

CASTOR FEDERAL LD15-73-1HN

MD
2":100'

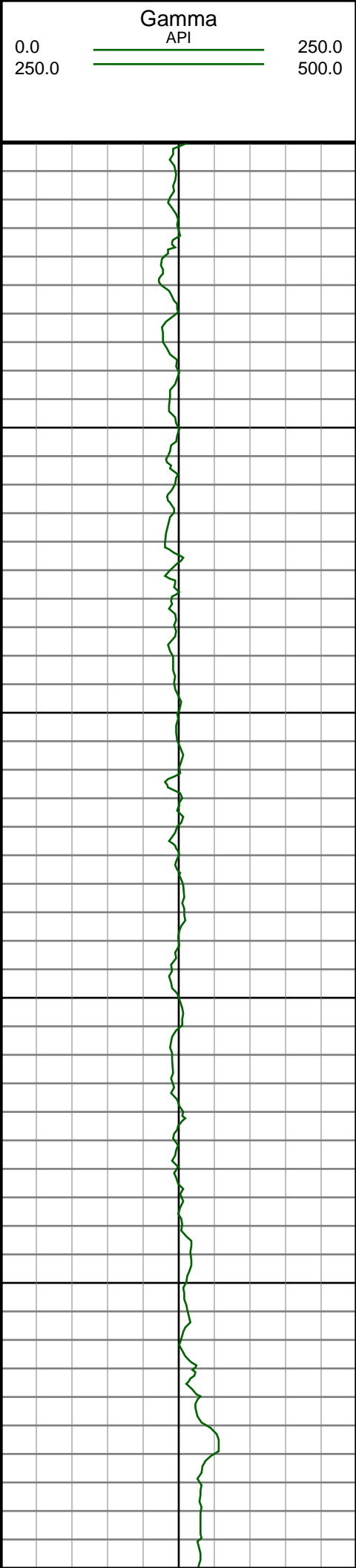
Company: Noble Energy Inc
Well Name: CASTOR FEDERAL LD15-73-1HN
UWI or LSD: 05-123-37432
Rig Id: H&P 273
State: Colorado
County/Parish: Weld
Country: USA
Survey Company: Ensign Directional
Job number: 139454
Dir. Driller Days Kody Wood
Dir. Driller Nights Mike David
MWD/LWD Days Tyler Teague
MWD/LWD Nights Jamey House

Log measurements:
Depth measured from:
Maximum temperature: 210.2

Depth **Date**
Start: 1225 ft 12/18/2013
End: 9807 ft 12/21/2013

Casing	Depth	Size	Mud Type:	Elevations
Surface:	1217	9.625	Density:	KB: 4728
Intermediate:	5928	7	Viscosity:	GL: 4704
			Rm:	DF: 4728
			Rmf:	
			Rmc:	

Run	Bit Size	Offsets	Gamma Survey	Start	Depths	End	Start	Dates	End
1	8.75	-1.00	-1.00	0	1225		12/17/2013		12/17/2013
2	8.75	61.58	56.58	1225	4838		12/18/2013		12/18/2013
3	8.75	61.84	56.84	4838	5938		12/18/2013		12/19/2013
4	6.125	72.30	67.30	5938	9807		12/20/2013		12/21/2013
5									
6									
7									
8									
9									
10									



MD

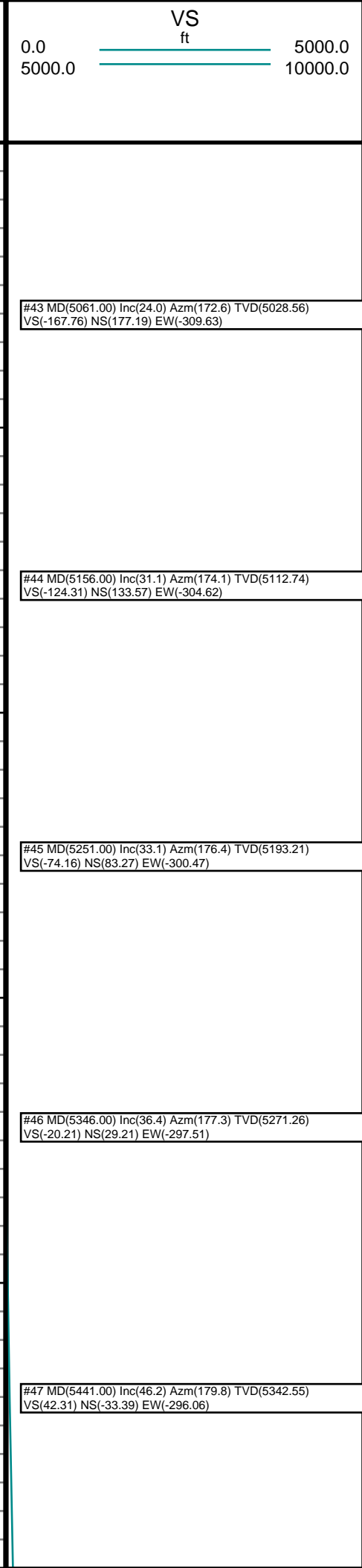
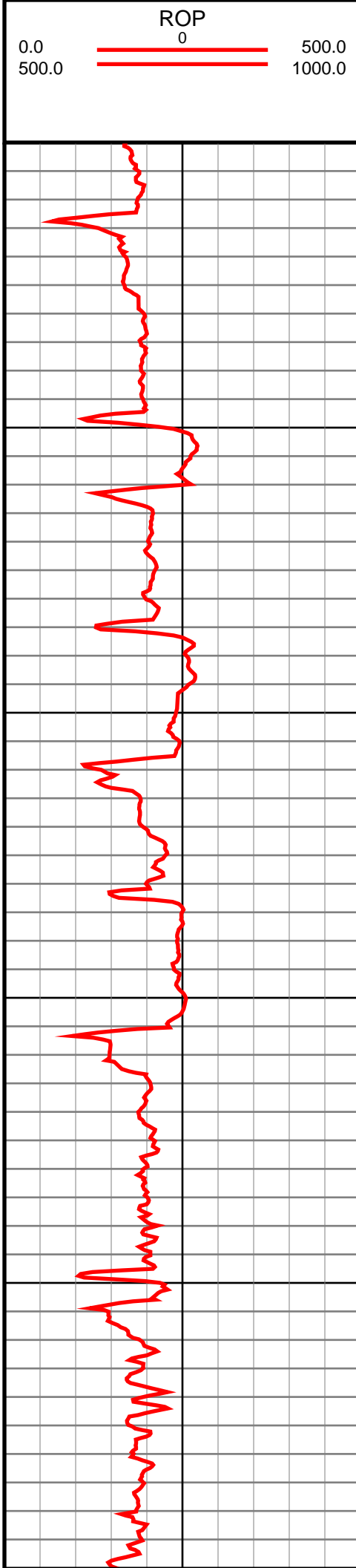
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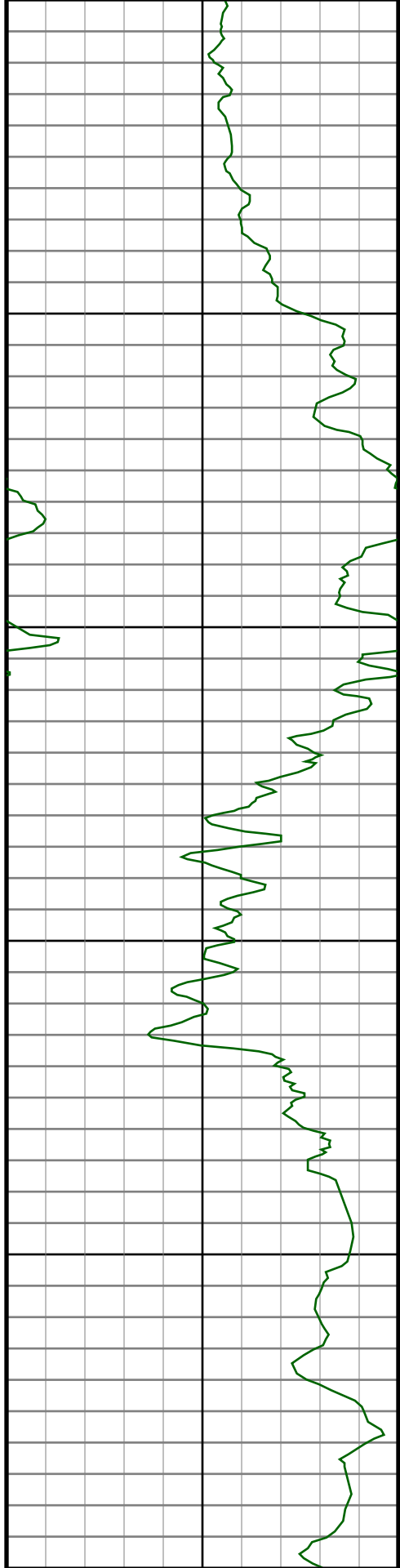
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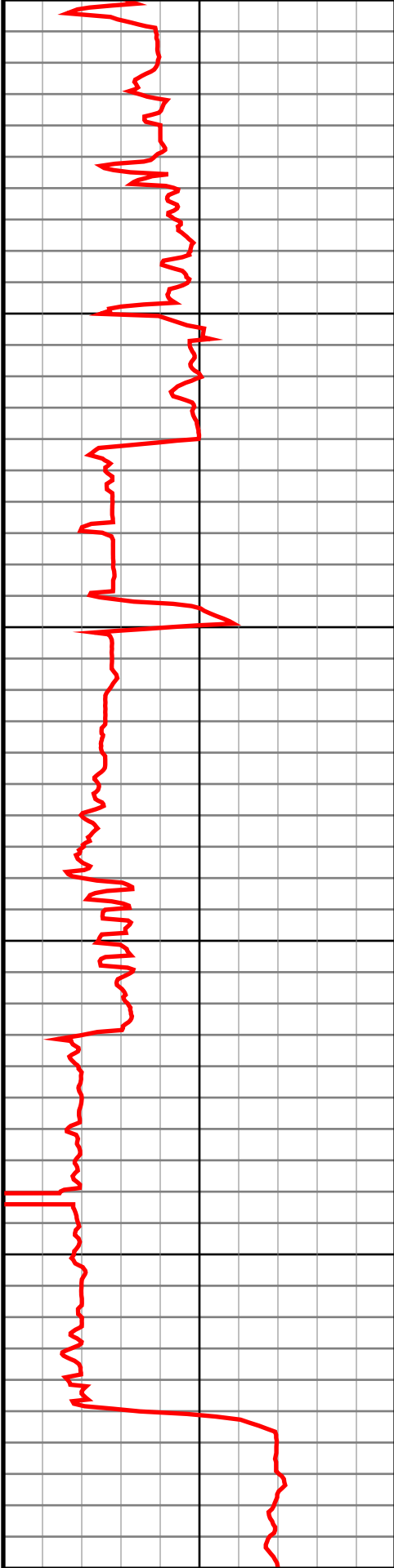
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5700

5800

5900

6000



#48 MD(5535.00) Inc(55.1) Azm(176.3) TVD(5402.10)
VS(114.75) NS(-105.94) EW(-293.45)

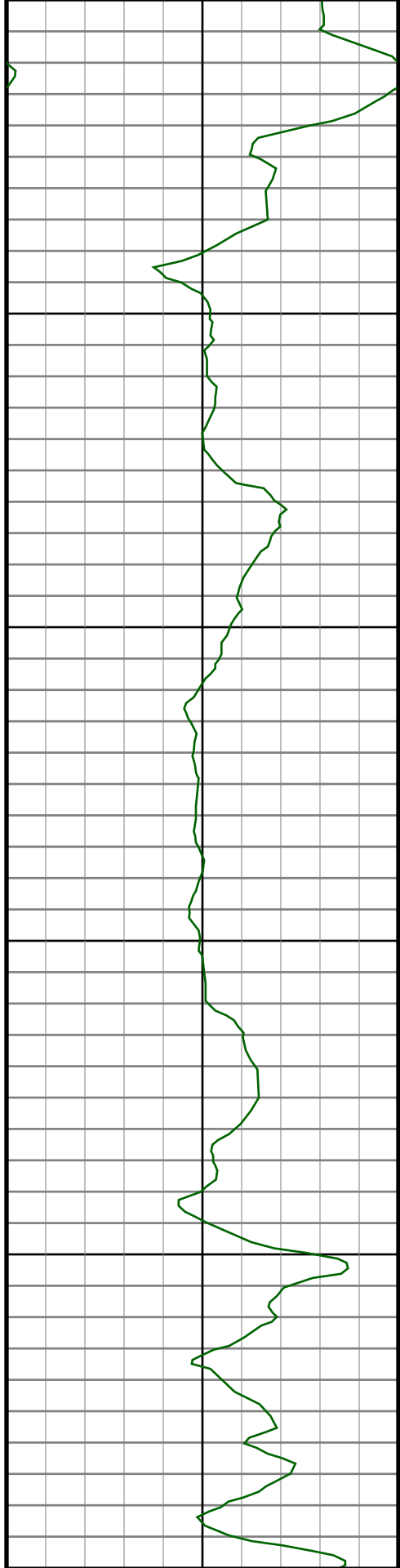
#49 MD(5630.00) Inc(55.7) Azm(175.4) TVD(5456.05)
VS(192.53) NS(-183.93) EW(-287.78)

#50 MD(5725.00) Inc(65.4) Azm(175.6) TVD(5502.70)
VS(274.67) NS(-266.30) EW(-281.31)

#51 MD(5820.00) Inc(72.3) Azm(176.1) TVD(5536.95)
VS(362.75) NS(-354.62) EW(-274.91)

#52 MD(5878.00) Inc(79.5) Azm(177.0) TVD(5551.07)
VS(418.74) NS(-410.73) EW(-271.53)

#53 MD(5971.00) Inc(87.5) Azm(178.9) TVD(5561.59)
VS(510.86) NS(-502.99) EW(-268.24)



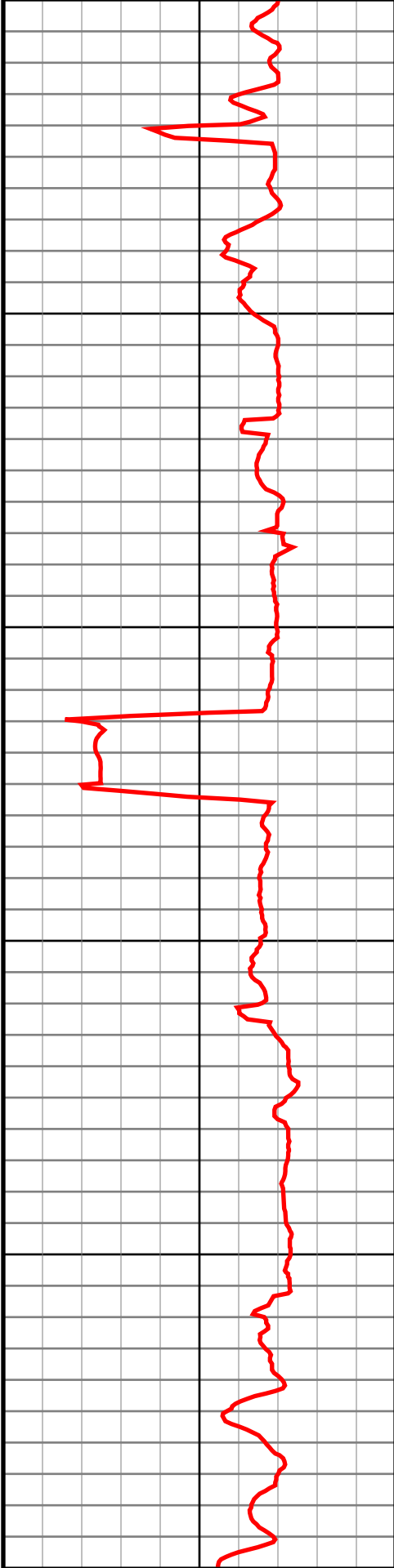
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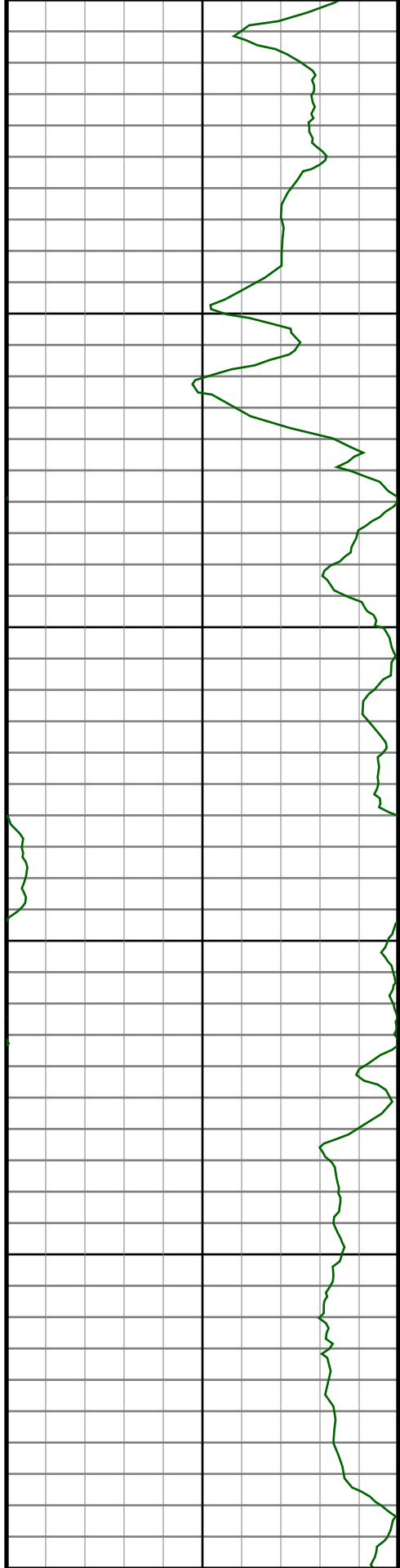
#54 MD(6064.00) Inc(87.4) Azm(178.7) TVD(5565.73)
VS(603.65) NS(-595.88) EW(-266.30)

#55 MD(6157.00) Inc(87.1) Azm(179.1) TVD(5570.19)
VS(696.43) NS(-688.76) EW(-264.51)

#56 MD(6249.00) Inc(89.0) Azm(179.6) TVD(5573.33)
VS(788.29) NS(-780.69) EW(-263.47)

#57 MD(6342.00) Inc(89.7) Azm(179.4) TVD(5574.38)
VS(881.21) NS(-873.68) EW(-262.66)

#58 MD(6437.00) Inc(90.4) Azm(180.1) TVD(5574.30)
VS(976.16) NS(-968.68) EW(-262.25)



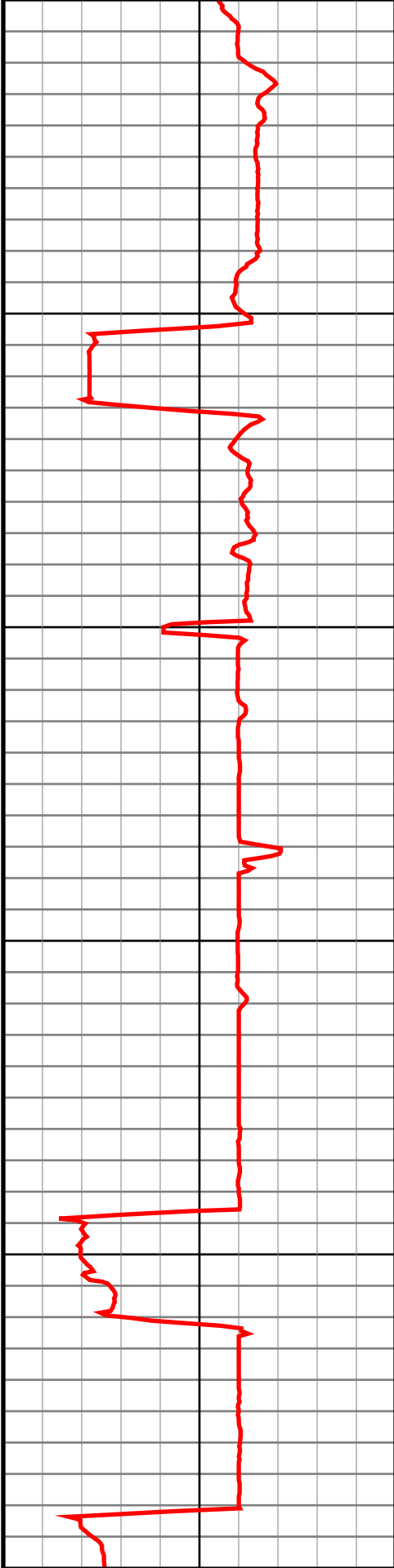
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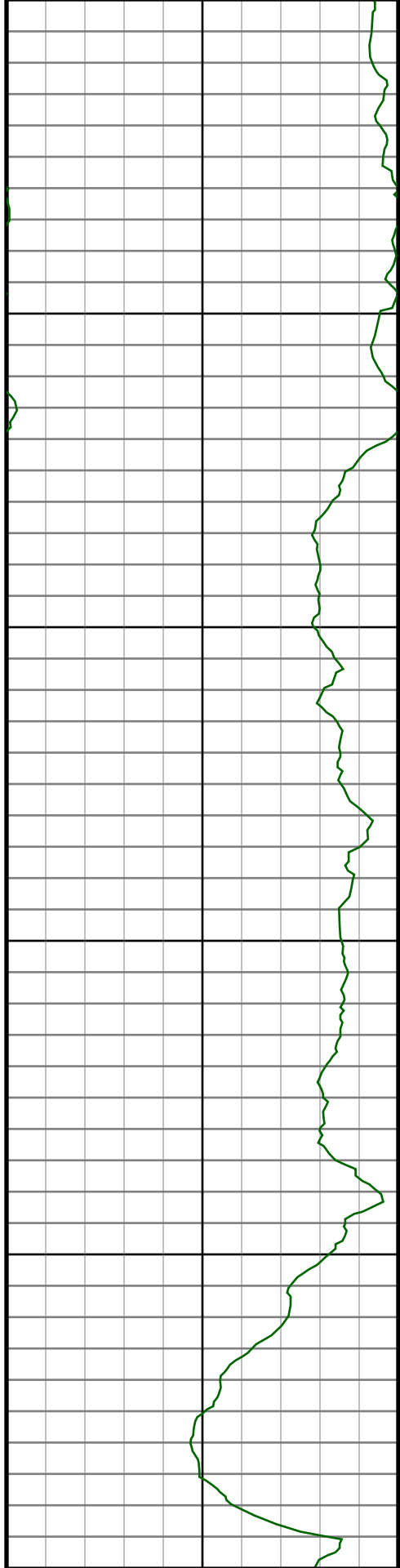
#59 MD(6532.00) Inc(90.9) Azm(180.3) TVD(5573.22)
VS(1071.12) NS(-1063.67) EW(-262.58)

#60 MD(6627.00) Inc(89.7) Azm(178.9) TVD(5572.72)
VS(1166.04) NS(-1158.67) EW(-261.91)

#61 MD(6722.00) Inc(89.7) Azm(179.1) TVD(5573.22)
VS(1260.93) NS(-1253.65) EW(-260.26)

#62 MD(6816.00) Inc(90.4) Azm(179.1) TVD(5573.14)
VS(1354.84) NS(-1347.64) EW(-258.78)

#63 MD(6911.00) Inc(90.0) Azm(178.7) TVD(5572.81)
VS(1449.72) NS(-1442.62) EW(-256.96)



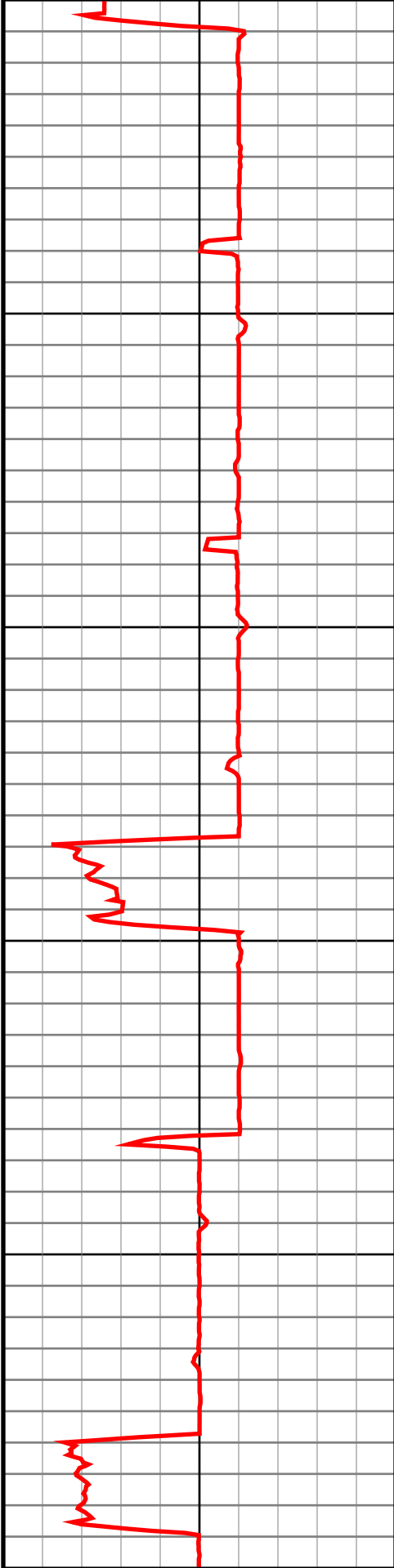
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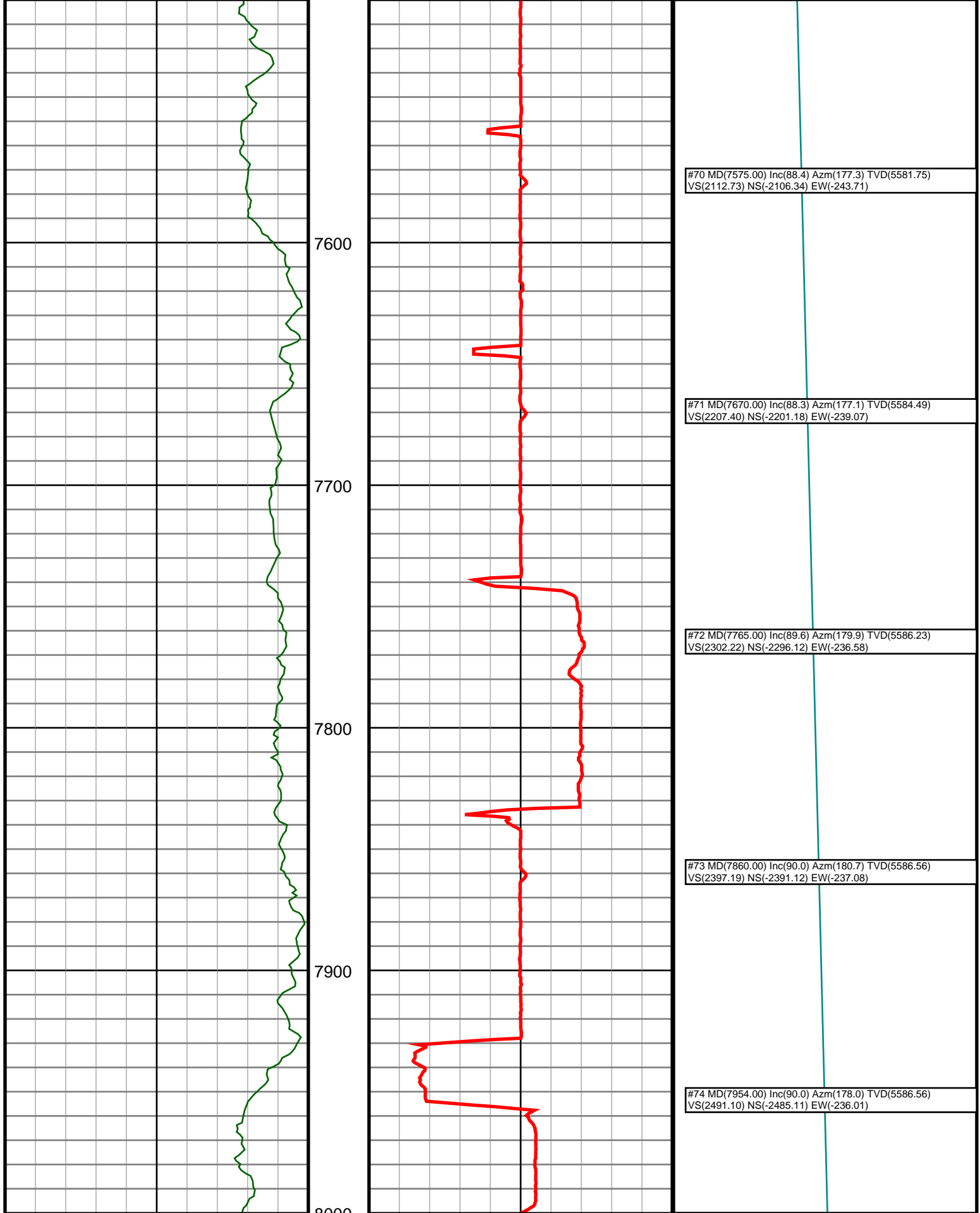
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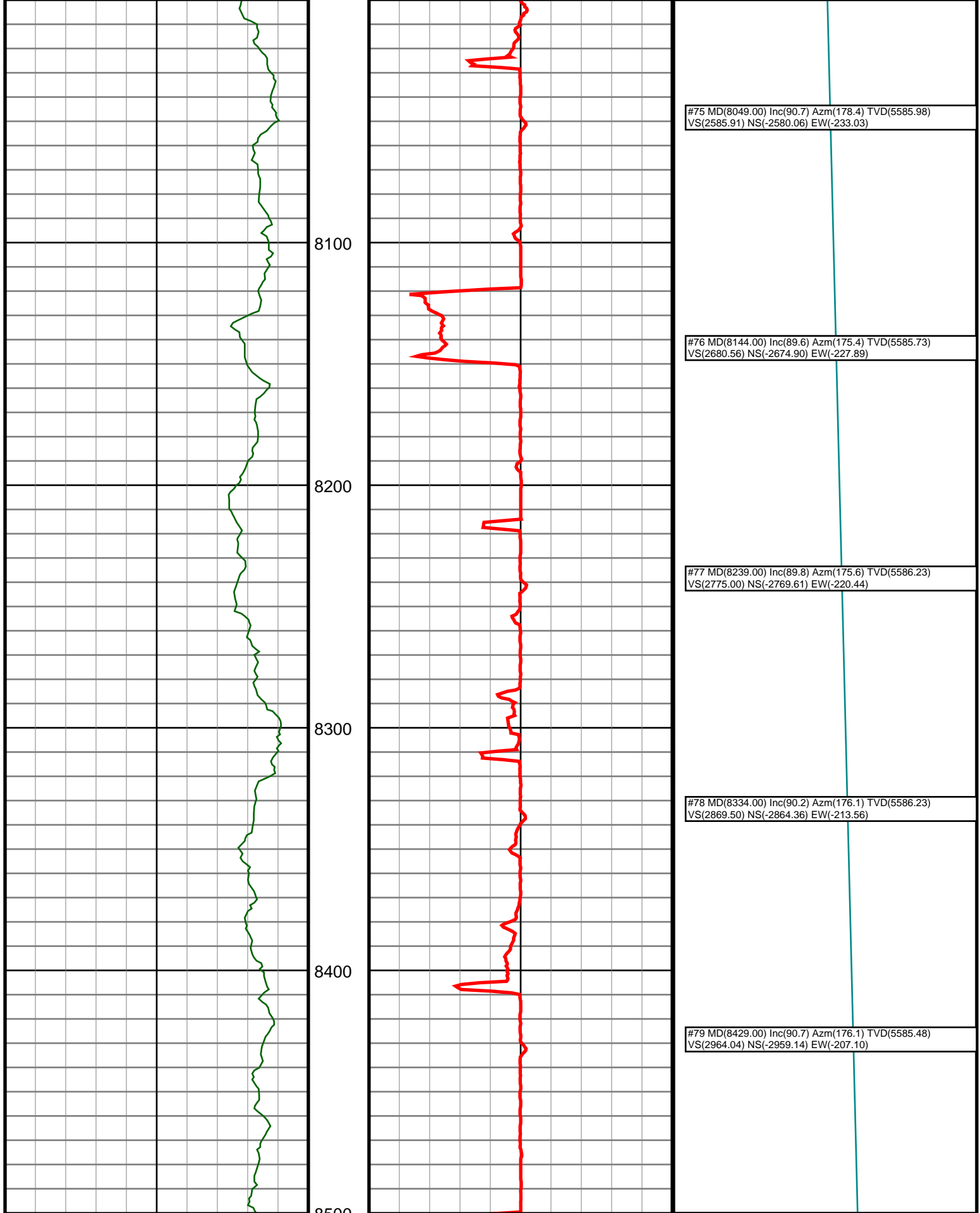
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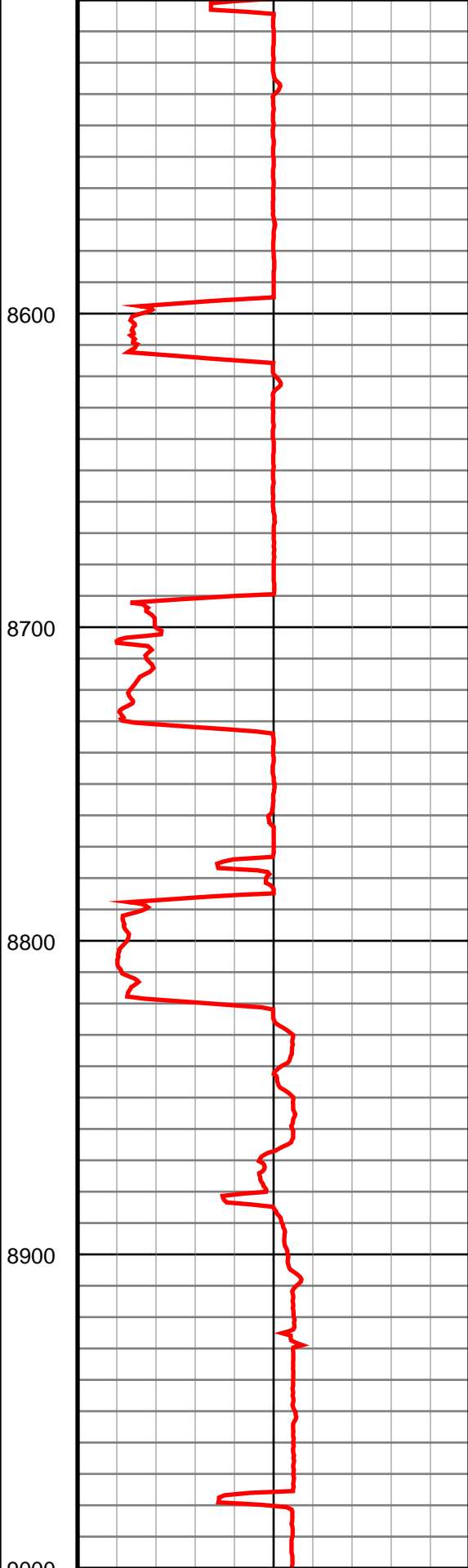
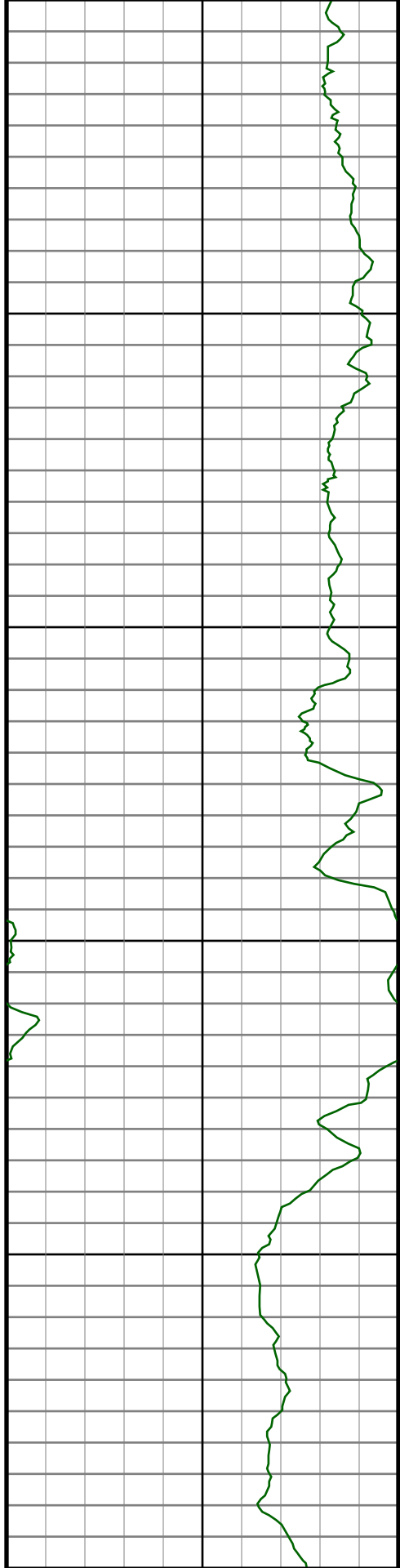
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#64 MD(7006.00) Inc(88.9) Azm(178.2) TVD(5573.72) VS(1544.56) NS(-1537.58) EW(-254.39)
#65 MD(7101.00) Inc(89.5) Azm(179.9) TVD(5575.04) VS(1639.44) NS(-1632.55) EW(-252.81)
#66 MD(7196.00) Inc(89.8) Azm(179.4) TVD(5575.62) VS(1734.37) NS(-1727.55) EW(-252.23)
#67 MD(7290.00) Inc(89.3) Azm(179.6) TVD(5576.36) VS(1828.30) NS(-1821.54) EW(-251.41)
#68 MD(7385.00) Inc(89.7) Azm(179.4) TVD(5577.19) VS(1923.22) NS(-1916.53) EW(-250.58)
#69 MD(7480.00) Inc(88.2) Azm(177.5) TVD(5578.93) VS(2018.05) NS(-2011.48) EW(-248.01)







#80 MD(8524.00) Inc(90.7) Azm(175.7) TVD(5584.32)
VS(3058.54) NS(-3053.89) EW(-200.31)

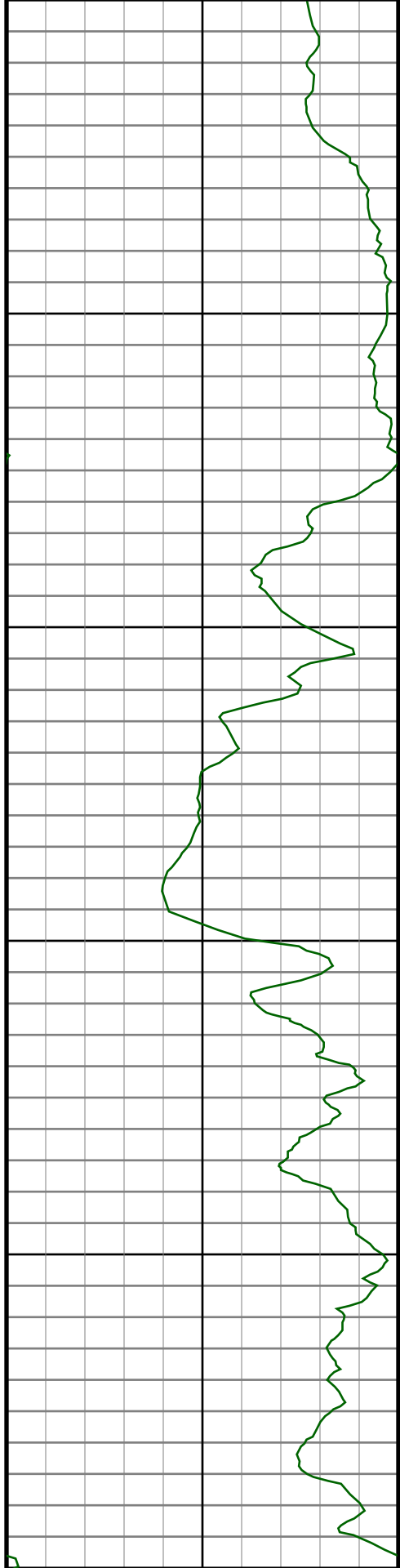
#81 MD(8618.00) Inc(88.0) Azm(171.2) TVD(5585.39)
VS(3151.52) NS(-3147.23) EW(-189.59)

#82 MD(8713.00) Inc(88.9) Azm(174.0) TVD(5587.96)
VS(3245.28) NS(-3241.40) EW(-177.36)

#83 MD(8809.00) Inc(88.2) Azm(178.0) TVD(5590.39)
VS(3340.75) NS(-3337.11) EW(-170.67)

#84 MD(8903.00) Inc(89.1) Azm(178.2) TVD(5592.60)
VS(3434.53) NS(-3431.04) EW(-167.55)

#85 MD(8998.00) Inc(89.0) Azm(177.8) TVD(5594.18)
VS(3529.32) NS(-3525.96) EW(-164.24)



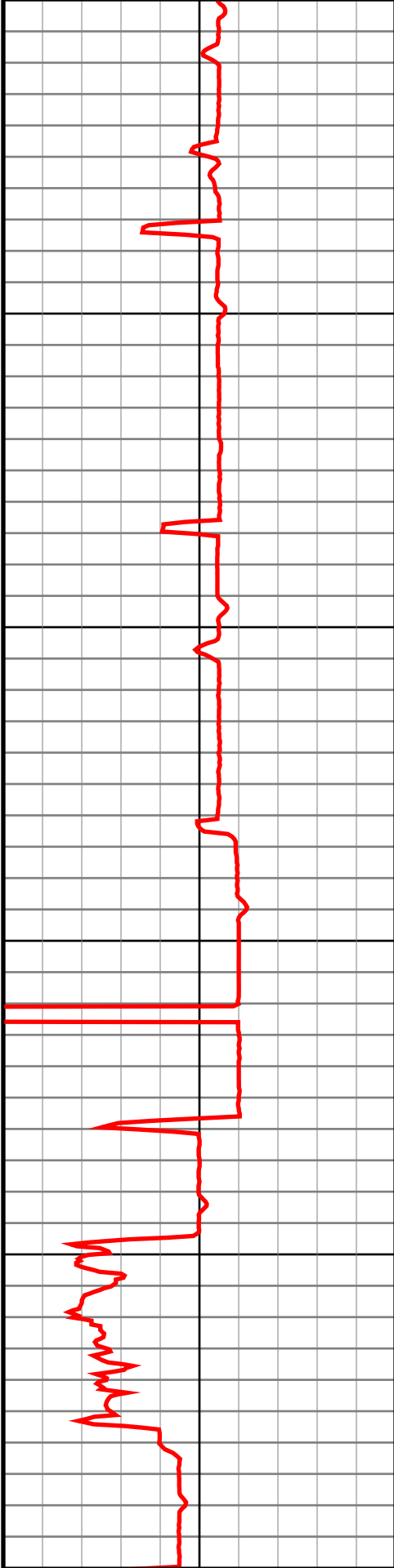
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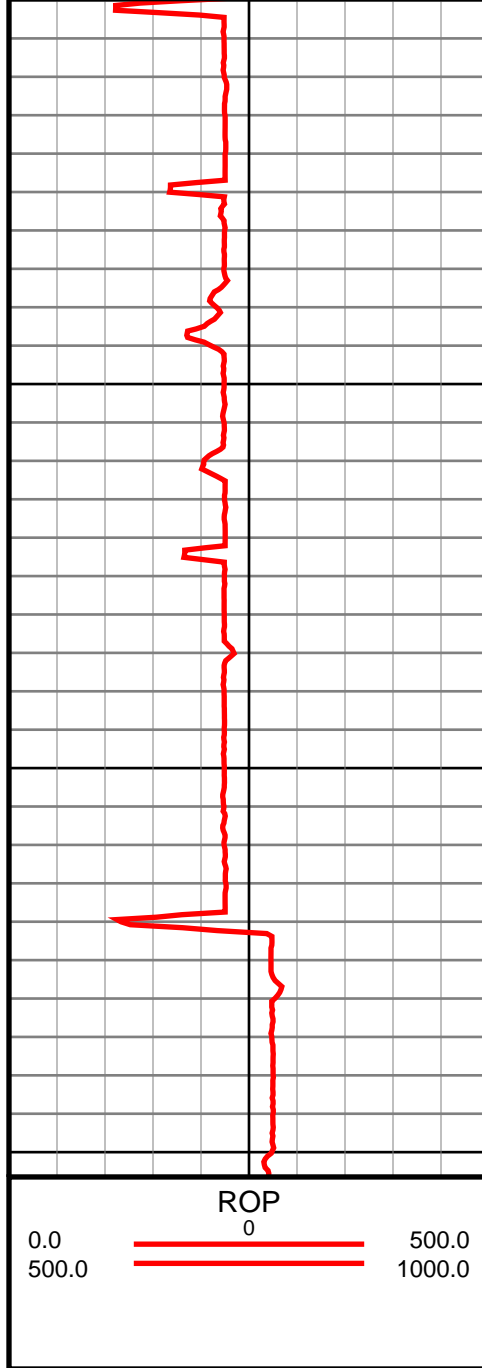
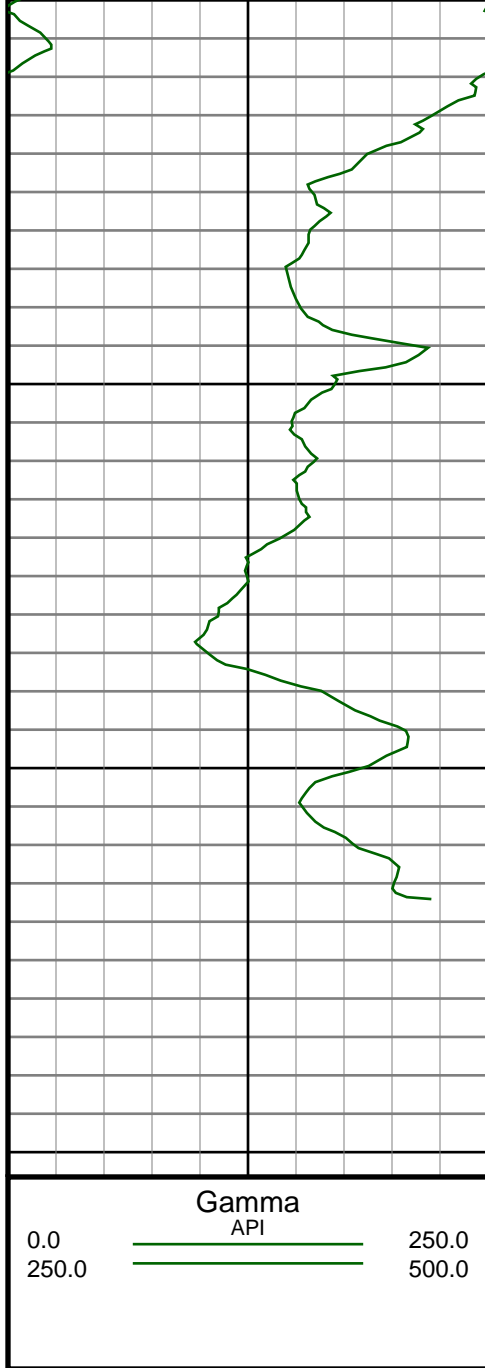
#86 MD(9093.00) Inc(89.3) Azm(178.0) TVD(5595.59)
VS(3624.09) NS(-3620.89) EW(-160.76)

#87 MD(9188.00) Inc(89.3) Azm(177.7) TVD(5596.75)
VS(3718.87) NS(-3715.82) EW(-157.19)

#88 MD(9282.00) Inc(89.9) Azm(177.7) TVD(5597.40)
VS(3812.63) NS(-3809.74) EW(-153.42)

#89 MD(9377.00) Inc(90.5) Azm(177.3) TVD(5597.07)
VS(3907.37) NS(-3904.65) EW(-149.28)

#90 MD(9472.00) Inc(91.0) Azm(176.8) TVD(5595.83)
VS(4002.05) NS(-3999.51) EW(-144.39)



#91 MD(9567.00) Inc(91.1) Azm(176.3) TVD(5594.09)
VS(4096.64) NS(-4094.32) EW(-138.67)

#92 MD(9662.00) Inc(91.5) Azm(176.1) TVD(5591.93)
VS(4191.18) NS(-4189.09) EW(-132.38)

#93 MD(9737.00) Inc(91.7) Azm(176.3) TVD(5589.84)
VS(4265.80) NS(-4263.90) EW(-127.41)