ENSIGN
ENERGY SERVICES INC.

State Seventy Holes 34-31-6HNB

MD
2":100'

Company: Bonanza Creek Energy Operating
Well Name: State Seventy Holes 34-31-6HNB
API: 05-123-37914-00
Rig Id: Ensign 136
State: Colorado
County/Parish: Weld
Country: USA
Survey Company: Ensign Directional
Job number: 378
Company Man 1 Lonnie Mustard
Directional Driller 1 Breven Williams
Directional Driller 2 Joe Dupre
MWD 1 Wade Eldridge
MWD 2 Andrew Keohan

Log measurements:
Depth measured from: KB
Maximum temperature: 219.2

	Depth	**Date**
Start:	5700 ft	09-18-2013
End:	10991 ft	09-23-2013

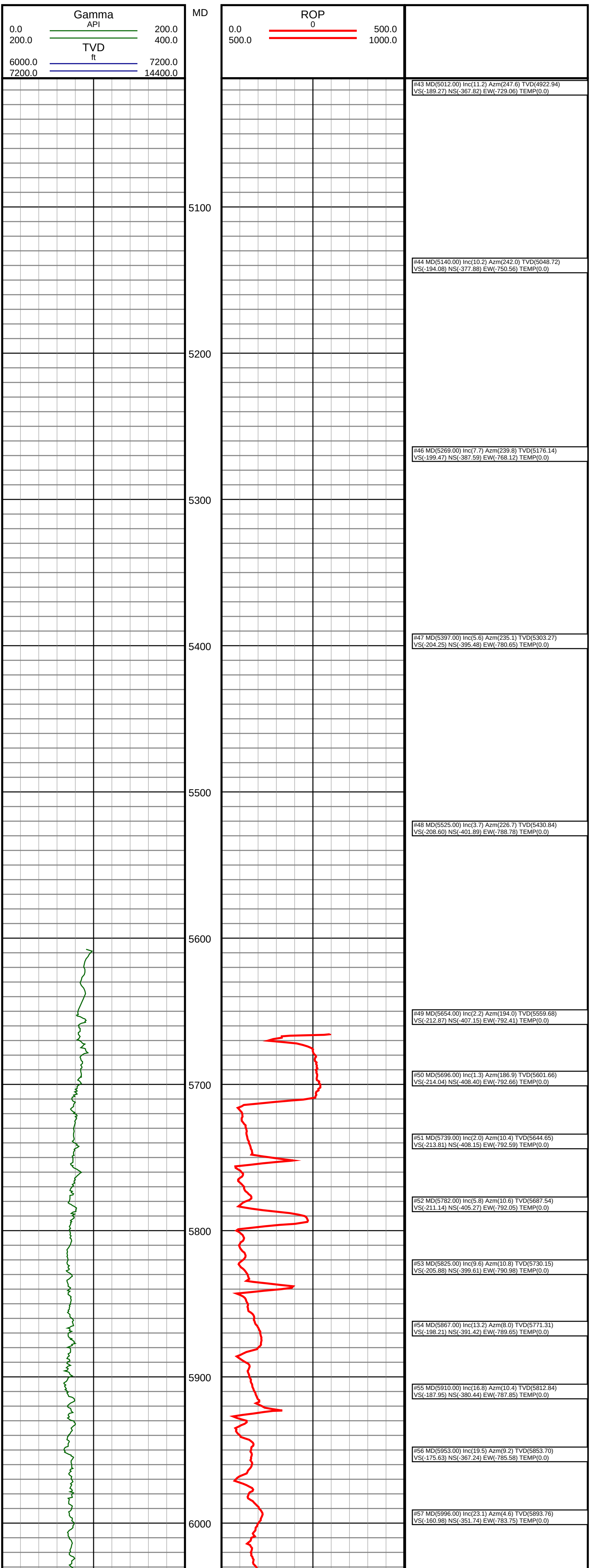
Casing	**Depth**	**Size**
Surface:	463	9.625
Intermediate:	6780	7

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

Elevations
KB: 4543
GL: 4530
DF: 4543

		Offsets		**Depths**		**Dates**	
Run	**Bit Size**	**Gamma**	**Survey**	**Start**	**End**	**Start**	**End**
1	13.5	0.00	0.00	0	482	09-04-2013	09-04-2013
2	8.750	57.81	52.81	482	6797	09-18-2013	09/19/2013
3	6 1/8	58.53	53.53	6797	10991	09-20-2013	09/23/2013
4							
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.



#43 MD(5012.00) Inc(11.2) Azm(247.6) TVD(4922.94) VS(-189.27) NS(-367.82) EW(-729.06) TEMP(0.0)

#44 MD(5140.00) Inc(10.2) Azm(242.0) TVD(5048.72) VS(-194.08) NS(-377.88) EW(-750.56) TEMP(0.0)

#46 MD(5269.00) Inc(7.7) Azm(239.8) TVD(5176.14) VS(-199.47) NS(-387.59) EW(-768.12) TEMP(0.0)

#47 MD(5397.00) Inc(5.6) Azm(235.1) TVD(5303.27) VS(-204.25) NS(-395.48) EW(-780.65) TEMP(0.0)

#48 MD(5525.00) Inc(3.7) Azm(226.7) TVD(5430.84) VS(-208.60) NS(-401.89) EW(-788.78) TEMP(0.0)

#49 MD(5654.00) Inc(2.2) Azm(194.0) TVD(5559.68) VS(-212.87) NS(-407.15) EW(-792.41) TEMP(0.0)

#50 MD(5696.00) Inc(1.3) Azm(186.9) TVD(5601.66) VS(-214.04) NS(-408.40) EW(-792.66) TEMP(0.0)

#51 MD(5739.00) Inc(2.0) Azm(10.4) TVD(5644.65) VS(-213.81) NS(-408.15) EW(-792.59) TEMP(0.0)

#52 MD(5782.00) Inc(5.8) Azm(10.6) TVD(5687.54) VS(-211.14) NS(-405.27) EW(-792.05) TEMP(0.0)

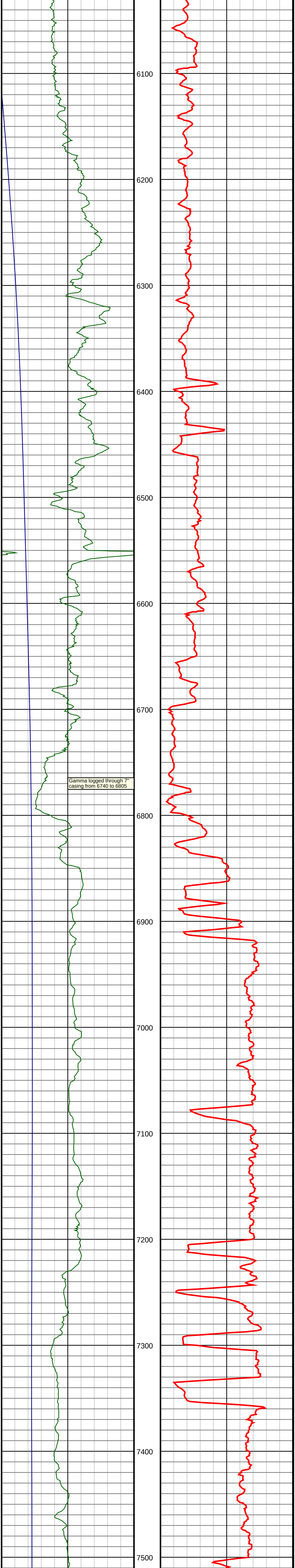
#53 MD(5825.00) Inc(9.6) Azm(10.8) TVD(5730.15) VS(-205.88) NS(-399.61) EW(-790.98) TEMP(0.0)

#54 MD(5867.00) Inc(13.2) Azm(8.0) TVD(5771.31) VS(-198.21) NS(-391.42) EW(-789.65) TEMP(0.0)

#55 MD(5910.00) Inc(16.8) Azm(10.4) TVD(5812.84) VS(-187.95) NS(-380.44) EW(-787.85) TEMP(0.0)

#56 MD(5953.00) Inc(19.5) Azm(9.2) TVD(5853.70) VS(-175.63) NS(-367.24) EW(-785.58) TEMP(0.0)

#57 MD(5996.00) Inc(23.1) Azm(4.6) TVD(5893.76) VS(-160.98) NS(-351.74) EW(-783.75) TEMP(0.0)



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#59 MD(6081.00) Inc(30.9) Azm(0.8) TVD(5969.39)
VS(-123.75) NS(-313.13) EW(-782.26) TEMP(0.0)

#60 MD(6124.00) Inc(35.1) Azm(358.8) TVD(6005.44)
VS(-100.95) NS(-289.72) EW(-782.37) TEMP(0.0)

#61 MD(6167.00) Inc(39.8) Azm(358.0) TVD(6039.57)
VS(-75.36) NS(-263.59) EW(-783.11) TEMP(0.0)

#62 MD(6210.00) Inc(45.0) Azm(356.6) TVD(6071.31)
VS(-46.87) NS(-234.64) EW(-784.49) TEMP(0.0)

#63 MD(6252.00) Inc(50.1) Azm(354.6) TVD(6099.65)
VS(-16.27) NS(-203.75) EW(-786.89) TEMP(0.0)

#64 MD(6295.00) Inc(55.8) Azm(353.9) TVD(6125.55)
VS(17.73) NS(-169.62) EW(-790.33) TEMP(0.0)

#65 MD(6338.00) Inc(61.4) Azm(354.8) TVD(6147.94)
VS(54.08) NS(-133.11) EW(-793.94) TEMP(0.0)

#66 MD(6381.00) Inc(67.1) Azm(354.3) TVD(6166.62)
VS(92.43) NS(-94.57) EW(-797.62) TEMP(0.0)

#67 MD(6424.00) Inc(71.1) Azm(353.0) TVD(6181.96)
VS(132.29) NS(-54.66) EW(-802.07) TEMP(0.0)

#68 MD(6466.00) Inc(73.9) Azm(353.6) TVD(6194.58)
VS(172.07) NS(-14.88) EW(-806.74) TEMP(0.0)

#69 MD(6509.00) Inc(74.1) Azm(353.0) TVD(6206.44)
VS(213.13) NS(26.17) EW(-811.56) TEMP(0.0)

#70 MD(6551.00) Inc(74.4) Azm(352.3) TVD(6217.84)
VS(253.33) NS(66.26) EW(-816.73) TEMP(0.0)

#71 MD(6594.00) Inc(74.8) Azm(352.5) TVD(6229.26)
VS(294.57) NS(107.35) EW(-822.21) TEMP(0.0)

#72 MD(6637.00) Inc(75.5) Azm(352.3) TVD(6240.28)
VS(335.92) NS(148.55) EW(-827.71) TEMP(0.0)

#73 MD(6680.00) Inc(76.7) Azm(353.8) TVD(6250.61)
VS(377.40) NS(189.98) EW(-832.76) TEMP(0.0)

#74 MD(6722.00) Inc(79.5) Azm(354.6) TVD(6259.27)
VS(418.14) NS(230.87) EW(-836.91) TEMP(0.0)

#75 MD(6742.00) Inc(81.7) Azm(355.0) TVD(6262.53)
VS(437.67) NS(250.52) EW(-838.70) TEMP(0.0)

#76 MD(6805.00) Inc(84.3) Azm(357.1) TVD(6270.21)
VS(499.34) NS(312.89) EW(-843.00) TEMP(0.0)

#77 MD(6848.00) Inc(85.7) Azm(357.6) TVD(6273.96)
VS(541.43) NS(355.68) EW(-844.98) TEMP(0.0)

#78 MD(6890.00) Inc(88.0) Azm(357.4) TVD(6276.27)
VS(582.61) NS(397.57) EW(-846.81) TEMP(0.0)

#79 MD(6933.00) Inc(89.2) Azm(356.9) TVD(6277.32)
VS(624.88) NS(440.50) EW(-848.95) TEMP(0.0)

#80 MD(6975.00) Inc(89.4) Azm(356.7) TVD(6277.83)
VS(666.21) NS(482.44) EW(-851.29) TEMP(0.0)

#81 MD(7018.00) Inc(89.2) Azm(356.4) TVD(6278.35)
VS(708.57) NS(525.36) EW(-853.88) TEMP(0.0)

#82 MD(7060.00) Inc(89.8) Azm(356.2) TVD(6278.72)
VS(749.97) NS(567.27) EW(-856.59) TEMP(0.0)

#83 MD(7102.00) Inc(91.4) Azm(356.7) TVD(6278.28)
VS(791.35) NS(609.18) EW(-859.19) TEMP(0.0)

#84 MD(7145.00) Inc(92.0) Azm(356.2) TVD(6277.01)
VS(833.70) NS(652.08) EW(-861.85) TEMP(0.0)

#85 MD(7187.00) Inc(92.4) Azm(356.7) TVD(6275.39)
VS(875.05) NS(693.97) EW(-864.45) TEMP(0.0)

#86 MD(7230.00) Inc(91.9) Azm(357.6) TVD(6273.78)
VS(917.30) NS(736.88) EW(-866.59) TEMP(0.0)

#87 MD(7273.00) Inc(91.8) Azm(357.8) TVD(6272.39)
VS(959.48) NS(779.83) EW(-868.31) TEMP(0.0)

#88 MD(7315.00) Inc(90.7) Azm(357.3) TVD(6271.48)
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#89 MD(7358.00) Inc(88.5) Azm(357.3) TVD(6271.78)
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#90 MD(7401.00) Inc(88.2) Azm(357.1) TVD(6273.01)
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#91 MD(7444.00) Inc(88.6) Azm(356.9) TVD(6274.21)
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#92 MD(7486.00) Inc(89.2) Azm(357.1) TVD(6275.02)
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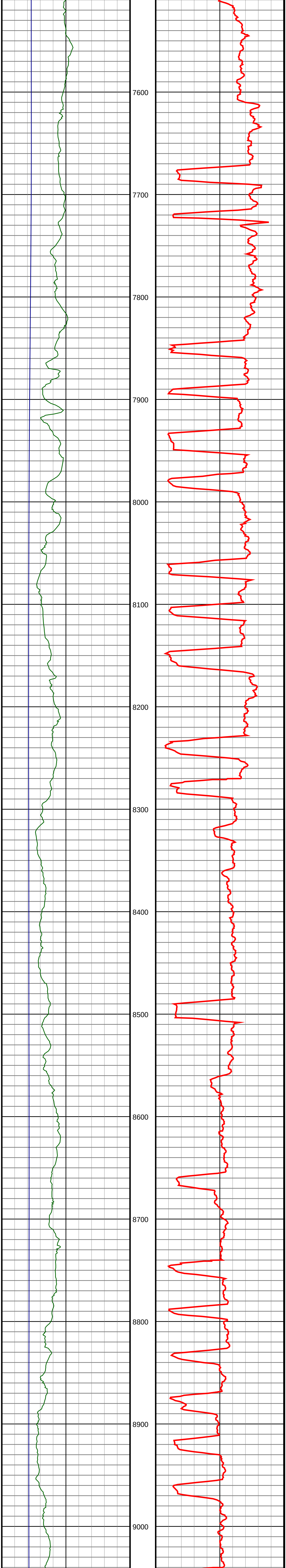

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#95 MD(7615.00) Inc(89.3) Azm(356.9) TVD(6276.18)
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#96 MD(7657.00) Inc(90.1) Azm(357.6) TVD(6276.40)
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#97 MD(7700.00) Inc(92.5) Azm(358.3) TVD(6275.43)
VS(1379.17) NS(1206.23) EW(-889.28) TEMP(0.0)

#98 MD(7743.00) Inc(94.2) Azm(358.1) TVD(6272.92)
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#99 MD(7786.00) Inc(94.5) Azm(358.5) TVD(6269.65)
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#100 MD(7829.00) Inc(94.7) Azm(358.3) TVD(6266.21)
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#101 MD(7871.00) Inc(94.8) Azm(357.8) TVD(6262.73)
VS(1546.20) NS(1376.66) EW(-894.53) TEMP(0.0)

#102 MD(7914.00) Inc(94.4) Azm(357.6) TVD(6259.28)
VS(1588.26) NS(1419.49) EW(-896.25) TEMP(0.0)

#103 MD(7957.00) Inc(92.8) Azm(357.1) TVD(6256.58)
VS(1630.43) NS(1462.36) EW(-898.23) TEMP(0.0)

#104 MD(8000.00) Inc(91.9) Azm(356.2) TVD(6254.82)
VS(1672.74) NS(1505.25) EW(-900.74) TEMP(0.0)

#105 MD(8043.00) Inc(92.5) Azm(356.2) TVD(6253.17)
VS(1715.11) NS(1548.12) EW(-903.59) TEMP(0.0)

#106 MD(8085.00) Inc(91.2) Azm(356.0) TVD(6251.81)
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#107 MD(8128.00) Inc(90.3) Azm(355.7) TVD(6251.25)
VS(1798.95) NS(1632.88) EW(-909.56) TEMP(0.0)

#108 MD(8171.00) Inc(90.7) Azm(357.1) TVD(6250.87)
VS(1841.33) NS(1675.80) EW(-912.26) TEMP(0.0)

#109 MD(8214.00) Inc(90.3) Azm(356.7) TVD(6250.50)
VS(1883.63) NS(1718.73) EW(-914.58) TEMP(0.0)

#110 MD(8257.00) Inc(88.8) Azm(356.4) TVD(6250.83)
VS(1925.99) NS(1761.65) EW(-917.17) TEMP(0.0)

#111 MD(8299.00) Inc(88.7) Azm(357.1) TVD(6251.75)
VS(1967.33) NS(1803.57) EW(-919.55) TEMP(0.0)

#112 MD(8342.00) Inc(89.2) Azm(357.6) TVD(6252.54)
VS(2009.57) NS(1846.52) EW(-921.54) TEMP(0.0)

#113 MD(8385.00) Inc(89.3) Azm(358.0) TVD(6253.10)
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#114 MD(8428.00) Inc(90.0) Azm(358.1) TVD(6253.36)
VS(2093.90) NS(1932.46) EW(-924.65) TEMP(0.0)

#115 MD(8470.00) Inc(90.1) Azm(357.8) TVD(6253.33)
VS(2135.08) NS(1974.43) EW(-926.15) TEMP(0.0)

#116 MD(8513.00) Inc(88.6) Azm(357.8) TVD(6253.82)
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#117 MD(8556.00) Inc(89.0) Azm(358.0) TVD(6254.72)
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#118 MD(8599.00) Inc(89.8) Azm(358.5) TVD(6255.17)
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#119 MD(8642.00) Inc(89.5) Azm(358.3) TVD(6255.43)
VS(2303.63) NS(2146.32) EW(-931.89) TEMP(0.0)

#120 MD(8684.00) Inc(90.4) Azm(358.5) TVD(6255.47)
VS(2344.75) NS(2188.30) EW(-933.06) TEMP(0.0)

#121 MD(8727.00) Inc(90.5) Azm(358.7) TVD(6255.13)
VS(2386.81) NS(2231.29) EW(-934.12) TEMP(0.0)

#122 MD(8770.00) Inc(90.0) Azm(357.8) TVD(6254.94)
VS(2428.93) NS(2274.26) EW(-935.43) TEMP(0.0)

#123 MD(8813.00) Inc(91.2) Azm(356.9) TVD(6254.49)
VS(2471.18) NS(2317.21) EW(-937.42) TEMP(0.0)

#124 MD(8856.00) Inc(91.4) Azm(356.7) TVD(6253.51)
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#125 MD(8898.00) Inc(90.5) Azm(356.4) TVD(6252.82)
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#126 MD(8941.00) Inc(90.0) Azm(356.4) TVD(6252.63)
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#127 MD(8984.00) Inc(88.9) Azm(356.2) TVD(6253.04)
VS(2639.62) NS(2487.88) EW(-947.82) TEMP(0.0)

#128 MD(9027.00) Inc(89.3) Azm(356.0) TVD(6253.72)
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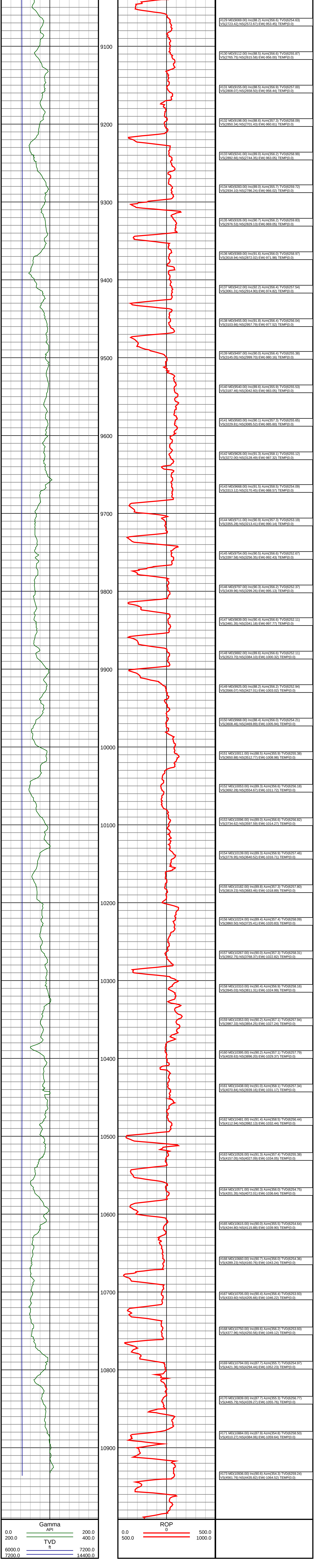

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#130 MD(9112.00) Inc(88.5) Azm(356.6) TVD(6255.87)
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#131 MD(9155.00) Inc(88.5) Azm(356.9) TVD(6257.00)
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#132 MD(9198.00) Inc(88.6) Azm(357.3) TVD(6258.09)
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#133 MD(9241.00) Inc(89.0) Azm(356.2) TVD(6258.99)
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#134 MD(9283.00) Inc(89.0) Azm(355.7) TVD(6259.72)
VS(2934.10) NS(2786.24) EW(-966.02) TEMP(0.0)

#135 MD(9326.00) Inc(90.7) Azm(356.2) TVD(6259.83)
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#136 MD(9369.00) Inc(91.6) Azm(356.0) TVD(6258.97)
VS(3018.94) NS(2872.02) EW(-971.98) TEMP(0.0)

#137 MD(9412.00) Inc(92.2) Azm(356.4) TVD(6257.54)
VS(3061.31) NS(2914.90) EW(-974.82) TEMP(0.0)

#138 MD(9455.00) Inc(91.8) Azm(356.4) TVD(6256.04)
VS(3103.66) NS(2957.79) EW(-977.52) TEMP(0.0)

#139 MD(9497.00) Inc(90.0) Azm(356.4) TVD(6255.38)
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#140 MD(9540.00) Inc(89.6) Azm(355.9) TVD(6255.53)
VS(3187.46) NS(3042.60) EW(-983.05) TEMP(0.0)

#141 MD(9583.00) Inc(90.1) Azm(357.3) TVD(6255.65)
VS(3229.81) NS(3085.52) EW(-985.60) TEMP(0.0)

#142 MD(9626.00) Inc(91.3) Azm(358.1) TVD(6255.12)
VS(3272.00) NS(3128.49) EW(-987.32) TEMP(0.0)

#143 MD(9668.00) Inc(91.5) Azm(358.5) TVD(6254.09)
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#144 MD(9711.00) Inc(90.9) Azm(357.3) TVD(6253.19)
VS(3355.28) NS(3213.41) EW(-990.14) TEMP(0.0)

#145 MD(9754.00) Inc(90.5) Azm(356.6) TVD(6252.67)
VS(3397.58) NS(3256.35) EW(-992.43) TEMP(0.0)

#146 MD(9797.00) Inc(90.3) Azm(356.2) TVD(6252.37)
VS(3439.96) NS(3299.26) EW(-995.13) TEMP(0.0)

#147 MD(9839.00) Inc(90.4) Azm(356.6) TVD(6252.11)
VS(3481.35) NS(3341.18) EW(-997.77) TEMP(0.0)

#148 MD(9882.00) Inc(89.6) Azm(356.6) TVD(6252.11)
VS(3523.70) NS(3384.10) EW(-1000.32) TEMP(0.0)

#149 MD(9925.00) Inc(88.2) Azm(356.2) TVD(6252.94)
VS(3566.07) NS(3427.01) EW(-1003.02) TEMP(0.0)

#150 MD(9968.00) Inc(88.4) Azm(356.0) TVD(6254.21)
VS(3608.46) NS(3469.89) EW(-1005.94) TEMP(0.0)

#151 MD(10011.00) Inc(88.5) Azm(355.9) TVD(6255.38)
VS(3650.88) NS(3512.77) EW(-1008.98) TEMP(0.0)

#152 MD(10053.00) Inc(89.3) Azm(356.6) TVD(6256.18)
VS(3692.28) NS(3554.67) EW(-1011.72) TEMP(0.0)

#153 MD(10096.00) Inc(89.0) Azm(356.6) TVD(6256.82)
VS(3734.62) NS(3597.59) EW(-1014.27) TEMP(0.0)

#154 MD(10139.00) Inc(89.3) Azm(356.9) TVD(6257.46)
VS(3776.95) NS(3640.52) EW(-1016.71) TEMP(0.0)

#155 MD(10182.00) Inc(89.8) Azm(357.3) TVD(6257.80)
VS(3819.23) NS(3683.46) EW(-1018.89) TEMP(0.0)

#156 MD(10224.00) Inc(89.4) Azm(357.4) TVD(6258.09)
VS(3860.50) NS(3725.41) EW(-1020.83) TEMP(0.0)

#157 MD(10267.00) Inc(90.0) Azm(357.3) TVD(6258.31)
VS(3902.75) NS(3768.37) EW(-1022.82) TEMP(0.0)

#158 MD(10310.00) Inc(90.4) Azm(356.9) TVD(6258.16)
VS(3945.03) NS(3811.31) EW(-1024.99) TEMP(0.0)

#159 MD(10353.00) Inc(90.2) Azm(357.1) TVD(6257.94)
VS(3987.33) NS(3854.25) EW(-1027.24) TEMP(0.0)

#160 MD(10395.00) Inc(90.2) Azm(357.1) TVD(6257.79)
VS(4028.63) NS(3896.20) EW(-1029.37) TEMP(0.0)

#161 MD(10438.00) Inc(91.0) Azm(358.1) TVD(6257.34)
VS(4070.84) NS(3939.16) EW(-1031.17) TEMP(0.0)

#162 MD(10481.00) Inc(91.4) Azm(358.5) TVD(6256.44)
VS(4112.94) NS(3982.13) EW(-1032.44) TEMP(0.0)

#163 MD(10526.00) Inc(91.3) Azm(357.4) TVD(6255.38)
VS(4157.05) NS(4027.09) EW(-1034.05) TEMP(0.0)

#164 MD(10571.00) Inc(90.3) Azm(356.0) TVD(6254.75)
VS(4201.35) NS(4072.01) EW(-1036.64) TEMP(0.0)

#165 MD(10615.00) Inc(90.0) Azm(355.5) TVD(6254.64)
VS(4244.80) NS(4115.88) EW(-1039.90) TEMP(0.0)

#166 MD(10660.00) Inc(90.7) Azm(356.0) TVD(6254.36)
VS(4289.23) NS(4160.76) EW(-1043.24) TEMP(0.0)

#167 MD(10705.00) Inc(90.4) Azm(356.4) TVD(6253.93)
VS(4333.60) NS(4205.66) EW(-1046.22) TEMP(0.0)

#168 MD(10750.00) Inc(89.6) Azm(356.2) TVD(6253.93)
VS(4377.96) NS(4250.56) EW(-1049.12) TEMP(0.0)

#169 MD(10794.00) Inc(87.7) Azm(355.7) TVD(6254.97)
VS(4421.36) NS(4294.44) EW(-1052.23) TEMP(0.0)

#170 MD(10839.00) Inc(87.7) Azm(355.3) TVD(6256.77)
VS(4465.79) NS(4339.27) EW(-1055.76) TEMP(0.0)

#171 MD(10884.00) Inc(87.9) Azm(354.8) TVD(6258.50)
VS(4510.27) NS(4384.06) EW(-1059.64) TEMP(0.0)

#173 MD(10936.00) Inc(90.6) Azm(354.3) TVD(6259.24)
VS(4561.76) NS(4435.82) EW(-1064.52) TEMP(0.0)