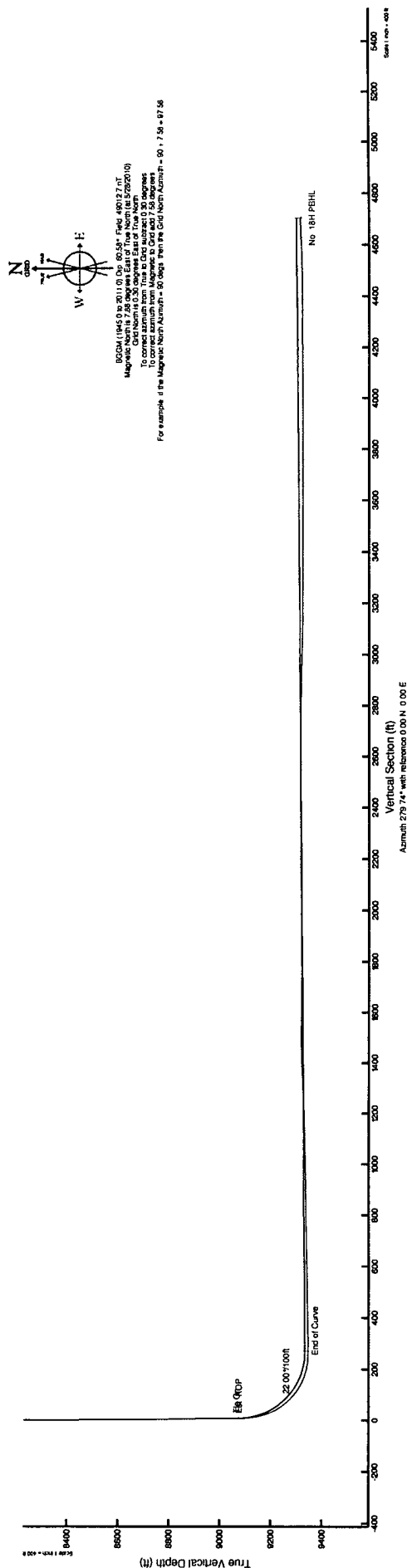
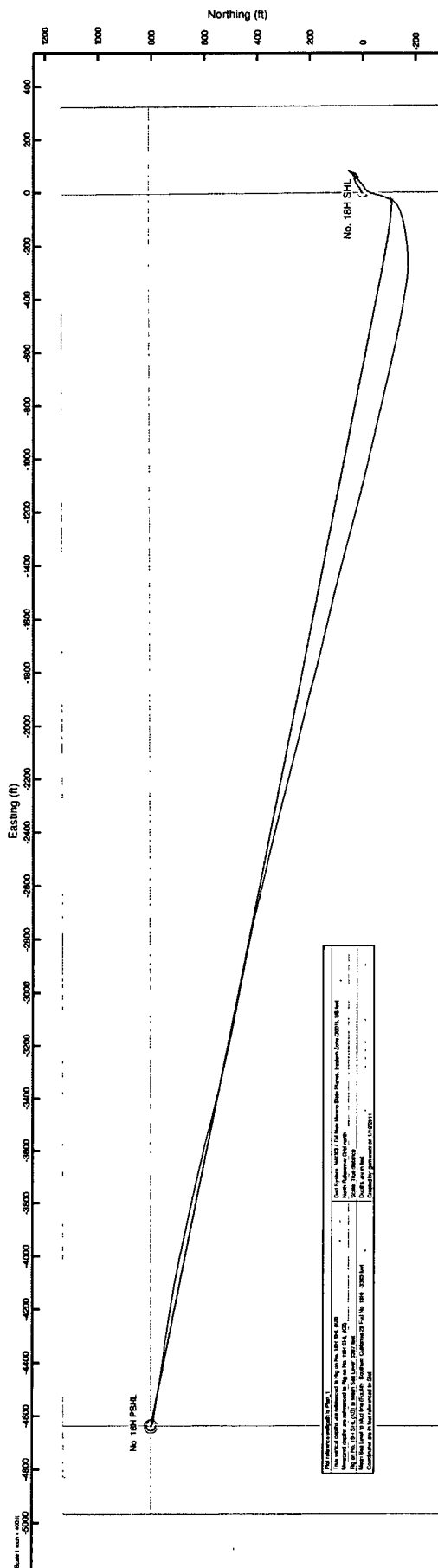


Location	Lea County, NM	Slat.	No	18H SHL
Field	(SC) Sec 29, T19S, R32E	Well	No	18H
Facility	Southern California 29 Fed No. 18H	Wellbore	No.	18H PWB

Well Profile Data

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (%100th)	VS (ft)
Est OP	9072.90	4.150	187.460	9064.93	-105.26	-24.76	0.00	6.59
Est KOP	9082.00	4.150	187.460	9074.00	-105.91	-24.84	6.57	
End of Curve	9043.40	90.452	281.296	9335.00	-73.17	-285.97	22.00	269.47
No. 18H PBH	13331.89	90.452	281.296	9300.00	795.98	-4637.37	0.00	4705.19



SEP 30 2011

Actual Wellpath Report

No. 18H AWP

Page 1 of 6

RECEIVED

**INTEQ****REFERENCE WELLPATH IDENTIFICATION**

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 18H AWB
Facility	Southern California 29 Fed No. 18H		

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	Gomeoscr
Scale	0.999942	Report Generated	1/10/2011 at 7:48:03 AM
Convergence at slot	0.30° East	Database/Source file	WA Midland/No. 18H_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	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W
Facility Reference Pt			711420.30	595383.70	32°38'07.955"N	103°46'50.939"W
Field Reference Pt			706799.20	591606.30	32°37'30.812"N	103°47'45.203"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 18H SHL (KB) to Ground Level	18.00ft
Horizontal Reference Pt	Slot	Rig on No. 18H SHL (KB) to Mean Sea Level	3387.00ft
Vertical Reference Pt	Rig on No. 18H SHL (KB)	Ground Level to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 18H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	279.74°



Actual Wellpath Report

No. 18H AWP

Page 2 of 6



INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 18H AWB
Facility	Southern California 29 Fed No. 18H		

WELLPATH DATA (224 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]	Comments
0.00†	0.000	257.900	0.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
18.00	0.000	257.900	18.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
123.10	0.270	257.900	123.10	0.23	-0.05	-0.24	711420.06	595383.65	32°38'07.954"N	103°46'50.942"W	0.26	
185.40	0.250	275.990	185.40	0.50	-0.07	-0.52	711419.78	595383.63	32°38'07.954"N	103°46'50.946"W	0.13	
247.60	0.220	274.920	247.60	0.76	-0.04	-0.77	711419.53	595383.66	32°38'07.955"N	103°46'50.948"W	0.05	
309.80	0.110	214.800	309.80	0.90	-0.08	-0.93	711419.37	595383.62	32°38'07.954"N	103°46'50.950"W	0.31	
372.10	0.210	161.510	372.10	0.87	-0.24	-0.93	711419.37	595383.46	32°38'07.953"N	103°46'50.950"W	0.27	
434.20	0.180	27.400	434.20	0.79	-0.26	-0.84	711419.46	595383.44	32°38'07.952"N	103°46'50.949"W	0.58	
496.50	0.370	4.040	496.50	0.78	0.03	-0.79	711419.51	595383.73	32°38'07.955"N	103°46'50.949"W	0.35	
558.80	0.440	338.130	558.80	0.92	0.45	-0.86	711419.44	595384.15	32°38'07.959"N	103°46'50.949"W	0.31	
621.10	0.340	332.180	621.09	1.16	0.83	-1.04	711419.26	595384.53	32°38'07.963"N	103°46'50.951"W	0.17	
683.00	0.410	328.890	682.99	1.42	1.19	-1.24	711419.06	595384.89	32°38'07.967"N	103°46'50.954"W	0.12	
745.20	0.440	307.750	745.19	1.78	1.52	-1.54	711418.76	595385.22	32°38'07.970"N	103°46'50.957"W	0.26	
808.80	0.270	309.420	808.79	2.12	1.77	-1.85	711418.45	595385.47	32°38'07.973"N	103°46'50.961"W	0.27	
872.30	0.340	13.750	872.29	2.24	2.05	-1.92	711418.38	595385.75	32°38'07.975"N	103°46'50.962"W	0.52	
935.90	0.930	63.490	935.89	1.81	2.46	-1.41	711418.89	595386.16	32°38'07.979"N	103°46'50.956"W	1.19	
999.50	1.410	67.820	999.47	0.73	2.99	-0.23	711420.07	595386.68	32°38'07.984"N	103°46'50.942"W	0.77	
1063.10	1.310	63.350	1063.05	-0.52	3.61	1.15	711421.45	595387.31	32°38'07.991"N	103°46'50.926"W	0.23	
1126.60	1.360	63.790	1126.54	-1.72	4.26	2.47	711422.77	595387.96	32°38'07.997"N	103°46'50.910"W	0.08	
1190.20	1.610	62.890	1190.12	-3.04	5.01	3.95	711424.25	595388.71	32°38'08.004"N	103°46'50.893"W	0.39	
1253.80	1.210	46.930	1253.70	-4.16	5.87	5.23	711425.53	595389.57	32°38'08.013"N	103°46'50.878"W	0.88	
1317.30	1.100	68.640	1317.18	-5.09	6.55	6.29	711426.59	595390.25	32°38'08.019"N	103°46'50.865"W	0.71	
1380.90	1.460	53.520	1380.77	-6.17	7.26	7.51	711427.81	595390.95	32°38'08.026"N	103°46'50.851"W	0.77	
1444.50	1.300	57.120	1444.35	-7.26	8.13	8.77	711429.07	595391.83	32°38'08.035"N	103°46'50.836"W	0.29	
1508.00	1.280	75.690	1507.83	-8.44	8.69	10.06	711430.36	595392.39	32°38'08.040"N	103°46'50.821"W	0.66	
1571.60	1.160	78.580	1571.42	-9.69	9.00	11.38	711431.68	595392.70	32°38'08.043"N	103°46'50.806"W	0.21	
1635.20	1.230	69.680	1635.01	-10.88	9.36	12.65	711432.95	595393.06	32°38'08.047"N	103°46'50.791"W	0.31	
1698.80	1.330	62.160	1698.59	-12.06	9.94	13.94	711434.24	595393.64	32°38'08.053"N	103°46'50.776"W	0.31	
1762.30	1.580	58.070	1762.07	-13.30	10.75	15.34	711435.64	595394.45	32°38'08.061"N	103°46'50.759"W	0.43	
1825.90	2.050	49.530	1825.64	-14.68	11.95	16.95	711437.24	595395.65	32°38'08.072"N	103°46'50.741"W	0.85	
1889.50	2.530	50.950	1889.19	-16.33	13.58	18.90	711439.20	595397.28	32°38'08.088"N	103°46'50.718"W	0.76	
1953.00	2.830	56.010	1952.62	-18.39	15.34	21.29	711441.59	595399.03	32°38'08.106"N	103°46'50.690"W	0.60	
2016.60	3.150	56.300	2016.13	-20.79	17.18	24.04	711444.34	595400.88	32°38'08.124"N	103°46'50.657"W	0.50	
2080.20	3.240	56.820	2079.63	-23.38	19.14	27.00	711447.30	595402.83	32°38'08.143"N	103°46'50.622"W	0.15	
2143.70	3.570	51.870	2143.02	-26.02	21.34	30.06	711450.36	595405.04	32°38'08.165"N	103°46'50.587"W	0.70	
2207.30	3.800	56.180	2206.49	-28.87	23.73	33.37	711453.67	595407.43	32°38'08.188"N	103°46'50.548"W	0.57	
2270.90	3.940	61.910	2269.94	-32.13	25.94	37.05	711457.34	595409.63	32°38'08.210"N	103°46'50.505"W	0.65	
2334.40	4.020	70.830	2333.29	-35.80	27.69	41.07	711461.37	595411.39	32°38'08.227"N	103°46'50.457"W	0.98	
2398.00	3.800	71.300	2396.74	-39.60	29.10	45.18	711465.47	595412.80	32°38'08.241"N	103°46'50.409"W	0.35	
2461.60	2.480	73.110	2460.25	-42.69	30.18	48.49	711468.79	595413.88	32°38'08.251"N	103°46'50.371"W	2.08	
2525.20	1.650	17.770	2523.81	-44.04	31.45	50.09	711470.38	595415.15	32°38'08.264"N	103°46'50.352"W	3.23	
2588.70	1.500	127.230	2587.30	-44.91	31.82	51.03	711471.32	595415.52	32°38'08.267"N	103°46'50.341"W	4.05	
2652.30	1.550	135.920	2650.87	-46.34	30.70	52.29	711472.58	595414.39	32°38'08.256"N	103°46'50.326"W	0.37	
2715.90	1.270	145.030	2714.45	-47.53	29.50	53.29	711473.59	595413.20	32°38'08.244"N	103°46'50.314"W	0.56	
2779.40	1.150	171.060	2777.94	-48.23	28.29	53.79	711474.09	595411.99	32°38'08.232"N	103°46'50.309"W	0.88	



Actual Wellpath Report

No. 18H AWP

Page 3 of 6



INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 18H AWB
Facility	Southern California 29 Fed No. 18H		

WELLPATH DATA (224 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]	Comments
2843.00	1.600	186.100	2841.52	-48.49	26.78	53.80	711474.09	595410.48	32°38'08.217"N	103°46'50.309"W	0.90	
2906.60	1.320	196.030	2905.10	-48.47	25.19	53.50	711473.80	595408.89	32°38'08.201"N	103°46'50.312"W	0.59	
2970.20	1.360	166.780	2968.68	-48.68	23.75	53.47	711473.77	595407.45	32°38'08.187"N	103°46'50.313"W	1.07	
3033.70	1.130	160.190	3032.17	-49.28	22.43	53.86	711474.15	595406.13	32°38'08.174"N	103°46'50.308"W	0.43	
3097.30	1.000	155.890	3095.76	-49.90	21.34	54.29	711474.59	595405.03	32°38'08.163"N	103°46'50.303"W	0.24	
3160.90	0.950	139.380	3159.35	-50.62	20.43	54.86	711475.16	595404.13	32°38'08.154"N	103°46'50.297"W	0.45	
3224.40	0.890	157.490	3222.84	-51.29	19.57	55.40	711475.69	595403.27	32°38'08.146"N	103°46'50.290"W	0.47	
3288.00	0.760	139.360	3286.44	-51.87	18.80	55.86	711476.16	595402.50	32°38'08.138"N	103°46'50.285"W	0.46	
3351.60	0.880	124.820	3350.03	-52.64	18.20	56.54	711476.83	595401.90	32°38'08.132"N	103°46'50.277"W	0.38	
3415.10	0.760	113.400	3413.52	-53.49	17.75	57.32	711477.62	595401.45	32°38'08.128"N	103°46'50.268"W	0.32	
3478.70	0.960	98.090	3477.12	-54.44	17.51	58.24	711478.53	595401.21	32°38'08.125"N	103°46'50.257"W	0.48	
3542.30	1.010	78.810	3540.71	-55.49	17.54	59.31	711479.61	595401.24	32°38'08.125"N	103°46'50.245"W	0.52	
3605.80	1.270	55.510	3604.19	-56.52	18.05	60.44	711480.74	595401.75	32°38'08.130"N	103°46'50.232"W	0.83	
3669.40	1.810	32.180	3667.77	-57.41	19.30	61.56	711481.86	595403.00	32°38'08.143"N	103°46'50.218"W	1.28	
3733.00	2.100	36.430	3731.33	-58.31	21.09	62.79	711483.08	595404.79	32°38'08.160"N	103°46'50.204"W	0.51	
3796.60	2.140	44.980	3794.89	-59.52	22.87	64.32	711484.61	595406.56	32°38'08.178"N	103°46'50.186"W	0.50	
3860.10	2.150	55.000	3858.35	-61.05	24.39	66.13	711486.43	595408.09	32°38'08.193"N	103°46'50.165"W	0.59	
3923.70	2.030	43.960	3921.90	-62.53	25.88	67.89	711488.19	595409.58	32°38'08.208"N	103°46'50.144"W	0.66	
3987.30	1.780	46.760	3985.47	-63.76	27.37	69.39	711489.69	595411.07	32°38'08.222"N	103°46'50.126"W	0.42	
4050.80	1.280	54.150	4048.95	-64.85	28.46	70.69	711490.98	595412.16	32°38'08.233"N	103°46'50.111"W	0.84	
4114.40	1.270	23.280	4112.53	-65.51	29.52	71.54	711491.84	595413.22	32°38'08.243"N	103°46'50.101"W	1.07	
4178.00	1.910	22.120	4176.11	-65.91	31.15	72.22	711492.51	595414.85	32°38'08.259"N	103°46'50.093"W	1.01	
4241.60	2.310	18.650	4239.66	-66.33	33.35	73.03	711493.32	595417.05	32°38'08.281"N	103°46'50.083"W	0.66	
4305.10	2.240	22.550	4303.11	-66.81	35.71	73.91	711494.21	595419.41	32°38'08.304"N	103°46'50.073"W	0.27	
4368.70	2.310	23.580	4366.66	-67.39	38.03	74.90	711495.20	595421.73	32°38'08.327"N	103°46'50.061"W	0.13	
4432.30	2.280	27.410	4430.21	-68.08	40.33	76.00	711496.29	595424.03	32°38'08.350"N	103°46'50.048"W	0.25	
4495.80	1.960	29.160	4493.67	-68.82	42.40	77.11	711497.40	595426.10	32°38'08.370"N	103°46'50.035"W	0.51	
4559.40	1.740	27.740	4557.24	-69.48	44.20	78.09	711498.38	595427.90	32°38'08.388"N	103°46'50.024"W	0.35	
4623.00	1.600	29.670	4620.81	-70.08	45.83	78.97	711499.27	595429.53	32°38'08.404"N	103°46'50.013"W	0.24	
4686.50	1.510	31.920	4684.29	-70.70	47.31	79.86	711500.15	595431.01	32°38'08.419"N	103°46'50.003"W	0.17	
4750.10	1.420	42.160	4747.86	-71.44	48.60	80.83	711501.12	595432.30	32°38'08.432"N	103°46'49.991"W	0.43	
4813.70	1.260	41.470	4811.45	-72.23	49.71	81.82	711502.12	595433.41	32°38'08.443"N	103°46'49.980"W	0.25	
4877.30	0.780	38.840	4875.04	-72.81	50.57	82.55	711502.85	595434.27	32°38'08.451"N	103°46'49.971"W	0.76	
4940.80	0.360	3.700	4938.53	-73.00	51.11	82.84	711503.13	595434.81	32°38'08.456"N	103°46'49.968"W	0.83	
5004.40	0.290	343.500	5002.13	-72.91	51.46	82.81	711503.10	595435.16	32°38'08.460"N	103°46'49.968"W	0.21	
5068.00	0.330	299.540	5065.73	-72.66	51.71	82.60	711502.90	595435.41	32°38'08.462"N	103°46'49.970"W	0.37	
5131.50	0.330	289.570	5129.23	-72.31	51.86	82.27	711502.56	595435.56	32°38'08.464"N	103°46'49.974"W	0.09	
5195.10	0.340	258.970	5192.83	-71.95	51.88	81.91	711502.21	595435.58	32°38'08.464"N	103°46'49.978"W	0.28	
5258.70	0.310	241.360	5256.43	-71.64	51.77	81.58	711501.87	595435.46	32°38'08.463"N	103°46'49.982"W	0.16	
5322.20	0.340	224.080	5319.93	-71.40	51.55	81.29	711501.59	595435.25	32°38'08.461"N	103°46'49.986"W	0.16	
5385.80	0.560	221.630	5383.53	-71.13	51.18	80.96	711501.25	595434.88	32°38'08.457"N	103°46'49.990"W	0.35	
5449.40	0.910	216.490	5447.12	-70.74	50.54	80.45	711500.74	595434.24	32°38'08.451"N	103°46'49.996"W	0.56	
5512.90	1.230	224.240	5510.61	-70.13	49.65	79.67	711499.97	595433.35	32°38'08.442"N	103°46'50.005"W	0.55	
5576.50	1.430	221.890	5574.19	-69.32	48.57	78.67	711498.96	595432.27	32°38'08.431"N	103°46'50.017"W	0.33	
5640.10	1.520	219.350	5637.77	-68.48	47.33	77.60	711497.90	595431.02	32°38'08.419"N	103°46'50.029"W	0.17	



Actual Wellpath Report

No. 18H AWP

Page 4 of 6



INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 18H AWB
Facility	Southern California 29 Fed No. 18H		

WELLPATH DATA (224 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]	Comments
5703.70	1.550	219.890	5701.35	-67.63	46.01	76.52	711496.81	595429.71	32°38'08.406"N	103°46'50.042"W	0.05	
5767.20	1.580	229.230	5764.82	-66.64	44.78	75.30	711495.60	595428.48	32°38'08.394"N	103°46'50.056"W	0.40	
5830.80	1.660	228.250	5828.40	-65.51	43.60	73.95	711494.25	595427.29	32°38'08.382"N	103°46'50.072"W	0.13	
5894.40	1.800	228.820	5891.97	-64.31	42.33	72.51	711492.81	595426.02	32°38'08.370"N	103°46'50.089"W	0.22	
5957.90	1.870	211.960	5955.44	-63.29	40.79	71.21	711491.51	595424.49	32°38'08.355"N	103°46'50.104"W	0.85	
6021.50	1.860	224.610	6019.00	-62.30	39.18	69.94	711490.23	595422.87	32°38'08.339"N	103°46'50.119"W	0.65	
6085.10	1.910	222.900	6082.57	-61.13	37.66	68.49	711488.79	595421.36	32°38'08.324"N	103°46'50.136"W	0.12	
6148.60	2.030	224.160	6146.03	-59.92	36.08	66.99	711487.28	595419.78	32°38'08.309"N	103°46'50.154"W	0.20	
6212.20	2.240	224.670	6209.59	-58.57	34.39	65.33	711485.63	595418.09	32°38'08.292"N	103°46'50.173"W	0.33	
6275.80	2.480	224.090	6273.13	-57.08	32.52	63.50	711483.80	595416.22	32°38'08.273"N	103°46'50.195"W	0.38	
6339.40	2.690	240.000	6336.67	-55.16	30.78	61.25	711481.55	595414.48	32°38'08.256"N	103°46'50.221"W	1.17	
6402.90	2.920	224.980	6400.10	-53.08	28.89	58.82	711479.11	595412.59	32°38'08.238"N	103°46'50.250"W	1.21	
6466.50	3.050	217.660	6463.61	-51.35	26.41	56.64	711476.93	595410.11	32°38'08.213"N	103°46'50.276"W	0.63	
6530.10	3.190	215.210	6527.11	-49.80	23.62	54.58	711474.88	595407.32	32°38'08.186"N	103°46'50.300"W	0.30	
6593.60	3.340	235.090	6590.51	-47.72	21.12	52.05	711472.34	595404.82	32°38'08.161"N	103°46'50.330"W	1.79	
6657.20	3.480	217.840	6654.00	-45.50	18.54	49.34	711469.64	595402.24	32°38'08.136"N	103°46'50.361"W	1.62	
6720.80	3.610	229.360	6717.48	-43.31	15.71	46.64	711466.94	595399.41	32°38'08.108"N	103°46'50.393"W	1.14	
6784.40	3.650	225.710	6780.95	-40.84	12.99	43.67	711463.97	595396.69	32°38'08.081"N	103°46'50.428"W	0.37	
6847.90	3.790	233.500	6844.32	-38.21	10.33	40.54	711460.83	595394.03	32°38'08.055"N	103°46'50.465"W	0.83	
6911.50	3.790	230.660	6907.78	-35.37	7.75	37.22	711457.52	595391.45	32°38'08.030"N	103°46'50.504"W	0.30	
6975.10	3.740	232.900	6971.24	-32.58	5.16	33.94	711454.24	595388.86	32°38'08.004"N	103°46'50.542"W	0.24	
7038.60	3.710	232.710	7034.61	-29.76	2.67	30.66	711450.95	595386.37	32°38'07.980"N	103°46'50.581"W	0.05	
7102.20	3.670	228.360	7098.08	-27.09	0.07	27.50	711447.80	595383.77	32°38'07.954"N	103°46'50.618"W	0.44	
7165.80	3.660	235.330	7161.55	-24.37	-2.44	24.31	711444.60	595381.26	32°38'07.930"N	103°46'50.655"W	0.70	
7229.30	3.700	219.770	7224.92	-21.90	-5.16	21.33	711441.63	595378.54	32°38'07.903"N	103°46'50.690"W	1.57	
7292.90	3.730	258.630	7288.40	-18.94	-7.15	17.99	711438.29	595376.55	32°38'07.883"N	103°46'50.730"W	3.88	
7356.50	3.710	237.650	7351.87	-15.48	-8.66	14.22	711434.52	595375.04	32°38'07.869"N	103°46'50.774"W	2.13	
7420.10	3.720	223.250	7415.33	-12.81	-11.26	11.07	711431.37	595372.44	32°38'07.843"N	103°46'50.811"W	1.46	
7483.60	3.550	223.840	7478.71	-10.57	-14.18	8.30	711428.60	595369.52	32°38'07.814"N	103°46'50.843"W	0.27	
7547.20	3.260	214.340	7542.19	-8.72	-17.09	-5.91	711426.21	595366.61	32°38'07.785"N	103°46'50.871"W	1.00	
7610.80	2.950	211.290	7605.70	-7.36	-19.99	4.04	711424.34	595363.71	32°38'07.757"N	103°46'50.893"W	0.55	
7674.30	2.900	209.130	7669.12	-6.23	-22.79	2.41	711422.71	595360.92	32°38'07.729"N	103°46'50.913"W	0.19	
7737.90	2.960	206.570	7732.63	-5.22	-25.66	0.89	711421.19	595358.04	32°38'07.701"N	103°46'50.931"W	0.23	
7801.50	3.270	204.010	7796.14	-4.30	-28.79	-0.58	711419.72	595354.92	32°38'07.670"N	103°46'50.948"W	0.53	
7865.00	3.650	198.210	7859.52	-3.55	-32.36	-1.95	711418.35	595351.34	32°38'07.635"N	103°46'50.964"W	0.81	
7928.60	3.840	192.990	7922.99	-3.14	-36.36	-3.06	711417.24	595347.34	32°38'07.595"N	103°46'50.977"W	0.61	
7992.20	3.690	191.510	7986.45	-2.95	-40.44	-3.95	711416.35	595343.26	32°38'07.555"N	103°46'50.988"W	0.28	
8055.80	3.910	198.060	8049.91	-2.57	-44.51	-5.03	711415.27	595339.20	32°38'07.515"N	103°46'51.001"W	0.76	
8119.30	3.880	206.670	8113.27	-1.64	-48.48	-6.66	711413.64	595335.22	32°38'07.476"N	103°46'51.020"W	0.92	
8182.90	3.550	195.180	8176.73	-0.82	-52.31	-8.14	711412.16	595331.40	32°38'07.438"N	103°46'51.038"W	1.28	
8246.50	3.300	189.790	8240.22	-0.63	-56.01	-8.97	711411.33	595327.69	32°38'07.401"N	103°46'51.048"W	0.64	
8310.00	3.370	190.520	8303.61	-0.61	-59.65	-9.62	711410.68	595324.06	32°38'07.365"N	103°46'51.056"W	0.13	
8373.60	3.470	191.010	8367.10	-0.54	-63.37	-10.33	711409.97	595320.33	32°38'07.328"N	103°46'51.064"W	0.16	
8437.20	3.230	195.670	8430.59	-0.31	-66.99	-11.18	711409.12	595316.71	32°38'07.293"N	103°46'51.074"W	0.57	
8500.70	3.040	195.610	8493.99	0.05	-70.33	-12.12	711408.18	595313.37	32°38'07.260"N	103°46'51.085"W	0.30	



Actual Wellpath Report

No. 18H AWP

Page 5 of 6



INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 18H AWP
Facility	Southern California 29 Fed No. 18H		

WELLPATH DATA (224 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]	Comments
8564.30	2.840	201.580	8557.51	0.54	-73.42	-13.15	711407.15	595310.28	32°38'07.229"N	103°46'51.098"W	0.57	
8627.90	2.630	194.020	8621.04	0.97	-76.30	-14.09	711406.22	595307.40	32°38'07.201"N	103°46'51.109"W	0.66	
8691.50	2.740	198.370	8684.57	1.31	-79.16	-14.92	711405.38	595304.54	32°38'07.172"N	103°46'51.119"W	0.36	
8755.00	3.980	203.910	8747.96	2.08	-82.62	-16.29	711404.01	595301.09	32°38'07.138"N	103°46'51.135"W	2.02	
8818.60	4.330	205.170	8811.39	3.26	-86.81	-18.21	711402.10	595296.90	32°38'07.097"N	103°46'51.158"W	0.57	
8882.20	4.340	206.320	8874.81	4.58	-91.14	-20.29	711400.01	595292.57	32°38'07.054"N	103°46'51.182"W	0.14	
8945.70	4.740	201.080	8938.11	5.78	-95.74	-22.30	711398.00	595287.97	32°38'07.009"N	103°46'51.206"W	0.91	
9009.30	4.450	194.210	9001.51	6.49	-100.58	-23.85	711396.45	595283.12	32°38'06.961"N	103°46'51.224"W	0.98	
9072.90	4.150	187.460	9064.93	6.59	-105.26	-24.76	711395.54	595278.45	32°38'06.915"N	103°46'51.235"W	0.92	
9086.00	5.700	201.400	9077.98	6.71	-106.33	-25.06	711395.24	595277.37	32°38'06.904"N	103°46'51.239"W	14.87	
9117.00	12.300	213.200	9108.58	8.33	-110.53	-27.43	711392.87	595273.17	32°38'06.863"N	103°46'51.267"W	22.00	
9149.00	18.700	217.500	9139.40	12.08	-117.46	-32.42	711387.88	595266.24	32°38'06.794"N	103°46'51.326"W	20.31	
9181.00	23.800	229.000	9169.23	18.57	-125.78	-40.43	711379.87	595257.93	32°38'06.713"N	103°46'51.420"W	20.51	
9213.00	28.400	241.500	9197.98	28.64	-133.66	-52.00	711368.30	595250.05	32°38'06.635"N	103°46'51.556"W	22.34	
9277.00	40.700	251.900	9250.64	59.19	-147.47	-85.37	711334.93	595236.24	32°38'06.500"N	103°46'51.947"W	21.25	
9340.00	52.900	258.700	9293.71	100.99	-158.82	-129.73	711290.58	595224.89	32°38'06.390"N	103°46'52.466"W	20.88	
9404.00	66.700	263.500	9325.84	153.30	-167.19	-184.24	711236.07	595216.52	32°38'06.310"N	103°46'53.104"W	22.51	
9467.00	80.100	267.600	9343.81	211.71	-171.79	-244.29	711176.02	595211.92	32°38'06.268"N	103°46'53.806"W	22.16	
9499.00	87.700	270.200	9347.20	242.93	-172.40	-276.08	711144.24	595211.32	32°38'06.263"N	103°46'54.178"W	25.08	
9531.00	90.100	276.900	9347.82	274.72	-170.41	-307.99	711112.33	595213.30	32°38'06.285"N	103°46'54.551"W	22.24	
9595.00	91.000	280.000	9347.20	338.69	-161.01	-371.28	711049.04	595222.70	32°38'06.381"N	103°46'55.291"W	5.04	
9658.00	91.300	279.800	9345.94	401.68	-150.18	-433.33	710986.99	595233.53	32°38'06.491"N	103°46'56.016"W	0.57	
9721.00	91.200	280.800	9344.57	464.66	-138.92	-495.30	710925.03	595244.79	32°38'06.606"N	103°46'56.740"W	1.59	
9785.00	90.600	282.500	9343.56	528.62	-126.00	-557.97	710862.36	595257.71	32°38'06.737"N	103°46'57.472"W	2.82	
9848.00	90.700	282.900	9342.85	591.53	-112.15	-619.43	710800.91	595271.56	32°38'06.877"N	103°46'58.189"W	0.65	
9911.00	90.900	282.900	9341.97	654.43	-98.09	-680.83	710739.51	595285.62	32°38'07.019"N	103°46'58.907"W	0.32	
9975.00	91.100	283.000	9340.85	718.32	-83.75	-743.19	710677.15	595299.96	32°38'07.164"N	103°46'59.635"W	0.35	
10038.00	91.400	283.200	9339.47	781.19	-69.47	-804.54	710615.81	595314.23	32°38'07.309"N	103°47'00.351"W	0.57	
10102.00	90.500	283.300	9338.41	845.06	-54.80	-866.83	710553.52	595328.90	32°38'07.457"N	103°47'01.079"W	1.41	
10166.00	90.800	283.000	9337.69	908.94	-40.24	-929.14	710491.21	595343.46	32°38'07.604"N	103°47'01.807"W	0.66	
10230.00	91.100	283.300	9336.63	972.82	-25.69	-991.46	710428.90	595358.01	32°38'07.752"N	103°47'02.535"W	0.66	
10293.00	91.600	283.500	9335.14	1035.68	-11.09	-1052.73	710367.64	595372.61	32°38'07.899"N	103°47'03.250"W	0.85	
10356.00	91.500	283.500	9333.44	1098.52	3.61	-1113.96	710306.40	595387.31	32°38'08.048"N	103°47'03.965"W	0.16	
10420.00	92.100	284.900	9331.43	1162.29	19.30	-1175.97	710244.40	595403.00	32°38'08.206"N	103°47'04.689"W	2.38	
10484.00	92.300	285.200	9328.97	1225.97	35.91	-1237.73	710182.64	595419.61	32°38'08.374"N	103°47'05.411"W	0.56	
10547.00	92.500	285.300	9326.33	1288.62	52.46	-1298.46	710121.92	595436.16	32°38'08.541"N	103°47'06.120"W	0.35	
10611.00	92.500	285.000	9323.54	1352.28	69.18	-1360.18	710060.20	595452.87	32°38'08.709"N	103°47'06.840"W	0.47	
10674.00	91.700	284.600	9321.23	1414.99	85.26	-1421.05	709999.34	595468.95	32°38'08.871"N	103°47'07.551"W	1.42	
10738.00	90.500	284.100	9320.00	1478.77	101.12	-1483.04	709937.35	595484.81	32°38'09.031"N	103°47'08.275"W	2.03	
10801.00	89.400	283.400	9320.06	1541.61	116.09	-1544.23	709876.16	595499.78	32°38'09.183"N	103°47'08.990"W	2.07	
10865.00	89.500	283.500	9320.67	1605.48	130.98	-1606.47	709813.92	595514.67	32°38'09.333"N	103°47'09.717"W	0.22	
10929.00	89.700	283.500	9321.12	1669.34	145.92	-1668.70	709751.70	595529.61	32°38'09.484"N	103°47'10.444"W	0.31	
10992.00	89.800	284.000	9321.39	1732.18	160.89	-1729.90	709690.51	595544.58	32°38'09.635"N	103°47'11.158"W	0.81	
11055.00	90.200	284.500	9321.39	1794.99	176.40	-1790.96	709629.45	595560.09	32°38'09.792"N	103°47'11.871"W	1.02	
11118.00	90.900	285.600	9320.79	1857.71	192.75	-1851.79	709568.62	595576.44	32°38'09.957"N	103°47'12.582"W	2.07	



Actual Wellpath Report

No. 18H AWP

Page 6 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 18H AWB
Facility	Southern California 29 Fed No. 18H		

WELLPATH DATA (224 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]	Comments
11182.00	90.200	284.000	9320.18	1921.46	209.10	-1913.66	709506.75	595592.79	32°38'10.122"N	103°47'13.304"W	2.73	
11246.00	90.100	283.600	9320.01	1985.29	224.37	-1975.82	709444.60	595608.05	32°38'10.276"N	103°47'14.030"W	0.64	
11309.00	90.900	284.000	9319.46	2048.13	239.39	-2036.99	709383.43	595623.08	32°38'10.428"N	103°47'14.745"W	1.42	
11373.00	91.400	284.300	9318.17	2111.93	255.04	-2099.04	709321.39	595638.72	32°38'10.586"N	103°47'15.469"W	0.91	
11437.00	90.500	284.500	9317.11	2175.71	270.95	-2161.02	709259.41	595654.63	32°38'10.746"N	103°47'16.193"W	1.44	
11500.00	89.300	284.000	9317.22	2238.51	286.46	-2222.08	709198.35	595670.14	32°38'10.903"N	103°47'16.906"W	2.06	
11564.00	89.600	284.200	9317.84	2302.33	302.05	-2284.15	709136.29	595685.73	32°38'11.060"N	103°47'17.631"W	0.56	
11628.00	90.900	284.600	9317.56	2366.11	317.96	-2346.14	709074.30	595701.65	32°38'11.221"N	103°47'18.355"W	2.13	
11691.00	90.400	284.200	9316.84	2428.90	333.63	-2407.15	709013.29	595717.31	32°38'11.379"N	103°47'19.067"W	1.02	
11754.00	89.900	283.200	9316.68	2491.75	348.55	-2468.36	708952.09	595732.23	32°38'11.530"N	103°47'19.782"W	1.77	
11818.00	90.100	283.100	9316.68	2555.63	363.11	-2530.68	708889.77	595746.79	32°38'11.677"N	103°47'20.510"W	0.35	
11882.00	89.700	283.200	9316.79	2619.52	377.67	-2593.00	708827.45	595761.35	32°38'11.824"N	103°47'21.238"W	0.64	
11945.00	89.600	283.300	9317.17	2682.40	392.11	-2654.32	708766.13	595775.79	32°38'11.970"N	103°47'21.954"W	0.22	
12009.00	89.700	282.900	9317.57	2746.29	406.62	-2716.66	708703.80	595790.29	32°38'12.117"N	103°47'22.682"W	0.64	
12073.00	89.200	282.100	9318.18	2810.21	420.47	-2779.14	708641.33	595804.14	32°38'12.257"N	103°47'23.412"W	1.47	
12136.00	89.400	281.500	9318.95	2873.17	433.35	-2840.80	708579.67	595817.02	32°38'12.388"N	103°47'24.132"W	1.00	
12199.00	88.600	280.900	9320.05	2936.13	445.58	-2902.59	708517.88	595829.26	32°38'12.512"N	103°47'24.854"W	1.59	
12263.00	89.000	281.100	9321.39	3000.11	457.79	-2965.40	708455.08	595841.47	32°38'12.636"N	103°47'25.588"W	0.70	
12327.00	88.600	280.900	9322.73	3064.08	470.00	-3028.21	708392.27	595853.67	32°38'12.760"N	103°47'26.322"W	0.70	
12391.00	89.700	280.800	9323.68	3128.06	482.05	-3091.06	708329.43	595865.72	32°38'12.882"N	103°47'27.056"W	1.73	
12454.00	89.900	281.900	9323.90	3191.03	494.45	-3152.83	708267.66	595878.12	32°38'13.008"N	103°47'27.777"W	1.77	
12518.00	89.700	282.300	9324.12	3254.97	507.86	-3215.40	708205.09	595891.53	32°38'13.144"N	103°47'28.508"W	0.70	
12581.00	89.900	282.900	9324.34	3317.90	521.60	-3276.89	708143.61	595905.27	32°38'13.283"N	103°47'29.227"W	1.00	
12645.00	89.800	283.200	9324.51	3381.79	536.06	-3339.23	708081.27	595919.72	32°38'13.429"N	103°47'29.955"W	0.49	
12708.00	89.400	283.300	9324.95	3444.67	550.50	-3400.55	708019.95	595934.16	32°38'13.575"N	103°47'30.671"W	0.65	
12772.00	90.000	283.900	9325.28	3508.52	565.54	-3462.76	707957.75	595949.21	32°38'13.727"N	103°47'31.397"W	1.33	
12836.00	89.700	284.000	9325.45	3572.35	580.97	-3524.87	707895.64	595964.64	32°38'13.883"N	103°47'32.123"W	0.49	
12899.00	89.600	283.200	9325.84	3635.20	595.79	-3586.10	707834.41	595979.45	32°38'14.032"N	103°47'32.838"W	1.28	
12963.00	90.200	283.000	9325.95	3699.09	610.29	-3648.44	707772.08	595993.96	32°38'14.179"N	103°47'33.566"W	0.99	
13026.00	90.400	283.100	9325.62	3761.99	624.52	-3709.81	707710.71	596008.18	32°38'14.323"N	103°47'34.283"W	0.35	
13090.00	89.900	282.500	9325.45	3825.90	638.70	-3772.22	707648.31	596022.36	32°38'14.466"N	103°47'35.012"W	1.22	
13153.00	90.000	282.000	9325.51	3888.83	652.06	-3833.78	707586.75	596035.72	32°38'14.602"N	103°47'35.731"W	0.81	
13217.00	90.100	281.800	9325.45	3952.79	665.26	-3896.41	707524.13	596048.92	32°38'14.735"N	103°47'36.463"W	0.35	
13280.00	90.300	282.100	9325.23	4015.74	678.30	-3958.04	707462.50	596061.96	32°38'14.868"N	103°47'37.182"W	0.57	
13344.00	90.600	281.600	9324.73	4079.70	691.45	-4020.67	707399.87	596075.11	32°38'15.001"N	103°47'37.914"W	0.91	
13408.00	90.700	280.800	9324.00	4143.67	703.88	-4083.45	707337.09	596087.53	32°38'15.127"N	103°47'38.647"W	1.26	
13471.00	90.300	279.200	9323.45	4206.67	714.82	-4145.49	707275.06	596098.47	32°38'15.238"N	103°47'39.372"W	2.62	
13535.00	89.900	279.100	9323.34	4270.66	724.99	-4208.67	707211.88	596108.65	32°38'15.342"N	103°47'40.111"W	0.64	
13594.00	89.900	278.400	9323.44	4329.65	733.97	-4266.99	707153.57	596117.62	32°38'15.434"N	103°47'40.792"W	1.19	
13662.00	90.100	278.100	9323.44	4397.63	743.73	-4334.28	707086.28	596127.38	32°38'15.534"N	103°47'41.578"W	0.53	
13726.00	90.500	278.200	9323.11	4461.60	752.80	-4397.64	707022.93	596136.45	32°38'15.627"N	103°47'42.319"W	0.64	
13790.00	91.000	278.600	9322.27	4525.58	762.15	-4460.94	706959.62	596145.80	32°38'15.722"N	103°47'43.058"W	1.00	
13853.00	92.400	278.600	9320.40	4588.54	771.56	-4523.21	706897.36	596155.22	32°38'15.819"N	103°47'43.786"W	2.22	
13965.00	92.400	278.600	9315.71	4700.42	788.30	-4633.85	706786.73	596171.95	32°38'15.990"N	103°47'45.079"W	0.00	Proj to Bit

TARGETS										
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape	

No. 18H PBHL	9318.00	795.98	-4637.37	706783.21	596179.63	32°38'16.066"N	103°47'45.119"W	point

WELLPATH COMPOSITION Ref Wellbore: No. 18H AWB Ref Wellpath: No. 18H AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
18.00	9072.90	Gyrodatta standard - Drop gyro or Multi-shot	Gyro	No. 18H AWB
9072.90	13965.00	NaviTrak (Standard)	MWD	No. 18H AWB