



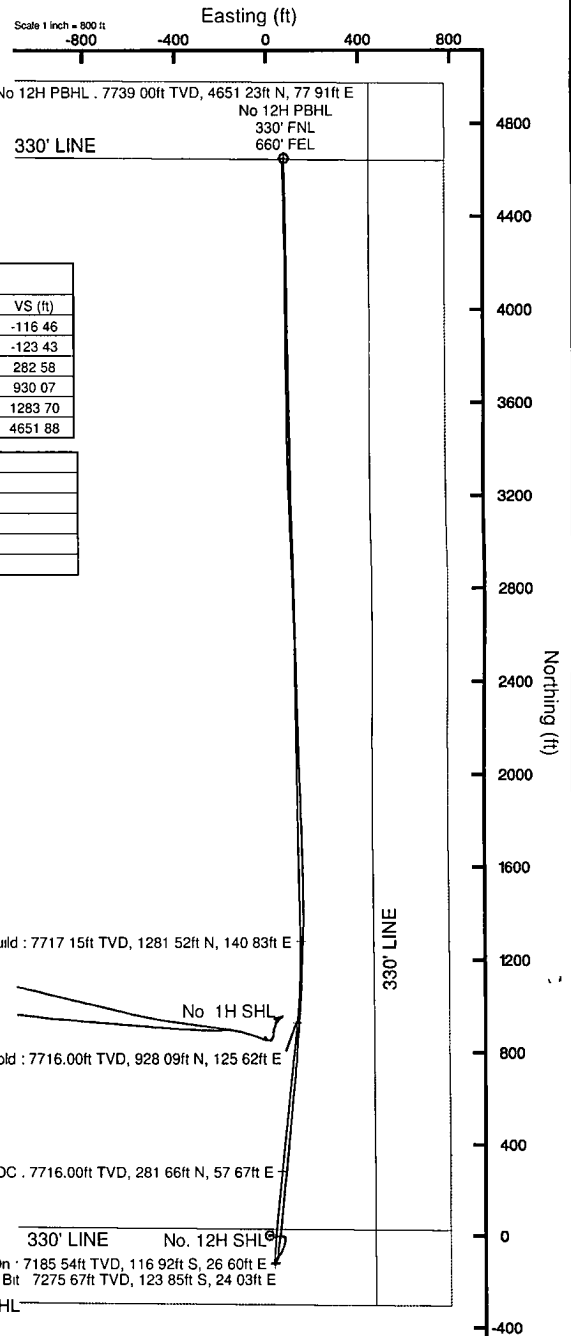
Cimarex Energy Co.

Location: Eddy County, NM
Field: (Cottonwood) Sec 22, T25S, R26E
Facility: Cottonwood Draw 22 Fed Com No 12H

Slot: No 12H SHL
Well: No 12H
Wellbore: No 12H PWB

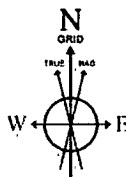


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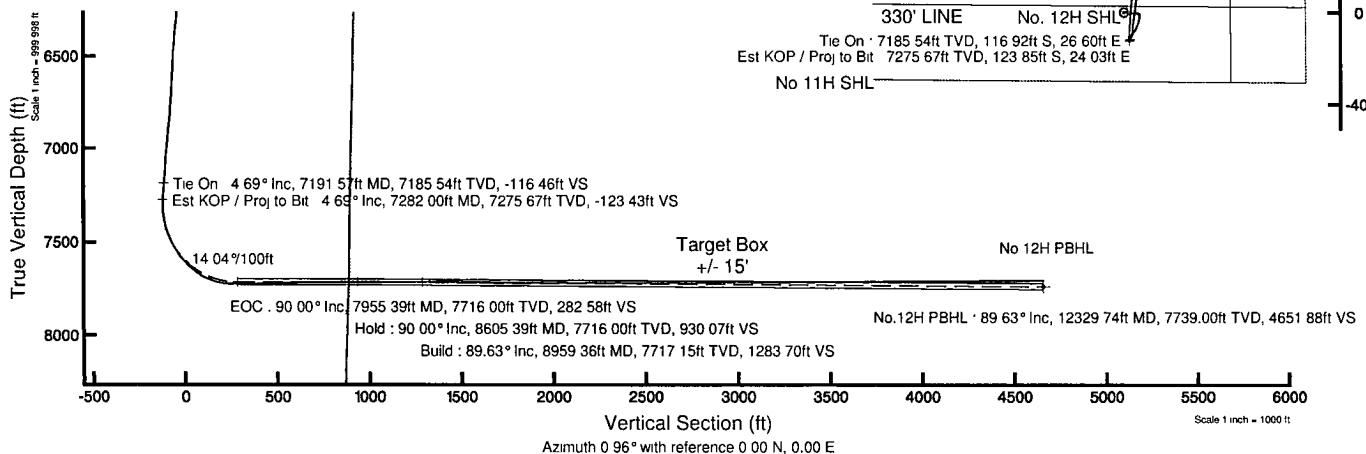


Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	7191 57	4 690	200 310	7185 54	-116 92	26 60	0 00	-116 46
Est KOP / Proj to Bit	7282 00	4 690	200 310	7275 67	-123 85	24 03	0 00	-123 43
EOC	7955 39	90 000	6 000	7716 00	281 66	57 67	14 04	282 58
Hold	8605 39	90 000	6 000	7716 00	928 09	125 62	0 00	930 07
Build	8959 36	89 629	358 930	7717 15	1281 52	140 83	2 00	1283 70
No 12H PBHL	12329 74	89 629	358 930	7739 00	4651 23	77 91	0 00	4651 88

Plot reference wellpath is Rev-A 0	
True vertical depths are referenced to Rig on No 12H (RKB)	Gnd System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No 12H (RKB)	North Reference: Gnd north
Rig on No 12H (RKB) to Mean Sea Level: 3300.5 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot No 12H SHL) -3272 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gentlry on 3/15/2012



BGGM (1945 0 to 2013 0) Dip: 59.91° Field: 48413.7 nT
Magnetic North is 7.91 degrees East of True North (at 1/4/2012)
Grid North is 0.03 degrees East of True North
To correct azimuth from True to Grid subtract 0.03 degrees
To correct azimuth from Magnetic to Grid add 7.88 degrees
For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.88 = 97.88





Actual Wellpath Report

No.12H AWP

Page n of nn



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 12H SHL
Area	Eddy County, NM	Well	No.12H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No.12H AWB
Facility	Cottonwood Draw 22 Fed Com No.12H		

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	0.999909	Report Generated	3/28/2012 at 9:59:09 AM
Convergence at slot	0.03° East	Database/Source file	WA Midland/No.12H_AWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	559544.10	403352.30	32°06'31.972"N	104°16'28.310"W
Facility Reference Pt			559544.10	403352.30	32°06'31.972"N	104°16'28.310"W
Field Reference Pt			559574.40	404301.30	32°06'41.363"N	104°16'27.952"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No. 12H (RKB) to Facility Vertical Datum	28.50ft
Horizontal Reference Pt	Slot	Rig on No. 12H (RKB) to Mean Sea Level	3300.50ft
Vertical Reference Pt	Rig on No. 12H (RKB)	Rig on No. 12H (RKB) to Mud Line at Slot (No. 12H SHL)	28.50ft
MD Reference Pt	Rig on No. 12H (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.96°



Actual Wellpath Report

No.12H AWP

Page n of nn



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 12H SHL
Area	Eddy County, NM	Well	No.12H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No.12H AWB
Facility	Cottonwood Draw 22 Fed Com No.12H		

WELLPATH DATA (169 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	260.230	0.00	0.00	0.00	0.00	559544.10	403352.30	32°06'31.972"N	104°16'28.310"W	0.00	
114.57	0.320	260.230	114.57	-0.06	-0.05	-0.32	559543.78	403352.25	32°06'31.971"N	104°16'28.314"W	0.28	
208.93	0.310	281.060	208.93	-0.06	-0.05	-0.83	559543.27	403352.25	32°06'31.971"N	104°16'28.319"W	0.12	
303.29	0.310	224.160	303.29	-0.21	-0.18	-1.25	559542.85	403352.12	32°06'31.970"N	104°16'28.324"W	0.31	
397.65	0.300	228.240	397.65	-0.56	-0.53	-1.62	559542.48	403351.77	32°06'31.967"N	104°16'28.329"W	0.03	
492.01	0.200	284.690	492.00	-0.69	-0.65	-1.96	559542.14	403351.65	32°06'31.965"N	104°16'28.333"W	0.27	
586.37	0.270	289.940	586.36	-0.58	-0.54	-2.33	559541.77	403351.76	32°06'31.967"N	104°16'28.337"W	0.08	
680.73	0.360	0.140	680.72	-0.21	-0.16	-2.54	559541.56	403352.14	32°06'31.970"N	104°16'28.339"W	0.39	
775.09	0.460	355.630	775.08	0.47	0.51	-2.56	559541.54	403352.81	32°06'31.977"N	104°16'28.340"W	0.11	
869.45	0.540	337.140	869.44	1.25	1.30	-2.77	559541.33	403353.60	32°06'31.985"N	104°16'28.342"W	0.19	
963.81	0.650	58.960	963.79	1.94	1.98	-2.48	559541.62	403354.28	32°06'31.992"N	104°16'28.339"W	0.83	
1058.17	1.430	83.740	1058.14	2.37	2.39	-0.85	559543.25	403354.69	32°06'31.996"N	104°16'28.320"W	0.94	
1152.53	1.250	83.040	1152.47	2.66	2.64	1.34	559545.44	403354.94	32°06'31.998"N	104°16'28.294"W	0.19	
1246.89	2.030	98.040	1246.79	2.60	2.53	4.02	559548.12	403354.83	32°06'31.997"N	104°16'28.263"W	0.94	
1341.25	3.070	98.310	1341.06	2.07	1.93	8.17	559552.27	403354.23	32°06'31.991"N	104°16'28.215"W	1.10	
1435.61	4.080	102.750	1435.23	1.06	0.83	13.95	559558.05	403353.13	32°06'31.980"N	104°16'28.148"W	1.11	
1529.97	4.430	101.140	1529.33	-0.27	-0.62	20.80	559564.89	403351.68	32°06'31.966"N	104°16'28.068"W	0.39	
1624.33	3.700	96.660	1623.46	-1.22	-1.68	27.40	559571.49	403350.62	32°06'31.955"N	104°16'27.991"W	0.84	
1718.69	3.170	89.310	1717.65	-1.44	-2.00	33.03	559577.13	403350.30	32°06'31.952"N	104°16'27.926"W	0.73	
1813.05	4.040	89.220	1811.82	-1.27	-1.92	38.96	559583.06	403350.38	32°06'31.953"N	104°16'27.857"W	0.92	
1907.41	2.370	88.900	1906.03	-1.10	-1.84	44.24	559588.33	403350.46	32°06'31.953"N	104°16'27.796"W	1.77	
2001.77	2.110	88.640	2000.31	-0.96	-1.76	47.92	559592.02	403350.54	32°06'31.954"N	104°16'27.753"W	0.28	
2096.13	1.590	97.790	2094.63	-1.04	-1.90	50.96	559595.05	403350.40	32°06'31.953"N	104°16'27.717"W	0.63	
2190.49	1.280	104.300	2188.96	-1.44	-2.33	53.28	559597.37	403349.97	32°06'31.949"N	104°16'27.690"W	0.37	
2284.85	1.220	90.500	2283.29	-1.68	-2.60	55.30	559599.40	403349.70	32°06'31.946"N	104°16'27.667"W	0.32	
2379.21	1.170	101.390	2377.63	-1.84	-2.80	57.25	559601.35	403349.50	32°06'31.944"N	104°16'27.644"W	0.25	
2473.57	1.050	100.320	2471.98	-2.16	-3.15	59.05	559603.14	403349.15	32°06'31.940"N	104°16'27.623"W	0.13	
2567.93	0.780	116.530	2566.32	-2.58	-3.59	60.47	559604.57	403348.71	32°06'31.936"N	104°16'27.607"W	0.39	
2662.29	0.700	128.350	2660.68	-3.20	-4.23	61.50	559605.59	403348.07	32°06'31.930"N	104°16'27.595"W	0.18	
2756.65	0.660	118.110	2755.03	-3.80	-4.85	62.43	559606.52	403347.45	32°06'31.924"N	104°16'27.584"W	0.14	
2851.01	0.620	116.260	2849.38	-4.27	-5.33	63.37	559607.46	403346.97	32°06'31.919"N	104°16'27.573"W	0.05	
2945.37	0.680	68.840	2943.74	-4.27	-5.35	64.35	559608.44	403346.95	32°06'31.919"N	104°16'27.562"W	0.56	
3039.73	0.510	97.060	3038.09	-4.11	-5.20	65.29	559609.38	403347.10	32°06'31.920"N	104°16'27.551"W	0.35	
3134.09	0.400	110.600	3132.45	-4.26	-5.37	66.01	559610.10	403346.93	32°06'31.918"N	104°16'27.542"W	0.16	
3228.45	0.270	282.520	3226.81	-4.33	-5.44	66.10	559610.20	403346.86	32°06'31.918"N	104°16'27.541"W	0.71	
3322.81	0.380	191.100	3321.17	-4.59	-5.70	65.82	559609.92	403346.60	32°06'31.915"N	104°16'27.545"W	0.50	
3417.17	0.440	34.080	3415.53	-4.60	-5.70	65.97	559610.06	403346.60	32°06'31.915"N	104°16'27.543"W	0.85	
3511.53	0.520	65.610	3509.88	-4.11	-5.23	66.56	559610.65	403347.07	32°06'31.920"N	104°16'27.536"W	0.29	
3605.89	0.710	57.490	3604.24	-3.61	-4.74	67.44	559611.54	403347.57	32°06'31.925"N	104°16'27.526"W	0.22	
3700.25	0.750	80.140	3698.59	-3.17	-4.32	68.54	559612.64	403347.99	32°06'31.929"N	104°16'27.513"W	0.31	
3794.61	0.620	76.760	3792.94	-2.93	-4.09	69.65	559613.74	403348.21	32°06'31.931"N	104°16'27.500"W	0.14	
3888.97	0.190	247.280	3887.30	-2.86	-4.04	70.00	559614.10	403348.26	32°06'31.932"N	104°16'27.496"W	0.86	
3983.33	0.350	176.330	3981.66	-3.21	-4.38	69.88	559613.97	403347.92	32°06'31.928"N	104°16'27.497"W	0.36	
4077.69	0.390	216.810	4076.02	-3.76	-4.93	69.70	559613.80	403347.37	32°06'31.923"N	104°16'27.500"W	0.27	
4172.05	0.500	219.580	4170.38	-4.34	-5.50	69.25	559613.34	403346.80	32°06'31.917"N	104°16'27.505"W	0.12	



Actual Wellpath Report

No.12H AWP

Page n of nn



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 12H SHL
Area	Eddy County, NM	Well	No.12H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No.12H AWB
Facility	Cottonwood Draw 22 Fed Com No.12H		

WELLPATH DATA (169 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
4266.41	0.570	209.400	4264.73	-5.08	-6.23	68.76	559612.85	403346.07	32°06'31.910"N	104°16'27.511"W	0.12	
4455.13	0.440	215.490	4453.45	-6.50	-7.64	67.87	559611.97	403344.66	32°06'31.896"N	104°16'27.521"W	0.07	
4549.49	0.200	204.010	4547.80	-6.95	-8.08	67.60	559611.69	403344.22	32°06'31.892"N	104°16'27.524"W	0.26	
4643.85	0.290	177.650	4642.16	-7.34	-8.47	67.54	559611.63	403343.83	32°06'31.888"N	104°16'27.525"W	0.15	
4738.21	0.370	163.470	4736.52	-7.87	-9.00	67.64	559611.73	403343.30	32°06'31.882"N	104°16'27.524"W	0.12	
4832.57	0.970	181.860	4830.88	-8.96	-10.09	67.70	559611.79	403342.21	32°06'31.872"N	104°16'27.523"W	0.67	
4926.93	1.040	160.800	4925.22	-10.56	-11.70	67.95	559612.05	403340.60	32°06'31.856"N	104°16'27.520"W	0.40	
5021.29	1.100	165.850	5019.56	-12.24	-13.39	68.45	559612.55	403338.91	32°06'31.839"N	104°16'27.514"W	0.12	
5115.65	1.070	172.770	5113.91	-13.99	-15.14	68.79	559612.88	403337.16	32°06'31.822"N	104°16'27.510"W	0.14	
5210.01	0.920	185.290	5208.25	-15.61	-16.77	68.83	559612.92	403335.53	32°06'31.806"N	104°16'27.510"W	0.28	
5304.37	0.760	218.550	5302.60	-16.86	-18.01	68.37	559612.46	403334.29	32°06'31.793"N	104°16'27.515"W	0.53	
5398.73	0.650	236.290	5396.96	-17.66	-18.80	67.53	559611.63	403333.50	32°06'31.786"N	104°16'27.525"W	0.26	
5493.09	0.330	235.240	5491.31	-18.13	-19.25	66.86	559610.96	403333.05	32°06'31.781"N	104°16'27.533"W	0.34	
5587.45	0.390	226.010	5585.67	-18.51	-19.63	66.41	559610.50	403332.67	32°06'31.777"N	104°16'27.538"W	0.09	
5681.81	0.580	205.130	5680.03	-19.18	-20.28	65.98	559610.07	403332.02	32°06'31.771"N	104°16'27.543"W	0.27	
5776.17	1.280	140.470	5774.38	-20.41	-21.53	66.44	559610.54	403330.77	32°06'31.759"N	104°16'27.537"W	1.23	
5870.53	1.500	173.570	5868.71	-22.44	-23.57	67.25	559611.35	403328.73	32°06'31.738"N	104°16'27.528"W	0.87	
5964.89	3.130	192.500	5962.99	-26.19	-27.31	66.83	559610.93	403324.99	32°06'31.701"N	104°16'27.533"W	1.89	
6059.25	4.070	197.200	6057.17	-31.93	-33.03	65.29	559609.38	403319.28	32°06'31.645"N	104°16'27.551"W	1.04	
6153.61	4.060	197.800	6151.29	-38.34	-39.40	63.28	559607.37	403312.90	32°06'31.582"N	104°16'27.574"W	0.05	
6247.97	4.610	198.060	6245.38	-45.16	-46.19	61.08	559605.17	403306.11	32°06'31.515"N	104°16'27.600"W	0.58	
6342.33	5.880	200.290	6339.34	-53.35	-54.33	58.23	559602.32	403297.98	32°06'31.434"N	104°16'27.633"W	1.36	
6436.69	5.010	201.780	6433.27	-61.76	-62.69	55.02	559599.12	403289.62	32°06'31.351"N	104°16'27.671"W	0.93	
6531.05	3.710	211.730	6527.36	-68.23	-69.11	51.89	559595.98	403283.19	32°06'31.288"N	104°16'27.707"W	1.59	
6625.41	3.090	212.980	6621.55	-73.01	-73.84	48.90	559592.99	403278.46	32°06'31.241"N	104°16'27.742"W	0.66	
6719.77	3.710	214.370	6715.75	-77.72	-78.50	45.79	559589.89	403273.81	32°06'31.195"N	104°16'27.778"W	0.66	
6814.13	5.460	213.950	6809.80	-84.03	-84.74	41.56	559585.65	403267.57	32°06'31.133"N	104°16'27.827"W	1.85	
6908.49	6.330	204.870	6903.66	-92.55	-93.18	36.86	559580.96	403259.13	32°06'31.050"N	104°16'27.882"W	1.35	
7002.85	5.620	203.680	6997.51	-101.57	-102.13	32.82	559576.92	403250.18	32°06'30.961"N	104°16'27.929"W	0.76	
7097.21	4.600	203.580	7091.49	-109.32	-109.83	29.45	559573.55	403242.48	32°06'30.885"N	104°16'27.968"W	1.08	
7191.57	4.690	200.310	7185.54	-116.46	-116.92	26.60	559570.70	403235.39	32°06'30.815"N	104°16'28.001"W	0.30	
7207.00	4.100	191.300	7200.93	-117.60	-118.05	26.27	559570.37	403234.26	32°06'30.804"N	104°16'28.005"W	5.87	
7238.00	3.800	190.000	7231.86	-119.70	-120.15	25.88	559569.97	403232.16	32°06'30.783"N	104°16'28.010"W	1.01	
7270.00	3.600	190.000	7263.79	-121.74	-122.18	25.52	559569.61	403230.13	32°06'30.763"N	104°16'28.014"W	0.63	
7301.00	0.800	200.300	7294.76	-122.90	-123.35	25.27	559569.37	403228.97	32°06'30.751"N	104°16'28.017"W	9.09	
7333.00	3.300	10.000	7326.75	-122.21	-122.65	25.36	559569.45	403229.66	32°06'30.758"N	104°16'28.016"W	12.78	
7364.00	7.700	15.600	7357.60	-119.31	-119.77	26.07	559570.17	403232.54	32°06'30.787"N	104°16'28.008"W	14.28	
7396.00	11.900	15.100	7389.12	-114.04	-114.51	27.51	559571.60	403237.80	32°06'30.839"N	104°16'27.991"W	13.13	
7427.00	16.000	15.200	7419.20	-106.79	-107.30	29.46	559573.56	403245.01	32°06'30.910"N	104°16'27.968"W	13.23	
7459.00	19.900	12.200	7449.64	-97.17	-97.72	31.77	559575.86	403254.59	32°06'31.005"N	104°16'27.941"W	12.52	
7491.00	23.500	7.700	7479.37	-85.49	-86.07	33.77	559577.87	403266.24	32°06'31.120"N	104°16'27.918"W	12.39	
7522.00	27.200	7.000	7507.38	-72.30	-72.91	35.47	559579.56	403279.40	32°06'31.250"N	104°16'27.898"W	11.97	
7554.00	31.100	8.100	7535.32	-56.82	-57.46	37.52	559581.62	403294.84	32°06'31.403"N	104°16'27.874"W	12.30	
7586.00	34.800	8.900	7562.17	-39.57	-40.25	40.10	559584.20	403312.05	32°06'31.573"N	104°16'27.844"W	11.64	
7617.00	38.400	8.200	7587.05	-21.26	-21.98	42.84	559586.94	403330.33	32°06'31.754"N	104°16'27.812"W	11.69	



Actual Wellpath Report

No.12H AWP

Page n of nn



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 12H SHL
Area	Eddy County, NM	Well	No.12H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No.12H AWB
Facility	Cottonwood Draw 22 Fed Com No.12H		

WELLPATH DATA (169 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
7649.00	42.800	7.500	7611.34	-0.59	-1.35	45.68	559589.78	403350.95	32°06'31.958"N	104°16'27.779"W	13.82	
7681.00	47.500	6.800	7633.91	21.96	21.15	48.50	559592.59	403373.45	32°06'32.181"N	104°16'27.746"W	14.77	
7713.00	52.500	6.000	7654.47	46.36	45.51	51.22	559595.32	403397.80	32°06'32.422"N	104°16'27.714"W	15.74	
7745.00	57.600	5.900	7672.79	72.48	71.59	53.94	559598.04	403423.88	32°06'32.680"N	104°16'27.682"W	15.94	
7777.00	62.800	5.600	7688.69	100.14	99.20	56.72	559600.82	403451.50	32°06'32.953"N	104°16'27.650"W	16.27	
7809.00	68.400	5.200	7701.91	129.18	128.21	59.46	559603.55	403480.49	32°06'33.240"N	104°16'27.618"W	17.54	
7841.00	73.800	5.300	7712.27	159.36	158.34	62.23	559606.32	403510.63	32°06'33.538"N	104°16'27.585"W	16.88	
7872.00	79.000	6.100	7719.56	189.38	188.31	65.22	559609.32	403540.60	32°06'33.835"N	104°16'27.550"W	16.96	
7895.00	82.600	6.100	7723.23	211.99	210.89	67.64	559611.73	403563.17	32°06'34.058"N	104°16'27.522"W	15.65	
7929.00	88.500	7.000	7725.87	245.71	244.55	71.50	559615.59	403596.82	32°06'34.391"N	104°16'27.477"W	17.55	
7963.00	90.300	5.500	7726.22	279.56	278.34	75.20	559619.30	403630.61	32°06'34.726"N	104°16'27.434"W	6.89	
7994.00	90.600	4.700	7725.98	310.48	309.22	77.96	559622.05	403661.49	32°06'35.031"N	104°16'27.402"W	2.76	
8058.00	91.200	5.800	7724.98	374.29	372.94	83.81	559627.91	403725.20	32°06'35.662"N	104°16'27.333"W	1.96	
8121.00	91.300	5.500	7723.60	437.06	435.62	90.01	559634.11	403787.88	32°06'36.282"N	104°16'27.261"W	0.50	
8184.00	91.500	5.200	7722.06	499.86	498.32	95.89	559639.98	403850.58	32°06'36.902"N	104°16'27.192"W	0.57	
8247.00	91.300	5.400	7720.52	562.66	561.04	101.70	559645.79	403913.28	32°06'37.523"N	104°16'27.124"W	0.45	
8311.00	91.500	5.500	7718.96	626.44	624.73	107.78	559651.87	403976.97	32°06'38.153"N	104°16'27.053"W	0.35	
8374.00	90.700	5.400	7717.75	689.24	687.43	113.76	559657.85	404039.67	32°06'38.774"N	104°16'26.983"W	1.28	
8437.00	90.700	4.200	7716.98	752.09	750.20	119.03	559663.12	404102.43	32°06'39.395"N	104°16'26.921"W	1.90	
8499.00	90.400	4.100	7716.39	813.99	812.04	123.52	559667.61	404164.26	32°06'40.007"N	104°16'26.869"W	0.51	
8562.00	90.500	5.100	7715.89	876.86	874.83	128.57	559672.66	404227.05	32°06'40.628"N	104°16'26.809"W	1.60	
8626.00	89.800	3.700	7715.72	940.75	938.64	133.48	559677.57	404290.85	32°06'41.259"N	104°16'26.752"W	2.45	
8689.00	90.100	4.300	7715.78	1003.66	1001.49	137.88	559681.97	404353.70	32°06'41.881"N	104°16'26.700"W	1.06	
8752.00	90.200	2.600	7715.61	1066.59	1064.37	141.67	559685.76	404416.57	32°06'42.503"N	104°16'26.656"W	2.70	
8815.00	90.000	1.900	7715.50	1129.58	1127.32	144.14	559688.23	404479.52	32°06'43.126"N	104°16'26.627"W	1.16	
8879.00	90.400	2.000	7715.28	1193.57	1191.28	146.32	559690.41	404543.47	32°06'43.759"N	104°16'26.601"W	0.64	
8942.00	90.500	1.700	7714.78	1256.56	1254.25	148.35	559692.44	404606.43	32°06'44.382"N	104°16'26.577"W	0.50	
9005.00	90.700	2.000	7714.13	1319.55	1317.21	150.39	559694.47	404669.39	32°06'45.005"N	104°16'26.553"W	0.57	
9068.00	90.500	0.500	7713.47	1382.54	1380.19	151.76	559695.85	404732.37	32°06'45.629"N	104°16'26.537"W	2.40	
9131.00	89.000	359.900	7713.74	1445.53	1443.19	151.98	559696.07	404795.36	32°06'46.252"N	104°16'26.534"W	2.56	
9195.00	88.700	359.500	7715.02	1509.50	1507.18	151.65	559695.73	404859.34	32°06'46.885"N	104°16'26.537"W	0.78	
9258.00	89.100	359.500	7716.23	1572.47	1570.16	151.10	559695.18	404922.32	32°06'47.508"N	104°16'26.543"W	0.63	
9320.00	89.000	358.500	7717.26	1634.43	1632.14	150.02	559694.10	404984.29	32°06'48.122"N	104°16'26.555"W	1.62	
9383.00	89.600	358.400	7718.03	1697.36	1695.12	148.31	559692.40	405047.26	32°06'48.745"N	104°16'26.575"W	0.97	
9446.00	90.100	358.100	7718.20	1760.29	1758.09	146.39	559690.47	405110.22	32°06'49.368"N	104°16'26.597"W	0.93	
9508.00	90.300	357.500	7717.98	1822.20	1820.04	144.01	559688.09	405172.17	32°06'49.981"N	104°16'26.624"W	1.02	
9571.00	89.900	358.100	7717.87	1885.10	1882.99	141.59	559685.68	405235.12	32°06'50.604"N	104°16'26.652"W	1.14	
9634.00	90.000	357.900	7717.93	1948.01	1945.95	139.39	559683.48	405298.07	32°06'51.227"N	104°16'26.677"W	0.35	
9697.00	90.100	357.900	7717.87	2010.93	2008.91	137.08	559681.17	405361.03	32°06'51.850"N	104°16'26.703"W	0.16	
9759.00	89.300	358.300	7718.20	2072.85	2070.88	135.03	559679.11	405422.98	32°06'52.463"N	104°16'26.727"W	1.44	
9822.00	89.600	358.500	7718.80	2135.78	2133.85	133.27	559677.35	405485.95	32°06'53.086"N	104°16'26.747"W	0.57	
9886.00	89.900	358.200	7719.08	2199.71	2197.82	131.42	559675.51	405549.92	32°06'53.719"N	104°16'26.768"W	0.66	
9949.00	89.400	357.700	7719.46	2262.62	2260.78	129.17	559673.26	405612.87	32°06'54.342"N	104°16'26.794"W	1.12	
10011.00	89.700	358.100	7719.95	2324.53	2322.74	126.90	559670.99	405674.82	32°06'54.955"N	104°16'26.820"W	0.81	
10074.00	89.900	357.800	7720.17	2387.45	2385.69	124.65	559668.73	405737.77	32°06'55.578"N	104°16'26.845"W	0.57	



Actual Wellpath Report

No.12H AWP

Page n of nn



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 12H SHL
Area	Eddy County, NM	Well	No.12H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No.12H AWB
Facility	Cottonwood Draw 22 Fed Com No.12H		

WELLPATH DATA (169 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
10137.00	90.100	357.600	7720.17	2450.35	2448.64	122.12	559666.21	405800.72	32°06'56.201"N	104°16'26.874"W	0.45	
10200.00	90.300	357.500	7719.95	2513.23	2511.59	119.42	559663.51	405863.65	32°06'56.824"N	104°16'26.905"W	0.35	
10263.00	90.500	357.800	7719.51	2576.13	2574.53	116.84	559660.93	405926.59	32°06'57.447"N	104°16'26.935"W	0.57	
10325.00	90.400	358.500	7719.02	2638.05	2636.50	114.84	559658.93	405988.55	32°06'58.060"N	104°16'26.958"W	1.14	
10388.00	90.500	357.900	7718.53	2700.97	2699.46	112.86	559656.95	406051.51	32°06'58.683"N	104°16'26.981"W	0.97	
10451.00	90.900	358.400	7717.76	2763.89	2762.42	110.83	559654.92	406114.47	32°06'59.306"N	104°16'27.004"W	1.02	
10515.00	90.300	358.000	7717.09	2827.82	2826.39	108.82	559652.91	406178.43	32°06'59.939"N	104°16'27.027"W	1.13	
10579.00	90.800	358.300	7716.48	2891.74	2890.35	106.75	559650.84	406242.39	32°07'00.572"N	104°16'27.050"W	0.91	
10640.00	89.500	357.700	7716.32	2952.65	2951.31	104.62	559648.71	406303.34	32°07'01.176"N	104°16'27.075"W	2.35	
10704.00	89.500	358.100	7716.87	3016.56	3015.27	102.28	559646.37	406367.29	32°07'01.808"N	104°16'27.102"W	0.62	
10767.00	90.000	358.300	7717.15	3079.48	3078.24	100.30	559644.39	406430.25	32°07'02.431"N	104°16'27.124"W	0.85	
10831.00	90.400	357.400	7716.93	3143.39	3142.19	97.90	559641.99	406494.20	32°07'03.064"N	104°16'27.152"W	1.54	
10895.00	89.800	358.300	7716.81	3207.29	3206.14	95.50	559639.59	406558.15	32°07'03.697"N	104°16'27.179"W	1.69	
10958.00	90.100	358.200	7716.87	3270.22	3269.11	93.57	559637.66	406621.11	32°07'04.320"N	104°16'27.201"W	0.50	
11022.00	90.300	358.900	7716.65	3334.17	3333.09	91.95	559636.04	406685.08	32°07'04.953"N	104°16'27.220"W	1.14	
11085.00	90.500	358.100	7716.21	3397.11	3396.07	90.30	559634.39	406748.06	32°07'05.577"N	104°16'27.238"W	1.31	
11148.00	90.000	359.700	7715.93	3460.06	3459.06	89.09	559633.19	406811.04	32°07'06.200"N	104°16'27.252"W	2.66	
11211.00	90.200	358.900	7715.82	3523.04	3522.05	88.32	559632.42	406874.02	32°07'06.823"N	104°16'27.261"W	1.31	
11275.00	90.400	359.700	7715.49	3587.01	3586.04	87.54	559631.63	406938.01	32°07'07.456"N	104°16'27.269"W	1.29	
11338.00	90.500	359.300	7714.99	3649.98	3649.04	86.99	559631.08	407001.00	32°07'08.080"N	104°16'27.275"W	0.65	
11401.00	90.700	359.100	7714.33	3712.95	3712.03	86.11	559630.21	407063.99	32°07'08.703"N	104°16'27.285"W	0.45	
11464.00	91.200	358.800	7713.29	3775.90	3775.01	84.96	559629.05	407126.96	32°07'09.326"N	104°16'27.298"W	0.93	
11525.00	90.400	359.400	7712.43	3836.86	3836.00	84.00	559628.09	407187.94	32°07'09.930"N	104°16'27.309"W	1.64	
11589.00	90.600	359.700	7711.88	3900.84	3899.99	83.50	559627.59	407251.93	32°07'10.563"N	104°16'27.314"W	0.56	
11657.00	90.300	359.700	7711.34	3968.82	3967.99	83.14	559627.23	407319.92	32°07'11.236"N	104°16'27.318"W	0.44	
11720.00	90.700	359.800	7710.79	4031.81	4030.98	82.87	559626.96	407382.91	32°07'11.859"N	104°16'27.321"W	0.65	
11784.00	89.900	359.600	7710.46	4095.79	4094.98	82.53	559626.62	407446.90	32°07'12.493"N	104°16'27.324"W	1.29	
11848.00	90.100	359.300	7710.46	4159.77	4158.98	81.92	559626.01	407510.89	32°07'13.126"N	104°16'27.331"W	0.56	
11911.00	90.200	359.000	7710.29	4222.74	4221.97	80.98	559625.08	407573.88	32°07'13.749"N	104°16'27.341"W	0.50	
11975.00	90.500	358.900	7709.90	4286.70	4285.96	79.81	559623.90	407637.86	32°07'14.382"N	104°16'27.355"W	0.49	
12070.00	90.200	358.900	7709.32	4381.63	4380.94	77.99	559622.08	407732.84	32°07'15.322"N	104°16'27.375"W	0.32	
12166.00	90.300	358.600	7708.90	4477.56	4476.92	75.89	559619.99	407828.80	32°07'16.272"N	104°16'27.399"W	0.33	
12261.00	90.600	358.500	7708.16	4572.47	4571.88	73.49	559617.58	407923.76	32°07'17.212"N	104°16'27.426"W	0.33	
12334.00	90.600	358.500	7707.39	4645.40	4644.85	71.58	559615.67	407996.72	32°07'17.934"N	104°16'27.448"W	0.00	Projection to bit



Actual Wellpath Report

No.12H AWP

Page n of nn



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 12H SHL
Area	Eddy County, NM	Well	No.12H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No.12H AWB
Facility	Cottonwood Draw 22 Fed Com No.12H		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No.12H PBHL		7739.00	4651.23	77.91	559622.00	408003.10	32°07'17.997"N	104°16'27.374"W	point

WELLPATH COMPOSITION - Ref Wellbore: No.12H AWB					Ref Wellpath: No.12H AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment			Wellbore	
0.00	7191.57	Generic gyro - northseeking (Standard)			Ves Gyro < 114.57-7191.57>			No.12H AWB	
7191.57	12261.00	NaviTrak (Standard)			BHI MWD NaviTrak (7191.57) <7207-12261>			No.12H AWB	
12261.00	12334.00	Blind Drilling (std)			Projection to bit			No.12H AWB	