

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:)
)
 APPLICATION OF YATES PETROLEUM)
 CORPORATION FOR DOWNHOLE COMMINGLING,)
 LEA COUNTY, NEW MEXICO)

CASE NO. 11,990

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

July 23rd, 1998

Santa Fe, New Mexico

OIL CONSERVATION DIV.
98 AUG - 6 AM 7:54

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, July 23rd, 1998, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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July 23rd, 1998
Examiner Hearing
CASE NO. 11,990

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* * *

A P P E A R A N C E S

FOR THE APPLICANT:

CAMPBELL, CARR, BERGE and SHERIDAN, P.A.
 Suite 1 - 110 N. Guadalupe
 P.O. Box 2208
 Santa Fe, New Mexico 87504-2208
 By: WILLIAM F. CARR

ALSO PRESENT:

MARK W. ASHLEY
 NMOCD Environmental Geologist
 2040 South Pacheco
 Santa Fe, New Mexico 87505

* * *

1 WHEREUPON, the following proceedings were had at
2 11:13 a.m.:

3 EXAMINER CATANACH: At this time I will call Case
4 11,990, which is the Application of Yates Petroleum
5 Corporation for downhole commingling, Lea County, New
6 Mexico.

7 Call for appearances in this case.

8 MR. CARR: May it please the Examiner, my name is
9 William F. Carr with the Santa Fe law firm Campbell, Carr,
10 Berge and Sheridan. We represent Yates Petroleum
11 Corporation. I have two witnesses.

12 EXAMINER CATANACH: Okay, will the witnesses
13 please stand to be sworn in?

14 (Thereupon, the witnesses were sworn.)

15 MR. CARR: At this time I call Mr. Moran.

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

19 DIRECT EXAMINATION

20 BY MR. CARR:

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

22 A. My name is Charles Moran.

23 Q. Where do you reside?

24 A. In Artesia, New Mexico.

25 Q. By whom are you employed?

1 A. Yates Petroleum Corporation.

2 Q. Mr. Moran, what is your current position with
3 Yates?

4 A. I'm a landman.

5 Q. Have you previously testified before this
6 Division?

7 A. Yes, I have.

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

11 A. Yes, they were.

12 Q. Are you familiar with the Application filed in
13 this case on behalf of Yates Petroleum Corporation?

14 A. Yes, it's an Application to commingle the Morton
15 wells, the Chester, Morrow and Atoka formations.

16 Q. And you are familiar with the well?

17 A. Yes.

18 Q. And the status of the lands in the area?

19 A. Yes.

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

22 EXAMINER CATANACH: They are.

23 Q. (By Mr. Carr) Have you prepared certain exhibits
24 for presentation here today?

25 A. I've prepared exhibit of the Morton unit, the

1 land plat describing the outline of the approved unit.

2 Q. Mr. Moran, did Yates file an administrative
3 application seeking downhole commingling authority for this
4 well?

5 A. I believe that we did, yes.

6 Q. And were you advised by the Oil Conservation
7 Division that it didn't qualify and therefore would need to
8 be set for hearing?

9 A. Yes.

10 Q. To your understanding, what is the reason that
11 this well does not qualify for administrative approval?

12 A. It was -- It did not meet the requirements of
13 Rule 303.C.(1).(b)(ii). The bottomhole pressure of the
14 highest-pressure commingle zone exceeded the original
15 reservoir pressure in any commingle zone in the wellbore,
16 adjusted to a common datum.

17 Q. And will Yates be calling an engineering witness
18 to discuss the technical portions of this case?

19 A. Yes.

20 Q. Let's go to Exhibit Number 1, your plat that
21 shows the Morton unit. Generally, would you just identify
22 this and explain what it shows?

23 A. This is a copy of a land-ownership map outlining
24 the land committed to the Morton unit. The well is located
25 in the north half of Section 5, 1770 feet from the north

1 line and 2150 feet from the east line in Unit B of Section
2 5, Township 15 South, Range 35 East, Lea County, New
3 Mexico.

4 Q. Is Yates Petroleum Corporation the operator of
5 this unit?

6 A. Yes.

7 Q. Are there any offsetting operators to whom notice
8 is required to be given under OCD rules?

9 A. No, I could not find any.

10 Q. Is the ownership common in all zones that are
11 proposed to be commingling?

12 A. Yes.

13 Q. And when we say that, we're including royalty,
14 overriding royalty as well as the working interest owner?

15 A. Yes.

16 Q. Was Exhibit Number 1 prepared by you?

17 A. Yes.

18 MR. CARR: Mr. Catanach, that concludes my direct
19 examination of Mr. Moran.

20 EXAMINER CATANACH: Are you going to enter
21 Exhibit 1?

22 MR. CARR: And I would like to -- I will move the
23 admission of Exhibit 1.

24 EXAMINER CATANACH: Exhibit 1 will be admitted as
25 evidence.

1 MR. CARR: That concludes my direct.

2 EXAMINER CATANACH: And I have no questions of
3 Mr. Moran.

4 MR. CARR: At this time we would call Morris
5 Keith.

6 MORRIS KEITH,
7 the witness herein, after having been first duly sworn upon
8 his oath, was examined and testified as follows:

9 DIRECT EXAMINATION

10 BY MR. CARR:

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

12 A. Morris Keith.

13 Q. Where do you reside?

14 A. Artesia, New Mexico.

15 Q. By whom are you employed?

16 A. Yates Petroleum Corporation, as an operations
17 engineer.

18 Q. Mr. Keith, have you previously testified before
19 this Division?

20 A. No, I haven't.

21 Q. Could you briefly summarize for Mr. Catanach your
22 educational background?

23 A. I have a bachelor of science degree from Tarleton
24 State University --

25 Q. And when --

1 A. -- 1976.

2 Q. And since 1976, for whom have you worked?

3 A. I've worked for the Western Company, North
4 America, Halliburton Energy Services and Yates Petroleum
5 Corporation.

6 Q. And since you graduated from college have you at
7 all times been employed in an engineering role?

8 A. No, sir, I began driving a truck. I've been in
9 an engineering capacity since 1985.

10 Q. Okay. And are you the engineer responsible for
11 the Morton Unit Well Number 1?

12 A. Yes, sir.

13 Q. You're familiar with the Application filed in
14 this case on behalf of Yates Petroleum Corporation?

15 A. Yes, sir.

16 MR. CARR: Mr. Catanach, at this time I would
17 tender Mr. Keith as an expert witness in petroleum
18 engineering.

19 EXAMINER CATANACH: Is your degree in
20 engineering, Mr. Keith?

21 THE WITNESS: It's in -- a bachelor of science in
22 agriculture.

23 EXAMINER CATANACH: Okay. Mr. Keith is so
24 qualified.

25 Q. (By Mr. Carr) Have you prepared exhibits for

1 presentation in this case?

2 A. Yes.

3 Q. All right, Mr. Keith, let's go to what has been
4 marked for identification as Yates Petroleum Corporation
5 Exhibit Number 2. Would you identify that, please?

6 A. Yes, this is the commingling Application filed in
7 April of 1998.

8 Q. And this is the document that resulted in the
9 administrative application being denied; is that right?

10 A. Yes.

11 Q. Could you explain to Mr. Catanach the
12 circumstances as you understand them concerning that
13 denial?

14 A. Yes. This Application had been previously filed
15 in April of 1997. It was filed under the 50-percent
16 reservoir pressure rule, which, when corrected to a common
17 datum, and I understood off the 1997 pressure number for
18 the Morrow, which we subsequently revised to the 1998
19 Application.

20 Q. The pressure, in fact, is substantially higher in
21 the Morrow at this time than it was back in 1997; isn't
22 that right?

23 A. Yes.

24 Q. And the issue here seems to be the production
25 from the Morrow formation?

1 A. I believe so, yes.

2 Q. When the well was initially drilled, you had a
3 good show. At least initially it appeared that way in the
4 Morrow; is that correct?

5 A. Yes.

6 Q. What happened?

7 A. We initially completed in the Chester, acidized
8 it and tested it, and we had a negative-four skin and a
9 very low permeability, .04 millidarcy.

10 We moved up to the Morrow, perforated it and
11 obtained a rate of about 13 million a day, was the good
12 news. The bad news was, it didn't last very long. It
13 depleted in about 11 million.

14 Q. How long did it take to deplete?

15 A. Just right at a week, about one week.

16 Q. And then at that point in time, what did you do
17 with that Morrow interval?

18 A. We had a retrievable bridge plug above the
19 Chester, so we attempted to come -- to move the bridge plug
20 that was above the Chester, and at that time it got stuck.
21 It would only go down, it wouldn't come up.

22 We conferred with Mr. Sexton, Jerry Sexton, at
23 the OCD Office in Hobbs, and he let us push that bridge
24 plug to the bottom of the hole and set an RBP at 13,100,
25 above the questionable spot in the casing, and put some

1 sand on top of it and recomplete into the Atoka zone.

2 Q. And that's how the well is completed, or at this
3 time?

4 A. Yes, sir, that's how it is today.

5 Q. Okay, let's now go back, and I think I'd ask you
6 now to review the general characteristics of each of the
7 zones which you're proposing to commingle.

8 A. The bottom Chester limestone was a rank wildcat.
9 There's not another well in five or six miles. It tested
10 gas. We made about 1.2 million out of that in a month-long
11 period. We did a bottomhole buildup, and we have a high
12 pressure, over 6000 pounds bottomhole pressure, but
13 extremely low permeability and a low deliverability rate.
14 It's capable of -- Let's see, I believe 100 to 136 MCFD.

15 The Morrow zone, the next zone up, initially
16 appeared to be a well-maker and a field-maker. Extremely
17 high permeable. But it depleted from 5400 pounds
18 bottomhole pressure, or 5413, down to 1900 in less than a
19 week, and 11 million. So it's a high perm but extremely
20 limited reservoir.

21 The Atoka formation is a low-perm reservoir; it
22 requires fracture stimulation. And it began at 3886
23 bottomhole pressure and has since produced a quarter of a
24 BCF at a marginal production rate, but it appears to have a
25 significant or a marginal amount of reserves.

1 Q. Why don't we go to Yates Petroleum Corporation
2 Exhibit Number 3, the wellbore schematic, and if you would
3 identify the intervals in the well that are producing and
4 the zone that you propose to add to the well.

5 A. The Chester zone is -- The Chester and the Morrow
6 zone are both open, and we're asking that we be able to
7 commingle those with the Atoka zone, the 12,916 to 12,933.

8 And in addition, when we put these zones
9 together, we propose to add an additional sand, a marginal
10 sand up there in the upper Atoka, 12,524 to 12,550. And we
11 feel like it will contribute 50 to 75 MCFD.

12 Q. At this time the only zone producing in the well
13 is that lower Atoka interval; is that right?

14 A. Yes.

15 Q. And both the Chester and the Morrow are below
16 that common bridge plug and are shut in?

17 A. Yes, sir.

18 Q. And during this period of time you would
19 anticipate an increase in pressure in the Morrow; is that
20 right?

21 A. Yes, sir, it's been nearly two years, and we feel
22 like that Morrow zone has regained its near-original
23 pressure.

24 Q. Okay. Could you provide Mr. Catanach with the
25 recent producing rates from this Atoka formation?

1 A. Yes, sir, it's right at 500,000. It's on one of
2 these exhibits. It's about 15 oil and 500,000 gas.

3 Q. And how recently is that information?

4 A. 7-14-98, 7 oil, 501 MCF on a 220-pounds tubing
5 pressure.

6 Q. What were the oil, gas and water rates for the
7 last production from the Morrow and the Chester prior to
8 shutting those zones in?

9 A. Neither zone made any water except for some
10 stragglng treatment fluid water, and that cleaned up to
11 zero. So both of them are zero water.

12 The Morrow made a little bit of oil at the very
13 first of its peak production, but 2 million into production
14 of the Morrow the oil stopped, and there's been no oil
15 production or -- There wasn't any oil swabbed after that.
16 So...

17 Q. What about the Chester or Mississippian?

18 A. The Chester didn't make any oil. It was all gas.

19 Q. Okay. What's the BTU content for the gases
20 produced from each of these formations?

21 A. We've tested the Chester-Mississippian as 1127,
22 the wildcat Morrow zone is 1210, and the Atoka, lower
23 Atoka, is 1150 BTU.

24 Q. Could you summarize for the Examiner the original
25 pressures in each of these zones and then compare it, I

1 guess, to the current pressure in each?

2 A. Yes. We measured the original Mississippian
3 pressure at 6271 and produced 1.2 million, re-measured the
4 pressure at 6074.

5 The original Morrow pressure was measured
6 immediately after perforating at 5413, and we're -- an
7 engineering estimate that the current pressure in the
8 Morrow formation now is 5400.

9 And the lower Atoka was not DST'd. It was
10 measured at 3886 after about 10 million feet production, so
11 we're -- It's now less than 3886.

12 Q. When we look at the increase in the pressure in
13 the Morrow, that is actually the result of some crossflow
14 from the Chester; is that not right?

15 A. Yes, sir, that crossflow has already happened in
16 our estimation.

17 Q. And you've calculated that it's about 5400
18 pounds. Now, how close -- What range of error would you
19 apply to that calculation?

20 A. Within 10 percent.

21 Q. When the formations are, in fact, producing,
22 would you anticipate any further crossflow?

23 A. No, sir, with commingled production we should not
24 have any crossflow because of the low permeabilities.

25 Q. Now, you've indicated that none of these

1 intervals are producing water; is that right?

2 A. Yes.

3 Q. Do you anticipate that there would be -- any harm
4 could occur as a result of any minimal crossflow that has
5 occurred between the Chester and the Morrow, or might occur
6 in the future?

7 A. No, sir.

8 Q. Is the bottomhole pressure of the lowest pressure
9 zone more than 50 percent of the bottomhole pressure in the
10 highest pressure zone, adjusted to a common datum?

11 A. No, sir, I don't believe it is.

12 Q. There is less than a 50-percent differential; is
13 that what you're saying?

14 A. Yes.

15 Q. Okay. Do you anticipate any problems with
16 compatibility of the fluids in this zone?

17 A. No.

18 Q. Let's go to what has been marked Yates Exhibit
19 Number 4. Would you identify and review that, please?

20 A. Yes, this is a Cartesian plot of production from
21 the -- starting past the actual Chester production, which
22 wasn't actually put down the sales line. And it indicates
23 there in December of 1996 when the Morrow was completed,
24 the high initial rates, the high tubing pressure, the
25 immediate depletion.

1 And then 1-21-97, the well was recompleted to the
2 Atoka sand where it was produced for nearly a year before
3 it was fracture-stimulated, and you can see the increase
4 there.

5 In the bottom right-hand corner are the cums from
6 the Morrow and Atoka.

7 Q. Will the value of the production after
8 commingling be equal to or exceed the value of the
9 production from formations if separately produced?

10 A. Yes, I believe it will.

11 Q. In your opinion, will commingling as requested in
12 these wells result in the increased recovery of
13 hydrocarbons?

14 A. Yes.

15 Q. Are all these formations capable of only marginal
16 production at this time?

17 A. Yes.

18 Q. And will the commingling you're requesting enable
19 Yates to produce the formations that are currently shut in?

20 A. Yes, it will.

21 Q. How does Yates propose to allocate production
22 from each of these reservoirs, if commingling is approved?

23 A. We're proposing 100 percent of the oil be
24 allocated to the Atoka; the gas be allocated 82 percent to
25 the Atoka, 8 percent to the Morrow and 10 percent to the

1 Chester-Mississippian.

2 Q. In your opinion, will the approval of this
3 Application be in the best interest of conservation, the
4 prevention of waste and the protection of correlative
5 rights?

6 A. Yes.

7 Q. Were Exhibits 2 through 4 prepared by you?

8 A. Yes, they were.

9 MR. CARR: At this time, Mr. Catanach, we would
10 move the admission into evidence of Yates Petroleum
11 Corporation Exhibits 2 through 4.

12 EXAMINER CATANACH: Exhibits 2 through 4 will be
13 admitted as evidence.

14 MR. CARR: And that concludes my direct
15 examination of Mr. Keith.

16 EXAMINATION

17 BY EXAMINER CATANACH:

18 Q. Mr. Keith, what is the allocation based on, that
19 you've proposed?

20 A. It's based on a -- Well, it's based on the upper
21 Atoka, a combination of the upper and middle Atoka, and
22 then the measured rates out of the Mississippian and the
23 Morrow.

24 Q. Okay. The current perforated Atoka is producing
25 500 MCF per day?

1 A. Yes, sir.

2 Q. And you anticipate an additional 75, did you say?

3 A. Well, an additional 499, for a million a day.

4 Q. Okay, I've got you.

5 And then the Morrow would be the rate -- the last
6 rate that produced -- ; Is that 94 MCF per day?

7 A. Yes, sir, 94 only, on 1-9-97, which will be on
8 Exhibit 4, the Cartesian plot.

9 Q. Okay. And that was after it had produced for a
10 while?

11 A. Yes, sir, that's after it depleted.

12 Q. Okay.

13 A. And that was with the lower bottomhole pressure.

14 Q. Okay. So you feel that's a good representation
15 of what it would produce at this point?

16 A. Yes, sir, after a week or ten days to level out.

17 Q. Okay. And the Chester last produced at 136 per
18 day?

19 A. Yes, sir.

20 Q. And that should be about what it produces now?

21 A. It's low perm, and it should do that for a long
22 time.

23 Q. Okay. And a hundred percent of the oil to the
24 Atoka?

25 A. Yes, sir.

1 Q. Okay. You say you believe crossflow has already
2 occurred from the Chester to the Morrow in that well?

3 A. Yes, sir.

4 Q. Is there any danger, as far as Yates is
5 concerned, that that pressure is so high that it may have
6 now escaped from the Morrow formation and gone elsewhere
7 and not -- you won't be able to recover it? Is that any
8 concern?

9 A. No, sir, in a gas zone I don't believe that is.

10 Q. Okay.

11 A. We were very disappointed in the limited nature
12 of this Morrow sand, because it was so wildcat and so far
13 from everything. But the tests are all very definitive.
14 It's an extremely limited reservoir.

15 Q. So you believe all that Chester gas is still
16 confined to the Morrow, and you will be able to produce it
17 in a commingled situation?

18 A. Well, just the limited amount, the 10 million
19 that transferred from the Chester up to the Morrow during
20 this shut-in period.

21 Q. Ten million, you've actually estimated that?

22 A. Yes, sir. Well, because of the -- Only because
23 of the fact that it took 10 million to deplete the
24 Morrow --

25 Q. I see.

1 A. -- so that -- take it from 5400 to 1900, so that
2 10 million would take 1900 back to 5400.

3 Q. Okay. Are you guys going to take that into
4 consideration when you allocate the production? At least
5 initially?

6 A. Well, sir, I believe it's going to come back so
7 quick that it's all going to be in the test period. So
8 we'll take two, three weeks to test this well, and I
9 believe it's going to happen in three to four days, or
10 less.

11 Q. Okay, so that production you may, in fact,
12 allocate to the Chester, at least initially?

13 A. Yes, sir. Well, I believe what would actually
14 happen is that an unrepresentative amount of it would get
15 charged back to the Atoka, at 82 percent. But it would be
16 a relatively small amount of gas if that happened.

17 Q. So right off the bat you're going to use these
18 percentage numbers that you've proposed?

19 A. That's what we were proposing for -- But we could
20 sure allocate 10 million initial production to the Morrow
21 zone --

22 Q. Well, it would --

23 A. -- or to the Chester.

24 Q. To the Chester --

25 A. Yes.

1 Q. -- that's what I'm saying. It may be more
2 accurate to do that, at least for the initial --

3 A. Okay.

4 Q. -- for the initial flush production, whatever you
5 want to call it, to allocate a higher percentage to the
6 Chester.

7 A. Yes, sir.

8 Q. You might work on that and see what you guys feel
9 is a true representation. I don't mind you guys going to
10 the percentage, at least after the first few days.

11 A. Okay.

12 Q. But you might take into consideration that
13 initial production when you report it.

14 How did you guys estimate the rate that you might
15 get from the new Atoka interval?

16 A. This new sand is a rank wildcat. We've since
17 done six other Atoka wells between this area and the
18 south -- or the Big Dog Lovington-Strawn area and just
19 estimated off net feet of pay and a correlative number.

20 Q. Are you guys actually going to, proceduralwise,
21 are you going to go in and perforate and test the Atoka
22 before you commingle it?

23 A. Yes, sir, the upper Atoka. It will need to be
24 fracture-stimulated, so we'll sure set a plug over
25 everything and perforate and test this one and probably

1 test it for two weeks for a frac decision, frac it and test
 2 it for another two weeks to a month and then put the whole
 3 thing together.

4 Q. Okay. And that's going to be separate from even
 5 the lower Atoka zone?

6 A. Yes, sir.

7 Q. Okay. So you may, in fact, want to revise these
 8 allocation numbers based on what you get from the upper
 9 Atoka?

10 A. Yes, sir. Because the well is so marginal, we'd
 11 like to be able to test and then pull the plugs and put
 12 everything together in a single operation.

13 Q. Okay. But what I'm saying is, if you get a rate
 14 that's significantly higher or lower than what you
 15 estimate, you might want to refigure your allocations.

16 A. Yes, sir.

17 EXAMINER CATANACH: Okay. I have nothing
 18 further.

19 MR. CARR: That concludes our presentation in
 20 this case.

21 EXAMINER CATANACH: Okay, there being nothing
 22 further, Case 11,990 will be taken under advisement.

23 (Thereupon, these proceedings were concluded at
 24 11:40 a.m.)

25

I do hereby certify that the foregoing is
 a complete record of the proceedings in
 the Examiner hearing of Case No. 11990
 heard by me on July 23 1988

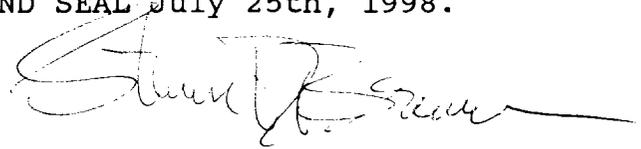
CERTIFICATE OF REPORTER

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 July 25th, 1998.



STEVEN T. BRENNER
 CCR No. 7

My commission expires: October 14, 1998