ENSIGN Directional Services

70 Ranch State BB18-655

TVD
2":100'

Company: Noble Energy
Well Name: 70 Ranch State BB18-655
API:
Rig Id: H&P 326
State: Colorado
County/Parish: Weld
Country: USA
Survey Company: ENSIGN Directional
Job number: HP326-207-19
DD1 Zach Gentry
DD2 Tyler Bachelder
DD3 Colby Hansen
MWD1 Andrew Demrow
MWD2 Derek Saykally
MWD3 Buster Snider

Log measurements: Gama, ROP
Depth measured from:
Maximum temperature:

	Depth	Date
Start:	759 ft	08-14-2015
End:	16252 ft	08-22-2015

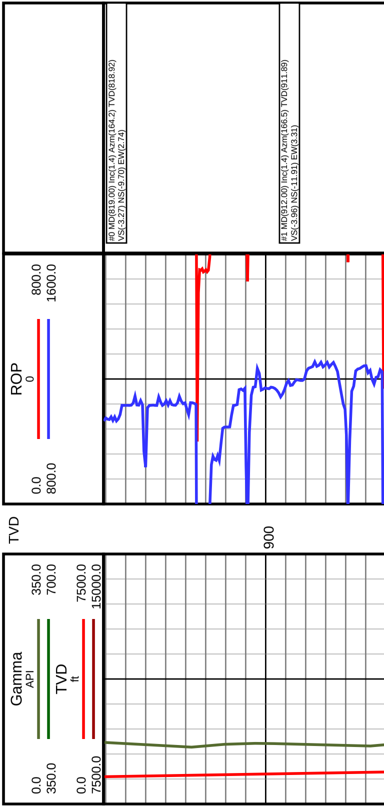
Casing	Depth	Size
Surface:	759	9 5/8
Intermediate:	6910	7

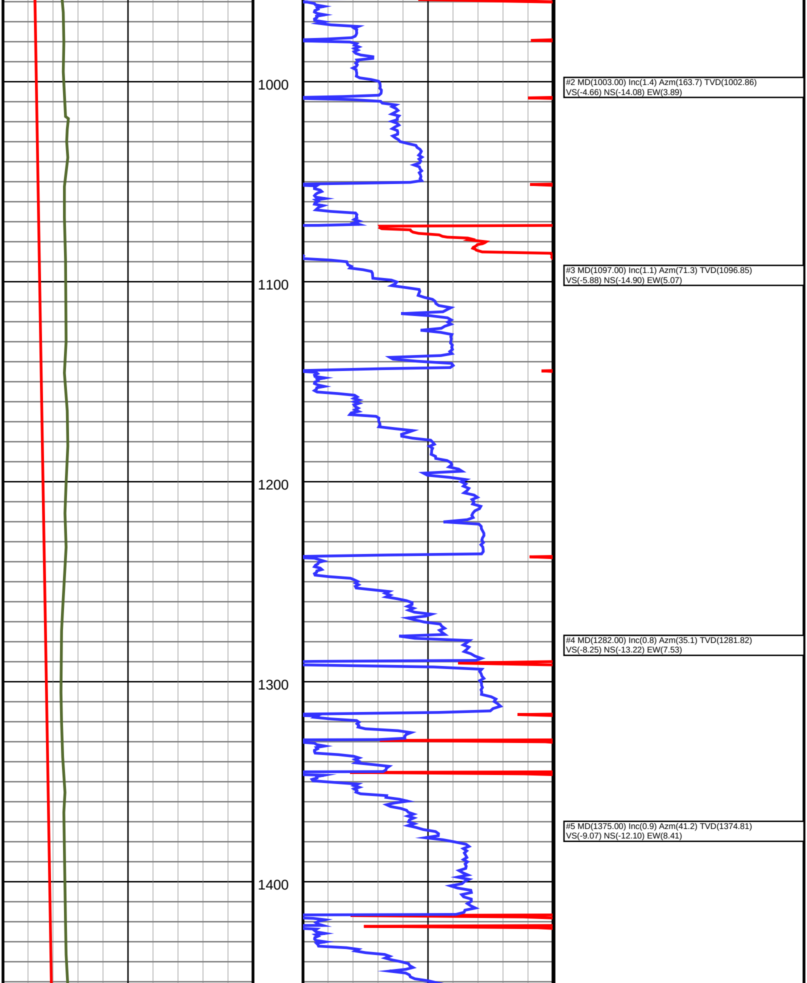
Mud Type:
Density:
Viscosity:
Rm: **Rmf:** **Rmc:**

Elevations
KB: 30
GL: 4855
DF: 4885

Run	Bit Size	Offsets		Depths		Dates	
		Gamma	Survey	Start	End	Start	End
1	8.75	54.43	49.43	759	6276	08-14-2015	08-15-2015
2	8.75	54.02	49.02	6276	6717	08-15-2015	08-15-2015
3	8.75	52.27	47.27	6717	6910	08-16-2015	08-16-2015
4	6.125	62.07	67.07	6910	12317	08-17-2015	08-20-2015
5	6.125	62.14	67.14	12317	16252	08-20-2015	08-22-2015
6							
7							
8							
9							
10							

ENSIGN Directional 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.



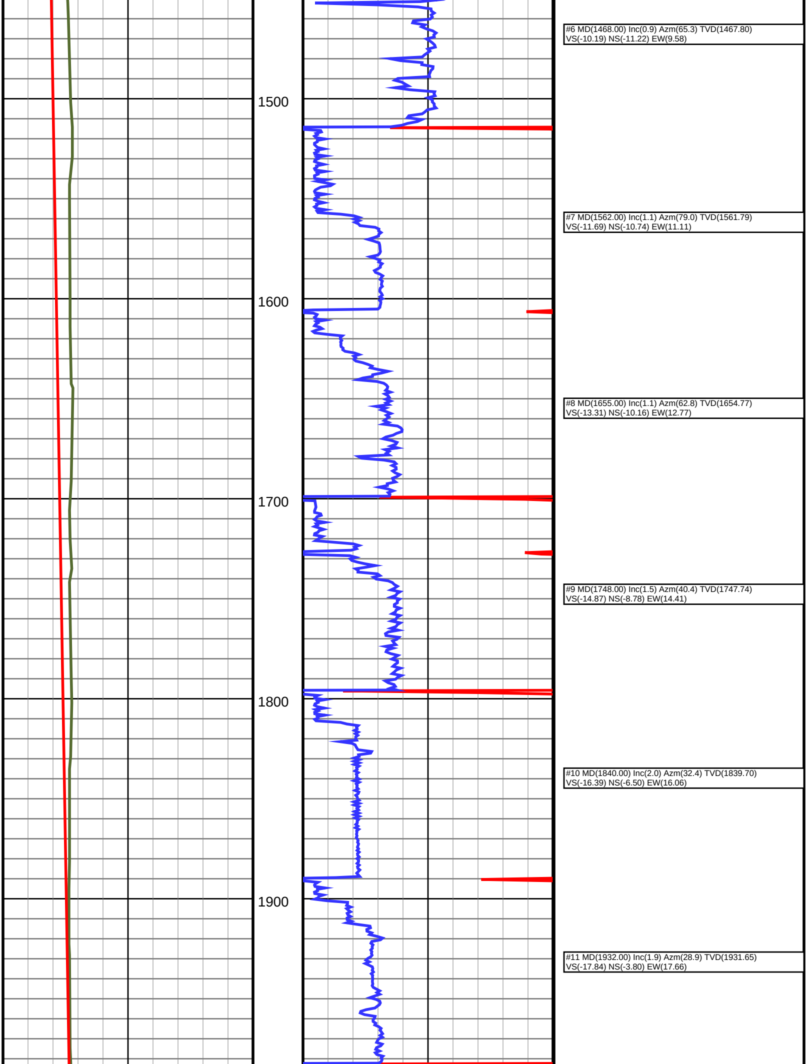


#2 MD(1003.00) Inc(1.4) Azm(163.7) TVD(1002.86)
VS(-4.66) NS(-14.08) EW(3.89)

#3 MD(1097.00) Inc(1.1) Azm(71.3) TVD(1096.85)
VS(-5.88) NS(-14.90) EW(5.07)

#4 MD(1282.00) Inc(0.8) Azm(35.1) TVD(1281.82)
VS(-8.25) NS(-13.22) EW(7.53)

#5 MD(1375.00) Inc(0.9) Azm(41.2) TVD(1374.81)
VS(-9.07) NS(-12.10) EW(8.41)



#6 MD(1468.00) Inc(0.9) Azm(65.3) TVD(1467.80)
VS(-10.19) NS(-11.22) EW(9.58)

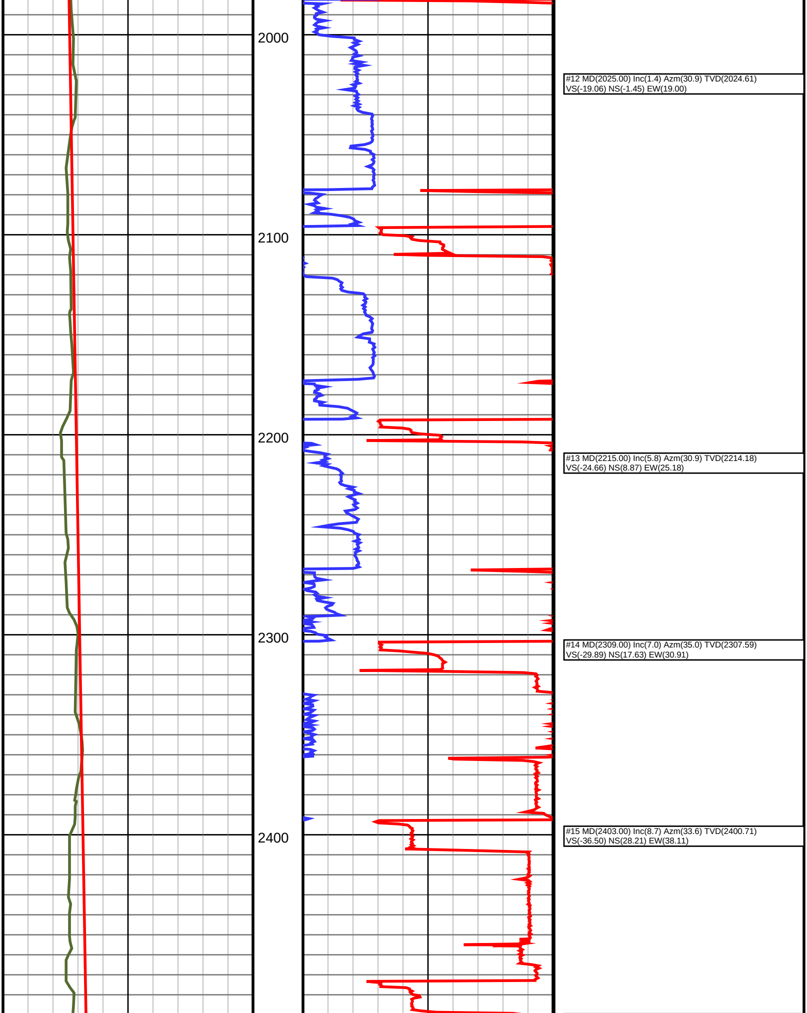
#7 MD(1562.00) Inc(1.1) Azm(79.0) TVD(1561.79)
VS(-11.69) NS(-10.74) EW(11.11)

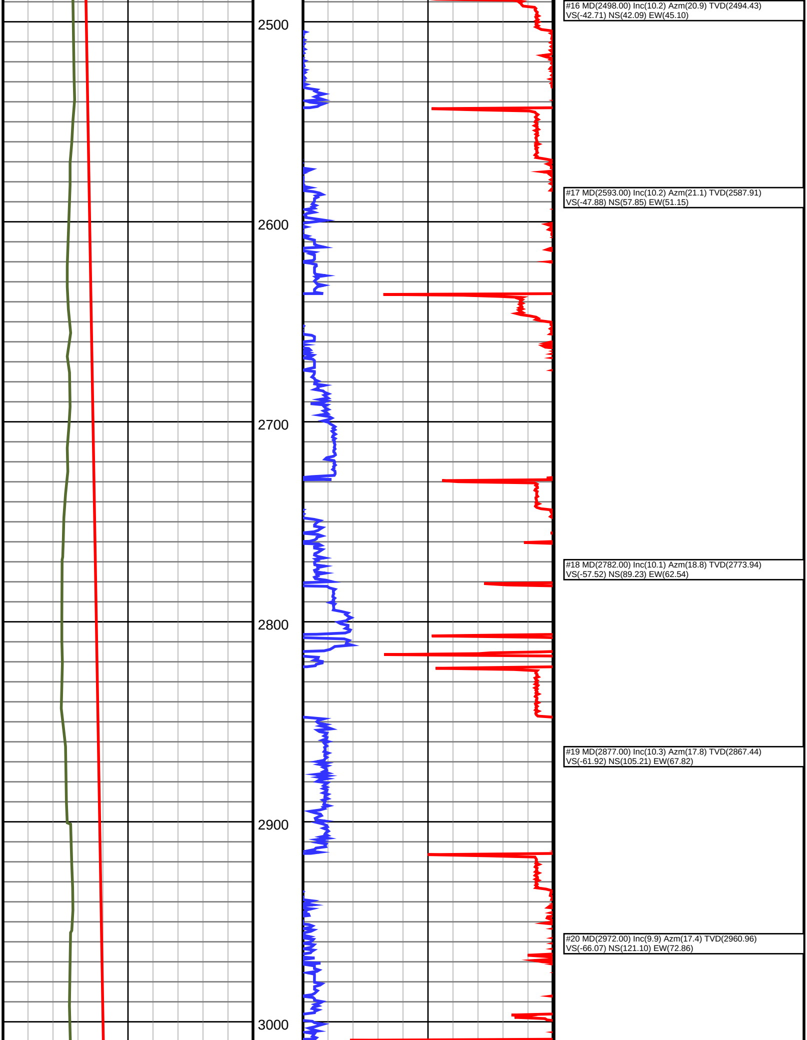
#8 MD(1655.00) Inc(1.1) Azm(62.8) TVD(1654.77)
VS(-13.31) NS(-10.16) EW(12.77)

#9 MD(1748.00) Inc(1.5) Azm(40.4) TVD(1747.74)
VS(-14.87) NS(-8.78) EW(14.41)

#10 MD(1840.00) Inc(2.0) Azm(32.4) TVD(1839.70)
VS(-16.39) NS(-6.50) EW(16.06)

#11 MD(1932.00) Inc(1.9) Azm(28.9) TVD(1931.65)
VS(-17.84) NS(-3.80) EW(17.66)





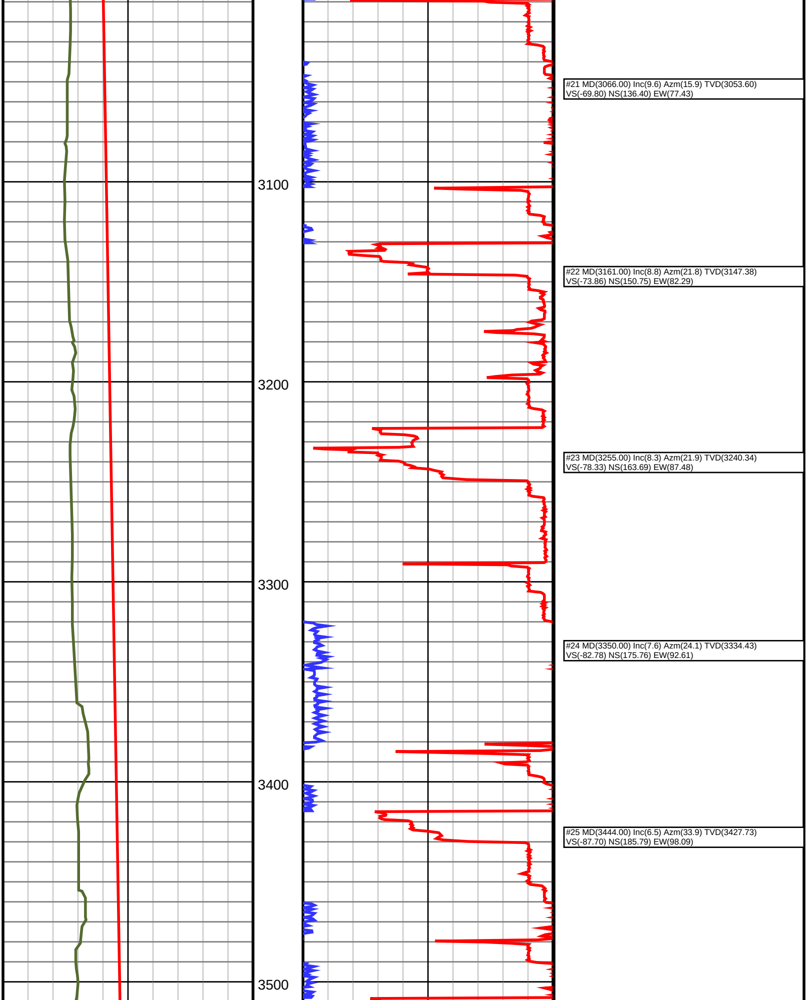
#16 MD(2498.00) Inc(10.2) Azm(20.9) TVD(2494.43)
VS(-42.71) NS(42.09) EW(45.10)

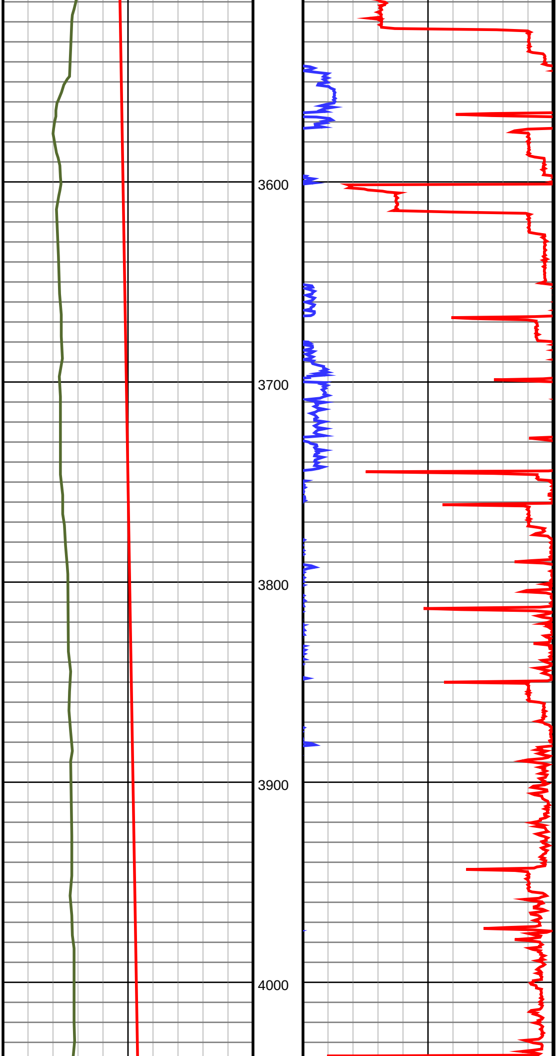
#17 MD(2593.00) Inc(10.2) Azm(21.1) TVD(2587.91)
VS(-47.88) NS(57.85) EW(51.15)

#18 MD(2782.00) Inc(10.1) Azm(18.8) TVD(2773.94)
VS(-57.52) NS(89.23) EW(62.54)

#19 MD(2877.00) Inc(10.3) Azm(17.8) TVD(2867.44)
VS(-61.92) NS(105.21) EW(67.82)

#20 MD(2972.00) Inc(9.9) Azm(17.4) TVD(2960.96)
VS(-66.07) NS(121.10) EW(72.86)





#26 MD(3538.00) Inc(7.2) Azm(36.8) TVD(3521.06)
VS(-93.67) NS(194.90) EW(104.57)

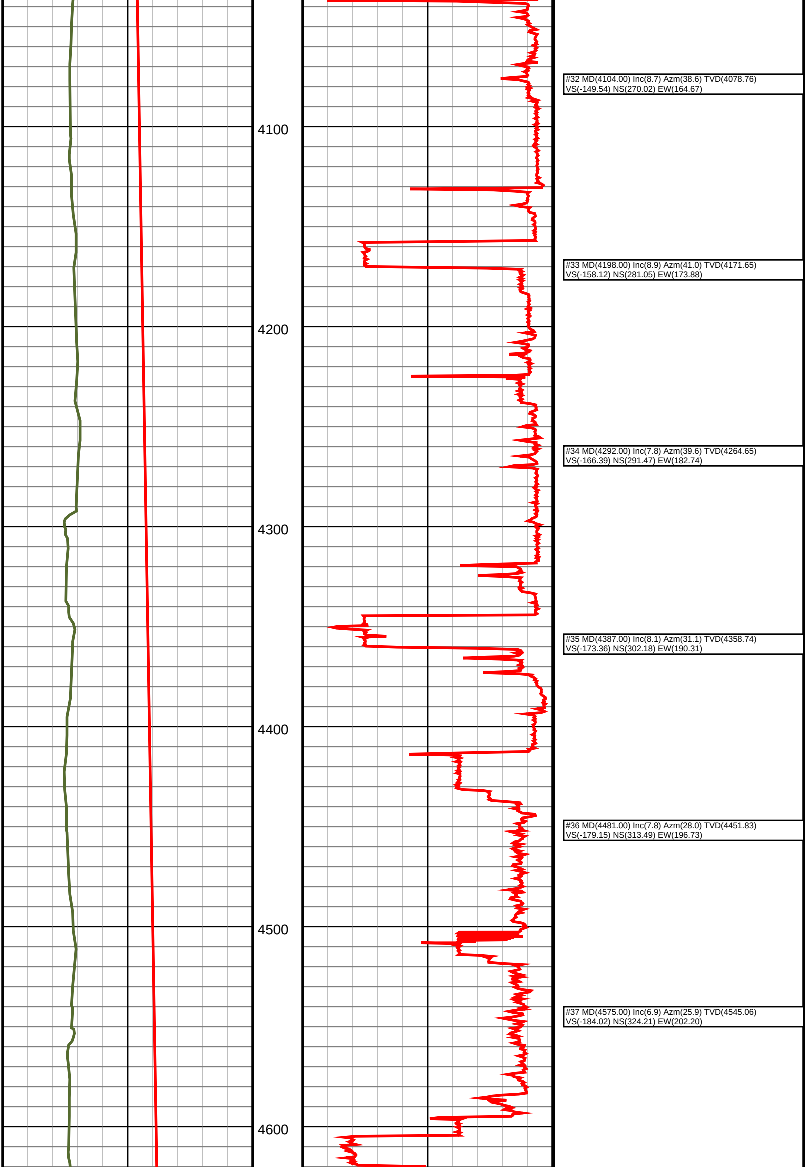
#27 MD(3633.00) Inc(9.5) Azm(39.5) TVD(3615.05)
VS(-101.62) NS(205.72) EW(113.13)

#28 MD(3728.00) Inc(10.6) Azm(39.4) TVD(3708.59)
VS(-111.43) NS(218.50) EW(123.66)

#29 MD(3822.00) Inc(10.7) Azm(38.6) TVD(3800.98)
VS(-121.60) NS(231.97) EW(134.59)

#30 MD(3917.00) Inc(10.5) Azm(38.3) TVD(3894.36)
VS(-131.67) NS(245.62) EW(145.43)

#31 MD(4010.00) Inc(9.6) Azm(38.0) TVD(3985.95)
VS(-140.95) NS(258.34) EW(155.43)



#32 MD(4104.00) Inc(8.7) Azm(38.6) TVD(4078.76)
VS(-149.54) NS(270.02) EW(164.67)

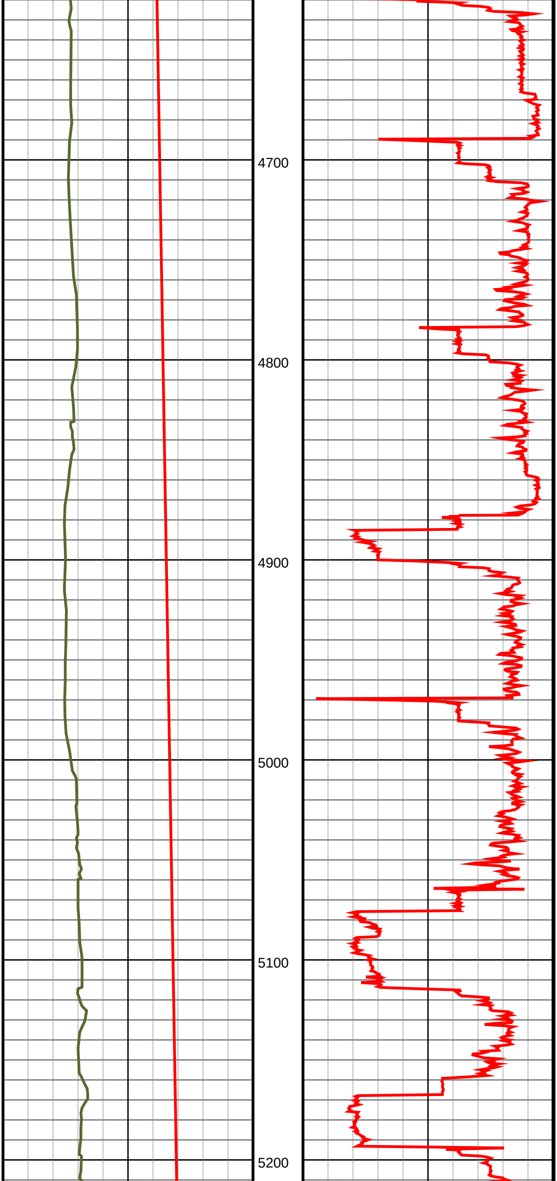
#33 MD(4198.00) Inc(8.9) Azm(41.0) TVD(4171.65)
VS(-158.12) NS(281.05) EW(173.88)

#34 MD(4292.00) Inc(7.8) Azm(39.6) TVD(4264.65)
VS(-166.39) NS(291.47) EW(182.74)

#35 MD(4387.00) Inc(8.1) Azm(31.1) TVD(4358.74)
VS(-173.36) NS(302.18) EW(190.31)

#36 MD(4481.00) Inc(7.8) Azm(28.0) TVD(4451.83)
VS(-179.15) NS(313.49) EW(196.73)

#37 MD(4575.00) Inc(6.9) Azm(25.9) TVD(4545.06)
VS(-184.02) NS(324.21) EW(202.20)



#38 MD(4670.00) Inc(8.0) Azm(25.2) TVD(4639.26)
VS(-188.71) NS(335.32) EW(207.51)

#39 MD(4765.00) Inc(7.8) Azm(23.5) TVD(4733.36)
VS(-193.42) NS(347.20) EW(212.89)

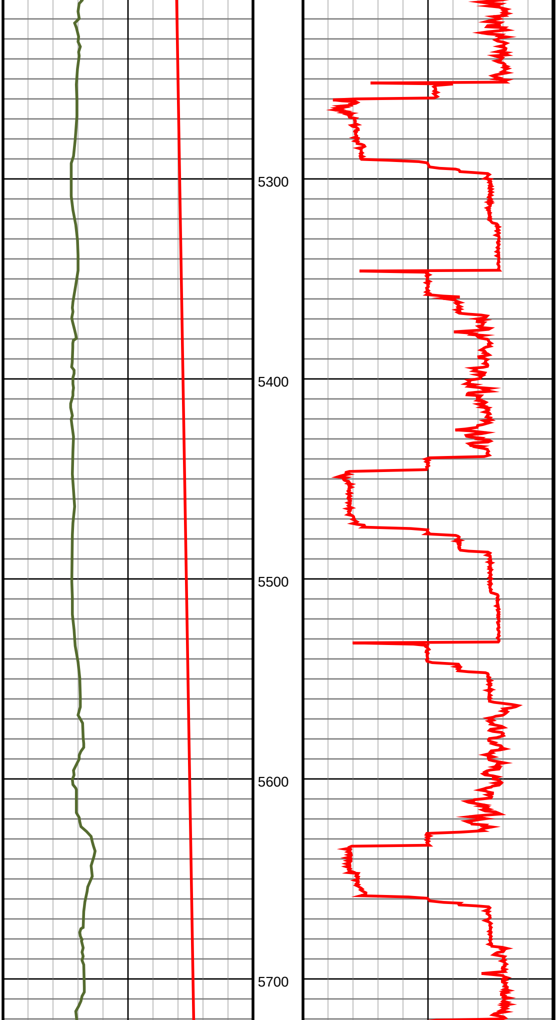
#40 MD(4859.00) Inc(7.1) Azm(21.3) TVD(4826.56)
VS(-197.45) NS(358.47) EW(217.54)

#41 MD(4954.00) Inc(7.8) Azm(32.4) TVD(4920.76)
VS(-202.44) NS(369.41) EW(223.14)

#42 MD(5049.00) Inc(6.1) Azm(34.2) TVD(5015.06)
VS(-208.21) NS(379.05) EW(229.45)

#43 MD(5143.00) Inc(6.2) Azm(50.2) TVD(5108.52)
VS(-214.50) NS(386.44) EW(236.16)

#44 MD(5238.00) Inc(7.6) Azm(43.4) TVD(5202.83)
VS(-222.31) NS(394.29) EW(244.41)



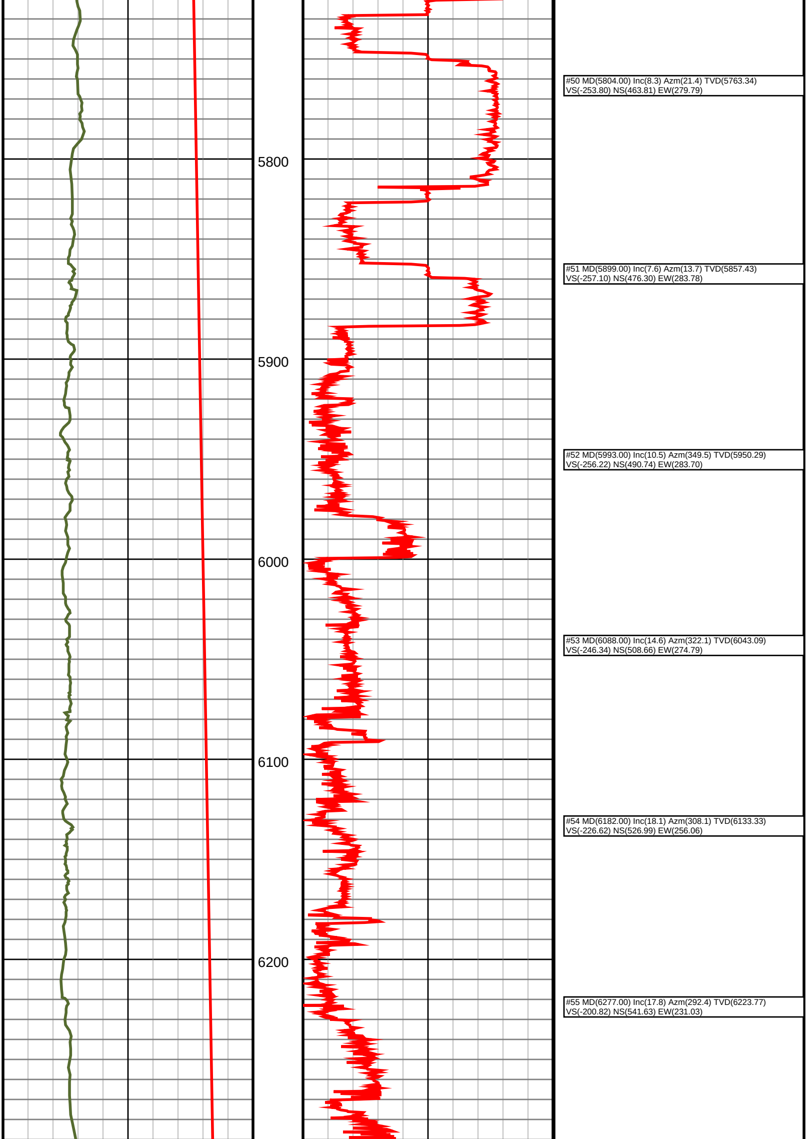
#45 MD(5332.00) Inc(8.7) Azm(32.1) TVD(5295.89)
VS(-229.76) NS(404.83) EW(252.46)

#46 MD(5427.00) Inc(6.7) Azm(32.0) TVD(5390.02)
VS(-235.91) NS(415.64) EW(259.22)

#47 MD(5521.00) Inc(9.0) Azm(24.9) TVD(5483.14)
VS(-241.28) NS(426.97) EW(265.22)

#48 MD(5616.00) Inc(7.3) Azm(22.8) TVD(5577.17)
VS(-246.05) NS(439.29) EW(270.68)

#49 MD(5710.00) Inc(8.2) Azm(18.8) TVD(5670.31)
VS(-249.87) NS(451.15) EW(275.15)



#50 MD(5804.00) Inc(8.3) Azm(21.4) TVD(5763.34)
VS(-253.80) NS(463.81) EW(279.79)

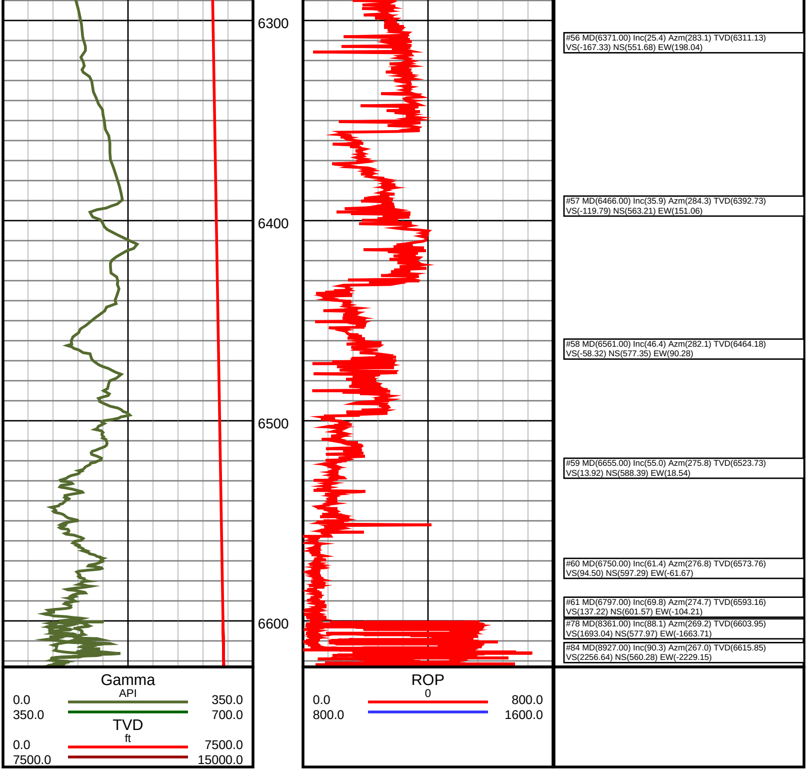
#51 MD(5899.00) Inc(7.6) Azm(13.7) TVD(5857.43)
VS(-257.10) NS(476.30) EW(283.78)

#52 MD(5993.00) Inc(10.5) Azm(349.5) TVD(5950.29)
VS(-256.22) NS(490.74) EW(283.70)

#53 MD(6088.00) Inc(14.6) Azm(322.1) TVD(6043.09)
VS(-246.34) NS(508.66) EW(274.79)

#54 MD(6182.00) Inc(18.1) Azm(308.1) TVD(6133.33)
VS(-226.62) NS(526.99) EW(256.06)

#55 MD(6277.00) Inc(17.8) Azm(292.4) TVD(6223.77)
VS(-200.82) NS(541.63) EW(231.03)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#56 MD(6371.00) Inc(25.4) Azm(283.1) TVD(6311.13)
VS(-167.33) NS(551.68) EW(198.04)
#57 MD(6466.00) Inc(35.9) Azm(284.3) TVD(6392.73)
VS(-119.79) NS(563.21) EW(151.06)
#58 MD(6561.00) Inc(46.4) Azm(282.1) TVD(6464.18)
VS(-58.32) NS(577.35) EW(90.28)
#59 MD(6655.00) Inc(55.0) Azm(275.8) TVD(6523.73)
VS(13.92) NS(588.39) EW(18.54)
#60 MD(6750.00) Inc(61.4) Azm(276.8) TVD(6573.76)
VS(94.50) NS(597.29) EW(-61.67)
#61 MD(6797.00) Inc(69.8) Azm(274.7) TVD(6593.16)
VS(137.22) NS(601.57) EW(-104.21)
#78 MD(8361.00) Inc(88.1) Azm(269.2) TVD(6603.95)
VS(1693.04) NS(577.97) EW(-1663.71)
#84 MD(8927.00) Inc(90.3) Azm(267.0) TVD(6615.85)
VS(2256.64) NS(560.28) EW(-2229.15)
Gamma
API
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TVD
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ROP
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