



CROW CREEK STATE AC36-73-1HN 1":100'

Company: NOBLE ENERGY
Well Name: CROW CREEK STATE AC36-73-1HN
UWI or LSD: 05-123-37422
Rig Id: H&P 277
State: CO
County/Parish: WELD COUNTY
Country: USA
Survey Company: DRILTECH, LLC
Job number: 2013-335-IDDT-CO
MARK LARUE MWD OPERATOR
JOSH CAYLOR MWD OPERATOR

Log measurements: Gamma, ROP, Temp
Depth measured from: 631
Maximum temperature: 216.7

Depth Start: 700 ft
End: 11206 ft
Date 11/02/2013
11/06/2013

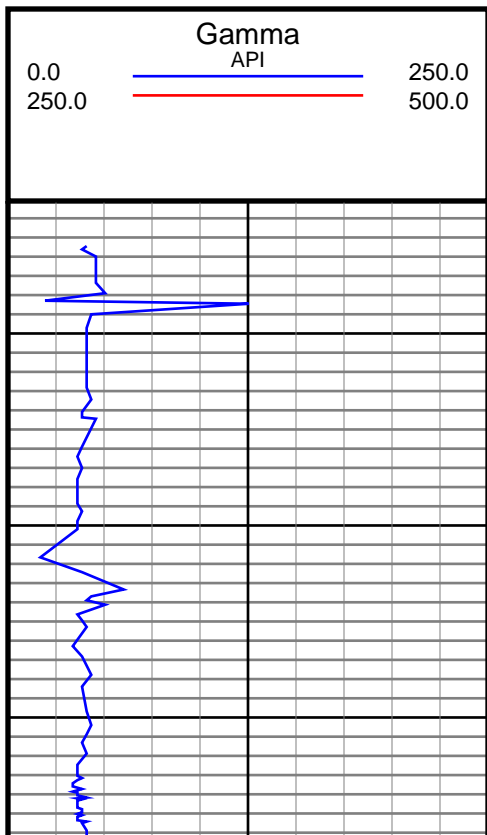
Casing Depth Size
Surface: 621 9 5/8
Intermediate: 7073 7

Mud Type: WATER BASE
Density: 9.3
Viscosity: 33
Rm: Rmf: Rmc:

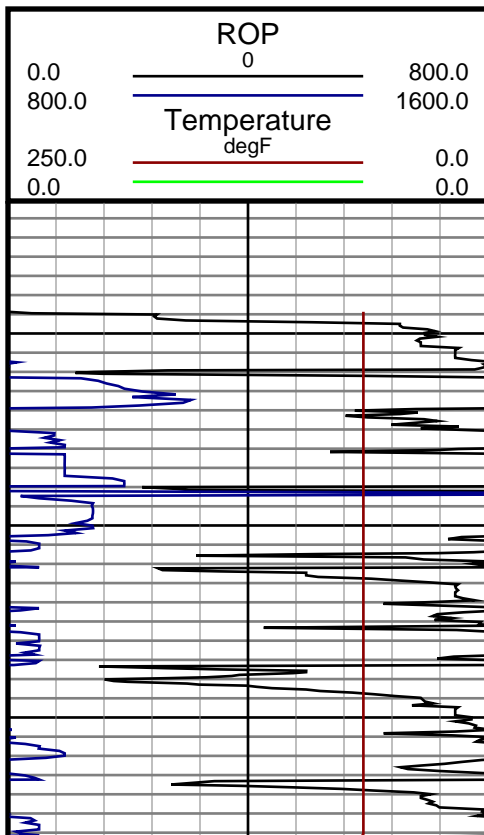
Elevations
KB: 4872
GL: 4848
DF:

Run	Bit Size	Gamma	Offsets	Survey	Start	End	Start	End	Dates
1	8 3/4	36.00	45.00	631	6090	7083	11/02/2013	11/03/2013	
2	8 3/4	35.00	47.00	6090	7083	11/03/2013	11/04/2013		
3	6 1/8	43.00	54.00	7083	11206	11/05/2013	11/06/2013		
4									
5									
6									
7									
8									
9									
10									

DRILTECH, LLC uses its best efforts to provide its customers with accurate information and interpretations in conjunction with services performed but will not be held liable or responsible for the accuracy of such information or interpretation.



MD

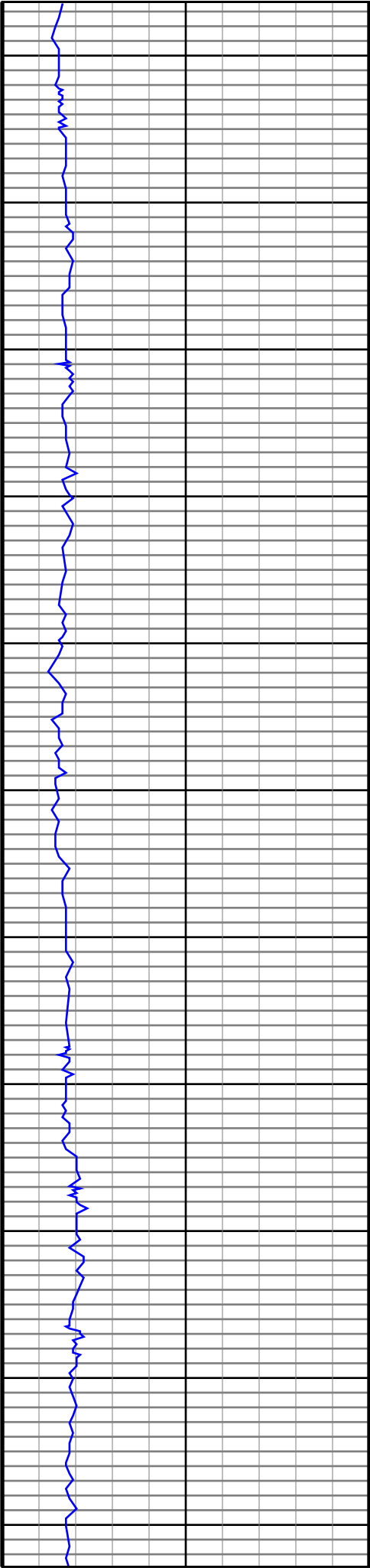


#3 MD(640.00) Inc(0.5) Azm(240.2) TVD(640.00)
VS(-0.68) NS(-0.59) EW(-1.19)

#4 MD(732.00) Inc(0.7) Azm(233.4) TVD(731.99)
VS(-1.28) NS(-1.12) EW(-1.99)

#5 MD(825.00) Inc(0.7) Azm(229.3) TVD(824.98)
VS(-2.06) NS(-1.83) EW(-2.88)

#6 MD(918.00) Inc(0.5) Azm(226.3) TVD(917.98)
VS(-2.77) NS(-2.48) EW(-3.60)



1000

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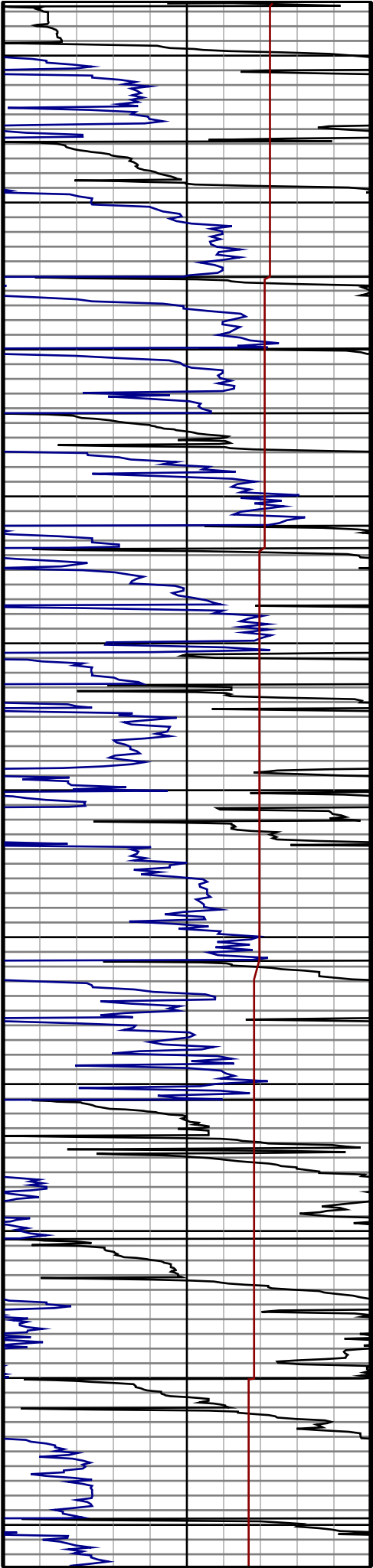
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1700

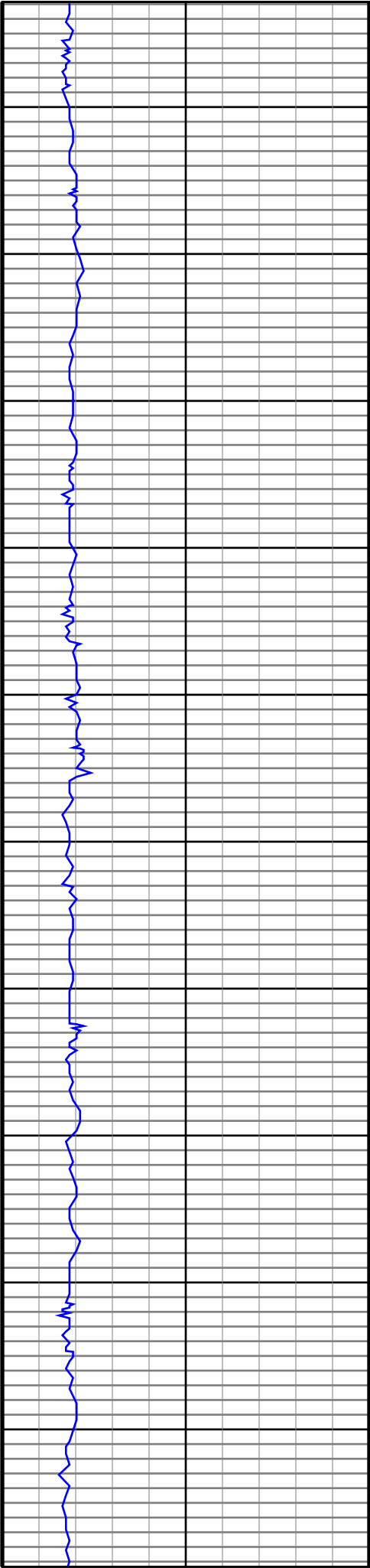
1800

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#7 MD(1012.00) Inc(1.4) Azm(169.7) TVD(1011.97) VS(-4.19) NS(-3.90) EW(-3.69)
#8 MD(1104.00) Inc(3.5) Azm(168.7) TVD(1103.88) VS(-7.97) NS(-7.76) EW(-2.94)
#9 MD(1196.00) Inc(3.5) Azm(163.4) TVD(1195.71) VS(-13.29) NS(-13.20) EW(-1.59)
#10 MD(1290.00) Inc(4.9) Azm(161.8) TVD(1289.45) VS(-19.66) NS(-19.77) EW(0.49)
#11 MD(1383.00) Inc(5.1) Azm(160.2) TVD(1382.10) VS(-27.08) NS(-27.43) EW(3.13)
#12 MD(1476.00) Inc(5.1) Azm(158.6) TVD(1474.73) VS(-34.55) NS(-35.17) EW(6.03)
#13 MD(1572.00) Inc(5.5) Azm(160.2) TVD(1570.32) VS(-42.57) NS(-43.47) EW(9.15)
#14 MD(1667.00) Inc(5.5) Azm(156.9) TVD(1664.88) VS(-50.74) NS(-51.94) EW(12.48)
#15 MD(1762.00) Inc(6.0) Azm(139.0) TVD(1759.41) VS(-58.23) NS(-59.87) EW(17.52)
#16 MD(1857.00) Inc(5.6) Azm(115.8) TVD(1853.94) VS(-63.36) NS(-65.64) EW(24.95)
#17 MD(1952.00) Inc(6.9) Azm(115.4) TVD(1948.37) VS(-67.05) NS(-70.10) EW(34.28)



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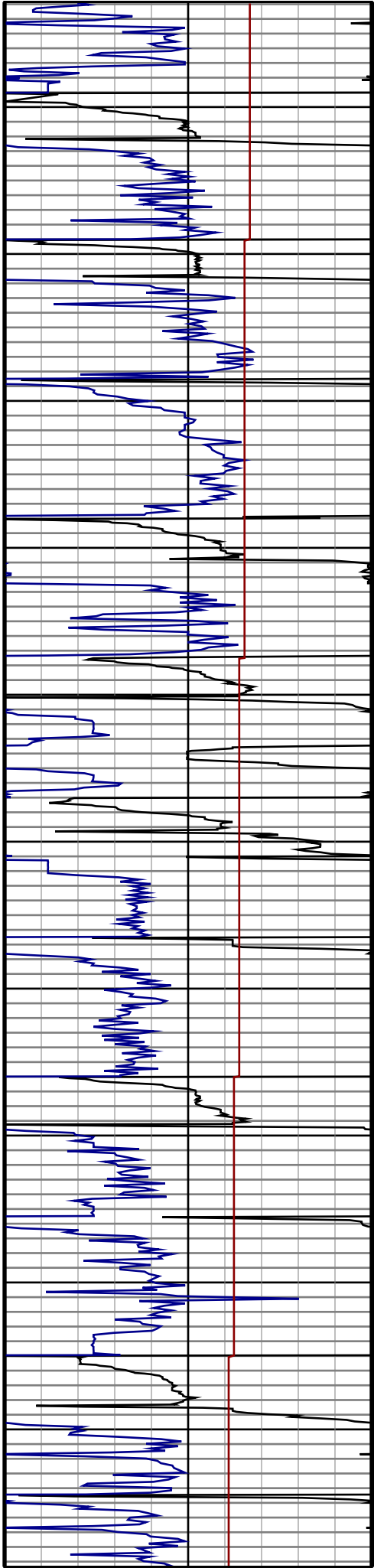
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#18 MD(2048.00) Inc(6.5) Azm(110.5) TVD(2043.72)
VS(-70.56) NS(-74.48) EW(44.58)

#19 MD(2143.00) Inc(8.3) Azm(108.0) TVD(2137.92)
VS(-73.60) NS(-78.48) EW(56.14)

#20 MD(2238.00) Inc(9.1) Azm(106.6) TVD(2231.83)
VS(-76.72) NS(-82.75) EW(69.86)

#21 MD(2333.00) Inc(8.8) Azm(106.1) TVD(2325.67)
VS(-79.70) NS(-86.91) EW(84.04)

#22 MD(2428.00) Inc(9.7) Azm(108.2) TVD(2419.43)
VS(-83.00) NS(-91.43) EW(98.63)

#23 MD(2523.00) Inc(10.7) Azm(105.2) TVD(2512.93)
VS(-86.47) NS(-96.24) EW(114.74)

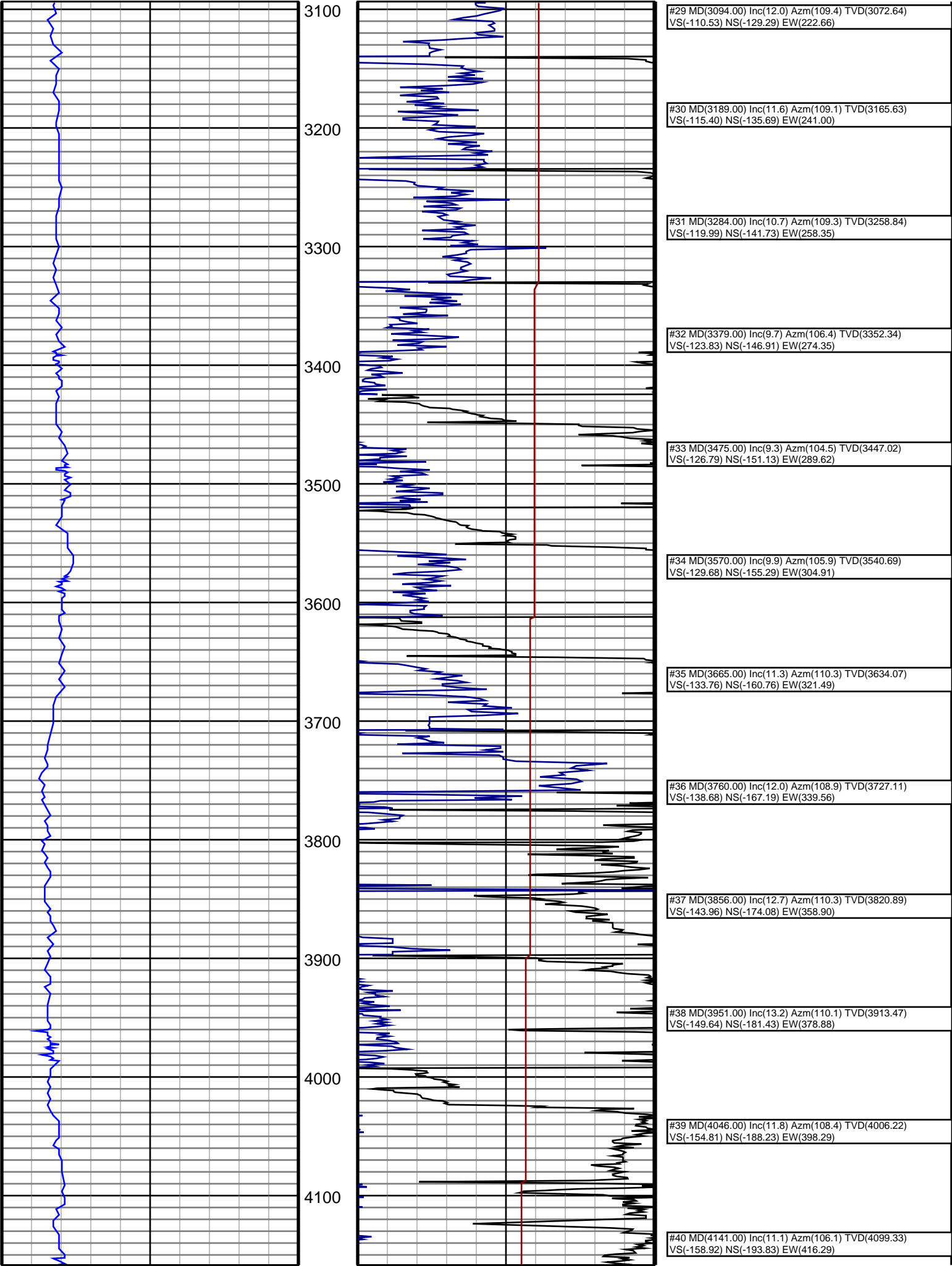
#24 MD(2618.00) Inc(11.4) Azm(105.6) TVD(2606.17)
VS(-89.85) NS(-101.07) EW(132.30)

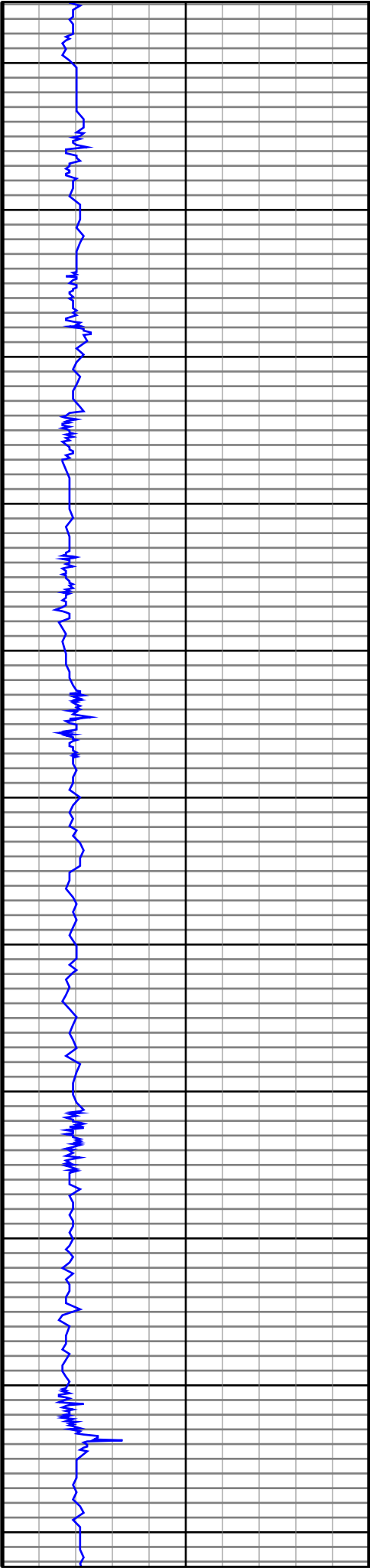
#25 MD(2713.00) Inc(10.7) Azm(104.3) TVD(2699.41)
VS(-93.09) NS(-105.78) EW(149.88)

#26 MD(2808.00) Inc(11.8) Azm(108.7) TVD(2792.58)
VS(-96.90) NS(-111.07) EW(167.63)

#27 MD(2903.00) Inc(11.1) Azm(105.7) TVD(2885.69)
VS(-100.99) NS(-116.66) EW(185.64)

#28 MD(2999.00) Inc(12.1) Azm(110.0) TVD(2979.73)
VS(-105.40) NS(-122.60) EW(203.99)





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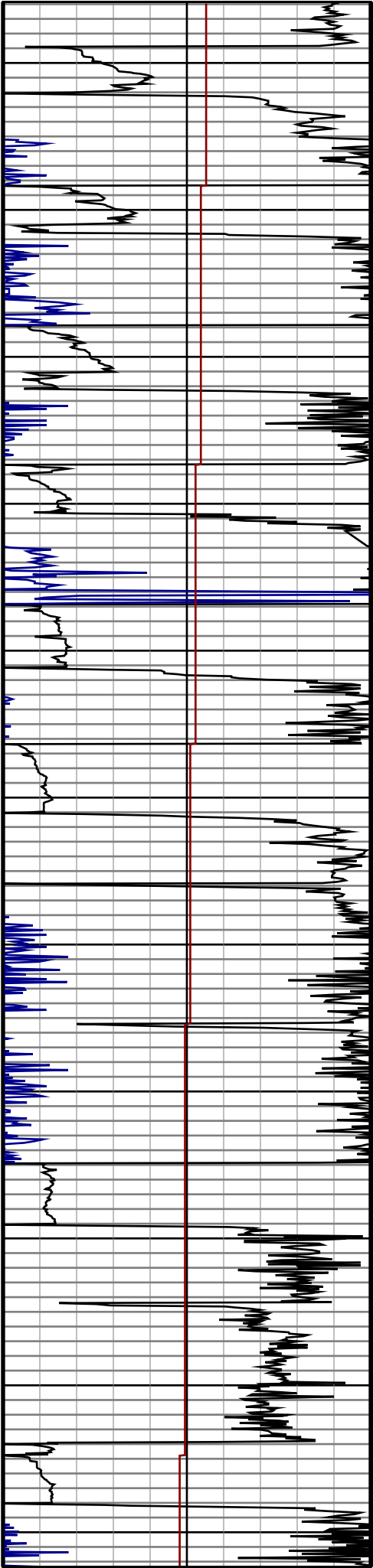
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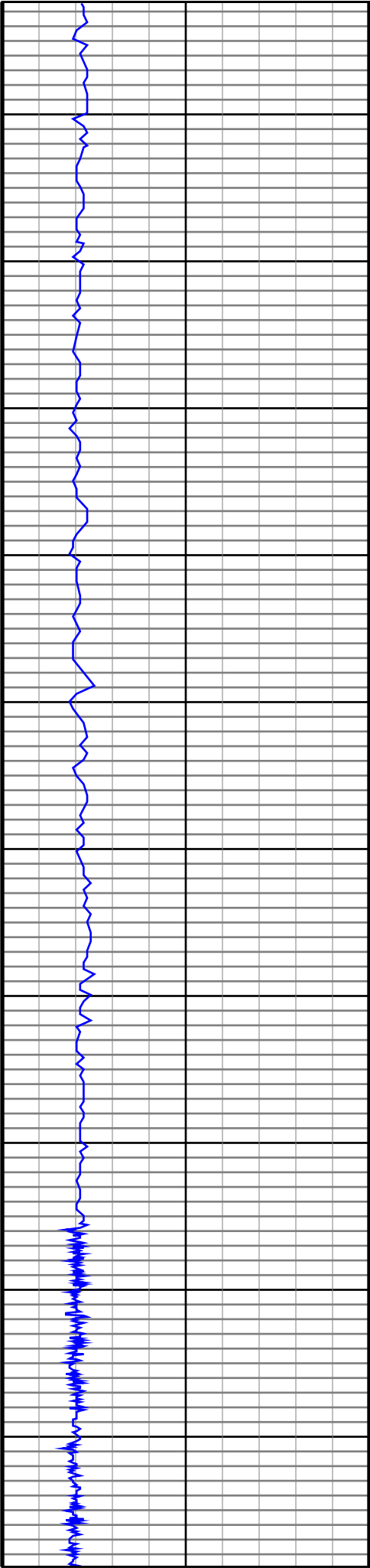
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#41 MD(4236.00) Inc(9.3) Azm(104.3) TVD(4192.82) VS(-162.00) NS(-198.26) EW(432.52)
#42 MD(4331.00) Inc(8.1) Azm(95.7) TVD(4286.73) VS(-163.39) NS(-200.82) EW(446.62)
#43 MD(4426.00) Inc(5.5) Azm(101.3) TVD(4381.06) VS(-164.03) NS(-202.38) EW(457.74)
#44 MD(4522.00) Inc(3.5) Azm(89.6) TVD(4476.76) VS(-164.29) NS(-203.26) EW(465.18)
#45 MD(4617.00) Inc(1.8) Azm(97.7) TVD(4571.65) VS(-164.11) NS(-203.44) EW(469.56)
#46 MD(4712.00) Inc(1.1) Azm(294.3) TVD(4666.64) VS(-163.88) NS(-203.26) EW(470.21)
#47 MD(4807.00) Inc(1.2) Azm(329.2) TVD(4761.62) VS(-162.77) NS(-202.03) EW(468.87)
#48 MD(4902.00) Inc(1.4) Azm(332.8) TVD(4856.60) VS(-160.97) NS(-200.15) EW(467.83)
#49 MD(4998.00) Inc(2.6) Azm(300.9) TVD(4952.54) VS(-159.02) NS(-197.99) EW(465.43)
#50 MD(5093.00) Inc(2.8) Azm(310.0) TVD(5047.43) VS(-156.73) NS(-195.39) EW(461.80)
#51 MD(5188.00) Inc(2.3) Azm(263.9) TVD(5142.35) VS(-155.74) NS(-194.10) EW(458.13)



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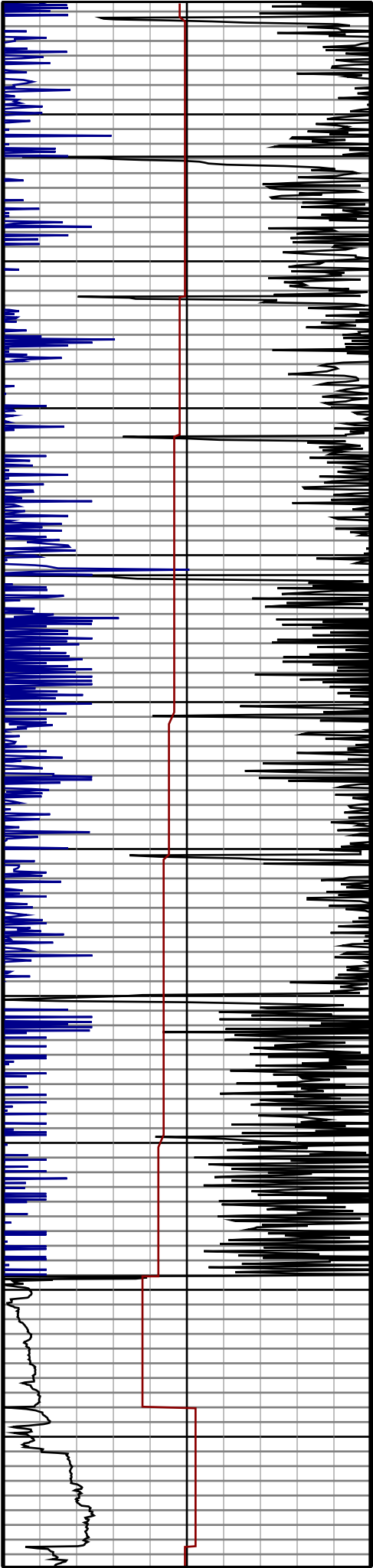
5800

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#52 MD(5283.00) Inc(1.8) Azm(263.6) TVD(5237.29)
VS(-156.39) NS(-194.47) EW(454.75)

#53 MD(5378.00) Inc(1.2) Azm(262.2) TVD(5332.26)
VS(-156.89) NS(-194.77) EW(452.28)

#54 MD(5473.00) Inc(0.9) Azm(254.1) TVD(5427.24)
VS(-157.37) NS(-195.11) EW(450.58)

#55 MD(5568.00) Inc(1.1) Azm(243.2) TVD(5522.22)
VS(-158.11) NS(-195.72) EW(449.04)

#56 MD(5664.00) Inc(1.1) Azm(245.8) TVD(5618.21)
VS(-159.04) NS(-196.52) EW(447.38)

#57 MD(5759.00) Inc(0.7) Azm(220.7) TVD(5713.20)
VS(-159.95) NS(-197.33) EW(446.17)

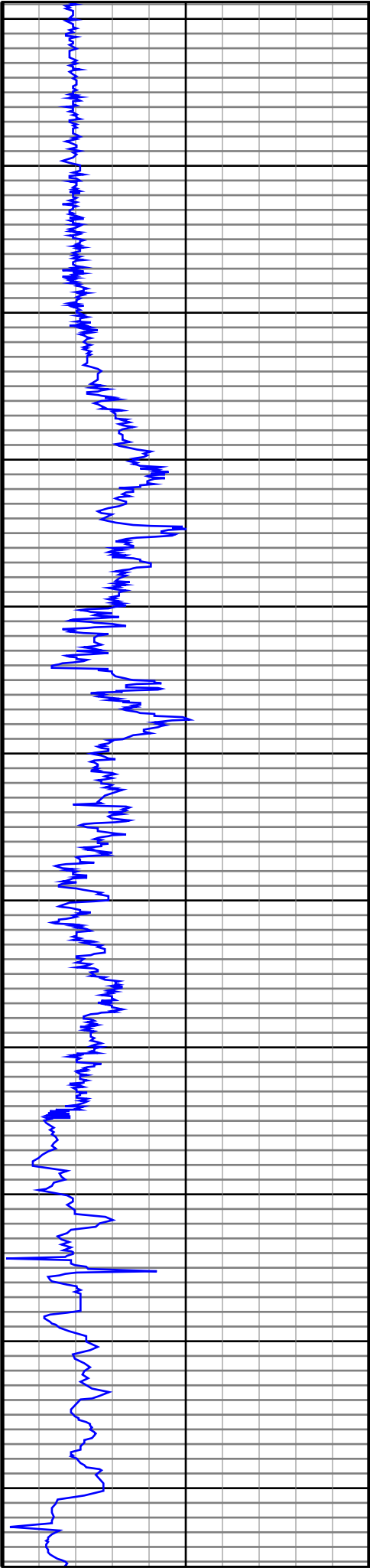
#58 MD(5854.00) Inc(0.9) Azm(236.2) TVD(5808.19)
VS(-160.88) NS(-198.19) EW(445.17)

#59 MD(5949.00) Inc(0.9) Azm(213.0) TVD(5903.18)
VS(-162.00) NS(-199.23) EW(444.15)

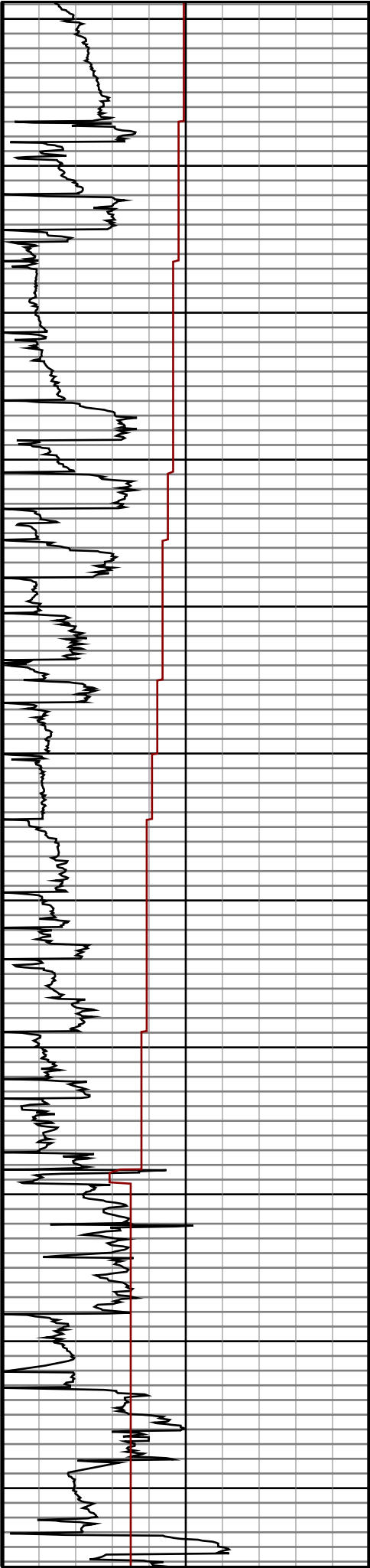
#60 MD(6044.00) Inc(0.9) Azm(233.2) TVD(5998.16)
VS(-163.16) NS(-200.30) EW(443.14)

#61 MD(6133.00) Inc(4.0) Azm(320.0) TVD(6087.09)
VS(-161.41) NS(-198.34) EW(440.59)

#62 MD(6228.00) Inc(13.5) Azm(338.6) TVD(6180.89)
VS(-149.07) NS(-185.45) EW(434.40)



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#63 MD(6324.00) Inc(23.7) Azm(341.1) TVD(6271.75)
VS(-121.26) NS(-156.68) EW(424.03)

#64 MD(6371.00) Inc(30.0) Azm(346.6) TVD(6313.67)
VS(-101.42) NS(-136.29) EW(418.24)

#65 MD(6419.00) Inc(32.5) Azm(347.3) TVD(6354.70)
VS(-77.70) NS(-112.04) EW(412.62)

#66 MD(6466.00) Inc(35.1) Azm(349.0) TVD(6393.76)
VS(-52.64) NS(-86.45) EW(407.27)

#67 MD(6514.00) Inc(39.7) Azm(355.3) TVD(6431.89)
VS(-24.21) NS(-57.60) EW(403.38)

#68 MD(6561.00) Inc(44.3) Azm(0.2) TVD(6466.82)
VS(6.99) NS(-26.20) EW(402.20)

#69 MD(6609.00) Inc(46.3) Azm(0.2) TVD(6500.58)
VS(41.00) NS(7.92) EW(402.32)

#70 MD(6657.00) Inc(48.7) Azm(359.7) TVD(6533.01)
VS(76.26) NS(43.30) EW(402.29)

#71 MD(6704.00) Inc(51.0) Azm(0.0) TVD(6563.31)
VS(112.05) NS(79.23) EW(402.20)

#72 MD(6752.00) Inc(51.5) Azm(0.5) TVD(6593.36)
VS(149.37) NS(116.66) EW(402.36)

#73 MD(6799.00) Inc(55.4) Azm(1.4) TVD(6621.34)
VS(187.04) NS(154.40) EW(402.99)

#74 MD(6847.00) Inc(62.0) Azm(2.6) TVD(6646.27)
VS(227.99) NS(195.37) EW(404.44)

#75 MD(6895.00) Inc(68.8) Azm(2.4) TVD(6666.24)
VS(271.57) NS(238.94) EW(406.34)

#76 MD(6942.00) Inc(72.1) Azm(2.6) TVD(6681.96)
VS(315.82) NS(283.19) EW(408.27)

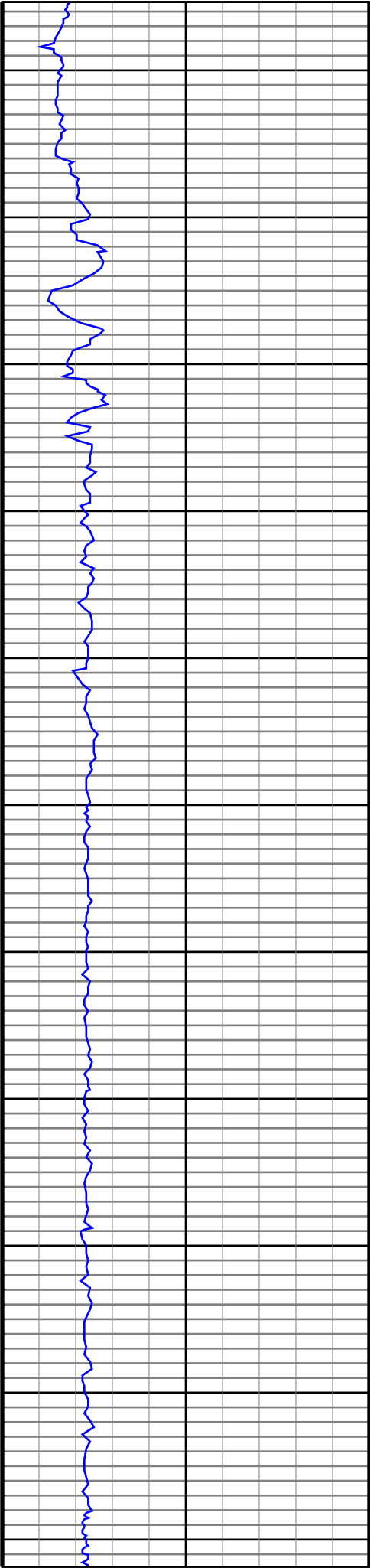
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VS(361.77) NS(329.15) EW(410.03)

#78 MD(7036.00) Inc(79.5) Azm(1.1) TVD(6705.94)
VS(406.52) NS(373.96) EW(411.17)

#79 MD(7134.00) Inc(82.7) Azm(0.1) TVD(6721.10)
VS(503.08) NS(470.76) EW(412.18)

#80 MD(7230.00) Inc(85.3) Azm(0.8) TVD(6731.13)
VS(598.28) NS(566.22) EW(412.93)

#81 MD(7325.00) Inc(88.3) Azm(359.7) TVD(6736.44)
VS(692.83) NS(661.06) EW(413.34)



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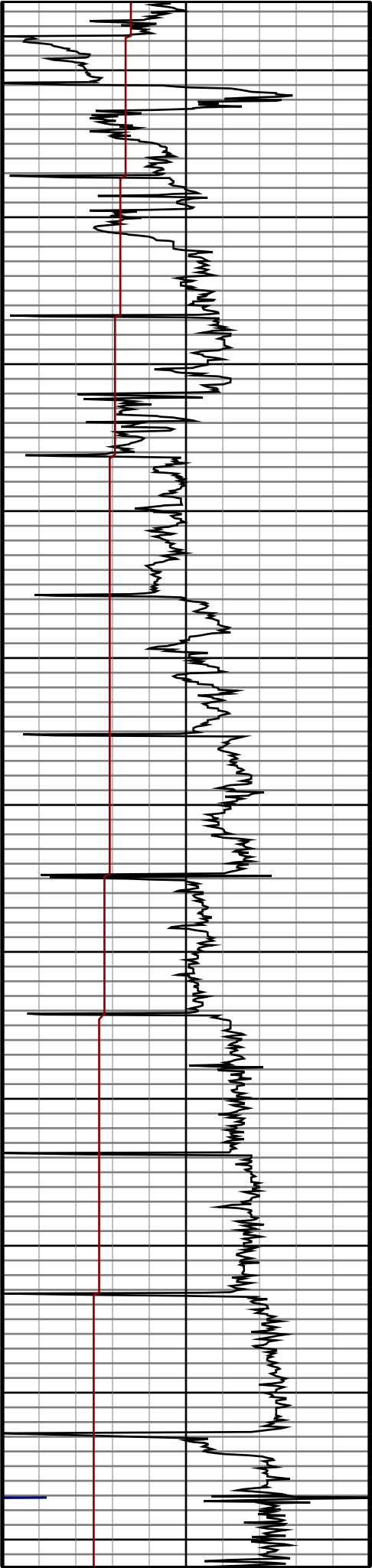
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#82 MD(7420.00) Inc(91.3) Azm(1.0) TVD(6736.77)
VS(787.54) NS(756.05) EW(413.92)

#83 MD(7515.00) Inc(91.0) Azm(1.3) TVD(6734.86)
VS(882.34) NS(851.01) EW(415.83)

#84 MD(7610.00) Inc(92.0) Azm(0.4) TVD(6732.37)
VS(977.09) NS(945.96) EW(417.24)

#85 MD(7705.00) Inc(90.4) Azm(359.6) TVD(6730.38)
VS(1071.74) NS(1040.94) EW(417.24)

#86 MD(7801.00) Inc(89.9) Azm(358.3) TVD(6730.13)
VS(1167.25) NS(1136.92) EW(415.48)

#87 MD(7896.00) Inc(90.3) Azm(359.4) TVD(6729.97)
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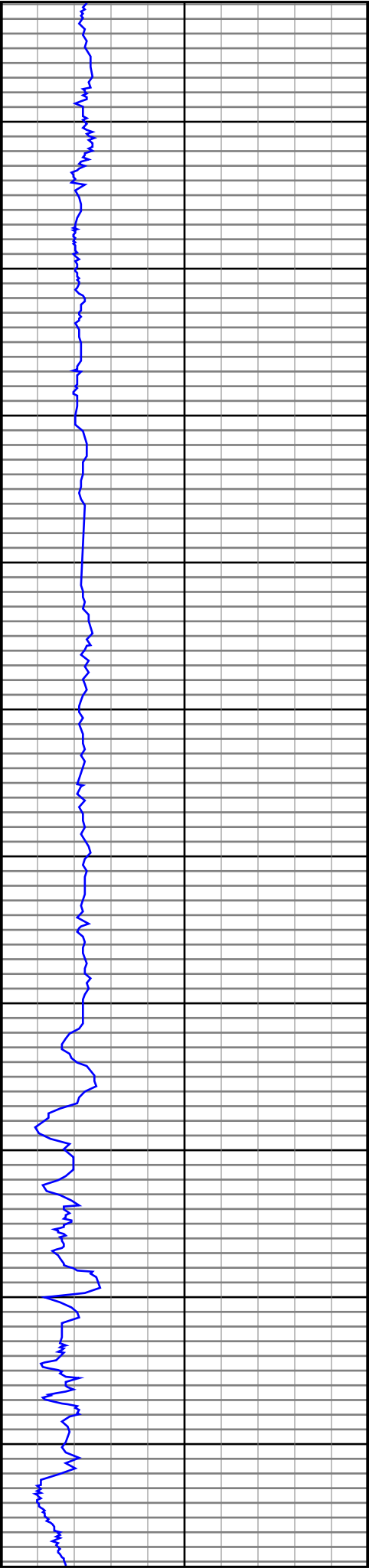
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VS(1356.27) NS(1326.88) EW(411.83)

#89 MD(8086.00) Inc(89.6) Azm(359.2) TVD(6730.22)
VS(1450.77) NS(1421.86) EW(409.92)

#90 MD(8182.00) Inc(89.2) Azm(3.4) TVD(6731.22)
VS(1546.57) NS(1517.81) EW(412.10)

#91 MD(8277.00) Inc(89.6) Azm(8.9) TVD(6732.22)
VS(1641.50) NS(1612.22) EW(422.27)

#92 MD(8372.00) Inc(89.7) Azm(13.1) TVD(6732.80)
VS(1735.91) NS(1705.45) EW(440.39)



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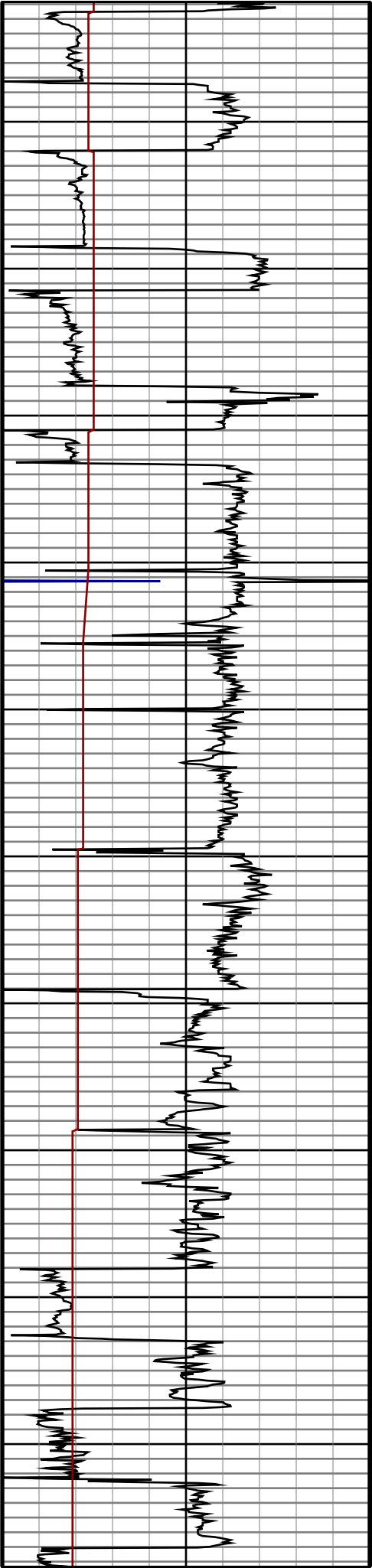
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#93 MD(8467.00) Inc(89.0) Azm(12.2) TVD(6733.88)
VS(1829.99) NS(1798.14) EW(461.20)

#94 MD(8562.00) Inc(90.3) Azm(8.4) TVD(6734.46)
VS(1924.52) NS(1891.59) EW(478.18)

#95 MD(8657.00) Inc(89.6) Azm(0.8) TVD(6734.54)
VS(2019.45) NS(1986.21) EW(485.79)

#96 MD(8753.00) Inc(90.4) Azm(357.1) TVD(6734.54)
VS(2114.94) NS(2082.18) EW(484.03)

#97 MD(8848.00) Inc(89.9) Azm(355.9) TVD(6734.29)
VS(2208.97) NS(2177.00) EW(478.23)

#98 MD(8943.00) Inc(89.6) Azm(353.9) TVD(6734.71)
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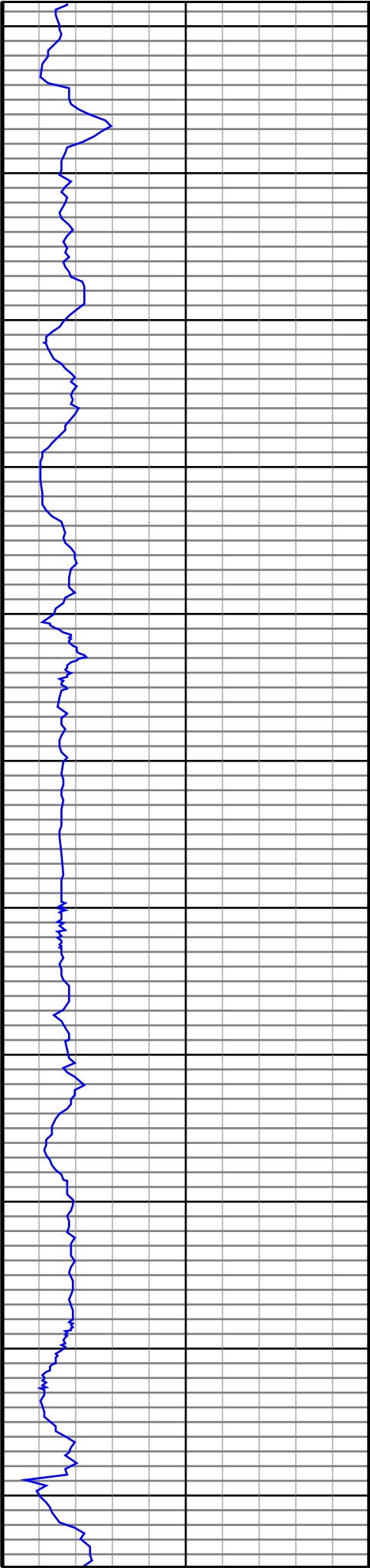
#99 MD(9038.00) Inc(90.6) Azm(355.0) TVD(6734.54)
VS(2396.04) NS(2366.17) EW(460.60)

#100 MD(9134.00) Inc(91.0) Azm(353.2) TVD(6733.20)
VS(2490.39) NS(2461.65) EW(450.74)

#101 MD(9229.00) Inc(92.9) Azm(351.8) TVD(6729.97)
VS(2583.17) NS(2555.77) EW(438.34)

#102 MD(9324.00) Inc(91.8) Azm(355.2) TVD(6726.07)
VS(2676.26) NS(2650.07) EW(427.60)

#103 MD(9419.00) Inc(91.1) Azm(356.9) TVD(6723.67)
VS(2770.15) NS(2744.81) EW(421.06)



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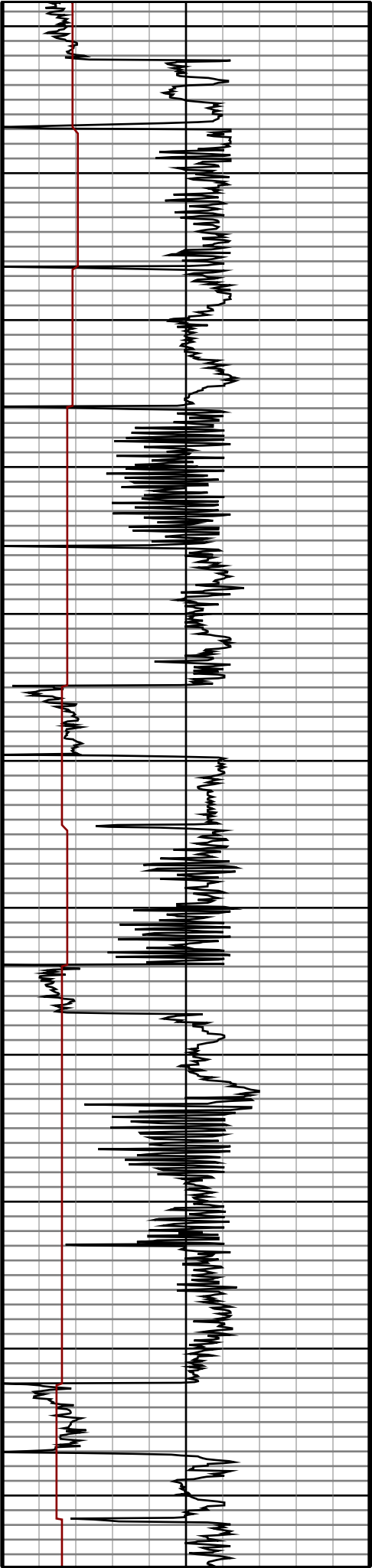
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#105 MD(9609.00) Inc(86.9) Azm(358.3) TVD(6728.64)
VS(2958.78) NS(2934.59) EW(414.93)

#106 MD(9705.00) Inc(87.4) Azm(358.3) TVD(6733.41)
VS(3054.06) NS(3030.43) EW(412.09)

#107 MD(9800.00) Inc(89.0) Azm(358.0) TVD(6736.40)
VS(3148.39) NS(3125.33) EW(409.02)

#108 MD(9895.00) Inc(91.7) Azm(357.3) TVD(6735.82)
VS(3242.65) NS(3220.24) EW(405.13)

#109 MD(9990.00) Inc(89.0) Azm(358.7) TVD(6735.24)
VS(3336.99) NS(3315.17) EW(401.81)

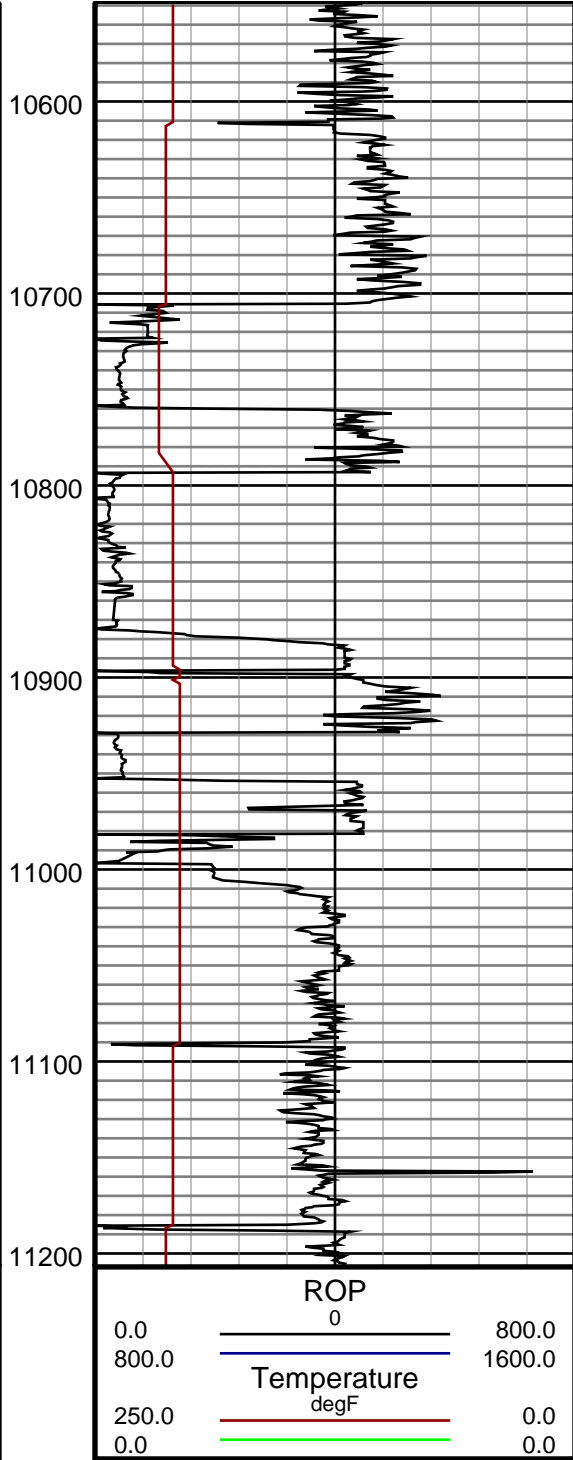
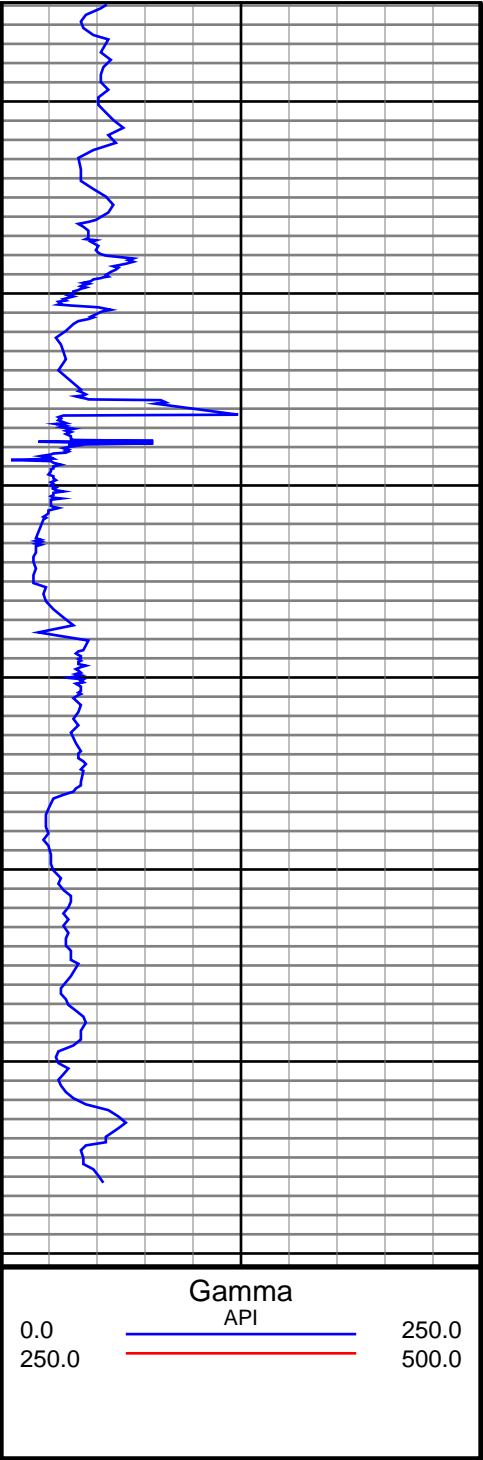
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VS(3431.46) NS(3410.13) EW(399.66)

#111 MD(10181.00) Inc(88.0) Azm(0.1) TVD(6738.41)
VS(3527.02) NS(3506.10) EW(398.65)

#112 MD(10276.00) Inc(88.5) Azm(359.7) TVD(6741.31)
VS(3621.64) NS(3601.06) EW(398.48)

#113 MD(10371.00) Inc(91.3) Azm(0.3) TVD(6741.47)
VS(3716.30) NS(3696.05) EW(398.48)

#114 MD(10466.00) Inc(86.7) Azm(357.5) TVD(6743.13)
VS(3810.76) NS(3790.98) EW(396.66)



#115 MD(10561.00) Inc(86.4) Azm(357.5) TVD(6748.85) VS(3904.84) NS(3885.72) EW(392.53)
#116 MD(10657.00) Inc(86.0) Azm(357.3) TVD(6755.21) VS(3999.85) NS(3981.41) EW(388.18)
#117 MD(10752.00) Inc(84.6) Azm(356.9) TVD(6762.99) VS(4093.69) NS(4075.97) EW(383.39)
#118 MD(10847.00) Inc(87.8) Azm(0.6) TVD(6769.29) VS(4187.94) NS(4170.71) EW(381.33)
#119 MD(10942.00) Inc(92.0) Azm(2.2) TVD(6769.46) VS(4282.76) NS(4265.65) EW(383.65)
#120 MD(11037.00) Inc(94.5) Azm(1.8) TVD(6764.07) VS(4377.49) NS(4360.43) EW(386.96)
#121 MD(11132.00) Inc(96.4) Azm(1.3) TVD(6755.05) VS(4471.91) NS(4454.97) EW(389.52)
#122 MD(11206.00) Inc(96.4) Azm(1.3) TVD(6746.80) VS(4545.82) NS(4528.48) EW(381.48)