

**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. 10487
Order No. R-9691**

**APPLICATION OF MERIDIAN OIL INC.
FOR A HIGH ANGLE/HORIZONTAL DIRECTIONAL
DRILLING PILOT PROJECT, SPECIAL OPERATING
RULES THEREFOR, A NON-STANDARD OIL
PRORATION UNIT, A SPECIAL PROJECT OIL
ALLOWABLE, AND SPECIAL GOR ASSIGNMENT,
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 25, 1992, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 13th day of July, 1992, 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 authority to initiate a high angle/horizontal directional drilling pilot project in an area that includes the N/2 and SW/4 of Section 17 and Lots 1 and 2, E/2 NW/4, NE/4 (N/2 equivalent) and the SE/4 of Section 18, both in Township 30 North, Range 15 West, NMPM, Designated and Undesignated Horseshoe-Gallup Oil Pool, San Juan County, New Mexico.

(3) Within the subject area, the applicant proposes to dedicate one of four possible 320-acre non-standard oil proration units comprising either the N/2 or W/2 of Section 17, or the N/2 or E/2 of Section 18, to its proposed Black Diamond Federal "17" Well No. 1 to be commenced from an unorthodox surface location 150 feet from the North line and 205 feet from the West line (Unit D) of Section 17, drilled vertically to a depth of approximately 3670 feet at which point the applicant would determine the azimuth for the well and would select the appropriate spacing unit for the well.

(4) At the time of the hearing, the applicant testified that the azimuth for the proposed well had been selected and requested that the actual pilot project area comprise the W/2 of Section 17. The applicant further requested that its proposal to include the N/2 of Section 17 and the N/2 and E/2 of Section 18 in the pilot project area be dismissed.

(5) The applicant seeks authority to drill the Black Diamond Federal "17" Well No. 1 in the following unconventional manner:

Drill vertically to a depth of approximately 3651 feet, kick off from the vertical at this depth and drill in a south-southeasterly direction building angle to approximately 80 degrees. Penetrate the top of the "Waterflow" zone of the Niobrara member of the Gallup formation at a total vertical depth of approximately 4318 feet. Continue drilling horizontally and bottom said wellbore no closer than 330 feet from the outer boundary of the project area.

(6) 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 330 feet from the outer boundary of the project area.
- b) approval of a 320-acre non-standard oil proration unit comprising the W/2 of Section 17.
- c) a special project allowable equal to eight times the state-wide depth bracket allowable for an oil well in the Gallup formation.

(7) At the time of the hearing, the applicant requested that its proposal for a special gas-oil ratio limitation of 4,500 cubic feet of gas per barrel of oil within the pilot project area be dismissed.

(8) The subject well is located within one mile of the outer boundary of the Horseshoe-Gallup Oil Pool which is currently governed by General Statewide Rules and Regulations, including 40-acre spacing with wells to be located no closer than 330 feet from the outer boundary of the proration unit, a gas-oil ratio limitation of 2,000 cubic feet of gas per barrel of oil, and a daily oil and gas allowable of 80 barrels and 160 MCF, respectively.

(9) The Niobrara member of the Gallup formation is the potentially productive zone within the pilot project area and is characterized by low permeability and interconnected fracture systems.

(10) Vertical wells drilled to the Niobrara member in this area seldom intersect significant natural fractures, and as a result, they are not generally commercially successful.

(11) The area of the Horseshoe-Gallup Oil Pool which the applicant seeks to develop with the pilot project is a marginally productive area which cannot be economically developed with conventional vertical wells on 40-acre spacing.

(12) Through its evidence and testimony, the applicant demonstrated that the proposed horizontal wellbore should encounter a substantially greater number of natural fractures within the Niobrara member of the Gallup formation than would a conventional wellbore, which should substantially increase the productivity of the subject well and which should ultimately result in the recovery of a greater amount of oil and gas from the proposed project area, thereby preventing waste.

(13) The W/2 of Section 17 is owned and controlled solely by Meridian Oil Inc.

(14) No offset operator and/or interest owner appeared at the hearing in opposition to the application.

(15) In the interest of conservation and prevention of waste, the application of Meridian Oil Inc. for a high angle/horizontal directional drilling project should be approved.

(16) In support of its request for a special project allowable of 640 barrels of oil per day, the applicant presented drilling cost estimates of \$850,000 to \$1.4 million dollars as compared to conventional vertical well costs in the ranges of \$500,000 to \$600,000.

(17) In addition, the applicant contends that each of the 40-acre tracts within the proposed project area will either be penetrated by the producing interval in the wellbore or will be so closely located to that interval as to contribute production to the well.

(18) The applicant further contends that the requested allowable gives proper credit to the contribution of reserves from each of the 40-acre tracts and would afford the applicant an allowable incentive to justify the risk and higher cost for such a project.

(19) It has been the practice of the Division in previously heard cases of this nature to assign an allowable based upon the number of standard proration units actually contacted by the wellbore.

(20) Such allowable based upon the number of standard proration units contacted by the wellbore has proven to be adequate in previous instances.

(21) The subject well and project area should be assigned an allowable in conformance with current Division policy. Based upon the evidence presented, the subject well should be assigned an allowable equal to 400 barrels of oil per day.

(22) The Division Director should have the authority to administratively grant a higher allowable to the subject well and project area upon a satisfactory presentation of data regarding the drainage characteristics of the well.

(23) The applicant should be required to determine the actual location of the kick-off point prior to commencing directional drilling operations. Also, the applicant should be required to conduct a directional survey on the lateral portion of the wellbore during or after completion of drilling operations.

(24) The applicant should notify the supervisor of the Aztec district office of the Division of the date and time of conductance of any directional surveys in order that the same may be witnessed.

(25) The applicant should be required to submit copies of all directional surveys conducted on the subject well to both the Santa Fe and Aztec offices of the Division.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Meridian Oil Inc., is hereby authorized to initiate a high angle/horizontal directional drilling pilot project in the W/2 of Section 17, Township 30 North, Range 15 West, NMPM, Designated and Undesignated Horseshoe-Gallup Oil Pool, San Juan County, New Mexico, by drilling its Black Diamond Federal "17" Well No. 1 from an unorthodox surface location 150 feet from the North line and 205 feet from the West line (Unit D) of Section 17, in the following unconventional manner:

Drill vertically to a depth of approximately 3651 feet, kick off from the vertical at this depth and drill in a south-southeasterly direction building angle to approximately 80 degrees. Penetrate the top of the "Waterflow" zone of the Niobrara member of the Gallup formation at a total vertical depth of approximately 4318 feet. Continue drilling horizontally and bottom said wellbore no closer than 330 feet from the outer boundary of the project area.

PROVIDED HOWEVER THAT, no portion of the horizontal portion of the wellbore shall be located closer than 330 feet from the outer boundary of the project area.

(2) The W/2 of Section 17 shall be dedicated to the above-described well forming a non-standard 320-acre oil spacing and proration unit, also hereby approved.

(3) The subject well shall be assigned an allowable of 400 barrels of oil per day provided the well is drilled as proposed. Otherwise, the subject well shall be assigned an allowable based upon the number of 40-acre tracts contacted by the wellbore as determined from directional surveys.

(4) The Division Director shall have the authority to administratively grant a higher allowable to the subject well and project area upon a satisfactory presentation of data regarding the drainage characteristics of the well.

(5) The applicant shall determine the actual location of the kick-off point prior to commencing directional drilling operations. Also, the applicant shall conduct a directional survey on the lateral portion of the wellbore during or after completion of drilling operations.

(6) The applicant shall notify the supervisor of the Aztec district office of the Division of the date and time of conductance of any directional surveys in order that the same may be witnessed.

(7) The applicant shall submit copies of all directional surveys conducted on the subject well to both the Santa Fe and Aztec offices of the Division.

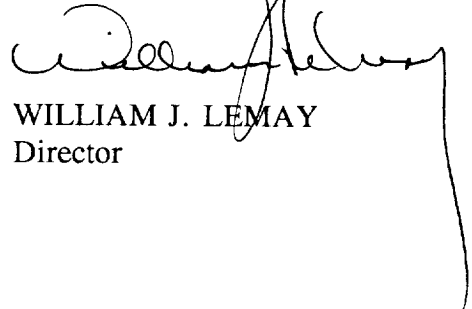
(8) The portion of this case requesting the inclusion of the N/2 of Section 17 and the N/2 and E/2 of Section 18 in the pilot project area is hereby dismissed.

(9) The portion of this case requesting a special gas-oil ratio limitation of 4,500 cubic feet of gas per barrel of oil within the pilot project area is hereby dismissed.

(10) Jurisdiction is hereby 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

A handwritten signature in dark ink, appearing to read 'William J. Lemay', is written over the printed name. The signature is fluid and cursive, with a long vertical stroke extending downwards from the end of the name.

WILLIAM J. LEMAY
Director

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