

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION COMMISSION  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO

8 June 1988

EXAMINER HEARING

IN THE MATTER OF:

Application of Conoco Inc. for an un- CASE  
orthodox oil well location and simul- 9409  
taneous dedication, Lea County, New  
Mexico.

BEFORE: David R. Catanach, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Robert G. Stovall  
Attorney at Law  
Legal Counsel to the Division  
State Land Office Bldg.  
Santa Fe, New Mexico

For the Applicant: W. Tom Kellahin  
Attorney at Law  
KELLAIN, KELLAHIN & AUBREY  
P.O. Box 2265  
Santa Fe, New Mexico 87501

## I N D E X

## HUGH INGRAM

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## JERRY HOOVER

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1 tion Coordinator for Conoco, Inc., in Hobbs, New Mexico.

2 Q Mr. Ingram, as Conservation Coordinator  
3 for your company, are you familiar with the land title and  
4 ownership arrangements involving this spacing unit in Lea  
5 County, New Mexico?

6 A Yes, I am.

7 Q Mr. Ingram, would you refer to what is  
8 marked as Exhibit Number One and discuss with the Examiner  
9 what Conoco seeks with this application?

10 A Conoco seeks in this application appro-  
11 val to drill its Eaves A Well No. 16 as an oil well at an  
12 unorthodox location and for simultaneous dedication of an  
13 existing 40-acre standard proration unit in the Scarborough  
14 Yates Seven Rivers Oil Pool.

15 Q Let's take a moment and fill in the  
16 footage locations for the examiner, using Exhibit Number  
17 One.

18 Let me direct your attention to the  
19 proposed unorthodox location, if you'll give him the foot-  
20 ages for that well.

21 A Exhibit Number One shows the correct  
22 location for the well that's proposed to be 1550 from the  
23 north line and 2460 feet from the west line of Section 19,  
24 Township 26 South, Range 37 East, Lea County, New Mexico.

25 Q Is it necessary to readvertise this

1 case, is it not, Mr. Ingram?

2 A Yes, it is. When we originally adver-  
3 tised this cased we had it staked at a location 1650 feet  
4 from the north line and the archaeologist requested that we  
5 move the location 100 feet north to the location that's  
6 shown on Exhibit One.

7 Q Have you made arrangements with the  
8 Division to have this case readvertised?

9 A Yes, we have and it will be carried on  
10 the docket for June the 22nd.

11 Q Would you take a moment and located for  
12 us the other well in the 40-acre tract? I believe it's the  
13 Eaves No. 4 Well?

14 A Yes. If you'll refer to Exhibit Number  
15 Two, this is a map showing the area around the proposed  
16 well, showing all of Section 19.

17 You'll notice that the Eaves A Lease is  
18 the western and southernmost part of that section. The  
19 dashed line running from the north section line to the east  
20 section line shows a division line between the Eaves A  
21 Lease and the Eaves B-1 Lease. Both of these leases are  
22 operated by Conoco, and the other well on the proration  
23 unit is Well No. 4, located just to the south and west of  
24 the proposed location.

25 Q Which location for the Eaves No. 4 Well

1 is 1980 from the north line and 650 from the west line?

2 A It's 9 -- I believe it's 1980 from the  
3 north and west lines of Section 19.

4 Q Do we have some way to verify that, Mr.  
5 Ingram?

6 A I don't know that I wrote down that  
7 location.

8 Q We'll double check, Mr. Stogner -- I  
9 mean Mr. Catanach, to see --

10 A But it is -- it is a standard --

11 Q -- to see if we've got the right loca-  
12 tion.

13 A It's a standard location. I think it's  
14 1980 from the north and 1650 from the west.

15 MR. CATANACH: That's how it's  
16 advertised.

17 A Yes, okay.

18 MR. KELLAHIN: The existing  
19 well in there, No. 4, is advertised at being the 1650  
20 location.

21 A That's correct.

22 Q And this will be --

23 A Yeah, I see it now.

24 Q -- this will be the second well on this  
25 40-acre tract.

1           A           That's correct.

2           Q           All right. Are there special rules  
3 for the Scarborough Yates Seven Rivers Pool, Mr. Ingram?

4           A           There are some special rules for the  
5 Scarborough Yates Seven Rivers; however, in reviewing those  
6 rules, I find very little change from the statewide rules  
7 and there will be no special pool rules that would affect  
8 this application at all.

9           Q           In what way, then, is the proposed well  
10 at an unorthodox location?

11          A           A standard location for that well would  
12 be -- would have to be 330 from the quarter quarter line on  
13 each -- on the north and the -- and the east sides, and  
14 this location is 180 feet from the east line and 230 feet  
15 from the north line of the proration unit. And so it's 100  
16 feet closer to the north line and 150 feet closer to the  
17 east line than a standard location would be.

18          Q           Is there a difference in the working  
19 interest ownership in the north half of this section?

20          A           No. The ownership in the Eaves A Lease  
21 and the Eaves B-1 lease are identical except for some  
22 overriding royalty interests in the Eaves A Lease on which  
23 this well is located.

24                    There are about 20 to 25 overriding  
25 royalty interest owners that own a total of 6.9 percent

1 overriding royalty.

2 Q The mineral interest is Federal  
3 minerals?

4 A That's correct.

5 Q For both of those tracts?

6 A That's correct.

7 Q Do you see any royalty or overriding  
8 royalty or working interest owner that would be disadvan-  
9 tagged by approval of this location as an unorthodox loca-  
10 tion?

11 A The only disadvantage at all, and it  
12 would be very minor, would be to the -- to the operator,  
13 Conoco, and the other working interest owners in that we  
14 have a slightly less net interest in the Eaves A lease than  
15 we do the Eaves B lease because of that overriding royalty  
16 interest.

17 But that -- that interest would be very,  
18 very small and the working interest owner would bear the  
19 total burden there and there's no objection by the working  
20 interest owners to this application.

21 A Have you caused copies of this applica-  
22 tion and notice of hearing to be sent to any parties?

23 A Yes, I have. If you'll refer to Exhibit  
24 Number Three, this is a copy of the certified letter  
25 receipt, whereas the letter was showing -- showing where

1 the letter was received, or the application, a copy of the  
2 application was received, by Amoco Production Company, ARCO  
3 Oil & Gas Company, Chevron, and the Bureau of Land Manage-  
4 ment, the Bureau of Land Management being the royalty  
5 owners and the other three being working interest owners  
6 with Conoco.

7 MR. KELLAHIN: Mr. Catanach,  
8 that concludes my examination of Mr. Ingram.

9 We'd move the introduction of  
10 Exhibits One, Two and Three.

11 MR. CATANACH: Exhibits One,  
12 Two and Three will be admitted as evidence.

13  
14 CROSS EXAMINATION

15 BY MR. CATANACH:

16 Q Mr. Ingram, ARCO, Chevron and Amoco are  
17 working interest owners in the proposed well?

18 A Yes. They're working interest owners in  
19 all of Section 19 with Conoco.

20 Q Okay, so it's just you four working  
21 interest owners.

22 A That's correct.

23 Q Did you hear anything back from any of  
24 these companies?

25 A ARCO -- Amoco and Chevron have both



1 approved our AFE for this well and we have heard no ob-  
2 jection to the well location from ARCO, although they have  
3 not yet approved the AFE.

4 MR. CATANACH: I don't have  
5 any more questions of the witness. He may be excused.

6  
7 JERRY HOOVER,  
8 being called as a witness and being duly sworn upon his  
9 oath, testified as follows, to-wit:

10  
11 DIRECT EXAMINATION

12 BY MR. KELLAHIN:

13 Q All right, sir, would you please state  
14 your name and occupation?

15 A My name is Jerry Hoover, I'm a Senior  
16 Reservoir Engineer with Conoco, Incorporated, Hobbs, New  
17 Mexico.

18 Q Mr. Hoover, have you previously testi-  
19 fied before the Division as an expert witness?

20 A Yes, I have.

21 Q And pursuant to your employment by  
22 Conoco have you made a study of the geologic and engineer-  
23 ing factors surrounding the pick of this well location?

24 A Yes, I have.

25 MR. KELLAHIN: We tender Mr.

1 Hoover as an expert witness.

2 MR. CATANACH: He is so  
3 qualified.

4 Q Mr. Hoover, let me direct your attention  
5 to Exhibit Number Four. Do you have that before you?

6 A Yes.

7 Q What is that, sir?

8 A This exhibit is a structure map con-  
9 toured on the top of the Yates formation and you'll see  
10 trending north/south across Section 19 a structural high,  
11 which is created by the Seven Rivers Reef.

12 To the west of the crest of this reef  
13 the fore reef plunges into the Delaware Basin and that  
14 section of the reef is characterized by very vuggy  
15 porosity, good permeability, and a very strong water drive.

16 The narrow back reef section, which  
17 pinches out over on the east side of Section 19, has less  
18 secondary porosity, somewhat lower perms, and very limited  
19 water drive.

20 Q When we look at the structure map and we  
21 find the arrow that depicts the proposed unorthodox loca-  
22 tion, there's a structural contour line running north/south  
23 through that location.

24 A That's correct.

25 Q What is the contour line value or number

1 for that line?

2 A That is a subsea depth of +100.

3 Q As we move to the east or to the right  
4 of that line, we're moving down structure again?

5 A That's correct.

6 Q That location, then represents the  
7 geologic opinion that's the highest location within that  
8 40-acre tract structurally?

9 A At the proposed well location?

10 Q Yes, sir.

11 A No. The highest location is where you  
12 see the -- the enclosed contour over in -- on the western  
13 half of the section, Wells Nos. 4, 5, 8, 15, and 1, running  
14 through that structural high.

15 Q That will be the highest point of the  
16 structure.

17 A That's correct. That's the crest of the  
18 reef.

19 Q As we move within the 40-acre tract, why  
20 are you proposing this location as an additional well in  
21 the 40 acres?

22 A All right. Primarily, as we've done a  
23 recent study of this area and this pool particularly, we've  
24 discovered that development and exploitation of this pool  
25 has been somewhat incomplete and somewhat sporadic.

1                   Early development in this area was done  
2 without the aid of modern logs. I think if we look at the  
3 next exhibit we'll be able to show you why development is  
4 not complete in this area.

5                   Q           Before we turn to that, look at the  
6 northeast quarter of 9. When we look at that acreage that  
7 Mr. Ingram described as being in the adjoining Conoco B  
8 Lease --

9                   A           Yes.

10                  Q           -- there is not a location within that  
11 northeast quarter that has the structural advantage as the  
12 unorthodox location?

13                  A           That's correct. Moving any further down  
14 slope we would lose pay quality.

15                  Q           Okay. All right. Let's turn now to  
16 Exhibit Number Five and have you identify that exhibit.

17                  Q           This is a copy of a log section from  
18 Conoco's Eaves A No. 8 in the southern half of Section 19.

19                               Looking at this log section, adding to  
20 the -- already the complexity of the reservoir from the  
21 reef and the water drive, we see that in the Yates and  
22 Seven Rivers formations there have been 13 identified  
23 producing intervals. They're identified on this exhibit.  
24 The upper section, the Yates has Y-1 through Y-9; the lower  
25 section, are Seven Rivers, indicated as SR-1 through SR-4.

Q Have you made a tabulation of the various informations from each of the wells in the area to see which of these various Yates producing intervals in fact have been tested and produced?

Q            Okay.    Would   you identify and describe  
that exhibit for us?

          If you'll look at the key briefly,  
you'll see that the stippled squares are those which have  
been at some time open to production.

The blank ones have not yet even been

1 tested.

2 Q When we look at the No. 4 Well in this  
3 40-acre tract, just below there's a series of X's. 1, 2,  
4 3, 4, between the fourth and fifth block up from the  
5 bottom, there's a horizontal line, Mr. Hoover?

6 A I see that.

7 Q What does that line represent?

8 A That separates the Yates and the Seven  
9 Rivers intervals.

10 Q The X's identify those zones that were  
11 tested wet or tight?

12 A That's correct.

13 Q And a blank shows an untested interval?

14 A That's correct.

15 Q How does this affect your interpretation  
16 about the -- the appropriateness of the unorthodox location  
17 you have picked for the subject well?

18 A Well, I think our study of these inter-  
19 vals, those that have been opened and those that haven't,  
20 indicate that we've not fully exploited all the reserves  
21 that are available on this lease and in this -- in this  
22 reservoir.

23 If you'll look at the -- some of the  
24 recoveries, you'll notice that some of them are quite  
25 large, from a half a million to 3/4 of a million barrels

1 from some of these wells. Part of that is due to the  
2 strong water drive coming up the west flank of this reef,  
3 showing somewhat the sporadic recovery and development.

4 For instance, we look at Wells 5 and 8  
5 right there on the top of the crest, those two wells have  
6 cumed well over a million barrels of oil entirely from the  
7 Lower Seven Rivers intervals, the bottom two, and yet in  
8 1971 we were able to come in and drill No. 15, completed it  
9 also in the Lower Seven Rivers and have recovered 172,000  
10 barrels from essentially an infill location.

11 You'll also note that Well No 1 is not  
12 even completed in the Seven Rivers, but just made a Yates  
13 completion with very high recovery.

14 So you can see the development has been  
15 sporadic across this -- this area.

16 Q Do you have an opinion, Mr. Hoover as to  
17 whether or not approval of the unorthodox location will  
18 allow you an opportunity to recover Seven Rivers production  
19 that might not otherwise be recovered?

20 A Yes, we believe so. If you'll look back  
21 up to Well No. 4, which is in the same unit as the proposed  
22 well, you'll note the SR-1 and SR-2 primarily are respons-  
23 ible for the recovery from that well. Those intervals have  
24 been plugged off in 1986; are no longer productive. They  
25 essentially watered out from the water drive moving from

1 the west.

2 The only other stippled interval you see  
3 on that column is up in the Yates and it was completed for  
4 a very marginal rate and is only producing two barrels a  
5 day now. This well looks like it's very close to being  
6 shut in.

7 So essentially the new well will be a  
8 replacement well in this unit.

9 We also feel like that the water drive  
10 is responsible for most of that 361,000 barrels recovery  
11 shown under Well 4, and that probably we have not drained  
12 the eastern half of that unit, Unit F.

13 Also it's possible that the water may  
14 have pushed oil on past No. 4 onto that east half.

15 And as far as the upper part, the Yates,  
16 if you look up and down the narrow back reef section,  
17 you'll see that the wells have primarily been producing  
18 from these upper intervals in the Yates and we feel like  
19 we're moving -- by moving the location over, we're getting  
20 into that trend of the Yates intervals in the back reef.

21 We're also moving beyond the water in-  
22 terference area of the No. 4 Well.

23 Q What is Exhibit Number Seven, Mr.  
24 Hoover?

25 A Exhibit Number Seven is simply a pro-



1 posed completion of this well. We propose simply to start  
2 with the bottom intervals and come up in four stages and  
3 any of these intervals may be productive in this proposed  
4 location. Those that are oil productive will be kept;  
5 those that are all water will be squeezed off.

6 Q Do you have an opinion as to whether  
7 this is the optimum location in the spacing unit in which  
8 to drill an additional well to recover reserves that are  
9 not otherwise recoverable?

10 A Yes, we feel like this location will  
11 help us to maximize the oil recovery from this unit.

12 Q Were Exhibits Four through Seven pre-  
13 pared by you or compiled under your direction and super-  
14 vision?

15 A Yes, they were.

16 MR. KELLAHIN: That concludes  
17 my examination of Mr. Hoover.

18 We move the introduction of  
19 Exhibits Four through Seven.

20 MR. CATANACH: Exhibits Four  
21 through Seven will be admitted as evidence.

22 CROSS EXAMINATION

23 BY MR. CATANACH:

24 Q Mr. Hoover, what area in that quarter  
25

1 section do you think the proposed well will be draining  
2 mostly?

3 A Area? I think there's still Seven  
4 Rivers potential on the east half at that depth. I really  
5 think most of that recovery before in that Upper Seven  
6 Rivers was responsible to the waterdrive from the east. A  
7 great deal of that recovery probably came from the east and  
8 not near as much recovery came from -- I mean, I'm sorry,  
9 from the west and not get as much from the east side.

10 Plus, we feel like we're in a better  
11 trend for the Upper Yates intervals.

12 Q Will the water drive help you out any in  
13 your Well 16?

14 A I doubt that it will right away. In  
15 fact, I think we're probably better off to be a little away  
16 from that, because before it was essentially watered out to  
17 this point. It eventually may begin to come across there  
18 and give some support.

19 Q If you -- if you move the location west  
20 you'd be higher up on the structure, wouldn't you?

21 A We would. We also would be much more in  
22 the drainage radius of Well No. 4 and moving into the  
23 water, plus, we also would be moving out of the trend of  
24 the Yates intervals. You'll notice very little Yates  
25 recovery has come from Well No. 4; only one interval

1 tested for anything and is very marginal.

2 Q So the Yates was the key factor in the  
3 new location also?

4 A Yes, I think so. It's a very narrow  
5 band over there we're looking at.

6 Q What did you say the No. 4 Well was  
7 doing?

8 A Two barrels of oil per day and 900  
9 barrels of water.

10 Q And did you say that well was going to  
11 be plugged?

12 A I don't have any plans made yet. Since  
13 there's a complete remedial study being done I'm sure that  
14 will dealt with.

15 Q Do you have any plans to open up the  
16 Yates in the untested intervals in Well No. 4?

17 A The remedial study that's underway --  
18 oh, in No. 4?

19 Q Yes.

20 A I think all of those have been --  
21 although there are two still show to be blank, I think  
22 essentially the potential has been checked out in that  
23 well. I don't anticipate any more Yates recovery from that  
24 well.

25 Q And which zones in the No. 16 do you

1 plan to test?

2 A All of them.

3 Let me -- let me be a little more  
4 specific there.

5 We'll start at the bottom of the Seven  
6 Rivers and they'll test SR-3 and 4 together; then SR-1 and  
7 2 together. And then we're going to test in the Yates in  
8 two stages, Zones 5 through 9. We do not plan to look at 1  
9 through 4. Those -- those are pretty tight sands and they  
10 probably would give up.

11 MR. CATANACH: That's all we  
12 have. The witness may be excused.

13 Anything further in this case?

14 MR. KELLAHIN; No, sir.

15 MR. CATANACH: If not, it will  
16 be taken under advisement.

17 I'm sorry, it won't be taken  
18 under advisement, it will be readvertised for June 22nd.  
19 We'll leaver the record open and call it on the 22nd.

20 (Hearing concluded.)

21

22

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25

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

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

Sally W. Boyd CSR

I do hereby certify that the foregoing is  
a complete report of the proceedings in  
the Examiner and No. of Case No. 9409,  
heard by me on June 8, 1958.

David R. Catant Examiner  
Oil Conservation Division

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO

22 June 1988

EXAMINER HEARING

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Application of Conoco Inc. for an un- CASE  
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Mexico.

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Robert G. Stovall  
Attorney at Law  
Legal Counsel to the Division  
State Land Office Bldg.  
Santa Fe, New Mexico

For the Applicant:

1 MR. STOGNER: Call next Case  
2 Number 9409, which is the application of Conoco, Incorporated,  
3 ated, for an unorthodox oil well location and simultaneous  
4 dedication, Lea County, New Mexico.

5 This case was originally heard  
6 on June 8th, 1988.

7 Due to a misadvertisment it  
8 was continued and readvertised for today.

9 At this time I'll call for any  
10 additional testimony.

11 There being none, Case Number  
12 9409 will be taken under advisement.

13  
14 (Hearing concluded.)  
15  
16  
17  
18  
19  
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24  
25

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

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

Sally W. Boyd CSR

I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of Case No. 9409  
heard by me on 22 June 19 88.  
Michael P. Higgins, Examiner  
Oil Conservation Division 8/12/88