Polaris Guidance Systems LLC

State Antelope 14-11-28HNB

MD
5":100'

Company:	Bonanza Creek Energy Company
Well Name:	State Antelope 14-11-28HNB
UWI or LSD:	05-123-36877-00
Rig Id:	Cade 22
State:	Colorado
County/Parish:	Weld
Country:	USA
Survey Company:	ENSIGN Directional
Job number:	
Directional 1:	Daniel Barton
Directional 2:	Chris Saykally
MWD 1:	Chad Lousberg
MWD 2:	Dustin Nagle
Company Man:	Joe Savage
Geologist:	Paul Mckay

Log measurements: Gamma
Depth measured from: 5650
Maximum temperature:

	Depth	Date
Start:	0 ft	5/5/2013
End:	10850 ft	5/10/2013

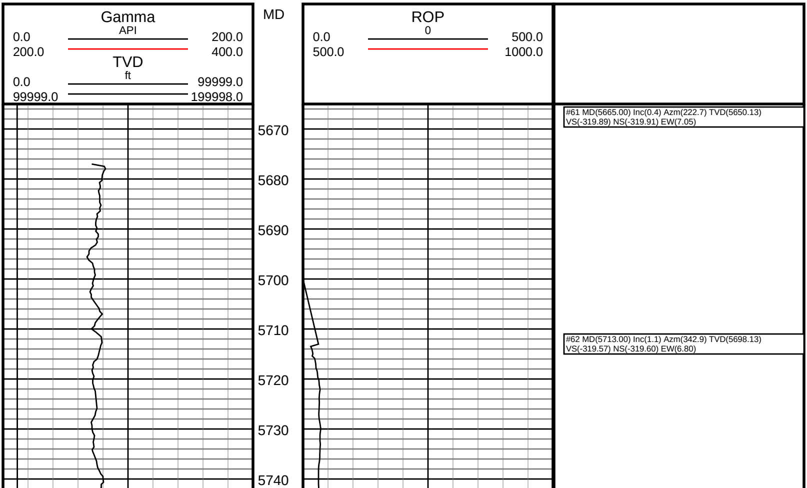
Casing	Depth	Size
Surface:	429	9.625
Intermediate:	6635	7

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

Elevations
KB: 4620
GL: 4604
DF: 4620

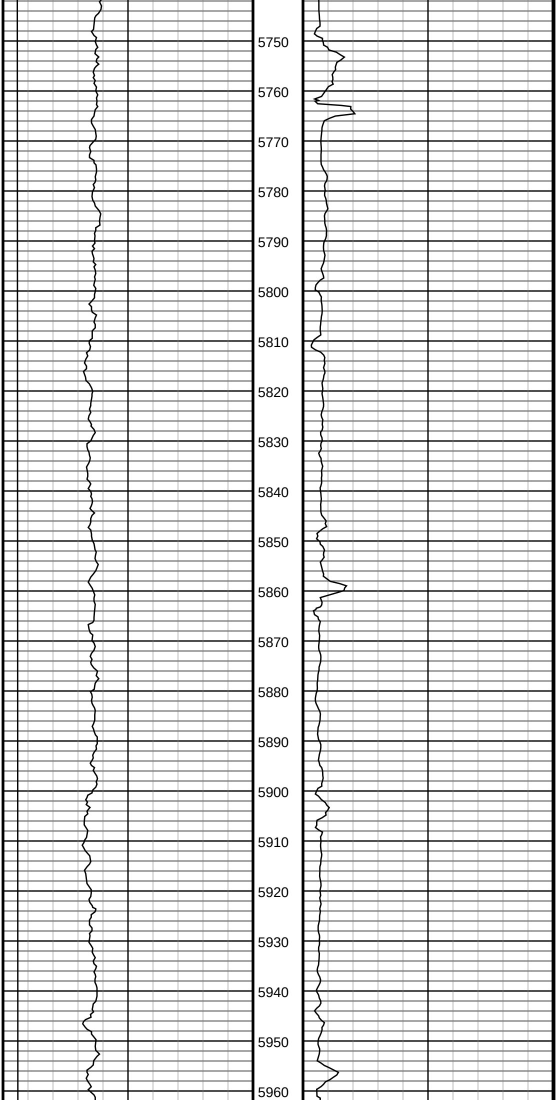
		Offsets		Depths		Dates	
Run	**Bit Size**	**Gamma**	**Survey**	**Start**	**End**	**Start**	**End**
1	9 5/8	0.00	0.00	0	429	5/2/2013	5/3/2013
2	8 3/4	0.00	46.00	451	5716	5/3/2013	5/5/2013
3	8 3/4	36.02	46.35	5716	6641	5/5/2013	5/6/2013
4	6 1/8	43.97	57.47	6641	10850	5/8/2013	5/10/2013
5							
6							
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.



#61 MD(5665.00) Inc(0.4) Azm(222.7) TVD(5650.13) VS(-319.89) NS(-319.91) EW(7.05)

#62 MD(5713.00) Inc(1.1) Azm(342.9) TVD(5698.13) VS(-319.57) NS(-319.60) EW(6.80)



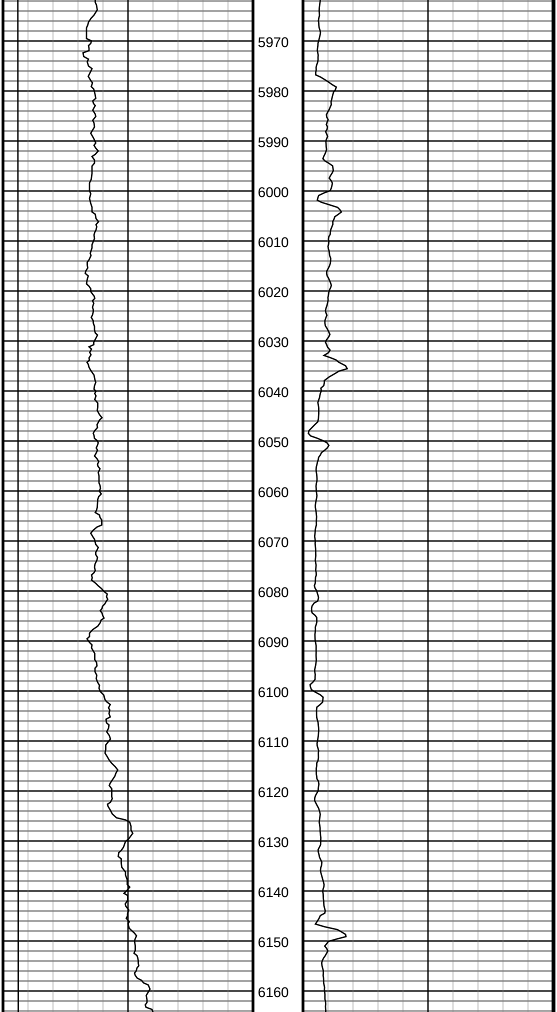
#63 MD(5761.00) Inc(5.4) Azm(1.0) TVD(5746.04)
VS(-316.87) NS(-316.90) EW(6.70)

#64 MD(5809.00) Inc(9.7) Azm(5.9) TVD(5793.61)
VS(-310.59) NS(-310.61) EW(7.16)

#65 MD(5857.00) Inc(13.7) Azm(7.1) TVD(5840.61)
VS(-300.91) NS(-300.95) EW(8.28)

#66 MD(5905.00) Inc(17.9) Azm(4.9) TVD(5886.78)
VS(-287.91) NS(-287.95) EW(9.61)

#67 MD(5953.00) Inc(22.8) Azm(5.4) TVD(5931.77)
VS(-271.29) NS(-271.33) EW(11.12)

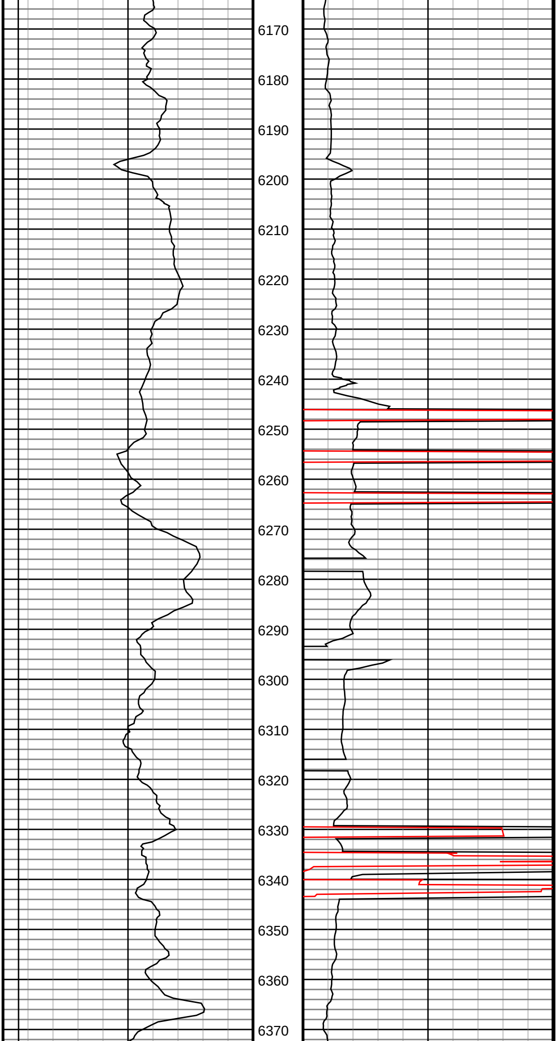


#68 MD(6000.00) Inc(27.7) Azm(7.1) TVD(5974.27)
VS(-251.36) NS(-251.41) EW(13.32)

#69 MD(6047.00) Inc(32.0) Azm(7.7) TVD(6015.03)
VS(-228.16) NS(-228.22) EW(16.34)

#70 MD(6095.00) Inc(37.0) Azm(7.1) TVD(6054.57)
VS(-201.19) NS(-201.27) EW(19.84)

#71 MD(6143.00) Inc(42.6) Azm(6.8) TVD(6091.43)
VS(-170.69) NS(-170.78) EW(23.55)

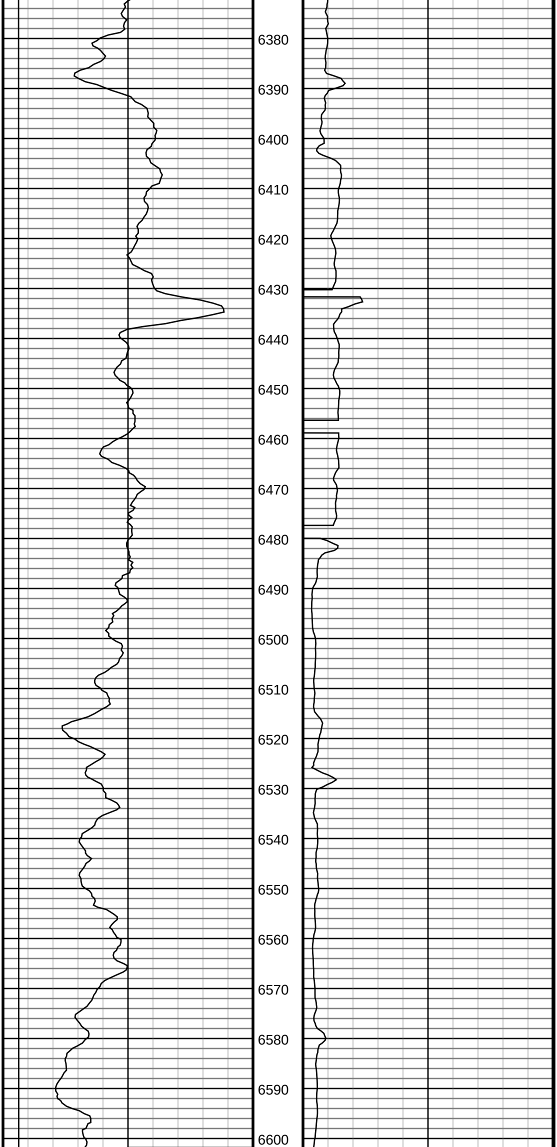


#72 MD(6191.00) Inc(47.7) Azm(5.6) TVD(6125.28)
VS(-136.86) NS(-136.96) EW(27.21)

#73 MD(6239.00) Inc(52.8) Azm(6.3) TVD(6155.96)
VS(-100.15) NS(-100.27) EW(31.04)

#74 MD(6286.00) Inc(57.4) Azm(6.6) TVD(6182.84)
VS(-61.85) NS(-61.98) EW(35.37)

#75 MD(6334.00) Inc(63.3) Azm(5.9) TVD(6206.58)
VS(-20.38) NS(-20.53) EW(39.90)



#76 MD(6382.00) Inc(68.7) Azm(3.3) TVD(6226.10)
VS(23.32) NS(23.16) EW(43.40)

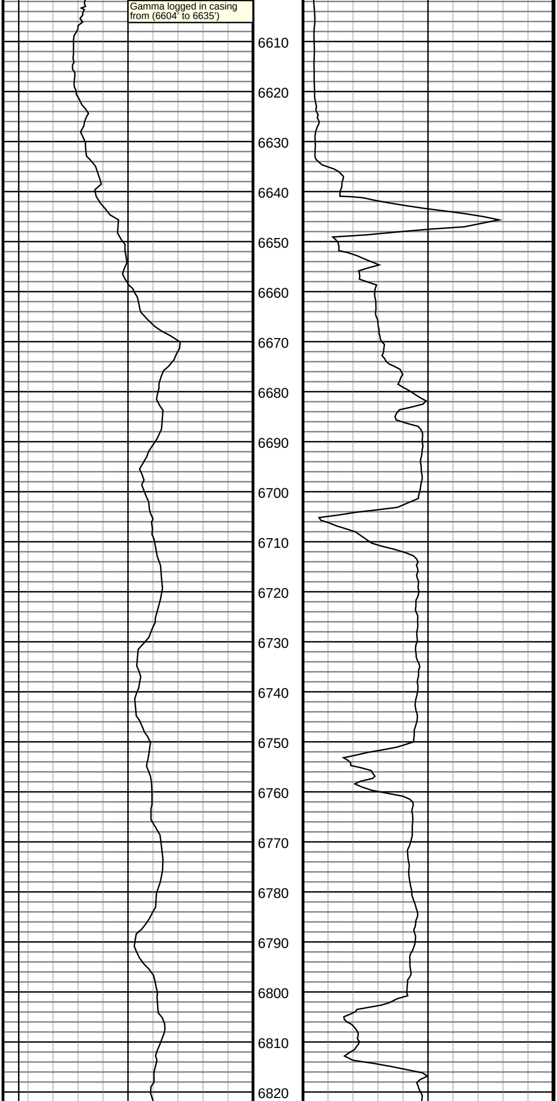
#77 MD(6430.00) Inc(69.3) Azm(2.4) TVD(6243.30)
VS(68.09) NS(67.92) EW(45.62)

#78 MD(6478.00) Inc(69.0) Azm(2.6) TVD(6260.38)
VS(112.91) NS(112.73) EW(47.58)

#79 MD(6526.00) Inc(74.2) Azm(0.8) TVD(6275.53)
VS(158.42) NS(158.24) EW(48.92)

#80 MD(6574.00) Inc(81.7) Azm(0.8) TVD(6285.54)
VS(205.33) NS(205.15) EW(49.57)

#81 MD(6593.00) Inc(84.1) Azm(0.1) TVD(6287.89)
VS(224.18) NS(224.00) EW(49.72)

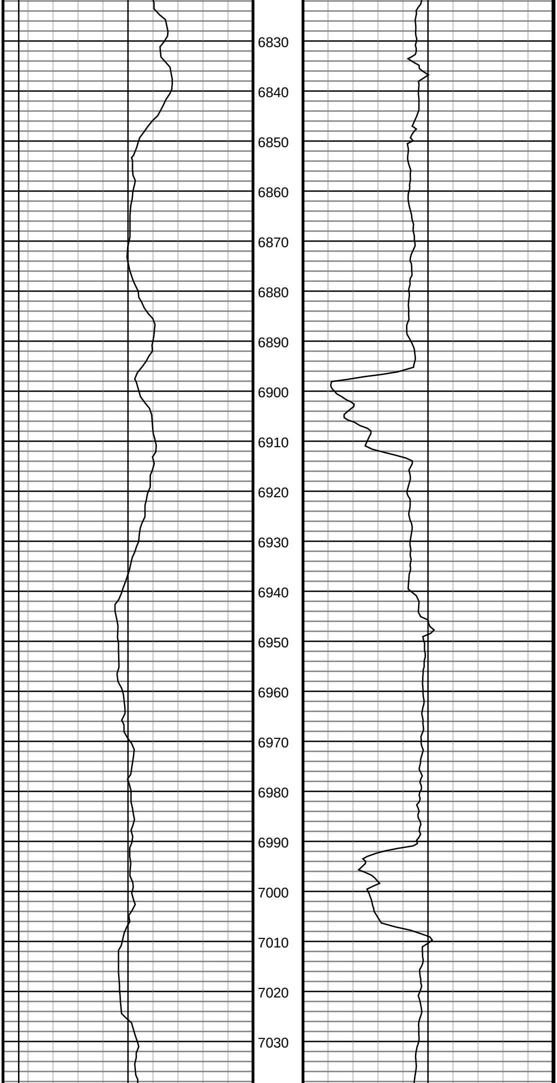


#82 MD(6642.00) Inc(87.8) Azm(358.0) TVD(6291.35)
VS(273.03) NS(272.86) EW(48.91)

#83 MD(6690.00) Inc(88.2) Azm(357.5) TVD(6293.03)
VS(320.96) NS(320.79) EW(47.03)

#84 MD(6738.00) Inc(89.6) Azm(357.5) TVD(6293.95)
VS(368.90) NS(368.73) EW(44.93)

#85 MD(6785.00) Inc(91.1) Azm(358.7) TVD(6293.66)
VS(415.86) NS(415.71) EW(43.38)



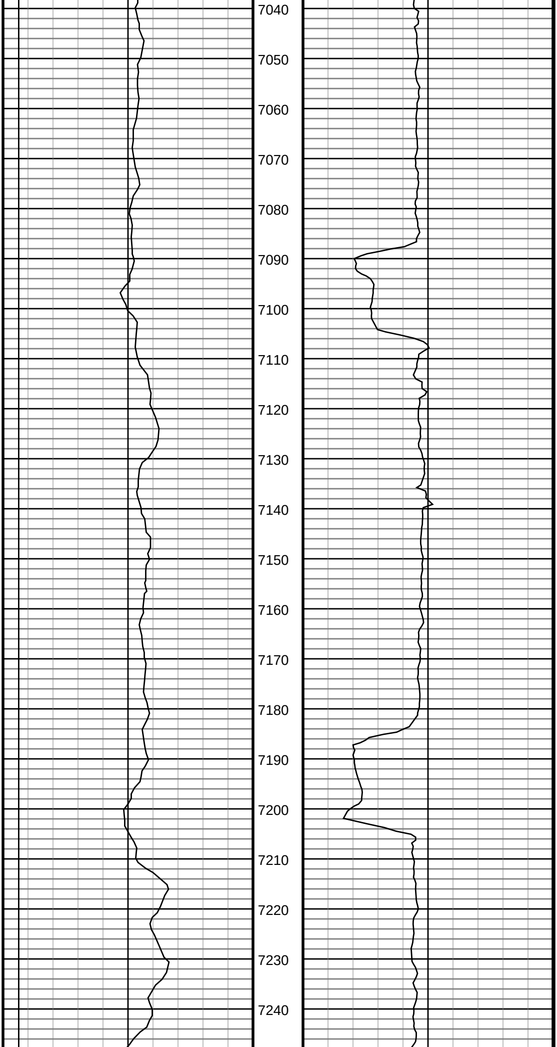
#86 MD(6833.00) Inc(90.7) Azm(0.6) TVD(6292.91)
VS(463.85) NS(463.70) EW(43.08)

#87 MD(6882.00) Inc(91.5) Azm(0.5) TVD(6291.97)
VS(512.84) NS(512.69) EW(43.55)

#88 MD(6930.00) Inc(90.6) Azm(359.2) TVD(6291.09)
VS(560.83) NS(560.68) EW(43.43)

#89 MD(6977.00) Inc(91.2) Azm(0.8) TVD(6290.35)
VS(607.82) NS(607.67) EW(43.43)

#90 MD(7025.00) Inc(90.2) Azm(1.2) TVD(6289.76)
VS(655.81) NS(655.66) EW(44.26)

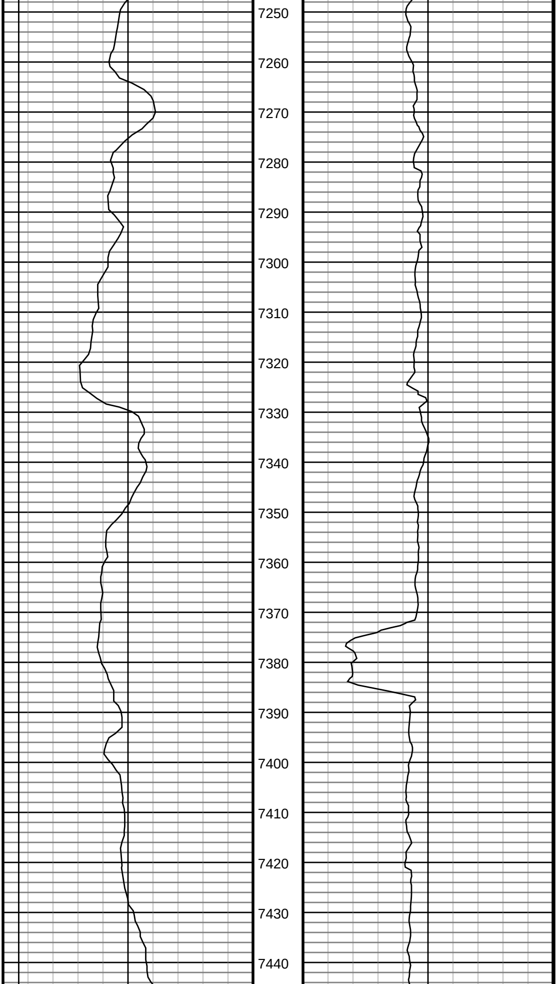


#91 MD(7073.00) Inc(91.0) Azm(359.8) TVD(6289.26)
VS(703.81) NS(703.65) EW(44.68)

#92 MD(7121.00) Inc(90.0) Azm(0.6) TVD(6288.84)
VS(751.81) NS(751.65) EW(44.85)

#93 MD(7168.00) Inc(90.7) Azm(359.2) TVD(6288.55)
VS(798.80) NS(798.64) EW(44.77)

#94 MD(7216.00) Inc(88.6) Azm(0.8) TVD(6288.85)
VS(846.80) NS(846.64) EW(44.77)

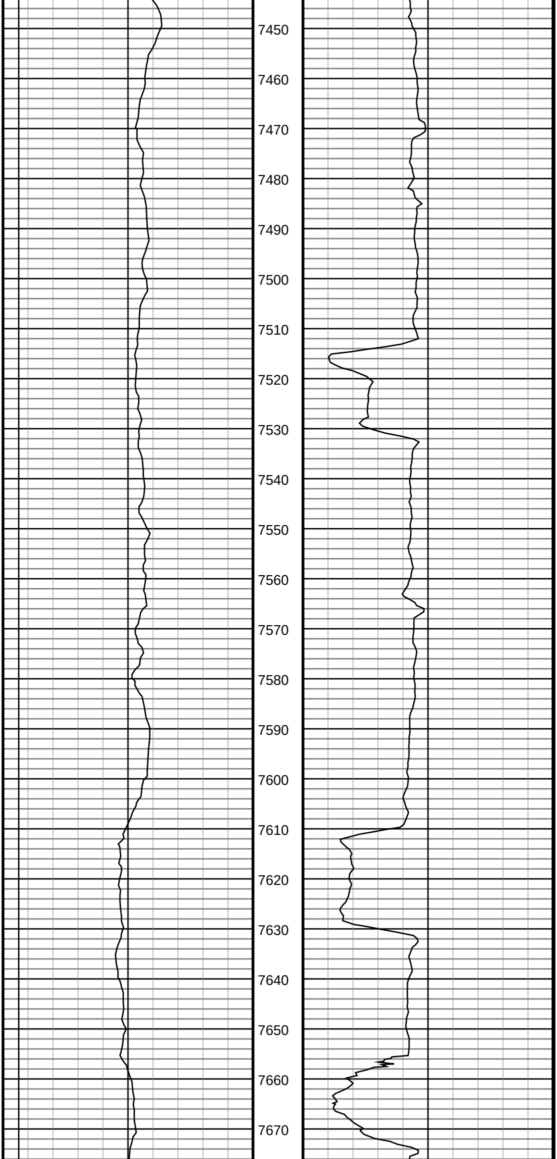


#95 MD(7262.00) Inc(88.8) Azm(0.8) TVD(6289.89)
VS(892.78) NS(892.62) EW(45.41)

#96 MD(7310.00) Inc(89.4) Azm(359.2) TVD(6290.65)
VS(940.78) NS(940.62) EW(45.41)

#97 MD(7356.00) Inc(90.0) Azm(359.4) TVD(6290.89)
VS(986.77) NS(986.61) EW(44.85)

#98 MD(7404.00) Inc(89.2) Azm(0.3) TVD(6291.22)
VS(1034.77) NS(1034.61) EW(44.72)



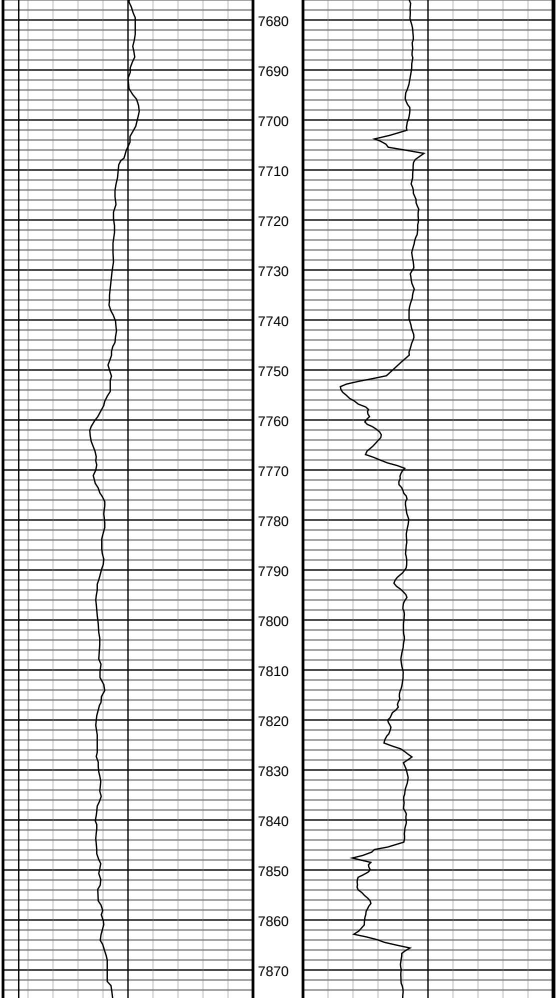
#99 MD(7452.00) Inc(89.8) Azm(0.8) TVD(6291.64)
VS(1082.76) NS(1082.60) EW(45.18)

#100 MD(7500.00) Inc(91.0) Azm(1.3) TVD(6291.31)
VS(1130.76) NS(1130.59) EW(46.06)

#101 MD(7547.00) Inc(90.6) Azm(1.2) TVD(6290.65)
VS(1177.74) NS(1177.58) EW(47.09)

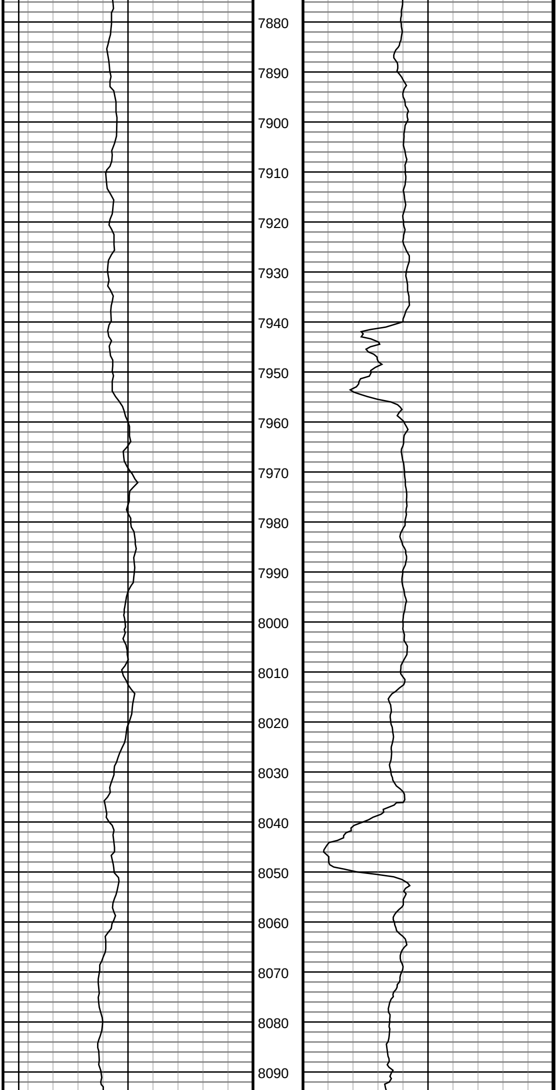
#102 MD(7595.00) Inc(91.5) Azm(1.3) TVD(6289.77)
VS(1225.73) NS(1225.56) EW(48.14)

#103 MD(7642.00) Inc(90.0) Azm(358.0) TVD(6289.15)
VS(1272.71) NS(1272.55) EW(47.85)



#104 MD(7690.00) Inc(89.4) Azm(357.5) TVD(6289.41)
VS(1320.67) NS(1320.51) EW(45.96)

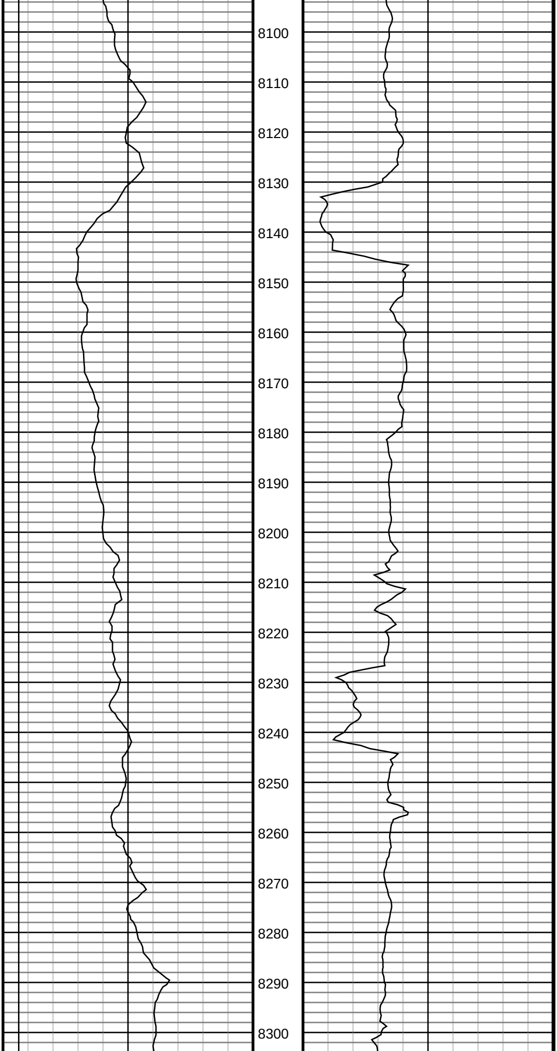
#105 MD(7783.00) Inc(89.5) Azm(357.8) TVD(6290.30)
VS(1413.57) NS(1413.43) EW(42.15)



#106 MD(7879.00) Inc(89.6) Azm(356.4) TVD(6291.05)
VS(1509.42) NS(1509.30) EW(37.29)

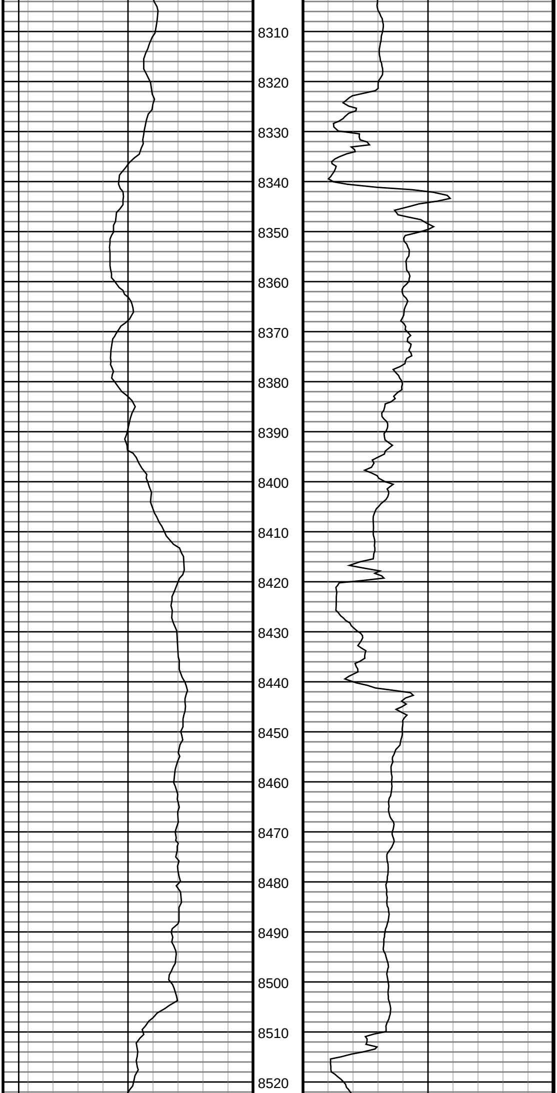
#107 MD(7974.00) Inc(89.8) Azm(357.7) TVD(6291.55)
VS(1604.28) NS(1604.17) EW(32.41)

#108 MD(8070.00) Inc(90.0) Azm(357.8) TVD(6291.72)
VS(1700.19) NS(1700.09) EW(28.64)



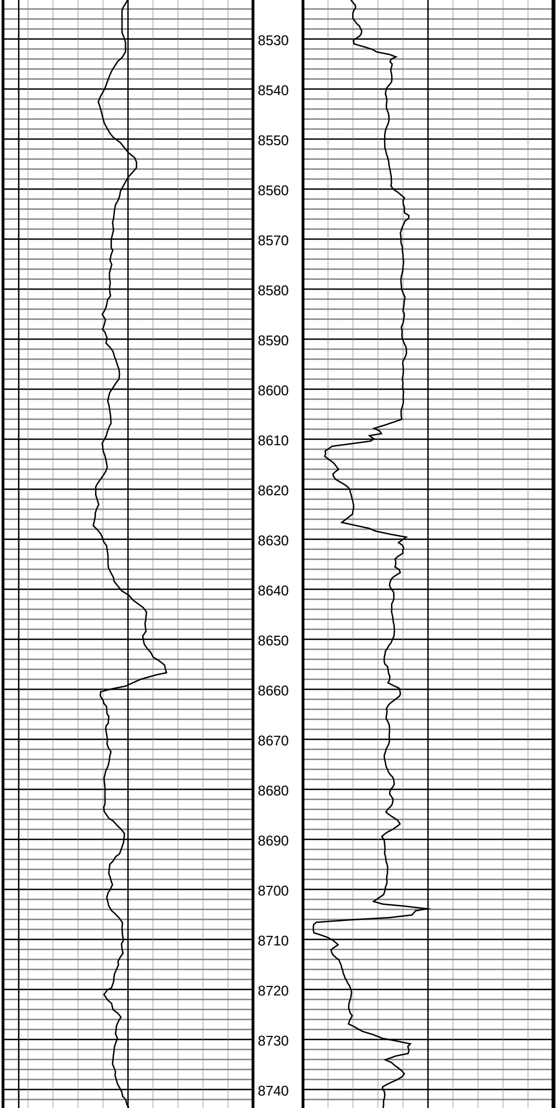
#109 MD(8166.00) Inc(90.5) Azm(356.8) TVD(6291.30)
VS(1796.06) NS(1795.98) EW(24.11)

#110 MD(8261.00) Inc(90.5) Azm(357.1) TVD(6290.47)
VS(1890.90) NS(1890.85) EW(19.06)



#111 MD(8354.00) Inc(90.7) Azm(358.0) TVD(6289.50)
VS(1983.80) NS(1983.75) EW(15.08)

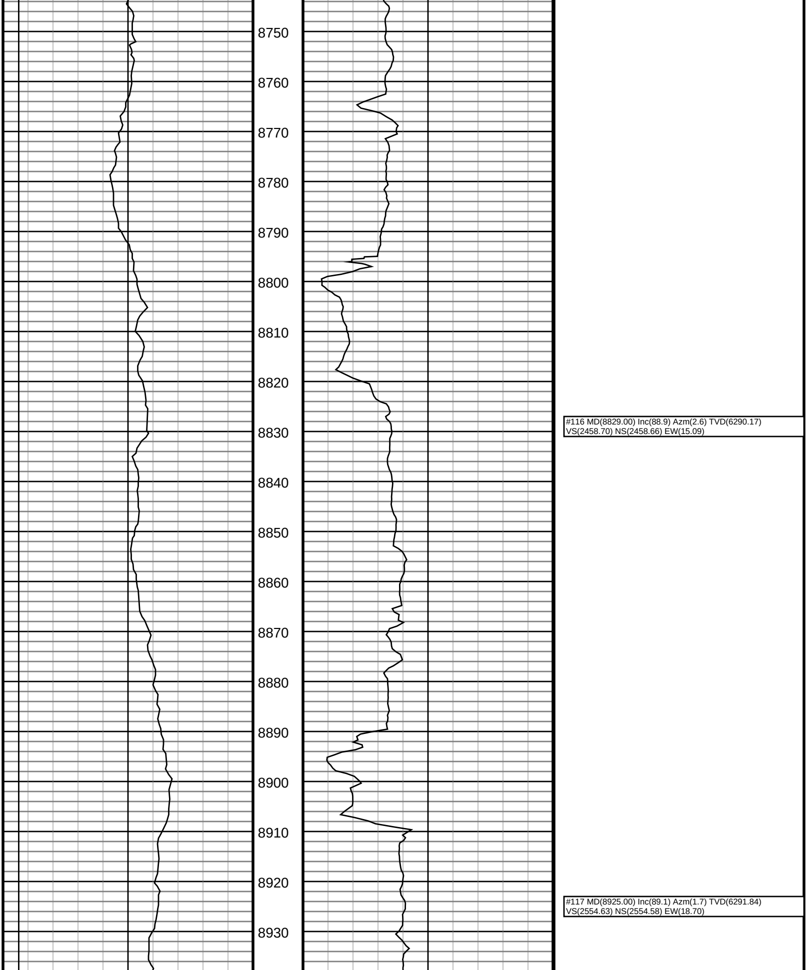
#112 MD(8448.00) Inc(90.0) Azm(0.1) TVD(6288.92)
VS(2077.77) NS(2077.73) EW(13.53)



#113 MD(8544.00) Inc(89.8) Azm(359.2) TVD(6289.09)
VS(2173.76) NS(2173.73) EW(12.94)

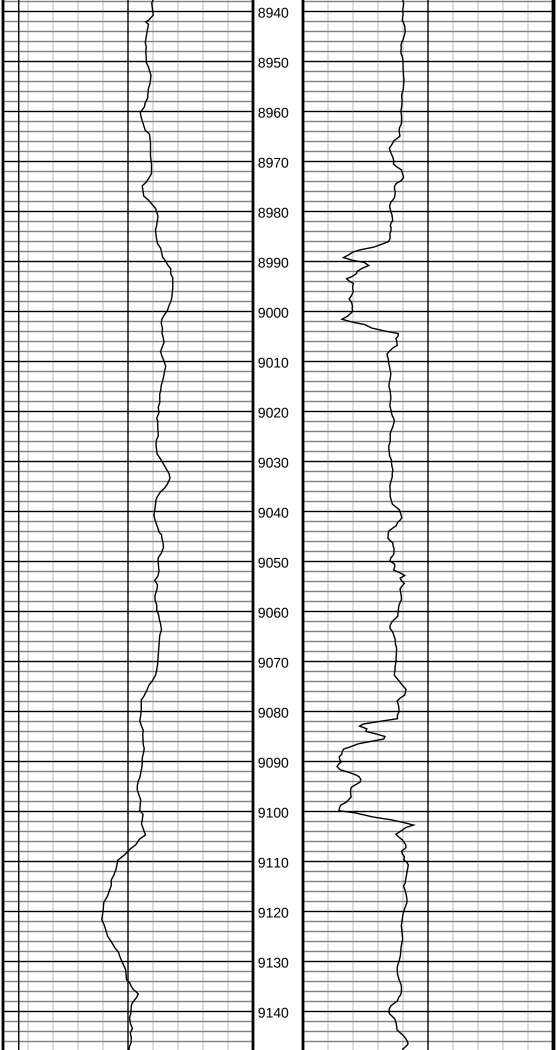
#114 MD(8639.00) Inc(90.0) Azm(359.4) TVD(6289.25)
VS(2268.75) NS(2268.72) EW(11.78)

#115 MD(8734.00) Inc(90.0) Azm(1.0) TVD(6289.25)
VS(2363.75) NS(2363.72) EW(12.11)



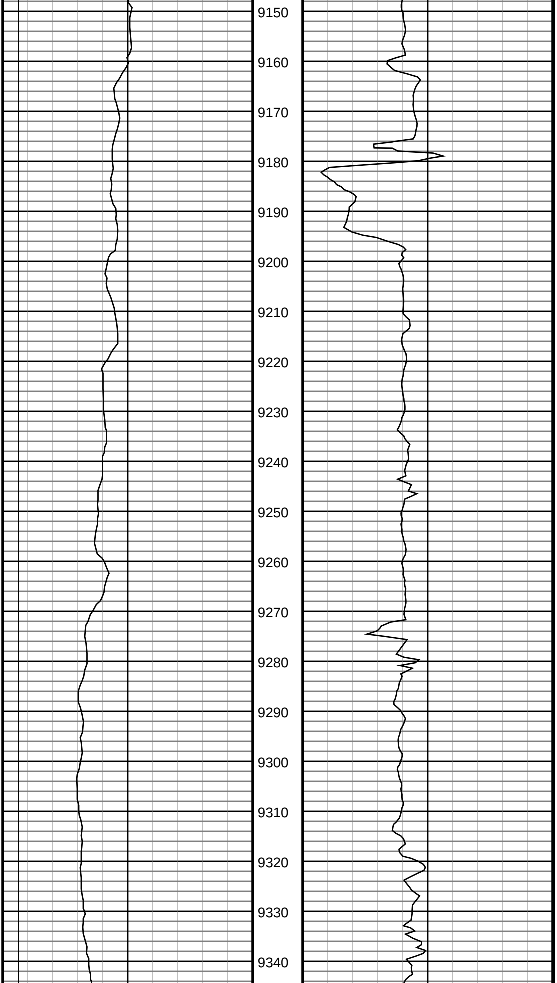
#116 MD(8829.00) Inc(88.9) Azm(2.6) TVD(6290.17)
VS(2458.70) NS(2458.66) EW(15.09)

#117 MD(8925.00) Inc(89.1) Azm(1.7) TVD(6291.84)
VS(2554.63) NS(2554.58) EW(18.70)



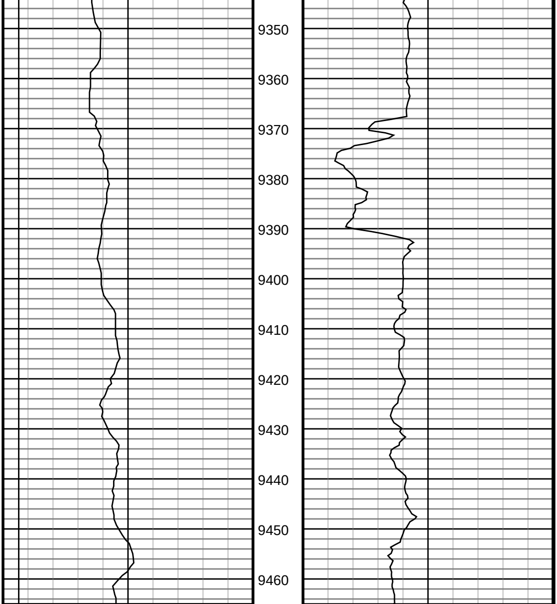
#118 MD(9020.00) Inc(89.5) Azm(359.4) TVD(6293.00)
VS(2649.62) NS(2649.56) EW(19.61)

#119 MD(9115.00) Inc(89.6) Azm(1.2) TVD(6293.75)
VS(2744.61) NS(2744.56) EW(20.10)



#120 MD(9211.00) Inc(88.5) Azm(359.8) TVD(6295.34)
VS(2840.59) NS(2840.53) EW(20.94)

#121 MD(9307.00) Inc(90.5) Azm(0.6) TVD(6296.18)
VS(2936.58) NS(2936.52) EW(21.28)



#122 MD(9402.00) Inc(91.1) Azm(0.5) TVD(6294.85)
VS(3031.57) NS(3031.51) EW(22.19)

#123 MD(9495.00) Inc(90.6) Azm(358.2) TVD(6293.47)
VS(3124.54) NS(3124.49) EW(21.13)

#124 MD(9591.00) Inc(90.3) Azm(357.3) TVD(6292.72)
VS(3220.45) NS(3220.41) EW(17.37)

#125 MD(9686.00) Inc(90.7) Azm(357.8) TVD(6291.89)
VS(3315.35) NS(3315.32) EW(13.30)

#126 MD(9782.00) Inc(90.3) Azm(359.8) TVD(6291.05)
VS(3411.31) NS(3411.29) EW(11.29)

#127 MD(9878.00) Inc(90.6) Azm(1.5) TVD(6290.30)
VS(3507.30) NS(3507.28) EW(12.38)

#128 MD(9974.00) Inc(89.7) Azm(2.6) TVD(6290.05)
VS(3603.25) NS(3603.21) EW(15.82)

#129 MD(10069.00) Inc(89.3) Azm(1.0) TVD(6290.87)
VS(3698.20) NS(3698.16) EW(18.80)

#130 MD(10165.00) Inc(89.2) Azm(0.6) TVD(6292.13)
VS(3794.19) NS(3794.14) EW(20.14)

#131 MD(10260.00) Inc(90.5) Azm(0.5) TVD(6292.38)
VS(3889.18) NS(3889.13) EW(21.05)

#132 MD(10357.00) Inc(91.1) Azm(1.0) TVD(6291.03)
VS(3986.17) NS(3986.12) EW(22.32)

#133 MD(10451.00) Inc(90.5) Azm(359.2) TVD(6289.71)
VS(4080.16) NS(4080.10) EW(22.49)

#134 MD(10547.00) Inc(89.5) Azm(359.2) TVD(6289.71)
VS(4176.14) NS(4176.09) EW(21.15)

#135 MD(10643.00) Inc(90.9) Azm(0.6) TVD(6289.38)
VS(4272.13) NS(4272.09) EW(20.98)

#136 MD(10739.00) Inc(92.4) Azm(0.8) TVD(6286.61)
VS(4368.09) NS(4368.04) EW(22.15)

#137 MD(10790.00) Inc(93.4) Azm(1.3) TVD(6284.03)
VS(4419.02) NS(4418.96) EW(23.08)

Bit Projection @ 10850'
INC: 93.4 AZM: 1.3 TVD:
6280.47'