

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 FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 9854(REOPENED)
ORDER NOS. R-9131-A
R-5353-K

IN THE MATTER OF CASE 9854 BEING REOPENED PURSUANT TO THE PROVISIONS OF DIVISION ORDER NO. R-9131, WHICH CREATED, DEFINED, AND PROMULGATED TEMPORARY SPECIAL RULES AND REGULATIONS INCLUDING PROVISIONS FOR 160-ACRE SPACING AND PRORATION UNITS, DESIGNATED WELL LOCATION REQUIREMENTS, AND ESTABLISHED A GOR (GAS/OIL RATIO) LIMITATION OF 6,500 CUBIC FEET OF GAS PER BARREL OF OIL FOR THE DIABLO-FUSSELMAN POOL, CHAVES COUNTY, NEW MEXICO. FURTHER, THE APPLICATION IN THE ORIGINAL CASE, STEVENS OPERATING CORPORATION, NOW SEEKS TO INCLUDE WITHIN SAID SPECIAL RULES PROVISIONS FOR ADMINISTRATIVE AUTHORIZATION FOR HORIZONTAL/HIGH-ANGLE WELLBORES.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on May 16, 1990, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this _____ day of August, 1990, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

- (1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) By Division Order No. R-9131, issued in Case No. 9854 and dated March 2, 1990, the Division create and defined the Diablo-Fusselman Pool for the production of oil

from the Fusselman formation with horizontal limits comprising the S/2 of Section 21 and the N/2 of Section 28, Township 10 South, Range 27 East, NMPM, Chaves County, New Mexico. Said order also promulgated Special Rules and Regulations for the pool including provisions for 160-acre spacing and proration units, designated well location requirements and established a Gas/Oil Ratio (GOR) limitation of 6500 cubic feet of gas per barrel of oil.

(3) Order No. R-9131 also provided that Case No. 9854 be reopened in May, 1990, at which time the operators in the pool would appear and present evidence, testimony and recommendations regarding the proper spacing and most efficient rate of production for the Diablo-Fusselman Pool.

(4) Following the entry of Order No. R-9131, Stevens Operating Corporation filed an application seeking adoption of an administrative procedure for approval of horizontal/high-angle drilling in the Diablo-Fusselman Pool.

(5) Stevens Operating Corporation (Stevens) and Yates Petroleum Corporation (Yates) are currently the only two operators in the Diablo-Fusselman Pool and both appeared and presented testimony in the reopened case.

(6) At this time both Yates and Stevens request that said Special Rules be amended to also include provisions for 80-acre spacing, an 80-acre depth bracket allowable of 222 barrels of oil per day (pursuant to General Rule 505(a)), a continuation of the 6500 to 1 gas/oil ratio limitation, and designated well location requirements such that each well be no closer than 330 feet from the outer boundary of its spacing and proration unit.

(7) The geological and engineering testimony presented at the time of the hearing substantiates further Finding Paragraph No. (7) of said Order No. R-9131 that the

Fusselman formation in the defined area of this pool consists of an excessively thick and distinct gas cap with no oil saturation, a thin oil column and finally a very active water drive mechanism underneath. This evidence indicates therefore that said pool should properly be classified as an "Associated Pool" and all further developed of this pool should proceed under the "General Rules and Regulations" governing such as promulgated by Division Order No. R-5353, as amended.

(8) The Diablo-Fusselman Pool should therefore be reclassified as the Diablo-Fusselman Associated Pool and, pursuant to the cumulative evidence available to date, wells classified as oil may be efficiently and economically developed on 80-acre spacing units and gas wells should remain on 160-acre spacing units as originally allowed under Order No. R-9131.

(9) The evidence to date also indicates that the applicants amended request of designated well location requirements such that wells be no closer than 330 feet to the outer boundary of an 80-acre tract and to adopt a standard depth bracket oil allowable pursuant to General Rule 504(a) will not impair correlative rights, will assure orderly development of the pool, and should therefore be adopted for said pool.

(10) The applicant's request for a pool-wide administrative procedure for horizontal/high-angle drilling is somewhat premature for this pool at its present stage of development and should therefore be denied.

(11) However, adequate evidence was presented at the hearing and sufficient notice was given in this matter to allow Stevens to proceed with its plans to initiate a horizontal drilling pilot project on its McBride State Com Well No. 1 located 660 feet from the North line and 1980 feet from the West line (Unit C) of Section 28, Township 10 South, Range 27 East, NMPM, Chaves County, New Mexico.

(12) Stevens proposes to dedicate said well to a standard 80-acre oil spacing and proration unit (pursuant to the proposed amended rules) comprising the N/2 NW/4 of said Section 28 and to initiate a horizontal drilling pilot project therein.

(13) Conventionally drilled (vertical) wells completed in the oil column of this pool have experienced significant "coning", both down from the gas cap and up from the water zone.

(14) By drilling this test well horizontally within the thin oil-bearing column, Stevens is attempting to show that coning can be alleviated by creating a small pressure drop along the large length of a horizontal wellbore instead of a large pressure drop through a small area available to a vertical wellbore and because there should be larger reservoir contact by a horizontal wellbore, more efficient oil production should result in drainage.

(15) Stevens proposes to utilize said McBride State Com No. 1 by plugging back to approximately the base of the "Chert Marker" (approximate depth of 6260 feet), cut a window in the 5 1/2-inch casing and drill a 90-degree turn off of vertical to horizontal utilizing a medium or intermediate radius curve of 100 feet (57 degrees build per 100 feet) in a westerly direction (260 degrees azimuth), wherefrom a 1000 foot horizontal section will complete the drilling portion of the wellbore. A 2 7/8-inch slotted liner will be placed in the horizontal portion of the wellbore. At the base of the curved portion of the wellbore, the non-perforated 2 7/8-inch tubing will be cemented back into the vertical hole.

(16) To allow for "flexibility", to minimize risk and maximize the success of such a completion, the designation of a prescribed area limiting the horizontal displacement of the wellbore should be adopted such that the producing interval of the well cannot be any closer than 100 feet to the outer boundary of the proposed proration unit (N/2 NW/4 of said Section 28).

(17) No interested party objected to Stevens' request to drill said well in the above-described method, in fact said proposal was supported by Yates.

(18) The applicant should be required to determine the actual location of the kick-off point prior to directional drilling operations. Also, the applicant should notify the supervisor of the Artesia District Office of the Division of the proposed direction of the deviated hole and of the date and time of commencement of the directional drilling in order that the same may be witnessed.

(19) The applicant should be required to conduct a directional survey on the lateral portion of the wellbore during or after completion of the drilling operations on the well and submit a copies of all such surveys to both the Santa Fe and Artesia Offices of the Division.

(20) The temporary Special Rules and Regulations promulgated for the Diablo-Fusselman Associated Pool should remain in effect for a period of an additional four months in order to allow the operators in the pool to gather additional reservoir information.

(21) This case should be reopened at an Examiner Hearing in December, 1990 at which time the operators of the pool should be prepared to appear and show cause why said pool should not be reclassified as either a gas pool or an oil pool, to be governed by such applicable statewide rules or to make any such recommendations regarding the proper spacing and development for said pool on a permanent basis.

IT IS THEREFORE ORDERED THAT:

(1) Effective August 1, 1990, the Diablo-Fusselman Pool in Chaves County, New Mexico is hereby reclassified as an associated pool and redesigned the Diablo-Fusselman

Associated Pool.

(2) The Special Rules and Regulations for the Diablo-Fusselman Pool as promulgated by Division Order No. R-9131, dated March 2, 1990, are hereby superseded by this order.

(3) The Diablo-Fusselman Associated Pool shall be governed by the General Rules and Regulations for the Associated Oil and Gas Pools of Northwest and Southeast New Mexico, as promulgated by Order No. R-5353, as amended, insofar as said General Rules and Regulations are not inconsistent with the Special Rules and Regulations for the subject pool as hereinafter set forth, in which event the Special Rules shall apply.

SPECIAL RULES AND REGULATIONS
FOR THE
DIABLO FUSSELMAN ASSOCIATED POOL

RULE 2. **(a)** A standard oil proration unit shall be 80 acres. A standard gas proration unit shall be 160 acres.

RULE 2. **(b)** Each well, oil or gas, shall be located no closer than 330 feet to the outer boundary of the proration unit or 330 feet to any governmental quarter-quarter section line or subdivision inner boundary.

RULE 6. The limiting gas-oil ratio shall be 6,500 cubic feet of gas for each barrel of oil produced.

IT IS FURTHER ORDERED THAT:

(4) The locations of all wells presently drilling to or completed in the Diablo-Fusselman Associated Pool or in the Fusselman formation within one mile thereof are hereby approved; the operator of any well having an unorthodox location shall notify the Artesia District Office of the Division in writing of the name and location of the well within 30 days from the date of this order.

(5) Pursuant to Paragraph A. of Section 70-2-18, N.M.S.A. 1978 Comp., contained in the Laws 1969, Chapter 271, existing oil wells in the Diablo-Fusselman Associated Pool shall have dedicated thereto 80 acres and existing gas wells shall have dedicated thereto 160 acres in accordance with the foregoing pool rules; or, pursuant to Paragraph C. of said Section 70-2-18, existing wells may have non-standard spacing or proration units established by the Division and dedicated thereto.

Failure to file new forms C-102 with the Division dedicating the appropriate acreage to a well or to obtain a non-standard unit approved by the Division within 60 days from the date of this order shall subject the well to cancellation of allowable. Until said form C-102 has been filed or until a limitation, each well presently drilling to or completed in the Diablo-Fusselman Associated Pool or in the formation within one mile thereof shall receive no more than a 40-acre allowable for the pool.

(6) The applicant's request to include provisions for an administrative procedure to authorize horizontal/high-angle drilling with the above Special Pool Rules and Regulations for the Diablo-Fusselman Pool is hereby denied.

IT IS FURTHER ORDERED THAT

(7) Stevens Operating Corporation is hereby authorized to conduct a horizontal directional drilling pilot project comprising the N/2 NW/4 of Section 28, Township 10

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South, Range 27 East, NMPM, Diablo-Fusselman Associated Pool, Chaves County, New Mexico, thereby forming a standard 80-acre oil spacing and proration unit for said pool.

(8) The applicant is further authorized to plug-back, sidetrack and directionally drill horizontally through the oil bearing zone of the Fusselman formation in its McBride State Com Well No. 1 located 660 feet from the North line and 1980 feet from the West line (Unit C) of said Section 28 by cutting a window in the 5 1/2-inch casing at a depth of approximately 6260 feet in a westerly direction, deviate to approximately 90 degrees and drill horizontally for 1000 feet. Said well is to be completed with a slotted 2 7/8-inch liner to be set in the horizontal portion of the hole.

(9) The lateral extent of the horizontal wellbore shall be such that the producing interval be no closer than 100 feet to the outer boundary of said proration unit.

(10) The geographic location of the kick-off point for the proposed horizontal well shall be determined prior to directional drilling. Also, the operator shall notify the supervisor of the Artesia District Office of the Division of the proposed direction of the deviated hole and of the date and time of the directional drilling in order that the same may be witnessed.

(11) The applicant shall conduct a directional drilling survey on the well during or after completion of horizontal drilling operations.

(12) Upon completion of the horizontal drilling operations on the well, the applicant shall file a copies of all such directional drilling surveys along with a final report specifying the depth and location of the terminus of said horizontal wellbore to both the Santa Fe and Artesia Offices of the Division.

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(13) This case shall be reopened at an Examiner Hearing in December, 1990 at which time the operators in the pool should be prepared to appear and show cause why said pool should not be reclassified as either a gas pool or oil pool, to be governed by applicable statewide rules or to make any such recommendations regarding the proper spacing and development for said pool on a permanent basis.

(14) Jurisdiction of this cause 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

WILLIAM J. LEMAY
Director

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