BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

CASE 556: (Re-hearing) Notice is hereby given by the State of New Mexico, through its Oil Conservation Commission, that Phillips Petroleum Company, upon proper petition, has requested a re-hearing in Case 556; that in said petition, petitioner asks recision of Order No. R-350, which order refused petitioner's application for permission to effect dual completion of its Fort No.1 Well, NE/4 NE/4 Section 34, Township 14 South, Range 37 East, NMPM, Lea County, New Mexico, in such manner as to permit production of oil from both the Devonian and Wolfcamp formations; that the Commission, by its Order No. R-350-A, has granted said re-hearing and set it for 9 a.m. on October 15, 1953, at Mabry Hall, Santa Fe, New Mexico, at which time and place petitioner and other interested parties will be heard.

CASE 557: (Re-hearing) Notice is hereby given by the State of New Mexico, through its Oil Conservation Commission, that Phillips Petroleum Company, upon proper petition, has requested a re-hearing in Case 557; that in said petition, petitioner asks recision of Order No. R-351, which order refused petitioner's application for permission to effect dual completion of its Fonzo No.1 Well, NW/4NW/4 Section 35, Township 14 South, Range 37 East, Lea County, New Mexico, in such manner as to permit production of oil from both the Devonian and Wolfcamp formations; that the Commission, by its Order No. R-351-A, has granted said re-hearing and set it for 9 a.m. on October 15, 1953, at Mabry Hall, Santa Fe, New Mexico, at which time and place petitioner and other interested parties will be heard.

TRANSCRIPT OF HEARING
October 15th, 1953

BEFORE: Honorable Ed. L. Mechem, Governor
Honorable E. S. Walker, Land Commissioner
Honorable R. R. Spurrier, Director, OCC

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss

I HEREBY CERTIFY that the within transcript of proceedings before the Oil Conservation Commission is a true record of the same to the best of my knowledge, skill, and ability.

DONE at Santa Fe, N.M., this 17th day of October, 1953.

Marjorie L. Allen
Reporter

SWORN TO before me this 17th day of October, 1953.

Notary Public

My Commission Expires:

CASE 556: Re-hearing — In the matter of the application of Phillips Petroleum Company for permission to effect a dual completion of its Fort Well No. 1, NE/4 NE/4 Section 34, Township 14 South, Range 37 East, NMPM, Lea County, New Mexico (in the Denton Pool), in such manner as to permit production of oil from the Devonian formation through existing casing perforations 12,536 to 12,710 feet, and oil from the Wolfcamp formation after perforating from 9,680 feet to 9,360 feet.

CASE 557: Re-hearing — In the matter of the application of Phillips Petroleum Company for permission to effect a dual completion of its Fonzo Well No. 1, NW/4 NW/4 Section 35, Township 15 South, Range 37 East, NMPM, Lea County, New Mexico (in the Denton Pool), in such manner as to permit production of oil from the Devonian formation through existing casing perforations 12,456 to 12,680 feet, and oil from the Wolfcamp formation after perforating from 9590 feet to 9260 feet.

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COM. SPURRIER: We will now take up Cases 556 and 557.

(Mr. Graham reads the advertisement of the case.)

JUDGE FOSTER: If it please the Commission, I have Mr. Jacob L. Williams here as a witness. He has not previously testified before the Commission, and therefore I will qualify him.

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JACOB L. WILLIAMS

having been first duly sworn testified as follows:

DIRECT EXAMINATION

BY JUDGE FOSTER:

Q Will you please state your name to the Commission?

A Jacob L. Williams.

Q Where do you reside?

A Midland, Texas.

Q By whom are you employed?

A Phillips Petroleum Company.

Q In what capacity?

A Geologist

Q From what school are you a graduate?

A Iowa State College.

Q What year did you graduate?

A 1943

Q With what degree?

A Bachelor of Science.

Q And how long have you practiced your profession as geologist?

A Eight years.

Q All of that time with the Phillips Petroleum Company?

A Yes.

Q What are your duties and where are you located ?

A Midland, Texas.

Q You are familiar with West Texas, New Mexico area of oil and gas production, are you?

A Yes.

Q And you have made a study of the Denton Pool in which Phillips has some wells?

A Yes.

Q And you have made a study of the area that is at issue here in respect to the application of Phillips Petroleum Company to dually complete some oil wells?

A Yes.

Q What area is that?

A Denton Pool

Q And have you prepared some Exhibits and cross-sections with respect to testimony you wish to present?

A Yes.

JUDGE FOSTER: We submit the witness has been qualified, Mr. Commissioner.

COM. SPURRIER: He is qualified.

Q (By Judge Foster): Mr. Williams, will you turn here to the board and just designate the first instrument on the board there as Phillips Petroleum Exhibit No. 1. ?

(Phillips Petroleum Exhibit No. 1 is identified by Mr. Williams.)

Q Now, will you please tell just what that exhibit represents?

A Exhibit No. 1 is a map of the top of the Wolfcamp formation. This particular map I should explain to be on a scale of one inch equals two thousand feet and, some copies I have made here are on a scale that one inch equals four thousand feet.

Q That is a map that reflects the Phillips Petroleum Company's Fort No. 1 and its Fonzo No. 1 wells in the Denton Pool?

A Yes.

Q Will you tell the Commission what that map shows in respect to those two wells?

A This is a map on top of the Wolfcamp formation. It shows which wells are situated higher on the structure and which are located on the fringe, in this position here.

Q What do you mean by "in this position here"?

A Sections 11, 15, 37 and Sections 2, 15, 37 are located on the crest of the Wolfcamp structure. The Phillips' Fonzo Well No. 1 and Fort No. 1 are located off of the crest on the northwest fringe of this structure.

Q On what quarter section are those located?

A The No. 1 Fort is located on the NE/4 of the NE/4 of Section 34, Township 14 South, Range 37 East, NMPM.

Q And the other one?

A The Fonzo Well No. 1 is located on the NW/4 of the NW/4 of Section 35, Township 14 South, Range 37 East, NMPM.

Q In respect to the structural position, what do they show?

A That the No. 1 Fort and No. 1 Fonzo are located on the northwest flank of the down structure.

Q I see you have some legend on the map. Will you explain it?

A The blue encircling the different wells designates that that well is producing from the Wolfcamp and the red pertains to the Wolfcamp formation.

Q There is some other color there, is there not?

A Yes. Yellow shows the leases in which Phillips has an interest.

Judge Foster: We offer in evidence Phillips Exhibit No. 1.

COM. SPURRIER: Without objection, it will be admitted.

(Phillips Exhibit No. 1 received in evidence.)

Q Will you please take that Exhibit down and put up Phillips Exhibit No. 2, identifying it please?

(Phillips Exhibit No. 2 identified.)

Q Now, will you just tell the Commission, without explaining anything that is on the map, just what that map is? What is that?

A That is a cross section drawn North-South through the Phillips No. 1 Fort and showing the relation of the Wolfcamp to the lower formations.

Q What is the source of the information reflected on that map?

A Electro-logs.

Q And was that prepared by you or under your supervision?

A Yes.

Q And that correctly reflects the condition there as you have pictured it on the Exhibit in respect to wells shown on there?

A Yes.

Q Will you please explain that to the Commission and tell them what facts are on there and draw any conclusions from that?

A I will show the cross sections which are on the map, Exhibit No. 1.

Judge Foster: I have had some folders made up that contain all of these maps and you might want to look at them and follow them along with the testimony.

(Whereupon, the folders are distributed.)

A It sets forth the two locations of Phillips - No.1 Fort starting at Magnolia going into Magnolia and Phillips No. 1 Fo[illegible]o and south to Atlantic 8-34 and Atlantic through Jones.

Q You say it extends north to the locations. What is the distance of the locations in that area?

A 1300 feet.

Q You are speaking about well location?

A Yes.

Q And that is on the 40 acres proration units in that area?

A Yes, sir. This map is pretty much of Wolfcamp, so it does not show much structure on this particular cross section, but it does show the relationship of the Wolfcamp to the underlying formations. For instance, the distance from the top of Wolfcamp on No. 1 Fort at this base and west on top here is 750 feet, and the distance from here to here,

Q Where is from here to here?

A From the top of Wolfcamp then to the top of Devonian is about 3100 feet. Another thing it shows is the drill tests in the upper Wolfcamp. You will notice tests in the upper Wolfcamp recover oil in many cases, but the lower Wolfcamp offered nothing.

Q You are pointing to those drill stem wells. What have you got on the map?

A Magnolia - Monument. This shows above the Wolfcamp that tests have gotten nothing but mud and at the top of the Wolfcamp, 7245 feet, of oil.

Q That is oil in the pipe or hole?

A In the pipe.

Q And beyond that, by a drill stem test, it recovered mud?

A Yes.

Q You speak about a drill stem test. Where was that?

A That was on Phillips' No. 1 Fort.

Q What did it show?

A On these two tests in the upper part of the Wolfcamp, we got 11.3 barrels of oil on the first and 32 barrels of oil on the second. There were three tests there below that and they recovered mud.

Q Compare Phillips' Petroleum Company's No. 1 Fort with No. 1 Magnolia Monument with drill stem tests. How does that compare? How do those wells compare?

A Magnolia recovered 7,245 barrels of oil and this one recovered 11.3 barrels of oil on the first test and 32 barrels of oil on the second test.

Q What well do you mean when you say "this one"?

A The Phillips' Fort No. 1.

Q And that is one of the wells involved in this case?

A Yes.

Q And so the Magnolia well appears to be a substantially better well than Phillips No. 1 Fort?

A Yes.

Q Would you say it is a substantially better well than Phillips'

No. 1 Fort on drill stem basis?

A Yes.

Q If you were to select the best one, which one would that be?

A Magnolia No. 1 Maxwell. We do not have any information on the Atlantic well.

Q How far from the Phillips Fort No. 1 was the Atlantic's No. 1. Dickson?

A About 2600 feet.

Q Would that be about one-half mile?

A Yes.

Q And, on the basis of drill stem test comparison, how does the Phillips' Fort No. 1 compare with Atlantic No. 2 Dickson 834?

A Fort No. 1 recovered 1200 feet of oil and Atlantic No. 2 Dickson 834 recovered about 1990 feet of oil.

Q Would you say that Atlantic No. 2 Dickson was substantially a better well than Phillips No. 1 Fort on the basis of the drill stem tests?

A It is somewhat better.

Q You are looking at the map - which one would you take as the best well?

A Atlantic No. 2 Dickson 834.

Q What is the next well shown?

A Atlantic No. 2 Jones. They took one drill stem test on top of Wolfcamp and recovered 3109 feet of oil and on another test

recovered fifteen feet of mud.

Q Comparing Atlantic No. 2 Jones with Phillips Fort No. 1 on drill stem tests, how did they compare?

A I would say this one had a much better test.

Q You would take Atlantic No. 2 Jones against Phillips' No. 1 Fort, would you?

A Yes.

Q What other information have you collected on that map?

A Another thing of interest is that the oil recovered is from the very top of the Wolfcamp.

Q In what well?

A In all of them.

Q And the tests below the top did not get any?

A No.

Q How do you account for that?

A Through lack of permeability.

Q When you say "lack of permeability", that does not mean anything to me. What are you talking about? Put that in the record.

A Permeability is the ability of the formation to allow fluid to pass through it.

Q To turn it loose and get it into the well hole?

A Yes.

Q How does the permeability of Phillips Fort No. 1 compare with the other wells shown here on the cross section?

Q In what formation can you get production in that area, from those wells shown in the cross section?

A In the very upper part of the Wolfcamp and in the Devonian.

Q These other formations, the Upper Mississippi and the Lower Mississippi and other formations, are not productive of oil and gas?

A Not in this cross section.

Q They do not produce?

A There was one well that produced for awhile, but it is in the Upper Mississippi.

Q Those formations are not productive formations in this pool?

A No.

Q What other information is reflected on that map?

A That is about all.

Q Will you take that down and go to the next one. Just before you take that down, let me ask you what is the distance from Phillips' Fort No. 1 to Atlantic No. 1 Jones?

A About three-quarters of a mile.

Q That is about three locations away?

A Yes.

Q Over there, get to the very end of the map, what is that well?

A That is the Magnolia No. 3 Maxwell.

Q Do you have a drill stem test on that one?

A No, I do not. There is a twin to this well, but this Devonian well is not tested.

Q Just the Devonian is reflected in this cross section?

A Yes.

Judge Foster: It is please the Commission, we would like to offer in evidence Phillips' Petroleum Exhibit No. 2.

COM. SPURRIER: Without objection, it will be admitted.

(Phillips Petroleum Co. Exhibit No. 2 admitted in evidence.)

Q (By Judge Foster) Will you mark that Exhibit on the board as Phillips' Exhibit No. 3 please?

(Phillips Petroleum Co. Exhibit No.3 identified.)

Q Without stating what Exhibit No. 3 reflects, just state what it is.

A This is a North-South cross section through Point B shown on the map.

Q What map?

A On the Wolfcamp map of Denton Pool. It shows essentially the same thing as Exhibit No. 2 except it goes through Phillips No. 1 Fort. It is one location East up depth from Exhibit No. 2, which is cross section.

Q You mean Fonzo No. 1 instead of Fort, do you not?

A Yes.

Q The other cross section went through Fort No. 1?

A Yes.

Q Also, at the extreme left hand side of the map you have the the Magnolia No. 16 Pope reflected in the Wolfcamp formation?

A Yes, this is the top of the Wolfcamp formation, and the well

is in the process of being completed now.

Q Is there anything that you want to add in effect to that cross section that you did not talk about on the other one?

A No.

Q On Phillips Fonzo Well No. 1, what did the drill stem tests show?

A There were two tests in the upper part , which is the most prospective. The two tests taken recovered no formation fluid.

Q You got nothing on that?

A No.

Q That makes it still a poor well as well as the other Phillips well?

A I do not think so, because the upper part was not tested. Some of these other drill stem tests are of interest. Magnolia No.16 Pope tested the upper, most prospective part, and recovered 1630 feet of oil and ninety feet oil and gas test mud.

Q Is that a good or bad well?

A To me it would indicate there is not much there. It is a pretty poor well.

Q How far is that from Phillips No. 1 Fonzo?

A Thirteen hundred feet.

Q One location West?

A Two locations North.

Q That would be about 2600 feet?

A Yes.

Q Have you any other drill stem tests that may be of interest?

A The Magnolia No. 4 Pope well flowed 27 barrels of oil in one hour and, when they tested it the second time, they got no fluid.

Q What does that mean?

A It indicates it might make a well in the upper Wolfcamp.

Q Referring to Phillips Fonza No. 1, how does it compare?

A It is hard tosay because it was not tested in the same zone.

Q Why did you not test it?

A I do not know.

Q There is nothing unusual about it?

A No; It could probably be tested.

Q But you do not know why it was not tested?

A No, I do not.

Q Have you some other drill stem tests?

A Between 3 D, Deck A was tested in the upper part and recovered 580 feet of oil and 270 feet of oil and salt water.

Q What does that indicate?

A It indicates to me there is not as much oil was there was here on the Pope and that the water is connate water.

Q Now, in the No. 2 Deck you had a drill stem test?

A Yes, the test recovered 6,450 feet of oil.

Q That indicates a pretty fair well?

A Yes.

The Atlantic No. 1 Jones tested 390 feet of oil and gas mud and 150 feet or slightly over of gas mud.

Q In the upper Wolfcamp?

A Yes.

Q When you say "the upper Wolfcamp", what do you mean?

A I am meaning the upper 100 to 150 feet that has the best permeability.

Q Does that indicate the Atlantic No. 1 Jones is a pretty good well?

A Not to me.

Q Any other statements you want to make?

A No.

JUDGE FOSTER: We would like to offer in evidence Phillips Petroleum Company Exhibit No. 3.

COM. SPURRIER: Without objection, it will be admitted.

(Phillips Petroleum Company's Exhibit No. 3 admitted in evidence.)

Q (By Judge Foster) Will you please identify the Exhibit on the board as Phillips Exhibit No. 4?

(Phillips Petroleum Company's Exhibit No. 4 marked for identification.)

COM. SPURRIER: We will take a recess until 1:30.

(Thereupon, at 12:05 p.m. the meeting recessed until 1:30 p.m. of the same day.)

AFTERNOON SESSION

1:30 p.m.

COM. SPURRIER: The meeting will come to order please. Judge Foster, will you continue please?

JUDGE FOSTER: I want to get a correction in the record, in the testimony of Mr. Williams about the feet of oil on the drill stem test in our Fort No. 1 Well.

Q I believe you said you had 1200 feet of oil in the hole?

A Yes.

Q That should have been what?

A Approximately three thousand. The number of barrels was correct.

Q You miscalculated the number of feet of oil in the drill stem ?

A Yes.

Q What size is that drill stem?

A Three and one-half inches I believe.

Q Now, as we adjourned, you had just identified Exhibit No. 4 up there and, without stating what Exhibit 4 reflects, will you tell what it is?

A Exhibit 4 is a cross section, East-West, through the Phillips No. 2 Fort, No. 1 Fort and No. 1 Fonzo and Magnolia #13 Pope starting from a point above the Wolfcamp through the Devonian.

Q For what purpose did you prepare that cross section?

A To show the relationship between the formations below the Wolfcamp, East and West; the T.D in the area.

Q What is "T.D."?

A Total depth.

Q Going over to Phillips No. 2 Fort - what is reflected on Exhibit 4 in respect to that well?

A It shows the top of the Wolfcamp and total depth of 9780' at which it was broken.

Q That is Phillips No. 2 Fort?

A Yes.

Q Are you saying that was a dry hole?

A Yes.

Q How close was that dry hole to Phillips No. 1 Fort?

A About thirteen hundred feet.

Q What direction from Fort No. 1?

A West.

Q How far West?

A Thirteen hundred feet.

Q You mean approximately thirteen hundred feet?

A Yes.

Q You got a dry hole in Wolfcamp?

A Yes.

Q You did not drill on to the Devonian?

A No.

Q Why?

A Because we thought it would be low on the structure - below the water.

Q What does the Exhibit reflect with respect to Phillips No.1

Fort, one of the wells at issue here?

A. It shows Phillips No. 1 Fort is up on the Devonian structure, up from the No. 2 Fort.

Q But it is still down structurally?

A Yes, from the other wells located on the cross section.

Q On Phillips No. 1 Fort, do you have any drill stem tests there?

A I do not know them on this cross section, but I did on the other ones.

Q You show Phillips No. 1 Fonzo. Where is it located with respect to Phillips No. 1 Fort as shown on the Exhibit?

A It is one location East.

Q And what will this Exhibit reflect with respect to No. 1 Fonzo and No. 1 Fort? What wells?

A It shows that Phillips No. 1 Fonzo is structurally about the same as Phillips No. 1 Fort.

Q But still on the down structure?

A Yes.

Q What do you mean by saying they are "down structure"?

A That they are closer to water.

Q They are not as well located as other wells?

A Yes.

Q Do you mean they are, or are not?

A They are not as well located on the structure.

Q And what effect is that likely to have in respect to

getting a good or bad well?

A If it is low on the structure, there would not be as much prospective as above water.

Q As there would likely be up on the structure?

A Yes. It is better developed on the upper structure than on the lower structure.

Q Then, you would expect from the structural position of Phillips Fort No. 1 and Fonzo No. 1 wells that they would not be as good wells as those would be further up structure?

A In general.

Q You would expect they would produce less oil than other wells?

A Other things being equal, yes.

Q In respect to this Exhibit, the other two cross sections that we have been talking about, Exhibits 2 and 3, I notice you have the logs on there. How did you get them on there?

A Just glued them on.

Q Did you just photograph them?

A Those are the electro-logs which have been photostated. Then I had the photographer shoot them down to one-half size.

Q But they are the actual reproductions of the actual logs of the well? Is that correct?

A Yes.

Q And the Atlantic No. 5 Dickson would be up structure from Phillips No. 1 Fonzo? Is that right?

A Yes.

Q Is there any special information shown in respect to that well that you have not testified about?

A No.

Q Just that it is higher than Magnolia No. 13 Pope, is that true also?

A It is shown to be down on the flank of the Wolfcamp as you go West.

JUDGE FOSTER: If it please the Commission, we would like to offer Phillips Petroleum Company Exhibit No. 4 in evidence.

COM. SPURRIER: I accept it. It will be admitted.

(Whereupon, Phillips Petroleum Company Exhibit No. 4 was admitted in evidence.)

JUDGE FOSTER: We will go now to the next Exhibit, No. 5.

Q Will you please mark that cross section as Phillips Petroleum Company's Exhibit No. 5?

(Phillips Petroleum Company's Exhibit No. 5 marked for identification.)

Q Mr. Williams, before I interrogate you about Exhibit 5, I want to return to our discussion about these comparative drill stem tests. I want this record to be clear and do not want anybody to be confused about the matter and I want you to state for the record here what the value of a drill stem test is.

A I would say that that test is an indication of what a well might produce in general.

Q In the industry, as a rule of thumb in the early stages

of drilling, you do rely on these drill stem tests to give you some indication of what kind of a well you might get, do you not?

A Yes, as an indication.

Q Now, it is true, of course, that in comparing drill stem tests, that one drill stem test there has gotten less in the hole than another drill stem test would show in another well, but that does not necessarily indicate that the well that has got the least oil in the hole is the poorest well, does it?

A Not necessarily.

Q By taking the law of averages and not by using it as a rule of thumb, it does indicate that the lower drill stem test is most likely to produce the poorest paying well, is that no so?

A In general.

Q There are some exceptions?

A Yes.

Q But I mean on the over all picture generally, the lower the drill stem test in the well the less productive well you might expect to get?

A I would say the poorer the drill stem test, the worse it would look in general.

Q Tell us what is represented here on Exhibit No. 5.

A Exhibit No. 5 is another cross section covering just a part of the Wolfcamp. It is constructed of micro-logs of Wolfcamp pay sections and covers the same wells that were shown on Exhibit 4.

Q I want to be sure that this record shows what a micro-log

is.

A It is an electro-log in much greater detail, designed to show the porosity of a pay zone.

Q They kind of act as a looking glass for the industry so they can look down in the ground and tell what is down there?

A It shows the porosity but does not indicate the permeability.

Q Is it the most accurate way you know of to determine the porosity?

A In the abosence of cores, I would say yes.

Q It is the only recognized way of doing it?

A Yes.

Q These micro-logs are generally relied on by the industry as being accurate in respect to information that they reflect?

A Yes.

Q I mean in a practical way. I am not talking theoretically. That is what the industry puts its money on?

A It is what we complete wells from.

Q This cross section here, Exhibit 5, reflects the micro-logs of what wells?

A Phillips No. 2 Fort west and going east, Phillips No. 1 Fort, Phillips No. 1 Fonza and Atlantic's Dickson and below that are Magnolia's No. 22 Pope and Magnolia's 33 Pope. These two wells are not on scale.

Q For what purpose did you prepare that Exhibit?

A I prepared it to show the structure, which is similar to

the other cross sections showing that you are coming down going West and also to show the characteristics of the Wolfcamp pay interval is from the top of Wolfcamp to water.

Q What is the characteristic of Wolfcamp pay zone there, as reflected by that Exhibit?

A This Exhibit shows it to be lenslike. The black represents porosity. It does not represent pay. And, in between, is the impervious zone. It shows the zones of porosity regardless of fluid. The sands in that area are limestone but linticular formation .

Q What do you mean by "linticular"?

A It is just like your fingers spread out.

Q It just comes to nothing?

A Yes.

Q If a zone of sand on which you might expect you pay, what would you say about a linticular sand?

A You cannot depend upon a given porosity being present in an offsetting well. It might peter out.

Q Starting from the top of Wolfcamp sand, where you have it illustrated on the Exhibit, at what depth would you encounter the top of that sand?

A This line represents the top of the structure, and the top on the West is 9350 feet.

Q And where do you get the bottom of it?

A We have a water level that is very poorly established at 5800 feet. The reason it is poorly established is that the pay is

so linticular that you do not get water because of lack of porosity.

Q You have a pay zone of what thickness?

A On an oil bearing zone, from the top to the bottom.

Q What thickness? From where you first hit it to where you can get it?

A There is some porosity almost to the top of Wolfcamp and maybe 20 feet to 30 feet in depending on wells, but from the top of Wolfcamp to minus 5800, which is approximately water, the interval bears to 245 feet to about 471 feet over here and higher over there on the crest of the Wolfcamp structure. (Illustrating on map).

Q On Phillips No. 1 Fort , what is the area?

A The Phillips No. 1 Fort has about 208 feet from the top of the Wolfcamp to minus 5800, but not all of this is pay.

Q You do not mean that you have 280 feet of sand there that will produce oil?

A That is the interval in which it would be found. Beyond this depth, you would not expect it.

Q Now, that is about 280 feet?

A Yes.

Q In the Phillips No. 1 Fort?

A Yes.

Q What is it in the Phillips No. 1 Fonza?

A It is close to 400 feet - about 370 feet.

Q That is from where you first strike the top of the Wolfcamp horizontally until you run out of it?

A Yes.

Q Going back to Phillips No. 1 Fort, how much effective pay sand do you have in that well?

A I think according to the micro-logs, there is twenty-nine feet indicated porosity, but I do not feel that all of that is pay because in the drill stem actually , that is five feet on top of Wolfcamp from which we got our oil on the drill stem test.

Q Did you say out of the 280 feet distance from the top of the Wolfcamp sand down to the bottom of the Wolfcamp sand in Phillips No. 1 Fort, you have only five feet on which you can expect oil?

A That five feet looks the best and below twenty-two feet of this we could not depend upon. It may yield a little oil but not much.

Q You would not expect much production?

A No.

Q So the effective pay sand does not exceed five feet, is that right?

A Yes.

Q How does that compare with the effective pay zone in the Magnolia No. 22 Pope?

A Magnolia No. 22 Pope has about eleven feet and that is the best part of Wolfcamp and sixteen feet developed by micro-log .

Q Now, in Magnolia No. 13 Pope what would you say?

A About the same.

Q How does that compare with Atlantic's No. 5 Dickson on the map?

A It has more - in the neighborhood of 14 feet.

Q Comparatively speaking then, the micro-logs show Phillips No. 1 Fort, as compared to the Atlantic's No. 5 Dickson and the two Magnolia wells, No. 13 and #22 Pope, is relatively poor?

A Yes.

Q And you would not expect to get anything from the recovery of oil from Phillips No. 1 Fort like the two Magnolias?

A No.

Q What would you say in reference to Fonza No. 1?

A It has about 28 feet developed throughout the best part. Where we were talking about, No. 1 Fort was possibly seven feet.

Q Does that indicate to you that as you go up structure your effective pay zone increases?

A Not necessarily. In general it is true, but there are wells that are high that have not effective pay zones.

Q But you do not have a record of them here?

A One of those is down toward the south. There is about 42 feet effective pay zone.

Q Comparing Phillips No. 1 Fonza with Atlantic's No. 2 Dickson, Magnolia's 22 Pope and Magnolia's 33 Pope, relatively

speaking, would you say that Phillips No. 1 Fonzo is a poor well?

A I would say according to the micro-logs it would indicate it was not a good well.

Q You say according to micro-logs - do you have anything else to go by?

A We do not have a drill stem test.

Q But you do have your micro-logs?

A Yes.

Q And it shows it a relatively poor well?

A As compared with other wells I mentioned, yes.

Q It shows it to be a little better well than Phillips Fort No. 1?

A Yes.

Q And you would expect some more oil out of No. 1 Fonzo than you would out of No. 1 Fort. Is that right?

A Yes.

Q Now, let me ask you this question. Are there any other factors reflected on this cross section that you want to call to the Commission's attention?

A I do not know whether we have gone over it in detail or not. I think the drill stem tests are interesting. With very few weels, we do not get very much formation fluid above this upper porosity - 50 to 100 feet below Wolfcamp. That porosity in the micro-logs has not yielded anything on drill stem test.

Q You mean in the lower porosity zones?

A Yes.

Q You mean when you are talking about lower porosity zones, you are talking about sands?

A Yes, I am not talking about pay sands. There are dolemites and limes, etc. As I already said, we tested No. 1 Fort through these zones.

Q That does not mean anything. You will have to tell me what zones are.

A Zones show porosity.

Q Where are they located?

A Between depths of 9518 feet and 9600 feet.

Q The drill stem tests on those zones shows what?

A Just mud. They did not give up any formation fluid. The Phillips No. 2 hold, one location West, tested the lower porosity zones from a depth of 9620 feet to 9730 feet, part of which, having minus 5800 figure for water, and recovered mud on three tests and water on the 4th test.

Q Indicating there is nothing there?

A Yes and we perforated these porosity zones and the first one was from 9677 to 9690 for twelve hours and we recovered sixteen barrels of salt water.

Q What well had that?

A Phillips No. 2 Fort. Then we perforated the porosity from 9608 to 9630, allowed four barrels of mud in five hours and swabbed

dry and attempted five gallons of acid and it was impervious. After that we perforated 9550 to 9578, swabbed dry, attempted acid, and it did not take. It does not show much on the micrologs, however. After that we perforated from 9460 - it happens to be in the upper Wolfcamp-and swabbed dry and got seven barrels of mud in eight hours.

Q Are you still talking about Phillips Fort No. 2?

A Yes. These drill stem tests and perforations on Phillips No 2 Fort here, two of them were these lower porosity zones that were encountered on No. 1 Fort.

Q What did you do on drill stem tests and further tests on Phillips No. 1 Fort?

A We just took drill stem tests and tested it down to the bone.

Q How about the Fonzo No. 1 respecting the drill stem test?

A We took two drill stem tests.

Q At what levels?

A The first was from 9350 to 9550, for a term of two hours, and the recovery was seven feet of slightly gas cut mud. We took the second drill stem test at 9605 to 9705 and were over one hour and twenty-five minutes and recovered 100 feet of mud and this one happens to be mostly below what we would call water.

Q Still in Wolfcamp?

A Yes. We did not test the upper, most prospective zone of Wolfcamp.

Q Now, let me ask you something: There is some oil that is to be recovered from Phillips No. 1 Fort and Phillips No. 1 Fonzo? There is some oil there to be recovered, is there not?

A Yes

Q Unless we twin this No. 1 Fort and No. 1 Fonzo, or the Commission here permits us to complete those two weeks, what is going to happen to that oil - that is, in the effective pay zones of those two wells?

A A good share of it would just stay there.

Q Where will the rest of it go?

A Some of it will be produced by other wells.

Q What surrounding wells are there?

A The Magnolia Maxwell No. 2.

Q Where is it located with respect to Fort No. 1?

A The Magnolia Maxwell is one location north.

Q The next location north from Fort No. 1?

A Yes.

Q What other wells around there might get some of that oil?

A Magnolia's No. 4 Pope is diagonally northeast offset and direct north offset to the Fonzo.

Q Do you expect that well to get some of that oil from the effective pay zone?

A Yes.

Q What other wells?

A Just from the Fort No. 1?

Q Yes.

A I believe that Atlantic is drilling immediately south os us.

Q That might get some of it when it gets going?

A Yes.

Q In respect to Phillips No. 1 Fonzo, there is some oil there to be recovered?

A I believe so.

Q And, if you are going to get the oil out of there, you are going to twin that or dually complete it?

A Yes.

Q Suppose we do not complete it, where is that oil going to go?

A Some of it would stay there and some of it would be produced by surrounding wells.

Q What wells surround it?

A The Magnolia No. 4 Pope to the north.

Q Just one location north?

A Yes.

Q Is that not No. 8?

A Yes, that is No. 8 Pope. And to the East is the Low 90 Dickenson.

Q One location away?

A Yes, east. And to the south I believe there is Atlantic. No, I do not believe it is Atlantic, but Low 11 B Dickenson, which is

producing from Devonian.

Q That would get some of it?

A Yes.

Q Assuming - but I do not suppose you know about well pay out and things of that sort?

A No, I do not.

Q But, assuming for the purpose of this question that this No. 1 Fort and No. 1 Fonzo would not be what we would call a paying well, and that Phillips Petroleum Company, in discharging their duty to royalty owners would not be obliged to drill that well if it was not a paying well, the only way to get the oil out is to complete the well?

A Yes.

Q You have to get it out of a hole somewhere. You have to get it out of the hole or drill one, is that not true?

A Yes.

Q So, the net result is some of that oil in those two wells we are talking about will never be produced, is that not true?

A If it is not twined or dualed, it will not be produced.

Q It will just stay there and nobody get the benefit of it?

A Yes.

Q Mr. Williams, let me ask you this question: I may have overlooked something that may be of important to the Commission in settling this matter and, if I have, will you please tell us what it is,if I have failed to ask you something that I should have asked

you as to what is reflected here by this Exhibit No. 5, that you would like to explain?

A I think we have covered most of it. The only thing that is of more interest to me than anything else is that it seems in this part of the field, and possibly throughout the field, the best prospective porosity is found in the upper part of the Wolfcamp and not further down.

Q What is the upper part of the Wolfcamp?

A I would say the upper one hundred to one hundred and fifty feet and sometimes closer to the top than that. It may be within thirty feet of the top, but within an interval of from one hundred to one-hundred and fifty feet of the upper Wolfcamp would be found the most effective pay. That is indicated by the drill stem tests and comparative methods that have been attempted in lower zones below one hundred to one hundred and fifty feet I am speaking of. The micro-logs would indicate the prospective in the upper zone is just as good - down in here.

Q Where is "down in here"?

A Well, starting about one hundred and fifty feet on down. From a point one hundred and fifty feet below the top on down.

Q The micro-logs indicate what?

A The porosity indicates it may be just as good but drill stem tests do not substantiate that. It did not give up anything from the formation.

Q If anything was there, would you expect to get it on drill

stem test?

A Generally, not always. Wells are completed at 100 to 150 feet. These lower zones, below the depth of 150 feet, samples indicate the porosity is a pinpoint and not as permeable.

Q Do you know of any productive wells in Wolfcamp in what you describe as a lower zone?

A There are some completed in both zones, but the upper zone would be contributing most of the oil and although some of them are completed in the lower zones, they would be in the minority. I think the cross section would indicate porosity in the lower part, but most of the pay will come from the upper part, 100 to 150 feet.

Q I want to call your attention to something. If you cannot answer it, just say so. It is already in this record by Mr. Washburn that in the Fort No. 1, you have 22 feet of six percent porosity. What does that mean to you?

A He is counting 22 feet porosity from the micro-logs and core information on other wells. I count about 29 feet from the micro-logs alone and the fact they had six percent porosity does not mean you would have effective permeability in all of it.

Q We have the same testimony with respect to Fonzo, that you got 35 feet six percent porosity effective pay zone. What does that mean to you ?

A Just the same. Not all of these thirty-five feet would be effective pay. It may not be permeable. I do not think it is from the drill stem tests.

Q The drill stem test indicated it would not be?

A A lot of this includes this down here which we did not get anything on.

Q That is being liberal on it?

A Yes, I would say so.

Q Not that there is anything wrong in being liberal, but I just wanted to make it clear. I believe that is all.

COM. SPURRIER: Does anyone have any question?

CROSS EXAMINATION

BY MR. MADOLE:

Q Judge Foster, I would like to ask your witness a question: Mr. Williams, in the micro-logs that you have made a cross section East and West, did you look at micro-logs North and South to make a comparison there?

A No, I have not made a cross section of it.

Q Why not?

A Because I did not have time.

Q Would it paint a better picture?

A Going south, some of the wells are better. The Atlantic No. 4 Ted Jones which is situated in the SE/4 of the SE/4 of Section 34, Township 14, Range 37, the micro-log indicates about 42 feet.

Q How about the North - on Maxwell No. 2?

A To the North, on Maxwell No. 2, I found it to be twelve feet.

Q How about Pope No. 8 on the north of Fonzo No. 1?

A I count 28 feet throughout the log that had been run but six feet at the top, but I had figured in the more prospective pay zone.

Q The comparison is almost identical to Fonzo No. 1?

A Yes.

Q How about to the South of Fonzo #1?

A Five feet on the low 3 V Dickenson. The twin is -

JUDGE FOSTER: While he is looking for this, I will submit Phillips Petroleum Exhibit No. 5 in evidence.

COM. SPURRIER: So long as there is no objection, it will be admitted.

(Whereupon, Phillips Petroleum Company's Exhibit No. 5 is received in evidence.)

Q (By Mr. Madole) In other words, the wells to the north and south, the Fort and Fonzo No. 1, according to the micro-logs, they are almost identical to the logs you found on Fort No. 1 and Fonzo No. 1.

A Immediately north and south of us.

Q Are you familiar with the accumulative recovery of those wells?

A No, I am not.

MR. MADOLE: If the Commission please, we have asked Mr. Macey to take off the figures from the Commission's report on the accumulative recovery of all the wells on the Wolfcamp in the Denton field. He has not had an opportunity to check his figures. We

would like to request permission that they be placed in the record.

COM. SPURRIER: The accumulative figures on the production of the various wells in the Wolfcamp formation in the Denton field is requested from the records of the Commission. Is there any objection?

(No objection voiced.)

Q (By Mr. Madole) : I ask first on this five feet of pay that you find in Fort No. 1, what is your estimated recovery in barrels of oil?

A I do not have that.

Q Have you any opinion as to how much is recovered?

A No. Mr. Washburn would have to answer that.

Q Your opinion as to the footage of pay, etc. is based on micro-logs and comparison of drill stem tests - is that correct?

A Yes.

Q You have not taken into consideration the actual production in offset wells?

A I have taken into account the fact the surrounding wells, most of them, are producing only from their upper zone.

Q Would that be an indication of the amount of oil that could be produced from Fort No. 1 and Fonzo No. 1?

A I do not know how it could when you do not know how much they are going to produce.

Q You have the figures on actual production by months from

the time they have been in?

A We did know we did produce that much, but how would we know how long that would produce that?

Q It is as good an indication as drill stem tests, is it not?

A Yes.

Q Is it not a fact that drill stem tests at best are indications of mud conditions in the hole and everything else will affect that test?

A It is an indication.

Q But the mud indication of the well will affect recovery on the drill stem tests?

A Yes.

Q Then what that well will give up is best determined by the actual oil that comes out of the hole?

A Yes.

JUDGE FOSTER: I object - the question is argumentive!

MR. MADOLE: It behooves Foster to raise an objection - and he has been arguing with his own witness all through this case.

JUDGE FOSTER: I want to show it is argumentive.

Q (By Mr. Madole): If Maxwell No. 2,in six months' period, has produced 27,537 barrels of oil, would that not be a pretty good indication that Fort No. 1 , which is directly off of that, will produce oil?

A Yes.

Q And in approximately the same amounts?

A I would not say that.

Q You found the micro-log had pay footage accrual?

A Just about.

Q What factors are you going to subtract from recovery in No. 1?

A By the same line of reasoning, you cannot use a drill stem test to tell what a well can produce, I do not see how you can use production from one well to say that that the offset well will produce the same.

Q It is a pretty good indication, is it not?

A Yes.

Q In general or specific detail?

A In general.

Q Now you said on these micro-logs, on cross sections, that all of the wells indicate that production is from the first 150 feet?

A I said in general.

Q What do you mean by "in general"

A Because there are some wells completed in both the upper pay zone and some have perforated in the lower part.

Q I am talking about this Exhibit. Is there any in the lower zone?

A There may be one or two.

Q Which ones?

A I believe Atlantic's #3 Ted Jones is run on cross section B-B Prime which would be Exhibit 3, is completed in both zones.

Q I am talking about those pictured on Exhibit No. 5. That is the one I am talking about.

A Four of those are Devonian wells and this one and this one (illustrating on map) are Wolfcamp ones which are completed in the upper zone.

Q Then, in your Fort No. 1 and Fonzo No. 1 you had 150 feet of Wolfcamp formation.

A You mean above water?

Q Yes

A We had more than that.

Q Then your Fort No. 1 and Fonzo No. 1 have in them the same pay formation that is being produced toward the East, is that not so?

A Yes.

Q Now, if the Commission decides not to complete and if you decide to twin these wells, where can you locate Fonzo No. 1 Twin on Fonzo No. 1?

A We would not twin them.

Q Is it not true that if you move the Fort No. 1 to 330 feet from the East line and 330 feet from the North line on the contour map that you used as Exhibit 1, would not that well be structurally almost on the same structural level as Magnolia's Maxwell No. 2?

A You say 330 feet from the North and East?

Q Yes.

A Yes, it would.

Q Then, under the rules of the Commission at this time you are permitted to so locate such a well, are you not?

A I believe that is right.

JUDGE FOSTER: I do not know whether it is or not.

Q (By Mr. Madole) Will you mark on Exhibit with an "X" where that would be on your contour line?

A Yes.

(Whereupon he marks Exhibit #5 with an "X")

Q Let us go on the Fonzo - On that same contour map, and go 330 feet to the North and East line of Fonzo, which you have marked with an "X", and tell me whether or not it would be on a structure comparable to Magnolia's Pope No.8?

A It would be just a little higher.

Q Now in the twinning of a well, your location of that twin well would not be identical with the Devonian location?

A No.

Q Then if these formations are linticular, there is a strong possibility of your hitting more porosity in that different location than in your Devonian location?

A More or less porosity.

Q But, as you move to the north and east, by your own testimony, you are getting more on structure, are you not?

A But I said in general the porosity -

Q In general?

JUDGE FOSTER: He has answered the question.

A It is hard to get specific because porosity does not change that much in relation to structure. This Atlantic well in the southeast of Section 34 is low on structure but it has high porosity, indicating it is quite eratic.

Q Did I understand your testimony correctly that, in general, as you move up structure you found more porosity?

A That is why I said "generally". There are exceptions to this.

Q What you are telling this Commission is, until you drill a hole that you do not find in Fort No. 1 or Fonzo No. 1, is that right?

A I did not say that. You can tell something by Devonian wells that have already been drilled.

Q You get general when it is necessary and you get specific when it is not necessary. I want you to stay on one side of the fence or the other. If, in general, going up structure you are going to get more permeability?

A I was speaking of the pool as a whole.

Q What is the purpose of this Exhibit 5?

A I was not speaking in respect to twin wells. On the crest of the Denton Pool the porosity is better - even that in general - but I think, in respect to twins, we could tell something about what

the porosity would be since the porosity on the immediate offsets are similar, which we already discussed.

Q Then if those wells would pay out, your wells should pay out?

A Yes, I think they would.

Q That is all.

REDIRECT EXAMINATION

By Mr. Foster:

Q Did I ask you the extent of the pay zone was that you found in Fonzo No. 1?

A Seven feet.

Q That is all.

MR. L. C. WHITE: Mr. Williams, how conclusive is a drill stem test?

A I think you can say if you get a flowing test, it is a good indication. It does not mean anything about what that well will produce. It is just an indication of the production of the fluid in the drill stem test interval. I do not think it can be taken as any kind of a measurement.

MR. SELINGER: I am with the Shell Oil Company and I would like to ask Mr. Williams some questions.

CROSS EXAMINATION

BY MR. SELINGER:

Q Mr. Williams, referring back to Exhibit 5, micro-log cross section. This Exhibit ends at the so-called crest. If you

had this Exhibit protrude out to the right, it would show the crest dipping down as you go over to the right, would it not?

A My map indicates no completed wells over there unless the completion is very recent and, east of 13, there is the 21. Is that completed? My map does not show it completed. East of that well is Sinclair, which is still being drilled.

Q Looking on the structure indicated by Exhibit I, other wells have been producing on the other side of the crest, in the southeast or easterly direction. Is that not true?

A Yes.

Q Mr. Williams, I believe your testimony was with respect to Exhibit 3, and which Judge Foster this afternoon had you correct your original testimony of this morning, in respect to drill stem test calculations you made on your well?

JUDGE FOSTER: I did not have him correct it! He called my attention to it and wished to have that corrected himself.

Q Well, in which you attempted to correct your testimony this morning , there being an error in your calculations as indicated on your Exhibit No. 3. It is your testimony now that your estimate there would be a 3,000 fill up on drill stem test?

A Approximately.

Q And your testimony still remains in respect to Atlantic's well - 1990 fill up on a drill stem test - that still remains?

A Yes.

Q Faced with a drill stem test of 1990 on Atlantic's well

and 3000 or more on the Phillips well, could you answer Judge Foster as to which is the better well?

A I would say the one at 3000.

Q You would prefer your well to the Atlantic well?

A Yes.

Q And, in that respect, you are correcting Judget Foster's question in which you gave an answer just opposite to this morning's answer?

A Judge Foster did not have the correct information.

Q And now you wish your testimony to be changed, that you prefer the Phillips well?

A Yes.

COM. SPURRIER: Does anyone else have a question of this witness? If not, the witness may be excused.

(Witness excused.)

COM. SPURRIER: We will take a short recess.

(Whereupon, at 3:10 p.m. a ten minute recess was taken.)

COM. SPURRIER: We will continue now. Judge Foster, did you have another witness?

JUDGE FOSTER: Mr. Washburn, will you be sworn please?

E. N. WASHBURN

having been first duly sworn testified as follows:

DIRECT EXAMINATION

BY JUDGE FOSTER :

Q Will you please state your name?

A E. N. Washburn.

Q You are the same Mr. Washburn who testified before in this case, are you not?

A Yes.

Q Mr. Washburn, how many barrels of oil at present prices will it take to pay out a Wolfcamp well?

MR. SELINGER: We wish to object to this question on the ground that the matter has been gone into in the original hearing on July 16th here.

JUDGE FOSTER: I understand it would take 116,000 barrels to pay out. I wish to get the correct understanding about it. I think it is a fair question.

COM. SPURRIER: Let us get some new testimony.

JUDGE FOSTER: May I, for the purpose of the record, state what the answer would be? It is very important if there should ever be a Court contest. They try it on the record and you can rule on the advisability or in inadvisability of the evidence, but I think it is important this witness be permitted to answer.

COM. SPURRIER: If it is new testimony we will hear it, but, if it is the same as the last hearing, I can see no reason to go over it again.

MR. SELINGER: My objection still stands that we went over this whole thing - the cost of the well by the amount of recoverable oil: The amount of oil necessary for each forty acres to pay out, and I see no reason to rehash it all over again.

JUDGE FOSTER: It is not my intention to do so.

COM. SPURRIER: If it is not in the record, put it in. What is your answer?

A 116,000 barrels of gross oil.

Q What do you mean by gross oil?

A Total oil.

Q Have you made any computation of the number of dual oil completed wells that Phillips Petroleum Company has operating today?

MR. SELINGER: I also wish to renew my objection, because he went into this at the last hearing.

COM. SPURRIER: Have you answered that before?

A I have similar data that is of a later date.

JUDGE FOSTER: It is a little different testimony.

MR. WHITE: I might state this to the Commission, that under this petition for rehearing, in my mind, I question the materiality of all the evidence introduced this morning and afternoon in this hearing. The grounds for rehearing are: 1. That Order 351 entered here was for further evidence. 2. As to the date of the Order. 3. That the Commission, in issuing said Order, acted unreasonably, arbitrarily and capriciously. I think the evidence should be set forth on the grounds set forth in the petition and not go over the whole case!

MR. SELINGER: That is why I objected. He is retrying it without the introduction of new testimony and this went through all of this morning and now this afternoon it is still testimony

of the last hearing!

JUDGE FOSTER: That while he testified as to the number of these wells, there is nothing in this record to show that Phillips has had ten years' experience in dually completing oil wells, and there is nothing in this record now to show that the depth, the range of the depth to which these dually completed wells have been completed by Phillips Petroleum Company and, if we are permitted to do so, we will show that we started in 1943 and, up to the present time, that we have dually completed seventy oil wells and that insofar as these seventy oil wells are concerned that no mechanical failure of the packers in those wells have ever resulted in any injury to the reservoir in which we have completed these wells. I think that is important in this case. There has been much said here and much objection about packer failures. We do not say that packers do not fail. Any mechanical device will fail at times as far as that is concerned, but I think it has very much probative value to show over ten years' experience by Phillips Petroleum Company that we have dually completed these seventy oil wells in widely varying areas from depths less than involved here to depths greater than involved here and that there has been very few failures in those wells and the few failures that have occurred, have not resulted in any injury to these reservoirs.

MR. WHITE: If that is your contention, what is it that you have to support your petition for rehearing on - your statement that the Order was unreasonable, arbitrary and capricious. What

testimony do you have to show that the Order was unreasonable, arbitrary and capricious?

JUDGE FOSTER: I call your attention to Paragraph F under No. 3 of the Petition which reads that the Order will require the drilling of several wells. That will mean a terrific loss and that is the purpose of this testimony, to show that those excess number of wells would be required under the Order.

MR. WHITE: That is your ground for claiming that the Order is unreasonable, arbitrary and capricious?

JUDGE FOSTER: That is correct.

MR. WHITE: The Order would have to be based on what was introduced at the last hearing.

JUDGE FOSTER: We asked for a rehearing and it seemed to me we should have one.

MR. WHITE: The whole testimony is out of the scope of the petition.

MR. MADOLE: All of the testimony outlined by Judge Foster was available at the previous hearing - all of this testimony given this morning and so far this afternoon, was available. There was no Motion for continuance to present additional testimony. The Motion as I understand it , and it was apparently created to show they have newly discovered evidence that had developed since the last hearing. This here is simply a rehash and simply an accumulation of testimony that could have been put forth at the previous hearing. If they had prepared themselves to adequately prepare their

Petition at the first hearing and I do not understand that a Motion is granted for rehearing for them to bolster their own inadequacies. If they have some new evidence developed since the previous hearing, certainly the Commission is within its jurisdiction to permit that evidence to come in, but not simply to retry the evidence of the previous hearing. I do not think that is the function of this Motion for rehearing.

JASON KELLAHIN: I would call your attention to Paragraph D of the petition which alleges that the equipment proposed to be used will provide adequate protection to the horizon which is clearly shown, and also will protect all correlative rights, and I do think we can present such testimony at this time.

MR. MADOLE: They presented their Otis pressure group and we had a demonstration of the effectiveness of packers and crossover nippels, etc. , but Paragraph D wholly refers to prior testimony.

COM. SPURRIER: If you have new testimony, let us hear it.

JUDGE FOSTER: Do you consider this testimony new?

COM. SPURRIER: If it is not in the previous record, it is new.

JUDGE FOSTER: I think what I am offering here is new testimony.

COM. SPURRIER: Proceed, and we will see.

Q (By Judge Foster) I have here a tabulation showing dually completed oil wells that Phillips Petroleum Company has as of July 1st, 1953 giving the pool, lease, well number - in the lower zone its name and depth perforated and, in the upper zone, its name, the depth of perforation, and the date it was dually completed. Will you hand that to the reporter please so that she can mark it Phillips Petroleum Company's Exhibit No.6.

(Phillips Petroleum Company Exhibit No. 6 marked for identification.)

MR. MADOLE: We object to that!

MR. SELINGER: They were here on July 16th and all this testimony was available.

A (By Mr. Washburn) It is dated July 1st in the field but it is not received in Bartlesville office until September.

Q (MR. MADOLE:) You could have accumulated it at the time of the last hearing, could you not?

A Yes.

COM. SPURRIER: Proceed.

MR. MADOLE: May we have a ruling as to where we stand on this record?

COM. SPURRIER: Your objection is overruled. Proceed, Judge, but confine your testimony to new testimony.

JUDGE FOSTER: I will try to do that. You will have to decide whether it is new or not. Somebody is going to have to decide that question.

Q (By Judge Foster) Mr. Washburn, directing your attention to Exhibit 6, between what depth ranges were those seventy dually

completed oil wells?

A For the upper ones about 4400 down to a depth of 12,500.

Q Now, between what dates were those wells completed?

A From April of 1943 to August of 1953.

Q Now, to whatever extent you may have had any power failure in those wells, do you know of any power failure resulting in any damage to the reservoir?

A No, sir.

JUDGE FOSTER: That is all.

CROSS EXAMINATION

BY MR. SELINGER:

Q Mr. Chairman, we objected to this witness' testimony entirely and also to the introduction of this Exhibit. However, we wish to ask Mr. Washburn, in this Denton field, what is the difference in depth between the Devonian production and the Wolfcamp production? How much of an interval?

A I would guess about three thousand feet.

Q Can you show this Commission where in your wells of dual completion there is an interval of three thousand feet in dually completed oil wells?

A I cannot.

Q What is the maximum interval of dual oil completion on your Exhibit?

A About eighteen hundred feet I believe

Q Now, in respect to packer failures, have you had any production

packer failures - the type of packer you run on your turbine?

A Yes.

Q Do you recall at the July 16th hearing I asked whether there had been any production packer failures and whether there had been any dual oil well packer failures?

A I do not know about the question of production packer failures, but I do remember your asking if we had a dual-dual packer failure.

Q How do you know a packer failure in a dual-dual oil completion?

A There are several ways you might identify it. You might catch it from a change in flowing of the two zones or change in capacity in stock tank return or in the gas oil ratio.

Q It is a matter of policing which is the realm of the operator, is that not correct?

A It is.

CROSS EXAMINATION

BY MR. MADOLE:

Q Mr. Washburn, you say in these seventy wells, you have never had a packer failure?

A No, I did not say that.

Q What did you say? What was the significance of your Exhibit?

A This is a list of Phillips dually completed wells.

Q You have had packer failures in these wells?

A I know of no instance in this bunch.

Q Have you investigated your records and checked on these wells in particular to see if they have had some packer failures or are you just relying on your general knowledge?

A I have not individually investigated them.

Q You do not know there have not been packer leaks?

A They have not been reported.

Q This information was not available at Bartlesville at the time of your previous testimony, is that right?

A Yes, sir.

Q Then the record of packer failures is not available to you at Bartlesville, is it?

A During my time in Bartlesville I have never known of any letter or correspondence or Report 903, in which a packer had failed.

Q But, to find out if there have been packer failures on these seventy wells, you would have to go to the district in which one was located?

A Yes.

Q And you have not done that, have you?

A No.

MR. NADOLE: That is all.

FURTHER CROSS EXAMINATION

BY MR. SELINGER:

Q On this list of dually completed oil wells that Phillips operates, how many have five and one-half inch casing?

A I can only answer that for the part that covers West Texas. I have never worked in the Oklahoma Area . On all of the Ellenburger wells we use five and one-half inch casing. Goldsmith's are five inch to the best of my knowledge, but those shown in West Texas are five and one-half inch casings.

REDIRECT EXAMINATION

BY JUDGE FOSTER:

Q If you had a packer failure, would a report be made up?

A Yes.

Q Where does that report go?

A Through all channels and Bartlesville.

Q And that would have been available to you, would it not?

A Yes.

Q And, in compiling your records, you did not find any reports of a packer failure?

A No, sir.

RECROSS EXAMINATION

BY MR. MADOLE:

Q Let us go back now. You stated at the previous hearing that you did not have available this information. Now, is that report made on dually completed wells to Bartlesville?

A Yes, on individual wells it comes to Bartlesville.

Q And that is on packer failures?

A Yes, because that would come under reconditioning.

Q But it was not at Bartlesville at the time of the last hearing?

A I gave the date before in the previous hearing - that it was made January 1st. We get a report semi-annually. This is the July report which got into Bartlesville after the last hearing.

Q Are you telling this Commission that every packer failure is reported and would be there at Bartlesville?

A Yes.

Q Then your testimony a minute ago - to find out about packer failures you would have to go to a District - is not correct?

A I was in error. They do come to Bartlesville.

Q To avoid a rehash, we would like to state to the Commission - he threw in this figure of 116,000 barrels, his previous testimony in the record - and we do not agree with that figure. There is testimony as to the payout on these wells in detail in the previous hearing, but we do not want, in any way, to be bound by this 116,000 figure, especially in view of the fact that it does not coincide at all with his testimony at the previous hearing. Are you going to accept that over our objection? If you are, then we want to break down that 116,000 figure.

COM. SPURRIER: We would like to have you break that down. Do you have a calculation on that 116,000 figure?

Q (MR. MADOLE:) How did you arrive at it? Can you outline it?

A I used oil at $2.83. I took 7/8ths of that to deduct royalties, giving me a value of $2.476. I took 6.44% sales tax and various State taxes out.

Q (Mr. SELINGER): You mean gross production tax? Is that cents or percent?

A That makes $2.476 oil worth $2.316. I assume a sixty cents per barrel lifting cost, which ends up with an oil, before income tax of $1.716 per gross barrel .

Q (Mr. Madole): What after income tax?

A These wells will not pay out. There is not any income tax on depletion allowance.

Q You have $1.71 per barrel. What figure do you use for recovery?

A I valued the Wolfcamp well at $200,000 and divided $200,000 by $1.716 and I got 116,000 barrels by slide rule. In my previous testimony I had considered income tax in that, which was why the value of my oil was less.

Q Then you say your Fonzo would not pay out?

A Yes, sir.

Q Are you changing your testimony as to ultimate recovery from Fonzo?

A I estimate Fonzo will produce 107,800 barrels.

Q You used 120,000 before and the price of oil at $1.25.

A I was in error but, again, I would have to pay income tax.

Q How does income tax affect barrels to be recovered? You testified that 120,000 barrels of oil was going to be produced from your Fonzo?

A I cannot check that figure. I cannot check it with the data given.

Q I am asking about -

JUDGE FOSTER: He is not denying what he has said . He is saying that he will get 107,800 barrels from Fonzo.

Q (MR. MADOLE:) Let me read from Page 5 of the transcript of the previous hearing: "Q What would the estimated total recovery from the Fonzo No. 1 well? " "A I would estimate the Fonzo would have approximately 3000 barrels per acre, or about 120,000 barrels on a 40-acre unit." Now you say 116,000 barrels will be your pay out. If you took 116,000 or 120,000, then Fonzo #1 will pay out?

A On those figures it would pay out - yes, sir.

MR. MADOLE: That is all I have to ask.

MR. WASHBURN: I cannot get but thirty-five feet of porosity.

MR. MADOLE: Let me read again from the transcript: "How thick is the Wolfcamp pay sand in the Fonzo and the Denton Nos. 12 and 13 wells?" "A I don't have a micro-log of those wells. We estimate the footage in the Fonzo is about 35 feet of productive porosity, and that the two Denton wells will have probably fifty feet of productive porosity." That is what you testified previously.

Mr. WASHBURN: I probably had an error in my calculation . You take 35% and then take 6% in all our wells and multiply that and you will come out with 107,800 barrels I believe.

JUDGE FOSTER: Don't argue! Calculate it out!

MR. MADOLE: There has been a lot of arithmetic, but it is on a sliding basis!

Q (By Mr. Madole) Will you give us a breakdown of this $200,000 cost of your well?

A I base that on cost of wells we have drilled.

Q Let us just get figures. How many tangibles and how many intangibles and how much did you charge to each?

A I did not break it down that way. I went to the Accounting Department and got the actual cost of drilling six Wolfcamp wells.

Q What was the footage cost?

A I do not have that. I used the over all gross cost of drilling the well - the price it cost us. I have those cost estimates here.

Mr. MADOLE: We got in that circle last time - estimates of actual cost.

MR. WASHBURN: I have actual costs.

MR. MADOLE: Let us have the actual costs.

MR. WASHBURN: Denton 4 - this was the first well drilled. I will give them in order here. Denton 4 cost $190,373.55. Denton 5 cost $168,644.33; Denton 8 cost $185,860.43; Denton 10 cost $176,359.95; Denton 11 cost $196,325.57; Denton 14 cost $210,616.24. The average was $188,030.01. The last two wells is what I used for my basis, because the location of Fonzo is not as good as these wells and we anticipate more trouble of completing the well.

Q (By Mr. Madole) You said you used the six wells to calculate the $200,000?

A The question was what it would cost to drill Fonzo. I think we got into this argument before.

Q This $200,000 is your estimate and it is not the average of the six wells.

A It is approximately the average of the last two wells drilled.

Q Do you have the breakdown of the last two as to how much additional work was required in those wells in the way of mechanical difficulty?

A It was mostly perforating and swabbing at this west edge and it takes more time to get a well in.

Q Your tangibles remain constant?

A Yes.

Q Your intangibles?

A At least 90% of increase is due to intangibles.

Q What do you estimate of the $200,000 is intangibles?

A About $160,000.00

Q You would get credit on your income tax for that approximately if your income was in the 50% bracket, you would get credit for $80,000.00.

A If you want to drill a well that would not return your money you would. However, that is not a good way to operate.

Q That is the $64.00 question in this. We do not agree with your figures, but, if you suffered this catastrophe, you would get about $80,000 credit on your income tax.

A You would get to charge off all your intangibles the first year.

COM. SPURRIER: If no further question, the witness may be excused.

JUDGE FOSTER: I have not quite closed the case yet. Mr. Selinger had a witness he wanted to put on. I want to take up one other matter here to which I would like to call the Commission's attention. In Order R 351 A, which is the Order of the Commission granting this rehearing and not the Order R 350 A, which is the Order granting the rehearing on another well. In each one of those Orders I called the Commission's attention to the fact that it says that Order R 350 was heretofore entered as of August 28th, 1953 and, in Order R 351 it says it was heretofore entered on August 28th, 1953. Now, it would indicate on the face of the Order that our application for rehearing was filed too late. That being purely a jurisdictional matter, I would like to get the matter straight and, for the purposes of this record, I want to say that on July 31st, 1953, Mr. Macey sent a telegram to Mr. Colley at Bartlesville saying our application to dually complete all four wells involved in the original hearing had been denied by the Commission and then, on September 8th, Mr. Macey wrote me a letter which I received on September 10th saying: "We enclose two signed copies each of orders issued in Cases 556, 557, 558 and 559 in which your company presented testimony at the July 16 hearing. Inasmuch as these orders are dated August 28, 1953 and you are not receiving them until this time, you may have until September 18 to file any request for rehearing which you may contemplate." Now, I would like to have that letter in the record as well as the telegram

I mentioned that is in the file here in this case, sent by Mr. Macey. I am not criticizing anybody. I appreciate the notice given in the matter. I would also like to put into the record the duplicate signed originally by the Commission of Order R 350 and R 351, if I may do so. Now, the rest of the matter on the question which I have presented here will be handled by Mr. Kellahin, if the Commission please.

MR. WHITE:I might state that it is well for him to state on the record what he did, in view of the fact it recides in Order R 351 as to the date of the request being placed. In view of the fact that that date does not coincide with the filing of the order in the Commission's records, which was on or about the eighth of September, let the record show the order R 350 and 351 were entered of record on September 8th.

JUDGE FOSTER: I assume that is what happened and regardless of the date it is signed or allowed, it is effective as of the entry which is appearing as of September 8th. On the face of the order it shows the filing date, but that brings him well within twenty days. The date it was filed in Supreme Court was September 10th. If that stands as a fact, that is all right.

MR. WHITE: That will not truly reflect on the order itself.

JUDGE FOSTER: We had twenty days from which the order was entered on which to file our notice of rehearing. In view of Mr. White's statement, it is the statement by the Commission as to

the time the record reflects that the order was in and, if that is true, we have no further testimony to offer, if the Commission please.

COM. SPURRIER: The record is available, Judge, and Mr. White got his date from the record.

JUDGE FOSTER: If that is the record, that is it. I am satisfied. Mr. Kellahin was going to give testimony on it, but Mr. White has given that information.

MR. SELINGER: We now wish to renew our objection to the testimony given by the applicant as being all a part of the previous record of July 16th and we would like to have a ruling now on it - as to whether the Commission considers this new testimony or not.

COM. SPURRIER: Proceed with your witness, Mr. Selinger.

MR. WHITE: We are withholding our decision.

MR. SELINGER: Mr. Cooper, will you please take the stand?

J. D. COOPER

having been first duly sworn testified as follows:

DIRECT EXAMINATION

By Mr. Selinger:

Q Will you please state your name?

A J. D. Cooper

Q With what Company are you associated?

A Skelly Oil Company.

Q In what capacity?

A Petroleum Engineer.

Q Mr. Cooper, you were here on July 16th covering this same application?

A Yes.

Q Does Skelly Oil Company have any Wolfcamp wells in the Denton field?

A We have six.

Q Have they all been drilled and completed?

A Yes.

Q And all producing?

A Yes.

Mr. SELINGER: Will you please mark this as Skelly Exhibit No. 1 please?

(Skelly Exhibit No. 1 marked for identification.)

Q I hand you what has been identified as Skelly Exhibit No. 1. Does that reflect the extent of Skelly Oil Company's operations in Denton field in a sort of report?

A Yes, as far as Wolfcamp is concerned, yes.

Q When was the first oil well started?

A February of 1952.

Q And the last well completed?

A April of 1953. There was a total of six wells.

Q How much was the average per well investment or cost of drilling a Wolfcamp well by the Skelly Oil Company?

A The average cost was $147,476.

Q What was the payout time per well?

A Per well was about 12.7 months.

Q I will ask you whether or not at this time Skelly Oil Company wells in the Wolfcamp in the Denton Field are paid out.

A I cannot answer that directly, but based on a projection on the rate they would pay out as of June 30th, they should have paid out by October 1st.

Q And the reason you cannot get definite information is the fact that all the bills are not all in and debited yet?

A The bills, runs, and everything has not hit the books.

Q But, from February, 1952 to April of 1953 and down to July 1st, you have had the benefit of six wells' production?

A They were completed at various times and we have had their benefit. All six wells have not been producing for that period of time, however.

Q Mr. Cooper, would you say the cost of drilling a Wolfcamp well, as far as the Skelly Oil Company is concerned, is an average of $147,000 plus?

A Yes.

Mr. Selinger: That is all.

COM. SPURRIER: Any further questions of the witness?

(No further questions indicated)

COM. SPURRIER: If not, the witness may be excused.

MR. MADOLE: We understand the original record is part

of the case and also there will be included in the record as Magnolia's Exhibit No. 1, the accumulative runs from each of the wells in the Wolfcamp in the Denton field. Is that correct, sir?

COM. SPURRIER: Mr. Selinger's objection was overruled. You are asking if this evidence that is presented is accepted as new?

MR. MADOLE: I am just asking if the original record in the July hearing will be considered with this testimony and that we will be allowed to supply the accumulative production on the Wolfcamp wells as reflected from the records of this Commission which Mr. Macey is going to check and supply as our Exhibit No. 1.

COM. SPURRIER: Do you have anything else, Judge?

JUDGE FOSTER: I have a few remarks. I want to point out one or two things. Sooner or later it seems to me that this Commission must reach the point where it is willing to grant applications for dual completion of oil wells. I do not know whether you have got to that point in your thinking or not but, in any event, it is just the march of time. Everybody else is doing it. It is being done fairly successfully according to this record. Now I know that you will find packer failures. You will find them in oil wells that are dually completed - oil and gas wells. You find failures in anything that is mechanical but that is no reason for not permitting us to complete these wells. Now, airplanes fall out of the sky due to mechanical defects. Railroad signals fail causing

wrecks and the wrecks causing deaths. There are mechanical defects on automobiles, but, because of these mechanical failures, nobody would argue that you should stop flying, going on railroads or automobiles and it is just as logical to say that because there may be a mechanical failure in one of these packers, that you should not grant a dual completion of an oil well. It is in the record, if the Commission please, of the Phillips Petroleum Company's experience and that is all the experience we have had over ten years of dually completed wells - oil wells - not oil and gas, but dually completed oil wells, that we have not had any report of packer failures in those well and we do not know of any reported packer failure in any wells that have caused any damage to the reservoir due to contamination in the two zones. It is all right to say that can happen but I am sure if there had been such instances that the opposition here, as strong as it is, would have dug it up and presented it to this Commission. They did not. They are simply content to argue that it could happen.

On the economic side of this picture, I do not know what kind of an operator Skelly is, but I know what a poor operator we are according to his figures, but it is in the record that any good, hard-headed business man who would go into this, would dual these wells. I think this Commission would be amply justified in finding that it would not be feasible to go out there and twin these wells. If that is the situation, then here is what you have got before you to consider. If you want to get that oil out of the ground, out of the Wolfcamp

formation, if it is not feasible, then it is only to get it out of the hole we have already got - the hole in the Devonian. If the Commission does not do that, then this record is clear and not denied that the productive oil that is in the Wolfcamp zone in these two wells will be produced by these offset operators - a large portion of it will. Some of it will not. That will be a loss for the people of the State of New Mexico. It will just stay there. We just ought to be practical and hardheaded about this thing. It would seem to me to protect the interest of our royalty owners, you should permit us to dually complete these wells and produce this oil that we can produce through a dually completed well and pay that royalty to the royalty owners and I believe that we have a legal obligation to the royalty owners, and, if it is not legal, it is certainly moral. We are trying to protect everybody's interest. What have the opposition here to lose? Just briefly, how can Skelly get hurt if this Commission grants this dual completion? What has Magnolia to lose? What has Sehll to lose? What has Amerada to lose? It is no skin off their nose and why they are here fighting it is something I do not understand. Now the fact that they have twinned wells in the same formation of the same characteristics, etc. does not prove that every well should be twinned. Now, why is it that Magnolia objects to this? The reservoir is not being injured. They will get as many barrels of oil as they would ever get if you permitted us to twin these wells but, they will get a lot more, if you don't.

These things get pretty plain to me just what the issue is and you just deny us the right to dual these wells and get that productive oil under our land there and deny us the right to dual and that productive oil will go to these other operators in this field and that is not something you can just laugh off. I think we have shown this Commission, in good faith, the way we see it, that we cannot twin these wells and pay them out. There is a serious question about it. Sooner or later in New Mexico you are going to be dually completing these oil wells. I know there is some objection to dually completing wells, and I do not say you should establish a policy of dually completing wells, but it is only after you have found the facts and I think when the Commission sits down conscientiously and digests these facts, you would be amply justified to let us complete these two wells. We have done all we can to remove any question of doubt you have in your minds. If anybody has failed, perhaps it is me. There may be some argument about these figures, as to what it takes to pay out a well. Mr. Washburn told us when he used thirty-five feet and six percent that he was wrong and you will get 116,000 barrels of oil and that, multiplied out, gives you so many thousand dollars.

I respectfully ask this Commission to give serious consideration to our request and grant our application to dually complete these two wells.

MR. MADOLE: I am Ross Madole appearing on behalf of

Magnolia. I am not planning to make any lengthy statement, but Judge Foster is implying here that we are coming here with an evil intent to steal his oil. We are here to oppose the dual completion on the ground that it embodies risk to the reservoir. He says there is no direct evidence in this record of packer failure. Either he is not reading his mail right or I am not because -

JUDGE FOSTER: I did not mean to say there is no record of packer failure.

MR. MADOLE: We brought our engineer from Texas and proved to our satisfaction that we had suffered twelve packer failures over there in a field - a total of twelve failures, of which he attributed nine to packer failure. He further testified that he found evidence of injury to the reservoir. That is not conjecture. Now, Mr. Foster refers to planes and railroads and automobiles. You have rules and regulations of running those automobiles. If you are a safe driver you stay on the right side of the road. All we suggest is that they stay on the right side of the road and put another hole down in that field and they will experience no difficulty or injury to the Reservoir. He says we suffer no injury. If there is injury to the Reservoir, and we are directly offsetting those wells, we would be affected and if there was contamination in the Fort or Fonzo, it would adversely affect our wells. Now, he refers to the evil intent of Magnolia to come up and oppose his application so that we can steal his

oil. That is not true. We suspect that Judge Foster is using this Commission to wash a little dirty linen of his own - his royalty owners demands for drilling. If we are going to get into personalities and what is behind this, I think a full disclosure would reveal that they have had a demand for drilling these two Wolfcamp wells and that is the purpose of this hearing to avoid and try to tie down a possible lawsuit action in the Courts of New Mexico.

COM.SPURRIER: Do you wish to speak?

J. H. VICKERY: My name is J. H. Vickery and I represent the Atlantic Refining Company. Atlantic Refining Company has approximately twenty percent of Denton field and we have no objection to the application of Phillips Petroleum Company to dully complete their Fort No. 1 and Fonzo No. 1. Atlantic has found that dual oil completions have been feasible in other areas where the Company operates and I would like to go on record to favor dual oil completions in the State of New Mexico.

GEORGE W. SELINGER: If the Commission please, Skelly Oil Company wishes to renew its objection to Phillips Petroleum Company's application. The record of the previous hearing has been made part of this rehearing, but the reason we are objecting is not because we are going to get Phillips' oil, but we feel there is that danger of contamination, particularly in areas where you have possible water production and it has been brought out throughout the entire hearing there is both water in Wolfcamp

and Devonian. I also want to point out that the matter of policing is a difficult one. It rests entirely with the operator, and we think that is a very important consideration of this Commission - this policing. Outside of bottom hole tests and gas returns, there is no way that the State or offset operator can be advised of such contamination if it exists and that is our sole interest in opposing Phillips - the danger of contamination. If they wish to contaminate their property, that is their business, but, when it comes to a common reservoir, where we might get injured, that is our objection. We wish to particularly call this Commission's attention to it here. We have also indicated that their equipment was unproven at great depths where there is also a mixing interval in respect to five and one-half inch casing. I think all those things should be thought of by the Commission in regard to the State as a whole and particularly to the Denton pool.

D. W. NESTOR: My name is D. W. Nestor and I represent Shell Oil Company. As explained before, even though we are part owners with the Phillips Petroleum Company in the Fonzo and Fort wells, we refer again to our previous statement and ask that their request for dually completing these wells be denied.

JUDGE FOSTER: Before we close, I would like the record to show that Mr. White is the attorney for the Commission. May that be shown?

COM. SPURRIER: Yes. If there is nothing further, we will take the case under advisement.