

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

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

CASE NO. 12,681

IN THE MATTER OF CASE 12,681 BEING )  
REOPENED PURSUANT TO THE PROVISIONS )  
OF DIVISION ORDER NO. R-11,680, WHICH )  
ORDER PROMULGATED TEMPORARY SPECIAL POOL )  
RULES FOR THE BIG DOG-ATOKA POOL IN LEA )  
COUNTY, NEW MEXICO, INCLUDING PROVISIONS )  
FOR 80-ACRE SPACING UNITS AND DESIGNATED )  
WELL LOCATIONS )

RECEIVED

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Oil Conservation Division  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

January 8th, 2004

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, January 8th, 2004, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

\* \* \*

## I N D E X

January 8th, 2004  
Examiner Hearing  
CASE NO. 12,681

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| APPEARANCES                       | 3    |
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| <u>DAVID F. BONEAU</u> (Engineer) |      |
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\* \* \*

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\* \* \*

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

## FOR THE APPLICANT:

HOLLAND & HART, L.L.P., and CAMPBELL & CARR  
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 P.O. Box 2208  
 Santa Fe, New Mexico 87504-2208  
 By: WILLIAM F. CARR

## FOR DEVON ENERGY PRODUCTION COMPANY:

JAMES G. BRUCE  
 Attorney at Law  
 P.O. Box 1056  
 Santa Fe, New Mexico 87504

\* \* \*

1           WHEREUPON, the following proceedings were had at  
2 8:58 a.m.:

3           EXAMINER CATANACH: At this time I will call Case  
4 12,681, which is in the matter of Case 12,681 being  
5 reopened pursuant to the provisions of Division Order No.  
6 R-11,680, which order promulgated temporary special pool  
7 rules for the Big Dog-Atoka Pool in Lea County, New Mexico,  
8 including provisions for 80-acre spacing units and  
9 designated well locations.

10           Call for appearances in this case.

11           MR. CARR: May it please the Examiner, my name is  
12 William F. Carr with the Santa Fe office of Holland and  
13 Hart, L.L.P. We represent Yates Petroleum Corporation in  
14 this matter, and I have one witness.

15           EXAMINER CATANACH: Additional appearances?

16           MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe,  
17 representing Devon Energy Production Company. I have no  
18 witnesses.

19           EXAMINER CATANACH: Any additional?

20           Will the witness please stand to be sworn in?

21           (Thereupon, the witness was sworn.)

22           MR. CARR: Mr. Examiner, as the evidence will  
23 show, in 2001 Yates Petroleum Corporation drilled its Big  
24 Bear ATN Well Number 2. The well was initially drilled to  
25 test the Strawn and the Morrow formation, but they made an

1 oil well in the Atoka. This was the only oil well in that  
2 formation for more than 20 miles. And what they  
3 encountered and have discovered is really a one-well Atoka  
4 oil pool.

5 They came before you that year, presented a case  
6 to Mr. Stogner seeking special pool rules and at that time  
7 estimated, based on initial well data, that the well would  
8 drain approximately 74 acres.

9 An order was entered approving temporary pool  
10 rules.

11 We're here today to show that adoption of those  
12 pool rules on a permanent basis is justified by the well's  
13 performance during the period of time since the initial  
14 rules were adopted.

15 DAVID F. BONEAU,

16 the witness herein, after having been first duly sworn upon  
17 his oath, was examined and testified as follows:

18 DIRECT EXAMINATION

19 BY MR. CARR:

20 Q. Would you state your name for the record, please?

21 A. David Francis Boneau.

22 Q. Dr. Boneau, where do you reside?

23 A. Artesia, New Mexico.

24 Q. By whom are you employed?

25 A. Yates Petroleum Corporation.

1 Q. And what is your position with Yates Petroleum  
2 Corporation?

3 A. It's called engineering manager.

4 Q. Have you previously testified before the New  
5 Mexico Oil Conservation Division?

6 A. Yes, sir.

7 Q. At the time of that testimony, were your  
8 credentials as an expert in petroleum engineering accepted  
9 and made a matter of record?

10 A. Yes, they were.

11 Q. Are you familiar with the status of the Yates Big  
12 Bear ATN Well Number 2?

13 A. Yes, sir, I am.

14 Q. Were you the engineering witness that testified  
15 in the case when the temporary pool rules were adopted?

16 A. I was that witness, yes, sir.

17 Q. Are you prepared to review the history of that  
18 well and make recommendations to the Examiner on the  
19 establishment of permanent rules?

20 A. Yes, sir.

21 MR. CARR: Are the witness's qualifications  
22 acceptable?

23 EXAMINER CATANACH: They are.

24 Q. (By Mr. Carr) Dr. Boneau, would you refer to  
25 what has been marked for identification as Yates Petroleum

1 Corporation Exhibit Number 1, and using this exhibit  
2 provide Examiner Catanach with a summary of the history of  
3 both this well and the temporary pool rules?

4 A. Yes, you did quite a little bit of that, but I'll  
5 do a little more.

6 So we're seeking -- We think that the temporary  
7 rules magically are going to work and they should be made  
8 permanent. This is a one-well pool and produces from a  
9 six-foot Atoka interval at 11,878 to -82 feet.

10 At the first hearing, in June of 2001, the  
11 temporary rules that resulted said that the spacing unit  
12 should be 80 acres. There's allowance made for a second  
13 well on the undrilled 40, which we don't need in this case.  
14 The setbacks were 330 feet, and the oil allowable was set  
15 at a depth bracket number of 445 barrels of oil per day.

16 At that time, like Mr. Carr said, I estimated  
17 based on -- I don't know, three weeks or five weeks or  
18 something of production -- that the well would drain 74  
19 acres.

20 We now have two and a half or so years of real  
21 data, and the well has produced at almost 75,000 barrels of  
22 oil and is still producing 32 barrels of oil a day. So it  
23 has turned out to be a pretty substantial well.

24 And essentially what I'm here to do is, I've  
25 recalculated the drainage area, and that's basically what

1 you're going to hear.

2           According to those recalculations, those 75,000  
3 barrels that have been produced to date have drained  
4 approximately 73 acres, and the ultimate drainage area of  
5 the Big Bear, I estimate now, is 94 acres. So the original  
6 74 wasn't all that bad.

7           So now we have real data on which to say 80-acre  
8 spacing is reasonable and we think that there's good reason  
9 to just take the temporary rules and make them permanent.

10           Q. Dr. Boneau, would you go to Exhibit Number 2,  
11 identify and review this, please?

12           A. Exhibit Number 2 has a lot of yellow in it, but  
13 it shows Section 29 of 15-35 in Lea County, and the 80  
14 acres that is the spacing unit of the Big Bear and is also  
15 the pool boundary of this Big Dog-Atoka Oil Pool is shown  
16 with a -- is surrounded with a black rectangle.

17           Yates is the operator of the whole section. You  
18 see there are three wells in the section:

19           A dry hole, Big Bear Number 1,

20           Up in the north is a well called Barry. It's a  
21 quite poor Permo-Penn oil producer.

22           And then the Big Bear well is shown at its  
23 location.

24           Q. Dr. Boneau, is the ownership common in all zones  
25 in Section 29?

1           A.    Actually -- Well, the truth is, the north half of  
2 Section 29 has different owners than the south half of  
3 Section 29. The details are not all that relevant, but in  
4 the south half of 29 the ownership is common in all  
5 intervals.

6           Q.    And when the case was originally heard, notice  
7 was provided in accordance with Division Rules to all  
8 affected offsetting interest owners; is that right?

9           A.    That's correct, yes.

10          Q.    Including Devon?

11          A.    Including Devon, yes.

12          Q.    Let's go to Exhibit Number 3. Would you identify  
13 and review that?

14          A.    Now what we have is just data on the well leading  
15 to the -- my drainage calculations, and it's a series of  
16 exhibits. So Exhibit 3 is a tabular listing of the  
17 production from the Atoka formation in the Big Bear Number  
18 2 from the initial status of the well in May of 2001, up  
19 through November of 2003. And it shows oil production, gas  
20 production, water production. Not very much water  
21 production. And the oil production started above 200  
22 barrels a day and drifted down, and in the last month it  
23 made 32 barrels of oil a day.

24          Q.    The important column on this exhibit is the oil  
25 production --

1 A. Is barrels of oil produced, yes, sir.

2 Q. If we go to the gas column, there's some zeroes  
3 there. Really, the numbers in the gas column are affected  
4 by market -- those zeroes are over marketing issues; isn't  
5 that right?

6 A. Yes, the well really did produce some gas during  
7 September, October, November, 2001, and these are the  
8 official numbers, and --

9 Q. Okay. But these are the numbers that were  
10 actually reported on the well for those months?

11 A. These are the numbers we got paid for, and these  
12 are the numbers that are reported, yes, sir.

13 Q. Let's go to Exhibit 4. What is this?

14 A. Exhibit 4 is a -- I would call it a production  
15 plot with some decline curves drawn on it. The symbols --  
16 the little squares that are green are the oil production,  
17 and that's really what we're concentrating on. There's  
18 been some gas production and a little bit of water, but the  
19 oil is the significant product that we sell and hope to  
20 make some money on.

21 So the oil production, like -- Well, the plot  
22 mirrors the table, obviously, and the oil production has  
23 declined steadily from over 200 barrels a day down to about  
24 30 barrels a day. But it has -- It's produced a lot of oil  
25 in two years.

1 Q. All right, let's go to Exhibit 5. Would you  
2 first identify what this is and then review the important  
3 figures and numbers depicted thereon?

4 A. Exhibit 5 is the output from an economics decline  
5 curve kind of program, but its purpose is to put  
6 quantitative numbers to the decline curve that was on the  
7 previous exhibit. And I think there's only one number,  
8 really, on the whole thing that's totally relevant, and  
9 that's my prediction, based on the decline curve that's  
10 shown on the previous exhibit, is that the ultimate  
11 recovery from this well will be 96,527 barrels, almost  
12 100,000 barrels.

13 Q. What is Exhibit 6?

14 A. And Exhibit 6 is another piece we need for this  
15 drainage area. Actually, Exhibit 6 is a repeat of the log  
16 of the well that was shown at the original hearing, and it  
17 just shows that the Atoka zone at 11,880 feet,  
18 approximately, is about six feet thick. It's pretty thin  
19 but it's -- and it's good porosity. Anyway, it -- the log  
20 shows the details of what we know about that rock that's  
21 producing down there.

22 And then Exhibit -- is it 7?

23 Q. Yes.

24 A. -- is a table converting that log data into what  
25 I call hydrocarbon pore volume, so how much empty space

1 there is in that Atoka zone to hold the oil, and at the  
2 lower left corner [sic] is the answer, it's .06731 [sic],  
3 is my estimate of the hydrocarbon pore volume that's -- of  
4 the feet of hydrocarbon pore volume available at the  
5 wellbore of this well, and we blithely assume that it's a  
6 pancake reservoir and do some calculations.

7 Q. And this exhibit was also presented in the  
8 original hearing, was it not?

9 A. This exhibit is a repeat from the original  
10 hearing, yes, sir.

11 Q. Let's go to Yates Exhibit Number 8, and I'd ask  
12 you to work through the information shown on this Exhibit.

13 A. Exhibit 8 is various pieces put together into a  
14 calculation of the drainage area and all hopefully standard  
15 stuff.

16 Item number 1 lists the equation for the oil in  
17 place.

18 Item number 2 repeats the results of our log  
19 calculation, hydrocarbon pore volume .678.

20 Item 3 concerns the formation volume factor of  
21 the oil. It's the factor that relates the volume occupied  
22 by oil in the ground to the volume occupied by the oil on  
23 the surface, and you use a standard thing called standing  
24 correlations to get that. That factor is 1.28.

25 And then you need to estimate how much of the oil

1 in place you're actually going to recover, and a bunch of  
2 people have done computer simulations to estimate that in  
3 various conditions, and I reference in item number 4 a 1957  
4 paper, but it's still the classic paper to give you the  
5 answer to that.

6 And the estimate is that you're recovering about  
7 25 percent of the oil in place.

8 So then in item 5 you put all those numbers  
9 together into the equation, and the answer is 93.9 acres,  
10 or essentially 94 acres that the well will drain.

11 So my estimate is that it's drained 70-some  
12 acres, and eventually it will drain about 94 acres. And I  
13 consider those numbers consistent with 80-acre spacing and  
14 think that the temporary rules are working and should just  
15 be left alone -- or be made permanent, actually.

16 Q. In your opinion, will adoption of these rules on  
17 a permanent basis be in the best interests of conservation,  
18 the prevention of waste and the protection of correlative  
19 rights?

20 A. Yes, sir.

21 Q. Were Exhibits 1 through 8 prepared by you or  
22 compiled under your direction?

23 A. Yes, they were.

24 MR. CARR: May it please the Examiner, at this  
25 time we would move the admission into evidence of Yates

1 Petroleum Corporation Exhibits 1 through 8.

2 EXAMINER CATANACH: Exhibits 1 through 8 will be  
3 admitted.

4 MR. CARR: That concludes my direct examination  
5 of Dr. Boneau.

6 EXAMINER CATANACH: Mr. Bruce, do you have any  
7 questions?

8 MR. BRUCE: No, I have no questions.

9 EXAMINATION

10 BY EXAMINER CATANACH:

11 Q. Mr. Boneau, how do you guys know the limits of  
12 this reservoir? Or how do you know this is just basically  
13 a one-well pool?

14 A. We do not know -- I do not know if the pool  
15 extends beyond the 94 acres that this well will drain.  
16 It's entirely possible that it extends -- I think that it  
17 covers something like, you know, 80 or 100 acres. I do not  
18 know if it is exactly that rectangle there. You know, it  
19 is some 80 acres, some 94 acres, and it is entirely  
20 possible that another well could be drilled nearby that  
21 would encounter a connected part of the same reservoir.  
22 All I know is that this one well is draining about -- I say  
23 94 acres, but about 80 acres.

24 There could be -- I would not be surprised if  
25 Yates drilled another well looking at an extension of this

1 at some point. I mean, we know it does not exist at the  
2 Big Bear 1 location, you know, we know it does not exist up  
3 in the north, but there's room for three or four or six  
4 more wells at the -- if you want to be really optimistic.

5 Q. So Yates may, in fact, drill some more wells?

6 A. Yates may, in fact, drill some more wells, and we  
7 would think that these rules would be applicable to that,  
8 would be a reasonable place to start for those wells.

9 Q. This Atoka oil is kind of an anomaly in this  
10 area, isn't it?

11 A. It's the only one I know of. We were amazingly  
12 surprised, and I'm -- I mean, everybody is happy, but  
13 surprised that it's turned out to be this good. When we  
14 found it, we thought it might be a two-day wonder or  
15 something and just disappear, but it has not. It's  
16 produced steadily for going on three years now and looks  
17 like it's a real reservoir.

18 Q. And it's a solution gas as far as you can tell?

19 A. Yes, there's no sign that it's anything other  
20 than that.

21 Q. How long will it ultimately take to recover the  
22 96,000 barrels?

23 A. The calculations say that the well will produce  
24 economically through 2009.

25 Q. Okay. Is it economic to drill these wells at

1 that recovery?

2 A. Yes, it would be. 100,000 barrels for a million-  
3 dollar well would be economic, yes, sir.

4 Q. And apparently it's not -- there's no other  
5 producing horizon in this well, right?

6 A. No, that's not true.

7 Q. There is?

8 A. Yeah, this well is commingled with two other  
9 zones, and it's commingled with a poor Morrow zone and a  
10 poor Permo-Penn zone, and -- well, I didn't think that -- I  
11 mean, I hope that that's not really all that relevant,  
12 other than information. But on Exhibit 3, the table with  
13 the goofy gas production, in April and May of 2002, a  
14 couple inches down there, the numbers go from 3000's to  
15 300's --

16 Q. Uh-huh.

17 A. -- and that's when these other two zones were  
18 added and the well was commingled, and the allocation  
19 factors, you know, look like they're not the best to me,  
20 actually. But the allocation kicked in in April, 2002, and  
21 it looks like some of the gas from the Atoka is being  
22 assigned to the other zones, is what it really looks like.

23 But anyway, in April of 2002 a Morrow zone and a  
24 Permo-Penn zone were opened, and those two, along with the  
25 Atoka, the three zones are producing commingled.

1 I think it's clear from the continuous good oil  
2 production from the Atoka zone that the Atoka is producing  
3 90-some percent of the hydrocarbons from this well, from  
4 the three zones.

5 I didn't bring any numbers on the other zones.  
6 But they're small, is what I'm --

7 Q. Uh-huh.

8 A. -- telling you. Obviously we could look them up  
9 together. I could get them for you if that's appropriate.

10 Q. Well, let me just ask you this. The Permo-Penn  
11 and the Morrow, are they producing any oil as far as you  
12 know?

13 A. The Morrow is producing no oil, the Permo-Penn is  
14 producing 5 or 10 a month, barrels, a tiny bit, or at least  
15 according to the allocation it is allocated a tiny bit of  
16 oil.

17 Q. So you think the allocation of oil within this  
18 wellbore is accurate?

19 A. I think it is accurate, and I think that is borne  
20 out by the fact that the oil decline curve or the oil  
21 production rate, you know, is a continuous curve that's  
22 unaffected by the change from counting exactly the Atoka  
23 numbers to go into the allocation thing.

24 So the oil production is a continuous decline,  
25 and that means that the oil allocation is correct.

1 EXAMINER CATANACH: Okay, I don't have any more  
2 questions.

3 MR. CARR: Mr. Catanach, that concludes our  
4 presentation in this case.

5 EXAMINER CATANACH: Okay, there being nothing  
6 further, Case Number 12,681 will be taken under advisement.

7 (Thereupon, these proceedings were concluded at  
8 9:20 a.m.)

9 \* \* \*

10  
11  
12  
13  
14 I do hereby certify that the foregoing is  
15 a complete record of the proceedings in  
16 the Examiner hearing of Case No. 12681  
17 heard by me on January 8, 2007  
18 David Mahan, Examiner  
19 Oil Conservation Division  
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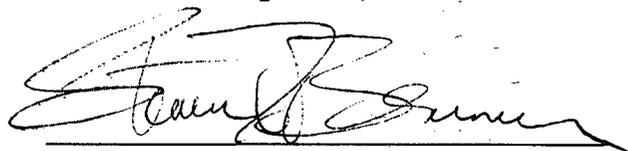
## CERTIFICATE OF REPORTER

STATE OF NEW MEXICO    )  
                                   )    ss.  
 COUNTY OF SANTA FE    )

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

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

WITNESS MY HAND AND SEAL January 8th, 2004.



STEVEN T. BRENNER  
 CCR No. 7

My commission expires: October 16th, 2006