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September 6, 1991

Mr. Michael E. Stogner
Oil Conservation Division
State Land Building
310 Old Santa Fe Trail, Room 206
Santa Fe, NM 87503

HAND DELIVERED

RE: Application of Meridian Oil, Inc.
for a High Angle/Horizontal Well
for its Huerfano Unit #300 Well
NMOCD Case No. 10325

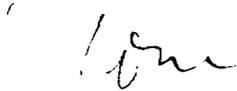
Dear Mr. Stogner:

On behalf of Meridian Oil, Inc please find enclosed, a draft of an order for your use in the above-referenced case.

Also enclosed for your convenience is a WordPerfect 5.1 diskette with this document on it.

Please call me if you have any questions.

Sincerely,



W. Thomas Kellahin

WTK/jcl

Enclosures

cc: Alan Alexander (w/encl.)
Meridian Oil - Farmington

ltrt906.330

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-

APPLICATION OF MERIDIAN OIL INC. FOR
A HIGH ANGLE/HORIZONTAL DIRECTIONAL DRILLING
PILOT PROJECT, SPECIAL OPERATING RULES
THEREFOR, A NON-STANDARD GAS/OIL SPACING AND
PRORATION UNIT, AN UNORTHODOX 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 _____ day of September, 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.

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(2) The applicant, Meridian Oil Inc., seeks authority to initiate a high angle/horizontal directional drilling pilot project in the Angels Peak-Gallup Associated Pool on a 328.18 acre gas/oil spacing and proration unit comprising Lots 3 & 4, E/25, W/4 & SE/4 (S/2 equivalent) of Section 31, Township 27 North, Range 10 West, NMPM, San Juan County, New Mexico, by drilling its proposed Huerfano Unit No. 300 Well in the following unconventional manner:

Drill vertically from an unorthodox well location 1450 feet FSL & 1060 feet FEL of said Section 31 to a depth of approximately 4760 feet (plus or minus 100 feet), kick-off in a northeasterly direction, build angle up to 75 to 90 degrees and commence drilling at a high angle horizontally with a total lateral distance not to exceed 3453 feet.

(3) The applicant further requests that special operating provisions and rules be established for said project area including a special project oil/gas allowable and the designation of a prescribed drilling window limiting the horizontal displacement of the wellbore such that its producing interval can be no closer than 790 feet to the outer boundary of said proration unit.

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(4) The proposed high angle/horizontal pilot project is within the boundaries of the Angels 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-8170 as amended.

(5) The Niobrara interval and Tocito Sandstone of the Angels Peak-Gallup Associated Oil and Gas Pool and the potential productive zones in this spacing/proration unit. The Niobrara is characterized by tight, low matrix permeability sandstones and silts that are naturally fractured. The Tocito produces from intergranular permeability. Past experience in said pool has shown that conventionally drilled (vertical) wells may not economically develop and produce all of the reserves in a spacing unit. By drilling a horizontal wellbore, the applicant is attempting to increase the probability of encountering and producing hydrocarbon reserves which may not ultimately be produced by a vertical well in the spacing unit, thereby preventing waste.

(6) The area of the pool which Applicant seeks to develop with this special pilot project is in a marginal area on the western edge of the Gallup producing interval which cannot be economically developed with conventional vertical wellbore technology nor without an allowable incentive to offset the risk involved in drilling a high angle/horizontal well.

(7) At this point in the productive life of this pool, substantially all of the wells in this area of the pool are classified as gas wells and there is no risk of waste of reservoir energy if the Applicant's allowable request is approved.

(8) At no point in its traverse of the Gallup formation does the proposed highly-deviated wellbore encroach upon the 790-foot setback required for 320 acre spacing and proration units by Rule 2(b) of the Special Rules and Regulations for the Associated Oil and Gas Pools, as promulgated by said Order No. R-5353, as amended.

(9) No offset operator appeared and objected to the proposed pilot project.

(10) Because this proposed non-standard gas/oil spacing and proration unit and the offsetting and adjoining spacing units are all within the boundary of the Huerfano Unit there are no interest owners who will be adversely affected if this application is granted.

(11) Applicant seeks a special project allowable with such allowable based upon the greater of either of the two following formulas:

- (a) The deliverability of the highly deviated well as determined by NMOCD regulations; or
- (b) Two (2) times the allowable for a gas well; or four (4) times the allowable for an oil well in the Angels Peak-Gallup Associated Oil and Gas Pool.

(12) A conventional vertical gas well in this pool to which 320 acres were assigned would be entitled to a top gas allowable of 1,776 mcfpd.

(13) A conventional vertical oil well in this pool to which 80 acres were assigned would be entitled to a top oil allowable of 222 bopd.

(14) Approval of the requested allowable will afford the Applicant the opportunity to attain the maximum efficient rate at which to flow the well,

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facilitate the lifting of any liquids from the wellbore and expedite the evaluations of the viability of this technology.

(15) The estimated \$1.5 to \$2.0 million dollar cost of this high angle well as compared to conventional vertical well costs in the range of \$500,000 to \$600,000, cannot be justified without the allowable incentive requested by the Applicant.

(16) In the absence of the proposed high angle well, the Applicant will be compelled to drill two uneconomic conventional vertical wells, one on each of the 160 acres in this spacing unit to recover potential oil and gas reserves.

(17) The applicant should be afforded the opportunity to produce the well at the requested allowable assigned to the subject spacing and proration unit in order to encourage the development of a marginal area of the pool that might not otherwise be developed.

(18) The aforementioned prescribed area limiting the horizontal displacement of the wellbore would allow for flexibility, serve to minimize risk and maximize

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the success of such a completion.

(19) In the interest of conservation, the application of Meridian Oil Inc. for this high angle/horizontal well project should be approved.

(20) 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.

(21) 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.

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IT IS THEREFORE ORDERED THAT:

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

(2) The applicant is further authorized to drill its Huerfano Unit No. 300 Well at an unorthodox surface well location in the S/2 of said Section 31 in the unconventional manner as described in Finding Paragraph No. (2) 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 forming a 328.18-acre gas spacing and proration unit is hereby approved.

(5) The deliverability of the subject gas/oil spacing and proration unit, for the purpose of calculating gas/oil allowable, shall be as follows:

- (a) The deliverability of the highly deviated well as determined by NMOCD regulations; or
- (b) Two (2) times the allowable for a gas well; or four (4) times the allowable for an oil well under the Angels Peak Gallup Associated Oil and Gas Pool Rules.

whichever method results in the higher calculated allowable for the spacing/proration unit.

(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

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terminus of said horizontal wellbore to both the Santa Fe and Aztec Offices of the Division.

(10) 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

S E A L