



CATHEDRAL

Build & Lateral

Job #:

185191

Well ID:

16190988

Scale:

5" = 100 ft

Type:

MD

Well Site Information

Oil Company Crestone Peak Resources

Surface Location S4-T1N-R65 (RUEGGE)

Well Name Ruegge 3L-4H-N165

API 05-123-46561 00

Field DJ Basin

State Colorado

Country USA

Surface Coordinates

Well Type Horizontal

Latitude 40° 07' 261 N

Longitude 104° 670' 738 W

N / S Coordinates 1,271,347.74 usft

E / W Coordinates 3,232,060.86 usft

Azimuth Reference True North

Grid Convergence 0.54°

MWD Engineers

Lead Hand Aaron Clark

Second Hand Bill Odell

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 11,892.00 ft Spud Date Jul/04/2018 End Date Jul/06/2018

(MD) Log Interval Start Depth 2,390.00 ft End Depth 11,892.00 ft

Bore Hole Record

Hole Size	From	To
13.50 in	0.00 ft	2,485.00 ft
8.50 in	2,485.00 ft	11,892.00 ft

Casing Record

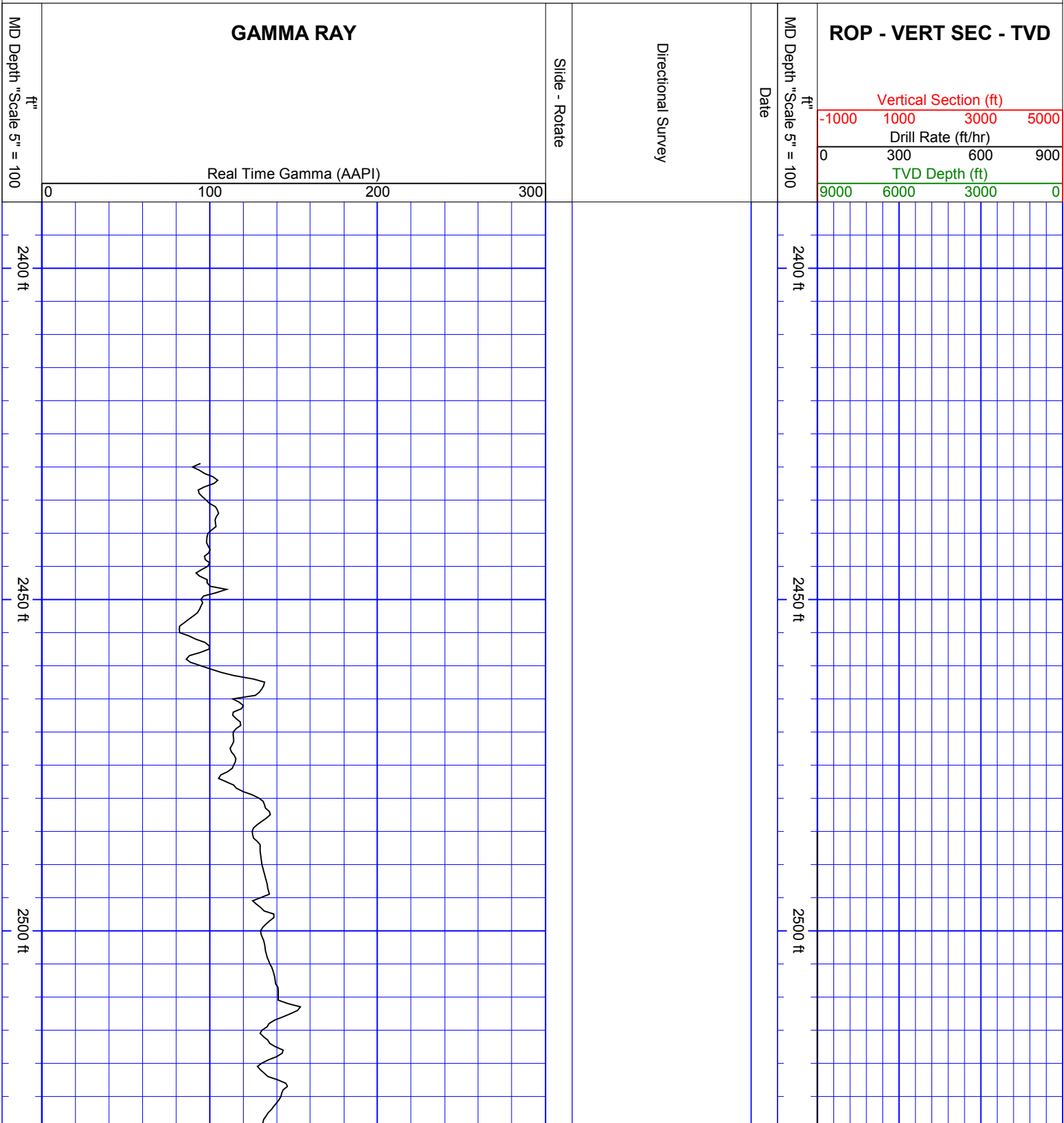
Type	Size	WGT	From	To
LT&C	9.63 in	40lb.	0.00 ft	2,451.00 ft
DWC/C-IS	5.50 in	20lb.	0.00 ft	11,865.00 ft

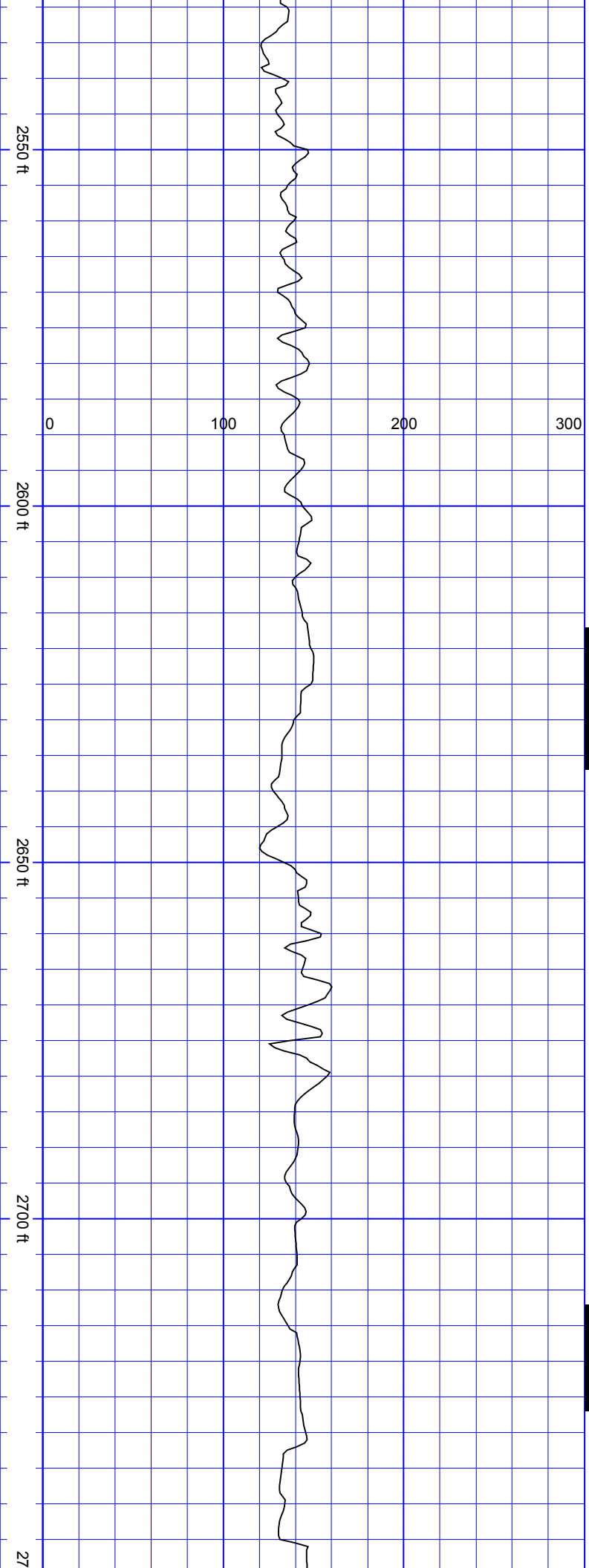
Run Data

Bit Run Number	1				
Start Date & Time	Jul/04/2018 01:00:00				
End Date & Time	Jul/06/2018 09:00:00				
Run Hours	56.00				
Depth In	2,485.00 ft				
Depth Out	11,892.00 ft				
Total Gamma Correction	5.68				
Gamma to Bit	55.74 ft				
Resistivity to Bit	N/A				
Mud Type	Oil Base				
Density	9.90 ppg				
Viscosity	50.00 sec/qt				
PH	N/A				
Fluid Loss	N/A				
K+ ppm	N/A				
CL- ppm	34,000.00 mg/L				
Max Mud Temp	241.00 °F				
Mud Report Depth	10,050.00 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.

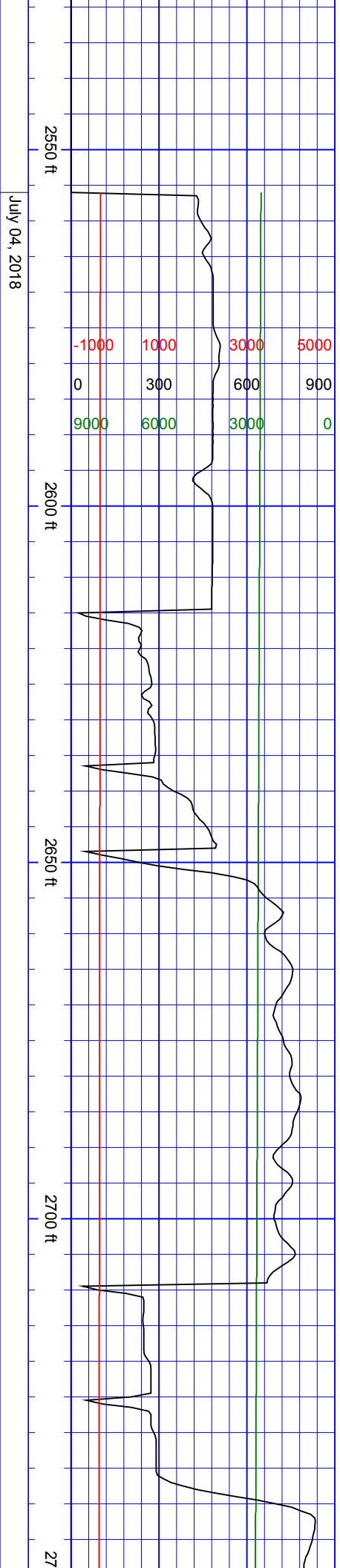


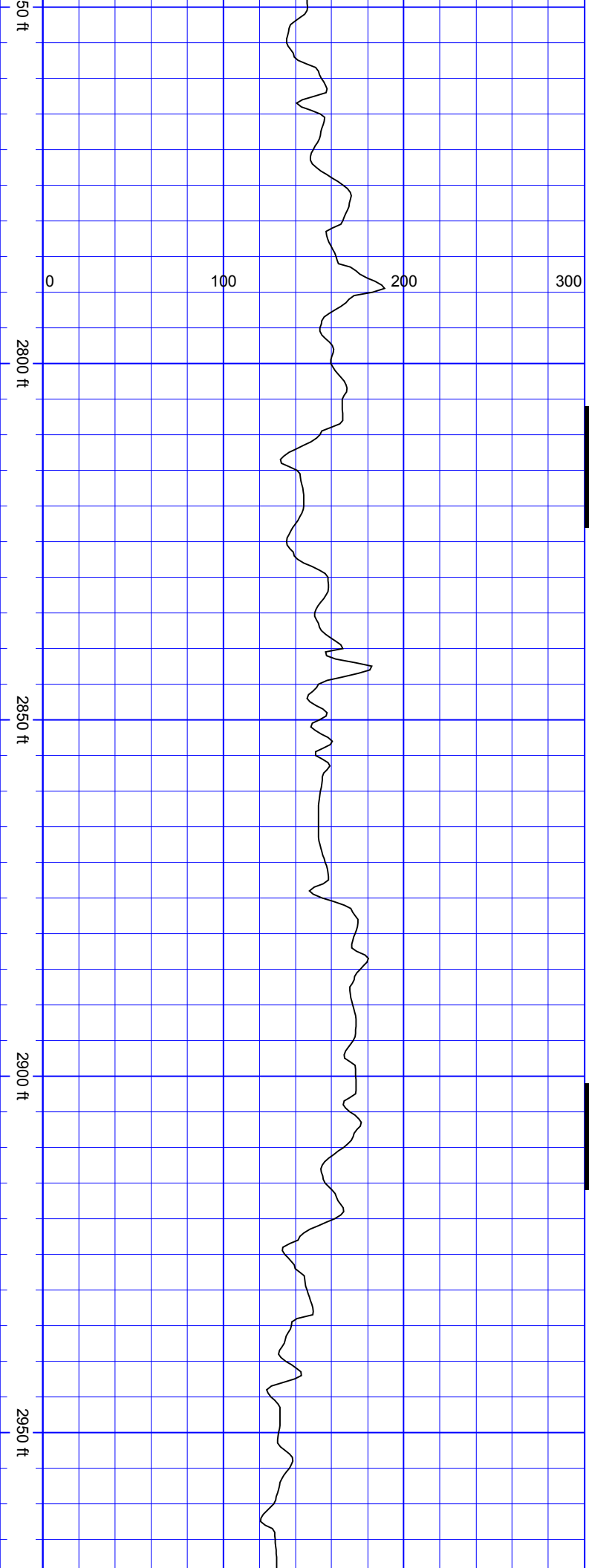


Begin Logging
SurveyDepth:2556
TVD:2510.59 Inc:10.9
Azi:138.94 VertSec:-327.62

SurveyDepth:2651
TVD:2603.66 Inc:12.22
Azi:139.12 VertSec:-341.87

SurveyDepth:2745
TVD:2695.46 Inc:12.57

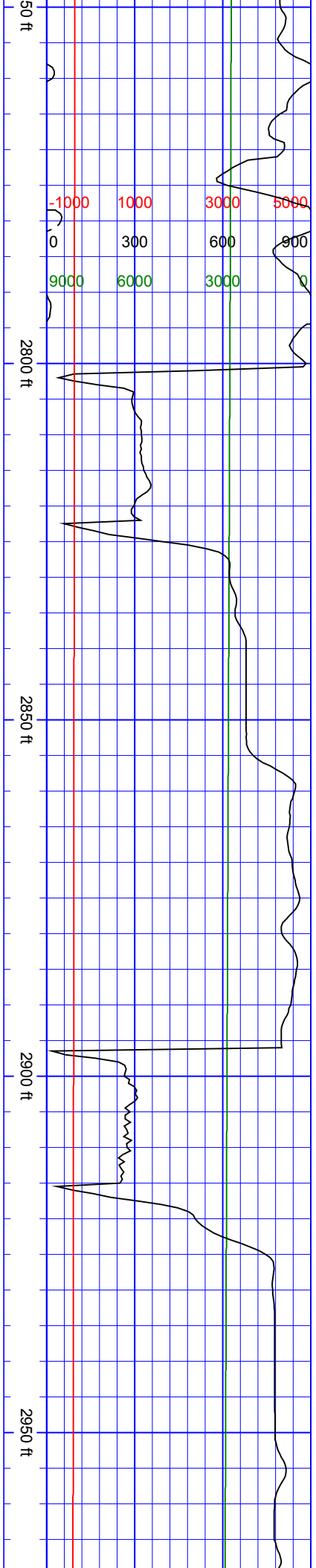


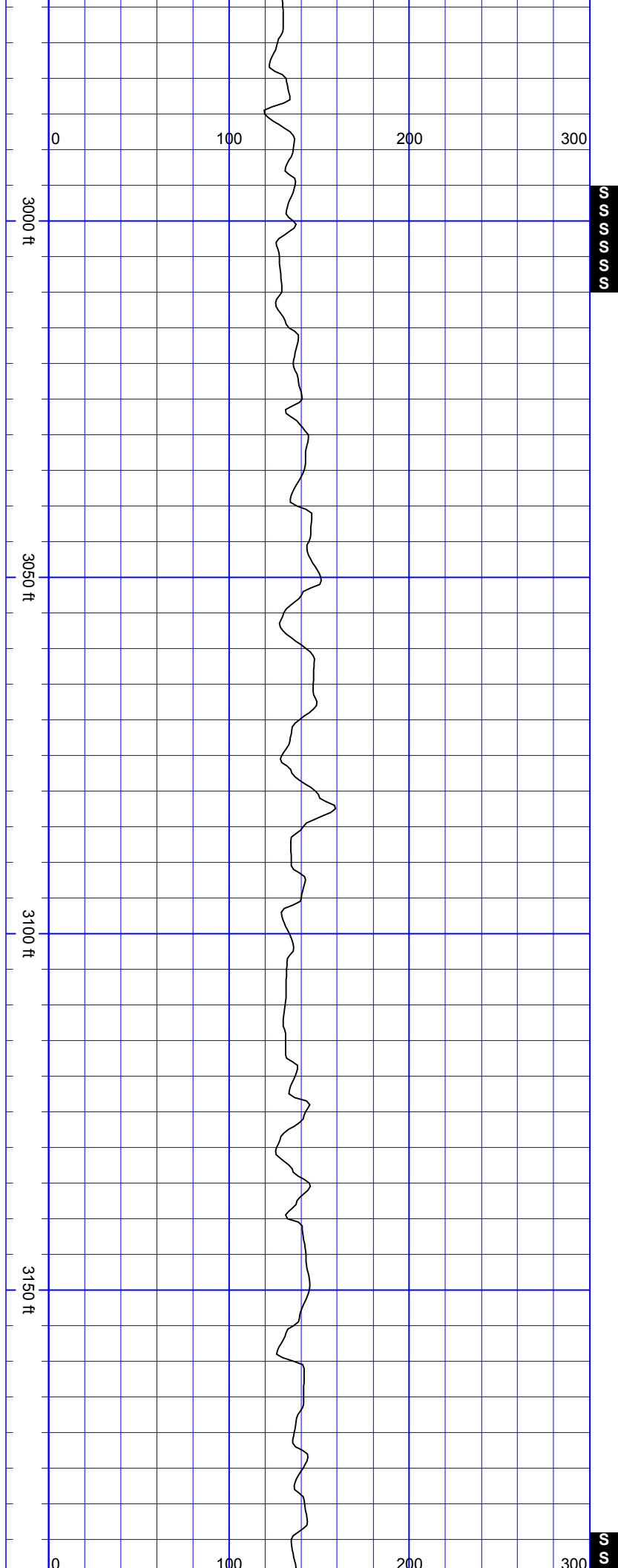


TVD:2833.46 Inc:12.97
Azi:137.8 VertSec:-
356.83

SurveyDepth:2840
TVD:2788.13 Inc:12.88
Azi:142.19 VertSec:-
372.71

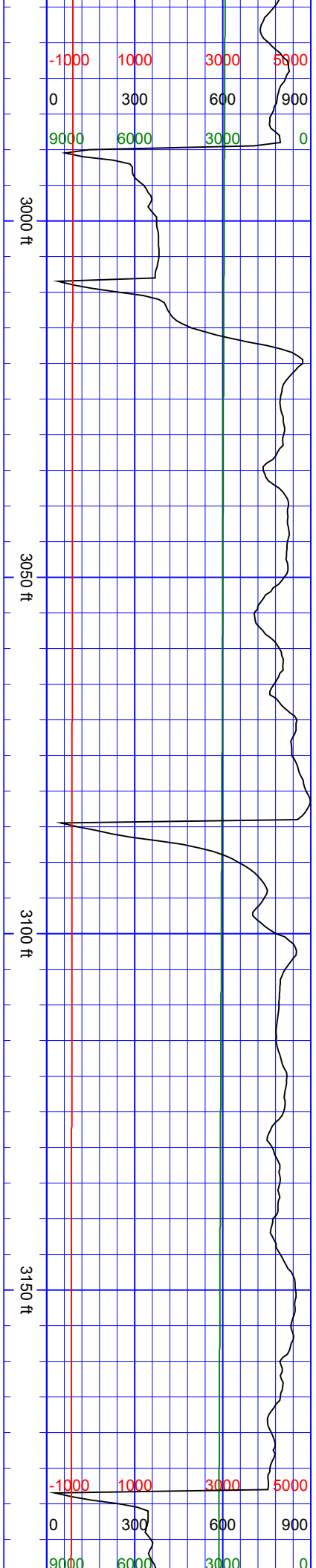
SurveyDepth:2934
TVD:2879.65 Inc:13.54
Azi:144.04 VertSec:-
389.76

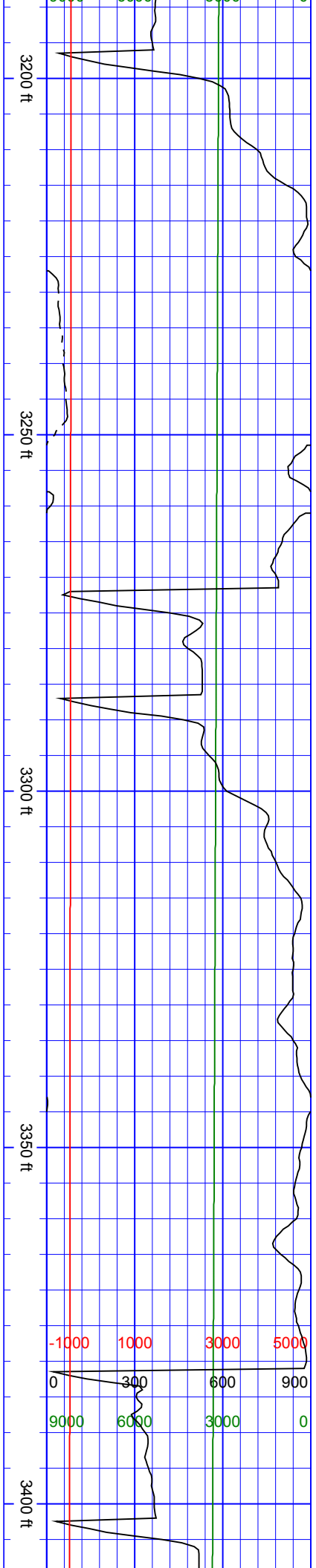
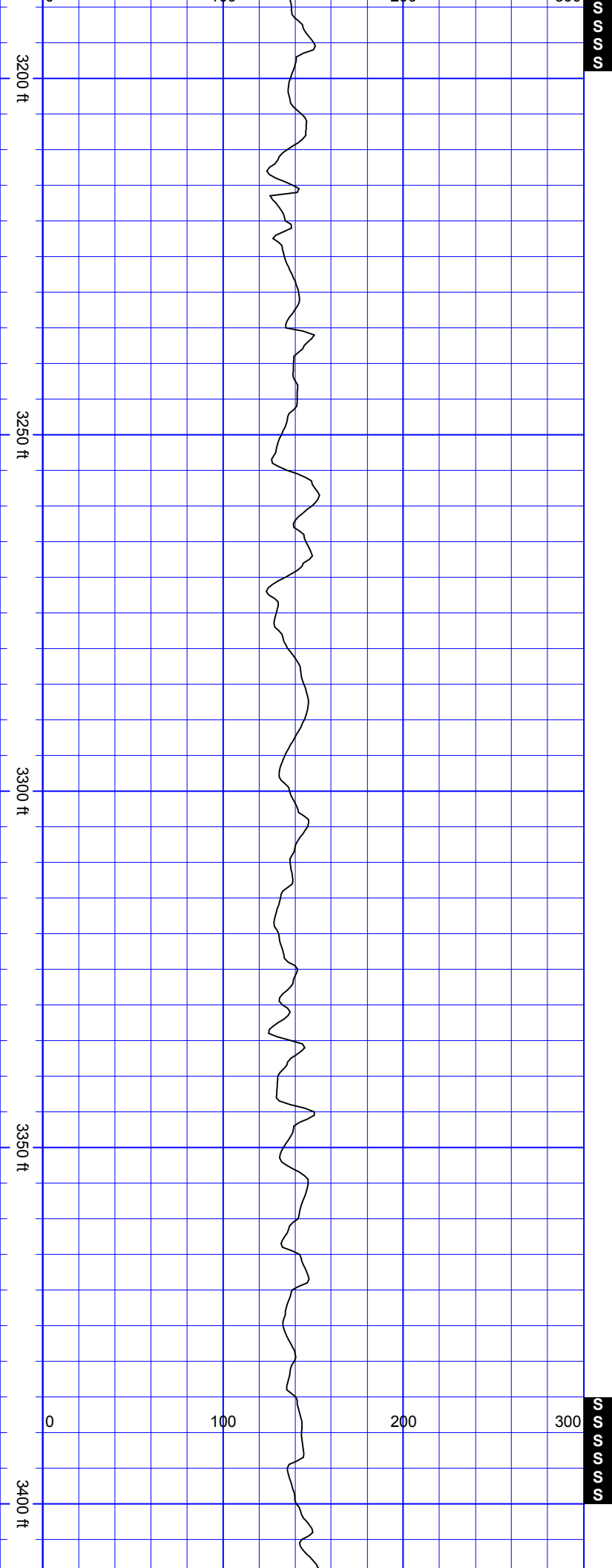


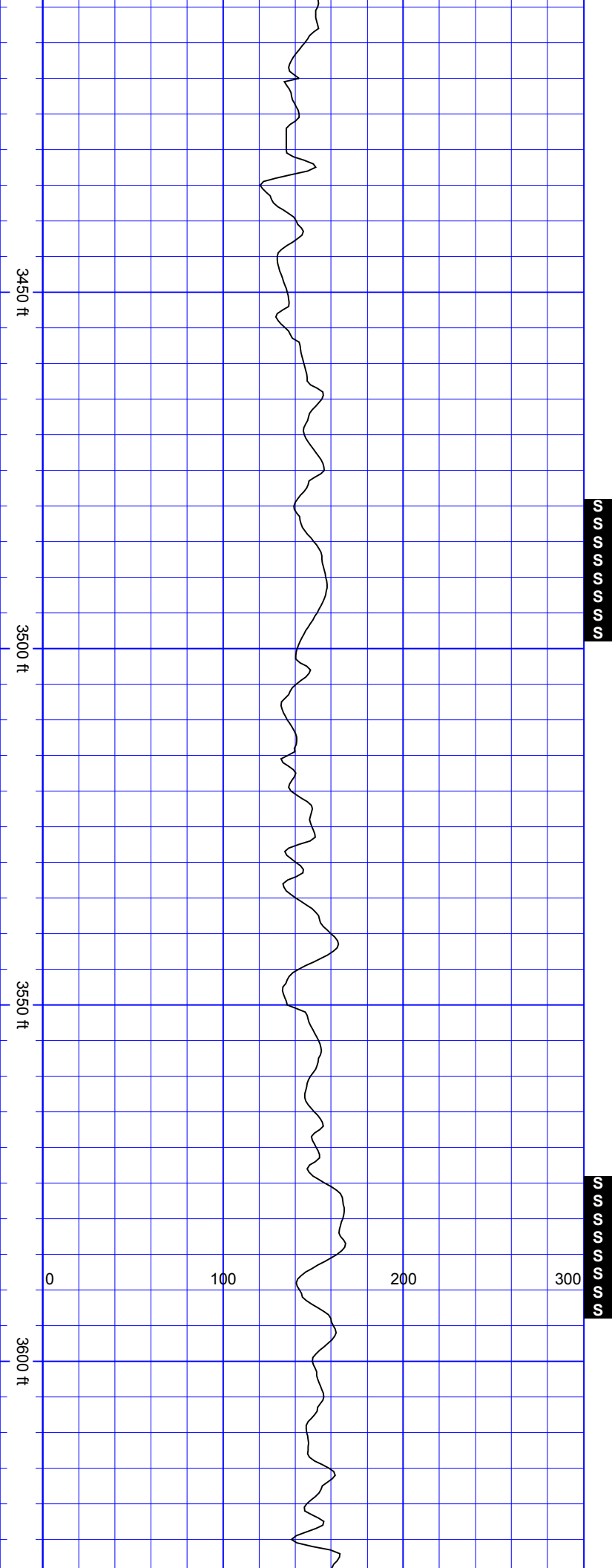


SurveyDepth:3029
TVD:2971.82 Inc:14.5
Azi:144.48 VertSec:-
408.31

SurveyDepth:3123
TVD:3063.09 Inc:13.14
Azi:142.9 VertSec:-
426.27



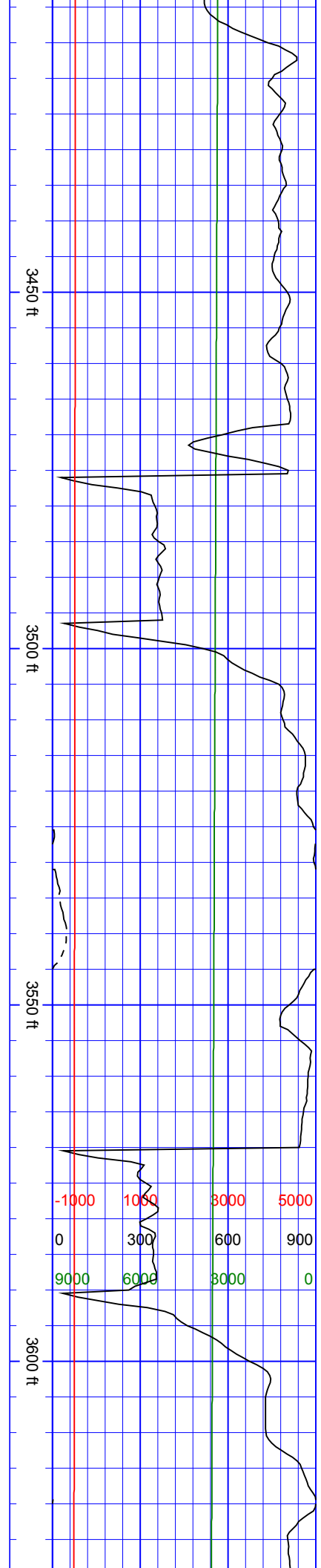




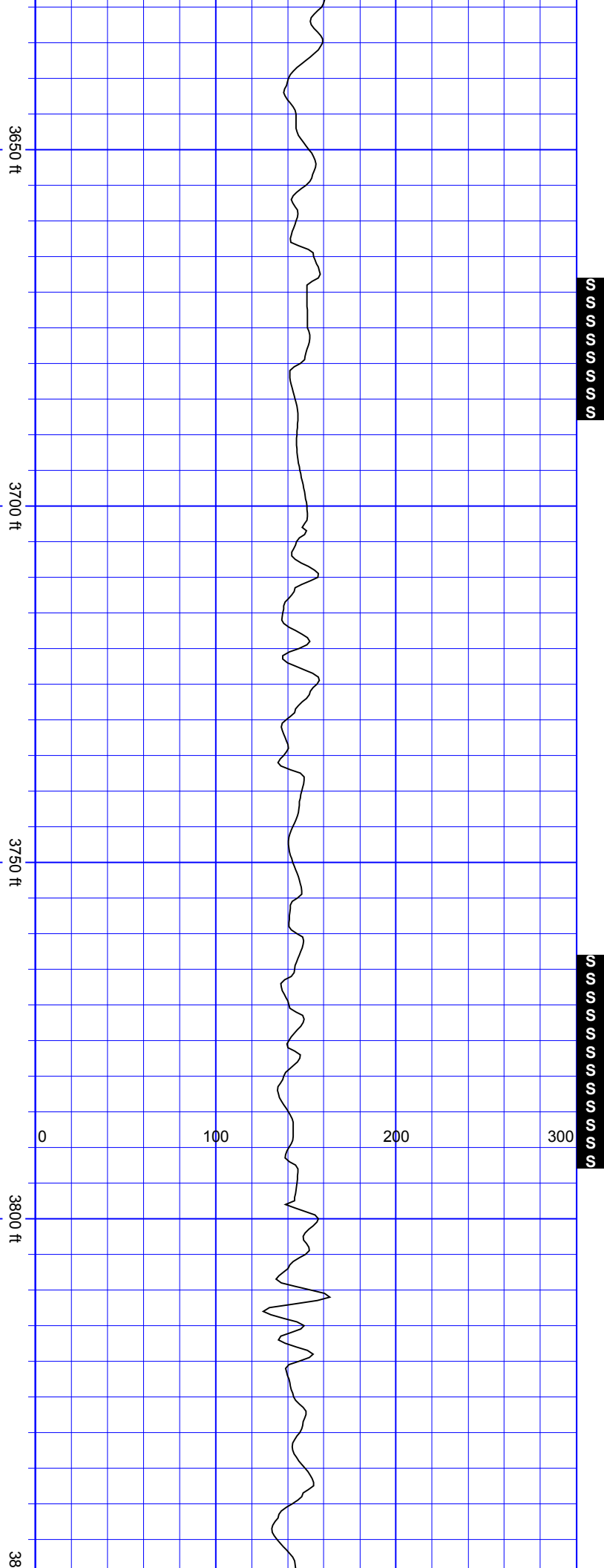
SurveyDepth:3418
TVD:3351.06 Inc:11.25
Azi:137.36 VertSec:-
474.27

SurveyDepth:3513
TVD:3444.26 Inc:11.07
Azi:137.97 VertSec:-
487.73

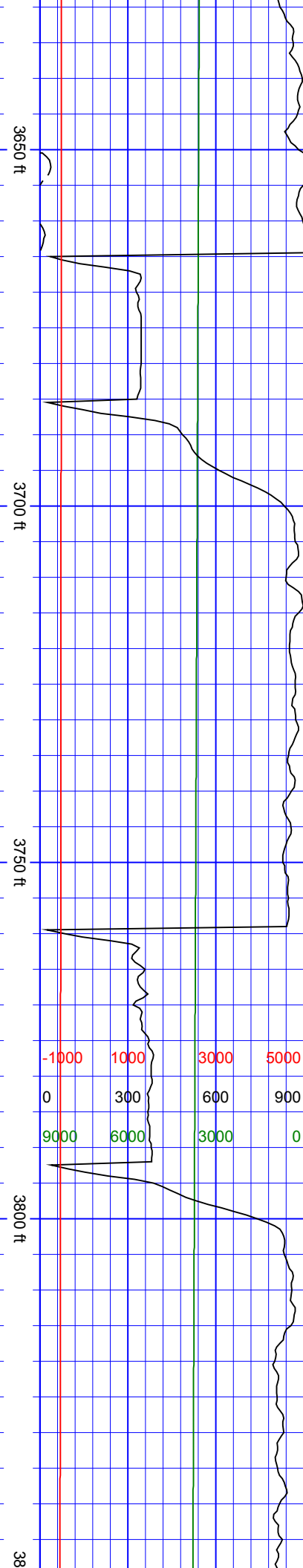
SurveyDepth:3607
TVD:3536.48 Inc:11.25
Azi:138.33 VertSec:-
501.16

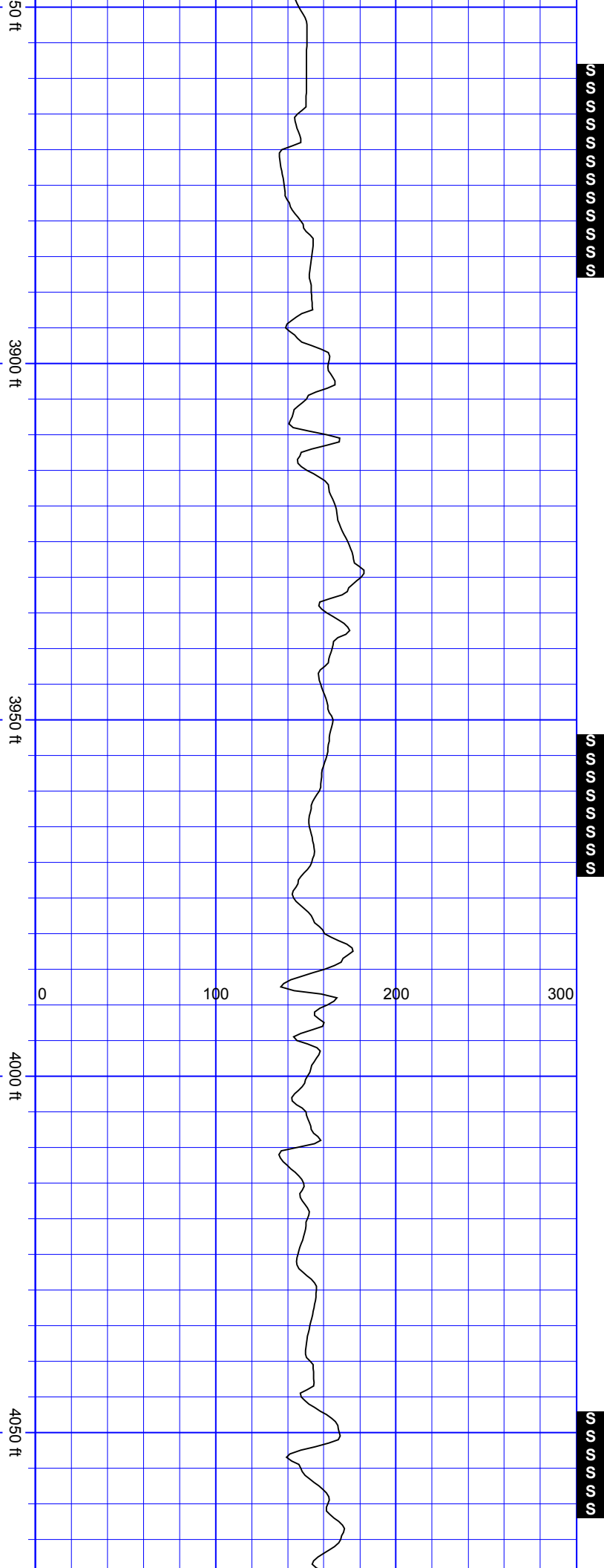


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0 300 600 900
9000 6000 3000 0



SurveyDepth:3702
TVD:3629.63 Inc:11.43
Azi:134.02 VertSec:-
514.49

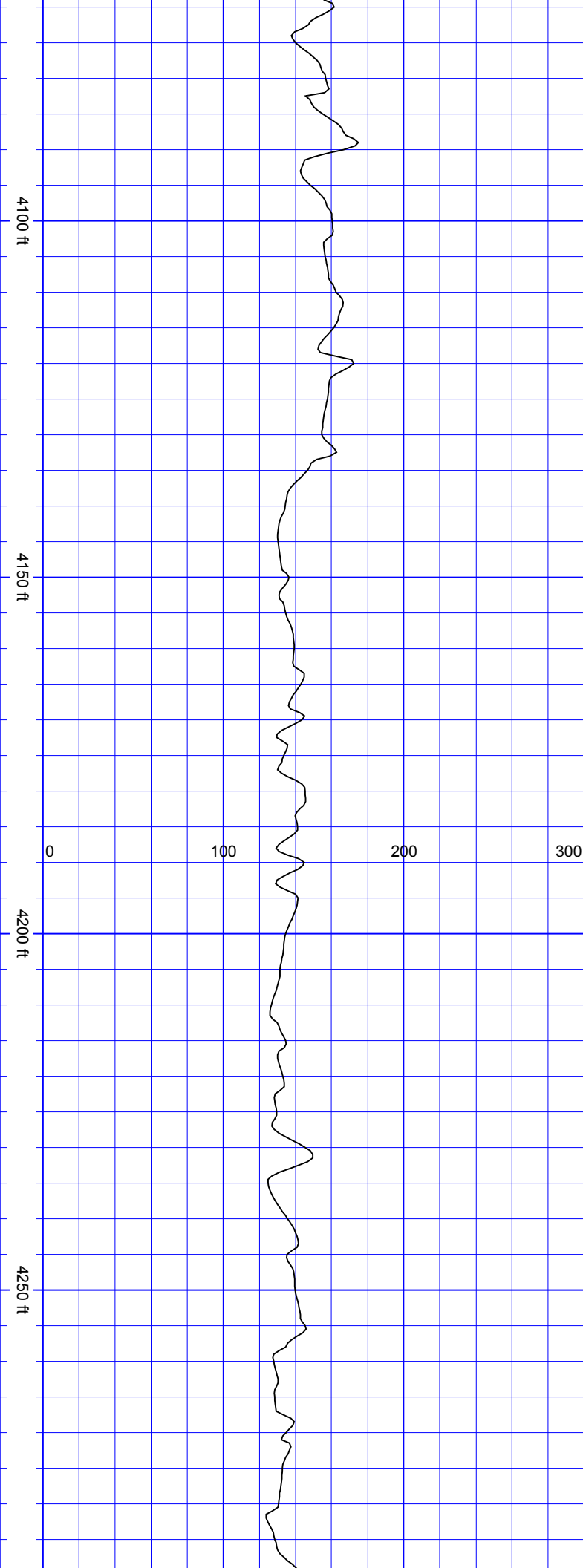




SurveyDepth:3891
TVD:3814.25 Inc:13.45
Azi:137.62 VertSec:-
544.2

SurveyDepth:3986
TVD:3906.65 Inc:13.45
Azi:135.34 VertSec:-
560.06



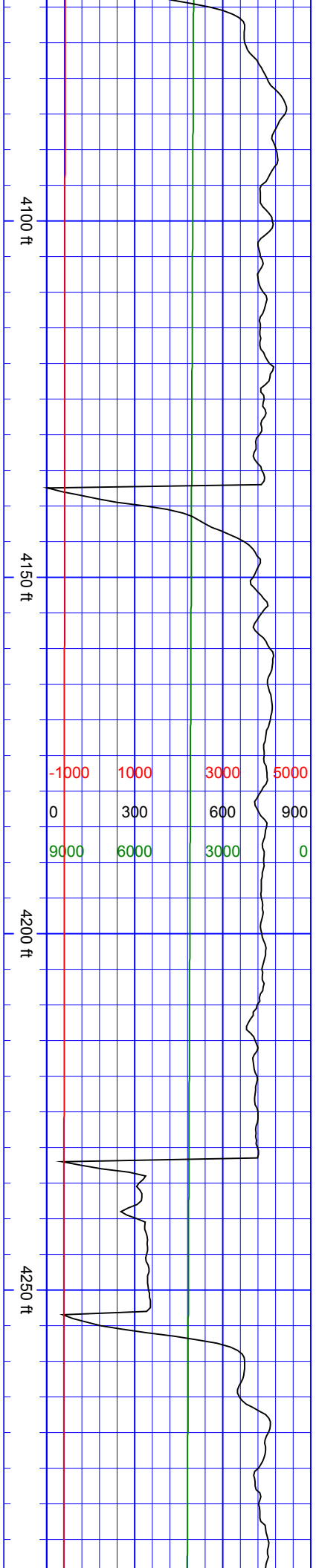


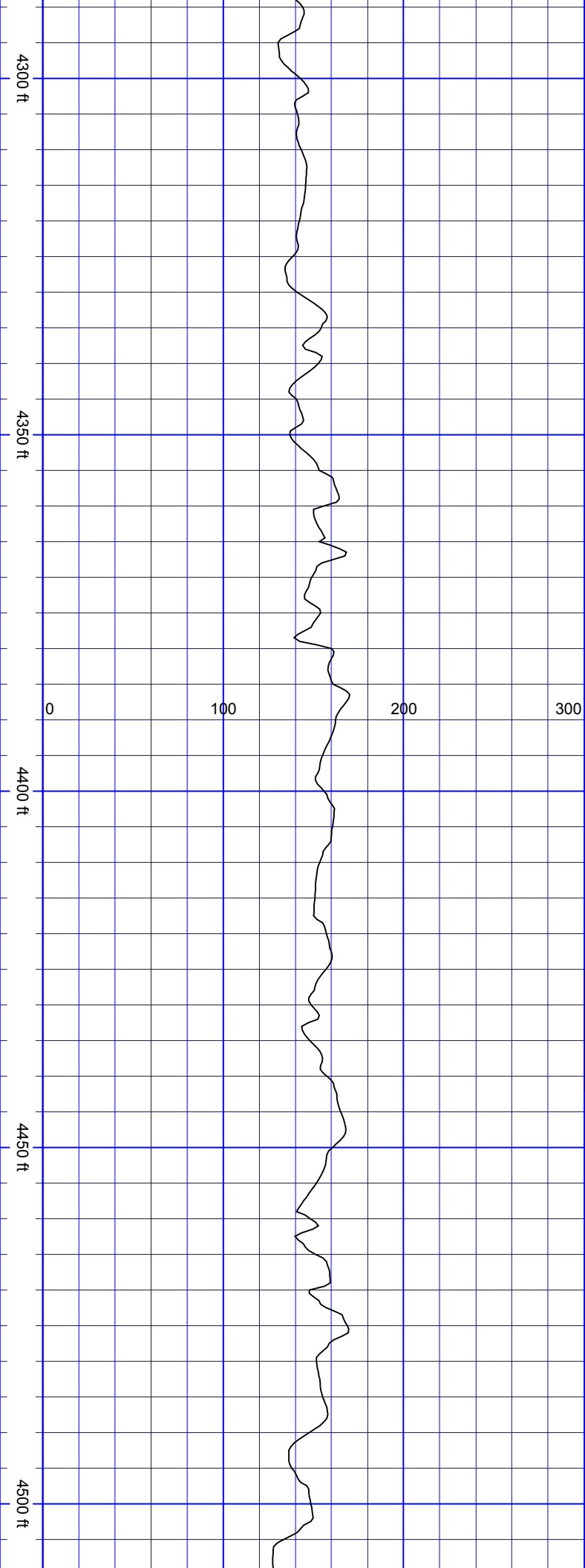
SurveyDepth:4080
TVD:3998.05 Inc:13.58
Azi:139.73 VertSec:-576.1

SurveyDepth:4175
TVD:4090.76 Inc:11.6
Azi:139.12 VertSec:-591.69

SurveyDepth:4270
TVD:4183.36 Inc:14.19
Azi:136.39 VertSec:-607.2

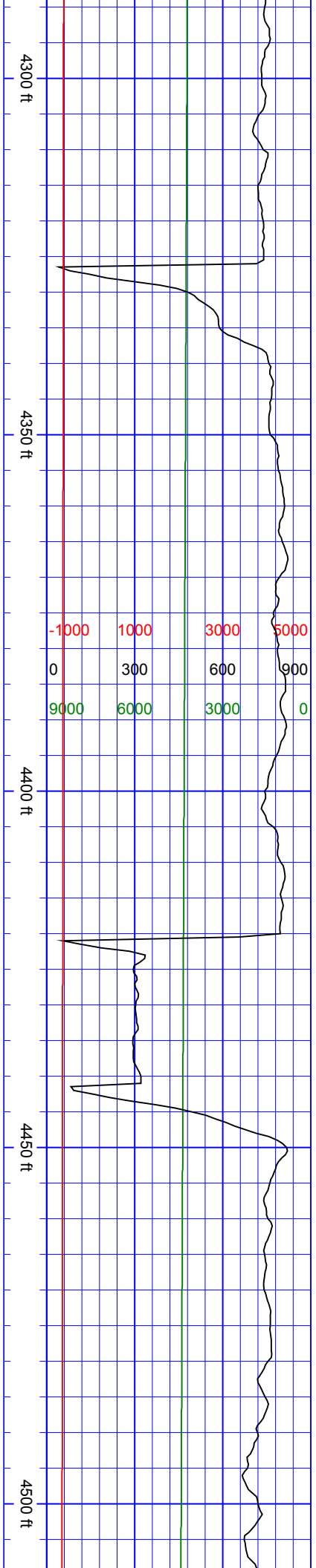
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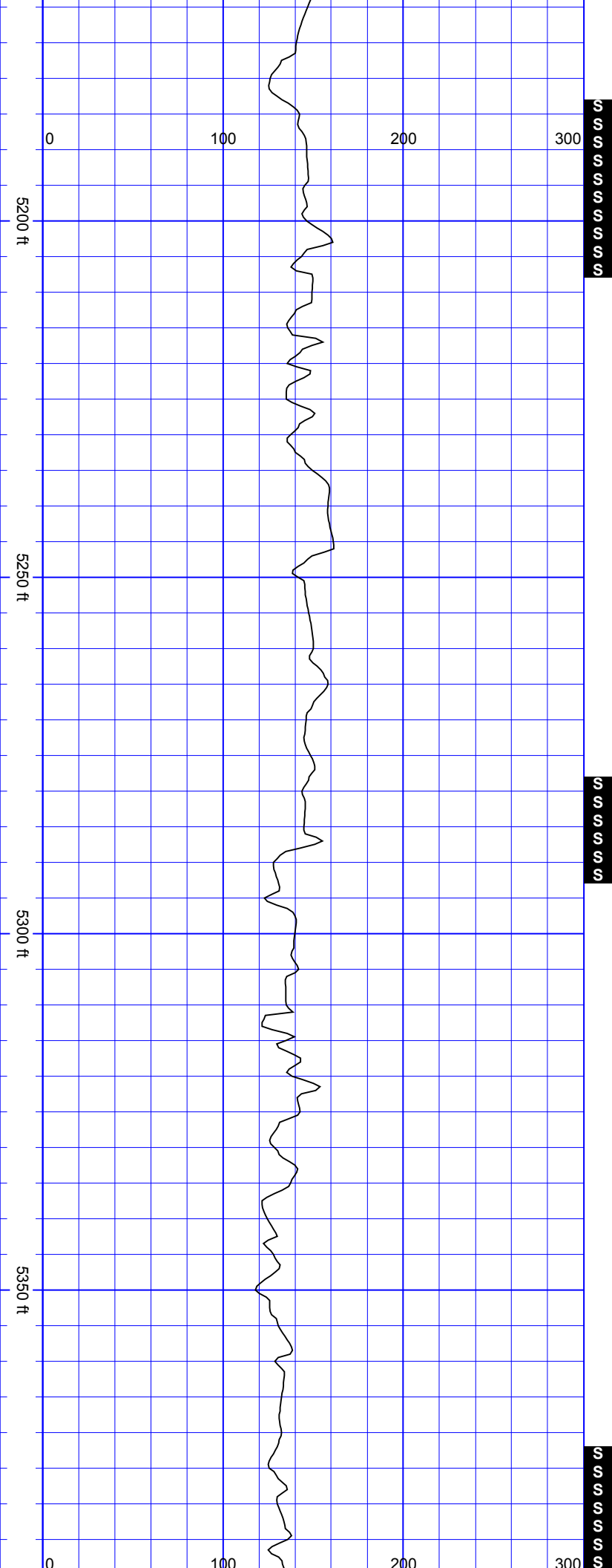




SurveyDepth:4364
TVD:4274.79 Inc:12.66
Azi:134.55 VertSec:-
622.61

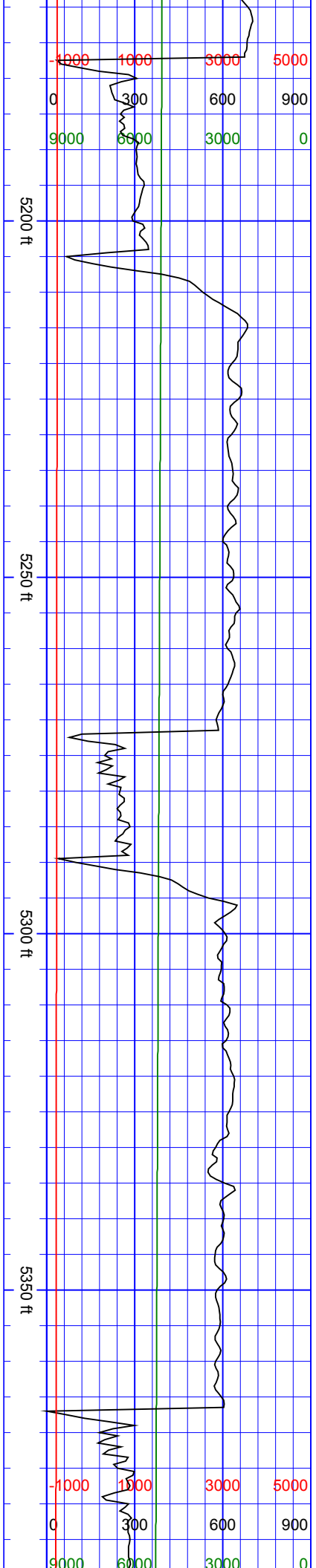
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TVD:4367.69 Inc:11.51
Azi:142.72 VertSec:-
637.32

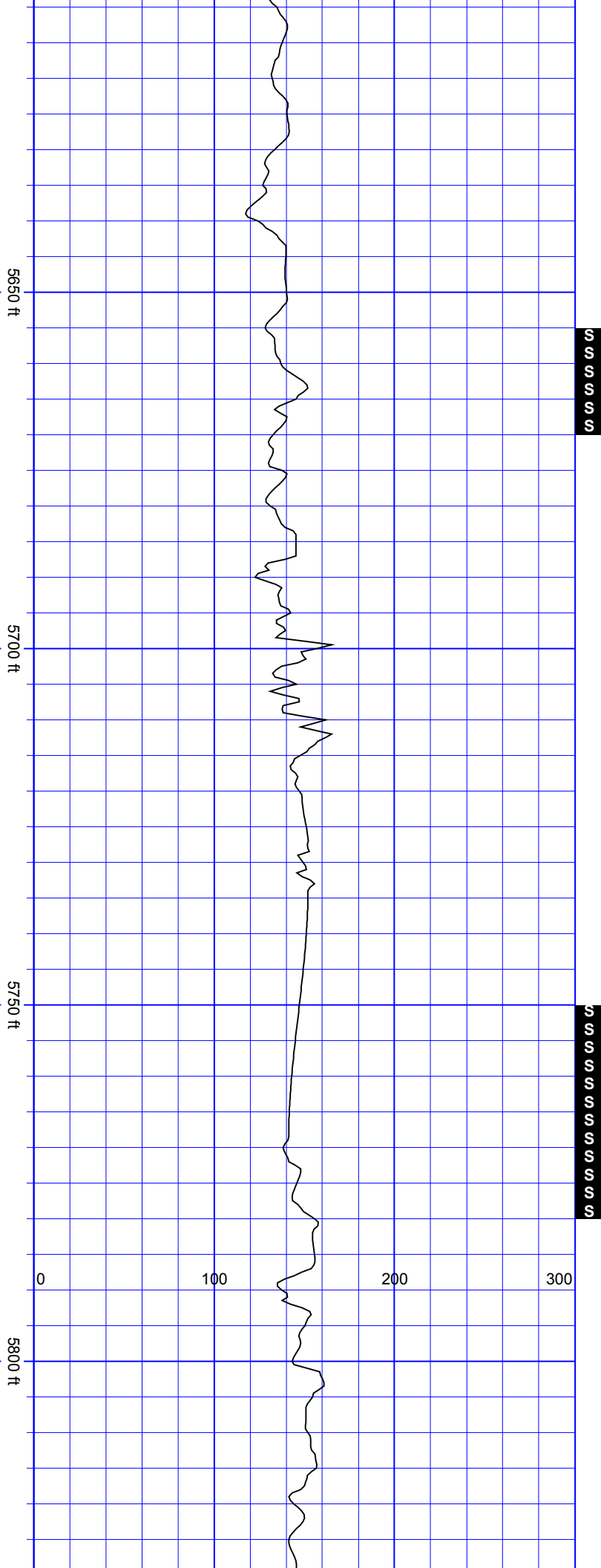




SurveyDepth:5217
TVD:5107.74 Inc:11.21
Azi:139.82 VertSec:-
759.54

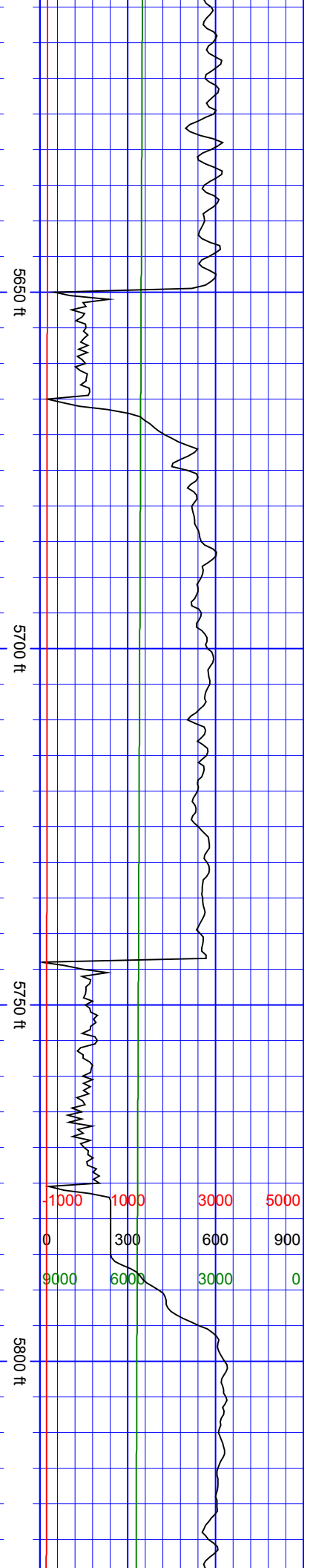
SurveyDepth:5311
TVD:5199.97 Inc:11.03
Azi:140.61 VertSec:-
773.35

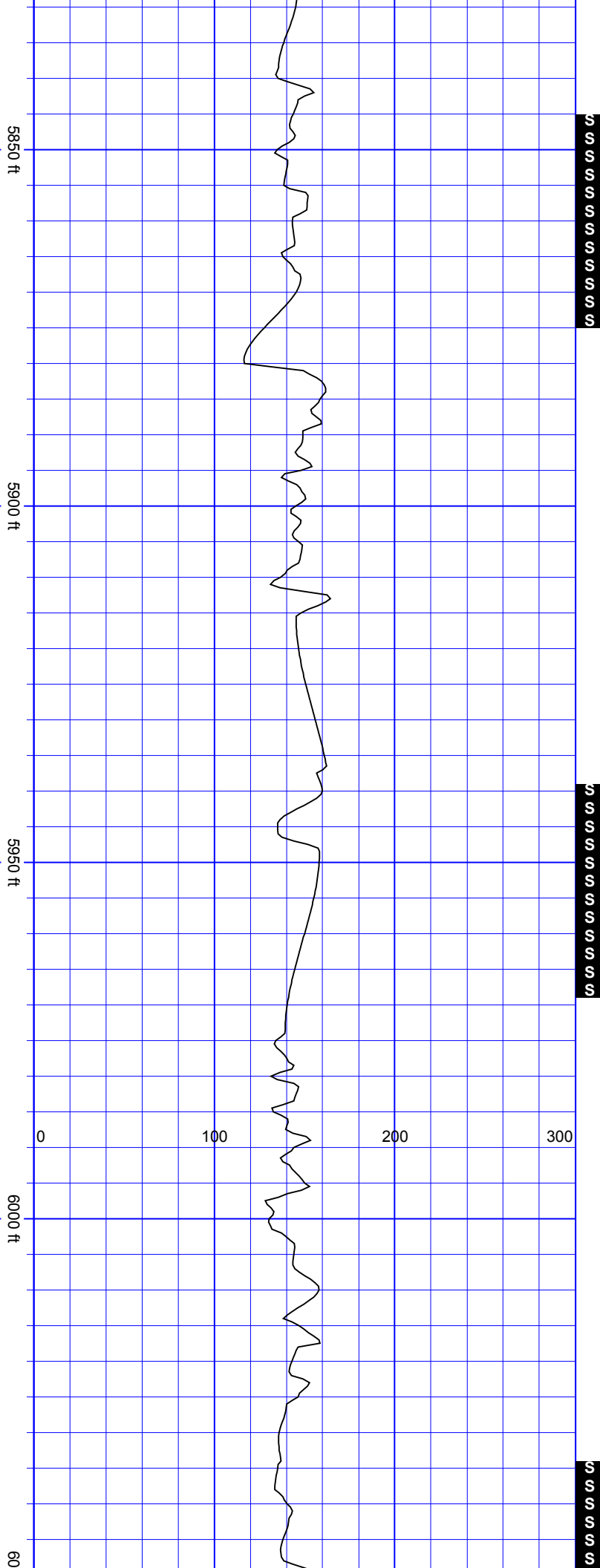




SurveyDepth:5689
TVD:5570.07 Inc:10.42
Azi:137.27 VertSec:-
831.85

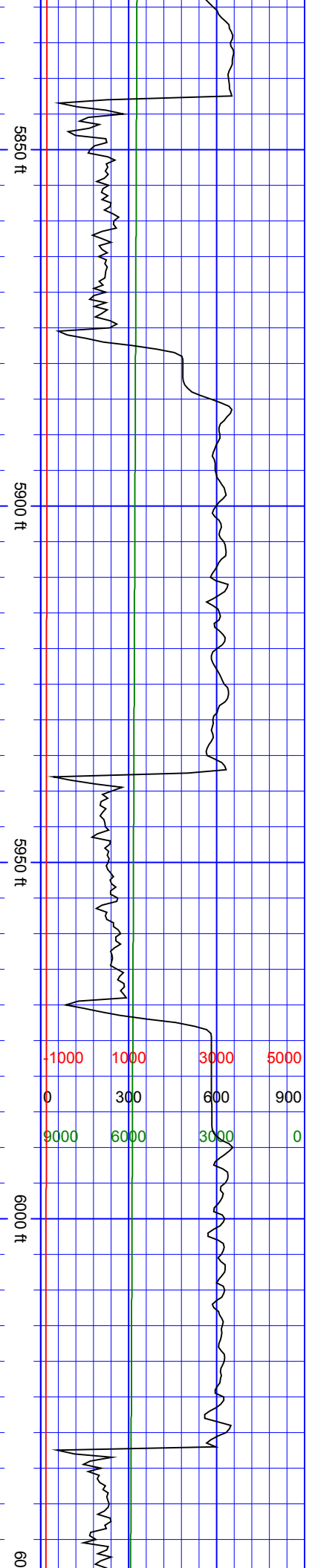
SurveyDepth:5784
TVD:5663.6 Inc:9.76
Azi:133.67 VertSec:-
843.6

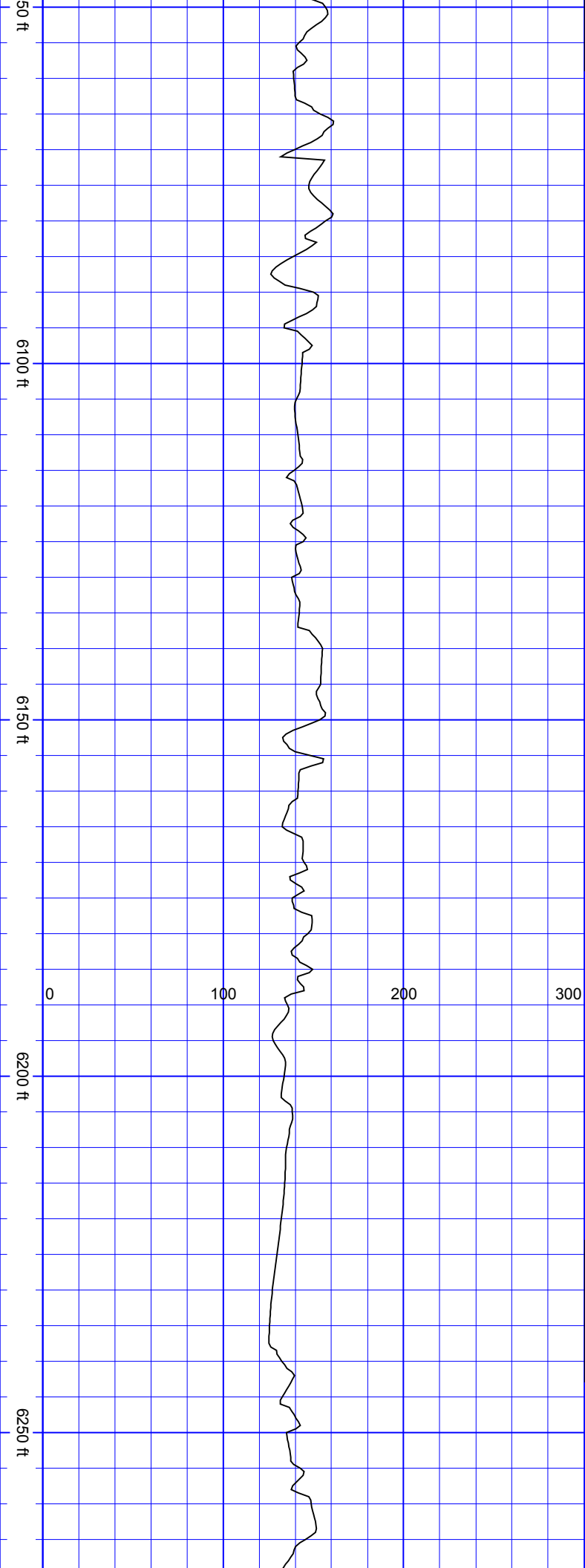




SurveyDepth:5878
TVD:5756.16 Inc:10.33
Azi:131.3 VertSec:-
854.54

SurveyDepth:5973
TVD:5849.36 Inc:11.95
Azi:134.02 VertSec:-
866.86

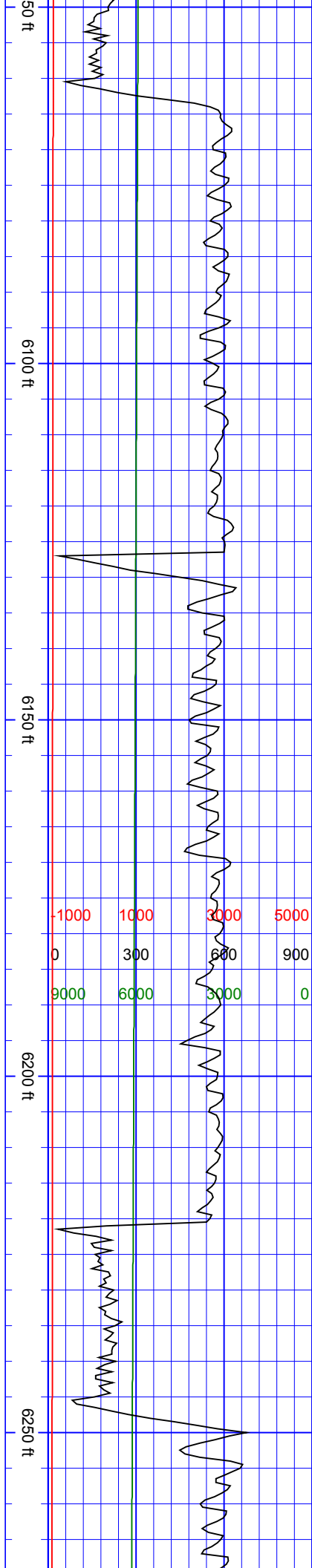


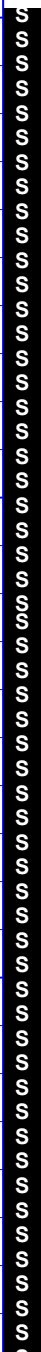
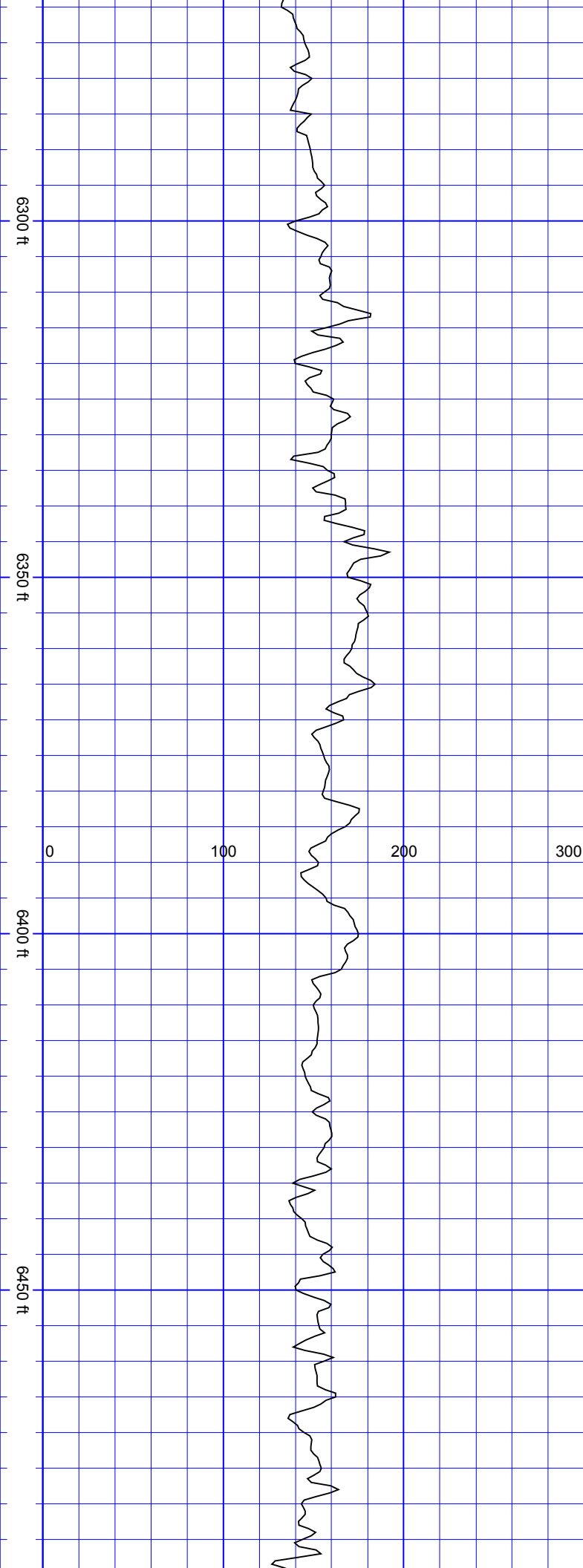


SurveyDepth:6068
TVD:5942.1 Inc:13.1
Azi:134.2 VertSec:-
881.05

SurveyDepth:6162
TVD:6034.14 Inc:10.28
Azi:129.36 VertSec:-
893.65

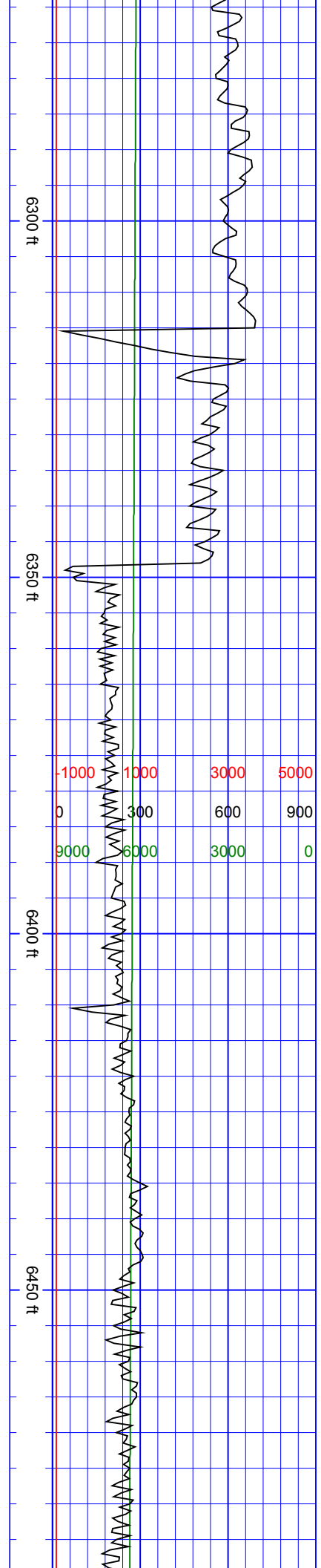
SurveyDepth:6257
TVD:6127.66 Inc:10.02
Azi:128.04 VertSec:-
903.98

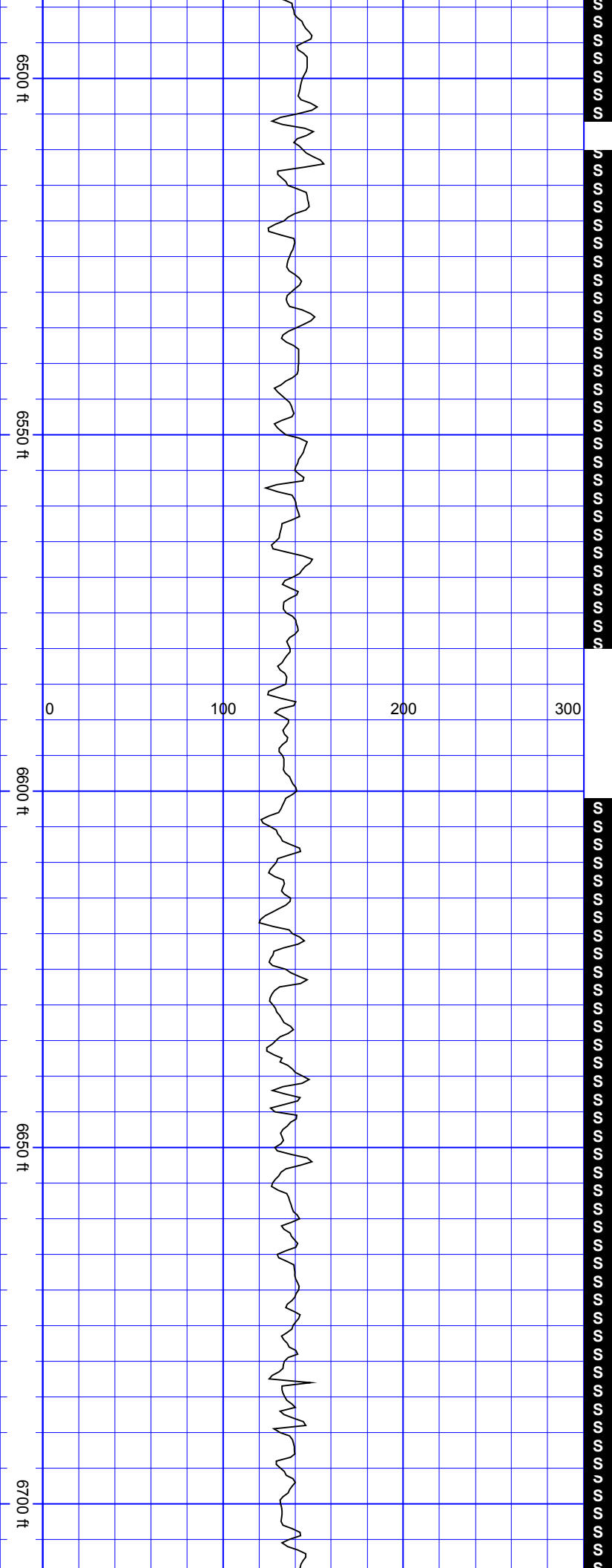




SurveyDepth:6351
TVD:6220.51 Inc:7.91
Azi:119.61 VertSec:-
912.1

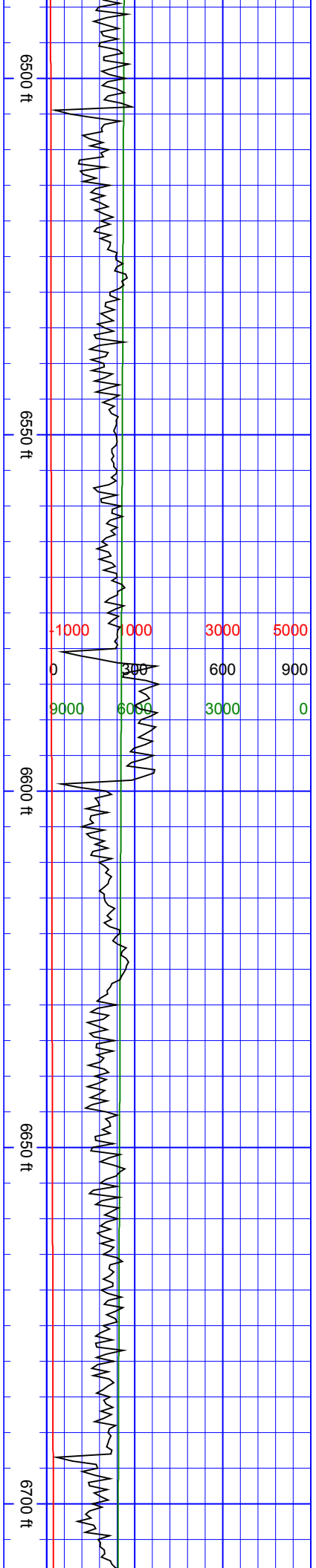
SurveyDepth:6446
TVD:6314.25 Inc:12.04
Azi:63.97 VertSec:-
910.82





SurveyDepth:6540
TVD:6405.2 Inc:17.36
Azi:43.14 VertSec:-
896.08

SurveyDepth:6635
TVD:6494.83 Inc:21.45
Azi:29.08 VertSec:-
870.35



6750 ft

6800 ft

6850 ft

6900 ft

SurveyDepth:6730
TVD:6581.54 Inc:26.81
Azi:18.09 VertSec:-834.6

SurveyDepth:6825
TVD:6664.83 Inc:30.67
Azi:13.87 VertSec:-790.57

SurveyDepth:6919
TVD:6741.02 Inc:40.83
Azi:12.99 VertSec:-737.08

6750 ft

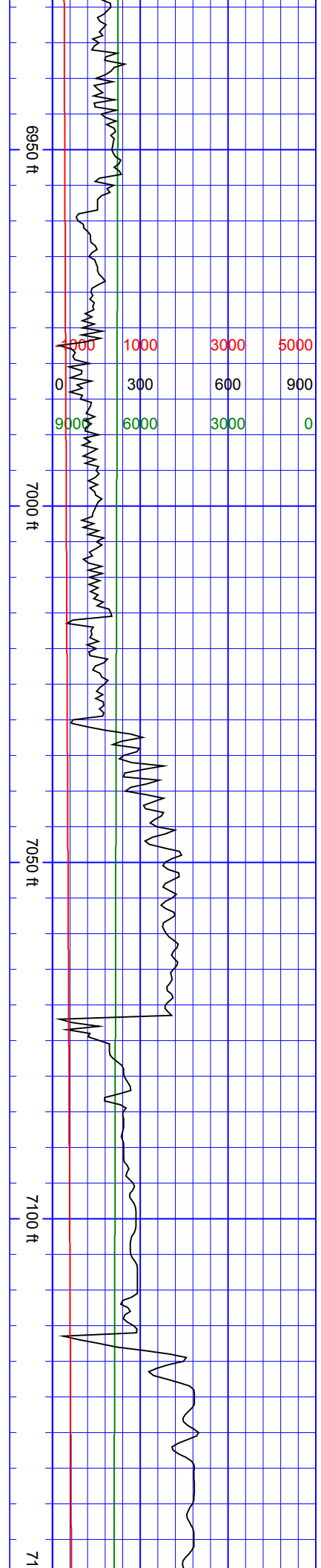
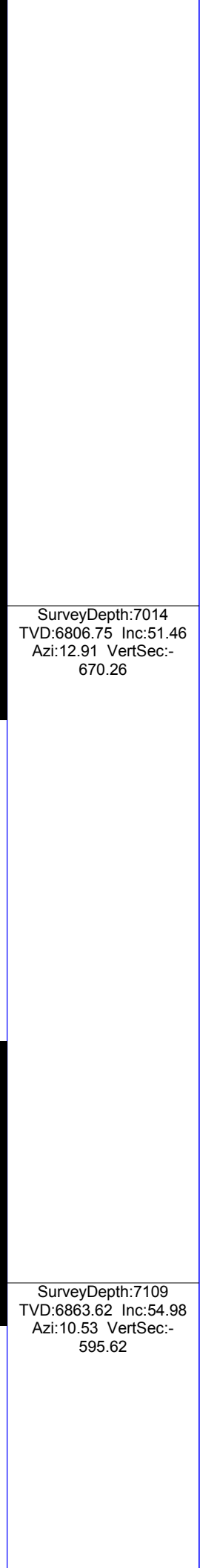
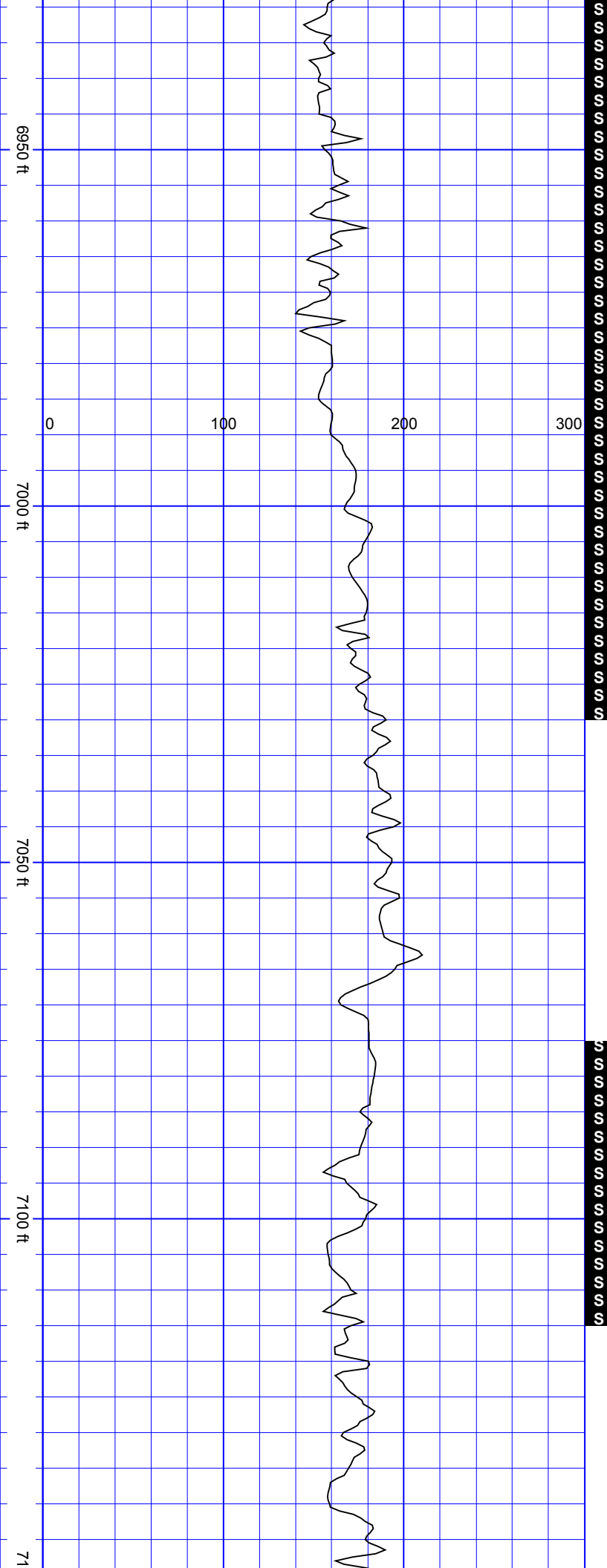
6800 ft

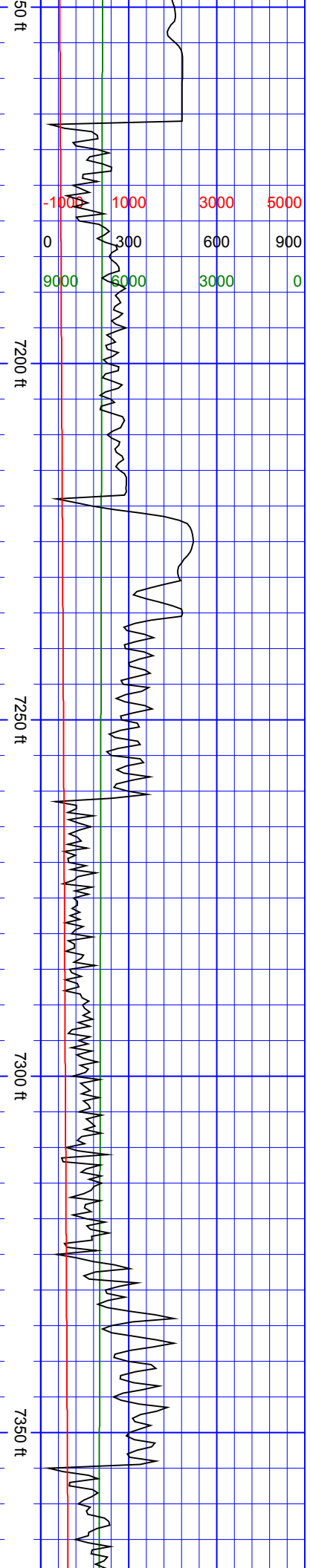
6850 ft

6900 ft

July 05, 2018

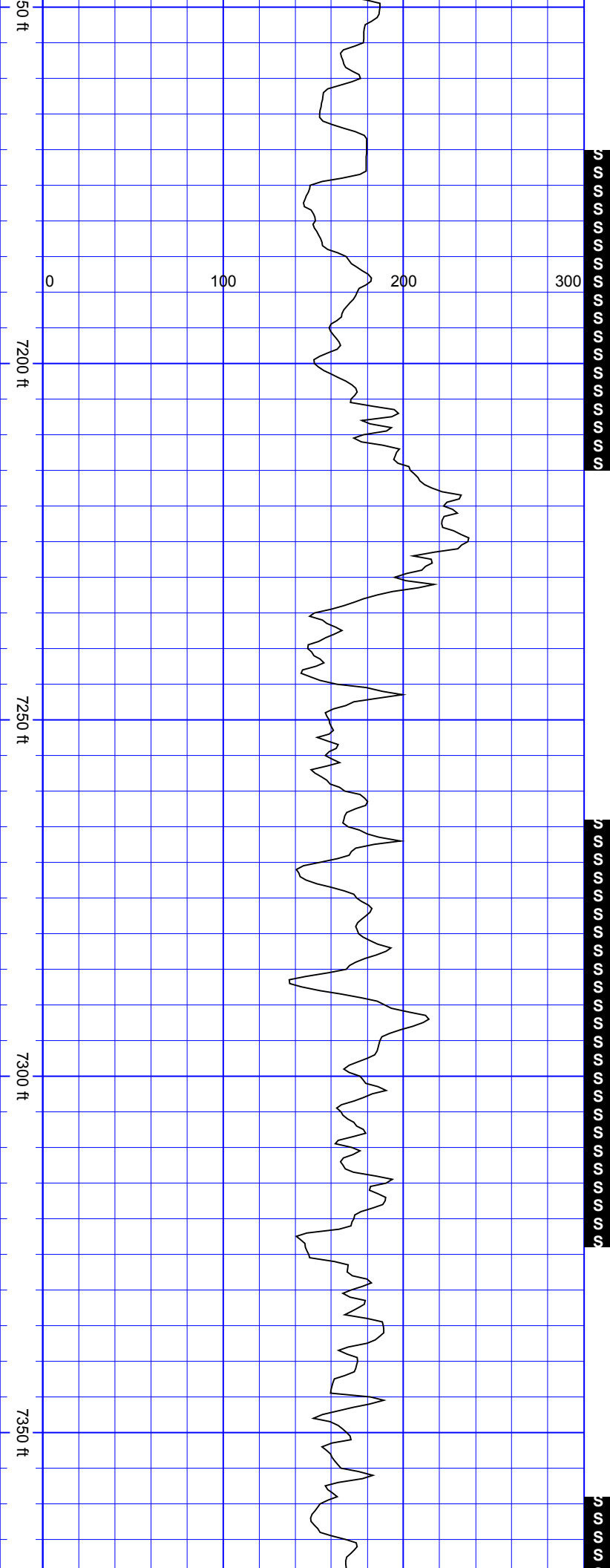
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9600	6000	3000	0

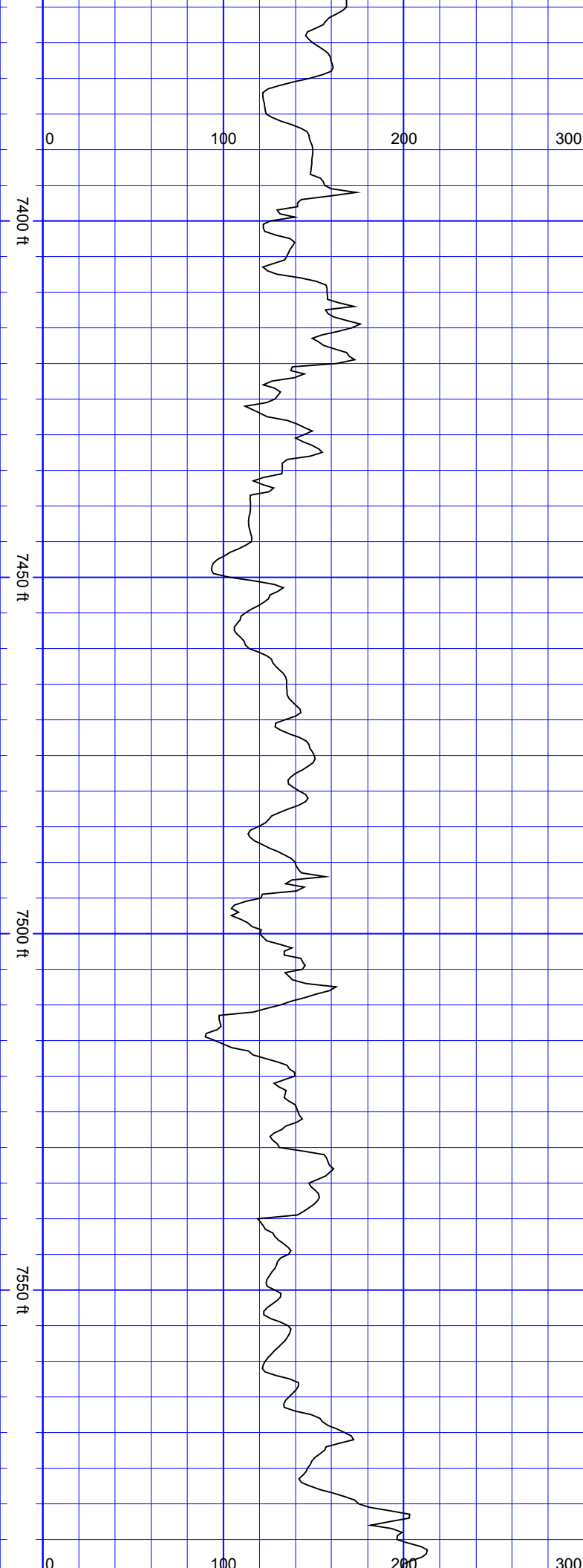




SurveyDepth:7203
TVD:6916.33 Inc:56.82
Azi:7.37 VertSec:-518.62

SurveyDepth:7298
TVD:6966.15 Inc:59.94
Azi:2.62 VertSec:-438.01

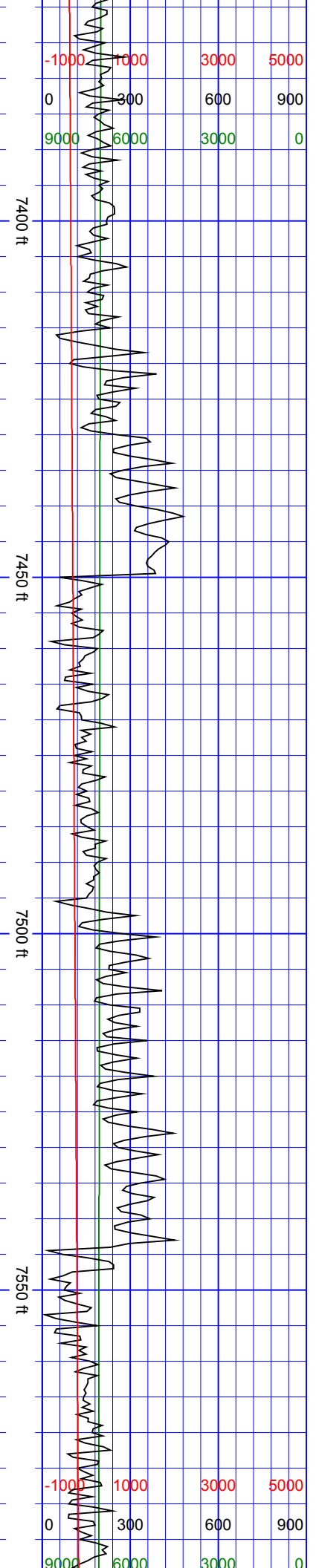


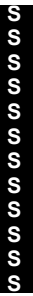
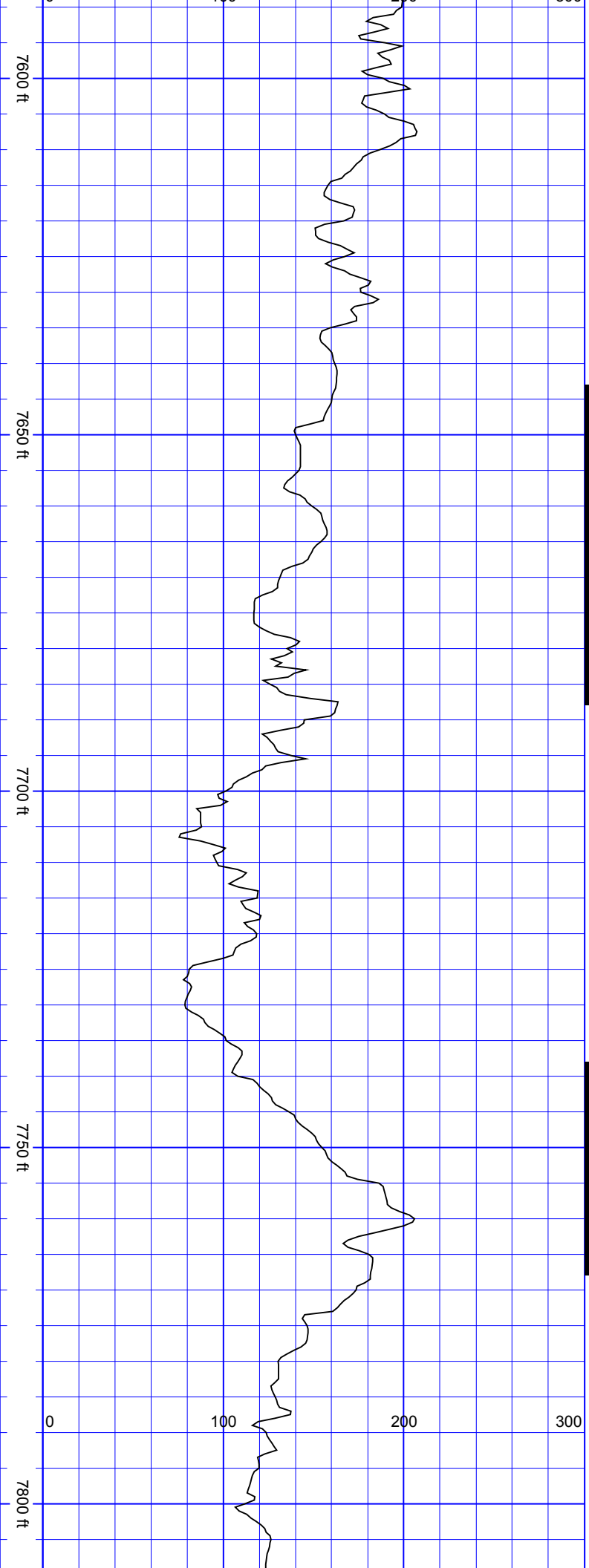


SurveyDepth:7393
TVD:7008.68 Inc:66.84
Azi:1.13 VertSec:-353.14

SurveyDepth:7487
TVD:7040.81 Inc:73.17
Azi:359.46 VertSec:-264.86

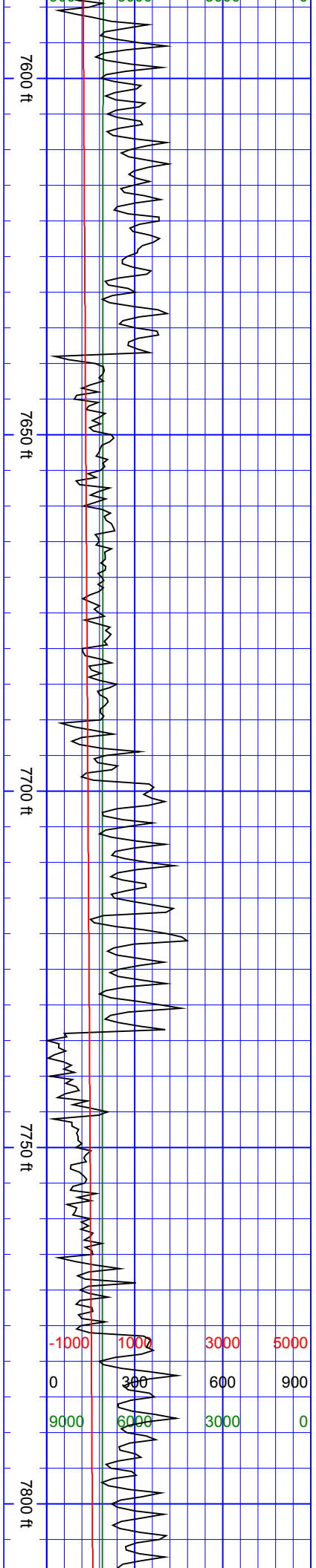
SurveyDepth:7582
TVD:7066.03 Inc:76.03
Azi:359.11 VertSec:-





173.3

SurveyDepth:7677 TVD:7084.59 Inc:81.43 Azi:359.46 VertSec:-80.19	SurveyDepth:7771 TVD:7094.27 Inc:86.75 Azi:359.99 VertSec:13.26
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7850 ft

7900 ft

7950 ft

8000 ft

0 100 200 300

SurveyDepth:7866
TVD:7099.76 Inc:86.62
Azi:359.9 VertSec:108.1



SurveyDepth:7961
TVD:7103.11 Inc:89.34
Azi:359.46
VertSec:203.02

7850 ft

7900 ft

7950 ft

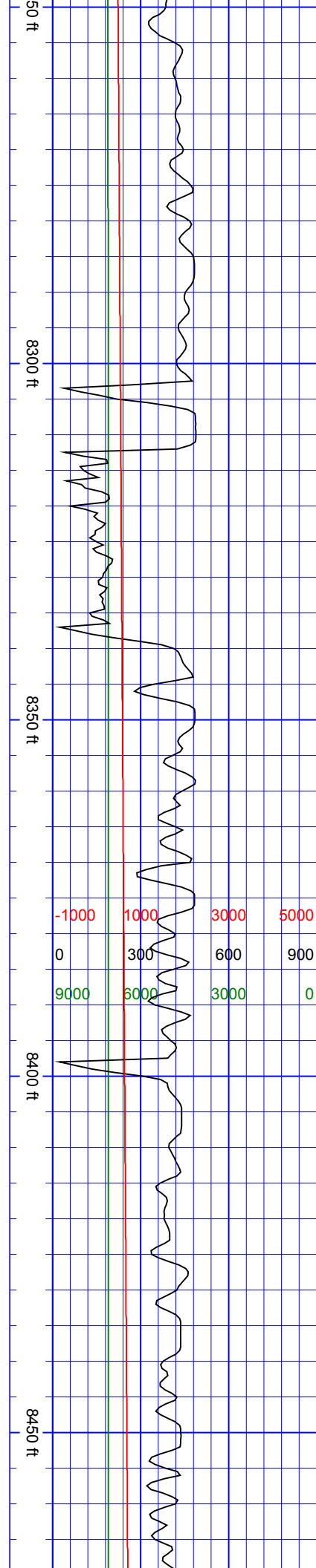
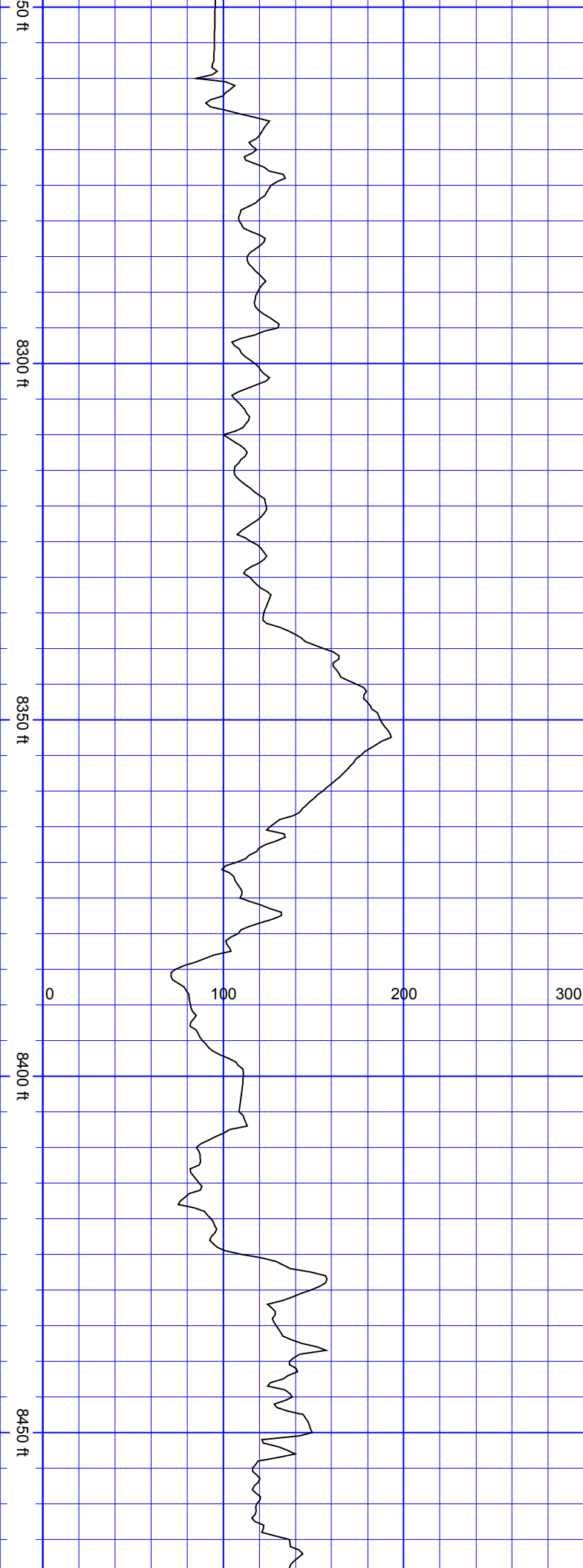
8000 ft

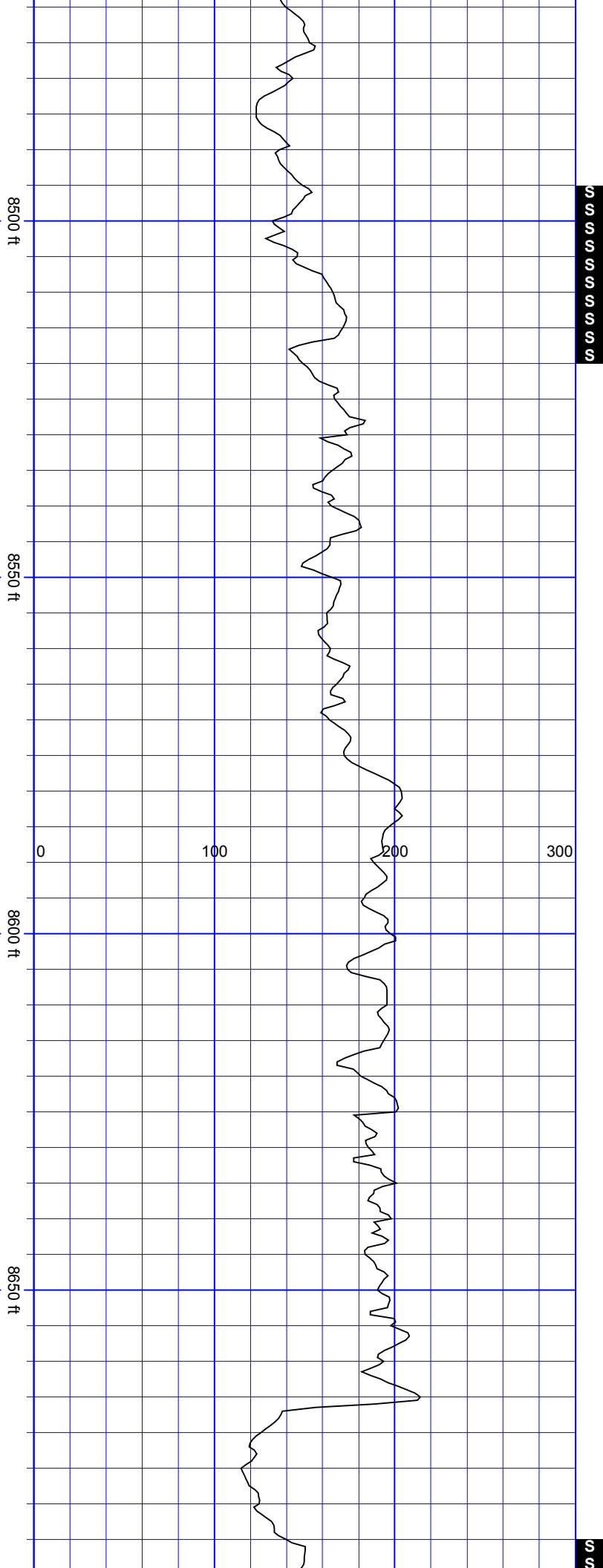
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0	300	600	900
9000	6000	3000	0

Azi:359.2
VertSec:485.96

SurveyDepth:8340
TVD:7101.99 Inc:91.45
Azi:1.22 VertSec:581.94

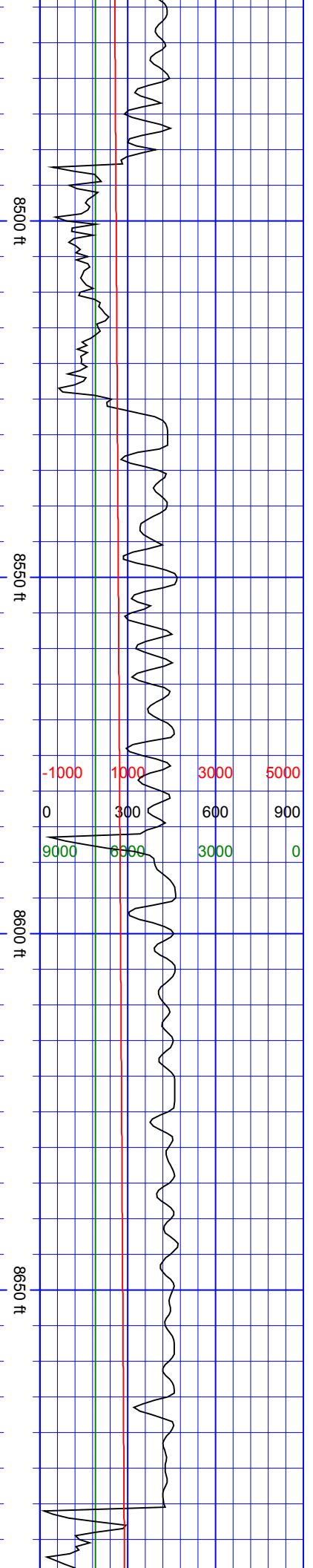
SurveyDepth:8434
TVD:7099.07 Inc:92.11
Azi:1.22 VertSec:675.89



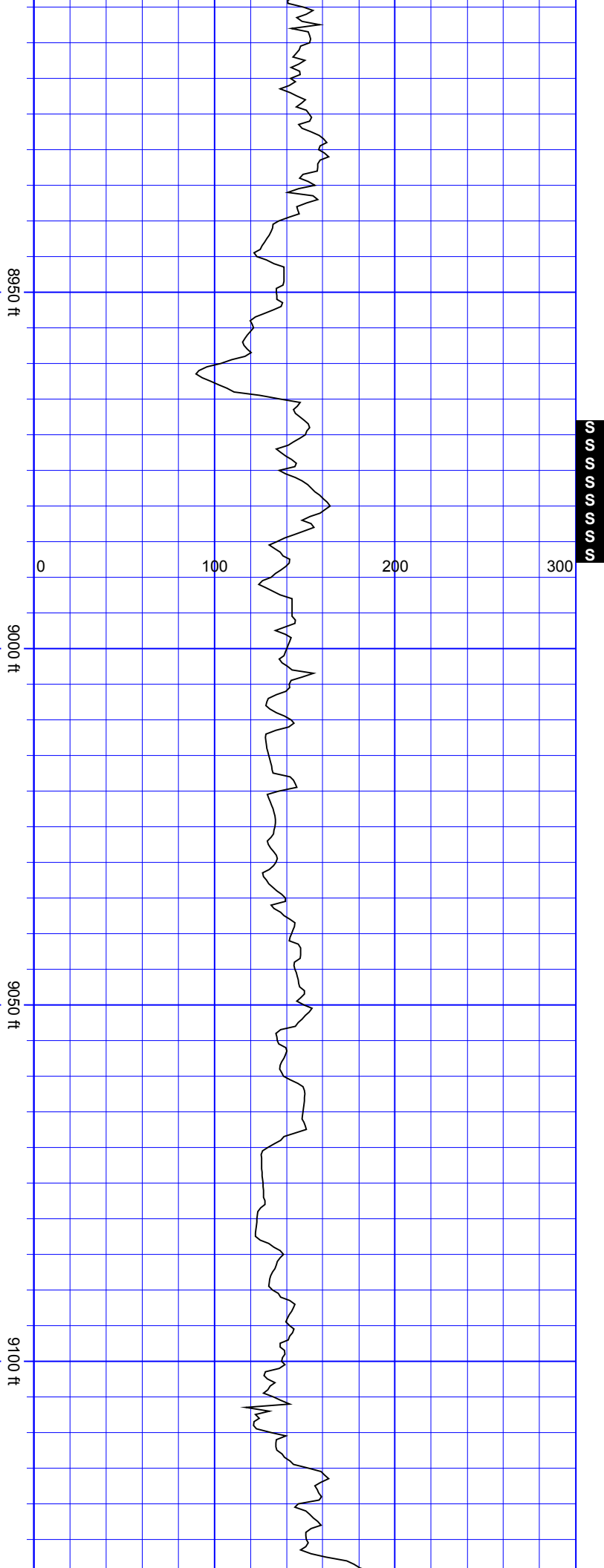


SurveyDepth:8529
TVD:7096.74 Inc:90.7
Azi:0.43 VertSec:770.86

SurveyDepth:8624
TVD:7095.28 Inc:91.06
Azi:0.07 VertSec:865.84

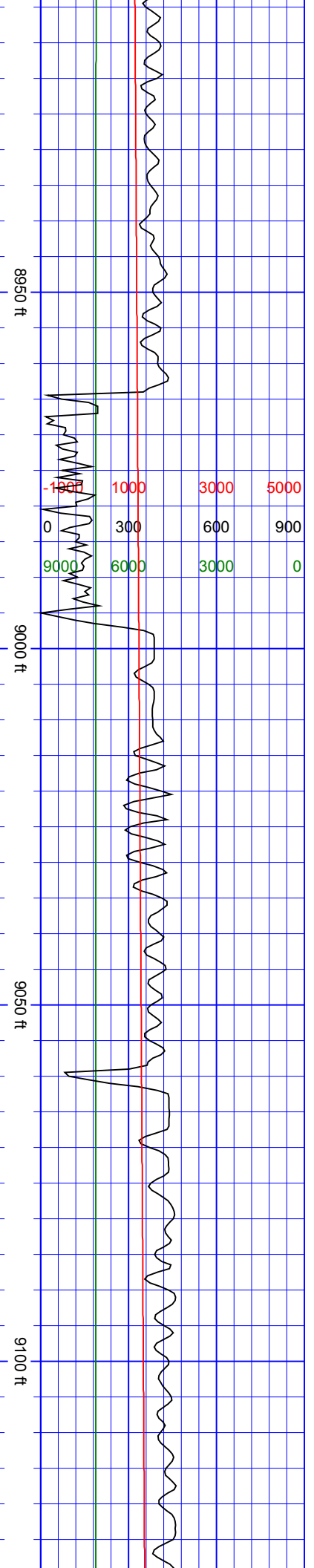


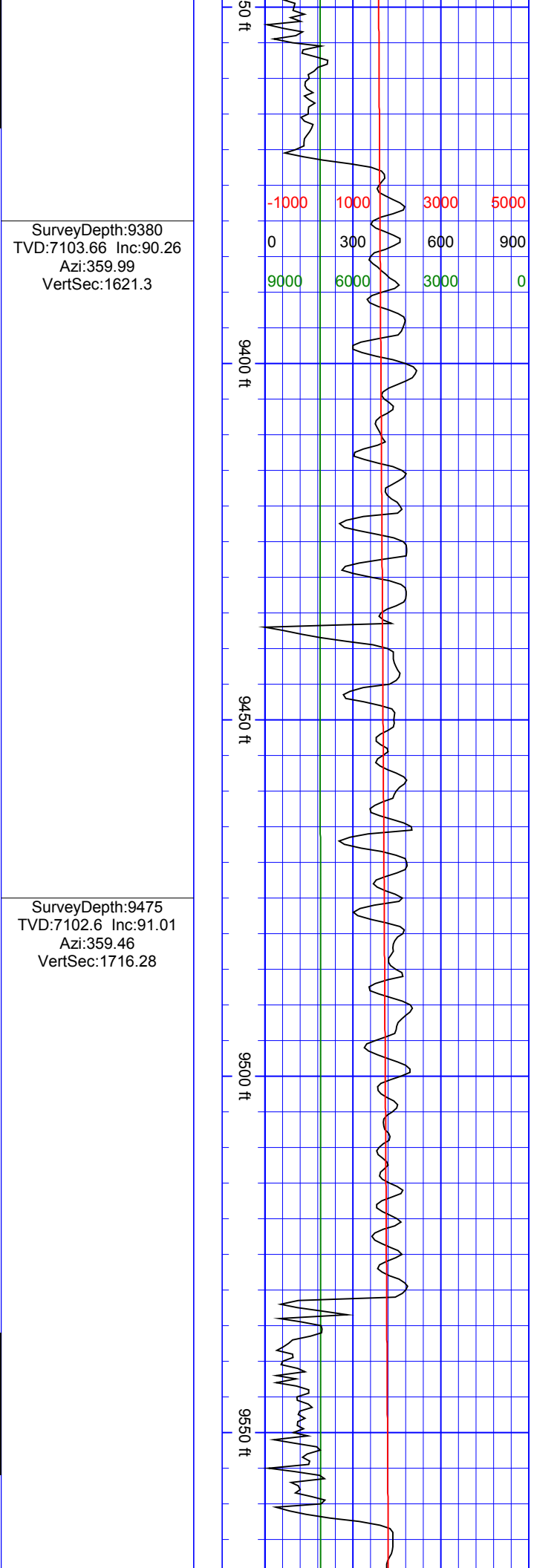
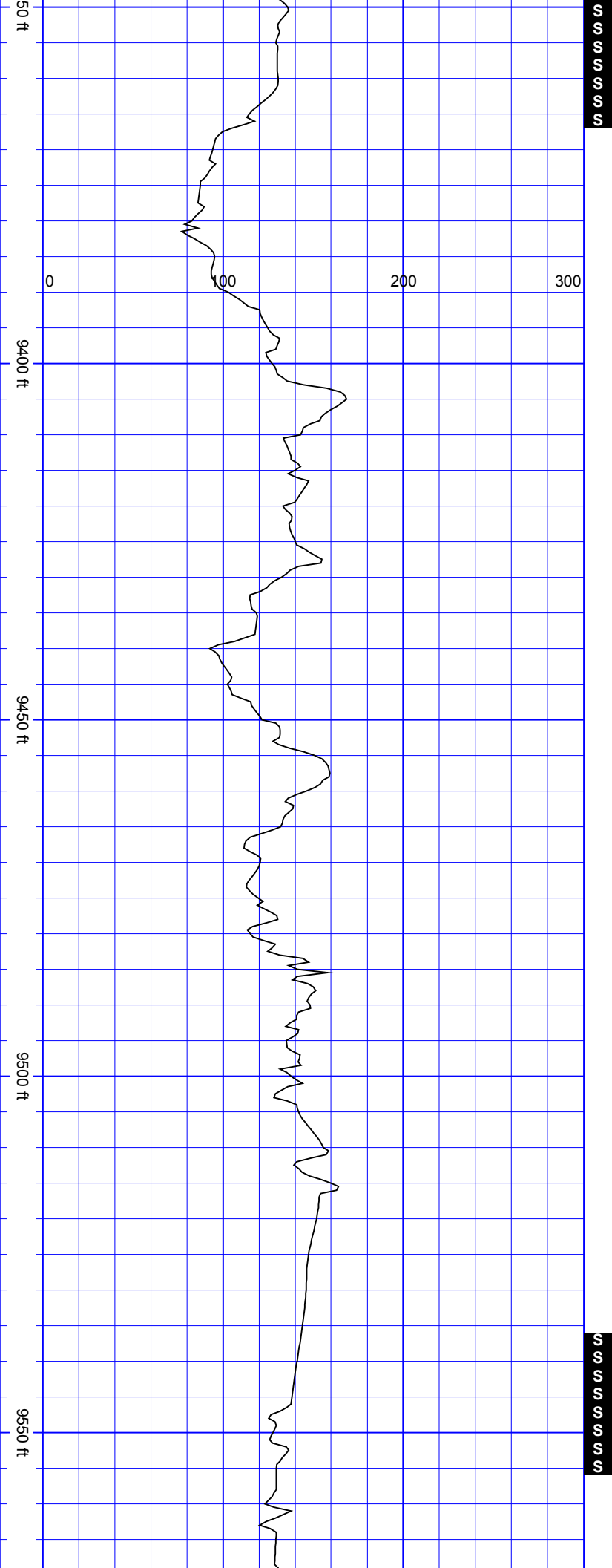
TVD:7102.24 Inc:86.35
Azi:1.92 VertSec:1148.6

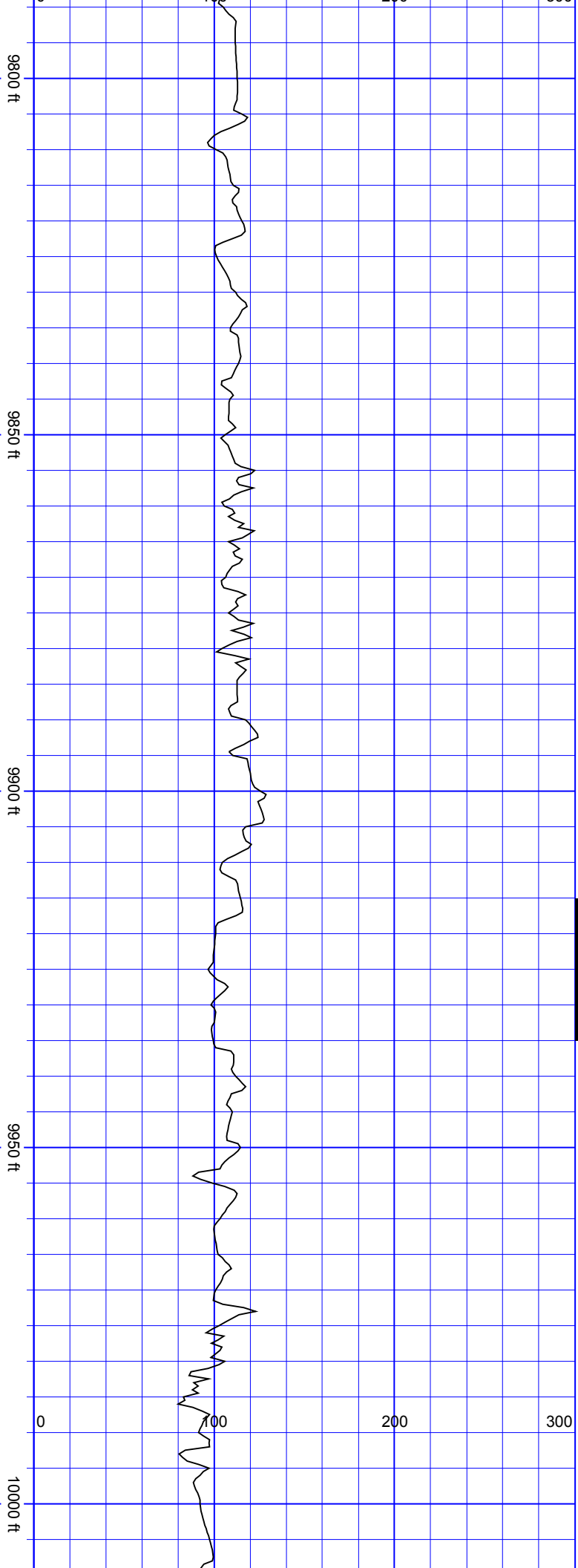


SurveyDepth:9002
TVD:7106.36 Inc:88.68
Azi:1.04
VertSec:1243.49

SurveyDepth:9096
TVD:7108.85 Inc:88.29
Azi:0.69
VertSec:1337.46

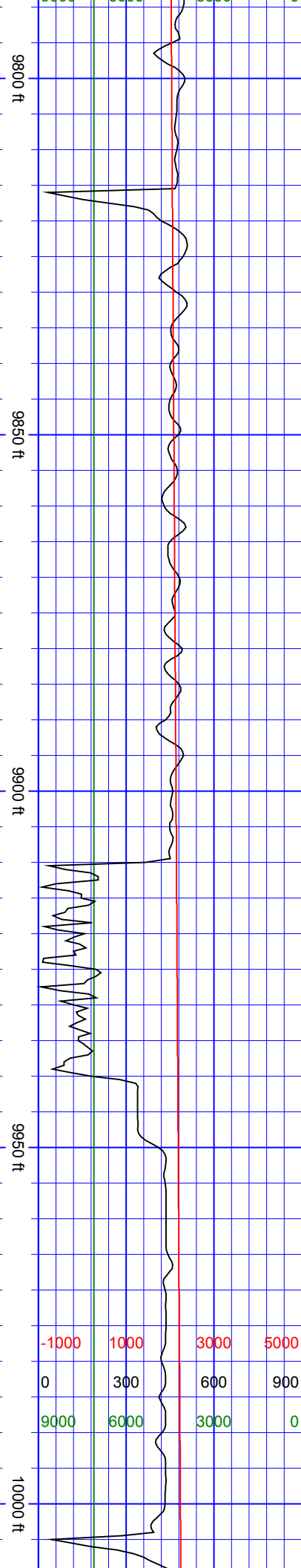


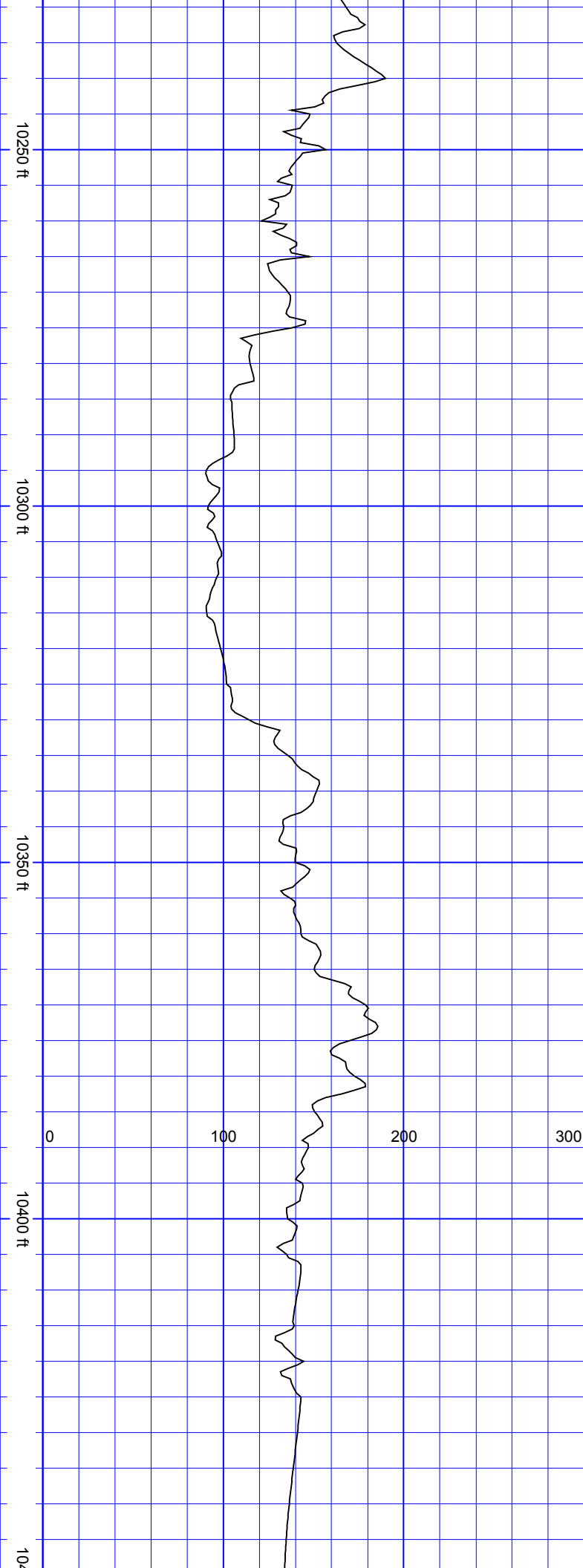




SurveyDepth:9854
TVD:7101.19 Inc:90.18
Azi:359.99
VertSec:2095.22

SurveyDepth:9949
TVD:7100.06 Inc:91.19
Azi:1.04
VertSec:2190.21



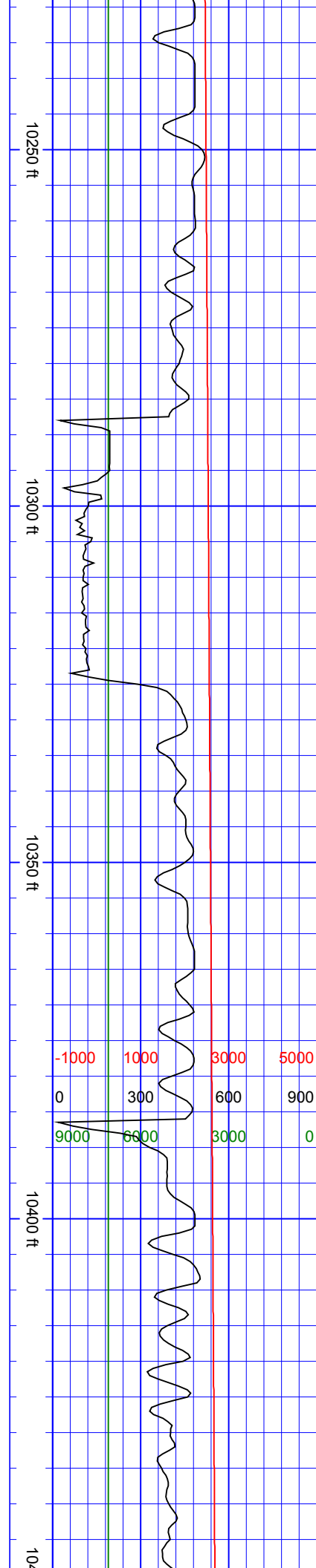


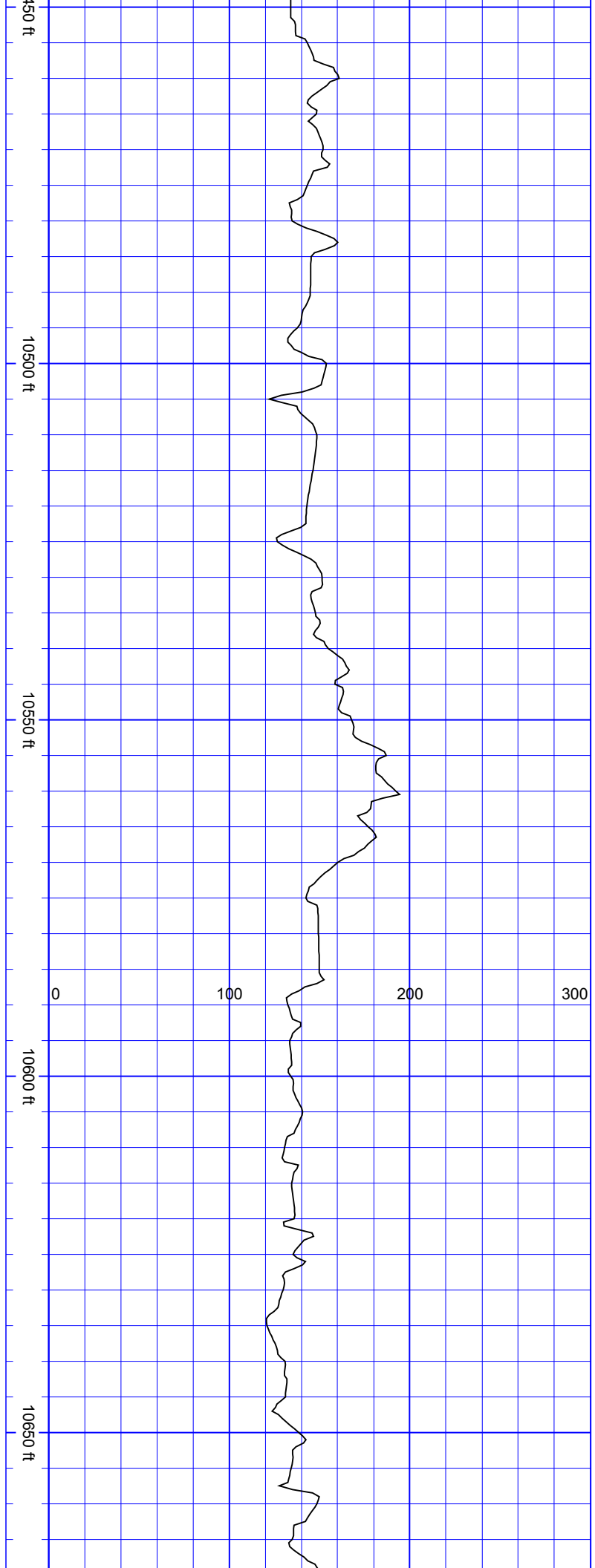
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SurveyDepth:10233
TVD:7091.44 Inc:91.85
Azi:1.83
VertSec:2474.06

SurveyDepth:10327
TVD:7090.28 Inc:89.56
Azi:2.18
VertSec:2568.02

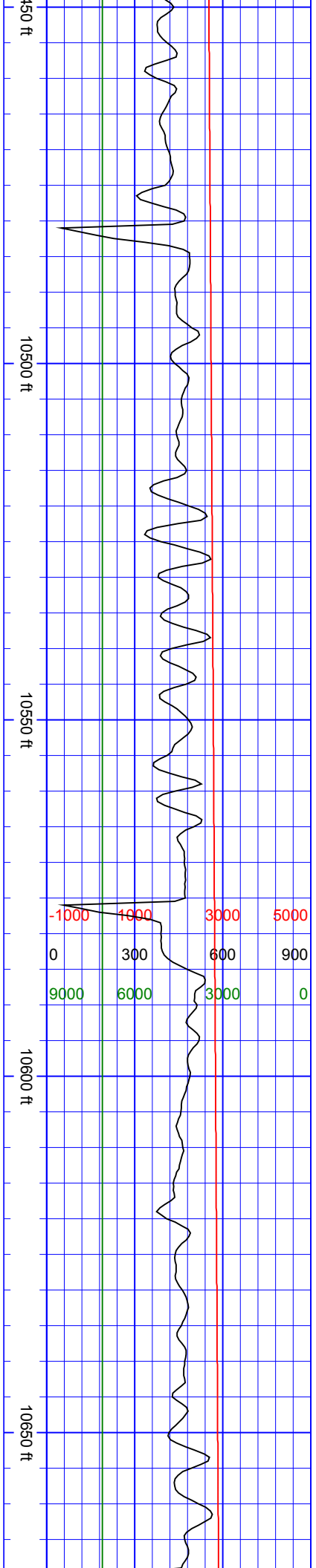
SurveyDepth:10422
TVD:7090.87 Inc:89.74
Azi:2.36
VertSec:2662.98

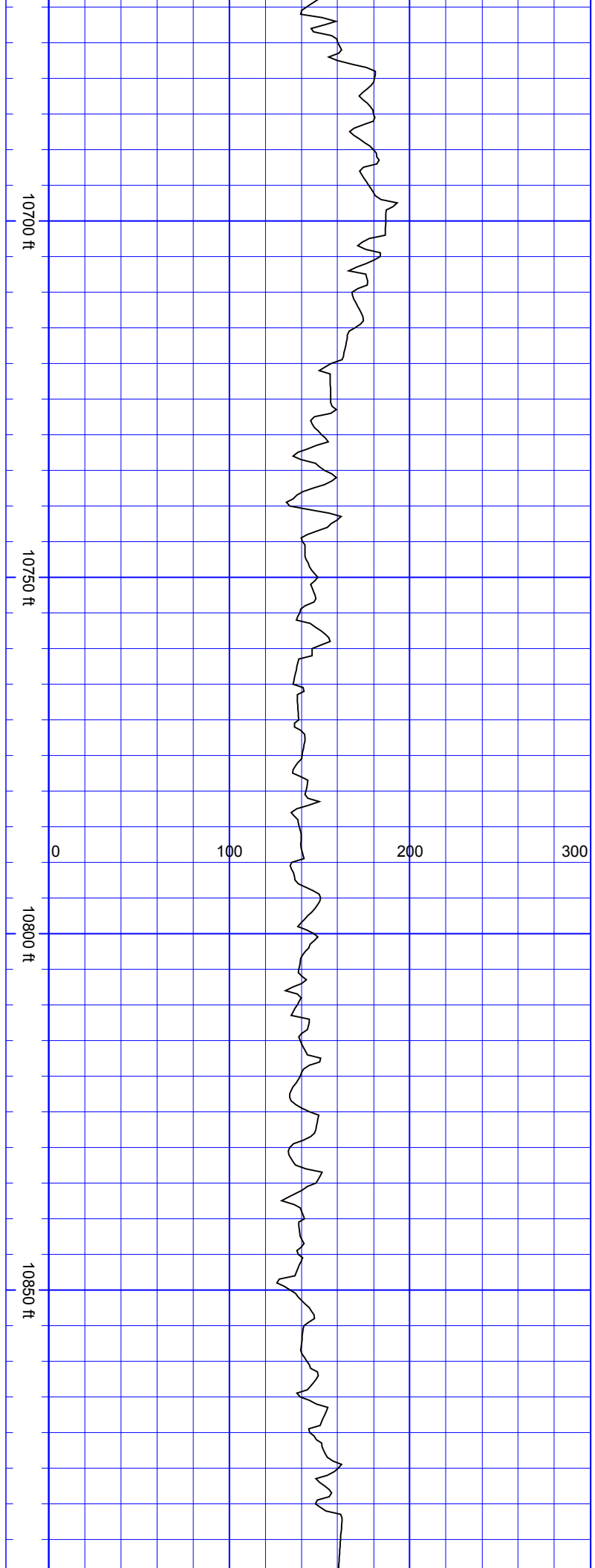




SurveyDepth:10517
TVD:7090.09 Inc:91.19
Azi:2.62
VertSec:2757.92

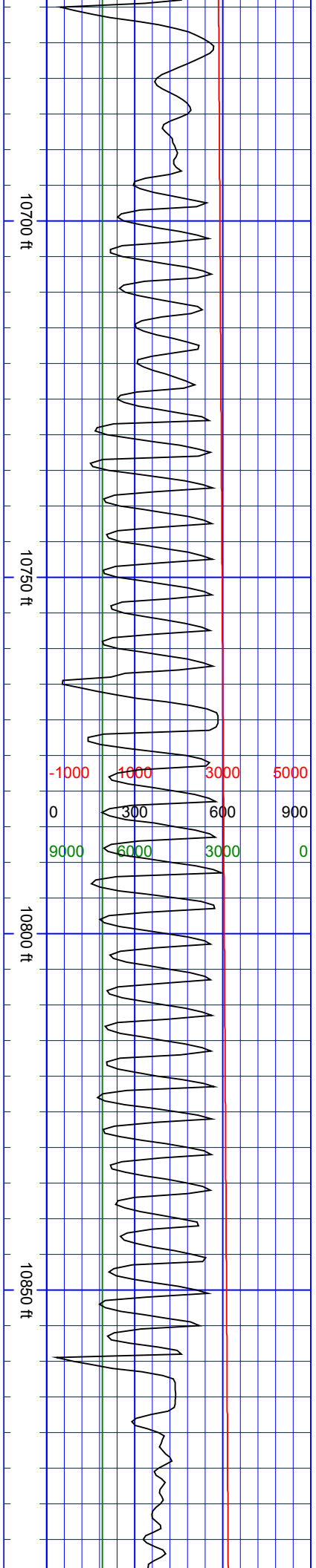
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TVD:7088.79 Inc:90.4
Azi:1.39
VertSec:2851.88

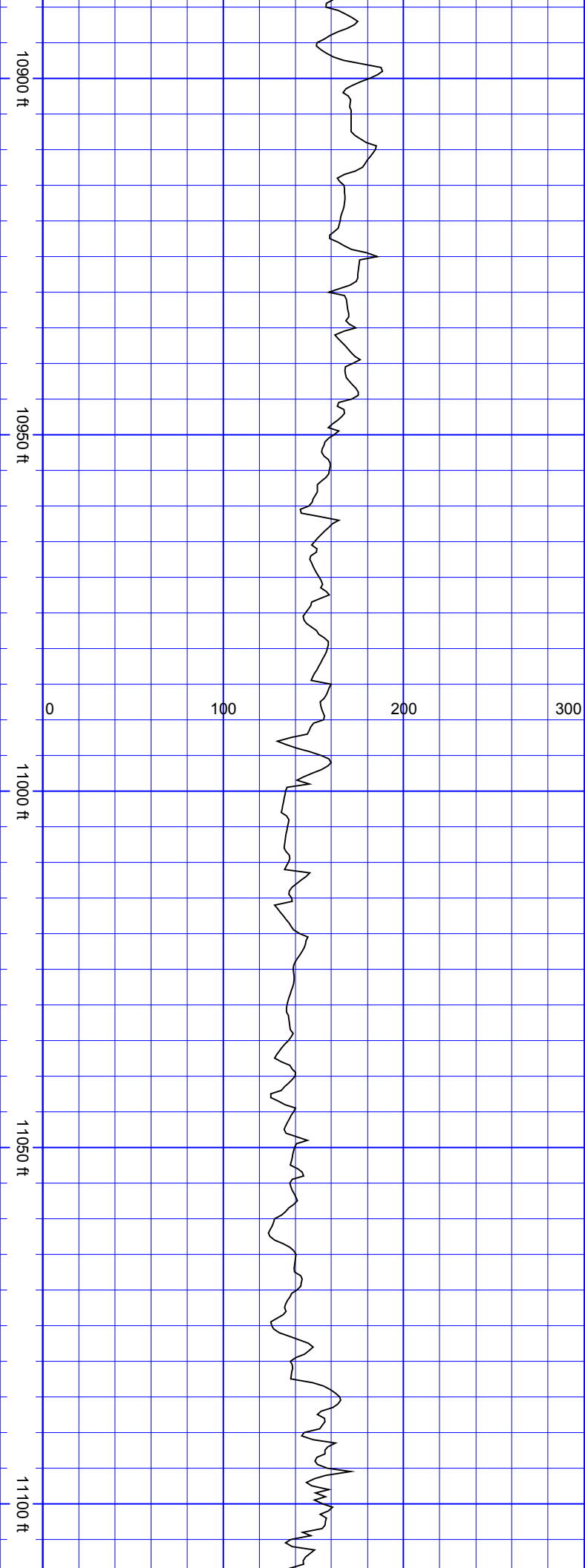




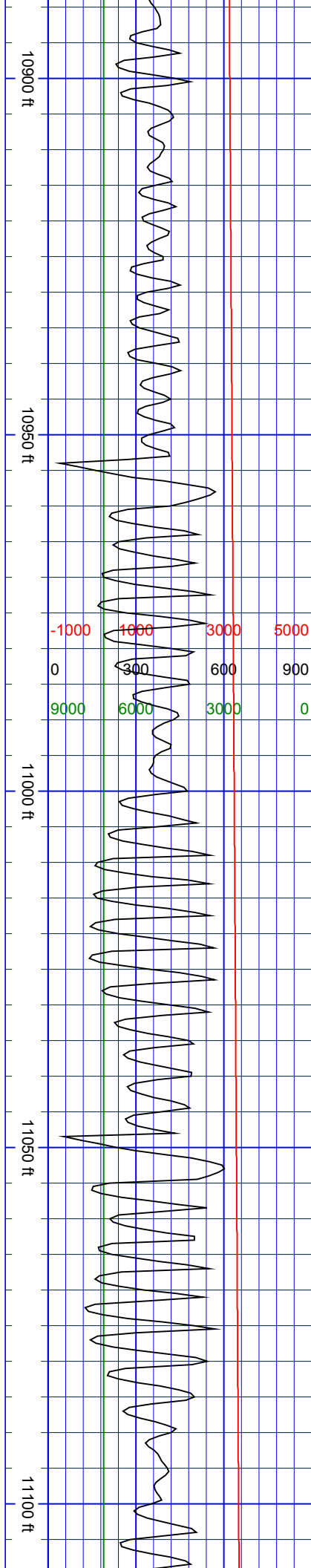
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TVD:7088.9 Inc:89.47
Azi:359.99
VertSec:2946.88

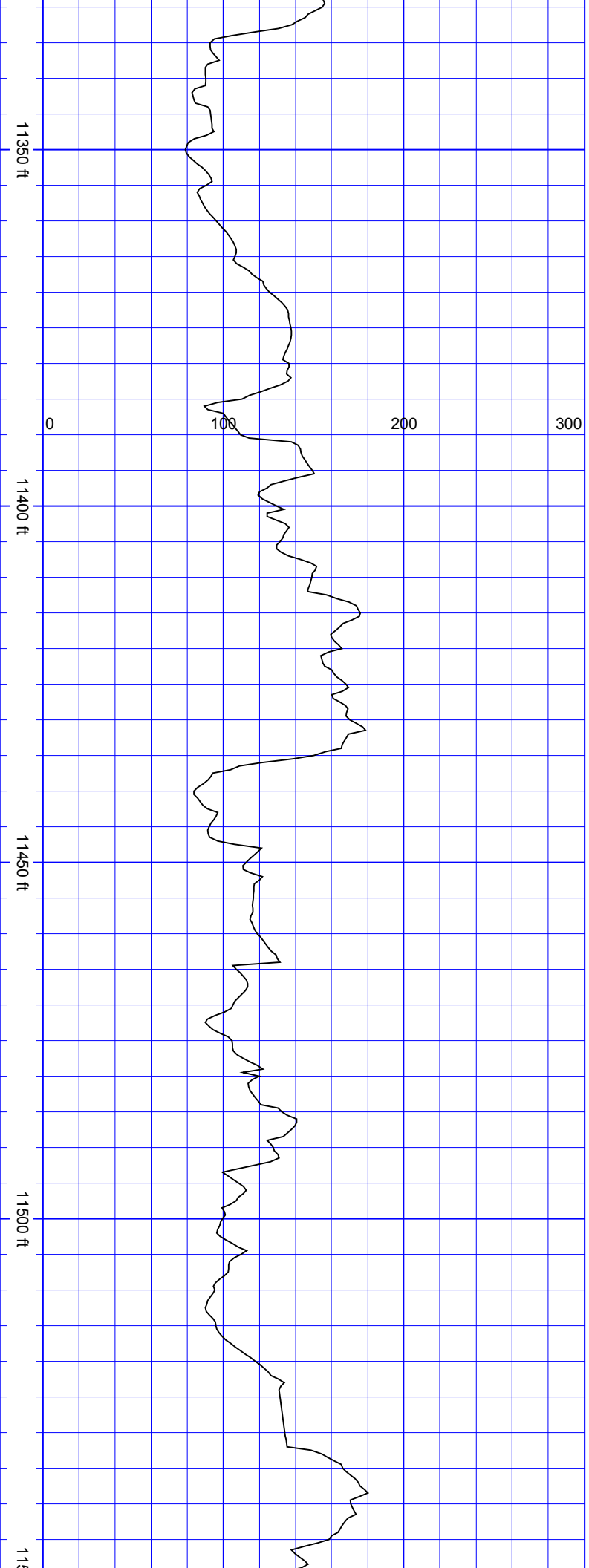
SurveyDepth:10801
TVD:7089.73 Inc:89.52
Azi:0.16
VertSec:3041.87





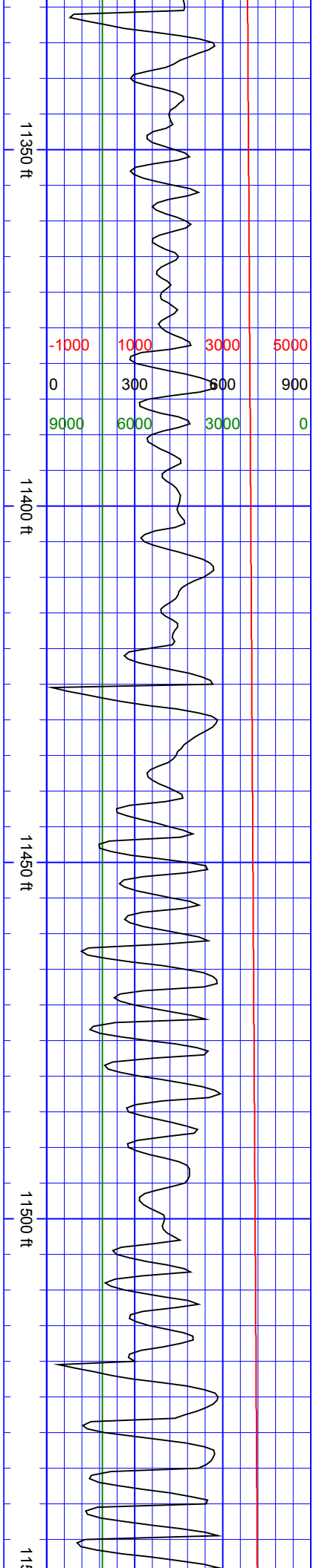
SurveyDepth:10896 TVD:7090.35 Inc:89.74 Azi:359.72 VertSec:3136.86	SurveyDepth:10990 TVD:7091.28 Inc:89.12 Azi:359.02 VertSec:3230.83	SurveyDepth:11084 TVD:7093.34 Inc:88.37 Azi:356.91 VertSec:3324.71
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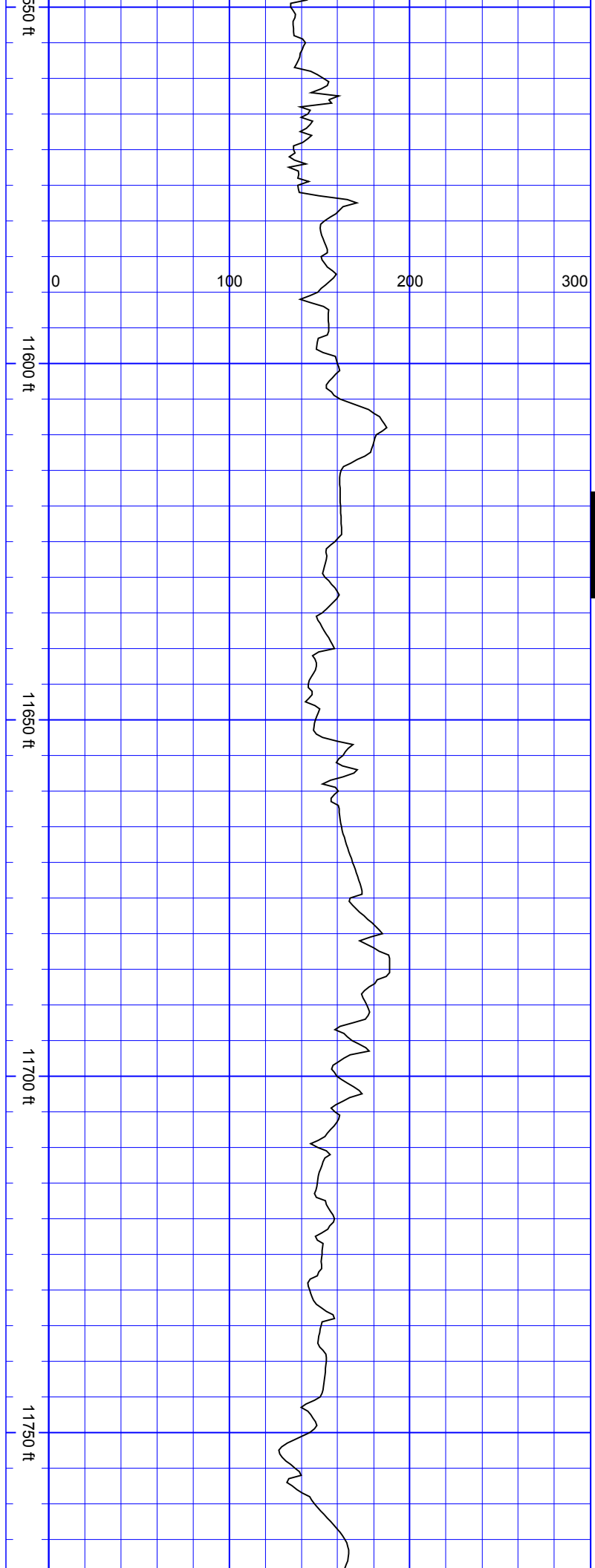




SurveyDepth:11368
TVD:7093.23 Inc:90.09
Azi:0.25
VertSec:3608.63

SurveyDepth:11462
TVD:7093.55 Inc:89.52
Azi:359.46
VertSec:3702.62





SurveyDepth:11557
TVD:7094.94 Inc:88.81
Azi:358.84
VertSec:3797.58

SurveyDepth:11651
TVD:7096.13 Inc:89.74
Azi:0.78
VertSec:3891.56

SurveyDepth:11746
TVD:7097.18 Inc:88.99
Azi:359.46
VertSec:3986.54

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