BEFORE THE OIL CONSERVATION DIVISION
EXAMINER HEARING AUGUST 9-10, 2023

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

HEARING PACKET III

OPTION I

Mighty Pheasant 5-8 Fed Com 301H Well

Mighty Pheasant 5-8 Fed Com 302H Well

Mighty Pheasant 5-8 Fed Com 303H Well

Mighty Pheasant 5-8 Fed Com 304H Well

Loosey Goosey 4-9 Fed Com 301H Well

Loosey Goosey 4-9 Fed Com 302H Well

Loosey Goosey 4-9 Fed Com 303H Well

Loosey Goosey 4-9 Fed Com 304H Well

CIMAREX ENERGY CO.

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Reference for Case Nos. 23594-23601
Prehearing Statement Case No. 23594-23601 with Attached Motion

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 - 23601

AMENDED PREHEARING STATEMENT

Cimarex Energy Co., ("Cimarex"), OGRID No. 215099, through its undersigned attorneys, submits the following Amended 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
Cimarex Energy Co.	Darin C. Savage Andrew D. Schill William E. Zimsky Abadie & Schill, PC 214 McKenzie Street Santa Fe, New Mexico 87501 Telephone: 970.385.4401 Facsimile: 970.385.4901

	darin@abadieschill.com andrew@abadieschill.com bill@abadieschill.com
COMPETING PARTY	
Read & Stevens, Inc., in association with Permian Resources Operating, LLC	Michael H. Feldewert Adam G. Rankin Julia Broggi Paula M. Vance Holland & Hart LLP Post Office Box 2208 Santa Fe, NM 87504 505-988-4421 Facsimile: 505-983-6043 mfeldewert@hollandhart.com agrankin@hollandhart.com jbroggi@hollandhart.com pmvance@hollandhart.com
ADDITIONAL PARTIES	
Sandstone Properties, LLC	Sealy Cavin, Jr. Scott S. Morgan Brandon D. Hajny P.O. Box 1216 Albuquerque, NM 87103 505-243-5400 scavin@cilawnm.com smorgan@cilawnm.com bhajny@cilawnm.com
Northern Oil and Gas, Inc.	Blake C. Jones Steptoe & Johnson PLLC 1780 Hughes Landing Blvd., Ste 750 The Woodlands, TX 77380 281-203-5730 Facsimile: 281-203-5701 blake.jones@steptoe-johnson.com

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. 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 3rd 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 3rd 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 3rd Bone Spring Sands, and not in the Upper Wolfcamp, in order preserve the Upper Wolfcamp from being drilled and thereby protect the 3rd Bone Spring Sand from drainage and damage.

After a thorough evaluation of prospects for the Wolfcamp formation, Cimarex provides the Division with two options for considering the role the Wolfcamp formation should plan in Case Nos. 23594 – 23601. In its **Option 1**, Cimarex proposes to develop the common source of supply in the Subject Lands in the same manner as Operators in the Area of Interest have overwhelmingly and successfully developed it, including Permian Resources who has used this same approach to develop the common source of supply in 10 of its 11 pooling applications in the Area of Interest; that is, to pool and drill the Bone Spring formation, with particular focus on the Third Bone Spring.

Cimarex asks the Division that if it takes Option 1 into consideration, that it also concurrently take into consideration Cimarex's "Amended Motion for an Order to Prohibit the Drilling of Wells in the Upper Wolfcamp to Protect Correlative Rights and Optimize Production of the Subject Lands," ("Amended Motion") submitted to the Division on July 28, 2023, which would complement Cimarex's development of the Bone Spring formation.

In its **Option 2**, Cimarex proposes to pool the Wolfcamp formation and thereby produce the Wolfcamp by dedicating its Third Bone Spring wells to its production. Since the Third Bone Spring wells are ideally positioned to produce the single reservoir as the common source of supply as it relates to the prolific reserves of the Bone Spring formation as well as to any smaller percentage of oil and gas that could be captured in the Wolfcamp formation, once Cimarex's Third Bone Spring wells are dedicated to the Wolfcamp units and the Wolfcamp units pooled, Cimarex will be able to produce the Wolfcamp formation at significantly lower costs than Permian Resources' plan by avoiding the drilling of unnecessary wells, thereby, preventing waste and providing a meaningful and measurable protection of correlative rights.

APPLICANT'S PROPOSED EVIDENCE AND WITNESS QUALIFICATIONS

WITNESS	ESTIMATED TIME	EXHIBITS

Landman: John Coffman — Approx. 45 min — Approx. 11
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 and Coterra Energy Inc. ("Coterra") for approximately 4 years, and I have been working in New Mexico for 4 years. (I was originally employed by Cimarex. Since October 1, 2021, when Cimarex merged with Cabot Oil & Gas Corporation to form Coterra, I have been an employee of Coterra.) 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. 45 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. 23
Qualifications: I attended the University of Tulsa and graduated with a Bachelor of Science 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 and Coterra (as of October 1, 2021) 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 in Reservoir Engineering, and my credentials have been accepted of record.

Facilities Engineer: Calvin Boyle — Approx. 15 min — Approx. 2
Qualifications: I attended the University of Oklahoma and graduated with a Bachelor of Science 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 and have been employed as a Field, Production, and Facilities engineer for Cimarex and Coterra (as of October 1, 2021) 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 facilities proposed by Cimarex 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). In its Option 1, 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. In its Option 2, also as an alternative to drilling the Upper Wolfcamp, Cimarex has proposed to pool the Wolfcamp and dedicate its Third Bone Spring wells in the Subject Lands to pooled units; in this way, because of the pooling and spacing, any amounts drained from the Wolfcamp would be classified as production without having to drill the Upper Woflcamp. It is the unique geology of the Subject Lands, its it single reservoir as the common source of supply that makes this possible.

PROCEDURAL MATTERS

For Cimarex's Case Nos. 23594 – 23601 and Permian Resources' Case Nos. 23512 – 23515 and 23520 – 23523, Cimarex requests that the Division consider its Option 1 and Option 2 proposals as options in the alternative such that, if Cimarex's development plan is selected, the Division apply

either Option 1 or Option 2 for optimal production, prevention of waste, the protection of correlative rights, and the avoidance of drilling unnecessary wells.

Respectfully submitted,

ABADIE & SCHILL, PC

/s/ Darin C. Savage

_____

Darin C. Savage

Andrew D. Schill
William E. Zimsky
214 McKenzie Street
Santa Fe, New Mexico 87501
Telephone: 970.385.4401
Facsimile: 970.385.4901
darin@abadieschill.com
andrew@abadieschill.com
bill@abadieschill.com

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 August 2, 2023:

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

Attorneys for Read & Stevens, Inc.;
and Permian Resources Operating, LLC

Blake C. Jones – blake.jones@steptoe-johnson.com

Attorney for Northern Oil and Gas, Inc.

Sealy Cavin, Jr. – scavin@cilawnm.com
Scott S. Morgan – smorgan@cilawnm.com
Brandon D. Hajny – bhajny@cilawnm.com

Attorneys for Sandstone Properties, LLC

/s/ Darin C. Savage

Darin C. Savage

TAB 2

Case Nos. 23594-23601

Exhibit A: Self-Affirmed Statement of John Coffman Landman
Exhibit A-1: Amended Motion

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

SELF-AFFIRMED STATEMENT OF JOHN COFFMAN

I, being duly sworn on oath, state the following:

1. I am over the age of eighteen years and have the capacity to execute this Self-Affirmed Statement, which is based on my personal knowledge.

2. I am employed as a Landman with Coterra Energy, Inc., and its subsidiary Cimarex Energy Co. ("Cimarex"), the applicant in this case, and I am familiar with the subject application and the lands involved.

3. 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 5 years. My credentials as an expert witness in petroleum land matters have been accepted by the New Mexico Oil Conservation Division ("Division") and made a matter of record.

4. This Statement concerns the status of Cimarex's Case Nos. 23594 - 23601, the pooling applications for which were filed by Cimarex 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

EXHIBIT
A

4 and 9, in Township 20 South, Range 34 East, NMPM, Lea County ("Subject Lands") in Case Nos. 23512-23515 and 23520 – 23523.

5. A little over a month after Cimarex filed its applications to develop and pool the Bone Spring formation in the Subject Lands, Permian Resources not only filed competing applications for the Bone Spring but also -- unexpectedly and surprisingly -- filed applications for drilling and pooling the Wolfcamp formation in the Subject Lands, in Case Nos. 23512-23515 and 23520 – 23523, proposing 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 3rd Bone Spring Sand, would not contribute or add to the overall EUR, would incur excessive costs by orders of magnitude, and would likely result in permanent damage to the target reservoir located in the Bone Spring where the best reservoirs are located, as shown by our geology and engineering exhibits.

6. Permian Resources' applications for both the Bone Spring formation and the Wolfcamp formation in the present cases do not reflect Permian Resources' development plans in the area surrounding the Subject Lands ("Area of Interest"). In addition to the pooling applications filed by Permian Resources in the present cases, Permian Resources, since 2020, when it appeared to become active in the Area of Interest, has filed approximately 11 pooling applications in this area. Ten of Permian Resources' applications pool only the Bone Spring and do not pool the Wolfcamp, nor does Permian Resources account for any of the purported correlative rights of owners in the Wolfcamp whose interests have been or would be drained by Permian Resources' development plans because there is no frac baffle between the Bone Spring and the Wolfcamp, as shown by Cimarex's geology and engineering exhibits. This is evident in the applications filed by Permian Resources in Case Nos. 23508, 23509, 23510, 23511, 23524, 23525, 23526, 23527, 23528, and 23529. The one Wolfcamp application submitted by Permian Resources in Case No.

23530 proposes to pool the Wolfcamp but not the Bone Spring, which shows that in this Case, Permian Resources would be capturing the prolific reserves in Third Bone Spring by draining the commons source of supply situated primarily in the Third Bone Spring.

7. Permian Resources' decision to propose to develop the Upper Wolfcamp created a dilemma for Cimarex, as we understood, based on clear geological and reservoir data, that the Upper Wolfcamp should not be developed in the Subject Lands, but also, we 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. As a result, Cimarex proposed Option 1 and Option 2 as described in its Brief Providing the Basis for Evaluating a Single Reservoir Situated in the Third Sand of the Bone Spring Formation in an Area that Lacks a Baffle Separating it from the Underlying Wolfcamp Formation ("Brief"). Cimarex's Option 2 involves the pooling of the Wolfcamp and is presented in a separate hearing packet for Cases 23594 – 23601. Cimarex's Option 1, presented as an alternative to its Option 2, proposes to develop the common source of supply in the Subject Lands in the same manner as Operators in the Area of Interest have overwhelmingly and successfully developed it, including Permian Resources who has used this same approach to develop the common source of supply in 10 of its 11 pooling applications in the Area of Interest; that is, to pool and drill the Bone Spring formation, with particular focus on the Third Bone Spring.

9. This is the successful, established method and approach used in hundreds of units across the Area of Interest, and it entails pooling just the Bone Spring to develop the common source of supply located in the Bone Spring. Any smaller percentage of drainage from the Wolfcamp formation should be, and has been viewed by the Division, as incidental drainage and acceptable in the overwhelming number of units in this area.

10. Cimarex asks the Division that if it takes Option 1 into consideration, that it also concurrently take into consideration Cimarex's "Amended Motion for an Order to Prohibit the Drilling of Wells in the Upper Wolfcamp to Protect Correlative Rights and Optimize Production of the Subject Lands," ("Amended Motion") submitted to the Division on July 28, 2023, which would complement Cimarex's development of the Bone Spring formation. Cimarex's Amended Motion is attached as Exhibit A-1.

11. Cimarex respectfully submits that its Option 1, the pooling and drilling of the Bone Spring formation, including the 3rd Bone Spring Sand, and not the Wolfcamp formation, provides a valid means of optimizing production from the Subject Lands, preventing waste, protecting correlative rights, and avoiding the unnecessary and risky drilling of numerous and very expensive additional wells.

12. You will find that the geology and engineering exhibits provided herein, which describe and analyze the Bone Spring and Wolfcamp formations, support Cimarex's development plan pursuant to Option 1.

[Signature page follows]

Signature page of Self-Affirmed Statement of John Coffman:

I understand that this Self-Affirmed Statement will be used as written testimony before the Division in Case Nos. 23594 – 23601 and affirm that my testimony herein is true and correct, to the best of my knowledge and belief and made under penalty of perjury under the laws of the State of New Mexico.

John Coffman

8/1/23

Date Signed

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

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

Cimarex Energy Co., ("Cimarex"), through its undersigned attorneys, considering the complex questions and issues of first impression raised in Cimarex's Brief Providing Foundation for Evaluating A Single Reservoir Situated in the Third Bone Spring without Frac Baffles Between Formations, Under the Oil and Gas Act, NMSA 1978 §§ 70-2-1 et al. ("Brief")," moves the New Mexico Oil Conservation Division ("Division") to dismiss its prior "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," submitted to the Division on July 18, 2022, ("Prior Motion") in the above-referenced cases. At this point in the proceedings involving the above-referenced cases, Cimarex had requested and was granted leave to submit the Brief in order to provide the Division with background information regarding the novelty of the above-referenced

EXHIBIT A-1

cases that Cimarex believes is essential for their evaluation in a contested hearing. In lieu of its Prior Motion, Cimarex requests that the Division consider and grant as its replacement this "Amended Motion for an Order to Prohibit the Drilling of Wells in the Upper Wolfcamp to Protect Correlative Rights and Optimize Production of the Subject Lands" ("Amended Motion").

In support of its Amended Motion, Cimarex submits the following:

I. Factual and procedural background:

1. The facts and background are much the same as in the Prior Motion and are presented as follows with certain additions to account for any updates pursuant to Cimarex's Brief.

2. Cimarex has been preparing to develop Sections 4, 5, 8 and 9, Township 20 South, Range 34 East, NMPM, Lea County, New Mexico ("Subject Lands") since 2018. Based on its detailed analysis of the specific geology and reservoir characteristics of this area, Cimarex filed on March 9, 2023, applications in Case Nos. 23448 through 23455 for the compulsory pooling 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. Cimarex in its Brief presented Option 1 for the compulsory pooling of the Bone Spring formation but not the Wolfcamp formation and presented Option 2 for the compulsory pooling of both the Bone Spring formation and the Wolfcamp formation. In accordance with Option 2, Cimarex filed applications in Case Nos. 23594 through 23601 for pooling the Wolfcamp formation. *See* Cimarex's Brief at Section I. p. 10, for a full description of Option 1, and at Section II. p. 15, for a full description of Option 2.

3. 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 Bone Spring Sand but also that the Upper Wolfcamp reservoir under the Subject Lands and surrounding area

("Subject Area") was significantly below average in quality and potentially rendering Wolfcamp wells economically unfeasible. *See* Exhibit 1, attached hereto, showing that the consensus landing for optimal development is the Third Bone Spring Sand, not the Upper Wolfcamp. Cimarex respectfully submits that this is why operators[1] in the Subject area overwhelmingly pool the Bone Spring formation only and not the Wolfcamp formation.

4. Cimarex has also determined that there is no baffle between the Third Bone Spring Sand and Upper Wolfcamp that would normally prevent communication between the two formations, resulting in a single reservoir as a common source of supply. Due to the absence of the baffle between the Third Bone Spring Sand and the Upper Wolfcamp, Cimarex has concluded that if Upper Wolfcamp wells were to be completed while drilling and developing the Third Bone Spring Sand, those wells would drain much of the reserves in the Third Bone Spring Sand, where the best reserves are located and would likely result in permanent damage to the target reservoir in the Third Bone Spring Sand.

5. Thus, in Option 1, Cimarex limits its proposed development and applications for compulsory pooling to the Bone Spring and does not seek to pool the Upper Wolfcamp. Option 1 comports to how other operators are developing the surrounding areas that share the same three fundamental characteristics, *viz*., excellent reserves in the Third 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

[1] Consider that searches in the OCD database appears to show that Permian Resources began actively filing a series of applications for compulsory units in the Subject Area beginning in 2020. Outside of the above-referenced cases it filed with the OCD for the contested hearing with Cimarex, Permian Resources appears to have filed at total of 11 applications to pool units in the Subject Area. Ten of the 11 applications proposed to pool only the Bone Spring and not the Wolfcamp, and only one application pools the Wolfcamp but not the Bone Spring. *See* Case Nos. 23508, 23509, 23510, 23511, 23524, 23525, 23526, 23527, 23528, 23529, and 23530.

rarity of the Wolfcamp development.

6. 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 23516-19. Permian Resources also filed applications for drilling and pooling the Wolfcamp formation in Case Nos. 23512-23515 and 23520-23523, proposing to drill wells in the Upper Wolfcamp despite the fact that those wells would drain the Third 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.

7. Given the poor quality of the Upper Wolfcamp reservoir, the lack of the baffle that would otherwise minimize drainage of the Third 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 dollars[2] 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.

8. 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

[2] 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.

reservoir data, that the Upper Wolfcamp should not be drilled with additional wells 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.

9. Consequently, Cimarex provided the Division with its Option 2, that involved 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 Third Bone Springs Sand, the same wells proposed by Cimarex's Bone Spring applications and prohibit the drilling of wells in Upper Wolfcamp. Under Option 2, the "drainage" of the Wolfcamp would be classified as "production" once the Wolfcamp formation is pooled. 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 Third Bone Spring Sand, and not in the Upper Wolfcamp, in order preserve the Upper Wolfcamp from being drilled and thereby protect the common source of supply from drainage and damage.

II. Argument:

A. The optimal development of the Subject Lands is to drill wells in the Third Bone Spring Sand and either select Cimarex's Option 2 or, in the alternative, select Option 1 with a protective buffer zone that would prohibit the drilling of wells in the Upper Wolfcamp.

10. In order to protect the abundant reserves in the Third Bone Spring Sand, and resolve the dilemma created by Permian Resources, the Division, if it finds Cimarex's position in these matters persuasive, should either approve Cimarex's Option 1 or Option 2. If Option 1 is selected for pooling only the Bone Spring formation, this could potentially leave the Upper Wolfcamp open and vulnerable to future applications for drilling and pooling, and therefore, Cimarex under Option 1, if selected, respectfully requests the Division to 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 been repeatedly demonstrated over the years by the fact that operators who were free to drill in both the Bone Spring and Wolfcamp decided to develop the Third Bone Spring Sand and to forego drilling any Upper Wolfcamp wells. *See* Exhibits 1 and 2, attached hereto.

11. Cimarex filed its Wolfcamp applications 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. In its competing Wolfcamp applications, Cimarex emphasized that only the Third Bone Spring Sand 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.

12. Cimarex submits that if Option 1 is pursued, the best course of action for the Division to follow in order to ensure achieving optimal production from the rich reserves located in the Third Bone Spring Sand and to protect the correlative rights would be to allow the drilling of the Third 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 Third Bone Spring, thus protecting the correlative rights of the owners in the Third Bone Spring. In addition, the protective zone would save tens of millions of dollars for wells that would not add to EUR and would likely damage the reservoir. Cimarex has carefully analyzed the need for such a protective buffer zone and provides in Exhibit 4, attached hereto, a graphic depiction and quantification of the area and extent of the Upper Wolfcamp that needs to be protected.

13. In the alternative, Cimarex submits that Option 2, as explained in Cimarex's Brief,

is a fully viable option for the development of the Third Bone Spring for achieving optimal production, preventing waste, and protecting correlative rights. If the Division should decide to select Cimarex's Option 2, then Cimarex would be pooling and spacing the Bone Spring formation as well as the Wolfcamp formation based on the dedication of its Third Bone Spring wells to both units. The granting of operatorship to Cimarex of the Wolfcamp unit, if pooled and spaced, would allow Cimarex to produce the Upper Wolfcamp from its Third Bone Spring Wells, and thereby protect the common source of supply from the drilling of unnecessary wells into the Upper Wolfcamp.

14. The Division has the clear authority under NMSA 1978 Section 70-2-11 to fashion such necessary solutions provided either by Cimarex's Option 2 or Option 1 including the protective buffer zone, as Section 70-2-11 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.

III. Conclusion:

15. Cimarex provides this Amended Motion as an update to and replacement for Cimarex's Prior Motion filed July 18, 2023. The Division granted Cimarex's recent Motion for Continuance of the above-referenced cases to provide additional time to prepare for the hearing to be held August 9-10, 2023, pursuant to a special docket, including allowing Cimarex to submit a Brief that describes the cases from Cimarex's position and allowing Permian Resources to provide a response. In the Brief, Cimarex describes two options, Option 1 and Option 2, based on Cimarex's current applications in place for the Bone Spring formation and the Wolfcamp formation. Cimarex has been grappling with the question of which of its applications best apply to

the Subject Lands to allow the Division to choose the best development plan between Cimarex and Permian Resources. In its Brief, Cimarex shows that both sets of applications can apply depending on which Option the Division would select if it were persuaded that Cimarex's development plan is the one that would best prevent waste, protect correlative rights, and avoid the drilling of unnecessary wells.

16. As a result, Cimarex requests that the Division dismiss its Prior Motion, prior to the contested hearing, and give consideration to this Amended Motion during the hearing along with Cimarex's Brief that describes the Options to be decided at the conclusion of the Division's review of the contested cases when the Division makes it final ruling between Cimarex's development plan and Permian Resources' development plan.

17. If the Division should select Cimarex's Option 2 in its ruling, then Cimarex would receive pooling orders for both the Bone Spring formation and the Wolfcamp formation, and as a consequence of the orders received, the Wolfcamp formation would be protected from drilling. The protective buffer zone requested herein would not be needed, and this Amended Motion would become moot.

18. However, in the alternative, if the Division should select Cimarex's Option 1, then Cimarex would receive an order for the compulsory pooling of just the Bone Spring formation, and in that case, Cimarex respectfully asks the Division to grant its request in this Amended 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, as these applications apply only to Option 2 and not Option 1; (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 target the Lower Wolfcamp, and not the Upper Wolfcamp.

Respectfully submitted,

ABADIE & SCHILL, PC

/s/ Darin C. Savage

Darin C. Savage

Andrew D. Schill
William E. Zimsky
214 McKenzie Street
Santa Fe, New Mexico 87501
Telephone: 970.385.4401
Facsimile: 970.385.4901
darin@abadieschill.com
andrew@abadieschill.com
bill@abadieschill.com

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 28, 2023:

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

Attorneys for Read & Stevens, Inc.;
and Permian Resources Operating, LLC

Blake C. Jones – blake.jones@steptoe-johnson.com

Attorney for Northern Oil and Gas, Inc.

Sealy Cavin, Jr. – scavin@cilawnm.com
Scott S. Morgan – smorgan@cilawnm.com
Brandon D. Hajny – bhajny@cilawnm.com

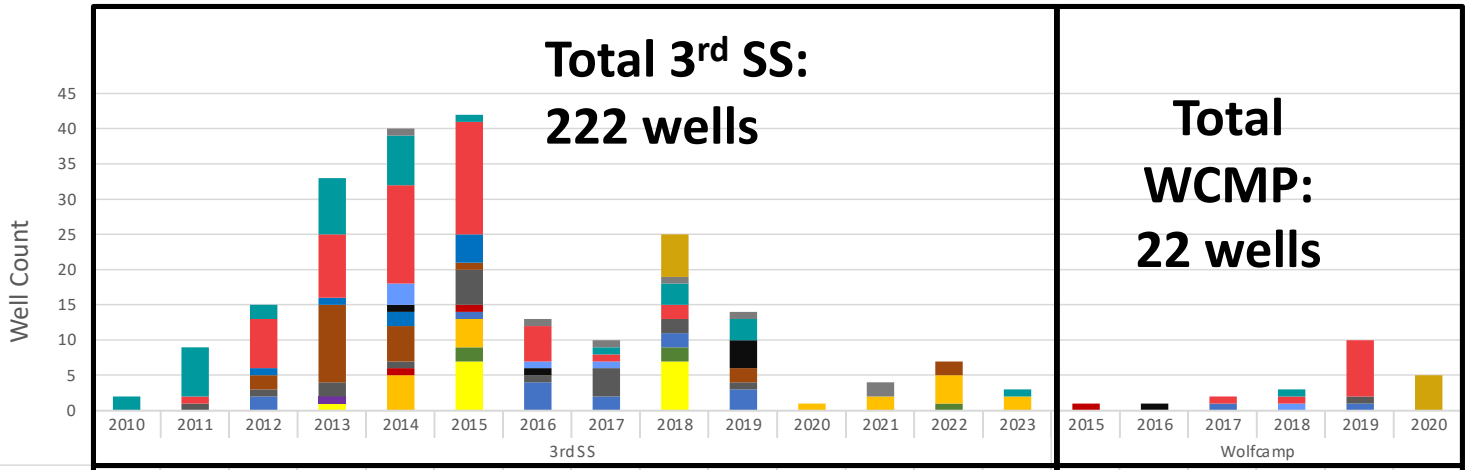
Attorneys for Sandstone Properties, LLC

/s/ Darin C. Savage

Darin C. Savage

Well Count by Landing and Operators Shows 3rd Sand is the Consensus Landing

- 3rd 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



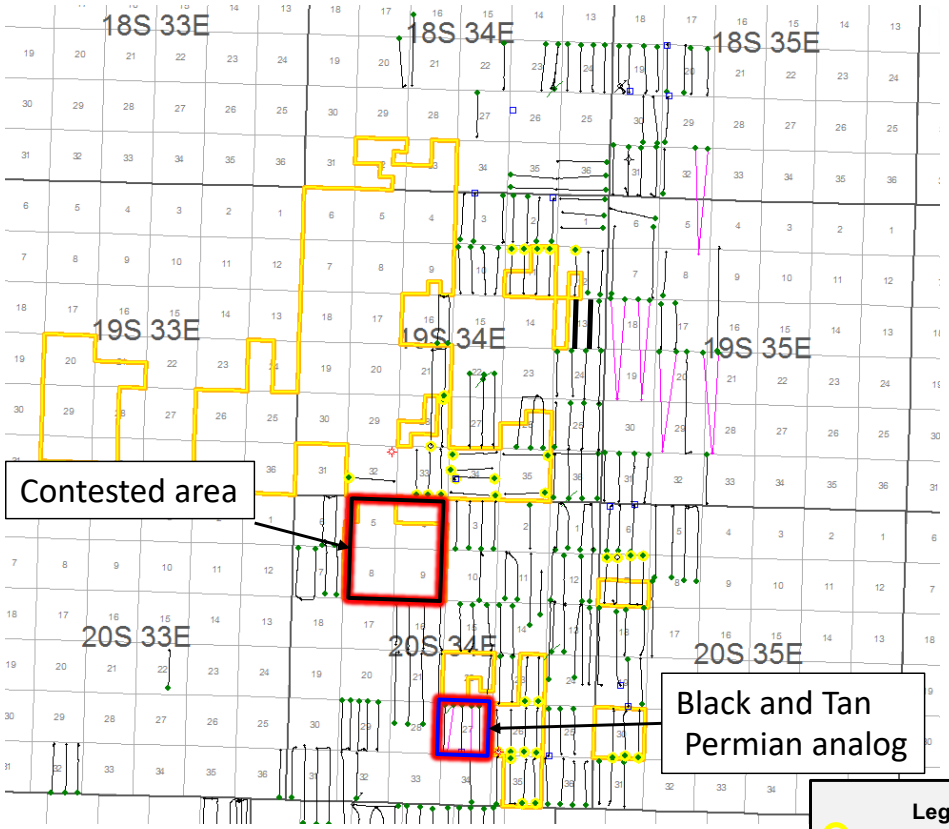
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2015	2016	2017	2018	2019	2020
APACHE CORP									6											5
CAZA OPERATING LLC					1		1	1	1	1		2								
CIMAREX ENERGY CO	2	7	2	8	7	1		1	3	3				1				1		
COG OPERATING LLC		1	7	9	14	16	5	1	2								1	1	8	
EARTHSTONE OPERATING LLC					3		1	1										1		
EOG RESOURCES INC					1		1			4						1				
FASKEN OIL & RANCH LTD			1	1	2	4														
FRANKLIN MOUNTAIN ENERGY 3 LLC			2	11	5	1				2			2							
LEGACY RESERVES OPERATING LP		1	1	2	1	5	1	4	2	1									1	
MARATHON OIL PERMIAN LLC					1	1									1					
MATADOR PRODUCTION CO			2			1	4	2	2	3							1		1	
MEWBOURNE OIL CO					5	4					1	2	4	2						
RAYBAW OPERATING LLC				1																
READ & STEVENS INC						2			2				1							
XTO ENERGY INC				1		7			7											

EXHIBIT 1

3rd 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

3rd Bone Spring Sand Producers



Wolfcamp Producers

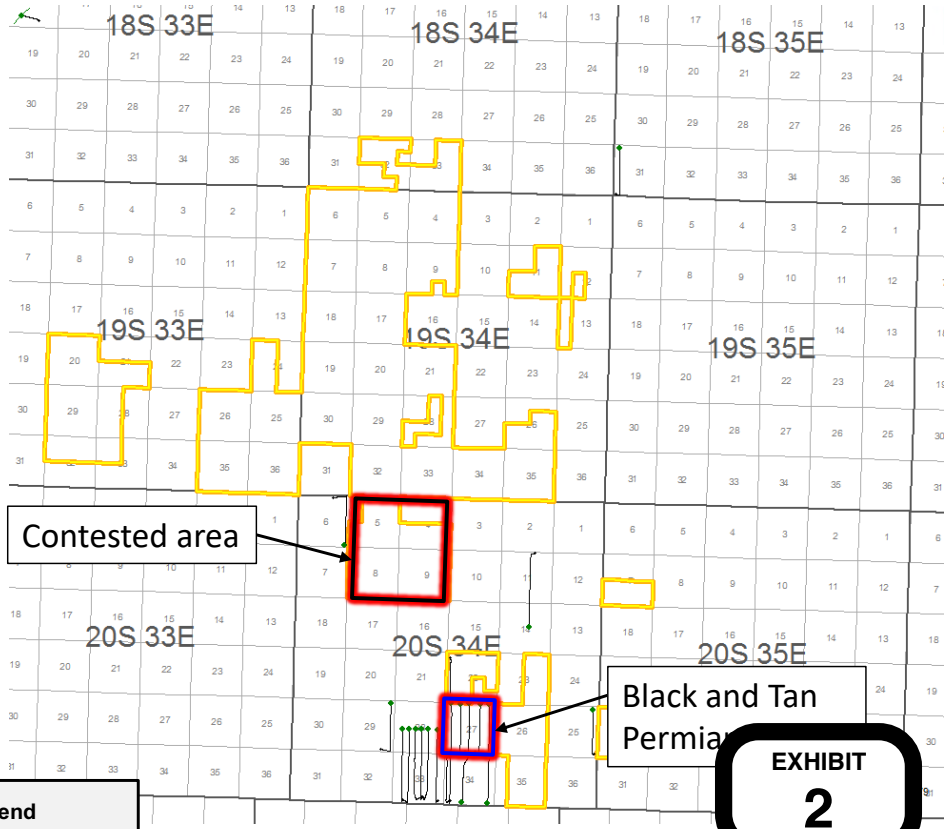


EXHIBIT 2

Permian Resources Operating, LLC

300 N. Marienfeld 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:	Bane 4-9 Federal Com 201H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 4, T20S-R34E	MD/TVD:	21,210' / 10,925'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian WI:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

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5 Rental - Surface Equipment	124,327	215,417	105,000	444,744
6 Rental - Downhole Equipment	205,424	59,805	-	265,229
7 Rental - Living Quarters	48,083	54,480	-	102,562
10 Directional Drilling, Surveys	429,543	-	-	429,543
11 Drilling	753,820	-	-	753,820
12 Drill Bits	100,176	-	-	100,176
13 Fuel & Power	188,935	725,061	-	913,996
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CTU	-	-	15,000	15,000
16 Perforating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CTU	-	146,484	-	146,484
20 Mud Circulation System	105,209	-	-	105,209
21 Mud Logging	17,529	-	-	17,529
22 Logging / Formation Evaluation	7,270	8,339	-	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	-	814,033	-	814,033
26 Stimulation Flowback & Disp	-	121,606	150,000	271,606
28 Mud / Wastewater Disposal	193,104	61,151	-	254,254
30 Rig Supervision / Engineering	121,196	133,420	21,667	276,283
32 Drlg & Completion Overhead	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	-	24,421	3,833	28,254
99 Plugging & Abandonment	-	-	-	-
TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,585

TANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
60 Surface Casing	$ 122,234	-	-	$ 122,234
61 Intermediate Casing	344,284	-	-	344,284
62 Drilling Liner	-	-	-	-
63 Production Casing	687,039	-	-	687,039
64 Production Liner	-	-	-	-
65 Tubing	-	-	140,000	140,000
66 Wellhead	64,820	-	40,000	104,820
67 Packers, Liner Hangers	14,732	-	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	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves, Dumps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
83 Flare Stack	-	-	16,667	16,667
84 Electrical / Grounding	-	-	50,000	50,000
85 Communications / SCADA	-	-	36,667	36,667
86 Instrumentation / Safety	-	-	833	833
TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,276
TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,862

PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer:	PS
Completions Engineer:	ML
Production Engineer:	DC

Permian Resources Operating, LLC APPROVAL:

Co-CEO	WH	Co-CEO	JW	VP - Operations	CRM
VP - Land & Legal	BG	VP - Geosciences	SO		

NON OPERATING PARTNER APPROVAL:

Company Name: _____ Working Interest (%): _____ Tax ID: _____

Signed by: _____ Date: _____

Title: _____ Approval: ☐ Yes ☐ No

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EXHIBIT 3

Permian Resources Operating, LLC

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63 Production Casing	687,039	-	-	687,039
64 Production Liner	-	-	-	-
65 Tubing	-	-	140,000	140,000
66 Wellhead	64,820	-	40,000	104,820
67 Packers, Liner Hangers	14,732	-	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	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
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81 Valves, Dumps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
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84 Electrical / Grounding	-	-	50,000	50,000
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PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer: PS
Completions Engineer: ML
Production Engineer: DC

Permian Resources Operating, LLC APPROVAL:

Co-CEO ______ WH Co-CEO ______ JW VP - Operations ______ CRM
VP - Land & Legal ______ BG VP - Geosciences ______ SO

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Company Name: ______________________ Working Interest (%): ______________ Tax ID: ______________
Signed by: ______________________ Date: ______________
Title: ______________________ Approval: ☐ Yes ☐ No (mark one)

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14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CTU	-	-	15,000	15,000
16 Perforating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CTU	-	146,484	-	146,484
20 Mud Circulation System	105,209	-	-	105,209
21 Mud Logging	17,529	-	-	17,529
22 Logging / Formation Evaluation	7,270	8,339	-	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	-	814,033	-	814,033
26 Stimulation Flowback & Disp	-	121,606	150,000	271,606
28 Mud / Wastewater Disposal	193,104	61,151	-	254,254
30 Rig Supervision / Engineering	121,196	133,420	21,667	276,283
32 Drlg & Completion Overhead	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	-	24,421	3,833	28,254
99 Plugging & Abandonment	-	-	-	-
TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,585

TANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
60 Surface Casing	$ 122,234	-	-	$ 122,234
61 Intermediate Casing	344,284	-	-	344,284
62 Drilling Liner	-	-	-	-
63 Production Casing	687,039	-	-	687,039
64 Production Liner	-	-	-	-
65 Tubing	-	-	140,000	140,000
66 Wellhead	64,820	-	40,000	104,820
67 Packers, Liner Hangers	14,732	-	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	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves, Dumps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
83 Flare Stack	-	-	16,667	16,667
84 Electrical / Grounding	-	-	50,000	50,000
85 Communications / SCADA	-	-	36,667	36,667
86 Instrumentation / Safety	-	-	833	833
TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,276
TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,862

PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer: PS
Completions Engineer: ML
Production Engineer: DC

Permian Resources Operating, LLC APPROVAL:

Co-CEO ______ WH
Co-CEO ______ JW
VP - Operations ______ CRM
VP - Land & Legal ______ BG
VP - Geosciences ______ SO

NON OPERATING PARTNER APPROVAL:

Company Name: ______ Working Interest (%): ______ Tax ID: ______
Signed by: ______ Date: ______
Title: ______ Approval: ☐ Yes ☐ No (mark one)

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Permian Resources Operating, LLC

300 N. Marienfeld 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 Mexico	LATERAL LENGTH:	10,000'
Permian WI:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

INTANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
1 Land / Legal / Regulatory	$ 59,066	-	37,500	$ 96,566
2 Location, Surveys & Damages	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
6 Rental - Downhole Equipment	205,424	59,805	-	265,229
7 Rental - Living Quarters	48,083	54,480	-	102,562
10 Directional Drilling, Surveys	429,543	-	-	429,543
11 Drilling	753,820	-	-	753,820
12 Drill Bits	100,176	-	-	100,176
13 Fuel & Power	188,935	725,061	-	913,996
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CTU	-	-	15,000	15,000
16 Pertorating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CTU	-	146,484	-	146,484
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21 Mud Logging	17,529	-	-	17,529
22 Logging / Formation Evaluation	7,270	8,339	-	15,609
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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	-	24,421	3,833	28,254
99 Plugging & Abandonment	-	-	-	-
TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,585

TANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
60 Surface Casing	$ 122,234	-	-	$ 122,234
61 Intermediate Casing	344,284	-	-	344,284
62 Drilling Liner	-	-	-	-
63 Production Casing	687,039	-	-	687,039
64 Production Liner	-	-	-	-
65 Tubing	-	-	140,000	140,000
66 Wellhead	64,820	-	40,000	104,820
67 Packers, Liner Hangers	14,732	-	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	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves, Dumps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
83 Flare Stack	-	-	16,667	16,667
84 Electrical / Grounding	-	-	50,000	50,000
85 Communications / SCADA	-	-	36,667	36,667
86 Instrumentation / Safety	-	-	833	833
TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,276
TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,862

PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer:	PS
Completions Engineer:	ML
Production Engineer:	DC

Permian Resources Operating, LLC APPROVAL:

Co-CEO	WH	Co-CEO	JW	VP - Operations	CRM
VP - Land & Legal	BG	VP - Geosciences	SO		

NON OPERATING PARTNER APPROVAL:

Company Name: _____ Working Interest (%): _____ Tax ID: _____

Signed by: _____ Date: _____

Title: _____ Approval: ☐ Yes ☐ No (mark one)

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Permian Resources Operating, LLC

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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 202H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E	MD/TVD:	21,211' / 10,926'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian WI:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

INTANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
1 Land / Legal / Regulatory	$ 59,066	-	37,500	$ 96,566
2 Location, Surveys & Damages	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
6 Rental - Downhole Equipment	205,424	59,805	-	265,229
7 Rental - Living Quarters	48,083	54,480	-	102,562
10 Directional Drilling, Surveys	429,543	-	-	429,543
11 Drilling	753,820	-	-	753,820
12 Drill Bits	100,176	-	-	100,176
13 Fuel & Power	188,935	725,061	-	913,996
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CTU	-	-	15,000	15,000
16 Perforating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CTU	-	146,484	-	146,484
20 Mud Circulation System	105,209	-	-	105,209
21 Mud Logging	17,529	-	-	17,529
22 Logging / Formation Evaluation	7,270	8,339	-	15,609
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25 Stimulation	-	814,033	-	814,033
26 Stimulation Flowback & Disp	-	121,606	150,000	271,606
28 Mud / Wastewater Disposal	193,104	61,151	-	254,254
30 Rig Supervision / Engineering	121,196	133,420	21,667	276,283
32 Drlg & Completion Overhead	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	-	24,421	3,833	28,254
99 Plugging & Abandonment	-	-	-	-
TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,585

TANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
60 Surface Casing	$ 122,234	-	-	$ 122,234
61 Intermediate Casing	344,284	-	-	344,284
62 Drilling Liner	-	-	-	-
63 Production Casing	687,039	-	-	687,039
64 Production Liner	-	-	-	-
65 Tubing	-	-	140,000	140,000
66 Wellhead	64,820	-	40,000	104,820
67 Packers, Liner Hangers	14,732	-	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	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves, Dumps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
83 Flare Stack	-	-	16,667	16,667
84 Electrical / Grounding	-	-	50,000	50,000
85 Communications / SCADA	-	-	36,667	36,667
86 Instrumentation / Safety	-	-	833	833
TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,276
TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,862

PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer:	PS
Completions Engineer:	ML
Production Engineer:	DC

Permian Resources Operating, LLC APPROVAL:

Co-CEO	WH	Co-CEO	JW	VP - Operations	CRM
VP - Land & Legal	BG	VP - Geosciences	SO		

NON OPERATING PARTNER APPROVAL:

Company Name: _____ Working Interest (%): _____ Tax ID: _____

Signed by: _____ Date: _____

Title: _____ Approval: ☐ Yes ☐ No (mark one)

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Permian Resources Operating, LLC

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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 203H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E	MD/TVD:	21,191' / 10,906'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian WI:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

INTANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
1 Land / Legal / Regulatory	$ 59,066	-	37,500	$ 96,566
2 Location, Surveys & Damages	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
6 Rental - Downhole Equipment	205,424	59,805	-	265,229
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11 Drilling	753,820	-	-	753,820
12 Drill Bits	100,176	-	-	100,176
13 Fuel & Power	188,935	725,061	-	913,996
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CTU	-	-	15,000	15,000
16 Perforating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CTU	-	146,484	-	146,484
20 Mud Circulation System	105,209	-	-	105,209
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54 Proppant	-	1,255,227	-	1,255,227
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TANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
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63 Production Casing	687,039	-	-	687,039
64 Production Liner	-	-	-	-
65 Tubing	-	-	140,000	140,000
66 Wellhead	64,820	-	40,000	104,820
67 Packers, Liner Hangers	14,732	-	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	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
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78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves, Dumps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
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PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer:	PS
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Permian Resources Operating, LLC APPROVAL:

Co-CEO	WH	Co-CEO	JW	VP - Operations	CRM
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NON OPERATING PARTNER APPROVAL:

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ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

DATE:	2.17.2023	AFE NO.:	1
WELL NAME:	Joker 5-8 Federal Com 204H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E	MD/TVD:	21,181' / 10,896'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian WI:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

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71 Rod string	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
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76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves, Dumps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
83 Flare Stack	-	-	16,667	16,667
84 Electrical / Grounding	-	-	50,000	50,000
85 Communications / SCADA	-	-	36,667	36,667
86 Instrumentation / Safety	-	-	833	833
TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,276
TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,862

PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer: PS
Completions Engineer: ML
Production Engineer: DC

Permian Resources Operating, LLC APPROVAL:

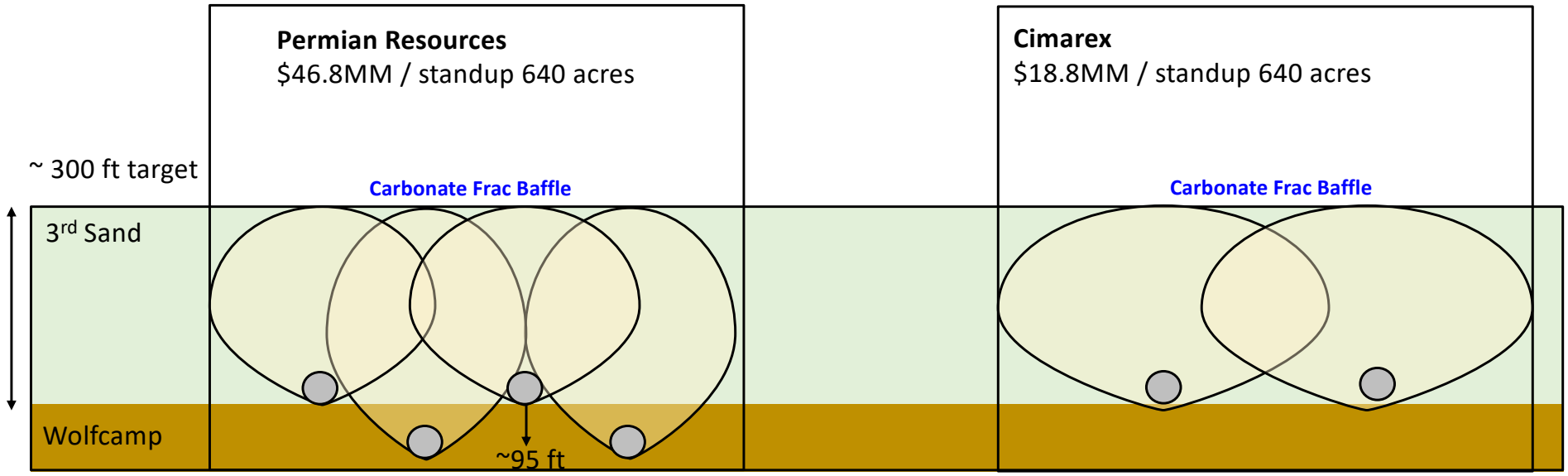
Co-CEO _____ WH
Co-CEO _____ JW
VP - Operations _____ CRM
VP - Land & Legal _____ BG
VP - Geosciences _____ SO

NON OPERATING PARTNER APPROVAL:

Company Name: _____ Working Interest (%): _____ Tax ID: _____
Signed by: _____ Date: _____
Title: _____ Approval: ☐ Yes ☐ No (mark one)

The costs on this AFE are estimates only and may not be construed as ceilings on any specific item or the total cost of the project. Tubing installation approved under the AFE may be delayed up to a year after the well has been completed. In executing this AFE, the Participant agrees to pay its proportionate share of actual costs incurred, including, legal, curative, regulatory, brokerage and well costs under the terms of the applicable joint operating agreement, regulatory order or other agreement covering this well. Participants shall be covered by and billed proportionately for Operator's well control and general liability insurance unless participant provides Operator a certificate evidencing its own insurance in an amount acceptable to the Operator by the date of spud.

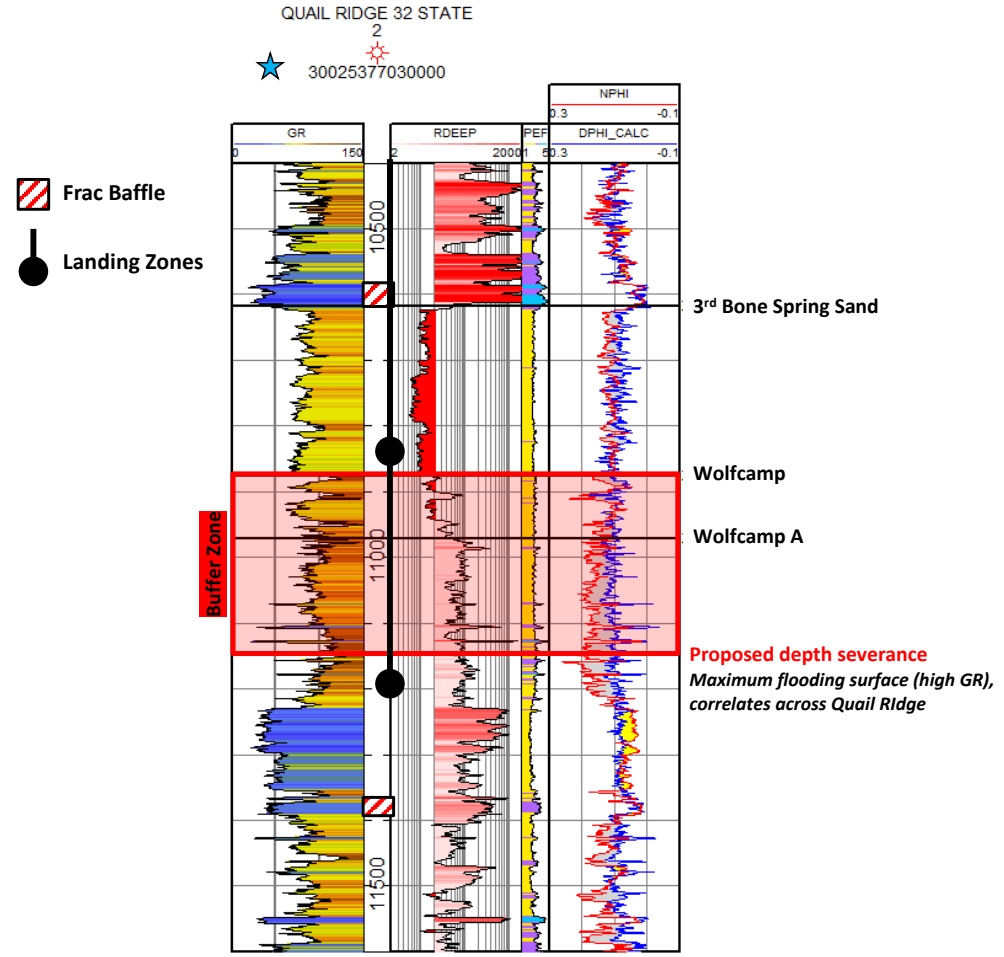
Diagram of Staggered Landing Wolfcamp + 3rd SS vs. 3rd SS Flat



- Cimarex has experience developing as many as 8 landings within a DSU successfully in Lea county with 9th 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.
- 3rd and Wolfcamp landed this close together are equivalent to 8 WPS flat in the 3rd 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 3rd Sand correlative rights and prevent capital waste.

EXHIBIT
4

Proposed Wolfcamp Depth Severance to Minimize Interaction with 3rd Bone Spring Sand



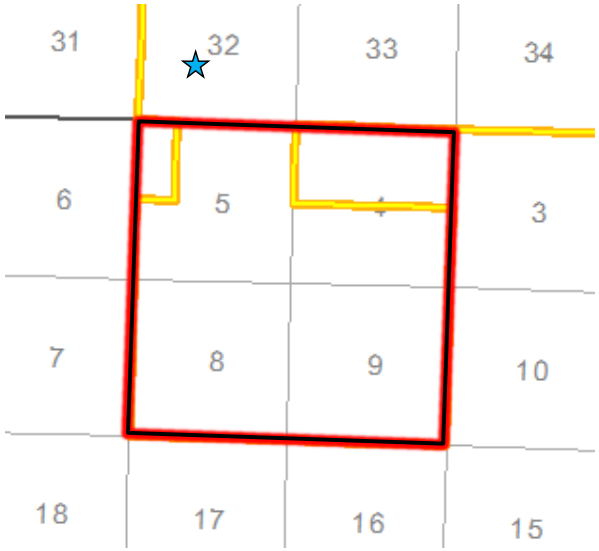


EXHIBIT
5

TAB 3

Case Nos. 23594-23601

Exhibit B:	Self-Affirmed Statement of Staci Mueller, Geologist
Exhibit B-1:	Locator Map & Stress Direction
Exhibit B-2:	Permit Status
Exhibit B-3:	Gun Barrel View
Exhibit B-4:	Development Plan Comparison
Exhibit B-5:	Subsea Structure Map
Exhibit B-6:	3rd bone Spring Isopach Map
Exhibit B-7:	Structural Cross Section
Exhibit B-8:	3rd Bone Spring Producers vs. all Wolfcamp Producers
Exhibit B-9:	All 3rd Bone Spring and Wolfcamp Producers
Exhibit B-10:	Comparing 3rd Sand to Wolfcamp Reservoir (SoPhiH)
Exhibit B-11:	2nd Bone Spring Structure Map
Exhibit B-12:	2nd Bone Spring Sand Isopach
Exhibit B-13:	2nd Bone Spring Sand Cross Section
Exhibit B-14:	2nd Bone Spring Sand vs. 3rd Bone Spring Carbonate Producers
Exhibit B-15:	PhilH L 2nd Sand vs. 3rd Carbonate
Exhibit B-16:	1st Bone Spring Sand Structure
Exhibit B-17:	1st Bone Spring Sand Isopach
Exhibit B-18:	1st Bone Spring Structural Cross Section
Exhibit B-19:	Wolfcamp Structure Map (Subsea TVD)
Exhibit B-20:	Wolfcamp XY Isopach
Exhibit B-21:	Wolfcamp XY West to East Cross Section
Exhibit B-22:	3D Seismic Outline
Exhibit B-23:	Cross Section Across 3rd Bone Spring Sand
Exhibit B-24:	Net-to-Gross Density Porosity (DPHI) <4% Within the 3rd Bone Spring Sand and Upper Wolfcamp Sands

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

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

Case Nos. 23448 – 23451
(Mighty Pheasant; Bone Spring)

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

Case Nos. 23594 – 23597
(Mighty Pheasant; Wolfcamp)

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

Case Nos. 23452 – 23455
(Loosey Goosey; Bone Spring)

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

Case Nos. 23598 – 23601
(Loosey Goosey; Wolfcamp)

SELF-AFFIRMED STATEMENT OF STACI MUELLER

I, being duly sworn on oath, state the following:

1. I am over the age of 18, and I have personal knowledge of the matters stated herein.

2. I am employed as a petroleum geologist for Coterra Energy, Inc. ("Coterra") The Applicant, Cimarex Energy Co. ("Cimarex"), is a subsidiary of Coterra. I am familiar with the subject application and the geology involved.

EXHIBIT B

3. This testimony is submitted in connection with the filing by Cimarex in the above-referenced compulsory pooling application pursuant to 19.15.4.12.A(1) NMAC.

4. I have testified previously by affidavit before the Oil Conservation Division ("Division") as an expert petroleum geologist; my credentials have been made a matter of record, and I have been qualified as an expert by the Division.

   a. 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.

   b. I have worked on New Mexico Oil and Gas matters since July 2018.

5. Cimarex is an established operator in the Quail Ridge area, with 35 horizontal wells drilled within the basal 3rd Bone Spring Sand starting in 2010 through 2022. In most of the 3rd Sand developments, Triple Combo logs were taken to further the reservoir characterization of both the Bone Spring and Wolfcamp formations. From these extensive mapping efforts along with offset production analyses, Cimarex has verified that the 3rd Sand is the most economic target at the Mighty Pheasant and Loosey Goosey proposed development.

6. **Exhibit B-1** shows a map made by Jens-Erik Lund Snee and Mark D. Zoback from Stanford University, which depicts the maximum horizontal stress direction throughout the Delaware and Midland Basins. The map on the right is a zoomed in portion of the regional map (red outline), where the blue lines represent the digitized version of the same stress directions. Based on the regional trend observed by Lund Snee and Zoback, the estimated stress direction at Mighty Pheasant and Loosey Goosey is approximately N70E, which means the favorable well orientation is north-south instead of east-west. Both Cimarex and Permian Resources plan to drill in the north-south orientation.

7. **Exhibit B-2** is a table summarizing the permit status for the Mighty Pheasant and Loosey Goosey developments. Highlighted in yellow are the wells that Cimarex has submitted to the BLM, and each well has "AFMSS-Accepted" noted to show that these wells are high enough on Cimarex's priority list for the BLM to be currently working on them. Ten permits were submitted between February and March 2022 for a 3rd Bone Spring Sand development (tier 1 target in area) plus a 1st Sand or 2nd Sand well to de-risk the sections in more highly channelized reservoirs.

8. **Exhibit B-3** is a gun barrel view of Cimarex's development plan across both Mighty Pheasant (Sections 5 & 8) and Loosey Goosey (Sections 4 & 9). Cimarex plans to develop the 1st, 2nd, and 3rd Bone Spring Sands at 4 wells per section spacing. The 1st Sand target is the high porosity, clean sand in the upper half of the interval. The 2nd Sand target is the basal siltstone/sandstone interval, and the 3rd Sand target is the basal clean sand lobe, which is also the established target across several townships.

9. **Exhibit B-4** is a gun barrel view of Cimarex's plan (left side) versus Permian Resources (right side). Permian Resources plans to include 3 additional landing zones in their full section development: the Upper 2nd Bone Spring Sand, the 3rd Carbonate, and the Wolfcamp XY Sands. This is a risky development scenario, because the 3rd Sand & Wolfcamop XY vertical spacing is about 95 ft, which is not considered a true stagger and subsequently treated as a flat development. Therefore, Permian Resource plans to develop the 3rd Sand & Wolfcamp XY combined reservoir tank at 8 wells per section, which is over-spaced for this area, where almost every operator has developed the 3rd Sand with 4 wells per section. Permian Resources' 3rd Carbonate target is approximately 135 ft vertical distance from their proposed Lower 2nd Sand target, which is also very tight vertical spacing when there is no frac baffle in between (no tight carbonates). The Lower 2nd Sand is the established target across several townships, while there has only been one well

landed in the 3rd Carbonate (with no 2nd Sand above). The Upper 2nd Sand is a target that Cimarex has investigated and determined to be too risky to drill before collecting data.

10. **Exhibit B-5** is a structure map (Subsea TVD) of the top of the Wolfcamp, which is about 50 ft below the 3rd Bone Spring Sand Target, as noted by the type log located at the blue star. The contour interval is 100 ft, well control points are displayed, and structure is dipping to the south. From the first take point to the last take point of the Mighty Pheasant and Loosey Goosey wells (located within black and red box), there is approximately 100 ft of relief.

11. **Exhibit B-6** is an isopach map of the 3rd Bone Spring Sand, as noted by the type log located at the blue star. The contour interval is 20 ft, well control points are displayed, and the 3rd Sand is consistently between 260-280 ft at the Mighty Pheasant and Loosey Goosey development (located within black and red box).

12. **Exhibit B-7** is a structural cross section from west to east on the northern end of the Mighty Pheasant and Loosey Goosey sections. Gamma Ray is displayed in the first log track, on a scale from 0 to 150 API, shaded to the right with blue representing low Gamma Ray, brown representing high Gamma Ray, and yellow in between. The second track is deep resistivity (RDEEP), on a scale from 2 to 2000 Ohms, with RDEEP less than 20 Ohms shaded solid red to represent the Bone Spring Sand reservoirs. The third track is the photoelectric log (PEF) which is shaded blue and purple for higher values and yellow for lower values. The fourth track is neutron and density porosity (NPHI and DPHI). NPHI is shown in red, while DPHI is blue, and when DPHI crosses to the left of NPHI, the space in between the two curves is shaded yellow. Otherwise, it is shaded grey. The basal 3rd Sand target is often characterized by the yellow crossover shading in the NPHI and DPHI track, Gamma Ray around 50-70 API, and RDEEP below 20 Ohms. Cimarex's target is the standard basal 3rd Bone Spring Sand target across the area (a few townships), which is shown

as a green stick in all three logs. Frac baffles are shown in red and white striped boxes within the depth track, and there are only a couple frac baffles present within the 3rd Bone Spring Carbonate. These baffles are characterized by low Gamma Ray <50 API, indicating carbonate, along with high resistivity, and low neutron and density porosities (0-4%). There are no indications of any major geomechanical changes/frac baffles in between Cimarex's 3rd Sand target and Permian Resources' Wolfcamp Sands target, indicating that these two intervals are most likely one shared reservoir tank.

13. **Exhibit B-8** is showing a map with all the producing 3rd Bone Spring Sand wells across almost three townships (left), versus all of the Wolfcamp producers across the area (right). This Exhibit highlights the fact that the 3rd Sand is the established target in the area surrounding the Mighty Pheasant and Loosey Goosey sections (black and red box), while there have only been two Wolfcamp developments plus some parent well tests. Cimarex is also an established operator in this area, with 36 wells drilled including a Wolfcamp test.

14. **Exhibit B-9** shows all of the 3rd Bone Spring Sand producing wells with blue diamonds, and all of the Wolfcamp Sands producing wells with orange diamonds. Mighty Pheasant and Loosey Goosey are located within the black and red box which lies among almost all 3rd Sand wells. There are a couple of Wolfcamp development tests two miles to the south, but the majority of Wolfcamp and 3rd Sand co-development occurs 3 townships to the south, where the total 3rd Sand and Wolfcamp Sands reservoir tank is much thicker and deeper into the basin.

15. **Exhibit B-10** shows the PhiH (porosity*height) of the 3rd Bone Spring Sand (left) versus the Wolfcamp X and Y Sands (right) as shown by the type log located at the blue star. PhiH is one of the most common reservoir maps to identify ideal target areas within the Bone Spring Sands because it represents total pore space, and more pore space means more room for hydrocarbon

storage. Both maps have the same color scale, with a contour interval of 2 pore-ft. The Mighty Pheasant and Loosey Goosey sections are shown in the black and red box, and the well control points are displayed, along with the values of the closest control points to the subject development. Higher PhiH values are indicated in yellow and red, while lower values are shown in blue. The average PhiH within the 3rd Sand, based on the closest control points, is 26.75 pore-ft. While the average PhiH within the Wolfcamp X and Y Sands is 10 pore-ft, which means that the 3rd Sand is at least 72.8% of the total reservoir, while the Wolfcamp Sands are 27.2% of the total reservoir. However, because there are no frac baffles separating the 3rd Sand and Wolfcamp Sands, and because the two Permian Resource targets would have about 95 ft of vertical separation, their Wolfcamp wells would drain a significant portion of the 3rd Sand reservoir that the four 3rd Sand wells would already be targeting.

16. **Exhibit B-11** is a structure map (Subsea TVD) of the top of the 3rd Bone Spring Carbonate, which is about 40 ft below the 2nd Bone Spring Sand Target, as noted by the type log located at the blue star. The contour interval is 100 ft, well control points are displayed, and structure is dipping to the south. From the first take point to the last take point of the Mighty Pheasant and Loosey Goosey wells (located within black and red box), there is approximately 200 ft of relief on the eastern edge of the proposed development, and about 100 ft of relief on the western edge.

17. **Exhibit B-12** is an isopach map of the 2nd Bone Spring Sand, as noted by the type log located at the blue star. The contour interval is 20 ft, well control points are displayed, and the 2nd Sand is consistently between 420-440 ft at the Mighty Pheasant and Loosey Goosey development (located within black and red box).

18. **Exhibit B-13** is a structural cross section from west to east on the northern end of the Mighty Pheasant and Loosey Goosey sections. Gamma Ray is displayed in the first log track, on

a scale from 0 to 150 API, shaded to the right with blue representing low Gamma Ray, brown representing high Gamma Ray, and yellow in between. The second track is deep resistivity (RDEEP), on a scale from 2 to 2000 Ohms, with RDEEP less than 20 Ohms shaded solid red to represent the Bone Spring Sand reservoirs. The third track is the photoelectric log (PEF) which is shaded blue and purple for higher values and yellow for lower values. The fourth track is neutron and density porosity (NPHI and DPHI). NPHI is shown in red, while DPHI is blue, and when DPHI crosses to the left of NPHI, the space in between the two curves is shaded yellow. Otherwise, it is shaded grey. The Lower 2nd Sand target is often characterized by the yellow crossover shading in the NPHI and DPHI track, Gamma Ray around 50-70 API, and RDEEP below 200 Ohms (not as low as basal 3rd Sand target). Cimarex's target is the standard Lower 2nd Bone Spring Sand target across the area (a few townships), which is shown as a green stick in all three logs. Frac baffles are shown in red and white striped boxes within the depth track, and there are only a couple frac baffles present within the 2nd Bone Spring Carbonate and in the middle of the 2nd Sand. These baffles are characterized by low Gamma Ray <50 API, indicating carbonate, along with high resistivity, and low neutron and density porosities (0-4%). These frac baffles within the 2nd Sand, plus the vertical distance of approximately 400 ft, indicate that there may be another target within the Upper 2nd Sand (similar log characteristics as the Lower Sand target). However, this would be a several mile step-out test, so Cimarex is planning advanced logging/data collection through this interval to de-risk it while drilling the 3rd Sand wells.

19. **Exhibit B-14** is showing a map with all the producing Lower 2nd Bone Spring Sand wells across almost nine townships (left), versus all of the 3rd Bone Spring Carbonate producers across the area (right). This Exhibit highlights the fact that the Lower 2nd Sand is the established target in

the area surrounding the Mighty Pheasant and Loosey Goosey sections (black and red box), while there has only been one well landed in the 3rd Carbonate, with no 2nd Sand development above.

20. **Exhibit B-15** shows the PhiH (porosity*height) of the 2nd Bone Spring Sand (left) versus the 3rd Bone Spring Carbonate (right) as shown by the type log located at the blue star. PhiH is one of the most common reservoir maps to identify ideal target areas within the Bone Spring Sands because it represents total pore space, and more pore space means more room for hydrocarbon storage. Both maps have the same color scale, with a contour interval of 2 pore-ft. The Mighty Pheasant and Loosey Goosey sections are shown in the black and red box, and the well control points are displayed. Higher PhiH values are indicated in yellow and red, while lower values are shown in blue. The average PhiH within the 2nd Sand, based on the closest control points, is 30 pore-ft. While the average PhiH within the 3rd Carbonate is 20 pore-ft, which means that the 2nd Sand is at least 60% of the total reservoir, while the 3rd Carbonate is 40% of the total reservoir. However, because there are no frac baffles separating the 2nd Sand and 3rd Carbonate, and because the two Permian Resource targets would have about 135 ft of vertical separation, their 3rd Carbonate wells would drain a significant portion of the 2nd Sand reservoir that the four 2nd Sand wells would already be targeting.

21. **Exhibit B-16** is a structure map (Subsea TVD) of the top of the 1st Bone Spring Sand, which is about 40 ft above the 1st Bone Spring Sand Target, as noted by the type log located at the blue star. The contour interval is 100 ft, well control points are displayed, and structure is dipping to the south. From the first take point to the last take point of the Mighty Pheasant and Loosey Goosey wells (located within black and red box), there is approximately 85 ft of relief.

22. **Exhibit B-17** is an isopach map of the 1st Bone Spring Sand, as noted by the type log located at the blue star. The contour interval is 20 ft, well control points are displayed, and the 1st

Sand is consistently between 280-300 ft at the Mighty Pheasant and Loosey Goosey development (located within black and red box).

23. **Exhibit B-18** is a structural cross section from west to east on the northern end of the Mighty Pheasant and Loosey Goosey sections. Gamma Ray is displayed in the first log track, on a scale from 0 to 150 API, shaded to the right with blue representing low Gamma Ray, brown representing high Gamma Ray, and yellow in between. The second track is deep resistivity (RDEEP), on a scale from 2 to 2000 Ohms, with RDEEP less than 20 Ohms shaded solid red to represent the Bone Spring Sand reservoirs. The third track is the photoelectric log (PEF) which is shaded blue and purple for higher values and yellow for lower values. The fourth track is neutron and density porosity (NPHI and DPHI). NPHI is shown in red, while DPHI is blue, and when DPHI crosses to the left of NPHI, the space in between the two curves is shaded yellow. Otherwise, it is shaded grey. The 1st Sand target is often characterized by the yellow crossover shading in the NPHI and DPHI track, Gamma Ray around 50-70 API, and RDEEP below 20 Ohms. Cimarex's target is the standard 1st Bone Spring Sand target across the area (a few townships), which is shown as a green stick in all three logs.

WOLFCAMP STATEMENT

24. **Exhibit B-19** is a structure map (Subsea TVD) of the top of the Wolfcamp, which is about 50 ft below the 3rd Bone Spring Sand Target, as noted by the type log located at the blue star. The contour interval is 100 ft, well control points are displayed, and structure is dipping to the south. From the first take point to the last take point of the Mighty Pheasant and Loosey Goosey wells (located within black and red box), there is approximately 100 ft of relief.

25. **Exhibit B-20** is an isopach map of the Wolfcamp X and Y Sands, as noted by the type log located at the blue star. The contour interval is 20 ft, well control points are displayed, and the

Wolfcamp X and Y Sands are consistently about 100 ft at the Mighty Pheasant and Loosey Goosey development (located within black and red box).

26. **Exhibit B-21** is a structural cross section from west to east on the northern end of the Mighty Pheasant and Loosey Goosey sections. Gamma Ray is displayed in the first log track, on a scale from 0 to 150 API, shaded to the right with blue representing low Gamma Ray, brown representing high Gamma Ray, and yellow in between. The second track is deep resistivity (RDEEP), on a scale from 2 to 2000 Ohms, with RDEEP less than 20 Ohms shaded solid red to represent the Bone Spring Sand reservoirs. The third track is the photoelectric log (PEF) which is shaded blue and purple for higher values and yellow for lower values. The fourth track is neutron and density porosity (NPHI and DPHI). NPHI is shown in red, while DPHI is blue, and when DPHI crosses to the left of NPHI, the space in between the two curves is shaded yellow. Otherwise, it is shaded grey. The basal 3rd Sand target is often characterized by the yellow crossover shading in the NPHI and DPHI track, Gamma Ray around 50-70 API, and RDEEP below 20 Ohms. Cimarex's target is the standard basal 3rd Bone Spring Sand target across the area (a few townships), which is located above the Wolfcamp X & Y Sands (highlighted yellow on the left side). Frac baffles are shown in red and white striped boxes within the depth track, and there are only a couple frac baffles present within the 3rd Bone Spring Carbonate. These baffles are characterized by low Gamma Ray <50 API, indicating carbonate, along with high resistivity, and low neutron and density porosities (0-4%). There are no indications of any major geomechanical changes/frac baffles in between Cimarex's 3rd Sand target and Permian Resources' Wolfcamp Sands target, indicating that these two intervals are most likely one shared reservoir tank; therefore, Permian Resources' Wolfcamp XY Sands target will primarily produce from the 3rd Bone Spring Sand.

NO FRAC BAFFLE BETWEEN WOLFCAMP AND 3RD SAND

27. **Exhibit B-22** shows the outlined area in red of Cimarex's 3D seismic coverage, which includes the Mighty Pheasant and Loosey Goosey sections as well as the adjacent Cimarex acreage. The Capitan Reef area is shaded blue, and the Potash outline is light blue. 3D seismic will aid in geosteering the Bone Spring development.

28. **Exhibit B-23** is a cross section across 3rd Bone Spring Sand developments, as shown on the map, in two townships (approximate target shown along the green line). The highlighted portion of the logs, which represents the sands bordering the 3rd Bone Spring Sand and Upper Wolfcamp, shows that there are no frac baffles (carbonates) present that would separate the Bone Spring and Wolfcamp across the whole area.

29. **Exhibit B-24** is a map showing net-to-gross density porosity (DPHI) <4% within the 3rd Bone Spring Sand and Upper Wolfcamp Sands, where 0% means there is no frac baffle separating the two formations. Almost all 3rd Sand developments on the map lie within an area that contains minimal-to-no carbonate/frac baffle between the Bone Spring and Wolfcamp.

30. The fact that there are minimal-to-no carbonate/frac baffles between the Bone Spring and Wolfcamp, as evidenced by Exhibits B-23 and B-24, further supports Cimarex's contention that these two intervals are most likely one shared reservoir tank. Thus, Cimarex's proposed 3rd Sand single landing is the optimal proposal based on the geology of the target area. These exhibits also provide further proof that Permian Resources' Wolfcamp XY Sands target will primarily produce from the 3rd Bone Spring Sand.

31. The Exhibits to this Affidavit were prepared by me or compiled from Cimarex's company business records under my supervision.

32. The granting of this Application is in the interests of conservation, the prevention of waste, and the protection of correlative rights.

33. The foregoing is correct and complete to the best of my knowledge and belief.

[Signature page follows]

Signature page of Self-Affirmed Statement of Staci Mueller:

I understand that this Self-Affirmed Statement will be used as written testimony before the Division in Case Nos. 23448-23455 and 23594 – 23601 and affirm that my testimony herein is true and correct, to the best of my knowledge and belief and made under penalty of perjury under the laws of the State of New Mexico.

STACI MUELLER

8/2/2023

Date Signed

Geology Exhibits

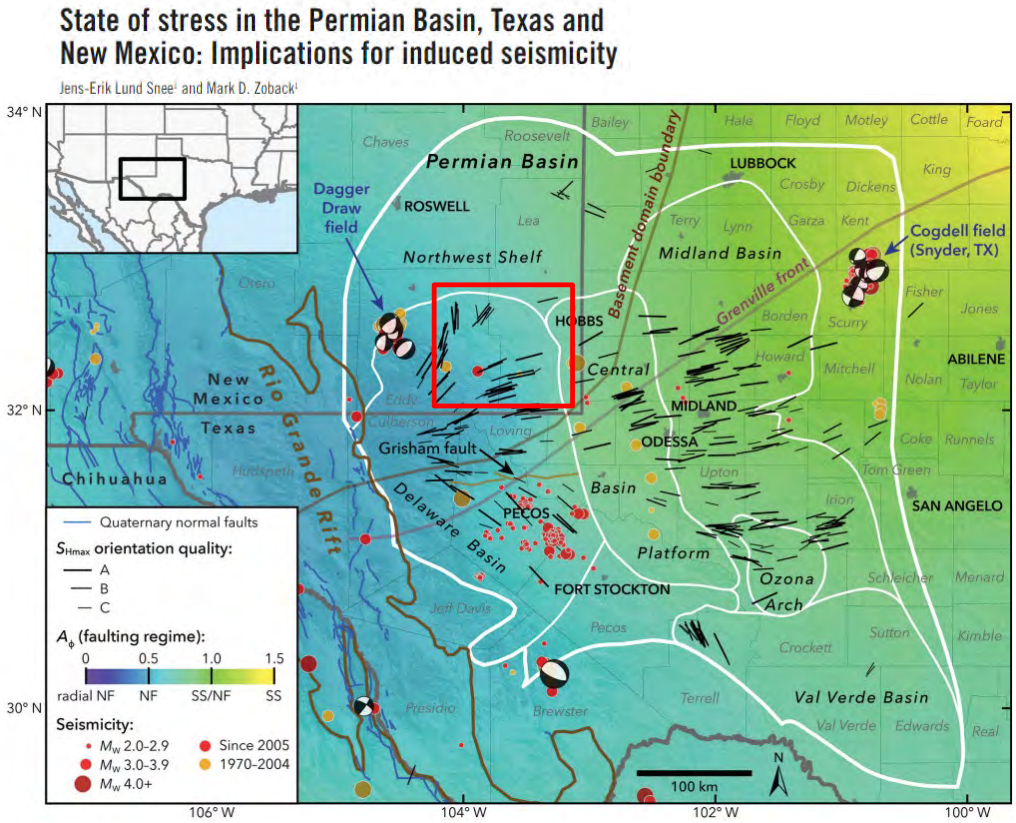
COTERRA

Locator Map & Stress Direction

Coterra plans to develop Sections 4-9 and 5-8 with 2-mile laterals

1. 8 Lower 3rd Bone Spring Sand
2. 8 2nd Bone Spring Sand
3. 8 1st Bone Spring Sand

The wells will be drilled north to south from 2 pads/ Section



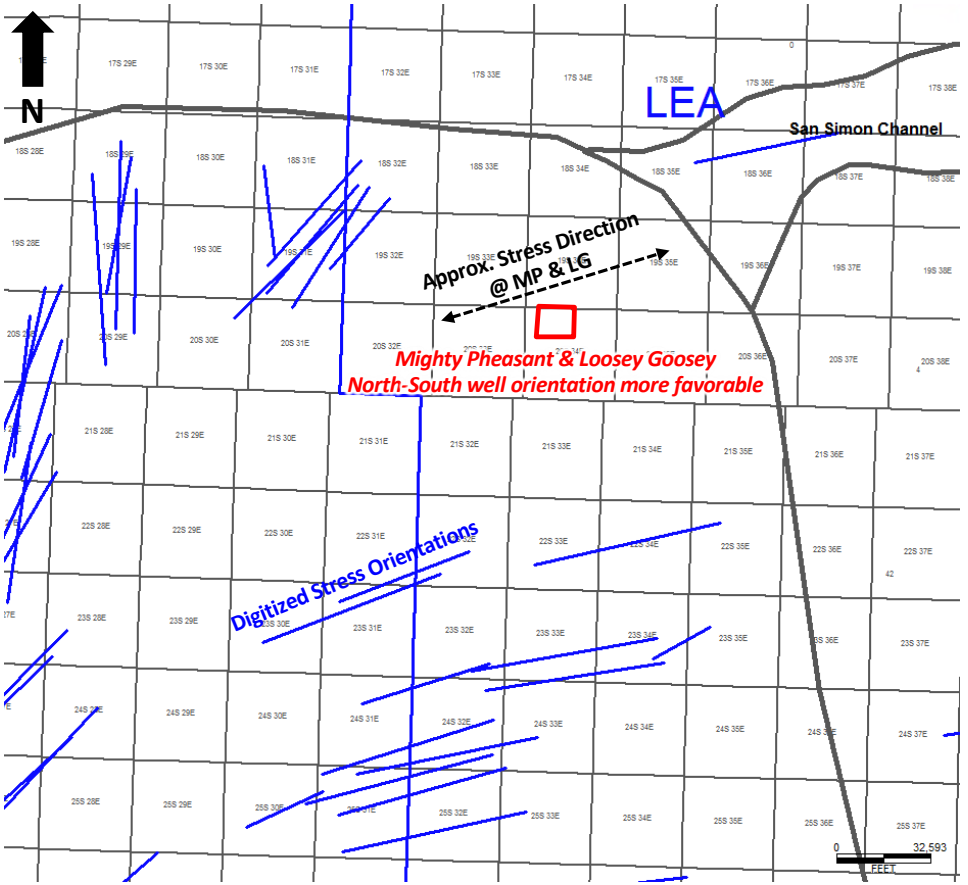


EXHIBIT B-1

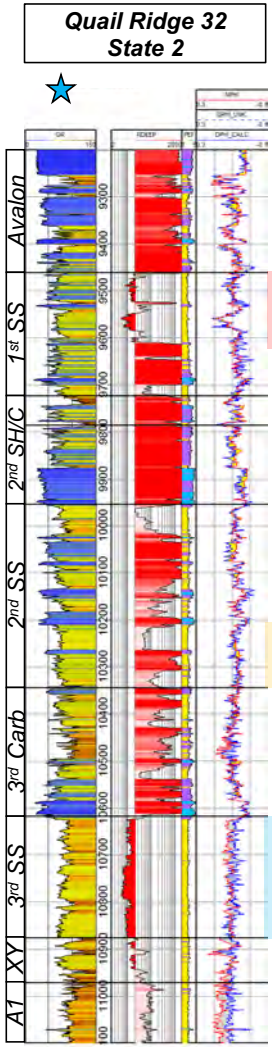
Permit Status

State	County	Well Name & Number	Permit Status	Permit Submission Due Date	Permit Submitted Date	10-Day Letter Date	10-Day Letter Due
NM	Lea	Mighty Pheasant 5-8 Fed Com 101H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 102H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 103H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 104H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 201H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 202H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 203H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 204H	AFMSS-Accepted	2/14/2022	2/14/2022	6/2/2023	7/17/2023
NM	Lea	Mighty Pheasant 5-8 Fed Com 301H	AFMSS-Accepted	3/1/2022	3/1/2022		
NM	Lea	Mighty Pheasant 5-8 Fed Com 302H	AFMSS-Accepted	3/2/2022	3/2/2022		
NM	Lea	Mighty Pheasant 5-8 Fed Com 303H	AFMSS-Accepted	2/14/2022	2/14/2022	6/2/2023	7/17/2023
NM	Lea	Mighty Pheasant 5-8 Fed Com 304H	AFMSS-Accepted	3/1/2022	3/1/2022	6/2/2023	7/17/2023
NM	Lea	Loosey Goosey 4-9 Fed Com 101H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 102H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 103H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 104H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 201H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 202H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 203H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 204H	AFMSS-Accepted	3/15/2022	3/15/2022		
NM	Lea	Loosey Goosey 4-9 Fed Com 301H	AFMSS-Accepted	3/9/2022	3/9/2022		
NM	Lea	Loosey Goosey 4-9 Fed Com 302H	AFMSS-Accepted	3/9/2022	3/9/2022		
NM	Lea	Loosey Goosey 4-9 Fed Com 303H	AFMSS-Accepted	3/15/2022	3/15/2022		
NM	Lea	Loosey Goosey 4-9 Fed Com 304H	AFMSS-Accepted	3/15/2022	3/15/2022		

Submitted permits for 3rd Sand development & 1st Sand/2nd Sand test
BLM is currently working on these

EXHIBIT
B-2

Cimarex Development Plan



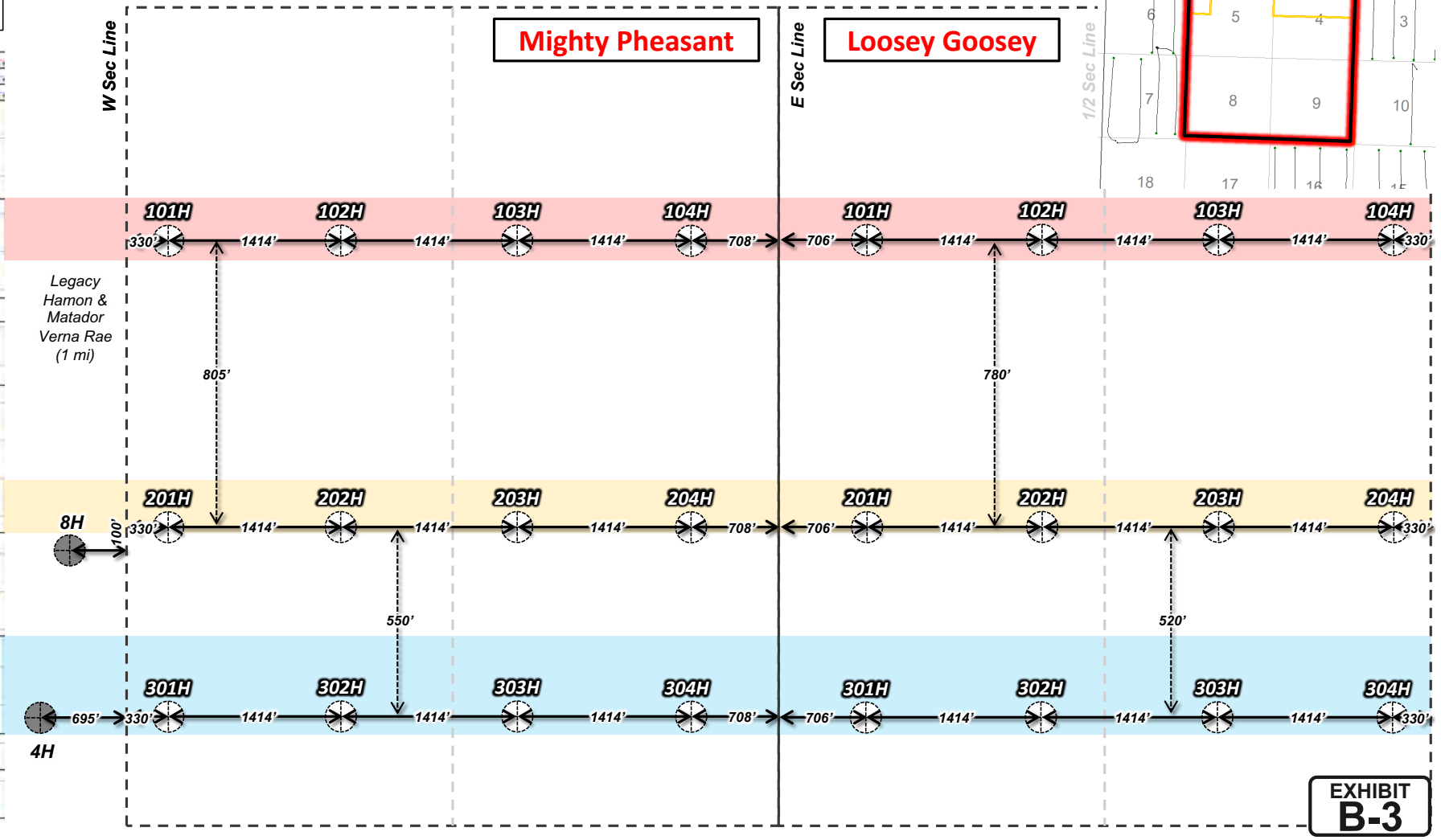
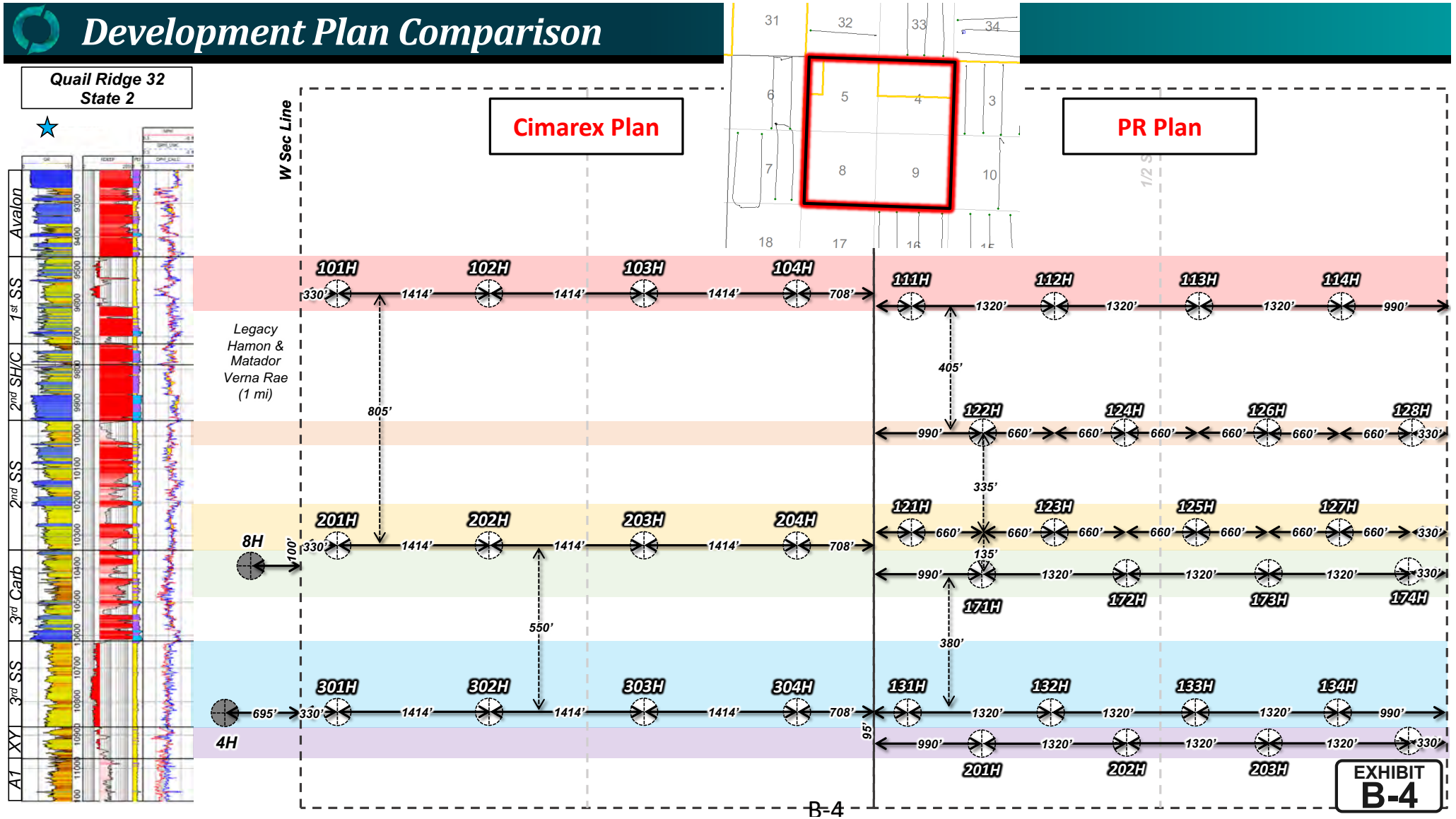


EXHIBIT B-3

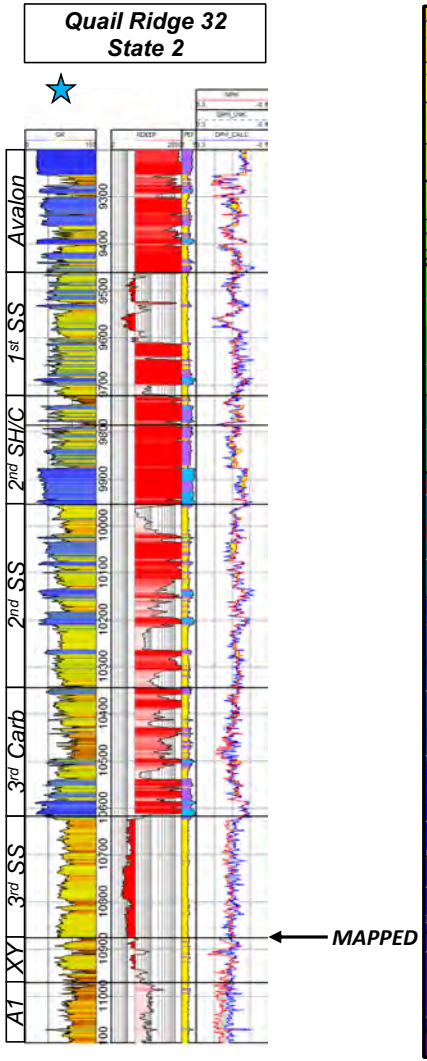
Development Plan Comparison



3rd Bone Spring Sand

COTERRA

3rd Bone Spring Sand Structure



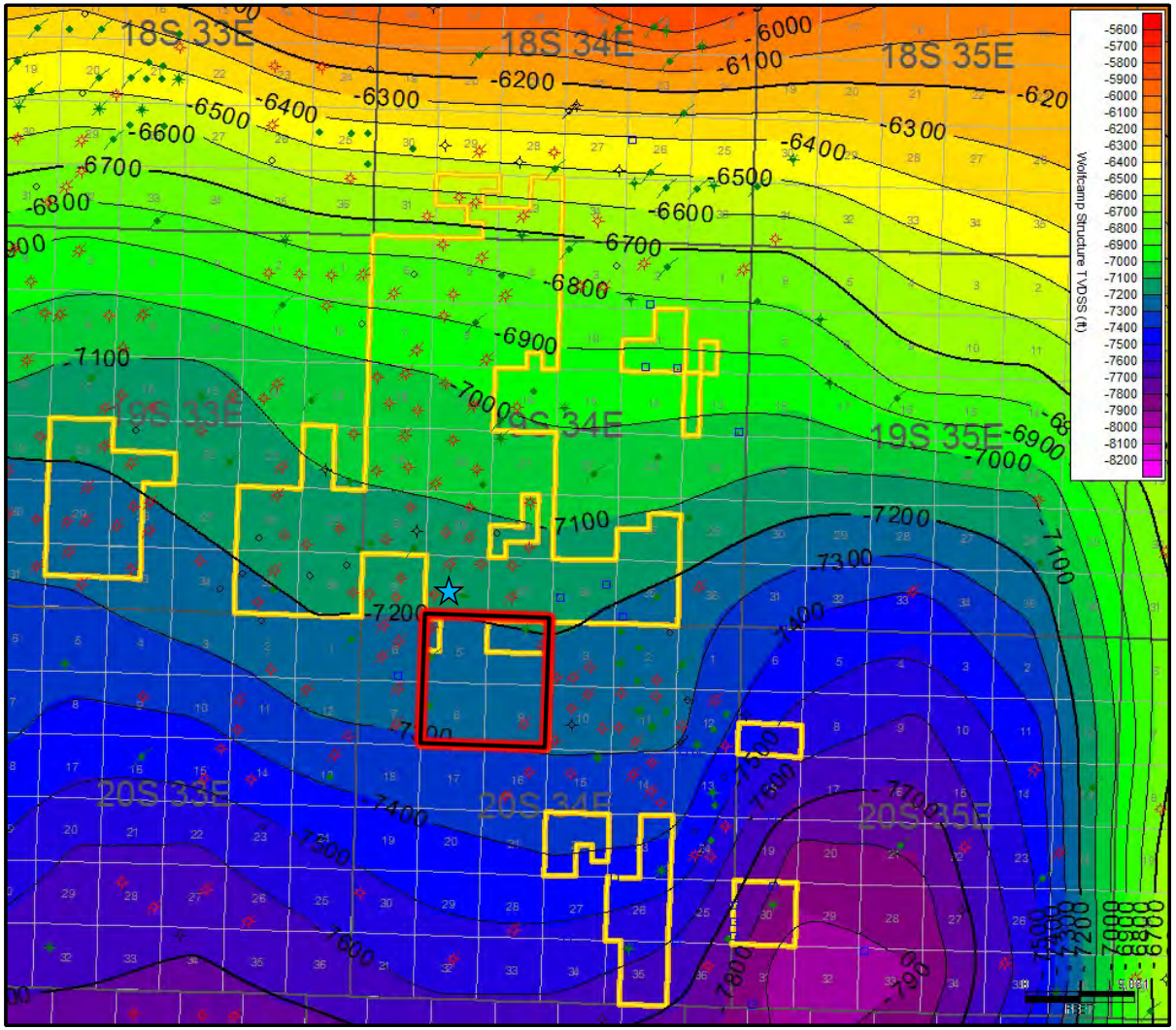
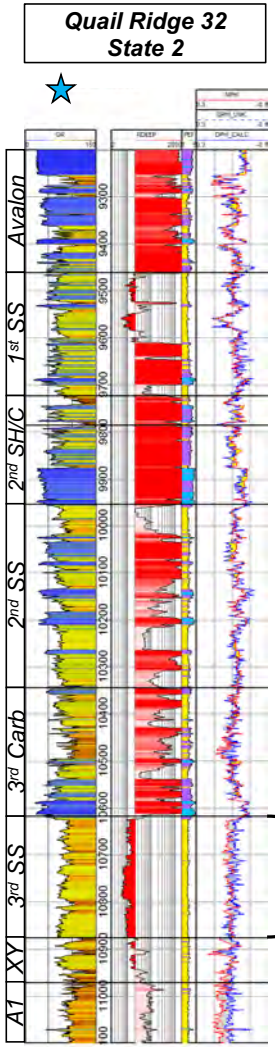


EXHIBIT
B-5

3rd Bone Spring Sand Isopach



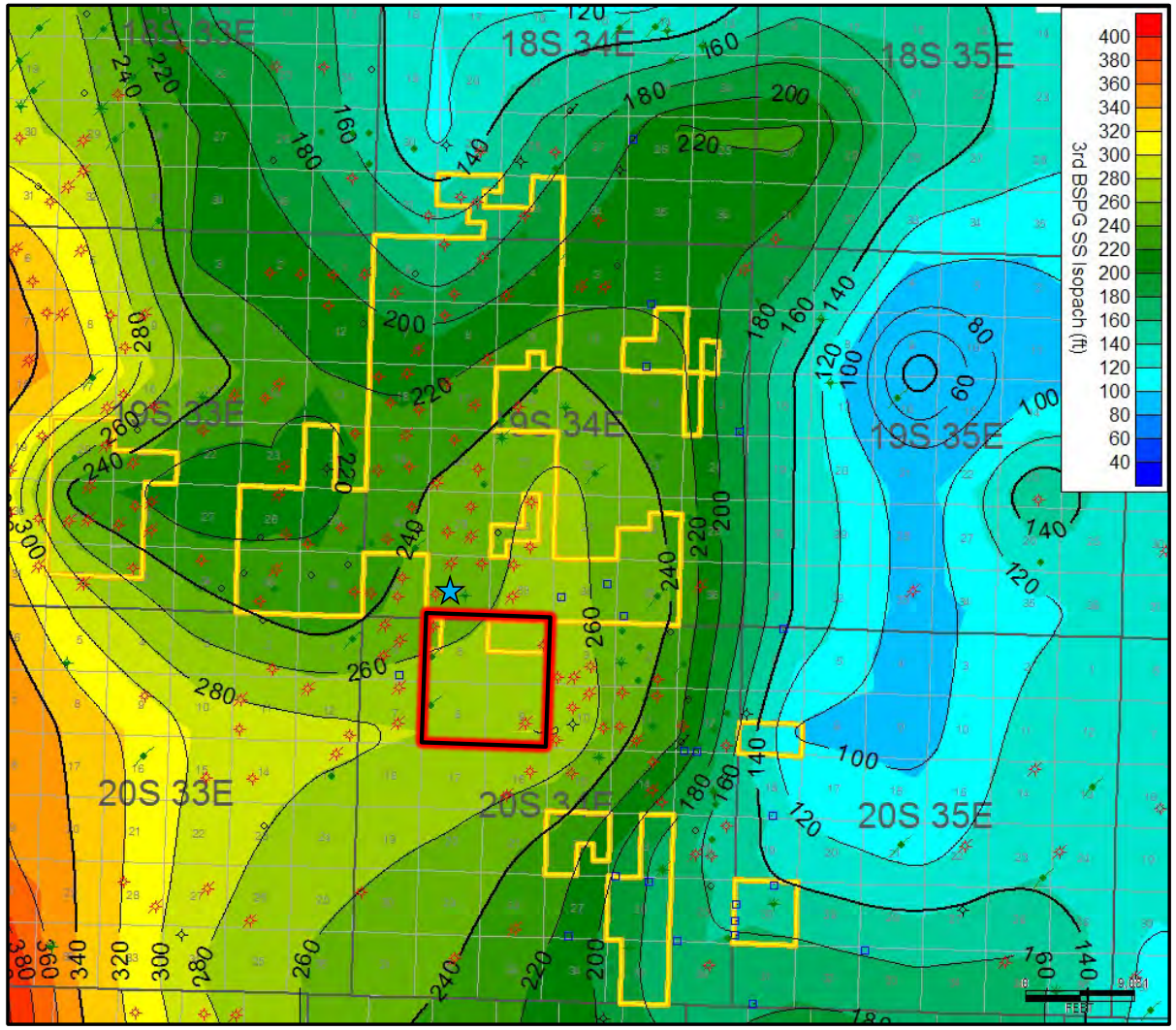
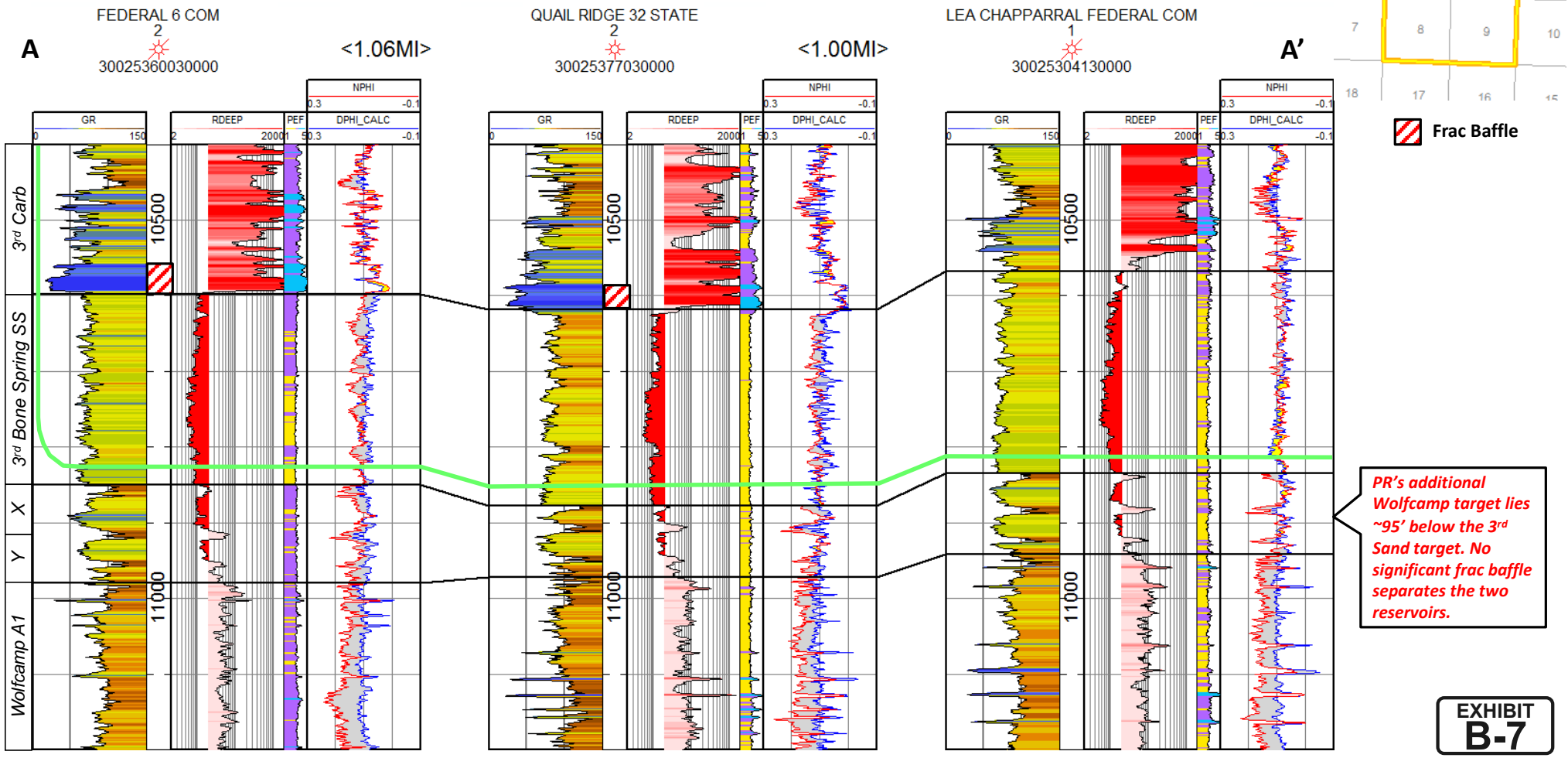
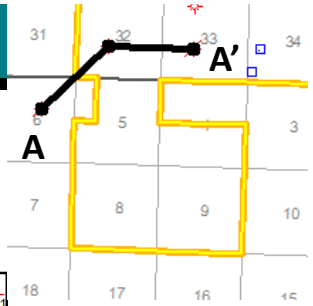


EXHIBIT
B-6

3rd Bone Spring Sand Cross Section





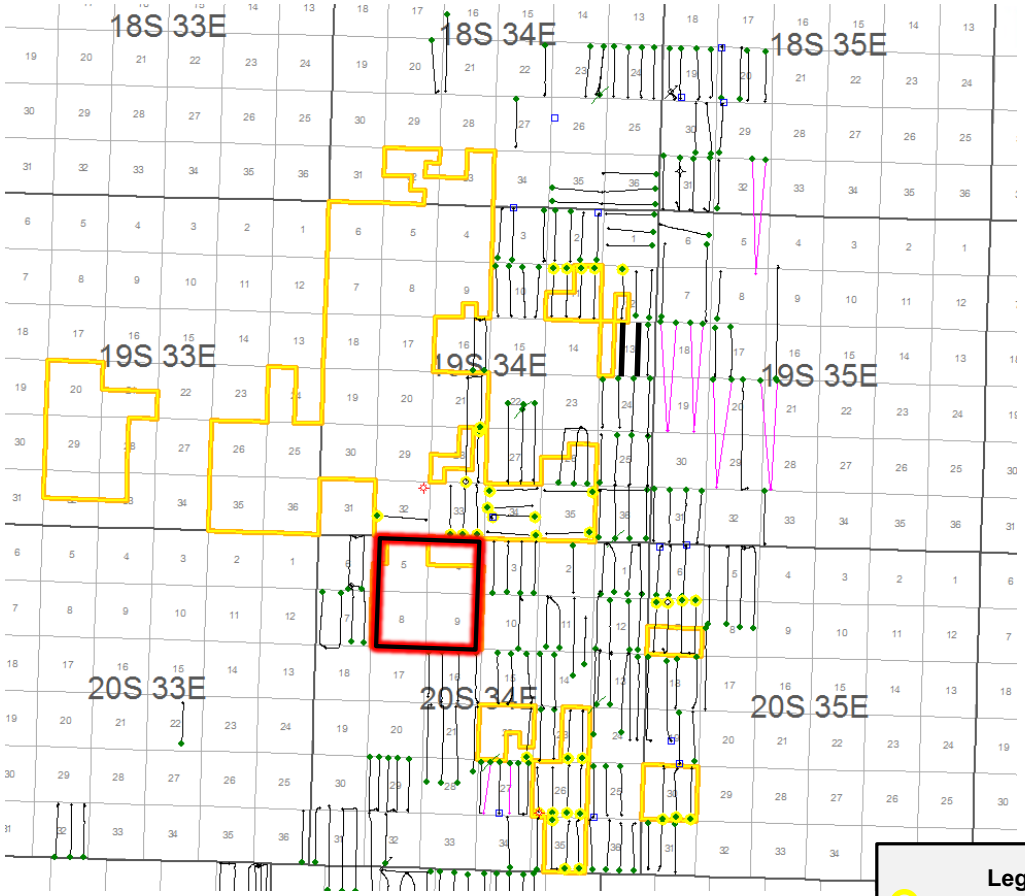
Frac Baffle

PR's additional Wolfcamp target lies ~95' below the 3rd Sand target. No significant frac baffle separates the two reservoirs.

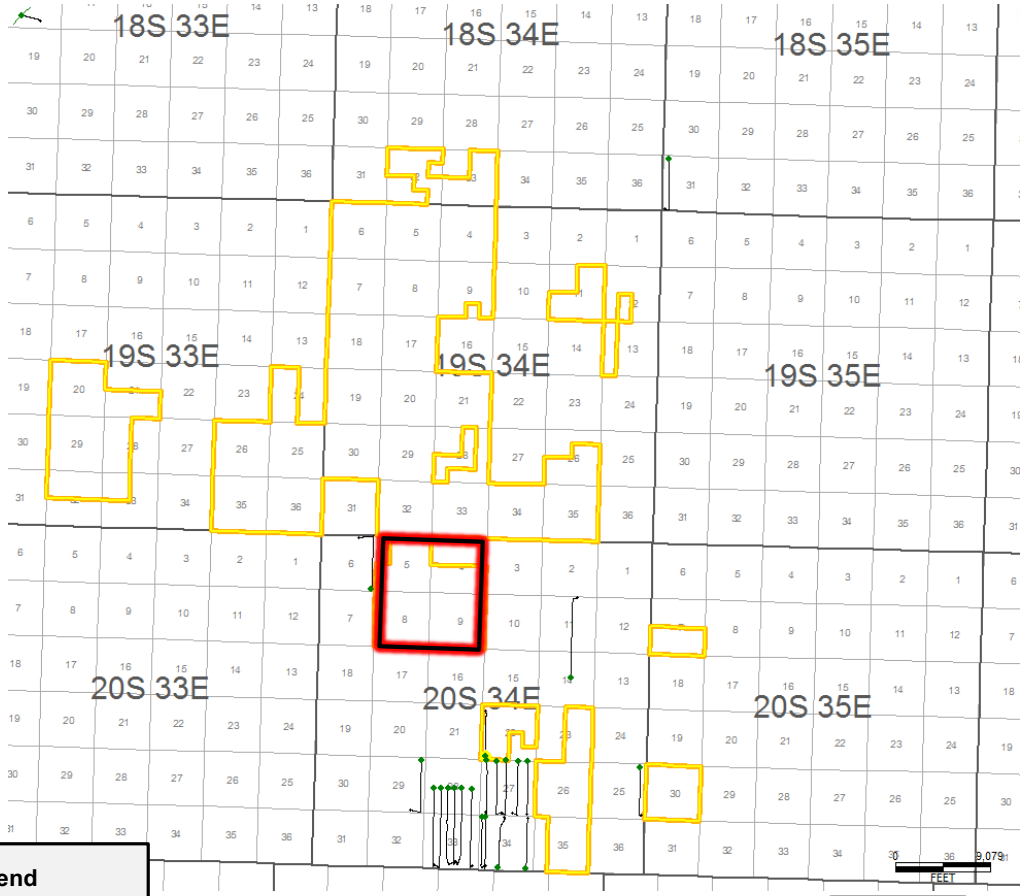
EXHIBIT B-7

3rd Bone Spring Sand is Established Target

3rd Bone Spring Sand Producers



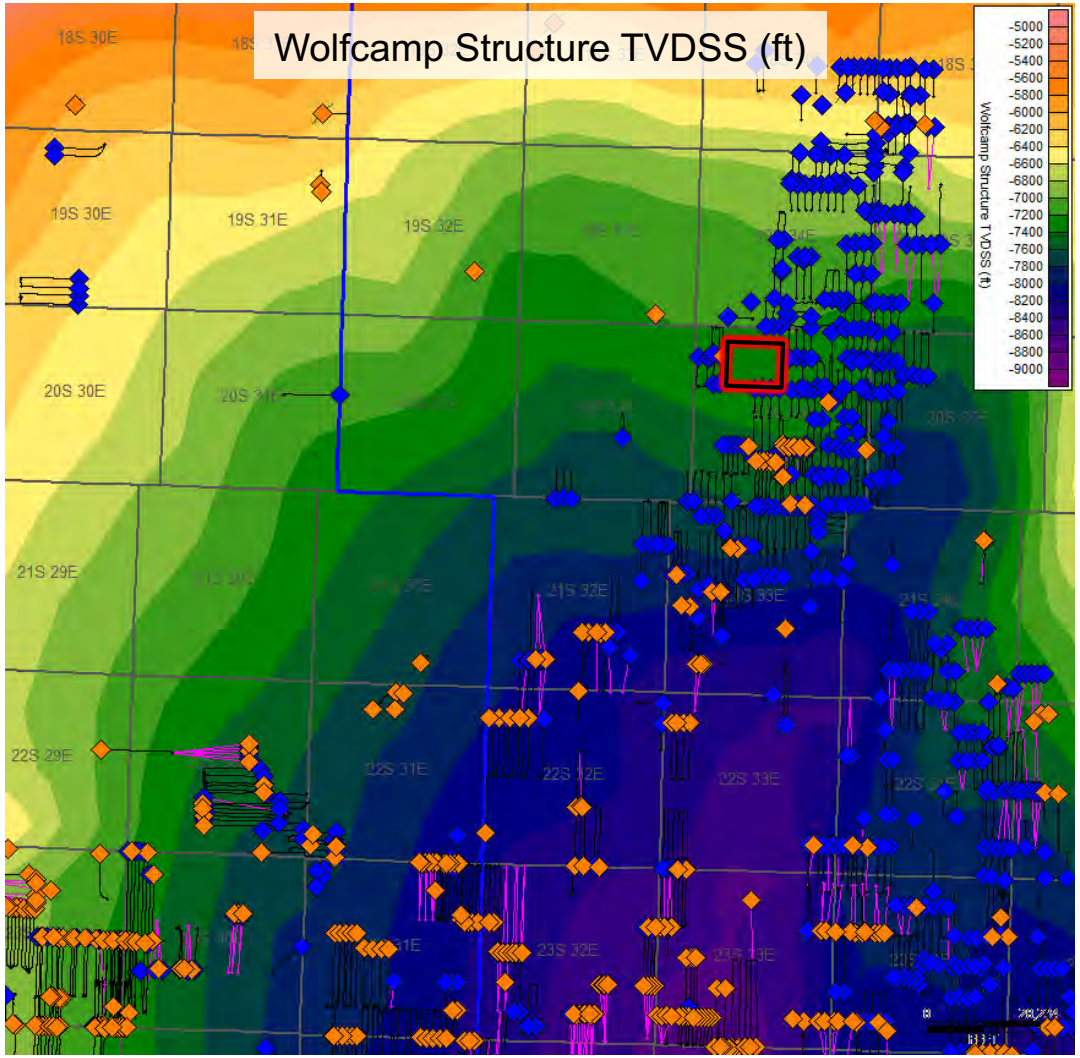
Wolfcamp Producers



Legend
Cimarex Operated Wells

EXHIBIT
B-8

Co-Wolfcamp SS/3rd SS Development Begins Further South



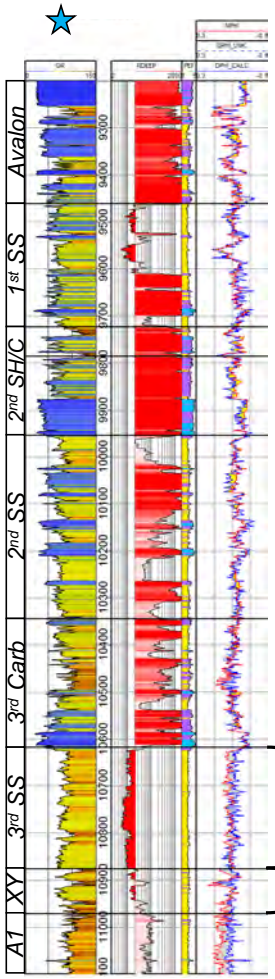
3rd Bone Spring Sand

Wolfcamp Sands

EXHIBIT
B-9

Comparing 3rd Sand to Wolfcamp Reservoir (SoPhiH)

Quail Ridge 32
State 2

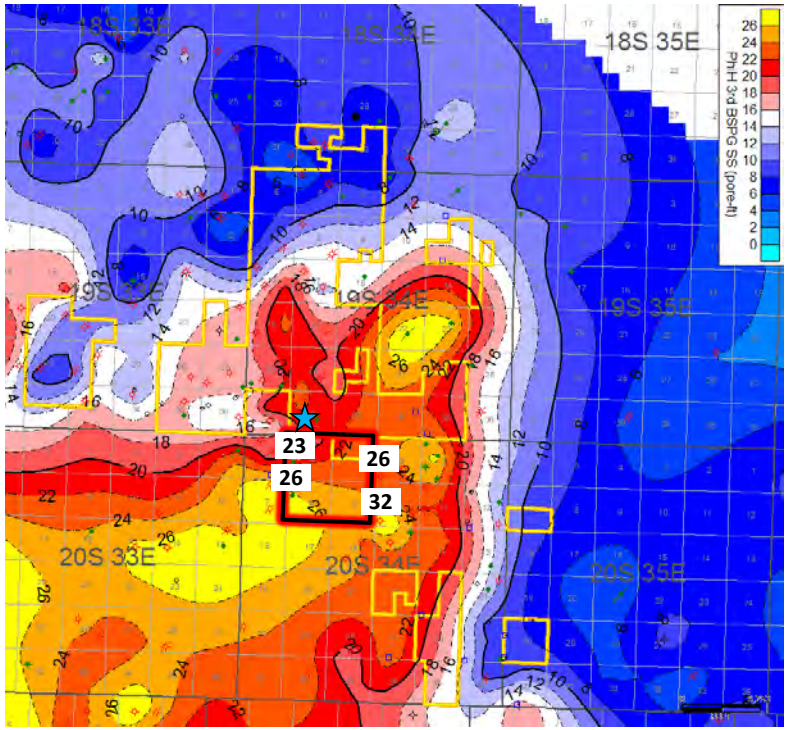


Left Map

Right Map

PhiH 3rd Bone Spring Sand

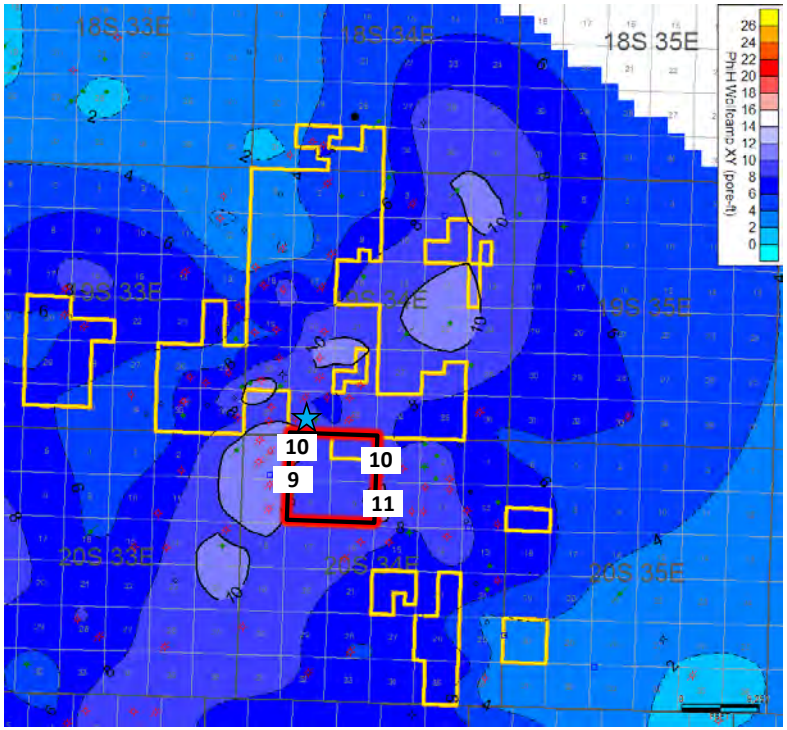
CTRA Target



Avg PhiH in 3rd SS = 26.75
72.8% of total reservoir

PhiH Wolfcamp X & Y Sands

Permian Resources Additional Target



Avg PhiH in WFMP XY = 10
27.2% of total reservoir

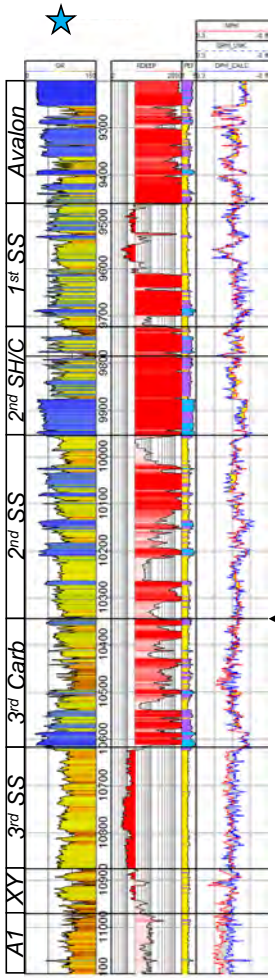
EXHIBIT
B-10

2nd Bone Spring Sand

COTERRA

2nd Bone Spring Sand Structure

Quail Ridge 32
State 2



MAPPED

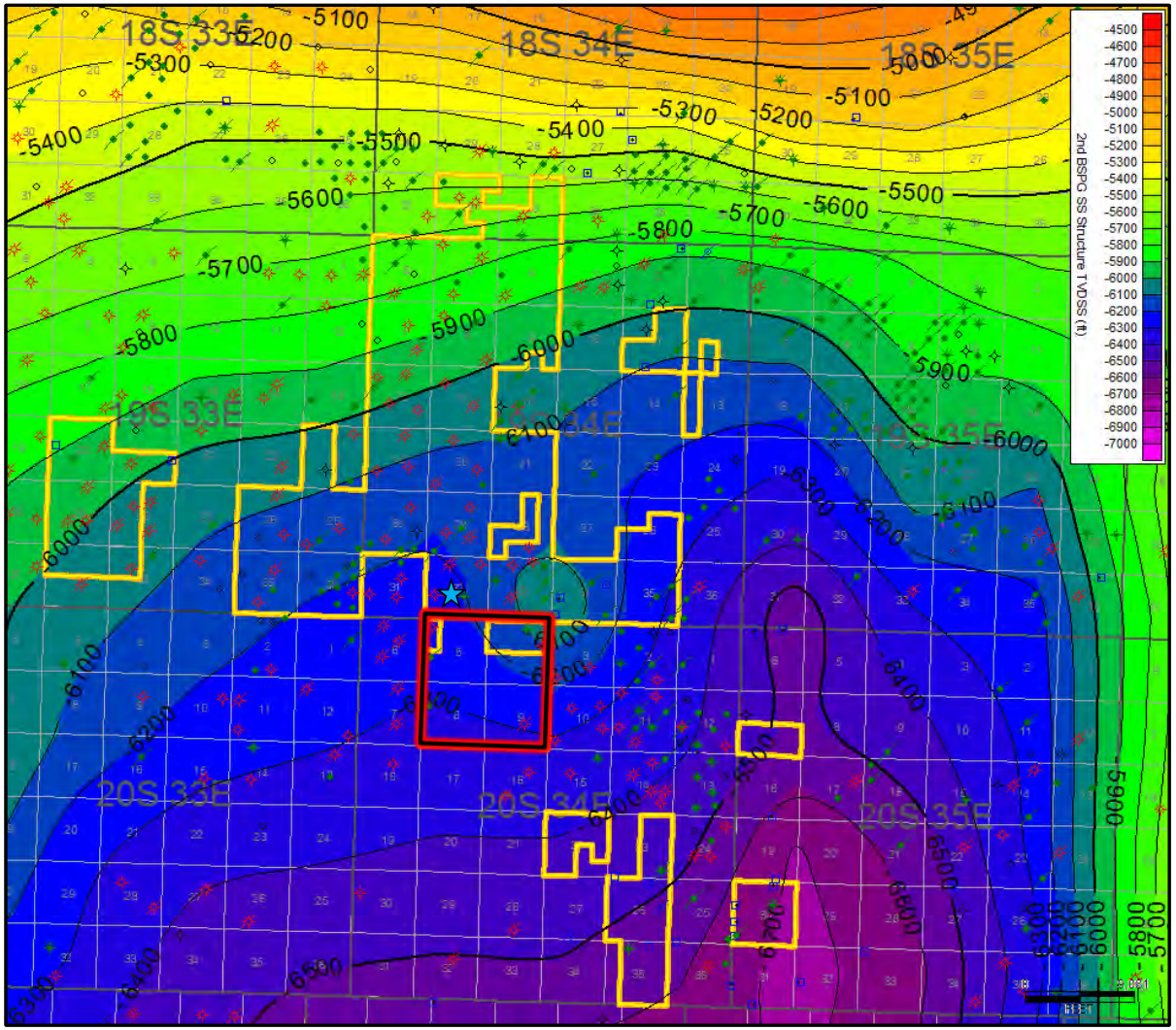
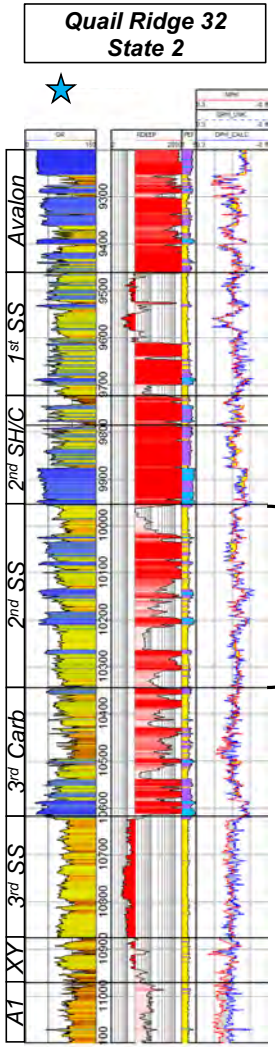


EXHIBIT
B-11

2nd Bone Spring Sand Isopach



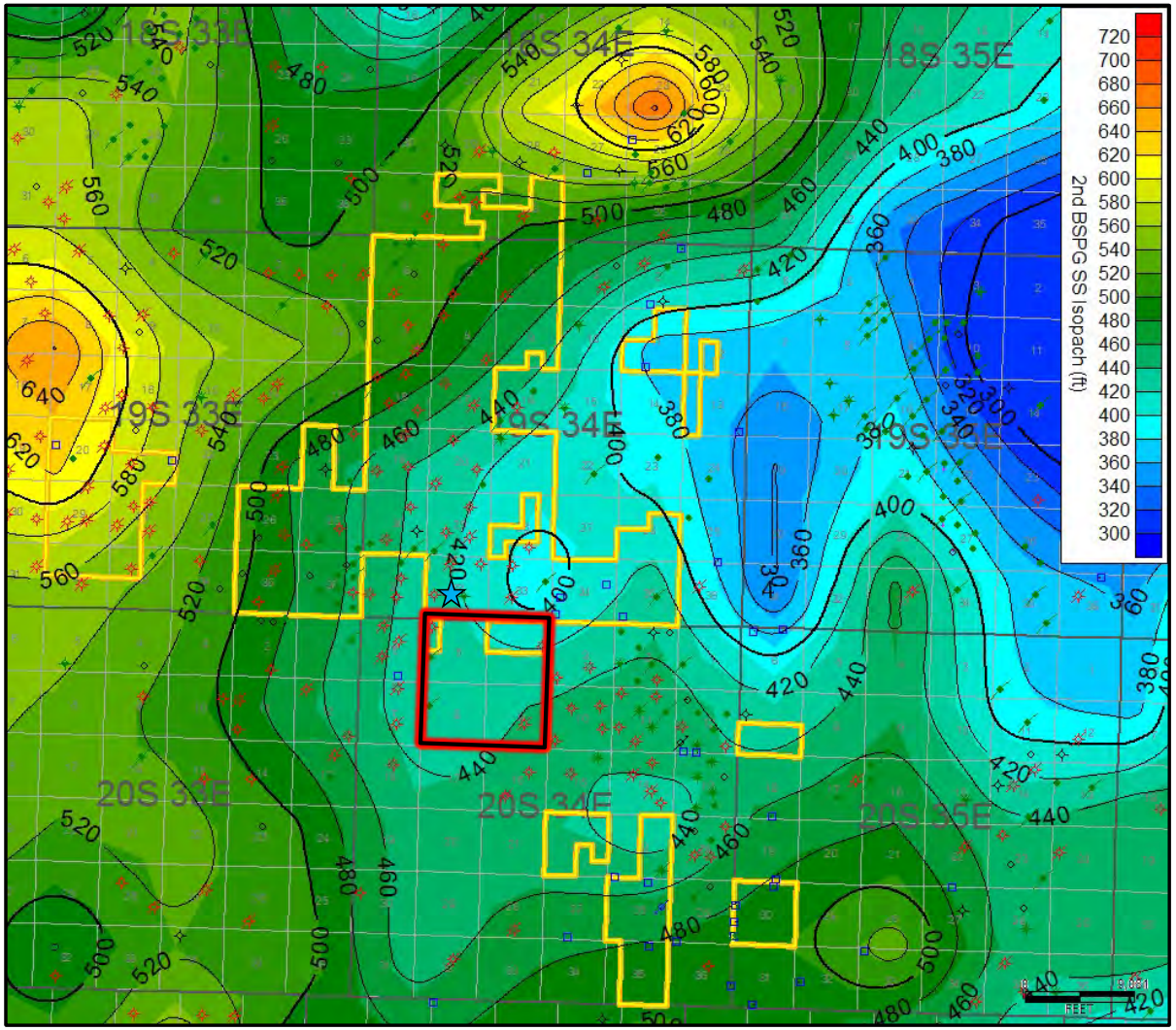
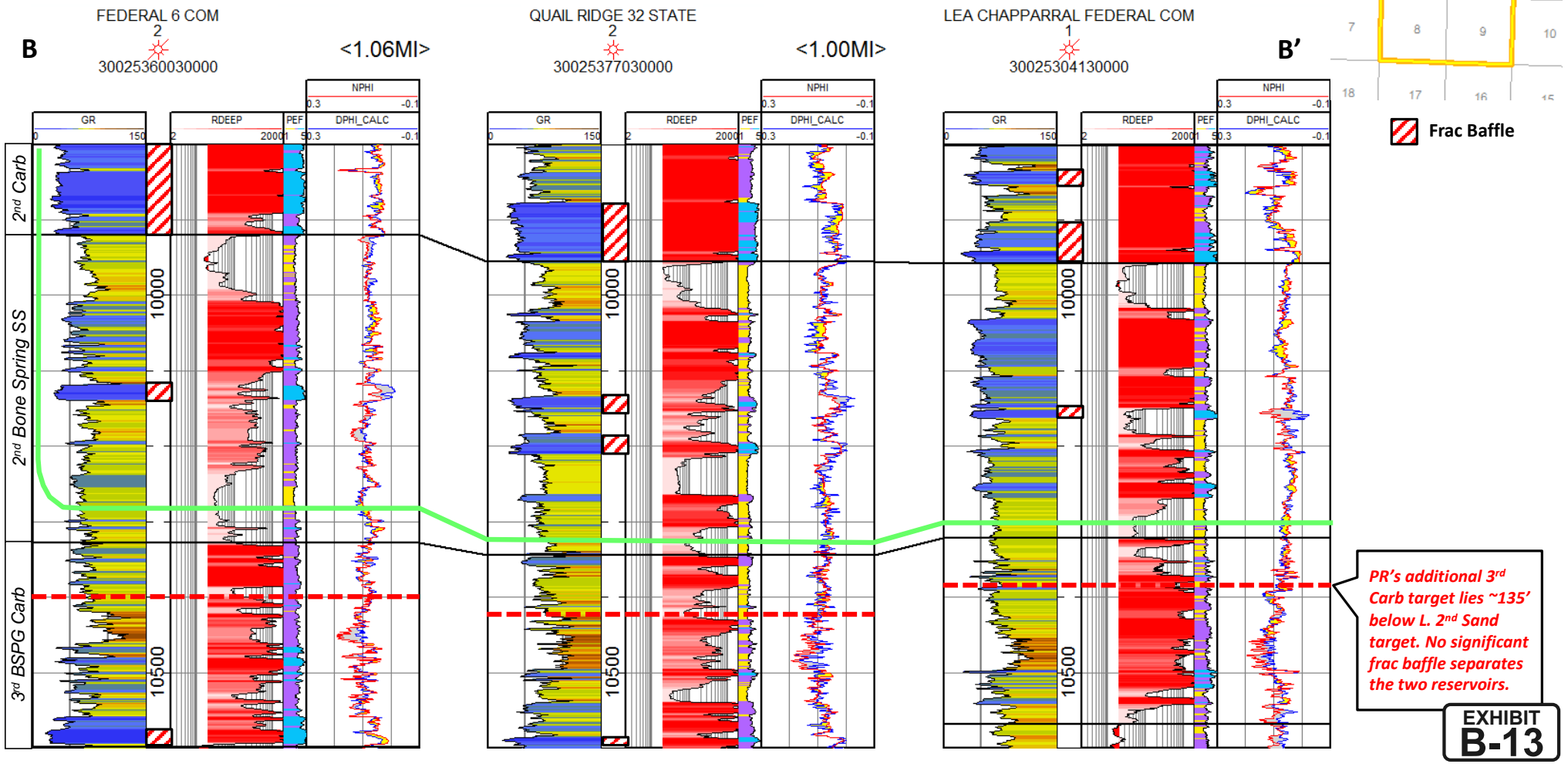


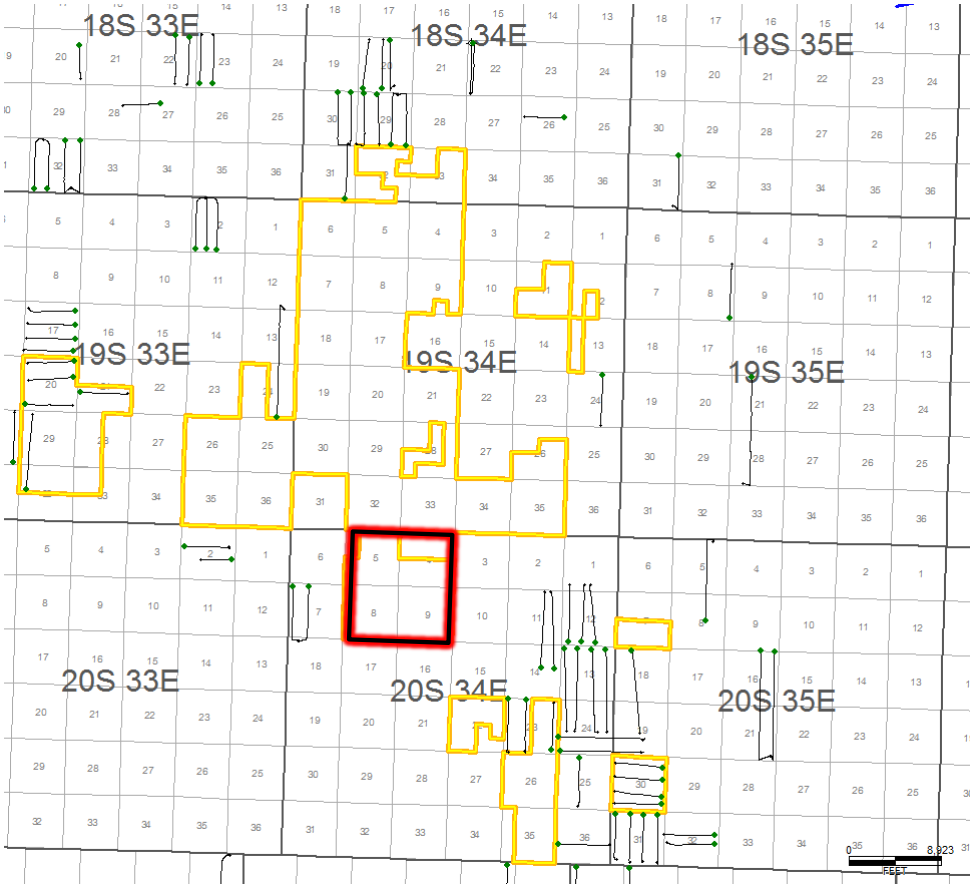
EXHIBIT
B-12

2nd Bone Spring Sand Cross Section



2nd Bone Spring Sand is Established Target

Lower 2nd Bone Spring Sand Producers



3rd Bone Spring Carb Producers

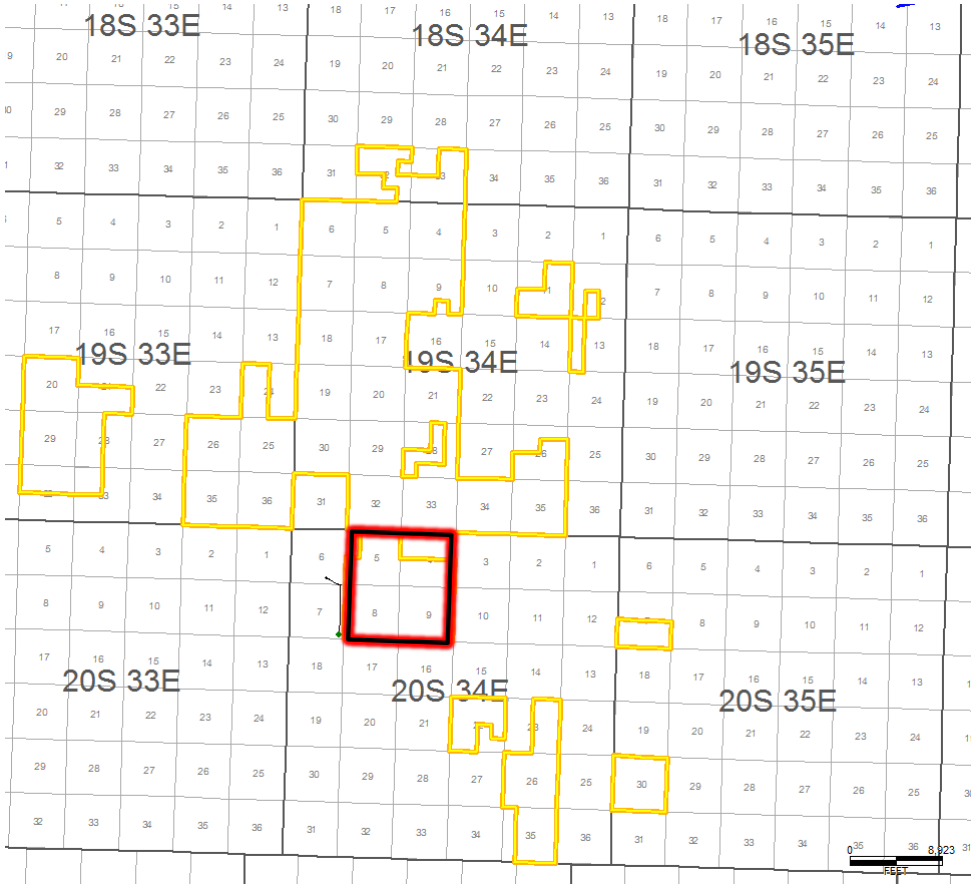
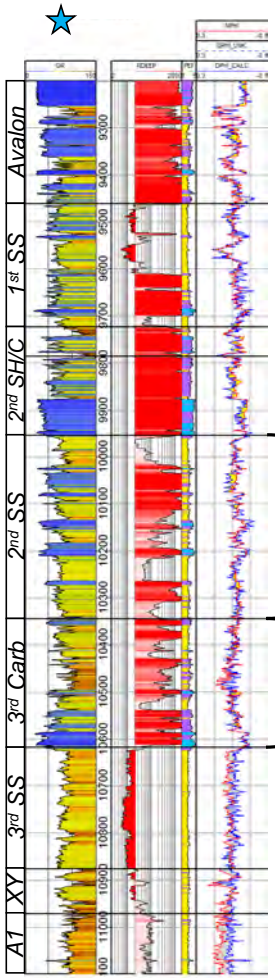


EXHIBIT
B-14

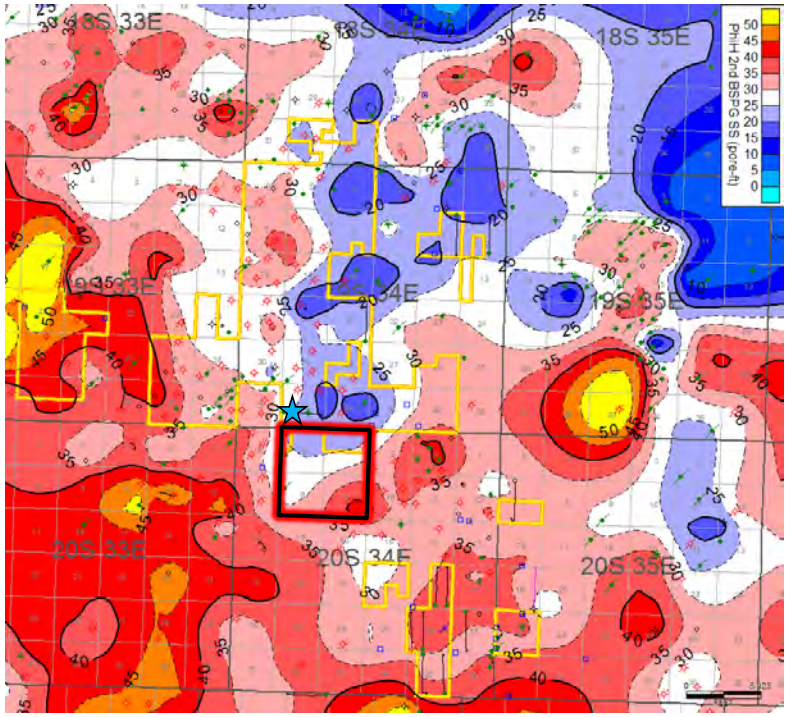
PhiH L 2nd Sand vs. 3rd Carb

Quail Ridge 32
State 2



PhiH 2nd Bone Spring Sand

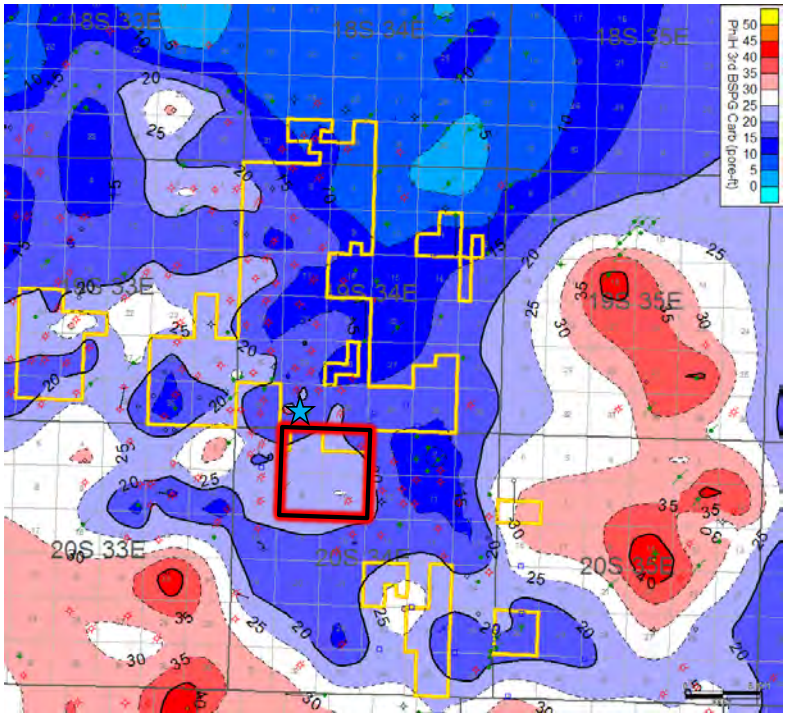
CTRA Target



Avg PhiH in 3rd SS = 30
60% of total reservoir

PhiH 3rd Bone Spring Carb

Permian Resources Additional Target



Avg PhiH in WFMP XY = 20
40% of total reservoir

EXHIBIT
B-15

1st Bone Spring Sand

COTERRA

1st Bone Spring Sand Structure

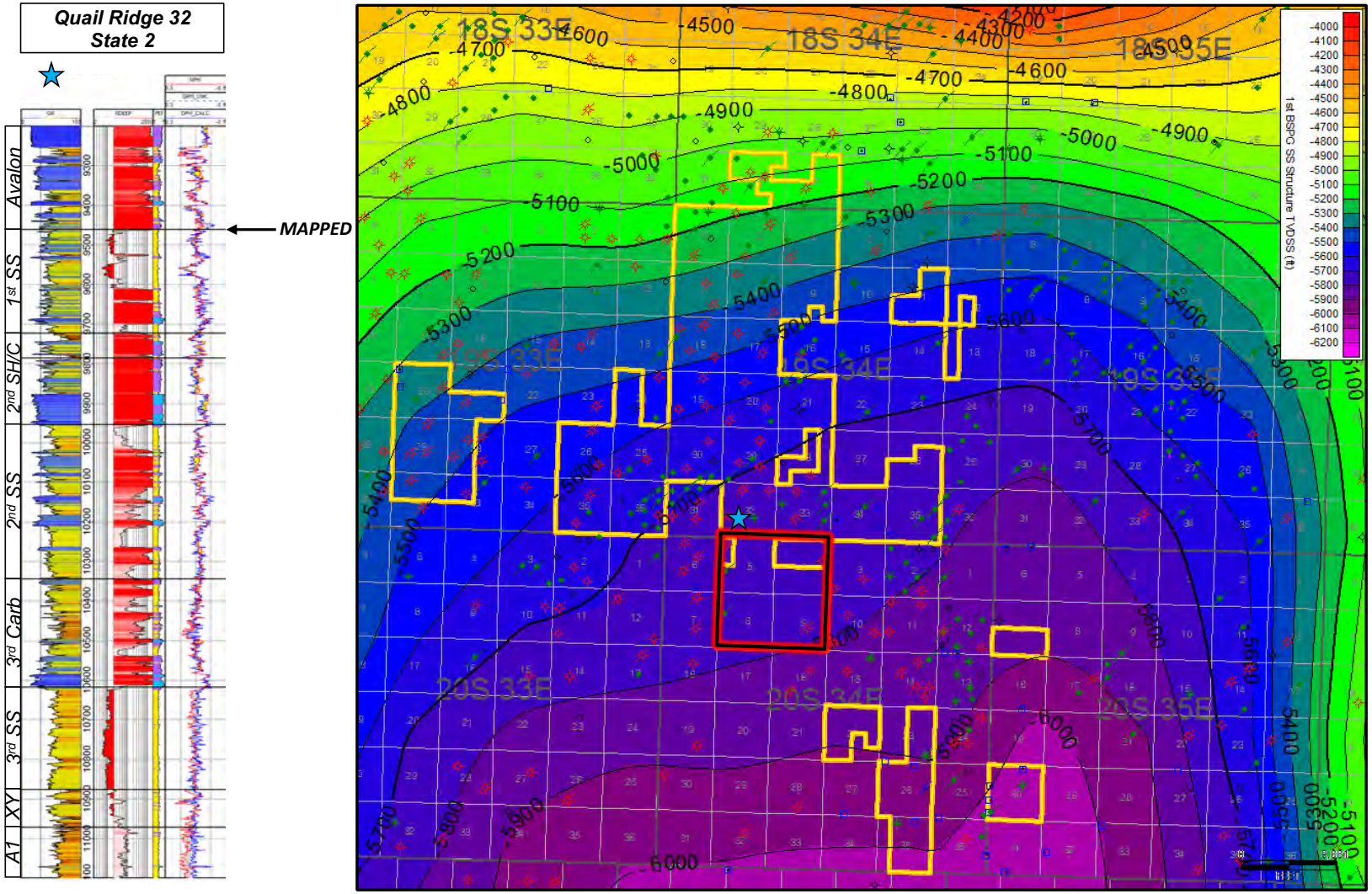
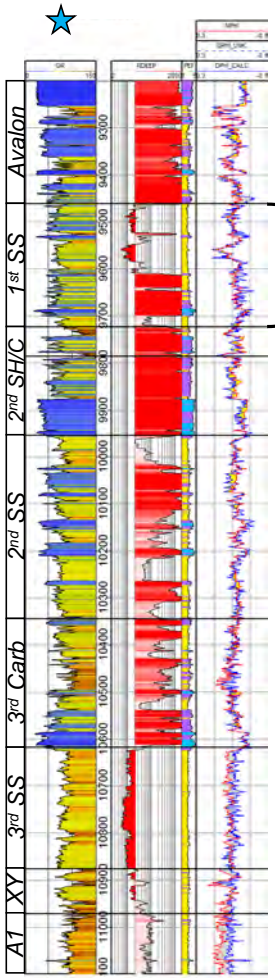


EXHIBIT
B-16

1st Bone Spring Sand Isopach

Quail Ridge 32
State 2



MAPPED

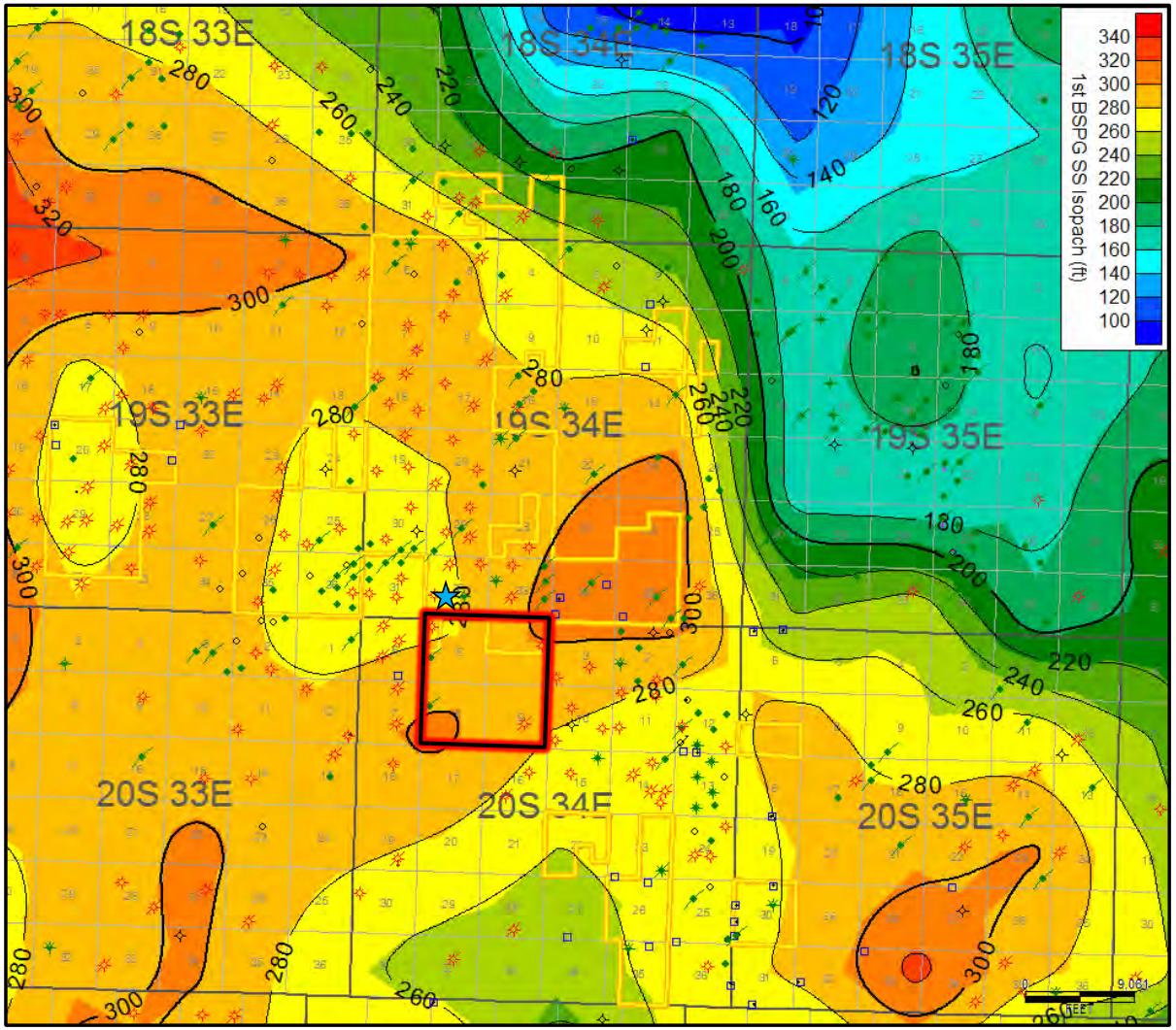
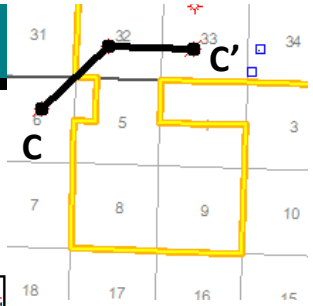


EXHIBIT
B-17

1st Bone Spring Sand Cross Section



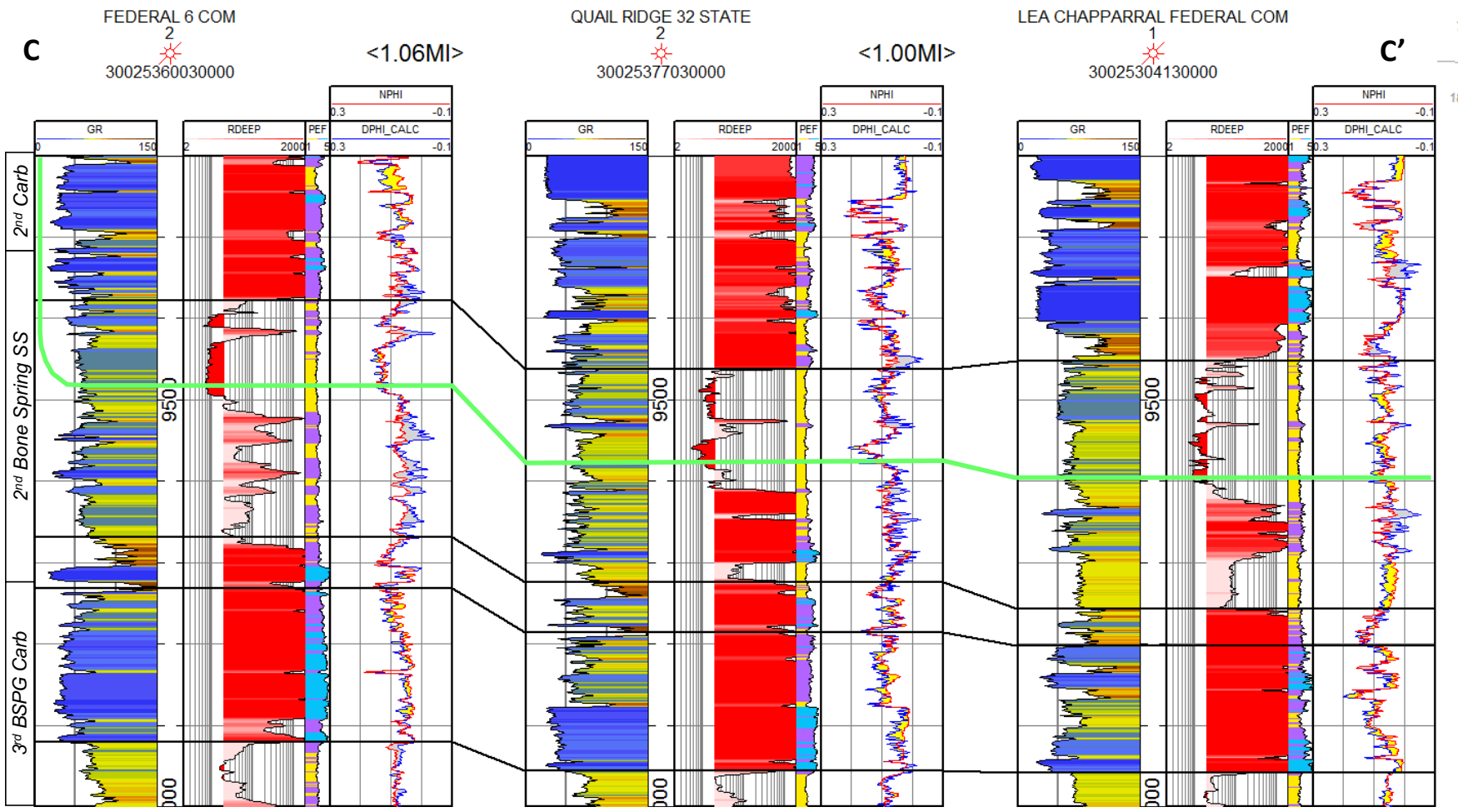


EXHIBIT
B-18

Wolfcamp XY

COTERRA

Wolfcamp XY Structure

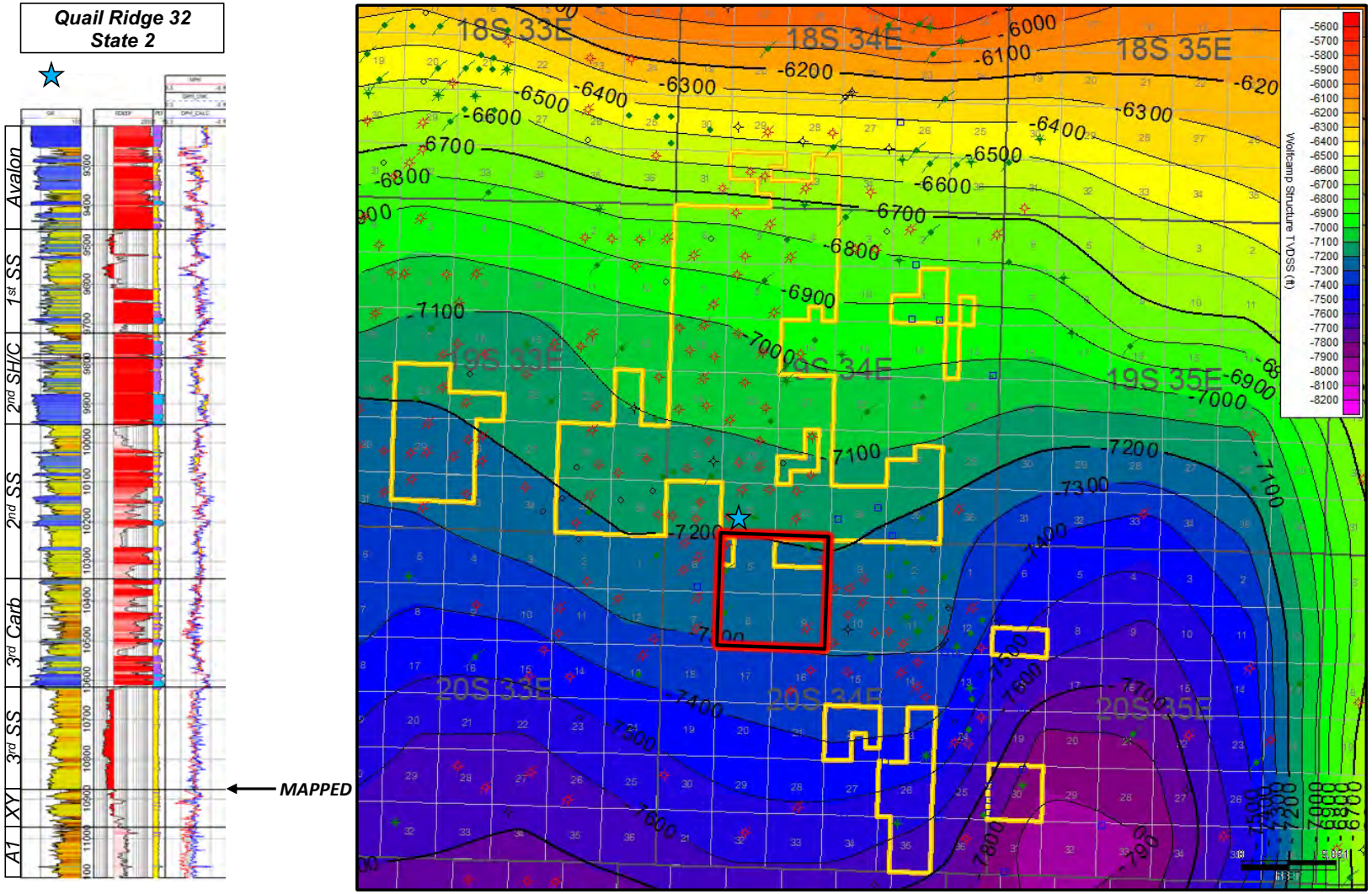
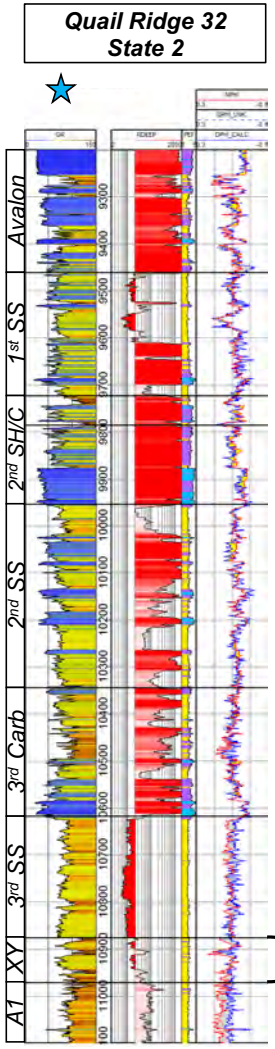


EXHIBIT
B-19

Wolfcamp XY Isopach



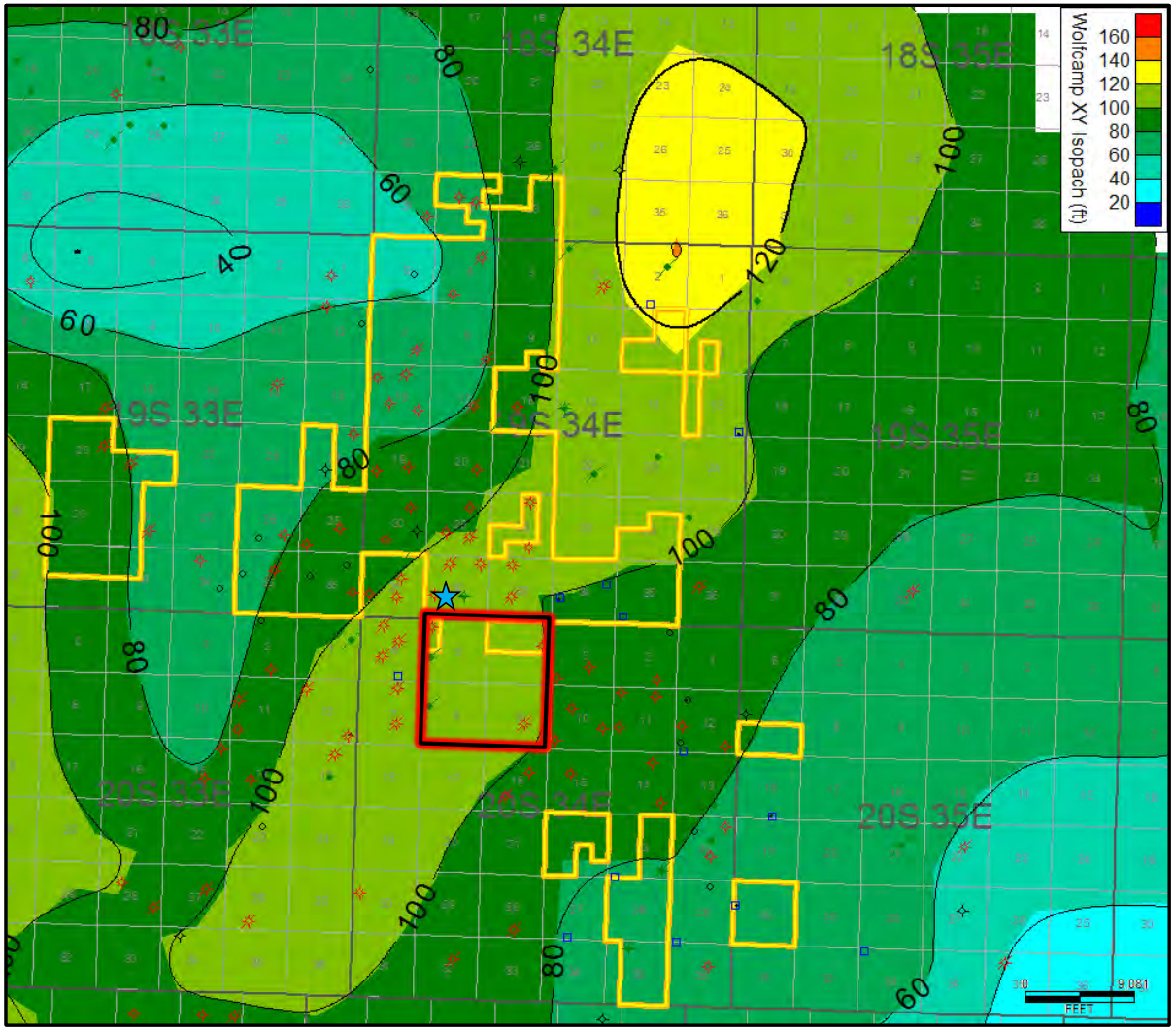
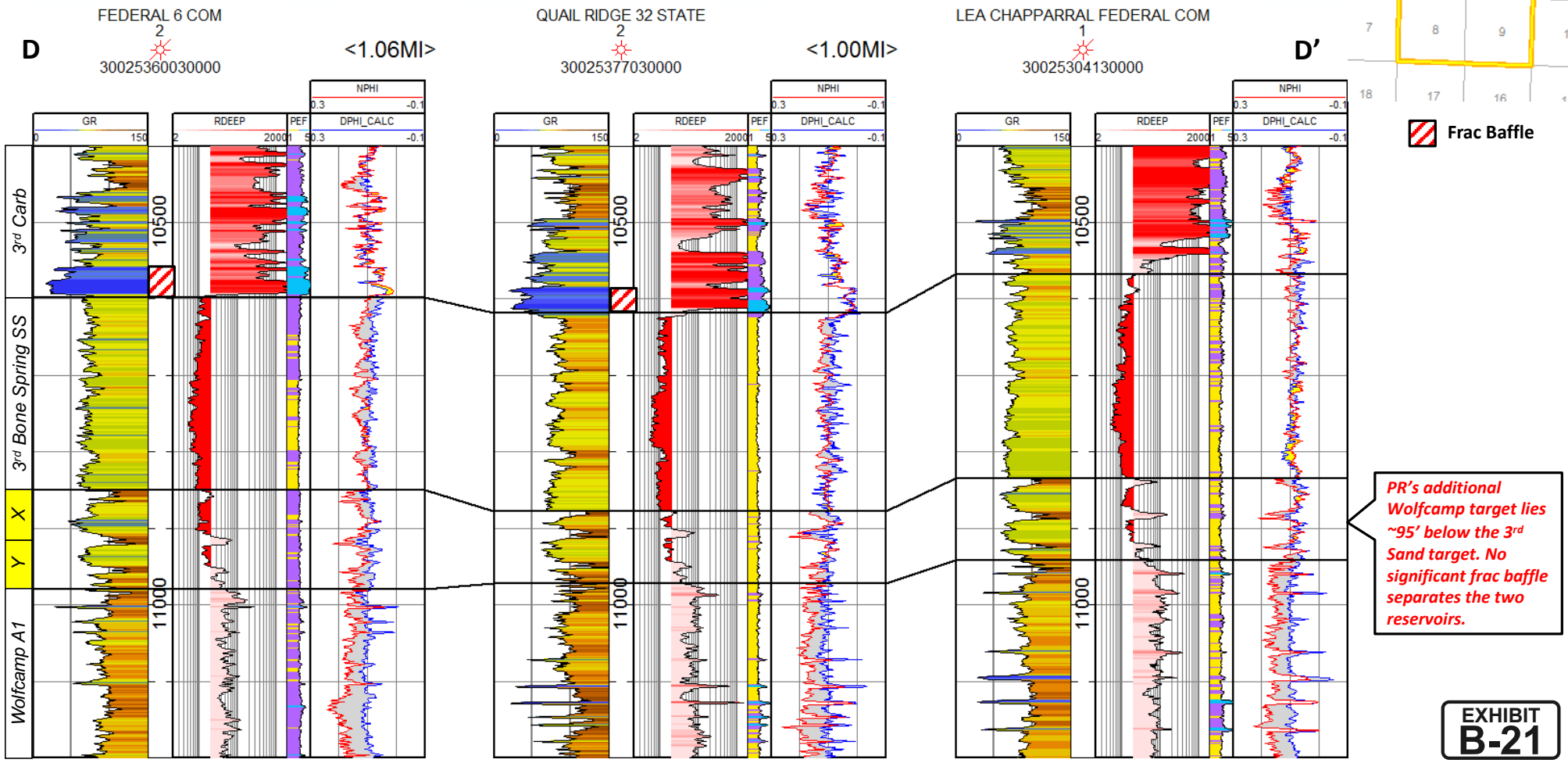
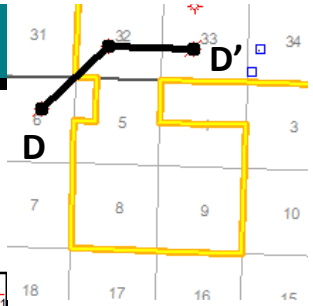


EXHIBIT
B-20

Wolfcamp XY Cross Section





Frac Baffle

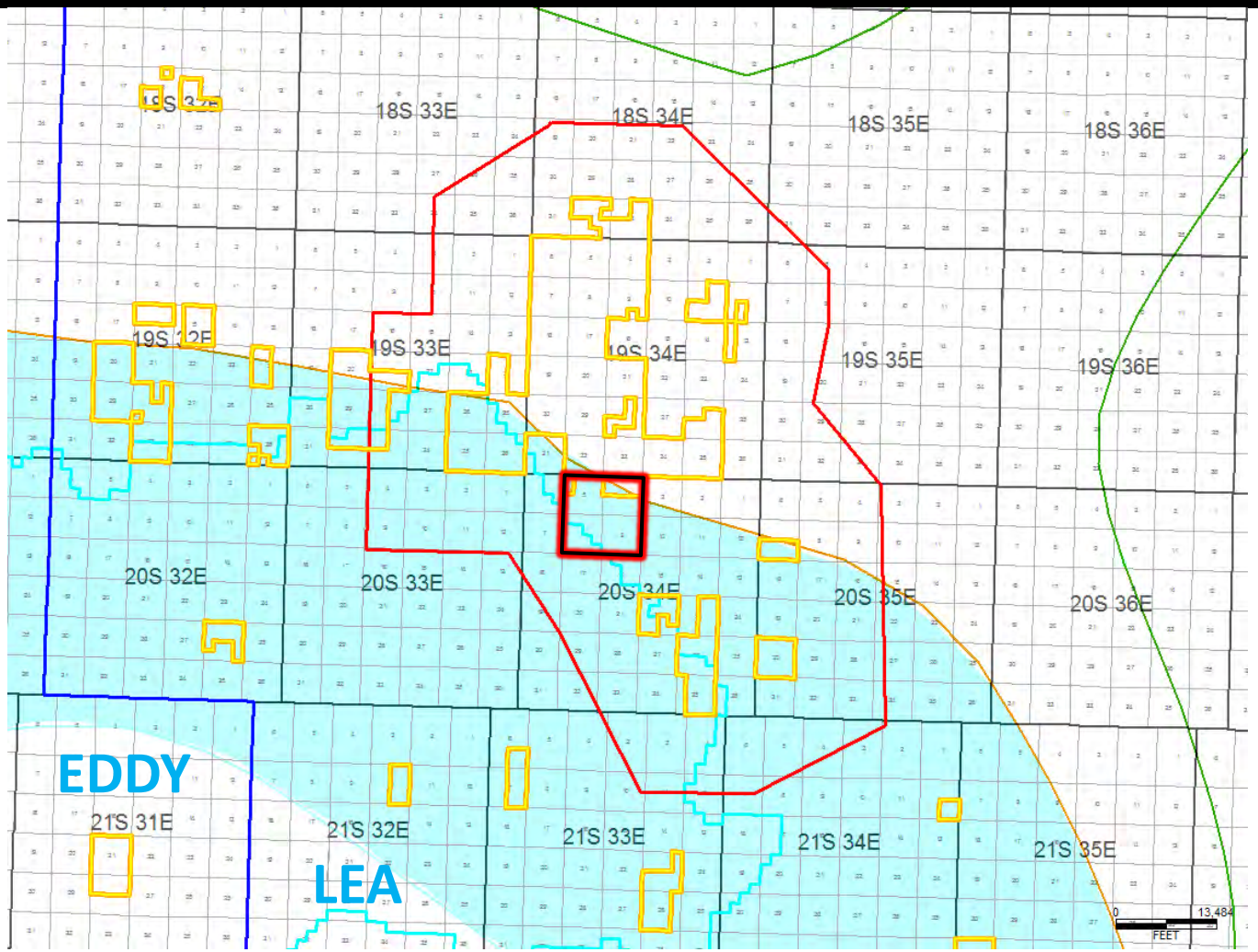
PR's additional Wolfcamp target lies ~95' below the 3rd Sand target. No significant frac baffle separates the two reservoirs.

EXHIBIT B-21

No Frac Baffle Between Wolfcamp and 3rd Sand

COTERRA

3D Seismic Outline

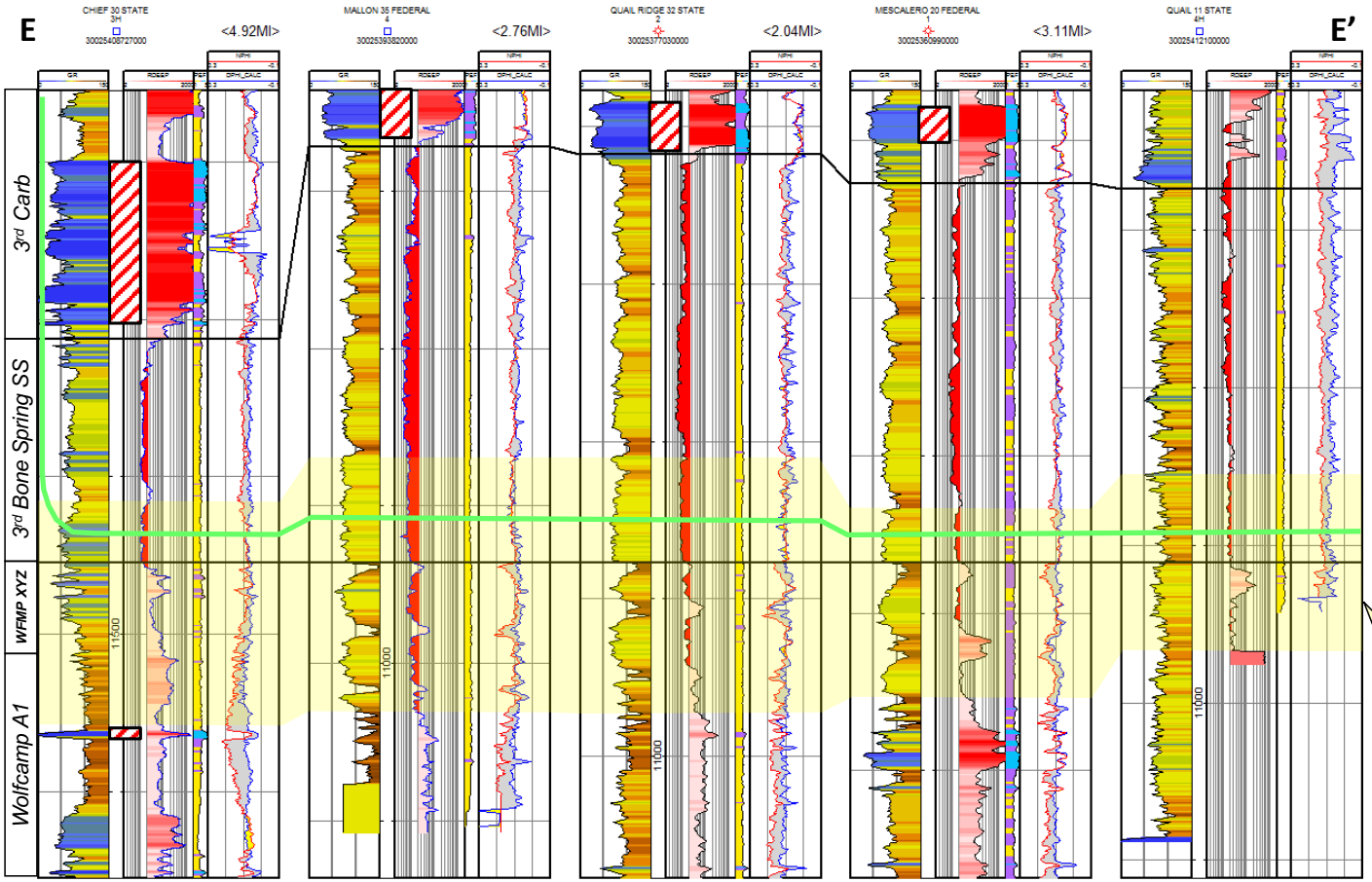


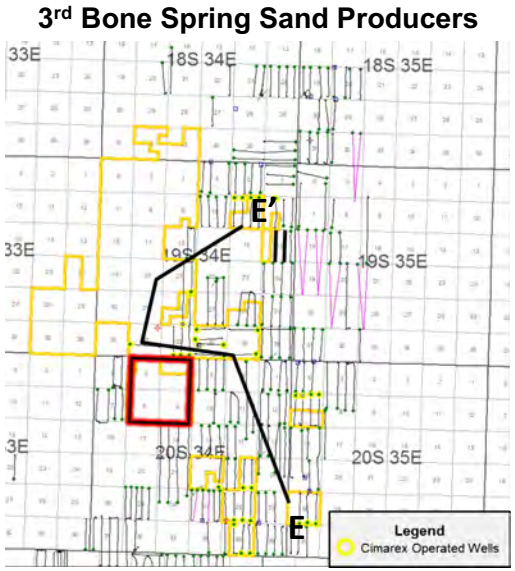
- Capitan Reef
- Cimarex 3D Seismic
- Potash Outline
- Cimarex Acreage
- Mighty Pheasant & Loosey Goosey

EXHIBIT
B-22

3D seismic survey processed in 2022

No Frac Baffle Present Between Wolfcamp & 3rd Sand at Offset 3rd Sand Developments





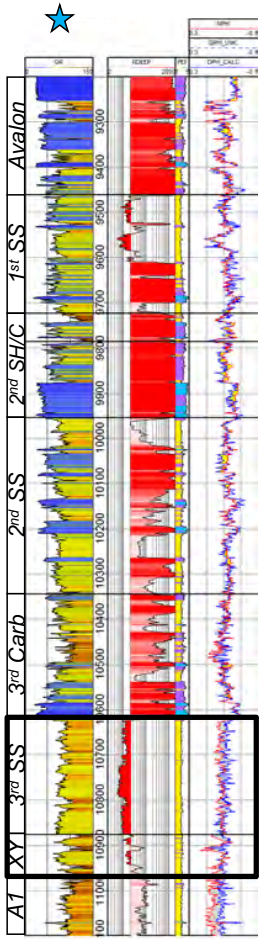
Basal 3rd Sand is primary target across the area (green line). Frac baffles are not located between the 3rd Sand target and Upper Wolfcamp across these developments. Example of a frac baffle that would most likely prevent communication between formations is within the 3rd Carbonate in the Chief 30 State 3H log.

Frac Baffle

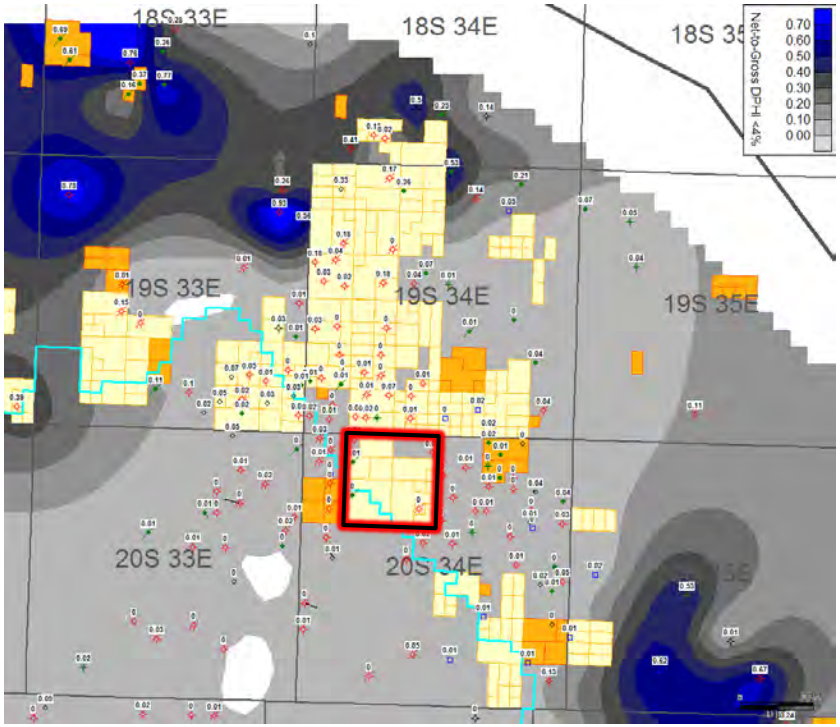
EXHIBIT B-23

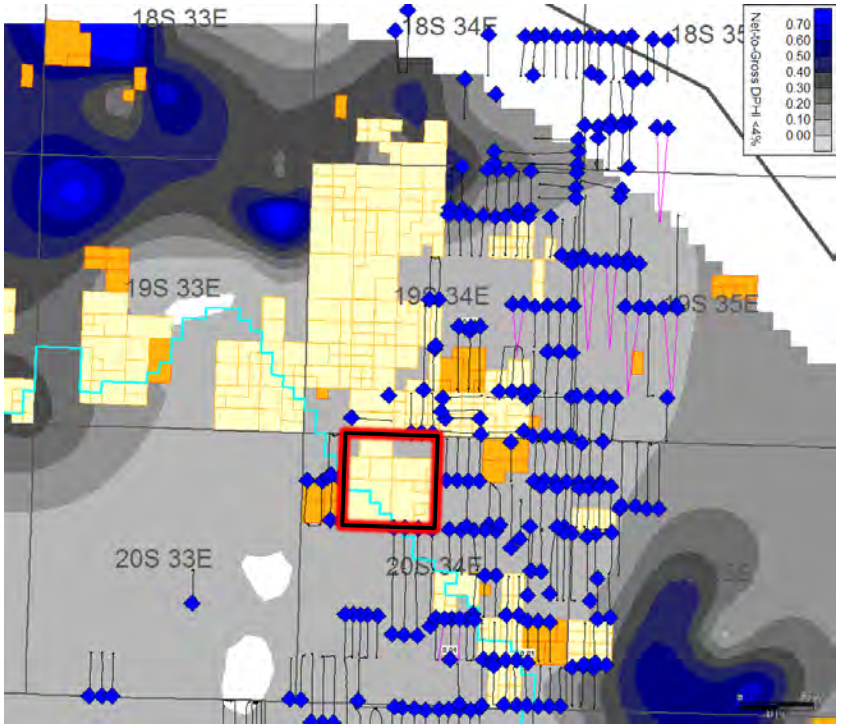
No Frac Baffles Between BSPG & WFMP at Existing Production

Quail Ridge 32 State 2



Net-to-Gross DPHI <4%
(0% means there is no frac baffle)





MAPPED

Scale is from 0% to 70%, so value = 0 means that there is no occurrence of density porosity dropping below 4% within 3rd Sand & Wolfcamp XY (no frac baffle)

◆ 3rd Bone Spring Sand

EXHIBIT B-24

TAB 4

Case Nos. 23594-23601

Exhibit C:	Self-Affirmed Statement of Calvin Boyle, Facility Engineer
Exhibit C-1:	Mighty Pheasant - Loosey Goosey Development Plan
Exhibit C-2:	Mighty Pheasant - Loosey Goosey Operations and Environmental Overview

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

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

Case Nos. 23448 – 23451
(Mighty Pheasant; Bone Spring; Secs. 5 & 8)

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

Case Nos. 23594 – 23597
(Mighty Pheasant; Wolfcamp; Secs. 5 & 8)

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

Case Nos. 23452 – 23455
(Loosey Goosey; Bone Spring; Secs. 4 & 9)

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

Case Nos. 23598 – 23601
(Loosey Goosey; Wolfcamp; Secs. 4 & 9)

SELF-AFFIRMED STATEMENT OF CALVIN BOYLE

1. I am over the age of 18 and have the capacity to provide this Statement.

2. I graduated from the University of Oklahoma in 2016 with a Bachelor of Science degree in Petroleum Engineering. I received a Master of Business Administration from Oklahoma State University in 2018.

EXHIBIT
C

3. I was employed by Haliburton Energy Services from June 2017 until March 2019, as a Technical Professional, responsible for designing and managing cementing programs for all of XTO Energy Inc.'s drilling rigs in the Mid-Continent.

4. I joined Cimarex Energy Co. ("Cimarex") in March 2019. Since October 1, 2021, when Cimarex merged with Cabot Oil & Gas Corporation to form Coterra Energy Inc. ("Coterra"), I have been an employee of Coterra.

5. I have been a Facility Engineer for Cimarex and then Cottera since April 2021. As the Facility Engineer, I am responsible for planning, designing, and managing production facilities operated by Cimarex. Coterra has charged me with ensuring that production facilities are designed and managed so as to minimize environmental impacts.

6. I manage construction budgets for production facilities and allocate capital to optimize production facilities. I have appended a copy of my resume as Attachment A to my Statement.

7. This Statement provides a description and overview of the facilities that Cimarex will implement in its development plan for the Mighty Pheasant Wells in Sections 5 and 8, Township 20 South, Range 34 East; and the Loosey Goosey Wells in Sections 4 and 9, Township 20 South, Range 34 East, covering 2,880 acres, more or less. (The 2,880 acres are referred to herein as the "Subject Lands" and the Development Plan for the Subject Lands is referred to herein as the "MP-LG Development Plan.").

8. I assisted in the formulation of Cimarex's plans to develop the hydrocarbons in the applications filed in the above-referenced Cases and am familiar with facilities that Cimarex is proposing in its applications as well as the AFEs associated with all of the wells that Cimarex is

proposing in these cases and the AFEs associated with the additional wells that Cimarex is planning to drill on the Subject Lands.

Exhibit C-1:
Mighty Pheasant - Loosey Goosey Development Plan.

9. As shown on Exhibit C-1, Cimarex will develop the Subject Lands with only 33.9 acres of disturbance to the surface, consisting of 2.33 acres of roads, 25.25 acres for pads, and 6.31 acres for a single battery. Thus, the results in a minimal 1.17% disturbance of the Subject Lands that substantially minimizes the environmental impact of the plan of development.

10. After the four drill pads and bulk gathering lines are installed, Cimarex will rotate back to these existing drill pads for all activities and operations within the MP-LG Development Plan, thus requiring no further surface disturbance to the lands. By minimizing dirt work in this way, Cimarex will reduce potential air pollution and preserve both native vegetation and natural habitat.

11. Cimarex will use a single Battery for all of the 27 to 34 wells that Cimarex intends to drill as part of the MP-LG Development Plan. A single battery eliminates two additional batteries that would otherwise be required, thereby eliminating additional surface disturbances and high-risk emissions devices.

12. Cimarex will develop the Subject Lands utilizing best-in-class gas capture technology and operations. Cimarex has already initiated this approach by securing proposals for oil, water, and gas takeaway using such technology and by submitting load requests to power surface equipment to develop the acreage. Cimarex has implemented an operations policy that encompasses zero (0) routine flaring and the use of tankless facilities that offer superior capture rates of low-pressure gas (>=90% low pressure capture) for new developments. Cimarex will utilize these policies in the development plan.

Exhibit C-2:
Mighty Pheasant - Loosey Goosey Operations and Environmental Overview

13. Cimarex will construct a single tankless facility for the MP-LG Development Plan. Cimarex will spend an additional $610,000 to lower the emission's risk of the facility. Cimarex's tankless facility utilizes surge vessels rather than tanks. In doing so, Cimarex removes all high-risk emissions devices from the facility. Cimarex will not utilize a high-pressure flare unless H_2S is present which allows Cimarex to minimize flaring. Cimarex will also install redundant vapor recovery units to increase low pressure gas capture and minimize flaring.

14. Cimarex will spend an additional $255,000 to lower the spill risk of the facility. Cimarex will install lined containment around all equipment and pumps. Berm switches will be installed inside the containment to minimize a spill if one should occur. Cimarex will install stainless steel piping in high spill risk areas which significantly reduces the likelihood of a spill occurring. Cimarex will install pump seal leak detection to minimize the likelihood of a spill off of the water transfer pumps.

15. The Exhibits to this Self-Affirmed Statement were prepared by me or compiled from Cimarex's company business records under my supervision and/or approval.

16. The foregoing is correct and complete to the best of my knowledge and belief.

I understand that this Self-Affirmed Statement will be used as written testimony before the Division in Case Nos. 23448-23455 and 23594-23601 and affirm that my testimony herein is true and correct, to the best of my knowledge and belief and made under penalty of perjury under the laws of the State of New Mexico.

Calvin Thomas Boyle

8-2-23

Date Signed

Calvin Thomas Boyle

6001 Deauville Blvd. Suite 300N Midland, TX 79706 | (918)-891-1095 | calvin.boyle@coterra.com

Education

Master of Business Administration
Concentration: Energy Business
Oklahoma State University – Stillwater, OK
Graduated August 2018; GPA: 4.00

Bachelor of Science in Petroleum Engineering
University of Oklahoma – Norman, OK
Graduated May 2016; GPA: 3.71

Work Experience

Coterra Energy (Formerly Cimarex Energy) – Facility Engineer
Midland, TX (April 2021-present)

- Plan, supervise, and design capital projects to minimize environmental impact
- Efficiently allocate capital to optimize production facilities
- Manage $74MM capital construction budget
- Implement Vapor Recovery Unit life plan to effectively decrease emissions
- Coordinate with field personnel and executive management for successful project execution
- Software proficiencies: Promax, ARIES, Carte, XSPOC, Spotfire, Google Earth, and various

Coterra Energy (Formerly Cimarex Energy) – Production Engineer
Midland, TX (March 2020-April 2021)

- Monitor production of more than 200 oil and gas wells in Lea and Eddy County New Mexico (Gas Lift, ESP, flowing, and pumping wells)
- Proposed, oversaw, and executed the divestiture of a 30 well asset
- Design and implement workovers (Rod Lift, ESP, Plunger, Acid Stimulation)
- Implemented the XSPOC system which decreased downtime by 12%

Coterra Energy (Formerly Cimarex Energy) – Field Engineer
Jal, NM (March 2019 to March 2020)

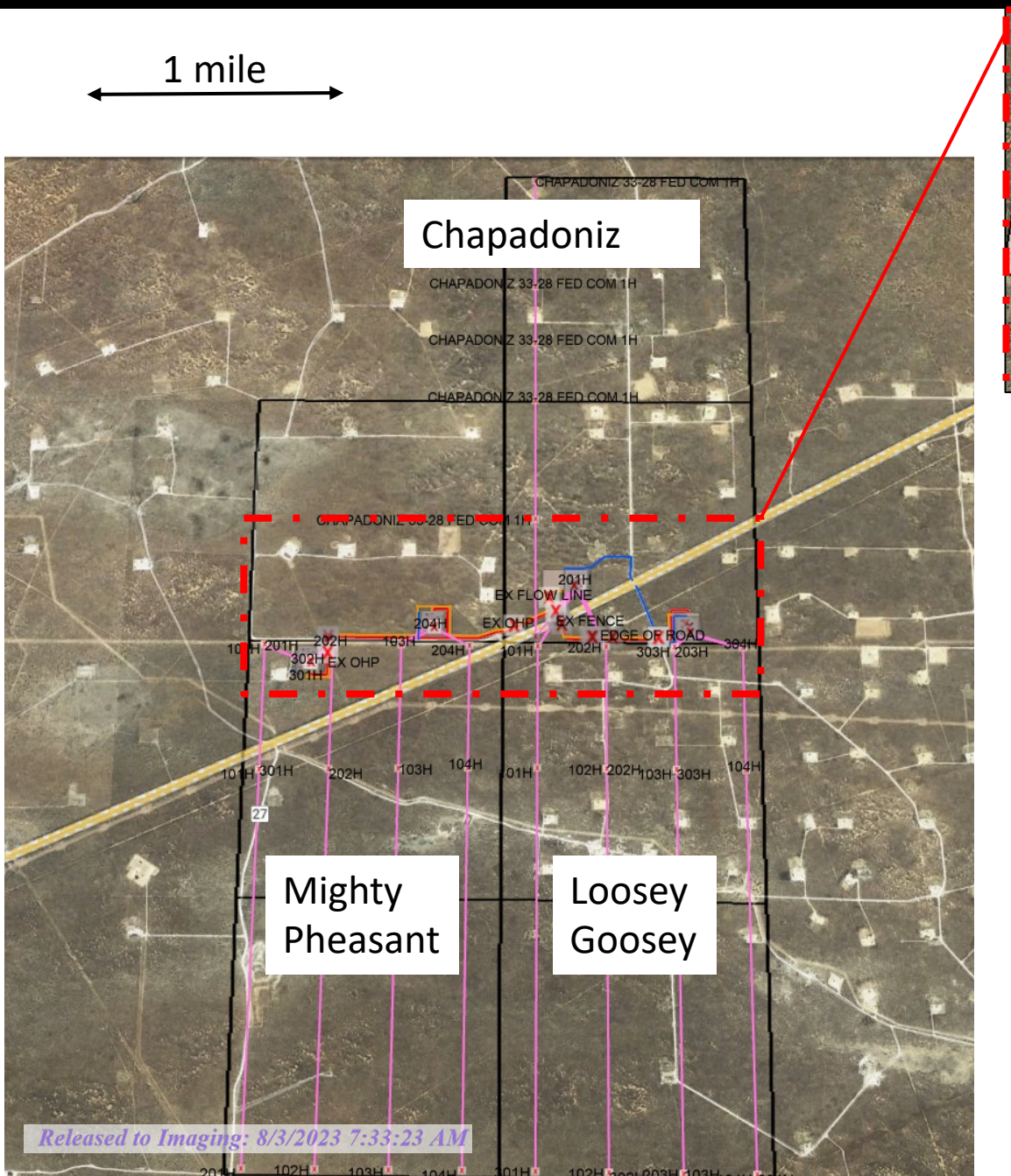
- Managed production of 31 oil wells (Gas lift, pumping, plunger, and flowing)
- Optimized the wells to increase production and decrease LOE
- Monitored flare pilot and VRUs to prevent methane emissions from flares and tanks
- Maintained production facilities

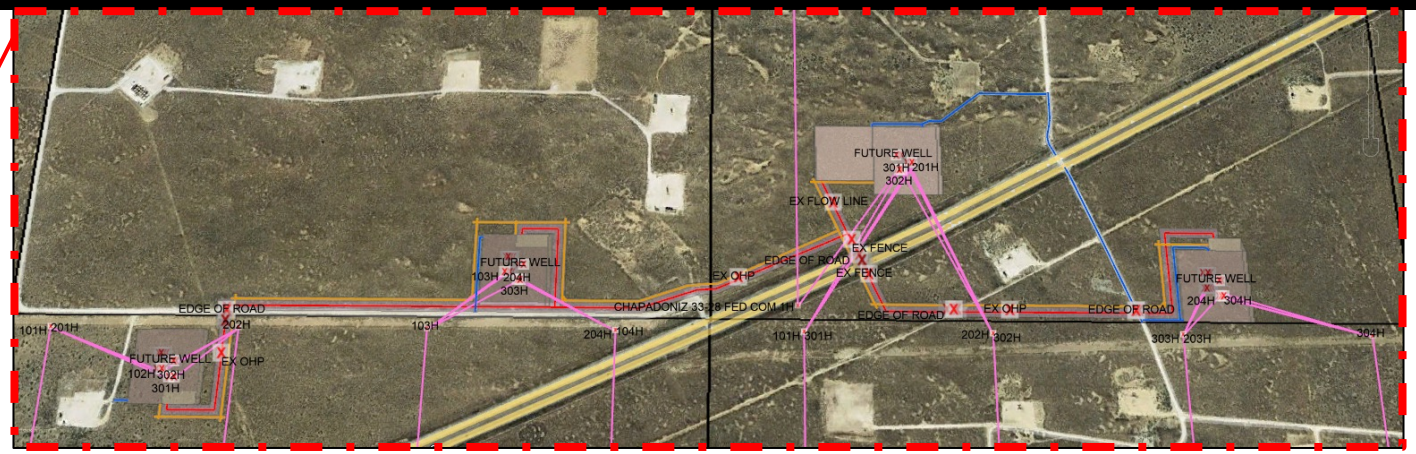
Halliburton Energy Services – Technical Professional, Cement
El Reno, OK (June 2017 to March 2019)

- Manage and design the cementing program for all of XTO's drilling rigs in the Mid-Continent; designing the cement programs in order to meet or exceed all of the XTO's specifications on each well drilled
- Design cement slurries for thickening time, compressive strength, rheological properties, and fluid loss; proactively tailoring cement slurries to achieve desired properties and alleviate risk for both my customers and Halliburton
- Run foam cement jobs on location; monitoring multiple variables and pumping nitrogen to ensure a successful job

Attachment A

Mighty Pheasant Loosey Goosey Development Plan





Single Battery develops – 27 to 34 planned wells

- Oil water gas power ROW connects 4 drilling pads with on pad separation to Battery
- Single battery eliminates 2 additional batteries worth of disturbance and high-risk emissions devices.
- Cimarex permits 0 routine flaring, and our design has >=90% low pressure vapor capture
- Roads (2.33) acres, pads (25.25 acres) and battery (6.31 acres) create ~33.9 acres of disturbance allowing for full development of ~2880 acres, 1.17% disturbance.
- Pipelines are onetime construction; follow-up wells will use existing gathering off pad which is installed the first time a well is drilled off a drill pad. All future wells create no new disturbance off drill pads minimizing environmental impact

Operations and Environmental Overview

Tankless Battery Design

- Central battery utilizing surge vessels
- Satellite separators utilized to eliminate future ground disturbance

Emissions Reduction

- 0 high risk emissions devices
- Removal of high-pressure flare (Shut wells in during high line pressure events)
- Redundant vapor recovery units to increase low-pressure gas capture and reduce flaring

Spill Mitigation

- Containment around all equipment and pumps
- Stainless steel piping in high-risk areas
- Transfer pump seal leak detection
- Berm switches in containments

TAB 5

Case Nos. 23594-23601

Exhibit D: Self-Affirmed Statement of Eddie Behm, Petroleum Engineer
Exhibit D-1: Cimarex's High Profile Role in Lea County
Exhibit D-2: Cimarex's Overall Production in Lea County
Exhibit D-3: Map of 3rd Bone Spring Sand Producers
Exhibit D-4: 3rd Sand Well Count by Landing and Operators
Exhibit D-5: Black and Tan 3rd Sand Composite Forecast 6 wells (Before WC completion)
Exhibit D-6: Black and Tan 3rd Sand Composite Forecast 6 Wells Post Wolfcamp Frac
Exhibit D-7: Black and Tan Wolfcamp Composite Forecast 6 wells
Exhibit D-8: Black and Tan Wolfcamp Composite Forecast 5 wells
Exhibit D-9: Lessons learned from Black & Tan Development
Exhibit D-10: Diagram of Staggered Landing Wolfcamp 3rd SS Vs. 3rd SS Flat
Exhibit D-11: Black and Tan Analog comparison to MP/LG
Exhibit D-12: Landing Zone Matters; Five Years Ago, Cimarex's Perry Test Confirmed 3rd SS Landing as Best Target
Exhibit D-13: Vrena Frac Test
Exhibit D-13: Dataset Identifying all Wells in Area of Interest
Exhibit D-14: Production Projections: 1280 Scale
Exhibit D-15: Average Cumulations of Oil
Exhibit D-16: Projected Oil Rate: 1280 Scale
Exhibit D-17: Batman WH vs. EH
Exhibit D-18: Capital Plan Comparison
Exhibit D-19: Cimarex Majority Working Interest
Exhibit D-20: Comparison of Development Plans
Exhibit D-21: PV10 Comparison: Mighty Pheasant vs. Joker
Exhibit D-22: PV10 Comparison: Loosey Goosey vs. Bane
Exhibit D-23: Ownership Rations and Depth Severances
Exhibit D-24: API List of Wells by Formation

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

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

Case Nos. 23448 – 23451
(Mighty Pheasant; Bone Spring; Secs. 5 & 8)

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

Case Nos. 23594 – 23597
(Mighty Pheasant; Wolfcamp; Secs. 5 & 8)

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

Case Nos. 23452 – 23455
(Loosey Goosey; Bone Spring; Secs. 4 & 9)

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

Case Nos. 23598 – 23601
(Loosey Goosey; Wolfcamp; Secs. 4 & 9)

SELF-AFFIRMED STATEMENT OF EDDIE BEHM

1. I am over the age of 18 and have the capacity to provide this Statement.

2. For the past six years, I have been employed as a Production Engineer and Reservoir Engineer in the Delaware Basin for Cimarex Energy Co. ("Cimarex") and then Coterra Energy Inc ("Coterra") as of October 1, 2021, when Cimarex merged with Cabot Oil & Gas

Corporation to form Coterra. My primary focus has been the development of the Bone Spring and Wolfcamp formations in Lea County, New Mexico.

3. I graduated from the University of Tulsa in 2011 with a Bachelor of Science degree in Petroleum Engineering. I was employed by Occidental Petroleum Corporation and California Resources Corporation from 2011 to 2017, prior to working for Cimarex.

4. I have previously testified before the Oil Conservation Division ("Division") as an expert in Petroleum Engineering and my credentials have been accepted of record by the Division.

5. I provided petroleum engineering and petroleum reservoir expertise with respect to the formulation of Cimarex's plans to develop the Loosey Goosey Wells in Sections 4 and 9 and the Mighty Pheasant Wells in Sections 5 and 8, Township 20 South, Range 34 East, Township 20 South, Range 34 East, covering 2,880 acres, more or less. (The 2,880 acres are referred to herein as the "Subject Lands" and Cimarex's Development Plan for the Subject Lands is referred to herein as the "Goosey-Pheasant Plan.")

6. I am also thoroughly familiar with the competing applications filed by Read & Stevens, Inc. in Case Nos. 23508-23523 for its Bane Wells proposed for Sections 4 and 9 and its Joker Wells proposed for Section 5 and 8 (collectively referred to as the "Bane-Joker Plan"). Read & Stevens designated Permian Resources Operating, LLC as the Operator for its proposed development. (Read & Stevens, Inc. and Permian Resources Operating, LLC are collectively referred to herein as "Permian Resources.")

7. This Statement compares Cimarex's Goosey-Pheasant Plan to Permian Resources' Bane-Joker Plan to be used in the hearing before the Division on these completing applications.

8. Based on my educational background, my experience as a Petroleum Engineer in the area surrounding the competing plans that contain the same geological and reservoir

characteristics (referred to herein as the "Area of Interest" and as the "AOI"), production data from wells completed in the 3rd Bone Spring Sand and in the Upper Wolfcamp in the Area of Interest, Recovery factors within the subject lands, Stack Stagger results throughout Lea County in various geologic settings, data from the Hydraulic Fracturing Test Site 2 ("HFTS2"), and the costs of the competing plans, it is my opinion regarding the development to the Subject Lands as an expert in the field of Petroleum Engineering that:

- The 3rd Bone Spring Sand ("3rd Sand") is the established single bench target;
- The optimal spacing for the 3rd Sand is four (4) laterals per Section;
- The spacing proposed by Permian Resources of eight (8) laterals per Section in the 3rd Sand is overly dense and wasteful since it will not result in an increase production to offset the additional $166 Million in capital expenditures incurred;
- Co-development of the Upper Wolfcamp in association with the development of the 3rd Sand will not result in any significant increase in the Estimated Ultimate Recovery ("EUR") of hydrocarbons and may negatively impact EUR;
- Due to the fact that the working interest owners under Permian Resources' plan will be burdened with an additional $270 Million in costs that will result in little, if any, disparities in EUR, all working interest owners will enjoy a substantial benefit if Cimarex's Goosey-Pheasant Plan is implemented, even working interest owners who own a greater interest in the Wolfcamp Formation than the Bone Spring Formation; and
- Conversely, all working interest owners of the Subject Lands will suffer considerable reduction in their return on investment if Permian Resources' Joker-Bane Plan is implemented, even working interest owners who own a greater interest in the Wolfcamp Formation than the Bone Spring Formation.

9. The information on which I am basing my opinions are the type of information that an expert in Petroleum Engineering normally relies upon in formulating opinions related to these subject matters.

Exhibits D-1 and D-2
Cimarex is a Play Leader in Lea County

10. **Exhibits D-1 and D-2** show the top fifteen (15) operators in Lea County from 2018-2022, based on the Average First 12 Month Cum BOE per 1000 feet of laterals (Ex. D-1) and based on Average First 12 Month Cum Oil BBL per 1000 feet of laterals (Ex. D-2), as compiled by Enverus, Inc.

11. **Exhibit D-1** shows that from 2018-2022 Coterra/Cimarex averaged 50,749 BOE for the first twelve months for each 1,000 feet of laterals over 81 wells, while Permian Resources averaged just 30,059 BOE for that same period for 94 wells. Coterra/Cimarex is one of the top two operators in Lea County under this metric.

12. **Exhibit D-2** shows that from 2018-2022, Coterra/Cimarex averaged 34,633 barrels of oil for the first twelve months per 1,000 feet of laterals over 81 wells, while Permian Resources averages just 23,625 BOE for that same period for 94 wells. Coterra/Cimerax is one of the top two operators in Lea County under this metric.

13. While these results are dependent upon the quality of the producing formations, Cimarex's superior results are also the result of applying a similar process using barrier and flow unit identification to inform landings, full section development recovery from densely drilled projects to inform well count, and understanding how oil is distributed within the flow units to most efficiently target all the economic barrels in each development. The most important driver of our success in Lea County over this time period has been driven not only by improved lateral spacing but by recognizing whether a flat single landing or stagger is most appropriate for the flow unit or units being targeted. We target the Leonard, Avalon, 2nd Shale, Upper 2nd Sand, lower 2nd Sand, Harkey, 3rd Sand, Wolfcamp sands, Wolfcamp A, and Wolfcamp Lower A/B and over spacing

laterally or vertically risks performance of wells landed in formations above and below as well as within the same bench.

14. Recognizing when a single landing is needed and a stagger is warranted is a fundamental difference in the plans proposed. Cimarex moved from 14 well per section testing staggers as vertically tight as 40 feet in 2017 at Hallertau (Section 5, Township 26 South, Range 32 East), which targeted the X and Y as if they were separate flow units with a third landing in the A 150 feet below despite a lack of barriers. Lack of vertical separation in addition to over spacing was a common mistake 6 years ago which results quickly made obvious to operators who reduced well count and increased vertical separation. Cimarex moved from a 40 foot stagger to a single clastic landing and now targets the A at 200 to 250' of vertical separation at places like the Red Hills 32-5 and Red Hills Unit 33-4 Wells (Section 32, Township 24 South, Range 32 East and Section 33, Township 25 South, Range 32 East) where both benches exist at 9 wells per section or as a single clastic landing at the Dos Equis 12-13 Wells (Sections 12 and 13, Township 24 South, Range 32 East), 6 wells per section where carbonate has made the Middle A non-prospective. The 3rd Bone Spring Sand and Wolfcamp stagger combined with 8 wells per 1280 acres, the well count proposed by Permian, looks more like a 2018 test in both well count and vertical drainage assumptions than a 2023 development plan informed by studies like HFTS2 and all the production results from significant development within Lea County.

15. South Lea county is complex across the entire area with flow units changing drastically over several miles. Cimarex's aggregate experience in Lea County is important because it is actually harder to optimally develop properties in the Southern part of Lea County, where most of Cimarex's Lea county activity has been the last 5 years. This is due to the fact that there are more landing zones with unclear boundaries due to multiple non laterally continuous thin carbonates and

much more variation in rock quality within individual landing zones due to increased distance from sediment source. The Subject Lands are the closest thing to conventional formations in Lea County and Cimarex's experience in the County and all the lessons learned in tighter rock on spacing and vertical separation will be even more important in a region of higher porosity, higher vertical continuity, higher permeability, and more defined frac baffles and barriers, especially when paired with the ability to complete wells with higher net fracture pressure (bigger frac height/half-length at same surface pressure).

Exhibit D-3
3rd Bone Spring Sand is the Established Single Bench Target
at 4 Wells Per Section Within the Area of Interest

16. **Exhibit D-3** consists of a map of approximately 42,650 acres in the AOI that includes the Subject Lands. This Exhibit compares the development of the 3rd Bone Spring Sand (left AOI map) and the Wolfcamp (right AOI map). The laterals of the Cimarex operated wells are highlighted in yellow. The lands controlled by Cimarex are marked by yellow boundary lines.

17. In the AOI, there are little or no indications of any major geomechanical changes/frac baffles in between the 3rd Sand target and Wolfcamp Sands that are the target of Permian Resources' proposed Wolfcamp wells, indicating that these two intervals are most likely one shared reservoir tank.

18. Cimarex has substantial experience in developing hydrocarbons in the AOI based on the fact that it has executed 36 wells within the AOI, 15% of all wells. Moreover, we were an early lateral play delineator within the AOI whose results helped drive significant lateral investment in the area.

19. This Exhibit, and the data upon which it is based, coupled with Cimarex's experience within the AOI, supports my opinion that the reservoir of hydrocarbons in the AOI is adequately captured with a single landing within the flow unit for the following reasons.

20. The map on the left of **Exhibit D-3**, "3rd Bone Spring Sand Producers" shows significant single bench development of the 3rd Sand at four (4) wells per section spacing (WPS).

21. The map on the right of **Exhibit D-3**, "Wolfcamp Producers," shows that the Wolfcamp Formation is not primarily targeted in conjunction with 3rd Bone Spring Sand development. Furthermore, as demonstrated by the map on the right, "Wolfcamp Producers," where the Wolfcamp Formation is developed, it is predominantly drilled and developed without the 3rd Sand also being developed.

22. Thus, the history of development in the AOI supports my opinion that the reservoir is adequately captured with a single landing in the 3rd Sand within the flow unit.

Exhibit D-4
Well Count by Landing and Operators
Proves that the 3rd Sand is the Consensus Landing

23. **Exhibit D-4** contains a table that shows the total number of 3rd Sand wells and Wolfcamp wells drilled in the AOI by year and by operator.

24. Ninety-seven percent (97%) of wells drilled in the AOI, that is 236 out of 244 wells, are executed as single bench, non-staggered developments. Of the 22 Wolfcamp Wells drilled in the AOI, 14 were drilled as stand along wells, *i.e.,* wells without a 3rd Sand Well, 5 were drilled as a separate bench, and only 3 were drilled in stacks with 3rd Sand Wells.

25. This well-established history of development, involving more than $2 Billion of CapEx[1] by fifteen (15) different operators, proves that it is not just Cimarex's idiosyncratic opinion that the best development plan for the Subject Lands requires a single landing target but rather that this is the consensus shared by all 15 companies active within the AOI, a consensus directly supported by the production data.

26. Furthermore, the fact that 222 wells out of 244 total wells within the AOI land in the 3rd Sand supports Cimarex's assessment of the 3rd Sand as the optimum landing.

Exhibits D-5 and D-6
Wine Rack of the Black and Tan Wells and Reference Map
Black and Tan 3rd Sand Composite Forecast 6 wells (Before WC completion)

27. There is only one development plan within the entire AOI similar to the plan Permian Resources is proposing for its Joker and Bane Wells, the Black and Tan Wells drilled in Section 27, Township 20 South, Range 35 East, located just 2 miles south of the Subject Lands. *See* Exhibit D-3. The development of the Black and Tan Wells was based on similar well drainage assumptions that utilize outdated completion height assumptions that Permian Resources appears to be relying upon.

28. Those assumptions include that there are separate benches which a single landing does not access, that in bench spacing drives performance, and that the vertical separation of a 100-feet would not have much impact on production.

29. The development of the Black and Tan Wells in Section 27 is best analog to Permian Resources' Joker and Bane Development Plan and is predictive of the likely outcome of Permian Resources' proposal to develop the 3rd Sand and the Wolfcamp as if they are separate and

[1] Assuming that the average cost of the 244 wells was $8.2MM, the CapEx for all of these wells exceeds $2 Billion.

equal targets. A summary of the production results is set forth in **Exhibit D-10** below. These results demonstrate substantial underproduction and waste that occurred as a result of the development of the Black and Tan Wells, results that would likely be replicated under Permian Resources' Joker and Bane Development Plan, which is based on the same erroneous underlying assumptions that doomed the Wolfcamp development of Section 27 with the Black and Tan Wells. Cimarex's MG-LG Development Plan would avoid such an outcome.

30. **Exhibit D-5** shows the winerack view of the Black and Tan Wells with a reference map. **Exhibit D-6** shows the actual aggregate production from the six 3rd Sand Wells, through May 1, 2019, before the five Wolfcamp Wells were fraced.

31. Exhibit D-6 also shows the Forecast as of May 1, 2019, for the future aggregate well performance of the six 3rd Sand Wells, prior to the underlying Wolfcamp development. Significant reserves (that of 2.5MM barrels of oil) and rates (that being 3356 BOPD IP30) were accessed by these 1-mile wells supporting 3rd Sand as a proven landing for optimal production.

32. We calculate Recovery Factor as within 1% of slickwater 4 well per section developments despite the drilling of 2 additional wells and would execute this section at 4 wells per section and expect similar results.

Exhibit D-7
Black and Tan 3rd Sand Composite Forecast 6 Wells Post Wolfcamp Frac

33. This Slide shows the Forecast as of May 1, 2023, for the future aggregate well performance of 3rd Bone Spring Sand wells after underlying Wolfcamp development. Unfavorable results included elevated water cut, rapid Gas-to-Oil Ratio Incline, and steep oil decline, all of which are signatures of interference between the five Wolfcamp wells drilled below these six 3rd Sand wells. After the Wolfcamp wells were drilled and produced, overall reserves appear to have

fallen to 1.63 MM barrels of oil with a steep decline profile. These facts prove the degradation a 2nd landing causes within the AOI on the 3rd Bone Spring Sand.

Exhibit D-8
Black and Tan Wolfcamp Composite Forecast 5 wells

34. This plot shows the aggregate performance and forecast for the five Wolfcamp wells completed below the six 3rd Sand wells shown on exhibits **D-5, D-6 and D-7**. Data clearly shows that vertical interference occurs in staggered developments, causing these 5 wells to add only 885MBO oil reserves and 500 BOPD IP in the aggregate. Elevated water cut and rapid GOR incline are evidence of interference with 3rd sand wells above.

Exhibit D-9
Lessons Learned from the Black and Tan Development

35. **Exhibit D-9** table 1.0 shows some simple forecast metrics highlighting the fact that only a negligible rate and a negligible amount of EUR were detectible from drilling the five extra, not to mention expensive, Wolfcamp wells. It is noteworthy and significant how little benefit the five wells added and how much they negatively impacted 3rd sand production. The aggregate rate change is so small it is essentially zero (0) which does not support or justify as effective capital stewardship the drilling of the 8 additional $11MM dollar wells proposed by Permian Resources. Table 1.1 shows the pore space distribution, 3rd Sand has 268% more PHIH than the upper Wolfcamp and is clearly the predominant contributing reservoir. The hypothesis that landing in 3rd Sand with 268% more porosity and height combined with better flow properties is the best way to access all the bbls becomes unarguable with production data from Black And Tan where the addition of Wolfcamp landings added no reserves and only negatively impacted the 3rd Sand raising aggregate section OpEx. The lesson learned from this data is that drilling into the Upper Wolfcamp itself is financially wasteful and jeopardizes optimal 3rd Sand production. A setback

from 3rd sand is in the best interest of efficient low risk recovery of the area reserves in this single landing target.

Exhibit D-10
Diagram of Staggered Landing Wolfcamp 3rd SS Vs. 3rd SS Flat

36. This exhibit shows what Cimarex believes happened in the Black and Tan analog example which reflects the nature of Permian Resources' proposal and therefore Permian's likely outcome. The Majority of Stimulated Rock Volume accessed by 3rd Sand well's landed flat must be very similar to the Stimulated rock volume accessed by staggered Wolfcamp and 3rd landings. If this were not true, the sum of Wolfcamp and 3rd sand production out of the Black and Tan development would be significantly higher once the 2nd bench was added instead of about the same. Where appropriate geologically, Cimarex executes as many as 9 landings within the same section in Lea County. Due to the location of barriers and target reservoir height executing two landings within the contested acreage in the 3rd Sand Wolfcamp target or the lower 2nd Sand 3rd Shale target serves only to double development CapEx. Cimarex has proprietary data from South Lea County developments in thicker more heterogeneous pay that support the accuracy of how we have assessed the vertical interference and is confident additional landings serve only to dilute sweet spot landing production. Not everyone has access to the same data but there is a wealth of public data available from the Hydraulic Fracture Test Site 2 DOE and industry partnership that would lead to the same conclusion.

Exhibit D-11
Black and Tan Analog comparison to MP/LG

37. Loosey Goosey and Mighty Pheasant have a similar pore space distribution as the Black and Tan Development with slightly higher porosity. The extra porosity is more likely to correlate to better permeability and allow a single landing to capture proven 3rd sand reserves even

more efficiently. Sensitivities run vs. reserves (Table 1.3) and Highside expectations (Table 1.4) show the PV 10 degradation and how much uplift would be needed to break even on the additional wells proposed by Permian. Given Black and Tan's added negligible bbls and rate, close to 0%, in similar rock two miles away, the public data simply does not support the 30% to 40% EUR and rate improvement needed to even break even on the extra incremental CapEx proposed by Permian resources well count. The recovery factor needed to payout the additional wells proposed is unrealistic in my opinion based on the Analog results. Furthermore, due to optimum well count Cimarex's plan is self-funding with payout in < 1 year. This is important for follow up benches that Cimarex will be able to rapidly develop out of lease cashflow, whereas Permian resources would require debt to fund an annual drilling program and would be significantly more exposed to commodity pricing jeopardizing timely development of subsequent benches if they go from 5 wells per section to 8 wells per section.

Exhibit D-12
Landing Zone Matters; Five Years Ago, Cimarex's Perry Test Confirmed 3rd SS Landing as Best Target

38. Cimarex confirmed 3rd Sand as best landing zone 5 years ago in 2018 with the Perry 4H 1 mile South of the contested acreage block. Over the life of the well, we see the old conventional 3rd Sand landing outperform other landings. Fracs evolved over time to modern slick water completions. Today most companies pump between 2000#/ft and 3000#/ft and 38 bbl/ft up to 60 bbl/ft with 6 to 14 clusters per stage depending on the target. It is highly unusual for a legacy frac, that is, one more conventional (i.e., <2016 with low cluster count, long stages, and unfocused frac energy), to better access reservoir than a modern frac (>2016 vintage with high cluster count, short stages, very focused frac energy). The best explanation for 478#/ft 3rd Sand frac outperforming 5 to 6 times the frac energy pumped in the Wolfcamp test well is that the vast

majority of oil reserves and best rock fabric flow properties are located within the 3rd Sand, and not in the Upper Wolfcamp. Thus, drilling into the Upper Wolfcamp is a waste of resources.

39. The dataset that identifies all the wells in the Area of Interest that I used in my analysis and that played a role in my conclusions is attached hereto as **Exhibit D-24**.

Exhibit D-13
Verna Rae Frac Test

40. The Verna Rae wells are a frac test and a poor analog for a full development. In my opinion, the 6827#/ft and 129 bbls/ft of frac energy is draining significantly more bbls than the 160-acre proration unit and appears to interfere with the 133H. Full developments are better to use for EUR and spacing because well half lengths are constrained which prevents both over estimating program development performance and section EUR's. I do not recommend offsetting the Verna Rae wells at double proven density as a good investment of CapEx because 3 times a modern slick waters frac energy was concentrated immediately adjacent to the subject lands.

Exhibits D-14
1280-Scale Project Cum. Oil/ft vs. Days

41. **Exhibit D-14** shows multiple developments executed at various Wells Per Section ("WPS") . The Y axis shows project cum/ft normalized to a full section development. For example, the ESTE WH Minis are 2 wells drilled at 4 WPS. Production from these wells is multiplied by 2 so production from these wells can be readily compared to full section projects. The Este EH Minis are 4 wells drilled at 8 WPS in the East Half and are multiplied by 8 to easily compare them to full section projects.

42. This simple plot provides a good check for Reserves vs. Acceleration. Acceleration occurs when a project is outperforming other projects during its early life, the first year for example, only to roll over with more production time to point towards the same ultimate

cumulative recovery. Understanding if production is additional reserves or merely acceleration of production is very important in places like New Mexico that offer decades of drilling opportunity with finite localized takeaway. Our Lea County team's definition of optimum development is a well count that accesses the economic bbls, rather than drill a 5th well to potentially accelerate bbls that appear to already be accessed by 4 wells we would deploy that capital in an additional landing within the project to add additional reserves with that capital or even de-risk a less tested landing for the area to replenish inventory. When Cimarex executes this approach across its Lea County acreage at portfolio level it allows Cimarex to drill additional projects with entire landing zones fully developed at an accelerated pace as opposed to executing less acres and benches at a denser well count that degrades stakeholders' returns and decreases aggregate royalty payments in the County.

43. The Reed and Stevens North Lea 3 (shown on Exhibit D-13) is an example where the long-term reserves captured by 4 WPS is very similar to denser projects. Cimarex is proposing this same spacing with all wells executed with a modern slickwater frac, produced on ESP with appropriate gas separation down hole, and then combined with adequate takeaway. It is my opinion that Cimarex's proposal will deliver a top performer as compared to all developments shown in Exhibit D-13, including the Batman E/2 and Batman W/2, with respect to the economics, *i.e.*, a greater return on investment and in terms of EUR.

44. The key takeaways from **Exhibit D-14** are that:

- Over time, 4 WPS developments catch up to denser spaced projects in production indicating that higher early-life production from denser developments is primarily attributable to acceleration;
- COG's Little Bear project is a dense Wolfcamp only landing, full development that underperforms, similar to the Black and Tan Wolfcamp, supporting Cimarex's proposed 3rd Sand landing; and

- Drilling Wolfcamp wells appears damaging to 3rd SS project at Black and Tan. The Wolfcamp wells appear to have added at most 30 bbl/ft reserves after 1,000 days which is, more or less, equivalent to slope of 3rd Sand prior to completion.

45. The early results for the 5 WPS Batman project looks good and the spacing is within 1 well of Cimarex's proposed 4 WPS, as opposed to Permian Resources' proposed 8 WPS for the 3rd Sand and Wolfcamp. However, it is too early to assess success or failure of the 5 WPS Batman project. Each of the Batman projects need to Cum approximately 125 bbl/ft out of the DSU to be able to make firm EURs. I would be more confident assessing the success or failure of this project after the Batman wells have had ESP's installed and several months of decline are evident. My expectation is that the ESP install will peak the differences between the two half sections and that over time differences between the two half section developments will decrease similar to what has been seen on other developments as spacing impacts materialize in production. I am not sure the East half 3rd sand wells drilled at 4 wells per section have fully cleaned up yet and if they have not, it will adversely affect production from the Batman wells.

Exhibit D-15
Average Per-Well Cum. Oil/ft vs Days, 2-Year Zoom

46. **Exhibit D-15** shows the average well performance in Bo/ft vs. Time zoomed into a 2-year period. This is a simple capital efficiency plot with the most capitally efficient early time wells plotting at the top and less capitally efficient wells plotting at the bottom. It is noteworthy that the best wells are either 4 WPS developments or flowed by EOG which, in my opinion, is one of the best operators in Lea County at aggressive drawdown / acceleration of their developments.

47. The main take aways from **Exhibit D-15** are that:

- Denser spaced developments underperform looser spaced developments to the point that drilling past 4 WPS appears to be a waste of capital;

- The Della project drilled by EOG takes longer to show degradation, most likely due to aggressive drawdown common on EOG's developments; and
- In aggregate 3rd Sand is the best way to develop from production results.

Exhibit D-16
1280-Scale Project Oil Rate/ft vs cum Oil/ft

48. **Exhibit D-16** shows Rate/ft vs. Cum/ft for multiple projects executed within the subject lands. This plot is useful for comparing developments that may be flowed differently. For example, if an operator is flowing a well constrained by takeaway they will plot low on the y axis but stay flat for a long time on the X axis. Alternatively, if a development is flowed without constraints it will peak very high on the y axis but quickly go on decline. On this Exhibit, the data past 125 cum oil/ft out of the development is most important with shallower declines equating to larger EURs and steeper declined equating to lower EURs. The 4 WPS Reed & Stevens project is an example where significant bbls were contacted and could have been produced more efficiently by some combination of frac, drawdown, and takeaway capacity.

49. The main take aways from **Exhibit D-16** are that:

- More time is needed on the Batman wells to gauge performance, post ESP install decline at 100 to 150 cum/ft will be a meaningful data point; and
- In aggregate 3rd sand developments have a shallower slope than Wolfcamp developments and will enjoy ultimate higher EURs.

Exhibit D-17
Batman East Half vs. Batman West Half

50. **Exhibit D-17** illustrates that there is a significant shift in GOR and Watercut on day 8 in the Batman development. Based on the limited days of production, as a Reservoir Engineer I am unable to determine whether these results evidence a long-term trend or whether these results are being driven by (1) allocation with oil carryover on the East Half 4 WPS development; or (2) water carry over on the West Half 6 WPS development; or (3) if this is an

early time issue that will be resolved by ESP install in the coming weeks, or (4) some combination thereof. These unanswerable questions further undercut any reliance a Reservoir Engineer can place on production from the Batman wells at this early juncture.

Exhibit D-18
Capital Expenditure Comparison between Cimarex's Goosey-Pheasant Plan vs. Permian Resources Bane-Joker Plan

51. **Exhibit D-18** contains two tables comparing the capital expenditures for Cimarex's Loosey Goosey and Mighty Pheasant wells and the additional wells that it plans to develop in the future in Sections 4, 5, 8, and 9[2] versus the capital expenditures for Permian Resources' Bane and Joker Wells[3]. These tables establish that:

a) Permian Resources proposes to spend $92.7 Million more in capital expenditures than Cimarex to develop each of its Plans by drilling an additional four (4) wells in the 3rd Bone Spring Sand and four (4) wells in the Upper Wolfcamp under each of its Plans;

b) In each of its Plans, Permian Resources proposes to spend $11 Million on a fourth well in the Upper 2nd Sand well compared to Cimarex's plan for three Upper 2nd Sand wells; and

c) Due to Permian Resources' higher per well AFEs, Permian Resources will spend $31.6 Million more than Cimarex (using Cimarex's updated August 2023 cost estimates) in each of it Plans to drill 4 wells in the 1st Sand, 2nd Sand, and 3rd Sand and three wells in the upper 2nd Sand ($166,181,956 versus $134,593,047).

[2] There are two columns for AFE CapEx amounts for Mighty Pheasant Wells 204H, 301H, 302H, 303H, and 304H, and for the additional wells that Cimarex plans for Sections 5 and 8. The first column sets forth estimated costs as of August 25, 2022, when Cimarex sent out its election letters to working interest owners for the Mighty Pheasant Wells. The second column sets forth the estimated costs for these wells updated to reflect June 2023 costs, which were provided to me by John Coffman.

[3] The AFE CapEx amounts for the Bane and Joker Wells are based on the AFEs that Permian Resources included in the package sent to working interest owners with the election letters dated March 17, 2023.

52. In sum, if the Division grants Permian Resources' development plan for its Bane and Joker Wells, Permian Resources will spend $135,352,717 more than Cimarex to develop Sections 4 and 9 (Bane vs. Loosey Goosey) and will spend $135,352,717 more than Cimarex to develop Sections 5 and 8 (Joker vs. Mighty Pheasant).

53. As set forth herein, the excessive capital expenditures will not result in increased production justifying the expense. Such a result constitutes financial waste that unnecessarily burdens, undermines, and harms the correlative rights of all working interest owners.

Exhibit D-19
NPV-10 Comparison Between Goosey-Pheasant and Bane-Joker

54. **Exhibit D-19** contains two tables that set forth the present value of the estimated future oil and gas revenues, reduced by direct expenses and discounted at an annual rate of 10% (PV-10), net of all burdens (NPV-10). The first table shows the NPV-10 for Permian Resources' Joker and Bane Wells and the second table shows the NPV-10 for Cimarex's Might Pheasant and Loosey Goosey Wells.

55. The NPV-10 calculations are based on the June 2023 Strip West Texas Intermediate prices and assume that the NRI is 80% and that the technical EUR accessed is 9,336MMbo across the DSU's similar to Black and Tan 3rd sand development with ~560Mbo of negative impact from offset depletion. The after-tax rate of return (ATax ROR%) assumes a 22.6543% tax on profits.

56. The NPV-10 comparison shows that the NPV-10 for Permian Resources' Joker-Bane Plan shows a $32 Million return on CapEx and an after-tax Rate of Return of 21%, while Cimarex's Goosey-Pheasant Plan shows a $115 Million on CapEx and an after-tax Rate of Return of 149%.

Exhibit D-20
Comparison of 3rd Sand Flat Cimarex Plan vs. Wolfcamp Stagger Permian Plan

57. **Exhibit D-20** contains a table that compares the PV-10 under Permian Resources' plan to drill eight 3rd Sand wells and four Wolfcamp wells in each of its two development proposals (Bane-Joker) versus the PV-10 under Cimarex's plan to drill four 3rd Sand Wells in each of its two development proposals (Goosey-Pheasant). The PV-10 calculations are based on the same assumptions used in Exhibit D-18. The Table is controlled to determine the change in PV-10 based on the ratio of ownership of Bone Spring net acres versus Wolfcamp net acres. The ratio in the first row is 1:1 and the last row is 1:8.

58. The purpose of this Exhibit is to demonstrate that working interest owners will enjoy a significant benefit under Cimarex's planned developments even if their interest in the Wolfcamp formation is five times greater than in the Bone Spring. At a 1:6 ratio, Bone Spring to Wolfcamp, the working interest owner would still enjoy a $1,246 PV-10 per 1 net acre of Bone Spring working interest advantage under Cimarex's proposal.

Exhibit D-21
MRC Permian – PV-10 Comparison Mighty Pheasant versus Joker

59. **Exhibit D-21** focuses on MRC Permian, which has the highest ratio of Bone Spring to Wolfcamp ownership, 1:3.0088, in Sections 5 and 8, Cimarex's Mighty Pheasant Plan, versus Permian Resources' Joker Plan.

60. The Table on **Exhibit D-21** shows that under Permian Resources' Joker Plan, MRC Permian's PV-10 is $25,193/acre versus $45,237/acre under Cimarex's Might Pheasant Plan. In other words, despite the fact that MRC Permian's interest in the Wolfcamp is a little more than 3 times its interest in the Bone Spring, MRC Permian would enjoy a PV-10 of $20,044/acre more

under the Mighty Pheasant per each net acre that it owns in the Bone Spring as compared to Permian Resources' Joker Plan.

Exhibit D-22
HOG Partners – PV-10 Comparison Loosey Goosey vs. Bane

61. **Exhibit D-22** focuses on HOG Partnership LP, which has the highest ratio of Bone Spring to Wolfcamp ownership, 1:1.37, in Sections 4 and 9, Cimarex's Loosey Goosey Plan, versus Permian Resources' Bane Plan.

62. The Table on **Exhibit D-22** shows that under Permian Resources' Bane Plan, HOG Partnership's PV-10 is $14,894/acre versus $45,237/acre under Cimarex's Loosey Goosey Plan. In other words, despite the fact HOG Partnership's interest in the Wolfcamp is 37% higher than its interest in the Bone Spring, HOG Partnership would enjoy a PV-10 of $30,343/acre more under the Mighty Pheasant per each net acre that it owns in the Bone Spring as compared to Permian Resources' Bane Plan.

Exhibit D-23
Ownership Ratios and Depth Severances

63. **Exhibit D-23** contains two tables. The table on the left, "Ownership Loosey Goosey/Bane," lists all of the working interest owners in Sections 4 and 9, showing their respective working interests in the Bone Spring and in the Wolfcamp, as well as their WC/BS ownership ratio.

64. The Loosey Goosey/Bane Table shows that the only working interest owner in Sections 4 and 9 that owns a greater interest in the Wolfcamp than it owns in the Bone Spring is HOG Partnership LP. As shown in **Exhibit D-23**, HOG Partnership LP would enjoy a much better outcome under the Loosey Goosey Plan despite the fact that it has a greater working interest in the Wolfcamp than it does in the Bone Spring.

65. The table on the right, "Ownership Mighty Pheasant/Joker," lists all of the working interest owners in Sections 5 and 8, showing their respective working interests in the Bone Spring and in the Wolfcamp, as well as their WC/BS ownership ratio.

66. The Mighty Pheasant/Joker Table shows that there are a number of working interest owners in Sections 5 and 8 that own a greater interest in the Wolfcamp than the Bone Spring, with MRC Permian having the largest ratio, 1:3009 (rounded up from 1:30088). As shown in Exhibit D-20, MRC Permian would enjoy a much better outcome under the Loosey Goosey Plan despite the fact that it owns more than 3 times an interest in the Wolfcamp than it does in the Bone Spring.

67. The purpose of **Exhibit D-23**, as well as **Exhibits D-18 through D-22**, is to demonstrate that Cimarex's Loosey Goosey and Mighty Pheasant Plans protect the correlative rights of all working interest owners since they will enjoy a much greater economic benefit under Cimarex's plans than under Permian Resources' plan and, conversely, Permian Resources' plans do not protect the correlative rights of the working interest owners in Sections 4, 5, 8, and 9 since their economic return on investment will be crushed under the weight of Permian Resources' excessive capital expenditures that do not increase the EURs.

68. The Exhibits to this Self-Affirmed Statement were prepared by me or compiled from Cimarex's company business records under my supervision and/or aproval.

69. As explained by the foregoing, the granting of Cimarex's Applications are in the best interests of conservation, the prevention of waste, and the protection of correlative rights.

70. The foregoing is correct and complete to the best of my knowledge and belief.

Self-Affirmed Signature on following page.

Self-Affirmed Statement of Eddie Behm:

I understand that this Self-Affirmed Statement will be used as written testimony before the Division in Case Nos. 23448-23455 and 23594-23601 and affirm that my testimony herein is true and correct, to the best of my knowledge and belief and made under penalty of perjury under the laws of the State of New Mexico.

_____
Eddie Behm

_____
Date Signed

From: **Eddie Behm** Eddie.Behm@coterra.com
Subject: Signing my statement by Email 8/2/2023
Date: August 2, 2023 at 2:17 PM
To: Bill Zimsky bill@abadieschill.com

EB

I understand that this Self-Affirmed Statement will be used as written testimony before the Division in Case Nos. 23448-23455 and 23594-23601 and affirm that my testimony herein is true and correct, to the best of my knowledge and belief and made under penalty of perjury under the laws of the State of New Mexico.

I am signing my self-affirmed statement by this email on August 2nd 2023

Eddie Behm

Cimarex is a Play Leader in Lea County (Avg 12 Month Cum BOE / 1000ft)

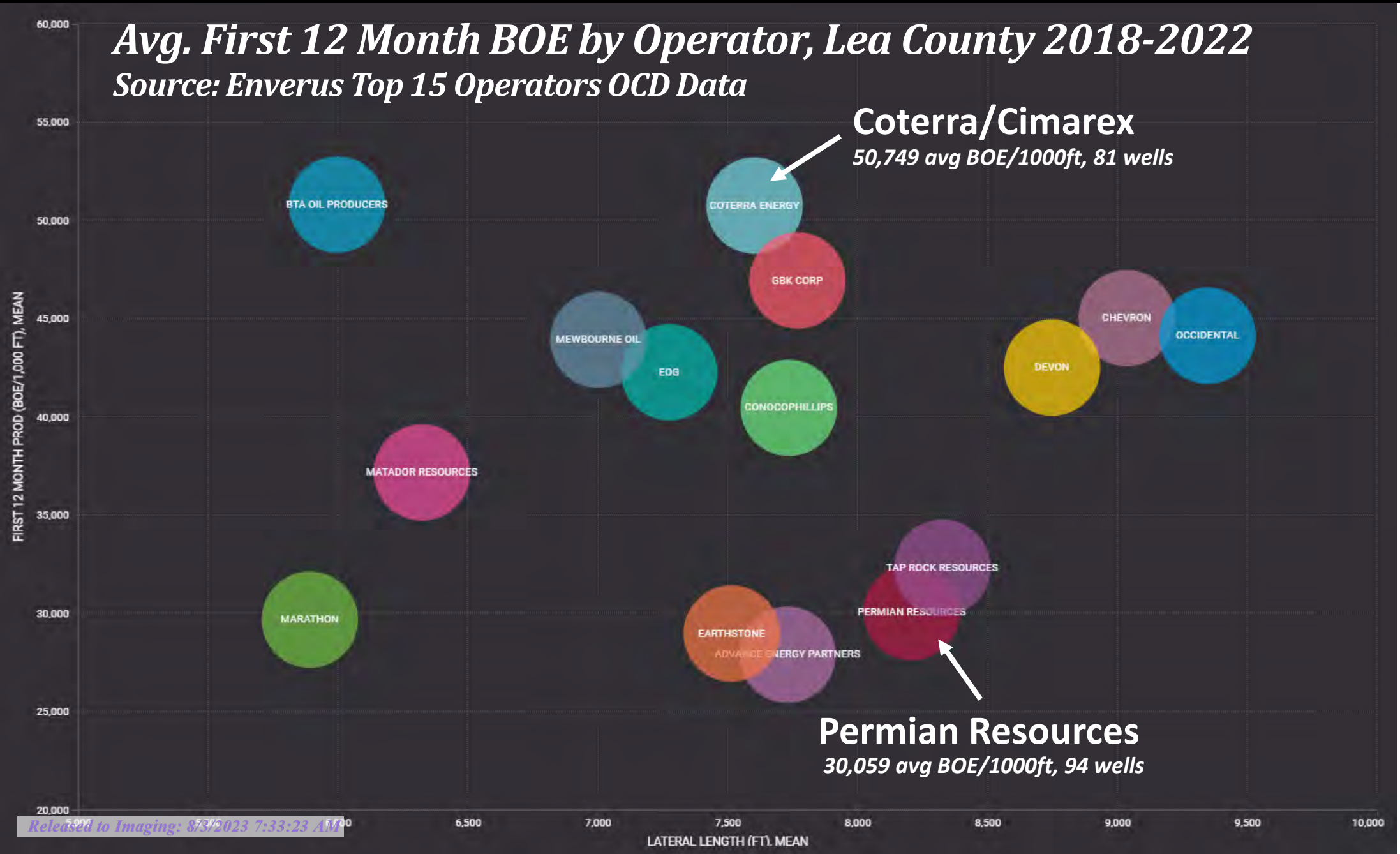


Exhibit D-1

Cimarex is a Play Leader in Lea County (Avg 12 Month Cum Oil BBl/ 1000ft)

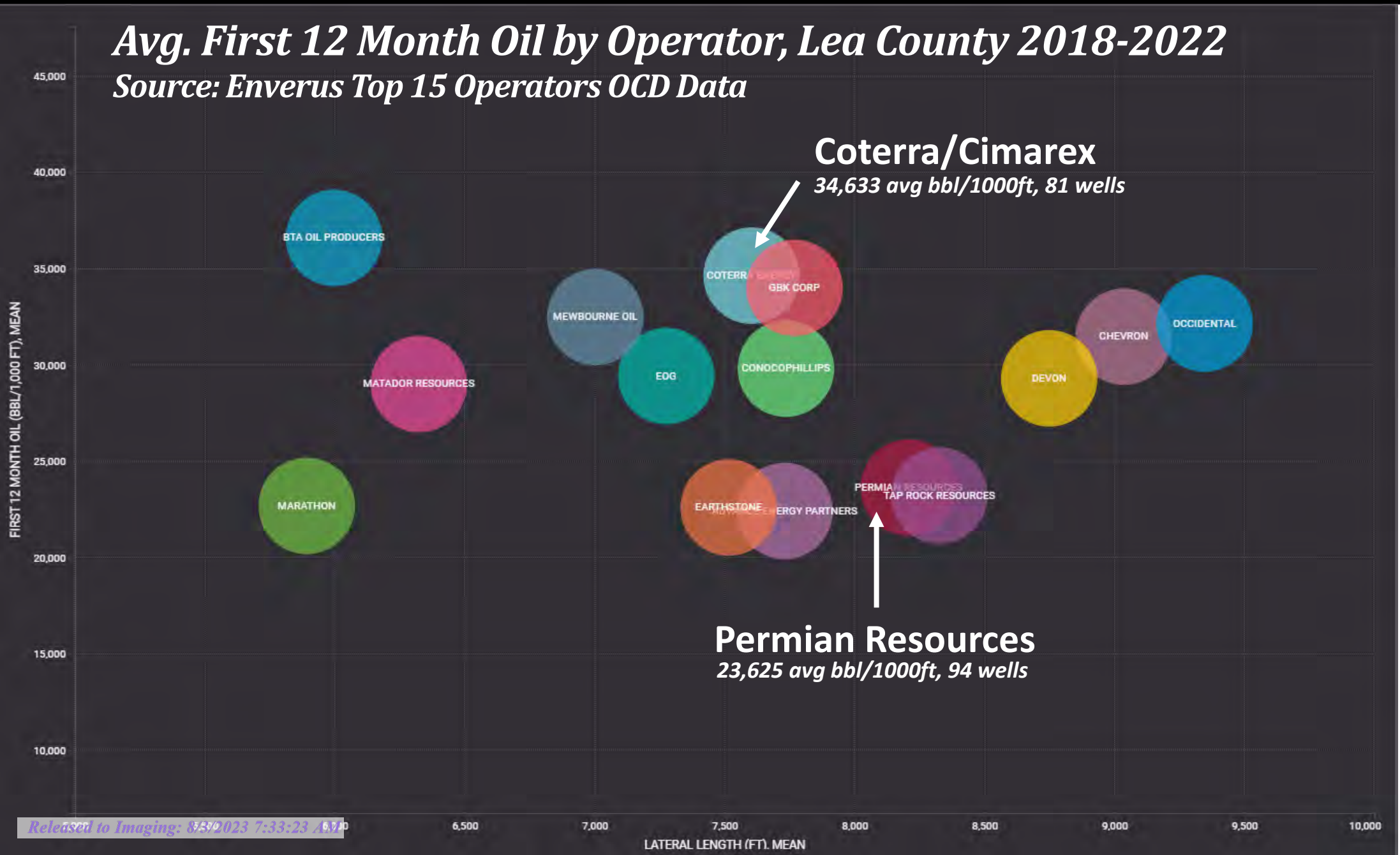
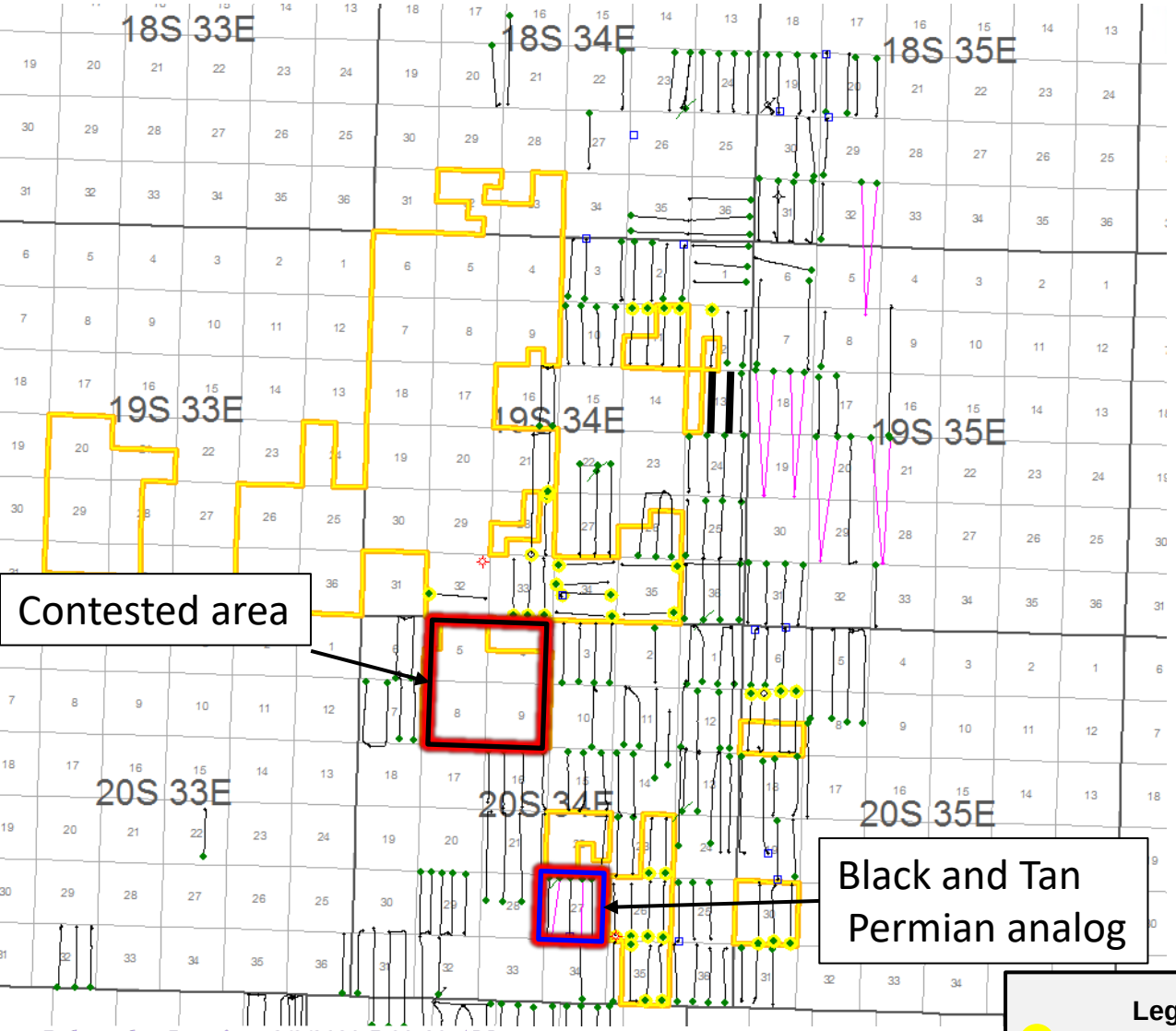


Exhibit D-2

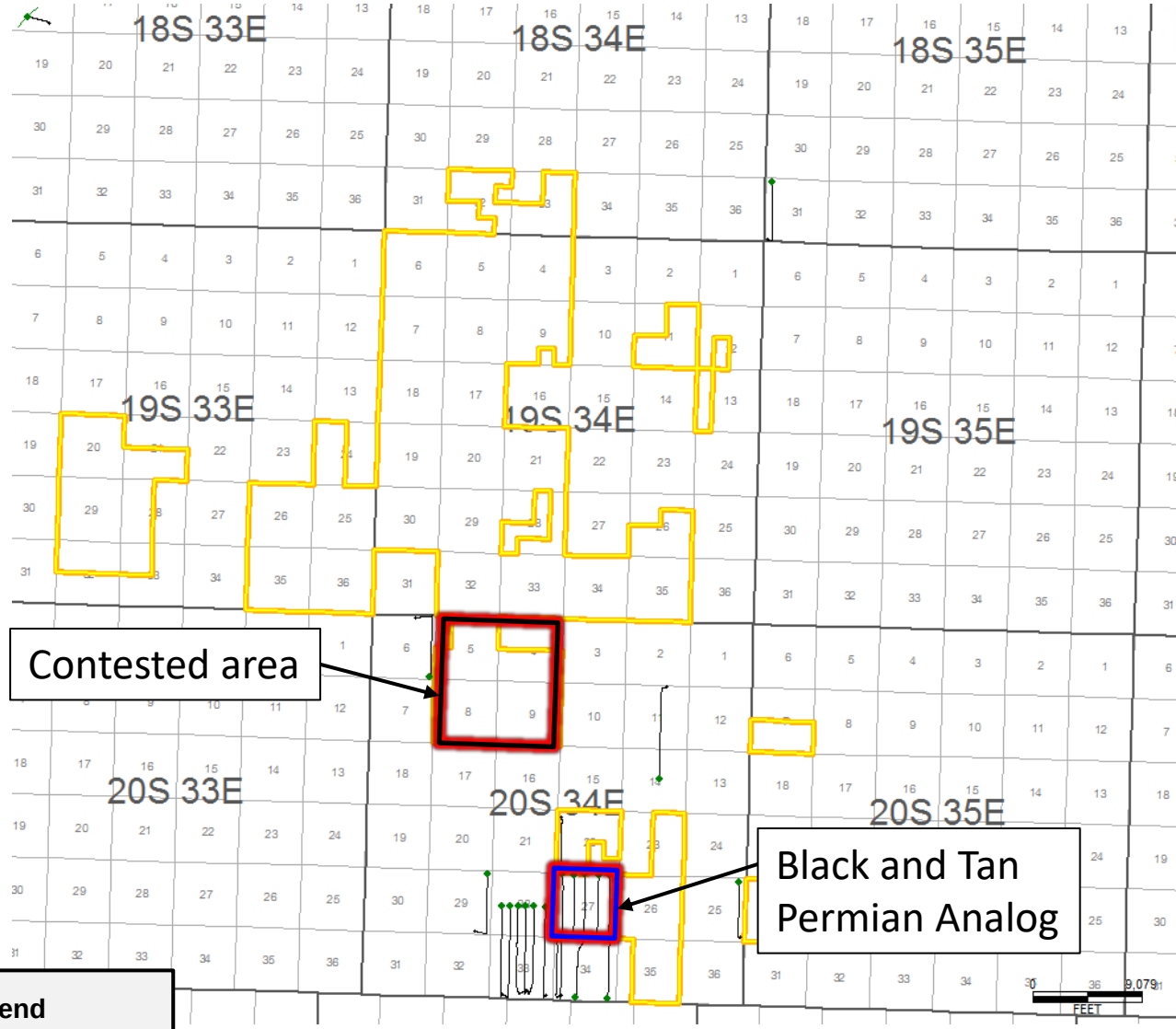
3rd Bone Spring Sand is the Established Single Bench Target at 4 WPS within AOI

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

3rd Bone Spring Sand Producers



Wolfcamp Producers



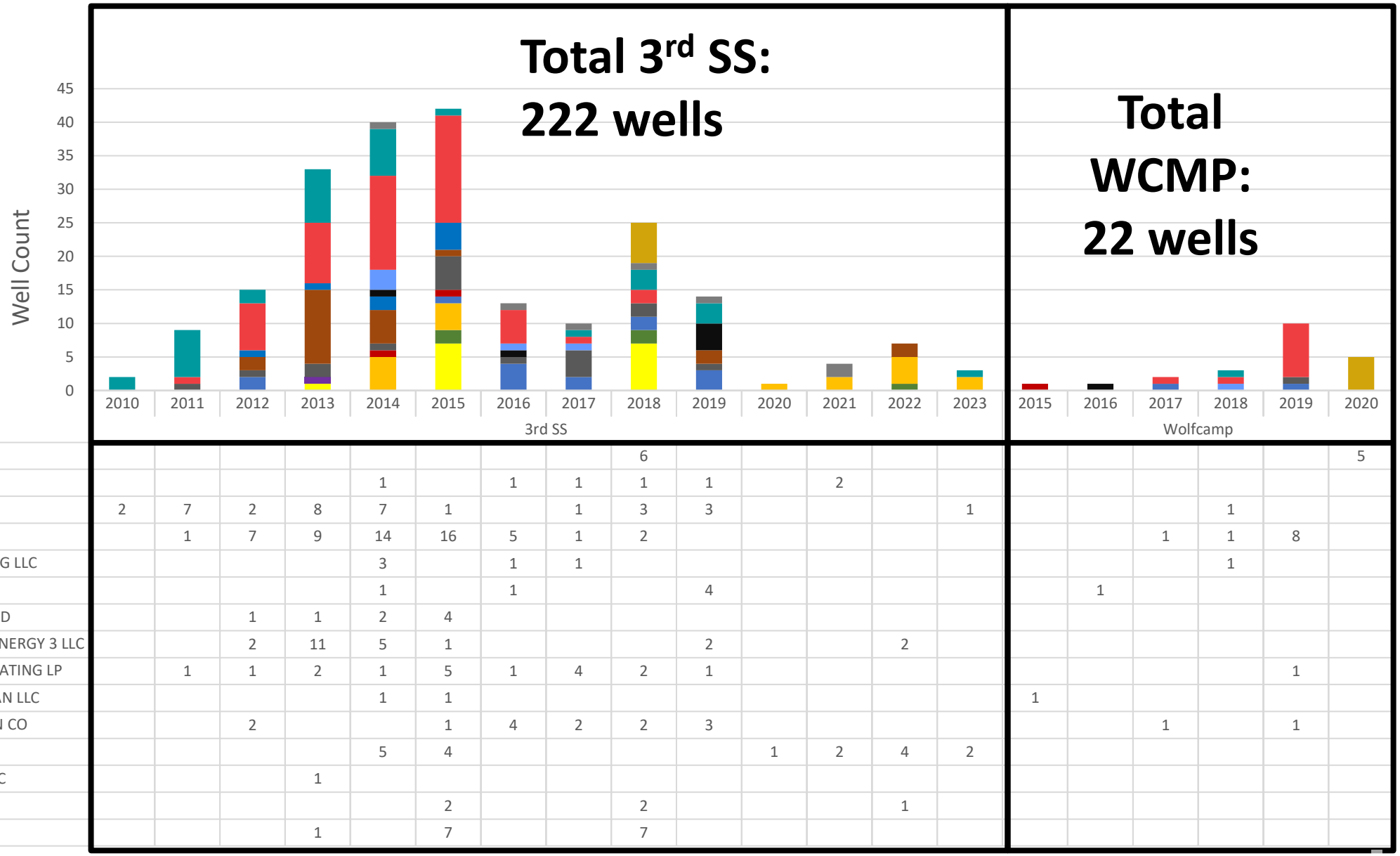
Legend
Cimarex Operated Wells

Exhibit D-3

Well Count by Landing and Operators Shows 3rd Sand is the Consensus Landing

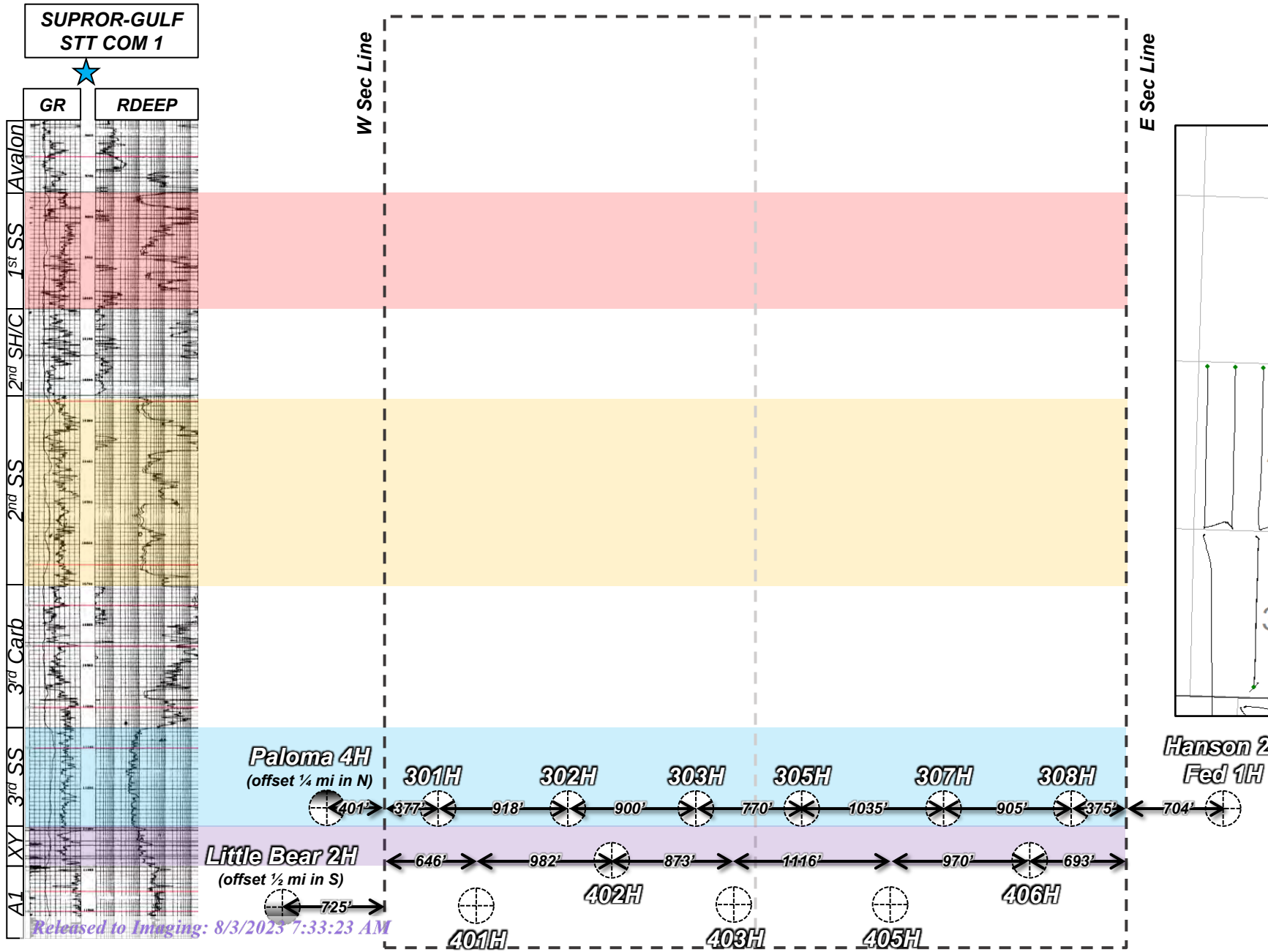
Exhibit D-4

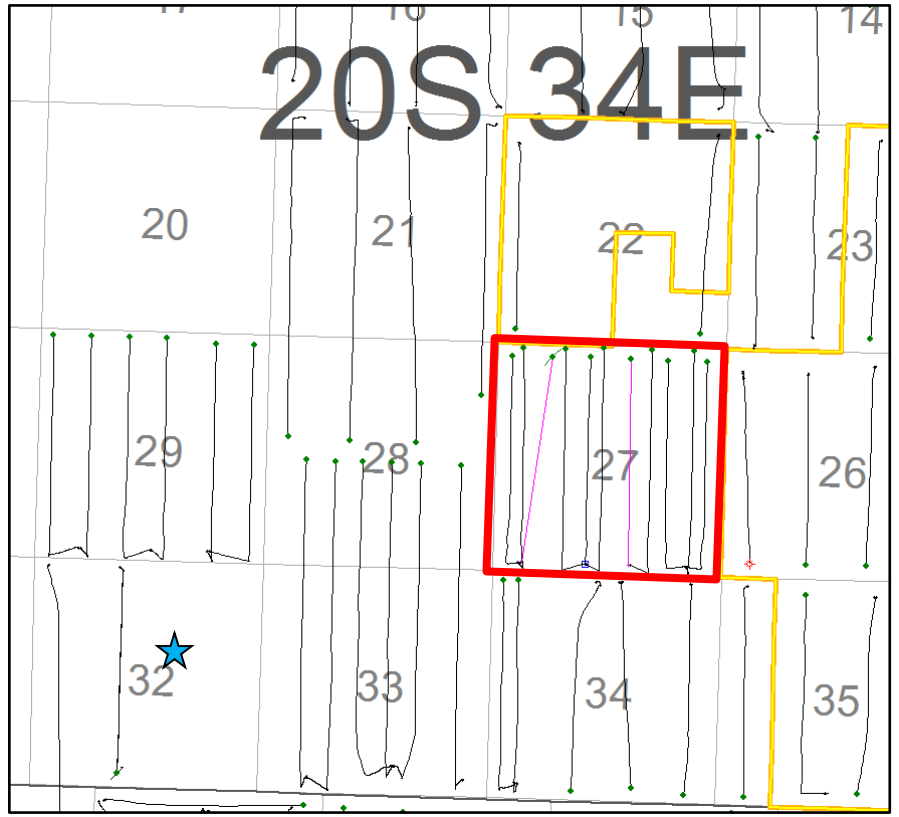
- 3rd Sand / single bench landing supported by 236 wells, 97%.
- 14 of 22 WCMP were drilled instead of 3rd SS
- 5 of 22 WCMP drilled as a separate bench
- 3 WCMP stack tests with 3rd Sand



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2015	2016	2017	2018	2019	2020
APACHE CORP									6											5
CAZA OPERATING LLC					1		1	1	1	1		2								
CIMAREX ENERGY CO	2	7	2	8	7	1		1	3	3				1				1		
COG OPERATING LLC		1	7	9	14	16	5	1	2								1	1	8	
EARTHSTONE OPERATING LLC					3		1	1										1		
EOG RESOURCES INC					1		1			4						1				
FASKEN OIL & RANCH LTD			1	1	2	4														
FRANKLIN MOUNTAIN ENERGY 3 LLC			2	11	5	1				2			2							
LEGACY RESERVES OPERATING LP		1	1	2	1	5	1	4	2	1									1	
MARATHON OIL PERMIAN LLC					1	1									1					
MATADOR PRODUCTION CO			2			1	4	2	2	3							1		1	
MEWBOURNE OIL CO					5	4					1	2	4	2						
RAYBAW OPERATING LLC				1																
READ & STEVENS INC						2			2				1							
XTO ENERGY INC				1		7			7											

Black and Tan





Black and Tan 3rd Sand Composite Forecast 6 Wells (Before WC completion)

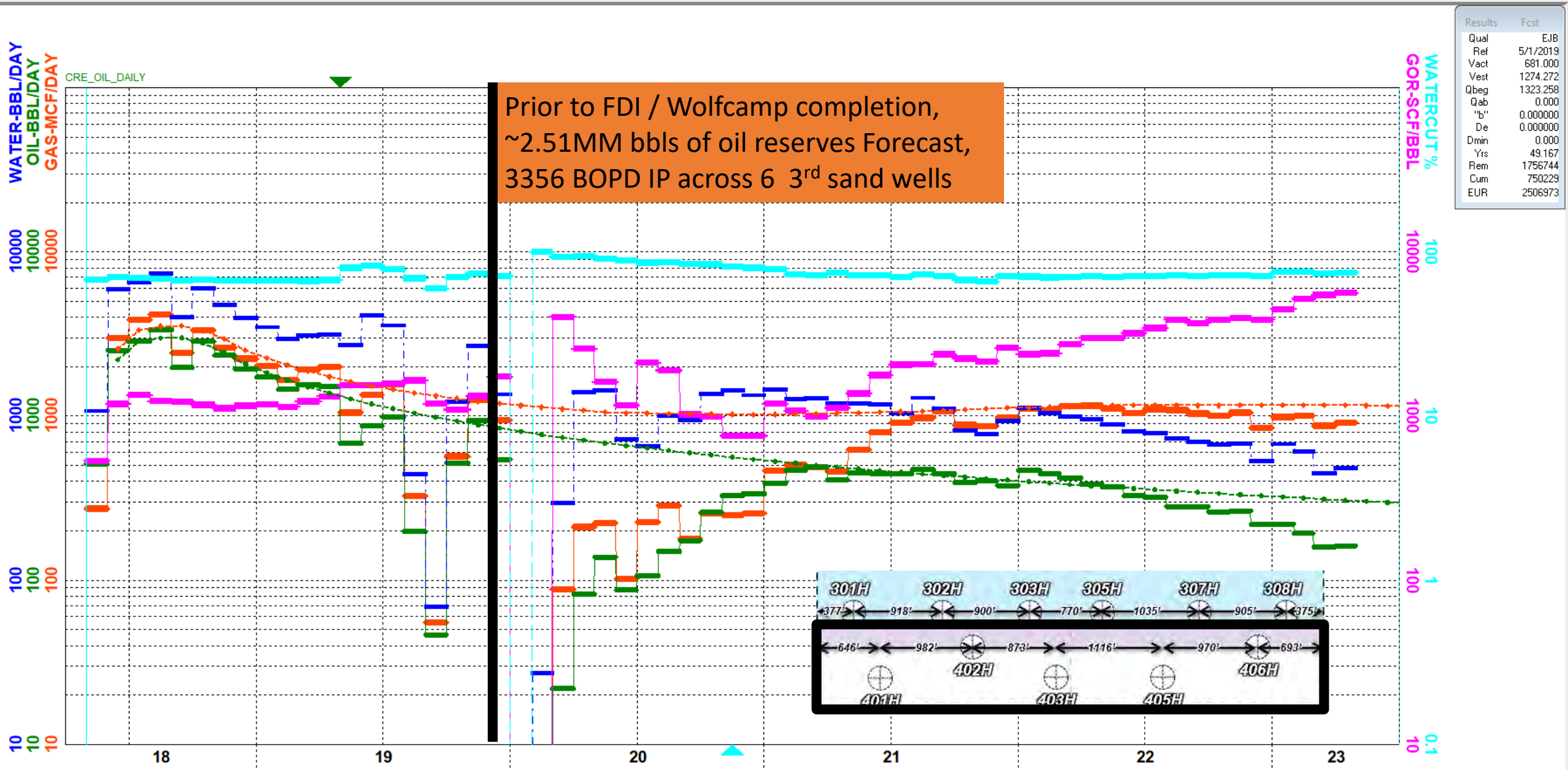


Exhibit D-6

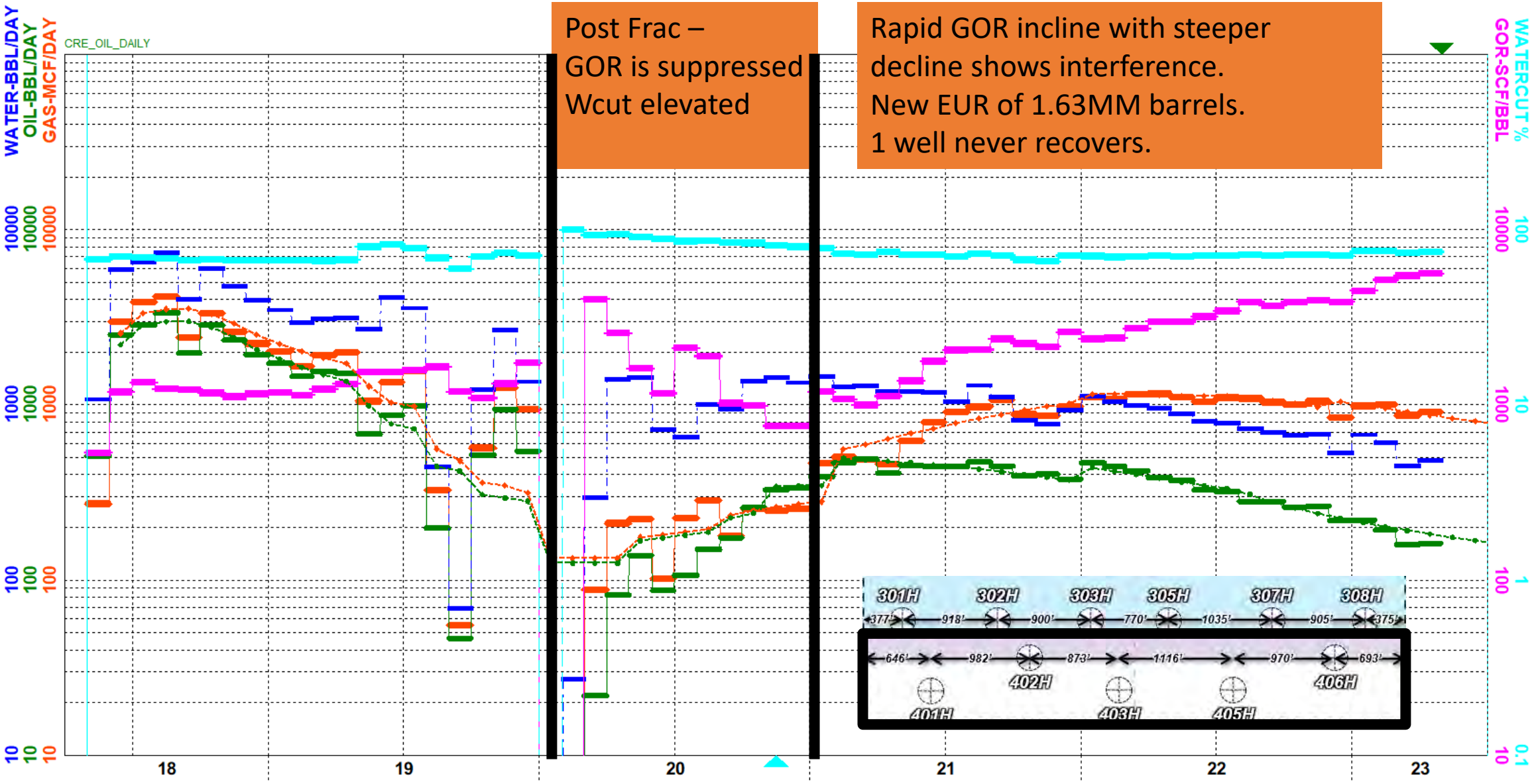
Black and Tan 3rd Sand Composite Forecast 6 Wells Post Wolfcamp Frac

Exhibit D-7

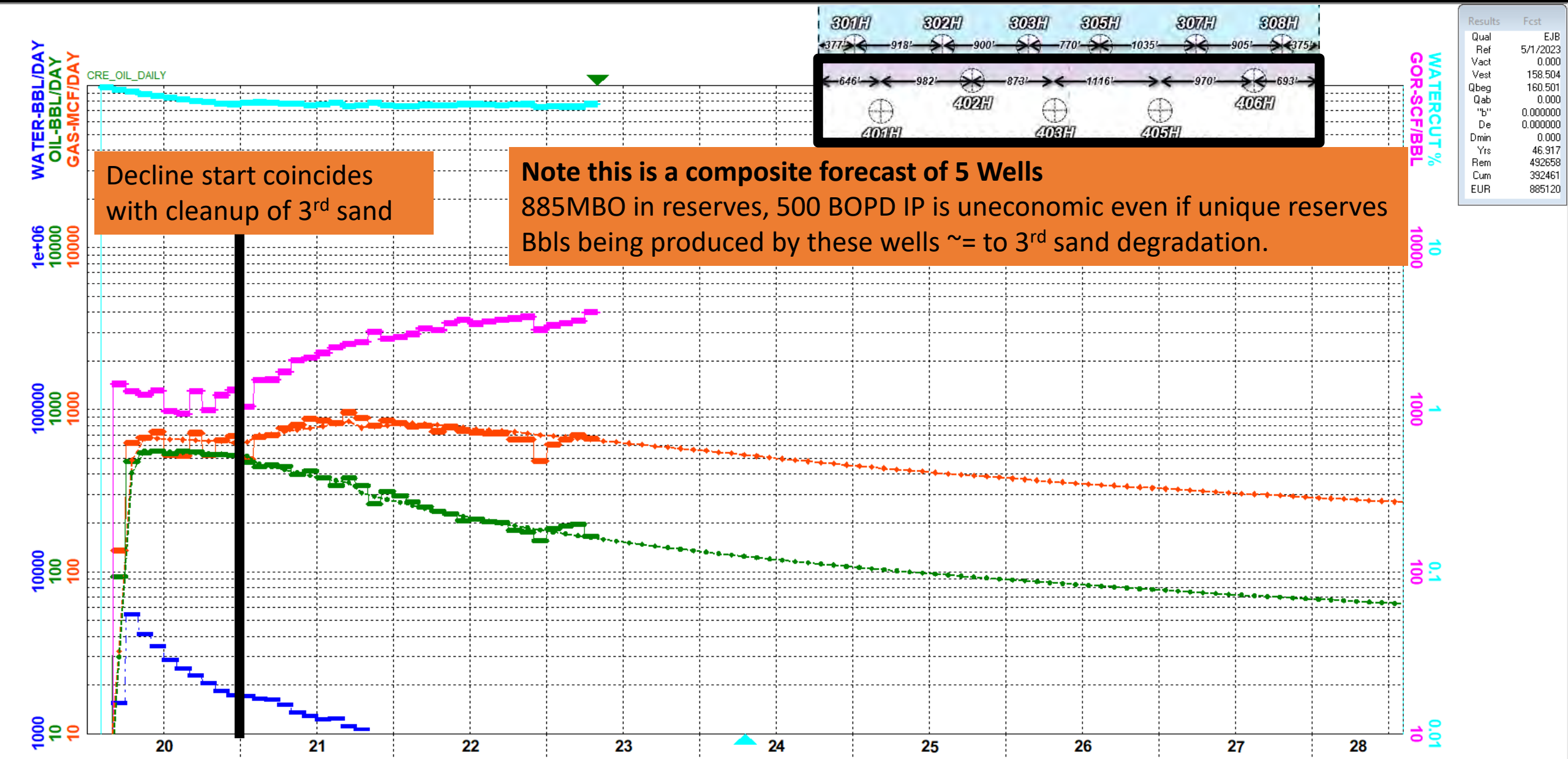
Post Frac –
GOR is suppressed
Wcut elevated

Rapid GOR incline with steeper decline shows interference.
New EUR of 1.63MM barrels.
1 well never recovers.

Results	Fcst
Qual	EJBFRAC
Ref	5/1/2023
Vact	0.000
Vest	175.490
Qbeg	179.285
Qab	0.000
"b"	0.000000
De	0.000000
Dmin	0.000
Yrs	45.083
Rem	376112
Cum	1252382
EUR	1628494



Black and Tan Wolfcamp Composite Forecast 5 Wells



Decline start coincides with cleanup of 3rd sand

Note this is a composite forecast of 5 Wells

885MBO in reserves, 500 BOPD IP is uneconomic even if unique reserves Bbls being produced by these wells ~= to 3rd sand degradation.

Results	Fcst
Qual	EJB
Ref	5/1/2023
Vact	0.000
Vest	158.504
Qbeg	160.501
Qab	0.000
"b"	0.000000
De	0.000000
Dmin	0.000
Yrs	46.917
Rem	492658
Cum	392461
EUR	885120

Lessons Learned from the Black and Tan Development

PROJECT = Black & Tan 27

30025461240000 | BLACK & TAN 27 FEDERAL COM #405H | BLACK & TAN 27 FEDERAL COM | WOLFCAMP A | APACHE CORP | LEA | 4583 | 09/01/2019 | 02/26/2020 | 0EF33AE781 30025460720000 | BLACK & TAN 27 FEDERAL COM #401H | BLACK & TAN 27 FEDERAL COM | WOLFCAMP A | APACHE CORP | LEA | 4666 | 10/19/2019 | 01/22/2020 | AFD8F0925C 30025460730000 | BLACK & TAN 27 FEDERAL COM #402H | BLACK & TAN 27 FEDERAL COM | WOLFCAMP SANDS XY SAND | APACHE CORP | LEA | 4561 | 08/17/2019 | 02/26/2020 | B4C53386 30025461230000 | BLACK & TAN 27 FEDERAL COM #403H | BLACK & TAN 27 FEDERAL COM | WOLFCAMP SANDS XY SAND | APACHE CORP | LEA | 4629 | 09/08/2019 | 02/26/2020 | 607292AC 30025460750000 | BLACK & TAN 27 FEDERAL COM #406H | BLACK & TAN 27 FEDERAL COM | WOLFCAMP SANDS XY SAND | APACHE CORP | LEA | 4694 | 09/29/2019 | 02/26/2020 | F44F2545	Completed 2nd
30025440180000 | BLACK & TAN 27 FEDERAL COM #302H | BLACK & TAN 27 FEDERAL COM | 3RD BONE SPRING SAND | APACHE CORP | LEA | 4416 | 12/11/2017 | 06/01/2018 | 163AC020E2 30025440170000 | BLACK & TAN 27 FEDERAL COM #301H | BLACK & TAN 27 FEDERAL COM | 3RD BONE SPRING SAND | APACHE CORP | LEA | 4526 | 11/15/2017 | 06/01/2018 | 402B8A1B23 30025439210100 | BLACK & TAN 27 FEDERAL COM #303H | BLACK & TAN 27 FEDERAL COM | 3RD BONE SPRING SAND | APACHE CORP | LEA | 4360 | 10/24/2017 | 05/18/2018 | 748D250B4E 30025439400000 | BLACK & TAN 27 FEDERAL COM #305H | BLACK & TAN 27 FEDERAL COM | 3RD BONE SPRING SAND | APACHE CORP | LEA | 4524 | 03/17/2018 | 05/23/2018 | A635466B07 30025440440000 | BLACK & TAN 27 FEDERAL COM #307H | BLACK & TAN 27 FEDERAL COM | 3RD BONE SPRING SAND | APACHE CORP | LEA | 4303 | 01/07/2018 | 05/16/2018 | CF72E02929 30025440450000 | BLACK AND TAN 27 FEDERAL COM #308H | BLACK AND TAN 27 FEDERAL COM | 3RD BONE SPRING SAND | APACHE CORP | LEA | 4340 | 01/30/2018 | 05/05/2018 | A7CD7	Completed 1st

WC vs. 3rd sand comparison shows stagger is capital waste

- 3rd sand IP is > 6 X Wolfcamp
- Wolfcamp oil rate ~= to 3rd sand rate decrease
- Wolfcamp reserves ~= to 3rd sand EUR decrease
- 5 Wolfcamp wells added ~ 0 additional bbls

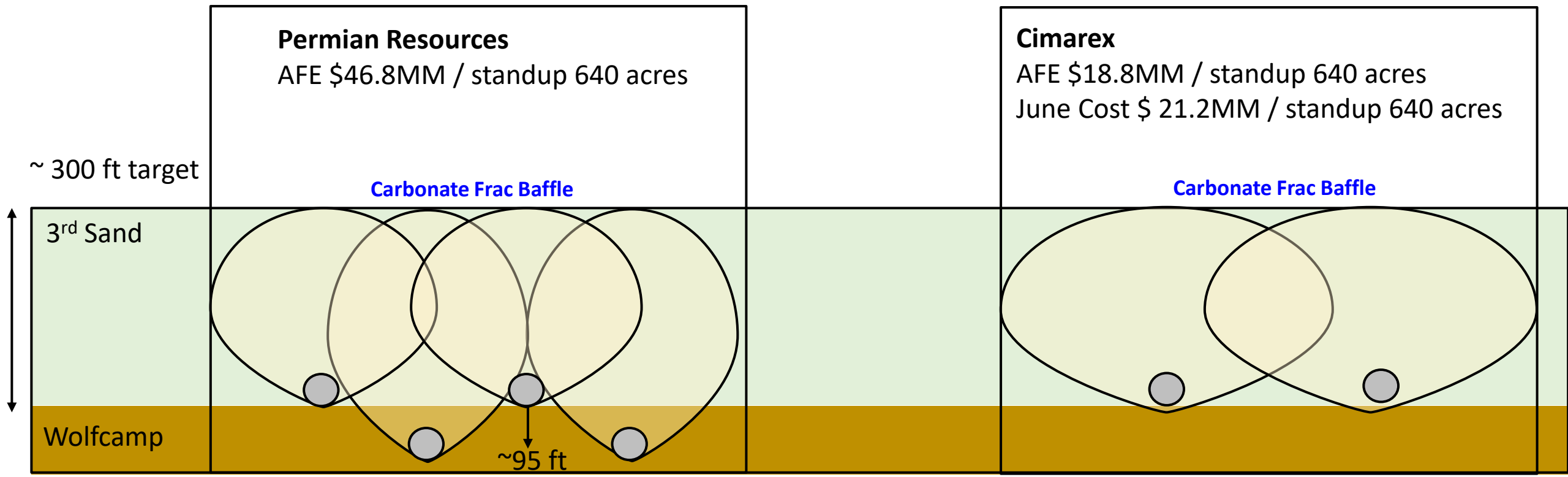
Table 1.0 Comparison of 3rd sand to Wolfcamp	3rd Sand			Wolfcamp	(Wolfcamp - 3rd Sand Delta) = value added from 5 wells
	3rd Bone Spring	3rd Bone Post frac	3rd Sand Delta		
IP30 BOPD	**3,356**	NA	NA	**555**	NA
Pre vs. Post frac oil rate BOPD	**950**	500	-450	**+555**	105
EUR MMBO	**2.51**	**1.63**	**-0.88**	**+0.89**	**0.01**

3rd sand is the landing for this single bench target

- 268% Phi H vs. Wolfcamp
- 3rd sand delta compounded by being cleaner with better flow property's than the Wolfcamp

Table 1.1 Analog Comparison	3rd Sand	Wolfcamp	3rd SS % of total	3rd / Wolfcamp Comparison %
PHIH	26.75	10	72.8	268

Diagram of Staggered Landing Wolfcamp + 3rd SS vs. 3rd SS Flat



- Cimarex has experience developing as many as 8 landings within a DSU successfully in Lea county with 9th 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.
- 3rd and Wolfcamp landed this close together are equivalent to 8 WPS flat in the 3rd 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 3rd Sand correlative rights and prevent capital waste.

Black and Tan Analog Comparison To MP/LG

Table 1.2	Black and Tan			Mighty Pheasant Loosey Goosey		
Analog Comparison	3rd Sand	Wolfcamp	3rd SS % of total	3rd Sand	Wolfcamp	3rd SS % of total
PHIH	22	7	76	27	10	73

- Contested acreage is expected to outperform Black and Tan 2.5MMbo / 640-acre Technical EUR by ~20%
- Over performance driven by improved PHIH of 3rd sand. 27/22 = 122%.
- Sensitivities highlight impact of capital waste given 0% uplift on Black and Tan Wolfcamp 3rd SS analog
  - Table 1.3 - Wolfcamp must add ~40% reserves to break even vs Cimarex Development at P90 reserves case
  - Table 1.4 - Wolfcamp must add ~31% reserves to break even vs. Cimarex Development at SM business case
  - Neither Table 1.3 or 1.4 increase in performance is reasonable to expect given public data

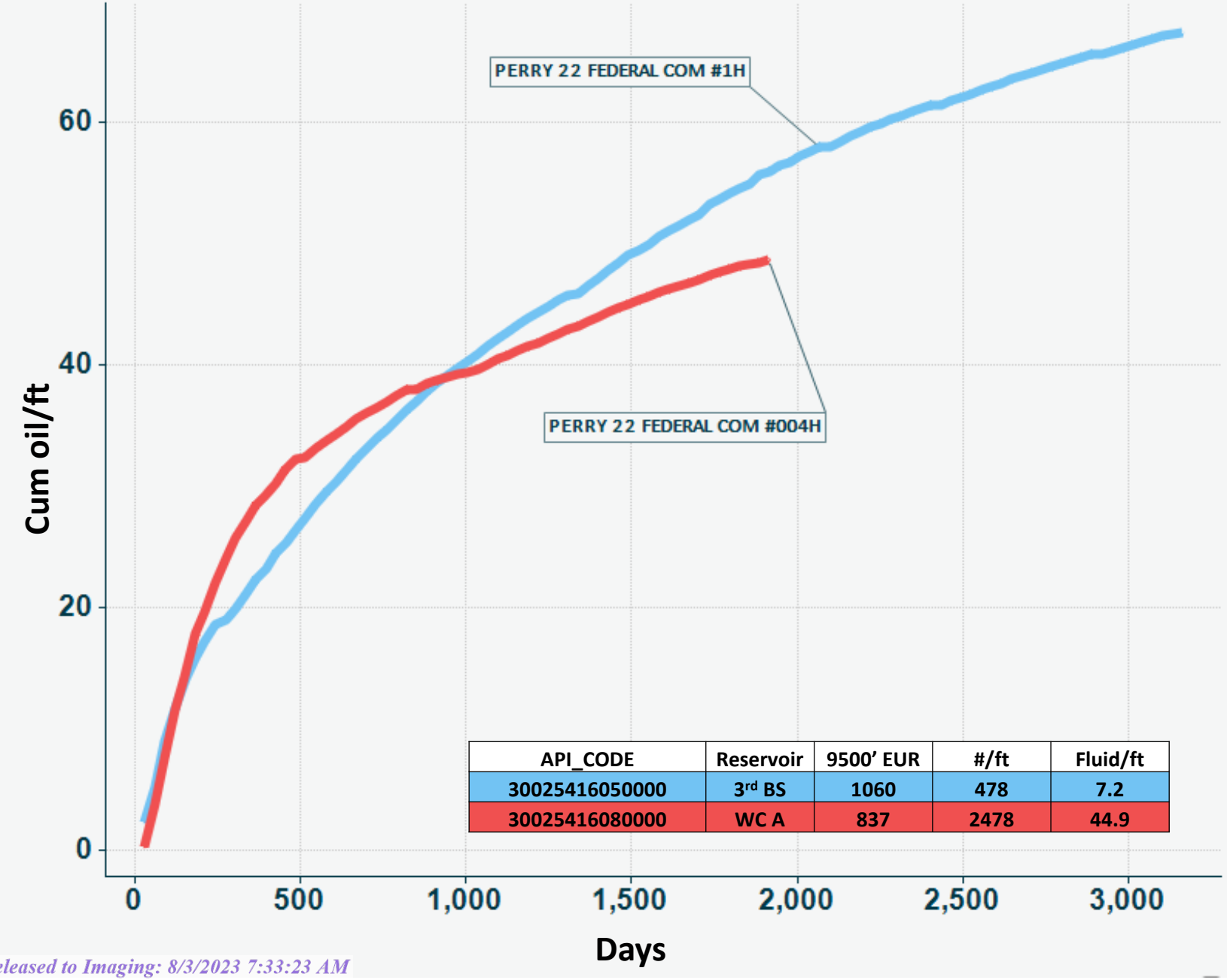
Table 1.3 Reserves Economic Comparison 10MM Technical EUR DSU						
$65 flat analysis at Cimarex WI & NRI			Permian		Cimarex	
Reserves	IP	Economic EUR MBO	PV10 $MM	Payout months	PV10 $MM	Payout months
100%	14,738	8,860	14.7	43	41.8	12
110% expected	16,212	9,820	21.4	33		
120% expected	17,685	10,780	28.2	26		
130% expected	19,159	11,740	34.9	23		
140% expected	20,633	12,700	41.5	21		

Table 1.4 Development Comparison 12MM Technical EUR DSU						
$65 flat analysis at Cimarex WI & NRI			Permian		Cimarex	
12 MM EUR	IP	Economic EUR MBO	PV10 $MM	Payout months	PV10	Payout months
100%	18,897	11,026	34.8	23	61.9	10
110% expected	20,787	12,987	43.6	20		
120% expected	22,676	14,233	52.3	18		
130% expected	24,566	15,480	61	16		
140% expected	26,456	16,727	69.7	15		

- In order to create equivalent PV10, Wolfcamp landings must add ~40% more reserves vs reserves estimate (table 1.3) and 31% more reserves vs. P50 expectation (table 1.4). This outcome is unrealistic vs. observed results.
- Cimarex lower terminal fixed OpEx + less well degradation results in 9.1MM EUR vs. Permian 8.9MM EUR at 100% reserves expectation.
- The Cimarex plan self-funds annual drilling after first batch of wells supporting rapid development
- Permian plan supports slower development speed

Landing Zone Matters; 5 Years Ago, Cimarex's Perry Test Confirmed 3rd SS Landing as Best Target v2

Exhibit D-12



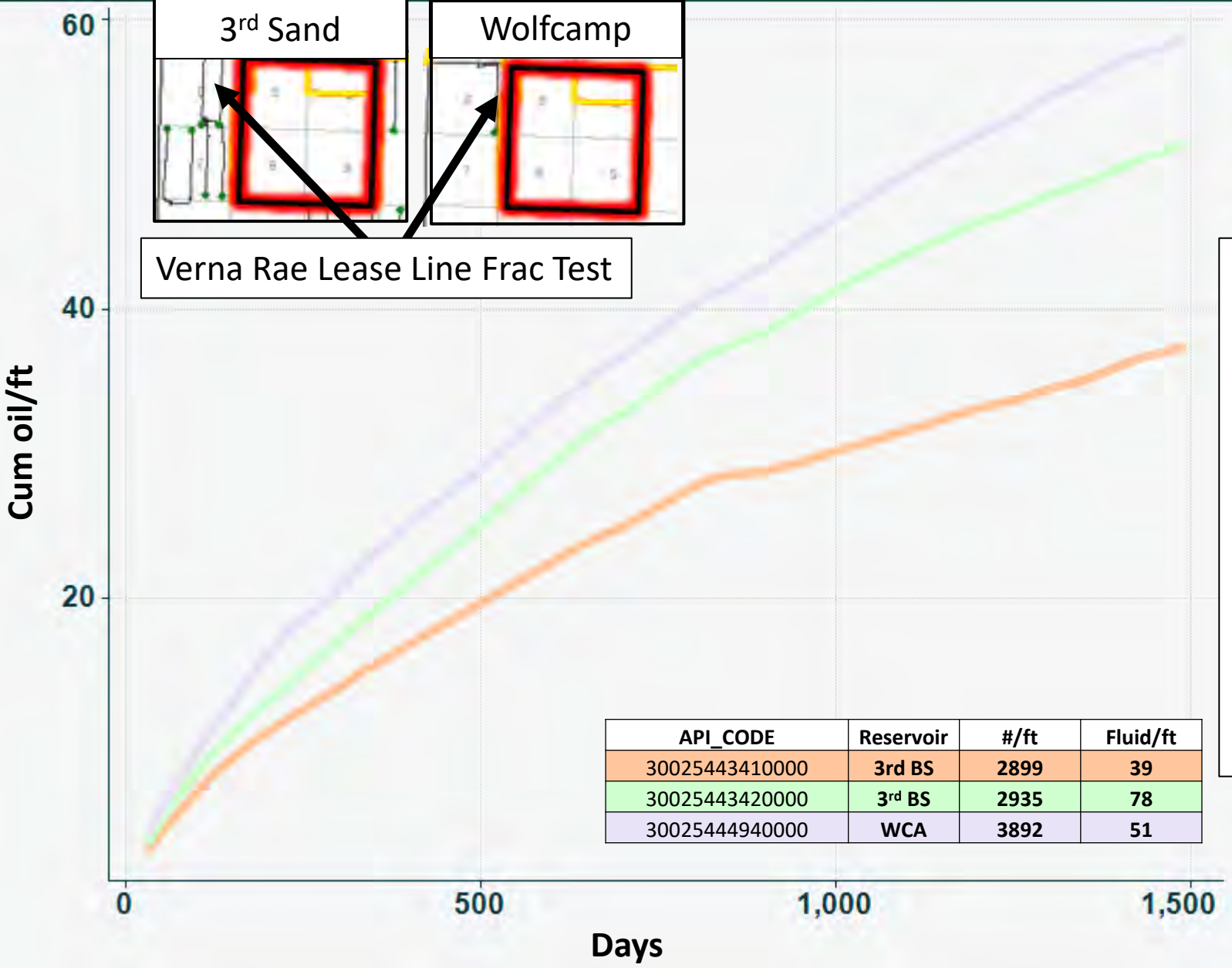
API_CODE	Reservoir	9500' EUR	#/ft	Fluid/ft
30025416050000	3rd BS	1060	478	7.2
30025416080000	WC A	837	2478	44.9

Note: 5 to 6 x the frac energy is not as important as the right landing zone.

- The Perry 1H 2014 vintage 3rd sand well outperforms modern 2018 Perry 4H Wolfcamp completion in the same section at better oil cut 1 mile south of contested development area.
- The best flow properties and majority of bbls are best accessed from the 3rd sand where they are located
- Updated Production to Monthly / Days in Month

Verna Rae Frac Test Section 6 Adjacent to Subject Lands

Verna Rae Lease Line Frac Test



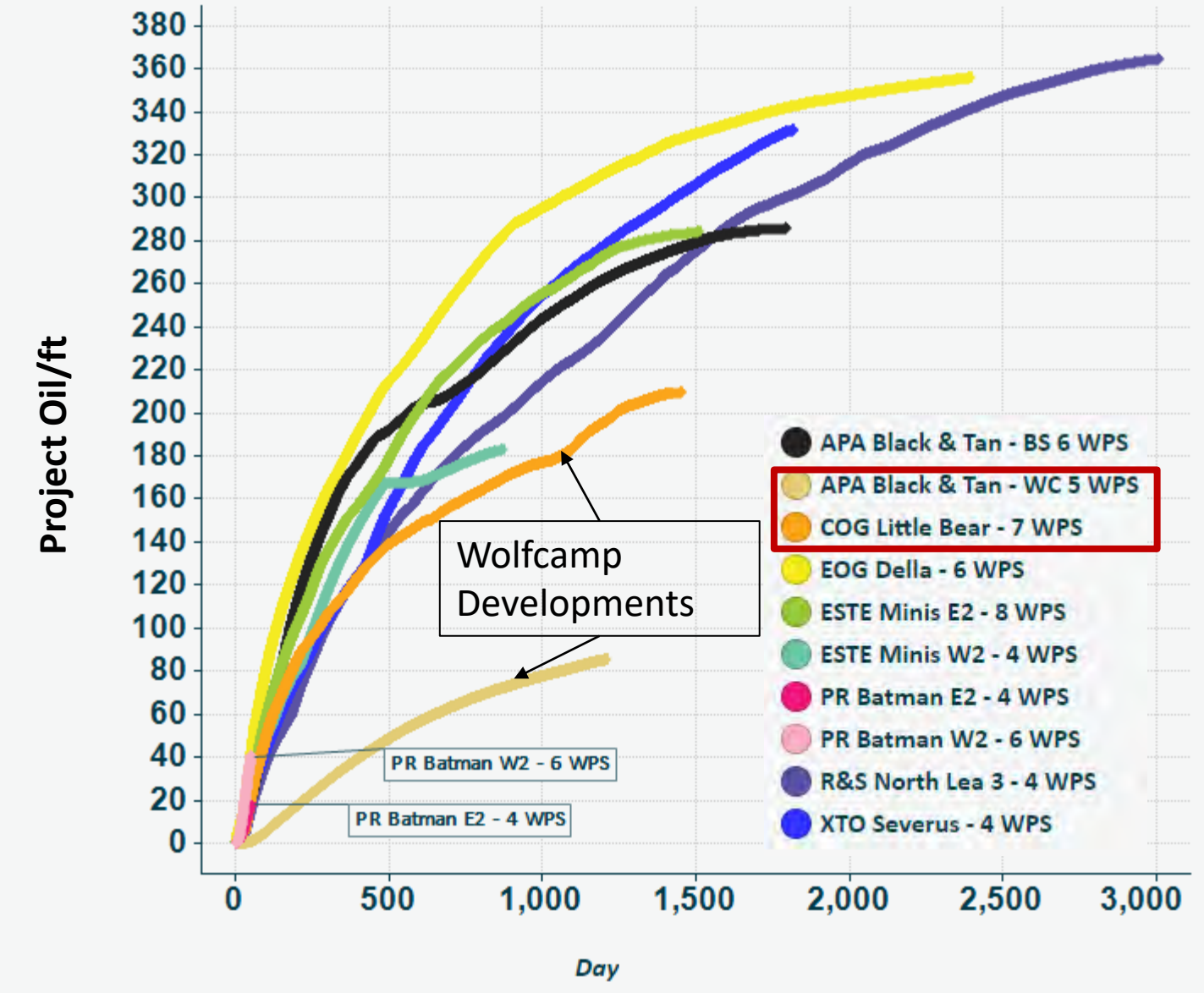
WELL_NAME
VERNA RAE FED COM #133H
VERNA RAE FEDERAL COM #134H
VERNA RAE FEDERAL COM #204H
(None)

API_CODE	Reservoir	#/ft	Fluid/ft
30025443410000	3rd BS	2899	39
30025443420000	3rd BS	2935	78
30025444940000	WCA	3892	51

Key points:

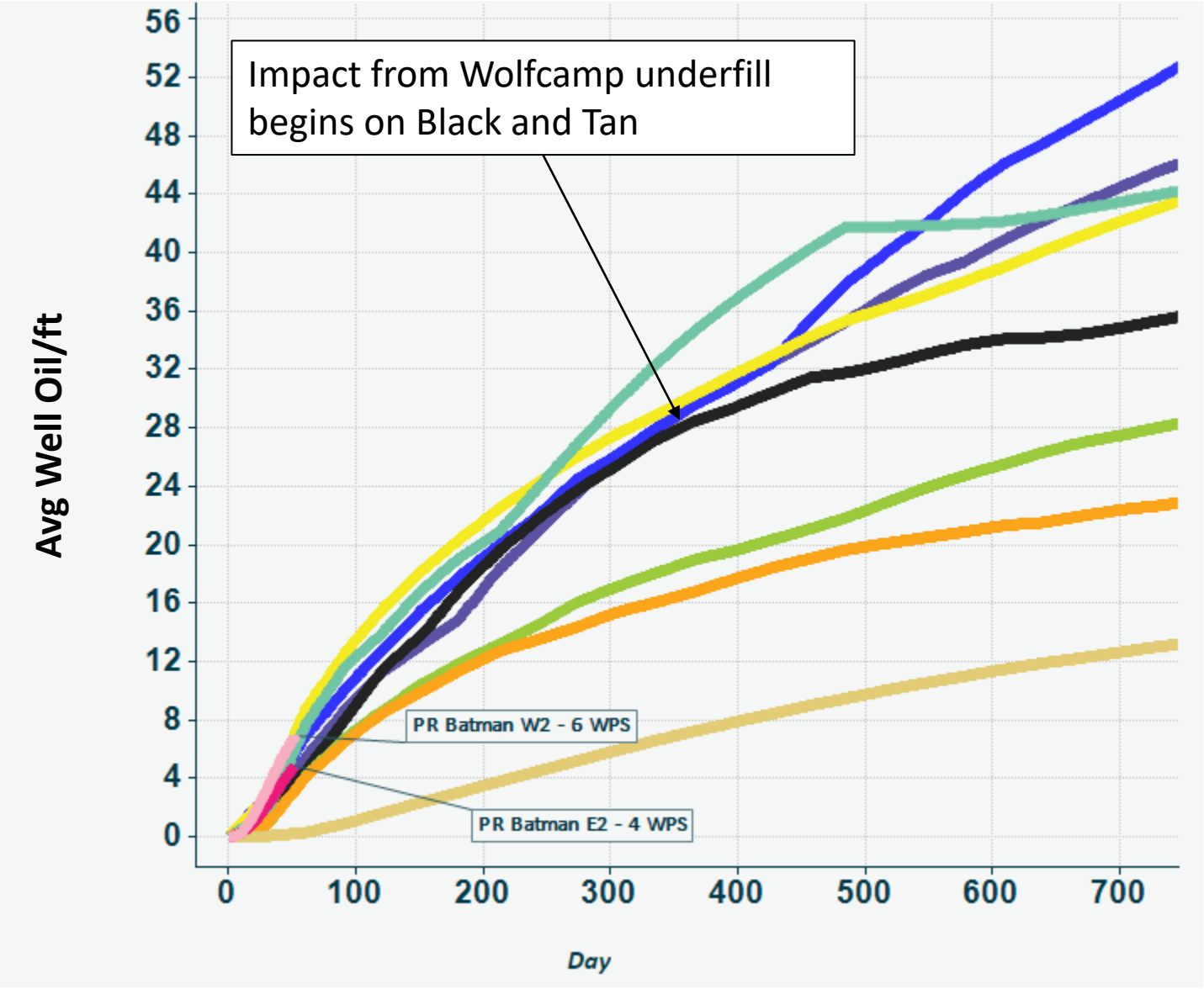
- The Verna Rae 204H is capturing significant 3rd sand bbls due to significantly more energy pumped on this frac test than what is prudent in a full development scenario. Frac Uplift on unbounded Edge wells does not equate to uplift when bounded
- Cimarex uses full developments when available to avoid unreasonable full section bounded development expectations.
- Offsetting these massive frac tests which Lease line Mighty Pheasant / Joker at double proven well density will not outperform Cimarex plan.

1280-Scale Project Cum. Oil/ft vs Days



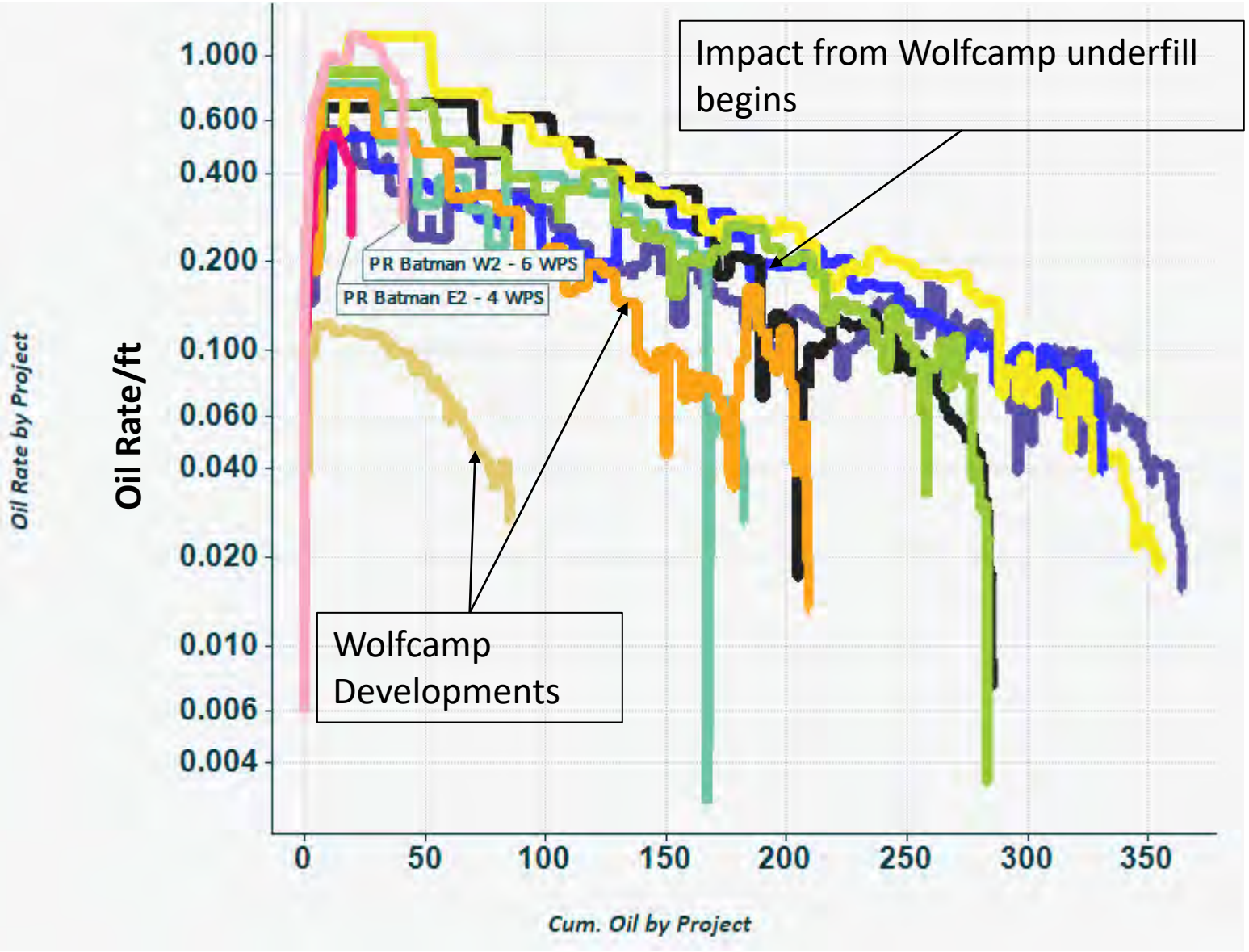
- Key points
- Over time 4 WPS developments catchup to denser projects indicating denser developments are primarily acceleration
- COG little Bear is a dense Wolfcamp only landing full development that underperforms similar to Black and Tan Wolfcamp supporting our proposed 3rd Sand landing
- Batman needs to Cum ~125bbls /ft out of the DSU to get an idea of EURS
- Drilling Wolfcamp looks damaging to 3rd SS project at Black and Tan. WFMP looks to have added at most 30 bbl/ft reserves after 1000 days which is ~equivalent to slope of 3rd sand prior to completion.

Average Per-Well Cum. Oil/ft vs Days, 2-Year Zoom



- Key points
- Denser spaced developments underperform looser spaced developments to the point that drilling past 4 WPS appears to be a waste of capital
- The Della project drilled by EOG takes longer to show degradation most likely due to aggressive drawdown common on their developments.
- In aggregate 3rd Sand is the best way to develop from production results

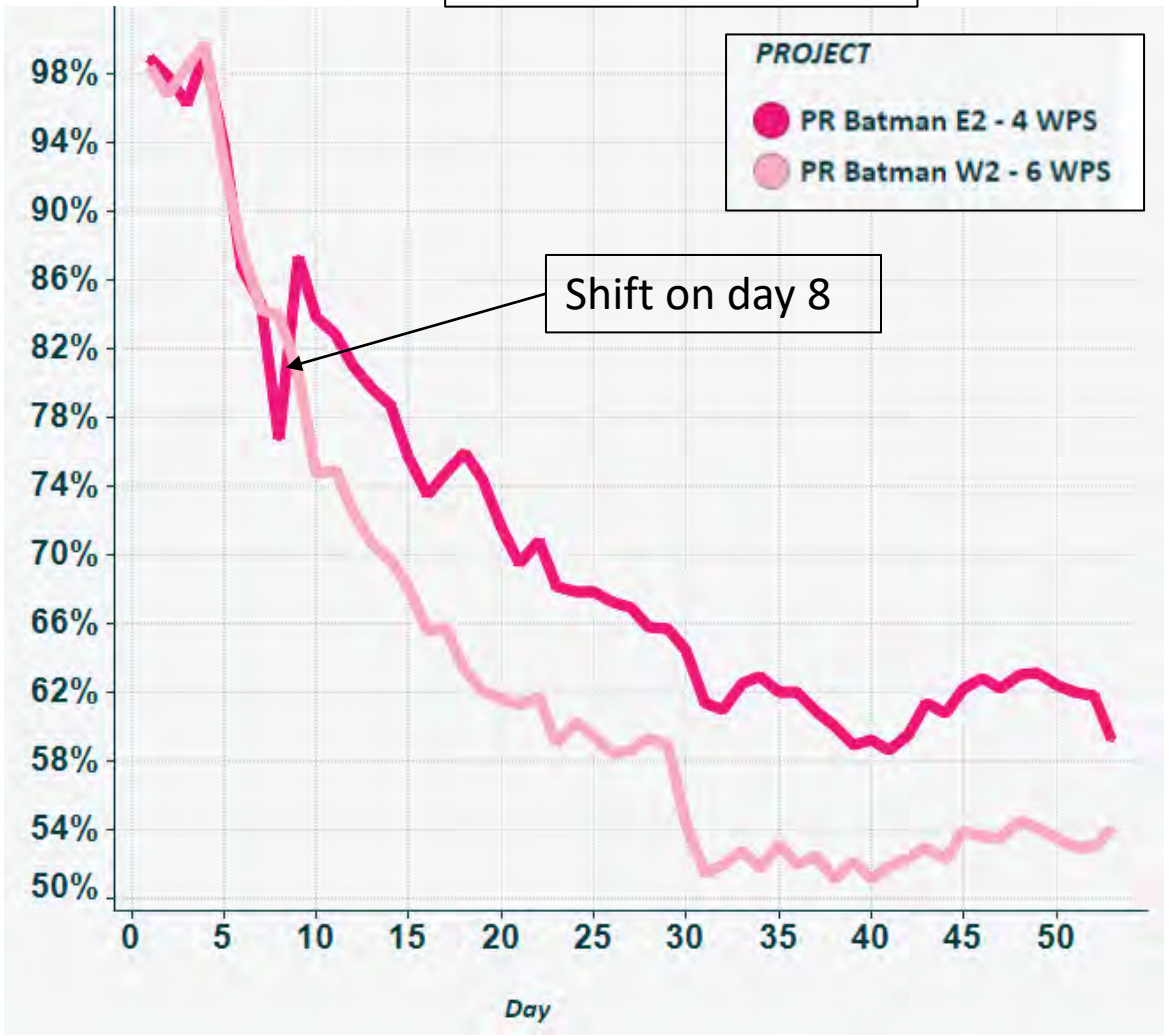
1280-Scale Project Oil Rate/ft vs Cum Oil/ft



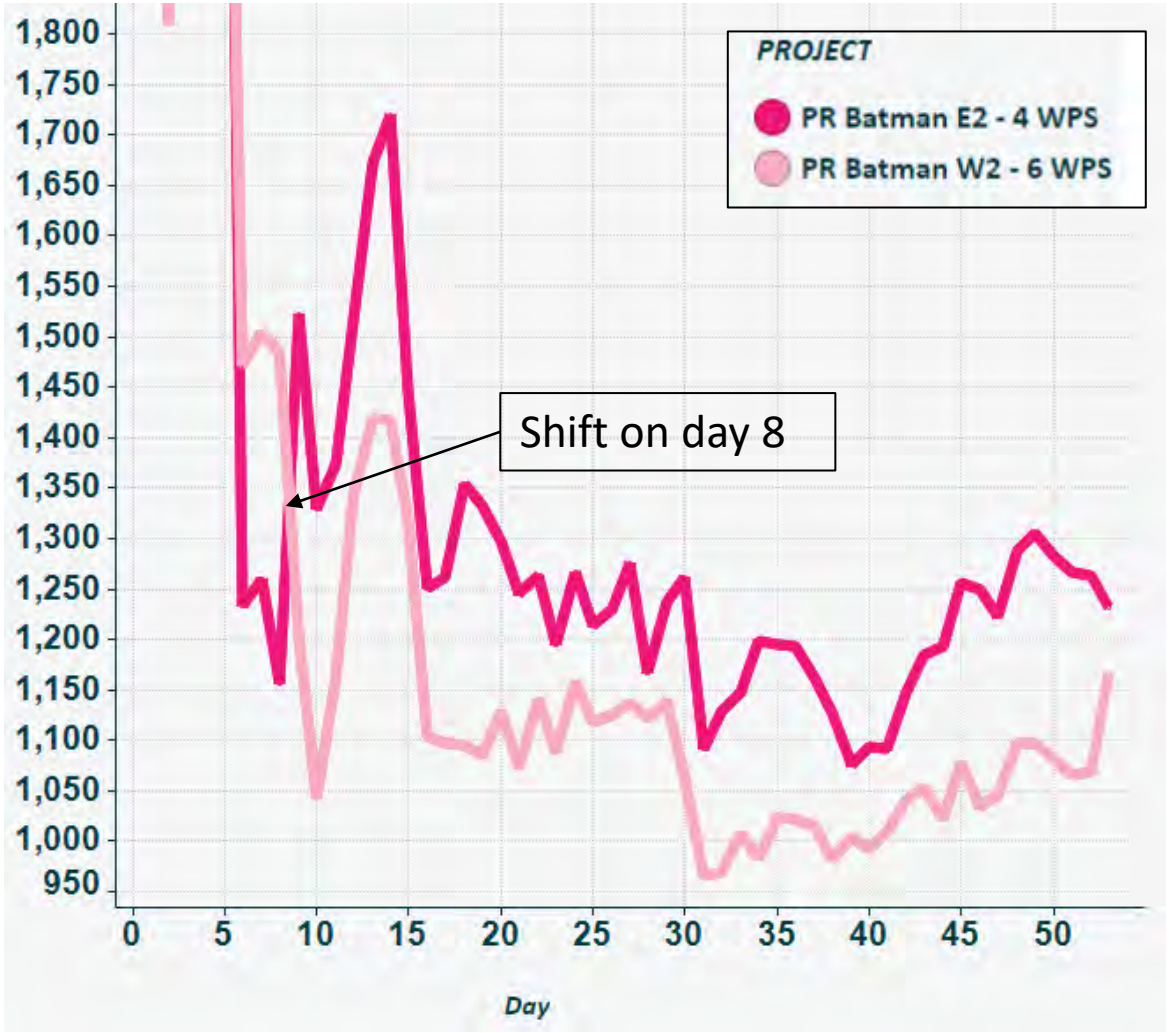
- Key Point
- More time is needed on the Batman wells to gauge performance, post ESP install decline at 100 to 150 cum/ft will be a meaningful data point
- In aggregate 3rd sand developments have a shallower slope than Wolfcamp developments and will enjoy ultimate higher EUR's

Batman WH vs. EH

Water Cut vs. Time



GOR vs. Time



Shift in oil allocation on day 8, long-term trend or driven by a hung separator dump or carryover?

Capital Plan Comparison

Cimarex - Loosey Goosey/Mighty Pheasant				
Res	**Well**	**AFE CapEx**	**June Current Cost**	**AFE Bench Total**
1st	101H	$8,570,695	$9,651,993	**$36,922,774**
1st	102H	$9,450,693	$9,651,993	
1st	103H	$9,450,693	$9,651,993	
1st	104H	$9,450,693	$9,651,993	
upper 2nd*	211H	$8,570,695	$9,651,993	**$25,712,085**
upper 2nd*	212H	$8,570,695	$9,651,993	
upper 2nd*	213H	$8,570,695	$9,651,993	
2nd	201H	$8,570,695	$9,651,993	**$34,282,780**
2nd	202H	$8,570,695	$9,651,993	
2nd	203H	$8,570,695	$9,651,993	
2nd	204H	$8,570,695	$9,651,993	
3rd	301H	$9,428,854	$10,621,993	**$37,675,408**
3rd	302H	$9,428,854	$10,621,993	
3rd	303H	$9,408,850	$10,621,993	
3rd	304H	$9,408,850	$10,621,993	
Total Gross CapEx		**$134,593,047**	**$148,659,895**	**$134,593,047**

*Note: we have planned for upper 2nd, acquiring data on 3rd sand wells to confirm adequate flow, saturation, and in place in this ~60-foot target and will execute if viable.

Permian Resources – Bane/Joker				
Res	**Well**	**AFE CapEx**	**June Current Cost**	**AFE Bench Total**
1st	111H	$10,724,193		$42,896,772
1st	112H	$10,724,193		
1st	113H	$10,724,193		
1st	114H	$10,724,193		
uppr 2nd	122H	$11,020,308		$44,081,232
uppr 2nd	124H	$11,020,308		
uppr 2nd	126H	$11,020,308		
uppr 2nd	128H	$11,020,308		
2nd	121H	$11,020,308		$44,081,232
2nd	123H	$11,020,308		
2nd	125H	$11,020,308		
2nd	127H	$11,020,308		
3rd bs	131H	$11,535,757		$46,143,028
3rd bs	132H	$11,535,757		
3rd bs	133H	$11,535,757		
3rd bs	134H	$11,535,757		
3rd bs	171H	$11,308,013		$92,743,500
3rd bs	172H	$11,308,013		
3rd bs	173H	$11,308,013		
3rd bs	174H	$11,308,013		
WC	201H	$11,877,862		
WC	202H	$11,877,862		
WC	203H	$11,877,862		
WC	204H	$11,877,862		
Total Gross CapEx		**$269,945,764**	**?**	**$269,945,764**

For each Plan, Permian is spending $135MM more / 1280 acres with proposal Capex, ~100% more CapEx, bad for WI owners:

- $ 92.7 MM, shown in red, Cimarex models as uneconomic non additive wells with reserves best captured by single landing.
- $ 31.6 MM, where well counts are ~= Permian costs are $ 2.1 MM to $2.4MM higher/well at time of proposal
- $ 11 MM, one additional 2nd sand well vs. Cimarex Proven spacing.
- Permian Resources contracts, practices, and development plan is >= $121MM of waste driven by Frac cost and Well Count

Cimarex Represents the Majority WI for Any Plan Drilled

We model Permian's plan as significantly over drilled. Extra wellbores raise OpEx, interventions, and spill risk while capturing negligible additional reserves.

	16 well Permian Plan | June Strip| 80% 8/8ths NRI					
Development	WI	NRI	Gross Capex	WI Capex	NPV10	ATax ROR%
Mighty Pheasant / Joker	0.477066	0.381653	$93,654,476	$44,574,978	$7,746,535	21%
Loosey Goosey / Bane	0.518295	0.414636	$93,654,476	$48,527,881	$8,347,243	21%
Total Cimarex	0.497681	0.398144	$187,308,952	$93,102,854	$16,093,779	21%
Total Development	**1**	**0.8**	**$187,308,952**	**$187,308,952**	**$32,176,560**	**21%**

Cimarex's plan benefits significantly from not over drilling the target. This materializes as fast payout, lower OpEx, and lower spill risk.

	8 well 3rd Sand Cimarex Plan | June Strip| 80% 8/8ths NRI					
Development	WI	NRI	Gross Capex	WI Capex	NPV10	ATax ROR%
Mighty Pheasant / Joker	0.553327	0.4426616	$42,487,972	$23,509,755	$32,039,956	149%
Loosey Goosey / Bane	0.527654	0.4221232	$42,487,972	$22,418,953	$30,552,828	149%
Total Cimarex	0.540491	0.432393	$84,975,944	$45,928,710	$62,592,788	149%
Total Development	**1**	**0.8**	**$84,975,944**	**$84,975,944**	**$115,807,328**	**149%**

Comparison of 3rd sand Flat Cimarex Plan vs. Wolfcamp Stagger Permian Plan

Exhibit D-20

Ownership mixes vs PV10 of Wolfcamp 3rd Development Plans					
BS acres	**WC acres**	**WC/BS Ratio**	**PV10 Permian Plan**	**PV10 Cimarex Plan**	**Cimarex - Permian**
1	1	1	$12,569	$45,237	$32,668
1	1.37	1.37	$14,894	$45,237	$30,343
1	2	2	$18,853	$45,237	$26,384
1	3	3	$25,138	$45,237	$20,099
1	3.0088	3.0088	$25,193	$45,237	$20,044
1	4	4	$31,422	$45,237	$13,815
1	5	5	$37,707	$45,237	$7,530
1	**6**	**6**	**$43,991**	**$45,237**	**$1,246**
1	7	7	$50,276	$45,237	-$5,039

- Above Table sensitivity shows different ownership blends at June Strip pricing and 80% 8/8ths NRI.
- We model WI owners benefitting from our development as long as they do not have a Wolfcamp to 3rd Sand ownership imbalance of more than 6x.
- The biggest differential ownership in Loosey Goosey is held by HOG Partnership LP with a 1.37 ratio of Wolfcamp to Bone Spring. $45,237/acre under Cimarex plan outperforms Permian Plan by ~$30,000/acre.
- The biggest differential ownership in Mighty Pheasant is held by MRC Permian and is a 3.0088 ratio of Wolfcamp to Bone Spring. $45,237/acre under Cimarex plan outperforms Permian Plan by ~$20,000/acre.

MRC Permian - PV10 Comparison - Mighty Pheasant vs. Joker

BS acres	WC acres	WC/BS Ratio	PV10 Permian Plan	PV10 Cimarex Plan	Cimarex - Permian
1	3.0088	3.0088	$25,193	$45,237	$20,044

- The biggest differential ownership in Mighty Pheasant / Joker is held by MRC Permian with a 3.0088 ratio of Wolfcamp to Bone Spring
- Under Cimarex's single landing development MRC Permian's PV10 is $ 45,237/acre
- Under Permian Resources' co-development plan, MRC Permian 's PV10 is $25,193/acre
- MRC Permian enjoys an additional $20,044/acre PV10 under Cimarex's plan

MRC Permian - PV10 Comparison – Loosey Goosey vs. Bane

BS acres	WC acres	WC/BS Ratio	PV10 Permian Plan	PV10 Cimarex Plan	Cimarex - Permian
1	1.37	1.37	$14,894	$45,237	$30,343

- The only and by default biggest differential ownership in Loosey Goosey / Bane is held by HOG Partnership LP with a 1.37 ratio of Wolfcamp to Bone Spring
- Under Cimarex's single landing development HOG Partnership PV10 is $ 45,237/acre
- Under Permian Resources' co-development plan HOG Partnership PV10 is $14,894/acre
- HOG Partnership enjoys an additional $30,343/acre PV10 under Cimarex's plan

Ownership Ratios and Depth Severences

Ownership Loosey Goosey / Bane			
OWNER	BS WI	WC WI	WC / BS ownership Ratio
Delmar Hudson Trust	0.060950089	0.060950089	1.0000
Lindys Living Trust	0.079980077	0.079980077	1.0000
Javelina Partners	0.086387997	0.07235004	0.8375
Zorro Partners	0.053319802	0.053319802	1.0000
Josephine Hudson Trust	0.013330013	0.013330013	1.0000
Ard Oil	0.039990039	0.039990039	1.0000
Moore and Shelton	0.030981016	0.030981016	1.0000
HOG Partnership LP	0.050128926	0.068846535	1.3734
Read and Stevens	0.244691793	0.244691793	1.0000
First Century Oil	0.073245733	0.073245733	1.0000
Foran Oil Co.	0.038215438	0.038215438	1.0000
Chase Oil Co.	0.026073984	0.026073984	1.0000
Union Hill	0	0	
Magnum Hunter	0.09280948	0.09280948	1.0000
Cimarex	0.089193344	0.089193344	1.0000
William A Hudson II	0.004679402	0	0.0000
Challenger Crude	0.016022867	0.016022867	1.0000

Loosey Goosey / Bane: Almost Uniform Interest.

- The Majority backs lower well count when unclouded by ownership.
- HOG has a 1.8% delta in ownership which we model as benefiting $30,000/acre from optimum well count vs. double CapEx plan.

Ownership Mighty Pheasant / Joker			
OWNER	BS WI	WC WI	WC / BS ownership Ratio
MRC Permian	0.011252148	0.033766407	3.0009
HOG Partnership LP	0.060948477	0.060948477	1.0000
Northern Oil and Gas	0.007767257	0.023305971	3.0005
Javelina Partners	0.07044874	0.07044874	1.0000
Zorro Partners	0.05079596	0.05079596	1.0000
Delmar Hudson Trust	0.006062753	0.006062753	1.0000
First Century Oil	0.030962423	0.067510413	2.1804
Read and Stevens	0.229467276	0.280456983	1.2222
CBR Oil Prop	0.00416737	0.012505521	3.0008
Ard Oil	0.014295	0.014295	1.0000
Josephine Hudson Trust	0.006755155	0.006755155	1.0000
Magnum Hunter	0.307816041	0.131229999	0.4263
CLM Production Co.	0	0.001249844	
Highland (Texas) Energy	0.003749531	0.001249844	0.3333
Diamond Star Prod.	0.001249844	0.001249844	1.0000
Carolyn Beall	0.001249844	0.001249844	1.0000
Tierra Encantada	0.001249844	0.001249844	1.0000
David Luna	0.001249844	0.001249844	1.0000
Warren Associates	0	0.001249844	
Cimarex Energy	0.025670122	0.0522325	2.0348
Moore and Shelton	0.01687	0.01687	1.0000
Lindys Living Trust	0.02859	0.02859	1.0000
Challenger Crude	2%	2%	1.0000
Avalon Energy Corp	0.007812793	0	0.0000
Marks Oil	0.00817	0.01567	1.9180
Prime Rock	0.023435195	0	0.0000
Wilbanks Reserve	0.043402861	0.083240693	1.9179
Union Hill	0.012499024	0.012499024	1.0000

Mighty Pheasant / Joker : Complicated by Depth Severance

- MRC Permian has worst ratio with 2.25% delta in ownership which we model as benefiting $20,000/acre more from optimum well count vs. double CapEx Plan.

3rd SS Wolfcamp API List

UWI (APINum)	Well Label	Operator	Formation
30025024240100	LEA UNIT 4H	LEGACY RESERVES OPERATING LP	3rd SS
30025328180000	MALLON `34` FEDERAL 16	CIMAREX ENERGY CO	3rd SS
30025393820100	MALLON 35 FEDERAL 4H	CIMAREX ENERGY CO	3rd SS
30025395550000	TUSK FEDERAL 2H	COG OPERATING LLC	3rd SS
30025397630100	MALLON 34 FEDERAL 18H	CIMAREX ENERGY CO	3rd SS
30025398940100	MALLON 34 FEDERAL 19	CIMAREX ENERGY CO	3rd SS
30025400350000	AIRCOBRA 12 STATE 002H	COG OPERATING LLC	3rd SS
30025400400000	QUAIL RIDGE 32 STATE 3H	CIMAREX ENERGY CO	3rd SS
30025400860000	MALLON 35 FEDERAL 7H	CIMAREX ENERGY CO	3rd SS
30025401150000	LYNCH 23 FEDERAL 1H	CIMAREX ENERGY CO	3rd SS
30025401230000	LYNCH 23 FEDERAL 2H	CIMAREX ENERGY CO	3rd SS
30025401350000	MALLON 34 FEDERAL 20	CIMAREX ENERGY CO	3rd SS
30025402530100	CHAPARRAL 33 FEDERAL 3H	CIMAREX ENERGY CO	3rd SS
30025403270000	HANSON 26 FEDERAL 1H	CIMAREX ENERGY CO	3rd SS
30025403280000	CHAPARRAL 33 FEDERAL COM 4	CIMAREX ENERGY CO	3rd SS
30025403300000	EAGLE `2` STATE 006H	MATADOR PRODUCTION CO	3rd SS
30025403610000	QUAIL `16` STATE COM 003H	FASKEN OIL & RANCH LTD	3rd SS
30025403880100	KING COBRA 2 STATE 1H	COG OPERATING LLC	3rd SS
30025403970000	AIRSTRIP 6 STATE COM 2H	COG OPERATING LLC	3rd SS
30025404040000	WILD COBRA 1 STATE 2H	COG OPERATING LLC	3rd SS
30025404050100	PLAYA 2 STATE 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025404250000	WEST PEARL 36 STATE 002H	COG OPERATING LLC	3rd SS
30025404300000	TIGER `11` FEDERAL 1H	COG OPERATING LLC	3rd SS
30025405310000	QUAIL `16` STATE 004H	FASKEN OIL & RANCH LTD	3rd SS
30025405490000	PLAYA 2 STATE 002H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406040100	IGLOO 19 STATE 2H	CAZA OPERATING LLC	3rd SS
30025406110000	IRONHOUSE 20 STATE 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406340000	BUTTER CUP 35 STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406370000	HANSON 26 FEDERAL 3H	CIMAREX ENERGY CO	3rd SS
30025406400000	BUTTER CUP 36 STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406410000	BUTTER CUP 36 STATE COM 002H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406420000	BUTTER CUP 35 STATE COM 002H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406760100	IRONHOUSE 19 STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406970000	LAGUNA 23 FEDERAL COM 002H	EARTHSTONE OPERATING LLC	3rd SS
30025406980100	LEA UNIT 30H	LEGACY RESERVES OPERATING LP	3rd SS
30025406990100	LEA UNIT 31H	LEGACY RESERVES OPERATING LP	3rd SS
30025407250100	OUTLAW `22` FEDERAL COM 1H	COG OPERATING LLC	3rd SS
30025407270000	MONGOOSE FEE 001H	MATADOR PRODUCTION CO	3rd SS
30025407420000	LAGUNA 23 FEDERAL COM 1H	EARTHSTONE OPERATING LLC	3rd SS
30025407480000	IRONHOUSE 20 STATE COM 002H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025407500000	LYNCH 35-2H	CIMAREX ENERGY CO	3rd SS
30025407780100	PRICKLY PEAR 6 FEDERAL 4H	COG OPERATING LLC	3rd SS
30025408040000	HANSON 26 FEDERAL 4H	CIMAREX ENERGY CO	3rd SS
30025408140100	CONDOR STATE 001H	COG OPERATING LLC	3rd SS
30025408190000	HANSON 26 FEDERAL 2H	CIMAREX ENERGY CO	3rd SS
30025408250000	LYNCH 35 FEE 1H	CIMAREX ENERGY CO	3rd SS
30025408360000	MERIT 32 DM STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025408410000	QUAIL 11 STATE COM 1H	CIMAREX ENERGY CO	3rd SS
30025408[illegible]	[illegible] M 2H	CIMAREX ENERGY CO	3rd SS
30025408750000	AIRCOBRA 12 STATE 1H	COG OPERATING LLC	3rd SS
30025408840000	MERIT 6 EH STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025409420000	QUAIL `16` STATE 007H	FASKEN OIL & RANCH LTD	3rd SS
30025409700000	STRATOJET 31 STATE COM 2H	COG OPERATING LLC	3rd SS
30025409770100	TRES PRIMOS 3 STATE 1H	COG OPERATING LLC	3rd SS
30025409840000	MARATHON ROAD 14 NC FEDERAL 1H	MEWBOURNE OIL CO	3rd SS
30025410250000	CONDOR STATE 2H	COG OPERATING LLC	3rd SS
30025410500000	IRONHOUSE 19 STATE COM 003H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025410600000	KING COBRA 2 STATE 2H	COG OPERATING LLC	3rd SS
30025410940000	IRONHOUSE 19 STATE COM 002H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025411060100	GOOSE STATE 001H	COG OPERATING LLC	3rd SS
30025411100000	WILD COBRA 1 STATE 1H	COG OPERATING LLC	3rd SS
30025411310000	PERLA NEGRA FEDERAL COM 1H	XTO ENERGY INC	3rd SS
30025411410000	QUAIL 11 STATE COM 3H	CIMAREX ENERGY CO	3rd SS
30025411480100	CAPROCK 27 STATE FEDERAL COM 1H	RAYBAW OPERATING LLC	3rd SS
30025411520000	AIRSTRIP FEE COM 1H	COG OPERATING LLC	3rd SS
30025411630000	IRONHOUSE 24 STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025412010000	GOOSE STATE COM 2H	COG OPERATING LLC	3rd SS
30025412100100	QUAIL 11 STATE COM 4H	CIMAREX ENERGY CO	3rd SS
30025412150000	MARATHON ROAD 14 MD FEDERAL 1H	MEWBOURNE OIL CO	3rd SS
30025412450200	IRONHOUSE `19` STATE COM 004H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025413050100	HAMON A FEDERAL COM 3H	LEGACY RESERVES OPERATING LP	3rd SS
30025413580100	TUSK FEDERAL 4H	COG OPERATING LLC	3rd SS
30025413660000	QUAIL `16` STATE 8H	FASKEN OIL & RANCH LTD	3rd SS
30025413670100	LEA SOUTH 25 FEDERAL COM 5H	EARTHSTONE OPERATING LLC	3rd SS
30025415190100	NIGHTHAWK STATE COM 1H	MARATHON OIL PERMIAN LLC	3rd SS
30025415320000	SCHARB 10 PA STATE 1H	MEWBOURNE OIL CO	3rd SS
30025415440000	ALBATROSS STATE COM 2H	COG OPERATING LLC	3rd SS
30025415620000	TANGO BTP STATE COM 004H	EOG RESOURCES INC	3rd SS
30025415720100	PRICKLY PEAR 6 FEDERAL 2H	COG OPERATING LLC	3rd SS
30025415730000	TUSK FEDERAL 3H	COG OPERATING LLC	3rd SS
30025415740000	TUSK FEDERAL 5H	COG OPERATING LLC	3rd SS
30025415750000	MARATHON ROAD 15 PA FEDERAL 1H	MEWBOURNE OIL CO	3rd SS
30025415950000	IRONHOUSE 24 STATE COM 002H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025416050000	PERRY 22 FEDERAL COM 1H	CIMAREX ENERGY CO	3rd SS
30025416120100	ORIOLE STATE 1H	COG OPERATING LLC	3rd SS
30025416170000	HAMON A FEDERAL COM 4H	LEGACY RESERVES OPERATING LP	3rd SS
30025416290000	PRICKLY PEAR 6 FEDERAL 3H	COG OPERATING LLC	3rd SS
30025416300100	HAMON FEDERAL COM A 2H	LEGACY RESERVES OPERATING LP	3rd SS
30025416440000	LYNCH 35 FED COM 3H	CIMAREX ENERGY CO	3rd SS
30025416950000	IRONHOUSE 24 STATE COM 003H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025416960000	IRONHOUSE 24 STATE COM 004H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025417140000	TOMCAT FEE 1H	COG OPERATING LLC	3rd SS
30025417520000	CUATRO HIJOS FEE 4H	COG OPERATING LLC	3rd SS
30025417750000	SCHARB 10 B3OB STATE 1H	MEWBOURNE OIL CO	3rd SS
30025418080000	MALLON 27 FEDERAL COM 003H	MATADOR PRODUCTION CO	3rd SS
30025418090000	ALBATROSS STATE COM 1H	COG OPERATING LLC	3rd SS
30025418330000	TIGER 11 FEDERAL 2H	COG OPERATING LLC	3rd SS
30025418340000	CORDONIZ 28 FEDERAL COM 4H	CIMAREX ENERGY CO	3rd SS
30025418350000	KINGFISHER STATE COM 1H	COG OPERATING LLC	3rd SS
30025418360000	KINGFISHER STATE COM 2H	COG OPERATING LLC	3rd SS
30025418580000	TEAL 12 STATE 2H	CIMAREX ENERGY CO	3rd SS
30025418610000	PERLA VERDE 31 STATE 2H	XTO ENERGY INC	3rd SS

3rd SS Wolfcamp API List

30025418620000	PERLA VERDE 31 STATE 003H	XTO ENERGY INC	3rd SS
30025418630000	PERLA VERDE 31 STATE 4H	XTO ENERGY INC	3rd SS
30025418790000	CHAPARRAL 33 FEDERAL COM 5H	CIMAREX ENERGY CO	3rd SS
30025418980000	LEA SOUTH 25 FEDERAL COM 6H	EARTHSTONE OPERATING LLC	3rd SS
30025419450000	MARATHON ROAD 15 B3OB FEDERAL 1H	MEWBOURNE OIL CO	3rd SS
30025419470000	PALOMA 21 FEDERAL COM 4H	FASKEN OIL & RANCH LTD	3rd SS
30025419860000	SCHARB 10 B3NC STATE 1H	MEWBOURNE OIL CO	3rd SS
30025419870100	SUPER COBRA STATE COM 1H	COG OPERATING LLC	3rd SS
30025419930000	PALOMA 21 FEDERAL COM 1H	FASKEN OIL & RANCH LTD	3rd SS
30025419940000	PALOMA 21 FEDERAL COM 2H	FASKEN OIL & RANCH LTD	3rd SS
30025419950000	PALOMA 21 FEDERAL COM 3H	FASKEN OIL & RANCH LTD	3rd SS
30025420340000	STRATOSPHERE 36 STATE COM 3H	COG OPERATING LLC	3rd SS
30025420350000	STRATOSPHERE 36 STATE COM 4H	COG OPERATING LLC	3rd SS
30025420360000	STRATOSPHERE 36 STATE COM 5H	COG OPERATING LLC	3rd SS
30025420370000	STRATOSPHERE 36 STATE COM 6H	COG OPERATING LLC	3rd SS
30025420630000	PERLA VERDE 31 STATE 001H	XTO ENERGY INC	3rd SS
30025420800000	NORTH LEA `3` FEDERAL COM 001H	READ & STEVENS INC	3rd SS
30025421290000	TRES PRIMOS 3 STATE 2H	COG OPERATING LLC	3rd SS
30025421410000	PEARL WEST 36 STATE COM 6H	COG OPERATING LLC	3rd SS
30025421450000	WEST PEARL 36 STATE COM 003H	COG OPERATING LLC	3rd SS
30025421460000	PEARL WEST 36 STATE COM 4H	COG OPERATING LLC	3rd SS
30025421470000	WEST PEARL 36 STATE COM 005H	COG OPERATING LLC	3rd SS
30025421730000	RAPTOR WEST 3 STATE 004H	MARATHON OIL PERMIAN LLC	3rd SS
30025422010000	MARATHON ROAD 15 NC FEDERAL 1H	MEWBOURNE OIL CO	3rd SS
30025422120000	MALLON 27 FEDERAL COM 001H	MATADOR PRODUCTION CO	3rd SS
30025422270000	NORTH LEA 3 FEDERAL COM 002H	READ & STEVENS INC	3rd SS
30025422280000	NORTH LEA `3` FEDERAL COM 003H	READ & STEVENS INC	3rd SS
30025422680000	LEA 7 FEDERAL COM 1H	CIMAREX ENERGY CO	3rd SS
30025422760000	CUATRO HIJOS FEE 3H	COG OPERATING LLC	3rd SS
30025422920000	BLACK PEARL 1 FEDERAL COM 1H	COG OPERATING LLC	3rd SS
30025422930000	BLACK PEARL 1 FEDERAL 002H	COG OPERATING LLC	3rd SS
30025422940000	BLACK PEARL 1 FEDERAL 3H	COG OPERATING LLC	3rd SS
30025422950000	BLACK PEARL 1 FEDERAL 4H	COG OPERATING LLC	3rd SS
30025423150000	MALLON 27 FEDERAL COM 2H	MATADOR PRODUCTION CO	3rd SS
30025423380100	BLUE JAY FEDERAL 001H	COG OPERATING LLC	3rd SS
30025423420000	LEA UNIT 32H	LEGACY RESERVES OPERATING LP	3rd SS
30025423430000	LEA UNIT 33H	LEGACY RESERVES OPERATING LP	3rd SS
30025423440000	LEA UNIT 34H	LEGACY RESERVES OPERATING LP	3rd SS
30025423520000	CIMARRON 16-19-34 RN STATE 134H	MATADOR PRODUCTION CO	3rd SS
30025423570100	IGLOO `19` STATE 3H	CAZA OPERATING LLC	3rd SS
30025423670000	BUTTER CUP 36 STATE COM 003H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025423770000	IGGLES STATE COM 001H	COG OPERATING LLC	3rd SS
30025424300000	STRATOJET 31 STATE COM 8H	COG OPERATING LLC	3rd SS
30025424720000	KINGFISHER STATE COM 5H	COG OPERATING LLC	3rd SS
30025424990000	PICKARD 20 18 34 RN STATE 124H	MATADOR PRODUCTION CO	3rd SS
30025425210000	SCHARB 10 B3MD STATE 1H	MEWBOURNE OIL CO	3rd SS
30025425460000	LEA 7 FEDERAL COM 2H (P&A 12/27/	CIMAREX ENERGY CO	3rd SS
30025425770000	PERLA NEGRA FEDERAL COM 4H	XTO ENERGY INC	3rd SS
30025426840000	NORTH LEA `3` FEDERAL COM 004H	READ & STEVENS INC	3rd SS
30025427090000	PERLA NEGRA FEDERAL COM 2H	XTO ENERGY INC	3rd SS
30025427100000	PERLA NEGRA FEDERAL COM 3H	XTO ENERGY INC	3rd SS
30025428850000	LEA UNIT 44H	LEGACY RESERVES OPERATING LP	3rd SS

30025429490000	LEA UNIT 54H	LEGACY RESERVES OPERATING LP	3rd SS
30025429500000	MAS FEDERAL 3H	COG OPERATING LLC	3rd SS
30025429580000	LEA UNIT 051H	LEGACY RESERVES OPERATING LP	3rd SS
30025429720000	DESERT ROSE 17-8 FEDERAL COM 001	CAZA OPERATING LLC	3rd SS
30025429790000	CIMARRON 16 19S 34E RN STATE COM	MATADOR PRODUCTION CO	3rd SS
30025429880100	EAGLECLAW FEDERAL 001H	CAZA OPERATING LLC	3rd SS
30025430290000	LEA SOUTH 25 FEDERAL COM 3BS 007	EARTHSTONE OPERATING LLC	3rd SS
30025430350000	LEA UNIT 059H	LEGACY RESERVES OPERATING LP	3rd SS
30025430540000	DELLA 29 FEDERAL COM 602H	EOG RESOURCES INC	3rd SS
30025430770000	LEA UNIT 038H	LEGACY RESERVES OPERATING LP	3rd SS
30025432470100	LEA UNIT 062H	LEGACY RESERVES OPERATING LP	3rd SS
30025432500000	HAMON A FED COM 009H	LEGACY RESERVES OPERATING LP	3rd SS
30025434150000	SEVERUS 31 FEDERAL COM 001H	XTO ENERGY INC	3rd SS
30025434160000	SEVERUS 31 FEDERAL COM 002H	XTO ENERGY INC	3rd SS
30025434170000	SEVERUS 31 FEDERAL COM 003H	XTO ENERGY INC	3rd SS
30025434180000	SEVERUS 31 FEDERAL COM 004H	XTO ENERGY INC	3rd SS
30025434680100	CHIEF 30 STATE 7H	CIMAREX ENERGY CO	3rd SS
30025435330000	BLUE JAY FEDERAL COM 002H	COG OPERATING LLC	3rd SS
30025436800000	NORTH LEA 10 FEDERAL 002H	READ & STEVENS INC	3rd SS
30025437410000	ESPEJO FEDERAL COM 001H	XTO ENERGY INC	3rd SS
30025437420000	ESPEJO FEDERAL COM 002H	XTO ENERGY INC	3rd SS
30025437770000	ESPEJO FEDERAL COM 003H	XTO ENERGY INC	3rd SS
30025437920000	STRATOJET 31 STATE COM 007H	COG OPERATING LLC	3rd SS
30025438160100	AIRSTRIP 31 18 35 RN STATE COM #132H	MATADOR PRODUCTION CO	3rd SS
30025439210100	BLACK & TAN 27 FEDERAL COM 303H	APACHE CORP	3rd SS
30025439400000	BLACK & TAN 27 FEDERAL COM 305H	APACHE CORP	3rd SS
30025440170000	BLACK & TAN 27 FEDERAL COM 301H	APACHE CORP	3rd SS
30025440180000	BLACK & TAN 27 FEDERAL COM 302H	APACHE CORP	3rd SS
30025440440000	BLACK & TAN 27 FEDERAL COM 307H	APACHE CORP	3rd SS
30025440450000	BLACK AND TAN 27 FEDERAL COM 308	APACHE CORP	3rd SS
30025440920000	MAS FEDERAL COM 001H	COG OPERATING LLC	3rd SS
30025442130000	CHIEF 30 STATE 8H	CIMAREX ENERGY CO	3rd SS
30025443230000	AIRSTRIP 31-18-35 RN STATE COM 1	MATADOR PRODUCTION CO	3rd SS
30025443410000	VERNA RAE FEDERAL COM 133H	MATADOR PRODUCTION CO	3rd SS
30025443420000	VERNA RAE FEDERAL COM 134H	MATADOR PRODUCTION CO	3rd SS
30025444740000	DELLA 29 FEDERAL COM 603H	EOG RESOURCES INC	3rd SS
30025444750000	DELLA 29 FEDERAL 604H	EOG RESOURCES INC	3rd SS
30025444760000	DELLA 29 FEDERAL 605H	EOG RESOURCES INC	3rd SS
30025444770000	DELLA 29 FEDERAL 606H	EOG RESOURCES INC	3rd SS
30025444950000	EAGLECLAW FEDERAL COM 002H	CAZA OPERATING LLC	3rd SS
30025445090000	AIRSTRIP 31-18-35 RN STATE COM 1	MATADOR PRODUCTION CO	3rd SS
30025449080000	CHIEF 30 STATE 9H	CIMAREX ENERGY CO	3rd SS
30025450540000	MESCALERO RIDGE 21 FEDERAL 1H	CIMAREX ENERGY CO	3rd SS
30025451540000	LEA UNIT 066H	LEGACY RESERVES OPERATING LP	3rd SS
30025451990000	LEA 7 FEDERAL COM 29H	CIMAREX ENERGY CO	3rd SS
30025452000000	LEA 7 FEDERAL COM 30H	CIMAREX ENERGY CO	3rd SS
30025452100000	LEA UNIT 065H	LEGACY RESERVES OPERATING LP	3rd SS
30025454380000	AIRSTRIP 31-18S-35E RN STATE COM	MATADOR PRODUCTION CO	3rd SS
30025458960000	ANCHOR 19 35 33 STATE 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025461400000	CABLE 19 35 9 STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025467680000	HEREFORD 29-20 W1OB FED COM 001H	MEWBOURNE OIL CO	3rd SS
30025468030000	SANTA VACA 19-18 B3MD STATE COM	MEWBOURNE OIL CO	3rd SS

3rd SS Wolfcamp API List

30025474570000	TALON 5-8 FEDERAL 001H	CAZA OPERATING LLC	3rd SS
30025474830000	HEREFORD 29-20 W1MD STATE COM 00	MEWBOURNE OIL CO	3rd SS
30025474840000	HEREFORD 29-20 W1NC STATE COM 00	MEWBOURNE OIL CO	3rd SS
30025474860000	TALON 5-8 FEDERAL 005H	CAZA OPERATING LLC	3rd SS
30025491550000	SANTA VACA 19 18 B3NC STATE COM	MEWBOURNE OIL CO	3rd SS
30025499040000	CHAROLAIS 28 21 W1MD STATE COM 0	MEWBOURNE OIL CO	3rd SS
30025499350000	HEREFORD 29 20 W1PA STATE COM 00	MEWBOURNE OIL CO	3rd SS
30025501680000	FOXTAIL E2 05 32 W1 STATE COM 00	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025501690000	FOXTAIL E2 05 32 W1 STATE COM 00	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025502420000	SANTA VACA 19-18 B3OB FEE 001H	MEWBOURNE OIL CO	3rd SS
30025503260000	SANTA VACA 19-18 B3PA FEE 001H	MEWBOURNE OIL CO	3rd SS
30025507240000	MESCALERO RIDGE 21-28 FED COM 2H	CIMAREX ENERGY CO	3rd SS
30025416080000	PERRY 22 FEDERAL COM 4H	CIMAREX ENERGY CO	Wolfcamp
30025419500000	NIGHTHAWK STATE COM 003H	MARATHON OIL PERMIAN LLC	Wolfcamp
30025430530000	DELLA 29 FEDERAL COM 701H	EOG RESOURCES INC	Wolfcamp
30025431100000	LEA SOUTH 25 FEDERAL COM WCA 012	EARTHSTONE OPERATING LLC	Wolfcamp
30025433950000	AIRSTRIP 31 18 35 RN STATE COM 2	MATADOR PRODUCTION CO	Wolfcamp
30025434820000	MAS FEDERAL 4H	COG OPERATING LLC	Wolfcamp
30025442140100	MAS FEDERAL COM 002H	COG OPERATING LLC	Wolfcamp
30025444940000	VERNA RAE FEDERAL COM 204H	MATADOR PRODUCTION CO	Wolfcamp
30025450980100	LITTLE BEAR FEDERAL COM 001H	COG OPERATING LLC	Wolfcamp
30025450990000	LITTLE BEAR FEDERAL COM 003H	COG OPERATING LLC	Wolfcamp
30025451000000	LITTLE BEAR FEDERAL COM 004H	COG OPERATING LLC	Wolfcamp
30025451020000	LITTLE BEAR FEDERAL COM 006H	COG OPERATING LLC	Wolfcamp
30025451030000	LITTLE BEAR FEDERAL COM 007H	COG OPERATING LLC	Wolfcamp
30025451040000	LITTLE BEAR FEDERAL COM 008H	COG OPERATING LLC	Wolfcamp
30025451050000	LITTLE BEAR FEDERAL COM 009H	COG OPERATING LLC	Wolfcamp
30025451490000	LITTLE BEAR FEDERAL COM 002H	COG OPERATING LLC	Wolfcamp
30025452110100	LEA UNIT 100H	LEGACY RESERVES OPERATING LP	Wolfcamp
30025460720000	BLACK & TAN 27 FEDERAL COM 401H	APACHE CORP	Wolfcamp
30025460730000	BLACK & TAN 27 FEDERAL COM 402H	APACHE CORP	Wolfcamp
30025460750000	BLACK & TAN 27 FEDERAL COM 406H	APACHE CORP	Wolfcamp
30025461230000	BLACK & TAN 27 FEDERAL COM 403H	APACHE CORP	Wolfcamp
30025461240000	BLACK & TAN 27 FEDERAL COM 405H	APACHE CORP	Wolfcamp