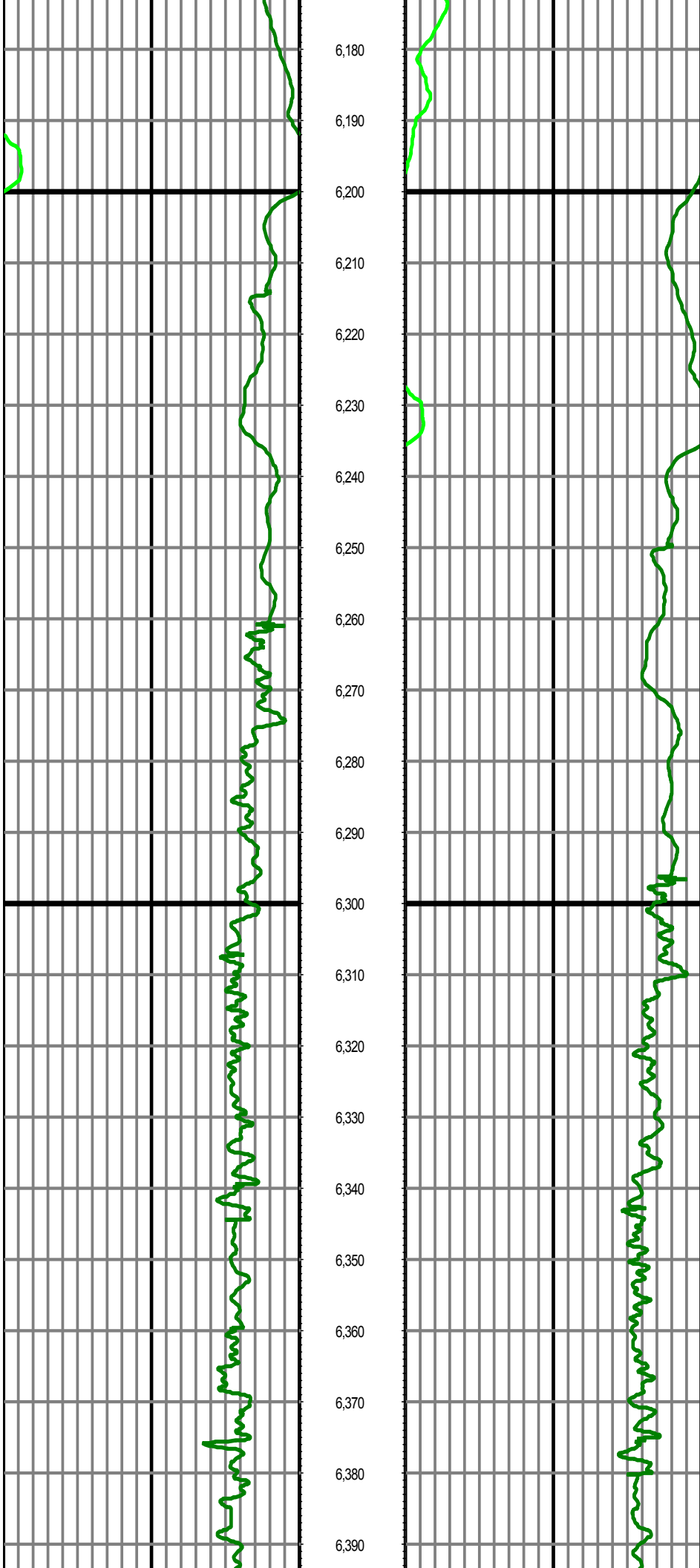
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from an interpretation made by any of our officers, agents, or employees.

0.00 GR RM (API) on TVD 200.00
200.00 2 400.00

MD 0.00 GR RM(API) on MD 200.00
FT 200.00 2 400.00

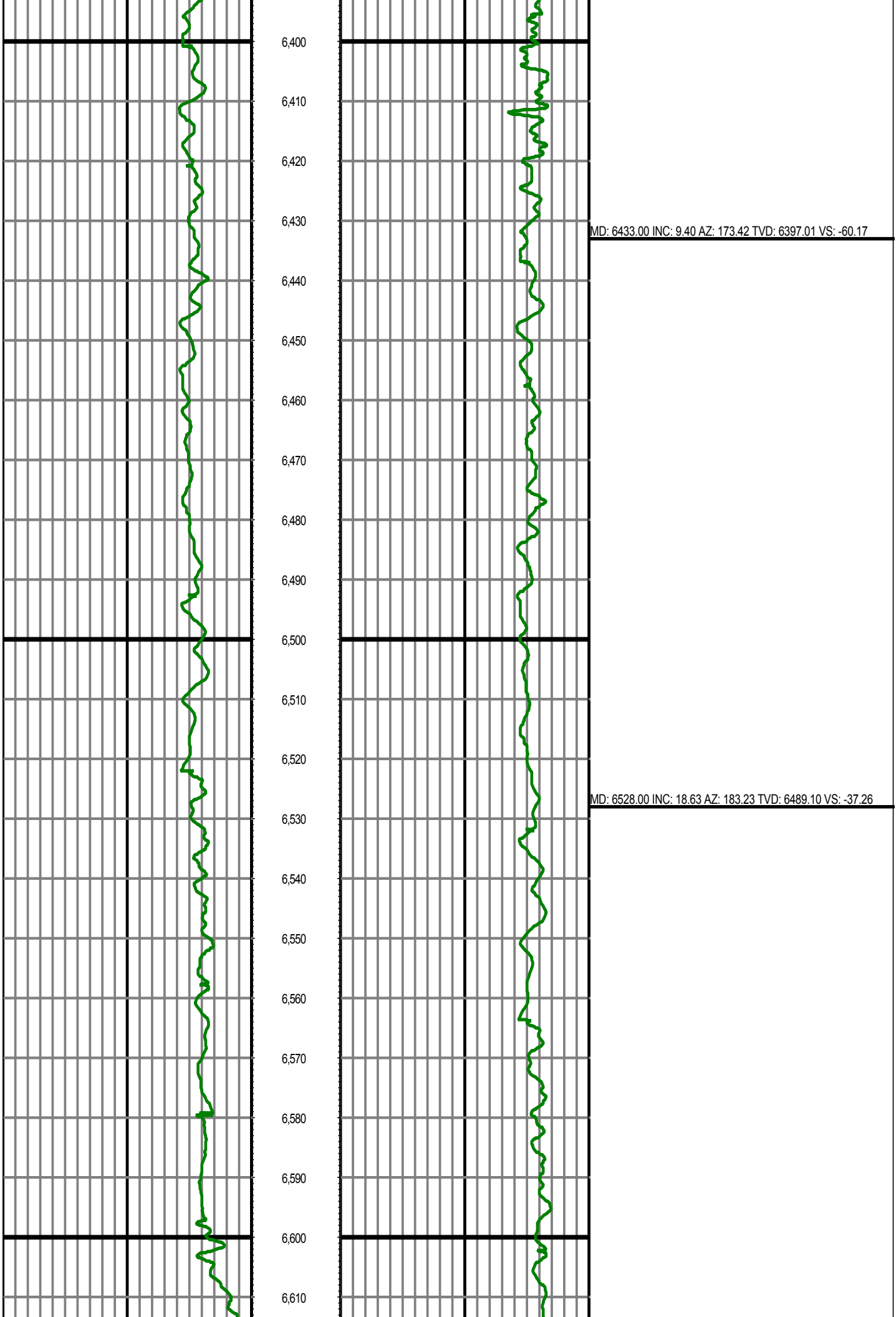
Surveys (MD/INC/AZ/TVD/VS)

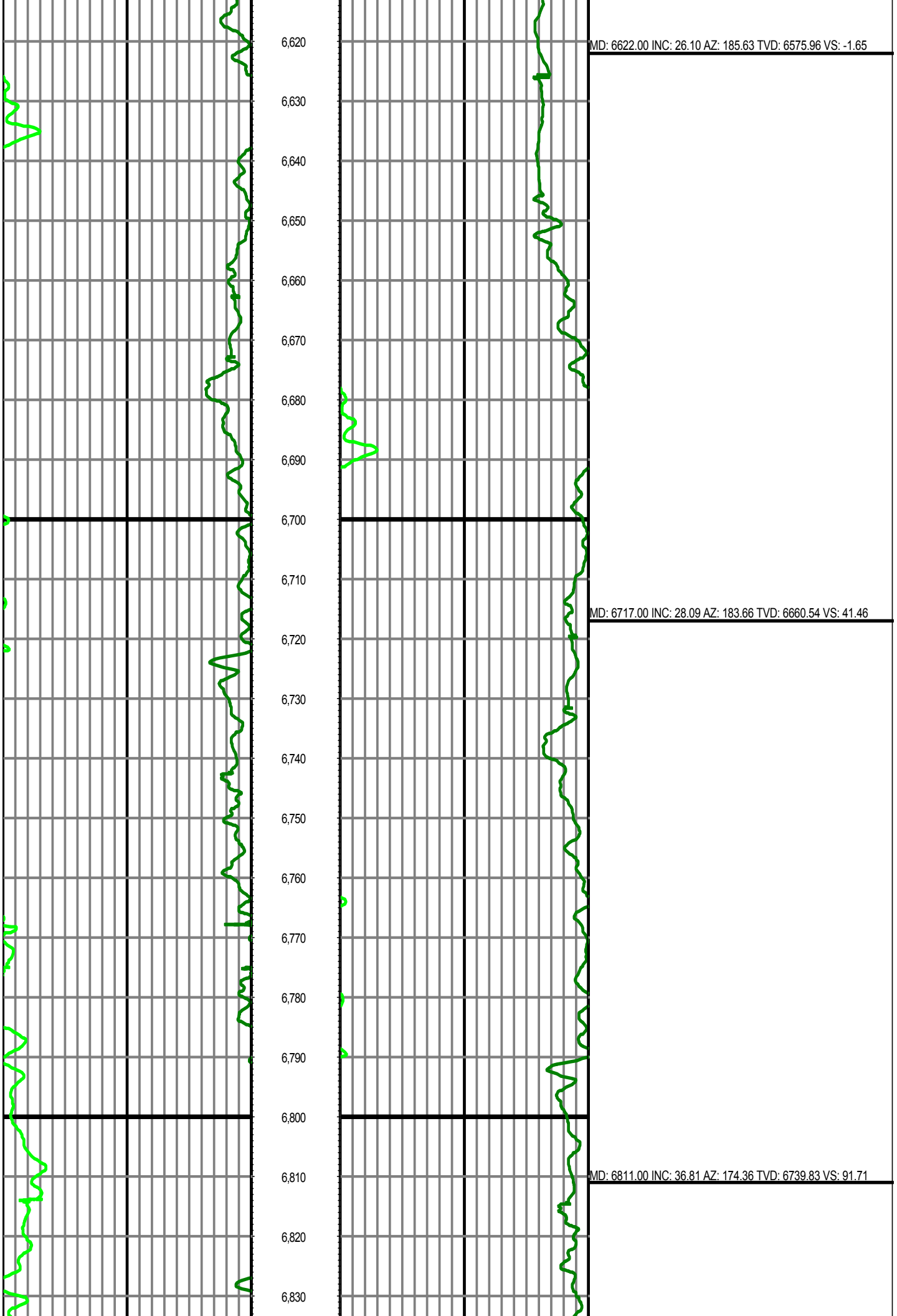


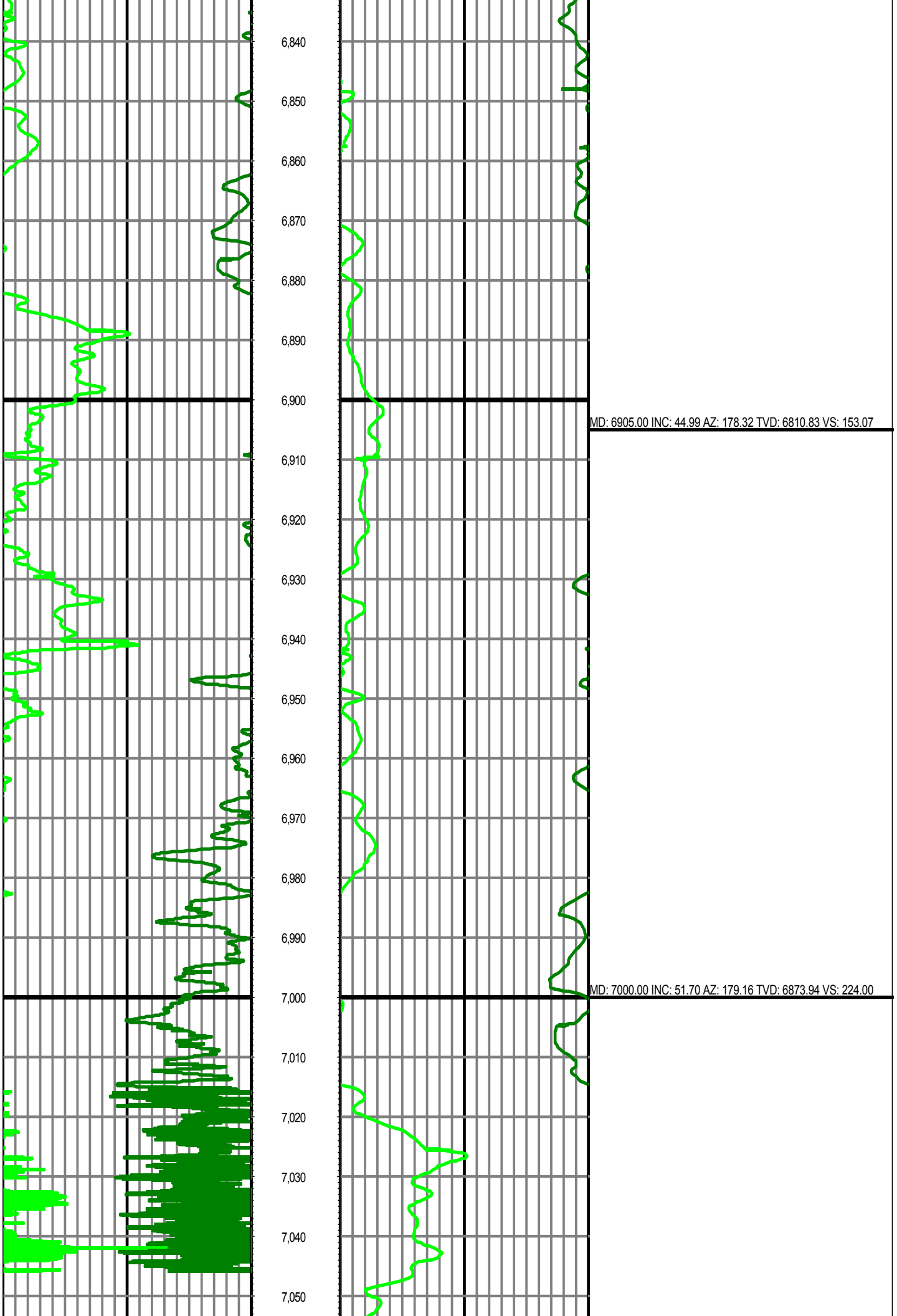


MD: 6244.00 INC: 0.49 AZ: 123.75 TVD: 6208.43 VS: -67.68

MD: 6339.00 INC: 0.59 AZ: 67.94 TVD: 6303.43 VS: -67.63



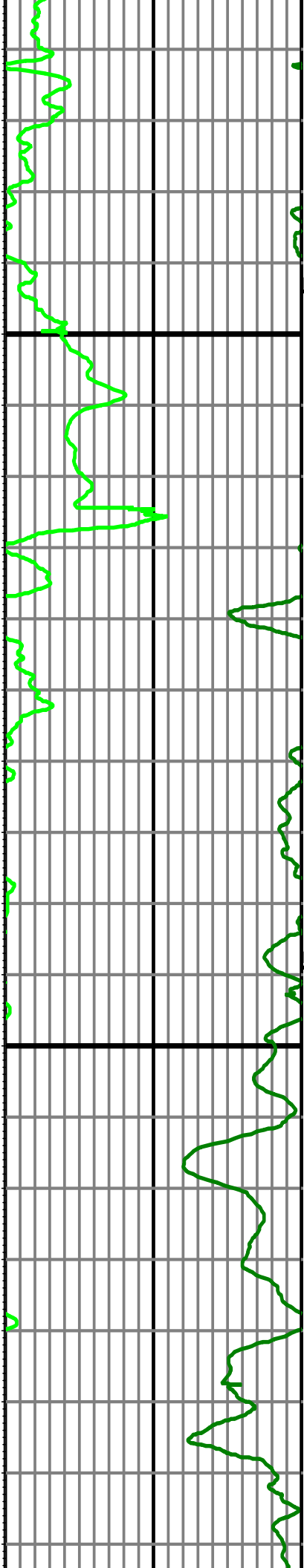




7,060
7,070
7,080
7,090
7,100
7,110
7,120
7,130
7,140
7,150
7,160
7,170
7,180
7,190
7,200
7,210
7,220
7,230
7,240
7,250
7,260
7,270

MD: 7094.00 INC: 59.27 AZ: 181.57 TVD: 6927.17 VS: 301.38

MD: 7189.00 INC: 68.98 AZ: 182.86 TVD: 6968.58 VS: 386.67



7,280

MD: 7283.00 INC: 78.01 AZ: 180.76 TVD: 6995.26 VS: 476.65

7,290

7,300

7,310

7,320

7,330

7,340

7,350

7,360

7,370

MD: 7378.00 INC: 82.92 AZ: 179.47 TVD: 7010.99 VS: 570.31

7,380

7,390

7,400

7,410

7,420

7,430

7,440

7,450

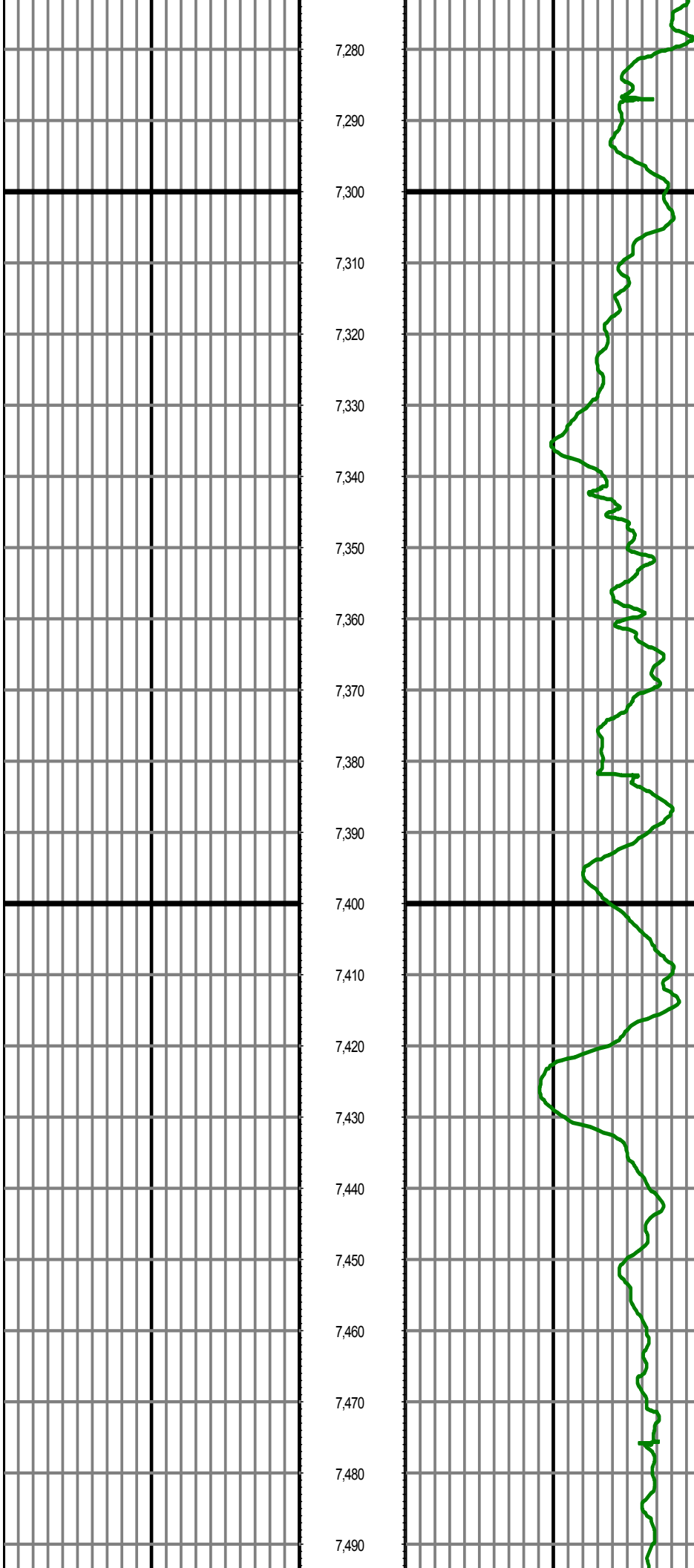
7,460

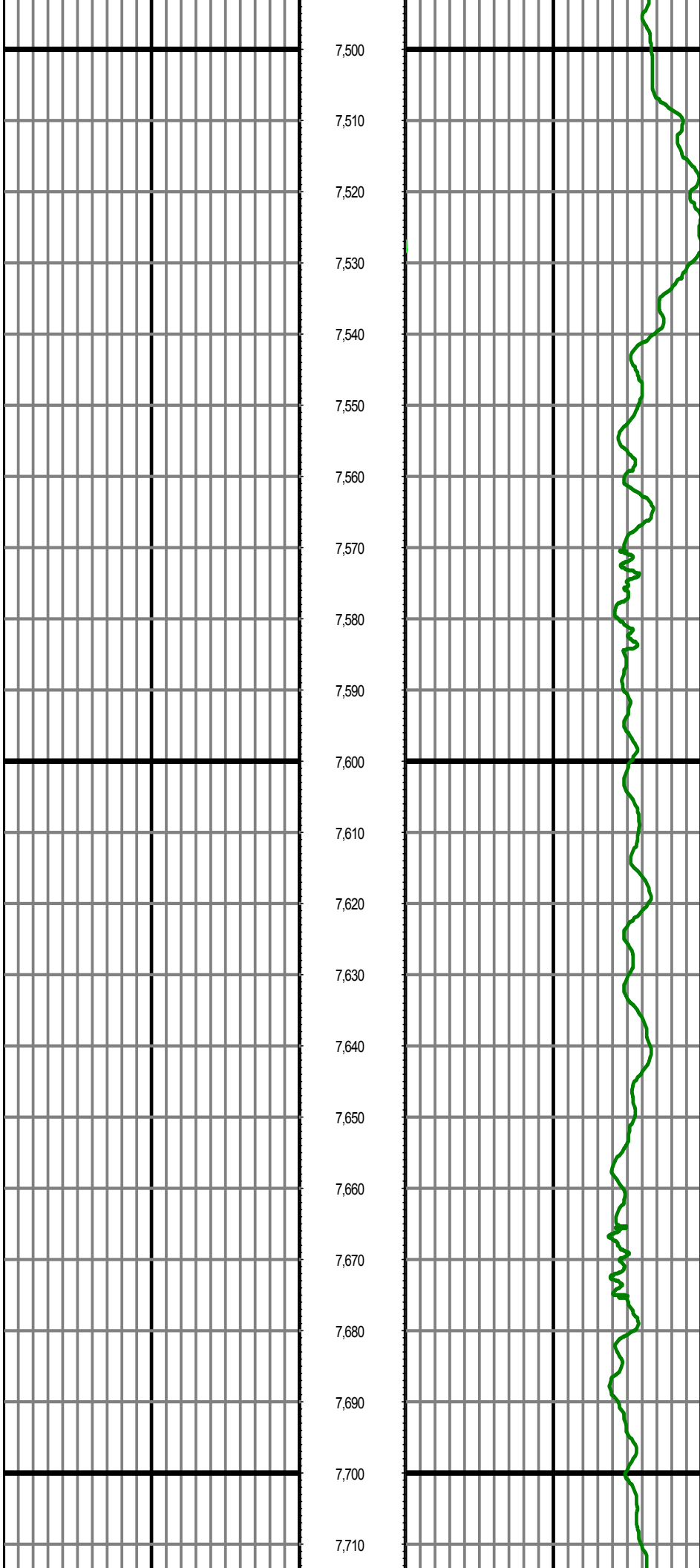
MD: 7472.00 INC: 88.34 AZ: 178.88 TVD: 7018.15 VS: 663.99

7,470

7,480

7,490





7,500

7,510

7,520

7,530

7,540

7,550

7,560

7,570

7,580

7,590

7,600

7,610

7,620

7,630

7,640

7,650

7,660

7,670

7,680

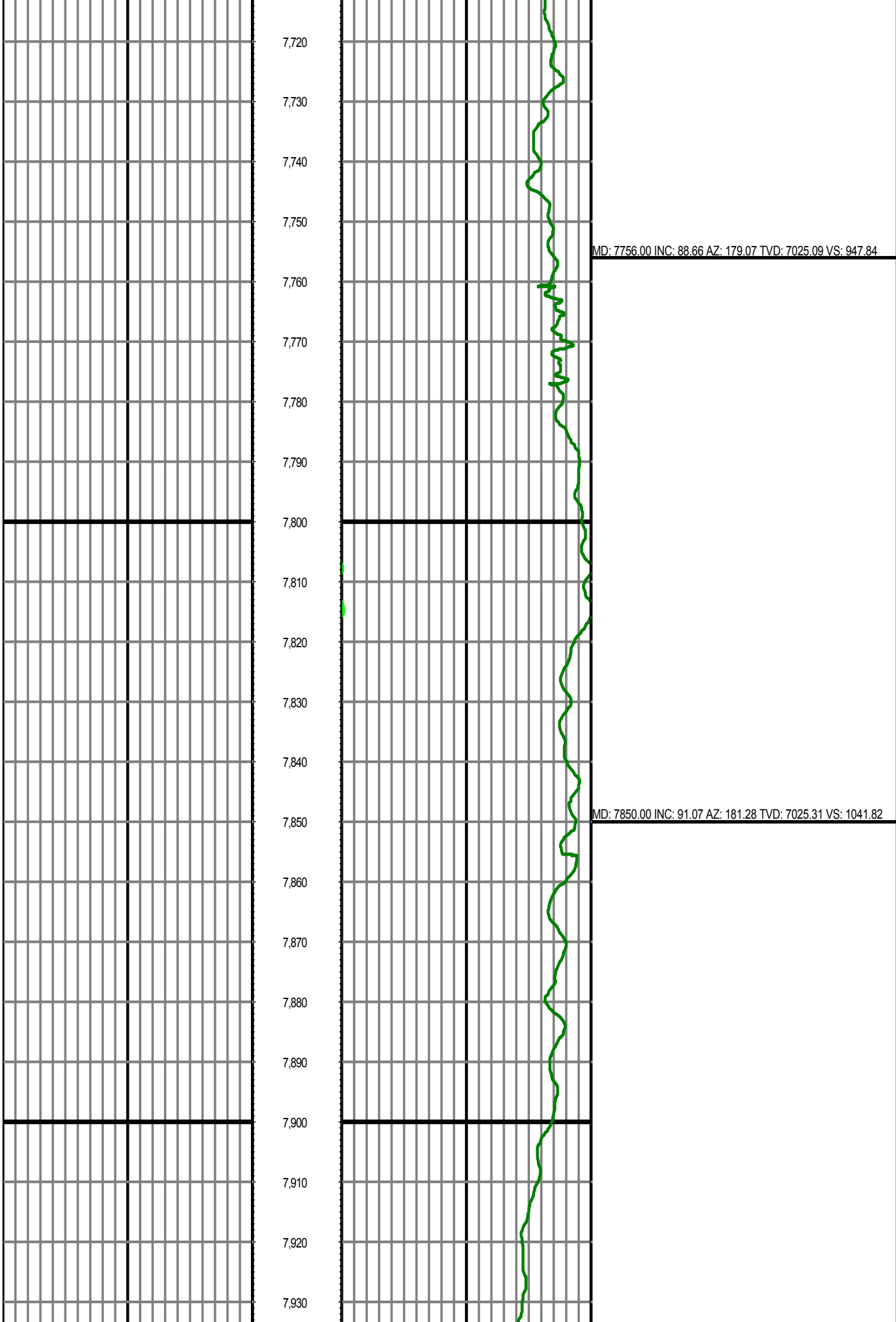
7,690

7,700

7,710

MD: 7567.00 INC: 88.03 AZ: 178.10 TVD: 7021.16 VS: 758.92

MD: 7661.00 INC: 89.27 AZ: 179.00 TVD: 7023.38 VS: 852.86



7,720

7,730

7,740

7,750

MD: 7756.00 INC: 88.66 AZ: 179.07 TVD: 7025.09 VS: 947.84

7,760

7,770

7,780

7,790

7,800

7,810

7,820

7,830

7,840

MD: 7850.00 INC: 91.07 AZ: 181.28 TVD: 7025.31 VS: 1041.82

7,850

7,860

7,870

7,880

7,890

7,900

7,910

7,920

7,930

7,940

MD: 7945.00 INC: 91.05 AZ: 181.22 TVD: 7023.56 VS: 1136.78

7,950

7,960

7,970

7,980

7,990

8,000

8,010

8,020

8,030

MD: 8039.00 INC: 90.88 AZ: 180.35 TVD: 7021.97 VS: 1230.75

8,040

8,050

8,060

8,070

8,080

8,090

8,100

8,110

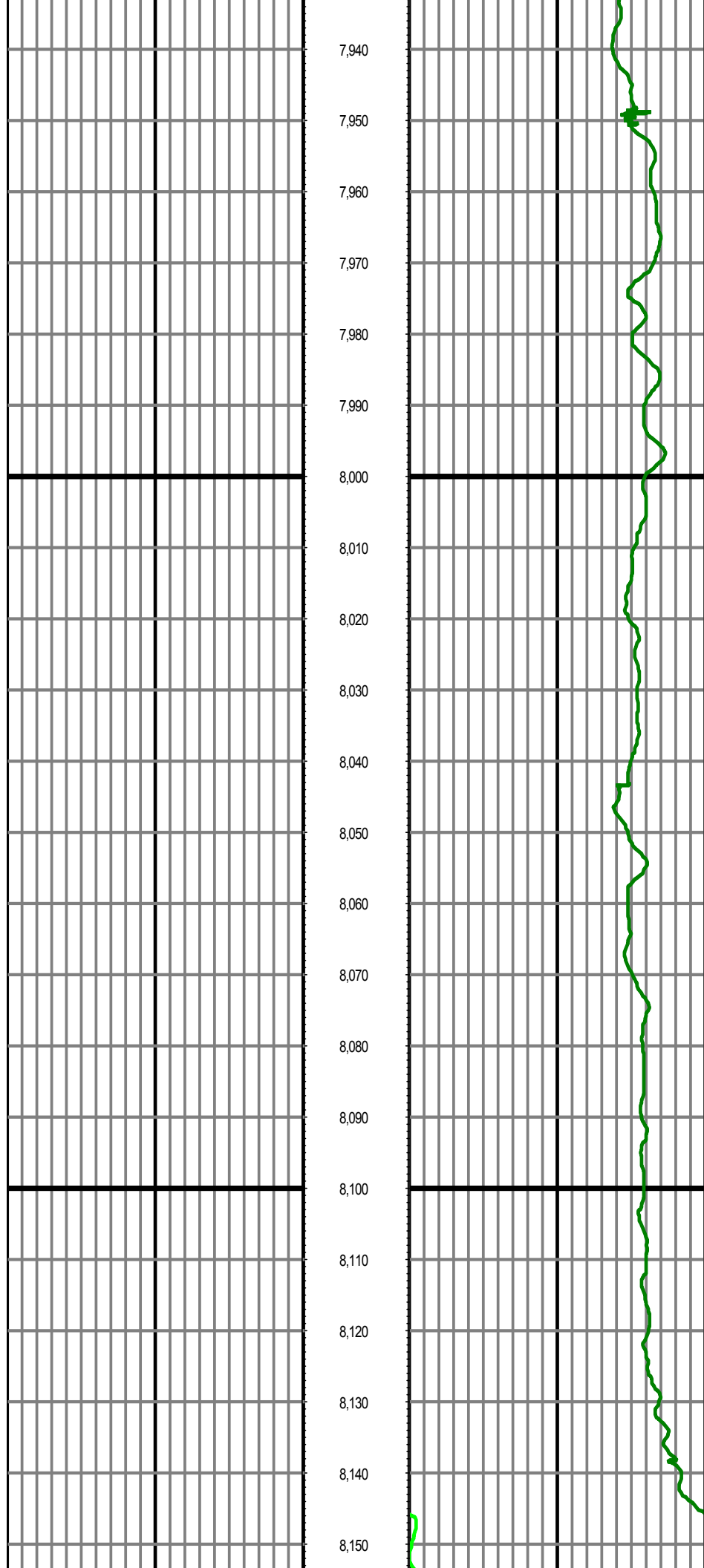
8,120

8,130

MD: 8134.00 INC: 91.40 AZ: 180.32 TVD: 7020.08 VS: 1325.73

8,140

8,150



8,380

8,390

8,400

8,410

8,420

8,430

8,440

8,450

8,460

8,470

8,480

8,490

8,500

8,510

8,520

8,530

8,540

8,550

8,560

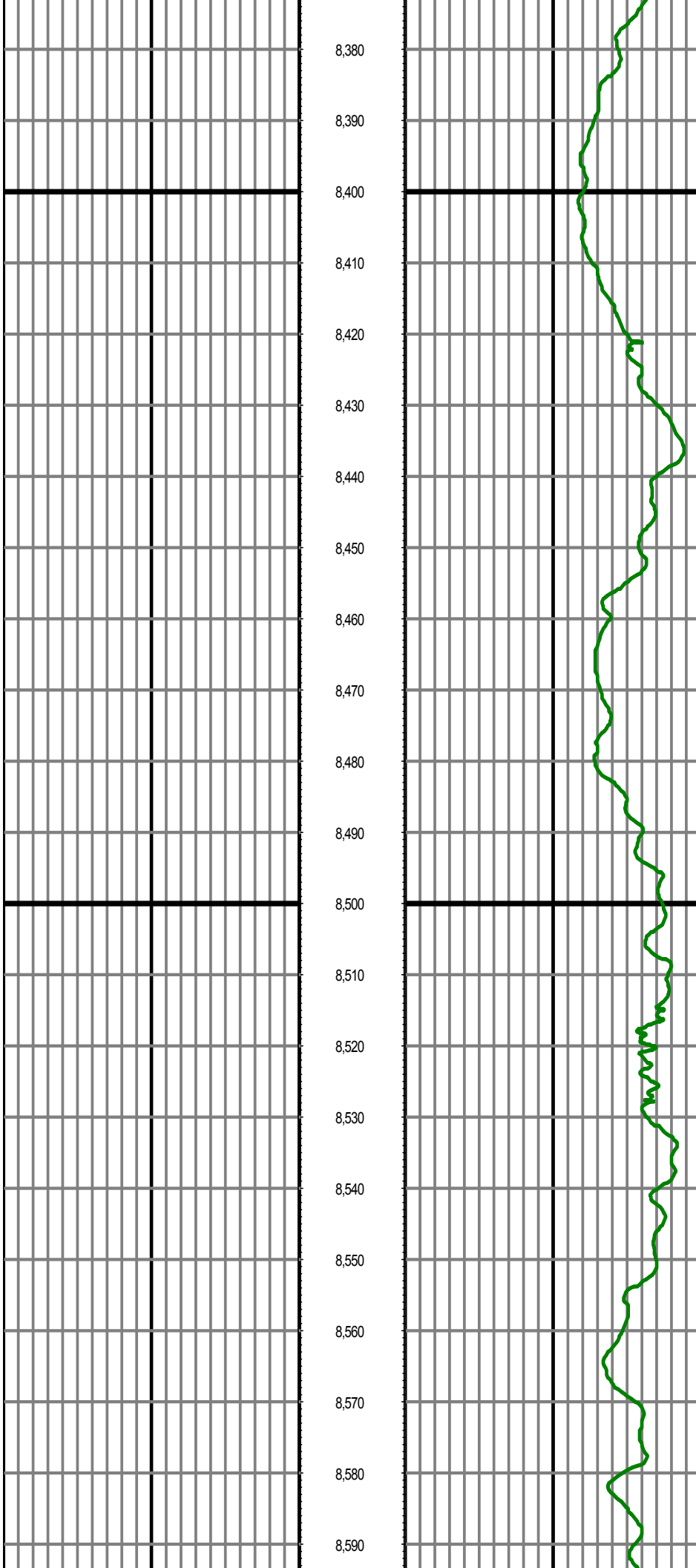
8,570

8,580

8,590

MD: 8417.00 INC: 89.77 AZ: 180.85 TVD: 7015.54 VS: 1608.67

MD: 8511.00 INC: 90.63 AZ: 180.93 TVD: 7015.22 VS: 1702.65



8,600

MD: 8606.00 INC: 88.86 AZ: 181.33 TVD: 7015.64 VS: 1797.62

8,610

8,620

8,630

8,640

8,650

8,660

8,670

8,680

8,690

8,700

MD: 8700.00 INC: 89.89 AZ: 181.46 TVD: 7016.66 VS: 1891.58

8,710

8,720

8,730

8,740

8,750

8,760

8,770

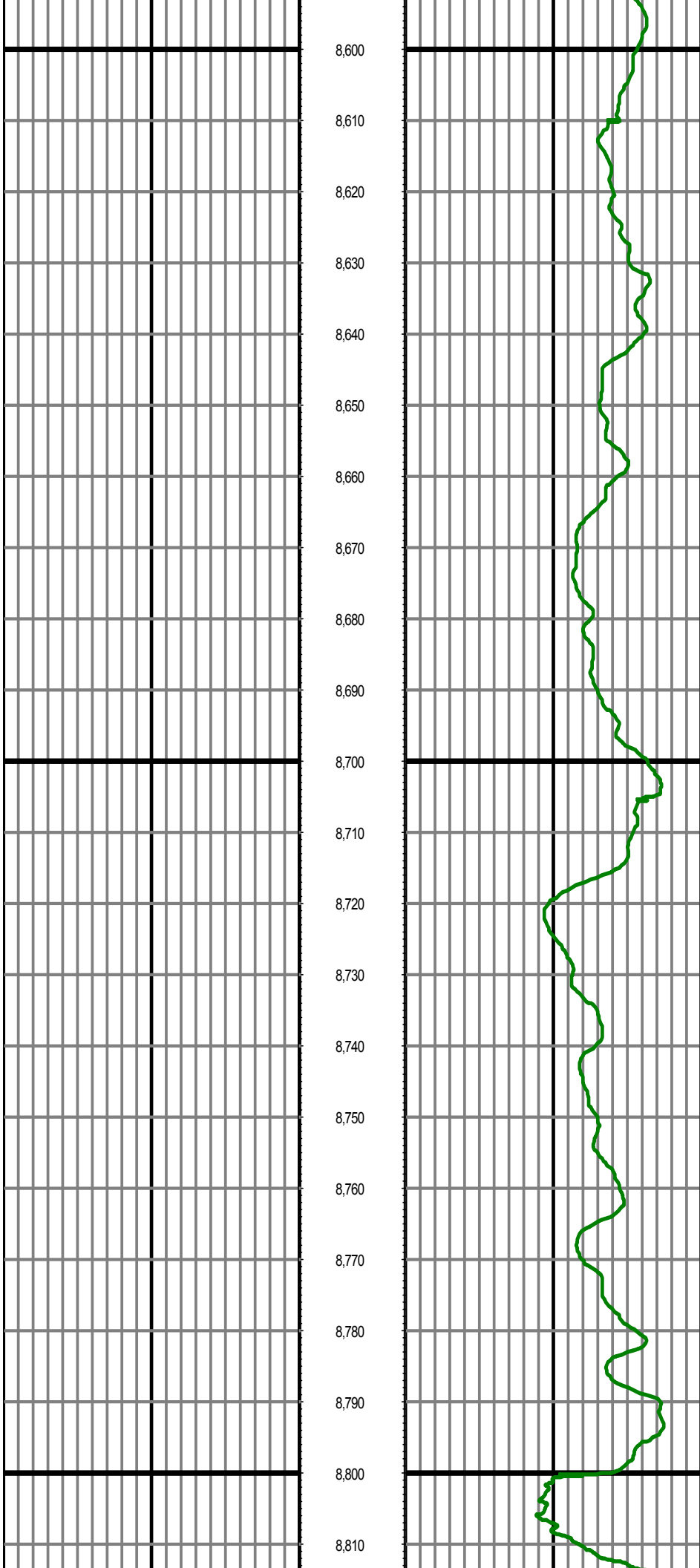
8,780

8,790

MD: 8795.00 INC: 90.82 AZ: 181.82 TVD: 7016.08 VS: 1986.53

8,800

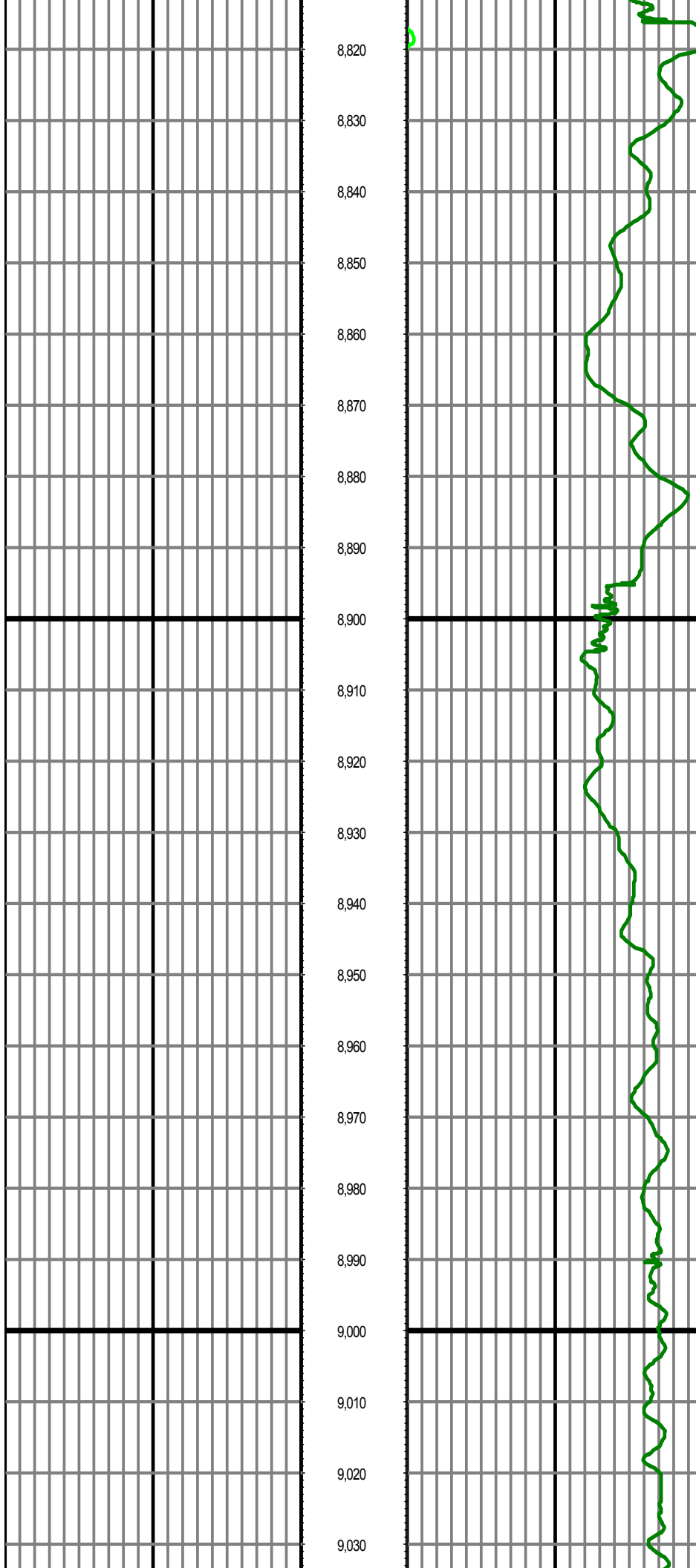
8,810



8,820
8,830
8,840
8,850
8,860
8,870
8,880
8,890
8,900
8,910
8,920
8,930
8,940
8,950
8,960
8,970
8,980
8,990
9,000
9,010
9,020
9,030

MD: 8889.00 INC: 89.65 AZ: 180.33 TVD: 7015.69 VS: 2080.50

MD: 8984.00 INC: 88.75 AZ: 179.13 TVD: 7017.02 VS: 2175.49



9,260

9,270

9,280

9,290

9,300

9,310

9,320

9,330

9,340

9,350

9,360

9,370

9,380

9,390

9,400

9,410

9,420

9,430

9,440

9,450

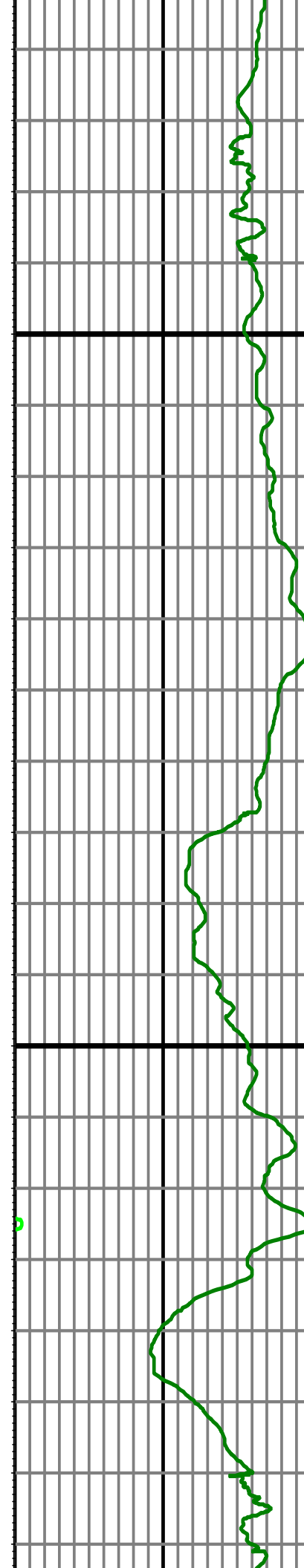
9,460

9,470

MD: 9267.00 INC: 91.06 AZ: 180.14 TVD: 7017.12 VS: 2458.47

MD: 9362.00 INC: 89.02 AZ: 180.45 TVD: 7017.06 VS: 2553.46

MD: 9456.00 INC: 89.36 AZ: 180.44 TVD: 7018.38 VS: 2647.44

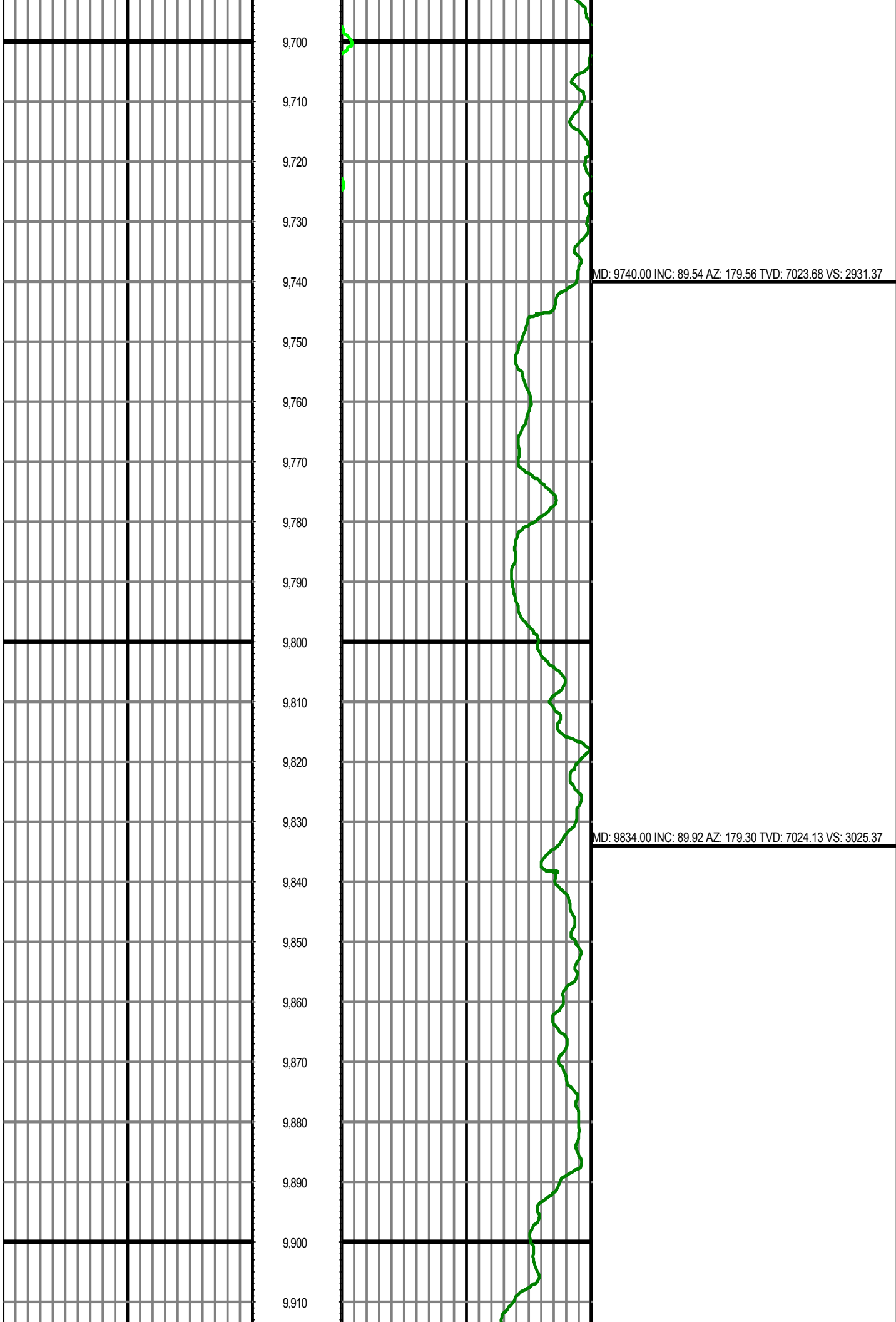


9,480
9,490
9,500
9,510
9,520
9,530
9,540
9,550
9,560
9,570
9,580
9,590
9,600
9,610
9,620
9,630
9,640
9,650
9,660
9,670
9,680
9,690

MD: 9551.00 INC: 88.71 AZ: 179.33 TVD: 7019.98 VS: 2742.43

MD: 9645.00 INC: 88.63 AZ: 178.76 TVD: 7022.17 VS: 2836.39





9,920

MD: 9929.00 INC: 90.39 AZ: 179.06 TVD: 7023.87 VS: 3120.36

9,930

9,940

9,950

9,960

9,970

9,980

9,990

10,000

10,010

10,020

MD: 10023.00 INC: 91.33 AZ: 179.14 TVD: 7022.46 VS: 3214.34

10,030

10,040

10,050

10,060

10,070

10,080

10,090

10,100

10,110

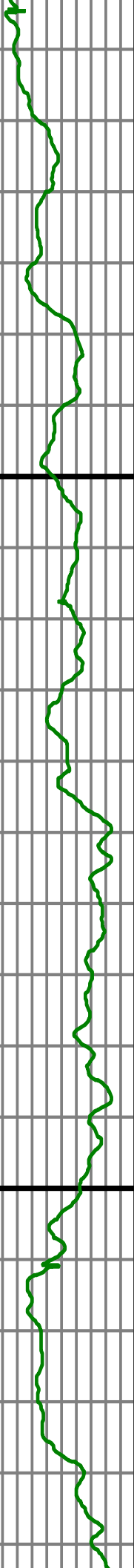
MD: 10118.00 INC: 89.34 AZ: 179.40 TVD: 7021.90 VS: 3309.33

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
10,250
10,260
10,270
10,280
10,290
10,300
10,310
10,320
10,330
10,340
10,350



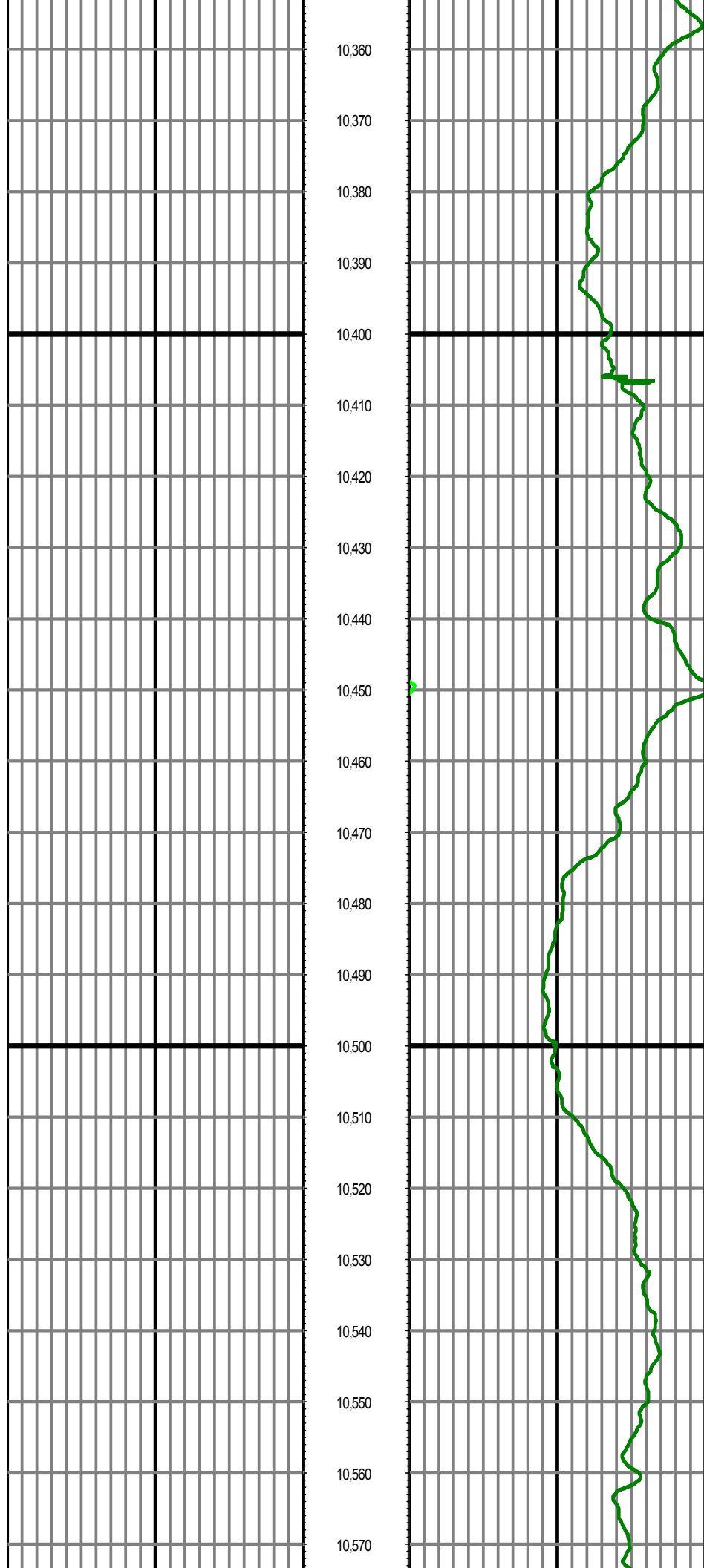
MD: 10212.00 INC: 88.19 AZ: 178.66 TVD: 7023.93 VS: 3403.30

MD: 10307.00 INC: 88.74 AZ: 178.37 TVD: 7026.47 VS: 3498.24

10,360
10,370
10,380
10,390
10,400
10,410
10,420
10,430
10,440
10,450
10,460
10,470
10,480
10,490
10,500
10,510
10,520
10,530
10,540
10,550
10,560
10,570

MD: 10401.00 INC: 88.82 AZ: 178.01 TVD: 7028.48 VS: 3592.18

MD: 10496.00 INC: 89.00 AZ: 178.20 TVD: 7030.28 VS: 3687.12



10,580

10,590

10,600

10,610

10,620

10,630

10,640

10,650

10,660

10,670

10,680

10,690

10,700

10,710

10,720

10,730

10,740

10,750

10,760

10,770

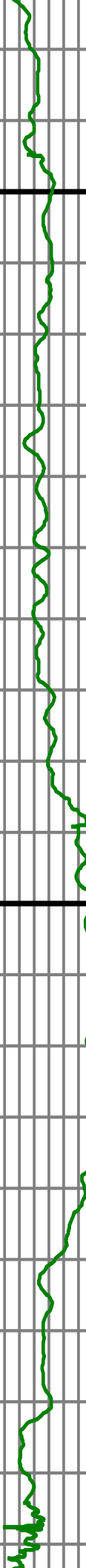
10,780

10,790

MD: 10590.00 INC: 89.19 AZ: 177.84 TVD: 7031.77 VS: 3781.06

MD: 10685.00 INC: 89.90 AZ: 178.42 TVD: 7032.52 VS: 3876.01

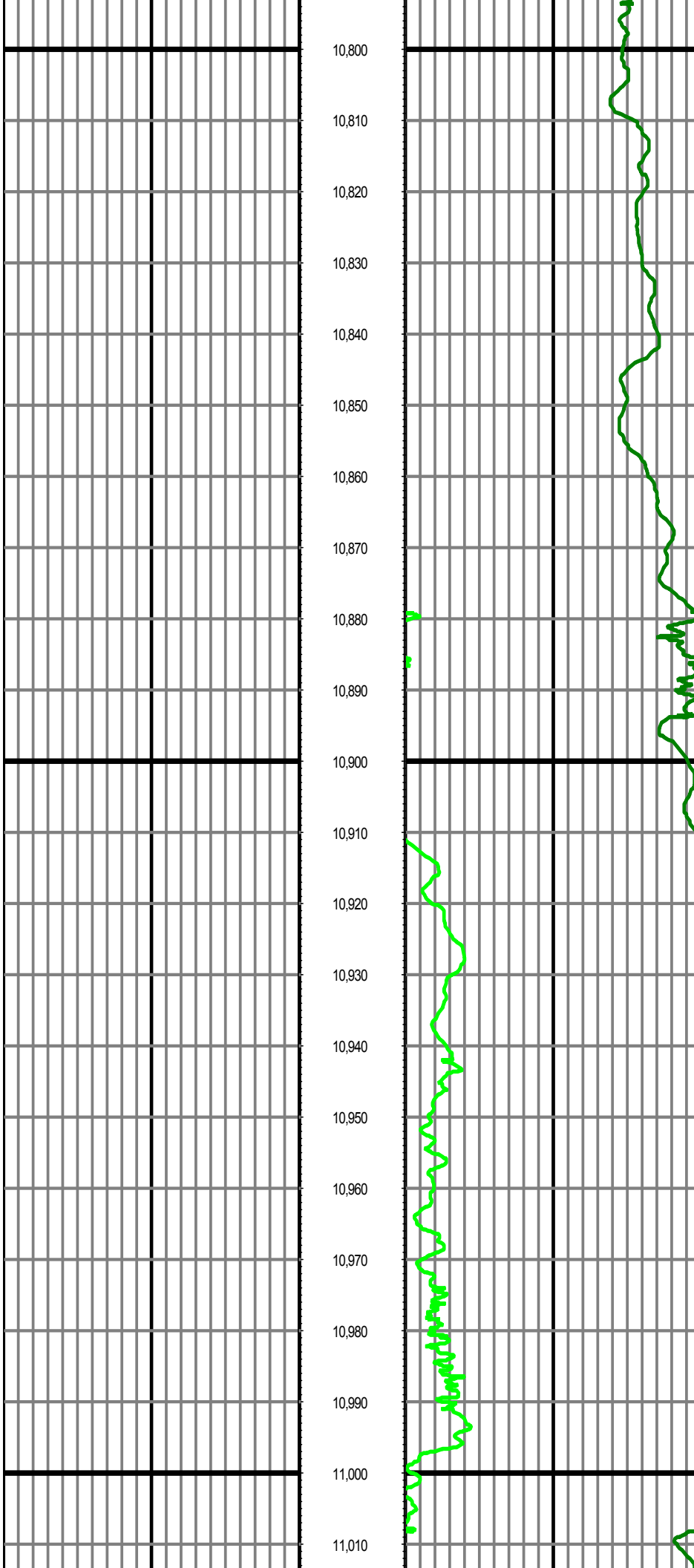
MD: 10779.00 INC: 89.91 AZ: 177.86 TVD: 7032.68 VS: 3969.97



10,800
10,810
10,820
10,830
10,840
10,850
10,860
10,870
10,880
10,890
10,900
10,910
10,920
10,930
10,940
10,950
10,960
10,970
10,980
10,990
11,000
11,010

MD: 10874.00 INC: 90.05 AZ: 178.42 TVD: 7032.71 VS: 4064.93

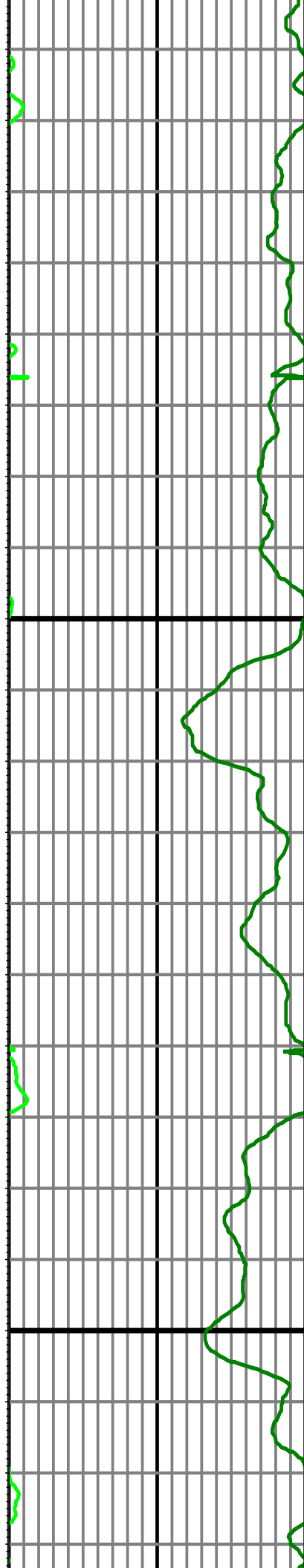
MD: 10968.00 INC: 89.94 AZ: 179.56 TVD: 7032.72 VS: 4158.92



11,020
11,030
11,040
11,050
11,060
11,070
11,080
11,090
11,100
11,110
11,120
11,130
11,140
11,150
11,160
11,170
11,180
11,190
11,200
11,210
11,220
11,230

MD: 11063.00 INC: 89.47 AZ: 180.70 TVD: 7033.21 VS: 4253.91

MD: 11157.00 INC: 88.77 AZ: 180.77 TVD: 7034.65 VS: 4347.89

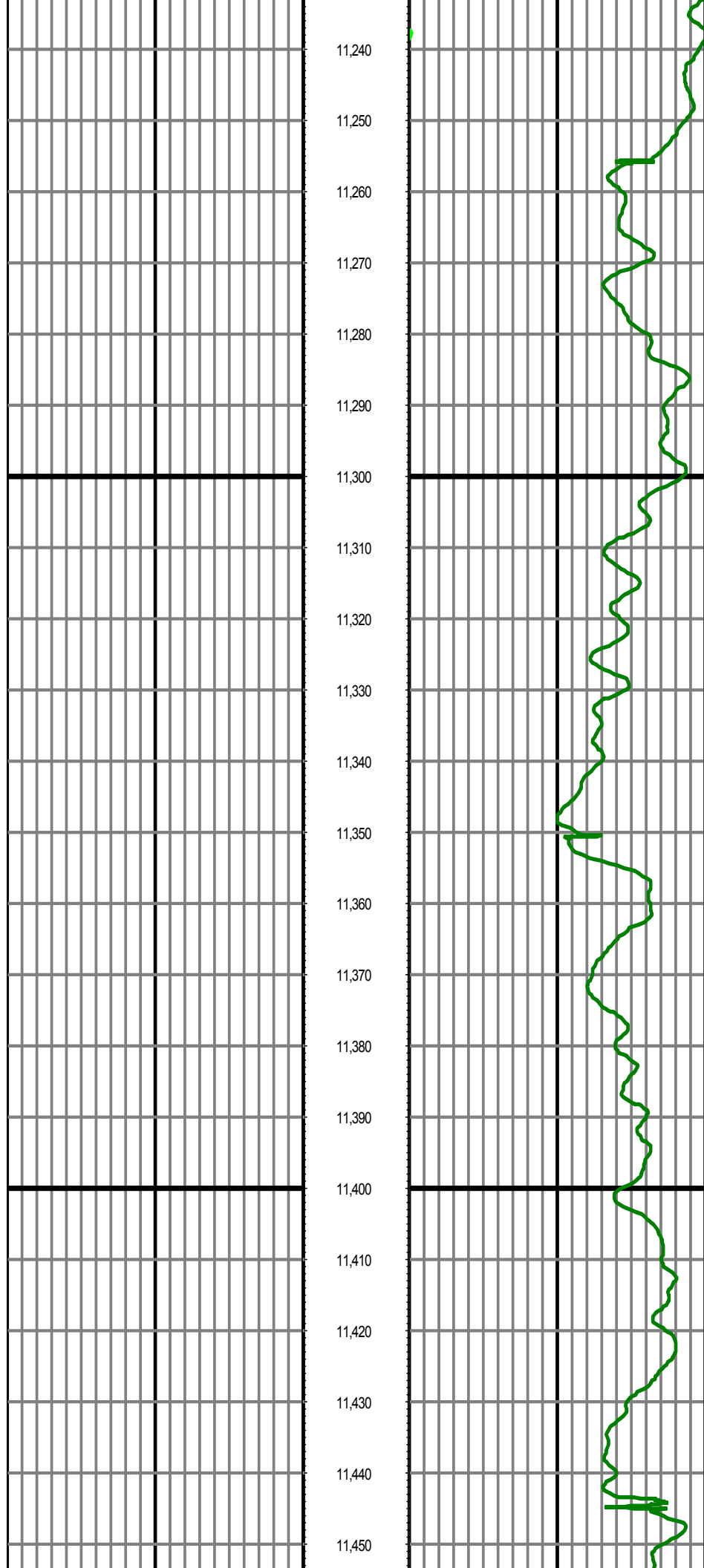


11,240
11,250
11,260
11,270
11,280
11,290
11,300
11,310
11,320
11,330
11,340
11,350
11,360
11,370
11,380
11,390
11,400
11,410
11,420
11,430
11,440
11,450

MD: 11251.00 INC: 88.86 AZ: 181.05 TVD: 7036.59 VS: 4441.85

MD: 11346.00 INC: 88.85 AZ: 181.03 TVD: 7038.49 VS: 4536.81

MD: 11440.00 INC: 88.40 AZ: 180.83 TVD: 7040.75 VS: 4630.77



11,460

11,470

11,480

11,490

11,500

11,510

11,520

11,530

11,540

11,550

11,560

11,570

11,580

11,590

11,600

11,610

11,620

11,630

11,640

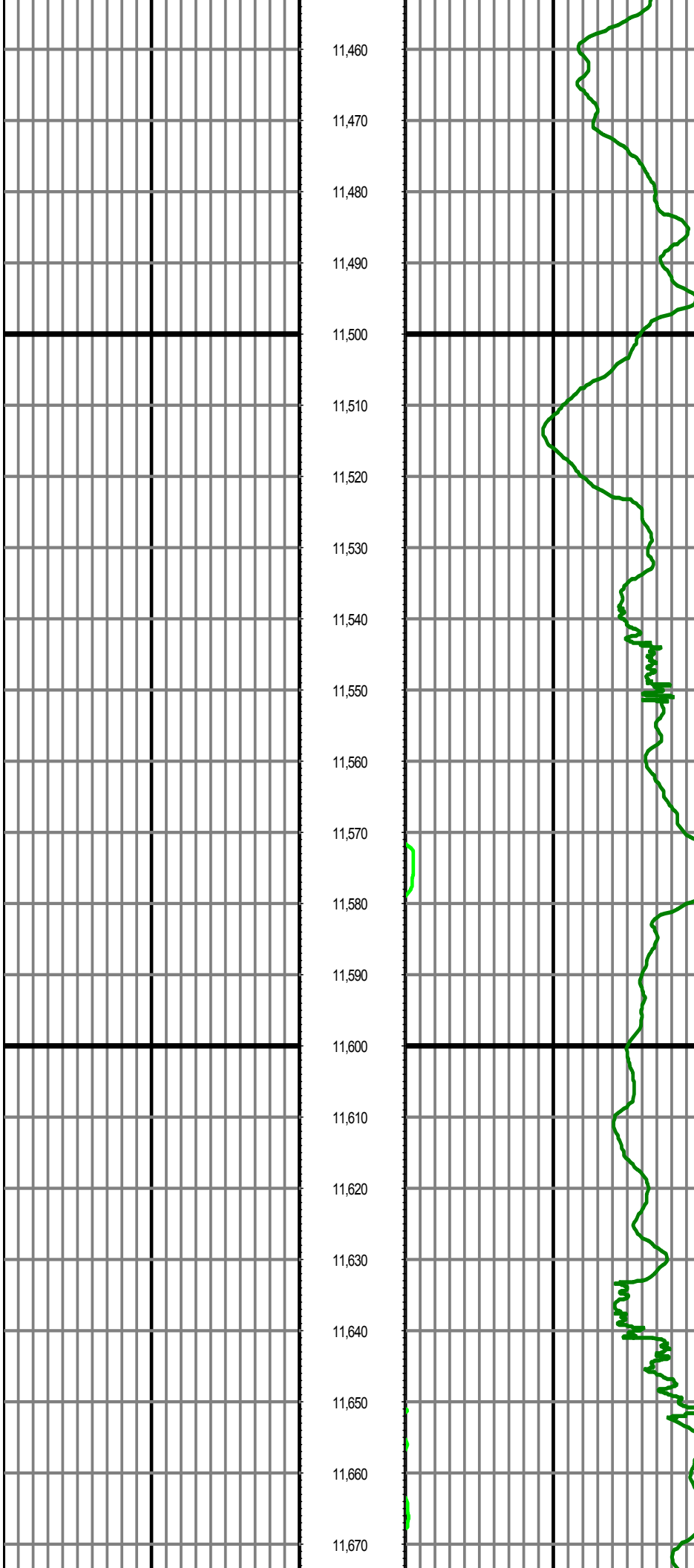
11,650

11,660

11,670

MD: 11535.00 INC: 88.57 AZ: 181.09 TVD: 7043.26 VS: 4725.72

MD: 11629.00 INC: 88.97 AZ: 180.51 TVD: 7045.28 VS: 4819.68



11,900

11,910

11,920

11,930

11,940

11,950

11,960

11,970

11,980

11,990

12,000

12,010

12,020

12,030

12,040

12,050

12,060

12,070

12,080

12,090

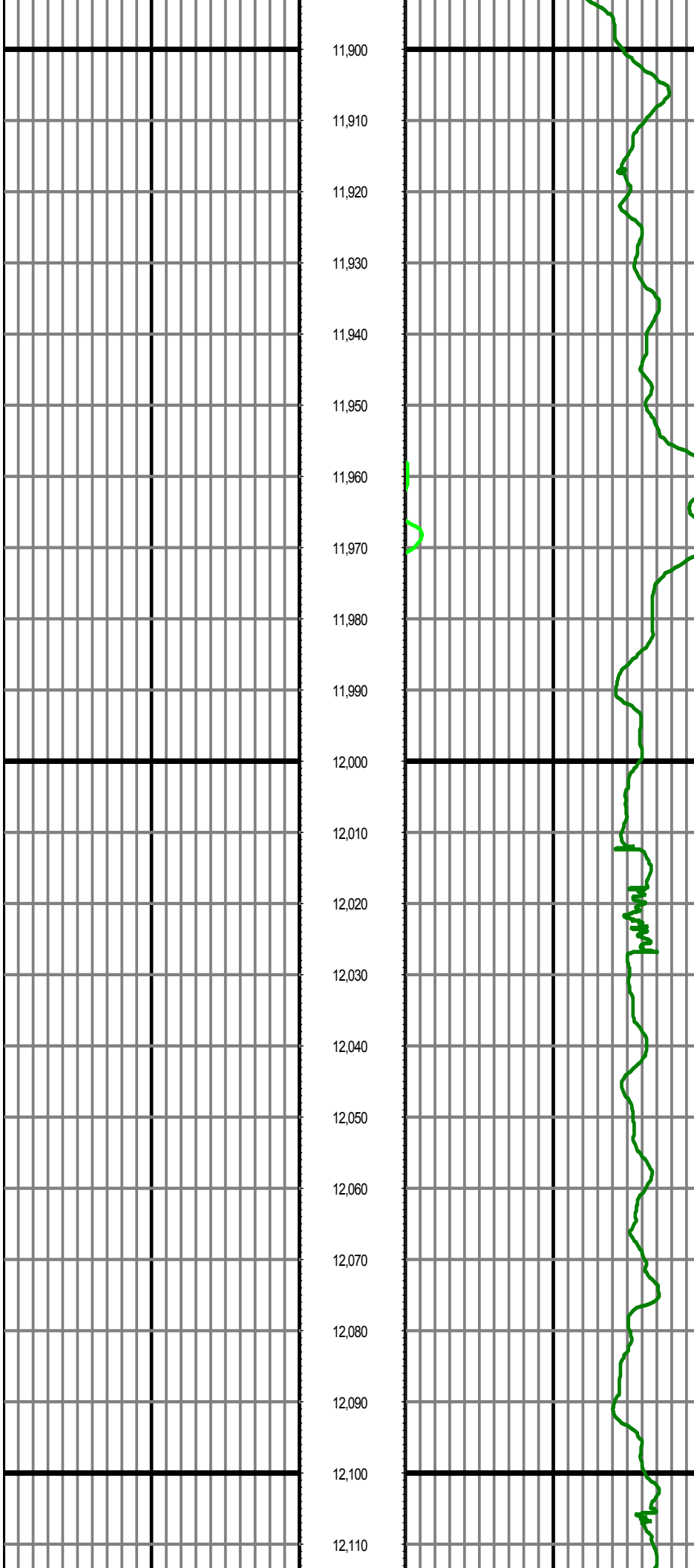
12,100

12,110

MD: 11912.00 INC: 90.93 AZ: 180.77 TVD: 7044.07 VS: 5102.64

MD: 12007.00 INC: 91.04 AZ: 180.36 TVD: 7042.44 VS: 5197.62

MD: 12101.00 INC: 90.51 AZ: 180.68 TVD: 7041.17 VS: 5291.61



12,120
12,130
12,140
12,150
12,160
12,170
12,180
12,190
12,200
12,210
12,220
12,230
12,240
12,250
12,260
12,270
12,280
12,290
12,300
12,310
12,320
12,330

MD: 12196.00 INC: 91.07 AZ: 180.85 TVD: 7039.86 VS: 5386.58

MD: 12290.00 INC: 89.90 AZ: 181.09 TVD: 7039.06 VS: 5480.56



12,340

12,350

12,360

12,370

12,380

12,390

12,400

12,410

12,420

12,430

12,440

12,450

12,460

12,470

12,480

12,490

12,500

12,510

12,520

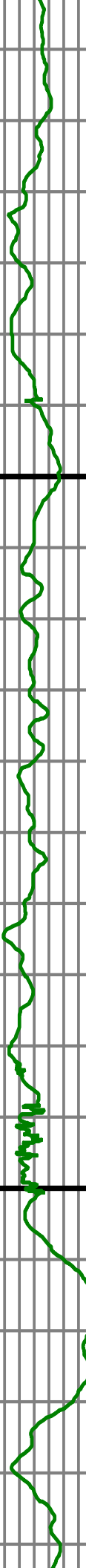
12,530

12,540

12,550

MD: 12385.00 INC: 90.70 AZ: 181.06 TVD: 7038.57 VS: 5575.53

MD: 12479.00 INC: 91.22 AZ: 180.88 TVD: 7036.99 VS: 5669.50



12,560

12,570

12,580

12,590

12,600

12,610

12,620

12,630

12,640

12,650

12,660

12,670

12,680

12,690

12,700

12,710

12,720

12,730

12,740

12,750

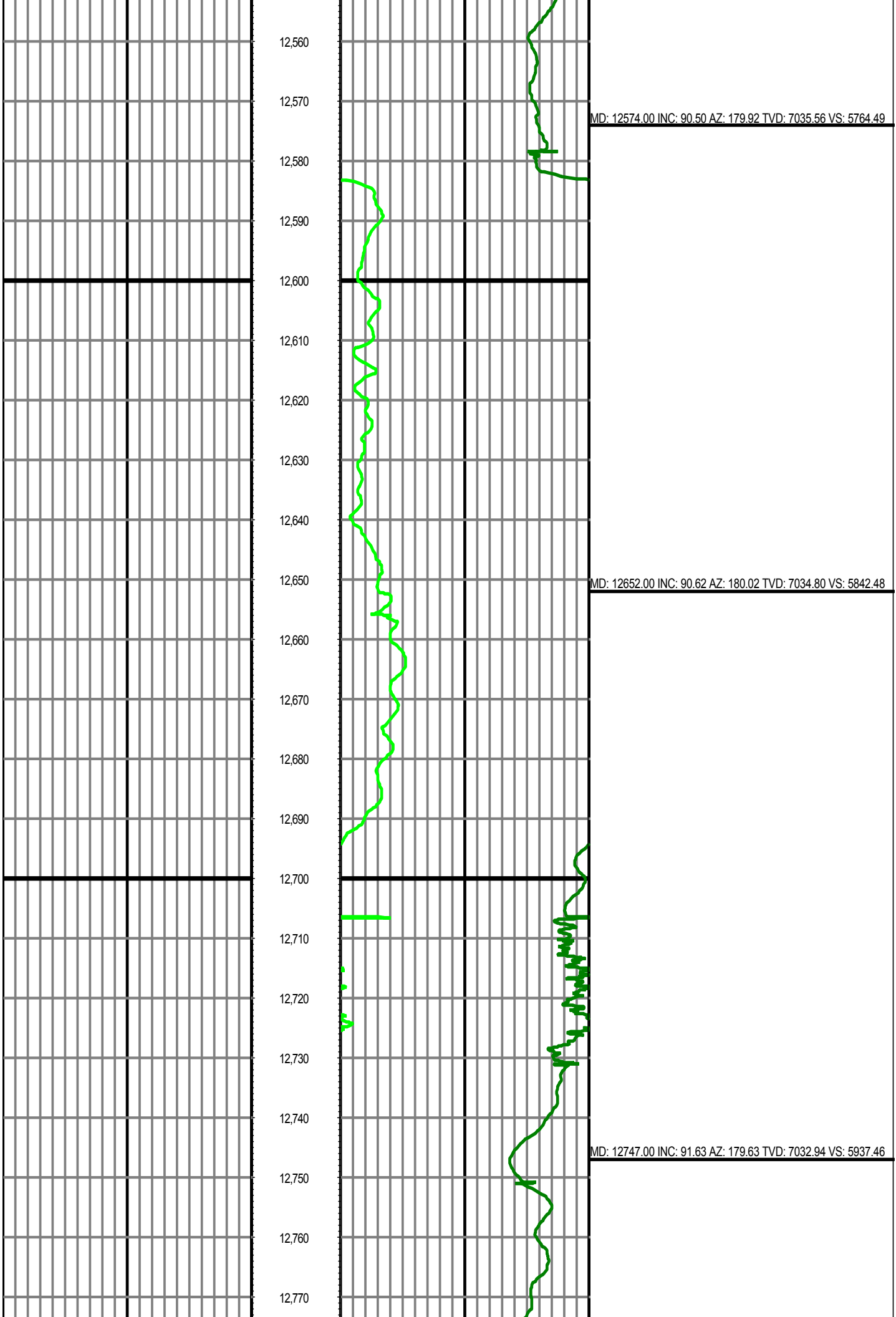
12,760

12,770

MD: 12574.00 INC: 90.50 AZ: 179.92 TVD: 7035.56 VS: 5764.49

MD: 12652.00 INC: 90.62 AZ: 180.02 TVD: 7034.80 VS: 5842.48

MD: 12747.00 INC: 91.63 AZ: 179.63 TVD: 7032.94 VS: 5937.46



12,780

12,790

12,800

12,810

12,820

12,830

12,840

12,850

12,860

12,870

12,880

12,890

12,900

12,910

12,920

12,930

12,940

12,950

12,960

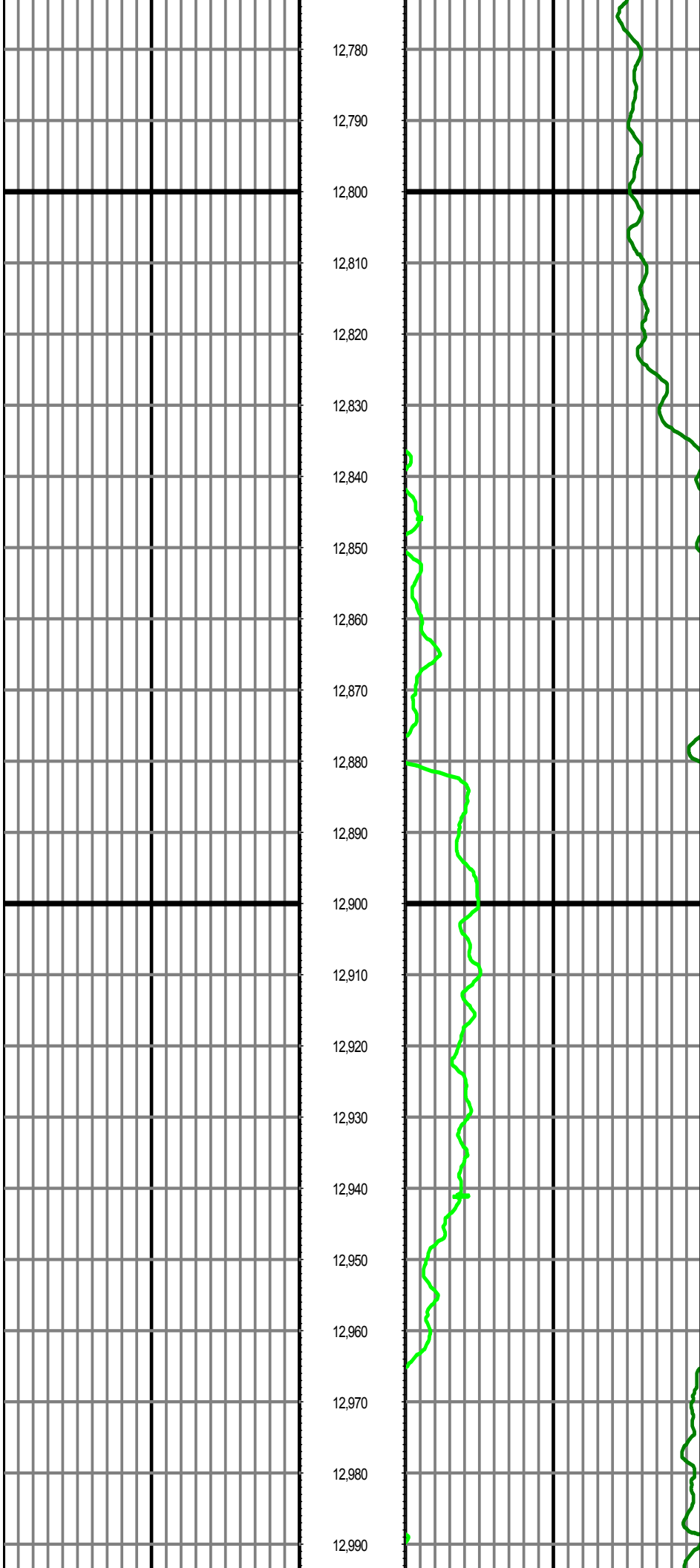
12,970

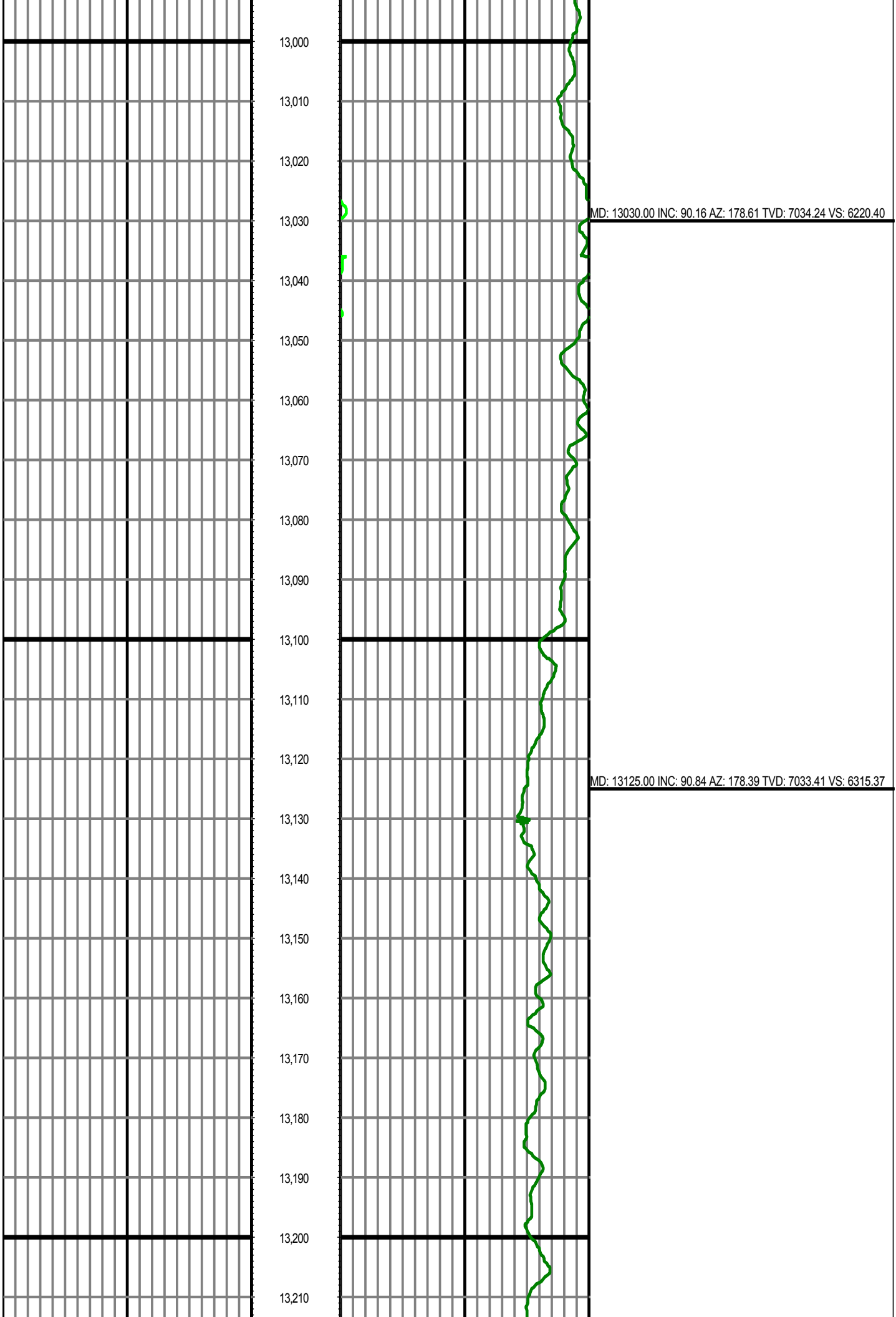
12,980

12,990

MD: 12841.00 INC: 88.89 AZ: 178.93 TVD: 7032.51 VS: 6031.45

MD: 12936.00 INC: 89.43 AZ: 178.58 TVD: 7033.90 VS: 6126.42





MD: 13219.00 INC: 91.47 AZ: 178.73 TVD: 7031.52 VS: 6409.32

13,220

13,230

13,240

13,250

13,260

13,270

13,280

13,290

13,300

13,310

MD: 13314.00 INC: 90.54 AZ: 180.21 TVD: 7029.85 VS: 6504.30

13,320

13,330

13,340

13,350

13,360

13,370

13,380

13,390

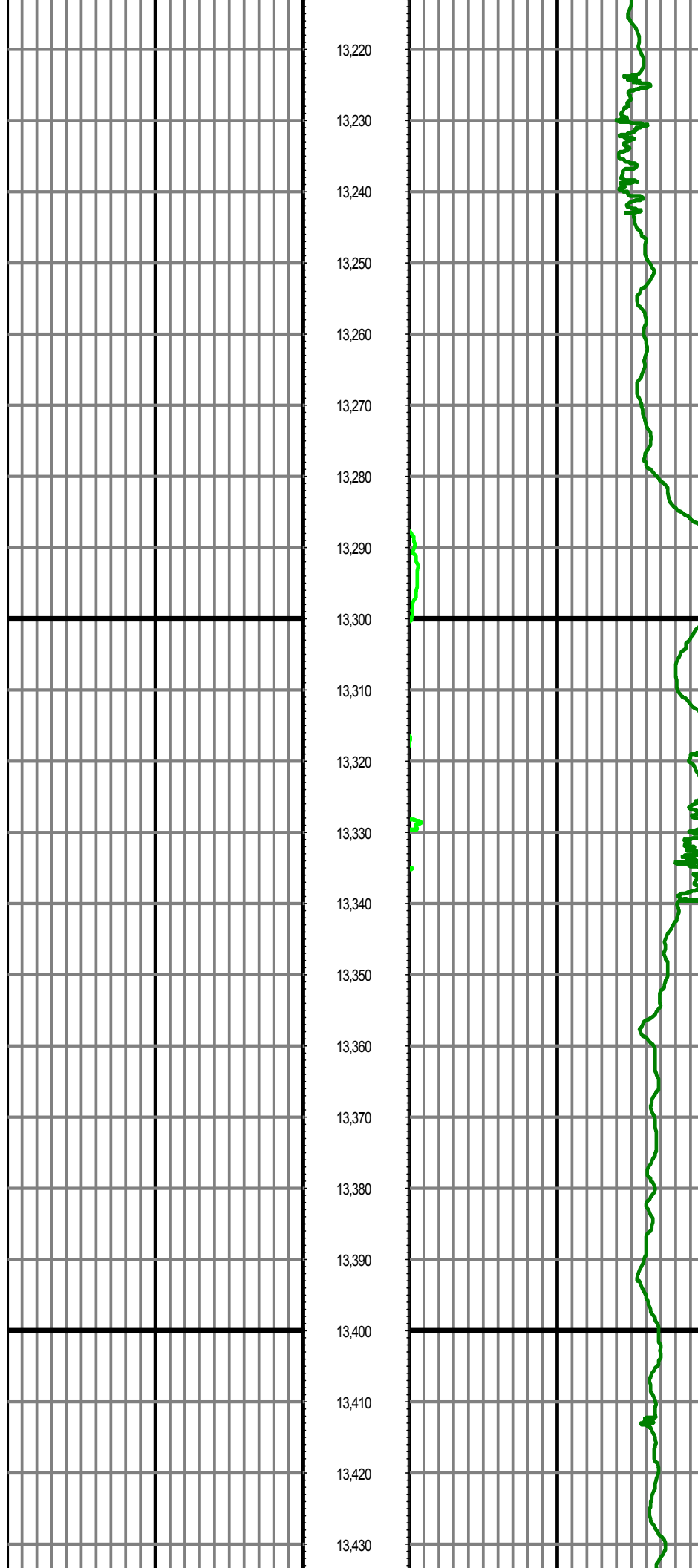
13,400

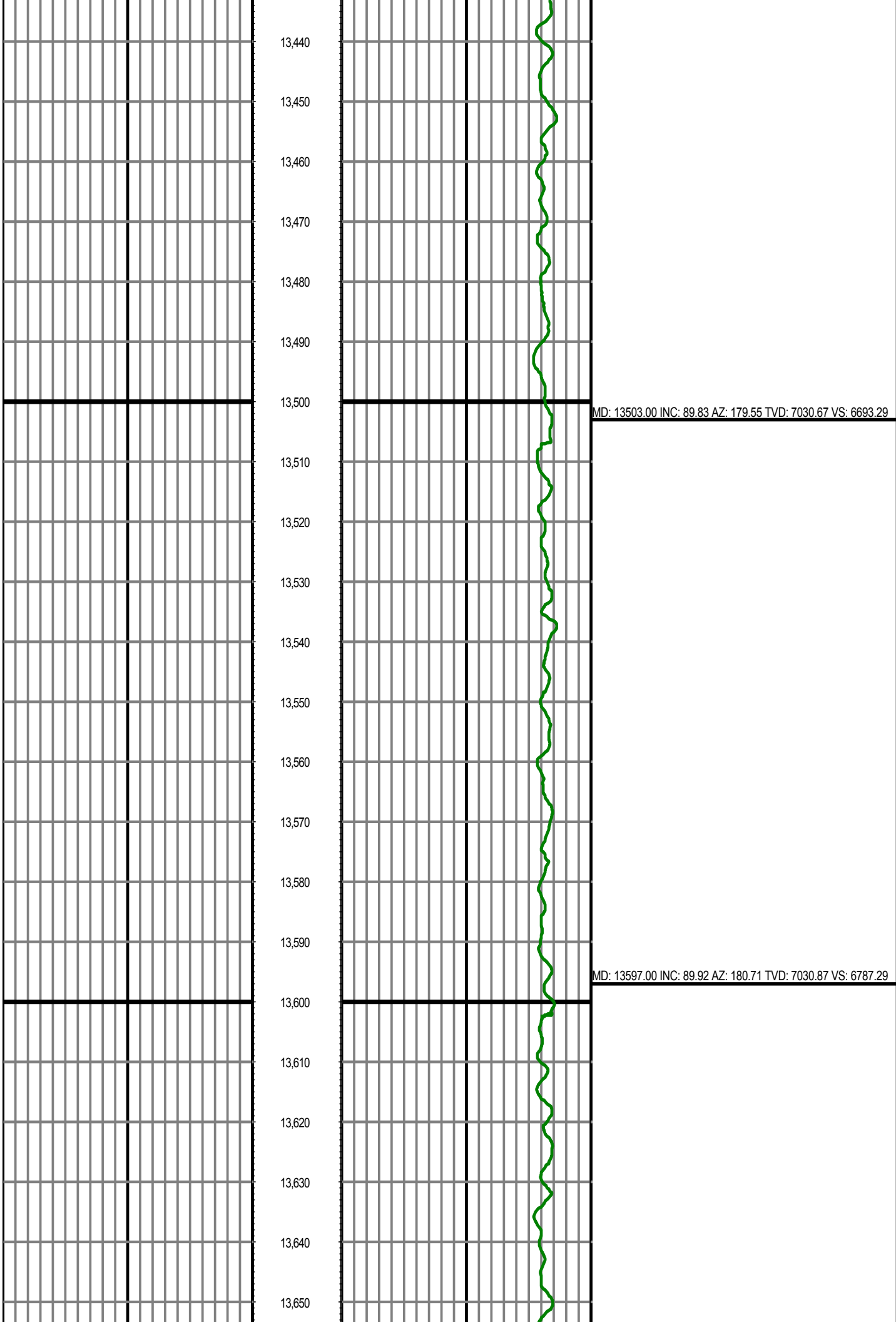
MD: 13408.00 INC: 89.32 AZ: 180.63 TVD: 7029.96 VS: 6598.30

13,410

13,420

13,430





13,660

13,670

13,680

13,690

13,700

13,710

13,720

13,730

13,740

13,750

13,760

13,770

13,780

13,790

13,800

13,810

13,820

13,830

13,840

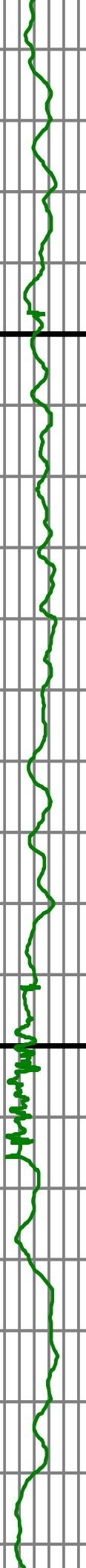
13,850

13,860

13,870

MD: 13692.00 INC: 90.60 AZ: 181.02 TVD: 7030.44 VS: 6882.27

MD: 13786.00 INC: 91.00 AZ: 181.05 TVD: 7029.13 VS: 6976.24



MD: 13880.00 INC: 89.49 AZ: 180.93 TVD: 7028.73 VS: 7070.22

13,880

13,890

13,900

13,910

13,920

13,930

13,940

13,950

13,960

13,970

MD: 13975.00 INC: 90.23 AZ: 181.33 TVD: 7028.96 VS: 7165.19

13,980

13,990

14,000

14,010

14,020

14,030

14,040

14,050

14,060

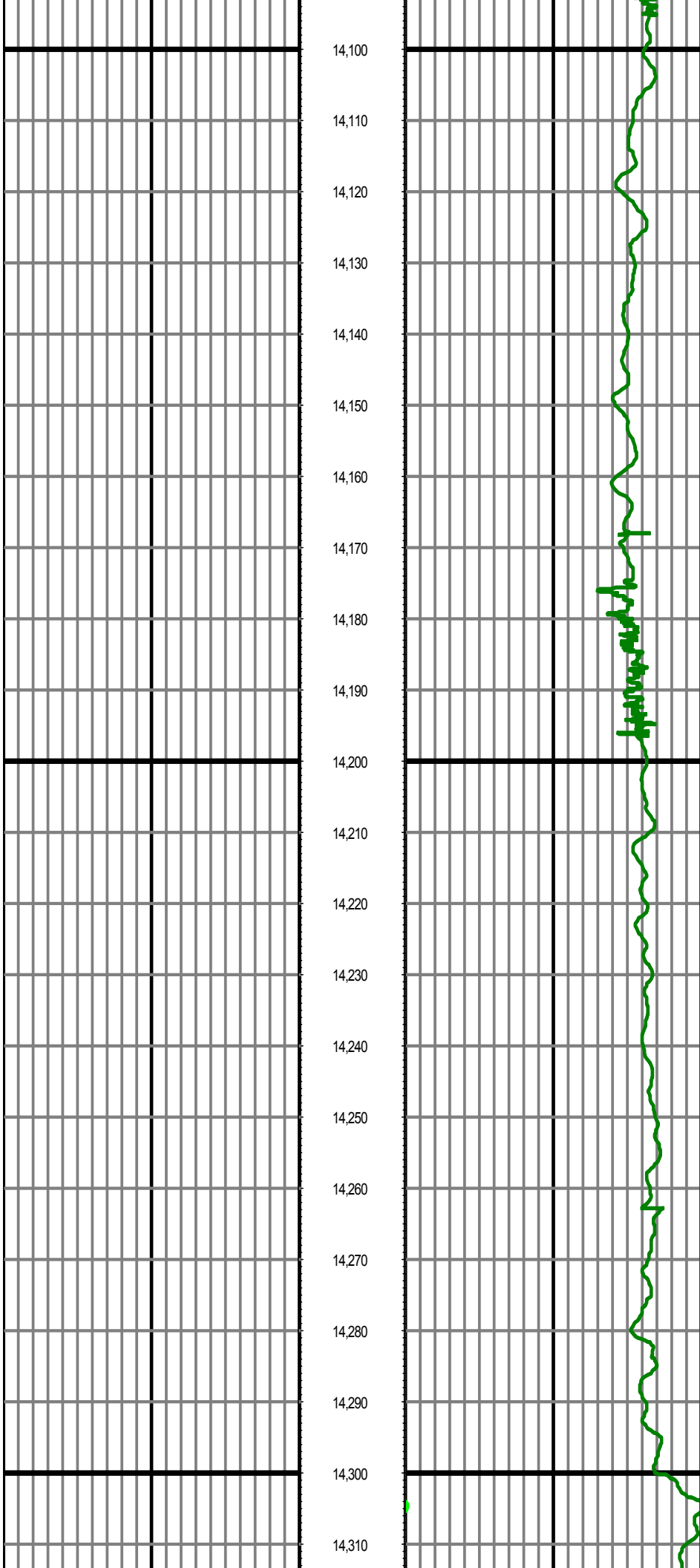
MD: 14069.00 INC: 89.31 AZ: 181.68 TVD: 7029.34 VS: 7259.15

14,070

14,080

14,090





14,100

14,110

14,120

14,130

14,140

14,150

14,160

14,170

14,180

14,190

14,200

14,210

14,220

14,230

14,240

14,250

14,260

14,270

14,280

14,290

14,300

14,310

MD: 14164.00 INC: 89.80 AZ: 181.35 TVD: 7030.08 VS: 7354.11

MD: 14258.00 INC: 88.83 AZ: 179.03 TVD: 7031.20 VS: 7448.09

14,540

MD: 14542.00 INC: 89.08 AZ: 178.48 TVD: 7037.40 VS: 7731.94

14,550

14,560

14,570

14,580

14,590

14,600

14,610

14,620

14,630

MD: 14636.00 INC: 89.65 AZ: 178.44 TVD: 7038.44 VS: 7825.91

14,640

14,650

14,660

14,670

14,680

14,690

14,700

14,710

14,720

14,730

MD: 14731.00 INC: 89.00 AZ: 178.54 TVD: 7039.56 VS: 7920.88

14,740

14,750



14,980

14,990

15,000

15,010

15,020

15,030

15,040

15,050

15,060

15,070

15,080

15,090

15,100

15,110

15,120

15,130

15,140

15,150

15,160

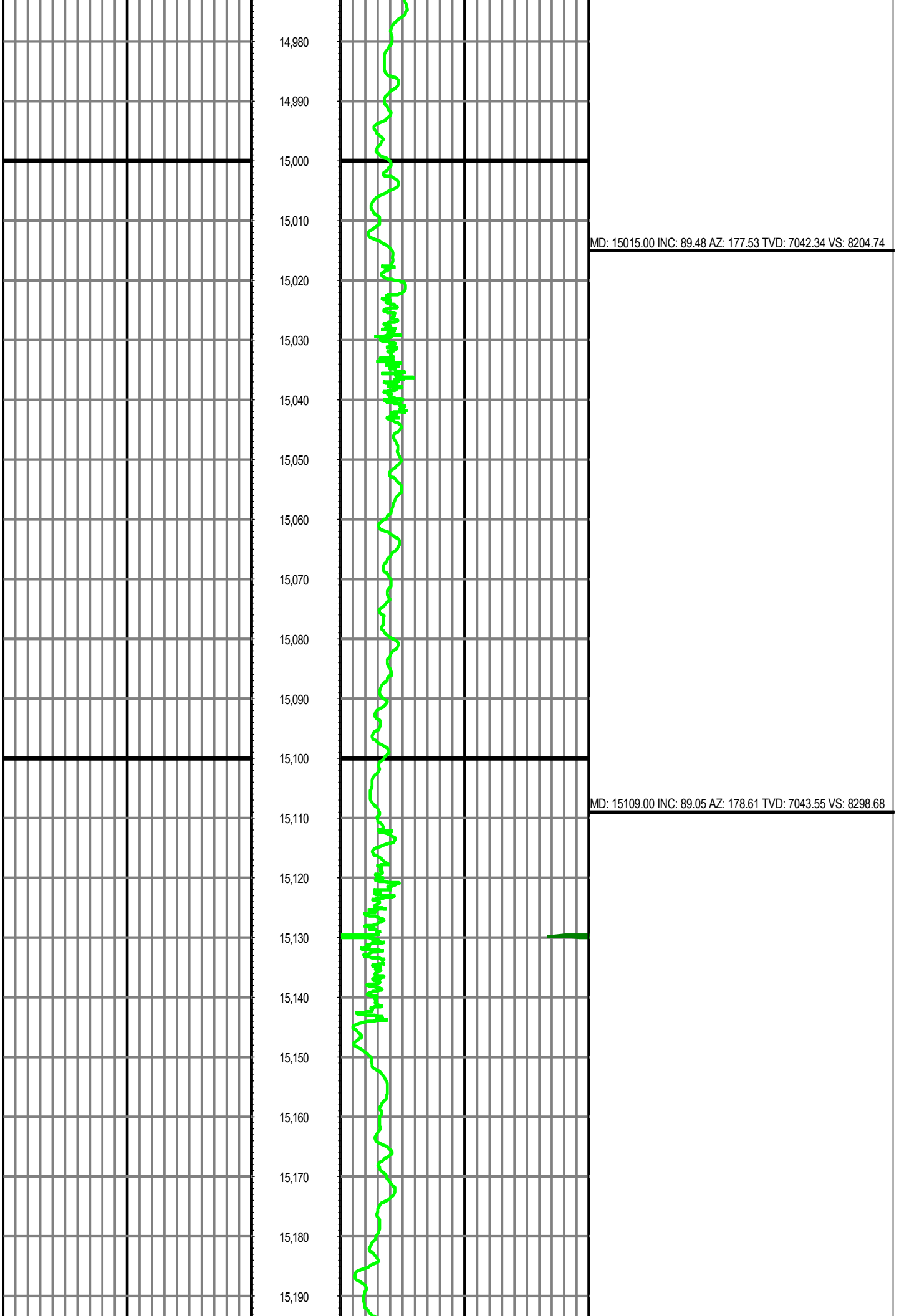
15,170

15,180

15,190

MD: 15015.00 INC: 89.48 AZ: 177.53 TVD: 7042.34 VS: 8204.74

MD: 15109.00 INC: 89.05 AZ: 178.61 TVD: 7043.55 VS: 8298.68



15,200

MD: 15204.00 INC: 90.34 AZ: 179.65 TVD: 7044.05 VS: 8393.67

15,210

15,220

15,230

15,240

15,250

15,260

15,270

15,280

15,290

MD: 15298.00 INC: 90.71 AZ: 180.85 TVD: 7043.19 VS: 8487.66

15,300

15,310

15,320

15,330

15,340

15,350

15,360

15,370

15,380

15,390

MD: 15393.00 INC: 90.51 AZ: 181.36 TVD: 7042.18 VS: 8582.64

15,400

15,410

15,420

15,430

15,440

15,450

15,460

15,470

15,480

MD: 15487.00 INC: 89.69 AZ: 180.76 TVD: 7042.02 VS: 8676.61

15,490

15,500

15,510

15,520

MD: 15527.00 INC: 89.99 AZ: 180.25 TVD: 7042.13 VS: 8716.61

15,530

15,540

15,550

15,560

15,570

15,580

15,590

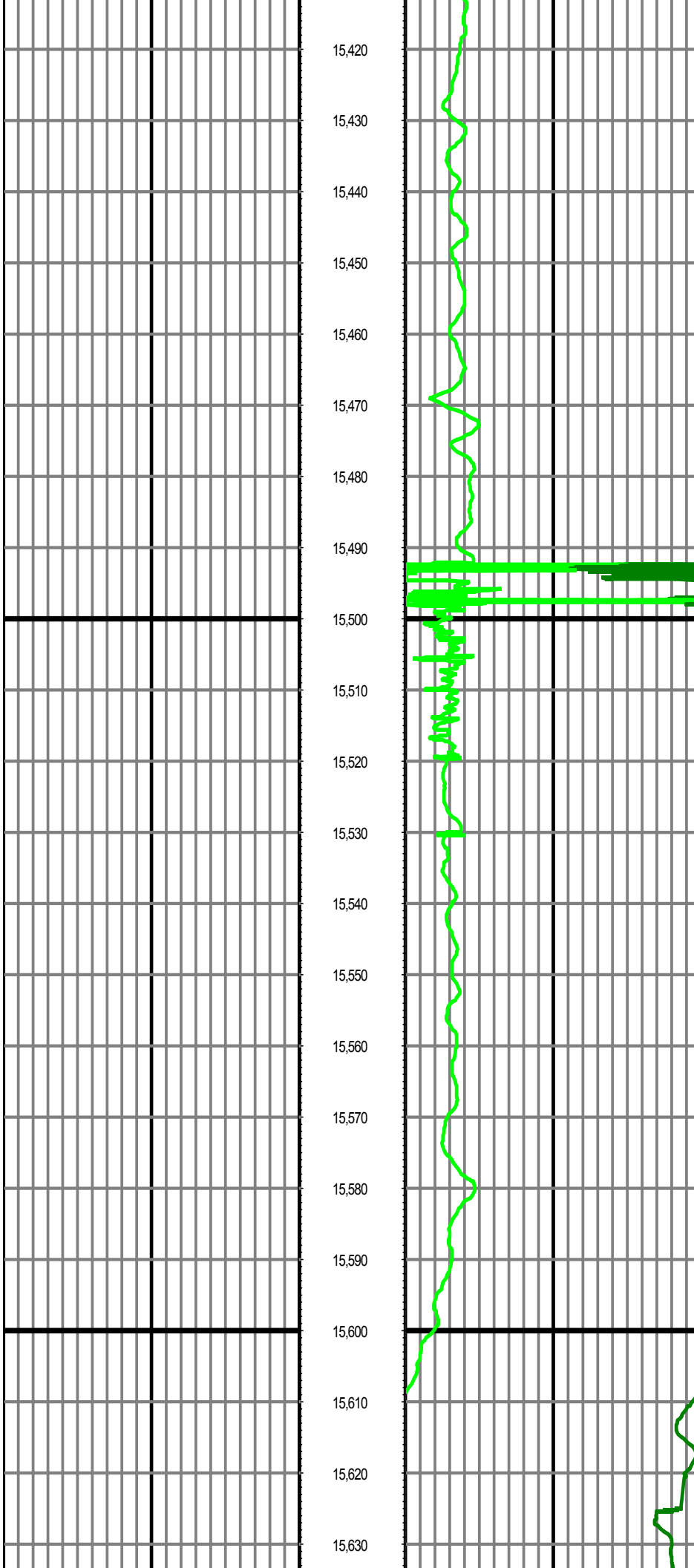
15,600

15,610

MD: 15621.00 INC: 92.24 AZ: 179.00 TVD: 7040.30 VS: 8810.58

15,620

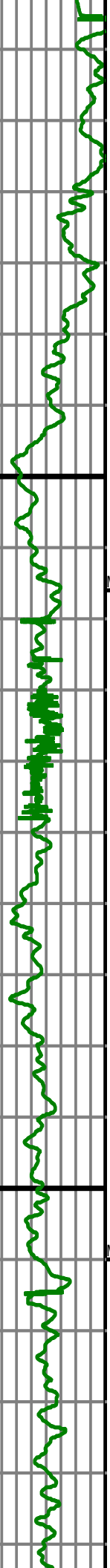
15,630



15,640
15,650
15,660
15,670
15,680
15,690
15,700
15,710
15,720
15,730
15,740
15,750
15,760
15,770
15,780
15,790
15,800
15,810
15,820
15,830
15,840
15,850

MD: 15716.00 INC: 92.58 AZ: 179.10 TVD: 7036.30 VS: 8905.49

MD: 15810.00 INC: 90.44 AZ: 178.25 TVD: 7033.83 VS: 8999.43



15,860

15,870

15,880

15,890

15,900

15,910

15,920

15,930

15,940

15,950

15,960

15,970

15,980

15,990

16,000

16,010

16,020

16,030

16,040

16,050

16,060

16,070

MD: 15905.00 INC: 88.99 AZ: 178.04 TVD: 7034.30 VS: 9094.39

MD: 15999.00 INC: 89.61 AZ: 178.69 TVD: 7035.45 VS: 9188.35



16,080

16,090

16,100

16,110

16,120

16,130

16,140

16,150

16,160

16,170

16,180

16,190

16,200

16,210

16,220

16,230

16,240

16,250

16,260

16,270

16,280

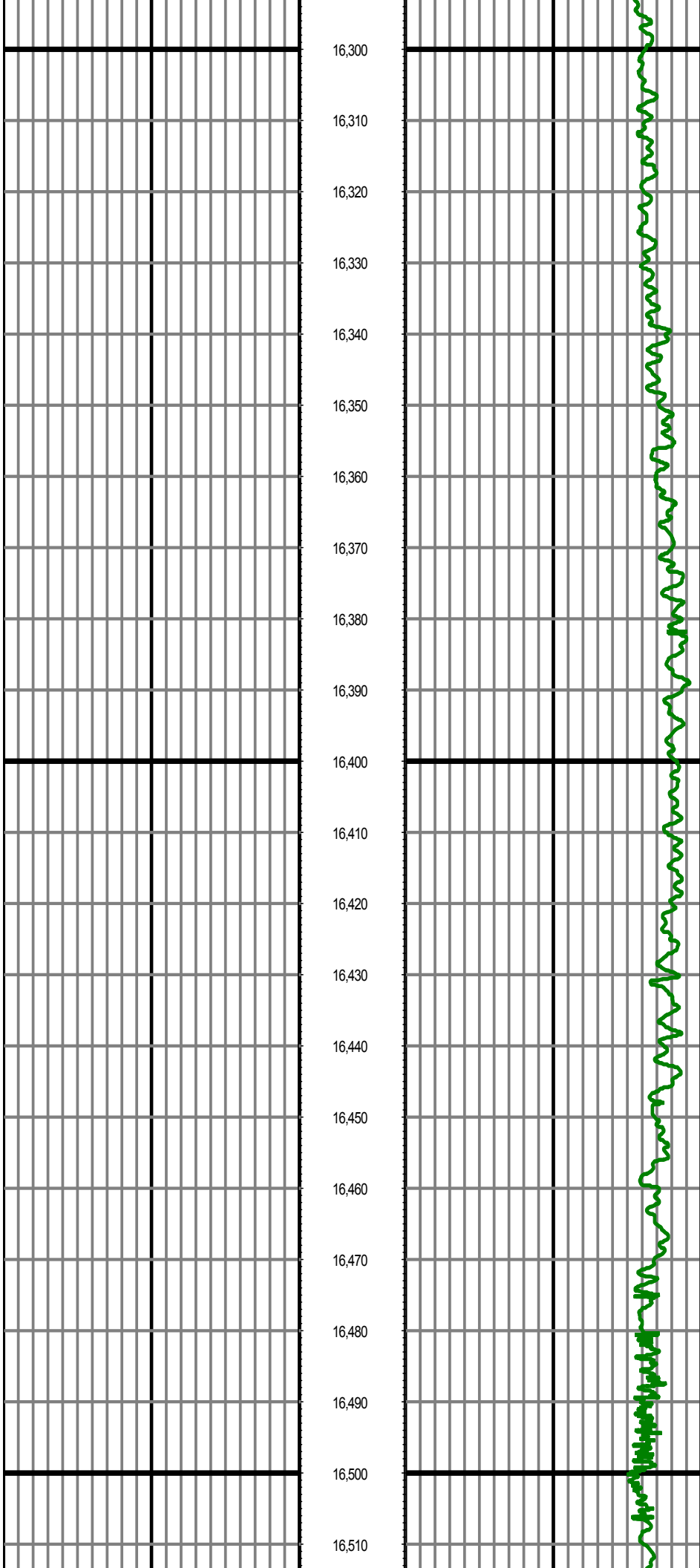
16,290

MD: 16093.00 INC: 89.18 AZ: 179.15 TVD: 7036.44 VS: 9282.33

MD: 16188.00 INC: 90.48 AZ: 180.43 TVD: 7036.72 VS: 9377.33

MD: 16282.00 INC: 90.29 AZ: 180.14 TVD: 7036.09 VS: 9471.32





16,300

16,310

16,320

16,330

16,340

16,350

16,360

16,370

16,380

16,390

16,400

16,410

16,420

16,430

16,440

16,450

16,460

16,470

16,480

16,490

16,500

16,510

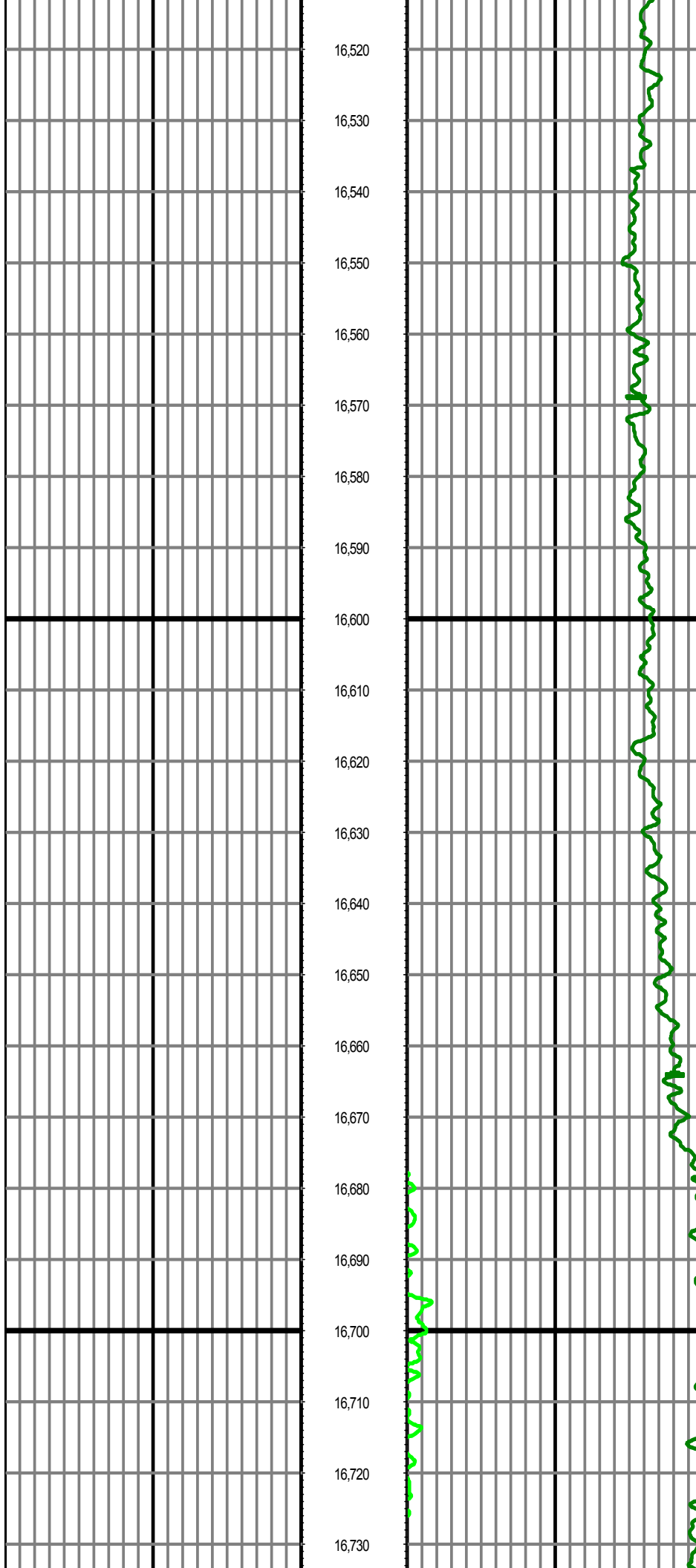
MD: 16377.00 INC: 89.77 AZ: 180.30 TVD: 7036.04 VS: 9566.32

MD: 16471.00 INC: 88.94 AZ: 180.41 TVD: 7037.10 VS: 9660.31

16,520
16,530
16,540
16,550
16,560
16,570
16,580
16,590
16,600
16,610
16,620
16,630
16,640
16,650
16,660
16,670
16,680
16,690
16,700
16,710
16,720
16,730

MD: 16565.00 INC: 90.06 AZ: 180.02 TVD: 7037.92 VS: 9754.30

MD: 16660.00 INC: 90.12 AZ: 179.90 TVD: 7037.77 VS: 9849.30

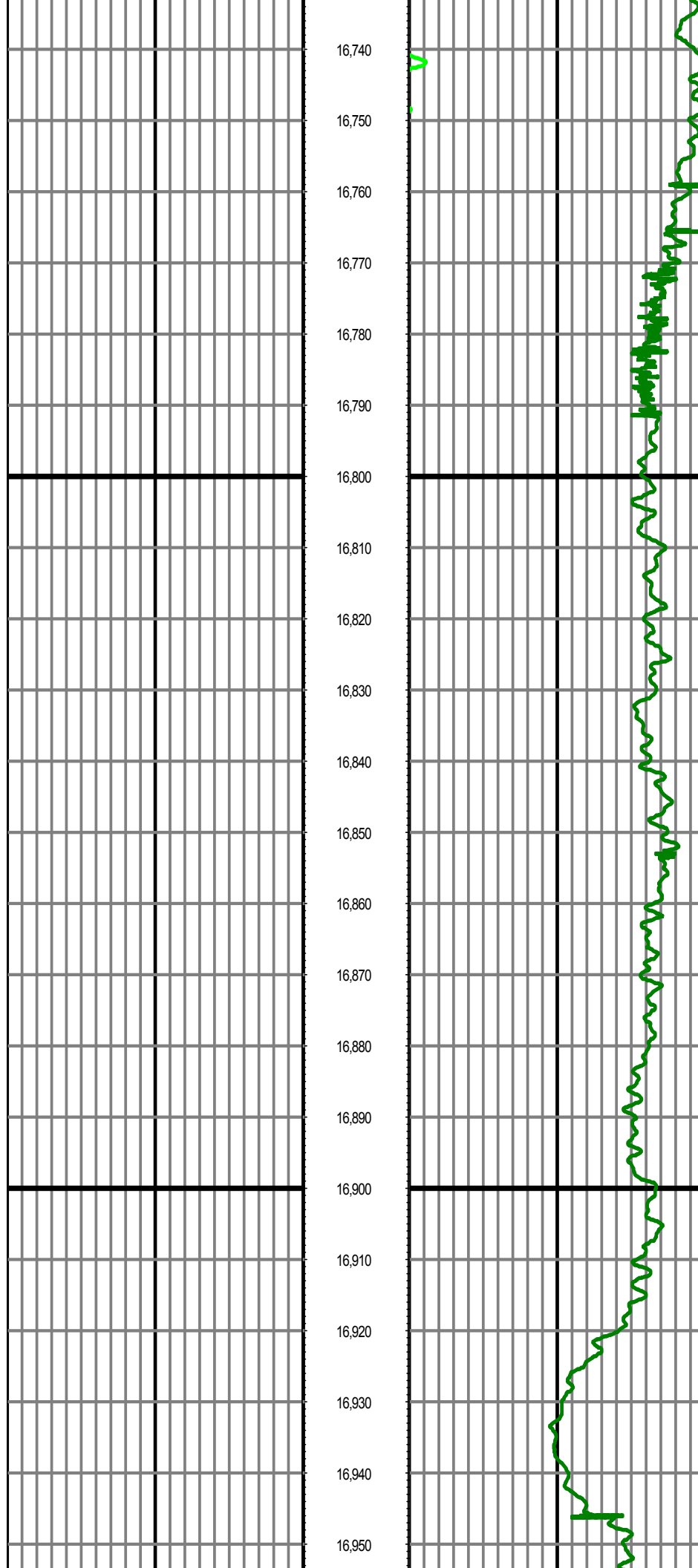


16,740
16,750
16,760
16,770
16,780
16,790
16,800
16,810
16,820
16,830
16,840
16,850
16,860
16,870
16,880
16,890
16,900
16,910
16,920
16,930
16,940
16,950

MD: 16755.00 INC: 89.74 AZ: 179.74 TVD: 7037.89 VS: 9944.30

MD: 16849.00 INC: 90.54 AZ: 180.25 TVD: 7037.66 VS: 10038.30

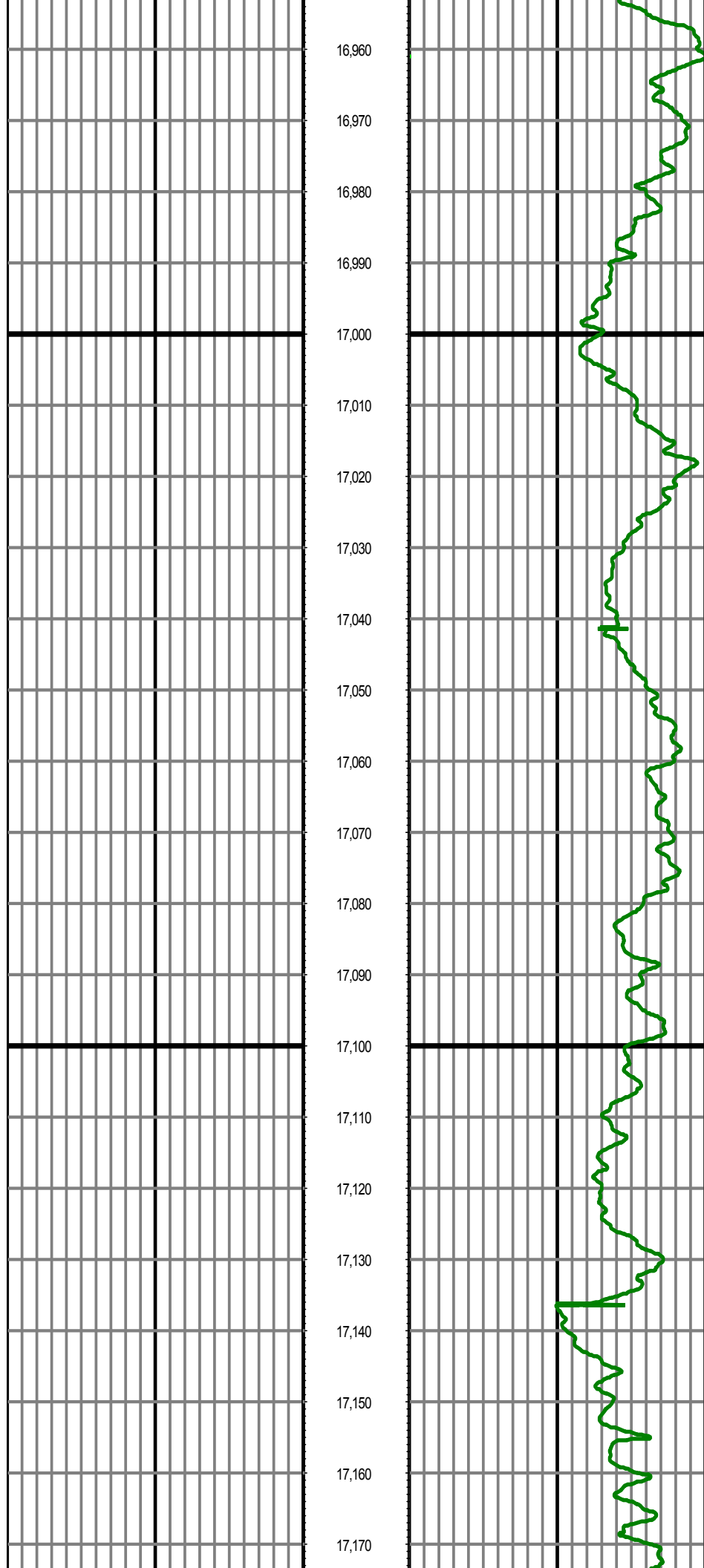
MD: 16943.00 INC: 91.00 AZ: 180.79 TVD: 7036.39 VS: 10132.28



16,960
16,970
16,980
16,990
17,000
17,010
17,020
17,030
17,040
17,050
17,060
17,070
17,080
17,090
17,100
17,110
17,120
17,130
17,140
17,150
17,160
17,170

MD: 17038.00 INC: 90.73 AZ: 180.77 TVD: 7034.96 VS: 10227.26

MD: 17132.00 INC: 91.52 AZ: 180.88 TVD: 7033.11 VS: 10321.23



17,400

17,410

17,420

17,430

17,440

17,450

17,460

17,470

17,480

17,490

17,500

17,510

17,520

17,530

17,540

17,550

17,560

17,570

17,580

17,590

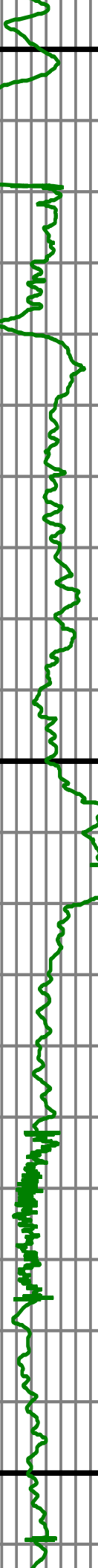
17,600

17,610

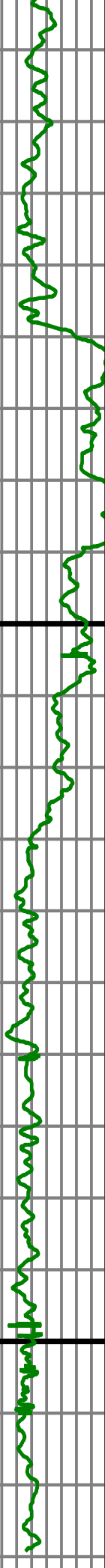
MD: 17416.00 INC: 89.72 AZ: 180.36 TVD: 7026.81 VS: 10605.10

MD: 17510.00 INC: 87.68 AZ: 179.51 TVD: 7028.94 VS: 10699.07

MD: 17604.00 INC: 87.09 AZ: 178.51 TVD: 7033.23 VS: 10792.96



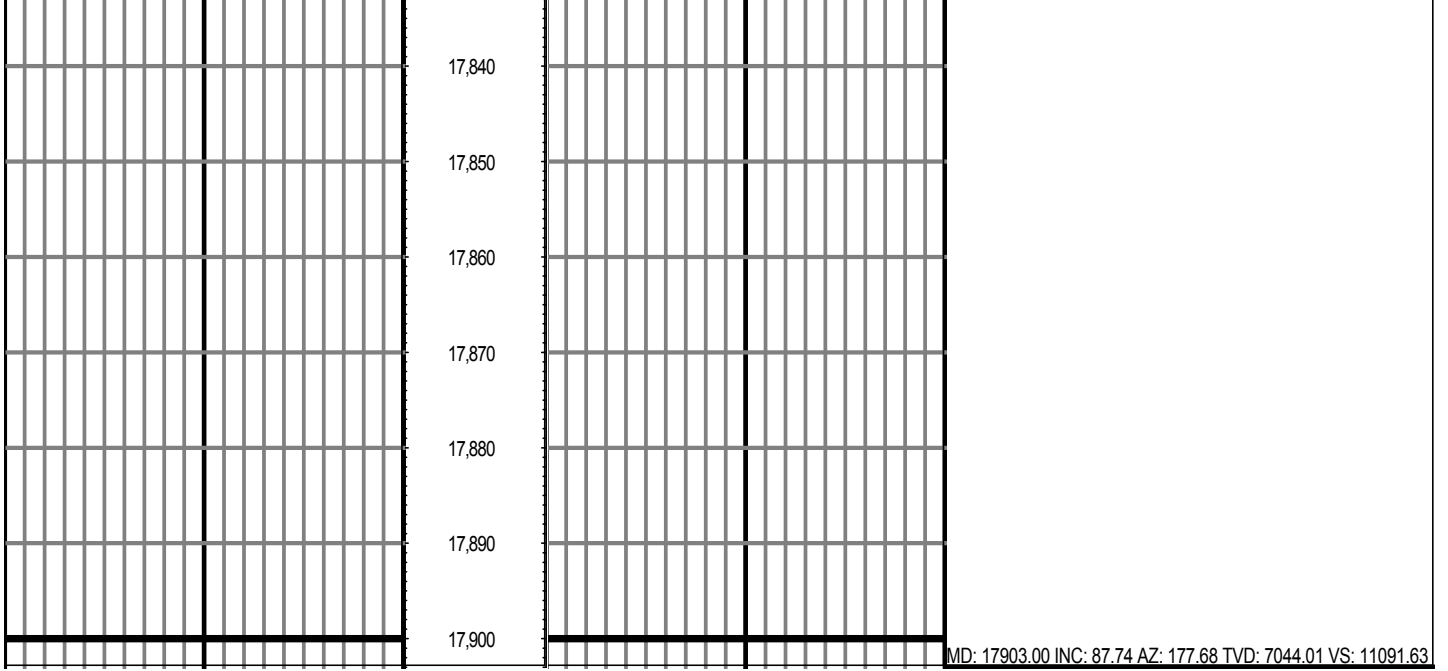
17,620
17,630
17,640
17,650
17,660
17,670
17,680
17,690
17,700
17,710
17,720
17,730
17,740
17,750
17,760
17,770
17,780
17,790
17,800
17,810
17,820
17,830



MD: 17699.00 INC: 88.63 AZ: 178.66 TVD: 7036.78 VS: 10887.87

MD: 17793.00 INC: 87.81 AZ: 177.97 TVD: 7039.70 VS: 10981.79

MD: 17825.00 INC: 87.74 AZ: 177.68 TVD: 7040.94 VS: 11013.74



MD: 17903.00 INC: 87.74 AZ: 177.68 TVD: 7044.01 VS: 11091.63

0.00 GR RM (API) on TVD 200.00
 200.00 2 400.00

MD 0.00 GR RM(API) on MD 200.00
 FT 200.00 2 400.00

Surveys (MD/INC/AZ/TVD/VS)