

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. 9754
ORDER NO. R-9079

APPLICATION OF MERRION OIL AND GAS
CORPORATION FOR A HORIZONTAL DIRECTIONAL
DRILLING PILOT PROJECT, SPECIAL OPERATING
RULES THEREFOR, NON-STANDARD OIL PRORATION
UNIT, UNORTHODOX OIL WELL LOCATION, AND
SIMULTANEOUS DEDICATION, MCKINLEY COUNTY,
NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on September 6, 1989, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 14th day of December, 1989, 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, Merrion Oil and Gas Corporation, seeks the formation of an 80-acre non-standard oil spacing and proration unit in the Papers Wash-Entrada Oil Pool comprising the SW/4 NW/4 and the NW/4 SW/4 of Section 15, Township 19 South, Range 5 West, NMPM, McKinley County, New Mexico, for the purpose of initiating a horizontal drilling pilot project therein and to further promulgate special rules and provisions within said pilot project area including the designation of a target window limiting the horizontal displacement of a wellbore and special allowable considerations.
- (3) This proposed pilot project area is within the boundaries of the Papers Wash-Entrada Oil Pool well spacing which is governed by statewide general rules.

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(4) The Entrada formation in this area was deposited as an eolian sand overlain by lacustrine limestones and anhydrites of the Todilto formation. These small "dune-like" structures, having high porosity and permeability act as the reservoir for trapping the accumulations of oil in the Entrada formation.

(5) The Papers Wash-Entrada Oil Pool is a strong water drive reservoir and the character of the oil found in this pool is paraffin base, low asphalt, and low viscosity (32.5° API).

(6) Conventionally drilled (vertical) oil wells in this pool experience water coning quite early and after water break through occurs, the well produces large volumes of water and relatively low volumes of oil, which results in very high operating costs, low oil recovery, and less efficient drainage.

(7) By drilling a horizontal well along the crest of one of these oil-bearing subterranean dunes, the applicant is attempting to alleviate coning by creating a small pressure drop along the large length of a horizontal wellbore instead of a large pressure drop through a small area available to a vertical wellbore.

(8) Also, there should be less produced water to handle, thereby lowering operating costs; and, because there will be larger reservoir contact by a horizontal wellbore, more efficient oil production should result in better drainage.

(9) The applicant proposes to plug-back, sidetrack and directionally drill horizontally through the Entrada formation in its Federal "15" Well No. 2 located 1980 feet from the North line and 990 feet from the West line (Unit E) of said Section 15 or, in the alternative, to drill a new well for the same purpose at an unorthodox surface location 1400 feet from the North line and 550 feet from the West line of said Section 15. The horizontal wellbore in either well is to be drilled in a southerly direction within a target window described as a rectangle 1250 feet wide and 2350 feet long, the north end of the rectangle being 1400 feet from the North line of said Section 15, with the western side formed by the Section line, provided however, the well should not encroach closer than 330 feet to any tract which is not of common ownership to that of the said non-standard proration unit in the Entrada formation.

(10) Said 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.

(11) To ensure the protection of correlative rights, the applicant is seeking to unitize the area around the proposed non-standard proration unit (Division Case No. 9840).

(12) There was no objection to the subject application by any interested party.

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(13) Currently there is an existing Papers Wash-Entrada Gas Pool producing well within the proposed project area operated by the applicant, this being the Navajo Allotted 15 Well No. 5 located 2310 feet from the South line and 990 feet from the West line (Unit L) of said Section 15.

(14) By Division Order No. R-5419, dated April 26, 1977, a special depth bracket allowable of 750 barrels per day was established for said pool.

(15) Since the project area consists of essentially two 40-acre proration units, the applicant proposed that the project be assigned an allowable of 1500 barrels of oil per day, which is equal to twice the normal allowable assigned a 40-acre proration unit in the Papers Wash-Entrada Oil Pool.

(16) For the purpose of assignment of allowable and the reporting of production, the applicant proposes to simultaneously dedicate the Entrada production from the SW/4 NW/4 and the NW/4 SW/4 of said Section 15 to the proposed horizontal well and to the Navajo Allotted 15 Well No. 5 and the Federal "15" Well No. 2, if it is not used for the horizontal drilling.

(17) The non-standard proration unit, as described above, should not become effective until such time as the horizontal wellbore is completed and placed on production and will cease at such time as the horizontal wellbore is properly plugged and abandoned.

(18) The applicant should be required to determine the actual location of the kick-off point prior to 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.

(19) 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 Merrion Oil and Gas Corporation for a horizontal directional drilling pilot project consisting of the SW/4 NW/4 and NW/4 SW/4 of Section 15, Township 19 South, Range 5 West, NMPM, Papers Wash-Entrada Oil Pool, McKinley County, New Mexico, forming a non-standard 80-acre oil spacing and proration unit is hereby approved.

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(2) The applicant is further authorized to plug-back, sidetrack and directionally drill horizontally through the Entrada formation in its Federal "15" Well No. 2 located 1980 feet from the North line and 990 feet from the West line (Unit E) of said Section 15 or, in the alternative, to drill a new well for the same purpose at an unorthodox surface location 1400 feet from the North line and 550 feet from the West line of said Section 15. The horizontal wellbore in either well is to be drilled in a southerly direction within a target window described as a rectangle 1250 feet wide and 2350 feet long, the north end of the rectangle being 1400 feet from the North line of said Section 15, with the western side formed by the Section line, provided however, the wellbore should not encroach closer than 330 feet to any tract which is not of common ownership to that of the said non-standard proration unit in the Entrada formation.

(3) The aforementioned 80-acre non-standard oil proration unit shall be simultaneously dedicated to the proposed horizontal well and to the applicant's Navajo Allotted 15 Well No. 5 and the Federal "15" Well No. 2 if it is not the horizontal well; production from said pool from the wells dedicated to the unit may be produced in any proportion.

(4) Said unit shall be assigned an acreage dedication factor of 2.0 to be assessed toward the depth bracket allowable for said pool.

(5) This non-standard proration unit shall not become effective until such time as the horizontal wellbore is completed and placed on production and shall cease at such time as the horizontal well is properly plugged and abandoned. At that time, the Navajo Allotted 15 Well No. 5 shall be re-dedicated to its current proration unit comprising the SW/4 NW/4 of said Section 15 and the Federal "15" Well No. 2 shall be dedicated to its current proration unit comprising the NW/4 SW/4 of said Section 15.

(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 Office 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.

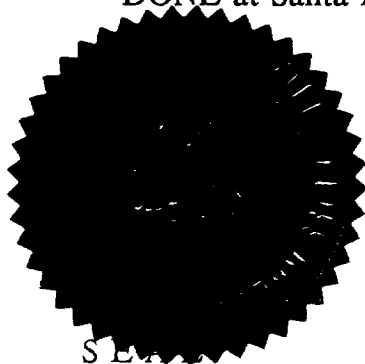
(7) The applicant shall conduct a directional drilling survey on the well during or after completion of horizontal drilling operations.

(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.

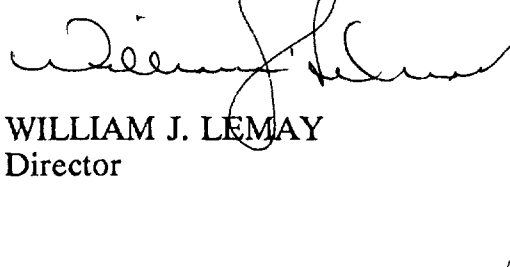
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(9) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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



STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director