



Build & Lateral

Job #:

185189

Well ID:

16190986

Scale:

5" = 100 ft

Type:

MD

Well Site Information

Oil Company Crestone Peak Resources

Surface Location S4-T1N-R65W

Well Name Ruegge 3J-4H-N165

API 05-123-46562-00

Field DJ Wattenburg

State Colorado

Country USA

Surface Coordinates

Well Type Horizontal

Latitude 40° 4' 31 N

Longitude 104° 40' 15 W

N / S Coordinates 1,271,344.62 us/ft

E / W Coordinates 3,232,041.10 us/ft

Azimuth Reference True North

Grid Convergence 0.54°

MWD Engineers

Lead Hand Bob Stahlecker

Second Hand Chad Vellad

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 12,064.00 ft Spud Date Jun/25/2018 End Date Jun/27/2018

(MD) Log Interval Start Depth 2,390.00 ft End Depth 12,064.17 ft

Bore Hole Record

Hole Size	From	To
13.50 in	0.00 ft	2,476.00 ft
8.50 in	2,476.00 ft	12,064.00 ft

Casing Record

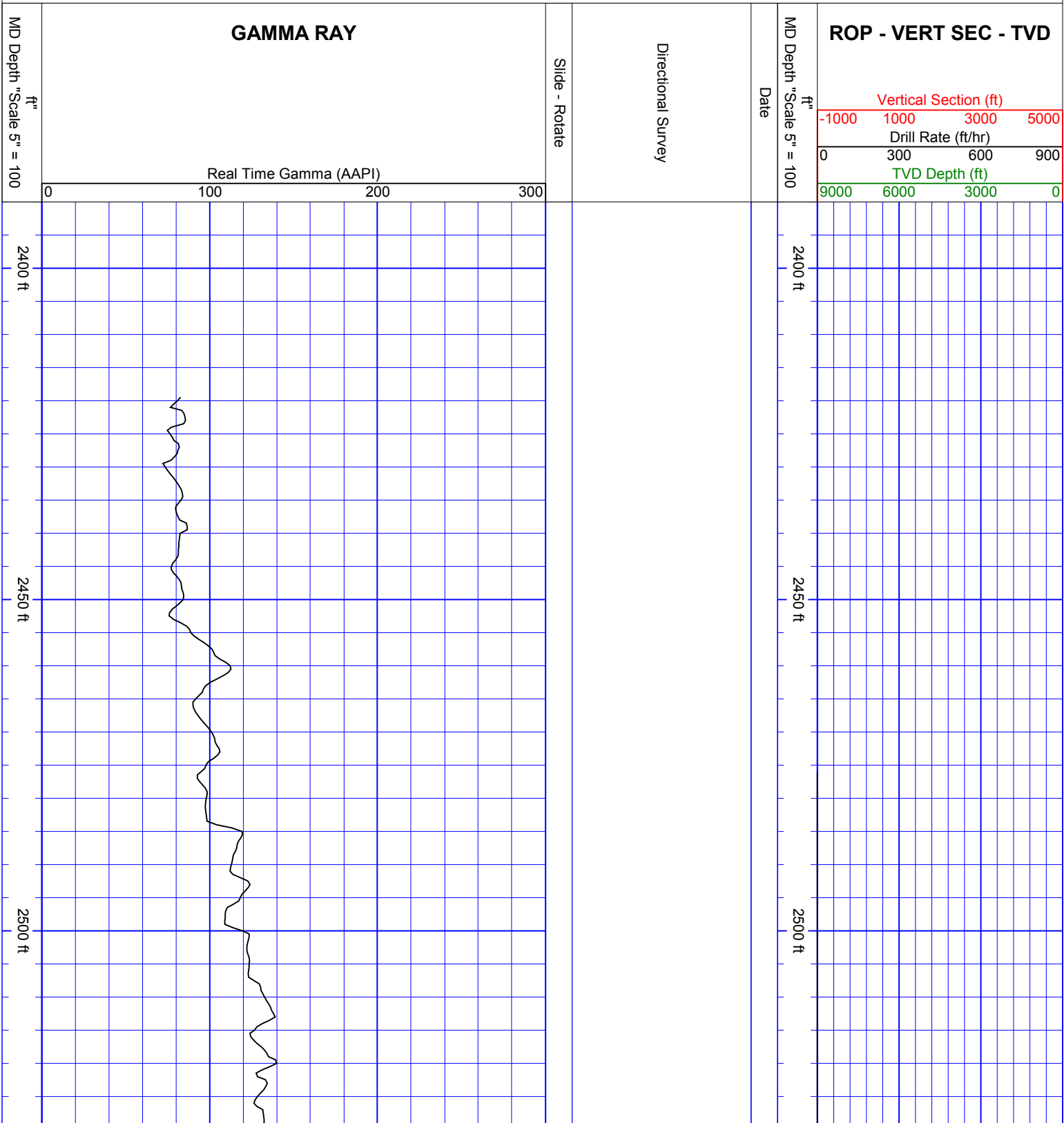
Type	Size	WGT	From	To
LT&C	9.63 in	40.00 lbs/ft	0.00 ft	2,458.00 ft
LT&C	5.50 in	20.00 lbs/ft	0.00 ft	12,051.00 ft

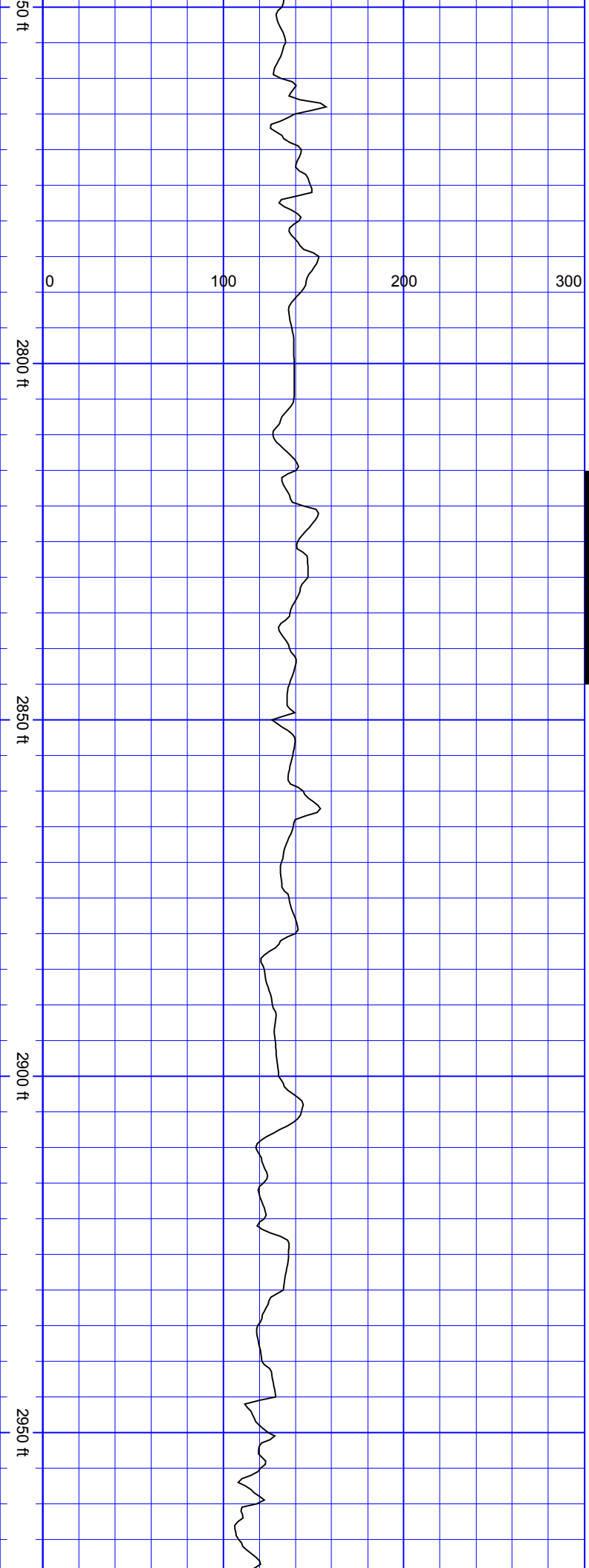
Run Data

Bit Run Number	1				
Start Date & Time	Jun/25/2018 16:30:00				
End Date & Time	Jun/27/2018 22:30:00				
Run Hours	75.00				
Depth In	2,411.00 ft				
Depth Out	12,064.00 ft				
Total Gamma Correction	5.26				
Gamma to Bit	56.75 ft				
Resistivity to Bit	N/A				
Mud Type	Oil Base				
Density	9.80 ppg				
Viscosity	41.00 sec/qt				
PH	N/A				
Fluid Loss	16.80 cc				
K+ ppm	N/A				
CL- ppm	238,409.00 ppm				
Max Mud Temp	248.00 °F				
Mud Report Depth	10,850.00 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.

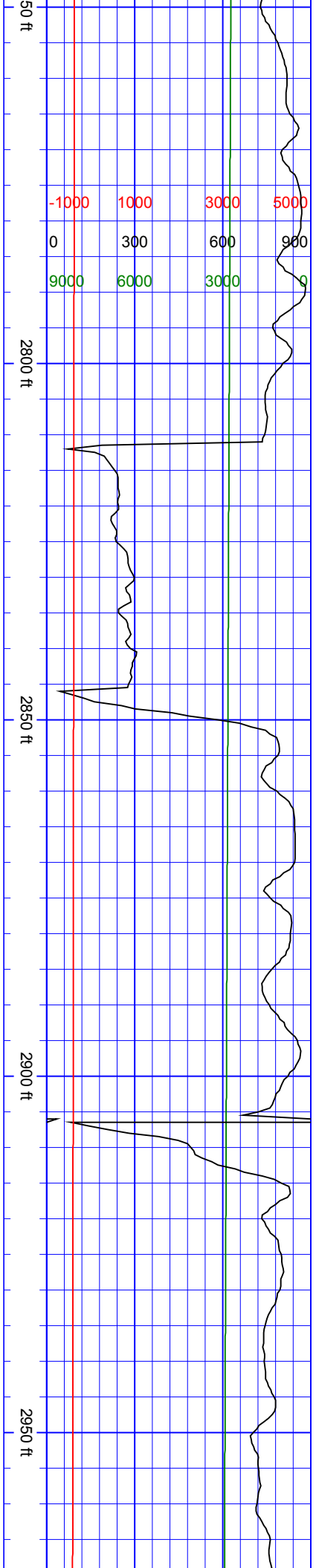


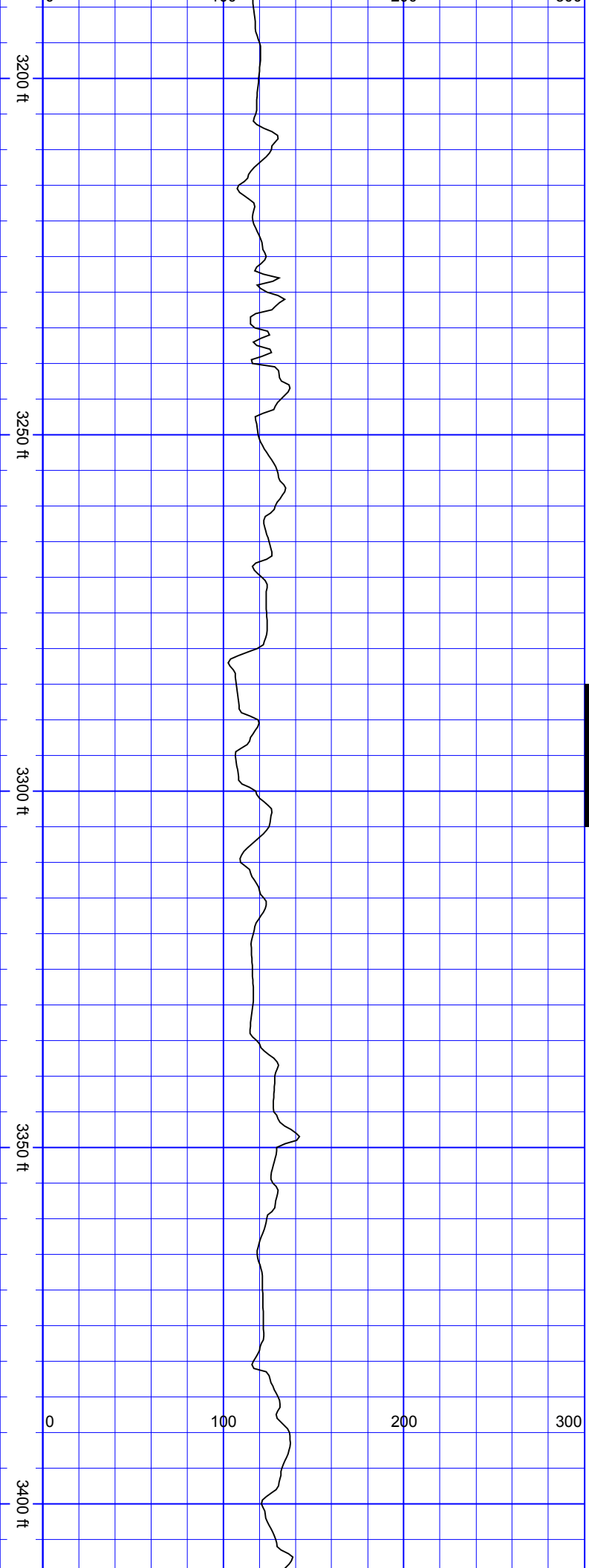


SurveyDepth:2749
TVD:2718.83 Inc:9.45
Azi:161.28 VertSec:-
365.7

SurveyDepth:2843
TVD:2811.22 Inc:11.73
Azi:165.41 VertSec:-
382.22

SurveyDepth:2938
TVD:2904.45 Inc:10.42
Azi:165.23 VertSec:-
399.83

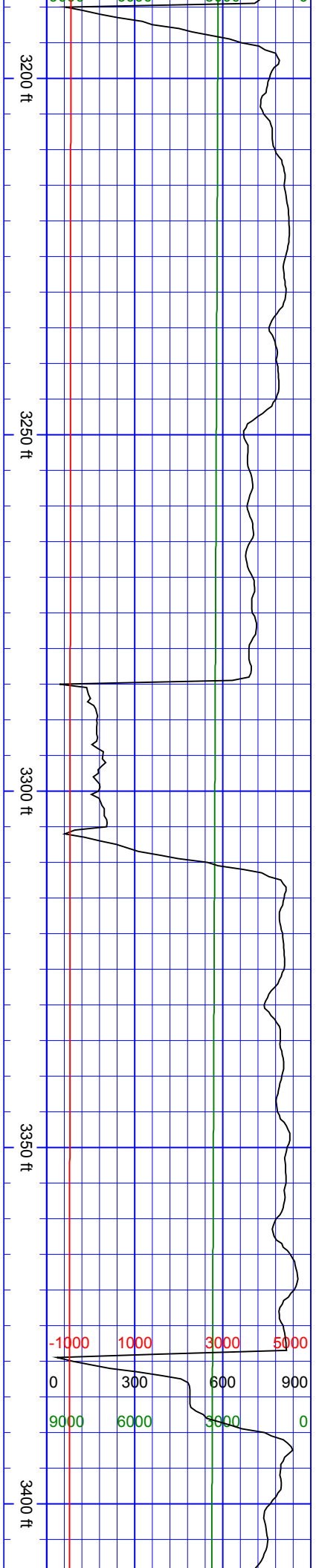


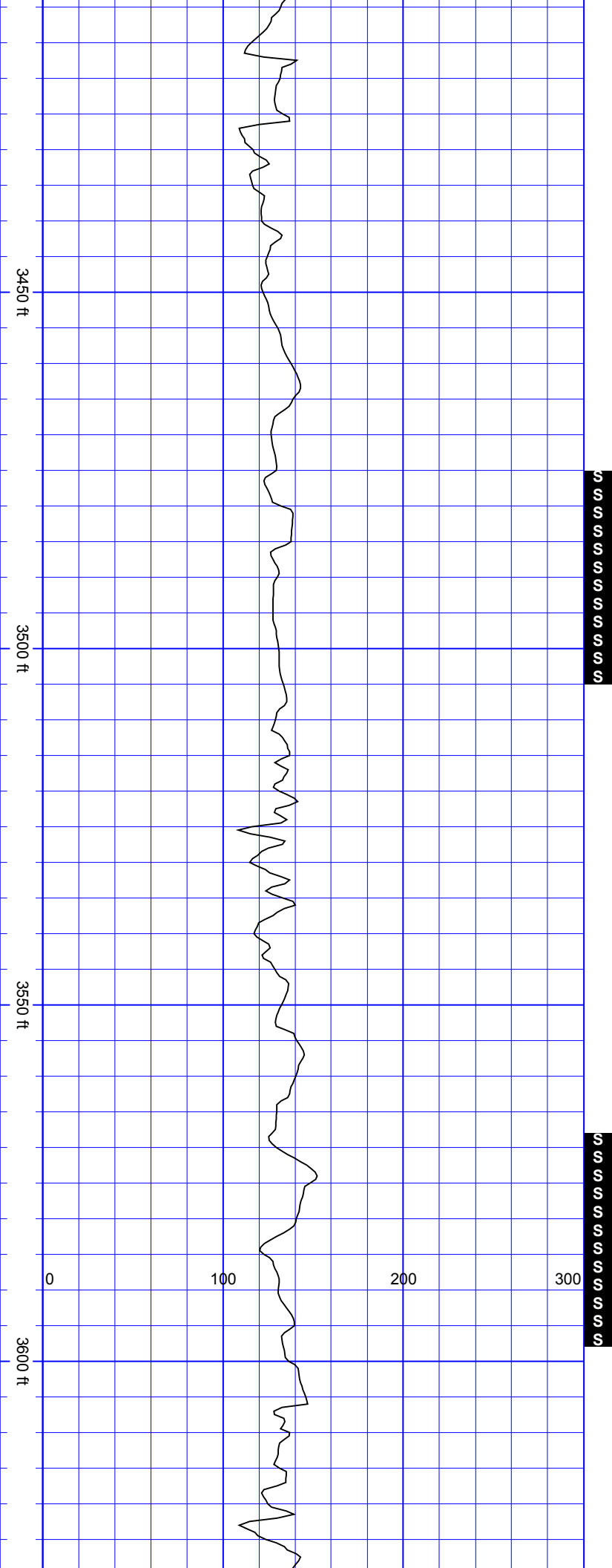


SurveyDepth:3222
TVD:3183.75 Inc:8.22
Azi:173.05 VertSec:-
450.62

SurveyDepth:3317
TVD:3277.59 Inc:9.67
Azi:170.07 VertSec:-
465.2

SSSSSSSS

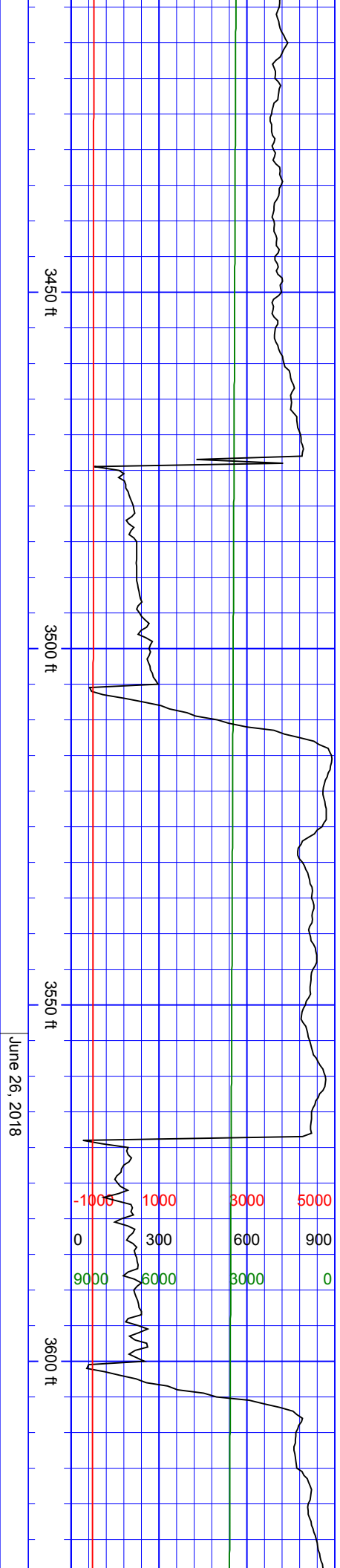
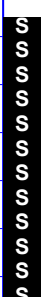
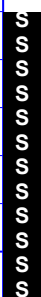




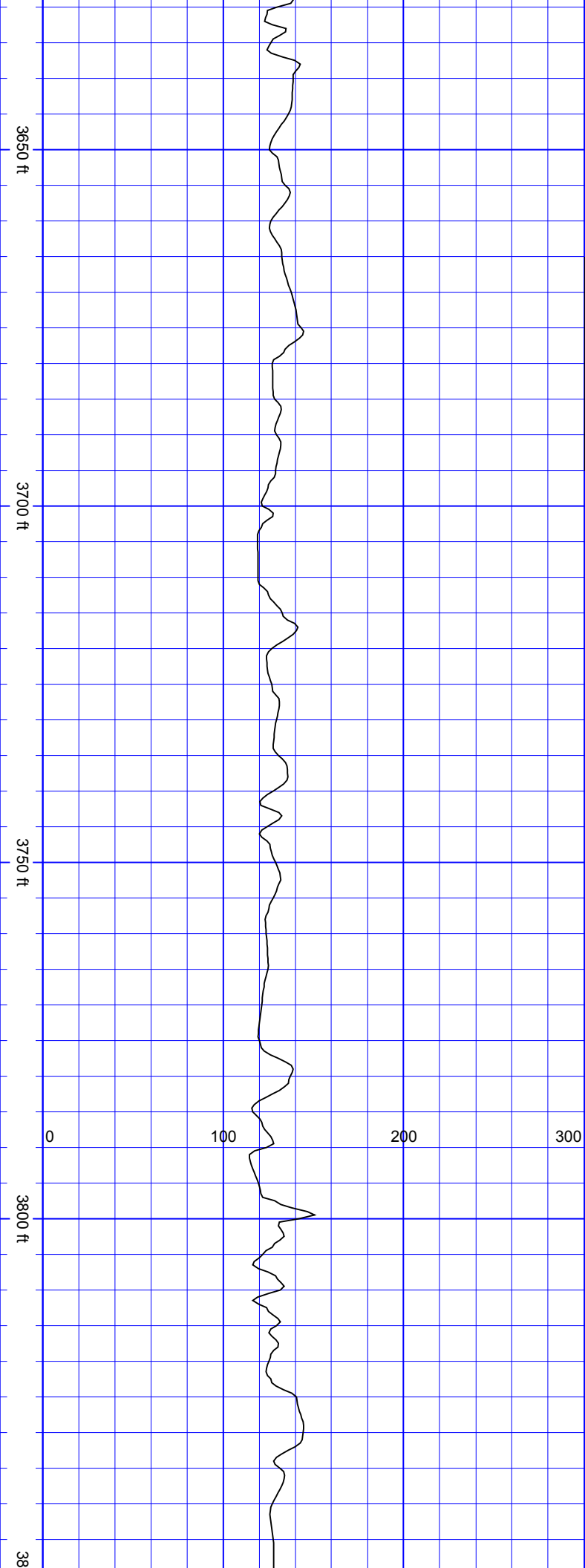
SurveyDepth:3411
TVD:3370.52 Inc:7.56
Azi:167.87 VertSec:-
479.01

SurveyDepth:3506
TVD:3464.55 Inc:8.92
Azi:183.86 VertSec:-
492.46

SurveyDepth:3601
TVD:3558.29 Inc:9.76
Azi:177.27 VertSec:-
507.85

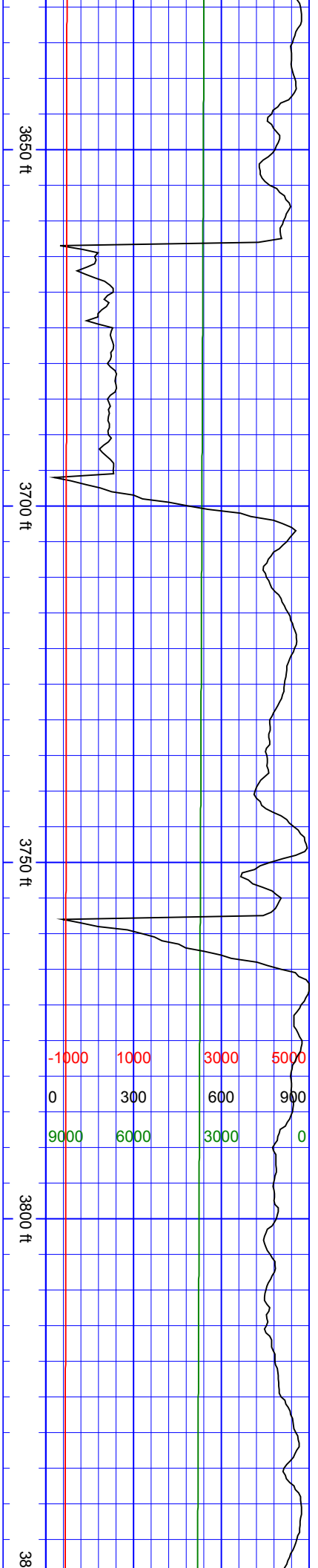


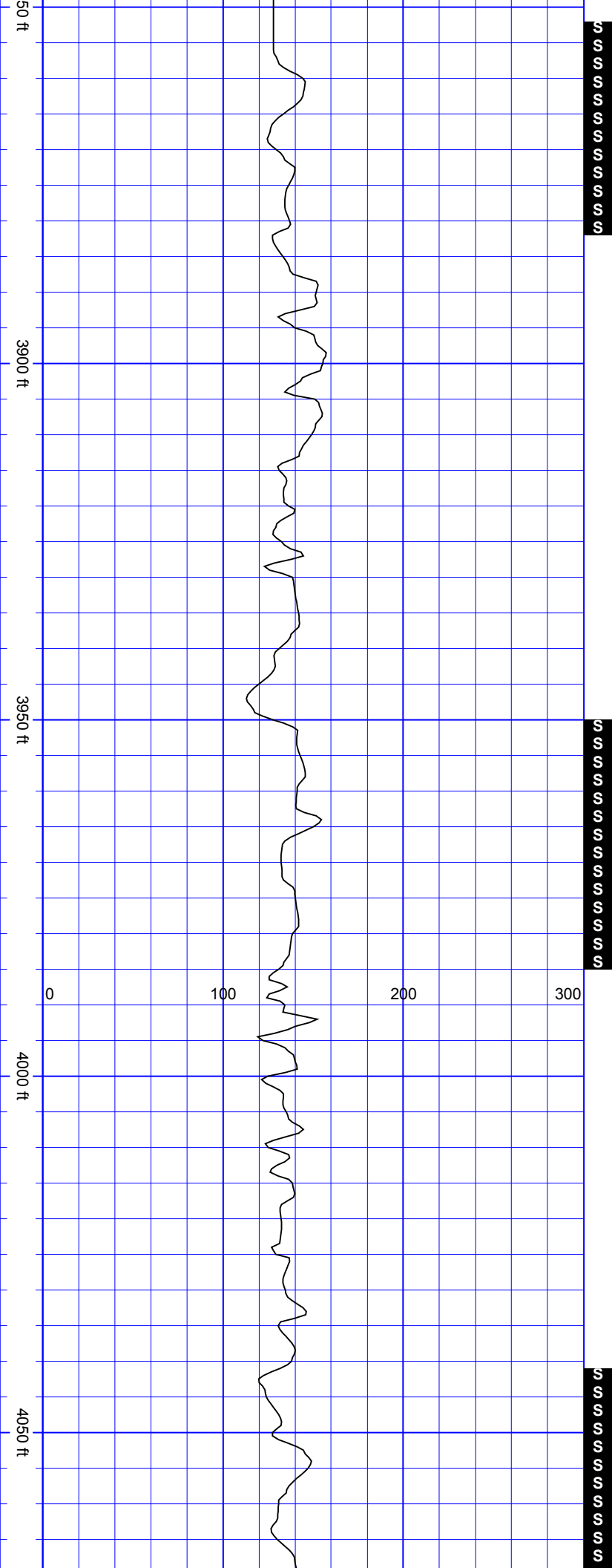
June 26, 2018



SurveyDepth:3695
TVD:3650.69 Inc:11.43
Azi:170.15 VertSec:-
524.97

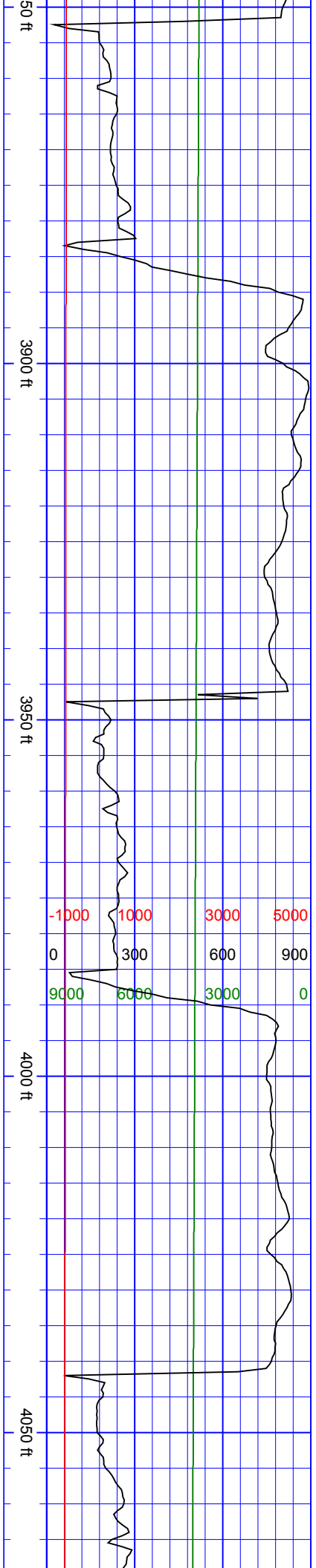
SurveyDepth:3790
TVD:3744.22 Inc:8.75
Azi:168.04 VertSec:-
541.29





SurveyDepth:3885
TVD:3838.1 Inc:8.88
Azi:178.59 VertSec:-
555.68

SurveyDepth:3979
TVD:3930.91 Inc:9.4
Azi:168.13 VertSec:-
570.43



SSS

SurveyDepth:4074
TVD:4024.42 Inc:10.9
Azi:172.53 VertSec:-
586.91

SurveyDepth:4168
TVD:4116.87 Inc:9.98
Azi:171.91 VertSec:-
603.76

SurveyDepth:4263
TVD:4210.5 Inc:9.49
Azi:171.38 VertSec:-
619.64

4100 ft

4150 ft

4200 ft

4250 ft

0 100 200 300

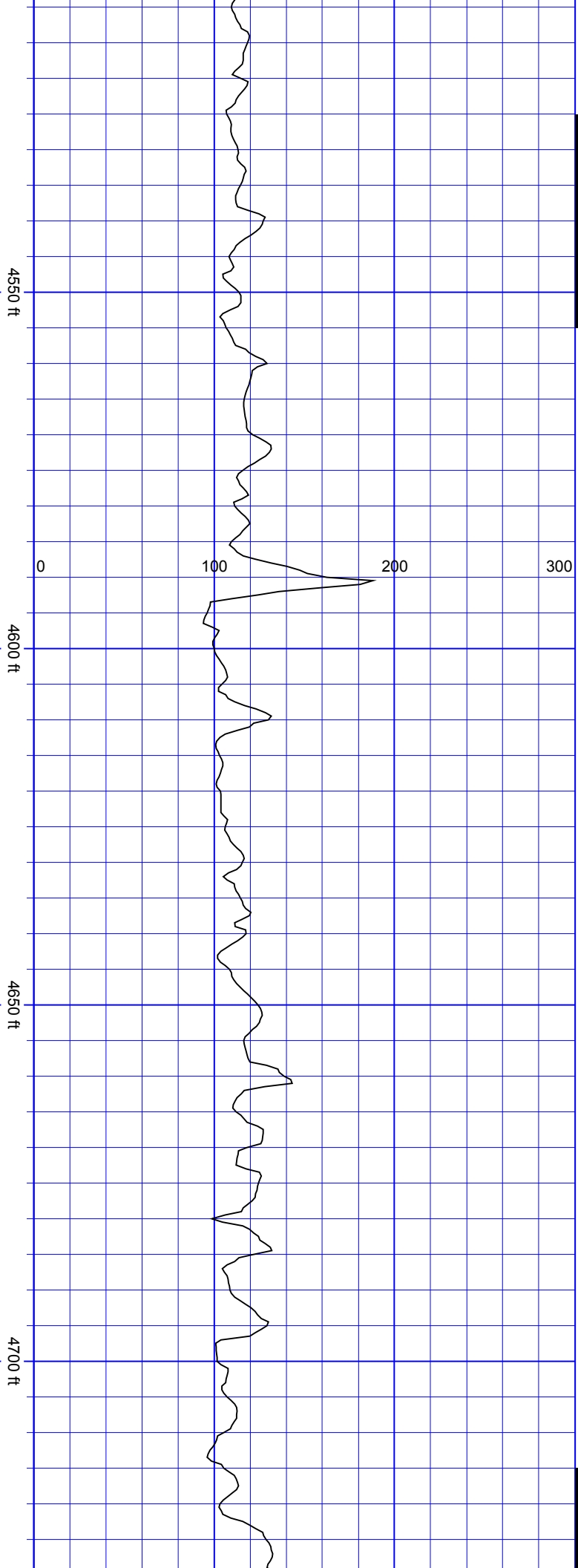
4100 ft

4150 ft

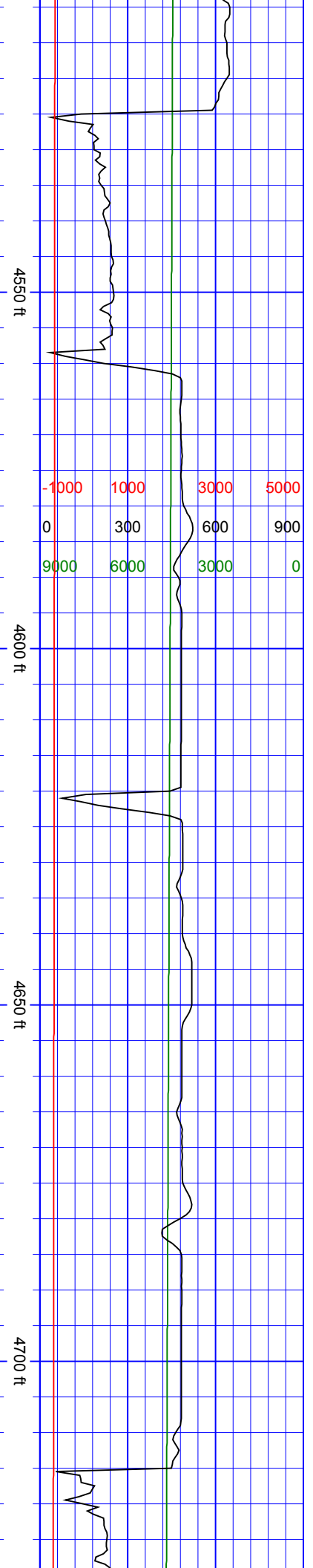
4200 ft

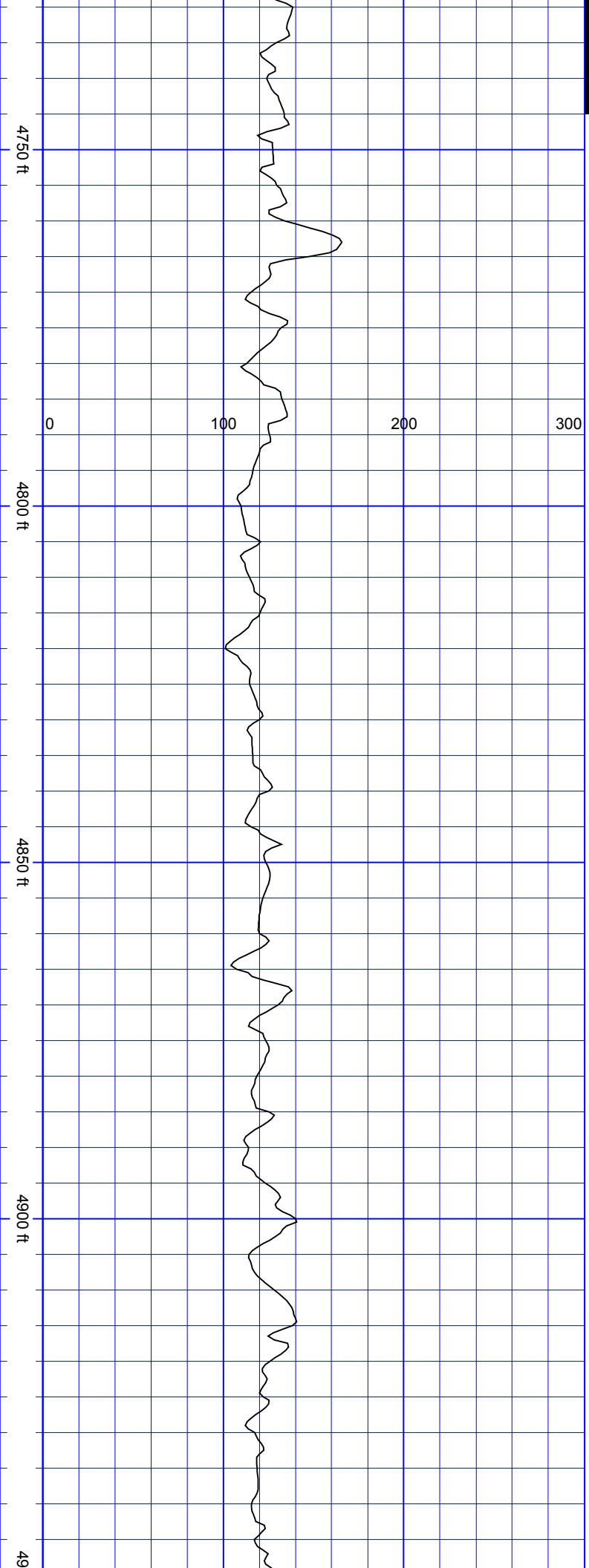
4250 ft

-1000	1000	3000	5000
0	300	600	900
9000	6000	3000	0



SurveyDepth:4558
TVD:4502.56 Inc:10.5
Azi:165.76 VertSec:-
659.57

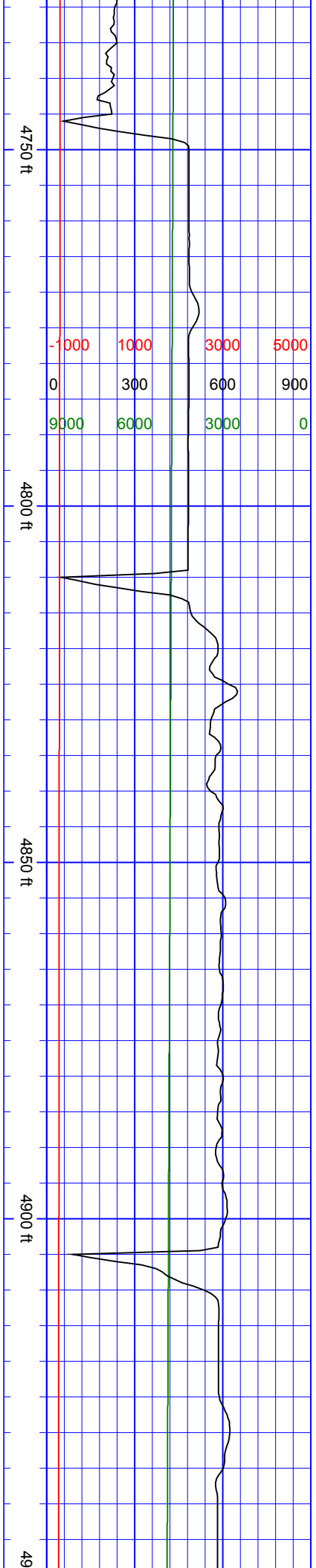


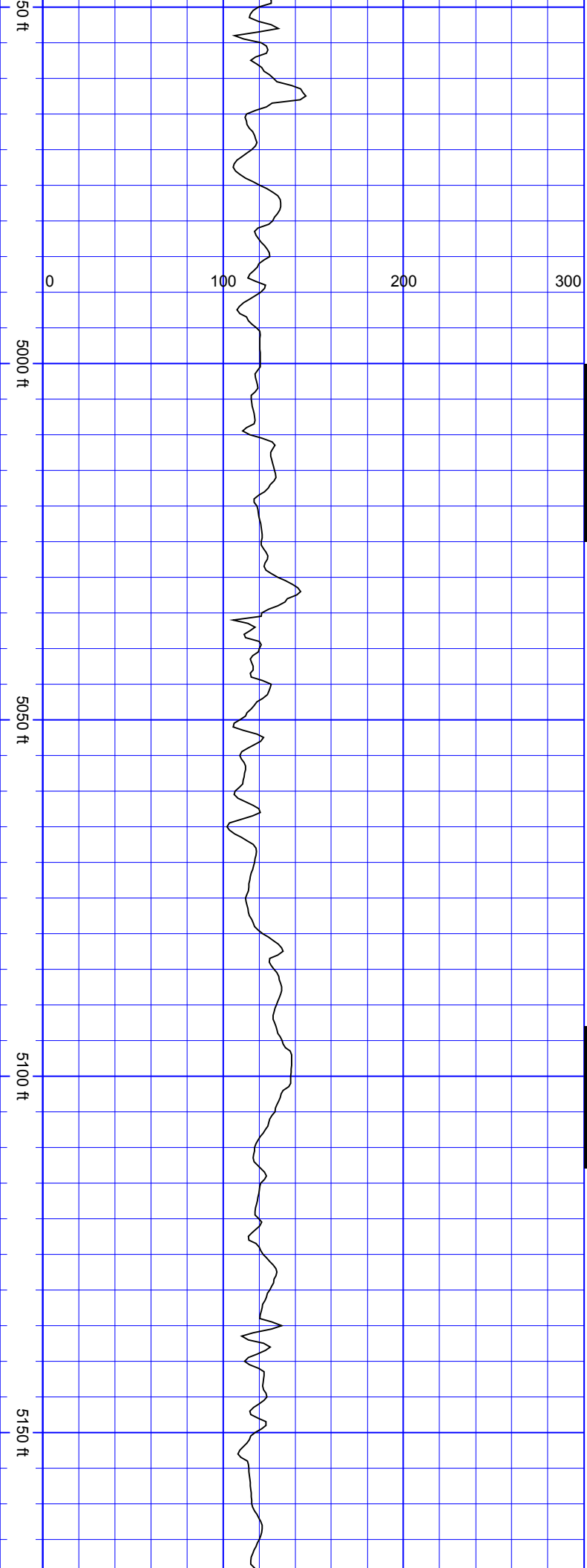


SurveyDepth:4747
TVD:4688.61 Inc:11.16
Azi:170.5 VertSec:-
691.86

SurveyDepth:4842
TVD:4781.88 Inc:10.72
Azi:168.83 VertSec:-
709.57

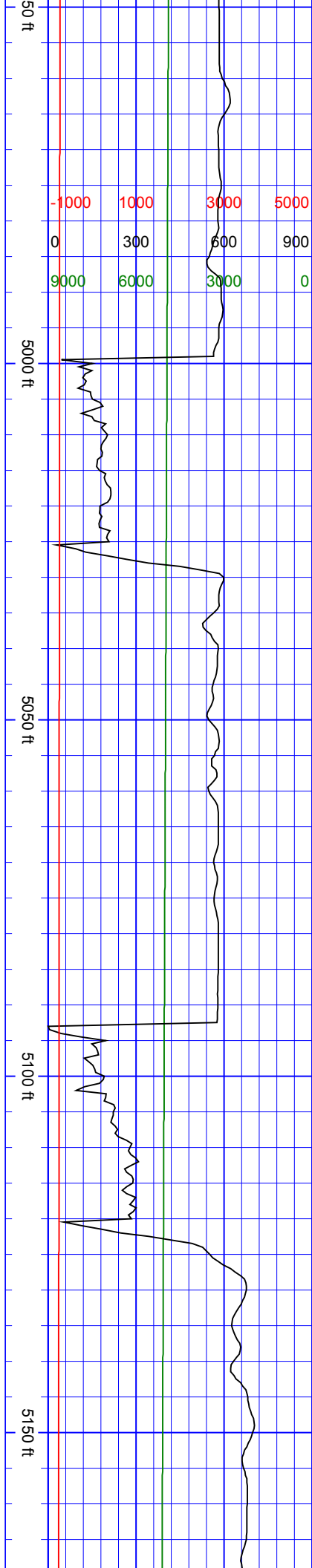
SurveyDepth:4937
TVD:4875.56 Inc:8.35
Azi:166.99 VertSec:-
724.93

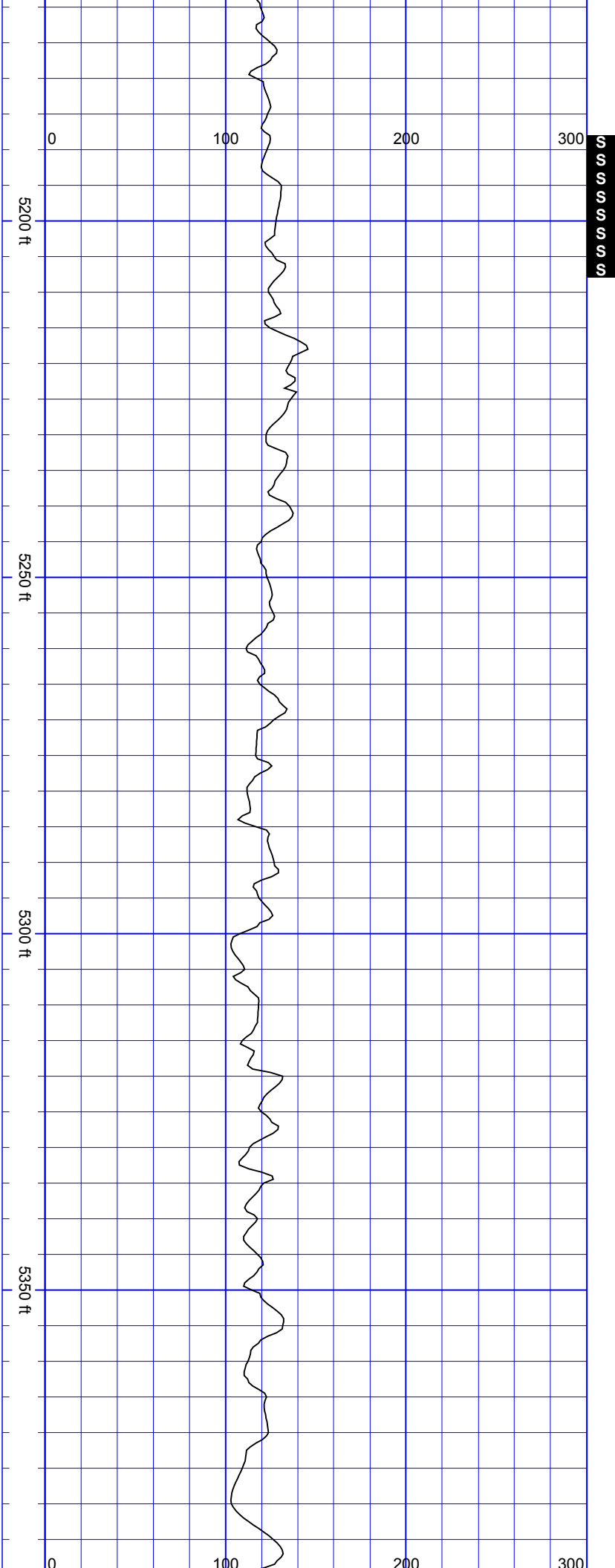




SurveyDepth:5031
TVD:4968.58 Inc:8.26
Azi:171.12 VertSec:-
738.23

SurveyDepth:5126
TVD:5062.61 Inc:8.13
Azi:168.22 VertSec:-
751.53

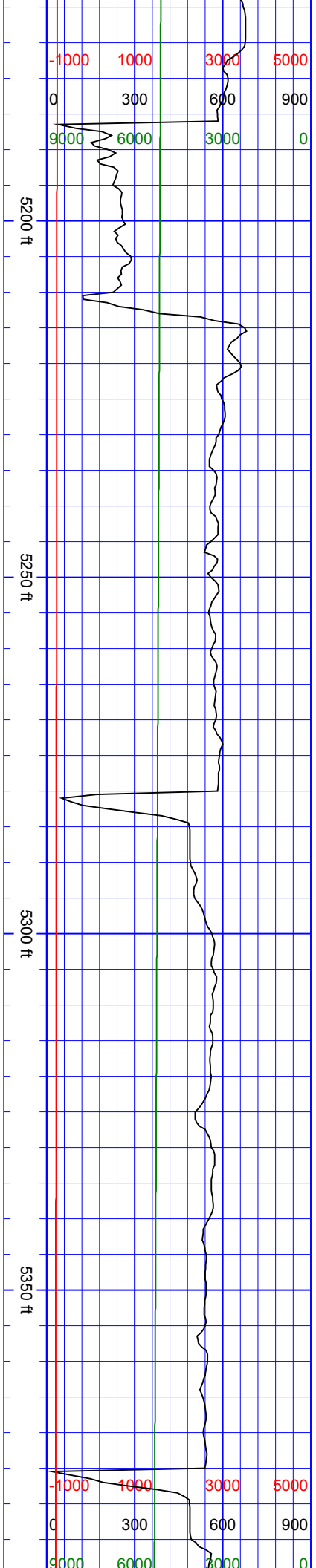


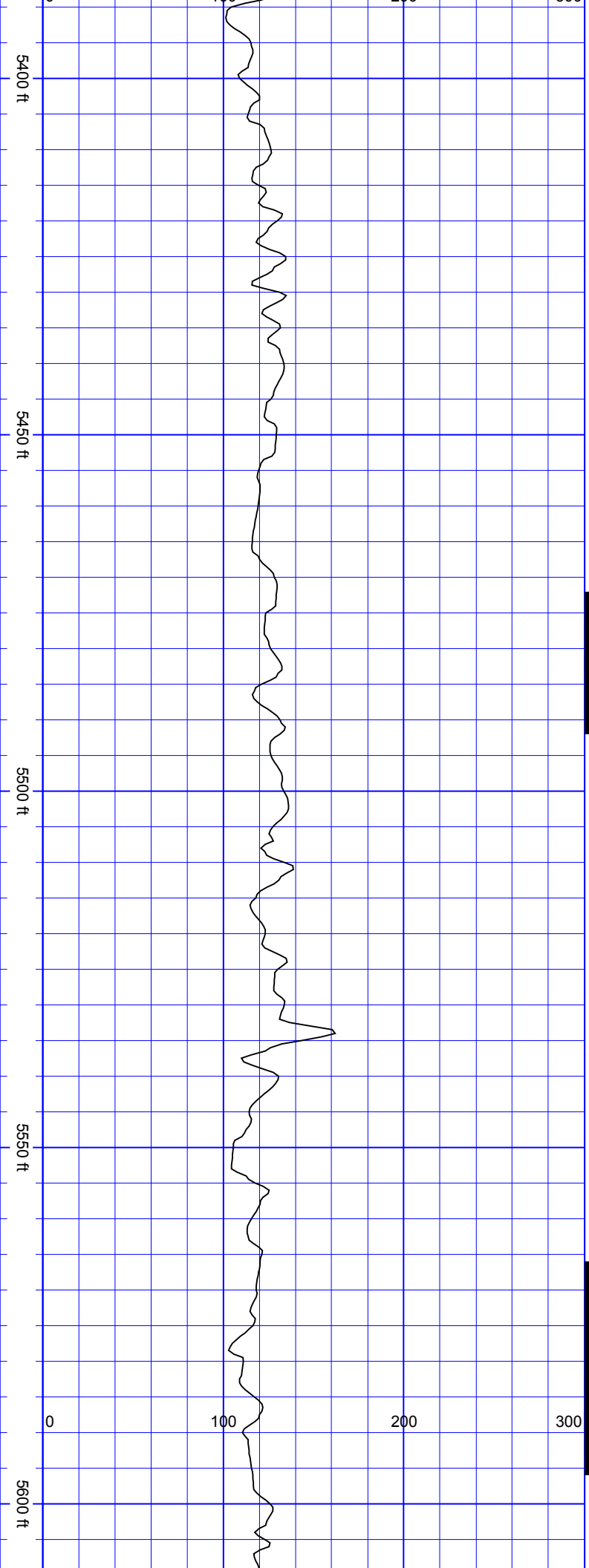


S
S
S
S
S
S
S
S
S
S

SurveyDepth:5221
TVD:5156.47 Inc:9.62
Azi:173.23 VertSec:-
765.97

SurveyDepth:5315
TVD:5249.27 Inc:8.7
Azi:170.77 VertSec:-
780.77

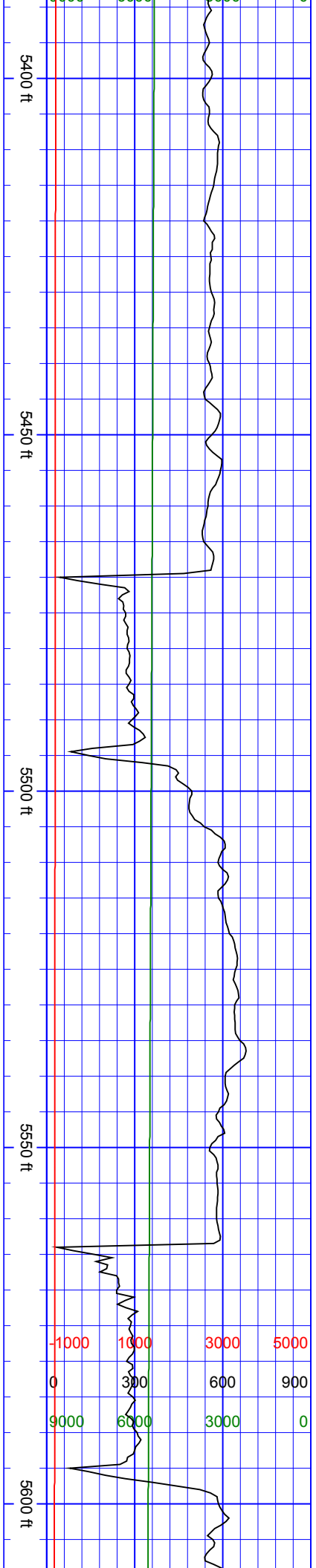


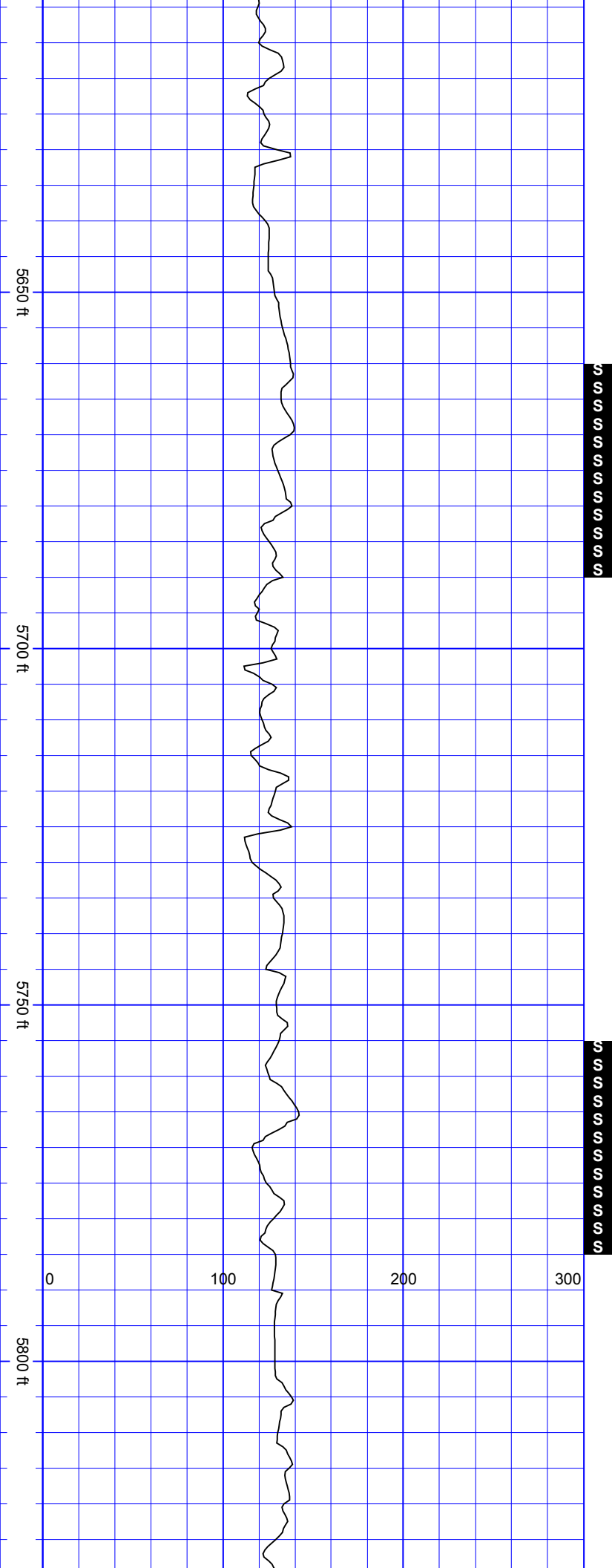


SurveyDepth:5410
TVD:5343.36 Inc:7.21
Azi:163.91 VertSec:-
793.57

SurveyDepth:5504
TVD:5436.67 Inc:6.68
Azi:168.83 VertSec:-
804.58

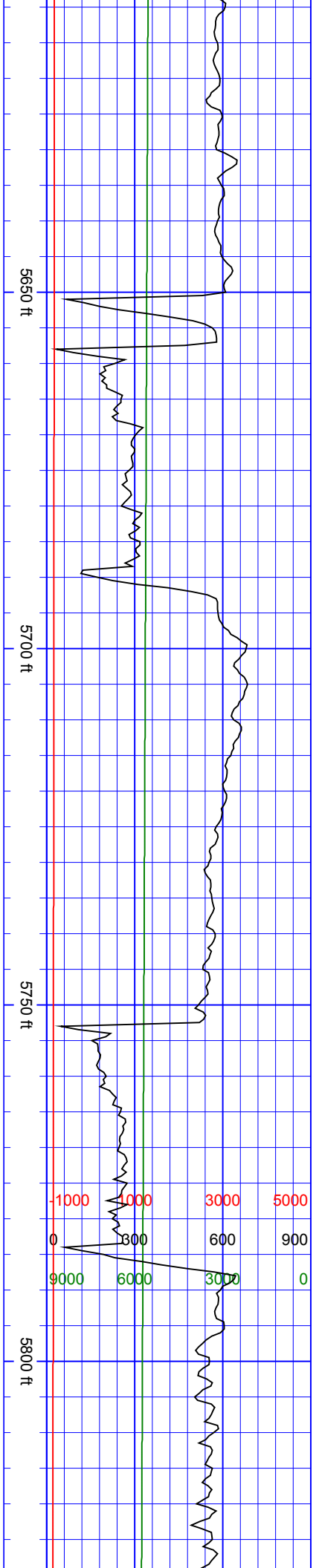
SurveyDepth:5598
TVD:5529.89 Inc:8.04
Azi:166.2 VertSec:-816.3

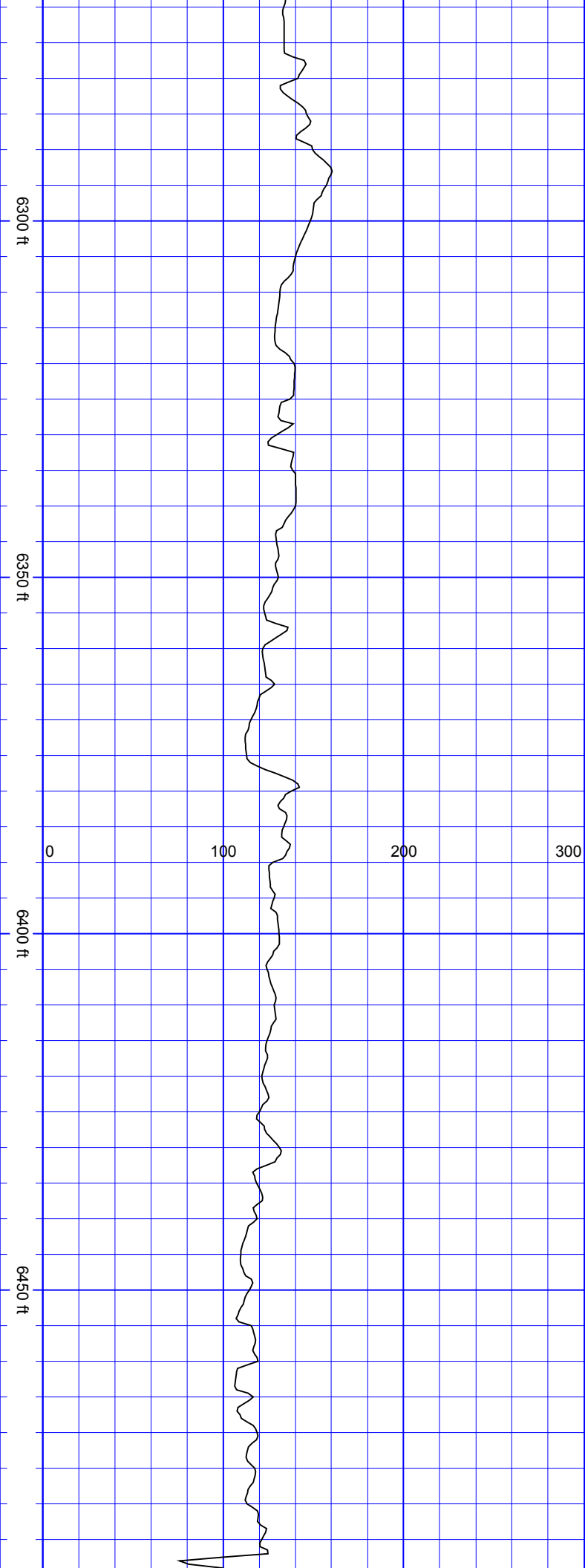




SurveyDepth:5693
TVD:5623.78 Inc:9.49
Azi:170.07 VertSec:-
830.44

SurveyDepth:5787
TVD:5716.37 Inc:10.42
Azi:175.78 VertSec:-
846.54

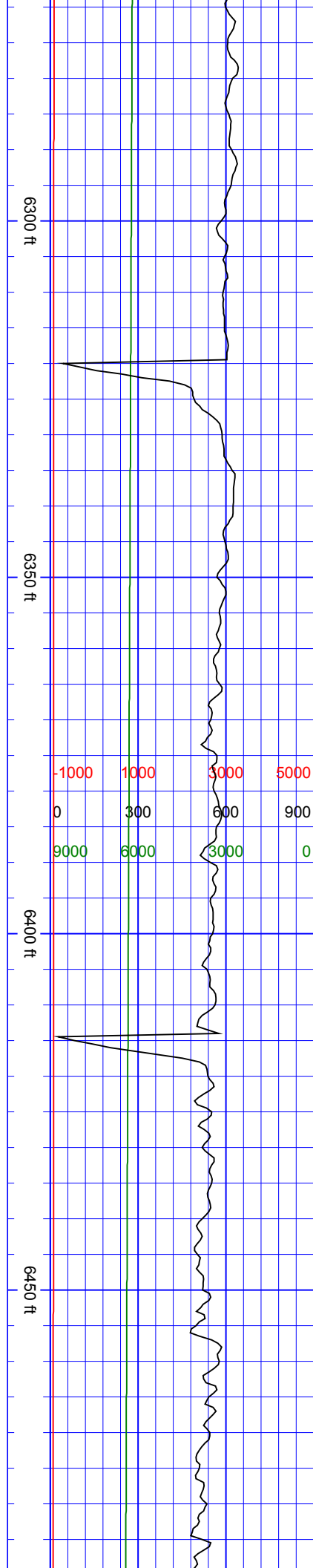


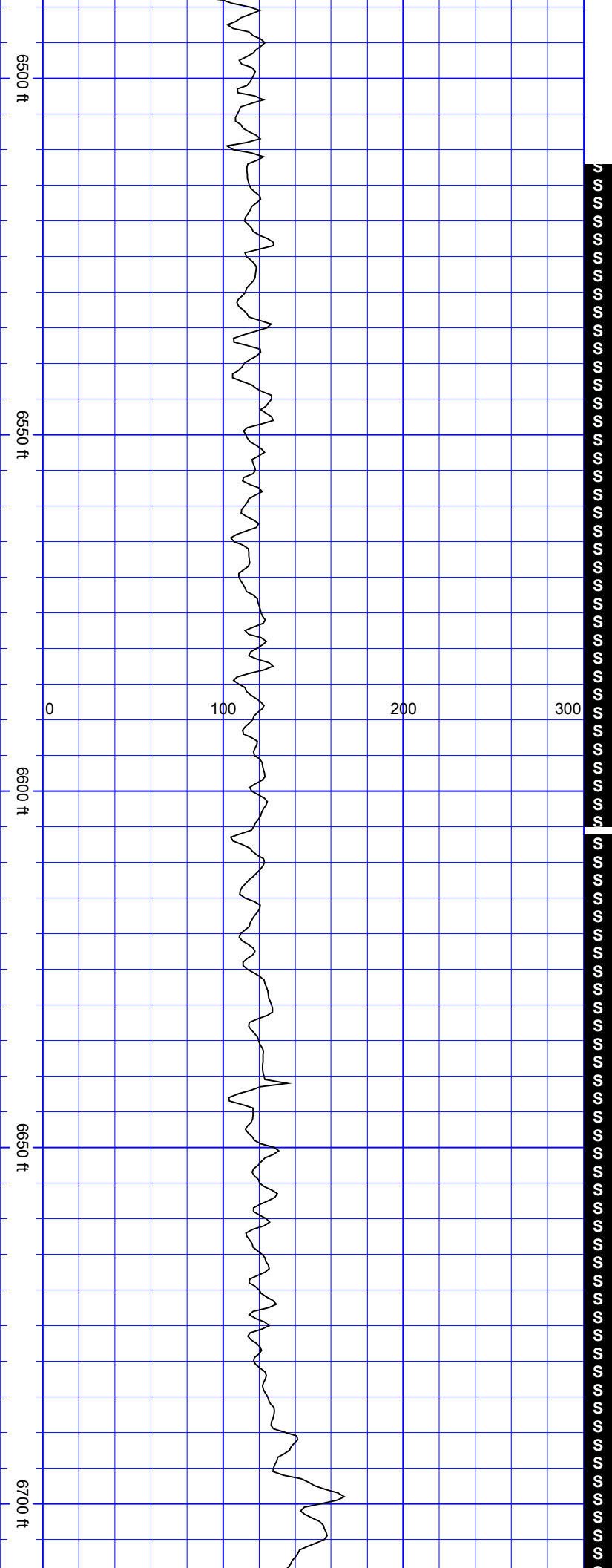


911.52

SurveyDepth:6355
TVD:6279.48 Inc:3.82
Azi:173.14 VertSec:-
918.53

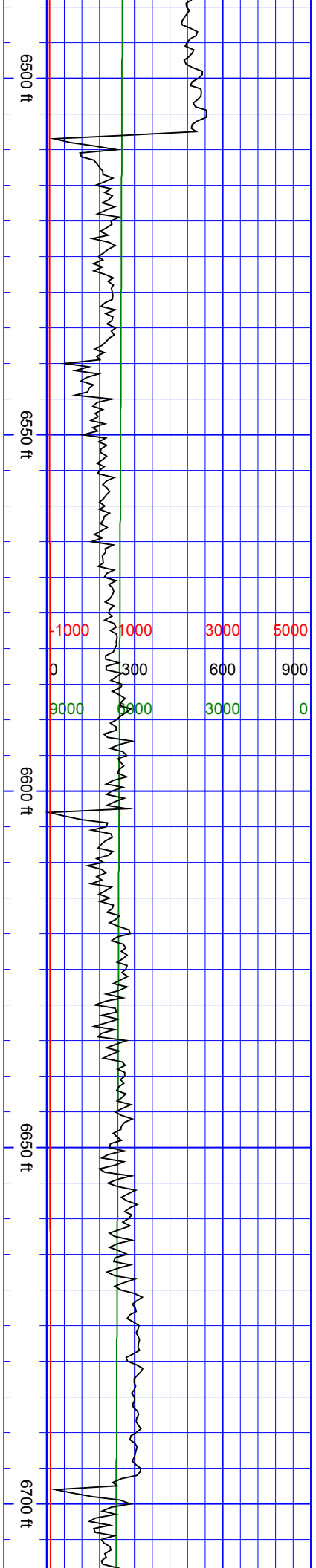
SurveyDepth:6450
TVD:6374.31 Inc:3.12
Azi:180.44 VertSec:-
924.26





SurveyDepth:6544
TVD:6468.27 Inc:0.92
Azi:24.34 VertSec:-
926.13

SurveyDepth:6639
TVD:6562.86 Inc:8.83
Azi:357.1 VertSec:-
918.14



6750 ft

6800 ft

6850 ft

6900 ft

0 100 200 300

SurveyDepth:6734
TVD:6655.8 Inc:14.81
Azi:358.15 VertSec:-
898.71

SurveyDepth:6829
TVD:6746.39 Inc:20.13
Azi:2.02 VertSec:-870.21

SurveyDepth:6923
TVD:6832.89 Inc:25.84
Azi:8.87 VertSec:-833.54

6750 ft

6800 ft

6850 ft

6900 ft

-1000	1000	3000	5000
0	300	600	900
9000	6000	3000	0

Azi:2.37 VertSec:-833.54

SurveyDepth:7018
TVD:6916.17 Inc:31.6
Azi:360 VertSec:-787.92

SurveyDepth:7112
TVD:6995.21 Inc:33.93
Azi:0.44 VertSec:-737.05

6950 ft

0 100 200 300

7000 ft

7050 ft

7100 ft

71

6950 ft

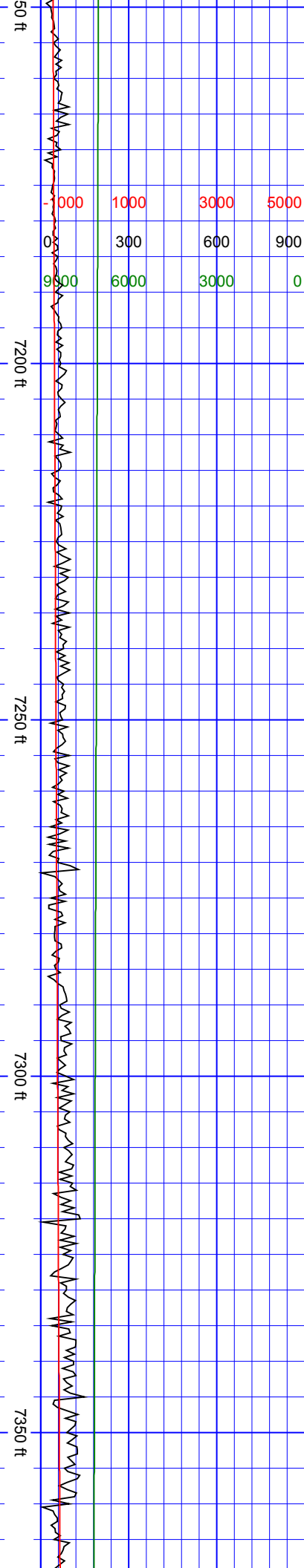
-1000	1000	3000	5000
0	300	600	900
9000	6000	3000	0

7000 ft

7050 ft

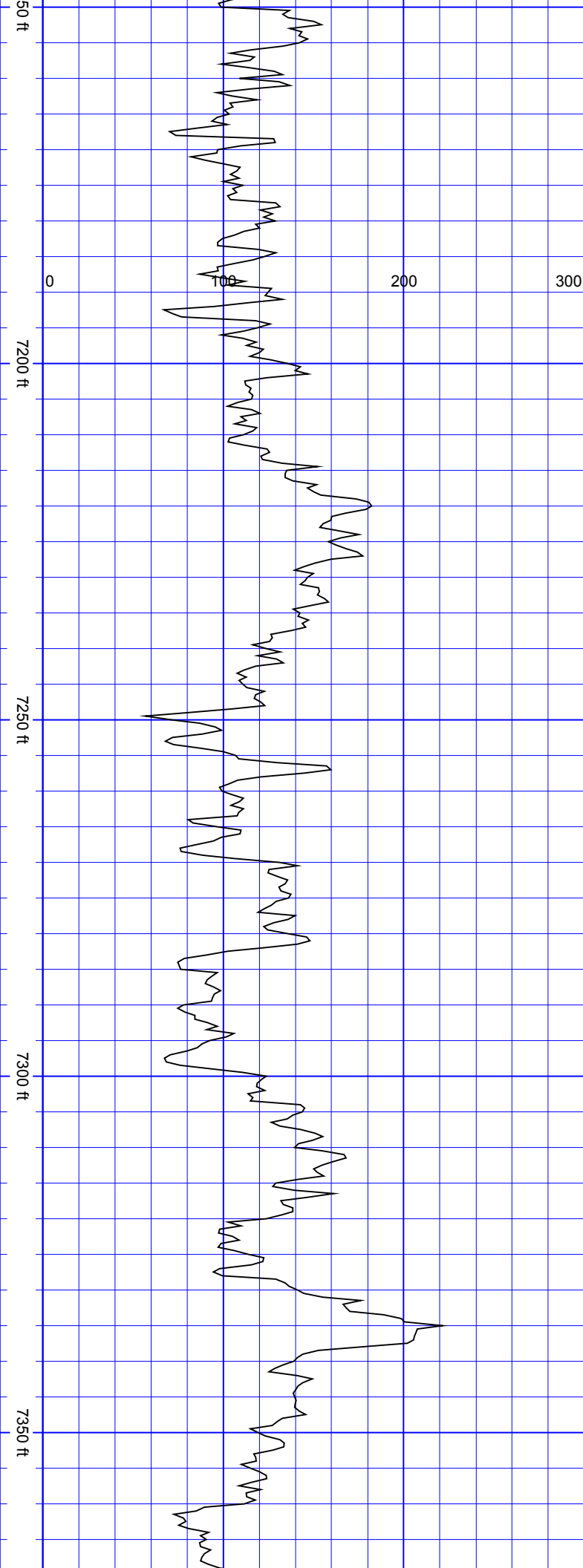
7100 ft

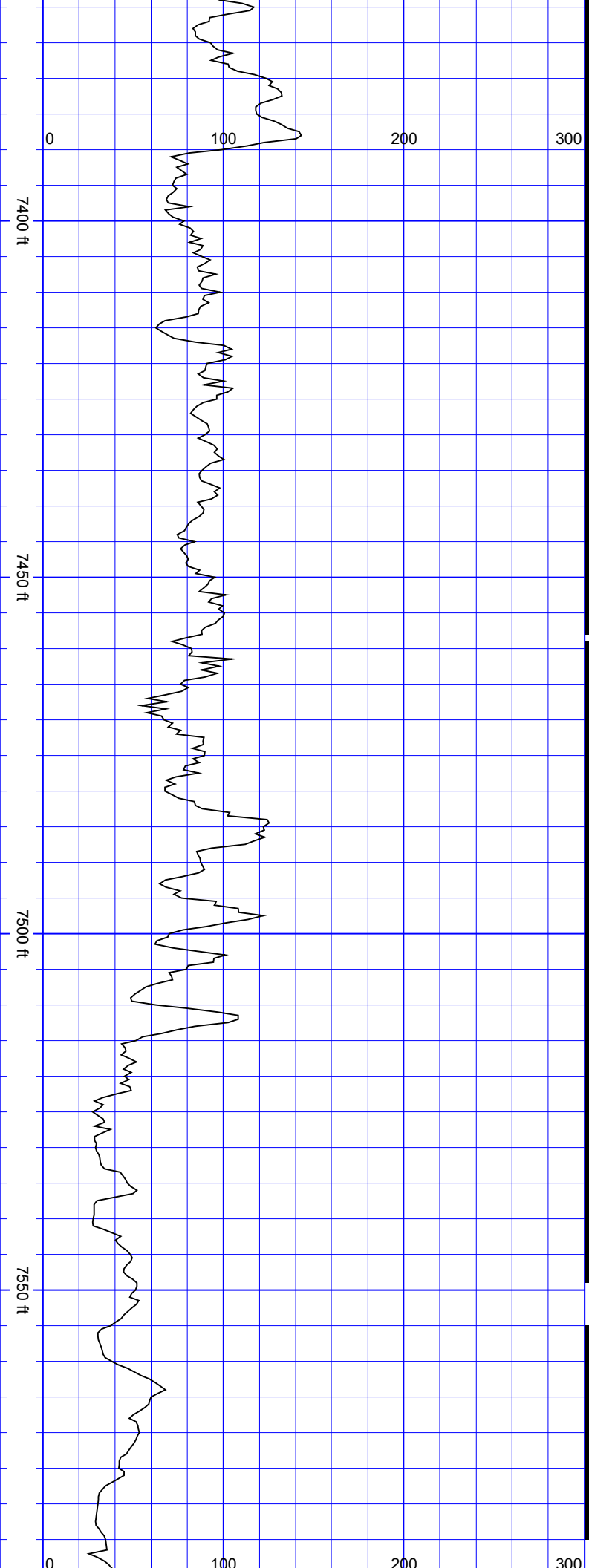
71



SurveyDepth:7207
TVD:7070.11 Inc:41.88
Azi:1.67 VertSec:-678.74

SurveyDepth:7302
TVD:7136.38 Inc:49.57
Azi:1.05 VertSec:-610.78

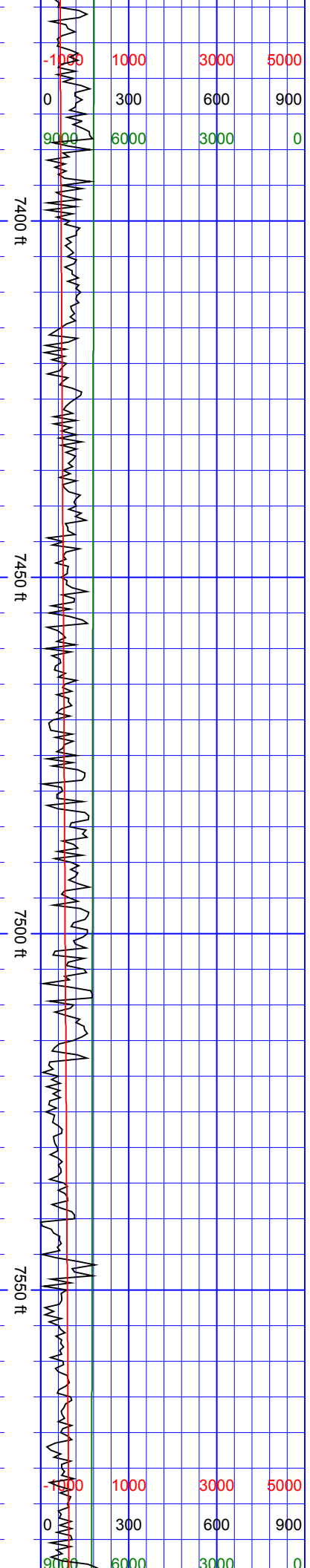




SurveyDepth:7397
TVD:7191.3 Inc:59.68
Azi:0.88 VertSec:-533.42

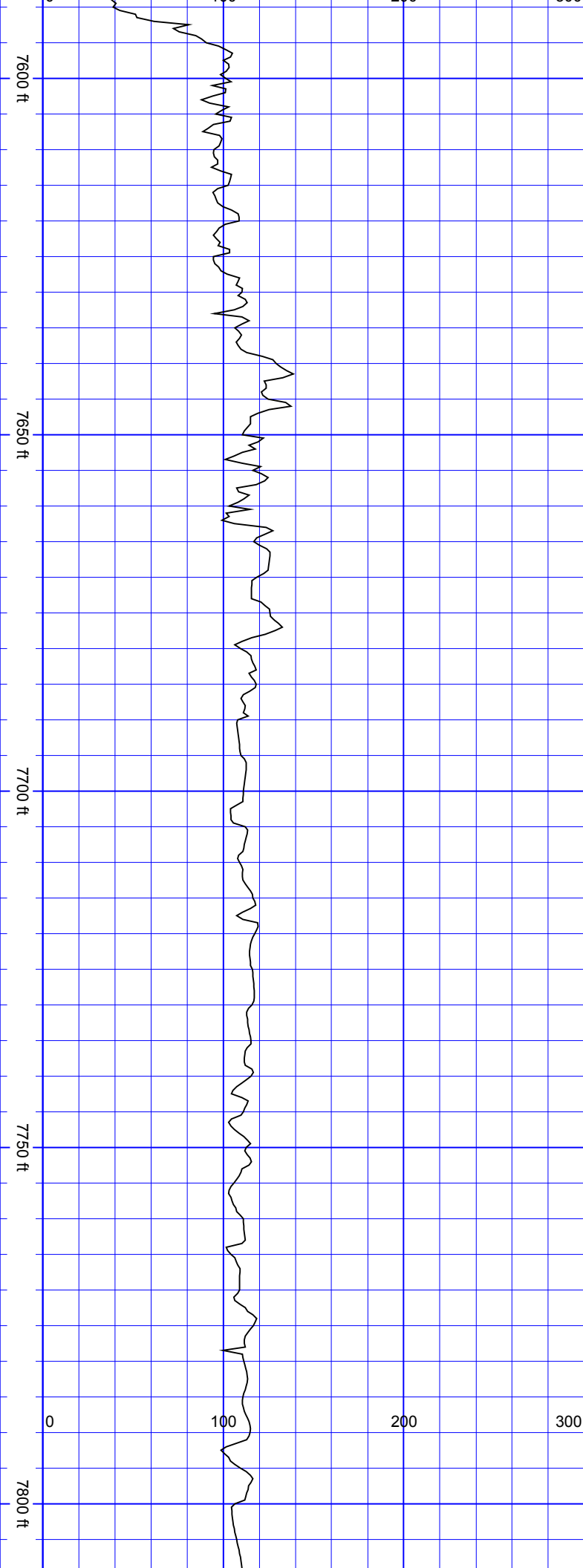
SurveyDepth:7491
TVD:7230.22 Inc:71.32
Azi:359.65 VertSec:-448.04

SurveyDepth:7586



0	1000	3000	5000
0	300	600	900
9000	6000	3000	0

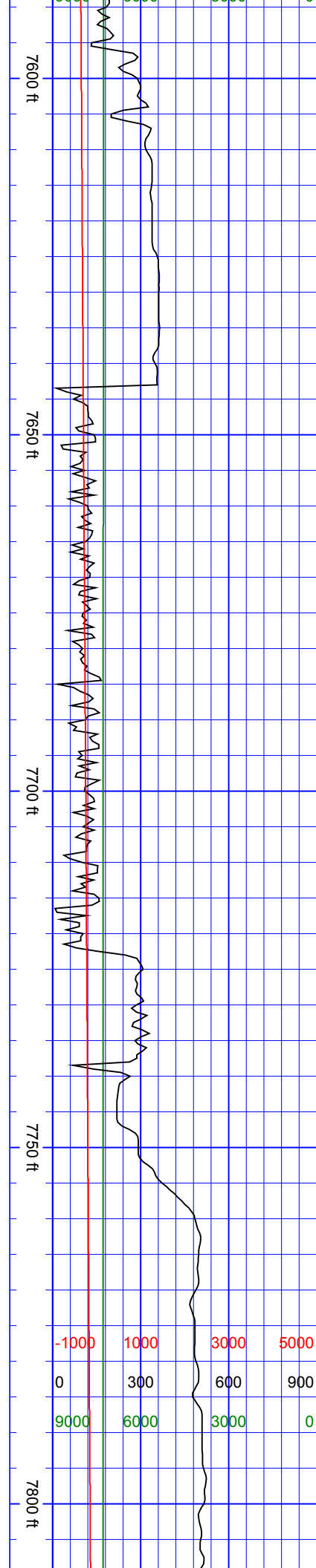
0	1000	3000	5000
0	300	600	900
9000	6000	3000	0



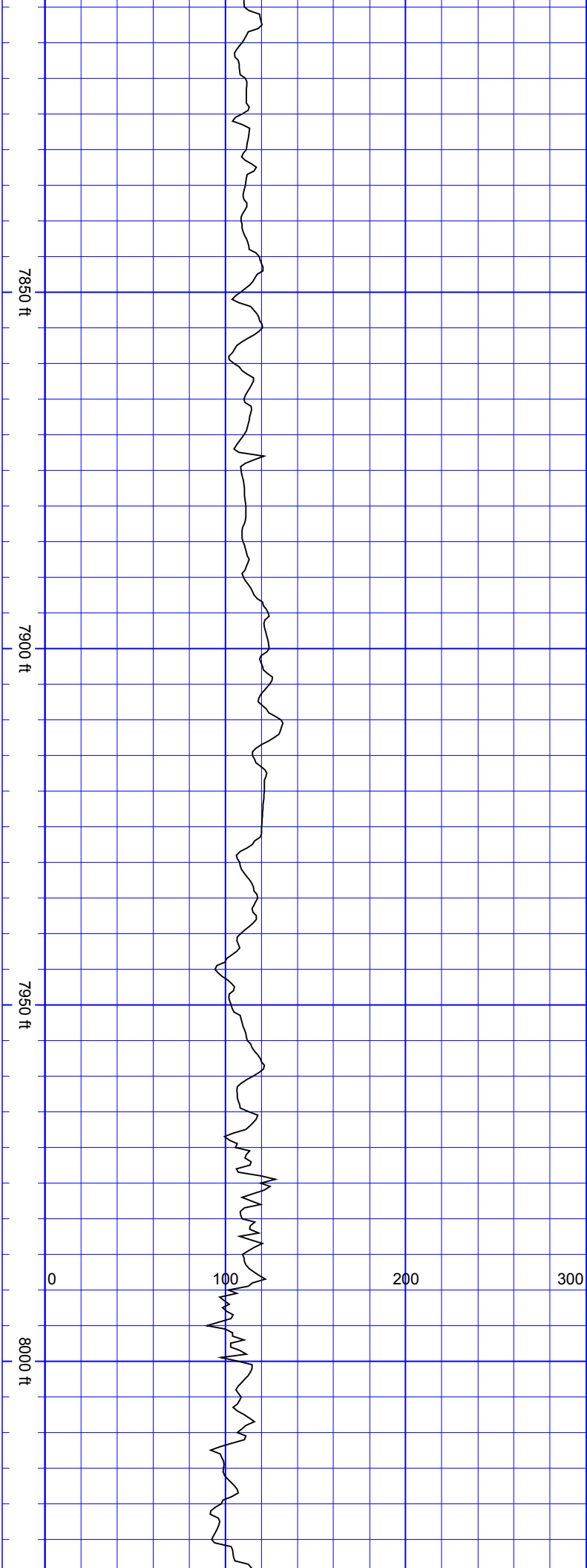
TVD:7254.17 Inc:79.45
Azi:1.05 VertSec:-356.19

SurveyDepth:7681
TVD:7267.39 Inc:84.55
Azi:1.05 VertSec:-262.15

SurveyDepth:7775
TVD:7272.22 Inc:89.56
Azi:0.7 VertSec:-168.31



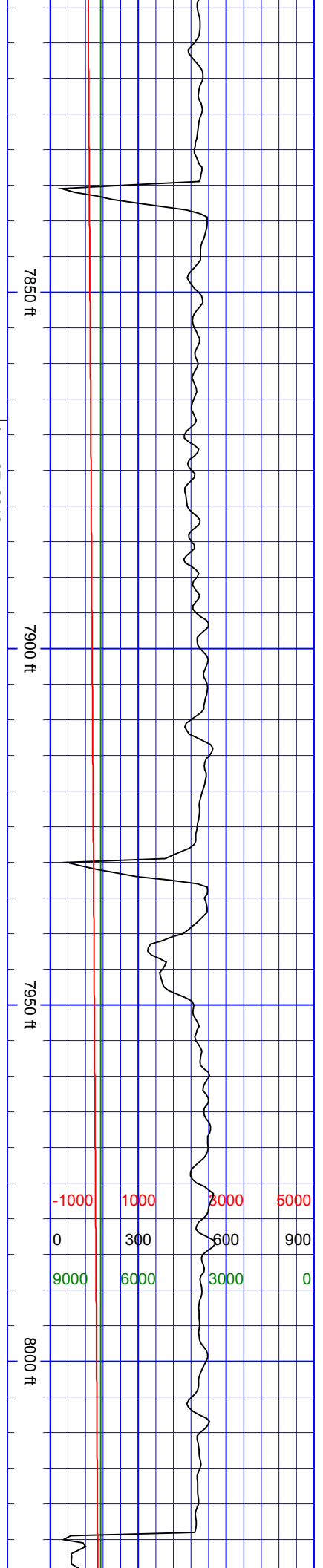
-1000	1000	3000	5000
0	300	600	900
9000	6000	3000	0

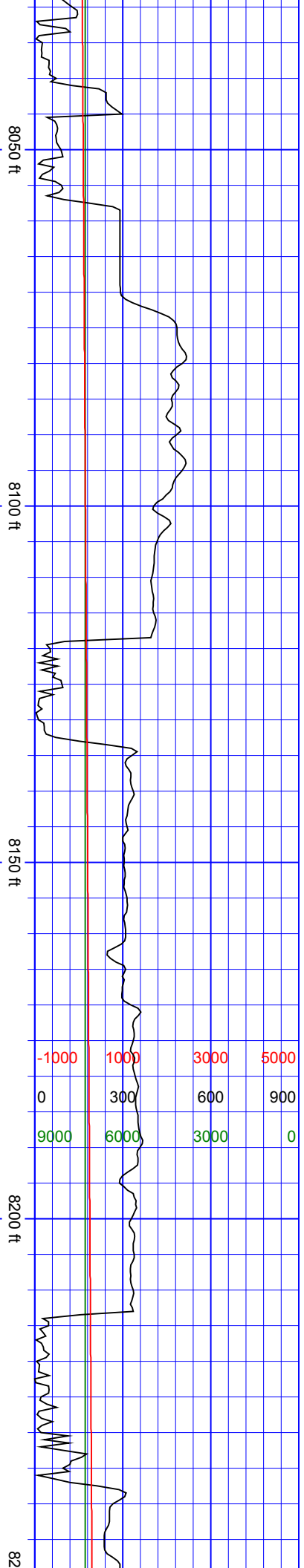


SurveyDepth:7870
TVD:7272.69 Inc:89.87
Azi:0.08 VertSec:-73.31

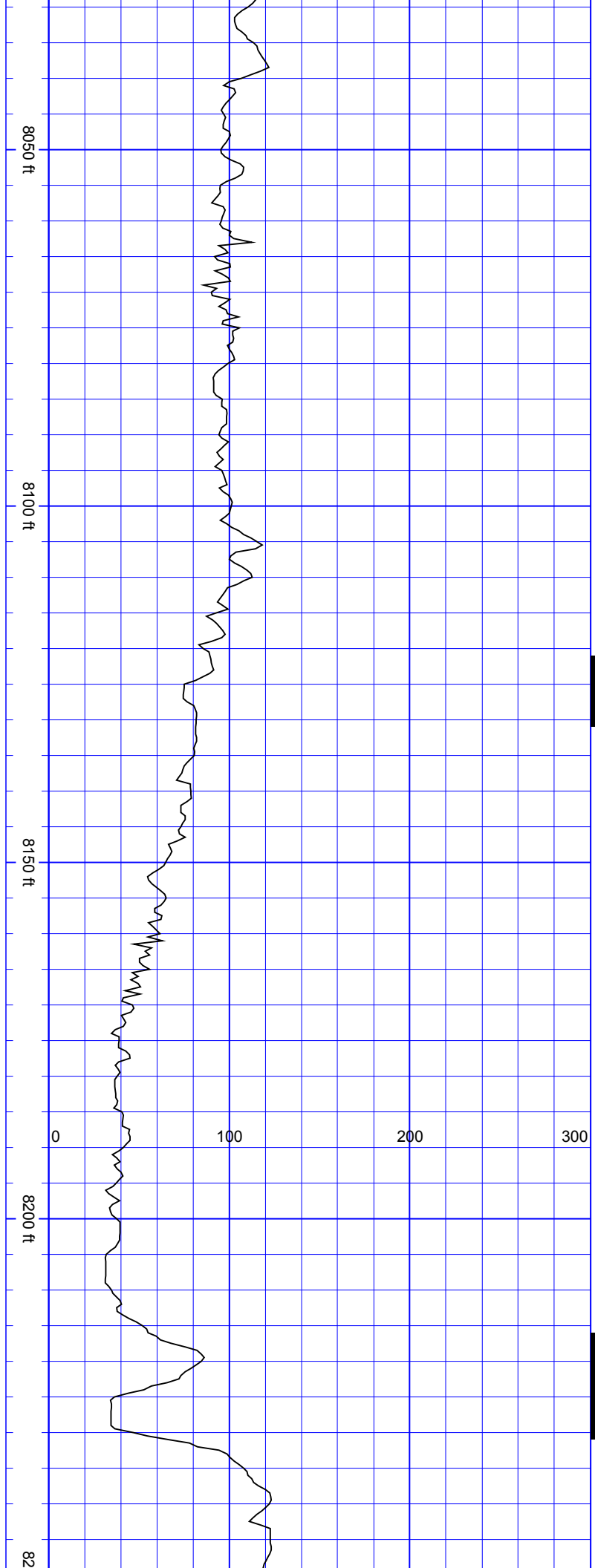
June 27, 2018

SurveyDepth:7964
TVD:7272.51 Inc:90.35
Azi:359.91
VertSec:20.69





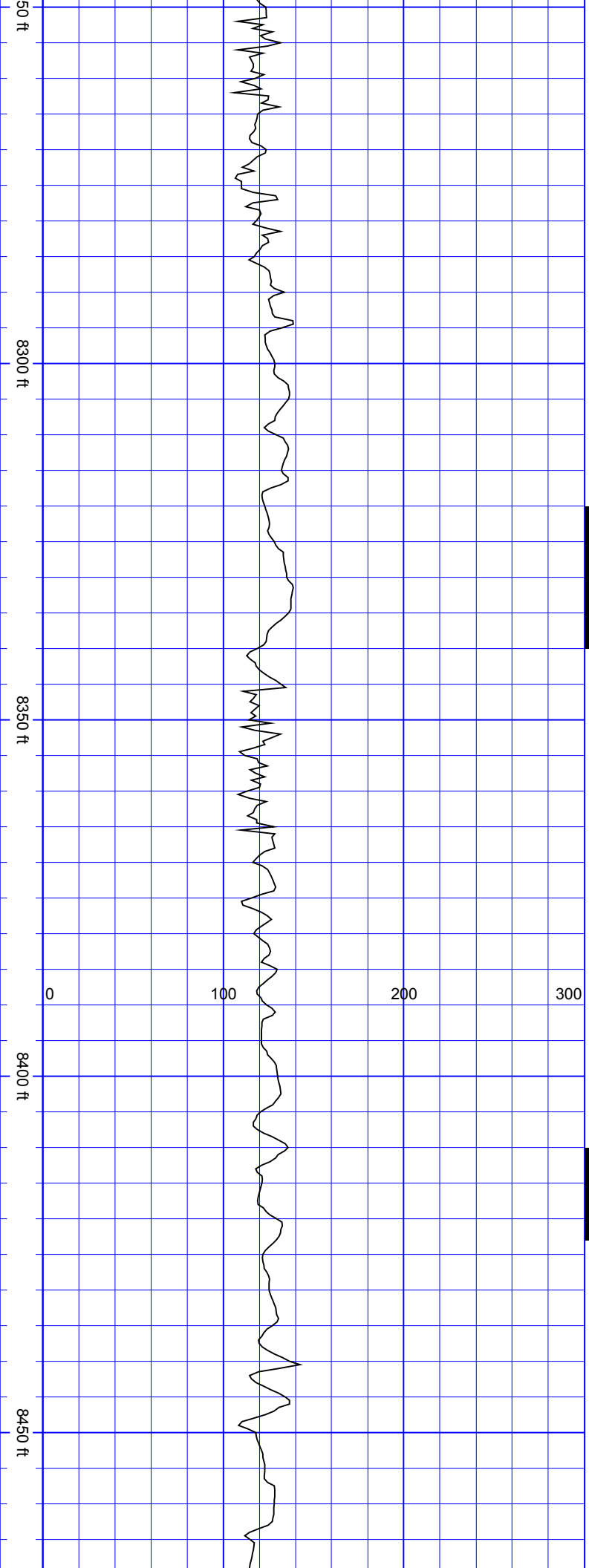
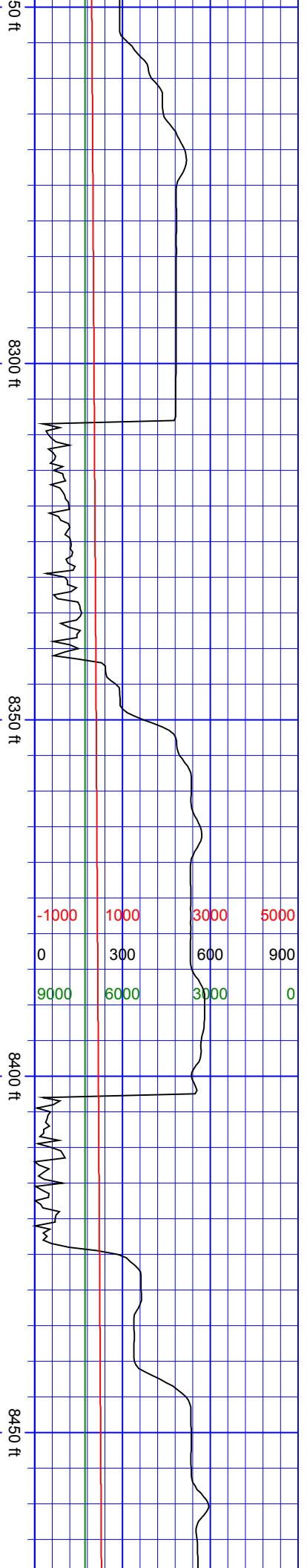
SurveyDepth:8154
TVD:7275.21 Inc:88.02
Azi:359.12
VertSec:210.63

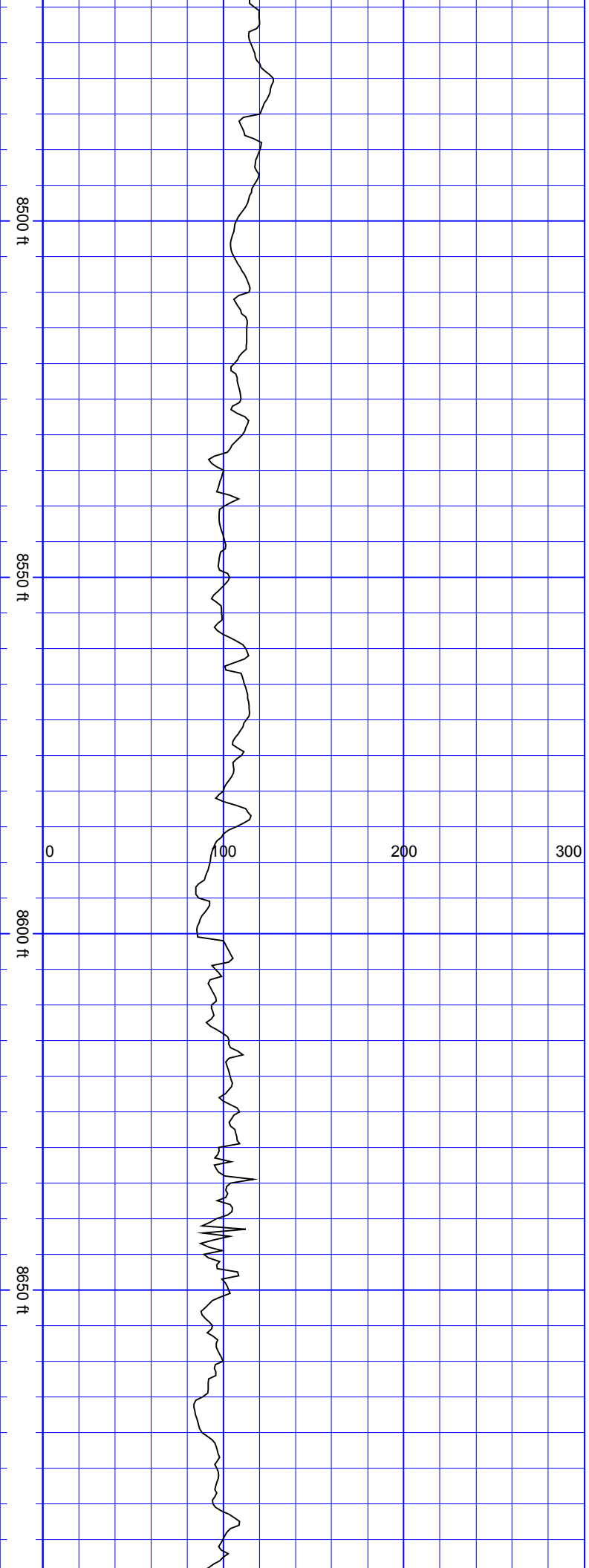


SurveyDepth:8248
TVD:7278.28 Inc:88.24
Azi:358.15
VertSec:304.53

SurveyDepth:8343
TVD:7279.52 Inc:90.26
Azi:0.96 VertSec:399.49

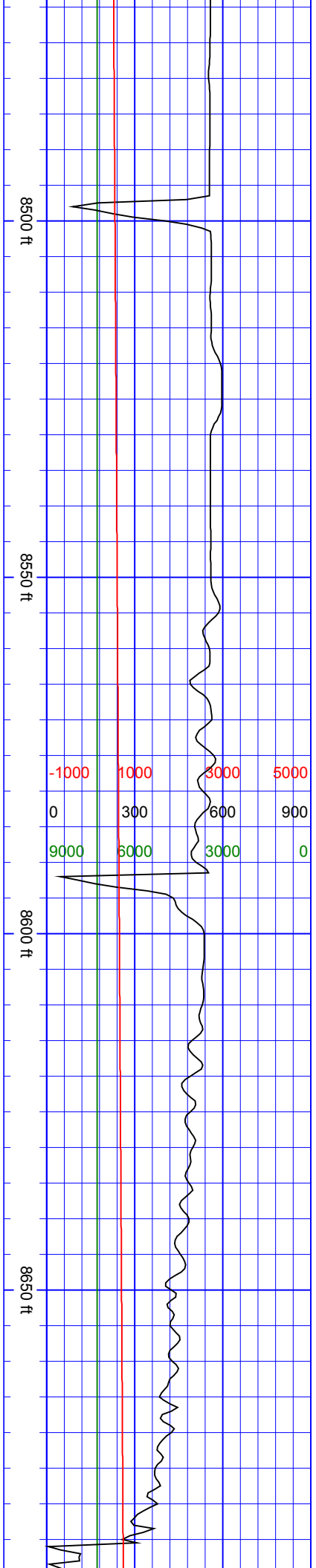
SurveyDepth:8438
TVD:7278.14 Inc:91.41
Azi:1.93 VertSec:494.47

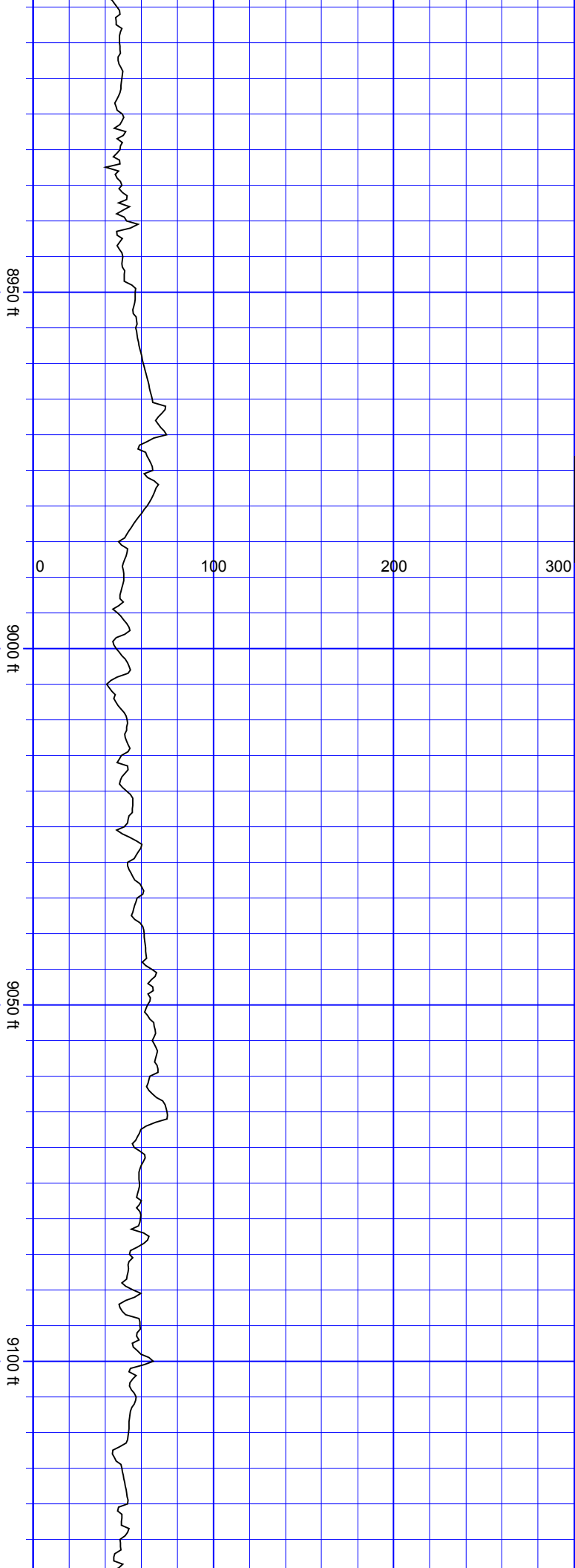




SurveyDepth:8533
TVD:7275.29 Inc:92.02
Azi:1.93 VertSec:589.39

SurveyDepth:8628
TVD:7271.72 Inc:92.29
Azi:1.4 VertSec:684.3

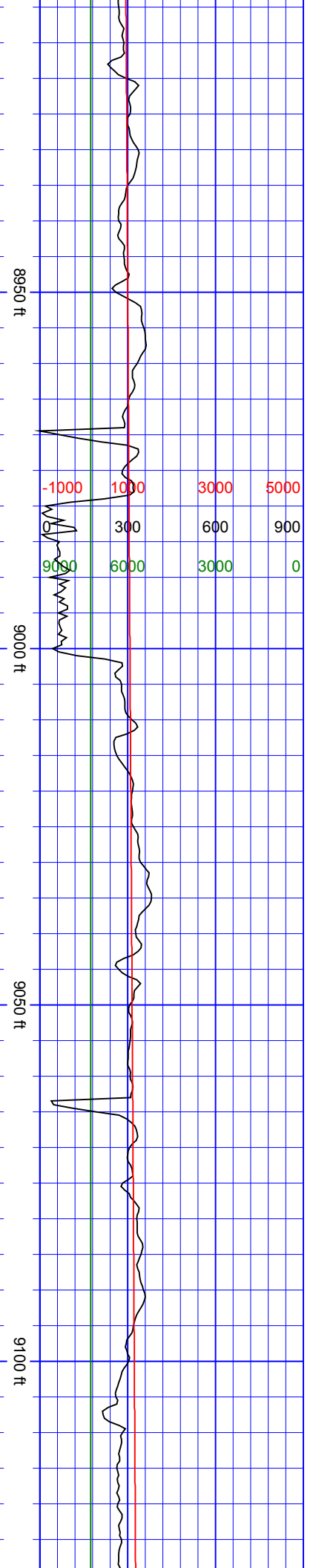


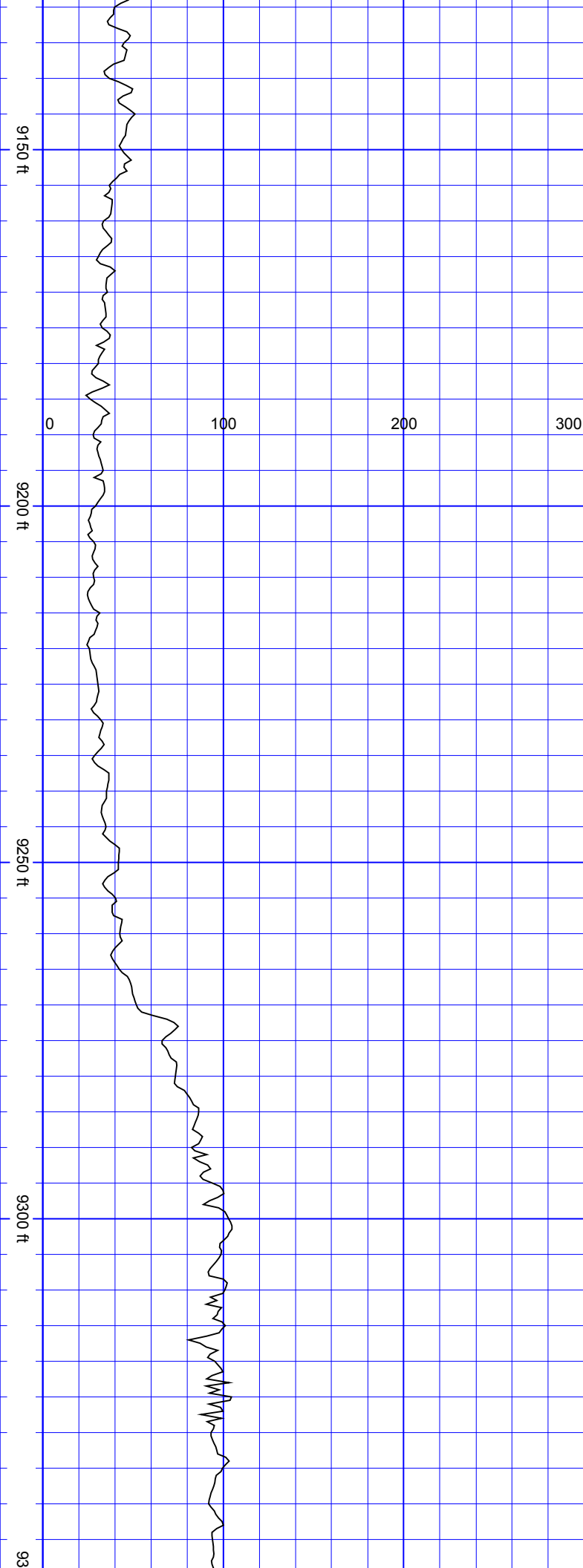


SurveyDepth:8911
TVD:7264.7 Inc:91.85
Azi:3.07 VertSec:967.07

SurveyDepth:9006
TVD:7263.2 Inc:89.96
Azi:4.74
VertSec:1061.88

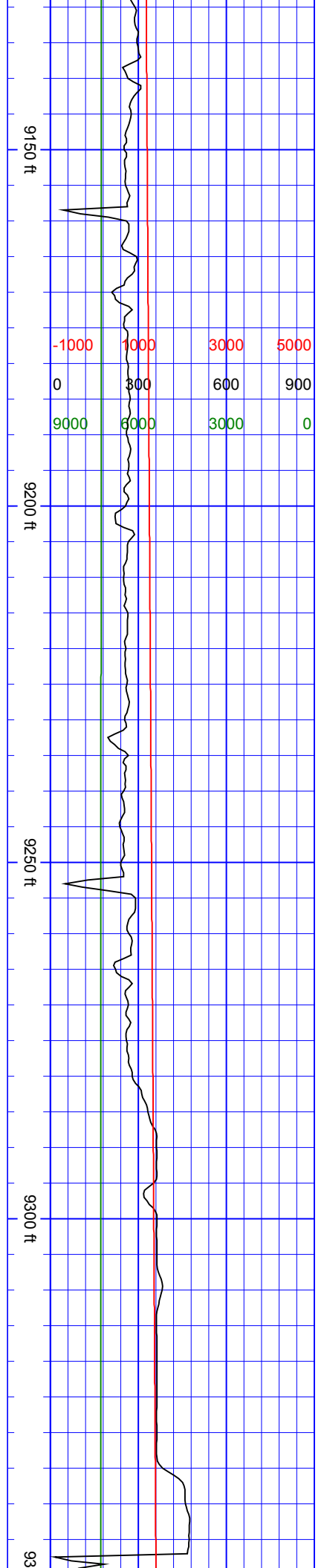
SurveyDepth:9100
TVD:7263.41 Inc:89.78
Azi:4.48
VertSec:1155.64

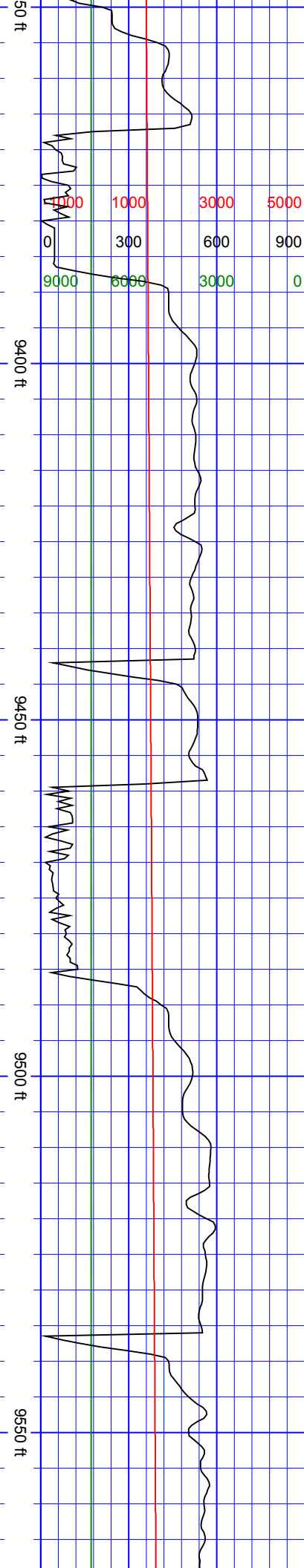




SurveyDepth:9195
TVD:7264.22 Inc:89.25
Azi:3.95
VertSec:1250.43

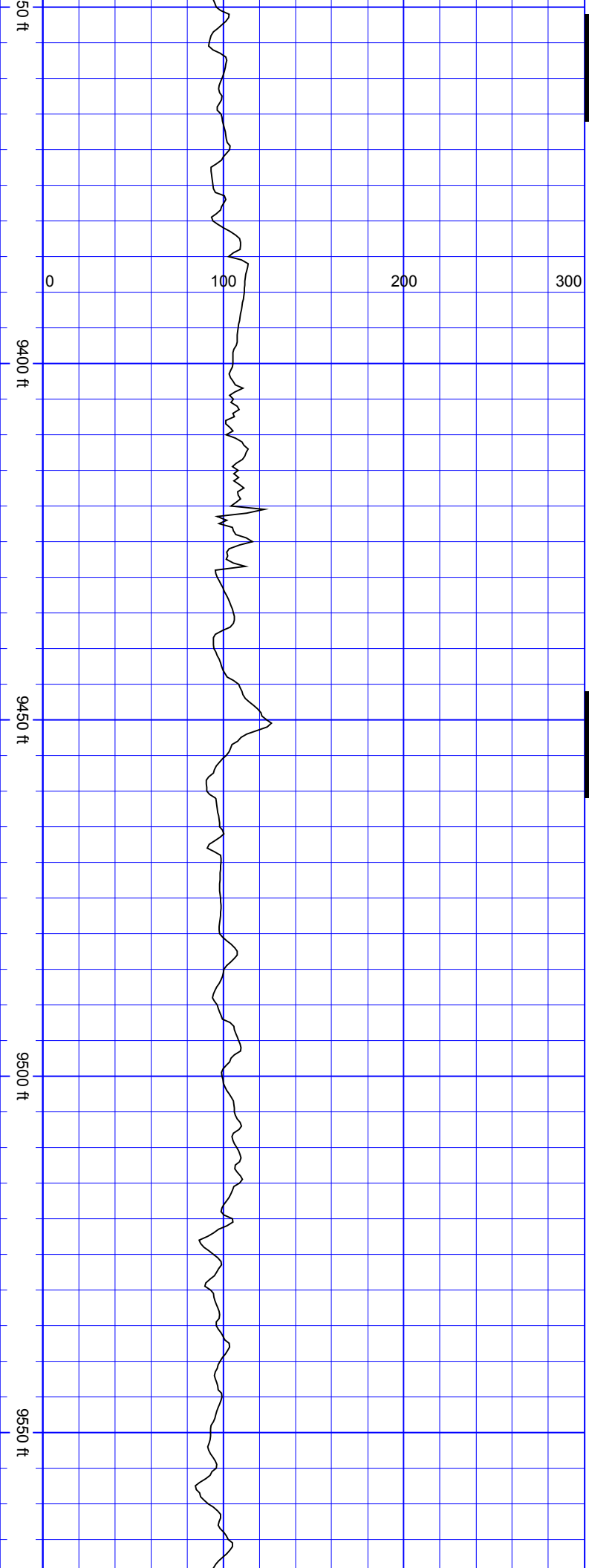
SurveyDepth:9289
TVD:7266.35 Inc:88.15
Azi:3.34
VertSec:1344.26

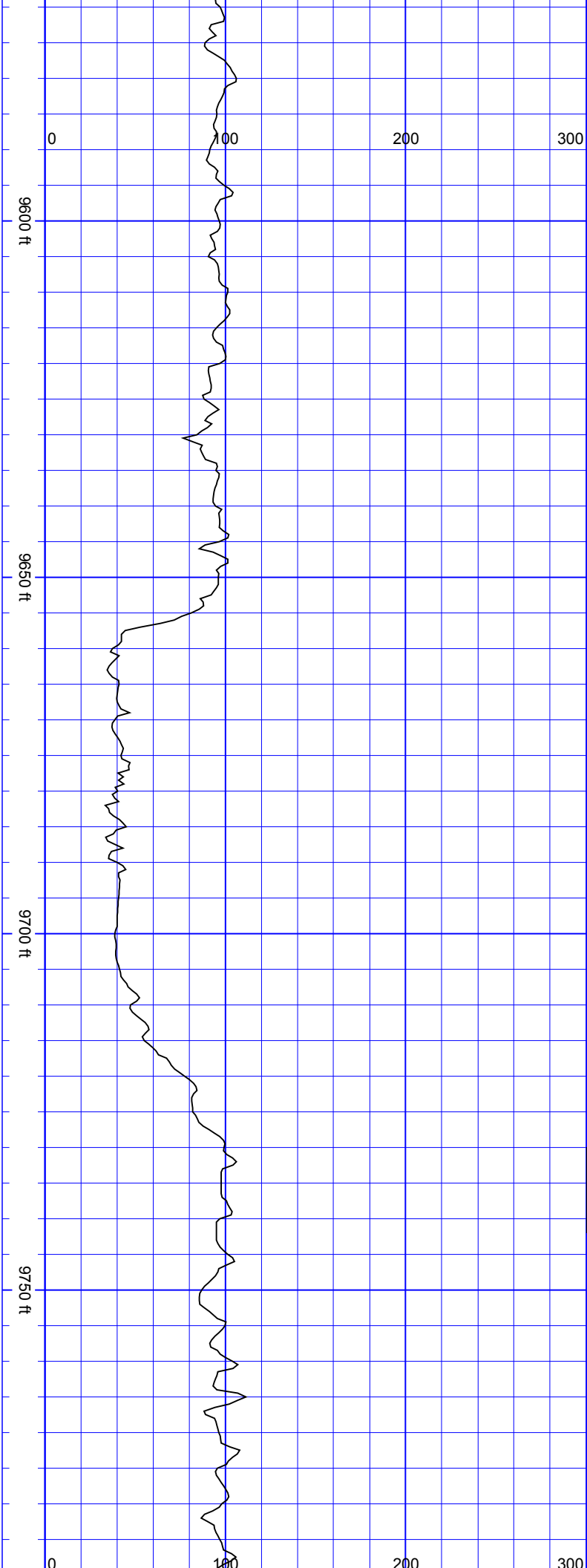




SurveyDepth:9384
TVD:7269.41 Inc:88.15
Azi:2.11
VertSec:1439.13

SurveyDepth:9479
TVD:7270.48 Inc:90.57
Azi:1.23 VertSec:1534.1



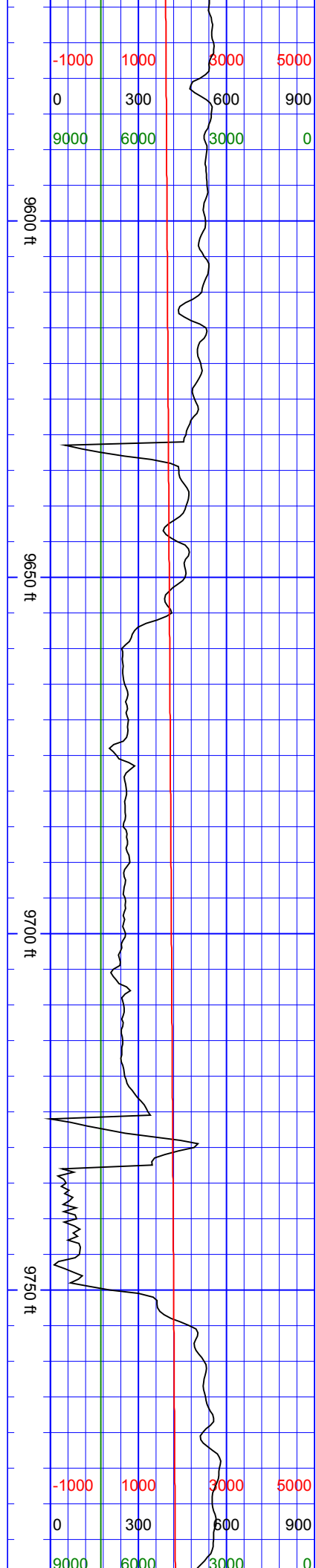


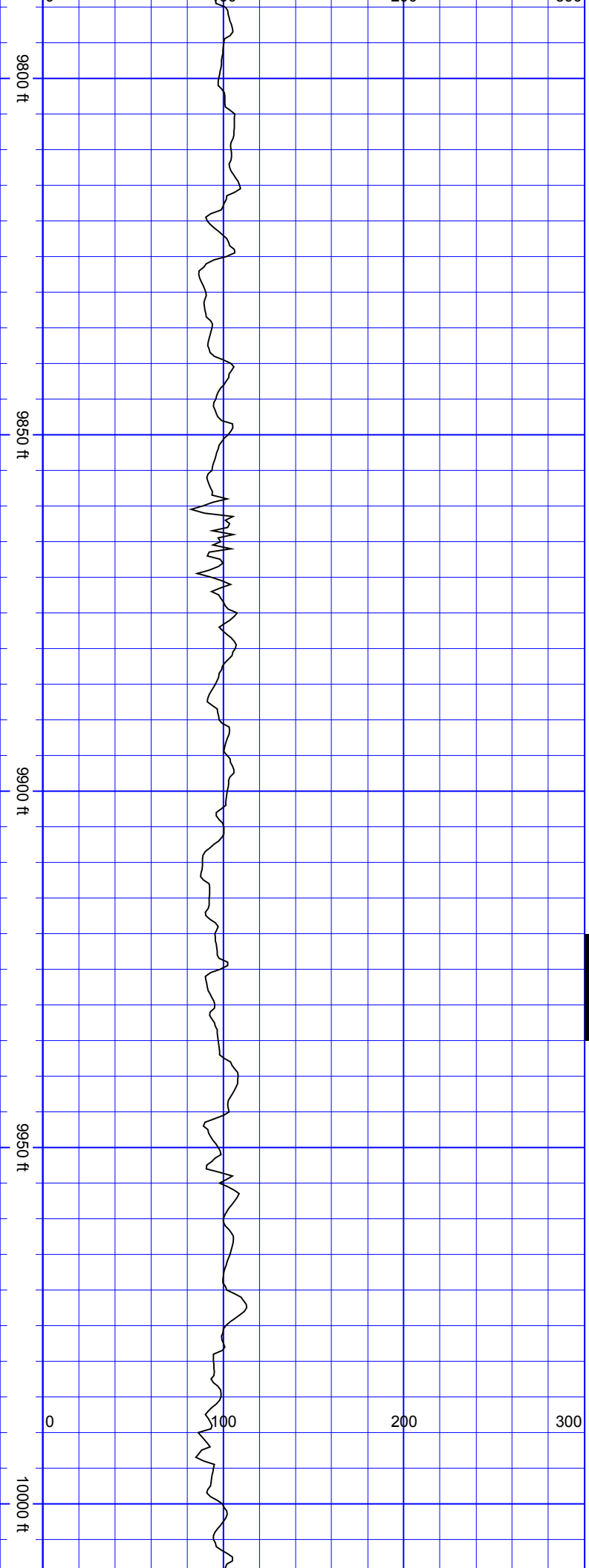
SurveyDepth:9574
TVD:7268.83 Inc:91.41
Azi:0.26
VertSec:1629.08

SurveyDepth:9668
TVD:7266.78 Inc:91.1
Azi:359.47
VertSec:1723.05

SurveyDepth:9763
TVD:7266.49 Inc:89.25
Azi:0.08
VertSec:1818.04

SSSS

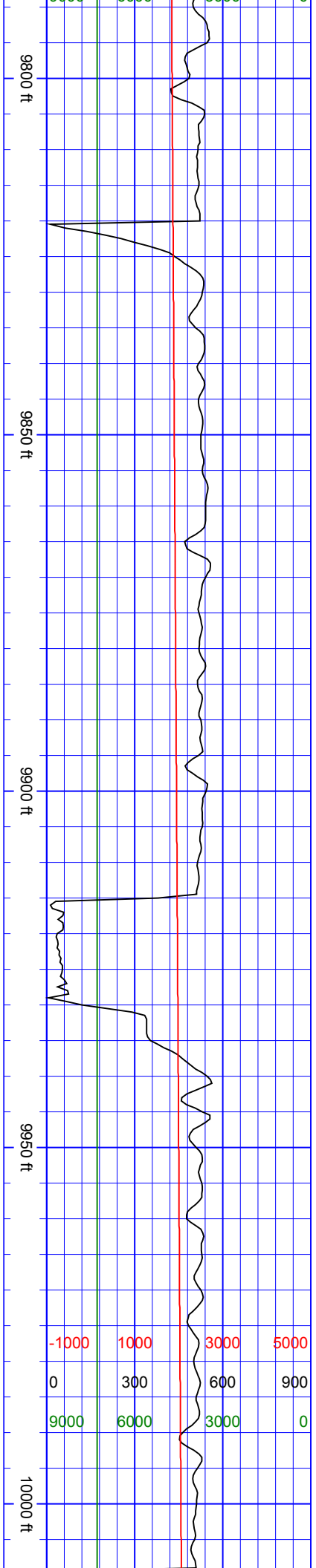


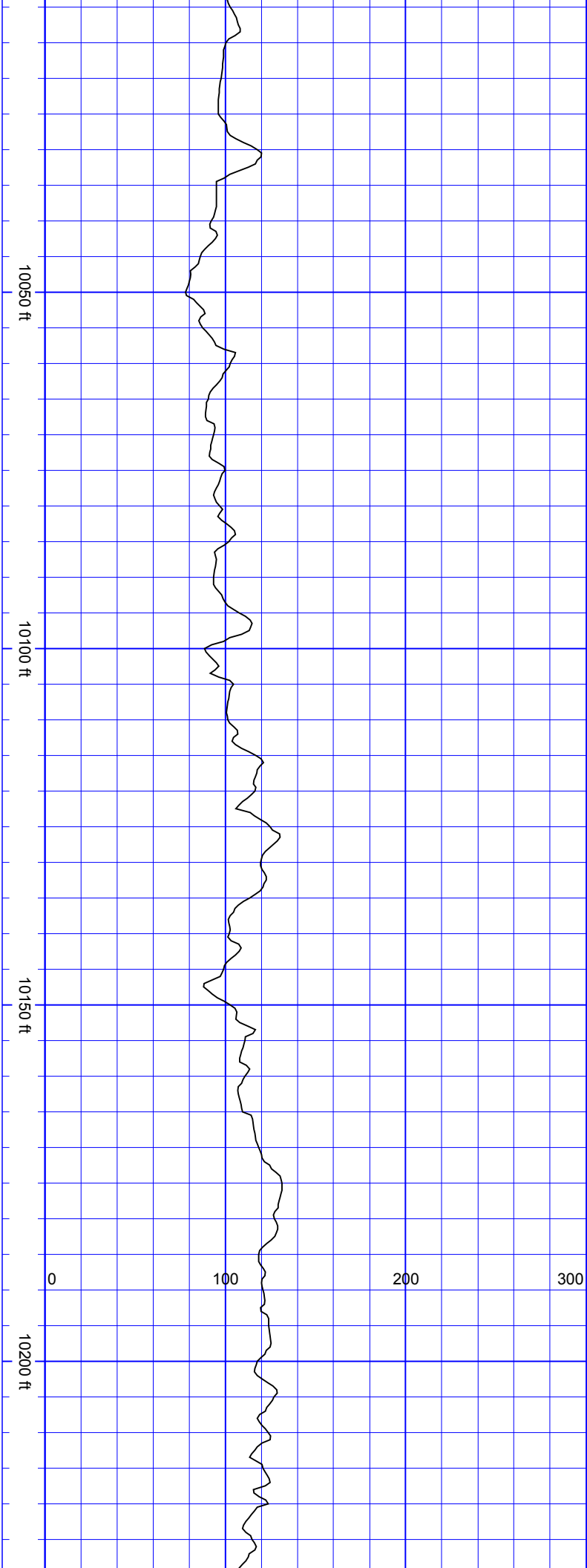


SurveyDepth:9858
TVD:7267.69 Inc:89.3
Azi:359.38
VertSec:1913.02

SurveyDepth:9953
TVD:7270.12 Inc:87.76
Azi:0.88
VertSec:2007.99

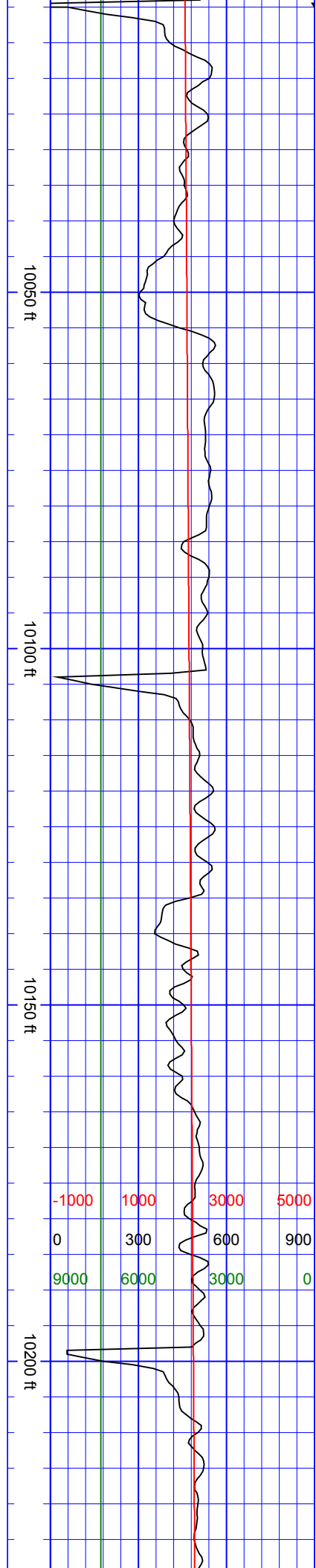
S
S
S
S
S
S

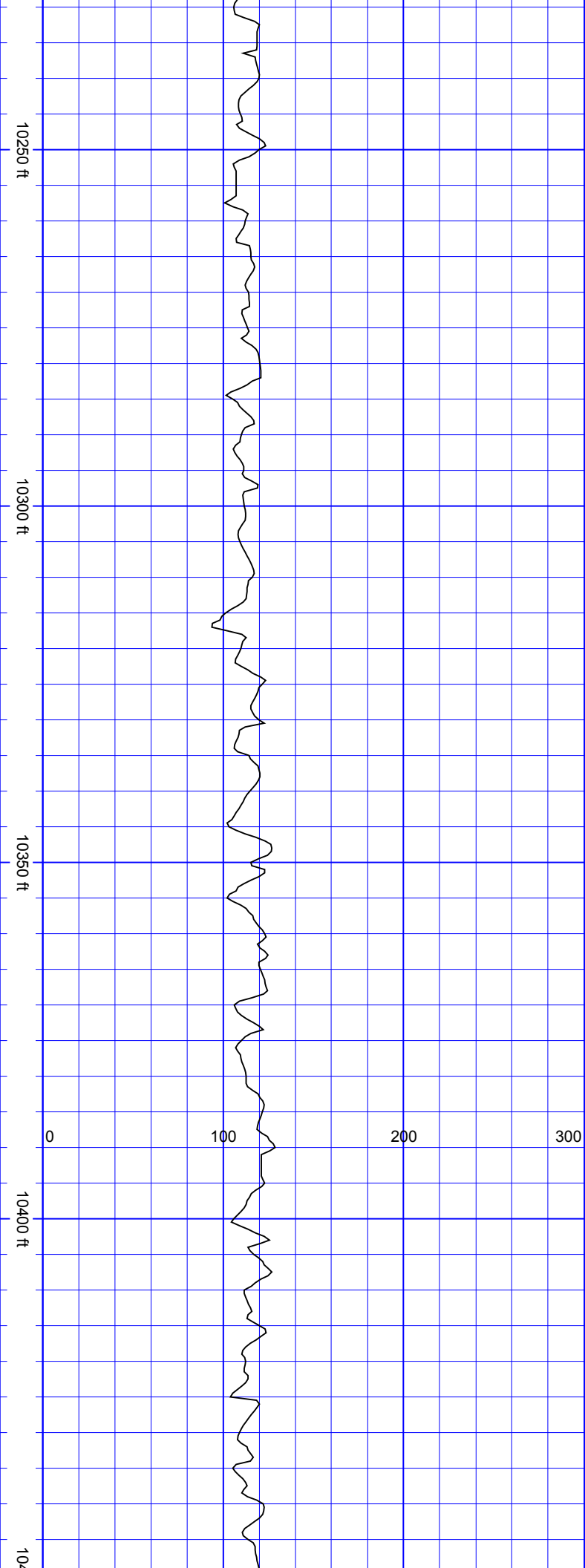




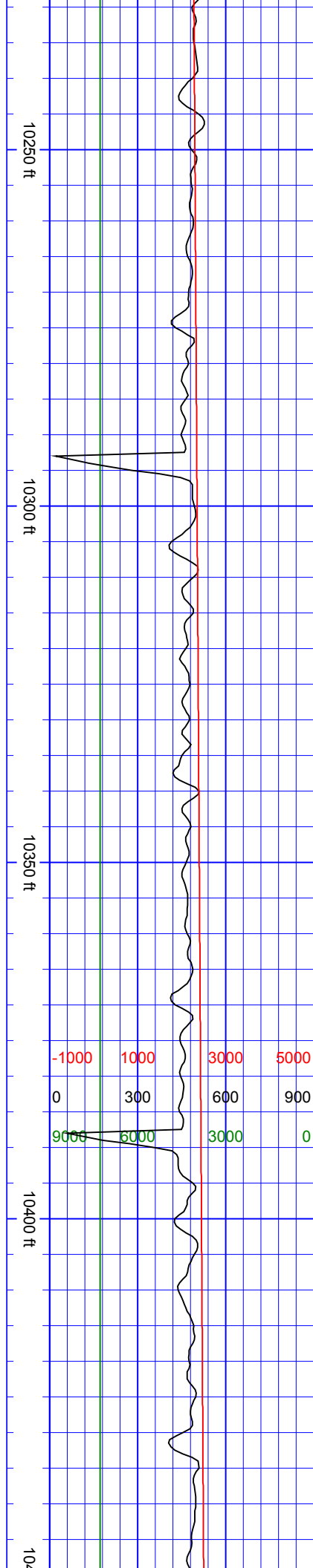
SurveyDepth:10047
TVD:7273.41 Inc:88.24
Azi:0.52
VertSec:2101.93

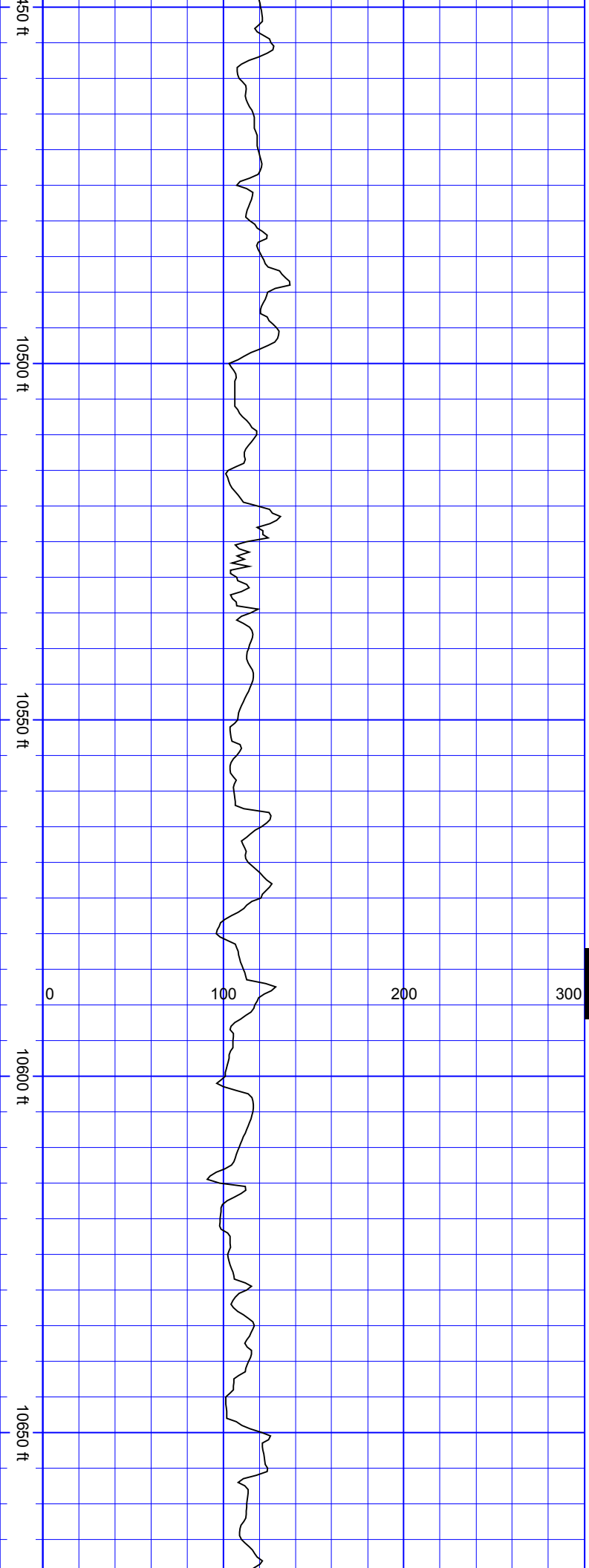
SurveyDepth:10142
TVD:7276.03 Inc:88.59
Azi:0.44
VertSec:2196.89





SurveyDepth:10236 TVD:7277.52 Inc:89.6 Azi:1.67 VertSec:2290.87
SurveyDepth:10331 TVD:7277.92 Inc:89.91 Azi:1.84 VertSec:2385.85
SurveyDepth:10426 TVD:7277.85 Inc:90.18 Azi:1.23 VertSec:2480.83

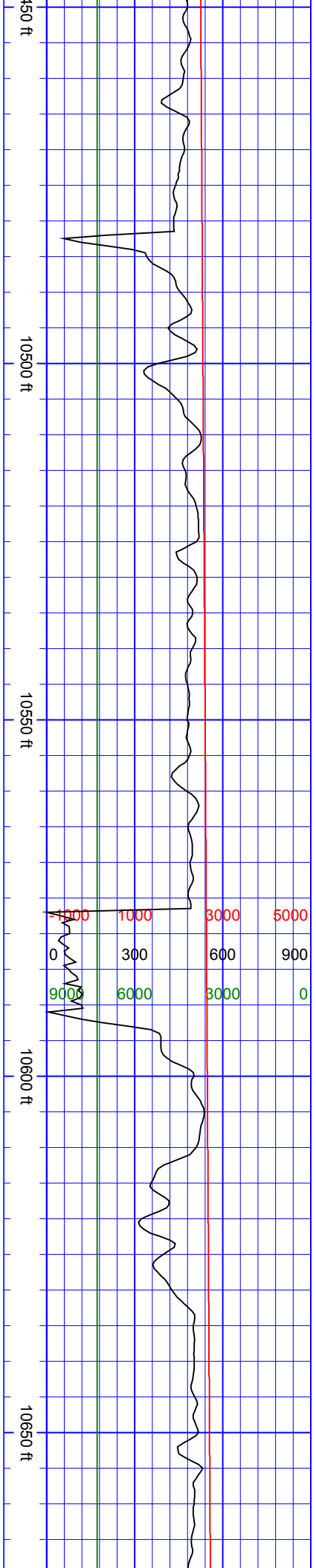




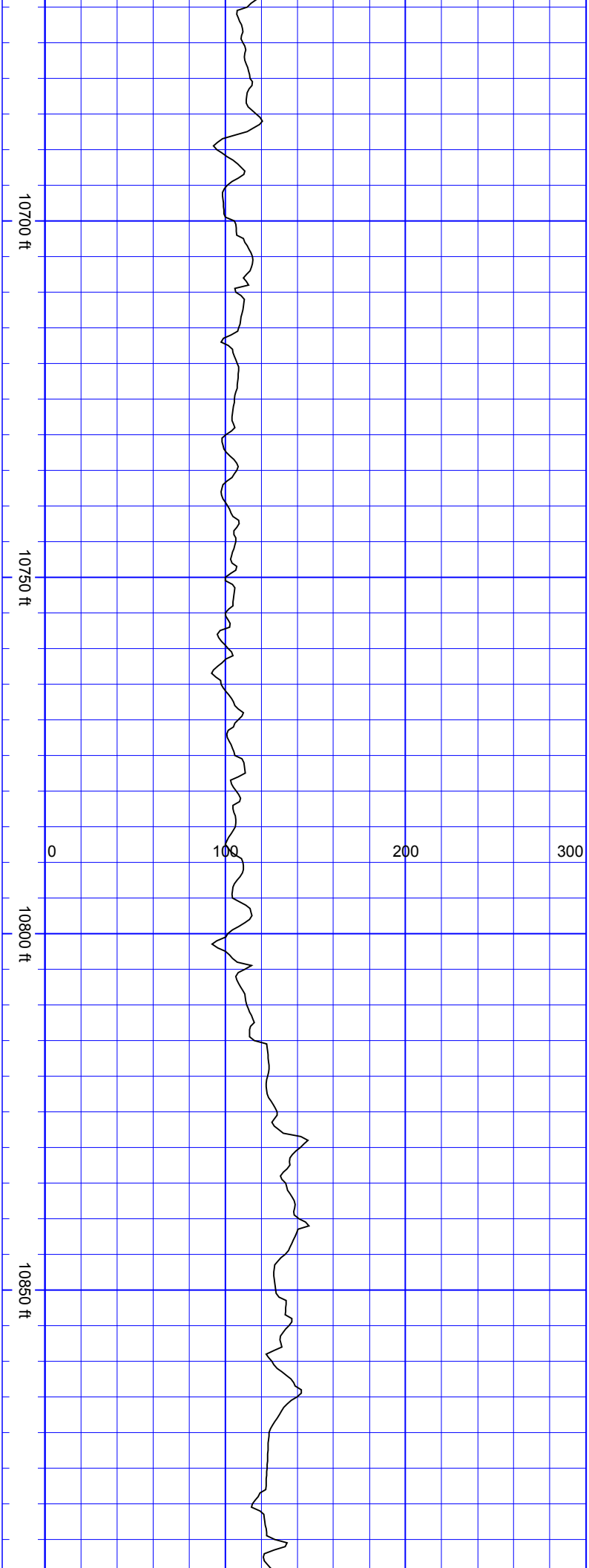
SurveyDepth:10520
TVD:7277.34 Inc:90.44
Azi:1.32
VertSec:2574.82

SSSS

SurveyDepth:10615
TVD:7278 Inc:88.77
Azi:0.61
VertSec:2669.81

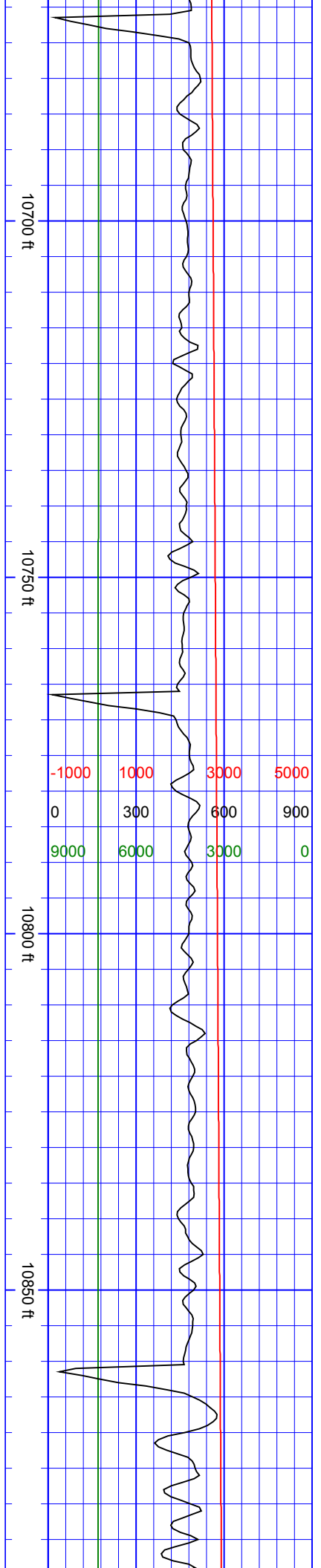


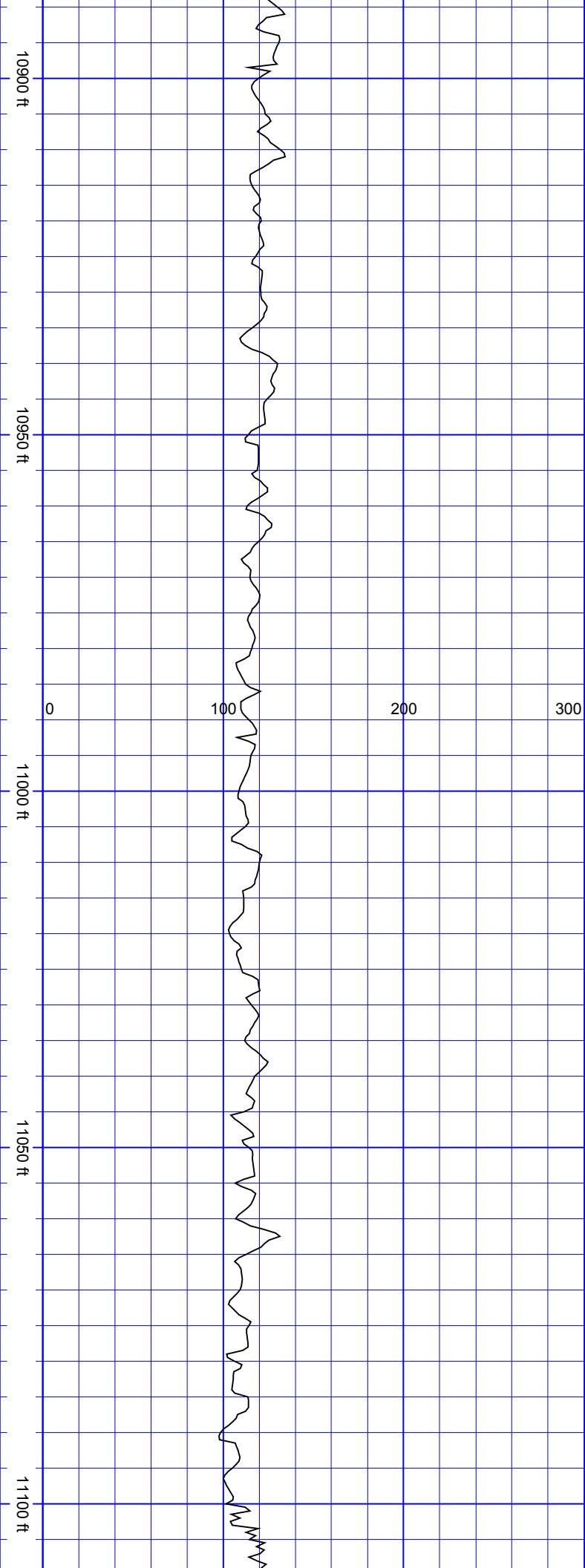
4000	1000	3000	5000
0	300	600	900
9000	6000	3000	0



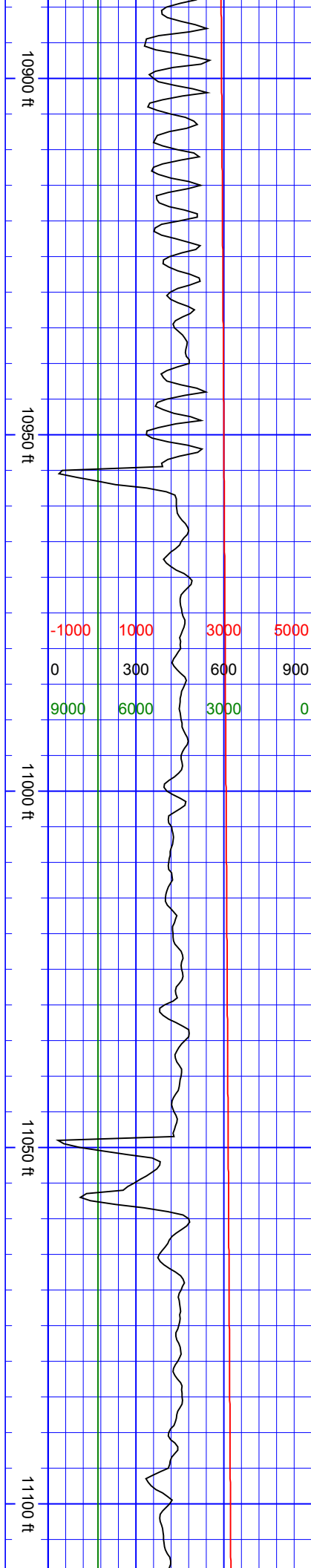
SurveyDepth:10710
TVD:7280.18 Inc:88.59
Azi:0.7 VertSec:2764.78

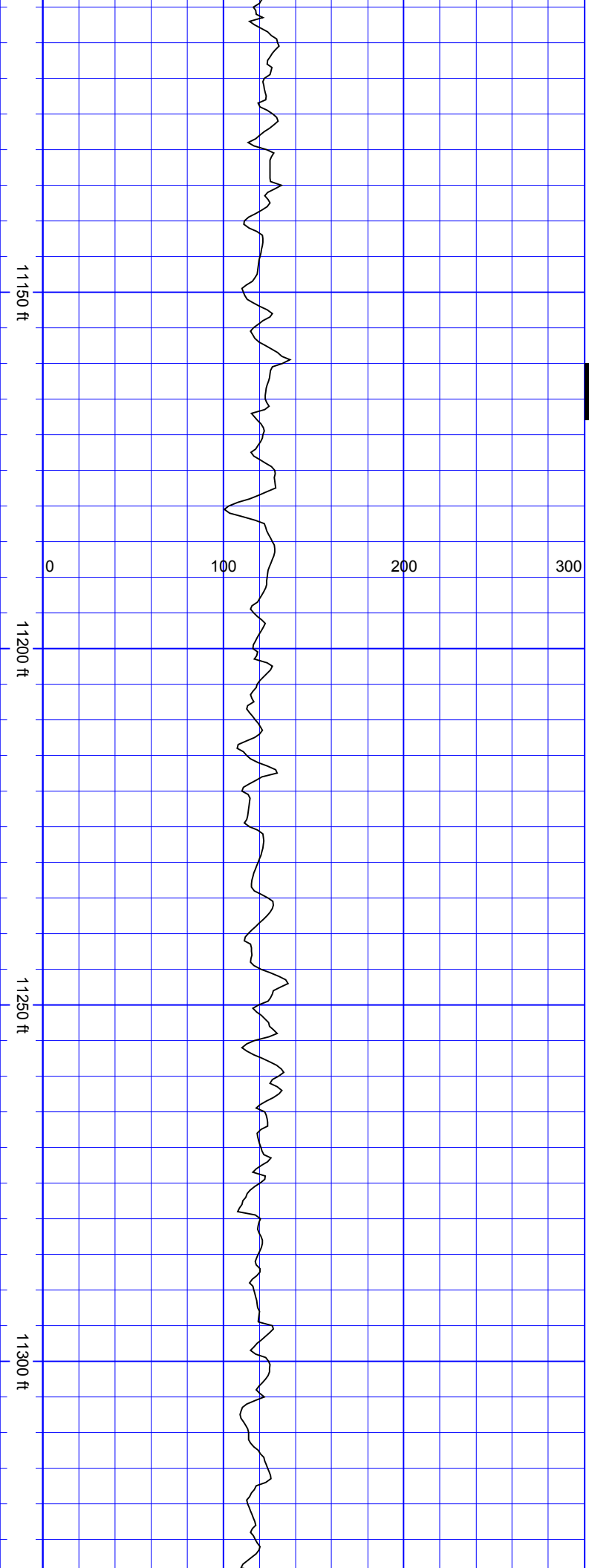
SurveyDepth:10805
TVD:7282.63 Inc:88.46
Azi:0.17
VertSec:2859.75





SurveyDepth:10900 TVD:7284.96 Inc:88.73 Azi:0.35 VertSec:2954.72	SurveyDepth:10994 TVD:7287.12 Inc:88.64 Azi:360 VertSec:3048.7	SurveyDepth:11088 TVD:7289.42 Inc:88.55 Azi:0.17 VertSec:3142.67
---	--	---

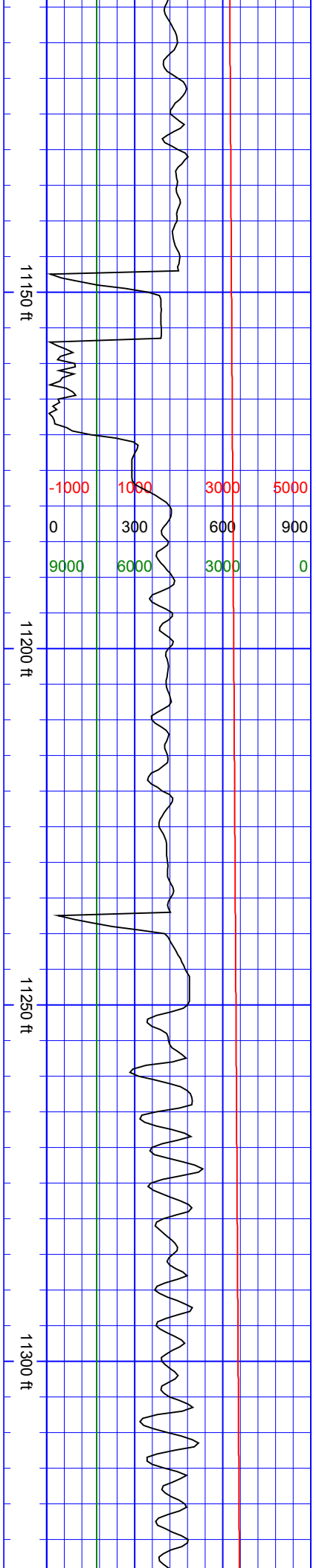


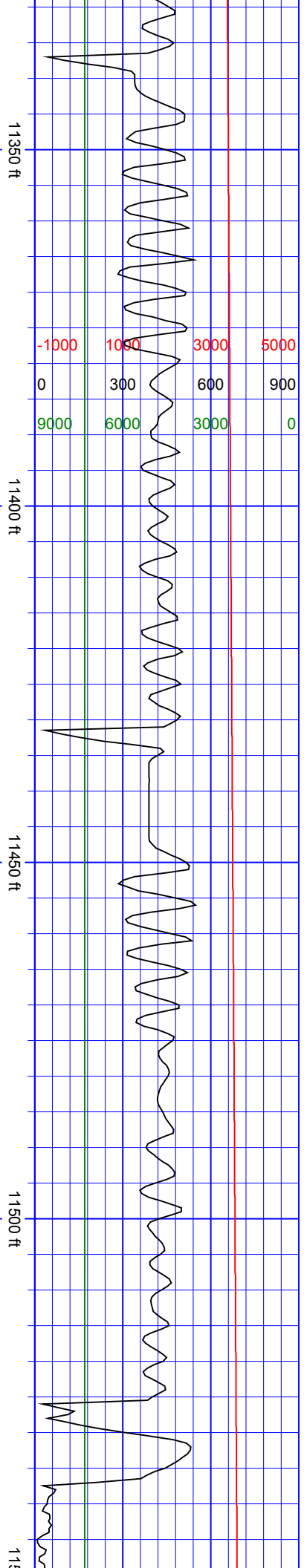


SSS

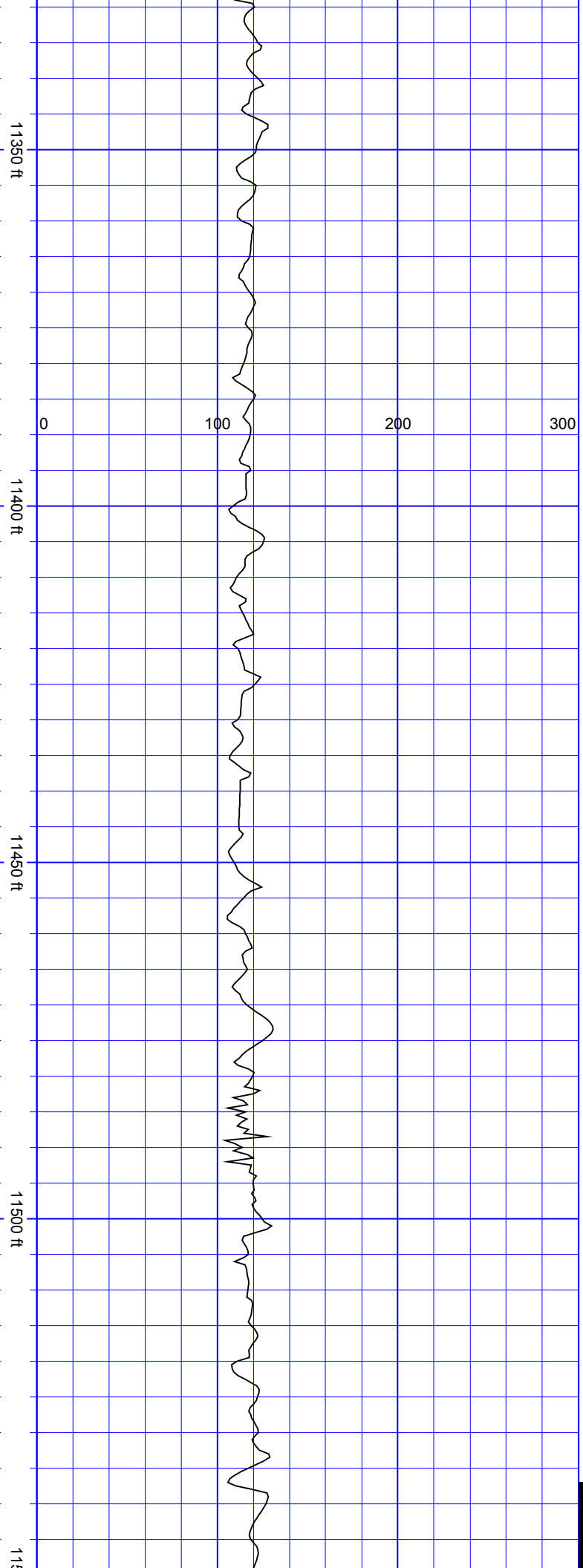
SurveyDepth:11182
TVD:7291.08 Inc:89.43
Azi:358.94
VertSec:3236.64

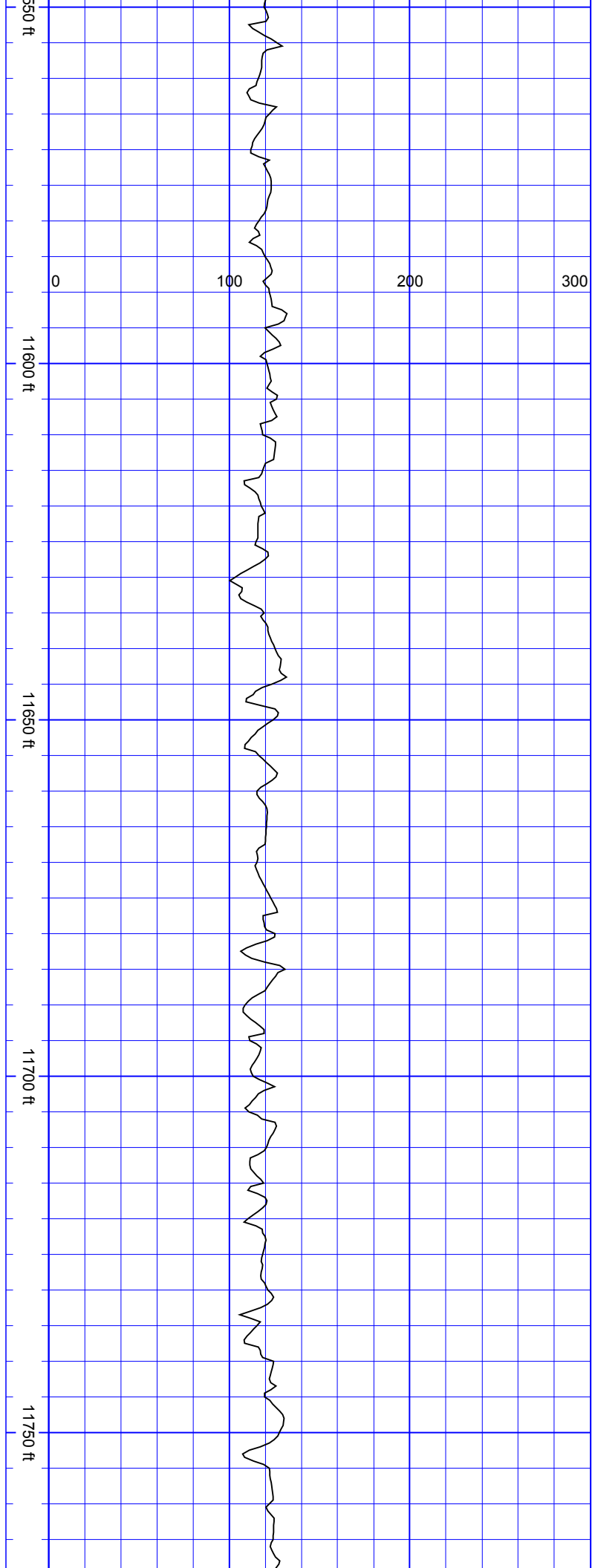
SurveyDepth:11277
TVD:7291.95 Inc:89.52
Azi:358.59
VertSec:3331.59





SurveyDepth:11466
TVD:7293.83 Inc:89.34
Azi:357.8
VertSec:3520.43

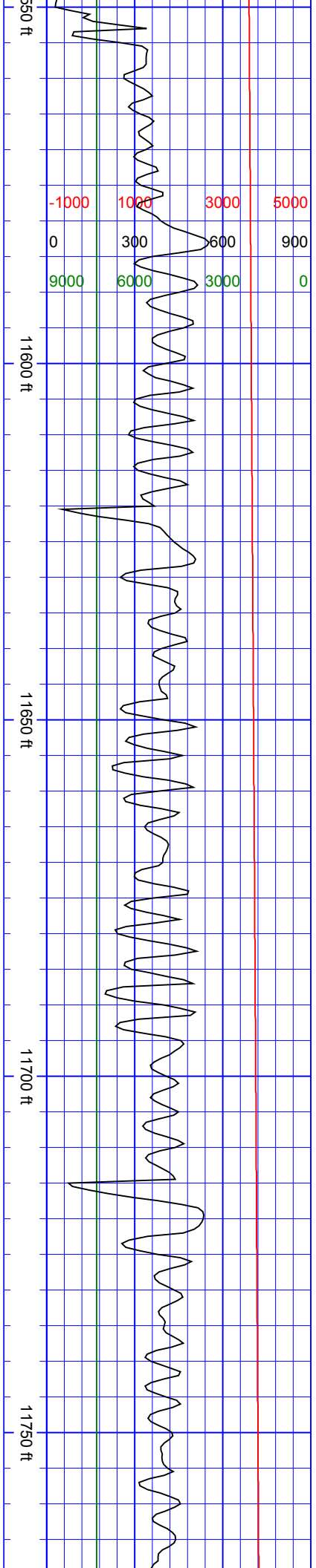


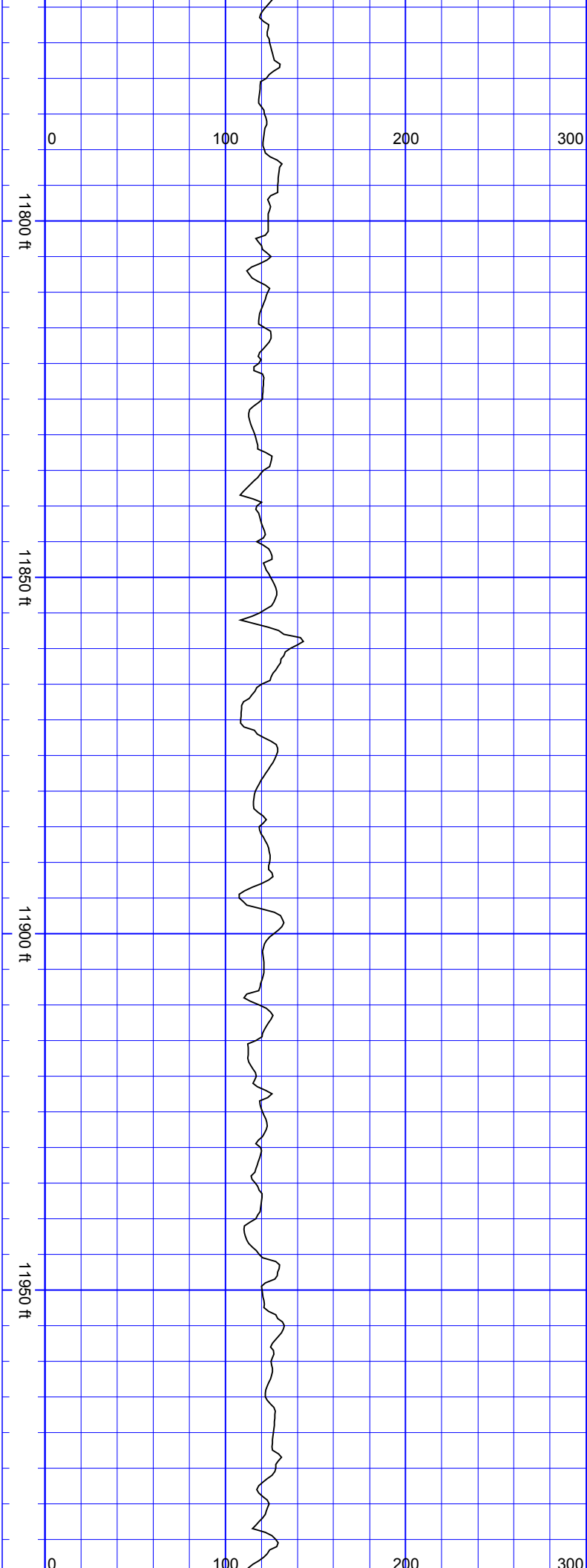


SurveyDepth:11561
TVD:7294.45 Inc:89.91
Azi:359.38
VertSec:3615.37

SurveyDepth:11655
TVD:7294.38 Inc:90.18
Azi:358.68
VertSec:3709.34

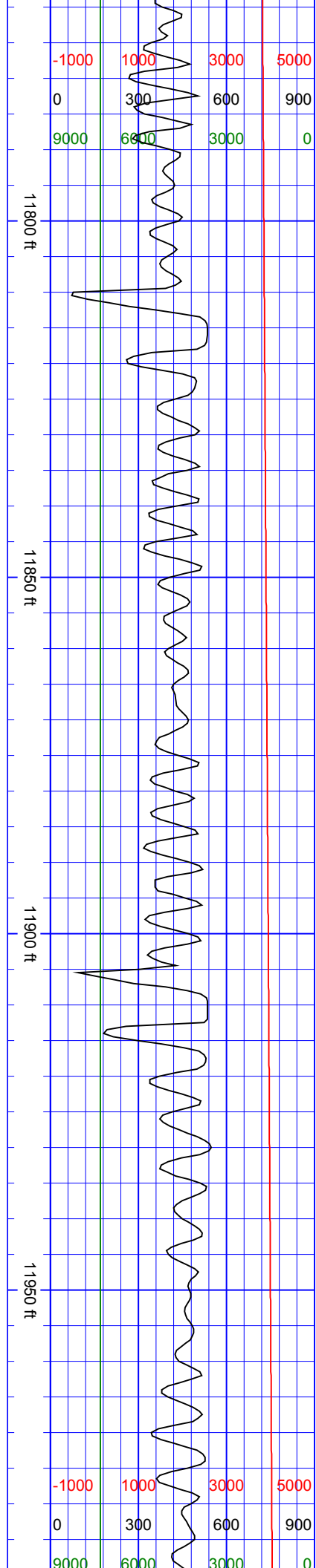
SurveyDepth:11750
TVD:7293.94 Inc:90.35
Azi:359.29
VertSec:3804.31

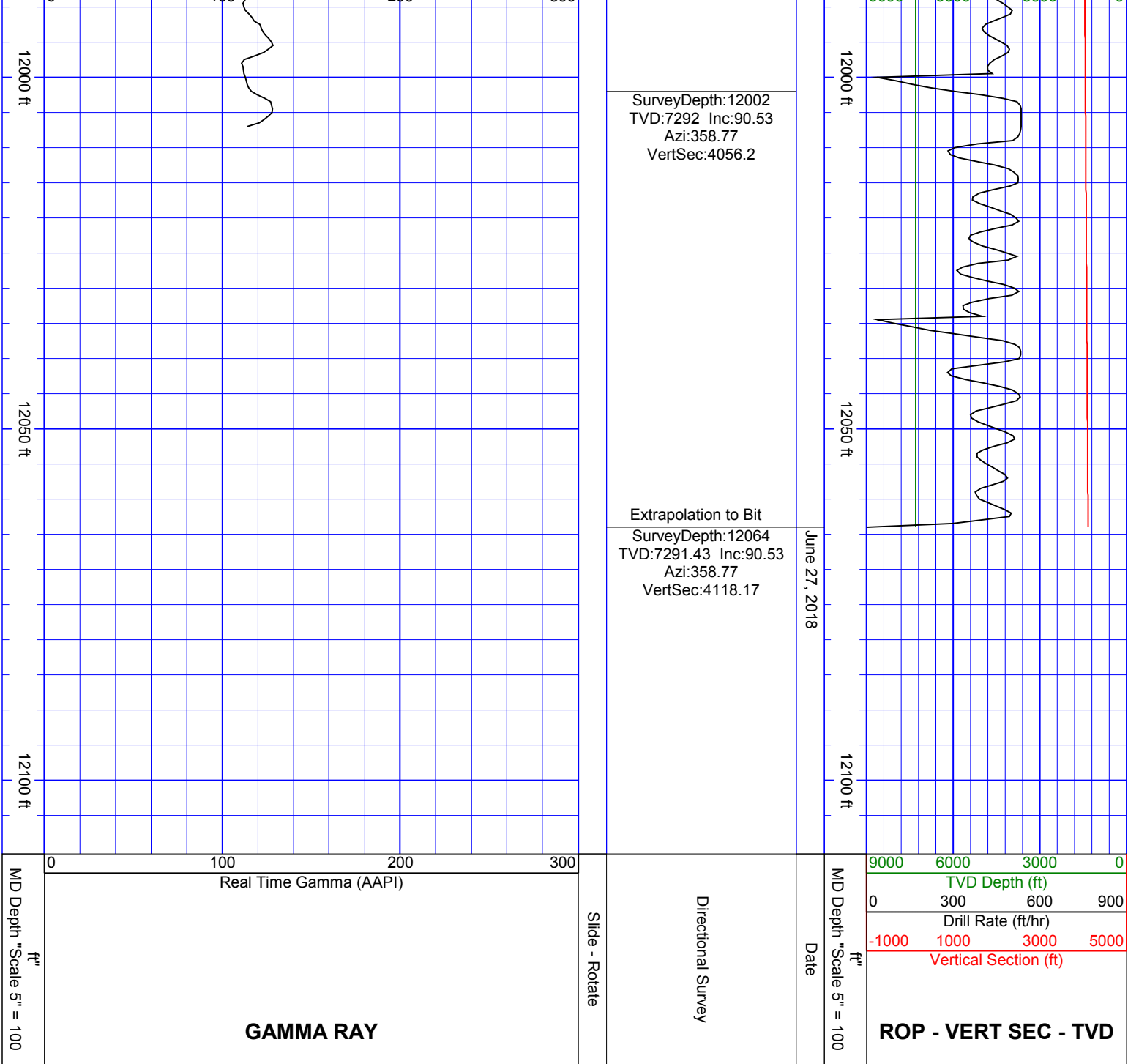




SurveyDepth:11845
TVD:7293.36 Inc:90.35
Azi:358.68
VertSec:3899.28

SurveyDepth:11940
TVD:7292.59 Inc:90.57
Azi:358.94
VertSec:3994.23





GAMMA RAY

ROP - VERT SEC - TVD