

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. 10325
ORDER NO. R-9607*

**APPLICATION OF MERIDIAN OIL, INC. FOR A HIGH
ANGLE/HORIZONTAL DIRECTIONAL DRILLING PILOT
PROJECT, SPECIAL OPERATING RULES THEREFOR, A
NON-STANDARD OIL PRORATION UNIT, AN UNORTHODOX
OIL WELL LOCATION AND A SPECIAL PROJECT ALLOWABLE,
SAN JUAN COUNTY, NEW MEXICO**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on June 13, 1991, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 4th day of November, 1991 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, Meridian Oil, Inc., seeks to initiate a high angle/horizontal directional drilling project in the Undesignated Angel Peak-Gallup Associated Pool underlying Lots 3 and 4, E/2 SW/4 and SE/4 (S/2 equivalent) of Section 31, Township 27 North, Range 10 West, NMPM, San Juan County, New Mexico, which is considered a standard 328.18-acre gas spacing and proration unit for said pool but is an unorthodox oil proration unit, all pursuant to the special pool rules as promulgated by Division Order No. R-5353, as amended.

(3) The subject unit is to be dedicated to a well to be drilled from a tentative unorthodox surface location 1450 feet from the South line and 1060 feet from the East line (Unit I) of said Section 31. Said wellbore will be kicked-off from vertical in a westerly direction until an angle of 75 to 90 degrees is achieved and continue drilling horizontally for approximately 3450 feet.

(4) The applicant further seeks:

- a) the adoption of special operating provisions and rules within the pilot project area including the designation of a prescribed area limiting the horizontal displacement of said well's producing interval such that it can be no closer than 790 feet to the outer boundary of the aforementioned 328.18-acre spacing and proration unit and for a special project allowable.
- b) a special project allowable with such allowable based on the greater of either of the two following formulas:
 - 1) the deliverability of the highly deviated well as determined by Oil Conservation Division regulations; or
 - 2) two times the allowable for a gas well; or four times the allowable for an oil well in the Angel Peak-Gallup Associated Pool.

(5) The proposed high angle/horizontal pilot project is within the boundaries of the Angel Peak-Gallup Associated Pool and is therefore subject to the Special Rules and Regulations for said pool and the General Rules for the Associated Pools of New Mexico, both promulgated by said Division Order No. R-5353 as amended, which provides for:

- a) 80-acre oil spacing and proration units with a top oil allowable of 222 barrels of oil per day and for wells to be located no closer than 790 feet to any quarter section line nor closer than 330 feet to any quarter-quarter section line or subdivision inner boundary; and

- b) 320-acre gas spacing and proration units with a top gas allowable of 1776 MCFPD and for wells to be located no closer than 790 feet to any quarter section line nor closer than 330 feet to any quarter-quarter section line or subdivision inner boundary.

(5) The Niobrara interval and Tocito Sandstone interval of the Angel Peak-Gallup Associated Pool are the potential productive zones in the proposed project area.

(6) The Niobrara is characterized by tight, low matrix permeability sandstones and silts that are naturally fractured. The Tocito produces from intergranular permeability.

(7) Past experience in said pool has shown that unless a conventionally drilled (vertical) well intersects natural fractures, the chance of obtaining commercial production is severely curtailed.

(8) By drilling a horizontal wellbore, the applicant is attempting to increase the probability of encountering several of these fractures which may ultimately result in the recovery of a greater amount of gas or oil, thereby preventing waste.

(9) In support of an increased allowable the applicant presented drilling cost estimates of \$1.5 to \$2.0 million dollars as compared to conventional vertical well costs in the range of \$500,000 to \$600,000. The applicant contends that an allowable incentive is needed to justify the risk and higher costs for such a project. The applicant further contends the requested allowable would afford the applicant the opportunity to attain the maximum efficient rate at which to flow the well, facilitate the lifting of any liquids from the wellbore and expedite the evaluations of the viability of this technology.

(10) It has been the Division's practice to assign the appropriate acreage factor to a horizontal well when said wellbore contacts multiple proration units and in this case the proposed horizontal well is expected to contact up to four standard 80-acre oil proration units, if the well should be classified as an oil well pursuant to Rule 5 of said Order No. R-5353, as amended. The well, if drilled as planned, should therefore be assigned an oil acreage factor of 4.1.

(11) However, should the well be classified as a gas well then the 328.18 unit is, for all intents and purposes, standard and is entitled to a gas acreage factor of 1.0. The applicant failed to adequately show geologically the need for an increased gas allowable for this well and engineering evidence showing what, if any, the overall effects such an increase would have pool-wide.

(12) Any increase in an assigned allowable other than an acreage factor of 4.1 for an oil well should be denied.

(13) Because this proposed gas/oil spacing and proration unit and the offsetting and adjoining spacing units are all within the boundary of Meridian's Huerfano Unit there are no interest owners who will be adversely affected by the proposed horizontal well.

(14) The aforementioned prescribed area limiting the horizontal displacement of the wellbore would allow for flexibility, serve to minimize risk and maximize the success of such a completion and does not interfere with the accepted development of the pool.

(15) In the interest of conservation, the application of Meridian Oil Inc. for this high angle/horizontal well project should be approved along with the provisions described in Finding Paragraph No. (12) above.

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

(17) 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 copy of said survey to both the Santa Fe and Aztec Offices of the Division.

IT IS THEREFORE ORDERED THAT:

(1) The application of Meridian Oil Inc. for a high angle/horizontal directional drilling pilot project in the Angel Peak-Gallup Associated Pool underlying Lots 3 and 4, E/2 SW/4, and SE/4 (S/2 equivalent) of Section 31, Township 27 North, Range 10 West, NMPM, San Juan County, New Mexico is hereby approved.

(2) The applicant is further authorized to drill its Huerfano Unit Well No. 300 at an unorthodox surface well location in the S/2 equivalent of said Section 31 in the unconventional manner as described in Finding Paragraph No. (3) of this order.

(3) The lateral extent of the horizontal wellbore shall be such that the producing interval be limited to an area which extends no closer than 790 feet to the outer boundary of the spacing and proration unit.

(4) The S/2 equivalent of said Section 31 comprising 328.18 acres is hereby approved as either a standard gas spacing and proration unit for said pool with a "gas well acreage factor" of 1.0 or a non-standard oil spacing and proration unit with an "oil well acreage factor" of 4.1.

(5) The applicant's request for an increased allowable for other than the above-described acreage factors is hereby denied.

(6) 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 Aztec District 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.

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

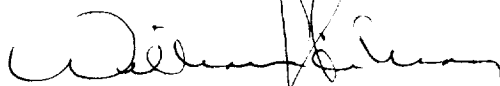
(8) Upon completion of the horizontal drilling operations on the well, the applicant shall file a copy of said directional drilling survey along with a final report specifying the depth and location of the terminus of said horizontal wellbore to both the Santa Fe and Aztec Offices of the Division.

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

Case No. 10325
Order No. R-9607
Page No. 6

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

A handwritten signature in cursive script, appearing to read 'William J. Lemay', written over a horizontal line.

WILLIAM J. LEMAY
Director

S E A L