STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

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

APPLICATION OF ORYX ENERGY COMPANY

REOPENED

CASE NO. 9928

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

July 25, 1991

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on July 25, 1991, at 11:35 a.m. at the Oil Conservation Division Conference Room, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Freda Donica, RPR, Certified Court Reporter No. 417, for the State of New Mexico.

FOR: OIL CONSERVATION DIVISION

BY: FREDA DONICA, RPR
Certified Court Reporter
CCR No. 417

I N D E X

July 25, 1991
Examiner Hearing
CASE NO. 9928

* * *

E X H I B I T S

A P P E A R A N C E S

FOR THE DIVISION: ROBERT G. STOVALL, ESQ.
General Counsel
Oil Conservation Commission
State Land Office Building
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

FOR THE APPLICANT: KELLAHIN, KELLAHIN & AUBREY
117 N. Guadalupe
Santa Fe, New Mexico
BY: THOMAS KELLAHIN, ESQ.

HEARING EXAMINER: Call the next case, 9928 reopened.

MR. STOVALL: Application Oryx Energy Company for two unorthodox gas well locations, Lea County, New Mexico.

HEARING EXAMINER: Call for appearances.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin, Kellahin & Aubrey, appearing on behalf of Oryx Energy Company, and I have two witnesses.

HEARING EXAMINER: Are there any other appearances in this matter?

Will the witnesses please stand and be sworn?

(Witness sworn.)

MR. KELLAHIN: Mr. Examiner, I'd like to show you a copy of the existing order -- it's R-9185 -- that was entered in the original case by Mr. Catanach. Both my witnesses today, Miss Bonnie Wilson and Mr. Cliff Murray, were the witnesses at the prior hearing back in May of 1990.

To aid you in understanding why we're back here today, I've taken out of that case file Exhibit Number 4. And it's the Atoka isopach that was utilized in that hearing. The Atoka was the primary objective for the number three well that is now the subject of today's case, and it's found in the southwest quarter of Section 26.

Examiner Catanach approved several things for us in the prior case, one of which was the reorientation of the

spacing units so that we had an east half unit and a west half unit.

We are seeking today to only discuss the Ojo Chiso number three well in the west half and located specifically in the southwest quarter. What we are asking your approval of is to approve this well not only as an Atoka unorthodox location, which Examiner Catanach did, but to also give us the approval to drill that well to test through the base of the Morrow. There has been a change of circumstances and facts between the two hearings that have now caused Oryx to come back before you to seek approval now for the Morrow formation. At the prior hearing in May of '90, it was not our plan or our anticipated operations to test the Morrow in this well, and that now has changed.

Miss Wilson was the engineer that testified at the prior hearing, and I'll ask her to explain to us then what the situation was in May of '90, what has transpired since then to cause Oryx now to seek a modification of the order. With that explanation then, I call Miss Bonnie Wilson.

BONNIE WILSON

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Miss Wilson, for the record, would you please state your name and occupation?

A. Bonnie Wilson. I'm a reservoir engineer for Oryx Energy.

Q. Miss Wilson, on prior occasions have you testified as a reservoir engineer before the division?

A. Yes, I have.

Q. And did you testify on behalf of your company in the examiner hearing of case 9928 back on May 2nd of 1990?

A. Yes, I did.

MR. KELLAHIN: We tender Miss Wilson as an expert reservoir engineer.

HEARING EXAMINER: Miss Wilson is so qualified as a reservoir engineer.

Q. (By Mr. Kellahin) Miss Wilson, I have shown Examiner Stogner Exhibit 4 out of the prior case, and perhaps you and I might utilize it to explain then what Oryx is seeking to change with this application.

Using Exhibit Number 4, help us remember what the status is of the various wells within Section 26. And let's start, first of all, with the Phillips Merchant B Number 1 well, which is in the southeast quarter and is the well on the eastern edge of the isopach.

A. It's the dry hole.

Q. Let's start with that one.

A. That well was drill stem tested in the Morrow. They drill stem tested a very large interval. It produced a lot of water and some amount of gas. And the well was consequently plugged and abandoned. The geologic interpretation off of some of those sands at the time -- or our recent geologic interpretation was that we might could isolate the gas productive sands from the water productive sands in our completion, and that's why we consequently proposed the Ojo Chiso Number 1 and the Ojo Chiso Number 2.

Q. Give us the information on the Ojo Chiso Number 1, which is in the northern portion of the section, and subsequently the information derived from drilling the number two well.

A. The Ojo Chiso Number 1 has about three or four intervals in the Morrow that show up on the logs, and we have tested all of those intervals. They've tested either tight or wet, and that well is currently TA.

Q. When we go to the number two well, what's the status of that?

A. The Ojo Chiso Number 2 was drilled as a Morrow test. We did not expect to encounter Atoka, and yet we did encounter Atoka. We were able to set casing through the Atoka and through the Morrow. We tested the Morrow. It was wet. We came uphole and made a good completion in the Atoka. That well's producing 1.4 million a day right out of

the Atoka.

Q. Has the number three well, which was the subject of the prior hearing in this case, was that well ever drilled?

A. No, it has not been drilled.

Q. At the time of the hearing in May of 1990 when you were testifying about the plans for the Atoka well, describe for us at that point in time what the status was of these other wells within the section.

A. There was no Morrow production from the section.

Q. You were at that time, were you not, testing the Ojo Chiso Number 1 well to see if you could establish Morrow gas production out of that well?

A. Yes. There was one more completion in the number one that we were trying to attempt that has since failed.

Q. The orientation of the spacing unit for the Ojo Chiso Number 1 in the Morrow would have been what?

A. It's a laydown.

Q. So the Ojo Chiso Number 1 well, which you were testing at the time of the last hearing, was for the north half?

A. Correct.

Q. The Atoka in the section was being produced only by the Ojo Chiso Number 2 well?

A. Yes.

Q. And the spacing unit to which that well was dedicated was what?

A. It's a standup, the east half of the section.

Q. At the time of the last hearing in May, why had Oryx elected not to pursue an attempt in the number three well in the Morrow formation?

A. Reservoir pressures in the Atoka were still very high, seven to 8,000 pounds, and in the Sun Fed Number 1, the well in Section 27, we had attempted to drill that well through the Atoka to the Morrow and were unable to continue drilling through the Atoka without setting a second intermediate stream, which we weren't prepared to do. We stopped drilling that well at the Atoka and completed it there.

Q. When we're looking at the well in 27, what was the range of Atoka pressure that was becoming the impediment?

A. Seven to 8,000 pounds.

Q. Within that pressure range in the Atoka then, why did you not elect to drill through it and test the Morrow in that well?

A. We were losing circulation. We could not continue drilling. We had to stop and case the hole, so we could not continue to the Morrow in that well. And when we proposed the Ojo Chiso Number 3, we were assuming that would

be the same case, that we would not be able to drill through the Atoka without setting another string of intermediate casing. By doing that, we would increase the cost of the well to the point where it would no longer be economic to drill it.

Q. Based upon that pressure range and the facts that were known to you in May of 1990 then, it was Oryx's recommendation to their other working interest owners not to take on the additional expense and risk of trying to drill the Ojo Chiso 3 well through the Atoka into the Morrow?

A. Yes. Even though the partners, especially BTA, wanted to take the well to the Morrow, we convinced them not to.

Q. What has changed since the last hearing to now cause Oryx to seek a modification in the order that was previously entered?

A. Our pressure measurements on the Sun Federal Number 1 and on the Ojo Chiso Number 3 indicate that the Atoka reservoir is now between three and 4,000 pounds pressure, and discussing with my drilling department and the drilling engineers, they tell me that we should be able to economically drill a well through the Atoka to the Morrow and therefore be able to attempt a completion in either of the two zones.

Q. In May of last year you were talking about a

pressure range in the Sun Federal Com well. You just mentioned that there was pressures in the Atoka in the Ojo Chiso Number 2 well. What were the range of those pressures in May of 1990?

A. We hadn't completed the well in the Morrow at that point. In the Atoka it was the very high pressure; it was around 7,000 pounds.

Q. So you had examples of pressure concerns both east of you and west of the Ojo Chiso 3 location?

A. Yes.

Q. You've indicated that BTA is an interest owner in Section 26 to which the Ojo Chiso 3 well is to be drilled.

A. Yes.

Q. Are they also an offset operator towards whom you're encroaching in the Morrow formation if the Examiner approves the deepening of this well to the Morrow?

A. Yes, BTA is the operator to the south.

Q. When we look at the wells in the south in Section 35, are there any of those wells in either 34 or 35 that are currently producing from the Morrow?

A. Yes.

Q. Which one, if any?

A. The trying to -- the Maddox 8016 JVP Number 1. That well is in unit -- it's either F or G of Section 35.

Q. If you are successful with a Morrow test in the

number three well, do you have an indication of what Morrow pool that acreage would be dedicated to?

A. It's my understanding that it would be the Ojo Chiso Morrow gas pool.

Q. When we look at the Morrow well in 35, do you know to what pool that well is dedicated?

A. That well is in the Antelope Bridge Morrow pool.

Q. Do you know if there's a difference in spacing in the Morrow for either of those pools?

A. The spacing is both 320.

Q. Have you attempted to analyze or quantify the economics with regards to altering the plan of development for the number three well by which you're now integrating into the Morrow both the costs and the reserve potential for that zone?

A. The cost to drill to the Atoka and stop would be approximately 1.2 million dollars. The cost to drill to the Morrow and stop would be approximately 1.5 million dollars. So we've got $300,000.00 incremental costs to drill that depth deeper. My reserve estimates for the Morrow zone that may potentially be productive does justify that $300,000.00 cost differential. However, the reserves are not high enough to justify the drilling of a new well. A new well would cost 1.5 million, and reserves wouldn't justify that.

Q. If the division should require that the Morrow

attempt for the west half of 26 be at the closest standard location, that new well then for a Morrow-only attempt is approximately 1.5 million?

A. Correct.

Q. Can you give us a general range of your reserve expectations for this Morrow zone potential?

A. Approximately one-and-a-half BCF.

Q. Your conclusion as a reservoir engineer is that that incremental cost is justified if you can tag it onto the end of the Ojo Chiso Number 3 well and give yourself a chance to recover those Morrow gas reserves?

A. Yes.

Q. And you couldn't do it as a stand-alone prospect for drilling a Morrow well by itself?

A. No, we wouldn't drill it by itself.

Q. Have there been any other attempts by your company, other than the ones that you've described in Section 26, to attempt to produce out of the Morrow in this immediate vicinity?

A. The Antelope Fed Com Number 1 in Section 27 is a dry hole in the Morrow.

Q. And then we have the Ojo Chiso Number 2 and the Number 1. Both of those are dry holes?

A. Yes.

Q. And then the Phillips attempt was also a dry

hole?

A. Yes.

Q. When we go north, how far north do we have to go before we find a Morrow producer? Do you know?

A. The well in the south half of Section 23, BTA Chiso 8711 JD Number 1 is a Morrow producer.

Q. Do you have the approval of your working interest owners, including BTA, to petition the division for an amendment in their approvals so that we can attempt the Morrow test at this unorthodox location?

A. BTA is -- wants very much to continue drilling the well and obtain a Morrow well. The other two partners are Joe Reynolds and Pacific, and they're in the process of working out a farmout agreement with BTA. If that takes place, then BTA and Oryx will be the only two working interest owners in the well.

Q. Have you received any objection from any of the other offsetting operators towards whom this Morrow well is encroaching?

A. No, there have been no objections.

Q. There's an indication on the display in 34 that there's someone called Maxus Exploration Company?

A. Yes.

Q. Have you had any contacts from them about your application?

A. No.

Q. In addition, we sent notification to Amoco Production Company in Houston. There's nothing on your Exhibit Number 4 that shows Amoco. Do you know where they may have an interest?

A. Amoco has a working interest in Section 35, so they're not an operator.

Q. Have you received any objection from them?

A. No.

MR. KELLAHIN: That concludes my examination of Miss Wilson, Mr. Examiner.

HEARING EXAMINER: Ms. Wilson, let me make sure I've got everything straight. What will be the proposed proration units on the well number two and three?

THE WITNESS: On the well number two, in the Atoka, it will be a standup Atoka, and on the number three would be a standup Atoka. In the Morrow, the number three would be a laydown Morrow.

HEARING EXAMINER: And the number two -- or you're not proposing a number two recompletion?

THE WITNESS: I'm not proposing a number two recompletion.

HEARING EXAMINER: And the number one well up in the north half, what's its present status again?

THE WITNESS: We're looking at uphole potential. We've

tested the Morrow. The Atoka doesn't appear to be thick enough to warrant a test on the Atoka. It's got about two or three feet of pay. And we're looking -- considering a Strawn recompletion, or there's some other zones that we have our log analyst looking at.

HEARING EXAMINER: So we're talking about a south half dedication for the Morrow for the number three.

THE WITNESS: Correct.

HEARING EXAMINER: Okay. And the initial pressure on that number three in the Atoka was 7,000 PSI?

THE WITNESS: The number two and the number one, Ojo Chiso Number 2. The number three has not been drilled yet. Current pressure for the number two and the Ojo Chiso Number 2 and the Santa Fe Number 1 is around 3,500.

HEARING EXAMINER: What do you think you'll see as the pressure in the Atoka in the number three?

THE WITNESS: I'm expecting a little higher pressure because I don't expect that location to be totally drained. I don't expect the seven to 8,000 pressure. That's too high, maybe a 5,000 pound pressure.

HEARING EXAMINER: In your testimony on May 2nd of 1990, on page 20, you spoke of -- in fact, the question was asked, "Why not drill through the Atoka into the Morrow?" And you answered that, "It will require more expensive casing completion and that Oryx would prefer to do -- drill

to just the Atoka and set one string of intermediate casing rather than two." I don't understand your answer in that. Maybe you want to show her that, Mr. Kellahin.

THE WITNESS: At that time I thought the pressure in the Atoka was seven or 8,000 pounds. And we would have had to -- we set one set of intermediate casing at 5,000 feet to cover the anhydrites, and we set another set of intermediate casing to cover the Strawn. And then we hang a liner off of that to cover the lower interval, the Atoka or the Morrow.

When they both occur, especially when the Atoka occurs at pressures of seven to 8,000 pounds, that would require that we set an intermediate casing string to 5,000 pounds to cover the evaporites, and then another one to cover the Strawn, and then a third one to cover the Atoka. And then we'd set our liner to go to the Morrow. And because of enlarging the diameter size on all those casings and then running that extra string of intermediate casing, the cost of the well goes up to almost two million dollars.

At that point, that was just too expensive. We would have preferred to complete in the Atoka, deplete the Atoka, and then deepen. At that point we would be able to deepen and hang another liner to the Morrow. Now, at this point we can probably set a full string of casing that would cover the Atoka and the Morrow. The liner would cover the Atoka and the Morrow at once. If we found out that the

pressure was too high and we couldn't do that, we would stop at the Atoka and complete there, and we would not drill to the Morrow.

HEARING EXAMINER: If you are able to drill down to the Morrow, how will this well be completed? Will the Atoka be produced simultaneous with the Morrow to a dual string of tubing?

THE WITNESS: At this point, we don't have plans to dual a completion. Most of our completions have been single completions, and we prefer to do one zone separate from the other.

HEARING EXAMINER: So you'll leave the Atoka untested at this point and produce from the Morrow, then come back up at a later date?

THE WITNESS: Yes.

HEARING EXAMINER: Unless you encounter high pressure.

THE WITNESS: Yes.

HEARING EXAMINER: I have no other questions of Miss Wilson.

CLIFF MURRAY

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Would you please state your name and occupation?

A. Yes, sir. My name is Cliff Murray, and I'm a petroleum geologist for Oryx Energy.

Q. Mr. Murray, on May 2nd, 1990, did you testify as a petroleum geologist on behalf of your company in the prior hearing of this case?

A. Yes, sir, I did.

Q. Subsequently, have you made a geologic interpretation, investigation of the Morrow potential concerning this Ojo Chiso Number 3 well?

A. Yes, sir, I have.

MR. KELLAHIN: We tender Mr. Murray as an expert petroleum geologist.

HEARING EXAMINER: Mr. Murray is so qualified.

Q. (By Mr. Kellahin) In preparing your geologic interpretation for the Ojo Chiso well back in May of 1990, did that study include the Morrow at that time?

A. Yes, sir, we did look at the Morrow.

Q. Did you anticipate any Morrow potential at that location at that time?

A. Yes, sir.

Q. Have you subsequently gone back at BTA's request to examine again the Morrow potential at the Ojo Chiso 3 location?

A. Yes, sir.

Q. And is that the purpose of your presentation

today?

A. Yes, it is.

Q. Did you provide Miss Wilson with your isopach on the Morrow stringer involved upon which then she could make potential reserve estimates of recovery from that zone?

A. Yes, I have.

Q. Let me show you what is marked as Exhibit Number 1 for this hearing. I'm sorry I've neglected to mark that as number one. Mr. Murray, did you prepare this display?

A. Yes, I did.

Q. What were you attempting to find out for yourself by doing this?

A. On a regional setting, the Morrow production and the cumulative production from the Morrow sands or the Morrow interval in this township. This map consists of all wells that were drilled to a TD greater than 12,500 feet, which should penetrate the Morrow. All the wells then are -- that are productive from the Morrow are highlighted, indicated by a red dot. And then associated with that dot is a BCF figure of cumulative production from the Morrow interval. Also indicated is the proposed location by a red circle and a red arrow.

Q. In making your investigation of the Morrow geology, did you also look at the Morrow structure?

A. Yes, I did.

Q. Let me mark that as Exhibit Number 2. Mr. Murray, does this represent your work?

A. Yes, sir, it does.

Q. And what is your interpretation of the structure of the Morrow?

A. Just as the Atoka structure does, it dips to the south southeast at just a regional depth.

Q. In attempting to find locations for a Morrow penetration in 26, is structure an important element of the decision that you make in locating wells at that time?

A. Yes, sir, it would be. But associated with this location with the primary horizon or target zone being the Atoka, structure wasn't taken into account as being the reason for this location in the Morrow. The fact that the Atoka well is our target is the reason for this location. The structure was here as a reference to indicate what the structure on the top of the Morrow is.

Q. Did you prepare an isopach of this Morrow section?

A. Yes, sir, I did.

Q. Let me show you what's marked as Exhibit Number 3, Mr. Murray. Is that the isopach that you prepared?

A. Yes, it is.

Q. Help us understand -- and perhaps let's go ahead and put up one of the cross-sections or unfold one of the

cross-sections so the Examiner can understand what you identified to be the Morrow 'A' Middle. So we can understand 4, let's go back to 3 and find the line of cross-section on the isopach. You've generally run it north to south?

A. Yes, sir. These were through the -- which are Morrow -- this is through wells which are Morrow producers, and also through the Morrow penetrations in Section 26 of the Ojo Chiso Number 1 and Number 2 that is operated by Oryx Energy.

What I wanted to indicate with this was, one, the extent of the Morrow interval in here, that it is represented by a sand shell sequence over approximately a 600-foot interval. And it is a very complex sand depositional model of sands coming and going. The 'A' Middle sand, which Exhibit Number 3 represents in that isopach of, is indicated by a label in the middle of the cross-section.

With production -- the only well here that can be isolated as being productive from the 'A' Middle sand of the Morrow is the second well from the left on the cross-section, BTA's Chiso D Number 1, which is the second well from the top on the cross-section of the map.

Other wells here illustrative of that is the Maddox Federal B Number 1 on the far right of the

cross-section, or the most southern well, perforated that interval. I can only assume that that interval was perforated off of mud log shoals because there is no porosity in that interval that was perforated.

So with using the cross-section and other wells in the area, I was able to construct a net pay isopach which may be overly optimistic in the width. Again, it shows the speculative nature of these sands that really have no clear indicator of the boundaries of this sand. And I've just mapped it as best I could through here using zero points as knowing there's not a sand there and pulling the zero line on the isopach in from that.

Q. When we look at the total gross Morrow interval, why have you selected to map only this Morrow 'A' Middle member?

A. Looking through the wells in this area, this was the best sand that I thought would be prospective for this location, meaning a lot of these sands are so erratic that I didn't feel any sort of meaningful net pay could be constructed over this area. So I felt this was the most prospective sand in this interval, and then did map it for presentation.

Q. Have you looked at the efforts, the log data and the completion attempts in Section 26 in the other three wells that have been tested for Morrow production?

A. Yes, sir, I have.

Q. Were you satisfied that all the Morrow potential in those three wells was attempted or evaluated?

A. Yes, sir.

Q. And neither you nor Phillips were able to establish Morrow production in this section?

A. That is correct.

Q. From a geologic perspective, does the geologic potential for the Morrow at the Ojo Chiso 3 location represent a potential that ought to be tested?

A. Within economic boundaries, yes, sir.

Q. As a geologist, would you be comfortable in trying to propose a well location for a stand-alone Morrow attempt in the west half of the section?

A. No, sir.

Q. It's simply too risky?

A. That's correct.

MR. KELLAHIN: That concludes my examination of Mr. Murray. We move the introduction of his Exhibits 1 through 4.

HEARING EXAMINER: Exhibits 1 through 4 will be admitted into evidence at this time. Are there any questions of this witness?

MR. STOVALL: Not me.

HEARING EXAMINER: You may be excused.

Mr. Kellahin, do you have anything further?

MR. KELLAHIN: Nothing further.

HEARING EXAMINER: Does anybody else have anything further in case number 9928 reopened? If not, this case will be taken under advisement once again.

Let's take a one-hour lunch break at this time.

(The foregoing hearing was adjourned at the approximate hour of 12:07 p.m.)

STATE OF NEW MEXICO)

:

COUNTY OF SANTA FE)

I, FREDA DONICA, RPR, a Certified Court Reporter, DO HEREBY CERTIFY that I stenographically reported these proceedings before the Oil Conservation Division; and that the foregoing is a true, complete and accurate transcript of the proceedings of said hearing as appears from my stenographic notes so taken and transcribed under my personal supervision.

I FURTHER CERTIFY that I am not related to nor employed by any of the parties hereto, and have no interest in the outcome hereof.

DATED at Santa Fe, New Mexico, this 16th day of September, 1991.

Freda Donica
Certified Court Reporter
CCR No. 417

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9928 (Reopened) heard by me on 25 July 1991.

Examiner
Oil Conservation Division

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CASE 9928

EXAMINER HEARING

IN THE MATTER OF:

Application of Oryx Energy Company for Two Unorthodox Gas Well Locations, Lea County, New Mexico

TRANSCRIPT OF PROCEEDINGS

BEFORE: DAVID R.CATANACH, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

May 2, 1990

ORIGINAL

A P P E A R A N C E S

FOR THE APPLICANT:

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I N D E X

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E X H I B I T S

APPLICANT'S EXHIBITS:

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WHEREUPON, the following proceedings were had at 10:00 a.m.:

EXAMINER CATANACH: At this time we'll call Case 9928, the Application of Oryx Energy Company for two unorthodox gas well locations, Lea County, New Mexico.

Are there appearances in this case?

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin, Kellahin and Aubrey. I'm appearing on behalf of the Applicant, and I have two witnesses to be sworn.

EXAMINER CATANACH: Any other appearances in this case?

Will the witnesses please stand to be sworn in?

(Thereupon, the witnesses were sworn.)

BONNIE WILSON,

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

EXAMINATION

BY MR. KELLAHIN:

Q. Miss Wilson, for the record would you please state your name and occupation?

A. Bonnie Wilson, and I work as a reservoir engineer for Oryx Energy.

Q. Miss Wilson, you have on prior occasions testified before the Division as a reservoir engineer?

A. Yes.

Q. Pursuant to your employment by your company, have you made a reservoir study of your company's request with regards to this section and the two wells involved in this section?

A. Yes, I have.

MR. KELLAHIN: Mr. Examiner, we tender Miss Wilson as an expert reservoir engineer.

EXAMINER CATANACH: She is so qualified.

Q. (By Mr. Kellahin) Let me direct your attention, Miss Wilson, to what we've marked as Exhibit Number 1. Are you familiar with this display?

A. Yes.

Q. Let me ask you some preliminary matters before we talk about the details of your work.

If we look at the center of the display and find Section 26, that's the subject of the Application?

A. Yes.

Q. All right. Describe for Mr. Catanach what your company is trying to accomplish.

A. Well, when I looked at this area and mapped drainage areas for the Atoka sand here, I saw that a good portion, the western half, especially the

southwestern half of Section 26, was going to be undrained, and we would like to place a well to drain that acreage.

Q. When we look at this display and compare it to the Notice of Hearing that's in the docket, the docket call describes a number of different gas pools, does it not?

A. Yes.

Q. Help us understand what pools we're dealing with when we look at the wells that you're interested in.

For example, the docket calls for approval of a location for production that may include the Ojo Chiso Strawn Gas Pool. Is that a pool that's involved, to the best of your knowledge, with production from either one of the two wells?

A. No, I don't believe there's any Strawn production on this entire map.

Q. There is -- There an Ojo Chiso Strawn gas pool, is there not?

A. Yes.

Q. But that production is removed from this immediate vicinity?

A. Yes.

Q. There's also described in the docket

Undesignated Antelope Ridge-Atoka Gas Pool?

A. Yes.

Q. Where is that in relation to this area?

A. Okay, the Antelope Ridge Atoka is what this -- all of the Atoka in this area is -- Wait, Antelope Ridge, Atoka, Ojo Chiso Morrow here and our Antelope Ridge Morrow here. All of the Atoka production is all in the Antelope Ridge. So Antelope Ridge Atoka is the only name for the Antelope -- for the Atoka Reservoir in this area.

Q. For purposes of the case today, then, we are specifically dealing with the Atoka gas?

A. Yes.

Q. And as best you understand it, that gas is designated as part of the Antelope Ridge Atoka Gas Pool?

A. Yes.

Q. When we look at the docket there is also a reference to the Antelope Ridge-Morrow Gas Pool?

A. Yes, that refers to Section 34 and 35. Any Morrow wells drilled in Section 34 and 35 would be Antelope Ridge Morrow.

Q. To the southwest?

A. Yes.

Q. Are we dealing with any Morrow attempts for

either one or both of the wells in 26?

A. Originally, we were drilling for the Morrow production in the Ojo Chiso Number 1 and the Ojo Chiso Number 2, and in that section the Morrow production or the Morrow reservoir was designated as Ojo Chiso Morrow.

We encountered no productive Morrow pay in the Ojo Chiso Number 2, and that well has recently been completed into the Atoka.

And in the Ojo Chiso Number 1, we have perforated the Morrow there. It tested wet and with some gas production, and we're trying to squeeze and eliminate some of our water production there and possibly complete that well in the Morrow. It does have three feet of Atoka pay behind pipe.

Q. The last pool shown in the docket sheet is undesignated Ojo Chiso Morrow Gas Pool -- I'm sorry, the Ojo Chiso Strawn Gas Pool?

A. And I don't believe we have any Strawn production there.

Q. Okay, and then finally the Ojo Chiso Morrow Gas Pool?

A. And that is in Section 26.

Q. Okay. When we look at 26, there are three wells shown on the display, plus the location for the

west-half well?

A. Yes.

Q. The display has got lots of information on it, and so we don't confuse the Examiner, let's go through each one of those and make sure we've explained those.

A. Okay.

Q. When we look at the display and look at the southeast corner of the section, there's a Phillips Merchant B Number 1 Well?

A. Yes.

Q. Tell me about that well.

A. When that well was drilled it was production tested. It tested from a large Morrow interval, and it tested water and gas and was abandoned. So it never produced from the Morrow or from the Atoka.

Q. When your company was determining how next to develop Section 26, recognizing the information, derived from the Phillips Merchant Well, what was the plan?

A. The plan was to drill a Morrow well in the north half since there was Morrow production to the north, and a Morrow well in the south half since there was Morrow production to the south.

Q. When we look at the Ojo Chiso Number 2,

that's the well around which there's scribed a circle in the southeast quarter of the section?

A. Yes.

Q. That was originally an attempt in the Morrow?

A. Yes.

Q. That was the --

A. That was the primary target.

Q. -- the objective?

A. Yes.

Q. The spacing unit for that well was the south half of the section?

A. Yes.

Q. All right. What was done with the north half of the section?

A. We had planned to drill the Ojo Chiso Number 1 as a Morrow well.

Q. And that's shown on this display?

A. Yes.

Q. Were those wells drilled consecutively or concurrently?

A. Concurrently.

Q. What was the result?

A. The Ojo Chiso Number 2 tested the Morrow, and the Morrow was wet. We came uphole and completed into the Atoka, and the well's making about a million a day

from the Atoka.

And then in the Ojo Chiso Number 1, we tested the Morrow there. It produced water and gas, and we're still working with the perforations there, trying to make a Morrow completion.

Q. Based upon that new information, then, derived from those two additional wells, what then did you decide to do for the full development of this deep gas production out of Section 26?

A. Well, we didn't realize that we had the Atoka potential here until we had drilled these two wells and began to see the Atoka behind the pipe, and so at that point that's when I made my study of the Atoka in this area and studied the drainage areas from the different wells, and that's when we found that the southwest quarter with good pay was being undrained in the Atoka.

Q. Having reached that conclusion, what is your recommendations on a solution for the full development of your section?

A. Well, we would like to, in the Atoka, in the Antelope Ridge Atoka zone, nominally to change the units from laydowns to standups so that we can drill a second Atoka well there in the southwest quarter.

Q. And that second Atoka well would be the Ojo Chiso Number 3, and it's the one shown as Number 3, and

it's at a point where the two lines of cross-section intersect in the southwest quarter?

A. Yes.

Q. In changing the orientation of the spacing unit, do you have agreement of all the interest owners to make that change?

A. Yes.

MR. KELLAHIN: Mr. Examiner, for the record, your file may reflect that the Division did enter a compulsory pooling order that was made effective December 1st of 1989. It was in case 9783. It's Order Number R-9064. It was for the compulsory pooling of the south half of this section.

Subsequently, your records should further reflect that Oryx has advised the Division that it obtained the involuntary agreement of all the working-interest owners in that spacing unit, and there was no necessity then for the pooling order.

But if you should find that in the record, it is not an inconsistency; it's the fact that we have substituted a voluntary agreement for the pooling order.

Q. (By Mr. Kellahin) Will the working-interest owners be the same for the whole section, as best you understand, Miss Wilson?

A. Yes.

Q. And that applies as well to the royalty owners?

A. Yes.

Q. Describe for us -- and let me have you finish Exhibit Number 1, and then we'll look at the calculations for Exhibit Number 2 -- but describe for me the circles.

A. These are calculated drainage areas for the wells that have produced from the Atoka. The -- there are -- If you notice, there are three Atoka wells in Section 34, and the reason there are three Atoka wells there is originally that Section had two standup proration units. And the Maxus Number 1, the well in the southwest quarter, turned out to be a very poor producer. And at that point they were able to rearrange their proration units and drill a well up in the north half and obtained a good well there, the Maxus Number 3. It's producing about a million a day, and that's a new, recent completion.

The Maxus Number 3, the well north of that in Section 27, is a new well also, and then the Ojo Chiso Number 2. So those three wells are very new wells in the Atoka.

And then the four wells in the southern part

of the map are older wells that have established production.

Q. When you look at the drainage circles as they relate between the well in Section 27 and the well in 34, there's a significant overlap in the area between which those wells compete?

A. Yes.

Q. Are you going to have that problem when you move over into Section 26 and drill the well as you propose to drill it?

A. No, I don't think you're going to have a large overlap of your drainage areas.

Q. What causes you to believe that?

A. Just the expected reservoir pressure that I would expect from that area and the expected feet of pay would cause you to have an estimated drainage area somewhere between what you'd expect for the Ojo Chiso Number 2 and there for the Sun Fed Number 1, which would minimize and overlap in your drainage areas.

Q. If the Examiner approves the reorientation of the spacing unit in the two unorthodox well locations, the one for the existing well and for the new well --

A. Yes.

Q. -- in your opinion, would you gain an advantage over the interest owners to the south?

A. No, we would only be draining what's on our Section 26.

Q. In order to balance the equities between the parties, do you believe it's necessary for either one of your locations to be penalized?

A. No.

Q. What's accomplished if a penalty is imposed, a production penalty?

A. Well, if a penalty is imposed in the drainage area for the proposed Ojo Chiso Number 3, it would be smaller and it would allow the offsetting wells to drain the acreage under Section 26, rather than allowing Section 26 to recover its own gas.

Q. When we look at Section 35 to the south, in your opinion is that existing well adequately protecting itself from drainage?

A. Yes.

Q. Let's look at Exhibit Number 2 now. Describe for us what you've done in order to make an analysis of the drainage calculations for the wells.

A. This is just the information that I used to calculate the drainage areas. The column shows the well name and then the section that it's located in, the cumulative recovery of that well to date, and you can see that the Maxus and the Ojo Chiso have no

cumulative recovery and the Sun Fed has a very small cumulative recovery.

And then the remaining reserves were calculated. I did this based on three different ways. If there was --

Q. Describe for us the three ways.

A. If there was a P over Z, I used the P over Z to estimate to estimate the remaining -- or the ultimate recovery -- or the remaining reserves so I could add it to the cumulative to obtain the ultimate recovery. If there -- I only had that on one well.

The other wells did have established decline rates, and so I used a decline-curve analysis.

And then the three new wells that didn't have an established decline rate, I just assumed a decline rate of 20 percent, which is approximately in line with what the other wells were declining at, and that's how I established the ultimate recovery for the wells.

And then using the initial pressure and the net perforated pay in the well, the well's porosity and water saturations we obtained from the individual well logs. And then I calculated the drainage area and the drainage radius that's been shown on Exhibit 1.

Q. Can you draw any conclusions for an examination of the initial pressures and the sequence

in which the wells were drilled in the pool?

A. The first well drilled in 1982 is the well in the southern half of Section 35, and that well had initial pressure of 8436 p.s.i.a.

Q. That's the Maddox Federal Number 1?

A. Yes.

Q. And that had the highest pressure?

A. Yes. And that pressure is in line with what you would expect for a virgin pressure reservoir in this area.

The remainder of the wells as they have -- as they have been drilled, have had lower pressure showing pressure depletion.

The Maxus Fed Number 1 did have a little bit higher pressure; it had 7000 pounds. But that's the very poor producer, sitting in the southwest quarter of Section 34, and I suspect that was due to high permeability around that well.

The other wells have shown consistently increasing pressure depletion in time.

Q. In looking at Exhibit 1 as a method to explain the area, what tells you, based upon your engineering studies, that the Oryx Ojo Chiso Number 2 Well is not going to be able to drain the southwest quarter of the section?

A. Its lower pressure of 6000 pounds and its limited amount of pay.

Q. In your opinion, then, it's necessary to have a second well located in the southwest quarter in order to recover the Atoka reserves in that section for those owners?

A. Yes.

Q. When we look specifically now about where best to locate that well, why is it not located at a standard well location?

A. Well, in choosing a well location there are two major factors that we need to consider: We need it to be in the thickest part of the reservoir to determine that we would get a good completion in the Atoka, and then we need it to be in the areas that would be least drained. So we want it to be in the center of the undrained section.

And if you move a thousand feet north, which would put you at a standard location, then you would be losing considerable net thickness.

Q. The unorthodox location would be 990 from the west line?

A. Yes.

Q. And 990 from the south line?

A. Yes.

Q. It's standard as to the west boundary, is it not?

A. That's correct.

Q. It exceeds the minimum 660 distance?

A. Yes.

Q. It's too close to the south boundary by approximately --

A. -- approximately a thousand feet.

Q. -- a thousand feet.

Okay. If we look on the display and move north, then, to the closest standard location based upon this geologic interpretation, we lose reservoir thickness?

A. Yes.

Q. Within the contour interval, though, the well location is just touching the 40-foot contour line?

A. Yes.

Q. Why haven't you recommended that you locate the well within the 40-foot contour and be at the greatest thickness?

A. Because at that point you're interfering more with the drainage areas from the offsetting wells, and I want to be at the center of my undrained area, the highest pressure.

Q. And if you move to an area of greater

thickness, you are simply increasing the extent to which you are unorthodox?

A. That's correct.

Q. Okay. Do you consider drilling this well through the Atoka into the Morrow?

A. Not at this point. We will drill to the Atoka and attempt a completion there.

Q. Why would you not simply drill through the Atoka and test the Morrow now while you had the opportunity?

A. That would require a more expensive casing completion, and what we would prefer to do is just set one string of intermediate casing rather than two, and that way we would attempt a completion in the Atoka, and once that was depleted perhaps we would deepen it at that point to the Morrow.

Q. In the absence of being granted an opportunity to drill at this unorthodox location, what in your opinion as a reservoir engineer is the likeli- -- What's likely to happen with those reserves in the southwest quarter?

A. Well, two things: Either they will remain unrecovered or the offsetting wells will eventually drain the acreage off of Section 26, the wells in 27, 34 and 35.

MR. KELLAHIN: That concludes my examination of Miss Wilson, Mr. Examiner. We move the introduction of her Exhibits 1 and 2.

EXAMINER CATANACH: Exhibits 1 and 2 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Miss Wilson, the Number 1 Well, you said, was going to be attempted to be completed in the Morrow?

A. Yes.

Q. You don't anticipate a subsequent Atoka completion in that well?

A. With three feet of pay, I don't think that it's going to be economic to attempt a completion there.

Q. And you said there wouldn't be much overlap in the drainage area between the Number 2 and 3 Well. How did you arrive at that conclusion?

A. Just roughly assuming that the pressure would be approximately somewhere between the Ojo Chiso Number 2 and the Sun Fed Com. The Sun Fed Com's pressure right now is about 5300, and the Ojo Chiso Number 2 is 6300. So you would use 5700 pounds pressure, and then your estimated net thickness, assume the well's going to IP somewhere similar to what the Sun Fed or the Ojo

Chiso IP'd at and calculate that drainage area. It's going to give you a drainage area somewhere between 1100 feet and 1700 feet, which would be somewhere between those two wells.

It's speculation at this point to know exactly what that well will come in at, but --

Q. What would that be in terms of acres, approximately?

A. Well, let's see. The Ojo Chiso Number 2 is only 93 acres and the Sun Fed was 220, so I would say that would be your range, somewhere between 90 and 200 acres, and then the -- Your most probable would be someplace in the middle, 150 acres.

Q. By moving the proposed Well Number 3 north, couldn't you recover more reserves in the west half of Section 26?

A. North, in the west half? You would recover possibly more of the northern reserves, but you have to understand that your net pay there is squeezing out so that the net productivity of the well would be smaller.

And you would also be leaving the southern part of the west half of Section 26 undrained, and you would be allowing the other wells to drain the southern half -- the southern portion of that half, which of course is the thickest portion, which would have the

most reserves.

Q. So you feel you'll recover more reserves at the location you're at rather than moving to the north and trying to recover more of these reserves?

A. Yes.

Q. What is the Well Number 2 currently capable of producing, did you say?

A. It's producing approximately a million MCF. The last test on it was a million and thirty-eight MCF of gas per day and 68 barrels of condensate per day.

Q. Now, you feel that with the limited production data you have on the Well Number 2, you feel that you have come up with an adequate drainage area for that well?

A. It's from best reservoir engineering estimate. And when I use -- I used a 20-percent decline on that well. And some of the other wells are exhibiting higher declines than that, 25 to 30 percent, and if I use that decline the drainage area would be even smaller. So I think I'm being almost optimistic with that drainage area.

Q. So the 20 percent was an average or just a guess?

A. It's the highest I've seen.

Q. You stated that the working-interest owners

and the royalty-interest owners were common in Section 26?

A. Yes.

Q. Okay, and you also testified that they have all agreed to rearrange the proration units for the Atoka?

A. Yes.

EXAMINER CATANACH: Mr. Kellahin, do we have an exhibit that shows who those interest owners are?

MR. KELLAHIN: I have a witness that can testify on that question, Mr. Catanach.

EXAMINER CATANACH: Okay. Is your next witness a geologist?

MR. KELLAHIN: Yes, sir.

EXAMINER CATANACH: Okay. That's all the questions I have of this witness.

CLIFF MURRAY,

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

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Murray, for the record would you please state your name and occupation?

A. Yes, sir. My name is Cliff Murray. I'm a production geologist for Oryx Energy Company in

Midland, Texas.

Q. Mr. Murray, on a prior occasion have you testified before the Division as a petroleum geologist?

A. Yes, I have.

Q. Pursuant to your employment as a geologist, have you made a study of the geology concerning the Atoka Formation and the wells that are subject to this Application in Section 26 of 22 South, 34 East?

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Murray as an expert petroleum geologist.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Kellahin) Mr. Murray, let me direct your attention, sir, to Exhibit Number 3. Would you identify that for us?

A. Yes, sir, that's the structure on the top of the Middle Atoka Marker in this area.

Q. What conclusions do you reach about locating wells within this section or the orientation of spacing units?

A. There's really -- Structure doesn't play a significant portion or any consideration regarding the proration units or the productivity of this area. This exhibit is just to show the dip that we have is to the southeast, higher portion of the marker here is to the

northwest, lower to the southeast, and really just showing the basic structure of this area.

Q. What geologic display, then, did you prepare and you and Miss Wilson rely on in determining the orientation and location of wells in this section?

A. It's Exhibit -- what is numbered as Exhibit Number 4, which is the Net Pay Isopach of this Atoka interval.

Q. Does that represent your work product?

A. Yes, sir.

Q. And is this the information that you supplied to Miss Wilson for her work?

A. Yes, sir, it is.

Q. Identify and describe for us what you did.

A. This is an isopach using a cutoff of porosity of 4 percent. We also used a water saturation, or SW, of 50 percent cutoff. That's in the porosity of what we're calling the Atoka Bank Interval, and it's above the structure marker, the middle Atoka marker that was used in the structure map.

And this interval encompasses all the perforations in the Atoka interval that's represented on this map.

Q. Let's set that aside for a moment and have you go through with us the cross section that's marked

Exhibit 5, the line of which is shown on Exhibit Number 4.

A. Yes, sir.

Q. Okay.

A. That's the north-south cross-section that we've presented here that's -- North is to the left side of the cross-section. South, of course, is to the right. And it goes from, in the north, the Oryx Ojo Chiso Number 1, through the proposed location for the Number 3 Well, and it goes through the Maddox Federal B Number 2, and at the far right hand of the cross-section or the bottom of the map is the BTA Maddox Number 1.

It's again showing the Atoka Bank Interval. That's the interval that's -- top and bottom line is blue. And then the gamma-ray portion of that log is also highlighted in blue.

In the right-hand portion of the log, each log, right hand -- right track -- is the porosity logs, and I've indicated the porous interval with red for each of those, for each of those, for where there is porosity.

And just as a reference, back to Exhibit Number 3, which was the structure map, that dashed line at the bottom which is the top of the Middle Atoka

Marker, that is the structure marker that was used for the structure map.

Q. Okay. When we look at Exhibit Number 6, what does that show?

A. It's the same interval of the west-to-east cross-section that's indicated on Exhibit Number 4, and it's starting with the Oryx Sun Federal Com Number 1, is on the left-hand portion of the cross-section, proceeds through the proposed location, and then through the Ojo Chiso Number 2, and then through the dry hole which is the Phillips Merchant B Number 1, on the right-hand portion of the cross-section.

Q. In looking for well locations for the development of Section 26, with a second well in that section to penetrate the Atoka, what's the criteria that you and Miss Wilson utilized in determining where to place that well?

A. Well, again, working together cooperatively on this is the -- that you're looking for the best recovery on this, and again you do want to stay near the best porosity development or the thickest net pay here for -- to effect a good completion.

And additionally, you want to make sure that you encounter all zones that are potential to recover reserves from that portion of the section.

Q. And do you accomplish that, in your opinion as a geologist, with the well located as you and Miss Wilson propose to locate it in the southwest quarter of Section 26?

A. Yes, sir, we do.

Q. Can you accomplish the same thing geologically if you move to the closest standard location some thousand feet to the north?

A. The risk is much higher at that point, and referring to Exhibit Number 5, which is the north-to-south cross-section, I've outlined or indicated with a red line an interval there that is productive in the wells to the south, and then also in the Fed -- the Sun Fed Com and the Ojo Chiso Number 2, which are present on the east-west cross-section.

That interval pinches out going north, and if we get too far north and we lose that interval we will not be able drain and protect that portion of the section in that interval.

Q. When we look at the net pay map on the Atoka, you do have in your geologic conclusions here a reservoir that extends for a significant distance up to the north in this spacing unit in the west half, do you not?

A. Yes, sir.

Q. And you've confirmed that with the Ojo Chiso Number 1 Well? You at least have three feet of pay, don't you?

A. Yes, sir. Yes, sir. It's shown -- and again on that cross-section, north-south cross-section, you see that lower -- the very base of the Atoka bank interval. It does have a porous interval there. And that interval does extend all the way to the Ojo Chiso Number 1. And so that interval as well as other contributing zones there do extend over a considerable portion of that west half of the section.

Q. Geologically, is this anything different, in terms of development, than the operators elected to pursue for the section south of you in 35?

A. No, sir. As far as an unorthodox location, no, sir. In 34 and 35 both, the operators have opted to select an unorthodox location to make the -- choose the best geologic location for the production of their reserves.

Q. When we look at 35, then, both those are laydown spacing units?

A. Yes, sir. North half, south half.

Q. And when we look at the east half of that section, we're into an area where you've mapped an absence of the reservoir?

A. Yes, sir.

Q. So the development chosen by that operator is the laydown with both wells in the west half?

A. Exactly.

Q. Are there other unorthodox well locations in this immediate area, Mr. Murray?

A. Yes, sir, that Section 35, the section to the south as you were referring to, is north half, south half proration units.

The north -- The well in the northwest quarter, or the southwest of the northwest quarter, which is the Federal, Maddox Federal B Number 2, is at an unorthodox location, being 1980 feet from the north line and 60 feet from the west line. So its end location and proximity to the south line are both 660, and thus inside the orthodox location.

Also the Maxus in Section 34, the southeast of 34, the Max Federal Number 2 is also a 660 location for both the east and the south line.

I'll just -- Just to be complete here, I'm sorry, in the northeast quarter of Section 34, the BTA Maddox Number 3, that's 1650 feet from the east line and 660 feet from the north line, so it's in an unorthodox location also there.

Q. Okay. Based upon your geologic study, Mr.

Murray, in your opinion, is the approval of the location for the Number 3 Well, as well as approval of the existing Number 2 Well at its location a necessary and prudent thing to do for the appropriate development of the Atoka gas reserves in Section 26?

A. Yes, sir.

Q. Can you adequately develop geologically the reserves in the Atoka Formation in this section in the absence of approval of these two unorthodox well locations?

A. No, sir.

MR. KELLAHIN: That concludes my examination, Mr. Murray.

We would move the introduction of his Exhibits 3 through 6.

EXAMINER CATANACH: Exhibits 3 through 6 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Murray, from your Exhibit Number 4, I see that there are quite a number of wells in this area that have been completed in the Atoka with less than 20 feet of net pay. Are those wells economic wells?

A. Well, starting with -- Let's see. I think the one that's the most -- the least amount of pay is

the Maxus. It's in Section 34, the southwest quarter. That one was not -- Or they didn't find that to be economical because they did reposition the proration units and make possible the well to be drilled in the northwest quarter there, the Number 3. So that Number 8, I believe, had around a quarter BCF production when they did plug it or move out of that zone.

The well in Section -- the northwest quarter of Section 34 with 16 feet is -- Well, it's just too new, and I believe Bonnie had done some calculations regarding that. It appears to be a pretty good zone, but it has found real good porosity in that lowermost interval that it's perforated in.

And that well illustrates to me or confirms to me just the rapidity that these zones may come and go, going from the 53 feet to the 16 feet in -- I'm sorry, the 53 feet in the well to the north, and then coming down to the 16 feet there, so it's awfully close to good porosity development there, which may contribute to it.

And then the 15 feet in that Maddox Federal B in Section 35, that's just on trend with some real good production and real good porosity, and it certainly effected a good completion there.

And the only other -- Let's see, then the six

feet in the Number 1 is not productive in the Atoka unit.

Q. Mr. Murray, when was the Well Number 2 drilled?

A. Oh, it was -- Excuse me, it was spud about -- just after the Number 1. It was logged in January of 1990, so it was -- it was spud sometime -- October, I believe, mid-, late October, in there. Its completion has just been a little behind the Ojo Chiso Number 1 due to the fact they tested the Morrow prior to moving up to the Atoka.

Q. I'm just a little curious as to why the Number 2 Well wasn't originally drilled in the southwest quarter. Was that due to the lack of geologic information that was -- that you had?

A. Yes, sir -- Well, it's just really on trend with the Morrow producers that are here. There are -- There's the Morrow producer in Section 35, which is the Maddox Federal B Number 1, and that well has produced, I think, in the vicinity of 4 BCF.

And the trend is just more -- extremely narrow north/south, and that -- You know, both those wells are less than 660 off of the center line there of Section 26. So we're just trying to stay in a close proximity to the center line of 26 where the trend of

the Morrow is going.

Q. Okay. Now -- I was incorrect. The Well Number 2 was drilled to test the Morrow?

A. Oh, yes. Yes, sir, I'm sorry.

Q. And there was no Atoka consideration at that point?

A. No, sir. At that point, we didn't even think the Morrow would -- If it clipped 26, it would just be a hair of the corner there.

None of these wells there in 27 -- in 27 had been drilled yet at the time of the proposal of these wells, and even the northeast of 34. So this was all just an ongoing development or play for that horizon.

EXAMINER CATANACH: Mr. Kellahin, is the witness that's testifying as to the interest, is that another witness?

MR. KELLAHIN: I'll have to call another witness and have him sworn, Mr. Examiner.

EXAMINER CATANACH: I have no further questions of this witness.

THOMAS R. HOBBS,

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

EXAMINATION

BY MR. KELLAHIN:

Q. Would you please state your name and occupation?

A. Thomas R. Hobbs, H-o-b-b-s. I'm a petroleum landman for Oryx.

Q. Mr. Hobbs, have you on a prior occasion testified as a petroleum landman?

A. No, I have not.

Q. Would you summarize for us your educational and employment experience as a petroleum landman?

A. I received a bachelor's of business administration from Oklahoma State University in 1978. I've been employed as a petroleum landman by Oryx since June of 1978 to the present.

Q. Mr. Hobbs, are you familiar with the ownership, royalty and working-interest ownership in Section 26 that's the subject of this Application?

A. Yes, I am.

Q. And sir, are you also familiar with the operators in the immediate vicinity towards whom these wells would be encroaching?

A. Yes.

MR. KELLAHIN: We tender Mr. Hobbs as an expert petroleum landman.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Kellahin) Mr. Hobbs, let me direct your attention, sir, to Exhibit Number 7. Are you familiar with this display?

A. Yes, I am.

Q. Let's look specifically at Section 26. Describe for us the working-interest owners in the section.

A. The working interest in the section is owned by, the entire section, Oryx 50 percent, BTA 25 percent, Pacific Enterprises 12.5 percent, Joe Reynolds 12.5 percent.

Q. Do you have the agreement of all the working-interest owners to commit the acreage to development as proposed by your company?

A. Yes.

Q. And have they concurred, then, in the reorientation of the spacing unit for the Ojo Chiso Number 2 Well?

A. Yes.

Q. And have you received approval for the drilling of the second well in the section to which the west half would be dedicated?

A. We have approval at this time from BTA. We have furnished AFE's to the other two owners, and our

indications are they will elect timely to participate.

Q. And that's all being done pursuant to operating agreement for the section?

A. That's true.

Q. When we look to the south, to the operatorship towards which these wells are moving in Section 35, who is the operator of that section?

A. BTA.

Q. And we look at the west half of Section 36, who's the operator of that?

A. West half of 36 would be Maxus.

Q. And in Section 34 who's the operator?

A. In Section 34 it would be BTA.

Q. The Notice of Hearing that we provided to these interest owners also includes a notice to Amoco Production Company?

A. Yes.

Q. What is their interest in this area, Mr. Hobbs?

A. Amoco has an interest in Section 34, one-third working interest, and also a working interest in Section 35; it's not an operator.

MR. KELLAHIN: That concludes my examination of Mr. Hobbs.

Mr. Examiner, I have marked as Exhibit Number

8 our certificate of mailing in which we have shown that on April 9th we have mailed a copy of the Applications in this case to Amoco, Maxus and BTA. We would move the introduction of Exhibits 7 and 8.

EXAMINER CATANACH: Exhibits 7 and 8 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Hobbs, this is the whole Section 26. That's a fee lease, isn't it?

A. That's a federal lease --

Q. It's a federal lease

A. -- a common federal lease.

Q. It is all one lease?

A. Yes.

Q. And have you had any communication with BTA or -- Maddox, is it?

MR. KELLAHIN: It's Maxus, Mr. Examiner.

Q. (By Examiner Catanach) Maxus, I'm sorry. -- regarding the location of any of your proposals?

A. It's our understanding Maxus -- BTA has acquired the interests of Maxus recently, and we have had no objections.

EXAMINER CATANACH: I have no further questions of this witness.

MR. KELLAHIN: That concludes our presentation.

EXAMINER CATANACH: There being nothing further in Case 9928, it will be taken under advisement.

(Thereupon, these proceedings were concluded at 10:47 a.m.)

CERTIFICATE OF REPORTER

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

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

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

WITNESS MY HAND AND SEAL May 17, 1990.

STEVEN T. BRENNER
CSR No. 106

My commission expires: October 14, 1990

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9931, heard by me on May 2 1990.

David R. Catanach, Examiner
Oil Conservation Division