



Cimarex Energy Co.

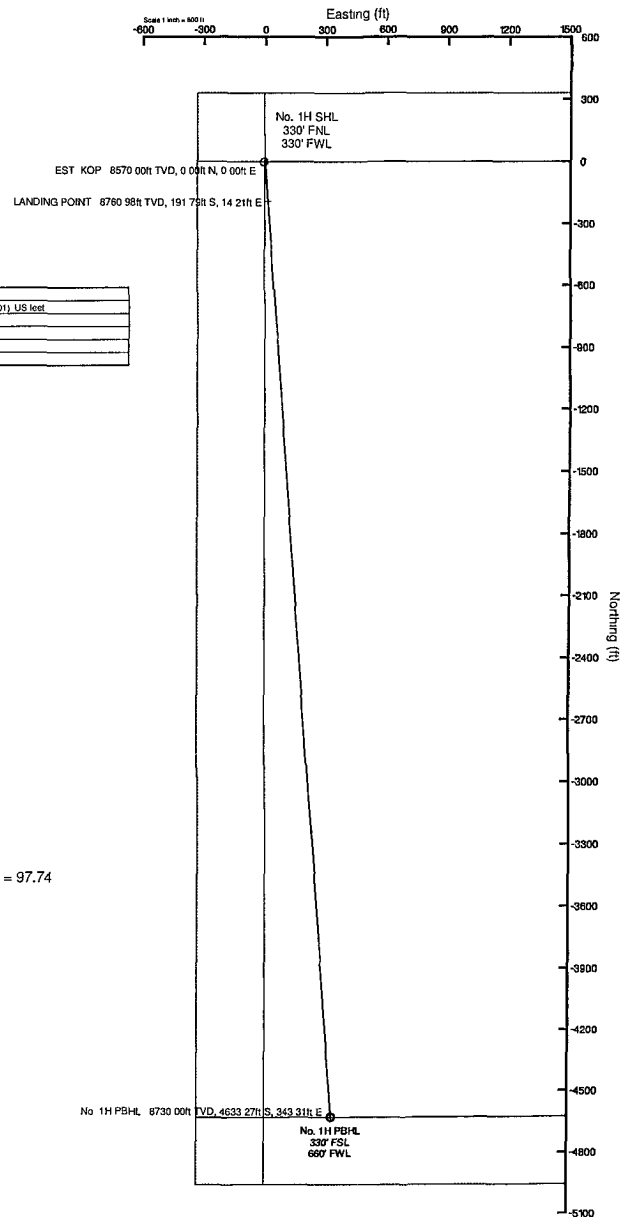
Location Eddy County, NM
Field (Crescent) Sec 1, T19S, R30E
Facility Crescent Hale 1 Fed Corn No. 1H

Slot No 1H SHL
Well No 1H
Wellbore No 1H PWB

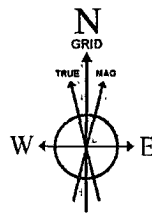


Well Profile Data

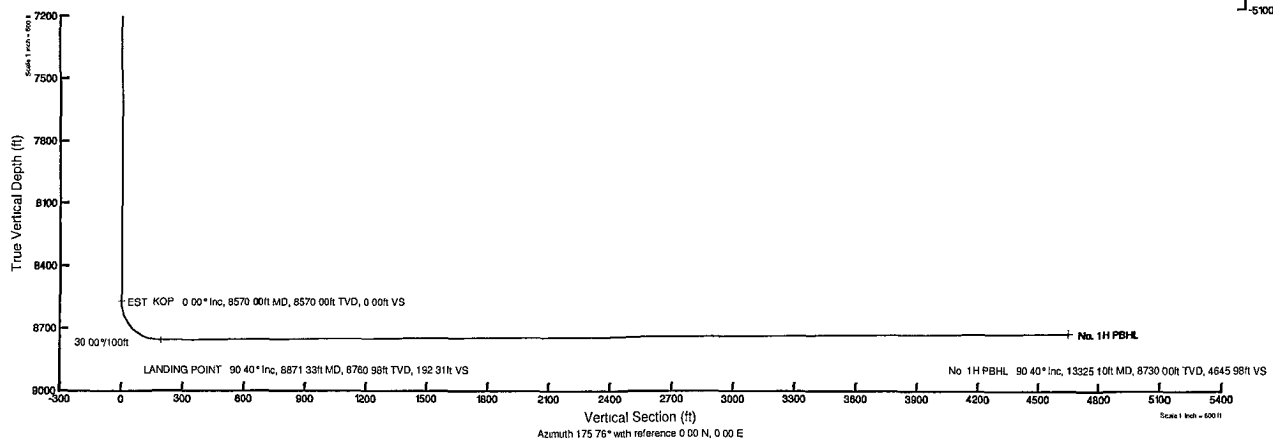
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0 00	0 000	175 762	0 00	0 00	0 00	0 00	0 00
EST KOP	8570 00	0 000	175 762	8570 00	0 00	0 00	0 00	0 00
LANDING POINT	8871 33	90 399	175 762	8760 98	-191 79	14 21	30 00	192 31
No 1H PBHL	13325 10	90 399	175 762	8730 00	-4633 27	343 31	0 00	4645 98



Plot reference wellpath is Prelim 3	Grid System NAD83 / TM New Mexico State Planes Eastern Zone (3001) US feet
True vertical depths are referenced to Rig on No 1H SHL (KB)	North Reference Grid north
Measured depths are referenced to Rig on No 1H SHL (KB)	Scale True distance
Rig on No 1H SHL (KB) to Mean Sea Level 3515 feet	Depths are in feet
Mean Sea Level to Mud line (Facility Crescent Hale 1 Fed Corn No. 1H) -3515 feet	Created by Victor Hernandez on 6/3/2010
Coordinates are in feet referenced to SL	



BGGM (1945.0 to 2011.0) Dip 60 60° Field: 49027.5 nT
Magnetic North is 7.95 degrees East of True North (at 6/3/2010)
Grid North is 0.22 degrees East of True North
To correct azimuth from True to Grid subtract 0.22 degrees
To correct azimuth from Magnetic to Grid add 7.74 degrees
For example, if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.74 = 97.74





Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Crescent) Sec 1, T19S, R30E	Wellbore	No. 1H PWB
Facility	Crescent Hale 1 Fed Com No. 1H		

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	0.999926	Report Generated	6/3/2010 at 1:21:39 PM
Convergence at slot	0.22° East	Database/Source file	WA_Midland/No. 1H_PWB.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	664493.70	617076.00	32°41'44.685"N	103°55'58.760"W
Facility Reference Pt			664493.70	617076.00	32°41'44.685"N	103°55'58.760"W
Field Reference Pt			664708.10	613101.90	32°41'05.353"N	103°55'56.426"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 1H SHL (KB) to GL	0.00ft
Horizontal Reference Pt	SL	Rig on No. 1H SHL (KB) to Mean Sea Level	3515.00ft
Vertical Reference Pt	Rig on No. 1H SHL (KB)	GL to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 1H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	175.76°



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Field	(Crescent) Sec 1, T19S, R30E	Wellbore	No. 1H PWB
Facility	Crescent Hale 1 Fed Com No. 1H		

WELLPATH DATA (51 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	175.762	0.00	0.00	0.00	0.00	664493.70	617076.00	32°41'44.685"N	103°55'58.760"W	0.00	Tie On
8570.00	0.000	175.762	8570.00	0.00	0.00	0.00	664493.70	617076.00	32°41'44.685"N	103°55'58.760"W	0.00	EST. KOP
8670.00†	30.000	175.762	8665.49	25.59	-25.52	1.89	664495.59	617050.48	32°41'44.432"N	103°55'58.739"W	30.00	
8770.00†	60.000	175.762	8735.40	95.49	-95.23	7.06	664500.76	616980.78	32°41'43.742"N	103°55'58.681"W	30.00	
8870.00†	90.000	175.762	8760.99	190.99	-190.46	14.11	664507.81	616885.55	32°41'42.800"N	103°55'58.603"W	30.00	
8871.33	90.399	175.762	8760.98	192.31	-191.79	14.21	664507.91	616884.23	32°41'42.787"N	103°55'58.602"W	30.00	LANDING POINT
8970.00†	90.399	175.762	8760.29	290.98	-290.19	21.50	664515.20	616785.83	32°41'41.813"N	103°55'58.521"W	0.00	
9070.00†	90.399	175.762	8759.60	390.98	-389.91	28.89	664522.59	616686.12	32°41'40.826"N	103°55'58.439"W	0.00	
9170.00†	90.399	175.762	8758.90	490.98	-489.64	36.28	664529.98	616586.40	32°41'39.839"N	103°55'58.357"W	0.00	
9270.00†	90.399	175.762	8758.21	590.98	-589.36	43.67	664537.37	616486.68	32°41'38.852"N	103°55'58.275"W	0.00	
9370.00†	90.399	175.762	8757.51	690.97	-689.08	51.06	664544.76	616386.97	32°41'37.865"N	103°55'58.193"W	0.00	
9470.00†	90.399	175.762	8756.82	790.97	-788.81	58.45	664552.14	616287.25	32°41'36.878"N	103°55'58.111"W	0.00	
9570.00†	90.399	175.762	8756.12	890.97	-888.53	65.84	664559.53	616187.53	32°41'35.891"N	103°55'58.028"W	0.00	
9670.00†	90.399	175.762	8755.43	990.97	-988.26	73.23	664566.92	616087.82	32°41'34.904"N	103°55'57.946"W	0.00	
9770.00†	90.399	175.762	8754.73	1090.96	-1087.98	80.62	664574.31	615988.10	32°41'33.917"N	103°55'57.864"W	0.00	
9870.00†	90.399	175.762	8754.03	1190.96	-1187.71	88.01	664581.70	615888.38	32°41'32.930"N	103°55'57.782"W	0.00	
9970.00†	90.399	175.762	8753.34	1290.96	-1287.43	95.39	664589.09	615788.67	32°41'31.943"N	103°55'57.700"W	0.00	
10070.00†	90.399	175.762	8752.64	1390.96	-1387.15	102.78	664596.48	615688.95	32°41'30.956"N	103°55'57.618"W	0.00	
10170.00†	90.399	175.762	8751.95	1490.95	-1486.88	110.17	664603.86	615589.23	32°41'29.969"N	103°55'57.536"W	0.00	
10270.00†	90.399	175.762	8751.25	1590.95	-1586.60	117.56	664611.25	615489.52	32°41'28.982"N	103°55'57.454"W	0.00	
10370.00†	90.399	175.762	8750.56	1690.95	-1686.33	124.95	664618.64	615389.80	32°41'27.995"N	103°55'57.372"W	0.00	
10470.00†	90.399	175.762	8749.86	1790.95	-1786.05	132.34	664626.03	615290.08	32°41'27.008"N	103°55'57.290"W	0.00	
10570.00†	90.399	175.762	8749.17	1890.94	-1885.78	139.73	664633.42	615190.37	32°41'26.021"N	103°55'57.208"W	0.00	
10670.00†	90.399	175.762	8748.47	1990.94	-1985.50	147.12	664640.81	615090.65	32°41'25.034"N	103°55'57.126"W	0.00	
10770.00†	90.399	175.762	8747.77	2090.94	-2085.22	154.51	664648.20	614990.93	32°41'24.047"N	103°55'57.044"W	0.00	
10870.00†	90.399	175.762	8747.08	2190.94	-2184.95	161.90	664655.59	614891.22	32°41'23.060"N	103°55'56.962"W	0.00	
10970.00†	90.399	175.762	8746.38	2290.94	-2284.67	169.29	664662.97	614791.50	32°41'22.073"N	103°55'56.880"W	0.00	
11070.00†	90.399	175.762	8745.69	2390.93	-2384.40	176.68	664670.36	614691.78	32°41'21.086"N	103°55'56.798"W	0.00	
11170.00†	90.399	175.762	8744.99	2490.93	-2484.12	184.07	664677.75	614592.07	32°41'20.099"N	103°55'56.716"W	0.00	
11270.00†	90.399	175.762	8744.30	2590.93	-2583.84	191.46	664685.14	614492.35	32°41'19.112"N	103°55'56.634"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Crescent) Sec 1, T19S, R30E	Wellbore	No. 1H PWB
Facility	Crescent Hale 1 Fed Com No. 1H		

WELLPATH DATA (51 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
11370.00†	90.399	175.762	8743.60	2690.93	-2683.57	198.84	664692.53	614392.63	32°41'18.125"N	103°55'56.552"W	0.00	
11470.00†	90.399	175.762	8742.90	2790.92	-2783.29	206.23	664699.92	614292.92	32°41'17.138"N	103°55'56.469"W	0.00	
11570.00†	90.399	175.762	8742.21	2890.92	-2883.02	213.62	664707.31	614193.20	32°41'16.151"N	103°55'56.387"W	0.00	
11670.00†	90.399	175.762	8741.51	2990.92	-2982.74	221.01	664714.70	614093.48	32°41'15.164"N	103°55'56.305"W	0.00	
11770.00†	90.399	175.762	8740.82	3090.92	-3082.47	228.40	664722.08	613993.77	32°41'14.177"N	103°55'56.223"W	0.00	
11870.00†	90.399	175.762	8740.12	3190.91	-3182.19	235.79	664729.47	613894.05	32°41'13.190"N	103°55'56.141"W	0.00	
11970.00†	90.399	175.762	8739.43	3290.91	-3281.91	243.18	664736.86	613794.33	32°41'12.203"N	103°55'56.059"W	0.00	
12070.00†	90.399	175.762	8738.73	3390.91	-3381.64	250.57	664744.25	613694.62	32°41'11.216"N	103°55'55.977"W	0.00	
12170.00†	90.399	175.762	8738.04	3490.91	-3481.36	257.96	664751.64	613594.90	32°41'10.229"N	103°55'55.895"W	0.00	
12270.00†	90.399	175.762	8737.34	3590.90	-3581.09	265.35	664759.03	613495.18	32°41'09.242"N	103°55'55.813"W	0.00	
12370.00†	90.399	175.762	8736.64	3690.90	-3680.81	272.74	664766.42	613395.47	32°41'08.255"N	103°55'55.731"W	0.00	
12470.00†	90.399	175.762	8735.95	3790.90	-3780.53	280.13	664773.81	613295.75	32°41'07.268"N	103°55'55.649"W	0.00	
12570.00†	90.399	175.762	8735.25	3890.90	-3880.26	287.52	664781.19	613196.03	32°41'06.281"N	103°55'55.567"W	0.00	
12670.00†	90.399	175.762	8734.56	3990.89	-3979.98	294.91	664788.58	613096.32	32°41'05.294"N	103°55'55.485"W	0.00	
12770.00†	90.399	175.762	8733.86	4090.89	-4079.71	302.29	664795.97	612996.60	32°41'04.307"N	103°55'55.403"W	0.00	
12870.00†	90.399	175.762	8733.17	4190.89	-4179.43	309.68	664803.36	612896.88	32°41'03.320"N	103°55'55.321"W	0.00	
12970.00†	90.399	175.762	8732.47	4290.89	-4279.16	317.07	664810.75	612797.17	32°41'02.334"N	103°55'55.239"W	0.00	
13070.00†	90.399	175.762	8731.77	4390.88	-4378.88	324.46	664818.14	612697.45	32°41'01.347"N	103°55'55.157"W	0.00	
13170.00†	90.399	175.762	8731.08	4490.88	-4478.60	331.85	664825.53	612597.73	32°41'00.360"N	103°55'55.075"W	0.00	
13270.00†	90.399	175.762	8730.38	4590.88	-4578.33	339.24	664832.91	612498.02	32°40'59.373"N	103°55'54.993"W	0.00	
13325.10	90.399	175.762	8730.00†	4645.98	-4633.27	343.31	664836.99	612443.08	32°40'58.829"N	103°55'54.947"W	0.00	No. 1H PBHL

HOLE & CASING SECTIONS Ref Wellbore: No. 1H PWB Ref Wellpath: Prelim_3

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
6.125in Open Hole	8570.00	13325.10	4755.10	8570.00	8730.00	0.00	0.00	-4633.27	343.31



Planned Wellpath Report

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Area	Eddy County, NM	Well	No. 1H
Field	(Crescent) Sec 1, T19S, R30E	Wellbore	No. 1H PWB
Facility	Crescent Hale 1 Fed Com No. 1H		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 1H PBHL	13325.10	8730.00	-4633.27	343.31	664836.99	612443.08	32°40'58.829"N	103°55'54.947"W	point

SURVEY PROGRAM Ref Wellbore: No. 1H PWB Ref Wellpath: Prelim_3				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	13325.10	NaviTrak (Standard)		No. 1H PWB