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

APPLICATIONS OF CIMAREX ENERGY CO. FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO

Case Nos. 23594, 23595, 23596, 23597, 23598, 23599, 23600 & 23601

## PREHEARING STATEMENT

Cimarex Energy Co., ("Cimarex"), OGRID No. 215099, through its undersigned attorneys, submits the following Prehearing Statement pursuant to the rules of the Oil Conservation Division ("Division") for the above referenced Cases which are consolidated with the Case Nos. 23452-23455, and 23508 – 23523 for a contested hearing pursuant to that certain "Further Amended Pre-Hearing Order" issued on June 8, 2023. This Prehearing Statement describes the status of Cimarex's Case Nos. 23594 - 23601, which were originally filed in response to Read & Stevens, Inc., in association with Permian Resources Operating, LLC (collectively referred to herein as "Permian Resources") proposing to pool the Wolfcamp formation underlying Sections 5 and 8, and Sections 4 and 9, in Township 20 South, Range 34 East, NMPM, Lea County ("Subject Lands") in Case Nos. 23512-23515 and 23520 – 23523.

**APPEARANCES** 

APPLICANT ATTORNEY

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### **COMPETING PARTY**

Read & Stevens, Inc., in association with Permian Resources Operating, LLC

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## **APPLICANT'S STATEMENT OF THE CASES**

Cimarex provides this Prehearing Statement to inform the Division of the current status of Case Nos. 23594, 23595, 23596 and 23597, 23598, 23599, 23600 & 23601. A little more than a month after Cimarex filed its applications to develop and pool the Bone Spring formation in the Subject Lands, Permian Resources not only filed applications for the Bone Spring but also filed applications for drilling and pooling the Wolfcamp formation in the Subject Lands in Case Nos. 23512-23515 and 23520 – 23523, and proposed to drill wells in the Upper Wolfcamp of the Subject Lands despite the fact that, based on the geological and reservoir data, those wells would drain the 3<sup>rd</sup> Bone Spring Sand and would likely result in permanent damage to the target reservoir located in the Bone Spring where the target reservoir is located.

Permian Resources' decision to propose to develop the Upper Wolfcamp created a dilemma for Cimarex. On the one hand, Cimarex understood, based on clear geological and reservoir data, that the Upper Wolfcamp should not be developed in the Subject Lands but, on the other hand, Cimarex understood that once Permian Resources filed its application to pool the Upper Wolfcamp, Cimarex needed to provide a counter proposal that would oppose Permian Resources' Upper Wolfcamp applications.

Consequently, Cimarex drafted competing pooling applications for the Wolfcamp in which it explained that the best way to develop the target reservoir is by drilling wells in the 3<sup>rd</sup> Bone Springs Sands, the same wells proposed by Cimarex's Bone Spring applications and prohibit the drilling of wells in Upper Wolfcamp to prevent drainage from and damage to the target reservoir. Cimarex filed its Wolfcamp applications in Case Nos. 23594 – 23601, in which it dedicated the Wolfcamp units exclusively to wells drilled in the 3<sup>rd</sup> Bone Spring Sands, and not in the Upper Wolfcamp, in order preserve the Upper Wolfcamp from being drilled and thereby protect the 3<sup>rd</sup> Bone Spring Sand from drainage and damage.

Cimarex has further evaluated its applications in Case Nos. 23594 – 23601 as a response to the applications filed by Permian Resources in Case Nos. 23512 – 23515 and 23520 – 23523, and Cimarex has determined that the best way to develop the Subject Lands and both protect the primary reservoir of said Lands while optimizing production is to request that the Division establish a protective zone covering the Upper Wolfcamp in order to protect correlative rights and prevent waste.

As a result, Cimarex has filed a Motion for an Order to Prohibit the Drilling of Wells in the Upper Wolfcamp in Order to Protect Correlative Rights and Optimize Production of the Subject Lands ("Motion"), attached hereto as Exhibit 1, in which it has asked the Division to consider and rule on the Motion as part of the Division's ruling in the contested hearing. Should the Division decide that Cimarex has the better development plan, then the Upper Wolfcamp would not be drilled.

## APPLICANT'S PROPOSED EVIDENCE AND WITNESS QUALIFICATIONS

WITNESS

**ESTIMATED TIME** 

**EXHIBITS** 

Landman: John Coffman Approx. 5 min Approx. 1

Ouglifications: Landman Approx. 5 min Approx. 1

Ouglifications: Landman Approx. 5 min Approx. 1

Qualifications: I graduated in 2018 from Texas Tech University with a bachelor's degree in Business Administration with an emphasis on Energy Commerce. I have worked at Cimarex for approximately 4 years, and I have been working in New Mexico for 4 years. My credentials as an expert witness in petroleum land matters have been accepted by the Division and made a matter of record.

Geologist: Staci Meuller Approx. min Approx. 21 Qualifications: I have a Bachelor of Science Degree in Geophysical Engineering from Colorado School of Mines, and a Master of Science Degree in Geophysics from Colorado School of Mines. I have worked on New Mexico Oil and Gas matters since July 2018. My credentials as an expert witness in geology have been accepted by the Division and made a matter of record.

Reservoir Engineer: Eddie Behm Approx. 45 minutes Approx. 17

Qualifications: I attended the University of Tulsa and graduated with a bachelor's in petroleum engineering in 2011. I have worked for Occidental, California Resources prior to working for Cimarex and have been employed as a Production and Reservoir engineer for Cimarex for the last 6 years, working in the Delaware Basin with a primary focus on Lea County, New Mexico. I have

previously testified before the Division as an expert reservoir engineer, and my credentials have been accepted of record.

Facilities Engineer: Calvin Boyle Available for questions (15 min) Approx. 1 Qualifications: I attended the University of Oklahoma and graduated with a bachelor's in petroleum engineering in 2016 followed by Oklahoma State University where I graduated with a Master of Business Administration in 2018. I worked for Halliburton prior to working for Cimarex Energy Co. ("Cimarex") and have been employed as a Field, Production, and Facilities engineer for Cimarex for the last 4 years, working in the Delaware Basin with a primary focus on Lea County, New Mexico. I am familiar with the subject applications filed in the above-referenced Cases and the engineering involved. I have not testified previously before the Division and am providing a one-page resume.

## **LIST OF MATERIAL FACTS NOT IN DISPUTE**

Parties are in general agreement that the Bone Spring formation underlying the Subject

Lands would be productive if drilled and developed and should be developed; however, there is

disagreement about whether the Upper Wolfcamp should be drilled and developed simultaneously
with the Bone Spring.

## **LIST OF DISPUTED FACTS AND ISSUES**

The central issue in Cimarex's Case Nos. 23594 - 23601 and Permian Resources' competing Case Nos. 23512 – 23515 and 23520 - 23523 is whether the Upper Wolfcamp should be drilled and developed (Cimarex asserts that the drilling of the Upper Wolfcamp would result in waste and harm to correlative rights and to the target reservoir, and therefore the Upper Wolfcamp should not be drilled; while Permian Resources proposes to drill the Upper Wolfcamp). As an alternative to drilling the Upper Wolfcamp, Cimarex has filed a Motion to establish a protective buffer zone in the Upper Wolfcamp to prevent it from being drilled.

### PROCEDURAL MATTERS

For Cimarex's Case Nos. 23594 – 23601 and Permian Resources' Case Nos. 23512 – 23515 and 23520 – 23523, Cimarex requests that the Division review and consider the Motion (attached

hereto as Exhibit 1) that Cimarex has filed concerning the Wolfcamp formation and how best to develop the Subject Lands.

Respectfully submitted,

ABADIE & SCHILL, PC

/s/ Darin C. Savage

Darin C. Savage

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Attorneys for Cimarex Energy Co.

## CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was filed with the New Mexico Oil Conservation Division and was served on counsel of record via electronic mail on July 13, 2023:

Michael H. Feldewert — mfeldewert@hollandhart.com Adam G. Rankin — agrankin@hollandhart.com Julia Broggi — jbroggi@hollandhart.com Paula M. Vance — pmvance@hollandhart.com

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Attorneys for Sandstone Properties, LLC

/s/ Darin C. Savage

Darin C. Savage

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

APPLICATIONS OF CIMAREX ENERGY CO. FOR A HORIZONAL SPACING UNIT AND COMPULSORY POOLING, LEA COUNTY, NEW MEXICO

Case Nos. 23448 – 23455

APPLICATIONS OF CIMAREX ENERGY CO. FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO

Case Nos. 23594 - 23601

APPLICATIONS OF READ & STEVENS, INC. FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO

Case Nos. 23508 – 23523

# MOTION FOR AN ORDER TO PROHIBIT THE DRILLING OF WELLS IN THE UPPER WOLFCAMP IN ORDER TO PROTECT CORRELATIVE RIGHTS AND OPTIMIZE PRODUCTION OF THE SUBJECT LANDS

Cimarex Energy Co., ("Cimarex"), through its undersigned attorneys, respectfully requests that the New Mexico Oil Conservation Division ("Division") issue an order prohibiting the drilling of horizontal wells in the Upper Wolfcamp in Sections 4, 5, 8 and 9, Township 20 South, Range 34 East, NMPM, Lea County ("Subject Lands") to protect correlative rights and optimize production of the Subject Lands. In support of its Motion, Cimarex submits the following:

### I. Factual and procedural background

1. Cimarex has been preparing to develop Subject Lands since 2018. Based on its detailed analysis of the specific geology and reservoir characteristics of this area, on March 9, 2023, Cimarex filed applications in Case Nos. 23448 through 23455 for the compulsory pooling

EXHIBIT 1

of the Bone Spring formation underlying the Subject Lands, proposing the Mighty Pheasant Wells for units in Sections 5 and 8, and proposing the Loosey Goosey Wells for units in Sections 4 and 9.

- 2. As a result of its evaluation of the Subject Lands, as well as the surrounding area, Cimarex found that not only were the best reserves of oil and gas residing in the 3<sup>rd</sup> Bone Spring Sand but also that the Upper Wolfcamp reservoir under the Subject Lands and surrounding area was significantly below average in quality and potential, rendering Wolfcamp wells economically unfeasible. *See* Exhibit 1, attached hereto, showing that the consensus landing for optimal development is the 3<sup>rd</sup> Bone Spring Sands, not the Upper Wolfcamp.
- 3. Cimarex has also determined that there are no indications of any major geomechanical changes/frac baffles in between Cimarex's 3<sup>rd</sup> Sand target and Permian Resources' Wolfcamp Sands target, indicating that these two intervals are most likely one shared reservoir tank. Due to the absence of the baffle between the 3<sup>rd</sup> Bone Spring Sand and the Upper Wolfcamp, Cimarex has concluded that if Upper Wolfcamp wells were to be completed while drilling and developing the 3<sup>rd</sup> Bone Spring Sand, those wells would drain much of the reserves in the 3rd Bone Spring Sand, where the best reserves are located, and would likely result in permanent damage to the target reservoir in the 3<sup>rd</sup> Bone Spring Sand.
- 4. Thus, Cimarex limited its proposed development and applications for compulsory pooling to the Bone Spring and did not seek to pool the Upper Wolfcamp. Cimarex's analysis of the Subject Lands comports to how other operators are developing the surrounding areas that share the same three fundamental characteristics, *viz.*, excellent reserves in the 3<sup>rd</sup> Bone Spring Sand, poor quality reservoir in the Upper Wolfcamp, and the lack of a baffle between the two. *See* Exhibit 2, attached hereto, showing the overwhelming predominance of Bone Spring development

and the dearth and rarity of the Wolfcamp development.

- 5. A little more than a month after Cimarex filed is applications to develop and pool the Bone Spring Formation, Read & Stevens, Inc., in association with Permian Resources Operating, LLC (collectively referred to as "Permian Resources"), filed competing applications to pool the Bone Spring formation of the Subject Lands in Case Nos. 23508-23511 and 23516-23519. Permian Resources also filed applications for drilling and pooling the Wolfcamp formation in Case Nos. 23512-23515 and 23520-23523, proposing to drill eight wells in the Upper Wolfcamp despite the fact that those wells would drain the 3<sup>rd</sup> Bone Spring Sand and would likely result in permanent damage to the target reservoir located in the Bone Spring where the best reservoirs are located.
- 6. Given the poor quality of the Upper Wolfcamp reservoir, the lack of the baffle that would otherwise minimize drainage of the 3<sup>rd</sup> Bone Spring, the fact that additional Upper Wolfcamp wells will not increase EUR, and the recent history of developing the lands in the area that account for these facts, Permian Resources' decision to seek to develop the Upper Wolfcamp Formation is baffling. The geological data demonstrates that expending tens of millions of dollars¹ drilling unnecessary wells in the Upper Wolfcamp that will not increase EUR, but instead would place a substantial financial burden on Working Interest owners, incur environmental risks of drilling additional and unnecessary wells, undermine overall production, and likely result in permanent damage to the target reservoir, creating waste of oil and gas that would be forever lost through the misguided development of the Upper Wolfcamp. See Exhibit 4
- 7. Permian Resources' decision to propose to develop the Upper Wolfcamp created a dilemma for Cimarex. On the one hand, based on clear geological and reservoir data, Cimarex

<sup>&</sup>lt;sup>1</sup> Permian Resources is proposing to drill eight Upper Wolfcamp wells on the Subject Lands at a total estimated cost of \$95,022,896. *See*: Permian Well Proposals, a copy of which are attached hereto as Exhibit 3.

knew, that the Upper Wolfcamp should not be developed on the Subject Lands but, on the other hand, Cimarex understood that once Permian Resources filed its application to pool the Upper Wolfcamp, Cimarex needed to provide a counter proposal that would oppose Permian Resources' Upper Wolfcamp applications.

8. Consequently, Cimarex drafted competing pooling applications for the Upper Wolfcamp in which it explained that the best way to develop the target reservoir is by drilling wells in the 3<sup>rd</sup> Bone Springs Sands, the same wells proposed by Cimarex's Bone Spring applications and prohibit the drilling of wells in Upper Wolfcamp to prevent drainage from and damage to the target reservoir. Cimarex filed its Wolfcamp applications on June 5, 2023, in Case Nos. 23594 – 23601, in which it dedicated the Wolfcamp units exclusively to wells drilled in the 3<sup>rd</sup> Bone Spring Sands, and not in the Upper Wolfcamp, in order preserve the Upper Wolfcamp from being drilled and thereby protect the 3<sup>rd</sup> Bone Spring Sand from drainage and damage.

## II. Argument

- A. The optimal development of the Subject Lands is to drill wells in the 3<sup>rd</sup> Bone Spring Sand and create a protective buffer zone that would prohibit the drilling of wells in the Upper Wolfcamp.
- 9. In order to protect the abundant reserves in the 3<sup>rd</sup> Bone Spring Sand and avoid the inherent damage that Permian Resources' proposed Upper Wolfcamp wells would inflict on the reservoir, the Division should create a buffer zone that prohibits development of the subpar Upper Wolfcamp. The history and practice of achieving optimal development in the area surrounding the Subject Lands has repeatedly been demonstrated over the years by the fact the operators who were free to drill in both the Bone Spring and Wolfcamp decided to develop the 3<sup>rd</sup> Bone Spring Sands and to forego drilling any Upper Wolfcamp wells. *See* Exhibits 1 and 2, attached hereto.
  - 10. Cimarex filed its Wolfcamp applications only as a response to Permian Resources'

unexpected and imprudent Wolfcamp applications as a means to prevent Permian Resources from making the mistake of drilling the costly, wasteful, and unnecessary Upper Wolfcamp wells. In its competing Wolfcamp applications, Cimarex emphasized that only the 3<sup>rd</sup> Bone Spring Sands should be drilled and not the Upper Wolfcamp, consistently advocating that the Division should not allow the drilling of Upper Wolfcamp wells on the Subject Lands.

- Wolfcamp based on wells drilled in 3<sup>rd</sup> Bone Spring Sand may not be the best way to protect correlative rights and counter Permian Resources' plan for the Upper Wolfcamp. Cimarex submits that the best course of action for the Division to follow, in order to ensure achieving optimal production from the rich reserves located in the 3<sup>rd</sup> Bone Spring Sand and to protect correlative rights, would be to allow the drilling of the 3<sup>rd</sup> Bone Spring Sand wells, as proposed by Cimarex, and to establish a vertical protective zone that would preclude the drilling of wells in the subpar Upper Wolfcamp. Such a protective zone would prevent drainage of the 3<sup>rd</sup> Bone Spring, thus protecting the correlative rights of the owners in the 3<sup>rd</sup> Bone Spring. In addition, the protective zone would spare the working interest owners approximately \$95 Million for wells that not only fail to increase the EUR but would also likely damage the reservoir. Cimarex has carefully analyzed the need for such a protective buffer zone and provides in Exhibit 5, attached hereto, a graphic depiction and quantification of the area and extent of the Upper Wolfcamp that needs to be protected.
- 12. The Division has the clear authority to fashion such a necessary solution and establish a protective zone under NMSA 1978 Section 70-2-11, which grants the Division authority "to do whatever may be reasonably necessary" to protect correlative rights, prevent waste, and prevent the drilling of unnecessary wells. The wells proposed to be drilled by Permian

Resources in the Upper Wolfcamp are clearly unnecessary, wasteful, and unwarranted based on the geological and reservoir data.

13. When Cimarex drafted its competing application to pool the Wolfcamp formation as a counter to Permian Resources' Wolfcamp application, it did so with the intent of dedicating the Wolfcamp unit to a well drilled in the 3<sup>rd</sup> Bone Spring in order to prevent the Upper Wolfcamp from being drilled and establishing the Upper Wolfcamp as a buffer zone. Cimarex submits this Motion with the same intent - to prohibit the drilling of wells in the Upper Wolfcamp by creating a protective buffer zone that would prevent drainage of the target reservoir, protect correlative rights, prevent waste, avoid the drilling of unnecessary wells, and protect the target reservoir from harm and damage. Thus, Cimarex by this Motion respectfully requests that its competing applications in Case Nos. 23594, 23595, 23596, 23597, 23598, 23599, 23600, and 23601 to pool the Wolfcamp formation be dismissed; that the Division establish a protective buffer zone that prohibits the drilling of wells in the Upper Wolfcamp; and that the Division require any operator who wants develop the Lower Wolfcamp, below the proposed buffer zone, to file a separate pooling application that specifically targets the Lower Wolfcamp.

## III. Conclusion:

Cimarex respectfully requests that the Division consider this Motion as part of the contested hearing for the above-referenced cases during which Cimarex and Permian Resources will be presenting their respective plans for the development of the Subject Lands. Permian Resources' development plans consist of drilling both the Bone Spring and Upper Wolfcamp formations; whereas, Cimarex's development plans consist of drilling only the Bone Spring formation to achieve optimal production of the Subject Lands that protects correlative rights and avoids waste.

If the Division finds Cimarex's production data and analysis of the geology and target reservoir to be accurate and persuasive, and as a result, decides to grant Cimarex operatorship of the Subject Lands by approving its applications for the Bone Spring, then concurrently with the Division's decision, Cimarex respectfully asks the Division to grant this Motion by enacting the following: (1) Dismiss Cimarex's applications for the Wolfcamp in Case Nos. 23594, 23595, 23596, 23597, 23598, 23599, 23600, and 23601, and as an alternative to pooling the Wolfcamp, pool only the Bone Spring formation underlying the units proposed by Cimarex in Case Nos. 23448 – 23455; (2) establish a protective buffer zone covering the Upper Wolfcamp below the base of the Bone Spring that would prohibit the drilling of wells in the Upper Wolfcamp in order to protect the correlative rights of the owners, prevent waste and optimize production from the Subject Lands; and (3) deny the applications filed by Permian Resources that propose to pool the Wolfcamp formation for the purpose of drilling the Upper Wolfcamp and require any operator wanting to develop the Lower Wolcamp, below the protective zone, to file separate applications that actually target the Lower Wolfcamp, and not the Upper Wolfcamp.

Respectfully submitted,

ABADIE& SCHILL, PC

/s/ Darin C. Savage

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## Attorneys for Cimarex Energy Co.

## **CERTIFICATE OF SERVICE**

I hereby certify that a true and correct copy of the foregoing was filed with the New Mexico Oil Conservation Division and was served on counsel of record via electronic mail on July 13, 2023:

Michael H. Feldewert — mfeldewert@hollandhart.com Adam G. Rankin — agrankin@hollandhart.com Julia Broggi — jbroggi@hollandhart.com Paula M. Vance — pmvance@hollandhart.com

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Attorneys for Sandstone Properties, LLC

/s/ Darin C. Savage

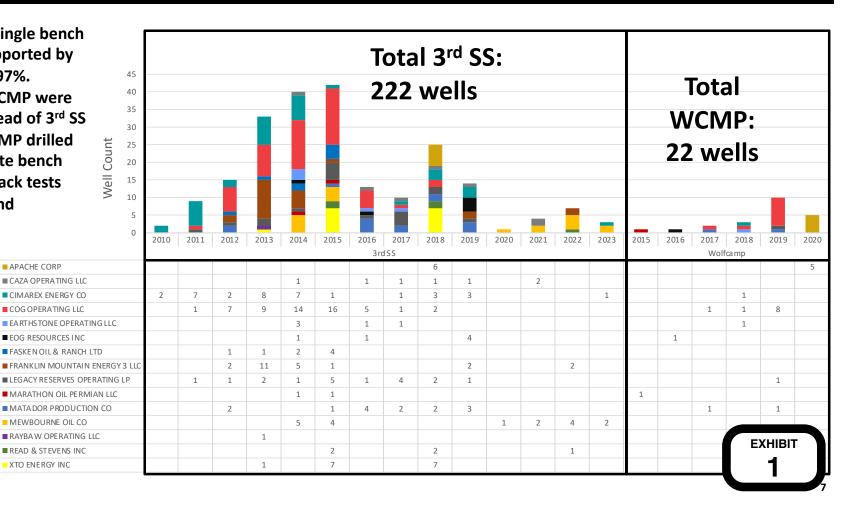
Darin C. Savage

## Well Count by Landing and Operators Shows 3<sup>rd</sup> Sand is the Consensus Landing

- 3<sup>rd</sup> Sand / single bench landing supported by 236 wells, 97%.
- 13 of 22 WCMP were drilled instead of 3rd SS
- 5 of 22 WCMP drilled as a separate bench
- 3 WCMP stack tests with 3rd Sand

APACHE CORP

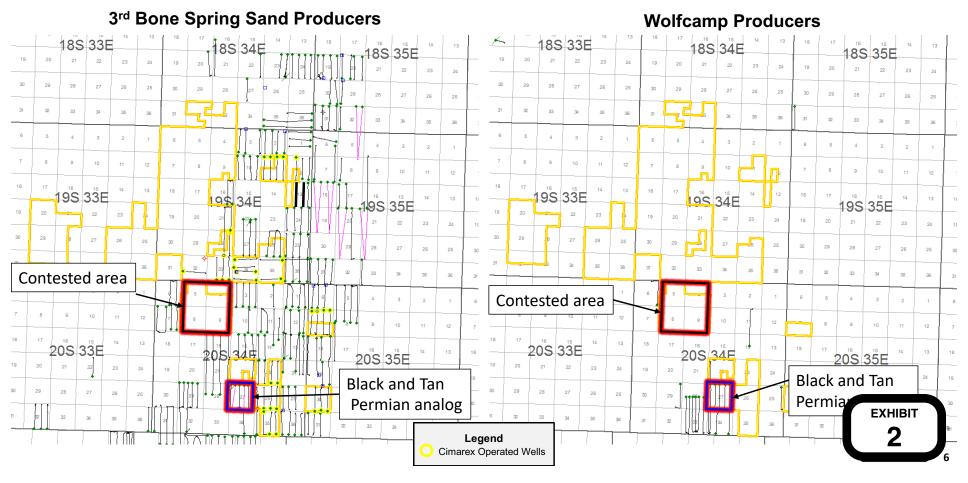
XTO ENERGY INC



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## 3<sup>rd</sup> Bone Spring Sand is the Established Single Bench Target at 4 WPS within AOI

42,650 acres developed with more than 1 well, all but one development, 98.5% of sections similar to Cimarex proposal



Permian Resources Operating, LLC 300 N. Marienfeld St., Ste. 1000 Midland, TX 79701 Phone (432) 695-4222 • Fax (432) 695-4063

DATE:		A COSTO AREA NOTICE	DRIZATION FOR EXPEND	AFE NO.:	1
DATE:	2.17.2023 Bane 4-9 Federal Com 20	1H		AFE NO.:	Tonto; Wolfcamp
WELL NAME:	Section 4, T20S-R34E			MD/TVD:	21,210' / 10,925'
LOCATION: COUNTY/STATE:	Lea County, New Mexico			LATERAL LENGTH:	10,000'
•	Dea County, New Mexico	<u>,                                      </u>		DRILLING DAYS:	19.6
Pennian WI: GEOLOGIC TARGET:	WCXY	<del></del>		COMPLETION DAYS:	19
		well and complete wit		s drilling, completions, f	
REMARKS:	AL install cost				
pama andres si	COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
INTANGIBLE ( 1 Land/Legal/Regulatory	OSTS	59,066	-	37,500	S 96,566
1 Lanu/ Cegat/ Regulatory 2 Location, Surveys & Damar	•	288,079	18,067	2,500	308,647
4 Freight/Transportation		47,628	43,778	25,000	116,406
5 Rental - Surface Equipment		124,327	215,417	105,000	444,744 265,229
6 Rental - Downhole Equipm 7 Rental - Living Quarters	ent	205,424 48,083	54,480	<del></del>	102,562
10 Directional Drilling, Surve	:vs	429,543		<del></del>	429,543
11 Drilling	<b>/</b> -	753,820			753,820
12 Drill Bits		100,176	-		100,176
13 Fuel & Power		188,935 243,296	725,061		913,996
14 Cementing & Float Equip 15 Completion Unit, Swab, C	TII	- 243,250	<del></del>	15,000	15,000
16 Perforating, Wireline, Slic		<del></del>	393,136		393,136
17 High Pressure Pump Truc			123,274	-	123,274
18 Completion Unit, Swab, C	TU	105,209	146,484		146,484
20 Mad Circulation System 21 Mad Logging		105,209	<del></del>		105,209 17,529
22 Logging / Formation Evalu	ation	7,270	8,339	<del></del>	15,609
23 Mud & Chemicals	•	361,835	438,185	10,000	810,020
24 Water		43,459	661,625	300,000	1,005,083
25 Stimulation	No.	<u>-</u>	814,033 121,606	150,000	814,033 271,606
26 Stimulation Flowback & I 28 Mud/Wastewater Dispos		193,104	61,151	150,000	254,254
30 Rig Supervision / Enginee		121,196	133,420	21,667	276,283
32 Drig & Completion Overh		10,423	-		10,423
35 Labor		153,358	69,489	101,667	324,514
54 Proppant 95 Insurance		14,660	1,255,227	<u>-</u>	1,255,227
97 Contingency		14,660	24,421	3,833	28,254
99 Plugging & Abandonmen			-	-	-
	TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,585
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE C	OSTS	COSTS	COSTS	COSTS	COSTS
60 Surface Casing 61 Intermediate Casing	s	122,234 344,284	<del></del>	<del></del>	\$ 122,234 344,284
62 Drilling Liner		<del></del>	<del></del>	<del></del>	
63 Production Casing		687,039		-	687,039
64 Production Liner		-			140.000
65 Tubing		64,820		140,000	140,000
66 Wellhead 67 Packers, Liner Hangers		14,732	<del></del>	20,000	34,732
68 Tanks		14,732	<del></del>	45,833	45,833
69 Production Vessels		-		126,667	126,667
70 Flow Lines				66,667	66,667
71 Rod string 72 Artificial Lift Equipment			<del></del>	90,000	90,000
73 Compressor		<del></del>	<del></del>	5,833	5,833
74 Installation Costs			•	-	
75 Surface Pumps				61,667	61,667
76 Downhole Pumps	tallation	<del>_</del> _	<del></del>	116,667	114 447
77 Measurement & Meter ins 78 Gas Conditioning/Debye		<del></del>	<del></del>	110,00/	116,667
79 Interconnecting Facility P		<del></del>		20,000	20,000
80 Gathering / Bulk Lines					
81 Valves, Dumps, Controlle				108,333	108,333
82 Tank / Facility Containme 83 Flare Stack	DE	<del></del>	<del></del>	43,333	43,333
84 Electrical/Grounding		<del></del>	<del></del>	50,000	50,000
85 Communications / SCAD	<u>,</u>			36,667	36,667
86 Instrumentation / Safety				833	833
	TOTAL TANGIBLES >			989,167	2,222,276
	TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,862
EPARED BY Permian Res	ources Operating, LLC:				
Drilling Engineer				•	
Completions Engineer					
Production Engineer					ļ
1 roudetton Engineer					
mian Resources Operating	LLC APPROVAL:				
Co-CEC		Co-C		VP - Opera	
	WH		JW	•	CRM
		VP - Geoscier			
VP - Land & Lega	BG BG		50		
VP - Land & Lega					
VP - Land & Lega					
	R APPROVAL:	<u> </u>			
N OPERATING PARTNE			Warking Interest (%)	T-	v ID:
VP - Land & Lega  N OPERATING PARTNE  Company Name			Working Interest (%):	Ta	x ID:
N OPERATING PARTNE			Working Interest (%):	Ta	
N OPERATING PARTNE Company Name Signed by	:		Date:		— EXH
N OPERATING PARTNE	:		_	Yes	

## Permian Resources Operating, LLC 300 N. Marienfeld St., Stc. 1000 Midland, TX 79701 Phone (432) 695-4022 • Fax (432) 695-4063

			DRIZATION FOR EXPEND		
DATE:	2.17.2023			AFE NO.:	1
WELL NAME:	Bane 4-9 Federal Com 20	D2H		FIELD:	Tonto; Wolfcamp
LOCATION:	Section 4, T20S-R34E			MD/TVD:	21,210' / 10,925'
COUNTY/STATE:	Lea County, New Mexic	0		LATERAL LENGTH:	10,000'
Permian WI:				DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY	well and complete wi	th 44 stages. AFE include	es drilling, completions,	flowback and Initial
		DRILLING	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
INTANGIBLE C	OSTS	COSTS	(0515		5 96,566
1 Land/Legal/Regulatory		59,066 288,079	18,067	37,500 2,500	308,647
2 Location, Surveys & Damag 4 Freight / Transportation	es.	47,628	43,778	25,000	116,406
5 Rental - Surface Equipment		124,327	215,417	105,000	444,744
6 Rental - Downhole Equipme	ent	205,424	59,805	-	265,229
7 Rental - Living Quarters		48,083	54,480	·	102,562
10 Directional Drilling, Surve	ys	429,543	<u> </u>		429,543 753,820
11 Drilling		753,820 100,176			100,176
12 Drill Bits 13 Fuel & Power		188,935	725,061	<del></del>	913,996
14 Cementing & Float Equip		243,296		<del></del>	243,296
15 Completion Unit, Swab, C	ru		-	15,000	15,000
16 Perforating, Wireline, Slick		<del></del>	393,136	•	393,136
17 High Pressure Pump Truck			123,274		123,274
18 Completion Unit, Swab, C	ru		146,484		146,484
20 Mud Circulation System		105,209			105,209
21 Mud Logging	atlan.	17,529 7,270	8,339		15,609
22 Logging / Formation Evalu 23 Mud & Chemicals	auon	361,835	438,185	10,000	810,020
24 Water		43,459	661,625	300,000	1,005,083
25 Stimulation			814,033		814,033
26 Stimulation Flowback & D	isp	-	121,606	150,000	271,606
28 Mud/Wastewater Disposa		193,104	61,151	-	254,254
30 Rig Supervision / Engineer	Ing	121,196	133,420	21,667	276,283
32 Drig & Completion Overh	ead	10,423	-		10,423
35 Labor		153,358	69,489	101,667	324,514
54 Proppant		-	1,255,227		1,255,227
95 Insurance		14,660	24,421	3,833	28,254
97 Contingency 99 Plugging & Abandonment		<del></del>	24,421	3,033	28,2,4
37 I lugging of Atomicuotiment	TOTAL INTANGIBLES:		5,367,000	772,167	9,655,58
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE C	OSTS	COSTS	COSTS	COSTS	COSTS
60 Surface Casing	:	5 122,234			\$ 122,234
61 Intermediate Casing		344,284		-	344,284
62 Drilling Liner					- (07.010
63 Production Casing		687,039	<del></del>		687,039
64 Production Liner		<del></del>	<del></del>	140,000	140,000
65 Tubing 66 Wellhead		64,820	<del></del>	40,000	104,820
67 Packers, Liner Hangers		14,732	<del></del>	20,000	34,732
68 Tanks		<del></del>		45,833	45,833
69 Production Vessels			-	126,667	126,667
70 Flow Lines		<del></del>		66,667	66,667
71 Rod string			-		
72 Artificial Lift Equipment			<u>.</u>	90,000	90,000
73 Compressor			<u>-</u>	5,833	5,833
74 Installation Costs				61,667	61,667
75 Surface Pumps 76 Downhole Pumps		<del></del>	<del></del>	01,007	01,007
77 Measurement & Meter Ins	tallation	<del></del>	<del></del>	116,667	116,667
78 Gas Conditioning / Dehyd		<del></del>		- 110,000	110,000
79 Interconnecting Facility Pi				20,600	20,000
80 Gathering / Bulk Lines					
81 Valves, Dumps, Controller	5			108,333	108,333
82 Tank / Facility Containme	at			43,333	43,333
83 Flare Stack			-	16,667	16,667
84 Electrical/Grounding				50,000	50,000
85 Communications / SCADA		<del></del>	<u> </u>	36,667	36,667
86 Instrumentation / Safety	TOTAL TANGIBLES			989,167	2,222,27
_	TOTAL COSTS		5,367,000	1,761,334	11,877,86
-	TOTAL COSTS	4,147,320	3,000,1000	1,701,052	11,077,000
EPARED BY Permian Reso	urces Operating, LLC:				
Drilling Engineer	PS				
Completions Engineer					
Production Engineer					
mian Resources Operating	, LLC APPROVAL:				
Co-CEC		Co-C	CEO	VP - Oper	
	WH		JW		CRM
VP - Land & Lega	BG	VP - Geoscie	so		
N OPERATING PARTNE	R APPROVAL:				
Company Name	-		Working Interest (%):	т	ax ID:
• •			-		
Signed by			Date:		
Title			Approval: [	Yes	☐ No (mark one)

Permian Resources Operating, LLC 300 N. Marienfeld St., Str. 1000 Midland, TX 79701 Phone (432) 695-4222 • Fax (432) 695-4063

	ESTIMAT				1
DATE:	2.17.2023			AFE NO.:	1
WELL NAME:	Bane 4-9 Federal Com	203H		FIELD:	Tonto; Wolfcamp
LOCATION:	Section 4, T20S-R34E			MD/TVD:	21,210' / 10,925'
COUNTY/STATE:	Lea County, New Mex	rico		LATERAL LENGTH:	10,000'
	Dea county, recording			DRILLING DAYS:	19.6
Permian WI:	WCM				
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WC	KY well and complete wi	th 44 stages. AFE include	s drilling, completions,	flowback and Initial
		DRILLING	COMPLETION	PRODUCTION	TOTAL
INTANGIBLE	OSTS	COSTS	COSTS	COSTS 37,500	COSTS 5 96,566
1 Land/Legal/Regulatory		\$ 59,066 288,079	18,067	2,500	308,647
2 Location, Surveys & Damas 4 Freight / Transportation	6	47,628	43,778	25,000	116,406
5 Rental - Surface Equipmen		124,327	215,417	105,000	444,744
6 Rental - Downhole Equipm		205,424	59,805	100,000	265,229
7 Rental - Living Quarters		48,083	54,480		102,562
10 Directional Drilling, Surve	vs	429,543		<del></del>	429,543
11 Drilling	•	753,820			753,820
12 Drill Bits		100,176	-		100,176
13 Fuel & Power		188,935	725,061		913,9%
14 Cementing & Float Equip		243,296			243,296
15 Completion Unit, Swab, C			•	15,000	15,000
16 Perforating, Wireline, Slic			393,136		393,136
17 High Pressure Pamp Truc		<u> </u>	123,274		123,274
18 Completion Unit, Swab, C	TU	<u> </u>	146,484	<u> </u>	146,484
20 Mud Circulation System		105,209			105,209
21 Mud Logging		17,529	0.000	<u>-</u>	17,529
22 Logging / Formation Evalu	atton	7,270	8,339	10.002	15,609 810,020
23 Mud & Chemicals		361,835	438,185	10,000 300,000	1,005,083
24 Water 25 Stimulation		43,459	814,033	300,000	814,033
25 Stimulation 26 Stimulation Flowback & E	ion	<del></del>	121,606	150,000	271,606
26 Stimulation Flowback & E 28 Mud/Wastewater Dispos		193,104		000,000	254,254
		193,104	61,151	21,667	276,283
30 Rig Supervision / Enginee		10,423	133,420	21,00/	10,423
32 Drlg & Completion Overh	rau	153,358	69,489	101,667	324,514
35 Labor 54 Proppant		133,336	1,255,227	101,007	1,255,227
95 Insurance		14,660		<del></del>	14,660
97 Contingency			24,421	3,833	28,254
99 Plugging & Abandonmen		<del></del>		-	
	TOTAL INTANGIBLE	5> 3,516,419	5,367,000	772,167	9,655,585
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE C	nere	COSTS	COSTS	COSTS	COSTS
60 Surface Casing		\$ 122,234		•	5 122,234
61 Intermediate Casing		344,284	-	•	344,284
62 Drilling Liner					
63 Production Casing		687,039			687,039
64 Production Liner		· ·		-	
65 Tubing		<u> </u>	<del></del>	140,000	140,000
66 Wellhead		64,820	<u>·</u>	40,000	104,820
67 Packers, Liner Hangers		14,732		20,000	34,732 45,833
68 Tanks			<del></del>	45,833 126,667	126,667
69 Production Vessels 70 Flow Lines		<u>·</u>	<del></del>	66,667	66,667
71 Rod string				00,007	- 00,007
72 Artificial Lift Equipment		<del></del>	<del></del>	90,000	90,000
73 Compressor				5,833	5,833
74 Installation Costs					
75 Surface Pumps		<del></del>		61,667	61,667
76 Downhole Pumps		<del></del>			
77 Measurement & Meter Ins	taliation		<del></del>	116,667	116,667
78 Gas Conditioning/Dehyo		<del></del>			
79 Interconnecting Facility P		<del></del>		20,000	20,000
80 Gathering / Bulk Lines		<del></del>	<del></del>		
81 Valves, Dumps, Controlle	-5	<del></del>	<del></del>	108,333	108,333
82 Tank / Facility Containme				43,333	43,333
83 Flare Stack		<del></del>		16,667	16,667
84 Electrical/Grounding		<del></del>	•	50,000	50,000
85 Communications / SCAD	<b>L</b>	•		36,667	36,667
86 Instrumentation / Safety		-		833	833
	TOTAL TANGIBLE	S > 1,233,109	0	989,167	2,222,276
	TOTAL COST	S > 4,749,528	5,367,000	1,761,334	11,877,862
EPARED BY Permian Res	urces Operating, LLC:				
Drilling Engineer	. PS				
Completions Engineer					
Production Engineer			-		
	•				
Production Engineer	, LLC APPROVAL:				
Production Engineer		<del> </del>	PO.		
	,	Co-C		VP - Open	
Production Engineer mian Resources Operatin	wн		JW	VP - Open	CRM
Production Engineer	wн	Co-C VP - Geoscier	JW	VP - Open	
Production Engineer mian Resources Operatin	WH I		JW nces	VP - Oper	
Production Engineer mian Resources Operatin	WH BG		JW nces	VP - Oper	
Production Engineer mian Resources Operatin Co-CEC VP - Land & Lega	WH BG		JW nces		
Production Engineer mian Resources Operating Co-CEC VP - Land & Lega NO OPERATING PARTNE	BG R APPROVAL:		JW SO		CRM
Production Engineer mian Resources Operating Co-CEC VP- Land & Lega N OPERATING PARTNE	WH  BC  R APPROVAL:		SO  Working Interest (%):		CRM

Permian Resources Operating, LLC 300 N. Marienfeld St., Ste. 1000 Midland, TX 79701 Phone (432) 695-4222 • Fax (432) 695-4063

		OF COSTS AND AUTH	ORIZATION FOR EXPEND		
DATE:	2.17.2023			AFE NO.:	11
WELL NAME:	Bane 4-9 Federal Com 2	204H		FIELD:	Tonto; Wolfcamp
LOCATION:	Section 4, T20S-R34E			MD/TVD:	21,210' / 10,925'
COUNTY/STATE:	Lea County, New Mexi	ico		LATERAL LENGTH:	10,000'
Permian WI:		<del></del>		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
		Y well and complete w	ith 44 stages. AFE include	_	
REMARKS:	AL install cost	T Hen and complete in			
	come.	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
INTANGIBLE 1 Land/Legal/Regulatory		5 39,066		37,500	s 96,50
2 Location, Surveys & Dama		288,079	18,067	2,500	308,64
4 Freight/Transportation	ye.	47,628	43,778	25,000	116,40
5 Rental - Surface Equipmen	1	124,327	215,417	105,000	444,74
6 Rental - Downhole Equipo		205,424	59,805	-	265,2
7 Rental - Living Quarters		48,083	54,480		102,50
10 Directional Drilling, Surv	eys	429,543	-	•	429,5
11 Drilling		753,820		<u> </u>	753,82
12 Drill Bits		100,176			100,13
13 Fuel & Power		188,935	725,061		913,9
14 Cementing & Float Equip		243,296	<u>_</u>		243,25
15 Completion Unit, Swab, C			393,136	15,000	15,00
16 Perforating, Wireline, Slice			123,274	<del></del>	393,13 123,2
17 High Pressure Pump Truc 18 Completion Unit, Swab, C		<del>`</del>	146,484	<del></del>	146,4
	.10	105,209	140,404		105,2
20 Mud Circulation System		17,529	<u>-</u> _	<del></del>	17,5
21 Mud Logging		7,270	8,339		15,6
22 Logging / Formation Evaluation	roudti	361,835	438,185	10,000	810,0
		43,459	661,625	300,000	1,005,0
24 Water 25 Stimulation		43,459	814,033	310,000	814,0
25 Stimulation 26 Stimulation Flowback & 1	Olea		121,606	150,000	271,6
		193,104		150,000	254,2
28 Mud / Wastewater Dispos		193,104	61,151	21,667	276,2
30 Rig Supervision / Enginee		10,423	133,420	21,007	10,41
32 Drlg & Completion Overl	iead	153,358	69,489	101,667	324,5
35 Labor		153,338	1,255,227	101,007	1,255,2
54 Proppant		14,660	1,255,227		14,6
95 Insurance		14,000	24,421	3,833	28.2
97 Contingency		<del></del>	24,321	3,033	
99 Plugging & Abandonmen	TOTAL INTANGIBLES	> 3,516,419	5,367,000	772,167	9,655,5
	TOTALINTANGIBLES				
TANGIBLE C	OCTC	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
60 Surface Casing	Oata	5 122,234			\$ 122,2
61 Intermediate Casing		344,284	-	<del></del>	344,2
62 Drilling Liner		<del></del>		<del></del>	
63 Production Casing		687,039			687,0
64 Production Liner			· <del></del>	<del></del>	
65 Tubing		<del></del>		140,000	140,0
66 Wellhead		64,820		40,000	104,8
67 Packers, Liner Hangers		14,732	-	20,000	34,7
68 Tanks				45,833	45,8
69 Production Vessels		<del></del>		126,667	126,6
70 Flow Lines		<del></del>		66,667	66,6
71 Rod string		<del></del>	<del></del>	<del></del>	
72 Artificial Lift Equipment		<del></del>		90,000	90,0
73 Compressor		-		5,833	5,8
74 Installation Costs					
75 Surface Pumps				61,667	61,6
76 Downhole Pumps		-			
77 Measurement & Meter In	staliation		-	116,667	116,6
78 Gas Conditioning / Dehy-		<del></del>			
79 Interconnecting Facility P		—	<del></del>	20,000	20,0
80 Gathering / Bulk Lines		<del></del>	•		
81 Valves, Dumps, Controlle	rs		-	108,333	108,3
82 Tank / Facility Containme			<del></del>	43,333	43,3
83 Flare Stack				16,667	16,6
84 Electrical / Grounding			-	50,000	50,0
85 Communications / SCAD	A			36,667	36,6
86 Instrumentation / Safety				833	- 8
	TOTAL TANGIBLES	> 1,233,109	0	989,167	2,222,5
	TOTAL COSTS		5,367,000	1,761,334	11,877,
		<u> </u>			
EPARED BY Permian Res	ources Operating, LLC:				
Drilling Enginee	r. PS				
Completions Enginee Production Enginee					
a rouncion Enginee	. u				
mian Resources Operatin	g, LLC APPROVAL:				
Co-CE	2		CEO	VP - Oper	rations
		Co-		vir-Oper	CRM
	ıl.	VP - Geoscie	ences		
VP - Land & Leg	BG				
	BG				
	BG .				
VP - Land & Leg.	ER APPROVAL:		Working Interest (%)	1	fax ID:
VP - Land & Leg.	ER APPROVAL:		Working Interest (%):	1	Tax ID:
VP - Land & Leg.	ER APPROVAL:		Working Interest (%):	1	Fax ID:
VP - Land & Lego N OPERATING PARTNI Company Nam	er approval:				Fax ID:

Permian Resources Operating, LLC
300 N. Marlenfeld St., Ste. 1000 Midland, TX 79701
Phone (432) 695-4222 - Fax (432) 695-4063
ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

DATE:	2.17.2023			AFE NO.:	1
WELL NAME:	Joker 5-8 Federal Com	201H		FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E			MD/TVD:	21,211' / 10,926'
COUNTY/STATE:	Lea County, New Mexi	co		LATERAL LENGTH:	10,000'
Permian WI:				DRILLING DAYS:	19.6
	WCXY			COMPLETION DAYS:	19
GEOLOGIC TARGET:		N -11 1 1-1		_	
		Y well and complete wi	ith 44 stages. AFE includes	s arming, completions, i	IOWDACK AND INDUM
REMARKS:	AL install cost				
		DRILLING	COMPLETION	PRODUCTION	TOTAL
		COSTS	COSTS	COSTS	COSTS
INTANGIBLE	OSTS				\$ 96,566
T Land/ Legal/ Regulatory		5 59,066	18,067	37,500 2,500	308,647
2 Location, Surveys & Damag	a	288,079	43,778	25,000	116,406
4 Freight/Transportation		47,628	215,417	105,000	444,744
5 Kental - Surface Equipment		124,327	59,805	103,000	265,229
6 Rental - Downhole Equipm 7 Rental - Living Quarters	ent	48,083	54,480		102,562
10 Directional Drilling, Surve	100	429,543	31/100	<del></del>	429,543
11 Orlling	,,	753,820	<del></del>	<del></del>	753,820
12 Orill Bits		100,176	<del></del>		100,176
13 Fuel & Power		188,935	725,061		913,996
14 Cementing & Float Equip		243,296	<del></del>		243,296
15 Completion Unit, Swab, C	ru		<del></del>	15,000	15,000
16 Pertorating, Wireline, Silci	dine	<del></del>	393,136		393,136
17 High Pressure Pump Truck			123,274		123,274
18 Completion Unit, Swab, C	ľU		146,484		146,484
20 Mud Circulation System		105,209		•	105,209
21 Mud Logging		17,529	•		17,529
22 Logging / Formation Evalu	ation	7,270	8,339	10,000	15,609
23 Mud & Chemicals		361,835	438,185		1,005,083
24 Water		43,459	661,625	300,000	814,033
25 Stimulation	u		814,033	150,000	271,606
26 Stimulation Flowback & L 28 Mud/Wastewater Dispose		193,104	121,606	150,000	254,254
		121,196	133,420	21,667	276,283
30 Rig Supervision / Enginee 32 Drig & Completion Overh		10,423	150,120		10,423
35 Labor		153,358	69,489	101,667	324,514
54 Proppant			1,255,227	<del></del>	1,255,22/
95 Insurance		14,660		<del></del>	14,660
97 Contingency			24,421	3,833	28,254
99 Plugging & Abandonment			<del></del>		<del></del>
<b></b> 3	TOTAL INTANGIBLES	> 3,516,419	5,367,000	772,167	9,655,585
•	101112111111111111111111111111111111111				
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE C	OSTS	COSTS	COSTS	COSTS	COSTS
60 Surface Casing		\$ 122,234	<del></del>	-	5 122,234
61 Intermediate Casing		344,284			344,284
62 Drilling Liner			:		
63 Production Casing		687,039			687,039
64 Production Liner		·	•	-	
65 Tubing			<u>-</u>	140,000	140,000
66 Wellhead		64,820	<del></del>	40,000	104,820 34,732
67 Packers, Liner Hangers 68 Tanks		14,732	<u>-</u> _	20,000	45,833
69 Production Vessels		<del></del>		45,833 126,667	126,667
70 Flow Lines		<del></del>		66,667	66,667
71 Rod string				00,007	
72 Artiticial Litt Equipment				90,000	90,000
73 Compressor			<del></del>	5,833	5,833
74 Installation Costs			<del></del>		<del></del>
75 Surface Pumps			<del></del>	61,667	61,667
76 Downhole Pumps		<del></del>	<del></del>	<del></del>	<del></del>
77 Measurement & Meter Ins	tatlation	<del></del>	<del></del>	116,667	116,667
78 Gas Conditioning / Dehyd			-	<del></del>	<del></del>
79 Interconnecting Facility Pi		-	-	20,000	20,000
80 Gathering / Bulk Lines		<del></del>			-
81 Valves, Dumps, Controller	s			108,333	108,333
82 Tank / Facility Containme	ıt		<del></del>	43,333	43,333
83 Flare Stack				16,667	15,667
84 Electrical / Grounding				50,000	50,000
85 Communications / SCADA				36,667	36,667
86 Instrumentation / Salety			· ·	833	833
	TOTAL TANGIBLES		0	989,167	2,222,276
	TOTAL COSTS	> 4,749,528	5,367,000	1,761,334	11,877,862
EPARED BY Permian Reso	urces Operating, LLC:				
D-IIV F1	•••				
Drilling Engineer					
Completions Engineer	ML				
	bc				
Production Engineer					
Production Engineer					
Production Engineer	LLC APPROVAL:				
Production Engineer	, LLC APPROVAL:		·		
Production Engineer		Co-C	CEO	VP - Opera	tions
Production Engineer		Co-C	CEO	VP - Opera	CRM
Production Engineer rmian Resources Operating Co-CEO	WH		JW	VP - Opera	
Production Engineer	WH	Co-C VP - Geoscier	JW	VP • Opera	
Production Engineer rmian Resources Operating Co-CEO	WH		jw nces	VP - Opera	
Production Engineer rmian Resources Operating Co-CEO	WH		jw nces	VP - Opera	
Production Engineer mian Resources Operating Co-CEO	WH		jw nces	VP - Opera	
Production Engineer mian Resources Operating Co-CEO VP - Land & Legal	WH BG		jw nces	VP • Opera	
Production Engineer rmian Resources Operating Co-CEO VP - Land & Legal	WH BG		jw nces	VP - Opera	
Production Engineen rmian Resources Operating Co-CEO VP - Land & Legal	WH BC R APPROVAL:		yw so		CRM
Production Engineer rmian Resources Operating Co-CEO	WH BC R APPROVAL:		jw nces		
Production Engineer rmian Resources Operating Co-CEO VP - Land & Legal ON OPERATING PARTNE Company Name:	WH BC R APPROVAL:		yw SO Working Interest (%):		CRM
Production Engineen rmian Resources Operating Co-CEO VP - Land & Legal	WH BC R APPROVAL:		yw so		CRM
Production Engineer rmian Resources Operating Co-CEO VP - Land & Legal ON OPERATING PARTNE Company Name:	WH BC R APPROVAL:		yw SO Working Interest (%):	Тг	CRM

Permian Resources Operating, LLC
300 N. Marienfeld St., Sie. 1000 Midland, TX 79701
Phone (432) 695-4222 • Fax (432) 695-4063
ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

	D 4 H 0000				
DATE;	2.17.2023			AFE NO.:	1
	Joker 5-8 Federal Com 2	202H		FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E			MD/TVD:_	21,211' / 10,926'
COUNTY/STATE:	Lea County, New Mexic	co		LATERAL LENGTH:	10,000'
Permian WI:				DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
		Y well and complete wi	th 44 stages. AFE include	es drilling, completions,	flowback and Initial
REMARKS:	AL install cost	I went and complete was	u. 115mbcs.111 n meidd	a, aramig complement,	
REMARKS:	AL HStati Cost				
		DRILLING	COMPLETION	PRODUCTION	TOTAL
INTANGIBLE C	оете	COSTS	COSTS	COSTS	COSTS
TLand/ Legal/ Regulatory	0313	\$ 59,066		37,500	\$ 96,566
2 Location, Surveys & Damage	·	288,079	18,067	2,500	308,647
4 Freight/Transportation		47,628	43,778	25,000	116,406
5 Kental - Surlace Equipment		124,327	215,417	105,000	444,744
6 Rental - Downhote Equipme	ent	205,424	59,805		265,229
7 Rental - Living Quarters		48,083	54,480		102,562
10 Directional Dritting, Surve	ys	429,543	<del></del>		429,543
11 Urilling		753,820	<del></del>		753,820
12 Drill Bits		100,176	<del></del>		100,176
13 Fuel & Power		188,935	725,061		913,996
14 Cementing & Float Equip		243,296			243,296
15 Completion Unit, Swab, Cl				15,000	15,000
16 Pertorating, Wireline, Slick			393,136		393,136
17 High Pressure Fump Truck			123,274		123,274
18 Completion Unit, Swab, C.	.υ		146,484		146,484
20 Mud Circulation System		105,209			105,209
21 Mud Logging 22 Logging/Formation Evalua	tion	7,270	8,339	<del>.</del>	17,529
22 Logging / Formation Evalua 23 Mud & Chemicals	nevil	361,833	438,185	10,000	810,020
24 Water		43,459	661,625	300,000	1,005,083
25 Stimulation			814,033		814,033
26 Stimulation Flowback & D	Iso	<del></del>	121,606	150,000	2/1,606
25 Mud / Wastewater Disposa		193,104	61,151		254,254
30 Rig Supervision / Engineer		121,196	133,420	21,667	2/6,283
32 Drig & Completion Overhe		10,423			10,423
35 Labor		153,358	69,489	101,667	324,514
54 Proppant			1,255,227		1,255,227
95 Insurance		14,660		•	14,660
97 Contingency		<del></del>	24,421	3,833	28,254
99 Plugging & Abandonment			·		
	TOTAL INTANGIBLES	> 3,516,419	5,367,000	772,167	9,655,585
		DRILLING	COMPLETION	PRODUCTION	TOTAL
T. NO.D. F. CO		COSTS	COSTS	COSTS	COSTS
TANGIBLE CO	815		20010	C0313	5 122.234
60 Surface Casing		5 122,234 344,284			344,284
61 Intermediate Casing		344,284	<u>-</u>		344,204
62 Drilling Liner		687,039	<u>-</u>		687,039
63 Production Casing 64 Production Liner		607,039	<u>-</u>	<u>-</u>	007,039
65 Tubing		<u>-</u>		140,000	140,000
66 Weilhead		64,820	<del>.</del>	40,000	104,820
67 Packers, Liner Hangers		14,732	<del></del>	20,000	34,732
68 Tanks			<del></del>	45,833	45,833
69 Production Vessels		<del></del>	<del></del>	126,667	126,667
70 Flow Lines		<del></del>		66,667	66,667
71 Rod string			<del></del>		<del></del>
72 Artiticial Litt Equipment		<del></del>	<del></del>	90,000	90,000
73 Compressor				5,833	5,833
74 Installation Costs		<del></del>	<del></del>	<del></del>	
75 Surtace Pumps		-	-	61,667	61,667
76 Downhole Pumps					
77 Measurement & Meter Inst			•	116,667	116,667
78 Gas Conditioning / Dehydr			•		
79 Interconnecting Facility Pip	ılng	-		20,000	20,000
80 Gathering / Bulk Lines		<u> </u>	<u> </u>	•	
81 Valves, Dumps, Controller			<u> </u>	108,333	108,333
82 Tank / Facility Containmen	ŧ			43,333	43,333
83 Flare Stack				16,667	16,667
84 Electrical / Grounding 85 Communications / SCADA			<del></del>	36,667	36,667
86 Instrumentation / Satety		<del></del>	<del></del>	833	833
	TOTAL TANGIBLES	> 1,233,109	<del></del>	989,167	2,222,276
	TOTAL COSTS:	> 4,749,528	5,367,000	1,761,334	11,877,862
PARED BY Permian Reson	arces Operating, LLC:				
Drilling Engineer:	PS				
Completions Engineer:	ML				
Production Engineer:	DC				
	IIC APPROVAL:			<del></del>	
mian Resources Onerating					
utian Resources Operating	DDC III I NO VIII		EO	VP - Oper	ations
mian Resources Operating,		Co-C		-•	CRM
		Co-C	- JW		СКМ
Co-CEO	WH		•		Скм
	WH	Co-C VP - Geoscien	•		CRM
Co-CEO	WH		•		СКМ
Co-CEO	WH		•		CRM
Co-CEO	WH		•		CRM
Co-CEO VP - Land & Legal	WH BG		•	<u></u>	CRM
VP - Land & Legal	WH BG		50 SO		
Co-CEO VP - Land & Legal	WH BG		•		ax ID:
Go-CEO  VP - Land & Legal  ON OPERATING PARTNEI	WH BG		50 SO		
Co-CEO  VP - Land & Legal  N OPERATING PARTNEI  Company Name:  Signed by:	WH BG		SO  Warking Interest (%):  Date:		ax ID:
Co-CEO  VP - Land & Legal  NO PERATING PARTNEI  Company Name:	WH BG R APPROVAL:	VP - Geoscien	Working Interest (%):  Date:  Approval:		ax ID:

### Permian Resources Operating, LLC

300 N. Marlenfeld St., Ste. 1000 Midland, TX 79701 Phone (432) 695-4222 • Fax (432) 695-4063 ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE 2.17.2023 DATE: AFE NO.: Tonto; Wolfcamp FIELD: Joker 5-8 Federal Com 203H Section 5, T20S-R34E WELL NAME: MD/TVD: 21,191 / 10,906 LOCATION: Lea County, New Mexico LATERAL LENGTH: 10 000' COUNTY/STATE: Permian WI: DRILLING DAYS: 19.6 WCXY COMPLETION DAYS: GEOLOGIC TARGET: Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost REMARKS: DRILLING COSTS COMPLETION COSTS PRODUCTION COSTS TOTAL INTANGIBLE COSTS 1 Land/ Legal / Regulatory 2 Location, Surveys & Damages 54.16 37.500 96,566 18,067 43,778 215,417 **408 647** 116,406 444,744 4 Freight / Transportation 47,628 5 Rental - Surface Equipment 124,327 105,000 5 Kental - Surface Equipment 6 Kental - Downhole Equipment 7 Kental - Living Quarters 10 Directional Drilling, Surveys 11 Drilling 12 Drill Bits 205.424 59,805 54,480 102.562 47U 544 753,820 100,176 100,176 12 Drill Bits
13 Fuel & Power
14 Cementing & Float Equip
15 Completion Unit, Swab, CTU
16 Periorating, Wireline, Silckline
17 High Pressure Pump Truck
18 Completion Unit, Swab, CTU
20 Mud Circulation System
21 Mud Locatine 188.935 725.061 913,996 243,296 15,000 15,000 393,136 123,274 146,484 123,274 105,209 21 Mud Logging 22 Logging / Formation Evaluation 23 Mud & Chemicals 17,529 7,270 361,835 8,339 15,609 438,185 661,625 814,033 10.000 810.020 23 Mud & Chemicals
24 Water
25 Stimulation
26 Stimulation Flowback & Disp 43,459 300,000 150,000 121,606 271,606 28 Mud / Wastewater Disposal 193,104 61,151 254,254 30 Rig Supervision / Engineering 32 Drig & Completion Overhead 35 Labor 133,420 21,667 276.283 10,423 324,514 69,489 1,255,227 101,667 153,358 54 Proppant 95 Insurance 1.255.227 14.660 14,660 24,421 3,833 99 Plugging & Abandonment TOTAL INTANGIBLES > 3,516,419 5,367,000 772,167 9,655,585 DRILLING COMPLETION TOTAL COSTS PRODUCTION TANGIBLE COSTS 60 Surface Casing 61 Intermediate Casing COSTS COSTS COSTS 344,284 344,284 62 Drilling Liner 63 Production Casing 64 Production Liner 65 Tubing 687,039 687,039 140,000 140,000 54,820 66 Wellhead 40,000 104,820 67 Packers, Liner Hangers 14,732 20.000 34,732 66 Tanks 69 Production Vessels 70 Flow Lines 71 Rod string 72 Artiticial Litt Equipment 66,667 66,667 90,000 90,000 73 Compressor 74 Installation Costs 75 Surface Pumps 5,833 5,833 61.667 61,667 76 Downhole Pumps 77 Measurement & Meter Installation
78 Gas Conditioning / Dehydration 116,667 116,667 20,000 79 Interconnecting Facility Piping 80 Gathering / Bulk Lines 20,000 81 Valves, Dumps, Controllers 82 Tank / Facility Containment 83 Flare Stack 108,333 108,333 16,667 16,667 50,000 84 Electrical / Grounding SUDDI 85 Communications / SCADA 86 Instrumentation / Safety 2,222,276 TOTAL TANGIBLES > 989.167 1,233,109 TOTAL COSTS > 5,367,000 4,749,528 1,761,334 11,877,862 PREPARED BY Permian Resources Operating, LLC: Drilling Engineer: PS Production Engineer DC Permian Resources Operating, LLC APPROVAL: Co-CEO Co-CEO VP - Operations CRM VP - Geosciences VP - Land & Legai NON OPERATING PARTNER APPROVAL: Company Name: Working Interest (%): Tax ID: Signed by:

Approval: Yes

No (mark one)

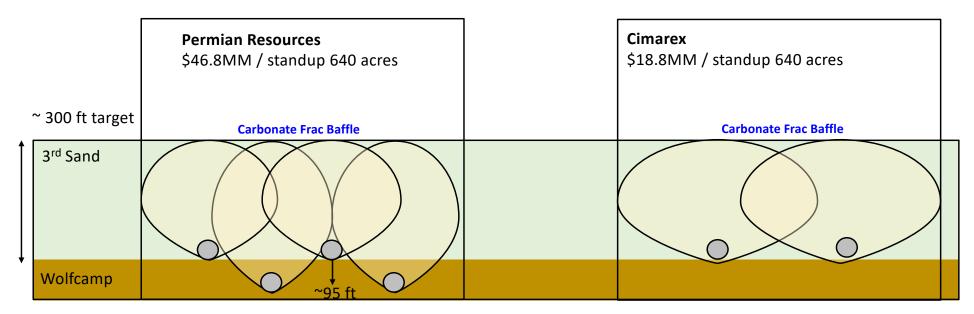
Released to Imaging: 7/14/2023 8:04:10 AM

Permian Resources Operating, LLC
300 N. Mazienfeld St., Ste. 1000 Midland, TX 79701
Phone (832) 895-4222 • Fax (832) 695-4063
ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

= = = = = = = = = = = = = = = = = = = =	0.417.0000				1
DATE:	2.17.2023	20477		AFE NO.: _	
WELL NAME:	Joker 5-8 Federal Com 2	204H		FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E			MD/TVD:	21,181' / 10,896'
COUNTY/STATE:	Lea County, New Mexi-	<u>co</u>		LATERAL LENGTH:	10,000'
Permian WI:				DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
	Drill a horizontal WCX	Y well and complete w	ith 44 stages. AFE includ	des drilling, completions,	flowback and Initial
REMARKS:	AL install cost				
		DRILLING	COMPLETION	PRODUCTION	TOTAL
INTANGIBLE	COSTS	COSTS	COSTS	COSTS	COSTS
T Land / Legal / Regulatory		5 59,066	•	37,500	\$ 96,566
2 Location, Surveys & Dama	ges .	288,079	18,067	2,500	308,647
4 Freight / Transportation		47,628	43,778	25,000	116,406
5 Kental - Surface Equipmen 6 Kental - Downhole Equipn		124,327 205,424	215,417	105,000	265,229
7 Rental - Living Quarters	ent	48,083	54,480		102,562
10 Directional Drilling, Surv	794	429,543		<del></del>	429,543
11 Drilling	.70	753,820	<del></del>	<del></del>	753,820
12 Drill Bils		100,176	<del></del>	<del></del>	100,176
13 Fuel & Power		188,935	725,061		913,996
14 Cementing & Float Equip		243,296	<del></del>		243,296
15 Completion Unit, Swab, C				15,000	15,000
16 Perforating, Wireline, Silo		•	393,136		393,136
17 High Pressure Pump Truc			123,274		123,2/4
18 Completion Unit, Swab, C	יוט		146,484		146,484
20 Mud Circulation System		105,209	·		105,209
21 Mud Logging		17,529	<del> </del>		17,529
22 Logging / Formation Evalu 23 Mud & Chemicals	nauon	361,835	8,339 438,185	10,000	15,609 810,020
24 Water		43,459	661,625	300,000	1,005,083
25 Stimulation			814,033	300,000	814,033
26 Stimulation Flowback & I	lisp	<del></del>	121,606	150,000	2/1,606
28 Mud / Wastewater Dispos		193,104	61,151		254,254
30 Rig Supervision / Enginee		121,196	133,420	21,667	276,283
32 Drig & Completion Over		10,423	<del></del>	<del></del>	10,423
35 Labor		153,358	69,489	101,667	324,514
54 Proppant		<del></del>	1,255,227		1,255,227
95 Insurance		14,660	<del></del>		14,660
97 Contingency			24,421	3,833	28,254
99 Plugging & Abandonmen					
	TOTAL INTANGIBLES	> 3,516,419	5,367,000	772,167	9,655,585
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE C	nere	COSTS	COSTS	COSTS	COSTS
60 Surface Casing	0313	\$ 122,234	· · · · · · · · · · · · · · · · · · ·		5 122,234
61 Intermediate Casing	·	344,284		<del></del>	344,284
62 Drilling Liner			<del></del>	<del></del>	
63 Production Casing		687,039	<del></del>	<del></del>	687,039
64 Production Liner		<del></del>			
65 Tubing		<del></del>	<del></del>	140,000	140,000
66 Wellhead		64,820		40,000	104,820
67 Packers, Liner Hangers		14,732	<del></del>	20,000	34,732
68 Tanks				45,833	45,833
69 Production Vessels		•		126,667	126,667
70 Flow Lines		•		66,667	66,667
71 Rod string				90,000	90,000
72 Artificial Lift Equipment					5,833
73 Compressor 74 Installation Costs		<del></del>		5,833	3,033
75 Surtace Pumps				61,667	61,667
76 Downhole Pumps		<del></del>	<del></del>		
77 Measurement & Meter Ins	taliation	<del></del>	<del></del>	116,667	116,667
76 Gas Conditioning / Dehye			<del></del>	<del></del>	
79 Interconnecting Facility P		<del></del>		20,000	20,000
80 Gathering / Bulk Lines					
81 Valves, Dumps, Controlle	rs			108,333	108,333
82 Tank / Facility Containme	nt	<del></del>		43,333	43,333
83 Flare Stack			•	16,667	16,667
84 Electrical / Grounding				50,000	50,000
85 Communications / SCAD	L .			36,667	36,667
86 Instrumentation / Safety			<u>·</u>	833	833
	TOTAL TANGIBLES		00	989,167	2,222,276
	TOTAL COSTS	> 4,749,528	5,367,000	1,761,334	11,877,862
EDARED BY Damies Bee					
EPARED BY Permian Rese	arces Operating, LLC:				
Drilling Engineer	: PS				
Completions Engineer					
Production Engineer					
1 roduction Engineer					
mian Resources Operating	, LLC APPROVAL:				
			cro	110.0	
0.00		Co-	CEO	VP - Open	ations
Co-CEC	WILZ		***		CRM
	WH		nces		
Co-CEC VP - Land & Lega	1	VP - Geoscie			
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VP - Land & Lega	BG	VP - Geoscie			
VP - Land & Lega	BG	VP - Geoscie			
VP - Land & Lega	BG R APPROVAL:	VP - Geoscie	so		
	BG R APPROVAL:	VP - Geoscie		т	ax ID:
VP - Land & Lego NOPERATING PARTNE Company Name	R APPROVAL:	VP - Geoscie	SO  Working Interest (%):	Т	ax ID:
VP - Land & Lega	R APPROVAL:	VP - Geoscie	so		ax ID:
VP - Land & Lego NOPERATING PARTNE Company Name	R APPROVAL:	VP - Geoscie	SO  Working Interest (%):		ax ID:

## O

## Diagram of Staggered Landing Wolfcamp + 3<sup>rd</sup> SS vs. 3<sup>rd</sup> SS Flat

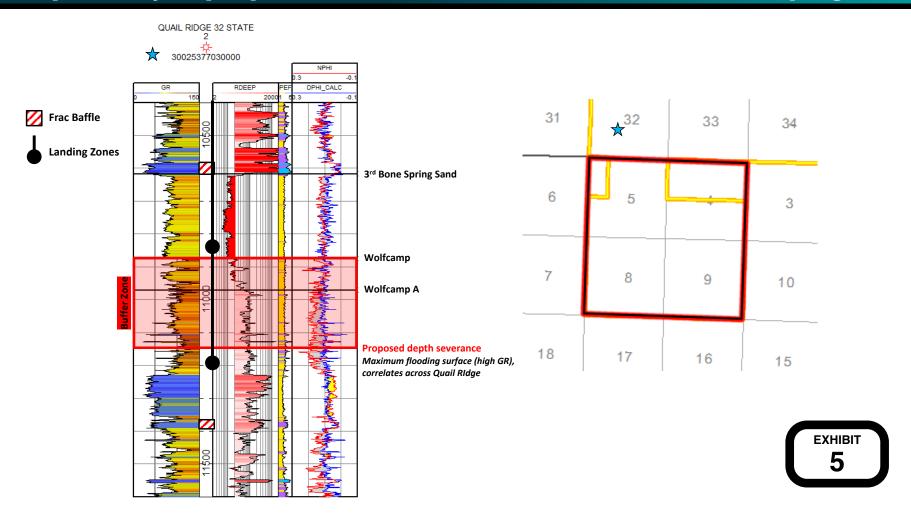


- Cimarex has experience developing as many as 8 landings within a DSU successfully in Lea county with 9<sup>th</sup> drilling now, 35 to 38 wells / section. The difference is the combination of geology (barriers, reservoir height, and flow units) don't support the proposed staggers at Mighty Pheasant Loosey Goosey as demonstrated by area developments like Black and Tan.
- 3<sup>rd</sup> and Wolfcamp landed this close together are equivalent to 8 WPS flat in the 3<sup>rd</sup> Sand, double the AOI proven density.
- A wealth of data from the DOE and industry funded Hydraulic Fracture Test Site 2 supports an upper Wolfcamp buffer zone in this specific location to protect proven 3<sup>rd</sup> Sand correlative rights and prevent capital waste.



## O

## Proposed Wolfcamp Depth Severance to Minimize Interaction with 3<sup>rd</sup> Bone Spring Sand



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 Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. **Santa Fe, NM 87505** 

QUESTIONS

Action 240072

### **QUESTIONS**

Operator:	OGRID:
CIMAREX ENERGY CO.	215099
6001 Deauville Blvd	Action Number:
Midland, TX 79706	240072
	Action Type:
	[HEAR] Prehearing Statement (PREHEARING)

### QUESTIONS

Testimony				
Please assist us by provide the following information about your testimony.				
Number of witnesses	4			
Testimony time (in minutes)	48			