

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:

***NOMENCLATURE***  
*CASE NO. 11567*  
*ORDER NO. R-10717*

**APPLICATION OF CONOCO, INC. TO EXTEND THE VERTICAL LIMITS OF  
THE WARREN-SAN ANDRES POOL, TO RENAME SAID POOL, AND FOR  
PROMULGATION OF SPECIAL POOL RULES THEREFOR, LEA COUNTY,  
NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on July 11, 1996, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 5th day of December, 1996 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 Order No. R-10342, dated April 24, 1995 and made effective May 1, 1995, the Division created and defined the Warren-San Andres Pool for the production of oil from the San Andres formation. The horizontal limits for said pool, as currently designated, include the following described lands in Lea County, New Mexico:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Section 28: SE/4.

(3) Currently the Warren-San Andres Pool is governed by the general Statewide Rules and Regulations with development on standard 40-acre spacing and proration units each having a top unit depth bracket allowable of 80 barrels of oil per day and a limiting

gas/oil ratio of 2,000 cubic feet of gas per barrel of oil which results in a casinghead gas allowable of 160 **MCF** per day. This depth bracket allowable was established and set by said Order No. R-10342 to correspond with the top most perforation in the discovery well for the pool, being 4,434 feet in the Conoco, Inc. Warren Unit Well No. 108 (**API No. 30-025-32666**), located 2203 feet from the South line and 2058 feet from the East line (Unit J) of said Section 28.

- (4) The applicant in this matter, Conoco, Inc. ("Conoco"), seeks:
- (a) to extend the vertical limits of the Warren-San Andres Pool upward to include the Grayburg formation;
  - (b) to rename the pool the Warren-Grayburg San Andres Pool; and,
  - (c) to promulgate special rules and regulations therefor including provisions for:
    - (i) a limiting gas oil ratio of 10,000 cubic feet of gas per barrel of oil; and,
    - (ii) a special depth bracket oil allowable of 200 barrels of oil per day.

(5) Conoco is the designated Unit operator of the Warren Unit, which comprises approximately 5,280 acres of Federal lands underlying the following described area in Lea County, New Mexico:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Section 20	SE/4
Section 21	S/2
Section 22	S/2 S/2
Section 25	W/2
Sections 26 through 28	All
Section 29	NE/4 and S/2
Sections 33 through 35	All

Said Warren Unit is classified as exploratory and was originally approved by the United States Department of the Interior in 1948.

- (6) There are currently three wells completed within the subject pool, all of which

are operated by Conoco and located within the Warren Unit in said Section 28:

- (a) the above-described discovery Well No. 108;
- (b) Well No. 100 (**API No. 30-025-33016**), located at a standard oil well location 990 feet from the South line and 740 feet from the East line (Unit P); and,
- (c) Well No. 125 (**API No. 30-025-33098**), located at a standard oil well location 2310 feet from the North and East lines (Unit G).

(7) Geologic and engineering information obtained, in part, from these three wells indicates: (i) the presents of a small closed anticlinal structure that is located entirely within the Warren Unit Area; (ii) that the San Andres formation has two separate and distinct oil productive intervals separated by a water bearing zone; (iii) that the Grayburg formation is capable of oil production; (iv) that no sealing bearer exists between the top of the upper San Andres productive interval and the bottom of the Grayburg formation; and, (v) that this reservoir is a solution gas drive.

(8) All three aforementioned wells are capable of producing at rates in excess of the current assigned depth bracket allowable (80 barrels of oil per day).

(9) Evidence presented based on actual production history from the three aforementioned wells and from production tests performed indicates the producing associated casinghead gas rates from both the Warren Unit Well Nos. 108 and 125 are low with respect to oil production, which results in an actual producing gas-oil ratio ("GOR") of approximately 1000 cubic feet of gas per barrel of oil, the total producing gas-oil ratio of the Warren Unit Well No. 100 to be approximately 9,400 cubic feet of gas per barrel of oil. If the oil depth bracket allowable were increased to the requested 200 BOPD for this pool, the producing GOR would require a substantial increase as well in order to avoid casinghead gas curtailment. Therefore, in addition to an oil allowable increase of 200 BOPD, a 10,000 limiting GOR is also requested for the expanded Warren Grayburg-San Andres Pool.

(10) Attempts to curtail gas production in the Warren Unit Well No. 100 by reducing chock settings in stages resulted in the loss of all oil production while sustaining a gas producing rate of 1,200 MCFPD. Test results and reservoir data indicates that the anomalous gas production found only in the Warren Unit Well No. 100 is a limited gas pocket.

(11) Producing these wells at capacity should have no adverse effect on the

ultimate recovery from the reservoir.

(12) The proposed pool expansion and adoption of special rules are necessary in order for the Unit operator to efficiently and economically maximize the capture and ultimate recovery of Grayburg and San Andres reserves in this common pool.

(13) Approval of this application is in the best interest of conservation, exhibits sound engineering practices, will enable the operator to produce his just and fair share of production from the reservoir in a prudent manner, will serve to prevent waste, will afford the applicant the continued opportunity to produce its just and equitable share of the oil in the subject reservoir and will otherwise serve to prevent waste and protect correlative rights.

(14) This order should be made effective as of July 1, 1996.

IT IS THEREFORE ORDERED THAT:

(1) Effective July 1, 1996, the vertical limits of the Warren-San Andres Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include the Grayburg formation and said pool is hereby redesignated the Warren-Grayburg-San Andres Pool.

(2) Special rules and regulations for the Warren-Grayburg-San Andres Pool in Lea County, New Mexico are hereby promulgated as follows:

**SPECIAL RULES AND REGULATIONS  
FOR THE  
WARREN-GRAYBURG-SAN ANDRES POOL**

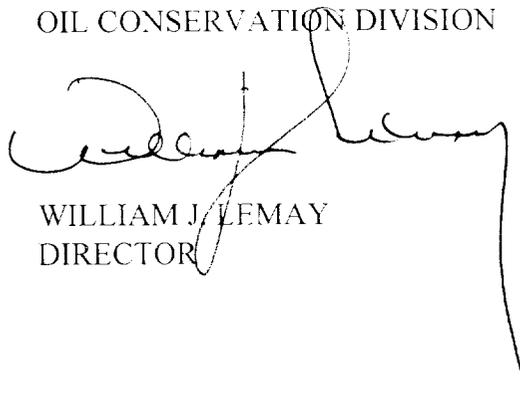
**RULE 1.** A special depth bracket oil allowable of 200 barrels of oil per day shall apply to the Warren-Grayburg-San Andres Pool.

**RULE 2.** The limiting gas/oil ratio for said Warren-Grayburg-San Andres Pool shall be 10,000 cubic feet of gas per barrel of oil produced; each proration unit in said pool shall produce only that volume of gas equivalent to 10,000 multiplied by the top unit depth bracket allowable set for the pool (being 200 barrels of oil per day).

(3) 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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