

30-015-37964

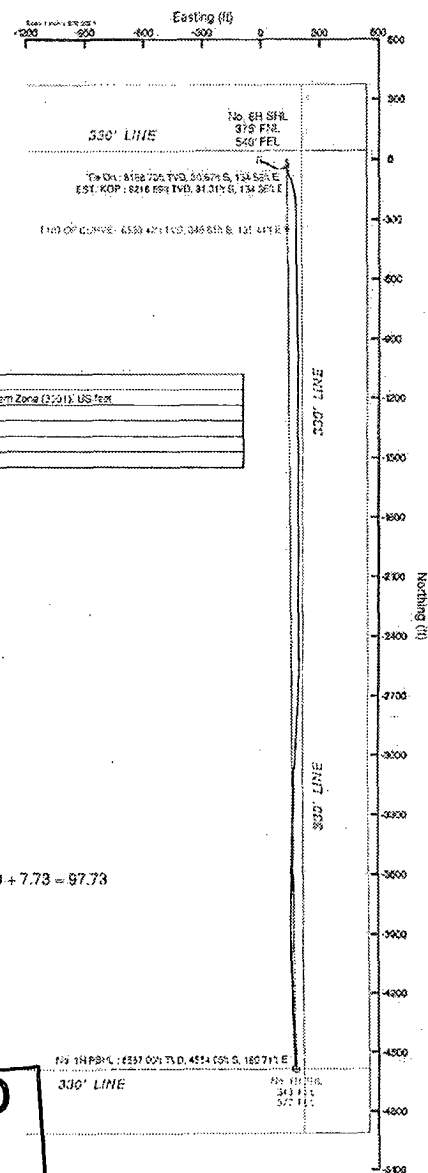
Cimarex Energy Co.

Location: Eddy County, NM
 Field: (Benson) Sec 3, T19S, R30E
 Facility: Benson 3 Prod Com No. 8H

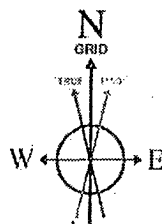
Sol: No. 8H SHL
 Well: No. 8H
 Wellbore: No. 8H PWB

Well Profile Data

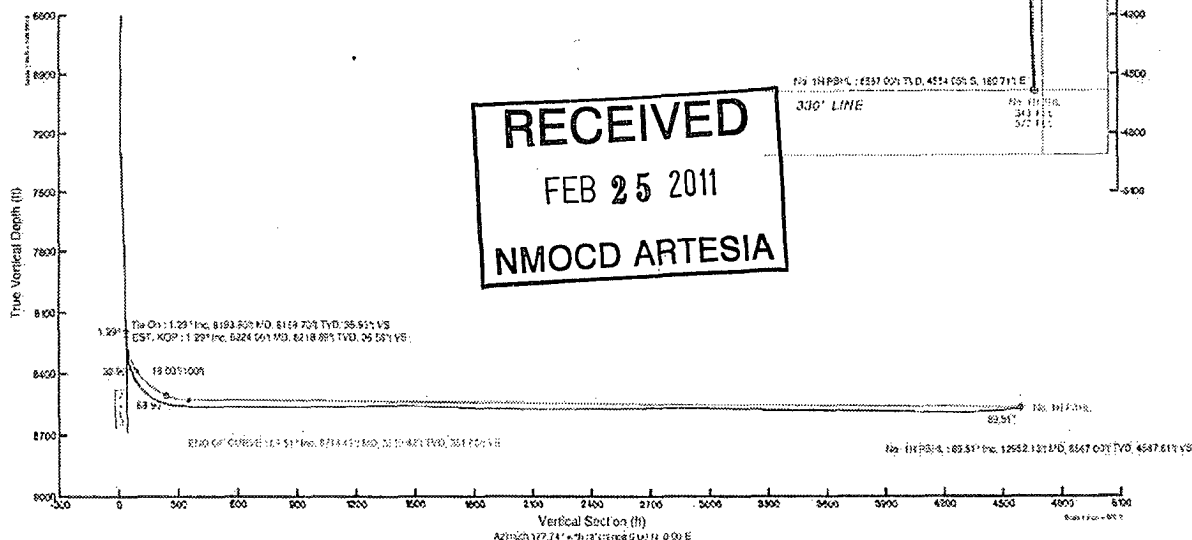
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	8193.80	1.290	198.620	8188.70	-30.67	134.58	0.00	35.95
EST. KOP	8224.00	1.290	198.620	8218.89	-31.31	134.35	0.00	36.58
END OF CURVE	8714.49	89.505	179.389	8530.42	-345.01	125.44	18.00	351.88
No. 1H PWB	12952.13	89.505	179.389	8567.00	-4584.05	180.71	0.00	4587.61



Plot reference is to the Plane of the Actual (BML)	
True verticality (ft) are referenced to Rgt 1-11 on No. 8H SHL (KB)	Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (2011) US Feet
Measured dip angles are referenced to Rgt 881 on No. 8H SHL (KB)	North Reference: Grid north
Rgt 881 on No. 8H SHL (KB) to Mean Sea Level: 3463 feet	Scale: True distance
Mean Sea Level to Mudline (ft) on No. 8H SHL (KB) to Mean Sea Level: 3443 feet	Dip angles in feet
Coordinates are in feet referenced to GL	Created by: Victor Hernandez on 8/30/2010



BGGM (1945.0 to 2011.0) Dip: 60.59° Field: 49008.4 nT
 Magnetic North is 7.94 degrees East of True North (at 8/13/2010)
 Grid North is 0.21 degrees East of True North
 To correct azimuth from True to Grid subtract 0.21 degrees
 To correct azimuth from Magnetic to Grid add 7.73 degrees
 For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.73 = 97.73



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Actual Wellpath Report

No. 8H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	(Benson) Sec 3, T19S, R30E	Wellbore	No. 8H AWB
Facility	Benson 3 Fed Com No. 8H	Sidetrack from	No. 8 AWB at 8193.80 MD

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999925	Report Generated	8/30/2010 at 10:05:59 AM
Convergence at slot	0.21° East	Database/Source file	WA_Midland/No. 8H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	658343.20	617011.90	32°41'44.274"N	103°57'10.737"W
Facility Reference Pt			658343.20	617011.90	32°41'44.274"N	103°57'10.737"W
Field Reference Pt			656803.50	616599.00	32°41'40.243"N	103°57'28.772"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig 881 on No. 8H SHL (KB) to GL	20.00ft
Horizontal Reference Pt	SL	Rig 881 on No. 8H SHL (KB) to Mean Sea Level	3463.00ft
Vertical Reference Pt	Rig 881 on No. 8H SHL (KB)	GL to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig 881 on No. 8H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	177.74°



Actual Wellpath Report

No. 8H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	(Benson) Sec 3, T19S, R30E	Wellbore	No. 8H AWP
Facility	Benson 3 Fed Com No. 8H	Sidetrack from	No. 8 AWP at 8193.80 MD

WELLPATH DATA (216 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
0.00	0.000	163.690	0.00	0.00	0.00	0.00	658343.20	617011.90	32°41'44.274"N	103°57'10.737"W	0.00
90.90	0.550	163.690	90.90	0.42	-0.42	0.12	658343.32	617011.48	32°41'44.270"N	103°57'10.736"W	0.61
154.20	1.220	138.540	154.19	1.24	-1.22	0.65	658343.85	617010.68	32°41'44.262"N	103°57'10.730"W	1.20
217.50	2.120	126.660	217.46	2.50	-2.42	2.04	658345.24	617009.48	32°41'44.250"N	103°57'10.714"W	1.52
280.80	2.920	117.070	280.70	4.02	-3.85	4.41	658347.61	617008.05	32°41'44.236"N	103°57'10.686"W	1.42
344.00	4.090	112.580	343.78	5.76	-5.45	7.93	658351.13	617006.45	32°41'44.220"N	103°57'10.645"W	1.90
407.30	5.110	117.400	406.88	8.10	-7.61	12.52	658355.72	617004.29	32°41'44.199"N	103°57'10.591"W	1.72
470.60	5.780	120.980	469.89	11.24	-10.55	17.75	658360.95	617001.35	32°41'44.169"N	103°57'10.530"W	1.19
533.90	5.560	118.920	532.88	14.58	-13.68	23.17	658366.37	616998.22	32°41'44.138"N	103°57'10.467"W	0.47
597.20	4.940	119.750	595.92	17.61	-16.51	28.22	658371.42	616995.39	32°41'44.110"N	103°57'10.408"W	0.99
663.40	4.810	119.930	661.88	20.61	-19.32	33.11	658376.31	616992.58	32°41'44.082"N	103°57'10.351"W	0.15
726.70	4.770	119.480	724.95	23.42	-21.95	37.72	658380.92	616989.95	32°41'44.056"N	103°57'10.297"W	0.13
790.00	4.740	119.760	788.04	26.19	-24.54	42.28	658385.48	616987.36	32°41'44.030"N	103°57'10.244"W	0.06
853.30	4.480	119.370	851.13	28.87	-27.05	46.71	658389.90	616984.85	32°41'44.005"N	103°57'10.192"W	0.41
916.60	4.160	119.770	914.25	31.38	-29.40	50.85	658394.05	616982.50	32°41'43.982"N	103°57'10.144"W	0.51
979.80	4.040	119.120	977.29	33.76	-31.63	54.79	658397.98	616980.28	32°41'43.960"N	103°57'10.098"W	0.20
1043.10	3.730	118.570	1040.44	35.97	-33.69	58.54	658401.74	616978.21	32°41'43.939"N	103°57'10.054"W	0.49
1106.40	3.620	117.950	1103.61	38.04	-35.62	62.12	658405.31	616976.29	32°41'43.920"N	103°57'10.012"W	0.18
1169.70	3.360	116.440	1166.80	39.93	-37.38	65.54	658408.74	616974.52	32°41'43.902"N	103°57'09.972"W	0.44
1233.00	3.230	115.690	1229.99	41.66	-38.98	68.81	658412.01	616972.93	32°41'43.886"N	103°57'09.934"W	0.22
1296.20	3.140	114.450	1293.09	43.27	-40.47	71.99	658415.19	616971.44	32°41'43.872"N	103°57'09.897"W	0.18
1359.50	3.030	114.130	1356.30	44.79	-41.87	75.10	658418.29	616970.04	32°41'43.858"N	103°57'09.860"W	0.18
1422.80	2.880	111.930	1419.52	46.19	-43.15	78.10	658421.29	616968.76	32°41'43.845"N	103°57'09.825"W	0.30
1486.10	2.800	109.780	1482.74	47.42	-44.26	81.03	658424.22	616967.64	32°41'43.834"N	103°57'09.791"W	0.21
1549.40	2.730	107.780	1545.97	48.52	-45.25	83.92	658427.11	616966.66	32°41'43.824"N	103°57'09.757"W	0.19
1612.60	2.770	105.630	1609.09	49.50	-46.12	86.82	658430.02	616965.79	32°41'43.815"N	103°57'09.723"W	0.18
1675.90	2.760	103.710	1672.32	50.39	-46.89	89.78	658432.97	616965.01	32°41'43.807"N	103°57'09.689"W	0.15
1739.20	2.420	100.520	1735.56	51.11	-47.50	92.57	658435.76	616964.41	32°41'43.801"N	103°57'09.656"W	0.58
1802.50	2.130	96.770	1798.81	51.59	-47.88	95.05	658438.25	616964.03	32°41'43.797"N	103°57'09.627"W	0.51
1865.80	2.040	95.270	1862.06	51.92	-48.12	97.34	658440.54	616963.78	32°41'43.795"N	103°57'09.600"W	0.17



Actual Wellpath Report

No. 8H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	(Benson) Sec 3, T19S, R30E	Wellbore	No. 8H AWB
Facility	Benson 3 Fed Com No. 8H	Sidetrack from	No. 8 AWB at 8193.80 MD

WELLPATH DATA (216 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVL [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
1929.00	1.940	93.550	1925.23	52.17	-48.29	99.53	658442.72	616963.61	32°41'43.793"N	103°57'09.575"W	0.18
1992.30	1.560	86.150	1988.50	52.26	-48.30	101.46	658444.65	616963.61	32°41'43.793"N	103°57'09.552"W	0.70
2055.60	1.390	80.990	2051.77	52.14	-48.12	103.08	658446.27	616963.78	32°41'43.795"N	103°57'09.533"W	0.34
2118.90	1.360	79.360	2115.06	51.91	-47.86	104.58	658447.77	616964.04	32°41'43.797"N	103°57'09.516"W	0.08
2182.20	1.370	75.510	2178.34	51.67	-47.53	106.05	658449.24	616964.37	32°41'43.800"N	103°57'09.498"W	0.15
2245.40	1.400	72.980	2241.52	51.32	-47.12	107.52	658450.71	616964.79	32°41'43.804"N	103°57'09.481"W	0.11
2308.70	1.430	71.930	2304.80	50.90	-46.65	109.01	658452.20	616965.26	32°41'43.809"N	103°57'09.464"W	0.06
2372.00	1.520	76.410	2368.08	50.52	-46.20	110.57	658453.76	616965.70	32°41'43.813"N	103°57'09.445"W	0.23
2435.30	1.610	79.730	2431.36	50.24	-45.85	112.26	658455.46	616966.05	32°41'43.817"N	103°57'09.426"W	0.20
2498.60	1.640	79.130	2494.63	49.98	-45.52	114.03	658457.22	616966.38	32°41'43.820"N	103°57'09.405"W	0.05
2561.80	1.590	77.720	2557.81	49.69	-45.16	115.77	658458.96	616966.74	32°41'43.824"N	103°57'09.385"W	0.10
2625.10	1.570	75.030	2621.08	49.34	-44.75	117.47	658460.66	616967.15	32°41'43.828"N	103°57'09.365"W	0.12
2688.40	1.560	72.730	2684.36	48.93	-44.27	119.13	658462.32	616967.63	32°41'43.832"N	103°57'09.345"W	0.10
2751.70	1.580	73.600	2747.63	48.49	-43.77	120.79	658463.98	616968.13	32°41'43.837"N	103°57'09.326"W	0.05
2815.00	1.490	71.270	2810.91	48.05	-43.26	122.41	658465.60	616968.64	32°41'43.842"N	103°57'09.307"W	0.17
2878.20	1.550	70.100	2874.09	47.56	-42.70	123.99	658467.18	616969.20	32°41'43.848"N	103°57'09.288"W	0.11
2941.50	1.540	71.440	2937.37	47.06	-42.14	125.60	658468.79	616969.76	32°41'43.853"N	103°57'09.269"W	0.06
3004.80	1.490	75.730	3000.64	46.65	-41.67	127.20	658470.39	616970.23	32°41'43.858"N	103°57'09.251"W	0.20
3068.10	1.370	77.780	3063.92	46.34	-41.31	128.74	658471.93	616970.60	32°41'43.861"N	103°57'09.233"W	0.21
3131.40	1.330	78.410	3127.21	46.09	-41.00	130.20	658473.39	616970.91	32°41'43.864"N	103°57'09.216"W	0.07
3194.60	1.270	78.800	3190.39	45.87	-40.71	131.61	658474.80	616971.19	32°41'43.867"N	103°57'09.199"W	0.10
3257.90	1.130	76.650	3253.68	45.64	-40.43	132.90	658476.09	616971.47	32°41'43.870"N	103°57'09.184"W	0.23
3321.20	1.040	76.550	3316.97	45.41	-40.16	134.07	658477.26	616971.75	32°41'43.872"N	103°57'09.170"W	0.14
3384.50	0.950	72.400	3380.26	45.16	-39.86	135.13	658478.32	616972.04	32°41'43.875"N	103°57'09.158"W	0.18
3447.80	0.850	69.140	3443.55	44.87	-39.54	136.06	658479.25	616972.36	32°41'43.878"N	103°57'09.147"W	0.18
3511.00	0.770	67.630	3506.74	44.57	-39.21	136.90	658480.08	616972.69	32°41'43.882"N	103°57'09.137"W	0.13
3574.30	0.730	73.140	3570.04	44.32	-38.93	137.67	658480.86	616972.97	32°41'43.884"N	103°57'09.128"W	0.13
3637.60	0.660	74.470	3633.33	44.14	-38.72	138.41	658481.60	616973.19	32°41'43.887"N	103°57'09.119"W	0.11
3700.90	0.570	67.370	3696.63	43.95	-38.50	139.05	658482.24	616973.41	32°41'43.889"N	103°57'09.112"W	0.19
3764.20	0.470	48.130	3759.93	43.67	-38.20	139.54	658482.73	616973.70	32°41'43.892"N	103°57'09.106"W	0.32



Actual Wellpath Report

No. 8H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	(Benson) Sec 3, T19S, R30E	Wellbore	No. 8H AWW
Facility	Benson 3 Fed Com No. 8H	Sidetrack from	No. 8 AWW at 8193.80 MD

WELLPATH DATA (216 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
3827.40	0.500	24.700	3823.12	43.26	-37.78	139.85	658483.04	616974.12	32°41'43.896"N	103°57'09.103"W	0.32
3890.70	0.610	27.410	3886.42	42.72	-37.23	140.12	658483.31	616974.67	32°41'43.901"N	103°57'09.099"W	0.18
3954.00	0.680	31.130	3949.72	42.11	-36.61	140.47	658483.65	616975.29	32°41'43.907"N	103°57'09.095"W	0.13
4017.30	0.680	36.100	4013.01	41.51	-35.98	140.88	658484.07	616975.92	32°41'43.913"N	103°57'09.090"W	0.09
4080.60	0.620	38.930	4076.31	40.95	-35.41	141.32	658484.51	616976.49	32°41'43.919"N	103°57'09.085"W	0.11
4143.80	0.630	33.740	4139.50	40.41	-34.86	141.73	658484.91	616977.04	32°41'43.925"N	103°57'09.080"W	0.09
4207.10	0.770	28.130	4202.80	39.77	-34.19	142.12	658485.31	616977.71	32°41'43.931"N	103°57'09.076"W	0.25
4270.40	0.930	30.610	4266.09	38.97	-33.38	142.58	658485.77	616978.53	32°41'43.939"N	103°57'09.070"W	0.26
4333.70	0.910	26.240	4329.38	38.09	-32.48	143.07	658486.25	616979.42	32°41'43.948"N	103°57'09.065"W	0.12
4397.00	0.830	22.010	4392.68	37.23	-31.61	143.46	658486.65	616980.29	32°41'43.957"N	103°57'09.060"W	0.16
4460.20	0.760	22.600	4455.87	36.44	-30.80	143.79	658486.98	616981.11	32°41'43.965"N	103°57'09.056"W	0.11
4523.50	0.780	9.590	4519.17	35.63	-29.98	144.03	658487.21	616981.92	32°41'43.973"N	103°57'09.053"W	0.28
4586.80	0.880	3.020	4582.46	34.73	-29.07	144.12	658487.31	616982.83	32°41'43.982"N	103°57'09.052"W	0.22
4650.10	0.940	13.120	4645.75	33.74	-28.08	144.27	658487.45	616983.82	32°41'43.992"N	103°57'09.050"W	0.27
4713.40	1.010	21.310	4709.04	32.73	-27.06	144.59	658487.78	616984.84	32°41'44.002"N	103°57'09.047"W	0.25
4776.60	1.040	19.770	4772.23	31.69	-26.00	144.98	658488.17	616985.90	32°41'44.012"N	103°57'09.042"W	0.06
4839.90	0.940	10.590	4835.52	30.65	-24.95	145.27	658488.46	616986.95	32°41'44.022"N	103°57'09.038"W	0.30
4903.20	0.890	353.240	4898.81	29.65	-23.95	145.31	658488.50	616987.95	32°41'44.032"N	103°57'09.038"W	0.44
4966.50	0.890	340.940	4962.11	28.69	-23.00	145.09	658488.28	616988.91	32°41'44.042"N	103°57'09.041"W	0.30
5029.80	0.900	325.160	5025.40	27.80	-22.12	144.65	658487.84	616989.78	32°41'44.050"N	103°57'09.046"W	0.38
5093.00	1.070	307.870	5088.59	27.00	-21.35	143.90	658487.09	616990.55	32°41'44.058"N	103°57'09.054"W	0.55
5156.30	1.250	299.420	5151.88	26.26	-20.65	142.83	658486.02	616991.25	32°41'44.065"N	103°57'09.067"W	0.39
5219.60	1.290	297.940	5215.16	25.54	-19.98	141.60	658484.79	616991.93	32°41'44.072"N	103°57'09.081"W	0.08
5282.90	1.300	296.830	5278.44	24.83	-19.32	140.33	658483.52	616992.58	32°41'44.078"N	103°57'09.096"W	0.04
5346.20	1.290	298.640	5341.73	24.12	-18.65	139.07	658482.26	616993.25	32°41'44.085"N	103°57'09.111"W	0.07
5409.40	1.330	302.420	5404.91	23.33	-17.92	137.82	658481.01	616993.98	32°41'44.092"N	103°57'09.125"W	0.15
5472.70	1.380	310.250	5468.19	22.40	-17.03	136.62	658479.81	616994.87	32°41'44.101"N	103°57'09.139"W	0.30
5536.00	1.300	316.370	5531.48	21.35	-16.02	135.54	658478.73	616995.88	32°41'44.111"N	103°57'09.152"W	0.26
5599.30	1.260	319.020	5594.76	20.27	-14.97	134.59	658477.78	616996.93	32°41'44.122"N	103°57'09.163"W	0.11
5662.60	1.260	321.680	5658.05	19.16	-13.90	133.70	658476.89	616998.00	32°41'44.132"N	103°57'09.173"W	0.09



Actual Wellpath Report

No. 8H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	(Benson) Sec 3, T19S, R30E	Wellbore	No. 8H AWB
Facility	Benson 3 Fed Com No. 8H	Sidetrack from	No. 8 AWB at 8193.80 MD

WELLPATH DATA (216 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
5725.80	1.170	323.940	5721.23	18.06	-12.84	132.89	658476.08	616999.06	32°41'44.143"N	103°57'09.183"W	0.16
5789.10	1.150	320.490	5784.52	17.02	-11.82	132.11	658475.30	617000.08	32°41'44.153"N	103°57'09.192"W	0.11
5852.40	0.980	319.030	5847.81	16.09	-10.93	131.35	658474.54	617000.98	32°41'44.162"N	103°57'09.201"W	0.27
5915.70	0.720	319.920	5911.10	15.35	-10.21	130.74	658473.93	617001.69	32°41'44.169"N	103°57'09.208"W	0.41
5979.00	0.580	327.540	5974.40	14.76	-9.64	130.31	658473.50	617002.26	32°41'44.175"N	103°57'09.213"W	0.26
6042.20	0.470	337.120	6037.59	14.24	-9.13	130.04	658473.23	617002.77	32°41'44.180"N	103°57'09.216"W	0.22
6105.50	0.380	3380	6100.89	13.79	-8.68	129.95	658473.14	617003.22	32°41'44.184"N	103°57'09.217"W	0.33
6168.80	0.330	49.500	6164.19	13.47	-8.35	130.10	658473.29	617003.55	32°41'44.187"N	103°57'09.215"W	0.45
6232.10	0.330	62.280	6227.49	13.28	-8.15	130.40	658473.59	617003.75	32°41'44.189"N	103°57'09.212"W	0.12
6295.40	0.350	44.960	6290.79	13.07	-7.93	130.70	658473.89	617003.97	32°41'44.191"N	103°57'09.208"W	0.16
6358.60	0.560	48.280	6353.99	12.74	-7.59	131.07	658474.26	617004.32	32°41'44.195"N	103°57'09.204"W	0.33
6421.90	0.620	47.890	6417.28	12.33	-7.15	131.55	658474.74	617004.75	32°41'44.199"N	103°57'09.198"W	0.09
6485.20	0.660	34.450	6480.58	11.81	-6.62	132.01	658475.20	617005.28	32°41'44.204"N	103°57'09.193"W	0.24
6548.50	0.810	31.260	6543.87	11.15	-5.94	132.45	658475.64	617005.96	32°41'44.211"N	103°57'09.188"W	0.25
6611.80	0.840	27.740	6607.17	10.37	-5.14	132.90	658476.09	617006.76	32°41'44.219"N	103°57'09.182"W	0.09
6675.00	0.780	22.230	6670.36	9.58	-4.34	133.28	658476.47	617007.57	32°41'44.227"N	103°57'09.178"W	0.16
6738.30	0.780	15.000	6733.66	8.78	-3.52	133.55	658476.74	617008.38	32°41'44.235"N	103°57'09.175"W	0.16
6801.60	0.810	12.660	6796.95	7.93	-2.67	133.76	658476.95	617009.23	32°41'44.243"N	103°57'09.172"W	0.07
6864.90	0.740	30.060	6860.24	7.16	-1.88	134.06	658477.25	617010.02	32°41'44.251"N	103°57'09.169"W	0.39
6928.20	0.620	59.710	6923.54	6.65	-1.35	134.56	658477.75	617010.55	32°41'44.256"N	103°57'09.163"W	0.58
6991.40	0.320	74.490	6986.74	6.45	-1.13	135.03	658478.22	617010.77	32°41'44.259"N	103°57'09.157"W	0.51
7054.70	0.160	163.690	7050.04	6.49	-1.17	135.22	658478.41	617010.73	32°41'44.258"N	103°57'09.155"W	0.56
7118.00	0.510	172.700	7113.34	6.86	-1.53	135.28	658478.47	617010.37	32°41'44.255"N	103°57'09.154"W	0.56
7181.30	0.920	171.040	7176.63	7.65	-2.31	135.40	658478.59	617009.59	32°41'44.247"N	103°57'09.153"W	0.65
7244.60	1.080	172.080	7239.92	8.74	-3.41	135.56	658478.75	617008.49	32°41'44.236"N	103°57'09.151"W	0.25
7307.80	1.370	176.700	7303.11	10.09	-4.75	135.69	658478.88	617007.15	32°41'44.223"N	103°57'09.150"W	0.48
7371.10	1.630	177.050	7366.39	11.75	-6.41	135.78	658478.97	617005.49	32°41'44.206"N	103°57'09.149"W	0.41
7434.40	1.810	177.150	7429.66	13.65	-8.30	135.87	658479.06	617003.60	32°41'44.188"N	103°57'09.148"W	0.28
7497.70	2.200	174.360	7492.92	15.86	-10.51	136.04	658479.23	617001.39	32°41'44.166"N	103°57'09.146"W	0.63
7561.00	2.240	171.670	7556.17	18.30	-12.94	136.34	658479.53	616998.96	32°41'44.142"N	103°57'09.143"W	0.18



Actual Wellpath Report

No. 8H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	(Benson) Sec 3, T19S, R30E	Wellbore	No. 8H AWP
Facility	Benson 3 Fed Com No. 8H	Sidetrack from	No. 8 AWP at 8193.80 MD

WELLPATH DATA (216 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [sry ft]	Grid North [sry ft]	Latitude	Longitude	DLS [°/100ft]
7624.20	2.070	171.510	7619.33	20.67	-15.29	136.69	658479.88	616996.61	32°41'44.118"N	103°57'09.139"W	0.27
7687.50	1.910	173.530	7682.59	22.86	-17.47	136.98	658480.16	616994.43	32°41'44.097"N	103°57'09.135"W	0.28
7750.80	1.790	175.400	7745.85	24.90	-19.51	137.17	658480.36	616992.39	32°41'44.077"N	103°57'09.133"W	0.21
7814.10	1.700	178.330	7809.13	26.82	-21.43	137.28	658480.47	616990.47	32°41'44.058"N	103°57'09.132"W	0.20
7877.40	1.620	185.900	7872.40	28.65	-23.26	137.22	658480.41	616988.64	32°41'44.039"N	103°57'09.133"W	0.37
7940.60	1.630	197.740	7935.57	30.38	-25.00	136.85	658480.04	616986.90	32°41'44.022"N	103°57'09.137"W	0.53
8003.90	1.500	203.600	7998.85	31.97	-26.62	136.24	658479.43	616985.28	32°41'44.006"N	103°57'09.144"W	0.33
8067.20	1.300	204.960	8062.13	33.35	-28.03	135.61	658478.80	616983.87	32°41'43.992"N	103°57'09.152"W	0.32
8130.50	1.270	200.820	8125.42	34.64	-29.34	135.06	658478.25	616982.56	32°41'43.979"N	103°57'09.158"W	0.15
8193.80	1.290	198.620	8188.70	35.95	-30.67	134.58	658477.77	616981.23	32°41'43.966"N	103°57'09.164"W	0.08
8224.00	1.900	197.600	8218.89	36.74	-31.47	134.32	658477.51	616980.43	32°41'43.958"N	103°57'09.167"W	2.02
8256.00	3.000	182.500	8250.86	38.07	-32.81	134.12	658477.31	616979.09	32°41'43.945"N	103°57'09.169"W	3.96
8286.00	6.100	171.900	8280.76	40.44	-35.17	134.31	658477.50	616976.73	32°41'43.922"N	103°57'09.167"W	10.66
8318.00	10.000	170.300	8312.44	44.89	-39.60	135.02	658478.21	616972.31	32°41'43.878"N	103°57'09.159"W	12.21
8350.00	14.800	165.800	8343.68	51.64	-46.30	136.49	658479.68	616965.60	32°41'43.812"N	103°57'09.142"W	15.29
8382.00	19.800	161.800	8374.23	60.86	-55.42	139.19	658482.38	616956.48	32°41'43.721"N	103°57'09.111"W	16.05
8413.00	24.500	160.400	8402.93	72.05	-66.47	142.99	658486.18	616945.44	32°41'43.612"N	103°57'09.067"W	15.26
8445.00	29.500	158.100	8431.44	85.81	-80.04	148.16	658491.35	616931.87	32°41'43.477"N	103°57'09.007"W	15.96
8476.00	36.600	160.900	8457.40	101.87	-95.87	154.04	658497.22	616916.03	32°41'43.320"N	103°57'08.939"W	23.42
8508.00	44.200	162.900	8481.76	121.81	-115.58	160.45	658503.63	616896.33	32°41'43.125"N	103°57'08.865"W	24.09
8540.00	51.900	165.900	8503.14	144.95	-138.49	166.80	658509.99	616873.42	32°41'42.898"N	103°57'08.791"W	25.05
8572.00	59.200	169.400	8521.23	170.92	-164.25	172.41	658515.59	616847.66	32°41'42.643"N	103°57'08.727"W	24.53
8604.00	66.000	172.400	8535.95	199.10	-192.29	176.88	658520.06	616819.63	32°41'42.366"N	103°57'08.676"W	22.82
8636.00	73.500	175.900	8547.02	229.04	-222.13	179.91	658523.10	616789.79	32°41'42.070"N	103°57'08.641"W	25.58
8667.00	79.900	177.500	8554.15	259.19	-252.23	181.64	658524.83	616759.69	32°41'41.772"N	103°57'08.622"W	21.25
8699.00	87.800	178.700	8557.57	290.98	-284.00	182.69	658525.88	616727.92	32°41'41.458"N	103°57'08.612"W	24.97
8731.00	88.100	179.600	8558.72	322.95	-315.98	183.17	658526.35	616695.95	32°41'41.142"N	103°57'08.607"W	2.96
8763.00	88.300	179.900	8559.72	354.91	-347.96	183.31	658526.49	616663.97	32°41'40.825"N	103°57'08.607"W	1.13
8795.00	88.300	179.500	8560.67	386.88	-379.95	183.47	658526.66	616631.98	32°41'40.509"N	103°57'08.606"W	1.25
8827.00	89.000	179.700	8561.43	418.85	-411.94	183.70	658526.88	616599.99	32°41'40.192"N	103°57'08.605"W	2.27



Actual Wellpath Report

No. 8H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	(Benson) Sec 3, T19S, R30E	Wellbore	No. 8H AWP
Facility	Benson 3 Fed Com No. 8H	Sidetrack from	No. 8 AWP at 8193.80 MD

WELLPATH DATA (216 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
8859.00	89.000	179.900	8561.99	450.83	-443.93	183.81	658526.99	616568.00	32°41'39.876"N	103°57'08.605"W	0.62
8922.00	89.900	180.200	8562.59	513.77	-506.93	183.75	658526.94	616505.01	32°41'39.252"N	103°57'08.608"W	1.51
8986.00	90.000	179.200	8562.65	577.74	-570.93	184.09	658527.27	616441.02	32°41'38.619"N	103°57'08.607"W	1.57
9049.00	89.700	179.200	8562.81	640.71	-633.92	184.97	658528.15	616378.03	32°41'37.996"N	103°57'08.600"W	0.48
9113.00	89.600	178.000	8563.20	704.70	-697.90	186.53	658529.72	616314.06	32°41'37.363"N	103°57'08.584"W	1.88
9177.00	90.000	179.500	8563.43	768.69	-761.88	187.93	658531.11	616250.08	32°41'36.730"N	103°57'08.570"W	2.43
9240.00	89.800	178.800	8563.54	831.67	-824.87	188.86	658532.05	616187.09	32°41'36.106"N	103°57'08.562"W	1.16
9303.00	89.900	178.400	8563.70	894.67	-887.85	190.40	658533.59	616124.11	32°41'35.483"N	103°57'08.547"W	0.65
9367.00	89.800	179.200	8563.87	958.65	-951.84	191.74	658534.93	616060.13	32°41'34.850"N	103°57'08.534"W	1.26
9431.00	90.300	179.200	8563.81	1022.63	-1015.83	192.64	658535.82	615996.15	32°41'34.217"N	103°57'08.526"W	0.78
9494.00	90.800	179.700	8563.21	1085.60	-1078.83	193.24	658536.43	615933.16	32°41'33.593"N	103°57'08.521"W	1.12
9557.00	91.100	179.400	8562.16	1148.56	-1141.82	193.74	658536.92	615870.17	32°41'32.970"N	103°57'08.518"W	0.67
9620.00	91.200	180.500	8560.90	1211.50	-1204.80	193.79	658536.98	615807.19	32°41'32.347"N	103°57'08.520"W	1.75
9684.00	91.500	180.600	8559.39	1275.41	-1268.78	193.18	658536.36	615743.22	32°41'31.714"N	103°57'08.530"W	0.49
9748.00	89.400	180.100	8558.89	1339.33	-1332.77	192.79	658535.97	615679.23	32°41'31.081"N	103°57'08.537"W	3.37
9811.00	89.600	180.100	8559.44	1402.28	-1395.77	192.68	658535.86	615616.24	32°41'30.457"N	103°57'08.541"W	0.32
9875.00	89.800	179.300	8559.77	1466.24	-1459.77	193.01	658536.20	615552.24	32°41'29.824"N	103°57'08.540"W	1.29
9940.00	88.300	179.800	8560.85	1531.20	-1524.76	193.52	658536.71	615487.26	32°41'29.181"N	103°57'08.537"W	2.43
10004.00	88.100	179.300	8562.86	1595.13	-1588.72	194.02	658537.21	615423.30	32°41'28.548"N	103°57'08.534"W	0.84
10067.00	88.200	178.600	8564.89	1658.09	-1651.68	195.18	658538.36	615360.35	32°41'27.925"N	103°57'08.523"W	1.12
10132.00	87.800	179.800	8567.16	1723.02	-1716.63	196.08	658539.27	615295.40	32°41'27.283"N	103°57'08.515"W	1.94
10196.00	87.500	180.000	8569.79	1786.92	-1780.58	196.20	658539.38	615231.46	32°41'26.650"N	103°57'08.516"W	0.56
10260.00	88.500	180.500	8572.02	1850.82	-1844.54	195.92	658539.10	615167.50	32°41'26.017"N	103°57'08.522"W	1.75
10323.00	88.600	180.100	8573.62	1913.74	-1907.52	195.59	658538.77	615104.53	32°41'25.394"N	103°57'08.529"W	0.65
10387.00	89.000	179.600	8574.96	1977.68	-1971.50	195.75	658538.94	615040.55	32°41'24.761"N	103°57'08.530"W	1.00
10451.00	88.700	180.600	8576.24	2041.61	-2035.49	195.64	658538.83	614976.57	32°41'24.128"N	103°57'08.534"W	1.63
10514.00	89.200	179.400	8577.39	2104.55	-2098.48	195.64	658538.83	614913.59	32°41'23.504"N	103°57'08.536"W	2.06
10578.00	90.100	180.000	8577.79	2168.51	-2162.47	195.98	658539.16	614849.59	32°41'22.871"N	103°57'08.535"W	1.69
10642.00	90.600	180.200	8577.39	2232.46	-2226.47	195.87	658539.05	614785.60	32°41'22.238"N	103°57'08.539"W	0.84
10706.00	90.800	180.100	8576.61	2296.40	-2290.47	195.70	658538.88	614721.61	32°41'21.605"N	103°57'08.544"W	0.35



Actual Wellpath Report

No. 8H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	(Benson) Sec 3, T19S, R30E	Wellbore	No. 8H AWP
Facility	Benson 3 Fed Com No. 8H	Sidetrack from	No. 8 AWP at 8193.80 MD

WELLPATH DATA (216 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
10769.00	90.500	180.100	8575.90	2359.34	-2353.46	195.59	658538.77	614658.62	32°41'20.982"N	103°57'08.548"W	0.48
10833.00	90.600	177.900	8575.28	2423.32	-2417.45	196.71	658539.89	614594.64	32°41'20.348"N	103°57'08.537"W	3.44
10897.00	91.000	177.900	8574.39	2487.31	-2481.40	199.05	658542.24	614530.70	32°41'19.716"N	103°57'08.512"W	0.63
10961.00	91.300	179.700	8573.11	2551.28	-2545.37	200.39	658543.57	614466.73	32°41'19.083"N	103°57'08.499"W	2.85
11024.00	90.700	181.800	8572.01	2614.18	-2608.35	199.57	658542.75	614403.75	32°41'18.460"N	103°57'08.512"W	3.47
11088.00	90.800	182.300	8571.17	2678.00	-2672.30	197.28	658540.46	614339.81	32°41'17.827"N	103°57'08.541"W	0.80
11152.00	91.900	182.500	8569.66	2741.77	-2736.23	194.60	658537.78	614275.89	32°41'17.194"N	103°57'08.575"W	1.75
11216.00	89.800	183.400	8568.71	2805.49	-2800.13	191.30	658534.49	614211.99	32°41'16.562"N	103°57'08.616"W	3.57
11279.00	89.900	182.800	8568.88	2868.22	-2863.04	187.90	658531.08	614149.08	32°41'15.940"N	103°57'08.659"W	0.97
11343.00	88.600	183.100	8569.71	2931.95	-2926.95	184.60	658527.79	614085.18	32°41'15.308"N	103°57'08.700"W	2.08
11406.00	88.800	183.200	8571.14	2994.65	-2989.83	181.14	658524.33	614022.30	32°41'14.686"N	103°57'08.743"W	0.35
11470.00	89.700	182.800	8571.98	3058.37	-3053.74	177.79	658520.98	613958.40	32°41'14.053"N	103°57'08.785"W	1.54
11533.00	88.000	182.200	8573.24	3121.14	-3116.67	175.05	658518.23	613895.48	32°41'13.431"N	103°57'08.820"W	2.86
11596.00	87.900	182.000	8575.50	3183.92	-3179.58	172.74	658515.93	613832.56	32°41'12.808"N	103°57'08.850"W	0.35
11660.00	88.600	181.400	8577.45	3247.74	-3243.52	170.84	658514.03	613768.63	32°41'12.176"N	103°57'08.875"W	1.44
11723.00	89.400	181.900	8578.55	3310.58	-3306.49	169.03	658512.21	613705.67	32°41'11.553"N	103°57'08.898"W	1.50
11787.00	90.600	181.600	8578.55	3374.42	-3370.46	167.07	658510.26	613641.70	32°41'10.920"N	103°57'08.924"W	1.93
11851.00	89.100	181.700	8578.72	3438.27	-3434.43	165.23	658508.42	613577.74	32°41'10.287"N	103°57'08.948"W	2.35
11914.00	89.700	181.100	8579.38	3501.14	-3497.40	163.69	658506.88	613514.77	32°41'09.664"N	103°57'08.969"W	1.35
11977.00	88.800	181.200	8580.20	3564.02	-3560.39	162.43	658505.61	613451.79	32°41'09.041"N	103°57'08.986"W	1.44
12041.00	88.900	181.000	8581.49	3627.90	-3624.36	161.20	658504.39	613387.82	32°41'08.408"N	103°57'09.003"W	0.35
12105.00	89.700	180.900	8582.27	3691.79	-3688.35	160.14	658503.33	613323.84	32°41'07.775"N	103°57'09.018"W	1.26
12167.00	90.400	180.800	8582.22	3753.70	-3750.34	159.22	658502.41	613261.85	32°41'07.162"N	103°57'09.032"W	1.14
12231.00	88.500	179.800	8582.83	3817.63	-3814.33	158.88	658502.07	613197.86	32°41'06.529"N	103°57'09.038"W	3.35
12294.00	88.700	179.400	8584.37	3880.58	-3877.31	159.32	658502.51	613134.89	32°41'05.905"N	103°57'09.036"W	0.71
12358.00	89.900	178.900	8585.15	3944.55	-3941.30	160.27	658503.46	613070.91	32°41'05.272"N	103°57'09.027"W	2.03
12422.00	88.600	179.000	8585.99	4008.53	-4005.28	161.44	658504.63	613006.93	32°41'04.639"N	103°57'09.016"W	2.04
12486.00	88.300	178.700	8587.72	4072.50	-4069.24	162.73	658505.92	612942.97	32°41'04.006"N	103°57'09.004"W	0.66
12549.00	88.900	178.700	8589.26	4135.47	-4132.21	164.16	658507.34	612880.01	32°41'03.383"N	103°57'08.990"W	0.95
12613.00	89.600	178.600	8590.10	4199.45	-4196.19	165.67	658508.85	612816.04	32°41'02.750"N	103°57'08.975"W	1.10



Actual Wellpath Report

No. 8H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	(Benson) Sec 3, T19S, R30E	Wellbore	No. 8H AWB
Facility	Benson 3 Fed Com No. 8H	Sidetrack from	No. 8 AWB at 8193.80 MD

WELLPATH DATA (216 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
12677.00	90.700	178.400	8589.93	4263.45	-4260.16	167.34	658510.53	612752.07	32°41'02.117"N	103°57'08.958"W	1.75
12741.00	91.700	177.400	8588.59	4327.43	-4324.10	169.69	658512.87	612688.13	32°41'01.484"N	103°57'08.933"W	2.21
12804.00	92.600	177.900	8586.23	4390.39	-4387.01	172.27	658515.45	612625.23	32°41'00.862"N	103°57'08.906"W	1.63
12868.00	93.700	178.000	8582.71	4454.29	-4450.87	174.55	658517.74	612561.38	32°41'00.230"N	103°57'08.882"W	1.73
12931.00	94.400	177.900	8578.26	4517.13	-4513.67	176.80	658519.99	612498.58	32°40'59.608"N	103°57'08.858"W	1.12
12989.00	94.400	177.900	8573.81	4574.96	-4571.46	178.92	658522.11	612440.79	32°40'59.037"N	103°57'08.836"W	0.00

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
No. 1H PBHIL		8567.00	-4584.05	180.71	658523.90	612428.20	32°40'58.912"N	103°57'08.815"W	point

WELLPATH COMPOSITION Ref Wellbore: No. 8H AWB Ref Wellpath: No. 8H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	8193.80	Gyrodata relative depth - Drop gyro or Multi-shot	GYRO (90.9 - 8700)	No. 8 AWB
8193.80	12931.00	NaviTrak (Standard)	MWD (8224 - 12931)	No. 8H AWB
12931.00	12989.00	Blind Drilling (std)	Projection to bit	No. 8H AWB