STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CASE 9861

EXAMINER HEARING

IN THE MATTER OF:

Application of TXO Production Corporation for Compulsory Pooling, Eddy County, New Mexico.

TRANSCRIPT OF PROCEEDINGS

BEFORE: DAVID R. CATANACH, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

February 7, 1990

ORIGINAL

A P P E A R A N C E S

FOR THE DIVISION:	ROBERT G. STOVALL Attorney at Law Legal Counsel to the Divison State Land Office Building Santa Fe, New Mexico
FOR THE APPLICANT:	W. THOMAS KELLAHIN, ESQ. Kellahin, Kellahin & Aubrey Post Office Box 2265 Santa Fe, New Mexico 87504
FOR ARCO:	WILLIAM F. CARR, ESQ. Campbell & Black, P.A. Post Office Box 2208 Santa Fe, New Mexico 87504

I N D E X

E X H I B I T S

APPLICANT'S EXHIBITS:

EXAMINER CATANACH: Call Case 9861.

MR. STOVALL: Application of TXO Production Corporation for compulsory pooling, Eddy County, New Mexico.

EXAMINER CATANACH: 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 TXO Production Corporation. I have three witnesses to be sworn.

EXAMINER CATANACH: Any other appearances?

MR. CARR: May it please the Examiner, my name is William F. Carr, with the law firm Cambell & Black, P.A. of Santa Fe. I represent ARCO Oil and Gas, Inc. I do not intend to call a witness nor otherwise participate in the hearing.

EXAMINER CATANACH: Would the witnesses stand and be sworn, please.

(Thereupon, the witnesses were sworn.)

RICHARD COATS

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

EXAMINATION

BY MR. KELLAHIN:

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

A. My name is Richard Coats. I'm a landman with TXO Production Corporation.

Q. Mr. Coats, have you, on prior occasions, testified as a landman on behalf of your company before the Division?

A. It's been a very long time.

Q. Summarize for us generally what you do as a landman for TXO Production Corporation?

A. I handle all types of trades, negotiations, lease acquisitions, record search, title curative, well preparation, et cetera.

Q. How long have you practiced your profession, Mr. Coats?

A. For approximately six years.

Q. When we look at the north half of Section 16 in Eddy County, New Mexico, that is the subject of this application, have you made yourself familiar with the current working interest ownership of that spacing unit?

A. Yes, sir.

Q. Have you been the individual employed on

behalf of your company to attempt to negotiate on a good-faith basis the voluntary joinder of those working interest owners in the drilling of the subject well?

A. Yes, sir.

MR. KELLAHIN: I tender Mr. Coats as an expert petroleum geologist.

EXAMINER CATANACH: He is so qualified.

THE WITNESS: Landman.

MR. KELLAHIN: Yes, landman. I almost got you to be a geologist.

THE WITNESS: I don't want to be one of those.

MR. KELLAHIN: We tender him as a landman, Mr. Examiner.

EXAMINER CATANACH: He is so qualified as a landman.

Q. Mr. Coats, let me direct your attention, sir to Exhibit No. 1. When we look at the display and look at the north half of Section 16 within the area shaded in the yellow outline, would you describe for us what that represents?

A. Well, the acreage within the yellow outline is our proposed 320-acre proration unit for the Shugart-State Com. "A" #1. The divisions within that

320-acre tract, represent state leases that cover additional acreage, but that is the acreage they cover within that north half.

Q. Identify for us which if any of the parties as of the date of this hearing have not currently agreed to voluntarily participate in the drilling of the proposed well.

A. The only party is ARCO.

Q. Where is their interest?

A. In the northeast quarter of the northeast quarter.

Q. In that 40-acre tract, do they have 100 percent of the working interest?

A. Yes, sir.

Q. Let me direct your attention to Exhibit No. 2, Mr. Coats. What have you prepared here?

A. This is a summary of the proposed well location, the proposed depth we anticipate drilling the well to, a schedule of the working interest owners along with their ownership percentage interest in the north half, and the nature of their ownership. It sets forth the party that we anticipate pooling and the formations we're requesting pooling.

Q. Am I correct in understanding that you have obtained voluntary agreement from all working interest

owners with regard to the drilling of this well, except for ARCO?

A. Yes.

Q. The formations to be pooled are from the top of the Wolfcamp formation to the base of the Pennsylvanian formation?

A. That is correct.

Q. The total depth of the well is one to penetrate and test the Morrow formation?

A. That is correct.

Q. The location of the well in the northeast to the northwest quarter, is that the proposed location as shown on Exhibit 1?

A. Yes, it is. It's 660 from the north line and 1980 from the west line. It's a legal location.

Q. ARCO's proportionately reduced interest in the spacing unit is what, sir?

A. 12.5 percent.

Q. That's as shown on Exhibit 2?

A. Correct.

Q. Summarize for us, Mr. Coats, what has been your efforts on behalf of your company to obtain ARCO's voluntary participation in the proposed well.

A. On May 19th I hand-delivered a well proposal to ARCO, which was an unorthodox well

location in the northwest quarter of the northeast quarter. At that point in time we were anticipating dedicating that well to the east half. ARCO was offered the right to participate in that well and expressed to us that they would strongly oppose that location and would seek to prevent it from being drilled, or at least have a strong penalty.

Q. Your first contact with ARCO about their interest in the section is set forth in Exhibit No. 3?

A. Yes, it is.

Q. And that's the letter over your signature dated May 22, 1989?

A. That's correct. The letter that's stapled to that is dated May 19, 1989. The May 19th letter proposed the well, the May 22nd letter was following up on one of the provisions in that May 19th letter saying that we would deliver a proposed operating agreement.

Q. After the May 22nd letter of 1989, what then occurred?

A. As I said, ARCO--it became clear they were going to object to that location. We therefore negotiated with our partners in Section 16 to realign the proration units to provide for the Shugart-State Com. well in the southeast of the southwest to be

dedicated to a south half proration unit instead of the west half proration unit it had previously been dedicated to.

In doing that, it would allow us to drill a legal location as proposed on the plat and let us go ahead and continue with our plans out there. It took from May 22nd to December 5th to accomplish this, and on December 5th I hand-delivered ARCO a subsequent well proposal that provided for the drilling of the Shugart-State Co. "A" #1 well, as shown on the plat. Attached to that was an AFE and a proposed operating agreement.

Q. The December 5th letter, then, shows the north half orientation, shows the specific well location that you've described in Exhibit 1, and gave ARCO the opportunity, then, to participate in the well based upon this AFE?

A. Yes, it did.

Q. Have you received any objections from ARCO to having TXO operate the well?

A. No, we have not.

Q. Any objection to the use of the north half as the orientation for the spacing unit?

A. No, we have not.

Q. Any objection to the well location?

A. No.

Q. Any objection to the AFE costs?

A. No.

Q. As of the date of the hearing today, what is the current status of your efforts to get voluntary joinder by ARCO?

A. As of today we were informed that ARCO has signed the AFE for the well. However, they continue to attempt to negotiate terms of the operating agreement with us. We've given them the right to participate under the operating agreement that was attached to the proposal, as well as join the operating agreement that's in existence with all of our other working interest owners. Neither of those proposals or operating agreements appears to be acceptable to them. We feel like that we've been fair and that those terms and conditions are accepted generally by most other nonworking--or nonoperators.

Q. Without going through all the details of the discussions and the negotiations about the terms of the operating agreement, in your opinion, Mr. Coats, will further time, in your opinion, result in the voluntary joinder of ARCO, or do you now need the assistance of the Division in entering a compulsory pooling order?

A. We need the assistance of the Commission to enter the compulsory pooling order. ARCO's intended purpose in this, in my opinion anyway, is to delay the drilling of this well as long as possible.

Q. When we look at the offsetting properties as shown on Exhibit 1, who operates the well in the south half of Section 9 to the north of your spacing unit?

A. ARCO.

Q. What is the formation that is produced in that well?

A. The Morrow formation.

Q. That is the intended projected target for your well in the north half of 16?

A. Yes, it is.

Q. Do you have an opinion, Mr. Coats, as to what you would recommend to the Examiner for overhead rates to be included in the compulsory pooling order?

A. My recommendation is that we have, as a drilling well rate, $5,960 per month, and as a producing well rate, $595 per month.

Q. Let me direct you to Exhibit No. 5, Mr. Coats. Is this an exhibit you prepared?

A. Yes, it is.

Q. When we look at that exhibit, and look at

the last entry, are those the proposed rates that you're requesting the Examiner to include?

A. Yes, they are.

Q. What's the basis for your recommendation?

A. Well, first of all, those rates are included within the operating agreement that's currently proposed to ARCO. Well, these are our standard rates for a well at this depth, a gas well in Southeast New Mexico. They're consistent with other overhead rates that we have included in other operating agreements; for instance, the Burton Flat Federal #1, with $6,000 drilling well rate and a producing rate, and also the Earnst & Young averages for 1989 which, by the way, have not been published yet, but we got these directly from that accounting firm.

The 89 averages, as you can see, is $6,134 $566. The median is somewhat lower than that, as shown on that exhibit. Essentially, we feel like these overhead rates are consistent with overhead rates charged by other operators. In addition to that, ARCO has been allowed the opportunity to participate under the original operating agreement. The overhead rates under that agreement are set forth where it says Shugart-State Com. #1 and Shugart-State

Com. "A" #1.

Q. What's the meaning of the calculation at the bottom portion of the exhibit?

A. Well, what that is, the original overhead rates in those operating agreements were $1,980 drilling well rate and $335 producing rate. Over the last 11 years or so, those have been escalated by a factor of 199.01 percent.

Q. Have any of the other working interest owners in the spacing unit objected to the proposed overhead rates?

A. No, they have not.

Q. Have all the other working interest owners approved the AFE?

A. Yes.

MR. KELLAHIN: That concludes my examination of Mr. Coats. We move the introduction of Exhibits 1 through 5.

EXAMINER CATANACH: Exhibits 1 through 5 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Coats, I'm not sure I understand Exhibit 5. You've got the Shugart-State Com. #1. That well was drilled in 1978, is that right?

A. Yes, sir. That well was drilled under an operating agreement that covered the entire Section 16. The ARCO tract expired from that agreement and was subsequently leased, obviously, by ARCO.

The Shugart-State Com. #1 well is operated by TXO under that operating agreement and the overhead rates on that well are set forth on Exhibit 5. The overhead rates to be charged to our partners on the proposed Shugart-State Com. "A" #1 would be identical to the ones for the Shugart-State Com. #1, as far as the nonoperators under that JOA. And we have given ARCO the opportunity to participate by ratifying that contract, which they do not want to do.

Q. Am I correct in understanding that all the other interest owners in the north half of 16, except for ARCO, will be paying the overhead rates of 39, 40, 40?

A. Drilling well rate, yes, sir.

Q. Drilling well rate. And ARCO will be the only one paying the higher or the proposed overhead rates?

A. Well, if they continue to not join the existing operating agreement, that's correct, or that's what we're asking for.

Q. If they sign the JOA, then, they're subject

to the lesser rates?

A. Yes, sir.

EXAMINER CATANACH: I see. I have no further questions of the witness.

MR. KELLAHIN: Mr. Examiner, at this time I would like to call Mr. Glen Brown. Mr. Brown is the geologist for TXO.

GLEN BROWN

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

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Brown, on prior occasions have you testified and qualified as a petroleum geologist?

A. In other Commissions, not this one.

Q. Not before this New Mexico Division?

A. Right.

Q. Would you take a moment and summarize for us your educational background and employment experience?

A. I received a bachelor's degree in geology from the State University in New York, in Plattsburg. That was in 1980. I received a master's degree in geology from New Mexico State University in Las Cruces in 1982.

At that time I went to work for Marshall R. Young Oil Company out of Ft. Worth. I worked in their Oklahoma City office as a petroleum geologist.

I left their employ after three years, and two months later joined up with Texas Oil and Gas, where I've worked since that time. I've been with Texas Oil and Gas for five years.

Q. Summarize for us your particular experiences, in a general way, in Southeastern New Mexico in mapping and geologic evaluations of the Morrow and Pennsylvanian formations.

A. I have been working New Mexico geology for a little over a year at this time.

Q. Did you prepare the geologic displays that the Examiner is about to see with regards to the structure and thickness of the Morrow sand?

A. I have.

Q. You prepared the cross-section as well as the map on the Atoka?

A. Yes, I have.

Q. And otherwise have made a geologic investigation of the opportunities to produce gas at this location?

A. Yes.

MR. KELLAHIN: We tender Mr. Brown as an

expert petroleum geologist.

EXAMINER CATANACH: He is so qualified.

Q. Let me turn your attention to what is marked as Exhibit No. 6. Identify that display, please.

A. This is a production map of the area surrounding Section 16.

Q. When we look at the code on the lower left side of the display, what have you shown there?

A. It's a color code that relates to specific formations that produce in the area.

Q. What, in your opinion as a geologist, are the primary objectives of a well to be drilled at this particular location?

A. The primary objective for this location would be the Morrow.

Q. Let's quickly eliminate some of the other formations, if you will. When we look at the potential for a Strawn producer, do we have any Strawn producers shown on the display?

A. There is one located a little over two miles to the north, in the very northwest corner of Section 3, the very north end of our map.

Q. When we look at the opportunities for an Atoka producer, where are we in relation to other

Atoka producers?

A. There's Atoka production a mile and a half to the south. I have a map that I'll submit for evidence of the Atoka. I don't believe it's really prospective at our given location. It's pinched out to the south.

Q. The best deep gas prospect is for the Morrow?

A. That's correct.

Q. Have you divided the Morrow into any intervals?

A. Yes, there are two distinct intervals in the Morrow that produce in here. There's what I've termed for convenience the middle and lower Morrow sandstones. I have exhibits that reflect isopachs of both of those sands.

Q. Based upon your geologic investigation of this area, were you able to formulate an opinion as to a proposed risk factor penalty to be assessed against any nonconsenting working interest owners by the Division in this case?

A. Yes, I have.

Q. What is that opinion?

A. We request a 200 percent penalty.

Q. Let's look at some of the bases upon which

you make that conclusion. Let's go, sir, to Exhibit No. 7. Again, please identify that for us?

A. Exhibit 7 is a structure map on the top of the middle Morrow sand. This structure would also be the same for structure at the lower Morrow sand. They're only 100 feet away from one another.

Q. When we look at the structural component of the geologic risk involved in drilling this well and your conclusion about the risk factor penalty, what does the structure tell you?

A. Well the structure is mapped on subsurface control alone. We have no seismic data to confirm that we would get high to the wells to the north or to the south. There is associated water production in the middle and lower Morrow sands. It's a combination trap of sand and structure.

Therefore, structure would be of importance, and it would be significant if we were to, in fact, fall in a hole, in that we would encounter water instead of gas. There would be a risk there of losing structural position.

Q. When we look at Exhibit No. 8, would you identify that for us?

A. Yes. It is a porosity isopach of net, middle Morrow sand that is greater than or equal to

eight percent.

Q. Let's go to Exhibit No. 9, then, and have you identify that display.

A. That is a porosity isopach of net lower Morrow sand greater than or equal to eight percent.

Q. What part do either of the displays, Exhibit 8 or 9, play in forming a basis for your conclusion that the 200 percent risk factor penalty is appropriate in this case?

A. What these maps show is that we're obviously in a Morrow trend of porosity development. The sands are interpreted as being a fluvial channel form system, and I'm hoping that these maps are, in fact correct, that we will encounter net values similar to producers in the area. However, my experience with that nature of the reservoir has been that sometimes one can be incorrect because the sands do come and go in a very short space.

Q. Does it diminish the recommended risk factor penalty to less than 200 percent to have the proposed well location located between two producing gas wells?

A. Well, yeah. I don't think it diminishes from that recommended penalty myself, because, as I say, there is a tendency for these sands to come and

go. There's very little control in the Morrow to the east or to the west of this ARCO well that's located in Section 9, to determine which way this sand, in fact, trends as it goes away from that well. It's very possible it could avoid our location.

Q. Can you give us an example to illustrate your point that exists on Exhibit 9, when we look at the relationship in Section 17 to the west of your location, and the wells in Section 20?

A. Yes. If the Examiner would look in Section 20, there are two Chevron wells there that are on a very close distance to one another, I would say approximately a quarter of a mile from one another. Those two wells, one had encountered 19 feet of porosity, the other had encountered 6 feet of porosity in the lower Morrow sand. Production in those two wells, there was a very sharp contrast over that short of a distance.

Q. If we go back to the production map, which is Exhibit No. 6--

A. All right. One would look at the Chevron Littlefield Fed. Com., which is in the northwest of the southeast quarter. That well from the Morrow has cum'd 3.9 Bcf and 77,000 barrels of condensate, and it currently makes over 600 Mcf a day.

The well in the northwest quarter, the Chevron Eddy-Federal Com. 1D, it only cum'd 103,000,000 cubic feet of gas. Obviously a subeconomic producer. So the point being, then, in a short distance the reservoir economic quality of the sand can, in fact, vary and become very undesirable.

Q. Let's take a moment and look at the stratigraphic cross-section which is Exhibit 10, Mr. Brown. Let's go directly to the cross-section and find the schematic of the proposed location.

A. Okay.

Q. Have you found that?

A. Uh-huh.

Q. Let's look at your geologic opinions with regards to that location as you compare them to each of the two wells on each side of that location.

A. Uh-huh.

Q. All right.

A. As you can see, our proposed location, as you'll notice on our previous maps, lies between a Texas Oil and Gas-operated well to the south, the Shugart-State Com. #1, and it offsets to the north the ARCO Paton B Fed. #1. There is, as I mentioned before, there's production in the middle Morrow and lower Morrow in the area. The ARCO Paton well

produces from one sand stringer in the middle Morrow well, and also has some sand development opened in the top of the lower Morrow section.

In contrast, you know, to the south, in our TXO Shugart-State Com. well, we have a development of three lenses of sand in the middle Morrow that produce, and the lower Morrow sand in that well was tested as well, water-bearing.

Q. When we look at the log of the Shugart-State Com. well, you see the three orange sets of perforations in the middle Morrow?

A. Right.

Q. Look below. See the lower Morrow perforations?

A. Yes.

Q. Describe how those are separated at this point.

A. They're separated by hot shale markers that are considered to be time stratigraphic markers that, in fact, bound the sands as genetic intervals, is how they're separated out.

Q. In your opinion, the production in that well is coming from the middle Morrow and not the lower Morrow?

A. Exclusively, yes. We perforate tested and

got all salt water out of the lower Morrow.

Q. In summary, then, Mr. Brown, what is your geologic conclusion about an appropriate risk factor penalty to assess?

A. I would still recommend 200 percent. If I might make one additional point while I have this cross-section in front of everyone, the next well to the left from the Shugart-State Com. that we were just looking at, is the Gulf Energy Keohane "C" Federal #1. This well encountered the thickest and best development of middle Morrow sand that I saw in the entire area. However, they perforated this well and it only made 43,000,000 cubic feet of gas.

My summary is that there is a variability in these sands in terms of your risks in encountering them, and there's also a variability once you get them on a log as to what you have. Not only does your risk come in at the drilling stage, but it comes in at completion stage. We've weighed these risks in our mind and have offset them with the potential that we could, in fact, make some rather large wells in the area, and feel that it is warranted to drill for, but there is substantial risk.

MR. KELLAHIN: Thank you, Mr. Brown. That concludes our examination of Mr. Brown. We would move

the introduction of his Exhibits 6 through 10.

THE WITNESS: There's also the Atoka map.

Q. Exhibit 11 is an Atoka map. Would you describe Exhibit 11 for us, Mr. Brown?

A. This is a structural map on top of the Atoka. The color coding reflects red is a producing map, producing zones in the Atoka; the blue is water zones; and the gray is zones where the Atoka sand is not developed, there's just no sand present at all.

As I mentioned before, the Atoka is pinching out as it comes up through Sections 20 and 21 and so there's really, in my opinion, very little chance that-- It would have to be a totally new reservoir for it to get up into the north half of 16. It would be a totally different sand

Q. The Atoka is more speculative than even the Morrow?

A. Extremely speculative. We would not drill a well to Atoka potential here.

MR. KELLAHIN: Mr. Examiner, we would now move Mr. Brown's exhibits be introduced; they're Exhibits 6 through 11.

EXAMINER CATANACH: Exhibits 6 through 11 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Brown, as I understand it, the primary objective is the Morrow, and did you say there was no Atoka potential?

A. I mapped no Atoka potential in there, although history has shown that occasionally one will encounter a zone when one doesn't expect it. I'm not anticipating it. We would like to include it in our pooling order just for the serendipity potential if something happened.

Q. On your Exhibit No. 6, are the Morrow wells in this area more or less mostly producing from the middle, or lower or a combination?

A. I personally feel that the middle sand is a better producer than the lower is, and I base that on the evidence that our Shugart-State Com. produces exclusively from middle Morrow sand interval and it is an exceptional well.

There are really only two exceptional wells in there, our well and the well in the southeast quarter of Section 20. All the others are marginally economic at best. Both of those wells have middle Morrow sand perforated and open in them. Further testimony from engineering will go into some of these

wells more specifically and the EUR's, estimated ultimate recoveries, of some of these wells in further detail.

Q. Did you state that the well in the south half of 16 tested wet in the lower Morrow?

A. In the lower Morrow, yes, sir, it did. On the cross-section it, in fact, will reflect that perforation, swabbed no show. We have a cast-iron bridge plug that is at approximately 1,750 feet in that well that's sealed off those perforations below that point because of water. Now, there is some associated water production with our middle Morrow production in there. We make about 60 barrels of water a day along with our gas and whatever, but it's from the middle Morrow.

Q. Is your proposed well structurally higher than the well in the south half of Section 16?

A. I believe it will be. My interpretation is that I think we will come in structurally high. That's not based on any seismic confirmation of that. It's based on the projection of the anticlinal nose from the southwest up into there. It's very possible that one could come in at a structural position between those two wells, if that anticlinal nose did not go through there. The net effect, what that would

do, it would remove us from lower Morrow sand production, in my opinion.

Q. Let me see if I'm correct in understanding your other testimony. Well, which one was it, the well you said encountered a lot of sand but didn't have a lot of cumulative production?

A. That's right. The well located in the southwest quarter of Section 21, it's the Gulf Energy Keohane "C" Federal. That well, you can see it on your cross-section here, has an excellent development of sand, over 20 feet of middle Morrow sand development. Everyone would get excited looking at the logs and run pipe, but unfortunately when they perforated the well it came on and just fell right on its face and accumulated 43,000,000 cubic feet and it's now abandoned.

Basically what it's telling you, my maps are reflecting the statistical development projection of development of sand within these trends, but obviously there's quite a bit more complexities there than I can really present with the limited data we have available. I would say this would probably be some kind of meander cutoff situation, where you have a little point bar and the sand, it's thick on the logs, but about the size of this room.

EXAMINER CATANACH: I have no further questions of the witness. He may be excused.

RANDALL STEWART CATE

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. My name is Randall Stewart Cate. I'm a petroleum engineer for Texas Oil and Gas, or TXO Production Corp. I have been working for them for over eight and a half years in the Midland district.

Q. Mr. Cate, have you, on prior occasion, testified as a petroleum engineer before this Division?

A. Yes, I have.

Q. In pursuing your employment, have you made a study of the engineering information available within the specific area of Eddy County, New Mexico, for the Shugart-State Com. "A" #1 well?

A. Yes, I have. I have reviewed production information, scout ticket completions, and have drawn some conclusions based on that research.

Q. In addition, you've also reviewed the AFE

that TXO proposes to utilize for the drilling of this well?

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Cate as an expert petroleum engineer.

EXAMINER CATANACH: He is so qualified.

Q. As part of your duties, have you been able to formulate an opinion as to what you, as a petroleum engineer, recommend to the Examiner for a penalty factor to be assessed against any nonconsenting working interest owners?

A. Yes, I have.

Q. And what is that opinion?

A. That the maximum penalty of 200 percent be assigned in this case.

Q. Have you also reviewed the AFE to determine whether or not you could reach an opinion as to whether that AFE was fair and reasonable?

A. Yes, I have.

Q. What is your opinion?

A. That it is fair and reasonable.

Q. I believe as of the date of the hearing we do not have any of the working interest owners, including ARCO, that have objected to the AFE?

A. That's correct.

Q. Let's go, then, to your opinion and conclusion about the risk factor penalty. What have you done in order to form a basis upon which to make that opinion?

A. I have studied the wells in the exhibit area which Exhibit No. 6, I guess, would be a good one. It's the production study. And my Exhibit No. 12 lists those wells and some of the test data, cumulative production, and the zones that it has been produced from. And based on that data, I arrived at my conclusion.

Q. Describe for us, and you don't have to go through each of the entries on Exhibit 12, but describe for us which of these comparisons or what portion of the statistical analysis helps support your conclusion?

A. Okay. Based on the exhibit area in which these wells fall in this Morrow trend, there is 11 total wells that--and I will stay with the Morrow. We don't believe the Atoka will be productive at this location--but 11 Morrow penetrations and tests, two of which made or will make more than one Bcf of gas, two out of 11.

In my opinion, one and a half to two Bcf is the minimum that we would want to have for this

prospect. So you can see the odds of achieving that in this trend are very low. In addition, only five out of the 11 will make more than half of a Bcf.

Q. What's the criteria by which you have judged 1 Bcf to be the volume of gas needed in order to have a well that, in your analysis, is commercial?

A. Based on $1.50 average gas price, which is pretty good average right now, less your transports and all, the AFE of $756,000, you divide that by your net, add two years' worth of operating expenses of $2,000 a month, you get payout of roughly six- to seven-tenths of a Bcf required. Nobody drills strictly for payout, so you would like to see a fair return two to three times that as a minimum, so that's where I get one and a half to two Bcf.

Q. At one and a half Bcf, then, you'll get the cost of the well back plus one more?

A. Yes, sir, approximately.

Q. As a method by which, then, to establish a criteria for the successfulness of these gas wells, that's what you've used?

A. Yes.

Q. Have you made a comparison as to whether or not you reduce the risk by being in close proximity to a well that is one of the better producers? For

example, can you locate yourself within close proximity of one of the two wells that meet your economic criteria for a successful well?

A. Yes, we can. Down in Section 20, the Littlefield Fed. drilled by Chevron, the well has a cum to date of 4 Bcf. I projected, based on decline and P/Z that it should do roughly 6 Bcf.

Direct offset to the northwest of it, the Chevron Eddy Fed. Com. attempted a completion, has made approximately one-tenth of a Bcf out of the Morrow.

Back up in Section 9, the ARCO Paton "B" Fed. #1 is the well that we will be the closest to at this location. I project, based on production decline rate and pressure calculations versus production--and there are exhibits that show the production decline on this well--that it will make between 700- and 800,000,000 cubic feet, or less than a Bcf. It came on very nicely, but it has dropped off dramatically.

Q. Your estimates of cumulative recovery for the ARCO well is probably not more than .8 Bcf?

A. That is correct.

Q. Where is the other of the two good wells, then, in the pool; "good," meaning those two wells of the 11 that, in your opinion, would recovery a Bcf or

more of gas?

A. The other is in the south half of Section 16. It's called the TXO Production Corp. Shugart-State Com. #1.

Q. Okay. When we look at attempted well location in the north half of 16, then, you're caught in the dilemma of being located between a poor well and a good well and you expose yourself to the same kind of risk that Chevron did in Section 20?

A. Yes. I believe the statistics definitely bear that kind of a risk, yes.

Q. Let's look at the production plot from the ARCO well in the south half of Section 9. I believe that's marked as Section 13. Do you have that?

A. Yes, I come.

Q. At the same time, let's look at Exhibit No. 14 which is the production data plotted for the TXO Shugart well in the south half of 16. Describe for us what this shows you.

A. Okay. This is a plot of the oil and gas production for the Shugart State and on the Paton B, Exhibit 13. It also includes the water production. For Exhibit 14, I would like to say that we did not get our water plot on this. It has averaged around 100 barrels of water per day for its entire life. So

these plots show some curious differences in the production performance between these wells.

The ARCO Paton well is not reporting significant water, somewhere around 7 barrels of water per day, and we have, like I say, produced an average of 100 barrels of water per day since the beginning of time.

Our gas production is in red and same on Exhibit 13. The green is the oil production. The production characteristics of our well since 1979 have been roughly 1,000,000 cubic feet per day to one and a half per day, very stable production, 10 to 15 percent decline over that entire period, and we have produced, I believe, 3.2 Bcf to date there.

In contrast, the ARCO Paton well has produced 514,000,000 through December of 89. At its projected decline, which is basically 80 to 90 percent, another two-tenths of a Bcf is what I would project that it will do.

Q. In conclusion, then, based upon your study of the engineering information, would you recommend to the Examiner a penalty factor against ARCO in the event they go nonconsent, of less than the maximum 200 percent?

A. No, I would recommend the maximum of 200

percent penalty.

MR. KELLAHIN: That concludes my examination. We move the introduction of Mr. Cate's Exhibits 12, 13 and 14, I believe is correct.

EXAMINER CATANACH: Exhibits 12 through 14 will be admitted as evidence. I have no questions of the witness.

MR. STOVALL: I have a question to clarify and make sure, as a nonengineer, to make sure I'm reading this right.

EXAMINATION

BY MR. STOVALL:

Q. On your two production curves, one starts your scale at the bottom? They're logarithmic curves, is that right?

A. Yes, that's correct.

Q. One starts at 100 and one at 1,000 Mcf per day? Am I reading those correctly?

A. No, this is on a per month.

Q. Per month. Excuse me.

A. Yes, that is correct. If you would like me to expand, or not, I--

Q. No. I just wanted to make sure I was reading the curves correctly.

A. Yes, that is correct.

EXAMINER CATANACH: That's all we have. Is there anything further in this case?

MR. KELLAHIN: Mr. Examiner, we have provided notification to ARCO, as evidenced by Mr. Carr's presence here today. I don't have the green return receipt card yet back from the postal service. I would like another day or two to wait for the card, and when it shows up I would like permission to insert into the record the certificate of our notice to ARCO.

We have sent them, with the filing of the application, a copy of the application, a notice of the hearing, and that was originally mailed on January 16, 1990, when we filed the application, which meets the 20-day notice requirement.

MR. STOVALL: Mr. Examiner, just for the record, there is sufficient authority that ARCO's appearance in this case would waive any notice defects anyway.

EXAMINER CATANACH: I'll wait till I hear from you on that, Mr. Kellahin, and we'll enter it in the record.

There being nothing further in this case, Case 9861 will be taken under advisement.

CERTIFICATE OF REPORTER

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

I, Carla Diane Rodriguez, 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 caused my notes to be transcribed under my personal supervision; and that the foregoing is a true and accurate record of the proceedings.

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

WITNESS MY HAND AND SEAL February 24, 1990.

Carla Diane Rodriguez
CARLA DIANE RODRIGUEZ
CSR No. 91

My commission expires: May 25, 1991

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9861, heard by me on February 7 1990.

David R. Catanach, Examiner
Oil Conservation Division