

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

CASE NO. 14361

EXHIBIT

2

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. 14,361

AFFIDAVIT OF LEE CATALANO

COUNTY OF MIDLAND)
) ss.
STATE OF TEXAS)

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

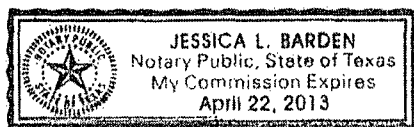
1. I am over the age of 18, and have personal knowledge of the matters stated herein.
2. I am a geologist for Cimarex Energy Co. ("Cimarex").
3. Exhibit A is a structure map on top of the Bone Spring formation. The Bone Spring formation dips to the south. Exhibit A also contains production data from 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 18th day of August, 2009 by Lee Catalano.

My Commission Expires: 4-22-2013

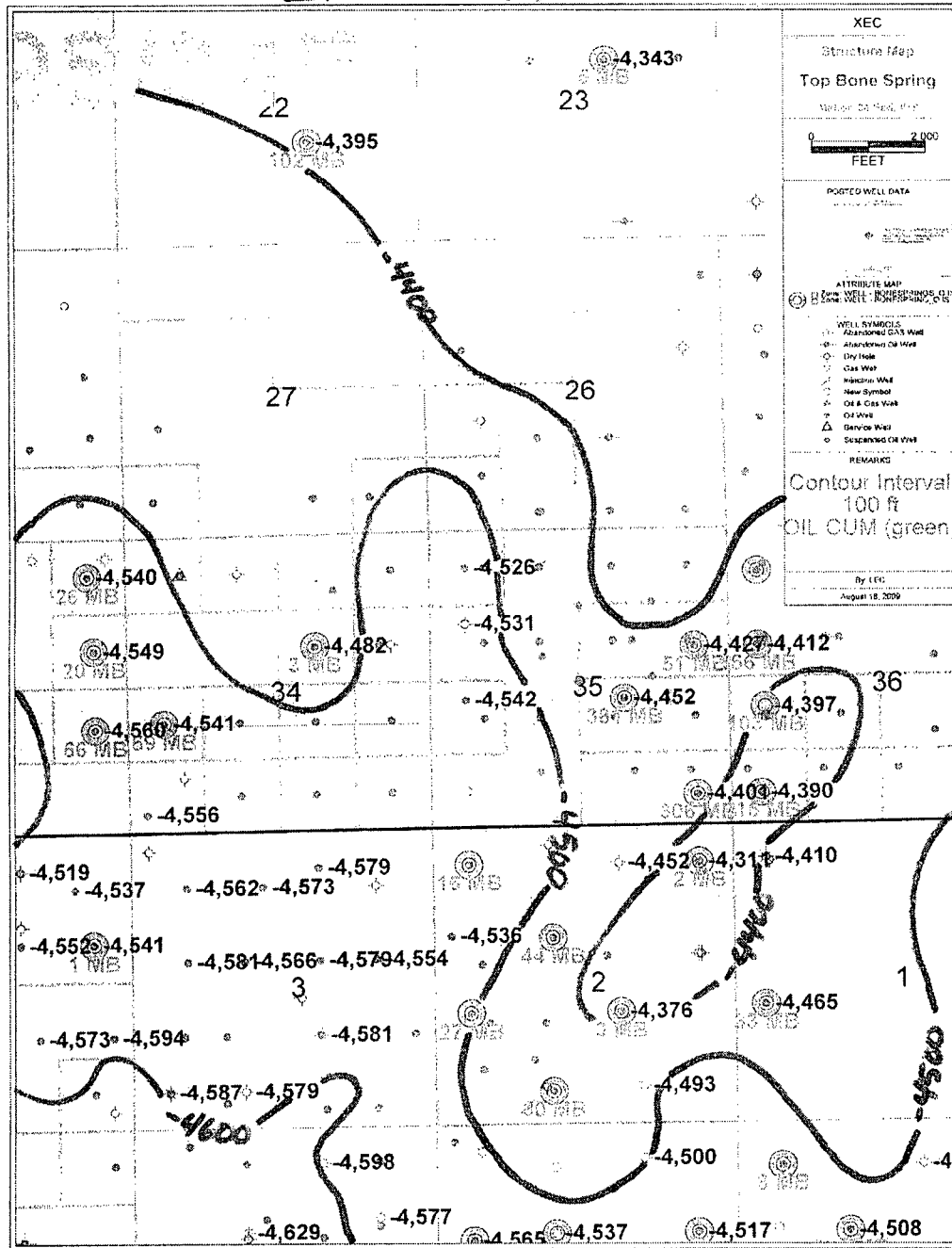




Notary Public

Oil Conservation Division
Case No. _____
Exhibit No. 2

Exhibit A



ELEV. KB - 3,687
3216

CIMAREX ENERGY OF COLORADO
COMP. DATE: 9/25/1997
MALLON 34 FEDERAL
16

T138 R34E S34
1980 FSL 660 FWL
BONESPRINGS, CO. 44,242 BBL
BONESPRINGS, W. 134,749 BBL

SAMSON RESOURCES COMPANY
COMP. DATE: 5/1/2007
EAGLE 2 STATE
3

T20S R34E S2
1980 FNL 2130 FWL
BONESPRINGS, CO. 44,242 BBL
BONESPRINGS, W. 57,918 BBL

ELEV. KB - 3,698
38042

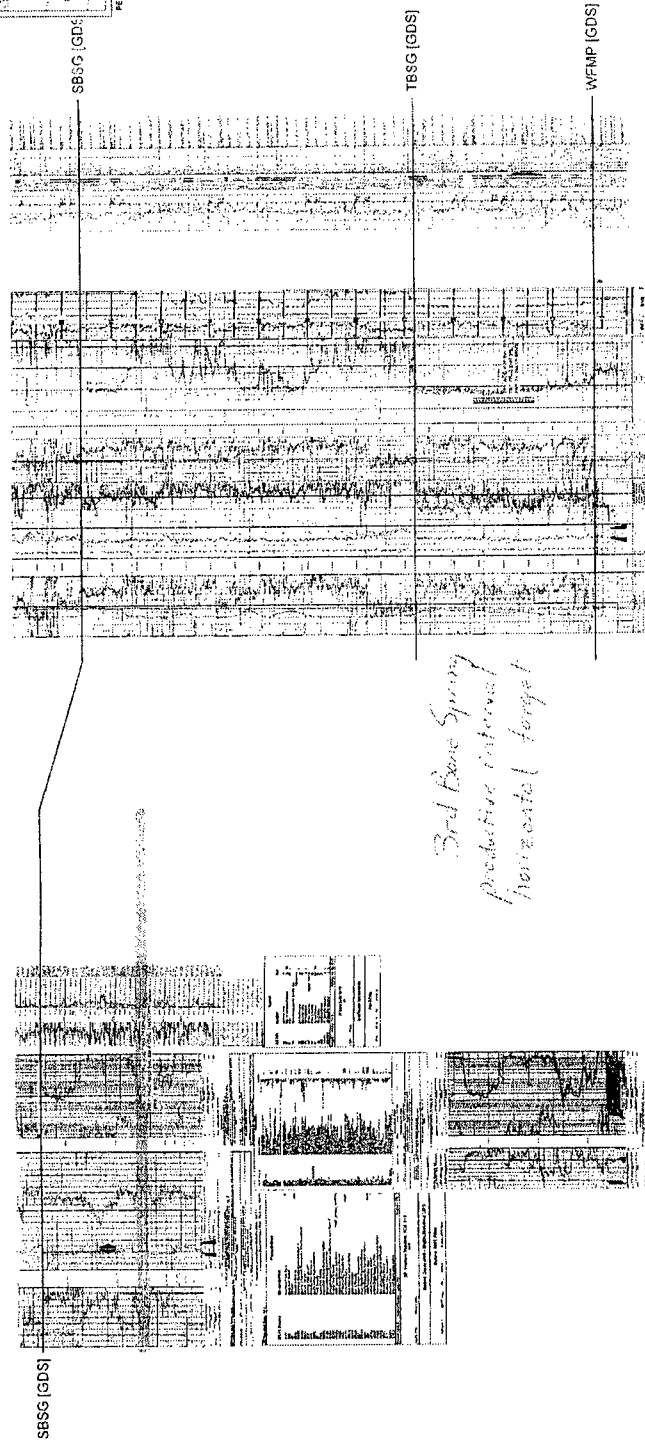
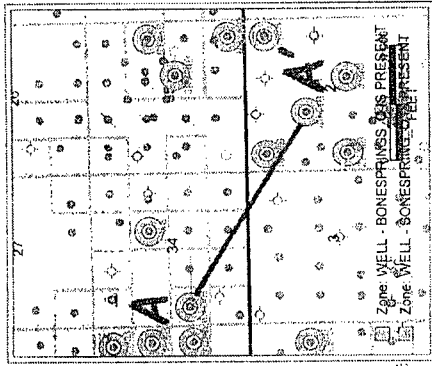
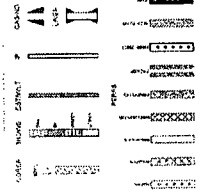


Exhibit B
CIMAREX ENERGY

Structural Cross-section

Mallon 34 Fed # 16

LeaCo, NM



By Lee Clumero
August 18, 2008 3:20 PM



Cimarex Energy Co. of Colorado

Location: Lea County, NM
Field: (Maton) Sec 34, T19S, R34E
Facility: Maton 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 (7100ft)	VS (ft)
Tie On	0.00	0.000	90.000	0.00	0.00	0.00	0.00	0.00
Est. KOP	10845.00	0.000	90.000	10845.00	0.00	0.00	0.00	0.00
EOC	10951.33	90.000	10840.02	0.00	195.02	29.38	195.02	195.02
No. 16H BHL	15046.31	90.000	10840.00	0.00	0.00	4290.00	0.00	4290.00

Plot reference wellpath 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) to Mean Sea Level: 3655.5 feet

Mean Sea Level to Mud Line (Field): Station 34 Federal #16, -3078 feet

Coordinates are in feet referenced to Factory Center

Old System: NAD83 T.M. New Mexico State Plane - Eastern Zone (GDA11), US feet

North Reference: Grid North

Scale: True distance

Depths are in feet

Created by: gmsmcmr, 10/2009

Easting (ft)

Scale: 1 inch = 700 feet

-700

-350

0

350

700

1050

1400

1750

2100

2450

2800

3150

3500

3850

4200

4550

4900

5250

5600

5950

6300

6650

7000

7350

7700

8050

8400

8750

9100

9450

9800

10150

10500

10850

11200

11550

12000

12450

12800

13150

13500

13850

14200

14550

14900

15250

15600

15950

16300

16650

17000

17350

17700

18050

18400

18750

19100

19450

19800

20150

20500

20850

21200

21550

22000

22450

22800

23150

23500

23850

24200

24550

24900

25250

25600

25950

26300

26650

27000

27350

27700

28050

28400

28750

29100

29450

29800

30150

30500

30850

31200

31550

31900

32250

32600

32950

33300

33650

34000

34350

34700

35050

35400

35750

36100

36450

36800

37150

37500

37850

38200

38550

38900

39250

39600

39950

40300

40650

41000

41350

41700

42050

42400

42750

43100

43450

43800

44150

44500

44850

45200

45550

45900

46250

46600

46950

47300

47650

48000

48350

48700

49050

49400

49750

50100

50450

50800

51150

51500

51850

52200

52550

52900

53250

53600

53950

54300

54650

55000

55350

55700

56050

56400

56750

57100

57450

57800

58150

58500

58850

59200

59550

59900

60250

60600

60950

61300

61650

62000

62350

62700

63050

63400

63750

64100

64450

64800

65150

65500

65850

66200

66550

66900

67250

67600

67950

68300

68650

69000

69350

69700

70050

70400

70750

71100

71450

71800

72150

72500

72850

73200

73550

73900

74250

74600

74950

75300

75650

76000

76350

76700

77050

77400

77750

78100

78450

78800

79150

79500

79850

80200

80550

80900

81250

81600

81950

82300

82650

83000

83350

83700

84050

84400

84750

85100

85450

85800

86150

86500

86850

87200

87550

87900

88250

88600

88950

89300

89650

90000

90350

90700

91050

91400

91750

92100

92450

92800

93150

93500

93850

94200

94550

94900

95250

95600

95950

96300

96650

97000



Planned Wellpath Report

Preliminary Plan

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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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Area	Lea County, NM	Well	No. 16H SHL
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

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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
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