

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.

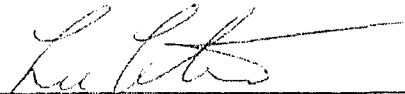
Case No. 14,390

AFFIDAVIT OF LEE CATALANO

COUNTY OF MIDLAND)
) ss.
STATE OF TEXAS)

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

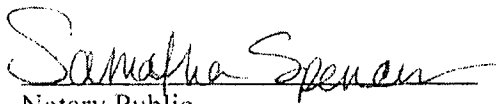
1. I am over the age of 18, and have personal knowledge of the matters stated herein.
2. I am a geologist for Cimarex Energy Co. ("Cimarex").
3. Exhibit A is a structure map on top of the Bone Spring formation. The Bone Spring formation dips to the south. Exhibit A also contains production data from 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 Mallon 34 Fed. Well No. 16. 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.



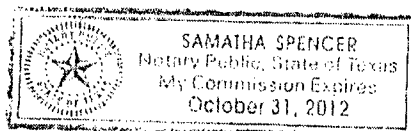
Lee Catalano

SUBSCRIBED AND SWORN TO before me this 27 day of October, 2009 by Lee Catalano.

My Commission Expires: October 31, 2012



Notary Public



Oil Conservation Division
Case No. 2
Exhibit No.

XEC
Structure Map
Top Bone Spring
BUREAU OF REVENUE
0 2,000
FEET
PORTED WELL DATA
ATTRIBUTE MAP
WELL SYMBOLS
Abandoned Gas Well
Dry Hole
Gas Well
Inactive Well
New Symbol
Oil & Gas Well
Oil Well
Service Well
Suspended Oil Well
REMARKS
Contour Interval
100 ft
OIL CUM (green)
By LEC
August 18, 2009

2 23 26 27 34 35 36 37

4,343 4,395 4,397 4,412 4,452 4,456 4,459 4,482 4,519 4,537 4,562 4,573 4,579 4,581 4,587 4,579 4,598 4,629 4,655 4,537 4,517 4,508

4,400 4,500 4,600

100 MB 20 MB 26 MB 34 MB 35 MB 36 MB 37 MB

ELEV. KB: 3.687
32818

CIMAREX ENERGY OF COLORADO
COMP. DATE: 9/25/1997
MALLON '34' FEDERAL

T15S R34E S34
1890 FSL 680 FWL
BONESPRINGS, W. 134 74S BBL

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

T20S R34E S2
1880 FSL 2130 FWL
BONESPRINGS, W. 44 22S BBL
BONESPRINGS, W. 57 81S BBL

ELEV. KB: 3.698
38042

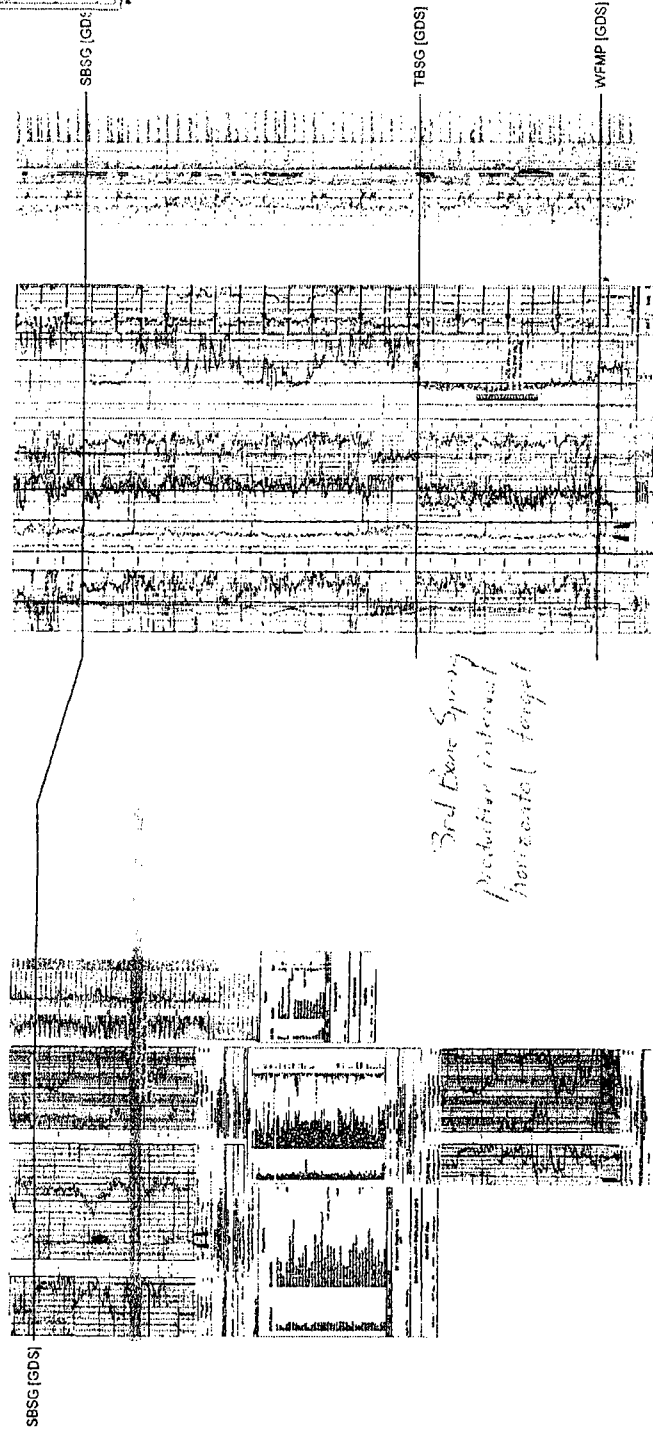
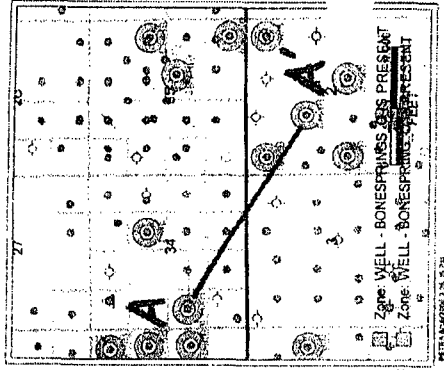
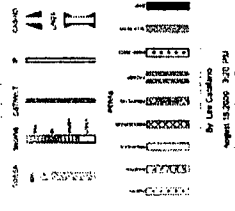


Exhibit B
CIMAREX ENERGY

Structural Cross-section

Mallon 34 Fed # 16

LeaCo, NM





Cimarex Energy Co. of Colorado

Location: Lea County, NM
Field: (Madon) Sec 34, T19S, R34E
Facility: Mallon 34 Federal #16

Slot: No. 16H
Well: No. 16H SHL
Wellbore: No. 16H 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	90.000	0.00	0.00	0.00	0.00	0.00
Est. KOP	10645.00	0.000	90.000	10645.00	0.00	0.00	0.00	0.00
EOC	10951.33	90.000	90.000	10640.02	0.00	195.02	29.38	195.02
No. 16H BHL	15046.31	90.000	90.000	10640.00	0.00	4290.00	0.00	4290.00

This reference wellbore is Preliminary Plan

True vertical depths are referenced to Rig on No. 16H (RT)

Measured depths are referenced to Rig on No. 16H (RT)

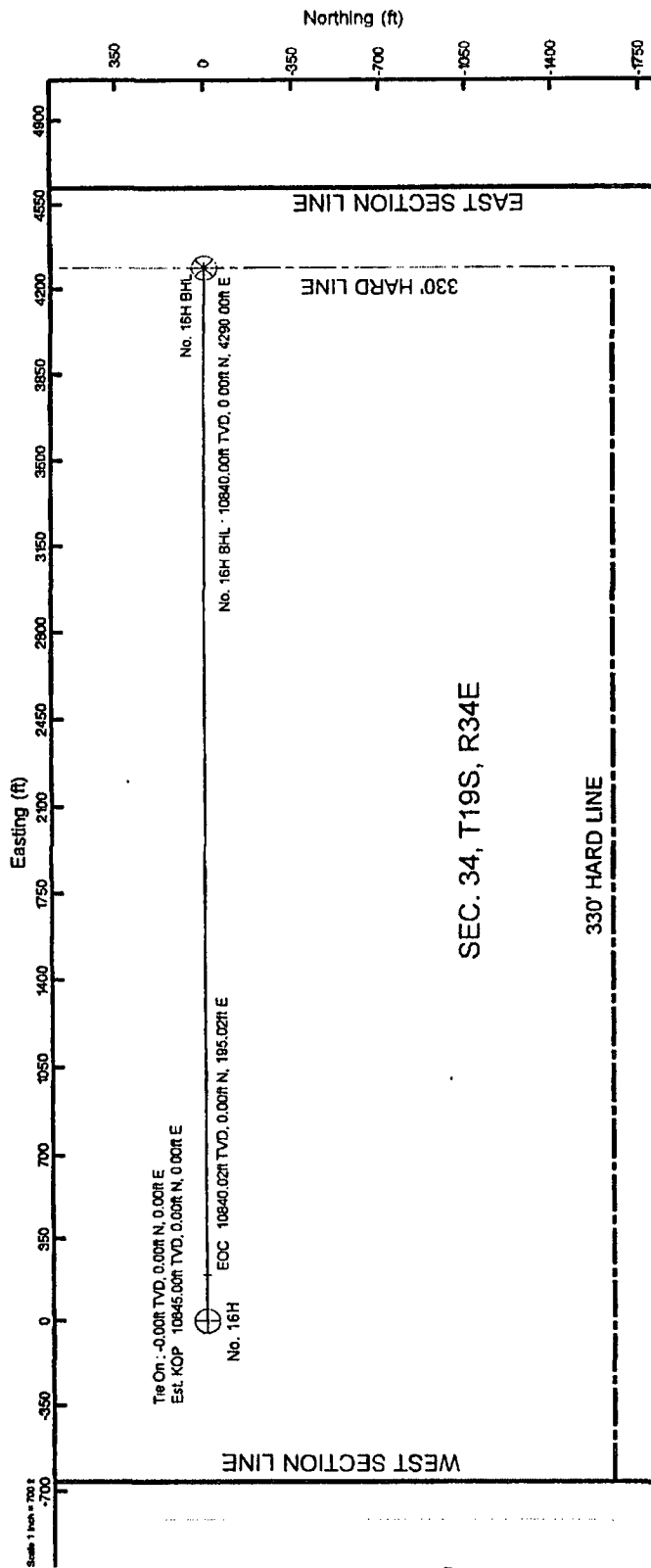
Rig on No. 16H (RT) is Mean Sea Level 3565.5 feet

Mean Sea Level is Mean Sea Level (Positive) minus 34.3779 feet

Coordinates are in feet referenced to Fickley Center

Created by geosystem on 10/20/09

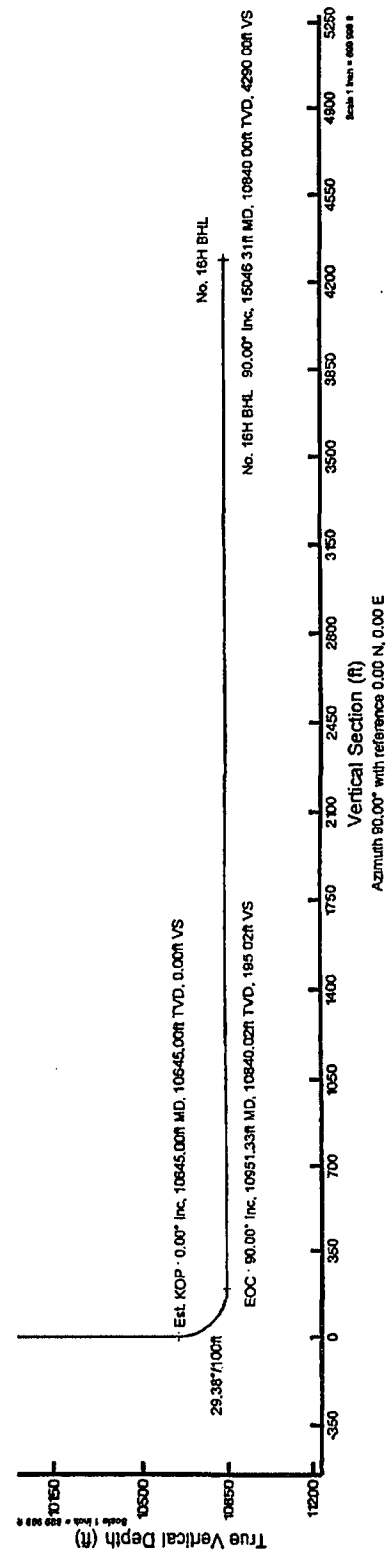
Grid System: NAD83 / TM Zone Mexico State Plane - Eastern Zone (DD11), US Feet
Mean Reference: Grid North
Scale: True distance
Drifts are in feet
Created by geosystem on 10/20/09



SEC. 34, T19S, R34E

330' HARD LINE

SECTION/HARD LINE ARE ESTIMATE ONLY AND ARE SUBJECT TO CUSTOMER APPROVAL



EXHIBIT

C



Planned Wellpath Report

Preliminary Plan
Page 1 of 3



INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co. of Colorado	Slot	No. 16H
Area	Lea County, NM	Well	No. 16H SHL
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 16H PWB
Facility	Mallon 34 Federal #16		

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	1.00024	Report Generated	1/9/2009 at 8:40:03 AM
Convergence at slot	n/a	Database/Source file	WA_Midland/No. 16H_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	0.00	0.00	30°59'18.404"N	106°03'38.987"W
Facility Reference Pt			0.00	0.00	30°59'18.404"N	106°03'38.987"W
Field Reference Pt			0.00	0.00	30°59'18.404"N	106°03'38.987"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 16H (RT) to Facility Vertical Datum	17.50ft
Horizontal Reference Pt	Facility Center	Rig on No. 16H (RT) to Mean Sea Level	3695.50ft
Vertical Reference Pt	Rig on No. 16H (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 16H (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	90.00°



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Preliminary Plan

Page 2 of 3



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Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 16H PWB
Facility	Mallon 34 Federal #16		

WELLPATH DATA (53 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00	0.000	90.000	0.00	0.00	0.00	0.00	0.00	Tie On
9756.00†	0.000	90.000	9756.00	0.00	0.00	0.00	0.00	2nd Bone Spring Carbonate
9948.00†	0.000	90.000	9948.00	0.00	0.00	0.00	0.00	2nd Bone Spring Sand
10430.00†	0.000	90.000	10430.00	0.00	0.00	0.00	0.00	3rd Bone Spring Coarbonate
10630.00†	0.000	90.000	10630.00	0.00	0.00	0.00	0.00	3rd Bone Spring Sand
10645.00	0.000	90.000	10645.00	0.00	0.00	0.00	0.00	Est KOP
10745.00†	29.380	90.000	10740.67	25.08	0.00	25.08	29.38	
10845.00†	58.760	90.000	10811.74	93.88	0.00	93.88	29.38	
10945.00†	88.140	90.000	10839.91	188.69	0.00	188.69	29.38	
10948.81†	89.260	90.000	10840.00	192.50	0.00	192.50	29.38	3rd Bone Spring "C" Sand
10951.33	90.000	90.000	10840.02	195.02	0.00	195.02	29.38	EOC; 3rd Bone Spring "C" Sand
11045.00†	90.000	90.000	10840.02	288.69	0.00	288.69	0.00	
11145.00†	90.000	90.000	10840.02	388.69	0.00	388.69	0.00	
11245.00†	90.000	90.000	10840.02	488.69	0.00	488.69	0.00	
11345.00†	90.000	90.000	10840.01	588.69	0.00	588.69	0.00	
11445.00†	90.000	90.000	10840.01	688.69	0.00	688.69	0.00	
11545.00†	90.000	90.000	10840.01	788.69	0.00	788.69	0.00	
11645.00†	90.000	90.000	10840.01	888.69	0.00	888.69	0.00	
11745.00†	90.000	90.000	10840.01	988.69	0.00	988.69	0.00	
11845.00†	90.000	90.000	10840.01	1088.69	0.00	1088.69	0.00	
11945.00†	90.000	90.000	10840.01	1188.69	0.00	1188.69	0.00	
12045.00†	90.000	90.000	10840.01	1288.69	0.00	1288.69	0.00	
12145.00†	90.000	90.000	10840.01	1388.69	0.00	1388.69	0.00	
12245.00†	90.000	90.000	10840.01	1488.69	0.00	1488.69	0.00	
12345.00†	90.000	90.000	10840.01	1588.69	0.00	1588.69	0.00	
12445.00†	90.000	90.000	10840.01	1688.69	0.00	1688.69	0.00	
12545.00†	90.000	90.000	10840.01	1788.69	0.00	1788.69	0.00	
12645.00†	90.000	90.000	10840.01	1888.69	0.00	1888.69	0.00	
12745.00†	90.000	90.000	10840.01	1988.69	0.00	1988.69	0.00	
12845.00†	90.000	90.000	10840.01	2088.69	0.00	2088.69	0.00	
12945.00†	90.000	90.000	10840.01	2188.69	0.00	2188.69	0.00	
13045.00†	90.000	90.000	10840.01	2288.69	0.00	2288.69	0.00	
13145.00†	90.000	90.000	10840.01	2388.69	0.00	2388.69	0.00	
13245.00†	90.000	90.000	10840.01	2488.69	0.00	2488.69	0.00	
13345.00†	90.000	90.000	10840.01	2588.69	0.00	2588.69	0.00	
13445.00†	90.000	90.000	10840.01	2688.69	0.00	2688.69	0.00	
13545.00†	90.000	90.000	10840.01	2788.69	0.00	2788.69	0.00	
13645.00†	90.000	90.000	10840.01	2888.69	0.00	2888.69	0.00	
13745.00†	90.000	90.000	10840.01	2988.69	0.00	2988.69	0.00	
13845.00†	90.000	90.000	10840.00	3088.69	0.00	3088.69	0.00	
13945.00†	90.000	90.000	10840.00	3188.69	0.00	3188.69	0.00	
14045.00†	90.000	90.000	10840.00	3288.69	0.00	3288.69	0.00	
14145.00†	90.000	90.000	10840.00	3388.69	0.00	3388.69	0.00	
14245.00†	90.000	90.000	10840.00	3488.69	0.00	3488.69	0.00	
14345.00†	90.000	90.000	10840.00	3588.69	0.00	3588.69	0.00	



Planned Wellpath Report

Preliminary Plan
Page 3 of 3



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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
14445.00†	90.000	90.000	10840.00	3688.69	0.00	3688.69	0.00	
14545.00†	90.000	90.000	10840.00	3788.69	0.00	3788.69	0.00	
14645.00†	90.000	90.000	10840.00	3888.69	0.00	3888.69	0.00	
14745.00†	90.000	90.000	10840.00	3988.69	0.00	3988.69	0.00	
14845.00†	90.000	90.000	10840.00	4088.69	0.00	4088.69	0.00	
14945.00†	90.000	90.000	10840.00	4188.69	0.00	4188.69	0.00	
15045.00†	90.000	90.000	10840.00	4288.69	0.00	4288.69	0.00	
15046.31	90.000	90.000	10840.00†	4290.00	0.00	4290.00	0.00	No. 16H BHL

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 16H BHL	15046.31	10840.00	0.00	4290.00	4291.04	0.00	30°59'19.060"N	106°02'49.710"W	point