



Build & Lateral

Job #:

185212

Well ID:

16190991

Scale:

5" = 100 ft

Type:

MD

Well Site Information

Oil CompanyCrestone Peak Resources

Surface LocationS4-T1N-R65W

Well NameRuegge 3O-4H-N165

API05-123-46564 00

FieldDJ Basin

StateColorado

CountryUSA

Surface Coordinates

Well TypeHorizontal

Latitude40° 4' 31

Longitude140° 40' 14

N / S Coordinates1,271,352.43 usft

E / W Coordinates3,232,090.49 usft

Azimuth ReferenceTrue North

Grid Convergence0.54°

MWD Engineers

Lead HandAaron Clark

Second HandRon Kenyon

Perm DatumGroundElevation4,915.00 ft

Log depth measured from KB is23.00 ftabove perm datum.KB = 4,938.00 ft

Total Depth12,360.00 ftSpud DateJul/15/2018End DateJul/18/2018

(MD) Log IntervalStart Depth2,482.70 ftEnd Depth12,360.03 ft

Bore Hole Record

Hole SizeFromTo

13.50 in0.00 ft2,520.00 ft

8.50 in2,520.00 ft12,360.00 ft

Casing Record

TypeSizeWGTFromTo

LT&C9.63 in40lb.0.00 ft2,520.00 ft

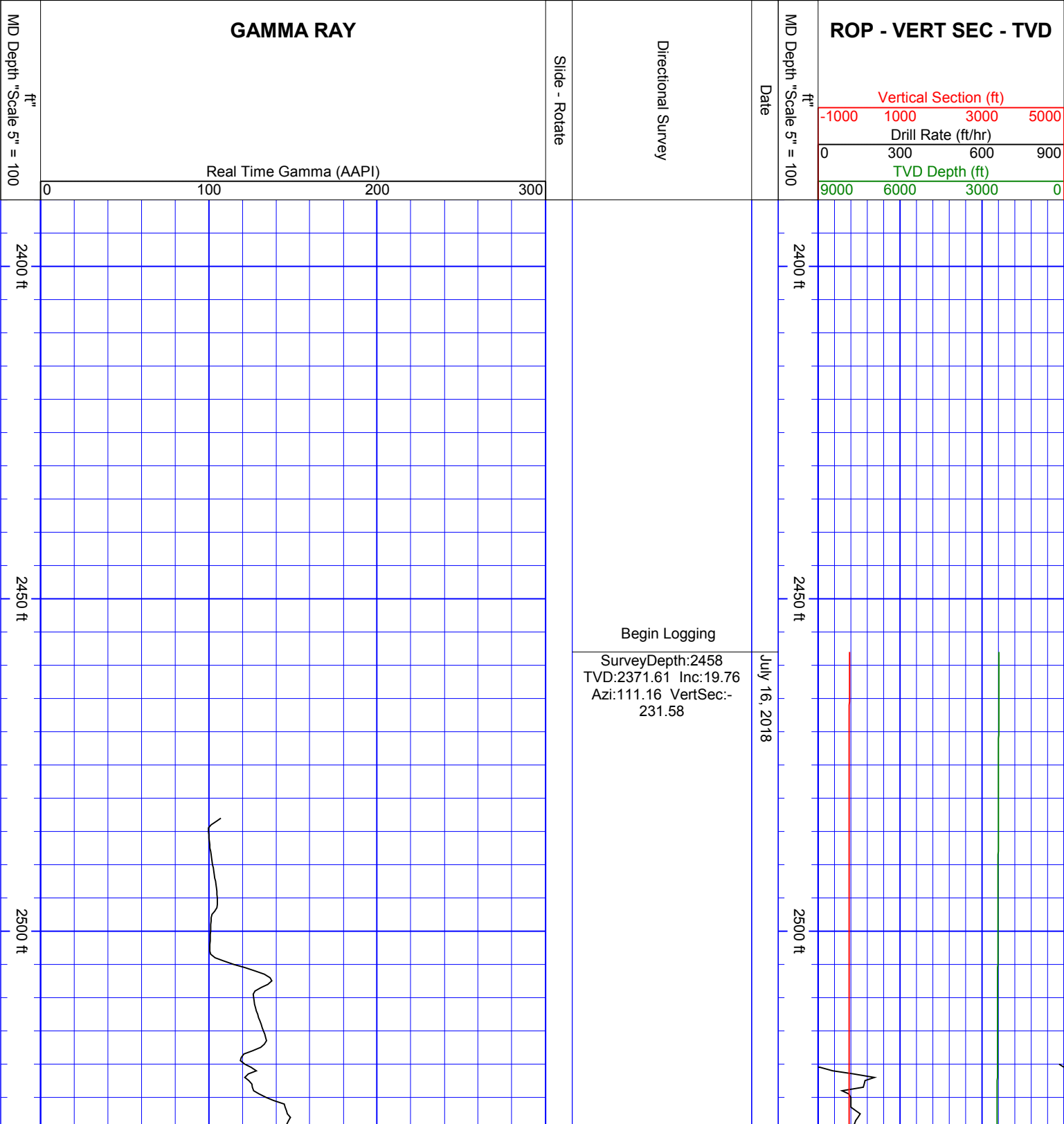
DWC-C-IS5.50 in20lb.0.00 ft12,360.00 ft

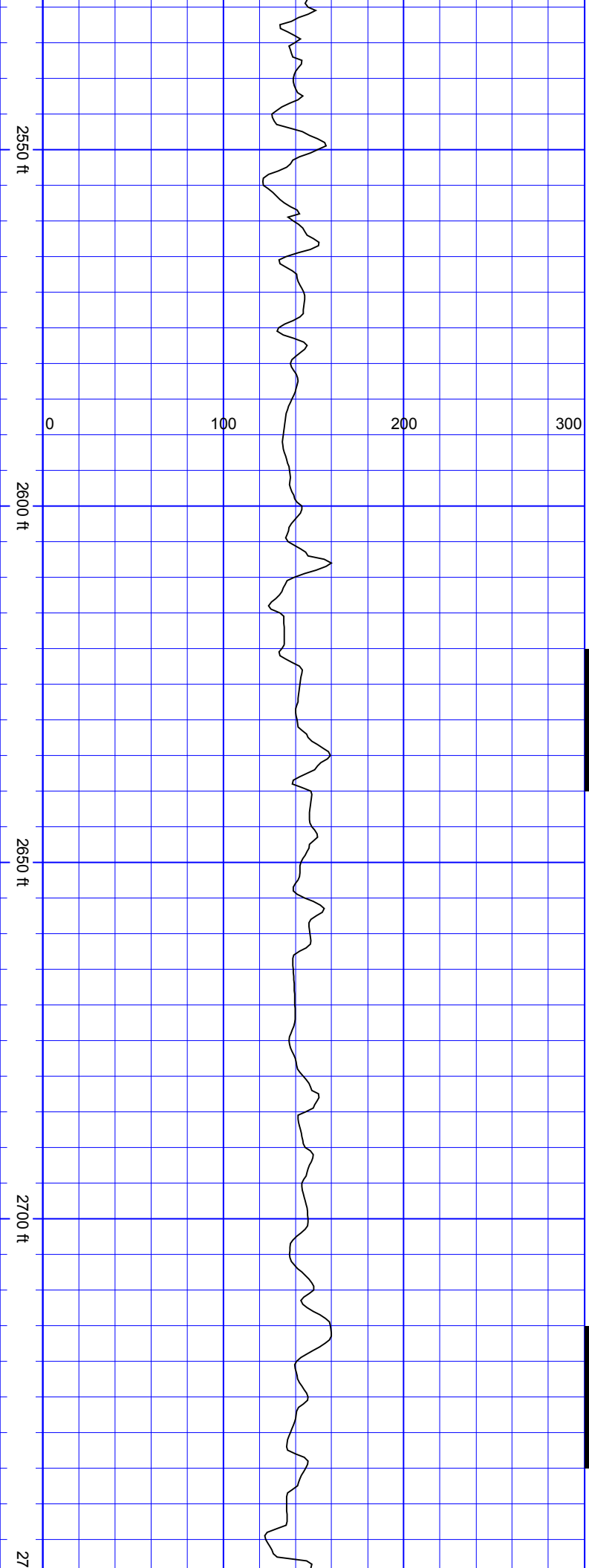
Run Data

Bit Run Number	1				
Start Date & Time	Jul/15/2018 19:30:00				
End Date & Time	Jul/17/2018 23:30:00				
Run Hours					
Depth In	2,520.00 ft				
Depth Out	12,360.00 ft				
Total Gamma Correction	5.68				
Gamma to Bit	55.89 ft				
Resistivity to Bit	N/A				
Mud Type	Oil Base				
Density	10.00 ppg				
Viscosity	44.00 sec/qt				
PH	N/A				
Fluid Loss	N/A				
K+ ppm	N/A				
CL- ppm	3600.00 mg/L				
Max Mud Temp	255 °F				
Mud Report Depth	12,360.00 ft				

Remarks

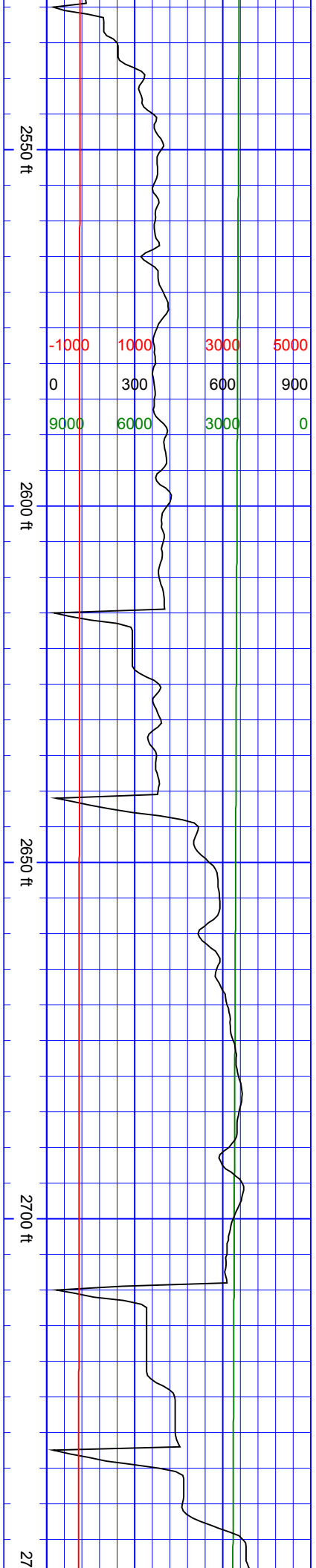
Interpretations of this data by Cathedral Energy Services will be of best judgment as to correctness. Cathedral Energy Services cannot and does not guarantee the accuracy or correctness of interpretations or any surveys derived therefrom. Cathedral Energy Services makes no warranties of performance, 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.

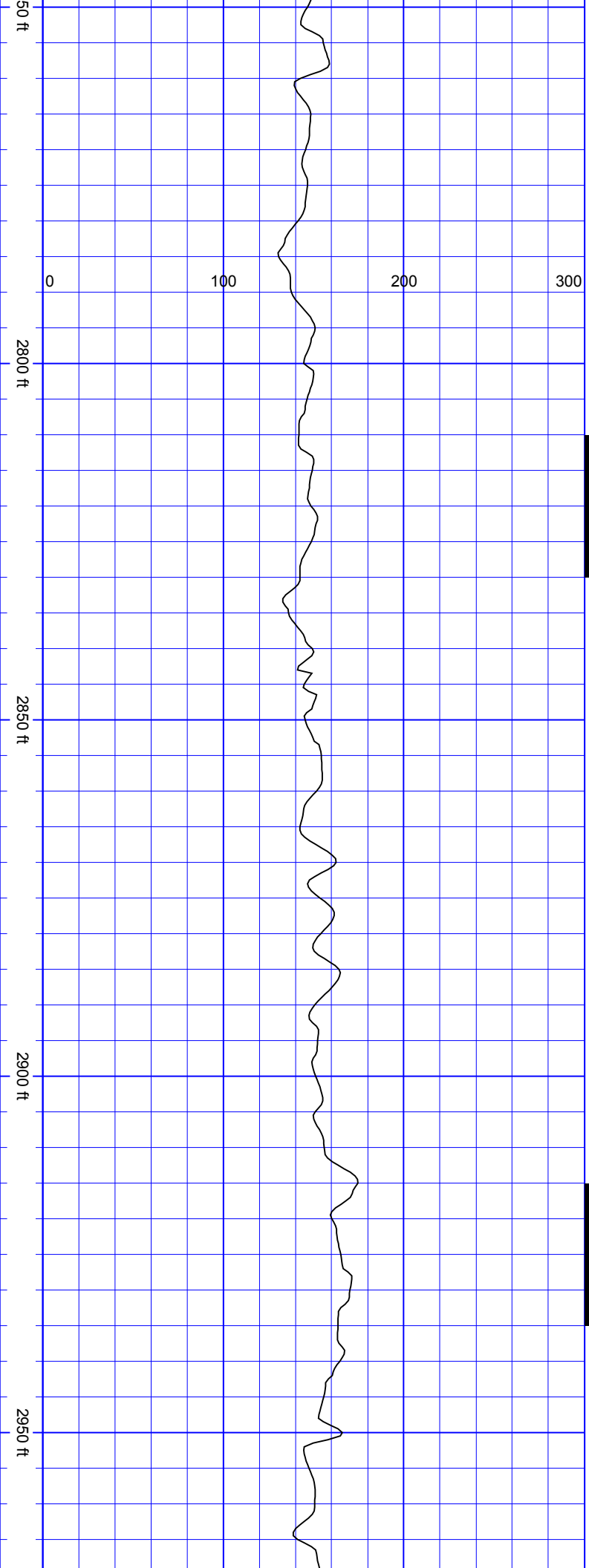




SurveyDepth:2559  
TVD:2467.04 Inc:18.46  
Azi:109.76 VertSec:-  
243.05

SurveyDepth:2654  
TVD:2556.97 Inc:19.2  
Azi:115.74 VertSec:-  
254.63

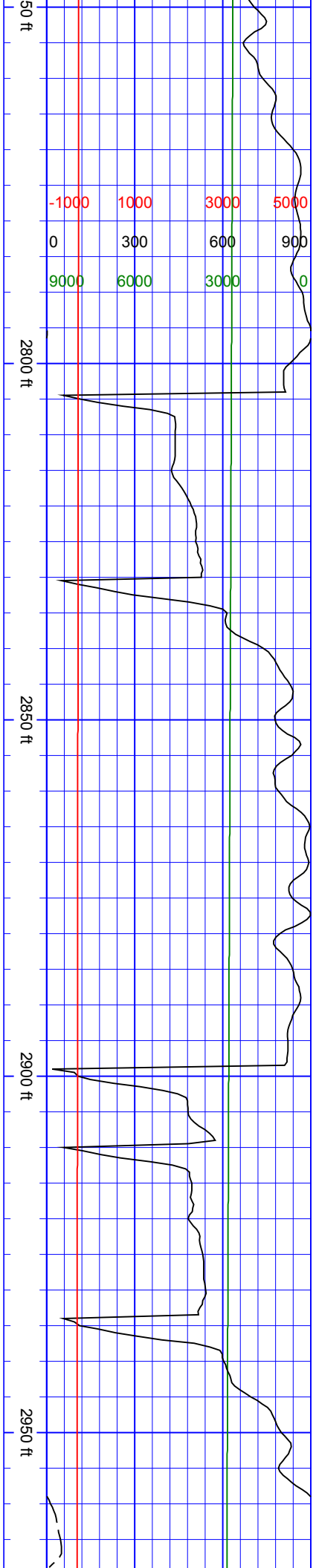




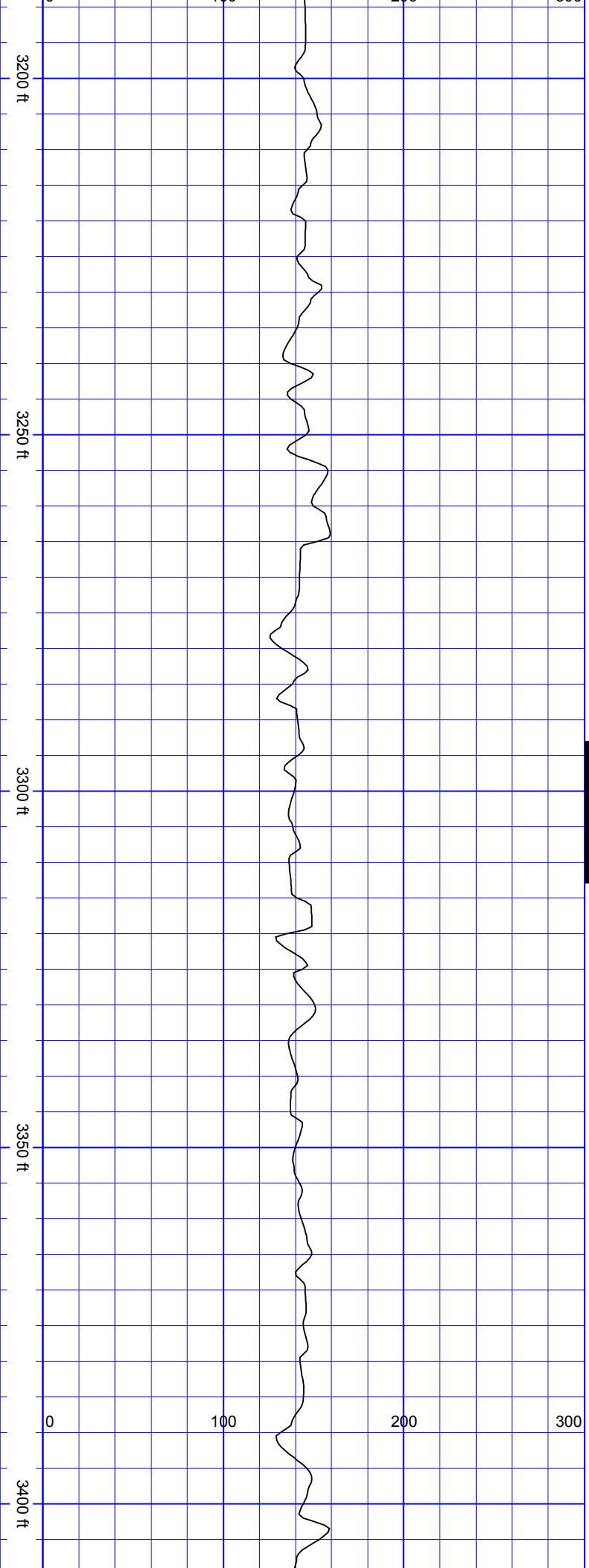
SurveyDepth:2749  
TVD:2646.49 Inc:19.91  
Azi:119.61 VertSec:-  
269.12

SurveyDepth:2854  
TVD:2745.27 Inc:19.73  
Azi:121.54 VertSec:-  
286.91

SurveyDepth:2948  
TVD:2833.64 Inc:20.13  
Azi:122.24 VertSec:-  
303.55

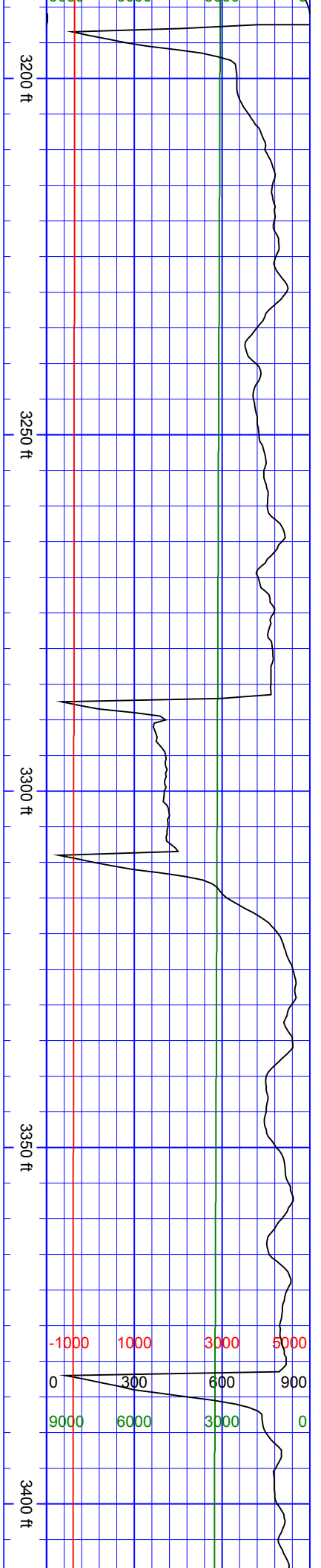


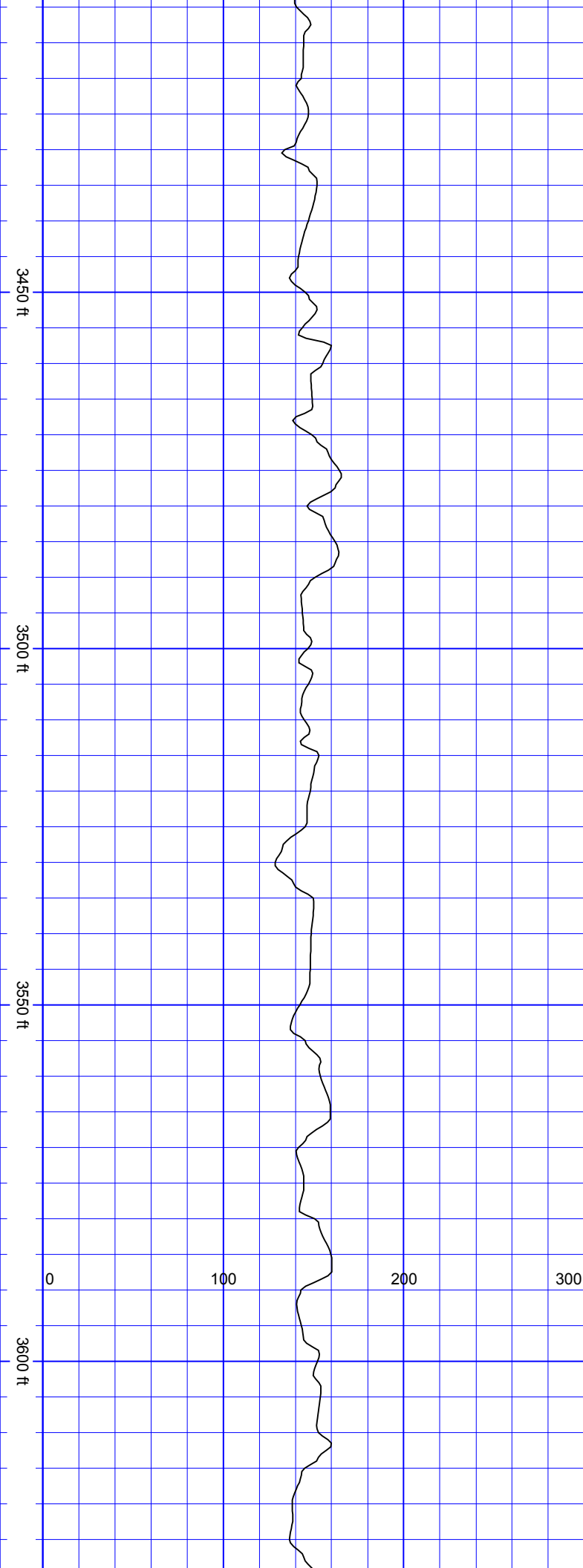




SurveyDepth:3232  
TVD:3094.88 Inc:22.5  
Azi:119.25 VertSec:-  
361.6

SurveyDepth:3327  
TVD:3182.3 Inc:23.56  
Azi:119.52 VertSec:-  
379.51



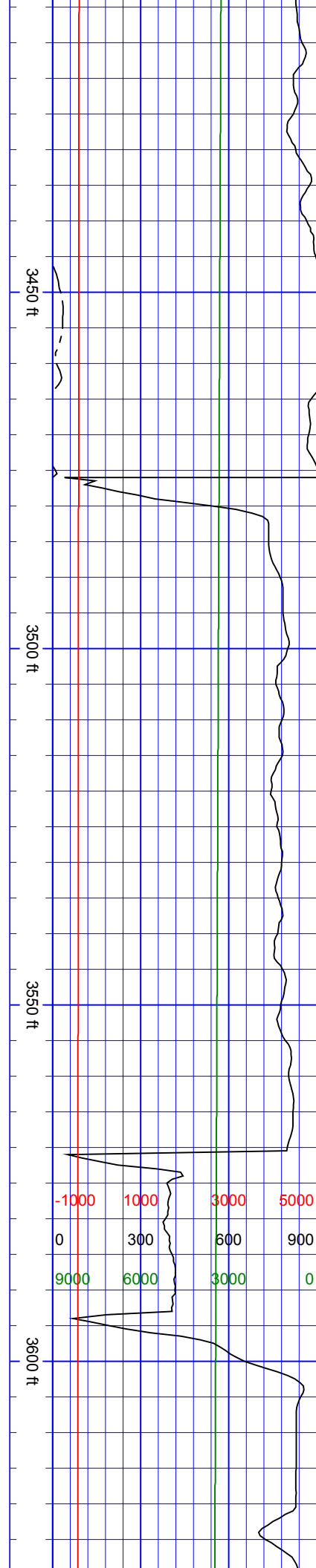


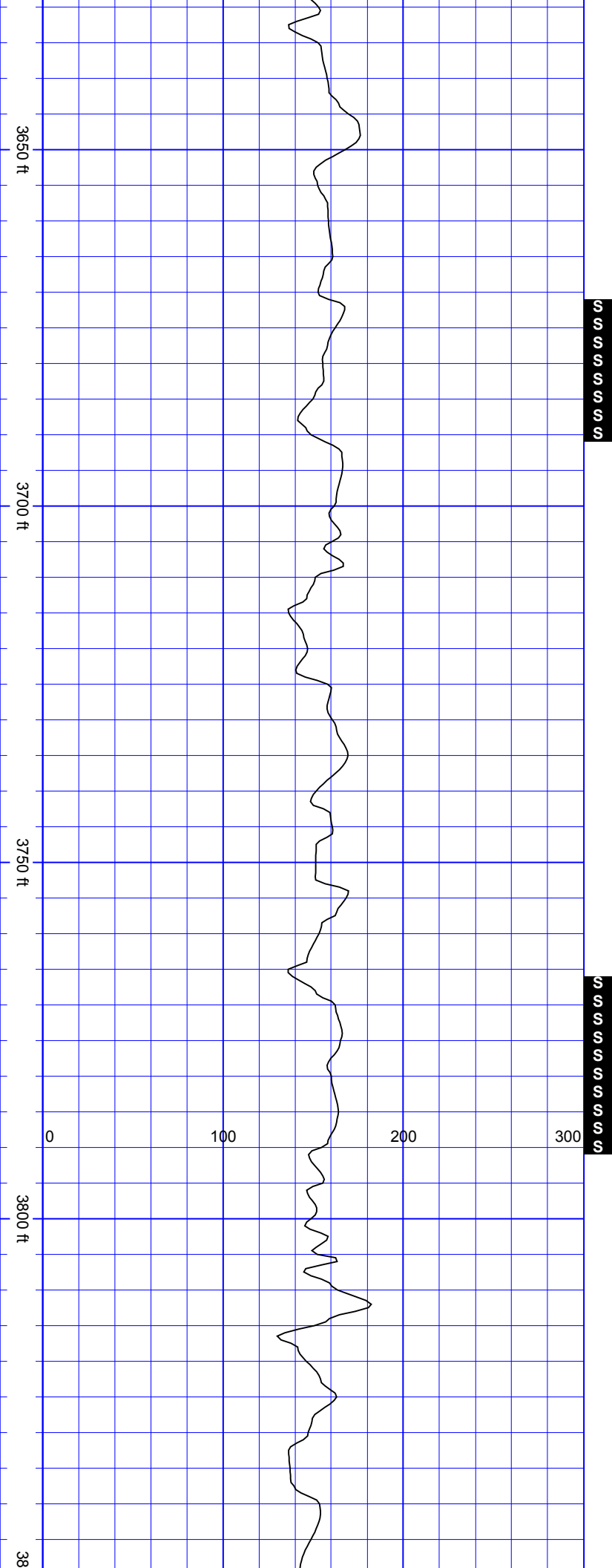
SurveyDepth:3421  
TVD:3269.16 Inc:21.4  
Azi:117.85 VertSec:-396.45

SurveyDepth:3516  
TVD:3358.35 Inc:18.85  
Azi:115.3 VertSec:-410.81

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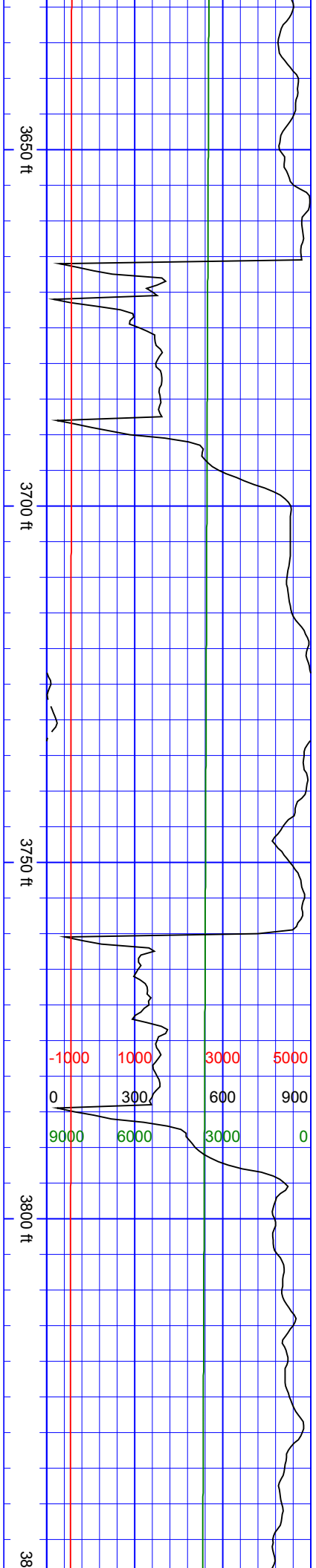
SurveyDepth:3610  
TVD:3447.35 Inc:18.72  
Azi:118.2 VertSec:-424.15



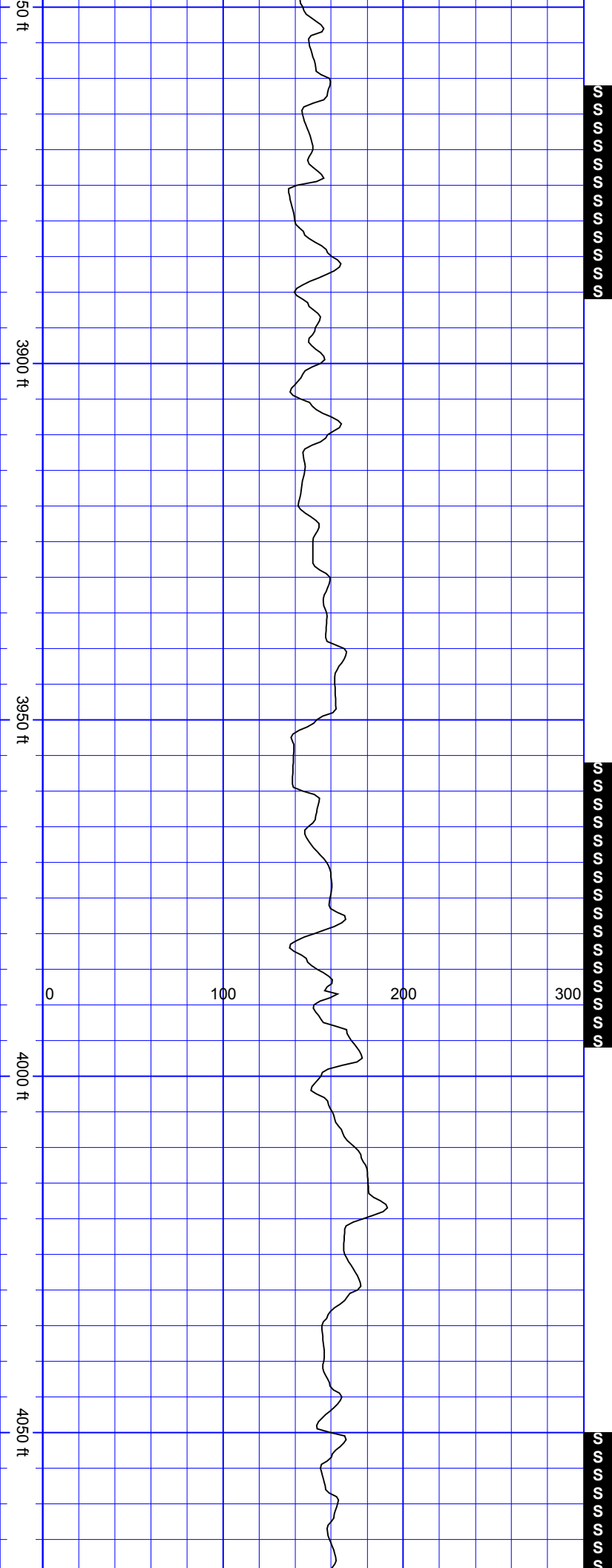


SurveyDepth:3705  
TVD:3537.48 Inc:18.11  
Azi:116.35 VertSec:-  
437.63

SurveyDepth:3800  
TVD:3627.8 Inc:18.02  
Azi:111.17 VertSec:-  
449.21

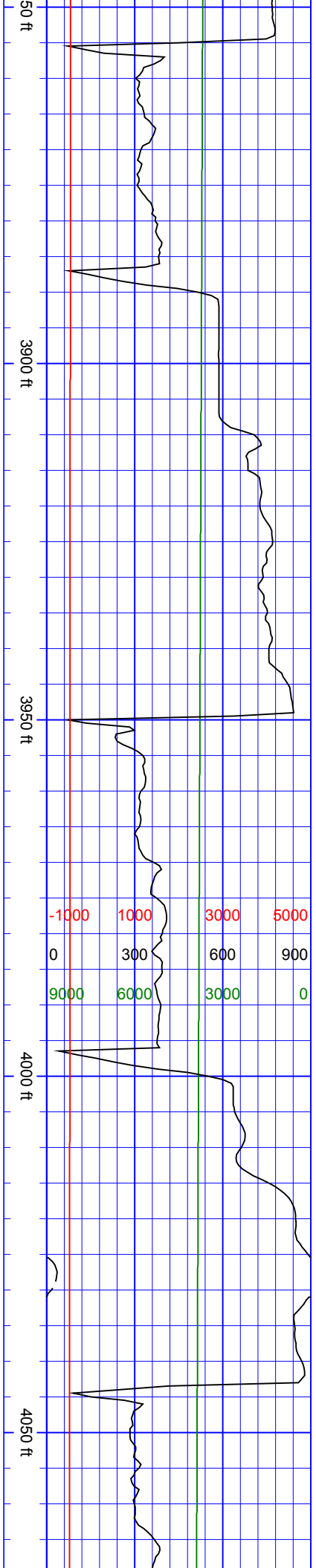




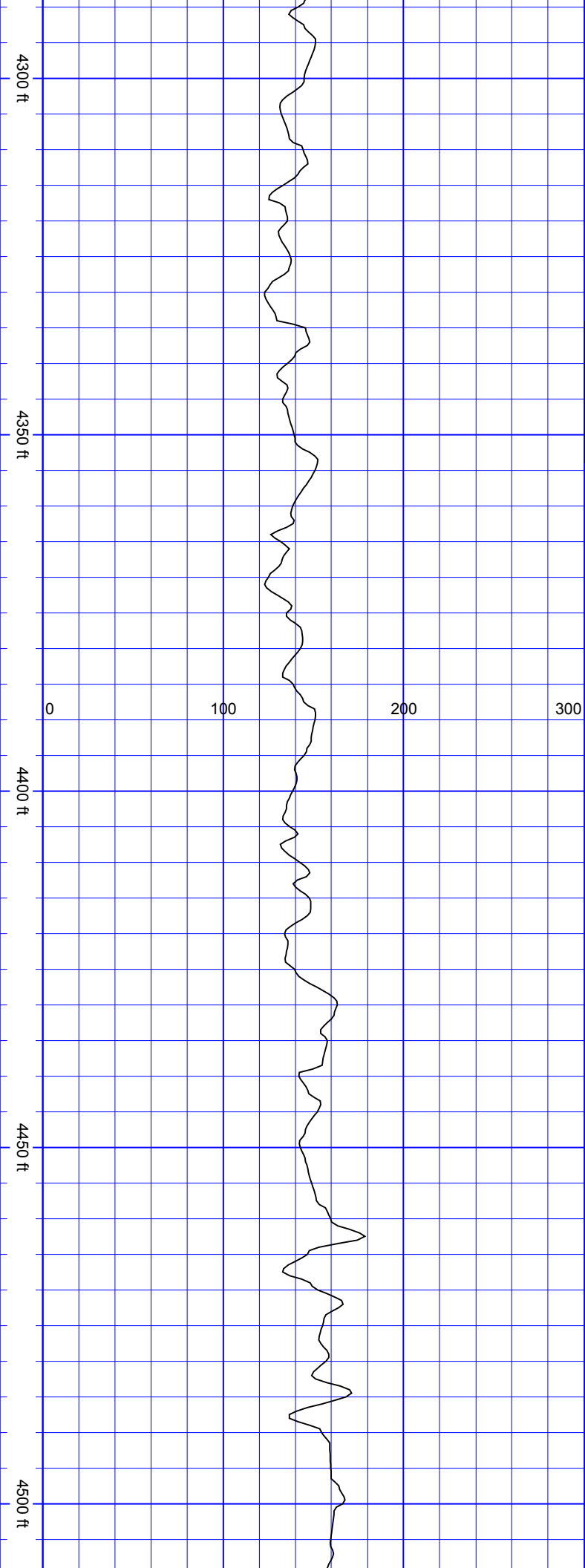


SurveyDepth:3895  
TVD:3718.49 Inc:16.66  
Azi:109.32 VertSec:-  
458.75

SurveyDepth:3989  
TVD:3807.95 Inc:19.07  
Azi:109.32 VertSec:-  
468.01



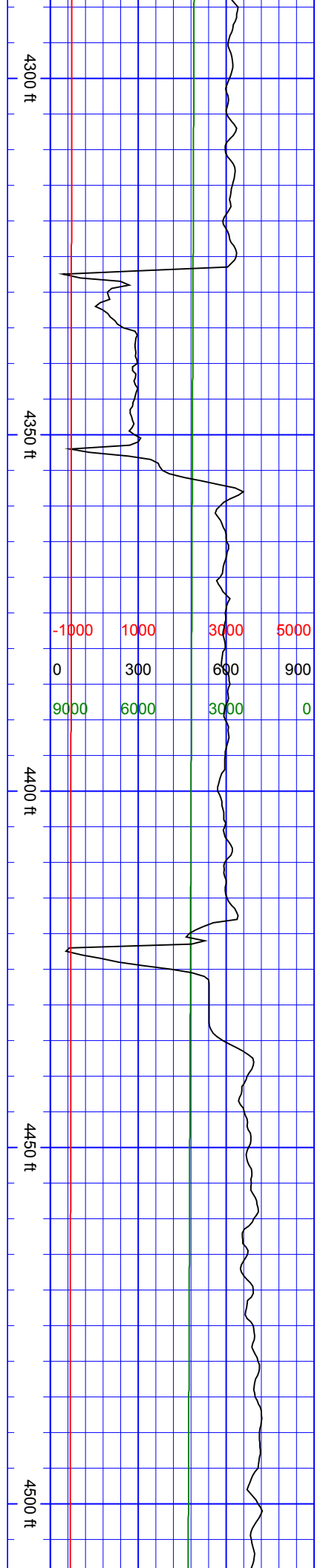




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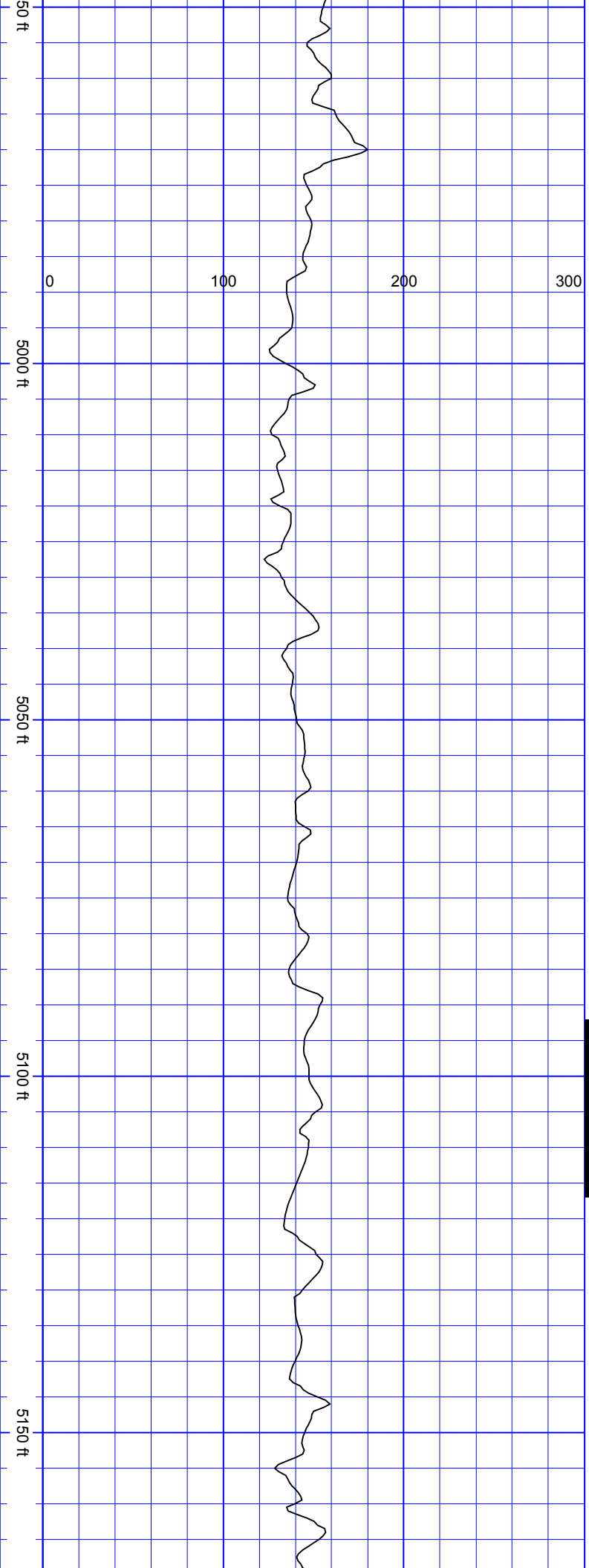
SurveyDepth:4368  
TVD:4158.69 Inc:24.92  
Azi:114.07 VertSec:-  
520.54

SurveyDepth:4462  
TVD:4244.34 Inc:23.73  
Azi:112.75 VertSec:-  
535.57





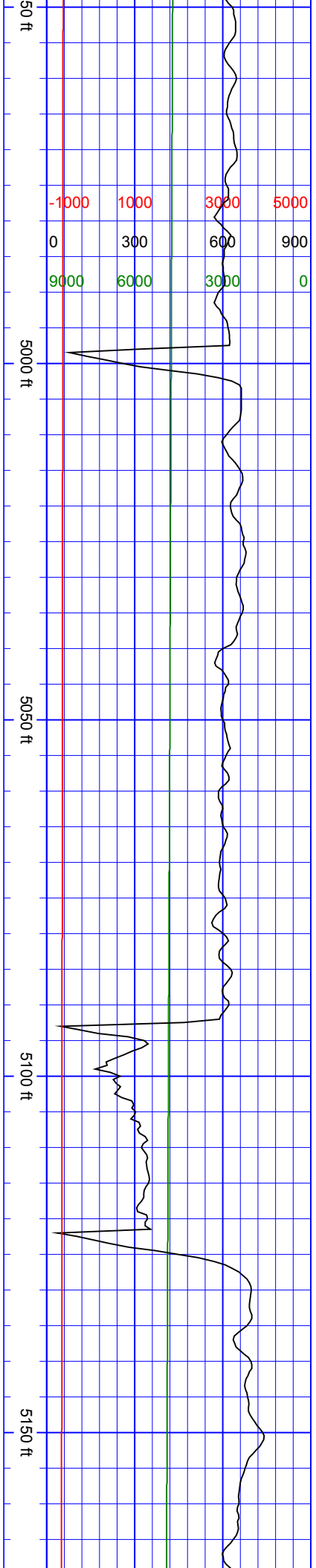


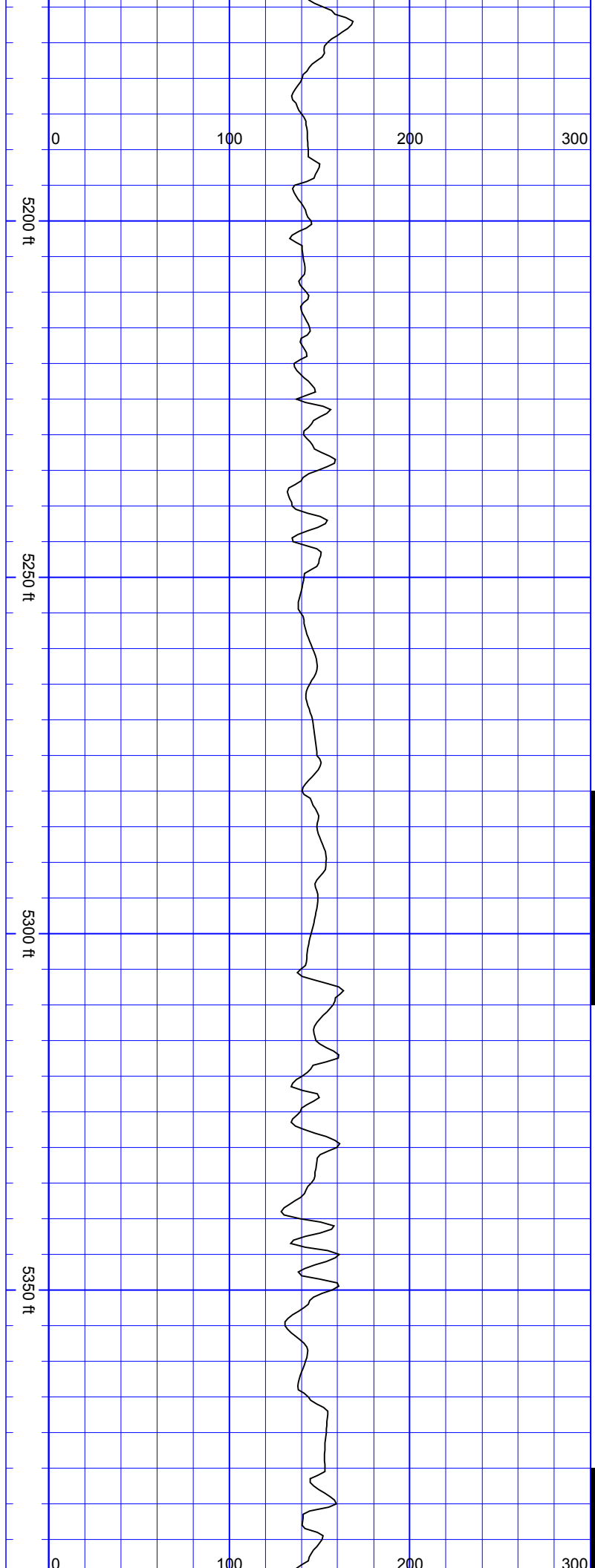


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SurveyDepth:5031  
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Azi:120.92 VertSec:-  
635.15

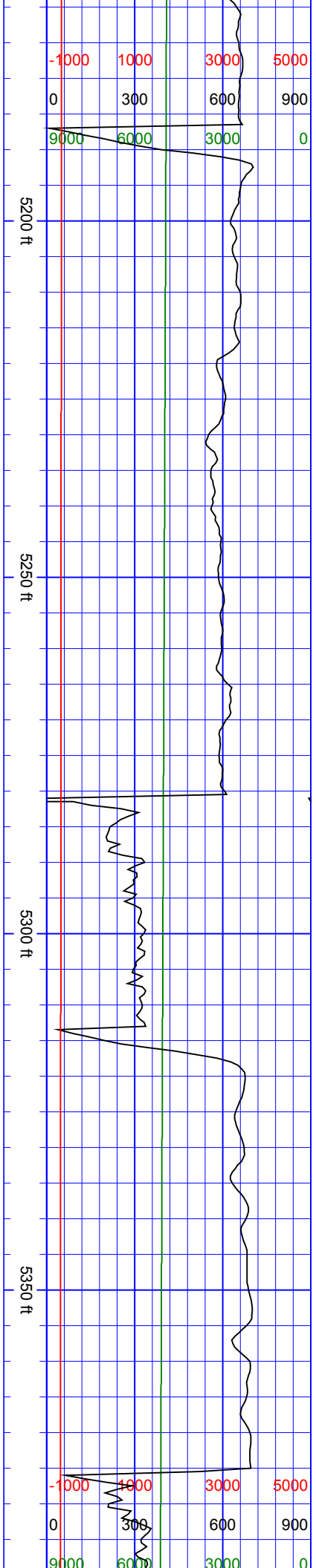
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TVD:4866.65 Inc:20.26  
Azi:117.76 VertSec:-  
650.51

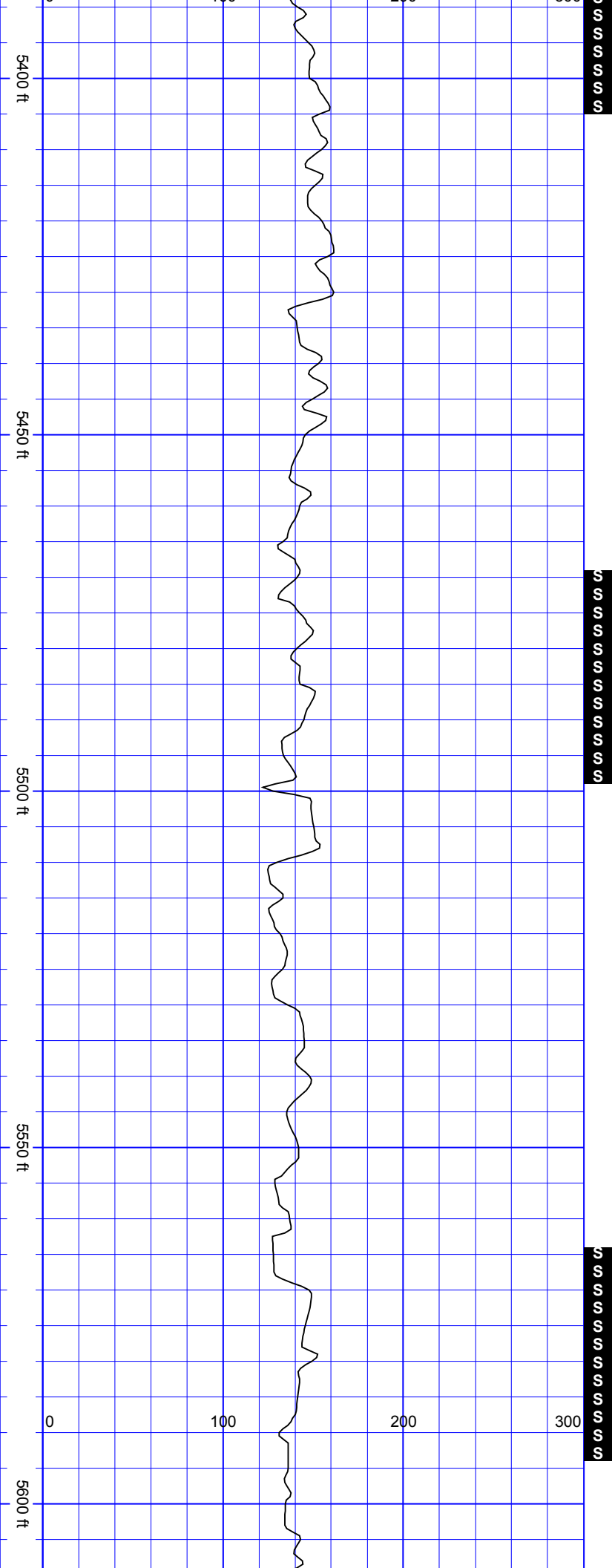




SurveyDepth:5219  
TVD:4955.36 Inc:18.37  
Azi:114.16 VertSec:-  
663.86

SurveyDepth:5314  
TVD:5045.32 Inc:19.12  
Azi:113.98 VertSec:-  
676.03

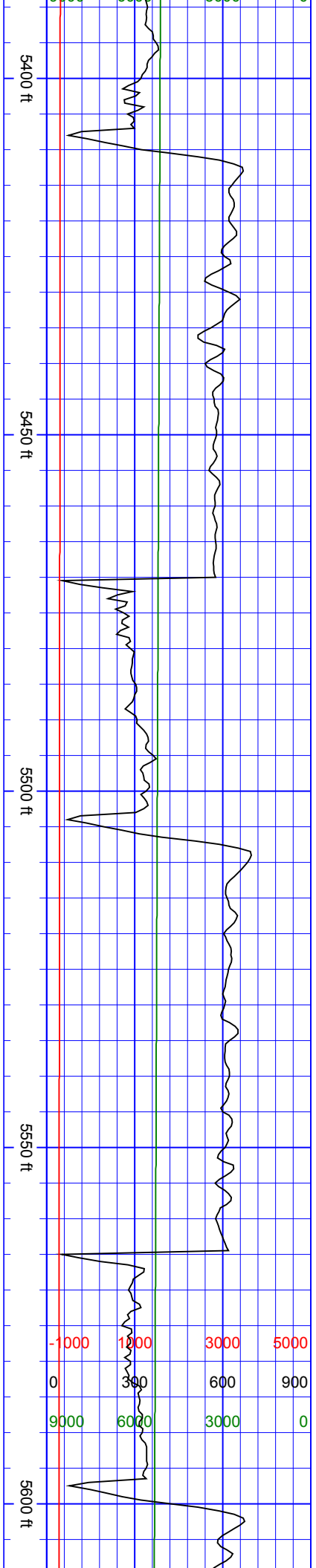




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Azi:117.23 VertSec:-  
688.79

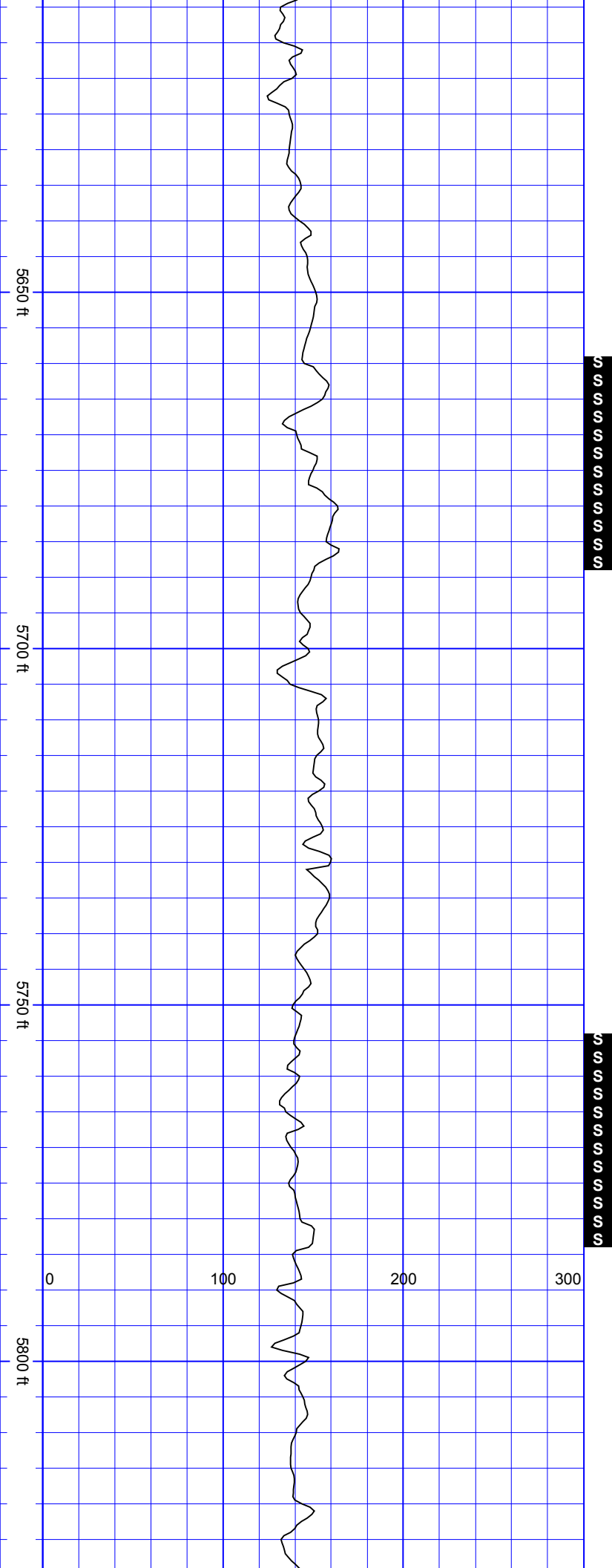
SurveyDepth:5503  
TVD:5223.95 Inc:20.3  
Azi:115.65 VertSec:-  
702.5

SurveyDepth:5598  
TVD:5312.64 Inc:21.71  
Azi:114.86 VertSec:-  
716.71



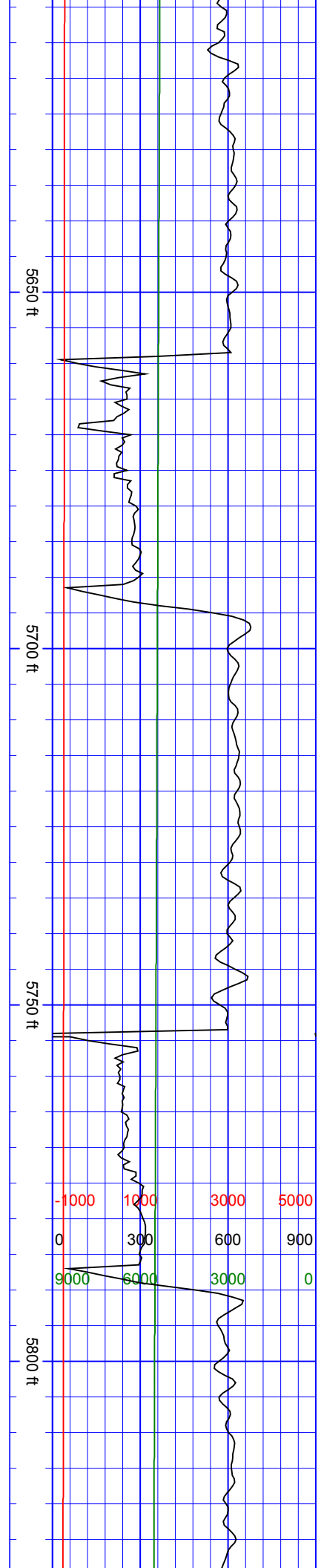
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0 300 600 900  
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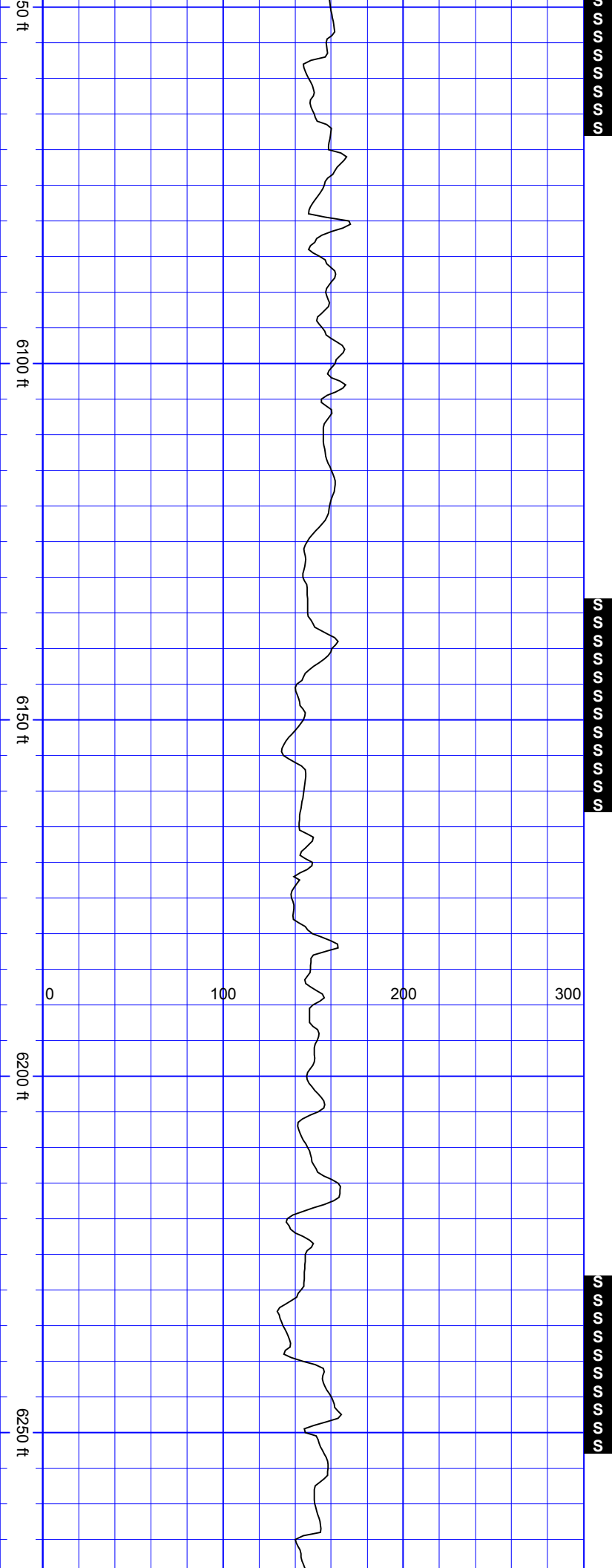


SurveyDepth:5693  
TVD:5401.06 Inc:21.18  
Azi:116.35 VertSec:-731.39

SurveyDepth:5787  
TVD:5488.61 Inc:21.53  
Azi:116.27 VertSec:-746.24



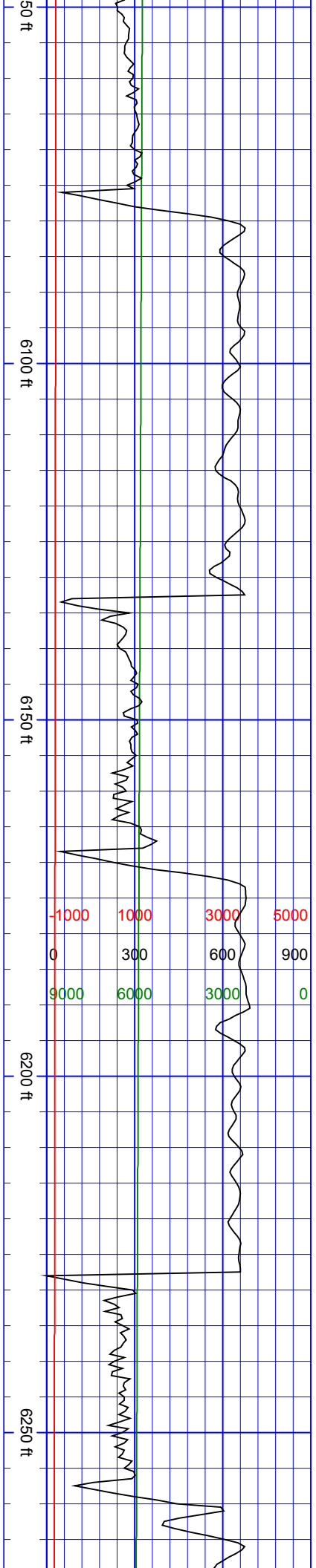


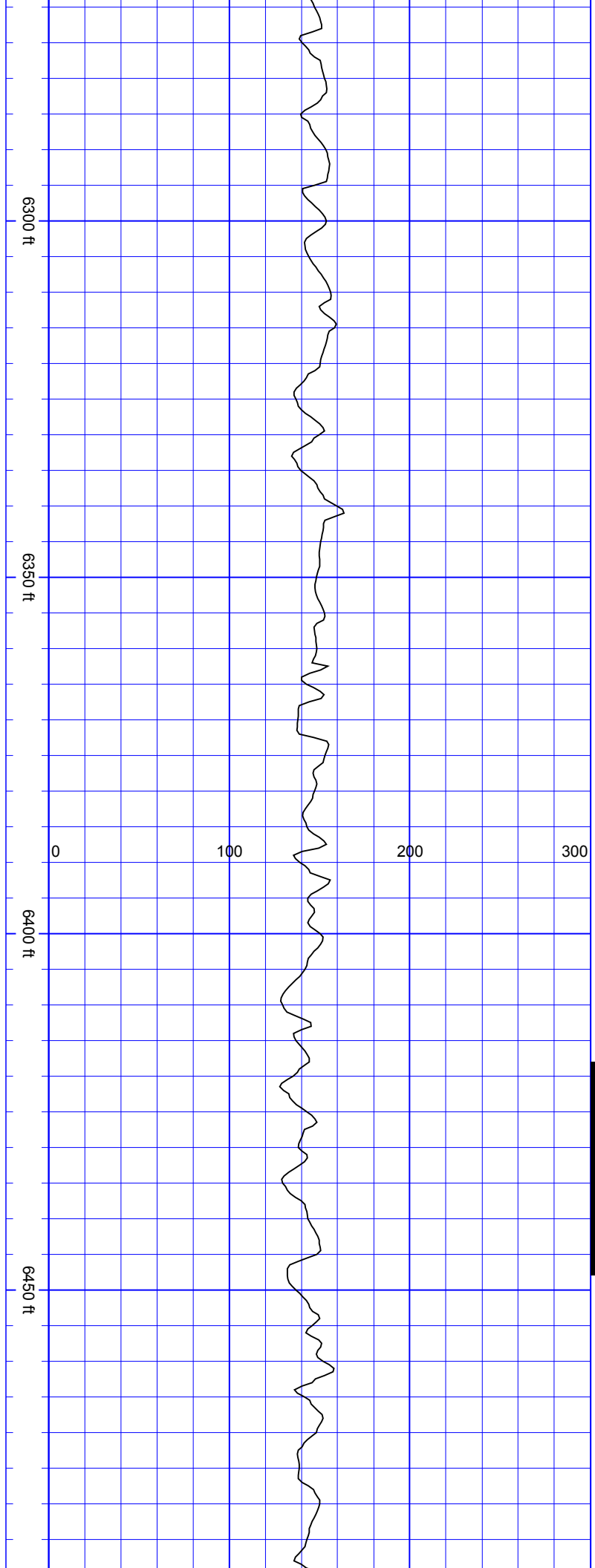


SurveyDepth:6072  
TVD:5754.94 Inc:20.17  
Azi:118.2 VertSec:-  
789.57

SurveyDepth:6167  
TVD:5843.95 Inc:20.74  
Azi:117.94 VertSec:-  
804.89

SurveyDepth:6262  
TVD:5932.57 Inc:21.49  
Azi:117.32 VertSec:-

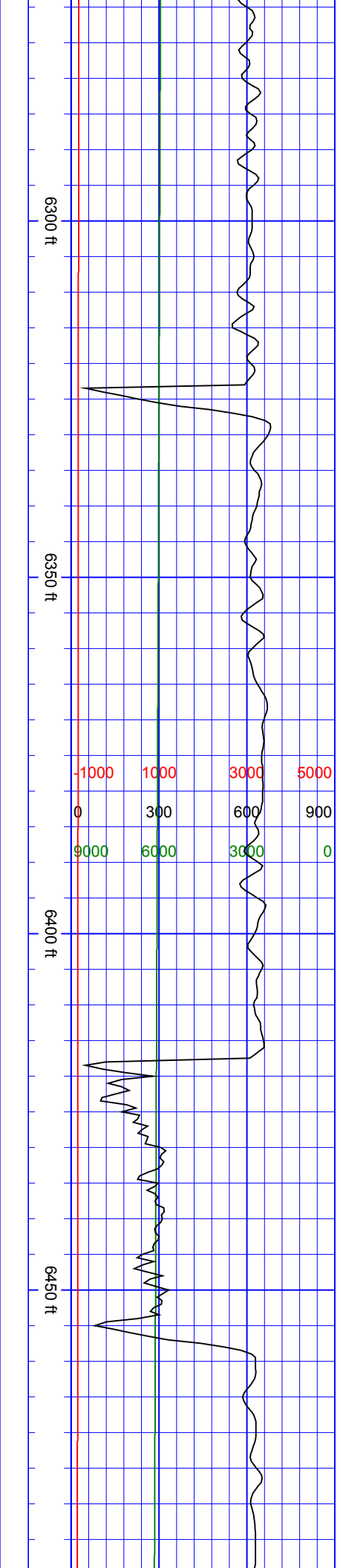


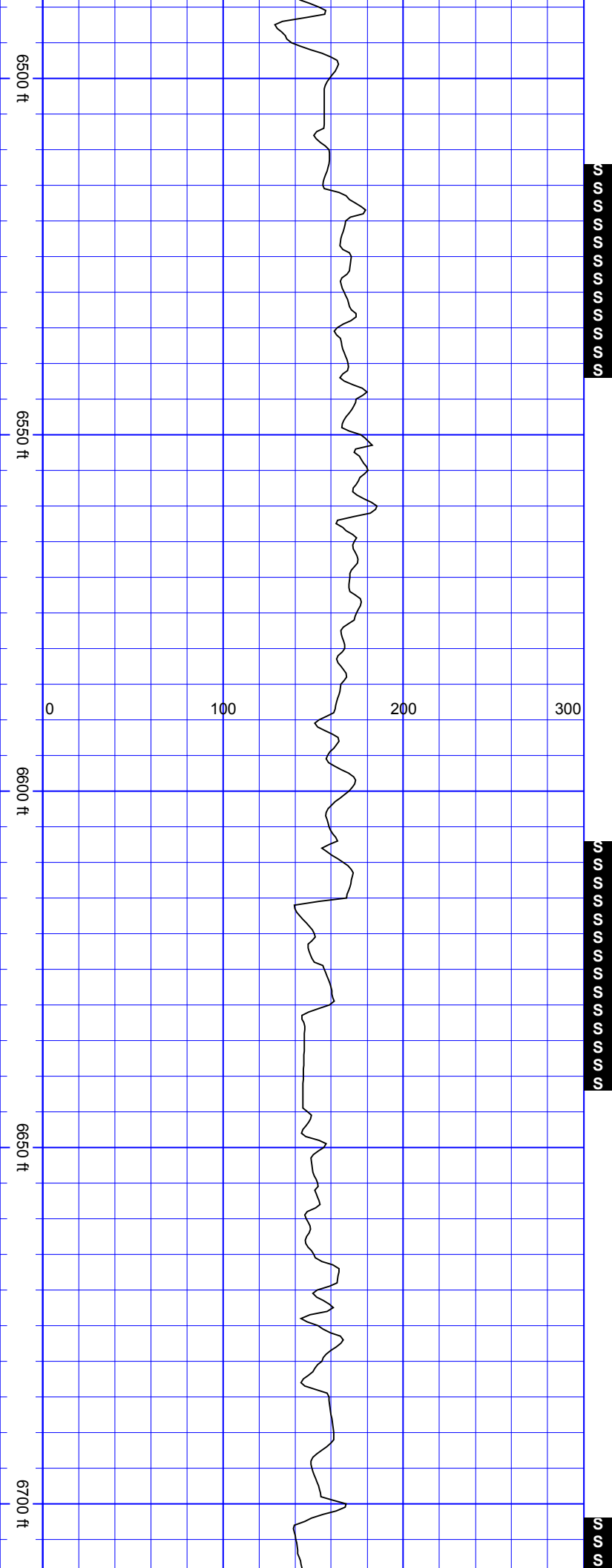


820.45

SurveyDepth:6357  
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Azi:114.68 VertSec:-  
834.3

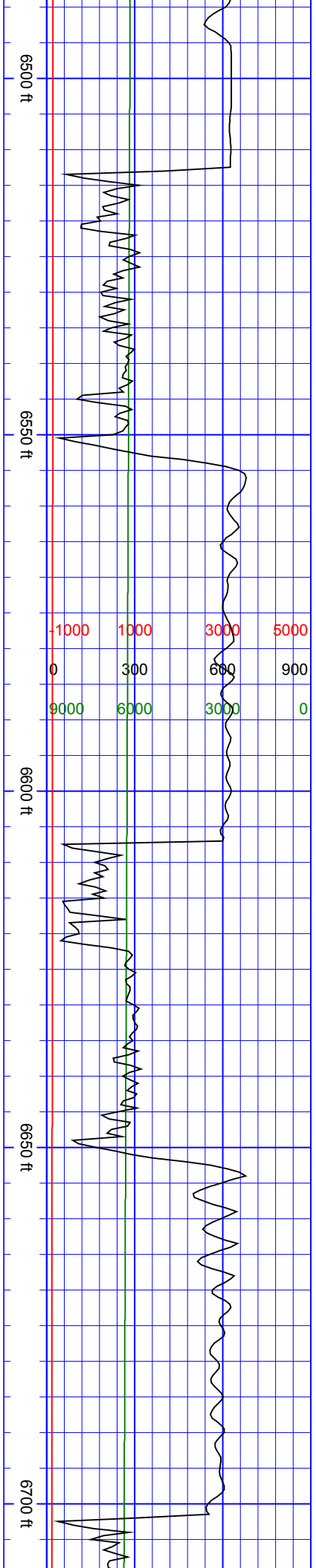
SurveyDepth:6451  
TVD:6111.35 Inc:17.84  
Azi:114.77 VertSec:-  
846.17





SurveyDepth:6546  
TVD:6201.97 Inc:17.1  
Azi:114.33 VertSec:-  
857.75

SurveyDepth:6641  
TVD:6292.67 Inc:17.53  
Azi:116.09 VertSec:-  
869.53



6750 ft

6800 ft

6850 ft

6900 ft



SurveyDepth:6735  
TVD:6382.56 Inc:16.48  
Azi:111.87 VertSec:-  
880.47

SurveyDepth:6830  
TVD:6473.89 Inc:15.73  
Azi:93.94 VertSec:-  
886.11

SurveyDepth:6925  
TVD:6563.99 Inc:21.31

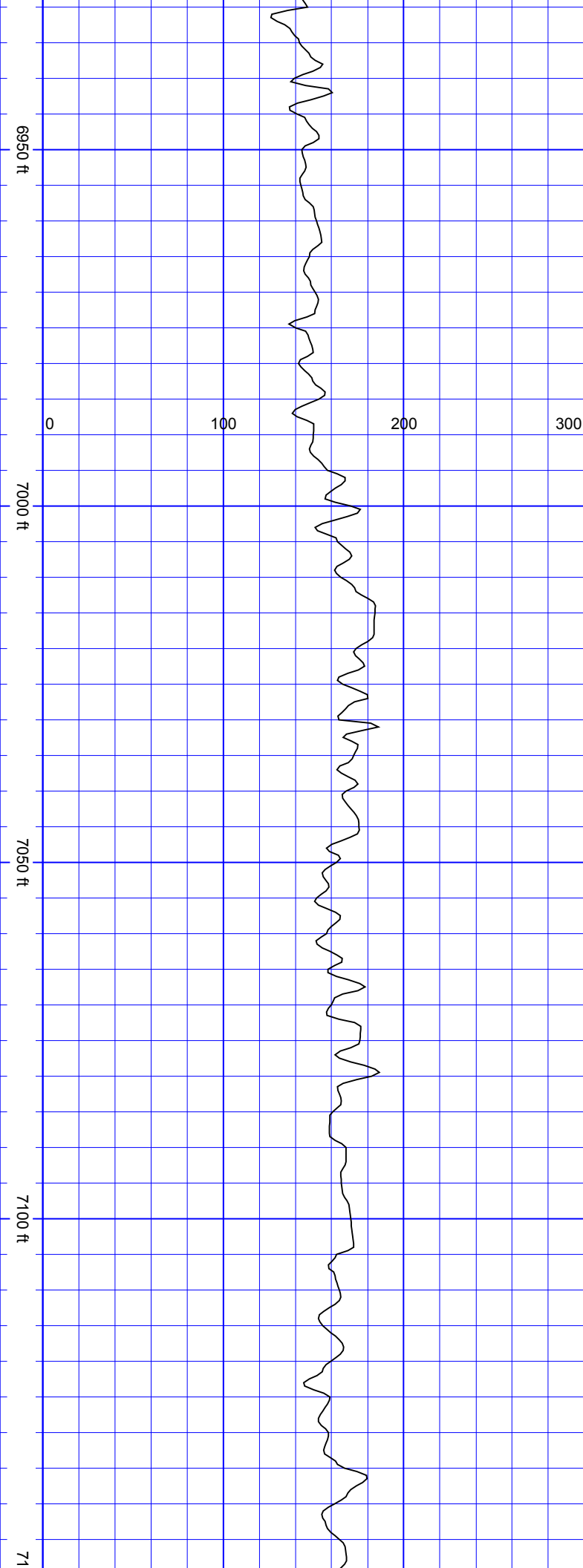
6750 ft

6800 ft

6850 ft

6900 ft

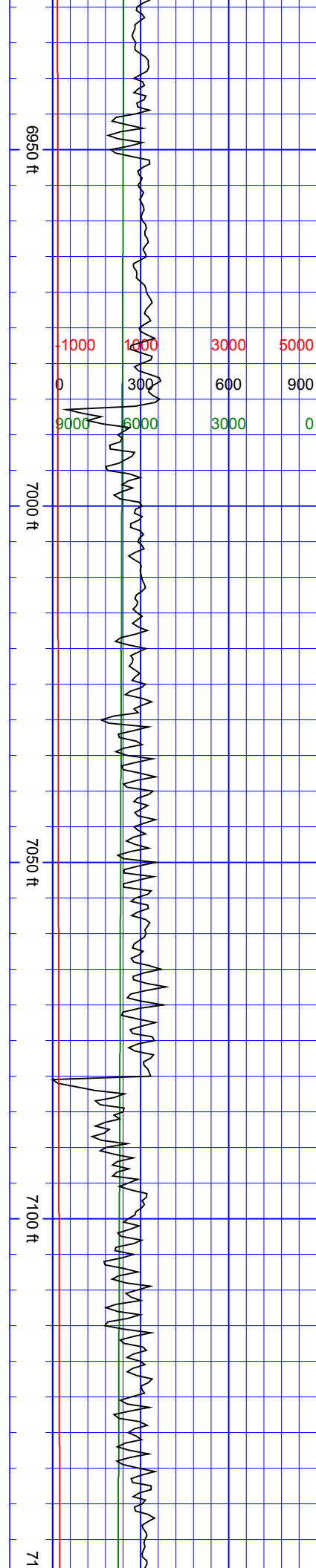
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9000	6000	3000	0

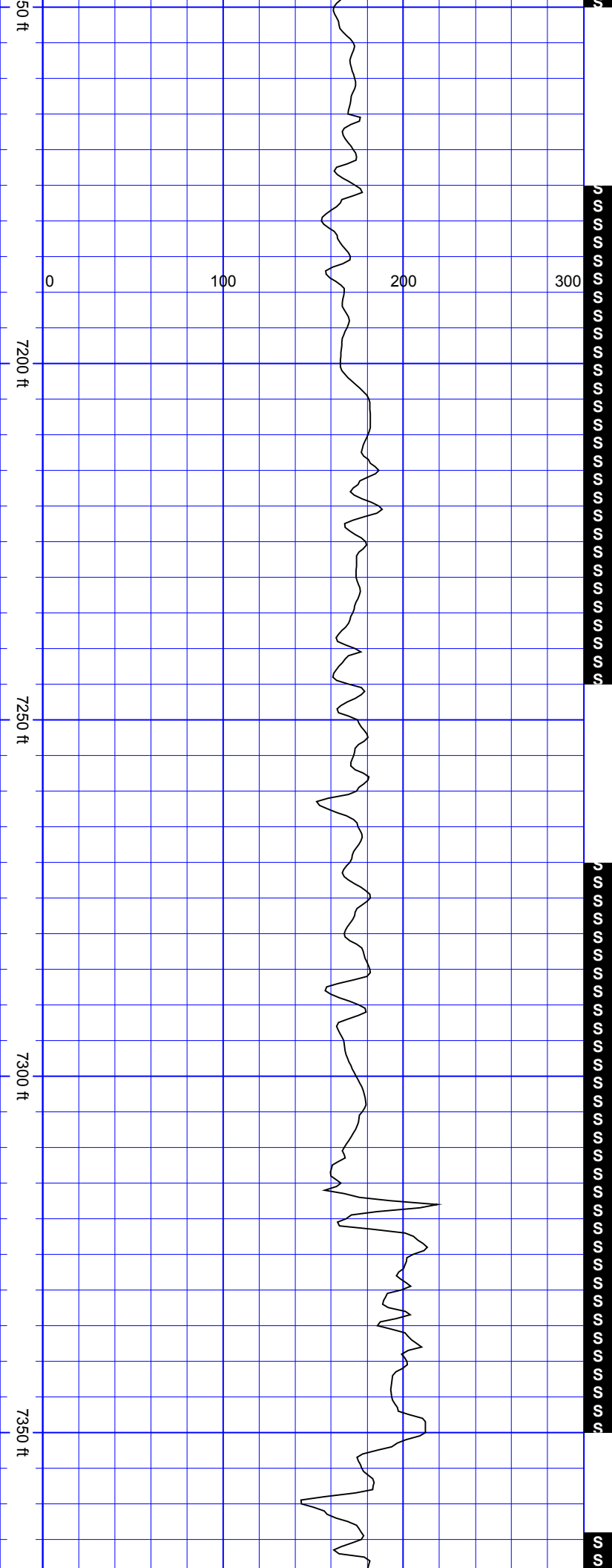


TVD:6588.89 Inc:21.91  
Azi:77.77 VertSec:-  
883.03

SurveyDepth:7019  
TVD:6648.79 Inc:29.71  
Azi:68.01 VertSec:-  
870.27

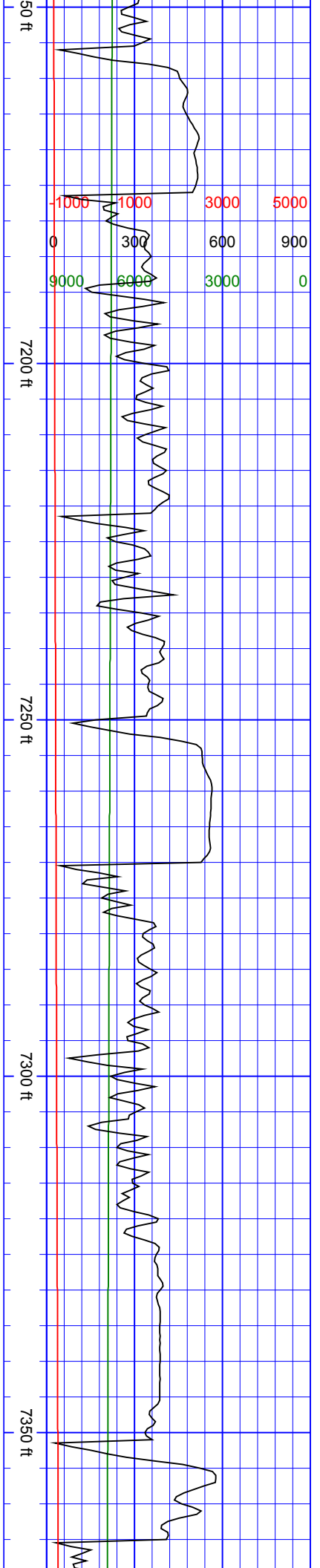
SurveyDepth:7114  
TVD:6728.35 Inc:36.65  
Azi:55.18 VertSec:-  
844.74



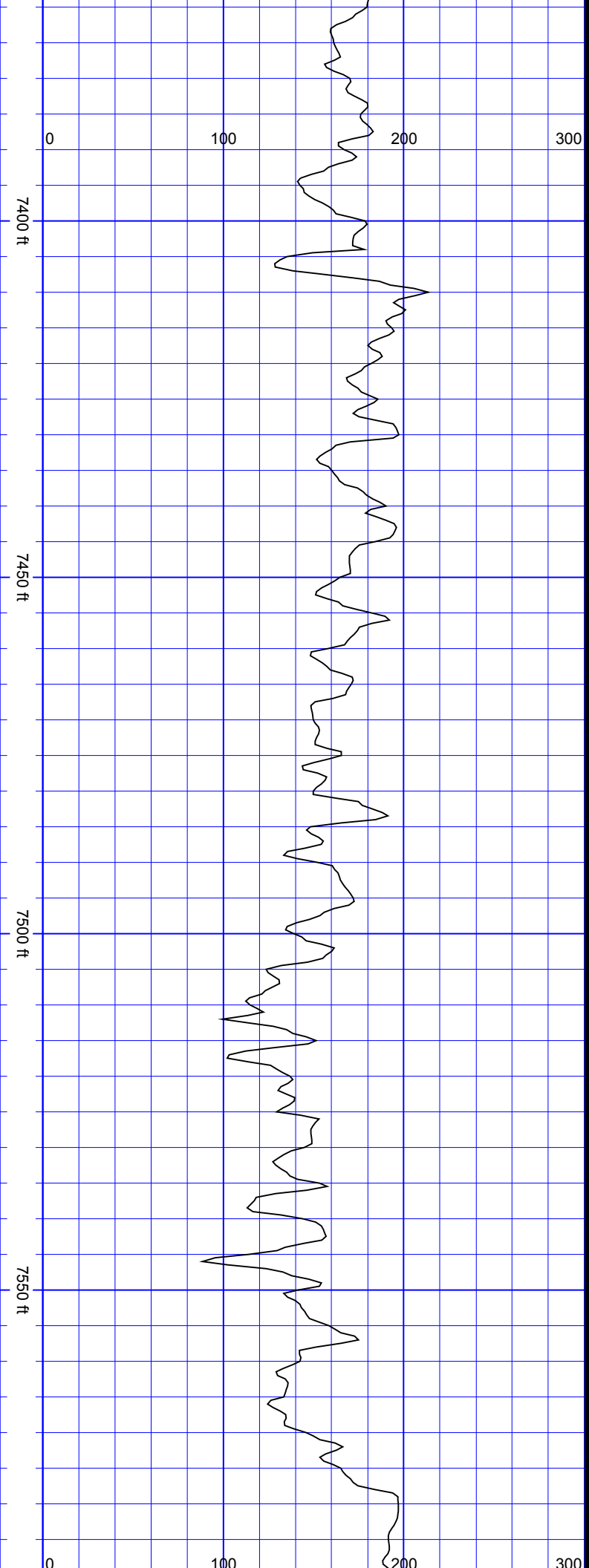


SurveyDepth:7209  
TVD:6802.76 Inc:40.25  
Azi:49.73 VertSec:-  
808.21

SurveyDepth:7303  
TVD:6872.94 Inc:43.15  
Azi:46.22 VertSec:-  
765.85



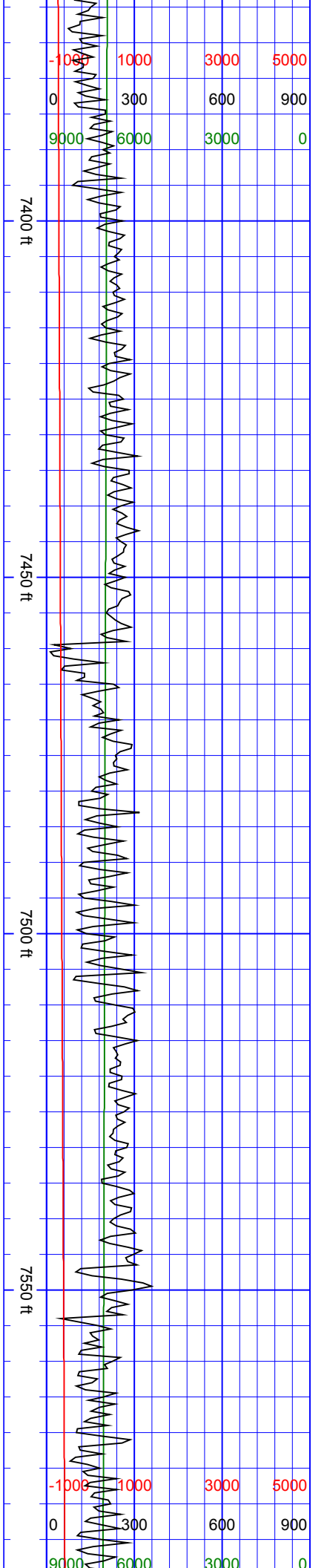


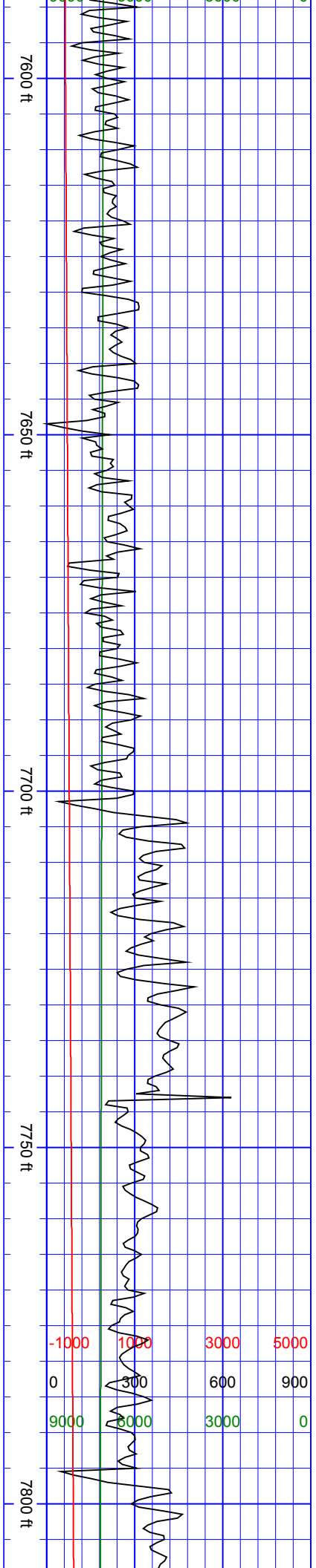
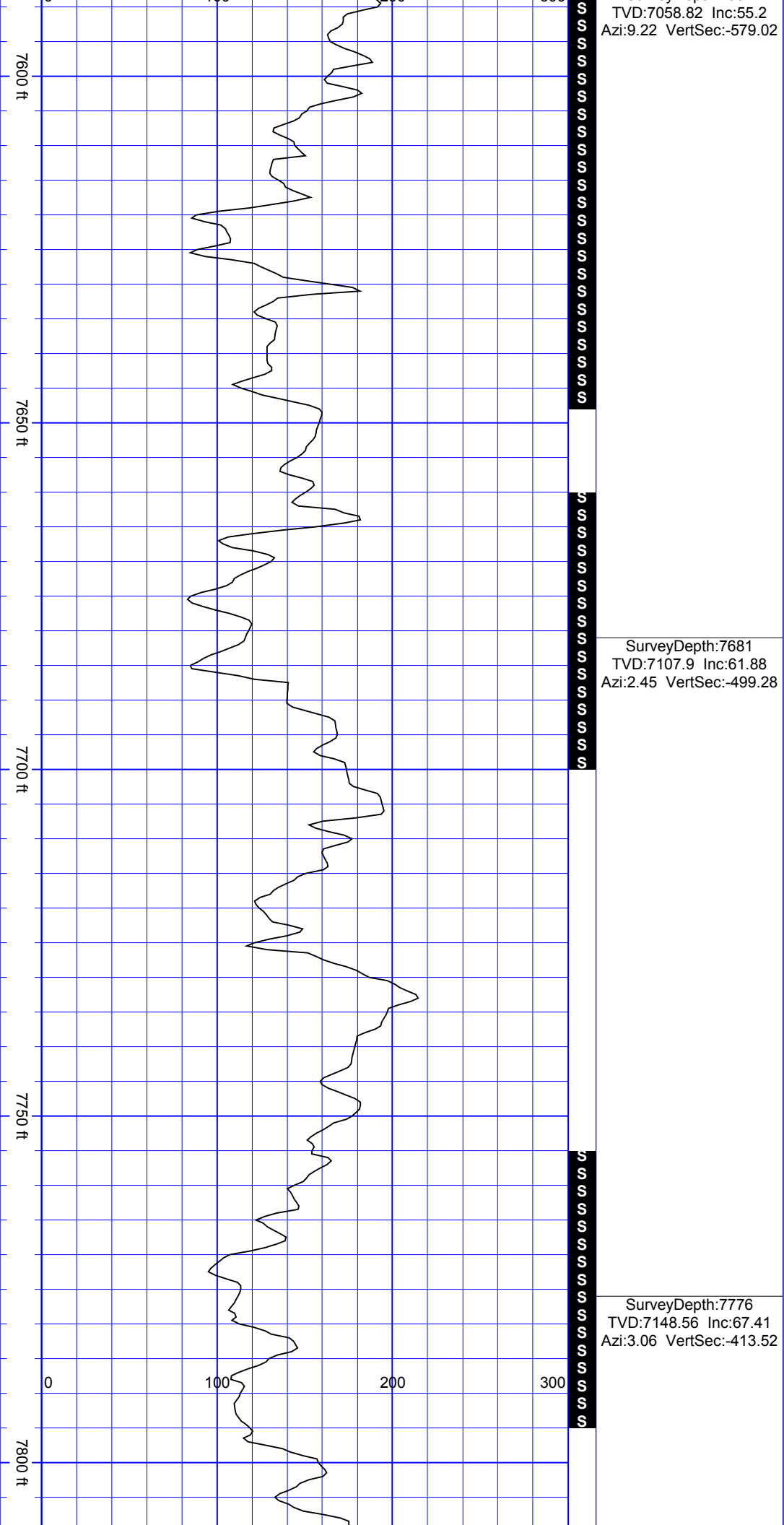


SurveyDepth:7398  
TVD:6940.18 Inc:46.89  
Azi:35.32 VertSec:-  
714.54

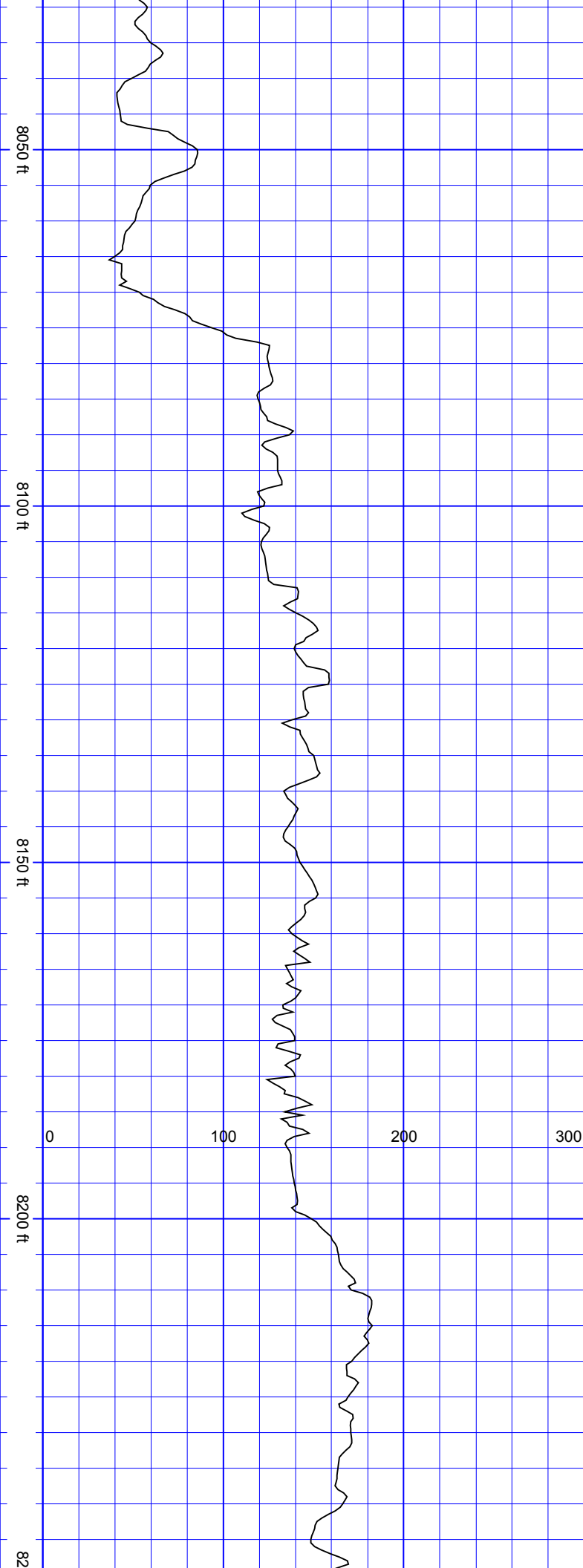
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TVD:7001.84 Inc:51.33  
Azi:22.75 VertSec:-  
652.18

SurveyDepth:7587



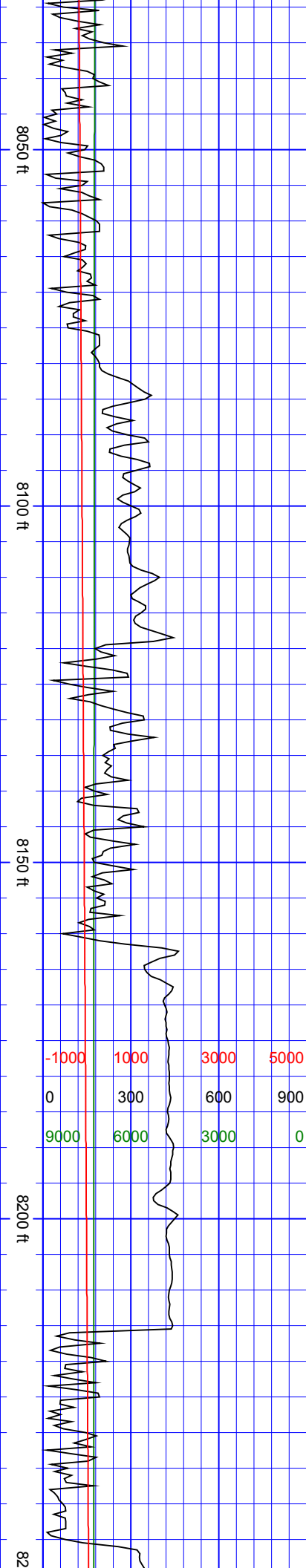






SurveyDepth:8060  
TVD:7235.77 Inc:74.71  
Azi:0.07 VertSec:-143.52

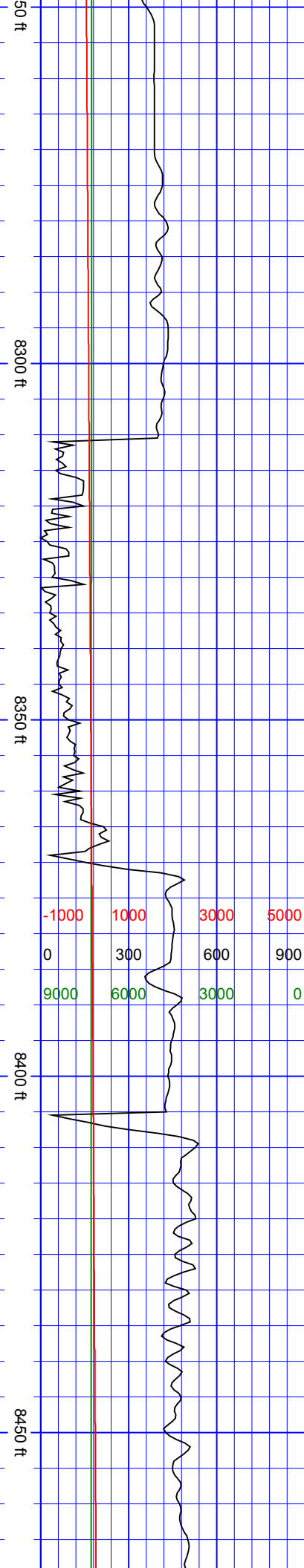
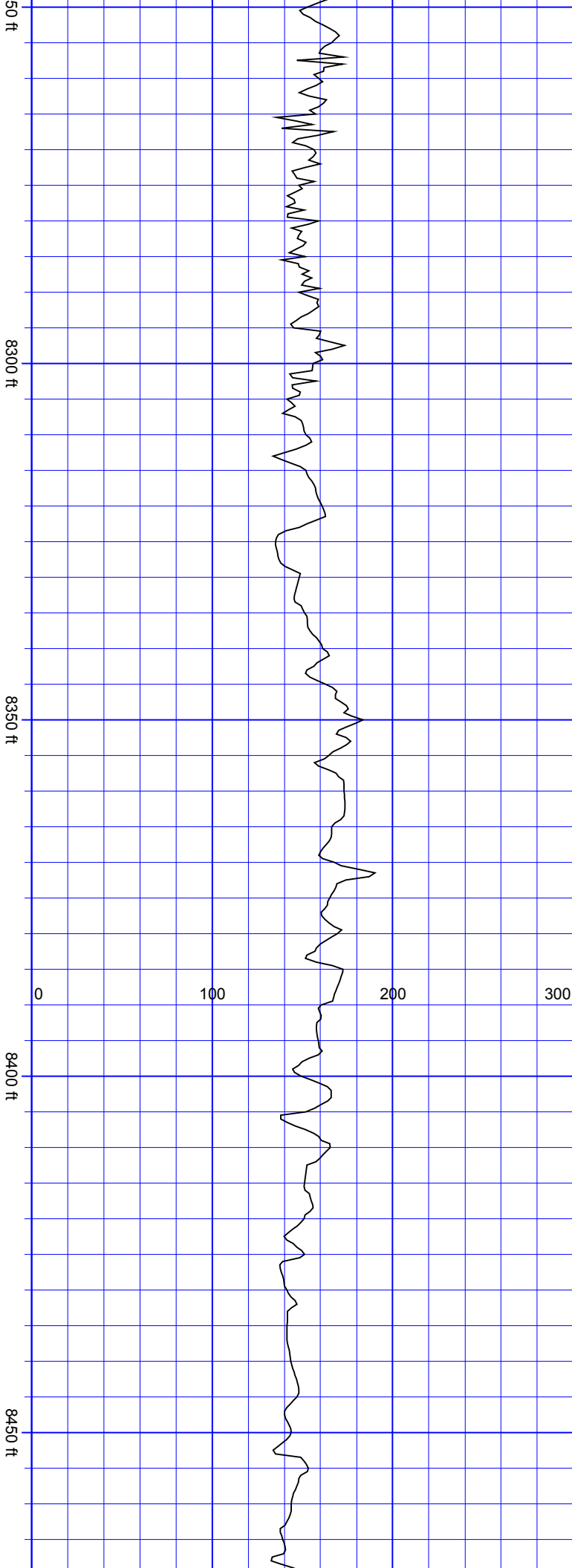
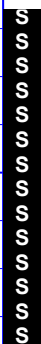
SurveyDepth:8154  
TVD:7252.17 Inc:85.17  
Azi:1.48 VertSec:-51.1

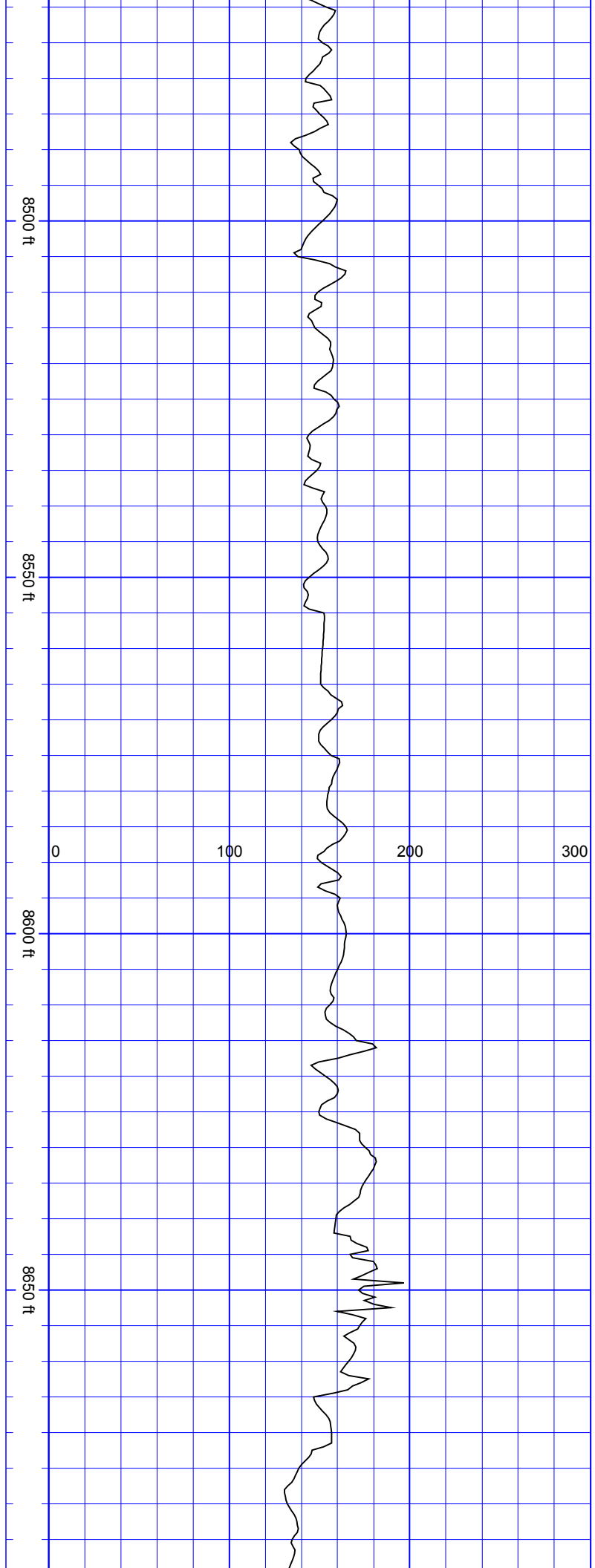


SurveyDepth:8249  
TVD:7260.03 Inc:85.34  
Azi:1.66 VertSec:43.56

SurveyDepth:8344  
TVD:7265.64 Inc:87.89  
Azi:358.84  
VertSec:138.37

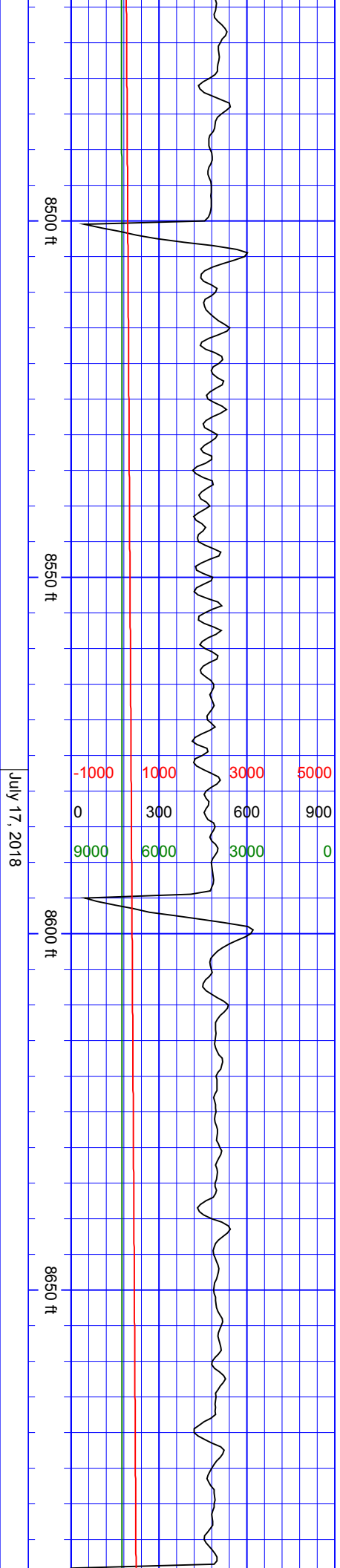
SurveyDepth:8438  
TVD:7266.39 Inc:91.19  
Azi:357.7  
VertSec:232.28

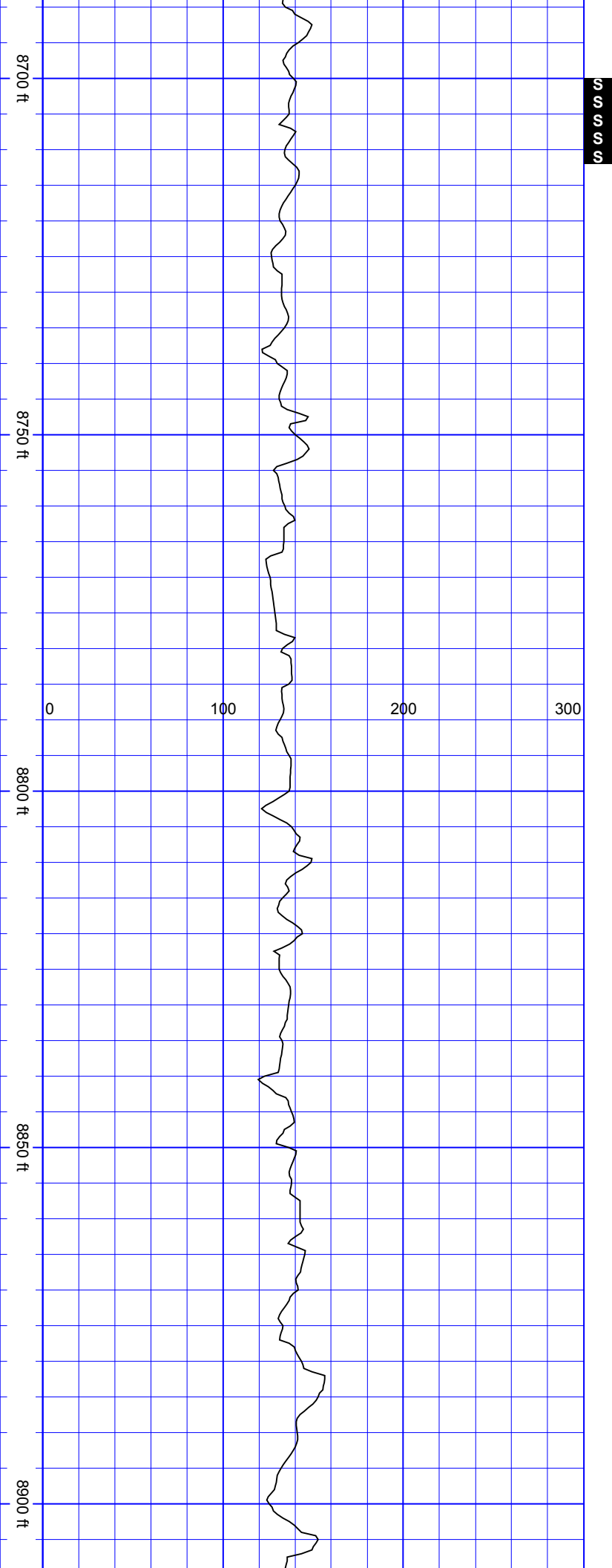




SurveyDepth:8533  
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Azi:358.67  
VertSec:327.15

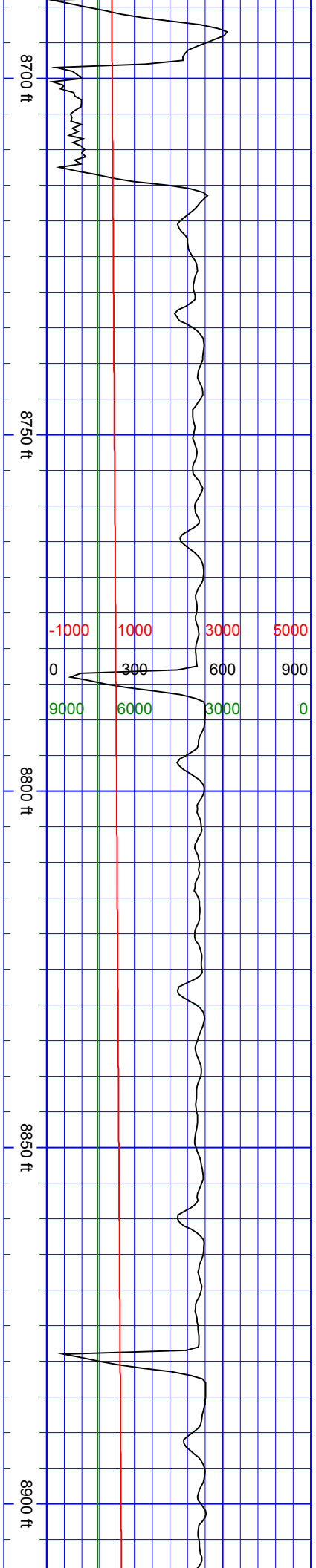
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TVD:7259.8 Inc:92.59  
Azi:358.84  
VertSec:421.03

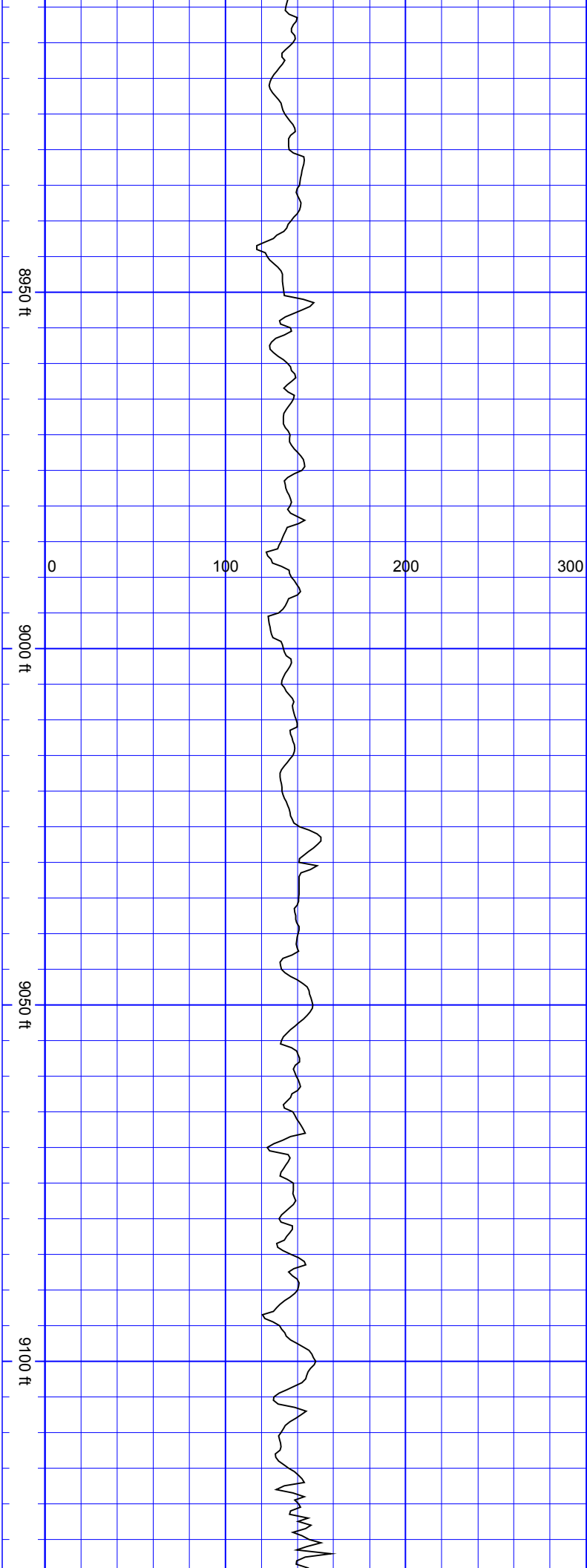




SurveyDepth:8722  
TVD:7257 Inc:90.79  
Azi:358.49  
VertSec:515.93

SurveyDepth:8817  
TVD:7255.9 Inc:90.53  
Azi:357.7  
VertSec:610.83

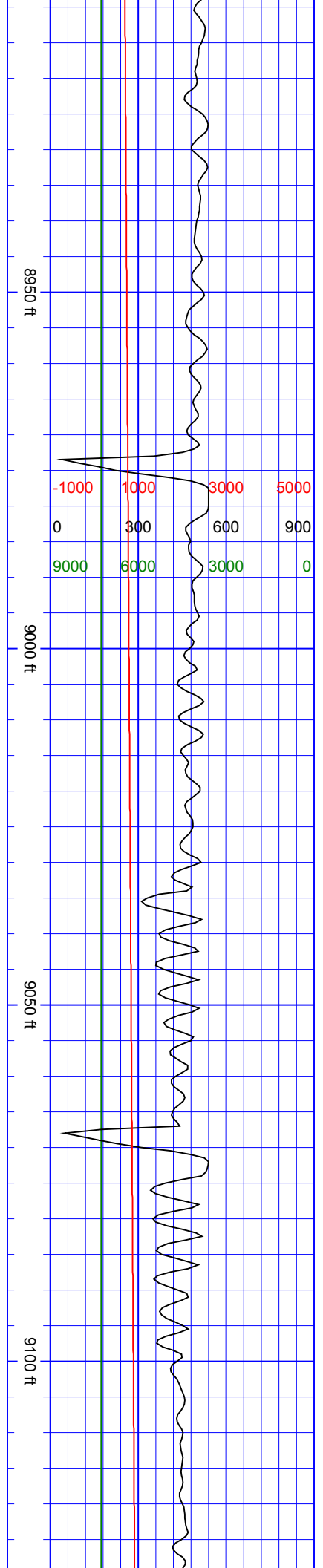




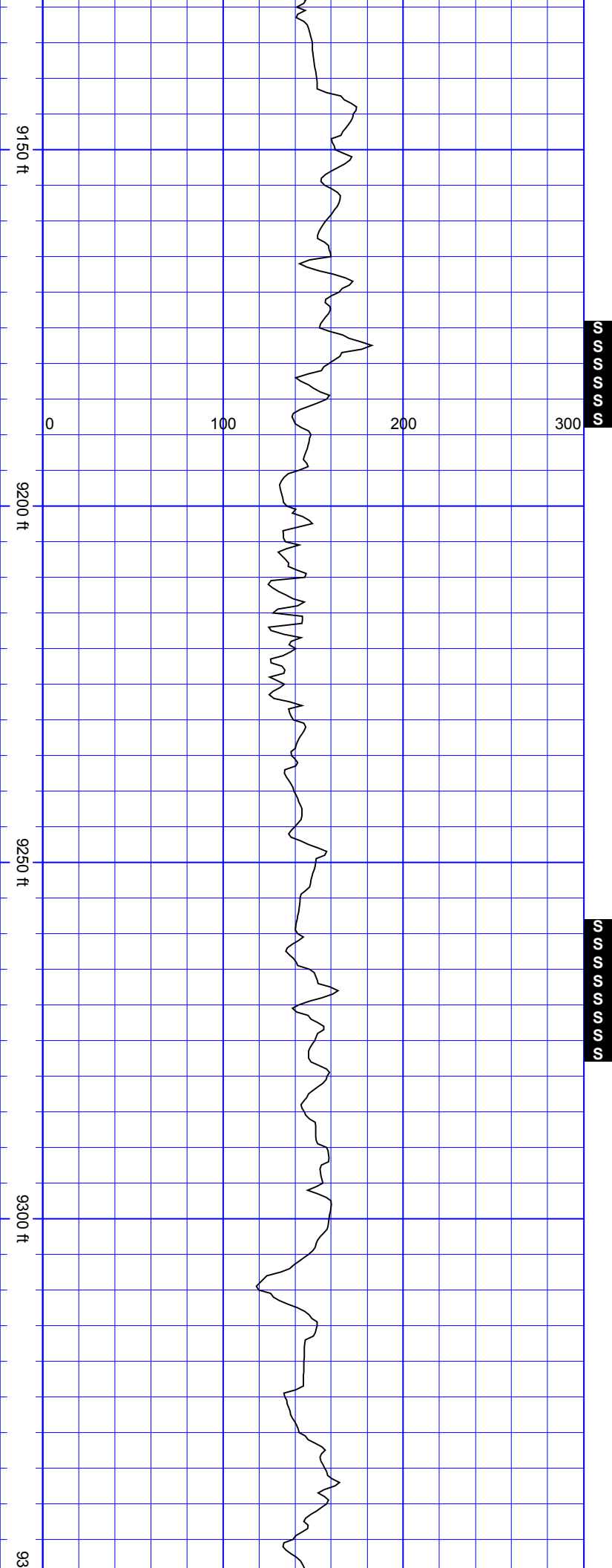
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TVD:7255.18 Inc:90.35  
Azi:357 VertSec:704.68

SurveyDepth:9006  
TVD:7254.78 Inc:90.13  
Azi:357.17  
VertSec:799.5

SurveyDepth:9101  
TVD:7254.86 Inc:89.78  
Azi:356.82  
VertSec:894.31

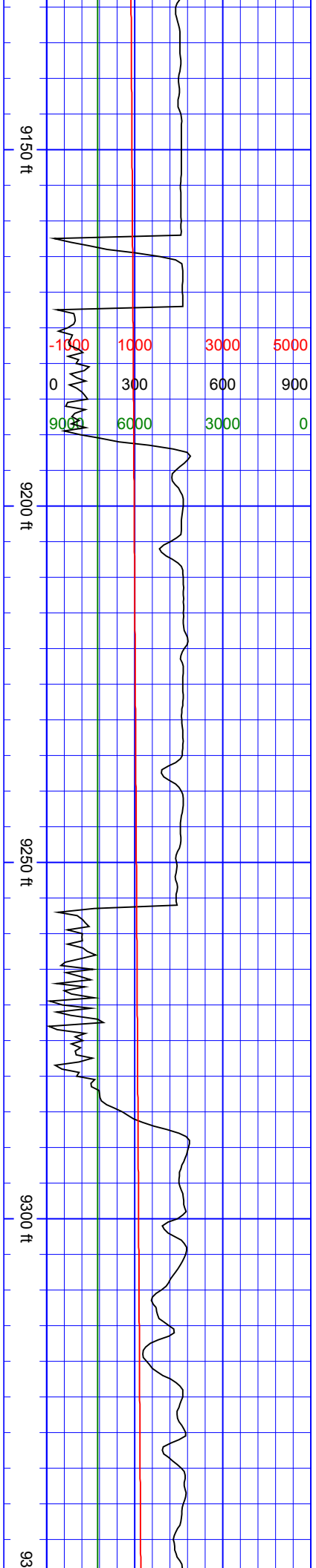


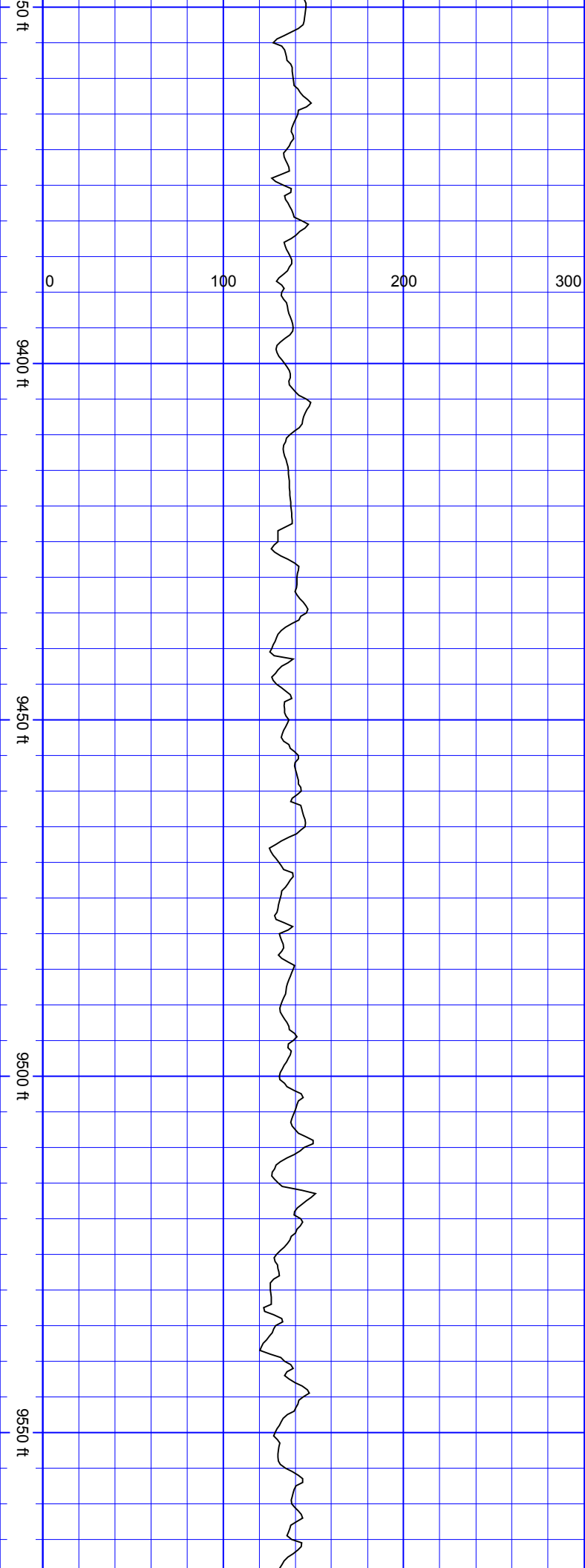




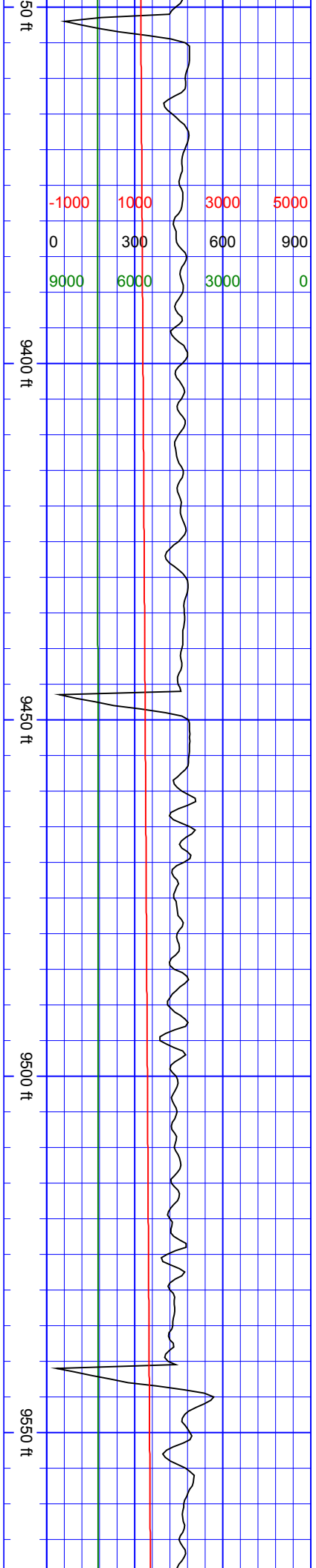
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VertSec:989.18

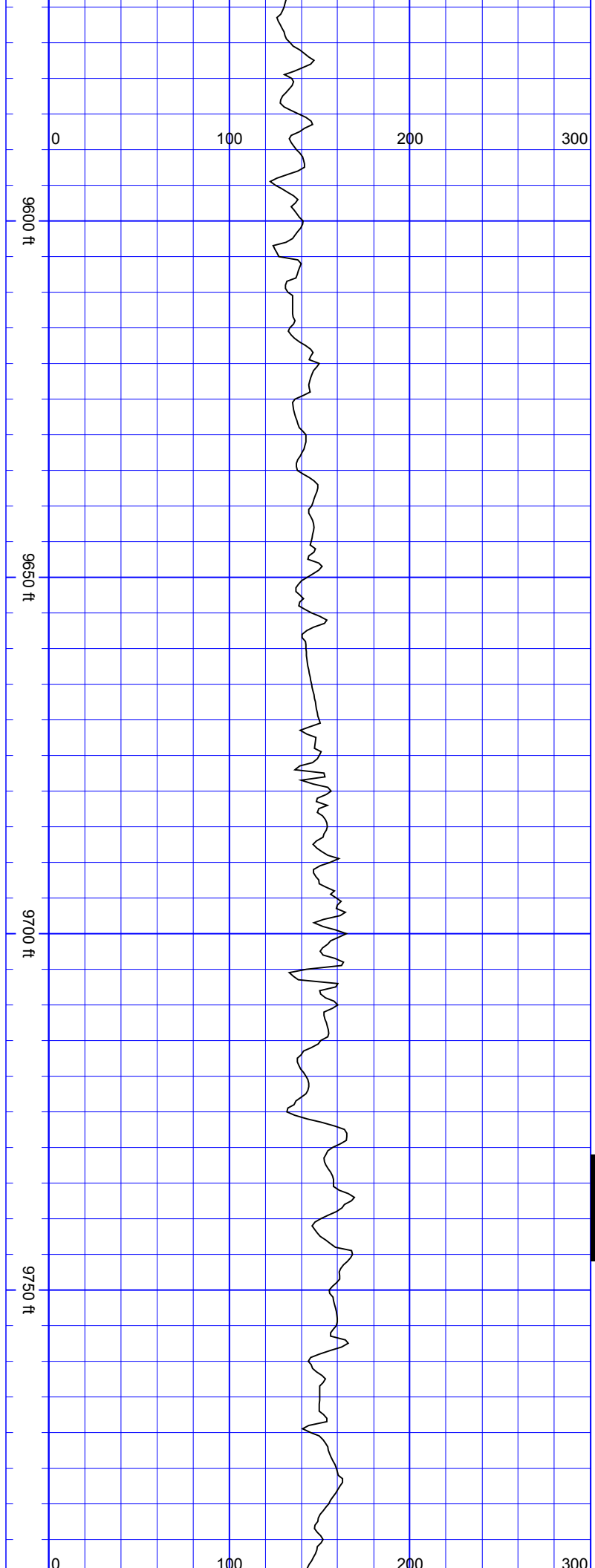
SurveyDepth:9290  
TVD:7251.34 Inc:91.23  
Azi:2.1 VertSec:1083.14





SurveyDepth:9384 TVD:7249.51 Inc:91.01 Azi:2.62 VertSec:1177.08	SurveyDepth:9480 TVD:7248.03 Inc:90.75 Azi:2.62 VertSec:1273.01
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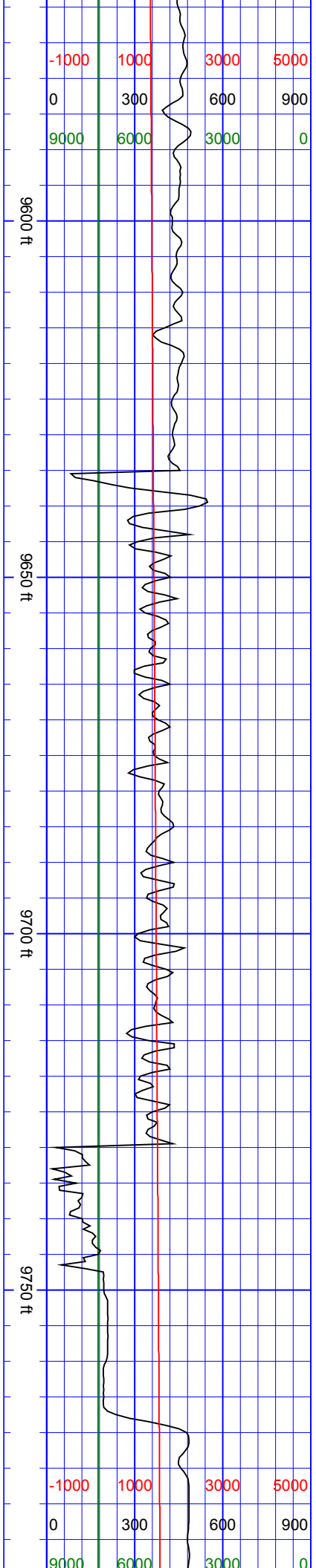


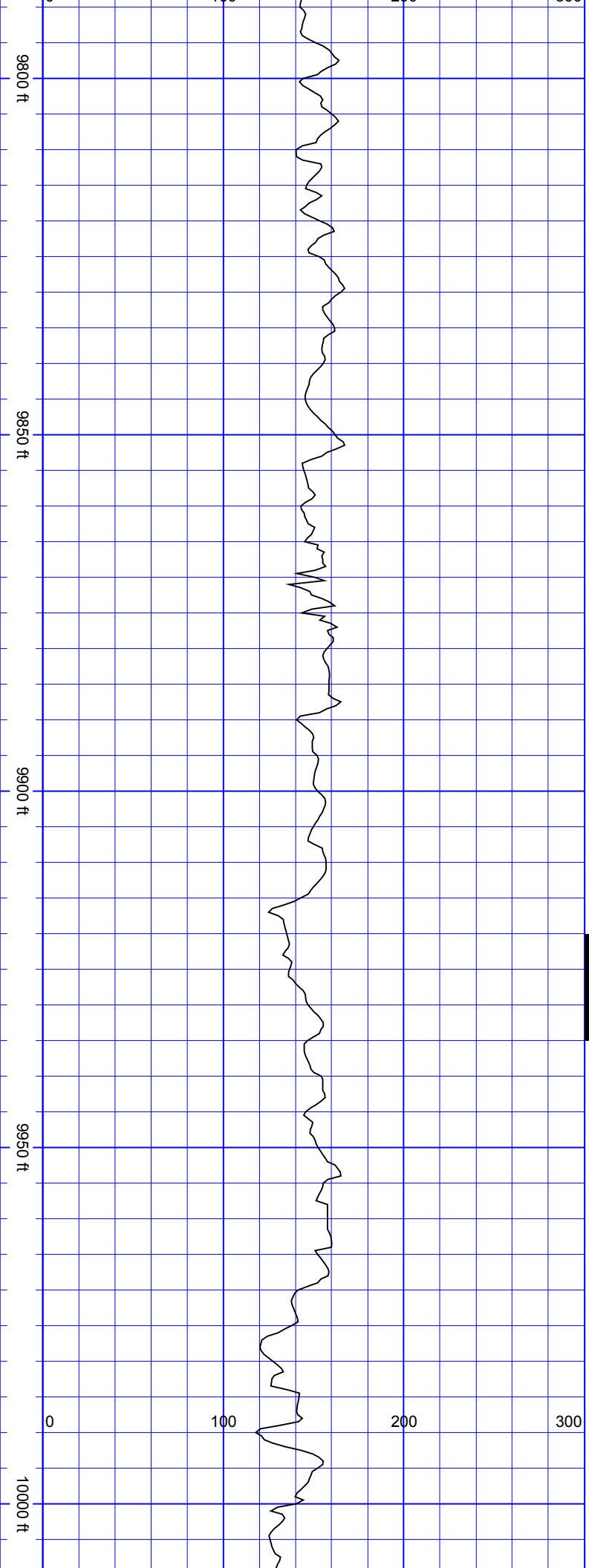
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TVD:7246.84 Inc:90.7  
Azi:2.54  
VertSec:1366.94

SurveyDepth:9669  
TVD:7245.93 Inc:90.4  
Azi:2.89  
VertSec:1461.87

SurveyDepth:9764  
TVD:7246.4 Inc:89.03  
Azi:0.69  
VertSec:1556.84

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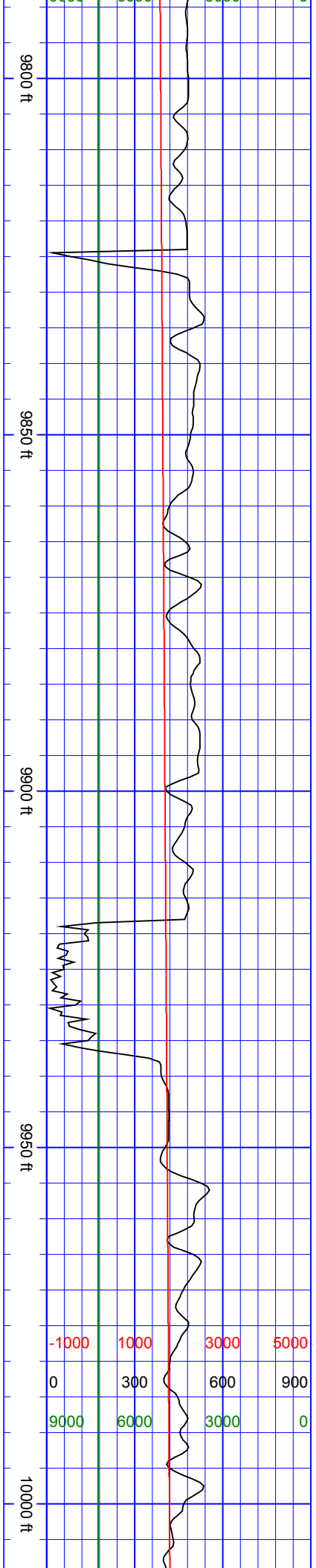


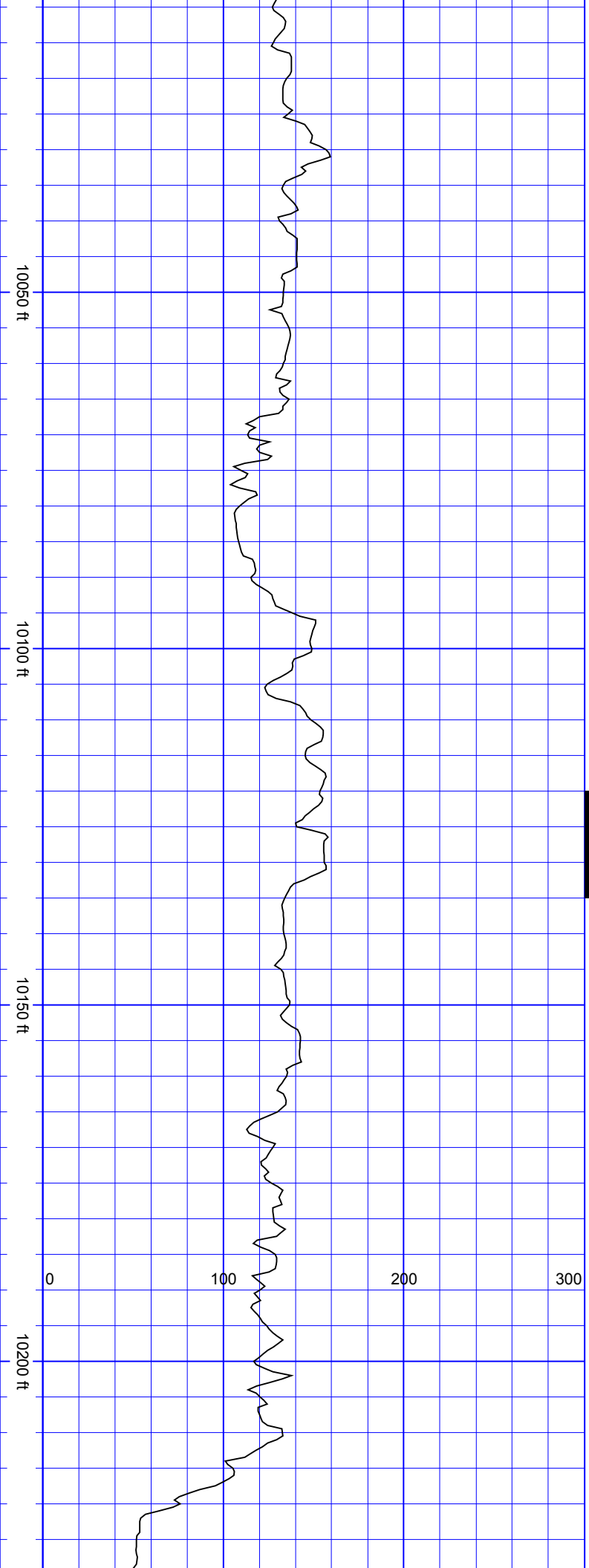


SurveyDepth:9858  
TVD:7247.09 Inc:90.13  
Azi:1.48  
VertSec:1650.83

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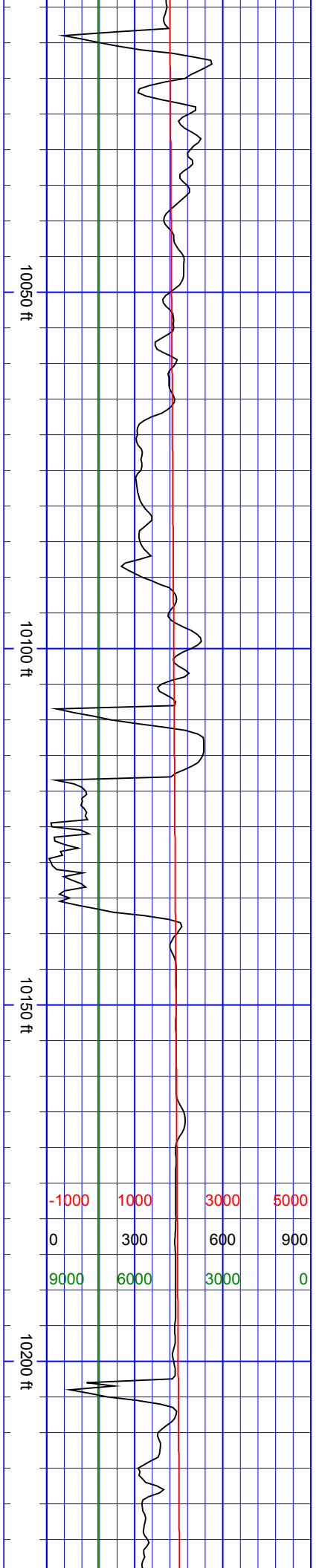
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TVD:7246.59 Inc:90.48  
Azi:359.37  
VertSec:1744.83

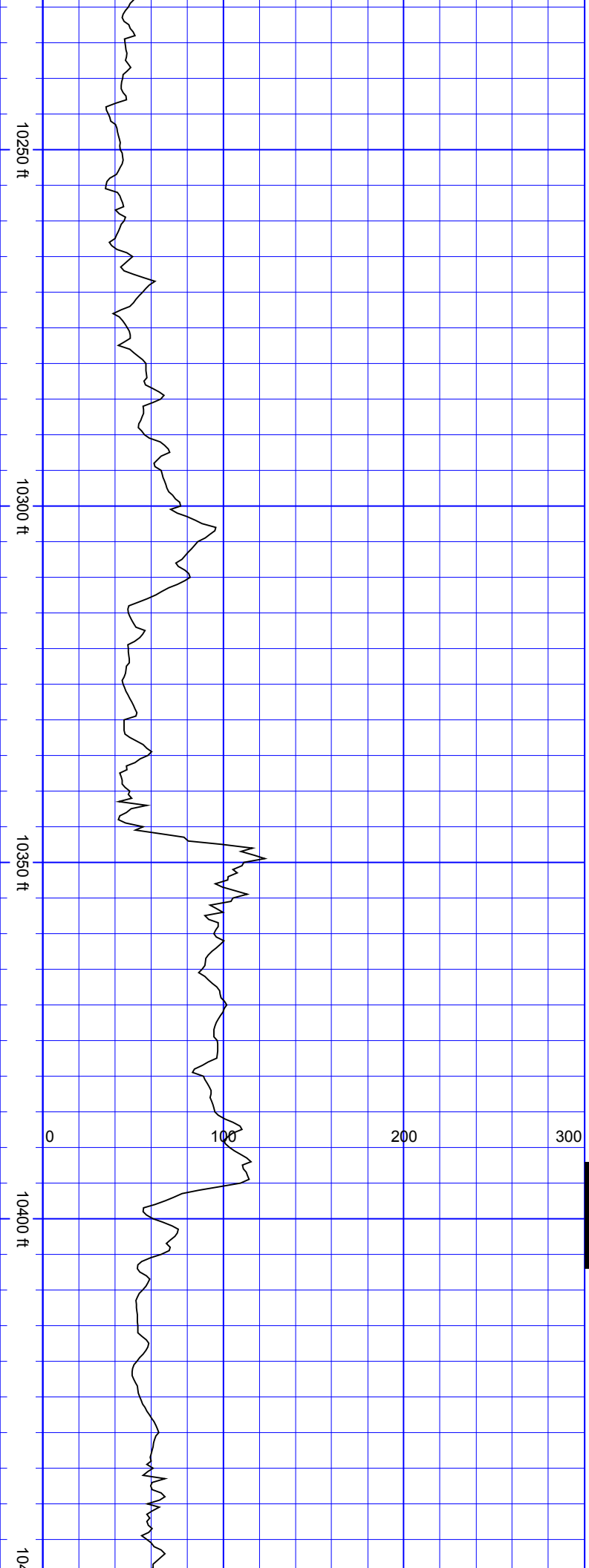




SurveyDepth:10047  
TVD:7246.82 Inc:89.25  
Azi:356.91  
VertSec:1839.73

SurveyDepth:10142  
TVD:7247.11 Inc:90.4  
Azi:358.58  
VertSec:1934.61

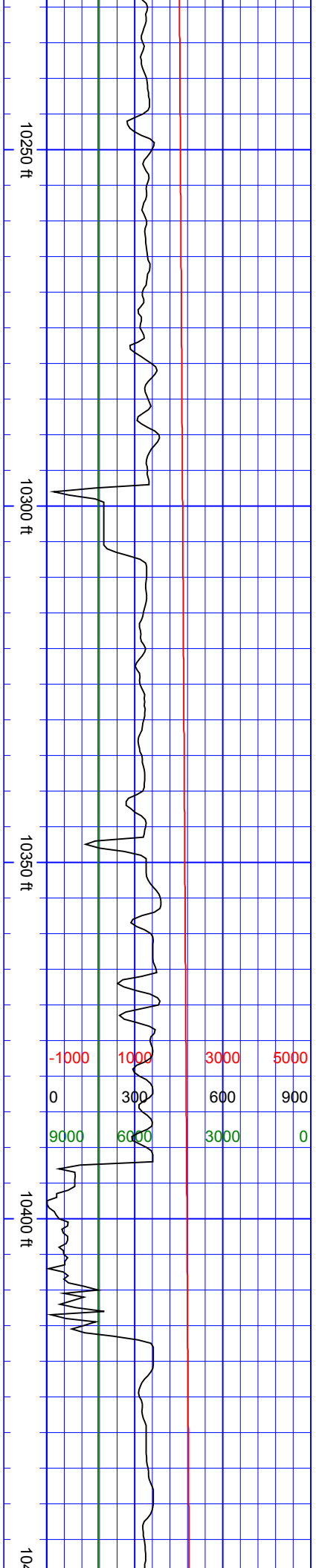


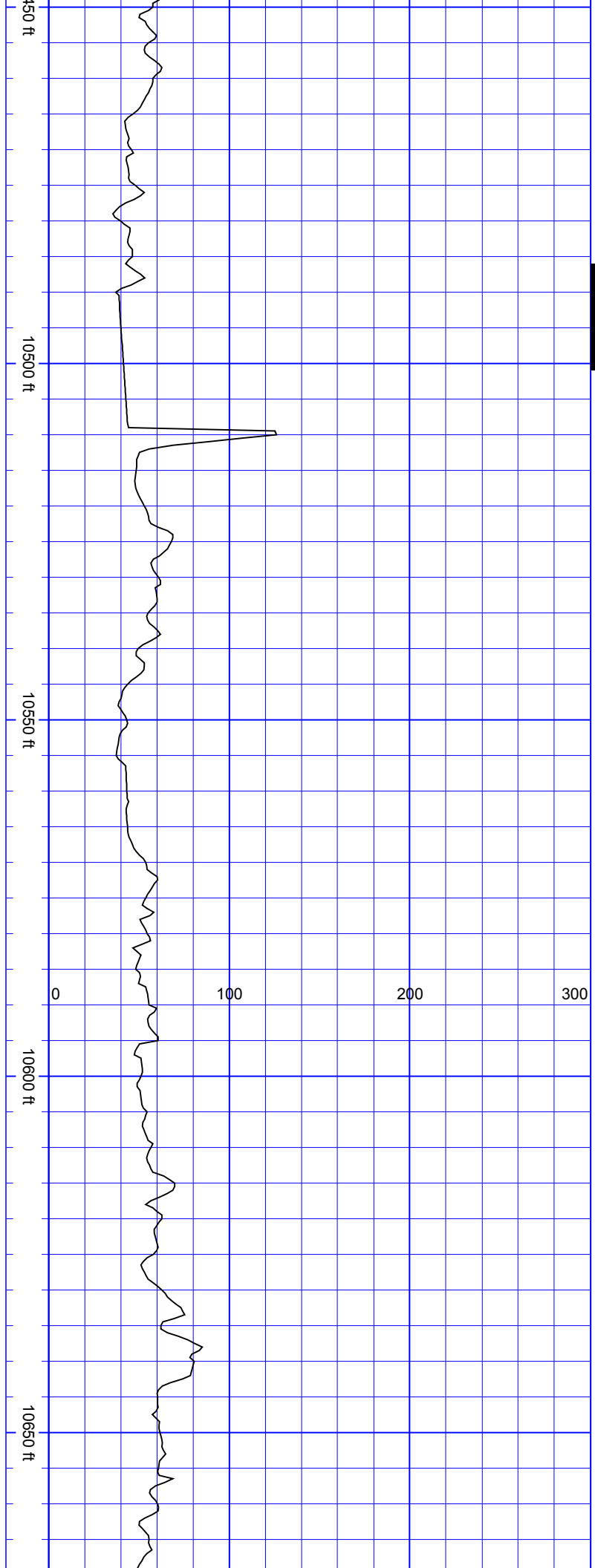


SurveyDepth:10236  
TVD:7246.34 Inc:90.53  
Azi:358.76  
VertSec:2028.55

SurveyDepth:10331  
TVD:7245.03 Inc:91.06  
Azi:357.88  
VertSec:2123.47

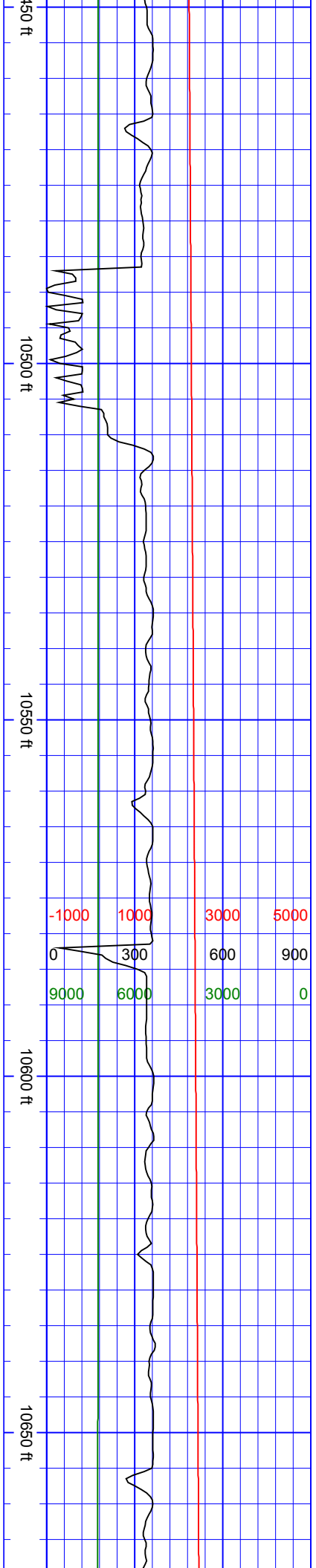
SurveyDepth:10425  
TVD:7243.36 Inc:90.97  
Azi:0.43  
VertSec:2217.42

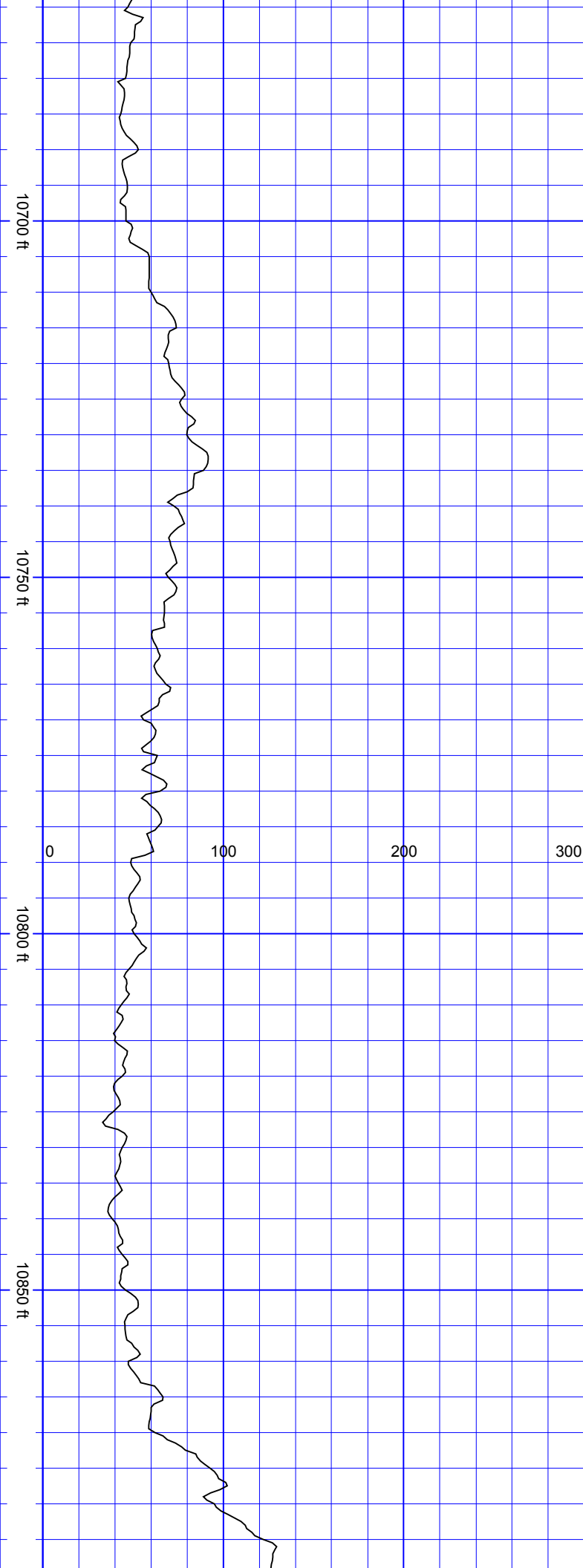




SurveyDepth:10520  
TVD:7244.12 Inc:88.11  
Azi:0.51 VertSec:2312.4

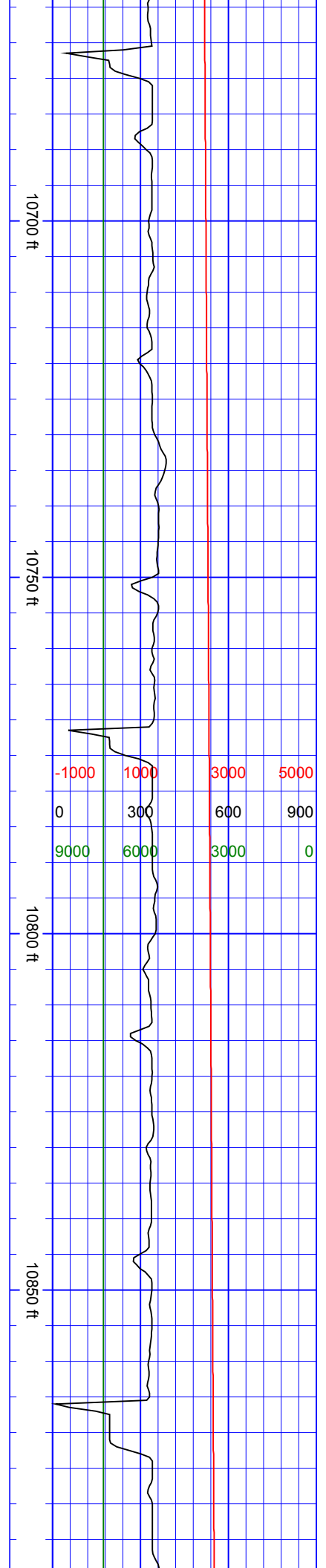
SurveyDepth:10615  
TVD:7247.47 Inc:87.85  
Azi:0.25  
VertSec:2407.34



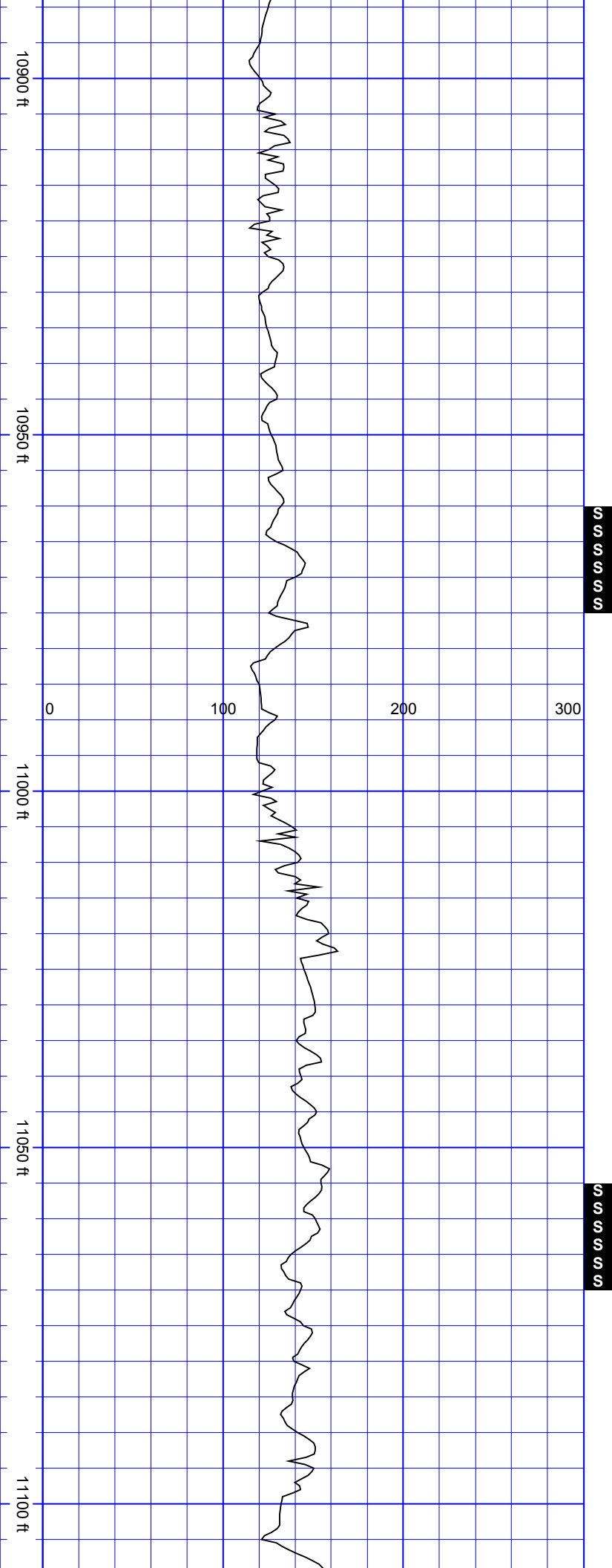


SurveyDepth:10709  
TVD:7250.82 Inc:88.07  
Azi:0.78  
VertSec:2501.28

SurveyDepth:10805  
TVD:7254.42 Inc:87.63  
Azi:1.04  
VertSec:2597.21



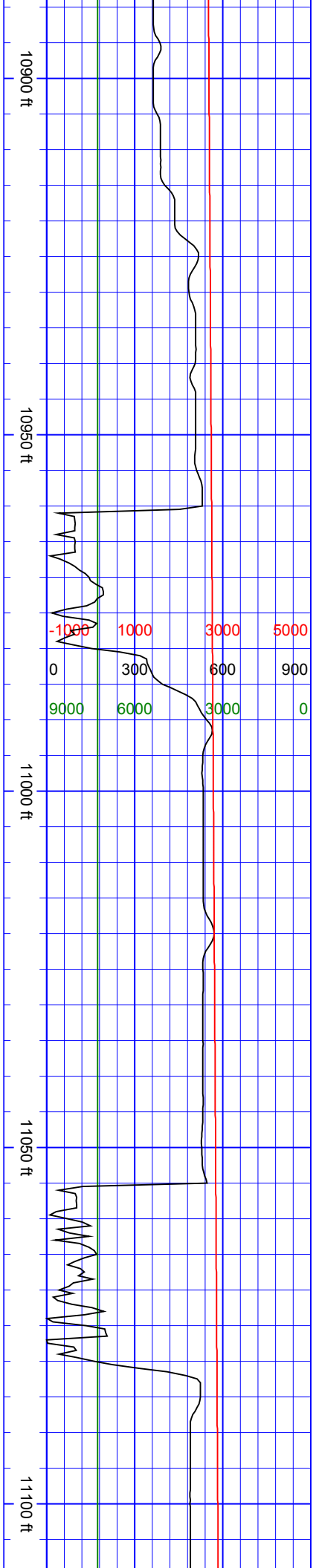


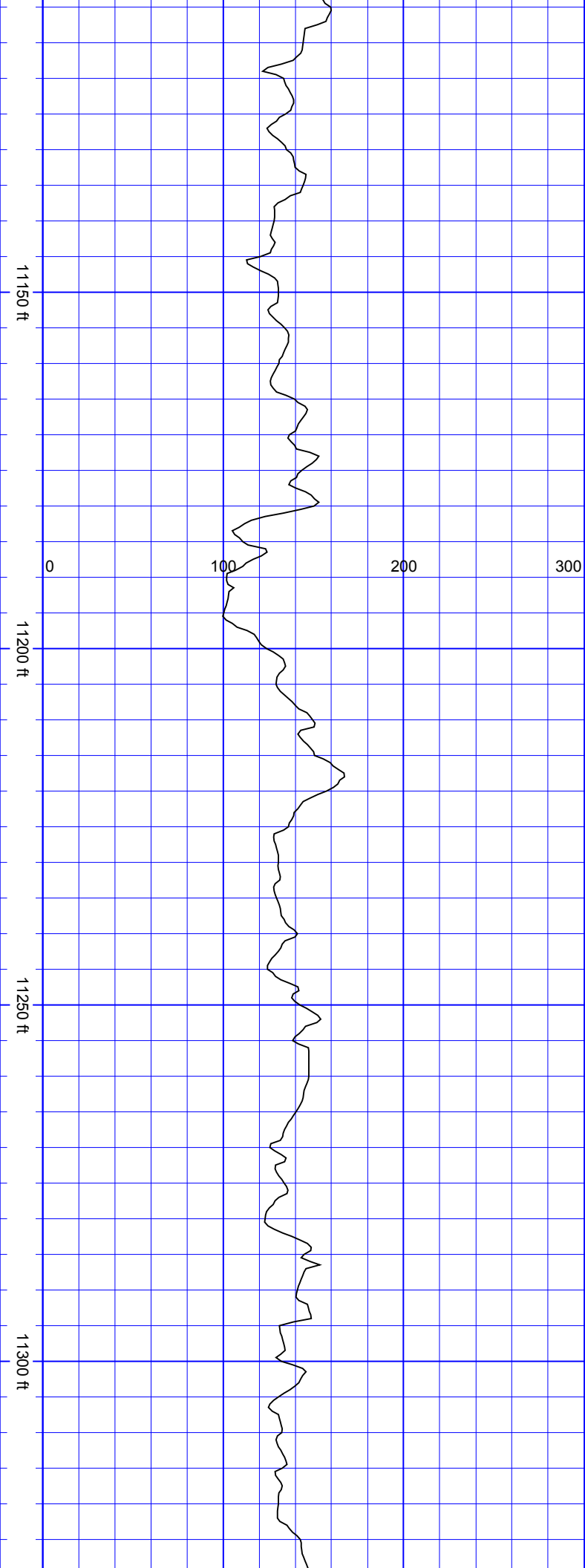


SurveyDepth:10899  
TVD:7259.31 Inc:86.4  
Azi:0.51  
VertSec:2691.08

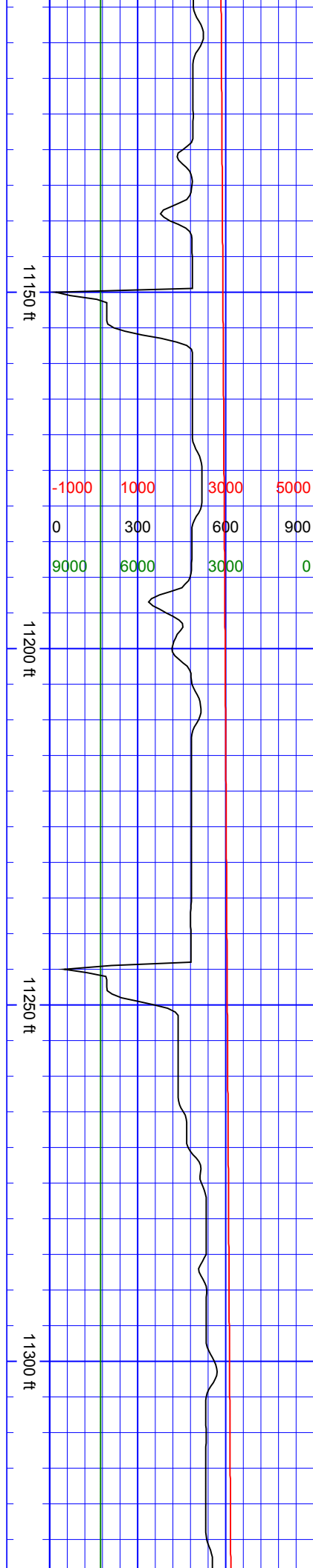
SurveyDepth:10994  
TVD:7263.83 Inc:88.15  
Azi:0.25  
VertSec:2785.97

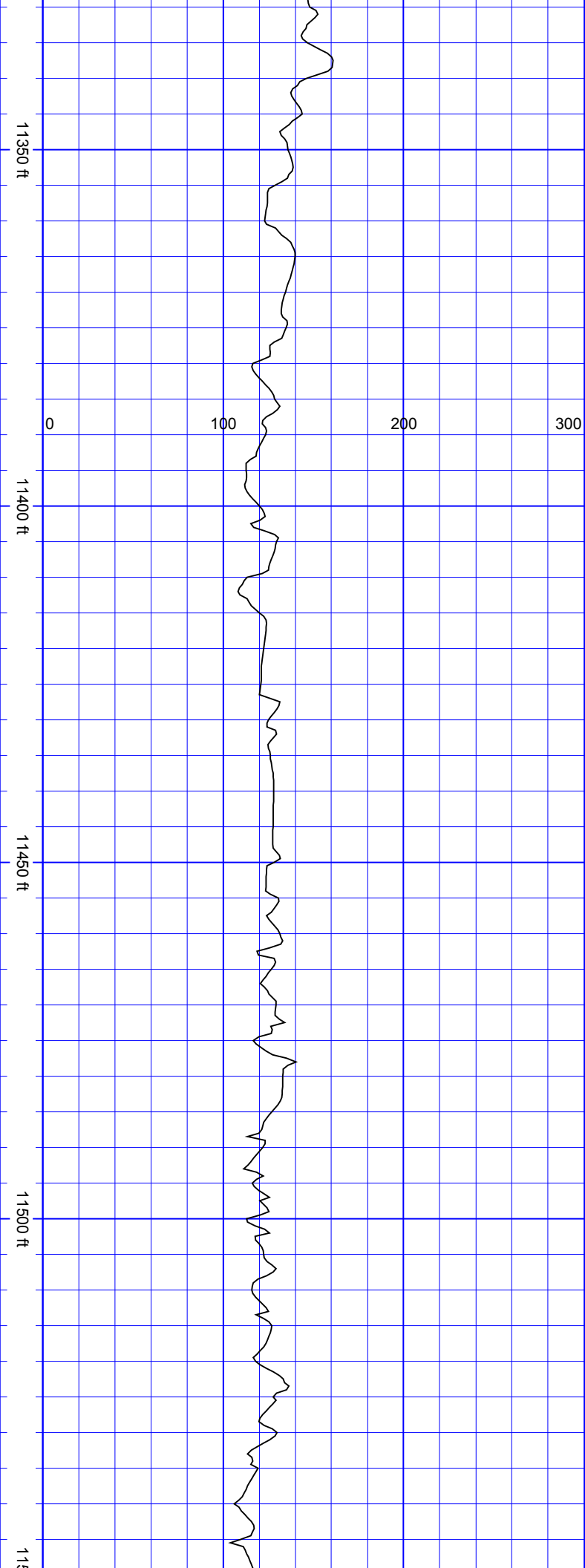
SurveyDepth:11088  
TVD:7264.7 Inc:90.79  
Azi:1.39  
VertSec:2879.96





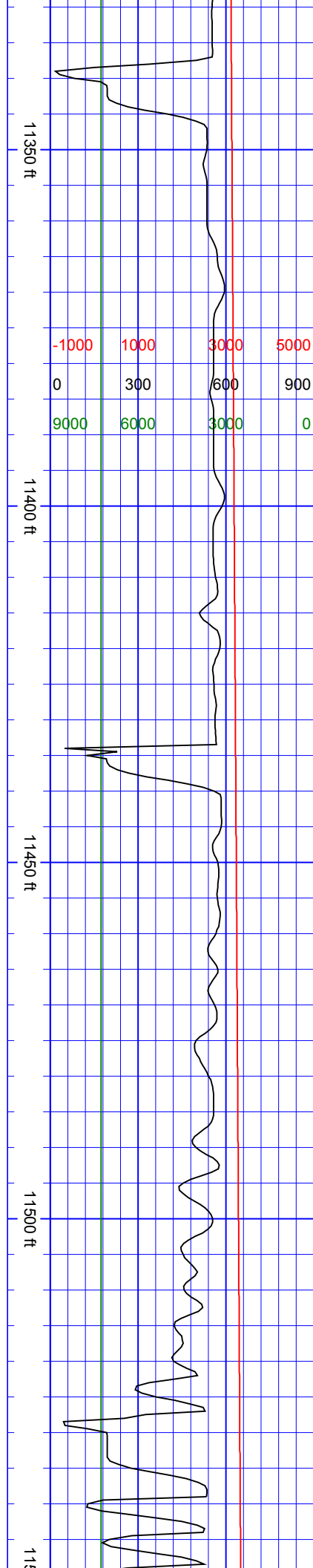
SurveyDepth:11183 TVD:7262.84 Inc:91.45 Azi:1.92 VertSec:2974.92	SurveyDepth:11278 TVD:7260.59 Inc:91.27 Azi:1.74 VertSec:3069.87
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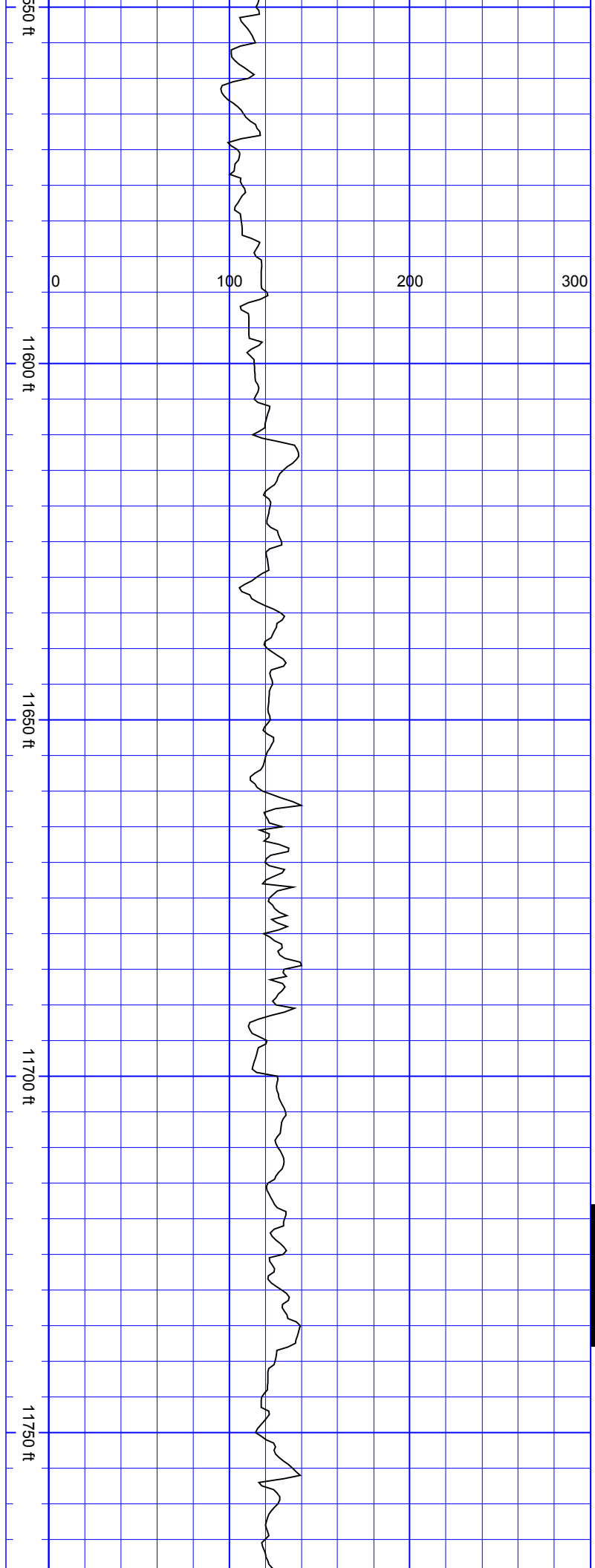




SurveyDepth:11373  
TVD:7258.26 Inc:91.54  
Azi:1.83  
VertSec:3164.82

SurveyDepth:11467  
TVD:7255.52 Inc:91.8  
Azi:1.66  
VertSec:3258.76

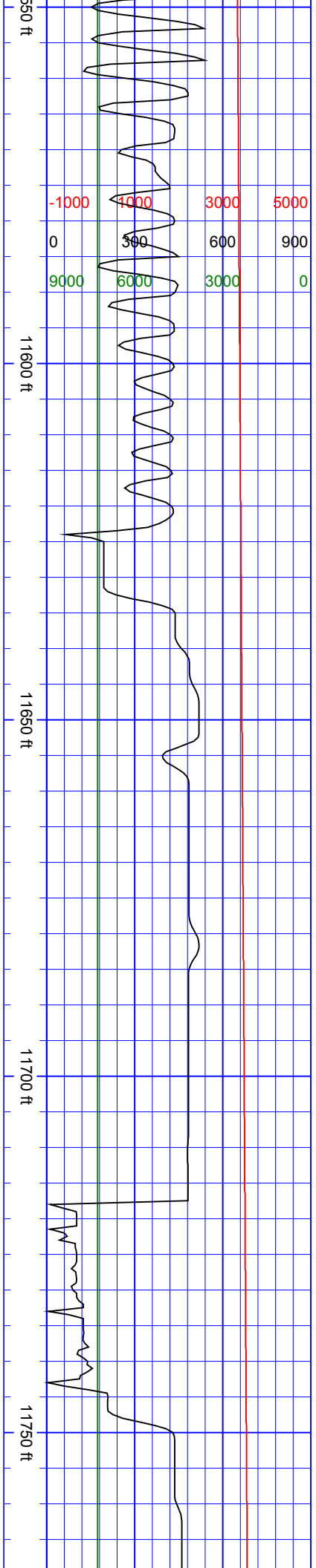


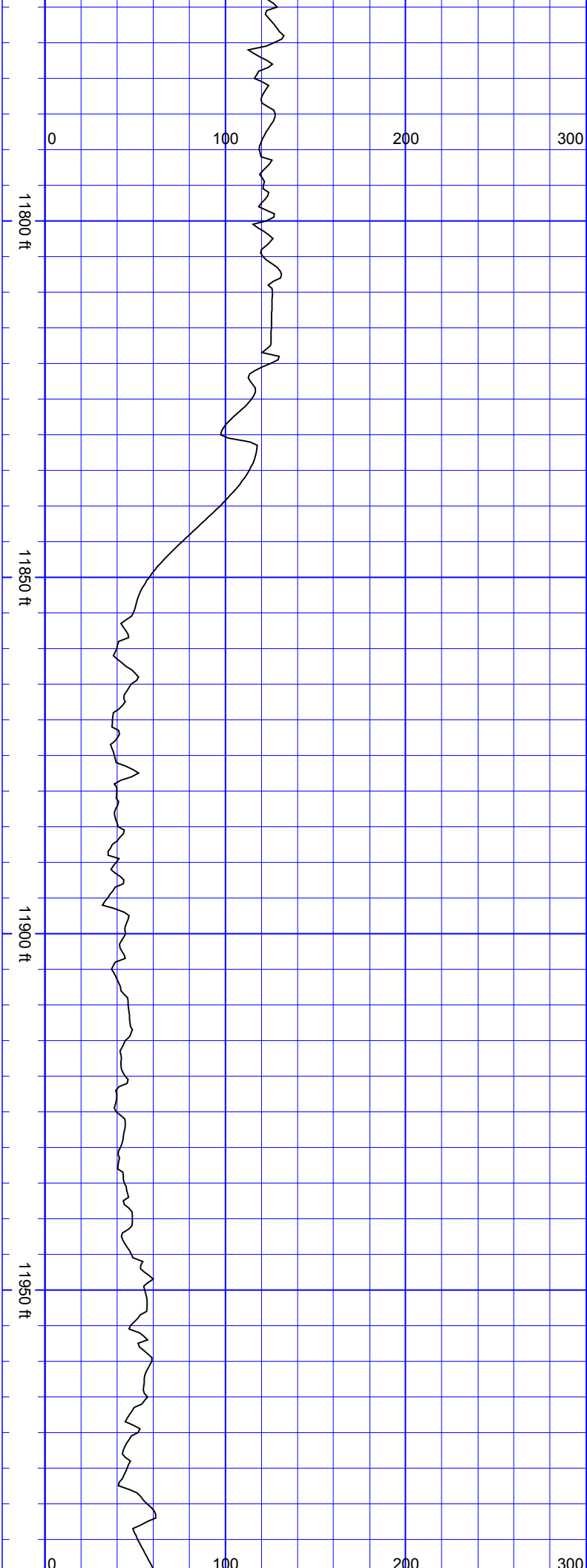


SurveyDepth:11562  
TVD:7253.81 Inc:90.26  
Azi:0.95  
VertSec:3353.74

SurveyDepth:11657  
TVD:7255.05 Inc:88.24  
Azi:359.72  
VertSec:3448.72

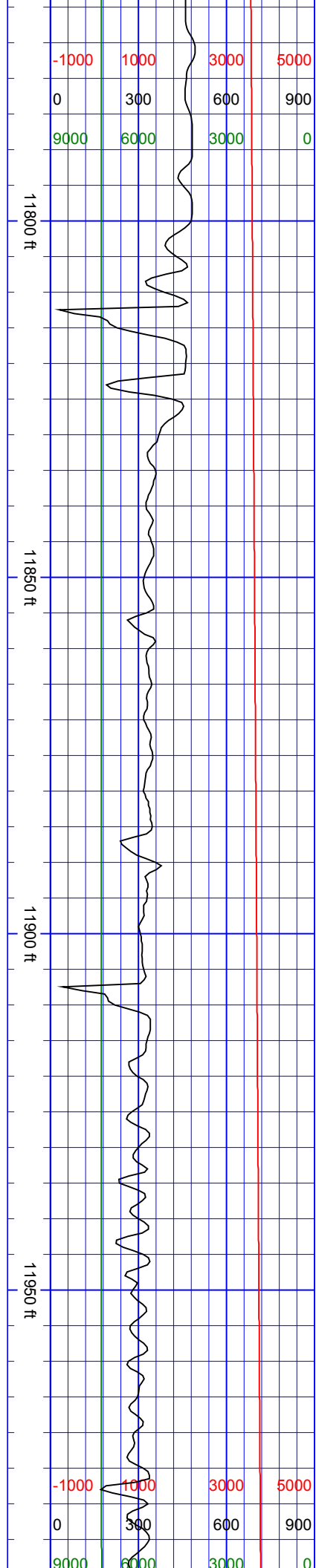
SurveyDepth:11751  
TVD:7255.02 Inc:91.8  
Azi:0.95 VertSec:3542.7

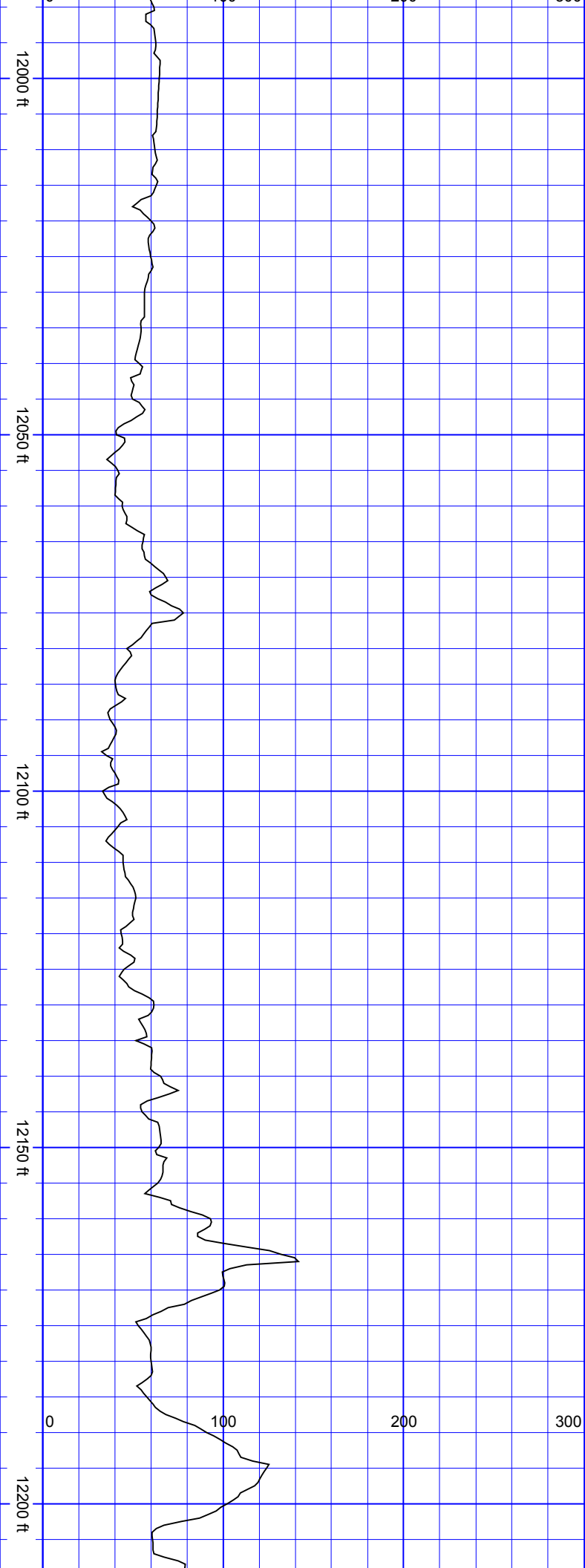




SurveyDepth:11845  
TVD:7252.46 Inc:91.32  
Azi:0.34  
VertSec:3636.67

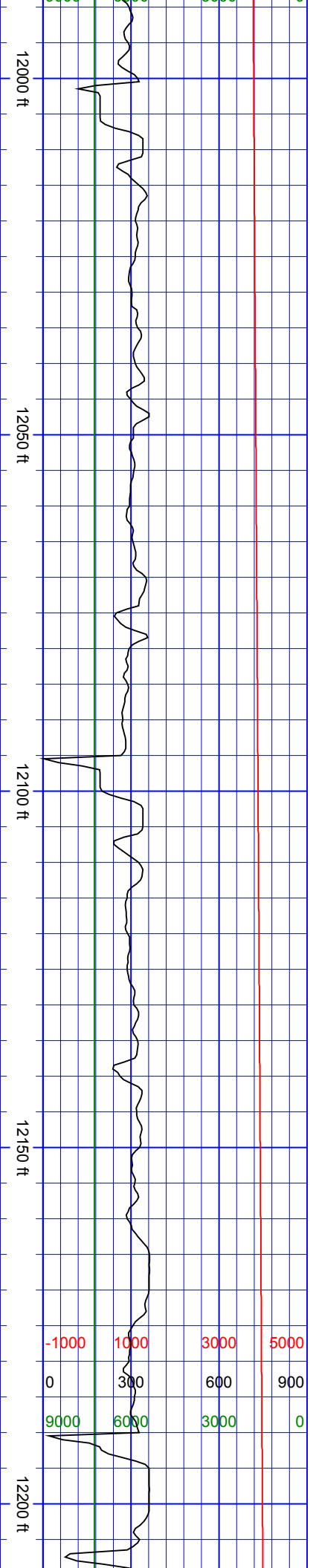
SurveyDepth:11939  
TVD:7250.22 Inc:91.41  
Azi:0.25  
VertSec:3730.64

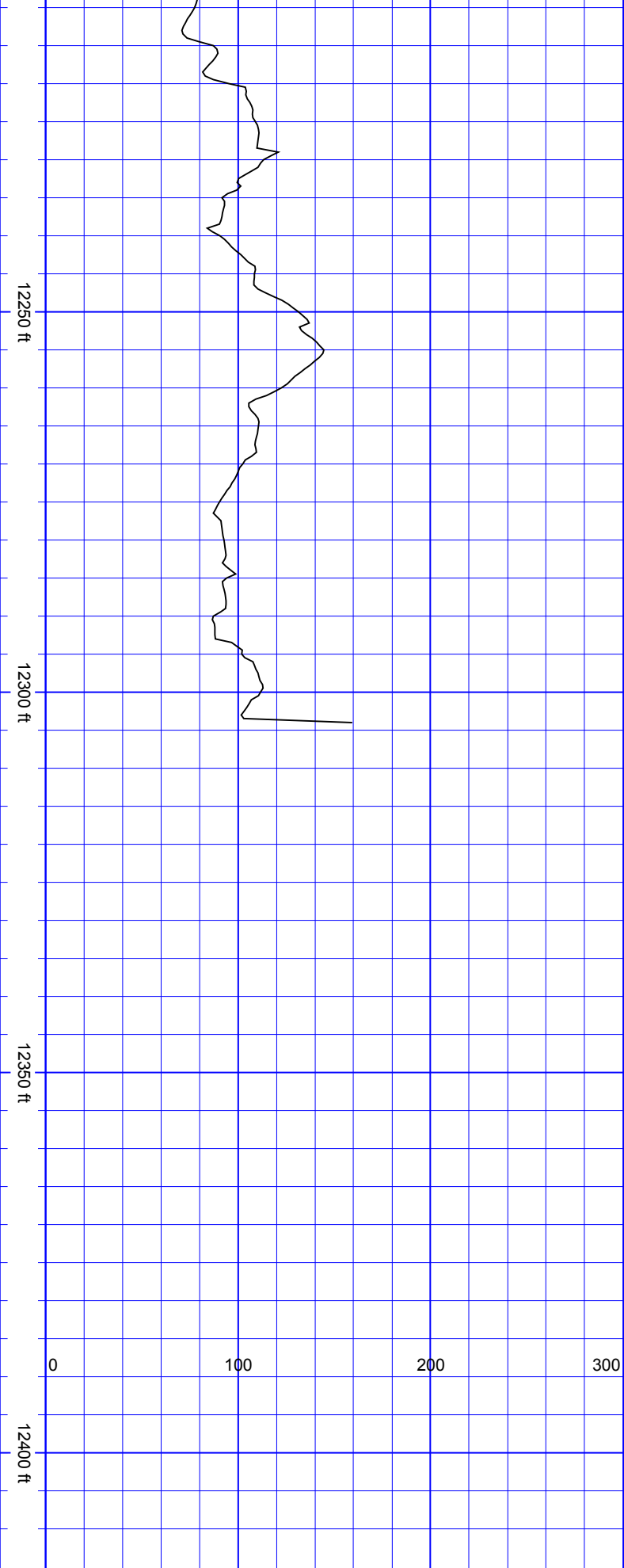




SurveyDepth:12034  
TVD:7247.05 Inc:92.42  
Azi:0.51  
VertSec:3825.59

SurveyDepth:12129  
TVD:7242.46 Inc:93.12  
Azi:0.25  
VertSec:3920.47





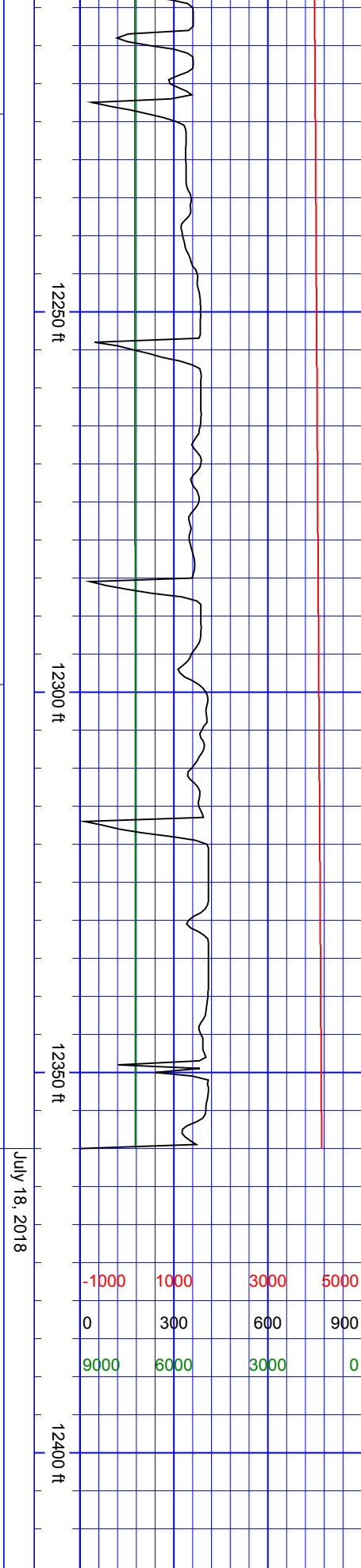
SurveyDepth:12224  
TVD:7236.56 Inc:94  
Azi:0.43  
VertSec:4015.29

SurveyDepth:12299  
TVD:7231.12 Inc:94.31  
Azi:0.6 VertSec:4090.09

Extrapolation to Bit  
SurveyDepth:12360  
TVD:7226.54 Inc:94.31  
Azi:0.6 VertSec:4150.92

Slide

Direction



July 18, 2018

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

9000	6000	3000	0
TVD Depth (ft)			
0	300	600	900
Drill Rate (ft/hr)			
-1000	1000	3000	5000

Drill

Vertical Section (ft)		ROP - VERT SEC - TVD	
ft"	Scale 5" = 100	date	
		nal Survey	
		- Rotate	
GAMMA RAY			
ft"	Scale 5" = 100		