ENSIGN Directional Services

McGlothlin Farms 4W-234

MD
2":100'

Company: Petroleum Development Corp.
Well Name: McGlothlin Farms 4W-234
API: 05123440300
County/Parish: Weld
State: Colorado
Country: United States
Job number: 161-93
Field: Wattenburg
Rig Id: Ensign 161
Survey Company: Ensign Directional Services
Operator: Petroleum Development Corp.
Company Man: Brady Sharp / John Falton
Daylight DD: Zach Gentry
Swing Shift DD: Chris Saykally
Night DD: Tony Callow
Daylight MWD: Justin Klatt
Night MWD: Terry Ash

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

	Depth	Date
Start:	0 ft	9-27-2017
End:	14365 ft	10-03-2017

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

Mud Type: H2O
Density:
Viscosity:
Rm: **Rmf:** **Rmc:**

Elevations
KB: 4639 ft
GL: 4616 ft
DF: 4639 ft

Run	Bit Size	Offsets Gamma	Offsets Survey	Depths Start	Depths End	Dates Start	Dates End
1	12.25"		57.85 ft	0 ft	1680 ft	9/27/2017	9/28/2017
2	8.5"	62.19 ft	57.19 ft	1680 ft	14365 ft	9/28/2017	10/3/2017
3							
4							
5							
6							
7							
8							
9							
10							

Ensign Directional Services 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.

#23 MD(2352.00) Inc(15.8) Azm(27.4) TVD(2295.77)
VS(-110.69) N/-S(391.81) E/-W(173.83)
DLS(0.9)

#24 MD(2447.00) Inc(17.1) Azm(29.7) TVD(2386.88)
VS(-119.73) N/-S(415.43) E/-W(186.71)
DLS(1.5)

#25 MD(2543.00) Inc(16.6) Azm(29.3) TVD(2478.76)
VS(-129.49) N/-S(439.65) E/-W(200.41)
DLS(0.5)

#26 MD(2638.00) Inc(16.3) Azm(28.6) TVD(2569.87)
VS(-138.69) N/-S(463.19) E/-W(213.43)
DLS(0.4)

#27 MD(2733.00) Inc(16.1) Azm(27.6) TVD(2661.10)
VS(-147.38) N/-S(486.57) E/-W(225.92)
DLS(0.4)

#28 MD(2829.00) Inc(16.1) Azm(27.1) TVD(2753.33)
VS(-155.78) N/-S(510.21) E/-W(238.15)
DLS(0.1)

#29 MD(2925.00) Inc(15.7) Azm(26.7) TVD(2845.66)
VS(-163.88) N/-S(533.67) E/-W(250.05)
DLS(0.4)

#30 MD(3020.00) Inc(15.7) Azm(25.5) TVD(2937.12)
VS(-171.46) N/-S(556.75) E/-W(261.36)
DLS(0.3)

#31 MD(3116.00) Inc(15.2) Azm(24.6) TVD(3029.65)
VS(-178.55) N/-S(579.92) E/-W(272.19)
DLS(0.6)

#32 MD(3212.00) Inc(15.9) Azm(30.4) TVD(3122.14)
VS(-186.75) N/-S(602.70) E/-W(284.08)
DLS(1.8)

#33 MD(3308.00) Inc(15.7) Azm(28.8) TVD(3214.51)
VS(-195.96) N/-S(625.43) E/-W(297.00)
DLS(0.5)

#34 MD(3404.00) Inc(14.9) Azm(28.3) TVD(3307.11)
VS(-204.46) N/-S(647.68) E/-W(309.10)
DLS(0.8)

#35 MD(3499.00) Inc(15.9) Azm(28.8) TVD(3398.70)
VS(-212.92) N/-S(669.84) E/-W(321.16)
DLS(1.1)

#36 MD(3595.00) Inc(15.7) Azm(27.9) TVD(3491.07)
VS(-221.60) N/-S(692.84) E/-W(333.58)
DLS(0.3)

#37 MD(3691.00) Inc(15.8) Azm(28.1) TVD(3583.47)
VS(-230.10) N/-S(715.85) E/-W(345.81)
DLS(0.1)

#38 MD(3786.00) Inc(15.7) Azm(27.4) TVD(3674.90)
VS(-238.41) N/-S(738.67) E/-W(357.82)
DLS(0.2)

#39 MD(3883.00) Inc(15.8) Azm(27.8) TVD(3768.26)
VS(-246.82) N/-S(762.00) E/-W(370.02)
DLS(0.2)

#40 MD(3978.00) Inc(16.3) Azm(25.0) TVD(3859.56)
VS(-254.68) N/-S(785.52) E/-W(381.68)
DLS(1.0)

#41 MD(4074.00) Inc(16.1) Azm(24.1) TVD(3951.74)
VS(-261.88) N/-S(809.88) E/-W(392.81)
DLS(0.3)

#42 MD(4170.00) Inc(15.9) Azm(23.5) TVD(4044.03)
VS(-268.66) N/-S(834.09) E/-W(403.49)
DLS(0.3)

#43 MD(4265.00) Inc(15.7) Azm(24.1) TVD(4135.44)
VS(-275.28) N/-S(857.76) E/-W(413.93)
DLS(0.3)

#44 MD(4361.00) Inc(15.1) Azm(23.5) TVD(4227.99)
VS(-281.82) N/-S(881.09) E/-W(424.22)
DLS(0.6)

#45 MD(4457.00) Inc(16.5) Azm(25.0) TVD(4320.36)
VS(-288.72) N/-S(904.91) E/-W(434.97)
DLS(1.5)

#46 MD(4553.00) Inc(16.3) Azm(24.4) TVD(4412.45)
VS(-296.08) N/-S(929.53) E/-W(446.29)
DLS(0.3)

#47 MD(4648.00) Inc(15.7) Azm(23.4) TVD(4503.77)
VS(-302.83) N/-S(953.47) E/-W(456.90)
DLS(0.7)

#48 MD(4744.00) Inc(15.2) Azm(24.6) TVD(4596.30)
VS(-309.46) N/-S(976.83) E/-W(467.30)
DLS(0.6)

#49 MD(4840.00) Inc(14.9) Azm(23.5) TVD(4689.01)
VS(-315.95) N/-S(999.60) E/-W(477.46)
DLS(0.4)

#50 MD(4936.00) Inc(14.6) Azm(22.5) TVD(4781.85)
VS(-321.89) N/-S(1022.09) E/-W(487.01)
DLS(0.4)

#51 MD(5032.00) Inc(14.3) Azm(22.7) TVD(4874.81)
VS(-327.53) N/-S(1044.21) E/-W(496.22)
DLS(0.3)

#52 MD(5128.00) Inc(14.0) Azm(20.7) TVD(4967.90)
VS(-332.71) N/-S(1066.01) E/-W(504.90)
DLS(0.6)

#53 MD(5254.00) Inc(12.9) Azm(20.6) TVD(5090.44)
VS(-338.65) N/-S(1093.43) E/-W(515.24)
DLS(0.9)

#54 MD(5350.00) Inc(10.8) Azm(21.3) TVD(5184.39)
VS(-342.74) N/-S(1111.85) E/-W(522.27)
DLS(2.2)

#55 MD(5446.00) Inc(8.1) Azm(18.4) TVD(5279.08)
VS(-345.77) N/-S(1126.65) E/-W(527.68)
DLS(2.9)

#56 MD(5542.00) Inc(6.1) Azm(25.8) TVD(5374.34)
VS(-348.36) N/-S(1137.66) E/-W(532.03)
DLS(2.3)

#57 MD(5638.00) Inc(4.9) Azm(41.5) TVD(5469.90)
VS(-352.04) N/-S(1145.32) E/-W(536.97)
DLS(2.0)

#58 MD(5733.00) Inc(2.6) Azm(38.5) TVD(5564.69)
VS(-355.29) N/-S(1150.05) E/-W(541.00)
DLS(2.4)

#59 MD(5829.00) Inc(1.4) Azm(18.4) TVD(5660.63)
VS(-356.55) N/-S(1152.86) E/-W(542.73)
DLS(1.4)

#60 MD(5925.00) Inc(1.5) Azm(17.0) TVD(5756.60)
VS(-356.92) N/-S(1155.18) E/-W(543.46)
DLS(0.1)

#61 MD(6021.00) Inc(1.3) Azm(34.8) TVD(5852.57)
VS(-357.57) N/-S(1157.27) E/-W(544.45)
DLS(0.5)

#62 MD(6117.00) Inc(0.4) Azm(39.0) TVD(5948.56)
VS(-358.21) N/-S(1158.43) E/-W(545.28)
DLS(0.9)

#63 MD(6212.00) Inc(8.8) Azm(286.2) TVD(6043.20)
VS(-351.15) N/-S(1160.72) E/-W(538.50)
DLS(9.4)

#64 MD(6308.00) Inc(16.0) Azm(289.7) TVD(6136.90)
VS(-330.84) N/-S(1167.24) E/-W(518.97)
DLS(7.5)

#65 MD(6404.00) Inc(20.0) Azm(280.4) TVD(6228.20)
VS(-301.42) N/-S(1174.66) E/-W(490.35)
DLS(5.1)

#66 MD(6499.00) Inc(25.4) Azm(269.5) TVD(6315.84)
VS(-265.03) N/-S(1177.42) E/-W(453.95)
DLS(7.2)

#67 MD(6595.00) Inc(36.7) Azm(266.1) TVD(6397.96)
VS(-216.60) N/-S(1175.28) E/-W(404.58)
DLS(11.9)

#68 MD(6691.00) Inc(46.5) Azm(271.9) TVD(6469.69)
VS(-153.90) N/-S(1174.49) E/-W(340.98)
DLS(11.0)

#69 MD(6787.00) Inc(51.4) Azm(271.6) TVD(6532.72)
VS(-82.10) N/-S(1176.69) E/-W(268.64)
DLS(5.1)

#70 MD(6883.00) Inc(59.4) Azm(267.2) TVD(6587.20)
VS(-4.29) N/-S(1175.72) E/-W(189.72)
DLS(9.1)

#71 MD(6978.00) Inc(67.7) Azm(261.2) TVD(6629.51)
VS(77.79) N/-S(1166.97) E/-W(105.25)
DLS(10.4)

#72 MD(7074.00) Inc(76.9) Azm(262.6) TVD(6658.67)
VS(165.13) N/-S(1154.13) E/-W(14.80)
DLS(9.7)

#73 MD(7170.00) Inc(83.7) Azm(266.3) TVD(6674.84)
VS(256.68) N/-S(1145.02) E/-W(-79.32)
DLS(8.0)

#74 MD(7266.00) Inc(86.4) Azm(268.4) TVD(6683.12)
VS(350.35) N/-S(1140.60) E/-W(-174.84)
DLS(3.6)

#75 MD(7362.00) Inc(89.4) Azm(271.2) TVD(6686.64)
VS(445.04) N/-S(1140.27) E/-W(-270.76)
DLS(4.3)

#76 MD(7457.00) Inc(91.0) Azm(272.1) TVD(6686.31)
VS(539.27) N/-S(1143.00) E/-W(-365.71)
DLS(1.9)

#77 MD(7553.00) Inc(90.7) Azm(272.1) TVD(6684.89)
VS(634.57) N/-S(1146.52) E/-W(-461.64)
DLS(0.3)

#78 MD(7649.00) Inc(91.2) Azm(272.1) TVD(6683.29)
VS(729.87) N/-S(1150.04) E/-W(-557.56)
DLS(0.5)

#79 MD(7744.00) Inc(91.3) Azm(272.1) TVD(6681.22)
VS(824.16) N/-S(1153.52) E/-W(-652.47)
DLS(0.1)

#80 MD(7840.00) Inc(90.5) Azm(271.7) TVD(6679.71)
VS(919.42) N/-S(1156.70) E/-W(-748.41)
DLS(0.9)

#81 MD(7936.00) Inc(90.7) Azm(271.2) TVD(6678.71)
VS(1014.60) N/-S(1159.13) E/-W(-844.37)
DLS(0.6)

#82 MD(8032.00) Inc(89.8) Azm(270.2) TVD(6678.29)
VS(1109.60) N/-S(1160.30) E/-W(-940.36)
DLS(1.4)

#83 MD(8128.00) Inc(90.7) Azm(269.8) TVD(6677.87)
VS(1204.42) N/-S(1160.30) E/-W(-1036.36)
DLS(1.0)

#84 MD(8223.00) Inc(89.0) Azm(269.3) TVD(6678.12)
VS(1298.14) N/-S(1159.55) E/-W(-1131.35)
DLS(1.9)

#85 MD(8318.00) Inc(89.2) Azm(268.9) TVD(6679.61)
VS(1391.73) N/-S(1158.06) E/-W(-1226.33)
DLS(0.5)

#86 MD(8414.00) Inc(89.2) Azm(268.4) TVD(6680.95)
VS(1486.17) N/-S(1155.80) E/-W(-1322.29)
DLS(0.5)

#87 MD(8510.00) Inc(89.3) Azm(269.6) TVD(6682.21)
VS(1580.71) N/-S(1154.13) E/-W(-1418.27)
DLS(1.3)

#88 MD(8605.00) Inc(89.7) Azm(270.0) TVD(6683.04)
VS(1674.49) N/-S(1153.79) E/-W(-1513.26)
DLS(0.6)

#89 MD(8701.00) Inc(90.2) Azm(269.8) TVD(6683.12)
VS(1769.30) N/-S(1153.63) E/-W(-1609.26)
DLS(0.6)

#90 MD(8797.00) Inc(90.9) Azm(269.5) TVD(6682.20)
VS(1864.03) N/-S(1153.04) E/-W(-1705.25)
DLS(0.8)

#91 MD(8892.00) Inc(89.3) Azm(270.2) TVD(6682.03)
VS(1957.82) N/-S(1152.79) E/-W(-1800.25)
DLS(1.8)

#92 MD(8988.00) Inc(89.5) Azm(269.8) TVD(6683.04)
VS(2052.65) N/-S(1152.79) E/-W(-1896.24)
DLS(0.5)

#93 MD(9084.00) Inc(89.4) Azm(269.1) TVD(6683.96)
VS(2147.32) N/-S(1151.87) E/-W(-1992.24)
DLS(0.7)

#94 MD(9180.00) Inc(90.0) Azm(271.0) TVD(6684.46)
VS(2242.16) N/-S(1151.95) E/-W(-2088.23)
DLS(2.1)

#95 MD(9276.00) Inc(90.1) Azm(270.7) TVD(6684.38)
VS(2337.20) N/-S(1153.38) E/-W(-2184.22)
DLS(0.3)

#96 MD(9371.00) Inc(90.9) Azm(270.7) TVD(6683.55)
VS(2431.21) N/-S(1154.54) E/-W(-2279.21)
DLS(0.8)

#97 MD(9467.00) Inc(91.0) Azm(270.0) TVD(6681.96)
VS(2526.11) N/-S(1155.12) E/-W(-2375.19)
DLS(0.7)

#98 MD(9563.00) Inc(91.1) Azm(269.6) TVD(6680.20)
VS(2620.87) N/-S(1154.79) E/-W(-2471.17)
DLS(0.4)

#99 MD(9659.00) Inc(90.8) Azm(270.9) TVD(6678.61)
VS(2715.75) N/-S(1155.21) E/-W(-2567.16)
DLS(1.4)

#100 MD(9755.00) Inc(90.9) Azm(270.7) TVD(6677.18)
VS(2810.77) N/-S(1156.55) E/-W(-2663.14)
DLS(0.2)

#101 MD(9851.00) Inc(91.2) Azm(270.7) TVD(6675.42)
VS(2905.87) N/-S(1157.72) E/-W(-2759.11)
DLS(0.3)

#102 MD(9946.00) Inc(91.6) Azm(270.5) TVD(6673.10)
VS(2999.72) N/-S(1158.72) E/-W(-2854.08)
DLS(0.5)

#103 MD(10042.00) Inc(90.9) Azm(271.2) TVD(6671.01)
VS(3094.73) N/-S(1160.14) E/-W(-2950.05)
DLS(1.0)

#104 MD(10137.00) Inc(90.1) Azm(272.1) TVD(6670.18)
VS(3188.96) N/-S(1162.87) E/-W(-3045.00)
DLS(1.3)

#105 MD(10233.00) Inc(89.4) Azm(271.9) TVD(6670.60)
VS(3284.25) N/-S(1166.23) E/-W(-3140.94)
DLS(0.8)

#106 MD(10329.00) Inc(89.7) Azm(270.5) TVD(6671.35)
VS(3379.36) N/-S(1168.24) E/-W(-3236.92)
DLS(1.5)

#107 MD(10424.00) Inc(88.9) Azm(270.5) TVD(6672.51)
VS(3473.32) N/-S(1169.06) E/-W(-3331.90)
DLS(0.8)

#108 MD(10520.00) Inc(89.5) Azm(270.2) TVD(6673.85)
VS(3568.23) N/-S(1169.65) E/-W(-3427.89)
DLS(0.7)

#109 MD(10615.00) Inc(88.6) Azm(270.0) TVD(6675.43)
VS(3662.08) N/-S(1169.82) E/-W(-3522.88)
DLS(1.0)

#110 MD(10711.00) Inc(89.3) Azm(269.6) TVD(6677.19)
VS(3756.84) N/-S(1169.48) E/-W(-3618.86)
DLS(0.8)

#111 MD(10807.00) Inc(90.1) Azm(269.1) TVD(6677.69)
VS(3851.49) N/-S(1168.39) E/-W(-3714.85)
DLS(1.0)

#112 MD(10902.00) Inc(89.0) Azm(269.3) TVD(6678.44)
VS(3945.11) N/-S(1167.07) E/-W(-3809.84)
DLS(1.2)

#113 MD(10998.00) Inc(89.9) Azm(268.8) TVD(6679.36)
VS(4039.67) N/-S(1165.47) E/-W(-3905.82)
DLS(1.1)

#114 MD(11093.00) Inc(89.2) Azm(269.1) TVD(6680.11)
VS(4133.22) N/-S(1163.73) E/-W(-4000.80)
DLS(0.8)

#115 MD(11189.00) Inc(89.5) Azm(269.1) TVD(6681.19)
VS(4227.80) N/-S(1162.23) E/-W(-4096.78)
DLS(0.3)

#116 MD(11285.00) Inc(90.1) Azm(268.8) TVD(6681.53)
VS(4322.34) N/-S(1160.47) E/-W(-4192.76)
DLS(0.7)

#117 MD(11381.00) Inc(90.9) Azm(268.9) TVD(6680.69)
VS(4416.84) N/-S(1158.54) E/-W(-4288.74)
DLS(0.8)

#118 MD(11477.00) Inc(89.7) Azm(270.5) TVD(6680.19)
VS(4511.59) N/-S(1158.04) E/-W(-4384.73)
DLS(2.1)

#119 MD(11573.00) Inc(90.2) Azm(270.5) TVD(6680.27)
VS(4606.54) N/-S(1158.88) E/-W(-4480.73)
DLS(0.5)

#120 MD(11668.00) Inc(90.7) Azm(270.2) TVD(6679.53)
VS(4700.47) N/-S(1159.46) E/-W(-4575.72)
DLS(0.6)

#121 MD(11764.00) Inc(89.3) Azm(270.0) TVD(6679.53)
VS(4795.32) N/-S(1159.62) E/-W(-4671.72)
DLS(1.5)

#122 MD(11860.00) Inc(89.3) Azm(269.3) TVD(6680.70)
VS(4890.05) N/-S(1159.04) E/-W(-4767.71)
DLS(0.7)

#123 MD(11956.00) Inc(89.3) Azm(268.9) TVD(6681.87)
VS(4984.62) N/-S(1157.53) E/-W(-4863.69)
DLS(0.4)

#124 MD(12051.00) Inc(89.3) Azm(268.6) TVD(6683.03)
VS(5078.11) N/-S(1155.46) E/-W(-4958.66)
DLS(0.3)

#125 MD(12147.00) Inc(89.8) Azm(270.7) TVD(6683.79)
VS(5172.84) N/-S(1154.87) E/-W(-5054.65)
DLS(2.2)

#126 MD(12243.00) Inc(90.3) Azm(270.5) TVD(6683.70)
VS(5267.82) N/-S(1155.88) E/-W(-5150.65)
DLS(0.6)

#127 MD(12338.00) Inc(91.3) Azm(270.5) TVD(6682.38)
VS(5361.77) N/-S(1156.70) E/-W(-5245.63)
DLS(1.1)

#128 MD(12434.00) Inc(90.0) Azm(271.5) TVD(6681.29)
VS(5456.84) N/-S(1158.38) E/-W(-5341.61)
DLS(1.7)

#129 MD(12530.00) Inc(90.5) Azm(271.4) TVD(6680.87)
VS(5552.01) N/-S(1160.81) E/-W(-5437.58)
DLS(0.5)

#130 MD(12626.00) Inc(91.5) Azm(271.6) TVD(6679.19)
VS(5647.19) N/-S(1163.32) E/-W(-5533.53)
DLS(1.1)

#131 MD(12721.00) Inc(90.0) Azm(271.2) TVD(6677.95)
VS(5741.35) N/-S(1165.64) E/-W(-5628.49)
DLS(1.6)

#132 MD(12817.00) Inc(90.5) Azm(271.0) TVD(6677.53)
VS(5836.45) N/-S(1167.49) E/-W(-5724.47)
DLS(0.6)

#133 MD(12913.00) Inc(88.4) Azm(269.8) TVD(6678.45)
VS(5931.36) N/-S(1168.16) E/-W(-5820.46)
DLS(2.5)

#134 MD(13009.00) Inc(89.0) Azm(269.6) TVD(6680.63)
VS(6026.09) N/-S(1167.65) E/-W(-5916.43)
DLS(0.7)

#135 MD(13105.00) Inc(90.1) Azm(269.6) TVD(6681.38)
VS(6120.81) N/-S(1166.98) E/-W(-6012.42)
DLS(1.1)

#136 MD(13201.00) Inc(90.9) Azm(269.5) TVD(6680.55)
VS(6215.51) N/-S(1166.23) E/-W(-6108.41)
DLS(0.8)

#137 MD(13296.00) Inc(91.4) Azm(269.3) TVD(6678.64)
VS(6309.17) N/-S(1165.23) E/-W(-6203.39)
DLS(0.6)

#138 MD(13392.00) Inc(89.9) Azm(269.1) TVD(6677.55)
VS(6403.77) N/-S(1163.89) E/-W(-6299.37)
DLS(1.6)

#139 MD(13488.00) Inc(89.1) Azm(268.8) TVD(6678.39)
VS(6498.31) N/-S(1162.14) E/-W(-6395.35)
DLS(0.9)

#140 MD(13584.00) Inc(89.8) Azm(267.9) TVD(6679.31)
VS(6592.66) N/-S(1159.37) E/-W(-6491.31)
DLS(1.2)

#141 MD(13680.00) Inc(90.7) Azm(267.2) TVD(6678.89)
VS(6686.76) N/-S(1155.27) E/-W(-6587.21)
DLS(1.2)

#142 MD(13776.00) Inc(89.9) Azm(268.2) TVD(6678.39)
VS(6780.91) N/-S(1151.41) E/-W(-6683.13)
DLS(1.3)

#143 MD(13871.00) Inc(90.1) Azm(268.8) TVD(6678.39)
VS(6874.33) N/-S(1148.93) E/-W(-6778.10)
DLS(0.7)

#144 MD(13967.00) Inc(89.8) Azm(269.3) TVD(6678.47)
VS(6968.90) N/-S(1147.34) E/-W(-6874.09)
DLS(0.6)

#145 MD(14063.00) Inc(89.9) Azm(270.2) TVD(6678.72)
VS(7063.66) N/-S(1146.92) E/-W(-6970.09)
DLS(0.9)

#146 MD(14158.00) Inc(90.8) Azm(269.6) TVD(6678.14)
VS(7157.47) N/-S(1146.75) E/-W(-7065.08)
DLS(1.1)

#147 MD(14254.00) Inc(91.7) Azm(269.5) TVD(6676.05)
VS(7252.15) N/-S(1146.00) E/-W(-7161.06)
DLS(0.9)

#148 MD(14365.00) Inc(92.8) Azm(268.6) TVD(6671.69)
VS(7361.41) N/-S(1144.16) E/-W(-7271.95)
DLS(1.3)