



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

May 6, 1996

Merrion Oil & Gas Corporation
610 Reilly Avenue
Farmington, New Mexico 87401
Attention: George Sharpe

Administrative Order DD-144(H)
High Angle/Horizontal

Dear Mr. Sharpe:

Reference is made to your application dated March 12, 1996 for authorization to initiate a high angle/horizontal directionally drilling project in the Entrada formation within a single 160-acre Navajo Allotted Lease (No. NOO-C-4402) to be operated by Merrion Oil & Gas Corporation comprising the NE/4 of Section 13, Township 20 North, Range 6 West, NMPM, McKinley County, New Mexico.

The Division Director Finds That:

- (1) The application by Merrion Oil & Gas Corporation ("Merrion") has been duly filed under the provisions of Rule 111.D and E of the General Rules and Regulations of the New Mexico Oil Conservation Division ("Division"), revised by Division Order No. R-10388; issued by the Oil Conservation Commission in Case 11,274 on June 13, 1995;
- (2) The above-described acreage is further than two miles from any designated Entrada oil pool and is therefore classified as "wildcat". This area is therefore subject to the statewide rules and regulations for oil wells, as promulgated by Rule 104.C(1)(a), which provides for 40-acre oil spacing and proration units, or drilling units, and requires that wells be located no closer than 330 feet to the outer boundary of a single 40-acre oil spacing and proration unit;
- (3) Further, pursuant to Division General Rule 505.A, the Entrada formation in this area is subject to a depth bracket oil allowable of 80 barrels of oil per day per 40-acre unit;

- (4) The Entrada formation in this area was deposited as an eolian sand overlain by lacustrine limestones and anhydrites of the Todilto formation. The resulting "dune-like" structures, having porosity and permeability, act as the reservoir for trapping the accumulation of oil in the Entrada formation. It is anticipated by the applicant that this portion of the Entrada formation is in contact with a large aquifer and hydrodynamically active fresh ground water flowing to the southwest beneath the oil accumulation. This strong drive acts to tilt the oil-water contact in the direction of flow; conventionally drilled (vertical) wells in this pool experience significant "water coning", whereby the water below the oil moves upward to the wellbore, a process that has left a significant amount of "attic" oil sidetracked or by-passed between wells; by drilling horizontally across the top of the structure, the applicant is attempting to drain this otherwise unrecoverable attic oil by alleviating this coning action; such horizontal drainhole will act to create a small pressure drop along the large area found in a long horizontal drainhole instead of a large pressure drop through a small area available to a vertical wellbore;
- (5) The "project area" proposed by Merrion is to correspond to the above-described 160 acres;
- (6) Within this project area Merrion seeks:
 - a) the ability to traverse quarter-quarter section lines within the project area in order to form non-standard oversized and irregular sized spacing and proration units to accommodate such wellbores;
 - b) drill the proposed horizontal wellbores to within 330 feet of the outer boundary of the project area; and,
 - c) the assignment of an allowable for a horizontally drilled well based upon the number of standard 40-acre proration units which are developed or traversed by a horizontal wellbore;
- (7) Initially, it is Merrion's intent to drill a vertical Entrada wildcat well at a standard oil well location in the SW/4 NW/4 (Unit G) of said Section 13 and, depending on the results, Merrion would plug back the well and initiate a horizontal wellbore to the north through the Entrada formation a lateral distance of approximately 1,000 feet;

- (8) It appears the applicant has satisfied all of the appropriate requirements prescribed in said Rule 111.D and E, the subject application should be approved and any horizontal wellbore drilled within the project area should be governed by the provisions contained within this order and all other applicable provisions of Division General Rule 111.

IT IS THEREFORE ORDERED THAT:

(1) The application of Merrion Oil and Gas Corporation ("Merrion") for high angle/horizontal directional drilling within a "project area" in the "wildcat" Entrada formation on its Navajo Allotted Lease (No. NOO-C-4402) underlying the following described acreage in McKinley County, New Mexico, is hereby approved:

TOWNSHIP 20 NORTH, RANGE 6 WEST, NMPM

Section 13: NE/4.

(2) Merrion is further authorized to proceed with their initial plans to drill a vertical Entrada wildcat well at a standard oil well location in the SW/4 NW/4 (Unit G) of said Section 13 and, depending on the results, initiate a horizontal wellbore to the north through the Entrada formation a lateral distance of approximately 1,000 feet.

PROVIDED HOWEVER THAT any drainhole drilled from said well may traverse quarter-quarter section lines within the project area provided that the horizontal or producing portion of any drainhole shall be located no closer than 330 feet from the outer boundary of the above-described "project area".

PROVIDED FURTHER THAT the applicant shall determine the actual location of the kick-off points in each well prior to commencing directional drilling operations. Also, the applicant shall conduct a directional survey on the lateral portion of any horizontal wellbore during or after completion of drilling operations.

(3) The applicant shall notify the supervisor of the Aztec District office of the Division of the date and time said wellbore surveys are to be conducted so that they may be witnessed. The applicant shall further provide a copy of said wellbore surveys to the Santa Fe and Aztec offices of the Division upon completion.

(4) The allowable assigned to the proration unit designated to said well in the Entrada formation shall be assigned by the supervisor of the Division's Aztec district office and shall be equal to 80 barrels of oil per day times the number of standard 40-acre tracts within each designated proration unit that are developed/traversed by a horizontal drainhole.

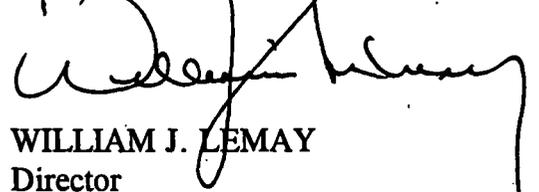
(5) The operator shall comply with all requirements and conditions set forth in Division General Rule 111.E(2) and any applicable requirements in 111.D and F.

(6) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth (TVD) in addition to measured depths (MVD).

(7) 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

cc: Oil Conservation Division - Aztec
U. S. Bureau of Land Management - Farmington

DD-HDR.M5

Rec: 3-18-96

Susp: 4-8-96

Released 5-6-96

May 6, 1996

**Merrion Oil & Gas Corporation
610 Reilly Avenue
Farmington, New Mexico 87401**

Attention: George Sharpe

Administrative Order DD-¹⁴⁴~~****~~(H)
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DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

**STATE OF NEW MEXICO
OIL CONSERVATION DIVISION**

**WILLIAM J. LEMAY
Director**

**cc: Oil Conservation Division - Aztec
U. S. Bureau of Land Management - Farmington**

Mike Stogner

From: Mike Stogner
To: Ernie Busch
Subject: RE: Administrative Order DD-144(H)
Date: Monday, May 19, 1997 9:51AM

Thank you for calling this discrepancy to my attention. The reference to the 80 BOPD allowable in DD-144(H) was included to reflect what I thought was the appropriate figure and not as any sort of penalty. Upon a successful completion by Merrion on its Chaco Wash Well No. 2 in the Entrata formation I'll issue an amendment to reflect the correct information.

From: Ernie Busch
To: Mike Stogner
Subject: Administrative Order DD-144(H)
Date: Wednesday, May 14, 1997 3:02PM

Merrion Oil & Gas Corporation
Chaco Wash #2 well
G-13-20N-06W

In reference to page one subparagraph three of the order, the Entrada formation in this area is deeper than the depth bracket oil allowable of 80 barrels of oil per day per 40 acre unit. The depth bracket oil allowable for wells in this area pursuant to Division General Rule 505.A, will be 142 barrels of oil per day per 40 acre unit based on a Pool Depth Range of 6,000 to 6,200 feet.

Mike Stogner

From: Ernie Busch
To: Mike Stogner
Subject: Administrative Order DD-144(H)
Date: Wednesday, May 14, 1997 3:02PM

Merrion Oil & Gas Corporation
Chaco Wash #2 well
G-13-20N-06W

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MERRION

OIL & GAS

OIL CONSERVATION DIVISION
RECEIVED

March 12, 1996

1996 MAR 18 AM 8 52

Mr. Michael Stogner
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87503

**Re: Application for Administrative Approval - Special Pool Rules
For Non-Standard Spacing Unit and Special Allowables
To Facilitate Horizontal Drilling
Chaco Wash Entrada Wildcat
McKinley County, New Mexico**

Dear Mr. Stogner:

Merrion Oil & Gas requests administrative approval of special pool rules for a Wildcat Entrada well (see Exhibit 1 for land plat) to allow for horizontal drilling within the Navajo Allotted lease which encompass the Project Area. This application reviews the justification for horizontal drilling in the Entrada and outlines the pool rules we are requesting.

JUSTIFICATION FOR HORIZONTAL DRILLING

In the Entrada, oil trapped in the top of preserved dunes is underlain by a large aquifer. The strong water drive results in severe water coning around vertical wells, leaving significant "attic" oil undrained between wells at the top of the dune. The use of horizontal wells to tap into that attic oil has proven effective at the Papers Wash Entrada Oil Pool, and again recently at the Eagle Mesa Entrada Oil Pool and the Snake Eyes Entrada Oil Pool. We feel this technology could also be successfully applied at the Chaco Wash Prospect.

Our original plans would be to drill a vertical Entrada wildcat in a standard location in the SW/4 NE/4 of Section 13, T20N, R6W. Depending on the results of the vertical, Merrion plans to plug back the well and drill a horizontal well to the north into the Entrada formation, a distance of approximately 1000' from the wellbore. The projected well traverse is shown in Exhibit 1.

REQUESTED SPECIAL POOL RULES

Merrion requests the following provisions be approved for the Chaco Wash Wildcat:

- 1.) Merrion is authorized to institute a horizontal drilling pilot project within the "project area" in the Chaco Wash Entrada Prospect within the Navajo Allotted Lease with the following described 160 acres in McKinley County, New Mexico:

TOWNSHIP 20N, RANGE 6W, NMPM
Section 13: NE/4 Lease NOO-C-4402

- 2.) Special operating provisions for horizontal wells within this lease will be promulgated that allow for:
 - a.) No portion of any horizontal well shall be closer than 330 feet to the outer boundary of the project area;
 - b.) The allowable assigned to each well shall be 750 barrels of oil per day times the number of 40 acre tracts that are traversed by its horizontal drain hole.

SUPPORTING INFORMATION

The following information is provided in support of this request:

- 1.) The ownership in the lease as to the Entrada formation is common throughout.
- 2.) The proposed rules will protect correlative rights by providing additional drilling, which will benefit the royalty owners and override owners.
- 3.) Copies of this application were sent certified mail to the following offset lease owners (see Exhibit 1):

Bureau of Land Management
Attn: Duane Spencer
1235 La Plata Highway
Farmington, New Mexico 87401

Yates Petroleum Corp.
105 South Fourth Street
Artesia, New Mexico 88210

Basin Fuels Ltd.
P.O. Box 50
Farmington, New Mexico 87499

Page 2
March 12, 1996

Pitco Production
P.O. Box 702320
Tulsa, Oklahoma 74170-2320

Bureau of Indian Affairs
P.O. Box 1060
Gallup, New Mexico 87301

SUMMARY

These proposed rules are needed to allow horizontal wells to be drilled in the Chaco Wash Entrada Prospect Area. This will protect correlative rights through increased royalty payments. Therefore, we request your prompt attention to this matter.

Please call me at (505) 327-9801 with questions or comments.

Sincerely,



George F. Sharpe
Manager - Oil & Gas Investments

xc: Field File
Jim Johnson

EXHIBIT 1
CHACO WASH LAND PLAT

McKinley County, New Mexico

