

## NEW MEXICO OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

CASE NO. 10523

IN THE MATTER OF:

The Application of Phillips Petroleum  
Company for three unorthodox oil well  
locations, Lea County, New Mexico.

BEFORE:

DAVID R. CATANACH

Hearing Examiner

State Land Office Building

August 20, 1992

REPORTED BY:

DEBBIE VESTAL  
Certified Shorthand Reporter  
for the State of New Mexico

**ORIGINAL**

1 EXAMINER CATANACH: At this time I'll  
2 call Case 10523, which is the application of  
3 Phillips Petroleum Company for three unorthodox  
4 oil well locations, Lea County, New Mexico.

5 It's my understanding this case was  
6 heard on August 6 and was readvertised due to  
7 some corrections in the well locations.

8 Are there any additional appearances at  
9 this time?

10 There being none, Case 10523 will be  
11 taken under advisement.

12 [And the proceedings were concluded.]  
13  
14  
15  
16

17 I do hereby certify that the foregoing is  
18 a complete record of the proceedings in  
19 the Examiner hearing of Case No. 10523,  
20 heard by me on August 1992.  
21 David R. Catanach, Examiner,  
22 Oil Conservation Division  
23  
24  
25

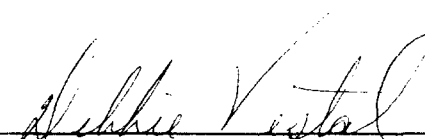
## 1 CERTIFICATE OF REPORTER

2  
3 STATE OF NEW MEXICO )  
4 COUNTY OF SANTA FE ) ss.  
5

6 I, Debbie Vestal, Certified Shorthand  
7 Reporter and Notary Public, HEREBY CERTIFY that  
8 the foregoing transcript of proceedings before  
9 the Oil Conservation Division was reported by me;  
10 that I caused my notes to be transcribed under my  
11 personal supervision; and that the foregoing is a  
12 true and accurate record of the proceedings.

13 I FURTHER CERTIFY that I am not a  
14 relative or employee of any of the parties or  
15 attorneys involved in this matter and that I have  
16 no personal interest in the final disposition of  
17 this matter.

18 WITNESS MY HAND AND SEAL AUGUST 24,  
19 1992.  
20

21  
22   
23 \_\_\_\_\_  
24 DEBBIE VESTAL, RPR  
25 NEW MEXICO CSR NO. 3

1 NEW MEXICO OIL CONSERVATION DIVISION

2 STATE LAND OFFICE BUILDING

3 STATE OF NEW MEXICO

4 CASE NO. 10523

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8 The Application of Phillips Petroleum  
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11  
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14 BEFORE:

15  
16 MICHAEL E. STOGNER

17 Hearing Examiner

18 State Land Office Building

19 August 6, 1992

20  
21  
22 REPORTED BY:

23 DEBBIE VESTAL  
24 Certified Shorthand Reporter  
25 for the State of New Mexico

ORIGINAL

## A P P E A R A N C E S

FOR THE APPLICANT:

KELLAHIN, KELLAHIN & AUBREY  
Post Office Box 2265  
Santa Fe, New Mexico 87504-2265  
BY: W. THOMAS KELLAHIN, ESQ.

## I N D E X

## Page Number

Appearances

2

## WITNESSES FOR THE APPLICANT:

1. SCOTT BALKE

Examination by Mr. Kellahin

7

Examination by Examiner Stogner

16

## E X H I B I T S

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1                   EXAMINER STOGNER: Call the next case,  
2 No. 10523, which is the application of Phillips  
3 Petroleum Company for three unorthodox oil well  
4 locations, Lea County, New Mexico.

5                   Before I call for appearances, this  
6 case will be readvertised for the August 20, 1992  
7 hearing to take care of some amendments to the  
8 application. However, I believe you are prepared  
9 at this time, Mr. Kellahin, to present evidence  
10 in this particular case?

11                  MR. KELLAHIN: Yes, Mr. Examiner.

12                  EXAMINER STOGNER: With that, are there  
13 any other appearances?

14                  MR. KELLAHIN: I'd like the record to  
15 reflect Mr. Scott Balke is my geologic witness.  
16 He has been qualified as an expert and continues  
17 under oath in this case.

18                  EXAMINER STOGNER: Let the record so  
19 show. Mr. Kellahin, you may proceed.

20                  MR. KELLAHIN: For the record in this  
21 case, Mr. Examiner, we have now staked these  
22 three locations. The first well on the docket  
23 sheet identified in Unit letter "O" -- all of  
24 these are in Section 4 -- we will refer to it as  
25 well No. 8.



1           The amendment that we have previously  
2 requested changes the distance from the south  
3 line. It was advertised as 1050 feet. It now  
4 becomes 1150. The rest of the information is the  
5 same.

6           We move down to the next well in Unit  
7 letter "H." It's identified by us as the well  
8 No. 9. The north distance line changes from 2500  
9 feet to 2600 feet.

10          The last one is identified as well No.  
11 10. That location remains unchanged. Each of  
12 the two previous locations, 8 and 9, while  
13 they're moving towards interest owners that are  
14 common within the spacing units of the unorthodox  
15 wells, they are moving to more unorthodox  
16 locations. And so we have requested that those  
17 be readvertised.

18          With those amendments now, these three  
19 wells have been staked, and we would request that  
20 you delete the 50-foot radius flexibility because  
21 that's no longer requested.

22          With those comments I'll direct my  
23 questions to Mr. Balke, and we'll make his  
24 presentation.

25          EXAMINER STOGNER: Thank you.

**SCOTT BALKE**

Having been previously duly sworn upon his oath,  
was examined and testified as follows:

**EXAMINATION**

BY MR. KELLAHIN:

Q. Let me have you turn, sir, to Exhibit  
No. 1. Would you identify that for us?

A. Yes. Mr. Examiner, Exhibit No. 1  
reflects Phillips' leasehold in yellow. It's all  
100 percent Phillips. Section 4 has no undivided  
royalties. The production out of the Wolfcamp  
again comes from two separate zones, what we  
refer to as Reef A and Reef B.

Wolfcamp production, total production,  
oil is on top just right below the well itself  
with gas right below it. Our locations,  
unorthodox locations 8, 9, and 10 are shown with  
red open circles. And again the area in question  
as Phillips acreage is bordered by a turquoise  
boundary.

Q. The Tulk Wolfcamp Pool, based upon your  
research, demonstrates statewide oil spacing on  
40-acre tracts?

A. It does.

Q. You don't find any special rules that

1     apply to that particular pool?

2           A.     No, I do not.

3           Q.     When we look at standard well locations  
4     then, we're looking within a spacing unit of 40  
5     acres, and the setback would be 330 from the side  
6     boundaries of those spacing units?

7           A.     That is correct.

8           Q.     In making your study are you moving  
9     towards any party that is not already having  
10    common ownership and sharing in production from  
11    offsetting wells?

12          A.     No, we are not.

13          Q.     The color-coding for the exhibit again  
14    demonstrates common ownership for working  
15    interest royalty and overrides?

16          A.     That is correct.

17          Q.     Is this under a unit operation, or is  
18    this simply a leasehold development?

19          A.     Leasehold development.

20          Q.     I think it's more visual if you'll turn  
21    to Exhibit No. 2, Mr. Balke, and we'll  
22    demonstrate to the Examiner your conclusions  
23    about each of these wells.

24          A.     Mr. Examiner, again, this is a 3-D  
25    seismic interpretation here. We shot a 3-D

1 survey over our leasehold and at least one mile  
2 beyond our borders. What we have here is our  
3 structural interpretation of the Wolfcamp  
4 itself.

5 The unorthodox locations, which we are  
6 requesting, can be seen with a red dot and red  
7 arrow and the well name above them, 8, 9 and 10.  
8 The small red "Xs" are the orthodox locations.  
9 And, based on our structural interpretation, our  
10 unorthodox locations will be much more favorable  
11 locations.

12 Contour interval is 40 feet. Each  
13 color represents a different contour or different  
14 structural contour.

15 Q. When you as a geologist are studying  
16 the Cisco portion of the pool and looking for  
17 optimum locations, what are the controlling  
18 parameters that you've identified that you must  
19 consider in making that decision?

20 A. We need to be assured that the  
21 reservoir itself is continuous over the  
22 structure. We need to be aware of where our  
23 oil-water contact is. This is solution gas and  
24 partial water drive.

25 These wells that have been plugged

1 within the Phillips acreage here were watered  
2 out, became uncommercial for Phillips to  
3 operate. So we need to be in a location that is  
4 structurally favorable above our oil-water  
5 contact and still having the necessary porosity  
6 and thickness of pay.

7 Q. Let's turn now to the individual survey  
8 plats for the three wells, starting first with  
9 Exhibit No. 3, which identifies the No. 8 well.

10 A. Okay.

11 Q. Has that well been surveyed and staked  
12 in the field?

13 A. It has been surveyed and staked in the  
14 field.

15 Q. Is that the location that we have  
16 amended that corresponds to that amendment  
17 previously filed with the Division?

18 A. That is correct.

19 Q. We will be within the 40-acre tract of  
20 Unit letter "O" for Section 4?

21 A. That is correct.

22 Q. Let's go to the well in Section 4  
23 that's numbered 9. It's Exhibit No. 4. Would  
24 you identify that for us?

25 A. It's located in Unit letter "H," right

1 next to a dry hole symbol. That well did not  
2 penetrate, did not drill deep enough to the  
3 Wolfcamp Formation. It has been staked and  
4 should not need to be moved.

5 Q. Again you're moving towards offsetting  
6 40-acre spacing units that are within the same  
7 lease that's being developed among common  
8 ownerships?

9 A. That is correct.

10 Q. Let's turn now to the last of the three  
11 wells. Well No. 10, it's on Exhibit No. 5,  
12 identify that for us.

13 A. It's in Unit letter "L" of Section 4.  
14 It's been staked out in the field and should not  
15 be moved.

16 Q. And again you're moving towards common  
17 ownerships with the spacing unit that's in  
18 question -- is common with the offsetting spacing  
19 unit?

20 A. That's correct.

21 Q. Let's turn now to more of your geologic  
22 investigation. You've shown us your structure  
23 map. What then do you do to analyze your best  
24 location for this kind of reservoir?

25 A. Our next attempt is to make sure that

1 the reservoir is present there with adequate  
2 thickness and adequate porosity.

3 Q. And how did you do that?

4 A. For this I just took the net thickness  
5 map, used a porosity cutoff, and essentially  
6 combined our porosity into thickness of the two  
7 separate reef zones that are within the Wolfcamp,  
8 Reef A and Reef C, I believe.

9 Q. So the isopach of thickness and pay,  
10 porosity --

11 A. Uh-huh.

12 Q. -- thickness and porosity is going to  
13 be mapped as to what you call Reef A?

14 A. Correct.

15 Q. Where is Reef A in relation to the  
16 other lettered reefs?

17 A. Reef A is located about 9900 feet.  
18 Reef C is around 50 feet deeper within the  
19 formation separated by dense limestone.

20 Q. Okay. Let's look at the isopach for  
21 Reef A on Exhibit 6. Tell us what you see as a  
22 geologist that supports your conclusion that the  
23 unorthodox locations are the optimum locations  
24 within those spacing units to drill for  
25 production out of the Cisco.

1           A.       This is specifically, Mr. Examiner,  
2       it's Exhibit No. 6, Section 4. We have three  
3       wells that are currently producing in Section 4,  
4       well No. 1, 3, and 4. We do not have high  
5       volumes of water being produced out of those  
6       wells right now.

7                   We feel using the well that's located  
8       in the southeast-southeast of Section 5, which  
9       was dry, it was typed but yet it produced water,  
10      our oil-water contact somewhere between that well  
11      in Section 3. It will be structurally higher in  
12      all cases to that well and should be above the  
13      oil-water contact.

14                  We have the ample thickening of the  
15      Reef A. In fact, we should be thicker in two out  
16      of the three cases, and we should be structurally  
17      higher.

18           Q.       In all three cases?

19           A.       In all three cases.

20           Q.       Let's turn now to what you call Reef

21      C. That is mapped by you on Exhibit No. 7?

22           A.       That's correct.

23           Q.       Okay.

24           A.       This reef, Reef C, is not as prolific  
25      as Reef A; however, we will see production out of



1 here ranging between 50- and 75,000 barrels.  
2 Reef C again is 50 feet lower than Reef A  
3 separated by dense carbonates not in  
4 communication with each other.

5 This reef tends to be very water  
6 sensitive. And, in fact, it is more of a water  
7 drive than a solution gas drive. And this has  
8 extreme concerns about being in the most  
9 favorable location.

10 Q. Again take each of the examples, Wells  
11 8, 9, and 10, and show us how the mapping of the  
12 Reef C fits into your overall conclusion about  
13 the optimum location.

14 A. Well, what we see here, along with Reef  
15 C and Reef A, is that we should encounter  
16 sufficient thickness and porosity of the zone  
17 itself. Our concern now, which we do feel very  
18 confident it will be there, is that we need to be  
19 in the most structurally favorable position.

20 Q. In conclusion then, based upon your  
21 entire review of the geology of this area, what  
22 is your ultimate opinion about the approval of  
23 these requested locations and how that  
24 opportunity affords you the chance to produce oil  
25 that you might not otherwise get?

1           A.       Exhibits 6 and 7 do show us that we do  
2 have the presence of the productive carbonate  
3 zones being there. We go back to Exhibit 2. We  
4 see that the most favorable structural position  
5 is in our unorthodox locations, not the orthodox  
6 locations.

7                   And so in combination with the isopachs  
8 and with the structure, our unorthodox locations  
9 will be much more favorable. We'll have a better  
10 commercial well than the unorthodox locations.

11          Q.       The notification of hearing that I  
12 issued at your request provided notifications to  
13 the Commissioner of Public Lands and to Yates  
14 Petroleum Company?

15          A.       That's correct.

16          Q.       Can you tell me where Yates' acreage  
17 position would be in this area?

18          A.       We can refer back to Exhibit No. 1.  
19 Probably have a clearer picture. Yates has the  
20 east half of 5, the majority of Section 8. And  
21 as of July 21, H. L. Brown, I believe, owns 600  
22 acres out of Section 9.

23          Q.       Okay. That sale by the Land Office to  
24 Mr. Brown was subsequent to your notification,  
25 and so the notification went to the Land Office?

1 A. Correct.

2 Q. And each of your well locations in fact  
3 do not move towards any of those owners?

4 A. That is correct.

5 Q. Okay. You're encroaching upon yourself  
6 and your own common owners within those spacing  
7 units?

8 A. In every case.

9 MR. KELLAHIN: Exhibit No. 10, Mr.  
10 Examiner, is confirmation of receipt from the  
11 Land Office of the waiver of objection as to the  
12 locations. And at this point then we would move  
13 the introduction of Exhibits 1 through 9.

14 EXAMINER STOGNER: Exhibits 1 through 9  
15 will be admitted into evidence at this time.

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

18 EXAMINER STOGNER: Thank you, Mr.  
19 Kellahin.

20 EXAMINATION

21 BY EXAMINER STOGNER:

22 Q. Mr. Balke, in reference to Exhibits 6  
23 and 7 --

24 A. Uh-huh.

25 Q. -- when I look at these two reefs, what

1 kind of distance, vertical separation, am I  
2 seeing between these two?

3 A. Between the two reefs?

4 Q. Yes.

5 A. At least 50 feet.

6 Q. Am I to understand you that the deeper  
7 reef being, being -- let's see, which one is  
8 deeper?

9 A. Reef C.

10 Q. -- Reef C, being deeper, was that  
11 eroded off into a flat plain, or is that still  
12 the reef structure that we see there?

13 A. You're seeing probably the Paleo  
14 structure there. You probably have erosion. And  
15 a lot of this porosity that's found within the  
16 limestone is secondary porosity. And probably,  
17 as the reef was deposited, you probably had  
18 porosity decreasing off the sides of the reef and  
19 was noncommercial. Couldn't hold anything, just  
20 too tight.

21 Q. And then when the second reef, Reef A,  
22 was deposited over the top of it --

23 A. It had more of a favorable position.  
24 As you see, there's a north -- almost a  
25 north-south trend in both of these reefs. That

1 is because it is draping over deep-seated faults,  
2 which we do see in the Devonian. It's  
3 essentially draping over these deep-seated  
4 faults.

5 It probably shows us a difference in  
6 the structural position of these faults. The  
7 faulting probably took place subsequential to the  
8 Reef C. And we probably had more structural  
9 relief when Reef A was deposited.

10 Q. What kind of a thickness do you see out  
11 of Pennsylvanian Formation underneath the  
12 Wolfcamp in this area?

13 A. There's only been a couple of wells,  
14 No. 7, No. 5, and No. 6, that have been  
15 penetrated into the Pennsylvanian Formation. The  
16 entire interval is in excess of 1200 feet. We  
17 see different zones that are going to be  
18 different.

19 If I can reference you back to our  
20 previous hearing on the South Four Lakes, they're  
21 going to be different zones that we see up there  
22 down here. We have tested the No. 6 in the  
23 Pennsylvanian, and it tested wet.

24 Q. But what you're seeing is the Devonian  
25 faults affecting the outlay of the reefs in which

1 they trended; is that correct?

2 A. That is correct.

3 EXAMINER STOGNER: I have no other  
4 questions, Mr. Kellahin.

5 MR. KELLAHIN: That concludes our  
6 presentation, Mr. Examiner.

7 EXAMINER STOGNER: I'll take this  
8 information and consider it subsequent to the  
9 hearing of August 20, which at that time it will  
10 be called and the corrections will be noted.

11 Mr. Kellahin, one other thing. The  
12 well No. 10, the reason I referred to the  
13 dedicated acreage, being the northwest-southwest  
14 quarter or southwest quarter-southwest quarter is  
15 because that 50-foot radius went outside both of  
16 those. So I wanted to make sure we clarified  
17 that.

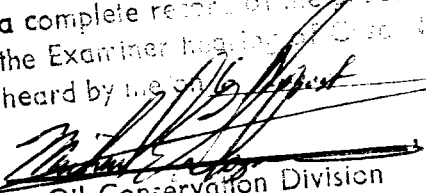
18 However, I do show that well No. 10 is  
19 in the southwest quarter-southwest quarter. Is  
20 that correct?

21 MR. KELLAHIN: That's what we show, Mr.  
22 Examiner.

23 EXAMINER STOGNER: With that, that  
24 concludes this particular case. We'll call it  
25 again on August 20.

[And the proceedings were concluded.]

I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of Case No. 10523  
heard by me on 16 August 1942.

  
Examiner  
Oil Conservation Division

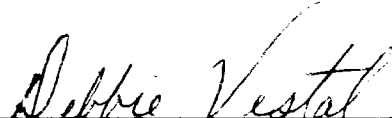
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17 this matter.

18 WITNESS MY HAND AND SEAL AUGUST 17,  
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21  
22   
23 \_\_\_\_\_  
24 DEBBIE VESTAL, RPR  
25 NEW MEXICO CSR NO. 3