

**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. 12098
Order No. R-11130**

**APPLICATION OF CROSS TIMBERS OIL COMPANY FOR AN UNORTHODOX
GAS WELL LOCATION AND SIMULTANEOUS DEDICATION, SAN JUAN
COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on December 17, 1998, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 5th day of February, 1999, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised,

FINDS THAT:

(1) Due public notice has been given and the Division has jurisdiction of this case and its subject matter.

(2) Cases No. 12098, 12099 and 12100 were consolidated at the time of the hearing for the purpose of testimony.

(3) The applicant, Cross Timbers Oil Company (Cross Timbers), seeks authorization to drill its Ute Mountain Tribal "AJ" Well No. 6 to test both the Dakota and Morrison formations, Ute Dome-Dakota and Wildcat-Morrison Pools, at an unorthodox gas well location for both intervals 450 feet from the South line and 500 feet from the West line (Unit M) of Section 1, Township 31 North, Range 14 West, as projected into the unsurveyed Ute Mountain Indian Reservation. The SW/4 of Section 1 is to be dedicated to the well forming a standard 160-acre gas spacing and proration unit for both intervals.

(4) The applicant further seeks an exception to Division Rule 104.D.(3) to continuously and concurrently produce from the Ute Dome-Dakota Gas Pool through production from the proposed Ute Mountain Tribal "AJ" Well No. 6 and through its existing: (i) Ute Mountain Tribal "J" Well No. 1 (API No. 30-045-21011) located at a previously approved unorthodox gas well location (approved by Division Order No. NSL-575, dated September 22, 1972) 2460 feet from the South line and 1830 feet from the West line (Unit K) of Section 1; and (ii) Ute Mountain Tribal "J" Well No. 4 (API No. 30-045-21332) located at a standard gas well location 1850 feet from the South line and 110 feet from the West line (Unit L) of Section 1. The applicant further seeks to dedicate all three wells to the existing 160-acre gas spacing and proration unit comprising the SW/4 of Section 1.

(5) Representatives of the Ute Mountain Ute Indian Tribe, the surface and royalty interest owner within the SW/4 of Section 1, appeared at the hearing and cross examined Cross Timber's witnesses primarily regarding the necessity of drilling an additional well on this gas proration unit.

(6) The proposed well and spacing unit are located within the Ute Dome-Dakota Gas Pool, which is currently governed by Division Rule 104.C.(3), which requires requires standard 160-acre gas spacing and proration units with wells to be located no closer than 790 feet from the outer boundary of the spacing unit nor closer than 130 feet from any quarter-quarter section line or subdivision inner boundary.

(7) The proposed well and spacing unit are not located within the boundaries of an existing Morrison pool. Pursuant to Rule 104.B.(2), the spacing and well location requirements for a wildcat gas well are identical to those described in Finding No. (6) above.

(8) Rule No. 104.D.(3) currently states that "Unless otherwise permitted by special pool rules or authorized after notice and hearing, only one well per spacing unit is permitted in non-prorated pools."

- (9) The applicant presented geologic evidence and testimony indicating that:
- a) the Ute Dome field is located on a broad semi-circular structure on the edge of the Four Corners Platform. On the southeast side of the structure, the stratigraphic section dips steeply to the southeast into the San Juan Basin;

- b) the southern portion of the structure is bisected in the Dakota formation by several west/northwest to east/southeast trending faults. Vertical displacement along the faults can reach 250 feet, and the faults act as permeability barriers. The faults often form four-way structural closures, which trap hydrocarbons migrating upward from mature source rocks;
 - c) similar fault blocks in the area have proven productive from lower Dakota and Morrison sandstones, but they are typically wet when encountered off of localized structures;
 - d) the SW/4 of Section 1 is traversed by a west/northwest to east/southeast trending fault that may effectively isolate, within the Dakota formation, a portion of the S/2 SW/4 from the remainder of the quarter section. The Ute Mountain Tribal "J" Wells No. 1 and 4 are located within the northern downthrust fault block and the Ute Mountain Tribal "AJ" Well No. 6 is proposed to be drilled within the southern up-thrust fault block; and
 - e) the proposed unorthodox location is necessary in order to locate the Ute Mountain Tribal "AJ" Well No. 6 at a high structural position within the Dakota southern fault block.
- (10) The applicant presented engineering evidence and testimony indicating that:
- a) volumetric gas reserve calculations for the primary producing sands in the Dakota formation within the SW/4 of Section 1 are as follows:

<u>Dakota Sand</u>	<u>OGIP (MMCF)</u>	<u>Recoverable Gas (85 % Recovery Factor)</u>
First	338	287
Second	606	514
Third	120	101

- b) production data for the existing wells within the SW/4 of Section 1 shows the following:

<u>Well Number</u>	<u>Cumulative Production (MMCF)</u>	<u>Decline Curve EUR (MMCF)</u>
Tribal "J" No. 1	460	460
Tribal "J" No. 4	309	506

- c) the Ute Mountain Tribal "J" Well No. 1 has produced from the 1st, 2nd, 3rd and 6th Sands of the Dakota formation. The Ute Mountain Tribal "J" Well No. 4 has produced from the Morrison and the 2nd, 3rd, 5th, and 6th Sands of the Dakota formation;
- d) the Ute Mountain Tribal "J" Well No. 1 is currently not capable of economic gas production. The Ute Mountain Tribal "J" Well No. 4 is currently producing at a rate of approximately 60 MCFG per day; and
- e) there are remaining gas reserves within the Dakota southern fault block that are not likely to be recovered by the existing Ute Mountain Tribal "J" Wells No. 1 and 4.

(11) The geologic and engineering evidence presented in this case demonstrates that the drilling of the Ute Mountain Tribal "AJ" Well No. 6 is necessary in order to effectively and efficiently recover the remaining gas reserves within the SW 4 of Section 1, which will not otherwise be recovered by the existing Ute Mountain Tribal "J" Wells No. 1 and 4.

(12) The proposed unorthodox gas well location is necessary in order to penetrate the Dakota formation at a structurally advantageous position within the southern fault block.

(13) The applicant currently operates all the affected offset acreage.

(14) Approval of the proposed unorthodox gas well location and simultaneous dedication will afford the applicant the opportunity to produce the remaining gas reserves underlying the SW/4 of Section 1 which may otherwise not be recovered, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED THAT:

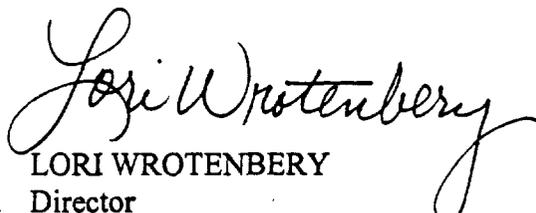
(1) The applicant, Cross Timbers Oil Company, is hereby authorized to drill its Ute Mountain Tribal "AJ" Well No. 6 to test both the Dakota and Morrison formations, Ute Dome-Dakota and Wildcat Morrison Pools, at an unorthodox gas well location for both intervals 450 feet from the South line and 500 feet from the West line (Unit M) of Section 1, Township 31 North, Range 14 West, as projected into the unsurveyed Ute Mountain Indian Reservation.

(2) The applicant is further authorized to simultaneously dedicate the SW/4 of Section 1 in the Ute Dome-Dakota Gas Pool to the Ute Mountain Tribal "AJ" Well No. 6 and to its existing: (i) Ute Mountain Tribal "J" Well No. 1 (API No. 30-045-21011) located at a previously approved unorthodox gas well location 2460 feet from the South line and 1830 feet from the West line (Unit K) of Section 1; and (ii) Ute Mountain Tribal "J" Well No. 4 (API No. 30-045-21332) located at a standard gas well location 1850 feet from the South line and 1110 feet from the West line (Unit L) of Section 1. The applicant is further authorized to continuously and concurrently produce the Ute Mountain Tribal "AJ" Well No. 6 and the Ute Mountain Tribal "J" Wells No. 1 and 4 in the Ute Dome-Dakota Gas Pool.

(3) Jurisdiction of this case 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


LORI WROTENBERY
Director

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