

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

**IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION TO CONSIDER:**

**CASE NO. 15821 (re-opened)  
ORDER NO. R-14600  
NOMENCLATURE**

**APPLICATION OF KAISER-FRANCIS OIL COMPANY TO RE-OPEN CASE NO.  
15821 FOR POOL CREATION AND SPECIAL RULES AND REGULATIONS  
THEREFOR, LEA COUNTY, NEW MEXICO**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This re-opened case came on for hearing at 8:15 a.m. on February 22, 2018, at Santa Fe, New Mexico before Examiners William V. Jones and Scott A. Dawson.

NOW, on this 6<sup>th</sup> day of April, 2018, the Division Director, having considered the testimony, the record and the recommendations of Examiner Jones,

**FINDS THAT:**

(1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.

(2) Cases No. 15821, 15822, 15823, and 15824 were combined for purposes of testimony, but separate orders are being issued for each case.

(3) The Division heard Case No. 15821 on September 14, 2017 and on October 26, 2017 and took said case under advisement but has not entered an order in the case.

(4) Kaiser-Francis Oil Company ("Applicant") has re-opened Case No. 15821 asking to present additional testimony and facts.

(5) Applicant seeks to create a new oil pool within the Bell Lake Unit - South Block for production from the Bone Spring formation and seeks the promulgation of Special Rules for horizontal wells within the new pool.

(6) Applicant is an interest owner and operator within what is recognized as the Bell Lake Unit - South Block, comprising the following described 5747.56 acres (more or less) of State, Federal, and fee lands in Lea County, New Mexico:

Township 23 South, Range 34 East, NMPM

Sections 31 and 32: All

Township 23 South, Range 33 East, NMPM

Section 36: All

Township 24 South, Range 33 East, NMPM

Sections 1 and 12: All

Township 24 South, Range 34 East, NMPM

Sections 5 through 8: All

(7) The proposed Bell Lake; Bone Spring, South Pool (Pool Code 98264) would cover all oil and gas production from the Bone Spring formation within the Bell Lake Unit - South Block and be limited to lands within the Unit.

(8) Applicant proposes Special Rules as follows to apply only to horizontal wells within the new pool:

- (a) A standard oil spacing and proration unit of 480 acres.
- (b) Wells with a completed location no closer than 330-feet from the exterior boundary of the Bell Lake Unit - South Block.
- (c) Interior setbacks of 10 feet from a quarter-quarter section line.
- (d) Setbacks of 100 feet from the side line of a standard horizontal well unit except as provided above.
- (e) A Special Depth Bracket Allowable of 9600 barrels of oil per day for each 480-acre horizontal spacing and proration unit.
- (f) A limiting Gas to Oil ratio ("GOR") of 5000 cubic feet of gas per barrel of oil produced.
- (g) All other rules to be in conformance with statewide rules.

(9) Energen Resources Corporation entered an appearance and appeared at the hearing but did not oppose the application. No other party entered an appearance in this case or otherwise opposed this application.

(10) Applicant appeared at all hearings for this case through counsel and presented exhibits and testimony showing the following.

- (a) The Bell Lake Unit was formed in 1953 as a federal exploratory unit and initially covered over 37,000 acres. Over the years it has been contracted down into two nine-section blocks; called the Bell Lake Unit - North Block and the Bell Lake Unit - South Block. The two blocks are not contiguous, and each is a Devonian formation participating area.
- (b) Without the requested spacing units and offset rules, the drilling plan would result in many non-standard units and well locations.
- (c) There were many ownership changes over the years. Applicant determined the latest owners in the mineral estate and provided notice of this application to those owners and to operators of wells in this formation within one mile of the Unit boundaries.
- (d) Bell Lake Unit - South Block operating agreement covers depths below 9,000 feet which includes almost all vertical members of the Bone Spring formation and all planned drilling targets.
- (e) The Bone Spring formation in this area extends vertically down to the Wolfcamp formation. The Wolfcamp formation extends down to the Strawn formation. Both formations are continuous across the Unit.
- (f) The first target in the Bone Spring formation will be the 2<sup>nd</sup> Bone Spring Sand member, but there are numerous targets in the Bone Spring formation.
- (g) The proposed mile and one half long horizontal wells are optimum to drill in a three-mile by three-mile, square shaped Unit and will allow centralized facilities and minimize surface disturbance. There are multiple drilling targets, and Applicant expects the wells to be successfully drilled to one and one-half miles in length.
- (h) The drilling pads will be visited in sequence by the drilling rig and an effort made to complete each drilling from each pad prior to moving the rig or completing the wells and installing production facilities. This plan will optimize safety and prevent waste of reservoir energy. For these reasons, the center well of the spacing units will not always be the first well drilled in the spacing unit.
- (i) Stand-up (North/South) wells have been determined by prior drilling to be optimum. The hydraulic fracture treatments in the previous years have steadily increased in sand density and are now up to 2000 pounds

of sand per foot. Increased production rates per well will not harm this reservoir, but on a well by well basis, too high of an initial flowback could result in damage to the stimulation treatment.

- (j) A well density per drilling target of six wells per mile, or three wells per 480-acre spacing unit, has been determined to be best – in both the Bone Spring formation and in the Bone Spring formation. This optimum well density and the presence of numerous vertical targets ensures that at least one center well should be drilled in each spacing unit. That center well after hydraulic fracture treatment, would develop all quarter-quarters within the unit with one well.
- (k) The requested increase in oil and gas allowable is needed to develop the multiple, stacked pay intervals, to support the planned well density, and to allow batch completions.
- (l) Existing production in this vicinity shows that wells initially produce at up to a gas oil ratio of 5,000 to 1 and the gas oil ratio does not vary significantly with differences in early-life oil production rates. The Division's standard limiting gas oil ratio of 2,000 to 1 is too small for this reservoir and the requested limiting gas oil ratio of 5,000 to 1 will not result in an undue waste of reservoir energy.

The Division concludes that:

(11) Applicant intends to locate surface well heads and production facilities extending in an East/West orientation, along the center line of each of these two nine-section exploratory units. The wells will be drilled for lengths of one and one-half miles beginning at those central locations and extending in a North/South direction to a maximum developed length no closer than 330 feet from the edge of the exploratory unit. This will allow for centralized facilities and reduce surface impacts.

(12) Applicant has shown that a well density of six wells per section or three wells per half section is optimum to recover the maximum amount of economical reserves. This well density was supported by a history-matched reservoir simulation with results input into economic models. To space out wells on this well density, the second (center) well would be optimally located 1320 feet from the section line. This would not be possible without allowing one-half section spacing units. The center well within that spacing unit would drain portions of all quarter-quarters within that spacing unit. And the benefits of simultaneous completion of twin wells located relatively close together would be hampered and result in waste if well spacing was limited to less than one-half section.

(13) The numerous drilling targets in the Bone Spring formation and the optimum well density of three wells laterally per spacing unit, make highly likely that one or more center wells will be drilled in each spacing unit. However, applicant has also shown in detail presented at the last hearing that the center well would not always be drilled

as the first well in a spacing unit and requiring this center well to be drilled first will cause waste and reduce safety of operation.

(14) Acreage is already held within these two exploratory units and all interest owners were noticed of these applications.

(15) Applicant proposes an increased depth bracket oil allowable and limiting gas oil ratio above those values allowed in Rules 19.15.20. (12 and 13) NMAC and Rule 19.15.16.14. B. (3) NMAC. Applicant has shown that this reservoir will not be harmed by oil and gas production at higher rates and the higher rates are needed to allow batch drilling and batch completions in multiple, vertical pay intervals.

(16) Applicant does not anticipate completion of any vertical wells in this pool and did not propose any change to the spacing unit size, depth bracket allowable, or limiting gas oil ratio for vertically drilled and completed wells. Any existing or future vertically drilled wells which are completed in the Bone Spring formation within this Unit and Pool should conform with statewide rules for oil wells.

(17) Applicant's proposal should be granted to prevent waste and protect correlative rights.

**IT IS THEREFORE ORDERED THAT:**

(1) The application of Kaiser-Francis Oil Company to create a new pool for oil production from the Bone Spring formation and promulgate Special Rules within the new pool is hereby approved.

(2) The **Bell Lake; Bone Spring, South Pool (Pool Code 98264)** is hereby created and shall be effective on April 1, 2018.

(3) The **Bell Lake; Bone Spring, South Pool** shall extend vertically throughout the Bone Spring formation and is laterally limited to the Bell Lake Unit – South Block in Lea County, New Mexico. Lands within the Unit are described as follows:

Township 23 South, Range 34 East, NMPM  
Sections 31 and 32: All

Township 23 South, Range 33 East, NMPM  
Section 36: All

Township 24 South, Range 33 East, NMPM  
Sections 1 and 12: All

Township 24 South, Range 34 East, NMPM  
Sections 5 through 8: All

(4) The operator of each well permitted for completion in the Bone Spring formation within the boundaries of the Bell Lake Unit - South Block shall file an amended form C-102 with the Division's Hobbs district office, dedicating the well to the new pool within 30 days after issuance of this order.

(5) The Special Rules for this pool shall be as follows:

**SPECIAL RULES FOR THE  
BELL LAKE; BONE SPRING, SOUTH POOL**

- Rule 1: Each horizontal well drilled and completed in the Bell Lake; Bone Spring, South Pool shall be produced in accordance with the Special Rules hereinafter set forth. The Pool and Special Rules for the Pool shall not extend beyond the boundaries of the Bell Lake Unit - South Block.
- Rule 2: The completed interval of a horizontal well shall be located no closer than 100 feet from the side line of a standard horizontal well unit and no closer than 330 feet from the exterior boundary of the Bell Lake Unit - South Block.
- Rule 3: A standard horizontal oil spacing unit shall consist of 480 acres, comprising three contiguous governmental quarter sections, aligned in a North/South or stand-up orientation.
- Rule 4: The surface location and bottom hole location of vertical or horizontal wells shall be no closer than 10 feet from a quarter-quarter section line.
- Rule 5: Each 40-acre governmental quarter-quarter section located within a horizontal oil spacing shall constitute a separate oil proration unit and may produce no more than 800 barrels of oil per day, average for a calendar month. For purposes of proration, each such quarter-quarter section is assumed to equally contribute to the production from the well or wells within the unit or units in which it is located.
- Rule 6: For quarter-quarter sections comprising horizontal well spacing units, the Limiting Gas Oil Ratio shall be 5000 cubic feet of gas per barrel of oil produced. The oil and gas allowable may be produced in any proportion from any well that contributes to the production attributed to each 40-acre quarter-quarter section.
- Rule 7: Vertically drilled and completed wells within the Pool shall not be subject to rules specific herein to horizontal wells and shall remain governed by otherwise applicable Division Rules.
- Rule 8: The procedures for obtaining exceptions to these Special Rules shall be as provided under Division rules.

(6) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

A handwritten signature in black ink, appearing to read "Heather Riley".

HEATHER RILEY  
Director