

CASE NO.

7046

---

APPLICATION,  
TRANSCRIPTS,  
SMALL EXHIBITS,  
ETC.



BRUCE KING  
GOVERNOR  
LARRY KEHOE  
SECRETARY

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

January 19, 1981

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

Mr. Thomas Kellahin  
Kellahin & Kellahin  
Attorneys at Law  
Post Office Box 1769  
Santa Fe, New Mexico

Re: CASE NO. 7046  
ORDER NO. R-6564

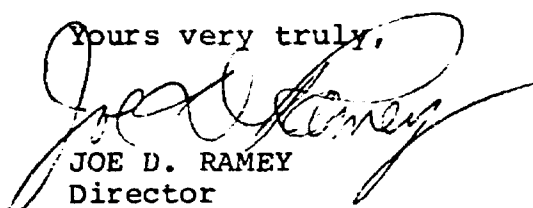
Applicant:

Cotton Petroleum Corporation

Dear Sir:

Enclosed herewith are two copies of the above-referenced  
Division order recently entered in the subject case.

Yours very truly,

  
JOE D. RAMEY  
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD x  
Artesia OCD x  
Aztec OCD x

Other \_\_\_\_\_  
\_\_\_\_\_

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

CASE NO. 7046  
Order No. R-6564

APPLICATION OF COTTON PETROLEUM  
CORPORATION FOR DOWNHOLE COMMINGLING,  
RIO ARriba COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on December 10, 1980, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 15th day of January, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Cotton Petroleum Corporation, seeks approval for the downhole commingling of Chacra and Pictured Cliffs production in the wellbores of wells in the South Blanco-Pictured Cliffs Pool located in Sections 1 thru 4, 9 thru 14, and 23 and 24, Township 24 North, Range 4 West, NMPM, Rio Arriba County, New Mexico.

(3) That the establishment of an administrative procedure whereby production from the Chacra and Pictured Cliffs formations in those sections described in Finding No. (2) above may be commingled within the wellbore of a producing well therein should permit the recovery of otherwise uneconomic reserves.

(4) That such an administrative procedure should provide for approval by the Division's District Supervisor at Aztec, safeguards to prevent crossflow between pools, and the protection of interest owners under each proration or spacing unit.

(5) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(6) That the applicant further seeks authority to commingle Chacra and Pictured Cliffs production within the wellbore of its Apache Well No. 30 in Unit J of Section 3 and Apache Well No. 29 in Unit C of Section 14, both in Township 24 North, Range 4 West, NMPM, Rio Arriba County, New Mexico.

(7) That from the Chacra zone, the subject wells are capable of low production only.

(8) That from the Pictured Cliffs zone, the subject wells are capable of low production only.

(9) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(10) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

(11) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Division any time either of the subject wells is shut-in for 7 consecutive days.

(12) That in order to allocate the commingled production to each of the commingled zones in the wells, applicant should consult with the supervisor of the Aztec district office of the Division and determine an allocation formula for each of the production zones.

IT IS THEREFORE ORDERED:

(1) That the applicant, Cotton Petroleum Corporation, is hereby authorized to commingle Chacra and Pictured Cliffs production within the wellbore of its Apache Well No. 30 located in Unit J of Section 3 and its Apache Well No. 29 located in Unit C of Section 14, both in Township 24 North, Range 4 West, NMPM, Rio Arriba County, New Mexico.

(2) That the applicant shall consult with the Supervisor of the Aztec district office of the Division and determine an allocation formula for the allocation of production to each zone in each of the subject wells.

(3) That the operator of the subject wells shall immediately notify the Division's Aztec district office any time any well commingled under terms of this order has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

IT IS FURTHER ORDERED:

(1) That an administrative procedure is hereby adopted whereby the district supervisor of the Division District Office at Aztec may administratively authorize downhole commingling of the Chacra and Pictured Cliffs zones in applicant's wells in Sections 1 through 4, 9 through 14, and 23 and 24, Township 24 North, Range 4 West, NMPM, Rio Arriba County, New Mexico.

(2) That qualification and application for and approval of requests for downhole commingling shall be made in accordance with the following rules:

RULE 1. Wells shall qualify for approval for downhole commingling under this order provided that:

- (a) that the commingling is necessary to permit production from the Chacra and Pictured Cliffs zones which would not otherwise be economically producible;
- (b) neither zone produces more than 10 barrels of liquid per day;
- (c) the bottom hole pressure of the lower pressure zone is not less than 50 percent of the bottom hole pressure of the higher pressure zone adjusted to a common datum; and,
- (d) the ownership of the two zones is common (including working interest, royalty interest, and overriding royalty).

RULE 2. Applications for administrative approval of downhole commingling under this order shall include:

- (a) Name and address of the operator.
- (b) Lease name, well number, well location, and names of the pools to be commingled.
- (c) A mechanical log of the well.
- (d) A diagrammatic sketch of the well showing casing, tubing, cement tops, perforations, and any downhole equipment.
- (e) Pressures and production for each zone to be commingled as determined from drill stem tests or potential tests following completion.
- (f) A formula for the allocation of production to each of the commingled zones and a description of the factors or data used in determining such formula.

RULE 3. The district supervisor may approve the proposed downhole commingling if, in his opinion, there is no disqualifying disparity of bottomhole pressures or other reservoir characteristics, waste will not result thereby, and correlative rights will not be violated.

RULE 4. Upon such approval, the well shall be operated in accordance with the provisions of the administrative order which authorized the commingling, and allocation of the commingled production from the well to each of the producing zones shall be in accordance with the allocation formula set forth in the order.

RULE 5. The Division Director may rescind authority to commingle production in the wellbore and require both zones to be produced separately, if, in his opinion, waste or reservoir damage is resulting thereby, or if any change of conditions render the installation no longer eligible for downhole commingling under the provisions of Rule 1, paragraphs (a) through (d).

IT IS FURTHER ORDERED:

- (1) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

-5-  
Case No. 7046  
Order No. R-6564

DONE at Santa Fe, New Mexico, on the day and year herein-  
above designated.

STATE OF NEW MEXICO  
WIL CONSERVATION DIVISION

  
JOE D. RAMEY  
Director

S E A L

fd/

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
STATE LAND OFFICE BLDG.  
SANTA FE, NEW MEXICO  
11 December 1980

EXAMINER HEARING

IN THE MATTER OF:

Application of Cotton Petroleum ) CASE  
Corporation for downhole commingling, ) 7046  
Rio Arriba County, New Mexico. )

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation  
Division:

Ernest L. Padilla, Esq.  
Legal Counsel to the Division  
State Land Office Bldg.  
Santa Fe, New Mexico 87501



1  
2 MR. STAMETS: We'll call Case 7046.

3 MR. PADILLA: Application of Cotton Pet-  
4 roleum Corporation for downhole commingling, Rio Arriba County,  
5 New Mexico.

6 MR. STAMETS: This case was originally  
7 heard at the November 25th Examiner Hearing, and was re-adver-  
8 tised to include some additional sections that were missed  
9 the first time.  
10

11 Is there any additional testimony in  
12 this case today?

13 There being none, the case will be  
14 taken under advisement.  
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16 (Hearing concluded.)  
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C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREPY CERTIFY that  
the foregoing Transcript of Hearing before the Oil Conserva-  
tion Division was reported by me; that the said transcript  
is a full, true, and correct record of the hearing, prepared  
by me to the best of my ability.

Sally W. Boyd C.S.R.

I do hereby certify that the foregoing is  
a correct and true copy of the transcript  
filed in the file of the case No. 7046  
dated 12/10/80

Richard R. Starn, Secretary  
Oil Conservation Division

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
STATE LAND OFFICE BLDG.  
SANTA FE, NEW MEXICO  
11 December 1980

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Corporation for downhole commingling, ) CASE  
Rio Arriba County, New Mexico. ) 7046

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation  
Division:

Ernest L. Padilla, Esq.  
Legal Counsel to the Division  
State Land Office Bldg.  
Santa Fe, New Mexico 87501

MR. SEAMUTH: We'll call Case 7046.

MR. PADILLA: Application of Cotton Petroleum Corporation for downhole commingling, Rio Arriba County, New Mexico.

MR. SEAMUTH: This case was originally heard at the November 25th in-camera hearing, and was re-advertised to include some additional sections that were missed the first time.

Is there any additional testimony in this case today?

There being none, the case will be taken under advisement.

(Hearing concluded.)

## C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that  
the foregoing Transcript of Hearing before the Oil Conserva-  
tion Division was reported by me; that the said transcript  
is a full, true, and correct record of the hearing, prepared  
by me to the best of my ability.

Sally W. Boyd C.S.R.

I do hereby certify that the foregoing is  
a true and correct copy of the transcript  
as the same was read and heard by the  
members of the Oil Conservation Division.  
\_\_\_\_\_, Chairman  
Oil Conservation Division

Dockets Nos. 42-80 and 43-80 are tentatively set for December 30, 1980 and January 14, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - DECEMBER 10, 1980

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for January, 1981, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.
- (2) Consideration of the allowable production of gas for January, 1981, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.
- CASE 7095: In the matter of the hearing called by the Oil Conservation Division on its own motion to permit Bill G. Isler, United States Fidelity and Guaranty Company, and all other interested parties to appear and show cause why the Spears State Well No. 2 in Unit E of Section 28, Township 11 South, Range 27 East, Chaves County, should not be plugged and abandoned in accordance with a Division-approved plugging program.
- CASE 7096: Application of Read & Stevens, Inc. for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the North B. Unit Area, comprising 637 acres, more or less, of State lands in Township 13 South, Ranges 32 and 33 East.
- CASE 7097: Application of Mesa Petroleum Co. for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Jackson Unit Area, comprising 2,560 acres, more or less, of State lands in Township 24 South, Range 33 East.
- CASE 7098: Application of The Wiser Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its McQuatters Well No. 4 located in Unit G of Section 11, Township 21 South, Range 36 East, to produce oil from the Oil Center-Glorieta and Hardy-Drinkard Pools through parallel strings of tubing.
- CASE 7077: (Continued from November 25, 1980, Examiner Hearing)
- Application of Threshold Development Company for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its Conoco "10" State Com Well No. 1 located in Unit I of Section 10, Township 19 South, Range 29 East, Turkey Track Field, to produce oil from the Wolfcamp formation and gas from the Atoka formation through parallel strings of tubing.
- CASE 7089: (Continued from November 25, 1980, Examiner Hearing)
- Application of Summit Energy, Inc. for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Blinberry formation through its Gulf Bunin Well No. 2 located in Unit C of Section 13, Township 21 South, Range 37 East.
- CASE 7099: Application of Harvey E. Yates Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Duncan Unit Area, comprising 7,679 acres, more or less, of State, Federal, and fee lands in Townships 13 and 14 South, Range 35 East.
- CASE 7100: Application of Harvey E. Yates Company for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Atoka and Morrow production in the wellbore of its Travis 24 State Com Well No. 1 in Unit H of Section 24, Township 18 South, Range 28 East.
- CASE 7101: Application of Consolidated Oil & Gas, Inc. for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Gallup and Basin-Dakota production in the wellbore of its Tribal "C" Well No. 4-E in Unit H of Section 6, Township 26 North, Range 3 West.
- CASE 7102: Application of Consolidated Oil & Gas, Inc. for approval of infill drilling and an exception to Rule 9(E) of Order No. R-1670-T, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the drilling of its Jacquez Well No. 2 to be located in Unit K of Section 2, Township 31 North, Range 13 West, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the two existing wells on the unit. Applicant further seeks an exception to Rule 9(E) of Division Order No. R-1670-T to permit calculating the proration unit's allowable on the basis of three Mesaverde wells on the unit.

- CASE 7103: Application of E. L. Latham, Jr. for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp thru Pennsylvanian formations underlying the N/2 of Section 7, Township 22 South, Range 26 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7104: Application of Conoco Inc. for the amendment of Orders Nos. R-4633 and WFX-462, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Division Orders Nos. R-4633 and WFX-462, which authorized the injection of water into applicant's Maljamar Mitchell Waterflood Project in Section 5, Township 17 South, Range 32 East. The amendments sought would include carbon dioxide in the injection authorization for said project.
- CASE 7105: Application of C and E Operators, Inc. for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Mesaverde formation underlying the N/2 of Section 9, Township 30 North, Range 11 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7106: Application of C and E Operators, Inc. for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Mesaverde formation underlying the S/2 of Section 8, Township 30 North, Range 11 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7107: Application of C and E Operators, Inc. for compulsory pooling and a non-standard proration unit, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Mesaverde formation underlying a 158.54-acre non-standard gas proration unit comprising the SW/4 of Section 9, Township 30 North, Range 11 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7090: (Continued from November 25, 1980, Examiner Hearing)
- Application of Dorchester Exploration, Inc. for directional drilling and an unorthodox gas well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to re-enter the old Union Hill Well No. 1, the surface location of which is 2319 feet from the North and West lines of Section 27, Township 12 South, Range 28 East, and to directionally drill in an indeterminate direction from a kick-off point at 7300 feet, bottoming said well at an approximate depth of 8100 feet in the Mississippian formation less than 330 feet away from the surface location. The W/2 of said Section 27 would be dedicated to the well.
- CASE 6668: (Continued from November 25, 1980, Examiner Hearing)
- In the matter of Case 6668 being reopened pursuant to the provisions of Order No. R-6139 which order promulgated temporary special rules and regulations for the South Culebra Bluff-Bone Spring Pool in Eddy County, New Mexico, including a provision for 80-acre spacing units. Operators in said pool may appear and show cause why the pool should not be developed on 40-acre spacing units.
- CASE 7092: (Continued from November 25, 1980, Examiner Hearing)
- Application of Delta Drilling Company for pool extension, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the extension of the South Culebra Bluff-Bone Spring Pool to include all of Sections 2, 11, 13, 14, 23, and 24, Township 23 South, Range 28 East.
- CASE 7056: (Continued and Readvertised)
- Application of Getty Oil Company for the extension of vertical limits of the Jalmat Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the contraction of the vertical limits of the Langlie-Mattix Pool and the downward extension of the vertical limits of the Jalmat Pool to a depth of 3740 feet, subsurface, under the NW/4 SW/4 of Section 3, Township 24 South, Range 26 East.

- CASE 7108:** Application of HNG Oil Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp and Pennsylvanian formations underlying the S/2 of Section 32, Township 21 South, Range 35 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7109:** Application of Alpha Twenty-One Production Company for approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the El Paso Tom Federal Well No. 1 located 330 feet from the North and West lines of Section 33, Township 25 South, Range 37 East, is necessary to effectively and efficiently drain that portion of an existing proration unit in the Langlie-Mattix Pool which cannot be so drained by the existing well(s).
- CASE 7110:** Application of Alpha Twenty-One Production Company for approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the El Paso Tom Federal Well No. 3 located 1650 feet from the North and West lines of Section 33, Township 25 South, Range 37 East, is necessary to effectively and efficiently drain that portion of an existing proration unit in the Langlie-Mattix Pool which cannot be so drained by the existing well(s).
- CASE 7111:** Application of Alpha Twenty-One Production Company for approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the El Paso Tom Federal Well No. 2 located 1650 feet from the North line and 330 feet from the West line of Section 33, Township 25 South, Range 37 East, is necessary to effectively and efficiently drain that portion of an existing proration unit in the Langlie-Mattix Pool which cannot be so drained by the existing well(s).
- CASE 7112:** Application of Alpha Twenty-One Production Company for approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the Harrison Federal Well No. 3 located 1980 feet from the North line and 660 feet from the West line of Section 27, Township 25 South, Range 37 East, is necessary to effectively and efficiently drain that portion of an existing proration unit in the Jalmat Gas Pool which cannot be so drained by the existing well(s).
- CASE 7086:** (Continued from November 12, 1980, Examiner Hearing)  
Application of Blackwood & Nichols Company, Ltd. for designation of a tight formation, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Pictured Cliffs formation underlying portions of Townships 30 and 31 North, Ranges 6, 7, and 8 West, containing 33,500 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705.
- CASE 7087:** (Continued from November 12, 1980, Examiner Hearing)  
Application of Blackwood & Nichols Company, Ltd. for designation of a tight formation, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Fruitland formation underlying portions of Townships 30 and 31 North, Ranges 6, 7, and 8 West, containing 33,500 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705.
- CASE 7046:** (Continued and Readvertised)  
Application of Cotton Petroleum Corporation for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Chacra and Pictured Cliffs production in the wellbores of wells in the South Blanco-Pictured Cliffs Pool located in Sections 1 thru 4, 9 thru 14, and 23 and 24, Township 24 North, Range 4 West.

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DOCKET: COMMISSION HEARING - THURSDAY - DECEMBER 11, 1980

OIL CONSERVATION COMMISSION - 9 A.M. - ROOM 205  
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

CASE 7025: (DE NOVO)

Application of Southland Royalty Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the W/2 of Section 35, Township 18 South, Range 29 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

Upon application of Southland Royalty Company this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 7008: (DE NOVO)

Application of Coronado Exploration Corp. for eight compulsory poolings, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying eight 40-acre proration units, being the NE/4 NE/4 of Section 4 and the NW/4 NE/4 of Section 5, both in Township 12 South, Range 28 East, and the NW/4 SE/4 of Section 6, the NE/4 NW/4 of Section 23, the NE/4 SE/4 of Section 28, the SE/4 SE/4 of Section 29, the NE/4 NW/4 of Section 32, and the SE/4 NW/4 of Section 33, all in Township 11 South, Range 28 East, each to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said wells and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the wells, and a charge for risk involved in drilling said wells.

Upon application of Tenneco Oil Company this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 6965: (DE NOVO)

Application of Supron Energy Corporation for a non-standard gas proration unit, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard Mesaverde and Dakota gas proration unit comprising the SE/4 of Section 8, Township 25 North, Range 3 West, to be dedicated to a well to be drilled at a standard location thereon.

Upon application of Curtis J. Little and Beartooth Oil and Gas Company this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 6896: (DE NOVO)

Application of John E. Schalk for a non-standard gas proration unit and an unorthodox gas well location, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard Blanco Mesaverde gas proration unit comprising the NE/4 of Section 8, Township 25 North, Range 3 West, to be dedicated to his Gulf Well No. 2 to be drilled at an unorthodox location 1925 feet from the North line and 790 feet from the East line of said Section 8.

Upon application of Curtis J. Little and Beartooth Oil and Gas Company this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 6996: (Continued from November 25, 1980, Examiner Hearing)

Application of John E. Schalk for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Blanco Mesaverde Pool underlying the NE/4 of Section 8, Township 25 North, Range 3 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
STATE LAND OFFICE BLDG.  
SANTA FE, NEW MEXICO  
12 November 1980

EXAMINER HEARING

IN THE MATTER OF:

Application of Cotton Petroleum Cor-  
poration for downhole commingling,  
Rio Arriba County, New Mexico.

CASE  
7046

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation  
Division:

Ernest L. Padilla, Esq.  
Legal Counsel to the Division  
State Land Office Bldg.  
Santa Fe, New Mexico 87501

For the Applicant:

W. Thomas Kellahin, Esq.  
KELLAHIN & KELLAHIN  
500 Don Gaspar  
Santa Fe, New Mexico 87501

## I N D E X

## GLENN GARVEY

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MR. STAMETS: Call next Case 7046.

MR. PADILLA: Application of Cotton  
Petroleum Corporation for downhole commingling, Rio Arriba  
County, New Mexico.

MR. KELLAHIN: I'm Tom Kellahin of  
Santa Fe, New Mexico, appearing on behalf of the applicant,  
and I have one witness.

MR. STAMETS: I'd like to have the wit-  
ness stand and be sworn, please.

(Witness sworn.)

GLENN GARVEY

being called as a witness and being duly sworn upon his  
oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Would you please state your name, by  
whom you're employed?

A. My name is Glenn Garvey. I am employed  
by Cotton Petroleum Corporation.

Q. Mr. Garvey, have you previously testi-  
fied before the Oil Conservation Division?

1  
2 A. No, I have not.

3 Q. Would you state for the Examiner when  
4 and where you obtained your degree?

5 A. I obtained my degree from Michigan  
6 Technicalological University in 1975, and it is a Bachelor of  
7 Science in geological engineering.  
8

9 Q. Subsequent to graduation where have you  
10 been employed in that capacity?

11 A. I've been employed with Texaco for four  
12 years, through mid-79, and since that time I've been employed  
13 with Cotton Petroleum as a Senior Engineer.

14 Q. Pursuant to your duties as a Senior  
15 Engineer with Cotton Petroleum Corporation, have you made a  
16 study of the facts surrounding this particular application?  
17

18 A. Yes, I have.

19 Q. And in addition, have you prepared or  
20 compiled certain exhibits?

21 A. Yes, I have.

22 MR. KELLAHIN: We tender Mr. Garvey as  
23 an expert witness.

24 MR. STAMETS: The witness is considered  
25 qualified.  
26

27 Q. Mr. Garvey, would you turn to what  
28 we've marked as Exhibit Number One. I'm sorry, it's marked as

1  
2 Exhibit A. Would you generally identify that exhibit for us?

3 A. This exhibit is a net sandstone Isopach  
4 of the Chacra formation in Township 24 North, Range 4 West of  
5 Rio Arriba County.  
6

7 Q What does the applicant seek to accom-  
8 plish in this application?

9 A We would like to downhole commingle the  
10 Pictured Cliffs and the Chacra formations in this area and  
11 the basic reason for this exhibit is to show that we believe  
12 the Chacra is a continuous formation in the area that we are  
13 concerned with.  
14

15 Q Do you have any Chacra-Pictured Cliffs  
16 wells currently in existence that you desire to downhole com-  
17 mingle?

18 A Yes, sir, we have two dualled wells, the  
19 Apache 30, which is located in Section 3, and the Apache --

20 Q Just a minute. All right, sir.

21 A And the Apache 29, which is located in  
22 Section 14, in the northwest quarter.  
23

24 MR. STAMETS: Well, wait a minute.

25 A It's in the southeast quarter.

26 MR. STAMETS: All right, now what's the  
27 second well, please?

28 A It is the Apache 29, which is located

1  
2 in the northwest quarter of Section 14.

3 MR. STAMETS: Is that the one that looks  
4 like twenty --

5 A. It says 24. Unfortunately, the well  
6 numbers were not put on there, just the thickness of the sand.

7 MR. STAMETS: I see, and that's the one  
8 by the, what, the 24-foot contour?

9 A. Yes, sir.

10 MR. STAMETS: Okay. All right.

11 Q. Now both of those wells are currently  
12 dually completed as Pictured Cliffs-Chacra wells?

13 A. Yes, sir.

14 Q. All right. What is the significance of  
15 the shaded area, Mr. Garvey?

16 A. The shaded area is our Gallup-Dakota  
17 production acreage. Our interest is slightly different for  
18 Chacra and Pictured Cliffs, but it's essentially the same in  
19 this area. This is just Cotton Petroleum controlled acreage.

20 Q. Apart from approval for the commingling  
21 for those two wells, are you seeking any other approval for  
22 future commingled Chacra-Pictured Cliffs wells in the area?

23 A. Yes, sir, we have several locations that  
24 we would like to drill within the next few years that we would  
25 like to downhole commingle.  
26  
27  
28

1  
2 Q Do you have a description of the acreage  
3 for which you seek approval at this point for future commingled  
4 wells?

5 A Yes, sir.

6 Q Would you identify that acreage for us?

7 A The acreage would be Sections 1 through  
8 4, 9 through 12, Sections 13, 14, 23, and 24, of Township 24  
9 North, Range 4 West, Rio Arriba County.  
10

11 MR. STAMETS: If I might point out that  
12 that's not the acreage that the docket sets out, and I wonder  
13 now what's been advertised.

14 Let's see, Section 12 was left out, and  
15 Section 14 is not shown on the docket. We'll have to -- and  
16 as a matter of fact, they are not in the application.  
17

18 A Okay.

19 Q Do you intend to include Sections 12 and  
20 14 as a part of the general development of commingled production  
21 from the Chacra and Pictured Cliffs?

22 A Yes.

23 MR. KELLAHIN: If the Examiner please,  
24 we'd seek to amend our application to include those two sec-  
25 tions and ask permission that the case be re-advertised, but  
26 that we be allowed to put on our testimony today.  
27

28 MR. STAMETS: Okay, that will be fine.



1  
2 Let me make some notes to myself here.

3 All right, you may proceed.

4 Q Will you turn to Exhibit B and identify  
5 that for us?  
6

7 A Exhibit B is a net sandstone Isopach  
8 of the Pictured Cliffs formation. This is similar to the first  
9 map and I'm just trying to show that the Pictured Cliffs is  
10 continuous in our area of interest.

11 Q In your opinion is it continuous?

12 A Yes, sir.

13 Q All right, sir, would you turn to Ex-  
14 hibit C? Identify that exhibit for us.  
15

16 A Exhibit C is a decline curve on the  
17 Apache 30, showing the daily production from the Chacra as a  
18 straight line and the Pictured Cliffs as a dashed line with  
19 X's marking the production points from the date of initial  
20 production.

21 Q Okay, while we're looking at Exhibit C,  
22 let's turn to Exhibit D and have you identify that.

23 MR. STAMETS: While we're back on C,  
24 what's the -- the scale on that? Is the Chacra producing at  
25 the end of April 3 Mcf per day, is that correct?  
26

27 A That would be 30, and that is just a  
28 projection that I've used to more or less look at reserves.

1  
2 MR. STAMETS: And then the Pictured  
3 Cliffs was producing 100 --

4 A. Yes, sir.

5 MR. STAMETS: -- Mcf per day. Okay,  
6 thank you.

7  
8 Q. All right, would you identify Exhibit  
9 D for us?

10 A. Exhibit D is a pressure build-up that  
11 we performed on the Chacra formation in the Apache 30. And it  
12 shows that we have a reservoir pressure of around 1110 pounds.

13 MR. STAMETS: Bottom hole?

14 A. Yes, sir.

15 Q. All right, and I assume you have a simi-  
16 lar decline curve information for the Pictured Cliffs zone in  
17 this well?  
18

19 A. Yes, sir. Exhibit E is a pressure build-  
20 up that we performed on the Pictured Cliffs in the same well,  
21 the Apache 30, with a bottom hole reservoir pressure of 1005  
22 pounds.

23 Q. On the Pictured Cliffs it's 1005.

24 A. Yes, sir.

25 Q. Let's go back to your decline curve,  
26 Exhibit Number C, for a moment. Would you identify for us  
27 what the current volumes of production of gas, water, and oil,  
28

1  
2 if any, from both of the zones?

3 A The current production levels, the last  
4 production we show on this curve is early October, has dropped  
5 to approximately 220 --

6 Q For which zone?

7 A For the Pictured Cliffs --

8 Q All right.

9 A -- has dropped to about 220 Mcf a day,  
10 and the current levels for the Chacra have stabilized at around  
11 55 to 60 Mcf a day.

12 No, I would like to correct myself on  
13 that. I should not have worked off of memory.

14 The corrected is that the Pictured  
15 Cliffs is presently making around 260 Mcf a day and the Chacra  
16 is approximately 78 Mcf a day.

17 Q And that's a test as of when?

18 A That is a test as of last week, which  
19 would be November, approximately, 10th.

20 Q All right.

21 A And the week before.

22 Q Do either of these zones make any oil?

23 A Neither of the zones has made any oil  
24 or condensate. We have been having some trouble lately with  
25 the Chacra starting to produce one to one-half and up to two  
26  
27  
28

1  
2 barrels of water a day.

3 Q Does the Pictured Cliffs produce any  
4 water?

5 A No, we have not had any water production  
6 from the Pictured Cliffs yet.

7 Q Referring to Exhibit F, which is the  
8 next exhibit in order, Mr. Garvey, would you identify that for  
9 us?  
10

11 A Exhibit F is a formation density and  
12 compensated neutron log on the Apache 30, and I show on the  
13 log the top of the Pictured Cliffs and the top of the Chacra.  
14 I believe perforations are also marked on this log.

15 Q This is the log for the Apache 30?

16 A Yes, sir.

17 Q Now based upon the information you've  
18 compiled for the Apache 30 Well, how does that information  
19 compare and correlate to the information available on the No.  
20 29 Well?  
21

22 A We did not perform any pressure build-  
23 up data on the 29, so I can not make any comparison there.  
24 The production rates have been higher than what we've experienced  
25 on the Apache 29.  
26

27 On the Apache 29 I'll give you the pro-  
28 duction rates over the past week, have averaged around 70 Mcf

1  
2 for the Pictured Cliffs and approximately 14 Mcf for the Chacra,  
3 and we have had some water production again from the Chacra,  
4 in the order of a barrel day, which is giving us some pro-  
5 duction problems.

6 Q. What is the amount of fluid produced  
7 from the Chacra?  
8

9 A. Approximately 1 barrel of water per  
10 day.

11 Q. And that compares with 1 to 2, perhaps  
12 3 barrels in the No. 30 Well?

13 A. Yes, sir.

14 Q. Would you identify Exhibit G, is it?

15 A. G, yes. Exhibit G is just a table that  
16 details the cost to drill individual Pictured Cliffs and indi-  
17 vidual Chacra wells; reserves that we feel we can attribute to  
18 each zone; our royalties; gas values; costs; and basically an  
19 economic data sheet.  
20

21 What I'm trying to show here is that the  
22 Pictured Cliffs by itself is an economic zone in this area but  
23 that the Chacra formation, if you drilled a separate well and  
24 produced only the Chacra, it would not be a commercial zone.  
25

26 Q. How does the economics compare between  
27 drilling a dually completed Pictured Cliffs-Chacra well and one  
28 that is commingled?

1  
2 A The dually completed well has a higher  
3 return on investment for Cotton Petroleum. It will cost us an  
4 incremental of around \$65,000 to complete the Chacra and drill  
5 through the Chacra, and results in an ROI of approximately 3.9.  
6

7 Q Based upon your study, Mr. Garvey, is  
8 it more economic and efficient to produce these wells as com-  
9 mingled wells?

10 A Yes, sir, we feel it will be -- economics  
11 will improve as a commingled well and will be much more effi-  
12 cient to produce them commingled.

13 Q All right, let's look at Exhibit H.  
14 Would you identify Exhibit H for us?  
15

16 A Exhibit H is a schematic of the present  
17 downhole equipment in the Apache 30 and this is identical to  
18 the Apache 29.

19 We have a packer set at 3810, which is  
20 approximately 30 feet above the Chacra perforations. We have  
21 a sliding sleeve, if we need to do any clean-out work, where  
22 we can open that, and blast joints across the Pictured Cliffs  
23 formation, and tubing run to the packer to separate the Chacra  
24 and Pictured Cliffs production.  
25

26 Q What's the vertical separation between  
27 the Chacra and Pictured Cliffs perforations?

28 A Approximately 800 feet.

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Q And you've indicated a pressure differential based upon the pressure information in the No. 30 Well of about 105 pounds?

A Yes, sir.

Q In your opinion will the method of completion here pose any risk of allowing Chacra fluids to migrate up into the Pictured Cliffs perforations?

A No, sir, I don't believe that that would cause any difficulty. We have approximately 13 barrels of annulus and tubing volume between the Chacra and the Pictured Cliffs. At its present production of 1 to 2 barrels per day, that would take approximately a week before you could possibly build any fluid that high. You may have some back pressure on the Chacra, would take even longer.

The bottom hole pressures are also very similar, 105 pounds differential. I don't think that that would cause any problems.

Q Based upon your study, Mr. Garvey, is the production characteristics encountered in the Pictured Cliffs and Chacra in the 29 and 30 Wells the type of production characteristics you anticipate to encounter in the general area you've described under this application?

A Yes, sir, it is. From the rates that I've given you, the production does vary throughout this area,

1  
2 but we do expect to get 60 to 100 Mcf, or better, usually in  
3 the Pictured Cliffs and anywhere from 20 to 60 or 70 Mcf a  
4 day in the Chacra.

5 Q Are the working interests and royalty  
6 ownerships in common between the Pictured Cliffs and Chacra  
7 formations for all sections involved in the application?  
8

9 A Yes, sir, they are.

10 Q Do you have a proposal to the Examiner  
11 of how you propose to allocate production between the two form-  
12 ations?

13 A Yes, sir. We did not -- I looked at it  
14 based on cumulative productions and due to our shut-in time  
15 that we've encountered and we've had some trouble producing the  
16 Chacra, been venting some gas, unfortunately, to try and blow  
17 some of this water out of it, drips, and I didn't feel that that  
18 was a good way to go, I've looked at the past week's production,  
19 the rates that I gave you, and have ratio-ed that to come up  
20 with 80 percent of the production comes from the Pictured Cliffs;  
21 approximately 20 percent from the Chacra.  
22

23 This is more or less an average between  
24 the two wells.  
25

26 Q An average between wells 30 and 29?

27 A Yes, sir.

28 Q Okay. I believe you had one more exhibit



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28

and I've forgotten the number.

A. Yes, right there, I think that's Exhibit I.

Q. I.

A. And all we're showing here is just potential locations that we would like to drill in the future for commingling of production strictly from the Pictured Cliffs and the Chacra.

Q. In your opinion, Mr. Garvey, will approval of this application be in the best interests of conservation, the prevention of waste, and the protection of correlative rights?

A. I believe that it will be in the best interest of conservation of gas production, and I do not believe that it will affect correlative rights, based on the 160-acre spacing for most of these wells. We don't see any offset interference, so we should not cause any problems with correlative rights.

Q. In your opinion is the proposed downhole commingling the most effective and efficient way to produce these two zones?

A. Yes, sir, due to the water production from the Chacra we've had problems, we've had to drop (?) sticks to try and unload the water and get the well to stay on pro-

1  
2 duction. With the help of the Pictured Cliffs gas we should  
3 not have that trouble in lifting the water production from the  
4 Chacra.

5  
6 Q Were the Applicant Exhibits A through I  
7 prepared by you or compiled under your direction and super-  
8 vision?

9 A Yes, sir, they were.

10 MR. KELLAHIN: We move the introduction  
11 of Exhibits A through I.

12 MR. STAMETS: These exhibits will be  
13 admitted.

14 Are there questions of this witness?

15 MR. CHAVEZ: Yes, I have some questions,  
16  
17 please.

18 MR. STAMETS: Mr. Chavez.

19  
20 CROSS EXAMINATION

21 BY MR. CHAVEZ:

22 Q Frank Chavez, District Supervisor, Oil  
23 Commission, Aztec.

24 Mr. Garvey, have you done any sample  
25 testing or analysis of this Chacra water?

26 A We have not recently after the fracture  
27 stimulation we performed on these wells. We had performed some  
28

1  
2 to see if the wells had cleaned up and if we were producing  
3 back frac water or formation water.

4 We have so little information on what  
5 the Chacra water is like in this area, we don't have that in-  
6 formation. We don't know if we're producing formation water  
7 or the frac water back.  
8

9 Q So this one barrel a day, if your analy-  
10 sis would show it was, say, frac water, you might not be pro-  
11 ducing that much water later on?

12 A Well, there is that possibility. That  
13 is a question I really cannot answer very well.

14 Q The nature of the Chacra interval in  
15 there, do you expect this rate of production from the Chacra  
16 throughout this area -- do you expect the production rate from  
17 the Chacra to be about zero to 50 Mcf a day, the stabilized  
18 rate throughout this area that you're asking to be allowed to  
19 commingle?  
20

21 A Yes, sir, I do not expect rates much in  
22 excess of 50 Mcf per day in that area.

23 MR. CHAVEZ: Okay, I think that's all I  
24 have.  
25

26  
27 CROSS EXAMINATION

28 BY MR. STAMETS:

1  
2 Q Mr. Garvey, do you have any information  
3 of what the original pressures were in these two zones?

4 A Well, this is only from the pressure  
5 build-up data which was performed after we fraced and stimu-  
6 lated the wells, produced them for about three or four days to  
7 clean up, and then we ran a 7-day pressure build-up, and so  
8 that these, the 1005 and the 1110 I believe to be original --  
9

10 Q Okay.

11 A -- or very close to original bottom hole  
12 pressures.

13 Q One other question that something on  
14 Exhibit C and your testimony look a little strange, Exhibit C  
15 seems to show that you're making 30 Mcf a day from No. 30, and  
16 yet the testimony is it's currently producing 78.  
17

18 A Yes, sir. What -- I should clarify Ex-  
19 hibit C. What I've done, is I have the decline on a daily rate  
20 shown for both zones, and then I have a straight smooth line,  
21 a curve line, through the production. That is an extrapolation  
22 that I used to calculate reserves for the individual zones.  
23 If you took the -- this line where immediately above it it says  
24 Chacra 10 percent decline to economic limit and extrapolated  
25 that to an economic limit, you'd come up with a little over 1/10th  
26 of a Bcf of reserves for that zone.  
27

28 The production for the Chacra is higher

1  
2 than the approximately 40 Mcf a day I show on my extrapolation  
3 at this point. But as I said, we have been having production  
4 problems with water and we've been using soap sticks to try and  
5 lighten this fluid gradient so that we can produce the well,  
6 which also increase our operating costs substantially for this  
7 well and would -- we'd ultimately end up with about the same  
8 reserves, I believe, on the well, but the production rates are  
9 different.  
10

11 Q How about the Pictured Cliffs? You  
12 show it had about 100 Mcf and the report, 260?

13 A Well, I show -- that is again the same  
14 thing. I'm showing an extrapolation of present production rate,  
15 and I believe you're looking out towards April of 1981, where  
16 you see the 100 Mcf, and back in the first part of November  
17 here, my extrapolation would show about 220 Mcf a day, and it  
18 has stabilized at approximately 260.  
19

20 Q Okay. That wasn't clear to me when we  
21 were discussing this exhibit.

22 As far as the formula to allocate pro-  
23 duction between these two zones, would you be willing to work  
24 that out on an individual case basis with our district super-  
25 visor?  
26

27 A Yes, sir, we would.

28 Q Have you given any thought to requesting

1  
2 an extension of vertical limits of the Pictured Cliffs Pool,  
3 at least in this area?

4 A. No, sir, I have not given that any  
5 thought at all.

6 Q. Is the Chacra productive outside the  
7 area being considered here today?

8 A. We -- the closest wells that I'm aware  
9 of that produce from the Chacra are approximately five to six  
10 miles to the northwest of our production. There is the poten-  
11 tial that the Chacra may be productive in between.

12 Q. I did understand you to say, didn't I,  
13 that the ownership was the same in both zones?

14 A. Yes, sir.

15 MR. STAMETS: Any other questions of the  
16 witness?  
17

18 MR. CHAVEZ: I've got a couple more.

19 MR. STAMETS: Mr. Chavez.  
20

21  
22 RECROSS EXAMINATION

23 BY MR. CHAVEZ:

24 Q. What was the length of time it was shut  
25 in on this No. 30, the Chacra zone, to get this Horner plot?  
26

27 A. During recompletion and then the comple-  
28 tion to the Pictured Cliffs, what --

1  
2 Q What was the total length of time the  
3 well was shut-in to --

4 Q Oh, for the pressure build-up. 180  
5 hours.

6 Q 180 hours? Do you feel that that was  
7 sufficient to establish the --  
8

9 A I would personally have preferred a  
10 longer period of time. If any of the tight sands, like we're  
11 dealing with here, you could go double that length of time and  
12 not build-up the -- reach a plateau and an absolute reservoir  
13 pressure.

14 The pressure build-ups here would pro-  
15 bably be on the high side and I felt that the margin for error  
16 was small enough, due to the length of time we let it flow  
17 prior to the build-up, that it's going to be probably within  
18 15 or 20 pounds of the reservoir pressure, the number that I  
19 have on the extrapolation.  
20

21 Q Okay. And the other question is, on  
22 your Exhibit A it shows the Chacra formation net sandstone  
23 Isopach. You have the contour line of 31 feet running through  
24 the Well No. 30; however you show only 21 feet of perforations  
25 in the formation. Do you expect that perhaps only --  
26

27 A Well, this is -- this is net sandstone,  
28 net potential pay. We perforated the porosity peaks and then

1  
2 in the fracture stimulation we would assume that we caught the  
3 interval in between the perforations.

4 Q Would you expect that perhaps this amount  
5 of perforations -- this quantity of the net sand would be  
6 productive throughout this interval?  
7

8 A I believe so.

9 Q About (inaudible.)

10 A Yes, sir.

11 MR. CHAVEZ: Okay, that's all.

12 MR. STAMETS: Any other questions? The  
13 witness may be excused.

14 Mr. Dugan, I believe you indicated you  
15 had a statement you'd like to make.  
16

17 MR. DUGAN: Tom Dugan with Dugan Pro-  
18 duction Corporation. We own a strip well in the northeast  
19 quarter of Section 4, 24, 4, in the same area, and we'd like  
20 to go on the record as supporting Cotton Petroleum in their  
21 application.  
22

23 MR. STAMETS: Anything further in this  
24 case?

25 The case will be taken under advisement.

26  
27 (Hearing concluded.)  
28



C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREPY CERTIFY that  
the foregoing Transcript of Hearing before the Oil Conserva-  
tion Division was reported by me; that the said transcript  
is a full, true, and correct record of the hearing, prepared  
by me to the best of my ability.

Sally W. Boyd C.S.R.

SALLY W. BOYD, C.S.R.

Rt. 1 Box 193-B  
Santa Fe, New Mexico 87501  
Phone (505) 455-7409

I do hereby certify that the foregoing is  
a true and correct copy of the transcript of the  
hearing held on 11-7-80 at 7046.  
Richard H. Stamm, Examiner  
Oil Conservation Division

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
STATE LAND OFFICE BLDG.  
SANTA FE, NEW MEXICO

12 November 1980

EXAMINER HEARING

-----  
IN THE MATTER OF:

Application of Cotton Petroleum Cor- )  
poration for downhole commingling, )  
Rio Arriba County, New Mexico. )

CASE  
7046

-----  
BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation  
Division:

Ernest L. Padilla, Esq.  
Legal Counsel to the Division  
State Land Office Bldg.  
Santa Fe, New Mexico 87501

For the Applicant:

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Santa Fe, New Mexico 87501

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I N D E X

GLENN GARVEY

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1  
2 MR. STAMETS: Call next Case 7046.

3 MR. PADILLA: Application of Cotton  
4 Petroleum Corporation for downhole corringling, Rio Arriba  
5 County, New Mexico.  
6

7 MR. KELLAHIN: I'm Tom Kellahin of  
8 Santa Fe, New Mexico, appearing on behalf of the applicant,  
9 and I have one witness.

10 MR. STAMETS: I'd like to have the wit-  
11 ness stand and be sworn, please.  
12

13 (Witness sworn.)  
14

15 GLENN GARVEY  
16 being called as a witness and being duly sworn upon his  
17 oath, testified as follows, to-wit:  
18

19  
20 DIRECT EXAMINATION

21 BY MR. KELLAHIN:

22 Q Would you please state your name, by  
23 whom you're employed?  
24

25 A My name is Glenn Garvey. I am employed  
26 by Cotton Petroleum Corporation.

27 Q Mr. Garvey, have you previously testi-  
28 fied before the Oil Conservation Division?

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A. No, I have not.

Q. Would you state for the Examiner when and where you obtained your degree?

A. I obtained my degree from Michigan Technological University in 1975, and it is a Bachelor of Science in geological engineering.

Q. Subsequent to graduation where have you been employed in that capacity?

A. I've been employed with Texaco for four years, through mid-79, and since that time I've been employed with Cotton Petroleum as a Senior Engineer.

Q. Pursuant to your duties as a Senior Engineer with Cotton Petroleum Corporation, have you made a study of the facts surrounding this particular application?

A. Yes, I have.

Q. And in addition, have you prepared or compiled certain exhibits?

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Garvey as an expert witness.

MR. STAMETS: The witness is considered qualified.

Q. Mr. Garvey, would you turn to what we've marked as Exhibit Number One. I'm sorry, it's marked as

1  
2 Exhibit A. Would you generally identify that exhibit for us?

3 A. This exhibit is a net sandstone Isopach  
4 of the Chacra formation in Township 24 North, Range 4 West of  
5 Rio Arriba County.  
6

7 Q What does the applicant seek to accom-  
8 plish in this application?

9 A We would like to downhole commingle the  
10 Pictured Cliffs and the Chacra formations in this area and  
11 the basic reason for this exhibit is to show that we believe  
12 the Chacra is a continuous formation in the area that we are  
13 concerned with.  
14

15 Q Do you have any Chacra-Pictured Cliffs  
16 wells currently in existence that you desire to downhole com-  
17 mingle?

18 A Yes, sir, we have two dualled wells, the  
19 Apache 30, which is located in Section 3, and the Apache --

20 Q Just a minute. All right, sir.

21 A And the Apache 29, which is located in  
22 Section 14, in the northwest quarter.  
23

24 MR. STAMETS: Well, wait a minute.

25 A It's in the southeast quarter.

26 MR. STAMETS: All right, now what's the  
27 second well, please?

28 A It is the Apache 29, which is located

1  
2 in the northwest quarter of Section 14.

3 MR. STAMETS: Is that the one that looks  
4 like twenty --

5 A It says 24. Unfortunately, the well  
6 numbers were not put on there, just the thickness of the sand.

7 MR. STAMETS: I see, and that's the one  
8 by the, what, the 24-foot contour?

9 A Yes, sir.

10 MR. STAMETS: Okay. All right.

11 Q Now both of those wells are currently  
12 dually completed as Pictured Cliffs-Chacra wells?

13 A Yes, sir.

14 Q All right. What is the significance of  
15 the shaded area, Mr. Garvey?

16 A The shaded area is our Gallup-Dakota  
17 production acreage. Our interest is slightly different for  
18 Chacra and Pictured Cliffs, but it's essentially the same in  
19 this area. This is just Cotton Petroleum controlled acreage.

20 Q Apart from approval for the commingling  
21 for those two wells, are you seeking any other approval for  
22 future commingled Chacra-Pictured Cliffs wells in the area?

23 A Yes, sir, we have several locations that  
24 we would like to drill within the next few years that we would  
25 like to downhole commingle.  
26  
27  
28

Q Do you have a description of the acreage for which you seek approval at this point for future commingled wells?

A Yes, sir.

Q Would you identify that acreage for us?

A The acreage would be Sections 1 through 4, 9 through 12, Sections 13, 14, 23, and 24, of Township 24 North, Range 4 West, Rio Arriba County.

MR. STAMETS: If I might point out that that's not the acreage that the docket sets out, and I wonder now what's been advertised.

Let's see, Section 12 was left out, and Section 14 is not shown on the docket. We'll have to -- and as a matter of fact, they are not in the application.

A Okay.

Q Do you intend to include Sections 12 and 14 as a part of the general development of commingled production from the Chacra and Pictured Cliffs?

A Yes.

MR. KELLAHIN: If the Examiner please, we'd seek to amend our application to include those two sections and ask permission that the case be re-advertised, but that we be allowed to put on our testimony today.

MR. STAMETS: Okay, that will be fine.



1  
2 Let me make some notes to myself here.

3 All right, you may proceed.

4 Q Will you turn to Exhibit B and identify  
5 that for us?  
6

7 A Exhibit B is a net sandstone Isopach  
8 of the Pictured Cliffs formation. This is similar to the first  
9 map and I'm just trying to show that the Pictured Cliffs is  
10 continuous in our area of interest.

11 Q In your opinion is it continuous?

12 A Yes, sir.

13 Q All right, sir, would you turn to Ex-  
14 hibit C? Identify that exhibit for us.  
15

16 A Exhibit C is a decline curve on the  
17 Apache 30, showing the daily production from the Chacra as a  
18 straight line and the Pictured Cliffs as a dashed line with  
19 X's marking the production points from the date of initial  
20 production.

21 Q Okay, while we're looking at Exhibit C,  
22 let's turn to Exhibit D and have you identify that.  
23

24 MR. STAMETS: While we're back on C,  
25 what's the -- the scale on that? Is the Chacra producing at  
26 the end of April 3 Mcf per day, is that correct?

27 A That would be 30, and that is just a  
28 projection that I've used to more or less look at reserves.

1  
2 MR. STAMETS: And then the Pictured  
3 Cliffs was producing 100 --

4 A Yes, sir.

5 MR. STAMETS: -- Mcf per day. Okay,  
6  
7 thank you.

8 Q All right, would you identify Exhibit  
9 D for us?

10 A Exhibit D is a pressure build-up that  
11 we performed on the Chacra formation in the Apache 30. And it  
12 shows that we have a reservoir pressure of around 1110 pounds.

13 MR. STAMETS: Bottom hole?

14 A Yes, sir.

15 Q All right, and I assume you have a simi-  
16 lar decline curve information for the Pictured Cliffs zone in  
17 this well?

18 A Yes, sir. Exhibit E is a pressure build-  
19 up that we performed on the Pictured Cliffs in the same well,  
20 the Apache 30, with a bottom hole reservoir pressure of 1005  
21 pounds.  
22

23 Q On the Pictured Cliffs it's 1005.

24 A Yes, sir.

25 Q Let's go back to your decline curve,  
26 Exhibit Number C, for a moment. Would you identify for us  
27 what the current volumes of production of gas, water, and oil,  
28

1  
2 if any, from both of the zones?

3 A. The current production levels, the last  
4 production we show on this curve is early October, has dropped  
5 to approximately 220 --  
6

7 Q. For which zone?

8 A. For the Pictured Cliffs --

9 Q. All right.

10 A. -- has dropped to about 220 Mcf a day,  
11 and the current levels for the Chacra have stabilized at around  
12 55 to 60 Mcf a day.

13 No, I would like to correct myself on  
14 that. I should not have worked off of memory.

15 The corrected is that the Pictured  
16 Cliffs is presently making around 260 Mcf a day and the Chacra  
17 is approximately 78 Mcf a day.

18 Q. And that's a test as of when?

19 A. That is a test as of last week, which  
20 would be November, approximately, 10th.

21 Q. All right.

22 A. And the week before.

23 Q. Do either of these zones make any oil?

24 A. Neither of the zones has made any oil  
25 or condensate. We have been having some trouble lately with  
26 the Chacra starting to produce one to one-half and up to two  
27  
28

1  
2 barrels of water a day.

3 Q Does the Pictured Cliffs produce any  
4 water?

5 A No, we have not had any water production  
6 from the Pictured Cliffs yet.

7  
8 Q Referring to Exhibit F, which is the  
9 next exhibit in order, Mr. Garvey, would you identify that for  
10 us?

11 A Exhibit F is a formation density and  
12 compensated neutron log on the Apache 30, and I show on the  
13 log the top of the Pictured Cliffs and the top of the Chacra.  
14 I believe perforations are also marked on this log.

15 Q This is the log for the Apache 30?

16 A Yes, sir.

17 Q Now based upon the information you've  
18 compiled for the Apache 30 Well, how does that information  
19 compare and correlate to the information available on the No.  
20 29 Well?  
21

22 A We did not perform any pressure build-  
23 up data on the 29, so I can not make any comparison there.  
24 The production rates have been higher than what we've experienced  
25 on the Apache 29.  
26

27 On the Apache 29 I'll give you the pro-  
28 duction rates over the past week, have averaged around 70 Mcf

1  
2 for the Pictured Cliffs and approximately 14 Mcf for the Chacra,  
3 and we have had some water production again from the Chacra,  
4 in the order of a barrel a day, which is giving us some pro-  
5 duction problems.

6 Q What is the amount of fluid produced  
7 from the Chacra?

8 A Approximately 1 barrel of water per  
9 day.

10 Q And that compares with 1 to 2, perhaps  
11 3 barrels in the No. 30 Well?

12 A Yes, sir.

13 Q Would you identify Exhibit G, is it?

14 A G, yes. Exhibit G is just a table that  
15 details the cost to drill individual Pictured Cliffs and indi-  
16 vidual Chacra wells; reserves that we feel we can attribute to  
17 each zone; our royalties; gas values; costs; and basically an  
18 economic data sheet.

19 Q What I'm trying to show here is that the  
20 Pictured Cliffs by itself is an economic zone in this area but  
21 that the Chacra formation, if you drilled a separate well and  
22 produced only the Chacra, it would not be a commercial zone.

23 Q How does the economics compare between  
24 drilling a dually completed Pictured Cliffs-Chacra well and one  
25 that is commingled?  
26  
27  
28

1  
2 A The dually completed well has a higher  
3 return on investment for Cotton Petroleum. It will cost us an  
4 incremental of around \$65,000 to complete the Chacra and drill  
5 through the Chacra, and results in an ROI of approximately 3.9.  
6

7 Q Based upon your study, Mr. Garvey, is  
8 it more economic and efficient to produce these wells as com-  
9 mingled wells?

10 A Yes, sir, we feel it will be -- economics  
11 will improve as a commingled well and will be much more effi-  
12 cient to produce them commingled.

13 Q All right, let's look at Exhibit H.  
14 Would you identify Exhibit H for us?  
15

16 A Exhibit H is a schematic of the present  
17 downhole equipment in the Apache 30 and this is identical to  
18 the Apache 29.

19 We have a packer set at 3810, which is  
20 approximately 30 feet above the Chacra perforations. We have  
21 a sliding sleeve, if we need to do any clean-out work, where  
22 we can open that, and blast joints across the Pictured Cliffs  
23 formation, and tubing run to the packer to separate the Chacra  
24 and Pictured Cliffs production.  
25

26 Q What's the vertical separation between  
27 the Chacra and Pictured Cliffs perforations?

28 A Approximately 800 feet.

1  
2 Q And you've indicated a pressure differ-  
3 ential based upon the pressure information in the No. 30 Well  
4 of about 105 pounds?

5 A Yes, sir.

6 Q In your opinion will the method of com-  
7 pletion here pose any risk of allowing Chacra fluids to migrate  
8 up into the Pictured Cliffs perforations?  
9

10 A No, sir, I don't believe that that would  
11 cause any difficulty. We have approximately 13 barrels of  
12 annulus and tubing volume between the Chacra and the Pictured  
13 Cliffs. At its present production of 1 to 2 barrels per day,  
14 that would take approximately a week before you could possibly  
15 build any fluid that high. You may have some back pressure on  
16 the Chacra, would take even longer.  
17

18 The bottom hole pressures are also very  
19 similar, 105 pounds differential. I don't think that that would  
20 cause any problems.

21 Q Based upon your study, Mr. Garvey, is  
22 the production characteristics encountered in the Pictured  
23 Cliffs and Chacra in the 29 and 30 Wells the type of production  
24 characteristics you anticipate to encounter in the general area  
25 you've described under this application?  
26

27 A Yes, sir, it is. From the rates that  
28 I've given you, the production does vary throughout this area,

1  
2 but we do expect to get 60 to 100 Mcf, or better, usually in  
3 the Pictured Cliffs and anywhere from 20 to 60 or 70 Mcf a  
4 day in the Chacra.

5 Q Are the working interests and royalty  
6 ownerships in common between the Pictured Cliffs and Chacra  
7 formations for all sections involved in the application?  
8

9 A Yes, sir, they are.

10 Q Do you have a proposal to the Examiner  
11 of how you propose to allocate production between the two form-  
12 ations?

13 A Yes, sir. We did not -- I looked at it  
14 based on cumulative productions and due to our shut-in time  
15 that we've encountered and we've had some trouble producing the  
16 Chacra, been venting some gas, unfortunately, to try and blow  
17 some of this water out of it, drips, and I didn't feel that that  
18 was a good way to go, I've looked at the past week's production,  
19 the rates that I gave you, and have ratio-ed that to come up  
20 with 80 percent of the production comes from the Pictured Cliffs;  
21 approximately 20 percent from the Chacra.  
22

23 This is more or less an average between  
24 the two wells.  
25

26 Q An average between wells 30 and 29?

27 A Yes, sir.

28 Q Okay. I believe you had one more exhibit



1  
2 and I've forgotten the number.

3 A. Yes, right there, I think that's Exhibit  
4 I.

5 Q. I.

6 A. And all we're showing here is just poten-  
7 tial locations that we would like to drill in the future for  
8 commingling of production strictly from the Pictured Cliffs and  
9 the Chacra.  
10

11 Q. In your opinion, Mr. Garvey, will appro-  
12 val of this application be in the best interests of conserva-  
13 tion, the prevention of waste, and the protection of correla-  
14 tive rights?  
15

16 A. I believe that it will be in the best  
17 interest of conservation of gas production, and I do not be-  
18 lieve that it will affect correlative rights, based on the 160-  
19 acre spacing for most of these wells. We don't see any offset  
20 interference, so we should not cause any problems with corre-  
21 lative rights.

22 Q. In your opinion is the proposed downhole  
23 commingling the most effective and efficient way to produce  
24 these two zones?  
25

26 A. Yes, sir, due to the water production  
27 from the Chacra we've had problems, we've had to drop (?) sticks  
28 to try and unload the water and get the well to stay on pro-

1  
2 duction. With the help of the Pictured Cliffs gas we should  
3 not have that trouble in lifting the water production from the  
4 Chacra.  
5

6 Q Were the Applicant Exhibits A through I  
7 prepared by you or compiled under your direction and super-  
8 vision?

9 A Yes, sir, they were.

10 MR. KELLAMIN: We move the introduction  
11 of Exhibits A through I.

12 MR. STAMETS: These exhibits will be  
13 admitted.  
14

15 Are there questions of this witness?

16 MR. CHAVEZ: Yes, I have some questions,  
17 please.

18 MR. STAMETS: Mr. Chavez.  
19

20 CROSS EXAMINATION

21 BY MR. CHAVEZ:

22 Q Frank Chavez, District Supervisor, Oil  
23 Commission, Aztec.  
24

25 Mr. Garvey, have you done any sample  
26 testing or analysis of this Chacra water?

27 A We have not recently after the fracture  
28 stimulation we performed on these wells. We had performed some

1  
2 to see if the wells had cleaned up and if we were producing  
3 back frac water or formation water.

4  
5 We have so little information on what  
6 the Chacra water is like in this area, we don't have that in-  
7 formation. We don't know if we're producing formation water  
8 or the frac water back.

9 Q So this one barrel a day, if your analy-  
10 sis would show it was, say, frac water, you might not be pro-  
11 ducing that much water later on?

12 A Well, there is that possibility. That  
13 is a question I really cannot answer very well.

14 Q The nature of the Chacra interval in  
15 there, do you expect this rate of production from the Chacra  
16 throughout this area -- do you expect the production rate from  
17 the Chacra to be about zero to 50 Mcf a day, the stabilized  
18 rate throughout this area that you're asking to be allowed to  
19 commingle?  
20

21 A Yes, sir, I do not expect rates much in  
22 excess of 50 Mcf per day in that area.

23 MR. CHAVEZ: Okay, I think that's all I  
24 have.  
25

26  
27 CROSS EXAMINATION

28 BY MR. STAMETS:

1  
2 Q Mr. Garvey, do you have any information  
3 of what the original pressures were in these two zones?

4 A Well, this is only from the pressure  
5 build-up data which was performed after we fraced and stimu-  
6 lated the wells, produced them for about three or four days to  
7 clean up, and then we ran a 7-day pressure build-up, and so  
8 that these, the 1005 and the 1110 I believe to be original --

9  
10 Q Okay.

11 A -- or very close to original bottom hole  
12 pressures.

13 Q One other question that something on  
14 Exhibit C and your testimony look a little strange, Exhibit C  
15 seems to show that you're making 30 Mcf a day from No. 30, and  
16 yet the testimony is it's currently producing 78.

17 A Yes, sir. What -- I should clarify Ex-  
18 hibit C. What I've done, is I have the decline on a daily rate  
19 shown for both zones, and then I have a straight smooth line,  
20 a curve line, through the production. That is an extrapolation  
21 that I used to calculate reserves for the individual zones.  
22 If you took the -- this line where immediately above it it says  
23 Chacra 10 percent decline to economic limit and extrapolated  
24 that to an economic limit, you'd come up with a little over 1/10th  
25 of a Bcf of reserves for that zone.

26  
27  
28 The production for the Chacra is higher

1  
2 than the approximately 40 Mcf a day I show on my extrapolation  
3 at this point. But as I said, we have been having production  
4 problems with water and we've been using soap sticks to try and  
5 lighten this fluid gradient so that we can produce the well,  
6 which also increase our operating costs substantially for this  
7 well and would -- we'd ultimately end up with about the same  
8 reserves, I believe, on the well, but the production rates are  
9 different.  
10

11 Q How about the Pictured Cliffs? You  
12 show it had about 100 Mcf and the report, 260?

13 A Well, I show -- that is again the same  
14 thing. I'm showing an extrapolation of present production rate,  
15 and I believe you're looking out towards April of 1981, where  
16 you see the 100 Mcf, and back in the first part of November  
17 here, my extrapolation would show about 220 Mcf a day, and it  
18 has stabilized at approximately 260.  
19

20 Q Okay. That wasn't clear to me when we  
21 were discussing this exhibit.

22 As far as the formula to allocate pro-  
23 duction between these two zones, would you be willing to work  
24 that out on an individual case basis with our district super-  
25 visor?  
26

27 A Yes, sir, we would.

28 Q Have you given any thought to requesting

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an extension of vertical limits of the Pictured Cliffs Pool,  
at least in this area?

A No, sir, I have not given that any  
thought at all.

Q Is the Chacra productive outside the  
area being considered here today?

A We -- the closest wells that I'm aware  
of that produce from the Chacra are approximately five to six  
miles to the northwest of our production. There is the poten-  
tial that the Chacra may be productive in between.

Q I did understand you to say, didn't I,  
that the ownership was the same in both zones?

A Yes, sir.

MR. STAMETS: Any other questions of the  
witness?

MR. CHAVEZ: I've got a couple more.

MR. STAMETS: Mr. Chavez.

RECROSS EXAMINATION

BY MR. CHAVEZ:

Q What was the length of time it was shut  
in on this No. 30, the Chacra zone, to get this Horner plot?

A During recompletion and then the comple-  
tion to the Pictured Cliffs, what --

Q What was the total length of time the well was shut-in to --

Q Oh, for the pressure build-up. 180 hours.

Q 180 hours? Do you feel that that was sufficient to establish the --

A I would personally have preferred a longer period of time. If any of the tight sands, like we're dealing with here, you could go double that length of time and not build-up the -- reach a plateau and an absolute reservoir pressure.

The pressure build-ups here would probably be on the high side and I felt that the margin for error was small enough, due to the length of time we let it flow prior to the build-up, that it's going to be probably within 15 or 20 pounds of the reservoir pressure, the number that I have on the extrapolation.

Q Okay. And the other question is, on your Exhibit A it shows the Chacra formation net sandstone Isopach. You have the contour line of 31 feet running through the Well No. 30; however you show only 21 feet of perforations in the formation. Do you expect that perhaps only --

A Well, this is -- this is net sandstone, net potential pay. We perforated the porosity peaks and then

1  
2 in the fracture stimulation we would assume that we caught the  
3 interval in between the perforations.

4 Q Would you expect that perhaps this amount  
5 of perforations -- this quantity of the net sand would be  
6 productive throughout this interval?  
7

8 A I believe so.

9 Q About (inaudible.)

10 A Yes, sir.

11 MR. CHAVEZ: Okay, that's all.

12 MR. STAMETS: Any other questions? The  
13 witness may be excused.

14 Mr. Dugan, I believe you indicated you  
15 had a statement you'd like to make.

16 MR. DUGAN: Tom Dugan with Dugan Pro-  
17 duction Corporation. We own a strip well in the northeast  
18 quarter of Section 4, 24, 4, in the same area, and we'd like  
19 to go on the record as supporting Cotton Petroleum in their  
20 application.  
21

22 MR. STAMETS: Anything further in this  
23 case?  
24

25 The case will be taken under advisement.

26  
27 (Hearing concluded.)  
28



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C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREPY CERTIFY that  
the foregoing Transcript of Hearing before the Oil Conserva-  
tion Division was reported by me; that the said transcript  
is a full, true, and correct record of the hearing, prepared  
by me to the best of my ability.

\_\_\_\_\_

I do hereby certify that the foregoing is  
a correct and true copy of the transcript  
the hearing was held on \_\_\_\_\_  
heard by \_\_\_\_\_

\_\_\_\_\_, Examiner  
Oil Conservation Division

**SALLY W. BOYD, C.S.R.**  
Rt. 1 Box 193-B  
Santa Fe, New Mexico 87501  
Phone (505) 455-7409

COSTS TO DRILL INDIVIDUAL WELLS

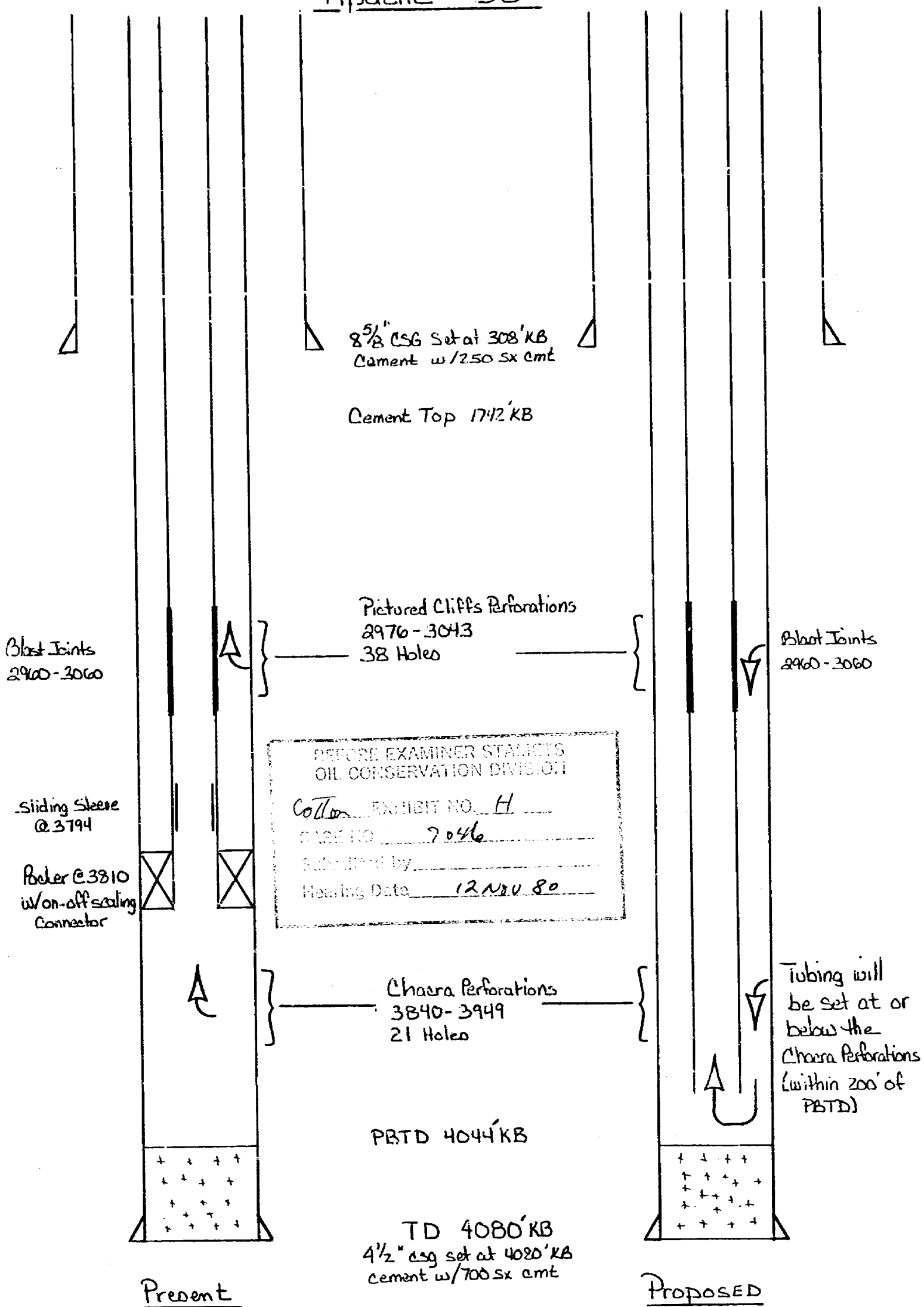
	<u>Pictured Cliffs</u>	<u>Chacra</u>	<u>Differential</u>
TD	3100'	4100'	1000'
Dry Hole Costs	\$110,000	\$120,000	\$10,000
Completion Costs	\$ 90,000	\$ 95,000	\$ 5,000
Total Well Cost	\$200,000	\$215,000	\$15,000
Reserves Based on Decline Curves	0.4 BCF	0.125 BCF	
Royalty		25%	
Gas Value		2.25/MMBTU	
Gas BTU Content		1200 BTU/CF	
Gas Value		\$2.70/MCF	
Reserve Value	\$810,000	\$253,100	
Operating Costs (\$500/mo for 20 yrs)	\$120,000	\$120,000	
Net Value	\$690,000	\$133,100	
ROI = $\frac{\text{Net value}}{\text{Well cost}}$	3.45	0.62	

Incremental cost to drill through the Chacra Formation and comingle production with the Pictured Cliffs is \$65,000. This results in an ROI of 3.9 for the Chacra Formation.

BEFORE EXAMINER STAMETS OIL CONSERVATION DIVISION	
<i>Colm</i>	EXHIBIT NO. <u>G</u>
CASE NO.	<u>7046</u>
Submitted by	_____
Hearing Date	<u>12 Nov 80</u>

*Exhibit G*

# Apache 30



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
STATE LAND OFFICE BLDG.  
SANTA FE, NEW MEXICO  
15 October 1980

EXAMINER HEARING

IN THE MATTER OF:

Application of Cotton Petroleum Cor-  
poration for downhole commingling,  
Rio Arriba County, New Mexico.

CASE  
7046

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation  
Division:

Ernest L. Padilla, Esq.  
Legal Counsel to the Division  
State Land Office Bldg.  
Santa Fe, New Mexico 87501

For the Applicant:

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Rt. 1 Box 193-B  
Santa Fe, New Mexico 87501  
Phone (505) 455-7409

1 MR. STAMETS: We'll call Case 7046.

2 MR. PADILLA: Application of Cotton Pet-  
3 roleum Corporation for downhole commingling, Rio Arriba  
4 County, New Mexico.

5 MR. KELLAHIN: If the Examiner please,  
6 we'd like to continue that case to November 12th.

7 MR. STAMETS: Case 7046 will be continued  
8 to the November 12th Examiner Hearing.

9  
10 (Hearing concluded.)  
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25

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Phone (505) 455-7409

## C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd C.S.R.

SALLY W. BOYD, C.S.R.

Rt. 1 Box 191-B  
Santa Fe, New Mexico 87501  
Phone (505) 455-7409

I do hereby certify that the foregoing is a complete and correct transcript of the hearing held on 10-15-70 at Santa Fe, New Mexico. 7046, 80.  
Richard L. Hunt Examiner  
Oil Conservation Division

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
STATE LAND OFFICE BLDG.  
SANTA FE, NEW MEXICO  
15 October 1980

EXAMINER HEARING

IN THE MATTER OF:

Application of Cotton Petroleum Cor-  
poration for downhole commingling,  
Rio Arriba County, New Mexico.

CASE  
7046

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation  
Division:

Ernest L. Padilla, Esq.  
Legal Counsel to the Division  
State Land Office Bldg.  
Santa Fe, New Mexico 87501

For the Applicant:

W. Thomas Kellahin, Esq.  
KELLAHIN & KELLAHIN  
500 Don Gaspar  
Santa Fe, New Mexico 87501

SALLY W. BOYD, C.S.R.

Rt. 1 Box 191-B  
Santa Fe, New Mexico 87501  
Phone (505) 455-7409

MR. STAMETS: We'll call Case 7046.

MR. PABILIA: Application of Cotton Petroleum Corporation for downhole commingling, Rio Arriba County, New Mexico.

MR. KELLAMIN: If the Examiner please, we'd like to continue that case to November 12th.

MR. STAMETS: Case 7046 will be continued to the November 12th Examiner Hearing.

(Hearing concluded.)



C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that  
the foregoing Transcript of Hearing before the Oil Conserva-  
tion Division was reported by me; that the said transcript  
is a full, true, and correct record of the hearing, prepared  
by me to the best of my ability.

SALLY W. BOYD, C.S.R.

Rt. 1 Box 193-B  
Santa Fe, New Mexico 87501  
Phone (505) 455-7409

I do hereby certify that the foregoing is  
a correct and true transcript of the hearing in  
the case of \_\_\_\_\_  
heard by me on \_\_\_\_\_, 19\_\_\_\_.

\_\_\_\_\_, Examiner  
Oil Conservation Division

Dockets Nos. 37-80 and 38-80 are tentatively set for November 25 and December 10, 1980. Applications for hearing must be filed at least 22 days in advance of hearing date.

**DOCKET: EXAMINER HEARING - WEDNESDAY - NOVEMBER 12, 1980**

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

- ALLOWABLE:** (1) Consideration of the allowable production of gas for December, 1980, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.
- (2) Consideration of the allowable production of gas for December, 1980, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.
- CASE 7076:** Application of Vista Resources, Inc. for an unorthodox gas well location, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its John H. Dashko Federal Well No. 1 to be drilled 2510 feet from the South line and 790 feet from the East line of Section 11, Township 24 North, Range 7 West, Basin-Dakota Pool, the E/2 of said Section 11 to be dedicated to the well.
- CASE 7077:** Application of Threshold Development Company for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its Conoco "10" State Com Well No. 1 located in Unit I of Section 10, Township 19 South, Range 29 East, Turkey Track Field, to produce oil from the Wolfcamp formation and gas from the Atoka formation through parallel strings of tubing.
- CASE 7046:** (Continued from October 15, 1980, Examiner Hearing)
- Application of Cotton Petroleum Corporation for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Chacra and Pictured Cliffs production in the wellbores of wells in the South Blanco-Pictured Cliffs Pool located in Sections 1, 2, 3, 4, 9, 10, 11, 13, 23, and 24, Township 24 North, Range 4 West.
- CASE 7078:** Application of Conoco Inc. for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its Warren Unit Well No. 82 located in Unit G of Section 35, Township 20 South, Range 38 East, to produce oil from the Blinberry Oil and Gas or Warren-Tubb Pools and the D-K Abo Pool.
- CASE 7079:** Application of HNG Oil Company for the amendment of Order No. R-5727, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-5727 to include the entire Pennsylvanian formation under the compulsory pooling order rather than only the Morrow formation as previously ordered.
- CASE 7080:** Application of Franks Petroleum, Inc. for an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled 660 feet from the North and East lines of Section 9, Township 21 South, Range 32 East, Hat Mesa-Morrow Gas Pool, the E/2 of said Section 9 to be dedicated to the well.
- CASE 7081:** Application of Belco Petroleum Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 19, Township 23 South, Range 28 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7070:** (Continued from October 29, 1980, Examiner Hearing)
- Application of Tesoro Petroleum Corporation for a pilot caustic flood project, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a one-acre pilot caustic flood project in the Hospah Field by the injection of caustic fluid into the Seven Lakes Sand of the Upper Hospah Field at an approximate depth of 300-500 feet through four injection wells in Unit K of Section 1, Township 17 North, Range 9 West.
- CASE 7082:** Application of Maralo, Inc. and Dalport Oil Corporation for a waterflood project, Lea County, New Mexico. Applicants, in the above-styled cause, seek authority to institute a joint waterflood project on Dalport's Winters Lease offsetting Maralo's Jalmat Yates Unit waterflood project by the injection of water into the Yates-Seven Rivers-Queen formations through a well to be jointly drilled at an unorthodox location 1260 feet from the South line and 1250 feet from the West line of Section 7, Township 25 South, Range 36 East, Jalmat Pool.

- CASE 7083:** Application of Bass Enterprises Production Co. for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp, Cisco, Canyon and Strawn formations underlying the S/2 NE/4 of Section 13, Township 16 South, Range 36 East, Northeast Lovington Field, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7005:** (Continued from October 29, 1980, Examiner Hearing)
- Application of Sol West III for an NCPA determination, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks a new onshore reservoir determination in the Morrow formation for his Turkey Track-Morrow Sand Well No. 1 in Unit I of Section 26, Township 18 South, Range 28 East.
- CASE 7038:** (Continued from October 29, 1980, Examiner Hearing)
- Application of Natura Energy Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the NE/4 NE/4 of Section 6, Township 19 South, Range 39 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7073:** (Readvertised)
- Application of Enserch Exploration, Inc. for pool creation, temporary special pool rules, and assignment of a discovery allowable, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Fusselman oil pool for its J. G. O'Brien Well No. 1 located 1980 feet from the North line and 660 feet from the West line of Section 31, Township 7 South, Range 29 East, with special rules therefor, including provisions for 80-acre spacing, a limiting gas-oil ratio of 3000 to one and special well location requirements providing for the drilling of wells within 150 feet of the center of a quarter-quarter section. Applicant further seeks approval of a 74.24-acre proration and spacing unit and a discovery allowable for said J. G. O'Brien Well No. 1.
- CASE 7084:** Application of Harvey E. Yates Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Duncan Unit Area, comprising 7679 acres, more or less, of State, Federal, and fee lands in Townships 13 and 14 South, Range 35 East.
- CASE 7085:** Application of Harvey E. Yates Company for designation of a tight formation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Atoka formation underlying portions of Townships 12, 13, and 14 South, Ranges 35 and 36 East, containing 37,760 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705.
- CASE 7086:** Application of Blackwood & Nichols Company, Ltd. for designation of a tight formation, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Pictured Cliffs formation underlying portions of Townships 30 and 31 North, Ranges 6, 7, and 8 West, containing 33,500 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705.
- CASE 7087:** Application of Blackwood & Nichols Company, Ltd. for designation of a tight formation, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Fruitland formation underlying portions of Townships 30 and 31 North, Ranges 6, 7, and 8 West, containing 33,500 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705.

Dockets Nos. 34-80 and 35-80 are tentatively set for October 29 and November 12, 1980. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 15, 1980

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for November, 1980, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.
- (2) Consideration of the allowable production of gas for November, 1980, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.
- CASE 7044: Application of Harvey E. Yates Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Travis Penn Unit Area, comprising 400 acres, more or less, of State and Federal lands in Township 18 South, Range 28 East.
- CASE 7045: Application of Texas Oil & Gas Corp. for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Atoka and Upper Morrow production in the wellbore of its Superior Federal Com. Well No. 1 located in Unit G of Section 8, Township 20 South, Range 29 East.
- CASE 7046: Application of Cotton Petroleum Corporation for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Chacra and Pictured Cliffs production in the wellbores of wells in the South Blanco-Pictured Cliffs Pool located in Sections 1, 2, 3, 4, 9, 10, 11, 13, 23, and 24, Township 24 North, Range 4 West.
- CASE 7047: Application of Nucorp Energy Inc. for a special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a special gas-oil ratio limitation of 10,000 to one, retroactive to April 18, 1980, for the East Caprock-Pennsylvanian Pool.
- CASE 7033: (Continued from October 1, 1980, Examiner Hearing)
- Application of Adams Exploration Inc. for three non-standard proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of three 80-acre non-standard proration units in the Vada-Pennsylvanian Pool, comprising the following acreage: SE/4 NE/4 and NE/4 SE/4 of Section 12, N/2 NE/4 of Section 12, and S/2 SE/4 of Section 2, all in Township 9 South, Range 34 East.
- CASE 7048: Application of Public Lands Exploration, Inc. for a pilot steam enhanced oil recovery project, Guadalupe County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot steam enhanced oil recovery project in the Santa Rosa formation by re-entering 2 wells and drilling 3 wells, all located in Unit A of Section 15, Township 11 North, Range 25 East.
- CASE 7036: (Continued from October 1, 1980, Examiner Hearing)
- Application of J. Gregory Merrion for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pictured Cliffs formation underlying the SE/4 of Section 34, Township 25 North, Range 6 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7049: Application of J. Gregory Merrion for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pictured Cliffs formation underlying the SW/4 of Section 35, Township 25 North, Range 6 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7050: Application of Maddox Energy Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp-Pennsylvanian formations underlying the N/2 of Section 23, Township 24 South, Range 28 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

- CASE 7051:** Application of Petro Lewis Corporation for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Blinebry and Drinkard production in the wellbore of its L. G. Warlick "B" Well No. 2 located in Unit G of Section 19, Township 21 South, Range 37 East.
- CASE 7052:** Application of Gulf Oil Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the S/2 of Section 36, Township 18 South, Range 31 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7024:** (Continued from September 17, 1980, Examiner Hearing)
- Application of Southland Royalty Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 35, Township 18 South, Range 29 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7038:** (Continued from October 1, 1980, Examiner Hearing)
- Application of Natura Energy Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the NE/4 NE/4 of Section 6, Township 19 South, Range 39 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7053:** Application of Amax Chemical Corporation for the amendment of Order No. R-111-A, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-111-A to extend the boundaries of the Potash-Oil Area to include the SE/4 NE/4 and NE/4 SE/4 of Section 24, Township 19 South, Range 29 East, and the S/2 NW/4 of Section 19, Township 19 South, Range 30 East.
- CASE 7054:** In the matter of the hearing called by the Oil Conservation Division on its own motion for an order creating, abolishing, and extending the vertical and horizontal limits of certain pools in Chaves, Eddy, Lea, and Roosevelt Counties, New Mexico:
- (a) CREATE a new pool in Chaves County, New Mexico, classified as a gas pool for Abo production and designated as the East Bitter Lakes-Abo Gas Pool. The discovery well is Boyd Operating Company Blakemore Federal Well No. 1 located in Unit D of Section 20, Township 9 South, Range 26 East, NMPM. Said pool would comprise:
- TOWNSHIP 9 SOUTH, RANGE 26 EAST, NMPM  
Section 20: NW/4
- (b) CREATE a new pool in Chaves County, New Mexico, classified as a gas pool for Wolfcamp production and designated as the East Bitter Lakes-Wolfcamp Gas Pool. The discovery well is Boyd Operating Company Blakemore Federal Well No. 1 located in Unit D of Section 20, Township 9 South, Range 26 East, NMPM. Said pool would comprise:
- TOWNSHIP 9 SOUTH, RANGE 26 EAST, NMPM  
Section 20: W/2
- (c) CREATE a new pool in Chaves County, New Mexico, classified as an oil pool for Fusselman production and designated as the South Elkins-Fusselman Pool. The discovery well is Enserch Exploration, Inc. J. G. O'Brien Well No. 1 located in Unit E of Section 31, Township 7 South, Range 29 East, NMPM. Said pool would comprise:
- TOWNSHIP 7 SOUTH, RANGE 29 EAST, NMPM  
Section 31: NW/4
- (d) ABOLISH the Cary-San Andres Pool in Lea County, New Mexico, described as:
- TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM  
Section 17: NW/4

- (e) EXTEND the Anderson Ranch-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 32 EAST, NMPM  
Section 3: Lots 9, 10, 15 and 16

- (f) EXTEND the Angell Ranch Atoka-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 27 EAST, NMPM  
Section 13: S/2

- (g) EXTEND the Blinebry Oil and Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM  
Section 29: SW/4

- (h) EXTEND the Boyd-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 24 EAST, NMPM  
Section 13: N/2

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM  
Section 1: W/2  
Section 14: N/2

- (i) EXTEND the Brown Queen-Grayburg Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 10 SOUTH, RANGE 26 EAST, NMPM  
Section 25: SE/4 SW/4 and S/2 SE/4

- (j) EXTEND the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 27 EAST, NMPM  
Section 25: N/2

- (k) EXTEND the Burton Flat-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 28 EAST, NMPM  
Section 17: S/2  
Section 20: N/2

- (l) EXTEND the vertical limits of the Comanche Stateline Tansill-Yates Pool in Lea County, New Mexico, to include the Seven Rivers formation and redesignate said pool as the Comanche Stateline Tansill-Yates-Seven Rivers Pool, and extend the horizontal limits of said pool to include therein:

TOWNSHIP 26 SOUTH, RANGE 36 EAST, NMPM  
Section 27: W/2 NW/4

- (m) EXTEND the Indian Flats-Delaware Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 28 EAST, NMPM  
Section 2: S/2 NE/4

- (n) EXTEND the Jenkins-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 35 EAST, NMPM  
Section 32: NW/4

- (o) EXTEND the L E Ranch-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 10 SOUTH, RANGE 28 EAST, NMPM  
Section 29: N/2 NW/4  
Section 30: N/2 NE/4

- (p) EXTEND the Malaga-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 28 EAST, NMPM  
Section 15: N/2

- (q) EXTEND the South Millman-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 28 EAST, NMPM  
Section 8: All

- (r) EXTEND the West Osado-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 35 EAST, NMPM  
Section 14: W/2  
Section 23: All

- (s) EXTEND the Penasco Draw-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM  
Section 6: W/2

- (t) EXTEND the Penasco Draw San Andres-Yeso Associated Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 24 EAST, NMPM  
Section 1: W/2 NW/4 and NW/4 SW/4  
Section 13: NW/4 NW/4  
Section 14: NE/4 NE/4

- (u) EXTEND the South Peterson-Pennsylvanian Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 6 SOUTH, RANGE 33 EAST, NMPM  
Section 2: Lots 1 and 2

- (v) EXTEND the Rabbit Flats-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 10 SOUTH, RANGE 27 EAST, NMPM  
Section 30: SE/4 SE/4

- (w) EXTEND the Railroad Mountain-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 28 EAST, NMPM  
Section 11: W/2 SW/4  
Section 14: NW/4 NW/4

- (x) EXTEND the Richard Knob Atoka-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 24 EAST, NMPM  
Section 36: E/2

- (y) EXTEND the Shugart Yates-Seven Rivers-Queen-Grayburg Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 31 EAST, NMPM  
Section 2: S/2 S/2

- (z) EXTEND the Twin Lakes-San Andres Associated Pool in Chaves County, New Mexico, to include therein:

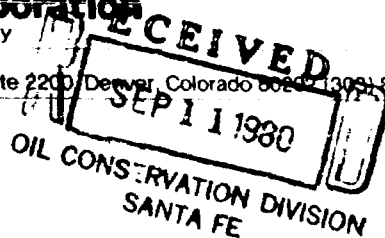
TOWNSHIP 8 SOUTH, RANGE 28 EAST, NMPM  
Section 26: SE/4 SE/4  
Section 35: E/2 NE/4 and NE/4 SE/4

- (aa) EXTEND the Wantz-Abo Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM  
Section 3: SE/4

**Cotton Petroleum Corporation**  
A United Energy Resources, Inc. Company

717-17th Street Energy Center One - Suite 2200 Denver, Colorado 80202 303-893-2233



September 8, 1980

New Mexico Oil & Gas  
Conservation Division  
Box 2088  
Santa Fe, NM 87501

*Case 7046*

Attention: Joe D. Ramey  
Director

Dear Sir:

Cotton Petroleum Corporation respectfully requests that a hearing be called by the Oil Conservation Division for the purpose of considering an Application by Cotton Petroleum Corporation for down hole comingling in Rio Arriba County, New Mexico.

Cotton Petroleum would like to comingle the Chacra and the Pictured Cliffs Formations in the South Blanco Pictured Cliffs Field. This application to comingle will be for the following described area: Sections 1, 2, 3, 4, 9, 10, 11, 13, 23, and 24 in T24N-R4W, Rio Arriba County, New Mexico.

Please set this matter for hearing on your October 15, 1980, hearing date.

Thank you.

Sincerely,

COTTON PETROLEUM CORPORATION

D. E. Wood  
Division Production Manager

GAG/pkh



ROUGH

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

CASE NO. 7046

Order No. R-6564

Application of Cotton Petroleum Corporation for downhole commingling, Rio Arriba County, New Mexico.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on December 10,  
19    , at Santa Fe, New Mexico, before Examiner     

NOW, on this      day of     , 19    , the  
Division Director, having considered the testimony, the record,  
and the recommendations of the Examiner, and being fully advised  
in the premises,

FINDS:

(1) That due public notice having been given as required  
by law, the Division has jurisdiction of this cause and the  
subject matter thereof.

(2) That the applicant, Cotton Petroleum Corporation,

seeks approval for the downhole commingling of Chacra and  
Pictured Cliffs production in the wellbores of wells in the South Blanco-Pictured Cliffs Pool located  
in Sections 1 thru 4, 9 thru 14, and 23 and 24, Township 24 North, Range 4 West Rio Arriba County, New Mexico.

Case No. 5980  
Order No. R-5460

*The Chacra and Pictured Cliffs  
formations in those sections  
described in Finding No. 2*

(3) That the establishment of an administrative procedure  
whereby production from ~~any or all of the four pools set out in~~  
~~Finding No. 2~~ above may be commingled within the wellbore of a  
producing well therein should permit ~~otherwise uneconomical wells~~  
~~and/or zones to be produced, thereby preventing waste.~~

(4) That such an administrative procedure <sup>at Aztec,</sup> should provide for  
approval by the ~~Commission~~ District Supervisor, safeguards to  
prevent crossflow between pools, ~~prevention of placement of fluids~~  
~~in fluid sensitive zones~~ and the protection of interest owners  
under each proration or spacing unit.

(5) That the proposed commingling may result in the recovery  
of additional hydrocarbons from each of the subject pools, thereby  
preventing waste, and will not violate correlative rights.

*Recovery  
of otherwise  
uneconomical  
reserves*

(6) That the applicant seeks authority to commingle

Chocoma and Pictured Cliffs production within the wellbore of ~~the above-described well~~. its Apache well No 30 in Unit J of Section 3 and Apache Well No 29 in Unit C of Section 14 both in ~~Sand~~ Township 24 North, Range 4 West, NMPM Rio Arriba County, New Mexico

(7) That from the Chocoma zone, the subject wells ~~are~~ capable of low ~~marginal~~ production only.

(8) (a) That from the Pictured Cliffs zone, the subject wells ~~are~~ capable of low ~~marginal~~ production only.

(9) (a) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(10) (a) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

(11) (a) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Division any time <sup>either of</sup> the subject wells is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in the subject well, percent of the commingled \_\_\_\_\_ production should be allocated to the \_\_\_\_\_ zone, and percent of the commingled \_\_\_\_\_ production to the \_\_\_\_\_ zone.

(ALTERNATE)

(12) (a) That in order to allocate the commingled production to each of the commingled zones in the wells, applicant should consult with the supervisor of the Aztec district office of the Division and determine an allocation formula for each of the production zones.

(1) That the applicant, Cotton Petroleum Corporation, is hereby authorized to commingle Chacra and Pictured Cliffs production within the wellbore of its Apache Well No 30 located in Unit 8 of Section 3 and its Apache Well No 29 located in Unit C of Section 14 both in Section, Township 24 North, Range 4 West, NMPM, Rio Arriba County, New Mexico.

(2) That the applicant shall consult with the Supervisor of the Aztec district office of the Division and determine an allocation formula for the allocation of production to each zone in each of the subject wells.

(ALTERNATE)

(2) That        percent of the commingled production shall be allocated to the        zone and        percent of the commingled production shall be allocated to the        zone.

(3) That the operator of the subject well shall immediately notify the Division's Aztec district office any time <sup>any well</sup> ~~the~~ well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

IT IS FURTHER ORDERED:

(1) That an administrative procedure is hereby adopted where by the district supervisor of the Division's <sup>District Office</sup> ~~at~~ Aztec may administratively authorize downhole commingling of the Chacra and Pictured Cliffs zones in applicant's wells in Sections 1 thru 4, 9 thru 14, and 23 and 24, Township 24 North Range 4 West, ~~NMPM~~ Rio Arriba County, New Mexico.

(2) That qualification and application for and approval of requests for downhole commingling shall be made in accordance with the following rules:

Rule 1. Wells shall qualify for approval for downhole commingling under this order provided that:

(a) That the commingling is necessary to permit production ~~from the Chacra and Pictured Cliffs zones~~ which would not otherwise be economically producible.

from the Chacra and Pictured Cliffs zones

- (b) neither zone produces more than 10 barrels of <sup>liquid</sup> fluid per day;
- (c) the bottom hole pressure of the lower pressure zone is not less than 50 percent of the bottom hole pressure of the higher pressure zone adjusted to a common datum; and,
- (d) the ownership of the two zones is common (including working interest, royalty interest, and overriding royalty).

Rule 2. Applications for administrative approval of downhole commingling under this order shall include:

- (a) Name and address of the operator.
- (b) Lease name, well number, well location, and names of the pools to be commingled.
- (c) A plat of the area showing the acreage dedicated to the well and the ownership of all offsetting leases.
- (c) (d) A mechanical log of the well.
- (d) (e) A diagrammatic sketch of the well showing casing, tubing, cement tops, perforations, and any downhole equipment.
- (e) (f) Pressures and production for each zone to be commingled as determined from drill stem tests or potential tests following completion.
- (f) (g) A formula for the allocation of production to each of the commingled zones and a description of the factors or data used in determining such formula.

RULE 3. The District Supervisor may approve the proposed downhole commingling ~~in the absence of a valid objection within 20 days after the receipt of the application~~ if, in his opinion, there is no disqualifying disparity of bottomhole pressures or other reservoir characteristics, waste will not result thereby, and correlative rights will not be violated. ~~The 20-day waiting period may be dispensed with upon receipt of waivers of objection from all parties mentioned in Rule 2, paragraph (1).~~

RULE 4. Upon such approval, the well shall be operated in accordance with the provisions of the administrative order which authorized the commingling, and allocation of the commingled production from the well to each of the producing zones shall be in accordance with the allocation formula set forth in the order.

RULE 5. The <sup>Division</sup> ~~Secretary~~ Director may rescind authority to commingle production in the well-bore and require both zones to be produced separately, if, in his opinion, waste or reservoir damage is resulting thereby, or if any change of conditions render the installation no longer eligible for downhole commingling under the provisions of Rule 1, paragraphs (a) through (d).

IT IS FURTHER ORDERED:

- (1) That jurisdiction of this cause is retained for the entry of such further orders as the ~~Commission~~ <sup>Division</sup> may deem necessary.