



Build & Lateral

Job #:

185213

Well ID:

16190992

Scale:

5" = 100 ft

Type:

MD

Well Site Information

Oil Company Crestone Peak Resources

Surface Location S4-T1N-R65W

Well Name Ruegge 3P-4H-N165

API 05-123-46557 00

Field DJ Basin

State Colorado

Country USA

Surface Coordinates

Well Type Horizontal

Latitude 40° 4' 31 N

Longitude 140° 40' 14 W

N / S Coordinates 1,271,353.99 usft

E / W Coordinates 3,232,100.37 usft

Azimuth Reference True North

Grid Convergence 0.54°

MWD Engineers

Lead Hand Aaron Clark

Second Hand Ron Kenyon

Perm Datum Ground Elevation 4,915.00 ft

Log depth measured from KB is 23.00 ft above perm datum. KB = 4,938.00 ft

Total Depth 12,300.00 ft Spud Date Jul/19/2018 End Date Jul/22/2018

(MD) Log Interval Start Depth 2,445.00 ft End Depth 12,300.14 ft

Bore Hole Record

Hole Size	From	To
-----------	------	----

13.50 in	0.00 ft	2,550.00 ft
----------	---------	-------------

8.50 in	2,550.00 ft	12,300.00 ft
---------	-------------	--------------

--	--	--

--	--	--

--	--	--

Casing Record

Type	Size	WGT	From	To
------	------	-----	------	----

LT&C	9.63 in	40lb.	0.00 ft	2,550.00 ft
------	---------	-------	---------	-------------

DWC/C-IS	5.50 in	20lb.	0.00 ft	12,300.00 ft
----------	---------	-------	---------	--------------

--	--	--	--	--

--	--	--	--	--

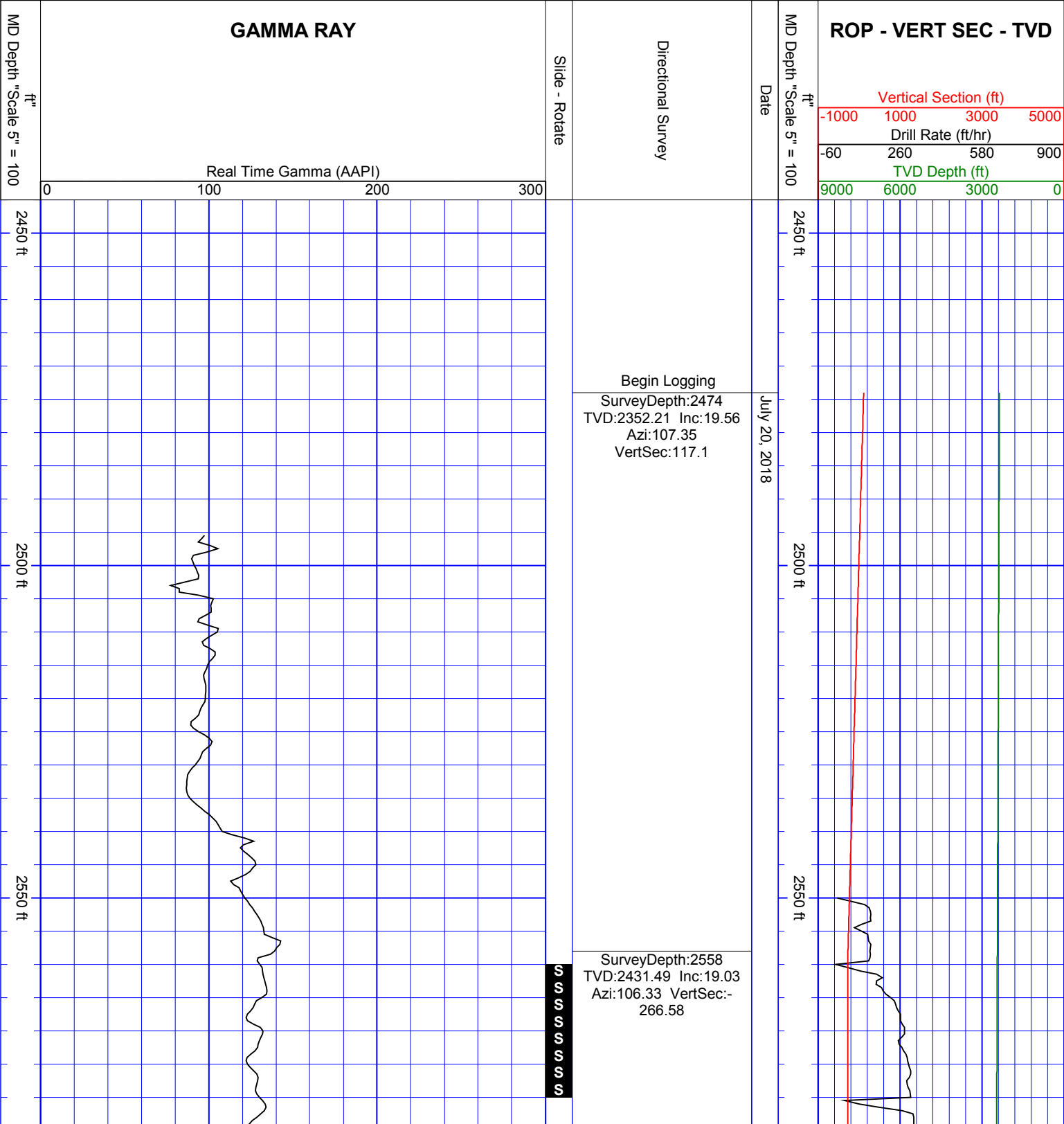
--	--	--	--	--

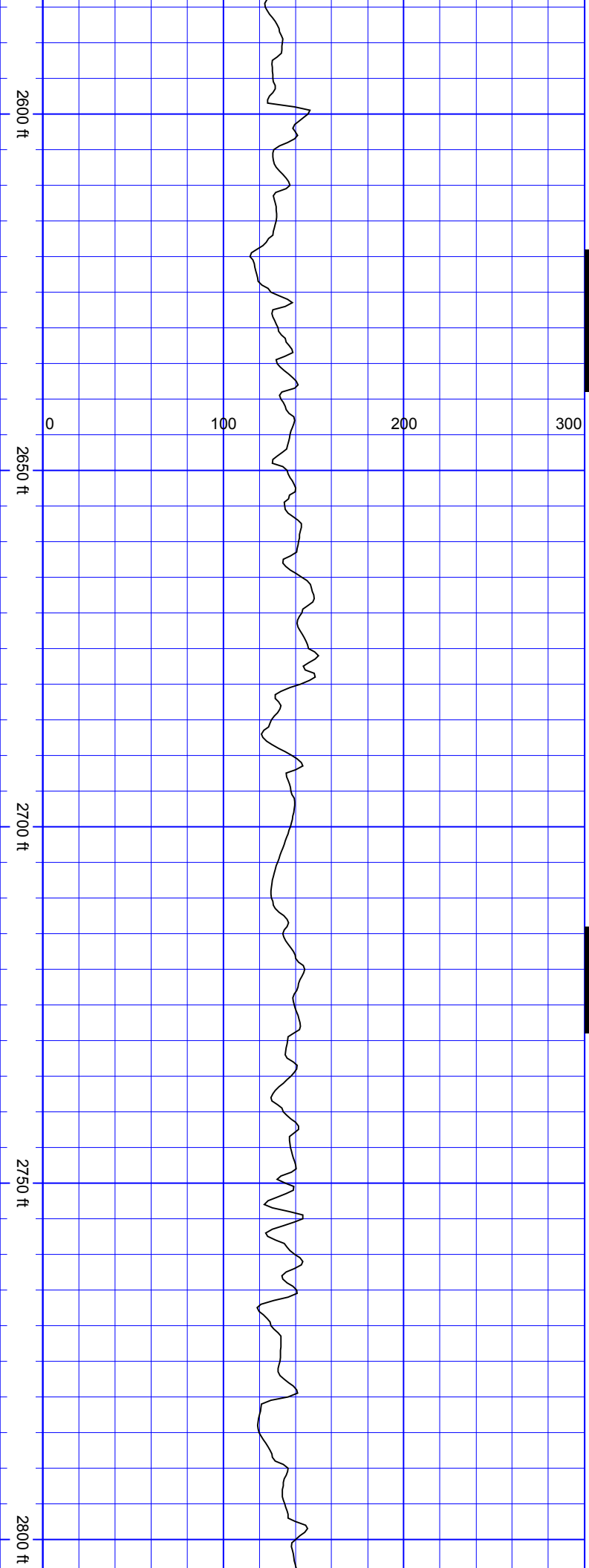
Run Data

Bit Run Number	1				
Start Date & Time	Jul/19/2018 17:30:00				
End Date & Time	Jul/22/2018 05:30:00				
Run Hours	56.00				
Depth In	2,550.00 ft				
Depth Out	12,300.00 ft				
Total Gamma Correction	5.29				
Gamma to Bit	55.00 ft				
Resistivity to Bit	N/A				
Mud Type	Oil Base				
Density	9.80 ppg				
Viscosity	41.00 sec/qt				
PH	N/A				
Fluid Loss	N/A				
K+ ppm	N/A				
CL- ppm	3,600.00 mg/L				
Max Mud Temp	252.50 °F				
Mud Report Depth	12,140.00 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.



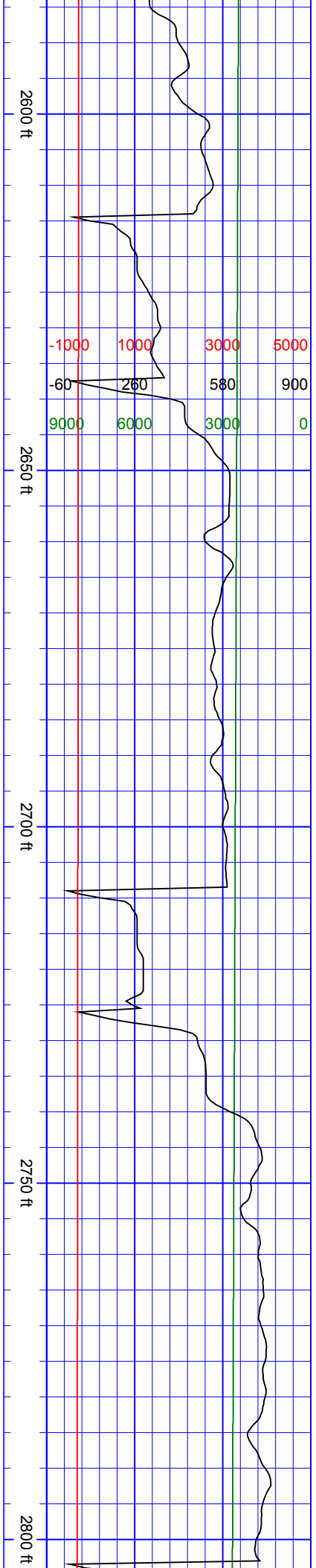


S
S
S
S
S
S
S
S

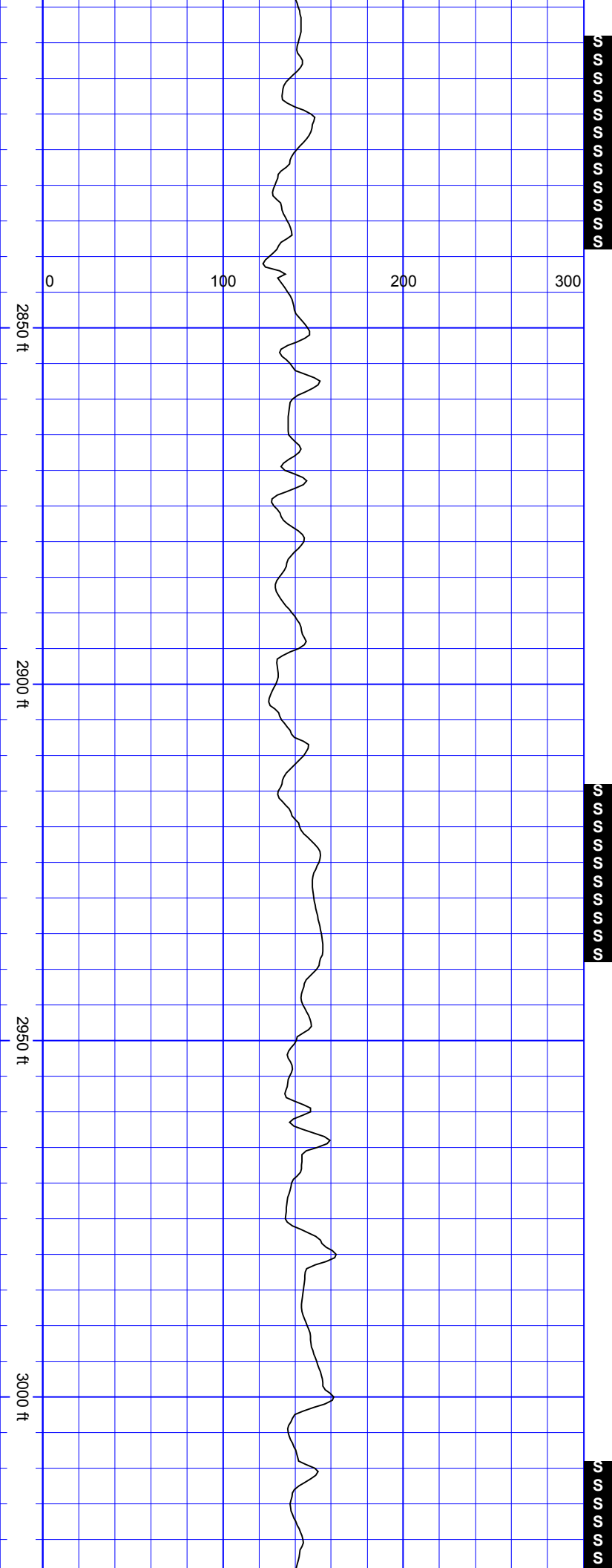
SurveyDepth:2653
TVD:2520.94 Inc:20.44
Azi:117.23 VertSec:-
277.88

S
S
S
S
S
S
S
S

SurveyDepth:2748
TVD:2609.99 Inc:20.35
Azi:121.01 VertSec:-
293.34

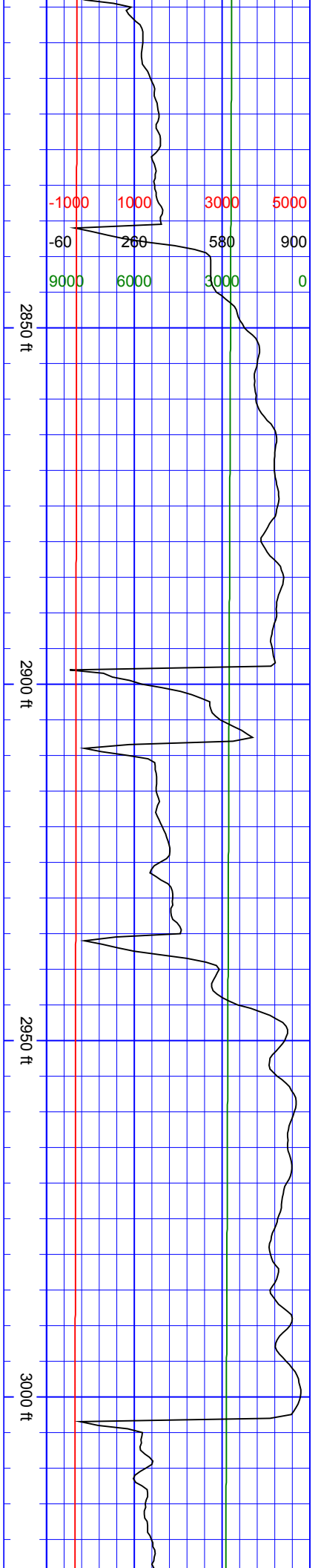


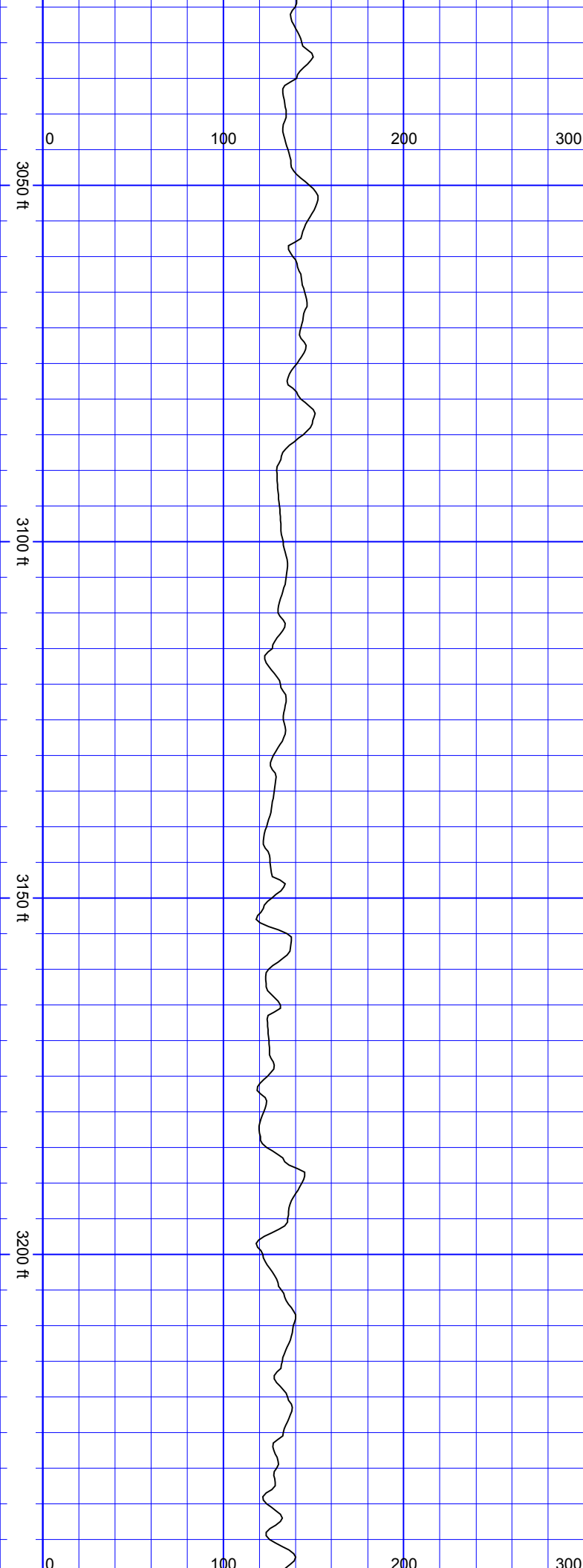
-1000 1000 3000 5000
-60 260 580 900
9000 6000 3000 0



SurveyDepth:2853
TVD:2707.91 Inc:21.97
Azi:123.39 VertSec:-
312.86

SurveyDepth:2948
TVD:2795.58 Inc:23.34
Azi:122.59 VertSec:-
332.1

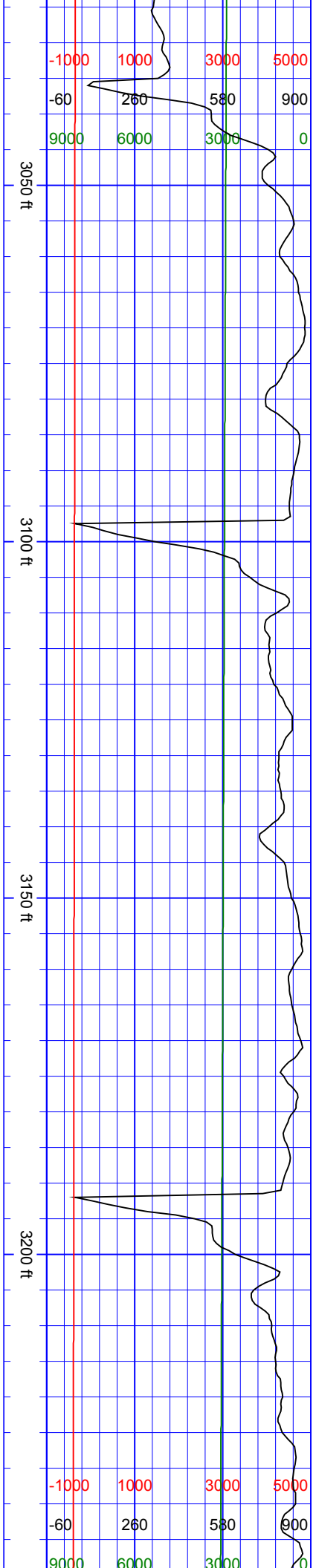


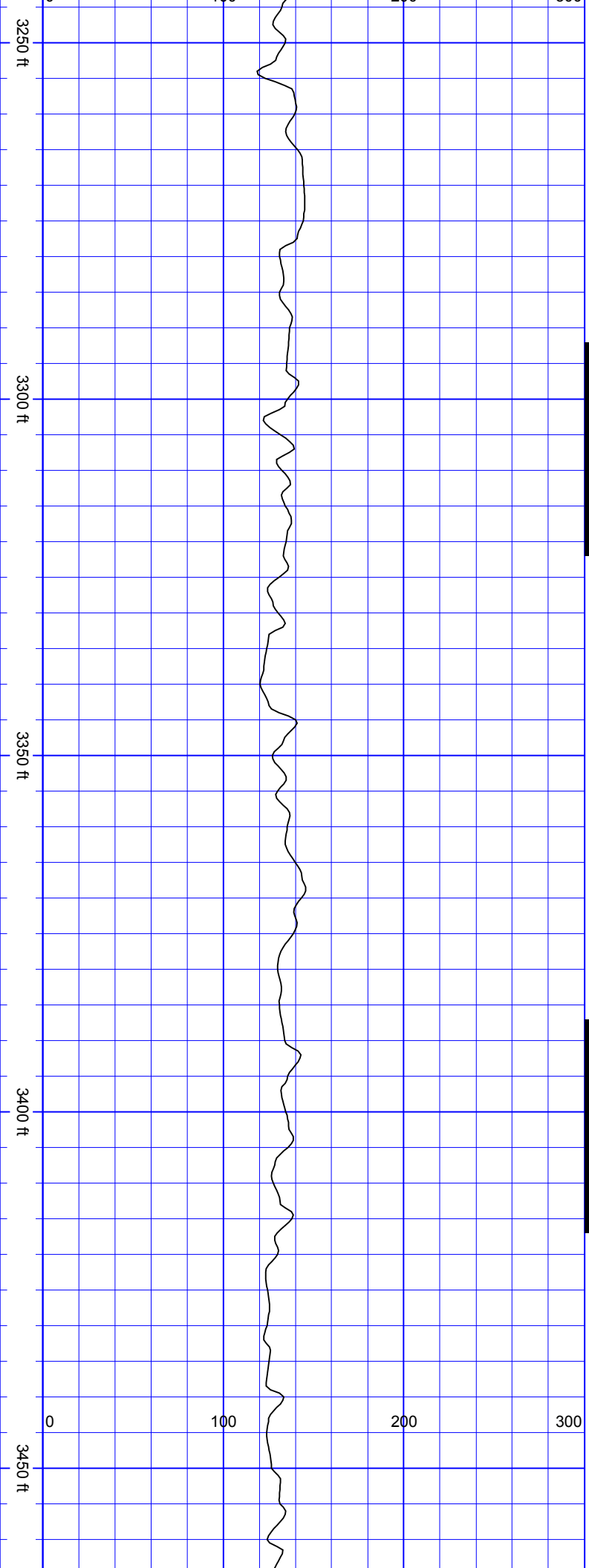


SurveyDepth:3042
TVD:2881.33 Inc:25.01
Azi:120.4 VertSec:-
351.47

SurveyDepth:3137
TVD:2967.94 Inc:23.51
Azi:119.34 VertSec:-
370.17

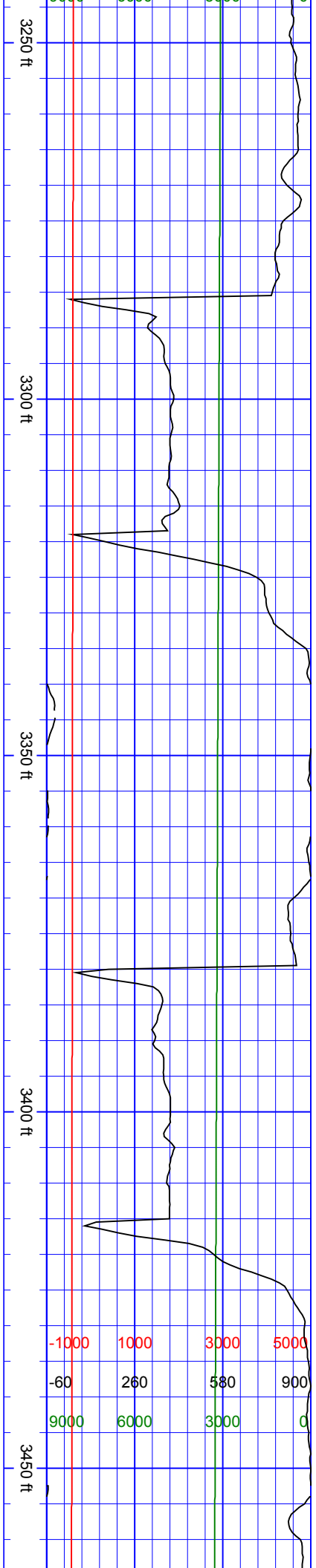
SurveyDepth:3231
TVD:3054.68 Inc:21.8
Azi:119.08 VertSec:-
387.15

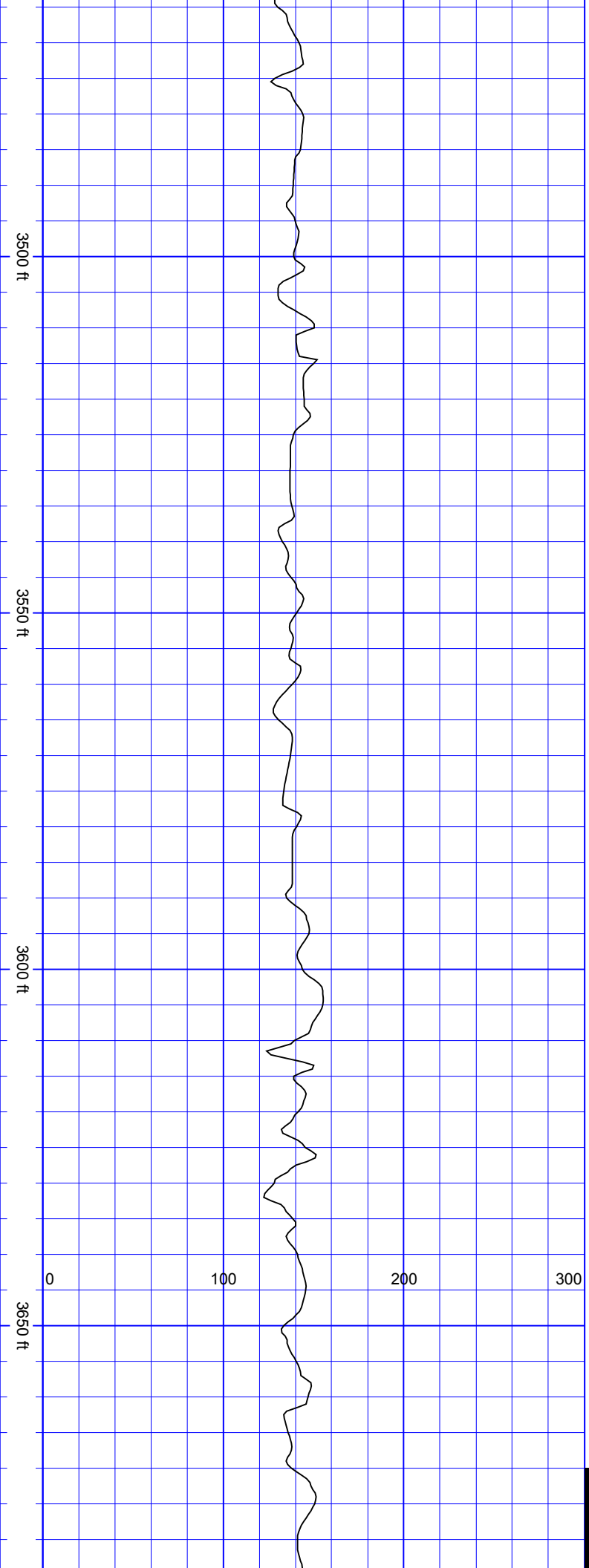




SurveyDepth:3326
TVD:3142.32 Inc:23.6
Azi:118.9 VertSec:-
404.21

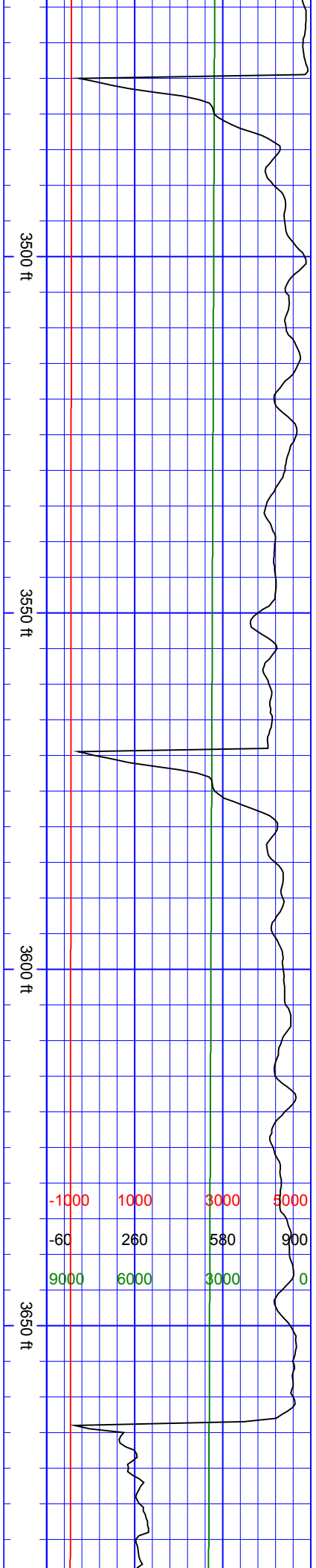
SurveyDepth:3420
TVD:3228.02 Inc:24.92
Azi:116 VertSec:-421.23

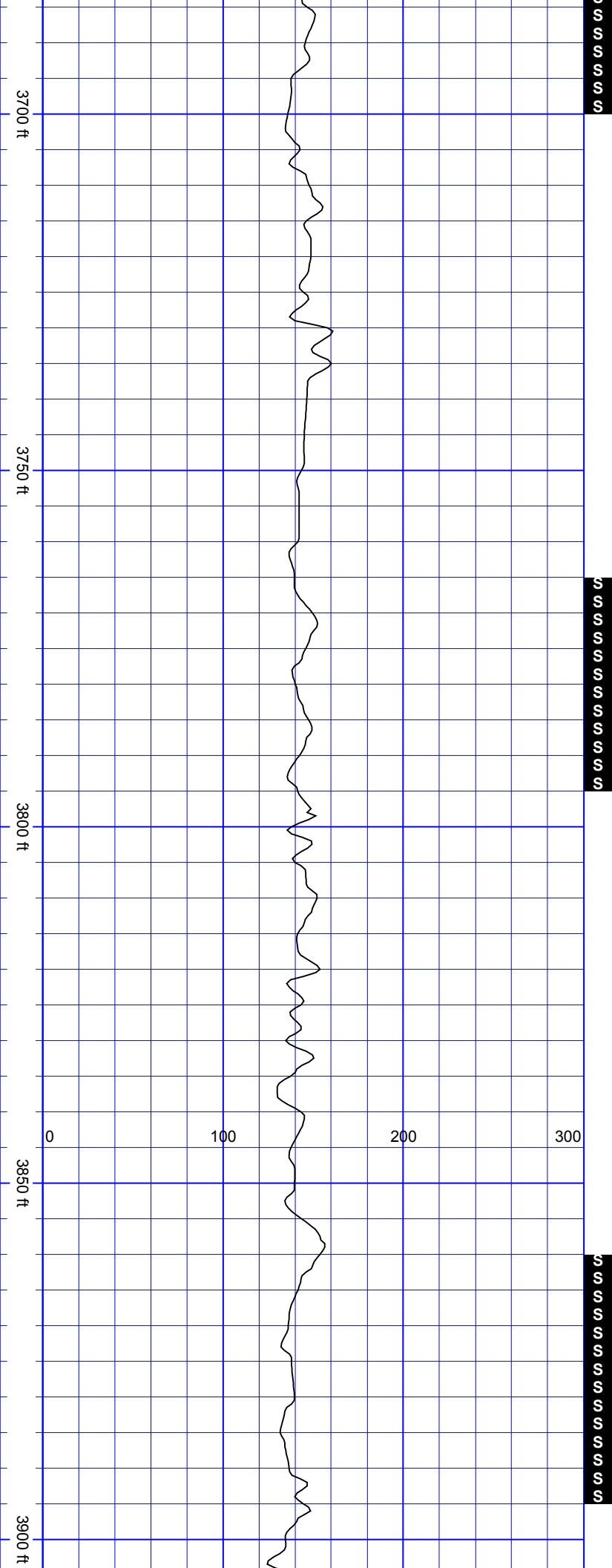




SurveyDepth:3515
TVD:3315.01 Inc:22.46
Azi:115.04 VertSec:-
436.94

SurveyDepth:3609
TVD:3402.62 Inc:20
Azi:113.81 VertSec:-
450.35

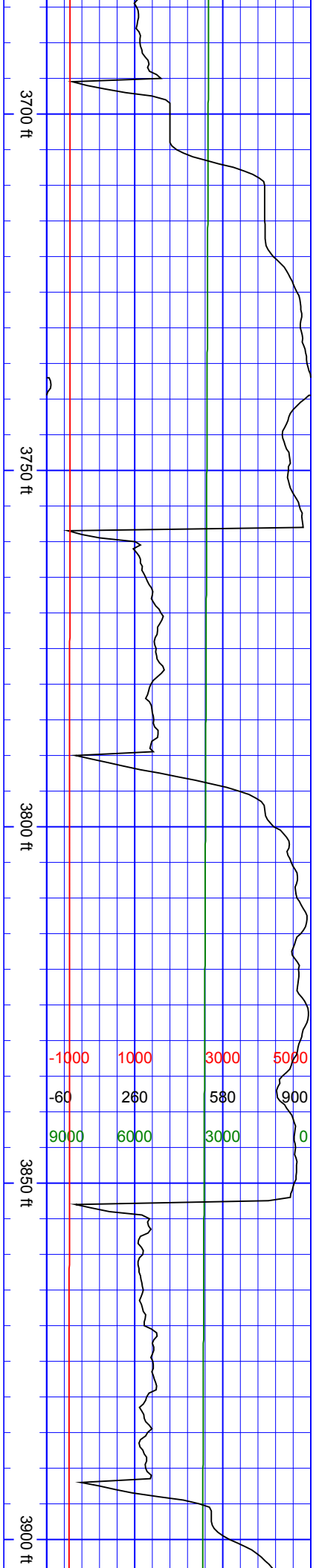


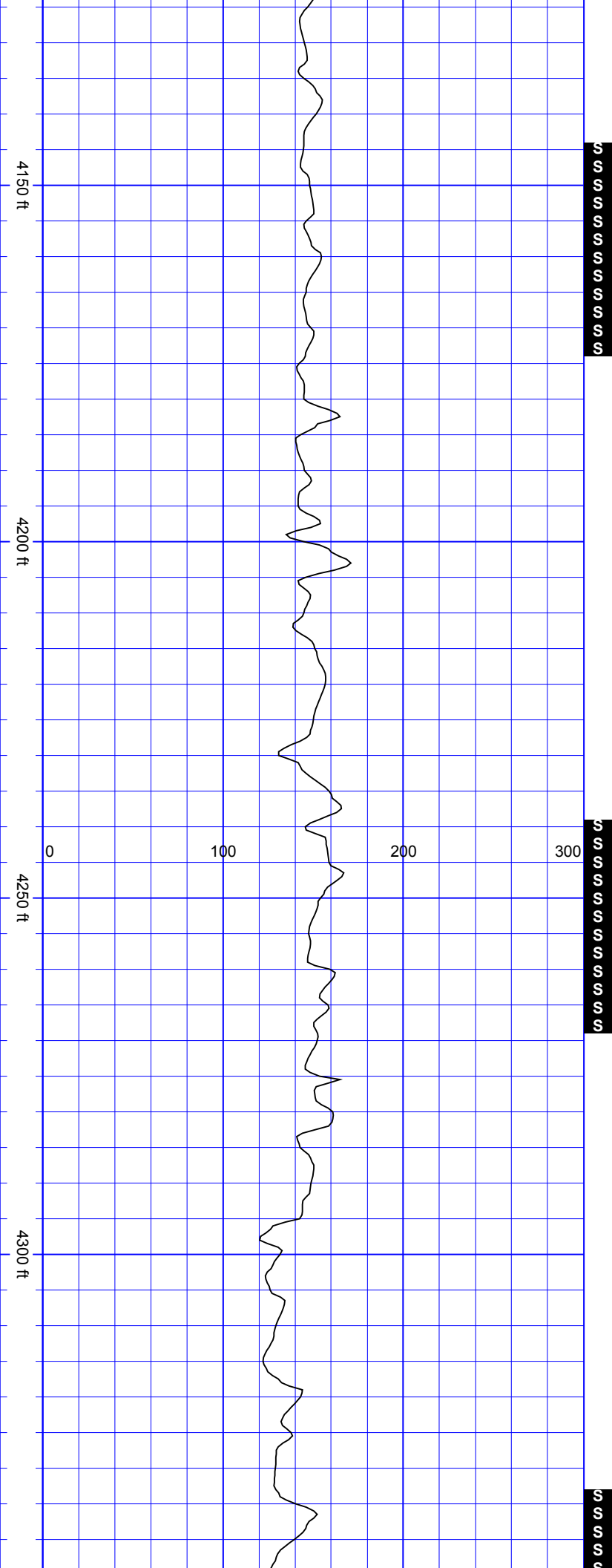


SurveyDepth:3704
TVD:3491.76 Inc:20.48
Azi:110.47 VertSec:-
462.05

SurveyDepth:3799
TVD:3580.63 Inc:20.92
Azi:111.08 VertSec:-
473.28

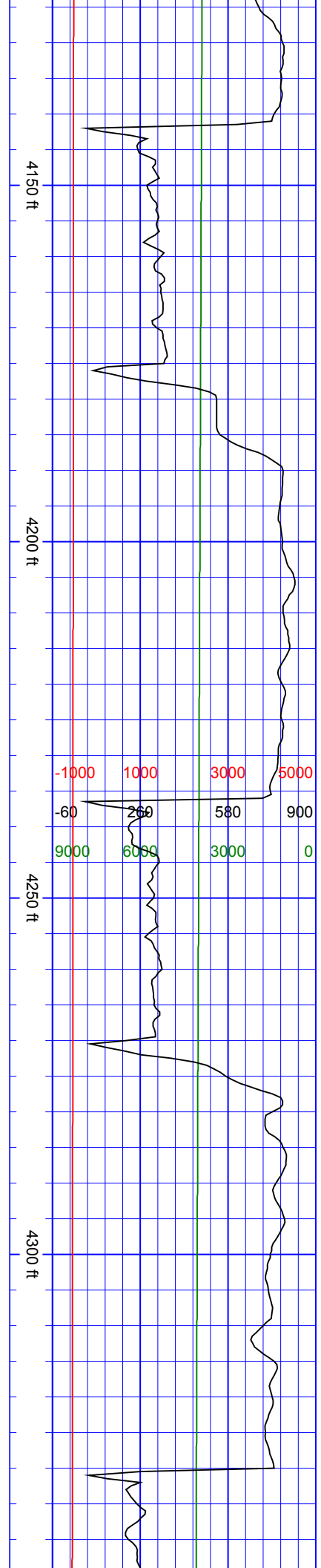
SurveyDepth:3894
TVD:3668.82 Inc:22.72
Azi:110.55 VertSec:-
485.1

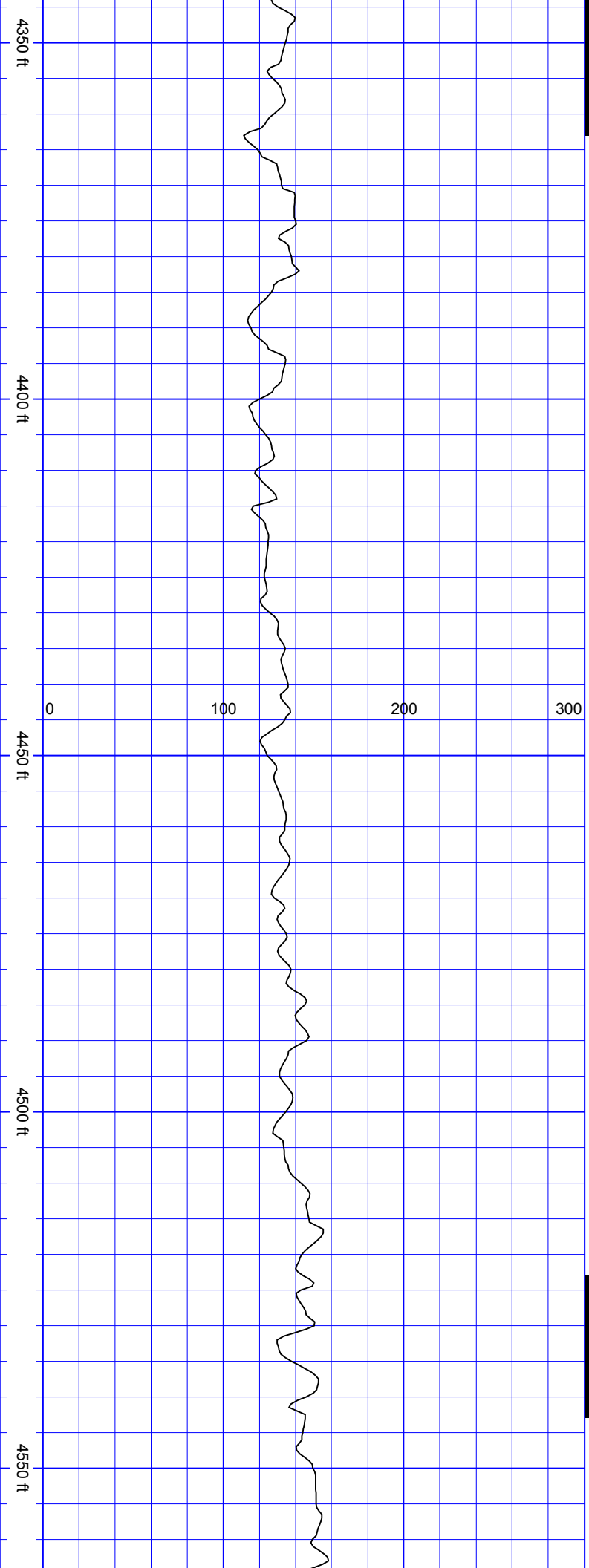




SurveyDepth:4178
TVD:3932.18 Inc:20.87
Azi:113.54 VertSec:-
519.13

SurveyDepth:4272
TVD:4019.76 Inc:21.75
Azi:118.38 VertSec:-
533.42

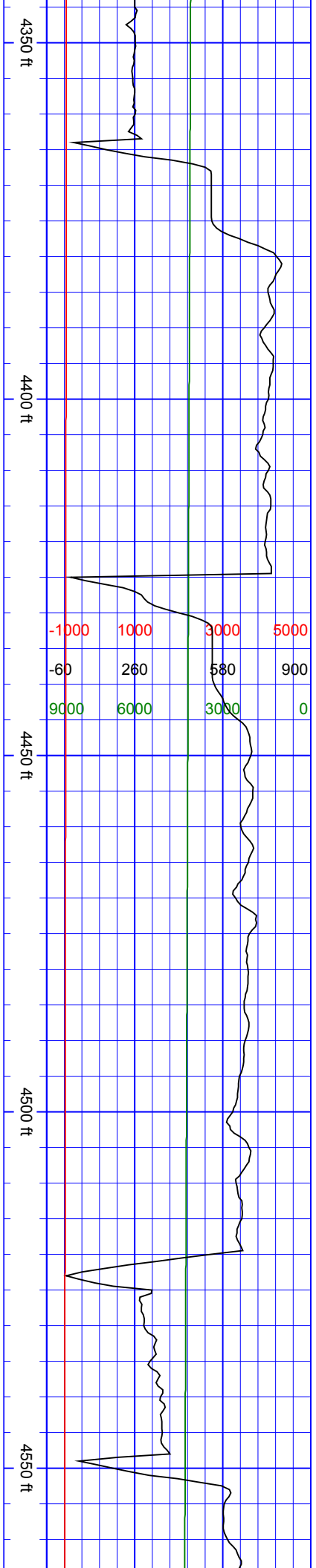




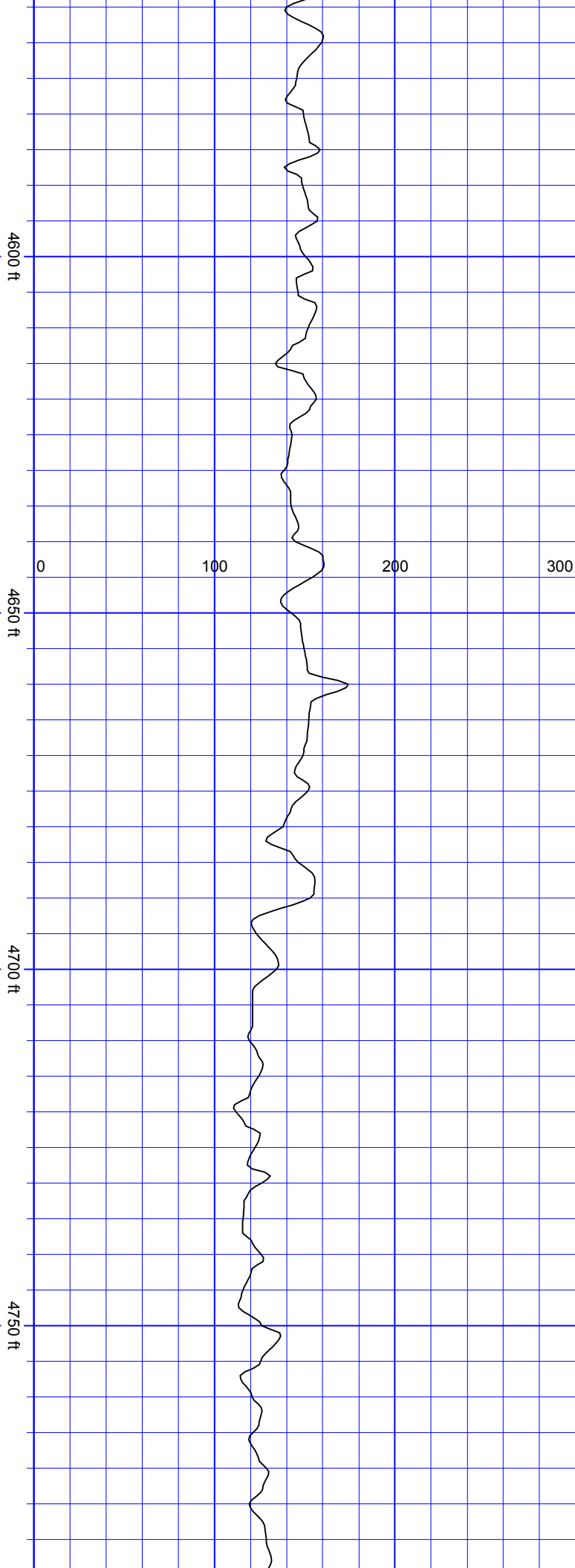
SurveyDepth:4367
TVD:4107.22 Inc:24.17
Azi:118.29 VertSec:-
550.29

SurveyDepth:4462
TVD:4194.03 Inc:23.77
Azi:117.41 VertSec:-
567.58

SurveyDepth:4556
TVD:4280.29 Inc:23.07
Azi:118.2 VertSec:-

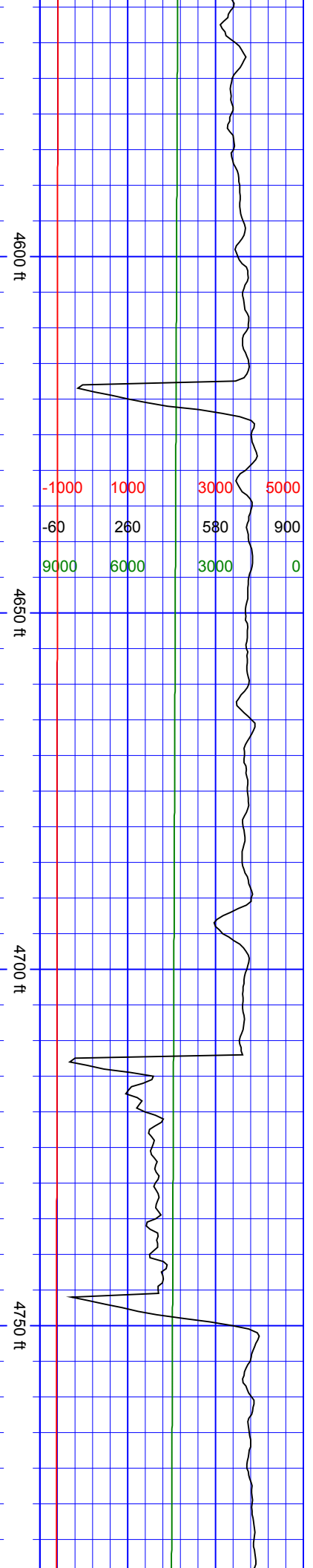


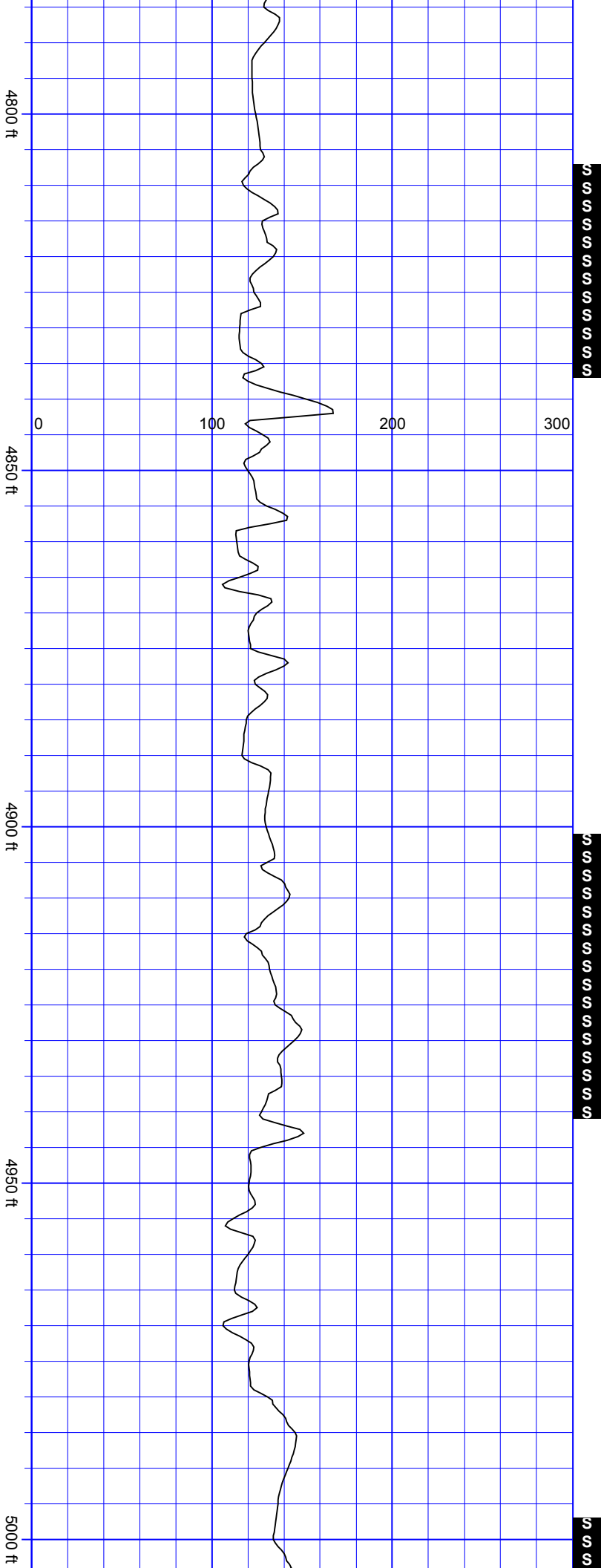
584.27



SurveyDepth:4651
TVD:4368.83 Inc:19.38
Azi:115.39 VertSec:-
599.16

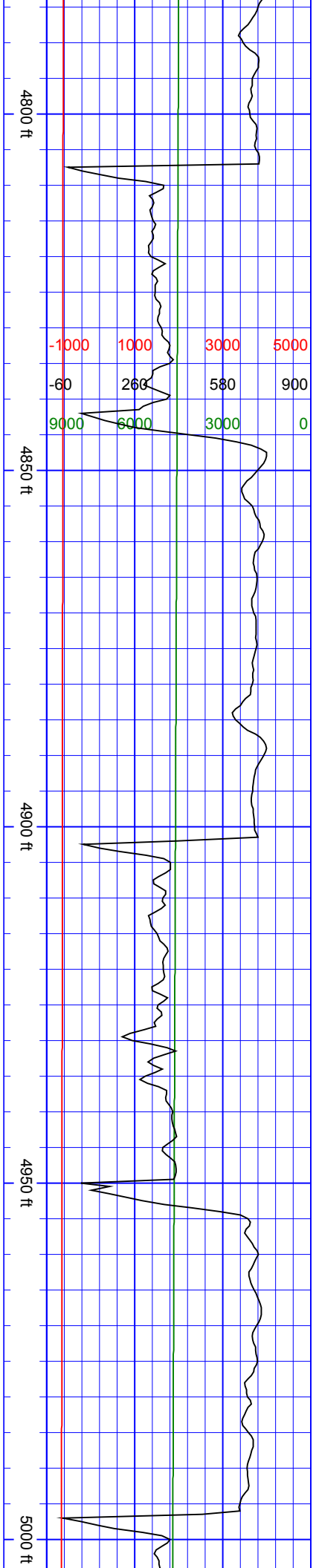
SurveyDepth:4746
TVD:4458.39 Inc:19.6
Azi:117.85 VertSec:-
612.74

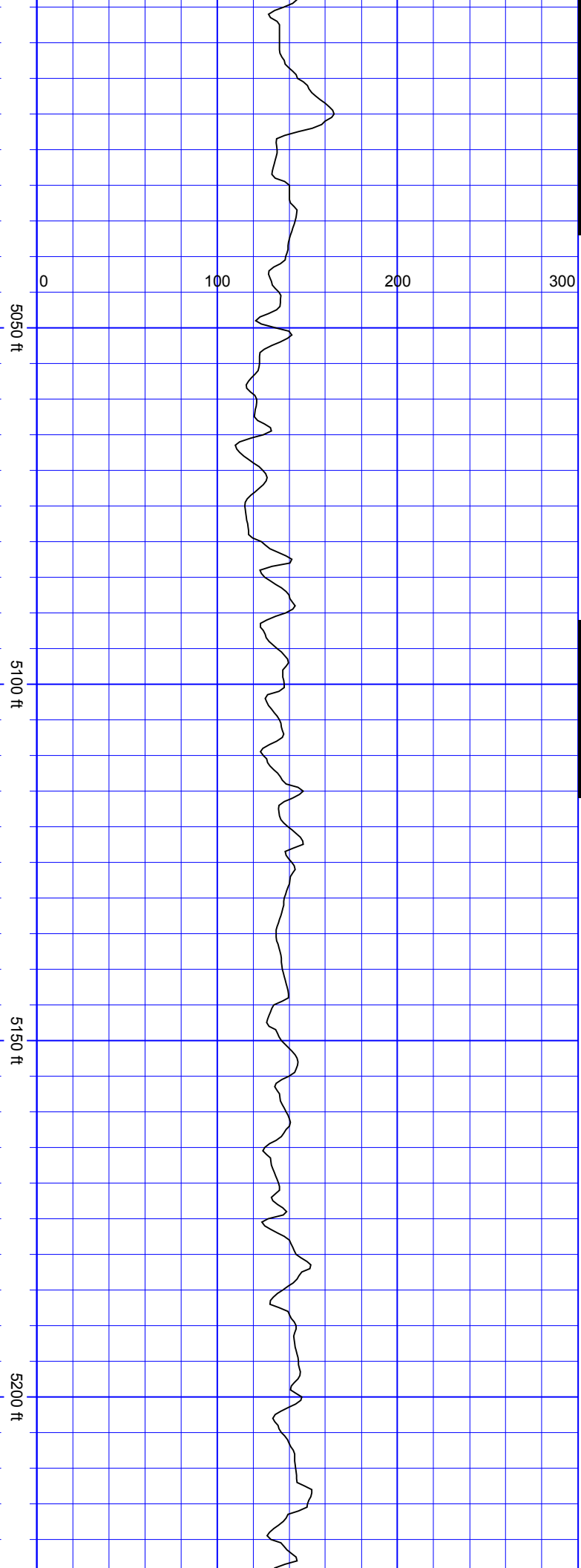




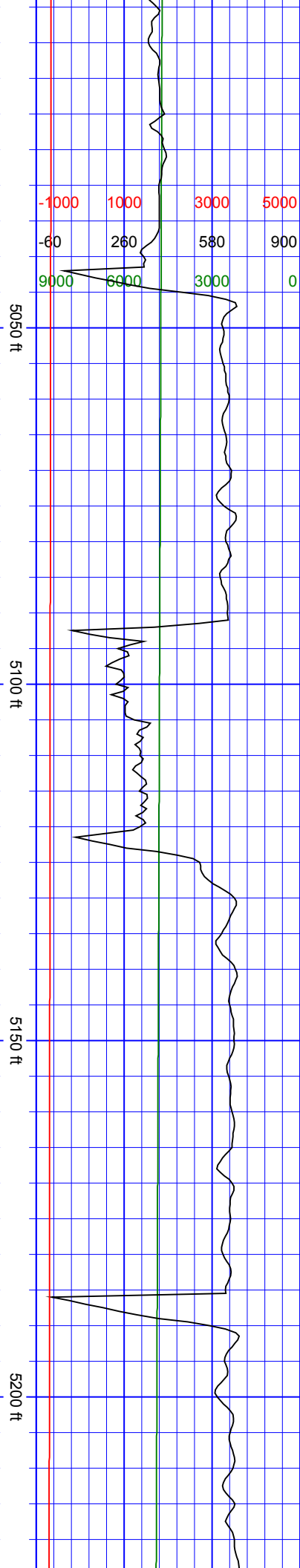
SurveyDepth:4840
TVD:4546.56 Inc:20.96
Azi:118.29 VertSec:-
627.45

SurveyDepth:4936
TVD:4635.8 Inc:22.28
Azi:120.31 VertSec:-
644.09



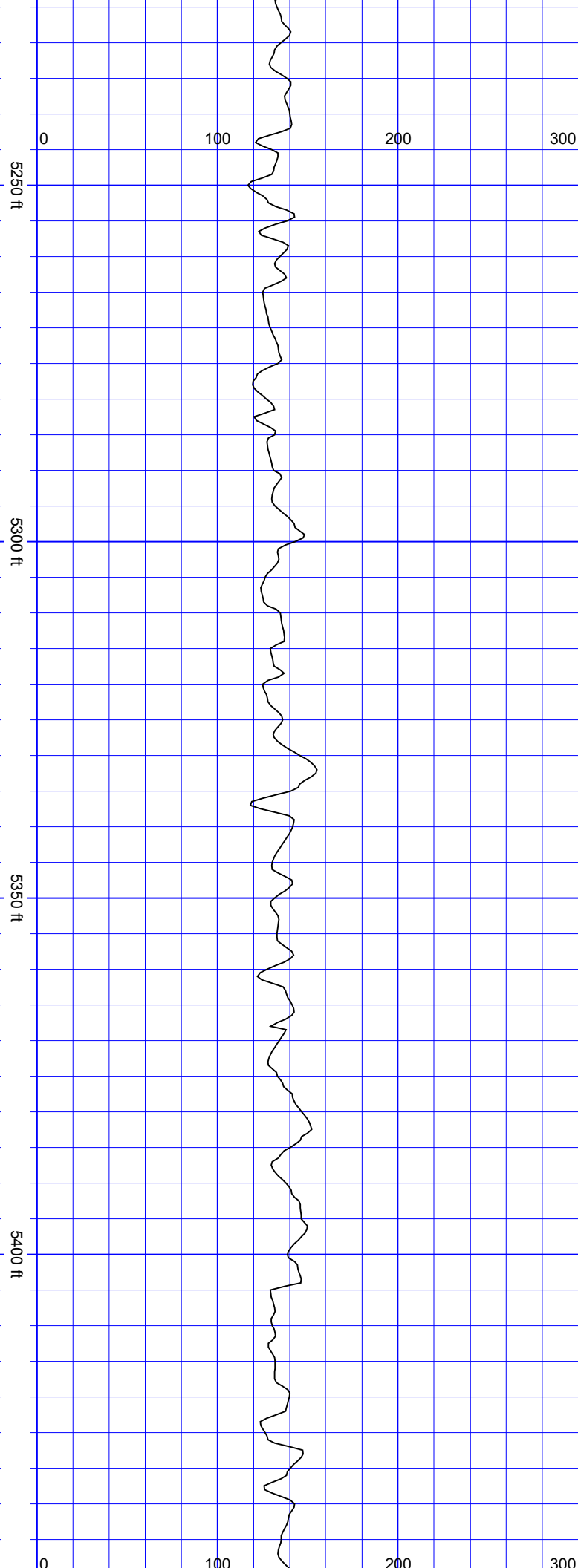


SurveyDepth:5030
TVD:4721.81 Inc:25.31
Azi:123.3 VertSec:-
663.42



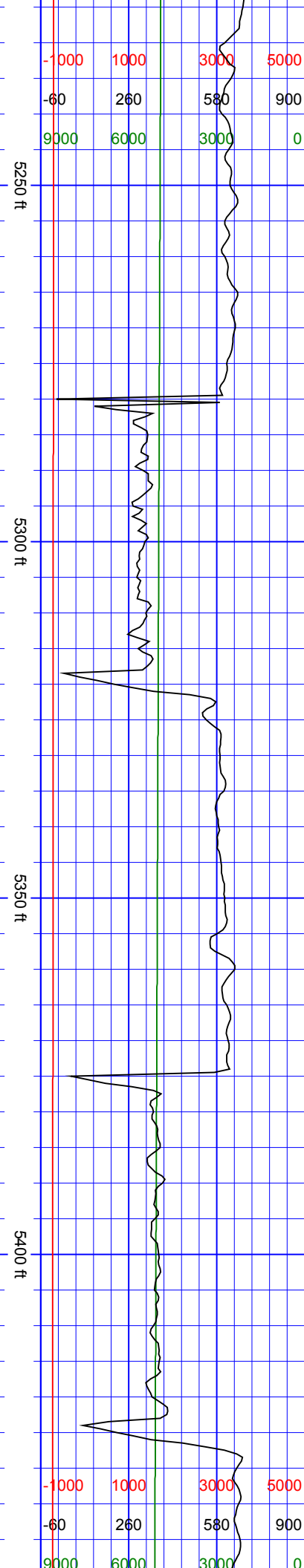
SurveyDepth:5125
TVD:4807.45 Inc:26.02
Azi:116.97 VertSec:-
683.24

SurveyDepth:5218
TVD:4892.58 Inc:21.4
Az:114.86 VertOpen:

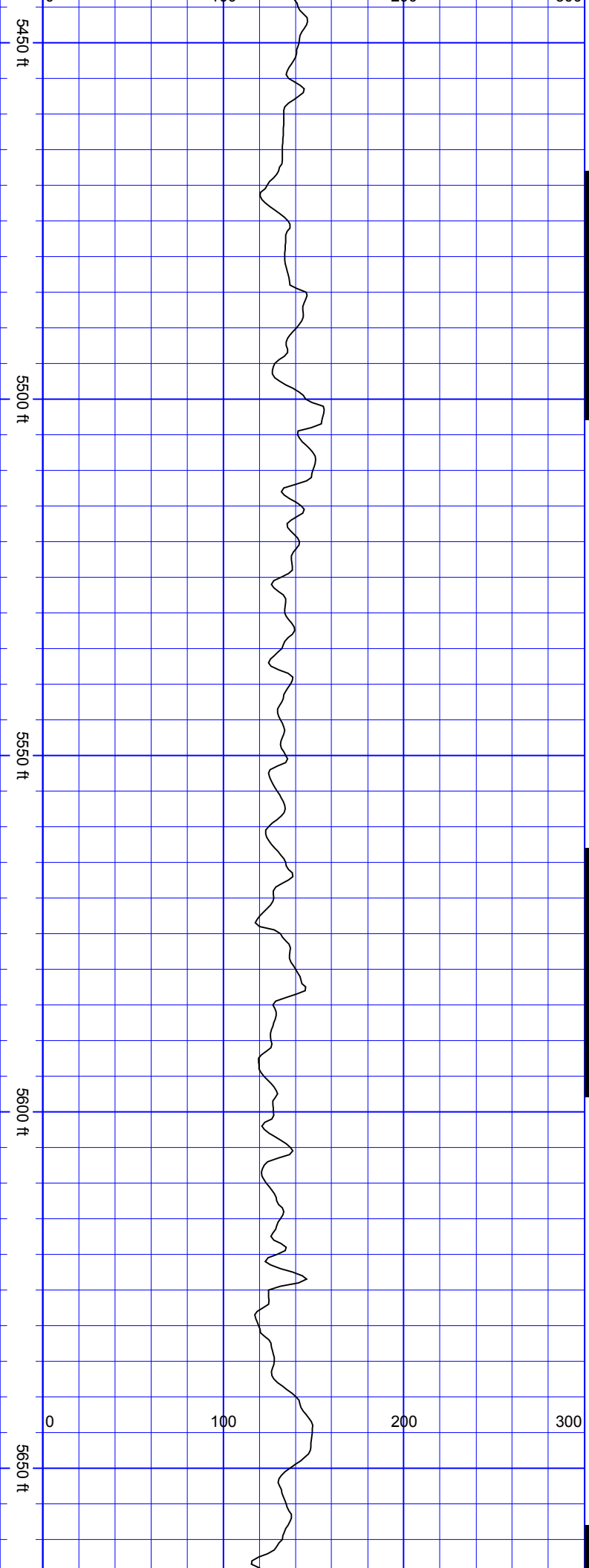


Azi:114.86 VertSec:-
698.9

SurveyDepth:5313
TVD:4981.19 Inc:20.87
Azi:110.73 VertSec:-
711.48

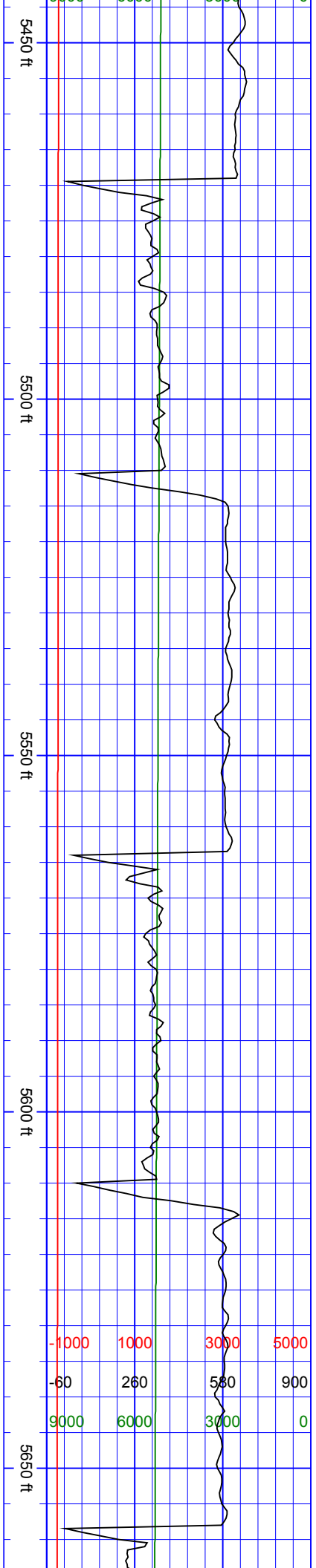


SurveyDepth:5407
TVD:5069.09 Inc:20.65
Azi:111.17 VertSec:-
722.71



SurveyDepth:5502
TVD:5157.64 Inc:21.8
Azi:110.11 VertSec:-
734.12

SurveyDepth:5597
TVD:5245.24 Inc:23.73
Azi:110.9 VertSec:-
746.25



5700 ft

5750 ft

5800 ft

5850 ft

0 100 200 300



SurveyDepth:5692
TVD:5331.8 Inc:24.96
Azi:115.04 VertSec:-
760.77



SurveyDepth:5786
TVD:5418.58 Inc:20.17
Azi:111.34 VertSec:-
774.34

SurveyDepth:5881

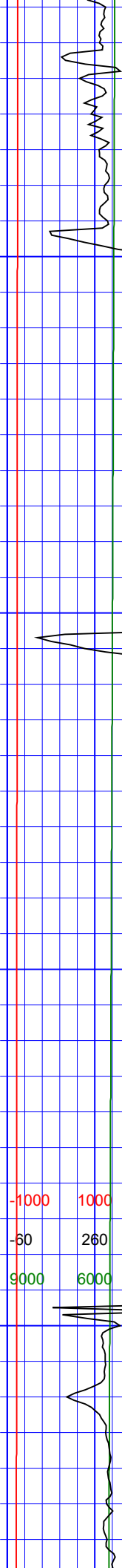
5700 ft

5750 ft

5800 ft

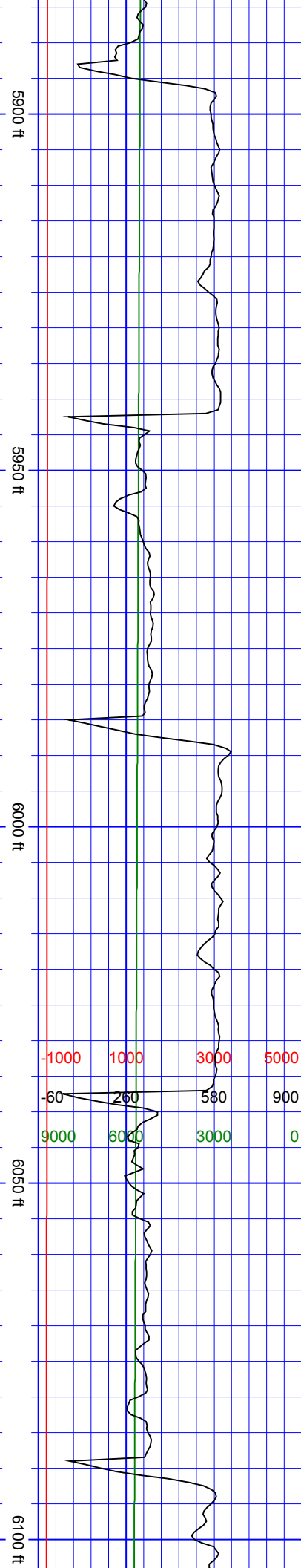
5850 ft

-1000	1000	3000	5000
-60	260	580	900
9000	6000	3000	0



SurveyDepth:5976
TVD:5596.29 Inc:20.96
Azi:109.23 VertSec:-
795.76

SurveyDepth:6071
TVD:5685.51 Inc:19.25
Azi:115.21 VertSec:-
807.37



6150 ft

6200 ft

6250 ft

6300 ft

0 100 200 300



SurveyDepth:6166
TVD:5775.21 Inc:19.2
Azi:117.76 VertSec:-
820.7

SurveyDepth:6261
TVD:5864.52 Inc:20.65
Azi:119.61 VertSec:-
835.63

6150 ft

6200 ft

6250 ft

6300 ft

-1000	1000	3000	5000
-60	200	580	900
9000	6000	3000	0

6350 ft

6400 ft

6450 ft

6500 ft

0 100 200 300

SurveyDepth:6356
TVD:5952.66 Inc:23.16
Azi:121.63 VertSec:-
853.04

SurveyDepth:6450
TVD:6038.94 Inc:23.64
Azi:128.22 VertSec:-
873.73

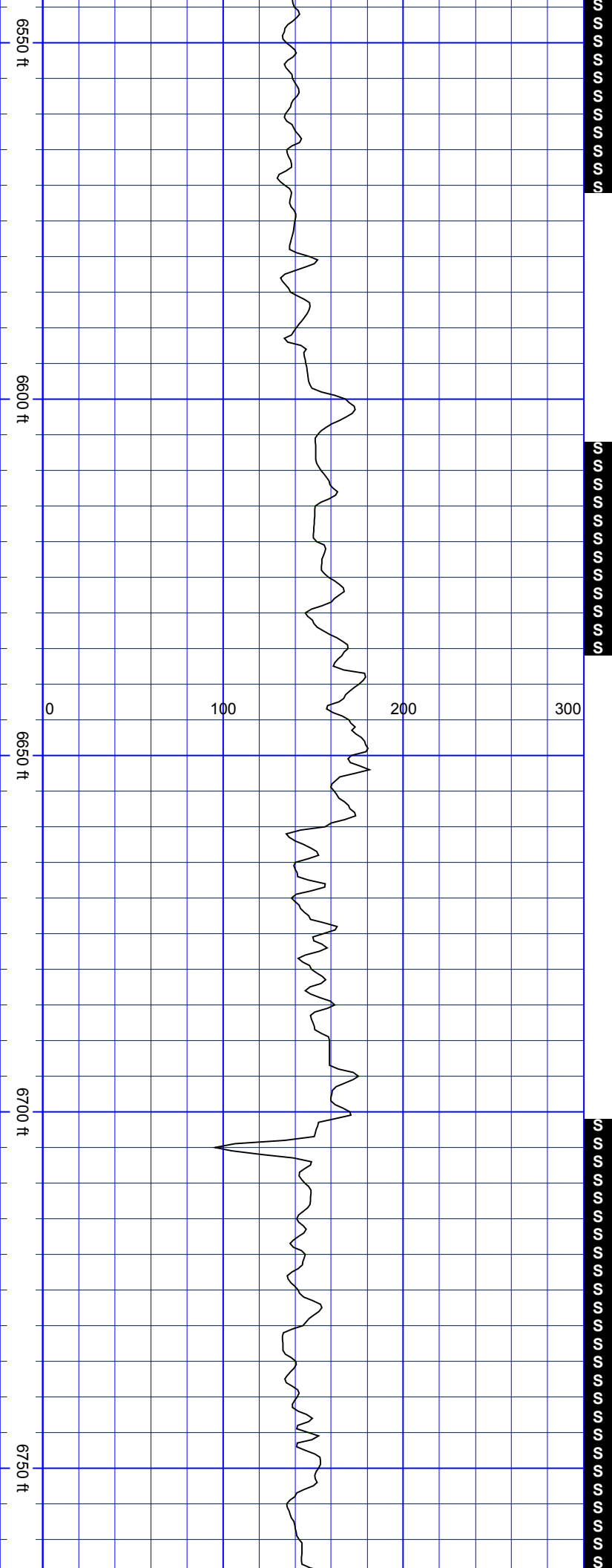
6350 ft

6400 ft

6450 ft

6500 ft

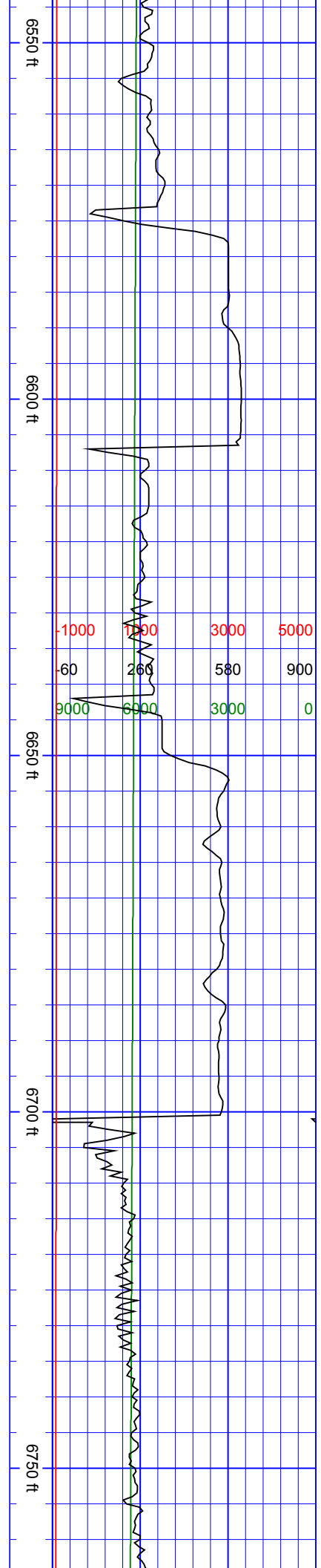
-1000	1000	3000	5000
-60	250	580	900
9000	6000	3000	0



SurveyDepth:6545
TVD:6126.05 Inc:23.6
Azi:114.6 VertSec:-892.73

SurveyDepth:6640
TVD:6212.92 Inc:24.17
Azi:110.82 VertSec:-906.79

SurveyDepth:6734
TVD:6299.73 Inc:21.09
Azi:97.37 VertSec:-915.04



6800 ft

6850 ft

6900 ft

6950 ft

0 100 200 300

SurveyDepth:6829
TVD:6386.99 Inc:25.88
Azi:75.92 VertSec:-
911.37

SurveyDepth:6924
TVD:6471.59 Inc:28.61
Azi:58.08 VertSec:-
893.42

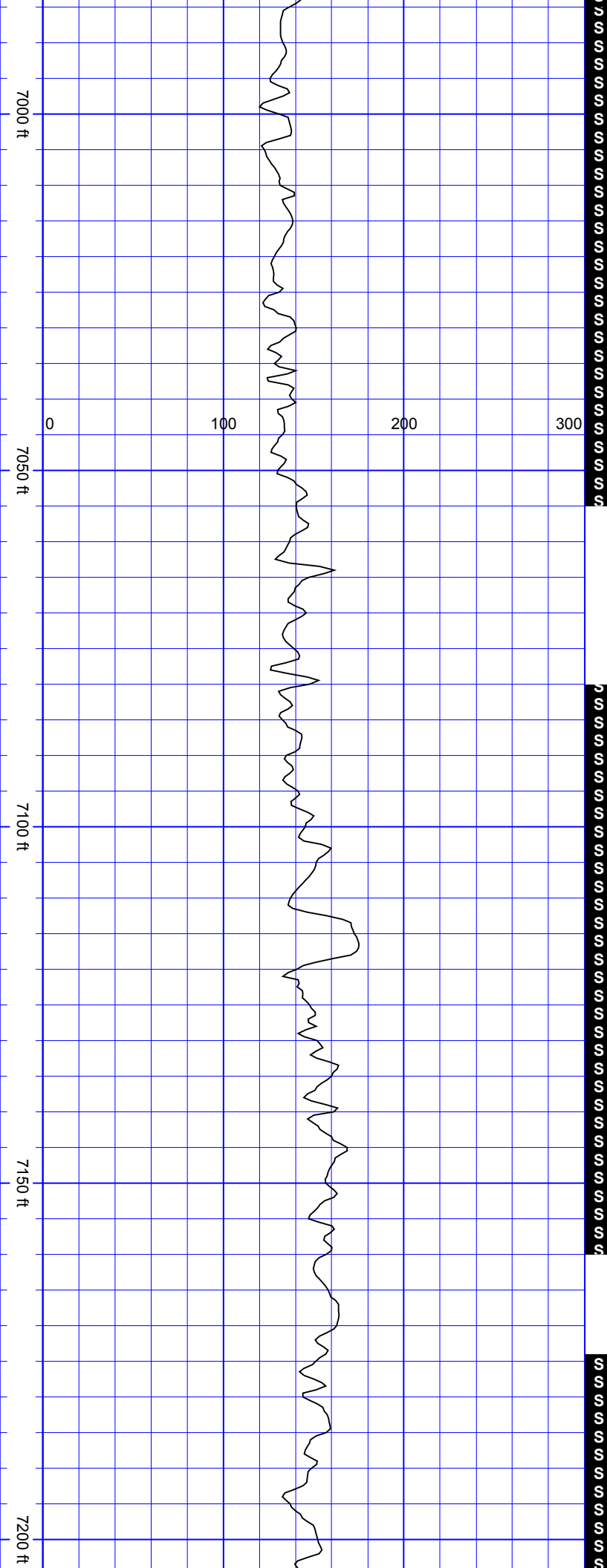
6800 ft

6850 ft

6900 ft

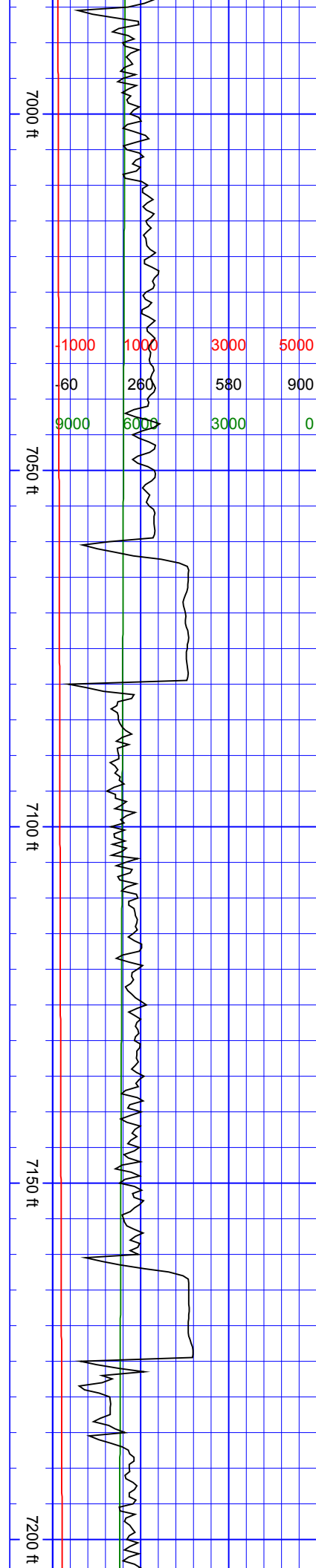
6950 ft

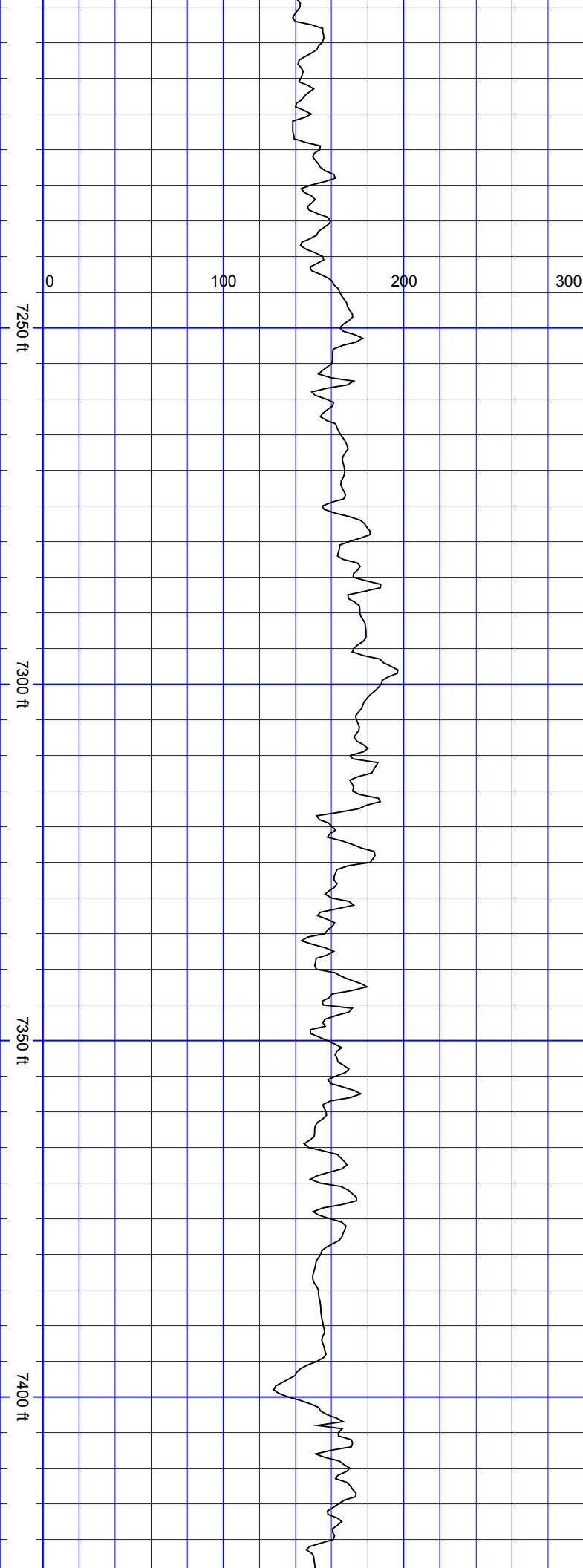
-1000	1000	3000	5000
-60	25	580	900
9000	6000	3000	0



SurveyDepth:7019
TVD:6553.73 Inc:31.95
Azi:43.14 VertSec:-
862.21

SurveyDepth:7113
TVD:6634 Inc:30.94
Azi:31.63 VertSec:-
822.81

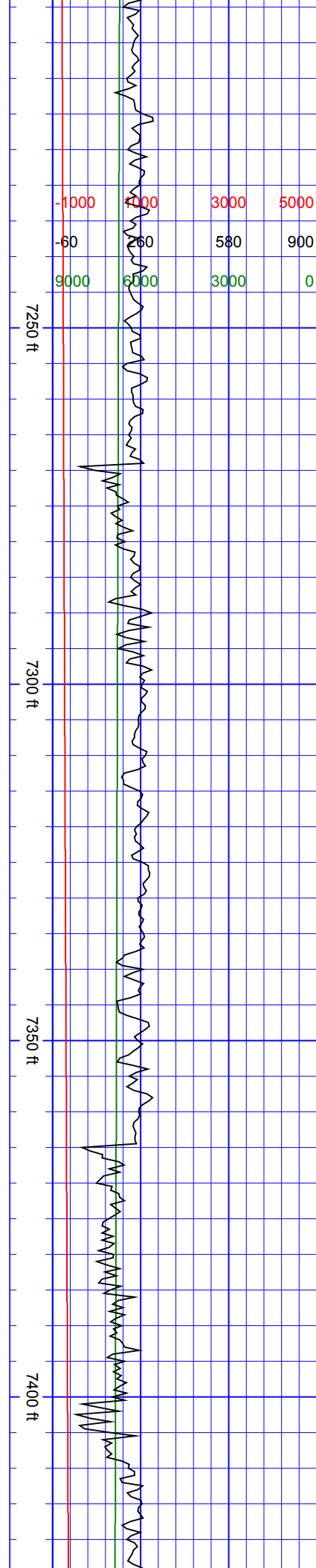


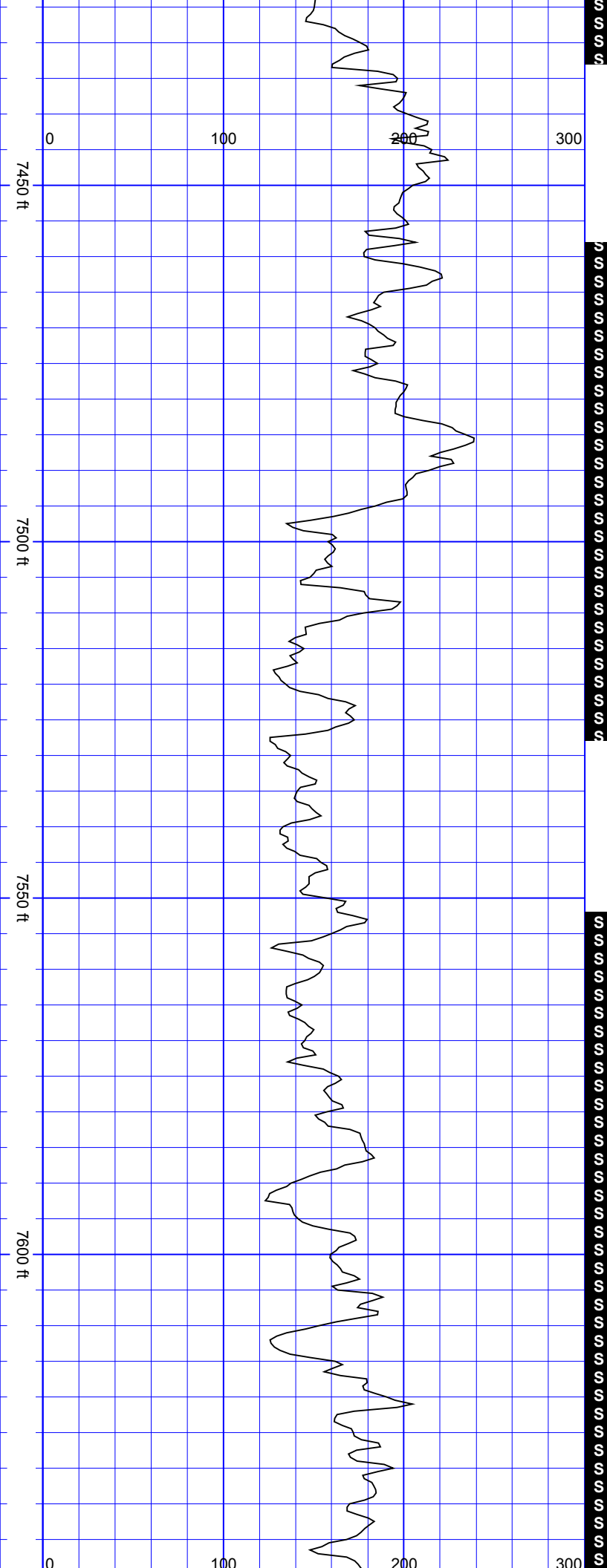


SurveyDepth:7208
TVD:6713.99 Inc:34.41
Azi:24.42 VertSec:-
777.03

SurveyDepth:7302
TVD:6786.42 Inc:44.6
Azi:26.44 VertSec:-722.6

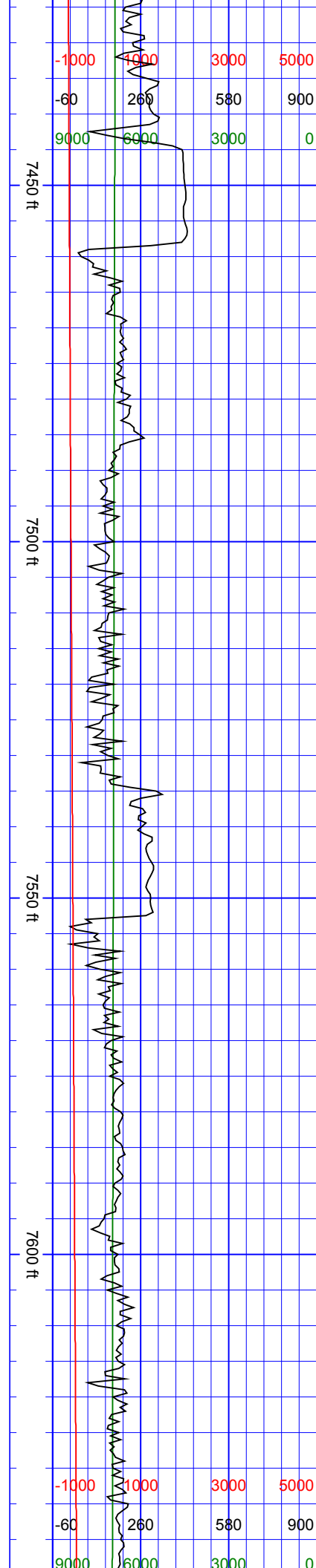
SurveyDepth:7397
TVD:6848.38 Inc:53.88
Azi:28.11 VertSec:-
658.05

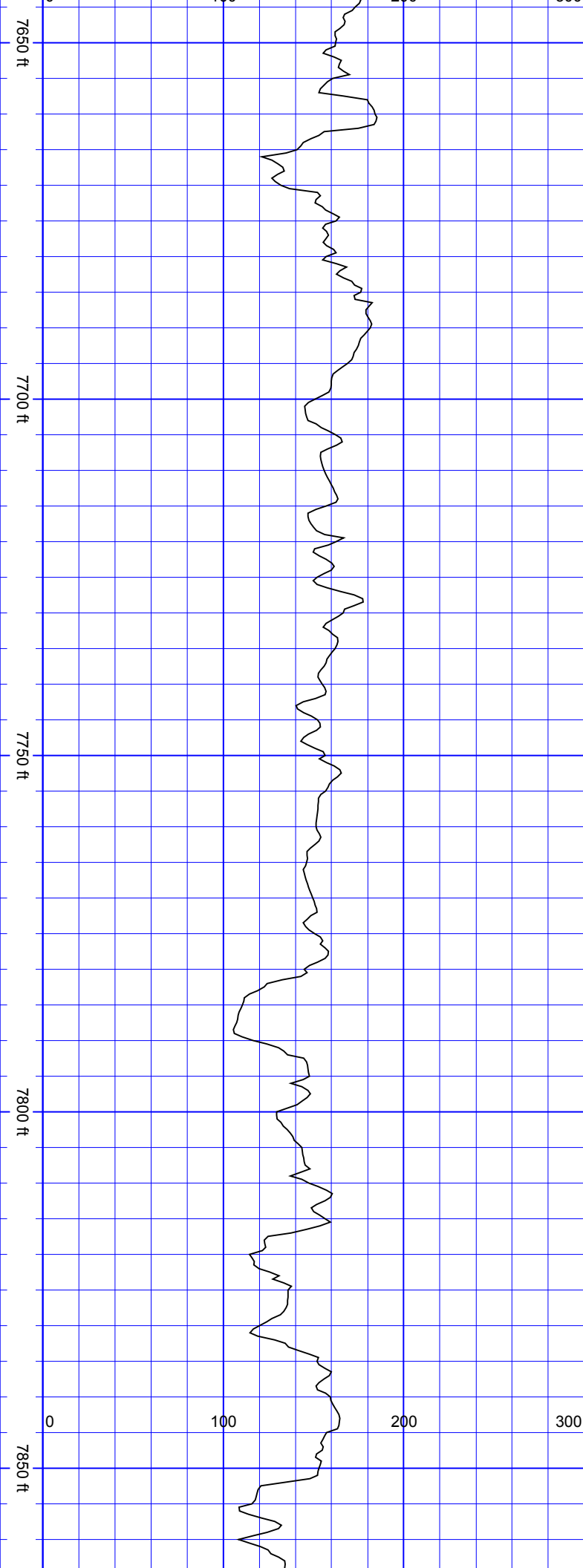




SurveyDepth:7491
TVD:6897.99 Inc:62.36
Azi:24.77 VertSec:-585.85

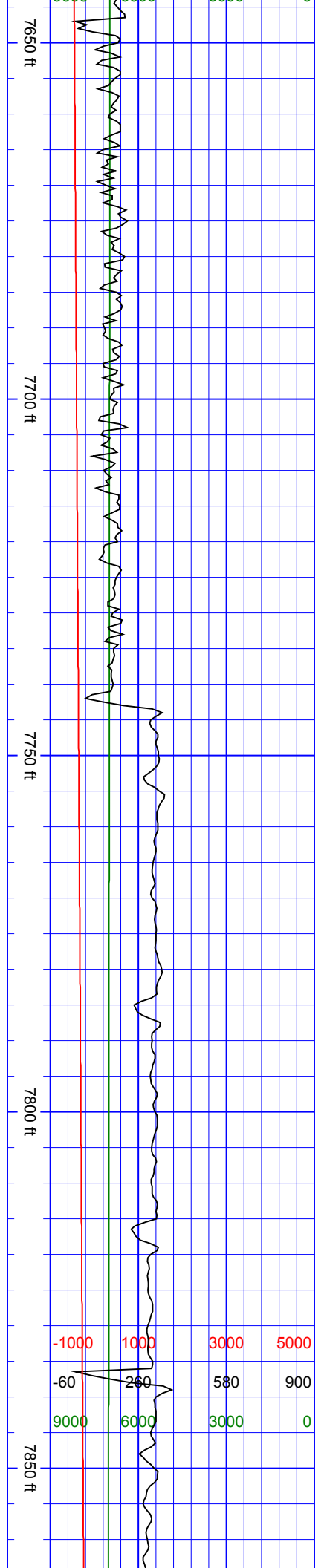
SurveyDepth:7586
TVD:6938.5 Inc:67.19
Azi:18.44 VertSec:-505.33

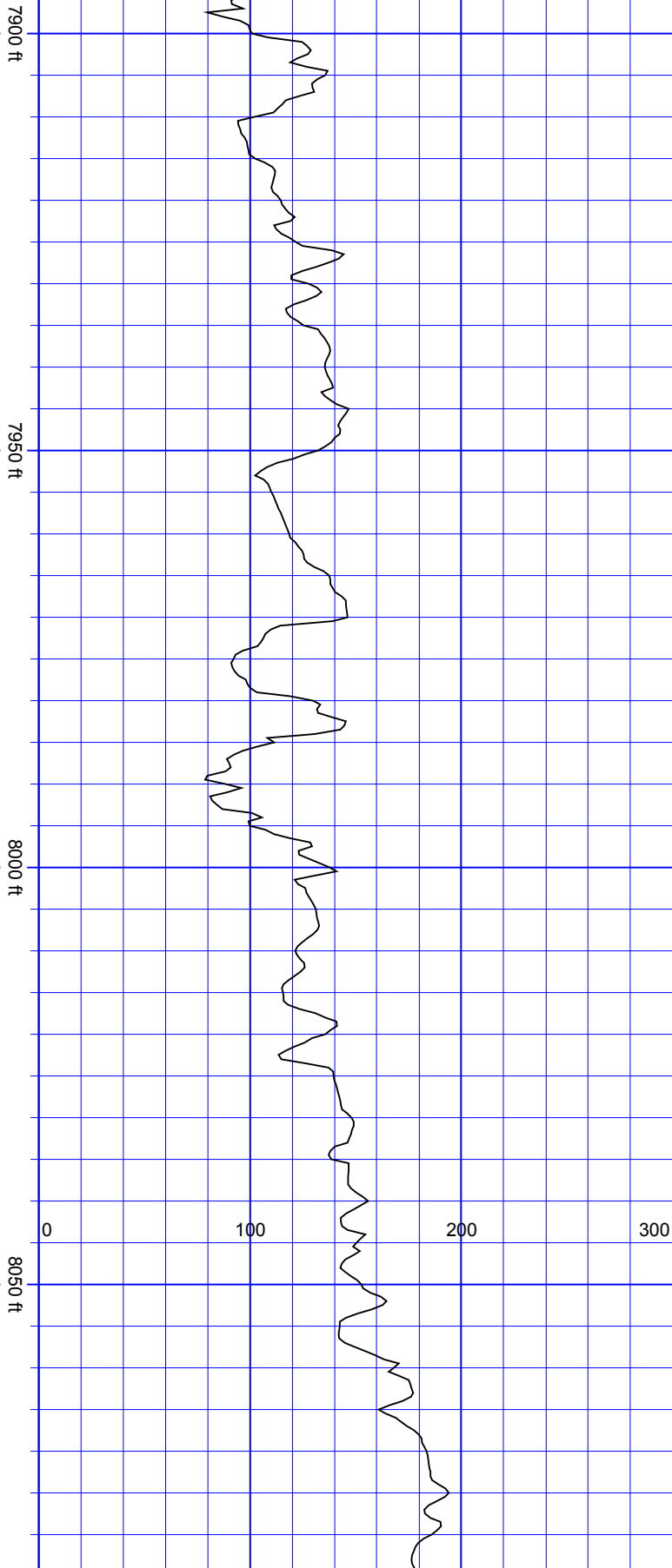




SurveyDepth:7680
TVD:6968.87 Inc:75.19
Azi:7.46 VertSec:-418.39

SurveyDepth:7775
TVD:6990.84 Inc:78.09
Azi:0.07 VertSec:-326.13

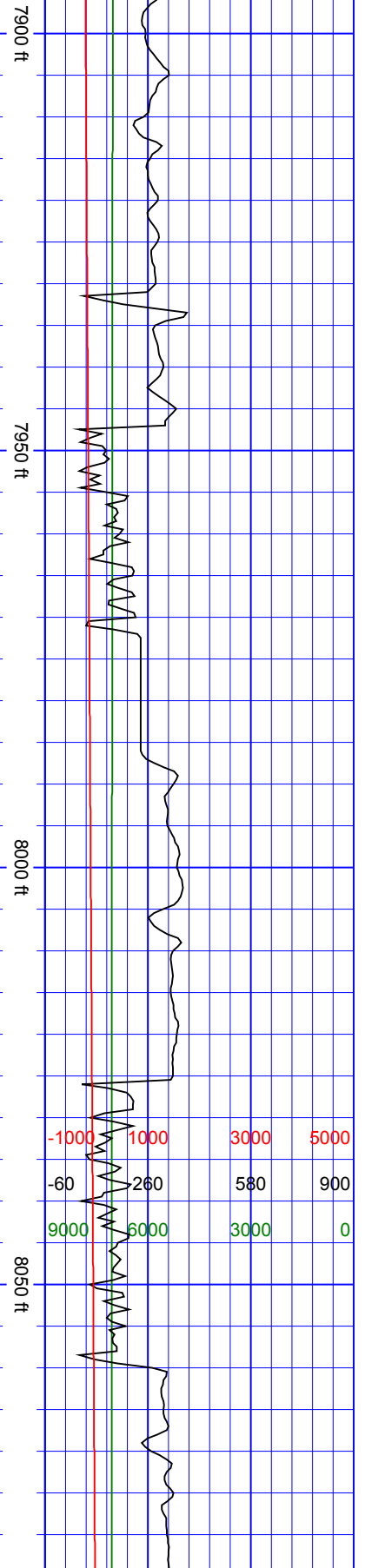


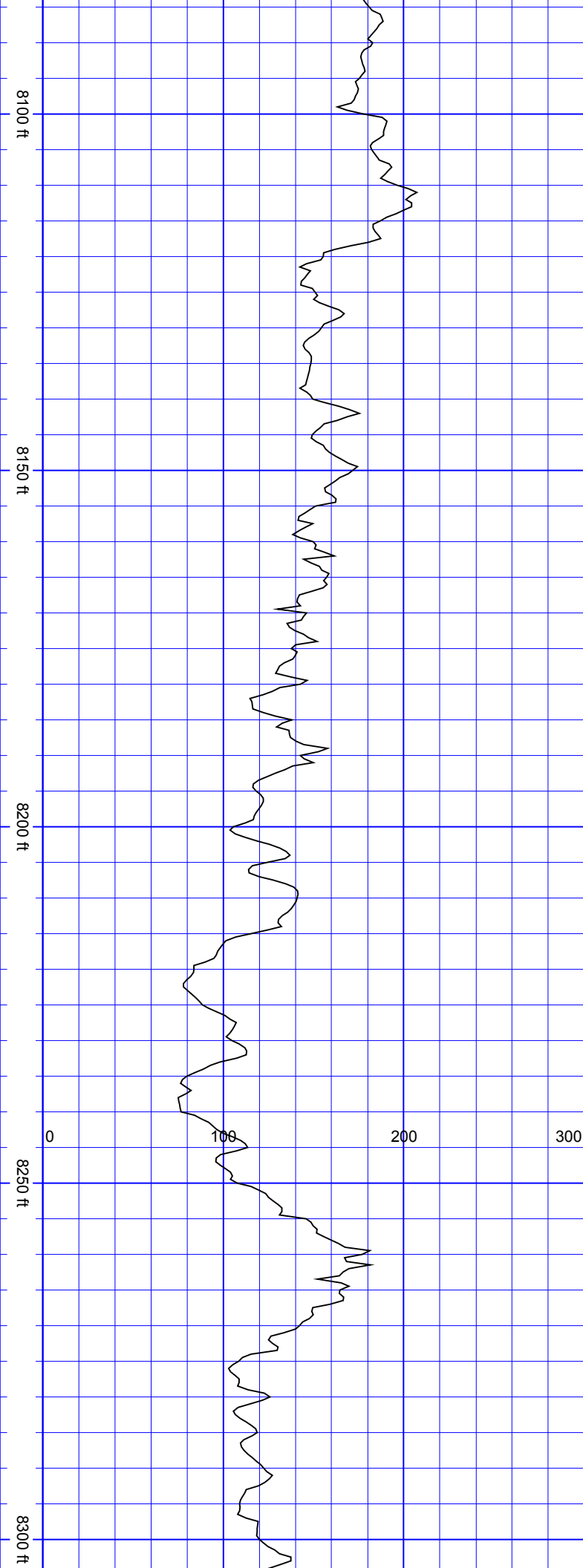


SurveyDepth:7869
TVD:7011.44 Inc:76.6
Azi:0.16 VertSec:-234.43

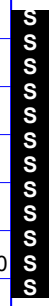
SurveyDepth:7965
TVD:7033.08 Inc:77.34
Azi:1.04 VertSec:-140.91

SurveyDepth:8059
TVD:7050.14 Inc:81.74
Azi:2.1 VertSec:-48.5

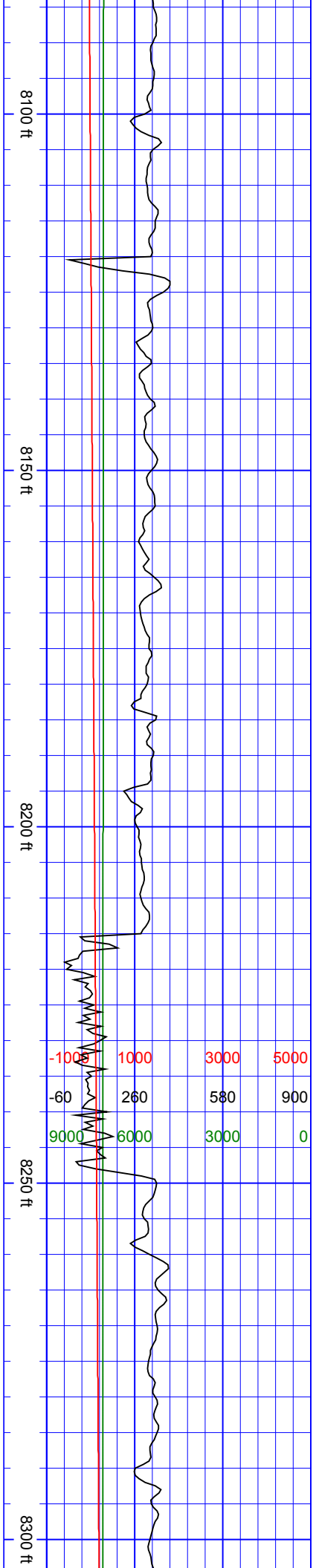


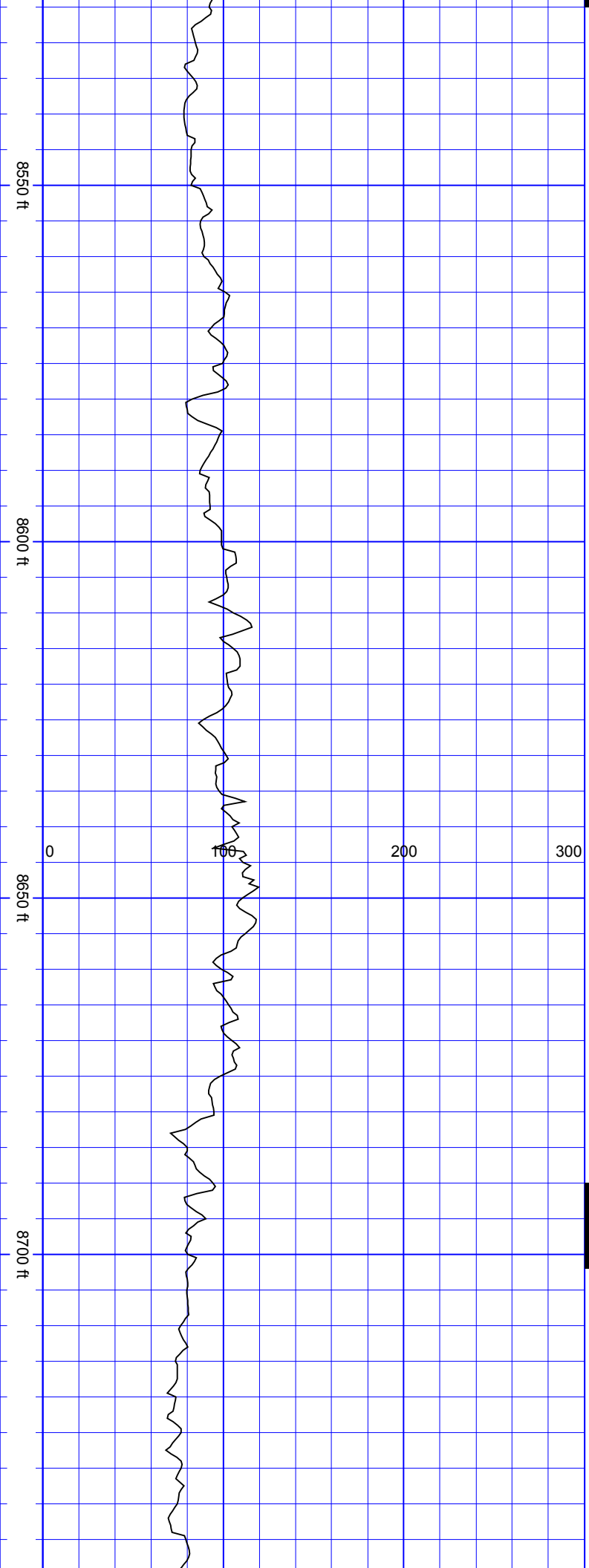


SurveyDepth:8153
TVD:7064.22 Inc:81.04
Azi:2.36 VertSec:44.43



SurveyDepth:8248
TVD:7076.24 Inc:84.42
Azi:0.51 VertSec:138.65



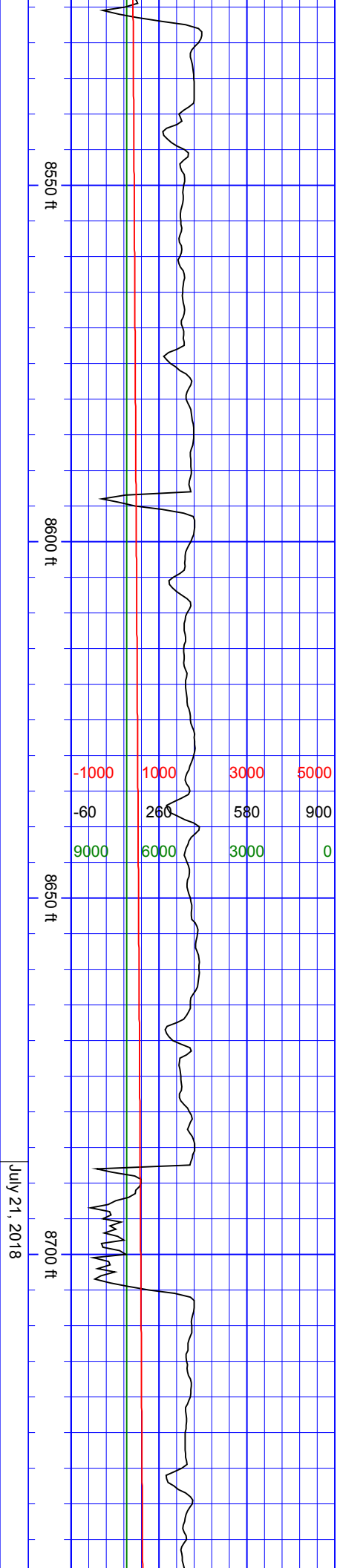


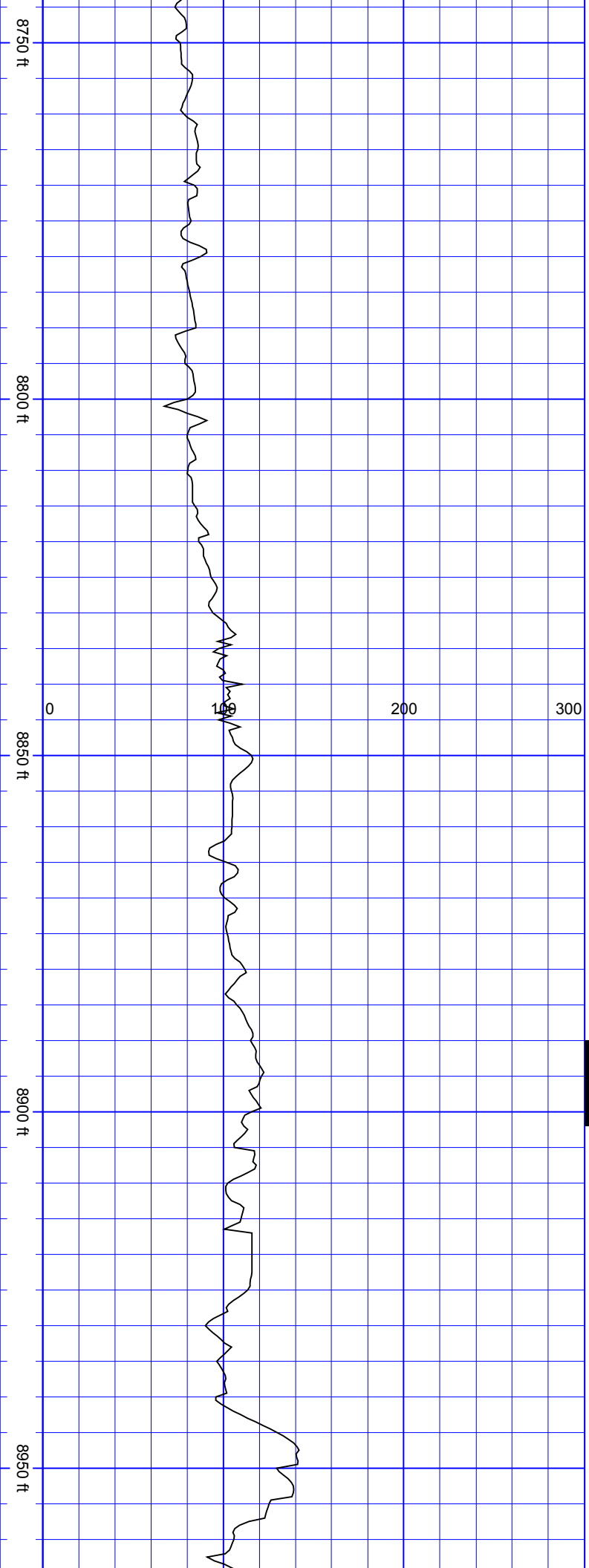
SSSS

SurveyDepth:8532
TVD:7097.52 Inc:88.51
Azi:358.93
VertSec:421.51

SurveyDepth:8627
TVD:7099.99 Inc:88.51
Azi:358.4
VertSec:516.38

SurveyDepth:8722
TVD:7100.52 Inc:90.84
Azi:359.02
VertSec:611.28

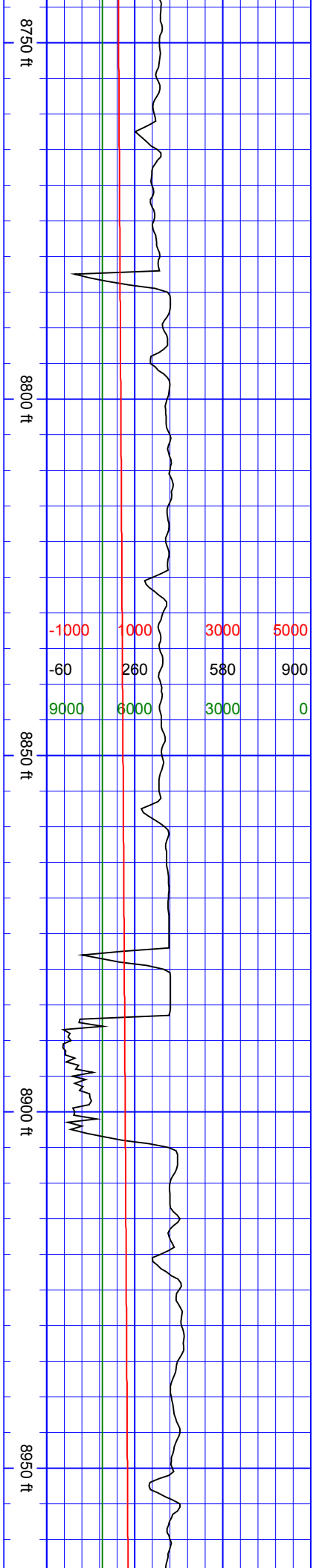




SurveyDepth:8816
TVD:7098.25 Inc:91.93
Azi:359.81
VertSec:705.2

SSSS

SurveyDepth:8910
TVD:7096.31 Inc:90.44
Azi:359.64
VertSec:799.14



9000 ft

9050 ft

9100 ft

9150 ft

0 100 200 300

SurveyDepth:9005
TVD:7095.98 Inc:89.96
Azi:359.46
VertSec:894.1

SurveyDepth:9100
TVD:7095.57 Inc:90.53
Azi:359.46
VertSec:989.05

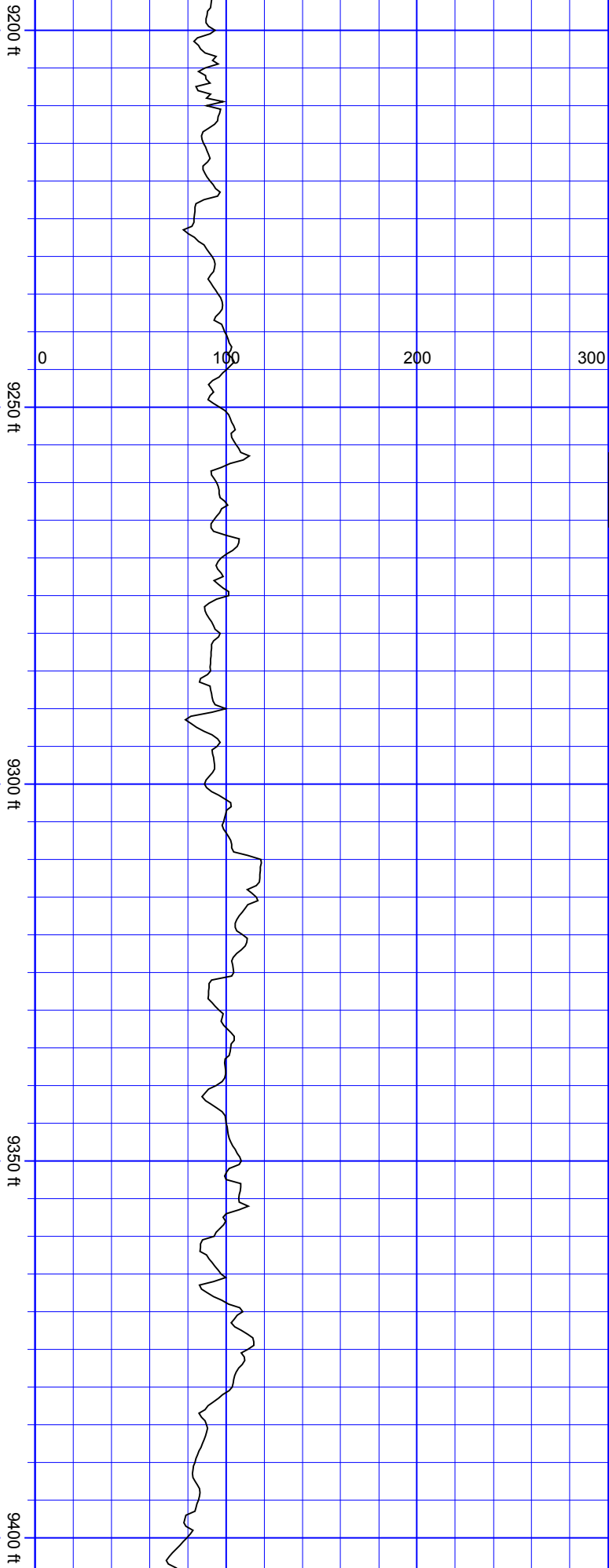
9000 ft

9050 ft

9100 ft

9150 ft

-1000	1000	3000	5000
-60	260	580	900
9000	6000	3000	0

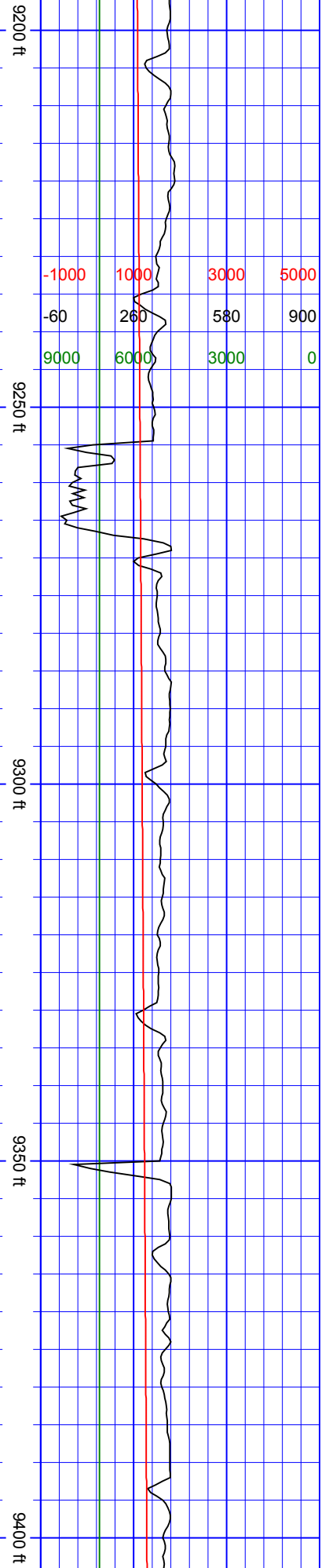


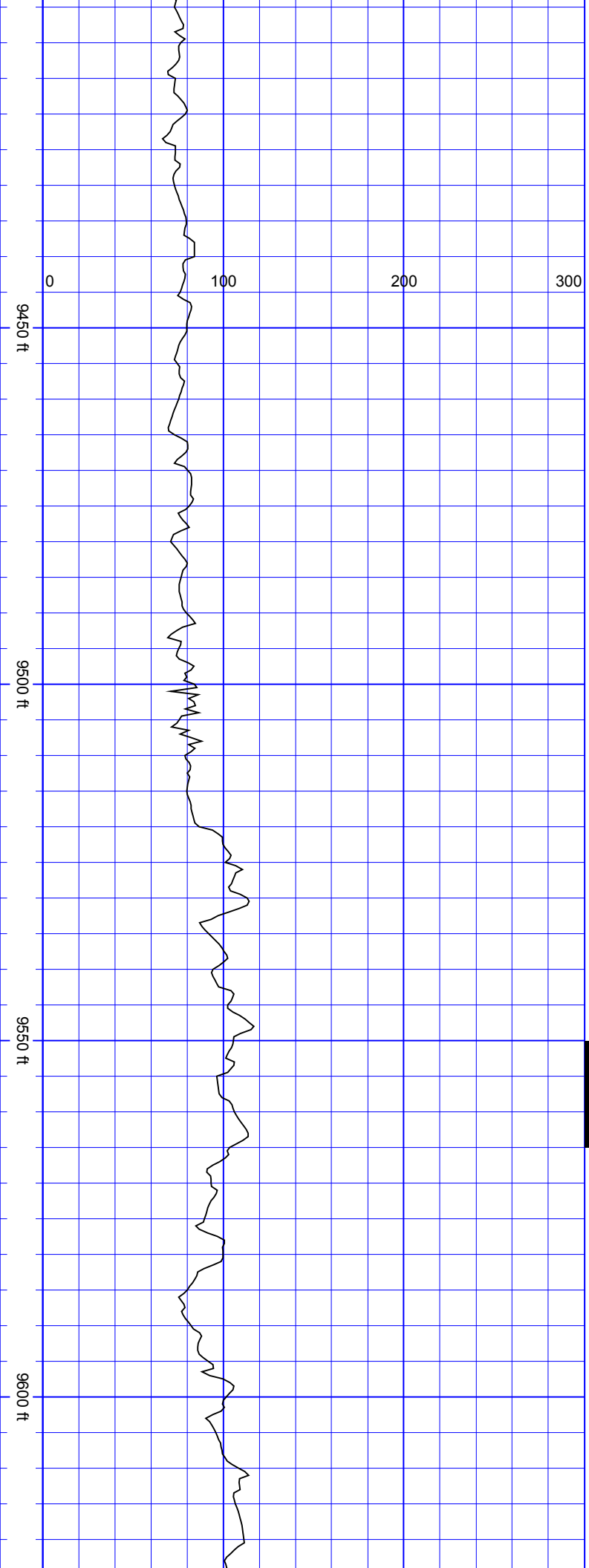
SurveyDepth:9195
TVD:7094.51 Inc:90.75
Azi:359.28 VertSec:1084

SurveyDepth:9289
TVD:7094.72 Inc:88.99
Azi:358.93
VertSec:1177.93

SurveyDepth:9384
TVD:7096.47 Inc:88.9
Azi:358.76
VertSec:1272.83

SSS

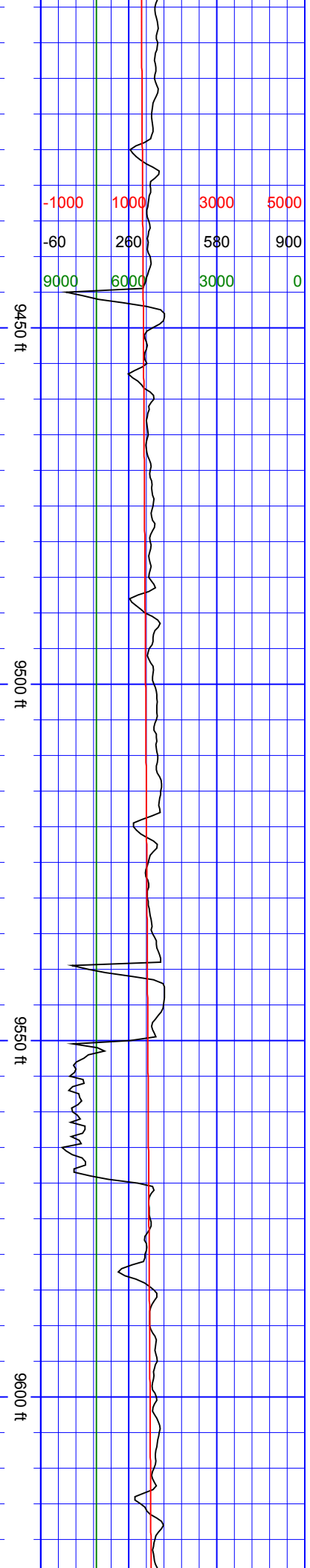


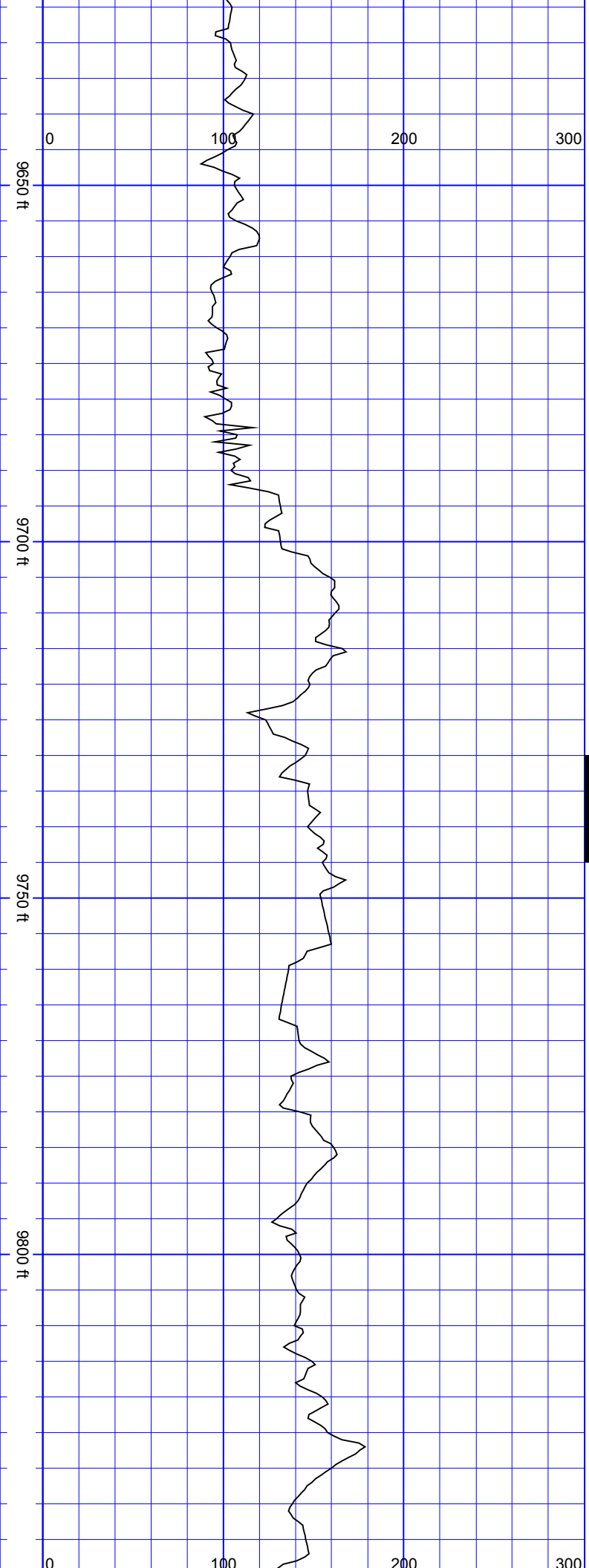


SurveyDepth:9479
TVD:7097.57 Inc:89.78
Azi:358.58
VertSec:1367.72

S
S
S
S
S
S

SurveyDepth:9573
TVD:7097.49 Inc:90.31
Azi:0.69
VertSec:1461.68

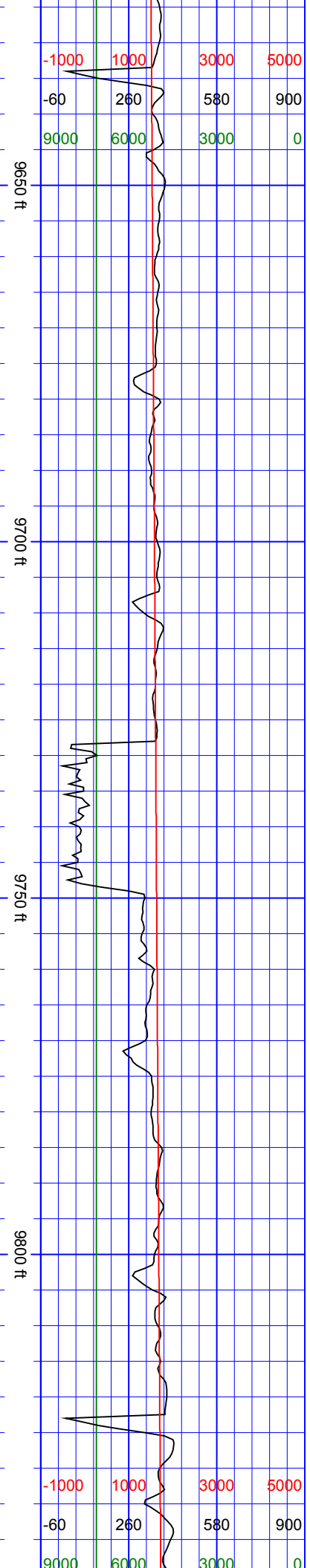


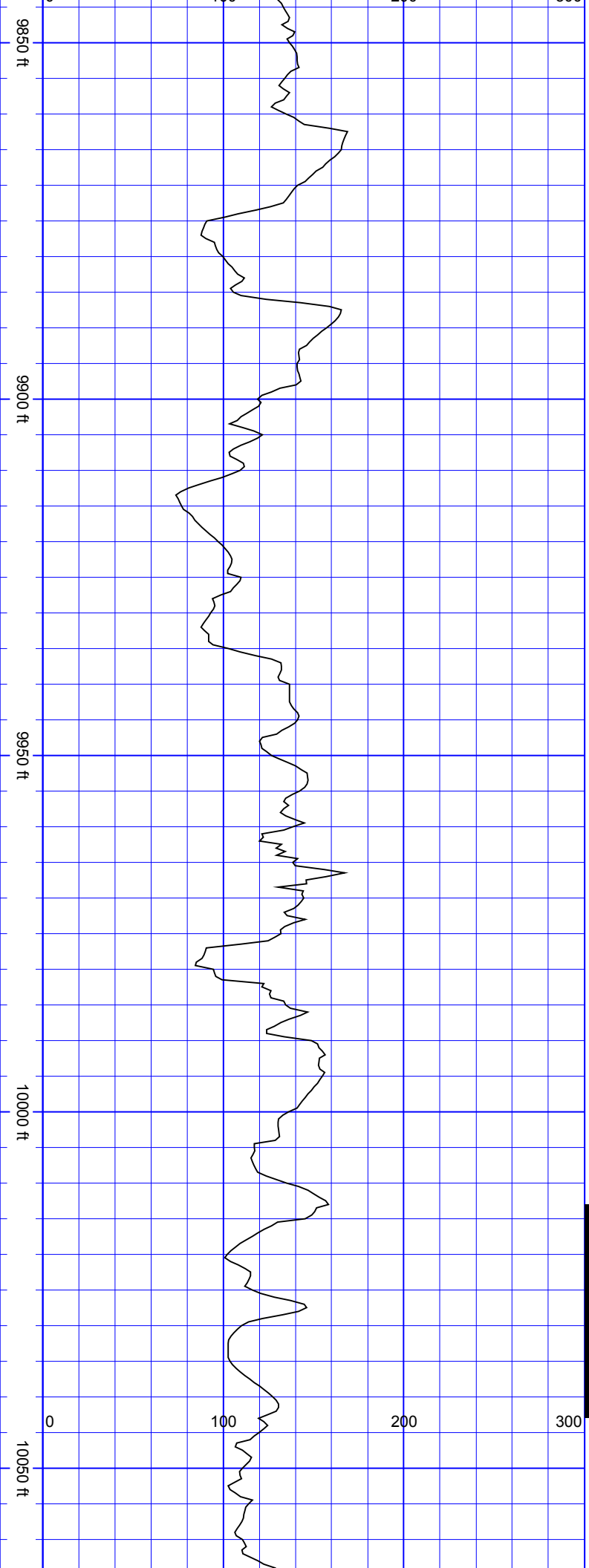


SurveyDepth:9668
TVD:7096.54 Inc:90.84
Azi:359.99
VertSec:1556.66

S
S
S
S
S

SurveyDepth:9763
TVD:7095.73 Inc:90.13
Azi:2.01
VertSec:1651.65

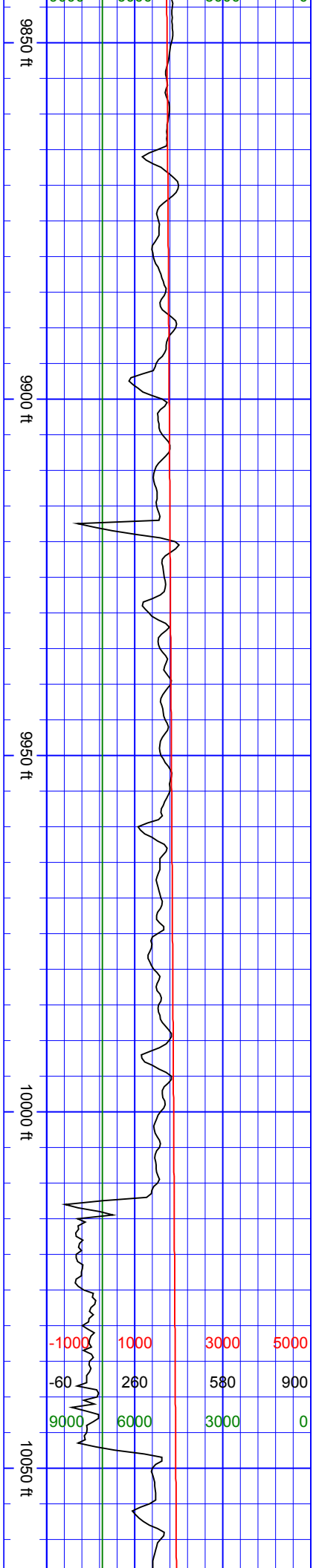


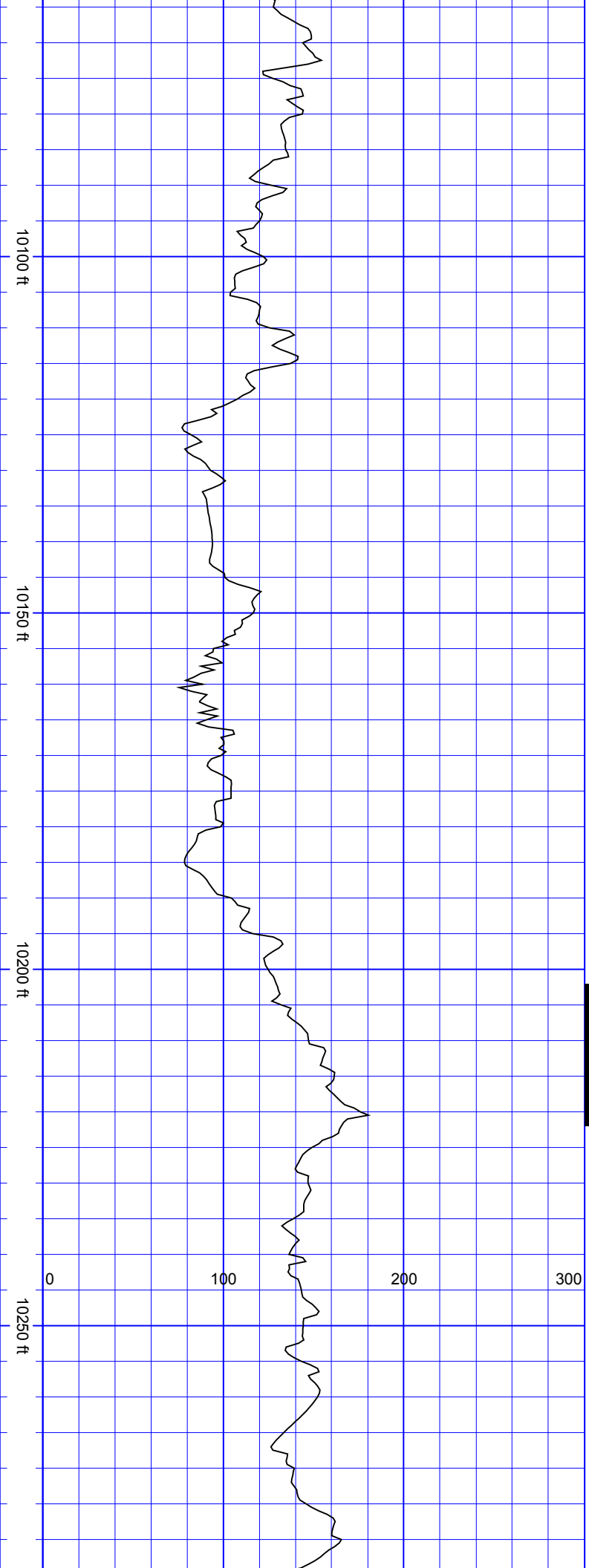


SurveyDepth:9857
TVD:7094.94 Inc:90.84
Azi:1.74
VertSec:1745.64

SurveyDepth:9952
TVD:7092.49 Inc:92.11
Azi:1.04
VertSec:1840.61

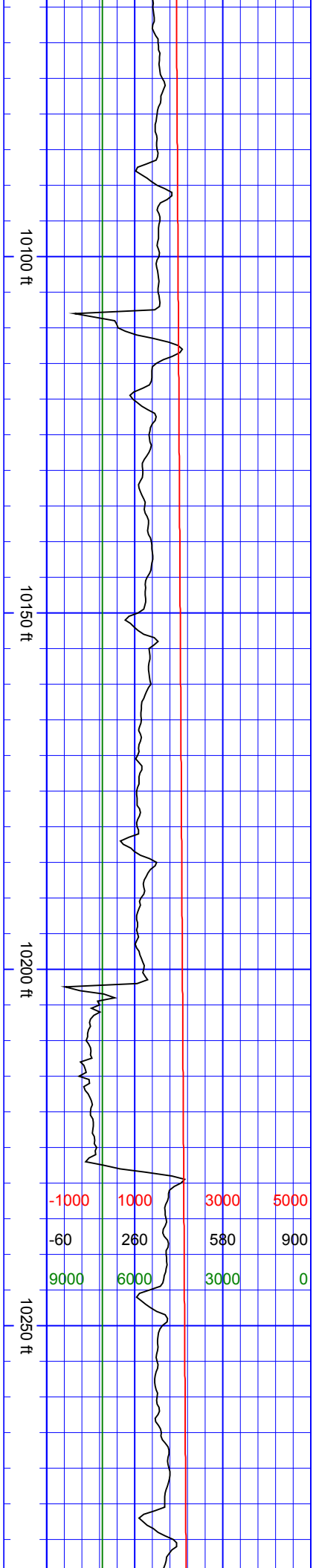
SurveyDepth:10046
TVD:7090.8 Inc:89.96
Azi:1.39
VertSec:1934.59

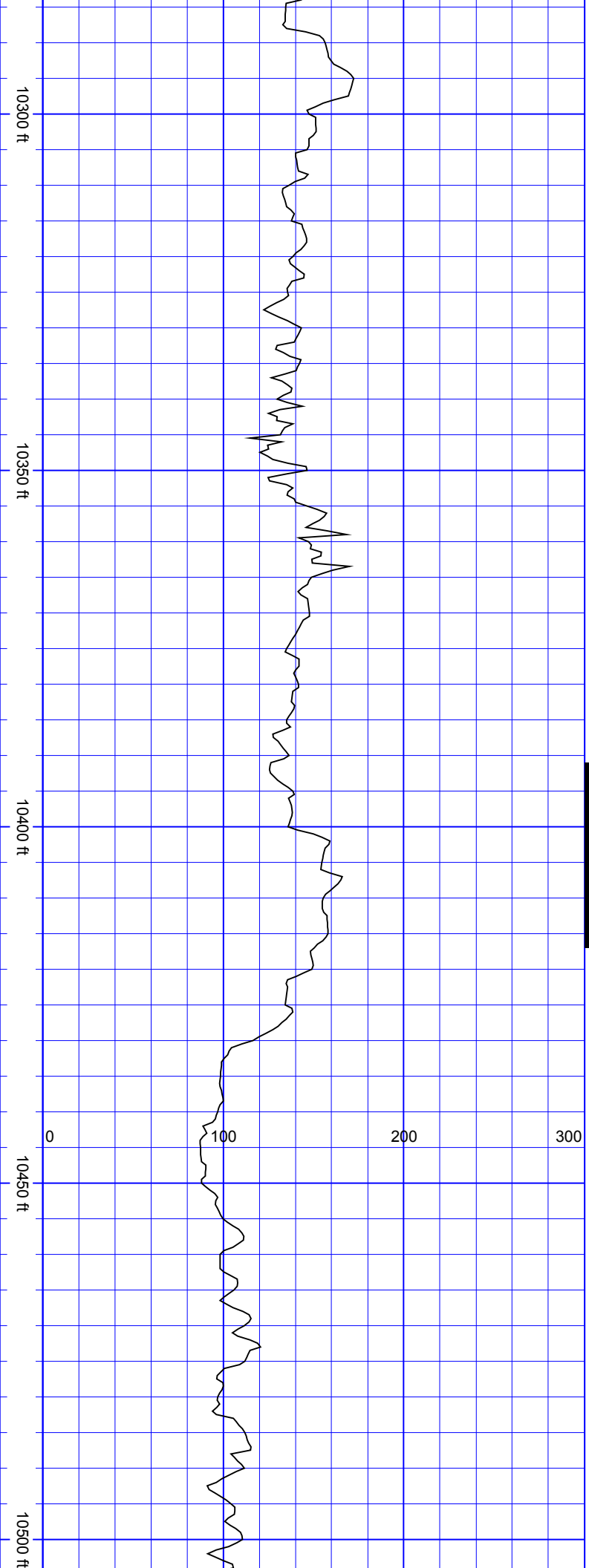




SurveyDepth:10141
TVD:7090.39 Inc:90.53
Azi:1.04
VertSec:2029.59

SurveyDepth:10235
TVD:7092.26 Inc:87.19
Azi:1.39
VertSec:2123.55

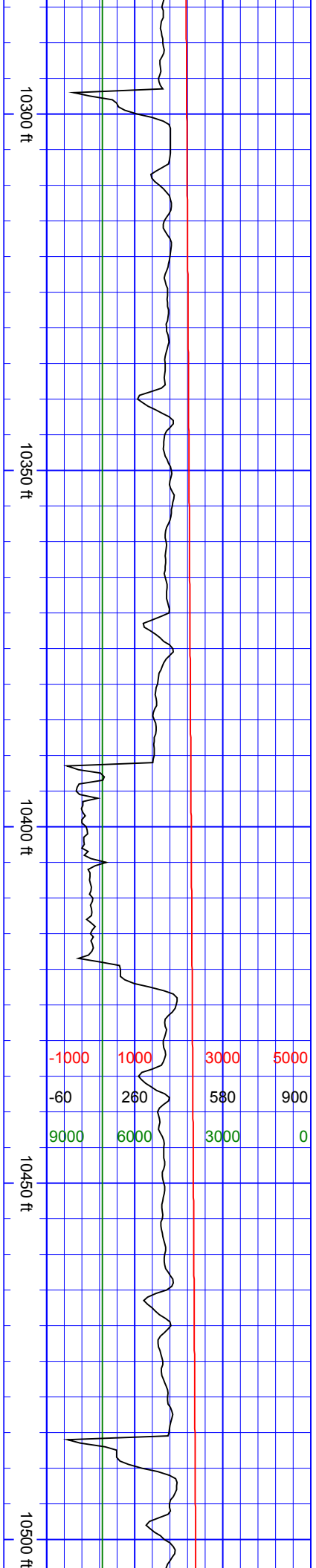


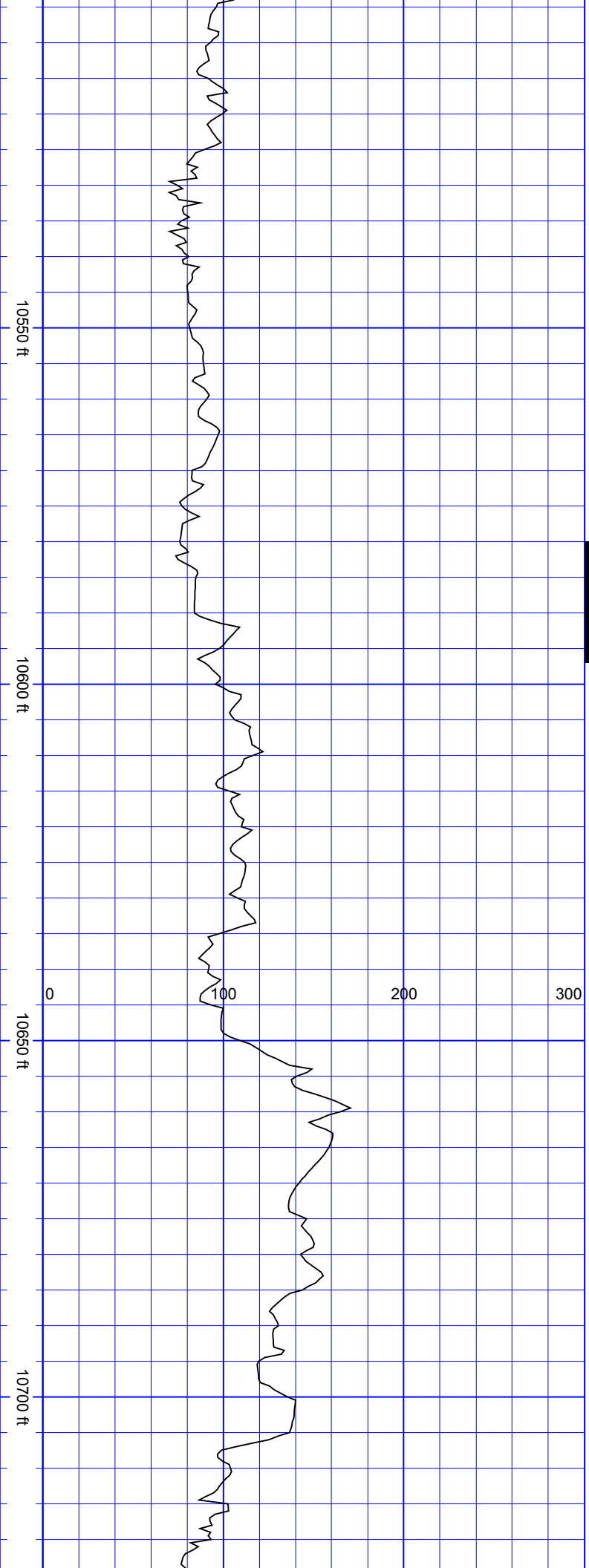


S S S S S S S S S S

SurveyDepth:10330
TVD:7097.25 Inc:86.79
Azi:0.16
VertSec:2218.42

SurveyDepth:10424
TVD:7100.64 Inc:89.08
Azi:2.36
VertSec:2312.34



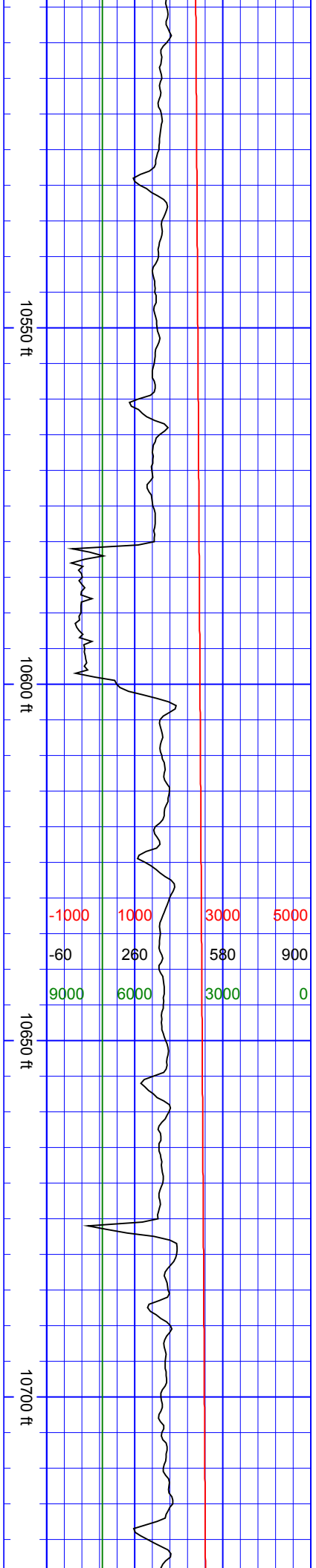


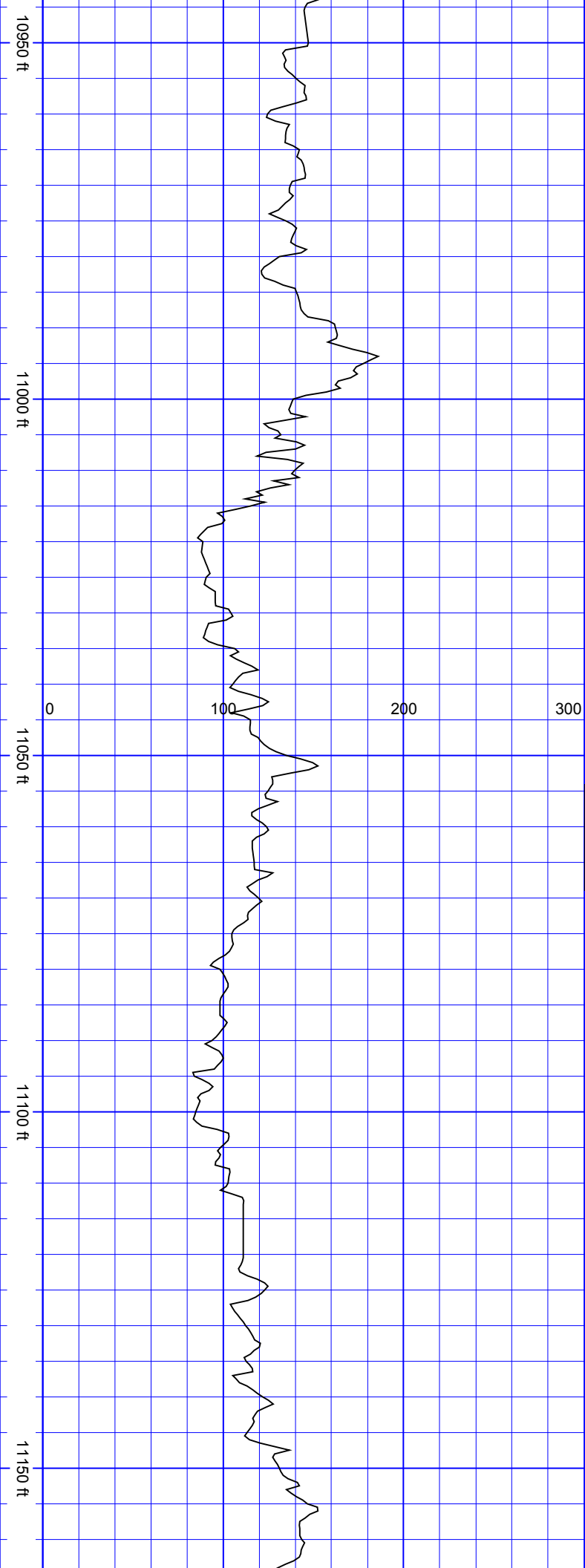
S
S
S
S
S
S
S
S
S
S

SurveyDepth:10519
TVD:7102.31 Inc:88.9
Azi:1.39
VertSec:2407.32

SurveyDepth:10614
TVD:7101.14 Inc:92.51
Azi:3.5 VertSec:2502.27

SurveyDepth:10708
TVD:7096.02 Inc:93.74
Azi:2.71
VertSec:2596.08

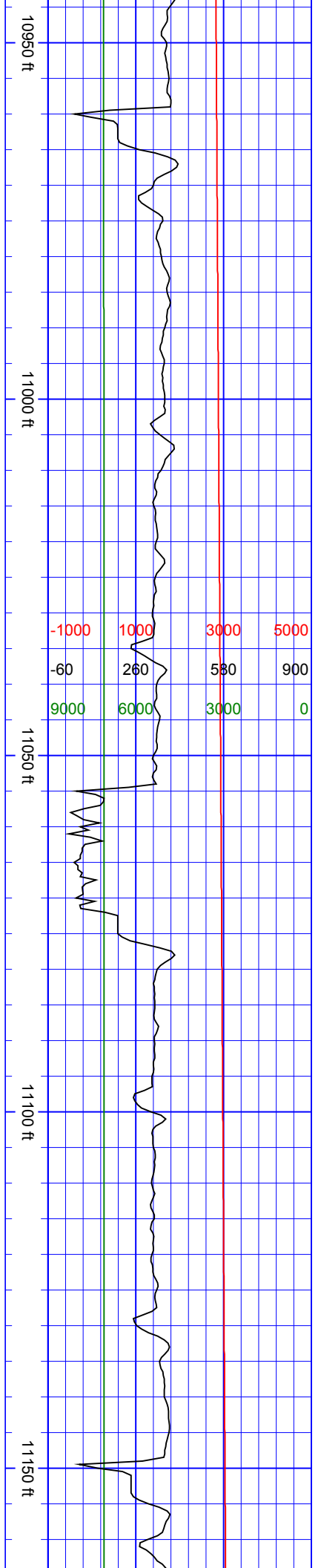


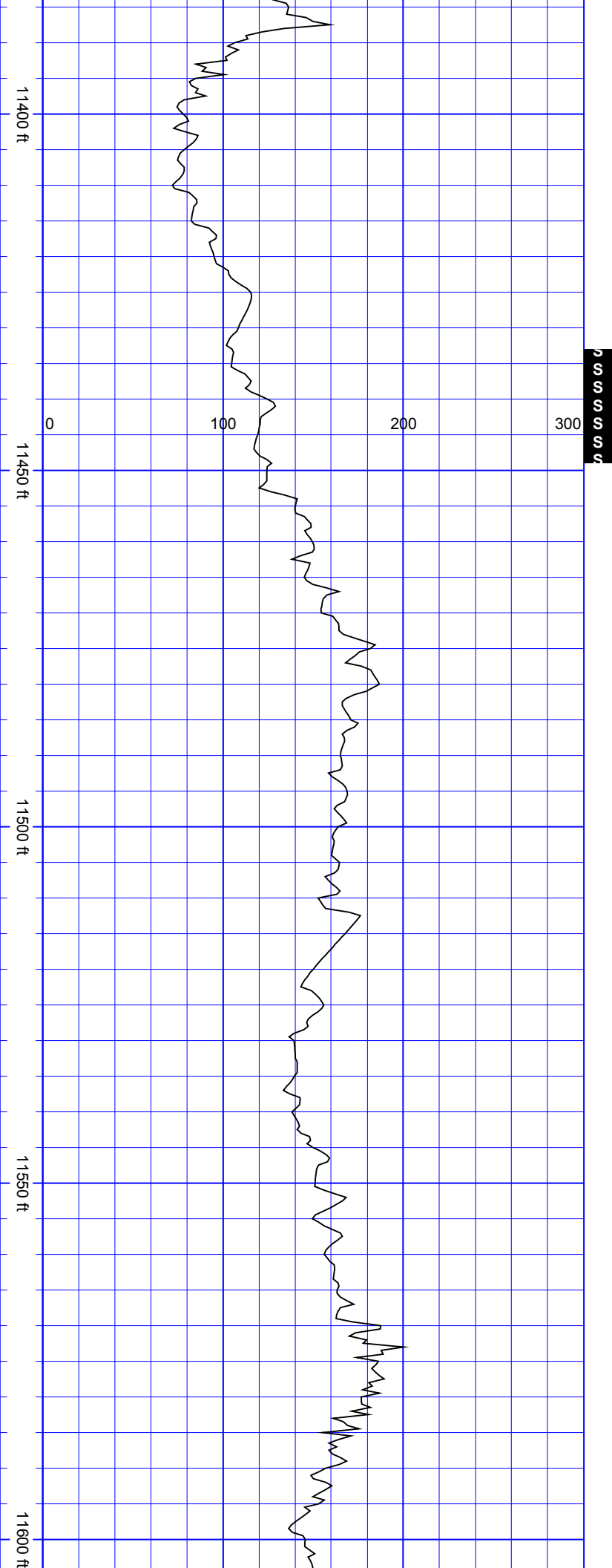


SurveyDepth:10993
TVD:7086.37 Inc:91.63
Azi:1.22
VertSec:2880.86

S
S
S
S
S

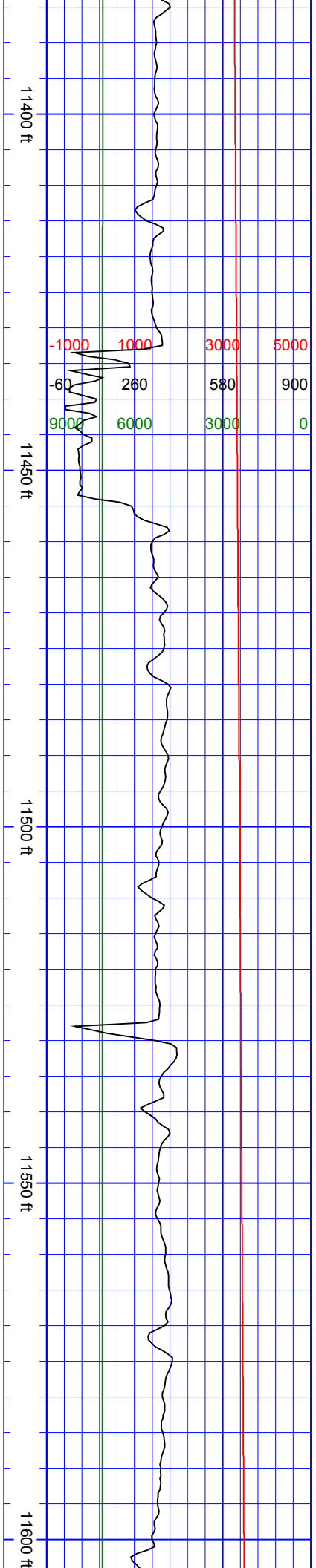
SurveyDepth:11088
TVD:7084.8 Inc:90.26
Azi:0.43
VertSec:2975.85

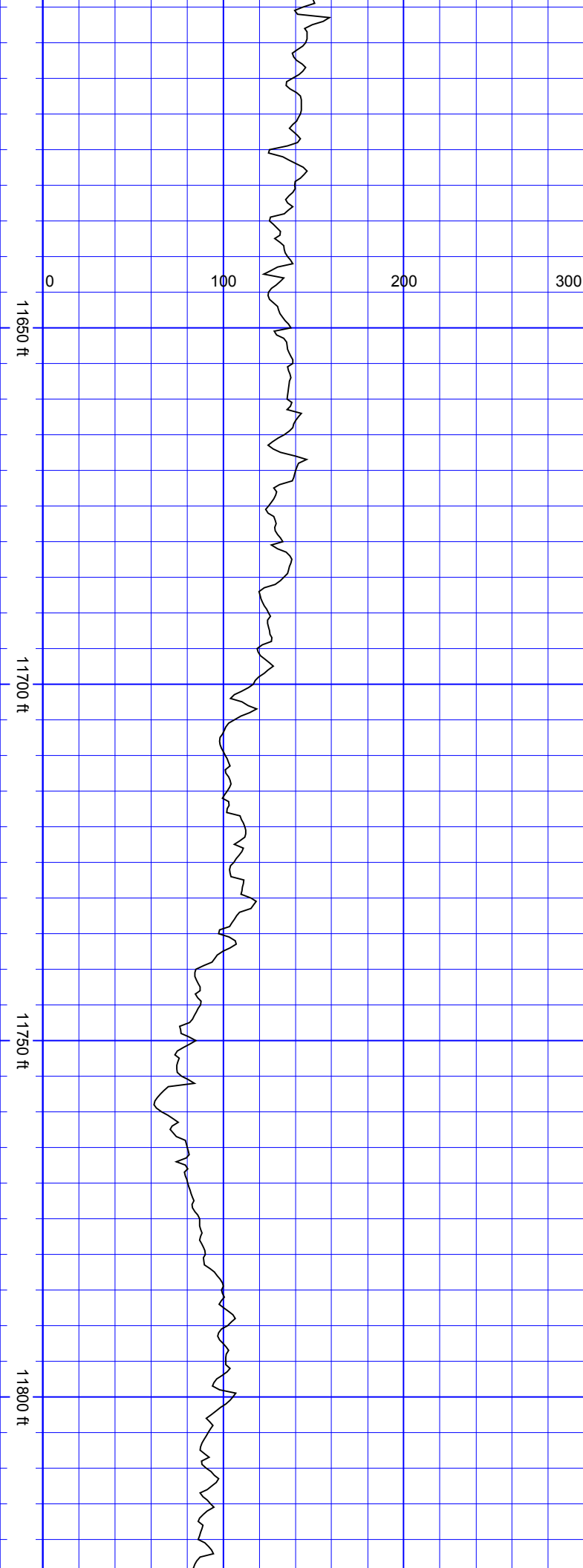




SurveyDepth:11466
TVD:7087.55 Inc:88.86
Azi:358.84
VertSec:3353.51

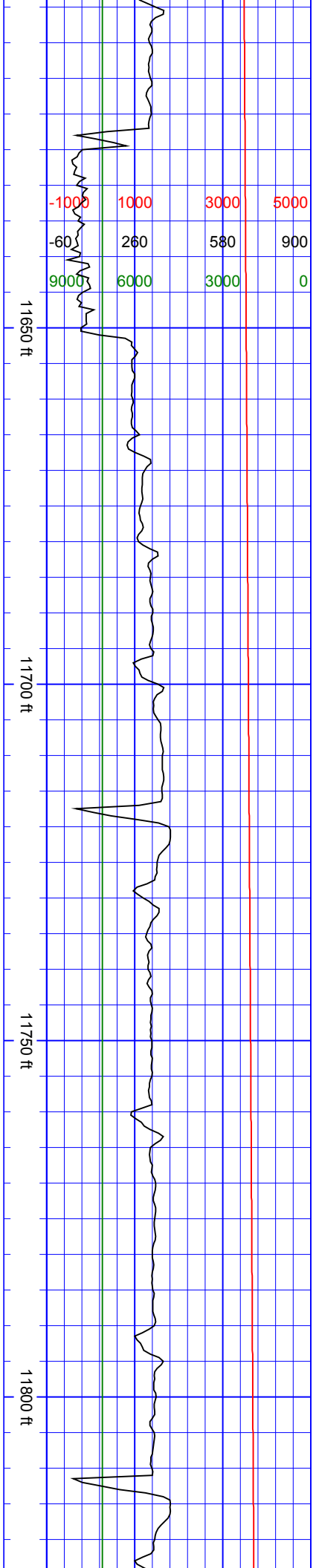
SurveyDepth:11561
TVD:7088.34 Inc:90.18
Azi:358.58
VertSec:3448.41

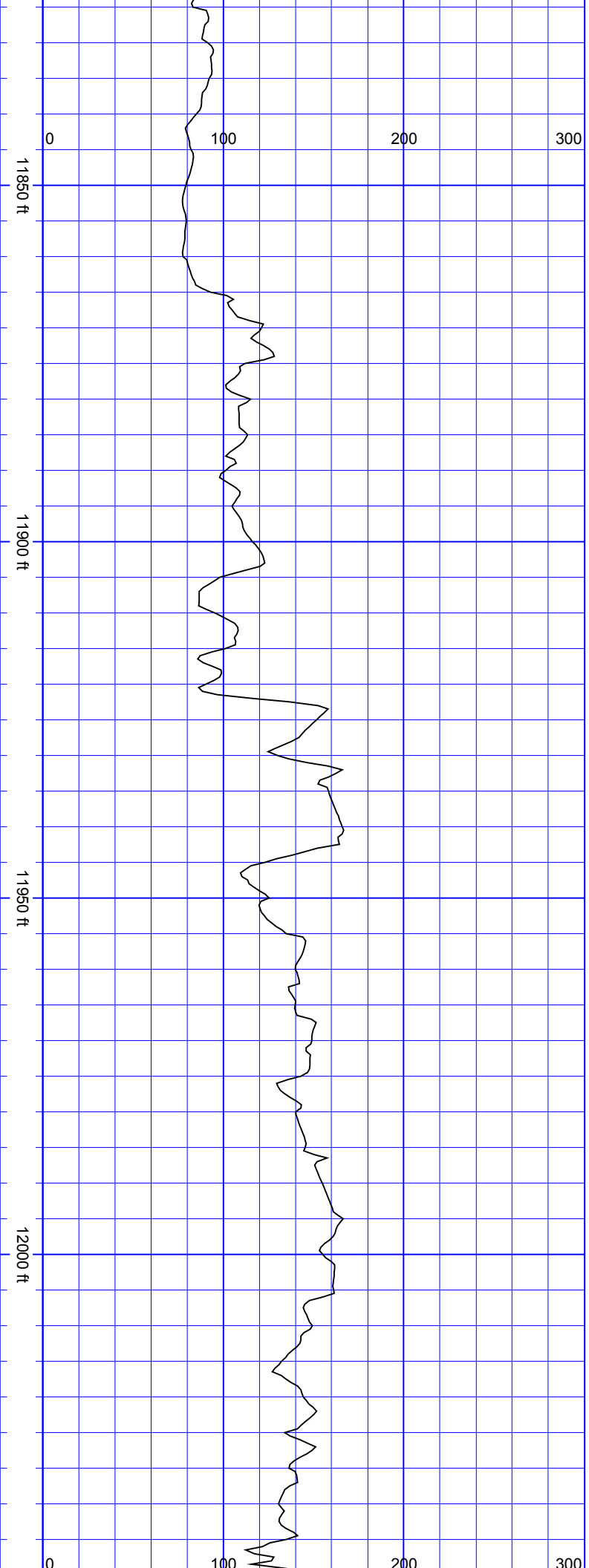




SurveyDepth:11656
TVD:7089.1 Inc:88.9
Azi:0.6 VertSec:3543.36

SurveyDepth:11750
TVD:7090.37 Inc:89.56
Azi:0.34
VertSec:3637.34

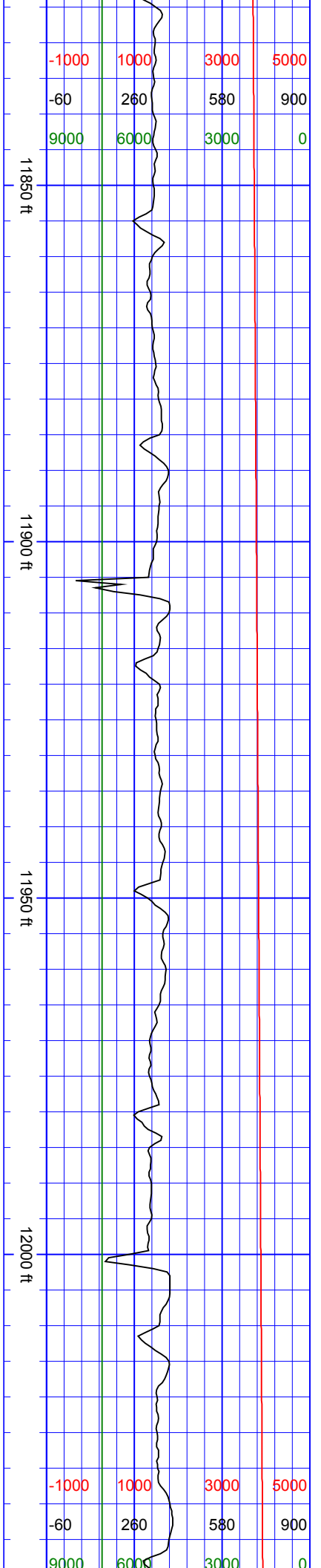


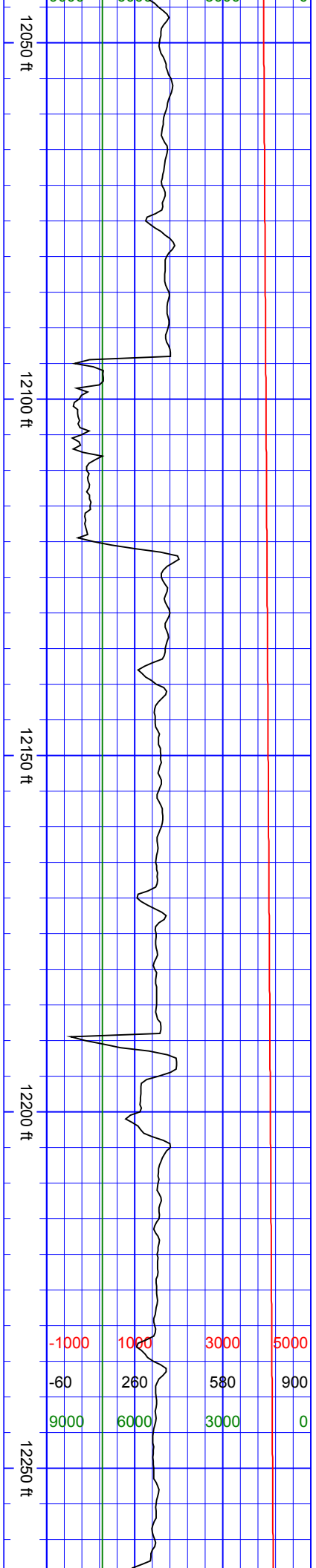


SurveyDepth:11844
TVD:7090.44 Inc:90.35
Azi:359.81
VertSec:3731.32

SurveyDepth:11938
TVD:7089.54 Inc:90.75
Azi:359.72
VertSec:3825.28

SurveyDepth:12033
TVD:7087.53 Inc:91.67
Azi:358.93
VertSec:3920.21





S S S S S S S

SurveyDepth:12128
TVD:7086.7 Inc:89.34
Azi:358.58
VertSec:4015.11

SurveyDepth:12223
TVD:7087.21 Inc:90.04
Azi:357.7
VertSec:4109.96

SurveyDepth:12239
TVD:7087.17 Inc:90.22
Azi:357.44
VertSec:4125.93

