

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. 11019  
ORDER NO. R-10160*

**APPLICATION OF YATES PETROLEUM CORPORATION FOR AN  
UNORTHODOX GAS WELL LOCATION, EDDY COUNTY, NEW MEXICO**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on July 21, 1994, at Santa Fe, New Mexico, before Examiner Jim Morrow.

NOW, on this 2<sup>nd</sup> day of August, 1994, 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) The applicant, Yates Petroleum Corporation, seeks authorization to drill the Llama ALL Federal Well No. 1 at an unorthodox gas well location 330 feet from the South line and 950 feet from the West line (Lot 4-Unit M) of Irregular Section 7, Township 22 South, Range 31 East, NMPM, Eddy County, New Mexico, to test the Undesignated Cabin Lake-Morrow Gas Pool and other gas pools in the area.

(3) Lots 3 and 4, the E/2 and the SE/4 (S/2 equivalent) of said Section 7 are to be dedicated to the well to form a 319.81-acre gas spacing proration unit.

(4) Yates proposes to drill the well to sufficient depth to test the Morrow formation, but the primary objective is the "Apache" sand of the Atoka formation. The proposed location is approximately 1938 feet Northeast of Mitchell Energy Corporation's Apache 13 Federal Well No. 1, an Atoka completion for which Mitchell reported an initial potential of 4,536 MCFGPD with completion in September 1993. They reported 0.6 BCF cumulative recovery through April, 1994. Yates' testimony indicates the Mitchell well averaged 5,000 MCFGPD during April, 1994.

(5) If completed in the Atoka, Yates proposes that the Llama ALL Federal 13 Well No. 1 be assigned to the Los Medanos-Atoka Gas Pool, which along with the Cabin Lake-Morrow Pool is subject to Oil Conservation Division General Rule 104.C.(2)(b). It specifies 320-acre gas spacing and proration units and well locations not closer than 660 feet to the nearest side boundary nor closer than 1980 feet to the nearest end boundary.

(6) Yates' lease in Section 7 expires September 1, 1994.

(7) Yates originally proposed the well at an orthodox location 660 feet from the South line and 1980 feet from the West line of Section 7. This location and a second location 330 feet from the South line and 1980 feet from the West line were both recommended for denial by the Bureau of Land Management because of potash reserves underlying those locations. Bureau of Land Management did however establish a drill island with dimensions zero feet to 330 feet from the South line and zero feet to 950 feet from the West line of Section 7. Yates' proposed location is the least unorthodox location within this island.

(8) Yates presented geological and engineering testimony including Morrow and Apache sand structure and isopach maps, cross-sections and the results of a reservoir simulation study to show that the proposed well should be productive in the Atoka and Morrow formations. It should encounter in excess of ten feet of Apache (Atoka) sand and could recover up to 6.6 BCF.

(9) Yates' testimony showed that the Mitchell Apache Federal 13 Well No. 1 in Section 13 and the proposed Yates well are located in the northern part of the Los Medanos-Atoka Gas reservoir. They testified that the reservoir is composed of two large, highly permeable sand bodies connected by a narrow lower permeability sand section. The southern part of the reservoir was developed beginning in 1957 and has produced approximately 37 BCF since that time. Development of the northern portion of the reservoir began in 1993 with the Mitchell Apache 13 Well No. 1.

(10) Yates' testimony showed that the reservoir is highly permeable. They expect that the Mitchell Apache 13 Well No. 1, their proposed well, and a possible third well in Section 12, Township 22 South, Range 30 East would be capable of recovering the remaining reserves in the partially depleted northern part of the pool.

(11) Yates presented drilling cost information to show that a vertical well drilled from their proposed location would cost \$1,357,800 and that a directional well to the nearest orthodox location (the one originally proposed) would cost \$2,216,600 to drill.

(12) Yates' witnesses testified that there would be essentially no difference in the productive capacity and total recovery of a well drilled vertically from their proposed location compared to a directional well drilled to the nearest orthodox location. In their opinion a well at the proposed unorthodox location would not decrease production from the Mitchell Apache 13 Well No. 1 any more than a well at the orthodox location.

(13) Mitchell's engineering and geological testimony was similar to Yates'. Mitchell presented Morrow and Atoka sand structure and isopach maps, cross-sections, and P/Z study to estimate total reservoir recovery. Their studies show that the orthodox location originally proposed by Yates (660 feet from the South line and 1980 feet from the West line) is a better location than the currently proposed unorthodox location (330 feet from the South line and 950 feet from the West line).

(14) Mitchell's drilling cost studies show that a vertical well at the proposed Yates location would cost \$1,291,000 compared to \$1,580,000 for a directional well to the nearest orthodox location.

(15) Mitchell presented economic analysis on recoveries of 3, 4, and 5 BCF for either a vertical or directional Yates well. Assuming a conservative reserve of 3 BCF, the study showed profitable economics for the drilling of a directional well to a standard location.

(16) Mitchell did not recommend a penalty for the unorthodox location proposed by Yates. Mitchell's witness testified that because the unorthodox location would be closer to the Mitchell well, it would cause interference and would decrease recoveries from both wells. Mitchell also takes the position that because Yates failed to show that the unorthodox location is better geologically than the orthodox location and would recover otherwise unrecoverable gas reserves, the Division should deny the Yates application.

(17) Yates, on the other hand, contends that their application should be approved based on Bureau of Land Management requirements for potash protection which Yates considers as topographical conditions and a valid basis for approval as outlined in Oil Conservation Division General Rule 104.F.

(18) At the hearing, Bass Enterprises Production Company submitted a letter in opposition to the Yates application. No other interest owner appeared at the hearing in opposition to the application.

(19) Both the Mitchell Apache 13 Well No. 1 and the proposed Yates Llama ALL Federal Well No. 1 are 330 feet from the WIPP site boundary. Both could be expected to produce significant volumes of gas reserves from beneath the WIPP site. The Mitchell well, also unorthodox, is located in a drill island authorized by the Bureau of Land Management.

Mitchell's location is approximately 1173 feet from the southwest corner of Yates' lease in Section 7. The proposed Yates location is 950 feet from the nearest Mitchell lease boundary. The distance between the proposed Yates location and the Mitchell well is greater than the distance which would be required by Oil Conservation Division rules for two standard locations each located 660 feet from a common side boundary.

(20) Approval of the application will allow Yates to recover reserves underlying their lease without damage to correlative rights. Approval should therefore be granted.

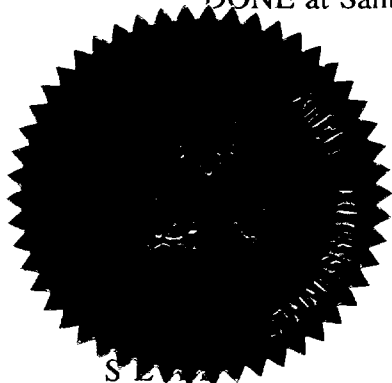
IT IS THEREFORE ORDERED THAT:

(1) Yates Petroleum Corporation is hereby authorized to drill the Llama ALL Federal Well No. 1 at an unorthodox gas well location 330 feet from the South line and 950 feet from the West line (Lot 4-Unit M) of Irregular Section 7, Township 22 South, Range 31 East, NMPM, Eddy County, New Mexico.

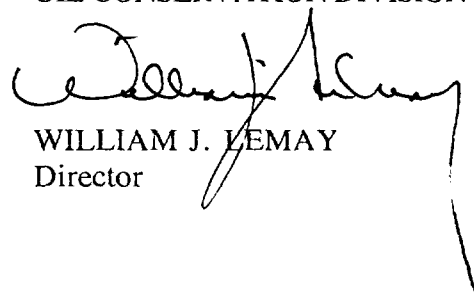
(2) Lots 3 and 4, the E/2 SW/4 and the SE/4 (S/2 equivalent) of said Section 7 shall be dedicated to the well to form a 319.81-acre gas spacing and proration unit.

(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