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ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

26 February 1986

COMMISSION HEARING

VOLUME I OF II VOLUMES

IN THE MATTER OF:

Application of TXO Production Corp. for compulsory pooling, Lea County, New Mexico. CASE 8755

BEFORE: Richard L. Stamets, Chairman
Ed Kelley, Commissioner

TRANSCRIPT OF HEARING

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MR. STAMETS: The hearing will come to order.

We'll call next Case 8755.

MR. TAYLOR: The application of TXO Production Corporation for compulsory pooling, Lea County, New Mexico.

MR. STAMETS: Call for appearances.

MR. DICKERSON: My name is Chad Dickerson, Mr. Examiner, from Artesia, New Mexico, appearing on behalf of TXO Production Corporation, and I have three witnesses.

MR. KELLAHIN: Mr. Chairman, I'm Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of Joseph S. Sprinkle, and I have two witnesses to be sworn.

MR. STAMETS: Any other appearances?

I'd like to have all those who are going to be witnesses stand and be sworn at this time, please.

MR. DICKERSON: Mr. Stamets, I'm sorry, one of my witnesses is up xeroxing.

MR. STAMETS: All right, if

you'll help us remember when he gets on we'll swear him.

MR. TAYLOR: Raise your right hands, please.

(Witnesses sworn.)

MR. DICKERSON: Call Jeff Bourgeois.

MR. KELLAHIN: Mr. Chairman, at the pleasure of the Commission I have a brief opening statement, if that is acceptable to the Commission.

MR. STAMETS: That's fine, Mr. Kellahin.

MR. KELLAHIN: Mr. Chairmn, Members of the Commission, you have requested both counsel to try to consolidate their various arguments and factual presentations for a decision by the Commission.

From my client's perspective, we would like to suggest to you the various areas in which we need your attention and decision this afternoon, so that you might direct the parties on how they are to proceed with this particular matter.

We have certainly had in the past various meetings with you to discuss production of documents and whatever. Let me refresh your recollection

generally.

We're involved in the northwest quarter of a particular section, Section 26. Within that 160 acres there is now a producing Bone Springs well operated by TXO, in the northwest of the northwest. That's referred to as the Sprinkle 1.

The Sprinkle 2 Well is in the northeast of this northwest of that section, and that's the Sprinkle No. 2.

Both of those cases were the subject of forced pooling orders of the Division.

The case we're here today on is for the No. 3 Well in the southwest of the northwest quarter and there is another case trailing the Commission docket for April, I believe, for a de novo hearing on the No. 4, which is the southwest of the northwest.

We're requesting a decision today concerning the Examiner order on the No. 3 Well. In that regard, and because of some time constraints placed upon the operator for an expedited decision in this matter, I'd like to present to you at least a form of an order that we would like to suggest. There are some modifications we have already thought of since I drafted this, but in order ot expedite processing we would like to give to you for your consideration a proposed order that might be used as a check

list to resolve the issues that I'll outline for you in just a moment.

Examiner Stogner heard this case in a series of hearings. The first one was on November 21st. The second hearing was on about January 9th. As of the last hearing there was a difference between Mr. Sprinkle and TXO as to the AFE costs. At that hearing TXO proposed an AFE of 615,000 approximately. Mr. Sprinkle proposed an AFE of 496,000, and the examiner found the 615,000 number to be reasonable and put it in the Examiner order.

Subsequent to that order both TXO and Mr. Sprinkle have revised AFEs for consideration and we will need a decision on which one or some combination is reasonable.

My understanding is that TXO now proposes that the costs for the No. 3 Well are approximately 533,000. Mr. McCoy, our engineer, testified that he thinks on behalf of Mr. Sprinkle reasonable costs are 431,000, a difference of about 100,000.

We will present testimony and that will be an issued to resolve.

The next issue to resolve is the risk factor penalty to be applied. At the time of the January hearing TXO asked for 180 percent penalty. Mr. Sprinkle's testimony was for a 25 percent penalty and the

Examiner order found 150 percent. I believe that issue needs to be redecided by the Commission.

On a lesser matter but one that's still important to the parties, the overhead charges are different. TXO proposed overhead charges of $5,374 for a drilling well rate, $538 for a producing well rate.

Mr. Sprinkle's testimony was for $3753 and -- for a drilling well, and for a producing well, $392. Examiner Stogner found $4100 drilling well and $410 for a producing well. So he came up with a number that was different than the two parties.

In addition there has been concern all along in terms of TXO's obligation to commence the well pursuant to a drilling obligation under a farmout. It is my understanding that the spud date for that well could not be later than March 19th of this year.

In addition the Commission has before it a decision on a requested stay Mr. Sprinkle has filed with you concerning his election period under the pooling order for a No. 3 Well.

To refresh your memory, TXO has submitted to Mr. Sprinkle an election period pursuant to the Examiner order for the No. 3 Well, which our calculations show will expire about February 28th, which is Friday. We are requesting, and we would seek and our order proposes

that Mr. Sprinkle's election period correspond to the spud date of the well, and we'll provide testimony about the election period being continued to the March 19th date.

The other factor that is of importance to us and one we have proposed in the draft order is having TXO provide us with additional information on or before March 5th, which Mr. Sprinkle feels is necessary in order to properly exercise his election, and we'll provide testimony on that issue about the additional data that he wants.

In terms of bringing our position in this case we have incorporated into the proposed order all those comments I've just made to you setting forth what Mr. Sprinkle's position is on each issue.

We are involved, at least to some extent, on all the major issues that the Commission decides on forced pooling cases. We propose not to spend any time discussing with you the reasonableness of the offers between the parties, the length of time that's taken place, the method in which forced pooling was filed in terms of the offers. The parties have had some several months now and still cannot agree on a voluntary basis and we have no other course but to ask you to help us with a pooling order.

MR. STAMETS: So am I correct

in understanding that at this time there is no dispute as to the acreage to be pooled, the fact that who the parties are be pooled, that they cannot agree, and we're only dealing with these four or five issues?

MR. KELLAHIN: It's my understanding. I don't know the precise interest. Mr. Sprinkle has an undivided interest in the northwest quarter. As to this 40-acre tract, it's the same. It's an interest of 31.25 percent.

In addition to Mr. Sprinkle, I believe Lewis Burleson has a one percent interest, or thereabouts, and I don't think he's elected to participate yet.

The balance of the acreage, as I understand it, is now under the control of the operator, TXO.

MR. STAMETS: Would it be appropriate and agreeable to all the parties here to incorporate that portion of the record in the Examiner Hearing in Case 8755 having to do with issues which are not in dispute in today's case?

MR. DICKERSON: It would be satisfactory to us, Mr. Stamets, to incorporated all of the record in Case 8755.

MR. KELLAHIN: I would suggest that would be the safest way to avoid having overlooked

something today, would be to recommend that you incorporate the transcripts and records from both hearings in this case, Mr. Examiner.

MR. STAMETS: All right. With the proviso that the order resulting from today's de novo hearing, as to those four or five issues which are in dispute will be determined upon the evidence presented in today's hearing and will not rely in any manner whatsoever on the evidence presented in the earlier case, we will do so.

Is that satisfactory?

MR. DICKERSON: Yes.

MR. KELLAHIN: Yes, sir.

MR. STAMETS: Then, under those circumstances we will incorporate the previous record in Case 8755.

If there are no further statements, I --

MR. DICKERSON: I'd like to respond very briefly, if I may.

MR. STAMETS: Okay, fine.

MR. DICKERSON: TXO, this controversy between TXO and Mr. Sprinkle, in fact began approximately a year ago when TXO proposed its Sprinkle No. 1 Well in the northwest quarter of the northwest quarter of Section 26. Mr. Sprinkle has, as Mr. Kellahin stated, an undivided

31.25 percent gross working interest throughout the northwest quarter of Section 26. Mr. Sprinkle exhibited no great amount of interest in the offers to participate or farmout whatever alternatives offered by TXO at that time prior to commencement of the No. 1 Well.

The evidence in that case showed that the No. 1 Well was of a wildcat nature, projected to the Morrow formation with a secondary objective being the Bone Spring.

The Morrow was, in fact, dry. The well was completed as a fairly prolific Bone Spring producer in the northwest quarter of the northwest quarter, in excess of 200 barrels per day.

Mr. Sprinkle had not appeared nor actively opposed the compulsory pooling order entered against him in that case and his interest was subjected to a maximum 200 percent statutory risk penalty.

Then, and the evidence today will show that pursuant to its continuous development obligations under various farmout agreements, TXO has ninety days following the completion of one well prior to commencing drilling operations on the succeeding well, and failing in which -- in complying with its continuous development obligations it, obviously, loses its chance to earn additional interest under the provisions of those farmout agreements;

therefore, shortly after the completion of the Sprinkle No. 1 Well, TXO commenced an application, still unable to reach agreement with Mr. Sprinkle regarding his participation or not in the Sprinkle No. 2 Well, commenced drilling operations for that.

An order was subsequently entered in the Sprinkle No. 2 Well in the northeast/northwest, also compelling Mr. Sprinkle either to participate or suffer 180 percent risk penalty in view of the proximity to the fairly good production established in the No. 1 Well.

In the timing of that drilling and completion of his No. 2 Well, Mr. Sprinkle's election period in which to determine whether or not he desired to participate in the drilling of that No. 2 Well, was still in effect after the well was in fact at total depth, logged, completed, and making in excess of 100 barrels of oil from the Bone Spring itself.

Over the course of some time Mr. Sprinkle was furnished, at his request and voluntarily by TXO, among other things, the electric logs on that well, summaries of what production data that there had been obtained from both the No. 1 and the No. 2 Wells.

Mr. Sprinkle subsequently determined to participate after the well was completed, after the No. 2 Well was completed and on production, elected to

participate as was his right in that well. He therefore had the opportunity to pay his share of cost in that well, not in the same manner as the ordinary participant in the drilling venture, prior to having the well drilled, but after the well had been completed and was on production. And it was to avoid that risk of carrying a party at the operator's and TXO's sole risk in this instance, and enable a party in the position of Mr. Sprinkle to watch a well be drilled, to get access to the information derived solely at the expense of the party drilling that well, and to make his election to participate in that well after it had been drilled. It was in an attempt to avoid that happening to TXO that we're hearing -- that we're at hearing before you today on the No. 3 and No. 4 Wells.

The evidence will show that TXO's drilling obligation under its farmout agreements is of a cumulative nature, so it is not strictly speaking ninety days after the completion of one well until the commencement of the next succeeding well, when in fact wells have been drilled with less than ninety days between those completion and spudding of the next well dates. That's additional time to be accumulated and added to the ninety days under the farmout agreement. So TXO has been able, because it had accumulated benefit of some lesser time between these 1 and 2 Wells to add that cumulated time to its ninety days under

the farmout and therefore avoid having to commence its well up to the present time.

Our evidence today will show that we have misstated it in the past, our current calculation of the dates is that March 14th, 1986, is the must spud date under the drilling obligations of these farmout agreements by which TXO must commence the drilling of the Sprinkle No. 3 Well, and this has been a long and drawn out controversy we have been almost ad nauseam at hearings before the examiners on a continued from one day-continuing to the next day basis since early November.

TXO has been successful in this time in avoiding having to drill its well, complete it, and have Mr. Sprinkle (not understood), so with the opportunity to participate in the well, but the time is short. We cannot avoid commencement of this well any longer.

Without the help of this Commission TXO cannot avoid having it happen to it again on the No. 3 Well, exactly what happened on the No. 4 Well. It's not fair. We need the pooling order entered with the earliest possible date. It needs to establish a reasonable risk for the -- as a penalty for the risk involved in carrying these nonparticipating parties, and it needs to be issued very promptly.

It needs to be drawn in such a

manner that the election period under that order does not permit Mr. Sprinkle to wait until this well, which will be drilling two weeks from now, is completed, or even any information derived from it, before he makes his election.

We respectfully request that the order to be entered by this Commission require Mr. Sprinkle to make his election on or before March 14th, 1986, the date this well must be spudded by TXO. Without assistance such as that, all our efforts here are in vain. Our statutes are supposed to encourage the exploration and development of oil and gas by enabling an operators ready, able, and willing to drill a well but who, for one reason or another, is not able to obtain the voluntary joinder in the drilling operations by all parties who have the right to participate in that well, by resorting to our compulsory pooling process to accomplish what could not have been accomplished between parties on a contractual basis. It's our sole, exclusive remedy. This is the fourth and last resort as far as the operator is concerned when it is in a situation such as TXO finds itself today, and for these reasons we respectfully request the Commission's assistance by following its statutory mandate and subjecting the interest of Mr. Sprinkle to pooling in this area.

MR. STAMETS: Mr. Dickerson, not prejudging this case, I know of no reason the Commission

cannot enter an order today which would provide for the well to begin by the date which you suggest and would also give Mr. Sprinkle a fair and reasonable opportunity to choose to join in the well, and so I hope we don't spend a lot of additional time and testimony on the issue, just the bare minimum to assure ourselves that indeed TXO does have to start the well by a certain date.

JEFF BOURGEOIS,

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

DIRECT EXAMINATION

BY MR. DICKERSON:

Q Mr. Bourgeois, would you state your name, your occupation, by whom you're employed, and in what capacity?

A My name is Jeff Bourgeois. I'm a petroleum landman, employed with TXO Production Corp.

Q And you have previously testified before this Commission or one of its examiners and had your credentials made a matter of record, have you not?

A Yes, I have.

MR. DICKERSON: Tender Mr. Bourgeois as a landman.

MR. STAMETS: The witness is considered qualified.

Q Mr. Bourgeois, will you identify what we have submitted as TXO Exhibit Number One and tell the Commission what is shown on that map?

A Exhibit Number One is a land plat showing the proposed location circled in red and the proposed 40-acre proration unit for the Sprinkle Federal No. 3 Well outlined in yellow.

Q And very briefly summarize the purpose of TXO's application in this Case 8755.

A TXO seeks an order pooling all mineral interests underlying the southwest quarter of the northwest quarter in Section 26, Township 18 South, Range 32 East, from a depth of 4825 feet beneath the surface down to the base of the Bone Spring formation at approximately 8800 feet.

Q Mr. Bourgeois, identify what we have submitted as TXO Exhibit Number Two, and summarize for the Commission the information on the various wells shown on this map.

A Exhibit Number Two is an acreage plat which shows all the locations of producing wells and proposed locations of TXO's Bone Spring development plan for the north half of Section 26.

The northwest quarter is our Sprinkle Federal tract; northeast quarter is the Burleson Federal tract, with the wells appropriately numbered one through four on each quarter section.

Q And of those wells only the Sprinkle One and Two in the north half of the northwest quarter and the Burleson well indicated in the northwest quarter of the northeast quarter have been drilled at this date?

A That's correct. The Burleson No. 2 and 3 Wells have been drilled but are currently not completed.

Q Okay. Now, with regard to the Burleson -- the Sprinkle Federal No. 1 Well in the northwest quarter of the northwest quarter, tell the Commission the spud date of that well and the date on which it was completed.

A The Sprinkle Federal No. 1 was commenced May 11th, 1985, completed August 6th, 1985.

Q In the Bone Spring.

A Yes.

Q And with regard to the Sprinkle Federal No. 2 Well in the northeast/northwest of Section 26, what were the correlative dates of that well?

A The Sprinkle Federal No. 2 Well was commenced October 3rd, 1985, completed November 12th, 1985.

Q Now what is the interest of Mr. Joseph Sprinkle in the wells in the area in question, Mr. Bour-

geois?

A It's undivided interest of 31.25 percent.

Q Throughout --

A Throughout the --

Q -- west quarter?

A Uh-huh.

Q What disposition of Mr. Sprinkle's interest in the No. 1 and No. 2 Wells was made?

A In the Sprinkle Federal No. 1 Well Mr. Sprinkle's interest pooled by virtue of the Division's Order No. R-7850, and subsequent to the entry of the pooling order, Mr. Sprinkle did not elect to participate.

On the Sprinkle Federal No. 2 Well Mr. Sprinkle has elected to participate and at this time is a working interest owner with that 31.25 percent.

Q Do you have the order number of that OCD proceeding?

A No, I don't.

Q Mr. Bourgeois, identify Exhibit Number Three and tell the Commission what that shows.

A Exhibit Number Three is two title opinions prepared covering -- one covering the northwest quarter and one covering the northeast quarter. These are submitted to show the leasehold ownership in the respective quarter sections.

Q Now with regard to the leasehold ownership schedules in both of those title opinions, direct the Commissioners' attention to the parties and their interests which have not voluntarily agreed to pool in the Sprinkle 3 and 4 Wells.

A Those would be Mr. Lewis B. Burleson.

Q Excuse me, the Commission only need look at the title opinion on the northwest quarter for this --

A That's correct.

Q -- is that right?

MR. STAMETS: Is that page one of the exhibit?

A No, it would be page four, I believe.

MR. STAMETS: Thank you.

Q Okay, the interest of Mr. Burleson, which is shown to be 1.30209 percent gross working interest?

A That's correct.

Q And 1.13281 net revenue interest in the entire northwest quarter.

A That's correct.

Q Okay.

A And also Mr. Joseph S. Sprinkle, 31.25 percent gross working interest and 27.1875 percent net revenue.

Q We know -- we know what Mr. Sprinkle's

position is because he's represented here today. Do we know -- in fact, Mr. Bourgeois, what information do you have about Mr. Burleson's position?

A We are currently trying to negotiate a sale on Mr. Burleson's interest and we had made an offer, I believe, back in December, at which time he turned it down and he contacted our office last week to inform us of his interest to sell his interest to TXO. At that time we had to re-evaluate our offer due to the falling oil prices and have not re-submitted an offer back to Mr. Burleson as of this date.

Q At any rate, if TXO is successful in reaching some sort of accommodation with Mr. Burleson, the order to be entered by this Commission would have no affect on that agreement.

A That's correct.

Q Mr. Bourgeois, identify what we have submitted as TXO Exhibit Number Four and tell the Commission what these documents are.

A Exhibit Number Four are copies of the farm-in agreements through which TXO earned its interest in this north half. We, for purposes of this hearing, we just need to concentrate on the hearing that's dated January 30th, 1985, covering the northwest quarter.

We have three separate farm-in agree-

ments; all are identical with the exception of the first page and the signature page. These represent a little over 51 percent of the gross working interest in the northwest quarter of Section 26 and these agreements are where TXO's continuous development obligations are.

Q Direct the Commissions' attention to the provision in these farmouts which govern the question of development.

A Okay, it's on page three of the farmin agreement, Article Number VI, entitled Continuous Development for Acreage To Be Earned. That clause states that TXO shall commence another well within ninety days after the completion of the test well.

Q Which was the Burleson -- the --

A Sprinkle.

Q -- Sprinkle Federal No. 1 Well.

A And if they do not do that there would be a reversion of all the interests of the farmors as to acreage that's not included within a producing proration unit.

Q And all of these farmouts that you have submitted on the northwest quarter of Section 26, they are identical as far as that provision is concerned.

A Yes.

Q Okay. Now based on the dates that you previously testified to concerning the completion of the

Sprinkle No. 1 and 2 Wells, Mr. Bourgeois, have you calculated TXO's date by which it must commence the third well on the northwest quarter of Section 26?

A Yes, I have.

Q And how have you calculated that?

A With the -- I calculated 58 days between the spud date, showing the completion date of the Sprinkle No. 1 and the spud date of the Sprinkle No. 2. That left an additional 32 days of the 90-day continuous development for TXO to use as its cumulative credit. That 32, in addition to the 90-days provided for in the agreement, left TXO with 122 days between the completion of the No. 2 Well and the commencement of the No. 3 Well, and we have calculated that date to be March 14th.

Q And does TXO, to your knowledge, intend to have a rig on location and drilling by March 14th?

A Yes.

Q Mr. Bourgeois, identify TXO Exhibit Number Five and briefly summarize what that packet is.

A Exhibit Number Five is copies of correspondence between TXO and Mr. Sprinkle, as well as other working interest owners in the northwest quarter of Sectoin 26, wherein TXO has sought the election or farmout of Mr. Sprinkle's interests to support the drilling of this well.

Q Commencing October 1st, 1984.

A Yes. That was for the Sprinkle Federal No. 1 Well.

Q Identify what we have submitted as Exhibit Number Six, Mr. Bourgois.

A Exhibit Number Six is a copy of what TXO would propose to be the joint operating agreement covering operations for the Sprinkle Federal No. 3 Well. It is a short form, which anticipates the use of the model form operating agreement, Form 1977 of the AAPL, and we just outlined the changes or deletions we would wish to make.

Q Now, so we're not misleading, Exhibit A to that document is not correct in the interest of the parties set out. It assumes that all of the parties will participate and you in fact have already stated that you did not have -- had no indication that Mr. Sprinkle or Mr. Burleson will participate.

A That's correct.

Q J. Cecil Rhodes is shown with a working interest. What disposition has been made of that?

A He has signed the AFE to agree to participate.

Q And that's the reason his interest is not affected by this proceeding.

A That's correct.

Q Identify and state the purpose of TXO Exhibit Number Seven.

A Exhibit Number Seven is a copy of an operating agreement by and between TXO and PetroAtlas Corporation, covering, among other lands, the tract on which the Sprinkle Federal No. 3 well will be drilled.

We have submitted this to showa that the overhead rates that we are requesting have been agreed to by PetroAtlas.

Q And what are those overhead rates that TXO would request?

A $5,374 per month for a drilling well and $538 a month for a producing well.

Q Would you identify Exhibit Number Eight, Mr. Bourgeois and state the purpose of this exhibit?

A Exhibit Number Eight is a copy of an interoffice memo from our Dallas Accounting Department. Dallas is our central office.

The purpose of this exhibit is to show where we arrived at the figures we are requesting for the overhead rates. The Dallas Accounting Department determines these rates for our various districts within the corporation, and requests that we use these rates in operating agreements.

Q Direct the Commissioners' attention to

the provision in this memorandum which establishes the TXO corporate policy for overhead rates.

A Okay.

Q It's under your West Texas District, is it not?

A Yes, sir, we're in the West Texas District and the well will be drilled at a 4000 to 12,000 foot interval; therefore requesting that we use the rates of $5,374 and $538.

Q And what is the reference to COPAS? Do you know what that is?

A COPAS is an abbreviation for the Council of Petroleum Accountants Society, and they review the overhead rates annually and either approve or disapprove an increase in overhead rates, and as this memo shows, that they approved a 2.7 percent increase for rates for contracts dated prior to April 1, '85, and that all contracts generated subsequent to April 1st, 1985, will have a 2.7 percent increase.

So this number merely represents a 2.7 percent increase over our previous year's overhead rates.

Q And is this policy followed by TXO in all wells within the certain depth categories and the districts set forth in that memorandum; it does not -- does not pick and choose among wells or whoever appears to be interested in the certain well? It's a blanket policy?

A That's correct.

Q Mr. Bourgeois, were Exhibits One through Eight compiled by you or under your direction and supervision?

A Yes, they were.

MR. DICKERSON: Move the Commission that TXO Exhibits One through Eight be admitted at this time.

MR. STAMETS: They will be admitted.

Are there questions of this witness?

MR. KELLAHIN: Yes, Mr. Stamets.

MR. STAMETS: Mr. Kellahin.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q Mr. Bourgeois, let me direct your attention to your Exhibit Number Two, which is the acreage map.

Based upon your understanding and knowledge, Mr. Bourgeois, can you update me with regard to TXO's drilling plans in the north half of Section 26 insofar as the Bone Springs is concerned?

In January, at the hearing on the 9th of

January, what was the status of the Burleson No. 2 Well in Unit letter A of 26?

A At January 9th, I believe that well was currently drilling.

Q All right, and what is its status today?

A I believe it is in the final stages of completion and they're going to have to put a pumping unit on it.

Q And do you know whether or not the No. 2 Well has been logged and potentialed?

A I know it has been logged. I'm not sure of the potential.

Q Okay. We look at the Burleson No. 3, that was a well location in January that's now a drilled well?

A It is now a drilled well, logged, and in the completion phase.

Q What is the status of the No. 4 Burleson Well?

A That remains a proposed location.

Q Okay. In the south half of the northwest quarter you still have the Sprinkle 3 and 4 as locations.

A Correct.

Q So at this point, of the eight possible locations in the north half of 26, TXO has drilled all but

three.

A Correct.

Q Do you still have current plans as you had back in January to go ahead a drill all eight 40-acre tracts in the north half of this section?

A To the best of my knowledge, we do.

Q Let me see if I can understand the sequence with regards to the 90-day drilling obligation in the farmout agreements.

Was that a 90-day contractual obligation in the farmout agreements that TXO proposed to the farmors?

A That 90-days was proposed by TXO. We inserted that in there so as to give us a right to earn additional acreage outside the proration of the initial well.

Q Had you thought about it then, could you have negotiated some other period of time other than the 90 days?

A Possibly. Maybe yes, maybe no. It wasn't -- it wasn't discussed.

Q Is this a farmout agreement that you negotiated yourself, Mr. Boureois?

A Yes.

Q And did you propose to the farmors the 90-day drilling clause?

A The 90-day drilling clause was submitted

to the farmors as a clause in this agreement when we sent it to the farmors for their review and execution.

Q Did you propose to any of them 120 days, for example?

A No.

Q Did any of the farmors request a more restrictive continuous drilling obligation other than the 90-day clause?

A No.

Q All right. In terms of calculating when the No. 3 Well must be spudded, you've given us a date today of March 14th?

A Yes.

Q Absolutely sure we've got the right date, now.

A I'm -- I'm very confident of tha. I you want to see my calculations of where we derived that from --

Q No, sir, I'm ready to believe you. In January you said it was March 19th. If you're satisfied March 14th, that's the date we propose to use in this hearing.

A Okay.

Q If you're satisfied that that's the date that fulfills the terms.

A Let's go with that.

Q All right. Let's go back in chronology just a moment so I can set in context the No. 2 Well. You gave us a chronology just now in your direct testimony saying the No. 1 Well was completed on August 6th of '85.

Under the 90-day clause, then, you would have had to commence the No. 2 Well approximately November 4th.

A Okay.

Q All right. What was the date that the Commission entered the forced pooling order on the No. 2 Well, do you recall?

A I don't have that order.

Q All right, I'll show you a copy of that.

A Okay.

MR. KELLAHIN: Mr. Chairman, I hand the witness a copy of Commission Order R-8043, and ask you, sir, if that refreshes your recollection about the effective date of the order.

A October 3rd, 1985, is the date.

Q All right, is that your understanding or recollection of the approximate effective date of that order?

A Yes.

Q And when was the spud date, then, for the No. 2 Well?

A Same day.

Q Do you recall, Mr. Bourgeois, what the day was that you gave Mr. Sprinkle notice to start his 30-day election period for that well?

A It would, I assume, be very shortly thereafter the correspondence. As soon as I get a copy of this I send it -- a copy to all force pooled interests with a copy of the order and our AFE by certified mail, and I believe those dates are of record in previous testimony. I don't have them in front of me right now.

Q You've testified the completion date for the No. 2 Well, having been spudded on October 3rd, was completed on November 12th.

A Yes.

Q Do you recall when Mr. Sprinkle's 30-day election period for that well would have terminated?

A I believe it was on or around the 12th of November.

Q Are you aware of any reason that would have precluded TXO from postponing the spud date on the No. 2 Well until sometime after the election for Mr. Sprinkle terminated on November 12th?

A Yes.

Q All right, what would have been the reason?

A Number one, as we discussed earlier, if we were to wait until November 12th, the continuous development obligation would have expired on November 4th.

Q So long as the spud date then was on or before approximately November 4th, then you would have complied with the continuous drilling obligation.

A Yes.

Q You started the well approximately 30 days before the end of the 90-day election period. That was a choice that TXO made, I assume.

A Yes.

Q All right. Having started it early, then you have credited yourself with that excess in terms of adding on to the 90-day period for the commencement of the third well.

A That's correct.

Q And that gets us to the 122 days and the March 14th date.

A That's correct.

Q All right. Did Mr. Sprinkle, I believe you've told us, already exercised his election on the No. 2 Well.

A Correct.

Q He's a participating working interest owner in the No. 2 Well.

A That's correct.

Q Do you recall how much money he paid to you to participate?

A He paid $192,000.

MR. KELLAHIN: Thank you, Mr. Chairman.

MR. STAMETS: Any other questions of this witness?

MR. DICKERSON: No questions.

MR. STAMETS: He may be excused.

You may call your next witness.

MR. DICKERSON: Call Mr. Andy O'Hare.

ANDREW T. O'HARE,

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

DIRECT EXAMINATION

BY MR. DICKERSON:

Q Will you state your name, your occupation, and by whom you're employed, please?

A My name is Andrew T. O'Hare. I'm a petroleum geologist with TXO Production Corporation in Midland.

Q Mr. O'Hare, you have testified recently for this Commission or one of its examiners and your credentials are a matter of record as a petroleum geologist, are they not?

A Yes, they are.

MR. DICKERSON: We tender this witness as an expert geologist.

MR. STAMETS: He is considered qualified.

Q Mr. O'Hare, have you made a study of the geological data available in the vicinity of the Sprinkle 3 and 4 Wells with respect to the purpose of expressing an opinion upon appropriate risk penalty to be imposed in any order entered by this Commission?

A Yes, I have.

Q And will you refer to what we have submitted as TXO Exhibit Number Nine and tell the Commission what that map shows?

A Exhibit Number Nine is a production map of the nine surrounding sections around the Sprinkle wells in question. On that map there are 23 wells shown in total, including dry holes. Of those 23 wells there are 8 wells that are designated as Bone Spring producers. Those wells are shown in pink and of those 8 wells 7 of them produce from the Bone Springs pay sands in question in this hearing.

The well in Section 34 produces from a carbonate zone in the Bone Spring formation that does not correlate with the pay zone that we're -- that's in question in this hearing.

As can be noted with the most up-to-date and correct production figures that we have, that I have to date, our Sprinkle No. 1 Well has produced just in excess of 22,000 barrels of oil.

The No. 2 Well has produced 3500 barrels of oil. The production statistics for that well in one of the previous hearings was miscalculated and therefore misrepresented. This is the true cumulative to date.

The No. 1 Well is still pumping 140 barrels -- still flowing 140 barrels of oil a day, and the No. 2 Well is currently waiting on a pumping unit and recompletion.

The Burleson Federal No. 1 Well was completed and has produced just in excess of 1900 barrels of oil and is still currently flowing 193 barrels of oil per day.

The No. 2 and No. 3 Burelson Wells have also been drilled and have yet to have been completed.

Q Locate those for us, if you would, Mr. O'Hare, as you describe these wells.

A The No. 2 Well is in the northeast of the

northeast and the No. 3 is in the southwest of the northeast. The No. 3 was just recently completed.

The older wells that produce from this same Bone Spring pay sand are in Section 27.

The Shell Querecho Plains Unit No. 1 is the oldest producer. It has currently been abandoned in this zone and cumed just in excess of 40,000 barrels of oil. that's in the southernmost part of Section 27.

Just north of that the Mewbourne Oil Federal G has cumed just in excess of 75,000 barrels of oil from the Bone Spring formation but has only produced 52,830 barrels of oil from the correlative Bone Spring Pay sand. This well was completed in other Bone Spring pay intervals, be that the 2nd Bone Spring Carbonate and the 3rd Bone Spring Carbonate; therefore 52,830 barrels are only attributable to the pay sand in question.

A more recent completion, the Mewbourne Oil 10-E has produced just in excess of 4000 barrels of oil to date and is currently pumping 50 barrels of oil a day.

Two other wells have been completed by other operators in this pay sand; one again by Mewbourne Oil, 11 -- which is 11-E again in the northeast of the northeast of Section 27; and Marshall and Winston Querecho Federal No. 1 in the southwest of the southwest of Section 23. These wells have yet to report completion.

And that describes Exhibit Number Nine.

Q Mr. O'Hare, go to Exhibit Number Ten and tell us what you've shown on that exhibit.

A Exhibit Number Ten is a structure map on top of the pay sands in question.

As can be seen, there are two pronounced structural noses, one running roughly north/south through Section 27 and Section 34; and another running roughly northwest/southeast through Sections 23, 25, and into Section 36.

The No. 3 Well, proposed No. 3 Well, will penetrate the No. 3 Sand at an approximate depth, subsea depth of -4750 or about equivalent to the Sprinkle No. 2, and the No. 4 will be some 60 or so guesstimated feet deeper than that.

The porosity in the pay sand in question appears to be more well developed over these structural noses. In cohesion with the structural troughs it appears to be a poor quality sandstone with a higher shale content and a finer grain size.

The result of this would -- would be exhibited in the Sprinkle No. 2 Well, which can be demonstrated on my next exhibit.

Q Okay, refer then to your Exhibit Number Eleven and tell us what you show with that.

A Okay. Exhibit Number Eleven is a porosity Isopach designating the number of feet of pay sand with porosities in excess of 10 percent.

As can be seen from the map, the Sprinkle No. 1 has been given 20 feet; the No. 2, 12 feet; the Burleson Federal No. 1, 16 feet; the No. 2, 39 feet; and this map was prepared too recently for putting the data for the No. 3 on the map.

Then again the data is shown for the wells in Section 27.

The Sprinkle No. 3 is supposed to penetrate approximately 24 feet of 10 percent or greater porosity, and the No. 4, just in excess or in the vicinity of 10 -- 10 feet.

Again, if you refer to Exhibit Number Ten, the porosity thicknesses appear to be developed in cohesion with the structural noses, as demonstrated.

Q So what part does the structure and the porosity development play in your analysis of the risk in the 3 and 4 Wells, Mr. O'Hare?

A It appears that one needs to have a favorable structural position, which would mean in the vicinity of the structural noses, on, or on the edge of them.

Along with that would be required a cer-

tain number of feet, which is yet been determined, of 10 percent or greater porosity in these pay sands, to make a productive well, which has yet to be determined what the eventual economic necessities will be to produce -- economic volumes of oil will be necessary to produce from these wells, based on the current drop in oil prices.

None of the wells shown on the plat, including the well in Section 27, the Mewbourne Oil Federal G-1 Well, has produced a large enough volume of oil to be considered econmic either at 25 barrels or at $18.00 per barrel.

Q Mr. O'Hare, would you prefer to go to your Exhibit Number Twelve before we discuss the comparative risk of the locations for 3 or 4 or do that at this point?

A I can do it at this point.

Q Okay. How would you, based on what you have testified to so far, compare the anticipated risk that TXO is going to encounter in the drilling of its 3 and 4 Wells, both between those two locations and with regard to the closest wells in the area, the 1 and 2 Wells?

A It appears both structurally and in a porosity sense that the Sprinkle No. 3 will be approximately equivalent to the Sprinkle No. 1, albeit down dip approximately 40 or 50 feet on estimate from the structure map.

And the No. 4 Well appears to indicate

that it will penetrate approximately 10 feet, as previously stated, and would more closely resemble the production from the Sprinkle No. 2 Well.

Therefore, I think the risks associated with those two wells would be on or equivalent to the No. 1 and the No. 2 Wells, respectively.

Q So that as between themselves, the -- you foresee that the No. 4 Well, though, is potentially more risky than the No. 3 Well.

A As mapped, the No. 4 Well will be a riskier venture than the No. 3 as mapped currently.

Q And the closest well that you can compare the No. 3 Well to as far as the risk encountered, is the No. 1 and you stated, I believe, that the proposed location of the No. 3 Well is down dip.

A Yes.

Q How much, and what, if any, effect on risk does that play?

A There does appear to be a structural component to this trap and, as mapped, it appears it will be approximately 40 feet down dip from the No. 1 Well; therefore making it at or equivalent to the structural elevation of the No. 2 Well.

Q Mr. O'Hare, now turn to your Exhibit Number Twelve and explain it to the Commission.

A Exhibit Number Twelve is a stratigraphic cross section which is hung on the 1st Bone Spring Sand, which is designated by the dashed line on top of the cross section.

The pay sand, which I have been discussing, has been colored yellow in each of the respective wells. Porosities in excess of 10 percent, or the best estimate there is, have been designated in green. Perforations from these pay sands are designated in pink.

The cross section goes through the Shell Well, which has produced 40,000 barrels of oil from the designated perforations; through the Mewbourne Oil Federal G Well, which has produced 50,000 -- 52,000 barrels to date from the noted perforations; then through the Mewbourne Oil Federal E-10 Well, which has produced just in excess of 4000 barrels; through the TXO Sprinkle No. 1 Well, producing approximately 23,000 barrels; and then the No. 2 Sprinkle Well, which has produced just in excess of 3500 barrels of oil.

Q What information do you glean from this cross section which bears on risk, Mr. O'Hare?

A As can be seen, the Sprinkle No. 1 Well appears to have three sandstones developed with porosities developed in excess of 10 percent, those designated in green.

The Sprinkle No. 2 Well has two, at least two of the sandstones with porosities -- with numbers of feet with porosity in excess of 10 percent designated; and the third-most sand, the lower sand, which is present in the No. 1 Well, is not as well developed and has porosities of about 8 percent.

Moving further west to the Mewbourne Oil Federal E-10, the two upper sands appear to be developed and for the remainder of the wells in the cross section, it appears that the only -- only the two upper sands have porosity developed in excess of 10 percent.

Therefore, I project that, hopefully, we'll penetrate the three sands with porosities greater than 10 percent in the No. 3 location, although it is up for debate at this point whether all three sands will have sufficient porosity in the No 4 location; therefore, again explaining the greater risk for that location.

Q Based on your analysis of this geological data, Mr. O'Hare, have you formed an opinion as to an appropriate risk penalty to be imposed in the order by this Commission?

A Based on my evidence presented in both this case and in previous cases, I feel that the risk factor should be no greater than 180 percent for both of the wells in question, both for the No. 3 and the No. 4 Well.

Q Is it your opinion, then, that 180 percent would be an appropriate risk penalty to be imposed on the No. 3 and 4 Wells?

A Yes.

MR. DICKERSON: We will move admission of TXO Exhibits Nine through Twelve at this time and that concludes my examination of this witness.

MR. STAMETS: Without objection, the exhibits will be admitted.

Any questions of the witness?

MR. KELLAHIN: Yes, sir.

Mr. Chairman, I have submitted to the Commission for introduction Sprinkle Exhibits One through Ten, which are copies of production maps, structure maps, Isopachs, introduced by TXO in the various pooling cases that have been presented to the Commission in the last year concerning the geology in the north half of 26.

We move for introduction of Exhibits One through Ten at this time for purposes of asking this geologist some questions about the TXO previous geologic exhibits.

MR. DICKERSON: No objection.

MR. STAMETS: The exhibits will be admitted for that purpose.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q Mr. O'Hare, would you take a moment and look through Exhibits One through Ten, Mr. Sprinkle Exhibits One through Ten, and tell us which of these exhibits were prepared by you or prepared under your direction and supervision?

A The first three exhibits were prepared by a geologist who still works for TXO who looked at this area before I came to work for TXO, and the rest of the exhibits, the remaining seven, were prepared by me or under my supervision.

Q Let's start with Exhibit Number Four, Mr. O'Hare. This was an exhibit that you used for the September 11th, 1985, forced pooling case for the Sprinkle No. 2 Well?

A Yes.

Q As well as Exhibits Five and Six, those three exhibits?

A I think the next one but that next one was used for a hearing past that.

Q All right. Four, Five, and Six are the September '85 hearing for the Sprinkle 2?

A Okay, right, Four, Five, and Six.

Q Seven, Eight, and Nine are your exhibits for the hearing in November 21st for the No. 3 Well.

A Yes.

Q And the tenth exhibit is the update on the production map that you used for the Sprinkle No. 3 for the January 9th hearing.

A Yes.

Q All right. If you'll look at Exhibits Four, Five, and Six, starting with No. 4, at that point in Section 26 the initial TXO well for the Bone Springs was the Sprinkle No. 1.

A Yes.

Q And it had an initial potential flowing rate of 235 barrels of oil?

A Yes.

Q Okay. The structural position -- the next best producing well in that Bone Springs area is which well on Exhibit Number Four, Mr. O'Hare?

A The next -- at that time it probably would have been the Shell oil well in the southernmost part of Section 27.

Q Would you begin with the structure map on Exhibit Number Five and lead us through the balance of your previous exhibits and narrate for us how your geology and interpretation of the area has evolved as additional wells are drilled and completed and produced?

A When I first mapped this area after I

first came to TXO in May, I mapped the structure in the Bone Spring sand on the top of the 1st Bone Spring sand, which, on my cross section, which I used for today, is designated as the dashed line.

Upon seeing the log on the Sprinkle No. 2 Well, and comparing that or correlating that with the Sprinkle No. 1 Well, you can see there's an increase in the thickness between the interval designated as the top of the Bone Spring pay sand and the top of the 1st Bone Spring sand, an anomalous thickening. It appears that at the Sprinkle No. 2 location there was a thicker deposition of sandstones and other rocks above the pay sand.

I therefore thought to reflect the local geology and depositional history more accurately that it would be better to map on top of the Bone Spring pay sand, so therefore in subsequent hearings my structure map has -- designates the top of the Bone Spring pay sand rather than the top of the 1st Bone Spring sand.

Q All right, sir, if you'll turn to Exhibit Number Nine, which is the porosity Isopach on the Bone Spring sand from the November hearing --

A Just a second, just a second. All right. Okay.

Q All right, and let's compare it to the porosity Isopach, your Exhibit Number Eleven at today's

hearing. Do you have both of those exhibits now?

A Yes.

Q Within the area of the north half of Section 26, what changes have you made with regards to your interpretation from November to date?

A Having initially worked this area, I made this porosity Isopach which shows the Bone Spring pay in question as one large pod of porosity. I made this porosity Isopach in conjunction with the structure map shown in the exhibit just before this one, which was on top of -- the structure map on top of the 1st Bone Spring sand.

Having received the data, as I just discussed, from the Sprinkle No. 2 Well, I went back through and re-correlated the logs in this immediate area and an area slightly around the outside of the area designated on the map and came up with a revised interpretation which I've outlined for you today. I feel that the better quality porosity is developed over the structural noses that are designated by the structure on top of the Bone Spring pay sands rather than the structure on top of the 1st Bone Spring sand, and therefore, on Exhibit Number Nine I have broken these two pods -- I have broken that one pod into two pods with the structure therefore agrees -- the porosity picks, excuse me, therefore agree with the structural noses designated on my more recent structural map.

And the wells drilled since the No. 2 have more or less agreed with my depositional history.

Q Has any operator in the immediate area drilled a dry hole in the Bone Springs up to now?

A Not completed as a dry hole, no.

Q Does TXO propose to go ahead with its drilling plans to drill up all eight 40-acre locations in the north half of 26?

A At this point, unless there's a negative venture is encountered.

Q As of today we've got some additional information that we didn't have back at the January hearing, don't we?

A Yes, I think I included the information for the Burleson Federal No. 2 Well.

Q When we look at the Bone Springs wells that have been drilled and completed, for example, on your Exhibit Number Eleven, in your opinion as a geologist, which would you consider to be the best of the Bone Springs wells currently completed?

A Some of the wells have had better initial potentials than the others. The Sprinkle No. 1, as we previously discussed, IP'ed flowing for 235 barrels of oil, whereas a direct east offset to that, the Sprinkle No. 2, IP'ed for approximately 160 barrels of oil flowing, and then

further east of that, the Burleson Federal No. 1 IP'ed for I think about 240 barrels of oil flowing.

Q In terms of its initial potential then, the best well is the Sprinkle 1, or is it the Burleson No. 1?

A This is yet to be determined.

Q They're both pretty close.

A Their initial potentials are close, yes.

Q If you wanted to get another well like any of the wells in the pool, the Bone Springs, which well would you want to duplicate?

A I would much rather penetrate a well with 20 feet of porosity up dip from anything we have remaining left to drill.

Q How do the TXO wells in the north half of 26 compare to what Mr. Mewbourne's company is doing in Section 27?

A They're pretty similar, although, as I testified to previously in other hearings, none of the wells shown on the plat have produced sufficient quantities of oil to make them economic.

Q Not enough time has gone by for that to occur, is that not true?

A Well, although for the -- that Shell Well in the southernmost part of Section 27, that's been already

abandoned and produced only 40,000 barrels of oil, and the well in Section 20 -- in Section 35, the William Hendon, Jr. Well, has producing -- been producing from the Bone Spring pay sands for in excess of ten years and it's produced just only 5000 barrels.

Q All right, let's look at the Hendron Well in 35 on your structure, does not that generally represent the lowest structural position for the Bone Springs reservoir in this immediate area?

A Yes.

Q Have we yet established a structural high point in this reservoir?

A Not to date.

Q So based upon current information, any well that is structurally higher than the Hendron Well in 35 is going to have good structural position, and as we continue to move to the northwest quarter of Section 26, we continue to improve structural position.

A It appears that way.

Q Okay. Let's look at the Isopach now with regards to the Hendron Well in 35.

Do you see the 10-foot Isopach thickness that's contoured at the Hendron Well, goes up into Section 26, circles the No. 4 Sprinkle location, and comes back down to the southeast corner of 26? Do you see that little sad-

dle or nose on the 10-foot -- the 10-foot thickness contour line?

Are you following me?

A Yes.

Q All right. What is the -- what are the values or the points, the datum points, that justify or explain why you have caused that 10-foot contour line to move from the Hendron Well all the way up through the No. 4 Sprinkle location?

A Again, in cohesion with my depositional history, where I got two separate structural noses designated, and with the data that I've obtained from the Sprinkle No. 2 Well, there appears to be an interval between those two noses where the sand is of a poorer quality than the wells that have penetrated the pay sand either on the structural noses or off the flanks of the structural noses.

Q Mr. O'Hare, I'd like to show you my copy of your Exhibit Number Eleven in which I have redrawn in a red pen the 10, 20, and 30 foot contour lines on your Isopach, and I'd like you to look at that for a moment.

Have you had an opportunity to look at those lines, Mr. O'Hare?

A Sure have.

Q All right. Does my approximation of a way to redraw the 10, 20, and 30 foot contour lines, is that

generally consistent with the existing data?

A It can be mapped that way. It doesn't agree with my depositional history, but --

Q I understand.

A -- it can be mapped that way certainly.

MR. KELLAHIN: Mr. Chairman, I show you my copy of TXO Exhibit Number Eleven in which I have drawn in red pen the contour lines on Mr. O'Hare's Isopach that he's identified and described as being within the range of reason in drawing those contour lines.

Q Let me -- let me use the structure map for a moment, Mr. O'Hare, or perhaps let's stay with the Isopach. I have another copy.

When we look at the Burleson No. 2 Well in the northeast of the northeast of 26, that well has been drilled and logged now, hasn't it?

A Yes.

Q In terms of the Isopach, what thickness have you determined to exist in the Burleson No. 2 Well in the Bone Springs?

A Approximately 39 feet.

Q In terms of your projection of the Isopach, is that consistent with the way you've contoured the Isopach?

A Given to slight drafting --

Q Okay.

A -- differences, yes.

Q And has that resulted in any change in your interpretation from the January hearing with regards to the thickness that would be encountered for that well?

A I think I have previously given it approximately 25 feet, or so --

Q All right.

A -- on my previous maps.

Q You projected 25 feet and it came in at what thickness?

A At 39 feet, and I think that that's mainly due to the fact that I acquired some porosity data on the well in Section 24.

Q All right. Let's look at the Burleson 3 location. That well's been drilled and logged now, hasn't it?

A Yes.

Q In January what did you project as the geologist that the thickness of the Bone Springs interval would be at that location?

A I think it -- it would approximately be 20, probably 25 feet, also, I think.

Q All right, and what have you calculated to be the thickness on that log?

A It's approximately 35 feet.

Q Over in Section 27 the Mewbourne location up there in Unit letter B --

MR. STAMETS: Excuse me, Mr. Kellahin, I want to be sure I understood the witness' --

Q Okay.

MR. STAMETS: -- answer to your last question.

The Burleson Federal No. 3 in the southwest of the northeast of Section 26, from the logs you now read 35 feet?

A Yes.

MR. STAMETS: Okay, and so your Exhibit Number Eleven presented today does not credit the No. 3 with enough porosity.

A No, these -- these maps were prepared before I calculated that data.

MR. STAMETS: All right, so to be absolutely correct, you'd need to move that 30-foot line over to the west of Well No. 3, is that correct?

A That would be true.

MR. STAMETS: Okay, thank you.

I'm sorry, Mr. Kellahin, I just wanted to be absolutely sure I understood the answer.

Q With regards to the acreage in 27, the

Mewbourne Well in January in Unit letter B, I think it is was the 1-E Well -- I'm sorry, it's in Unit letter A, it's the 11-E, has that well been drilled and logged?

A Yes.

Q All right. Unit letter A in Section 27, Mewbourne 11-E, what do you calculate to be the thickness of the Bone Springs interval for that well?

A Approximately 26 feet.

Q And what does your Exhibit Number Eleven show at today's hearing in terms of what you anticipated to be the thickness at that well location?

A Approximately 26 feet.

Q Other than the wells we've just talked about, are there any other wells that have been drilled and logged since the January hearing that we have not discussed that apply to this Bone Springs reservoir?

A The Marshall and Winston well.

Q All right, sir, that's the well in the southwest of the southwest of 23?

A Yes.

Q In January what had you projected for the thickness at that location, if any?

A Approximately 18 feet.

Q All right, sir, and according to the log on the Marshall/Winston Well, what do you calculate to be

the thickness?

A Approximately 23 feet.

Q You testified in January, Mr. O'Hare, that you anticipated the geologic risk to be not greater than 180 percent.

You testified again today that you thought it was no greater than 180 percent.

You used the phrase "no greater than". Does that attach to you any significance in terms of a range of risk? Is that the upper limit of the risk that you're considering?

A Yes.

Q All right. What, in your opinion as a geologist would be the minimum risk involved?

A No less than 175 percent.

Q Your opinion in January was that the risk involved was 180 percent. has subsequent drilling and logging caused you to believe that the risk has increased or decreased?

A I still remain with my same figure. Due to the fact that, as I discussed previously, none of these wells have produced enough volume to indicate that they will be economic.

Q I appreciate the qualification, but geologically, the additional drilling that's taken place has

shown that your mapping in January was more conservative or more pessimistic than the facts have demonstrated to us to date. Is that not true?

A Yes, that's true.

MR. KELLAHIN: No further questions.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. O'Hare, would you run by the minimum risk that you gave Mr. Kellahin? Did I understand you to say that there was a -- only a 30 percent chance, a 3 out of 10 chance, that the Well No. 3 would be a dry hole?

A I was just testifying to geologic risk and I didn't say anything about percentage, percentages.

Q Okay, we got a 3 in 10 geologic risk of what?

A Do you mean a 70 percent chance of success?

Q Yeah, is that what you're testifying geologically?

A Yes, I'd say that would be fair.

Q Okay, so 3 out of 10 times under these circumstances you would expect to not get a well.

A Let's say to not penetrate a sufficient

quantity of sand and in a favorable structural position with a favorable initial potential, be that flowing or pumping, again, with no cumulative production history to indicate that these will be economic.

As this -- this reservoir can be compared geologically to the Sprayberry trend, which is of a similar geologic age, and of a similar quality in the grain size of the sandstones and the relative time of deposition and the relative means of deposition, and some of those wells come on for relatively decent IP's and then produce small quantities of oil after the initial seven or eight months of production.

And I think --

Q What we're talking about here is the risk of encountering those desired geologic factors which would cause anybody to -- to go out there and drill a well --

A Yes.

Q -- geologically, not necessarily from an engineering standpoint, from a payout standpoint.

MR. STAMETS: Are there other questions of this witness?

He may be excused.

MR. DICKERSON: Call Mr. Deen Wood, and, Mr. Stamets, this witness has not been sworn.

(Witness sworn.)

DEEN WOOD,

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

DIRECT EXAMINATION

BY MR. DICKERSON:

Q Mr. Wood, state your name, your occupation, and by whom you're employed, please.

A My name is Deen Wood. I'm a petroleum engineer and I'm employed by TXO Production Corporation.

Q And you have recently testified on behalf of TXO as a petroleum engineer before this Commission or one of its examiners, have you not?

A Yes, I have.

Q And have you made a study of the engineering data available in the vicinity of the Sprinkle 1 and 2 Wells, the wells we've heard testimony concerning today --

A Yes.

Q -- for purposes of your testimony?

A Yes, I have.

Q And have you also made a study of the cost factors involved in drilling this well, as far as the anticipated cost of drilling and completing the Sprinkle 3 and 4 Wells?

A Yes, I have.

MR. DICKERSON: Tender this expert -- or this engineer as an expert.

MR. STAMETS: He is considered qualified.

Q Mr. Wood, will you refer first of all to what you have submitted as TXO Exhibit Number Thirteen and tell us what that is and who prepared it?

A Exhibit Number Thirteen is a revised AFE for drilling the Sprinkle Federal No. 3. It was prepared by Randy Cate.

Q And when was it prepared?

A It was prepared February 24th of this year.

Q And Mr. Cate testified to matters concerned with the preparation of the AFE at all previous hearings i;n this case, has he not?

A Yes, he has.

Q But you are here in his stead by reason of his inability to be here?

A Yes, sir.

Q Okay. Summarize for the Commission, if you would, Mr. Wood, the anticipated cost or estimated cost reflected by Exhibit Number Thirteen as far as total well costs.

A The total well cost we anticipate in drilling the Sprinkle Federal No. 3 is $532,950.

Q And have you compared that with the AFE's previously submitted in earlier hearings in this case of approximately $615,500?

A Yes, sir, I have compared them.

Q And this revised and very recent AFE is substantially less cost reflected than the earlier AFE's, is it not?

A That is correct, it is.

MR. DICKERSON: Mr. Commissioner, Mr. Stamets, for you all's benefit, I'd refer you, if it would be helpful, to TXO Exhibit Five submitted today, which has the earlier AFE enclosed as part of that packet.

Q Can you briefly, Mr. Wood, summarize the decreased costs in TXO Exhibit Number Thirteen as compared to the earlier estimates of TXO's total estimated cost in this well?

A The major differences are in pipe prices, and in the pumping unit cost. There are a few other differences but the majority of the differences are contained in those items.

Q Okay, have you familiarized yourself as far as you've been able, Mr. Wood, with the actual costs incurred by TXO in the drilling of the Sprinkle 1 and 2 Wells

and the Burleson Wells which we've heard testimony concerning today?

A Yes, sir, I have. The --

Q Tell us, were any of those wells on which you have current information what were the actual costs, describe any reasons that the actual costs incurred in a given well would not be relevant to anticipated cost in the Sprinkle No. 3 well?

A The Sprinkle Federal No. 1, the expenditure on that well to the time we turned it to production, was $1,030,000. The reason that it was that much is because it was a Morrow test and it was a lot deeper and required more money to get there.

The Sprinkle Federal No. 2 had an expenditure of somewhere in the neighborhood of $450,000, and the reason that it was less than what we anticipate is that it was a re-entry and that re-entries generally don't cost as much as a new well.

The Burleson Federal No. 1, the costs on that well are going to be about $509,000. The -- this is actual expenditures, what we've spent on it. We've spent -- I have records of we've spent $417,000 and that's without any surface facilities or pumping units, or anything else. When you add those on off of the AFE, it adds -- it's going to come out to be right over $500,000.

The Burleson Federal No. 2 in the same situation has spent $428,000 and when you put the pumping unit on it, that will come out to be about $505, about $510,000.

And the Burleson Federal No. 3 has currently spent $359,000. We have not fraced the well yet. They'll probably be doing that today. It is at this point in time $10,000 behind the Burleson Federal No. 1 at the same point in that well's development.

So we should expect almost identical costs unless we have some sort of a mechanical problem, which is often the case.

So all in all, this AFE of $532,950 should be within 10 percent on the plus or minus side of what we actually spend.

Q Is it customary to err a little bit on the side of increased anticipated costs for contingencies i one manner or another, Mr. Wood?

A Yes, sir. You always put a contingency and there are -- usually something unanticipated will pop up on a well.

Q And is it your opinion, then, that the costs reflected by Exhibit Number Thirteen, anticipated $532,950, would be a fair and reasonable estimate of the costs to be incurred in drilling and completion of this

well?

A Very fair and reasonable.

Q Mr. Wood, have you made an engineering -- a study of the engineering data available for the purpose of expressing an opinion on the economic risk involved in drilling of the TXO proposed 3 and 4 Sprinkle Wells?

A Yes, sir, I have.

Q Describe for the Commission what you have done by your submittal of TXO Exhibit Number Fourteen.

A Exhibit Number -- well, the first thing that I did was go in and look at the reservoir characteristics and the offset production, and what production history we had available to us.

Exhibit Number Fourteen is the history of the production from the Sprinkle Federal No. 1 and the Sprinkle Federal No. 2 from the day that they were turned on as commercial producers to the present day.

The Sprinkle Federal No. 1 came on, as Mr. O'Hare has testified, at 230-some odd barrels a day. These numbers that you see on here are weekly averages; based on one week production we average it, and this is the daily rate for each week.

You can see that the well was pretty much, the Sprinkle Federal No. 1 was pretty much stable at about 200 barrels a day until the 44th week of 1985. It

dropped down for several weeks and then came back up to right around 200 barrels a day and then began to significantly drop and we saw a tremendous reduction in flowing tubing pressure along about the -- between the first and fourth weeks of January, 1986. The production rates also dropped.

Note, please, that at this point in time the Sprinkle Federal No. 2 had been on for about six weeks. It's -- there's no conclusive evidence, but it would be reasonable to -- to assume that the Sprinkle Federal No. 2 could have had some influence on the No. 1, even at the low rates the No. 2 produced at.

The 2 came on at 100 barrels a day or 160 barrels a day, and almost immediately dropped off to around 100 barrels and has since then steadily dropped down to about 50 barrels a day. The flowing tubing pressure has dropped to the 30 to 40 and 50 pound range.

The sixth week of 1986, the week before last, the well, we had to shut it in for 56 hours because it has ceased to flow. We opened it up last week after a pressure build-up and got an average of 46 barrels a day out of it. It's dead again right now and we're in the process of preparing to put a pumping unit on it.

It just isn't the same quality producer as the No. 1, although it enjoys favorable structural

position and generally comparable pay to the Burleson No. 1, which is a very, very good well, comparable to the No. -- Sprinkle Federal No. 1.

So the structure is not the determining factor. We have a very poor well in between two very good wells.

I also looked at the production on -- what production is available, on the offset wells to the north and to the western sections of our Sprinkle lease. I'd like to refer you back now to Mr. O'Hare's Exhibit Number Nine, if I could.

If you look down towards the center of Section 27 you'll see the Mewbourne Oil Federal 1-G. That well has made a cumulative of around 52 to 55,000 barrels, to the best of my knowledge, out of this correlative Bone Springs sand pay. It's still producing around 50 to 55 barrels a day, to the best of my knowledge.

Recently Mewbourne offset this well with the No. 10-E and that well came in flowing at 100 barrels a day and is now down to 60 barrels a day. That well, the date of the completion on that well is June of 1985, so it's a very recent well.

The conclusion that I would draw from this is that the Mewbourne G-1 has appreciably affected the pressure in the 10-E.

Based on the logs on the cross section presented in Mr. O'Hare's Exhibit Number Twelve, the pay sections are very similar to what we have and yet the well is not nearly so good.

You can also see from Mr. O'Hare's exhibits that the Mewbourne Well, the No. 10-E, enjoys about a correlative structural position as our Sprinkle Federal No. 2 and a little better structural position than the Burleson Federal No. 1.

Q Mr. Wood, what connection, if any, is there between your discussion of apparent communication between various of these wells and communication as shown -- did I understand you correct to say that you think your Exhibit Fourteen evidences, although not conclusively, that there is in fact communication between the Sprinkle No. 1 and other reservoirs?

A Yes, sir. The evidence in 14 is at this point a little bit preliminary, but based on the analogy with the two Mewbourne wells, it's not at all unreasonable to assume that we do -- have seen pressure communication and that these wells will pressure deplete a larger area than 40 acres, although they may not effectively drain such a larger area.

There is more supporting evidence for this in that the Mewbourne 11-E, which is the due west off-

set in Section 27 to the Sprinkle Federal No. 1, they are in the process of getting a test for an initial potential and for the last three days the well has flowed pretty steadily at 99 barrels a day with 6 barrels of water and 160 MCF, and their flowing tubing pressure has been hanging in at 210 pounds, which is considerably less than the initial tubing -- flowing tubing pressure on our Sprinkle Federal No. 1, which I noted at somewhere around 124 pounds. I didn't have the initial pressure but in the fourth week of production we were still over 900 pounds.

So apparently that Mewbourne well has seen some pressure depletion effect on our well.

Also, the due north offset to our Sprinkle Federal No. 1, the Marshall and Winston Querecho Federal No. 1, they're in the process of testing their well. It IP'ed at 214 barrels a day on the first test. I don't have any more flow rates on that. It's been on for, I think, six or seven days now, and their flowing tubing pressure is at 220 pounds also, indicating that they have the seen some sort of pressure communication with our well.

Q Mr. Wood, of what significance when we're looking at -- you're studying this data for the purpose of making an opinion on the economic risk involved in the Sprinkle No. 3 and 4 Wells, what relevance to that purpose is this evidence that you have discussed regarding depletion

or cross communication between these reservoirs and other wells?

A Well, the risk that someone else is going to get your oil. Also, you run the risk of leaving oil in the ground that would have otherwise been produced by 40-acre development, due to the fact that you've broken all the gas out of it, whereas if you drill it up on forties rather than eighties, you'll see a little more addition in your total oil recovery, although you're going to -- to incur an incremental cost over drilling it on eighties that you wouldn't have incurred.

The difference in there is at this point a fine line that we can't define and in order to protect ourselves from drainage, we've determined that it is in our best interest and the mineral owners' best interest to actively develop it on 40 acres until something occurs to tell us that we shouldn't be doing that or we shouldn't drill a particular well.

Q You heard Mr. Bourgeois' testimony that TXO is obligated to a 90-day continuous development clause.

A That's right.

Q Is that obligation consisten with your testimony that for purposes of avoiding drainage this acreage should be promptly developed?

A Yes, sir.

Q Mr. Wood, do you have any other conclusions that you have drawn from your Exhibit Number Fourteen which you would like to relate?

A No, sir, not at this time.

Q Do you have any qualifications to make with regard to the information or the opinions that you've formed from Exhibit Number Fourteen based on the time that you have had the opportunity to collect this data?

A Well, the -- we don't have much historical data yet and it's too soon to tell, but all the evidence is that there is pressure communication and the field needs to be drilled on 40 acres to maximize oil recovery.

Q What would be a sufficient period of time for you as a reservoir engineer to feel confident with the data that you are basing your information upon?

A I'd like to have at least one year of production from all the wells.

Q Mr. Wood, refer now to what you have marked as Exhibit Number Fifteen, and go through for us the calculations that you made on that exhibit and tell us the conclusions that you draw from those calculations.

A All righty. Exhibit Number Fifteen is a volumetric calculation of the recoverable oil in place on a 40-acre proration unit for the Sprinkle Federal No. 1, and of course, a similar type calculation would apply to all of

the wells that we develop out there on 40 acres.

And I calculated a recoverable reserve for 40-acre development of 65,460 barrels. I used an average porosity of 11.6 percent with a pay quality height of 30 feet, and an average water saturation of 37 percent. That 37 percent is lower than Mr. O'Hare calculated, but some of the pay --

Q He calculated from the logs?

A Yes, he calculated from the logs and I calculated -- I used his calculations to get a weighted average and arrived at 37 percent.

Our formation volume factor is 1.559 and my recovery factor is 15 percent. The formation volume factor was derived from a computer program that uses the standard empirical correlation. The recovery factor we arrived at by previous experience with tight sands and by analogy to the Sprayberry zone that Mr. O'Hare mentioned earlier. These -- I'd like to talk a little bit more now about the recovery factor, since it is --

Q Let me ask you one question about that. Which of those assumed values that you have used, Mr. Wood, are subject to the most interpretation or which --

A The recovery factor is the point that is subject to the most interpretation.

Q The rest of the data is -- is less sub-

ject to interpretation because while it may be subject to some interpretation, or disagreement, the variance in the final calculation which you make is not as great --

A As in the -- as in the recovery factor, that is correct.

Q Okay, then tell us, then, how you've arrived at your assumed recovery factor of 15 percent.

A All right. First of all, this is a tight sandstone. We were not able to produce any of the wells without fracing them. All of the wells that we've drilled to the Bone Springs specifically and completed in the Bone Springs, had to be fraced to produce. We swabbed them dry and after acid treatments (not understood) and then had to frac them to establish commercial production.

The Sprayberry zone in Texas, as Mr. O'Hare previously testified, is of the same general geologic age, the same depositional environment, similar porosities, the same average water saturations, the same bottom hole temperatures, the same depth, as the Bone Spring zone that we are analyzing here.

The average recovery factor for those fields which have been under development since the early fifties and in some cases even earlier, is 7 percent. I acquired this number from the Atlas of Texas Oil Field -- Atlas of Major Texas Oil Reservoirs, published by the Bureau

of Economic Geology at the University of Texas. That information was taken from -- they got their information from the oil companies that operate these fields. They are mostly in the advanced stages of development. A great number of them are already in waterflood and in some cases even tertiary CO2 type flooding, so they have an excellent handle on what their recovery factor is.

Our zone here is a -- our zone here in this Bone Spring sand is very closely analogous to several of the Sprayberry fields, those with similar water saturations and porosities and depths have shown a recovery factor of 13 percent to 15 percent. They have oil in place, ultimate oil in place, the three fields that we looked at, of around 100-million barrels. I hope we have that much here but I feel like this number was an excellent number to use. I would qualify it by saying that these fields, at lease two of them, are already under waterflood and this recovery factor reflects the increased recovery efficiency of the waterflood. We don't have that here yet.

In none of the Sprayberry sands is there a waterdrive. There is no evidence for waterdrive in this particular Bone Springs play. The water saturations are low to moderate. Water production is practically nonexistent. The Sprinkle Federal No. 2 averages 1-1/3 barrel a day. The Sprinkle Federal No. 1 averages -- the Sprinkle Federal No.

1 averages around 7 barrels a day.

Some of the other wells are making a little bit more water but they're in the final stages or early stages in some cases, of cleaning up their frac jobs and one or two of them are even up-dip to us. There's no reason to suppose any type of waterdrive at all. It is not --

Q Was there --

A -- a characteristic.

Q If -- if there were a waterdrive mechanism in operation in your Bone Springs wells, in your opinion would it have evidenced itself from the production history you have today?

A It certainly should have. We shouldn't have seen the pressure drops that we've seen.

In addition to that, even if there were a waterdrive, the numbers I've been using based on the best analogy that we have, already include that in the mechanism.

Q You mean the number of your --

A The recovery factors that I've used.

Q -- recovery factor --

A That's right.

Q So is it fair to say that if you as an engineer were to increase that recovery factor, what would have to be present in order for you to justify doing it, as far as the raw data for the production of the wells that you

have?

A Some tremendous surge in pressure and water production, and in addition to that, if you get a big increase in water production, you've got to weigh the -- weight increasing your recovery factor against premature watering out of the wells.

Q Now your Exhibit Number Sixteen, Mr. Wood, that is the same calculation made for the Sprinkle Federal No. 2 Well, is it not?

A Yes, sir, it is.

Q And on that exhibit you have set forth the assumptions for the data in that calculation, which you have used.

A Yes, it is. It is taken off the logs. I used the same recovery factor, and the result was 38,294 barrels of recoverable oil on 40 acres.

Q On the No. 2 Well.

A On the No. 2.

Q And your calculations --

A Sprinkle Federal No. 2.

Q -- on the Sprinkle Federal No. 1 Well was what recoverable oil in place, in your opinion?

A 65,460 barrels.

Q Now if those are the true recoverable oil in place under each of those wells, what bearing, Mr. Wood,

does that have on the economic risk anticipated in drilling three more wells?

A Well, it places a considerable risk on us because it makes your deal at this point between a 2-t0-1 and a 2-1/2-to-1 on the Sprinkle Federal No. 1, which is the best well.

The Sprinkle Federal No. 2 is not anywhere close to that.

The only thing that would make them attractive as deals is the hope that you will get a high rate of return and also the hope that somehow at some point in time you could in fact do something about the recovery factor, at some point in the deal's life.

That could be something like a CO2 flood or some other extremely expensive operation. That would have to be evaluated at a much later point in the field's history. The field hasn't been defined yet.

Q Now for you as a reservoir engineer to express an opinion on the economics or not of a given well, you obviously have to assume a price for oil, do you not?

A Yes, sir, I do.

Q And have you made some calculations on various assumed prices for oil as far as the economics of the Sprinkle 3 and 4 Wells?

A Yes, I have. At $18 a barrel, with this

revised AFE, we would require 104,000 barrels and 243-million cubic feet to have a 3-to-1 deal.

Q What do you mean by a 3-to-1?

A A 3-to-1 return on investment, which is what our guidelines are.

Q Your guidelines, then, obviously do not count as a profitable well a well that merely returns the cost of drilling, completing, producing, that well.

A No, it doesn't.

Q Why not?

A Because we have a, as an operating oil firm, we have a number of failures as well as successes and our successes must cover the cost of our failures and still provide us a reasonable return on our money.

Q The chance of these failures, whether or not they be a dry hole or an economic failure there, really enters into this calculation or risk, does it not?

A That's true.

Q When TXO commenced drilling these wells apprximately one year ago, or a little less, Mr. Wood, what was the economics assumed at the time you first studied this data?

A Well, a year ago, when we were getting $30.00 a barrel, or even less than a year ago, but as time goes on we've had to sharpen our pencils and the prices have

continued to drop. It looks like for the time being they've stabilized at $18.00 a barrel, I think, is just about what we're getting.

We've got several factors to consider in the risk when I evaluate this well.

The first is the reservoir risk that Mr. O'Hare talked about earlier. There is some risk. We've got a very poor well in the Sprinkle Federal No. 2, which is in between the two best producers in the field so far. You can look on the map and there's one directly east and one directly west.

The second risk is drainage. We know, or think very strongly now, that there is going to be a drainage problem and we don't know yet how that will affect the final ultimate cum. It will certainly be detrimental to each individual well.

I illustrated that with the Mewbourne wells and the production data in Exhibit Number Fourteen.

The third risk is the economic risk, which is what will the price of oil do. We hope very sincerely that it will go back up because right now these deals look very shaky. At the time we started the operation, it looked like it was going to be a lot safer in terms of economics than it is right now.

Nevertheless, we have the leases. We

have oil in place there and we have offset activity that will drain that oil if we don't drill it, and we have a clock that we're operating under which forces us to drill these wells before you might in similar circumstances.

I assigned an 80 percent risk factor in the financial analysis of this drilling package, and based -- that is the economic risk factor that I placed on calculating the return on investment and rate of return.

Q Now you understand, Mr. Wood, that our statute provides for a maximum risk that this Commission can impose upon a pooled, non-paying partner, that is the return to the operator that advanced the cost of dollar for dollar the amount of money that he advanced, plus a maximum of an additional 200 percent thereof.

Now, under that formula, which we have to live with, but with comparison to it, as you look at it as a reservoir engineer, what in your opinion would be an appropriate risk factor pursuant to our statute in the drilling of the 3 and 4 Wells, assuming that TXO was forced to carry a nonjoining interest?

A 180 percent.

Q And that is to compensate for, among other things, the concerns that you've testified to?

A Yes, sir.

MR. DICKERSON: At this time we

move admission of TXO Exhibits Thirteen through Sixteen, and I have no further questions of this witness.

MR. STAMETS: Without objection the exhibits will be admitted.

I'd like to ask one question of the witness before Mr. Kellahin gets a shot at him.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Wood, you testified as to an 80 percent economic risk. Does that mean that 80 percent of the time under these given conditions you will not make an economic well?

A No, sir.

Q Would you explain what you meant?

A What I've said there is that's a success probability factor. That means that 8 times out of 10 we will hit the zone and it will be productive. That does not include the reserve error factor, which is a risk factor that you would apply to the reserves as to what number you expect to get from the reserves.

Q So your 80 percent is only as to making some sort of a producable well.

A Yes, sir.

Q And it takes -- and it does not make any

estimate at all as to whether or not that well will pay out.

A No, sir.

Q Okay.

A That's, again, that's a separate calculation that you take into account when you assign the reserves to the venture.

MR. STAMETS: Mr. Kellahin?

MR. KELLAHIN: Thank you, sir.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q Mr. Wood, you testified as the January 9th hearing as a reservoir engineer on behalf of your company?

A Yes, I did.

Q On the February 9th hearing you had exhibits identical to Exhibit Fifteen and Sixteen with the exception that at the previous hearing you used a recovery factor of 12 percent.

A That's correct.

Q And today you've increased that to a 15 percent recovery factor.

A That's correct.

Q Do you recall in the prior hearing we talked about the ranges with regards to a recovery factor

and that you estimated for us that the maximum range of recovery for a reservoir of this type could be as much as 30 percent?

A No, now that's not what I said at the time.

Q All right, what was it that you said?

A The maximum range, or the range for all the sandstones, tight, loose, highly productive, waterdrive, everything else, and surveyed for the SPE paper that I quoted that range from, was 12 -- I've got it here if you'd like to see it -- was something like 12.4 percent to 30-some odd percent. That includes a wide variety of sandstones, not at all applicable as a range to the situation that we have here.

Q We were looking at your testimony and I asked you what the basis is for using a recovery factor of 12 percent and one of the bases you used was to quote from this SPE publication that you've referred to just now.

A That is correct.

Q And within that range in the paper we have a range of somewhere between 12 and you said 30 to 34 percent as the absolute maximum range.

A Something like that, yes.

Q All right.

A Yes.

Q Now your testimony in January said within that range you had estimated the recovery factor for the Sprinkle 1 and the Sprinkle 2 to be 12 percent.

A That's correct.

Q What has caused you to increase your recovery factor from 12 to 15 percent for today's hearing?

A Several things.

Q All right, sir.

A First of all, the 12 percent number is still a good number. It might even be closer to the truth than the 15 percent; however, I changed it to the 15 percent because with a little more information on offset, similar type production, particularly in the Sprayberry, it seemed not unreasonable to increase it to 15 percent; however, as I qualified earlier, that 15 percent recovery factor for the Sprayberry wells includes in several cases a waterflood mechanism, which is not what we've got here.

Their original, primary recovery factor would have been much lower, anywhere from 6 percent to 10 or 11 percent.

Q Do you recall your testimony in January when I was discussing with you taking into consideration your studies of reserves in place, recoverable reserves, and economic risk that you as a reservoir engineer assigned to this project, I asked you this question.

QUESTION: Why does your management, or how did you make recommendations to your management about a risk? Do you do the same kind of thing that you've done here and assign certain risk to a prospect?

YOUR ANSWER: Generally, yes, I evaluate it for -- for ultimate recovery, the effects of drainage, and for -- and how that would affect the ultimate recovery. I then do an economic calculation and figure what our rate of return and return on investment would be under certain conditions, and, of course, this is tempered by the risk of success or failure in drilling the well and based on that I make a recommendation.

QUESTION: What was the risk that you assigned to the No. 2 Sprinkle Well?

MR. KELLAHIN: We were confused, it's the No. 3 Well we were talking about.

QUESTION: The No. 3 Well?

YOUR ANSWER: I assigned it what we considered a normal development risk on these coming Sprinkle wells, the Sprinkle 3, a normal development risk, which I considered to be about a 75 percent chance of success.

Was that not your testimony?

A That was my testimony.

Q Does that not mean that out of 10 wells

every 7-1/2 wells is going to be an economic success under your study?

A No, it does not. What it means is that given the reserves that I've assigned it, the normal development risk of -- I said 75 percent. I misstated myself. It should have been 80 percent, as Mr. McCoy stated.

What I had in mind is that in the calculation of the risk dollars, it would be an extra 25 percent on certain portions of the cost, and that was how I got messed up on that.

But, back to your question, there -- the -- in the final analysis that risk factor is the last factor that goes into the economic analysis. It's not the only one or in many cases the final determining factor.

It is, as I told the Commission a moment ago, the success probability factor, which is the probability of encountering a producing zone, not necessarily an economically commercial zone.

However, when I do the analysis, I've already taken the other things into account and at that point I make my recommendation, and with all things considered, that is what I give to my management.

Q Is that not the discussion we had in January when you said the chance of success in your opinion --

A Well --

Q -- as a reservoir engineer was going to be 75 percent?

A The 75 percent is not the number. It is one of several numbers.

It's the last number that goes in, in the sequence that I'm talking about, anyway, it doesn't have to be the last number.

Q Were you not asked in January how you make your recommendations to management about the risk to apply to this well in terms of driling an economic well, and did you not give me all the factors that you as a reservoir engineer, took into consideration, and then gave me this 75 percent success number?

A Give the 75 percent number, and I do agree with the 80 percent, you assign a reserve to a well. You factor in a reserve error factor. Okay. Then you do the economic analysis, so in -- and that's where you use the 75 percent that you're talking about.

So in a manner of speaking, yes, it is the probability of success, but it depends on a reserve error factor and other considerations that are judgement that have already gone into the reserve number.

It's dependent on the reserve number, but it -- in a manner of speaking, yes, that is correct.

Q Based upon what has occurred and what

you've examined since the last hearing up to today, have you recommended to your management that they ought not to drill any further wells to the Bone Springs formation in the north half of this section?

A My position is that we look at it on a well by well basis.

Q Based upon what you know, are you prepared to undertake the drilling of the Sprinkle No. 3 Well?

A Yes, I am.

Q Using your production data from Exhibit Number 14, would you clarify something for me, Mr. Wood? Under the Sprinkle Federal No. 1 Well, in the right column it says "FTP". Is that the flowing tubing pressure?

A Yes, it is.

Q You had some general discussion awhile ago about the potential for this Bone Springs reservoir being a candidate for -- I'm sorry, to be partially waterdrive or have some waterdrive factor that would affect ultimate recovery?

A No, I don't think there's any potential for that.

Q That's right, you said you didn't think so.

A That's right.

Q Would a drop or a decrease in the flowing

tubing pressure, as shown on this exhibit, be an indication of possible waterdrive in the reservoir?

Would that help you explain the drop in the flowing tubing pressure?

A No.

Q No?

A The pressure, if there's a partial waterdrive it would support the pressure of the reservoir and you would not have seen, or should not have seen, as precipitous a drop in pressure as we have seen.

Q Have you assessed this reservoir to determine whether or not it is a viable candidate for a waterflood operation?

A No, we have no core data and the limits of the reservoir haven't been defined. We're still in the early stages of the development. It's -- it's not something that we have examined yet, but with -- given the low water saturations and virtually nonexistent water production, there's no reason to believe it's got any part of a water drive around it.

Q You indicated to us that you would like, oh, in the best possible world to have a one-year production history on existing wells in order to assess the reservoir?

A That's a ballpark number, yes.

Q In the absence of a 90-day continuous

drilling obligation would you recommend that the drilling of the No. 3 and 4 Wells be postponed?

A Not for a year.

Q Do you know whether or not there's a similar drilling obligation in the northeast quarter of this section?

A No, sir, I don't. Mr. Bourgeois may have testified about that earlier.

Q Who is the current oil purchaser on the oil produced from the Sprinkle wells, do you know?

A I'm not certain. I'm not certain. It's either Phillips or Permian and I'm not sure about that.

Q You've quoted us an oil price that you have used in some of the your calculations. You said you used $18.00 a barrel?

A Yeah, that's an average number based on what we were expecting at the time that I did this analysis. What you'll see is higher than that, generally $19.00, $19.25, 19.50, something like that right now, but we have to pay a Dollar and a Nickel transportation fee, which lowers our effective price by that much.

Q In doing your economic analysis did you contact the purchaser of the oil from the Sprinkle wells to see what the current price was?

A No. I took the last check we had, which

was about -- several weeks ago.

When I say "check" I meant when I checked with the production engineer that's what he told me.

Q You indicated to us in January in your testimony that it was TXO's plan to continue to drill up the north half of Section 26 until you hit a bad one. Do you remember your testimony about that?

A Uh-huh.

Q All right. Have you hit a bad one yet, Mr. Wood?

A The Sprinkle Federal No. 2 and the Burleson Federal No. 2 are both -- the Sprinkle Federal No. 2 is a definitely poor well. It came on as a very good well. Now we've got some concerns with it.

The Burleson Federal No. 2 would not flow. We are waiting on a pumping unit and we're already almost down before we even completed the No. 2 with the No. 3, so there's some concern as to how the No. 3 will perform.

Q Based upon that information have you recommended to your management that the Sprinkle No. 3 Well not be drilled?

A No, I haven't. The Sprinkle Federal No. 3 is in a different position. It's in a competitive position up dip to the other two wells and it should have as good or better sand pay, we hope.

But that's what we thought about the other two, also.

MR. KELLAHIN: I wonder if now might be a convenient time to take a few minutes break and let me see if I have any more questions?

MR. STAMETS: Let's take five minutes.

(Thereupon a recess was taken.)

MR. STAMETS: All right, we'll resume the hearing and see if Mr. Kellahin has any additional questions of the witness.

Q Mr. Wood, you discussed with us back in January that your volumetric calculations for the Sprinkle 1 and 2 might be less than the ultimate recoveries you would see from these three wells based on information you had available back then, that your volumetric calculations might reserve -- might represent a conservative estimate of what the wells would ultimately produce, and that you related that to producing rates at that time, in January.

Are you still of the same opinion or have you changed your opinion with regards to the volumetric calculation as representing what the wells will ultimately recover?

A I don't recall couching it in exactly that way. I remember saying I had -- I hoped that the recoveries would be higher, and at the time there, at which there was very little production information at all, there was reason to hope that it would be, but we're waiting on data. We see now, we have a little more data, and with the decline in production rates and knowledge new to me about several other similar fields, I think that the 15 percent recovery factor that I have used now is about as optimistic as I can get.

Q Have you made a calculation, Mr. Wood, to determine the economic consequence to TXO of various percentages of risk factor penalty as applied to Mr. Sprinkle's interest?

A No, I haven't. I did my analyses assuming that Mr. Sprinkle would join us.

Q The risk factor penalty assumes that someone in Mr. Sprinkle's position does not join and it only applies if in fact he doesn't join. The number you've given us of 180 percent is one that's intended to compensate the operator for undertaking the risk of carrying and repaying itself out of production of someone's interest, like Mr. Sprinkle's.

That is the context in which the penalty is applied.

Is that the framework that you've used in coming up with your penalty?

A The penalty that the Commission uses and the risk factors that I use are not the same type thing at all.

As I understand it, the penalty that the Commission applies is a penalty designed to compensate the operator for assuming a risk, and the risk that I'm using is the probability of successfully encountering the zone and having oil and gas there.

And as I said, I assume that Mr. Sprinkle would join us on these things and that penalty wouldn't be there. We're -- when we analyze these things in our program, we've got to take into account a number of total failures as well as successes and it's the risk that we are taking and having a total failure, which is all the money gone, totally, everything we spent, that is at risk.

Q So, to make sure I understand what you did, your opinions and calculations have not been under the factual assumption that the risk factor penalty applied in the pooling order would be in a situation where Mr. Sprinkle would go nonconsent.

A My risk factor has no relationship whatsoever to the Commission's penalty assessment.

MR. KELLAHIN: Nothing further.

MR. STAMETS: I've got one additional question, if I might.

RECROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Wood, I would assume that you recommend a lot of wells, you recommend wells to be drilled, is that correct?

A Yes, sir.

Q And I would also assume that the wells that you recommend have a varying degree of risk of being a successful well.

A Yes, sir.

Q Where, on the scale of risk based on your experience, does this well fall --

A This --

Q -- on a scale of zero to 100, with a -- with a rank wildcat being the very highest degree of risk, where would you see this well falling?

A Okay, can I -- I'm used to thinking the other way around.

Q That's fine, if you want to say that he wildcat is the zero number, and a sure thing is a 100, where would this well fall?

A Okay, let me qualify this. I don't want

to get into trouble with Mr. Kellahin again.

Are you -- are you asking me where the risk of this project is a total or the risk of encountering an oil and gas producing zone? Is there a difference between a commercial deal and one where it hit it but it isn't enough to make your economics?

Q Just based upon your experience in recommending wells to your management, realizing that the dry hole, one that you expect to be a dry hole, and I'm sure you don't recommend any of those --

A No, never.

Q -- but one that has a real good chance of turning out to be a dry hole being the most risky, and a sure thing the least risky, where does this one fall?

A Probably somewhere in the 70, low seventies, somewhere like that. This is -- a problem with this is, as we've -- we've got at least two wells out there out of the four that we've put down, and these were all -- after the first well these were all development wells, and two of the three subsequent wells that we've completed so far look like they're going to be commercial failures, although they successfully encountered the zone and we'll get our -- probably get our money back out of them, at least one of them, plus a little bit, but they don't return enough to us for us to be able to do that kind of deal and stay in business.

We've got to make more than just getting our money back.

But I'd say there was about a 70 percent chance of going out there and making an economically viable deal based on current oil and gas prices.

And something else I might mention, being an optimist, we took that $18.00 oil and escalated it at 3 percent.

Q If I understand it correctly, you're telling me that this -- this prospect is in the better group --

A Yes, sir.

Q -- of wells that you recommend.

A Yes, sir, it is.

Q But that's only as to getting your money back, not getting this 3-to-1 return that you like.

A Well, it's -- it's in the better part of the deals that I look at as far as, like the 2-to-1, 3-to-1 range, but this field here will never, in my best estimate, never be much more than a 3-to-1. It doesn't have the potential of being a real big (not clearly understood), that kind of thing.

Q Why, then, if this well is one of the better wells, you believe, that you recommend, why should we then give a risk factor which is in the upper third of the

range that we're allowed to give?

A Because the track record out there is we've got two out of four wells that are going to be be, probably be commercial failures; one for sure.

We -- these -- this is -- there are a lot of deals that you think are going to be a sure thing, 80, 90 percent chance of success, and you recommend it and they come in dry, and that is why you should assess that kind of penalty.

Q So even though you believe the well is in the better half, at this point based on wells that have been completed, you're really only seeing a 50/50 --

A Right. Right.

Q -- chance.

A It looks as good as anything that we can find, or not, well, let me qualify that. It doesn't look as good as anything we can find, but as far as being a 2-to-1 to 3-to-1 type deal; even though we've got a couple of failures it still looks like something we ought to go do.

But the fact is that we're 50/50 right now on going out there and making the kind of money that we're supposed to be trying to make.

MR. STAMETS: Do you have additional questions, Mr. Kellahin, based on my questions?

MR. KELLAHIN: Yes, sir, I have

one brief one. He may not know the answer.

RECROSS EXAMINATION

BY MR. KELLAHIN:

Q Mr. Wood, what do you know about TXO's proposal in the Sprinkle No. 2 Well submitted to Mr. Sprinkle in February to perforate an additional Bone Springs pay interval from 8505 to 16 feet?

A I don't know anything about it. I have heard that they wanted to go in and test some additional pay and that's the extent --

Q That's the extent of your knowledge about whether there's additional potential in the No. 2 Well?

A Yeah, that there's a zone in there that they think looks attractive based on the logs and the information that the Production Department has.

Q That's the extent of your information on that?

A Yeah, I think -- I think so.

Q You haven't assigned any value -- value to that --

A No, I --

Q -- interval in making your calculations.

A No, I have not booked any reserves to that zone yet; not in -- not in that well.

MR. DICKERSON: Just a couple, Mr. Stamets.

REDIRECT EXAMINATION

BY MR. DICKERSON:

Q Mr. Wood, when you as a reservoir engineer study economics and talk in terms of risk about the project or prospect or an area, you're not ordinarily limited to winner take all, all or nothing, a one well shot, are you?

A No. No, we couldn't do that.

Q Okay, to simplify it a little bit, when you studied this area where the Sprinkle wells, let's for simplicity limit to the north half of Section 26, you, as an engineer, even though you look at the data from each and every single well, and you look at it separately, you are entitled, and you have to, in fact, don't you, look at it as a project as well?

A As a, yeah, as a whole, the whole project, a statistical thing.

Q Okay, so when you have two wells out of four which are marginal, as far as a prospect or a project overall result is concerned, it's perfectly possible that another two wells, assuming they're good enough, can reimburse the operator and carry the noneconomic wells and can

make the overall project, or prospect, attractive as an economic risk where in fact if it were looked at from any singular, particular well, one might be attractive and economic, and the next one adjoining to it not.

A That's right.

Q You understand, don't you, Mr. Wood, that for purposes of compulsory pooling under our statute the risk imposed by the Commission on an interest which elects to be carried by the operator has to be paid and has to be recovered, if at all, from production from that well, from that one, single well.

A That's correct. That's my understanding.

Q If it's a dry hole, not a penny toward the operator's carrying that risk is ever paid, is it?

A That's right. We take the whole cost with no kind of reimbursement.

Q If the cost of drilling, completing, and operating this well is returned, but that's all, that well, under our statute and the practice of compulsory pooling, cannot return any penalty, can it?

A No, it cannot.

Q And before any penalty can be reimbursed pursuant to our pooling statute, you, as an engineer, are forced to isolate on that well, you can no longer look upon

it as a project, can you, as you normally do with your normal practices?

A No, you really can't.

Q That's not the way you're accustomed to assessing risk, is it?

A No, that's -- that's not how you go about looking at a deal to go drill for oil and gas.

Q Our statute and our practices force you into that concept, and that is the way it is; we have no discretion to change it. If the risk can only be expressed, it cannot be calculated mathematically in the ways that the engineers do, but if the maximum risk imposed under our statute is 200 percent, and if there's not any real formula given to tell an engineer how to read that statute and apply it to a given well, the situation over the -- the carrying out the calculation of that formula in order to say, okay, in this Bone Spring play, in this Sprinkle No. 3 Well, the statute limits us to 200 percent. It has taken away your discretion to look at it as a project or a prospect, an overall attractive or nonattractive operation. It forces you as an engineer to look at it as all or nothing from this wel, or nothing. When expressed in those terms, Mr. Wood, and assuming an approximate cost of $500,000 to drill and complete one of these wells, we argue above that and below that, but for the sake of our example, $500,000, Mr. Sprin-

kle's share of that was 31.25 percent. If my mathematics is correct, his share of the cost of drilling this well was $156,250, and assuming again, as Mr. Kellahin told you, that the penalty is only imposed when an owner, such as Mr. Sprinkle, elects not to participate in that well, TXO has to advance that $156,250.

A That's right.

Q And assuming further in line with our statute, that that money advanced and any penalty, whatever it is expressed in a percentage, can only be recovered out of production from that No. 3 Well; not out of the No. 4, not out of the No. 1, not of the Burleson wells, but from the No. 3.

A That's right. It's got to be a well that's good enough to pay for itself, and then some.

Q Under those circumstances, then, when you're forced to express an opinion under our statute, which is limited to a maximum of 250 percent, is it fair to look at an engineer's -- you called it your success prediction, or something along those lines, of an 80 percent success ratio defined, and you believe that there's somewhere in the vicinity of an 80 percent chance that this well will be capable of producing in paying quantities, as opposed to a dry hole not being capable of producing at all?

MR. KELLAHIN: I'm going to ob

ject to the question, the way it was formulated.108He asked the witness whether it was fair. I don't think it's relevant whether it was fair.

The question is this man has said he studied the risk in a particular way and did not study it pursuant to the way the risk factor is applied under the statute. You're going to have to take his testimony and make that translation for yourself.

The question of fairness, I think, is in the form of the question.

MR. DICKERSON: Let me rephrase it without that word.

MR. STAMETS: Please.

Q Is it appropriate, Mr. Deen, to assume that in your opinion it is an 80 percent chance of success on the Sprinkle No. 4 Well, and from that to flow necessarily to say it has a certain simplistic appeal, but is it appropriate as an engineer to use that to then say that therefore there is only a 20 percent chance of failure and therefore only a 20 percent risk penalty under our statute which would be imposed?

A No, they are two different things, and to comment on what Mr. Kellahin said, when I analyze a deal, it's -- it's for whether or not we as an oil business should -- should drill it, not to calculate what the penalty to Mr.

Sprinkle or anyone else should be, but that's not to say that I haven't considered that. But we can't go about our business of trying to find oil and gas that we should go find by looking at penalties and things.

Q Okay. You testified that you have made your calculations. You don't concern yourself with land and legal problems involved with whether or not a party in any case who has the right to participate is in fact going to participate or is not.

A That's right.

Q Whether or not he's going to be pooled and whatever the penalty under our statute applies, does not reallyl enter into your calculations as an engineer.

A No, it doesn't.

Q If, though, as an engineer, and when faced with our maximum statutory penalty of 200 percent, and with knowledge of the fact that any amount of that penalty can only be recovered from production from the Sprinkle No. 3 Well, or the Sprinkle No. 4 Well, as the case may be, is 150 or 180 percent penalty expressed in terms of our statute outlined under circumstances that you've outlined for your projection of this well?

A I certainly would not think so, especially based on the program that we have out there so far.

Q Even though as a practical matter, if

this Commission imposed no -- pooled Mr. Sprinkle and imposed no penalty, so that TXO were allowed to get only the money that it advanced for his interest back, TXO as a practical matter could still recover that penalty from other wells in the area in which TXO has an interest but Mr. Sprinkle does not, could they not?

A I'm not sure I understand your question.

Q If this Commission imposed no penalty on Mr. Sprinkle, so that TXO were permitted to get out of the No. 3 Well only dollar for dollar the investment that it paid for him in that well, the fact remains that TXO operates these wells in the area as a project. TXO could still recover the money in advance, assuming it had a profit on the whole project, out of other wells.

A Right. The other wells would pay for it but --

Q But it would not be Mr. Sprinkle --

A That's right.

Q -- who paid for it. It would not be his interest paying for it. It would be either TXO or interest owners in other wells.

A That's correct.

Q And yet in this case the penalty has to be recovered, if at all, out production out of Mr. Sprinkle's interest.