



3-13

BEFORE THE OIL AND GAS CONSERVATION COMMISSION *pt 1 of 3*
OF THE STATE OF COLORADO

IN THE MATTER OF THE INVESTIGATION }
TO TAKE MEASURES TO PREVENT WASTE }
OF OIL AND GAS IN THE IGNACIO FIELD }
IN THE STATE OF COLORADO }
* * * * *

PURSUANT TO CONTINUATION from December 6th, 1951,
the above-entitled matter came duly on for the taking of
further evidence in the Hearing Room of the Employment Ser--
vice Division, 1280 Sherman Street, Denver, Colorado, at
10:00 o'clock a. m., Monday, January 7th, 1952.

BEFORE:

- MR. WARWICK DOWNING, Chairman - - - - - present
- MR. CLARK F. BARB, Member - - - - - present
- MR. RUSSELL VOLK, Member - - - - - present
- MR. J. J. ZORICHAK, Director - - - - - present
- MISS ANNABEL HOGSETT, Assistant Secretary - present

APPEARANCES:

BENNETT, William J., by himself.

BRITISH-AMERICAN OIL PRODUCING CO., by
G. W. Evelyn, Jr., Casper, Wyoming.

EL PASO NATURAL GAS CO., by
W. T. Hollis and
K. W. Harris, Farmington, N. M.

MERIDETH, W. Clay, by himself.

SOUTHWESTERN COLORADO OIL & GAS COMMITTEE, by
W. J. Rutledge, Jr., Durango, Colorado.

STANOLIND OIL AND GAS CO., by
J. K. Smith,
Lewis H. Mond, Jr.
T. F. Newman,
John E. Evans, Ft. Worth, Texas.
T. J. Files and
S. B. Richards, Casper, Wyoming.

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I N D E X

Witnesses

<u>For Stanolind</u>	<u>Direct</u>	<u>Cross</u>	<u>Redirect</u>	<u>Recross</u>
T. F. Newman	107	124		
Lewis H. Mond, Jr.		118	152, 156	154
<u>FOR SOUTHWESTERN OIL AND GAS COMMITTEE</u>				
J. T. Collins	137	143		

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P R O C E E D I N G S

CHAIRMAN DOWNING: The hearing will please come to order. Following the Greasewood matter, we have the Ignacio hearing. Will there be any further evidence regarding the Ignacio field?

MR. J. K. SMITH: (Stanolind) We have some slight additional evidence which we might put in. We would like, of course, to make certain that the evidence formerly offered is adopted and it is reoffered at this time. In other words, as I understand it, at the initial hearing on November 14th, we were to have the privilege of not having to go through that again. And I would like to make inquiry at this time if any person is here who wasn't here at that particular time who wants to hear the testimony?

CHAIRMAN DOWNING: Is there anyone here in opposition to the petition for a spacing order on Ignacio?

MR. RUTLEDGE: Your Honor --

CHAIRMAN DOWNING: Do you wish this testimony to be re-read?

MR. RUTLEDGE: -- I have been furnished since the hearing on the 6th day of December with a copy of the oral testimony, have had an opportunity to read it and I am perfectly willing this morning to make an agreement without the repetition of that from the witnesses that the evidence that was offered on the 14th day of November may be considered a part of the record in the Ignacio matter.

CHAIRMAN DOWNING: Thank you very much.

MR. RUTLEDGE: There is no necessity for reproducing it.

CHAIRMAN DOWNING: Have you boys talked together about it? Can you agree upon what, if any, spacing order should be made?

MR. RUTLEDGE: I don't think there is any possibility of an agreement on the matter.

CHAIRMAN DOWNING: Your position is that it is premature?

MR. RUTLEDGE: Yes, sir.

CHAIRMAN DOWNING: -- at this time?

MR. RUTLEDGE: Definitely, the same as it was when we were here before.

CHAIRMAN DOWNING: An you want to introduce further evidence?

MR. SMITH: Some additional evidence.

CHAIRMAN DOWNING: Proceed.

MR. RUTLEDGE: O^u that subject, on what I would call a motion to deny the application on the testimony that has been offered by Stanolind which I would want to urge when they get through, subject to that, if the board sees fit to go ahead, then I want the opportunity to examine Mr. Newman and Mr. Bond or question them on the testimony they have given and possibly offer some additional evidence that we may want to put in.

CHAIRMAN DOWNING: That is all right. We will give you that opportunity. Is there any objection to that procedure?

MR. SMITH: No, sir. I would like to have exhibit S-4.

CHAIRMAN DOWNING: I believe we will have to continue the matter of the Ignacio hearing until 2:00 o'clock p. m. today.

(Whereupon, the Ignacio hearing was continued.)

(Hearing on the Ignacio matter resumed at 2:00 o'clock p. m., Monday, January 7th, 1952.)

CHAIRMAN DOWNING: The hearing will come to order. I am sorry we were interrupted this morning. Mr. Smith, will you proceed?

MR. SMITH: Before proceeding further I would like to make certain that the service of citations has been returned from Durango. That was a matter that was controverted at the last hearing. I presume it has been made a part of the official record.

MR. ZORICHAK: That is right

MR. SMITH: Mr. Newman, will you please take the stand?

T. F. NEWMAN

a witness in behalf of the Stanolind Oil and Gas Company, being first duly sworn to testify the truth, the whole truth and nothing but the truth, upon his corporal oath testified as follows:

DIRECT EXAMINATION

BY MR. SMITH: (Stanolind)

Q. I believe Mr. Newman was qualified as an expert geologist and the commission accepted his qualifications.

CHAIRMAN DOWNING: We will accept him as qualified.

Q. Referring to exhibit number 4, Mr. Newman, I direct your attention to exhibit S-4, introduced at the hearing on November 14, 1951, which reflects certain contour lines which were placed on there as a result of certain development or certain work in the Ignacio field and I will ask you if, since November 14th, you have any additional information or evidence with respect to locations of these contour lines or any other information reflecting the development or drilling in that neighborhood?

A. Yes, there are two additional wells being drilled in the area which were not drilling on November 14th and a third well which was drilling on November 14th has given additional information.

Q. Now, I ask you what the nature of that information is?

A. The nature from the three wells consists of geological information and production information.

Q. What, specifically, has been the finding or your opinion with respect to the information developed from those three wells?

A. In general, they bear out our original ideas.

Q. From the information that you have acquired from these other three wells, are you able to extend the contour lines that are shown on Exhibit S-4?

A. Yes.

Q. I will ask you at this time if you can indicate as close as possible with free hand drawing the location of those contour lines?

A. If you will permit me, Mr. Smith, I will identify these wells.

Q. Yes.

A. The first well which I wish to mention is the Three-States Natural Gas Company number 1, Ute Indian, which is located 990 feet from the south line and 990 feet from the east line of section 36-33N-R7W.

Q. Will you take this pencil and show the location?

A. Approximately this location.

Q. Put some identification by it so the exhibit will show what it is.

A. "Three-States by the approximate location. I will also place on the well here the elevation which is 6454 and the date up at the top of the Pictured Cliffs as we have now received it is plus 378, the actual top of the Pictured Cliffs, as near as we can tell, is still active, is 2726 feet.

Now, that well took a drillstem test from 2548,

2699 and 237,000 cubic feet of gas per day indicated. On drilling deeper at the top of those, in the Fruitland formation -- at the top of the Pictured Cliffs was encountered approximately 2726 feet and a drillstem test taken from 2680--2740, showed no gas.

This well on top of the Pictured Cliffs is approximately 142 feet lower structurally than the Stanolind number 3, Ute "B", which is located in section 27 of the same township.

Now, that data indicates, although it does not necessarily prove, that this well will make a small producer in the Fruitland. It indicates that the upper part of the Pictured Cliffs is probably not productive in this well.

As was drawn indicates what we thought to be the limit of commercial production in this field as of November 14th to be approximately correct. If this well should be somewhat better than is indicated it is possible that a commercial producer might be obtained immediately east of this location. But if it is not better it is rather unlikely that the operators will drill immediately east of it, consequently, making our line come out just about right.

I will show just very very approximately, 3720 feet. This will be the 3700 foot contour. You have to come down here roughly like this and would tie into around here and come in something like this. It is not exactly correct

but it would indicate roughly that we are getting pretty close to the limits. If this contour runs that way, as they are indicated, these other contours will have to come down, too. It is about the same rate as indicated here on this previous map that I submitted.

Q. Let the record show that the little pencil marks are the ones the witness is now sketching in.

Mr. Newman, I will ask you if the data obtained from this well supports the conclusions that you testified about at the earlier hearing?

A. Yes, I think so.

Q. What about the other two wells?

A. The next nearest well is the Greenbrier number 1, Schoffield, which is located 660 feet from the north line and 1980 feet from the east line of section 5,32N-7W, which would put it approximately in this location. (Indicating lower center of map.)

This well is now drilling and the information we have obtained from this well, as have the other wells, is from the operators themselves and from the usual scout check. It is not our own work so it can't be certified to quite as definitely as we can our own wells.

Greenbrier No. 1 Schoffield, according to the best of our information has taken seven drillstem tests through the Fruitland and Pictured Cliffs formations but has

not obtained sufficient gas to be measurable, although some very good shows. But we do not have the top of the Pictured Cliffs or of the Fruitland so I can't draw contours through here. So it will be doubtful, since we are getting a control point there pretty soon, as soon as samples and electric logs are available to us.

Q. Have any of the drillstem tests indicated that this well is likely to be a commercial producer?

A. No, sir, not the Fruitland or the Pictured Cliffs or anything above. It is our understanding that the well is to be deepened and is now being deepened to the Mesa Verde and what we obtain there we do not know at this time, of course.

Q. What evidence do you have concerning the third well?

A. The third well is the El Paso No. 1 Helton about which I testified on November 14th which is located in the northeast quarter of section 18, 33N-8W

Q. That is already identified on the map, isn't it?

A. Yes, sir, that is already identified on the map. I testified at the last hearing that the well had some very good shows in the Fruitland-Pictured Cliffs, but apparently insufficient to make a commercial well.

The well which was originally started by Amerada has been taken over by the El Paso and deepened to the Dakota-Morrison.

The well got the top of the Dakota at approximately 7740 feet. Some gas in the Dakota but very little, as indicated by drillstem tests.

While coring from 7910-7949 the well blew out and estimates were about ten million cubic feet per day. It is thought to be in the upper part of the Morrison, possibly twenty or thirty feet in the Morrison.

After running a three-hour blow down approximately twelve and a half million cubic feet was estimated as capacity as of that date. However, our understanding is that the El Paso have lowered their estimates as to what the well will make to approximately seven million cubic feet of gas per day, most of that coming from what we think is the top part of the Morrison.

Now, you will notice that our red line does not go over to that well. I testified on November 14th, that according to our seismographic information which extends beyond the limits of drilling in here indicated a saddle between the Ignacio structure and the location of El Paso No. 1 Hilton. We are confident that that saddle does exist but we are not absolutely sure, of course, whether or not production from the Dakota-Morrison will not extend clear across the saddle onto this El Paso structure. However, we do not believe that will be the case. The El Paso well is approximately 187 feet lower structurally than the Stanolind No. 1 Ute "B" located in section 18, 33N-7W.

Q. I will ask you if the discovery of gas in that well supports or does not support your testimony which was offered at the former hearing? In other words, does it corroborate your statement with respect to the saddle and the fact that there might be a rise coming back up?

A. Just the well by itself, without the detail seismographic information, could be interpreted to support my original testimony. However, it does not prove that the original testimony was correct.

Q. Do you have any further geological evidence that has been developed since the hearing of November 14th?

A. Mr. Bond testified in December, I believe, that this Gallegos well which he testified to will lie in section 12, 33N-8W, testified to some additional information that it will be able to produce from the Fruitland formation and possibly from the top of the Pictured Cliffs and we could swing a contour around there just a little bit, if you would like me to do that.

Q. I think it might be helpful.

A. (Indicating with pencil drawing) About like that. (Indicating upper center on same exhibit.) That well more or less corroborates the original testimony, as the penciled contours can be tied in very readily to the inked contours as they could this southeastern.

Q. That supports your earlier testimony as to the closure?

A. Yes, I believe it does. We still don't have definite control clear over to the west, but the excellent showing in the El Paso well and the fact that it made some kind of commercial producer from the Dakota-Morrison indicates our conception of the structure and the stratigraphy of the area is essentially correct.

MR. SMITH: That is all the testimony we have to offer at this time.

CHAIRMAN DOWNING: Are there any other questions of this witness?

MR. RUTLEDGE: I would like to examine Mr. Newman on this testimony and also on his testimony previously given, which I now have.

CROSS EXAMINATION

BY MR. RUTLEDGE:

Q. Mr. Newman, if I understand your testimony correctly, there are only two wells that have been carried to the Dakota-Morrison horizon in the area; one of them is your No. 1 Ute "B" and the other is the El Paso-Amerada well six miles west of you. Is that correct?

A. That is correct.

Q. You have no knowledge from actual drilling that does more than confirm, as those two wells do, your ideas of the structure strictly from a geological standpoint?

A. Aside from my geophysical information.

Q. That is what I mean. Your geophysical information

more or less conforms with your surface picture that you got?

A. Yes, sir.

Q. That, basically, is true, isn't it?

A. Yes, sir.

Q. So that you have a structure there that is well defined both on the basis of surface geology and on the basis of seismic work? It is a very large structure? You have that very definitely, don't you?

A. Yes, sir.

Q. And you have confirmation to the extent of two wells?

A. On the Dakota-Morrison we have confirmation on two wells.

Q. That's right. I am talking about the Dakota-Morrison for the time being.

A. This map here is on the top of the Pictured Cliffs.

Q. That's right. Now, on the basis of the, what I would call, factual information with reference to its ability to produce, you don't undertake to tell the commission that you have any basis for defining the productive limits of a pool (that's on the basis of drilling information), you don't have that, do you?

A. On the Dakota-Morrison?

Q. That is what I am talking about, Dakota-Morrison.

A. Yes. You have only the information obtained from those two wells plus the knowledge of the stratigraphy

of the Dakota-Morrison as found in the outcrop which almost completely surrounds the basin plus the information from the Dakota-Morrison as drilled in other wells in Northwestern New Mexico and Southwestern Colorado as might be applied to this area. But those two wells are the only two actual geological control points that we have in this particular area.

Q. That's right. Now, do you undertake to tell the commission that you could, on the basis of the information which you have to date, undertake to compute the reserves in the Dakota-Morrison there?

A. I have not attempted to do that at all. Our company, I think, has attempted to make some rather theoretical claims. Of course we have to assume certain theoretical conditions in there but based on the possible water level in the Stanolind well which is not definitely proven and we have not determined the water level. I know of no one -- that has been determined in the El Paso well. If we had a definite water level in both wells we would have a pretty good idea how far down a dip the gas might go.

Q. But you have no information along that line?

A. We have some information because we have the water level in one well but not enough so that you would feel nearly so well qualified to speak as to the limits of the Dakota-Morrison field as you can of the Fruitland-Pictured Cliffs field.

Q. I want to talk about the Fruitland-Pictured Cliffs later. I am trying to confirm or limit the questions I am asking you at this time to the Dakota-Morrison. That is the one you have asked for a 640-acre spacing order on.

A. Now, my testimony was originally more or less confined to the structure and stratigraphy of the area. I will be glad to answer any questions you might care to ask, sir, about the structure, the stratigraphy of the Morrison, as I understand it. But I rather imagine your detailed questions as to reserves might best be answered by Mr. Bond.

Q. Then I will undertake to do it that way. The only control points then that you have from actual drilling are those that are obtainable from the two wells that have been drilled about which you have testified?

A. Yes, sir.

Q. And all the rest of the information that you have about that is strictly structure, based on your surface work and your seismograph work?

A. The general sub-surface.

Q. To what extent have you had occasion to advise yourself about the formation of the Dakota-Morrison formation in that particular area in the San Juan basin area?

A. We have had our surface geologists study the Dakota-Morrison on the outcrop where it comes to the surface.

Q. To what extent have you done work in that particular area yourself?

A. No, sir; I have not been on the outcrop.

MR. RUTLEDGE: I believe that is all I have from this witness.

(The witness withdrew)

CHAIRMAN DOWNING: Is there anything further?

MR. SMITH: That is all we have to offer.

MR. RUTLEDGE: I want to examine Mr. Bond. May I ask Mr. Bond some questions at this time?

CHAIRMAN DOWNING: All right.

LEWIS H. BOND, JR.

recalled as a witness in behalf of the Stanolind Oil and Gas Company, being first duly sworn to testify the truth, the whole truth and nothing but the truth, was cross examined by The Southwest Colorado Oil and Gas Committee, and upon his corporal oath testified as follows:

CROSS EXAMINATION

BY MR. RUTLEDGE:

Q. Give your name.

A. Lewis H. Bond, Jr.

CHAIRMAN DOWNING: And your business qualifications.

A. I was previously qualified.

MR. SMITH: I believe you accepted his qualifications, Mr. Chairman.

CHAIRMAN DOWNING: That's right.

Q. (By Mr. Rutledge) Mr. Bond, have you undertaken to make any computation of reserves in the Dakota-Morrison

based on the information that you have with reference to that structure? the Ignacio structure?

A. No, sir, I have not.

Q. You don't consider that you have sufficient information to undertake to do so. Is that correct?

A. Not for a firm estimate, no, sir.

Q. You did not furnish in your testimony on either the 14th of November or the 6th of December, any core analysis or any other data of that sort on the Dakota-Morrison where it had been drilled?

A. No.

Q. You have not undertaken to do so?

A. (Shakes head negatively.)

Q. Do you have any information with reference to the Dakota-Morrison section that you think would permit you to make such a computation at this time?

A. Oh, a computation could be made on the Dakota-Morrison. I wouldn't wish to make such a computation and consider it a firm estimate of the reserves.

Q. Now, with reference to the Pictured-Cliffs, or the Fruitland-Pictured Cliffs horizon, I believe your testimony on that is that you had a show in the Ute No. 1 well in that horizon that indicated that you could have finished a commercial producer at that horizon in that well?

A. Yes, Ute "B" 1.

Q. Ute "B" 1. Then you moved over and drilled a second well which I believe is the Ute "B" 2?

A. That's correct.

Q. That is in section 23, and in that well -- you did complete it as a commercial well in that Fruitland-Pictured Cliffs horizon?

A. Well, the number 2 well, Ute "B" 2 is completed in the Pictured Cliffs.

Q. In the Pictured Cliffs?

A. Yes, sir.

Q. You did encounter a water lever in the bottom portion of the Pictured Cliffs there?

A. I don't believe that we did in the Ute "B" 2.

Q. The only other well which I believe your testimony shows you thought capable of being completed in the Pictured Cliffs was the Gallegos wells. Is that not right?

A. No, sir. The Gallegos well is planned to be a Fruitland commercial well.

Q. That was not completed at the time of your testimony on the 6th of December? I may have misunderstood you.

A. No, it was not completed then and it still is not completed.

Q. It still is not completed?

A. No.

Q. Is that the only well at this time being worked on in the Ignacio by Stanolind?

A. Yes, sir.

Q. You are still working in an effort to complete the Gallegos well?

A. We are not actively working at the present time. The casing has been set and we are waiting on cable tool steel to plug it.

Q. Now, the other wells that have been finished in the Fruitland-Pictured Cliffs horizon, have any of the other ones been finished as Pictured Cliffs wells?

A. Just the Ute "B" 2.

Q. Just the Ute "B" 2?

A. Yes, sir.

Q. And the other three have been completed in the Fruitland, as I understand, or recall your testimony, because you found the water level so high that you did not undertake to complete in the Pictured Cliffs. Is that right?

A. That's correct.

Q. That is correct. In all those wells in which you have encountered water, what is the relative location or position of that water level in those wells? About the same depth or about the same level?

A. As near as we can determine, it is approximately the same.

Q. Now, how complete is the information you have on that water condition in those wells?

A. Well, before answering that, if I could have our exhibit, the cross section, I would like to refer to that. That is Exhibit No. S-14. Referring to Exhibit S-14, I will start with the Ute Indian No. 1 on the extreme left of this exhibit.

This well was drilled to a total depth of 3,054 feet, seven inch casing set at 2751. The interval from approximately 2880 total depth was shot and the well was subsequently tested and made water at the rate of 100 feet an hour.

The Ute Indian "C" 1 had a similar completion history. The casing set in this well at 2712. This well was also shot. The well was plugged back to 2825 which is a sub-sea depth of approximately 3850 plus 3850 above sea level and the well swabbed 66 barrels of water in six hours.

The next well is our Ute Indian "B" 1, which is a Dakota-Morrison producer.

Ute Indian "B" 2 was completed natural, below, 7 inch casing at 2465. This well produced no water on potential test.

The Ute Indian "B" 3 was completed with seven inch casing set at 2705. The well flowed fresh water on a drillstem test from 2811 to 2916. That figure, 2811, is about plus 3850 or plus 3860 above sea level.

I would say, in answer to your question, that we have information which indicates that the water level to be

at approximately plus 3850. It might be possibly higher than that.

Q. Plus 3850?

A. Yes, sir.

Q. Do you think that is a fairly uniform condition over the area that those three wells are in?

A. It appears to be.

Q. It appears to be. Now, do you have any sort of information with reference to that that would give you the means of utilizing or of computing the effect or arriving at the effect of that water encroachment or water level coming into the well how it would effect the ultimate reserves or the ultimate production from those wells? Do you have that information at this time?

A. No, sir. Studies on the effect of the water coming into the wells would be dependent upon the producing history from the wells.

Q. And, of course, you have no production history because all the wells are shut in?

A. That is correct.

Q. Now, let's get to the question of the tests that you made on those different wells. I believe you offered some exhibits here such as curves showing your tests that were made on those different wells. Is that correct?

A. Yes, that is correct.

Q. What time interval or factor did you use in the making of those tests? In other words, you blew those wells down. What time factor or interval have you used in connection with that?

A. I am not sure I understand your question.

Q. All right. You drew a curve. Over what period of time was that curve? Is that curve based on -- on what time factor? What was the time factor did you use in the computation of that curve?

A. I believe most of those tests lasted from forty-eight to seventy-two hours.

Q. Well, let's take one of those curves just for illustration, if you will pick any one of them then I would like to ask some questions with reference to that particular well.

A. This is a curve on the Ute Indian "B" 2.

Q. Well, you have some other exhibits, haven't you, in connection with these?

A. You mean one of the deliverability curves?

Q. Yes, one of your deliverability curves.

A. Let's see. I believe that is the only deliverability curve I submitted on the Fruitland-Pictured Cliffs. I have one on the Dakota-Morrison.

Q. Do you have a chart on your blowdown tests on those wells? Don't you have an exhibit showing that curve?

A. This is the back-pressure test curve.

Q. Is that the only graff you have got in connection with them?

A. Yes, I believe that is the only one we have submitted.

Q. The only other curve you show is the deliverability curve, was on the Dakota-Morrison. Is that right?

A. Yes, I believe that is right.

Q. Take your Ute No. 2 "B". Over what period of time was that test taken?

A. I don't have that exact information with me. I recall that on the Dakota-Morrison it was approximately seventy-two hours and the other tests, I think, varied from about forty-eight hours.

Q. Do you have any other information on the buildup on those wells following the blowdown test?

A. No, sir, I don't.

Q. Do you have any knowledge about how long it took for those wells to build back to their original pressure?

A. Well, I can possibly give you some information along that line. However, the bottom-hole pressure in the Fruitland-Pictured Cliffs formation were based, I believe, on a twenty-six hour buildup. On the Ute Indians -- let me check this. The Ute Indian "B" 2, twenty-eight hours. I would like to correct that if I may. We got a pressure of 1489 lbs. per square inch.

Q. Now, wait a minute! Wasn't that your original or your initial pressure in connection with that or was that a buildup pressure?

A. That was a buildup of twenty-eight hours after a test.

Q. After a test?

A. Yes. Then we had a thirty-minute buildup test on a drillstem test in Ute Indian "B" 3 and got a pressure of 1475. So you see, the Ute Indian "B" 3 very nearly built up to the same pressure in only thirty minutes.

Q. It took thirty minutes for one of them to come back up to the original pressure when it took twenty-six hours for the other one. Is that your testimony?

A. I am not saying that the 1489 represents a continuous build up. I am saying that was the pressure measurement in the well that had been shut in for a period of time.

Q. Do you know how long it took to get back to that pressure?

A. No, sir.

Q. To what extent have you had, in the San Juan basin, occasion to acquaint yourself with the characteristics of this Fruitland-Pictured Cliffs formation?

A. Well, we also operate in New Mexico in certain pools which produce from the Pictured-Cliffs.

Q. Have you yourself done work in those fields?

A. I have studied those fields to a certain extent, yes, sir.

Q. Don't you recognize it to be a fact that there is no consistency or no uniformity in the Pictured-Cliffs-Fruitland horizon across that area? In other words, it varies widely from place to place in very short distance?

A. Are you speaking of Ignacio now?

Q. Yes, I am speaking of the San Juan basin area which includes Ignacio.

A. No, sir, I can't agree with your statement altogether. If you were to make a statement like that in regard to any particular field, I think there would probably be some truth to your statement. In other words, this is an area of shales and coals and sands interspersed. And correlating any one particular bed across an area might be difficult. On the other hand, the characteristics of the formation, I think, correlate very well as may be seen from the characteristics in appearance in the Fruitland formation on this cross section.

Q. But that is in the wells that have been drilled?

A. Yes, sir.

Q. Now, you have no wells except in effect on top contour across that structure, have you?

A. Oh, I believe that we have. Our Ute Indian "B" 3 is located in section 27. It is approximately a hundred or

a hundred and fifty feet below the top of the structure.

Q. It is just off the southeast, off the nose of your top contour?

A. That depends on what contour you are using.

Q. I am speaking of contours on your map that you have offered in evidence.

A. Those are not, if you will examine the map a little closer. The top contour is 3950 and that encountered the top at 3878.

Q. All right. It is almost a direct line, a straight line, the main portion of which is across the top contour of the structure?

A. It is along the long axis of the structure.

Q. It is true that you found a wide variation in the permeability in those different wells from well to well, isn't it?

A. Well, in the Fruitland formation, no, we only have complete cores on one well, our "C"-1 well and in the Pictured-Cliffs well we have cores on several wells and they were in, I would say, in good agreement.

Q. Well, I have only two, the "B-1", in which you have a calculated permeability of .59 and, I suppose, that is average, isn't it?

A. (Nods affirmatively.)

Q. Or is it?

A. Yes, sir.

Q. That was your average? .59? And "C-1" is 2.32?
Do you recall that?

A. Yes. Let me get that exhibit, please. Yes, that is correct.

Q. 2.32. In your Fruitland your average there was 39.31?

A. That's right.

Q. And that shows certainly a very wide variance in permeability in those three different wells, doesn't it?

A. Well, I believe you will recall from my testimony before that the characteristics of the Fruitland are different from those of the Pictured Cliffs.

Q. I do recall that.

A. They are expected to have different permeability.

Q. I believe your testimony on that was that they were -- as a matter of fact, your permeability there was due to or was in the highly fractured sections. Is that right?

A. To a large extent.

Q. Largely?

A. Yes.

Q. As a matter of fact, there was very little but that?

A. No, sir, I wouldn't agree with that statement.

Q. Well, now, on the question of porosity, you have

in your Fruitland a porosity of 2.84. That is in the Fruitland "C-1"?

A. That is correct.

Q. And in the "B-1" Pictured Cliffs you have a porosity of 14.29 and in your "C-1" your porosity was 11.6?

A. That's right.

Q. In each instance those are averages also?

A. Yes, sir; that is correct. Now, I would like to add to that an explanation of my remarks a few moments ago that our core analysis in the Pictured Cliffs showed reasonably good agreement. You will note that the porosity of our two averages in the Pictured Cliffs was 14.29% for the "B-1" and 11.6 for the "C-1". Permeability of .59 in the "B-1" and 2.32 in "C-1".

Although there is, of course, some difference between a 1.59 and 2.32 they are at least of the same magnitude.

Q. That is correct. They are also relatively low?

A. Relatively low.

Q. So much so that in many fields you would find that there would be probably no production to be had from such low permeability?

A. I would expect any gas field to produce from permeability like that.

Q. What would be your minimum that you use in that? I believe, in the record as I got it back, there must have

been an error in transcribing. What is the minimum that you have used in your computation of your consideration?

A. The minimum that I used was .05 millidarcies. I believe in the record that was 500.

Q. That is right. And I thought there was nothing in the record, at least that I was able to find, to indicate that you had any minimum.

A. I will state that certain samples in "C-1" had averages in excess of .05.

Q. When you were figuring that, over what portion of producing sections would you say that the permeability ran higher than that?

A. Higher than what?

Q. Than the .05 that you have used.

A. I would have to study that core analysis. I can't recall it at the present time.

Q. Now then, in your testimony you stated that you have regarded the factual information that you had from the drilling that had been done as fairly representative of the producing formation over the structure as Stanolind has outlined that. Is that correct?

A. I believe that is right.

Q. And do you have anything at all to base that statement on other than your assumption that the additional drilling out there is going to conform with the drilling that you have already done?

A. Well, I have this to base it on; that our drilling has covered a fairly representative area of the field. The farthest well in an easterly direction is our Ute Indian "B-3" in section 27 which is fairly well down in the southeastern portion of the pool. We have drilled our Ute Indian "C-1" in section 13; "1-D" in section 7 and the Gallegos well which is not quite completed in section 12. The distance between those wells, I believe, represents a large portion of the area that is going to be productive across the axis of the formation.

We have gotten coverage from wells about which Mr. Newman has testified. We have our Ute Indian "C-1" in section 13 which is fairly well down on the southwestern flank of the structure. Our Ute Indian "B-1" is fairly well up on the northeastern flank of the structure. I believe we have fairly representative coverage.

Q. But you will have to concede that your drilling so far has confirmed the structure as distinguished from proven pool, productive limits on the structure? You will have to concede that, won't you?

A. Well, our drilling has not fully determined the productive limits except as it has determined the approximate water level but the drilling of the other operators has, I believe, pretty well substantiated our figures on productive limits.

Q. Could you, on any other basis other than your geological structure contour, undertake to give an approximation of where your productive limits will be? You are assuming that your productive limits will be -- or your production is going to be down to your closing contour, as your geology has shown, aren't you?

A. Well, we anticipate that production will extend further than the last contour which is closed on this map.

Q. That is anticipation. What I am getting at, you don't have any facts from drilling to show that, do you?

A. Yes, sir, we certainly do. We have got this well of Greenbrier's which failed to get a completion in the Fruitland-Pictured Cliffs and the Ditmar well of El Paso which failed to get a completion in the Pictured Cliffs. Apparently the Three States is getting a small well in the Fruitland-Pictured Cliffs.

Q. Well, where, between those wells that you class as definite failures and your wells which are definitely producers, will you draw the pool limit? the production limit?

A. It is approximately indicated by this red line. Of course, the red line follows the regular government sub-land and will not delineate the productive limits exactly. But the approximate limits we can determine will be approximately along the line indicated.

Q. The point I am getting at is that your conclusion is based on an assumption?

A. It is based upon the best information we have.

Q. I understand that but it still is an assumption?

MR. SMITH: I object to his arguing with the witness. I think the witness has testified.

CHAIRMAN DOWNING: Well, let's get the facts.

MR. RUTLEDGE: I am trying to get them by his answer to my questions.

MR. SMITH: You are trying to get an answer your way.

CHAIRMAN DOWNING: I think you both understand the question. Answer the question as best you can.

A. All right, sir. We would never know the productive limits of this field unless we began drilling wells, say, fifty feet apart. Then we would have it pinned down to at least within fifty feet. I think that we are reasonably able to determine the approximate limits from the information that we have available. Those limits may be moved in or out as much as half a section. I doubt if they would be moved much more than that.

Q. (By Mr. Rutledge) All right. You have it your way in that matter. Now, you have not, even on the basis of factual information that you have, undertaken to compute your reserves on the Fruitland-Pictured Cliffs horizon, have



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you?

A. I personally haven't made computations on them.

Q. As far as you know, Stanolind has not undertaken to do wo?

A. I believe there have been estimates made, yes, sir.

Q. I am not talking about estimates, I am talking about computations.

A. That is what I am talking about.

Q. On the basis of the show that has been made to the west in the Amerada-El Paso Natural Gas well, is it your idea that the reservoir extends over that far or that there is a saddle or demarkation between the structure as Stanolind has drawn it and another structure located to the west?

A. I haven't made a detailed study of that, Mr. Rutledge. I believe Mr. Newman has and he testified concerning it.

Q. It is a fact that there is no line anywhere close to this area, no pipeline connection ?

A. I can't answer that. I don't have knowledge of that.

Q. It is a fact that you have not got a well connected to the line? you have no outlet?

A. That is correct.

Q. Every well that has been drilled except for the

gas that has been released in the process of completion and testing has been shut in?

A. That's correct.

Q. And that will be true of the Gallegos well as soon as your testing is complete on it?

A. Yes, that's right.

Q. You know of no probability even of an outlet or a pipeline connection?

A. I have no knowledge of that.

MR. RUTLEDGE: I believe that is all.

CHAIRMAN DOWNING: Is that all, Mr. Smith?

MR. SMITH: That is all.

CHAIRMAN DOWNING: Are you both through with this witness? Is there any further testimony?

MR. RUTLEDGE: I want to offer in evidence a letter that was -- or a report that was made for the opponents in this matter by Mr. Collins, based on a critical study of the exhibits made at a time when the exhibits were the only portion of the record that we had available to us. I would like to offer that in evidence for the consideration of the commission.

MR. SMITH: Is Mr. Collins present?

MR. RUTLEDGE: Yes.

MR. SMITH: I object to the report being offered when the witness is here personally.

CHAIRMAN DOWNING: What is your objection?

MR. SMITH: I object to an ex-parte report being admitted when the witness is here and able to testify. Mr. Collins is present.

CHAIRMAN DOWNING: I think you ought to put him on the stand, Mr. Rutledge.

MR. RUTLEDGE: I thought I would shorten the matter for the commission but it is all right.

CHAIRMAN DOWNING: Put him on so there will be an opportunity for cross examination.

J. V. COLLINS

a witness called in behalf of the Southwestern Colorado Oil and Gas Committee, being first duly sworn to state the truth, the whole truth and nothing but the truth, upon his corporal oath testified as follows:

DIRECT EXAMINATION

BY MR. RUTLEDGE:

Q. State your name to the commission, please.

A. J. V. Collins.

Q. Where do you live, Mr. Collins?

A. In Denver, 1800 Cherry Street.

Q. What is your occupation?

A. Consulting petroleum engineer.

Q. What education or what educational qualifications do you possess?

CHAIRMAN DOWNING: There is no objection to his qualifications.

MR. SMITH: I have no objection.

MR. RUTLEDGE: Do you concede that he is qualified?

MR. SMITH: I will concede he is qualified.

CHAIRMAN DOWNING: He testified that he is a petroleum engineer. That is sufficient unless objected to.

MR. RUTLEDGE: I thought I would meet the anticipated objection but I anticipated one they didn't make.

Q. (By Mr. Rutledge) Mr. Collins, have you had occasion to look at the exhibits that have been offered in this matter pending before the commission and admitted in evidence as part of the record?

A. Yes.

Q. When did you have occasion to do that?

A. Prior to the December 6th meeting.

Q. At that time, I believe the parole testimony had not been transcribed and was not available to us?

A. It was not.

Q. Have you since that meeting had occasion to look at the verbal testimony that was offered?

A. Yes.

Q. Did you have occasion to consider -- that is give consideration to the different exhibits with reference to what they showed in connection with this Ignacio develop-

ment?

A. Yes, sir.

Q. What experience have you had with reference to the Dakota-Morrison and the Fruitland-Pictured Cliffs formation in matters of consideration prior to this time?

A. I haven't had experience with Dakota-Morrison formation in that area. I have had experience with Pictured-Cliffs formation as produced down in the Farmington area of New Mexico.

Q. What particular portion of the Farmington area have you had experience in?

A. I think that is known as the West Koots.

Q. Have you had any occasion, just on the basis of general information, to acquaint yourself with the characteristics of those different formations from a matter of study or background of that sort.

A. My experience with the Dakota-Morrison formation has been confined to this area where oil is produced. I have had experience with the Pictured Cliffs formation where the production of gas, as in the New Mexico area, was.

Q. Well, from your examination of the exhibits that were offered in evidence and that are shown in this record, will you state whether or not, in your opinion as a petroleum engineer, there is sufficient information in this record to enable a proper estimate to be made of the reserves in

this different formation in that area?

A. No, sir, I do not think they have enough information. I don't think they have presented it if they do have.

Mr. Bond, a moment ago, mentioned the fact, I believe he stated that there were one or two feet in a certain well with permeability of .05 millidarcies.

MR. BOND: I don't believe I gave the number of feet.

MR. COLLINS: Was there any one foot of permeability of .05?

MR. BOND: Yes.

MR. COLLINS: That was one foot of .05?

MR. BOND: No, sir, that had an average of 39.

MR. COLLINS: I thought you mentioned the Pictured Cliffs --

MR. BOND: That was Fruitland, if I made the statement.

MR. COLLINS: Even so, with a permeability of .05 millidarcies, even in one foot, then, I believe, your average was 39, it must entail a very great number of feet of very low permeability, lower than 39.

Q. (By Mr. Rutledge) Well, is there sufficient information from any of the exhibits that you have seen to get a correct picture of the sections that are shown in each of the different wells or in any one of the wells?

A. I don't believe that you can make an accurate estimate of the reserves in place or of the capability of the wells to produce without having detailed core analysis on all of the wells. You have such wide variations. I think you can consult this cross section here and find that it is almost impossible to correlate a streak or resistivity peak from well to well. Therefore, I --

Q. What does that indicate to you with reference to the characteristics of the formation across there?

A. That indicates to me that the permeabilities and porosities may be all characteristics will vary from well to well, maybe even in between wells they must vary in between wells.

Q. Are there any places on which you can do more than draw an estimate or a conclusion based on these five different wells that have been drilled to the Fruitland-Pictured Cliffs horizon as to what you will be able to find in other fruitland-Pictured Cliffs wells drilled across this wide area, some nine miles long and an average of three and a half miles in width?

A. In my opinion, drilled to a much closer spacing than these are, well, you still wouldn't be able to correlate a well between them.

Q. Isn't it a fact, on a structure as large as this one, it is unlikely that you will find portions of it in

which you would have localized, very high permeability and high porosity and maybe stretches where there is no production whatever to be had?

A. That is true.

Q. Then in other places on that formation, places where there will be some variance between no production and good production and that that would not be uniform across the structure at all?

A. That is true.

Q. Is that what you would reasonably expect based on information that these wells that have been drilled would show?

A. That's right.

Q. Under those circumstances, if they do encounter such a situation, then certainly it is true that in some places you will be entitled to expect much closer drilling and in some no drilling at all would be justified?

A. I should think so.

Q. So, to apply an arbitrary spacing pattern over a large area like this, would be based on fact or based on assumption solely?

A. Based on assumption.

MR. RUTLEDGE: You may have the witness.

CROSS EXAMINATION

BY MR. SMITH:

Q. Your testimony has been based on assumption altogether. Isn't that right?

A. Partly, yes. I am assuming these things don't carry from well to well.

Q. That's right.

A. And I think this cross section will bear that out.

Q. Now, the fact that you have drillstem tests that show productivity scattered throughout this entire area indicates that the wells are productive, aren't they?

A. That's right.

Q. And that you would assume from the exhibits you examined that these wells are commercial producers?

A. That would depend on what you would call a commercial producer. I couldn't say, for instance, that a well down here would be a commercial producer. You mean this well down here.

Q. It may be?

A. It may be.

Q. This information, would you say, more or less confirm the evidence offered at the earlier hearing as to the extent of the field?

A. Yes, it definitely showed that there is production from one end, from this end, at least from that location up to your upper well here in the same formation. To my mind,

it doesn't give any information as to the relative productivity of any location in there.

Q. As I understand your testimony, the only way you can find out whether or not any given well has sufficient permeability is to drill it?

A. That's right.

Q. So that in order to determine whether or not the well is productive you will have to put it down?

A. (Nods affirmatively.)

Q. As I understand you, Mr. Bond's illustration of finding the field limit is by drilling a well every fifty feet would be your way to develop a field?

A. No, that would be carrying it to the ridiculous, as I said. I am not attempting to, for Mr. Rutledge or for anyone else, try to determine the limits of the field. I am-- my testimony, I think, as Mr. Rutledge has tried to bring out, is that these permeabilities and porosities will vary from location to location and I think that there will probably, as he intimated, be some dry holes in territory that should otherwise be productive.

Q. Well, according to the evidence that we have brought forward so far, there is nothing in the exhibits or in the testimony which indicates that you definitely will have a dry hole if drilling in contour limits set up there. Is that right?

A. That's right.

Q. In other words, the testimony we offered did support the fact that you would probably get sufficient permeability and porosity within these limites to get a well. Isn't that right?

A. (Nods affirmatively.)

Q. You have no independent knowledge of this field other than the exhibits that you have examined?

A. That's right.

MEMBER BARB: Just to get this thing clear in my mind now, after these three hearings on Ignacio, as I get it, Stanolind is endeavoring to prove that there is enough continuity of sand body that you are justified in some certain well spacings in each sand, (I have forgotten the figure), 320, 640?

MR. SMITH: That is partly right.

MR. COLLINS: Continuity of permeability over this entire body, over the field area.

MR. SMITH: Over the field area as defined in there.

MEMBER BARB: Then, as I get the picture, Mr. Rutledge and his man are endeavoring to prove that there is not enough continuity of permeability that that spacing will drain that area?

MR. RUTLEDGE: To show what drainage would happen from it. That is our position.

Q. (By Member Barb) I have one question. If there isn't continuity of permeability, how did the gas get all over the area?

MR. RUTLEDGE: We don't know that it is all over the area, your Honor.

MEMBER BARB: All over the area where it is.

MR. RUTLEDGE: I don't know that I am qualified to answer that.

MR. COLLINS: That can't be determined except by drilling. A lot of things might be conceivable. We might have impermeability in areas between wells which would prevent the passage of gas from one-B to one-C. I am not familiar with your well locations. There might be faults which would prohibit the passage of gas from one well to the other. I am not saying there are but there could be.

MEMBER BARB: The gas did come into the area from some place -- all over the area.

MR. RUTLEDGE: That's right. That condition exists all over that San Juan basin country.

MR. COLLINGS: I want to make that clear. I don't say that any part of that is unproductive. I say that it may be. Some one or a few wells may be unproductive.

MR. SMITH: You would have no facts to support that statement?

MR. COLLINS: Not on this, but I do have the Pictured Cliffs formation in the Farmington area.

MR. SMITH: In the Kutz area?

MR. COLLINS: Farmington

Q. (Cross examination continued by Mr. Smith) Mr. Collins, as a geologist, would you say that we would have expectation of drilling a dry hole, say, at this location here? I am pointing to section 17, in the center.

A. As a geologist I am not qualified to say.

Q. Oh, you are a petroleum engineer. I appologize. As a consulting petroleum engineer, I will ask you if you would advise your client if he would expect to encounter gas if he drilled at this point?

A. No.

Q. As I understand your position, available data is unimportant because the well you drill is a wildcat?

A. Right.

Q. Regardless of geophysical information, structural information and the available tests from these wells?

A. Your own core analysis presented on your Pictured Cliffs formation show a variation of four to one.

Q. I will ask you if there is a decided distinction between all production and gas production with respect to your expectation on millidarcies, permeability and porosity?

A. Yes.

Q. Gas being a single phase commodity it will flow northeasterly through these relatively small openings. Isn't

that correct?

A. (Nods affirmatively.)

Q. So, if your information indicates a fractured condition in certain wells located at different points, isn't there reason to believe that the same condition exists in the pool? Wouldn't you expect it to be the same?

A. If the fractures were uniform on the edge and uniform across the area you would expect it to yield better productivity.

Q. You say you are familiar with the closure in the Kutz area?

A. West Kutz area.

Q. You are not familiar with the Fulchur-Kutz. Where is the West Kutz field?

A. Oh, it is south and east of Farmington.

Q. South and east of Farmington how far?

A. I don't know where it is -- by the Frontier refining.

Q. What type of work did you do?

A. Consulting engineer.

Q. Well, that covers a multitude of sins, shall we say. Did you make core analysis?

A. I have limits. At my suggestion they took cores on complete core analysis on one well.

Q. Did you examine those yourself?

A. Yes, sir.

Q. Is that the only well in that area you examined the core analysis on?

A. Yes. There was a wide variation of permeabilities and porosities in that one well.

Q. In the one sand in the well?

A. Yes.

Q. You don't know whether or not that would be consistent with another well drilled somewhere else?

A. I would think so, by correlation of schlumbergers.

Q. In other words, you think the same condition would probably prevail in another well?

A. Yes, but not in relative positions.

Q. What do you mean by relative positions?

A. In other words, if we had a permeability streak of thirty millidarcies up here in one foot of sand, that one foot of sand need not continue to this well. It may die out five feet away from the well, or fifty feet away, somewhere.

Q. But even in the West Kutz field you don't know whether that actually occurred in development in wells just drilled?

A. In the schlumbergers I would.

Q. Of another well drilled?

A. Yes.

Q. Did you make an independent study of a schlumberger on a well you took a core analysis on?

A. Yes, sir.

Q. As I understood your statement awhile ago, you are not attempting to offer any testimony with respect to the boundaries of this field?

A. No, sir.

Q. You have no knowledge as to what the boundaries are or should be?

A. (Shakes head negatively.)

Q. You have no reason to believe that the exhibits and testimony formerly offered do not properly define the boundaries of the field?

A. (Shakes head negatively.)

Q. Now, your testimony is concerned with reserves in the field and estimates of the reserves. Why are such reserves necessary to spacing of wells?

A. Reserves are not necessary to spacing of wells except, I think, you pointed out at the last meeting that you have to develop these wells in order to have a market for them.

Q. Then, as I understand your testimony, you are attacking neither the location of the field boundaries nor well spacing?

A. That is Mr. Rutledge's problem to attack the well

spacing. I am only trying to testify that I think that your permeabilities, your porosities, your water saturation will all vary from well to well.

Q. But so far as 320 acres of Pictured Cliffs are concerned and 640 in the Dakota-Morrison, you have no opinion with respect to whether that is proper or not?

A. No.

Q. Does variation of porosity and permeability necessarily indicate a lack of communication?

A. No. We could have communication between this this hole, a theoretical thirty millidarcies a foot which would break down to two millidarcies over here and you would have communication.

Q. You would still have communication in there?

A. You wouldn't have productive capacity from this foot. The pressure goes down there greater.

MR. SMITH: No further questions.

BY MEMBER BARB:

Q. I have a question regarding water. I don't recall, either in your testimony, Mr. Bond, if you mentioned the interstitial percent in your cores -- did you?

A. (By Mr. Bond) No, sir, I did not, for the reason that we have been unable to accurately determine that. We made our cores with water base, mud and have no good figures on that.

Q. Your water run in capillary pressure tests to calculate that pressure?

A. No, sir, they have not.

CHAIRMAN DOWNING: Are there any further questions?

MR. SMITH: I believe we have one slight other matter in view of the evidence recently developed.

LEWIS H. BOND

recalled as a witness for the Stanolind Oil and Gas Company, having been previously sworn, testified as follows:

REDIRECT EXAMINATION

BY MR. SMITH:

Q. I will ask you, Mr. Bond, if you have plats showing isobars in the Fulchur-Kutz field in Northwest New Mexico?

A. Yes.

MR. SMITH: At this time we should like to offer in evidence Stanolind exhibit "S-16" which I will ask Mr. Bond to identify.

A. This exhibit is an isobaric map of the Fulchur-Kutz pool in San Juan county, New Mexico. The pool production is from the Picture-Cliffs formation. The pool history of the development of the pool has been as follows:

Early development was in the Northwest portion of the pool as presently constituted. Development, I believe, commenced in approximately 1930 in that area. Subsequently development has progressed generally in a Southwesterly direction and present drilling has been largely in the area to the Southwest.

The original bottom-hole pressure in this pool was something over 600 lbs.

Now, for a considerable period after development commenced in the pool, there was not any development of great magnitude and the few wells completed in the Northwest portion produced without interference.

I would like to point out to the commission the effect that the early drilling in the Northwest part of the pool has had on reservoir pressure throughout the pool over a distance of some apparently seven or eight miles.

You will note that nowhere in this pool is reservoir pressure encountered to equal original pressure and there is more or less a steady decline of pressure from the most recently developed area toward the old original area where the first wells were drilled. This indicates to me that the original development in the Northwest part of this pool has been draining gas from the entire area of the Fulchur-Kutz pool Pictured Cliffs formation. And that there is obviously communication throughout the entire area of this pool.

CHAIRMAN DOWNING: What is the diagonal distance across there, approximately?

MR. SMITH: Going across a section would make it about a mile and a quarter.

A. About ten miles.

Q. (By Commissioner Volk) How great a drop in pressure did you have in drilling the West-Southwestern wells over the original pressure?

A. Well, if I can find a recent completion -- here is a well completed in February of 1951, and between the 480 lb. and 500 lb. contour, apparently the pressure has been drawn down in that area slightly in excess of 100 lbs.

I would like to point out further that this new area is rather sparsely developed. Now, there are some sections that have as many as four wells on them. There are others that have only one; some with two and some with three. But if the entire area were considered, I doubt if development would be much over 320 acres per well.

CHAIRMAN DOWNING: Is that all from this witness?

MR. RUTLEDGE: I have a question or two.

RE-CROSS EXAMINATION

BY MR. RUTLEDGE:

Q. With reference to that area, do you have any knowledge or information with reference to porosity and permeability in the Pictured Cliffs in that particular West Kutz field?

A. No, sir, I have none with me.

Q. You don't know. Do you know anything about the volume of the wells or the capacity of the wells that are being completed in that area at this time?

A. Yes, sir, I do.

Q. What sort of wells in reference to capacity are being produced at this time down there?

A. I believe I averaged about 15 or 20 wells which were completed in 1951 and 1950.

Q. What sort of wells were they?

A. They are average capacity, with about 800,000 cubic feet.

Q. They varied all the way from three quarters of a mile to as high as five or six miles up to bigger?

A. No, sir, I don't believe I had any that big.

Q. What range did you have?

A. Oh, from possibly a third of a mile to possibly two miles. I believe two miles would be the tops.

Q. Those wells, there, that is the spacing pattern in that field, 160 acres, isn't it?

A. Yes, sir, that is the pattern established by the pool rules.

Q. That's right. And the pool rules fixed by New Mexico or in that field down there are 160 acres?

A. Yes, but as I started to say, I would like to point out that the area hasn't been developed nearly to that density.

Q. Now, you are talking about testing that by the actual drilling. They are still drilling wells down there?

A. That's right.

Q. And they are making wells that at least in those you have tested, 15 of them in the last year and a half, have averaged approximately the size or capacity that you have talked about?

A. Yes, sir.

REDIRECT EXAMINATION

BY MR. SMITH:

Q. Mr. Bond, assuming that this field will be developed on 320-acre spacing rather than 160-acre spacing, would there be any difference, in your opinion, in the ends of the field or development of the field with respect to differentials in the pressure at the Northwest end of the field as respects the pressure in the Southwest -- I mean the Northwest as distinguished from the Southeast?

A. I am not sure I understand your question.

Q. What I am getting at, do you consider the fact there is unequal pressure and this could be attributed to the fact that it was on 160-acre spacing rather than 320-acre spacing.

Q. Well, to this extent, that the 160-acre rules that were in effect resulted in a greater concentration of wells in the originally drilled area and, of course, more gas was produced in that area as a result of that.

RECROSS EXAMINATION

BY MR. RUTLEDGE:

Q. Something that would more nearly affect that than anything else would be the quantity of gas that had been actually produced from the wells that had been drilled twenty years ago and over that period of time, wouldn't it?

A. Yes, that is correct.

Q. And to get right down to the last analysis, the rate of withdrawal or rate of production is the controlling factor rather than the well spacing on a question of recovery, the amount to be recovered from the formation. Is that right?

A. You are quite correct, Mr. Rutledge. And I would like to point out that that is one reason that we have requested rules of 320 acres per well. We feel that we can supply an adequate market from those wells just as well as we could if we drilled wells on every 160 acres. In other words, the wells are capable of producing in quantities that will enable us to efficiently drain that pool. And drilling these infill wells is, in my opinion, simply a waste of steel and other critical material.

Q. Some other questions I want to ask you along that line that have been, or have not been touched on in evidence as far as I can see. Will you sit down and let me ask you about that?

I don't know where in this record, except possibly in a suggested field rule that you stated in the record that you did not offer in evidence, I don't know where there is

anything that pertains to the pipe program that is covered by your temporary order and in reference to the temporary order -- I am just referring to that simply because I assume that is substantially the basis of your permanent order that you are asking for. Am I right or wrong?

A. Which part was the question?

Q. Well, there is nothing in this record that deals with or undertakes to give this commission any information at all as a basis for the pipe program that you set up.

A. I think you are correct. And probably the reason that there is not is that at the first hearing we were pretty well rushed for time.

Q. All right, now, what occasion is there for the requirement that you run an intermediate string of pipe in the completion of the Dakota-Morrison zone in this field?

A. The occasion for that is to protect our Fruitland-Pictured Cliffs horizon which we consider an important source of gas.

Q. If you are undertaking to drill a well and not complete in the Pictured Cliffs horizon, is there any reason why you have got to run a string of pipe to protect that Pictured Cliffs horizon?

A. Yes, if your well is to be drilled deeper than the Fruitland-Pictured Cliffs horizon.

Q. You think, under the circumstances, you wouldn't

be wasting an intermediate string of pipe by putting one in there?

A. Absolutely not. We want to confine that Fruitland-Pictured Cliffs gas to the formation in which it now occurs. If an intermediate string of pipe were not run, there is a possibility that that gas might escape and enter some permeable more shallow formation.

Q. Not if that formation at that depth is properly mudded off or cemented off either one, is it?

A. We prefer the security of intermediate pipe.

Q. I am not talking about that. That is Stanolind's idea. In other words, are you simply going to say that as a must, that people must operate in accordance with Stanolind's idea of that?

A. Obviously, Mr. Rutledge, the rules that we presented represented our idea of prudent operation. We, since we have a large interest in here, in the Fruitland-Pictured Cliffs horizon, want to protect that gas and we think it is in the interest of conservation that it be done.

Q. You want to put the burden on every other operator although there are not very many of them in there. You want to make it necessary for them to conform to the Stanolind standard with reference to completion. Is that right?

A. If it is good conservation for Stanolind, we feel it is good conservation for other operators.

Q. You don't think that applies in the face of so-called urgency with reference to supply of steel. We are all alike.

A. Obviously, with pipe as hard as it is to get we wouldn't recommend ---

Q. In the last analysis, it rests on Stanolind's idea of what prudent operation in the area requires?

A. Yes, sir.

Q. Now, you don't put in evidence in this record any portion of your electrical logs to show the top formation, that is that portion of the Wasatch that you could in drilling out there, do you?

A. I don't recall whether we introduced one log from top to bottom or not.

Q. I don't find one in those exhibits. But I wanted to ask you if you are familiar with that top section?

A. Fairly familiar. I haven't made a detailed study.

Q. Isn't it a fact that you have run into, in other operations in that area, at about four to five hundred feet horizon, some shows of gas in some member of the Wasatch?

A. We have run into shows of gas in shallow formations. I can't definitely say it was in the Wasatch.

Q. Whether it can be identifiable, it is above the 750 foot point at which your requirements are for the setting of surface pipe?

A. Yes, and that is the very reason that our require-

ment is as specific as 750 geet for surface pipe.

Q. In the process of doing that, do you mean to tell the commission that you think prudent operation would ignore the possibility of encountering a greater flow of gas somewhere in that large area down there and have no protection whatever against that gas until you have set your 750 feet of surface pipe?

A. I don't follow you. Would you repeat that?

Q. You think the prudent operation requires an open hole to a depth of 750 feet and take the hazard of a blow-out in the first four or five hundred feet in the event you did run into a greater amount of gas than you so far encountered?

A. Yes. In the experience we have encountered in drilling our present wells, we can drill safely to 750 feet.

Q. What about this other poor fellow that is drilling through that same section that isn't, we'll say, as skillful in the handling of a situation of that kind? What is to keep his well from getting away from him, which it wouldn't do if you had a shorter string of surface pipe properly sanded?

A. I can only say to that prospective operator, when he drills his first well in a pool in which another operator has drilled several wells, he should make inquiries concerning the drilling problems that the first operator has encountered and plan his drilling and his mud program according-

ly.

Q. Don't you know that you can, at a depth of 300 to 330 feet in the Ignacio area, run a set and by proper cementing have full control or adequate control of everything, every pressure that you have so far encountered by using a string of 300 feet or 330 feet of pipe instead of 750 feet?

A. No, sir.

Q. You do not?

A. No, sir. Because we encountered gas in our "B-3" well at a depth of about 525 feet.

Q. Well, you would have your pipe set and you would have adequate control on that at the time you cut that formation if you had set surface pipe at 300 feet.

A. The mere fact that surface pipe was set at 300 feet would not prevent a well from blowing out at a depth of 525 feet.

Q. Not unless other things were done, that you know should be done under prudent operation. But you would have means of getting that well under control because you would have surface pipe set there to help in doing so.

A. It would assist in control of the well. I would like to point out, since we did encounter gas at a deeper depth, it would be our recommendation that we would still have to set pipe below that deeper surface gas. In other words, we would end up with two strings of pipe instead of

one.

Q. So as between the two of them, you prefer to take the hazard or you think prudent operation would let the man take the hazard of a blowout with no surface pipe to control it in order to protect the show of gas you get at a little lesser depth?

A. We believe that wells can be drilled prudently under our recommendation.

I would like to state this further, there is nothing in our rules that would prevent an operator, if he was afraid of drilling through that three or four hundred foot of gas from setting a surface or conduct a string to that depth.

Q. But in addition to that, he would have to run 750 feet of pipe then he would have to, if he were going to the Dakota-Morrison, run intermediate strings of approximately 3,000 feet.

A. That's correct.

Q. Don't you regard that as a waste of critical steel or critical material?

A. Three or four hundred feet isn't a great amount.

Q. 3,000 feet is quite a bit?

A. Yes, sir, and I think it is well justified in this case.

MR. RUTLEDGE: That is all.



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CHAIRMAN DOWNING: Is there any further testimony?

MR. SMITH: No further questions.

CHAIRMAN DOWNING: The case will be closed.

I want to read this from El Paso Natural Gas Company. "El Paso Natural Gas Company withdraws its objection to Stanolind's proposed spacing order for Ignacio. Objection was made prior to our knowledge of unit boundaries."

We have a letter from Mr. Foster Morell of the Regional Oil and Gas Supervisor's Office of the U.S.G.S. which the commission will consider.

I call attention to just this part of his letter. He says that in New Mexico the approved procedure would be 160 acres as for the Pictured Cliffs area, 320 acres for the Mesa Verde and 640 acres for the Pennsylvania formation. That is the approved picture for spacing orders on these three sands.

Then he says, in winding up his letter, "It is true there is no marketing of gas at this time. I am informed by Stanolind, as major operator of the area, that it is their desire and intent to explore and determine the limits of productive area before selling gas so that the best possible contract can be made on the basis of definite knowledge; in the meantime no agreement will occur, but to prevent unnecessary drilling it is desirable.

"In view of the above, this office offers no objection to the application of Stanolind for spacing field rules in the Ignacio area and feels that appropriate action

by your commission is warranted and necessary at this time to prevent waste and to prevent correlative action."

He speaks as an owner or at least representing the owners.

Well, now, I suppose we could have a very lengthy argument here. As I understand it very briefly, Stanolind proposes to develop this field and feels, whether rightly or wrongly, that the spacing order of this size -- I understand you want a 640-acre spacing order --

MR. SMITH: 640 for the Dakota-Morrison, 320 for the Fruitland.

CHAIRMAN DOWNING: 640 for the Dakota-Morrison. 160 is the rule in New Mexico. We have told the New Mexico commission that we would like to, down in this Ignacio area (part of which is in Colorado and part of which is in New Mexico)-- ought to be governed by the same rule. And I just read his letter to show that the Pictured Cliffs -- they are in New Mexico --would be 160 acres.

MR. SMITH: Mr. Downing, this structure here definitely demonstrated by the testimony, is entirely independent of any communication or structure in the New Mexico area.

CHAIRMAN DOWNING: That is ture. I didn't mean it that way. What I mean is here is a great big area -- not the Ignacio but the San Juan area -- and our commission has tried

to have our rules approximately the same as the rules of U.S.G.S. and the Wyoming rules, just so that we will have a uniformity of practice and procedure in the Rocky Mountain area. And we have had some talks with the New Mexico commission at a joint meeting. We have considered -- but we haven't decided -- it would be a desirable thing in the whole San Juan area in the rules in New Mexico and Colorado were the same.

MR. SMITH: I think your statement is quite good and quite right. However, I would like to point out in New Mexico the commission has deviated from the 160 acres in some of their fields and we are asking the same thing here that they have done by exception.

We certainly didn't interpose any commitment such as using a rough yard stick of 160 acre spacing contingent upon development of the field.

What I would like to point out, what we are asking here now is a preliminary, you might say, set of field rules on a 320 acre spacing in the field so we might properly explore this field, also without someone coming in and disrupting that orderly development. There is nothing to prevent the commission, at a later date when the entire area is explored, to come back to 160-acre spacing. But if we go to 160 acre spacing we are bound by that. We can't go back to 320-acre spacing because they are drilled on 160 acre basis.

So what we are asking now, as I said once before, --

CHAIRMAN DOWNING: You are covering only the Pictured Cliffs or does it cover the Dakota?

MR. SMITH: Dakota, 640 we are asking for that.

CHAIRMAN DOWNING: Your prayer covers both?

MR. SMITH: Yes, sir.

CHAIRMAN DOWNING: 320 on Pictured Cliffs and 640 on the Dakota?

MR. SMITH: The deeper sands; that's right.

CHAIRMAN DOWNING: I think we understand your position.

Mr. Rutledge, I don't want to invite a long argument or put you to all that, but I would like to know just what you think the commission ought to do and why; kind of an opening statement, as it were, rather than a final argument.

MR. RUTLEDGE: Your Honor, I find myself in the position possibly of having --

CHAIRMAN DOWNING: Do you think there ought to be any spacing order?

MR. RUTLEDGE: I don't think, in the face of the showing here, that this commission, except on the basis of an assumption, and an unwarranted assumption, can make any order.

Now, my position about this matter evidently isn't in accord with a lot of peoples'. But it still is my position that you have got a law here that says what you can do to prevent waste.

There is no basis whatever for anybody, even Stanolind themselves, to tell you how big an area will be drained by any well on the basis of the factual information in here.

Now, you may start out with the assumption which is followed or the theory that is adopted and say to a lot of people, a lot of men that are experts, that a well has unlimited ability to draw anything anywhere that has got contact there, if you disregard the time factor.

CHAIRMAN DOWNING: Do you think there should ever be a spacing order on any field?

MR. RUTLEDGE: I think that if your commission has the right to put a spacing order, make a spacing order, for the purpose of preventing waste then I think you can write an order only when you find that what you are doing will prevent waste. I don't think you have got any right to make any order of any kind. How can there be any waste when there is no production, and what is to keep Stanolind, if they think this pattern is a satisfactory pattern --

CHAIRMAN DOWNING: Don't you think we have jurisdiction to make orders to prevent future waste?

MR. RUTLEDGE: No, I don't think you can anticipate that there is going to be waste. How can you? Efficient operation wouldn't allow waste.

CHAIRMAN DOWNING: I am trying to get your viewpoint.

MR. RUTLEDGE: I want to state it.

CHAIRMAN DOWNING: There is one other question that I haven't got clear yet. Suppose we have jurisdiction and there was production. Would you advocate a spacing order on that field or any other like field?

MR. RUTLEDGE: I don't know what the circumstances would be. You are asking me to suppose some things that do not exist. I assume that some day they will get a market down there. They say they want your order for the purpose of permitting them to continue development in accordance with the spacing pattern here that they think is the right one. Well, my answer to that is what is to keep them from following that? It is a peculiar situation. They own ninety percent of the acreage in this field. They have got ~~leases~~ leases that are valid. Let them drill on any one they want to anywhere they want to that they can get a permit to drill under any laws that are in effect. There is not anything to keep them from following a 320-acre pattern. There is not not anything, there is not an operator in this defined area that hasn't said they are perfectly willing to go along with them. What is the purpose of a spacing order? Why do they need any spacing order at all.

CHAIRMAN DOWNING: Well, do you object to the 320-acre spacing limit or do you object to any order at all?

MR. RUTLEDGE: I object to any order at all.

CHAIRMAN DOWNING: That is what I am trying to get at. That is on the premise there is no production.

MR. RUTLEDGE: There is no waste and therefore there is nothing happening and nothing that is going to happen and nothing that is threatened today that would justify the commission making an order to stop it.

CHAIRMAN DOWNING: Let me ask, is there anything threatening?

MR. RUTLEDGE: No, sir.

CHAIRMAN DOWNING: -- of anything or some others going in there and starting a well not in conformity with your petition with the spacing order in your petition?

MR. RUTLEDGE: This record doesn't show it.

MR. SMITH: We don't have a report from Three States signed as to what their intentions are; negative either way.

CHAIRMAN DOWNING: Is there any other imminent drilling by others on these small spacings?

MR. SMITH: Well, Wednesday this Three States, I think, completed one well and we are not advised of additional drilling by other companies. There has been quite a bit. Greenbrier has drilled a couple of wells in that area, not within the limits we have defined, and I think Byrd-Frost is drilling a well down there -- That is the Three States, now. And we don't know just what their plans are.

Now, we feel, in the interest of orderly develop-

ment, when I say that, that we have an order issued by a commission, if someone wants to deviate from that, the commission will advise all of the interested parties at which time then we can see what they are interested in, in which event, if they want to go to a smaller spacing pattern they might convince us that was the best thing to do or they might convince the commission that that is the best thing to do and everybody is happy about it. But in order to keep promiscuous drilling out of there we need some sort of a pattern set for it and I think at some future date it is possible 160 acres might be found to be the best. I am not familiar, so far as the shallower depths are concerned. You know, of course, the deeper wells are quite expensive and take quite a bit of pipe and quite a bit of work to get them down and it is rough country to get out there.

We think, in the preliminary stages here, and I think it has been observed by a number of reports, that in the early stages of the field the wider spacing is preferred so that you can come back later and make the infill wells.

CHAIRMAN DOWNING: Let me ask, as I understand, you have a program to unitize the field down there?

MR. SMITH: There are some plans to organize a federal unit out there now. Whether or not that will be successful in its culmination depends on many things.

CHAIRMAN DOWNING: Will that include at least the --

Mr. Rutledge says you control 90%.

MR. RUTLEDGE: That is my estimate.

CHAIRMAN DOWNING: Who controls the 10%?

MR. RUTLEDGE: Well, El Paso --

CHAIRMAN DOWNING: Do you represent them?

MR. RUTLEDGE: I don't represent any operator. El Paso Gas Company came in and said they would go along. Amerada says they will go along. Malco Refining Company says they will go along. Skelly says they will go along. Every operator, at least so far, in the way of major companies and their acreage which is this 10% that I estimate that Stanolind doesn't control --

CHAIRMAN DOWNING: Well, don't you represent any of that 10%?

MR. RUTLEDGE: I don't represent anybody but the landowners.

CHAIRMAN DOWNING: You have the landowners and they have the operating rights?

MR. RUTLEDGE: They have operating contracts with the landowners but if this commission enters an order and it is valid, they have wiped out individual property lines. That is exactly what I object to. You wipe them out and you do it by legislation.

CHAIRMAN DOWNING: The interest is for the underlying property owners and not for the 10%.

MR. RUTLEDGE: Not exactly. I am not representing any operator in any field. But I don't think this commission, by regulation, order or rule, can say that there shall not be but one well drilled on 640 acres and it must have such and such a location and in doing that say that a man that I do represent can't have a well drilled on his acreage or can't make Stanolind drill his land within the terms of his lease or get off that lease, one.

CHAIRMAN DOWNING: Well, isn't your relation with your operators governed by your own contracts?

MR. RUTLEDGE: Sure, we are perfectly satisfied with our contract.

CHAIRMAN DOWNING: Would any order that we would make affect contractual operations?

MR. RUTLEDGE: I think it overrides the contract, because, if you put a well on 320 acres and you say by force of the statute of Colorado that that well will include a half section and that will be the only well drilled on there, then you have forced a man that owns any part of that 320 acres into that unit and you put his lease over in the operating or producing lease class and you write off the question of the primary term of that lease and you do it by virtue of your order and not by virtue of the contract they have got with the man that owns that land.

CHAIRMAN DOWNING: I suppose our orders might supersede a contract. But we could make an order. I never thought of

that and it certainly hasn't been discussed. We could make an order and say that this order shall not affect contractual operations. Would that help the situation?

MR. RUTLEDGE: I don't know. If you are going to write an order like that, the order says what it says on the thing and it would either be good within what it says or it wouldn't be any good at all. If you want to write that kind of order, it is my view that the order would not have the effect, and we certainly wouldn't let it stand without attacking it. I don't want to shade anything at all. I say very definitely, this commission today, if you write that sort of an order on the thing you are going to meet yourself and they are going to meet us in the district court of La Plata County just as sure as you write it, because we are not going to take that kind of an order. Because our construction of the order is that it wipes out our contractual rights with Stanolind or modifies them to such an extent they don't mean anything at all. I don't say that as a threat, I simply want to put myself on record. I am not shading anything.

CHAIRMAN DOWNING: We are used to threats.

MR. RUTLEDGE: I conceive it to be my duty to tell you where I stand and that is what I am doing.

There is one other comment before I quit, I want to make. That is this: If you write that order and you make it apply to 35 1/2 sections -- that is how many section there

are within the boundaries that are described in that temporary order and I am assuming that the permanent order will describe the same area, if one is made. You make it applicable to 35 1/2 sections and you say there shall not be more than one well to the Dakota-Morrison on each section and there shall not be more than one well on each half section to the Pictured Cliffs-Fruitland horizon. Now, if you write that order, I want to call your attention to paragraph (g), I believe it is, Whatever it is, I mentioned before noon, which says now the way you write it has the effect of pooling every lease that is in that half section. If you write that order then go the rest of the way. The statute says that you SHALL provide for the drilling of a well in any such order. Make them drill them. If you are going to say that is the right way to drill them, don't stop until you put in there that they shall them. They made that. 35 1/2 of them to the Dakota-Morrison and 71 of them to the Fruitland-Pictured Cliffs.

And the next paragraph down there that I refer to in this bill says that if you set up that sort of unit, then you shall provide for the drilling of a well on it. If you want to do that, if you don't want to do that you are not going to finish your job. If you do want to finish that job then write the order that way.

MR. VOLK: (Member) Mr. Rutledge, how many wells

under these contractual obligations, have Stanolind in the area down there, would you estimate would have to be drilled if they would have no spacing order?

MR. RUTLEDGE: I have made no estimate. I wouldn't know.

MR. VOLK: How many would you estimate?

MR. RUTLEDGE: I don't know. I think there is about 40% of that area that would be covered by this order; that is Indian land which runs all the way through it. I think you will find that there are many of those units that would have one or two or maybe three 80's of Indian land and one of fee land or you would find one or two or three 80's of fee land and one of Ute Indian land. How are you going to work that out? I don't know. Nobody has ever done it yet.

MR. VOLK: When I asked you the question, if there is an 80-acre or even 40-acre tract, contractual obligation in this district, it might mean drilling as many as three or four or five wells on a 320-acre tract.

MR. RUTLEDGE: I don't know. I don't think there are many smaller tracts.

MR. SMITH: In the townsite of Ignacio, with diversified well drilling you might have as many as fifty wells in Ignacio.

MR. RUTLEDGE: Let me call your attention to that. You can get any well driller to drill without coming to this com-

mission, without getting a permit. You don't have to write an order to control that. You have it under control today. Because I can't go down there and move a rig and start cutting a hole. I have got to come to this commission.

CHAIRMAN DOWNING: You mean to get steel?

MR. RUTLEDGE: No, to get a drilling permit. I've got other problems on top of that, but first I have got to come and get a permit. If I have a lease and want to drill a well and have a thousand acres, I would still have to come up and get a permit. You have still got that under control.

CHAIRMAN DOWNING: Our policy is to give permits. We are for two things. We are for greatest possible development of all of the oil and gas resources in the state and second we want everybody to get a square deal. And the little fellow will be protected against the big fellow.

MR. RUTLEDGE: I don't think I could add anything, if I talked from now to next week, to what I have said.

CHAIRMAN DOWNING: In what way do you claim that your landowners would be hurt if we granted this petition? How will you be hurt?

MR. RUTLEDGE: I claim if you granted this order, you have told Stanolind that "You can go down there and follow your pattern irrespective of your property lines and in doing so you can force me as a landowner to unitize with them on any 320 acres they want to drill in" and if in doing so,

40 acres of my land goes into that unit and I have got 160 acres those other three quarters are held by that well as a producing well, and do it without their ever drilling any well. That puts my other 40 that I have got or any part of it into another unit. That is the only actual benefit that I can see that Stanolind might have if they got this order. I don't see any other benefit. I can't see any other reason for their wanting it. Because there is nothing to keep them from following this thing this, as I say, ideal thing. Nothing. There is no threat.

CHAIRMAN DOWNING: Undoubtedly they can follow it without the owners of the ten percent.

MR. RUTLEDGE: You know, regulatory bodies have their hands full regulating things, when they are threatening or when they are happening, and not stepping out and saying that something might happen so we will take these steps to anticipate that and be sure there never will be anything happen. There will be plenty of time for this commission to act. They have no right or desire to prevent waste when waste is occurring or threatening; and neither of those things is true today, not just theoretically.

CHAIRMAN DOWNING: You heard some very good people this morning say we ought to have statewide orders especially, the industry as a rule --

MR. RUTLEDGE: There is not any negative opinion among the industry themselves nor among the theorists. They are

not even in accord in the theory or in the practice of it. There are differences all the way through and I imagine there always will be.

CHAIRMAN DOWNING: Have you any questions, Mr. Barb?

We haven't talked among ourselves. We haven't considered it.

MR. VOLK: (Member) I would like to ask Mr. Smith a few more questions just to clarify this matter.

I think the essence of this whole thing is to prevent unnecessary drilling.

MR. SMITH: That is correct.

MR. VOLK: Can you state in few words if we granted you this order, where it would prevent a lot of unnecessary drilling due to these small tracts and so forth?

MR. SMITH: Well, the illustration I gave of Ignacio is one and I am not quite as familiar with the varying tracts of land that are included in this Ignacio field to make an offhand estimate. But, of course, what you have when you start on a small pattern in a particular area is what you might call a chain reaction. You have the implied obligation in your lease contract to directly and equally-distant offset to compensate from drainage from another well so that being a chain reaction effect it can extend over the entire field. Of course, while the field isn't on production now, we may sell that gas in six months or we may sell it in two years.

In the meantime, when we start selling it we should be developed on an orderly basis as other operators might decide to tie on their well and drain the entire reservoir. They could go out and drill five or six wells on a section of land, maybe eight or ten wells on a section of land and start selling that gas. In the meantime the entire reservoir will be drained something like this situation that has developed in this Fulchur-Kutz area. In other words, the earlier people there have been drawing down on that reservoir the entire time. And, of course, as I stated before, one of the essential elements of the gas business, where it differs from that of the oil business, is that the longer you can hold reserves off and build them up the better price you can get for the gas.

Mr. Rutledge is probably well-intentioned, but perhaps he doesn't fully appreciate what we are asking for is for the benefit of the royalty owners and of the small operators down there.

He speaks of a large oil company taking a benevolent attitude. We have found from past experience if we don't deal fairly with the people of the community, not only there but everywhere, we are in trouble. It is better, too, that we lean over backward to see that a particular area is properly developed.

Large major oil companies are usually big enough

to take care of themselves and we can crowd out small operators if it is necessary. We don't want to do it. That is the whole thing in a nutshell. We are doing this for the benefit of the small people.

CHAIRMAN DOWNING: At the last meeting I suggested you ought to get together. As I look at it, your interests are identical.

MR. SMITH: That is right.

CHAIRMAN DOWNING: You are both interested in development and high prices. The only question on which you might differ is that the landowner might like to have development faster than you would be willing to do. Well, that would depend a good deal upon your market. I presume if you had a market for all the gas you could produce you would produce more than if you had a market for an insignificant part.. Here, it seems to me, your interests are so close together, while there is the possibility for differences and all that, yet they are largely close together. I don't know, even now, why you can't get together and satisfy these people. They are not going to be hurt. Mr. Rutledge is here in good faith and he is not an ignoramus in the oil business.

MR. RUTLEDGE: I don't know, I think I am quite an ignoramus. I wouldn't want to put you to proving that I am but I will almost admit it.

CHAIRMAN DOWNING: He wants to know why you need this.

Maybe you can tell him and tell me and the rest of us.

MR. SMITH: I think we have tried to explain it before, Mr. Downing. But frankly it all goes back to your early days of conservation in the days when you could go from one platform to another in the Oklahoma fields, and all the waste that went with it. And we all know that oil went to ten cents a barrel in '31 and '32 because there was so much production.

I might say that the same opposition to proration in Texas and Oklahoma was encountered when they first put it into effect by the small operators as is now being effected by Mr. Rutledge. I am sure he was in Texas and knows about it.

MR. RUTLEDGE: I surely was. And I went through that, too.

MR. SMITH: He is an unreconstructed rebel.

MR. RUTLEDGE: That is what I am.

MR. SMITH: I would like to say that all of the small operators and all of the royalty owners in Texas -- or I will say most of them; I can't say for all of them -- are very well pleased with the manner in which proration is handled in those states and they have come around to the viewpoint that it is the best thing for them.

CHAIRMAN DOWNING: Have you boys had any real conferences?

MR. SMITH: Mr. Downing, we went to Durango and we had

a conference with Mr. Rutledge.

MR. RUTLEDGE: Right.

MR. SMITH: And it developed that he is representing a committee appointed by the Durango Chamber of Commerce. He also says that he represents some 164 people.

MR. RUTLEDGE: Go ahead.

MR. SMITH: -- out there. And, of course, I am not familiar with just who they are or the scope of their powers of attorney but I will say this. That I inquired of Mr. Rutledge, since he was opposed, I asked, "Well, are you opposed to everything?" Mr. Rutledge says, "Yes," he is opposed to everything.

MR. RUTLEDGE: That's right.

MR. SMITH: I asked him, "You have authority to go back with your employers and negotiate and try to work this out?" He said, "No."

So I am inclined to question Mr. Rutledge's good faith in coming before the commission at this time.

MR. RUTLEDGE: Well, I will meet that right squarely. I am not going to stand by and let that go.

CHAIRMAN DOWNING: You don't have to defend your good faith before this commission. We grant that.

MR. RUTLEDGE: Well, there is something to be said on both sides. And I have purposely directed my remarks to the issue before this commission. But if there is going to be

any question raised about my good faith, I am prepared right now to satisfy it. And I don't at all appreciate that.

CHAIRMAN DOWNING: There is no allegation.

MR. RUTLEDGE: All right.

CHAIRMAN DOWNING: It is the order of the commission that this matter be taken under advisement and, particularly for consultation with the attorney general, we will enter an order as of this date. It may not be prepared or written up for some several days but it will be dated this date and either side may present their objections and exceptions. Those things are not necessary here but if you want to do it it is all right. But I would like to have it dated as of this date.

MR. RUTLEDGE: I just want to say, about that, don't hold it off and date it back long enough to let the time factor go by in which I can attack it. Don't do me that way.

CHAIRMAN DOWNING: I anticipate in very few days it will be ready.

MR. RUTLEDGE: Because there are certain remedies.

CHAIRMAN DOWNING: We would rather, because we have this dog-goned legislative committee on our backs.

MR. RUTLEDGE: That is a matter I am not going to borrow any part of. I have my own ideas about that. But I don't want the commission to enter an order as of this date and have the time factor operate to my disadvantage between the time

you actually sign it and the time it is communicated to me at Durango. I would much rather date the order when you make it.

CHAIRMAN DOWNING: All I had in mind was continuity until the matter is finally determined.

MR. RUTLEDGE: Let me say one thing.

CHAIRMAN DOWNING: When I say continuity, when I date it back our jurisdiction definitely is good as of today, but whether we can take it under advisement and maybe have another meeting in a week from now without any continuity I don't know whether our jurisdiction would be good or bad.

MR. RUTLEDGE: I want to say one thing and no more. That I made the statement to Mr. Smith in Durango and said that I had been employed to oppose the application. That was the extent of my employment. That they had not delegated to me any power whatever to compromise the matter and that was my position and that is my position today.

Now, if he wants to undertake the process of negotiation and is foolish enough to want to do that through me, I have no objection to his trying to. But it seems to me it would be much more direct for him to get in touch with the directors, the lessors, and not get in touch with any intermediary, me or anybody else. That is why I made the statement. I don't appreciate his statement that he questions my faith before this commission.

CHAIRMAN DOWNING: Let me ask, as to these operators, have you authority to unitize without their consent?

MR. SMITH: Yes, sir, we do have that authority now.

MR. RUTLEDGE: What do they need an order for?

CHAIRMAN DOWNING: If they have that authority for unitization they can make all the spacing orders.

MR. RUTLEDGE: Except for the other ten percent.

CHAIRMAN DOWNING: In other words, you are really concerned with the ten percent. You are not concerned with the underlying owners in the matter governed by private contracts.

MR. VOLK: (Member) That other ten percent, then, has also acquiesced in your spacing arrangement?

MR. SMITH: We don't know how firmly they will stand hitched. That is right, so far as the present status is concerned, they think it is satisfactory until they get more information out there. But there is no firm commitment, nothing to prevent their going in tomorrow -

CHAIRMAN DOWNING: That would be roughly, what, 3500 acres?

MR. SMITH: I don't know whether it is ten percent or fifteen percent. I haven't made that analysis.

CHAIRMAN DOWNING: Is it edge stuff in your structure or on top?

MR. SMITH: It is on top. It is scattered throughout. Mr. Bond, you are more familiar with that. Why don't we get that from him?

MR. VOLK: (Member) There is no contractual obligation that you can't overcome on this spacing with the landowners?

MR. SMITH: Depending upon the type of lease agreement which the other operators have plus the fact that we have a substantial amount of Indian land in there which requires acquiescence by the United States Geological Survey.

CHAIRMAN DOWNING: You will have that cooperation.

MR. SMITH: Here is an indication (referring to map) where various other tracts are located. This is Malco Refining Company on top of the structure.

CHAIRMAN DOWNING: They are working with you?

MR. SMITH: Yes, they okayed it.

MR. BOND: I would like to point out this 160-acre block belongs to W. R. Childers. He has sold it and we have no information as to who owns it.

Here is one owned by Mr. Underwood of Amarillo. We have written Mr. Underwood but have received no response. I don't know what his ideas might be on drilling.

Here is some unleased land in section 4 which could be leased by an operator and drilled as he saw fit.

Three States Natural Gas Company owns this land which is designated as Byrd-Frost on this map. It comprises over a section. We don't know what their plans are.

Here is a block of Indian land. (Referring to blue section on map.) It might be leased by some operator.

Amerada has indicated concurrence with our program and they have land scattered throughout the area.

In addition, the Ignacio townsite is detailed at the lower left hand corner of this map. The lease is colored yellow and they are owned by Stanolind.

The purple is owned by Mr. King.

The pink is owned by Mr. McIlvanney.

You will note a number of them are left white. We have no knowledge of ownership.

CHAIRMAN DOWNING: And the land of which you have no knowledge of ownership or what they will do are pretty much all together edge lands, aren't they?

MR. BOND: Most of them are except the lands within Ignacio, which is right in the center.

CHAIRMAN DOWNING: Does any of them cover more than 320 acres? This one eown here does.

MR. BOND: This one does. (Indicating green section.) Three States and unleased.

MR. NEWMAN: In regard to this Ute land, I don't know what we will do when the time comes and we have the money to drill it. We will drill it.

MR. SMITH: That is outside of the unit.

MR. NEWMAN: That isn't colored.

MR. RUTLEDGE: Your limit falls half a mile outside the boundaries?

MR. NEWMAN: That's right.

CHAIRMAN DOWNING: Practically all of this ten percent is outside of the unit boundaries, both unit boundaries?

MR. BOND: All the land that I pointed to a few minutes ago is inside the boundary.

COMMISSIONER BARB: It has just become clear in the last three or four minutes, that matter of your leases. I don't hear too well so you may have said things that I missed. But as I understand it, you said your leases that you now have give you the power to unitize this yellow acreage without regard to any order that we may issue. It will simply apply to these colored areas. I don't mean take in those areas as well as your own? (To Smith)

MR. SMITH: Since the commission has inquired about unitization authority, there are roughly three types of authority granted. This is the one that is most frequently encountered.

"Lessee is hereby given the right at its option, at any time and from time to time, to pool or unitize all or any part or parts of the above described land with other land, lease, or leases, in the immediate vicinity thereof, such pooling to be into units not to exceed the minimum size tract on which a well may be drilled under the laws, rules, or regulations in force at the time of such pooling or unitization. Provided, however, that such units may exceed such minimum by not more than ten acres if such excess is necessary in order to conform to ownership subdivision or

lease lines."

In the absence of any order, it will be possible for us to unitize it because there is no minimum specified by the contract.

When we came in and asked for 320-acre spacing, we were receding from the contractual right which we have for the benefit of the royalty owners. We are giving up something that we have on our contract.

MR. RUTLEDGE: There is a slight difference of opinion on that. And I doubt very seriously if Stanolind Oil and Gas Company is as magnanimous as they have indicated that they are.

MR. SMITH: Now we are even, Mr. Rutledge.

MR. RUTLEDGE: I doubt it very seriously.

CHAIRMAN DOWNING: Do you have a unitization clause in every lease? Do they all sign it?

SENATOR ELLIFF: I scratch them out when they come to me.

MR. VOLK: The whole thing boils down to this. You want to prevent any wells being drilled on an off pattern on this few smaller than ten percent of the acreage involved. To your way of thinking they have come in with the idea they have to concur with your pattern?

MR. SMITH: All but Three States plus ten or twelve town sites in the town of Ignacio where a well could be drilled.

COMMISSIONER VOLK: On the entire block they do concur?

MR. SMITH: That's correct.

COMMISSIONER VOLK: You don't know of a single one outside of that?

MR. SMITH: I don't quite understand your question.

COMMISSIONER VOLK: Is there anyone that can go in there and drill a well off pattern now?

MR. SMITH: Sure, any of them can.

MR. NEWMAN: If I wanted to drill a well on this 240 acres here, right here in the north half of 25 and I wanted a space here, set back here 300 or whatever it is, 330 feet,

COMMISSIONER VOLK: Could you go ahead and drill that?

MR. SMITH: You mean now?

COMMISSIONER VOLK: Yes.

MR. SMITH: I presume the commission will grant a permit upon your applying for it?

MR. NEWMAN: If you have the pipe and good contractors.

MR. SMITH: As far as I know, the suggestion made this morning about drilling ten feet from the lease line, the commission hasn't --

CHAIRMAN DOWNING: Mr. Newman, I want to go along. I wondered if the time came and I wanted to drill that, I could sell the gas off that if it will produce. What would prevent me from drilling.

COMMISSIONER BARB: Nothing.

CHAIRMAN DOWNING: We thank you, gentlemen, very much for all of the enlightening knowledge and information that we have gotten and we hope we may measure up and do as good a job in reaching a conclusion as you gentlemen have done in presenting your case. Thank you.

(Whereupon, at 4:00 o'clock p.m., the hearing was concluded and the matter taken under advisement.)

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