

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. 10617
ORDER NO. R-9832*

**APPLICATION OF C.W. TRAINER FOR DESIGNATION OF A TIGHT FORMATION,
CHAVES COUNTY, NEW MEXICO**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on December 17, 1992, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 25th day of January, 1993 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, C. W. Trainer, requests that the Division recommend to the Federal Energy Regulatory Commission ("FERC") that the Mississippian formation underlying the following lands in Chaves County, New Mexico be designated as "tight formation" in accordance with Section 107 of the Natural Gas Policy Act, FERC regulations in Title 18 CFR Section 271.703 and Oil Conservation Division Order No. R-6388-A:

Township 11 South, Range 28 East, NMPM

Section 35:	E/2
Section 36:	All

Township 11 South, Range 29 East, NMPM

Section 21: S/2
Section 22: All
Section 23: W/2
Section 26: W/2
Sections 27 through 34: All
Section 35: W/2

Township 12 South, Range 28 East, NMPM

Section 1: All
Section 2: Lots 1 and 2, S/2 NE/4, and SE/4 (E/2 equivalent)

Township 12 South, Range 29 East, NMPM

Section 2: Lots 3 and 4 and S/2 NW/4 (NW/4 equivalent)
Section 3: Lots 1 through 4 and S/2 N/2 (N/2 equivalent)
Section 4: Lots 1 through 4 and S/2 N/2 (N/2 equivalent)
Sections 5 and 6: All

(3) The proposed "tight formation" area contains 11,009.08 acres, more or less, of state (approximately 640 acres or 5.8%) and fee (approximately 94.2%) lands. All lands included in this proposed designation are administered by the New Mexico Oil Conservation Division, which is the recognized FERC jurisdictional agency in this matter (see FERC Rule 274.501(a)(2)).

(4) Included entirely within the confines of the proposed tight formation area is the White Ranch Mississippian Gas Pool, which was created by Division Order No. R-3030, issued in Case No. 3364 and dated January 21, 1966.

(5) The type log presented by the applicant to represent the Mississippian formation in the proposed "tight formation" designation is the Compensated Neutron/Formation Density Log dated May 3, 1977 in the C.W. Trainer (formerly Tom L. Ingram) White Ranch Well No. 4 located 660 feet from the North and East lines (Unit A) of Section 33, Township 11 South, Range 29 East, NMPM, Chaves County, New Mexico. Although this well was drilled to a total depth of 8810 feet, it did not fully penetrate the Mississippian formation. From this log, however, other pertinent data can be presented such as the top of the Mississippian formation found at 8315 feet and the main pay zone found in the Mississippian formation in the proposed area is from 8502 to 8545 feet.

(6) Geological evidence presented by the applicant shows that the Mississippian formation underlies all of the above-described lands; its top ranges between 7500 feet to 8500 feet and its thickness varies between 600 and 800 feet. It is primarily a limestone formation, small amounts of chert occurring as "nodules" are encountered in the upper portion. The lower one-third is somewhat clastic with shale and sometimes siltstone included within the formation. The primary "pay zone", found within the area (White Ranch Mississippian Gas Pool production), occurs within 150 to 200 feet of the top of the Mississippian formation, its lithology varies somewhat from that normally found in the Mississippian formation. It is a limestone, pellet, clastic type of material (limestone pellets packed together) called packstone, which occurs in a shallow marine shoal environment.

(7) The White Ranch Mississippian Gas Pool is 400 feet structurally lower than the Mississippian formation found in the western portion of the proposed area, which demonstrates a regional dipping to the east/southeast of 200 to 250 feet per mile.

(8) The following four wells, all operated by the applicant and located in Township 11 South, Range 29 East, NMPM, White Ranch Mississippian Gas Pool, White Ranch Lease, Chaves County, New Mexico, represent the only natural gas production from the Mississippian formation within the proposed area to date:

Well No.	Footage Location	Unit	Section
1	1980' FNL - 660' FWL	E	34
2	1980' FSL - 660' FWL	L	34
3	990' FSL - 660' FWL	M	34
4	660' FN & EL	A	33

(9) The Mississippian formation underlying the proposed area has been penetrated by seven other wells, none of which produced natural gas in commercial quantities from said formation.

(10) The engineering evidence presented in this case demonstrates that no well formerly or currently completed in the Mississippian formation within the proposed area exhibited permeability, gas productivity, or crude oil productivity in excess of the following parameters:

- (a) average in situ gas permeability throughout the pay section of 0.1 millidarcy;

- (b) stabilized production rates, against atmospheric pressure, as found in the table set out in 18 CFR §271.703(c)(2)(B) of the interim regulations; and,
- (c) production of more than five barrels of crude oil per day.

(11) Based on the analysis of available data from existing wells within the proposed area and utilizing generally and customarily accepted petroleum engineering techniques and measurements:

- (a) the average in situ permeability throughout the pay section of the Mississippian formation is expected to be 0.1 millidarcy or less; and,
- (b) the stabilized production rate, against atmospheric pressure, of wells contemplated for production in the Mississippian formation, without stimulation, is not expected to exceed production levels determined by reference to 18 CFR §271.703(c)(2)(B) of the interim regulations; and,
- (c) no well drilled into the formation is expected to produce more than five barrels of crude oil per day.

(12) Within the proposed area there is a recognized water aquifer, being the Permian Sand, found to occur from the surface of the ground to the top of the Salado (salt) interval at approximately 300 feet.

(13) Existing State of New Mexico and Federal regulations relating to casing and cementing of wells will assure that development of the Mississippian formation will not adversely affect said water zones.

(14) The White Ranch Mississippian Gas Pool and the surrounding Mississippian formation is governed by statewide rules and regulations which spaces this zone on 320-acre units (General Rule 104.B(1)(a) and 104.C(2)). Although there are no official infill drilling provisions for this zone in the proposed area, two of the applicant's wells producing from the White Ranch Mississippian Gas Pool share a standard 320-acre spacing unit in the S/2 of Section 34, Township 11 South, Range 29 East, NMPM, Chaves County, New Mexico, those being the White Ranch Well Nos. 2 and 3 in Units L and M, respectively. When the No. 3 well was recompleted from a deeper oil horizon into the existing unit dedicated to the No. 2 well in 1977, Division policy at that time allowed for such simultaneous dedication of acreage.

(15) The last development drilling/recompletion work within said pool occurred in 1977 with the No. 4 well in Section 33, Township 11 South, Range 29 East, NMPM, Chaves County, New Mexico.

(16) The Mississippian formation within the proposed area should be recommended to the Federal Energy Regulatory Commission for designation as a tight formation.

IT IS THEREFORE ORDERED THAT:

(1) It be and hereby is recommended to the Federal Energy Regulatory Commission, pursuant to Section 107 of the Natural Gas Policy Act of 1978, and 18 CFR §271.703, that the Mississippian formation, as further described in Finding Paragraph Nos. (5), (6) and (7) of this Order, underlying the following described lands in Chaves County, New Mexico, be designated as a tight formation:

Township 11 South, Range 28 East, NMPM

Section 35: E/2
Section 36: All

Township 11 South, Range 29 East, NMPM

Section 21: S/2
Section 22: All
Section 23: W/2
Section 26: W/2
Sections 27 through 34: All
Section 35: W/2

Township 12 South, Range 28 East, NMPM

Section 1: All
Section 2: Lots 1 and 2, S/2 NE/4, and SE/4 (E/2 equivalent)

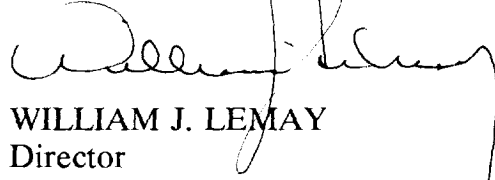
Township 12 South, Range 29 East, NMPM

Section 2: Lots 3 and 4 and S/2 NW/4 (NW/4 equivalent)
Section 3: Lots 1 through 4 and S/2 N/2 (N/2 equivalent)
Section 4: Lots 1 through 4 and S/2 N/2 (N/2 equivalent)
Sections 5 and 6: All

(2) 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

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