

CASE 4575: Appli. of ANADARKO
FOR NEW GAS POOL OR AMENDMENT OF
SPECIAL RULES AND POOL COMMINGLING

4575

Application
Transcripts.

Small Exhibits

ETC.

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

December 15, 1971

REGULAR HEARING

IN THE MATTER OF:

Application of Anadarko Production
Company for the amendment of the
special pool rules for an existing
pool, Lea County, New Mexico.

Case No. 4575

BEFORE: ~~LAURENCE A. ARMijo, Examiner~~

Governor Bruce King
Mr. A. L. Porter
Mr. Alex J. Armijo

TRANSCRIPT OF HEARING

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1 MR. HATCH: Application of Anadarko Production
2 Company for the amendment of the special pool rules for an
3 existing pool, Lea County, New Mexico.
4
5 The Commission has received a request from the
6 applicant that the case be continued. This is to be heard
7 De Novo. They ask that it be continued to the hearing to be
8 held February 16, 1972.
9
10 MR. PORTER: If there's no objection, Case 4575
11 will be continued to February 16.
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1 STATE OF NEW MEXICO)
2 COUNTY OF BERNALILLO) SS

3 I, RICHARD STURGES, Court Reporter in and for the
4 County of Bernalillo, State of New Mexico, do hereby certify
5 that the foregoing and attached Transcript of Hearing before
6 the New Mexico Oil Conservation Commission was reported by
7 me and that the same is a true and correct record of the said
8 proceedings, to the best of my knowledge, skill, and ability.

9
10 Richard Sturges
11 Court Reporter
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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Roswell, New Mexico

October 13, 1971
Regular Hearing

IN THE MATTER OF:

Application of Anadarko
Production Company for the
amendment of the special
pool rules for an existing
pool, Lea County, New Mexico.

Case 4575

BEFORE: A. L. "Pete" PORTER, SECRETARY DIRECTOR

TRANSCRIPT OF HEARING

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MR. PORTER: Call Case 4575.

MR. HATCH: Case 4575, De Novo. Application of Anadarko Production Company for the amendment of the special pool rules for an existing pool, Lea County, New Mexico.

The Commission has received a request from the applicant that this case be continued. The next regularly scheduled meeting of the Commission will be December 15, and I move that it be continued to then.

MR. PORTER: If there are no objections, Case 4575 will be continued to the Regular Hearing December 15.

1 STATE OF NEW MEXICO)
2 COUNTY OF BERNALILLO)

3 I, LINDA MALONE, Court Reporter, do hereby certify that
4 the foregoing and attached Transcript of Hearing before the
5 New Mexico Oil Conservation Commission was reported by me;
6 that the same is a true and correct record of the said
7 proceedings, to the best of my knowledge, skill and ability.

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11 Linda Malone
12 Court Reporter
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22 I do hereby certify that the foregoing is
23 a complete record of the proceedings in
24 the Bernalillo hearing of Case No.
25 heard by me on 19.....

....., Hearinger
New Mexico Oil Conservation Commission

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BEFORE THE

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
August 11, 1971

Examiner Hearing

IN THE MATTER OF:

Application of Anadarko Production
Company for the creation of a new
gas pool, or, in the alternative,
the amendment of the special pool
rules for an existing pool and
pool co-mingling, Lea County,
New Mexico.

Case No. 4575

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

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1 MR. NUTTER: The hearing will come to order, please.
2 First case this morning will be Case 4575.

3 MR. HATCH: Case 4575. Application of Anadarko
4 Production Company for the creation of a new gas pool, or in
5 the alternative, the amendment of a special pool rules for an
6 existing pool and pool co-mingling, Lea County, New Mexico.

7 MR. KELLAHIN: If the Examiner please, Jason Kellahin,
8 Kellahin and Fox, appearing on behalf of the applicant, in
9 association with Mr. J. B. Kepke, a member of the Texas Bar.

10 We have one witness I would like to have sworn.

11 (Witness sworn)

12 (Whereupon, Applicant's Exhibits one through eight
13 were marked for identification.)

14 C. W. STUMHOFFER
15 having been duly sworn, testified as follows:

16 DIRECT EXAMINATION

17 BY MR. KELLAHIN:

18 Q Would you state your name, please?

19 A C. W. Stumhoffer

20 Q By whom are you employed, and in what position, Mr.
21 Stumhoffer?

22 A I am employed by Anadarko Production Company as
23 superintendent, secondary recovery division.

24 Q Where are you located?
25

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1 A In Fort Worth, Texas.

2 Q Have you appeared before the Oil Conservation Commission
3 or one of its examiners and made your qualifications a
4 matter of record?

5 A Yes, I have.

6 MR. KELLIHAN: Are the witness' qualifications
7 acceptable?

8 MR. NUTTER: Yes, they are.

9 Q (Mr. Kellahin continuing) Mr. Stumhoffer, are you familiar
10 with the application of Anadarko Production Company in this
11 case before the Commission?

12 A Yes, I am.

13 Q Briefly, what is proposed by the applicants in this case?

14 A Anadarko, in this case, seeks an amendment of the specific
15 rules and regulations governing the South Eunice, San
16 Andres Fields, Lea County, New Mexico, to provide for the
17 classification of its Wortham number six as a gas well
18 in the South Eunice, San Andres Field Oil Reservoir.

19 Q Now, in the application there was an application for the
20 creation of a new pool for gas production in the San
21 Andres formation.

22 A Yes.

23 Q What did you determine in connection with that?

24 A In making our geological engineering study of this well,
25

1 we determined that the completion intervals in the Wortham
2 six were connected to the oil reservoir that was developed
3 to the Northeast of the well.

4 Q So now, you are only asking for the adoption of pool rules
5 for the recreation and recognition of this well as a gas
6 well and an oil reservoir; is that correct?

7 A That's correct.

8 Q Now, referring to what has been marked as Applicant's
9 Exhibit number one, would you identify that exhibit?

10 A Exhibit number one is a map of the Penrose-Skelley and
11 South Eunice San Andres Field area, showing the development
12 in the two fields.

13 On the map we have indicated the San Andres wells that
14 have been drilled and completed with triangles around
15 the well designations.

16 At the present time there are three producing oil wells.
17 Excuse me, I take that back. There are four producing
18 oil wells in the reservoir.

19 They are owned by Anadarko, and one is operated by Humble.
20 And there are two water disposal wells in the San Andres
21 area, one by Humble, and one by Anadarko

22 Q That would be the Humble number twenty-six in section
23 two?

24 A That's correct.
25

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1 Anadarko's number four well located in section fifteen,
 2 Township twenty-two south, range thirty-seven east.

3 MR. NUTTER: Is disposal into the San Andres in
 4 each of those?

5 THE WITNESS: Yes. And we have one temporarily
 6 abandoned well.

7 A In section fourteen, Q13, Section 14, same township
 8 and range, at the present time this well is being worked
 9 over to attempt making a San Andres completion, based on
 10 the data we have obtained with the San Andres work to the
 11 North.

12 Q Now, the Humble well number four in section two, you say
 13 that is a producing well? That was drilled as a water
 14 supply well, was it not?

15 A That's correct. Approximately in 1969 this well was drilled
 16 for water supply to furnish water for a water flood if--
 17 I think in the Paddock, and while attempting to complete
 18 this well, Humble obtained some oil production with the
 19 water in sufficient quantity to require establishment of
 20 field rules, a field for the oil production with the
 21 water.

22 And on the basis of the oil show in the water supply well
 23 that Humble completed, Anadarko has done the majority--
 24 well, all of the development work in the South Eunice
 25 San Andres Field to this date, well, I might add that

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1 Humble drilled the number twenty-six that they are using
2 as the number S, number twenty-six, as an oil test, but
3 were not successful, and later converted to water
4 disposal.

5 The first well that Anadarko drilled in this area to
6 test the number thirteen Hugh, located in the Northwest
7 of the Northwest of section fourteen.

8 All the wells that we refer to will be in township
9 twenty-two South, range thirty-seven East. And we completed
10 this well for approximately fifty barrels of oil a day
11 and a thousand barrels of water.

12 It later declined to uneconomic amounts of oil, and the
13 well was abandoned shortly after completion.

14 During February of 1970, Anadarko drilled its Wortham
15 C number one. Originally, this well is Wortham B number
16 three located in the Northwest of the Northeast of section
17 eleven, and this---I want to refer to exhibit number two.

18 It is a Dresser Atlas Densilog of the well, and on this
19 log we have shown the perforated interval in the San
20 Andres and the production history of the well.

21 This well was perforated from an overall interval from
22 3870 to 4126.
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1 It completed pumping for one hundred eighty-eight
2 barrels a day, 912 barrels of water, and a gas oil ratio
3 of nineteen hundred and fifteen.

4 At the present time the well is pumping sixty-seven
5 barrels of oil a day, and thirty-nine barrels of water.
6 Gas oil ratio, 2313.

7 These perforations have not been changed, and they are
8 still--it is the same at the present time.

9 Subsequent to the completion of the Wortham C 1, we
10 drilled and completed the Wortham C 2 in the Southwest
11 of the Northeast of the section 11.

12 And I would like to refer you to Exhibit 3, which is a
13 Dresser Atlas Densilog of the well, showing the same
14 data as we indicated on the number 1 well.

15 This well was completed from perforations comparable
16 to the Wortham C 1, overall perforations from 3866 to
17 4238.

18 We were not as successful with this completion. Initially,
19 it made 55 barrels a day, pumping, 700 barrels of water,
20 and 82,000 cubic feet of gas.

21 This was during May of 1970. During October of '70 this
22 well was only producing 22 barrels of oil per day and
23 not over 6200 barrels of water, with no gas test, at that
24 time, with the same perforations as originally completed.
25

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1 During February of '71, -- I would like to retract that.
2 I would like to go to Wortham Number 5. Exhibit number
3 four, we worked over Number C two, but prior to that time.
4 we drilled and completed Lou Wortham number five, located
5 in the Northeast corner of the Northwest quarter of section
6 eleven.

7 I would like to refer you to the perforations in this
8 well, from 4116 to 4250, which is down in the San Andres.

9 The top of the San Andres is at 3806, and these perforations
10 are considerably into the San Andres section.

11 This well was completed for 183 barrels a day, 297 barrels
12 of water, and a gas/oil ratio of 1880.

13 This was during December, 1970. During June of 1971,
14 this well tested 82 barrels a day, 15 barrels of water,
15 with a gas/oil ratio of 811, well, in the case that we
16 had by weight. Exhibit four is a Schlumberger Formation
17 Densilog. I didn't refer to that. This indicates that
18 we have a water productive zone based on the previous
19 completions above the oil productive zone, in the San
20 Andres, in this area, but by the low water cut production,
21 we have in the Wortham five, based on the work we did with
22 the Wortham five -- we went back to Wortham C number two,
23 and we used all the perforations and recompleted from 4091
24 to 4226. Initially, this was during February of 1971.
25

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1 A well was completed for a hundred barrels a day, 145
2 barrels of water, gas production of 241 mcf per day.

3 At the present time, the well is producing 31 barrels
4 of oil per day, 60 barrels of water, and the GOR of
5 3213 to 1.

6 These new perforations were comparable to the ones in
7 Wortham five that was completed in December of 1970.

8 During May of 1971, we drilled Lou Wortham Number six in
9 a Southwest quarter of the Northwest quarter of section
10 eleven. This well was -- after testing the lower San
11 Andres, which proved to be non-commercial, we came in and
12 completed in -- and attempted a completion in a San Andres
13 from 41 -- 4048 to 58, 4110 to 15, 4122 to 26, as shown on
14 exhibit five.

15 We tested at least three sets of perforations, 142 barrels of
16 fluid per day, 8 percent oil, and this made a 500 mcf of
17 gas per day.

18 These perforations were squeezed, and we reperforated from
19 4110 to 15, 4122 to 25.

20 Now, this set of perforations is comparable to the
21 perforations in the Wortham five from -- I would like to
22 refer you to Wortham five, Log five, exhibit four, from
23 4116 to 23.

24 MR. NUTTER. Let's see. Would you go through what
25 your original perforations were in that well again, Clarence?

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THE WITNESS: In the Wortham six?

MR. NUTTER: Yes.

THE WITNESS: After we plugged back the well to 4230, we tested some zones down below. They were not commercial. We came in and perforated from 4048 to 58. The ones that is shown with an X.

MR. NUTTER: Yes

THE WITNESS: They were squeezed at a later date, and then from 4110 to 15, and 4122 to 26. That is not shown on this log but it is perforated from 4122 to 26 originally. Those perforations were squeezed. There were three sets. We squeezed those perforations, came back and perforated 4110 to 15 and 4122 to 25. Now, those two sets of perforations are comparable to the perforations from 4116 to 23 in Wortham five.

MR. NUTTER: Then you have also got perforations from 4160 to 70 and 80 to 87?

THE WITNESS: Right.

MR. NUTTER: And when were they made, originally?

THE WITNESS: No. They were after --

MR. NUTTER: Oh, okay.

THE WITNESS: I was going to go on the production tests of this, Mr. Examiner. We flowed -- we tested these perforations 4110 to 15, 4122 to 25. We flowed a mist of

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1 fluid, and 397 mcf of gas per day on a three-quarter inch
2 choke flowing tubing, pressure of 90 P.S.I.

3 We came in later. Of course, we were looking for an oil
4 well. All previous completions have been oil, and we were
5 looking for an oil well, so we came in and perforated
6 additional zones, from 4160 to 70 and 4180 to 83, which
7 correlates with the perforations in Wortham five.

8 The lower sets, one of the lower two sets in the Wortham
9 five, we treated this zone, but we did not improve the
10 production.

11 Apparantly, we verified the original analysis of log that
12 these zones were too tight, and we couldn't get anything
13 out of them in this particular well.

14 And with those four sets of perforations and 4110 overall
15 to 4183, the well was producing just a mist of fluid with
16 396 mcf per day on a three-quarter inch choke, 90 pounds
17 flowing pressure on it, and at that time we tested these
18 zones for several days, and we set a plug, a bridge plug, a
19 retrievable, came in and perforated it from 3900 to 902,
20 and 3927 to 32, and this zone on test was flowing
21 approximately seven barrels of fluid per hour, seven
22 percent oil, the rest water.

23 And the gas increased, which we tested from 164 to 426 mcf
24 per day on a three quarter choke. The flowing tubing
25 pressure, 120 pounds.

1 And this time, we retrieved the bridge plug and opened
2 all perforations, that was the perforations 3900, 3902,
3 3927 to 392, 4110 to 15, 4122 to 25, 4160 to 70, 4180 to
4 83.

5 And on subsequent tests, with all these perforations open,
6 the well produced 10 barrels of oil a day, flowing 60
7 barrels of water, 2050 mcf of gas on a 24 and six-fourths
8 choke, flowing tubing pressure 550 pounds, casing pressure
9 750 P.S.I.

10 And at the present time the well, after testing for several
11 days, the well is temporarily shut in waiting on this
12 hearing. That is for classification of the gas well.

13 I would like to refer you to exhibit six, which is a cross
14 section of Anadarko starting on the left is the gas well
15 we are talking about, Wortham six, and the middle log is
16 of the little Wortham five, the oil zone that was completed
17 in December of '70 and the Wortham C one that was completed
18 during February of 1970.

19 I might point out that Lou Wortham five has produced in
20 excess of 50,000 barrels of oil since completion during
21 February of '70, and Wortham five was completed in December
22 of '70 and has produced approximately 20,000 barrels of oil.
23 And, of course, the Lou Wortham six has not been produced
24 except for testing.
25

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1 As you can see, it is rather confusing what to expect
2 from the San Andres in this area.

3 We feel that the upper part -- well, not, say the upper
4 part. From the top of the San Andres down to approximately
5 4000 feet, I would like to use Wortham C one as an example,
6 where we have perforated.

7 I think we were fortunate in this well that we were able
8 to get a successful completion and make an oil well out
9 of it, because of the -- we have had other wells that we
10 perforated in the same zones, and obtained considerable
11 water production, but I feel like these zones, say, Wortham
12 C one, perforated from 4038 70 to 3979, will produce mostly
13 water with approximately five to ten percent oil and a
14 considerable amount of gas.

15 It is a perforation from 4023 to 4068, from tests we have
16 run, apparantly have produced mostly water, and we have
17 done enough testing in this area to show that we have
18 separation in the various zones in the San Andres and
19 then the perforations in Wortham C one from 4100 to 4185,
20 we feel is our oil producing zone, which produces at a
21 fairly low gas/oil ratio.

22 That we have separation, I feel, is further verified by
23 the testing we did in Wortham five. The lower two sets of
24 perforations produced the oil with a gravity of about 32
25 degrees API.

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1 API. The upper set from 4116 to 23, produced a 36 gravity
 2 oil, and with a -- it had a higher GOR.

3 We had very little gas with the two lower sets of
 4 perforations. I think what this cross section will show
 5 is that the perforations from 4116 to 4123 in Wortham 5
 6 is comparable to our perforations from 4110 to 25 in
 7 Wortham 6, that tested to approximately 400 mcf gas per
 8 day, before we completed in the zone, San Andres zones of
 9 at 3900 to 3932.

10 Q (Mr. Kellahin continuing) Is the main portion of your
 11 gas, in your opinion, coming from the upper zone or the
 12 lower --

13 A I feel like the major part of our gas is coming from the
 14 upper part of the San Andres.

15 Q This indicates this is a rather complex reservoir, does it
 16 not?

17 A Yes.

18 Q Do you have water above oil and different gravities at
 19 different levels in the strata?

20 A That's correct.

21 Q And that indicates historic separations, at least.

22 A Right.

23 Q In the formation?

24 A Yes, sir. This does.

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1 Q Now, referring to what has been marked as exhibit number
 2 six, would you identify that exhibit, please?

3 A Exhibit -- the pressure survey?

4 Q Yes.

5 A We have --

6 Q Seven and eight.

7 A We would like to refer to exhibit number seven and eight.
 8 These are bottom-hole pressure surveys that were run on
 9 Wortham C one on the -- that is seven.

10 I would like to point out that the survey shows the
 11 Wortham B three, and of course, that well number has been
 12 changed to Lou Wortham C one.

13 Approximately thirty days after this well was completed, we
 14 ran a bottom-hole pressure pressure survey. Now, you have to
 15 remember this well has a perforation from 3870 to 4185
 16 overall, and the bottom-hole pressure is 1410 at a depth
 17 of 4028 feet.

18 The exhibit A is a bottom-hole survey of Lou Wortham number
 19 six with perforations from 3900 to 4183, overall, at a
 20 depth of 4053 feet.

21 The bottom-hole pressure of 1525 P.S.I.

22 This is one of the major reasons we decided that this was
 23 the same -- that these reservoirs were apparantly connected.
 24 there is not enough difference in the bottom-hole pressure
 25 to indicate separation, although I can't definitely say

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- 1 there might be.
- 2 We feel like this is Lou Wortham six is an unusual well.
- 3 We were drilling there for oil, and it is only twelve feet
- 4 higher structurally than the Lou Wortham five that was
- 5 completed as an oil well, and it has become rather -- we
- 6 didn't expect this much gas volume out of the well, but
- 7 we feel like it is a gas well, and in the oil reservoir
- 8 and we wish to ask the commission to classify it as such.
- 9 Q Now, is there any possibility that this is a gas cap in
- 10 the oil reservoir, in your opinion.
- 11 A Excuse me?
- 12 Q Is this possibly a gas cap in the oil reservoir?
- 13 A I feel like it is -- that the reservoir condition is
- 14 so complex that I would say no, and I think it is --
- 15 no clearly defined gas cap.
- 16 Q And it is separated, in an effective separation, actually
- 17 from the oil zone; is that your opinion?
- 18 A Yes. That is my opinion.
- 19 Q Would the production of the well as a gas well cause any
- 20 damage to the oil wells in the way of reduced pressure?
- 21 A I feel that it wouldn't. This is a relatively tight
- 22 reservoir, and we have even considered asking the commission
- 23 to consider development on the oil field as being developed
- 24 on 80 acre spacing.
- 25

1 We have even considered for asking for 40 acre spacing
2 to obtain maximum recovery from the reservoir.

3 Q Now, the oil production is on 80 acres at the present
4 time. What acreage do you have dedicated to your well
5 number five.

6 A We have the North half of the Northwest quarter dedicated
7 to number five Wortham.

8 Q And at the present time, the South half of the Northwest
9 quarter is not dedicated except to --

10 A That's correct.

11 Q -- the number six well?

12 A That's correct.

13 Q Now, you are proposing to have this well declared a gas
14 well, what rules would you suggest for the operation of
15 the well as a gas well in an oil reservoir.

16 A I would suggest that the rules be -- the field rules be
17 amended to take -- comparable to the Penrose-Skelley field
18 rules, where there is no limiting gas/oil ratio, and the
19 producing characteristics, the Penrose-Skelley produces
20 from the lower Queen and Grayburg is very similar to the
21 San Andres in productive characteristics based on some
22 other wells we have in this area, and then that is what
23 we propose or ask that the commission consider, as an
24 amendment to the field rules for the South Eunice San
25 Andres field, comparable to the Penrose-Skelley where

1 there are no limiting gas/oil ratios.

2 Q Now, what is being done with the casing head gas in this
3 area at the present time?

4 A It is being sold to the pipeline -- gas pipeline companies
5 in the area.

6 Q And do you have a market for the gas in the event this is
7 declared a gas well as requested?

8 A Yes. Northern Natural has been contacted, and we have been
9 in discussion with them for market for this gas from
10 Wortham 6.

11 Q Were exhibits 1 through 8 prepared by you or under your
12 supervision.

13 A Yes, they were.

14 MR. KELLIHAN: At this time I would like to offer
15 exhibits 1 through 8 into evidence.

16 MR. NUTTER: Anadarko's exhibits 1 through 8 will be
17 admitted in evidence.

18 MR. KELLIHAN: Do you have anything further to add,
19 Mr. Stumhoffer?

20 A I believe that's all.
21
22
23
24
25

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Stumhoffer, the number five well is located in between this C one and your well number six, but I notice that it doesn't have any perforations in that upper San Andres zone, but apparantly is the zone making the gas in the number six well.

A That's correct.

Q Is that correct?

A That's correct.

Q Porosity is indicated to be there. You just didn't happen to perforate it? Is that it?

A This was based on a movable oil survey that was run on Wortham five, indicated that we would expect water -- a high water cut with our production from these upper zones, and the -- we perforated in a -- these -- the zone at 3900 in Wortham six, more in a desperation move than anything.

We were looking for a commerical well, and we didn't expect these volumes of gas from this zone, but I would like to point out we are producing approximately seven barrels of fluid a day out of perforations, and only about eight percent of oil.

Q All right. So essentially, those top strainers out there are producing gas and a little water --

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1 A A little oil.

2 Q --a little oil?

3 A It is oil. It is not condensate. We -- all we are --
 4 I might add that what we are requesting is just an
 5 amendment to the field rules to allow us to produce this
 6 well to make a commercial producer out of it. And that
 7 is our main -- as I say, we had drilled this
 8 well as an oil well, and we feel like it is an isolated
 9 possibility, that the aerial extent of this will not be
 10 too great?

11 Q Well, now, this same interval was the interval that in
 12 your C number two, you found to be highly productive of
 13 water and went ahead and squeezed then; is that correct?

14 A In Southeast two.

15 Q These upper San Andres stringers were the ones that were
 16 squeezed, weren't they?

17 A Yes, sir. They were squeezed.

18 Q And then the well was re-separated down in the lower
 19 San Andres?

20 A That's correct. But that doesn't necessarily mean we
 21 could -- possibly could perforate the very upper part.
 22 Our biggest problem with water production was in the zone
 23 around 4000 feet, and the Wortham C two. We ran some
 24 surveys, and we found our water. A bulk of our water was
 25 coming in around the perforations from -- well, actually

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1 the perforations from 3982 to 3960, we found that this
2 was where a bulk of our water was coming,
3 and the reason we did not reperforate from C two above it
4 is because of the fact we didn't want to have to handle
5 these large volumes of water again.

6 We were afraid we might get back into that water.

7 Q Do you have any idea how much oil the number one is producing
8 from the upper San Andres? Has any determination ever
9 been made as --

10 A No.

11 Q -- to what percentage is coming from the upper, as opposed
12 to the lower?

13 A No, we haven't. Not with the amount of perforations we
14 have. There is -- a perforation density. We feel like
15 we just couldn't get a good test on them. We found that
16 in most cases you have communications behind the top
17 between these perforation, and it is difficult to get a
18 good test. I do feel like the bulk of our oil is coming
19 from the lower perforations, and we are getting a little
20 oil from the upper perforations, but I think the bulk of it
21 is coming from the oil perforations, but that is based on
22 the Wortham five completion.

23 Q Well, I think it would be generally agreed, wouldn't it,
24 Mr. Stumhoffer, that these stringers would have natural
25 separations from each other?

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1 A Yes.

2 Q Vertical separations?

3 A Oh, yes.

4 Q But behind the pipe there is probably a man made
 5 communications between some of the stringers?

6 A Oh, yes, yes. I think in the Wortham C1 -- we were
 7 extremely fortunate in making a commercial well. At the
 8 time, we had no idea where the oil was coming from.
 9 We just thought we will-- you normally -- you think it is
 10 the top part of the San Andres, or your producing zones,
 11 which it is, and apparently, we perforated everything in
 12 the well, and we were able to treat the lower perforations
 13 separately from the upper, and I think this is the reason
 14 for the successful completion.

15 We completed all the perforations in the Wortham C1 below
 16 4000 feet separately from the perforations above 4000 feet,
 17 and I think we were able to get through the lower oil zone,
 18 whereas before, in subsequent wells, the Wortham C2 we
 19 had communications behind the perforations.

20 We were not able to get into the oil zone.

21 Q Then in your analysis of exhibits 7 and 8, I think you
 22 said these probably indicated communications between the
 23 wells.

24 A I would, -- there is not enough difference that -- although
 25 the Wortham number 6 has about 115 pounds more shut-in

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1 pressure, bottom hole pressure, I just don't think it is
2 enough to say that this was separated, although I think
3 the possibility exists, but there is no way to positively
4 say that it does.

5 As I say, this is a complex reservoir, and each well--
6 we worked on this -- has been a different problem
7 altogether.

8 Q The pays that cross through these various locations you
9 have given here and also the cross sections which only
10 includes three of them?

11 A Yes.

12 Q The pays are highly correlative from one well to the other?

13 A Yes. Right. But the fluid production --

14 Q Varies?

15 A --varies.

16 Q Yes. Well, it would be possible, would it not, if there
17 were oil associated with this stringer, these upper
18 stringers with -- they were all associated with these
19 stringers in other locations, maybe to the north or to
20 the east or somewhere else, that where all of this large
21 amount of gas might reduce the pressure on those oil fans,
22 isn't that possible?

23 A Are you talking about the upper stringer ends?

24 Q Yes, sir. I am talking about these upper stringer ends.

25 A. 3900.

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- 1 Q Now, you say you might want to develop this later on
- 2 40 acre spacing, in which case, you would have additional
- 3 wells to drill.
- 4 A We have just thought about this. We have not definitely
- 5 firmed up any proposal along this line. I feel the upper
- 6 perforations from 3900 to 3932 in Wortham six, I feel that
- 7 there is no oil column in this particular zone. I think
- 8 we have enough evidence to indicate this, that we -- I
- 9 think anywhere you complete in this zone, you get gas with
- 10 some water and a very small oil catch, less than ten
- 11 percent.
- 12 Q Well, you have --
- 13 A I think you would not damage any oil producing wells,
- 14 because I don't think you would ever complete a water-
- 15 free oil well in this area.
- 16 Q At any rate, you have no wells at the present time that
- 17 are completed as oil wells in this upper section?
- 18 A No, sir. No, sir. The only -- what we would -- I would
- 19 consider a characteristic oil well completion would be
- 20 the Wortham five that we completed in the lower part.
- 21 Not actually -- when I say lower part, I mean it is
- 22 approximately in the middle of the San Andres with the
- 23 water bearing zones in the San Andres above it.
- 24 Q Yes, well, where is the Humble water well completed,
- 25 the one that makes so much oil?

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1 A It is completed below all of our zones. We have no zone
 2 open that they have open in their well.

3 Q I see.

4 A But, of course, you have to remember they are only
 5 producing only approximately three percent oil. They are
 6 moving -- of course, they are using water for a water
 7 flood.

8 Q Yes.

9 A And they make 80 to 100 barrels a day last time I checked
 10 the production records, and I understand -- I don't know
 11 the water volumes they are taking out, but it is over
 12 3000 barrels a day.

13 Q Several thousand barrels a day?

14 A Yes.

15 Q But those perforations are below any of these perforations?

16 A Yes.

17 Q Okay.

18 A They had the perforations that we have open originally, the
 19 day that we subsequently squeezed those off to reduce
 20 the amount of oil they had to handle. I feel this is
 21 an unusual situation. I think that it could possibly --
 22 of course there has not been any other testing in this area
 23 of the San Andres outside of what we have done and what
 24 Humble has done with their water supply well, and the one
 25 well they drilled to the north of their water supply well,

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1 and we have done all the work to develop this as an oil
2 reservoir, outside of the Humble work, and we have had
3 no indication that any one else plans to do any.

4 I am sure they are watching what we are doing.

5 Q In the San Andres?

6 A In the San Andres. I feel like this Wortham six could be
7 a local condition.

8 Q Well, this may be unusual in the sense that it is the
9 only San Andres pool in this area that is similar to this
10 but it is not unusual, is it, in that there are other
11 Queen and Greyburg reservoirs in the same general area
12 that do have isolated stringers of gas and oil --

13 A Right.

14 Q --and in some cases, gas associated with the oil?

15 A Right. There are, in fact -- we have some in the Greyburg
16 in the Penrose-Skelley field; that is the reason I ask
17 that we be allowed to have rules comparable to the Penrose-
18 Skelley rules, because I feel the production characteristics
19 of the San Andres are comparable to it.

20 Q And as a matter of fact, you were aware that these high
21 ratio oil wells or possibly gas wells have been the
22 subject of considerable study by the commission --

23 A Yes, sir.

24 Q --in recent months?

25 A I was aware of that.

1 Of course, we were asking for a gas well classification.
2 We didn't want to amend or ask any exceptions to rule
3 506.

4 MR. NUTTER: Are there any further questions of
5 Mr. Stumhoffer?

6 MR. KELLAHIN: I have one.

7 REDIRECT EXAMINATION

8 BY MR. KELLAHIN:

9 Q In the application, Mr. Stumhoffer, we also ask for the
10 commission to co-mingle production from the Wortham number
11 six and the number five wells.

12 What do you propose in that connection?

13 A We propose to take -- Due to common ownership under that
14 acreage, we would like to be granted permission to co-mingle
15 any liquid that Wortham six would produce, if it -- provided
16 it is a gas well, to co-mingle it with the oil production
17 from Wortham five.

18 MR. NUTTER: Now, in the event the commission should
19 Mr. Stumhoffer, not create a new pool, but in the alternative
20 amend the pool rules, what would be the classification of an
21 oil well, and what would be the classification of a gas
22 well? I realize you are asking for unlimited ratios
23 for oil wells, but where would we classify oil wells and
24 gas wells?
25

1 THE WITNESS: Well, our producing ratio on the oil
2 wells presently runs from 800 to 800 to 100 to 2300 to 1.
3 I would say, of course, the producing ratios on this
4 Wortham six is over a hundred thousand to one.

5 MR. NUTTER: Well, presumably, if we had such pool
6 rules, it would be classified as a gas well?

7 THE WITNESS: Yes.

8 MR. NUTTER: This number six well would --

9 THE WITNESS: Yes.

10 MR. NUTTER: --and the other would be oil wells?
11 So in the event one of these other wells should increase
12 its ratio, say, at what point should it break off and
13 become classified as a gas well rather than as an oil
14 well?

15 THE WITNESS: I have haven't given that any thought,
16 where I would say. I would be reluctant to make a
17 recommendation without giving some thought to it, Mr.
18 Examiner.

19 I think that probably ten thousand to one or something
20 in that range probably would be --that is just --without
21 any study.

22 MR. NUTTER: I see. Are there any other questions
23 of Mr. Stumhoffer? You may be excused.
24 Do you have anything further, Mr. Kellahin?

25 MR. KELLAHIN: That's all I have, Mr. Nutter.

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MR. NUTTER: Does anyone have anything they wish
to offer in case No. 4575?

We'll take the case under advisement.

(Whereupon the case was concluded.)

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I N D E X

WITNESS

PAGE

C. W. STUMHOFFER

2

Direct Examination by Mr. Kellahin

2

Cross Examination by Mr. Nutter

19

Redirect Examination by Mr. Kellahin

27

EXHIBIT

MARKED

OFFERED AND
ADMITTED

Applicant's 1
through 8

2

18

1 STATE OF NEW MEXICO)
2)
3 COUNTY OF BERNALILLO)

4 I, LINDA MALONE, Court Reporter, do hereby certify that
5 the foregoing and attached Transcript of Hearing before the
6 New Mexico Oil Conservation Commission was reported by me; and
7 that the same is a true and correct record of the said
8 proceedings, to the best of my knowledge, skill and ability.

9
10 *Linda Malone*
11 Court Reporter
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I do hereby certify that the foregoing is
a true and correct record of the proceedings in
the hearing of Case No. _____,
held by me on _____, 19____.

_____, Examiner
New Mexico Oil Conservation Commission
_____, Secretary

_____, Court Reporter
_____, Court Reporter
_____, Court Reporter
_____, Court Reporter



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

February 2, 1972

GOVERNOR
BRUCE KING
CHAIRMAN

**LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER**

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

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

Re: Case No. 4575
Order No. R-4249
Applicant:
Anadarko Production Company

Dear Sir:

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

Very truly yours,

A. L. Porter, Jr.
A. L. PORTER, Jr.,
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC _____ **x**
 Artesia OCC _____
 Aztec OCC _____
 Other _____

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 4575 (De Novo)
Order No. R-4249

APPLICATION OF ANADARKO PRODUCTION
COMPANY FOR THE AMENDMENT OF THE
SPECIAL POOL RULES FOR AN EXISTING
POOL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing de novo at 9:00 a.m. on October 13, 1971, at Roswell, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," and was continued from time to time at the request of Anadarko Production Company to February 16, 1972.

NOW, on this 1st day of February, 1972, the Commission, a quorum being present, having considered the record, and being fully advised in the premises,

FINDS:

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

(2) That the applicant for the hearing de novo, Anadarko Production Company, has requested that the application for a hearing de novo in Case No. 4575 be dismissed.

(3) That the applicant's request to dismiss the application for hearing de novo should be granted.

IT IS THEREFORE ORDERED:

(1) That the application of Anadarko Production Company for a hearing de novo in Case No. 4575 is hereby dismissed.

-2-

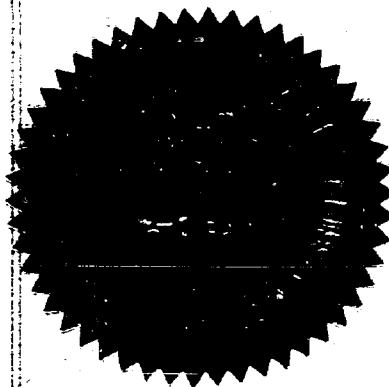
CASE NO. 4575 (De Novo)

Order No. R-4249

(2) That Order No. 4193, issued by the Commission on September 14, 1971, is hereby fully approved, ratified, and confirmed.

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

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



S E A L

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Bruce King
BRUCE KING, Chairman

Alex J. Armiijo
ALEX J. ARMIJO, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

dr/

Docket No. 17-71

DOCKET: EXAMINER HEARING - WEDNESDAY - AUGUST 11, 1971

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

The following cases will be heard before Daniel S. Nutter, Examiner, or
Elvis A. Utz, Alternate Examiner:

CASE 4563: (Continued from the July 28, 1971, Examiner Hearing)

Application of Corinne Grace for special gas-oil ratio limitation and pressure maintenance project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to produce her State Well No. 1 located in Unit A of Section 1, Township 15 South, Range 29 East, Double L-Queen Pool, Chaves County, New Mexico, with no gas-oil ratio limitation, strip the liquids, and institute a pressure maintenance project by the injection of all said gas back into the producing formation through her State Well No. 2 located in Unit B of said Section 1. Applicant further seeks to transfer an oil allowable from said Well No. 2 to said Well No. 1.

CASE 4575: Application of Anadarko Production Company for the creation of a new gas pool, or, in the alternative, the amendment of the special pool rules for an existing pool and pool commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new San Andres gas pool for its Lou Wortham Well No. 6 located in Unit E of Section 11, Township 22 South, Range 37 East, or, in the alternative, the amendment of the special rules and regulations governing the South Eunice-San Andres Pool to provide for the classification of oil and gas wells, spacing and well location requirements, and an allocation formula for withdrawals by oil and gas wells. In the event the Commission creates the above-requested gas pool, applicant further seeks authority to commingle on the surface the liquid hydrocarbons from the above-described Well No. 6 and its Wortham Well No. 5, a South Eunice-San Andres Pool well, located in Unit C of said Section 11.

CASE 4576: Application of Continental Oil Company for unorthodox oil well locations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill two oil wells as infill wells in its Eumont Hardy Unit Area, Eumont Pool, Lea County, New Mexico, at unorthodox locations as follows:

Examiner Hearing - Wednesday

Docket No. 17-71

August 11, 1971

-2-

(Case 4576 continued)

TOWNSHIP 21 SOUTH, RANGE 37 EAST

Eumont Hardy Unit Well No. 48 to be located 1492 feet from the North line and 560 feet from the East line of Section 6;

Eumont Hardy Unit Well No. 49 to be located 3660 feet from the South line and 1980 feet from the West line of Section 6.

CASE 4577: Application of Petroleum Corporation for the creation of a new pool, special rules therefor, and discovery allowable, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Wolf-camp oil pool for its Petco State Well No. 2 located in Unit N of Section 26, Township 19 South, Range 29 East, Eddy County, New Mexico, and the promulgation of special rules therefor, including a provision for 160-acre spacing and proration units. Applicant further seeks the assignment of an oil discovery allowable in the amount of approximately 48,110 barrels to said well.

CASE 4578: Application of Harvey E. Yates Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Empire South Deep Unit Area comprising 4968 acres, more or less, of Federal, State and Fee lands in Townships 17 and 18 South, Ranges 28 and 29 East, Eddy County, New Mexico.

CASE 4579: Application of Stephen C. Helbing for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Juniper Canyon Unit Area comprising 6,880 acres, more or less, of Federal, State and Fee lands in Township 24 South, Range 25 East, Eddy County, New Mexico.

CASE 4580: Application of Gulf Oil Corporation for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Harry Leonard (NCT-C) Well No. 12 located in Unit A of Section 36, Township 21 South, Range 36 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Arrowhead-Grayburg and Blinbry Pools through parallel strings of tubing.

Examiner Hearing - Wednesday
August 11, 1971

-3-

Docket No. 17-71

(Continued from the July 28, 1971, Examiner Hearing)
CASE 4570: Application of Shenandoah Oil Corporation for salt water disposal, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the interval from 1760 feet to 1840 feet by injection down the annulus of its Read & Stevens "M" Federal Well No. 1 located in Unit K of Section 28, Township 6 South, Range 27 East, Haystack-Cisco Gas Pool, Chaves County, New Mexico.



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

**GOVERNOR
BRUCE KING
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR**

September 14, 1971

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

Re: Case No. 4575
Order No. R-4193
Applicant:

Anadarko Production Company

Dear Sir:

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

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC **x**

Artesia OCC

Aztec OCC

Other

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 4575
Order No. R-4193

APPLICATION OF ANADARKO PRODUCTION
COMPANY FOR THE AMENDMENT OF THE
SPECIAL POOL RULES FOR AN EXISTING
POOL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 11, 1971, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 14th day of September, 1971, the Commission, a quorum being present, 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 Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Anadarko Production Company, has completed in the San Andres formation its Lou Wortham Well No. 6 in Unit E of Section 11, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico, and within the horizontal boundaries of the South Eunice-San Andres Pool.

(3) That the applicant seeks the amendment of the Special Rules and Regulations governing the South Eunice-San Andres Pool to provide for the classification of oil and gas wells, spacing and well location requirements, an allocation formula for withdrawals by oil and gas wells, and the classification of its Lou Wortham Well No. 6 as a gas well in the South Eunice-San Andres Pool.

-2-

CASE NO. 4575
Order No. R-4193

(4) That the evidence presented to establish that said Lou Wortham Well No. 6 is a gas well is inconclusive.

(5) That the evidence presented to establish that the South Eunice-San Andres Pool is an associated pool is inconclusive.

(6) That the applicant's request for the amendment of the Special Rules and Regulations governing the South Eunice-San Andres Pool to provide for the classification of oil and gas wells, spacing and well location requirements, an allocation formula for withdrawals by oil and gas wells and the classification of its Lou Wortham Well No. 6 as a gas well should be denied.

(7) That the reservoir characteristics of the subject pool are such that a gas-oil ratio limitation of 5,000 cubic feet of gas per barrel of oil should be established on a temporary basis for one year in order to allow the operators in the subject pool to gather additional information as to whether or not the Lou Wortham Well No. 6 is indeed a gas well and whether or not the South Eunice-San Andres Pool is indeed an associated pool.

IT IS THEREFORE ORDERED:

(1) That the applicant's request for the amendment of the Special Rules and Regulations governing the South Eunice-San Andres Pool to provide for the classification of oil and gas wells, spacing and well location requirements, an allocation formula for withdrawals by oil and gas wells, and the classification of its Lou Wortham Well No. 6 as a gas well in said pool is hereby denied.

(2) That effective, October 1, 1971, the limiting gas-oil ratio of the South Eunice-San Andres Pool, Lea County, New Mexico, shall be 5,000 cubic feet of gas for each barrel of oil produced.

(3) That this case shall be reopened at an examiner hearing in September, 1972, at which time the operators in the subject pool may appear and present evidence as to whether or not the Anadarko Production Company Lou Wortham Well No. 6 located in Unit E of Section 11, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico, is in fact a gas well; whether or not

-3-

CASE NO. 4575

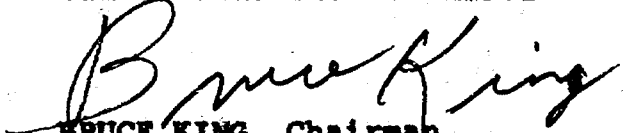
Order No. R-4193

the South Eunice San Andres Pool is in fact an associated reservoir; and whether or not the limiting gas-oil ratio should revert to 2000 cubic feet of gas for each barrel of oil produced.


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

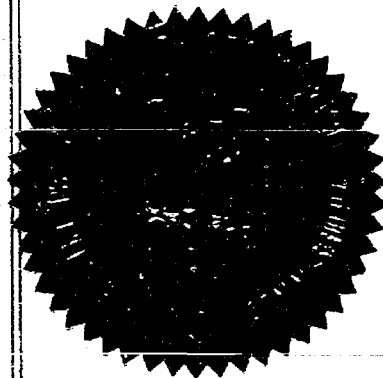
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


BRUCE KING, Chairman


ALEX J. ARMIJO, Member


A. L. PORTER, Jr., Member & Secretary



SEAL

dr/

JASON W. KELLAHIN
ROBERT E. FOX

KELLAHIN AND FOX
ATTORNEYS AT LAW
54½ EAST SAN FRANCISCO STREET
POST OFFICE BOX 1769
SANTA FE, NEW MEXICO 87501

TELEPHONE 982-4315
AREA CODE 505

November 5, 1971 **RECEIVED**

NOV 8 1971

OIL CONSERVATION COMM.
SANTA FE

[Handwritten signature]

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

Gentlemen:

This is to request that Case No. 4575, application of Anadarko Production Company for amendment of the special pool rules for the South Eunice San Andres Pool, presently set for hearing de novo before the Commission on December 15, be continued to the next regular hearing of the Commission, February 16, 1972.

Yours very truly,

Jason W. Kellahin
Jason W. Kellahin

JWK:abs

cc: Mr. Joe Kepke
Anadarko Production Company

DOCKET: REGULAR HEARING - WEDNESDAY - OCTOBER 13, 1971

OIL CONSERVATION COMMISSION - 9 A.M. - ROSWELL INN, 1815 NORTH MAIN,
ROSWELL, NEW MEXICO

- ALLOWABLE: (1) Consideration of the oil allowable for November and December, 1971;
- (2) Consideration of the allowable production of gas for November, 1971, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for November, 1971.

CASE 4575: (De Novo)

Application of Anadarko Production Company for the amendment of the special pool rules for an existing pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of the special rules and regulations governing the South Eunice-San Andres Pool to provide for the classification of oil and gas wells, spacing and well location requirements, and an allocation formula for withdrawals by oil and gas wells.

Upon application of Anadarko Production Company, this case will be heard De Novo under the provisions of Rule 1220.

CASE 4557: (De Novo)

Application of Continental Oil Company for transfer of allowable, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to transfer allowable across boundaries of the participating area and the leases outside said area, but within the Maljamar Co-operative Area, MCA Unit Area, Maljamar Grayburg-San Andres Pool, Lea County, New Mexico.

Upon application of Continental Oil Company, this case will be heard De Novo under the provisions of Rule 1220.

THE FOLLOWING CASES WILL BE HEARD BEFORE DANIEL S. NUTTER, EXAMINER, OR ELVIS A. UTZ, ALTERNATE EXAMINER, ALSO AT THE
ROSWELL INN:

- CASE 4605: Application of Elk Oil Company for special pool rules and a non-standard gas proration unit, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Round Tank-Queen Pool,

Regular Hearing - October 13, 1971

-2-

Docket No. 22-71

(Case 4605 continued)

including provisions for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and a limiting gas-oil ratio of 6,000 to 1. Applicant further seeks approval of a 120-acre non-standard gas proration unit comprising the W/2 SW/4 and SE/4 SW/4 of Section 30, Township 15 South, Range 29 East, Chaves County, New Mexico, to be dedicated to its JW Well No. 2 located in Unit L of said Section 30.

CASE 4606: Application of Black River Corporation for an unorthodox well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox gas well location for its Cities-Federal Well No. 2 located 2310 feet from the South and East lines of Section 34, Township 25 South, Range 24 East, undesignated Morrow gas pool, Eddy County, New Mexico, with the E/2 of said Section 34 to be dedicated to the well.

CASE 4448: (Reopened)

In the matter of Case 4448 being reopened pursuant to the provisions of Order No. R-4060, which order established 160-acre spacing units and an 80-acre proportional factor of 4.00 for the West Mescalero-Pennsylvanian Pool, Lea County, New Mexico, for a period of one year. All interested persons may appear and show cause why said pool should not be developed on less than 160-acre spacing units and why the 80-acre proportional factor of 4.00 assigned to the pool should or should not be retained.

CASE 4607: Application of Penroc Oil Corporation for a waterflood expansion and amendment of Order No. R-3494, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks to expand its Phillips Artesia Waterflood Project, Artesia Pool, by an additional injection well to be located 2645 feet from the South line and 1325 feet from the East line of Section 27, Township 17 South, Range 28 East, Eddy County, New Mexico. Applicant further seeks the amendment of Order No. R-3494 to permit administrative approval for additional

(Case 4607 continued)

injection wells in said project without a showing of well response.

CASE 4608: Application of Jack L. McClellan for the creation of a new pool and special pool rules, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new pool for the production of oil from the Siluro-Devonian formation for his Bar-J Federal Well No. 1 located in Unit E of Section 15, Township 6 South, Range 27 East, Chaves County, New Mexico, and the assignment of approximately 32,300 barrels of discovery allowable to said well. Applicant further seeks the promulgation of special rules for said pool including a provision for 80-acre spacing and proration units.

CASE 4609: Application of Jack L. McClellan for a unit agreement, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Sulimar-Queen Unit Area comprising 1520 acres, more or less, of Federal lands in Sections 13, 23, 24, 25, and 26 of Township 15 South, Range 29 East and Sections 18 and 19 of Township 15 South, Range 30 East, Chaves County, New Mexico.

CASE 4610: Application of Jack L. McClellan for a waterflood project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Sulimar-Queen Pool by the injection of water through various wells located in Sections 13, 23, 24, 25, and 26 of Township 15 South, Range 29 East and Sections 18 and 19 of Township 15 South, Range 30 East, Chaves County, New Mexico.

CASE 4611: Southeastern New Mexico nomenclature case calling for an order for the extension of certain pools in Lea, Chaves and Roosevelt Counties, New Mexico.

(a) Extend the Allison-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 36 EAST, NMPM
SECTION 3: N/2 SE/4

(Case 4611 continued)

(b) Extend the Bluitt-San Andres Associated Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 38 EAST, NMPM
SECTION 16: S/2

(c) Extend the Vest Ranch-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 30 EAST, NMPM
SECTION 28: SE/4

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

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
SECTION 12: NE/4

CASE 4539: (Continued from the September 1, 1971 Examiner Hearing)

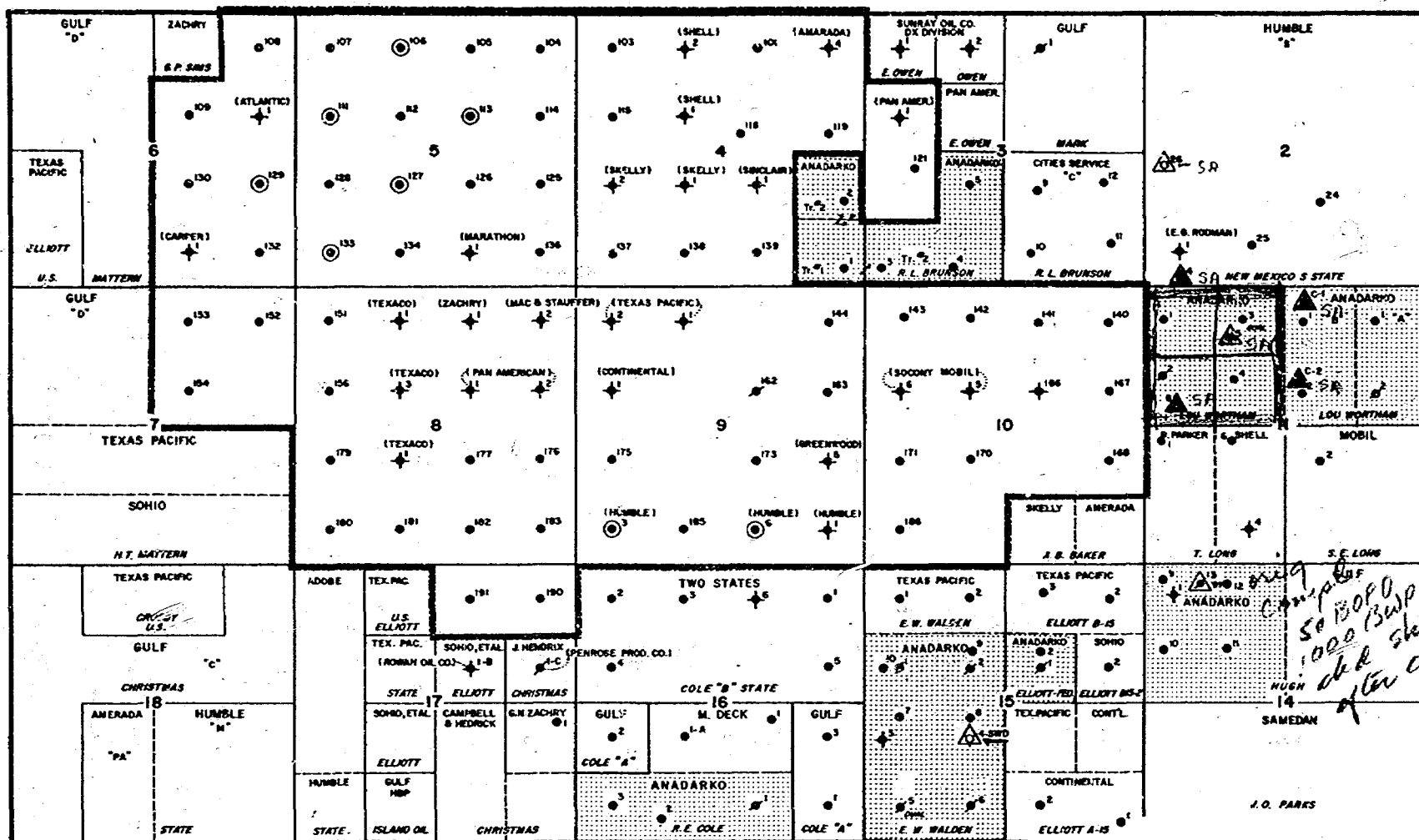
In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Doanbuy Lease & Company, Inc., and all other interested persons to appear and show cause why its following described wells in Section 27, Township 14 South, Range 33 East, Saunders Pool, Lea County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

CASE 4593: (Continued from the September 15, 1971 Examiner Hearing)

Application of Continental Oil Company for an exception to Order No. R-3221, as amended, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, to dispose of water produced by wells located on its W. R. Means lease comprising the S/2 and NW/4 of Section 28, and E/2 and E/2 W/2 of Section 29, Township 14 South, Range 30 East, Vest Ranch-Queen Pool, Chaves County, New Mexico, in unlined surface pits.

T
22
S

R 37 E



LEGEND

- South Eunice San Andres Oil Well Location
- South Eunice San Andres Oil Well
- Oil Well
- Plugged & Abandoned
- Temporarily Abandoned
- Dry & Abandoned
- Water Injection Well
- Water Disposal Well
- South Penrose Skelly Unit (Gulf Operated)
- Anadarko Acreage



**ANADARKO
PRODUCTION COMPANY**

PENROSE - SKELLY
and
SOUTH EUNICE SAN ANDRES FIELD
LEA COUNTY, NEW MEXICO

0 1500 3000 4500 6000
SCALE FEET



COLEMAN PETROLEUM ENGINEERING COMPANY

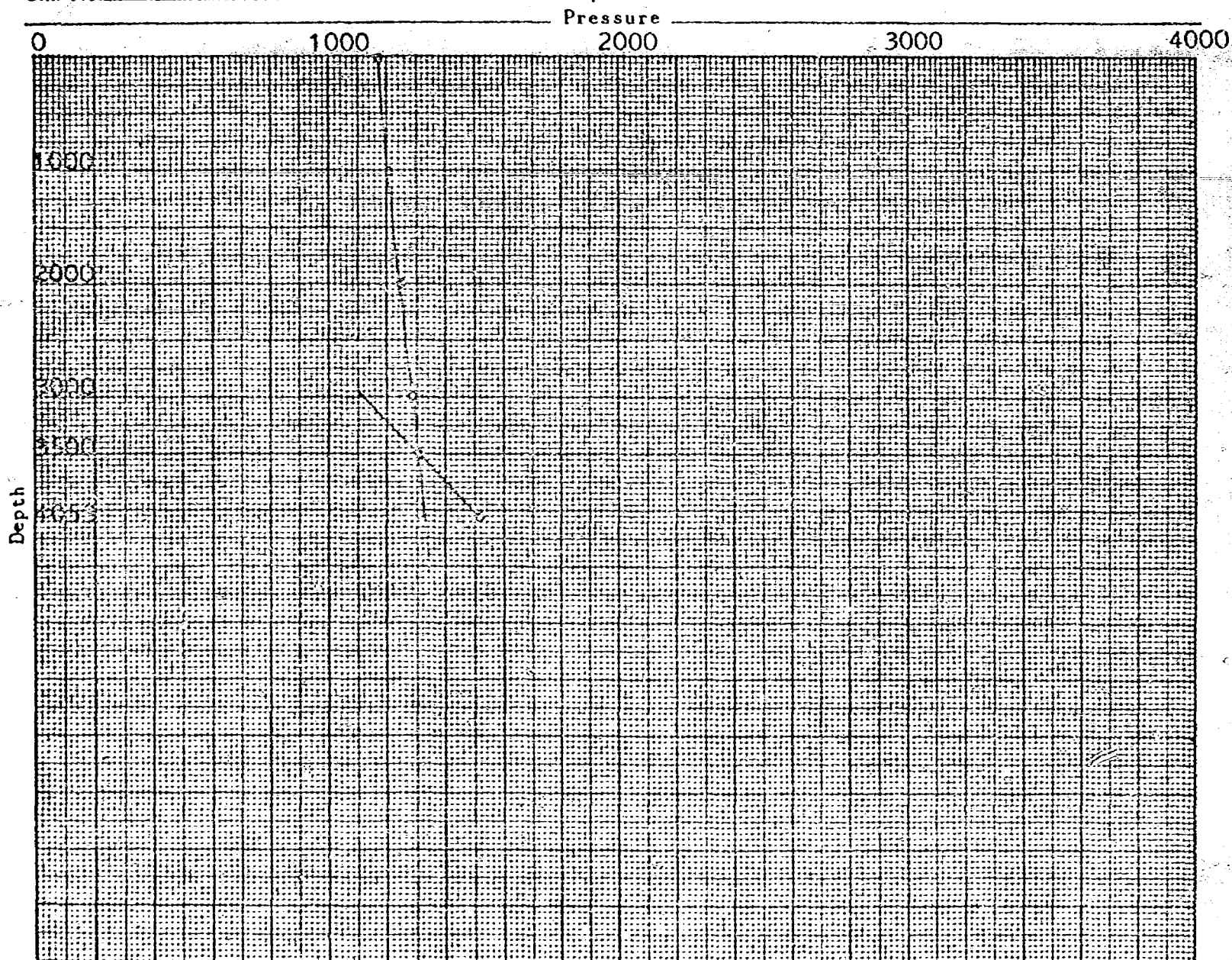
PHONE EXPRESS 3-3813
611 GRIMES
P. O. BOX 1829
HOBBS, NEW MEXICO

BOTTOM HOLE PRESSURE RECORD

OPERATOR ANADARKO PRODUCTION COMPANY
FIELD SO. EUNICE FORMATION SAN ANDRES
LEASE WORTHAM WELL No. 6
COUNTY LEA STATE NEW MEXICO
DATE 7-6-71 TIME 9:00 AM
Status SHUT IN Test depth 4053'
Time S. 141.0 HRS Last test date INITIAL
Tub Pres. 1184 BHP last test -
Cas. Pres. - BHP change -
Elev. 3381' DF Fluid top 3500'
Datum (-672') ** Water top -
Temp. @ 98' Run by WEAVER
Cal. No. A4586N Chart No. 1

Depth	Pressure	Gradient
0	1184	-
1000	1218	.034
2000	1257	.039
3000	1298	.041
3500	1319	.042
4053	1525	.373

EX-7





COLEMAN PETROLEUM ENGINEERING COMPANY

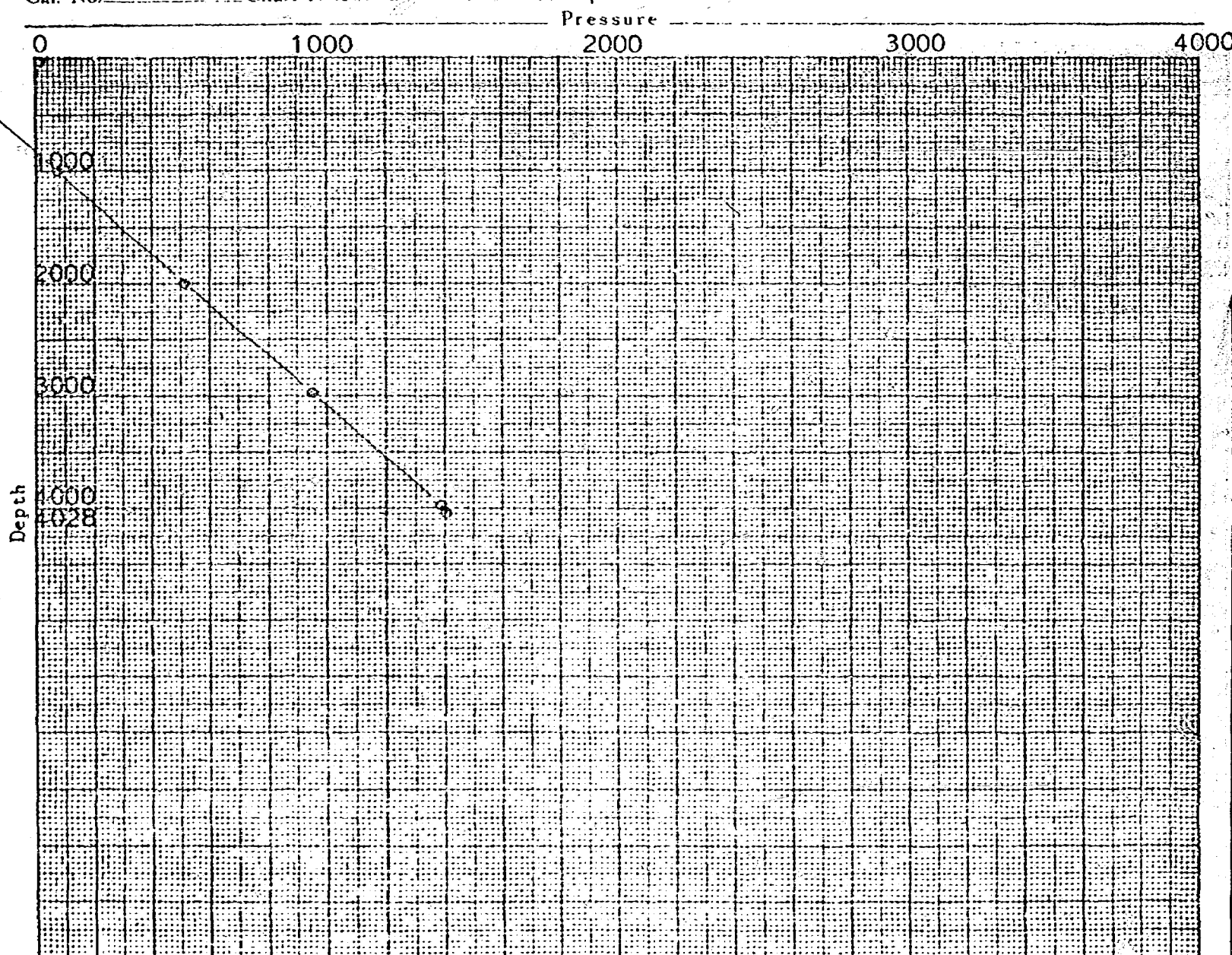
PHONE EXPRESS 3 3813
611 GRIMES
P. O. BOX 1829
HOBBS, NEW MEXICO

BOTTOM HOLE PRESSURE RECORD

OPERATOR ANADARKO PRODUCTION COMPANY
FIELD SOUTH EUNICE FORMATION SAN ANDRES
LEASE LOU WORTHAM B WELL No. 3
COUNTY LEA STATE NEW MEXICO
DATE 3-21-70 TIME 4:00 PM
Status SHUT IN Test depth 4028'
Time S. I. 24.0 HRS Last test date INITIAL
Tub Pres. 24 BHP last test -
Cas. Pres. - BHP change -
Elev. 3356' GL Fluid top -
Datum (-672')** Water top 887'
Temp. @ 930F Run by WATSON
Cal. No. A4586N Chart No. 1

Depth	Pressure	Gradient
0	24	-
1000	82	.058
2000	515	.433
3000	950	.435
4000	1397	.447
4028	1410**	.464

** MID POINT OF CASING PERFORATIONS



JASON W. KELLAHIN
ROBERT E. FOX

KELLAHIN AND FOX
ATTORNEYS AT LAW
54 1/2 EAST SAN FRANCISCO STREET
POST OFFICE BOX 1769
SANTA FE, NEW MEXICO 87501

TELEPHONE 982-4315
AREA CODE 505

September 16, 1971

RECEIVED

SEP 17 1971

OIL CONSERVATION COMM.
SANTA FE

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

Re: Case No. 4575

Order No. R-4191

R-4193

Gentlemen:

Enclosed is the application of Anadarko Production Company for a hearing de novo on the above case and order number. It is requested that this application be set for hearing, if possible, before the Commission at its regular October 13 hearing, in Roswell, New Mexico.

Yours very truly,

Jason W. Kellahin

Jason W. Kellahin

JWK/sr
Encl. as stated

DOCKET MARKED

Date 10-1-71

RECEIVED
SEP 17 1971

OIL CONSERVATION COMM.
SANTA FE

BEFORE THE

OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF ANADARKO PRODUCTION COMPANY
FOR THE AMENDMENT OF THE SPECIAL
POOL RULES FOR AN EXISTING POOL,
LEA COUNTY, NEW MEXICO.

Case No. 4575

Order No. ~~R-4191~~

R-4193

APPLICATION FOR HEARING DE NOVO

Comes now Anadarko Production Company, applicant in the above styled case, and applies to the Oil Conservation Commission of New Mexico for a hearing de novo, as provided by Section 65-3-11.1, New Mexico Statutes Annotated, 1953 Compilation, as amended, and in support thereof would show the Commission:

1. Applicant filed its application for an amendment of the special pool rules for the South Eunice-San Andres Pool, to provide for the classification of oil and gas wells, spacing and well location requirements, an allocation formula for withdrawals by oil and gas wells and the classification of the Lou Wortham Well No. 6 as a gas well.

2. The application was set for hearing as Case No. 4575 before Commission Examiner Daniel S. Nutter, and after notice and hearing on August 11, 1971, the Commission, under date of September 14, 1971, entered its order denying applicant's application, but establishing, effective October 1, 1971, a limiting gas-oil ratio of 5,000 cubic feet of gas for each barrel of oil produced.

3. Applicant is a party adversely affected by the Commission's ruling and order, and as such applies to the Commission for a hearing de novo as provided by law.

WHEREFORE applicant prays that this matter be set for hearing de novo before the Oil Conservation Commission, and that after notice and hearing as required by law, the Commission enter its order granting the relief prayed for in the original application filed herein.

Respectfully submitted,

ANADARKO PRODUCTION COMPANY

By Jason W. Kellahin
Jason W. Kellahin, Attorney for
Applicant

KELLAHIN & FOX
P.O. Box 1769
Santa Fe, New Mexico 87501

JASON W. KELLAHIN
ROBERT E. FOX

KELLAHIN AND FOX
ATTORNEYS AT LAW
54½ EAST SAN FRANCISCO STREET
POST OFFICE BOX 1769
SANTA FE, NEW MEXICO 87501

July 2, 1971

TELEPHONE 982-4315
AREA CODE 505

Case 4575

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

Gentlemen:

Enclosed in triplicate is the application of Anadarko
Producing Company for creation of a new gas pool and other
relief.

It is requested that this application be set for hearing at
the August 11 examiner hearing.

Yours very truly,

Jason W. Kellahin
Jason W. Kellahin

cc: Mr. Robert E. Anderson

jwk;jk

DOCKET MAILED

Date 7-30-71

BEFORE THE
OIL CONSERVATION COMMISSION
OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF ANADARKO PRODUCTION COMPANY
FOR CREATION OF A NEW GAS POOL
FOR SAN ANDRES PRODUCTION, LEA
COUNTY, NEW MEXICO, OR IN THE ALTER-
NATIVE, FOR ADOPTION OF POOL RULES;
AND FOR AUTHORITY TO COMMINGLE PRODUCTION

71 JUL 6 4 48 15

Case 4575

A P P L I C A T I O N

Comes now Anadarko Production Company and applies to the Oil Conservation Commission of New Mexico for the creation of a new pool for the production of gas from the San Andres formation, Lea County, New Mexico, or in the alternative, for the adoption of pool rules for the operation of a gas well in an oil pool; and for authority to commingle production, and in support thereof would show the Commission:

1. Applicant has completed its Lou Wortham No. 6 well, located 2310 feet from the North line, and 380 feet from the West line of Section 11, Township 22 South, Range 37 East, N.M.P.M., Lea County, New Mexico, for the production of gas from the San Andres formation at the rate of approximately 500 mcf per day. Fluid production from the well is limited, and on test the well has operated with a gas-oil ratio of approximately 250,000:1.

2. Applicant's Wortham No. 5 well, located 990 feet from the North line and 1650 feet from the West line of Section 11 was completed for production of oil from the San Andres formation at the rate of approximately 140 barrels per day from the South Eunice San Andres Pool. The No. 5 well is a diagonal offset to the No. 6 well.

3. All available evidence indicates that the Wortham Well No. 6 has been completed in an area where there is effective separation from the South Eunice San Andres Pool, and that the gas production from this well is from a formation constituting a separate common source of supply, and that a new pool should be created for the production of gas from the San Andres formation.

4. In the alternative, applicant requests that pool rules be adopted for the South Eunice San Andres Pool for the operation of a gas well in the pool upon such terms as may be proper.

5. Applicant further requests permission to commingle the liquids produced from the Wortham Well No. 6 with production from the Wortham Well No. 5, under the provisions of Commission Rule No. 303 (b).

WHEREFORE applicant prays that this application be set for hearing before the Commission or the Commission's duly appointed examiner, and that after notice and hearing as required by law the Commission enter its order granting the relief prayed for.

Respectfully submitted,

ANADARKO PRODUCTION COMPANY

By Jason W. Kellahin
KELLAHIN & FOX
P. O. Box 1769
Santa Fe, New Mexico 87501
ATTORNEYS FOR APPLICANT

DRAFT

GMH/dr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE 4575 (De Novo)
Order No. R- 4249

APPLICATION OF ANADARKO PRODUCTION
COMPANY FOR THE AMENDMENT OF THE
SPECIAL POOL RULES FOR AN EXISTING
POOL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing de novo at 9:00 a.m. on
October 13, 1971, at Roswell, New Mexico, before the Oil
Conservation Commission of New Mexico, hereinafter referred to
as the "Commission," and was continued from time to time at
the request of Anadarko Production Company to February 16, 1972.

NOW, on this 10th day of Feb, 1972, the Commission,
a quorum being present, having considered the record, and being
fully advised in the premises,

FINDS:

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

(2) That the applicant for the hearing de novo, Anadarko
Production Company, has requested that the application for a
hearing de novo in Case No. 4575 be dismissed.

-2-
CASE 4575 (De Novo)
Order No. R-

(3) That the applicant's request to dismiss the application for hearing de novo should be granted.

IT IS THEREFORE ORDERED:

(1) That the application of Anadarko Production Company for a hearing de novo in Case No. 4575 is hereby dismissed.

(2) That Order No. 4193, issued by the Commission on September 14, 1971, is hereby fully approved, ratified, and confirmed.

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

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

DRAFT

GMH/dr

(W)

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4575

Order No. R-4193

SN *K*
APPLICATION OF ANADARKO PRODUCTION
COMPANY FOR ~~THE CREATION OF A NEW~~
~~GAS POOL, OR, IN THE ALTERNATIVE,~~
THE AMENDMENT OF THE SPECIAL POOL
RULES FOR AN EXISTING POOL, ~~AND POOL~~
COMMINGLING, LEA COUNTY, NEW MEXICO.

ASD

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 11, 1971,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this day of September, 1971, the Commission, a
quorum being present, 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 Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That the applicant, Anadarko Production Company, has
completed in the San Andres formation its Lou Wortham Well No. 6
in Unit E of Section 11, Township 22 South, Range 37 East, NMPM,
Lea County, New Mexico, and within the horizontal boundaries of
the South Eunice-San Andres Pool.

- (3) That the applicant seeks ~~the creation of a new San Andres gas pool for the above described Lou Wortham Well No. 6,~~
~~or, in the alternative,~~ the amendment of the Special Rules and Regulations governing the South Eunice-San Andres Pool to provide for the classification of oil and gas wells, spacing and well location requirements, ~~and~~ an allocation formula for withdrawals by oil and gas wells, *and the classification of its Lou Wortham Well No. 6 as a gas well in the South Eunice-San Andres Pool.*
- ~~(4) That the applicant further seeks, in the event the Commission creates the above requested new gas pool, authority to commingle on the surface the liquid hydrocarbons from the above described Lou Wortham Well No. 6 and its Lou Wortham Well No. 5, located in Unit C of said Section 11.~~
- ~~(5) That the evidence presented to establish that a new gas pool in the San Andres formation has been discovered by said Lou Wortham Well No. 6 is inconclusive.~~
- ~~(6) That the applicant's request for the creation of a new gas pool should be denied.~~
- ⁴
(7) That the evidence presented to establish that said Lou Wortham Well No. 6 is a gas well is inconclusive.
- ⁶
(8) That the applicant's request for the amendment of the Special Rules and Regulations governing the South Eunice-San Andres Pool to provide for the classification of oil and gas wells, spacing and well location requirements, ~~and an allocation formula~~ *at the classification of its Lou Wortham Well No. 6 as a gas well* for withdrawals by oil and gas wells, should be denied.
- ⁵
(9) *That the evidence presented to establish that the South Eunice-San Andres Pool is an associated pool is inconclusive.*

-3-

CASE NO. 4575

Order No. R-

7
(9) That the reservoir characteristics of the subject pool are such that a gas-oil ratio limitation of 5000 cubic feet of gas per barrel of oil should be established on a temporary basis for one year in order to allow the operations in the subject pool to gather additional information as to whether or not the ~~San Wortham well No. 6 is indeed a gas well and~~ ~~subject well has indeed discovered a separate common source of supply~~ whether or not the South Eunice-San Andres Pool is indeed an associated pool.

IT IS THEREFORE ORDERED:

(1) That the applicant's request for the amendment of the Special Rules and Regulations governing the South Eunice-San Andres Pool to provide for the classification of oil and gas wells, spacing and well location requirements, and an allocation formula for withdrawals by oil and gas wells, ~~is hereby denied~~ and *the classification of its San Wortham well No. 6 as a gas well in said pool is hereby denied.*

(2) That effective, October 1, 1971, the limiting gas-oil ratio of the South Eunice-San Andres Pool, Lea County, New Mexico, shall be 5000 cubic feet of gas for each barrel of oil

7
(9) That the reservoir characteristics of the subject pool are such that a gas-oil ratio limitation of 5000 cubic feet of gas per barrel of oil should be established on a temporary basis for one year in order to allow the operators in the subject pool to gather additional information as to whether or not the ~~Lou Wortham Well No. 6 is indeed a gas well and~~ subject well has ~~indeed discovered a separate common source of~~ supply; whether or not the South Eunice-San Andres Pool is indeed an associated pool.

IT IS THEREFORE ORDERED:

(1) That the applicant's request for the amendment of the Special Rules and Regulations governing the South Eunice-San Andres Pool to provide for the classification of oil and gas wells, spacing and well location requirements, and an allocation formula for withdrawals by oil and gas wells, ~~is hereby denied and~~ *the classification of its Lou Wortham Well No. 6 as a gas well in said pool is hereby denied.*

(2) That effective, October 1, 1971, the limiting gas-oil ratio of the South Eunice-San Andres Pool, Lea County, New Mexico, shall be 5000 cubic feet of gas for each barrel of oil produced.

(3) That this case shall be reopened at an examiner hearing in September, 1972, at which time the operators in the subject pool may appear and present evidence as to whether or not the Anadarko Production Company Lou Wortham Well No. 6 located in Unit E of Section 11, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico, ~~has discovered a separate common source of supply;~~ *is in fact a gas well;* whether or not the South Eunice San Andres Pool is in fact an associated reservoir; and whether or not the limiting gas-oil ratio should revert to 2000 cubic feet of gas for each barrel of oil produced.

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

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

CASE 4576: Appli. of CONTINENTAL
OIL CO. FOR UNORTHODOX OIL WELL
LOCATIONS, LEA COUNTY, N. MEX.