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

30 January 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of Mobil Producing Texas & New Mexico, Inc., for infill findings, Lea County, New Mexico. CASE 8464

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Jeff Taylor
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I N D E X

E X H I B I T S

MR. STOGNER: The hearing will resume to order.

We will call now Case 8464.

MR. TAYLOR: The application of Mobil Producing Texas and New Mexico, Inc. for infill findings, Lea County, New Mexico.

MR. SPERLING: James E. Sperling of the Modrall Law Firm, Albuquerque, appearing for the applicant.

We will have two witnesses.

MR. STOGNER: Are there any other appearances in this matter?

Will the witnesses please stand and be sworn?

(Witnesses sworn.)

MR. SPERLING: By way of introduction, Mr. Examiner, as I announced, we will have two witnesses.

The first will give a general view of the geology in the area concerned and then the main portion of the testimony in support of the application will be presented by the second witness, Mr. Weaver.

ROBERT GUDRAMOVICS,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. SPERLING:

Q Would you please state your name for the record?

A My name is Robert Gudramovics. G-U-D-R-A-M-O-V-I-C-S.

Q Are you familiar with the -- well, I guess I'd better qualify you first.

Would you state by whom you're employed and in what capacity?

A I'm employed by Mobil Producing Texas and New Mexico as a production geologist. Currently I'm responsible for the southern half of Lea County, New Mexico.

Q And where do you reside and work?

A I reside in Houston and work in Houston.

Q Okay. Are you familiar with the application that's been filed by Mobil in this case?

A Yes, I am.

Q Okay. Would you give us some idea of your experience background and your educational background as a basis for qualifying you as an expert?

A I received my Bachelor of Science degree from the State University of New York at Stony Brook.

I received my Master's degree at Michigan State University.

I had a research assistantship through the United States Geological Survey and I started working for Mobil in 1981 and I spent 18 months working on their International Division at Dallas, and then I've been working for a little over two years right now in Houston in their Production Geology Division.

Q Are you familiar with the geologic characteristics of the North Vacuum Abo Field in Lea County, New Mexico?

A Yes, I am.

Q Would you give us a brief discussion and description of what you perceive the general geologic picture to be?

A Okay. The North Vacuum Abo Field is located near the Town of Buckeye, about 25 miles northwest of Hobbs, Lea County, New Mexico.

The field was discovered in 1963.

The North Vacuum Abo Pool is associated with the north/south trending Vacuum anticline; however, production is primarily a function of stratigraphy rather than structure.

Geologically the Abo formation in the North Vacuum Abo Pool is dominantly a backreef deposit, Permian, or more specifically Leonardian in age, characterized as an anhydritic dolomite with interbedded shales.

The Abo formation is approximately 550 feet thick with scattered porosity and is capped by a dense anhydritic dolomite.

The Abo "A" productive interval is limited to the top 100 feet of the Abo formation. Production is obtained by completing in the more porous zones within the interval.

In general, porosity in the Abo "A" pinches out to the north and south at or near the North Vacuum Abo Unit boundaries and appears to deteriorate to the west beyond the North Vacuum Abo Unit boundary.

Within the Abo "A" productive interval average porosity is 11.4 percent. Average permeability is 3 millidarcies and the average net pay is 21 feet.

In general, vertical permeability is much less than horizontal permeability; however, as with other pools in the Abo formation, porosity and permeability are a function of original Abo depositional facies; tectonic history of the field; and complex diogenetic history of the reservoir, thereby resulting in the inhomogeneity of porosity and permeability throughout the North Vacuum Abo Pool.

Q Would you now please refer to what's been marked as Mobil's Exhibit Number One and explain the purpose of that exhibit, the information contained on it?

A The purpose of the exhibit is just to show the general structure of the Abo pay, located in the North Vacuum Abo Unit Area.

This map has a structure map on top of the Abo.

Q Okay. Any other significant features to that exhibit?

A It just outlines the North Vacuum Abo Unit and the Abo East Unit.

Q The former being in green, I take it, and the latter in red?

A That's correct.

Q Would you now refer to what's been marked as Exhibit Two and explain the nature and purpose of that exhibit?

A Exhibit Two is a cross section from east to west in the North Vacuum Abo Field and it's meant to demonstrate the variation between the different zones within the Abo pay, and it shows the lenticular nature of the various porous zones within the field and it shows how various zones come and go in thickness as you go from east to west.

Q What is the purpose of the coloring in the respective log sections that appear on the section?

A The coloring is just to make it easy so that each color represents a particular unit that's being correlated.

For example, all the greens represent one unit and it's just to show the correlation from the east to west end of the field and also to make it easier for you to notice the thickening and the thinning of the units and

the disappearances of a particular zone within that unit.

Q Okay.

A And also the yellow coloring is just -- on top of the heading over there just shows the new wells that were drilled back in 1983-84 drilling program.

Q You're referring to the logs of -- which appear under the particular column that bears the number 243 on the left through 237 and 236?

A Correct.

Q And these sections, or zones, that have been indicated, are those generally accepted markers in the area?

A They're correlative markers within the particular zone that was evaluated.

Q And this is an east/west section, I believe from the index map.

A Correct.

Q Okay. Would you now refer to what's been marked as Exhibit Three and explain the purpose of that exhibit?

A Exhibit Three is another cross section demonstrating the same principles that we've seen in the east/west cross section; however, this is a north/south cross section.

It's a longer section, includes more wells, and again the coloring and the correlations are similar. Also it points out, as did the previous cross section,

the top of the Abo "A" pay zone and below it the top of the Abo "B" pay zone.

Q Okay, and in like manner, the columns re-preenting the log sections which are highlighted in yellow indicate recently drilled wells?

A Correct.

Q Okay, and this is a north/south section according to the index, is that correct?

A Correct.

Q Would you now refer to what's been marked as Exhibit Four and explain the information contained on that exhibit and the purpose?

A Exhibit Four is a map showing the Abo "B" net pay. Again it's -- the outline in green shows the North Vacuum Abo Unit; the outline in red is the Vacuum Abo East Unit, and it demonstrates a deeper zone within the Abo and the productive thickness of it.

Q And that is a zone that is marked on the sections that you have previously identified as the Abo "B" pay zone?

A Correct.

Q Anything else significant insofar as that exhibit is concerned? It might be noted, I assume, that the "B" zone is not shown on this exhibit to be prevalent or appearing throughout the units.

A That's correct. The zone that we have identified only after the drilling program that we initiated

in the end part of 1983 and through -- throughout '84.

Q Would you now refer to what's been marked as Exhibit Five and explain the purpose of that exhibit?

A The Exhibit Five is just to delineate the zones within the Abo Unit Area where permeability is greater than 1 millidarcy and that zone is within the area outlined in yellow.

Q So the area within the yellow line is that which has permeabilities in excess of 1 millidarcy?

A That's correct, and that is the more productive area within the field, whereas the zones outside that are the poorer performing wells.

Q Okay. It also appears that certain of the wells are marked and highlighted by a red circle.

A Yes.

Q What is the significance of that indicator?

A Those are the new wells that were drilled in this -- in the previous '83-'84 drilling program.

Q And these are infill wells?

A Correct.

Q In other words, the second well on an 80-acre proration unit?

A Correct.

Q Anything else of significance on Exhibit Five?

A Nothing.

Q Okay. Was the information which appears on the exhibits which you have identified information which appears in Mobil's files and has been converted into visual exhibits?

A Correct. This -- this information was utilized first to develop the infill program, to evaluated it for additional reserves.

Q Okay. Do you have anything further to add?

A Nothing.

Q Okay.

MR. SPERLING: That's all the direct, Mr. Examiner, from this witness.

MR. STOGNER: I have no further questions of this witness at this time.

I will find him qualified; however, I do question his definition of a town, being Buckeye.

MR. SPERLING: It wasn't my intention to qualify him as an urban expert.

A I apologize for that.

MR. STOGNER: There being no questions of this witness, he is -- may be excused.

MR. SPERLING: Thank you.

Mr. Weaver.

MR. WEAVER: Yes.

H. F. WEAVER,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. SPERLING:

Q Would you please state your name for the record?

A My name is H. F. Weaver.

Q Where do you reside and by whom are you employed and in what capacity, Mr. Weaver?

A I live in Houston, Texas, and I'm employed by Mobil Producing Texas and New Mexico, Incorporated. I'm a Staff Regulatory Engineer.

Q Have you on any previous occasion testified before this Division and made your qualifications a matter of record?

A Yes, sir.

MR. SPERLING: Are the qualifications of the witness acceptable?

MR. STOGNER: Mr. Weaver is so qualified.

Q Are you familiar with the application which has been filed on Mobil's behalf in this matter?

A Yes, sir.

Q Would you explain very briefly what it is that Mobil seeks from this Division by way of the applica-

tion?

A Very briefly, we are attempting to get a ruling on infill well findings so that we can qualify for FERC's qualification for Rule 103 pricing, and in order to qualify, it must be found that infill well findings are needed to effectively and efficiently drain a portion of the proration unit that one well occupies.

Q Okay.

A And we wish to expand that to include everything within the North Vacuum Abo Unit and the North Vacuum Abo Unit East.

Q Okay. In your capacity are you familiar with the area which is the subject of this hearing?

A Yes, sir.

Q Would you give us a brief history of the development of the unit, its present state of development, and what Mobil envisions insofar as additional reserve recovery is concerned?

A Yes. I'd like to start with the beginning, if I might.

Back in 1962 a well was drilled out there that resulted in the discovery of the Abo pay.

The first hearing was held in 1963 resulting in the Order R-2421, which established the field rules.

In those field rules 80-acre spacing was specified and it was pointed out that this was for the bene-

fit of giving operators an opportunity to develop their wells in an orderly fashion, study the characteristics of the reservoir, and so forth, and then drill additional [illegible] us an opportunity to drill without additional -- too many wells; the density would be too great.

Then a year later, this was the temporary rules that were established, a year later in 1964 the temporary rules became permanent under R-2421-A.

In 1972, after having drilled quite a large number of wells, Mobil studied the characteristics of the reservoir and made the decision that we needed to do a pressure maintenance project.

We appeared before the Commission and asked for a pressure maintenance project and we were approved, it was approved, by Order Number R-4430.

I would like to point out in the Order R-4430 that Rule 10 specifies that, again, that we're drilling on 80-acre spacing; however, and I would like to read this Rule 10 because I think it has a bearing on our case:

"The Secretary-Director of the Commission is hereby authorized to approve such additional producing wells and injection wells at orthodox and unorthodox locations within the boundaries of the North Vacuum Abo Unit Area as may be necessary to complete an effective production and injection pattern; provided, however, that the wells are

drilled no closer than 660 feet..."

And I might add that -- "to an outer boundary" -- and I might add that we came back to hearing in R-4438, changed that spacing to 460 rather than the 660, just a matter of record.

So, essentially, all the time, even from the very beginning, Mobil recognized and the Commission recognized that drilling on 80-acre spacing might not be the best, although it was the best to begin with. We might want to go to more dense spacing.

1978, we came back to the Commission with -- asking that the North Vacuum Abo Unit -- North Vacuum Abo East Unit be approved for pressure maintenance, and it was, and we have the same rules regarding the North Vacuum Abo East Unit that we have in the North Vacuum Abo, with Rule 10 being written as it was in the other order, but specifying distances that were corrected in the "A" part.

MR. STOGNER: That was Order R-4430-A written in that date that you just alluded to just then?

A The order for the North Vacuum Abo East Unit is R-5801.

The order for the North Vacuum Abo Unit was 4430, and the then the "A" part of 4430 changed the spacing within the unit.

MR. STOGNER: Before we go any further, let me clarify something.

A Okay.

MR. STOGNER: We wish the infill provisions that should come out of this case today to include the Vacuum Abo East Unit, is that correct?

A Yes, sir, that's right.

MR. STOGNER: Okay. Mr. Sperling, the advertisement does not show that, so this case will be -- have to be continued and readvertised to make that correction; however, at this time we will continue to take testimony as such, and at such time we will just call for appearances in that matter on February 27th, 1985, and see if there's any additional testimony that needs to be brought up.

A Let me just discuss this with our attorney just a moment, please.

MR. STOGNER: Please do.

MR. SPERLING: It's just been suggested, Mr. Examiner, that the advertisement as it appears for Case 8464 includes the North Vacuum Abo Pool, located in portions of Townships 16 and 17 South, Ranges 34 and 35 East, which I believe would include the East Area.

MR. STOGNER: The locations are --

MR. SPERLING: Suggesting that the advertisement might be broad enough in its present form.

MR. STOGNER: Mr. Sperling, we're going to consider that and get back with you in a

couple days.

MR. SPERLING: Very good.

MR. STOGNER: You may continue with the testimony.

MR. SPERLING: Very good. Thank you.

Q Would you continue, Mr. Weaver?

A Okay. In 1974 Mobil began to drill infill wells in order to protect the unit from drainage.

There were nine total wells drilled to protect the unit, and later on, when we get to our production history, I'll point that out and show how it responded on the production curve when we drilled those wells, those particular wells.

In 1983 Mobil began an expansion by drilling -- by planning to drill throughout the entire interval that is -- that is shown on Exhibit Number -- Exhibit Five, in the 1 millidarcy and greater area; to drill approximately 41 infill wells.

35 of those infill wells have been completed and 6 of these infill wells have been drilled and are waiting completion, and we're not able to get them on our production history, so -- however, they have been drilled and they are awaiting completion.

The purpose of this program was that through drilling of these additional wells a portion of the North Vacuum Abo Pool would be more effectively and effi-

ciently drained than would be possible with the existing wells within the unit.

The project economics used to justify this program was based on the recovery of oil and gas that would not have been recovered without the drilling of the additional wells.

Do you want to ask me to talk about a particular --

Q Well, I think before we refer to the exhibits specifically, we should establish that Mobil is the operator of this unit and would you give us an indication of the percentage of ownership of Mobil as compared to the percentage of ownership of other operators within the units?

A Mobil owns in excess of 80 percent of the unit, which would leave approximately 19 percent for the other --

Q Well, I think that's a close enough approximation.

A Is that close enough? Okay.

Q Have you had any dissenting votes so far as the infill program is concerned from the other operators in the unit?

A No, sir, we have not. As a matter of fact, I might just add that we had requested this through administrative approval back in April of the past year, and at the time we had to contact all of the operators, offset operators, to make certain that they were advised of this

procedure, administrative procedure, at which time there was no opposition to it.

MR. TAYLOR: May I interrupt you for a second?

Is that -- in your testimony for both the North Vacuum Abo Pool and the Vacuum Abo East, that there was no dissension in the vote of the --

A Well, it does -- it does create a problem there. There would be a difference in the ownership there.

MR. TAYLOR: And your vote was only the North Vacuum --

A North Vacuum Abo.

MR. TAYLOR: All right.

Q Anything else you want to add by way of background, Mr. Weaver?

A Well, I'd just like to mention that prior to infill drilling we expected to recover 39.4 percent of the oil in place and by our infill drilling we expect to increase that to 44.7 percent of the original oil in place, giving us an additional reserves of 3.35-million barrels of incremental oil and gas which would -- will be produced but would not be able to produce it without the infill wells.

Q Okay.

A And we would like to also point out some of our exhibits here that --

Q All right, in that connection would you refer to what's been marked as Mobil's Exhibit Six and ex-

plain the information contained on that exhibit?

A On Exhibit Six we have our oil production from the very beginning.

Q You might explain how the exhibit is constructed by the reference to the time of the --

A Okay.

Q -- production.

A All right. We have semilog paper here. On the left is a semilog portion and at the bottom portion is some time in years.

There are one, two, three, four, four curves on this graph.

The beginning of the production was in 1966. That was the first well that was produced from the interval in the North Vacuum Abo Unit.

As you can see, that our production came up rather rapidly from zero there beginning in June of 1966 to a little in excess of 1000 barrels a day, and all this is reflected in our drilling program, and then it tapered off until about 19 -- mid-1970, and some additional drilling occurred which brought our curve on up to about 37 or 3800 barrels of oil per day.

After we came to the Commission and asked for pressure maintenance approval and received that, we began to convert producing wells to injection wells, and you'll note that the oil production fell off dramatically.

And about the time that this production

was falling off dramatically, we began to inject water, which would be at June, 1973.

Very shortly after this beginning of water injection we noted an increase in our production.

If you'll note, in 19 -- early in 1975 it begins to rise, the production begins to rise, and it comes up from about 11-1200 barrels up to about 4000 barrels and it peaks at 4000 barrels per day in 1978.

Now during that rise in production, that dramatic rise in production after beginning the waterflood, or water injection in this pressure maintenance project, we also were drilling some of these infill wells to protect our leaseline.

Then it stayed pretty much gradually across until it began -- it began to decline, a gradual decline, and in 1983 we began our drilling program.

If you'll look to the next graph --

Q This being Exhibit Seven?

A Exhibit Number Seven, we picked out the years '82, '83, and '84, and focused on that in a larger graph.

We have drawn a production decline across that particular portion of our production and then also you'll note that we have -- show our infill well drilling program, five wells, ten wells, ten wells, and ten wells, makes 35 wells that show up on this graph of the 41 that we had drilled -- we have drilled.

Note, please note that about the end of 1984, or November of '84, our production by the production decline would have been at approximately 3000 barrels per day. The result of drilling the infill wells, with still yet 6 more to be added to this, our production is up to about 40 -- 4700 barrels, or an increase of approximately 17 barrels of oil per day as a result of our infi[illegible]

[illegible]ion decline curve that is prominent on Exhibit Seven simply a continued extrapolation of the one which appears in the upper righthand corner of the Exhibit Six?

A Yes, it is.

Q Okay. What is the present daily production?

A 47 -- 4750 barrels.

Q Okay. Exhibit Seven shows in the legend portion of it under production history, 1982-1984, ten wells D & C and then ten wells D & C beneath that.

What is the significance of that information? Does that simply mean additional wells drilled and completed?

A Well, the D & C means drilling and completion. I'm not real sure what that -- that 10 wells D & C and 10 wells D & -- what it's doing down there, to tell you the truth.

The real significance is that if you look at the top in your production curve, you'll have 5 wells D &

C, and then following that is 10 wells D&C, and then the next is 10 wells D & C, and finally 10 wells D & C, which gives you 35 wells as drilled and completed in '83 and '84, with 6 more that have been drilled but haven't been completed that did not get on this production curve.

Q Okay. Now Exhibit Seven shows the response and the performance of the unit during the years when the most intensive infill drilling program has been undertaken, and there are a number of designations of informational curves, or plotted curves, on this exhibit, such as gas/oil ratio, water production, and so forth.

Would you comment on those, please?

A Yes, sir. Our gas/oil ratio curve is at about 6000 -- or 600-to-1, 600 mcf of gas to a barrel of oil, and that is the very bottom curve on that -- on Exhibit Number Seven.

The curve immediately above that is marked water production and it is being -- we do see our water increasing with our infill well drilling program.

Q Well, have your injection volumes increased any?

A No, sir.

Q What about the other information that is shown above those which you've just spoken of, such as production decrease, weather related, and so forth, which show substantial dips?

A Well, that one specific dip was during

real severe winter that we had in the Hobbs area during that particular time in 1982, when everything froze up out there and we just almost came to a standstill, and it did -- it's reflected there in that month's production.

Q But the green line indicates that the production jumped back up --

A Oh, yes, sir.

Q -- above that previously experienced following that interval.

A And then came back and fell right into line with the -- with the decline.

Q Okay. Do you have any other comment with respect to either Exhibit Six or Seven at this time?

A I don't have, sir.

Q Okay. Now would you please refer to the two exhibits which are companion exhibits marked respectively Exhibt Eight and Exhibit Eight-A?

A Yes, sir.

Q And explain in some detail what those exhibits are designed to show?

A Okay. I'm going to read this because this is an area of expertise that we need a qualified, a real qualified person on, and I received it from a qualified person.

Pictorially Eight and Eight-A represent the effect of infill drilling on the waterflood sweep efficiency.

Q Well, again I think we ought to tell how these exhibits were constructed; the source of the information and how the configuration which is demonstrated here was arrived at.

I take it this is a computer model, is that right?

A Yes, sir, it is.

Q Okay.

A It's a computer model and it -- the first one, Eight, Exhibit Eight is for one well with four surrounding injection wells.

Q The typical 5-spot --

A The typical 5-spot.

Q Okay.

A Eight-A is by closing in the typical 5-spot and drilling our infill wells between the injectors, and this is a model study from a computer.

Now I'd like to read this, if I might.

Q Well, let me ask you one more --

A Okay.

Q -- question before you do that.

Do -- what do the more or less concentric circles represent, their significance?

A Flood fronts; these are flood fronts.

Q And there seems to be some difference in the spacing between the flood fronts. What -- what does that represent, time?

A Well, that's sweep -- sweep efficiency and time, yes, sir.

Q Time, okay.

A And sweep.

Q All right, continue.

A Okay. This Exhibit Eight and Eight-A pictorially represent the effect of infill drilling on the waterflood sweep efficiency in the North Vacuum Abo Pressure Maintenance Project.

Specifically, the two exhibits depict the theoretical area swept by water injection at the time of water breakthrough into the producing wells for a 5-spot, which is Exhibit Number Eight, pattern, and for a pattern modified by infill drilling, which is Eight-A, which we just explained earlier.

The purpose of the exhibits is to show that infill drilling will allow a larger area to be swept than a conventional 5-spot pattern would, leading to greater recovery of oil.

The flood fronts were generated by an MPTM two dimensional reservoir model of the North Vacuum Abo Unit.

The model calculates the pressure distribution throughout the reservoir, taking into consideration the effect of water injection. The solution generated considers the reservoir geometry, boundary conditions, location of producing and injection wells, rate of injection, reser-

voir conductivity, and reservoir pressure.

The resultant flood front is plotted out at successive time intervals and each line is a part of the flood front from start of the injection until breakthrough occurs.

Now, by continuing injection past the breakthrough will increase recovery in the swept area but will not appreciably increase the extent of the swept area, primarily because of the tightness of the reservoir, 1 millidarcy or 2 millidarcies.

The only way to incrementally increase recovery is to change to a pattern which will yield a larger swept area.

As the exhibits show, infill drilling will accomplish this.

Now what -- to get an appreciation of that, really you need to just overlay the 5-spot pattern currently -- is what we're currently going to, what we're currently doing, and then this is what we've just gone to.

Q So you put Exhibit Eight over Exhibit Eight-A?

A Over Exhibit Eight-A.

Q And hold it to the light.

A And hold it up to the light, and then we will find that we are sweeping more area by going ot the infill well drilling program.

We'd also like to mention that addition-

ally we will study this reservoir after we have gone to this infill drilling program and it might be that we want to increase the density even beyond where we are now, 40 acres.

Q Now would you summarize for us again the increased recovery that you expect to gain through the adoption of an infill program?

A Yes, sir. We expect to increase our recovery by 5.3 percent over our expected recovery of 80-acre pattern, giving us an additional 3.35-million barrels of incremental backed oil.

Q Do you believe that the infill program that you have already initiated and by that I mean the new wells that have been drilled since '82, we'll say, demonstrates that?

A Yes.

Q I assume that even though Exhibit Eight-A is identified as after infill wells, that the result will not be instantaneous.

A That's correct.

Q All right. There will be some interval of time in order for the sweep to move forward as illustrated on the exhibit.

A Yes, sir. Those are flood -- 50, there are 50 lines on there that represent flood front as it progresses out.

In the beginning, initially you'd have this one line, then with time you'd have two, and so forth,

until you've got breakthrough, and as we stated before, with breakthrough you can continue to sweep the area and you will continue to improve your efficiency in the swept area, but you won't necessarily enlarge on the swept area because of the reservoir characteristics.

Q Do you have anything else to add at this time?

A I don't think of anything we haven't covered --

Q Okay.

A -- Jim, unless someone else has an idea that --

Q Bob referred to this exhibit -- I mean this Abo "B" zone.

A Oh, yes.

Q Would you comment on that from your perspective and your opinions with respect to the potential of that zone?

A Well, the "B" zone was really discovered, or not maybe discovered, but it has been determined by the infill drilling that the "B" zone is producable, and that we will in the future go in and do something with this to recover this oil.

Our reserves for that "B" zone have been increased -- increases the reserves for the pool by 1.668-million barrels of oil.

So, actually, the infill program has

given us an opportunity to pick up 3.35-million barrels of oil plus the 1.668-million barrels of oil, giving us over 5-million barrels of oil as a result of the drilling of the infill wells.

Q Were the exhibits which you have identified and which Bob identified prepared under the supervision of you or Mobil personnel?

A Yes, sir.

MR. SPERLING: At this time we'd like to offer Exhibits One through Eight-A.

MR. STOGNER: Exhibits One through Eight-A will be admitted into evidence.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Weaver, the computer personnel that you have working for you that come up with this model, are they under your direction and supervision?

A No, sir, but we asked them to do this for us.

Q The people you asked are under your direct supervision, right, I suppose.

[illegible] mentioned something, that you suspect maybe sometime in the future the increased number of wells in a single proration unit could increase, is that right?

A I'm just saying that we'd want to leave that option open.

Q Okay. Essentially what we're trying to prove today is to make an efficient and effective finding to satisfy NGPA requirements for 103 application, is that right?

A Right.

Q Okay. What is the depth of the top of the pay zone out here in these wells, average?

A 86 -- about 8600.

Q About 8600, so in today's 103 market that would be below the 5000 feet mark and would make that a de-regulated horizon, would it not?

A That I don't know.

Q I think it is.

MR. STOGNER: I have no further questions of this witness.

Is there any other questions of Mr. Weaver?

If not, he may be excused.

Mr. Sperling, in thinking about this, what we had previously talked about earlier, the advertisement reads proration units in the North Vacuum Abo Pool located in those portions, and it does include that Vacuum Abo East Unit; however, we really don't say that in there and to be on the safe side, I would like to readvertise this case and at that time we will put in a stipulation, in the

absence of objection, that this case will be included.

MR. SPERLING: Very good, thank you. I think I concur in the abundance of caution.

MR. STOGNER: Is there anything further to come in Case 8464?

If not, this case will be taken under advisement.

(Hearing concluded.)

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 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. 8464, heard by me on 30 January 1985.

Michael E. Stogner, Examiner
Oil Conservation Division