

BEFORE THE
OIL CONSERVATION COMMISSION
Roswell, New Mexico
April 16, 1958

IN THE MATTER OF:

Case No. 1419

TRANSCRIPT OF PROCEEDINGS

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GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
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BEFORE THE
OIL CONSERVATION COMMISSION
Roswell, New Mexico
April 16, 1958

IN THE MATTER OF:

Application of Standard Oil Company of Texas for the :
creation of the Atoka-Pennsylvanian Gas Pool and for :
the adoption of temporary special pool rules for said :
pool. Applicant, in the above-styled cause, seeks an :
order creating the Atoka-Pennsylvanian Gas Pool, Town- :
ship 18 South, Range 26 East, Eddy County, New Mex- :
ico, and adopting temporary special pool rules for :
said pool providing for 320-acre spacing with fixed :
well locations and such other rules as the Commission :
may deem proper. :

CASE NO. 1419

BEFORE:

Honorable Edwin L. Mechem
Mr. A. L. Porter
Mr. Murray Morgan

TRANSCRIPT OF PROCEEDINGS

MR. PORTER: Next case to be considered is Case 1419.

MR. PAYNE: Application of Standard Oil Company of Texas
for the creation of the Atoka-Pennsylvanian Gas Pool and for the
adoption of temporary special pool rules for said pool.

MR. KELLAHIN: If it please the Commission, Jason Kella-
hin of Kellahin and Fox representing the applicant. I would also
like to enter the appearance of Robert F. Fox of Santa Fe. We have
two witnesses to be sworn.

(Witnesses sworn)

MR. KELLAHIN: I would like to call as our first witness Mr. M. R. Stipp.

M. R. STIPP

a witness, of lawful age, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A M. R. Stipp.

Q By whom are you employed, Mr. Stipp?

A Standard Oil Company of Texas.

Q What position?

A I am district geologist for the Roswell district, southeastern, New Mexico.

Q You have never testified before the New Mexico Oil Conservation Commission?

A I have not.

Q Mr. Stipp, what is your education and experience?

A Educated at University of California at Los Angeles and the University of Tulsa from which I graduated in 1948 with a Bachelor's degree in geology. I went to work for Standard Oil Company of Texas at that time.

Q As a geologist?

A As a geologist. I have been working in charge of the company's exploratory efforts in southern New Mexico for the past six years.

Q Are you familiar with the application which has been filed in this case? A I am, sir.

Q Are you familiar with the area involved in this application?

A I am familiar with the area.

Q How did you become familiar with that?

A The area was purchased at my recommendation, approximately, 1953.

Q Are the witness' qualifications acceptable?

MR. PORTER: Yes, sir, they are.

Q Now, referring to what has been marked as Exhibit No. 1, Mr. Stipp, will you state what that is?

A Exhibit No. 1 is the most lefthand map on the display board. It is a lease hold map of what we originally termed our South Artesia area in Township 18 South, Range 26 East.

Q Does that include the Pennsylvanian formation which is included in the application? A That is correct.

Q Does that Exhibit show the location of the discovery well in that area?

A Yes, it does. If I may point out, it is 660 from West, 1980 from south, Section 14, Township 18 South, Range 26 East.

Q Now, have you made a location of a proposed well to be drilled?

A Yes, sir. We have filed that one with the Commission as a proposed location. No activity has been started to date other

than staking the location. It is located 1650 from south line and 1980 from east line, Section 15.

Q Now, on Exhibit No. 1, there are two areas outlined in red. What are those, Mr. Stipp?

A Those are the proposed gas units as indicated in the order.

Q Do you know whether the ownership in those units has been pooled or not?

A Yes, sir, they have been.

Q Now, referring to what has been marked as Exhibit No. 2, what is that designed to show?

A Exhibit No. 2 is basically a contour map on the top of the present Pennsylvanian -- if I may jump ahead here, it is contoured as indicated on Exhibit No. 3 at the base of the Pennsylvanian and top of the Mississippian. It is a correlation point that we are able to carry in our geological work in this area. Overlaying the contour map, colored in yellow, is a trend of lower Pennsylvanian Sand. The up depth limit, as marked on here, is a wedgeout in the subsurface of the productive sand.

Q Now, you say that was contoured on the base of the Pennsylvanian. How was that picked, Mr. Stipp?

A Those points from which the contours were drawn were picked on the electric logs with additional interpretations given by sample logs which are made from cutting and cores.

Q Well, now, does that exhibit reflect the presence of a continuous sand body, in your opinion?

A The contour map is strictly a map with reference to sea level on a correlatable point that appears at the base of the Pennsylvanian. The yellow coloring indicates our impression of the continuity of that sand.

Q Well, is the sand present in other wells as shown by your exhibit?

A There --

Q Stratigraphic intervals?

A There are approximately six wells controlling the position of this northeast-southwest trend of sand. Each of those six wells has that particular sand in it.

Q At approximately --

A At approximately that same stratographic position.

Q Now, did you make an examination of cuttings and cores?

A Yes, sir, we have. We have viewed the cores and the cuttings from all of those wells and find them to be relatively consistent in nature.

Q And in your opinion, are they the same sand?

A In our opinion, they are the same sand.

Q Now, in your opinion, is the Pennsylvanian sand present and continuous throughout Sections 14 and 15, then?

A In my opinion, consistent with the information we have at hand, it is continuous and present throughout.

Q Now, referring to what has been marked as Exhibit No. 3, will you state what that is?

A Exhibit No. 3 is a cross section showing various electric and radioactive logs for eight wells in northern Eddy County and extreme western Lea County, New Mexico. It covers a distance of approximately thirty miles in a northeast-southwest orientation.

Q Is that shown by an insert map which appears on the exhibit?

A An insert map of the exhibit indexes the location of the various wells.

Q Now, what comment do you have to make in connection with that Exhibit, Mr. Stipp?

A First of all, let me caution you that these wells are not placed on here in regard to distances between them, they are simply arranged for convenience sake, and no relative distance is indicated here. The main object that I may point out here is the continuity of a sand trend in the lower Pennsylvanian, but it appears in five of the eight wells on the cross section. A secondary sand above that appears in four and probably five of those wells.

Q Now, in addition to the wells shown on Exhibit No. 3, there are some wells closer to the discovery well, are there not?

A There are two producing wells in the Red Lake Pennsylvanian Pool that are closer.

Q Now, referring to Exhibit No. 4, what does that show?

A Exhibit No. 4 is composed of a cross section, being three electric logs; the Standard of Texas No. 1 Everest on the left and the two gas producing wells on the Humble No. 1, and Chuck Bruff

units.

Q Where are those two latter wells located?

A The latter two wells are approximately four to five miles northeast from the Standard of Texas well.

Q Now, does that Exhibit show information from which you can conclude a continuous sand body is present?

A The Exhibit shows correlations which in our geological opinion are irrefutable that the zones as marked carry through and that the sand is one and the same.

Q Now, on the basis of that information, would you say that the sand is continuous and present through Sections 14 and 15 in Township 18, Range 26 East?

A This is a matter of extrapolation. There is a distance of five miles there. Our impression and interpretation is that it continues to the southwest and west as such that it would cover all of Sections 14 and 15.

Q Now, upon the drilling of this projected well, you would have additional information from which you could state a better conclusion, would you not? A That is true, sir.

Q Is there anything else you care to add to your comments, Mr. Stipp?

A I would like to add that on Exhibit 3 we have shown the sand to be in the same relative position. I do not mean to indicate that it is continuous throughout the thirty miles, the trend of the sand zone is continuous. There may be breaks in the sand itself or

in the permeability of the sand.

MR. KELLAHIN: That's all the questions we have.

MR. PORTER: Anyone have a question of Mr. Stipp? Mr. Nutter.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Stipp, is this -- on your Exhibit No. 4 -- is this well on the left-hand side of the Exhibit the subject well that has been completed in the gas -- A That is correct.

Q I notice on this Exhibit that the drillstem test indicates quite a bit of oil.

A That was condensate, sir, and later production tests revealed there to be -- if I may take some of the engineer's words here, -- I believe it is eleven barrels per minute on the production test.

Q This is after some production on it?

A Yes, sir.

Q Eleven barrels per minute per cubic foot?

A Yes.

Q You haven't tested as to the permeability of the sand, and such as that?

A I would prefer Mr. Graham testify to that.

MR. NUTTER: That is all.

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Stipp, were Exhibits 1 through 4 prepared by you or under your direction and supervision?

A They were.

Q I would like to offer at this time Exhibits 1 through 4 in evidence.

CROSS EXAMINATION

BY MR. DUNN:

MR. DUNN: David Dunn, with Union Oil Company. Mr. Stipp, would you give us the approximate thickness of the sands in the three wells shown on your Exhibit No. 4?

A Yes, sir. They are approximately forty feet thick.

Q In all cases?

A In all cases.

Q What about the permeability or the porous portions of that sand? Do you have an estimate on the thickness of that porous nature in the three wells on that section?

A I do not have any data as to the permeability of the Humble wells.

MR. DUNN: That is all.

MR. NUTTER: Well, is the entire 40-foot section permeable?

A The Standard of Texas Well, on the basis of the microlog, approximately 35 feet are porous and permeable.

MR. NUTTER: 35 out of 40?

A Yes, sir.

MR. NUTTER: Thank you.

MR. PORTER: Any other questions of the witness? You may be excused.

(Witness excused)

MR. KELLAHIN: Call Mr. Graham, please.

J. R. GRAHAM

a witness, of lawful age, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A J. R. Graham.

Q By whom are you employed, Mr. Graham?

A Standard Oil Company of Texas.

Q What is your position?

A I am senior engineer for the Standard Oil Company of Texas.

Q Where are you located? A Houston.

Q Have you ever testified before the New Mexico Oil Conservation Commission?

A No, sir, I have not.

Q Would you briefly state your education, experience and qualifications as an engineer, Mr. Graham?

A Yes, sir. I graduated from Louisiana State University in 1949 with a Bachelor of Science degree in petroleum engineering. Since that time I have been employed by the Standard Oil Company of Texas in various capacities; as drilling engineer, production engineer, district engineer, production foreman, and I am now senior

engineer for the company.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. PORTER: Yes, sir, they are.

Q Now, Mr. Graham, are you familiar with the application which has been filed in this case?

A Yes, sir, I am.

Q Have completion data on the Everest No. 1 Well been filed with the Commission?

A Yes, sir, it has.

Q Will you briefly outline for the record the completion information on that well?

A All right, sir. The Everest No. 1 Well was drilled to an actual depth of 10,542 feet which is a minus 7,199 feet, plugged back to 9,267 feet minus 6,925. The casing program is as follows: 13 3/8 and 1,208 feet with 1,464 sacks. Circulation was to the cellar; 9 5/8 and 3,000 feet with 1,500 sacks circulated at approximately 130 sacks. 7-inch casing was cemented at 9,370 feet, which is a subsea of 6,027 feet, cemented with 600 sacks. Top of cement by temperature survey on the 7-inch was 7,158 feet. The well was perforated in the lower Pennsylvanian sand. Perforations are from 9,079 feet to 9,085 feet; from 9,089 feet to 9,093 feet, and from 9,095 to 9,116 feet. A back pressure test was conducted on the well on October 2nd, 1957, with a calculated open flow of 23,000,000. The gas liquid ratio on the test was 90,840 cubic feet per barrel. The gravity of the condensate was 55.8 degrees API.

Q Are any core analysis available from this well?

A Yes, sir. We have a full hole core analysis.

Q Has that been marked as Exhibit No. 5?

A Yes, sir.

MR. KELLAHIN: We have only one copy of the report analysis available and the witness will submit it as soon as he has completed his direct testimony.

Q (By Mr. Kellahin) Now, what interval was cored on this well, Mr. Graham?

A A full hole core analysis; 9,070 feet to 9,084 feet, of which 11 feet were recovered and analyzed. We have side-wall cores in the interval 9,079 to 9,006 feet. The average permeability in the 11 feet cored in the upper interval was 51 millidarcies. The average porosity in this same 11 feet was $9\frac{1}{2}$ percent. The average porosity in the entire 33 feet that we interpret to be productive, or net pay, is 18.9 percent, using both side wall samples and the full hole core.

Q In addition to this, did you make any calculations on reserve, Mr. Graham?

A Yes, sir.

Q What other information did you use in connection with that calculation?

A We used a bottom hole pressure at a depth of 9,065 feet, that measure being obtained on a drillstem test as 3,747 PSI. The bottom hole temperature at 9,065 feet was 158 degrees Fahrenheit.

We used the well fluid gravity of .5617. Porosity average for the net pay, 18.9 percent. Comate water average for the 33 feet of net pay, 17.9 percent and from the microlog determined the net pay to be 33 feet.

Q Now, referring to what has been marked as Exhibit No. 6, what is that?

A That is a Schlumberger electrical log that we ran on the Everest No. 1 Well.

Q On that Exhibit, have you marked the formation tops, perforation, casing points, and other information?

A Yes, sir, we have.

Q Now, referring to Exhibit No. 7, the microlog, what does that show?

A The microlog is from the Everest No. 1 Well also and it indicates an effective pay of 33 feet.

Q Now, you stated you had made a reserve calculation. Have you made any study of the economics involved in the drilling in this area?

A Yes, sir, we have.

Q Have you prepared a summary, as Exhibit No. 8, on that information?

A Yes, sir, we have.

Q Now, referring to Exhibit No. 8, what does that show?

A That shows that we estimate the cost of drilling a well in this -- to this lower Pennsylvanian sand to be \$172,700. The

first well cost approximately \$297,000. It shows that by using the factors that I enumerated earlier, that the gas reserves under 320 acres are calculated to be twelve billion, two million cubic feet, that the liquid reserves and condensate are calculated to be 19,800 barrels and that the cost for developing two wells on 320 or 160 acre spacing would, of course, be double the cost of developing one well on 320, or \$345,400. It shows that it is based on our estimates, or at least the -- our usual contract as to minimum taxes with gas companies, that we can expect to at least be assured of selling approximately 1 over 8,500 based on reserves, or in the case of 320-acre units, about 1,430,000 per day. It shows a gross working interest income to be \$224 per day, gross royalty interest income of \$32 per day, a pay out of 2.7 years for a 320-acre unit well, a pay out of 5.3 years for a 160-acre unit well.

Q Do you consider that an economic operation?

A We considered the 2.7 years as economically feasible. We could not consider the 5.3 economic feasibly, at least we have a hard time selling it to our management.

Q Upon what do you base your well costs?

A We base our well costs on the estimate to drill the Martin Well, Martin No. 1 Well, which has been approved and shown on our Exhibit No. 1.

Q And on what do you base your income figures as shown on this Exhibit?

A As stated earlier, we base the income figures on a sale

of one over 8,500 based on reserves.

Q At what prices?

A We can calculate a well price of the well fluid at eighteen cents, using sixteen cents for the gas, and approximately two cents for the condensate.

Q Now, based upon the information which is available to you at the present time, in your opinion, will one well effectively and economically drain and develop 320 acres?

A Of course, our information at this time on the reservoir itself is very limited. We do know that the average permeability in the 11 feet analyzed is 51 milidarcies. Bearing in mind that it is a gas reservoir with this 51 milidarcies permeability and the fact that we think that the two sections are underlined by the Pennsylvanian sand, we believe that at this time that a well will drain 320 acres, and it will drain it economically.

Q Will additional information be available within a period of one year?

A We anticipate that it will. We have indicated on Exhibit 1 a second well to be drilled, and we are now taking contracts for that well, or taking bids for contracts, and plan to start that well within the next two weeks. We anticipate drilling additional wells in the area and believe that by the end of one year we will have some additional data to base a more specific recommendation on.

Q Do you recommend a temporary spacing order of 320 acres for a period of one year?

A We recommend a one year temporary spacing order.

Q Now, the application filed in this case recommends the creation of a pool to be designated as the Atoka-Pennsylvanian Gas Pool. Do you have any recommendations as to the area to be included in that Pool?

A We are recommending that only Sections 14 and 15 be included at this time in the spacing order and in the Pool delineation.

Q In your opinion, is all of Sections 14 and 15, on the basis of information presently available, productive of gas?

A On the information that we have at this time we think that it is.

Q Do you have any recommendation to make as to well spacing?

A Our first well is located 660 from one line and 1980 from the other. We have tentatively located and have staked and located, I should say, our second well 990 from the closest unit line and 1980 from the east line of that unit. It is our recommendation that 990, 1980 be adopted for this Pool.

Q In that event, it would require an exception for the Everest No. 1?

A Yes, sir, that's correct.

Q Do you have any recommendation to make to the Commission as to the directions that should be taken on the formation of the drilling units?

A No, sir. We recommend that the operators be permitted to use any two continuous quarter sections either in the north-south

or east-west direction, and the main reason for that recommendation is that there are several small tracts in the area, and we think it would be easier to pool if we had that flexibility.

Q Is there anything further you wish to add to your testimony, Mr. Graham? A No, sir.

Q Were Exhibits No. 5 through 8 prepared by you or under your direction?

A Yes, sir, they were, except one is a core analysis, of course, and two logs.

Q And the core analysis is the core analysis obtained by your company in the regular course of business?

A Yes, sir, by the Cole Laboratory.

MR. KELLAHIN: At this time we offer in evidence Exhibits 5 through 8 inclusive.

MR. PORTER: Without objection, these Exhibits will be admitted.

I believe you offered that core?

A Yes, sir.

MR. KELLAHIN: That is all.

CROSS EXAMINATION

BY MR. PORTER

Q Mr. Graham, I don't believe I got your estimate of the cost of completing the well.

A We estimate, for the second well, \$172,700.

Q That's on your Exhibit No. 8?

A Yes, sir, that's right.

Q You say that at the end of the year you will have additional information?

A Yes, sir, we hope to. We have not signed a gas contract and not made a connection yet, but we do intend to produce this first well for drilling, the Martin No. 1 Well. We intend to use the gas both as drilling fuel and as drilling fluid, and we will obtain some information there, and we intend to continue our drilling program in the area and hope to have additional wells completed at the end of the year.

Q When do you expect to complete your Martin No. 1?

A The starting date, I estimate some time in the latter part of April, and we hope to complete it in about forty days, drilling days.

MR. PORTER: Does anyone have a question of Mr. Graham?
Mr. Nutter.

QUESTIONS BY MR. NUTTER:

Q Mr. Graham, what evidence do you have that one well will drain 320 acres?

A Sir, we have very little evidence other than the permeability characteristics of the sand and the fact that it is a gas reservoir, and if it underlies 320 acres, it is our opinion that it will drain based on permeability and characteristics of the reservoir and if the fluids are free to move throughout the 320 acres.

Q Are there any other pools in the southeast New Mexico,

any other gas pools, completed in this same sand?

A It is my understanding that the two pools to the northeast, one being the Red Lake Pool, and the other, I believe the -- I can't recall the name of it, but it is about twelve miles to the northeast, is completed in this comparable Pennsylvanian sand, yes, sir. Empire Pool, I believe, is the one that is twelve miles to the northeast.

Q Has the Commission approved 320 acres for any of those pools?

A I believe they have for the Empire Pool, on a temporary basis. I am not sure of the expiration of that one year order, but that was a pool operated by Pan American. It is my understanding that they approved an order for that pool, Empire Pool.

Q Mr. Graham, you haven't determined that the order in the Empire Pennsylvanina Pool has expired?

A No, sir, I am not familiar with it other than what I have been told. They told me they approved a one year order for that pool. I don't think it has expired.

MR. PORTER: I think an investigation would prove that the order has expired.

Q (By Mr. Nutter) I want to ask a couple of questions here regarding the income that you have here. What is the formula that you base your income per day on?

A Well, the only basis we have at this time is a minimum pay contract that is offered to us by the gas company, at least

those are the figures we use to determine our pay outs, and we usually are offered 1 to 8,500 based on reserves. In other words, they will take one cubic feet per day per 8,500 cubic feet of reserves. In some contracts we have 7,300 in 10,000, but we use 1 to 8,500 as the usual.

Q And you have estimated your reserves under each tract based on core analysis?

A Yes, sir. We have estimated reserves based on core analysis and other factors. The 1 to 8,500, Mr. Nutter, is an average daily minimum take that the gas pipeline company assures us that they will take when we sign a contract.

Q Has the gas under this lease been contracted?

A No, sir, it has not.

Q So you don't know that the minimum take clause would be 1 to 8,500 in this particular case?

A No, sir, we don't know that it would be 1 to 8,500.

Q You don't know that the gas purchaser will take only the gas that is required by the minimum take clause?

A That is correct. That is a minimum take that they will assure us they will take, a daily average minimum, and we use those to calculate.

Q And if they take more than the minimum take, you have a better pay?

A Yes, sir, that's correct.

MR. NUTTER: That is all.

QUESTIONS BY MR. UTZ:

Q What was your footage recommendation? I didn't quite get it.

A 990 and 1980, sir. 990 from the closest unit line, 1980 from the more distant unit line.

Q 1980 from the section line, then?

A Yes, sir, that's correct.

Q No closer than 990 from the unit line?

A Yes, sir, that's correct.

Q Do you have a recommendation as to which way you would like these units to run?

A No, sir. I stated earlier that we had no recommendation, that they could either go east-west or north-south, just so they are continuous quarter sections.

Q Consist of a legal half section?

A Yes, sir, that's correct.

Q Now, as to your pool delineation, you want all of the sections, or have you recommended Sections 14 and 15?

A 14 and 15, yes, sir.

Q Of course, the east half of 14 and all of 15 is not yet proven, is it?

A Yes, sir, that's correct. It is not proven.

Q Wouldn't it be more practical to include a pool of 320 acres for your present completed Everest Well, and on that Pool, on 320-acre basis, a unit be approved?

A Yes, sir, that would be satisfactory with us. We base the two-section pool delineation -- that is based on our geologist's opinion that it underlies both sections, and we are assuming that it would be productive, but I am not familiar enough with our procedure here to know whether you take in a larger area than that already proved or not, so we just use the two-section because our geologist believes it is underlain by Pennsylvanian sand.

Q If the geologist proved to be wrong, they would be the ones --

A Yes, sir, that's right. They have been wrong before.

MR. UTZ: That's all I have.

QUESTIONS BY MR. COOLEY:

Q Mr. Graham, you state that the only evidence you have based the opinion that one well will drain 320 acres is on the core analysis?

A Yes, sir, the core analysis, 51 milidarcy permeability, mainly showing that there could be good movement of fluid in the reservoir and the fact that we think the sand is continuous over 320 acres. Of course, we will have to have additional information to really give a final opinion on that. At this time all we have is one well and all we can use is the permeability characteristics and the fact that it is underlain.

Q This one core involving this one small area is the only core that has been taken in this entire pool, is it not?

A Well, that's correct. These are the only permeability

measurements that have been made. We have measured porosity in the side walls since, but we have not measured permeability except in the 11 feet. That's the information we have.

Q Do you have any evidence that there is not wide variation?

A No, sir, not at this time. We have no reason to believe that there is or is not.

Q On your assumption that one well will drain 320 acres, wouldn't it be necessary that you know where the well is located on the 320-acre tract?

A Of course, the best way to determine -- in my opinion, one of the best ways to determine 320-acre tracts is to take interference tests, but on one well you will have to assume it is draining ratably 320 acres around the well.

Q That's my point. Under your proposed spacing plan, I believe, it would permit the drilling of a well 990 from the section line and 1980 feet from the section line --

A Yes, sir.

Q -- which would permit the drilling of both wells in the single section in either the south half or the north half, would it not?

A Yes, sir. It would permit drilling two wells in this section.

Q In your opinion, would this type of spacing pattern be as efficient as spacing the wells one either in the northeast quarter and one in the southwest quarter or one in the northwest quarter

and one in the southeast quarter? Would you have better drainage in that section if you staggered your wells in that fashion?

A Of course, the most efficient drainage would be to have the wells equally spaced in the reservoir, and I would have to answer yes to that, yes, sir.

Q Concerning the payout that you had calculated on these wells, that being 2.7 years for 320-acre well, and 5.3 years for 160-acre well, so long as the gas purchasers nominate given quantities of gas for this particular pool, wouldn't that be immaterial until such time as the area should become prorated?

A Yes, sir. I think it is common practice among operators to calculate payout based on reserves because companies, at least it is my understanding, take based on reserves where you have several pools and have to limit their takes. I think it is based on reserves, so we usually calculate our payout based on reserves. I think it is a valid calculation.

Q Well then, what is the purpose of coming at this time with 320-acre spacing with as little evidence as we have that one well would drain 320, why would it not be as feasible to remain on 160-acre spacing until it is prorated so that you can take whatever you could sell, produce whatever you could sell?

A I said that initially, in a reservoir, we look at the takes based on reserve. If you have a 640-acre unit in a 640-acre reservoir and you have four wells in it, you are going to sell the same amount of gas, in my opinion, or at least it is my understand-

ing, that you would sell if you had two wells in the reservoir because the gas company takes based on reserves, that's the way it is.

Q Provided two wells will drain 640?

A Yes, sir, and I don't think I can make a dogmatic statement that one well will drain that. With the limited evidence we have, we think it will.

MR. COOLEY: That is all.

QUESTIONS BY MR. UTZ:

Q Mr. Graham, according to the way I understand your footage location recommendation, your Martin No. 1 is already on a non-standard location, is that correct, sir?

A No, sir, I think we located it 990 from the north and 1980 from the east line of the section.

Q 1650 from the south line of the section?

A Yes, sir. Well, those are minimum distances, of course, and I understood that you located on minimum basis, that you are permitted to locate at least 990 and 1980 from the lines. My understanding is that as long as you are 990 from one line and 1980 from the other you are within spacing.

Q How close do you want to come to the section line?

A 1980.

Q You are 1650 on the south line now?

A Oh, I see. Well, it would have to be 1980 from the long side of the unit and 990 from the short side of the unit. I don't

see how you could locate 1980 from the long side without being 660 from the short side.

Q Wouldn't it be more practical for it to be 1650 and no closer than 990 from the unit line?

A From unit lines?

Q Yes.

A Yes, sir, that would be the same thing.

Q It would fit better?

A Yes, sir, that would fit it.

MR. UTZ: That's all.

MR. PORTER: Mr. Utz, I will ask you a question. What do you mean by unit line?

MR. UTZ: I mean the proration unit.

MR. PORTER: The 320-acre unit line?

MR. UTZ: Yes, sir.

MR. PORTER: Thank you.

Anyone else have any questions? Mr. Nutter.

QUESTIONS BY MR. NUTTER:

Q While we are on this, is your Martin No. 1 Well in a standard location according to the proposed rules?

A I just thought we talked about that, but it is my --

Q I don't mean the Martin, the Everest?

A No, sir, it is not.

Q That is an exception?

A Yes, sir, we asked that originally.

MR. NUTTER: Thank you.

MR. PORTER: Any further questions?

The witness may be excused.

MR. DUNN: May I ask a question?

MR. PORTER: Yes.

QUESTIONS BY MR. DUNN:

Q Do you know of any well in southeastern New Mexico or in the vicinity of your test that is producing oil from this same sand or correlative sand?

A Sir, I know of none, if I can answer that way.

Q Let me word the question a little differently. Are all of the correlative sands that you are acquainted with producing sand?

A I am only acquainted within the immediate area of the Everest, and I understand there is not one within four miles producing from this sand and that's my best knowledge of this sand, within four miles.

MR. DUNN: That is all.

MR. PORTER: Anyone else have a question? I believe you offered your Exhibits already.

MR. KELLAHIN: Yes.

MR. PORTER: The witness may be excused.

(Witness excused)

MR. PORTER: Any further testimony to be presented in

this case? Any statements?

MR. KELLAHIN: If the Commission please, obviously, the information we have with one well available, which we think is important, I am certain, on the basis of the information which is available to this pool, and the witnesses have testified that in their opinion it will effectively drain 320 acres, and due to the economics involved, and the fact, as pointed out, that there is not even a gas connection in there as yet, we feel a temporary order for a period of one year is fully justified until the additional information can be obtained, at which time we will return before the Commission and present out testimony to show whether the 320-acre spacing should be continued or not. But meanwhile, the pool should be developed on a uniform 320-acre pattern until such time as the additional information is available because of the economic situation and because of the core information and other information which is available and does indicate that one well will drain and develop 320 acres, and development on 160 acres, in the meanwhile, could and probably result in waste. Thank you.

MR. PORTER: Anyone else have anything further to say in this case?

MR. DUNN: David Dunn with Union Oil. Union wishes to make the statement that we do not have any acreage in the immediate vicinity of this test. We do have considerable holdings in Eddy County that we consider to be prospective of gas in the lower Pennsylvanian. We have completed a gas well south of this area a

considerable distance from the lower Pennsylvanian sand. We feel

considerable distance from the lower Pennsylvanian sand. We feel that 320 acres is the bare minimum and we question the advisability of draining anything less than a 640-acre spacing for the economical development of gas in Eddy County, New Mexico from the lower Pennsylvanian.

MR. ANDERSON: Donald Anderson of Malco, Malco also owns considerable acreage in Eddy County along this sporadic trend and owns an interest in three wells, and we protest the inclusion of the east half of Section 14, in which we are part owners of a 40-acre tract, on the basis that the gas production may be so marginal that you cannot justify less or a smaller spacing than 640 acres. We are the major owners in the two wells northeast, four miles northeast, and feel strongly that those two wells are so marginal that they should not have been drilled unless the spacing is granted on a 640-acre basis, and we would very strongly object at this time to including the east half of Section 14 in the area.

MR. PAYNE: We have a telegram here that I would like to read.

"Sinclair Oil & Gas Company wishes to concur with Standard of Texas in the following: Rules for Atoka Penn Gas Pool. No. 1, 320-acre proration units with units to run either north-south or east-west. 2: well spacing to be 990 feet from lease lines and 1980 feet between wells. 3: a location formula, 100 percent acreage. Sinclair Oil & Gas Company, Signed Layton A. Webb."

MR. PORTER: Anything further to be said? If not, we

