CASE 7304: ARCO OIL AND GAS COMPANY FOR DIRECTIONAL DRILLING, LEA COUNTY, NEW MEXICO

Case No.

7304

Application

Transcripts

Small Exhibits

Jason Kellahin W. Thomas Kellahin Karen Aubrey

KELLAHIN and KELLAHIN Attorneys at Law 500 Don Gaspar Avenue

Post Office Box 1769 Santa Fe, New Mexico 87501



November 5, 1981

William F. Carr, Esq. Campbell, Byrd & Black P.O. Box 2208 Santa Fe, NM 87501

NMOCD Case No. 7304 &

Dear Mr. Carr:

On Tuesday, November 3, 1981 on behalf of ARCO Oil & Gas Company you requested my concurrence in postponing the DeNovo Hearing for this case until after December 31, 1981.

Yesterday I met with representatives of Conoco. We concur in postponing the case.

This would allow ARCO time to complete and test the subject well.

On behalf of Conoco, I concur in your request provided your client will furnish to me the following information as soon as it becomes available:

- copies of all logs run on the subject well, including but not limited to open hole logs showing porosity and water saturation; and
- (b) copies of all pressure information; and
- copies of all production tests.

Very truly yours,

W. Thomas Kellahin

WTK: vik

Mr. Vic Lyon Mr. Paul Thompson Mr. Joe D. Ramey

KELLAHIN and KELLAHIN

500 Don Gaspar Avenue Post Office Box 1769 Santa Fe, New Mexico 87501

OIL CONSERVATION DIVISION SANTA FE

Telephone 982-4285 Area Code 505

Jason Kellahin W. Thomas Kellahin Karen Aubrey

October 28, 1981

Set for January 11

Mr. Joe D. Ramey Oil Conservation Division P.O. Box 2088 Santa Fe, New Mexico 87501

RE: Application of Arco 011 & Gas Company for Directional Drilling and an Unorthodox Well location, Lea County, New Mexico

Dear Mr. Ramey:

Enclosed for filing is Conoco's application for a DeNovo hearing in Case 7304 (Order R-6792).

W. Thomas Kellahin

WTK:jm Enclosure

cc: Mr. Victor T. Lyon
Mr. Paul Thompson
William F. Carr, Esquire

. .



BEFORE THE

OIL CONSERVATION COMMISSION

NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

IN THE MATTER OF THE APPLICATION OF ARCO OIL AND GAS COMPANY FOR DIRECTIONAL DRILLING AND AN UNORTHODOX GAS WELL LOCATION, LEA COUNTY, NEW MEXICO.

Case 7304 Order R-6792

APPLICATION FOR HEARING DE NOVO

Comes now, CONOCO INC., by and through its undersigned attorneys, being a party adversely affected by Order R-6792 and pursuant to Section 70-2-13, N.M.S.A. (1978 Compilation) and Oil Conservation Commission Rule No. 1220, hereby applies to the Commission for a hearing De Novo in the above referenced cause.

Respectfully submitted,

KELLAHIN & KELLAHIN

W. Thomas Kellahin

P.O. Box 1/69

Santa Fe, New Mexico 87501 (505) 982-4285

ATTORNEYS FOR CONOCO INC.

CERTIFICATE OF MAILING

I hereby certify that a copy of the foregoing was mailed to opposing counsel this _____day of October, 1981.



BEFORE THE

OIL CONSERVATION COMMISSION

NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

IN THE MATTER OF THE APPLICATION OF ARCO OIL AND GAS COMPANY FOR DIRECTIONAL DRILLING AND AN UNOR-THODOX GAS WELL LOCATION, LEA COUNTY, NEW MEXICO.

Case 7304 Order R-6792

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BEFORE THE

OIL CONSERVATION COMMISSION

NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS SANTA FE

IN THE MATTER OF THE APPLICATION OF ARCO OIL AND GAS COMPANY FOR DIRECTIONAL DRILLING AND AN UNOR-THODOX GAS WELL LOCATION, LEA COUNTY, NEW MEXICO.

Case 7304 Order R-6792

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Respectfully submitted,

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ATTORNEYS FOR CONOCO INC.

CERTIFICATE OF MAILING

I hereby certify that a copy of the foregoing was mailed to opposing counsel this _____day of October, 1981.

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. 7304 Order No. R-6792

APPLICATION OF ARCO OIL AND GAS COMPANY FOR DIRECTIONAL DRILLING AND AN UNORTHODOX GAS WELL LOCATION, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on July 15, 1981, and on August 12, 1981, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this $\frac{2nd}{d}$ day of October, 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, ARCO Oil and Gas Company, seeks authority to directionally drill its Custer Wells Well No. 1, the surface location of which is 1810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, Custer Field, in such a manner as to penetrate the Devonian formation at an unorthodox location within 100 feet of a point approximately 1800 feet from the North line and 1480 feet from the West line of said Section 6, and to bottom said well at a standard location in the Ellenburger formation within 100 feet of a point approximately 1650 feet from the North line and 760 feet from the West line of said Section 6, but in no event closer than 660 feet to said line. The N/2 of said Section 6 would be dedicated to each of said formations.

Page 2 Case No. 7304 Order No. R-6792

- (3) That the offset operator to the west, Conoco, Inc., appeared at the hearing and objected to the unorthodox Devonian location on grounds that it would cause drainage of hydrocarbons from under the E/2 of Section 1, Township 25 South, Range 36 East, NMPM, being the spacing and proration unit dedicated to Conoco's wells Federal B-1 Well No. 5, located 1650 feet from the North line and 660 feet from the East line of said Section 1, and would therefore impair Conoco's correlative rights.
- (4) That the Custer-Devonian Gas Pool appears to be of very limited lateral extent, being bounded on the north and east by a northwest/southeast trending fault and on the south and west by a productive limit based on reservoir rock quality and structure.
- (5) That from the best information available, it would appear that because of the size and shape of the reservoir, none of the wells presently completed in said reservoir, nor the subject well, has dedicated thereto a fully productive 320-acre tract.
- (6) That the Division, in determining the appropriate penalty for wells drilled at unorthodox locations or on tracts which are shown to be only partially productive, most often relies on a straight acreage determination of drainage impingement onto offsetting tracts or of productive areas.
- (7) That inasmuch as each well in the Custer-Devonian Gas Pool appears to have less than 320 productive acres dedicated thereto, and no well's production has been penalized heretofore, determination of a penalty factor based on straight acreage in the instant case would be arbitrary and unjust and would not protect correlative rights.
- (8) That Section 70-2-33 H, NMSA, 1978 Compilation, defines correlative rights as being "...the opportunity afforded, so far as it is practicable to do so, to the owner of each property in a pool to produce without waste his just and equitable share of the oil or gas, or both, in the pool..."
- (9) That the protection of correlative rights in this particular case can best be served by not utilizing the usual methods of straight acreage penalty determination, but by utilizing a formula involving net acre-feet of pay.
- (10) That the only offsetting well to applicant's Custer Wells Well No. 1 which would be adversely affected by said well is the Conoco Wells Federal B-1 Well No. 5, located as described in Finding No. (3) above.
- (11) That according to the best available evidence at the hearing, said Conoco Wells Federal B-1 Well No. 5 has some 16,514

Page 3 Case No. 7304 Order No. R-6792

acre-feet of Devonian pay within its dedicated spacing and proration unit (the E/2 of Section 1, Township 25 South, Range 36 East, NMPM) which it can presumably drain.

- (12) That according to the best available evidence at the hearing, the proposed well, ARCO's Custer Wells Well No. 1, would have some 15,387 acre feet of Devonian pay within its dedicated spacing and proration unit (the N/2 of Section 6, Township 25 South, Range 37 East, NMPM) which it would presumably drain.
- (13) That inasmuch as said ARCO Custer Wells Well No. I would have less acre-feet of Devonian pay available to the well-bore than does the Conoco Wells Federal B-1 Well No. 5, said ARCO Custer Wells Well No. 1 should be penalized to offset any advantage it might gain over the Conoco well by reason of its unorthodox location.
- (14) That such penalty should be based on the ratio of productive acre-feet dedicated to one well to productive acrefeet dedicated to the other well and calculated as follows:

Production limitation factor =

net acre-feet of Devonian pay dedicated to ARCO well net acre-feet of Devonian pay dedicated to Conoco well

$$\frac{15,387}{16,514} = .93$$

- (15) That in the absence of any special rules and regulations for the prorationing of production from the Devonian formation, the aforesaid production limitation factor should be applied against said well's ability to produce into the pipeline as determined by periodic well tests.
- (16) That the minimum calculated allowable for the subject well should be reasonable, and 1,000,000 cubic feet of gas per day is a reasonable figure for such minimum allowable.
- (17) That the applicant should be required to determine the subsurface location of the kick-off point in the subject well prior to directional drilling, and to determine the subsurface location of the Devonian pay and the Ellenburger pay by means of a continuous multi-shot directional survey conducted subsequent to said directional drilling, if said well is to be completed as a producing well.
- (18) That approval of the subject application subject to the above provisions and limitations will afford the applicant the opportunity to produce its just and equitable share of the gas in the subject reservoir or other productive zones found, will

Page 4 Case No. 7304 Order No. R-6792

prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

- (1) That the applicant, ARCO Oil and Gas Company, is hereby authorized to directionally drill its Custer Wells Well No. 1, the surface location of which is 1810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, NMPM, Custer Field, Lea County, New Mexico, in such a manner as to penetrate the Devonian formation at an unorthodox location within 100 feet of a point 1800 feet from the North line and 1480 feet from the west line of said Section 6, and to bottom said well in the Ellenburger formation within 100 feet of a point 1650 feet from the North line and 760 feet from the West line of said Section 6, and in no event closer than 660 feet to said west line of said Section 6.
- (2) That the N/2 of the aforesaid Section 6 shall be dedicated to said well in both the Custer-Devonian Gas Pool and the Custer-Ellenburger Gas Pool.
- (3) That prior to directional drilling of said well, the operator shall determine the subsurface location of the kick-off point.
- (4) That subsequent to the above-described directional drilling, should said well be a producer, a continuous multi-shot directional survey shall be made of the wellbore of the well from total depth to the kick-off point with shot points not more than 100 feet apart; that the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe Office of the Division, P. O. Box 2088, Santa Fe, New Mexico, and that the operator shall notify the Division's Hobbs District Office of the date and time said survey is to be commenced.
- (5) That Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth in addition to measured depth.

IT IS FURTHER ORDERED:

(1) That the ARCO Custer Wells Well No. 1 is hereby assigned a Production Limitation Factor of 0.93 in the Devonian formation.

Page 5 Case No. 7304 Order No. R-6792

- (2) That in the absence of any Special Rules and Regulations prorating gas production in said Devonian formation, the special rules hereinafter promulgated shall apply.
- (3) That the following Special Rules and Regulations for a non-prorated gas well at an unorthodox location shall apply to the subject well:

SPECIAL RULES AND REGULATIONS
FOR THE
APPLICATION OF A "PRODUCTION LIMITATION FACTOR"
TO A NON-PRORATED GAS WELL

APPLICATION OF RULES

- RULE 1. These rules shall apply to the Devonian formation completion of the ARCO Oil and Gas Company Custer Wells Well No. 1, the surface location of which is 1810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico, which well's Production Limitation Factor of 0.93 shall be applied to the well's deliverability (as determined by the hereinafter set forth procedure) to determine its maximum allowable rate of production.
- RULE 2. The allowable period for the subject well shall be six months.
- RULE 3. The year shall be divided into two allowable periods commencing at 7:00 o'clock a.m. on January 1 and July 1.

DETERMINATION OF DELIVERY CAPACITY

- RULE 4. Immediately upon connection of the well the operator shall determine the open flow capacity of the well in accordance with the Division "Manual for Back-Pressure Testing of Natural Gas Wells" then current, and the well's initial deliverability shall be calculated against average pipeline pressure.
- RULE 5. The well's "subsequent deliverability" shall be determined twice a year, and shall be equal to its highest single day's production during the months of April and May or October and November, whichever is applicable. Said subsequent deliverability, certified by the pipeline, shall be submitted to the appropriate District Office of the Division not later than June 15 and December 15 of each year.
- RULE 6. The Division Director may authorize special deliverability tests to be conducted upon a showing that the well

Page 6 Case No. 7304 Order No. R-6792

has been worked over or that the subsequent deliverability determined under Rule 5 above is erroneous. Any such special test shall be conducted in accordance with Rule 4 above.

RULE 7. The operator shall notify the appropriate district office of the Division and all offset operators of the date and time of initial or special deliverability tests in order that the Division or any such operator may at their option witness such tests.

CALCULATION AND ASSIGNMENT OF ALLOWABLES

- RULE 8. The well's allowable shall commence upon the date of connection to a pipeline and when the operator has complied with all appropriate filing requirements of the Rules and Regulations and any special rules and regulations.
- RULE 9. The well's allowable during its first allowable period shall be determined by multiplying its initial deliverability by its production limitation factor.
- RULE 10. The well's allowable during all ensuing allowable periods shall be determined by multiplying its latest subsequent deliverability, as determined under provisions of Rule 5, by its production limitation factor. If the well shall not have been producing for at least 60 days prior to the end of its first allowable period, the allowable for the second allowable period shall be determined in accordance with Rule 9.
- RULE 11. Revision of allowable based upon special well tests shall become effective upon the date of such test provided the results of such test are filed with the Division's district office within 30 days after the date of the test; otherwise the date shall be the date the test report is received in said office.
- RULE 12. Revised allowables based on special well tests shall remain effective until the beginning of the next allowable period.
- RULE 13. In no event shall the well receive an allowable of less than one million cubic feet of gas per day.

BALANCING OF PRODUCTION

- RULE 14. January 1 and July 1 of each year shall be known as the balancing dates.
- RULE 15. If the well has an underproduced status at the end of a six-month allowable period, it shall be allowed to carry such underproduction forward into the next period and may produce

Page 7 Case No. 7304 Order No. R-6792

such underproduction in addition to its regularly assigned allowable. Any underproduction carried forward into any allowable period which remains unproduced at the end of the period shall be cancelled.

- RULE 16. Production during any one month of an allowable period in excess of the monthly allowable assigned to the well shall be applied against the underproduction carried into the period in determining the amount of allowable, if any, to be cancelled.
- RULE 17. If the well has an overproduced status at the end of a six-month allowable period, it shall be shut in until such overproduction is made up.
- RULE 18. If, during any month, it is discovered that the well is overproduced in an amount exceeding three times its average monthly allowable, it shall be shut in during that month and during each succeeding month until it is overproduced in an amount three times or less its monthly allowable, as determined hereinabove.
- RULE 19. The Director of the Division shall have authority to permit the well, if it is subject to shut-in pursuant to Rules 17 and 18 above, to produce up to 500 MCF of gas per month upon proper showing to the Director that complete shut-in would cause undue hardship, provided however, such permission shall be rescinded for the well if it has produced in excess of the monthly rate authorized by the Director.
- RULE 20. The Division may allow overproduction to be made up at a lesser rate than permitted under Rules 17, 18, or 19 above upon a showing at public hearing that the same is necessary to avoid material damage to the well.

GENERAL

- RULE 21. Failure to comply with the provisions of this order or the rules contained herein or the Rules and Regulations of the Division shall result in the cancellation of allowable assigned to the well. No further allowable shall be assigned to the well until all rules and regulations are complied with. The Division shall notify the operator of the well and the purchaser, in writing, of the date of allowable cancellation and the reason therefor.
- (6) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

Page 8 Case No. 7304 Order No. R-6792

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

STATE OF NEW MEXICO

JOE D. RAMEY, Director

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ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

October 5, 1981

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

Mr. William F. Carr Campbell, Byrd & Black Attorneys at Law Post Office Box 2208 Santa Fe, New Mexico Re: CASE NO. 7304 ORDER NO. R-6792

Applicant:

ARCO Oil and Gas Company

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

Other Thomas Kallahin

CAMPBELL, BYRD & BLACK, P.A.

LAWYERS

JACK M. CAMPBELL
HARL D. BYRD
BRUCE D. BLACK
MICHAEL B. CAMPBELL
WILLIAM F. CARR
BRADFORD C. BERGE
WILLIAM G. WARDLE

JEFFERSON PLACE
SUITE 1 - HO NORTH GUADALUPE
POST OFFICE BOX 2208
SANTA FE, NEW MEXICO 87501
TELEPHONE: (505) 988-4421.
TELECOPIER: (505) 983-6043

August 13, 1981

HAND DELIVERED

Daniel S. Nutter
Chief Engineer
Oil Conservation Division
New Mexico Department of
Energy & Minerals
Post Office Box 2088
Santa Fe, New Mexico 87501

OIL CONSERVATION DIVISION

- AUG 1 3 1981,

RECEIVED

Re: Case 1304: Application of Arco Oil & Gas Company for Direct 1 Drilling and Unorthodox Gas Well Location, Lea County, ew Mexico.

Dear Mr. Nutter:

Enclosed for your consideration are the proposed findings of Arco Oil & Gas Company in the above-referenced case.

Best regards.

ery truly yours,

William F. Carr

WFC:kb enclosure

cc: Horace Burton, Esq. Mr. Huan Q. Pham Tom Kellahin

AUG 1 3 1981,

RECEIVED

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:

APPLICATION OF ARCO OIL AND GAS COMPANY FOR DIRECTIONAL DRILLING AND UNORTHODOX GAS WELL LOCATION, LEA COUNTY, NEW MEXICO.

Case:	7304
0rder	R-

PROPOSED FINDINGS OF ARCO OIL & GAS COMPANY

- (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 applicant, ARCO Oil & Gas Company, seeks approval to directionally drill its Custer Wells No. 1, the surface location of which is 1810 feet from the North line and 2164 feet from the West line of Section 6, T25S, R37E, Custer Field, Lea County, New Mexico to an unorthodox bottom hole location in the Devonian formation 1800 feet from the North line and not closer than 1480 feet from the West line of said Section and to an orthodox bottom hole location in the Ellenburger formation 1650 feet from the North line and not closer than 660 feet from the West line of said Section.
- (3) That the N/2 of said Section 6 is to be dedicated to the well.
- (4) That while drilling the Custer Wells No. 1, application encountered a fault traversing from Northwest to Southeast the N/2 of said Section 6 all as shown on ARCO Oil & Gas Company Exhibit No. 3.
- (5) That applicant has plugged back the well to a depth of 6500

feet and directionally drilled the Custer Wells No. 1 to enable the application to complete said well in the Devonian and Ellenburger formations on the West side of the fault.

- (6) That the offset operator to the West, Conoco Inc., has dedicated the E/2 of Section 1, T25S, R36E, to its Conoco Wells Fedearl B-1 No. 5 Well which is located in Unit H of said Section and is completed in and producing from the Devonian and Ellenburger formations.
- (7) That Conoco Inc. appeared and objected to the proposed unorthodox location in the Devonian formation only.
- (8) That the Conoco No. 5 Well is drilled at a point 660 feet from the common lease line between the Conoco and ARCO leases and the ARCO Custer Wells No. 1 will have a bottom hole location in the Devonian at least 1,480 feet from said common lease line.
- (9) That the thickness of the pay zone in the Devonian formation increases and the quality of this zone improves as you move up structure towards the fault traversing Section 6.
- (10) That the quality of the pay zone improves as you move toward the fault as a result of natural fracturing along said fault.
- (11) That the ARCO Custer Wells No. 1 will be completed at a higher structural point and in a better portion of the productive interval in the Devonian formation than the offsetting Conoco No. 5 Well.
- (12) That the acreage east of the fault in Section 6 cannot contribute to the gas produced from the Custer Wells No. 1.
- (13) That there is acreage in the E/2 of Section 1 that cannot contribute to the gas produced from the Conoco No. 5 Well.
- (14) The evidence showed that there were 15,387 productive acre feet that would contribute gas to the ARCO Custer Wells No. 1 in the N/2 of Section 6 and 16,514 productive acre feet that would contribute gas to the Conoco No. 5 Well in the E/2 of Section 1.

- (15) That the production from the ARCO Custer Wells No. 1 should be restricted to offset any advantage it may gain on the Conoco No. 5 Well.
- (16) That the amount of recoverable gas under each tract can be practicably determined in the Devonian by using productive acrefeet.
- (17) That restricting production in the Devonian formation based upon productive acre feet in each spacing unit is a reasonable and practical method of accurately allocating production between operators and protecting he correlative rights of each operator in the pool.
- (18) That the production from the ARCO Custer No. 1 Well should be restricted by a formula based upon the ratio between the productive acre feet in the Devonian underlying the E/2 of Section 1 and the productive acre feet in the Devonian underlying the N/2 of Section 6, as is set out on ARCO Exhibit No. 4.
- (19) That in the absence of any special rules and regulations for the prorationing of production of the Devonian formation, a production limitation factor should be applied against the capacity of the Arco Custer Wells No. 1 to produce into the pipeline is determined by annual deliverability tests.
- (20) That the ARCO Custer Wells No. 1 should be assigned a production limitation factor in the Devonian formation based upon 15,387 productive acre feet divided by 16,514 acre feet which would permit the ARCO Custer Wells No. 1 to produce 93% of its annual deliverability capacity, as hereinafter established.

Jason Kellahin W. Thomas Kellabin Karen Aubrey

KELLAHIN and KELLAH Attorneys at Law

500 Don Gaspar Avenue Post Office Box 1769 Santa Fe, New Mexico 87501

OIL CONSCIONATION UNISHUA Telephone 982-4285 Area Code 505

July 17, 1981

Mr. Dan Nutter Oil Conservation Division P.O. Box 2088 Santa Fe, New Mexico 87501

NMOCD Case 7304

ARCO Directional Drilling

Dear Mr. Nutter:

The above referenced case was heard by you at the examiner hearing on July 15, 1981.

Based upon the testimony and exhibits presented at the hearing, we believe that there is substantial evidence to support incorporating into the order the proposed finding! I have enclosed herein.

Very truly you

W. Thomas Kellahin

WTK: jm Enclosure

Mr. Bill Carr, Esq. Mr. Vic Lyon Mr. Paul Thompson



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:

APPLICATION OF ARCO OIL AND GAS COMPANY FOR DIRECTIONAL DRILLING AND UNORTHODOX WELL LOCATION LEA COUNTY, NEW MEXICO.

Case: 7304 Order R-____

CONOCO'S PROPOSED FINDINGS

- (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, ARCO Oil & Gas Company, seeks approval to directionally drill its Custer Well No. 1, the surface location of which is 1810 feet from the North line and 2164 feet from the West line of Section 6, T25S, R37E, Custer Field Lea County, New Mexico to an unorthodox bottom hole location in the Devonian formation not closer than 1480 feet from the West line of said Section and a bottom hole location in the Ellenberger not closer than 660 feet to the West line of said Section.
- (3) That the N/2 of said Section 6 is to be dedicated to the well.
- (4) That applicant further intends to drill and complete a second well in the Devonian and Ellenberger formations to which the S/2 of said Section 6 will be dedicated.

- (5) That the offset operator to the West, Conoco Inc., has dedicated the E/2 of Section 1, T25S, R36E, to its Conoco #5 a Devonian and Ellenberger well in Unit H of said Section 1, said well being completed and producing from both said formations.
- (6) That Conoco Inc., has objected to the proposed unorthodox location in so far as the Devonian formation is concerned and to the number of productive acres to be dedicated to the ARCO Custer Well No. 1 in the N/2 of said Section 6.
- (7) That from the evidence presented at the hearing by both the applicant and the opponent, there is no commercial gas reserves in the Devonian formation in Section 6 East of the fault line as depicted on Conoco Exhibit 2 and ARCO exhibit 3.
- (8) That any production from the Devonian formation underlying the N/2 of said Section 6 would be west of the fault line and consists of 96 surface acres out of a 320 acre proration unit.
- (9) That there is no clearly defined Western or Southern limit to the Devonian formation in this area and its limits are a matter of speculation and conjecture.
- (10) That to produce a Devonian well at full capacity at the proposed location would give the applicant an unfair advantage over the opponent.
- (11) That the entire 320 acre proration unit consisting of the E/2 of Section 1 and to which the Conoco #5 well is dedicated is reasonably productive of gas from the Devonian formation.
- (12) That the Devonian formation underlying this area is not in a prorated gas pool.

- (13) That to allow the Applicant to produce the Devonian formation at full capacity at the proposed location with the proposed proration unit would give the applicant an unfair advantage over the opponent, and thereby impair the correlative rights of Conoco Inc.
- (14) That to offset the aforesaid advantage some method of restricting production from the proposed well at the proposed unorthodox well location should be imposed.
- (15) That the Applicant has admitted that production from the well should be restricted and has recommended a restriction formula based upon the ratio between the Devonian producable reserves underlying the E/2 of Section 1 and the N/2 of said Section 6.
- (16) That the applicant has failed to establish substantial evidence concerning the amount of recoverable Devonian reserves underlying the E/2 of Section 1.
- (17) That due to the nature of the Devonian formation, a method of restricting production as recommended by the Applicant would not be a practical and reasonable method of accurately determining the amount of gas underlying each of the proration units in the area.
- (18) That the amount of recoverable gas under each producer's tract cannot be practically determined in the Devonian by a formula which does not take into consideration the fractured nature of the Devonian formation.
- (19) That there is substantial evidence to establish that the Conoco #3 well in the $\mathbb{W}/2$ of Section 1 has at least eight feet

of productive Devonian pay which Applicant has failed to incorporate into its Exhibit No. 4 and its proposed penalty formula.

- (20) That considering the nature of the Devonian formation and the evidence introduced at hearing and in the absence of prorationing for the entire Devonian formation in this field, the only fair, equitable and reasonable method to penalize the applicant's proposed well is a penalty based upon a surface acreage formula.
- (21) That ARCO Exhibit No. 3 and Conoco Exhibit No. 2 establish that there is 96 surface acres in the Devonian formation in the N/2 of Section 6 West of the fault.
- (22) That the Conoco #5 well was the subject of a previous unorthodox well location hearing before the Division and was not opposed by ARCO.
- (23) That although ARCO could have reoriented its proration unit in Section 6 to dedicate the W/2 of Section 6 to the well and avoid a penalized allowable, it has elected not to do so.
- (24) That in the absence of any special rules and regulations for the prorationing of production from the Devonian formation, a production limitation factor should be applied against said well's capacity to produce into the pipeline as determined by periodic well tests.
- (25) That the well should be assigned an allowance limitation factor based upon 96 productive areas out of a 320 acre proration unit in the Devonian formation which would permit the subject well to produce 30% of its Delivery Capacity, as 'hereinafter set forth.

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION STATE LAND OFFICE BLDG. SANTA FE, NEW MEXICO 12 August 1981 EXAMINER BEAKING

IN THE MATTER OF:

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Application of ARCO Oil and Gas Company for directional drilling and an unorthodox gas well location,

CASE 7304

Lea County, New Mexico.

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

APPEARANCES

For the Oil Conservation Division:

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

MR. NUTTER: Call next Case 7304.

MR. PADILLA: Application of ARCO 0il and Gas Company for directional drilling and an unorthodox gas well location, Lea County, New Mexico.

MR. NUTTER: Case Number 7304 was heard on July the 15th, 1981, and inasmuch as certain bottom hole locations and so forth were changed, we had to readvertise the case.

Case Number 7304 is now reopened. Are there any appearances to be made in Case 7304?

If not, we'll take the case under advisement, and the hearing is adjourned.

(Hearing concluded.)

CERTIFICATE

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 hearing transcript is a full, true, and correct record of the hearing prepared by me to the best of my ability.

July W. Boyd Cor

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7304. heard by me on 19.81.

Examiner,

Oil Conservation Division

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STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
12 August 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of ARCO 0il and Gas Company for directional drilling and an unorthodox gas well location, Lea County, New Mexico.

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

APPEARANCES

For the Oil Conservation Division:

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

MR. NUTTER: Call next Case 7304. MR. PADILLA: Application of ARCO 011 and Gas Company for directional drilling and an unorthodox gas well location, Lea County, New Mexico. MR. NUTTER: Case Number 7304 was heard on July the 15th, 1981, and inasmuch as certain bottom hole locations and so forth were changed, we had to readvertise the case. Case Number 7304 i now reopened. Are there any appearances to be made in Case 7304? If not, we'll take the case under ad-visement, and the hearing is adjourned. (Hearing concluded.)

CERTIFICATE

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 hearing transcript is a full, true, and correct record of the hearing prepared by me to the best of my ability.

a complete record of the proceedings in the Examiner hearing of Case No. 7304 heard by me on_

do hereby certify that the foregoing is

Snessy W. Boyd Core

Oil Conservation Division

, Examiner



Shell Oil Company



P.O. Box 991 Houston, Texas 77001

July 9, 1981

Oil Conservation Division State of New Mexico P. 0. Box 2088 Santa Fe, New Mexico 87501

Gentlemen:

SUBJECT: EXAMINER-HEARING

CASE #7304 ARCO OIL AND GAS COMPANY

CUSTER WALL NO. 1 SCHEDULED JULY 15, 1981

Shell Oil Company has reviewed ARCO Oil and Gas Company's request to directionally drill their Custer Well No. 1 from the current surface location of 1810' FNL and 2164' FWL, Section 6, T25S, R37E, Lea County, New Mexico. We understand that the well is to be drilled to a true vertical depth of 12,800' with its targeted Bottom Hole location falling within a circle being 150' in radius, the center of which is 1650' FNL and 810' FWL of Section 6, T25S, R37E.

We have no objection to the outlined procedure providing that a penalized allowable is granted based on the productive acreage under the proration unit assigned this well.

A. J. Fore

Supervisor Regulatory & Permitting

Production Administration Mid-Continent Division

JHD:TS

Arco Oil & Gas Company ATTN: Ben Stokley P. 0. Box 1610 Midland, TX 79702

> Conoco, Inc. ATTN: Hugh Ingram P. 0. Box 460

Hobbs, New Mexico 88240



Chevron U.S.A. Inc.

700 South Colorado Blvd., P. O. Box 599, Denver, CO 80201



July 13, 1981

Case No. 7304 NMOCD Examiner Docket July 15, 1981

New Mexico 011 Conservation Commission P. O. Box 2088 Santa Fe, New Mexico 87501

Gentlemen:

It is our understanding that ARCO 0il and Gas Company will seek approval in Case No. 7304 to directionally drill its Custer Well No. 1, located in Section 6, Township 25 South, Range 37 East, Custer Field, Lea County, New Mexico. The surface location is 1810' FNL and 2164' FWL of Section 6. The bottom hole location is projected to be within 100 feet of a point 1650' FNL and 660' FWL of Section 6.

Chevron U.S.A. Inc. is a working interest owner in offsetting NMFU wells B-1 Well No. 5. Chevron has no objection to ARCO directionally drilling their Custer Well No. 1 to the proposed bottom hole location. However, Chevron supports Conoco operator of NMFU, in their request that the Devonian allowable of Custer Well No. 1 be reduced by a factor of the number of productive acres divided by the number of acres in a standard proration unit.

Yours very truly,

G. M. Emerick

Manager, Environmental and Proration

Matters

c: Conoco Inc.

P. O. Box 460 Hobbs, NM 88240

(bb) EXTEND the North Turkey Track-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

> TOWNSHIP 19 SOUTH, RANGE 29 EAST, NMPH Section 4:

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

TOWNSHIP 8 SOUTH, RANGE 28 EAST, NMPM Section 24: SE/4

TOWNSHIP 8 SOUTH, RANGE 29 EAST, NMPM

Section 18: N/2 SN/4 Section 19: E/2 E/2 Section 30: E/2

Section 32: W/2 NW/4

TOWNSHIP 9 SOUTH, RANGE 29 EAST, NMPM

Section 5:

Section 6: S/2 N/2 and S/2

NW/4 Section 7:

(dd) EXTEND the Vaca Draw-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 25 SOUTH, RANGE 33 EAST, NMPM Section 2: E/2

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

TOWNSHIP 19 SOUTH, RANGE 28 EAST, NMPM Section 36: E/2

TOWNSHIP 19 SOUTH, RANGE 29 EAST, NMPM Section 31: N/2

(ff) EXTEND the North Young-Bone Spring Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM Section 3:

CASE 7304: (Readvertised)

> Application of ARCO Oil and Cas Company for directional drilling and an unorthodox gas well Application of ARCO Off and cas company for directional drifting and an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to directionally drill its Custer Well No. 1, the surface location of which is 1810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East,. Custer Field, in such a manner as to penetrate the Devonian formation at an unorthodox location within 100 feet of a point approximately 1800 feet from the North line and 1480 feet from the West line of said Section 6, and to bottom said well in the Ellenburger formation within 100 feet of a point approximately 1650 feet from the North line and 760 feet from the Meet line of said Section 6, but in an approximately 1650 feet from the North line and 760 feet from The Meet line of said Section 6, but in an approximately 1650 feet from the North line and 760 feet from the West line of said Section 6, but in no event closer than 660 feet to said line. The N/2 of said Section 6 would be dedicated to each of said formations.

BEFORE THE NEW MEXICO OIL DO DE LA VAL

APPLICATION OF ARCO OIL AND GAS COMPANY TO DIRECTIONALLY DRILL ITS WELL ARCO CUSTER WELLS NO. 1 LOCATED IN THE N/2 OF SECTION 6, TOWNSHIP 25 SOUTH RANGE 37 EAST, N.M.P.M., CUSTER FIELD, LEA COUNTY, NEW MEXICO

JUL 28 1981

OIL CONSERVATION DESIGNATOR CASE NO. 7304

AMENDED APPLICATION

COMES NOW, ARCO Oil & Gas Company (ARCO) by its attorneys, Montgomery & Andrews, P.A., and applies for an order allowing it to directionally drill its ARCO Custer Wells No. 1, located in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico, and in support of its applications states:

- 1. ARCO has commenced drilling its Custer Wells No. 1 well 1810 feet from the north line and 2,164 feet from the west line in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico pursuant New Mexico Oil Conservation Division Order No. R-6626. In that order ARCO was designated operator of the subject well and the unit.
- 2. In the process of drilling its Custer Well No. 1, ARCO cut a fault. As a result, ARCO proposes to plug back to 6,500 feet and to directionally drill the well to a point within 100 feet east of a point 1,650 feet from the north line and 660 feet from the west line Section 6, T. 25 S., R. 37 E., N.M.P.M. and at a true vertical depth of 12,800 feet. ARCO also proposes a non-standard location in the Devonian 1,800 feet from the north line and 1,480 feet from the west line of above-described Section 6 in connection with this application.

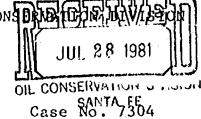
The granting of this application will prevent waste and protect correlative rights.

Respectfully submitted, MONTGOMERY & ANDREWS, P.A.

Allen H. Brill
Gary R. Kilpatric
P.O. Box 2307
Santa Fe, New Mexico 87501
(505) 982-3873

BEFORE THE NEW MEXICO OIL CONSIDER TO THE NEW MEXICO OIL CONSI

APPLICATION OF ARCO OIL AND GAS COMPANY TO DIRECTIONALLY DRILL ITS WELL ARCO CUSTER WELLS NO. 1 LOCATED IN THE N/2 OF SECTION 6, TOWNSHIP 25 SOUTH RANGE 37 EAST, N.M.P.M., CUSTER FIELD, LEA COUNTY, NEW MEXICO



AMENDED APPLICATION

COMES NOW, ARCO Oil & Gas Company (ARCO) by its attorneys, Montgomery & Andrews, P.A., and applies for an order allowing it to directionally drill its ARCO Custer Wells No. 1, located in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico, and in support of its applications states:

- 1. ARCO has commenced drilling its Custer Wells No. 1 well 1810 feet from the north line and 2,164 feet from the west line in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico pursuant New Mexico Oil Conservation Division Order No. R-6626. In that order ARCO was designated operator of the subject well and the unit.
- 2. In the process of drilling its Custer Well No. 1, ARCO cut a fault. As a result, ARCO proposes to plug back to 6,500 feet and to directionally drill the well to a point within 100 feet east of a point 1,650 feet from the north line and 660 feet from the west line Section 6, T. 25 S., R. 37 E., N.M.P.M. and at a true vertical depth of 12,800 feet. ARCO also proposes a non-standard location in the Devonian 1,800 feet from the north line and 1,480 feet from the west line of above-described Section 6 in connection with this application.

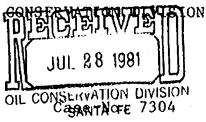
3. The granting of this application will prevent waste and protect correlative rights.

Respectfully submitted, MONTGOMERY & ANDREWS, P.A.

Allen H. Brill
Gary R. Kilpatric
P.O. Box 2307
Santa Fe, New Mexico 87501
(505) 982-3873

BEFORE THE NEW MEXICO OIL 60

APPLICATION OF ARCO OIL AND GAS COMPANY TO DIRECTIONALLY DRILL ITS WELL ARCO CUSTER WELLS NO. 1 LOCATED IN THE N/2 OF SECTION 6, TOWNSHIP 25 SOUTH RANGE 37 EAST, N.M.P.M., CUSTER FIELD, LEA COUNTY, NEW MEXICO



AMENDED APPLICATION

COMES NOW, ARCO Oil & Gas Company (ARCO) by its attorneys, Montgomery & Andrews, P.A., and applies for an order allowing it to directionally drill its ARCO Custer Wells No. 1, located in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico, and in support of its applications states:

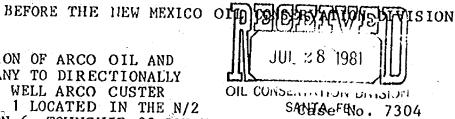
- 1. ARCO has commenced drilling its Custer Wells No. 1 well 1810 feet from the north line and 2,164 feet from the west line in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico pursuant New Mexico Oil Conservation Division Order No. R-6626. In that order ARCO was designated operator of the subject well and the unit.
- 2. In the process of drilling its Custer Well No. 1, ARCO cut a fault. As a result, ARCO proposes to plug back to 6,500 feet and to directionally drill the well to a point within 100 feet east of a point 1,650 feet from the north line and 660 feet from the west line Section 6, T. 25 S., R. 37 E., N.M.P.M. and at a true vertical depth of 12,800 feet. ARCO also proposes a non-standard location in the Devonian 1,800 feet from the north line and 1,480 feet from the west line of above-described Section 6 in connection with this application.

The granting of this application will prevent waste and 3. protect correlative rights.

Respectfully submitted, MONTGOWERY & ANDREWS, P.A.

Allen H. Brill
Gary R. Kilpatric
P.O. Box 2307
Santa Fe, New Mexico 87501
(505) 982-3873

APPLICATION OF ARCO OIL AND GAS COMPANY TO DIRECTIONALLY DRILL ITS WELL ARCO CUSTER
WELLS NO. 1 LOCATED IN THE N/2
OF SECTION 6, TOWNSHIP 25 SOUTH
RANGE 37 EAST, N.M.P.M., CUSTER
FIELD, LEA COUNTY, NEW MEXICO



AMENDED APPLICATION

COMES NOW, ARCO Oil & Gas Company (ARCO) by its attorneys, Montgomery & Andrews, P.A., and applies for an order allowing it to directionally drill its ARCO Custer Wells No. 1, located in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico, and in support of its applications states:

- ARCO has commenced drilling its Custer Wells No. 1 well 1. 1810 feet from the north line and 2,164 feet from the west line in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico pursuant New Mexico Oil Conservation Division Order No. R-6626. In that order ARCO was designated operator of the subject well and the unit.
- In the process of drilling its Custer Well No. 1, ARCO cut a fault. As a result, ARCO proposes to plug back to 6,500 feet and to directionally drill the well to a point within 100 feet east of a point 1,650 feet from the north line and 660 feet from the west line Section 6, T. 25 S., R. 37 E., N.M.P.M. and at a true vertical depth of 12,800 feet. ARCO also proposes a nonstandard location in the Devonian 1,800 feet from the north line and 1,480 feet from the west line of above-described Section 6 in connection with this application.

The granting of this application will prevent waste and 3. protect correlative rights.

Respectfully submitted, MONTGOWERY & ANDREWS, P.A.

Allen H. Brill
Gary R. Kilpatric
P.O. Box 2307
Santa Fe, New Mexico 87501
(505) 982-3873

Dockets Nos. 23-81 and 24-81 are tentatively set for July 29 and August 12, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JULY 15, 1981

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

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

- ALLOWABLE: (1) Consideration of the allowable production of gas for August, 1981, from fifteen provated pools in Lea, Eddy, and Chaves Counties, New Mexico.
 - (2) Consideration of the allowable production of gas for August, 1981, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.
- Application of El Paso Natural Gas Company for downhole commingling, Rio Arriba County, New Mexico.

 Applicant, in the above-styled cause, seeks approval for the downhole commingling of Chacra and Hesaverde production in the wellbores of four wells to be drilled in the SE/4 and SW/4 of Section 34, Township 27 North, Range 7 West, and the SW/4 and NW/4 of Section 2, Township 26 North, Range 7 West, respectively.
- CASE 7303: Application of Florida Hydrocarbons Company for surface commingling, Lea County, New Mexico.

 Applicant, in the above-styled cause, seeks approval for the surface commingling of Morrow, Strawn,
 Atoka, and Wolfcamp gas produced from five wells located in Unit F of Section 10, Units G and O of
 Section 15, and Units A and I of Section 22, all in Township 23 South, Range 34 East, Antelope
 Ridge Field, after separately metering the gas produced from each well and each zone. Lease liquids
 would be separated out at the wellhead and the gas processed in a plant, allocating plant production
 back to each well on the basis of meter readings. Applicant further seeks a procedure whereby
 additional wells could be similarly commingled in said system.
- CASE 7304: Application of ARCO Oil and Gas Company for directional drilling, Lea County, New Mexico.

 Applicant, in the above-styled cause, seeks authority to directionally drill its Custer Well No. 1, the surface location of which is 810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, Custer Field, to a bottom hole location within 100 feet of a point 1650 feet from the North line and 660 feet from the West line of said Section 6, at a true vertical depth of approximately 12,800 feet.
 - CASE 7305: Application of Amoco Production Company for compulsory pooling and an unorthodox well location, 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 34, Township 23 South, Range 28 East, to be dedicated to a well to be drilled at an unorthodox location 660 feet from the South line and 1980 feet from the West line of said Section 34. 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 7306:

 Application of Getty Oil Company for pool creation, special rool rules, and a non-standard proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Lower Pennsylvanian gas pool for its Federal 33 Well No. 1 located in Unit G of Section 33, Township 26 South, Range 33 East, and the promulgation of special rules therefor, including provisions for 640-acre spacing. Applicant also seeks approval of a 616.24-acre non-standard gas proration unit comprising Sections 33 and 34, Township 26 South, Range 33 East.
 - CASE 7307: Application of Mesa Petroleum Company for compulsory pooling, Rio Arriba County, New Mexico.

 Applicant, in the above-styled cause, seeks an order pooling all royalty interests in the Mesaverde formation underlying the W/2 of Section 23, Township 26 North, Range 6 West, to be dedicated to its Federal Well No. 12E drilled at a standard location thereon.
- CASE 7308: Application of Mesa Petroleum Company for compulsory pooling, Rio Arriba County, New Mexico.

 Applicant, in the above-styled cause, seeks an order pooling all royalty interests in the Mesaverde formation underlying the E/2 of Section 23, Township 26 North, Range 6 West, to be dedicated to its Federal Well No. 11E drilled at a standard location thereon.
- CASE 7074: (Reopened and Readvertised)

In the matter of Case 7074 being reopened pursuant to the provisions of Order No. R-6565, which order created the South Elkins-Fusselman Gas Pool in Chaves County, New Mexico, to permit all interested parties to appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is determined to be a retrograde gas condensate reservoir.

J. O. SETH (1883-1963) FRANK ANDREWS (1914-1981)

A. K. MONTGOMERY
SETH D. MONTGOMERY
FRANK ANDREWS III
OWEN M. LOPEZ
VICTOR R. ORTEGA
JOHN E. CONWAY
JEFFREY R. BRANNEN
JOHN B. POUND
GARY R. KILPATRIC
THOMAS W. OLSON
WALTER J. MELENDRES
BRUCE L. HERR
MICHAEL W. BRENNAN
ROBERT P. WORCESTER
JOHN B. DRAPEK
NANCY M. ANDERSON
RUDOLPH B. SACKS, JR.
JANET MCL. MCKAY
EDWARD F. MITCHELL III
ALLEN H. BRILL
CARRIE L. PARKER

MONTGOMERY & ANDREWS

PROFESSIONAL ASSOCIATION ATTORNEYS AND COUNSELORS AT LAW

325 PASEO DE PERALTA POST OFFICE BOX 2307 SANTA FE, NEW MEXICO 87501

TELEPHONE 505-982-3873 TELECOPY 505-982-4289

June 25, 1981



New Mexico Oil Conservation Division State Land Office Post Office Box 2088 Santa Fe, New Mexico 87501 Case 7304

Re: Application for Directional Drilling and Refiling of Form C-103 for ARCO's Custer Wells, Well No. 1

Gentlemen:

Enclosed please find ARCO's application for directional drilling and three copies of an amended form C-103 for the same well.

Please advertise the application for directional drilling for hearing on your July 16, 1981 calendar or, if that docket is full, on the next available hearing date thereafter. If you have any questions concerning this application, or should anything further be required, please do not hesitate to contact me.

Very truly yours,

ary R Kilpatric

GRK:c1

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION OF ARCO OIL AND GAS COMPANY TO DIRECTIONALLY DRILL ITS WELL ARCO CUSTERNS WELLS NO. 1 LOCATED IN THE PROPERTY. No. 7304 OF SECTION 6, TOWNSHIP 25 BOUTH RANGE 37 EAST, N.M.P.M., USTERN 25 1981 FIELD, LEA COUNTY, NEW MEXICO OIL CONSERVATION DIVISION APPLPENTA ON

COMES NOW, ARCO Oil & Gas Company (ARCO) by its attorneys, Montgomery & Andrews, P.A., and applies for an order allowing it to directionally drill its ARCO Custer Wells No. 1, located in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico, and in support of its applications states:

- ARCO has commenced drilling its Custer Wells No. 1 well 810 feet from the north line and 2,164 feet from the west line in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico pursuant New Mexico Oil Conservation Division Order No. R-6626. In that order ARCO was designated operator of the subject well and the unit.
- In the process of drilling its Custer Well No. 1, ARCO cut a fault. As a result, ARCO proposes to plug back to 6,250 feet and to directionally drill the well to a circle with a 100 foot radius, the center of said circle to be 660 feet from the west line and 1,650 from the north line of Section 6, T. 25 S., R. 37 E., N.M.P.M. and at a true vertical depth of 12,800 feet.
- The granting of this application will prevent waste and protect correlative rights.

Respectfully submitted, MONTGOMERY & ANDREWS, P.A.

P.O. Nox 2307

Santa Fe, New Mexico 87501

(505) 982-3873

APPLICATION OF ARCO OIL AND GAS COMPANY TO DIRECTIONALLY DRILL ITS WELL ARCO CUSTER DRILL ITS WELL ARCO COSTER
WELLS NO. 1 LOCATED IN THE N/2
OF SECTION 6, TOWNSHIP DESCRIPTION OF SECTION 100 PM PEXICO 25 1981 Case No. 7304

COMES NOW, ARCO Oil & Gas Company (ARCO) by its attorneys, Montgomery & Andrews, P.A., and applies for an order allowing it to directionally drill its ARCO Custer Wells No. 1, located in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico, and in support of its applications states:

- ARCO has commenced drilling its Custer Wells No. 1 well 810 feet from the north line and 2,164 feet from the west line in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico pursuant New Mexico Oil Conservation Division Order No. R-6626. In that order ARCO was designated operator of the subject well and the unit.
- In the process of drilling its Custer Well No. 1, ARCO cut a fault. As a result, ARCO proposes to plug back to 6,250 feet and to directionally drill the well to a circle with a 100 foot radius, the center of said circle to be 660 feet from the west line and 1,650 from the north line of Section 6, T. 25 S., R. 37 E., N.M.P.M. and at a true vertical depth of 12,800 feet.
- The granting of this application will prevent waste and protect correlative rights.

Respectfully submitted, MONTGOMERY & ANDREWS, P.A.

P.O. Nox 2307

Santa Fe, New Mexico 87501 (505) 982-3873

APPLICATION OF ARCO OIL AND GAS COMPANY TO DIRECTIONALLY DRILL ITS WELL ARCO CUSTER WELLS NO. 1 LOCATED IN THE N/2 OF SECTION 6, TOWNSHIP 25 SOUTH RANGE 37 EAST, N.M.P.M., FIELD, LEA COUNTY, NEW TEXT OF

Case No. 3304

OIL CONSERVATION DIVISION
COMES NOW, ARCO Oil & Gaan Tooffpany (ARCO) by its attorneys, Montgomery & Andrews, P.A., and applies for an order allowing it to directionally drill its ARCO Custer Wells No. 1, located in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico, and in support of its applications states:

- ARCO has commenced drilling its Custer Wells No. 1 well 810 feet from the north line and 2,164 feet from the west line in the N/2 of Section 6, T. 25 S., R. 37 E., N.M.P.M., Custer Field, Lea County, New Mexico pursuant New Mexico Oil Conservation Division Order No. R-6626. In that order ARCO was designated operator of the subject well and the unit.
- In the process of drilling its Custer Well No. 1, ARCO cut a fault. As a result, ARCO proposes to plug back to 6,250 feet and to directionally drill the well to a circle with a 100 foot radius, the center of said circle to be 660 feet from the west line and 1,650 from the north line of Section 6, T. 25 S., R. 37 E., N.M.P.M. and at a true vertical depth of 12,800 feet.
- The granting of this application will prevent waste and protect correlative rights.

Respectfully submitted, MONTGOMERY & ANDREWS, P.A.

Gary R. Kilpa P.O. Nox 2307

Santa Fe, New Mexico 87501 (505) 982-3873

STATE OF NEW MEXICO	
ENERGY AND MINERALS DEPARTMENT	
OIL CONSERVATION DIVISION	
- DISTRIBUTION P. O. BOX 2088	Fora C-103
SANTA FE SANTA FE, NEW MEXICO 87501	Revised 10-1
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ARCO Oil and Gas Company SANTA FE	Custer Wells
2. Address of Operator	9. Well No.
P. O. Box 1710, Hobbs, New Mexico 38240	1 . 1 .
. Location of Well	Custer and Pool, or Wildcal
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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT	,
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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

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

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Case No. 7304 Order No. R-(e792

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APPLICATION OF ARCO OIL AND GAS COMPANY FOR DIRECTIONAL DRILLING AND AN UNORTHODOX GAS WELL LOCATION, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on July 15, 1981, and on August 12, 1981, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____day of October, 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, ARCO Oil and Gas Company, seeks authority to directionally drill its Custer Wells Well No. 1, the surface location of which is 1810 feet from the North line

and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, Custer Field, in such a manner as to penetrate the Devonian formation at an unorthodox location within 100 feet of a point approximately 1800 feet from the North line and 1480 feet from the West line of said Section 6, at a Standard location and to bottom said well in the Ellenburger formation within 100 feet of a point approximately 1650 feet from the North line and 760 feet from the West line of said Section 6, but in no event closer than 660 feet to said line. The N/2 of said Section 6 would be dedicated to each of said formations.

- appeared at the hearing and objected to the unorthodox location on grounds that it would cause drainage of hydrocarbons from under the E/2 of Section 1, Township 25 South, Range 36 East, NMPM, being the spacing and proration unit dedicated to Conoco's wells Federal B-1 Well No. 5, located 1650 feet from the North line and 660 feet from the East line of said feet tion 1, and would therefore impair Conoco's correlative rights.
- (4) That the Custer-Devonian Gas Pool appears to be of very limited lateral extent, being bounded on the north and east by a northwest/southeast trending fault and on the south and west by a productive limit based on reservoir rock quality and structure.
- (5) That from the best information available, it would appear that because of the size and shape of the reservoir, none of the wells presently completed in said reservoir, nor the subject well, has dedicated thereto a fully productive 320-acre tract.
- (6) That the Division, in determining the appropriate penalty for wells drilled at unorthodox locations or on tracts which are shown to be only partially productive, most often

relies on a straight acreage determination of drainage impingement onto offsetting tracts or of productive areas.

- (7) That inasmuch as each well in the Custer-Devonian Gas Pool appears to have less than 320 productive acres dedicated thereto, and no well's production has been penalized hereto-fore, determination of a penalty factor based on straight acreage in the instant case would be arbitrary and unjust and would not protect correlative rights.
- (8) That Section 70-2-33H, NMSA Compilation, defines correlative rights as being "...the opportunity afforded, so far as it is practicable to do so, to the owner of each property in a pool to produce without waste his just and equitable share of the oil or gas, or both, in the pool..."
- (9) That the protection of correlative rights in this particular case can best be served by not utilizing the usual methods of straight acreage penalty determination, but by utilizing a formula involving net acre-feet of pay.
- (10) That the only offsetting well to applicant's Custer Wells Well No. 1 which would be adversely affected by said well is the Conoco Wells Federal B-1 Well No. 5, located as described in Finding No. (3) above.
- (11) That according to the best available evidence at the hearing, said Conoco Wells Federal B-1 Well No. 5 has some 16,514 acre-feet of Devonian pay within its dedicated spacing and proration unit (the E/2 of Section 1, Township 25 South, Range 36 East, NMPM) which it can presumably drain.
- (12) That according to the best available evidence at the hearing, the proposed well, ARCO's Custer Wells Well No. 1, would have some 15,387 acre feet of Devonian pay within its dedicated spacing and proration unit (the N/2 of Section 6, Township 25 South, Range 37 East, NMPM) which it would

presumably drain.

- would have less acre-feet of Devonian pay available to the well-bore than does the Conoco Wells Federal B-l Well No. 5, said ARCO Custer Wells Well No. 1 should be penalized to offset any advantage it might gain over the Conoco well by reason of its unorthodox location.
- (14) That such penalty should be based on the ratio of productive acre-feet dedicated to one well to productive acre feet dedicated to the other well and calculated as follows:

Production limitation factor =

net acre-feet of Devonian pay dedicated to ARCO well net acre-feet of Devonian pay dedicated to Conoco well

 $\frac{15,387}{160,534} = .93$

- (15) That in the absence of any special rules and regulations for the prorationing of production from the Devonian formation, the aforesaid production limitation factor should be applied against said well's ability to produce into the pipeline as determined by periodic well tests.
- (16) That the minimum calculated allowable for the subject well should be reasonable, and 1,000,000 cubic feet of gas per day is a reasonable figure for such minimum allowable.
- (17) That the applicant should be required to determine the subsurface location of the kick-off point in the subject well prior to directional drilling, and to determine the subsurface location of the Devonian pay and the Ellenburger pay by means of a continuous multi-shot directional survey conducted subsequent to said directional drilling, if said well is to be completed as a producing well.
- (18) That approval of the subject application subject to the above provisions and limitations will afford the applicant

the opportunity to produce its just and equitable share of the gas in the subject reservoir or other productive zones found, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

- (1) That the applicant, ARCO Oil and Gas Company, is hereby authorized to directionally drill its Custer Wells Well No. 1, the surface location of which is 1810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, NNPM, Custer Field, Lea County, New Mexico, in such a manner as to penetrate the Devonian formation at an unorthodox location within 100 feet of a point 1800 feet from the North line and 1480 feet from the West line of said Section 6, and to bottom said well in the Ellenburger formation within 100 feet of a point 1650 feet from the North line and 760 feet from the West line of said Section 6, and in no event closer than 660 feet to said west line of said Section 6.
- (2) That the N/2 of the aforesaid Section 6 shall be dedicated to said well in both the Custer-Devonian Gas Pool and the Custer-Ellenburger Gas Pool.
- (3) That prior to directional drilling of said well, the operator shall determine the subsurface location of the kick-off point.
- (4) That subsequent to the above-described directional drilling, should said well be a producer, a continuous multi-shot directional survey shall be made of the wellbore of the well from total depth to the kick-off point with shot points not more than 100 feet apart; that the operator shall

cause the surveying company to forward a copy of the survey report directly to the Santa Fe Office of the Division, P. O. Box 2088, Santa Fe, New Mexico, and that the operator shall notify the Division's Hobbs District Office of the date and time said survey is to be commenced.

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

IT IS FURTHER ORDERED:

- (1) That the ARCO Custer Wells Well No. 1 is hereby assigned a Production Limitation Factor of 0.93 in the Devonian formation.
- (2) That in the absence of any Special Rules and Regulations prorating gas production in said Devonian formation, the special rules hereinafter promulgated shall apply.
- (3) That the following Special Rules and Regulations for a non-prorated gas well at an unorthodox location shall apply to the subject well:

SPECIAL RULES AND REGULATIONS
FOR THE
APPLICATION OF A "PRODUCTION LIMITATION FACTOR"
TO A NON-PRORATED GAS WELL

APPLICATION OF RULES

RULE 1. These rules shall apply to the Devonian formation completion of the ARCO Oil and Gas Company Custer Wells Well No. 1, the surface location of which is 1810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico, which well's Production Limitation Factor of 0.93 shall be applied to the well's deliverability (as determined by the hereinafter set forth procedure) to determine its maximum

allowable rate of production.

RULE 2. The allowable period for the subject well shall be six months.

RULE 3. The year shall be divided into two allowable periods commencing at 7:00 o'clock a.m. on January 1 and July 1.

DETERMINATION OF DELIVERY CAPACITY

RULE 4. Immediately upon connection of the well the operator shall determine the open flow capacity of the well in accordance with the Division "Manual for Back-Pressure Testing of Natural Gas Wells" then current, and the well's initial deliverability shall be calculated against average pipeline pressure.

RULE 5. The well's "subsequent deliverability" shall be determined twice a year, and shall be equal to its highest single day's production during the months of April and May or October and November, whichever is applicable. Said subsequent deliverability, certified by the pipeline, shall be submitted to the appropriate District Office of the Division not later than June 15 and December 15 of each year.

RULE 6. The Division Director may authorize special deliverability tests to be conducted upon a showing that the well has been worked over or that the subsequent deliverability determined under Rule 5 above is erroneous. Any such special test shall be conducted in accordance with Rule 4 above.

RULE 7. The operator shall notify the appropriate district office of the Division and all offset operators of the date and time of initial or special deliverability tests in order, that the Division or any such operator may at their option witness such tests.

CALCULATION AND ASSIGNMENT OF ALLOWABLES

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- RULE 8. The well's allowable shall commence upon the date of connection to a pipeline and when the operator has complied with all appropriate filing requirements of the Rules and Regulations and any special rules and regulations.
- RULE 9. The well's allowable during its first allowable period shall be determined by multiplying its initial deliverability by its production limitation factor.
- RULE 10. The well's allowable during all ensuing allowable periods shall be determined by multiplying its latest subsequent deliverability, as determined under provisions of Rule 5, by its production limitation factor. If the well shall not have been producing for at least 60 days prior to the end of its first allowable period, the allowable for the second allowable period shall be determined in accordance with Rule 9.
- RULE 11. Revision of allowable based upon special well tests shall become effective upon the date of such test provided the results of such test are filed with the Division's district office within 30 days after the date of the test; otherwise the date shall be the date the test report is received in said office.
- RULE 12. Revised allowables based on special well tests shall remain effective until the beginning of the next allowable period.
- RULE 13. In no event shall the well receive an allowable of less than one million cubic feet of gas per day.

 BALANCING OF PRODUCTION
- RULE 14. January 1 and July 1 of each year shall be known as the balancing dates.
- RULE 15. If the well has an underproduced status at the end of a six-month allowable period, it shall be allowed to carry such underproduction forward into the next period and may

produce such underproduction in addition to its regularly assigned allowable. Any underproduction carried forward into any allowable period which remains unproduced at the end of the period shall be cancelled.

RULE 16. Production during any one month of an allowable period in excess of the monthly allowable assigned to the well shall be applied against the underproduction carried into the period in determining the amount of allowable, if any, to be cancelled.

RULE 17. If the well has an overproduced status at the end of a six-month allowable period, it shall be shut in until such overproduction is made up.

RULE 18. If, during any month, it is discovered that the well is overproduced in an amount exceeding three times its average monthly allowable, it shall be shut in during that month and during each succeeding month until it is overproduced in an amount three times or less its monthly allowable, as determined hereinabove.

RULE 19. The Director of the Division shall have authority to permit the well, if it is subject to shut-in pursuant to Rules 17 and 18 above, to produce up to 500 MCF of gas per month upon proper showing to the Director that complete shut-in would cause undue hardship, provided however, such permission shall be rescinded for the well if it has produced in excess of the monthly rate authorized by the Director.

RULE 20. The Division may allow overproduction to be made up at a lesser rate than permitted under Rules 17, 18, or 19 above upon a showing at public hearing that the same is necessary to avoid material damage to the well.

GENERAL

RULE 21. Failure to comply with the provisions of this

order or the rules contained herein or the Rules and Regulations of the Division shall result in the cancellation of allowable assigned to the well. No further allowable shall be assigned to the well until all rules and regulations are complied with. The Division shall notify the operator of the well and the purchaser, in writing, of the date of allowable cancellation and the reason therefor.

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

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

STATE OF NEW MEXICO OIL CONSERVATION DIVISION

JOE D. RAMEY, Director

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