

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
May 27, 1964

EXAMINER HEARING

IN THE MATTER OF:

Application of Sohio Petroleum Company
for a unit agreement, Lea County, New
Mexico. Applicant, in the above-styled
cause, seeks approval of the Littman San
Andres Unit Area comprising 661 acres,
more or less, of State and Federal lands
in Sections 8, 9, 16, and 17, Township
21 South, Range 38 East, Lea County, New
Mexico. The Unit Area also includes 1280
acres of fee land in Sections 5, 6, 7,
14, and 15, Block A-29, PSL, Andrews
County, Texas.

Case No. 3049

and

Case No. 3050

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

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MR. UTZ: Case 3049.

MR. DURRETT: Application of Sohio Petroleum Company for a unit agreement, Lea County, New Mexico.

MR. COOTER: Paul Cooter of Atwood, Malone, Roswell, appearing for the Applicant. Mr. Utz, for purposes of this hearing and the taking of testimony, we would move the consolidation of Cases 3049 and 3050.

MR. UTZ: 3050 is a waterflood application for the Littman San Andres Unit?

MR. COOTER: Yes, sir.

MR. UTZ: For purposes of testimony, 3049 and 3050 will be consolidated.

MR. COOTER: We have two witnesses, C. L. Ware and R. L. McCormick.

(Witnesses sworn.)

C. L. WARE

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. COOTER:

Q Would you state your name for the record, please?

A My name is C. L. Ware.

Q By whom are you employed, Mr. Ware?

A Sohio Petroleum Company.



Q In what capacity?

A A staff landman.

Q Are you familiar with Sohio's application in Case 3049 for the approval of the unit agreement?

A I am.

Q What is the purpose of Sohio's application?

A The purpose of the application is to secure approval of the Littman San Andres agreement and Unit Area for the purposes of instigating a secondary recovery project to promote conservation and prevent waste.

(Whereupon, Sohio's Exhibit No. 1 marked for identification.)

Q I'll hand you what has been marked for purposes of identification Exhibit No. 1 and ask you if this is a copy of the unit agreement.

A It is.

Q There was a unit agreement filed with the application. Is this the same unit agreement that was filed with that?

A Yes. There are three minor mechanical corrections that have been made in there. There's three typing errors that were discovered and corrected.

Q For the purposes of the record, would you identify those three corrections? I believe they appear on pages 5, 6, and 18.

A On page 5 under Article 4, the definition reference to 2.15 should have been 2.14 and that has been corrected. 2.15



I believe defined the unit manager, the unit operator rather than the Unit Area.

MR. PORTER: I find that as you read it in, 2.14.

A In the one we are submitting it is corrected.

MR. PORTER: It is corrected?

A Yes, sir. On page 5 in paragraph B at the top of the page on the second line, the word "immediately" was mis-spelled. It is corrected.

Q (By Mr. Cooter) Page 18 I believe is the third change.

A On page 18 in Article 24, on the second line of 24.1, the word "and" should have been "any" and has been corrected.

MR. COOTER: Mr. Examiner, we would offer Exhibit 1 and ask to withdraw the copies of the unit agreement which were filed with the application.

MR. UTZ: You may do so.

(Whereupon, Sohio's Exhibit No. 2 marked for identification.)

Q I will hand you next what has been marked for purposes of identification Exhibit No. 2 and ask you to identify that exhibit.

A Exhibit No. 2 is a unit operating agreement prepared to cover the operations of the Littman San Andres unit agreement.

(Whereupon, Sohio's Exhibit No. 3 marked for identification.)

MR. UTZ: These three copies that you sent with the



application are incorrect?

MR. COOTER: Right. I think it would clarify the record if we just withdrew those.

MR. JES: All right.

Q (By Mr. Cooter) Was the unit agreement submitted to the office of the Commissioner of Public Lands of the State of New Mexico?

A Yes.

Q I'll hand you what has been marked for purposes of identification as Exhibit No. 3 and ask you to relate what that is.

A It's a letter from the Commissioner of Public Lands dated March 19, 1963, approving the Littman San Andres unit agreement as to form and content, subject to two changes requested by the Commissioner.

Q Were those changes made in the unit agreement which has been marked as Exhibit No. 1?

A Yes.

Q Was the unit agreement submitted to the U.S.G.S.?

A Yes.

(Whereupon, Sohio's Exhibit No. 4 marked for identification.)

Q I will hand you what has been marked for identification as Exhibit 4 and ask you to relate what that is.

A This is a letter from the United States Department of



the Interior dated August 13th, 1963, approving the Littman San Andres Unit Area and approving the form and content of the unit agreement, subject to changes as requested by the U.S.G.S.

Q Were those changes incorporated into the exhibit that is now Exhibit 1?

A Yes.

(Whereupon, Schio's Exhibit No. 5 marked for identification.)

Q I hand you what has been marked for purposes of identification as Exhibit No. 5 and ask you to relate what Exhibit 5 is.

A Exhibit 5 is a map to the scale of one inch to 2,000 feet showing the Littman San Andres Unit outlined in hashers, and further outlined in red pencil showing the State land between New Mexico and Texas indicated in red. This map shows the entire Littman San Andres Field, showing the proposed injection wells, the producing wells, and an areal extent of approximately two to two and a half miles around the Littman San Andres Field.

Q Are the wells in that two to two and a half mile area all shown?

A Yes.

Q What percentage of the area involved in the proposed Unit is Federal acreage?

A Twenty-five percent.

Q What percentage is State land owned by the State of New Mexico?



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A 8.75 percent.

Q Does the Federal and State land comprise all of the land within the Unit in the State of New Mexico?

A Yes.

Q What percentage of the proposed Unit is fee land?

A 66.25 percent.

Q Where is the fee land located?

A The fee land is located entirely within the State of Texas.

Q Is all of the land in the State of Texas fee land?

A Yes.

Q Is this exhibit which has been marked as Exhibit No. 5 substantially the same as the index map filed with the application?

A Yes.

(Whereupon, Sohio's Exhibit No. 7 marked for identification.)

Q I hand you what has now been marked for purposes of identification as Exhibit No. 7 and ask you to relate what that is.

A This is a map on a scale one inch to 1,000 feet, again showing the Littman San Andres Unit outlined with a hashed line and indicating in a code, in color code, the percentage of the sign-up of the royalty interest, overriding royalty interest, production payment interest, and so forth, under the heading "Royalty" in each tract within the Unit Area.



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The tracts colored yellow or gold-colored indicate the tracts in which 100 percent of the interest is signed. Incidentally, the 100 percent interest sign-up includes all of the working interest in every tract. The tracts indicated in solid red indicate 90 to 99.99 percent sign-up. The cross-hatched red indicates 80 to 89.99 percent sign-up. You will note on the tract number three it shows 96.2496 percent as committed royalty. There is a 3.7 percent of a two and one-half percent overriding royalty which I did not have in hand. This interest is in the Estate of C. H. Kyte, and we have been advised that the Executor of the Estate has signed the ratification and joinder, and has requested confirmation of his signature from the beneficiaries of the Estate, which we have been assured by the counsel for the Estate will be forthcoming.

MR. COOTER: At this point we will offer Exhibit No. 10 which is a letter from Mr. Bondurant, the lawyer for the C. H. Kyte Estate, dated May 25, 1964.

(Whereupon, Sohio's Exhibit No. 10 marked for identification.)

A With the C. H. Kyte joinder in hand, we will have 100 percent sign-up within the State of New Mexico.

(Whereupon, Sohio's Exhibit No. 8 marked for identification.)

Q I hand you now what has been marked for purposes of identification as Exhibit No. 8 and ask you to briefly relate what that shows.



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A Exhibit 8 is an ownership schedule of the entire ownership by tracts in the entire Littman San Andres Unit, showing the tract number, the lease name and description, the number of acres, the number of wells, the lease numbers where applicable, the basic royalty and amount, royalty owners and amount, overriding royalty owners and amount, production payment owners and amounts, working interest owners and amounts, on a tract basis; and then the respective owner's unit participation within that tract; also shows the tract participation of the tract.

(Whereupon, Sohio's Exhibit No. 9 marked for identification.)

Q In connection with that, I'll hand you what has been marked as Exhibit No. 9 and ask you to relate what that exhibit shows.

A Exhibit No. 9 is a summation of the unit participation parameter factors, showing the tract numbers, the lease names, the number of wells, the percentage of wells; a summation of the various parameters within each tract going to make up the total tract participation of the tract.

Q And you have stated that the unit agreement has been executed by all owners of the operating rights?

A That is right.

Q And in the State of New Mexico by all owners of any overriding royalty interest with the exception of the C. H. Kyte Estate?

A Right. We have everyone in hand except the Kyte



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ratification.

Q Do you have the ratification and joinders to the unit agreement by the owners of the working interest and the royalty, overriding royalty?

A Yes, I have an original plus of ratification with a set of two Xerox copies of the ratification which I have in hand.

MR. COOTER: We would offer these if the Commission would like to have them.

MR. UTZ: I don't believe it's necessary.

MR. COOTER: Fine.

Q (By Mr. Cooter) This Unit comprises land both within the State of New Mexico and within the State of Texas. Have you had a hearing on this Unit before the Texas Railroad Commission?

A Yes, the hearing was held on May 20th at 2:00 P.M. before the Railroad Commission.

Q Were there any objections presented to the Railroad Commission of Texas by the owners or adjoining owners at that time?

A There were no protests and no objections.

Q Under the terms of the unit agreement, will there be any commingling of the production across the State line?

A No.

Q In your opinion, would this Unit promote the best economic recovery and prevent waste of the oil?

A Yes.



Q Are there provisions in the unit agreement for subsequent enlargement of it?

A Yes.

Q How about subsequent joinder?

A Subsequent joinder is provided for.

Q Were Exhibits 5, 7, 8, and 9 which have been offered prepared by you or under your direction?

A Yes, sir.

Q Do you have anything else to add to your testimony?

A I would think not.

MR. COOTER: That concludes this phase of the testimony.

MR. UTZ: You are offering at this time Exhibits 5, 7, 8, and 9?

MR. COOTER: We will offer all of the exhibits, Mr. Utz, and some additional ones.

MR. UTZ: All right. Any questions of the witness?
The witness may be excused.

(Witness excused.)

(Whereupon, Schio's Exhibits No. 16 marked for identification.)

ROBERT L. MCCORMICK

called as a witness, having been first duly sworn, was examined and testified as follows:



DIRECT EXAMINATION

BY MR. COOTER:

Q Would you state your name for the record, please?

A Robert L. McCormick.

Q By whom are you employed, Mr. McCormick?

A Sohio Petroleum Company.

Q In what capacity are you employed?

A Petroleum engineer.

Q You have previously testified before the New Mexico Oil Conservation Commission?

A I have not.

Q Are you a college graduate?

A Yes, sir.

Q From which college?

A Pennsylvania State University.

Q What degree did you obtain?

A Bachelor of Science degree in Petroleum Natural Gas Engineering.

Q Would you please relate briefly your experience that you've had since your college graduation?

A I graduated in 1938, was employed by Plymouth Oil Company from 1938 to 1944 doing field grade work in geology; then by the Pennsylvania State University from 1944 to '45 doing graduate work and from 1945 to date with Sohio Petroleum Company. That entire



time has been in the capacity of a petroleum engineer.

MR. COOTER: Are his qualifications acceptable, Mr. Utz?

MR. UTZ: Yes, sir, they are.

Q I'll hand you what has been marked for purposes of identification as Exhibit No. 6 and ask you to relate what that exhibit discloses.

A Exhibit No. 6 is a structure map drawn on top of the San Andres formation. All wells on the map are San Andres completions excepting only three, and those wells have symbols by them showing W.S.W., which symbol means Water Supply Well. They are shallower completions from the Santa Rosa. One of these wells is located in Section 8 on the New Mexico side, one of them is located in Section 5 on the Texas side, and the third one in Section 7 on the Texas side.

Q Does the proposed Unit include all lands expected to be or possibly productive?

A Yes, it does.

Q Would you briefly describe the geology and the reservoir characteristics?

A The Sohio acquired their interest in this field through our position so we did not do the original drilling. The original drilling from the records is shown to have been done by combination use where they used rotary to the top of the San Andres, set their production string of casing and cable tooled in. So there



are no cores, and such knowledge we have of the San Andres formation is derived entirely from sample analysis by geologists at that time.

Q Could you go ahead further and explain generally a little about the geology of it?

A The structure is an elongated east-west anticlinal structure. Drilling encountered water along the south side of the field at the subsea depth of minus 820. We have reason to believe that the formation in this field is susceptible to waterflood through a single pilot injection test. It was made on the northernmost well shown on the map, tract 11, Southland No. 4.

This pilot test was done by the former operator of these properties and in it they were able to inject up to about 600 barrels a day at a pressure of about 1200 pounds, 1280 pounds.

From the performance, it is a solution gas drive pressure depletion type reservoir. There's no gascap and there's no water drive.

(Whereupon, Sohio's Exhibit No. 11 marked for identification.)

Q I hand you what has now been marked as Exhibit No. 11 and ask you what tabulation that exhibit shows. Perhaps in conjunction with it you would also like to have Exhibits 12, 13 and 14.

(Whereupon, Sohio's Exhibits Nos. 12, 13 and 14 marked for identification.)



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A Exhibit No. 11 is a tabulation by month of the entire productive history of the San Andres Field and it has been subdivided into the New Mexico subdivision and the Texas subdivision and then a total. The first production from the field having occurred in June, 1951, Exhibits 12, 13 and 14 are graphic presentations of this tabular data, again subdivided between New Mexico subdivision and the Texas subdivision and the pool total.

Q Do any of the exhibits reflect the remaining primary production contemplated under this?

A The exhibits identify the declining rate of production; the average rate of production on a per well basis is slightly less than five barrels a day at the present time, so that this reservoir is in an advanced stage of primary depletion. There are approximately 200,000 barrels of remaining primary reserve, about 50,000 of these barrels to be recovered on the New Mexico subdivision and about 150,000 on the Texas subdivision.

Q Have you been able to form an opinion as to the probable additional recovery through the use of a waterflood project?

A It is our estimate that the additional oil to be recovered from secondary recovery by water injection will be as much as one and three-quarter million barrels.

Q If this waterflood project is approved, from where will the water be obtained?

A From the Santa Rosa formation, which in this area is



at a depth of approximately 1200 feet.

Q What type of water is this?

A It's a brackish water, slightly brackish.

Q Water will be injected into which formation?

A The San Andres formation.

Q At what depth?

A 4300 feet.

Q At what rate?

A We anticipate injection rates of 800 barrels per injection well with injection pressures up to 2,000 pounds. We will design our system for that maximum pressure.

Q What is the depth of the Santa Rosa water bed in this area?

A About 1200 feet.

(Whereupon, Sohio's Exhibit No. 15 marked for identification.)

Q I hand you what has now been marked as Exhibit No. 15 and ask you to relate what that is.

A Exhibit No. 15 is a gamma ray neutron log of Southland No. 4, which is one of the wells proposed for injection service on the Texas side. It is the northernmost well shown on the map. It identifies the top of the San Andres formation in this well at a depth of 4322 feet, which is a subsea depth of minus 773.

(Whereupon, Sohio's Exhibit No. 16 marked for identification.)



Q I hand you what has been marked for purposes of identification as Exhibit No. 16 and ask you to relate what that exhibit is.

A This exhibit is again a gamma ray neutron log of Sims No. 1 well which is the most southeasterly well on the map, again on the Texas side. The San Andres formation in that well is shown to be at 4,308 feet with a subsea datum of minus 795 feet.

Q Are there any other logs, to your knowledge, of any of the injection wells?

A There are none to my knowledge. These are presented as exhibits and represent the only logs available on proposed injection wells.

(Whereupon, Schic's Exhibit No. 17 marked for identification.)

Q I hand you what has now been marked as Exhibit No. 17 and ask you what that exhibit shows.

A Since logs aren't available, we've constructed a schematic diagram of the well bore to show for each of the proposed injection wells the surface string of pipe, its size, setting depth, and number of sacks used to cement it, the setting depth of the production string, and then the total depth of the well.

All wells are completed through open hole, and such data as we have available to us indicates that essentially every well, the surface casing had cement circulated back to surface and that the setting depth was in the range of 1500 feet, which is



well below the Santa Rosa water formation and therefore the Santa Rosa is protected by surface pipe and by circulated cement.

Q Assuming that permission is given both by the Texas Railroad Commission and by the New Mexico Oil Conservation Commission, where will the first operation under the waterflood project commence?

A Our plan of operation calls for initiating the project on the Texas subdivision. We have made application and had a hearing requesting wells shown on Exhibit 5 for injection wells, and if that request is granted we will select a five-spot which would mean we would convert four wells to injection and produce the center well as our initial development.

Q On the proposed injection wells in the State of New Mexico, have definite plans yet been made for the conversion of the wells to injection wells?

A Not in specific detail, no, sir.

Q Were Exhibits 11, 12, 13, 14, and 17 either prepared by you or under your direction?

A Yes, sir.

MR. COOTER: At this time, Mr. Examiner, we would offer all exhibits, being numbered 1 through 17.

MR. UTS: Without objection Exhibits 1 through 17 will be entered into the record of these two cases.

(Whereupon, Sohio's Exhibits Nos. 1 through 17 received in evidence.)



Q (By Mr. Cooter) Do you have anything further to add to your testimony?

A I believe not.

CROSS EXAMINATION

BY MR. UTZ:

Q On your Exhibit No. 17, Mr. McCormick, which is a schematic of your injection wells in Lea County, I notice on your Wylie No. 1 that there was only 150 sacks used on the 8-5/8ths, which is approximately the same length as those in which 450 and 250 sacks were used on other wells. Do you think that's enough cement to circulate on that 8-5/8ths?

A Cement fill-up in absence of any variants in the cement are about 800 feet, I mean eight feet per sack, so this would be approximately 1200 feet, and I think that the evidence that we have been able to gather, that while maybe this record shows 150 sacks, it appears that they did circulate and we are wondering whether or not we have a complete enough record of all the detail to know that they didn't circulate. I think they did.

Q It is your opinion on all of the surface casing that all the cement is circulated?

A Yes, that's my opinion. We went back to the cementing companies and asked for the data from them, and we did get response from most of them. Unfortunately, on the New Mexico side is where we were least able to get cementing records. I



would wonder as we go on to the Wylie No. 3, they report 600 sacks; well, that's far in excess of the need for fill-up. That would be page 3, the third page.

Q Yes.

A 600 sacks is much too much. They would have cement all over the surface, all over the ground.

Q Might be enough to cement a driveway, too, wouldn't it?

A Yes, sir.

Q How about the production strings? Do you have any data as to the top of the cement on those?

A No temperature surveys, no data other than some theoretical fill-up calculations we could derive from cementing records.

Q How old are these wells?

A Our first development was 1951 and the development was complete by 1954.

Q Do you have any idea as to how you are going to complete these wells for injection?

A We have some tentative proposals for this initial area in Texas. First off, we probably will develop even a few wells down to this water table of minus 320, this for investigative purposes to see that we have the entire reservoir exposed, and then we very well will set a liner in that and complete through perforations and tubing will be run on a packer.

Q And inject under a packer?



A Under a packer, yes, sir.

Q With inert fluid in the annulus?

A Yes.

Q You are at this time requesting that these four wells in New Mexico on Exhibit 17 be approved as injection wells?

A Yes, we respectfully request that if this project is approved, the Commission provide for administrative approval of the conversion of the injection wells in accordance with Rule 701.

MR. UTZ: Are there other questions of the witness?

MR. PORTER: I was wondering if you were going to get into any discussion of the allowable.

MR. UTZ: He wants it under Rule 701.

MR. PORTER: It is to be operated under the rules of 701?

A That is our request, yes, sir.

MR. PORTER: Okay. That's all I have.

MR. UTZ: Mr. Izby.

BY MR. IRBY:

Q I notice some of these wells in Texas have very small amounts of cement used, and actually Texas isn't my concern unless something gets loose and migrates across the line; let them worry about their problem.

MR. PORTER: We're kind of hoping the oil will get



loose and migrate across.

MR. IRBY: I hope so, too, but I hope this injection water doesn't.

Q (By Mr. Irby) I would like for you to tell me just what you know about this very limited amount of cement used in the wells just across the imaginary line.

A Well, one of them that you might be referring to is the Littman "B" Well No. 1 and in it they set 160 feet of 13-3/8ths and cemented it with 150 sacks. That was followed by 2-5/8ths set at 1630 and with a reported 40 sacks of cement on it. I can't say much more about it, except this is the data that we have to work with now, and hope that it does do the job of protecting us. If it doesn't, we're going to have to work with it some more.

Q What about the Littman A-4?

A Littman A-4 is where there is no cement reported.

Q Yes.

A We just haven't found a record of it at all. Halliburton didn't do the job, it isn't on their records. Maybe we can find out who did it and get from the cementing company the cement that was used.

Q Where would you estimate the top of the 300 sacks used on the 7-inch casing?

A 300 sacks on 7-inch, let's just for easy arithmetic say about 10 feet per sack which would be about 3,000 feet above



4300, which would be roughly 1300 feet from the surface.

Q I know this is hard for you. Do you have any reason to believe there's any cement at all around this surface string, this 8-5/8ths?

A Oh, yes. I think it's just we don't have the record. Yes, sir, I think it's there.

Q Do you have any notion that it might be circulated or that it would be protecting the Santa Rosa formation?

A This well was drilled by the same operator who did a lot of their drilling. In all cases, he circulated cement, that we have been able to tell, and in absence of a specific record for this well, I am assuming that he performed a cement job on this well similar to all the rest. That's as much evidence as I have now.

Q Now most of these wells, the surface casing is set at approximately 1600 in all of these. Does this completely penetrate the Santa Rosa and go into a lower formation for setting?

A Yes, the bottom of the Santa Rosa is approximately 1400 feet, so we have it at least 200 feet below it.

Q I notice that on nearly all of the wells -- not all, but nearly all, you have 2-inch production tubing in there. Is it your intention to inject water through tubing?

A Yes, sir.

Q Will there be a packer on here?



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A Packer, yes, sir.

Q And this packer, will it be set below the top of the cement on the production string?

A Yes, sir. It will be set nearer the bottom of the pipe and if we run liners, we'll have to lap them over and the packer will be set above liner depth, or maybe into the liner.

Q Good. Now you gave some testimony with regard to your Exhibit 5, which is the San Andres structural map, I believe.

A Yes, sir.

Q I didn't get down all of the information. My shorthand is a little bit slow. You made some remarks about the water, I believe it was on the south side of the field?

A Yes, sir.

Q Then you remarked about whether this was a water or gas drive, and I didn't get that. Would you repeat it for me, please?

A We have evidence of an oil-water contact at minus 820 feet, and this evidence arises from the deepest well drilled, which is along the south side of the field. Then I intended by talking about performance, that there is no gas cap, that this is a solution gas drive reservoir and there's no evidence of water drive. There seems to be, all the evidence points to a porosity and permeability pinchout of the San Andres around this field, and it is ringed by dry holes or -- there are a couple of wells that were



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completed, production attempted in the San Andres. They recovered as much as 2,000 barrels and they were temporarily abandoned. They were very uneconomical.

Q You said this pilot test was injected under 1280 psi?

A Yes, sir.

Q What did you say that volume was in barrels per day?

A They injected about 500 barrels a day. This test was of relatively short duration, about two weeks, and they kept varying the rates and conditions and --

Q You feel that this is indicative of what you can expect?

A Yes, sir. Furthermore, the well that was used for the injection is a flank well and we knew from its primary performance that the reservoir is getting tight, we're toward the edge of the reservoir, and we reduced it. If we could inject at effective rates into this edge well, we will be able to inject higher volumes and lesser pressures as we get to the better part of the reservoir.

MR. IRBY: Thank you, Mr. McCormick.

MR. UTZ: Any other questions of the witness? Mr.

Durrett.

BY MR. DURRETT:

Q What allowable did Sohio request in Texas?

A We did not request an allowable in Texas.



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Q What's the usual procedure there? Will they assign you an allowable that's similar to 701 allowables under water-flood projects?

A The usual occurrence in Texas with respect to allowable is we will be granted an allowable for the producing well and this can be worked up as performance shows an improved oil production rate through flood up to their Mer or their allowable and we will be granted in addition to the basic Mer allowable a transfer from the injection well.

Now this is not a full Mer. This is a test rate of production now, which would mean we would get something in the order of five barrels a day and a proportionate share of that for each of the four injection wells.

Q Well, then, do you think it would be feasible that the allowable in Texas would be higher or lower than the allowable in New Mexico, or proportionately similar, or what do you feel?

A It will be closely similar, and let's go at it this way. The Mer for the field as set by the Texas Railroad Commission is 81 barrels. They're down to 26 percent, but let's use 30 percent as their proration factor, that would make 24 barrels. Now we will be permitted to transfer from the injection well on the current rate of production basis. These wells, we'll say, average five barrels and we'll get a proportionate share of that. We'll probably get a quarter of the summation of the four wells. The



summation might be 20, the summation is back to five, and that added gives 29 barrels so I anticipate that we'll be slightly under in Texas what we would expect to be normal allowable in New Mexico.

MR. DURRETT: Thank you.

MR. UTZ: Any other questions?

MR. IRBY: I would like to ask one more, if I may.

BY MR. IRBY:

Q I got the impression from some of your answers that you intend to continue in your efforts to get additional information with regard to the cementing of the casing in these wells, is this correct?

A Yes, sir.

Q Would you furnish me this information if you are fortunate enough to obtain it?

A We'll be very happy to, yes, sir.

MR. UTZ: Any other questions?

MR. COOTER: May I state to the Examiner that we would appreciate early consideration of this unit agreement and water-flood project, as under the terms of the unit agreement operation by July 1st is necessary in submitting it to the Commission and U.S.G.S., and reassure them that conversion with the injection wells in New Mexico will be by petition for administrative approval under Rule 701.



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MR. DURRETT: I'm not sure I understand you. Do you want approval, are you seeking approval now of certain injection wells, or are you going to seek all of the injection wells by administrative approval?

MR. COOTER: I think under Rule 701, and I might be wrong, all that can be asked for now is the approval of the waterflood project and the proposed injection wells. Before the injection wells may be converted, we must comply with the porosity information, et cetera, and submit this for administrative approval of the actual conversion. I am incorrect?

MR. UTZ: The injection wells will be approved by this hearing right here. It is my understanding that you requested permission to have these four approved.

MR. DURRETT: You want the four approved, and then any additional could come through administrative approval?

MR. COOTER: Right.

MR. UTZ: If no further questions, the witness may be excused.

(Witness excused.)

MR. UTZ: Any other statements in this case? The case will be taken under advisement.

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