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

9 November 1988

EXAMINER HEARING

IN THE MATTER OF:

In the matter of the hearing called by the Oil Conservation Division on its own motion for an order extending the North Shoe Bar-Wolfcamp Pool in Lea County, New Mexico.	CASE 9527

BEFORE: David R. Catanach, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division:	Robert G. Stovall Attorney at Law Legal Counsel to the Division State Land Office Bldg. Santa Fe, New Mexico
For Inexco:	James Bruce Attorney at Law HINKLE LAW FIRM 500 Marquette, N. W. Suite 740 Albuquerque, New Mexico 87102-2121
For Berry Lee Hobbs, et al:	Theodore R. Johnson Attorney at Law WILLIAMS & JOHNSON P. O. Box 1948 Hobbs, New Mexico 88240

I N D E X

I N D E X Cont'd

E X H I B I T S

MR. CATANACH: In the matter of the hearing called by the Oil Conservation Division on its own motion for an order extending the following pool in Lea County, New Mexico: Extending the North Show Bar Wolfcamp Pool to include Section -- the north half of Section 17 and the northeast quarter of Section 18, Township 16 South, Range 36 East.

Are there appearances in this case?

MR. STOVALL: Robert G. Stovall, appearing on behalf of the Division.

I have one witness.

MR. CATANACH: Other appearances?

MR. JOHNSON: Theodore R. Johnson of Williams and Johnson, Hobbs, New Mexico, appearing on behalf of Berry Lee Hobbs, and others, owners of the minerals under the northeast quarter of the northeast quarter of Section 17, Township 16 South, Range 36 East, Lea County.

MR. CATANACH: Besides Mr. Hobbs, you are representing other mineral interest owners?

MR. JOHNSON: Yes, they're Hobbs heirs.

MR. CATANACH: I see, that

it's all --

MR. JOHNSON: They own all the minerals under that, subject to a lease in favor of Inexco.

MR. CATANACH: All right, thank you.

Any other appearances?

MR. BRUCE: Mr. Examiner, my name is Jim Bruce from the Hinkle Law Firm, representing Inexco Oil Company.

I have two witnesses.

MR. JOHNSON: Mr. Examiner, I have one witness.

MR. CATANACH: Thank you, Mr. Johnson.

Will the -- can I get all these witnesses to stand at this time to be sworn in?

(Witnesses sworn.)

Mr. Stovall, you may proceed.

PAUL F. KAUTZ,

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

DIRECT EXAMINATION

BY MR. STOVALL:

Q Would you please state your name, by whom you're employed and in what capacity?

A My name is Paul Kautz. I'm employed by the New Mexico Oil Conservation Division as District Geologist in Hobbs, New Mexico.

Q Mr. Kautz, have you previously testified before the Commission or its examiners and had your credentials accepted?

A Yes, I have.

Q Are you prepared to make recommendations to the Examiner today concerning the nomenclature of certain pools in Lea County, New Mexico?

A Yes, I am.

Q Are your recommendations prepared in the form of an exhibit?

A Yes, they are, Exhibit A.

Q Was Exhibit A in this case prepared by you or under your supervision and control, or have you examined the contents of that exhibit and assured yourself of its accuracy?

A Yes, they were prepared under my direction.

Q Do you have an opinion, Mr. Kautz, as to

whether the area proposed for inclusion in the North Shoe Bar Wolfcamp Pool is in fact a continuous part of that pool and formation and producing from a common source of supply with that pool?

A I believe it is.

Q And upon what information have you based that opinion?

A Based on a geologic study.

Q Which has been done by you?

A Yes.

Q Is there anything further you'd like to add to your testimony?

A No.

MR. STOVALL: Mr. Examiner, I have no further questions of this witness.

MR. CATANACH: Are there any questions of this witness? Mr. Johnson?

MR. JOHNSON: Yes, sir.

CROSS EXAMINATION

BY MR. JOHNSON:

Q Mr. Kautz, did you prepare a structure topography map of this?

A Yes, I did prepare a structure map.

Q Do you have that with you?

A I do have a copy of that map with me.

Q Beg pardon?

A Yes, I do.

Q Will you produce that for us, please?

A That's all I have.

Q Mr. Kautz, did you prepare this topography structure map on structure contours?

A Yes, I did.

Q When was this map prepared?

A This map was prepared in September of this year and it's based on another map that I prepared three or four years ago on this area.

Q And was it prepared in connection with your recommendation to be made to the Division?

A It was prepared on the basis -- on the study to see if there was a possible extension of the North Shoe Bar Wolfcamp Pool.

Q Well, now, at the time you prepared this map or plat, what there some doubt in your mind as to whether or not this North Shoe Bar Wolfcamp Pool extended to include the northeast quarter of the northeast quarter of Section 17?

A I had not come to an opinion at that time as to whether it was or it was not.

Q Well, is that why you included the

question marks there?

A Well, it's -- the question just indicate that it's a possible extension of that pool.

Q When did you conclude that it was an extension of it?

A After I went back and looked at the well in the northeast -- or correction, northwest quarter of the southwest quarter and I found about 4 feet of porosity in that well that corresponds to the Upper Wolfcamp pay zone.

Q Now are we speaking about the northwest quarter of the --

A In Section 8.

Q In Section 8. Now, would you say in the northwest quarter of the southwest quarter?

A Yes, sir.

Q Of Section 8?

A That's correct.

Q Was that completed as a producer?

A No, it was not. It was completed or it was drilled as a test of a Lower Wolfcamp pay zone and the Lower Wolfcamp pay zone was found to be absent so they plugged the well.

Q Who drilled that well, if you know?

A I believe it was Mesa.

Q Who's the largest operator in the North

Shoe Bar Wolfcamp Pool?

A Mesa.

Q And Mesa didn't choose to produce the well, did it?

A No, sir.

Q They're the most -- Mesa is the most knowledgeable company operating in the North Shoe Bar Wolfcamp Pool, isn't that correct?

A Yes, sir.

Q They have more wells than anyone else.

A Yes, sir.

Q Now, the map that you prepared, I believe from your legend the shaded area in blue is the Upper Wolfcamp.

A Yes, sir.

Q Which formation produces most of the oil in the North Shoe Bar Wolfcamp Pool, the Lower or the Upper --

A There is only one formation and that is the Wolfcamp formation.

Q Well, you've got a lower formation?

A No, sir.

Q You've got an upper?

A It is not formally subdivided in this area into upper and lower.

Q Well, why did you on your map, Mr. Kautz, you had U, the upper pay zone, and L, the lower pay zone? Maybe I'm using the wrong terminology. Maybe I should say the upper pay zone and the lower pay zone.

A That is correct. It should be -- that's the proper terminologies, the pay zone. A pay zone is not a formation, or --

Q Okay.

A -- not necessarily a formation.

Q All right. Which one produces the major portion of the oil?

A Well, I would say that the lower pay zone, looking at the production statistics for the area, produces the majority of the oil.

Q Do the records in your office in Hobbs reflect the amount of production from the lower pay zone?

A No, sir, it's just -- it's just the Wolfcamp combined.

Q Do they -- do the records in your office in Hobbs reflect the amount of production from the upper pay zone?

A No, sir.

Q Have you formed an opinion as to how much of the production in that area is from the upper pay zone?

A Not a figure.

Q Mr. Kautz, are you familiar with the amount of production in the northeast quarter of the northeast quarter of Section 17?

A I am familiar with some of the early production. It was producing somewhere around 90 barrels a day, 90 to 100 barrels a day in the first month of production.

Q Does the well produce exclusively from the upper pay zone?

A Yes, sir.

Q Are there any other wells in the North Shoe Bar Pool producing exclusively from the upper pay zone?

A Yes, sir.

Q What has been the history of the production from those wells as to fall-offs?

A I couldn't say right now without looking at the annual production figures.

Q Do you have those records in your office in Hobbs?

A Yes, sir.

Q Do you know if the production in that pool falls off pretty rapidly?

A Some of the wells, yes, it has fallen

off pretty rapidly, and there's a few wells that -- where it has not, where they -- one well, for instance, has produced 477,000 barrels as of December of '87.

Q That's the Mesa wells back in the pool, isn't it?

A No, sir, it's one of the closest wells to the -- Inexco's Berry Hobbs No. 1 Well.

Q Could you tell us which well it is?

A It's the Mesa Operating Limited Partnership Gilman No. 1 Well, located in Unit letter M of Section 7, Township 16 South, Range 36 East.

And I might correct that figure. It produced 435,950 barrels as of December of '87.

Q Do your records reflect when that well was drilled, Mr. Kautz?

A I don't have that information available in front of me right now.

Q Mr. Kautz, will the production from this Berry Hobbs No. 1 Well in the northeast quarter of the northeast quarter of Section 17 efficiently and economically drain 160 acres?

A I do not know. I do not have any engineering or engineering figures to substantiate it to make an answer to that question.

Q Have you ever made the statement that it

wouldn't drain it?

A I made a statement that based on its production, just taking a -- making a -- based on my experience I doubt if it would.

Q And you still doubt it, don't you?

A Yes, sir, without the -- without any engineering evidence I would say, I'd have to say I doubt it.

Q Well, do you need engineering evidence to determine whether or not it's tied into the North Shoe Bar Wolfcamp Pool?

A No, sir.

Q You don't need the engineering evidence on that.

A I'm basing it on geologic.

Q What information do you base it on?

A The geologic environment, deposition, and type of deposit it is, suggests to me that it is a lenticular reservoir and with the -- correlating the logs, the porosity zones suggest to me that it is an extension of the North Shoe Bar Wolfcamp Pool.

Q Well, the fact that there was a porosity zone in the log doesn't mean that it's in this pool.

A You could probably argue both ways.

Q Well, don't you have the same porosity

up in the West Lovington Penn Field --

A That is --

Q -- in the Wolfcamp?

A That is a lower zone in the Wolfcamp.

Q Lower zone in the Wolfcamp. All right, do you have the same porosity in the wells situated to the south in the North Shoe Bar Wolfcamp Pools?

A We do have one well down there in Section 20 of 16 South, Range 36 East, that is in the -- has a porosity zone in the upper Wolfcamp.

Q But it's not in the pool, is it?

A It is in the North Shoe Bar Wolfcamp Pool.

Q North Shoe Bar. How about further on south, is the one I had -- really had reference to.

A I do not know of any wells further south.

Q Well, there's the Wolfcamp formation, that's a formation, isn't it?

A Yes, sir.

Q You've got an upper and a lower pay zone, and there's the upper Wolfcamp formation throughout Lea County, in areas throughout Lea County.

A I'm not sure if I understand. You --

Q Well, it appears in the -- in other

pools, not -- it's not exclusive to -- to the North Shoe Bar Wolfcamp Pool.

A That same particular porosity zone?

Q Yes.

A I -- I really couldn't say without correlating logs, but I doubt if it's the exact same -- same porosity zone.

MR. JOHNSON: Okay, I have no further questions, Mr. Examiner.

MR. CATANACH: Mr. Bruce, any questions?

MR. BRUCE: I don't have any questions of the witness, Mr. Examiner.

CROSS EXAMINATION

BY MR. STOVALL:

Q Mr. Kautz, this map that you're looking at, perhaps we can -- let's go ahead and mark that as an exhibit, Division Exhibit Two -- Exhibit B, I'll mark it Exhibit B.

Did you prepare this map --

A Yes, sir.

Q -- this structure map, based upon logs and other information which was available in your office in your records?

A Yes, sir.

Q Notwithstanding some of the questions that Mr. Johnson has raised, do you believe that that formation is continuous into Section 17?

A I do.

MR. STOVALL: Mr. Examiner, I have no further questions.

I would move at this time the admission of Exhibits A and B.

MR. JOHNSON: We have no objection.

MR. CATANACH: Exhibits A and B will be admitted into evidence at this time.

CROSS EXAMINATION

BY MR. CATANACH:

Q Mr. Kautz, what was the closest producing well to the Berry Hobbs Well, do you know?

A It is the well in the southwest quarter of the southeast quarter of Section 7, Township 16 South, Range 36 East.

Q The -- there appears to be on the -- on this exhibit a well in Section 8. Was that drilled through the Wolfcamp?

A It was drilled through the Wolfcamp and

it was drilled as a test for the lower Wolfcamp pay.

Q So you used the data from that well log to prepared this exhibit?

A Yes, sir.

MR. CATANACH: That's all the questions I have of the witness. He may be excused.

MR. STOVALL: I have no further witnesses.

MR. CATANACH: I guess, Mr. Johnson, if you want to go, go on next --

MR. JOHNSON: Call Mr. Jim L. Sharp.

JIM L. SHARP,

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

DIRECT EXAMINATION

BY MR. JOHNSON:

Q State your name, residence, and occupation, Mr. Sharp.

A My name is Jim L. Sharp. I live in 109 West Gold in Hobbs, New Mexico. I'm a consulting petroleum geologist and have been a consulting geologist for the last ten years, and I --

Q Have you testified before the Commission or --

A Yes, but it's been a long time ago. It's been way long.

Q Will you review for the record your education and your employment?

A I graduated from Texas Tech in 1955 with a petroleum geology degree; went to work for PanAmerican, which is now Amoco, and worked for them till 1960 in Roswell.

Moved to Hobbs in 1960 and went to work for Texas Drilling and Producing Company as their chief geologist. I worked for Texas for 8 years and went to work for Antweil Oil Company out of Hobbs as a geologist; worked for them for 10 years, and then have been independent for 10 years, working primarily southeast New Mexico and west Texas.

Q Mr. Sharp, have you worked for independent producers or oil companies, not major oil companies, since you've been in the consulting business?

A Yes, I have.

MR. JOHNSON: Mr. Examiner, we tender Mr. Sharp as an expert geologist.

MR. CATANACH: He is so qualified.

Q Mr. Sharp, are you familiar with the North Shoe Bar Wolfcamp Pool?

A Yes, I am. I'm familiar with it. I've studied it the last week, week and a half.

Q Have you reviewed the logs on some of the wells?

A Yes, I have.

Q Just tell us what you have done.

A Well, I've reviewed some logs in the Shoe Bar Field and in the general area and as to the Wolfcamp, the Upper Wolfcamp, the upper pay and the Lower, Lower zone. The -- I thought Paul would bring this out but the Wolfcamp is a narrow -- the Shoe Bar Wolfcamp is a narrow carbonate production trend that goes along the shelf edge that is productive in the -- in the Wolfcamp zone. It's also productive in the Strawn, Morrow production, there are some -- is some Devonian production over to the far east.

It's very similar to the large Townsend Field up to the north, which is a mile, mile and a half, to the north. It's also productive out of this Wolfcamp production -- zone.

There are right now eight wells producing out of the Wolfcamp in the North Shoe Bar Field. There have been, as many as thirteen wells producing. Out of the

eight, the -- by studying the production, the majority of the oil, I feel like, or I know, is coming out of the Lower Wolfcamp zone. I find no well in the upper zone in the Wolfcamp Field -- in the Shoe Bar Field that I would call commercial. It's all a marginal zone, a plugged back zone, would not be drilled, in my opinion, would not be drilled for only the Upper Wolfcamp. You can't drill a well to the Upper Wolfcamp in this area.

I find this Upper Wolfcamp zone -- back up just a little -- we'll go to the -- Mr. Catanach, can we use -- I -- I thought these were going to be an exhibit, we can use the exhibit of Paul's. I don't have any exhibits. I didn't -- I thought Paul was going to introduce this -- this map as an exhibit, so I'll -- we can use it. That's all I have. I don't have any exhibits.

MR. CATANACH: That would be fine.

A I have one here of my own. I'll back up just a minute. We were talking about the Mesa No. 1 Austin Well, which is in Section 8, is the nearest well to the Hobbs Well. It's in the Unit letter L, I believe, of 8. It was drilled in 1975 by Mesa; a total depth of 10.700; drilled through the Upper Wolfcamp; through the Lower Wolfcamp; they tested water out of the Lower Wolfcamp; maybe has 2 feet of porosity; not -- was not ever tested by Mesa.

They plugged the well and in turn dropped their leases in the area. I feel like this is the eastern edge of the field. I think Mesa felt like that and they drilled it and plugged it, the eastern edge of the field.

As you'll notice, the field is very defined by dry holes both to the north, south, west and east. There are dry holes all around there. These wells, some of these dry holes did have a few feet of porosity in the upper Wolfcamp. They were either wet or tight in the Lower Wolfcamp.

The Lower Wolfcamp, as you go off a ridge, sometimes you get water; other times you -- it's just tight.

In Section 20 which -- how this got in the field, I don't know, but in Section 20, in the Unit M, Roger Hanks has one well there that's in the North Shoe Bar Field. I guess -- I don't -- but it's in the field. It produced about 5000 -- 6000 barrels out of the Upper Penn, Upper Wolfcamp, and now has produced 36,000 barrels out of the Lower. This is the most oil I can find that's made out of -- excuse me, out of the upper, I'm sorry -- 6000 out of the Lower, 36,000 barrels out of the Upper Wolfcamp. This is the most oil I could find produced by any well in this area out of the Upper Wolfcamp. It is now producing, they worked it over about three months ago and it is producing

about 20 barrels a day out of the -- out of the Wolfcamp.

The Berry Hobbs Well, which has been mentioned in Section 17, was tight -- excuse me, they drilled through the Strawn, it was tight in the Strawn, tight in the Lower Wolfcamp, and had 8 to 10 feet of porosity in the Upper Wolfcamp, which they are now producing.

This is the same, it's the same zone that is producing down in the well in 20; same zone that has been plugged back in some of the wells in the Shoe Bar Field. Also I see that same porosity in the Townsend Field a mile and a half north.

It's a new well that potentialed, initial potentialed for 207 barrels of oil per day in August of '88. The first half a month they averaged 114 -- this is taken from the production records -- 114 barrels of oil per day; in September averaged 106 barrels per day. The well has been shut in for around 20 days. I think it was opened a couple of days ago, but it's been shut in for around 20 days, I think due to a no flare order. I'm sure they can tell us this, but it's been shut in for awhile, so it hasn't produced, produced less than two months, and I feel like, in my opinion, this well is not an economical well. I, and I don't think any prudent operator would drill a well to the Upper Wolfcamp by itself, just drill to the Upper Wolfcamp. You could not economically drill to

the Upper Wolfcamp. You can drill to the Strawn, like they did, and plug back after you find everything dry, but I do not believe you can -- you can drill to the Upper Wolfcamp economically.

Q Mr. Sharp, are you familiar with the history of production in the North Shoe Bar Wolfcamp Pool?

A Yes, I checked this out and the best -- on some of the wells they've produced -- most of the wells were produced out of the Lower Wolfcamp and then plugged back with a bridge plug, perforated the Upper Wolfcamp, and then opened both zones together, so it's hard to tell exactly what the Upper Wolfcamp has made, but 33,000 barrels is about the best I can give it, give any well in the Upper Wolfcamp in the Shoe Bar Field and that was in the -- in the well in Unit M of Section 7, the Mesa Well.

Q And drilled when?

A Those people drilled in about '72, I believe. I don't --

Q So it's only produced about that long.

A And then went -- but they have not been producing out of the Upper Wolfcamp since '82. They both -- Mesa went back and worked these wells over in 1982, producing out of the Upper Wolfcamp with the Lower Wolfcamp, and these are very good wells in it, those three wells.

Q Now, you're speaking about the wells

over near the center of the pool?

A No, I'm speaking of the three -- three Mesa wells at 7, the two wells in 7 and one well in 18. They're the three best wells in the pool.

Q Okay. Okay.

A Of 16, 36. Those three wells together have produced about -- over a million barrels out of the Wolfcamp.

Q Mr. Sharp, did you form an opinion as to whether or not this Shoe Bar -- North Shoe Bar Wolfcamp Pool extended over to include the Berry Hobbs Well No. 1 in the northeast quarter of the northeast quarter of Section 7?

A Well, in my opinion the -- the eastern -- eastern boundary is in Section 8, and I feel like that this -- the north -- the Hobbs Well, the Inexco Hobbs Well does not connect. It has -- it does have a porosity zone that is -- that we find in the other wells, but I do not think it's necessarily connected to the North Shoe Bar Field and I do not feel like it's an economical well out of this zone.

Q All right, now you said the porosity zones. Do you have porosity zones in the Wolfcamp in other areas in Lea County other than the Townsend Pool and in the North Shoe Bar?

A Well, that's -- you probably do. Whether it's exactly the same, I don't know, but I do think that there is some porosity that's very correlative in the Townsend Field to the north in the same zone that's producing in the -- in the field -- in the Hobbs Well, Berry Hobbs Well.

Q And in the Townsend Field, is that spacing up there --

A That's 40-acre spacing.

Q 40-acre spacing.

MR. JOHNSON: I believe that's all the questions I have.

MR. CATANACH: Mr. Bruce?

CROSS EXAMINATION

BY MR. BRUCE:

Q Mr. Sharp, in your opinion would -- would the Upper Wolfcamp pay zone be developed on 40-acre spacing? Do you think an operator would develop it on 40-acre spacing?

A No. You're talking, now, you're talking about just drilling a well and developing it on 40-acre spacing, right?

Q Yes, sir.

A In my opinion, no.

MR. BRUCE: I have nothing further, Mr. Examiner.

REDIRECT EXAMINATION

BY MR. JOHNSON:

Q Mr. Sharp, would an operator drill a well to the upper pay zone on 160 acres?

A I'm sorry, I didn't know you were going to ask -- say that again. I wasn't listening.

Q Would a prudent operator drill a well to the upper pay zone of the Wolfcamp on 160-acre spacing?

A No, not in my opinion.

Q Do have an opinion as to whether an up-dip well would drain 160 acres?

A I don't think so, no.

Q Would it drain 40 acres?

A Well, that's a guess. I feel like it might have a chance to drain 40 acres, yes, possibly. It think maybe it's a limited reservoir but that's my opinion. It might not even drain 40 acres.

Q Do you as a consulting geologist, and while you were a geologist working for companies, were you called on to approve well locations?

A Yes.

Q Would you as a geologist approve a well

location for completion to the upper pay zone of the Wolfcamp in the North Shoe Bar Wolfcamp Pool?

A No, I wouldn't drill another well there.

MR. JOHNSON: No other questions.

MR. STOVALL: Mr. Examiner, I think I'm out of order but I would like to ask Mr. Sharp a couple of questions.

MR. CATANACH: Sure.

CROSS EXAMINATION

BY MR. STOVALL:

Q Mr. Sharp, have you examined the logs of, say, the wells in Section 7 (unclear) the Inexco Well in 17?

A Yes, uh-huh. Yes, I have.

Q Do you see any correlation in the sands across that area?

A Well, these aren't sands, but yes --

Q Or formations?

A Yeah, you can judge, you can correlate, yes. There is a correlative zone, yes, sir.

Q Is it possible that the Mesa well in Section 8 could delineate rather than the eastern boundary the northern boundary of that --

Q In other words, go between? There's a possibility of that, yes.

MR. STOVALL: I have nothing further.

MR. CATANACH: Mr. Bruce?

MR. BRUCE: Could I ask one?

RECROSS EXAMINATION

BY MR. BRUCE:

Q Mr. Sharp, are you a reservoir engineer?

A No.

REDIRECT EXAMINATION

BY MR. JOHNSON:

Q He said "possibility". Is there a probability that it is?

A I don't think it's a good probability, no, that it goes south of that.

MR. CATANACH: All right, if that's all, the witness may be excused.

You may proceed, Mr. Bruce.

MR. BRUCE: Thank you.

CHARLES A. CAUGHEY,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q Mr. Caughey, would you please state your full name and city of residence?

A My name is Charles A. Caughey. I reside in Spring, Texas, which is a north suburb of the City of Houston.

Q And by whom are you employed and in what capacity?

A I'm employed by LL&E as a geologist.

Q And have you previously testified before the OCD as a geologist and had your credentials accepted?

A Yes, I have.

Q And are you familiar with the geology pertaining to Inexco's Berry Hobbs wells?

A Yes, I am.

MR. BRUCE: Mr. Examiner, is the witness considered acceptable?

MR. CATANACH: Yes, sir, he is.

Q Mr. Caughey, would you please refer to

Inexco's Exhibit Number One and discuss it for the -- for the crowd here today?

A This exhibit is a structure map covering the North Shoe Bar area. It is contoured on top of the pay zone at North Shoe Bar Wolfcamp Field. The scale is an inch to 1000 feet and you can see that it covers several of the eastern sections in 16 South, 36 -- in 15 South, 36 East, and a portion of 16 South, 36 East. For reference the Town of Lovington is marked in the northeast corner.

The structure map shows the Wolfcamp producing wells highlighted in green. The outline of the field as it currently exists is outlined by the solid orange line and it extends slightly west of the area shown here in the map.

The map itself shows a structural nose that corresponds quite closely, or corresponds well, to the production from the Wolfcamp at North Shoe Bar Field. The nose extends east/northeastward across the area towards the Inexco No. 1 Berry Hobbs Well. We do have ample geophysical control, which is shown on this map and that is used to map structure to the area beyond well control to the northeast, east and south and our seismic interpretation shows the nose continues even further to the east.

The significance to me is that the Berry Hobbs Well is located on a nose, as is the production in

North Shoe Bar Wolfcamp Field off to the west.

I also have shown on this map a line of cross section. It is marked by a dotted line and it extends from the Mesa No. 1 Chambers Well in the southeast of Section 7 to the Inexco No. 1 Hobbs in the northeast of Section 17, and on down to the Hanks No. 1 Ruth State in the southwest of 20.

The purpose of this cross section is to show the correlation of the producing zones among those three wells. I'd like to call to your attention while we're looking at this map that the well at the north end of that cross section, the Mesa No. 1 Chambers, and the well at the south end of that cross section, the Hanks No. 1 Ruth State, currently are included in the North Shoe Bar Wolf-Wolfcamp Field.

Q Okay. Would you please move on to your cross section marked Exhibit Two and discuss its contents?

A For the participants and interested parties, it may be easier if I put this on the wall and refer to it, would that be all right?

MR. CATANACH: Yes.

A Okay. This is the cross section that was located upon the map. The well on the north, Mesa No. 1 Chambers; the one in the center, the Inexco No. 1 Hobbs; the well in the south, the Hanks No. 1 Ruth State.

The scale for the cross section is an inch equals 250 feet vertically and it's just an arbitrary scale to show you correlations along the horizontal scale.

This is stratigraphic section. It is flattened on the datum which is the top of the Shoe Bar pay zone. So this is the datum and the purpose of the cross section is to illustrate where pay occurs among these three wells, the well to the north, which is the North Shoe Bar Wolfcamp Field; the well in the center, which we are discussing currently; the well to the south, which is also the North Shoe Bar Wolfcamp Field.

Highlighted on this section are three common log markers within the Wolfcamp. The top of the Wolfcamp lime where we go from a thick section of undifferentiated dolomite into the Wolfcamp Lime; a Double X marker in the central part of the section; and a Three Brothers marker, which actually occurs within the pay section at North Wolfcamp Field -- the North Shoe Bar Wolfcamp Field.

The bottom of the Wolfcamp zone in this area is a basal chert member, which is shown here in brown. The log is shown all the way to total depth and there are deeper correlations if anyone is interested.

So this discussion I'll confine my comments to the pay zone and start with the Mesa No. 1 Chambers Well, which was initially completed in the zone

here between 10,509 to 10,514, and perfs from 10,520 to 10,530, as shot with two shots per foot, acidized with 3000 gallons. Initial flow was 630 barrels of oil per day. This was produced up until July of 1982 when the well was recompleted up-hole, perforated the zone from 10,296 to 10,312, and from 10,326 to 10,329, acidized with 14,500 gallons; initialed pumping for 93 barrels of oil a day.

So the Mesa well, then, was initially completed down in this zone. A number of years later it was recompleted up-hole in this zone.

I'll next proceed to the far south end of the cross section and show you the Hanks No. 1 Ruth State.

The Hanks No. 1 Well was completed in three different intervals, all within this upper zone, as you will notice. It originally was perforated from 10,382 to 10,385 and acidized with 1500 gallons. Initial potential was 204 barrels of oil a day. That well, according to the records that were available to me, produced only 1100 barrels, plus or minus, in a period of six months. The well was then recompleted up-hole with two sets of perforations, 10,255 to 259, and 10,295 to 10,299. Those are shown right here; came on pumping for 74 barrels of oil a day and it has cumed approximately 43,000 barrels since that time. My records show that it's making about 20 bar-

rels a day and has been steady at that rate for an extended period of time.

Our well was drilled in between the two in a position represented right here. Quite clearly the zone that we perforated, which is 10,357 to 10,375, is correlative with the production that is perforated in the Hanks No. 1 Ruth State to the south. The overall interval that's completed in the Hanks No. 1 Ruth corresponds to this overall interval which corresponds to production at North Shoe Bar in the Mesa No. 1 Chambers Well.

In addition to that, as previous testimony has already noted, a number of other wells in the field to the west have been completed in this same upper zone. In fact, according to my count, in addition to our well there are seven other wells that have been completed in that zone.

Q Okay, Mr. Caughey, I refer you to Exhibit Number Three and discuss production on the Inexco Hobbs No. 1 Well.

A Exhibit Number Three is a daily production record for the No. 1 Hobbs Well, starting from when the well was put on production on pump on August 13th, until it was shut-in for a bottom hole build-up on October the 13th.

My understanding is that it may have

been put on production again yesterday; however, that information is not available to me at this time.

It does show that the well came on strongly initially with a maximum of 190 barrels of oil a day, declined sharply into the region of about 100 barrels a day, and it's been producing on the order of 87 barrels a day for some time now. Note that this is a logarithmic plot for the barrels of oil per day scale, which I call your attention to the right side of the plot shown clearly there in green.

The left side scale is the gas production on a linear scale and again the gas production has been 100 MCF a day for an extended period of time.

Q In your opinion should the Inexco Hobbs No. 1 Well and the acreage suggested by the OCD be included in the North Shoe Bar Wolfcamp Pool?

A Yes, sir, I find that it is geologically the same and see no reason that it should not be included.

Q Were Exhibits One through Three prepared by you?

A Yes, they were.

Q Mr Caughey, I refer t what's been marked Inexco Exhibit Number Nine and I would ask you to identify that.

A Exhibit Number Nine is a lease taken on

behalf of Inexco. It shows here as Berry Lee Hobbs, also known as Berry L. Hobbs, individually, and as agent and attorney in fact for several other people.

Q And was this exhibit obtained from Inexco's company records?

A Yes, sir, it was.

Q In your --

MR. JOHNSON: We admit the (unclear).

MR. BRUCE: I only have one copy of this, Mr. Examiner.

MR. JOHNSON: That's fine, I have a copy.

MR. BRUCE: I would submit that to the OCD.

MR. JOHNSON: That's on the 40 acres --

MR. BRUCE: It's on the north-east northeast.

Q In your opinion, Mr Caughey, is the granting of the nomenclature application by the OCD in the interest of conservation and the prevention of waste?

A Yes, sir, it is.

Q Do you have anything further to state about this matter?

A No, sir.

MR. BRUCE: Mr. Examiner, I move the admission of Inexco Exhibits One through Three and Number Nine.

MR. CATANACH: Any objections?

MR. JOHNSON: No objections.

MR. CATANACH: Exhibits One through Three and Nine will be admitted into evidence.

MR. BRUCE: I'm through with this witness.

MR. CATANACH: Yes, Mr. Johnson, you may proceed.

CROSS EXAMINATION

BY MR. JOHNSON:

Q Did you make a study of all the wells there in the North Shoe Bar Wolfcamp Pool?

A Yes, sir, I did.

Q What was the best well producing from the upper pay zone?

A There are no production records that discretely separate the production from upper and lower zones.

Q Well, you've got some wells up there that are just producing from the upper, haven't you?

A Yes.

Q What were they producing?

A My records show my best attempt to separate the two with the understanding that the wells have been produced and commingled and I have public access to public records, so I'll do the best.

What I do show is that in the upper zone the Mesa No. 1 Wiser made 35,193 barrels of oil; a Mesa No. 1 Gilmore made 64,113; Mesa No. 1 Chambers made 62,733; Mesa No. 1 Houston made 117,200 barrels.

I understand that some of these wells were perforated in the lower zone and commingled with production up-hole, which is why I can't answer you discretely.

Q But in your presentation you presented the information on both upper and lower, didn't you?

A Yes, I did.

Q Now, in referring to your Inexco Number One Exhibit, you said that this was your seismic plat?

A I indicated that seismic is represented here, sir, as you can see it is.

Q All right, was represented on it.

A Yes.

Q Where would the best place have been to drill the well? Did you have this before you drilled the

Berry Hobbs No. 1 Well?

A Yes, we did.

Q From the geologist's standpoint, where was the best point to drill the well?

A For this particular -- the well was drilled for Strawn objectives.

Q I know it. I know it. Where was the best point, though, to drill it, from the seismic information you had; the best location?

A For Strawn production?

Q Yes. Or Wolfcamp, either.

A Well, the Strawn, of course, is a very different zone. I'll answer your question but I'll have to refer to the cross section. The Strawn here is way down here, a very distinct zone that does stay --

Q Well, you drilled -- you drilled this well to the Strawn, didn't you?

A Yes, we did.

Q And it was nonproductive.

A That's correct.

Q Now, did this map indicate that the Strawn would be productive?

A This map was made after the well was drilled. It did not exist at that time.

Q I thought that I understood from your

testimony that this map was prepared before the Berry Hobbs No. 1 Well was drilled.

A No, sir.

Q Okay.

A The date of the map is clearly shown in the righthand corner there as November the 2nd, 1988.

Q When was the seismic work done?

A The seismic work was started approximately 1984. The last line was shot in my recollection that's on this map, April of this year.

All I can do is say perhaps I should use seasons, and it was shot around winter or spring, because that's as accurately as I know it.

Q Well, did you have the information at the time you drilled the well?

A At the time we drilled the well we had all of the seismic that is shown here except some lines; the two lines that extend east/west across the southernmost part of Section 20 and 21 were not in hand at that time. There may well be another line or two because we do acquire seismic all the time. If you desire a very clear answer, I'll have to take maybe fifteen minutes and study the map.

The preponderance of the seismic was available but those two lines were not and there may be another line or two that we've acquired since then.

Q In approving well locations, do you do that as a geologist?

A No, sir. I recommend well locations.

Q Oh, you recommend.

A Yes, sir.

Q You make your recommendation, do you take into consideration the cost out there?

A Yes, sir, quite clearly.

Q Is this a commercial well?

A I don't have the data to answer that.

MR. JOHNSON: We have nothing further.

CROSS EXAMINATION

BY MR. STOVALL:

Q I'd like to turn to the lease for just a moment. Do you have a copy and are you familiar with it?

A I'm familiar in general terms with it, sir.

Q Well, let me come down there and show you. Mr. Examiner, we'll try to make it clear what we're discussing as we understand it while we look at one copy.

Now this is the lease from -- from Mr. Hobbs, et al, to is that Louisiana Land and Exploration, is that correct?

A It was leased to Inexco Oil Company, which is a wholly owned subsidiary of Louisiana Land and Exploration.

Q All right, and in paragraph number one of the lease, what does that lease grant to Inexco, generally speaking.

A My understanding as a geologist is that it grants Inexco a lease over the northeast quarter northeast quarter of Section 17, which I understand is an area of approximately 40 acres.

Q And what, in granting that lease, what rights does Inexco acquire?

A The right to drill for and explore for, drill and produce hydrocarbons.

Q Is that an exclusive right?

A Yes, sir, it is.

Q In other words, in your opinion as a geologist, you don't believe that Mr. Hobbs, or anybody else, could come in and drill or explore on that acreage, is that correct?

A Yes, sir.

Q Is Mr. Hobbs the only owner in that acreage, or let's say the lessors in this lease, are they the only owners of the minerals rights in that --

A To my knowledge that's correct.

Q And what is -- what does the lessor get in exchange for granting that exclusive right to drill for and produce?

A He gets a cash bonus and he also gets royalty -- any royalty that is based on the production of gas and oil from that lease.

Q And does the -- does the lessor incur any costs in exploration and production of the -- of the oil and gas that may be found there?

A No, sir, all of the exploratory costs, drilling costs, and production costs are borne by Inexco.

Q Let me ask you to look at paragraph number three for a moment and we're looking at the end of the third line and the beginning of the fourth line and I've asked you to take a moment to read that and see if you would amend your answer in any way after reading that.

A Okay. Okay, in reading that clause I would have to amend my answer and I must call to the group's attention that I am a geologist.

Q I understand and we're asking -- asking you not as an expert but just in your opinion as a -- well, let me ask you in that context. Have you looked at oil and gas leases before? Do you ever have an opportunity to review them?

A I do not routinely review oil and gas

leases as to specific provisions, no, sir.

Q But are you familiar with -- in general, with oil and gas leases?

A I'm familiar in general from working as an exploration geologist and drilling wells for fifteen years.

Q Okay, so you're not rendering an expert opinion but rather a geological opinion.

A That is all that I can render.

Q But just reading the plain language of that clause, does the lessor bear any costs?

MR. JOHNSON: We'll stipulate --

MR. STOVALL: All right, stipulate that he bears the cost of making the oil marketable, is that correct, after it's produced?

MR. JOHNSON: Well, we'll -- we'll stipulate that he doesn't bear any costs of drilling of the well or --

MR. STOVALL: Okay.

MR. JOHNSON: -- anything else (not clearly understood)

MR. STOVALL: Including it making the (not clearly understood).

MR. JOHNSON: It ought to also

be stipulated that 80 percent of the production, the lessee gets.

Q Oh, I understand, and I'm sure the lessee would stipulate to that, but I can't on his behalf.

MR. JOHNSON: Well, I --

Q Looking for a moment at paragraph number four, and are you familiar with pooling clauses in leases and what they're -- generally what they provide?

A Yes.

Q And does paragraph number four in just a quick glance appear to be a pooling clause?

A It does.

Q And is it your understanding that a pooling clause will allow the acreage covered by that lease to be pooled with other acreage to form a proration unit?

A Yes, it does.

Q And if, in fact, that lease is pooled to form a proration unit, what -- what's the effect of that? Do you understand the effect of that, what that means?

A Well, I understand the effect of it is that that lease is included with others that are included within the proration unit so that the minerals that are produced from that are produced equally from the unit itself and that the proceeds are distributed accordingly.

Q And so that, in other words, that this

acreage would bear -- would receive its pro rata share, a royalty on its pro rate share of production from --

A That is correct.

Q -- from the pooled acreage, is that correct?

A Yes, sir.

Q And are you familiar with the manner in which proration units are established with the OCD and what has to be shown in order to establish a proration unit?

A I'm familiar and I have testified as an expert geological witness towards the establishment of irregular -- of nonstandard locations on proration units, and that's the extent of my involvement.

Q And are you, do you have an understanding or are you aware that in order to establish special pool rules and proration units that it must be demonstrated that a well completed on that proration unit can adequately drain that area?

A Yes, sir, I'm familiar with that.

Q And do you have an understanding that -- that proration units are established, one of the purposes of proration units is to prevent waste by preventing -- by, yeah, preventing, prohibiting the drilling of unnecessary wells; that is, the drilling of wells, more wells than are necessary to produce oil and gas underlying acreage?

A Yes.

Q And if unnecessary wells are caused to be drilled, is not that expense borne by the lessee, the person who is granted the right to drill?

A That is correct.

Q And if, in fact, an unnecessary well is drilled, the lessee incurs a cost but the lessor or lessors whose interests are affected do not incur any costs, they still receive their proportionate share of production, is that correct?

A That is correct.

MR. STOVALL: I have no further questions regarding this exhibit.

MR. CATANACH: Any other questions at all Mr. Stovall?

MR. STOVALL: No.

MR. CATANACH: Are there any other questions of this witness at this time?

MR. CAUGHEY: I'd like to consult with my attorney briefly before I'm excused, if I may.

MR. CATANACH: Yes, sir.

REDIRECT EXAMINATION

BY MR. BRUCE:

Q Mr. Caughey, were you listening to Mr.

Sharp's testimony?

A Yes, I was.

Q And did you hear him testify that in his opinion no one would drill a well to the Wolfcamp formation to produce the upper zone?

MR. JOHNSON: Correction, Upper Wolfcamp; upper pay zone.

Q To produce the upper pay zone in the Wolfcamp?

A Yes, I did hear that.

Q Does Inexco have any plans to drill any other wells in this area?

A Inexco has already obtained a zoning variance from authorities in the Town of Lovington to drill a location 660 from the north and 660 from the west of Section 16. We're in the process of bringing that well location along, and that's in response to my proposal that we drill a development well at that location.

I would have to state that we, of course, are examining the production data from the Hobbs, but we're proceeding with plans in that direction.

MR. CATANACH: Do you have anything further, Mr. Bruce?

MR. BRUCE: I have no further questions.

RECROSS EXAMINATION

BY MR. JOHNSON:

Q Are you going to just drill to the upper pay zone or the Wolfcamp or do you plan to go down and test the Strawn?

A The AFE that I signed on the thing was for a Wolfcamp test, specifically for the Upper Wolfcamp zone, or specifically for the zone that is producing in the Berry Hobbs Well.

Now, any well that's drilled, I would recommend drilling through the interval where other pay zones may occur, but the reason for drilling the well is the Upper Wolfcamp.

As the cross section shows, the Lower Wolfcamp is not developed over this area.

Q Have you filed an application with the Commission to drill the well?

A As of yesterday we had not.

Q On those applications you file do you show the total depth that you propose to drill to?

A Yes, sir, we certainly do.

Q And are you telling the Examiner that you're only going to drill to the Wolfcamp?

A I will not make any commitment in

advance of the drilling of the well because this is good oil country and there are multiple horizons; however, the AFE that I signed was for an Upper Wolfcamp test and if I'm permitted to check my notes, I think I can tell you what the recommendation was for. 10,650 feet total depth. I emphasize that is my recommendation. We may or may not elect for who knows what reason to take the well deeper.

Q That would be to the Lower Wolfcamp.

A Was that a question?

Q Yes.

A As I said, the Lower Wolfcamp is not considered prospective, in my opinion, in the area; however, I see no reason not to see all pay zones that produce in the area, and I've addressed all correspondence in-house as to a test of this particular zone that is producing in the Berry Hobbs. That's the way it is.

MR. JOHNSON: No further questions.

MR. CATANACH: The witness may be excused.

DAVID W. HARVILLE,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q Would you please state your full name and city of residence, please?

A David W. Harville and I reside in Houston, Texas.

Q And who are you employed by and what is your occupation?

A I'm employed by LL&E, the Louisiana Land and Exploration Company, and I'm employed as a petroleum -- a staff petroleum engineer.

Q And have you previously testified before the OCD as an engineer?

A I have not.

Q Would you briefly outline your educational and work experience?

A I graduated from LSU with degrees in -- a Bachelor of Science in petroleum engineering and a Master of Science in petroleum engineering.

I have approximately 26 years of experience with Standard Oil of Texas, Phillips, Inexco, and LL&E. My last employment was with Inexco that was taken over by LL&E and the company 100 percent subsidiary, so I consider myself employed by LL&E for -- oh, since 1975.

I've worked in the southeast New Mexico

area for -- off and on for five or six years. I have responsibility for this field and other fields in this area.

Q Are you familiar with the Inexco Hobbs No. 1 Well involved in this case?

A I am.

MR. BRUCE: Mr. Examiner, are the witness' credentials acceptable?

MR. CATANACH: They are.

Q Mr. Harville, would you please refer to Inexco Exhibit Number Four and discuss its contents?

A I presume Exhibit Number Four is -- refers to the DST No. 1 on 6-5-88.

This was a drill stem test that was taken on the Berry Hobbs No. 1 on 6-5-88 to obtain bottom hole pressures of the North Shoe Bar Wolfcamp Field. It was taken in the upper pay zone of that field.

The first two columns of this exhibit show the time and pressure data that was taken from -- from that build-up. The last pressure was 3752 pounds after 4.039 hours.

From that data I have performed Horner Plot to get an extrapolated maximum pressure from that data.

Q And that's marked Exhibit Number Five,

Mr. Examiner.

A That is correct. Using that plot I have extrapolated a maximum pressure of 4007 psi of this particular pay zone. In addition to that maximum pressure I have calculated a permeability and skin of the formation. The exhibit shows that that calculation results in a .79 millidarcy permeability and a negative skin of 2.5, which would indicate a naturally stimulated wellbore that is probably stimulated by vugs and natural fractures that occur in this formation.

Q Referring you to Exhibits Six and Seven together, did Inexco then perform a -- produce the well to obtain additional data?

A That is correct. The well was produced approximately two months, as shown on one of the previous exhibits, where the production had declined down to about 85 barrels per days. At that time the well was shut in and we took an extended bottom hole pressure build-up and the first two columns of this exhibit show that the pressure had built up to 3407 psi after 434 hours, which is a little over two weeks, so this is an extended build-up that we had to run a second bomb in to get additional data to firm up on the Horner plot and make a useful extrapolation.

Using that data I've constructed the Horner plot of this build-up and the P-star extrapolation

at the bomb setting depth was 3890. Correcting that pressure to the same datum of the previous test, the pressure was 3988, indicating a loss of about 19 psi from production of about 6100 barrels of oil.

Q Using this date, have you made calculations of drainage for this well?

A I have.

Q And is that contained in Exhibit Eight?

A It is.

Q I refer you to that exhibit and please describe its contents.

A Exhibit Eight is a drainage calculation sheet divided up into five steps.

Under step one I've calculated using reservoir properties the porosity, water saturation, and fluid properties of formation volume factors, I've calculated that the oil in place per net acre feet is about 310 barrels.

In step two I've taken that, used that data and taken the pay thickness that we measured in the Berry Hobbs No. 1 of 14 feet, multiplied that by 160 acres to get the oil in place in 160-acre spacing unit around the Berry Hobbs No. 1. That calculation resulted in 695,000 barrels of oil in place in the upper pay zone of this field.

In step three I have made a pressure drop calculation to show what the pressure loss should have been with the knowledge of the production data, prior production data of over -- slightly over 6000 barrels. Assuming that the well was only draining 160 acres, that calculation indicates that we should have measured a pressure drop of approximately 478 psi if the well was draining 160 acres.

Step four of this drainage calculation sheet indicates that we lost only 19 pounds, which would indicate or bring me to the conclusion that the Berry Hobbs No. 1 is draining at least 160 acres and quite a bit more.

Q Okay, and do you recommend that the Inexco Hobbs No. 1 Well in the North Shoe Bar Wolfcamp Pool remain on 160-acre spacing?

A I do.

Q In your opinion is your recommendation in the interest of conservation and the prevention of waste?

A Yes.

Q And were Exhibits Four through Eight prepared by you?

A They were.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibits Four through Eight.

MR. CATANACH: Exhibits Four through Eight will be admitted as evidence.

MR. BRUCE: Before I pass the witness, I would also ask that the OCD take administrative notice of the following orders: Order No. R-4657, which created the special pool rules for this pool; all OCD nomenclature cases extending the pool; and OCD Rule 104-A regarding pool rules governing wells within one mile of a pool boundary.

MR. CATANACH: Mr. Johnson.

CROSS EXAMINATION

BY MR. JOHNSON:

Q Mr. Harvey --

A Harville.

Q What?

A Harville.

Q Harvel, H-A-R-V-E-L?

A V-I-L-L-E.

Q Oh, all right, Harville. Can you tell us why you are going to drill on the north and west 660 feet of Section 16, put it on 40-acre spacing?

A Well, I have knowledge of why it's being drilled there. As testified previously, I think Mr. Caughey indicated he made that recommendation.

If you want my opinion as to whether the well should be drilled or not or is justified, I can give you that.

Q Well, wouldn't the Berry Hobbs Well drain this 40?

A The evidence from this drainage calculation indicates the well is draining over 160 acres. It does not tell me which 160 acres it's draining. That would depend on the geologic control and how that porosity was mapped.

Q You're saying that it's drilling 160 acres but --

A It's draining 160 acres.

Q -- not necessarily the 160 acres back towards the North Shoe Bar Wolfcamp Pool.

A No. This calculation only says it's draining at least 160 acres.

Q All right. Now, are there any wells out there in the North Shoe Bar Wolfcamp Pool that produce this amount of oil, 695,000 barrels?

A This is the oil in place and not an ultimate recovery that will be received from this well. I would have to apply a recovery factor to come up with the reserve number,

Q No, I don't need a recovery factor.

A If we recovered 100 percent that would be the reserves, but, obviously, wells of this nature would only recover, in my opinion, 10 to 15 percent of that oil in place number.

Q All right, 10 to 15 percent.

A Would -- would be a range of recovery.

Q Well, so --

A And that would apply for, basically, for any pressure depletion type reservoir. It's not limited to just the North Shoe Bar Wolfcamp Field. This is an industry --

Q Well, you're not telling the Examiner that it would produce 695,000 barrel of oil.

A No, I only use that oil in place to calculate what the pressure drop would -- would be from the production that was produced out of the Berry Hobbs. You have to make -- to get a pressure drop, you have to know what size a tank it's drained, and that was only used to -- to demonstrate that this well is effectively draining at least 160 acres.

MR. JOHNSON: No. further questions.

MR. CATANACH: Any further questions?

MR. STOVALL: Yeah.

CROSS EXAMINATION

BY MR. STOVALL:

Q So, Mr. Harville, you're saying that this well is effectively draining 160 acres. Is it logical, then, to conclude that an additional well on the proration unit would not result in the recovery of additional oil?

A That is correct. It would -- you would have waste if you're referring to developing the 160 on 40 acres or 80 acres. It would be an unnecessary well, in my opinion.

Q And you heard the -- my examination of Mr. Caughey regarding the bearing of expenses and sharing of revenue from a well based upon leases, is that correct?

A Yes.

Q Do you know if Inexco or LL&E owns all of the acreage in that a160-acre proration unit?

A It's my understanding that until payout, I think we do. I would refer that to Mr. Caughey. I think he knows the answer to that better than I do, but to my knowledge --

Q Well, whoever the operator is then on that 160 -- the additional acreage other than -- than Mr. Hobbs acreage, if that acreage were not included within the spacing unit established for the well, is it your opinion,

then, that they would have to drill an additional well in that 160 acres in order to protect themselves from drainage?

A In my opinion they would have to drill to protect themselves but it would be uneconomic that drilling on smaller than 160 spacing from the work I've done is uneconomic. These wells cost about $800,000 to drill and complete and we're talking about recoveries of on the order of 100,000 barrels of oil on 160-acre spacing. So if you went to forties, you'd get one-fourth of that and you'd be down to about 40,000 barrels recovered at the expense of, you know, drilling an $800,000 well, and you wouldn't get your money back.

So -- so they not only -- they would not drill the well and they would be drained. They would have no way of sharing, then, in the oil and gas under their property because it would be uneconomic for them to drill their well.

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

MR. CATANACH: Mr. Johnson.

RECROSS EXAMINATION

BY MR. JOHNSON:

Q Now, you state that there was no way

that they could drill economically on 40 acres.

A In my opinion.

Q Upon what do you base that opinion?

A Based on this drainage calculation that I've done using the 14 feet in the Berry Hobbs Well and using --

MR. BRUCE: 14 feet of pay?

A 14 feet of pay, and assuming that that pay is uniform over the 160 acres, which it could thin, you know, it could --

Q And it could thicken.

A -- thicken, so I've used a conservative assumption that's to say the 160 acres would have the full 14 feet of pay and that there would be 695,000 barrels of oil in place. Using a 15 percent recovery factor would get you over, slightly over 100,000 barrels of reserves on 160 acres. So if you went to 40 acres you would only get half of that, so --

Q If you went to 40 acres you'd only get half of it?

A Oh, yeah, I stand corrected. You'd get one-fourth of it.

Q All right, but now that depends upon the allowable for the 40 acres, doesn't it?

A Well, if the field was developed on 40,

the well normally only drains, or should drain, what's in its unit. If nobody drilled around that well, it could drain more than 40, so, yes, the well might pay out if nobody drilled a well around it.

Q Well, if you're going to get that kind of oil, though, it would be economic to go ahead and drill on it, wouldn't it?

A Not on 40-acre spacing.

Q Now on 40 acre spacing?

A No, sir. You wouldn't --

Q Would you drill on 40-acre spacing just to the Upper Wolfcamp?

A That's what I'm talking about here, is the --

Q I mean the upper pay zone?

A On 160-acre spacing we would and the -- Inexco has plans to drill such a well.

MR. JOHNSON: No further questions.

RECROSS EXAMINATION

BY MR. STOGNER:

Q Let me -- let me clarify what I think you were trying to say to Mr. Johnson, if I may.

You were saying that if-- assuming your

drainage calculations, that this well is draining 160 acres at least, but if that well -- that's a yes? A nod of your head is a yes?

A Yes.

Q Okay, the -- if the spacing for this area were established at, say, statewide 40-acre spacing rather than 160, then that doesn't change the physical characteristics of the formation, does it?

A If you're asking me what I think would happen if they -- if you went ahead and spaced it on 40, I don't think any other wells would be drilled and I think that --

Q No, that's not what I'm asking. Let me interrupt you here for just a moment.

What's in the rock is in the rock.

A Right.

Q All right, the issue here really is what your opinion of the character of that rock is and the drainage radius of a well producing from that formation.

A Right.

Q What is proposed here is an extension of the Shoe Bar -- North Shoe Bar Wolfcamp Pool, which has established spacing units of 160 acres.

A Right.

Q And you concur that 160 acres is the

proper spacing unit because a well drilled in that pool can effectively drain 160 acres.

A Yes.

Q Now, if that extension of that pool were denied, presumably this area would be on 40-acre statewide spacing.

A Yes.

Q But a well would still actually, in your opinion, be physically capable of draining 160 acres.

A Yes.

Q Now, is it in -- am I correct in understanding that what you are saying, that if three additional wells were drilled on that 160 acres, I'm not asking you whether that's economical, if in fact they were drilled, that they would share in the same ultimate recovery of approximately 100,000 barrels of oil.

A That is correct. Instead of one well recovering 100,000, you would have four wells that would share in 100,000, assuming the field is fully developed, recognizing that the first well in any field is -- it may be draining an area larger than the spacing size prior to the offset leases being developed.

Q I understand, yes, I understand that.

So when you indicated that you thought this well, even if it were on 40-acre spacing, that this

well could ultimately make this greater than 25,000 barrel recovery, it was based upon a presumption that nobody else would go out and drill a similar well for 25,000 barrels, is that correct, and therefor this well would be able to continue to drain its radial drainage area --

A It would drain outside the 160 acres and it would be confiscating --

Q Outside the 40.

A -- the -- well, I -- we're talking about just the Berry Hobbs No. 1 Well, if there was no other wells drilled, in my opinion it would drain the 160 acres and then outside it, if there is no further development.

Q Okay.

MR. STOVALL: No further questions.

MR. CATANACH: Anything further from this witness?

If not, he may be excused.

MR. JOHNSON: I have no more questions.

MR. CATANACH: The Division will take administrative notice of R-4657, the order creating the pool rules, and all nomenclature orders extending the pool, and Division Rule 104.

And would counsel like to make

closing statements at this time?

Mr. Johnson, would you like to make a statement?

MR. JOHNSON: Yes. The Protestants, Berry Lee Hobbs and the other Hobbs heirs, and they are Hobbs heirs, they're his nieces, nephews, and they are children of his deceased brother, take the position that the Division or the Commission has a legislative mandate, The rule, not rule, excuse me, statute Section 70-2-17 of the New Mexico Statutes Annotated, 1978 compilation, grants the (unclear) the right to establish a proration unit for each pool provided the area of the unit can be economically drained and developed by one well. Now you've got to make that determination. It goes ahead and stays that the Division may consider economic loss caused by the drilling of unnecessary wells.

Now you've got before you conflicts in testimony.

You've got Mr. Sharp, who is certainly a qualified geologist. He takes the side that it won't drain (inaudible) in his opinion.

You've got the witnesses on behalf of Inexco that testified differently.

So this is the determination that you've got to make. Now, in this determination you're

certainly going to affect the rights of Berry Lee Hobbs and the other owners in the northeast quarter of the northeast quarter because you're going to force them, force they to share their royalty with the royalty owners in the other 120 acres comprising the unit as proposed by Inexco.

Now, Inexco did not see fit to come down here and drill on that 100 -- the remaining 600 acres that they've got a lease on. They're going east.

Now, according to the testimony of Mr. Harville that one 40 acres is going to drain 160. I don't know why they didn't come down here and drill on that 640. They had plenty of acreage.

Certainly if you drilled three more wells on that 160 it's going to reach over, if it will drain 160, it's going to drain at least 80 acres of it out somewhere else.

Now, the allowable on this well, according to the depth and bracket, the depth and bracket allowable I believe is 340 barrels a day. I don't think that they would be needing a determination as to what the allowable of the North Shoe Bar Wolfcamp Field is other than the allowable status from Rule 505.

Now, those wells out there have not produced that kind of oil. Is there any, any expectation that the Berry Hobbs Well is going to be better

than those other wells in the North Shoe Bar Field? I don't think so. I don't think so. And, of course, the other wells in the North Shoe Bar Field, they're producing from the lower and the upper pay zone. All we've got here in this well is the upper pay zone. According to Mr. Sharp and his study of the records and the logs and what not, only a small portion of the oil is coming from the upper pay zone.

Some of the records out there do show what's coming from the upper pay zone but those wells are dropping off awful fast. What's happening? I don't know. I'm not a geologist. I'm not an engineer. I have to depend upon them for my information, just as my opposing counsel has to, but I do think that this is certainly going to be an economic loss on the part of the Protestants.

Now, we get into correlative rights. Mr. (not understood) makes a point that the Protestants are not paying anything towards the drilling of this well. The Protestants have shown that in this lease they're getting 20 percent royalty but the lessee is getting 80 percent. The lessee is assuming the risk. If there is a risk involved, it's the lessee assuming it, but the lessee, if they hit, they're compensated.

And this has been the history

of the oil game.

Now, according to Mr. Sharp, this is not an economic well. He says that no prudent operator would drill it just for the Upper Wolfcamp and he bases that upon the information you can only judge the future by the past and that's what he's doing (not audible) in the Shoe Bar.

And we respectfully request that the motion to extend the pool be denied because we've got two parties with correlative rights here; we've got the lessee and we've got the owners of the mineral interest, and if you do extend the pool, then they will lose three-quarters of their rights. It's not going to affect Inexco because they own the leases or have an interest in the leases comprising the other 120 acres in the 160.

MR. CATANACH: Thank you, Mr. Johnson.

Mr. Bruce?

MR. BRUCE: Mr. Examiner, I would first point out that the Inexco Hobbs No. 1 Well is currently within one mile of the existing North Shoe Bar Wolfcamp Pool rule -- pool boundaries, excuse me, and thus, I believe, should be spaced on 160 acres pursuant to the OCD statewide Rule 104-A.

Also, I believe that testimony

shows that geologically this well is within the same pool as the other Wolfcamp wells in this area.

Engineering data also shows that 160-acre spacing is necessary to drain this pool and to prevent physical and economic waste.

And, finally, I would point out that the lease from Mr. Hobbs to Inexco was executed in 1987. Leases are executed subject to existing OCD orders and including spacing rules, and I believe as a result, Mr. Hobbs and his acreage was subject to the 160-acre spacing in this pool when he executed the lease.

And for those reasons I ask that the OCD position on extending the North Shoe Bar Pool to include this well be approved.

MR. CATANACH: Thank you, Mr. Bruce.

Anything for the Division?

MR. STOVALL: Yes, Mr. Examiner, I can't pass up this opportunity to --

I believe the other attorneys have correctly framed the main issue which you must decide, and that is whether or not this acreage which is proposed to be included in the North Shoe Bar Wolfcamp Pool is in fact part of a common source of supply, and that's a decision that you've got to make based upon the testimony

which you have heard today.

Mr. Hobbs' interest is certainly understandable and I don't mean to down play it, but let's look at a "what if" scenario if Mr. Hobbs is correct in asserting that this well is incapable of draining 40 acres -- draining more than 40 acres, then, in fact, yes, he is being asked to share his royalty with people who are not entitled to it.

If, on the other hand, the Inexco testimony and the Division testimony is correct, in that this well in this spacing unit that we're particularly talking about, the quarter section in which the well is located, is in fact part of this North Shoe Bar Wolfcamp Pool, and if, in particular, the Inexco testimony regarding drainage is correct, then Mr. Hobbs will in fact receive a windfall. He would receive the royalty on not only his oil but in all probability on the oil underlying the other 120 acres, at least, surrounding his well in that -- or his acreage in that quarter section.

Our job, the OCD's job is to prevent waste and protect correlative rights. If, in fact, Inexco's testimony is correct, that additional wells are unnecessary and will not result in the recovery of additional oil and/or gas from the (unclear), then the drilling of additional wells which might be necessitated by the

denial of the extension of the pool, would result in economic waste and possibly waste of reservoir energy.

If, on the other hand, Mr. Hobbs is correct and the well is only capable of draining 40 acres, it is quite possible that the operator could return to the Division at a later time and request some modification of the pool rules or variation from the pool rules, to allow infill drilling, in which case that infill drilling would continue to be done on the 160-acre spacing unit and Mr. Hobbs would in fact share in that production as well.

So your only decision that you've really got to make is whether or not the acreage proposed to be included in the North Shoe Bar Pool is in fact correlative and in fact the well drilled therein is capable of draining 160 acres.

I have nothing further.

MR. CATANACH; Thank you, Bob.

Anything further in Case 9547?

If not, it 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 (Commission) 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. 9507, heard by me on November 9, 1988.

David R. Catanach, Examiner
Oil Conservation Division