

**BEFORE THE OIL CONSERVATION DIVISION  
EXAMINER HEARING JULY 20, 2023**

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

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

**CIMAREX ENERGY CO.**

## TABLE OF CONTENTS FOR CASE NOS. 23594-23601

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TAB 1 | <p><b>Reference for Case Nos. 23594-23601</b></p> <p><b>Applications for Case Nos. 23594-23601</b></p> <p><b>Prehearing Statement Case Nos. 23594-23601 with Attached Motion</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| TAB 2 | Exhibit A: Self-Affirmed Statement of John Coffman Landman                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| TAB 3 | <p>Exhibit B: Self-Affirmed Statement of Staci Mueller, Geologist</p> <p>Exhibit B-1: Locator Map &amp; Stress Direction</p> <p>Exhibit B-2: Permit Status</p> <p>Exhibit B-3: Gun Barrel View</p> <p>Exhibit B-4: Development Plan Comparison</p> <p>Exhibit B-5: Subsea Structure Map</p> <p>Exhibit B-6: 3<sup>rd</sup> Bone Spring Isopach Map</p> <p>Exhibit B-7: Structural Cross Section</p> <p>Exhibit B-8: 3<sup>rd</sup> Bone Spring Producers vs. all Wolfcamp Producers</p> <p>Exhibit B-9: All 3<sup>rd</sup> Bone Spring and Wolfcamp Producers</p> <p>Exhibit B-10: Comparing 3<sup>rd</sup> Sand to Wolfcamp Reservoir (SoPhiH)</p> <p>Exhibit B-11: 2<sup>nd</sup> Bone Spring Structure Map</p> <p>Exhibit B-12: 2<sup>nd</sup> Bone Spring Sand Isopach</p> <p>Exhibit B-13: 2<sup>nd</sup> Bone Spring Sand Cross Section</p> <p>Exhibit B-14: 2<sup>nd</sup> Bone Spring Sand vs. 3<sup>rd</sup> Bone Spring Carbonate Producers</p> <p>Exhibit B-15: PhilH L 2<sup>nd</sup> Sand vs. 3<sup>rd</sup> Carbonate</p> <p>Exhibit B-16: 1<sup>st</sup> Bone Spring Sand Structure</p> <p>Exhibit B-17: 1<sup>st</sup> Bone Spring Sand Isopach</p> <p>Exhibit B-18: 1<sup>st</sup> Bone Spring Structural Cross Section</p> <p>Exhibit B-19: Wolfcamp Structure Map (Subsea TVD)</p> <p>Exhibit B-20: Wolfcamp XY Isopach</p> <p>Exhibit B-21: Wolfcamp XY West to East Cross Section</p> |
| TAB 4 | <p>Exhibit C: Self-Affirmed Statement of Eddie Behm, Petroleum Engineer</p> <p>Exhibit C-1: Mighty Pheasant Loosey Goosey Development Plan</p> <p>Exhibit C-2: Capital Plan Comparison Cimarex vs. Permian</p> <p>Exhibit C-3: Map of 3<sup>rd</sup> Bone Spring Sand Producers</p> <p>Exhibit C-4: 3<sup>rd</sup> Sand Well Count by Landing and Operators</p> <p>Exhibit C-5: Black and Tan 3<sup>rd</sup> Sand Composite Forecast 6 wells<br/>(Before WC completion)</p> <p>Exhibit C-6: Black and Tan 3<sup>rd</sup> Sand Composite Forecast 6 Wells Post<br/>Wolfcamp Frac</p> <p>Exhibit C-7: Black and Tan Wolfcamp Composite Forecast 5 wells</p> <p>Exhibit C-8: Lessons Learned from the Black and Tan Development</p> <p>Exhibit C-9: Diagram of Staggered Landing Wolfcamp 3<sup>rd</sup> SS Vs. 3<sup>rd</sup> SS Flat</p> <p>Exhibit C-10: Black and Tan Analog comparison to MP/LG</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

Exhibit C-11: Landing Zone Matters; Five Years Ago, Cimarex's Perry Test  
Confirmed 3<sup>rd</sup> SS Landing as Best Target  
Exhibit C-12: Dataset Identifying all Wells in Area of Interest

## **TAB 1**

Reference for Case Nos. 23594-23601

Applications 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**

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

Case No. 23594

**APPLICATION**

Cimarex Energy Co. ("Cimarex"), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division ("Division") pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.01-acre, more or less, spacing and proration unit comprised of Lot 4 (NW/4 NW/4 equivalent), the SW/4 NW/4, and the W/2 SW/4 of Section 5 and the W/2 W/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit ("HSU") and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Mighty Pheasant 5-8 Fed Com 301H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 301H well described in the application filed by Cimarex in Case No. 23449. Cimarex's geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

formation, based on the geology of the lands, is achieved by drilling the **Mighty Pheasant 5-8 Fed Com 301H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23520, for the Wolfcamp formation.

3. Cimarex proposes the **Mighty Pheasant 5-8 Fed Com 301H Well**, an oil well, to be horizontally drilled from a surface location in Lot 4 (NW/4 NW/4 equivalent) of Section 5 to a bottom hole location in the SW/4 SW/4 (Unit M) of Section 8.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

- A. Pooling all uncommitted interests in the Wolfcamp formation underlying the proposed HSU.
- B. Approving the **Mighty Pheasant 5-8 Fed Com 301H Well** as the proper well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **301H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.
- C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;
- D. Authorizing Cimarex to recover its costs of drilling, equipping, and completing the well;
- E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;
- F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and
- G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

*/s/ Darin C. Savage*

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**Attorneys for Cimarex Energy Co.**

***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

Applicant in the above-styled cause seeks an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.01-acre, more or less, spacing and proration unit comprised of Lot 4 (NW/4 NW/4 equivalent), the SW/4 NW/4, and the W/2 SW/4 of Section 5 and the W/2 W/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Mighty Pheasant 5-8 Fed Com 301H Well**, an oil well, to be horizontally drilled from a surface location in Lot 4 (NW/4 NW/4 equivalent) of Section 5 to a bottom hole location in the SW/4 SW/4 (Unit M) of Section 8. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

Case No. 23595

**APPLICATION**

Cimarex Energy Co. ("Cimarex"), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division ("Division") pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.04-acre, more or less, spacing and proration unit comprised of Lot 3 (NE/4 NW/4 equivalent), the SE/4 NW/4, and the E/2 SW/4 of Section 5 and the E/2 W/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit ("HSU") and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Mighty Pheasant 5-8 Fed Com 302H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 302H well described in the application filed by Cimarex in Case No. 23450. Cimarex's geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

formation, based on the geology of the lands, is achieved by drilling the **Mighty Pheasant 5-8 Fed Com 302H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23521, for the Wolfcamp formation.

3. Cimarex proposes the **Mighty Pheasant 5-8 Fed Com 302H Well**, an oil well, to be horizontally drilled from a surface location in Lot 4 (NW/4 NW/4 equivalent) of Section 5 to a bottom hole location in the SE/4 SW/4 (Unit N) of Section 8.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted interests in the Wolfcamp formation underlying the proposed HSU.

B. Approving the **Mighty Pheasant 5-8 Fed Com 302H Well** as the proper well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **302H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

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

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

*/s/ Darin C. Savage*

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***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

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formation, based on the geology of the lands, is achieved by drilling the **Mighty Pheasant 5-8 Fed Com 303H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23522, for the Wolfcamp formation.

3. Cimarex proposes the **Mighty Pheasant 5-8 Fed Com 303H Well**, an oil well, to be horizontally drilled from a surface location in SW/4 SE/4 (Unit O) of Section 32, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SW/4 SE/4 (Unit O) of Section 8, Township 20 South, Range 34 East, NMPM.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

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

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

Case No. 23596

**APPLICATION**

Cimarex Energy Co. (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division (“Division”) pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.06-acre, more or less, spacing and proration unit comprised of Lot 2 (NW/4 NE/4 equivalent), the SW/4 NE/4, and the W/2 SE/4 of Section 5 and the W/2 E/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit (“HSU”) and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Mighty Pheasant 5-8 Fed Com 303H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 303H well described in the application filed by Cimarex in Case No. 23451. Cimarex’s geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted interests in the Wolfcamp formation underlying the proposed HSU.

B. Approving the **Mighty Pheasant 5-8 Fed Com 303H Well** as the proper well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **303H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

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

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

*/s/ Darin C. Savage*

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**Attorneys for Cimarex Energy Co.**

***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

Applicant in the above-styled cause seeks an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.06-acre, more or less, spacing and proration unit comprised of Lot 2 (NW/4 NE/4 equivalent), the SW/4 NE/4, and the W/2 SE/4 of Section 5 and the W/2 E/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Mighty Pheasant 5-8 Fed Com 303H Well**, an oil well, to be horizontally drilled from a surface location in SW/4 SE/4 (Unit O) of Section 32, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SW/4 SE/4 (Unit O) of Section 8, Township 20 South, Range 34 East, NMPM. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

Case No. 23597

**APPLICATION**

Cimarex Energy Co. (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division (“Division”) pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.09-acre, more or less, spacing and proration unit comprised of Lot 1 (NE/4 NE/4 equivalent), the SE/4 NE/4, and the E/2 SE/4 of Section 5 and the E/2 E/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit (“HSU”) and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Mighty Pheasant 5-8 Fed Com 304H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 304H well described in the application filed by Cimarex in Case No. 23448. Cimarex’s geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

formation, based on the geology of the lands, is achieved by drilling the **Mighty Pheasant 5-8 Fed Com 304H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23523, for the Wolfcamp formation.

3. Cimarex proposes the **Mighty Pheasant 5-8 Fed Com 304H Well**, an oil well, to be horizontally drilled from a surface location in SW/4 SE/4 (Unit O) of Section 32, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SE/4 SE/4 (Unit P) of Section 8, Township 20 South, Range 34 East, NMPM.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted interests in the Wolfcamp formation underlying the proposed HSU.

B. Approving the **Mighty Pheasant 5-8 Fed Com 304H Well** as the proper well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **304H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

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

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

*/s/ Darin C. Savage*

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**Attorneys for Cimarex Energy Co.**

***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

Applicant in the above-styled cause seeks an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.09-acre, more or less, spacing and proration unit comprised of Lot 1 (NE/4 NE/4 equivalent), the SE/4 NE/4, and the E/2 SE/4 of Section 5 and the E/2 E/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Mighty Pheasant 5-8 Fed Com 304H Well**, an oil well, to be horizontally drilled from a surface location in SW/4 SE/4 (Unit O) of Section 32, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SE/4 SE/4 (Unit P) of Section 8, Township 20 South, Range 34 East, NMPM. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

Case No. 23598

**APPLICATION**

Cimarex Energy Co. ("Cimarex"), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division ("Division") pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.21-acre, more or less, spacing and proration unit comprised of Lot 4 (NW/4 NW/4 equivalent), the SW/4 NW/4, and the W/2 SW/4 of Section 4 and the W/2 W/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit ("HSU") and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Loosey Goosey 4-9 Fed Com 301H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 301H well described in the application filed by Cimarex in Case No. 23453. Cimarex's geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

formation, based on the geology of the lands, is achieved by drilling the **Loosey Goosey 4-9 Fed Com 301H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23512, for the Wolfcamp formation.

3. Cimarex proposes the **Loosey Goosey 4-9 Fed Com 301H Well**, an oil well, to be horizontally drilled from a surface location in the SE/4 SW/4 (Unit N) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SW/4 SW/4 (Unit M) of Section 9, Township 20, Range 34 East, NMPM.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted mineral interests in the Wolfcamp formation underlying the proposed HSU;

B. Approving the **Loosey Goosey 4-9 Fed Com 301H Well** as the proper well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **301H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

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

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

/s/ Darin C. Savage

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**Attorneys for Cimarex Energy Co.**

***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

Applicant in the above-styled cause seeks an order from the Division pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.21-acre, more or less, horizontal spacing and proration unit comprised of Lot 4 (NW/4 NW/4 equivalent), the SW/4 NW/4, and the W/2 SW/4 of Section 4 and the W/2 W/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Loosey Goosey 4-9 Fed Com 301H Well**, an oil well, to be horizontally drilled from a surface location in the SE/4 SW/4 (Unit N) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SW/4 SW/4 (Unit M) of Section 9, Township 20 South, Range 34 East, NMPM. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

Case No. 23599

**APPLICATION**

Cimarex Energy Co. ("Cimarex"), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division ("Division") pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.44-acre, more or less, spacing and proration unit comprised of Lot 3 (NE/4 NW/4 equivalent), the SE/4 NW/4, and the E/2 SW/4 of Section 4 and the E/2 W/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit ("HSU") and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Loosey Goosey 4-9 Fed Com 302H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 302H well described in the application filed by Cimarex in Case No. 23454. Cimarex's geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

formation, based on the geology of the lands, is achieved by drilling the **Loosey Goosey 4-9 Fed Com 302H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23513, for the Wolfcamp formation.

3. Cimarex proposes the **Loosey Goosey 4-9 Fed Com 302H Well**, an oil well, to be horizontally drilled from a surface location in the SE/4 SW/4 (Unit N) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SE/4 SW/4 (Unit N) of Section 9, Township 20, Range 34 East, NMPM.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted mineral interests in the Wolfcamp formation underlying the proposed HSU;

B. Approving the **Loosey Goosey 4-9 Fed Com 302H Well** as the well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **302H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

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

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

/s/ Darin C. Savage

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**Attorneys for Cimarex Energy Co.**

***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

Applicant in the above-styled cause seeks an order from the Division pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.44-acre, more or less, horizontal spacing and proration unit comprised of Lot 3 (NE/4 NW/4 equivalent), the SE/4 NW/4, and the E/2 SW/4 of Section 4 and the E/2 W/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Loosey Goosey 4-9 Fed Com 302H Well**, an oil well, to be horizontally drilled from a surface location in the SE/4 SW/4 (Unit N) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SE/4 SW/4 (Unit N) of Section 9, Township 20 South, Range 34 East, NMPM. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

Case No. 23600

**APPLICATION**

Cimarex Energy Co. (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division (“Division”) pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.66-acre, more or less, spacing and proration unit comprised of Lot 2 (NW/4 NE/4 equivalent), the SW/4 NE/4, and the W/2 SE/4 of Section 4 and the W/2 E/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit (“HSU”) and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Loosey Goosey 4-9 Fed Com 303H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 303H well described in the application filed by Cimarex in Case No. 23455. Cimarex’s geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

formation, based on the geology of the lands, is achieved by drilling the **Loosey Goosey 4-9 Fed Com 303H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23514, for the Wolfcamp formation.

3. Cimarex proposes the **Loosey Goosey 4-9 Fed Com 303H Well**, an oil well, to be horizontally drilled from a surface location in the SW/4 SE/4 (Unit O) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SW/4 SE/4 (Unit O) of Section 9, Township 20, Range 34 East, NMPM.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted mineral interests in the Wolfcamp formation underlying the proposed HSU;

B. Approving the **Loosey Goosey 4-9 Fed Com 303H Well** as the well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **303H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

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

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

*/s/ Darin C. Savage*

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**Attorneys for Cimarex Energy Co.**

***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

Applicant in the above-styled cause seeks an order from the Division pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.66-acre, more or less, horizontal spacing and proration unit comprised of Lot 2 (NW/4 NE/4 equivalent), the SW/4 NE/4, and the W/2 SE/4 of Section 4 and the W/2 E/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Loosey Goosey 4-9 Fed Com 303H Well**, an oil well, to be horizontally drilled from a surface location in the SW/4 SE/4 (Unit O) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SW/4 SE/4 (Unit O) of Section 9, Township 20 South, Range 34 East, NMPM. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

Case No. 23601

**APPLICATION**

Cimarex Energy Co. (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division (“Division”) pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.89-acre, more or less, spacing and proration unit comprised of Lot 1 (NE/4 NE/4 equivalent), the SE/4 NE/4, and the E/2 SE/4 of Section 4 and the E/2 E/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit (“HSU”) and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Loosey Goosey 4-9 Fed Com 304H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 304H well described in the application filed by Cimarex in Case No. 23452. Cimarex’s geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp formation, based on the

geology of the lands, is achieved by drilling the **Loosey Goosey 4-9 Fed Com 304H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23515, for the Wolfcamp formation.

3. Cimarex proposes the **Loosey Goosey 4-9 Fed Com 304H Well**, an oil well, to be horizontally drilled from a surface location in the SW/4 SE/4 (Unit O) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SE/4 SE/4 (Unit P) of Section 9, Township 20, Range 34 East, NMPM.

4. The proposed well is orthodox in their locations, and the take points and completed intervals comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on April 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted mineral interests in the Wolfcamp formation underlying the proposed HSU;

B. Approving the **Loosey Goosey 4-9 Fed Com 304H Well** as the well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **304H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

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

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

*/s/ Darin C. Savage*

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**Attorneys for Cimarex Energy Co.**

***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

Applicant in the above-styled cause seeks an order from the Division pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.89-acre, more or less, horizontal spacing and proration unit comprised of Lot 1 (NE/4 NE/4 equivalent), the SE/4 NE/4, and the E/2 SE/4 of Section 4 and the E/2 E/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Loosey Goosey 4-9 Fed Com 304H Well**, an oil well, to be horizontally drilled from a surface location in the SW/4 SE/4 (Unit O) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SE/4 SE/4 (Unit P) of Section 9, Township 20 South, Range 34 East, NMPM. The well will be orthodox, and the take points and completed intervals will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

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

**PREHEARING STATEMENT**

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

**APPEARANCES**

**APPLICANT**

Cimarex Energy Co.

**ATTORNEY**

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#### COMPETING PARTY

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

Michael H. Feldewert  
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Julia Broggi  
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#### ADDITIONAL PARTIES

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

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

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

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

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

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

#### **APPLICANT’S PROPOSED EVIDENCE AND WITNESS QUALIFICATIONS**

| WITNESS                                                                                                                                                                                                                                                                                                                                                                                                                     | ESTIMATED TIME     | EXHIBITS   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|
| Landman: John Coffman<br>Qualifications: I graduated in 2018 from Texas Tech University with a bachelor’s degree in Business Administration with an emphasis on Energy Commerce. I have worked at Cimarex for approximately 4 years, and I have been working in New Mexico for 4 years. My credentials as an expert witness in petroleum land matters have been accepted by the Division and made a matter of record.       | Approx. 5 min      | Approx. 1  |
| Geologist: Staci Meuller<br>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.                       | Approx. min        | Approx. 21 |
| Reservoir Engineer: Eddie Behm<br>Qualifications: I attended the University of Tulsa and graduated with a bachelor’s in petroleum engineering in 2011. I have worked for Occidental, California Resources prior to working for Cimarex and have been employed as a Production and Reservoir engineer for Cimarex for the last 6 years, working in the Delaware Basin with a primary focus on Lea County, New Mexico. I have | Approx. 45 minutes | Approx. 17 |

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

Facilities Engineer: Calvin Boyle Available for questions (15 min) Approx. 1

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

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

Parties are in general agreement that the Bone Spring formation underlying the Subject Lands would be productive if drilled and developed and should be developed; however, there is disagreement about whether the Upper Wolfcamp should be drilled and developed simultaneously with the Bone Spring.

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

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

### **PROCEDURAL MATTERS**

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

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

Respectfully submitted,

ABADIE & SCHILL, PC

/s/ Darin C. Savage

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**CERTIFICATE OF SERVICE**

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

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*Attorneys for Sandstone Properties, LLC*

/s/ Darin C. Savage

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Darin C. Savage

**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 – 23455**

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

**Case Nos. 23594 – 23601**

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

**Case Nos. 23508 – 23523**

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

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

**I. Factual and procedural background**

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

**EXHIBIT  
1**

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

2. As a result of its evaluation of the Subject Lands, as well as the surrounding area, Cimarex found that not only were the best reserves of oil and gas residing in the 3<sup>rd</sup> Bone Spring Sand but also that the Upper Wolfcamp reservoir under the Subject Lands and surrounding area was significantly below average in quality and potential, rendering Wolfcamp wells economically unfeasible. *See* Exhibit 1, attached hereto, showing that the consensus landing for optimal development is the 3<sup>rd</sup> Bone Spring Sands, not the Upper Wolfcamp.

3. Cimarex has also determined that there are no indications of any major geomechanical changes/frac baffles in between Cimarex's 3<sup>rd</sup> Sand target and Permian Resources' Wolfcamp Sands target, indicating that these two intervals are most likely one shared reservoir tank. Due to the absence of the baffle between the 3<sup>rd</sup> Bone Spring Sand and the Upper Wolfcamp, Cimarex has concluded that if Upper Wolfcamp wells were to be completed while drilling and developing the 3<sup>rd</sup> Bone Spring Sand, those wells would drain much of the reserves in the 3<sup>rd</sup> Bone Spring Sand, where the best reserves are located, and would likely result in permanent damage to the target reservoir in the 3<sup>rd</sup> Bone Spring Sand.

4. Thus, Cimarex limited its proposed development and applications for compulsory pooling to the Bone Spring and did not seek to pool the Upper Wolfcamp. Cimarex's analysis of the Subject Lands comports to how other operators are developing the surrounding areas that share the same three fundamental characteristics, *viz.*, excellent reserves in the 3<sup>rd</sup> Bone Spring Sand, poor quality reservoir in the Upper Wolfcamp, and the lack of a baffle between the two. *See* Exhibit 2, attached hereto, showing the overwhelming predominance of Bone Spring development

and the dearth and rarity of the Wolfcamp development.

5. A little more than a month after Cimarex filed its applications to develop and pool the Bone Spring Formation, Read & Stevens, Inc., in association with Permian Resources Operating, LLC (collectively referred to as “Permian Resources”), filed competing applications to pool the Bone Spring formation of the Subject Lands in Case Nos. 23508-23511 and 23516-23519. Permian Resources also filed applications for drilling and pooling the Wolfcamp formation in Case Nos. 23512-23515 and 23520-23523, proposing to drill eight wells in the Upper Wolfcamp despite the fact that those wells would drain the 3<sup>rd</sup> Bone Spring Sand and would likely result in permanent damage to the target reservoir located in the Bone Spring where the best reservoirs are located.

6. Given the poor quality of the Upper Wolfcamp reservoir, the lack of the baffle that would otherwise minimize drainage of the 3<sup>rd</sup> Bone Spring, the fact that additional Upper Wolfcamp wells will not increase EUR, and the recent history of developing the lands in the area that account for these facts, Permian Resources’ decision to seek to develop the Upper Wolfcamp Formation is baffling. The geological data demonstrates that expending tens of millions of dollars<sup>1</sup> drilling unnecessary wells in the Upper Wolfcamp that will not increase EUR, but instead would place a substantial financial burden on Working Interest owners, incur environmental risks of drilling additional and unnecessary wells, undermine overall production, and likely result in permanent damage to the target reservoir, creating waste of oil and gas that would be forever lost through the misguided development of the Upper Wolfcamp. See Exhibit 4

7. Permian Resources’ decision to propose to develop the Upper Wolfcamp created a dilemma for Cimarex. On the one hand, based on clear geological and reservoir data, Cimarex

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

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

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

## **II. Argument**

### **A. The optimal development of the Subject Lands is to drill wells in the 3<sup>rd</sup> Bone Spring Sand and create a protective buffer zone that would prohibit the drilling of wells in the Upper Wolfcamp.**

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

10. Cimarex filed its Wolfcamp applications only as a response to Permian Resources'

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

11. Cimarex recognizes that filing its competing applications for pooling the Upper Wolfcamp based on wells drilled in 3<sup>rd</sup> Bone Spring Sand may not be the best way to protect correlative rights and counter Permian Resources' plan for the Upper Wolfcamp. Cimarex submits that the best course of action for the Division to follow, in order to ensure achieving optimal production from the rich reserves located in the 3<sup>rd</sup> Bone Spring Sand and to protect correlative rights, would be to allow the drilling of the 3<sup>rd</sup> Bone Spring Sand wells, as proposed by Cimarex, and to establish a vertical protective zone that would preclude the drilling of wells in the subpar Upper Wolfcamp. Such a protective zone would prevent drainage of the 3<sup>rd</sup> Bone Spring, thus protecting the correlative rights of the owners in the 3<sup>rd</sup> Bone Spring. In addition, the protective zone would spare the working interest owners approximately \$95 Million for wells that not only fail to increase the EUR but would also likely damage the reservoir. Cimarex has carefully analyzed the need for such a protective buffer zone and provides in Exhibit 5, attached hereto, a graphic depiction and quantification of the area and extent of the Upper Wolfcamp that needs to be protected.

12. The Division has the clear authority to fashion such a necessary solution and establish a protective zone under NMSA 1978 Section 70-2-11, which grants the Division authority "to do whatever may be reasonably necessary" to protect correlative rights, prevent waste, and prevent the drilling of unnecessary wells. The wells proposed to be drilled by Permian

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

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

### **III. Conclusion:**

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

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

Respectfully submitted,

ABADIE& SCHILL, PC

*/s/ Darin C. Savage*

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**CERTIFICATE OF SERVICE**

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

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*Attorneys for Sandstone Properties, LLC*

/s/ Darin C. Savage

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Darin C. Savage

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

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

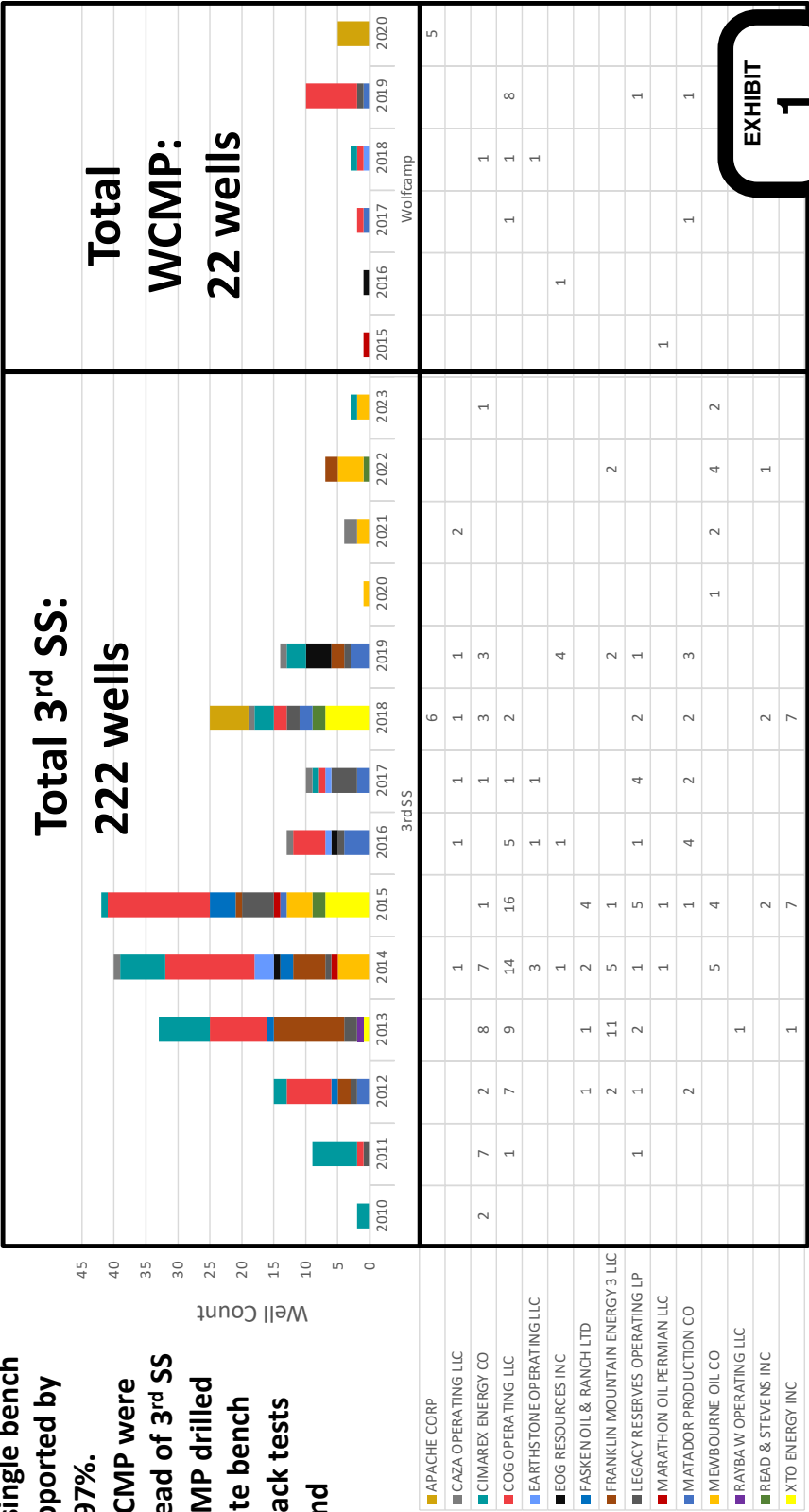


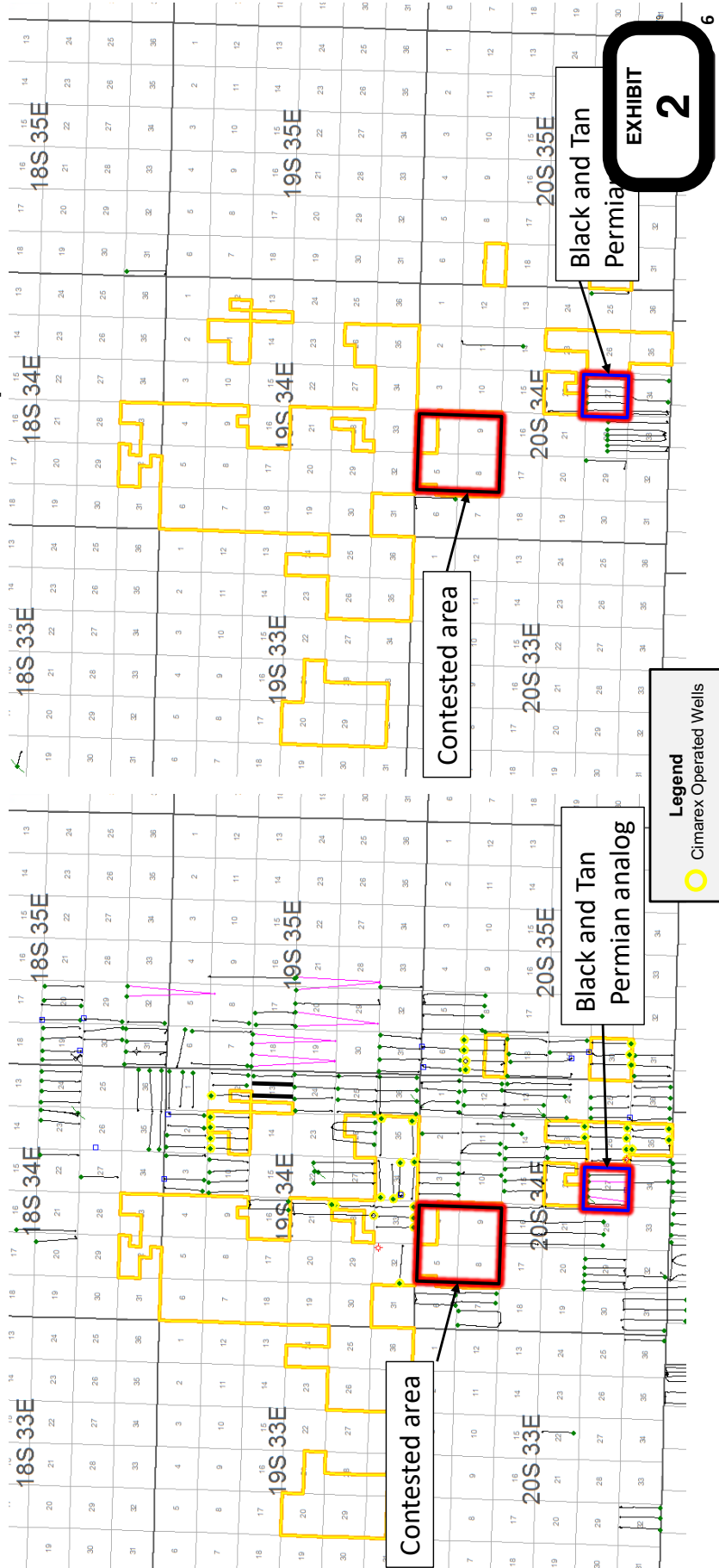
EXHIBIT 1

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

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

**3<sup>rd</sup> Bone Spring Sand Producers**

**Wolfcamp Producers**



## Permian Resources Operating, LLC

300 N. Marlenfeld St., Ste. 1000 Midland, TX 79701  
Phone (432) 695-4222 • Fax (432) 695-4063

## ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

|                  |                                                                                                                                    |                  |                   |
|------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|
| DATE:            | 2/17/2023                                                                                                                          | AFE NO.:         | 1                 |
| WELL NAME:       | 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 Wt:      |                                                                                                                                    | 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 |                  |                   |

|                                     | DRILLING COSTS   | COMPLETION COSTS | PRODUCTION COSTS | TOTAL COSTS      |
|-------------------------------------|------------------|------------------|------------------|------------------|
| <b>INTANGIBLE COSTS</b>             |                  |                  |                  |                  |
| 1 Land / Legal / Regulatory         | \$ 99,066        | -                | \$7,380          | \$6,566          |
| 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          | 99,805           | -                | 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 Drilg & Completion Overhead      | 10,423           | -                | -                | 10,423           |
| 33 Labor                            | 153,358          | 49,489           | 101,667          | 304,514          |
| 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           | -                | -                | -                | -                |
| <b>TOTAL INTANGIBLES &gt;</b>       | <b>3,516,419</b> | <b>5,367,000</b> | <b>772,167</b>   | <b>9,655,585</b> |

|                                     | DRILLING COSTS   | COMPLETION COSTS | PRODUCTION COSTS | TOTAL COSTS       |
|-------------------------------------|------------------|------------------|------------------|-------------------|
| <b>TANGIBLE COSTS</b>               |                  |                  |                  |                   |
| 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           | -                | -                | 30,000           | 30,000            |
| 85 Communications / SCADA           | -                | -                | 36,667           | 36,667            |
| 86 Instrumentation / Safety         | -                | -                | 833              | 833               |
| <b>TOTAL TANGIBLES &gt;</b>         | <b>1,233,109</b> | <b>0</b>         | <b>989,167</b>   | <b>2,222,276</b>  |
| <b>TOTAL COSTS &gt;</b>             | <b>4,749,528</b> | <b>5,367,000</b> | <b>1,761,334</b> | <b>11,877,862</b> |

## 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

The costs on this AFE are estimates only and may not be consistent with actual costs incurred on any specific item or the total costs of the project. Taking installation approved under the AFE may be delayed up to 30 days after the well has been completed. In executing this AFE, the Permian Resources Operating, LLC and its affiliates warrant that the costs are reasonable and will not exceed the total costs of the project. The costs are not to be used for any other purpose. The costs are not to be used for any other purpose. The costs are not to be used for any other purpose.

EXHIBIT

3

## 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

| ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE |                                                                                                                                    |                  |                   |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|
| DATE:                                               | 2/17/2023                                                                                                                          | AFE NO.:         | 1                 |
| WELL NAME:                                          | Bane 4-9 Federal Com 202H                                                                                                          | 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 Wt:                                         |                                                                                                                                    | 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            | 308,547          |
| 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          | 39,805           | -                | 245,229          |
| 7 Rental - Living Quarters          | 48,083           | 54,480           | -                | 102,562          |
| 10 Directional Drilling, Surveys    | 425,543          | -                | -                | 429,543          |
| 11 Drilling                         | 753,820          | -                | -                | 753,820          |
| 12 Drill Bits                       | 100,176          | -                | -                | 100,176          |
| 13 Fuel & Power                     | 188,933          | 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           | 561,625          | 300,000          | 1,005,083        |
| 25 Stimulation                      | -                | 814,033          | -                | 814,033          |
| 26 Stimulation Flowback & Dip       | -                | 121,606          | 150,000          | 271,606          |
| 28 Mud / Wastewater Disposal        | 193,108          | 61,151           | -                | 254,251          |
| 30 Ilig Supervisor / Engineering    | 121,196          | 133,420          | 21,667           | 276,283          |
| 32 Drig & 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            | 28,251           |
| 99 Plugging & Abandonment           | -                | -                | -                | -                |
| <b>TOTAL INTANGIBLES &gt;</b>       | <b>3,516,419</b> | <b>5,367,000</b> | <b>772,167</b>   | <b>9,655,585</b> |

| 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         | -                | 40,800           | 104,820     |
| 67 Packers, Liner Hangers           | 14,732         | -                | 20,800           | 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            | _____ | Co-CEO           | _____ | VP - Operations | _____ |
|                   | WH    |                  | JW    |                 | CRM   |
| VP - Land & Legal | _____ | VP - Geosciences | _____ |                 |       |
|                   | BG    |                  | SO    |                 |       |

**NON OPERATING PARTNER APPROVAL:**

NON-OPERATING PARTNER/AT-RISK

|                     |                                        |                                        |
|---------------------|----------------------------------------|----------------------------------------|
| Company Name: _____ | Working Interest (%): _____            | Tax ID: _____                          |
| Signed by: _____    | Date: _____                            |                                        |
| Title: _____        | Approval: <input type="checkbox"/> Yes | <input type="checkbox"/> No (mark one) |

The costs on this AIT are maximum only and may not be construed as ceilings on any specific item or the total cost of the project. Tabling installation approved under the AIT may be delayed up to a year after the well has been completed. In executing this AIT, the Participant agrees to pay its proportionate share of actual costs incurred including local creation, installation, backhaul and small costs under the terms of the creditable joint operation agreement, installation order or other agreement governing this well. Participants shall be covered by and hold harmless for Oronot's

## 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:       | Banc 4-9 Federal Com 203H                                                                                                          | 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 Wt:      |                                                                                                                                    | 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       | 288,099          | 18,067           | 2,500            | 308,667          |
| 4 Freight / Transportation          | 17,228           | 43,778           | 25,000           | 116,406          |
| 5 Rental - Surface Equipment        | 124,327          | 215,417          | 105,000          | 444,744          |
| 6 Rental - Downhole Equipment       | 205,424          | 39,805           | -                | 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         | -                | 723,274          | -                | 723,274          |
| 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    | 121,156          | 133,420          | 21,667           | 276,243          |
| 32 Drig & 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                      | -                | 21,421           | 3,833            | 28,254           |
| 99 Plugging & Abandonment           | -                | -                | -                | -                |
| <b>TOTAL INTANGIBLES &gt;</b>       | <b>3,516,419</b> | <b>5,367,000</b> | <b>772,167</b>   | <b>9,655,585</b> |

| 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           | 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               |
| <b>TOTAL TANGIBLES &gt;</b>         | <b>1,233,109</b> | <b>0</b>         | <b>989,167</b>   | <b>2,222,276</b>  |
| <b>TOTAL COSTS &gt;</b>             | <b>4,749,528</b> | <b>5,367,000</b> | <b>1,761,334</b> | <b>11,877,862</b> |

## 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 identical to actual costs incurred on any specific item or the total cost of the project. Taking 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 no more than the actual cost incurred by the Participant. The Participant shall be responsible for the actual cost incurred by the Participant. The Participant shall be responsible for the actual cost incurred by the Participant.

## Permian Resources Operating, LLC

300 N. Marlenfeld St., Ste. 1000 Midland, TX 79701

Phone (432) 695-4222 • Fax (432) 695-4063

## ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

|                  |                                                                                                                                    |                  |                   |
|------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|
| DATE:            | 2.17.2023                                                                                                                          | AFE NO.:         | 1                 |
| WELL NAME:       | Bane 4-9 Federal Com 204H                                                                                                          | FIELD:           | Tonko; Wolfcamp   |
| LOCATION:        | Section 4, T20S-R34E                                                                                                               | MD/TVD:          | 21,210' / 10,925' |
| COUNTY/STATE:    | Lea County, New Mexico                                                                                                             | LATERAL LENGTH:  | 10,000'           |
| Permian Well:    |                                                                                                                                    | 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 |                  |                   |

|                                     | DRILLING COSTS | COMPLETION COSTS | PRODUCTION COSTS | TOTAL COSTS |
|-------------------------------------|----------------|------------------|------------------|-------------|
| INTANGIBLE COSTS                    |                |                  |                  |             |
| 1 Land / Legal / Regulatory         | \$ 39,066      | -                | 37,500           | \$ 76,566   |
| 2 Location, Surveys & Damages       | 288,099        | 18,067           | 2,500            | 308,667     |
| 4 Freight / Transportation          | 47,628         | 43,778           | 25,000           | 116,406     |
| 5 Rental - Surface Equipment        | 174,327        | 215,417          | 105,000          | 494,744     |
| 6 Rental - Downhole Equipment       | 205,424        | 99,805           | -                | 305,229     |
| 7 Rental - Living Quarters          | 48,083         | 54,480           | -                | 102,562     |
| 10 Directional Drilling, Surveys    | 429,543        | -                | -                | 429,543     |
| 11 Drilling                         | 733,820        | -                | -                | 733,820     |
| 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 Drilg & 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   |

|                                     | DRILLING COSTS | COMPLETION COSTS | PRODUCTION COSTS | TOTAL COSTS |
|-------------------------------------|----------------|------------------|------------------|-------------|
| TANGIBLE 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)

The costs on this AFE are estimates only and may not be considered as a ceiling on the total cost of the project. Taking installation approval under the AFE may be delayed up to a year after the well has been completed. In exercising this AFE, the Participant agrees to pay no more than the actual cost incurred in furtherance of the well. The Participant shall not be liable for any costs incurred by the Participant in connection with the well. The Participant shall not be liable for any costs incurred by the Participant in connection with the well.

## Permian Resources Operating, LLC

300 N. Marlenfeld St., Ste. 1000 Midland, TX 79701  
Phone (432) 695-4222 • Fax (432) 695-4063

## ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

|                  |                                                                                                                                    |                  |                   |
|------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|
| DATE:            | 2.17.2023                                                                                                                          | AFE NO.:         | 1                 |
| WELL NAME:       | Joker 5-8 Federal Com 201H                                                                                                         | FIELD:           | Tonto; Wolfcamp   |
| LOCATION:        | Section 5, T20S-R34E                                                                                                               | MD/TVD:          | 21,211' / 10,926' |
| COUNTY/STATE:    | Lea County, New 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 |                  |                   |

|                                     | DRILLING COSTS   | COMPLETION COSTS | PRODUCTION COSTS | TOTAL COSTS       |
|-------------------------------------|------------------|------------------|------------------|-------------------|
| <b>INTANGIBLE COSTS</b>             |                  |                  |                  |                   |
| 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          | 47,528           | 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                         | 755,820          | -                | -                | 755,820           |
| 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, CIU       | -                | -                | 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, CIU       | -                | 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 & Disposal  | -                | 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 Drig & Completion Overhead       | 104,423          | -                | -                | 104,423           |
| 35 Labor                            | 153,558          | 69,489           | 101,667          | 324,714           |
| 54 Proppant                         | -                | 1,255,227        | -                | 1,255,227         |
| 95 Insurance                        | 14,680           | -                | -                | 14,680            |
| 97 Contingency                      | -                | 24,421           | 3,833            | 28,254            |
| 99 Plugging & Abandonment           | -                | -                | -                | -                 |
| <b>TOTAL INTANGIBLES &gt;</b>       | <b>3,516,419</b> | <b>5,367,000</b> | <b>772,167</b>   | <b>9,655,585</b>  |
| <b>TANGIBLE COSTS</b>               |                  |                  |                  |                   |
| 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                   | -                | -                | 116,667          | 116,667           |
| 77 Measurement & Meter Installation | -                | -                | -                | -                 |
| 78 Gas Conditioning / Dehydration   | -                | -                | 20,000           | 20,000            |
| 79 Interconnecting Facility Piping  | -                | -                | -                | -                 |
| 80 Gathering / Bulk Lines           | -                | -                | 108,333          | 108,333           |
| 81 Valves, Dumps, Controllers       | -                | -                | 43,333           | 43,333            |
| 82 Tank / Facility Containment      | -                | -                | 16,667           | 16,667            |
| 83 Haze Stack                       | -                | -                | 50,000           | 50,000            |
| 84 Electrical / Grounding           | -                | -                | 36,667           | 36,667            |
| 85 Communications / SCADA           | -                | -                | 833              | 833               |
| 86 Instrumentation / Safety         | -                | -                | -                | -                 |
| <b>TOTAL TANGIBLES &gt;</b>         | <b>1,233,109</b> | <b>0</b>         | <b>989,167</b>   | <b>2,222,276</b>  |
| <b>TOTAL COSTS &gt;</b>             | <b>4,749,528</b> | <b>5,367,000</b> | <b>1,761,334</b> | <b>11,877,862</b> |

## 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 BC VP - Geosciences SO

## NON OPERATING PARTNER APPROVAL:

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

The costs on this AFE are estimates only and may not be converted to a single cost or the total cost of the project. Taking 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, costs, regulatory, technology and well costs under the terms of the applicable joint operating agreement, regulatory order or other agreement covering the well. Participants shall be covered by and held 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 sign.

## Permian Resources Operating, LLC

300 N. Marlenfeld St., Ste. 1000 Midland, TX 79701  
Phone (432) 695-4222 • Fax (432) 695-4063

## ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

|                  |                                                                                                                                    |                  |                   |
|------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|
| DATE:            | 2.17.2023                                                                                                                          | AFE NO.:         | 1                 |
| WELL NAME:       | Joker 5-8 Federal Com 202H                                                                                                         | FIELD:           | Tonto; Wolfcamp   |
| LOCATION:        | Section 5, T205-R34E                                                                                                               | MD/TVD:          | 21,211' / 10,926' |
| COUNTY/STATE:    | Lea County, New Mexico                                                                                                             | LATERAL LENGTH:  | 10,000'           |
| Permian WL:      |                                                                                                                                    | 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 |                  |                   |

|                                     | DRILLING COSTS   | COMPLETION COSTS | PRODUCTION COSTS | TOTAL COSTS      |
|-------------------------------------|------------------|------------------|------------------|------------------|
| <b>INTANGIBLE COSTS</b>             |                  |                  |                  |                  |
| 1 Land/ Legal/ Regulatory           | \$ 39,066        | -                | 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           | 34,480           | -                | 102,563          |
| 10 Directional Drilling, Surveys    | 429,543          | -                | -                | 429,543          |
| 11 Drilling                         | 753,820          | -                | -                | 753,820          |
| 12 Drill Bits                       | 100,176          | -                | -                | 100,176          |
| 13 Fuel & Power                     | 188,353          | 725,061          | -                | 913,414          |
| 14 Cementing & Float Equip          | 243,296          | -                | -                | 243,296          |
| 15 Completion Unit, Swab, CTU       | -                | -                | 15,000           | 15,000           |
| 16 Perforating, Wireline, Silckline | -                | 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 & Dlep      | -                | 121,606          | 150,000          | 271,606          |
| 28 Mud/ Wastewater Disposal         | 193,104          | 61,751           | -                | 254,854          |
| 30 Rig Supervision/ Engineering     | 121,196          | 133,420          | 21,667           | 276,283          |
| 32 Drig & Completion Overhead       | 10,425           | -                | -                | 10,425           |
| 35 Labor                            | 133,358          | 69,489           | 101,667          | 304,514          |
| 54 Proppant                         | -                | 1,259,227        | -                | 1,259,227        |
| 95 Insurance                        | 14,660           | -                | -                | 14,660           |
| 97 Contingency                      | -                | 24,421           | 3,833            | 28,254           |
| 99 Plugging & Abandonment           | -                | -                | -                | -                |
| <b>TOTAL INTANGIBLES &gt;</b>       | <b>3,516,419</b> | <b>5,367,000</b> | <b>772,167</b>   | <b>9,655,585</b> |

|                                     | DRILLING COSTS   | COMPLETION COSTS | PRODUCTION COSTS | TOTAL COSTS       |
|-------------------------------------|------------------|------------------|------------------|-------------------|
| <b>TANGIBLE COSTS</b>               |                  |                  |                  |                   |
| 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               |
| <b>TOTAL TANGIBLES &gt;</b>         | <b>1,233,109</b> | <b>0</b>         | <b>989,167</b>   | <b>2,222,276</b>  |
| <b>TOTAL COSTS &gt;</b>             | <b>4,749,528</b> | <b>5,367,000</b> | <b>1,761,334</b> | <b>11,877,862</b> |

## 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 | BC | VP - Geosciences | SO |                 |     |

## NON OPERATING PARTNER APPROVAL:

|               |                                                                               |         |
|---------------|-------------------------------------------------------------------------------|---------|
| Company Name: | Working Interest (%):                                                         | Tax ID: |
| Signed by:    | Date:                                                                         |         |
| Title:        | Approval: <input type="checkbox"/> Yes <input type="checkbox"/> No (mark one) |         |

The costs on this AFE are estimates only and may not be considered as a ceiling on the total cost of the project. Taking limitations 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, but not limited to, regulatory, permitting, and well costs under the terms of the applicable joint operating agreement, regulatory orders or other agreements covering this well. Participants shall be covered by wellbore completion for Operator's well control and general liability insurance unless participant provides Operator a certificate evidencing the same insurance to its extent applicable to the Operator by the date of sign.

## Permian Resources Operating, LLC

300 N. Marlenfeld St., Ste. 1000 Midland, TX 79701  
Phone (432) 695-4222 • Fax (432) 695-4063

## ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

|                  |                                                                                                                                    |                  |                   |
|------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|
| DATE:            | 2.17.2023                                                                                                                          | AFE NO.:         | 1                 |
| WELL NAME:       | Joker 5-8 Federal Com 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 Well:    |                                                                                                                                    | 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 |                  |                   |

|                                     | DRILLING COSTS   | COMPLETION COSTS | PRODUCTION COSTS | TOTAL COSTS       |
|-------------------------------------|------------------|------------------|------------------|-------------------|
| <b>INTANGIBLE COSTS</b>             |                  |                  |                  |                   |
| 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          | 47,528           | 43,778           | 25,000           | 116,306           |
| 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           | -                | 102,563           |
| 10 Directional Drilling, Surveys    | 429,543          | -                | -                | 429,543           |
| 11 Drilling                         | 753,800          | -                | -                | 753,800           |
| 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, C/U       | -                | -                | 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, C/U       | -                | 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 & Disposal  | -                | 121,606          | 150,000          | 271,606           |
| 28 Mud / Wastewater Disposal        | 193,104          | 61,151           | -                | 254,255           |
| 29 Rig Supervision / Engineering    | 121,196          | 133,420          | 21,667           | 276,283           |
| 32 Drig & 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                        | 14,680           | -                | -                | 14,680            |
| 97 Contingency                      | -                | 28,421           | 3,833            | 32,294            |
| 99 Plugging & Abandonment           | -                | -                | -                | -                 |
| <b>TOTAL INTANGIBLES &gt;</b>       | <b>3,516,419</b> | <b>5,367,000</b> | <b>772,167</b>   | <b>9,655,585</b>  |
| <b>TANGIBLE COSTS</b>               |                  |                  |                  |                   |
| 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                         | 64,620           | -                | 40,000           | 104,620           |
| 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, Valves, Controllers      | -                | -                | 108,333          | 108,333           |
| 82 Tank / Facility Containment      | -                | -                | 45,333           | 45,333            |
| 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               |
| <b>TOTAL TANGIBLES &gt;</b>         | <b>1,233,109</b> | <b>0</b>         | <b>989,167</b>   | <b>2,222,276</b>  |
| <b>TOTAL COSTS &gt;</b>             | <b>4,749,528</b> | <b>5,367,000</b> | <b>1,761,334</b> | <b>11,877,862</b> |

## 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 | BC | VP - Geosciences | SO |                 |     |

## NON OPERATING PARTNER APPROVAL:

|               |                                                                               |         |
|---------------|-------------------------------------------------------------------------------|---------|
| Company Name: | Working Interest (%):                                                         | Tax ID: |
| Signed by:    | Date:                                                                         |         |
| Title:        | Approval: <input type="checkbox"/> Yes <input type="checkbox"/> No (mark one) |         |

The costs on this AFE are estimates only and may not be considered as a ceiling on any specific item or the total cost of the project. Taking finalization 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, overhead, regulatory, landings 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 held jointly and severally for the Operator's well 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 sign.

## Permian Resources Operating, LLC

300 N. Marlenfeld St., Ste. 1000 Midland, TX 79701  
Phone (432) 695-4222 • Fax (432) 695-4063

## ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

|                  |                                                                                                                                    |                  |                   |
|------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|
| DATE:            | 2.17.2023                                                                                                                          | AFE NO.:         | 1                 |
| WELL NAME:       | Joker 5-8 Federal Com 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 |                  |                   |

|                                     | DRILLING COSTS   | COMPLETION COSTS | PRODUCTION COSTS | TOTAL COSTS      |
|-------------------------------------|------------------|------------------|------------------|------------------|
| <b>INTANGIBLE COSTS</b>             |                  |                  |                  |                  |
| 1 Land / Legal / Regulatory         | \$ 59,066        | -                | 37,500           | \$ 96,566        |
| 2 Location, Surveys & Damages       | 288,079          | 18,067           | 2,900            | 309,047          |
| 4 Freight / Transportation          | 47,628           | 43,778           | 25,000           | 116,406          |
| 5 Rental - Surface Equipment        | 124,327          | 215,117          | 105,000          | 444,444          |
| 6 Rental - Downhole Equipment       | 205,424          | 59,805           | -                | 265,229          |
| 7 Rental - Living Quarters          | 46,083           | 54,480           | -                | 100,563          |
| 10 Directional Drilling, Surveys    | 429,543          | -                | -                | 429,543          |
| 11 Drilling                         | 753,820          | -                | -                | 753,820          |
| 12 Drill Bits                       | 106,176          | -                | -                | 106,176          |
| 13 Fuel & Power                     | 186,935          | 725,061          | -                | 913,996          |
| 14 Cementing & Host Equip           | 243,296          | -                | -                | 243,296          |
| 15 Completion Unit, Swab, CUI       | -                | -                | 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, CUI       | -                | 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 & Dip       | -                | 121,606          | 150,000          | 271,606          |
| 28 Mud / Wastewater Disposal        | 193,104          | 61,151           | -                | 254,254          |
| 30 Rig Supervision / Engineering    | 121,196          | 135,420          | 21,667           | 278,283          |
| 32 Drig & Completion Overhead       | 10,425           | -                | -                | 10,425           |
| 35 Labor                            | 135,358          | 69,489           | 101,667          | 306,514          |
| 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           | -                | -                | -                | -                |
| <b>TOTAL INTANGIBLES &gt;</b>       | <b>3,516,419</b> | <b>5,367,000</b> | <b>772,167</b>   | <b>9,655,585</b> |

|                                     | DRILLING COSTS   | COMPLETION COSTS | PRODUCTION COSTS | TOTAL COSTS       |
|-------------------------------------|------------------|------------------|------------------|-------------------|
| <b>TANGIBLE COSTS</b>               |                  |                  |                  |                   |
| 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           | 147,332          | -                | 20,000           | 167,332           |
| 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               |
| <b>TOTAL TANGIBLES &gt;</b>         | <b>1,233,109</b> | <b>0</b>         | <b>989,167</b>   | <b>2,222,276</b>  |
| <b>TOTAL COSTS &gt;</b>             | <b>4,749,528</b> | <b>5,367,000</b> | <b>1,761,334</b> | <b>11,877,862</b> |

## PREPARED BY Permian Resources Operating, LLC:

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

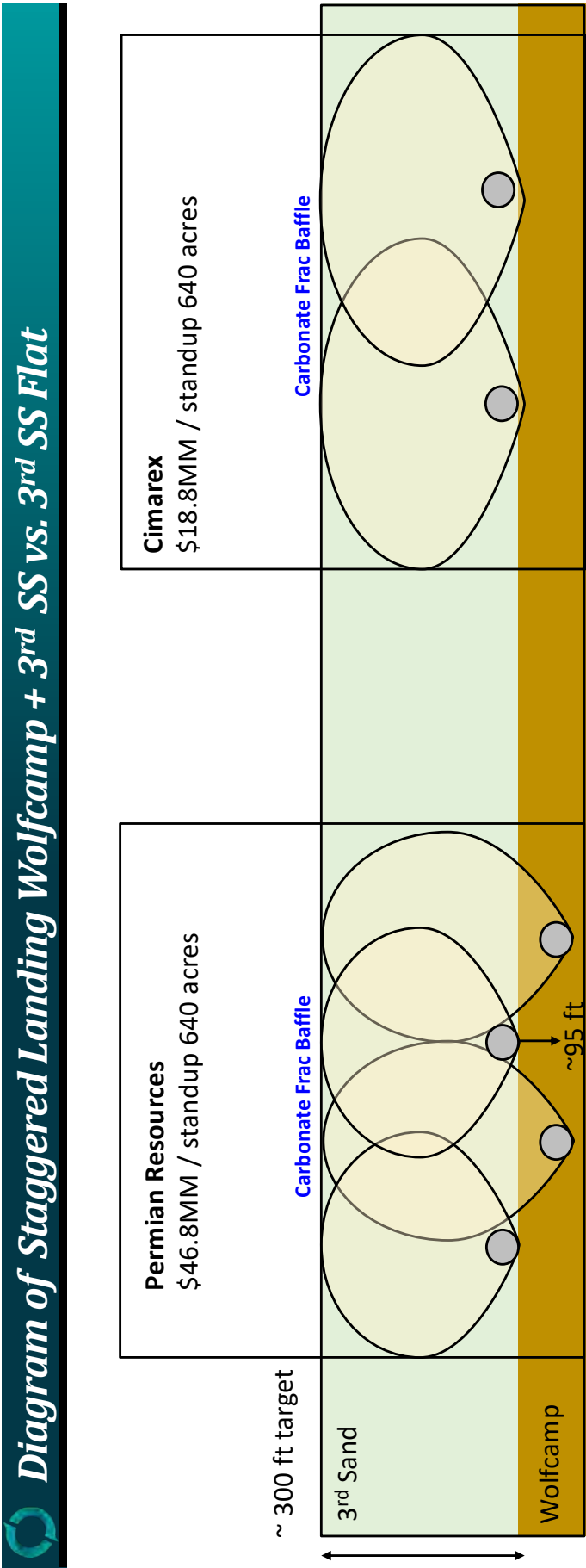
## Permian Resources Operating, LLC APPROVAL:

|                   |    |                  |    |                 |     |
|-------------------|----|------------------|----|-----------------|-----|
| 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:        | Approve: <input type="checkbox"/> Yes <input type="checkbox"/> No (mark one) |         |

The costs on this AFE are estimates only and may not be considered as offerings on any specific item or the total cost of the project. Taking finalization approval 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, insurance, regulatory, permitting and well costs under the terms of the applicable joint operating agreement, regulatory orders or other agreements covering this well. Participants shall be covered by and held proportionately for Operator's well control and general liability (because various participants provide Operator a certificate evidencing its own insurance to an amount payable to the Operator by the date of approval).



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

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

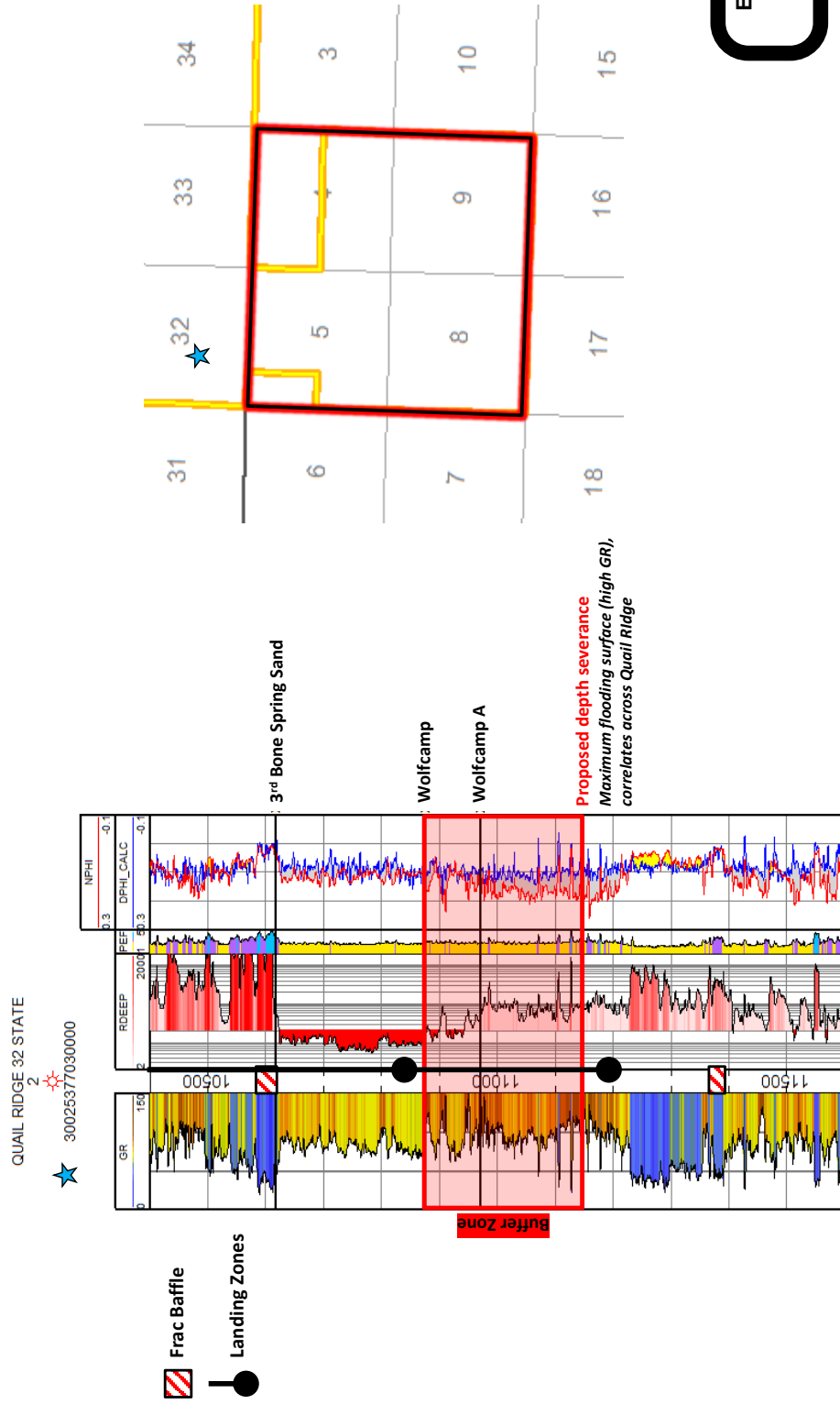


EXHIBIT  
5

## **TAB 2**

Case Nos. 23594-23601

Exhibit A: Self-Affirmed Statement of John Coffman Landman

**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, 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,

**EXHIBIT  
A**

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 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 3<sup>rd</sup> Bone Spring Sand, would not contribute or add to the overall EUR, would incur excessive costs, and would likely result in permanent damage to the target reservoir located in the Bone Spring where the best reservoirs are located.

6. 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.

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

the Upper Wolfcamp, in order to preserve the Upper Wolfcamp from being drilled and thereby protect the 3<sup>rd</sup> Bone Spring Sand from drainage and damage.

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

9. As a result, Cimarex has filed a Motion for an Order to Prohibit the Drilling of Wells in the Upper Wolfcamp in Order to Protect Correlative Rights and Optimize Production of the Subject Lands in which it has asked the Division to consider and rule on the Motion as part of the contested hearing process.

10. Cimarex respectfully submits that the best way to optimize production of the Subject Lands, prevent waste, protect correlative rights, and avoid the unnecessary and risky drilling of numerous and very expensive additional wells is to drill and pool the Bone Spring formation underlying the Subject Lands, including the 3<sup>rd</sup> Bone Spring Sand, and establish a protective buffer zone that prohibits drilling the Upper Wolfcamp.

11. The geology and engineering exhibits provided herein, which describe and analyze the Wolfcamp formation, support Cimarex's approach that only the Bone Spring should be drilled and developed and not the Upper Wolfcamp.

*[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

7/12/23  
Date Signed

## 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: 3<sup>rd</sup> Bone Spring Isopach Map  
Exhibit B-7: Structural Cross Section  
Exhibit B-8: 3<sup>rd</sup> Bone Spring Producers vs. all Wolfcamp Producers  
Exhibit B-9: All 3<sup>rd</sup> Bone Spring and Wolfcamp Producers  
Exhibit B-10: Comparing 3<sup>rd</sup> Sand to Wolfcamp Reservoir (SoPhiH)  
Exhibit B-11: 2<sup>nd</sup> Bone Spring Structure Map  
Exhibit B-12: 2<sup>nd</sup> Bone Spring Sand Isopach  
Exhibit B-13: 2<sup>nd</sup> Bone Spring Sand Cross Section  
Exhibit B-14: 2<sup>nd</sup> Bone Spring Sand vs. 3<sup>rd</sup> Bone Spring Carbonate Producers  
Exhibit B-15: PhilH L 2<sup>nd</sup> Sand vs. 3<sup>rd</sup> Carbonate  
Exhibit B-16: 1<sup>st</sup> Bone Spring Sand Structure  
Exhibit B-17: 1<sup>st</sup> Bone Spring Sand Isopach  
Exhibit B-18: 1<sup>st</sup> 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

**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 Cimarex Energy Co. ("Cimarex"), and I am familiar with the subject application and the geology involved.
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 3<sup>rd</sup> Bone Spring Sand starting in 2010 through 2022. In most of the 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> Bone Spring Sand development (tier 1 target in area) plus a 1<sup>st</sup> Sand or 2<sup>nd</sup> 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 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Bone Spring Sands at 4 wells per section spacing. The 1<sup>st</sup> Sand target is the high porosity, clean sand in the upper half of the interval. The 2<sup>nd</sup> Sand target is the basal siltstone/sandstone interval, and the 3<sup>rd</sup> 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 2<sup>nd</sup> Bone Spring Sand, the 3<sup>rd</sup> Carbonate, and the Wolfcamp XY Sands. This is a risky development scenario, because the 3<sup>rd</sup> Sand & Wolfcamp 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 3<sup>rd</sup> 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 3<sup>rd</sup> Sand with 4 wells per section. Permian Resources’ 3<sup>rd</sup> Carbonate target is approximately 135 ft vertical distance from their proposed Lower 2<sup>nd</sup> Sand target, which is also very tight vertical spacing when there is no frac baffle in between (no tight carbonates). The Lower 2<sup>nd</sup> Sand is the established target across several townships, while there has only been one well landed in the 3<sup>rd</sup> Carbonate (with no 2<sup>nd</sup> Sand above). The Upper 2<sup>nd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> Sand wells. There are a couple of Wolfcamp development tests two miles to the south, but the majority of Wolfcamp and 3<sup>rd</sup> Sand co-development occurs 3 townships to the south, where the total 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> Sand reservoir that the four 3<sup>rd</sup> Sand wells would already be targeting.

16. **Exhibit B-11** is a structure map (Subsea TVD) of the top of the 3<sup>rd</sup> Bone Spring Carbonate, which is about 40 ft below the 2<sup>nd</sup> 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 2<sup>nd</sup> 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 2<sup>nd</sup> 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 2<sup>nd</sup> 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 3<sup>rd</sup> Sand target). Cimarex's target is the standard Lower 2<sup>nd</sup> 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 2<sup>nd</sup> Bone Spring Carbonate and in the middle of the 2<sup>nd</sup> 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 2<sup>nd</sup> Sand, plus the vertical distance of approximately 400 ft, indicate that there may be another target within the Upper 2<sup>nd</sup> 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 3<sup>rd</sup> Sand wells.

19. **Exhibit B-14** is showing a map with all the producing Lower 2<sup>nd</sup> Bone Spring Sand wells across almost nine townships (left), versus all of the 3<sup>rd</sup> Bone Spring Carbonate producers across the area (right). This Exhibit highlights the fact that the Lower 2<sup>nd</sup> 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 3<sup>rd</sup> Carbonate, with no 2<sup>nd</sup> Sand development above.

20. **Exhibit B-15** shows the PhiH (porosity\*height) of the 2<sup>nd</sup> Bone Spring Sand (left) versus the 3<sup>rd</sup> 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 2<sup>nd</sup> Sand, based on the closest control points, is 30 pore-ft. While the average PhiH within the 3<sup>rd</sup> Carbonate is 20 pore-ft, which means that the 2<sup>nd</sup> Sand is at least 60% of the total reservoir, while the 3<sup>rd</sup> Carbonate is 40% of the total reservoir. However, because there are no frac baffles separating the 2<sup>nd</sup> Sand and 3<sup>rd</sup> Carbonate, and because the two Permian Resource targets would have about 135 ft of vertical separation, their 3<sup>rd</sup> Carbonate wells would drain a significant portion of the 2<sup>nd</sup> Sand reservoir that the four 2<sup>nd</sup> Sand wells would already be targeting.

21. **Exhibit B-16** is a structure map (Subsea TVD) of the top of the 1<sup>st</sup> Bone Spring Sand, which is about 40 ft above the 1<sup>st</sup> 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 1<sup>st</sup> 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 1<sup>st</sup> 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 1<sup>st</sup> 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 1<sup>st</sup> Bone Spring Sand target across the area (a few townships), which is shown as a green stick in all three logs.

#### **WOLFCAMP STATEMENT**

**(See Cimarex's 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, filed as an Exhibit in Cases 23594 – 23597 and Cases 23598 - 23601)**

24. **Exhibit B-19** is a structure map (Subsea TVD) of the top of the Wolfcamp, which is about 50 ft below the 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> Bone Spring Sand.

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

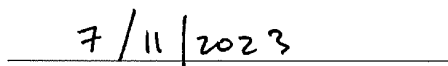
28. The granting of this Application is in the interests of conservation, the prevention of waste, and the protection of correlative rights.

29. 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  
7 / 11 / 2023

Date Signed

# *Geology Exhibits*





# Locator Map & Stress Direction

- Coterra plans to develop Sections 4-9 and 5-8 with 2-mile laterals
1. 8 Lower 3<sup>rd</sup> Bone Spring Sand
  2. 8 2<sup>nd</sup> Bone Spring Sand
  3. 8 1<sup>st</sup> Bone Spring Sand
- The wells will be drilled north to south from 2 pads/ Section

## State of stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity

lens: Erik Lund Snee and Mark D. Zoback

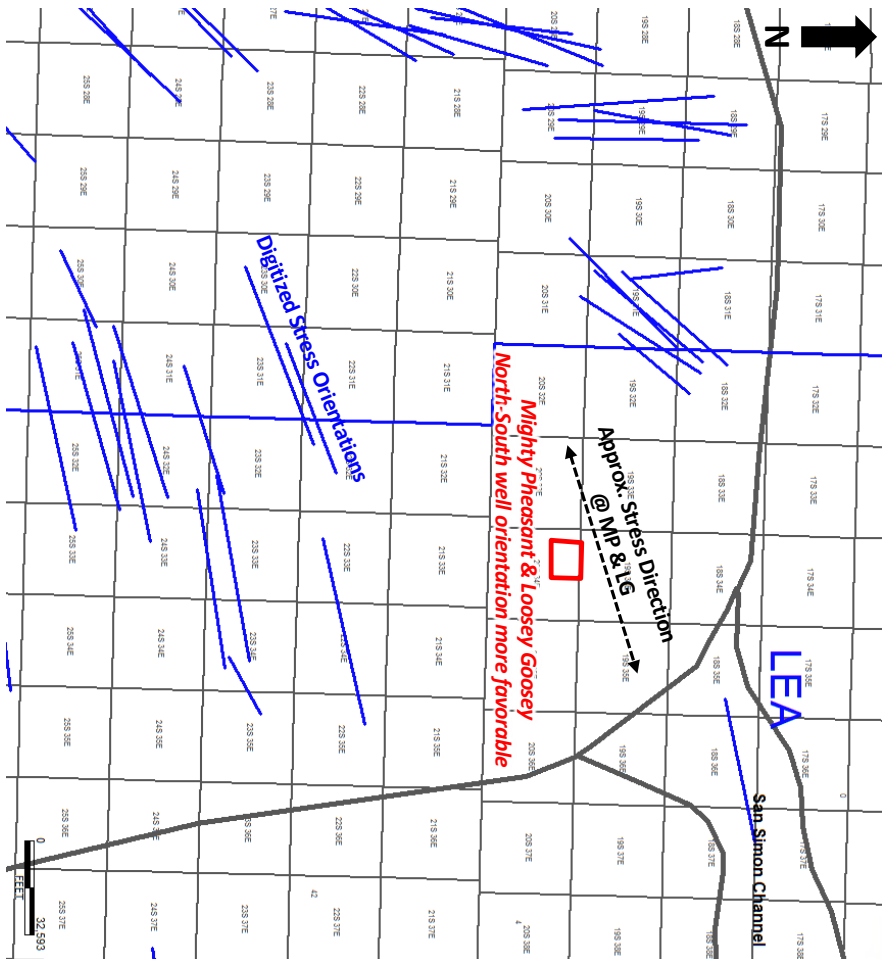
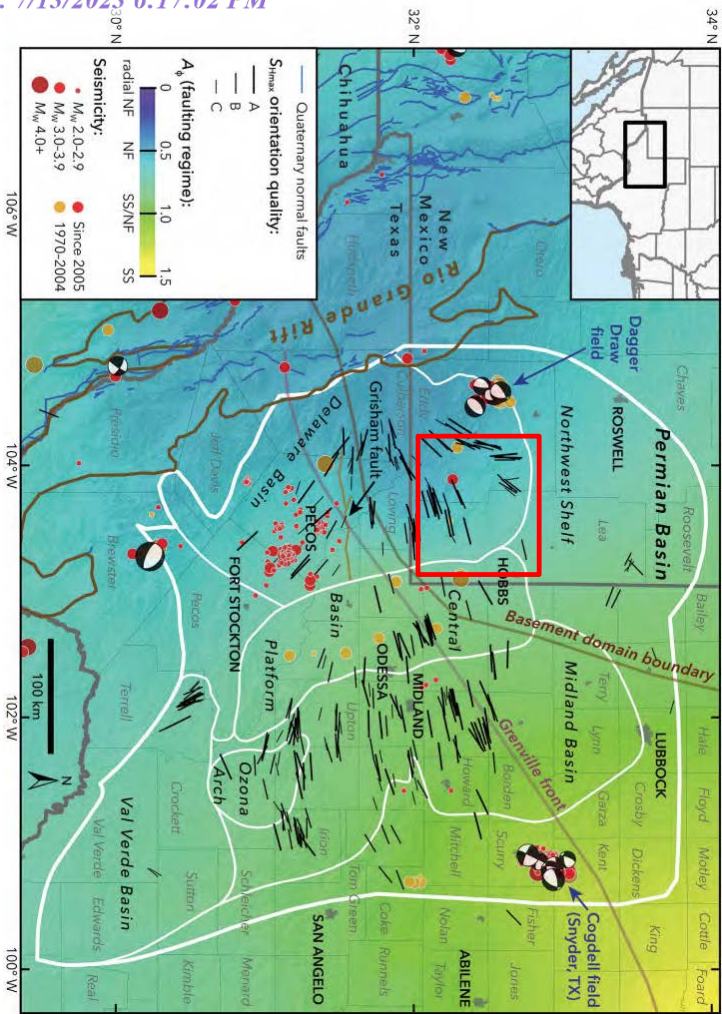


EXHIBIT  
B-1



# 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 |                            |                       |                    |                   |
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| 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 3<sup>rd</sup> Sand development & 1<sup>st</sup> Sand/2<sup>nd</sup> Sand test**  
**BLM is currently working on these**

EXHIBIT  
B-2



# Cimarex Development Plan

Quail Ridge 32  
State 2

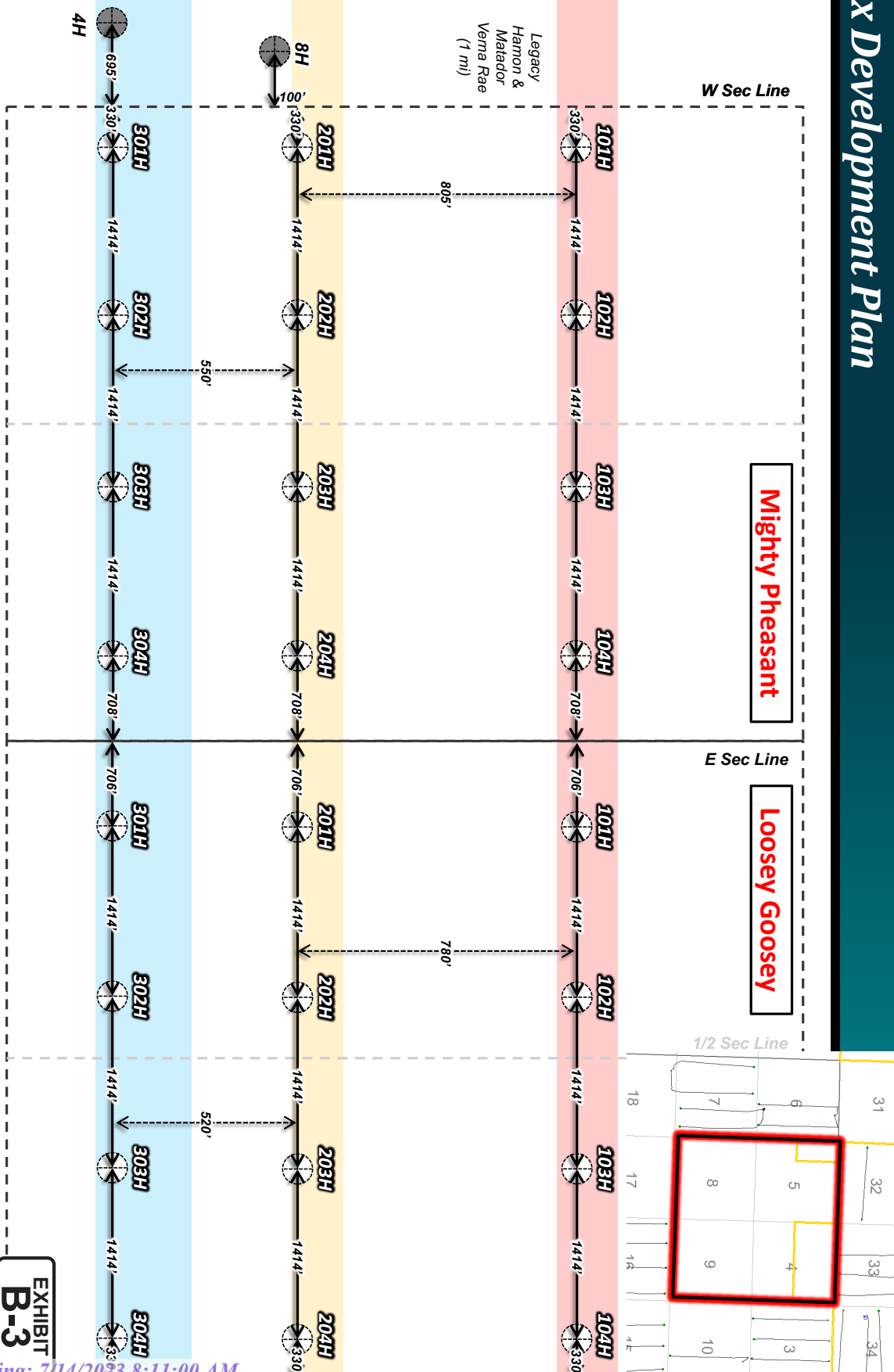
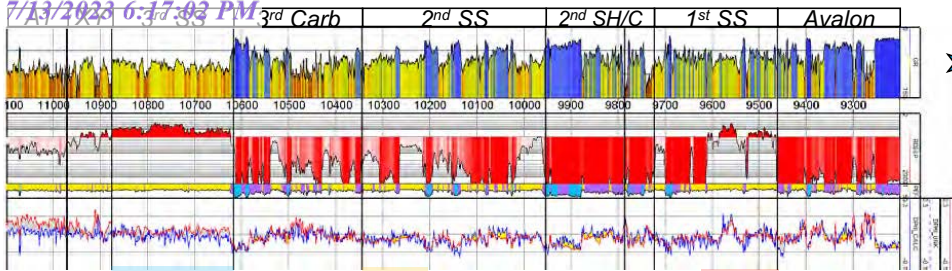
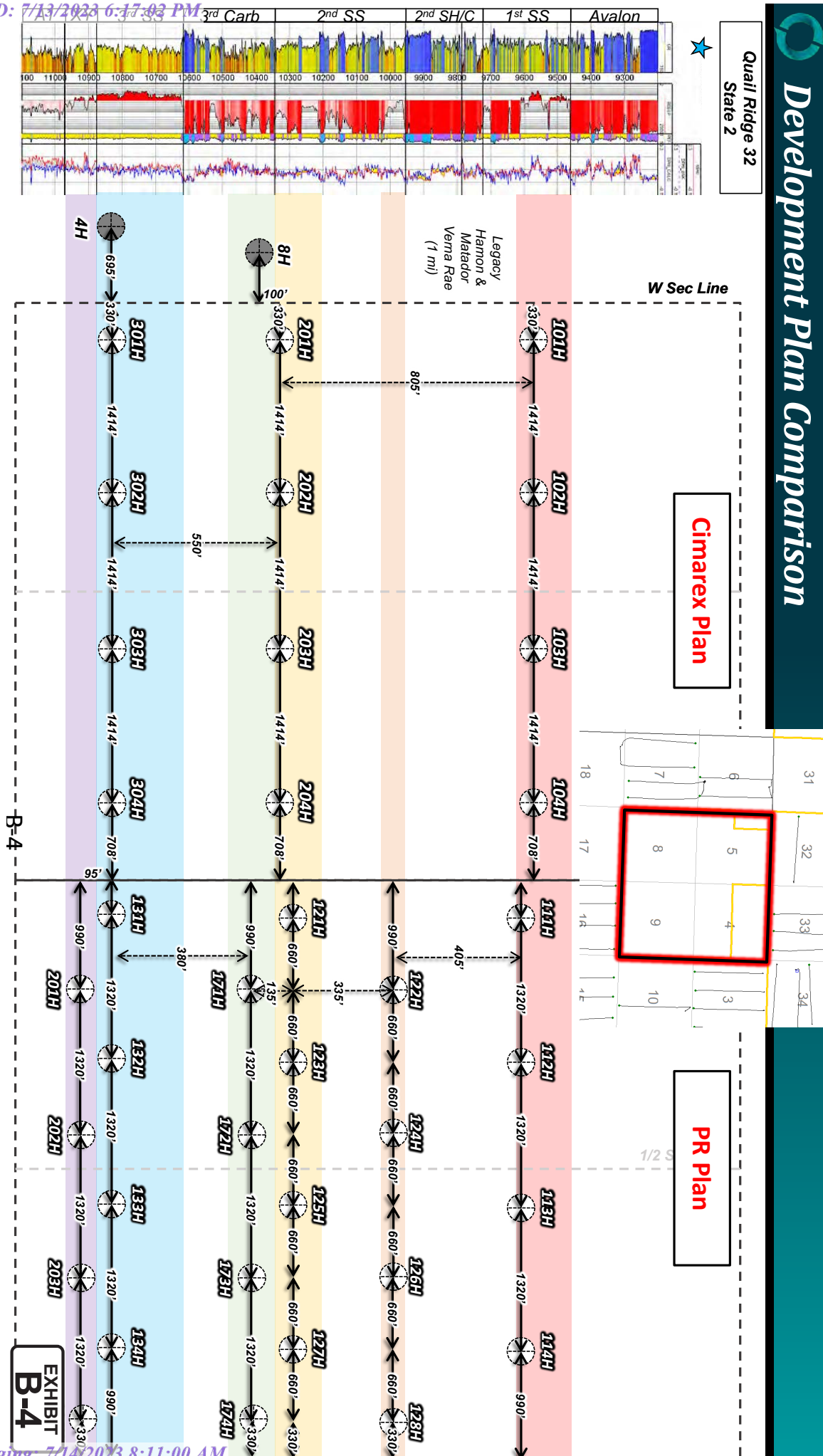


EXHIBIT  
B-3

# Development Plan Comparison

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**State 2**

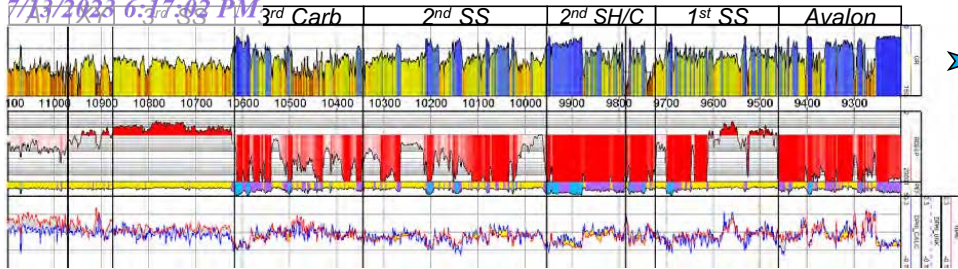


# *3<sup>rd</sup> Bone Spring Sand*



# 3rd Bone Spring Sand Structure

Quail Ridge 32  
State 2



MAPPED

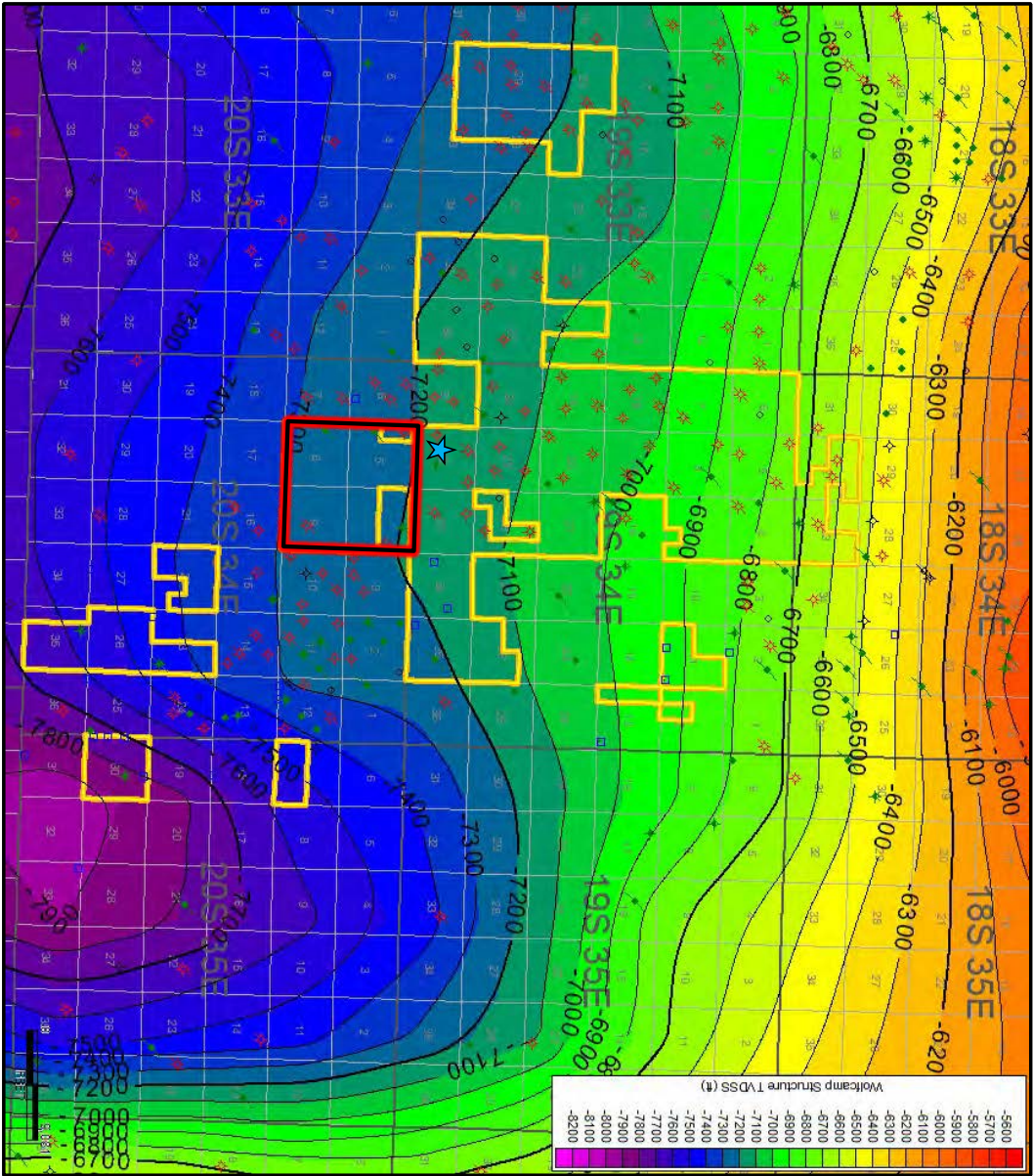
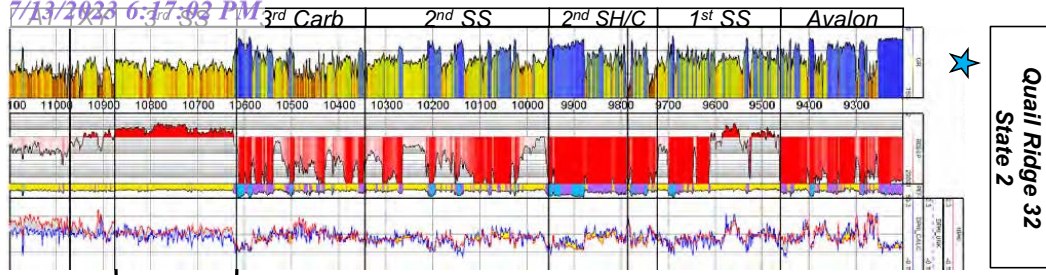


EXHIBIT  
B-5



Quail Ridge 32  
State 2

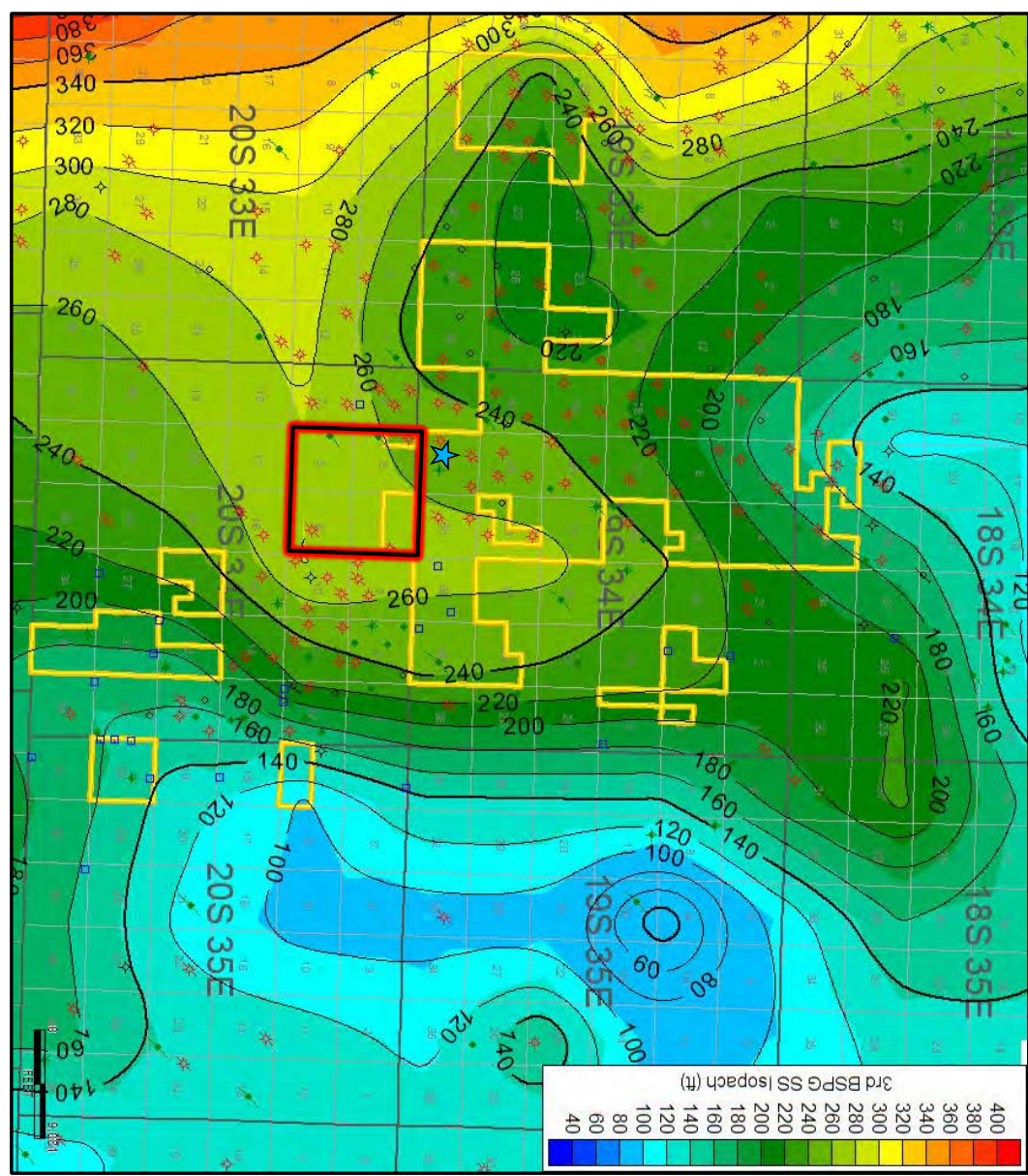
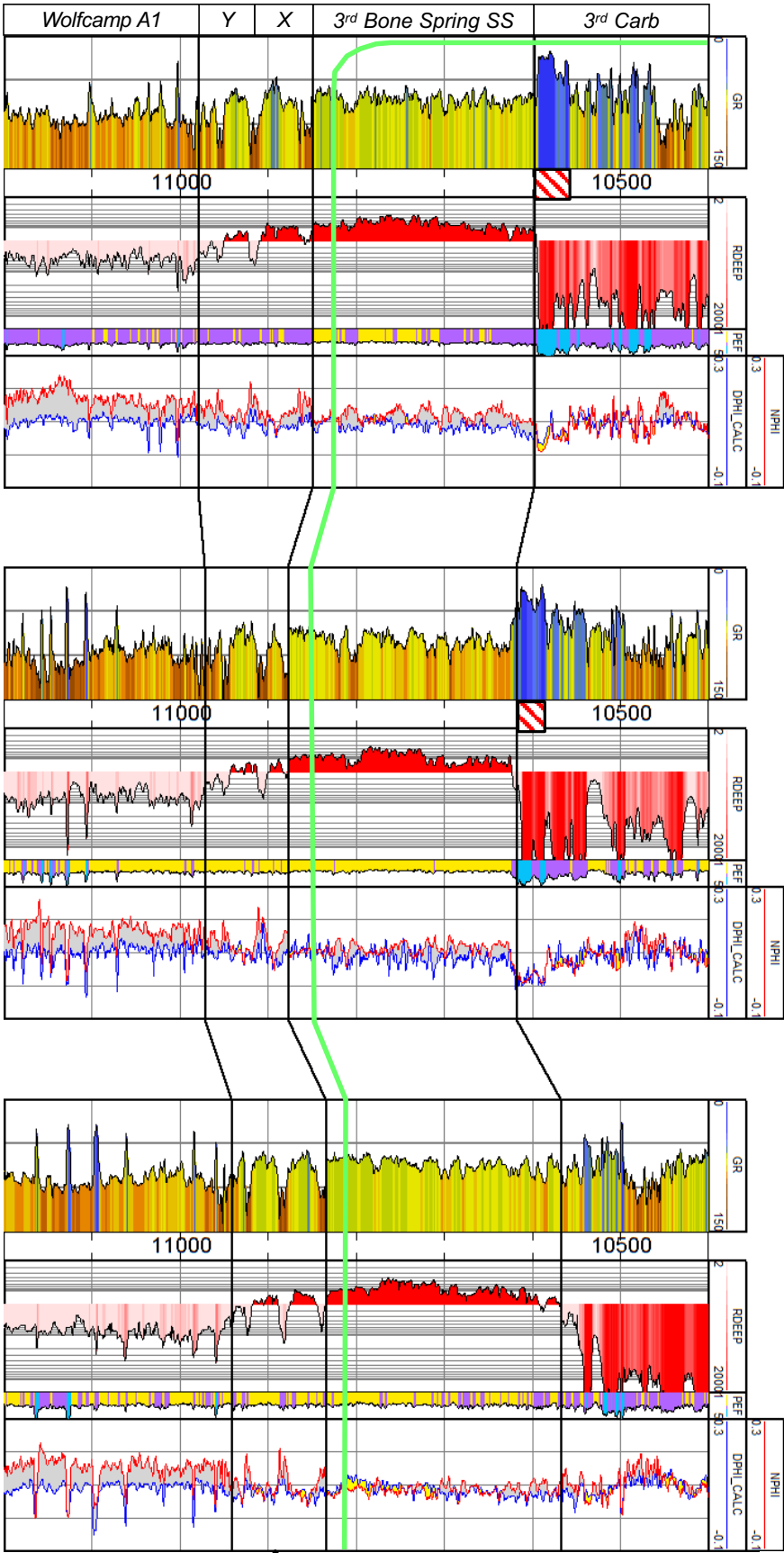


EXHIBIT  
B-6



# 3rd Bone Spring Sand Cross Section



A

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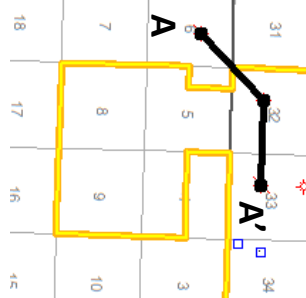
QUAL RIDGE 32 STATE  
3002537030000

<1.00MI>

LEA CHAPARRAL FEDERAL COM  
30025304130000

A'

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/3<sup>rd</sup> SS Development Begins Further South

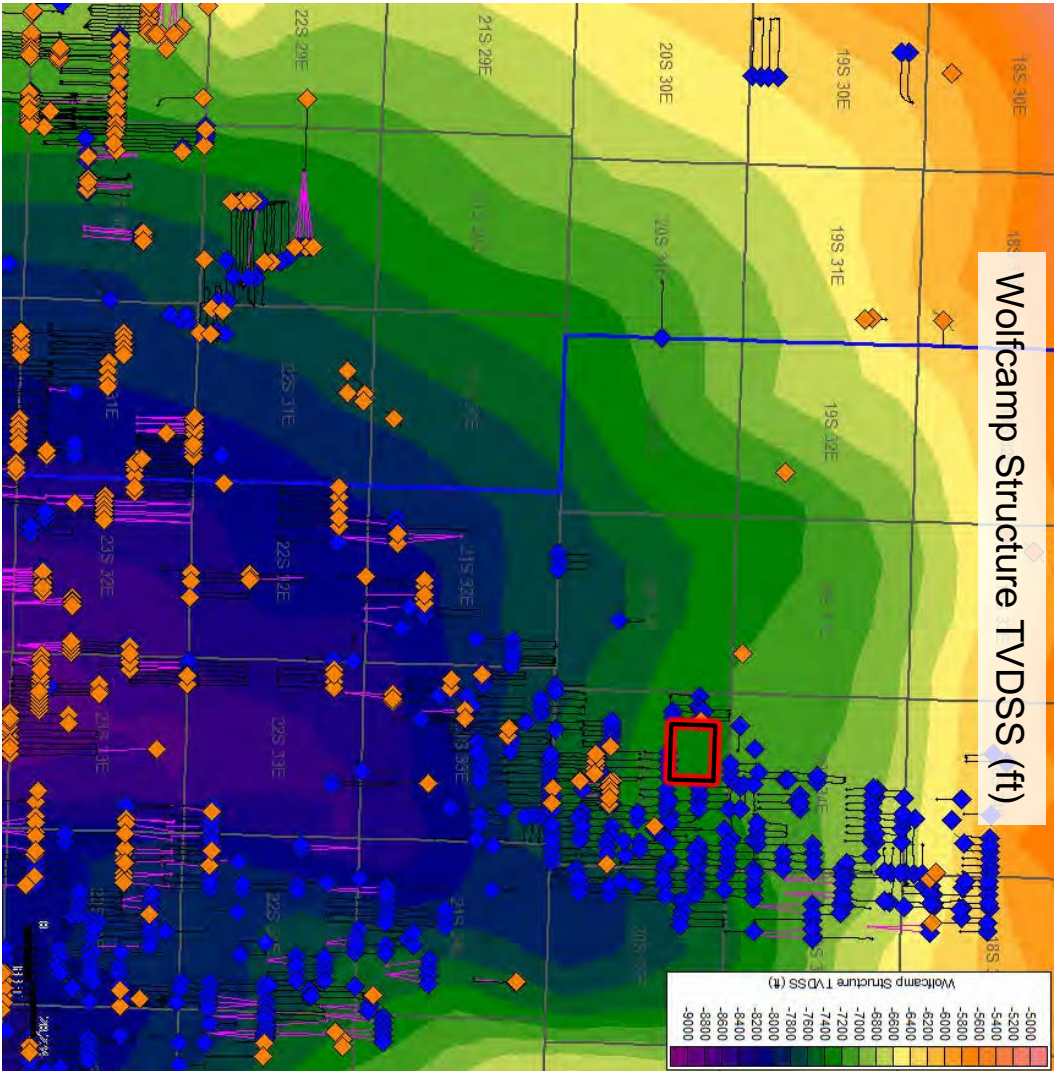


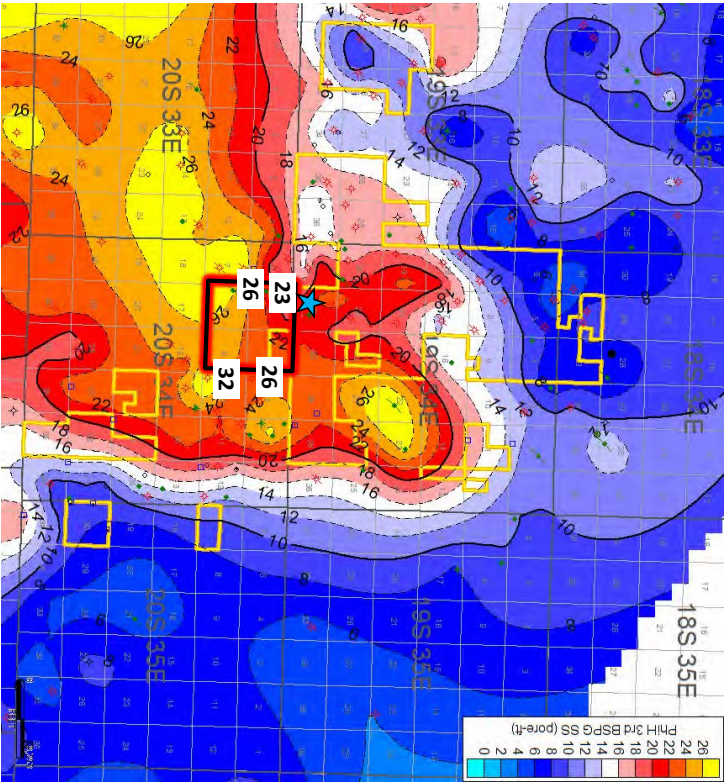
EXHIBIT  
B-9

# Comparing 3<sup>rd</sup> Sand to Wolfcamp Reservoir (SoPhiH)

Quail Ridge 32  
State 2

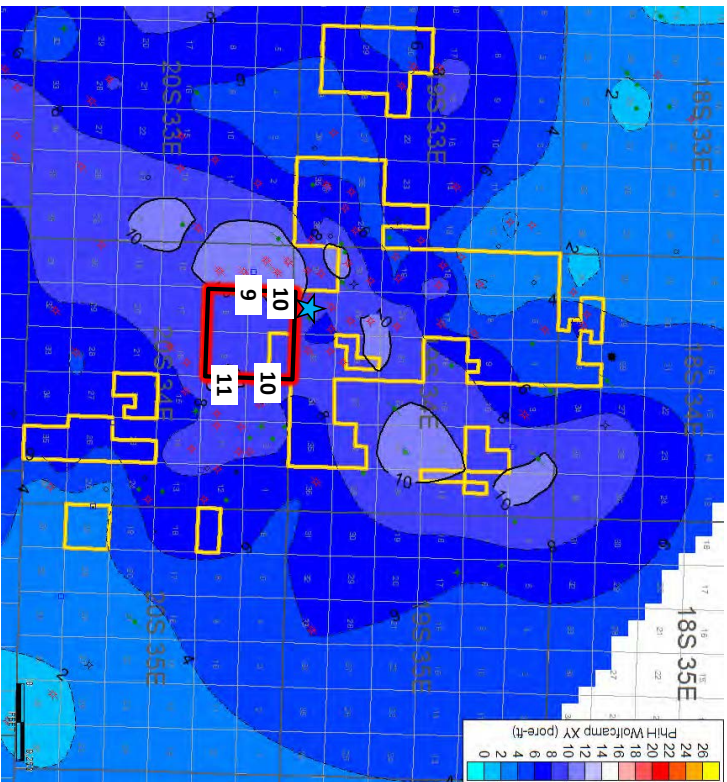


PhiH 3<sup>rd</sup> Bone Spring Sand  
CTRA Target



Avg PhiH in 3<sup>rd</sup> SS = 26.75  
72.8% of total reservoir

PhiH Wolfcamp X & Y Sands  
Permian Resources Additional Target

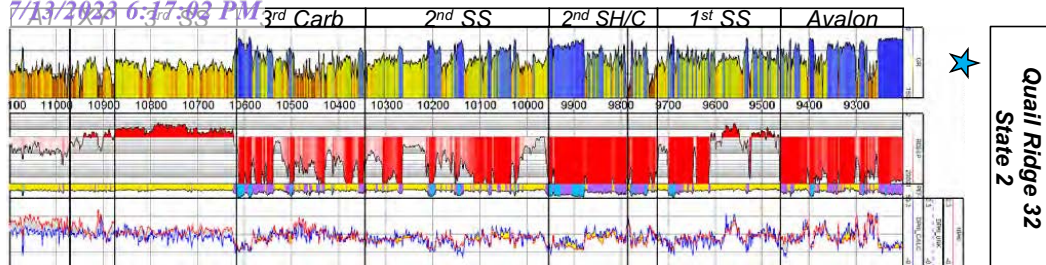


Avg PhiH in WFMP XY = 10  
27.2% of total reservoir

EXHIBIT  
B-10

# ***2<sup>nd</sup> Bone Spring Sand***





↑ MAPPED

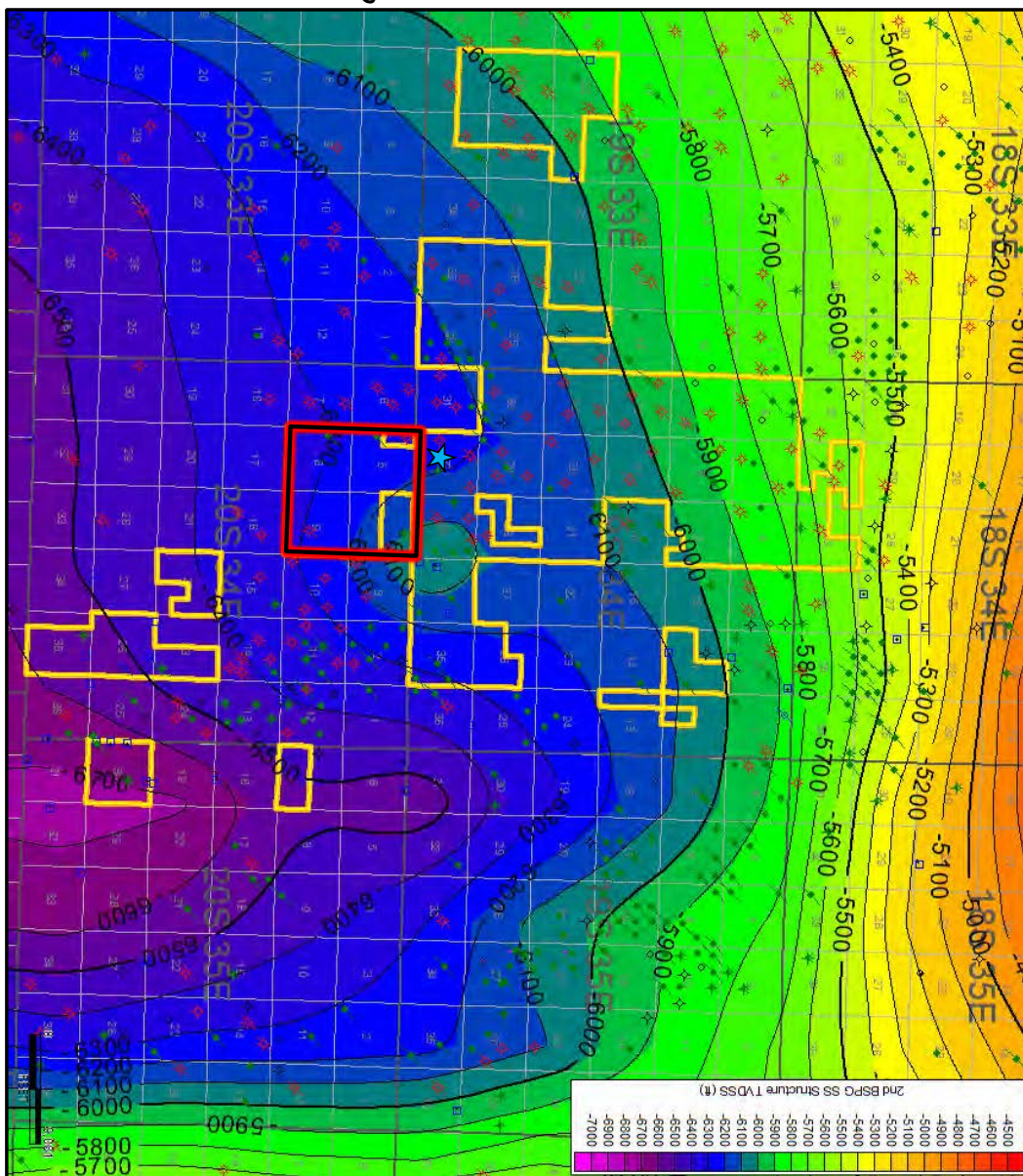
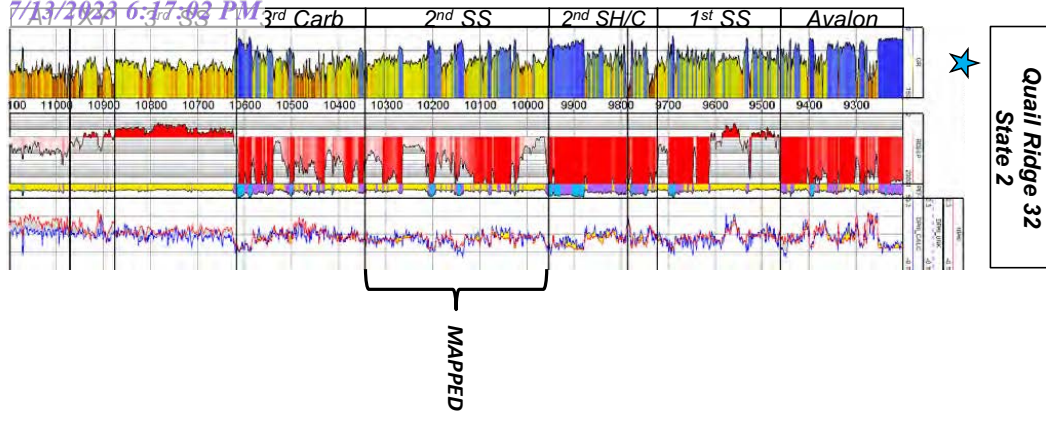
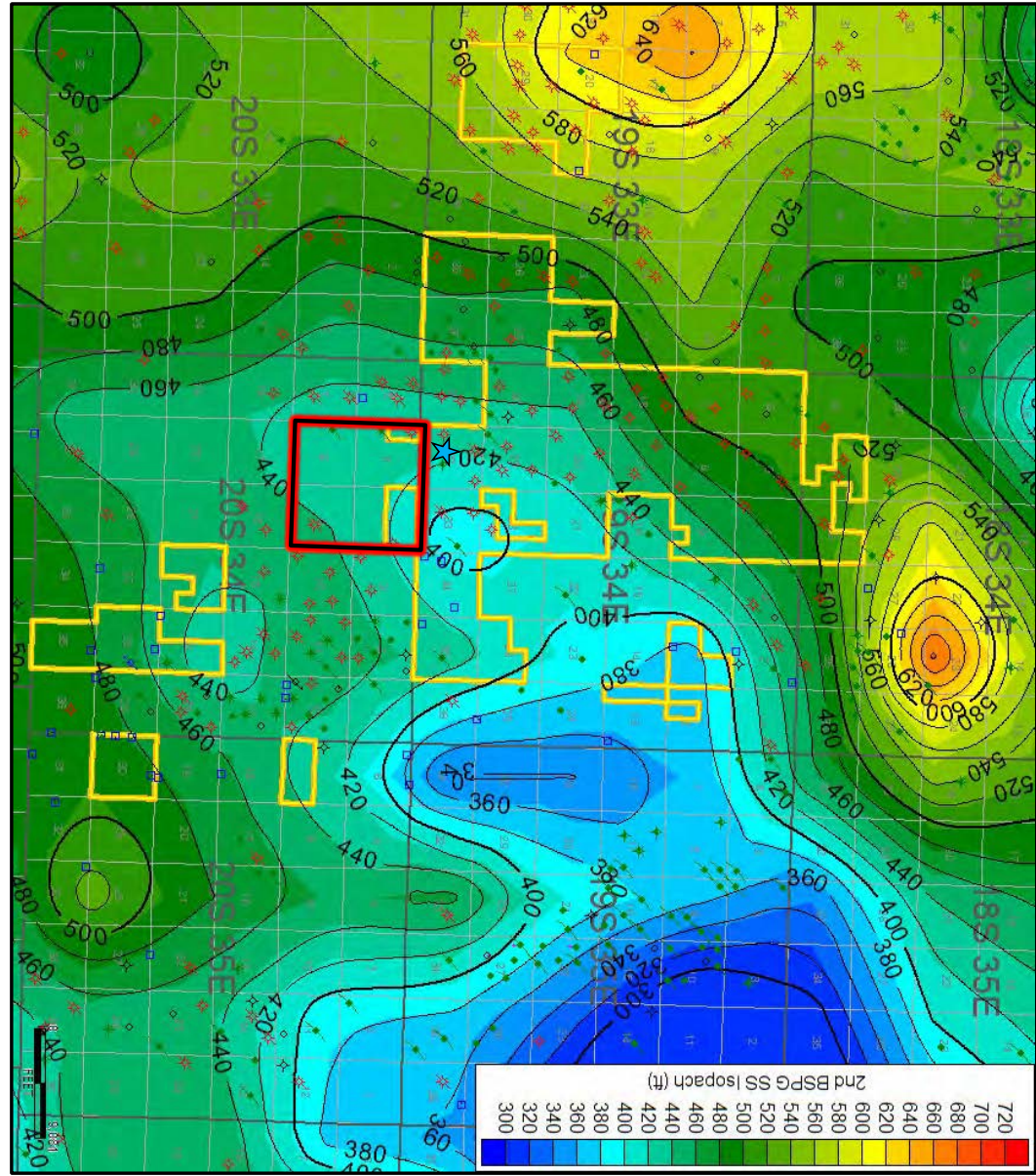


EXHIBIT  
B-11



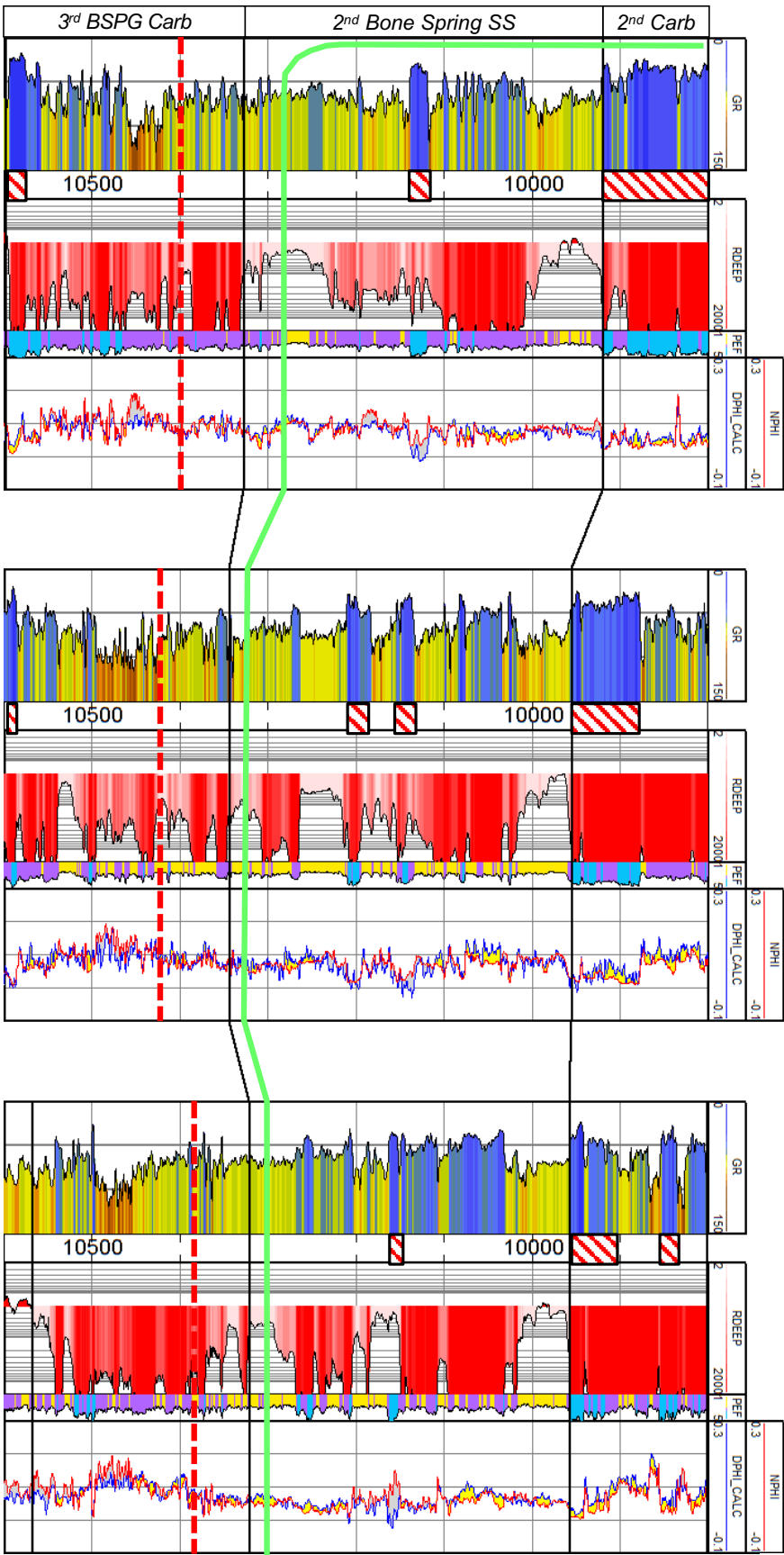
Quail Ridge 32  
State 2



2nd Bone Spring Sand Isopach

EXHIBIT  
B-12

2nd Bone Spring Sand Cross Section



**B**

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<1.06MI>

QUAL RIDGE 32 STATE

30025377030000

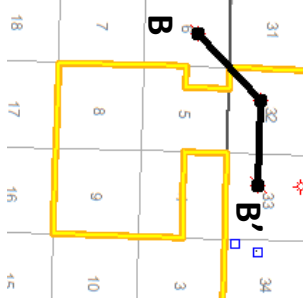
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LEA CHAPPARRAL FEDERAL COM

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**B'**

Frac Baffle

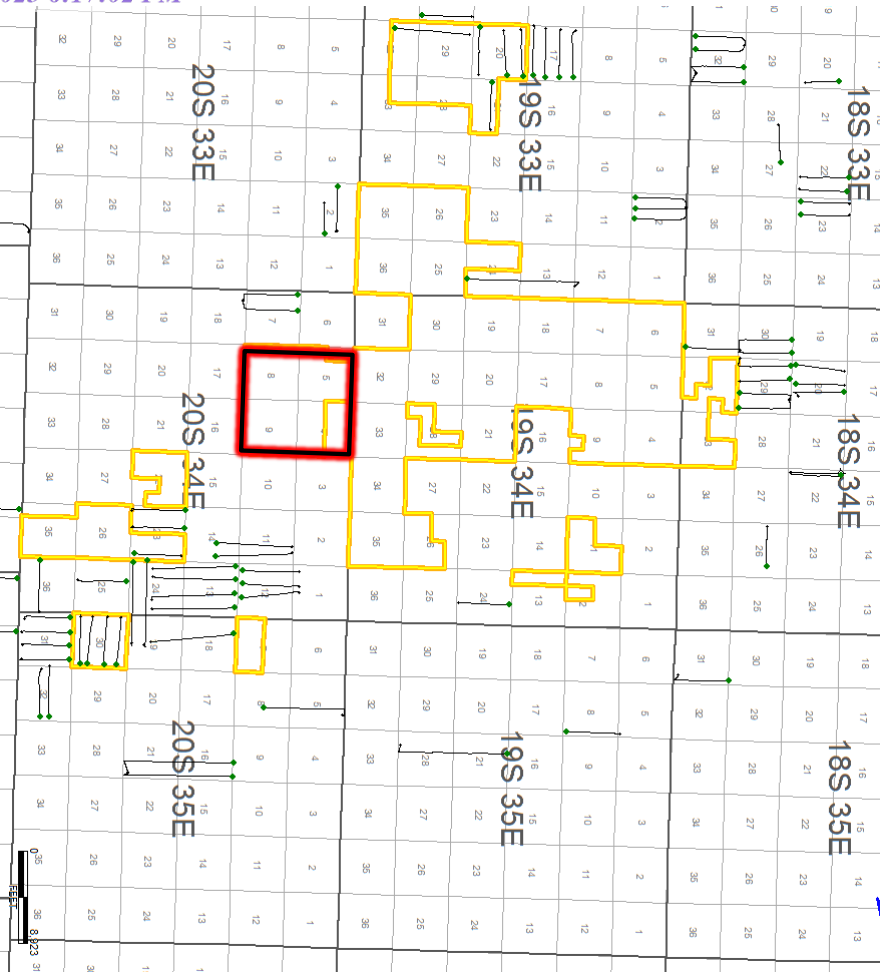


PR's additional 3rd Carb target lies ~135' below L. 2nd Sand target. No significant frac baffle separates the two reservoirs.

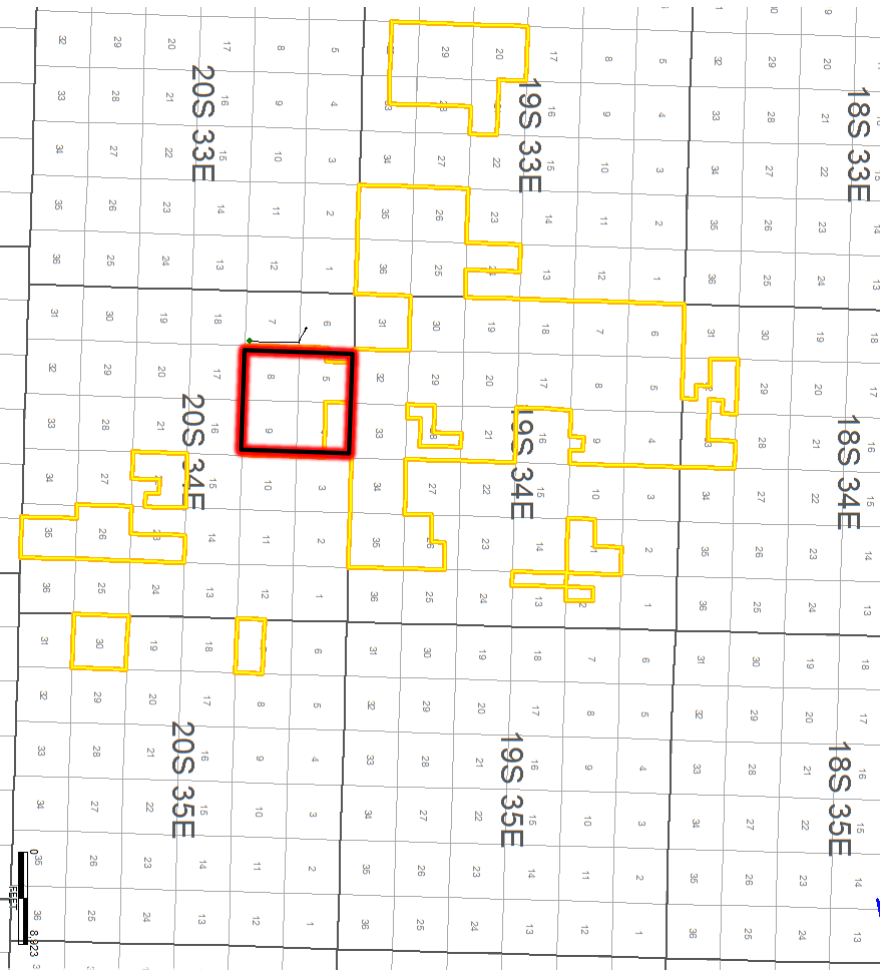
EXHIBIT B-13

# 2<sup>nd</sup> Bone Spring Sand is Established Target

## Lower 2<sup>nd</sup> Bone Spring Sand Producers



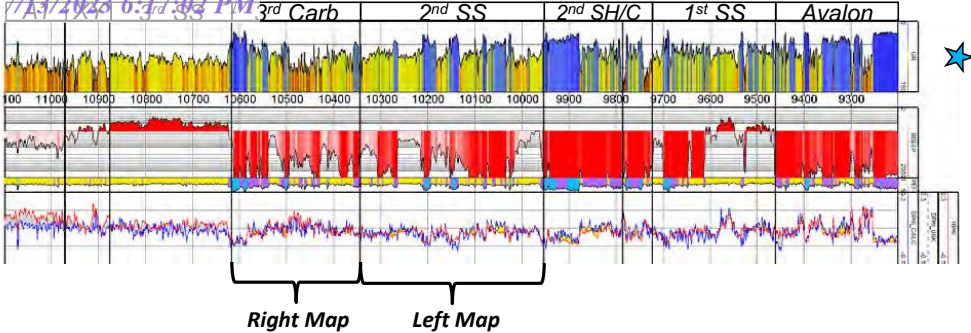
## 3<sup>rd</sup> Bone Spring Carb Producers



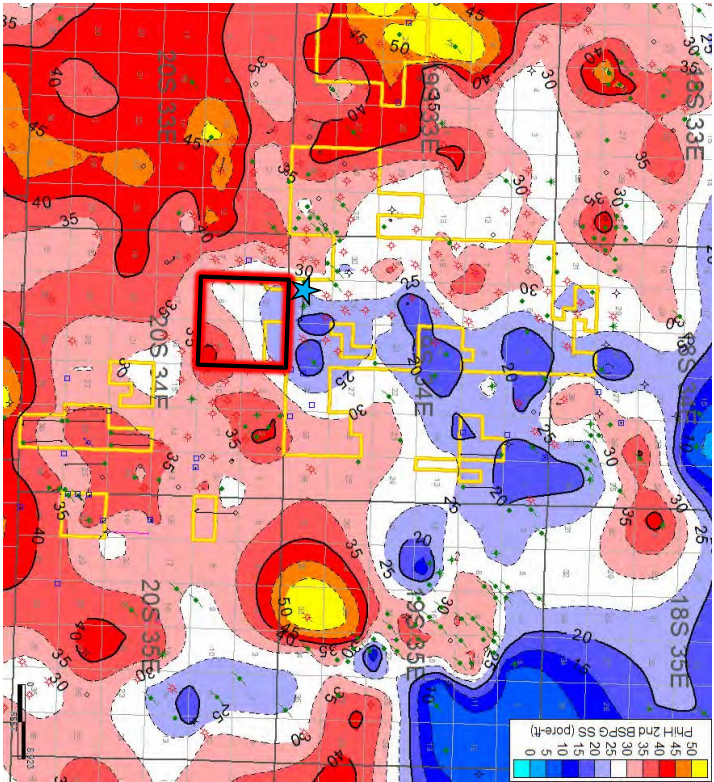
**EXHIBIT  
B-14**

PhiHL 2<sup>nd</sup> Sand vs. 3<sup>rd</sup> Carb

Quail Ridge 32  
State 2

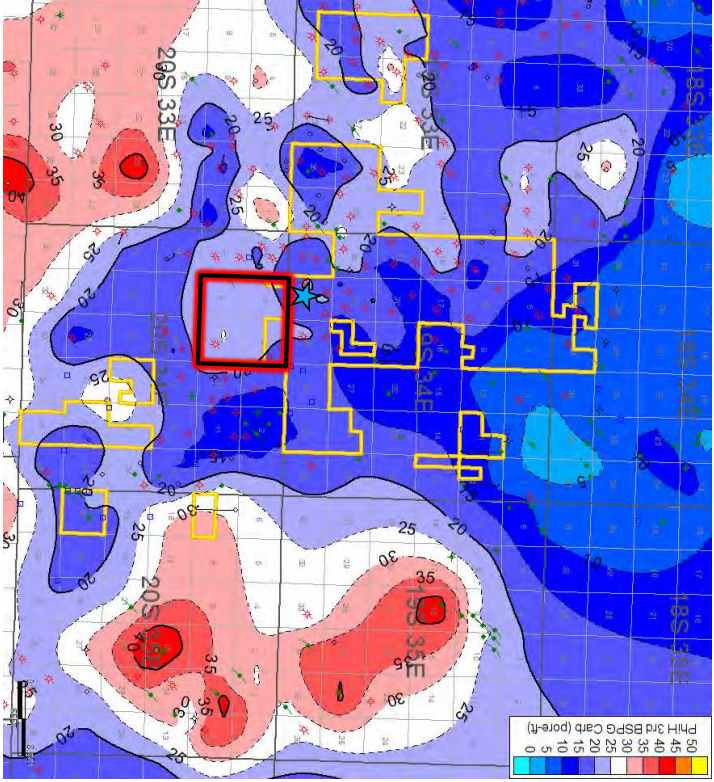


PhiH 2<sup>nd</sup> Bone Spring Sand  
CTRA Target



Avg PhiH in 3<sup>rd</sup> SS = 30  
60% of total reservoir

PhiH 3<sup>rd</sup> Bone Spring Carb  
Permian Resources Additional Target

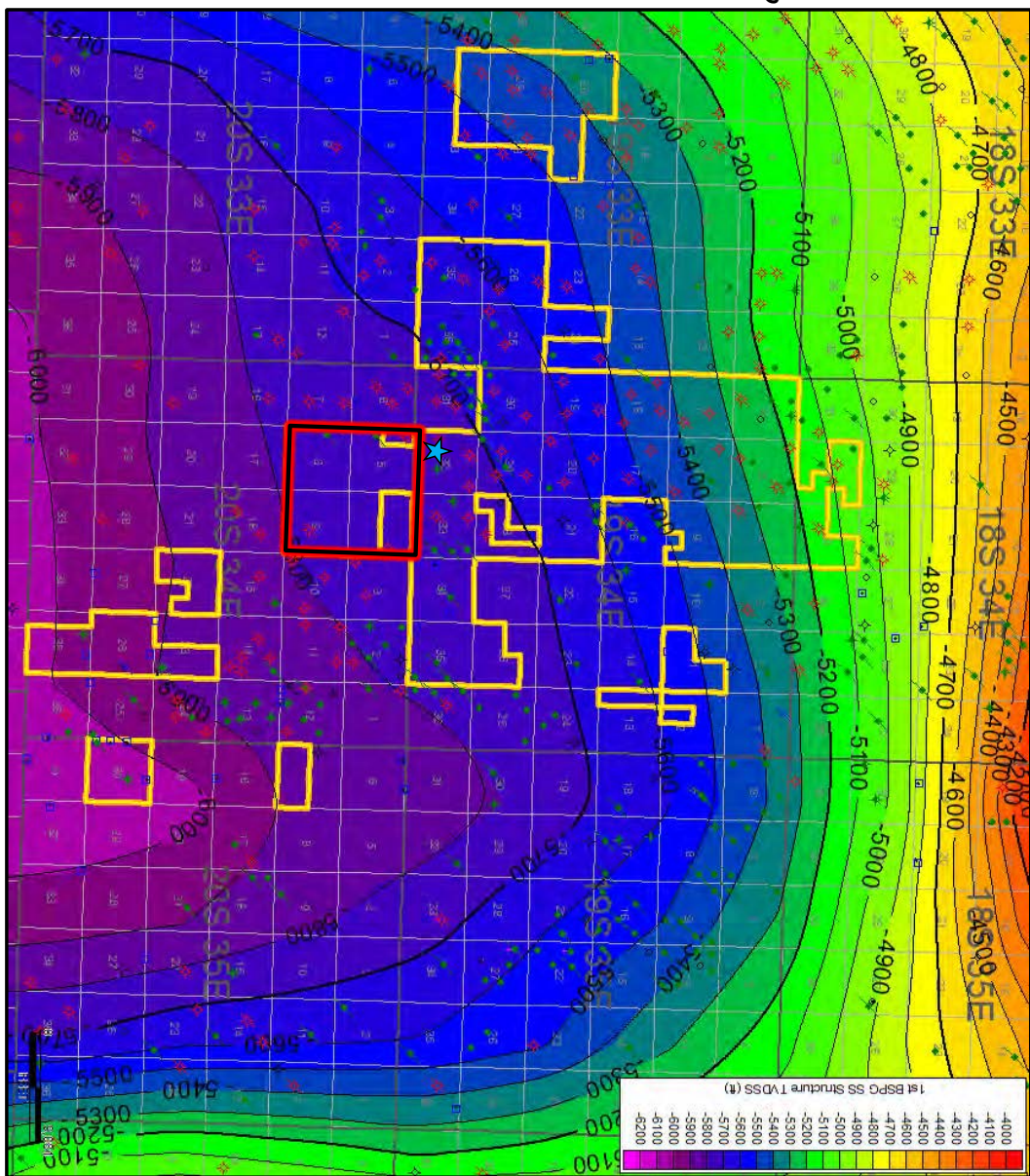
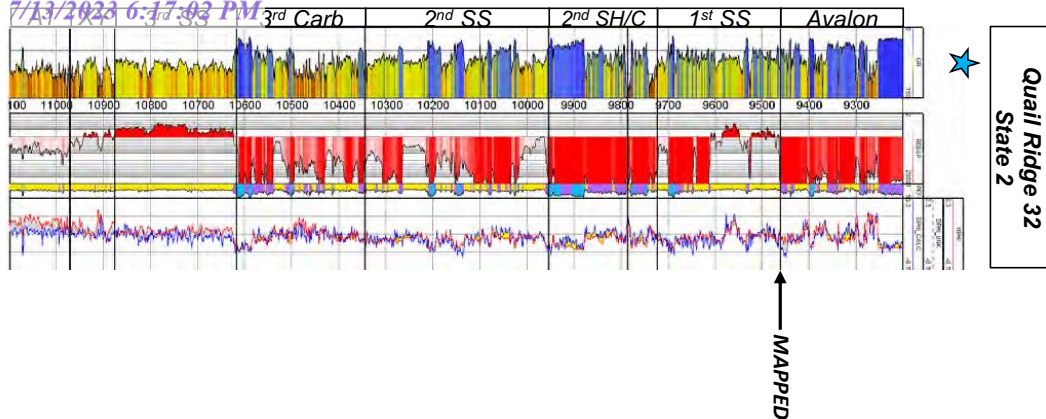


Avg PhiH in WFMP XY = 20  
40% of total reservoir

EXHIBIT  
B-15

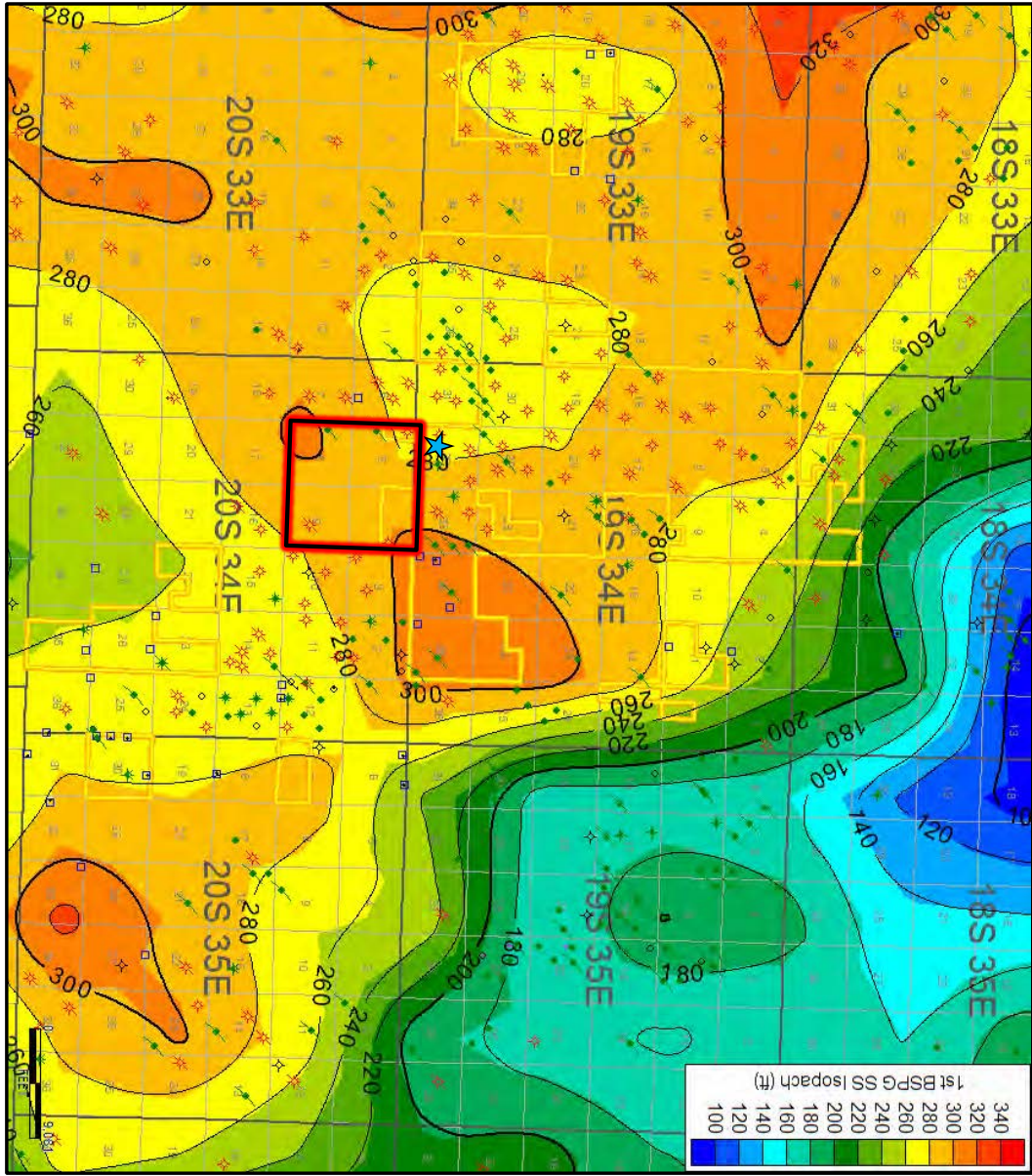
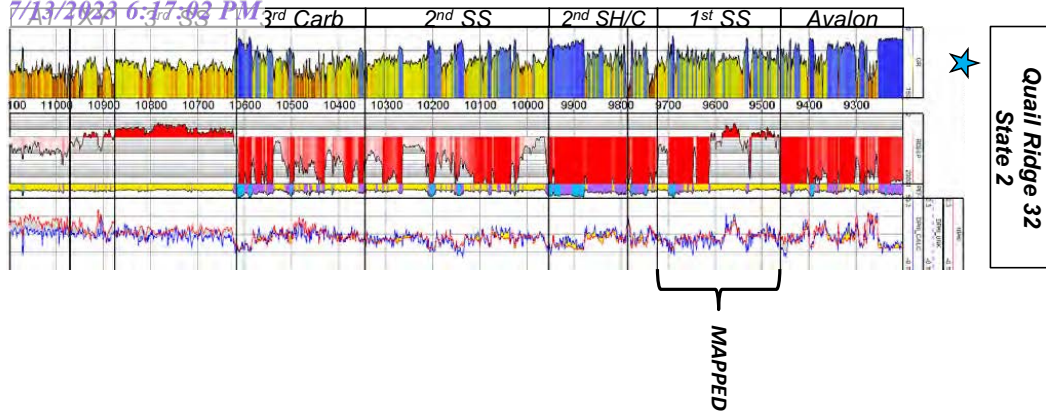


# *1<sup>st</sup> Bone Spring Sand*



# 1st Bone Spring Sand Structure

EXHIBIT  
B-16

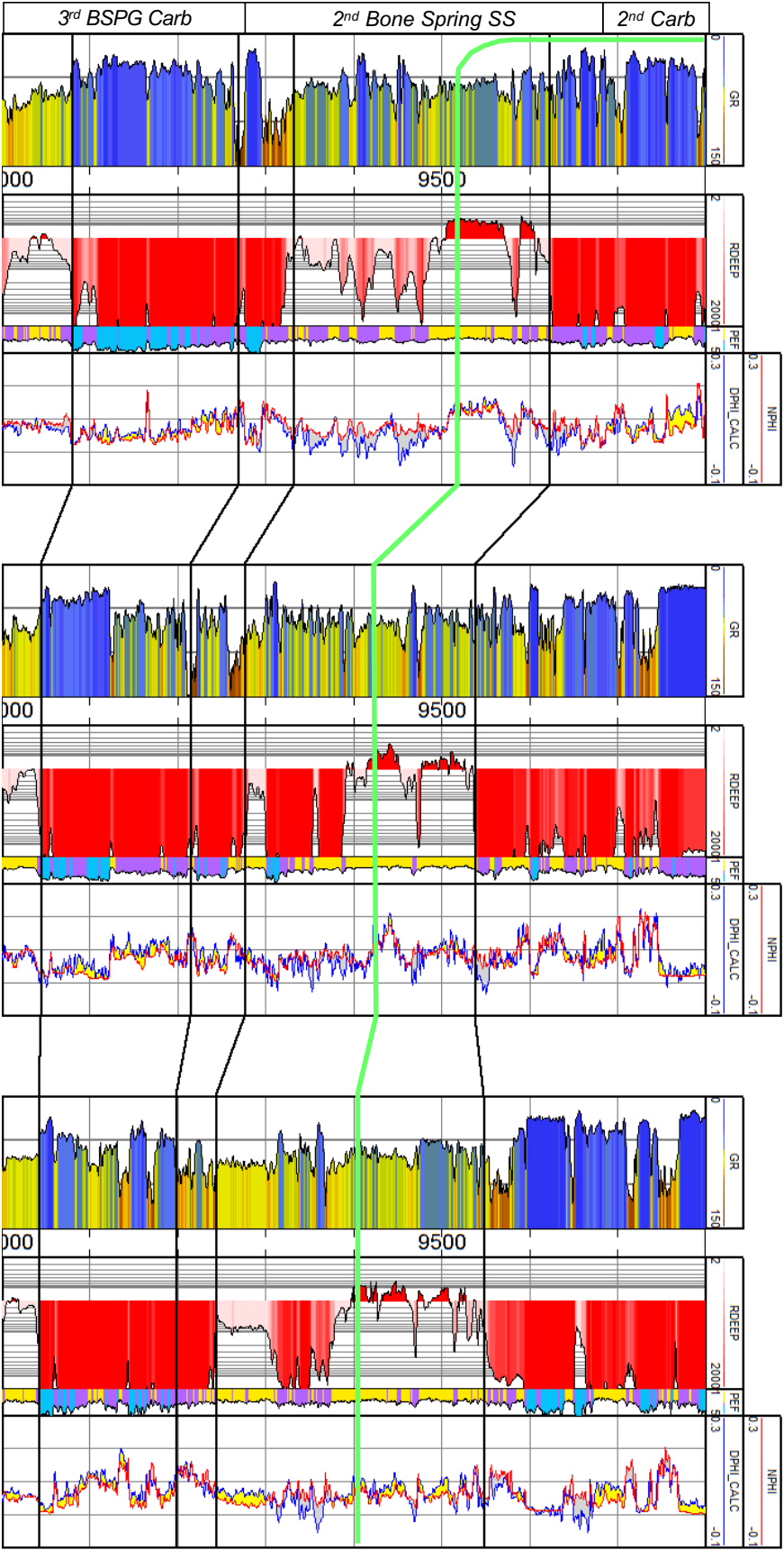


1st Bone Spring Sand Isopach

EXHIBIT  
B-17



1<sup>st</sup> Bone Spring Sand Cross Section



C  
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<1.06MI>

QUAL RIDGE 32 STATE  
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<1.00MI>

LEA CHAPPARRAL FEDERAL COM  
30025304130000

C'

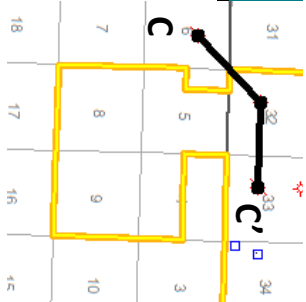
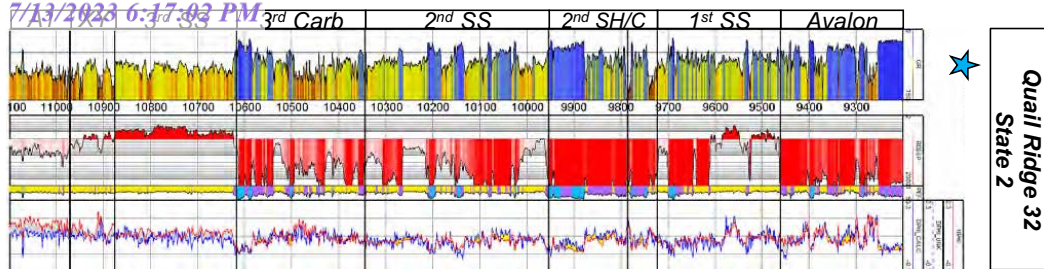


EXHIBIT  
B-18

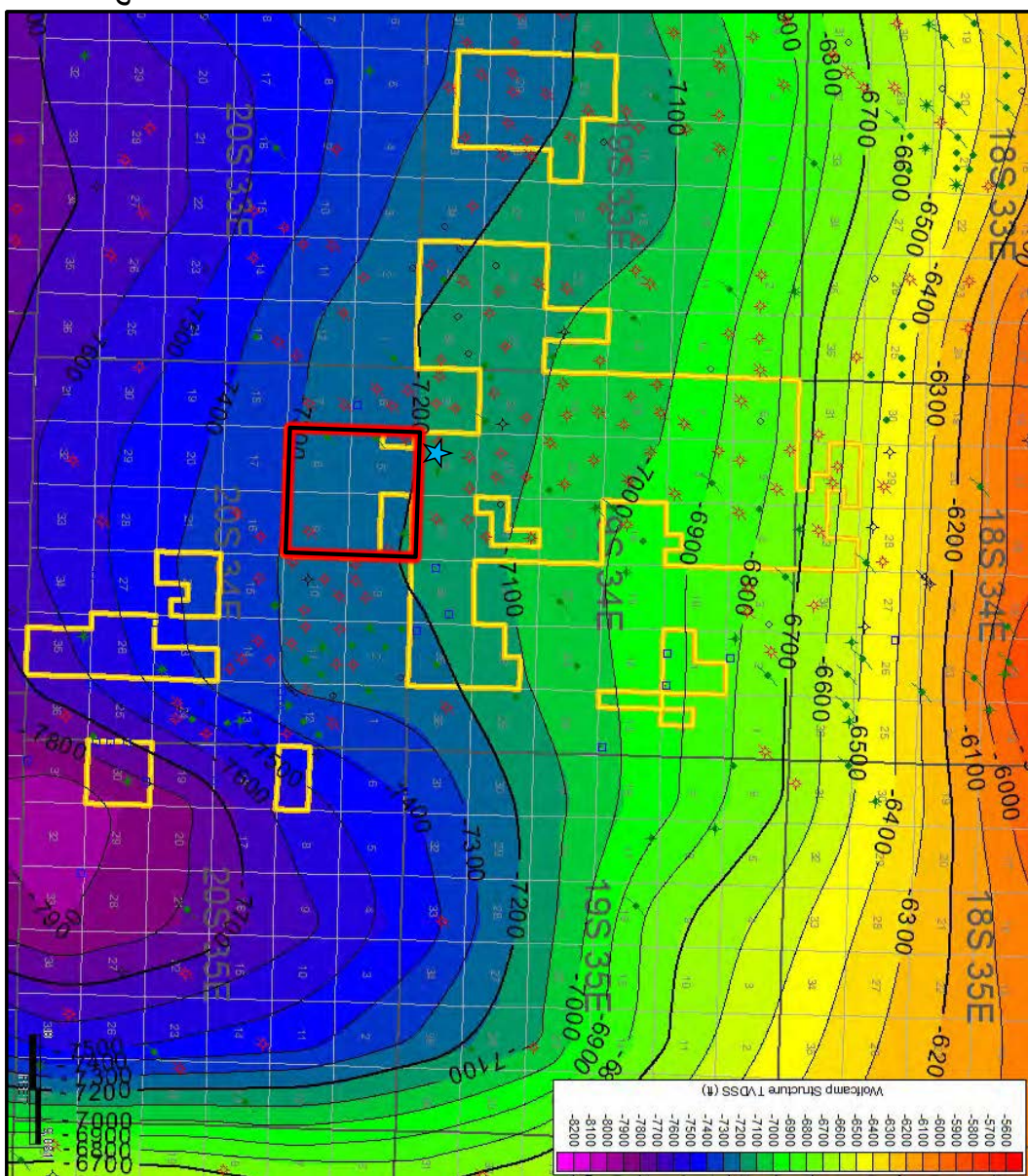


COTERRA

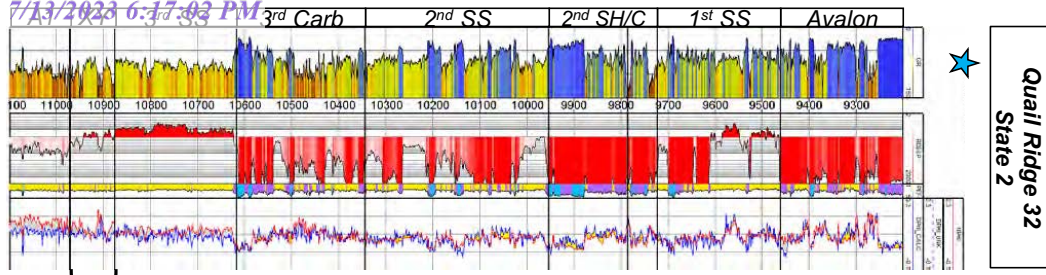
***Wolfcamp XY***



→ **MAPPED**



**EXHIBIT  
B-19**



Wolfcamp XY Isopach

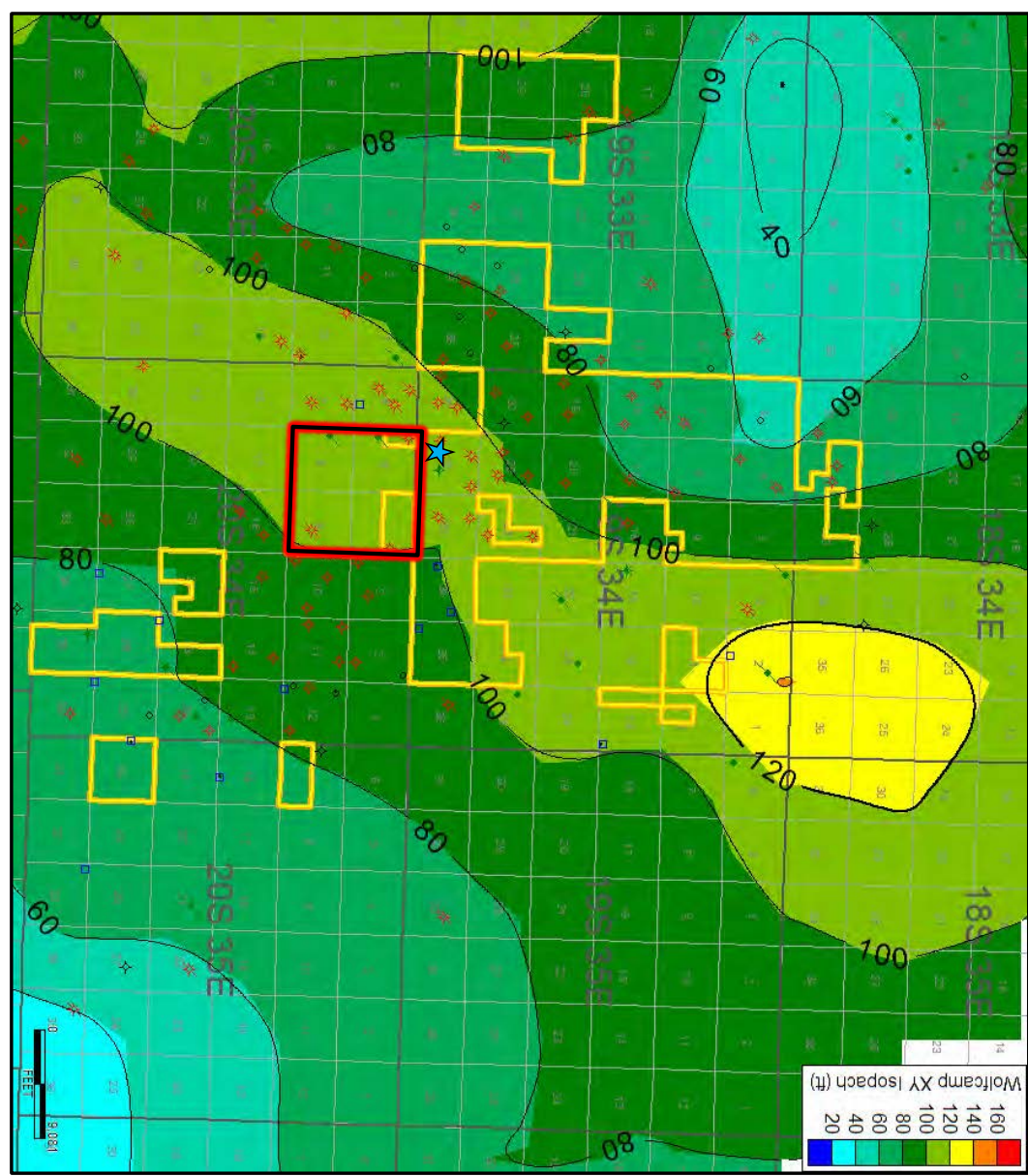
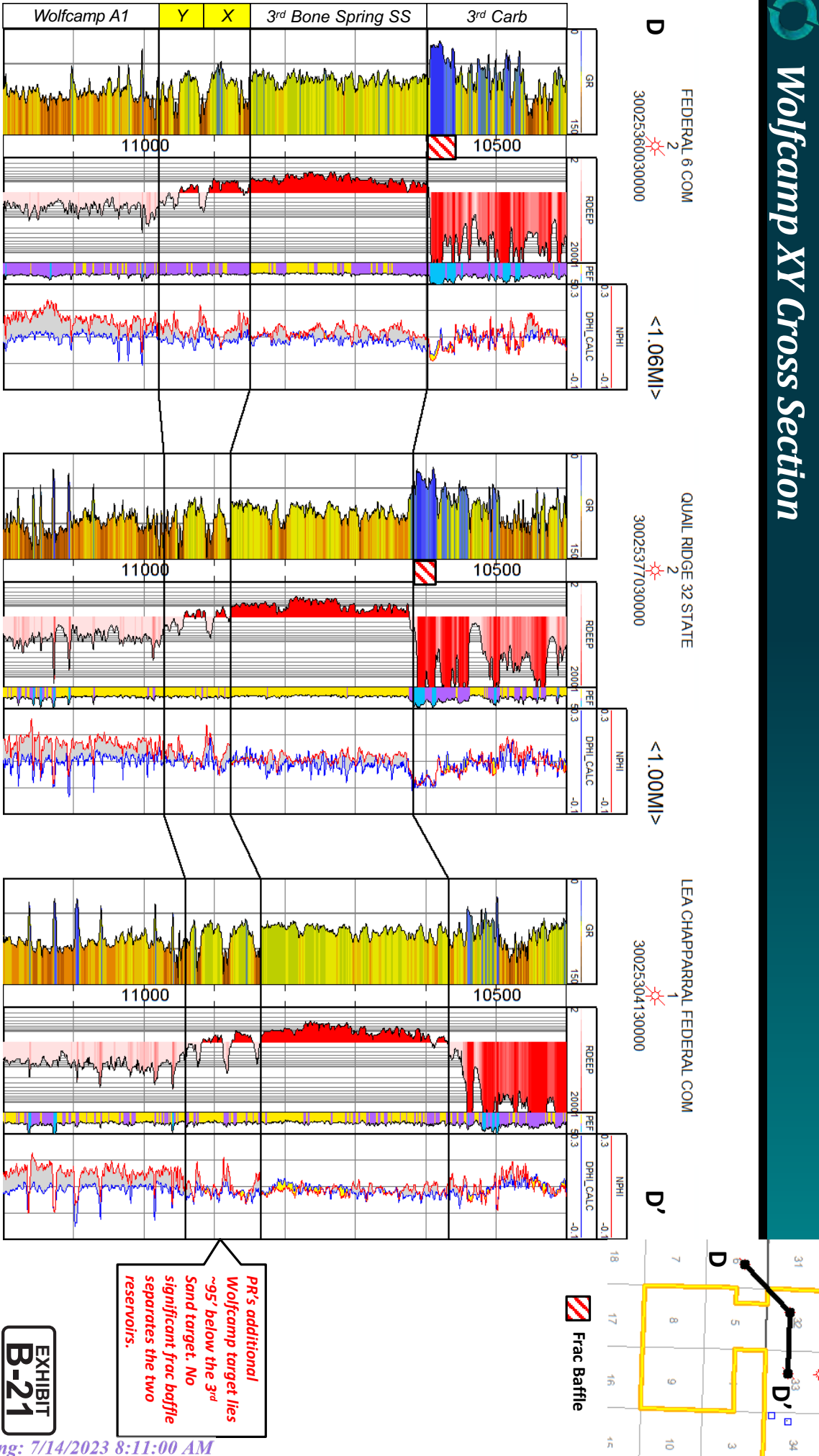


EXHIBIT  
B-20

Wolfcamp XY Cross Section



## TAB 4

Case Nos. 23594-23601

- Exhibit C: Self-Affirmed Statement of Eddie Behm, Petroleum Engineer
- Exhibit C-1: Mighty Pheasant Loosey Goosey Development Plan
- Exhibit C-2: Capital Plan Comparison Cimarex vs. Permian
- Exhibit C-3: Map of 3<sup>rd</sup> Bone Spring Sand Producers
- Exhibit C-4: 3<sup>rd</sup> Sand Well Count by Landing and Operators
- Exhibit C-5: Black and Tan 3<sup>rd</sup> Sand Composite Forecast 6 wells  
(Before WC completion)
- Exhibit C-6: Black and Tan 3<sup>rd</sup> Sand Composite Forecast 6 Wells Post  
Wolfcamp Frac
- Exhibit C-7: Black and Tan Wolfcamp Composite Forecast 5 wells
- Exhibit C-8: Lessons Learned from the Black and Tan Development
- Exhibit C-9: Diagram of Staggered Landing Wolfcamp 3<sup>rd</sup> SS Vs. 3<sup>rd</sup> SS Flat
- Exhibit C-10: Black and Tan Analog comparison to MP/LG
- Exhibit C-11: Landing Zone Matters; Five Years Ago, Cimarex's Perry Test  
Confirmed 3<sup>rd</sup> SS Landing as Best Target
- Exhibit C-12: Dataset Identifying all Wells in Area of Interest

**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**

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

1. I am over the age of 18 and have the capacity to provide this Statement; I am a Reservoir Engineer for Cimarex Energy Co. ("Cimarex") and have personal knowledge of the matters stated herein.
2. I attended the University of Tulsa and graduated with a bachelor's in petroleum engineering in 2011. I have worked for Occidental, California Resources prior to working for Cimarex Energy

Co. ("Cimarex") and have been employed as a Production and Reservoir engineer for Cimarex for the last 6 years, working in the Delaware Basin with a primary focus on Lea County, New Mexico. I am familiar with the subject applications filed in the above-referenced Cases and the engineering involved.

3. I have previously testified before the Oil Conservation Division ("Division") as an expert reservoir engineer, and my credentials have been accepted of record by the Division.

4. 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.

5. I am also thoroughly familiar with the competing applications filed by Read & Stevens, Inc. who designated Permian Resources Operating, LLC as the Operator (Read & Stevens and Permian Resources collectively referred to herein as "Permian" or "Permian Resources") in Case Nos. 23508 through 23523. This Statement provides a description and overview of Cimarex's development plan in comparison to Permian's development plans.

6. **Exhibit C-1, Slide 2: Mighty Pheasant Loosey Goosey Development Plan.**

Cimarex's development plan includes 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, all in Lea County, and Cimarex plans to develop the entire 2880 acres of the proposed units with only 33.9 acres of disturbance to the surface, thus substantially minimizing environmental impact (resulting in only a minimal 1.17% disturbance). Once the four drill pads and bulk gathering lines are installed, Cimarex will be able to rotate back to these existing drill pads for all activities and operations, thus requiring no further disturbance to the lands; by minimizing dirt work in this way, Cimarex will reduce potential air pollution and preserve native vegetation and natural habitat. Furthermore, Cimarex will develop this area with best-in-class gas

capture technology and operations and has already initiated this approach by securing proposals for oil, water, and gas takeaway and submitting load requests to power surface equipment to develop the acreage. As a company we permit zero (0) routine flaring and build tankless facilities that offer superior capture rates of low-pressure gas ( $\geq 90\%$  low pressure capture) for new developments which will be utilized in our proposed development plan.

**7. Exhibit C-2, Slide 3: Capital Plan Comparison of Mighty Pheasant vs. Joker (1280-acre Capital comparison is shown for Sections 5 & 8) to Highlight:**

- a) The \$92.7MM in Capital waste that results from the extra wells proposed by Permian Resources; public data show that Permian's extra wells will be non-additive to EUR and PV10**
- b) The \$31.6 MM in extra well cost driven by the wasteful execution of Permian Resources' plan.**
- c) Permian's unnecessary expenditure of \$11 MM on one additional 2<sup>nd</sup> Sand well in comparison to Cimarex's plan which avoids such waste.**
- d) At the time of its proposal, Permian Resources will spend \$270MM more than Cimarex to develop all 4 sections, thus in comparison, Permian would create financial waste that excessively burdens, undermines, and harms the correlative rights of working interest owners.**

**8. Exhibit C-3, slide 6: 3<sup>rd</sup> Bone Spring Sand is the Established Single Bench Target at 4 Wells Per Section (WPS) Within the Area of Interest (AOI).** The map of 3<sup>rd</sup> Bone Spring Sand Producers shows significant single bench development of the 3<sup>rd</sup> Sand at 4 wells per section spacing. The Map of Wolfcamp producers shows that the Wolfcamp is not primarily targeted with 3<sup>rd</sup> Sand development. Furthermore, where Wolfcamp is developed, it is

predominantly drilled and developed without the 3<sup>rd</sup> Sand because the reservoir is adequately captured with a single landing within the flow unit. There is only one development plan within the entire AOI similar to the plan Permian has proposed for the 3<sup>rd</sup> Sand. This plan, similar to Permian's plan, is located just 2 miles south of the subject lands, and it was based on similar well drainage assumptions that utilized outdated completion height assumptions. The Black and Tan Development Plan is the best analog and example that demonstrates the likely outcome of Permian Resources' proposal when both the 3<sup>rd</sup> Sand and Wolfcamp are developed as if they were separate and equal targets. A summary of the production results at **Exhibit C-10 (Slide 14)** herein speaks for itself, demonstrating what happened with the Black and Tan Development Plan, and therefore showing the substantial underproduction and waste that would likely result from Permian's approach, which is based on the same underlying assumptions. Cimarex's plan would avoid such an outcome.

9. **Exhibit C-4, Slide 7: Well Count by Landing and Operators Shows 3<sup>rd</sup> Sand is the Consensus Landing.** Ninety-seven percent of wells drilled in this area, that is, 236 out of 244 wells, are executed as single bench, non-staggered developments. This means it is not just Cimarex's idiosyncratic opinion that the best development plan for the Subject Lands requires a single landing target, but this is a consensus shared by all companies active within the area and directly supported by the data. Furthermore, 222 wells out of 244 total wells within the AOI land in the 3<sup>rd</sup> Sand supporting Cimarex's assessment of 3<sup>rd</sup> Sand as the optimum landing. Cimarex has executed 36 wells within the AOI, 15% of all wells, and has development experience specific to this area and its landing requirements.

10. **Exhibit C-5, Slide 9: Black and Tan 3<sup>rd</sup> Sand Composite Forecast 6 wells (Before WC completion)** This Forecast shows the aggregate well performance of 6 wells prior to

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 3<sup>rd</sup> Sand as a proven landing for optimal production.

11. **Exhibit C-6, Slide 10: Black and Tan 3<sup>rd</sup> Sand Composite Forecast 6 Wells Post Wolfcamp Frac.** This Forecast shows the aggregate well performance of 3<sup>rd</sup> Bone Spring Sand wells after underlying Wolfcamp development. Unfavorable results included elevated water cut, rapid GOR Incline, and steep oil decline which are signatures of interference between the five Wolfcamp wells drilled below these six 3<sup>rd</sup> Sand wells. After the Wolfcamp wells were drilled and produced, overall reserves appear to have fallen to 1.63 MM barrels of oil with steep decline profile. This highlights the degradation a 2<sup>nd</sup> landing causes within the AOI.

12. **Exhibit C-7, Slide 11: Black and Tan Wolfcamp Composite Forecast 5 wells.** This plot shows the aggregate performance and forecast to the five Wolfcamp wells completed below the six 3<sup>rd</sup> Sand wells shown on exhibits C-4 and C-5. 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 3<sup>rd</sup> sand wells above.

13. **Exhibit C-8, Slide 12: Lessons Learned from the Black and Tan Development.** Exhibit C-8 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 3<sup>rd</sup> 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, 3<sup>rd</sup> Sand has 268% more PHIH than the upper Wolfcamp and is clearly the predominant contributing reservoir. The hypothesis that landing in 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> Sand production. A setback from 3<sup>rd</sup> sand is in the best interest of efficient low risk recovery of the area reserves.

14. **Exhibit C-9, Slide 13: Diagram of Staggered Landing Wolfcamp 3<sup>rd</sup> SS Vs. 3<sup>rd</sup> SS Flat.** 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 3<sup>rd</sup> Sand well's landed flat must be very similar to the Stimulated rock volume accessed by staggered Wolfcamp and 3<sup>rd</sup> landings. If this were not true, the sum of Wolfcamp and 3<sup>rd</sup> sand production out of the Black and Tan development would be significantly higher once the 2<sup>nd</sup> 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 3<sup>rd</sup> Sand Wolfcamp target or the lower 2<sup>nd</sup> Sand 3<sup>rd</sup> Shale target serves only to double development CapEx. Cimarex has proprietary data from South Lea County developments in thicker 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.

15. **Exhibit C-10, Slide 14: Black and Tan Analog comparison to MP/LG.** Mighty Pheasant and Loosey Goosey 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 3<sup>rd</sup> sand reserves even more efficiently. Sensitivities run vs. reserves (table 1.3) and P50 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. 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.

16. **Exhibit C-11, Slide 15: Landing Zone Matters; Five Years Ago, Cimarex's Perry Test Confirmed 3<sup>rd</sup> SS Landing as Best Target.** Cimarex confirmed 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> Sand, and not in the Upper Wolfcamp. Thus, drilling into the Upper Wolfcamp is a waste of resources.

17. 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 C-12**.

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

19. 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.

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

*[Signature page follows]*

*Signature page of 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

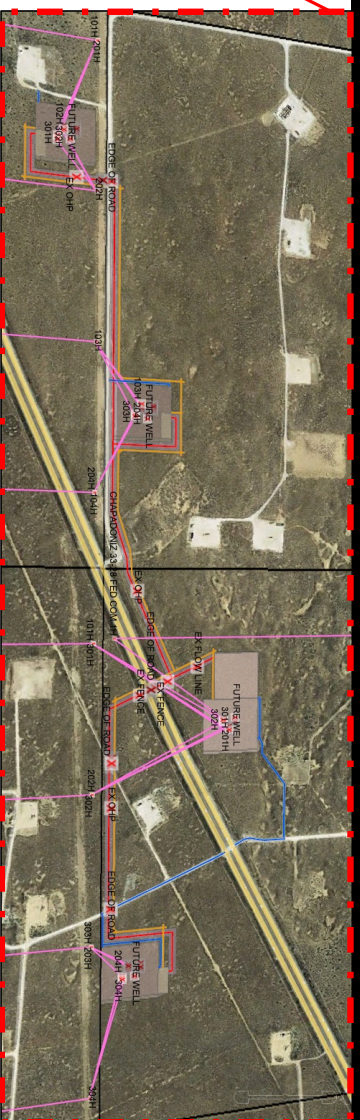
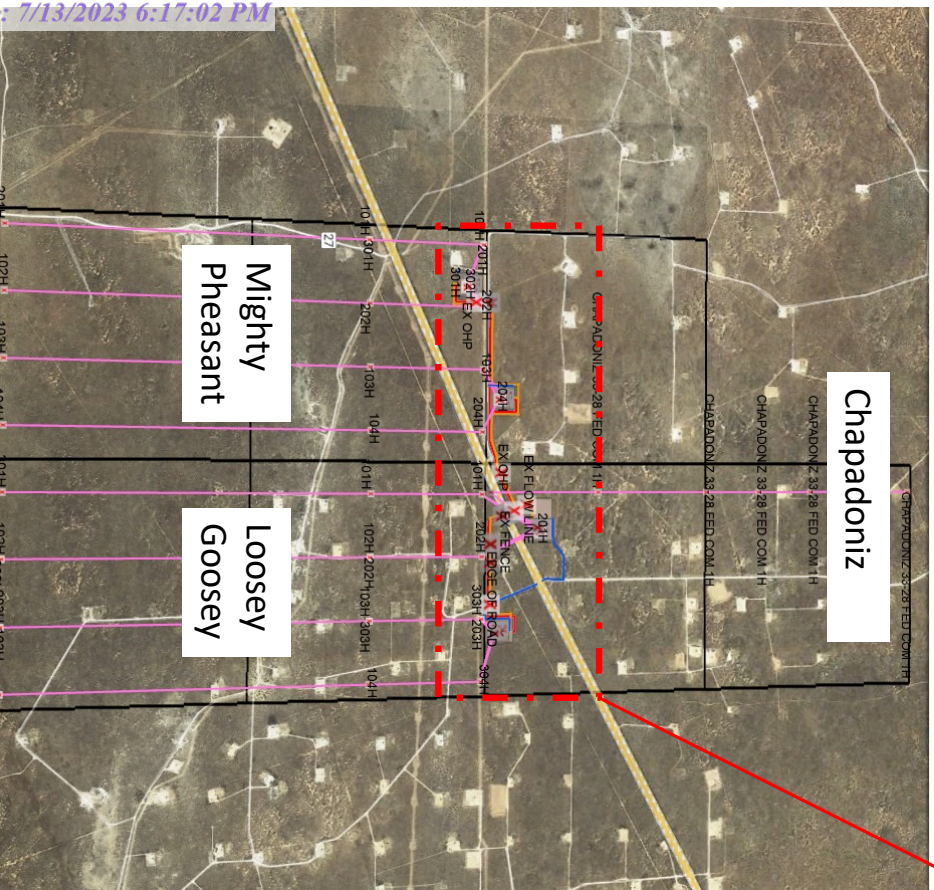
# *Development Strategy*





# Mighty Pheasant Loosey Goosey Development Plan

1 mile



- 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

EXHIBIT  
C-1



# Capital Plan Comparison Mighty Pheasant vs. Joker

| Mighty Pheasant   |      |               |                   |
|-------------------|------|---------------|-------------------|
| Res               | Well | AFE Capex     | June Current Cost |
| 1st               | 101H | \$8,570,695   | \$9,651,993       |
| 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*        | NA   | \$8,570,695   | \$9,651,993       |
| upper 2nd*        | NA   | \$8,570,695   | \$9,651,993       |
| upper 2nd*        | NA   | \$8,570,695   | \$9,651,993       |
| 2nd               | 201H | \$8,570,695   | \$9,651,993       |
| 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      |
| 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     |

| Permian Resources - Joker |      |               |                   |
|---------------------------|------|---------------|-------------------|
| Res                       | Well | AFE Capex     | June Current Cost |
| 1st                       | 111  | \$10,724,193  |                   |
| 1st                       | 112  | \$10,724,193  |                   |
| 1st                       | 113  | \$10,724,193  |                   |
| 1st                       | 114  | \$10,724,193  |                   |
| uppr 2nd                  | 122  | \$11,020,308  |                   |
| uppr 2nd                  | 124  | \$11,020,308  |                   |
| uppr 2nd                  | 126  | \$11,020,308  |                   |
| uppr 2nd                  | 128  | \$11,020,308  |                   |
| 2nd                       | 121  | \$11,020,308  |                   |
| 2nd                       | 123  | \$11,020,308  |                   |
| 2nd                       | 125  | \$11,020,308  |                   |
| 2nd                       | 127  | \$11,020,308  |                   |
| 3rd bs                    | 131H | \$11,535,757  |                   |
| 3rd bs                    | 132H | \$11,535,757  |                   |
| 3rd bs                    | 133H | \$11,535,757  |                   |
| 3rd bs                    | 134H | \$11,535,757  |                   |
| 3rd bs                    | 171H | \$11,308,013  |                   |
| 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 | ?                 |

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

**Permian plan is \$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 2<sup>nd</sup> sand well vs. Cimarex Proven spacing.

Permian Resources contracts, practices, and development plan is >= \$121MM of waste driven by Frac cost and Well Count

EXHIBIT  
C-2



# 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 3<sup>rd</sup> Sand development & 1<sup>st</sup> Sand/2<sup>nd</sup> Sand test**  
**BLM is currently working on these**

# *3<sup>rd</sup> Bone Spring Sand*

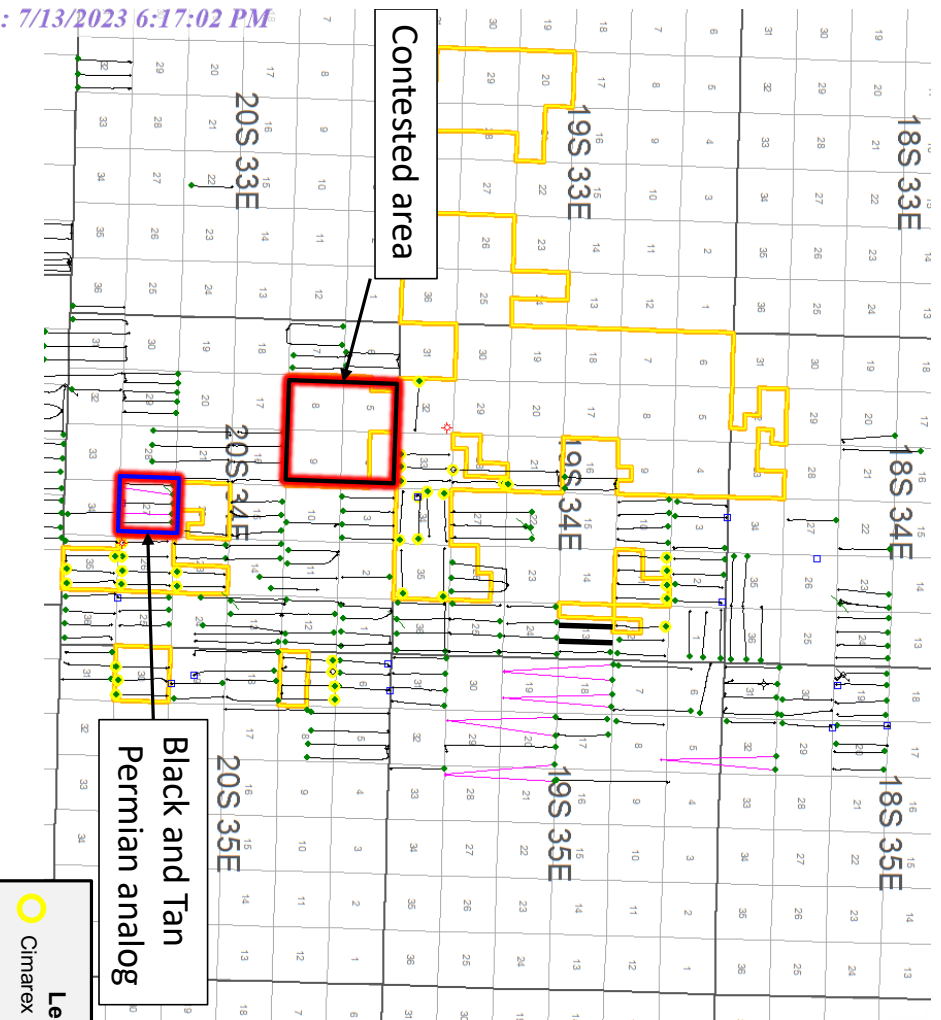




# 3rd Bone Spring Sand is the Established Single Bench Target at 4 WPS within AOI

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

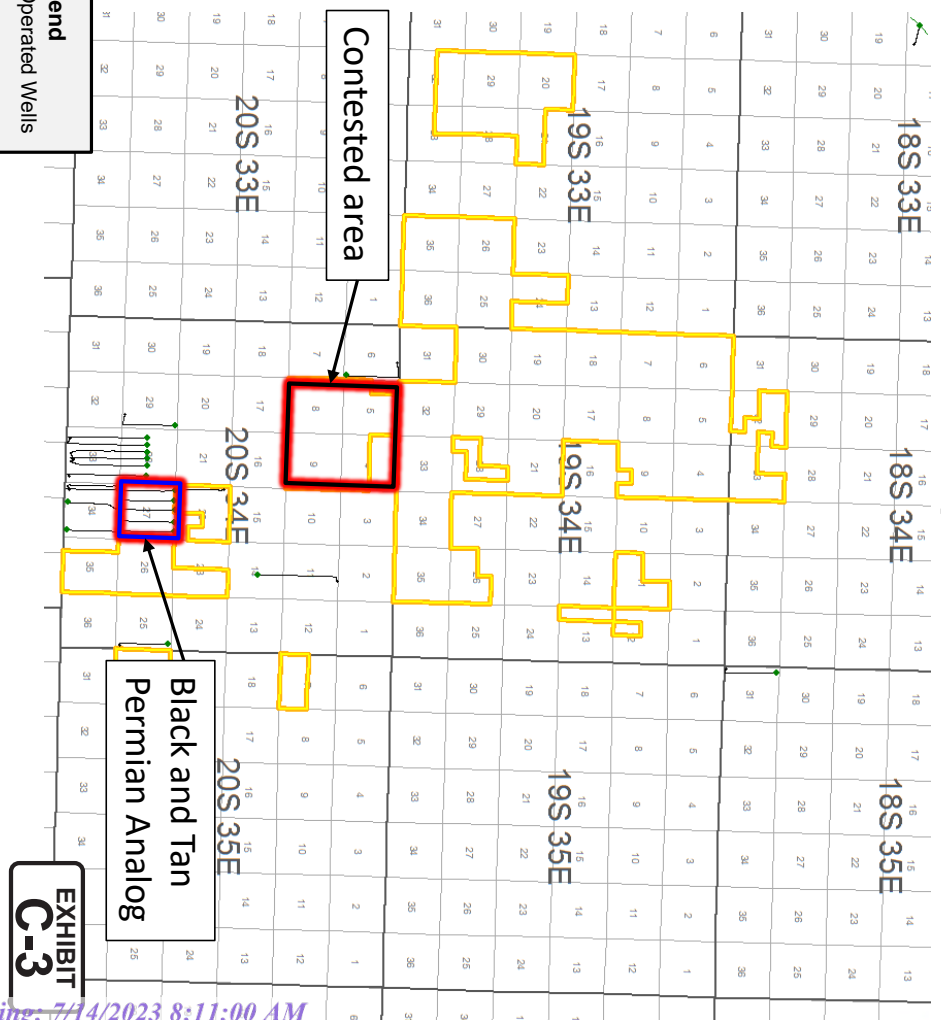


EXHIBIT  
C-3



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

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

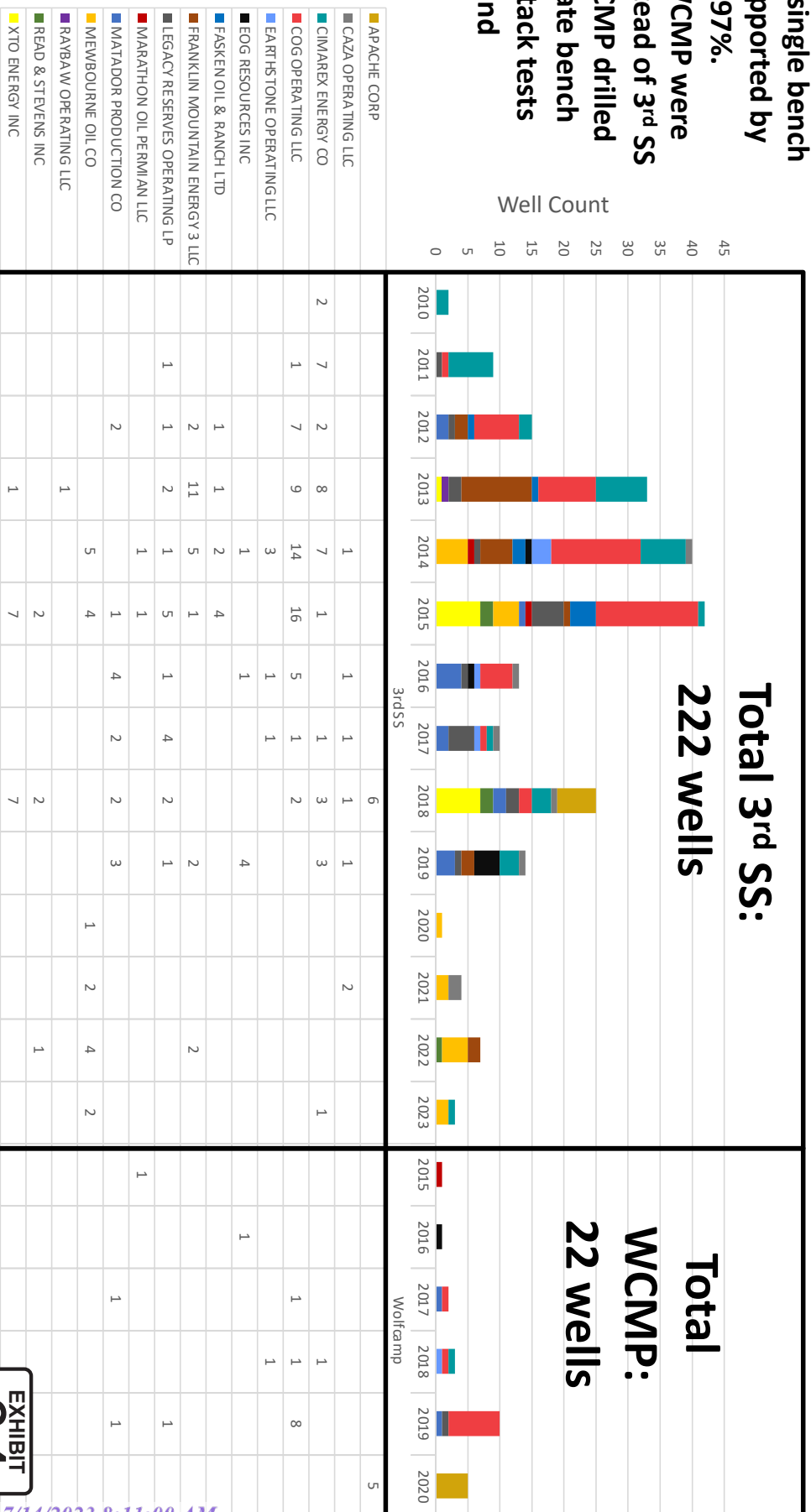
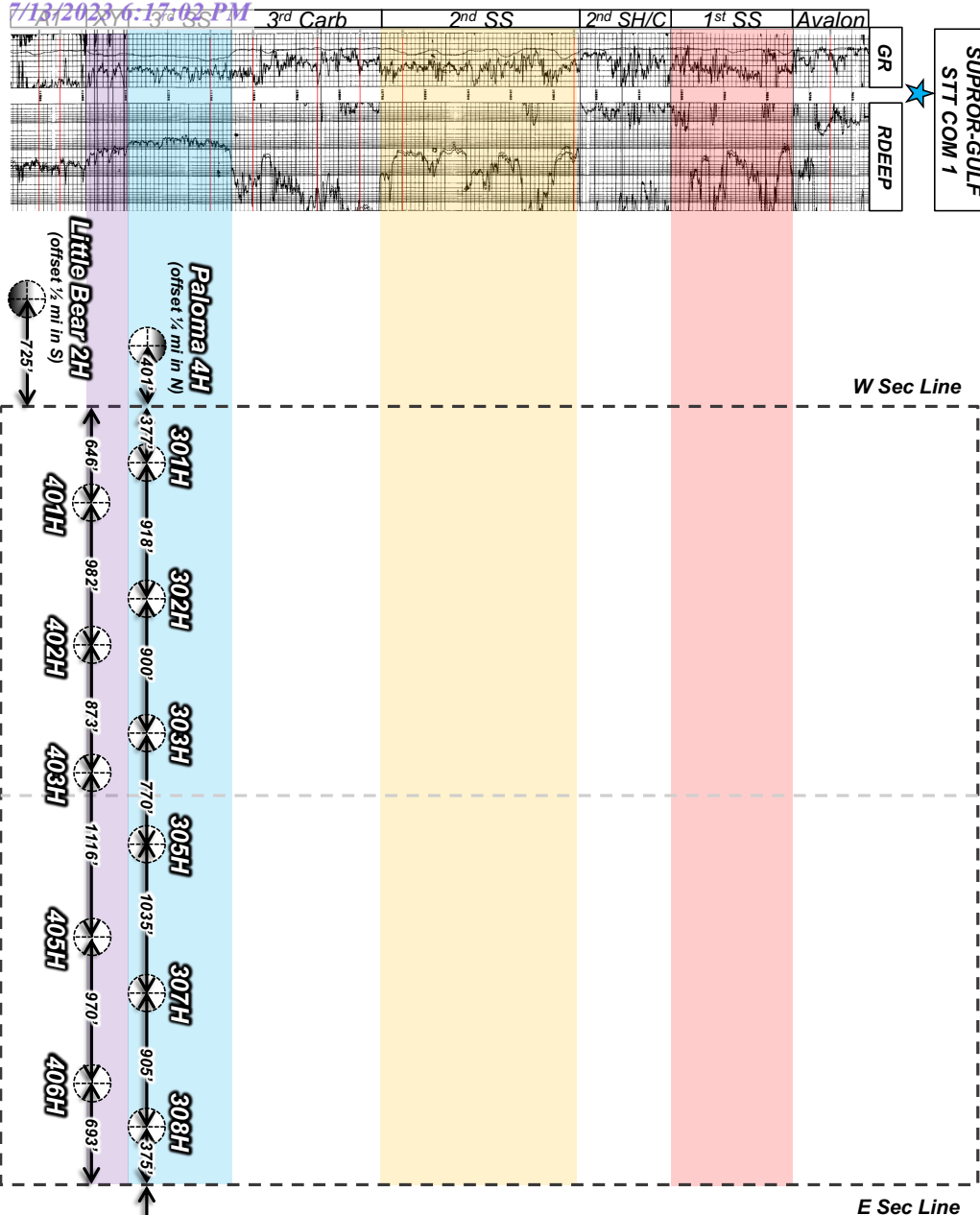


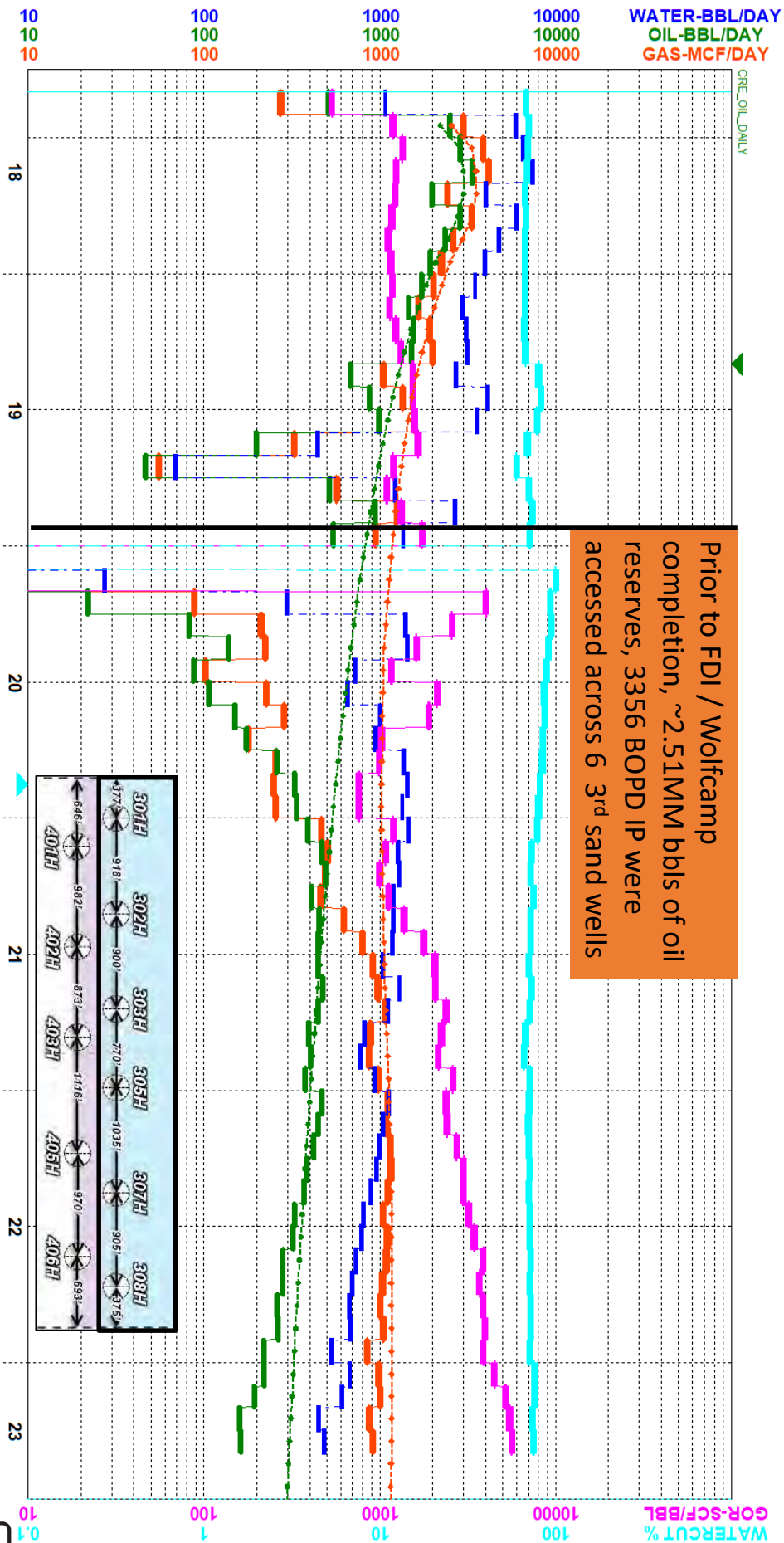
EXHIBIT  
C-4



**Hanson 26**  
**Fed 1H**

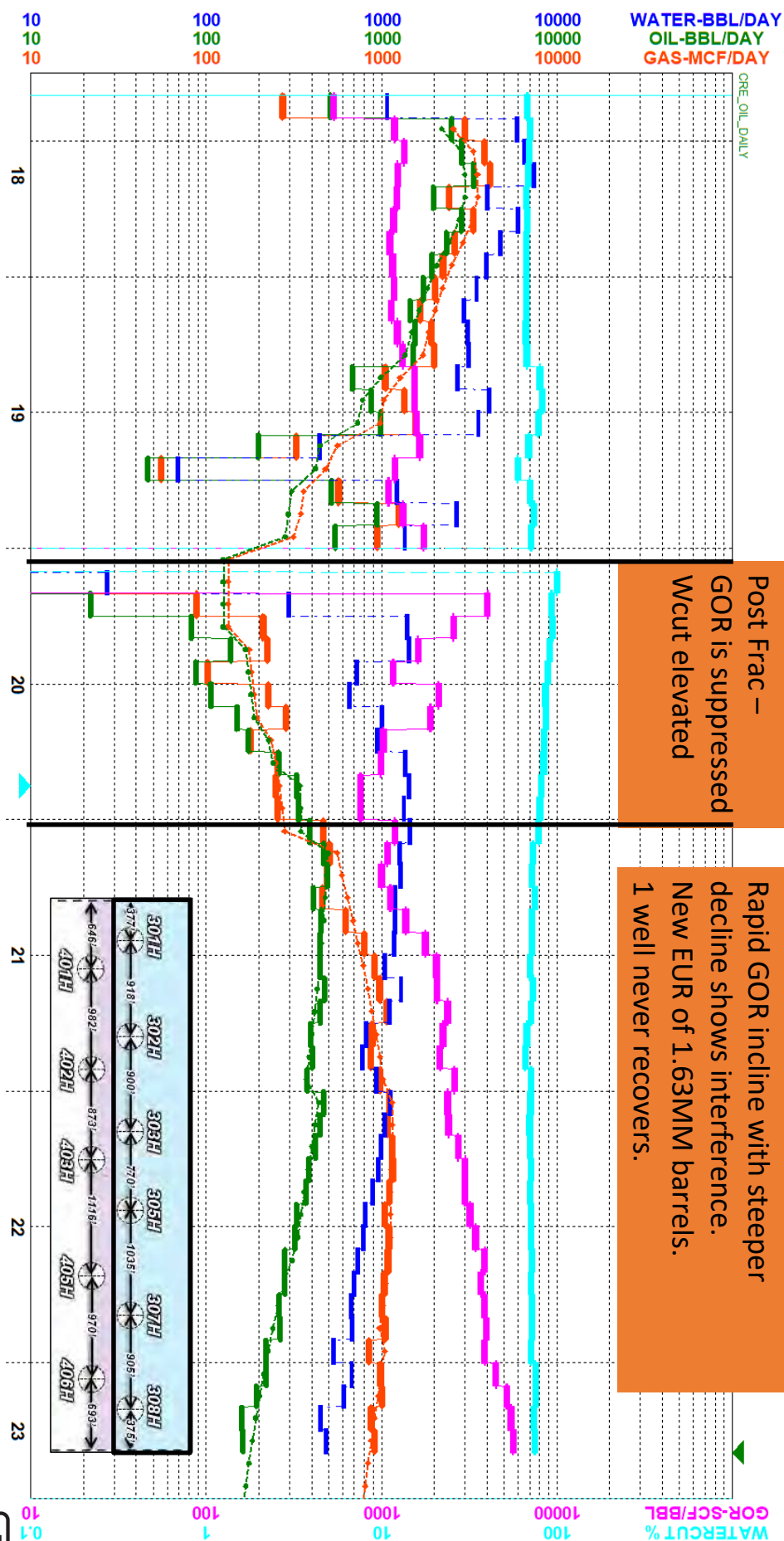


Black and Tan 3<sup>rd</sup> Sand Composite Forecast 6 Wells (Before WC completion)



| Results | Fact     |
|---------|----------|
| Qual    | EUR      |
| Ref     | 5/1/2019 |
| Vact    | 681,000  |
| Vest    | 1274,272 |
| Obeg    | 1323,258 |
| Oab     | 0.000    |
| "g"     | 0.000000 |
| De      | 0.000000 |
| Dmn     | 0.000    |
| Yrs     | 49,167   |
| Rem     | 1796744  |
| Cum     | 750229   |
| EUR     | 2506973  |

EXHIBIT  
C-5



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 | Test      |
|---------|-----------|
| Qual    | EJBFRAC   |
| Ref     | 5/1/2023  |
| Vat     | 0.000     |
| Vest    | 175.490   |
| Oleg    | 179.285   |
| Oab     | 0.000     |
| "b"     | 0.0000000 |
| De      | 0.0000000 |
| Dmin    | 0.000     |
| Y's     | 45.083    |
| Rem     | 376112    |
| Cum     | 1255382   |
| EUR     | 1620494   |

**EXHIBIT  
C-6**



# Black and Tan Wolfcamp Composite Forecast 5 Wells

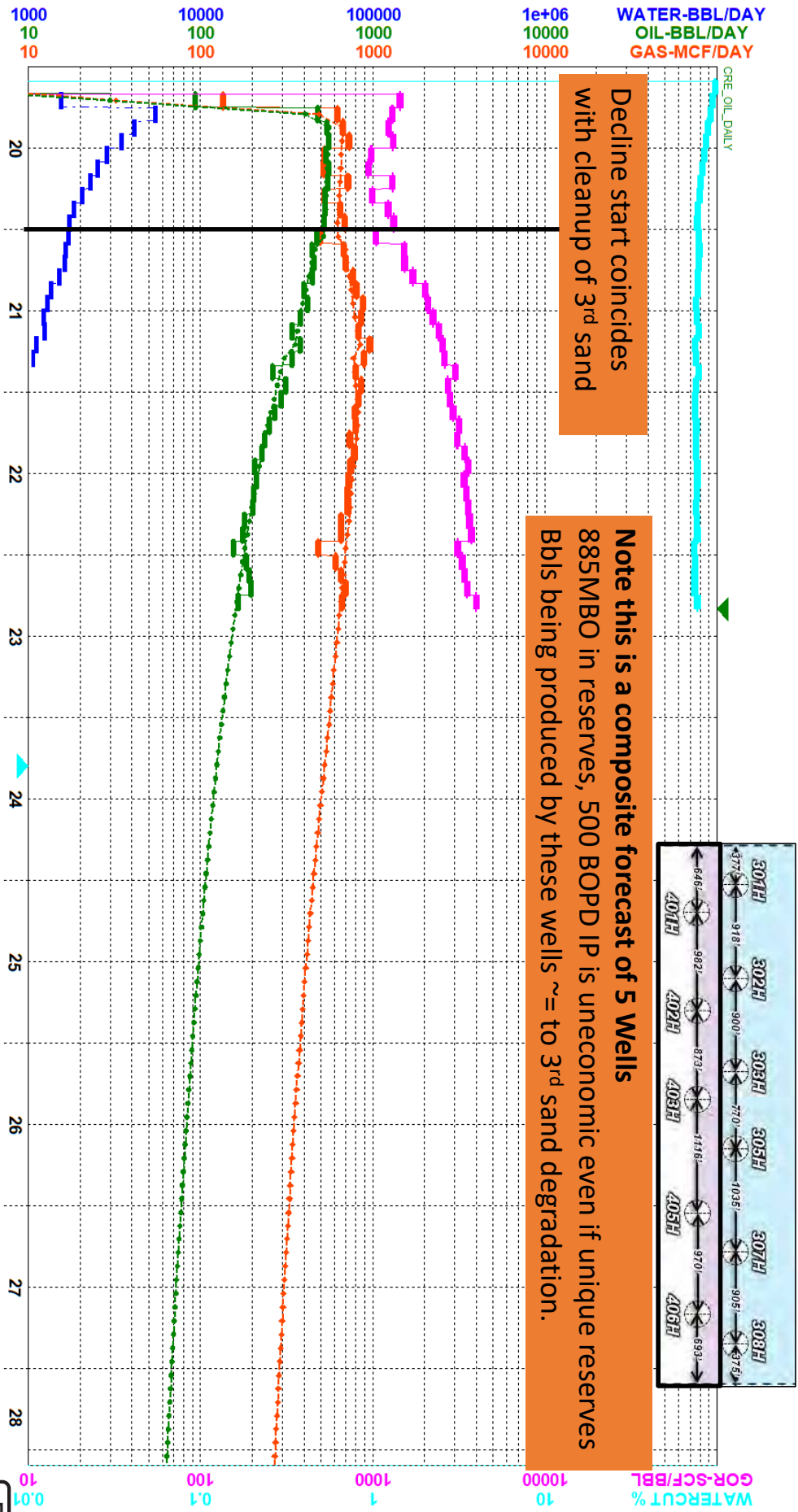


EXHIBIT  
C-7  
1.1



# Lessons Learned from the Black and Tan Development

| PROJECT = Black & Tan 27 |                                                                                                                                                      |               |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 30025461240000           | BLACK & TAN 27 FEDERAL COM #405H BLACK & TAN 27 FEDERAL COM I WOLFCAMP A I APACHE CORP I LEA I 4583 I 09/01/2019 I 02/26/2020 I 0EF33AE781           | Completed 2nd |
| 30025460720000           | BLACK & TAN 27 FEDERAL COM #401H BLACK & TAN 27 FEDERAL COM I WOLFCAMP A I APACHE CORP I LEA I 4666 I 10/19/2019 I 01/22/2020 I AFD8F0925C           |               |
| 30025460730000           | BLACK & TAN 27 FEDERAL COM #402H BLACK & TAN 27 FEDERAL COM I WOLFCAMP SANDS XY SAND I APACHE CORP I LEA I 4561 I 08/17/2019 I 02/26/2020 I B4C53386 |               |
| 30025461230000           | BLACK & TAN 27 FEDERAL COM #403H BLACK & TAN 27 FEDERAL COM I WOLFCAMP SANDS XY SAND I APACHE CORP I LEA I 4629 I 09/08/2019 I 02/26/2020 I 607292AC |               |
| 30025460750000           | BLACK & TAN 27 FEDERAL COM #406H BLACK & TAN 27 FEDERAL COM I WOLFCAMP SANDS XY SAND I APACHE CORP I LEA I 4694 I 09/29/2019 I 02/26/2020 I F44F2545 |               |
| 30025440180000           | BLACK & TAN 27 FEDERAL COM #302H BLACK & TAN 27 FEDERAL COM I 3RD BONE SPRING SAND I APACHE CORP I LEA I 4416 I 12/11/2017 I 06/01/2018 I 163AC020E2 | Completed 1st |
| 30025440170000           | BLACK & TAN 27 FEDERAL COM #301H BLACK & TAN 27 FEDERAL COM I 3RD BONE SPRING SAND I APACHE CORP I LEA I 4526 I 11/15/2017 I 06/01/2018 I 40288A1B23 |               |
| 30025439210100           | BLACK & TAN 27 FEDERAL COM #303H BLACK & TAN 27 FEDERAL COM I 3RD BONE SPRING SAND I APACHE CORP I LEA I 4360 I 10/24/2017 I 05/18/2018 I 748D250B4E |               |
| 30025439400000           | BLACK & TAN 27 FEDERAL COM #305H BLACK & TAN 27 FEDERAL COM I 3RD BONE SPRING SAND I APACHE CORP I LEA I 4524 I 03/17/2018 I 05/23/2018 I A635466807 |               |
| 30025440400000           | BLACK & TAN 27 FEDERAL COM #307H BLACK & TAN 27 FEDERAL COM I 3RD BONE SPRING SAND I APACHE CORP I LEA I 4303 I 01/07/2018 I 05/16/2018 I CF72E02929 |               |
| 30025440450000           | BLACK AND TAN 27 FEDERAL COM #308H BLACK AND TAN 27 FEDERAL COM I 3RD BONE SPRING SAND I APACHE CORP I LEA I 4340 I 01/30/2018 I 05/05/2018 I A7CD7  |               |

## 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 |
|----------------------------------------------|-----------------|---------------|------|----------------|----------|--------------------------------------------------------|
| IP30 BOPD                                    | 3rd Bone Spring | 3rd Bone frac | Post | 3rd Sand Delta | 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

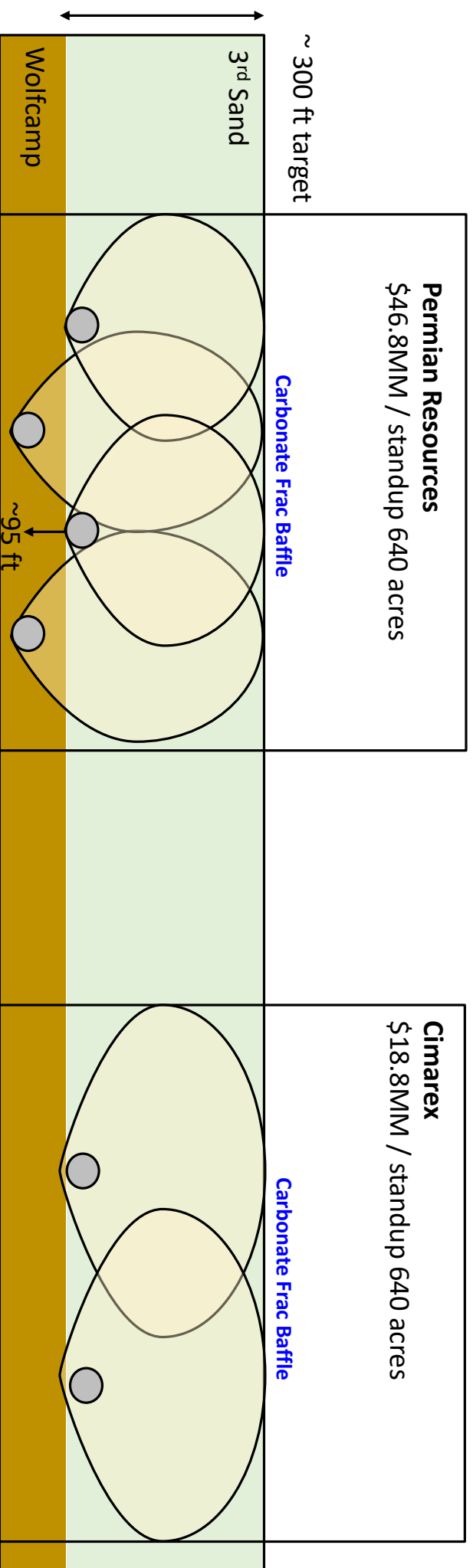
- 268% Phi H vs. Wolfcamp
- 3rd sand delta compounded by being cleaner with better flow property's than the Wolfcamp

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

EXHIBIT  
C-8



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



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

EXHIBIT  
C-9

# Black and Tan Analog Comparison To MP/LG

Table 1.2

| Analog Comparison | Black and Tan |          |                   | Mighty Pheasant Loosey Goosey |          |                   |
|-------------------|---------------|----------|-------------------|-------------------------------|----------|-------------------|
|                   | 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

| 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

| 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            |         |               |

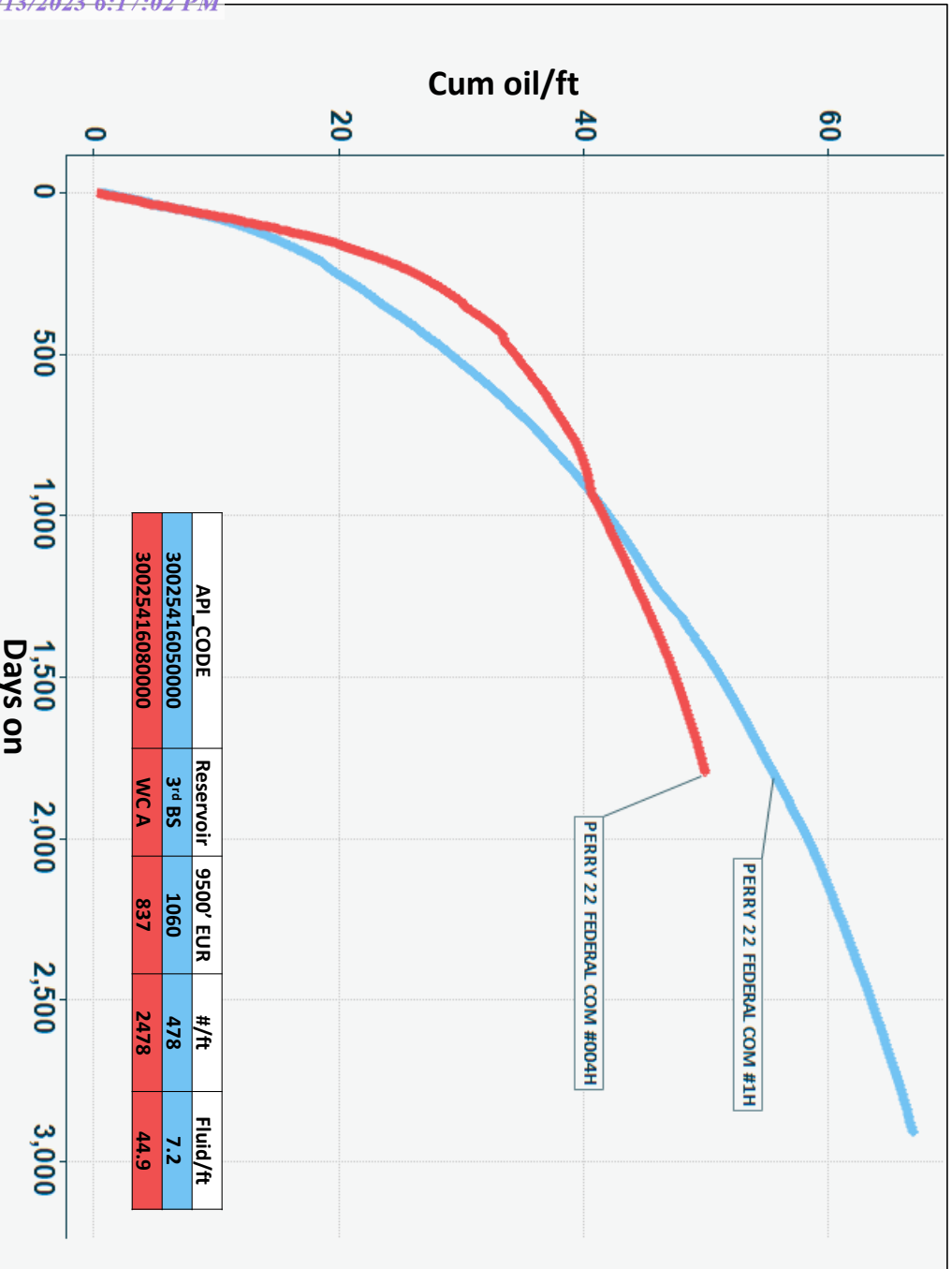
- In order to create equivalent PV10, Wolfcamp landings must add ~40% more reserves vs reserves estimate (table 1.3) and 31% more reserves vs. P50 expectation (table 1.4). This outcome is unrealistic vs. observed results.
- Cimarex lower terminal fixed OpEx + less well degradation results in 9.1MM EUR 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

EXHIBIT  
C-10

14



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



- Note: 5 to 6 x the frac energy is not as important as the right landing zone.**
- The Perry 1H 2014 vintage 3<sup>rd</sup> 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 3<sup>rd</sup> sand where they are located

EXHIBIT  
C-11

## Exhibit C12 3rd SS WC API List

| Exhibit C12 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    |
| 30025408420000       | QUAIL 11 STATE COM 2H        | CIMAREX ENERGY CO              | 3rd SS    |
| 30025408750000       | AIRCOBRA 12 STATE 1H         | COG OPERATING LLC              | 3rd SS    |

**EXHIBIT**  
**C-12**

**Exhibit C12 3rd SS WC API List**

|                |                                 |                                |        |
|----------------|---------------------------------|--------------------------------|--------|
| 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 | AIRSTRIPE 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 |

## Exhibit C12 3rd SS WC 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 |

## Exhibit C12 3rd SS WC API List

|                |                                       |                                |        |
|----------------|---------------------------------------|--------------------------------|--------|
| 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 | AIRSTRIIP 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 | AIRSTRIIP 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 | AIRSTRIIP 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 | AIRSTRIIP 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 W10B FED COM 001H      | MEWBOURNE OIL CO               | 3rd SS |
| 30025468030000 | SANTA VACA 19-18 B3MD STATE COM       | MEWBOURNE OIL CO               | 3rd SS |

**Exhibit C12 3rd SS WC 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 | AIRSTRIIP 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 |