NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

Hearing Date SEPTEMBER 29, 1994 Time: 8:15 A.M.

NAME	REPRESENTING	LOCATION
William F. Carr	Campbell Carr, Berge & Sheehan	Santa Fe
Jami Bailey	R.W. Byram	SF
Joe Perez	Mobil	Midland
Sal Gutierrez	"	"
Galen Buller	Montgomery & Andrews	Santa Fe
Scott Gutberlet	Unocal	Midland
Rick Teague	Unocal	Midland
GARY SMALLWOOD	ARCO PERMIAN	"
DERROLL Wolfenbarger	ARCO PERMIAN	ARTESIA
Bill Hawkins	Amoco	Denver
GARY WEITZ	Amoco.	DENVER.
W. Kellahin	Kellahin & Kellahin	Santa Fe

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. 11,103
APPLICATION OF MOBIL EXPLORATION AND PRODUCING, U.S., INC.	)	

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

September 29th, 1994

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on Thursday, September 29th, 1994, at Morgan Hall, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Deborah O'Bine, RPR, Certified Court Reporter No. 63, for the State of New Mexico.

* * *

I N D E X

September 29th, 1994
Examiner Hearing
CASE NO. 11,103

* * *

E X H I B I T S

	Identified	Admitted
Exhibit 1	7	17
Exhibit 2A	8	17
Exhibit 2B	9	17
Exhibit 2C	9	17
Exhibit 3	9	17
Exhibit 4	10	17
Exhibit 5	11	17
Exhibit 6	11	17
Exhibit 7	13	17
Exhibit 8	13	17
Exhibit 9	13	17
Exhibit 10	13	17
Exhibit 11	15	17

* * *

A P P E A R A N C E S

FOR THE DIVISION:

RAND L. CARROLL
Attorney at Law
Legal Counsel to the Division
State Land Office Building
Santa Fe, New Mexico 87504

FOR THE APPLICANT:

MONTGOMERY & ANDREWS, P.A.
325 Paseo de Peralta
P.O. Box 2307
Santa Fe, New Mexico 87504-2307
By: GALEN M. BULLER

* * *

EXAMINER CATANACH: At this time we'll call Case 11,103.

MR. CARROLL: Application of Mobil Exploration & Producing, U.S. Inc., for downhole commingling, Lea County, New Mexico.

EXAMINER CATANACH: Are there appearances in this case?

MR. BULLER: Galen Buller from Montgomery & Andrews law firm in Santa Fe, representing Mobil.

We have one witness.

EXAMINER CATANACH: Any additional appearances? Will the witness please stand and be sworn in at this time?

JOE PEREZ,

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

DIRECT EXAMINATION

BY MR. BULLER:

Q. Mr. Perez, would you please state your name for the record?

A. Good morning, Mr. Hearing Examiner. My name is Joe Perez. I work for Mobil Oil as an operations engineer, and I reside in Midland, Texas.

Q. Could you please tell the Hearing Examiner what your current position with Mobil is?

A. I'm an operations engineer.

Q. Have you ever testified before the New Mexico Oil Conservation Division before?

A. No, I have not.

Q. Would you please summarize your educational and background and work experience?

A. I have a degree in petroleum engineering which I received from University of Texas in Austin in 1983.

I've been with Mobil for about 11 years, eight years as a production engineer, two years as a gas plant engineer and one year as a facilities engineer.

During my career with Mobil, I've worked closely with various groups in the organization, such as the land donation groups, environmental, regulatory oil and gas counsel, among other groups.

I'm familiar with the land plats which we will be discussing this morning, as well as all the other exhibits which we propose to present in this hearing.

Q. Can you describe to the Hearing Examiner, Mr. Perez, your familiarity with the proposed downhole commingling application, including its location and the notice that was given?

A. Okay. I'm very familiar with the proposed downhole commingling application. One of my duties as an operations engineer is to look at the efficiency of our operations.

In this particular well, mechanical failures associated with the dual completion configuration had become numerous, and so we proposed to the state to downhole commingle the Abo zone, which is the top interval, and the Penn and Wolfcamp intervals, being the lower two intervals.

The Penn and Wolfcamp were previously commingled in 1989 under a separate application.

During the time that the application was being prepared to commingle all three intervals a mechanical failure occurred, or I should say another mechanical failure occurred.

A provisional approval pending State review of the Application was granted by Mr. Jerry Sexton of the New Mexico Oil Conservation Division, and thus the well was commingled in May of 1994.

Subsequent to that, the Application was denied.

We are continuing to produce this well under verbal approval by the State, pending the outcome of this hearing.

And yes, I am familiar with the location of this well. It will be discussed in Exhibit 1.

As for notices to the offset operators, I'm also familiar with that, and I do have with me the certified mail return receipts.

Q. Have you also reviewed the plats depicting the lands surrounding the proposed project?

A. Yes, I have.

MR. BULLER: Are the witness's qualifications acceptable, Mr. Hearing Examiner?

EXAMINER CATANACH: They are.

Q. (By Mr. Buller) Mr. Perez, would you please turn to what's been marked as Exhibit 1 in the exhibit booklet and could you describe for the Hearing Examiner what this exhibit is and what you're trying to show through it?

A. Okay. Exhibit 1 is a location plat showing the relative position of our Bridge State Number Abo 104, which is in Section 25 of Township 17 South and Range 34 East.

The offset operators are Amerada Hess, Phillips, Arco, Shell, Texaco, Conoco, Marathon and Pennzoil. The majority of these offset operators are also joint interest partners in this wellbore. Not all, but the bulk of them.

Q. And has notice of this hearing been provided to each of these offset operators?

A. Yes.

Q. By certified mail, return receipt requested?

A. That's correct.

Q. Have any of these offset operators contacted you or protested this Application?

A. No.

Q. You testified earlier that Mobil's proposal is to produce this well from three zones; isn't that right?

A. That is correct.

Q. Is ownership of production within each of these three zones common?

A. Ownership is common in the lower two intervals, the Penn and Wolfcamp, both of which Mobil has a 100-percent interest.

The Abo interval is a joint interest property with Mobil having nearly 78 percent working interest.

Joint interest approval for commingling requires Mobil plus one partner. We have obtained approval from 30 of 31 joint interest owners, which account for nearly 99 percent of the working interest, and one joint interest owner has been notified but has not responded.

Q. Representing approximately one percent of the interest?

A. About one percent, that's correct.

Q. Okay. Would you please identify for the Hearing Examiner what's been marked as Exhibits 2A, 2B, and 2C, and describe what you're trying to show through these exhibits?

A. Okay. Exhibit 2A is a structure map of the North Vacuum Abo field. The Vacuum Abo unit is outlined in red. The subject well is shown with a red arrow.

And what we're trying to show here is that the

subject well overlays very close to the top of the structure in the Abo field.

Exhibit 2B is a structure map of the Penn structure. And as shown in the red arrow, again, the subject well overlays pretty close to the top of the structure in this area also.

Exhibit 2C is a structure map of the Vacuum Wolfcamp Pool. And again, as shown there in red arrow, the subject well again overlays very top close to the top of that structure. And what we're trying to show here is that the subject well is in a strategic location to recover the maximum reserves from these three zones.

Q. Why don't we go ahead and look at Exhibits 3 and 4, because they are going to help sort out through some of the data that I think we need to insert here. Could you identify for the Hearing Examiner both Exhibits 3 and -- Well, let's start -- Let's just do 3 first.

A. Okay. Exhibit 3 is a data sheet and a production test summary basically showing the lease name, well number, well location.

It shows that the upper zone is a North Vacuum Abo with a completion interval between 8444 and 9300. The lower zone is a Wolfcamp and completed between 9552 and 10,116.

The current productivity test summary are tests

based on our field tests and show that the upper zone tested under the developed pumping system 60 barrels of oil per day, 30 MCF and 68 barrels of water, with a 500 GOR; and that the lower zone, being the Wolfcamp and Penn, also, at the time, under a water pumping system tested 37 barrels of oil, 50 barrels of water, 73 MCF -- I'm sorry I got that wrong; let me make a correction -- 37 barrels of oil, 50 MCF, 73 barrels of water, with a 1351 GOR.

Both zones produce an intermediate crude, and we expect no problems in commingling the two waters.

Q. And this is the same data sheet that was submitted earlier to the Hearing Examiner as part of the Application?

A. That's correct as part of the original Application.

Q. Why don't you go ahead, then, and describe for the hearing examiner what Exhibit 4 is, what you're trying to show with that?

A. Okay. Exhibit 4 is a computation of relative values of the hydrocarbon production before and after downhole commingling.

Again, this is a -- This data sheet was submitted with the original application prior to the provisional approval.

And what we're trying to show here is that the

computational value of production before commingling and after commingling would be the same. In other words, we would expect no revenue loss from commingling.

In actuality, since we have commingled the production, the production has slightly increased as a result of removing that packer off the bottom two intervals and reducing that producing that bottomhole pressure.

So in actuality, the relative values would be a little bit higher after commingling.

Q. Why don't you go ahead and identify what's been marked as Exhibits 5 and 6 and explain what you're showing through those?

A. Okay. Exhibits 5 and 6 are wellbore schematics.

Exhibits 5 shows the previous condition of the wellbore, prior to the provisional approval. And Exhibit 6 shows the current condition and how commingling will occur into the future.

Basically what we're showing is that the previous configuration, we had two tubing strings with a packer set at 9500 isolated the Abo formation from the Wolfcamp and the Upper Penn.

Under this configuration we did have quite a few mechanical failures. I will discuss those in one of the later exhibits. But with that packer in the hole, we were unable to circulate chemical down to the lower tubing

string, and that was one of the causes of a lot of the failures, among packer failures and among others.

The current completion, as shown in Exhibit 6, shows one tubing string with a tubing anchor allowing all the gas to get up the casing, with a downhole column pump producing fluids from all three zones.

Q. And just for clarification, Exhibit 5 says current completion and Exhibit 6 says proposed completion --

A. That's correct.

Q. -- and that's not exactly accurate?

A. That's correct. Again, these were documents submitted in the original application, and since the provisional approval we're now under proposed completion scenario --

Q. You're actually --

A. -- which is actually current now.

Q. -- current now? Okay, thank you.

Would you go ahead, then, and identify what's been marked as Exhibit 7, 8, 9, and 10 and describe to the Hearing Examiner what you're showing through those exhibits?

A. Okay. Exhibit 7 is a production -- Well, actually Exhibit 7, 8, and 9 are production plots from all three of the intervals.

Exhibit 7 is a production plot for the Vacuum Abo field with the oil shown in green, the gas in red, and the water in blue.

Exhibit 8 is again a production plot with the same legend of the Vacuum Upper Penn.

And Exhibit 9 is and production plot of the Vacuum Wolfcamp.

And I'd like to draw your attention to Exhibit 10, which is a plot of all three zones commingled, just to show that we took the trend and looked at the history of production from all three zones.

As you can see, in June of 1994, it does show an increase in that test in that production, and since the well was commingled and made, that response is due to relieving that back pressure on those bottom intervals.

Since then it's -- We've had some flush production. It's coming back to what it normally was, getting close to norm. But it's still a little bit higher, especially the gas volume; it really jumped up after relieving that back pressure.

Q. And do you note any other anomalies in Exhibit 10, or does it look like a fairly normal test --

A. Yes --

Q. -- in your expert opinion?

A. -- it looks like a fairly normal decline, it

looks like a normal curve.

It does give us a basis to look at some trends and, after commingling into the future, would allow us to see any variance from that trend. And that's basically what we tried to show, is to have some basis for evaluation.

Q. How does Mobil plan to allocate production from these three zones?

A. Okay. Basically we're using the same procedure that was used when we commingled the Penn and the Wolfcamp.

What was done is that we had taken test data prior to commingling and used weighted averages to allocate production from that point on. And basically what we've done and have gotten approval from our joint-interest partners is to do the same method, look at the production prior to commingling, and then based on those weighted percentages allocate production to each of the intervals in that respect.

And that has been, again, discussed with our joint-interest partners, and it has been approved by them.

Q. By all but one, apparently?

A. By -- Except 1 percent, right, which has not responded, has not protested but has not responded.

Q. Okay. Let's turn to Exhibit 11, and maybe you could identify Exhibit 11 and describe for the Hearing

Examiner what this is.

A. Exhibit 11 is a well history. And what I'm trying to show here is that starting in 1989, after we commingled the Penn and Wolfcamp, from that point on we're showing nine to ten failures. And these failures have been mostly tubing failures or packer failures as a result of having the dual string in the hole.

Interesting thing to note is that since we have put it on with one string, since it has been commingled, we have not had any failures since then.

And we're trying to show that the efficiency of this operation has not been very good. Anytime a well goes down, it's gown down for at least a week or two weeks. During that time if you're going to cross-flow, that probably would be the time that you would cross-flow because you're allowing the pressure to build up, and if there's any variance in pressures at that time you would cross-flow.

Having one tubing string in the hole allows us to keeping the well pumping longer, keep it pumped off and have all zones producing at all times to prevent or reduce any chance of a cross-flow.

Q. Based on your review of these exhibits, what conclusions have you reached concerning the viability of this Application for downhole commingling?

A. It's my opinion that the viability for downhole commingling is one that's going to provide a mutual benefit for the State, for Mobil as an operator and for our joint-interest partners.

As we have seen in our production plots, oil and gas volumes increased slightly following the provisional approval to commingle. It's my opinion that by reducing that excess backpressure from those lower intervals we should be able to recover additional reserves otherwise left in the ground.

Also, since this well was commingled in May, as I mentioned, we have not had any failures.

We are also improving the economic viability of this well. This should allow us to produce the well over a longer period of time.

And by approving the feasibility and economics of this wellbore and by producing it for a longer period of time, again, additional recovery of reserves should be seen.

Q. In your opinion, will approval of this Application result in the recovery of hydrocarbons otherwise left in the ground?

A. Yes.

Q. Will this approval prevent waste?

A. No --

Q. Will it prevent waste?

A. -- yes, it will prevent waste.

Q. Okay. Will the approval result in the conservation of oil and gas, and will it result in the protection of correlative rights?

A. Yes, it will.

Q. Were Exhibits 1 through 11 prepared by you or under your supervision?

A. Yes.

MR. BULLER: Mr. Hearing Examiner, at this time I move for admission of Exhibits 1 through 11.

EXAMINER CATANACH: Exhibits 1 through 11 will be admitted as evidence.

MR. BULLER: And that concludes our direct testimony.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Perez, do you know which order originally approved the downhole commingling of the Penn and the Wolfcamp?

A. Yes, sir. I have it in my file, I can get it.

Q. Okay, I'd appreciate that.

A. The administrative order is DHC-725.

Q. In that order, is there an allocation of production between the Penn and the Wolfcamp?

A. I don't see it in the order. It was submitted, I believe, in the original application for this project. I don't see it in the order as the allocation.

Q. So you're not aware how the well was being allocated?

A. I do have the original -- the application -- a copy of the application that was submitted, and -- I don't have those percentages that were -- that are allocated to each of these zones here.

Q. I've got the original application. It appears on one of the C-116s that 96 percent is allocated to the Penn, four percent to the Wolfcamp?

A. Okay, that sounds about right.

Q. You've got a single interest owner who has not signed on for commingling?

A. They have just not responded. It's a one-percent joint-interest owner which has not responded. And basically we're trying to not only meet the joint interest obligation but to exceed it, and we have done that by getting at least 30 of the 31, and what was required was Mobil plus one. Like I said, that one partner has not responded, and so we don't really know if they would object to it or not.

Q. Okay. You don't think he has any problem with it?

A. No, sir.

Q. Okay. Isn't the Abo formation currently under waterflood?

A. That is correct, it is under waterflood.

Q. Is that Abo production pretty stable?

A. It has been in my opinion, I believe that the production plots from a lot of our Abo producers, and we don't see significant changes over a long period of time. It has been fairly steady.

Q. Do you have a recommended percentage allocation for this waterflood?

A. Yes. Let me see if I can dig through it right quick.

The allocation would provide 60 percent of the production, allocate 60 percent of the production to the Abo, and 40 percent to the Bridges State leases.

Q. I'm sorry I lost you there.

A. Okay.

Q. 60 percent to the Abo --

A. 60 percent to the North Vacuum Abo unit --

Q. Uh-huh.

Q. -- and then 40 percent to the lower two intervals, being the Penn and Wolfcamp. And then from that 40 percent, you would allocate 96 to the Penn and four percent to the Wolfcamp.

Q. How did you arrive at that?

A. Based on the previous production prior to commingling, we took the weighted averages of the actual production, roughly 60 oil to the Abo and 40 oil to the Penn-Wolfcamp.

Q. The partners have signed off on that allocation method --

A. Yes, sir --

Q. -- percentage?

A. -- that is correct.

Q. Do you expect the water production to increase significantly due to the waterflood?

A. We've been waterflooding since 1983 to 1986. At that time we converted to that 40-acre spacing, and production since then has been fairly stable, and we have not seen any significant changes in production.

One of the reasons that I wanted to combine the production prior to commingling was to look at that trend that we had before. We've got that basis so that any variables from that trend we can track.

And if we see a significant increase in water or a significant increase or decrease in oil, then at that time we can go in there and isolate and test the Abo by itself to see if any change had occurred, and if necessary at that time we could also make changes to the allocation

based on partner approval, obtaining partner approval.

Q. Is there any detrimental effects to the well when you start producing more water from the Abo?

A. No, sir. We have done some water analysis, and we've looked at that. Everything looks compatible. We've been producing for roughly -- what? -- three, four months with no problems, no mechanical failures, slight increase in production. So I wouldn't expect any problems.

Q. Is the bottomhole pressure in the Abo significantly higher than the Penn and Wolfcamp?

A. We estimate about 2,000 pounds bottomhole pressure, and I don't believe that the pressures are that varied.

The way I look at it is that if we can keep this well producing and keep it pumped on, regardless of the pressures in the zones -- You've got a common pressure in the wellbore so they're all producing in that common pump. And by going to a single completion we're able to keep it on longer, so any time we will have somebody pooled we do eliminate chances of any cross-flow.

Q. Is the well -- Do you know what the well is producing currently?

A. It's producing about 90 to 95 barrels of oil, and about 150, 120 MCF.

And like I say, we did have that peak, probably

because of flush production, and I expect it will probably be declining in the near future.

Q. Within that North Vacuum, that's mostly state acreage, is it not?

A. Yes, sir.

Q. Have you talked to anybody with the Commissioner of Public Lands about this proposal?

A. Not to my knowledge.

Q. Okay, I'm not sure, exactly sure on their rules on that, but you may want to check on that to see if you need to get anything from them.

A. Okay.

EXAMINER CATANACH: I have nothing further in this case.

Anything further, Mr. Buller?

MR. BULLER: I have nothing further.

THE WITNESS: Thank you very much.

EXAMINER CATANACH: There being nothing further, Case 11,103 will be taken under advisement.

MR. BULLER: Thank you.

* * *

CERTIFICATE OF REPORTER

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

I, Deborah O'Bine, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that my notes were transcribed under my supervision; 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.

Deborah O'Bine

DEBORAH O'BINE
CCR Number 63

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 11103, heard by me on October 21 1994.

David R. Catanach, Examiner
Oil Conservation Division