

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|--------------------------------------|----------|--|
| Operator | KERR-MCGEE OIL & GAS ONSHORE LP (WA) | Slot | SLOT#29 MIRACLE 9C-11HZ (2380'FSL & 274'FEL, SEC.12) |
| Area | COLORADO | Well | MIRACLE 9C-11HZ |
| Field | LARIMER COUNTY | Wellbore | MIRACLE 9C-11HZ AWP <13682> |
| Facility | SEC.12-T5N-R68W | | |

| REPORT SETUP INFORMATION | | | |
|--------------------------|------------------------------------|----------------------|--|
| Projection System | NAD83 / UTM Zone 13 North, US feet | Software System | WellArchitect® 4.1.1 |
| North Reference | True | User | Precain |
| Scale | 0.9996 | Report Generated | 8/18/2015 at 2:53:59 PM |
| Convergence at slot | 0.04° East | Database/Source file | WellArchitectAPC/MIRACLE_9C-11HZ_AWP__13682_.xml |

| WELLPATH LOCATION | | | | | | |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|-----------------|
| | Local coordinates | | Grid coordinates | | Geographic coordinates | |
| | North[ft] | East[ft] | Easting[US ft] | Northing[US ft] | Latitude | Longitude |
| Slot Location | -99.88 | -0.31 | 1655605.62 | 14677318.15 | 40°24'48.625"N | 104°56'43.559"W |
| Facility Reference Pt | | | 1655605.86 | 14677417.99 | 40°24'49.612"N | 104°56'43.555"W |
| Field Reference Pt | | | 0.00 | 0.00 | 0°00'00.000" | 109°29'19.478"W |

| WELLPATH DATUM | | | |
|--------------------------|-------------------------|--|-------------------|
| Calculation method | Minimum curvature | XTREME 23 (16'KB) (RKB) to Facility Vertical Datum | 4964.00ft |
| Horizontal Reference Pt | Slot | XTREME 23 (16'KB) (RKB) to Mean Sea Level | 4964.00ft |
| Vertical Reference Pt | XTREME 23 (16'KB) (RKB) | XTREME 23 (16'KB) (RKB) to Mud Line at Slot (SLOT#29 MIRACLE 9C-11HZ (2380'FSL & 274'FEL, SEC.12)) | 4964.00ft |
| MD Reference Pt | XTREME 23 (16'KB) (RKB) | Section Origin | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level | Section Azimuth | 270.54° |

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| Area | COLORADO | Well | MIRACLE 9C-11HZ |
| Field | LARIMER COUNTY | Wellbore | MIRACLE 9C-11HZ AWB <13682> |
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| WELLPATH DATA (151 stations) † = interpolated/extrapolated station | | | | | | | | | | |
|--|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------|-----------------|------------------|--|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 0.00† | 0.000 | 335.190 | 0.00 | 0.00 | 0.00 | 0.00 | 40°24'48.625"N | 104°56'43.559"W | 0.00 | |
| 16.00 | 0.000 | 335.190 | 16.00 | 0.00 | 0.00 | 0.00 | 40°24'48.625"N | 104°56'43.559"W | 0.00 | Tie-On |
| 128.00 | 0.710 | 335.190 | 128.00 | 0.30 | 0.63 | -0.29 | 40°24'48.631"N | 104°56'43.563"W | 0.63 | Begin Scientific Energy MWD Surveys |
| 218.00 | 0.930 | 78.080 | 217.99 | -0.18 | 1.29 | 0.19 | 40°24'48.638"N | 104°56'43.557"W | 1.43 | |
| 307.00 | 2.260 | 108.670 | 306.96 | -2.55 | 0.87 | 2.56 | 40°24'48.634"N | 104°56'43.526"W | 1.72 | |
| 434.00 | 3.960 | 137.910 | 433.77 | -7.90 | -3.18 | 7.87 | 40°24'48.594"N | 104°56'43.457"W | 1.79 | |
| 561.00 | 6.190 | 133.080 | 560.27 | -15.92 | -11.11 | 15.81 | 40°24'48.515"N | 104°56'43.355"W | 1.79 | |
| 687.00 | 8.140 | 140.710 | 685.28 | -26.64 | -22.66 | 26.42 | 40°24'48.401"N | 104°56'43.217"W | 1.72 | |
| 783.00 | 9.330 | 148.980 | 780.17 | -35.06 | -34.59 | 34.74 | 40°24'48.283"N | 104°56'43.110"W | 1.80 | |
| 877.00 | 10.130 | 146.450 | 872.82 | -43.68 | -48.01 | 43.23 | 40°24'48.151"N | 104°56'43.000"W | 0.96 | |
| 972.00 | 11.740 | 144.540 | 966.09 | -54.05 | -62.84 | 53.46 | 40°24'48.004"N | 104°56'42.868"W | 1.74 | |
| 1163.00 | 14.910 | 153.630 | 1151.94 | -76.60 | -100.70 | 75.65 | 40°24'47.630"N | 104°56'42.581"W | 1.98 | |
| 1257.00 | 14.780 | 156.460 | 1242.81 | -86.96 | -122.53 | 85.81 | 40°24'47.414"N | 104°56'42.450"W | 0.78 | |
| 1354.00 | 15.530 | 156.850 | 1336.43 | -97.22 | -145.81 | 95.86 | 40°24'47.184"N | 104°56'42.320"W | 0.78 | |
| 1447.00 | 15.970 | 157.330 | 1425.94 | -107.27 | -169.06 | 105.69 | 40°24'46.954"N | 104°56'42.193"W | 0.49 | |
| 1542.00 | 15.290 | 155.190 | 1517.43 | -117.78 | -192.49 | 115.98 | 40°24'46.723"N | 104°56'42.060"W | 0.94 | |
| 1637.00 | 14.130 | 155.930 | 1609.31 | -127.97 | -214.45 | 125.97 | 40°24'46.506"N | 104°56'41.931"W | 1.24 | |
| 1732.00 | 13.720 | 151.400 | 1701.52 | -138.28 | -234.93 | 136.09 | 40°24'46.303"N | 104°56'41.800"W | 1.23 | |
| 1817.00 | 13.670 | 150.340 | 1784.11 | -148.24 | -252.51 | 145.88 | 40°24'46.130"N | 104°56'41.673"W | 0.30 | Tie-Into Scientific Energy MWD Surveys |
| 1898.00 | 13.860 | 150.770 | 1862.78 | -157.88 | -269.29 | 155.36 | 40°24'45.964"N | 104°56'41.551"W | 0.27 | Begin BHI MWD+IFR Surveys |
| 1993.00 | 13.300 | 143.870 | 1955.13 | -170.05 | -288.05 | 167.36 | 40°24'45.779"N | 104°56'41.395"W | 1.80 | |
| 2088.00 | 14.040 | 137.510 | 2047.44 | -184.44 | -305.38 | 181.59 | 40°24'45.607"N | 104°56'41.211"W | 1.76 | |
| 2183.00 | 15.140 | 129.840 | 2139.39 | -201.91 | -321.82 | 198.90 | 40°24'45.445"N | 104°56'40.988"W | 2.34 | |
| 2279.00 | 16.180 | 121.460 | 2231.83 | -223.08 | -336.84 | 219.94 | 40°24'45.296"N | 104°56'40.716"W | 2.59 | |
| 2373.00 | 16.020 | 114.570 | 2322.16 | -246.17 | -349.07 | 242.91 | 40°24'45.176"N | 104°56'40.419"W | 2.04 | |
| 2469.00 | 16.130 | 114.370 | 2414.40 | -270.46 | -360.08 | 267.10 | 40°24'45.067"N | 104°56'40.106"W | 0.13 | |
| 2564.00 | 15.150 | 114.470 | 2505.88 | -293.88 | -370.66 | 290.42 | 40°24'44.962"N | 104°56'39.805"W | 1.03 | |
| 2659.00 | 14.370 | 114.340 | 2597.75 | -316.02 | -380.67 | 312.46 | 40°24'44.863"N | 104°56'39.520"W | 0.82 | |
| 2755.00 | 13.860 | 112.340 | 2690.85 | -337.59 | -389.95 | 333.95 | 40°24'44.772"N | 104°56'39.242"W | 0.74 | |
| 2850.00 | 13.370 | 111.660 | 2783.18 | -358.40 | -398.33 | 354.68 | 40°24'44.689"N | 104°56'38.974"W | 0.54 | |
| 2946.00 | 12.620 | 111.540 | 2876.72 | -378.55 | -406.27 | 374.75 | 40°24'44.610"N | 104°56'38.714"W | 0.78 | |
| 3041.00 | 11.740 | 112.260 | 2969.58 | -397.21 | -413.74 | 393.35 | 40°24'44.537"N | 104°56'38.474"W | 0.94 | |
| 3232.00 | 12.420 | 115.730 | 3156.35 | -433.85 | -430.02 | 429.84 | 40°24'44.376"N | 104°56'38.002"W | 0.52 | |
| 3327.00 | 11.180 | 114.520 | 3249.34 | -451.51 | -438.28 | 447.42 | 40°24'44.294"N | 104°56'37.775"W | 1.33 | |
| 3421.00 | 9.630 | 112.910 | 3341.80 | -467.11 | -445.12 | 462.96 | 40°24'44.226"N | 104°56'37.574"W | 1.68 | |
| 3516.00 | 9.500 | 118.920 | 3435.48 | -481.35 | -452.01 | 477.14 | 40°24'44.158"N | 104°56'37.391"W | 1.06 | |
| 3611.00 | 10.730 | 124.530 | 3529.00 | -495.59 | -460.81 | 491.29 | 40°24'44.071"N | 104°56'37.208"W | 1.66 | |
| 3707.00 | 14.400 | 127.860 | 3622.69 | -512.49 | -473.21 | 508.08 | 40°24'43.949"N | 104°56'36.991"W | 3.90 | |
| 3801.00 | 16.350 | 124.360 | 3713.32 | -532.78 | -487.85 | 528.23 | 40°24'43.804"N | 104°56'36.730"W | 2.30 | |
| 3896.00 | 16.290 | 124.460 | 3804.49 | -554.95 | -502.94 | 550.26 | 40°24'43.655"N | 104°56'36.445"W | 0.07 | |
| 3991.00 | 15.430 | 122.040 | 3895.88 | -576.78 | -517.18 | 571.96 | 40°24'43.514"N | 104°56'36.165"W | 1.14 | |
| 4086.00 | 13.590 | 116.460 | 3987.85 | -597.59 | -528.86 | 592.66 | 40°24'43.399"N | 104°56'35.897"W | 2.43 | |
| 4182.00 | 14.420 | 115.290 | 4080.99 | -618.59 | -538.99 | 613.57 | 40°24'43.299"N | 104°56'35.627"W | 0.91 | |
| 4277.00 | 13.440 | 115.160 | 4173.20 | -639.37 | -548.74 | 634.26 | 40°24'43.202"N | 104°56'35.360"W | 1.03 | |
| 4372.00 | 14.430 | 112.960 | 4265.40 | -660.35 | -558.05 | 655.15 | 40°24'43.110"N | 104°56'35.089"W | 1.18 | |

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| WELLPATH DATA (151 stations) † = interpolated/extrapolated station | | | | | | | | | | |
|--|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------|-----------------|------------------|-----------------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 4467.00 | 13.350 | 112.550 | 4357.62 | -681.46 | -566.87 | 676.18 | 40°24'43.023"N | 104°56'34.818"W | 1.14 | |
| 4562.00 | 13.230 | 110.720 | 4450.08 | -701.83 | -574.93 | 696.48 | 40°24'42.944"N | 104°56'34.555"W | 0.46 | |
| 4657.00 | 14.690 | 112.310 | 4542.27 | -723.23 | -583.35 | 717.79 | 40°24'42.860"N | 104°56'34.280"W | 1.59 | |
| 4752.00 | 13.840 | 112.430 | 4634.34 | -744.95 | -592.25 | 739.44 | 40°24'42.772"N | 104°56'34.000"W | 0.90 | |
| 4847.00 | 14.750 | 113.690 | 4726.40 | -766.62 | -601.45 | 761.01 | 40°24'42.682"N | 104°56'33.721"W | 1.01 | |
| 4922.00† | 13.928 | 113.690 | 4799.06 | -783.70 | -608.91 | 778.02 | 40°24'42.608"N | 104°56'33.501"W | 1.10 | Entered Landbox |
| 4941.00 | 13.720 | 113.690 | 4817.51 | -787.87 | -610.74 | 782.18 | 40°24'42.590"N | 104°56'33.447"W | 1.10 | |
| 5036.00 | 13.290 | 114.320 | 4909.88 | -808.22 | -619.76 | 802.45 | 40°24'42.501"N | 104°56'33.185"W | 0.48 | |
| 5132.00 | 11.670 | 114.130 | 5003.61 | -827.22 | -628.27 | 821.36 | 40°24'42.417"N | 104°56'32.941"W | 1.69 | |
| 5227.00 | 11.210 | 112.770 | 5096.73 | -844.57 | -635.78 | 838.65 | 40°24'42.342"N | 104°56'32.717"W | 0.56 | |
| 5322.00 | 8.660 | 111.450 | 5190.29 | -859.80 | -641.97 | 853.82 | 40°24'42.281"N | 104°56'32.521"W | 2.69 | |
| 5417.00 | 8.120 | 113.560 | 5284.28 | -872.66 | -647.26 | 866.63 | 40°24'42.229"N | 104°56'32.356"W | 0.65 | |
| 5512.00 | 7.080 | 116.310 | 5378.44 | -884.10 | -652.54 | 878.03 | 40°24'42.177"N | 104°56'32.208"W | 1.16 | |
| 5608.00 | 5.490 | 113.230 | 5473.86 | -893.67 | -656.97 | 887.55 | 40°24'42.133"N | 104°56'32.085"W | 1.69 | |
| 5703.00 | 5.720 | 114.760 | 5568.41 | -902.18 | -660.75 | 896.03 | 40°24'42.096"N | 104°56'31.976"W | 0.29 | |
| 5798.00 | 4.440 | 112.990 | 5663.03 | -909.90 | -664.17 | 903.71 | 40°24'42.062"N | 104°56'31.876"W | 1.36 | |
| 5893.00 | 3.520 | 104.880 | 5757.80 | -916.12 | -666.35 | 909.91 | 40°24'42.040"N | 104°56'31.796"W | 1.13 | |
| 5988.00 | 3.020 | 100.060 | 5852.65 | -921.41 | -667.54 | 915.20 | 40°24'42.028"N | 104°56'31.728"W | 0.60 | |
| 6082.00 | 2.670 | 97.230 | 5946.53 | -926.03 | -668.25 | 919.81 | 40°24'42.021"N | 104°56'31.668"W | 0.40 | |
| 6178.00 | 1.330 | 104.400 | 6042.47 | -929.33 | -668.81 | 923.10 | 40°24'42.016"N | 104°56'31.625"W | 1.42 | |
| 6273.00 | 1.300 | 105.880 | 6137.45 | -931.44 | -669.38 | 925.21 | 40°24'42.010"N | 104°56'31.598"W | 0.05 | |
| 6368.00 | 0.990 | 103.490 | 6232.43 | -933.28 | -669.86 | 927.04 | 40°24'42.006"N | 104°56'31.575"W | 0.33 | |
| 6463.00 | 0.890 | 71.100 | 6327.42 | -934.78 | -669.81 | 928.54 | 40°24'42.006"N | 104°56'31.555"W | 0.56 | |
| 6558.00 | 0.280 | 26.880 | 6422.41 | -935.58 | -669.37 | 929.34 | 40°24'42.010"N | 104°56'31.545"W | 0.75 | |
| 6654.00 | 4.380 | 273.740 | 6518.32 | -932.02 | -668.92 | 925.79 | 40°24'42.015"N | 104°56'31.591"W | 4.68 | |
| 6749.00 | 10.410 | 280.570 | 6612.49 | -919.93 | -667.11 | 913.72 | 40°24'42.033"N | 104°56'31.747"W | 6.40 | |
| 6844.00 | 19.870 | 278.220 | 6704.09 | -895.43 | -663.22 | 889.25 | 40°24'42.071"N | 104°56'32.063"W | 9.98 | |
| 6939.00 | 29.370 | 275.270 | 6790.35 | -856.12 | -658.76 | 849.98 | 40°24'42.115"N | 104°56'32.571"W | 10.08 | |
| 7018.00† | 36.170 | 273.577 | 6856.74 | -813.48 | -655.52 | 807.37 | 40°24'42.147"N | 104°56'33.122"W | 8.69 | SSPG |
| 7034.00 | 37.550 | 273.300 | 6869.54 | -803.90 | -654.94 | 797.79 | 40°24'42.153"N | 104°56'33.245"W | 8.69 | |
| 7076.00† | 40.216 | 272.073 | 6902.24 | -777.55 | -653.72 | 771.46 | 40°24'42.165"N | 104°56'33.586"W | 6.61 | NBRR |
| 7130.00 | 43.660 | 270.680 | 6942.40 | -741.47 | -652.86 | 735.39 | 40°24'42.174"N | 104°56'34.052"W | 6.61 | |
| 7225.00 | 50.540 | 268.800 | 7007.03 | -671.94 | -653.24 | 665.84 | 40°24'42.170"N | 104°56'34.951"W | 7.39 | |
| 7255.00† | 52.099 | 268.539 | 7025.78 | -648.53 | -653.79 | 642.43 | 40°24'42.164"N | 104°56'35.254"W | 5.24 | N470_B_CK |
| 7320.00 | 55.480 | 268.010 | 7064.17 | -596.13 | -655.37 | 590.02 | 40°24'42.149"N | 104°56'35.931"W | 5.24 | |
| 7375.00† | 58.114 | 268.436 | 7094.29 | -550.16 | -656.80 | 544.02 | 40°24'42.135"N | 104°56'36.526"W | 4.83 | N700_C_CK |
| 7415.00 | 60.030 | 268.730 | 7114.85 | -515.87 | -657.64 | 509.72 | 40°24'42.126"N | 104°56'36.969"W | 4.83 | |
| 7510.00 | 64.850 | 269.580 | 7158.79 | -431.70 | -658.87 | 425.54 | 40°24'42.114"N | 104°56'38.058"W | 5.14 | |
| 7605.00 | 72.960 | 270.940 | 7192.95 | -343.14 | -658.44 | 336.98 | 40°24'42.119"N | 104°56'39.203"W | 8.64 | |
| 7648.00† | 76.219 | 270.632 | 7204.38 | -301.69 | -657.87 | 295.54 | 40°24'42.124"N | 104°56'39.738"W | 7.61 | FRHS |
| 7700.00 | 80.160 | 270.270 | 7215.02 | -250.80 | -657.47 | 244.65 | 40°24'42.128"N | 104°56'40.396"W | 7.61 | |
| 7784.00† | 85.129 | 269.146 | 7225.77 | -167.53 | -657.90 | 161.37 | 40°24'42.124"N | 104°56'41.473"W | 6.06 | CDLL |
| 7795.00 | 85.780 | 269.000 | 7226.64 | -156.57 | -658.08 | 150.41 | 40°24'42.122"N | 104°56'41.615"W | 6.06 | |
| 7839.00† | 87.989 | 268.926 | 7229.04 | -112.65 | -658.88 | 106.48 | 40°24'42.114"N | 104°56'42.182"W | 5.02 | Landing Depth |
| 7890.00 | 90.550 | 268.840 | 7229.69 | -61.68 | -659.87 | 55.50 | 40°24'42.104"N | 104°56'42.842"W | 5.02 | |

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| 7985.00 | 89.630 | 267.000 | 7229.54 | 33.21 | -663.32 | -39.43 | 40°24'42.070"N | 104°56'44.069"W | 2.17 | |
| 8081.00 | 89.230 | 268.490 | 7230.49 | 129.09 | -667.10 | -135.35 | 40°24'42.033"N | 104°56'45.309"W | 1.61 | |
| 8176.00 | 89.690 | 270.480 | 7231.39 | 224.07 | -667.95 | -230.34 | 40°24'42.025"N | 104°56'46.537"W | 2.15 | |
| 8271.00 | 89.660 | 273.770 | 7231.93 | 319.02 | -664.43 | -325.26 | 40°24'42.059"N | 104°56'47.764"W | 3.46 | |
| 8366.00 | 90.590 | 274.350 | 7231.72 | 413.83 | -657.70 | -420.02 | 40°24'42.126"N | 104°56'48.989"W | 1.15 | |
| 8461.00 | 90.710 | 273.100 | 7230.64 | 508.68 | -651.53 | -514.81 | 40°24'42.187"N | 104°56'50.214"W | 1.32 | |
| 8507.00 | 91.110 | 272.730 | 7229.91 | 554.63 | -649.19 | -560.74 | 40°24'42.210"N | 104°56'50.808"W | 1.18 | |
| 8556.00 | 89.200 | 271.820 | 7229.78 | 603.61 | -647.25 | -609.70 | 40°24'42.229"N | 104°56'51.441"W | 4.32 | |
| 8603.00 | 89.230 | 271.130 | 7230.42 | 650.60 | -646.04 | -656.68 | 40°24'42.241"N | 104°56'52.048"W | 1.47 | |
| 8652.00 | 89.630 | 270.770 | 7230.91 | 699.59 | -645.22 | -705.67 | 40°24'42.249"N | 104°56'52.682"W | 1.10 | |
| 8747.00 | 89.200 | 269.530 | 7231.88 | 794.58 | -644.98 | -800.66 | 40°24'42.251"N | 104°56'53.910"W | 1.38 | |
| 8842.00 | 90.520 | 269.250 | 7232.11 | 889.56 | -645.99 | -895.66 | 40°24'42.241"N | 104°56'55.138"W | 1.42 | |
| 8937.00 | 89.380 | 269.520 | 7232.19 | 984.54 | -647.01 | -990.65 | 40°24'42.231"N | 104°56'56.366"W | 1.23 | |
| 9032.00 | 88.800 | 270.980 | 7233.70 | 1079.53 | -646.59 | -1085.63 | 40°24'42.235"N | 104°56'57.594"W | 1.65 | |
| 9128.00 | 89.820 | 270.990 | 7234.86 | 1175.51 | -644.94 | -1181.61 | 40°24'42.252"N | 104°56'58.834"W | 1.06 | |
| 9223.00 | 89.260 | 271.790 | 7235.62 | 1270.50 | -642.64 | -1276.58 | 40°24'42.274"N | 104°57'00.062"W | 1.03 | |
| 9319.00 | 90.580 | 271.880 | 7235.76 | 1366.47 | -639.56 | -1372.53 | 40°24'42.305"N | 104°57'01.303"W | 1.38 | |
| 9414.00 | 89.410 | 271.240 | 7235.76 | 1461.46 | -636.98 | -1467.49 | 40°24'42.330"N | 104°57'02.530"W | 1.40 | |
| 9509.00 | 88.550 | 270.460 | 7237.45 | 1556.44 | -635.57 | -1562.46 | 40°24'42.344"N | 104°57'03.758"W | 1.22 | |
| 9604.00 | 89.170 | 269.630 | 7239.34 | 1651.41 | -635.49 | -1657.44 | 40°24'42.345"N | 104°57'04.986"W | 1.09 | |
| 9700.00 | 89.750 | 268.960 | 7240.25 | 1747.39 | -636.67 | -1753.43 | 40°24'42.333"N | 104°57'06.227"W | 0.92 | |
| 9795.00 | 89.110 | 270.740 | 7241.19 | 1842.37 | -636.92 | -1848.42 | 40°24'42.330"N | 104°57'07.455"W | 1.99 | |
| 9890.00 | 88.650 | 271.310 | 7243.05 | 1937.35 | -635.22 | -1943.39 | 40°24'42.347"N | 104°57'08.682"W | 0.77 | |
| 9985.00 | 89.750 | 271.750 | 7244.38 | 2032.32 | -632.69 | -2038.34 | 40°24'42.372"N | 104°57'09.910"W | 1.25 | |
| 10081.00 | 90.520 | 271.910 | 7244.15 | 2128.30 | -629.62 | -2134.29 | 40°24'42.402"N | 104°57'11.150"W | 0.82 | |
| 10176.00 | 90.250 | 271.370 | 7243.51 | 2223.28 | -626.90 | -2229.25 | 40°24'42.429"N | 104°57'12.378"W | 0.64 | |
| 10271.00 | 88.710 | 271.390 | 7244.38 | 2318.26 | -624.62 | -2324.22 | 40°24'42.452"N | 104°57'13.606"W | 1.62 | |
| 10367.00 | 89.820 | 271.680 | 7245.61 | 2414.24 | -622.04 | -2420.17 | 40°24'42.477"N | 104°57'14.846"W | 1.20 | |
| 10462.00 | 91.080 | 271.520 | 7244.86 | 2509.22 | -619.39 | -2515.13 | 40°24'42.503"N | 104°57'16.074"W | 1.34 | |
| 10557.00 | 91.200 | 272.290 | 7242.97 | 2604.17 | -616.24 | -2610.06 | 40°24'42.534"N | 104°57'17.301"W | 0.82 | |
| 10652.00 | 90.680 | 270.400 | 7241.41 | 2699.14 | -614.01 | -2705.02 | 40°24'42.556"N | 104°57'18.528"W | 2.06 | |
| 10747.00 | 89.480 | 268.810 | 7241.28 | 2794.12 | -614.66 | -2800.01 | 40°24'42.550"N | 104°57'19.756"W | 2.10 | |
| 10937.00 | 91.910 | 268.100 | 7238.98 | 2983.97 | -619.78 | -2989.91 | 40°24'42.499"N | 104°57'22.211"W | 1.33 | |
| 11032.00 | 90.860 | 268.770 | 7236.68 | 3078.88 | -622.38 | -3084.84 | 40°24'42.473"N | 104°57'23.439"W | 1.31 | |
| 11128.00 | 90.280 | 270.040 | 7235.72 | 3174.85 | -623.37 | -3180.83 | 40°24'42.463"N | 104°57'24.680"W | 1.45 | |
| 11223.00 | 90.860 | 269.180 | 7234.78 | 3269.83 | -624.02 | -3275.82 | 40°24'42.457"N | 104°57'25.908"W | 1.09 | |
| 11319.00 | 90.180 | 269.630 | 7233.91 | 3365.81 | -625.02 | -3371.81 | 40°24'42.447"N | 104°57'27.149"W | 0.85 | |
| 11414.00 | 89.850 | 268.710 | 7233.88 | 3460.78 | -626.39 | -3466.80 | 40°24'42.433"N | 104°57'28.377"W | 1.03 | |
| 11509.00 | 90.460 | 269.150 | 7233.63 | 3555.74 | -628.17 | -3561.79 | 40°24'42.415"N | 104°57'29.604"W | 0.79 | |
| 11605.00 | 90.180 | 269.290 | 7233.09 | 3651.71 | -629.47 | -3657.77 | 40°24'42.402"N | 104°57'30.845"W | 0.33 | |
| 11700.00 | 90.620 | 271.260 | 7232.43 | 3746.71 | -629.02 | -3752.77 | 40°24'42.406"N | 104°57'32.073"W | 2.12 | |
| 11795.00 | 91.290 | 270.410 | 7230.84 | 3841.69 | -627.63 | -3847.74 | 40°24'42.420"N | 104°57'33.301"W | 1.14 | |
| 11889.00 | 88.400 | 269.590 | 7231.10 | 3935.68 | -627.63 | -3941.73 | 40°24'42.420"N | 104°57'34.516"W | 3.20 | |
| 11984.00 | 89.080 | 270.240 | 7233.19 | 4030.65 | -627.77 | -4036.71 | 40°24'42.418"N | 104°57'35.744"W | 0.99 | |
| 12079.00 | 90.280 | 270.810 | 7233.72 | 4125.64 | -626.90 | -4131.70 | 40°24'42.427"N | 104°57'36.972"W | 1.40 | |

| REFERENCE WELLPATH IDENTIFICATION | | | | | | | | | | | |
|-----------------------------------|--------------------------------------|--|--|--|--|--|----------|--|--|--|--|
| Operator | KERR-MCGEE OIL & GAS ONSHORE LP (WA) | | | | | | Slot | SLOT#29 MIRACLE 9C-11HZ (2380'FSL & 274'FEL, SEC.12) | | | |
| Area | COLORADO | | | | | | Well | MIRACLE 9C-11HZ | | | |
| Field | LARIMER COUNTY | | | | | | Wellbore | MIRACLE 9C-11HZ AWB <13682> | | | |
| Facility | SEC.12-T5N-R68W | | | | | | | | | | |

| WELLPATH DATA (151 stations) | | | | | | | | | | | |
|------------------------------|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------|-----------------|------------------|--------------------------|--|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments | |
| 12174.00 | 90.310 | 269.190 | 7233.23 | 4220.63 | -626.90 | -4226.69 | 40°24'42.427"N | 104°57'38.200"W | 1.71 | | |
| 12269.00 | 87.870 | 268.450 | 7234.74 | 4315.57 | -628.86 | -4321.65 | 40°24'42.407"N | 104°57'39.428"W | 2.68 | | |
| 12460.00 | 89.780 | 269.840 | 7238.65 | 4506.46 | -631.71 | -4512.58 | 40°24'42.379"N | 104°57'41.896"W | 1.24 | | |
| 12554.00 | 90.860 | 269.270 | 7238.13 | 4600.44 | -632.44 | -4606.57 | 40°24'42.371"N | 104°57'43.111"W | 1.30 | | |
| 12649.00 | 91.330 | 270.650 | 7236.31 | 4695.42 | -632.50 | -4701.55 | 40°24'42.370"N | 104°57'44.339"W | 1.53 | | |
| 12744.00 | 89.320 | 270.640 | 7235.77 | 4790.41 | -631.43 | -4796.54 | 40°24'42.381"N | 104°57'45.567"W | 2.12 | | |
| 12839.00 | 89.450 | 269.580 | 7236.79 | 4885.40 | -631.25 | -4891.53 | 40°24'42.382"N | 104°57'46.795"W | 1.12 | | |
| 12934.00 | 89.720 | 268.060 | 7237.48 | 4980.36 | -633.21 | -4986.51 | 40°24'42.363"N | 104°57'48.023"W | 1.63 | | |
| 13029.00 | 91.050 | 267.570 | 7236.84 | 5075.24 | -636.83 | -5081.43 | 40°24'42.327"N | 104°57'49.250"W | 1.49 | | |
| 13124.00 | 89.970 | 268.130 | 7236.00 | 5170.13 | -640.39 | -5176.36 | 40°24'42.291"N | 104°57'50.477"W | 1.28 | | |
| 13219.00 | 87.290 | 268.510 | 7238.27 | 5265.03 | -643.18 | -5271.29 | 40°24'42.264"N | 104°57'51.704"W | 2.85 | | |
| 13315.00 | 88.890 | 270.330 | 7241.47 | 5360.95 | -644.15 | -5367.22 | 40°24'42.254"N | 104°57'52.944"W | 2.52 | | |
| 13410.00 | 91.320 | 271.290 | 7241.29 | 5455.94 | -642.81 | -5462.20 | 40°24'42.267"N | 104°57'54.172"W | 2.75 | | |
| 13506.00 | 93.050 | 271.280 | 7237.63 | 5551.86 | -640.65 | -5558.10 | 40°24'42.288"N | 104°57'55.412"W | 1.80 | | |
| 13619.00 | 92.900 | 271.640 | 7231.77 | 5664.69 | -637.78 | -5670.92 | 40°24'42.316"N | 104°57'56.870"W | 0.34 | Last BHI MWD+IFR Surveys | |
| 13682.00 | 92.900 | 271.640 | 7228.58 | 5727.60 | -635.98 | -5733.81 | 40°24'42.334"N | 104°57'57.684"W | 0.00 | Projection to Bit | |

| HOLE & CASING SECTIONS - Ref Wellbore: MIRACLE 9C-11HZ AWB <13682> Ref Wellpath: MIRACLE 9C-11HZ AWP | | | | | | | | | | | |
|---|------------------|----------------|------------------|-------------------|-----------------|-------------------|-------------------|-----------------|-----------------|--|--|
| String/Diameter | Start MD [ft] | End MD [ft] | Interval [ft] | Start TVD [ft] | End TVD [ft] | Start N/S [ft] | Start E/W [ft] | End N/S [ft] | End E/W [ft] | | |
| 13.5in Open Hole | 16.00 | 1876.00 | 1860.00 | 16.00 | 1841.42 | 0.00 | 0.00 | -264.71 | 152.79 | | |
| 9.625in Casing Surface | 16.00 | 1865.00 | 1849.00 | 16.00 | 1830.74 | 0.00 | 0.00 | -262.42 | 151.50 | | |
| 8.5in Open Hole | 1876.00 | 13682.00 | 11806.00 | 1841.42 | 7228.58 | -264.71 | 152.79 | -635.98 | -5733.81 | | |

| TARGETS | | | | | | | | | | | |
|---|-------------|---------------|--------------|----------------------|-----------------------|----------------|-----------------|---------|--|--|--|
| Name | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Shape | | | |
| SEC.11-T5N-R68W LINES | 0.00 | 1.11 | -59.85 | 1655545.78 | 14677319.22 | 40°24'48.636"N | 104°56'44.333"W | polygon | | | |
| SEC.12-T5N-R68W LINES | 0.00 | 1.11 | -59.85 | 1655545.78 | 14677319.22 | 40°24'48.636"N | 104°56'44.333"W | polygon | | | |
| MIRACLE 9C-11HZ BHL ON PLAT (1695'FSL & 500'FEL, SEC.11) REV-1 | 7196.00 | -595.35 | -5740.16 | 1649868.13 | 14676719.49 | 40°24'42.735"N | 104°57'57.766"W | point | | | |
| MIRACLE 9C-11HZ LANDBOX | 7196.00 | 0.00 | 0.00 | 1655605.61 | 14677318.14 | 40°24'48.625"N | 104°56'43.559"W | polygon | | | |

| WELLPATH COMPOSITION - Ref Wellbore: MIRACLE 9C-11HZ AWB <13682> Ref Wellpath: MIRACLE 9C-11HZ AWP | | | | | | | | | | | |
|---|----------------|--|--|--|--|--|--|-----------------------------|--|--|--|
| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | | | Log Name/Comment | | | Wellbore | | | |
| 16.00 | 1817.00 | Custom APC_ISCWSA REV 2 MWD | | | SCIENTIFIC DRILLING MWD SURVEYS <128-1817> | | | MIRACLE 9C-11HZ AWB <13682> | | | |
| 1817.00 | 13619.00 | Custom APC_ISCWSA REV 2 MWD+IFR1 (approximation) | | | BHI MWD+IFR SURVEYS 8 1/2" HOLE <1898-13619> | | | MIRACLE 9C-11HZ AWB <13682> | | | |
| 13619.00 | 13682.00 | Blind Drilling (std) | | | Projection to bit | | | MIRACLE 9C-11HZ AWB <13682> | | | |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|--------------------------------------|----------|--|
| Operator | KERR-MCGEE OIL & GAS ONSHORE LP (WA) | Slot | SLOT#29 MIRACLE 9C-11HZ (2380'FSL & 274'FEL, SEC.12) |
| Area | COLORADO | Well | MIRACLE 9C-11HZ |
| Field | LARIMER COUNTY | Wellbore | MIRACLE 9C-11HZ AWB <13682> |
| Facility | SEC.12-T5N-R68W | | |

| WELLPATH COMMENTS | | | | |
|-------------------|--------------------|----------------|-------------|--|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Comment |
| 16.00 | 0.000 | 335.190 | 16.00 | Tie-On |
| 128.00 | 0.710 | 335.190 | 128.00 | Begin Scientific Energy MWD Surveys |
| 1817.00 | 13.670 | 150.340 | 1784.11 | Tie-Into Scientific Energy MWD Surveys |
| 1898.00 | 13.860 | 150.770 | 1862.78 | Begin BHI MWD+IFR Surveys |
| 4922.00 | 13.928 | 113.690 | 4799.06 | Entered Landbox |
| 7018.00 | 36.170 | 273.577 | 6856.74 | SSPG |
| 7076.00 | 40.216 | 272.073 | 6902.24 | NBRR |
| 7255.00 | 52.099 | 268.539 | 7025.78 | N470_B_CK |
| 7375.00 | 58.114 | 268.436 | 7094.29 | N700_C_CK |
| 7648.00 | 76.219 | 270.632 | 7204.38 | FRHS |
| 7784.00 | 85.129 | 269.146 | 7225.77 | CDLL |
| 7839.00 | 87.989 | 268.926 | 7229.04 | Landing Depth |
| 13619.00 | 92.900 | 271.640 | 7231.77 | Last BHI MWD+IFR Surveys |
| 13682.00 | 92.900 | 271.640 | 7228.58 | Projection to Bit |