ENSIGN ENERGY SERVICES INC.

Rohn State LD09-67HN

MD
2":100'

Company:	Noble Energy Inc
Well Name:	Rohn State LD09-67HN
UWI or LSD:	05-123-37542
Rig Id:	H&P 273
State:	Colorado
County/Parish:	Weld
Country:	USA
Survey Company:	Ensign Directional
Job number:	139452
Dir. Driller Days	Kody Wood
Dir. Driller Nights	Mike David
MWD/LWD Days	Brennen Knerr
MWD/LWD Nights	Jamey House

Log measurements:
Depth measured from:
Maximum temperature:

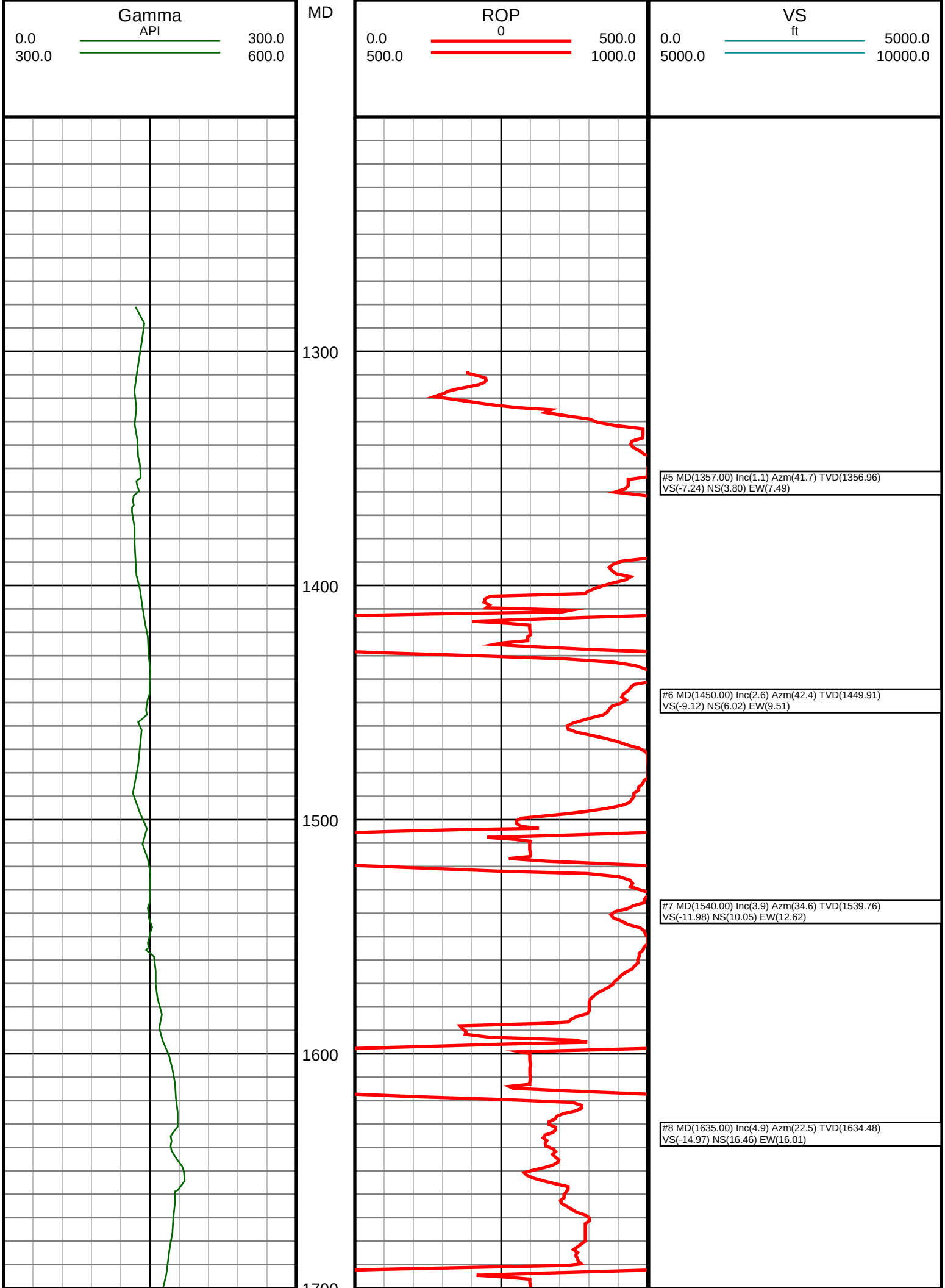
	Depth	Date
Start:	1275 ft	10/4/2013
End:	9687 ft	10/10/2013

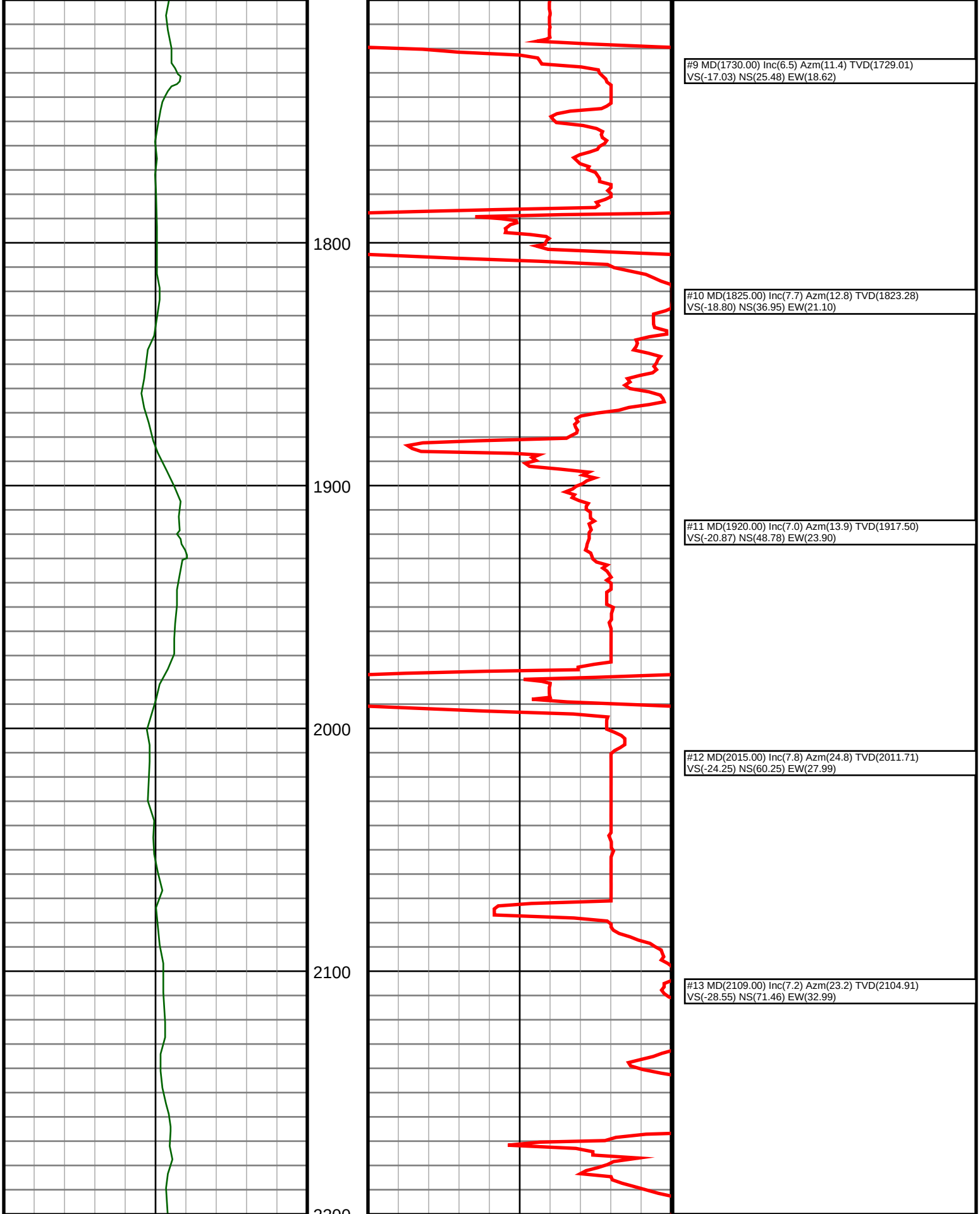
Casing	Depth	Size
Surface:	1249	9.625
Intermediate:		

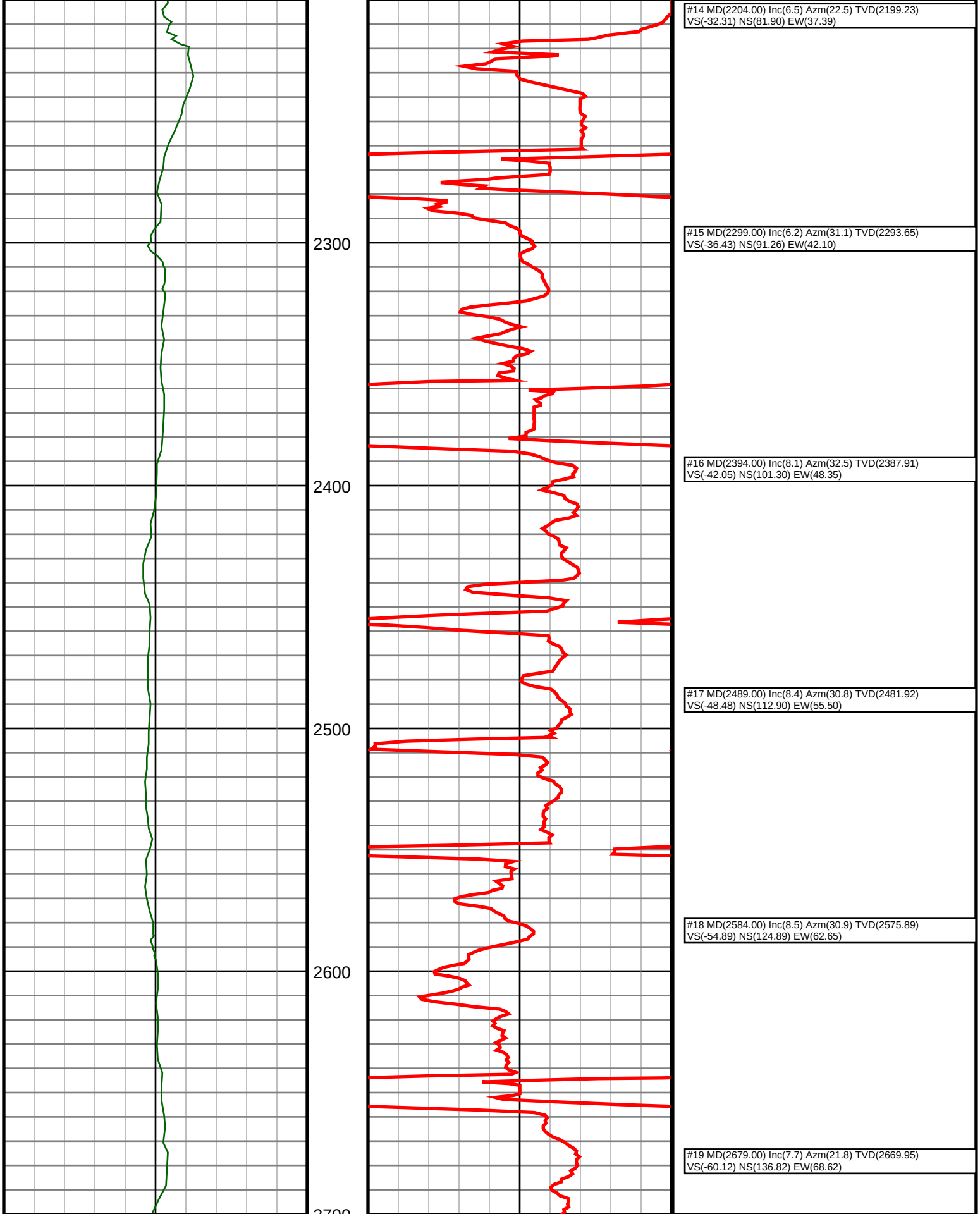
Mud Type:
Density:
Viscosity:
Rm: **Rmf:** **Rmc:**

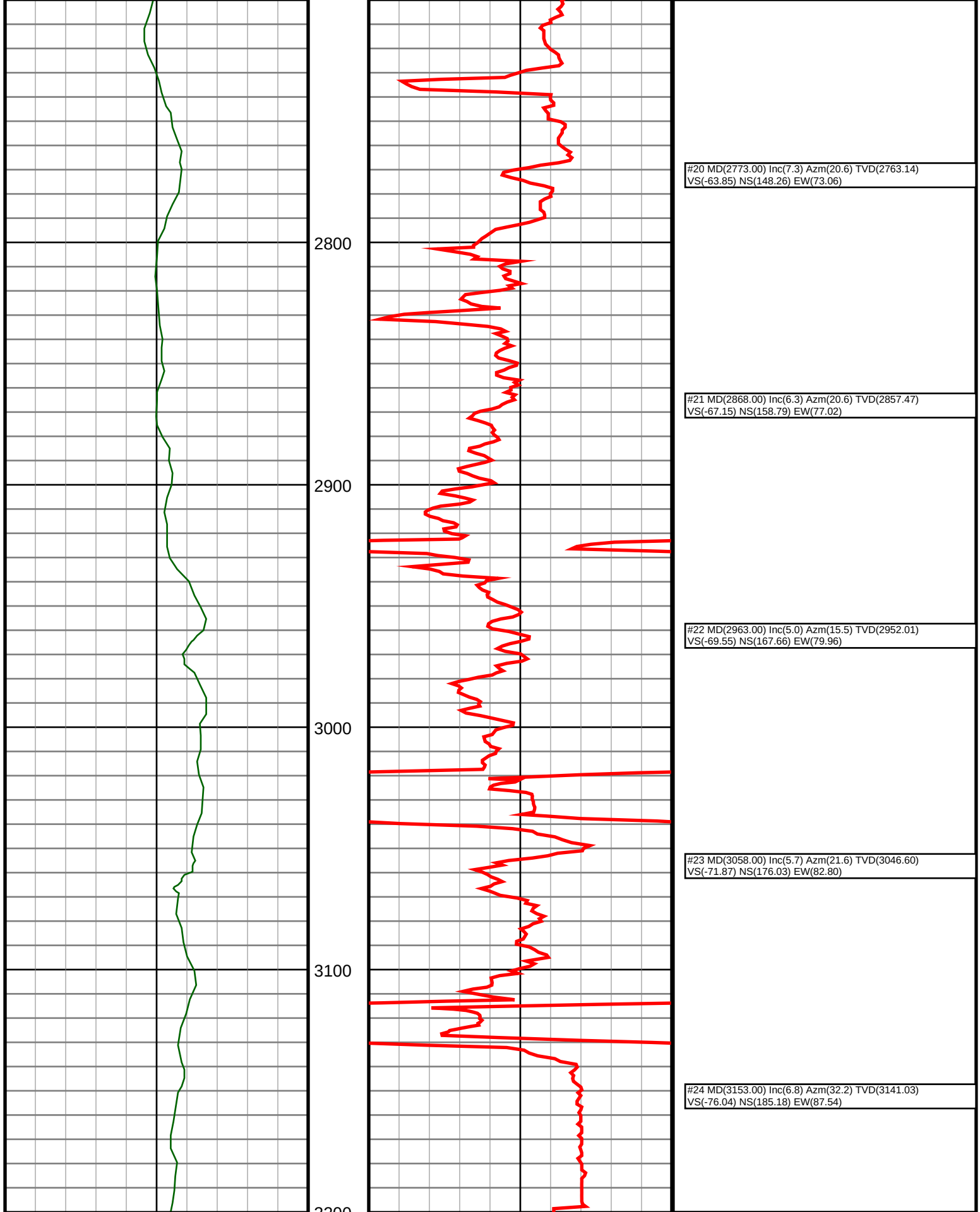
Elevations
KB: 4736
GL: 4712
DF: 4736

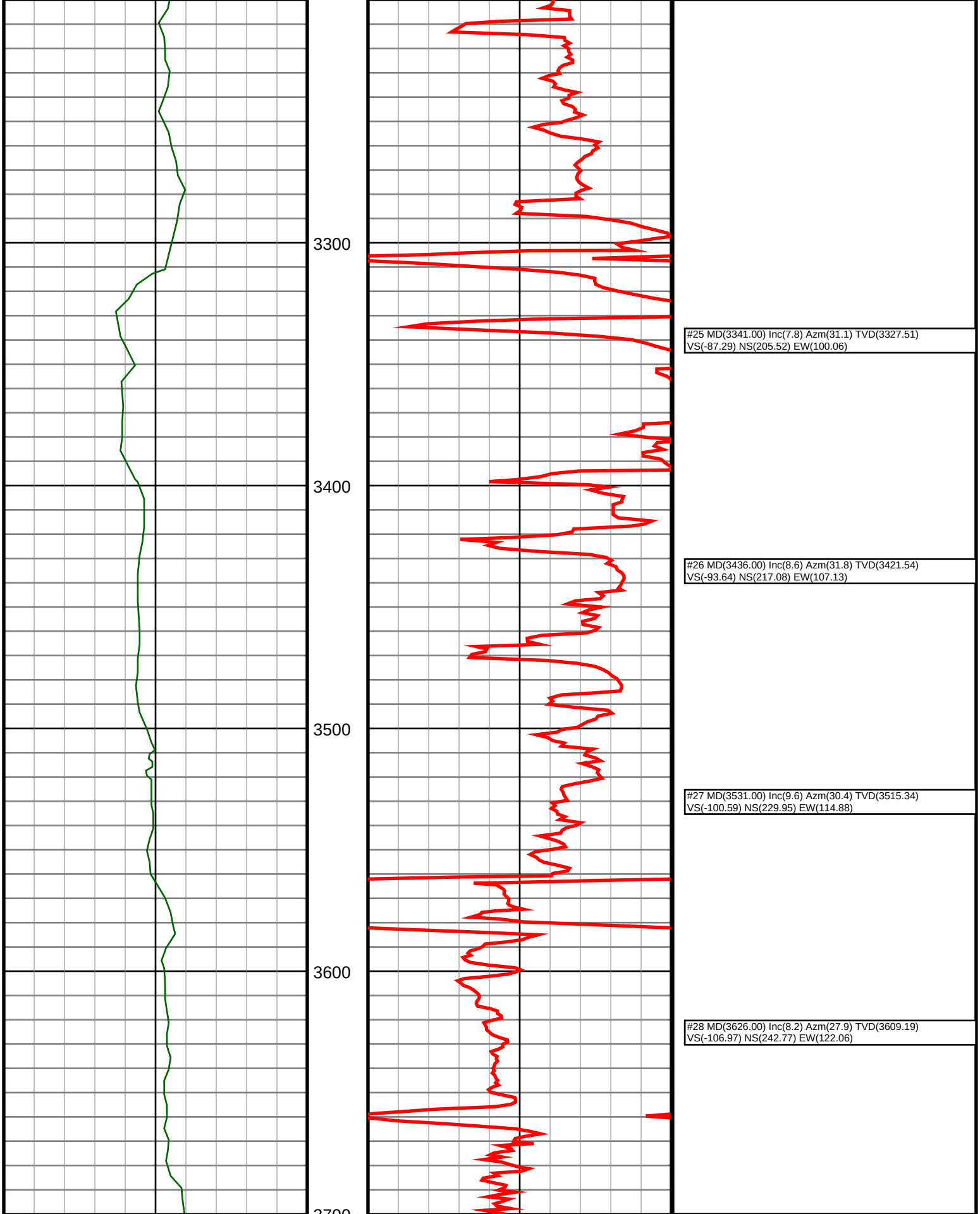
Run	Bit Size	Offsets Gamma	Offsets Survey	Depths Start	Depths End	Dates Start	Dates End
1	8.75	-1.00	50.00	0	1300	10/4/2013	10/4/2013
2	8.75	57.38	52.38	1300	4981	10/5/2013	10/5/2013
3	8.75	61.83	56.83	4981	6154	10/6/2013	10/6/2013
4	6.125	71.44	66.44	6154	7456	10/7/2013	10/7/2013
5	6.125	71.51	66.51	7456	9687	10/8/2013	10/10/2013
6							
7							
8							
9							
10							

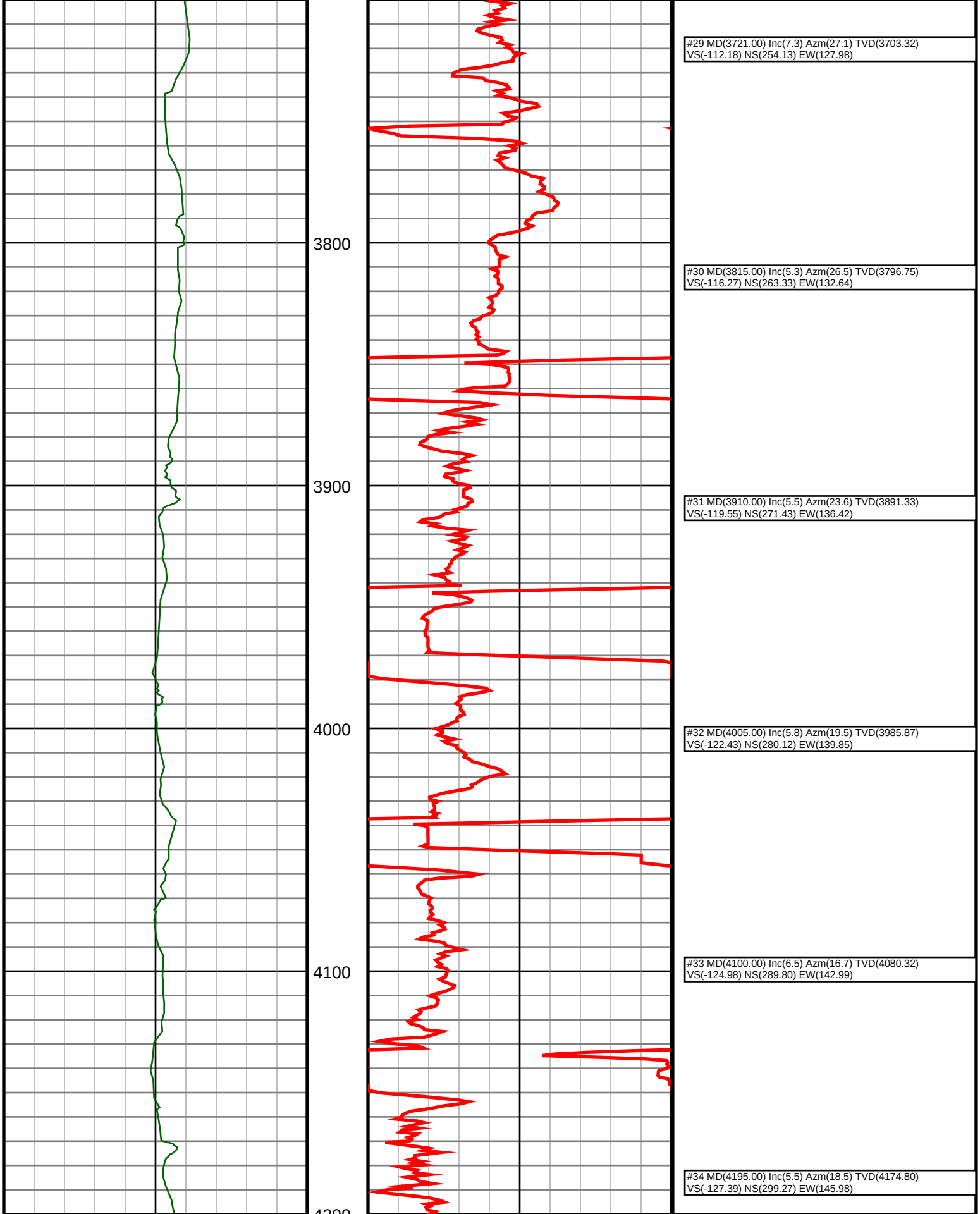

Gamma
API
0.0
300.0
300.0
600.0
MD
ROP
0
0.0
500.0
500.0
1000.0
VS
ft
0.0
5000.0
5000.0
10000.0
1300
1400
1500
1600
#5 MD(1357.00) Inc(1.1) Azm(41.7) TVD(1356.96)
VS(-7.24) NS(3.80) EW(7.49)
#6 MD(1450.00) Inc(2.6) Azm(42.4) TVD(1449.91)
VS(-9.12) NS(6.02) EW(9.51)
#7 MD(1540.00) Inc(3.9) Azm(34.6) TVD(1539.76)
VS(-11.98) NS(10.05) EW(12.62)
#8 MD(1635.00) Inc(4.9) Azm(22.5) TVD(1634.48)
VS(-14.97) NS(16.46) EW(16.01)

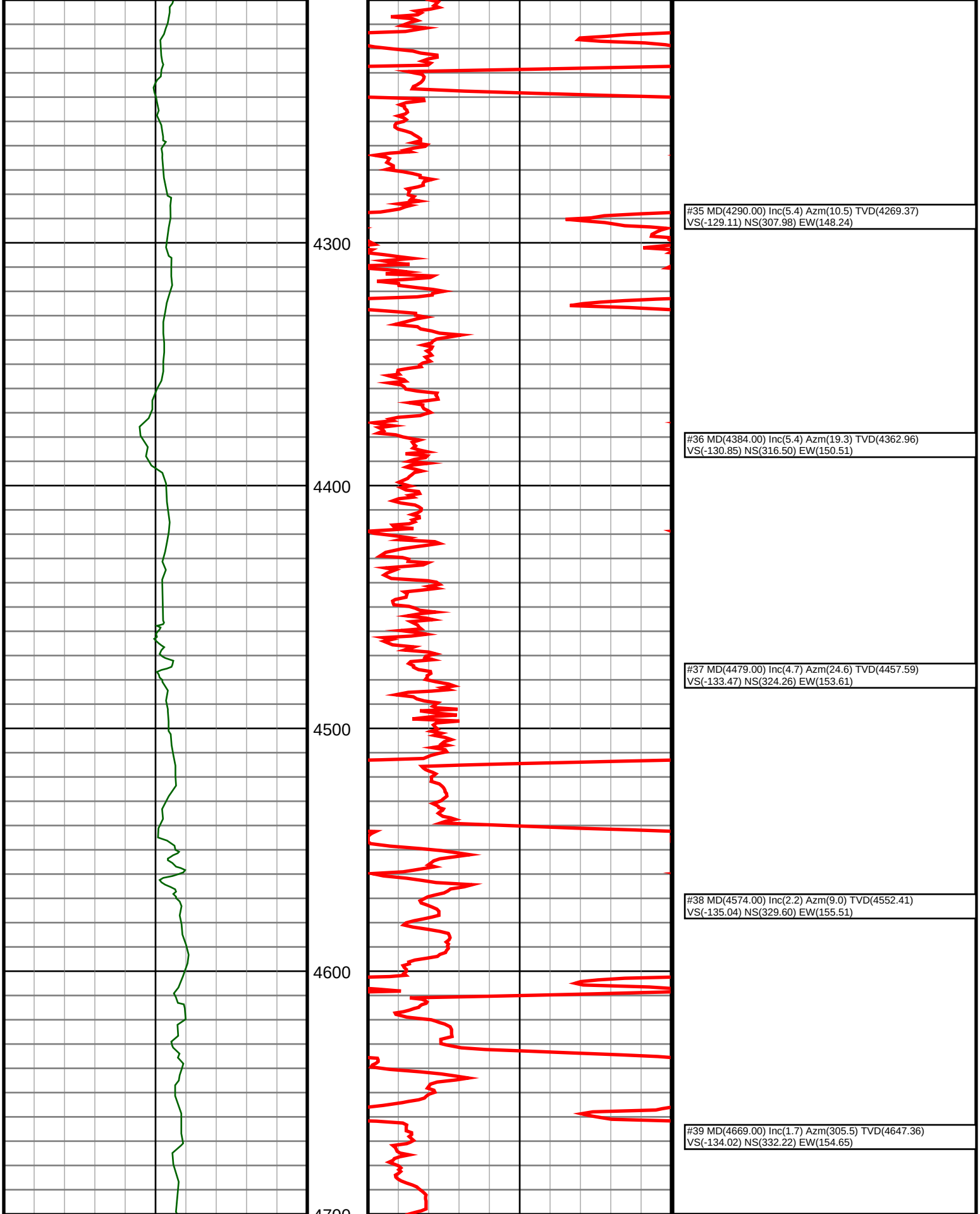

1800
1900
2000
2100
2200
#9 MD(1730.00) Inc(6.5) Azm(11.4) TVD(1729.01)
VS(-17.03) NS(25.48) EW(18.62)
#10 MD(1825.00) Inc(7.7) Azm(12.8) TVD(1823.28)
VS(-18.80) NS(36.95) EW(21.10)
#11 MD(1920.00) Inc(7.0) Azm(13.9) TVD(1917.50)
VS(-20.87) NS(48.78) EW(23.90)
#12 MD(2015.00) Inc(7.8) Azm(24.8) TVD(2011.71)
VS(-24.25) NS(60.25) EW(27.99)
#13 MD(2109.00) Inc(7.2) Azm(23.2) TVD(2104.91)
VS(-28.55) NS(71.46) EW(32.99)

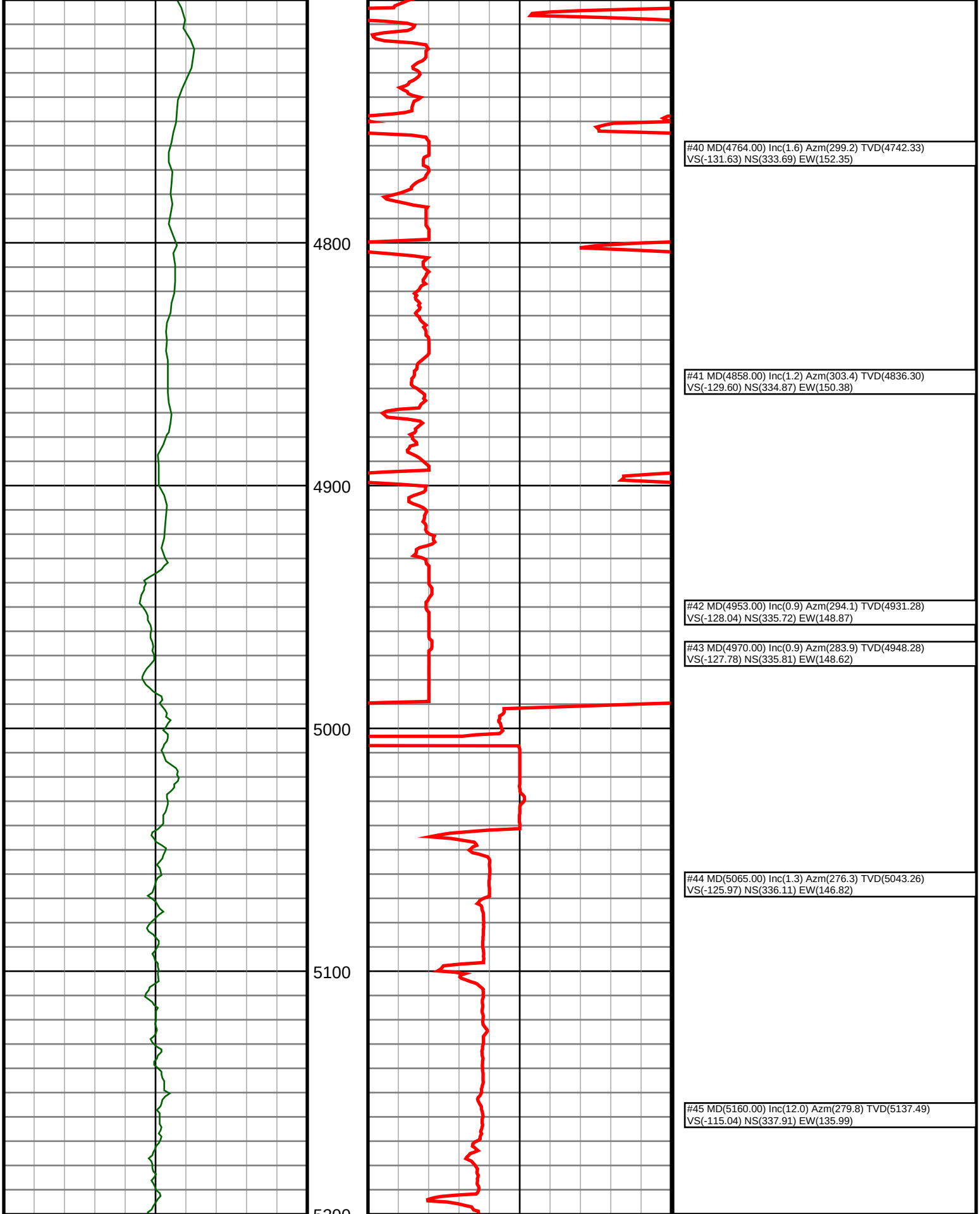

2300
2400
2500
2600
2700
#14 MD(2204.00) Inc(6.5) Azm(22.5) TVD(2199.23)
VS(-32.31) NS(81.90) EW(37.39)
#15 MD(2299.00) Inc(6.2) Azm(31.1) TVD(2293.65)
VS(-36.43) NS(91.26) EW(42.10)
#16 MD(2394.00) Inc(8.1) Azm(32.5) TVD(2387.91)
VS(-42.05) NS(101.30) EW(48.35)
#17 MD(2489.00) Inc(8.4) Azm(30.8) TVD(2481.92)
VS(-48.48) NS(112.90) EW(55.50)
#18 MD(2584.00) Inc(8.5) Azm(30.9) TVD(2575.89)
VS(-54.89) NS(124.89) EW(62.65)
#19 MD(2679.00) Inc(7.7) Azm(21.8) TVD(2669.95)
VS(-60.12) NS(136.82) EW(68.62)

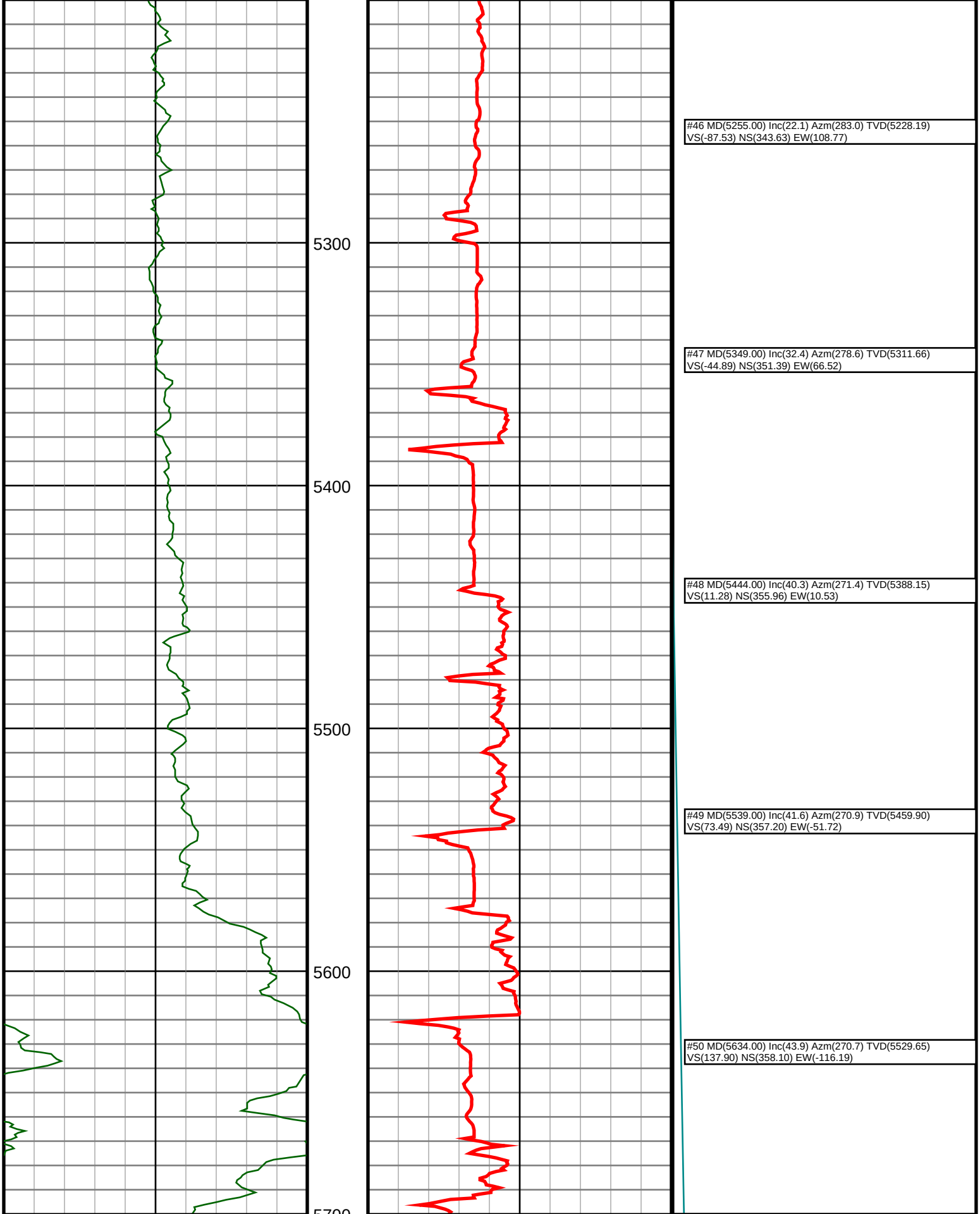

2800
2900
3000
3100
3200
#20 MD(2773.00) Inc(7.3) Azm(20.6) TVD(2763.14)
VS(-63.85) NS(148.26) EW(73.06)
#21 MD(2868.00) Inc(6.3) Azm(20.6) TVD(2857.47)
VS(-67.15) NS(158.79) EW(77.02)
#22 MD(2963.00) Inc(5.0) Azm(15.5) TVD(2952.01)
VS(-69.55) NS(167.66) EW(79.96)
#23 MD(3058.00) Inc(5.7) Azm(21.6) TVD(3046.60)
VS(-71.87) NS(176.03) EW(82.80)
#24 MD(3153.00) Inc(6.8) Azm(32.2) TVD(3141.03)
VS(-76.04) NS(185.18) EW(87.54)

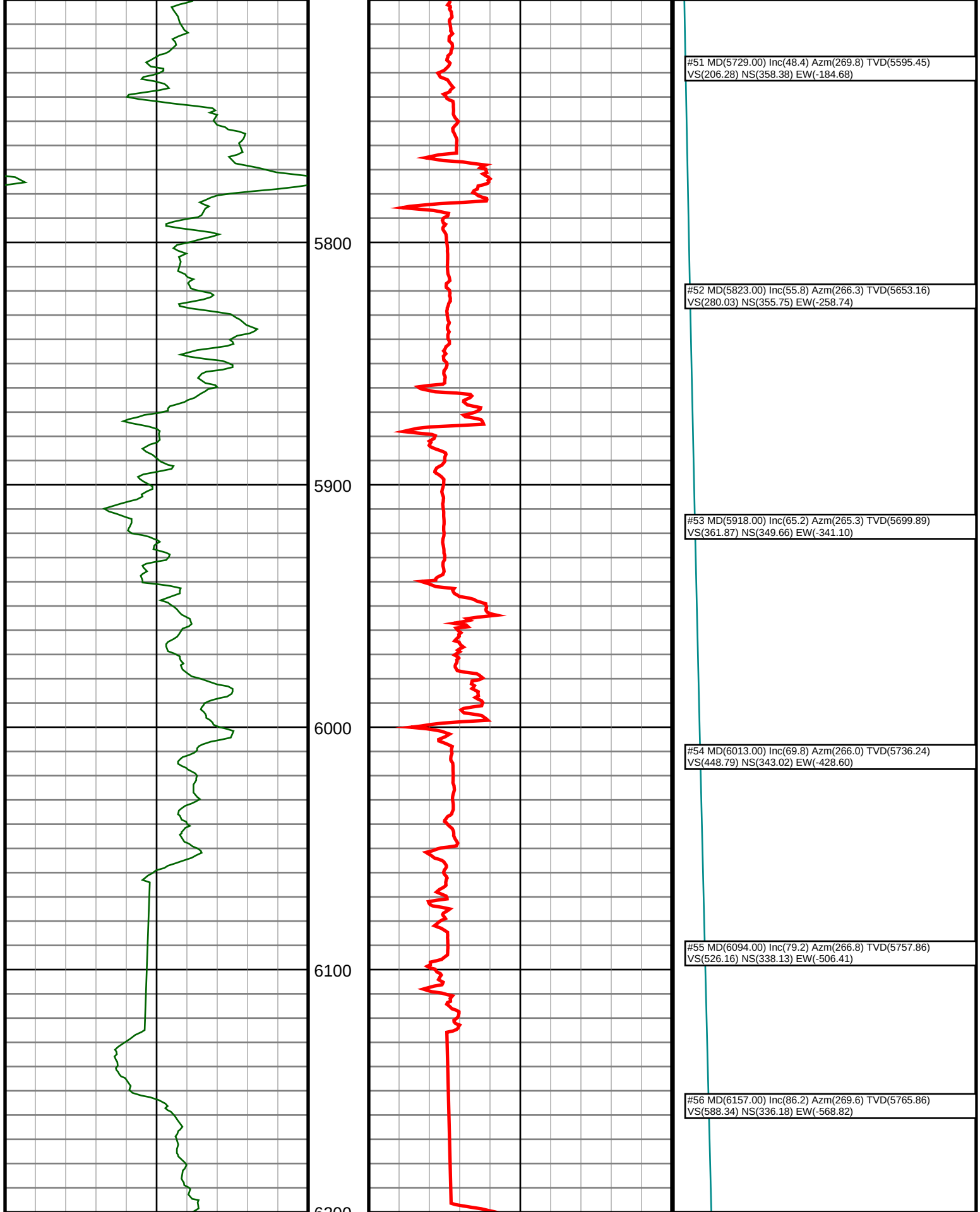

3300
3400
3500
3600
#25 MD(3341.00) Inc(7.8) Azm(31.1) TVD(3327.51)
VS(-87.29) NS(205.52) EW(100.06)
#26 MD(3436.00) Inc(8.6) Azm(31.8) TVD(3421.54)
VS(-93.64) NS(217.08) EW(107.13)
#27 MD(3531.00) Inc(9.6) Azm(30.4) TVD(3515.34)
VS(-100.59) NS(229.95) EW(114.88)
#28 MD(3626.00) Inc(8.2) Azm(27.9) TVD(3609.19)
VS(-106.97) NS(242.77) EW(122.06)

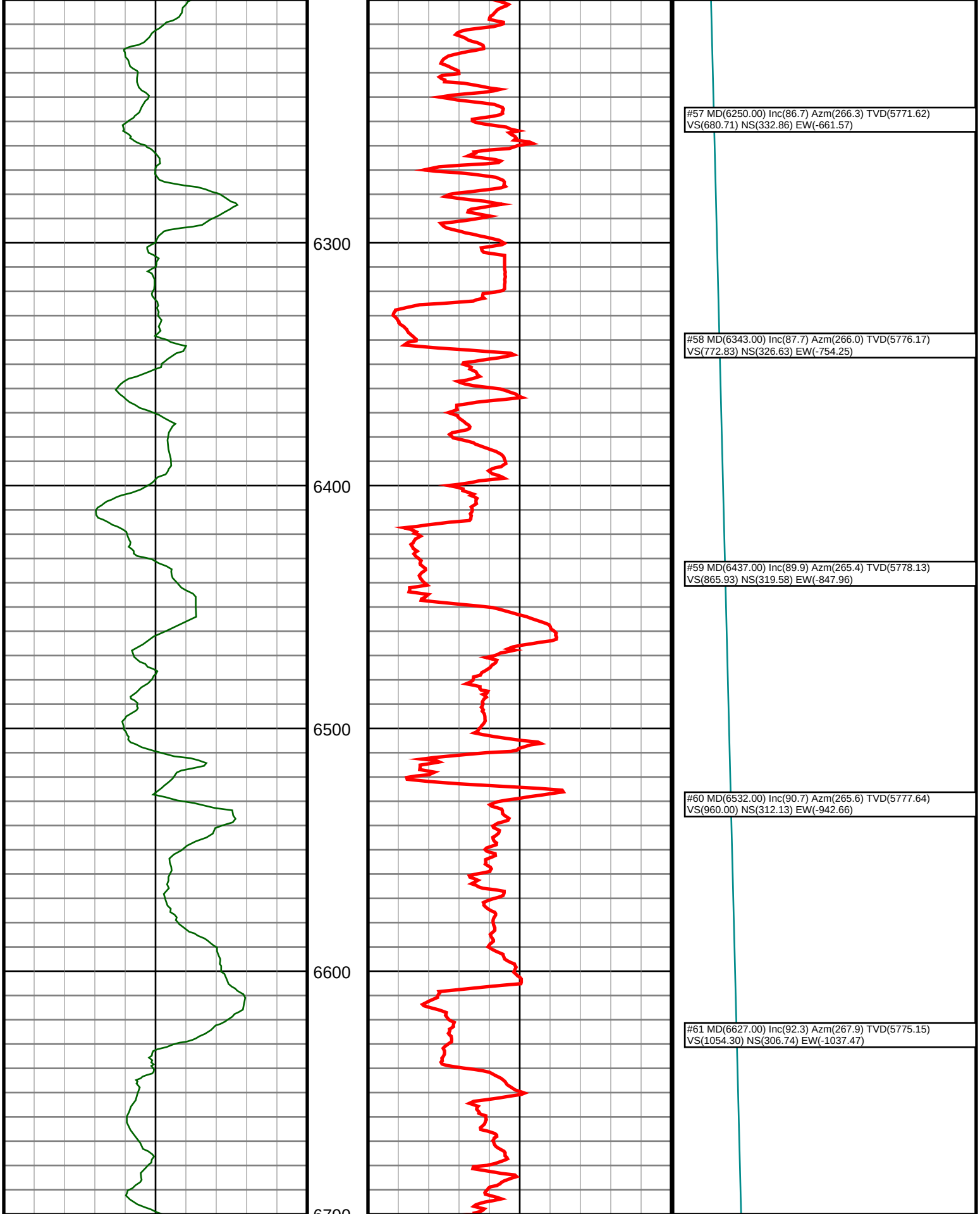

3800
3900
4000
4100
4200
#29 MD(3721.00) Inc(7.3) Azm(27.1) TVD(3703.32)
VS(-112.18) NS(254.13) EW(127.98)
#30 MD(3815.00) Inc(5.3) Azm(26.5) TVD(3796.75)
VS(-116.27) NS(263.33) EW(132.64)
#31 MD(3910.00) Inc(5.5) Azm(23.6) TVD(3891.33)
VS(-119.55) NS(271.43) EW(136.42)
#32 MD(4005.00) Inc(5.8) Azm(19.5) TVD(3985.87)
VS(-122.43) NS(280.12) EW(139.85)
#33 MD(4100.00) Inc(6.5) Azm(16.7) TVD(4080.32)
VS(-124.98) NS(289.80) EW(142.99)
#34 MD(4195.00) Inc(5.5) Azm(18.5) TVD(4174.80)
VS(-127.39) NS(299.27) EW(145.98)

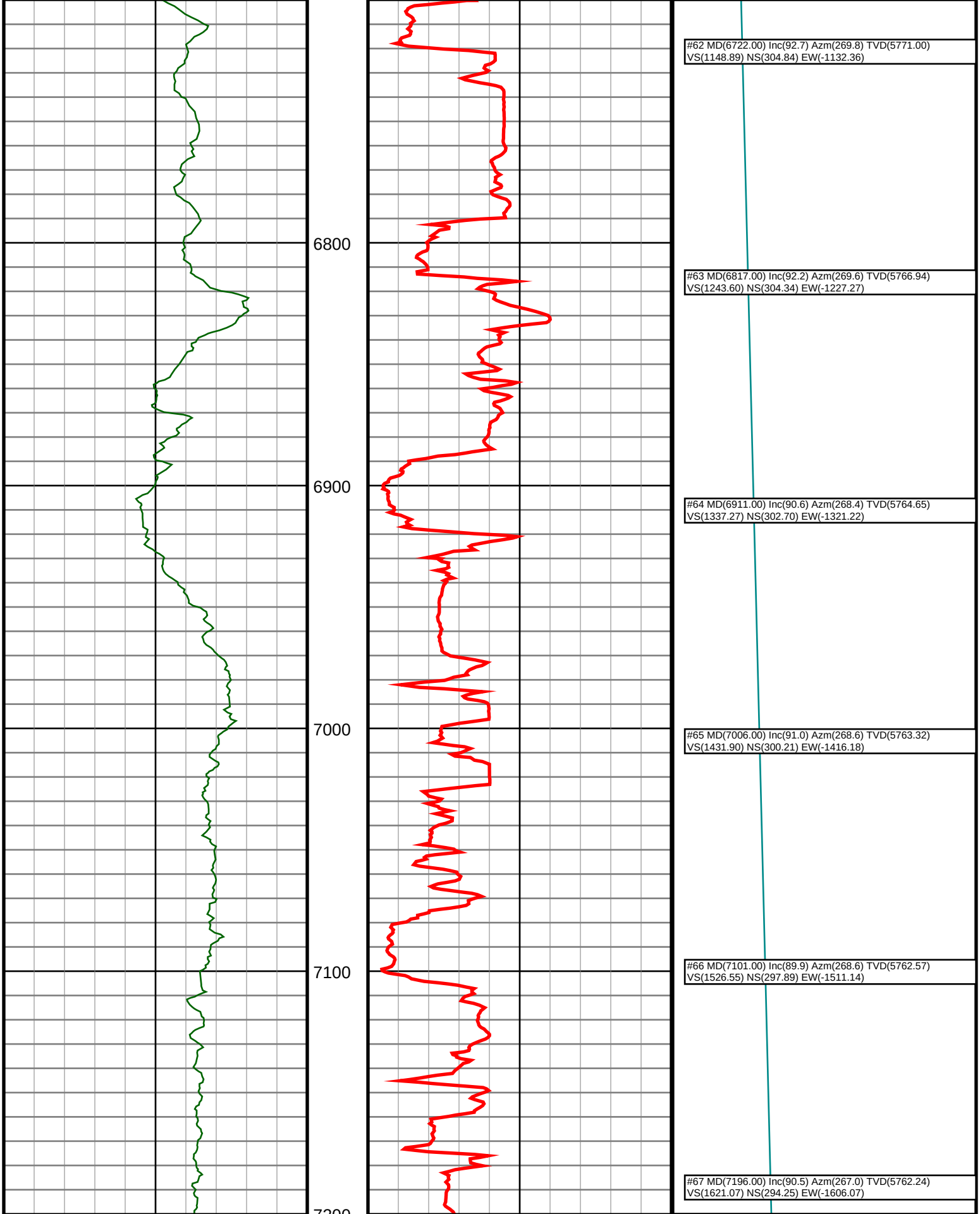

4300
4400
4500
4600
#35 MD(4290.00) Inc(5.4) Azm(10.5) TVD(4269.37)
VS(-129.11) NS(307.98) EW(148.24)
#36 MD(4384.00) Inc(5.4) Azm(19.3) TVD(4362.96)
VS(-130.85) NS(316.50) EW(150.51)
#37 MD(4479.00) Inc(4.7) Azm(24.6) TVD(4457.59)
VS(-133.47) NS(324.26) EW(153.61)
#38 MD(4574.00) Inc(2.2) Azm(9.0) TVD(4552.41)
VS(-135.04) NS(329.60) EW(155.51)
#39 MD(4669.00) Inc(1.7) Azm(305.5) TVD(4647.36)
VS(-134.02) NS(332.22) EW(154.65)

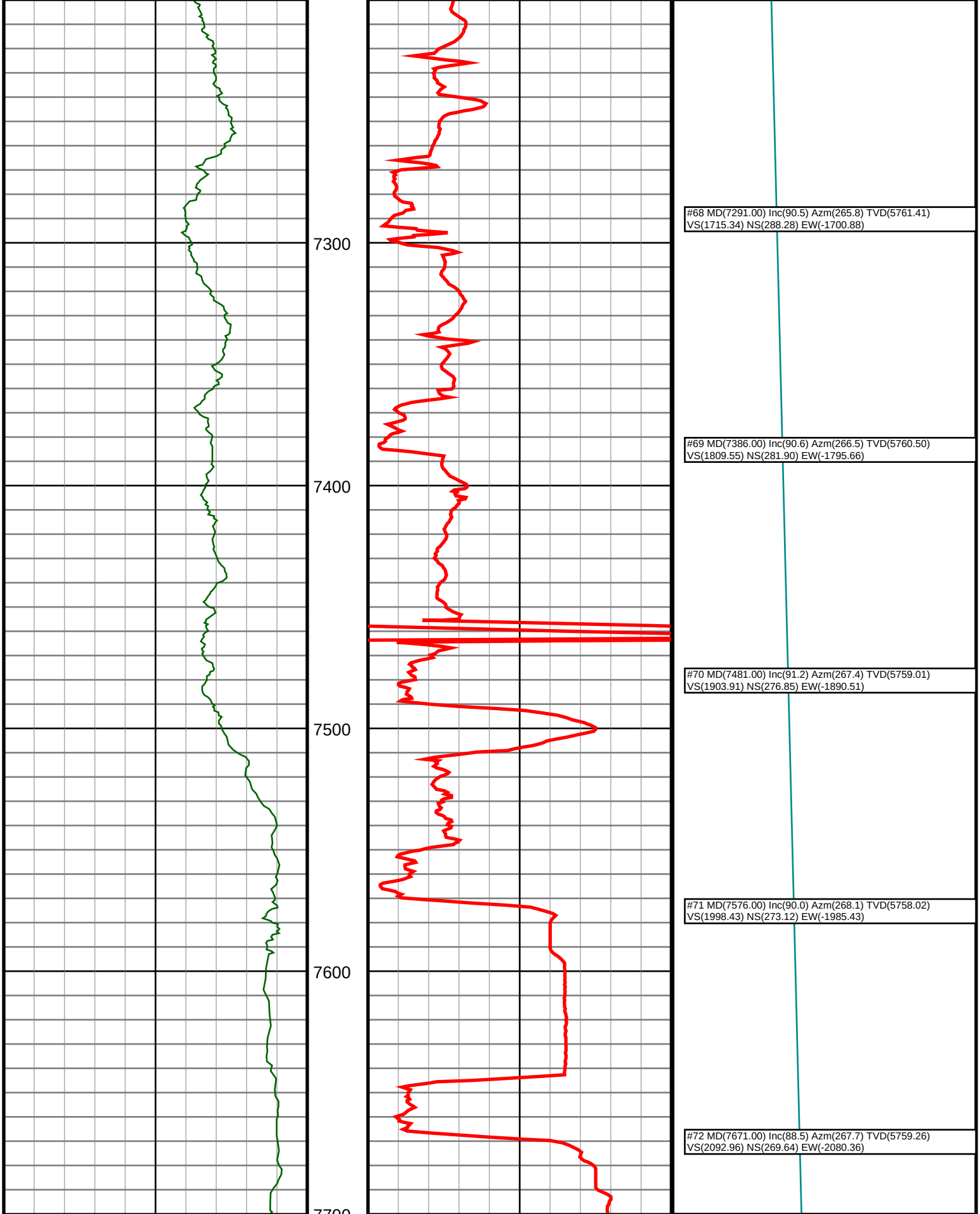

4800
4900
5000
5100
5200
#40 MD(4764.00) Inc(1.6) Azm(299.2) TVD(4742.33)
VS(-131.63) NS(333.69) EW(152.35)
#41 MD(4858.00) Inc(1.2) Azm(303.4) TVD(4836.30)
VS(-129.60) NS(334.87) EW(150.38)
#42 MD(4953.00) Inc(0.9) Azm(294.1) TVD(4931.28)
VS(-128.04) NS(335.72) EW(148.87)
#43 MD(4970.00) Inc(0.9) Azm(283.9) TVD(4948.28)
VS(-127.78) NS(335.81) EW(148.62)
#44 MD(5065.00) Inc(1.3) Azm(276.3) TVD(5043.26)
VS(-125.97) NS(336.11) EW(146.82)
#45 MD(5160.00) Inc(12.0) Azm(279.8) TVD(5137.49)
VS(-115.04) NS(337.91) EW(135.99)

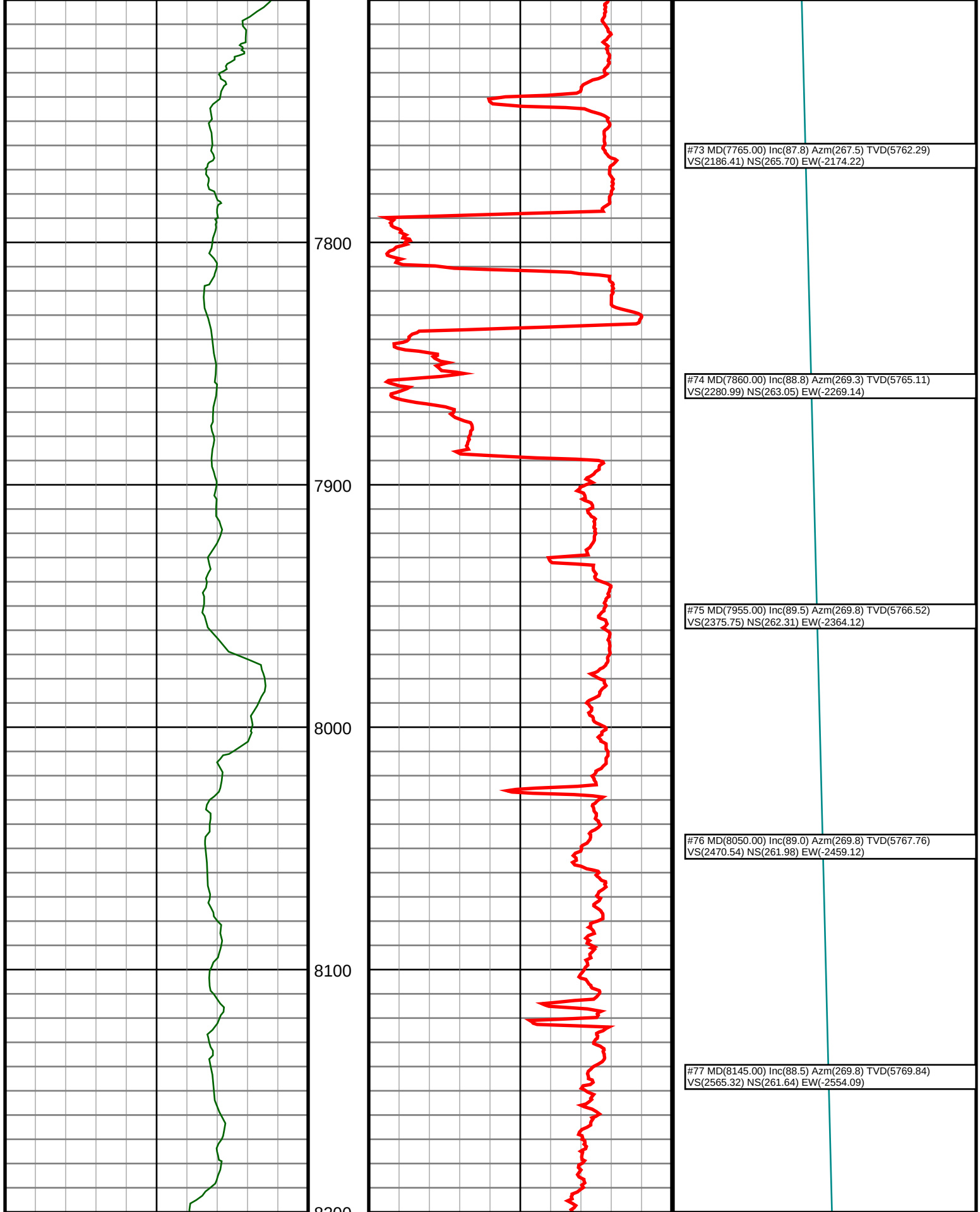

5300
5400
5500
5600
5700
#46 MD(5255.00) Inc(22.1) Azm(283.0) TVD(5228.19)
VS(-87.53) NS(343.63) EW(108.77)
#47 MD(5349.00) Inc(32.4) Azm(278.6) TVD(5311.66)
VS(-44.89) NS(351.39) EW(66.52)
#48 MD(5444.00) Inc(40.3) Azm(271.4) TVD(5388.15)
VS(11.28) NS(355.96) EW(10.53)
#49 MD(5539.00) Inc(41.6) Azm(270.9) TVD(5459.90)
VS(73.49) NS(357.20) EW(-51.72)
#50 MD(5634.00) Inc(43.9) Azm(270.7) TVD(5529.65)
VS(137.90) NS(358.10) EW(-116.19)

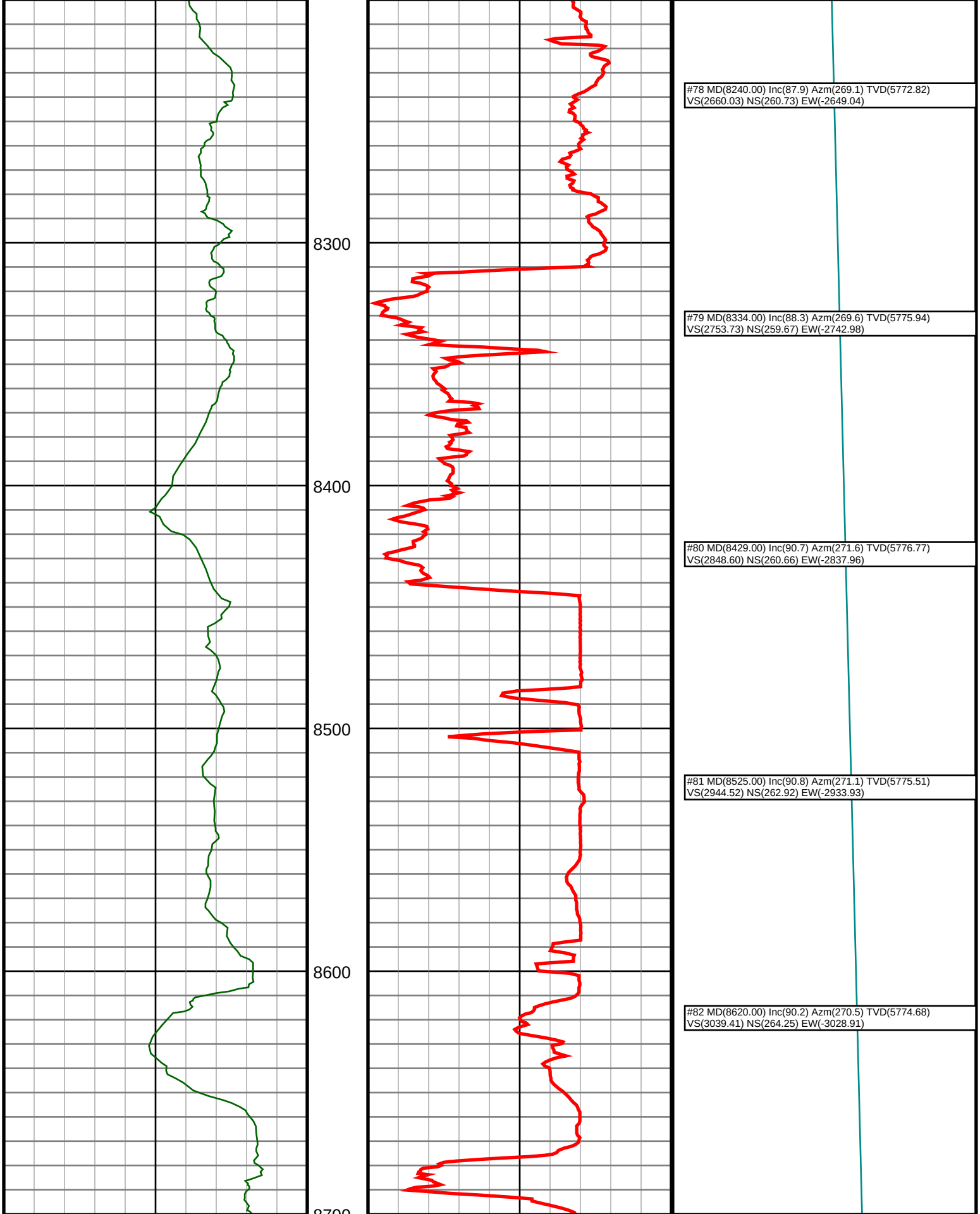

5800
5900
6000
6100
6200
#51 MD(5729.00) Inc(48.4) Azm(269.8) TVD(5595.45)
VS(206.28) NS(358.38) EW(-184.68)
#52 MD(5823.00) Inc(55.8) Azm(266.3) TVD(5653.16)
VS(280.03) NS(355.75) EW(-258.74)
#53 MD(5918.00) Inc(65.2) Azm(265.3) TVD(5699.89)
VS(361.87) NS(349.66) EW(-341.10)
#54 MD(6013.00) Inc(69.8) Azm(266.0) TVD(5736.24)
VS(448.79) NS(343.02) EW(-428.60)
#55 MD(6094.00) Inc(79.2) Azm(266.8) TVD(5757.86)
VS(526.16) NS(338.13) EW(-506.41)
#56 MD(6157.00) Inc(86.2) Azm(269.6) TVD(5765.86)
VS(588.34) NS(336.18) EW(-568.82)

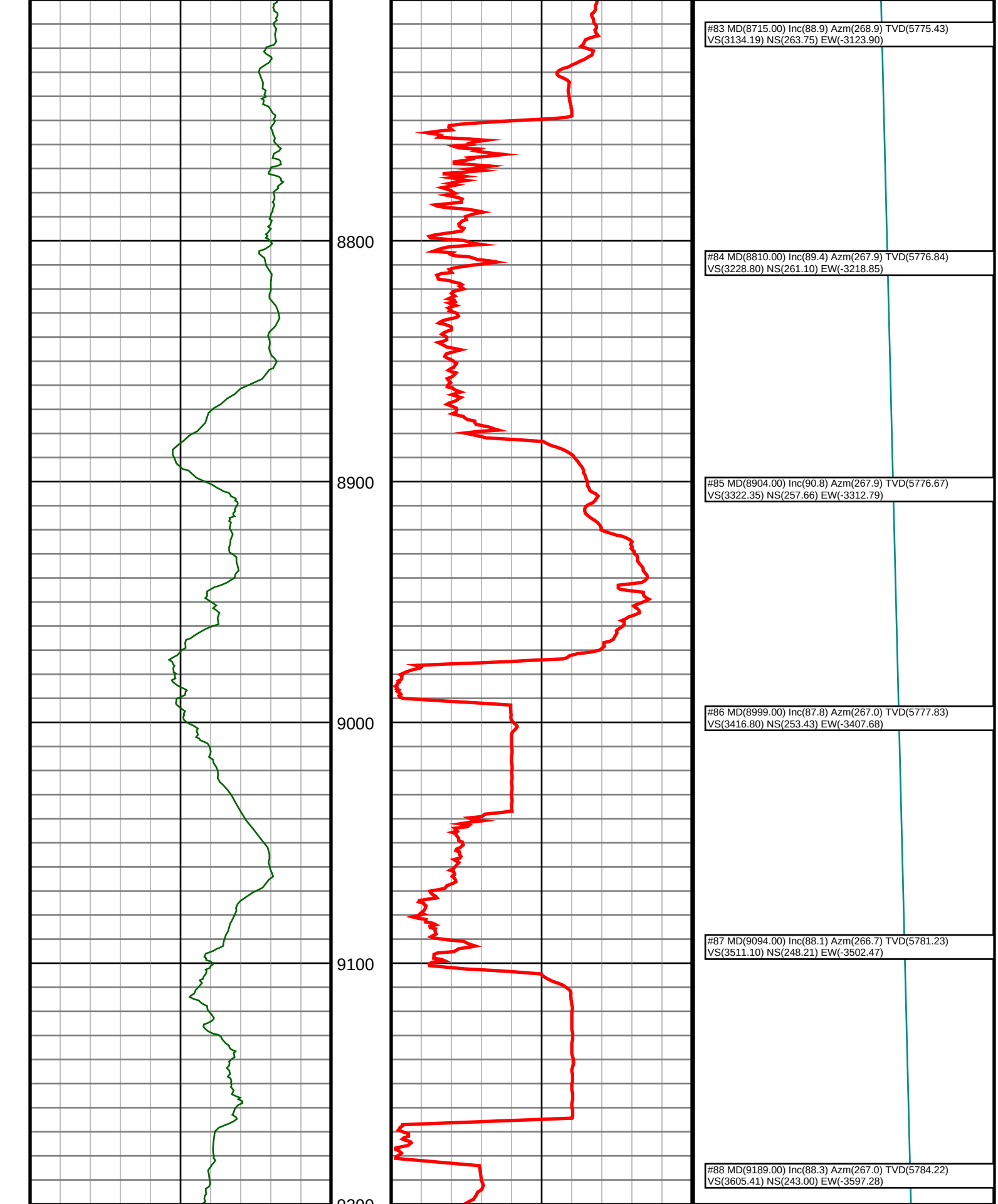

6300
6400
6500
6600
6700
#57 MD(6250.00) Inc(86.7) Azm(266.3) TVD(5771.62)
VS(680.71) NS(332.86) EW(-661.57)
#58 MD(6343.00) Inc(87.7) Azm(266.0) TVD(5776.17)
VS(772.83) NS(326.63) EW(-754.25)
#59 MD(6437.00) Inc(89.9) Azm(265.4) TVD(5778.13)
VS(865.93) NS(319.58) EW(-847.96)
#60 MD(6532.00) Inc(90.7) Azm(265.6) TVD(5777.64)
VS(960.00) NS(312.13) EW(-942.66)
#61 MD(6627.00) Inc(92.3) Azm(267.9) TVD(5775.15)
VS(1054.30) NS(306.74) EW(-1037.47)

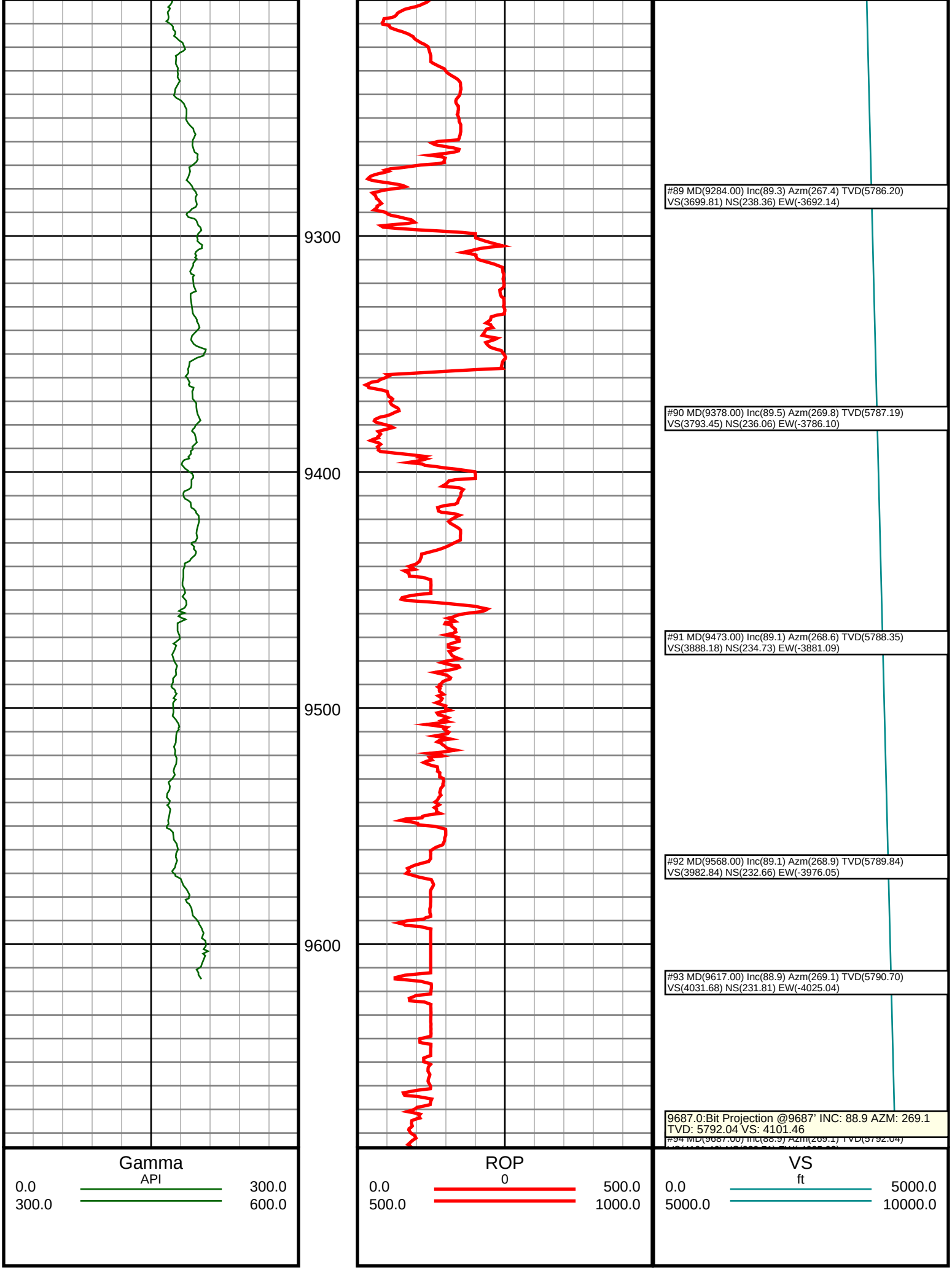

6800
6900
7000
7100
7200
#62 MD(6722.00) Inc(92.7) Azm(269.8) TVD(5771.00)
VS(1148.89) NS(304.84) EW(-1132.36)
#63 MD(6817.00) Inc(92.2) Azm(269.6) TVD(5766.94)
VS(1243.60) NS(304.34) EW(-1227.27)
#64 MD(6911.00) Inc(90.6) Azm(268.4) TVD(5764.65)
VS(1337.27) NS(302.70) EW(-1321.22)
#65 MD(7006.00) Inc(91.0) Azm(268.6) TVD(5763.32)
VS(1431.90) NS(300.21) EW(-1416.18)
#66 MD(7101.00) Inc(89.9) Azm(268.6) TVD(5762.57)
VS(1526.55) NS(297.89) EW(-1511.14)
#67 MD(7196.00) Inc(90.5) Azm(267.0) TVD(5762.24)
VS(1621.07) NS(294.25) EW(-1606.07)


7300
7400
7500
7600
#68 MD(7291.00) Inc(90.5) Azm(265.8) TVD(5761.41)
VS(1715.34) NS(288.28) EW(-1700.88)
#69 MD(7386.00) Inc(90.6) Azm(266.5) TVD(5760.50)
VS(1809.55) NS(281.90) EW(-1795.66)
#70 MD(7481.00) Inc(91.2) Azm(267.4) TVD(5759.01)
VS(1903.91) NS(276.85) EW(-1890.51)
#71 MD(7576.00) Inc(90.0) Azm(268.1) TVD(5758.02)
VS(1998.43) NS(273.12) EW(-1985.43)
#72 MD(7671.00) Inc(88.5) Azm(267.7) TVD(5759.26)
VS(2092.96) NS(269.64) EW(-2080.36)


7800
7900
8000
8100
8200
#73 MD(7765.00) Inc(87.8) Azm(267.5) TVD(5762.29)
VS(2186.41) NS(265.70) EW(-2174.22)
#74 MD(7860.00) Inc(88.8) Azm(269.3) TVD(5765.11)
VS(2280.99) NS(263.05) EW(-2269.14)
#75 MD(7955.00) Inc(89.5) Azm(269.8) TVD(5766.52)
VS(2375.75) NS(262.31) EW(-2364.12)
#76 MD(8050.00) Inc(89.0) Azm(269.8) TVD(5767.76)
VS(2470.54) NS(261.98) EW(-2459.12)
#77 MD(8145.00) Inc(88.5) Azm(269.8) TVD(5769.84)
VS(2565.32) NS(261.64) EW(-2554.09)


8300
8400
8500
8600
#78 MD(8240.00) Inc(87.9) Azm(269.1) TVD(5772.82)
VS(2660.03) NS(260.73) EW(-2649.04)
#79 MD(8334.00) Inc(88.3) Azm(269.6) TVD(5775.94)
VS(2753.73) NS(259.67) EW(-2742.98)
#80 MD(8429.00) Inc(90.7) Azm(271.6) TVD(5776.77)
VS(2848.60) NS(260.66) EW(-2837.96)
#81 MD(8525.00) Inc(90.8) Azm(271.1) TVD(5775.51)
VS(2944.52) NS(262.92) EW(-2933.93)
#82 MD(8620.00) Inc(90.2) Azm(270.5) TVD(5774.68)
VS(3039.41) NS(264.25) EW(-3028.91)


8800
8900
9000
9100
9200
#83 MD(8715.00) Inc(88.9) Azm(268.9) TVD(5775.43)
VS(3134.19) NS(263.75) EW(-3123.90)
#84 MD(8810.00) Inc(89.4) Azm(267.9) TVD(5776.84)
VS(3228.80) NS(261.10) EW(-3218.85)
#85 MD(8904.00) Inc(90.8) Azm(267.9) TVD(5776.67)
VS(3322.35) NS(257.66) EW(-3312.79)
#86 MD(8999.00) Inc(87.8) Azm(267.0) TVD(5777.83)
VS(3416.80) NS(253.43) EW(-3407.68)
#87 MD(9094.00) Inc(88.1) Azm(266.7) TVD(5781.23)
VS(3511.10) NS(248.21) EW(-3502.47)
#88 MD(9189.00) Inc(88.3) Azm(267.0) TVD(5784.22)
VS(3605.41) NS(243.00) EW(-3597.28)


9300
9400
9500
9600
#89 MD(9284.00) Inc(89.3) Azm(267.4) TVD(5786.20)
VS(3699.81) NS(238.36) EW(-3692.14)
#90 MD(9378.00) Inc(89.5) Azm(269.8) TVD(5787.19)
VS(3793.45) NS(236.06) EW(-3786.10)
#91 MD(9473.00) Inc(89.1) Azm(268.6) TVD(5788.35)
VS(3888.18) NS(234.73) EW(-3881.09)
#92 MD(9568.00) Inc(89.1) Azm(268.9) TVD(5789.84)
VS(3982.84) NS(232.66) EW(-3976.05)
#93 MD(9617.00) Inc(88.9) Azm(269.1) TVD(5790.70)
VS(4031.68) NS(231.81) EW(-4025.04)
9687.0:Bit Projection @9687' INC: 88.9 AZM: 269.1
TVD: 5792.04 VS: 4101.46
Gamma
API
0.0
300.0
300.0
600.0
ROP
0
0.0
500.0
500.0
1000.0
VS
ft
0.0
5000.0
5000.0
10000.0