

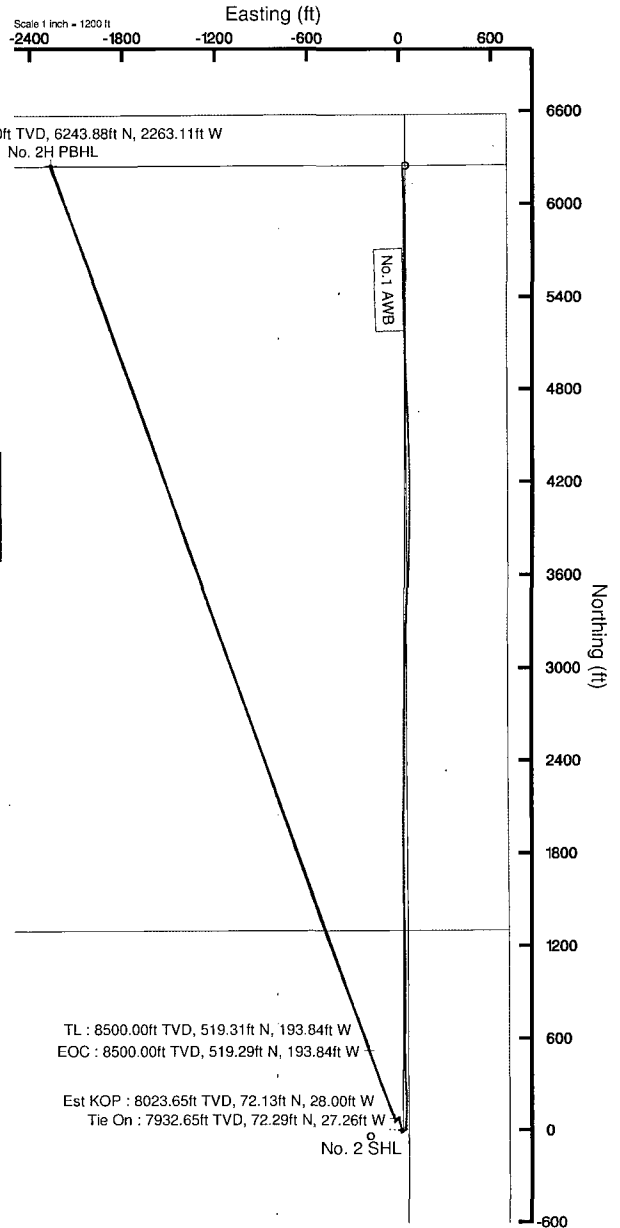
30 015 39892



Cimarex Energy Co.

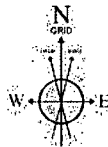
Location: Eddy County, NM
Field: (Irwin) Sec 23-14, T19S, R30E
Facility: Irwin 23-14 Site Location

Slot: No. 2 SHL
Well: No. 2
Wellbore: No. 2 PWB

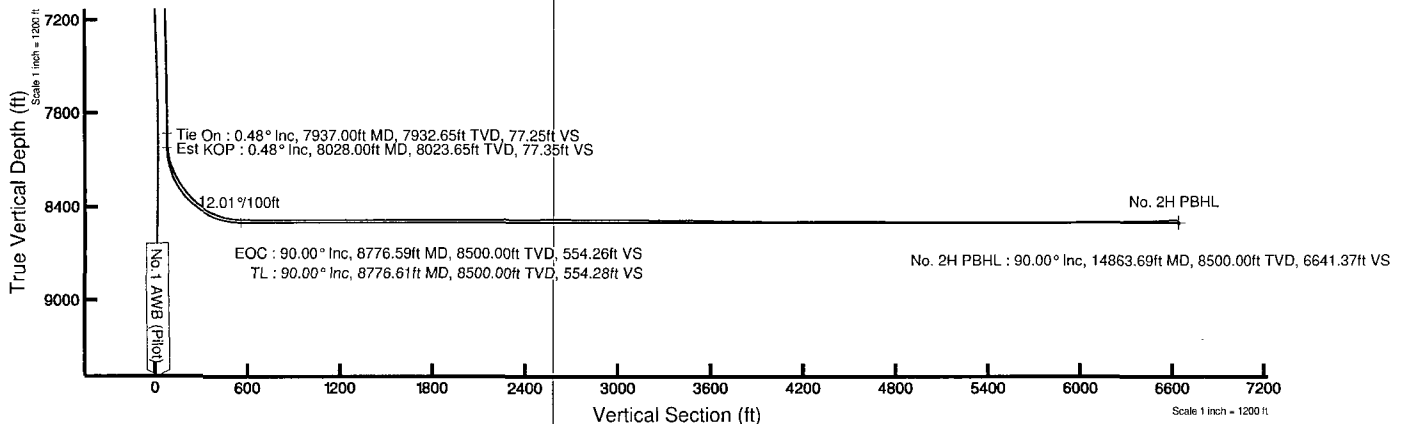


Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	7937.00	0.480	257.840	7932.65	72.29	-27.26	0.00	77.25
Est KOP	8028.00	0.480	257.840	8023.65	72.13	-28.00	0.00	77.35
EOC	8776.59	90.000	340.127	8500.00	519.29	-193.84	12.01	554.26
TL	8776.61	90.000	340.127	8500.00	519.31	-193.84	2.00	554.28
No. 2H PBHL	14863.69	90.000	340.127	8500.00	6243.88	-2263.11	0.00	6641.37

Plot reference wellpath is Rev-D.0	
True vertical depths are referenced to Cactus 115 (KB)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Cactus 115 (KB)	North Reference: Grid north
Cactus 115 (KB) to Mean Sea Level: 3298 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No. 2 SHL): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gentbury on 7/16/2012



BGGM (1945.0 to 2013.0) Dip: 90.45° Field: 48735.4 nT
Magnetic North is 7.76 degrees East of True North
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 7.54 degrees
For example: if the Magnetic North Azimuth = 90 degrees, then the Grid North Azimuth = 90 + 7.54 = 97.54



Azimuth 340.08° with reference 0.00 N, 0.00 E

Rev-D.0



Actual Wellpath Report

No.2 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2 SHL
Area	Eddy County, NM	Well	No.2
Field	(Irwin) Sec 23-14, T19S, R30E	Wellbore	No.2 AWB
Facility	Irwin 23-14 Site Location		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Harrkol
Scale	0.999926	Report Generated	8/1/2012 at 4:02:02 PM
Convergence at slot	0.21° East	Database/Source file	WA Midland/No.2_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	600107.08	663331.33	663492.40	600252.80	32°38'58.254"N	103°56'11.213"W
Facility Reference Pt			0.00	0.00	30°59'18.404"N	106°03'38.987"W
Field Reference Pt			663522.30	600253.00	32°38'58.255"N	103°56'10.864"W

WELLPATH DATUM

Calculation method	Minimum curvature	Cactus 115 (KB) to GL	3298.00ft
Horizontal Reference Pt	Slot	Cactus 115 (KB) to Mean Sea Level	3298.00ft
Vertical Reference Pt	Cactus 115 (KB)	Cactus 115 (KB) to Mud Line at Slot (No. 2 SHL)	3298.00ft
MD Reference Pt	Cactus 115 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	340.08°



Actual Wellpath Report

No.2 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2 SHL
Area	Eddy County, NM	Well	No.2
Field	(Irwin) Sec 23-14, T19S, R30E	Wellbore	No.2 AWB
Facility	Irwin 23-14 Site Location		

WELLPATH DATA (204 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	130.290	0.00	0.00	0.00	0.00	663492.40	600252.80	32°38'58.254"N	103°56'11.213"W	0.00	
100.00	0.070	130.290	100.00	-0.05	-0.04	0.05	663492.45	600252.76	32°38'58.254"N	103°56'11.213"W	0.07	
200.00	0.190	137.090	200.00	-0.26	-0.20	0.21	663492.61	600252.60	32°38'58.252"N	103°56'11.211"W	0.12	
300.00	0.490	136.950	300.00	-0.80	-0.63	0.61	663493.01	600252.17	32°38'58.248"N	103°56'11.206"W	0.30	
400.00	0.790	120.800	399.99	-1.73	-1.30	1.49	663493.89	600251.50	32°38'58.242"N	103°56'11.196"W	0.35	
521.60	0.860	112.070	521.58	-2.99	-2.07	3.06	663495.46	600250.73	32°38'58.234"N	103°56'11.178"W	0.12	
617.20	0.680	109.540	617.17	-3.83	-2.53	4.26	663496.66	600250.27	32°38'58.229"N	103°56'11.164"W	0.19	
712.00	0.520	101.670	711.97	-4.41	-2.81	5.21	663497.61	600249.99	32°38'58.226"N	103°56'11.152"W	0.19	
806.60	0.540	91.630	806.56	-4.80	-2.91	6.08	663498.48	600249.89	32°38'58.225"N	103°56'11.142"W	0.10	
901.30	0.780	92.610	901.25	-5.21	-2.95	7.17	663499.57	600249.85	32°38'58.225"N	103°56'11.130"W	0.25	
995.90	1.220	76.850	995.84	-5.58	-2.75	8.79	663501.19	600250.05	32°38'58.227"N	103°56'11.111"W	0.54	
1090.20	1.490	61.880	1090.11	-5.52	-1.94	10.85	663503.25	600250.86	32°38'58.235"N	103°56'11.086"W	0.47	
1184.80	1.460	54.180	1184.68	-5.02	-0.66	12.91	663505.31	600252.14	32°38'58.247"N	103°56'11.062"W	0.21	
1279.40	1.420	56.500	1279.25	-4.41	0.70	14.87	663507.27	600253.50	32°38'58.261"N	103°56'11.039"W	0.07	
1374.10	1.270	60.880	1373.93	-3.97	1.85	16.76	663509.16	600254.65	32°38'58.272"N	103°56'11.017"W	0.19	
1468.80	1.360	63.170	1468.60	-3.67	2.87	18.68	663511.08	600255.67	32°38'58.282"N	103°56'10.995"W	0.11	
1563.40	1.040	74.870	1563.18	-3.60	3.60	20.51	663512.91	600256.40	32°38'58.289"N	103°56'10.973"W	0.42	
1657.00	0.620	111.860	1656.77	-4.01	3.64	21.80	663514.20	600256.44	32°38'58.290"N	103°56'10.958"W	0.71	
1658.00	0.620	111.900	1657.77	-4.02	3.63	21.81	663514.21	600256.43	32°38'58.290"N	103°56'10.958"W	0.04	
1752.60	0.480	118.430	1752.37	-4.66	3.25	22.64	663515.03	600256.05	32°38'58.286"N	103°56'10.948"W	0.16	
1847.30	0.260	235.380	1847.07	-5.01	2.94	22.81	663515.21	600255.74	32°38'58.283"N	103°56'10.946"W	0.68	
1941.90	1.290	290.150	1941.66	-4.38	3.19	21.63	663514.03	600255.99	32°38'58.285"N	103°56'10.960"W	1.23	
2036.60	2.080	321.740	2036.32	-2.06	4.90	19.57	663511.97	600257.70	32°38'58.302"N	103°56'10.984"W	1.26	
2131.80	3.460	335.000	2131.40	2.44	8.86	17.28	663509.68	600261.66	32°38'58.341"N	103°56'11.011"W	1.59	
2227.00	5.180	339.420	2226.33	9.60	15.49	14.56	663506.96	600268.29	32°38'58.407"N	103°56'11.042"W	1.84	
2322.30	6.270	343.810	2321.15	19.10	24.52	11.59	663503.99	600277.31	32°38'58.497"N	103°56'11.077"W	1.23	
2417.70	6.780	343.820	2415.94	29.92	34.93	8.57	663500.97	600287.72	32°38'58.600"N	103°56'11.112"W	0.53	
2512.90	6.780	349.980	2510.47	41.06	45.86	6.03	663498.43	600298.65	32°38'58.708"N	103°56'11.141"W	0.76	
2608.70	5.420	346.130	2605.73	51.13	55.82	3.96	663496.36	600308.62	32°38'58.807"N	103°56'11.165"W	1.48	
2703.90	4.190	351.330	2700.59	59.01	63.62	2.36	663494.76	600316.42	32°38'58.884"N	103°56'11.183"W	1.37	
2799.60	1.850	355.890	2796.15	63.93	68.62	1.72	663494.12	600321.42	32°38'58.933"N	103°56'11.190"W	2.46	
2894.80	0.650	2.450	2891.33	65.91	70.69	1.63	663494.03	600323.49	32°38'58.954"N	103°56'11.191"W	1.27	
2990.40	0.400	339.900	2986.92	66.74	71.55	1.54	663493.94	600324.34	32°38'58.962"N	103°56'11.192"W	0.33	
3086.10	0.310	353.090	3082.62	67.33	72.12	1.40	663493.80	600324.91	32°38'58.968"N	103°56'11.194"W	0.13	
3181.80	0.230	344.630	3178.32	67.77	72.56	1.31	663493.71	600325.36	32°38'58.972"N	103°56'11.195"W	0.09	
3277.50	0.270	326.760	3274.02	68.18	72.94	1.14	663493.54	600325.73	32°38'58.976"N	103°56'11.197"W	0.09	
3373.40	0.250	17.890	3369.92	68.57	73.32	1.08	663493.48	600326.12	32°38'58.980"N	103°56'11.197"W	0.23	
3468.10	0.300	341.070	3464.62	68.98	73.75	1.06	663493.46	600326.55	32°38'58.984"N	103°56'11.198"W	0.19	
3564.00	0.430	324.660	3560.52	69.58	74.29	0.77	663493.17	600327.08	32°38'58.989"N	103°56'11.201"W	0.17	
3660.00	0.500	326.560	3656.51	70.33	74.93	0.33	663492.73	600327.72	32°38'58.996"N	103°56'11.206"W	0.07	
3755.10	0.350	330.170	3751.61	71.02	75.53	-0.04	663492.36	600328.32	32°38'59.002"N	103°56'11.210"W	0.16	
3851.10	0.180	331.980	3847.61	71.46	75.91	-0.26	663492.14	600328.71	32°38'59.006"N	103°56'11.213"W	0.18	
3946.90	0.260	37.300	3943.41	71.72	76.22	-0.20	663492.20	600329.01	32°38'59.009"N	103°56'11.212"W	0.26	
4043.90	0.340	37.190	4040.41	72.00	76.62	0.11	663492.51	600329.42	32°38'59.013"N	103°56'11.209"W	0.08	
4139.30	0.520	39.150	4135.80	72.38	77.19	0.56	663492.96	600329.98	32°38'59.018"N	103°56'11.203"W	0.19	



Actual Wellpath Report

No.2 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2 SHL
Area	Eddy County, NM	Well	No.2
Field	(Irwin) Sec 23-14, T19S, R30E	Wellbore	No.2 AWB
Facility	Irwin 23-14 Site Location		

WELLPATH DATA (204 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4234.90	0.410	23.240	4231.40	72.85	77.84	0.97	663493.37	600330.63	32°38'59.025"N	103°56'11.199"W	0.18	
4330.50	0.470	28.850	4327.00	73.36	78.49	1.29	663493.69	600331.29	32°38'59.031"N	103°56'11.195"W	0.08	
4426.00	0.570	21.330	4422.49	73.97	79.28	1.65	663494.05	600332.07	32°38'59.039"N	103°56'11.191"W	0.13	
4520.90	0.650	352.650	4517.39	74.85	80.25	1.75	663494.15	600333.05	32°38'59.048"N	103°56'11.189"W	0.33	
4614.80	0.640	342.430	4611.28	75.90	81.28	1.53	663493.93	600334.08	32°38'59.059"N	103°56'11.192"W	0.12	
4710.60	0.610	320.770	4707.08	76.91	82.19	1.04	663493.44	600334.98	32°38'59.068"N	103°56'11.197"W	0.25	
4806.30	0.550	330.700	4802.77	77.85	82.98	0.50	663492.90	600335.78	32°38'59.075"N	103°56'11.204"W	0.12	
4901.90	0.550	261.670	4898.37	78.39	83.32	-0.18	663492.22	600336.11	32°38'59.079"N	103°56'11.212"W	0.65	
4997.50	1.440	219.760	4993.96	77.88	82.33	-1.40	663491.00	600335.12	32°38'59.069"N	103°56'11.226"W	1.14	
5093.50	2.860	217.950	5089.89	75.99	79.51	-3.65	663488.75	600332.30	32°38'59.041"N	103°56'11.252"W	1.48	
5189.50	2.710	209.200	5185.77	73.24	75.64	-6.23	663486.17	600328.43	32°38'59.003"N	103°56'11.283"W	0.47	
5285.60	2.460	214.580	5281.77	70.55	71.96	-8.51	663483.89	600324.75	32°38'58.967"N	103°56'11.310"W	0.36	
5381.10	2.180	217.790	5377.20	68.39	68.84	-10.78	663481.62	600321.63	32°38'58.936"N	103°56'11.336"W	0.32	
5476.40	1.960	220.280	5472.43	66.61	66.16	-12.95	663479.45	600318.96	32°38'58.910"N	103°56'11.362"W	0.25	
5572.20	1.780	223.530	5568.18	65.13	63.83	-15.03	663477.37	600316.63	32°38'58.887"N	103°56'11.386"W	0.22	
5668.00	1.670	225.980	5663.94	63.90	61.78	-17.06	663475.34	600314.58	32°38'58.866"N	103°56'11.410"W	0.14	
5763.90	1.310	228.410	5759.81	62.92	60.08	-18.89	663473.52	600312.88	32°38'58.850"N	103°56'11.432"W	0.38	
5859.30	1.160	231.680	5855.18	62.22	58.76	-20.46	663471.94	600311.56	32°38'58.837"N	103°56'11.450"W	0.17	
5954.80	0.970	230.900	5950.67	61.65	57.65	-21.84	663470.56	600310.45	32°38'58.826"N	103°56'11.466"W	0.20	
6050.20	0.850	227.950	6046.06	61.11	56.67	-23.00	663469.41	600309.46	32°38'58.816"N	103°56'11.480"W	0.13	
6146.20	0.740	226.560	6142.05	60.60	55.77	-23.98	663468.43	600308.56	32°38'58.807"N	103°56'11.491"W	0.12	
6241.30	0.710	233.250	6237.14	60.18	54.99	-24.89	663467.51	600307.79	32°38'58.799"N	103°56'11.502"W	0.09	
6337.20	0.500	231.230	6333.03	59.88	54.37	-25.70	663466.71	600307.17	32°38'58.793"N	103°56'11.511"W	0.22	
6432.70	0.300	216.680	6428.53	59.60	53.91	-26.17	663466.23	600306.71	32°38'58.789"N	103°56'11.517"W	0.23	
6527.70	0.270	254.870	6523.53	59.48	53.65	-26.53	663465.87	600306.45	32°38'58.786"N	103°56'11.521"W	0.20	
6622.90	0.440	306.190	6618.73	59.81	53.81	-27.05	663465.36	600306.61	32°38'58.788"N	103°56'11.527"W	0.36	
6717.60	0.600	331.090	6713.43	60.60	54.46	-27.58	663464.82	600307.26	32°38'58.794"N	103°56'11.533"W	0.29	
6812.20	0.760	349.240	6808.02	61.71	55.51	-27.94	663464.47	600308.31	32°38'58.805"N	103°56'11.538"W	0.28	
6907.60	0.810	9.740	6903.41	62.92	56.80	-27.94	663464.46	600309.59	32°38'58.817"N	103°56'11.538"W	0.30	
7002.90	1.020	20.320	6998.70	64.15	58.26	-27.53	663464.87	600311.05	32°38'58.832"N	103°56'11.533"W	0.28	
7098.80	1.350	17.050	7094.58	65.70	60.14	-26.90	663465.50	600312.93	32°38'58.850"N	103°56'11.525"W	0.35	
7194.40	1.540	17.510	7190.15	67.62	62.44	-26.19	663466.22	600315.23	32°38'58.873"N	103°56'11.517"W	0.20	
7288.30	1.450	17.840	7284.01	69.57	64.77	-25.44	663466.96	600317.57	32°38'58.896"N	103°56'11.508"W	0.10	
7383.80	1.140	14.800	7379.49	71.30	66.84	-24.83	663467.57	600319.64	32°38'58.917"N	103°56'11.501"W	0.33	
7479.70	0.780	351.850	7475.38	72.72	68.41	-24.68	663467.72	600321.20	32°38'58.932"N	103°56'11.499"W	0.54	
7574.40	0.680	328.820	7570.07	73.91	69.53	-25.06	663467.34	600322.32	32°38'58.943"N	103°56'11.503"W	0.32	
7669.20	0.680	335.330	7664.86	75.02	70.52	-25.59	663466.81	600323.32	32°38'58.953"N	103°56'11.509"W	0.08	
7764.30	0.460	318.020	7759.96	75.94	71.32	-26.08	663466.32	600324.11	32°38'58.961"N	103°56'11.515"W	0.29	
7860.10	0.640	321.160	7855.75	76.80	72.02	-26.67	663465.73	600324.81	32°38'58.968"N	103°56'11.522"W	0.19	
7937.00	0.480	257.840	7932.65	77.25	72.29	-27.26	663465.15	600325.08	32°38'58.971"N	103°56'11.529"W	0.78	
7966.00	0.600	258.900	7961.65	77.29	72.23	-27.52	663464.88	600325.03	32°38'58.970"N	103°56'11.532"W	0.42	
7998.00	1.300	293.900	7993.64	77.56	72.35	-28.02	663464.38	600325.14	32°38'58.971"N	103°56'11.538"W	2.75	
8030.00	4.900	331.000	8025.59	79.17	73.69	-29.01	663463.39	600326.48	32°38'58.985"N	103°56'11.549"W	12.32	
8061.00	9.200	338.400	8056.35	82.95	77.15	-30.57	663461.83	600329.95	32°38'59.019"N	103°56'11.567"W	14.15	
8093.00	13.000	342.000	8087.75	89.11	82.96	-32.62	663459.78	600335.75	32°38'59.076"N	103°56'11.591"W	12.07	



Actual Wellpath Report

No.2 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2 SHL
Area	Eddy County, NM	Well	No.2
Field	(Irwin) Sec 23-14, T19S, R30E	Wellbore	No.2 AWB
Facility	Irwin 23-14 Site Location		

WELLPATH DATA (204 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8125.00	16.600	342.300	8118.68	97.28	90.74	-35.13	663457.28	600343.53	32°38'59.154"N	103°56'11.620"W	11.25	
8157.00	20.400	341.700	8149.02	107.42	100.39	-38.27	663454.13	600353.18	32°38'59.249"N	103°56'11.656"W	11.89	
8188.00	24.200	340.400	8177.70	119.18	111.51	-42.10	663450.31	600364.30	32°38'59.359"N	103°56'11.701"W	12.36	
8219.00	27.900	339.800	8205.55	132.79	124.31	-46.74	663445.67	600377.10	32°38'59.486"N	103°56'11.754"W	11.97	
8251.00	30.800	338.400	8233.44	148.47	138.95	-52.34	663440.07	600391.74	32°38'59.631"N	103°56'11.819"W	9.31	
8283.00	33.700	336.800	8260.50	165.53	154.73	-58.85	663433.55	600407.52	32°38'59.788"N	103°56'11.895"W	9.45	
8315.00	36.000	337.400	8286.76	183.79	171.58	-65.96	663426.44	600424.37	32°38'59.955"N	103°56'11.977"W	7.27	
8347.00	39.000	339.100	8312.14	203.26	189.67	-73.17	663419.23	600442.46	32°39'00.134"N	103°56'12.061"W	9.92	
8379.00	43.000	339.200	8336.29	224.24	209.29	-80.64	663411.76	600462.07	32°39'00.328"N	103°56'12.147"W	12.50	
8411.00	46.600	339.000	8358.99	246.78	230.35	-88.69	663403.72	600483.13	32°39'00.537"N	103°56'12.240"W	11.26	
8442.00	50.500	339.200	8379.51	270.01	252.05	-96.97	663395.43	600504.83	32°39'00.752"N	103°56'12.336"W	12.59	
8474.00	54.900	339.700	8398.89	295.46	275.88	-105.90	663386.51	600528.66	32°39'00.988"N	103°56'12.440"W	13.81	
8506.00	59.300	340.200	8416.27	322.32	301.12	-115.11	663377.30	600553.89	32°39'01.238"N	103°56'12.546"W	13.81	
8538.00	62.900	340.800	8431.73	350.33	327.52	-124.46	663367.95	600580.30	32°39'01.500"N	103°56'12.655"W	11.37	
8569.00	66.600	340.200	8444.95	378.36	353.94	-133.82	663358.59	600606.72	32°39'01.761"N	103°56'12.763"W	12.06	
8601.00	71.000	340.100	8456.52	408.19	382.00	-143.94	663348.47	600634.77	32°39'02.039"N	103°56'12.880"W	13.75	
8632.00	74.900	340.300	8465.61	437.82	409.88	-153.98	663338.43	600662.65	32°39'02.316"N	103°56'12.996"W	12.60	
8664.00	78.500	341.200	8472.97	468.95	439.28	-164.25	663328.17	600692.04	32°39'02.607"N	103°56'13.115"W	11.58	
8696.00	82.600	342.200	8478.23	500.50	469.24	-174.15	663318.26	600722.00	32°39'02.904"N	103°56'13.230"W	13.18	
8727.00	86.400	341.600	8481.20	531.34	498.56	-183.74	663308.68	600751.33	32°39'03.194"N	103°56'13.340"W	12.41	
8759.00	89.100	340.900	8482.45	563.30	528.84	-194.02	663298.40	600781.60	32°39'03.494"N	103°56'13.459"W	8.72	
8791.00	89.200	341.100	8482.93	595.29	559.09	-204.43	663287.98	600811.85	32°39'03.794"N	103°56'13.580"W	0.70	
8854.00	89.600	340.000	8483.59	658.29	618.49	-225.41	663267.01	600871.25	32°39'04.382"N	103°56'13.823"W	1.86	
8917.00	89.700	339.400	8483.97	721.28	677.58	-247.27	663245.15	600930.33	32°39'04.968"N	103°56'14.076"W	0.97	
8981.00	89.900	338.600	8484.19	785.27	737.33	-270.20	663222.22	600990.07	32°39'05.560"N	103°56'14.341"W	1.29	
9044.00	90.100	337.900	8484.19	848.24	795.84	-293.55	663198.88	601048.58	32°39'06.140"N	103°56'14.612"W	1.16	
9108.00	90.300	339.100	8483.97	912.21	855.39	-317.00	663175.42	601108.12	32°39'06.730"N	103°56'14.883"W	1.90	
9171.00	90.400	338.500	8483.59	975.20	914.12	-339.78	663152.64	601166.85	32°39'07.312"N	103°56'15.147"W	0.97	
9235.00	89.600	339.700	8483.59	1039.18	973.91	-362.61	663129.81	601226.64	32°39'07.904"N	103°56'15.412"W	2.25	
9298.00	89.800	340.100	8483.92	1102.18	1033.07	-384.26	663108.17	601285.79	32°39'08.490"N	103°56'15.662"W	0.71	
9361.00	90.100	339.400	8483.97	1165.18	1092.18	-406.07	663086.36	601344.89	32°39'09.076"N	103°56'15.915"W	1.21	
9424.00	90.100	339.500	8483.86	1228.18	1151.17	-428.18	663064.25	601403.88	32°39'09.660"N	103°56'16.171"W	0.16	
9488.00	90.400	338.700	8483.58	1292.17	1210.96	-451.01	663041.42	601463.66	32°39'10.253"N	103°56'16.435"W	1.33	
9551.00	90.100	340.000	8483.31	1355.16	1269.91	-473.23	663019.20	601522.61	32°39'10.837"N	103°56'16.693"W	2.12	
9615.00	90.100	339.300	8483.20	1419.16	1329.91	-495.49	662996.95	601582.61	32°39'11.431"N	103°56'16.950"W	1.09	
9678.00	89.900	340.800	8483.20	1482.16	1389.13	-516.98	662975.46	601641.82	32°39'12.018"N	103°56'17.199"W	2.40	
9741.00	90.200	340.200	8483.14	1545.15	1448.51	-538.01	662954.43	601701.20	32°39'12.606"N	103°56'17.443"W	1.06	
9804.00	90.100	339.900	8482.98	1608.15	1507.73	-559.51	662932.93	601760.42	32°39'13.193"N	103°56'17.691"W	0.50	
9867.00	89.800	340.800	8483.03	1671.15	1567.06	-580.69	662911.75	601819.75	32°39'13.781"N	103°56'17.937"W	1.51	
9930.00	89.800	340.400	8483.25	1734.15	1626.49	-601.62	662890.83	601879.16	32°39'14.370"N	103°56'18.179"W	0.63	
9993.00	90.100	340.200	8483.31	1797.15	1685.80	-622.86	662869.59	601938.47	32°39'14.957"N	103°56'18.425"W	0.57	
10057.00	90.200	340.100	8483.14	1861.15	1746.00	-644.59	662847.86	601998.66	32°39'15.554"N	103°56'18.676"W	0.22	
10120.00	90.300	339.900	8482.86	1924.15	1805.20	-666.13	662826.32	602057.86	32°39'16.140"N	103°56'18.926"W	0.35	
10183.00	89.900	341.400	8482.75	1987.14	1864.64	-687.01	662805.44	602117.29	32°39'16.729"N	103°56'19.167"W	2.46	
10246.00	90.100	341.000	8482.75	2050.13	1924.27	-707.31	662785.14	602176.93	32°39'17.320"N	103°56'19.402"W	0.71	



Actual Wellpath Report

No.2 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2 SHL
Area	Eddy County, NM	Well	No.2
Field	(Irwin) Sec 23-14, T19S, R30E	Wellbore	No.2 AWB
Facility	Irwin 23-14 Site Location		

WELLPATH DATA (204 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10309.00	90.500	339.600	8482.42	2113.13	1983.58	-728.55	662763.91	602236.23	32°39'17.908"N	103°56'19.648"W	2.31	
10372.00	90.600	340.200	8481.82	2176.12	2042.74	-750.20	662742.26	602295.39	32°39'18.494"N	103°56'19.898"W	0.97	
10436.00	90.400	340.100	8481.26	2240.12	2102.94	-771.93	662720.53	602355.58	32°39'19.090"N	103°56'20.150"W	0.35	
10499.00	89.700	341.100	8481.21	2303.12	2162.36	-792.85	662699.61	602415.00	32°39'19.679"N	103°56'20.392"W	1.94	
10562.00	89.900	341.100	8481.43	2366.11	2221.96	-813.26	662679.20	602474.60	32°39'20.269"N	103°56'20.628"W	0.32	
10625.00	90.100	340.800	8481.43	2429.10	2281.51	-833.82	662658.64	602534.14	32°39'20.859"N	103°56'20.866"W	0.57	
10688.00	90.300	341.000	8481.21	2492.09	2341.05	-854.44	662638.03	602593.67	32°39'21.449"N	103°56'21.105"W	0.45	
10751.00	90.200	340.800	8480.93	2555.09	2400.58	-875.05	662617.42	602653.19	32°39'22.039"N	103°56'21.343"W	0.35	
10815.00	90.300	339.600	8480.65	2619.08	2460.79	-896.73	662595.74	602713.41	32°39'22.636"N	103°56'21.594"W	1.88	
10878.00	89.200	340.400	8480.93	2682.08	2519.99	-918.28	662574.19	602772.60	32°39'23.222"N	103°56'21.844"W	2.16	
10941.00	89.600	340.300	8481.59	2745.08	2579.32	-939.46	662553.01	602831.92	32°39'23.810"N	103°56'22.089"W	0.65	
11005.00	89.600	339.900	8482.03	2809.08	2639.49	-961.24	662531.23	602892.09	32°39'24.406"N	103°56'22.341"W	0.62	
11067.00	90.000	340.300	8482.25	2871.07	2697.79	-982.35	662510.13	602950.39	32°39'24.984"N	103°56'22.585"W	0.91	
11131.00	90.200	339.300	8482.14	2935.07	2757.85	-1004.45	662488.03	603010.45	32°39'25.579"N	103°56'22.841"W	1.59	
11194.00	89.600	340.200	8482.25	2998.07	2816.96	-1026.25	662466.23	603069.55	32°39'26.164"N	103°56'23.094"W	1.72	
11258.00	89.100	340.600	8482.97	3062.07	2877.25	-1047.72	662444.76	603129.83	32°39'26.762"N	103°56'23.342"W	1.00	
11321.00	89.100	340.500	8483.96	3125.06	2936.64	-1068.69	662423.79	603189.22	32°39'27.350"N	103°56'23.585"W	0.16	
11385.00	89.100	339.500	8484.97	3189.05	2996.78	-1090.58	662401.90	603249.35	32°39'27.946"N	103°56'23.838"W	1.56	
11448.00	88.600	339.000	8486.23	3252.03	3055.68	-1112.90	662379.59	603308.25	32°39'28.530"N	103°56'24.097"W	1.12	
11512.00	90.600	340.400	8486.68	3316.02	3115.70	-1135.10	662357.39	603368.26	32°39'29.124"N	103°56'24.354"W	3.81	
11576.00	90.600	340.000	8486.01	3380.02	3175.91	-1156.78	662335.71	603428.47	32°39'29.721"N	103°56'24.605"W	0.62	
11639.00	89.500	340.100	8485.95	3443.01	3235.13	-1178.27	662314.22	603487.68	32°39'30.307"N	103°56'24.854"W	1.75	
11734.00	88.500	340.000	8487.61	3538.00	3324.41	-1210.68	662281.81	603576.96	32°39'31.192"N	103°56'25.229"W	1.06	
11797.00	89.100	340.400	8488.93	3600.98	3383.68	-1232.02	662260.48	603636.22	32°39'31.779"N	103°56'25.476"W	1.14	
11861.00	89.100	339.700	8489.94	3664.98	3443.83	-1253.85	662238.65	603696.37	32°39'32.375"N	103°56'25.729"W	1.09	
11925.00	89.400	339.900	8490.77	3728.97	3503.89	-1275.95	662216.55	603756.42	32°39'32.970"N	103°56'25.984"W	0.56	
11988.00	88.800	339.700	8491.76	3791.96	3563.00	-1297.70	662194.80	603815.53	32°39'33.556"N	103°56'26.236"W	1.00	
12052.00	88.500	339.600	8493.27	3855.94	3622.99	-1319.95	662172.55	603875.52	32°39'34.150"N	103°56'26.494"W	0.49	
12115.00	88.400	339.000	8494.98	3918.91	3681.90	-1342.21	662150.29	603934.42	32°39'34.734"N	103°56'26.752"W	0.97	
12178.00	89.100	339.700	8496.35	3981.89	3740.84	-1364.42	662128.08	603993.36	32°39'35.318"N	103°56'27.009"W	1.57	
12241.00	90.100	340.000	8496.79	4044.89	3799.98	-1386.12	662106.38	604052.49	32°39'35.904"N	103°56'27.260"W	1.66	
12336.00	91.400	341.600	8495.55	4139.87	3889.69	-1417.36	662075.15	604142.19	32°39'36.793"N	103°56'27.622"W	2.17	
12431.00	90.600	340.900	8493.89	4234.83	3979.63	-1447.89	662044.62	604232.13	32°39'37.684"N	103°56'27.975"W	1.12	
12526.00	91.200	341.500	8492.40	4329.80	4069.55	-1478.50	662014.01	604322.04	32°39'38.575"N	103°56'28.329"W	0.89	
12589.00	90.100	340.900	8491.68	4392.78	4129.18	-1498.80	661993.71	604381.67	32°39'39.165"N	103°56'28.564"W	1.99	
12652.00	90.300	341.300	8491.46	4455.77	4188.78	-1519.21	661973.31	604441.27	32°39'39.756"N	103°56'28.800"W	0.71	
12715.00	90.000	341.400	8491.30	4518.76	4248.48	-1539.36	661953.16	604500.95	32°39'40.347"N	103°56'29.033"W	0.50	
12778.00	89.500	341.200	8491.57	4581.74	4308.15	-1559.55	661932.96	604560.62	32°39'40.938"N	103°56'29.267"W	0.85	
12842.00	88.400	341.300	8492.74	4645.72	4368.74	-1580.12	661912.40	604621.21	32°39'41.539"N	103°56'29.505"W	1.73	
12905.00	88.400	341.000	8494.50	4708.68	4428.34	-1600.47	661892.05	604680.80	32°39'42.129"N	103°56'29.740"W	0.48	
12968.00	88.900	340.100	8495.99	4771.66	4487.73	-1621.44	661871.08	604740.19	32°39'42.717"N	103°56'29.983"W	1.63	
13031.00	89.000	340.400	8497.14	4834.65	4547.01	-1642.73	661849.80	604799.47	32°39'43.305"N	103°56'30.229"W	0.50	
13094.00	89.300	340.100	8498.08	4897.64	4606.30	-1664.01	661828.51	604858.75	32°39'43.892"N	103°56'30.476"W	0.67	
13157.00	89.800	340.400	8498.57	4960.64	4665.59	-1685.30	661807.23	604918.04	32°39'44.480"N	103°56'30.722"W	0.93	
13220.00	90.000	340.600	8498.68	5023.64	4724.98	-1706.33	661786.20	604977.42	32°39'45.068"N	103°56'30.966"W	0.45	



Actual Wellpath Report

No.2 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2 SHL
Area	Eddy County, NM	Well	No.2
Field	(Irwin) Sec 23-14, T19S, R30E	Wellbore	No.2 AWB
Facility	Irwin 23-14 Site Location		

WELLPATH DATA (204 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13283.00	90.300	340.000	8498.52	5086.64	4784.29	-1727.57	661764.96	605036.73	32°39'45.656"N	103°56'31.212"W	1.06	
13346.00	90.600	339.900	8498.02	5149.64	4843.47	-1749.17	661743.37	605095.90	32°39'46.242"N	103°56'31.462"W	0.50	
13409.00	89.400	339.400	8498.02	5212.63	4902.54	-1771.07	661721.46	605154.96	32°39'46.827"N	103°56'31.715"W	2.06	
13473.00	89.800	338.800	8498.47	5276.62	4962.32	-1793.90	661698.63	605214.75	32°39'47.420"N	103°56'31.980"W	1.13	
13536.00	90.600	340.300	8498.25	5339.62	5021.35	-1815.92	661676.62	605273.77	32°39'48.004"N	103°56'32.235"W	2.70	
13599.00	90.300	341.000	8497.75	5402.61	5080.79	-1836.79	661655.75	605333.20	32°39'48.593"N	103°56'32.476"W	1.21	
13662.00	89.500	340.600	8497.86	5465.60	5140.28	-1857.51	661635.03	605392.69	32°39'49.183"N	103°56'32.716"W	1.42	
13725.00	90.400	341.100	8497.92	5528.60	5199.80	-1878.17	661614.37	605452.20	32°39'49.772"N	103°56'32.955"W	1.63	
13788.00	89.700	341.200	8497.86	5591.59	5259.42	-1898.53	661594.02	605511.82	32°39'50.363"N	103°56'33.191"W	1.12	
13852.00	89.300	340.000	8498.42	5655.58	5319.78	-1919.79	661572.76	605572.18	32°39'50.961"N	103°56'33.437"W	1.98	
13915.00	89.900	339.400	8498.86	5718.58	5378.87	-1941.64	661550.91	605631.26	32°39'51.546"N	103°56'33.690"W	1.35	
13978.00	90.200	338.800	8498.81	5781.57	5437.72	-1964.12	661528.43	605690.11	32°39'52.129"N	103°56'33.950"W	1.06	
14041.00	91.100	339.500	8498.09	5844.55	5496.59	-1986.54	661506.01	605748.97	32°39'52.713"N	103°56'34.210"W	1.81	
14105.00	90.300	339.900	8497.31	5908.55	5556.61	-2008.74	661483.81	605808.99	32°39'53.307"N	103°56'34.467"W	1.40	
14168.00	90.200	339.300	8497.04	5971.54	5615.66	-2030.70	661461.86	605868.03	32°39'53.892"N	103°56'34.722"W	0.97	
14231.00	90.700	339.300	8496.54	6034.54	5674.59	-2052.97	661439.59	605926.96	32°39'54.476"N	103°56'34.980"W	0.79	
14294.00	91.000	339.400	8495.61	6097.52	5733.53	-2075.18	661417.38	605985.90	32°39'55.060"N	103°56'35.237"W	0.50	
14357.00	90.600	339.400	8494.73	6160.51	5792.50	-2097.35	661395.21	606044.86	32°39'55.645"N	103°56'35.494"W	0.63	
14421.00	90.700	339.100	8494.00	6224.50	5852.35	-2120.02	661372.54	606104.70	32°39'56.238"N	103°56'35.756"W	0.49	
14485.00	91.100	339.200	8493.00	6288.49	5912.15	-2142.80	661349.77	606164.50	32°39'56.830"N	103°56'36.020"W	0.64	
14548.00	91.400	338.900	8491.62	6351.46	5970.97	-2165.32	661327.25	606223.32	32°39'57.413"N	103°56'36.281"W	0.67	
14643.00	91.600	338.900	8489.13	6446.41	6059.57	-2199.50	661293.06	606311.91	32°39'58.291"N	103°56'36.677"W	0.21	
14737.00	92.000	339.200	8486.18	6540.35	6147.31	-2233.10	661259.47	606399.64	32°39'59.160"N	103°56'37.066"W	0.53	
14829.00	92.000	339.200	8482.97	6632.28	6233.26	-2265.75	661226.82	606485.59	32°40'00.012"N	103°56'37.445"W	0.00	Projection to bit

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No. 2H PBHL		8500.00	6243.88	-2263.11	661229.46	606496.21	32°40'00.117"N	103°56'37.413"W	point

WELLPATH COMPOSITION - Ref Wellbore: No.2 AWB Ref Wellpath: No.2 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	7937.00	Generic gyro - northseeking (Standard)	GyroData Gyro <100-7937>	No.2 AWB
7937.00	14737.00	NaviTrak (Standard)	BHI / MWD Navitrak <7966-14737>	No.2 AWB
14737.00	14829.00	Blind Drilling (std)	Projection to bit	No.2 AWB

Nash Unit #57H
API #: 30-015-39303

