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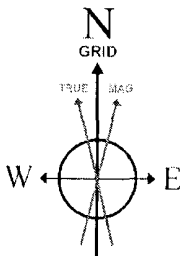
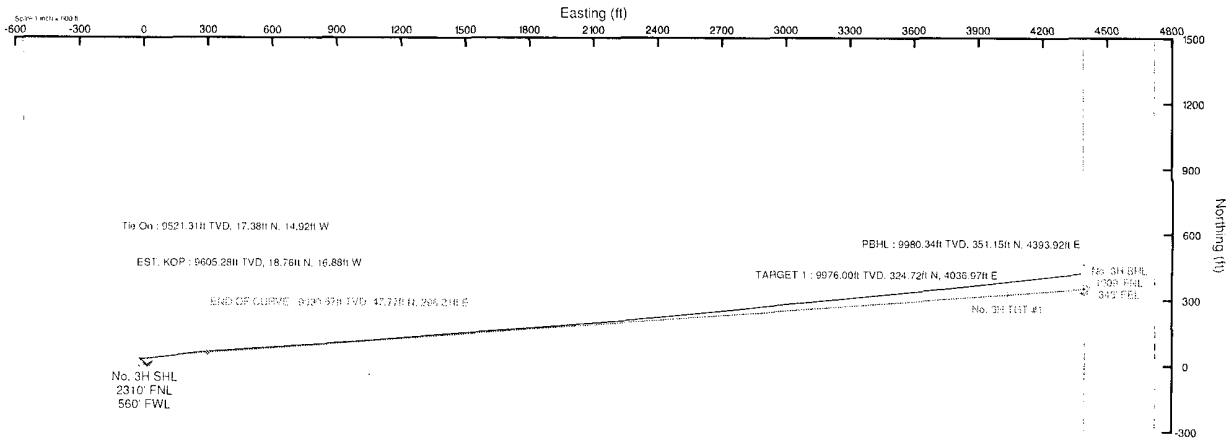
Cimarex Energy Co.

Location: Lea County, NM
Field: (N Maduro) Sec 29, T19S, R33E
Facility: N Maduro Fed Unit No. 3H

Slot: No. 3H SHL
Well: No. 3H
Wellbore: No. 3H PWB



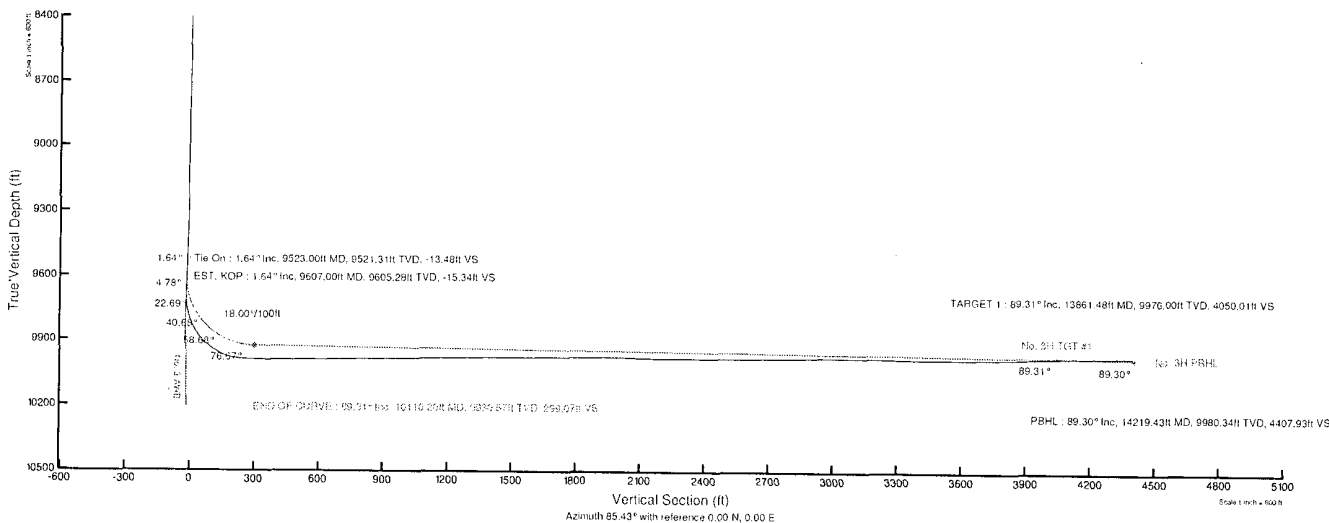
Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (%100ft)	VS (ft)
Tie On	9523.00	1.640	305.010	9521.31	17.38	-14.92	0.00	-13.48
EST. KOP	9607.00	1.640	305.010	9605.28	18.76	-16.88	0.00	-15.34
END OF CURVE	10110.20	89.306	85.766	9930.57	47.77	286.21	18.00	299.07
TARGET 1	13861.48	89.306	85.766	9976.00	324.72	4036.97	0.00	4050.01
PBHL	14219.43	89.305	85.766	9980.34	351.15	4393.92	0.00	4407.93



BGGM (1945.0 to 2011.0) Dip: 60.59° Field: 48998.7 nT
Magnetic North is 7.79 degrees East of True North (at 9/29/2010)
Grid North is 0.35 degrees East of True North
To correct azimuth from True to Grid subtract 0.35 degrees
To correct azimuth from Magnetic to Grid add 7.45 degrees
For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.45 = 97.45

Plot reference wellpath is Plan #2 vs Actual (FINAL)
True vertical depths are referenced to Rig 881 on No. 3H SHL (KB)
Measured depths are referenced to Rig 881 on No. 3H SHL (KB)
Rig 881 on No. 3H SHL (KB) to Mean Sea Level: 3632 feet
Mean Sea Level to Mud line (Facility: N Maduro Fed Unit No. 3H): -3612 feet
Coordinates are in feet referenced to Facility Center

Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
North Reference: Grid north
Scale: True distance
Depths are in feet
Created by: Victor Hernandez on 10/13/2010





Actual Wellpath Report

No. 3H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(N Maduro) Sec 29, T19S, R33E	Wellbore	No. 3H AWB
Facility	N Maduro Fed Unit No. 3H	Sidetrack from	No. 3 AWB at 9523.00 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	0.999954	Report Generated	10/13/2010 at 8:08:30 AM
Convergence at slot	0.35° East	Database/Source file	WA_Midland/No. 3H_AWB.xml

WELL PATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	738724.40	599593.30	32°38'48.090"N	103°41'31.346"W
Facility Reference Pt			738724.40	599593.30	32°38'48.090"N	103°41'31.346"W
Field Reference Pt			738568.60	601242.10	32°39'04.414"N	103°41'33.052"W

WELL PATH DATUM

Calculation method	Minimum curvature	Rig 881 on No. 3H SHL (KB) to Facility Vertical Datum	20.00ft
Horizontal Reference Pt	Facility Center	Rig 881 on No. 3H SHL (KB) to Mean Sea Level	3632.00ft
Vertical Reference Pt	Rig 881 on No. 3H SHL (KB)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig 881 on No. 3H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	85.43°



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

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Field	(N Maduro) Sec 29, T19S, R33E	Wellbore	No. 3H AWB
Facility	N Maduro Fed Unit No. 3H	Sidetrack from	No. 3 AWB at 9523.00 MD

WELLPATH DATA (168 stations) † = interpolated/extrapolated station

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	55.960	0.00	0.00	0.00	0.00	738724.40	599593.30	32°38'48.090"N	103°41'31.346"W	0.00
20.00	0.000	55.960	20.00	0.00	0.00	0.00	738724.40	599593.30	32°38'48.090"N	103°41'31.346"W	0.00
125.40	0.160	55.960	125.40	0.13	0.08	0.12	738724.52	599593.38	32°38'48.091"N	103°41'31.345"W	0.15
251.00	0.150	57.600	251.00	0.43	0.27	0.41	738724.81	599593.57	32°38'48.093"N	103°41'31.341"W	0.01
376.60	0.360	33.110	376.60	0.81	0.69	0.76	738725.16	599593.99	32°38'48.097"N	103°41'31.337"W	0.18
511.20	0.330	346.000	511.20	1.01	1.42	0.90	738725.30	599594.72	32°38'48.104"N	103°41'31.335"W	0.21
636.80	0.520	252.710	636.79	0.39	1.60	0.27	738724.67	599594.90	32°38'48.106"N	103°41'31.343"W	0.50
762.40	0.930	166.270	762.39	0.00	0.44	-0.04	738724.36	599593.74	32°38'48.095"N	103°41'31.346"W	0.83
888.00	0.710	166.460	887.97	0.28	-1.31	0.39	738724.79	599591.99	32°38'48.077"N	103°41'31.342"W	0.18
982.20	0.480	167.270	982.17	0.43	-2.26	0.61	738725.01	599591.04	32°38'48.068"N	103°41'31.339"W	0.24
1025.40	0.900	35.580	1025.37	0.67	-2.16	0.85	738725.25	599591.14	32°38'48.069"N	103°41'31.336"W	2.94
1107.80	0.500	175.930	1107.76	1.09	-1.99	1.25	738725.65	599591.31	32°38'48.070"N	103°41'31.332"W	1.61
1233.40	0.550	177.720	1233.36	1.06	-3.14	1.31	738725.71	599590.16	32°38'48.059"N	103°41'31.331"W	0.04
1359.00	0.520	181.780	1358.95	0.97	-4.31	1.32	738725.72	599588.99	32°38'48.047"N	103°41'31.331"W	0.04
1484.60	0.480	148.720	1484.55	1.15	-5.33	1.58	738725.98	599587.97	32°38'48.037"N	103°41'31.328"W	0.23
1610.20	0.580	111.710	1610.14	1.95	-6.02	2.44	738726.84	599587.28	32°38'48.031"N	103°41'31.318"W	0.28
1735.80	0.630	119.250	1735.74	3.10	-6.59	3.63	738728.03	599586.71	32°38'48.025"N	103°41'31.304"W	0.07
1861.40	0.790	114.930	1861.33	4.42	-7.29	5.02	738729.42	599586.01	32°38'48.018"N	103°41'31.288"W	0.13
1987.00	0.800	105.260	1986.91	6.00	-7.89	6.65	738731.05	599585.41	32°38'48.012"N	103°41'31.269"W	0.11
2112.60	0.790	104.300	2112.50	7.65	-8.33	8.34	738732.74	599584.97	32°38'48.007"N	103°41'31.249"W	0.01
2301.00	0.890	85.930	2300.88	10.34	-8.55	11.05	738735.45	599584.75	32°38'48.005"N	103°41'31.217"W	0.15
2363.80	1.400	72.290	2363.67	11.57	-8.28	12.27	738736.67	599585.02	32°38'48.008"N	103°41'31.203"W	0.92
2489.40	1.790	61.340	2489.22	14.86	-6.87	15.45	738739.85	599586.43	32°38'48.021"N	103°41'31.166"W	0.39
2615.00	2.130	55.610	2614.75	18.67	-4.62	19.10	738743.50	599588.69	32°38'48.043"N	103°41'31.123"W	0.31
2740.60	2.890	49.490	2740.23	23.26	-1.24	23.44	738747.83	599592.06	32°38'48.077"N	103°41'31.072"W	0.64
2866.20	3.110	54.770	2865.65	28.76	2.78	28.63	738753.02	599596.08	32°38'48.116"N	103°41'31.011"W	0.28
2991.80	3.330	60.340	2991.06	34.99	6.55	34.58	738758.98	599599.85	32°38'48.153"N	103°41'30.941"W	0.30
3117.40	1.840	71.530	3116.53	40.25	9.00	39.66	738764.06	599602.30	32°38'48.177"N	103°41'30.882"W	1.25
3243.00	0.540	108.450	3242.10	42.75	9.45	42.14	738766.53	599602.75	32°38'48.181"N	103°41'30.853"W	1.15
3368.60	0.670	184.530	3367.69	43.18	8.53	42.64	738767.04	599601.83	32°38'48.172"N	103°41'30.847"W	0.60



Actual Wellpath Report

No. 3H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(N Maduro) Sec 29, T19S, R33E	Wellbore	No. 3H AWB
Facility	N Maduro Fed Unit No. 3H	Sidetrack from	No. 3 AWB at 9523.00 MD

WELLPATH DATA (168 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]
3494.20	1.050	206.300	3493.28	42.48	6.77	42.07	738766.47	599600.07	32°38'48.155"N	103°41'30.854"W	0.39
3619.80	0.910	206.470	3618.86	41.37	4.84	41.12	738765.51	599598.14	32°38'48.136"N	103°41'30.865"W	0.11
3745.40	1.170	236.390	3744.44	39.74	3.24	39.60	738764.00	599596.54	32°38'48.120"N	103°41'30.883"W	0.47
3871.00	1.200	228.510	3870.01	37.56	1.66	37.55	738761.95	599594.96	32°38'48.104"N	103°41'30.907"W	0.13
3996.60	1.080	229.160	3995.59	35.56	0.01	35.67	738760.07	599593.31	32°38'48.088"N	103°41'30.929"W	0.10
4122.20	0.970	234.550	4121.17	33.69	-1.38	33.91	738758.31	599591.92	32°38'48.075"N	103°41'30.950"W	0.12
4247.80	0.770	234.290	4246.75	32.06	-2.49	32.36	738756.76	599590.81	32°38'48.064"N	103°41'30.968"W	0.16
4373.40	0.480	238.970	4372.35	30.86	-3.25	31.22	738755.62	599590.05	32°38'48.056"N	103°41'30.981"W	0.23
4499.00	0.320	227.200	4497.94	30.12	-3.76	30.51	738754.91	599589.54	32°38'48.051"N	103°41'30.990"W	0.14
4624.60	0.400	222.620	4623.54	29.52	-4.32	29.96	738754.36	599588.98	32°38'48.046"N	103°41'30.996"W	0.07
4750.20	0.630	192.370	4749.14	29.00	-5.32	29.51	738753.91	599587.98	32°38'48.036"N	103°41'31.001"W	0.28
4875.80	0.940	160.810	4874.72	29.06	-6.97	29.70	738754.10	599586.33	32°38'48.019"N	103°41'30.999"W	0.41
5001.40	0.670	191.390	5000.31	29.11	-8.66	29.90	738754.30	599584.64	32°38'48.003"N	103°41'30.997"W	0.40
5127.00	0.580	173.790	5125.90	28.93	-10.01	29.82	738754.22	599583.29	32°38'47.989"N	103°41'30.998"W	0.17
5252.60	0.440	155.260	5251.50	29.11	-11.08	30.09	738754.49	599582.22	32°38'47.979"N	103°41'30.995"W	0.17
5378.20	0.320	139.520	5377.10	29.49	-11.79	30.52	738754.92	599581.51	32°38'47.972"N	103°41'30.990"W	0.13
5503.80	0.350	205.590	5502.70	29.50	-12.40	30.58	738754.98	599580.90	32°38'47.966"N	103°41'30.989"W	0.29
5629.40	0.380	218.060	5628.29	29.02	-13.07	30.16	738754.56	599580.23	32°38'47.959"N	103°41'30.994"W	0.07
5755.00	0.320	194.070	5753.89	28.63	-13.74	29.82	738754.22	599579.56	32°38'47.952"N	103°41'30.998"W	0.12
5880.60	0.340	227.080	5879.49	28.23	-14.34	29.46	738753.86	599578.97	32°38'47.947"N	103°41'31.003"W	0.15
6006.20	0.610	263.800	6005.08	27.27	-14.66	28.52	738752.92	599578.64	32°38'47.943"N	103°41'31.014"W	0.31
6131.80	0.970	273.950	6130.67	25.55	-14.66	26.80	738751.20	599578.64	32°38'47.944"N	103°41'31.034"W	0.31
6257.40	0.950	264.040	6256.25	23.45	-14.70	24.70	738749.10	599578.61	32°38'47.943"N	103°41'31.058"W	0.13
6383.00	0.890	253.650	6381.84	21.46	-15.08	22.73	738747.13	599578.22	32°38'47.940"N	103°41'31.081"W	0.14
6508.60	0.860	255.460	6507.42	19.57	-15.59	20.88	738745.28	599577.71	32°38'47.935"N	103°41'31.103"W	0.03
6634.20	0.970	286.340	6633.01	17.65	-15.53	18.95	738743.35	599577.77	32°38'47.935"N	103°41'31.126"W	0.40
6759.80	0.750	290.190	6758.59	15.91	-14.94	17.16	738741.56	599578.36	32°38'47.941"N	103°41'31.146"W	0.18
6885.40	0.570	299.380	6884.19	14.65	-14.35	15.84	738740.24	599578.95	32°38'47.947"N	103°41'31.162"W	0.17
7011.00	0.560	309.000	7009.78	13.69	-13.66	14.82	738739.22	599579.64	32°38'47.954"N	103°41'31.174"W	0.08
7136.60	0.580	313.620	7135.37	12.82	-12.84	13.88	738738.28	599580.46	32°38'47.962"N	103°41'31.185"W	0.04



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Area	Lea County, NM	Well	No. 3H
Field	(N Maduro) Sec 29, T19S, R33E	Wellbore	No. 3H AWB
Facility	N Maduro Fed Unit No. 3H	Sidetrack from	No. 3 AWB at 9523.00 MD

WELLPATH DATA (168 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]
7262.20	0.610	320.510	7260.97	12.01	-11.88	13.00	738737.40	599581.42	32°38'47.972"N	103°41'31.195"W	0.06
7387.80	0.680	324.880	7386.56	11.25	-10.76	12.14	738736.54	599582.54	32°38'47.983"N	103°41'31.205"W	0.07
7513.40	0.670	326.680	7512.15	10.52	-9.53	11.31	738735.71	599583.77	32°38'47.995"N	103°41'31.214"W	0.02
7639.00	0.810	340.400	7637.74	9.93	-8.08	10.61	738735.01	599585.22	32°38'48.010"N	103°41'31.223"W	0.18
7764.60	0.870	337.140	7763.33	9.40	-6.37	9.94	738734.34	599586.93	32°38'48.027"N	103°41'31.230"W	0.06
7890.20	0.750	334.250	7888.91	8.81	-4.75	9.22	738733.61	599588.55	32°38'48.043"N	103°41'31.239"W	0.10
8015.80	1.020	358.560	8014.50	8.57	-2.89	8.83	738733.23	599590.41	32°38'48.061"N	103°41'31.243"W	0.36
8141.40	1.130	356.450	8140.08	8.65	-0.54	8.73	738733.12	599592.76	32°38'48.084"N	103°41'31.244"W	0.09
8267.00	1.070	340.060	8265.65	8.37	1.80	8.25	738732.65	599595.10	32°38'48.108"N	103°41'31.249"W	0.25
8392.60	1.830	309.170	8391.21	6.61	4.17	6.29	738730.69	599597.47	32°38'48.131"N	103°41'31.272"W	0.85
8518.20	1.840	303.000	8516.75	3.56	6.54	3.05	738727.45	599599.84	32°38'48.155"N	103°41'31.310"W	0.16
8643.80	1.240	305.240	8642.30	0.92	8.42	0.25	738724.65	599601.72	32°38'48.173"N	103°41'31.343"W	0.48
8769.40	1.390	298.070	8767.87	-1.41	9.92	-2.21	738722.19	599603.22	32°38'48.188"N	103°41'31.371"W	0.18
8895.00	0.900	315.180	8893.45	-3.33	11.34	-4.25	738720.15	599604.64	32°38'48.203"N	103°41'31.395"W	0.47
9020.60	0.760	295.220	9019.03	-4.69	12.39	-5.70	738718.70	599605.69	32°38'48.213"N	103°41'31.412"W	0.25
9146.20	0.910	299.590	9144.62	-6.24	13.24	-7.32	738717.08	599606.54	32°38'48.222"N	103°41'31.431"W	0.13
9271.80	0.980	297.280	9270.20	-7.98	14.22	-9.14	738715.26	599607.52	32°38'48.231"N	103°41'31.452"W	0.06
9397.40	1.700	295.970	9395.77	-10.49	15.53	-11.77	738712.63	599608.83	32°38'48.245"N	103°41'31.483"W	0.57
9523.00	1.640	305.010	9521.31	-13.48	17.38	-14.92	738709.49	599610.68	32°38'48.263"N	103°41'31.519"W	0.21
9560.00	1.600	293.200	9558.30	-14.35	17.88	-15.82	738708.58	599611.18	32°38'48.268"N	103°41'31.530"W	0.91
9592.00	1.600	285.200	9590.29	-15.16	18.18	-16.67	738707.74	599611.48	32°38'48.271"N	103°41'31.540"W	0.70
9624.00	1.400	284.800	9622.28	-15.95	18.39	-17.47	738706.93	599611.69	32°38'48.273"N	103°41'31.549"W	0.63
9656.00	1.300	274.600	9654.27	-16.68	18.52	-18.21	738706.19	599611.82	32°38'48.275"N	103°41'31.558"W	0.81
9688.00	0.400	273.900	9686.26	-17.15	18.56	-18.69	738705.71	599611.86	32°38'48.275"N	103°41'31.563"W	2.81
9719.00	3.300	78.800	9717.25	-16.37	18.74	-17.92	738706.48	599612.04	32°38'48.277"N	103°41'31.554"W	11.90
9751.00	8.700	82.400	9749.06	-13.04	19.24	-14.62	738709.79	599612.54	32°38'48.281"N	103°41'31.516"W	16.91
9783.00	14.300	83.700	9780.41	-6.66	20.00	-8.28	738716.12	599613.29	32°38'48.289"N	103°41'31.442"W	17.52
9814.00	20.100	84.800	9810.01	2.50	20.90	0.84	738725.23	599614.20	32°38'48.297"N	103°41'31.335"W	18.74
9846.00	25.900	85.600	9839.45	14.99	21.93	13.29	738737.69	599615.23	32°38'48.306"N	103°41'31.189"W	18.15
9878.00	32.500	85.300	9867.37	30.60	23.18	28.84	738753.24	599616.47	32°38'48.318"N	103°41'31.007"W	20.63



Actual Wellpath Report

No. 3H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(N Maduro) Sec 29, T19S, R33E	Wellbore	No. 3H AWB
Facility	N Maduro Fed Unit No. 3H	Sidetrack from	No. 3 AWB at 9523.00 MD

WELLPATH DATA (168 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]
9910.00	38.800	84.200	9893.36	49.24	24.90	47.40	738771.80	599618.19	32°38'48.334"N	103°41'30.790"W	19.79
9942.00	45.600	82.900	9917.05	70.71	27.32	68.75	738793.14	599620.62	32°38'48.356"N	103°41'30.540"W	21.42
9973.00	52.500	82.800	9937.36	94.08	30.24	91.97	738816.36	599623.54	32°38'48.384"N	103°41'30.268"W	22.26
10005.00	59.500	83.000	9955.24	120.57	33.51	118.28	738842.67	599626.81	32°38'48.415"N	103°41'29.961"W	21.88
10037.00	67.000	82.800	9969.63	149.10	37.04	146.61	738871.00	599630.34	32°38'48.448"N	103°41'29.629"W	23.44
10069.00	74.300	83.100	9980.23	179.24	40.75	176.55	738900.95	599634.04	32°38'48.483"N	103°41'29.278"W	22.83
10101.00	81.800	82.400	9986.85	210.49	44.70	207.59	738931.98	599637.99	32°38'48.520"N	103°41'28.915"W	23.53
10133.00	88.400	82.700	9989.58	242.31	48.83	239.18	738963.57	599642.13	32°38'48.559"N	103°41'28.545"W	20.65
10165.00	87.900	84.900	9990.61	274.28	52.28	270.98	738995.37	599645.58	32°38'48.591"N	103°41'28.173"W	7.05
10196.00	87.300	86.000	9991.91	305.25	54.74	301.85	739026.24	599648.04	32°38'48.614"N	103°41'27.802"W	4.04
10228.00	88.800	85.900	9993.00	337.23	57.00	333.75	739058.14	599650.29	32°38'48.634"N	103°41'27.439"W	4.70
10260.00	89.600	85.800	9993.45	369.23	59.31	365.67	739090.05	599652.61	32°38'48.655"N	103°41'27.065"W	2.52
10292.00	89.700	85.600	9993.64	401.23	61.71	397.58	739121.96	599655.01	32°38'48.677"N	103°41'26.692"W	0.70
10324.00	90.300	85.900	9993.64	433.23	64.08	429.49	739153.87	599657.38	32°38'48.699"N	103°41'26.319"W	2.10
10356.00	90.500	86.000	9993.42	465.23	66.34	461.41	739185.79	599659.64	32°38'48.719"N	103°41'25.945"W	0.70
10410.00	90.600	85.800	9992.90	519.22	70.20	515.27	739239.64	599663.50	32°38'48.754"N	103°41'25.315"W	0.41
10483.00	90.700	85.900	9992.07	592.22	75.49	588.07	739312.44	599668.78	32°38'48.802"N	103°41'24.463"W	0.19
10546.00	91.000	86.300	9991.14	655.20	79.77	650.92	739375.29	599673.07	32°38'48.841"N	103°41'23.728"W	0.79
10610.00	91.500	85.900	9989.74	719.18	84.12	714.75	739439.12	599677.42	32°38'48.880"N	103°41'22.981"W	1.00
10673.00	91.100	86.500	9988.31	782.16	88.30	777.60	739501.96	599681.59	32°38'48.917"N	103°41'22.246"W	1.14
10737.00	90.200	86.100	9987.59	846.15	92.43	841.46	739565.82	599685.72	32°38'48.954"N	103°41'21.499"W	1.54
10801.00	90.400	86.400	9987.25	910.14	96.61	905.32	739629.68	599689.91	32°38'48.992"N	103°41'20.752"W	0.56
10864.00	90.800	85.900	9986.59	973.13	100.84	968.18	739692.53	599694.14	32°38'49.030"N	103°41'20.016"W	1.02
10928.00	91.200	85.800	9985.48	1037.12	105.47	1032.00	739756.35	599698.77	32°38'49.072"N	103°41'19.269"W	0.64
10991.00	90.200	85.300	9984.74	1100.12	110.36	1094.80	739819.15	599703.66	32°38'49.117"N	103°41'18.535"W	1.77
11055.00	90.700	85.400	9984.20	1164.11	115.55	1158.59	739882.93	599708.84	32°38'49.164"N	103°41'17.788"W	0.80
11118.00	91.300	85.000	9983.10	1227.10	120.82	1221.36	739945.70	599714.11	32°38'49.212"N	103°41'17.054"W	1.14
11182.00	90.400	84.800	9982.16	1291.09	126.51	1285.10	740009.44	599719.80	32°38'49.265"N	103°41'16.308"W	1.44
11246.00	90.900	84.800	9981.43	1355.08	132.31	1348.83	740073.17	599725.60	32°38'49.318"N	103°41'15.562"W	0.78
11309.00	89.900	86.100	9980.99	1418.08	137.31	1411.63	740135.96	599730.60	32°38'49.364"N	103°41'14.827"W	2.60



Actual Wellpath Report

No. 3H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(N Maduro) Sec 29, T19S, R33E	Wellbore	No. 3H AWB
Facility	N Maduro Fed Unit No. 3H	Sidetrack from	No. 3 AWB at 9523.00 MD

WELLPATH DATA (168 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]
11373.00	90.400	85.200	9980.82	1482.08	142.16	1475.44	740199.77	599735.45	32°38'49.408"N	103°41'14.081"W	1.61
11436.00	90.200	85.900	9980.49	1545.08	147.05	1538.25	740262.58	599740.34	32°38'49.453"N	103°41'13.346"W	1.16
11499.00	90.200	86.300	9980.27	1608.07	151.33	1601.11	740325.43	599744.63	32°38'49.491"N	103°41'12.611"W	0.63
11563.00	90.400	86.300	9979.94	1672.06	155.46	1664.97	740389.29	599748.76	32°38'49.528"N	103°41'11.863"W	0.31
11627.00	90.800	85.400	9979.27	1736.06	160.09	1728.80	740453.12	599753.39	32°38'49.570"N	103°41'11.117"W	1.54
11691.00	89.800	85.600	9978.93	1800.06	165.12	1792.60	740516.91	599758.41	32°38'49.616"N	103°41'10.370"W	1.59
11754.00	90.600	85.800	9978.71	1863.05	169.84	1855.42	740579.73	599763.13	32°38'49.659"N	103°41'09.635"W	1.31
11817.00	90.100	85.300	9978.33	1926.05	174.73	1918.23	740642.54	599768.02	32°38'49.704"N	103°41'08.900"W	1.12
11880.00	88.600	85.000	9979.04	1989.05	180.05	1981.00	740705.30	599773.34	32°38'49.753"N	103°41'08.166"W	2.43
11943.00	88.700	85.300	9980.53	2052.03	185.38	2043.76	740768.06	599778.67	32°38'49.802"N	103°41'07.431"W	0.50
12007.00	88.700	85.600	9981.98	2116.01	190.45	2107.54	740831.84	599783.74	32°38'49.848"N	103°41'06.685"W	0.47
12070.00	89.500	85.500	9982.97	2179.00	195.34	2170.34	740894.63	599788.63	32°38'49.893"N	103°41'05.950"W	1.28
12134.00	89.600	85.400	9983.47	2243.00	200.42	2234.14	740958.43	599793.71	32°38'49.939"N	103°41'05.204"W	0.22
12198.00	89.700	84.500	9983.86	2307.00	206.05	2297.89	741022.17	599799.34	32°38'49.991"N	103°41'04.458"W	1.41
12261.00	89.500	84.500	9984.30	2369.99	212.09	2360.59	741084.88	599805.38	32°38'50.047"N	103°41'03.724"W	0.32
12325.00	89.800	84.700	9984.69	2433.98	218.11	2424.31	741148.59	599811.40	32°38'50.103"N	103°41'02.979"W	0.56
12389.00	90.200	84.000	9984.69	2497.97	224.41	2488.00	741212.28	599817.70	32°38'50.161"N	103°41'02.233"W	1.26
12452.00	89.900	84.200	9984.64	2560.95	230.89	2550.66	741274.94	599824.18	32°38'50.221"N	103°41'01.500"W	0.57
12517.00	90.300	84.400	9984.52	2625.94	237.35	2615.34	741339.62	599830.63	32°38'50.281"N	103°41'00.743"W	0.69
12580.00	90.300	83.900	9984.19	2688.92	243.77	2678.01	741402.28	599837.05	32°38'50.341"N	103°41'00.010"W	0.79
12644.00	90.800	84.200	9983.58	2752.90	250.40	2741.66	741465.93	599843.69	32°38'50.403"N	103°40'59.265"W	0.91
12707.00	91.100	83.700	9982.53	2815.87	257.04	2804.30	741528.57	599850.33	32°38'50.465"N	103°40'58.532"W	0.93
12770.00	91.400	83.500	9981.16	2878.82	264.06	2866.90	741591.16	599857.35	32°38'50.530"N	103°40'57.799"W	0.57
12834.00	90.600	84.900	9980.04	2942.79	270.53	2930.56	741654.82	599863.81	32°38'50.590"N	103°40'57.054"W	2.52
12898.00	89.500	84.400	9979.99	3006.79	276.49	2994.28	741718.53	599869.78	32°38'50.646"N	103°40'56.309"W	1.89
12962.00	89.400	84.900	9980.60	3070.78	282.46	3058.00	741782.25	599875.75	32°38'50.701"N	103°40'55.563"W	0.80
13025.00	89.300	84.700	9981.32	3133.77	288.17	3120.73	741844.98	599881.46	32°38'50.754"N	103°40'54.829"W	0.35
13089.00	89.500	84.300	9981.99	3197.76	294.30	3184.43	741908.68	599887.59	32°38'50.810"N	103°40'54.083"W	0.70
13153.00	88.100	84.000	9983.33	3261.73	300.83	3248.09	741972.33	599894.11	32°38'50.871"N	103°40'53.339"W	2.24
13216.00	89.000	84.200	9984.92	3324.69	307.30	3310.73	742034.97	599900.58	32°38'50.931"N	103°40'52.605"W	1.46



Actual Wellpath Report

No. 3H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(N Maduro) Sec 29, T19S, R33E	Wellbore	No. 3H AWB
Facility	N Maduro Fed Unit No. 3H	Sidetrack from	No. 3 AWB at 9523.00 MD

WELLPATH DATA (168 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]
13280.00	89.800	84.400	9985.59	3388.67	313.66	3374.41	742098.65	599906.94	32°38'50.990"N	103°40'51.860"W	1.29
13344.00	89.500	84.000	9985.98	3452.66	320.12	3438.08	742162.32	599913.41	32°38'51.050"N	103°40'51.115"W	0.78
13407.00	89.600	84.400	9986.48	3515.64	326.49	3500.76	742224.99	599919.77	32°38'51.110"N	103°40'50.382"W	0.65
13471.00	90.300	84.400	9986.53	3579.63	332.73	3564.45	742288.68	599926.02	32°38'51.167"N	103°40'49.636"W	1.09
13535.00	90.900	83.700	9985.86	3643.61	339.37	3628.10	742352.33	599932.65	32°38'51.229"N	103°40'48.892"W	1.44
13599.00	90.500	85.200	9985.08	3707.59	345.56	3691.79	742416.02	599938.84	32°38'51.287"N	103°40'48.146"W	2.43
13660.00	90.600	84.700	9984.50	3768.58	350.93	3752.56	742476.77	599944.21	32°38'51.336"N	103°40'47.435"W	0.84
13690.00	90.700	84.300	9984.15	3798.58	353.80	3782.42	742506.63	599947.08	32°38'51.363"N	103°40'47.086"W	1.37
13754.00	90.900	83.800	9983.26	3862.55	360.44	3846.06	742570.28	599953.72	32°38'51.424"N	103°40'46.341"W	0.84
13817.00	91.200	83.900	9982.11	3925.52	367.18	3908.69	742632.90	599960.47	32°38'51.487"N	103°40'45.608"W	0.50
13881.00	91.800	83.200	9980.43	3989.46	374.37	3972.26	742696.47	599967.65	32°38'51.555"N	103°40'44.864"W	1.44
13945.00	91.600	83.400	9978.53	4053.39	381.83	4035.80	742760.00	599975.12	32°38'51.625"N	103°40'44.120"W	0.44
14008.00	91.800	83.200	9976.66	4116.32	389.18	4098.34	742822.54	599982.46	32°38'51.693"N	103°40'43.388"W	0.45
14070.00	90.300	83.400	9975.53	4178.26	396.41	4159.90	742884.10	599989.69	32°38'51.761"N	103°40'42.668"W	2.44
14134.00	90.400	83.700	9975.14	4242.23	403.60	4223.50	742947.69	599996.88	32°38'51.829"N	103°40'41.924"W	0.49
14197.00	90.900	83.600	9974.42	4305.19	410.57	4286.11	743010.30	600003.85	32°38'51.894"N	103°40'41.191"W	0.81
14238.00	90.800	83.100	9973.81	4346.16	415.32	4326.83	743051.02	600008.60	32°38'51.938"N	103°40'40.714"W	1.24
14292.00	90.800	83.100	9973.06	4400.11	421.80	4380.43	743104.62	600015.08	32°38'51.999"N	103°40'40.087"W	0.00



Actual Wellpath Report

No. 3H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(N Maduro) Sec 29, T19S, R33E	Wellbore	No. 3H AWB
Facility	N Maduro Fed Unit No. 3H	Sidetrack from	No. 3 AWB at 9523.00 MD

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
No. 3H TGT #1		9976.00	324.72	4036.97	742761.18	599918.00	32°38'51.059"N	103°40'44.111"W	point
No. 3H PBHL		9980.34	351.15	4393.92	743118.11	599944.43	32°38'51.299"N	103°40'39.934"W	point

WELLPATH COMPOSITION

Ref Wellbore: No. 3H AWB

Ref Wellpath: No. 3H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
20.00	9523.00	Gyrodata standard - Drop gyro or Multi-shot	GYRO (105.4 - 10193.8)	No. 3 AWB
9523.00	14238.00	NaviTrak (Standard)	MWD (9560 - 14238)	No. 3H AWB
14238.00	14292.00	Blind Drilling (std)	Projection to bit	No. 3H AWB