

**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. 15823
ORDER NO. R-14527
NOMENCLATURE**

**APPLICATION OF KAISER-FRANCIS OIL COMPANY FOR POOL CREATION
AND SPECIAL POOL RULES, LEA COUNTY, NEW MEXICO**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on September 14, 2017, at Santa Fe, New Mexico before Examiner William V. Jones and again on October 12, 2017 before Examiner Phillip R. Goetze.

NOW, on this 21st day of December, 2017, the Division Director, having considered the testimony, the record and the recommendations of the Examiners,

FINDS THAT:

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

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

(3) In Case No. 15823, Kaiser-Francis Oil Company ("KF" or "Applicant"), seeks to create a new oil pool within the North Bell Lake Unit for production from the Bone Spring formation and seeks the promulgation of Special Rules for horizontal wells within the new pool.

(4) Applicant is an interest owner and operator within what is recognized as the North Bell Lake Unit, comprising the following described 5727.58 acres (more or less) of Federal and State lands in Lea County, New Mexico:

Township 22 South, Range 34 East, NMPM
Sections 31 and 32: All

Township 22 South, Range 33 East, NMPM
Section 36: All

Township 23 South, Range 33 East, NMPM
Sections 1 and 12: All

Township 23 South, Range 34 East, NMPM
Sections 5 through 8: All

(5) The proposed Ojo Chiso; Bone Spring, Southwest Pool (Pool Code 98259) would cover all oil and gas production from the Bone Spring formation within the North Bell Lake Unit and be limited to lands within the Unit.

(6) 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 to be located no closer than 330 feet from the exterior boundary of the North Bell Lake Unit.
- (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 of 5000 cubic feet of gas per barrel of oil produced.
- (g) All other rules to be in conformance with statewide rules.

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

(8) Applicant appeared at the hearing through counsel and presented exhibits and testimony showing the following.

- (a) The Bell Lake Unit was formed in 1953 on a federal exploratory unit form and initially covered over 37,000 acres. Over the years it has been contracted down into two nine-section blocks; called the North Bell Lake Unit and the South Bell Lake Unit. The blocks are non-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. KF 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) Both the North Bell Lake Unit and the South Bell Lake Unit are all-depths units and the leases extend to all depths. The North Bell Lake Unit consists of State and Federal lands, while the South Bell Lake Unit includes State, Federal, and fee lands.
- (e) The operating agreement covers depths below 9000 feet which includes almost all vertical members of the Bone Spring formation and all planned drilling targets.
- (f) KF has not yet drilled a horizontal well within the North Bell Lake Unit but has drilled one in the South Bell Lake Unit. The BLM has not yet agreed to form a unit-wide participating area, but negotiations are continuing.
- (g) The Bone Spring formation in this area extends to the Wolfcamp formation. The Wolfcamp formation extends down to the Strawn formation. Both formations are continuous across the Unit.
- (h) The first target in the Bone Spring formation will be the 2nd Bone Spring Sand member; however, there are numerous, vertically located drilling targets in the Bone Spring formation.
- (i) 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.
- (j) The existing horizontal Bone Spring well in the South Bell Lake Unit would be re-dedicated to a larger, 480-acre spacing unit.
- (k) 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.

- (l) 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 Wolfcamp formation.
- (m) 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.
- (n) 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:

(9) Applicant intends to locate surface well heads and production facilities extending in an East/West line, located in the center 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.

(10) 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 lucrative technique 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.

(11) The center well within one of these proposed 480-acre spacing units is the well which would "develop" or drain portions of all quarter-quarter sections within the proposed 480-acre spacing unit. The outside wells would, in that sense, not "develop" all quarter-sections within a 480-acre spacing unit. Applicant should be required to drill and complete the center well as the first well within any 480-acre spacing unit, then drill the outside wells as optional infill wells, also dedicated to the spacing unit. If any of the outside wells are completed prior to the center well, the spacing unit should be limited in size to the 240 acres containing said well. If the center well is subsequently completed to establish the 480-acre spacing unit, then the existing outside well should be optionally allowed into the 480-acre spacing unit.

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

(13) 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.

(14) 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 obey statewide rules for oil wells.

(15) 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 ("KF") 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 **Ojo Chiso; Bone Spring, Southwest Pool (Pool Code 98259)** is hereby created and shall be effective on January 1, 2018.

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

Township 22 South, Range 34 East, NMPM
Sections 31 and 32: All

Township 22 South, Range 33 East, NMPM
Section 36: All

Township 23 South, Range 33 East, NMPM
Sections 1 and 12: All

Township 23 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 North Bell Lake Unit 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
OJO CHISO; BONE SPRING, SOUTHWEST POOL**

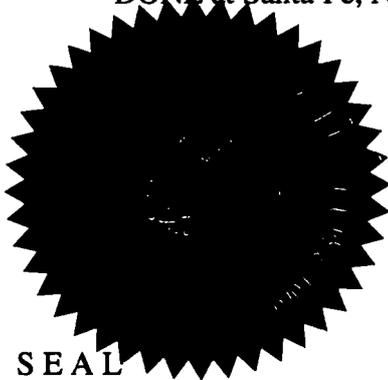
- Rule 1: Each horizontal well drilled and completed in the Ojo Chiso; Bone Spring, Southwest Pool shall be produced in accordance with the Special Rules hereinafter set forth. The Pool and Special Rules for the Pool shall not extend beyond the boundaries of the North Bell Lake Unit.
- Rule 2: The completed 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 North Bell Lake Unit.
- Rule 3: A standard horizontal oil spacing and proration unit shall consist of 480 acres, comprising three contiguous governmental quarter sections, aligned in a north/south or stand-up orientation; provided however, said unit shall only be established by completion of a well located (along the longest axis) within 100 feet of the center line of said unit (the "center well").
- Rule 4: If any well located more than 100 feet from the center line of a standard 480-acre unit is completed prior to the completion of the center well or other establishment of the 480-acre unit, that well shall be dedicated to a 240-acre standard horizontal oil spacing unit, comprised of six contiguous governmental quarter-quarter sections, aligned in a north/south or stand-up orientation.
- Rule 5: 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 6: Each 40-acre quarter-quarter section located within a horizontal oil spacing unit shall constitute a separate proration unit and may produce no more than 800 barrels of oil per day, average for a calendar month. 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 7: For horizontal wells, 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 8: 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 9: The procedures for obtaining exceptions to these Special Rules shall be as provided under Division rules.

(6) Operators of Wells having 240 dedicated acres being overlapped with a standard 480-acre oil spacing and proration unit, may increase spacing to the standard 480-acre spacing unit in the Pool by filing an application to increase spacing as provided by Division rules. Notice of any such application shall be given to each owner of an interest in the mineral estate in the existing spacing unit or in the increased spacing unit whose interest would be affected by the increase. The requested increase may be granted administratively, without hearing, if all affected owners execute waivers of objection, or if all affected owners are duly noticed and no such owner files a protest within 20 days after the Division receives the application.

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

David R. Catanach

DAVID R. CATANACH
Director