



Build & Lateral

Job #:

185175

Well ID:

16190982

Scale:

5" = 100 ft

Type:

MD

Well Site Information

Oil Company Crestone Peak Resources

Surface Location S4-T1N-R65W

Well Name Ruegge 3F-4H-N165

API 05-123-4657000

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 1,271,338.37 us/ft

E / W Coordinates 3,232,001.59 us/ft

Azimuth Reference True North

Grid Convergence 0.54°

MWD Engineers

Lead Hand Bob Stahlecker

Second Hand Adrian Loma

Perm Datum Ground Elevation 4,916.00 ft

Log depth measured from KB is 23.00 ft above perm datum. KB = 4,939.00 ft

Total Depth 11,884.00 ft Spud Date Jun/06/2018 End Date Jun/09/2018

(MD) Log Interval Start Depth 2,458.67 ft End Depth 11,884.16 ft

Bore Hole Record

Hole Size	From	To
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13.50 in	0.00 ft	2,515.00 ft
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8.50 in	2,515.00 ft	11,884.00 ft
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Casing Record

Type	Size	WGT	From	To
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LT&C	9.63 in	40.00 lbs/ft	0.00 ft	2,515.00 ft
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LT&C	5.50 in	20.00 lbs/ft	0.00 ft	11,884.00 ft
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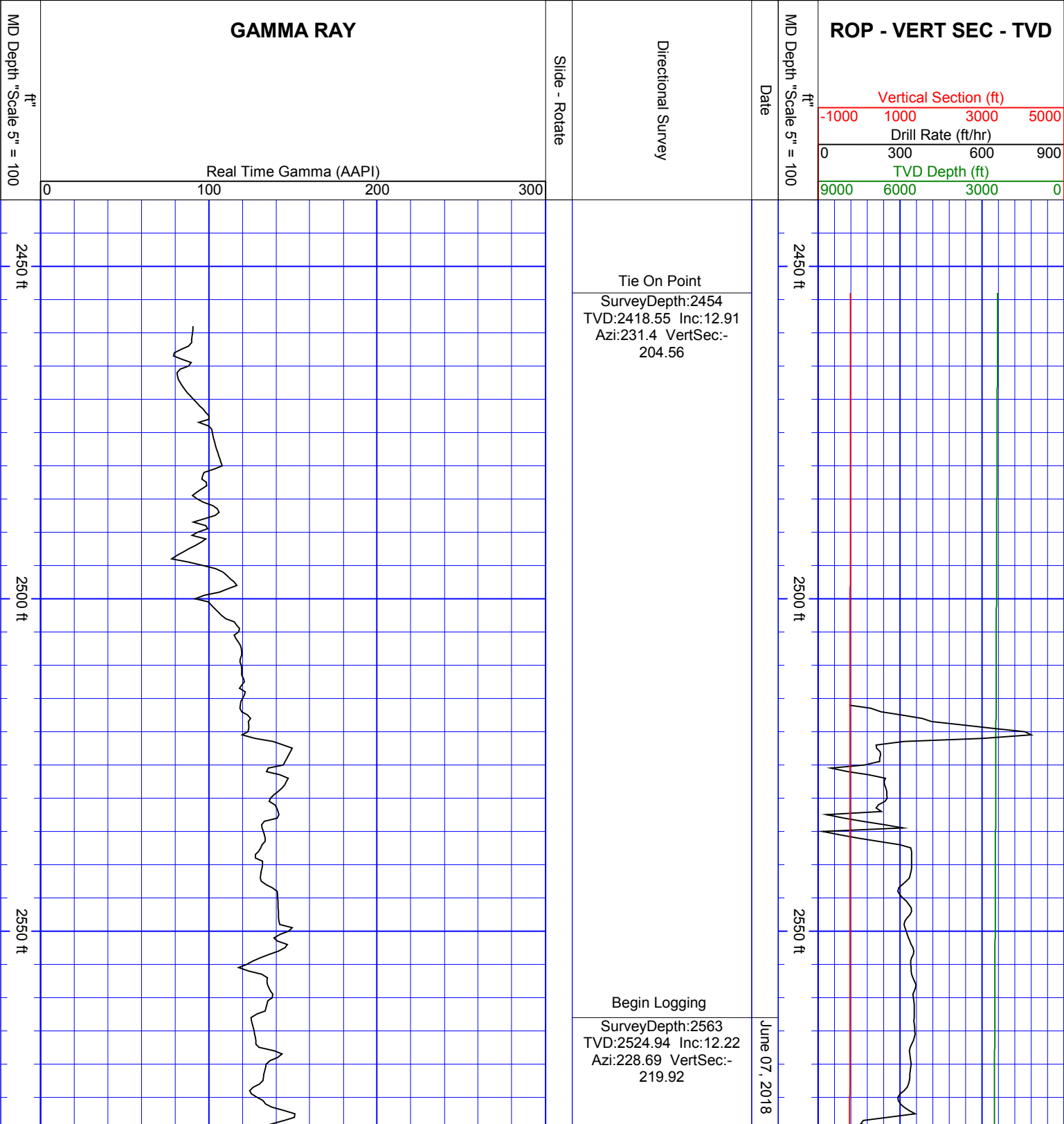
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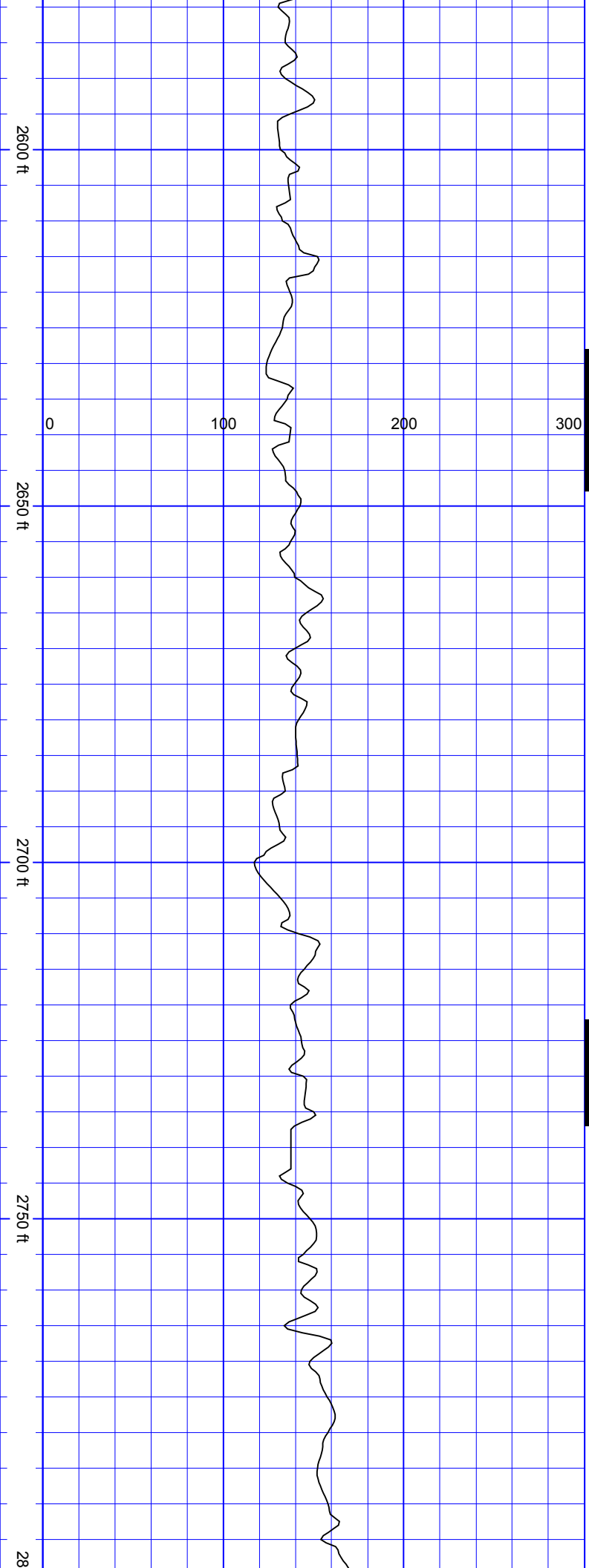
Run Data

Bit Run Number	1	2			
Start Date & Time	Jun/07/2018 00:30:00	Jun/08/2018 14:00:00			
End Date & Time	Jun/08/2018 12:00:00	Jun/10/2018 01:00:00			
Run Hours	35.50	35.00			
Depth In	2,515.00 ft	9,012.00 ft			
Depth Out	9,012.00 ft	11,884.00 ft			
Total Gamma Correction	5.16	5.16			
Gamma to Bit	59.36 ft	55.76 ft			
Resistivity to Bit	-	-			
Mud Type	Oil Based Mud	Oil Based Mud			
Density	9.80 ppg	9.80 ppg			
Viscosity	39.00 sec/qt	43.00 sec/qt			
PH	-	-			
Fluid Loss	16.80 cc	16.80 cc			
K+ ppm	-	-			
CL- ppm	232,506.00 ppm	228,186.00 ppm			
Max Mud Temp	217.00 °F	235.00 °F			
Mud Report Depth	9,000.00 ft	11,884.00 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.



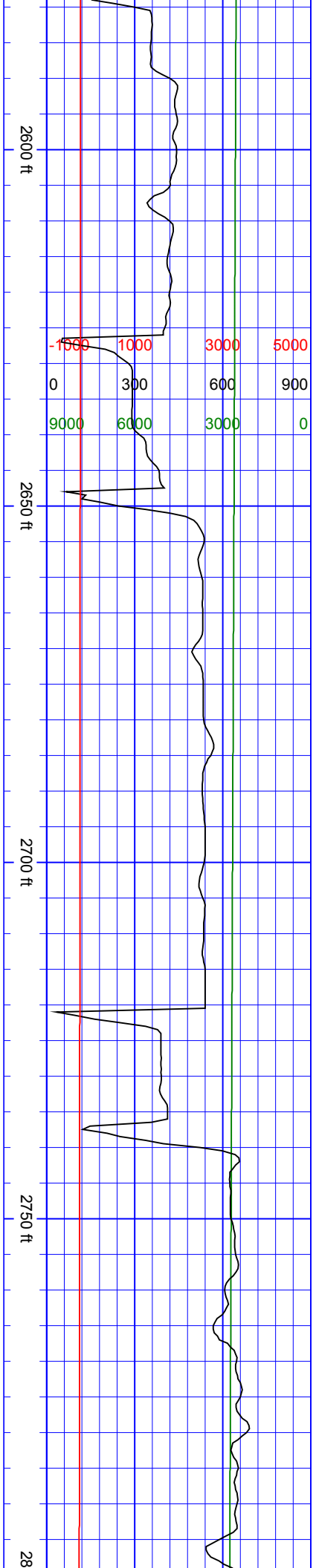


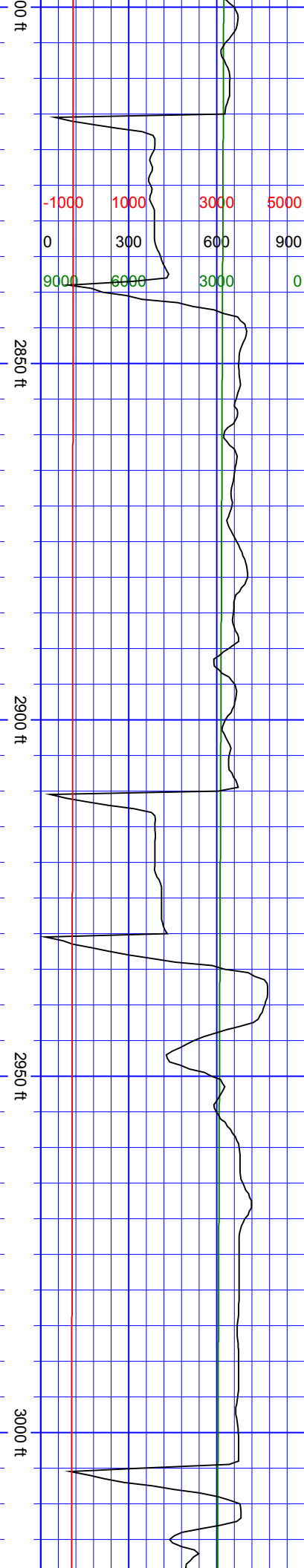
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SSSSSS

SurveyDepth:2657
TVD:2616.45 Inc:14.19
Azi:234.23 VertSec:-
233.36

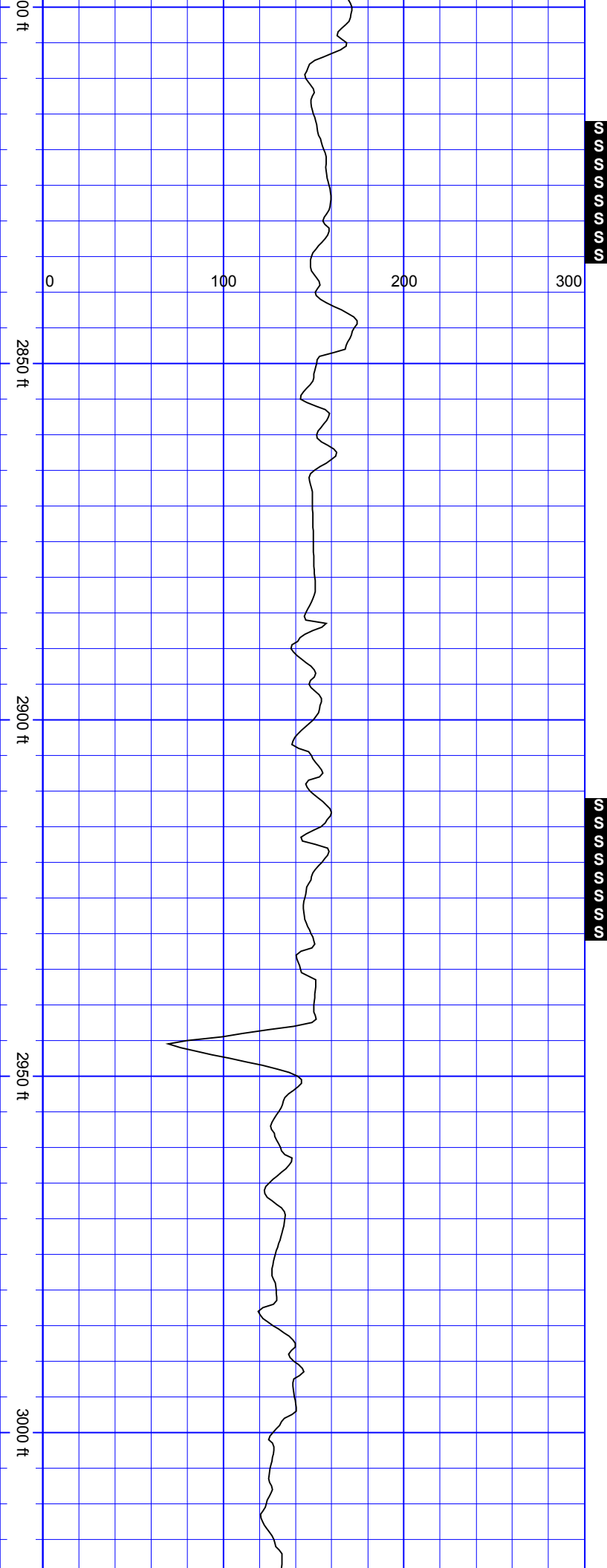
SurveyDepth:2751
TVD:2707.49 Inc:14.68
Azi:232.91 VertSec:-
247.44

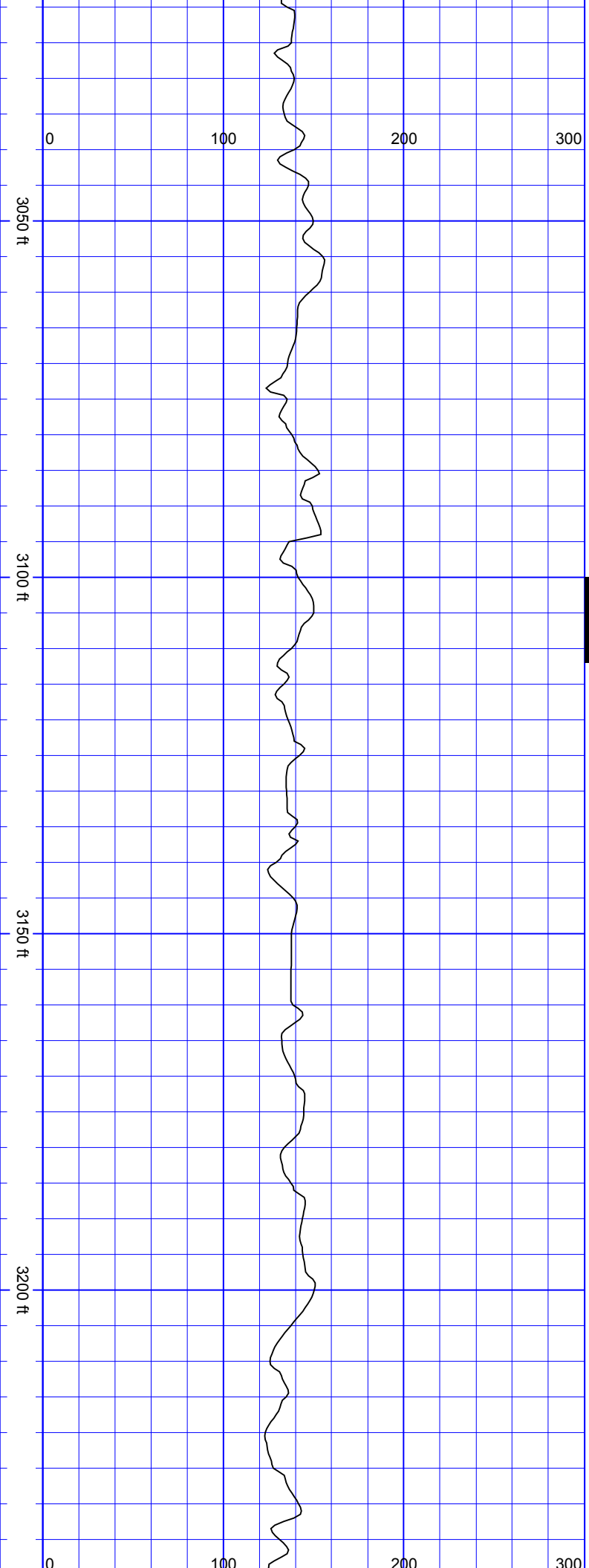




SurveyDepth:2846
TVD:2799.24 Inc:15.34
Azi:234.05 VertSec:-
262.23

SurveyDepth:2941
TVD:2890.59 Inc:16.57
Azi:229.65 VertSec:-
278.55

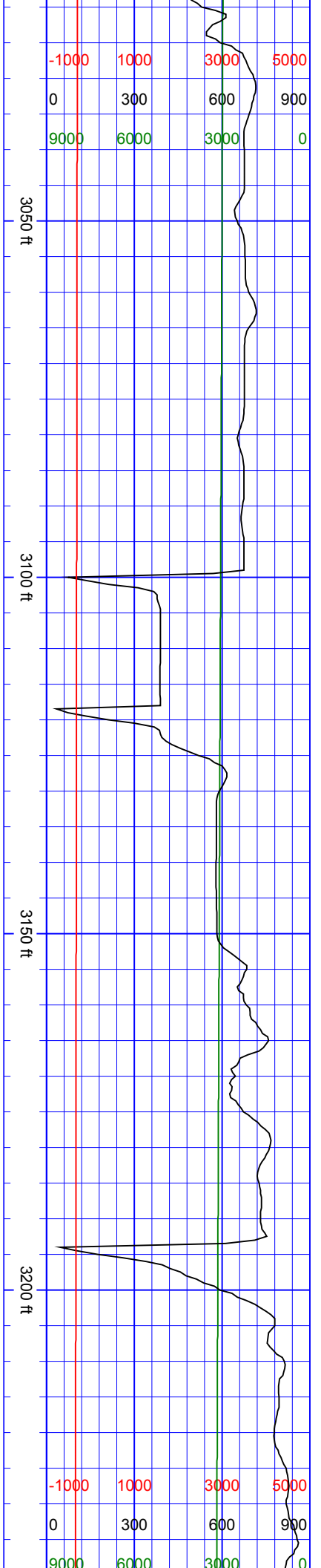


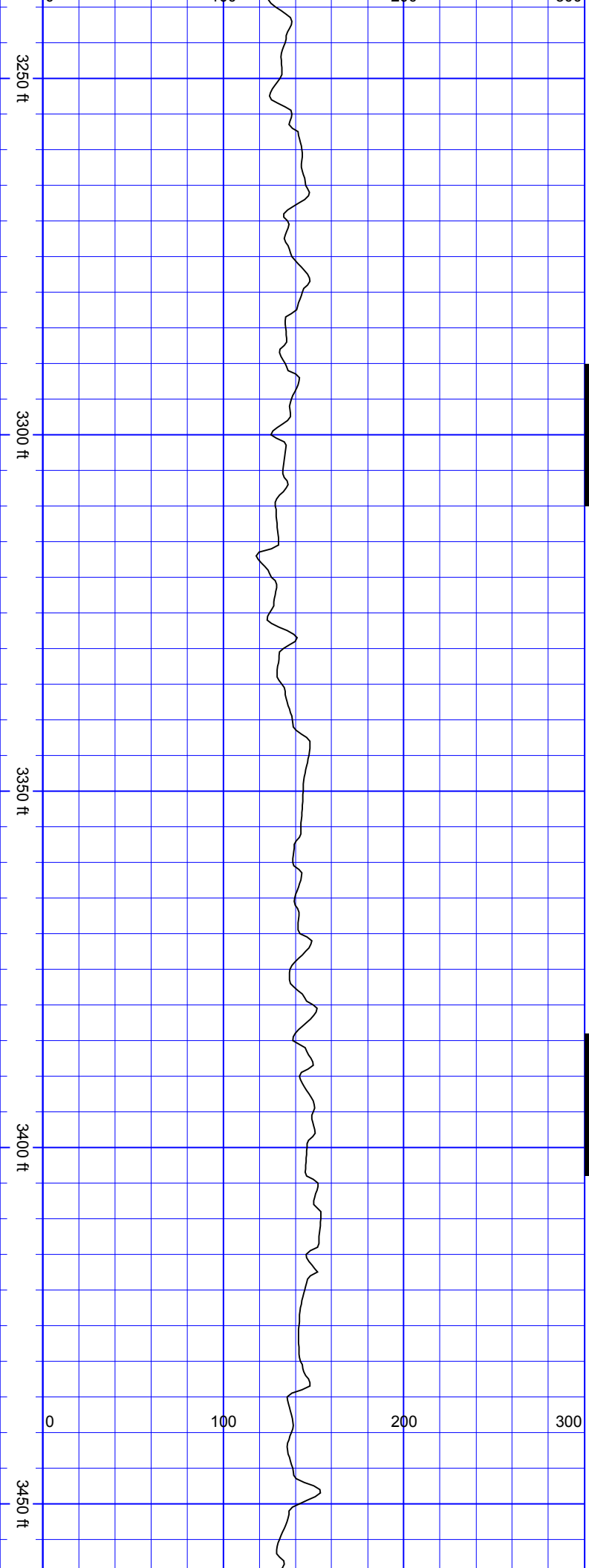


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TVD:2980.78 Inc:16.13
Azi:229.04 VertSec:-
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SurveyDepth:3130
TVD:3072.02 Inc:16.26
Azi:223.5 VertSec:-
314.41

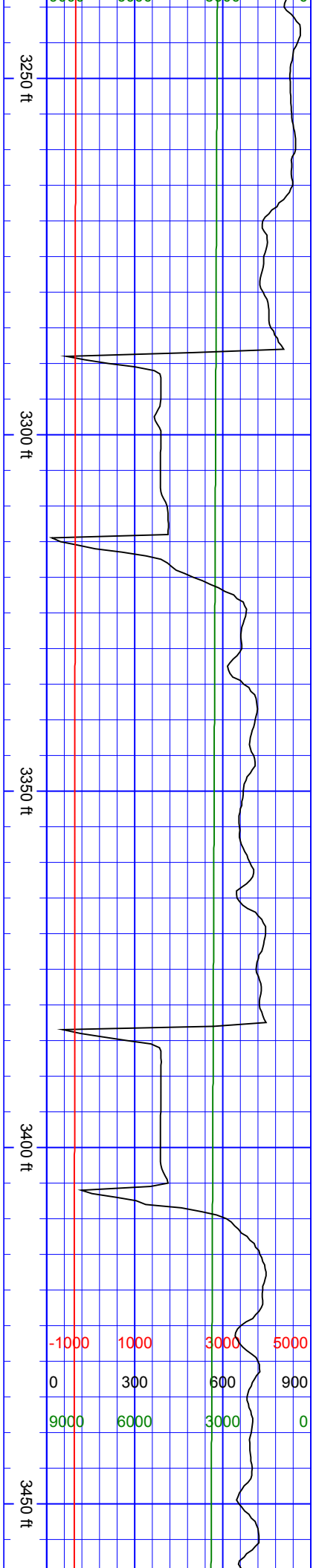
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TVD:3163.58 Inc:14.68
Azi:221.48 VertSec:-
333.22

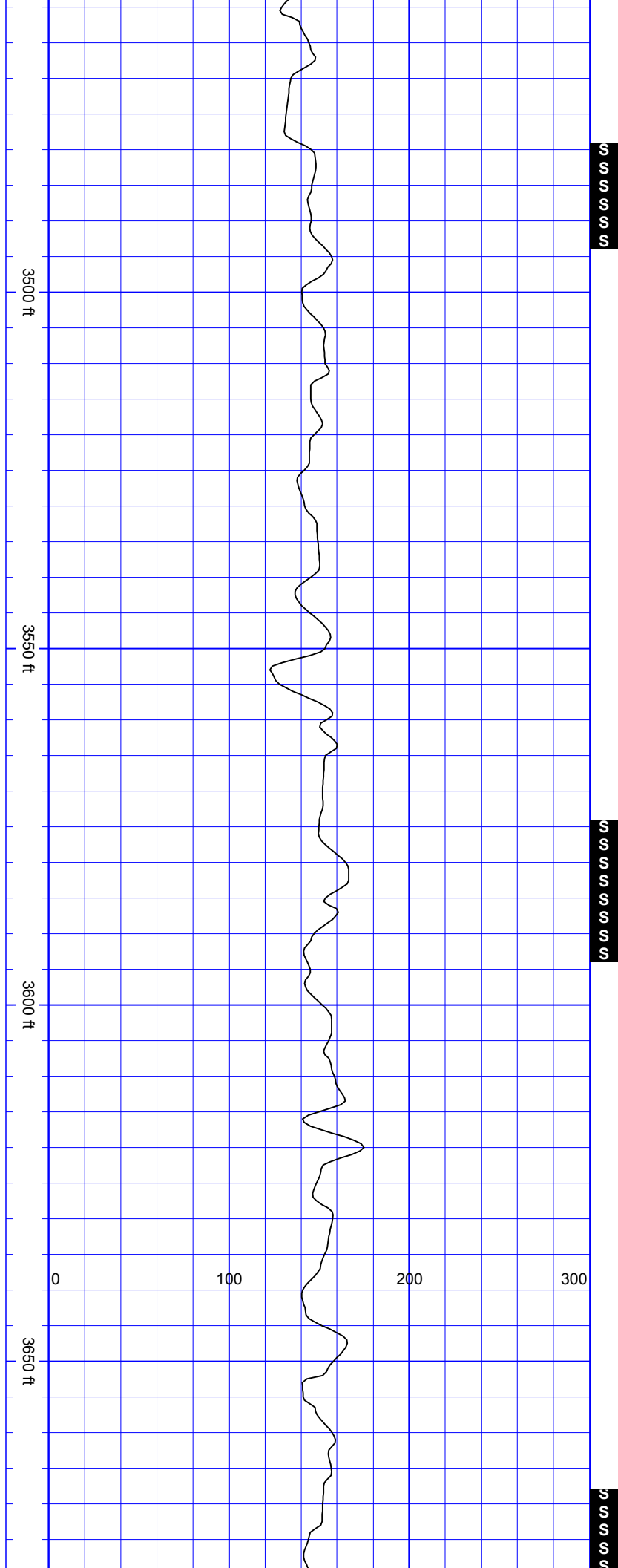




SurveyDepth:3319
TVD:3254.63 Inc:14.15
Azi:232.56 VertSec:-
349.27

SurveyDepth:3414
TVD:3346.55 Inc:15.12
Azi:231.32 VertSec:-
364.22





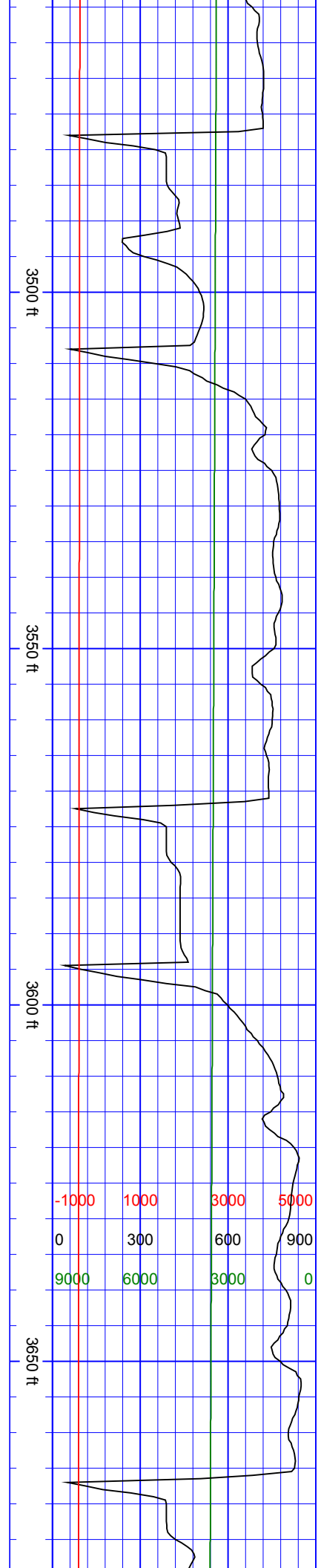
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TVD:3438.46 Inc:14.19
Azi:231.24 VertSec:-
379.41

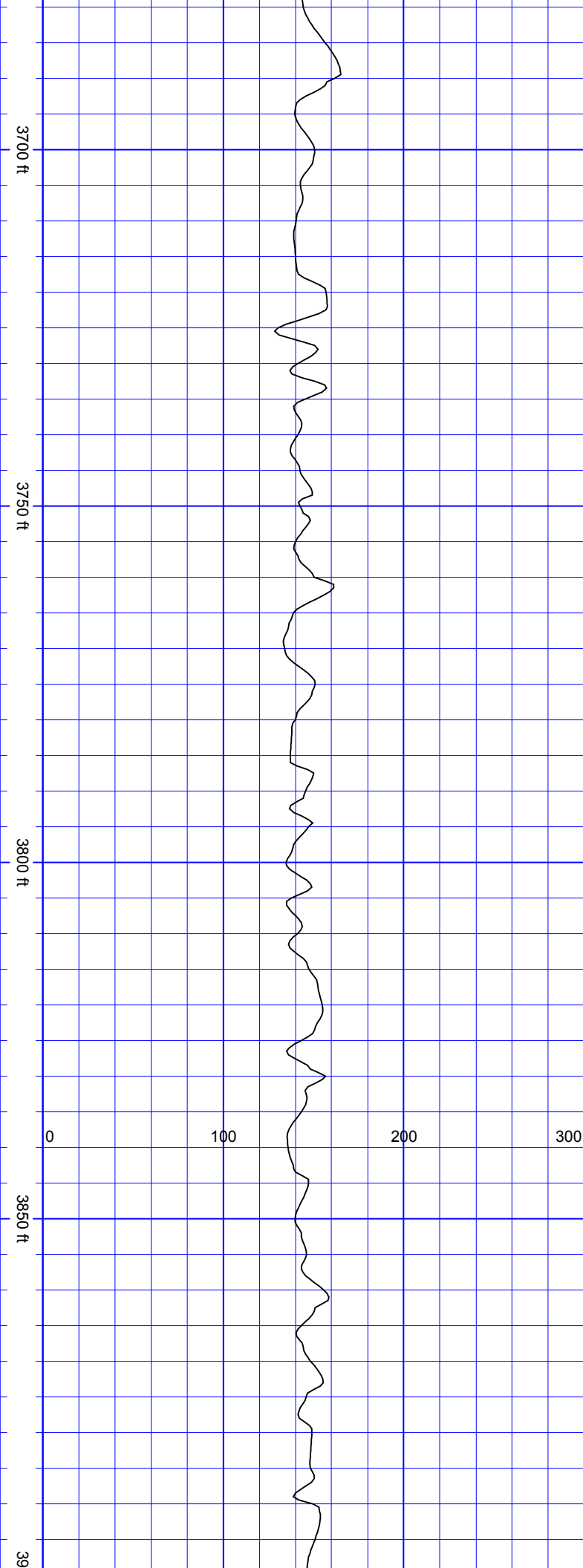
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SurveyDepth:3603
TVD:3529.73 Inc:13.49
Azi:230.53 VertSec:-
393.74

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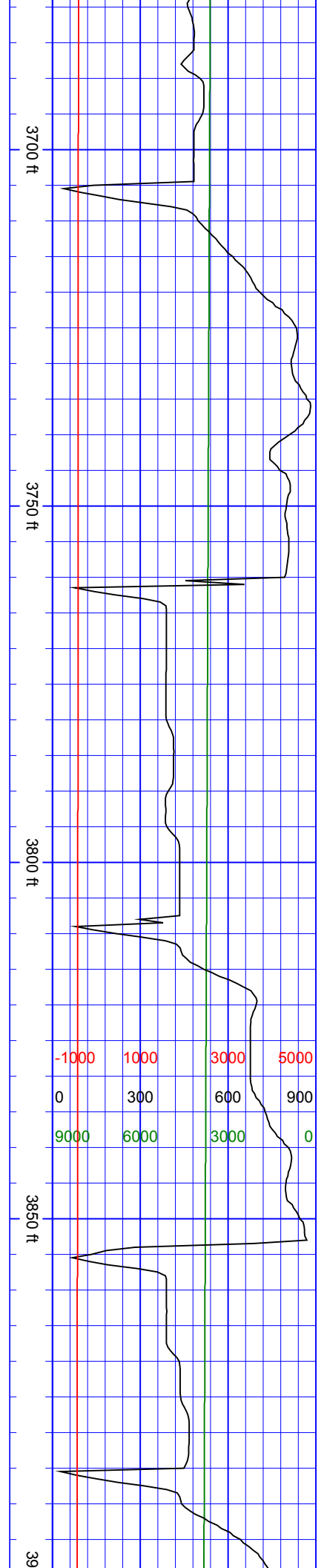
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0 300 600 900
9000 6000 3000 0

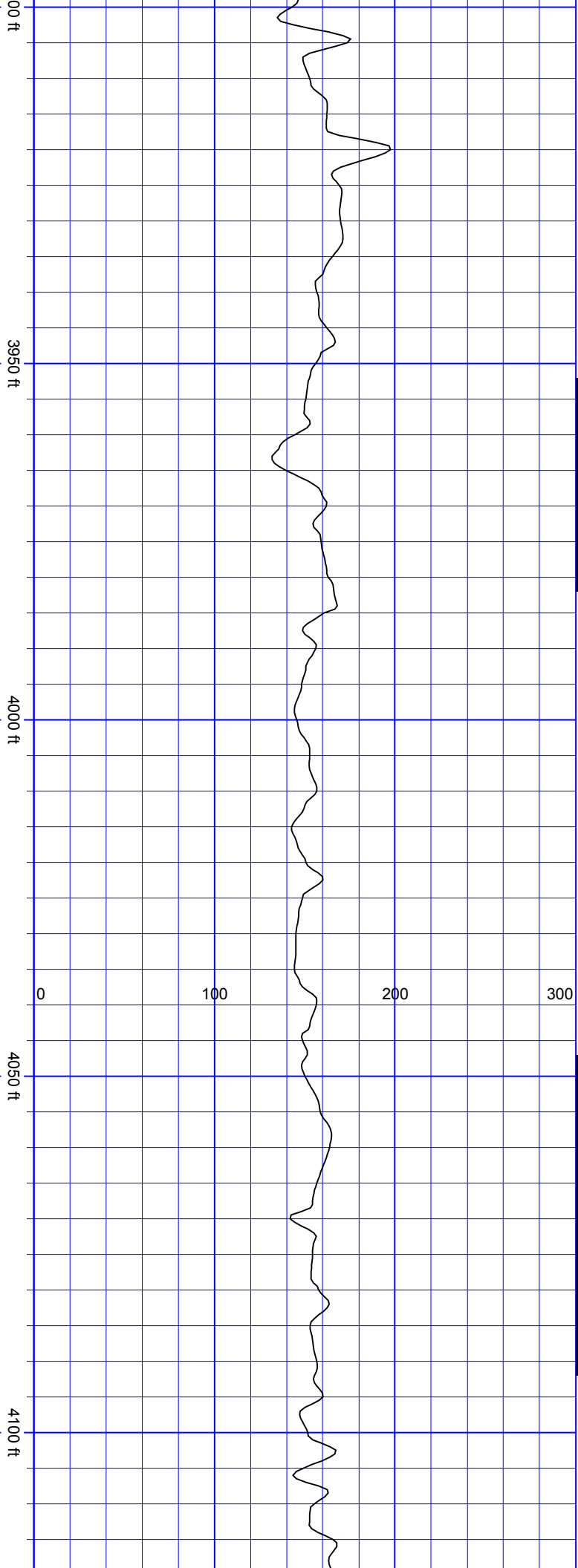


SurveyDepth:3698
TVD:3622.26 Inc:12.83
Azi:244.77 VertSec:-405.43

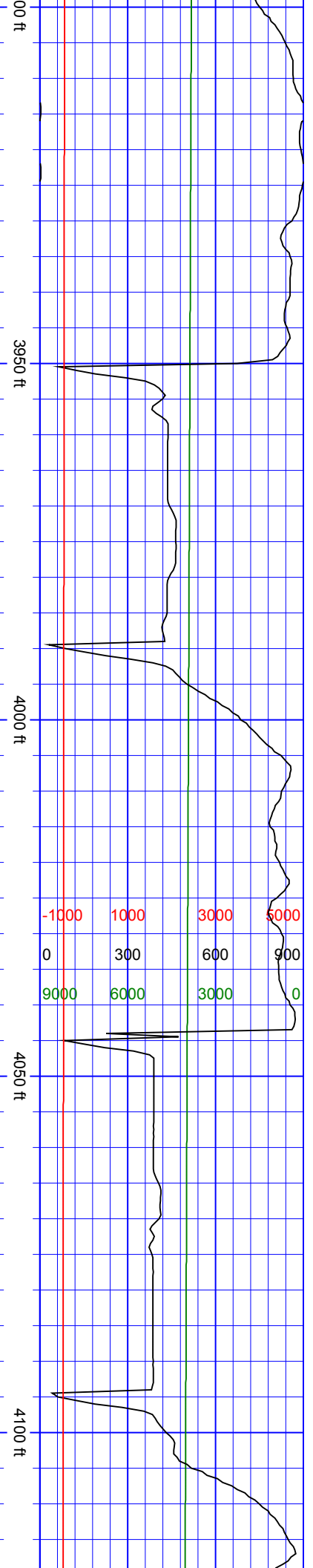
SurveyDepth:3792
TVD:3713.51 Inc:14.94
Azi:239.85 VertSec:-416.13

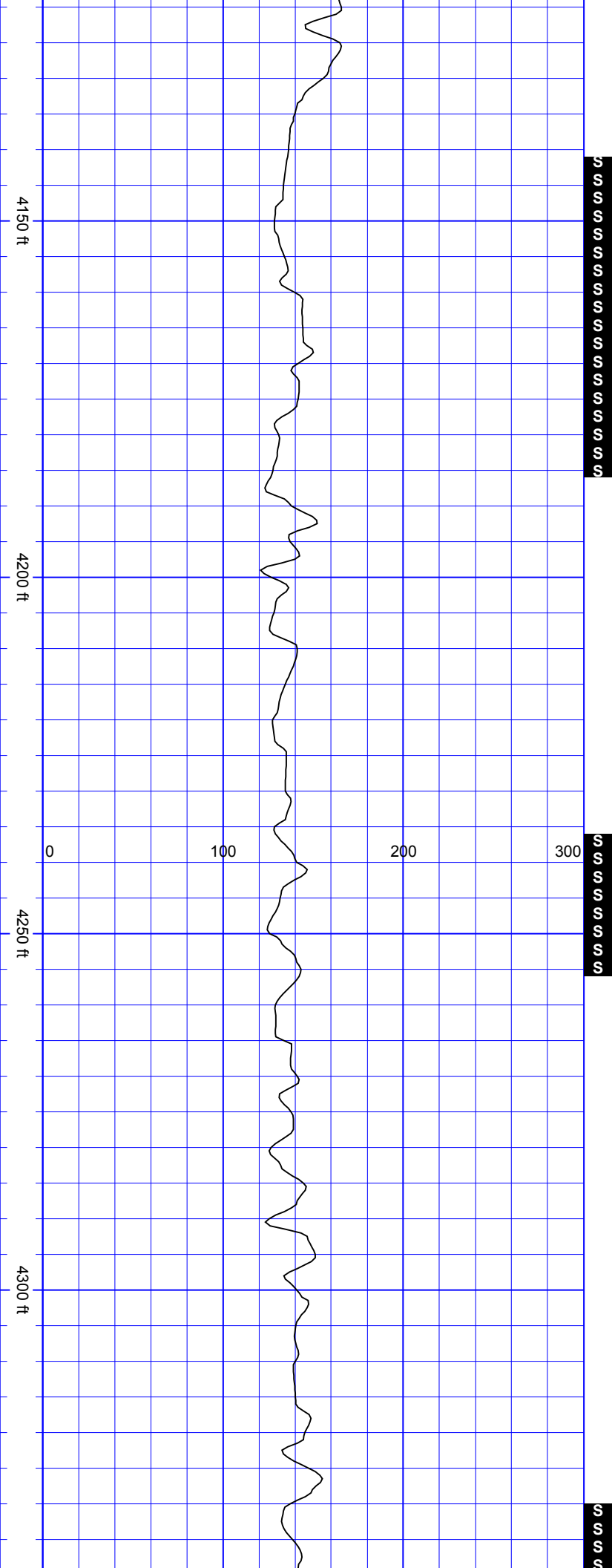
SurveyDepth:3887
TVD:3805.38 Inc:14.85
Azi:219.81 VertSec:-431.79





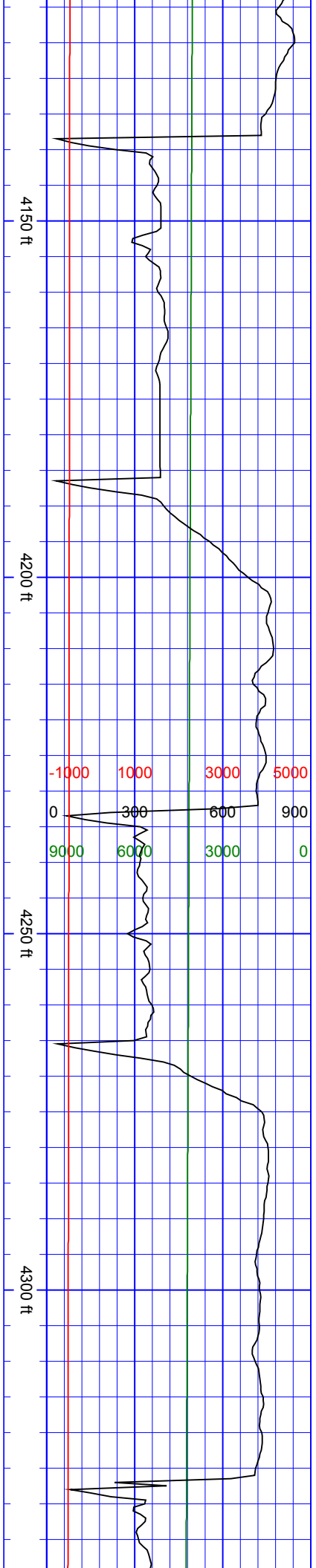
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TVD:3897.63 Inc:12.79
Azi:224.29 VertSec:-
448.79

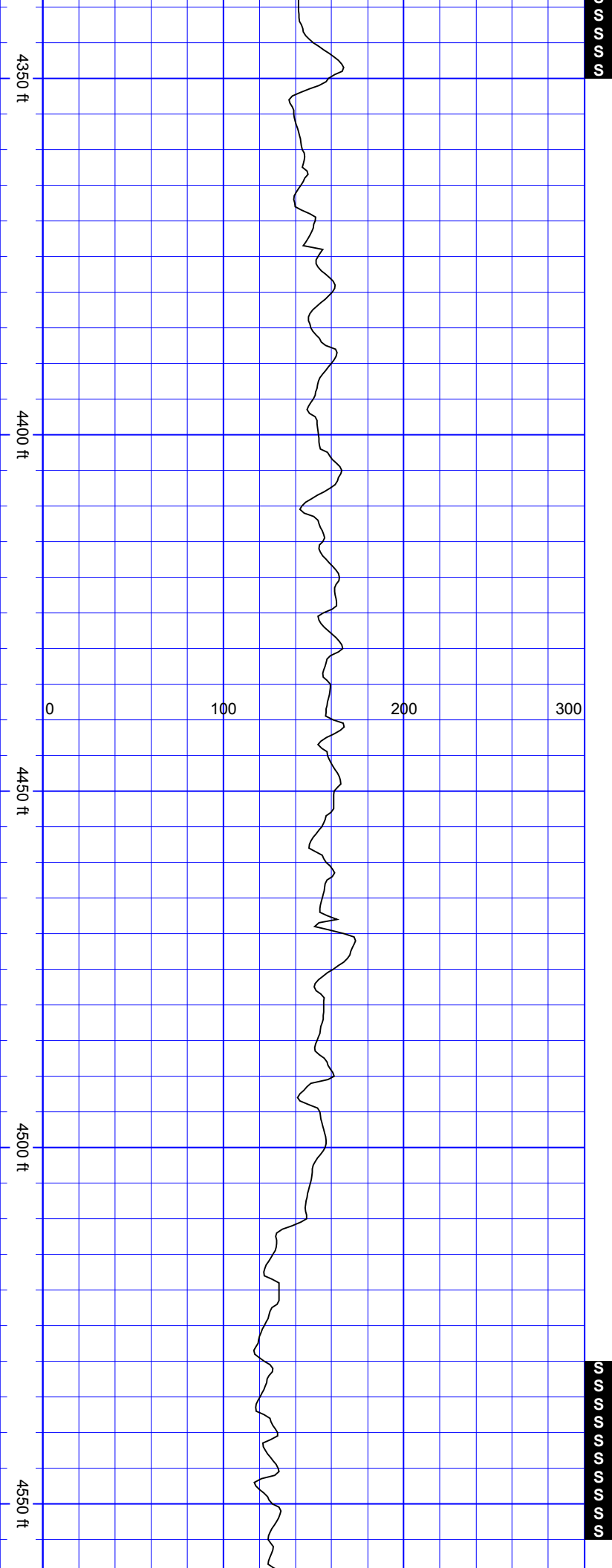




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Azi:238.09 VertSec:-
476.88

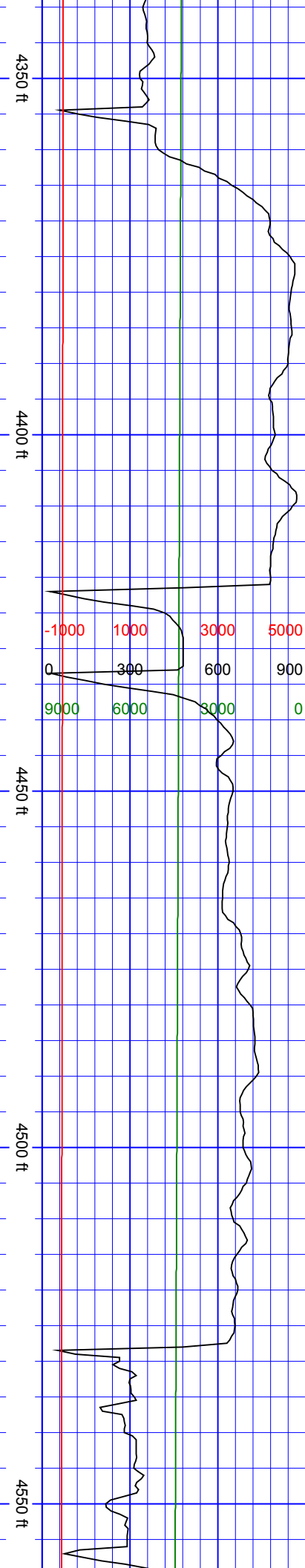
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TVD:4169.03 Inc:22.02
Azi:229.13 VertSec:-
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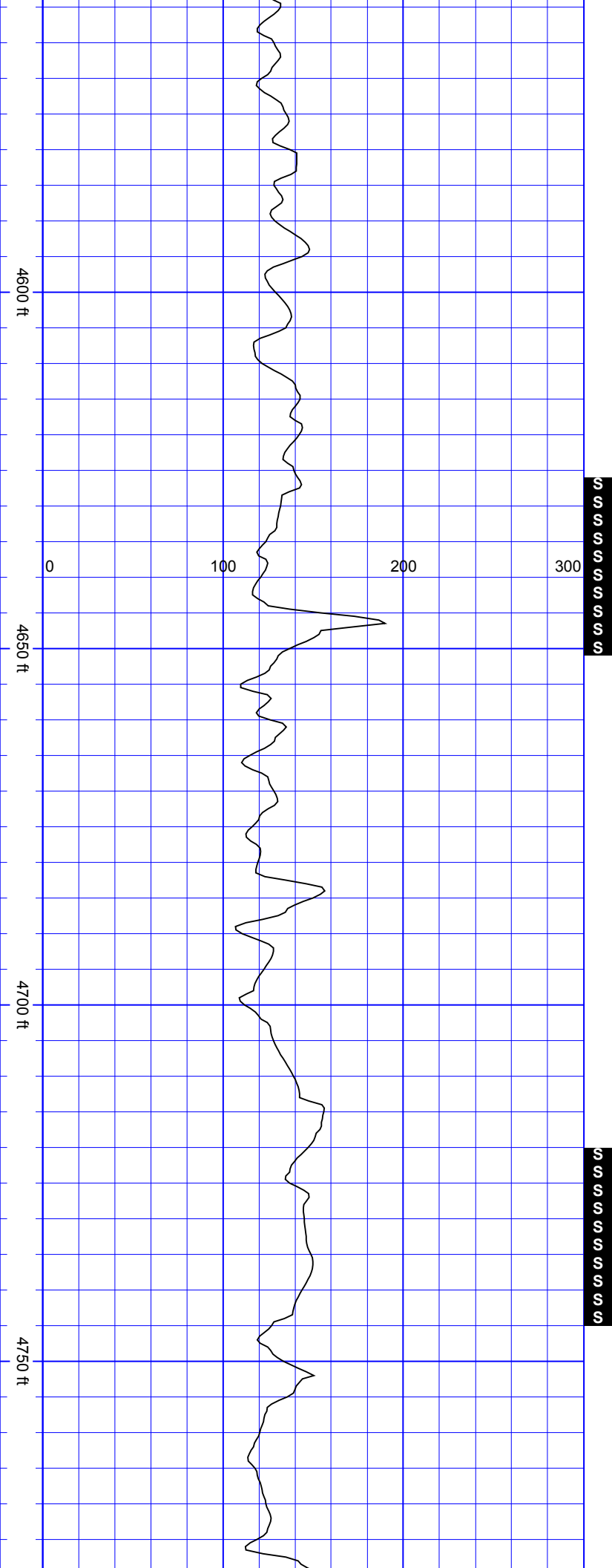




SurveyDepth:4371
TVD:4268.99 Inc:16.83
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521.05

SurveyDepth:4465
TVD:4359.69 Inc:13.54
Azi:219.55 VertSec:-
540.06

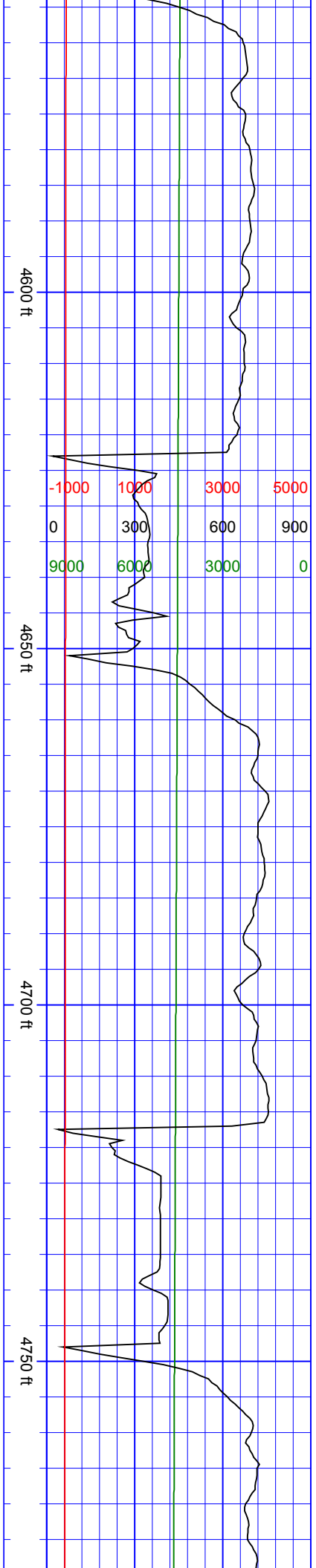


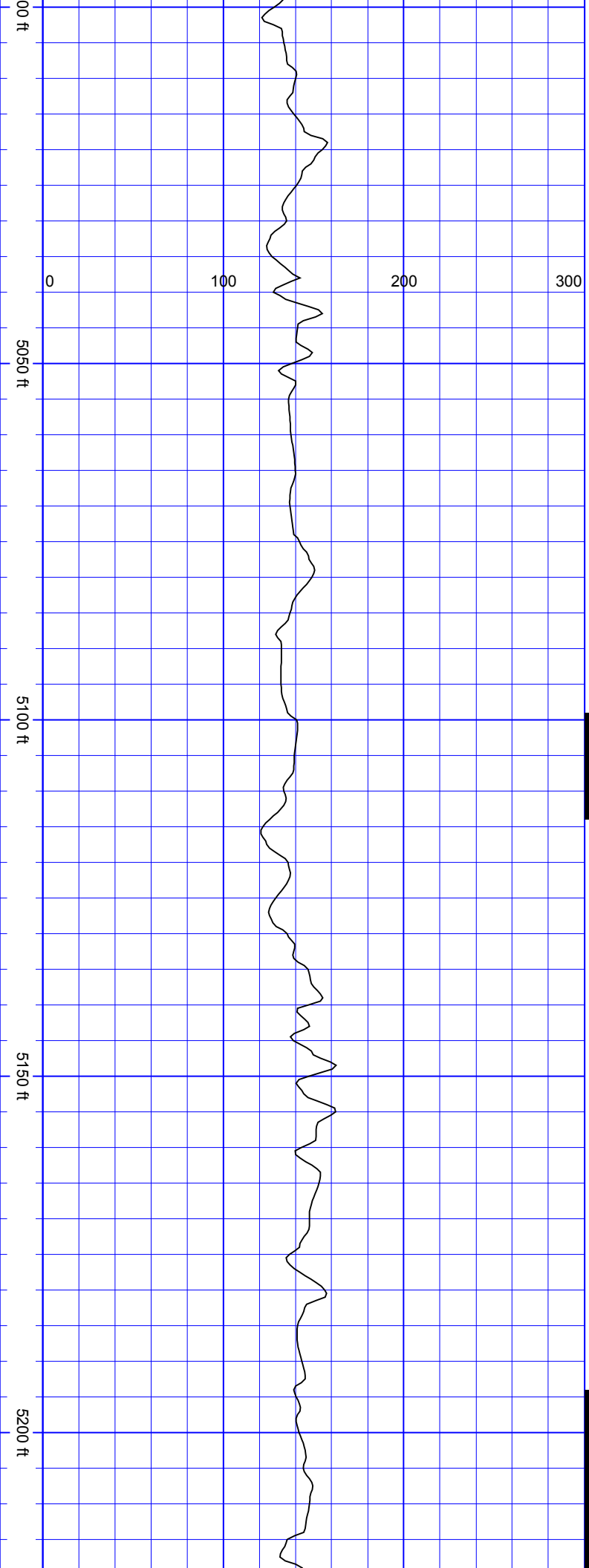


SurveyDepth:4561
TVD:4453.17 Inc:12.88
Azi:230.97 VertSec:-
555.59

SurveyDepth:4655
TVD:4544.46 Inc:14.72
Azi:239.32 VertSec:-
568.43

SurveyDepth:4750
TVD:4636.29 Inc:15.07
Azi:228.25 VertSec:-
582.98



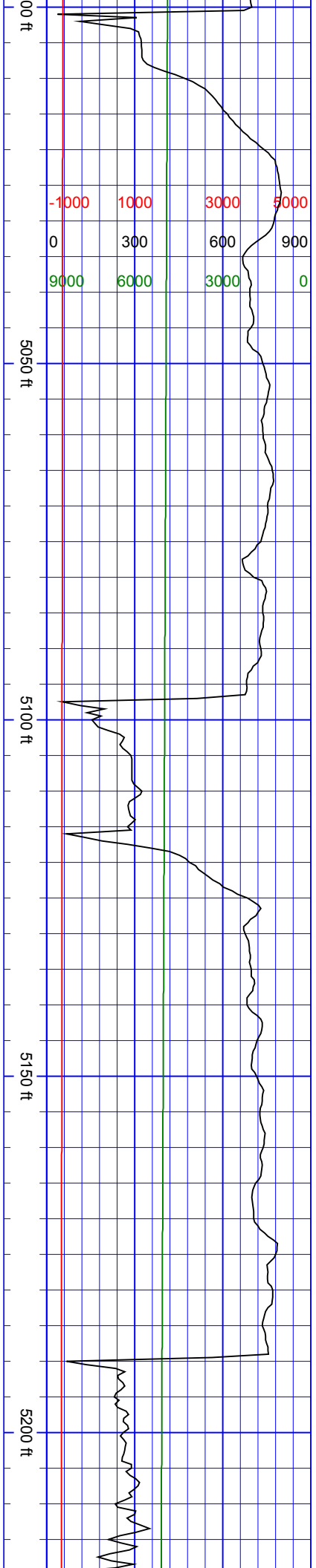


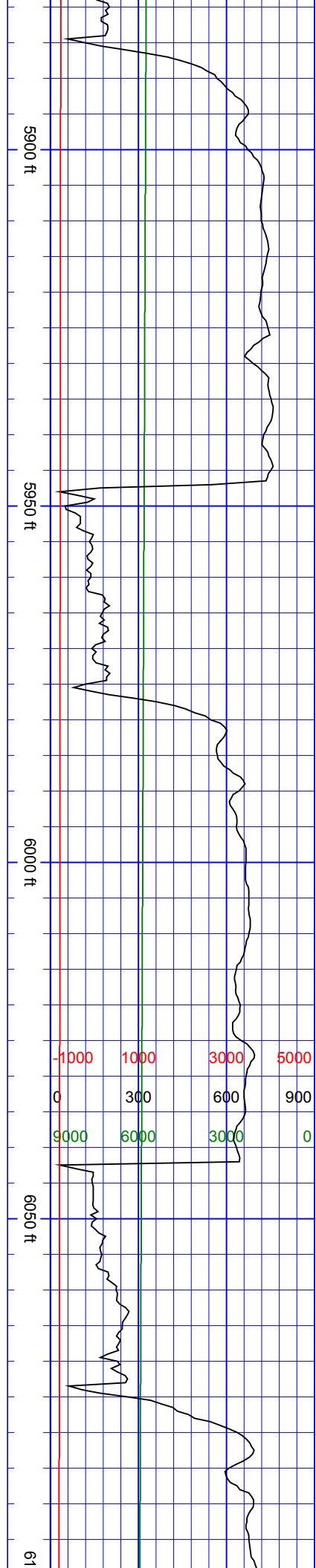
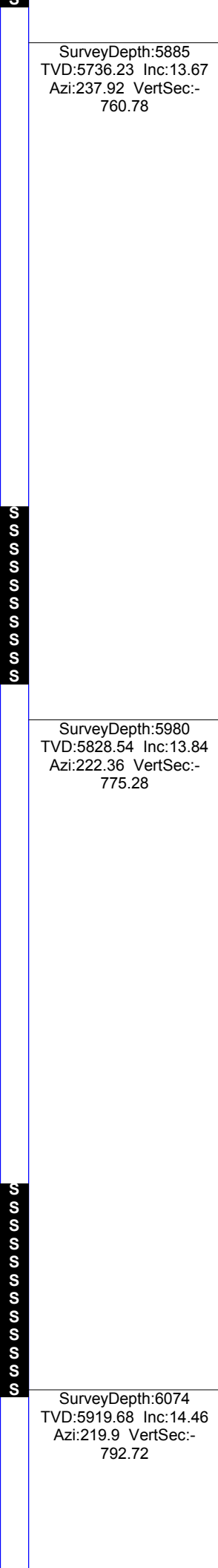
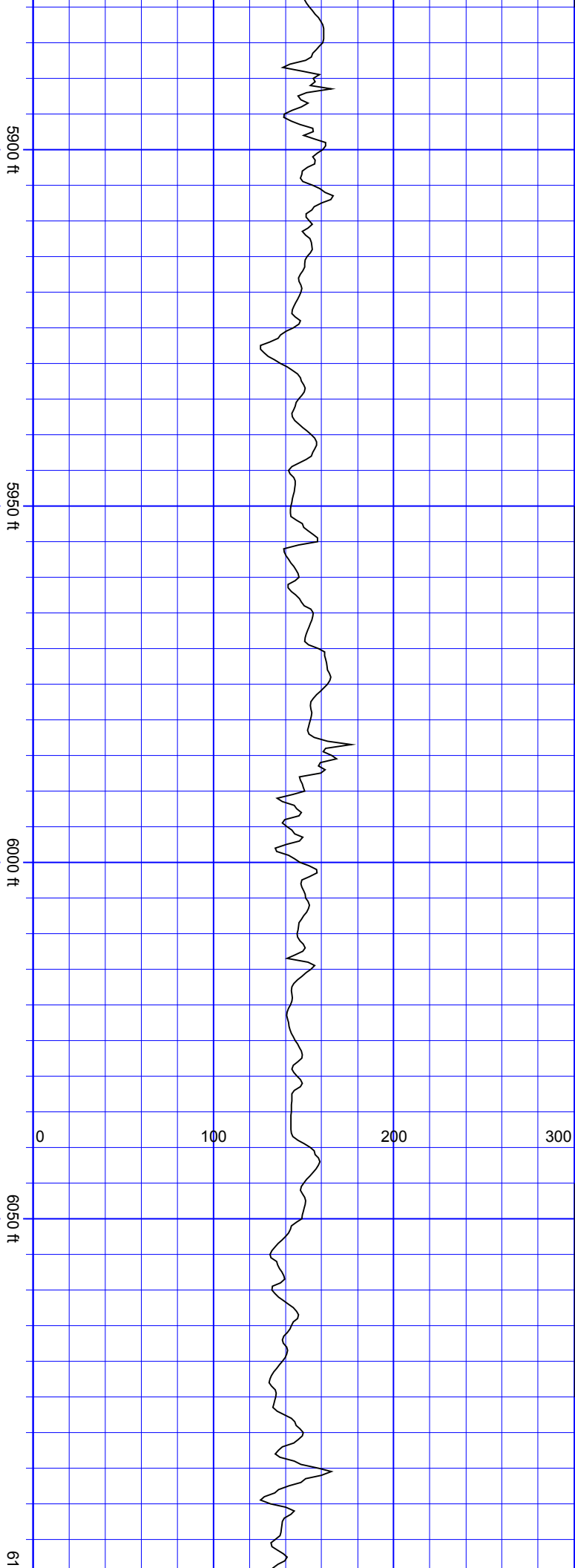
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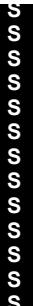
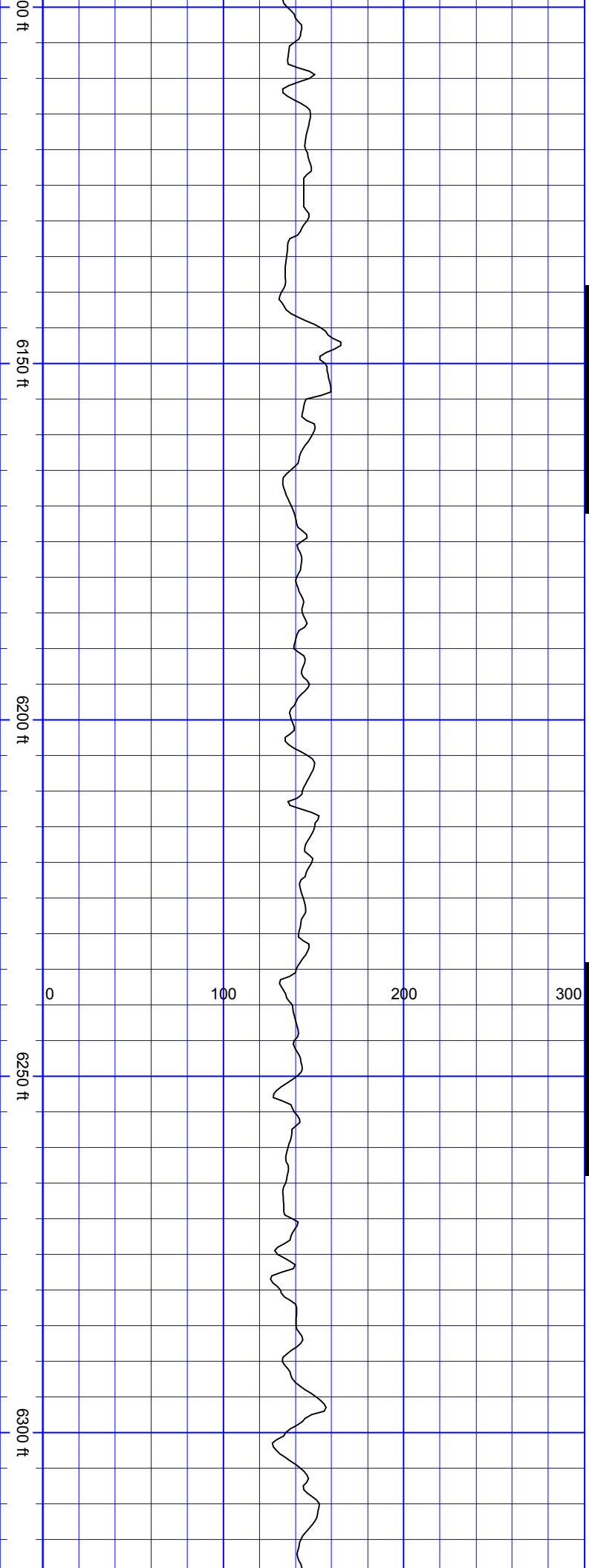
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TVD:4909.31 Inc:13.62
Azi:224.82 VertSec:-
634.74

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SurveyDepth:5129
TVD:5001.7 Inc:13.36
Azi:232.99 VertSec:-
649.42



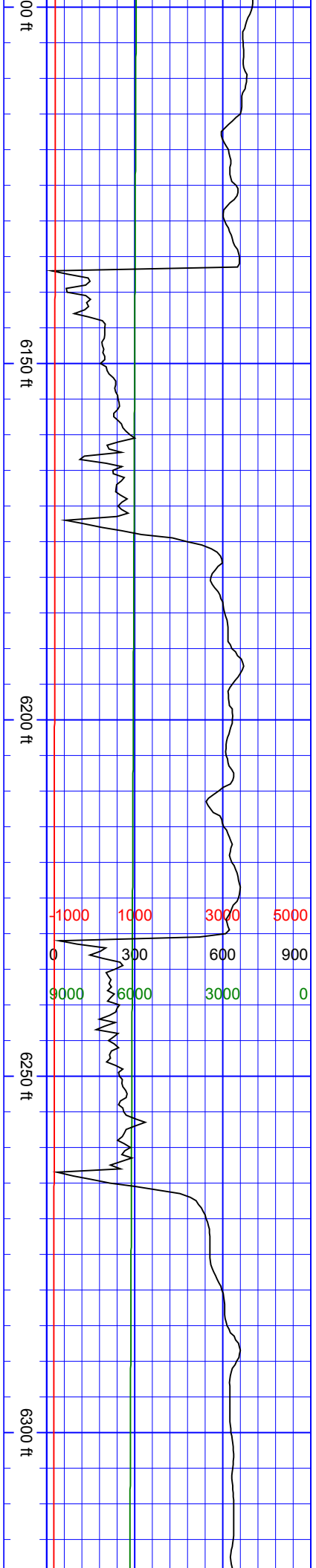


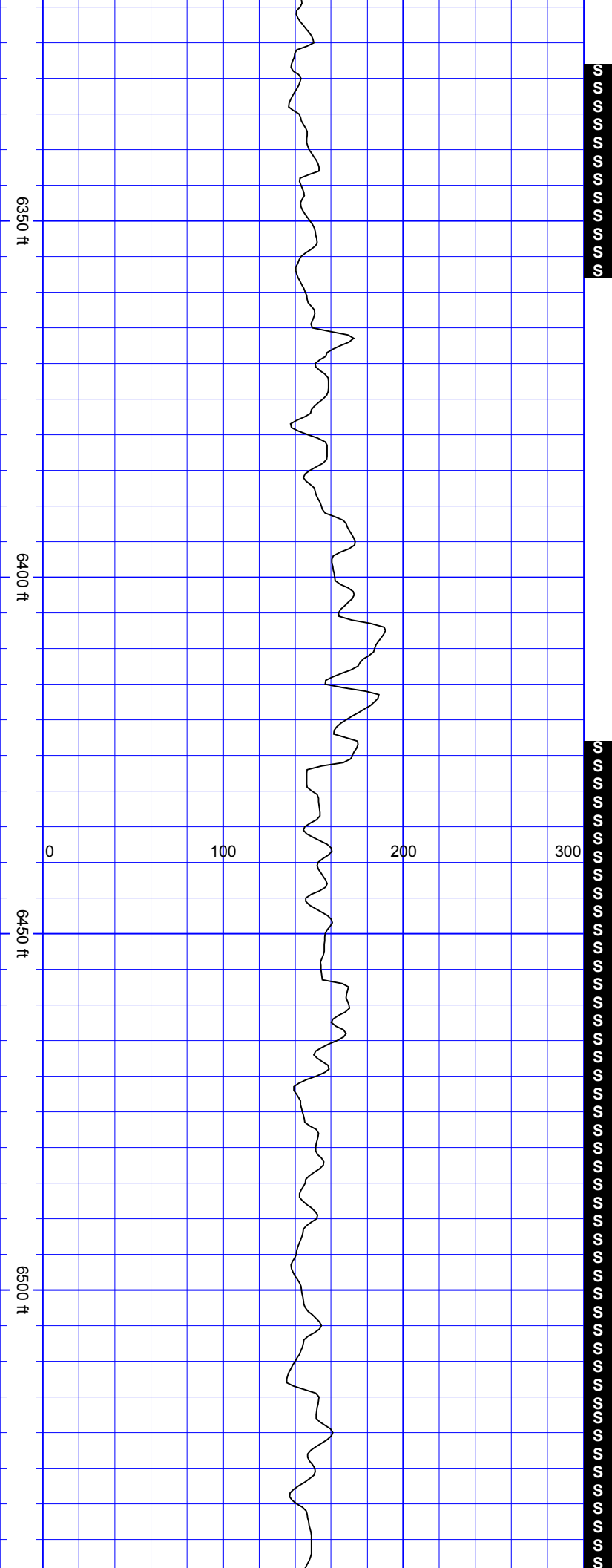


SurveyDepth:6169
TVD:6011.66 Inc:14.55
Azi:222.01 VertSec:-
810.81



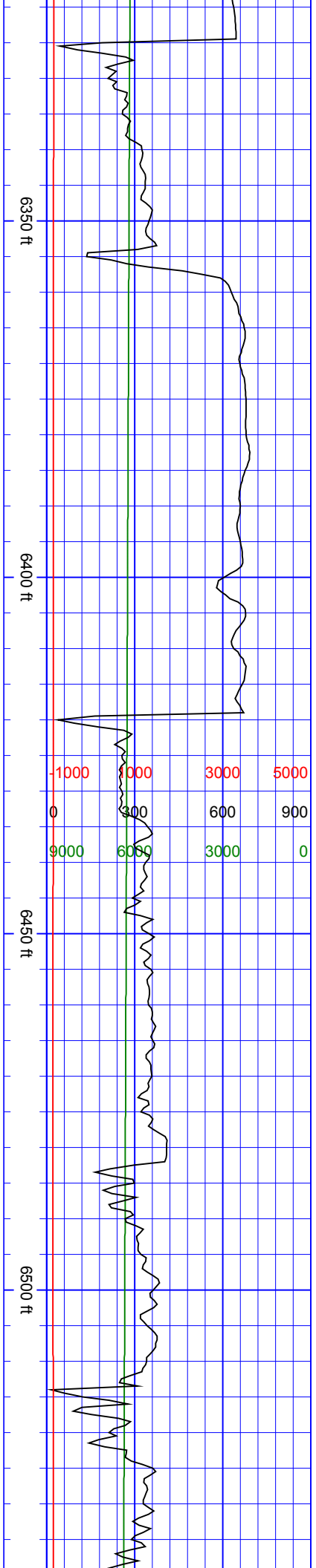
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TVD:6102.66 Inc:14.55
Azi:233.7 VertSec:-
826.72

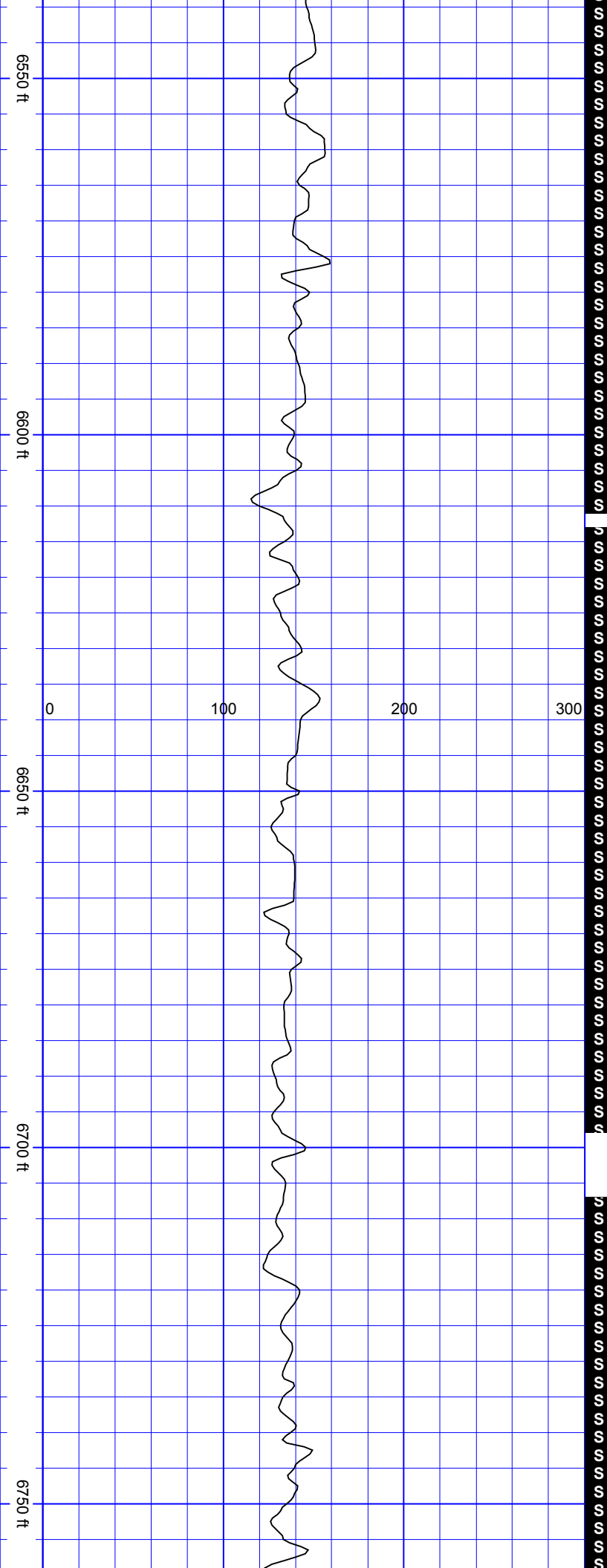




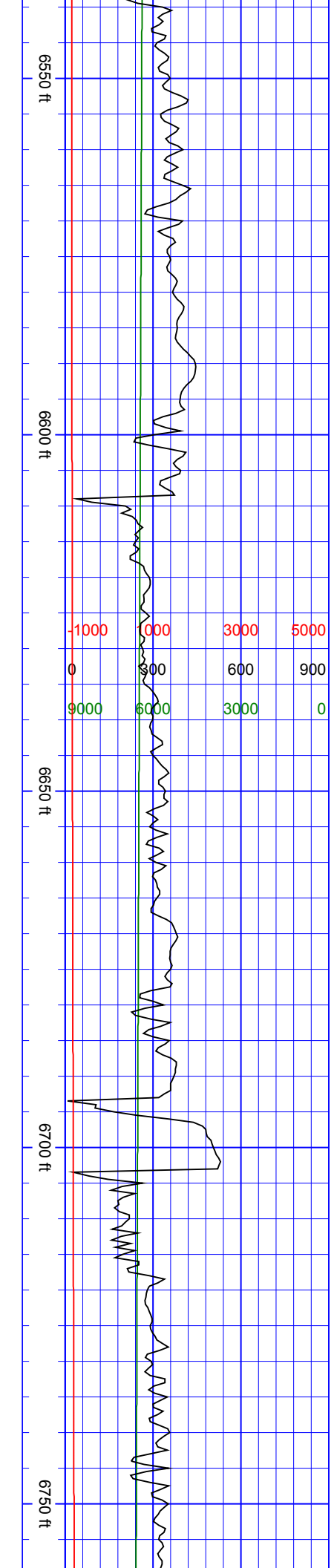
SurveyDepth:6358
TVD:6194.55 Inc:14.9
Azi:238.97 VertSec:-
840.25

SurveyDepth:6452
TVD:6285.47 Inc:14.68
Azi:256.11 VertSec:-
849.52





SurveyDepth:6547 TVD:6376.69 Inc:18.46 Azi:287.57 VertSec:- 848.08
SurveyDepth:6642 TVD:6465.64 Inc:23.2 Azi:312.89 VertSec:- 830.99
SurveyDepth:6737 TVD:6551.98 Inc:26.46 Azi:331.78 VertSec:- 799.74



6800 ft

6850 ft

6900 ft

6950 ft

0 100 200 300



SurveyDepth:6831
TVD:6634.58 Inc:30.63
Azi:341.1 VertSec:-
758.74

SurveyDepth:6926
TVD:6715.33 Inc:32.92
Azi:341.54 VertSec:-
711.49

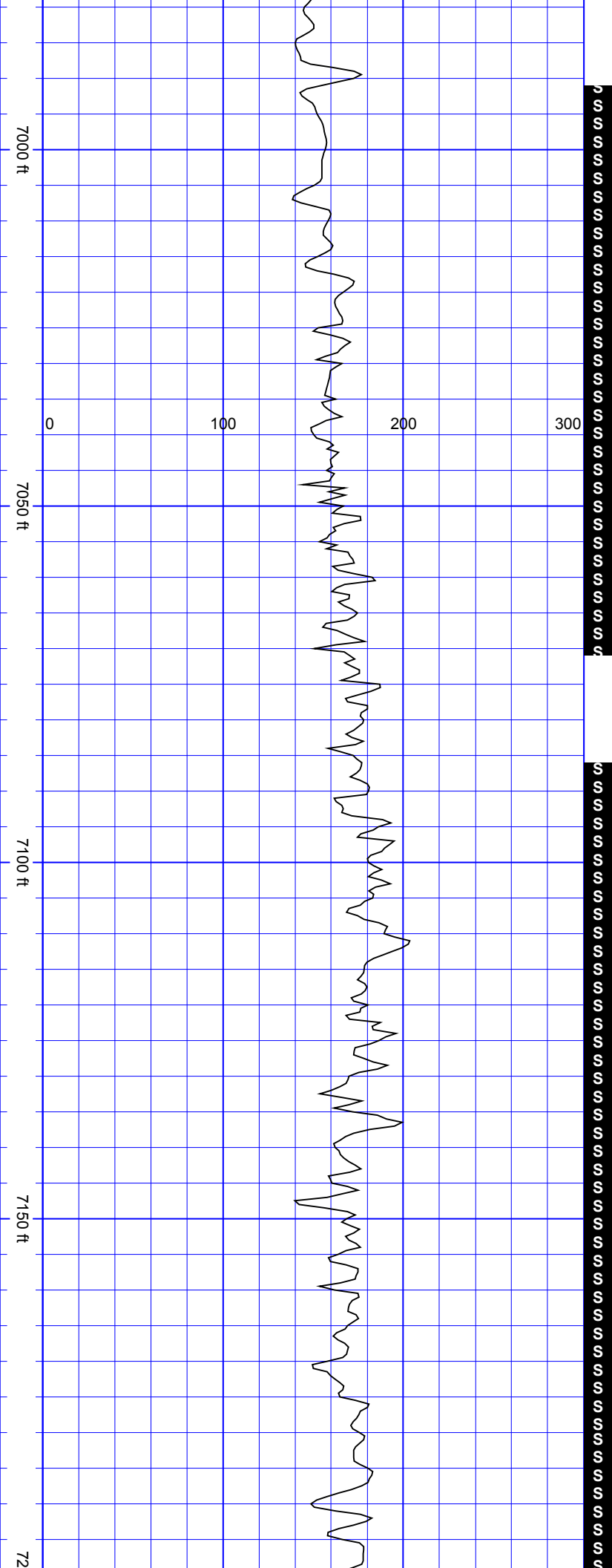
6800 ft

6850 ft

6900 ft

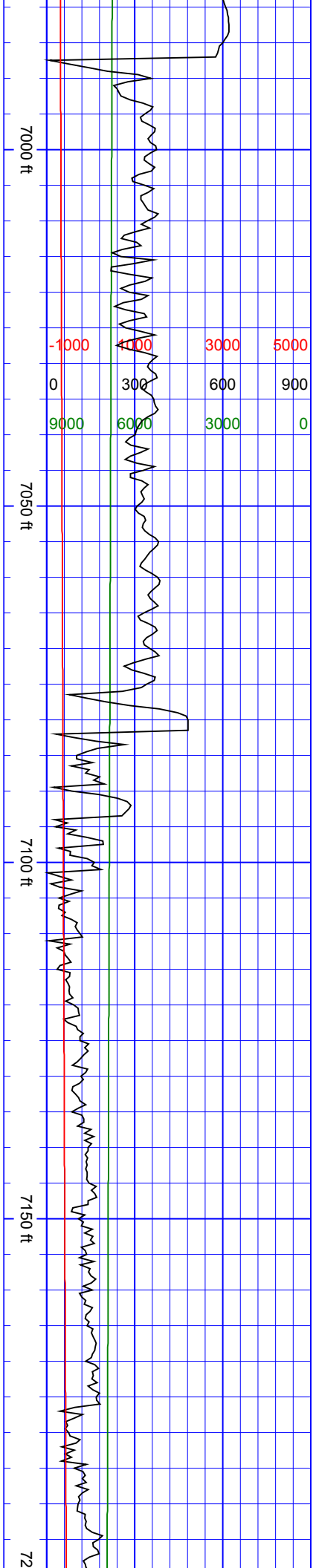
6950 ft

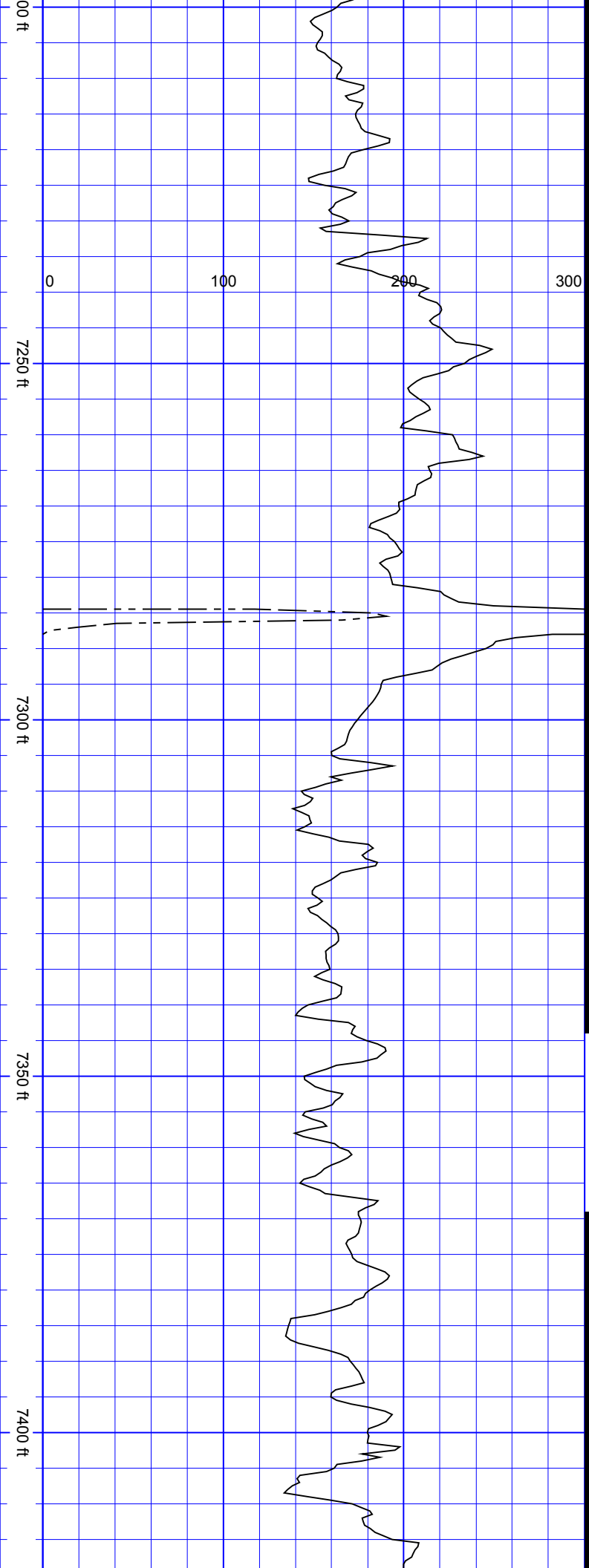
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0	300	600	900
9000	6000	3000	0



SurveyDepth:7021
TVD:6795.08 Inc:32.96
Azi:347.6 VertSec:-
661.86

SurveyDepth:7115
TVD:6870.96 Inc:39.33
Azi:344.88 VertSec:-
608.18

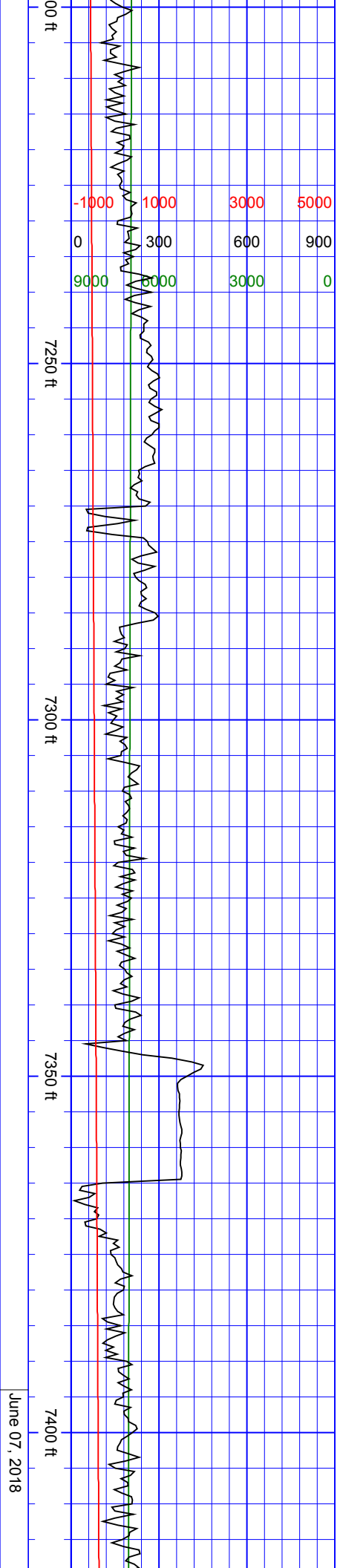




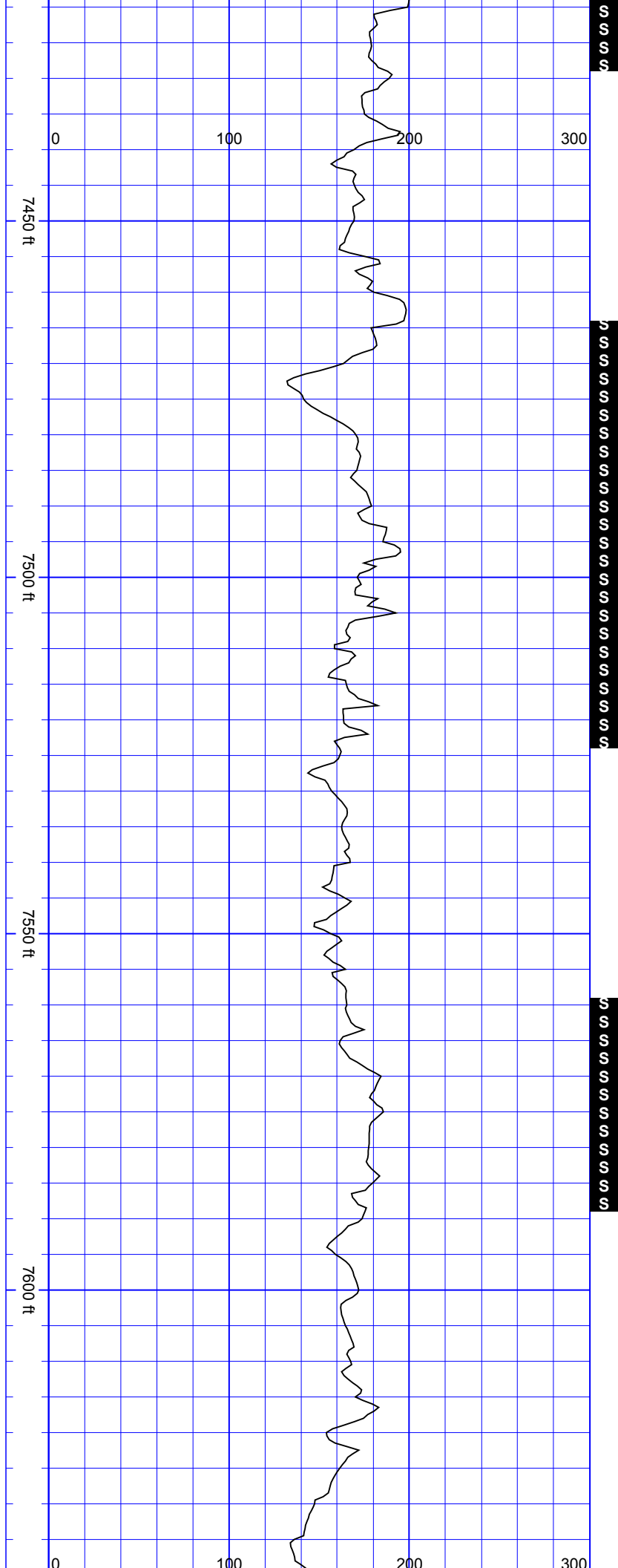
SurveyDepth:7209
TVD:6936.9 Inc:51.37
Azi:344.7 VertSec:-
543.92

SurveyDepth:7304
TVD:6989.04 Inc:62.01
Azi:352.26 VertSec:-
466.39

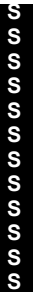
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TVD:7027.34 Inc:70.4
Azi:353.93 VertSec:-
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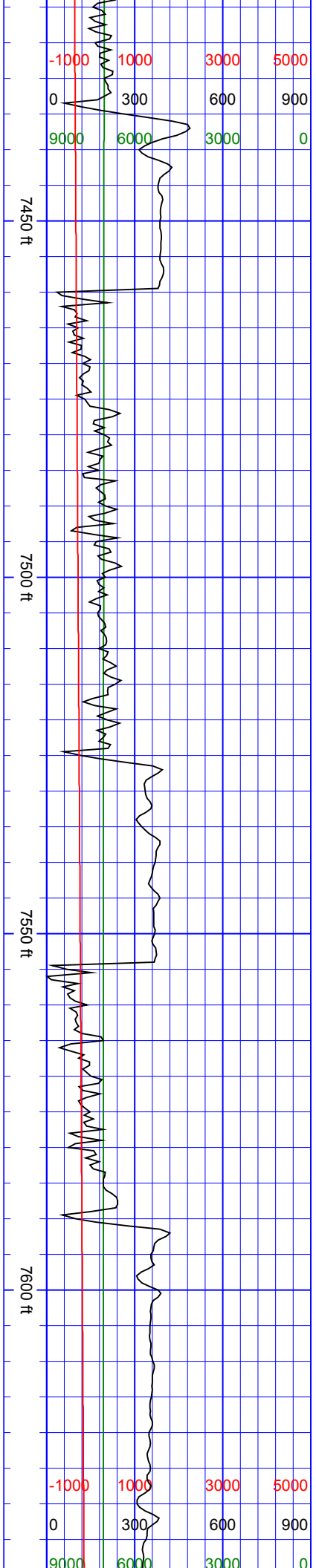
June 07, 2018

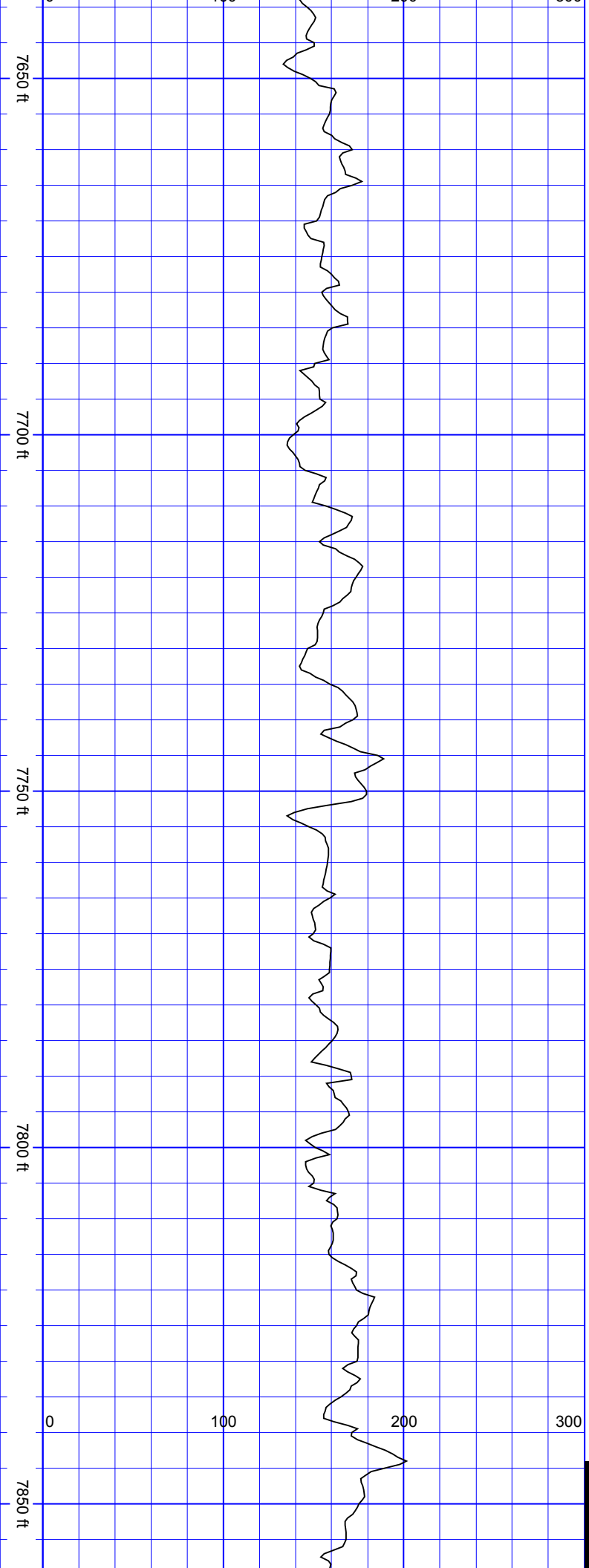


SurveyDepth:7494
TVD:7052.34 Inc:79.06
Azi:356.22 VertSec:-
289.11



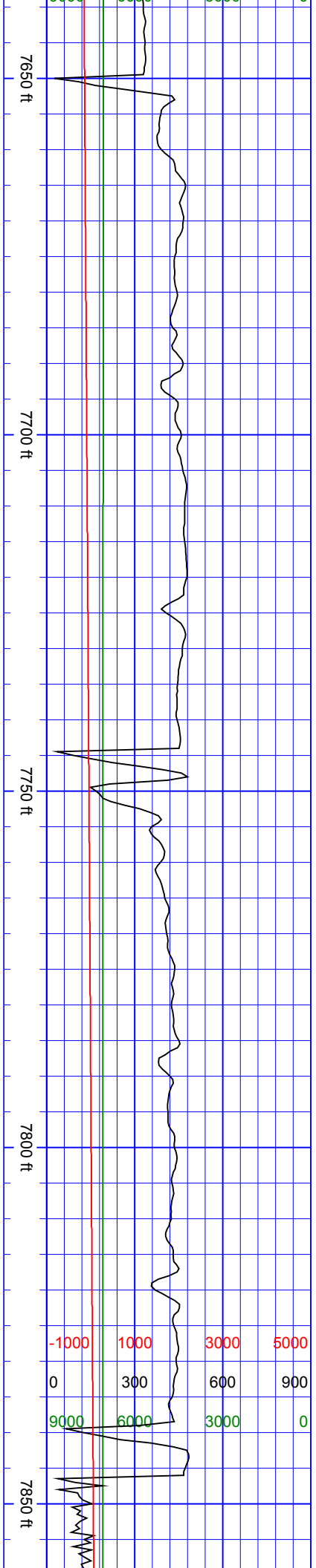
SurveyDepth:7589
TVD:7063.78 Inc:87.1
Azi:0.7 VertSec:-194.97





SurveyDepth:7683
TVD:7068.64 Inc:86.97
Azi:1.05 VertSec:-101.09

SurveyDepth:7778
TVD:7074.47 Inc:86
Azi:0.7 VertSec:-6.28

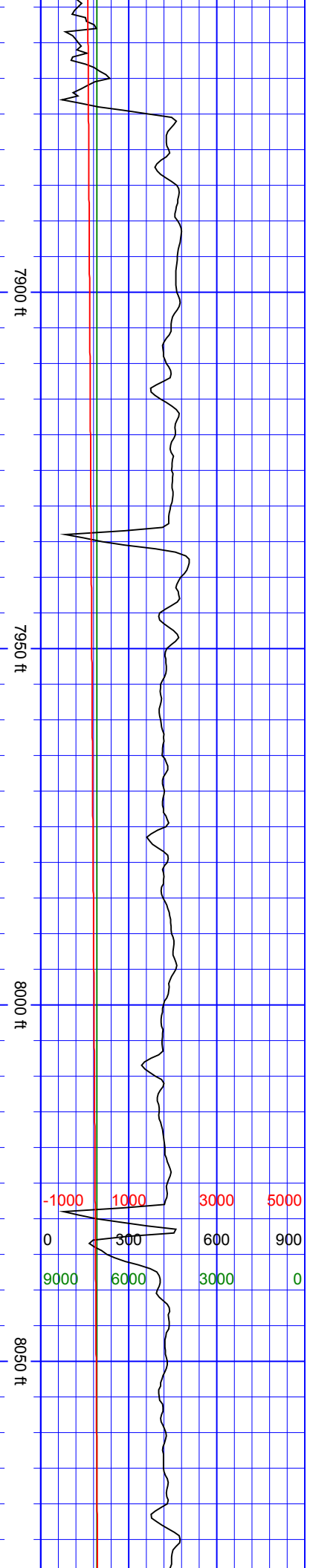
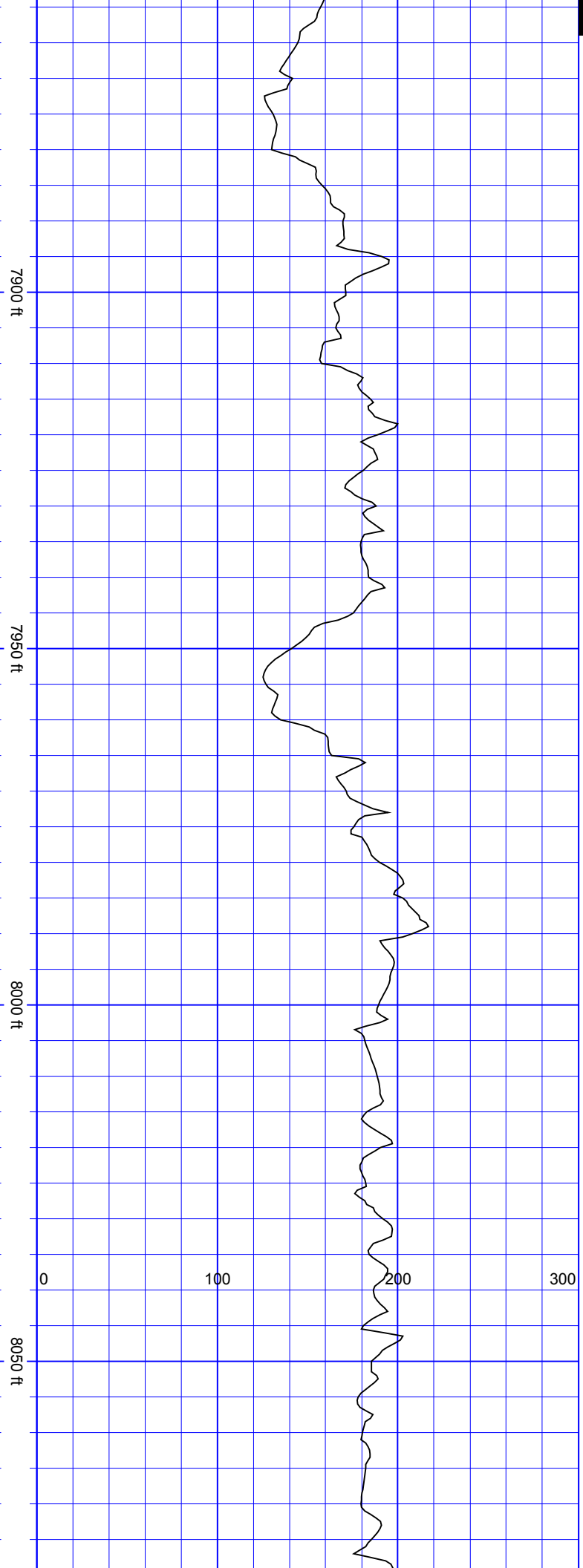


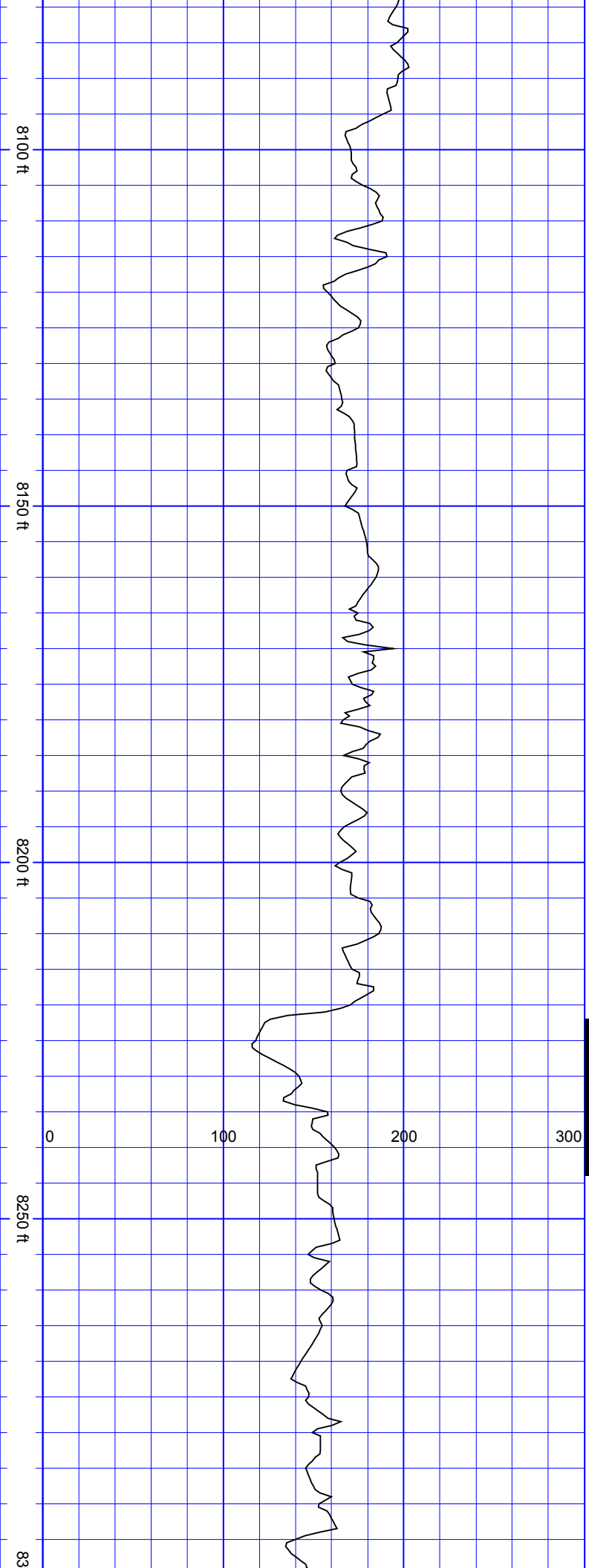
SS

SurveyDepth:7873
TVD:7078.84 Inc:88.73
Azi:1.14 VertSec:88.61

SurveyDepth:7967
TVD:7081.32 Inc:88.24
Azi:1.93 VertSec:182.56

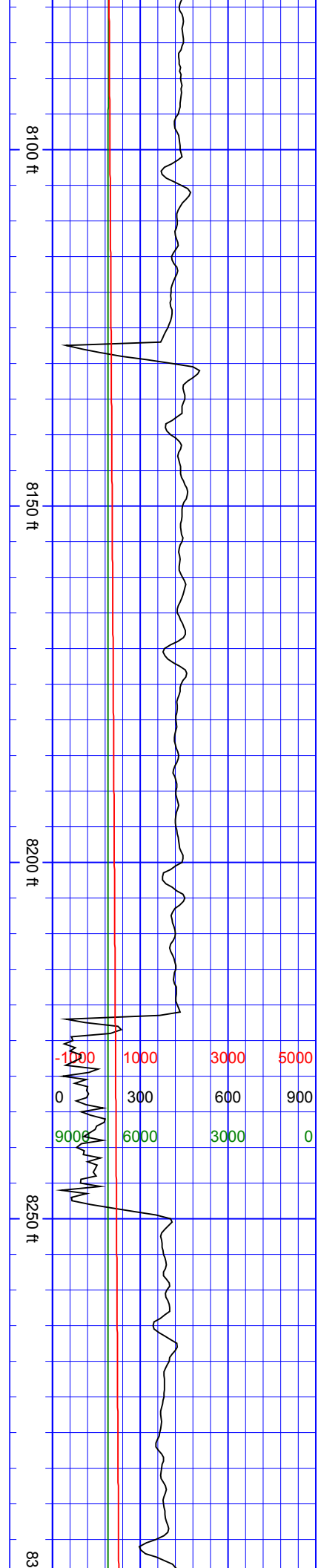
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TVD:7084.82 Inc:87.54
Azi:1.58 VertSec:277.47

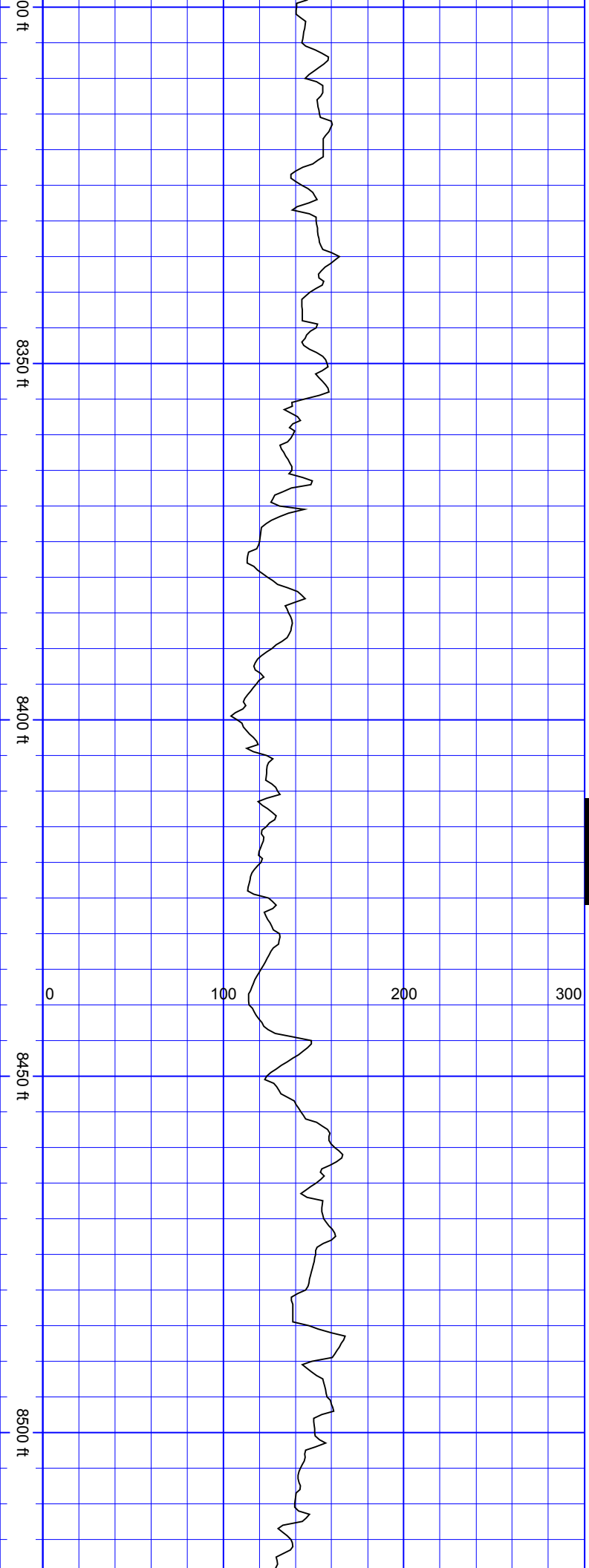




SurveyDepth:8157
TVD:7089.7 Inc:86.57
Azi:1.49 VertSec:372.33

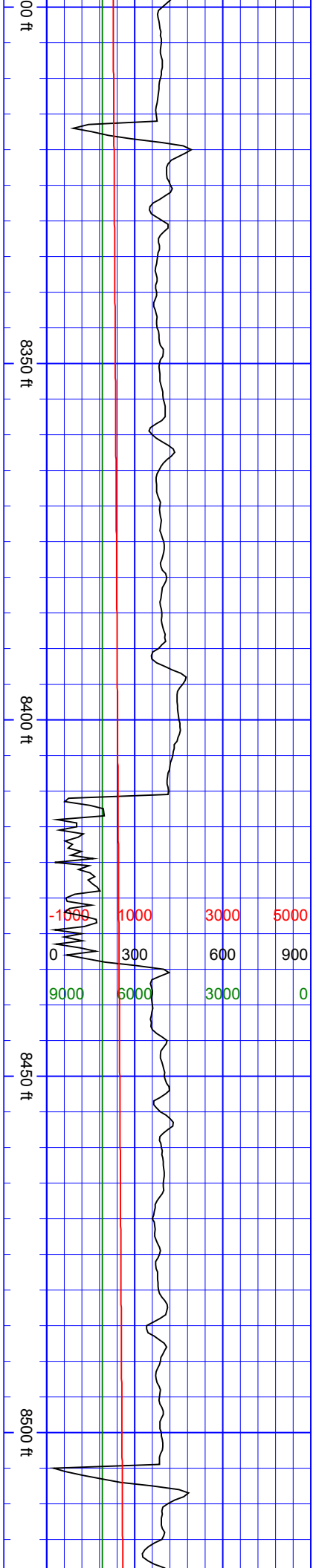
SurveyDepth:8251
TVD:7092.55 Inc:89.96
Azi:1.14 VertSec:466.26





SurveyDepth:8346
TVD:7093.34 Inc:89.08
Azi:0.88 VertSec:561.25

SurveyDepth:8441
TVD:7092.28 Inc:92.2
Azi:1.23 VertSec:656.23



8550 ft

8600 ft

0 100 200 300

8650 ft

8700 ft

SurveyDepth:8536
TVD:7088.71 Inc:92.11
Azi:1.75 VertSec:751.15

SurveyDepth:8631
TVD:7085.65 Inc:91.58
Azi:1.32 VertSec:846.08

SurveyDepth:8725
TVD:7083.38 Inc:91.19
Azi:1.23 VertSec:940.04

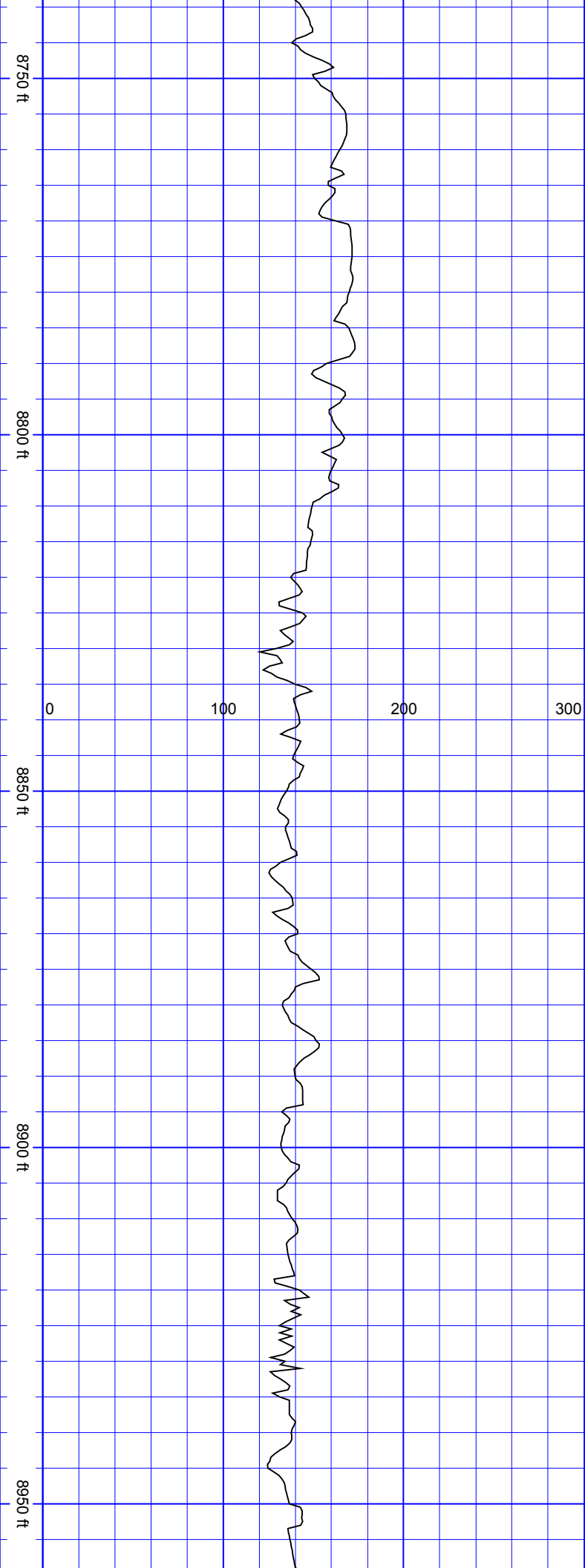
8550 ft

8600 ft

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0	300	600	900
9000	6000	3000	0

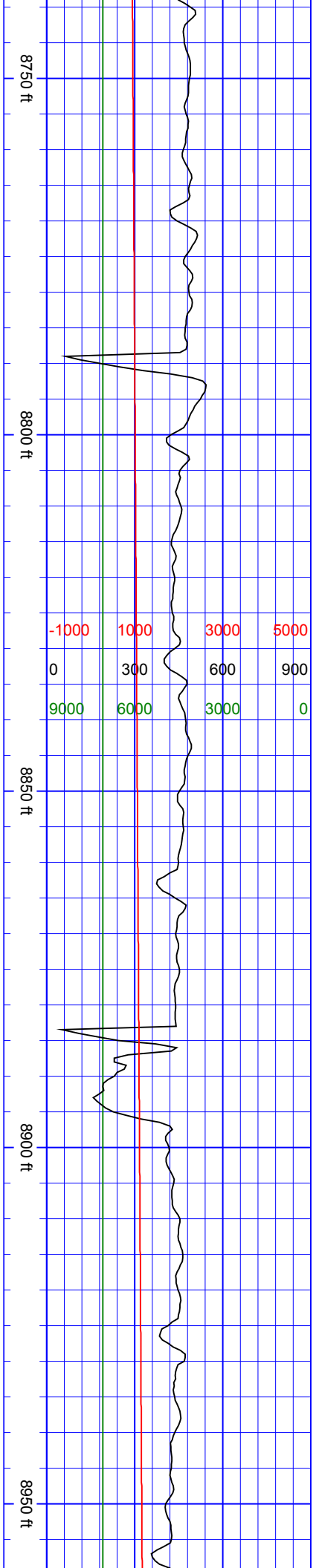
8650 ft

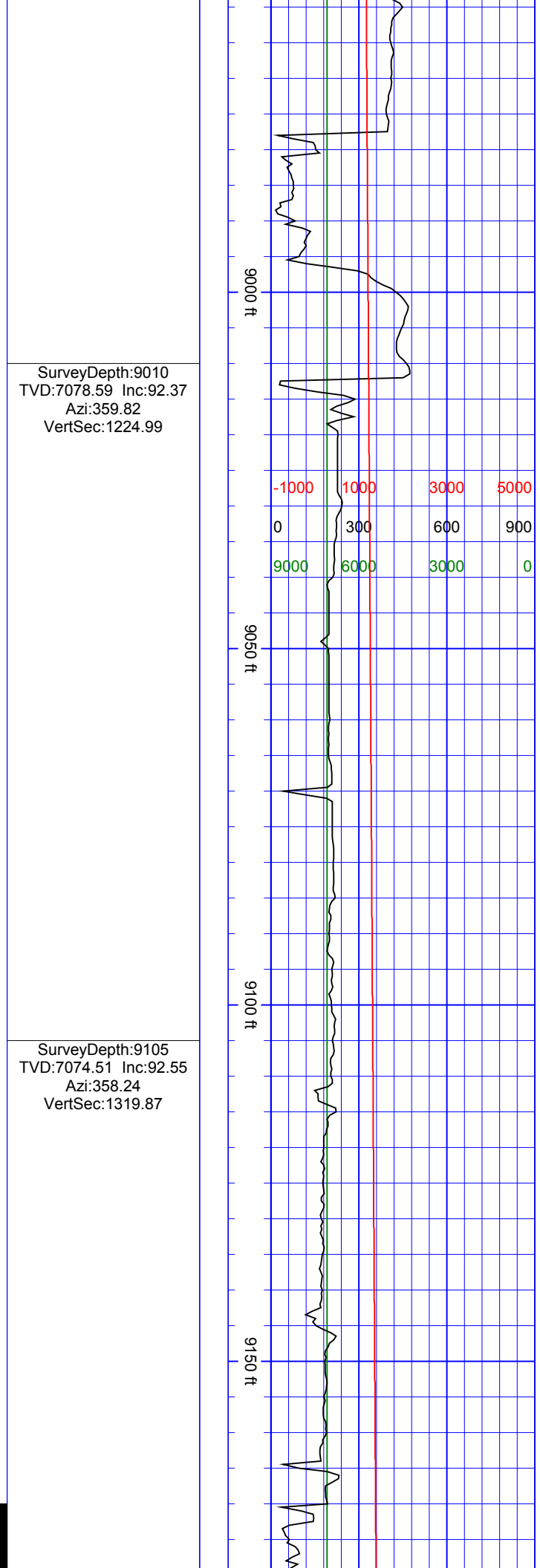
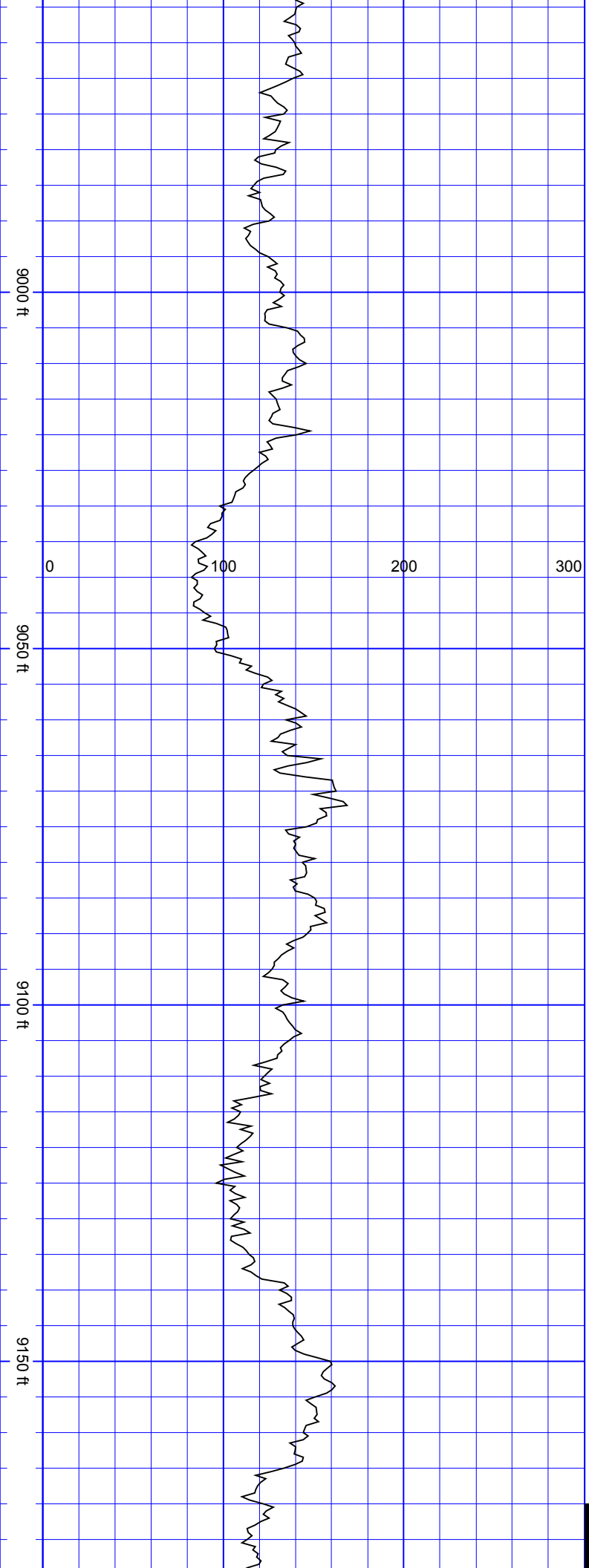
8700 ft

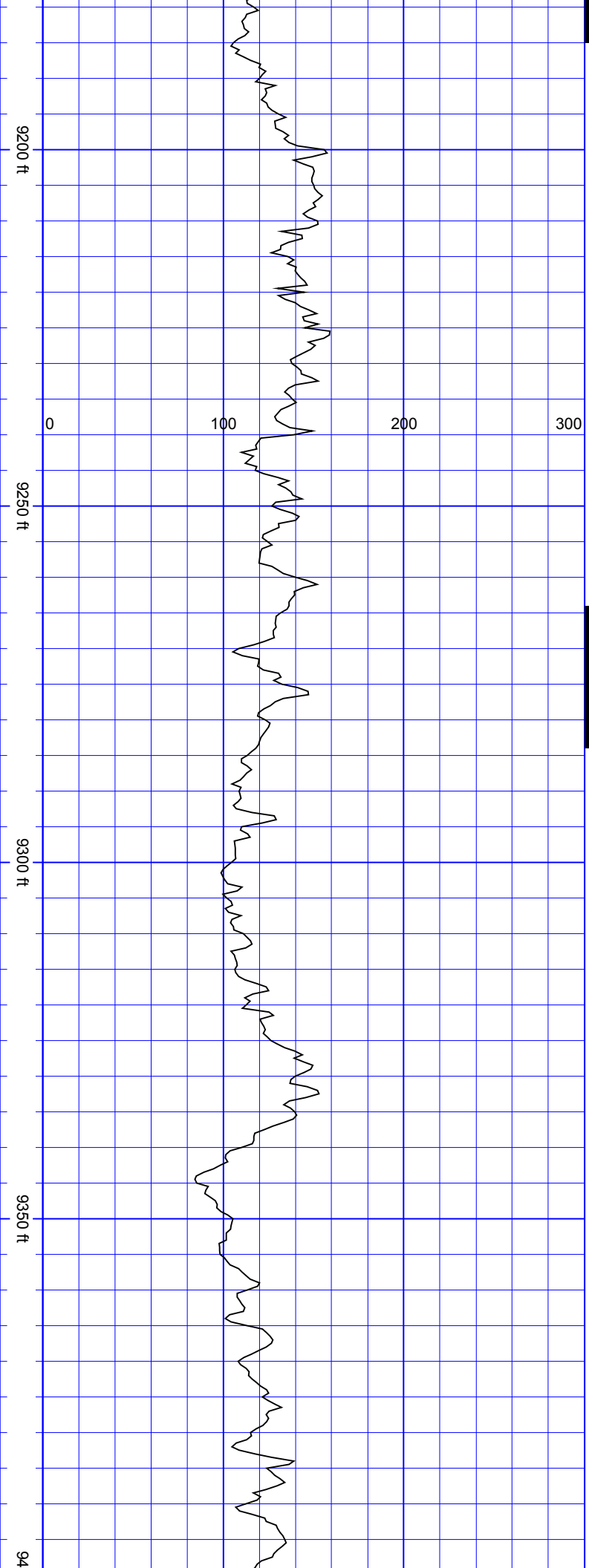


SurveyDepth:8820
TVD:7081.66 Inc:90.88
Azi:0.88
VertSec:1035.02

SurveyDepth:8914
TVD:7080.76 Inc:90.22
Azi:0.44
VertSec:1129.02







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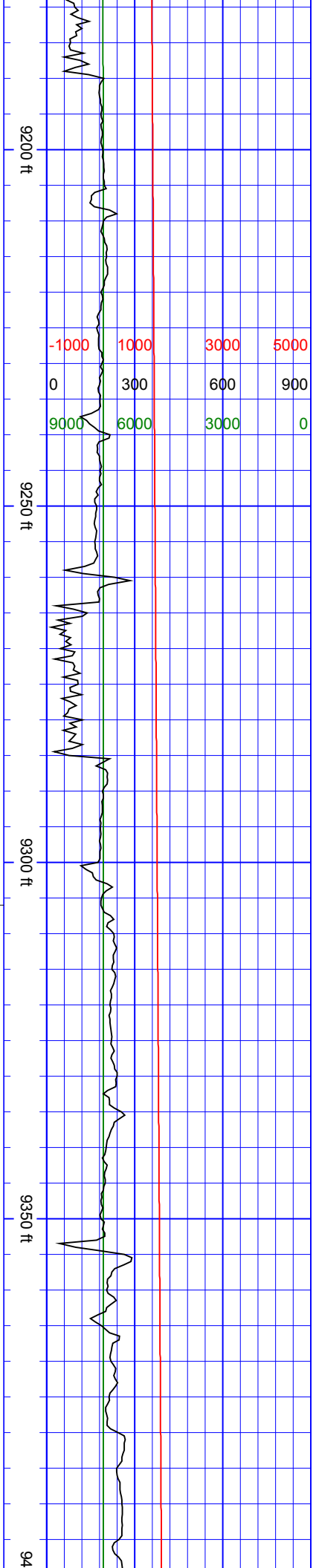
SurveyDepth:9199
TVD:7069.71 Inc:93.3
Azi:0.52
VertSec:1413.72

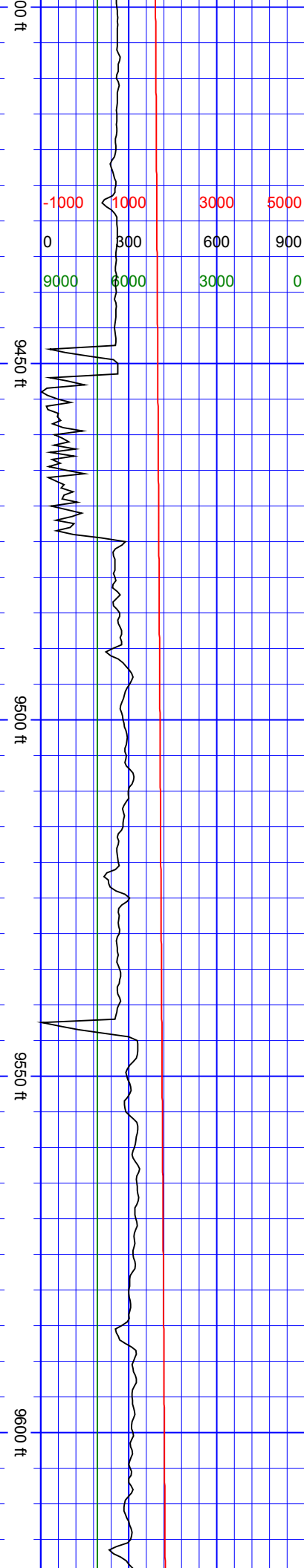
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SurveyDepth:9294
TVD:7065.74 Inc:91.49
Azi:1.23
VertSec:1508.63

SurveyDepth:9388
TVD:7062.61 Inc:92.33
Azi:0.88
VertSec:1602.57

June 08, 2018

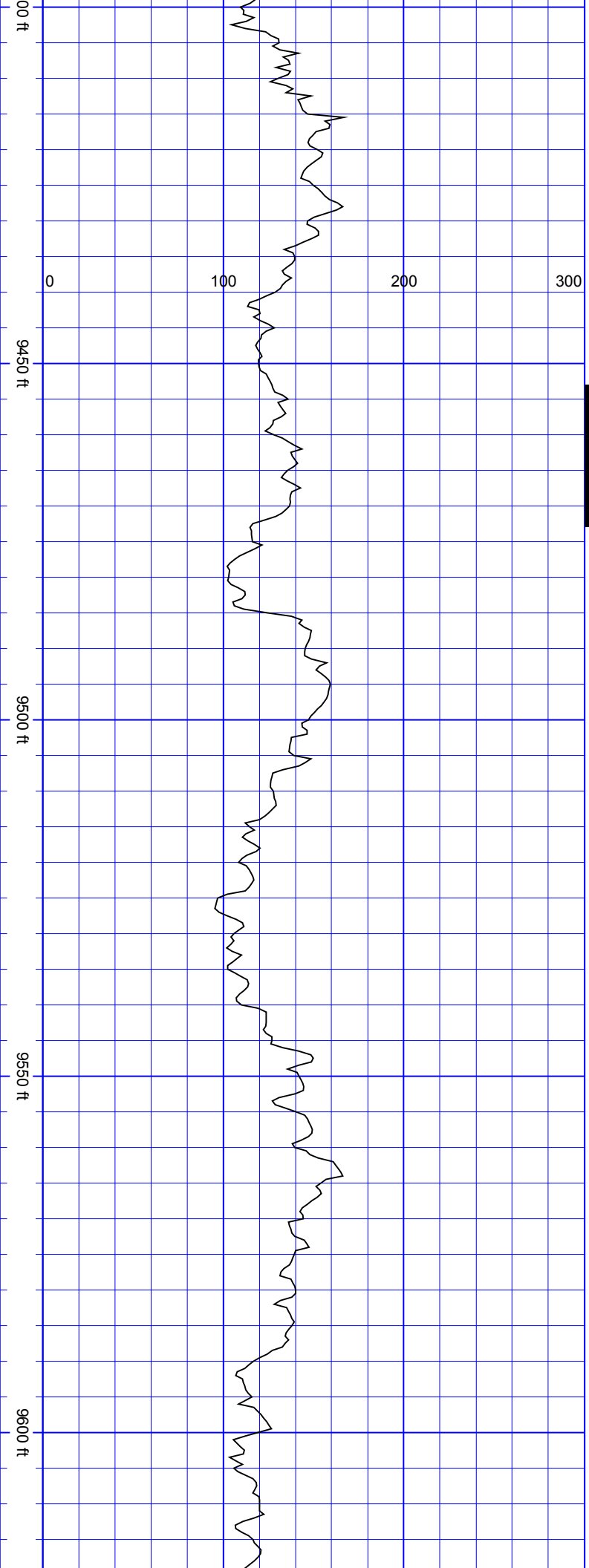


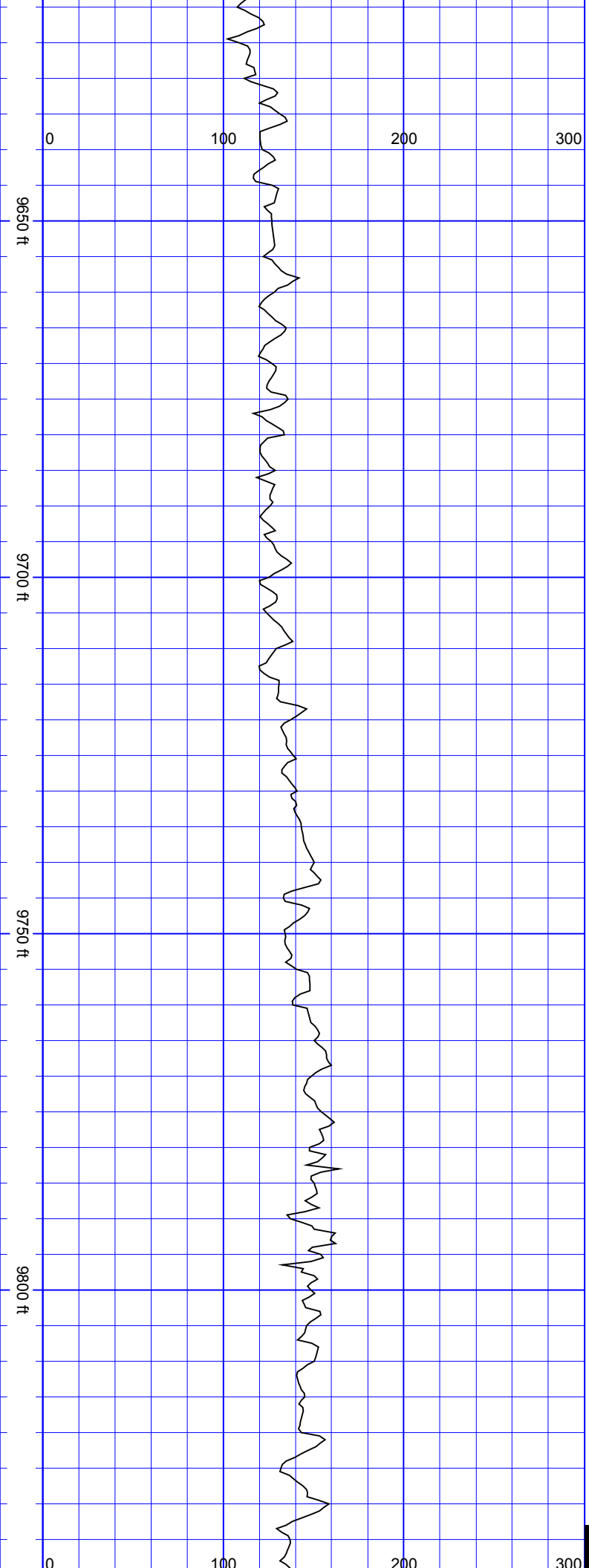


SurveyDepth:9483
TVD:7060.83 Inc:89.82
Azi:1.58
VertSec:1697.54

SurveyDepth:9578
TVD:7060.98 Inc:90
Azi:1.4 VertSec:1792.52

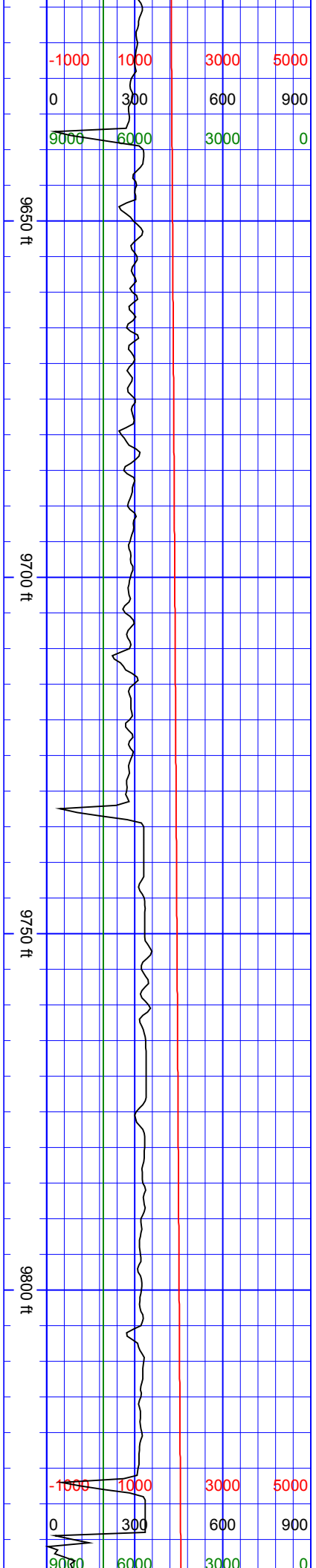
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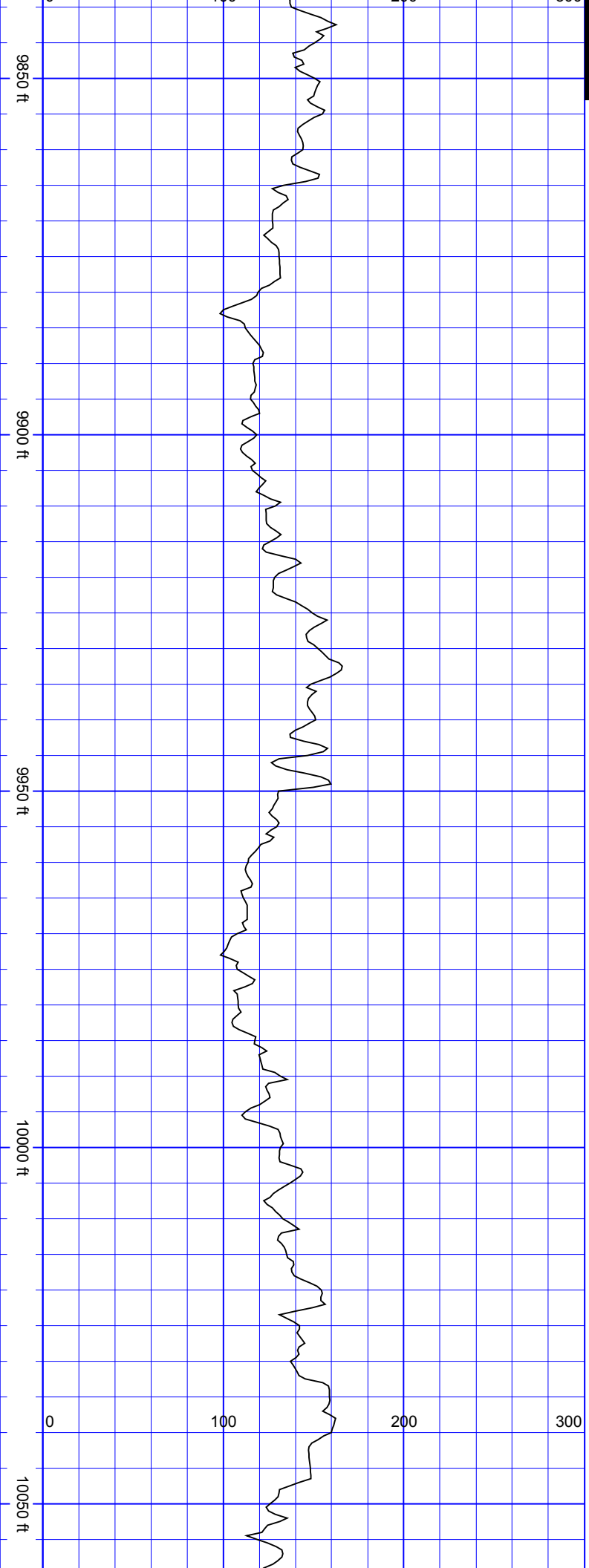




SurveyDepth:9672
TVD:7060.51 Inc:90.57
Azi:0.52
VertSec:1886.52

SurveyDepth:9768
TVD:7059.08 Inc:91.14
Azi:0.52
VertSec:1982.51



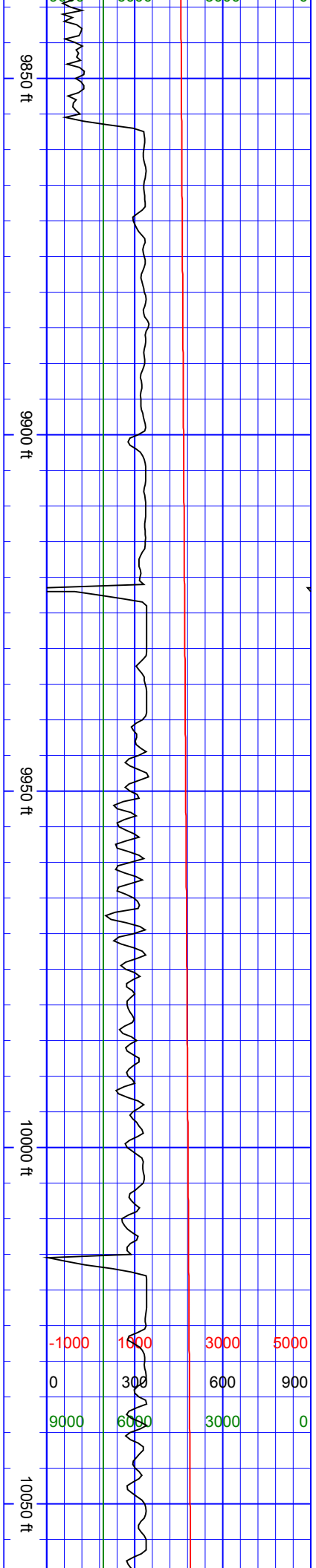


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SurveyDepth:9862
TVD:7059.12 Inc:88.81
Azi:0.79 VertSec:2076.5

SurveyDepth:9957
TVD:7061.23 Inc:88.64
Azi:0.26
VertSec:2171.47

SurveyDepth:10051
TVD:7063.83 Inc:88.2
Azi:359.91

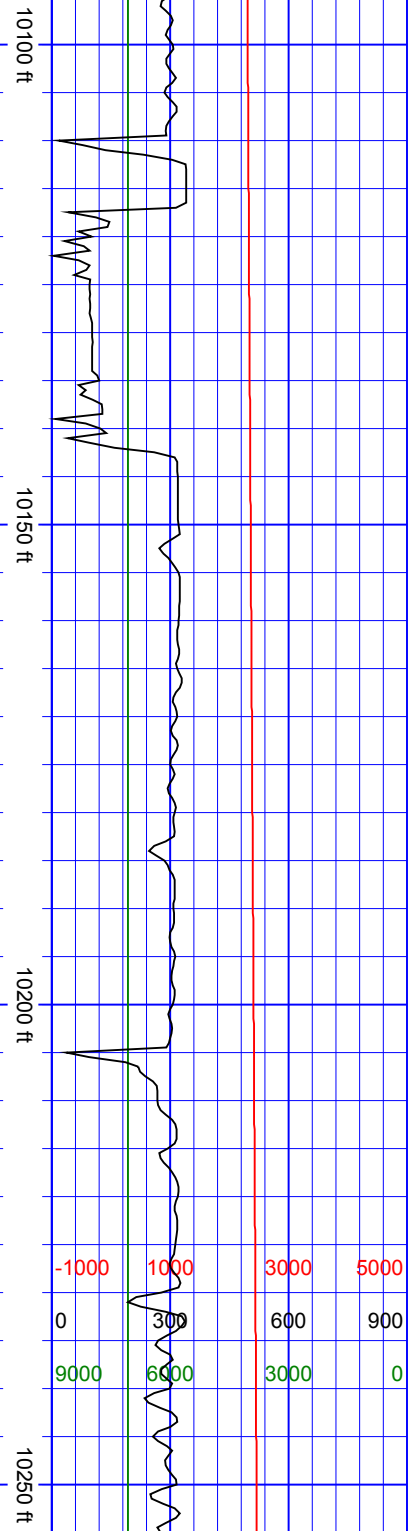
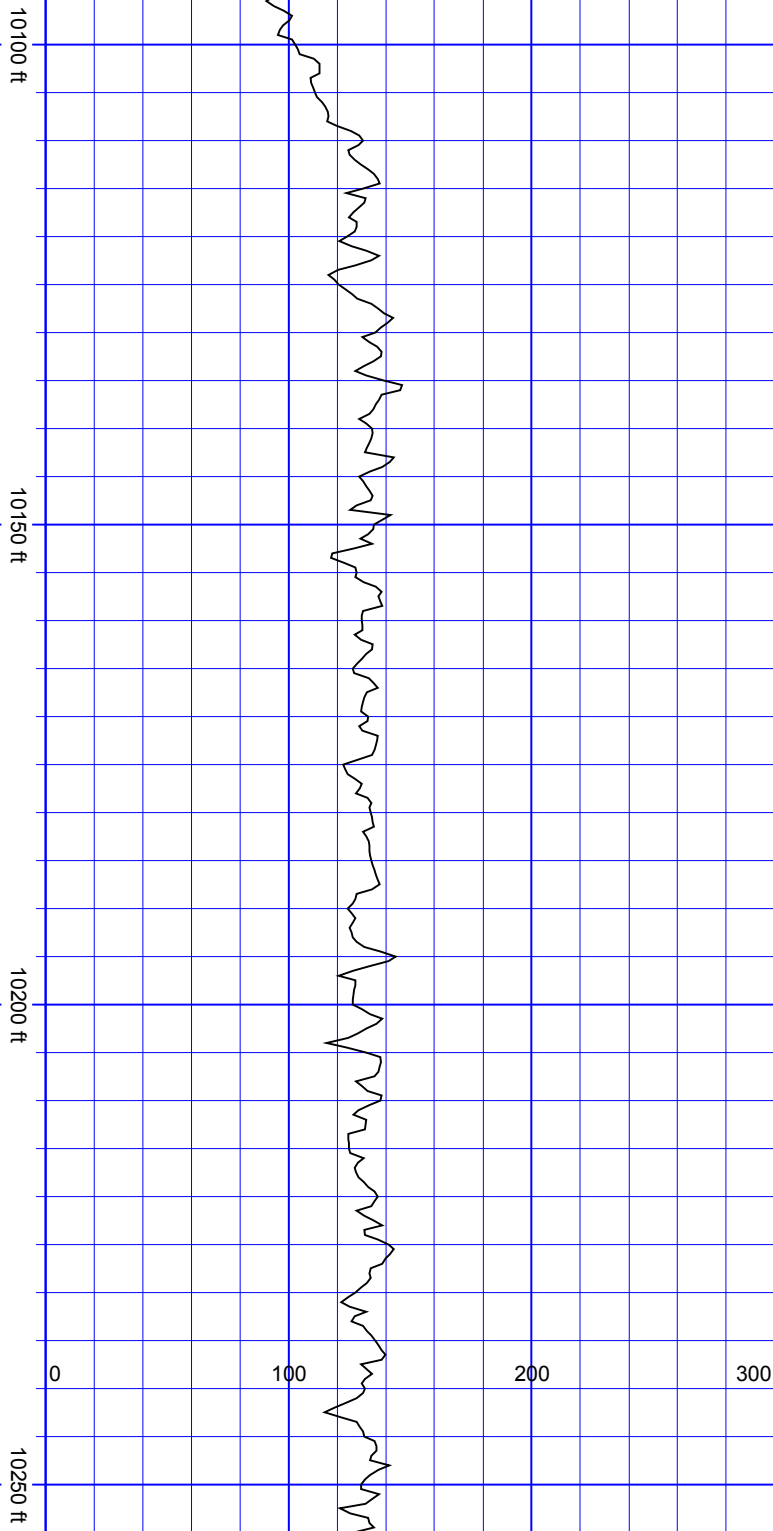


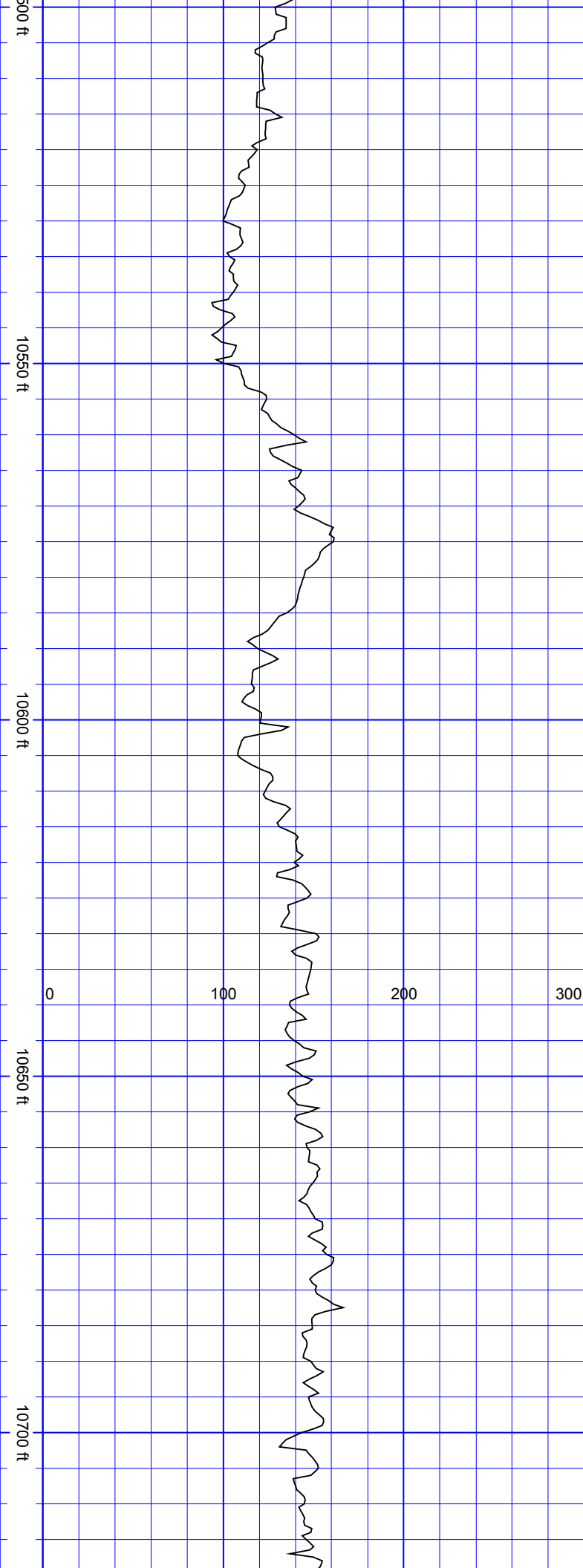
VertSec:2265.44

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SurveyDepth:10146
TVD:7065.06 Inc:90.31
Azi:1.75
VertSec:2360.42

SurveyDepth:10241
TVD:7065.28 Inc:89.43
Azi:0.96 VertSec:2455.4

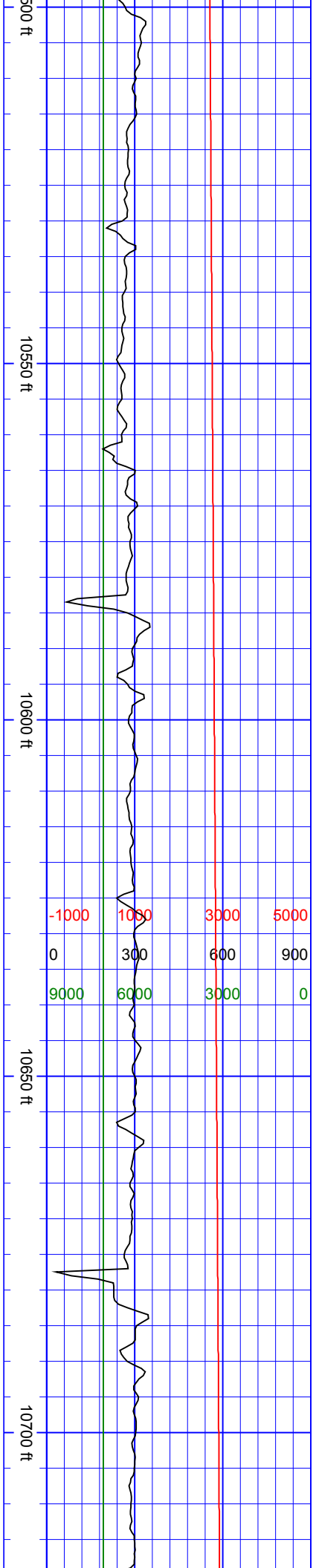


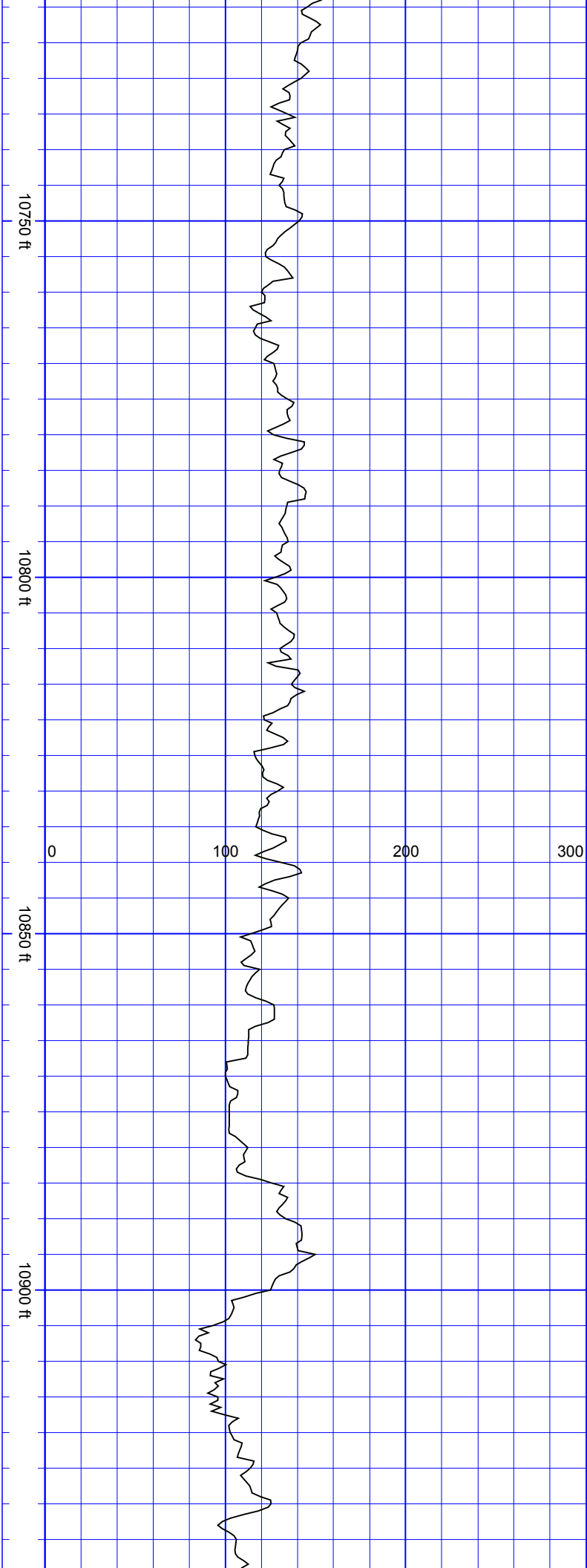


SurveyDepth:10525
TVD:7060.99 Inc:91.1
Azi:2.98 VertSec:2739

SurveyDepth:10619
TVD:7058.94 Inc:91.41
Azi:2.72
VertSec:2832.89

SurveyDepth:10714
TVD:7056.71 Inc:91.27

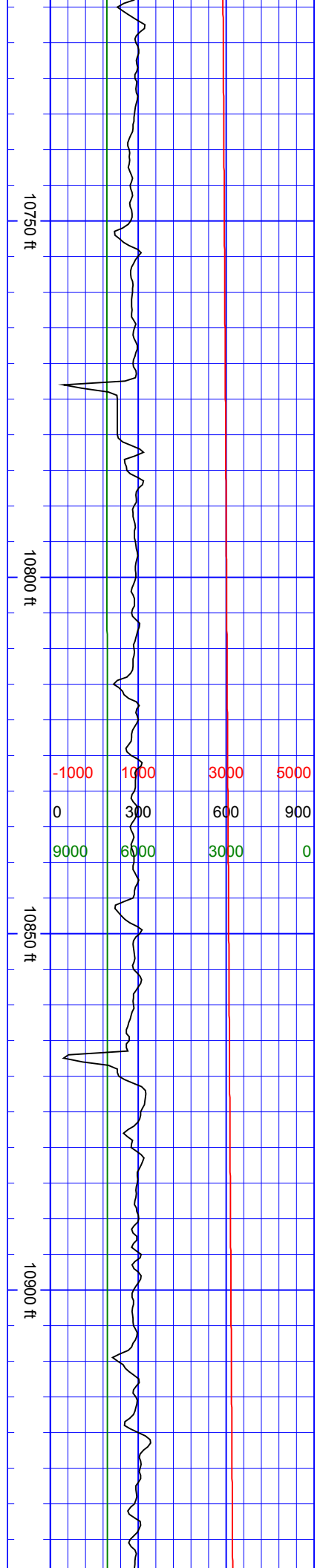


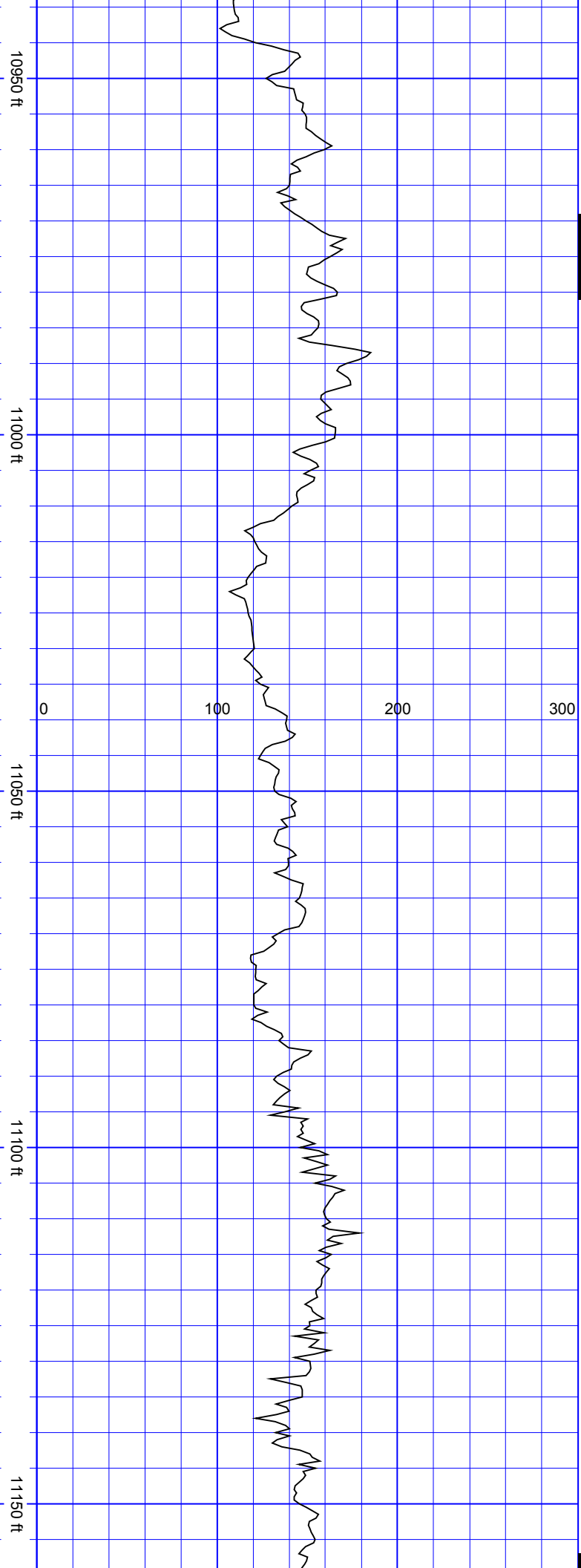


Azi:2.28
VertSec:2927.81

SurveyDepth:10809
TVD:7054.02 Inc:91.98
Azi:1.58
VertSec:3022.74

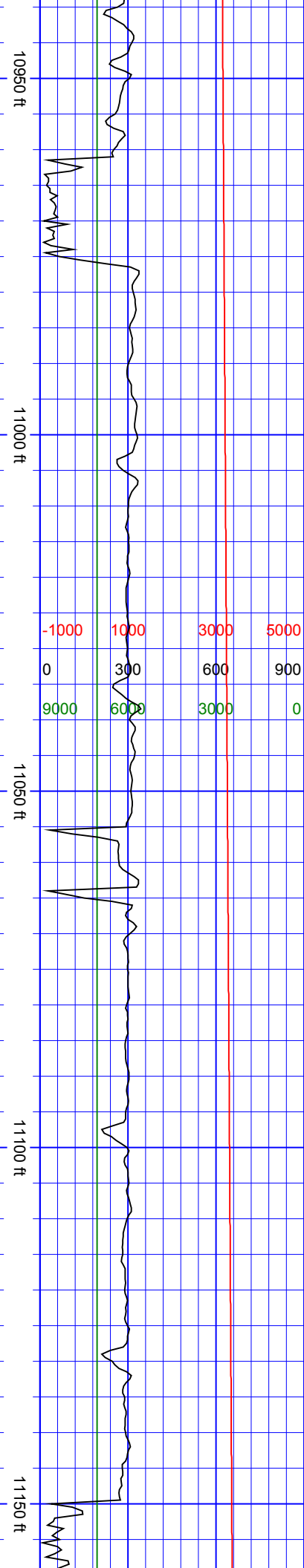
SurveyDepth:10904
TVD:7050.27 Inc:92.55
Azi:1.05
VertSec:3117.65

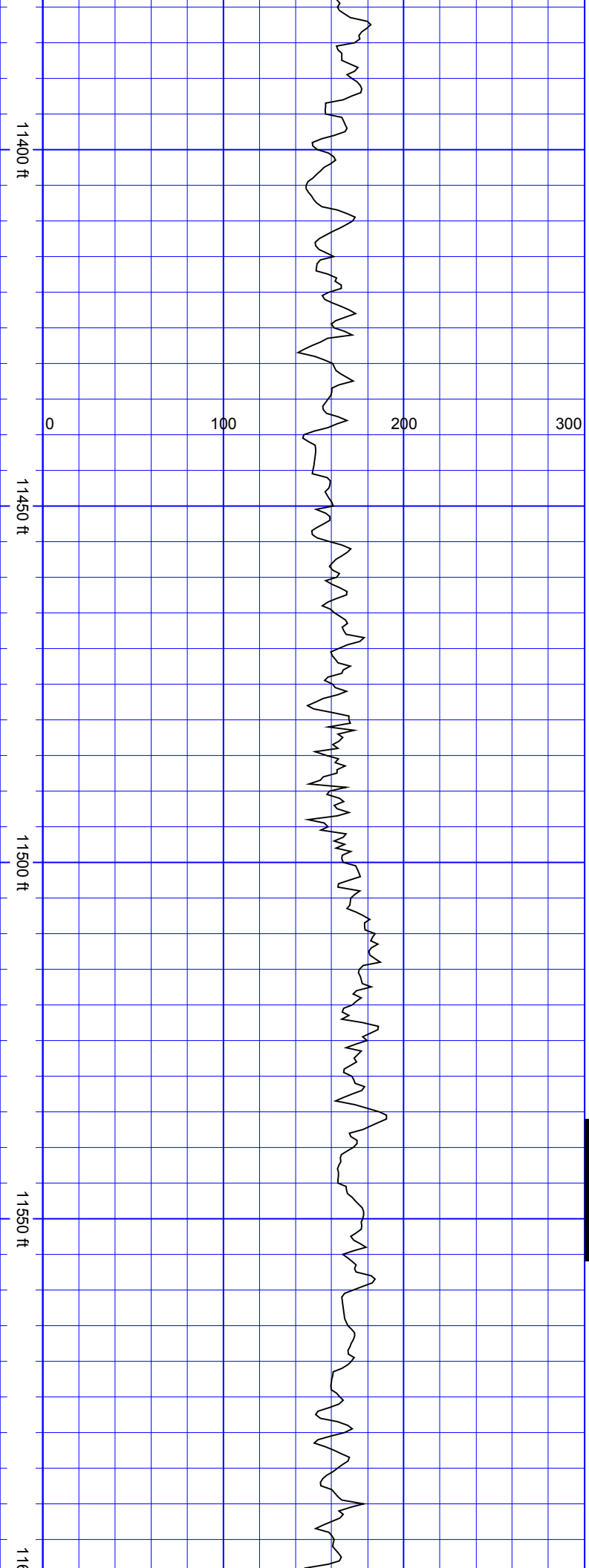




SurveyDepth:10998
TVD:7047.48 Inc:90.84
Azi:1.05 VertSec:3211.6

SurveyDepth:11092
TVD:7045.39 Inc:91.71
Azi:0.52
VertSec:3305.58



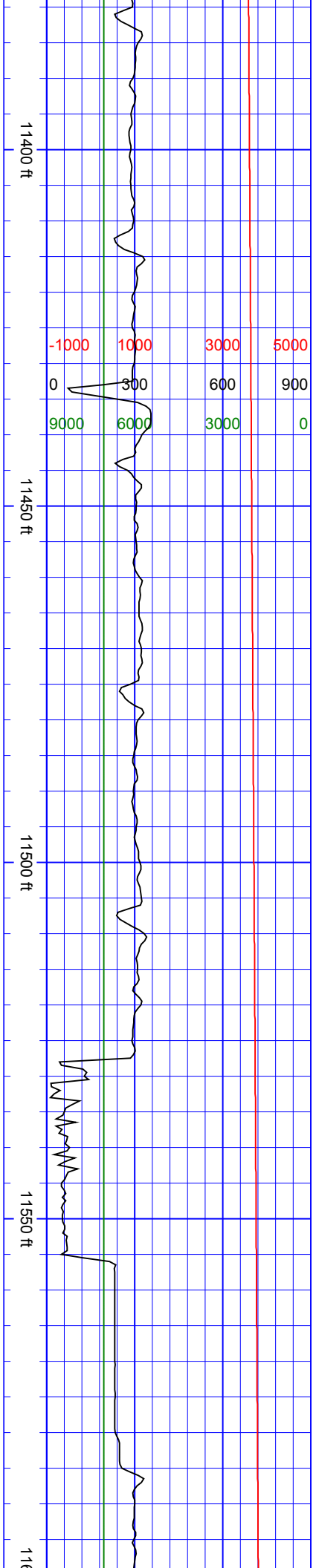


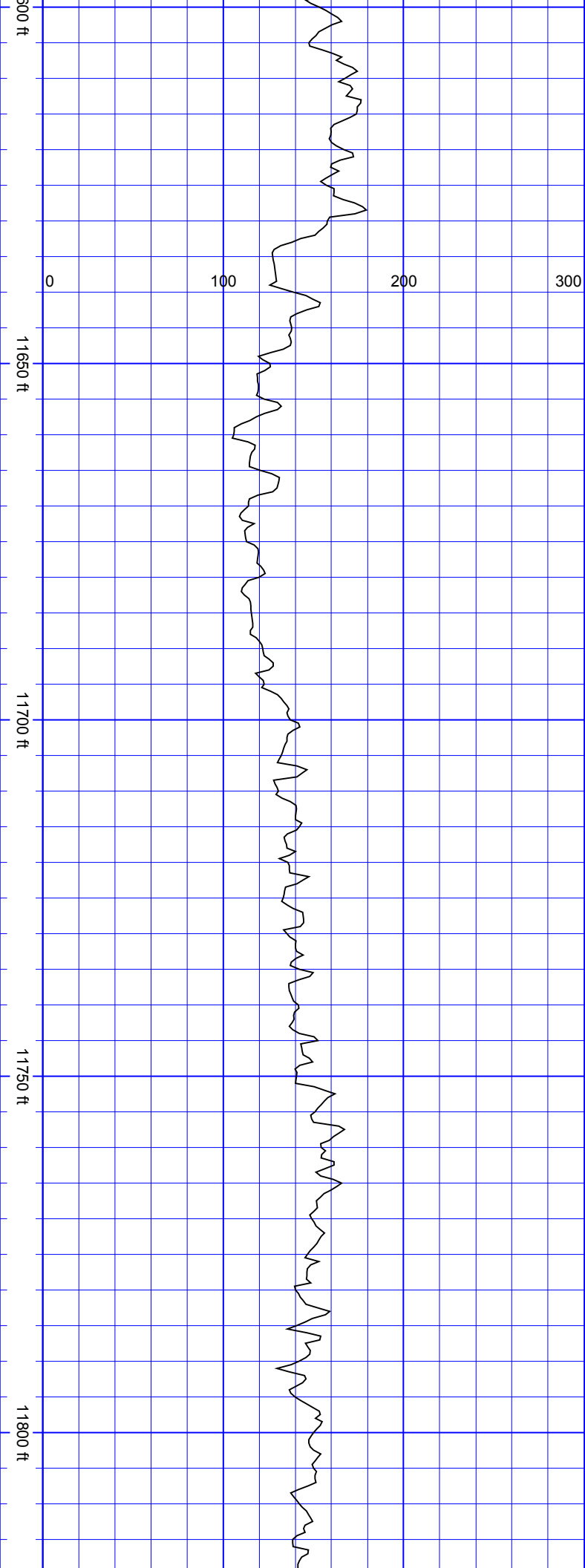
TVD:7042.44 Inc:89.69
Azi:358.15
VertSec:3589.42

SurveyDepth:11471
TVD:7042.77 Inc:89.91
Azi:357.45
VertSec:3684.32

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SurveyDepth:11565
TVD:7044.14 Inc:88.42
Azi:359.91
VertSec:3778.25





SurveyDepth:11659
TVD:7046.47 Inc:88.73
Azi:359.82
VertSec:3872.22

SurveyDepth:11755
TVD:7048.57 Inc:88.77
Azi:359.03
VertSec:3968.18

