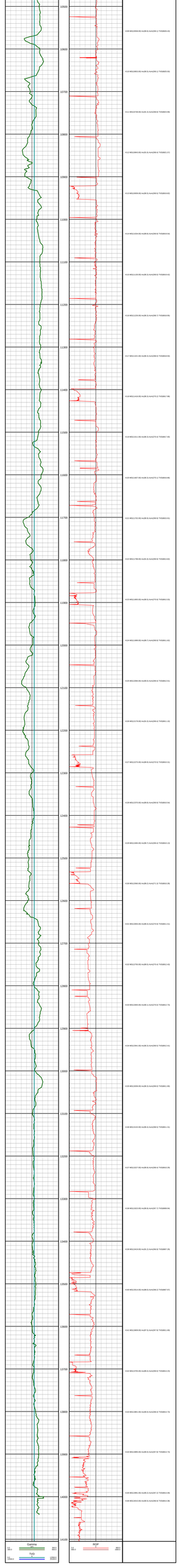

Challenger 5N

ENSIGN

PDC ENERGY

MD 2":100'

Company: PDC Energy Inc
Well Name: Challenger 5N
API: 05-123-45895-00
County/Parish: WELD
State: COLORADO
Country: USA
Job number: 152-188
Field: Wattenberg
Rig Id: Ensign 152
Survey Company: Ensign Directional
DD1 Jesus Gallego
DD2 Dan Hanson
DD3
MWD1 Justin Klatt
MWD2 Mike Geiger

Log measurements: Gamma, ROP
Depth measured from: 1698 ft
Maximum temperature: 210

	Depth	Date
Start:	0 ft	2-20-2019
End:	14105 ft	2-24-2019

Casing	Depth	Size
Surface:	1698 ft	9 5/8"
Intermediate:		

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

Elevations
KB: 23 ft
GL: 4775 ft
DF: 4798 ft

Run	Bit Size	Offsets		Depths		Dates	
		Gamma	Survey	Start	End	Start	End
1	12.25"		60.73 ft	0 ft	1698 ft	2-20-2019	2-21-2019
2	8.5"	63.09 ft	58.26 ft	1698 ft	14105 ft	2-22-2019	2-24-2019
3							
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.

Gamma
API
0.0 300.0
300.0 600.0
TVD
ft
0.0 12550.0
12550.0 25100.0
MD
ROP
0
0.0 800.0
800.0 1600.0
1500
1600
1700
1800
1900
2000
2100
2200
2300
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2500
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3000
3100
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9900
10000
10100
10200
10300
10400
#15 MD(1485.00) Inc(1.8) Azm(43.2) TVD(1484.93)
#16 MD(1638.00) Inc(1.6) Azm(41.9) TVD(1637.86)
#17 MD(1784.00) Inc(3.1) Azm(42.6) TVD(1783.74)
#18 MD(1865.00) Inc(5.0) Azm(58.6) TVD(1864.53)
#19 MD(1960.00) Inc(7.4) Azm(64.9) TVD(1958.97)
#20 MD(2054.00) Inc(9.7) Azm(52.7) TVD(2051.92)
#21 MD(2148.00) Inc(9.3) Azm(52.0) TVD(2144.63)
#22 MD(2243.00) Inc(9.2) Azm(50.3) TVD(2238.40)
#23 MD(2338.00) Inc(8.6) Azm(49.0) TVD(2332.25)
#24 MD(2433.00) Inc(8.3) Azm(48.1) TVD(2426.21)
#25 MD(2527.00) Inc(7.8) Azm(47.9) TVD(2519.29)
#26 MD(2622.00) Inc(10.0) Azm(42.9) TVD(2613.14)
#27 MD(2718.00) Inc(10.8) Azm(42.9) TVD(2707.56)
#28 MD(2813.00) Inc(10.7) Azm(42.7) TVD(2800.90)
#29 MD(2908.00) Inc(10.7) Azm(42.1) TVD(2894.25)
#30 MD(3029.00) Inc(9.9) Azm(41.2) TVD(3013.30)
#31 MD(3125.00) Inc(9.8) Azm(42.8) TVD(3107.89)
#32 MD(3220.00) Inc(10.0) Azm(37.8) TVD(3201.48)
#33 MD(3316.00) Inc(11.0) Azm(25.9) TVD(3295.87)
#34 MD(3411.00) Inc(10.3) Azm(26.1) TVD(3389.23)
#35 MD(3507.00) Inc(9.8) Azm(26.0) TVD(3483.76)
#36 MD(3603.00) Inc(8.5) Azm(25.9) TVD(3578.55)
#37 MD(3699.00) Inc(7.8) Azm(22.4) TVD(3673.58)
#38 MD(3794.00) Inc(7.5) Azm(23.7) TVD(3767.73)
#39 MD(3890.00) Inc(7.5) Azm(22.6) TVD(3862.91)
#40 MD(3986.00) Inc(7.3) Azm(21.6) TVD(3958.11)
#41 MD(4082.00) Inc(7.3) Azm(20.1) TVD(4053.33)
#42 MD(4176.00) Inc(6.2) Azm(349.7) TVD(4146.70)
#43 MD(4271.00) Inc(3.6) Azm(312.2) TVD(4241.37)
#44 MD(4367.00) Inc(1.9) Azm(224.7) TVD(4337.28)
#45 MD(4462.00) Inc(1.7) Azm(199.1) TVD(4432.24)
#46 MD(4557.00) Inc(1.5) Azm(188.1) TVD(4527.20)
#47 MD(4653.00) Inc(1.4) Azm(183.0) TVD(4623.17)
#48 MD(4749.00) Inc(0.9) Azm(170.4) TVD(4719.15)
#49 MD(4844.00) Inc(0.3) Azm(138.9) TVD(4814.15)
#50 MD(4939.00) Inc(0.4) Azm(25.9) TVD(4909.15)
#51 MD(5035.00) Inc(0.4) Azm(98.6) TVD(5005.14)
#52 MD(5130.00) Inc(0.7) Azm(80.9) TVD(5100.14)
#53 MD(5226.00) Inc(0.8) Azm(106.0) TVD(5196.13)
#54 MD(5321.00) Inc(0.8) Azm(75.3) TVD(5291.13)
#55 MD(5417.00) Inc(0.7) Azm(116.2) TVD(5387.12)
#56 MD(5513.00) Inc(0.7) Azm(103.9) TVD(5483.11)
#57 MD(5608.00) Inc(0.8) Azm(122.3) TVD(5578.10)
#58 MD(5704.00) Inc(0.9) Azm(108.0) TVD(5674.09)
#59 MD(5799.00) Inc(0.9) Azm(81.2) TVD(5769.08)
#60 MD(5894.00) Inc(1.0) Azm(58.7) TVD(5864.07)
#61 MD(5990.00) Inc(1.0) Azm(52.1) TVD(5960.05)
#62 MD(6085.00) Inc(1.0) Azm(64.4) TVD(6055.04)
#63 MD(6181.00) Inc(5.5) Azm(267.7) TVD(6150.91)
#64 MD(6277.00) Inc(12.1) Azm(268.0) TVD(6245.74)
#65 MD(6372.00) Inc(16.8) Azm(271.5) TVD(6337.71)
#66 MD(6468.00) Inc(23.2) Azm(271.0) TVD(6427.87)
#67 MD(6563.00) Inc(30.0) Azm(275.6) TVD(6512.80)
#68 MD(6659.00) Inc(39.5) Azm(277.2) TVD(6591.60)
#69 MD(6754.00) Inc(48.4) Azm(274.8) TVD(6659.91)
#70 MD(6849.00) Inc(57.7) Azm(271.0) TVD(6716.94)
#71 MD(6944.00) Inc(69.4) Azm(268.2) TVD(6759.19)
#72 MD(7040.00) Inc(73.3) Azm(266.4) TVD(6789.88)
#73 MD(7135.00) Inc(80.6) Azm(265.6) TVD(6811.32)
#74 MD(7230.00) Inc(87.2) Azm(270.3) TVD(6821.48)
#75 MD(7326.00) Inc(89.4) Azm(270.7) TVD(6824.33)
#76 MD(7421.00) Inc(89.1) Azm(270.4) TVD(6825.51)
#77 MD(7516.00) Inc(89.9) Azm(269.3) TVD(6826.34)
#78 MD(7611.00) Inc(90.0) Azm(268.7) TVD(6826.49)
#79 MD(7705.00) Inc(89.9) Azm(268.4) TVD(6826.63)
#80 MD(7800.00) Inc(90.1) Azm(267.7) TVD(6826.64)
#81 MD(7895.00) Inc(90.5) Azm(267.3) TVD(6826.17)
#82 MD(7990.00) Inc(90.8) Azm(266.9) TVD(6825.08)
#83 MD(8085.00) Inc(89.7) Azm(269.9) TVD(6824.60)
#84 MD(8180.00) Inc(90.2) Azm(269.2) TVD(6824.70)
#85 MD(8275.00) Inc(90.6) Azm(269.6) TVD(6824.09)
#86 MD(8370.00) Inc(90.8) Azm(269.6) TVD(6822.94)
#87 MD(8464.00) Inc(91.0) Azm(269.3) TVD(6821.49)
#88 MD(8560.00) Inc(91.0) Azm(269.0) TVD(6819.87)
#89 MD(8654.00) Inc(91.0) Azm(268.4) TVD(6818.28)
#90 MD(8749.00) Inc(91.1) Azm(268.1) TVD(6816.58)
#91 MD(8844.00) Inc(89.1) Azm(269.5) TVD(6816.44)
#92 MD(8939.00) Inc(89.0) Azm(269.6) TVD(6818.06)
#93 MD(9034.00) Inc(88.9) Azm(268.7) TVD(6819.81)
#94 MD(9130.00) Inc(88.7) Azm(267.9) TVD(6821.77)
#95 MD(9224.00) Inc(88.5) Azm(267.5) TVD(6824.04)
#96 MD(9319.00) Inc(89.5) Azm(270.8) TVD(6825.67)
#97 MD(9414.00) Inc(89.7) Azm(270.9) TVD(6826.29)
#98 MD(9509.00) Inc(89.9) Azm(270.1) TVD(6826.62)
#99 MD(9605.00) Inc(90.1) Azm(269.6) TVD(6826.64)
#100 MD(9700.00) Inc(90.2) Azm(268.7) TVD(6826.35)
#101 MD(9795.00) Inc(90.4) Azm(267.8) TVD(6825.79)
#102 MD(9890.00) Inc(91.0) Azm(266.9) TVD(6824.62)
#103 MD(9986.00) Inc(90.0) Azm(270.2) TVD(6823.83)
#104 MD(10081.00) Inc(89.2) Azm(270.3) TVD(6824.53)
#105 MD(10176.00) Inc(89.4) Azm(269.9) TVD(6825.69)
#106 MD(10271.00) Inc(89.7) Azm(270.3) TVD(6826.40)
#107 MD(10366.00) Inc(89.6) Azm(270.0) TVD(6826.93)
#108 MD(10462.00) Inc(90.2) Azm(269.7) TVD(6827.09)

#109 MD(10558.00) Inc(90.6) Azm(269.1) TVD(6826.43)

#110 MD(10653.00) Inc(90.5) Azm(269.1) TVD(6825.50)

#111 MD(10748.00) Inc(91.3) Azm(268.8) TVD(6823.99)

#112 MD(10843.00) Inc(91.6) Azm(268.4) TVD(6821.57)

#113 MD(10939.00) Inc(90.5) Azm(269.5) TVD(6819.82)

#114 MD(11034.00) Inc(89.8) Azm(269.9) TVD(6819.54)

#115 MD(11130.00) Inc(90.3) Azm(269.0) TVD(6819.42)

#116 MD(11226.00) Inc(90.3) Azm(268.7) TVD(6818.95)

#117 MD(11321.00) Inc(90.3) Azm(268.0) TVD(6818.50)

#118 MD(11416.00) Inc(90.3) Azm(270.2) TVD(6817.98)

#119 MD(11511.00) Inc(90.3) Azm(270.4) TVD(6817.40)

#120 MD(11607.00) Inc(90.3) Azm(270.1) TVD(6816.86)

#121 MD(11702.00) Inc(90.9) Azm(269.9) TVD(6815.91)

#122 MD(11798.00) Inc(91.6) Azm(269.9) TVD(6813.82)

#123 MD(11893.00) Inc(90.5) Azm(270.9) TVD(6812.03)

#124 MD(11989.00) Inc(89.7) Azm(269.9) TVD(6811.82)

#125 MD(12084.00) Inc(90.0) Azm(269.4) TVD(6812.01)

#126 MD(12179.00) Inc(91.0) Azm(269.4) TVD(6811.10)

#127 MD(12275.00) Inc(89.9) Azm(270.5) TVD(6810.31)

#128 MD(12370.00) Inc(89.8) Azm(269.9) TVD(6810.54)

#129 MD(12465.00) Inc(90.7) Azm(269.4) TVD(6810.13)

#130 MD(12560.00) Inc(89.2) Azm(271.3) TVD(6810.28)

#131 MD(12655.00) Inc(89.3) Azm(270.9) TVD(6811.51)

#132 MD(12750.00) Inc(89.5) Azm(270.4) TVD(6812.43)

#133 MD(12845.00) Inc(90.1) Azm(270.0) TVD(6812.73)

#134 MD(12941.00) Inc(90.3) Azm(269.5) TVD(6812.41)

#135 MD(13036.00) Inc(90.3) Azm(269.0) TVD(6811.90)

#136 MD(13132.00) Inc(90.4) Azm(268.5) TVD(6811.31)

#137 MD(13227.00) Inc(90.8) Azm(268.4) TVD(6810.29)

#138 MD(13323.00) Inc(90.8) Azm(267.7) TVD(6808.94)

#139 MD(13419.00) Inc(91.2) Azm(266.9) TVD(6807.29)

#140 MD(13514.00) Inc(88.0) Azm(268.2) TVD(6807.97)

#141 MD(13609.00) Inc(87.5) Azm(267.9) TVD(6811.69)

#142 MD(13705.00) Inc(89.4) Azm(269.0) TVD(6814.23)

#143 MD(13801.00) Inc(90.0) Azm(268.4) TVD(6814.73)

#144 MD(13895.00) Inc(90.0) Azm(267.8) TVD(6814.73)

#145 MD(13991.00) Inc(90.2) Azm(267.2) TVD(6814.49)

#146 MD(14010.00) Inc(90.5) Azm(266.9) TVD(6814.38)