

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

APPLICATION OF CIMAREX ENERGY CO.
FOR A NON-STANDARD OIL SPACING AND
PRORATION UNIT AND FOR COMPULSORY
POOLING, LEA COUNTY, NEW MEXICO.

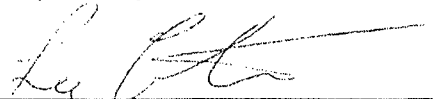
Case No. 14,369

AFFIDAVIT OF LEE CATALANO

COUNTY OF MIDLAND)
) ss.
STATE OF TEXAS)

Lee Catalano, being duly sworn upon his oath, deposes and states:

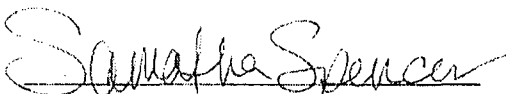
1. I am over the age of 18, and have personal knowledge of the matters stated herein.
2. I am a geologist for Cimarex Energy Co. ("Cimarex").
3. Exhibit A is a structure map on top of the Bone Spring formation. The Bone Spring formation dips to the south. Exhibit A also contains production data from existing, vertical wells in the pool.
4. Exhibit B is a cross section which shows the productive interval and stratigraphic target for horizontal Bone Spring wells in the area.
5. Attached as Exhibit C is the horizontal drilling plan for the proposed well. A horizontal wellbore will test a greater reservoir length, increasing the chances for an economic completion.
6. All four quarter-quarter sections in the well unit are prospective in the Bone Spring, and Cimarex anticipates producing reserves from each quarter-quarter section.



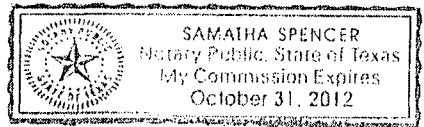
Lee Catalano

SUBSCRIBED AND SWORN TO before me this 10 day of November, 2009 by Lee Catalano.

My Commission Expires: October 31, 2012

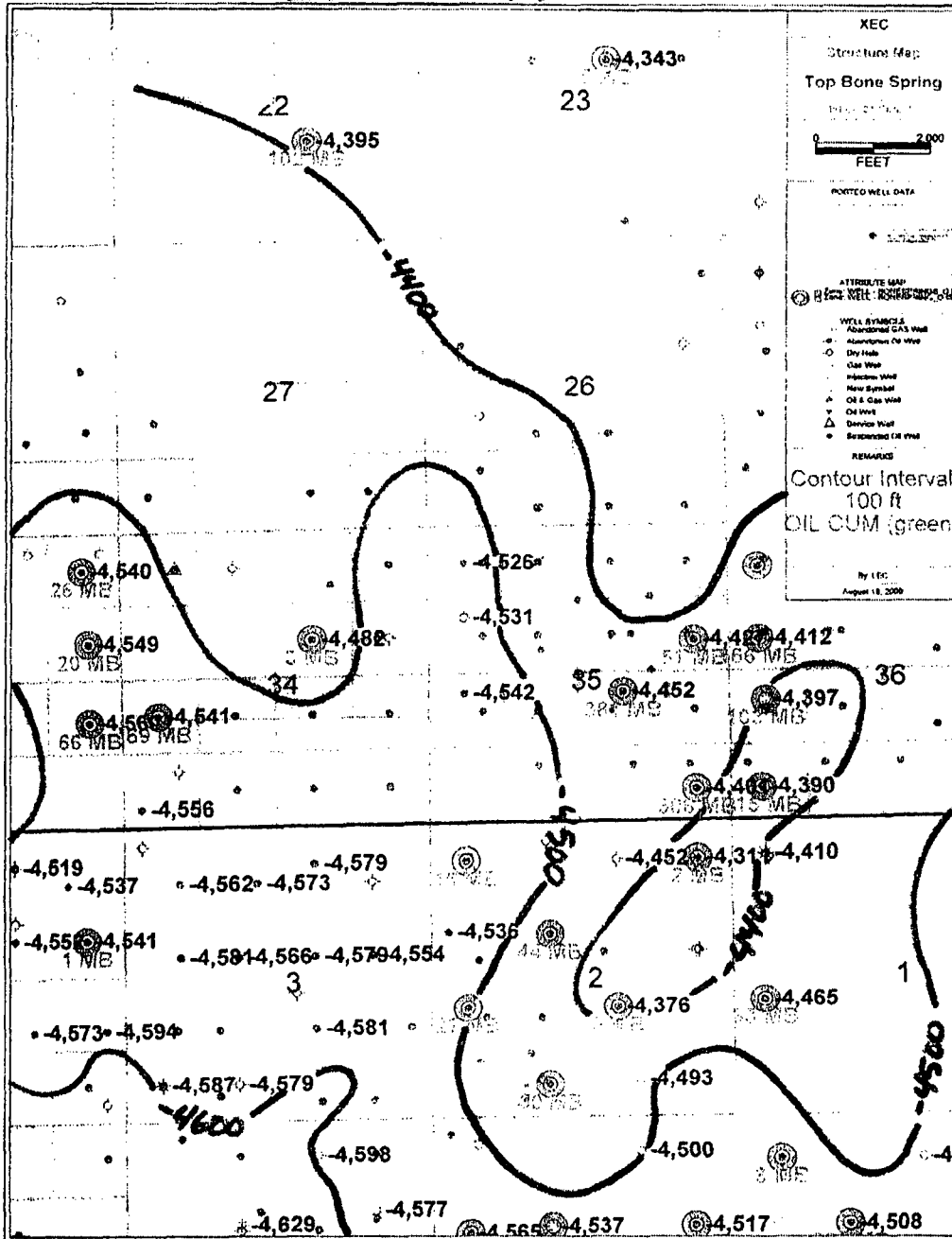


Samantha Spencer
Notary Public

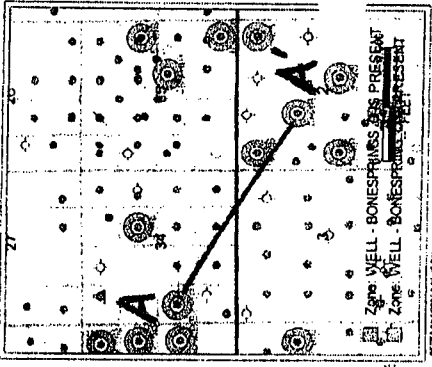


Oil Conservation Division
Case No. _____
Exhibit No. 2

Exhibit A



PETRA BRVCC09 J 09 09 P01



ELEV. KB: 3,698
3604Z

SAMSON RESOURCES COMPANY
COMP. DATE: 5/1/2007
EAGLE 2 STATE

T70S R34E S2
1880 ENL 2130 FWL
BONESPRINGS, CO. 41,212 HPI
BONESPRINGS, W. 57,619 BBL

ELEV. KB: 3,687
32818

CIMAREX ENERGY OF COLORADO
COMP. DATE: 9/25/1987
MALLON 34 FEDERAL

T18S R34E S34
1880 FSL 660 FWL
BONESPRINGS, CO. 41,212 HPI
BONESPRINGS, W. 134,749 BBL

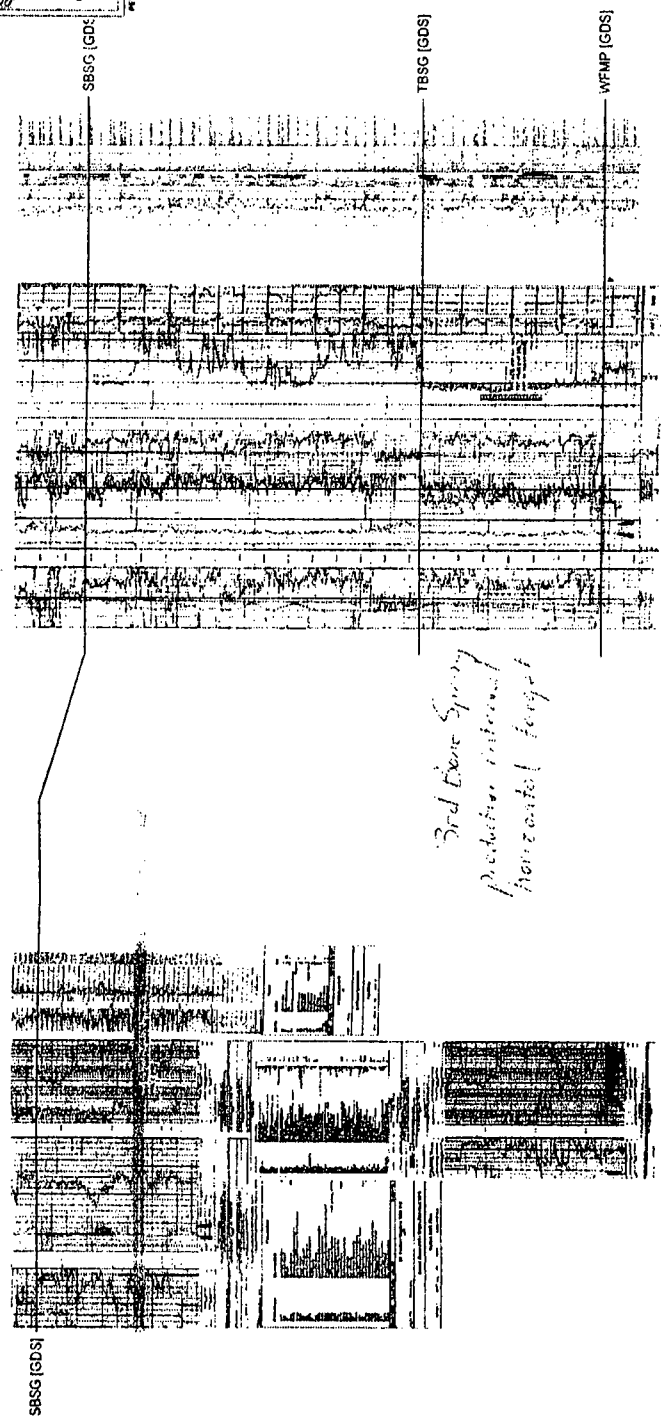
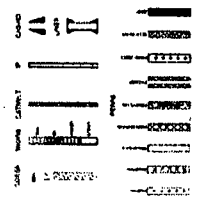


Exhibit B
CIMAREX ENERGY

Structural Cross-section

Mallon 34 Fed # 16

LeaCo., NIM



By Lee Giddens
August 18, 2008 3:20 PM

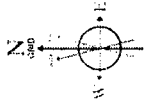
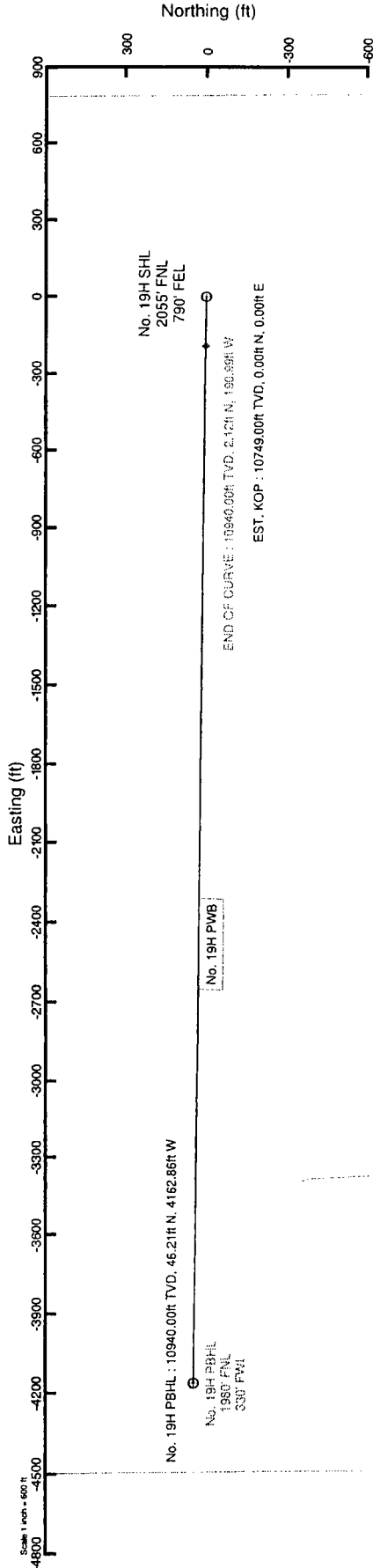
Cimarex Energy Co.

Location: Lea County, NM
 Slot: No. 19H SHL
 Field: (Mallon) Sec 34, T19S, R34E
 Facility: Mallon 34 Fed No. 19H
 Wellbore: No. 19H PWB



Well Profile Data

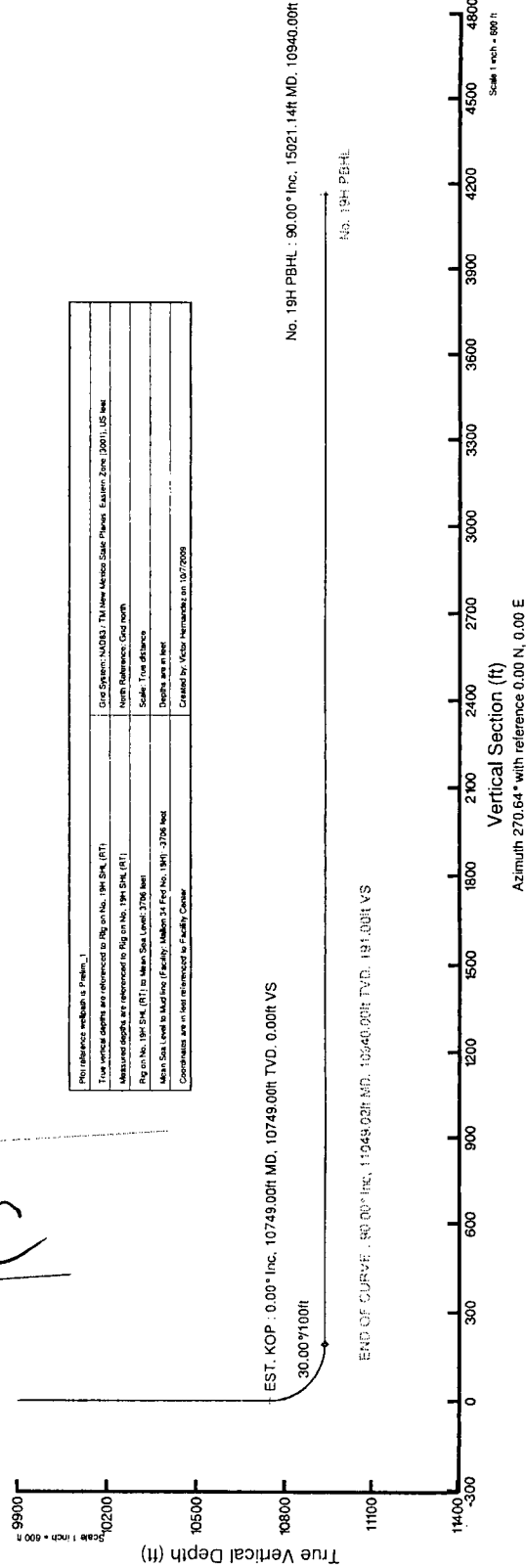
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (1/100ft)	VS (ft)
Tie On	0.00	0.000	270.636	0.00	0.00	0.00	0.00	0.00
EST. KOP	10749.00	0.000	270.636	10749.00	0.00	0.00	0.00	0.00
END OF CURVE	11049.00	90.000	270.636	10940.00	2.12	-190.96	36.00	19.06
No. 19H PBHL	15021.14	90.000	270.636	10940.00	46.21	-4162.86	0.00	4163.12



BCCM (1945.0 to 2011.0) Dec. 80.82° Peak: 4986.7' of
 Magnetic North is 7.85 degrees East of True North (at 10/7/2009)
 Grid North is 0.43 degrees East of True North
 To correct azimuth from Magnetic to Grid add 7.42 degrees
 To correct azimuth from Magnetic to True add 8.27 degrees
 For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 97 + 7.42 = 97.42

RTI reference within a Profile.	Grid System: NAD83, TN New Mexico State Plane, Eastern Zone (2001), US feet
True vertical depths are referenced to Rig on No. 19H SHL (RTI)	North Reference: Grid north
Measured depths are referenced to Rig on No. 19H SHL (RTI)	Scale: True distance
Rig on No. 19H SHL (RTI) to Mean Seal Level: 2706 feet	Depths are in feet
Mean Seal Level to Mudline (Facility: Mallon 34 Fed No. 19H) 2706 feet	Coordinates are in feet referenced to Facility Center
Coordinates are in feet referenced to Facility Center	Created by: Victor Hernandez on 10/7/2009

EXHIBIT C



Vertical Section (ft)
 Azimuth 270.64° with reference 0.00 N, 0.00 E

Scale 1 inch = 600 ft



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 19H SHL
Area	Lea County, NM	Well	No. 19H
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 19H PWB
Facility	Mallon 34 Fed No. 19H		

PROPERTY SURVEY 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	0.999977	Report Generated	10/7/2009 at 2:49:05 PM
Convergence at slot	-0.43° East	Database/Source file	WA_Midland/No._19H_PWB.xml

WELLPATH INFORMATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	784973.60	589601.40	32°37'06.139"N	103°32'31.322"W
Facility Reference Pt			784973.60	589601.40	32°37'06.139"N	103°32'31.322"W
Field Reference Pt			780804.80	586972.60	32°36'40.432"N	103°33'20.286"W

WELLPATH DATA

Calculation method	Minimum curvature	Rig on No. 19H SHL (RT) to Facility Vertical Datum	0.00ft
Horizontal Reference Pt	Facility Center	Rig on No. 19H SHL (RT) to Mean Sea Level	3706.00ft
Vertical Reference Pt	Rig on No. 19H SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 19H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	270.64°



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

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Area	Lea County, NM	Well	No. 19H
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 19H PWB
Facility	Mallon 34 Fed No. 19H		

WELLPATH DATA (46 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	270.636	0.00	0.00	0.00	0.00	784973.60	589601.40	32°37'06.139"N	103°32'31.322"W	0.00	Tie On
10749.00	0.000	270.636	10749.00	0.00	0.00	0.00	784973.60	589601.40	32°37'06.139"N	103°32'31.322"W	0.00	EST. KOP
10849.00†	29.998	270.636	10844.49	25.59	0.28	-25.58	784948.02	589601.68	32°37'06.143"N	103°32'31.621"W	30.00	
10949.00†	59.996	270.636	10914.40	95.49	1.06	-95.48	784878.12	589602.46	32°37'06.156"N	103°32'32.438"W	30.00	
11049.00†	89.993	270.636	10940.00	190.98	2.12	-190.97	784782.64	589603.52	32°37'06.174"N	103°32'33.555"W	30.00	
11049.02	90.000	270.636	10940.00	191.00	2.12	-190.99	784782.62	589603.52	32°37'06.174"N	103°32'33.555"W	30.00	END OF CURVE
11149.00†	90.000	270.636	10940.00	290.98	3.23	-290.96	784682.65	589604.63	32°37'06.192"N	103°32'34.724"W	0.00	
11249.00†	90.000	270.636	10940.00	390.98	4.34	-390.95	784582.66	589605.74	32°37'06.210"N	103°32'35.892"W	0.00	
11349.00†	90.000	270.636	10940.00	490.98	5.45	-490.95	784482.66	589606.85	32°37'06.229"N	103°32'37.061"W	0.00	
11449.00†	90.000	270.636	10940.00	590.98	6.56	-590.94	784382.67	589607.96	32°37'06.247"N	103°32'38.230"W	0.00	
11549.00†	90.000	270.636	10940.00	690.98	7.67	-690.94	784282.68	589609.07	32°37'06.265"N	103°32'39.399"W	0.00	
11649.00†	90.000	270.636	10940.00	790.98	8.78	-790.93	784182.69	589610.18	32°37'06.284"N	103°32'40.568"W	0.00	
11749.00†	90.000	270.636	10940.00	890.98	9.89	-890.92	784082.70	589611.29	32°37'06.302"N	103°32'41.737"W	0.00	
11849.00†	90.000	270.636	10940.00	990.98	11.00	-990.92	783982.71	589612.40	32°37'06.320"N	103°32'42.906"W	0.00	
11949.00†	90.000	270.636	10940.00	1090.98	12.11	-1090.91	783882.72	589613.51	32°37'06.339"N	103°32'44.075"W	0.00	
12049.00†	90.000	270.636	10940.00	1190.98	13.22	-1190.90	783782.73	589614.62	32°37'06.357"N	103°32'45.244"W	0.00	
12149.00†	90.000	270.636	10940.00	1290.98	14.33	-1290.90	783682.73	589615.73	32°37'06.375"N	103°32'46.413"W	0.00	
12249.00†	90.000	270.636	10940.00	1390.98	15.44	-1390.89	783582.74	589616.84	32°37'06.394"N	103°32'47.582"W	0.00	
12349.00†	90.000	270.636	10940.00	1490.98	16.55	-1490.89	783482.75	589617.95	32°37'06.412"N	103°32'48.751"W	0.00	
12449.00†	90.000	270.636	10940.00	1590.98	17.66	-1590.88	783382.76	589619.06	32°37'06.430"N	103°32'49.920"W	0.00	
12549.00†	90.000	270.636	10940.00	1690.98	18.77	-1690.87	783282.77	589620.17	32°37'06.449"N	103°32'51.089"W	0.00	
12649.00†	90.000	270.636	10940.00	1790.98	19.88	-1790.87	783182.78	589621.28	32°37'06.467"N	103°32'52.258"W	0.00	
12749.00†	90.000	270.636	10940.00	1890.98	20.99	-1890.86	783082.79	589622.39	32°37'06.485"N	103°32'53.427"W	0.00	
12849.00†	90.000	270.636	10940.00	1990.98	22.10	-1990.86	782982.79	589623.50	32°37'06.503"N	103°32'54.596"W	0.00	
12949.00†	90.000	270.636	10940.00	2090.98	23.21	-2090.85	782882.80	589624.61	32°37'06.522"N	103°32'55.764"W	0.00	
13049.00†	90.000	270.636	10940.00	2190.98	24.32	-2190.84	782782.81	589625.72	32°37'06.540"N	103°32'56.933"W	0.00	
13149.00†	90.000	270.636	10940.00	2290.98	25.43	-2290.84	782682.82	589626.83	32°37'06.558"N	103°32'58.102"W	0.00	
13249.00†	90.000	270.636	10940.00	2390.98	26.54	-2390.83	782582.83	589627.94	32°37'06.577"N	103°32'59.271"W	0.00	
13349.00†	90.000	270.636	10940.00	2490.98	27.65	-2490.82	782482.84	589629.05	32°37'06.595"N	103°33'00.440"W	0.00	
13449.00†	90.000	270.636	10940.00	2590.98	28.76	-2590.82	782382.85	589630.16	32°37'06.613"N	103°33'01.609"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator **Cimarex Energy Co.** Slot **No. 19H SHL**
 Area **Lea County, NM** Well **No. 19H**
 Field **(Mallon) Sec 34, T19S, R34E** Wellbore **No. 19H PWB**
 Facility **Mallon 34 Fed No. 19H**

WELLPATH DATA (46 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
13549.00†	90.000	270.636	10940.00	2690.98	29.87	-2690.81	782282.85	589631.27	32°37'06.631"N	103°33'02.778"W	0.00	
13649.00†	90.000	270.636	10940.00	2790.98	30.98	-2790.81	782182.86	589632.38	32°37'06.650"N	103°33'03.947"W	0.00	
13749.00†	90.000	270.636	10940.00	2890.98	32.09	-2890.80	782082.87	589633.49	32°37'06.668"N	103°33'05.116"W	0.00	
13849.00†	90.000	270.636	10940.00	2990.98	33.20	-2990.79	781982.88	589634.60	32°37'06.686"N	103°33'06.285"W	0.00	
13949.00†	90.000	270.636	10940.00	3090.98	34.31	-3090.79	781882.89	589635.71	32°37'06.704"N	103°33'07.454"W	0.00	
14049.00†	90.000	270.636	10940.00	3190.98	35.42	-3190.78	781782.90	589636.82	32°37'06.723"N	103°33'08.623"W	0.00	
14149.00†	90.000	270.636	10940.00	3290.98	36.53	-3290.78	781682.91	589637.93	32°37'06.741"N	103°33'09.792"W	0.00	
14249.00†	90.000	270.636	10940.00	3390.98	37.64	-3390.77	781582.92	589639.04	32°37'06.759"N	103°33'10.961"W	0.00	
14349.00†	90.000	270.636	10940.00	3490.98	38.75	-3490.76	781482.92	589640.15	32°37'06.777"N	103°33'12.130"W	0.00	
14449.00†	90.000	270.636	10940.00	3590.98	39.86	-3590.76	781382.93	589641.26	32°37'06.796"N	103°33'13.299"W	0.00	
14549.00†	90.000	270.636	10940.00	3690.98	40.97	-3690.75	781282.94	589642.37	32°37'06.814"N	103°33'14.468"W	0.00	
14649.00†	90.000	270.636	10940.00	3790.98	42.08	-3790.74	781182.95	589643.48	32°37'06.832"N	103°33'15.637"W	0.00	
14749.00†	90.000	270.636	10940.00	3890.98	43.19	-3890.74	781082.96	589644.59	32°37'06.850"N	103°33'16.806"W	0.00	
14849.00†	90.000	270.636	10940.00	3990.98	44.30	-3990.73	780982.97	589645.70	32°37'06.869"N	103°33'17.974"W	0.00	
14949.00†	90.000	270.636	10940.00	4090.98	45.41	-4090.73	780882.98	589646.81	32°37'06.887"N	103°33'19.143"W	0.00	
15021.14	90.000	270.636	10940.00†	4163.12	46.21	-4162.86	780810.84	589647.61	32°37'06.900"N	103°33'19.987"W	0.00	No. 19H PBHL



Planned Wellpath Report

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REFERENCE WELL PATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 19H SHL
Area	Lea County, NM	Well	No. 19H
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 19H PWB
Facility	Mallon 34 Fed No. 19H		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 19H PBHL	15021.14	10940.00	46.21	-4162.86	780810.84	589647.61	32°37'06.900"N	103°33'19.987"W	point

SURVEY PROGRAM Ref Wellbore: No. 19H PWB Ref Wellpath: Prelim_1

Start MD [ft]	0.00	Log Name/Comment	Wellbore
End MD [ft]	15021.14		No. 19H PWB
	15021.14		

Positional Uncertainty Model
NaviTrak (Standard)