

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

APPLICATION OF CIMAREX  
ENERGY CO. FOR COMPULSORY  
POOLING, EDDY COUNTY,  
NEW MEXICO

CASE NO. 21055

Examiner Docket: February 6, 2020

CIMAREX'S EXHIBITS

Ringer 3-4 Federal Com 2H



Earl E. DeBrine, Jr.  
Lance D. Hough



500 Fourth Street NW, Suite 1000  
P. O. Box 2168 / Albuquerque, NM 87103  
Telephone 505.848.1800  
[edebrine@modrall.com](mailto:edebrine@modrall.com)  
[ldh@modrall.com](mailto:ldh@modrall.com)

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DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES  
OIL CONSERVATION DIVISION**

**APPLICATION OF CIMAREX  
ENERGY CO. FOR COMPULSORY  
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NEW MEXICO**

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**CIMAREX'S EXHIBITS**

**Ringer 3-4 Federal Com 2H**

- Exhibit A      Compulsory Pooling Application Checklist
- Exhibit B      Affidavit of Caitlin Pierce
- B-1      Application
  - B-2      C102
  - B-3      Tract Map with WIs and ORRIs
  - B-4      Well Proposal Letter
  - B-5      Excerpt from Proposed JOA
  - B-6      Authorization for Expenditure
  - B-7      Communication Timeline
- Exhibit C      Affidavit of Harrison Hastings
- C-1      Gun Barrel Diagram
  - C-2      Regional Locator Map
  - C-3      Cross-Section Locator Map
  - C-4      Deep Structure Map
  - C-5      Upper Wolfcamp Isopach Map
  - C-6      Stratigraphic Cross Section
  - C-7      Target Zone within Stratigraphic Cross Section
- Exhibit D      Affidavit of Lance D. Hough
- D-1      Hearing Notice
  - D-2      Certified Mail Log / Notice January 16, 2020
  - D-3      Certified Mail Log / Report February 4, 2020
  - D-4      Affidavit of Publication

Earl E. DeBrine, Jr.  
Lance D. Hough

 **MODRALL SPERLING**

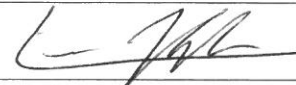
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[ldh@modrall.com](mailto:ldh@modrall.com)

# COMPULSORY POOLING APPLICATION CHECKLIST (pdf)

ALL INFORMATION IN THE APPLICATION MUST BE SUPPORTED BY SIGNED AFFIDAVITS

<b>Case:</b> 21055	<b>APPLICANT'S RESPONSE</b>
<b>Date</b> 2/6/20	
<b>Applicant</b>	Cimarex Energy Co.
<b>Designated Operator &amp; OGRID (affiliation if applicable)</b>	Cimarex Energy Co. (OGRID 215099)
<b>Applicant's Counsel:</b>	Modrall Sperling
<b>Case Title:</b>	APPLICATION OF CIMAREX ENERGY CO. FOR COMPULSORY POOLING, EDDY COUNTY, NEW MEXICO, CASE NO. 21055
<b>Entries of Appearance/Intervenors:</b>	None
<b>Well Family</b>	Ringer
<b>Formation/Pool</b>	
<b>Formation Name(s) or Vertical Extent:</b>	Wolfcamp Formation
<b>Primary Product (Oil or Gas):</b>	Gas
<b>Pooling this vertical extent:</b>	Wolfcamp Formation
<b>Pool Name and Pool Code:</b>	Purple Sage; Wolfcamp Pool (Pool Code 98220)
<b>Well Location Setback Rules:</b>	Division's special set back requirements in Order No. R-14262
<b>Spacing Unit Size:</b>	640 Acres
<b>Spacing Unit</b>	
<b>Type (Horizontal/Vertical)</b>	Horizontal
<b>Size (Acres)</b>	640 Acres
<b>Building Blocks:</b>	Half Section Equivalents
<b>Orientation:</b>	Nort
<b>Description: TRS/County</b>	S/2 of Sections 3 and 4, Township 25 South, Range 26 East, NMPM, Eddy County, New Mexico
<b>Standard Horizontal Well Spacing Unit (Y/N), If No, describe</b>	Yes
<b>Other Situations</b>	
<b>Depth Severance: Y/N. If yes, description</b>	No
<b>Proximity Tracts: If yes, description</b>	No
<b>Proximity Defining Well: if yes, description</b>	N/A
<b>Applicant's Ownership in Each Tract</b>	Exhibit B.3
<b>Well(s)</b>	
<b>Name &amp; API (if assigned), surface and bottom hole location, footages, completion target, orientation, completion status (standard or non-standard)</b>	See Exhibit B.1 and Exhibit B.2
<b>Well #1</b>	Ringer 3-4 Federal Com 2H, API No. 30-015-Pending SHL: SE/4 SE/4 (Unit P) of Section 3, Township 25 South, Range 26 East, NMPM, Eddy County. BHL: SW/4 SW/4 (Unit M) of Section 4, Township 25 South, Range 26 East, NMPM, Eddy County  Completion Target: Wolfcamp at approx 8,529 feet TVD. Well Orientation: East to West Completion Location expected to be: Standard
<b>Horizontal Well First and Last Take Points</b>	Exhibit B.2
<b>Completion Target (Formation, TVD and MD)</b>	Exhibit B.1; Exhibit B.2; Exhibit C.1, Exhibit C.6; Exhibit C.7
<b>AFE Capex and Operating Costs</b>	
<b>Drilling Supervision/Month \$</b>	6,500
<b>Production Supervision/Month \$</b>	650
<b>Justification for Supervision Costs</b>	Exhibit B.6 for AFEs
<b>Requested Risk Charge</b>	200%; see Exhibit B



<b>Notice of Hearing</b>	
Proposed Notice of Hearing	Exhibit D.1
Proof of Mailed Notice of Hearing (20 days before hearing)	Exhibit D.2
Proof of Published Notice of Hearing (10 days before hearing)	Exhibit D.3
<b>Ownership Determination</b>	
Land Ownership Schematic of the Spacing Unit	Exhibit B; Exhibit B.3
Tract List (including lease numbers and owners)	Exhibit B.3
Pooled Parties (including ownership type)	Exhibit B.3
Unlocatable Parties to be Pooled	Exhibit B.3; Exhibit D.2
Ownership Depth Severance (including percentage above & below)	None
<b>Joinder</b>	
Sample Copy of Proposal Letter	Exhibit B.4
List of Interest Owners (ie Exhibit A of JOA)	Exhibit B.3
Chronology of Contact with Non-Joined Working Interests	Exhibit B.7
Overhead Rates In Proposal Letter	Exhibit B.5
Cost Estimate to Drill and Complete	Exhibit B.6 for AFEs
Cost Estimate to Equip Well	Exhibit B.6 for AFEs
Cost Estimate for Production Facilities	Exhibit B.6 for AFEs
<b>Geology</b>	
Summary (including special considerations)	Exhibit C
Spacing Unit Schematic	Exhibits C.1, C.2, and C.3
Gunbarrel/Lateral Trajectory Schematic	Exhibit C.1
Well Orientation (with rationale)	Exhibit C
Target Formation	Exhibits C.6 and C.7
HSU Cross Section	Exhibits C.6 and C.7
Depth Severance Discussion	Exhibit B
<b>Forms, Figures and Tables</b>	
C-102	Exhibit C.2
Tracts	Exhibit B.3
Summary of Interests, Unit Recapitulation (Tracts)	Exhibit B.3
General Location Map (including basin)	Exhibit C.2
Well Bore Location Map	Exhibits B.2, C.1, C.4, and C.5
Structure Contour Map - Subsea Depth	Exhibit C.4
Cross Section Location Map (including wells)	Exhibits C.3
Cross Section (including Landing Zone)	Exhibits C.6 and C.7
<b>Additional Information</b>	
<b>CERTIFICATION: I hereby certify that the information provided in this checklist is complete and accurate.</b>	
Printed Name (Attorney or Party Representative):	Laura Harsh
Signed Name (Attorney or Party Representative):	
Date:	2/5/20



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

APPLICATION OF CIMAREX  
ENERGY CO. FOR COMPULSORY  
POOLING, EDDY COUNTY,  
NEW MEXICO

CASE NO. 21055

AFFIDAVIT OF CAITLIN PIERCE

STATE OF TEXAS                    )  
  ) ss.  
COUNTY OF MIDLAND            )

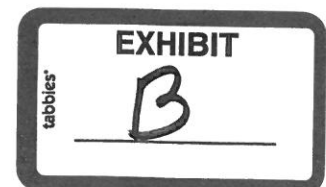
Caitlin Pierce, being duly sworn, deposes and states:

1. I am a landman for Cimarex Energy Co. ("Cimarex"), over the age of 18 and have personal knowledge of the matters stated herein. I have previously been qualified to testify by the New Mexico Oil Conservation Division as an expert in petroleum land matters.

2. Pursuant to NMAC 19.15.4.12.A(1), the following information is submitted in support of the above referenced compulsory pooling applications filed by Cimarex.

3. This case involves a request for an order from the Division for compulsory pooling of interest owners who have refused to voluntarily pool their interests for the proposed Wolfcamp horizontal spacing unit described below, and in the well to be drilled in the horizontal spacing unit.

4. Prior to filing it application, Cimarex made a good faith effort to obtain voluntary joinder of the working interest owners in the proposed well. Cimarex identified all of the working interest, unleased mineral interests, and overriding royalty interest owners from a title opinion. To locate interest owners, Cimarex conducted a diligent search of the public records in the county where the well will be located, and conducted phone directory and computer searches to locate



contact information for parties entitled to notification. I mailed all working interest owners well proposals and an Authorization for Expenditure, and a form of Operating Agreement upon request.

5. No opposition is expected. Prior to filing its applications Cimarex contacted the interest owners being pooled regarding the proposed well; the pooled working interest owners have failed or refused to voluntarily commit their interests in the well. Cimarex provided all of the working interest owners, any unleased mineral owners, and overriding royalty owners with notice of this application, and none have entered an appearance in opposition to Cimarex's application.

6. In its Application, Cimarex seeks an order from the Division: (1) to the extent necessary, approving the creation of a 640-acre, more or less, Wolfcamp horizontal spacing unit; and, (2) pooling all uncommitted mineral interests within a Wolfcamp horizontal spacing unit underlying the S/2 of Sections 3 and 4, Township 25 South, Range 26 East, NMPM, Eddy County, New Mexico. This spacing unit will be dedicated to the **Ringer 3-4 Federal Com 2H** well, to be horizontally drilled. The Application is attached hereto as **Exhibit B.1**.

7. Attached as **Exhibit B.2** is the C-102 for the proposed well. This well will develop the Purple Sage; Wolfcamp Pool (Pool Code 98220), which is a gas pool. The producing interval for the wells will be orthodox and will comply with the Division's special set back requirements in Order No. R-14262, as the first and last take points will be no closer than 330' from the proposed unit boundary and the completed lateral will be no closer than 330' from the proposed unit boundary.

8. A lease tract map outlining the unit to be pooled is attached hereto as **Exhibit B.3**. The working interest owners being pooled and the percent of their interest, as well as a list of overriding royal interest owners being pooled, are also included as part of **Exhibit B.3**. Cimarex owns an interest in the proposed unit and has a right to drill a well thereon.

9. There are no depth severances within the proposed spacing unit.
10. **Exhibit B.4** is a sample well proposal letter sent to each of the working interest owners seeking their voluntary participation in the well.
11. **Exhibit B.5** is an excerpt of the proposed joint operating agreement, included with the well proposal letter sent to each of the working interest owners, that provides overhead and administrative rates of \$6,500/month during drilling and \$650/month while producing.
12. **Exhibit B.6** is the Authorization for Expenditure for the proposed well. The estimated cost of the well, set forth therein, of \$12,190,000 is fair and reasonable, and is comparable to the costs of other wells of similar depth, length and completion method being drilled in this area of New Mexico.
13. **Exhibit B.7** is a summary of communications with the non-joined working interest.
14. Cimarex requests overhead and administrative rates of \$6,500/month during drilling and \$650/month while producing. These rates are fair and comparable to the rates charged by other operators for wells of this type in this area of Southeastern, New Mexico and consistent with the rates awarded by the Division in recent compulsory pooling orders. Cimarex requests that these rates be adjusted periodically as provided in the COPAS Accounting Procedure.
15. Cimarex requests the maximum cost plus 200% risk charge be assessed against non-consenting pooled working interest owners.
16. Cimarex requests that it be designated operator of the well.
17. Cimarex requests that it be allowed a period of one (1) year between when the wells are drilled and when the first well is completed under the order.
18. The parties Cimarex is seeking to pool were notified of this hearing.
19. Cimarex requests that overriding royalty interest owners be pooled.

20. Based upon my knowledge of the land matters involved in this case, education and training, it is my expert opinion that the granting of Cimarex's applications in this case is in the interests of conservation and the prevention of waste.

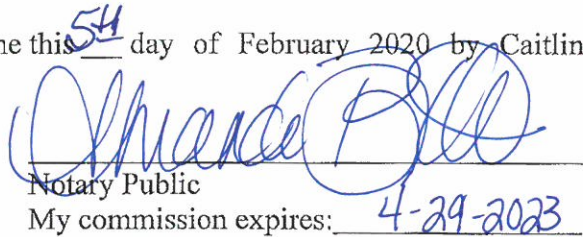
21. The attachments to my Affidavit were prepared by me or compiled from company business records.

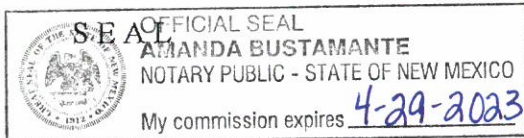
22. I attest that the information provided herein is true, correct and complete to the best of my knowledge and belief.



Caitlin Pierce

SUBSCRIBED AND SWORN to before me this 5<sup>th</sup> day of February 2020 by Caitlin Pierce.

  
Notary Public  
My commission expires: 4-29-2023



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

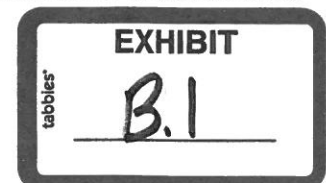
**APPLICATION OF CIMAREX  
ENERGY CO. FOR COMPULSORY  
POOLING, EDDY COUNTY,  
NEW MEXICO**

CASE NO. \_\_\_\_\_

**APPLICATION**

Cimarex Energy Co. ("Cimarex"), OGRID Number 215099, through its undersigned attorneys, hereby makes an application to the Oil Conservation Division pursuant to the provisions of NMSA (1978), Section 70-2-17, for an order pooling all uncommitted mineral interests within a Wolfcamp horizontal spacing unit underlying the S/2 of Sections 3 and 4, Township 25 South, Range 26 East, NMPM, Eddy County, New Mexico. In support of this application, Cimarex states as follows:

1. Cimarex is an interest owner in the subject lands and has a right to drill a well thereon.
2. Cimarex seeks to dedicate the S/2 of Sections 3 and 4, Township 25 South, Range 26 East, NMPM, Eddy County, New Mexico to form a 320-acre, more or less, spacing unit.
3. Cimarex plans to drill the **Ringer 3-4 Federal Com 2H** well to a depth sufficient to test the Wolfcamp formation. This well is a horizontal well with a surface location in the SE/4 SE/4 (Unit P) of Section 3, Township 25 South, Range 26 East, NMPM, Eddy County, and an intended bottom hole location in the SW/4 SW/4 (Unit M) of Section 4, Township 25 South, Range 26 East, NMPM, Eddy County.
4. This well is proposed to be drilled vertically to a depth of approximately 8,529' to the Wolfcamp formation and laterally in a westerly direction within the formation to the referenced bottom hole location.



5. This well will be located within the Purple Sage Wolfcamp (Gas) Pool (Pool Code 98220) and will comply with the Division's setback requirements.

6. Cimarex sought, but has been unable to obtain, a voluntary agreement from all interest owners in the Wolfcamp formation underlying the proposed spacing unit to participate in the drilling of the well or to otherwise commit their interests to the well.

7. The creation of a horizontal spacing unit and the pooling of all interests in the Wolfcamp formation underlying the proposed unit will prevent the drilling of unnecessary wells, prevent waste and protect correlative rights.

WHEREFORE, Cimarex requests that this case is set for hearing before an Examiner of the Oil Conservation Division on January 9, 2020, and after notice and hearing as required by law, the Division enter its order:

A. Creating an approximately 320-acre horizontal spacing unit in the Wolfcamp formation comprised of S/2 of Sections 3 and 4, Township 25 South, Range 26 East, NMPM, Eddy County, New Mexico;

B. Pooling all mineral interests in the Wolfcamp formation underlying a horizontal spacing unit within the S/2 of Sections 3 and 4, Township 25 South, Range 26 East, NMPM, Eddy County, New Mexico;

C. Designating Cimarex as operator of this unit and the well to be drilled thereon;

D. Authorizing Cimarex to recover its costs of drilling, equipping and completing the well;

E. Approving actual operating charges and costs charged for supervision, together with a provision adjusting the rates pursuant to the COPAS accounting procedure;



F. Setting a 200% charge for the risk involved in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

MODRALL, SPERLING, ROEHL, HARRIS  
& SISK, P.A.

By: 

Earl E. DeBrine, Jr.  
Lance D. Hough  
Post Office Box 2168  
500 Fourth Street NW, Suite 1000  
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[ldh@modrall.com](mailto:ldh@modrall.com)  
*Attorneys for Applicant*

W3623873.DOCX

**CASE NO. \_\_\_\_\_: Application of Cimarex Energy Co. for compulsory pooling, Eddy County, New Mexico.** Applicant seeks an order from the Division: (1) to the extent necessary, approving the creation of a 320-acre, more or less, Wolfcamp horizontal spacing unit; and, (2) pooling all uncommitted mineral interests within a Wolfcamp horizontal spacing unit underlying the S/2 of Sections 3 and 4, Township 25 South, Range 26 East, NMPM, Eddy County, New Mexico. This spacing unit will be dedicated to the **Ringer 3-4 Federal Com 2H** well, to be horizontally drilled. The producing area for this well will be orthodox. Also to be considered will be the cost of drilling and completing said well, the allocation of these costs as well as the actual operating costs and charges for supervision, designation of Cimarex as operator of the well, and a 200% charge for risk involved in drilling said well. Said area is located approximately 16.5 miles south southwest of Carlsbad, New Mexico.

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-015	<sup>2</sup> Pool Code 98220	<sup>3</sup> Pool Name Purple Sage Wolfcamp (Gas)
<sup>4</sup> Property Code	<sup>5</sup> Property Name RINGER 3-4 FEDERAL COM	<sup>6</sup> Well Number 2H
<sup>7</sup> OGRID No. 162683	<sup>8</sup> Operator Name CIMAREX ENERGY CO. OF COLORADO	<sup>9</sup> Elevation 3348.8'

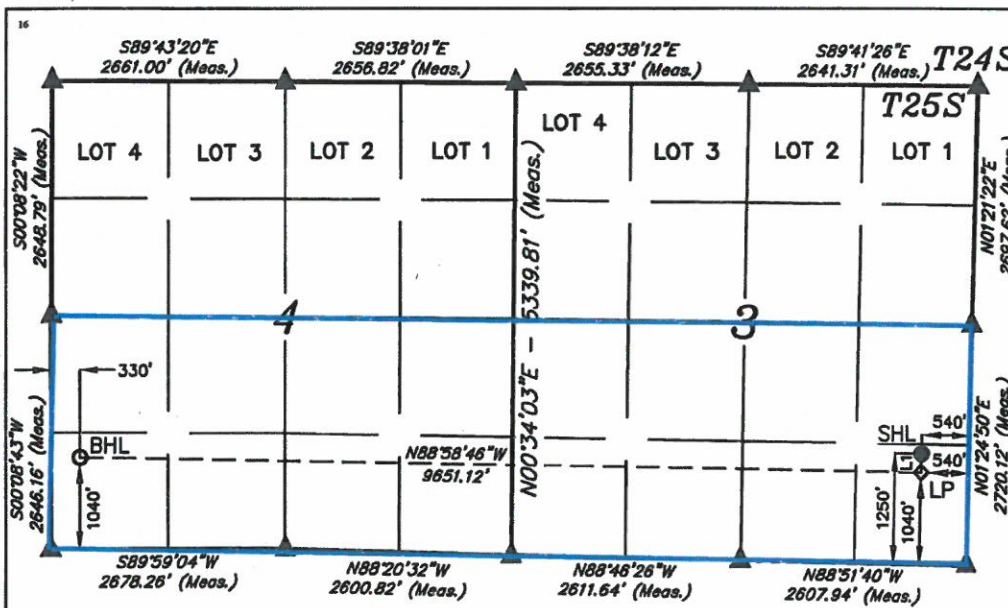
<sup>10</sup> Surface Location

UL or lot no. P	Section 3	Township 25S	Range 26E	Lot Idn	Feet from the 1250	North/South line SOUTH	Feet from the 540	East/West line EAST	County EDDY
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<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no. M	Section 4	Township 25S	Range 26E	Lot Idn	Feet from the 1040	North/South line SOUTH	Feet from the 330	East/West line WEST	County EDDY
<sup>12</sup> Dedicated Acres 640	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.						

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



SCALE

DRAWN BY: R.J. 07-02-18

REV: 1 07-16-18 C.M.T. (BHL CHANGE)

- = SURFACE HOLE LOCATION
- ◇ = LANDING POINT
- = BOTTOM HOLE LOCATION
- ▲ = SECTION CORNER LOCATED

NOTE:

- Distances referenced on plat to section lines are perpendicular.
- Basis of Bearing is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

LINE TABLE

LINE	DIRECTION	LENGTH
L1	S01°24'08"W	210.00'

NAD 83 (SURFACE HOLE LOCATION)

LATITUDE = 32°09'18.06" (32.155016°)

LONGITUDE = 104°16'27.33" (104.274258°)

NAD 27 (SURFACE HOLE LOCATION)

LATITUDE = 32°09'17.63" (32.154896°)

LONGITUDE = 104°16'25.53" (104.273759°)

STATE PLANE NAD 83 (N.M. EAST)

N: 420135.01' E: 559619.30'

STATE PLANE NAD 27 (N.M. EAST)

N: 420077.70' E: 518436.58'

NAD 83 (BOTTOM HOLE LOCATION)

LATITUDE = 32°09'17.32" (32.154811°)

LONGITUDE = 104°18'19.61" (104.305448°)

NAD 27 (BOTTOM HOLE LOCATION)

LATITUDE = 32°09'16.89" (32.154692°)

LONGITUDE = 104°18'17.81" (104.304948°)

STATE PLANE NAD 83 (N.M. EAST)

N: 420056.62' E: 549967.14'

STATE PLANE NAD 27 (N.M. EAST)

N: 419999.51' E: 508784.50'

<sup>11</sup> OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Hope Knauls*  
Signature

7/17/2018  
Date

Hope Knauls  
Printed Name

hknauls@cimarex.com  
E-mail Address

<sup>18</sup> SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

February 23, 2018

Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number:

EXHIBIT

B.2

## Ringer 3-4 Federal Com 2H

S/2 of Sections 3 & 4-25S-26E

**All of Sections 3 & 4 SAE the SE/4SE/4 of Section 4 governed by existing OA – Cimarex seeks to force pool only the SE/4SE/4 of Section 4 to allow for full development of the S/2 of Sections 3 & 4-25S-26E**

WI Owners	WI of S/2 Well BPO	WI of Tract being Force Pooled	Tract #
MHPI	0.709574025	0.3220506	2
Chevron	0.0645701	0.0645701	2
WPX	0.0966814	0.0966814	2
Murchison	0.116257028	0.46502811	2
MEC	0.012917448	0.05166979	2



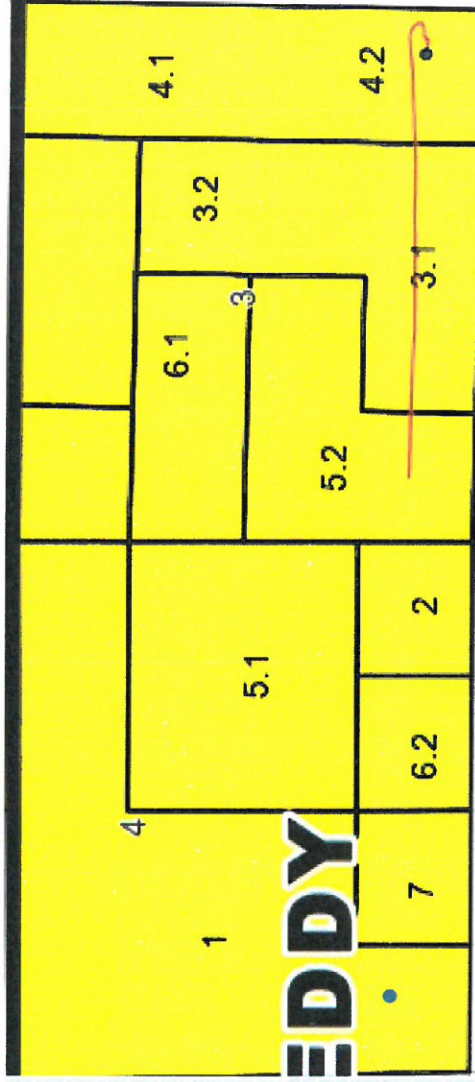


# Ringer 3-4 Federal Com 2H

S/2 of Sections 3 & 4-25S-26E

**All of Sections 3 & 4 SAE the SE/4SE/4 of Section 4 governed by existing OA – Cimarex seeks to force pool only the SE/4SE/4 of Section 4 to allow for full development of the S/2 of Sections 3 & 4-25S-26E**

ORRI Owners	Tract #
United States of America	1,2,3,1,3,2,4,1,4,2
Pearson-Sibert Oil Co of Texas	1,2,3,1,3,2,4,1,4,2, 5.1, 5.2, 6.1, 6.2, 7
AmeriPermian Holdings, LLC	6.1, 6.2, 7
Murchison Oil & Gas Inc	1, 3.1, 4.2
MEC Petroleum Corp.	1, 3.1, 4.2
Alan Jochimsen	6.1, 6.2, 7
Monty D. McLane	6.1, 6.2, 7
States Royalty Limited Partnership	6.1, 6.2, 7
Estate of Kelly Lohman, deceased	6.1, 6.2, 7
Springbok Energy Partners II, LLC	6.1, 6.2, 7
Silver Spur Resources, LLC	6.1, 6.2, 7
MRC Permian Company	6.1, 6.2, 7
Lester A Parks, et ux Clara Parks	6.1, 6.2, 7
Janet J. Tidwell	6.1, 6.2, 7
Diana K Hammonds	6.1, 6.2, 7
Nancy B. Parks	6.1, 6.2, 7
James L Thomas	6.1, 6.2, 7
William Ray Thomas	6.1, 6.2, 7
Carl Otis Thomas	6.1, 6.2, 7
Suncrest Resources, LLC	1, 3.1, 4.2
AmericaWest Resources, LLC	1, 3.1, 4.2
Speyside Resources, LLC	1, 3.1, 4.2
Shrader Enterprises, LP	1, 3.1, 4.2
OGX Royalty Fund IV, LP	1, 3.1, 4.2



December 17, 2018



Chaparral Oil, LLC  
701 Cedar Lake Blvd.  
Oklahoma City, OK 73114

**Re: Proposal to Drill  
Ringer 3-4 Federal Com 2H  
S/2 of Sections 3 & 4, Township 25 South, Range 26 East, Eddy County, NM**

Dear Working Interest Owner,

Cimarex Energy Co. hereby proposes to drill the Ringer 3-4 Federal Com 2H well at a legal location in Section 3, Township 25 South, Range 26 East, NMPM, Eddy Co., NM.

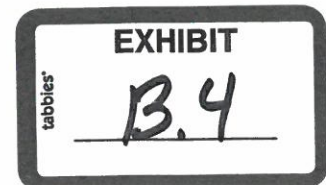
The intended surface hole location for the well is 1,250' FSL and 540' FEL of Section 3, Township 25 South, Range 26 East, and the intended bottom hole location is 1040' FSL and 330' FWL of Section 4, Township 25 South, Range 26 East. The well is proposed to be drilled vertically to a depth of approximately 8,529' to the Wolfcamp formation and laterally in a southerly direction within the formation to the referenced bottom hole location. Total measured depth of the well is proposed to be approximately 18,849' feet from surface to terminus.

It should be understood that compliance with topography or cultural or environmental concerns, among others, might require modification of Cimarex's intended procedure. Cimarex will advise you of any such modifications.

Cimarex intends to drill the proposed well under the terms of that certain Operating Agreement dated September 15, 1975 with a Unit Area covering All of Section 3 & 4, save and except the SE/4SE/4, Township 25 South, Range 26 East, Eddy County, New Mexico (the "JOA"). The proposed Ringer 3-4 Federal Com 2H will be drilled through the S/2S/2 of Sections 3 & 4, Township 25 South, Range 26 East, Eddy County, NM. Hence, Cimarex hereby proposes to amend the referenced JOA to (1) revise the Unit Area to include the SE/4SE/4; and (2) revise the participation percentages on Exhibit A; provided, however, that both of these amendments shall only apply to and affect horizontal wells drilled on the Unit Area, as amended, on or after January 1, 2019. All existing wells and vertical wells will remain subject to the existing JOA, as it were not amended hereby.

For all horizontal wells drilled on the Unit Area on or after January 1, 2019, the participation percentages, as amended, shall be:

Magnum Hunter Production, Inc – 68.25448%  
Chevron USA Inc – 12.711898%  
Chaparral Oil, LLC – 19.033654%  
MEC Petroleum Corp – APO Interest Only  
Murchison Oil & Gas, Inc – APO Interest Only





\*Ownership changes are subject to change pending verification of Title, including but not limited to review of assignments earned under Farmouts and Before/After Payout Calculations

Enclosed, in duplicate, is (i) our detailed AFE reflecting estimated costs associated with this proposal, and; (ii) a ballot approving to amend the existing JOA dated September 15, 1975 to include the SE/4SE/4 of Sections 3 & 4 only as to horizontal wells drilled on or after January 1, 2019. If you intend to participate and approve of the proposed Operating Agreement Amendment, please approve and return one (1) original of the enclosed AFE, one (1) signed ballot approving the amendment JOA as previously set forth, along with the contact information to receive your well data, to the undersigned within thirty (30) days of receipt of this proposal. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance to Cimarex prior to commencement of drilling operations; otherwise, you will be covered by insurance procured by Cimarex and will be responsible for your share of the cost.

Please call the undersigned at (432) 571-7862 with any questions or comments.

Respectfully,



Caitlin Pierce  
Exploration Landman

**ELECTION TO PARTICIPATE  
Ringer 3-4 Federal Com 2H**

\_\_\_\_\_ Chaparral Oil, LLC elects **TO** participate in the proposed Ringer 3-4 Federal Com 2H

\_\_\_\_\_ Chaparral Oil, LLC elects **NOT** to participate in the proposed Ringer 3-4 Federal Com 2H

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

If your election above is TO participate in the proposed Ringer 3-4 Federal Com 2H well, then:

\_\_\_\_\_ Chaparral Oil, LLC elects **TO** be covered by well control insurance procured by Cimarex Energy Co.

\_\_\_\_\_ Chaparral Oil, LLC elects **NOT** to be covered by well control insurance procured by Cimarex Energy Co. and agrees to provide Cimarex Energy Co. with a certificate of insurance prior to commencement of drilling operations or be deemed to have elected to be covered by well control insurance procured by Cimarex Energy Co.

**Approval of Amendment to "Ringer Unit" JOA dated 9/15/1975  
Sections 3 & 4, Township 25 South, Range 26 East  
Eddy County, New Mexico**

Chaparral Oil, LLC approves of the proposal to amend the referenced JOA as follows: (1) revise the Unit Area to include the SE/4SE/4; and (2) revise the participation percentages on Exhibit A; provided, however, that both of these amendments shall only apply to and affect horizontal wells drilled on the Unit Area, as amended, on or after January 1, 2019. All existing wells and vertical wells will remain subject to the existing JOA, as it were not amended hereby.

Dated this \_\_\_\_ day of \_\_\_\_\_, 2018.

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

- 1 • human resources
- 2 • management
- 3 • supervision not directly charged under Section II.2 (*Labor*)
- 4 • legal services not directly chargeable under Section II.9 (*Legal Expense*)
- 5 • taxation, other than those costs identified as directly chargeable under Section II.10 (*Taxes and Permits*)
- 6 • preparation and monitoring of permits and certifications; preparing regulatory reports; appearances before or meetings with
- 7 governmental agencies or other authorities having jurisdiction over the Joint Property, other than On-site inspections; reviewing,
- 8 interpreting, or submitting comments on or lobbying with respect to Laws or proposed Laws.

Overhead charges shall include the salaries or wages plus applicable payroll burdens, benefits, and Personal Expenses of personnel performing overhead functions, as well as office and other related expenses of overhead functions.

#### 1. OVERHEAD—DRILLING AND PRODUCING OPERATIONS

As compensation for costs incurred but not chargeable under Section II (*Direct Charges*) and not covered by other provisions of this Section III, the Operator shall charge on either:

- ☒ (Alternative 1) Fixed Rate Basis, Section III.1.B.
- ☐ (Alternative 2) Percentage Basis, Section III.1.C.

##### A. TECHNICAL SERVICES

- (i) Except as otherwise provided in Section II.13 (*Ecological, Environmental, and Safety*) and Section III.2 (*Overhead - Major Construction and Catastrophe*), or by approval of the Parties pursuant to Section I.6.A (*General Matters*), the salaries, wages, related payroll burdens and benefits, and Personal Expenses for On-site Technical Services, including third party Technical Services:

- ☒ (Alternative 1 - Direct) shall be charged direct to the Joint Account.
- ☐ (Alternative 2 - Overhead) shall be covered by the overhead rates.

- (ii) Except as otherwise provided in Section II.13 (*Ecological, Environmental, and Safety*) and Section III.2 (*Overhead - Major Construction and Catastrophe*), or by approval of the Parties pursuant to Section I.6.A (*General Matters*), the salaries, wages, related payroll burdens and benefits, and Personal Expenses for Off-site Technical Services, including third party Technical Services:

- ☒ (Alternative 1 - All Overhead) shall be covered by the overhead rates.
- ☐ (Alternative 2 - All Direct) shall be charged direct to the Joint Account.
- ☐ (Alternative 3 - Drilling Direct) shall be charged direct to the Joint Account, only to the extent such Technical Services are directly attributable to drilling, re-drilling, deepening, or sidetracking operations, through completion, temporary abandonment, or abandonment if a dry hole. Off-site Technical Services for all other operations, including workover, recompletion, abandonment of producing wells, and the construction or expansion of fixed assets not covered by Section III.2 (*Overhead - Major Construction and Catastrophe*) shall be covered by the overhead rates.

Notwithstanding anything to the contrary in this Section III, Technical Services provided by Operator's Affiliates are subject to limitations set forth in Section II.7 (*Affiliates*). Charges for Technical personnel performing non-technical work shall not be governed by this Section III.1.A, but instead governed by other provisions of this Accounting Procedure relating to the type of work being performed.

##### B. OVERHEAD—FIXED RATE BASIS

- (1) The Operator shall charge the Joint Account at the following rates per well per month:

Drilling Well Rate per month \$ 6,500.00 (prorated for less than a full month)

Producing Well Rate per month \$ 650.00

- (2) Application of Overhead—Drilling Well Rate shall be as follows:

- (a) Charges for onshore drilling wells shall begin on the spud date and terminate on the date the drilling and/or completion equipment used on the well is released, whichever occurs later. Charges for offshore and inland waters drilling wells shall begin on the date the drilling or completion equipment arrives on location and terminate on the date the drilling or completion equipment moves off location, or is released, whichever occurs first. No charge shall be made during suspension of drilling and/or completion operations for fifteen (15) or more consecutive calendar days.



## Authorization For Expenditure Drilling

AFE # 26619045

Company Entity

Date Prepared  
12/17/2018

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	RINGER 3-4 FEDERAL COM 2H	Carlsbad Bone Spring Prospect	300001-093.01	26619045
County, State	Location		Estimated Spud	Estimated Completion
Eddy, NM	S/2S/2 of Sections 3 & 4, Township 25 South, Range 26 East, Eddy County, NM		6/3/2019	7/1/2019
<input checked="" type="checkbox"/> New Supplement Revision	Formation	Well Type	Ttl Measured Depth	Ttl Vertical Depth
	Wolfcamp	DEV	18,303	8,607

Purpose Drill and complete well

## Description

Drilling Drill and complete a horizontal test. Drill to 460', set water string casing. Drill to 1910', set surface casing. Drill to 8097' (KOP). Drill curve at 12"/100' initial build rate to +/- 75 degrees and set casing at +/- 8722' MD. Finish curve at +/- 4"/100' to +/- 8610' TVD and drill a +/- 9180' long lateral in the Wolfcamp formation. Run and cement production liner. Stage frac. Drill out plugs. Run production packer, tubing and GLVs.

<b>Intangible</b>	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,868,000		\$2,868,000
Completion Costs		\$7,526,500	\$7,526,500
<b>Total Intangible Cost</b>	<b>\$2,868,000</b>	<b>\$7,526,500</b>	<b>\$10,394,500</b>
<b>Tangible</b>	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$371,000	\$502,000	\$873,000
Lease Equipment		\$922,500	\$922,500
<b>Total Tangible Cost</b>	<b>\$371,000</b>	<b>\$1,424,500</b>	<b>\$1,795,500</b>
<b>Total Well Cost</b>	<b>\$3,239,000</b>	<b>\$8,951,000</b>	<b>\$12,190,000</b>

## Comments On Well Costs

1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

## Well Control Insurance

Unless otherwise indicated below, you, as a non-operating working interest owner, agree to be covered by Operator's well control insurance procured by Operator so long as Operator conducts operations hereunder and to pay your prorated share of the premiums therefore. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance acceptable to Operator, as to form and limits, at the time this AFE is returned, if available, but in no event later than commencement of drilling operations. You agree that failure to provide the certificate of insurance, as provided herein, will result in your being covered by insurance procured by Operator.

**I elect to purchase my own well control insurance policy.**

## Marketing Election

Cimarex sells its gas under arm's-length contracts with third party purchasers. Such contracts may include fees. In addition, penalties may be incurred for insufficient volumes delivered over time. Should you choose to market your share of gas with Cimarex, you will be subject to all of the terms of such contracts. Upon written request to Cimarex's Marketing Department, we will share with you the terms and conditions pursuant to which gas will be sold. Failure to make an election below shall be deemed an election to market your gas with Cimarex under the terms and conditions set forth above.

**I elect to take my gas in kind.**

**I elect to market my gas with Cimarex pursuant to the terms and conditions of its contract.**

## Comments on AFE

The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE, the working interest owner agrees to pay its proportionate share of actual legal, curative, regulatory and well costs under term of the joint operating agreement, regulatory order or other applicable agreement covering this well.

## Nonoperator Approval

Company	Approved By (Print Name)	Approved By (Signature)	Date

NOTICE TO NONOPERATOR: Costs shown on this form are estimates only. By executing this AFE, the consenting party agrees to pay its proportionate share of actual costs incurred. Overhead will be charged in accordance with the Joint Operating Agreement.

12/17/2018







## Authorization For Expenditure - RINGER 3-4 FEDERAL COM 2H

AFE # 26619045

Description	BCP - Drilling		ACP - Drilling		Comp/Stim		Production Equip		Post Completion		Total	
	Code	Amount	Code	Amount	Code	Amount	Code	Amount	Code	Amount		Cost
Roads & Location	DICC 100	280,000			STIM 100	10,000	CON 100	34,000	PCOM 100	5,000		329,000
Damages	DICC 105	6,000					CON 105	19,000				25,000
Mud/Fluids Disposal	DICC 255	145,000			STIM 255	53,000			PCOM 255	130,000		328,000
Day Rate	DICC 115	475,000	DICC 120	100,000								575,000
Misc Preparation	DICC 120	35,000										35,000
Bits	DICC 125	75,000	DICC 125	0	STIM 125	0			PCOM 125	0		75,000
Fuel	DICC 135	79,000	DICC 130	0					PCOM 130	0		79,000
Water for Drilling Rig (Not Frac Water)	DICC 140	5,000	DICC 135	0	STIM 135	24,000			PCOM 135	0		29,000
Mud & Additives	DICC 145	187,000										187,000
Surface Rentals	DICC 150	84,000	DICC 140	0	STIM 140	237,000	CON 140	13,000	PCOM 140	180,000		514,000
Downhole Rentals	DICC 155	142,000			STIM 145	0			PCOM 145	0		142,000
Flowback Labor					STIM 141	0			PCOM 141	0		0
Automation Labor							CON 150	35,000	PCOM 150	0		35,000
Formation Evaluation (DST, Coring, etc.)	DICC 160	0			STIM 150	0						0
Mud Logging	DICC 170	22,000										22,000
Open Hole Logging	DICC 180	0										0
Cementing & Floot Equipment	DICC 185	158,000	DICC 155	53,000								211,000
Tubular Inspections	DICC 190	50,000	DICC 160	5,000	STIM 160	4,000			PCOM 160	0		59,000
Casing Crews	DICC 195	20,000	DICC 165	13,000	STIM 165	0						33,000
Mechanical Labor	DICC 200	20,000	DICC 170	10,000	STIM 170	0	CON 170	179,500	PCOM 170	30,000		239,500
Trucking/Transportation	DICC 205	25,000	DICC 175	8,000	STIM 175	4,000	CON 175	25,000	PCOM 175	0		62,000
Supervision	DICC 210	96,000	DICC 180	16,000	STIM 180	94,000	CON 180	43,500	PCOM 180	0		249,500
Trailer House/Camp/Catering	DICC 280	28,000	DICC 255	4,000	STIM 280	45,000						77,000
Other Misc Expenses	DICC 220	5,000	DICC 190	0	STIM 190	0	CON 190	0	PCOM 190	0		5,000
Overhead	DICC 225	10,000	DICC 195	5,000								15,000
Remedial Cementing	DICC 231	0			STIM 215	0			PCOM 215	0		0
MOB/DEMOMB	DICC 240	300,000										300,000
Directional Drilling Services	DICC 245	338,000										338,000
Solids Control	DICC 260	60,000										60,000
Well Control Equip (Snubbing Services)	DICC 265	70,000	DICC 240	5,000	STIM 240	109,000			PCOM 240	0		184,000
Fishing & Sidetrack Services	DICC 270	0	DICC 245	0	STIM 245	0			PCOM 245	0		0
Completion Rig					STIM 115	21,000			PCOM 115	0		21,000
Coil Tubing Services					STIM 260	368,000			PCOM 260	0		368,000
Completion Logging/Perforating/Wireline					STIM 200	521,000			PCOM 200	0		521,000
Composite Plugs					STIM 390	108,000			PCOM 390	0		108,000
Stimulation Pumping/Chemicals/Additives/Sand					STIM 210	3,542,000			PCOM 210	0		3,542,000
Stimulation Water/Water Transfer/Water Storage					STIM 395	849,000						849,000
Cimarex Owned Frac/Rental Equipment					STIM 305	40,000			PCOM 305	0		40,000
Legal/Regulatory/Curative	DICC 300	10,000					CON 300	0				10,000
Well Control Insurance	DICC 285	6,000										6,000
Real Time Operations Center	DICC 560	0			STIM 560	0						0
FL/GL - Labor							CON 500	51,000				51,000
FL/GL - Supervision							CON 505	13,000				13,000
Survey							CON 515	1,000				1,000
SWD/Other - Labor							CON 600	57,500				57,500
SWD/OTHER - SUPERVISION							CON 605	9,500				9,500
Contingency	DICC 435	137,000	DICC 220	11,000	STIM 220	301,000	CON 220	111,500	PCOM 220	0		560,500
Contingency							CON 221	29,000				29,000
P&A Costs	DICC 295	0	DICC 275	0								0
Total Intangible Cost		2,868,000		230,000		6,330,000		621,500		345,000		10,394,500
Drive Pipe	DWEB 150	0										0
Conductor Pipe	DWEB 130	0										0
Water String	DWEB 135	16,000										16,000
Surface Casing	DWEB 140	55,000										55,000
Intermediate Casing 1	DWEB 145	280,000										280,000
Intermediate Casing 2	DWEB 155	0										0
Drilling Liner	DWEB 160	0										0
Production Casing or Liner			DWEA 100	147,000								147,000
Production Tie-Back			DWEA 165	0	STIM 101	0						0
Tubing					STIM 105	72,000			PCOM 105	0		72,000
Wellhead, Tree, Chokes	DWEB 115	20,000	DWEA 120	25,000	STIM 120	60,000			PCOM 120	0		105,000
Liner Hanger, Isolation Packer	DWEB 100	0	DWEA 125	90,000								90,000
Packer, Nipples					STIM 400	28,000			PCOM 400	0		28,000
Pumping Unit, Engine					STIM 405	0			PCOM 405	0		0
Downhole Lift Equipment					STIM 410	80,000			PCOM 410	0		80,000
Surface Equipment									PCOM 420	0		0
Well Automation Materials									PCOM 455	0		0
Total Tangible - Well Equipment Cost		371,000		262,000		240,000				0		873,000
N/C Lease Equipment							CONT 400	140,000				140,000
Tanks, Tanks Steps, Stairs							CONT 405	0				0
Battery Equipment							CONT 410	356,500				356,500
Secondary Containments							CONT 415	22,500				22,500
Overhead Power Distribution							CONT 420	125,000				125,000
Facility Electrical							CONT 425	75,000				75,000
Telecommunication Equipment							CONT 426	0				0
Meters and Metering Equipment							CONT 445	20,000				20,000
Facility Line Pipe							CONT 450	27,500				27,500
Lease Automation Materials							CONT 455	17,500				17,500
FL/GL - Materials							CONT 550	19,000				19,000
FL/GL - Line Pipe							CONT 555	18,500				18,500
SWD/Other - Materials							CONT 650	8,000				8,000
SWD/OTHER - LINE PIPE							CONT 655	93,000				93,000
Total Tangible - Lease Equipment Cost								922,500				922,500
<b>Total Estimated Cost</b>		<b>3,239,000</b>		<b>492,000</b>		<b>6,570,000</b>		<b>1,544,000</b>		<b>345,000</b>		<b>12,190,000</b>





# Authorization For Expenditure - RINGER 3-4 FEDERAL COM 2H

AFE # 26619045

Description	BCP - Drilling		ACP - Drilling		Comp/Stim	
	Codes	Amount	Codes	Amount	Codes	Amount
Roads & Location	DIDC.100	280,000			STIM.100	10,000
Damages	DIDC.105	6,000				
Mud/Fluids Disposal	DIDC.255	145,000			STIM.255	53,000
Day Rate	DIDC.115 10 days at \$25,000/day	475,000	DICC.120 4 days at \$25,000/day	100,000		
Misc Preparation	DIDC.120	35,000				
Bits	DIDC.125	75,000	DICC.125	0	STIM.125	0
Fuel	DIDC.135 1,150 gal/day at \$3.00/gal	79,000	DICC.130	0		
Water for Drilling Rig (Not Frac Water)	DIDC.140	5,000	DICC.135	0	STIM.135	24,000
Mud & Additives	DIDC.145	187,000				
Surface Rentals	DIDC.150 Per Day (BCP)/day	84,000	DICC.140	0	STIM.140	237,000
Downhole Rentals	DIDC.155	142,000			STIM.145	0
Flowback Labor					STIM.141	0
Automation Labor						
Formation Evaluation (DST, Coring, etc.)	DIDC.160	0			STIM.150	0
Mud Logging	DIDC.170 14 days at \$1,200/day	22,000				
Open Hole Logging	DIDC.180	0				
Cementing & Float Equipment	DIDC.185	158,000	DICC.155	53,000		
Tubular Inspections	DIDC.190	50,000	DICC.160	5,000	STIM.160	4,000
Casing Crews	DIDC.195	20,000	DICC.165	13,000	STIM.165	0
Mechanical Labor	DIDC.200	20,000	DICC.170	10,000	STIM.170	0
Trucking/Transportation	DIDC.205	25,000	DICC.175	8,000	STIM.175	4,000
Supervision	DIDC.210	96,000	DICC.180	16,000	STIM.180	94,000
Trailer House/Camp/Catering	DIDC.280	28,000	DICC.235	4,000	STIM.280	45,000
Other Misc Expenses	DIDC.270	5,000	DICC.190	0	STIM.190	0
Overhead	DIDC.225	10,000	DICC.195	5,000		
Remedial Cementing	DIDC.231	0			STIM.215	0
MOB/DEMOP	DIDC.240	300,000				
Directional Drilling Services	DIDC.245	338,000				
Solids Control	DIDC.260	60,000				
Well Control Equip (Snubbing Services)	DIDC.265	70,000	DICC.240	5,000	STIM.240	109,000
Fishing & Sidetrack Services	DIDC.270	0	DICC.245	0	STIM.245	0
Completion Rig					STIM.115	21,000
Coil Tubing Services					STIM.260	368,000
Completion Logging/Perforating/Wireline					STIM.200	521,000
Composite Plugs					STIM.390	108,000
Stimulation					STIM.210	3,542,000
Stimulation Water/Water Transfer/Water					STIM.395	849,000
Cimarex Owned Frac/Rental Equipment					STIM.305	40,000
Legal/Regulatory/Curative	DIDC.300	10,000				
Well Control Insurance	DIDC.285 \$0.35/ft	6,000				
Real Time Operations Center	DIDC.560	0			STIM.560	0
FL/GL - Labor						
FL/GL - Supervision						
Survey						
SWD/Other - Labor						
SWD/OTHER - SUPERVISION						
Contingency	DIDC.435 500 % of Drilling Intangibles	137,000	DICC.220	11,000	STIM.220	301,000
Contingency						
P&A Costs	DIDC.295	0	DICC.275	0		
Total Intangible Cost		2,868,000		230,000		6,330,000
Drive Pipe	DWEE.150	0				
Conductor Pipe	DWEE.150	0				
Water String	DWEE.135	16,000				
Surface Casing	DWEE.140 9 5/8" - 1,910ft at \$29.00/ft	55,000				
Intermediate Casing 1	DWEE.145 7" - 8,820ft at \$29.00/ft	280,000				
Intermediate Casing 2	DWEE.155	0				
Drilling Liner	DWEE.160	0				
Production Casing or Liner			DWEA.100 4 1/2" - 11,310ft at \$13.00/ft	147,000		
Production Tie-Back			DWEA.165	0	STIM.101	0
Tubing					STIM.105 3-1/2" - 7,200ft at \$10.00/ft	72,000
Wellhead, Tree, Chokes	DWEE.115	20,000	DWEA.120	25,000	STIM.120	60,000
Liner Hanger, Isolation Packer	DWEE.100	0	DWEA.125	90,000		
Packer, Nipples					STIM.400	28,000
Pumping Unit Engine					STIM.405	0
Downhole Lift Equipment					STIM.410	80,000
Surface Equipment						
Well Automation Materials						
Total Tangible - Well Equipment Cost		371,000		262,000		240,000
N/C Lease Equipment						
Tanks, Tanks Steps, Stairs						
Battery Equipment						
Secondary Containments						
Overhead Power Distribution						
Facility Electrical						
Telecommunication Equipment						
Meters and Metering Equipment						
Facility Line Pipe						
Lease Automation Materials						
FL/GL - Materials						
FL/GL - Line Pipe						
SWD/Other - Materials						
SWD/OTHER - LINE PIPE						
Total Tangible - Lease Equipment Cost						
<b>Total Estimated Cost</b>		<b>3,239,000</b>		<b>492,000</b>		<b>6,570,000</b>



Description	Code	Production Equip		Post Completion		Total	
		Amount	Co Set	Amount	Co Set	Amount	Cost
Roads & Location	CON 100	34,000	PCOM 100	5,000		329,000	
Damages	CON 105	19,000				25,000	
Mud/Fluids Disposal			PCOM 255	130,000		328,000	
Day Rate						575,000	
Misc Preparation						35,000	
Bits			PCOM 125	0		75,000	
Fuel			PCOM 130	0		79,000	
Water for Drilling Rig (Not Frac Water)			PCOM 135	0		29,000	
Mud & Additives						187,000	
Surface Rentals	CON 140	13,000	PCOM 140	180,000		514,000	
Downhole Rentals			PCOM 145	0		142,000	
Flowback Labor			PCOM 141	0		0	
Automation Labor	CON 150	35,000	PCOM 150	0		35,000	
Formation Evaluation (DST, Coring, etc.)						0	
Mud Logging						22,000	
Open Hole Logging						0	
Cementing & Float Equipment						211,000	
Tubular Inspections			PCOM 160	0		59,000	
Casing Crows						33,000	
Mechanical Labor	CON 170	179,500	PCOM 170	30,000		239,500	
Trucking/Transportation	CON 175	25,000	PCOM 175	0		62,000	
Supervision	CON 180	43,500	PCOM 180	0		249,500	
Trailer House/Camp/Catering						77,000	
Other Misc Expenses	CON 190	0	PCOM 190	0		5,000	
Overhead						15,000	
Remedial Cementing			PCOM 215	0		0	
MOB/DEMOS						300,000	
Directional Drilling Services						338,000	
Solids Control						60,000	
Well Control Equip (Snubbing Services)			PCOM 240	0		184,000	
Fishing & Sidetrack Services			PCOM 245	0		0	
Completion Rig			PCOM 115	0		21,000	
Coil Tubing Services			PCOM 260	0		368,000	
Completion Logging/Perforating/Wireline			PCOM 200	0		521,000	
Composite Plugs			PCOM 390	0		108,000	
Stimulation Pumping/Chemicals/Additives/Sand			PCOM 210	0		3,542,000	
Stimulation Water/Water Transfer/Water Storage						849,000	
Cimarex Owned Frac/Rental Equipment			PCOM 305	0		40,000	
Legal/Regulatory/Curative	CON 300	0				10,000	
Well Control Insurance						6,000	
Real Time Operations Center						0	
FL/GL - Labor	CON 500	51,000				51,000	
FL/GL - Supervision	CON 505	13,000				13,000	
Survey	CON 515	1,000				1,000	
SWD/Other - Labor	CON 600	57,500				57,500	
SWD/OTHER - SUPERVISION	CON 605	9,500				9,500	
Contingency	CON 220	111,500	PCOM 220	0		560,500	
Contingency	CON 221	29,000				29,000	
P&A Costs						0	
Total Intangible Cost		621,500		345,000		10,394,500	
Drive Pipe						0	
Conductor Pipe						0	
Water String						16,000	
Surface Casing						55,000	
Intermediate Casing 1						280,000	
Intermediate Casing 2						0	
Drilling Liner						0	
Production Casing or Liner						147,000	
Production Tie-Back						0	
Tubing			PCOMT 105	0		72,000	
Wellhead, Tree, Chokes			PCOMT 120	0		105,000	
Liner Hanger, Isolation Packer						90,000	
Packer, Nipples			PCOMT 400	0		28,000	
Pumping Unit, Engine			PCOMT 405	0		0	
Downhole Lift Equipment			PCOMT 410	0		80,000	
Surface Equipment			PCOMT 420	0		0	
Well Automation Materials			PCOMT 455	0		0	
Total Tangible - Well Equipment Cost				0		873,000	
N/C Lease Equipment	CONT 400	140,000				140,000	
Tanks, Tanks Steps, Stairs	CONT 405	0				0	
Battery Equipment	CONT 410	356,500				356,500	
Secondary Containments	CONT 415	22,500				22,500	
Overhead Power Distribution	CONT 420	125,000				125,000	
Facility Electrical	CONT 425	75,000				75,000	
Telecommunication Equipment	CONT 426	0				0	
Meters and Metering Equipment	CONT 445	20,000				20,000	
Facility Line Pipe	CONT 450	27,500				27,500	
Lease Automation Materials	CONT 455	17,500				17,500	
FL/GL - Materials	CONT 550	19,000				19,000	
FL/GL - Line Pipe	CONT 555	18,500				18,500	
SWD/Other - Materials	CONT 650	8,000				8,000	
SWD/OTHER - LINE PIPE	CONT 655	93,000				93,000	
Total Tangible - Lease Equipment Cost		922,500				922,500	
<b>Total Estimated Cost</b>		<b>1,544,000</b>		<b>345,000</b>		<b>12,190,000</b>	



## Authorization For Expenditure Drilling

AFE # 26619045

Company Entity

Date Prepared  
12/17/2018

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	RINGER 3-4 FEDERAL COM 2H	Carlsbad Bone Spring Prospect	300001-093.01	26619045
County, State	Location	Estimated Spud	Estimated Completion	
Eddy, NM	S/2S/2 of Sections 3 & 4, Township 25 South, Range 26 East, Eddy County, NM	6/3/2019	7/1/2019	
<input checked="" type="checkbox"/> New Supplement Revision	Formation	Well Type	Tbl Measured Depth	Tbl Vertical Depth
	Wolfcamp	DEV	18,303	8,607

Purpose Drill and complete well

## Description

Drilling: Drill and complete a horizontal test. Drill to 460', set water string casing. Drill to 1910', set surface casing. Drill to 8097' (KOP). Drill curve at 12"/100' initial build rate to +/- 75 degrees and set casing at +/- 8722' MD. Finish curve at +/- 4"/100' to +/- 8610' TVD and drill a +/- 9180' long lateral in the Wolfcamp formation. Run and cement production liner. Stage frac. Drill out plugs. Run production packer, tubing and GLVs.

<b>Intangible</b>	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,868,000		\$2,868,000
Completion Costs		\$7,526,500	\$7,526,500
<b>Total Intangible Cost</b>	<b>\$2,868,000</b>	<b>\$7,526,500</b>	<b>\$10,394,500</b>
<b>Tangible</b>	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$371,000	\$502,000	\$873,000
Lease Equipment		\$922,500	\$922,500
<b>Total Tangible Cost</b>	<b>\$371,000</b>	<b>\$1,424,500</b>	<b>\$1,795,500</b>
<b>Total Well Cost</b>	<b>\$3,239,000</b>	<b>\$8,951,000</b>	<b>\$12,190,000</b>

## Comments On Well Costs

1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

## Well Control Insurance

Unless otherwise indicated below, you, as a non-operating working interest owner, agree to be covered by Operator's well control insurance procured by Operator so long as Operator conducts operations hereunder and to pay your prorated share of the premiums therefore. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance acceptable to Operator, as to form and limits, at the time this AFE is returned, if available, but in no event later than commencement of drilling operations. You agree that failure to provide the certificate of insurance, as provided herein, will result in your being covered by insurance procured by Operator.

**I elect to purchase my own well control insurance policy.**

## Marketing Election

Cimarex sells its gas under arm's-length contracts with third party purchasers. Such contracts may include fees. In addition, penalties may be incurred for insufficient volumes delivered over time. Should you choose to market your share of gas with Cimarex, you will be subject to all of the terms of such contracts. Upon written request to Cimarex's Marketing Department, we will share with you the terms and conditions pursuant to which gas will be sold. Failure to make an election below shall be deemed an election to market your gas with Cimarex under the terms and conditions set forth above.

**I elect to take my gas in kind.**

**I elect to market my gas with Cimarex pursuant to the terms and conditions of its contract.**

## Comments on AFE

The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE, the working interest owner agrees to pay its proportionate share of actual legal, curative, regulatory and well costs under term of the joint operating agreement, regulatory order or other applicable agreement covering this well.

## Nonoperator Approval

Company	Approved By (Print Name)	Approved By (Signature)	Date
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NOTICE TO NONOPERATOR: Costs shown on this form are estimates only. By executing this AFE, the consenting party agrees to pay its proportionate share of actual costs incurred. Overhead will be charged in accordance with the Joint Operating Agreement.

12/17/2018



## Authorization For Expenditure - RINGER 3-4 FEDERAL COM 2H

AFE # 26619045

Description	BCP - Drilling		ACP - Drilling		Comp/Stim		Production Equip		Post Completion		Total
	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Cost
Roads & Location	DIDC 100	280,000			STIM 100	10,000	CON 100	34,000	PCOM 100	5,000	329,000
Damages	DIDC 105	6,000					CON 105	19,000			25,000
Mud/Fluids Disposal	DIDC 255	145,000			STIM 255	53,000			PCOM 255	130,000	328,000
Day Rate	DIDC 115	475,000	DICC 120	100,000							575,000
Misc Preparation	DIDC 120	35,000									35,000
Bits	DIDC 125	75,000	DICC 125	0	STIM 125	0			PCOM 125	0	75,000
Fuel	DIDC 135	79,000	DICC 130	0					PCOM 130	0	79,000
Water for Drilling Rig (Not Frac Water)	DIDC 140	5,000	DICC 135	0	STIM 135	24,000			PCOM 135	0	29,000
Mud & Additives	DIDC 145	187,000									187,000
Surface Rentals	DIDC 150	84,000	DICC 140	0	STIM 140	237,000	CON 140	13,000	PCOM 140	180,000	514,000
Downhole Rentals	DIDC 155	142,000			STIM 145	0			PCOM 145	0	142,000
Flowback Labor					STIM 141	0			PCOM 141	0	0
Automation Labor							CON 150	35,000	PCOM 150	0	35,000
Formation Evaluation (DST, Coring, etc.)	DIDC 160	0			STIM 150	0					0
Mud Logging	DIDC 170	22,000									22,000
Open Hole Logging	DIDC 180	0									0
Cementing & Float Equipment	DIDC 185	158,000	DICC 155	53,000							211,000
Tubular Inspections	DIDC 190	50,000	DICC 160	5,000	STIM 160	4,000			PCOM 160	0	59,000
Casing Crews	DIDC 195	20,000	DICC 165	13,000	STIM 165	0					33,000
Mechanical Labor	DIDC 200	20,000	DICC 170	10,000	STIM 170	0	CON 170	179,500	PCOM 170	30,000	239,500
Trucking/Transportation	DIDC 205	25,000	DICC 175	8,000	STIM 175	4,000	CON 175	25,000	PCOM 175	0	62,000
Supervision	DIDC 210	96,000	DICC 180	16,000	STIM 180	94,000	CON 180	43,500	PCOM 180	0	249,500
Trailer House/Camp/Catering	DIDC 280	28,000	DICC 255	4,000	STIM 280	45,000					77,000
Other Misc Expenses	DIDC 220	5,000	DICC 190	0	STIM 190	0	CON 190	0	PCOM 190	0	5,000
Overhead	DIDC 225	10,000	DICC 195	5,000							15,000
Remedial Cementing	DIDC 231	0			STIM 215	0			PCOM 215	0	0
MOB/DEMOB	DIDC 240	300,000									300,000
Directional Drilling Services	DIDC 245	338,000									338,000
Solids Control	DIDC 260	60,000									60,000
Well Control Equip (Snubbing Services)	DIDC 265	70,000	DICC 240	5,000	STIM 240	109,000			PCOM 240	0	184,000
Fishing & Sidetrack Services	DIDC 270	0	DICC 245	0	STIM 245	0			PCOM 245	0	0
Completion Rig					STIM 115	21,000			PCOM 115	0	21,000
Coil Tubing Services					STIM 260	368,000			PCOM 260	0	368,000
Completion Logging/Perforating/Wireline					STIM 200	521,000			PCOM 200	0	521,000
Composite Plugs					STIM 390	108,000			PCOM 390	0	108,000
Stimulation Pumping/Chemicals/Additives/Sand					STIM 210	3,542,000			PCOM 210	0	3,542,000
Stimulation Water/Water Transfer/Water Storage					STIM 395	849,000					849,000
Cimarex Owned Frac/Rental Equipment					STIM 305	40,000			PCOM 305	0	40,000
Legal/Regulatory/Curative	DIDC 300	10,000					CON 300	0			10,000
Well Control Insurance	DIDC 285	6,000									6,000
Real Time Operations Center	DIDC 560	0			STIM 560	0					0
FL/GL - Labor							CON 500	51,000			51,000
FL/GL - Supervision							CON 505	13,000			13,000
Survey							CON 515	1,000			1,000
SWD/Other - Labor							CON 600	57,500			57,500
SWD/OTHER - SUPERVISION							CON 605	9,500			9,500
Contingency	DIDC 435	137,000	DICC 230	11,000	STIM 220	301,000	CON 220	111,500	PCOM 220	0	560,500
Contingency							CON 221	29,000			29,000
P&A Costs	DIDC 295	0	DICC 275	0							0
Total Intangible Cost		2,868,000		230,000		6,330,000		621,500		345,000	10,394,500
Drive Pipe	DIVEB 150	0									0
Conductor Pipe	DIVEB 130	0									0
Water String	DIVEB 135	16,000									16,000
Surface Casing	DIVEB 140	55,000									55,000
Intermediate Casing 1	DIVEB 145	280,000									280,000
Intermediate Casing 2	DIVEB 155	0									0
Drilling Liner	DIVEB 160	0									0
Production Casing or Liner			DWEA 100	147,000							147,000
Production Tie-Back			DWEA 165	0	STIM 101	0					0
Tubing					STIM 105	72,000			PCOM 105	0	72,000
Wellhead, Tree, Chokes	DIVEB 115	20,000	DWEA 120	25,000	STIM 120	60,000			PCOM 120	0	105,000
Liner Hanger, Isolation Packer	DIVEB 100	0	DWEA 125	90,000							90,000
Packer, Nipples					STIM 400	28,000			PCOM 400	0	28,000
Pumping Unit, Engine					STIM 405	0			PCOM 405	0	0
Downhole Lift Equipment					STIM 410	80,000			PCOM 410	0	80,000
Surface Equipment									PCOM 420	0	0
Well Automation Materials									PCOM 455	0	0
Total Tangible - Well Equipment Cost		371,000		262,000		240,000				0	873,000
N/C Lease Equipment							CONT 430	140,000			140,000
Tanks, Tanks Steps, Stairs							CONT 435	0			0
Battery Equipment							CONT 410	356,500			356,500
Secondary Containments							CONT 415	22,500			22,500
Overhead Power Distribution							CONT 420	125,000			125,000
Facility Electrical							CONT 425	75,000			75,000
Telecommunication Equipment							CONT 426	0			0
Meters and Metering Equipment							CONT 445	20,000			20,000
Facility Line Pipe							CONT 450	27,500			27,500
Lease Automation Materials							CONT 455	17,500			17,500
FL/GL - Materials							CONT 550	19,000			19,000
FL/GL - Line Pipe							CONT 555	18,500			18,500
SWD/Other - Materials							CONT 650	8,000			8,000
SWD/OTHER - LINE PIPE							CONT 655	93,000			93,000
Total Tangible - Lease Equipment Cost								922,500			922,500
<b>Total Estimated Cost</b>		<b>3,239,000</b>		<b>492,000</b>		<b>6,570,000</b>		<b>1,544,000</b>		<b>345,000</b>	<b>12,190,000</b>





## Authorization For Expenditure - RINGER 3-4 FEDERAL COM 2H

AFE # 26619045

Description	BCP - Drilling			ACP - Drilling			Comp/Stim	
	Codes	Amount	Codes	Amount	Codes	Amount		
Roads & Location	DIDC 100	280,000			STIM 100			10,000
Damages	DIDC 105	6,000						
Mud/Fluids Disposal	DIDC 255	145,000			STIM 255			53,000
Day Rate	DIDC 115 18 days at \$25,000/day	475,000	DICC 120 4 days at \$25,000/day	100,000				
Misc Preparation	DIDC 120	35,000						
Bits	DIDC 125	75,000	DICC 125	0	STIM 125			0
Fuel	DIDC 135 1,150 gal/day at \$3.00/gal	79,000	DICC 130	0				
Water for Drilling Rig (Not Frac Water)	DIDC 140	5,000	DICC 135	0	STIM 135			24,000
Mud & Additives	DIDC 145	187,000						
Surface Rentals	DIDC 150 Per Day (BCF)/day	84,000	DICC 140	0	STIM 140			237,000
Dowhole Rentals	DIDC 155	142,600			STIM 145			0
Flowback Labor					STIM 141			0
Automation Labor								
Formation Evaluation (DSI, Coring, etc)	DIDC 160	0			STIM 150			0
Mud Logging	DIDC 170 14 days at \$1,200/day	22,000						
Open Hole Logging	DIDC 180	0						
Cementing & Float Equipment	DIDC 185	158,000	DICC 155	53,000				
Tubular Inspections	DIDC 190	50,000	DICC 160	5,000	STIM 160			4,000
Casing Crews	DIDC 195	20,000	DICC 165	13,000	STIM 165			0
Mechanical Labor	DIDC 200	20,000	DICC 170	10,000	STIM 170			0
Trucking/Transportation	DIDC 205	25,000	DICC 175	8,000	STIM 175			4,000
Supervision	DIDC 210	96,000	DICC 180	16,000	STIM 180			94,000
Trailer House/Camp/Catering	DIDC 280	28,000	DICC 255	4,000	STIM 280			45,000
Other Misc Expenses	DIDC 220	5,000	DICC 190	0	STIM 190			0
Overhead	DIDC 225	10,000	DICC 195	5,000				
Remedial Cementing	DIDC 231	0			STIM 215			0
MOB/DEMOMOB	DIDC 240	300,000						
Directional Drilling Services	DIDC 245	338,000						
Solids Control	DIDC 260	60,000						
Well Control Equip (Snubbing Services)	DIDC 265	70,000	DICC 240	5,000	STIM 240			109,000
Fishing & Sidetrack Services	DIDC 270	0	DICC 245	0	STIM 245			0
Completion Rig					STIM 115			21,000
Coil Tubing Services					STIM 260			368,000
Completion Logging/Perforating/Wireline					STIM 200			521,000
Compsite Plugs					STIM 390			108,000
Stimulation					STIM 210			3,542,000
Stimulation Water/Water Transfer/Water					STIM 395			849,000
Cimarex Owned Frac/Rental Equipment					STIM 305			40,000
Legal/Regulatory/Curative	DIDC 300	10,000						
Well Control Insurance	DIDC 285 \$0.35/ft	6,000						
Real Time Operations Center	DIDC 560	0			STIM 560			0
FL/GL - Labor								
FL/GL - Supervision								
Survey								
SWD/Other - Labor								
SWD/OTHER - SUPERVISION								
Contingency	DIDC 455 500 % of Drilling Intangibles	137,000	DICC 220	11,000	STIM 220			301,000
Contingency								
P&A Costs	DIDC 295	0	DICC 275	0				
Total Intangible Cost		2,868,000		230,000				6,333,000
Drive Pipe	DWEB 150	0						
Conductor Pipe	DWEB 130	0						
Water String	DWEB 135	16,000						
Surface Casing	DWEB 140 9 5/8" - 1,910ft at \$29.00/ft	55,000						
Intermediate Casing 1	DWEB 145 7" - 8,820ft at \$29.00/ft	280,000						
Intermediate Casing 2	DWEB 155	0						
Drilling Liner	DWEB 160	0						
Production Casing or Liner			DWEA 100 4 1/2" - 11,310ft at \$13.00/ft	147,000				
Production Tie-Back			DWEA 165	0	STIM 101			0
Tubing					STIM 105 3 - 1/2" - 7,200ft at \$10.00/ft			72,000
Wellhead, Tree, Chokes	DWEB 115	20,000	DWEA 120	25,000	STIM 120			60,000
Liner Hanger, Isolation Packer	DWEB 100	0	DWEA 125	90,000				
Packer, Nipples					STIM 400			28,000
Pumping Unit, Engine					STIM 405			0
Dowhole Lift Equipment					STIM 410			80,000
Surface Equipment								
Well Automation Materials								
Total Tangible - Well Equipment Cost		371,000		262,000				240,000
N/C Lease Equipment								
Tanks, Tanks, Steps, Stairs								
Battery Equipment								
Secondary Containments								
Overhead Power Distribution								
Facility Electrical								
Telecommunication Equipment								
Meters and Metering Equipment								
Facility Line Pipe								
Lease Automation Materials								
FL/GL - Materials								
FL/GL - Line Pipe								
SWD/Other - Materials								
SWD/OTHER - LINE PIPE								
Total Tangible - Lease Equipment Cost								
<b>Total Estimated Cost</b>		<b>3,239,000</b>		<b>492,000</b>				<b>6,570,000</b>



Description	Production Equip		Post Completion		Total	
	Codes	Amount	Codes	Amount	Cost	Cost
Roads & Location	CON 100	34,000	PCOM 100	5,000		329,000
Damages	CON 105	19,000				25,000
Mud/Fluids Disposal			PCOM 255	130,000		328,000
Day Rate						575,000
Misc Preparation						35,000
Bits			PCOM 125	0		75,000
Fuel			PCOM 130	0		79,000
Water for Drilling Rig (Not Frac Water)			PCOM 135	0		29,000
Mud & Additives						187,000
Surface Rentals	CON 140	13,000	PCOM 140	180,000		514,000
Downhole Rentals			PCOM 145	0		142,000
Flowback Labor			PCOM 141	0		0
Automation Labor	CON 150	35,000	PCOM 150	0		35,000
Formation Evaluation (DST, Coring, etc.)						0
Mud Logging						22,000
Open Hole Logging						0
Cementing & Float Equipment						211,000
Tubular Inspections			PCOM 160	0		59,000
Casing Crews						33,000
Mechanical Labor	CON 170	179,500	PCOM 170	30,000		239,500
Trucking/Transportation	CON 175	25,000	PCOM 175	0		62,000
Supervision	CON 180	43,500	PCOM 180	0		249,500
Trailer House/Camp/Catering						77,000
Other Misc Expenses	CON 190	0	PCOM 190	0		5,000
Overhead						15,000
Remedial Cementing			PCOM 215	0		0
MOB/DE/MOB						300,000
Directional Drilling Services						338,000
Solids Control						60,000
Well Control Equip (Snubbing Services)			PCOM 240	0		184,000
Fishing & Sidetrack Services			PCOM 245	0		0
Completion Rig			PCOM 115	0		21,000
Coil Tubing Services			PCOM 260	0		368,000
Completion Logging/Perforating/Wireline			PCOM 260	0		521,000
Composite Plugs			PCOM 390	0		108,000
Stimulation Pumping/Chemicals/Additives/Sand			PCOM 210	0		3,542,000
Stimulation Water/Water Transfer/Water Storage						849,000
Cimarex Owned Frac/Rental Equipment			PCOM 305	0		40,000
Legal/Regulatory/Curative	CON 300	0				10,000
Well Control Insurance						6,000
Real Time Operations Center						0
FL/GL - Labor	CON 500	51,000				51,000
FL/GL - Supervision	CON 505	13,000				13,000
Survey	CON 515	1,000				1,000
SWD/Other - Labor	CON 600	57,500				57,500
SWD/OTHER - SUPERVISION	CON 605	9,500				9,500
Contingency	CON 220	111,500	PCOM 220	0		560,500
Contingency	CON 221	29,000				29,000
P&A Costs						0
Total Intangible Cost		621,500		345,000		10,394,500
Drive Pipe						0
Conductor Pipe						0
Water String						16,000
Surface Casing						55,000
Intermediate Casing 1						280,000
Intermediate Casing 2						0
Drilling Liner						0
Production Casing or Liner						147,000
Production Tie-Back						0
Tubing			PCOMT 105	0		72,000
Wellhead, Tree, Chokes			PCOMT 120	0		105,000
Liner Hanger, Isolation Packer						90,000
Packer, Nipples			PCOMT 400	0		28,000
Pumping Unit, Engine			PCOMT 405	0		0
Downhole Lift Equipment			PCOMT 410	0		80,000
Surface Equipment			PCOMT 420	0		0
Well Automation Materials			PCOMT 455	0		0
Total Tangible - Well Equipment Cost						873,000
N/C Lease Equipment	CONT 400	140,000				140,000
Tanks, Tanks Steps, Stairs	CONT 405	0				0
Battery Equipment	CONT 410	356,500				356,500
Secondary Containments	CONT 415	22,500				22,500
Overhead Power Distribution	CONT 420	125,000				125,000
Facility Electrical	CONT 425	75,000				75,000
Telecommunication Equipment	CONT 426	0				0
Meters and Metering Equipment	CONT 445	20,000				20,000
Facility Line Pipe	CONT 450	27,500				27,500
Lease Automation Materials	CONT 455	17,500				17,500
FL/GL - Materials	CONT 550	19,000				19,000
FL/GL - Line Pipe	CONT 555	18,500				18,500
SWD/Other - Materials	CONT 650	8,000				8,000
SWD, OTHER - LINE PIPE	CONT 655	93,000				93,000
Total Tangible - Lease Equipment Cost		922,500				922,500
<b>Total Estimated Cost</b>		<b>1,544,000</b>		<b>345,000</b>		<b>12,190,000</b>



Chevron and WPX have elected and executed the Amendment to the JOA to include the SE/4SE/4. Their interest does not need to be force pooled.

12/20/2019-1/31/2020 – 14 emails in addition to several phone calls with Murchison regarding interest, AFE's and plans for drilling – Cimarex fully expects to finalize negotiations with Murchison in regards to the drilling of the well and the Amendment to the JOA which Amends the existing Operating Agreement to include the SE/4SE/4 of Section 4. Once the Amendment has been executed, the need for force pooling will be eliminated. Cimarex is requesting the force pooling hearing due to rig schedule timing.

12/9/2019-1/15/2020 – 5 emails in addition to several phone calls with MEC regarding calculation of interest, payout and plans for drilling – as in the case with Murchison, Cimarex fully expects to finalize negotiations with MEC in regards to the drilling of the well and the Amendment to the JOA which Amends the existing Operating Agreement to include the SE/4SE/4 of Section 4. Once the Amendment has been executed, the need for force pooling will be eliminated. Cimarex is requesting the force pooling hearing due to rig schedule timing.



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

APPLICATION OF CIMAREX  
ENERGY CO. FOR COMPULSORY  
POOLING, EDDY COUNTY,  
NEW MEXICO

CASE NO. 21055

AFFIDAVIT OF HARRISON HASTINGS

STATE OF TEXAS                     )  
  ) ss.  
COUNTY OF MIDLAND            )

Harrison Hastings, being duly sworn, deposes and states:

1. I am over the age of 18, I am a geologist for Cimarex Energy Co. ("Cimarex"), and have personal knowledge of the matters stated herein. I have been qualified by the Oil Conservation Division ("Division") as an expert in petroleum geology matters.

2. I conducted a geological study of the area that encompasses the horizontal spacing unit that is the subject of Cimarex's application in this case and am familiar with the geological matters involved in this case.

3. As part of my study, I have prepared the following geological exhibits with respect to the horizontal spacing unit that are attached hereto:

- a. **Exhibit C.1** is a Gunbarrel/Lateral Trajectory Diagram. This diagram identifies the Ringer 3-4 development plan, which includes the **Ringer 3-4 Federal Com 2H** well (*hereinafter* "Proposed Well") that is located within the Wolfcamp horizontal spacing unit that is the subject of this application.



- b. **Exhibit C.2** is a Locator Map identifying the Ringer 3-4 project area, in proximity to the Capitan Reef, for the Wolfcamp horizontal spacing unit that is the subject of this application.
- c. **Exhibit C.3** is a Cross-Section Locator Map. This map identifies the cross-section running from A-A' with the cross-section well names and a blue dotted line in proximity to the Proposed Well Spacing Unit. It also identifies the sections in which the cross-section wells are located.
- d. **Exhibit C.4** is a Deep Structure Map on the top of the Wolfcamp formation. This map identifies the Proposed Well with a red line. It also identifies the location of the cross-section running from A-A' with a blue dotted line. This map shows that the structure dips to the south-southeast.
- e. **Exhibit C.5** is an Upper Wolfcamp Isopach Map. It shows that the formation is relatively uniform across the proposed unit. It also shows the location of cross-section A-A' in proximity to the Proposed Spacing Unit.
- f. **Exhibit C.6** is a Stratigraphic Cross Section hung on the top of the Wolfcamp formation. The well logs on the cross-section give a representative sample of the Wolfcamp formation in the area. The target zone for the well is the Wolfcamp 'Y' SS, and that zone is consistent across the unit. The planned well-path for this well is indicated by a blue dashed line, and the letters 'LZ'.
- g. **Exhibit C.7** is a detailed view of the Target Zone within Stratigraphic Cross Section hung on the top of the Wolfcamp formation. The target zone for the well is the Wolfcamp 'Y' SS and is identified in bright red, and that zone is consistent across the unit.

4. Based upon my study as illustrated in these exhibits, knowledge of the geology in this area, and education and training, it is my expert opinion that:

- a. The horizontal spacing unit is justified from a geologic standpoint.
- b. There are no structural impediments or faulting that will interfere with horizontal development.
- c. Each quarter section in the unit will contribute more or less equally to production.

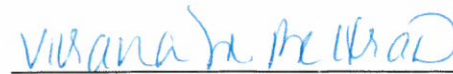
5. The preferred well orientation in this area is either N-S or E-W. This is due to the fact that regional max horizontal stress orientation in this area is approximately N45E.

6. The producing interval for each of these wells will be orthodox and will comply with the Division's set back requirements.

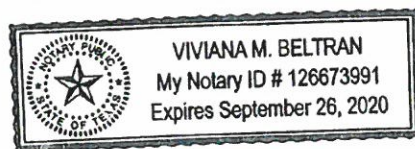
7. I attest that the information provided herein is true, correct and complete to the best of my knowledge and belief.

  
Harrison Hastings

SUBSCRIBED AND SWORN to before me this 4<sup>th</sup> day of February 2020 by Harrison Hastings, on behalf of Cimarex Energy Co.

  
Notary Public

My commission expires: 09/26/2020





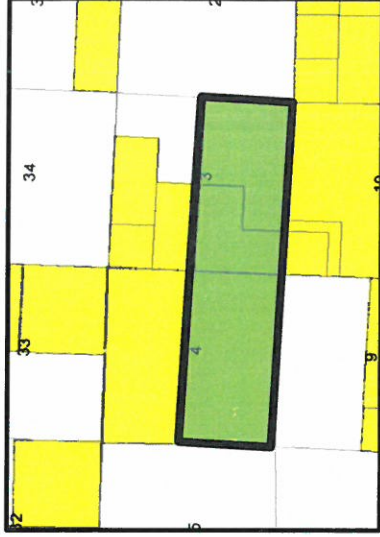
# Ringer 3-4 S/2

## Gun Barrel Diagrams

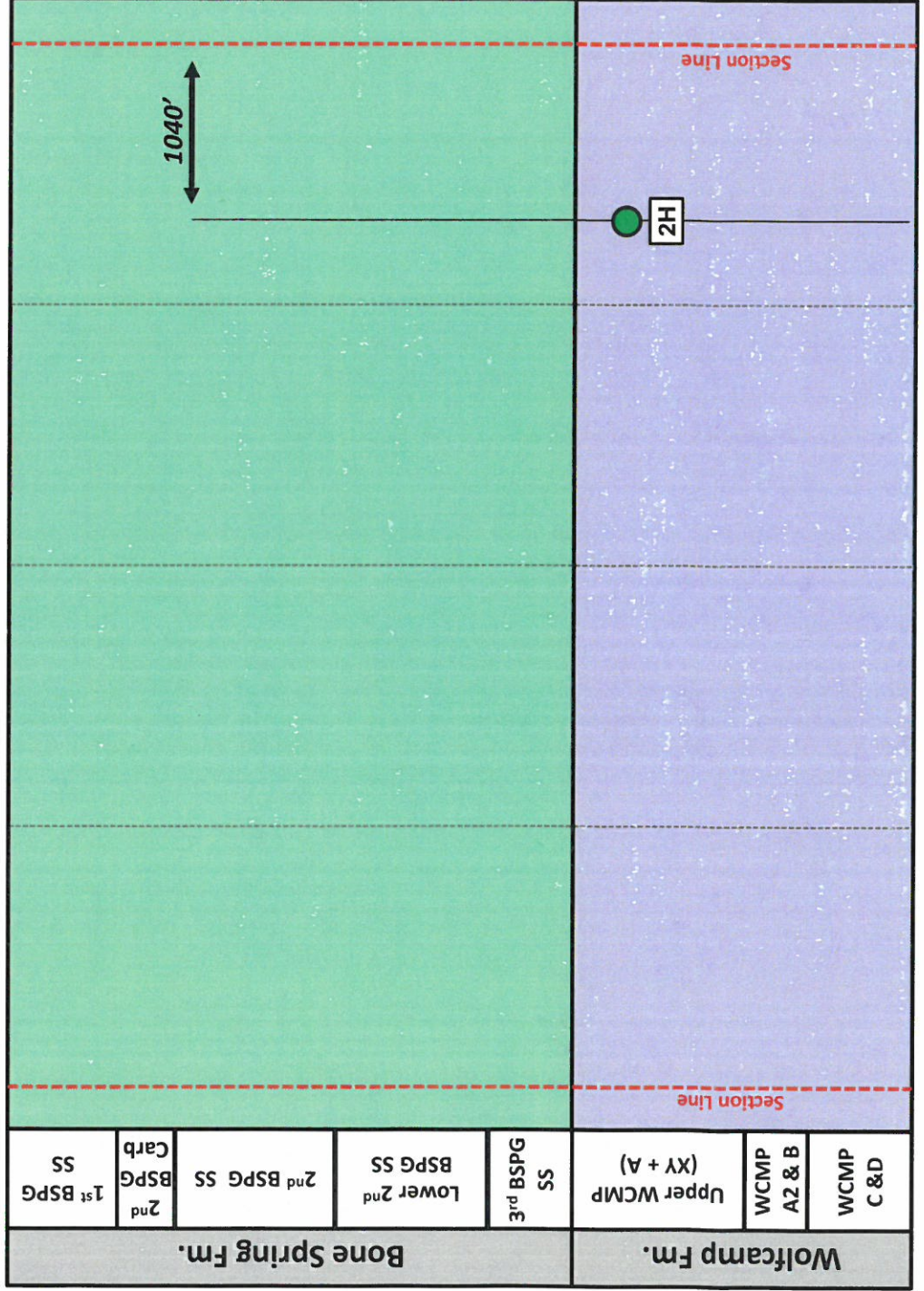
Sec 3 & 4 - T25S/R26E  
Eddy Co., NM

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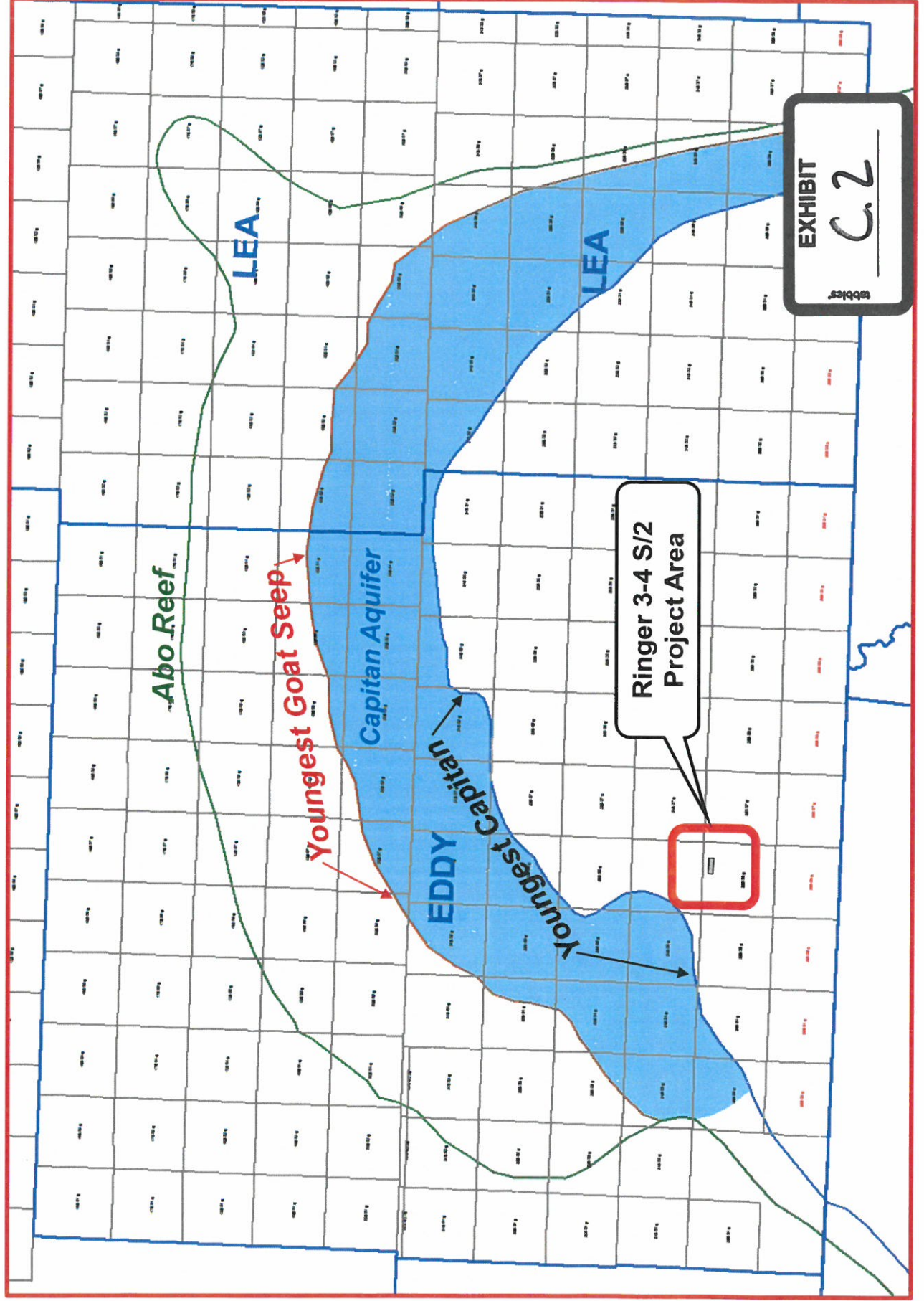
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Ringer 3-4 S/2

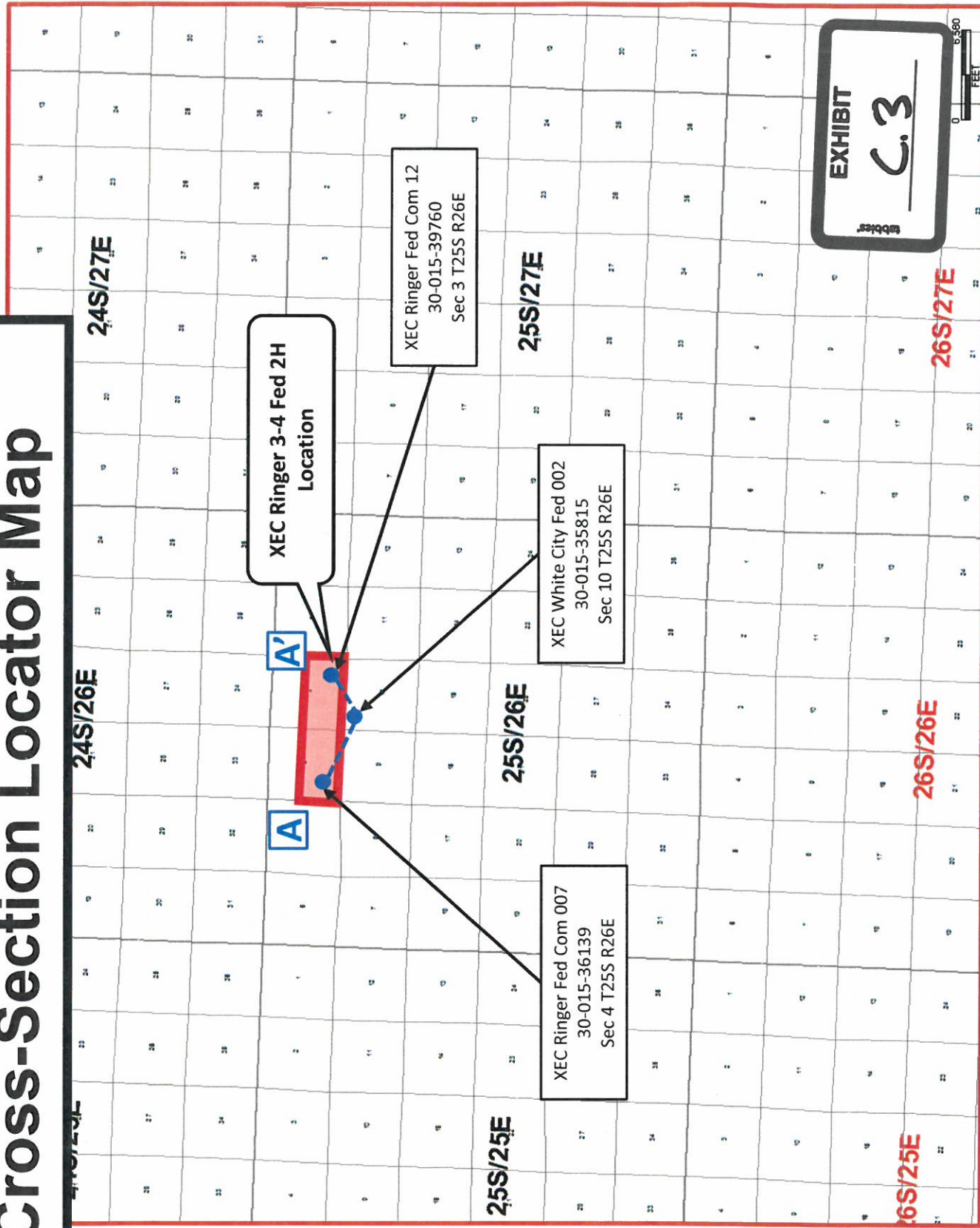


# Ringer 3-4 Fed Com S/2 (2H) Locator Map





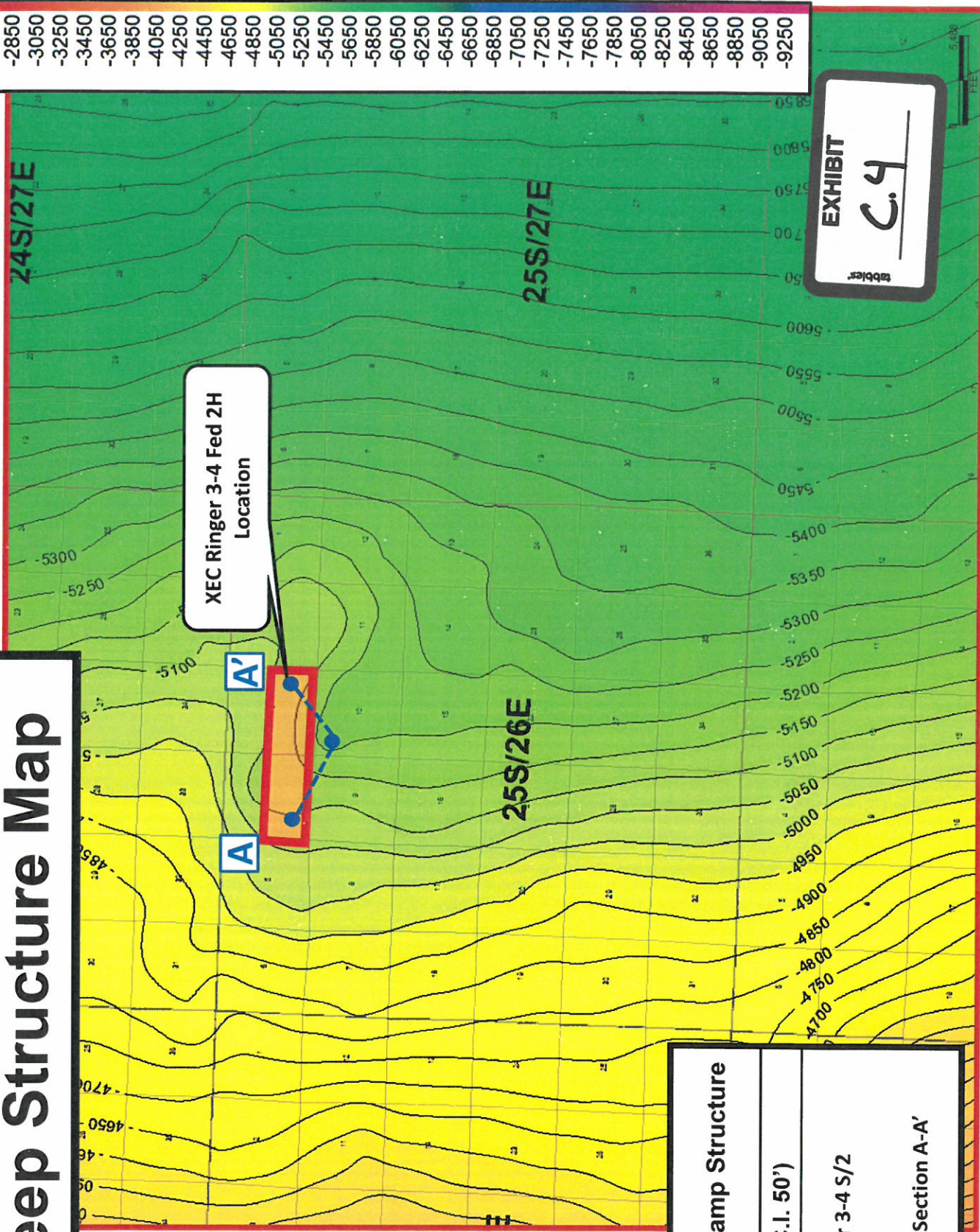
# Cross-Section Locator Map





# Deep Structure Map

-2650  
-2850  
-3050  
-3250  
-3450  
-3650  
-3850  
-4050  
-4250  
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EXHIBIT

C.4

Top Wolfcamp Structure

(C.I. 50')

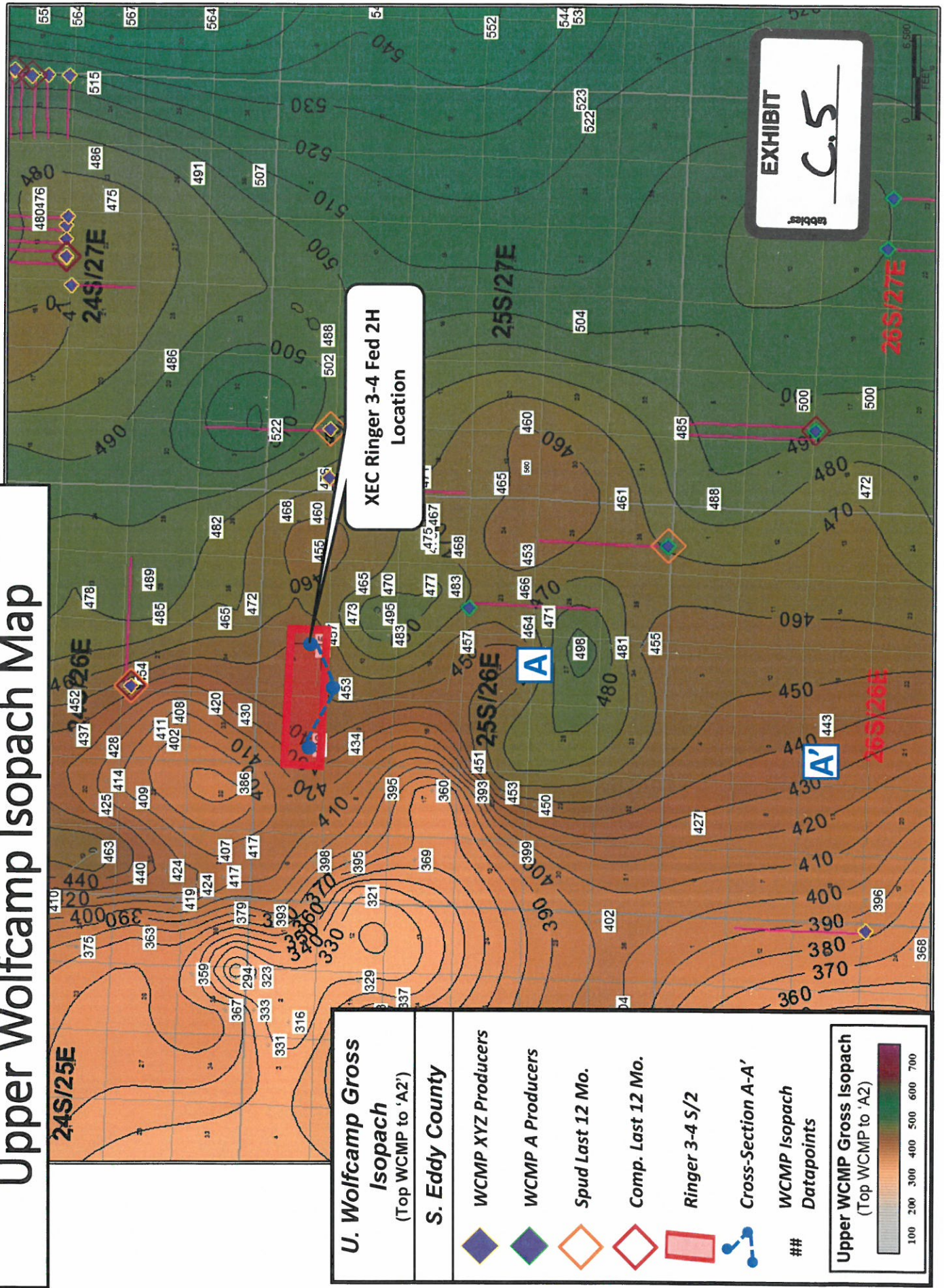
Ringer 3-4 S/2

Cross-Section A-A'





# Upper Wolfcamp Isopach Map





# Upper WCMP W-E Cross-Section A-A'

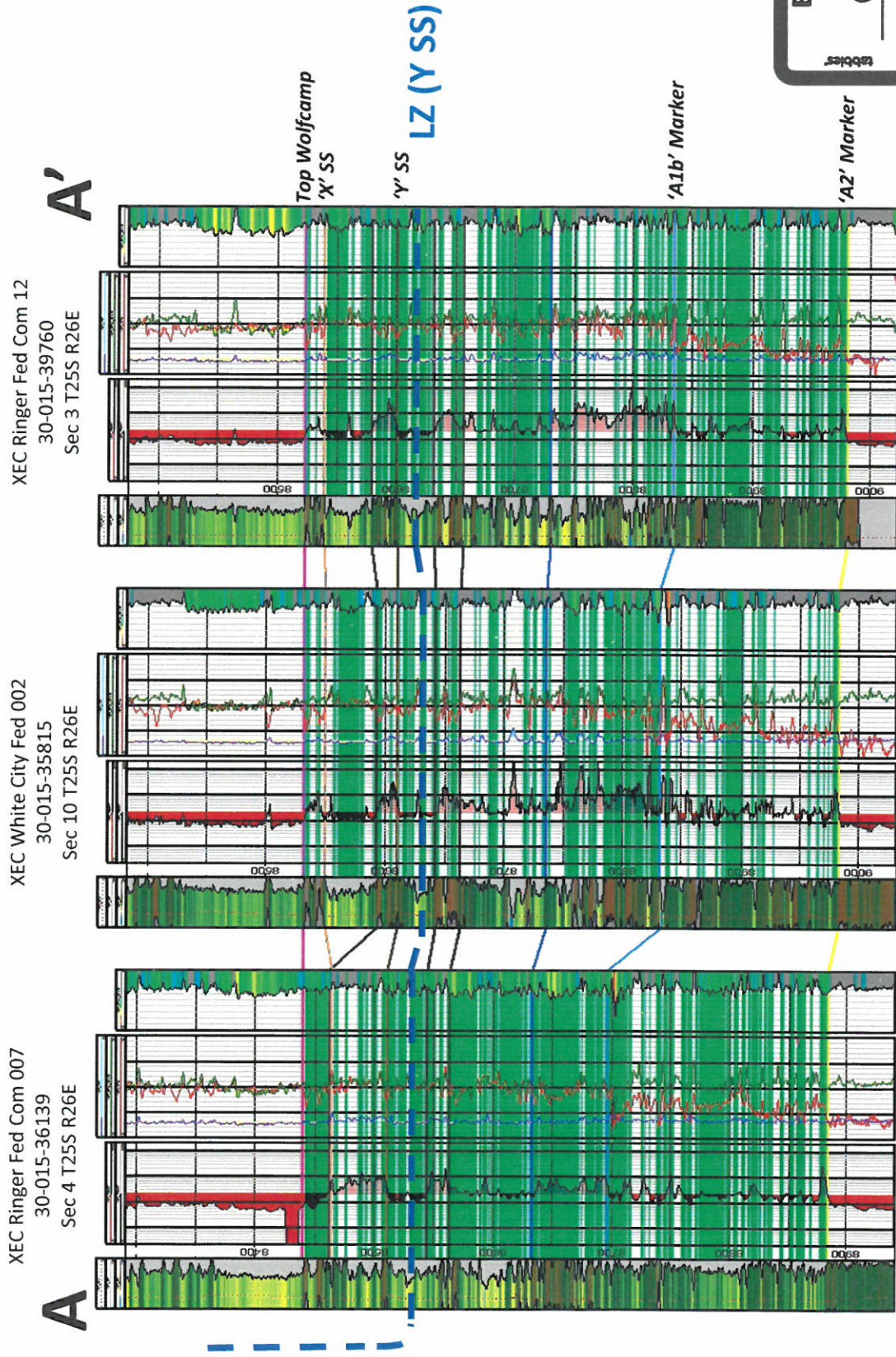


EXHIBIT  
**C.6**

- Upper Wolfcamp Net Pay (DPHI >9% DPHI)



# Upper WCMP W-E Cross-Section (A-A') – 'Y' SS LZ

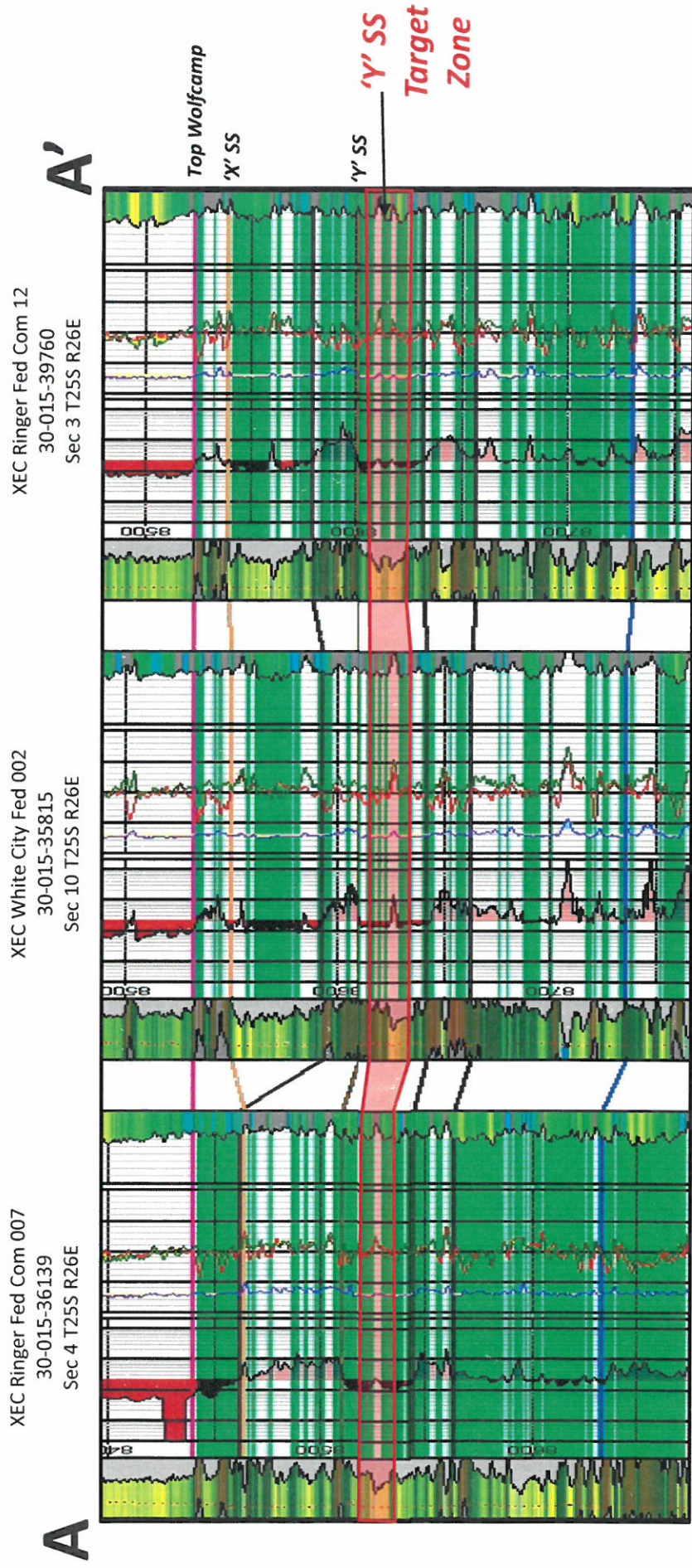


EXHIBIT  
C.7

- Upper Wolfcamp Net Pay (DPHI >9% DPHI)

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

**APPLICATION OF CIMAREX  
ENERGY CO. FOR COMPULSORY  
POOLING, EDDY COUNTY,  
NEW MEXICO**

**CASE NO. 21055**

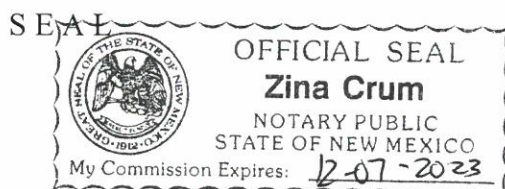
**AFFIDAVIT**

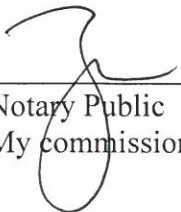
STATE OF NEW MEXICO            )  
  )ss.  
COUNTY OF BERNALILLO        )

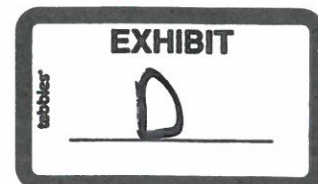
Lance D. Hough, attorney in fact and authorized representative of Cimarex Energy Co., the Applicant herein, being first duly sworn, upon oath, states that the above-referenced Applications were provided under notices of hearing to parties entitled to notice; and that the following are attached hereto: a sample of said notice of hearing, a mailing list for notice of hearing, proof of mailed notice of hearing, and proof of published notice of hearing. As noted in the Affidavit of Caitlin Pierce, Cimarex Energy Co. has conducted a good faith, diligent effort to find the names and correct addresses for the interest owners entitled to receive notice of the application filed herein.

  
\_\_\_\_\_  
Lance D. Hough

SUBSCRIBED AND SWORN to before me this 5<sup>th</sup> day of February 2020 by Lance D. Hough.



  
\_\_\_\_\_  
Notary Public  
My commission expires: 12-07-2023







MODRALL SPERLING

L A W Y E R S

January 16, 2020

Lance D. Hough  
Tel: 505.848.1826  
Fax: 505.848.9710  
Lance.Hough@modrall.com

**VIA CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

TO: AFFECTED PARTIES

This letter is to advise you that Cimarex Energy Co. has filed the enclosed applications with the New Mexico Oil Conservation Division:

**Case No. 21055: Application of Cimarex Energy Co. for compulsory pooling, Eddy County, New Mexico.** Applicant seeks an order from the Division: (1) to the extent necessary, approving the creation of a 320-acre, more or less, Wolfcamp horizontal spacing unit; and, (2) pooling all uncommitted mineral interests within a Wolfcamp horizontal spacing unit underlying the S/2 of Sections 3 and 4, Township 25 South, Range 26 East, NMPM, Eddy County, New Mexico. This spacing unit will be dedicated to the **Ringer 3-4 Federal Com 2H** well, to be horizontally drilled. The producing area for this well will be orthodox. Also to be considered will be the cost of drilling and completing said well, the allocation of these costs as well as the actual operating costs and charges for supervision, designation of Cimarex as operator of the well, and a 200% charge for risk involved in drilling said well. Said area is located approximately 16.5 miles south southwest of Carlsbad, New Mexico.

This application has been set for hearing before a Division Examiner at **8:15 a.m. on February 6, 2020**. The hearing will be held in Porter Hall in the Oil Conservation Division's Santa Fe Office located at 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505. As a party who may be affected by this application, we are notifying you of your right to appear at the hearing and participate in this case, including the right to present evidence either in support of or in opposition to the application. Failure to appear at the hearing may preclude you from any involvement in this case at a later date.

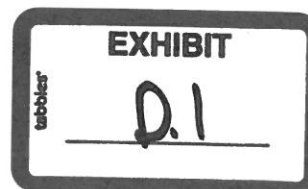
You are further notified that if you desire to appear in this case, then you are requested to file a Pre-Hearing Statement with the Division at least four business days in advance of a scheduled hearing before the Division or the

Modrall Sperling  
Roehl Harris & Sisk P.A.

500 Fourth Street NW  
Suite 1000  
Albuquerque,  
New Mexico 87102

PO Box 2168  
Albuquerque,  
New Mexico 87103-2168

Tel: 505.848.1800  
www.modrall.com



AFFECTED PARTIES

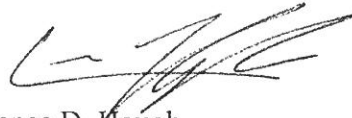
Cimarex / Ringer 3-4 Federal Com 2H

January 16, 2020

Page 2

Commission, but in no event later than 5:00 p.m. mountain time, on the Thursday preceding the scheduled hearing date, with a copy delivered to the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lance D. Hough', with a stylized flourish at the end.

Lance D. Hough  
*Attorney for Applicant*

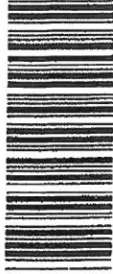
EED/ldh/W3634738.DOCX

Enclosures: as stated

Zina Crum  
Modrall Spertling  
500 4th Street NW  
Suite 1000  
Albuquerque NM 87102

PS Form 3877

Type of Mailing: CERTIFIED MAIL  
01/16/2020



Firm Mailing Book ID: 182806

Line	USPS Article Number	Name, Street, City, State, Zip	Postage	Service Fee	RR Fee	Rest.Del.Fee	Reference Contents
1	9314 8699 0430 0067 7525 19	WPX Energy Permian, LLC 3500 One Williams Center Tulsa OK 74172	\$1.15	\$3.55	\$1.60	\$0.00	82762.0128 Ringer Notice
2	9314 8699 0430 0067 7525 26	Chevron USA Inc Attn: Kristen Hunter 6301 Deauville Blvd. Midland TX 79706	\$1.15	\$3.55	\$1.60	\$0.00	82762.0128 Ringer Notice
3	9314 8699 0430 0067 7525 33	Murchison Oil & Gas Inc P.O. Box 21228, Dept. #37 Tulsa OK 74121	\$1.15	\$3.55	\$1.60	\$0.00	82762.0128 Ringer Notice
4	9314 8699 0430 0067 7525 40	MEC Petroleum Corp. 1100 Mira Vista Blvd. Plano TX 75093	\$1.15	\$3.55	\$1.60	\$0.00	82762.0128 Ringer Notice
5	9314 8699 0430 0067 7525 57	Magnum Hunter Production Inc. 1700 Lincoln Street, Suite 3700 Denver CO 80203	\$1.15	\$3.55	\$1.60	\$0.00	82762.0128 Ringer Notice
<b>Totals:</b>			<b>\$5.75</b>	<b>\$17.75</b>	<b>\$8.00</b>	<b>\$0.00</b>	
			<b>Grand Total:</b>				<b>\$31.50</b>



List Number of Pieces  
Listed by Sender

Total Number of Pieces  
Received at Post Office

Postmaster:

Name of receiving employee

Dated:



Transaction Report Details - CertifiedPro.net  
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USPS Article Number	Date Created	Name 1	Name 2	Address 1	City	State	Zip	Mailing Status	Service Options	Mail Delivery Date
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9314869904300067752533	2020-01-16 1:47 PM	Murchison Oil & Gas Inc		P.O. Box 21228, Dept. #37	Tulsa	OK	74121	Delivered	Return Receipt - Electronic, Certified Mail	01-22-2020
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# Carlsbad Current Argus.

PART OF THE USA TODAY NETWORK

## Affidavit of Publication

Ad # 0004011300

This is not an invoice

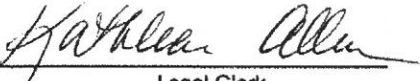
MODRALL SPERLING  
POBOX 2168

ALBUQUERQUE, NM 87103

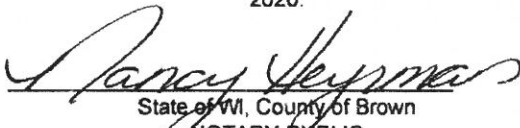
I, a legal clerk of the Carlsbad Current Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

January 22, 2020

CASE NO. 21055: Notice to all affected parties, as well as their heirs and devisees, of WPX Energy Permian, LLC; Chevron USA Inc, attn: Kristen Hunter; Murchison Oil & Gas Inc; MEC Petroleum Corp.; United States of America; Pearson Sibert Oil Co of Texas; AmeriPermian Holdings, LLC; Murchison Oil & Gas Inc; MEC Petroleum Corp.; Alan Jochimsen Monty D. McLane; States Royalty Limited Partnership; Estate of Kelly Lohman, deceased; Springbok Energy Partners II, LLC; Silver Spur Resources, LLC; MRC Permian Company; Lester A Parks, et ux Clara Parks; Janet J. Tidwell; Diana K Hammonds; Nancy B. Parks; James L Thomas; William Ray Thomas; Carl Otis Thomas; Suncrest Resources, LLC; AmericaWest Resources, LLC; Speyside Resources, LLC Shrader Enterprises, LP; and OGX Royalty Fund IV, LP of Cimarex Energy Co.'s Application for compulsory pooling, Eddy County, New Mexico. The State of New Mexico through its Oil Conservation Division, hereby gives notice that the Division will conduct a public hearing at 8:15 a.m. on February 6, 2020 to consider this application. Applicant seeks an order from the Division: (1) to the extent necessary, approving the creation of a 320-acre, more or less, Wolfcamp horizontal spacing unit; and, (2) pooling all uncommitted mineral interests within a Wolfcamp horizontal spacing unit underlying the S/2 of Sections 3 and 4, Township 25 South, Range 26 East, NMPM, Eddy County, New Mexico. This spacing unit will be dedicated to the Ring-er 3-4 Federal Com 2H well, to be horizontally drilled. The producing area for this well will be orthodox. Also to be considered will be the cost of drilling and completing said well, the allocation of these costs as well as the actual operating costs and charges for supervision, designation of Cimarex as operator of the well, and a 200% charge for risk involved in drilling said well. Said area is located approximately 16.5 miles south southwest of Carlsbad, New Mexico. Pub: January 22, 2020 #4011300

  
Legal Clerk

Subscribed and sworn before me this January 22,  
2020:

  
State of WI, County of Brown  
NOTARY PUBLIC  
5-15-23  
My commission expires

Ad # 0004011300

PO #:

# of Affidavits 1

This is not an invoice

NANCY HEYRMAN  
Notary Public  
State of Wisconsin

