



Build & Lateral

Job #:

185176

Well ID:

16190983

Scale:

5" = 100 ft

Type:

MD

Well Site Information

Oil CompanyCrestone Peak Resources

Surface LocationS4-T1N-R65W

Well NameRuegge 3G-4H-N165

API05-123-46566-00

FieldDJ Wattenburg

StateColorado

CountryUSA

Surface Coordinates

Well TypeHorizontal

Latitude40° 4' 31 N

Longitude104° 40' 15 W

N / S Coordinates1,271,339.93 us/ft

E / W Coordinates3,232,011.47 us/ft

Azimuth ReferenceTrue North

Grid Convergence0.54°

MWD Engineers

Lead HandBob Stahlecker

Second HandAdrian Loma

Perm DatumGround

Elevation4,916.00 ft

Log depth measured from KB is23.00 ft

above perm datum.

KB = 4,939.00 ft

Total Depth12,070.00 ft

Spud DateJun/11/2018

End DateJun/13/2018

(MD) Log IntervalStart Depth2,403.45 ft

End Depth12,074.60 ft

Bore Hole Record

Hole SizeFromTo

13.50 in0.00 ft2,462.00 ft

8.50 in2,462.00 ft12,070.00 ft

Casing Record

TypeSizeWGTFromTo

LT&C9.63 in40.00 lbs/ft0.00 ft2,462.00 ft

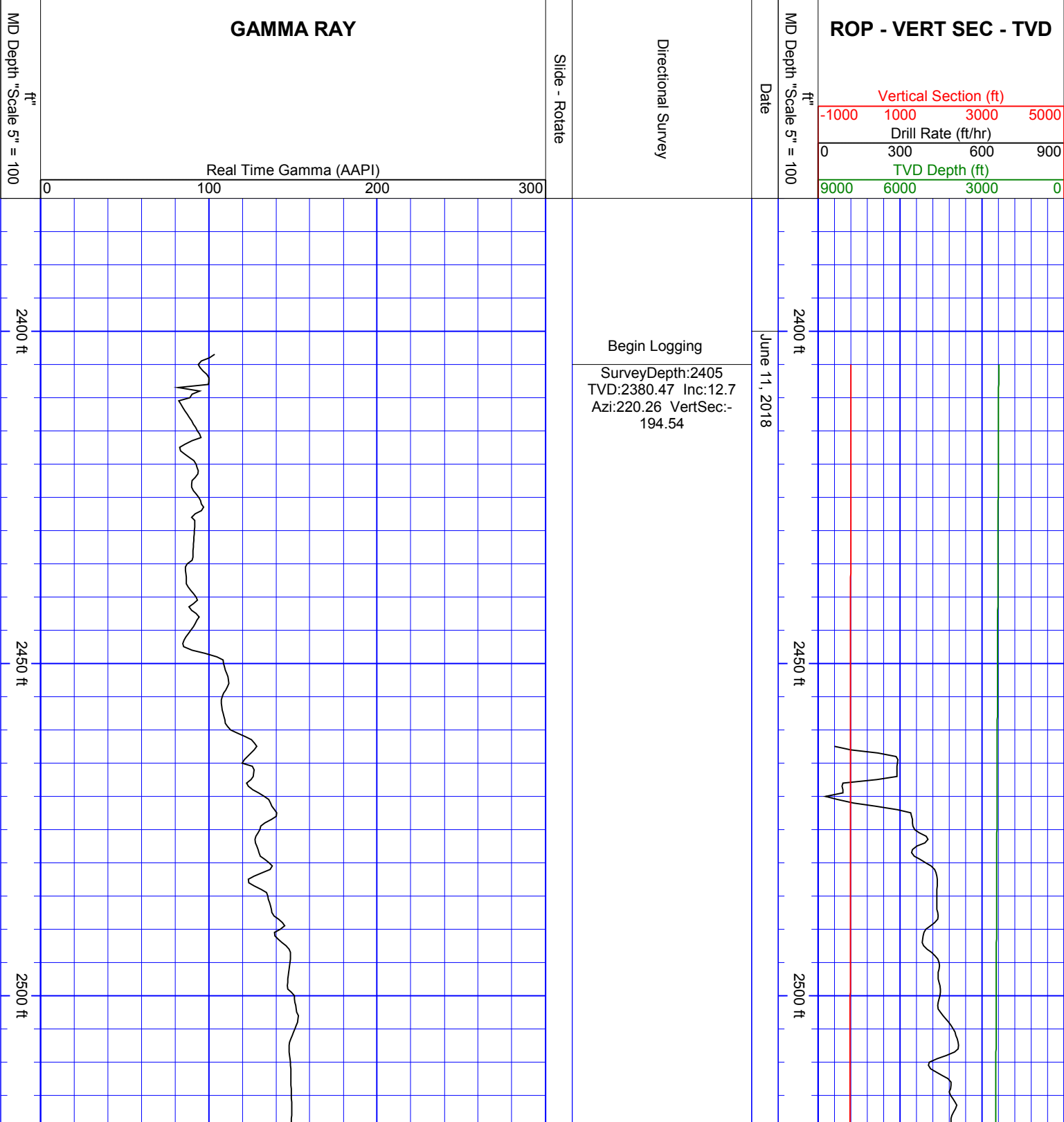
LT&C5.50 in20.00 lbs/ft0.00 ft12,070.00 ft

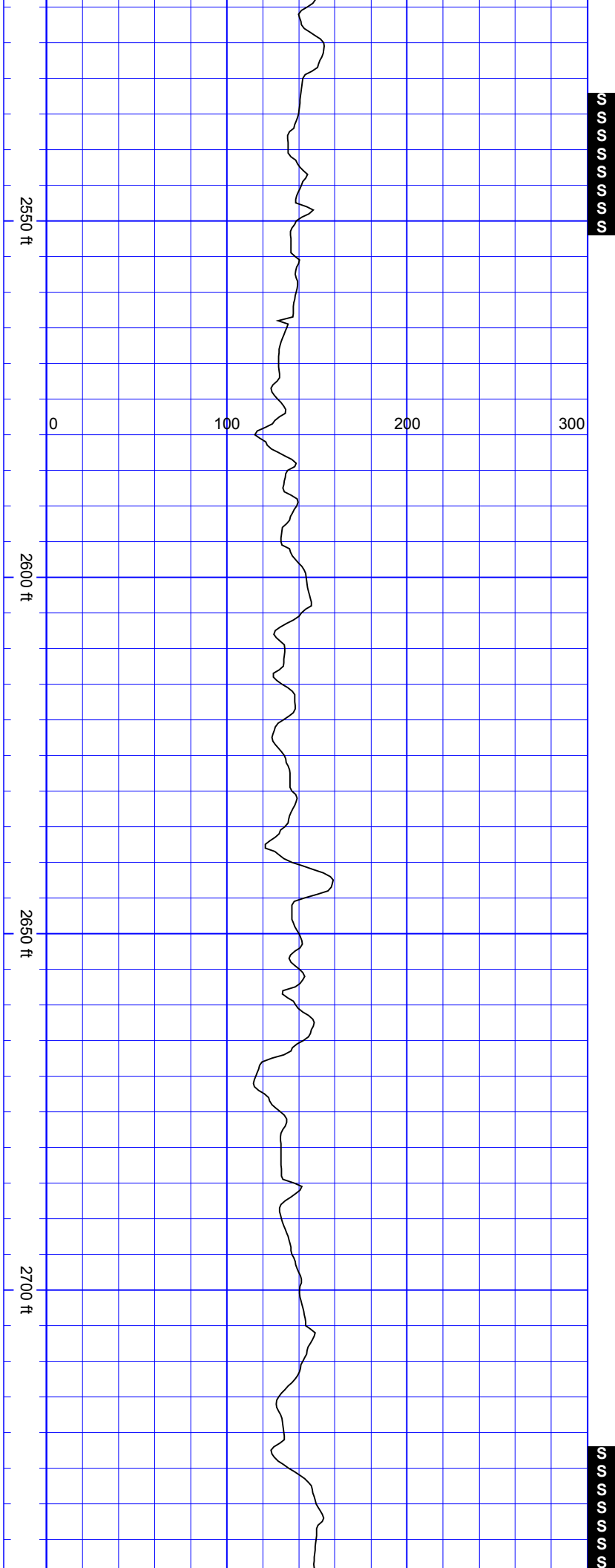
Run Data

Bit Run Number	1				
Start Date & Time	Jun/11/2018 15:00:00				
End Date & Time	Jun/14/2018 00:00:00				
Run Hours	57.00				
Depth In	2,462.00 ft				
Depth Out	12,070.00 ft				
Total Gamma Correction	5.17				
Gamma to Bit	59.68 ft				
Resistivity to Bit	-				
Mud Type	Oil Based Mud				
Density	9.80 ppg				
Viscosity	42.00 sec/qt				
PH	-				
Fluid Loss	16.00 cc				
K+ ppm	-				
CL- ppm	238,409.00 ppm				
Max Mud Temp	250.00 °F				
Mud Report Depth	12,070.00 ft				

Remarks

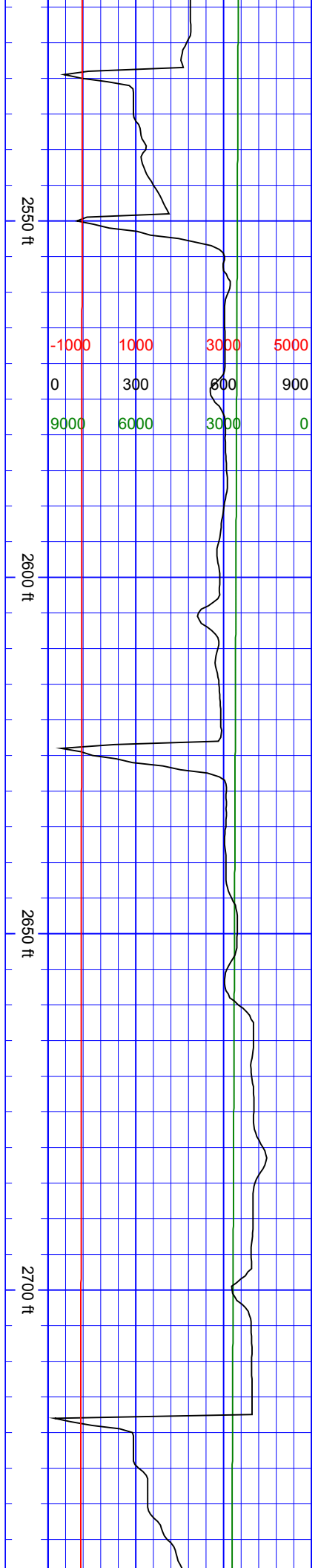
Interpretations of this data by Cathedral Energy Services will be of best judgment as to correctness. Cathedral Energy Services cannot and does not guarantee the accuracy or correctness of interpretations or any surveys derived therefrom. Cathedral Energy Services makes no warranties of performance, results, fitness or suitability for any particular purposes with respect to the goods being furnished under the terms and conditions. Cathedral Energy Services warrants that the equipment furnished will conform to Cathedral Energy Services published specifications in effect at the time and be in good working order.

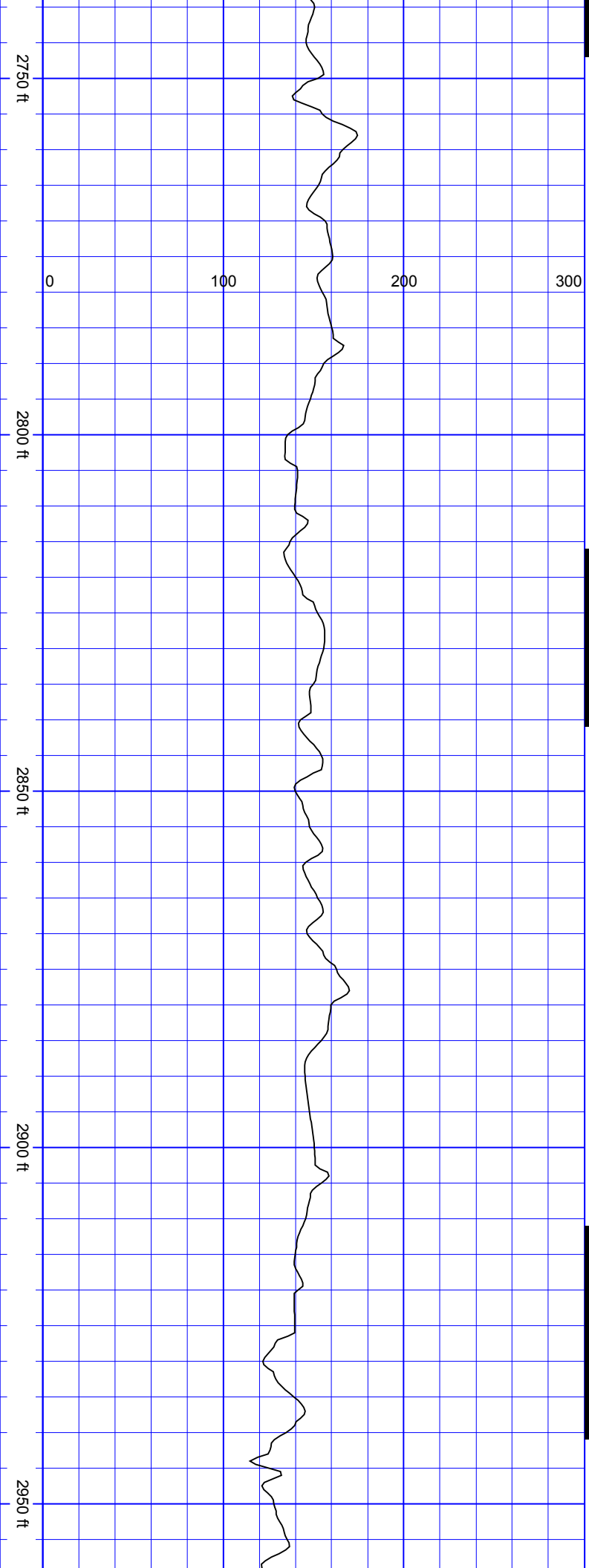




SurveyDepth:2563
TVD:2534.29 Inc:13.71
Azi:222.8 VertSec:-
221.72

SurveyDepth:2657
TVD:2626.05 Inc:11.34
Azi:222.27 VertSec:-
236.85





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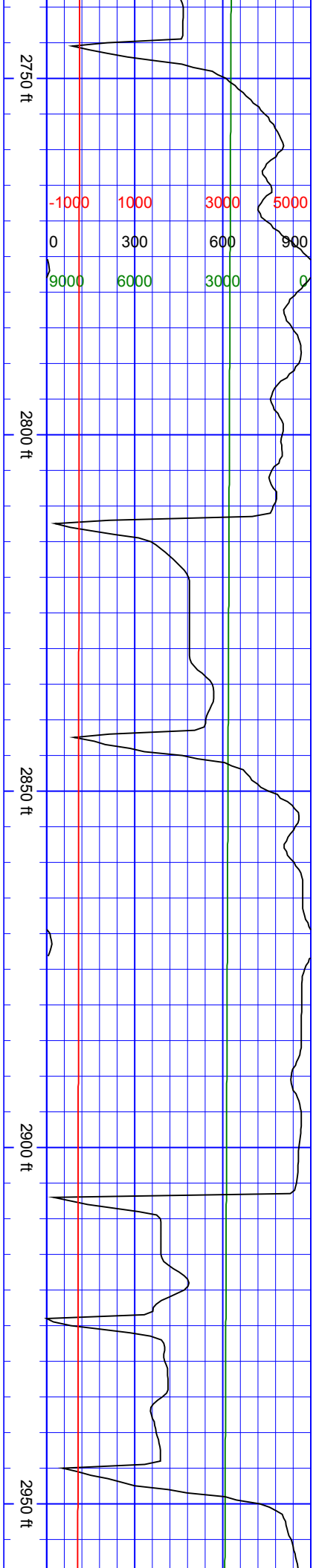
SurveyDepth:2751
TVD:2717.99 Inc:12.7
Azi:223.33 VertSec:-
251.31

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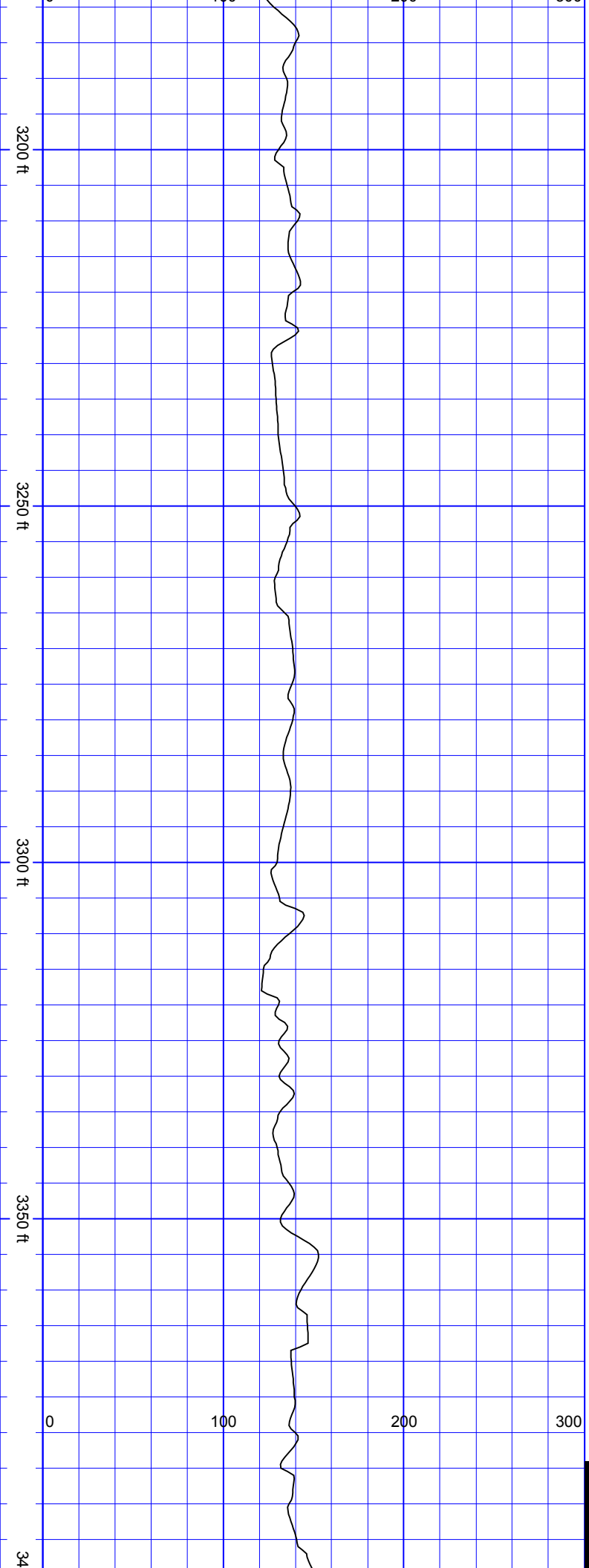
SurveyDepth:2846
TVD:2810.49 Inc:13.62
Azi:220.16 VertSec:-
267.57

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SurveyDepth:2941
TVD:2902.83 Inc:13.58
Azi:222.1 VertSec:-
284.52



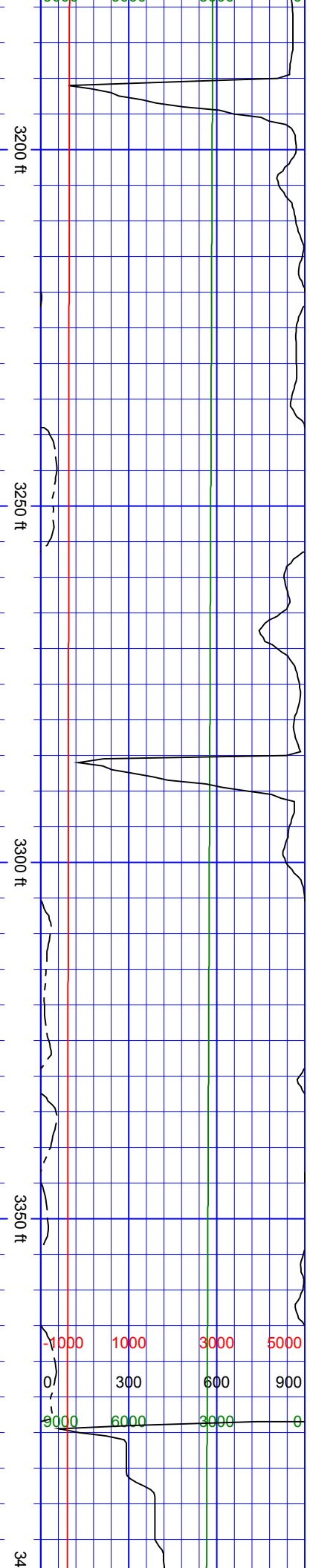
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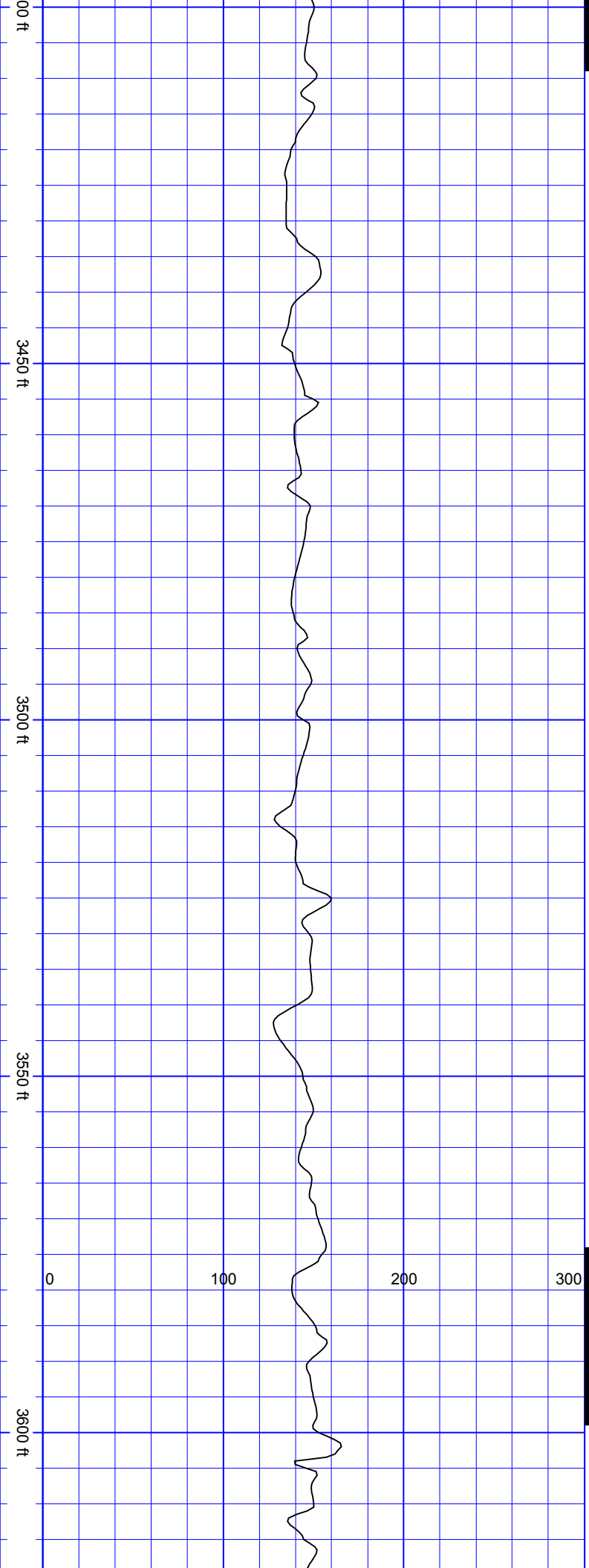


SurveyDepth:3225
TVD:3173.39 Inc:17.45
Azi:216.03 VertSec:-
352.17

SurveyDepth:3319
TVD:3263.7 Inc:14.72
Azi:214.89 VertSec:-
373.49

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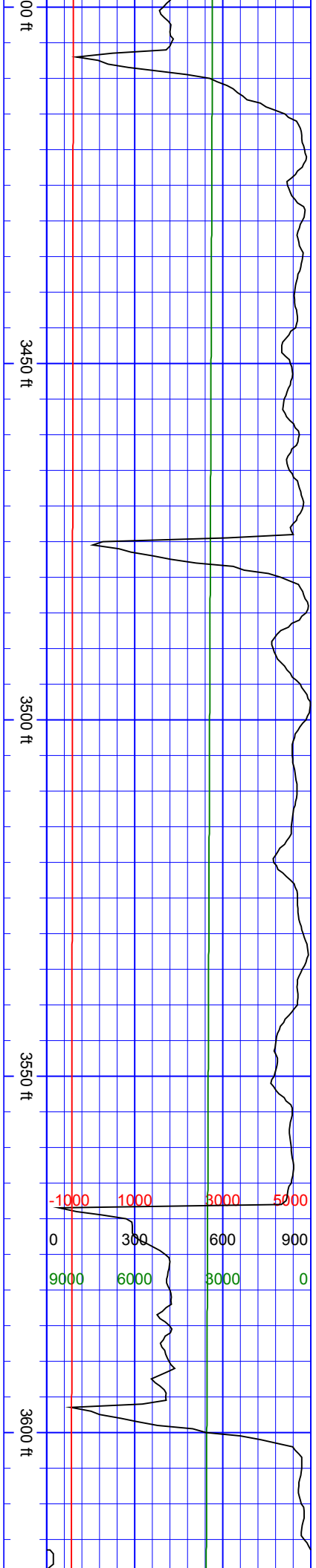


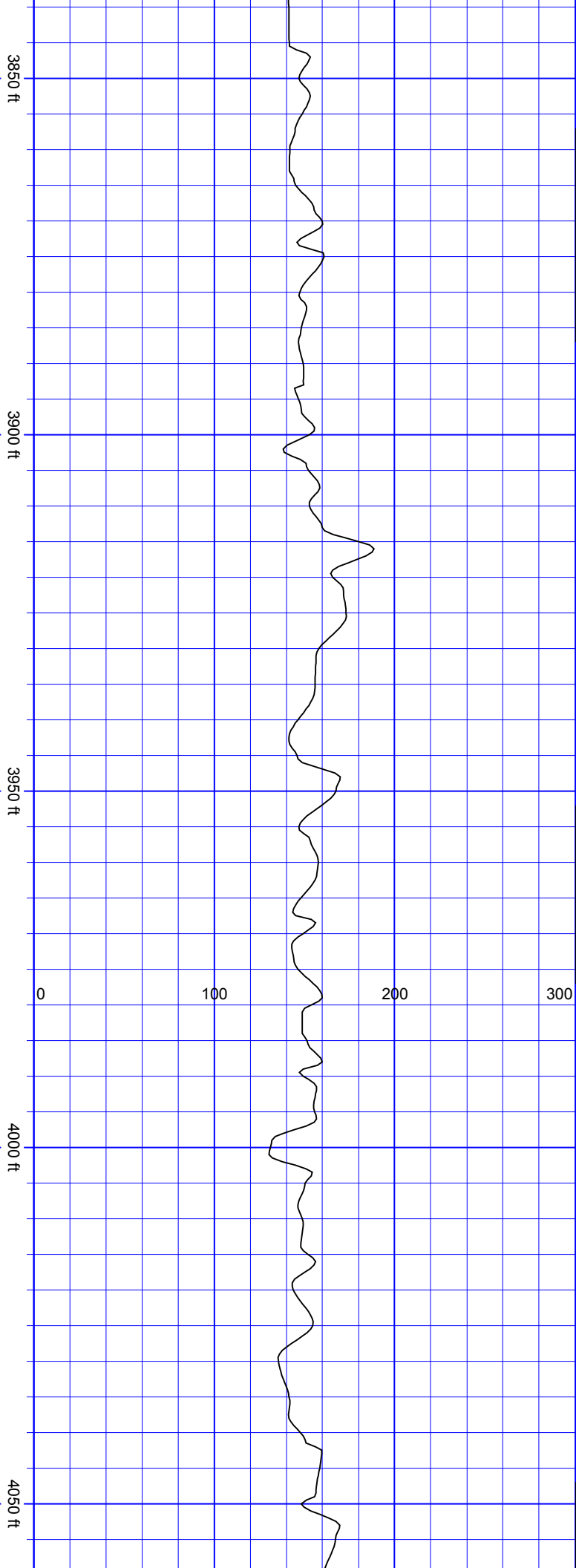


SurveyDepth:3414
TVD:3355.33 Inc:15.91
Azi:219.28 VertSec:-
393.59

SurveyDepth:3509
TVD:3447.19 Inc:13.58
Azi:219.02 VertSec:-
412.46

SurveyDepth:3603
TVD:3538.63 Inc:13.27
Azi:227.46 VertSec:-
428.45

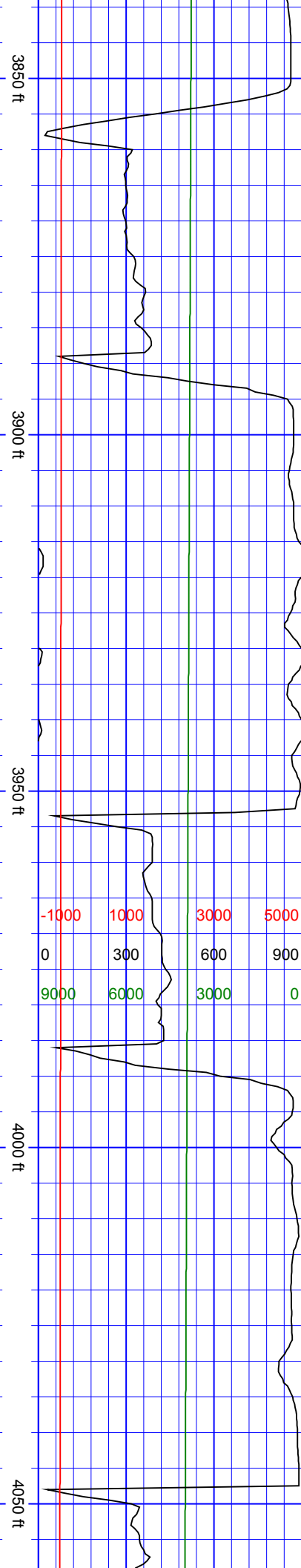


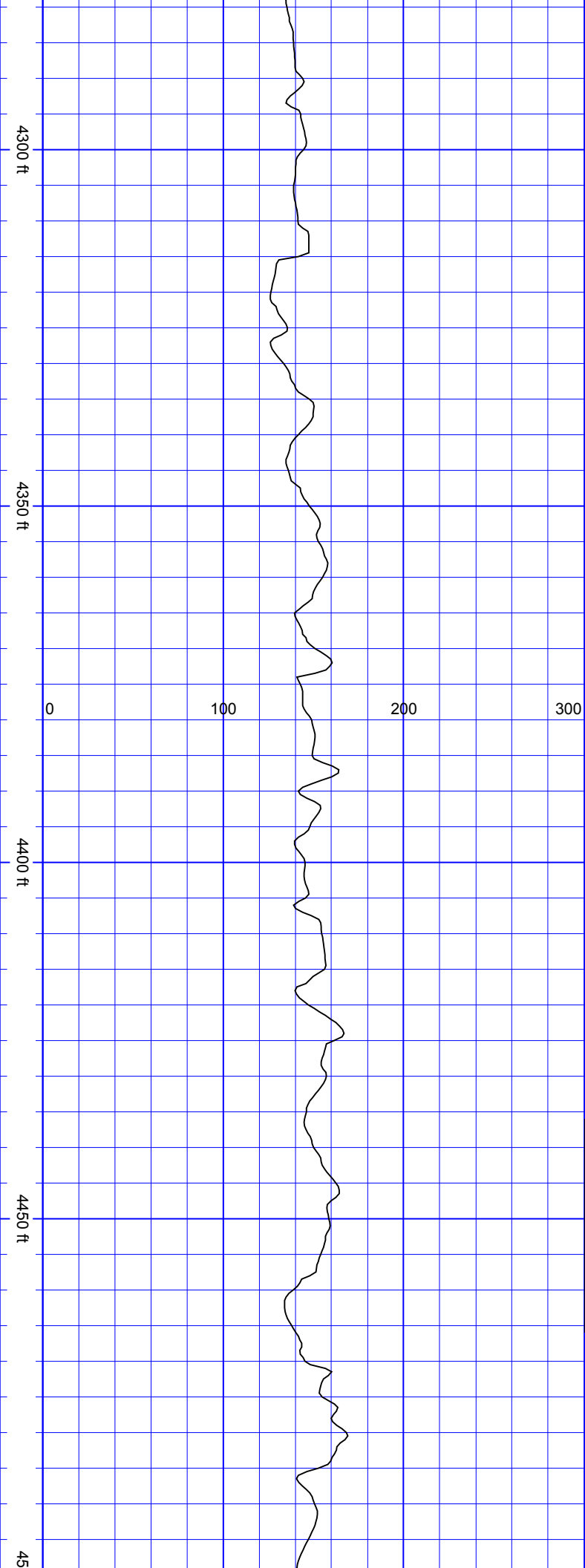


SurveyDepth:3887
TVD:3814.24 Inc:14.24
Azi:227.37 VertSec:-
474.3

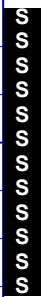
SurveyDepth:3982
TVD:3906.41 Inc:13.84
Azi:224.21 VertSec:-
490.49

June 12, 2018

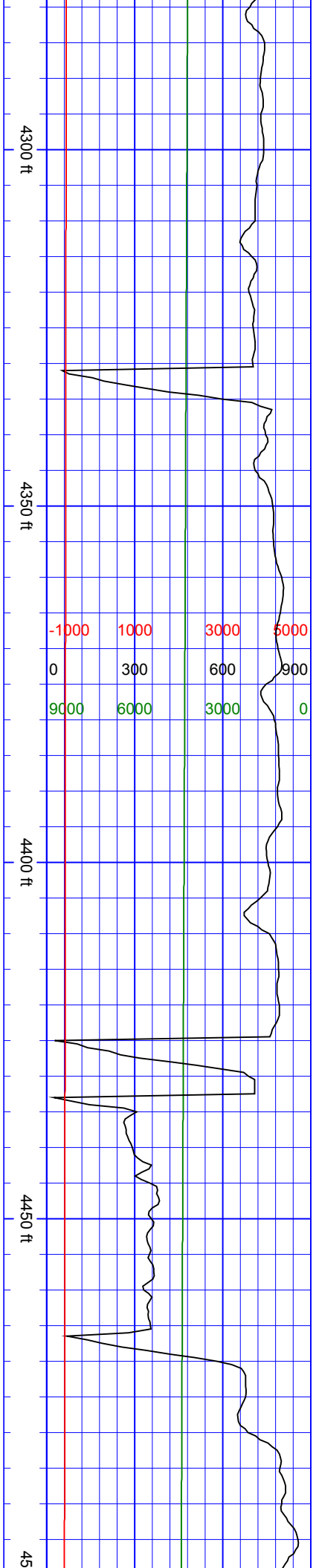


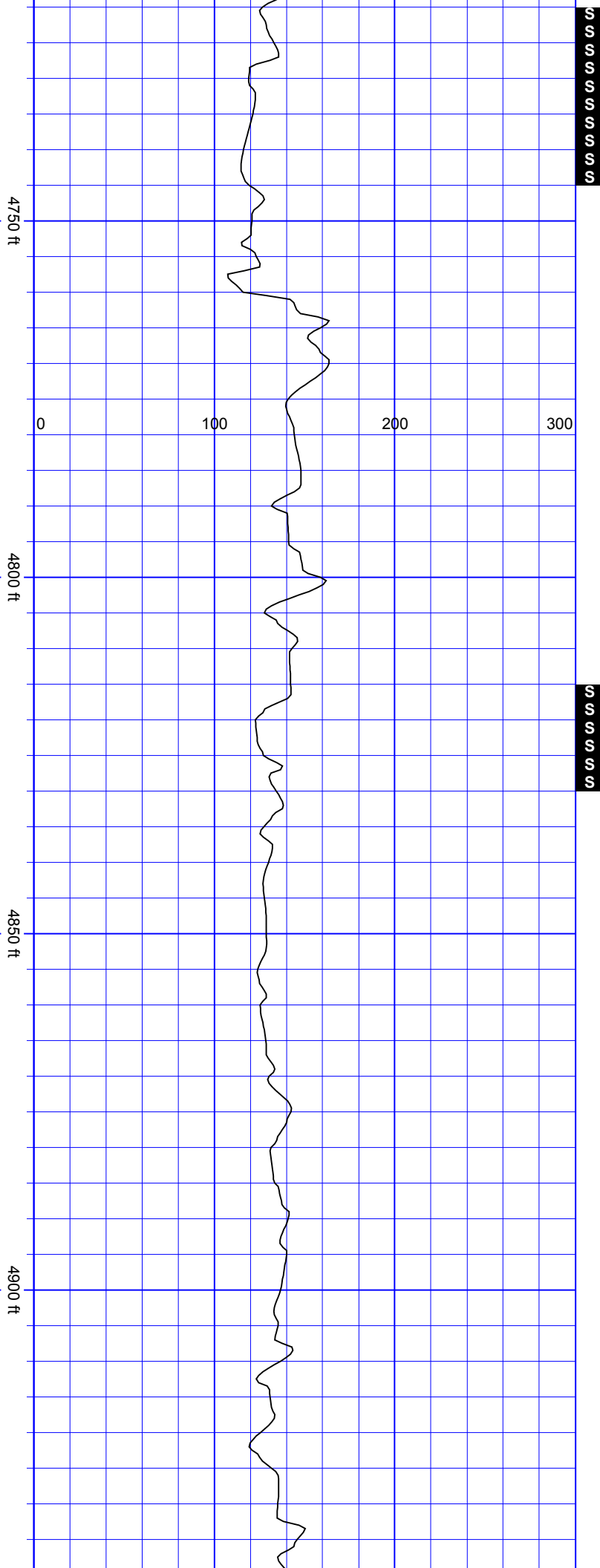


SurveyDepth:4371
TVD:4282.04 Inc:12.09
Azi:218.76 VertSec:-567.89

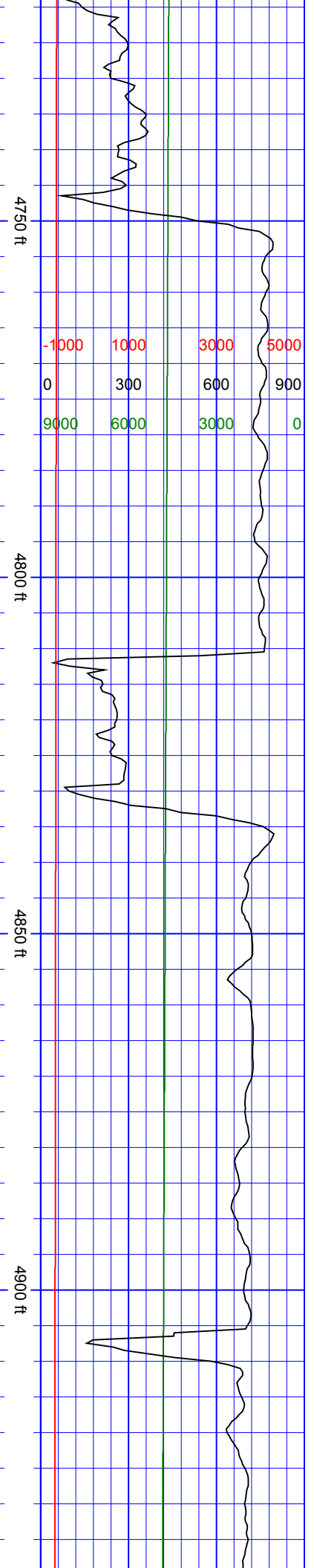


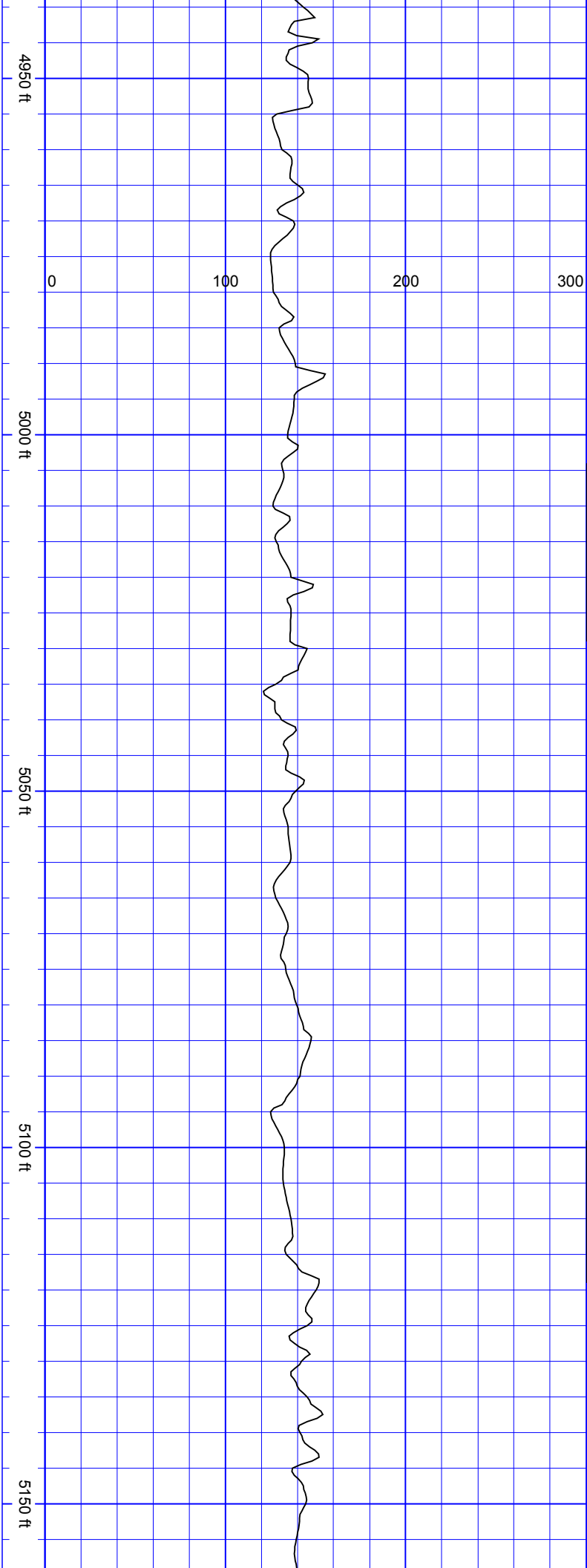
SurveyDepth:4465
TVD:4373.77 Inc:13.14
Azi:218.4 VertSec:-584.04





SurveyDepth:4750
TVD:4649.46 Inc:14.59
Azi:227.02 VertSec:-
636.66

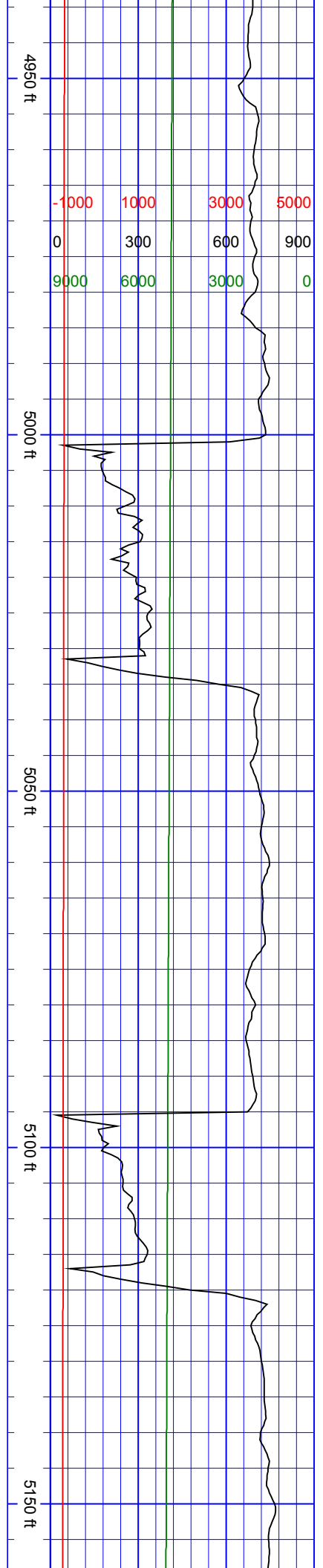




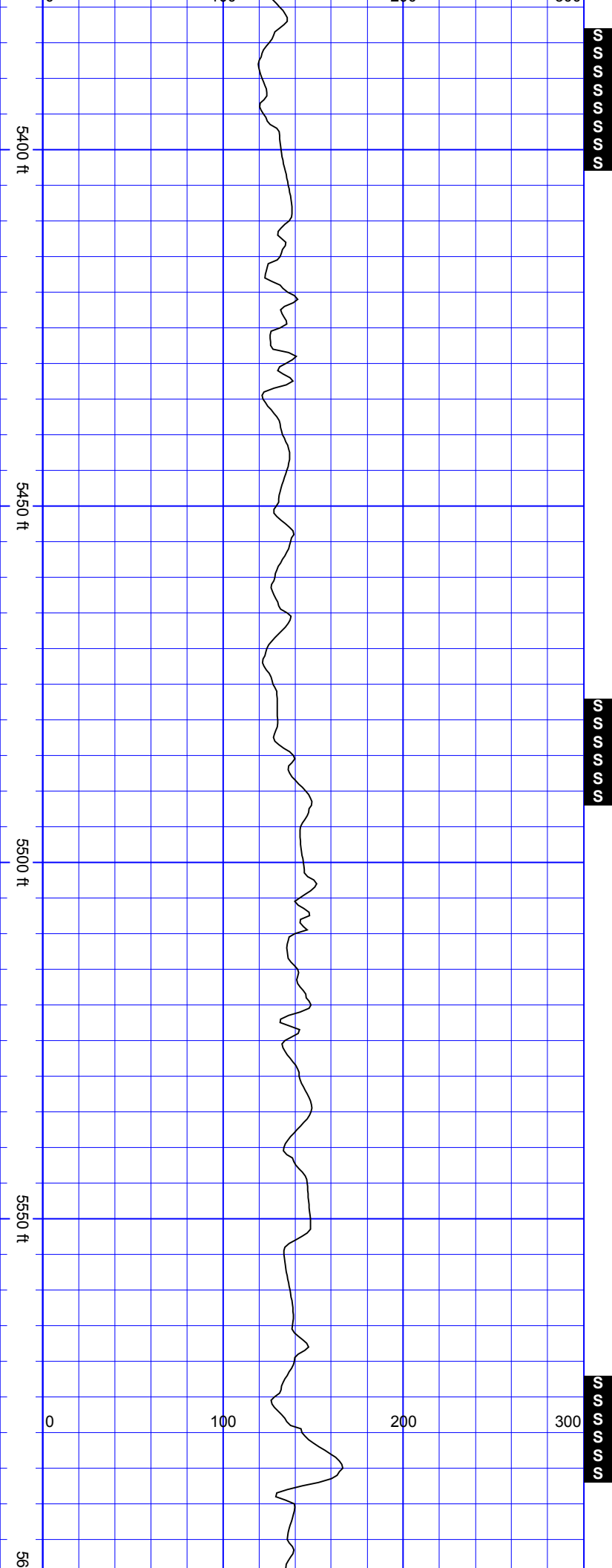
SurveyDepth:4939
TVD:4831.98 Inc:13.8
Azi:220.87 VertSec:-
673.14

SurveyDepth:5034
TVD:4924.26 Inc:13.71
Azi:215.24 VertSec:-
691.01

SurveyDepth:5129
TVD:5016.56 Inc:13.67
Azi:216.91 VertSec:-
709.29

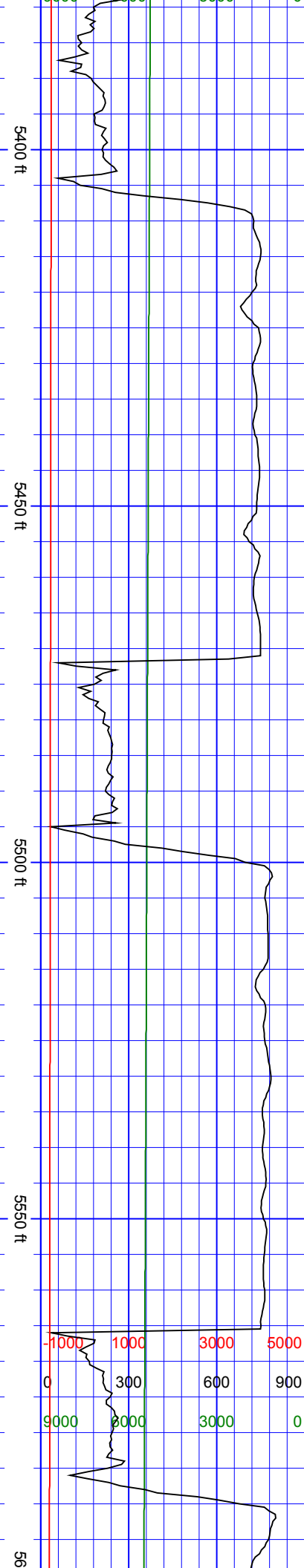


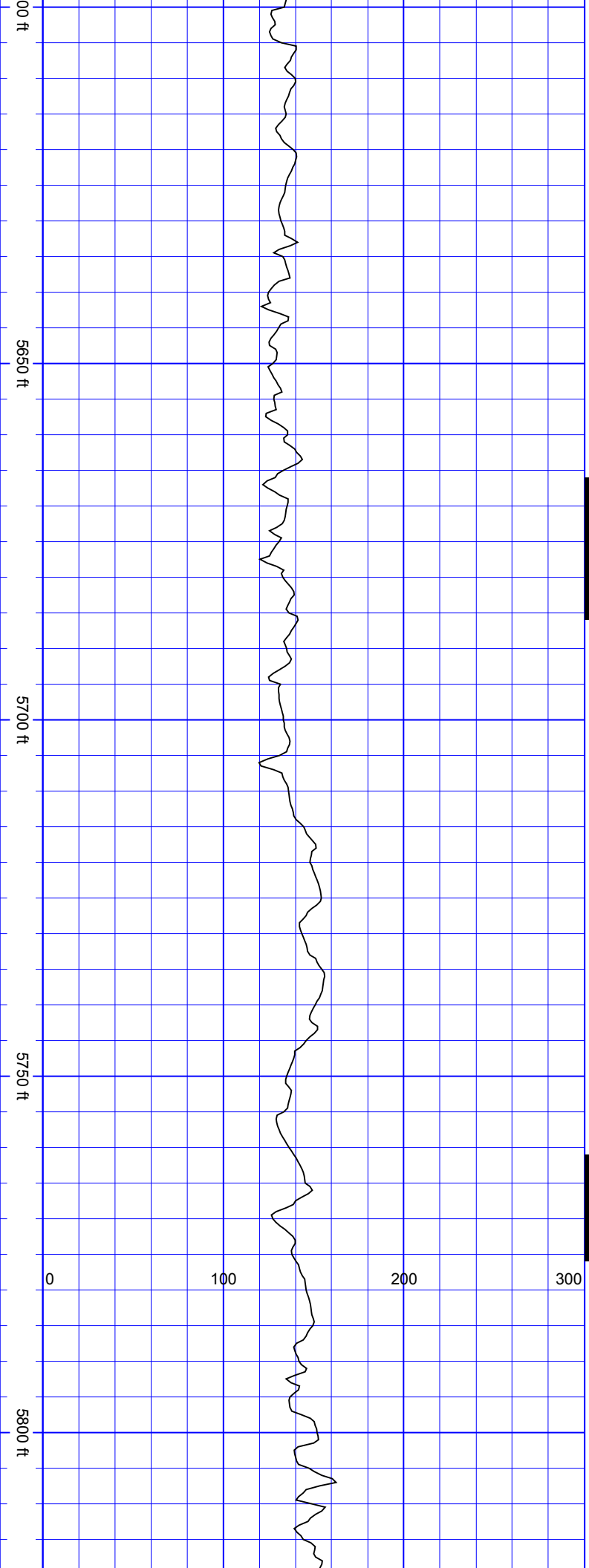
Red	Green	Blue	Black
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0	300	600	900
9000	6000	3000	0



SurveyDepth:5412
TVD:5291.68 Inc:14.28
Azi:218.32 VertSec:-
761.23

SurveyDepth:5507
TVD:5383.72 Inc:14.41
Azi:217.88 VertSec:-
779.87

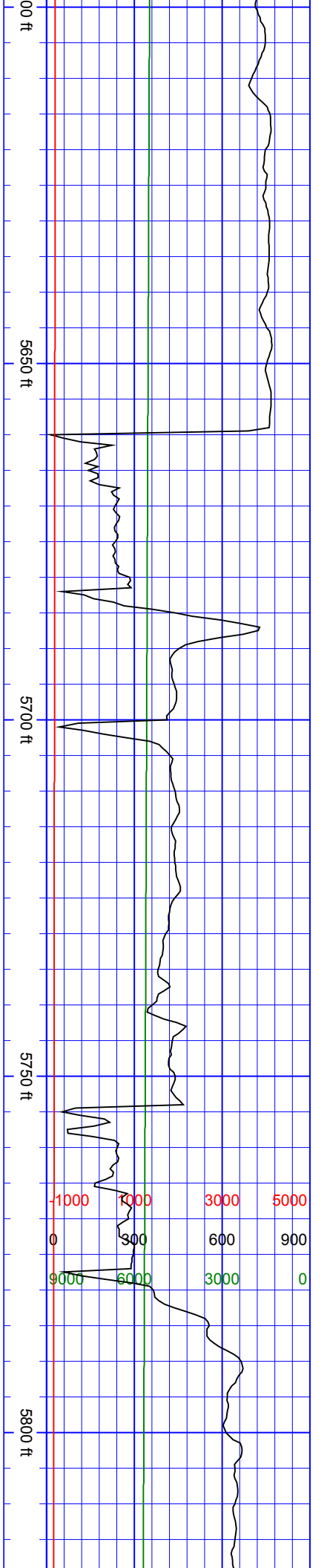


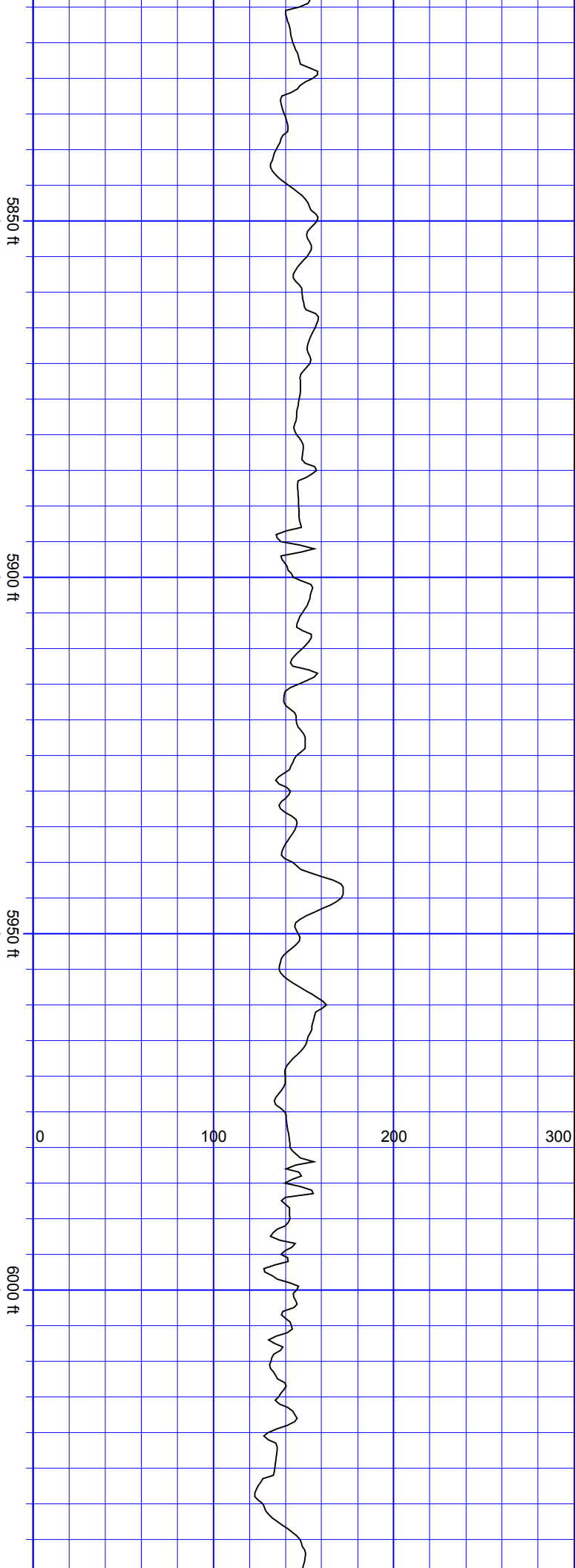


SurveyDepth:5601
TVD:5474.98 Inc:13.32
Azi:224.03 VertSec:-
797.01

SurveyDepth:5696
TVD:5567.3 Inc:13.98
Azi:219.37 VertSec:-
813.87

SurveyDepth:5790
TVD:5658.68 Inc:13.14
Azi:218.05 VertSec:-
831.18

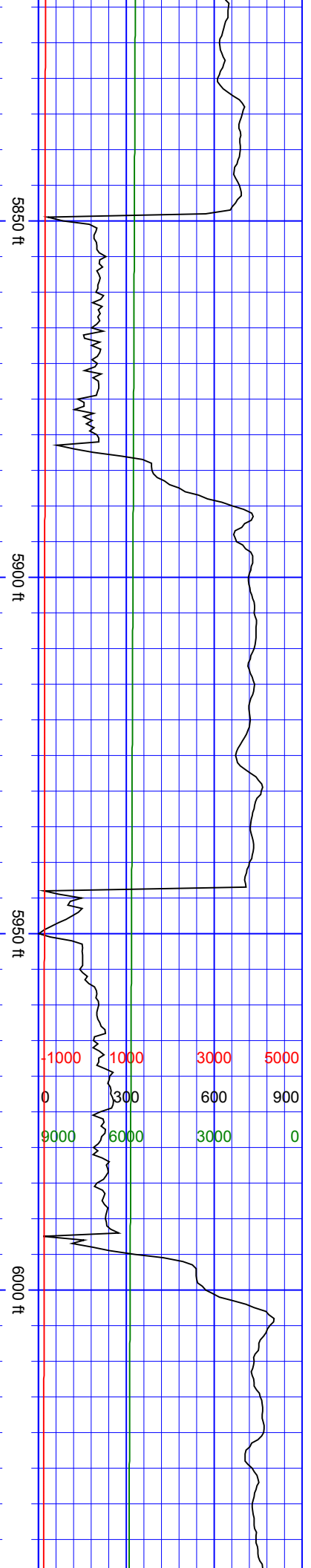




SurveyDepth:5885
TVD:5751.36 Inc:12.22
Azi:220.25 VertSec:-
847.46



SurveyDepth:5980
TVD:5843.86 Inc:14.11
Azi:220.34 VertSec:-
864.08



6300 ft

6350 ft

6400 ft

6450 ft

0 100 200 300

SurveyDepth:6263
TVD:6117.08 Inc:12.7
Azi:224.65 VertSec:-
915.57



SurveyDepth:6358
TVD:6209.67 Inc:13.18
Azi:229.04 VertSec:-
930.23



SurveyDepth:6452
TVD:6301.13 Inc:13.62
Azi:242.57 VertSec:-
942.5

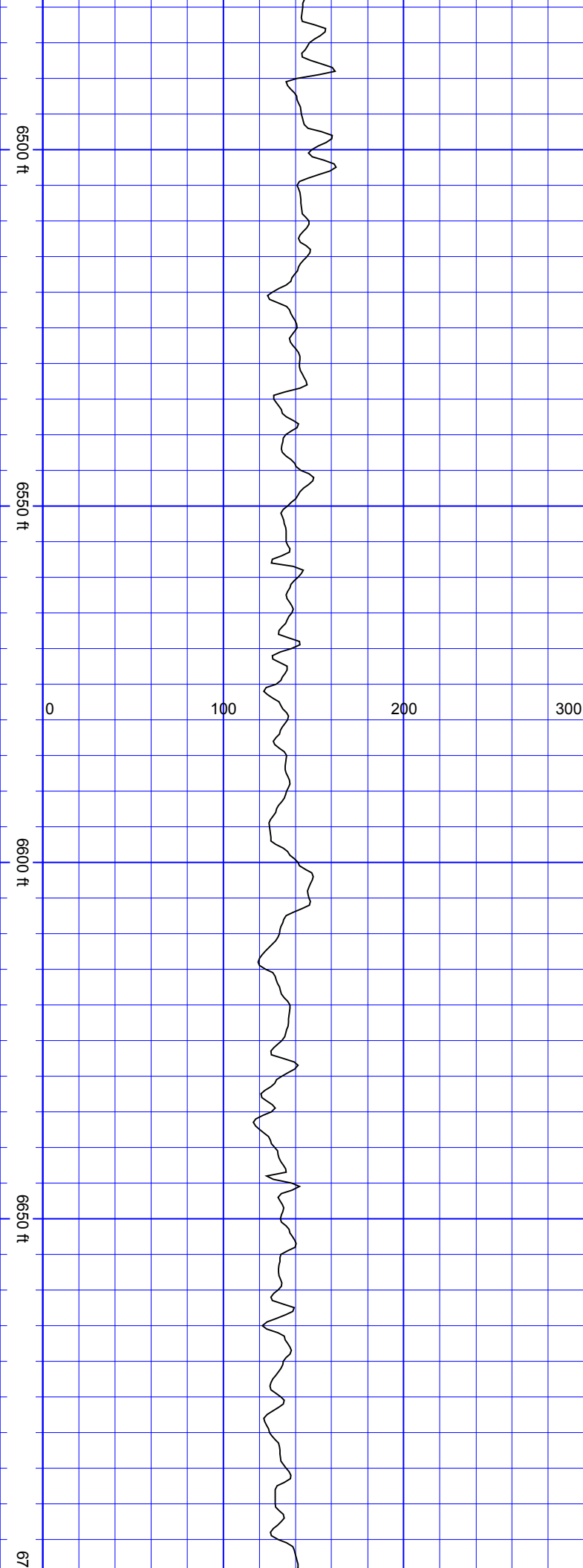
6300 ft

6350 ft

6400 ft

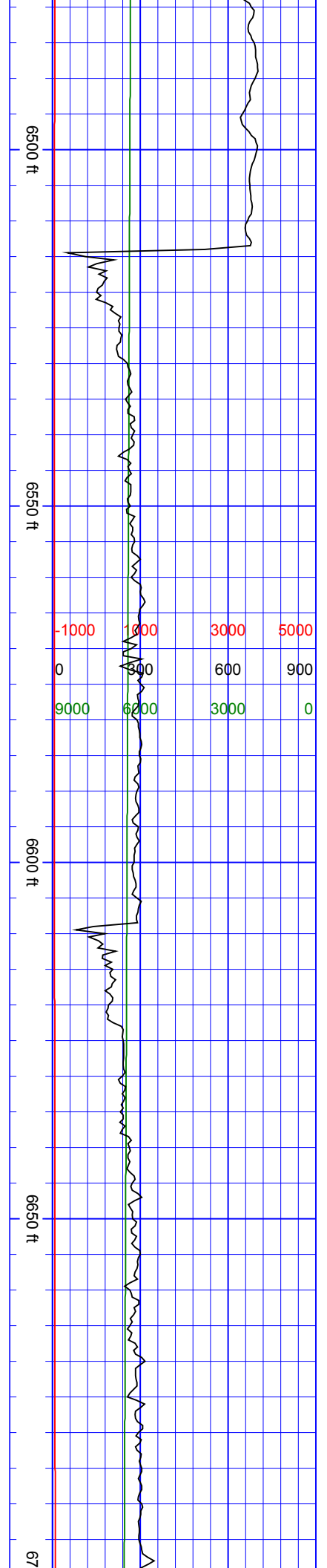
6450 ft

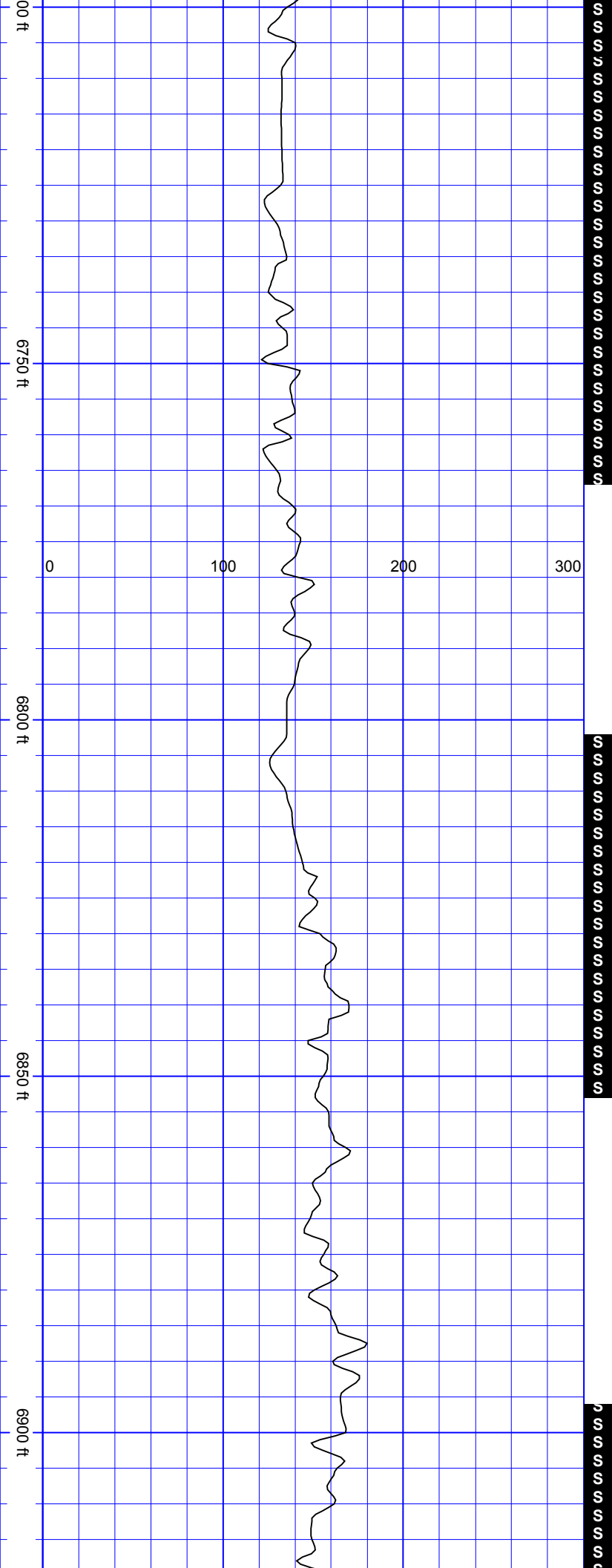
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SurveyDepth:6547
TVD:6393.37 Inc:14.28
Azi:259.8 VertSec:-
949.91

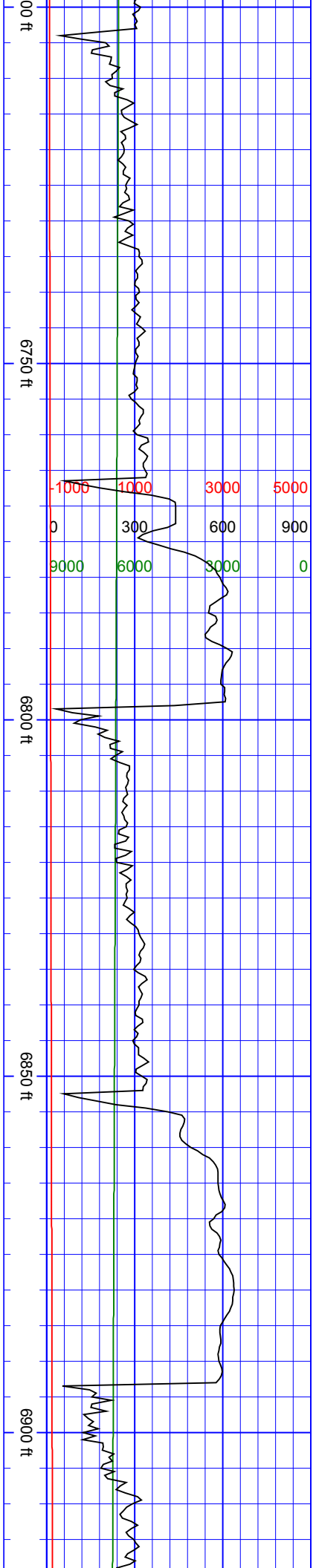
SurveyDepth:6642
TVD:6484.63 Inc:19.03
Azi:298.82 VertSec:-
944.71

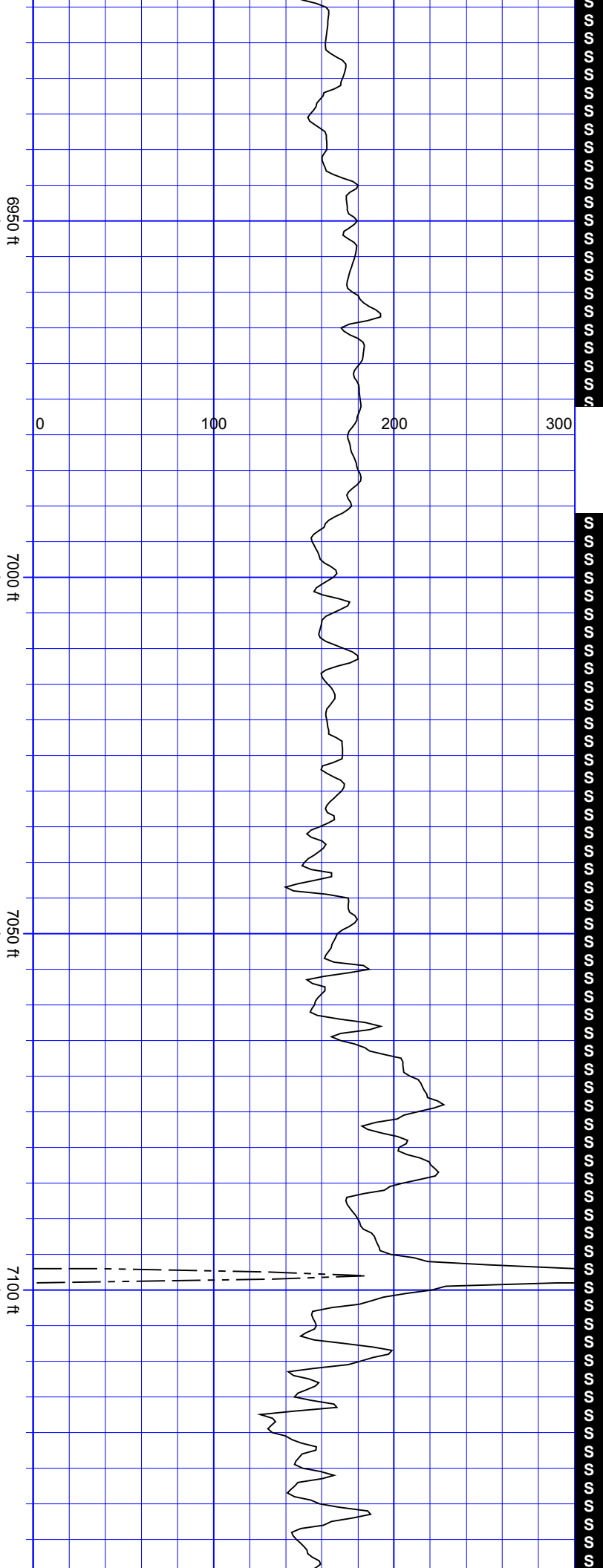




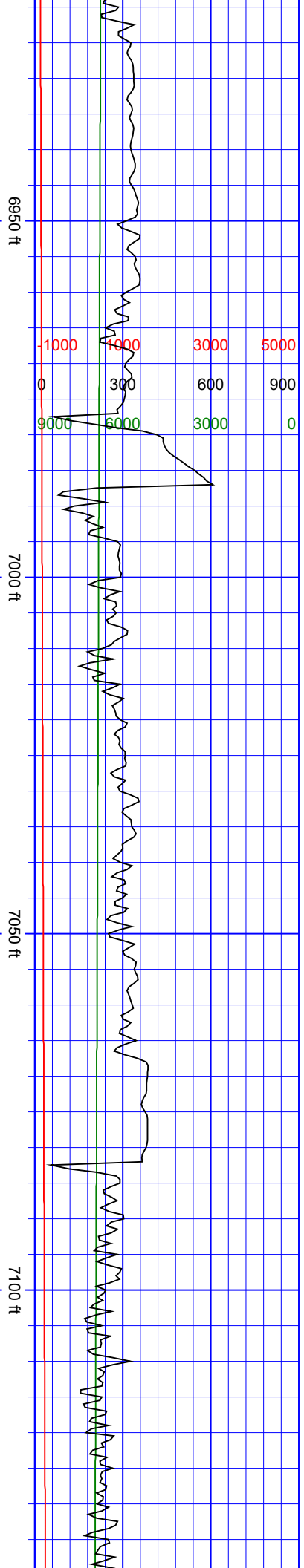
SurveyDepth:6737
TVD:6575.07 Inc:17.93
Azi:338.11 VertSec:-
923.75

SurveyDepth:6831
TVD:6664.23 Inc:19.25
Azi:355.16 VertSec:-
894.91

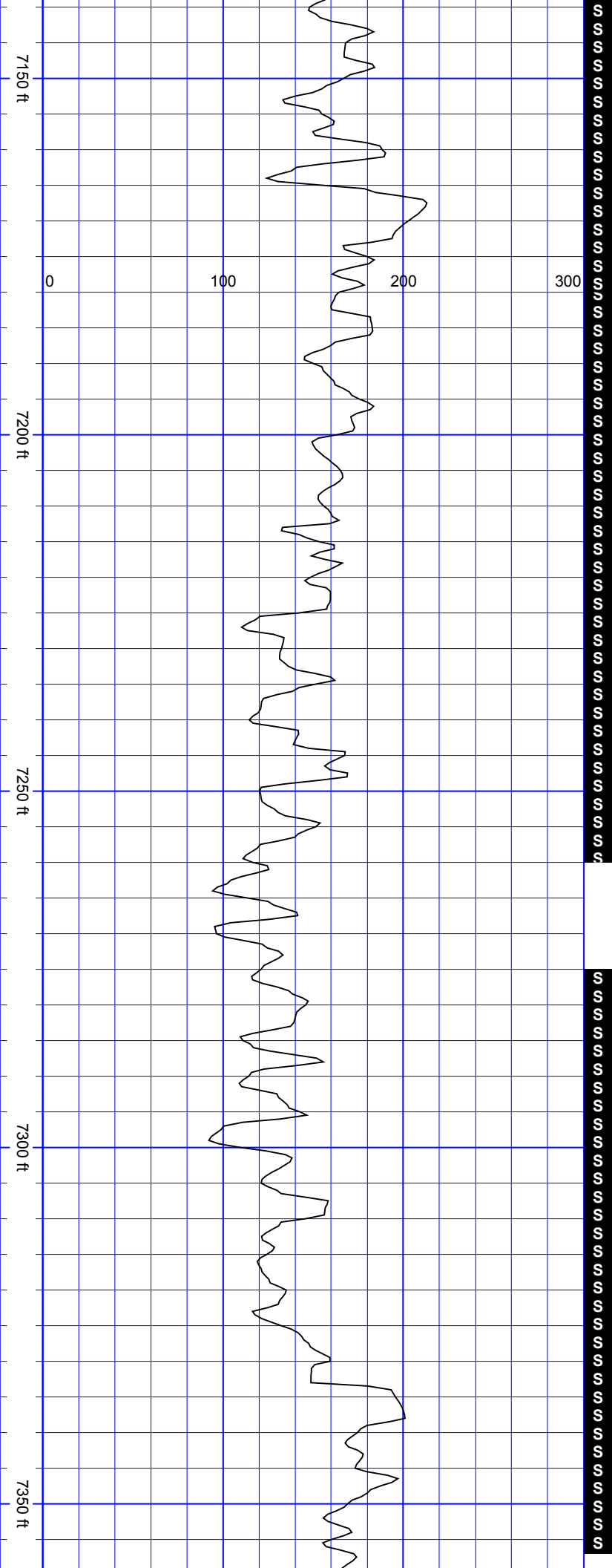




SurveyDepth:6926
TVD:6753.35 Inc:21.27
Azi:357.36 VertSec:-
862.11

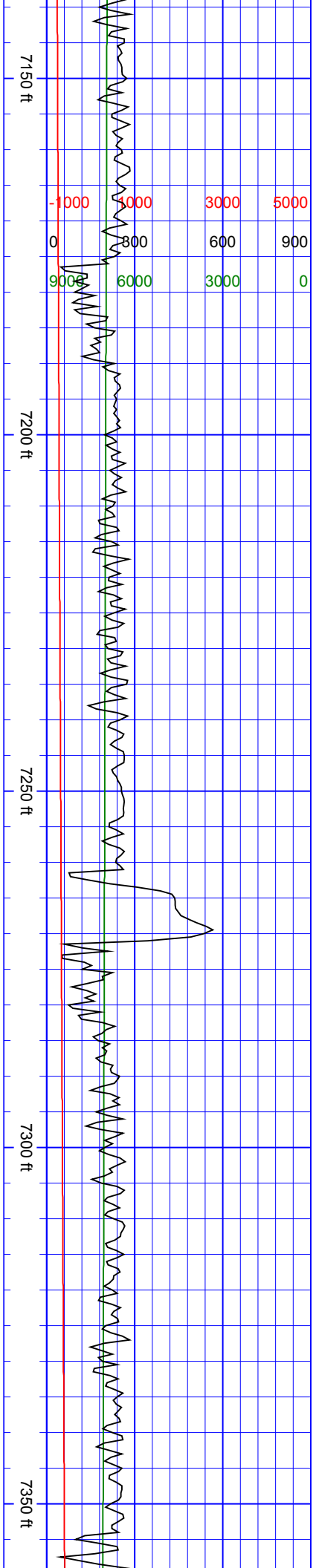


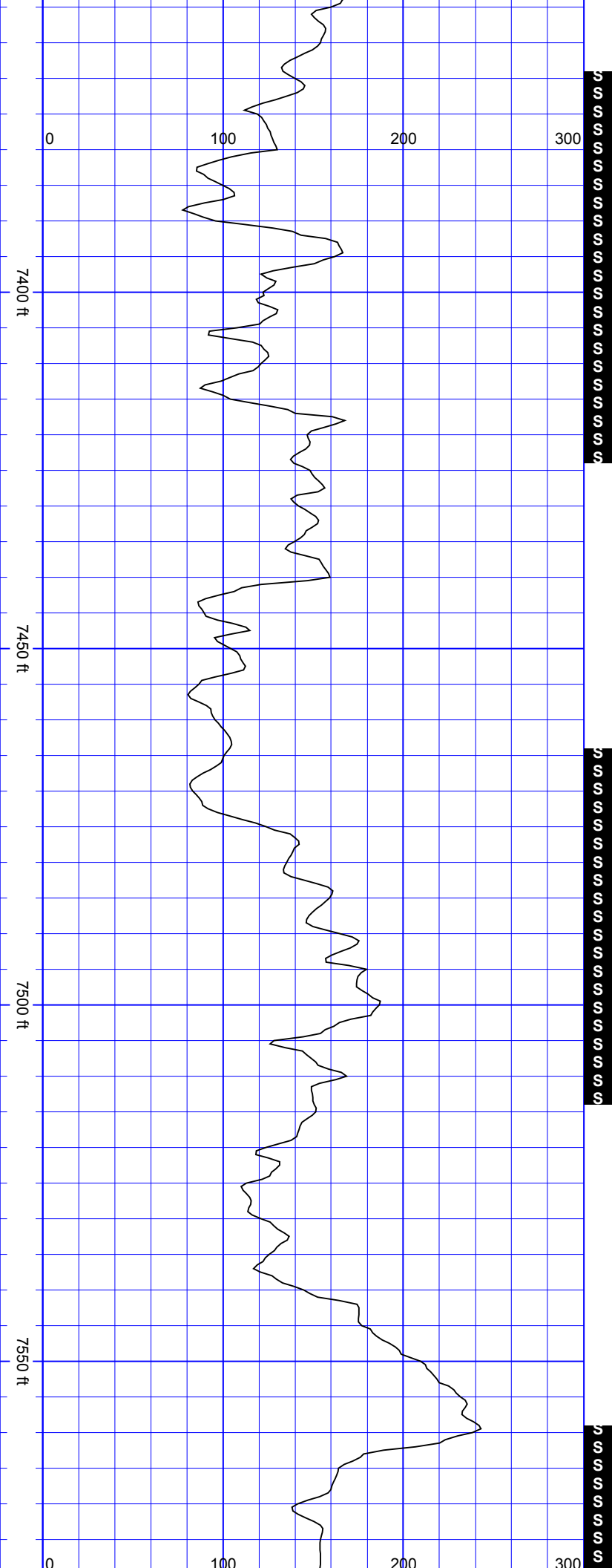
SurveyDepth:7115
TVD:6917.92 Inc:37
Azi:357.27 VertSec:-
770.52



SurveyDepth:7210
TVD:6988.72 Inc:46.49
Azi:357.01 VertSec:-
707.45

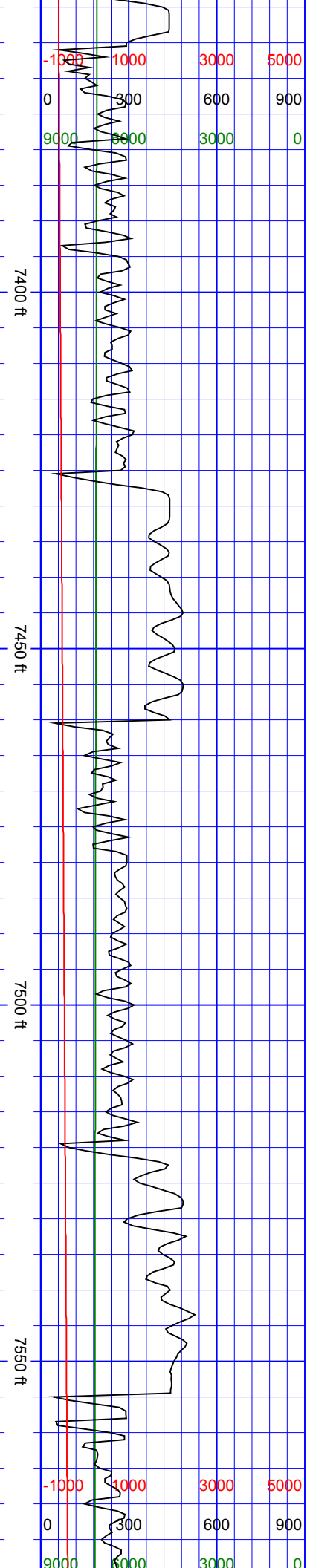
SurveyDepth:7304
TVD:7047.91 Inc:55.37
Azi:354.46 VertSec:-
634.81

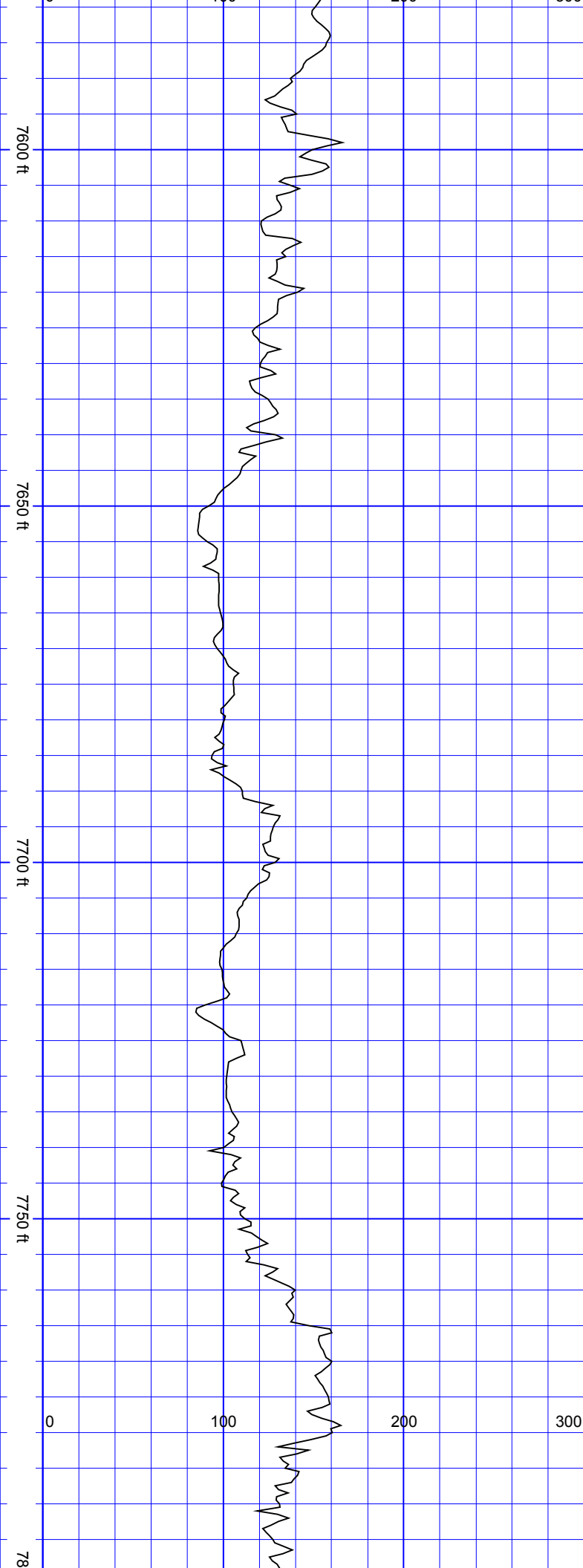




SurveyDepth:7399
TVD:7094.36 Inc:66.01
Azi:356.31 VertSec:-
552.42

SurveyDepth:7494
TVD:7128.84 Inc:71.41
Azi:357.54 VertSec:-
464.1

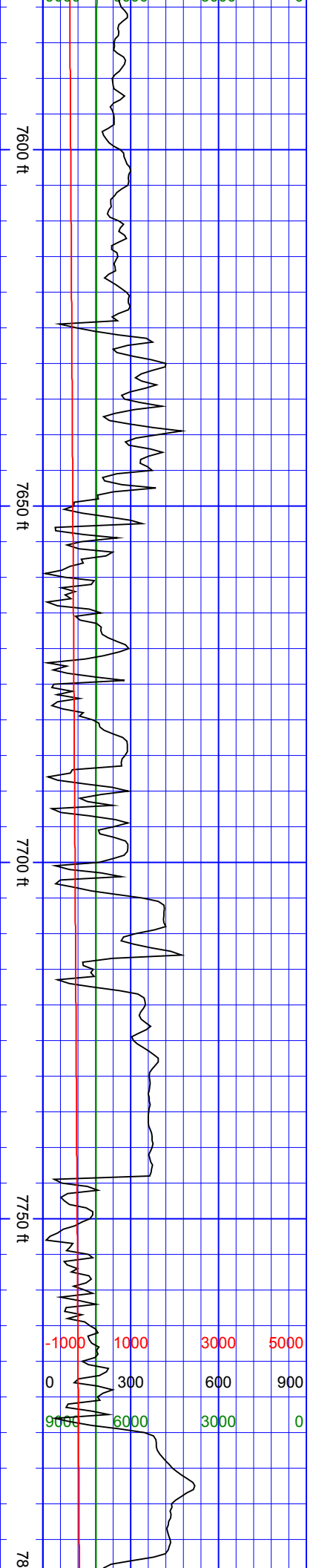


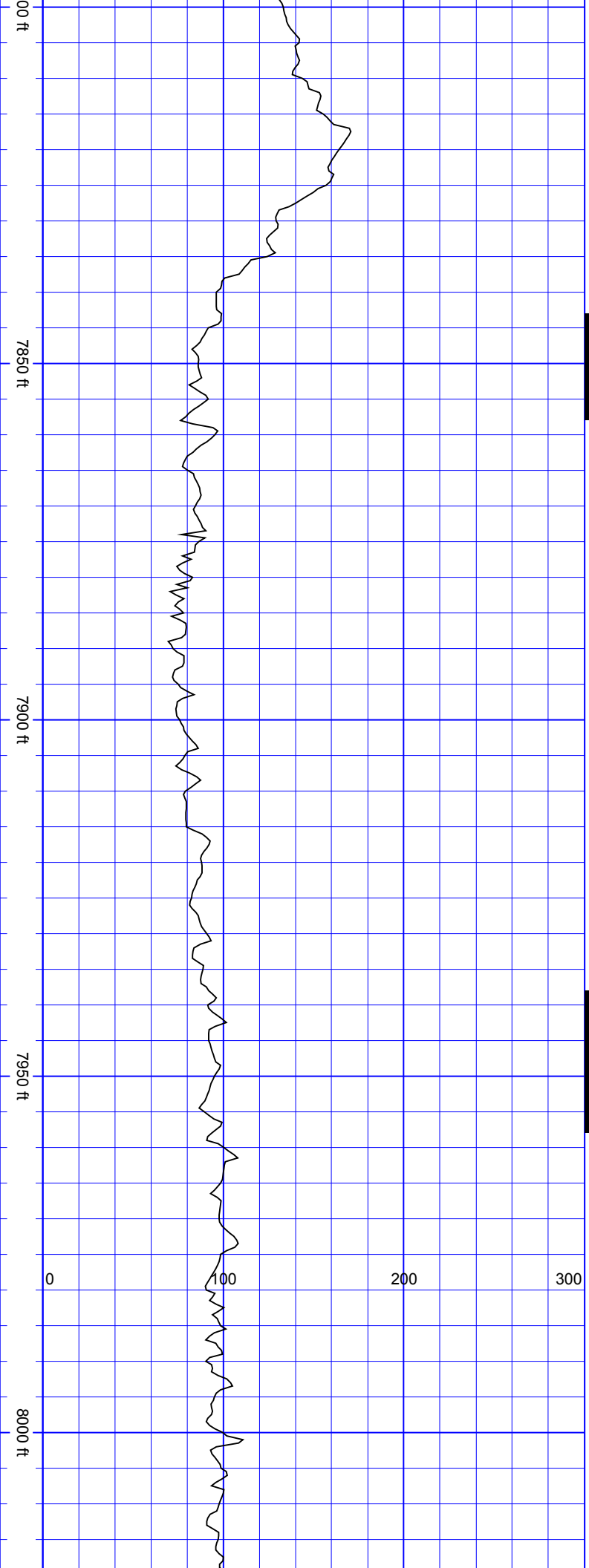


SurveyDepth:7589
TVD:7153.78 Inc:78.14
Azi:0.35 VertSec:-372.53

SurveyDepth:7683
TVD:7168.02 Inc:84.42
Azi:3.51 VertSec:-279.71

SurveyDepth:7778
TVD:7176.1 Inc:85.83
Azi:0.61 VertSec:-185.1



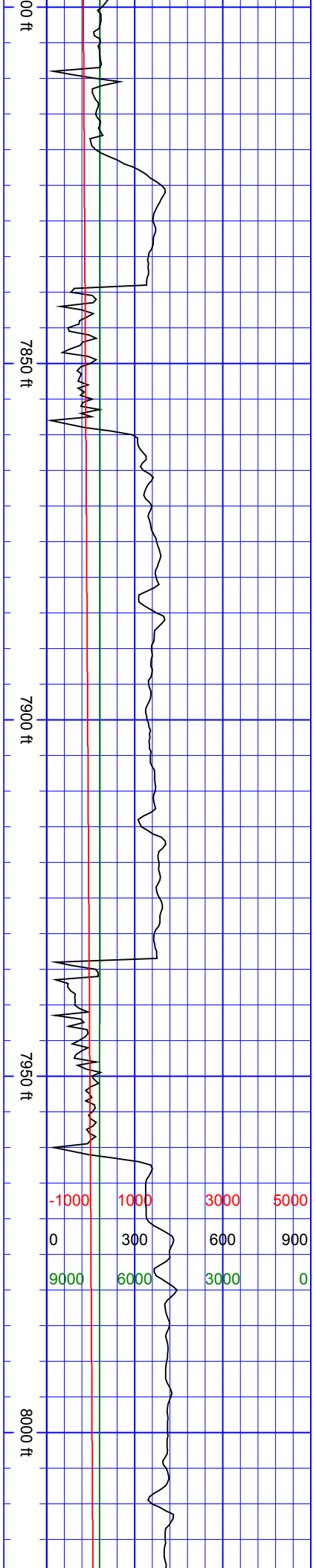


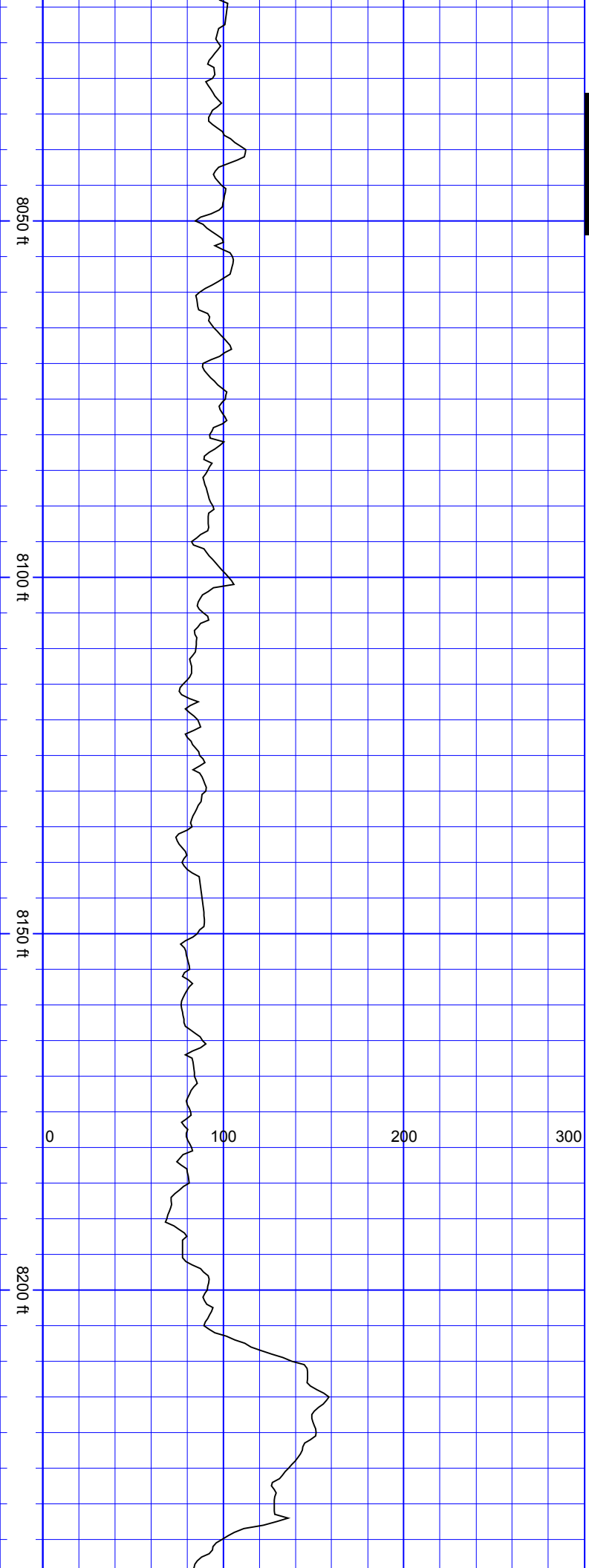
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SurveyDepth:7873
TVD:7181.7 Inc:87.41
Azi:359.12 VertSec:-90.28

SurveyDepth:7967
TVD:7184.5 Inc:89.17
Azi:356.74 VertSec:3.58

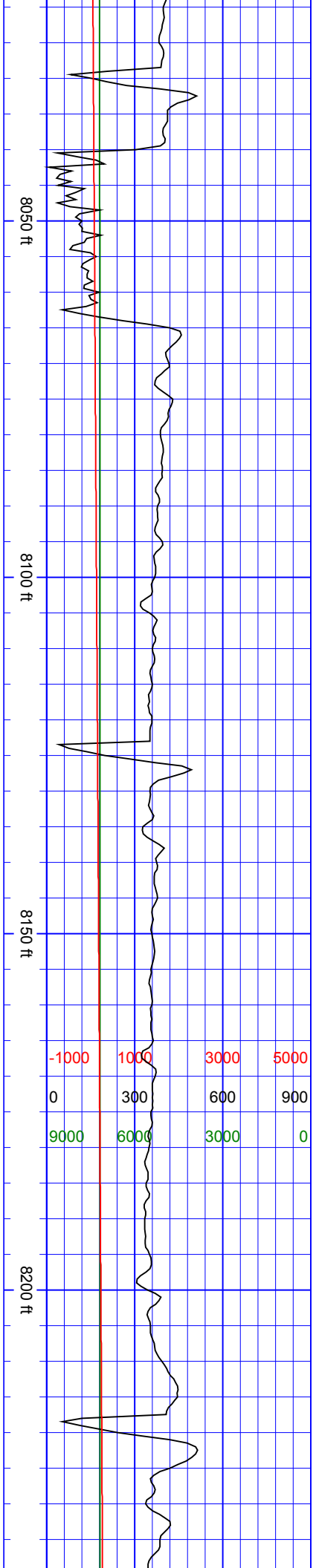


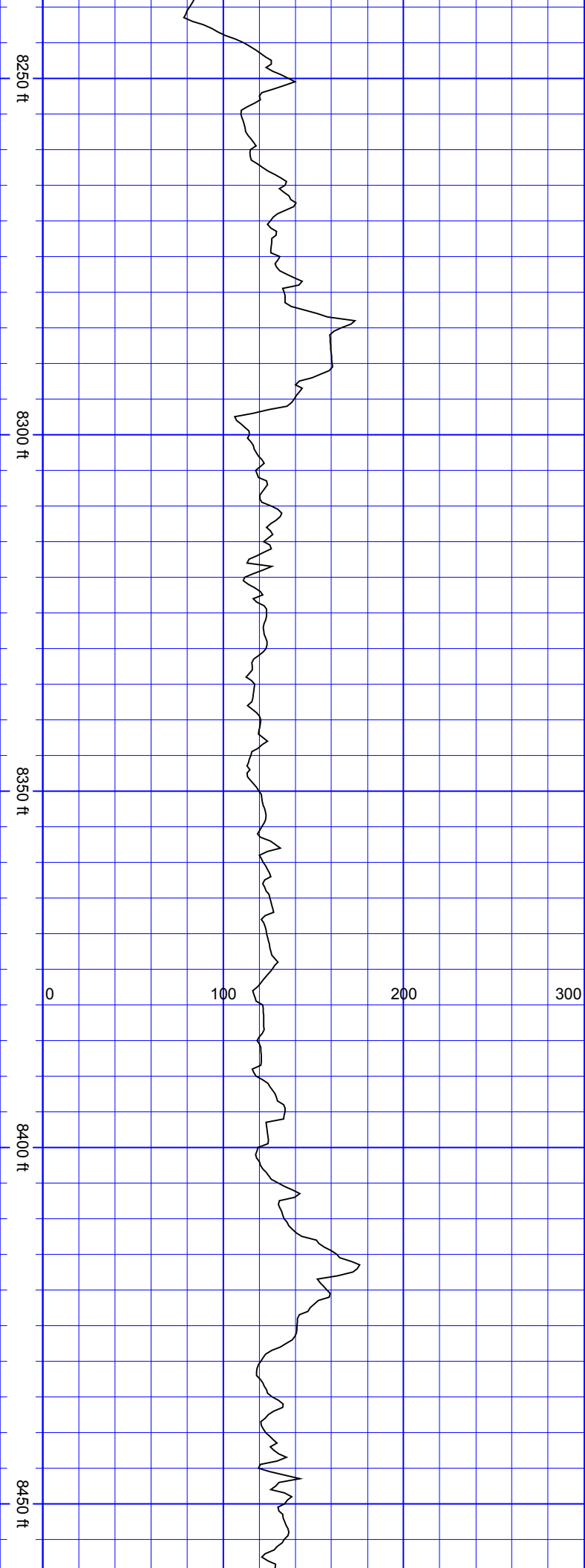


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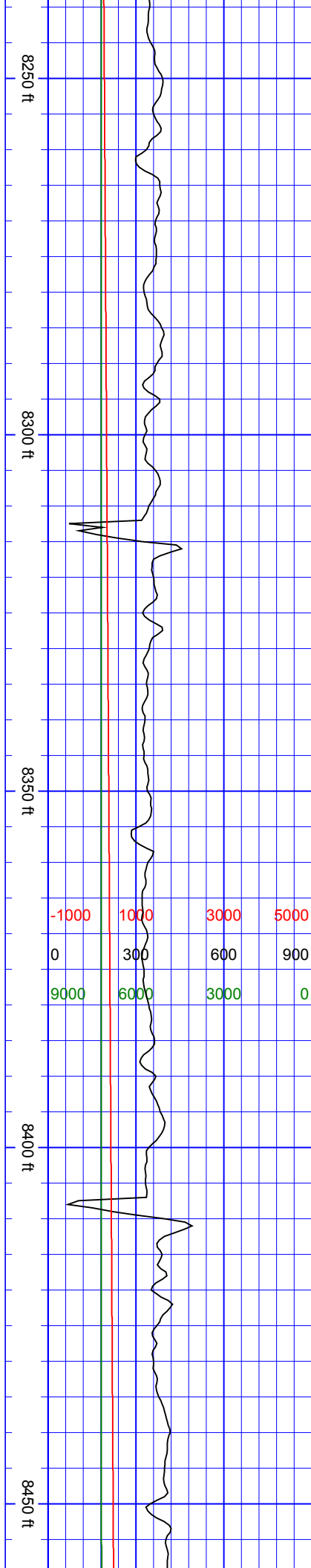
SurveyDepth:8062
TVD:7183.66 Inc:91.85
Azi:357.8 VertSec:98.42

SurveyDepth:8157
TVD:7179.86 Inc:92.73
Azi:357.8
VertSec:193.24





SurveyDepth:8251 TVD:7175.53 Inc:92.55 Azi:357.45 VertSec:287.02			
SurveyDepth:8346 TVD:7171.96 Inc:91.76 Azi:357.54 VertSec:381.83			
SurveyDepth:8441 TVD:7168.31 Inc:92.64 Azi:357.45 VertSec:476.63			



8500 ft

8550 ft

8600 ft

8650 ft

0 100 200 300

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SurveyDepth:8536
TVD:7163.51 Inc:93.16
Azi:359.47
VertSec:571.44

SurveyDepth:8631
TVD:7158.49 Inc:92.9
Azi:359.29
VertSec:666.29

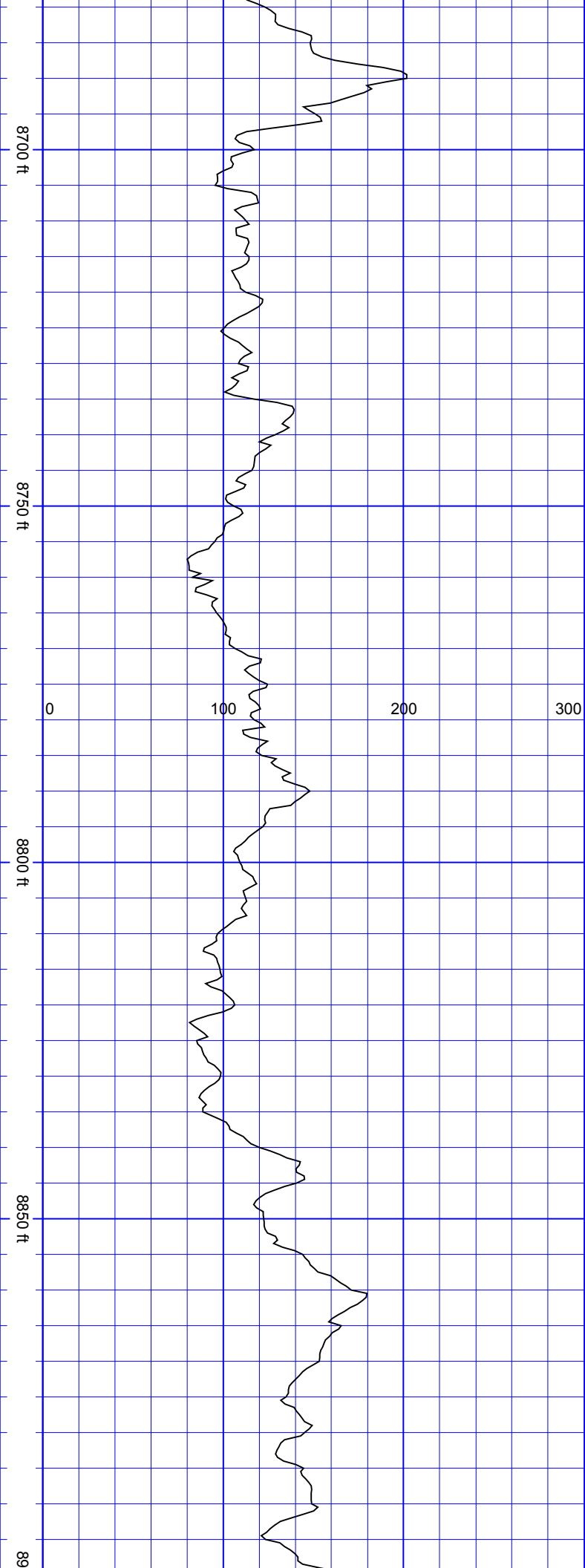
8500 ft

8550 ft

8600 ft

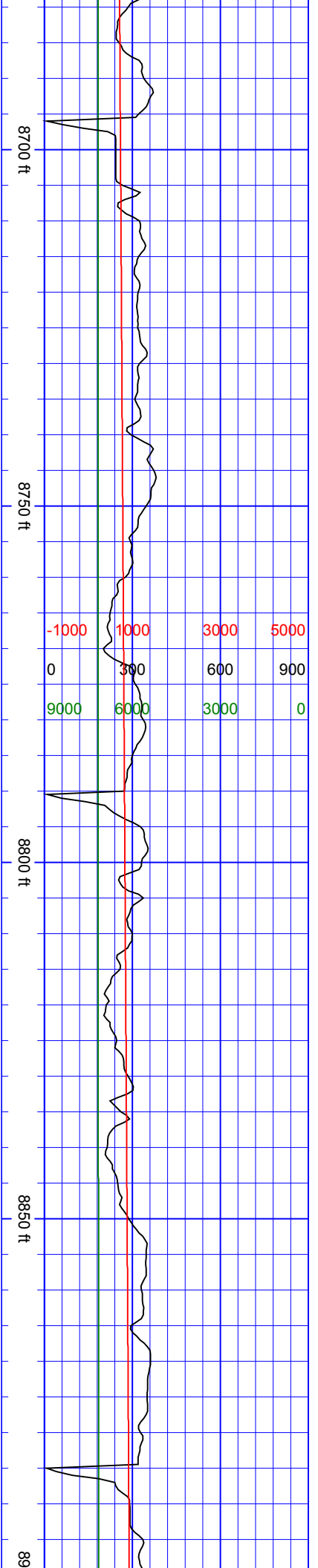
8650 ft

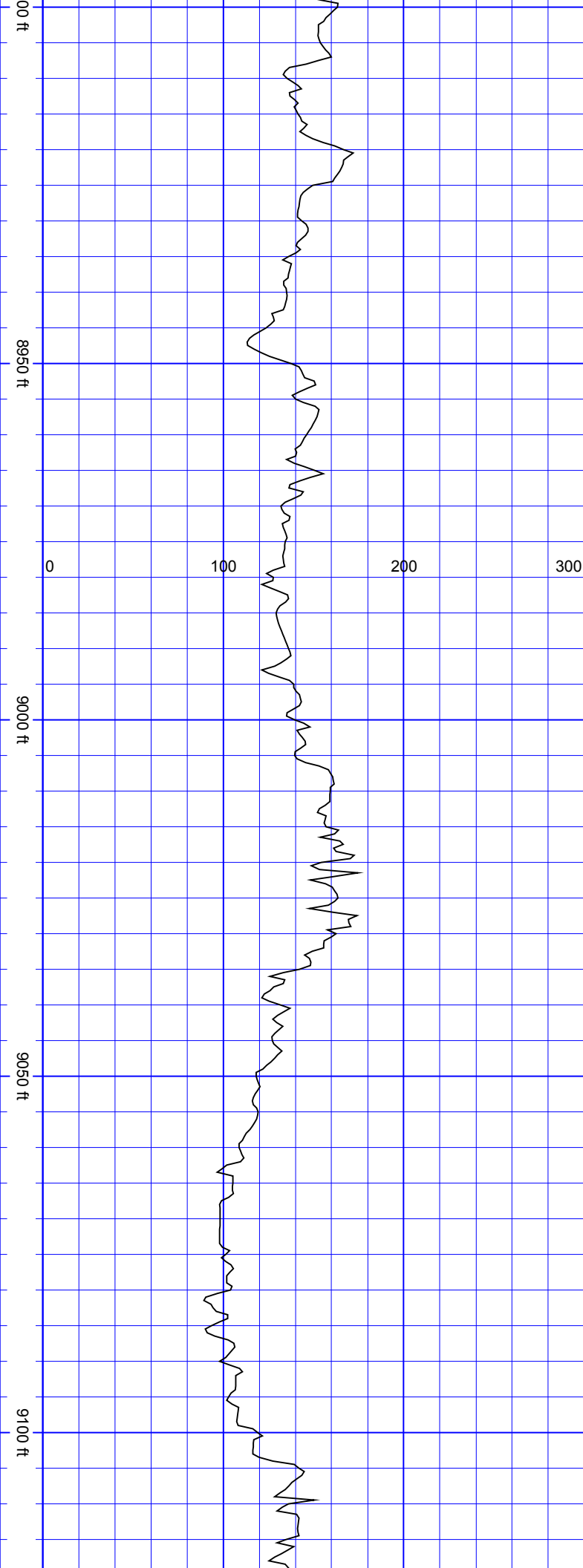
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0	300	600	900
9000	6000	3000	0



SurveyDepth:8725
TVD:7154.63 Inc:91.8
Azi:359.12
VertSec:760.19

SurveyDepth:8820
TVD:7151.79 Inc:91.63
Azi:359.38
VertSec:855.12

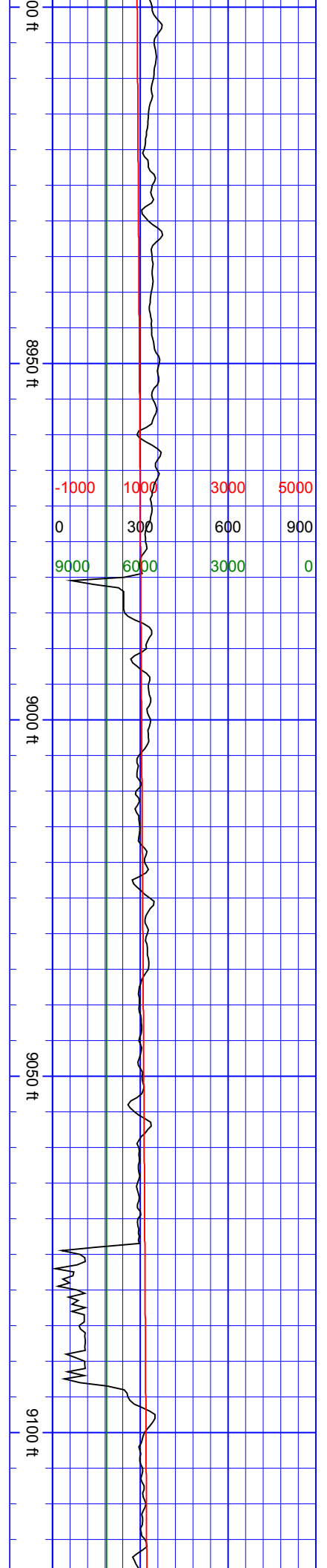
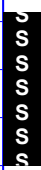


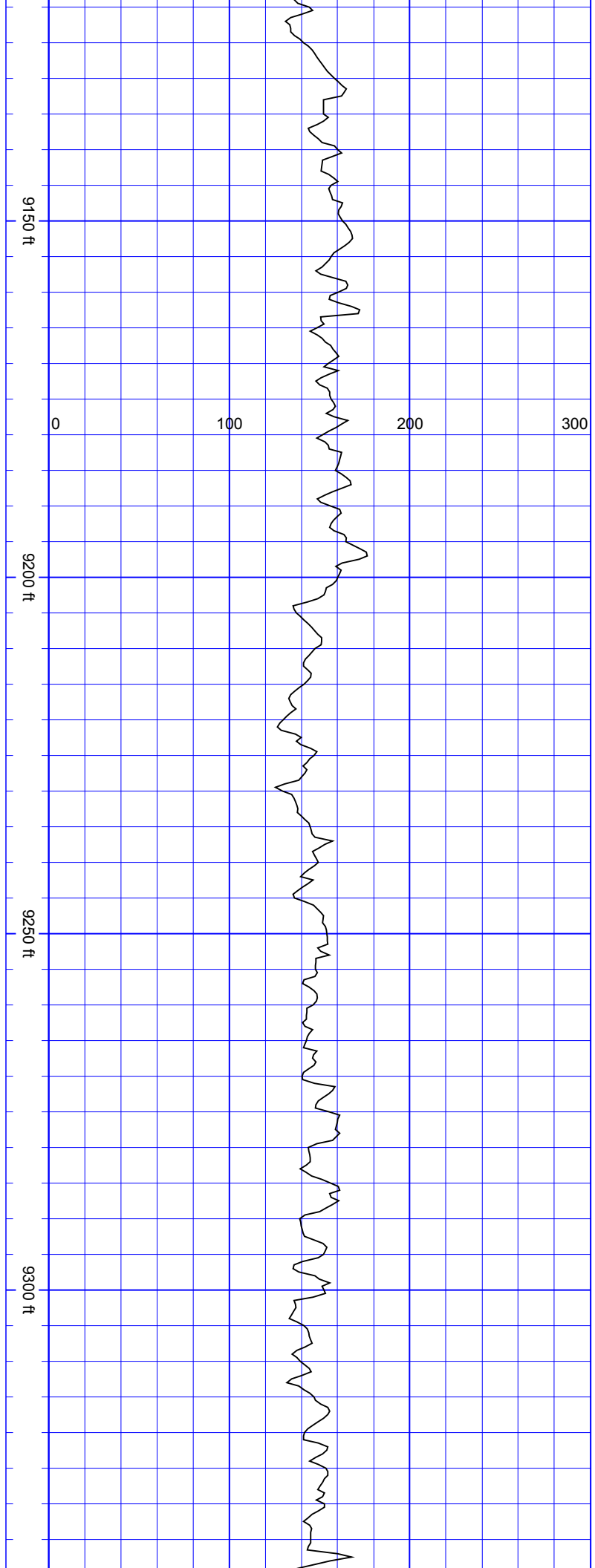


SurveyDepth:8914
TVD:7150.09 Inc:90.44
Azi:359.29
VertSec:949.09

SurveyDepth:9009
TVD:7149.8 Inc:89.91
Azi:359.29
VertSec:1044.07

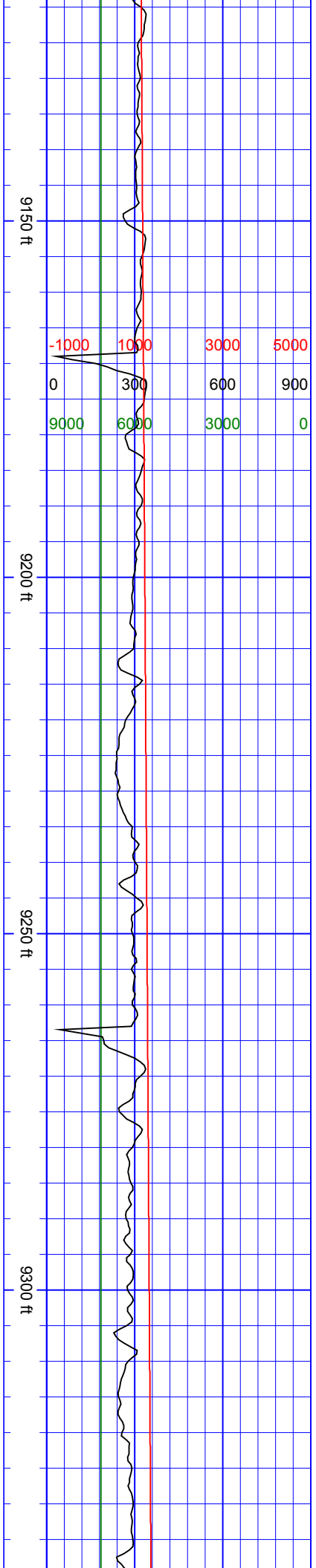
SurveyDepth:9103
TVD:7147.82 Inc:92.51
Azi:1.49
VertSec:1138.03

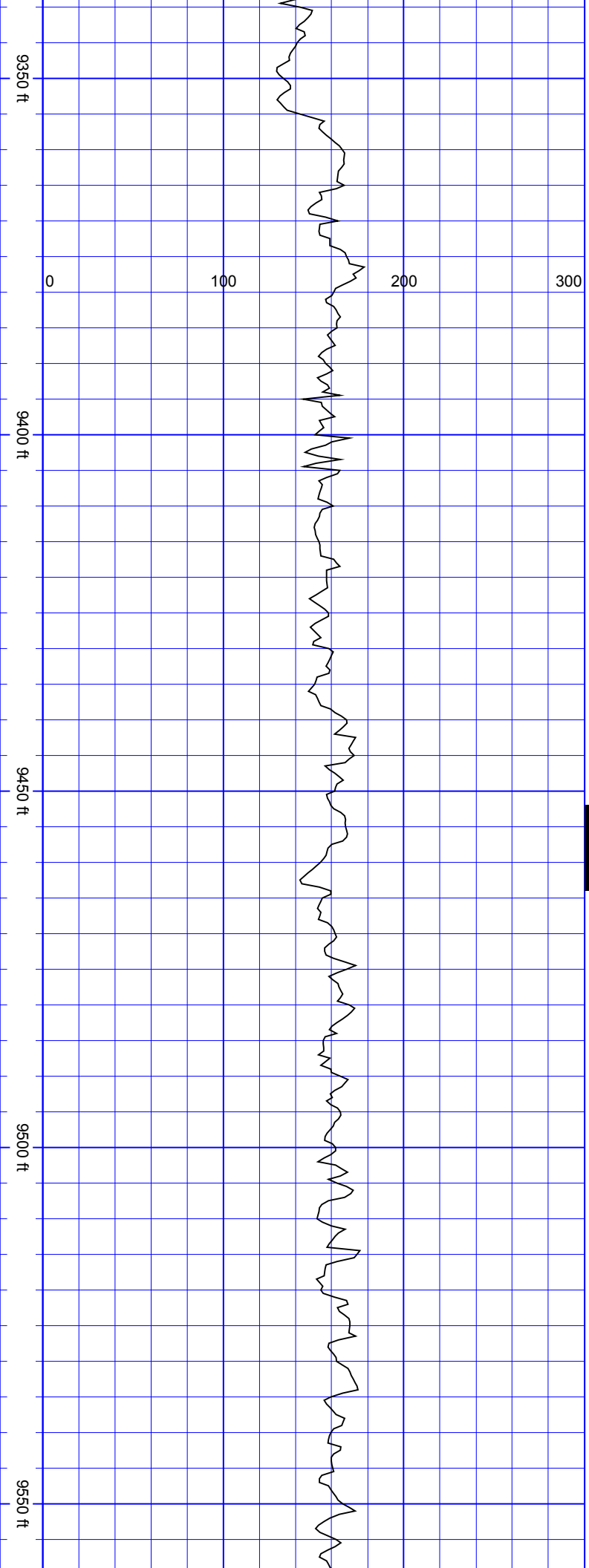




SurveyDepth:9198
TVD:7144.02 Inc:92.07
Azi:1.58
VertSec:1232.94

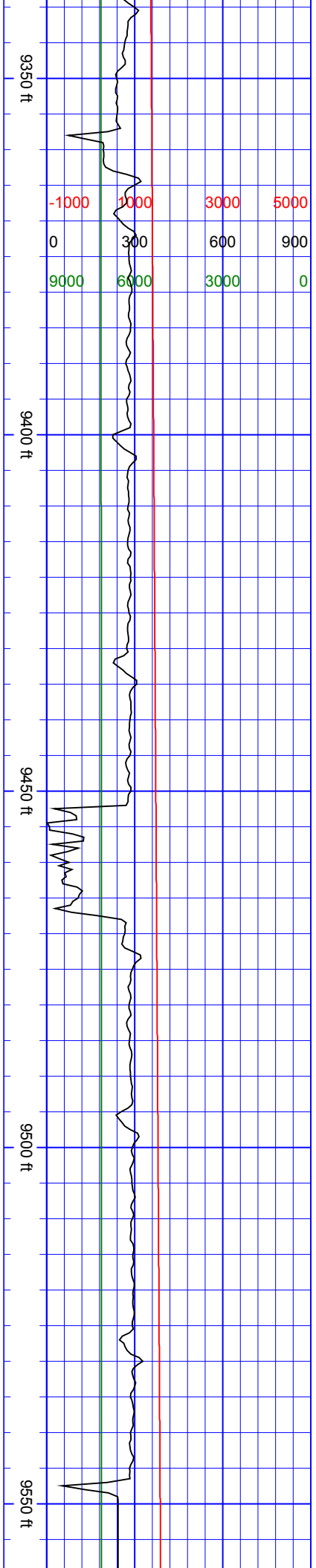
SurveyDepth:9292
TVD:7139.98 Inc:92.86
Azi:2.55
VertSec:1326.81

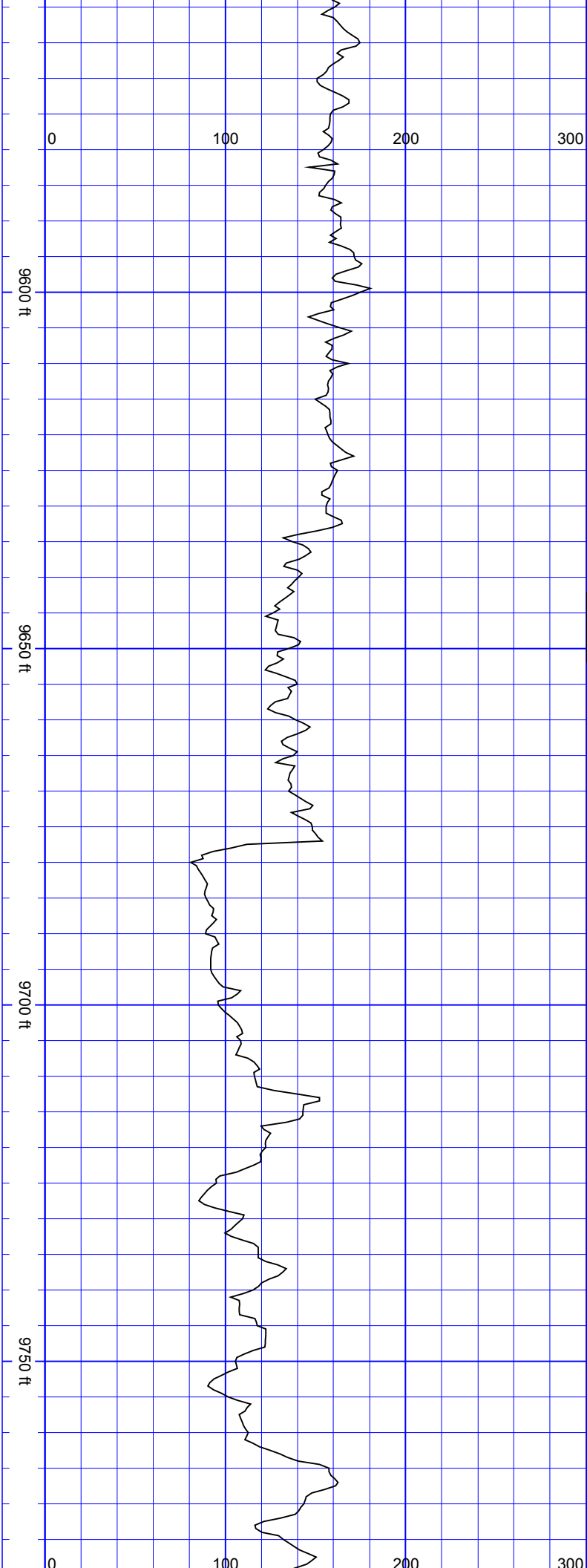




SurveyDepth:9387
TVD:7135.82 Inc:92.15
Azi:2.46
VertSec:1421.66

SurveyDepth:9482
TVD:7132.95 Inc:91.32
Azi:1.58
VertSec:1516.58



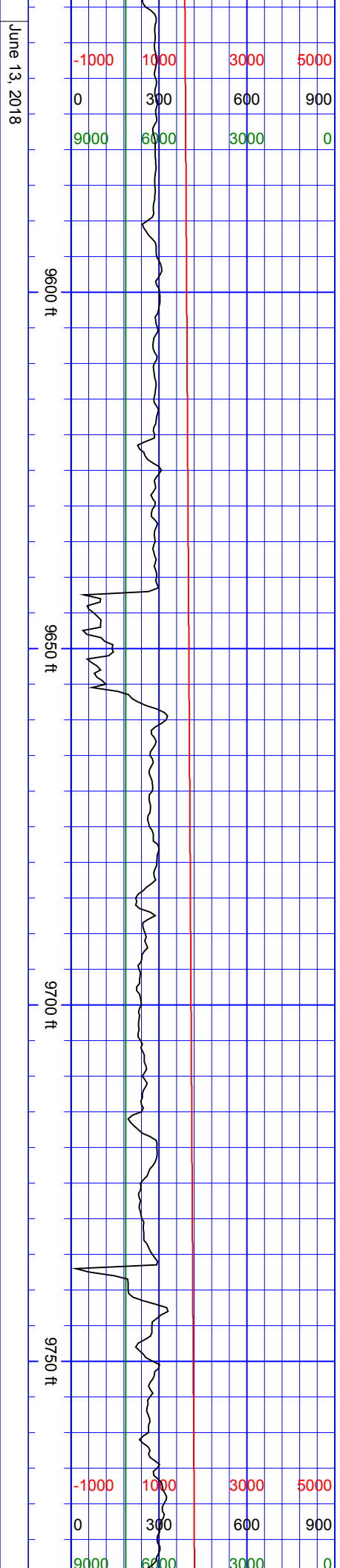


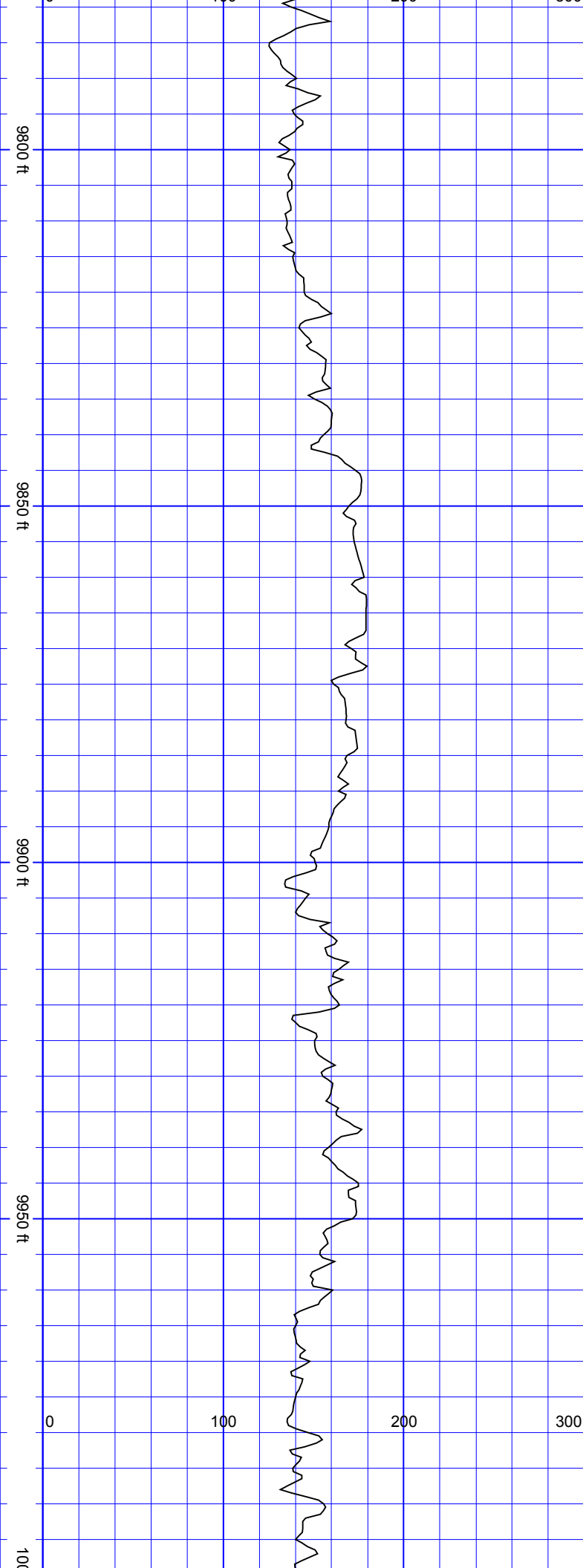
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SurveyDepth:9577
TVD:7130.76 Inc:91.32
Azi:1.49
VertSec:1611.54

SurveyDepth:9671
TVD:7129.89 Inc:89.74
Azi:0.35
VertSec:1705.53

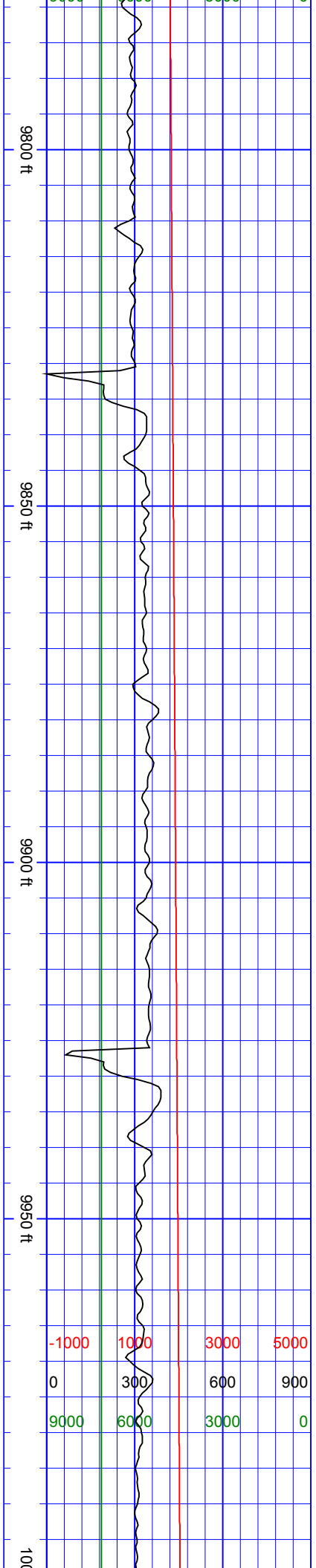
SurveyDepth:9766
TVD:7130 Inc:90.13
Azi:0.17
VertSec:1800.53

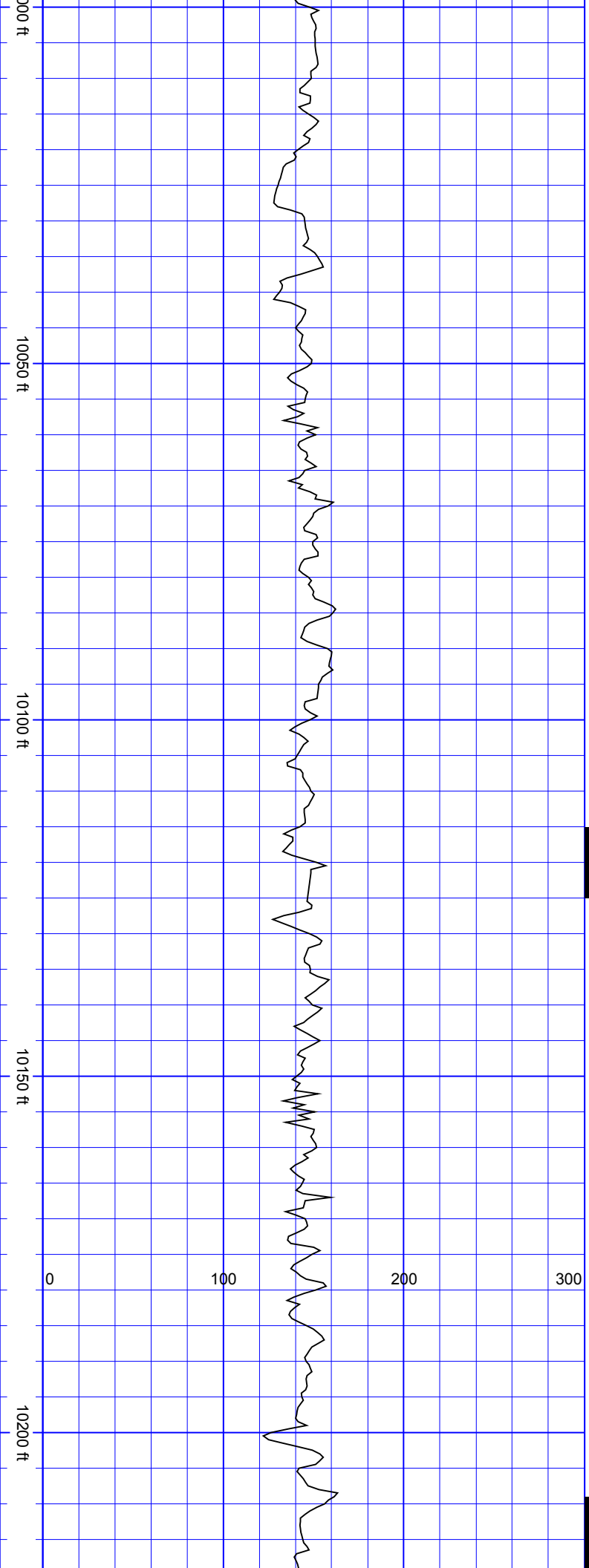




SurveyDepth:9861
TVD:7130.33 Inc:89.47
Azi:0.35
VertSec:1895.53

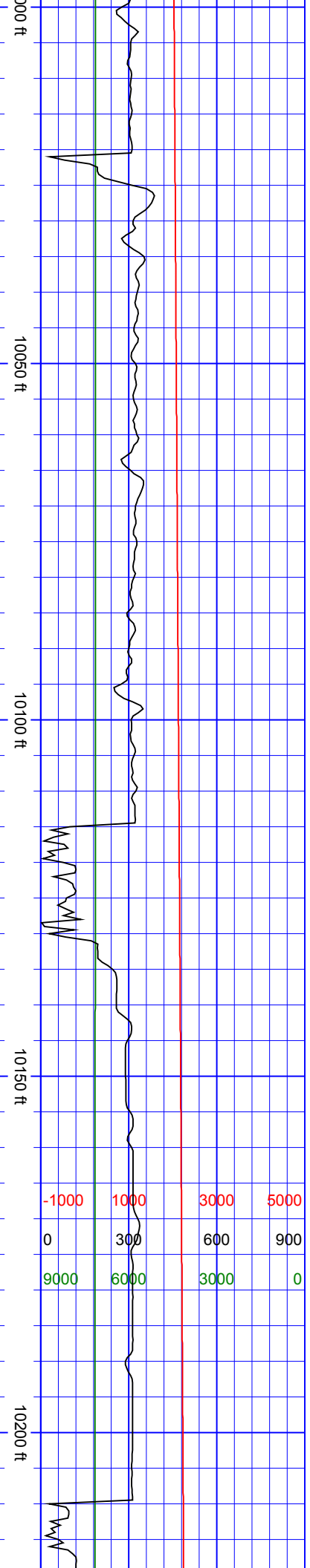
SurveyDepth:9955
TVD:7131.77 Inc:88.77
Azi:0.26
VertSec:1989.52





SurveyDepth:10050
TVD:7133.81 Inc:88.77
Azi:359.65
VertSec:2084.49

SurveyDepth:10144
TVD:7135.18 Inc:89.56
Azi:359.29
VertSec:2178.46

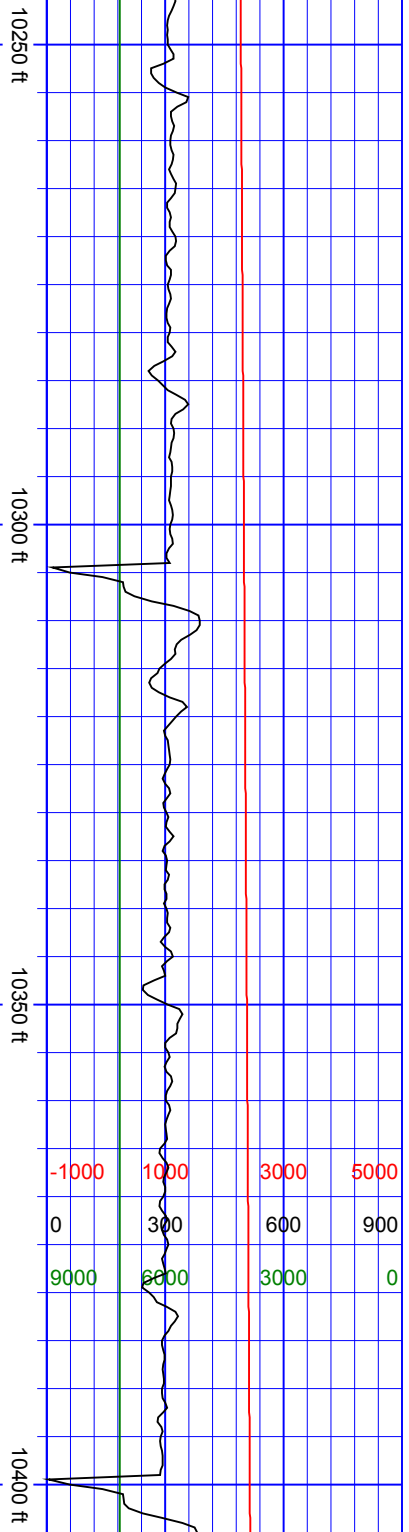
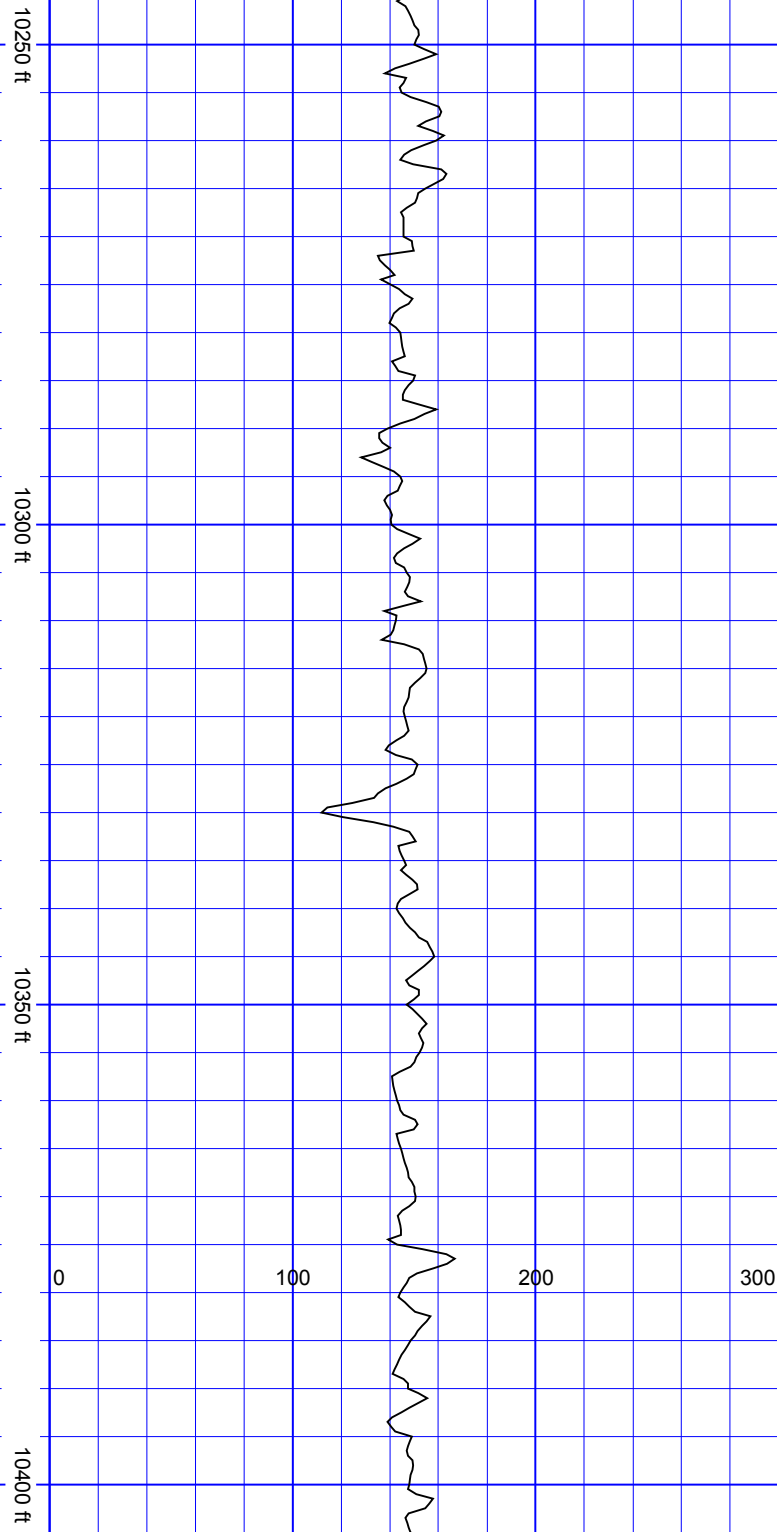


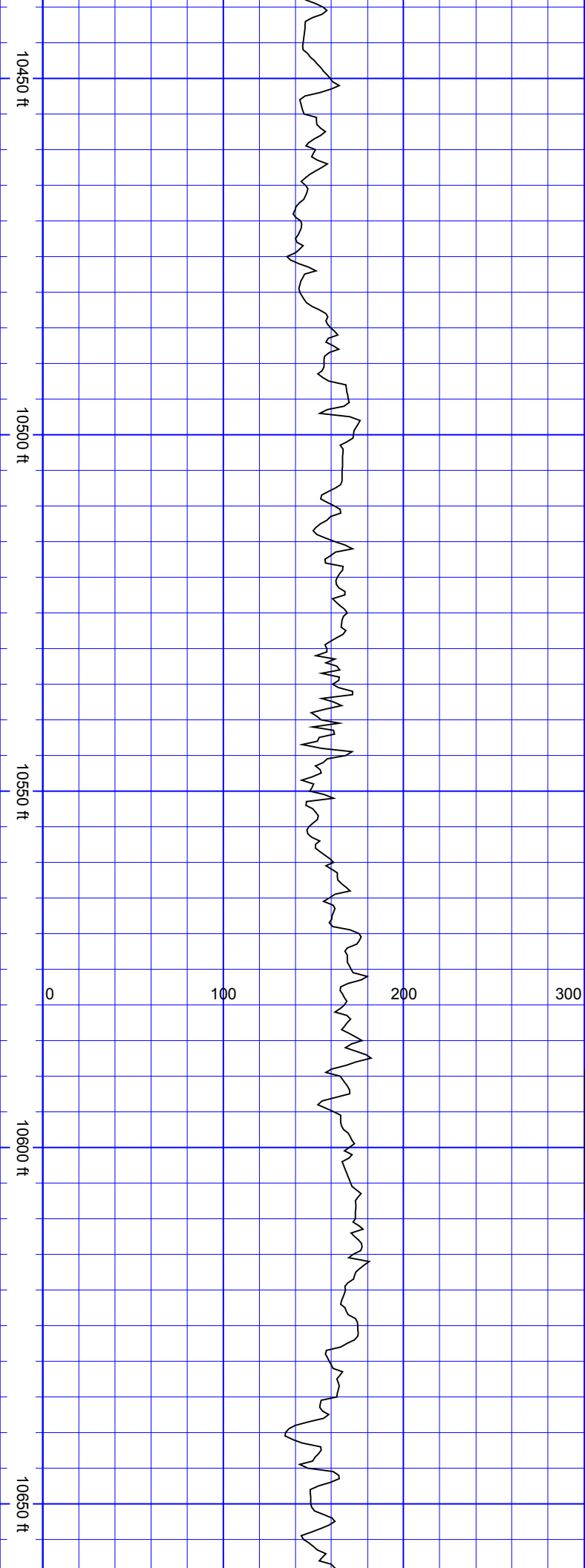
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SurveyDepth:10239
TVD:7135.44 Inc:90.13
Azi:0.35
VertSec:2273.46

SurveyDepth:10334
TVD:7135.59 Inc:89.69
Azi:0.26
VertSec:2368.46

SurveyDepth:10428
TVD:7136.2 Inc:89.56
Azi:0.08
VertSec:2462.45

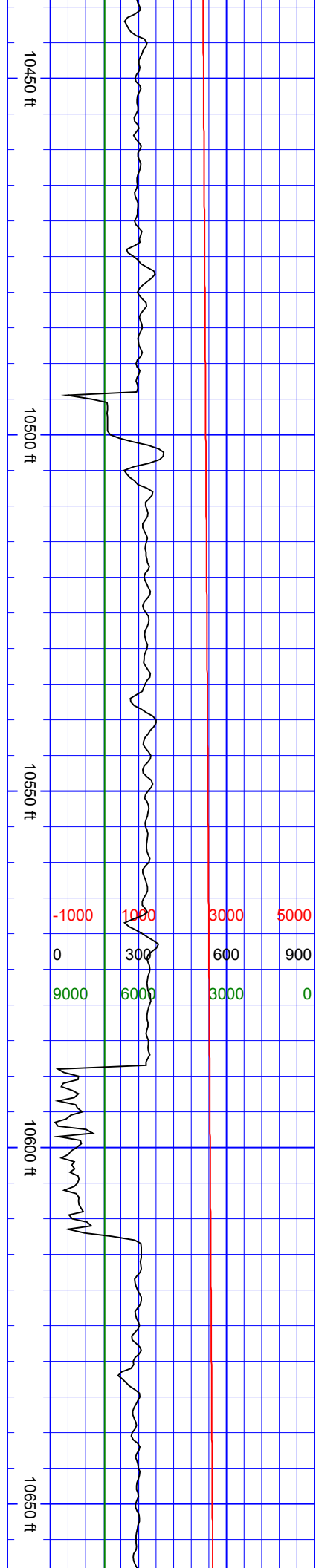


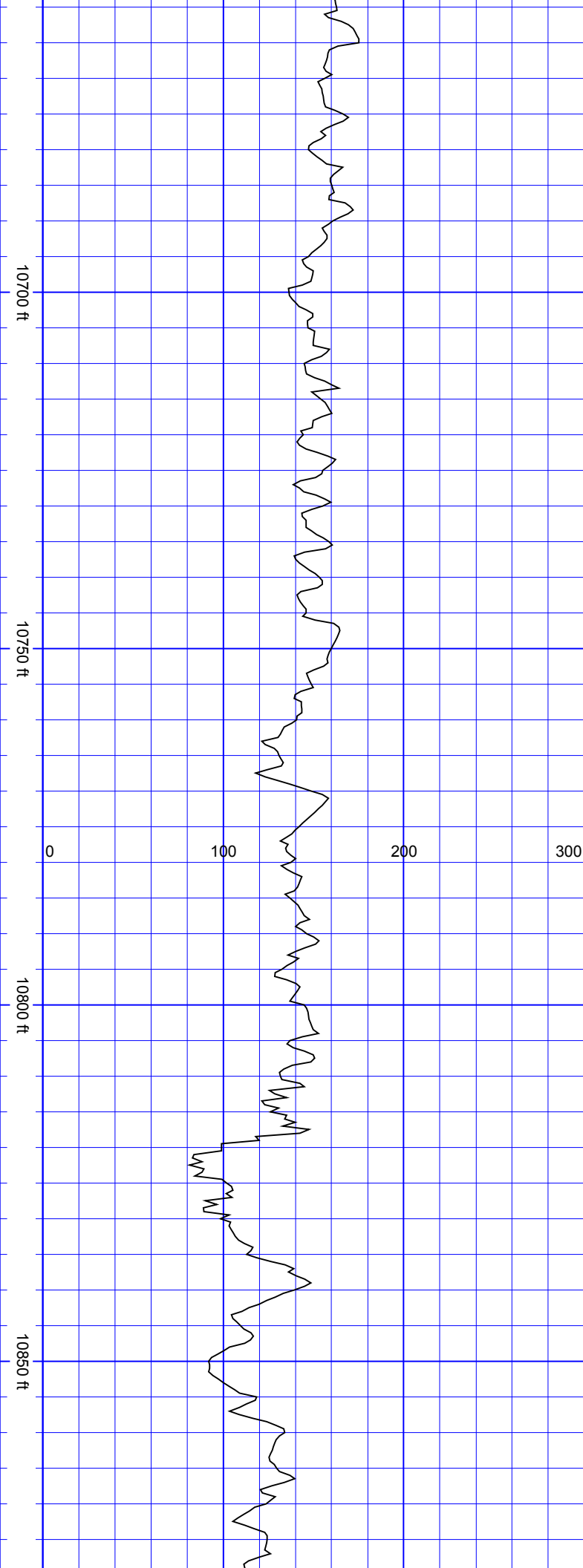


SurveyDepth:10524
TVD:7137.45 Inc:88.95
Azi:360 VertSec:2558.44

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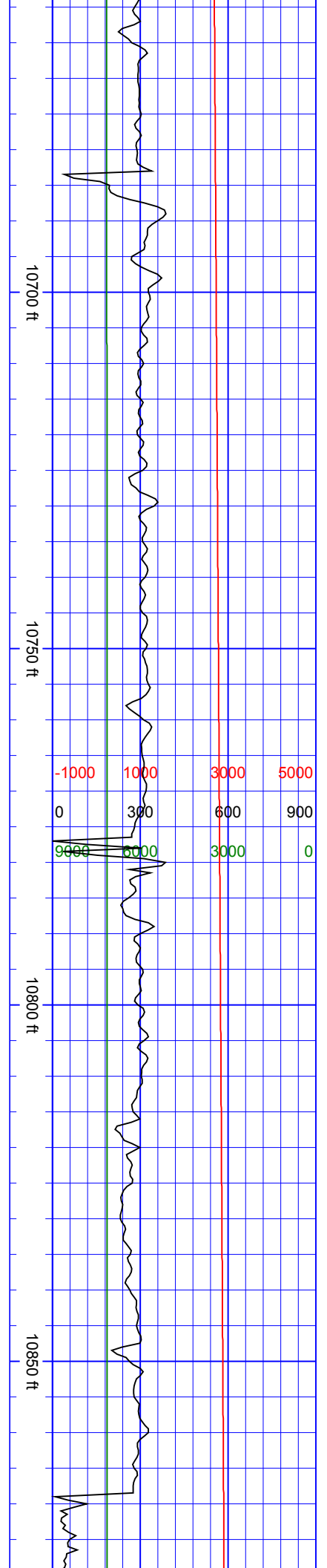
SurveyDepth:10618
TVD:7137.16 Inc:91.41
Azi:1.67
VertSec:2652.43

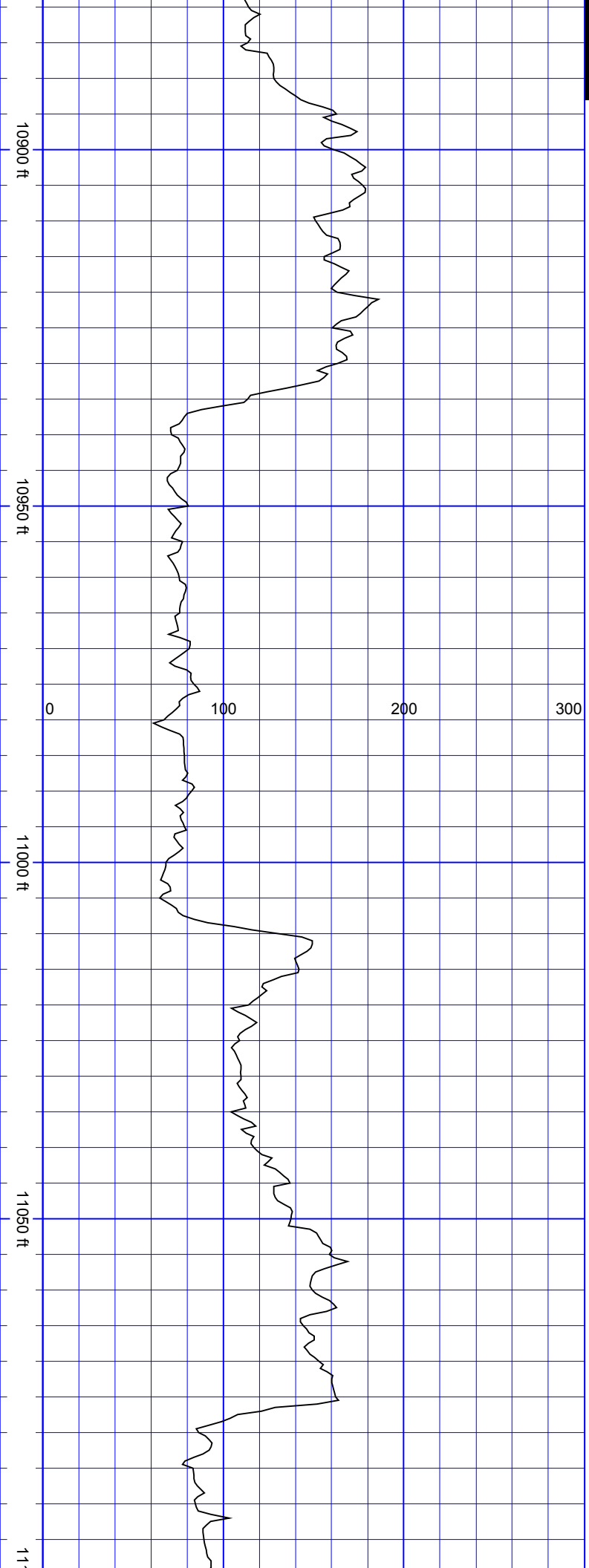




SurveyDepth:10712
TVD:7135.02 Inc:91.19
Azi:1.84
VertSec:2746.38

SurveyDepth:10808
TVD:7132.81 Inc:91.45
Azi:2.19
VertSec:2842.32

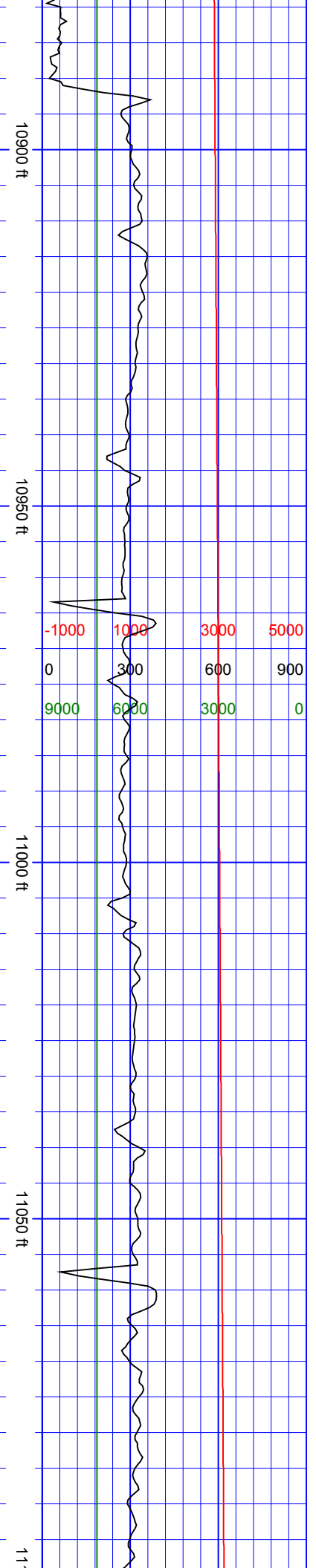


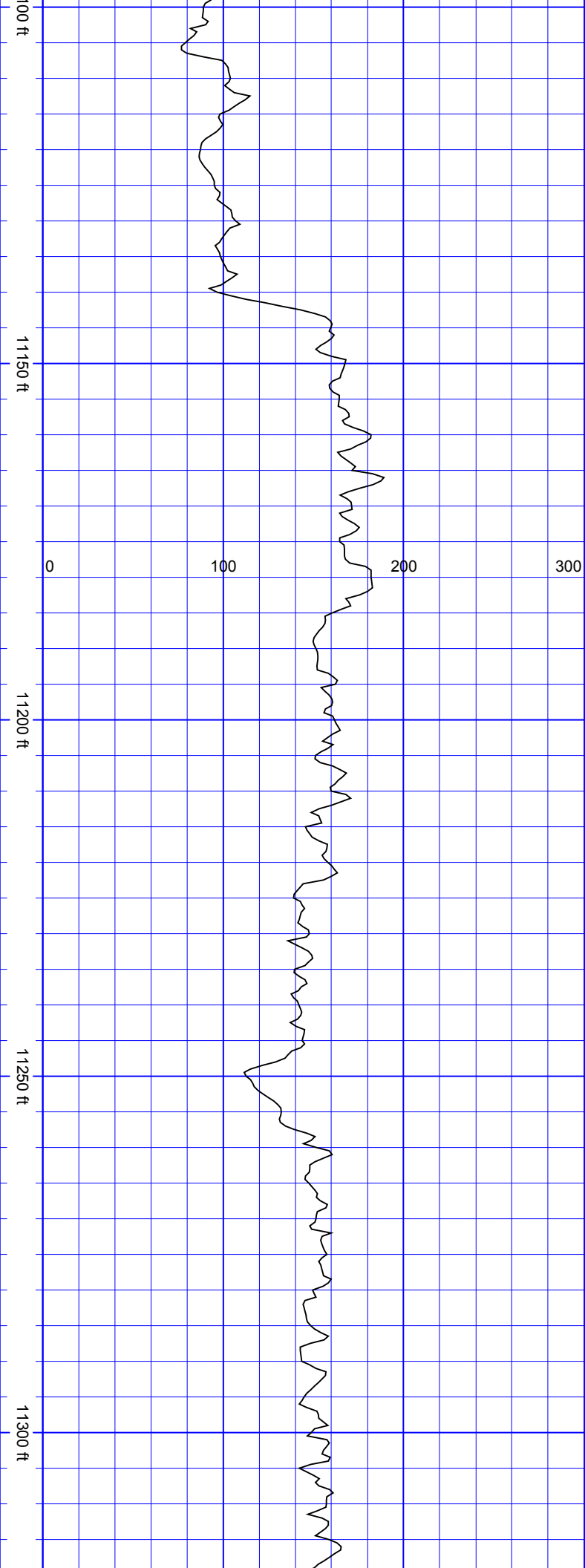


SurveyDepth:10902
TVD:7130.18 Inc:91.76
Azi:360 VertSec:2936.27

SurveyDepth:10996
TVD:7127.08 Inc:92.02
Azi:359.82
VertSec:3030.21

SurveyDepth:11091
TVD:7123.76 Inc:91.98
Azi:0.35

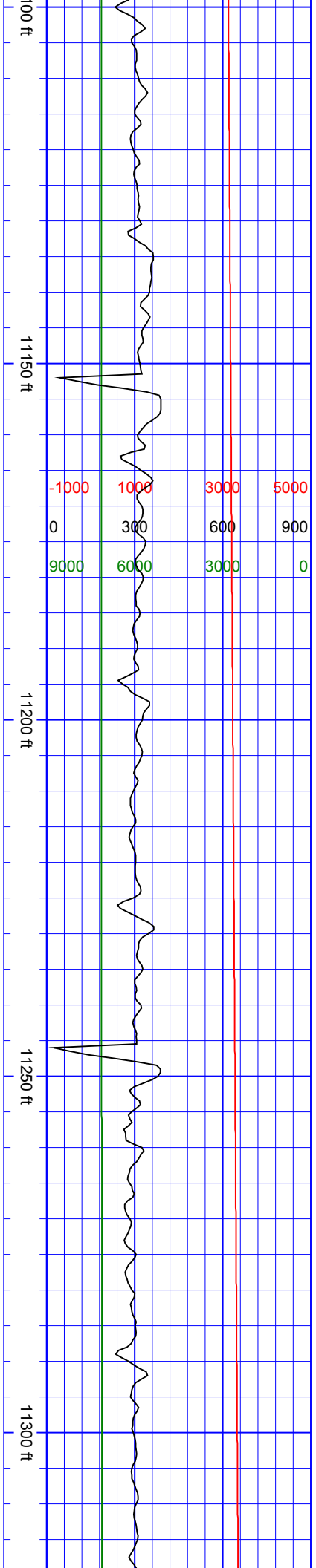


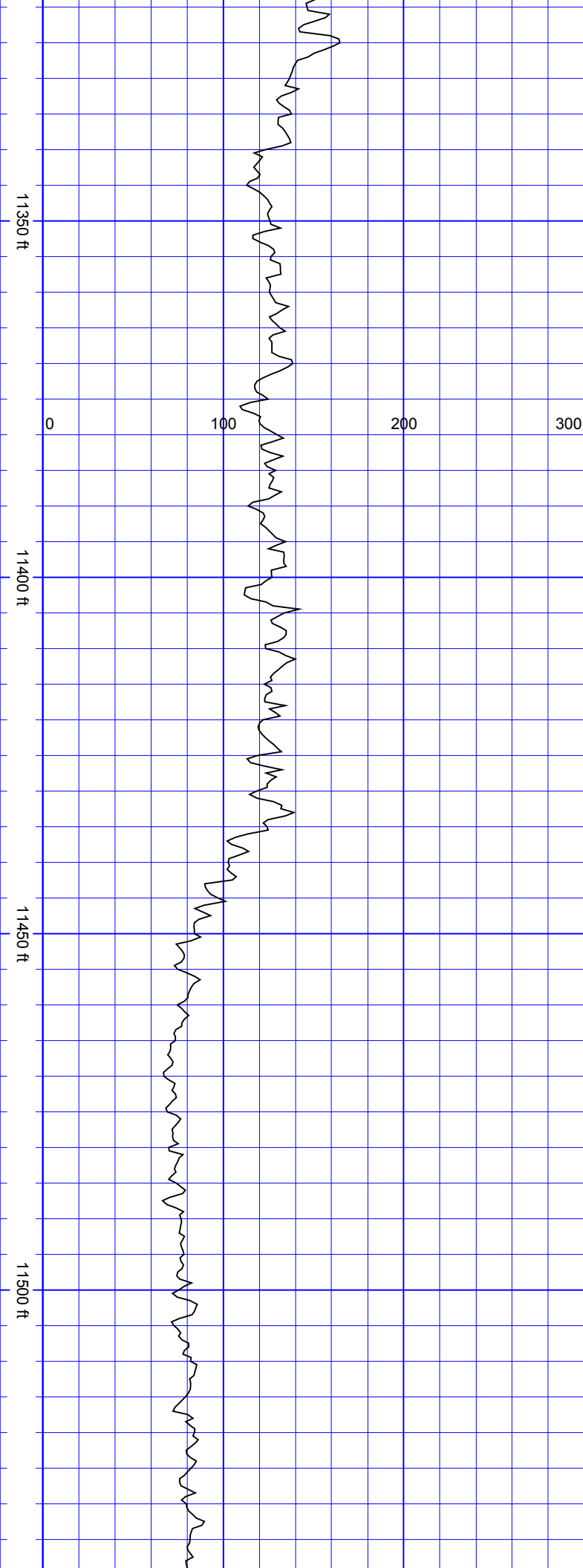


VertSec:3125.15

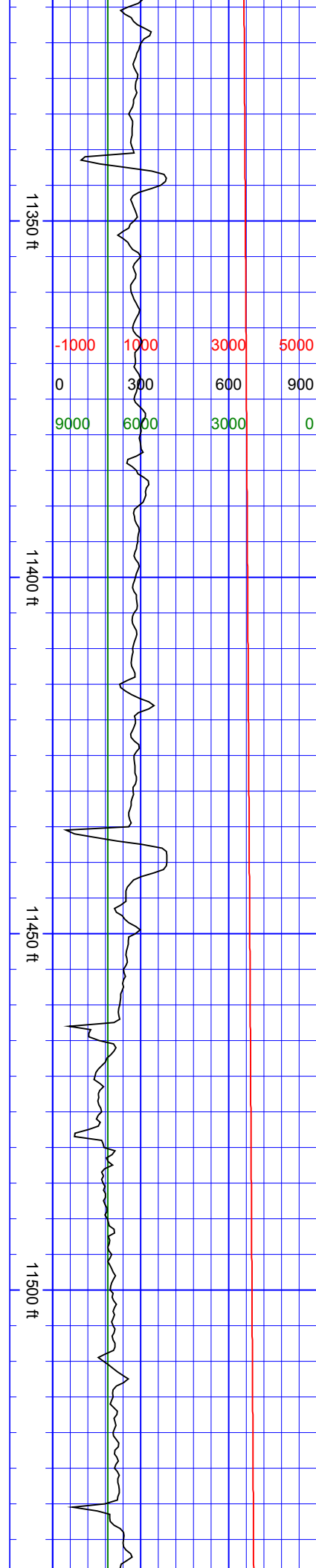
SurveyDepth:11185
TVD:7120.74 Inc:91.71
Azi:0.44
VertSec:3219.11

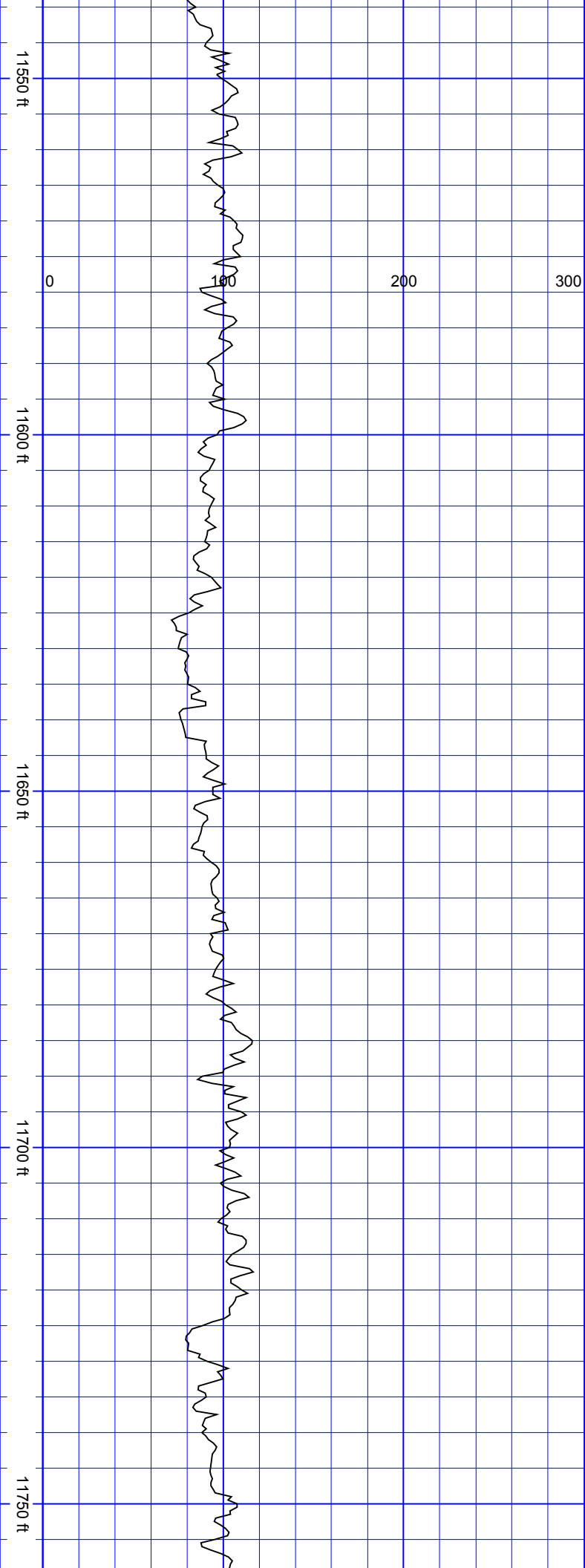
SurveyDepth:11279
TVD:7118.33 Inc:91.23
Azi:360 VertSec:3313.07



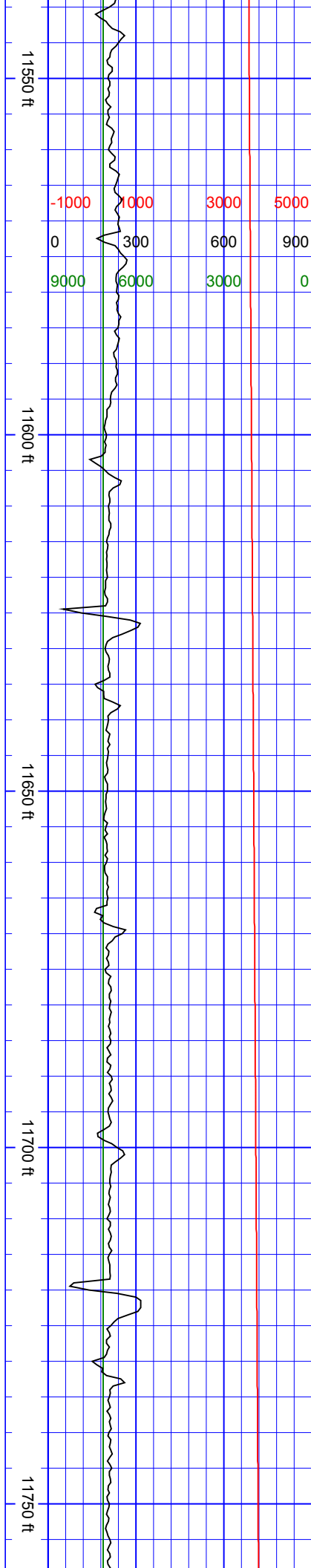


SurveyDepth:11374 TVD:7116.39 Inc:91.1 Azi:0.26 VertSec:3408.05	SurveyDepth:11469 TVD:7114.86 Inc:90.75 Azi:359.82 VertSec:3503.04
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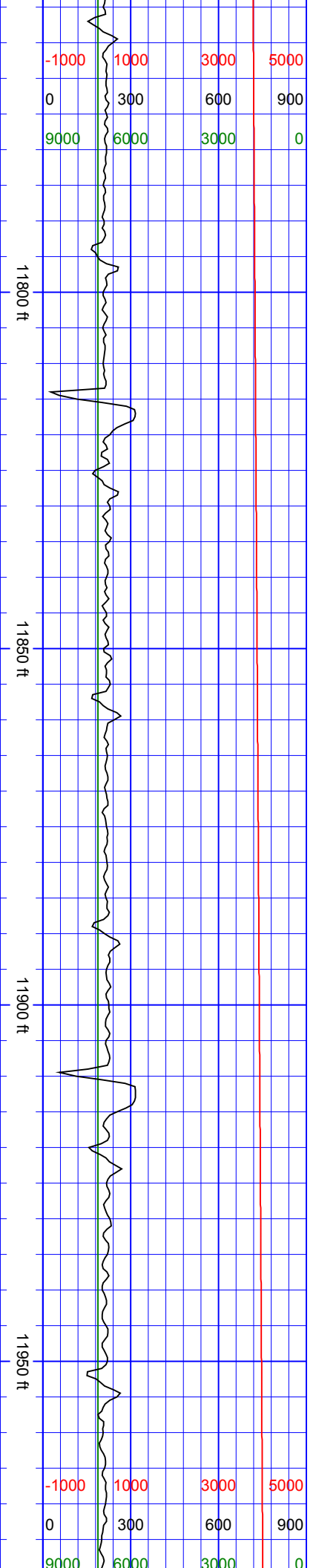
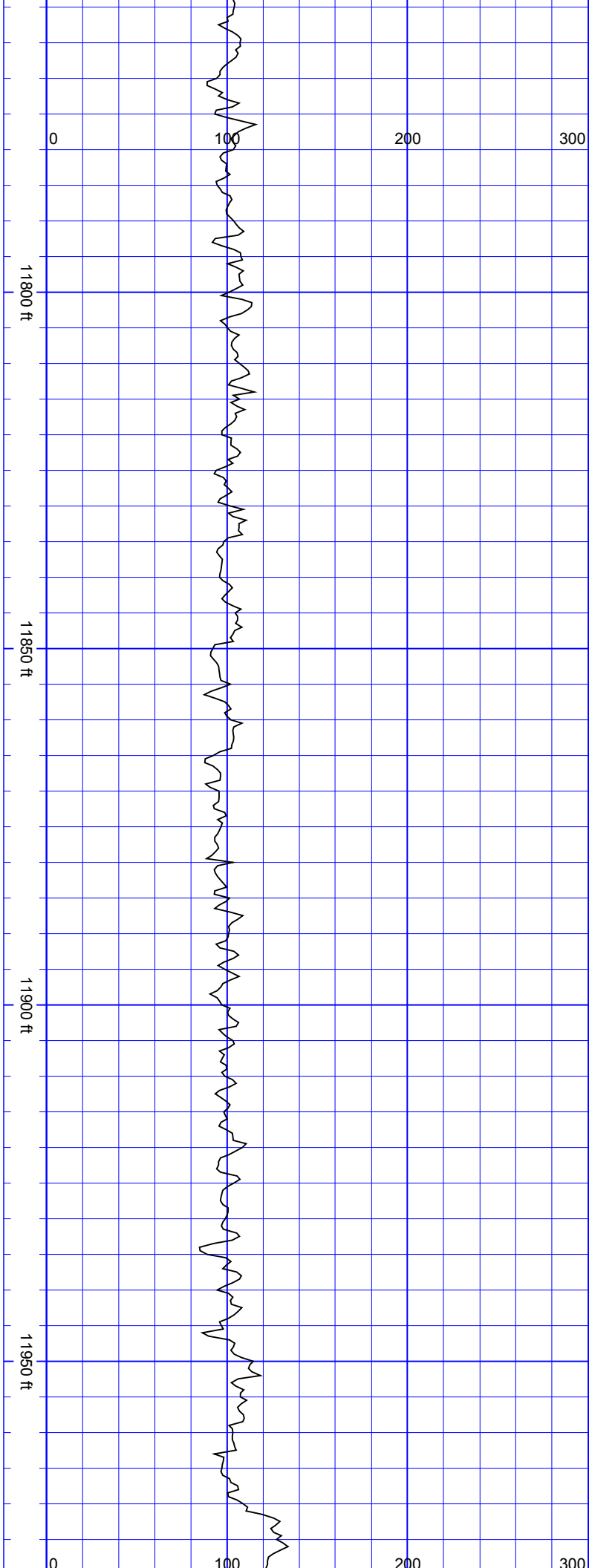


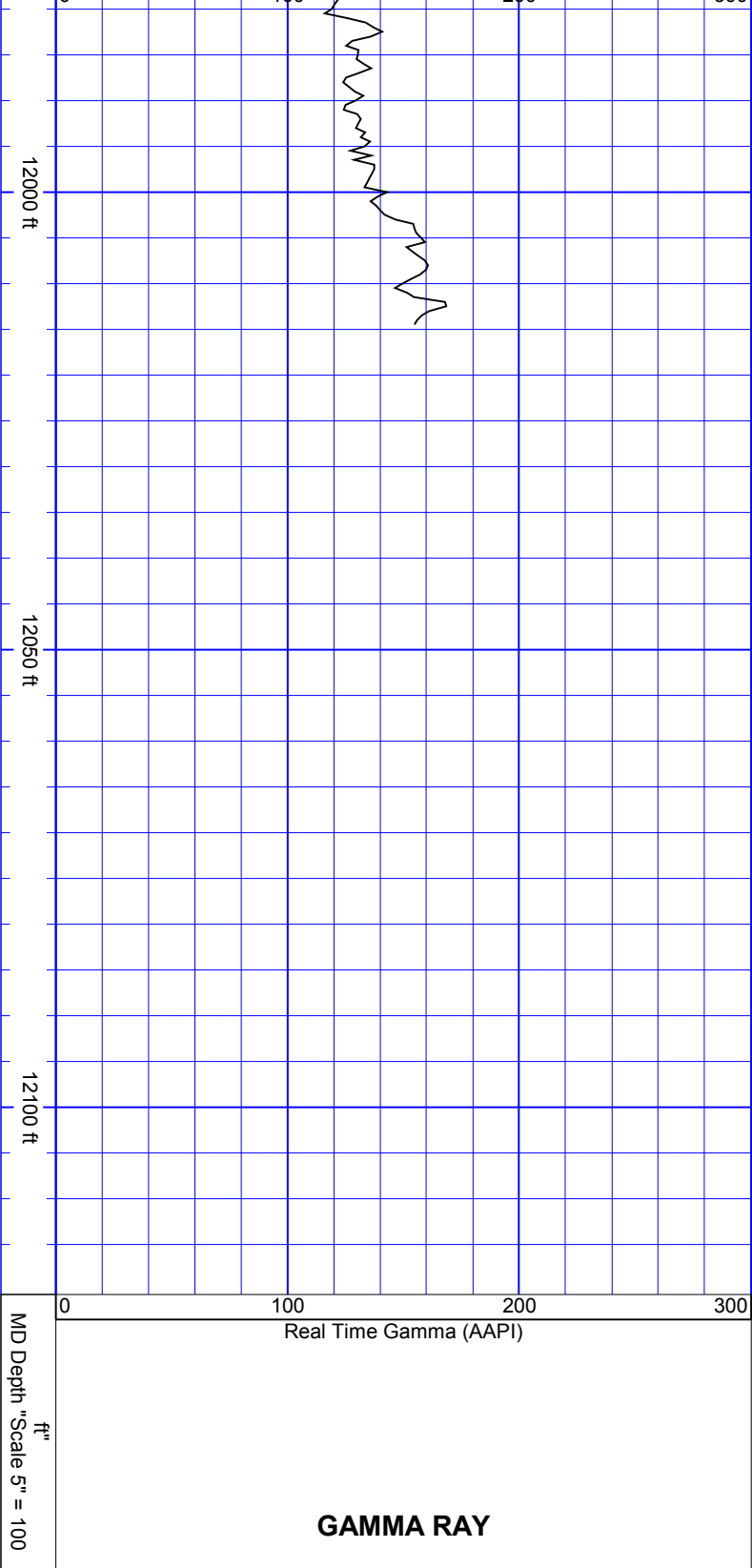
SurveyDepth:11564 TVD:7113.33 Inc:91.1 Azi:0.44 VertSec:3598.02
SurveyDepth:11658 TVD:7111.78 Inc:90.79 Azi:0.08 VertSec:3692.01
SurveyDepth:11753 TVD:7110.68 Inc:90.53 Azi:0.17 VertSec:3787.01



Azi:0.17 VertSec:3787

SurveyDepth:11848
TVD:7109.88 Inc:90.44
Azi:0.44 VertSec:3882





SurveyDepth:12005
TVD:7110.54 Inc:89.08
Azi:359.29
VertSec:4038.98

Extrapolation to bit
SurveyDepth:12070
TVD:7111.58 Inc:89.08
Azi:359.29
VertSec:4103.96

Directional Survey

