BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 22, 1965

EXAMINER HEARING

IN THE MATTER OF:

Application of Amerada Petroleum Corporation for a unit agreement, Lea County, New Mexico.

Application of Amerada Petroleum Corporation for a waterflood project, Lea County, New Mexico.

Case No. 3304
and
Case No. 3305
CONSOLIDATED

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: We'll call Case 3304.

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

MR. NUTTER: Do you want to consolidate Cases 3304 and 3305?

MR. KELLAHIN: Yes, we would like to ask that Cases 3304 and 3305 be consolidated for the purposes of the record.

MR. NUTTER: We'll call next Case 3305.

MR. DURRETT: Application of Amerada Petroleum Corporation for a waterflood project, Lea County, New Mexico.

MR. NUTTER: Is there any objection to the consolidation of the cases? For the purposes of testimony, the cases will be consolidated.

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, Santa Fe, New Mexico; appearing in association, Mr. Thomas W. Lynch, a member of the Oklahoma Bar, who will present the two cases.

MR. LYNCH: We would like to call two witnesses in these consolidated cases, Mr. Andrew E. Snyder, Mr. Joe B. Denton. The first witness will be Mr. Snyder.

* * * *

ANDREW E. SNYDER

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

DIRECT EXAMINATION

BY MR. LYNCH:

Q Will you state your name and your occupation and by whom you are employed, for the record?

A My name is Andrew E. Snyder and I am employed by Amerada Petroleum Corporation in Tulsa, Oklahoma, as a Petroleum Engineer.

Q And have you testified previously before the Oil Conservation Commission as a Petroleum Engineer?

A Yes, sir.

Q Are you familiar with the area which is the subject of Amerada's application in this consolidated proceeding?

A Yes, sir.

Q Mr. Snyder, would you examine first what should be marked as Exhibit 1?

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

MR. LYNCH: Mr. Examiner, I might state that this Exhibit 1 is precisely the same as one of the Exhibits attached to the application except for what Mr. Snyder will point out.

Q (By Mr. Lynch) Mr. Snyder, will you examine this Exhibit and tell us what it shows?

A This Exhibit is a location plat, lease plat, showing all of the wells in the leasehold of record surrounding the

proposed Warren McKee Unit in portions of Township 20 South, Range 30 East, Lea County, New Mexico. This map shows the unit outline in a dark dashed outline, the four proposed water injection wells outlined in red, and the zone of completion of all the wells in this area.

Q Does this unit consist of all of the Warren McKee Pool?

A No, sir.

Q What portion of the Warren McKee Pool does this unit consist of?

A This unit is essentially the North Half of the Warren McKee Pool.

Q When was the Warren McKee Pool discovered, Mr. Snyder?

A The first well was drilled in 1948. It was Continental's Warren Unit McKee No. 3. Actually it doesn't show up on this map, it's south.

Q It is in the South Half?

A Yes.

Q As shown by the current proration schedule, how many wells are there in the entire pool?

A Forty-two.

Q How many wells completed in the Warren McKee are there within the unit area?

A There are twenty-three wells, of which four are temporarily abandoned and nineteen are producing.

Q Those four temporarily abandoned wells are --

A Are the four wells that are proposed for salt water injection.

Q What spacing is in effect for this pool?

A Forty-acre Statewide.

Q What is the top allowable for the pool?

A 140 barrels per day.

Q Are any of the wells in the pool, not just those in the unit, but any wells in the entire pool capable of making top allowable at the present time?

A No, sir.

Q Of those wells within the unit area, what is the average production in some recent month?

A In June, the last month that we had a record of all of the wells, the average production was twenty-three barrels per well per day for the nineteen producing wells in the unit.

Q On this basis and on the basis of facts which you'll testify about later concerning the reservoir characteristics and performance, are you of the opinion that this reservoir is at the present time in an advanced stage of depletion?

A Yes, sir.

Q Would you call it a stripper stage?

A Yes, sir.

Q Would you now examine what the reporter is marking as Exhibit No. 2?

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

Q What does Exhibit 2 show, Mr. Snyder?

A Exhibit 2 is a structure map primarily of the entire Warren McKee reservoir showing the two distinct highs in the field, a high in the north portion of the field and another high in the south portion. The reservoir itself is anticlinal in nature with a fault along the east side. Again the unit outline is shown in red, and the four proposed injection wells also shown in red.

Q What sort of entrapment, how would you characterize the entrapment of hydrocarbon in the reservoir?

A That's an anticlinal structure. The oil is underlain by water.

Q You classify it as a structural trap?

A Yes, sir.

Q What sort of drive mechanism prevails in the field?

A The drive predominantly is solution gas drive. There may be some very small minor amount of water drive, but it's very negligible, if any at all.

Q Would you now examine what should be marked as Exhibit 3?

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

Q Tell us what that shows.

A Exhibit 3 is a type log in the Warren McKee Unit. It is the particular log of Amerada's Turner No. 2. We have the normal electric S-P and Resistivity logs, and in addition to that a microlog showing zones of porosity. On the extreme right-hand boundary of the exhibit you'll notice a line drawn at a depth of 8961, which is the top of the McKee in this particular well, another line at 9194 which is the base of the McKee and the top of the Waddell Sand. This is to be the unitized interval of the Warren McKee Unit.

Q This unitized interval as you have shown on Exhibit 3 is as described in the unit agreement?

A Yes, sir.

Q Is this entire interval treated as a single pool or a common source of supply by the Commission?

A Yes, sir.

Q All right. Would you now examine what should be marked as Exhibit 4?

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

Q What does this exhibit show, Mr. Snyder?

A Exhibit 4 is a tabulation or a data sheet concerning this reservoir. In the column of "General", most of that we

have primarily talked about, the current capacity and the number of wells and so on. It also shows the cumulative production to July 1st, 1965, 8,193,000 barrels.

Q Looking down at "Reservoir Properties", what is a representative porosity for that portion of the reservoir included in the unit?

A Average porosity from core analysis, I figure to be 16.4 percent.

Q What would be the representative water saturation figure?

A About forty-two percent.

Q And a representative permeability?

A 99.8 millidarcies.

Q What is the oil gravity?

A About forty-five degrees.

Q Some of these other items of information shown on this exhibit will be covered in later testimony, is that correct?

A Yes.

Q Would you now examine what should be marked as Exhibit 5 and Exhibit 6?

(Whereupon, Applicant's Exhibits Nos. 5 and 6 marked for identification.)

Q Would you just briefly describe what Exhibit 5 and

Exhibit 6 are?

A These exhibits show the same thing. One, Exhibit 5, is in tabular form showing the monthly history of this field from the time it was discovered up until the current time, showing barrels of oil produced, barrels of water, average gas-oil ratio, and average bottom hole pressure.

Looking at Exhibit 6, this shows up better as a picture showing that it is a normal type of solution gas drive field. The bottom hole pressure, the top curve on the exhibit, the pressure decline from an initial of 3486 pounds per square inch down to the last pressure measured in April of 1962 was 499 pounds. This pressure undoubtedly has continued to decline and we expect that currently it's somewhere between 400 pounds.

Q Are the figures shown on Exhibits 5 and 6 for all of the wells in the pool, or those wells within the Unit Area?

A Only those within the Unit Area.

Q What has happened to the gas-oil ratio during this same period of time?

A The gas-oil ratio again has occurred like we would expect, starting from an initial of about 600 cubic feet per barrel to the last gas-oil ratio we had, about 3820 cubic feet per barrel in June of 1965.

Q Mr. Snyder, you stated that the cumulative production to July 1st, 1965, was slightly over 8,000,000 barrels?

A Yes, sir.

Q What would be a reasonable estimate of the primary recovery, total ultimate primary recovery?

A 9,232,928 barrels.

Q Based on what you've said so far in connection with Exhibits 5 and 6 concerning the reservoir performance, what would you say would be the stage of primary depletion at the present time?

A The reservoir is in an advanced stage of depletion. It figures out to be about 89 percent depleted.

Q So this substantiates your conclusions that you arrived at on the basis of the decline in the productivity of the wells?

A Yes.

Q Mr. Snyder, what would you expect to be the volume of secondary oil recovered if secondary recovery operations were instigated in this field?

A The estimate that we had made was for an additional 2,385,000 barrels of secondary oil to be recovered.

Q This is over and above the total primary?

A Yes, sir.

Q Have you made a study of the economics of conducting the secondary recovery program in this unit?

A Yes, sir.

Q Would the value of the additional recovery exceed the cost of producing that oil?

A Yes, it would.

Q Mr. Snyder, would you now refer back to the structure map, Exhibit 2, and very briefly explain the proposed waterflood program with respect to the location of the wells and the structure and so forth?

A Initially, to start out this waterflood program we anticipate injecting water into the north end of the field as shown by the four injection wells. As response occurs, when and if it does, we would expect that water will be injected in the south end of the unit also, and that we would in effect have an end-to-end flood in this reservoir.

Q Would you now examine what should be marked as Exhibits 7 through 10?

(Whereupon, Applicant's Exhibits Nos. 7 through 10, both inclusive, marked for identification.)

Q What are Exhibits 7 through 10?

A Exhibit 7 is a log of one of the injection wells, Unit Well No. 102, which shows the top of the McKee at 9140 feet. The Exhibit No. 8 is the log of injection Well No. 201, shows the estimated top of the McKee at 9151. This well bottomed up what appeared to be right in the very top of the McKee is the reason we called it an estimate. It was very

difficult to tell, but it appeared to be in the top and it did produce, so we're pretty sure that's a good figure.

Exhibit 9 is a log of Injection Well No. 202 showing the top of the McKee at 9160 feet. Exhibit 10 is a log of Unit Injection Well No. 203, shows the top of the McKee at 9138 feet.

Q Now the injection well numbers that you just gave me are numbers that will be assigned in the event of unitization?

A Yes, sir.

Q These wells are also identified by the lease names and therefore can be related to previous exhibits such as Exhibit 2, the structure map?

A Yes, sir.

Q Would you now examine what the reporter is marking as Exhibits 11 through 14?

(Whereupon, Applicant's Exhibits Nos. 11 through 14, both inclusive, marked for identification.)

Q Tell us what those show.

A These four exhibits are schematic diagrams of the four injection wells. We might look at two of these in detail. Well No. 102 is Exhibit No. 11. This shows the current condition of this well, the depth and cementing practices of the casing strings, the anticipated packer setting depth, and the tube string where the perforations are, from 9145 to 9214,

and open hole interval from 9225 to 9250. We anticipate no changes in this well in putting it on injection.

Exhibit No. 12 is very similar to No. 13 and 14. It also shows the schematic diagram of the equipment in the well and the anticipated packer setting depth, the tubing string, but this well will be deepened from the current depth of 9165 to about 9310 and a liner set and cemented, and perforations made from 9152 to 9305.

The other two wells, as I mentioned, on Exhibits 13 and 14, are similar to this in that they will be deepened and liner set and selectively perforated for completion.

Q Will the completions that you have outlined on Exhibits 11 through 14 prevent contamination to fresh water and damage from any other oil or gas zones that might be found in the area?

A Yes.

MR. LYNCH: I might point out at this time, also, Mr. Examiner, that the Exhibits 11 through 14 are identical to the exhibits that were attached to the application.

Q (By Mr. Lynch) Mr. Snyder, what is the anticipated daily volume of water to be injected per injection well per day?

A We think we'll be able to get 3,000 barrels a well per day into the reservoir.

Q All right. Are you going to use any surface pressure in injecting this water?

A No, sir, we anticipate that it will go by gravity.

Q What is the source of the water that you intend to inject?

A It will be San Andres water.

Q This is not fresh water, this is salty water?

A Yes, sir.

Q Would you now examine, Mr. Snyder, what the reporter is marking as Exhibit 15?

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

Q Tell us what Exhibit 15 shows.

A Exhibit 15 is a tabulation by leases of all of the tracts in this proposed unit, showing the participation parameters that were used in the derivation of interest within the unit. The four parameters were current rate of production based on a period from December 1st, 1963 to June 1st, 1964. We had a remaining primary factor and an adjusted acre-feet factor and ultimate primary factor. These were combined into a split phase formula, a phase one formula, as shown at the bottom of the exhibit, until 1,253,100 barrels of oil had been produced after June the 1st, 1964. Participation from this phase was to be forty-five percent current production plus forty-five percent remaining primary and ten percent adjusted

acre-feet. After this primary is recovered, then phase two formula for the remaining secondary oil was to be distributed on the basis of one-third adjusted acre-feet and two-thirds of the ultimate primary.

Q And the upper portion of the exhibit shows, sets out for each tract those parameters?

A Yes, sir.

Q Mr. Snyder, in conclusion, is it your opinion that the proposed waterflood program is in the interest of conservation and will increase the ultimate recovery of oil and protect correlative rights?

A Yes, I believe it will.

Q Will a waterflood program conducted on a unit basis as you have presented here today be more efficient than on a lease basis?

A Yes.

Q So in your opinion the unitization of the various leases in the area is necessary?

A Yes.

Q Will that portion of the Warren McKee Pool outside the unit area be adversely affected by this operation?

A No.

Q Should the injection program be classified as a waterflood project under Statewide Rule 701-E?

A Yes, sir.

Q Why is that?

A Due to the advanced stage of depletion, the low bottom hole pressure, the general performance characteristics of the reservoir.

Q Are you asking for any special allowable rules or any other rules at the present time?

A No, sir.

MR. LYNCH: That's all we have of this witness.

MR. NUTTER: Are there any questions of Mr. Snyder? Mr. Durrett.

CROSS EXAMINATION

BY MR. DURRETT:

Q Mr. Snyder, would you please give us your complete name?

A Andrew E. Snyder.

Q What does the initial "E" stand for?

MR. NUTTER: You are under oath, Mr. Snyder.

A Yes, sir.

MR. LYNCH: I might interject at this point, we had this same problem in Kansas and Mr. Snyder got up to leave the stand. He wasn't going to proceed with his testimony. I was the most concerned person in the room.

MR. DURRETT: I might state to the Examiner that Mr.

Snyder is in contempt of the Kansas Commission. That is the reason for my asking the question.

MR. NUTTER: You object to the question, Mr. Snyder?

A Yes, sir.

MR. NUTTER: Objection sustained this time. Did you have any further questions, Mr. Durrett?

MR. DURRETT: No, that's all at this time.

MR. NUTTER: Very pertinent to this testimony. Mr. Irby, did you have a question?

BY MR. IRBY:

Q Mr. Snyder, with regard to your Exhibit 1 and the larger scale map that came out with the application, is the red circle, the coloring on the proposed injection wells, and the scale the only difference in these two maps?

A Yes, sir.

Q Now with regard to your Exhibit 2, I note that your contours are labeled "minus". Is that minus sea level datum or land surface?

A It's minus sea level.

Q Do you propose to reinject the produced water?

A Not at the present time. The produced water volume is small and we're disposing of it in other methods and we would prefer not to inject it at the present time.

Q What is the daily average of water production from

the wells now producing?

A Eighty-six barrels per day.

MR. NUTTER: That's for all of the wells?

A Yes, sir.

Q (By Mr. Irby) How many wells?

A Nineteen wells.

MR. LYNCH: That figure is shown on a monthly basis on Exhibit 4, is that correct?

A Yes, that's right.

Q (By Mr. Irby) How is this water presently disposed of?

A I believe probably the water is presently left in the pit, I'm not real sure about it.

Q An unlined pit?

A Probably so. It actually would be in several different pits, since there are a number of different leases in the field.

Q Do you intend to put additional wells on injection at a later date in this pool?

A Yes, sir.

Q And are you seeking here today a method by which they can be approved administratively rather than coming in for another hearing?

A I don't believe so. There are some other things that

would probably be involved that would probably include a hearing at the time that those are put on.

Q You don't have an estimate of when those other wells would go on?

A No, sir, it depends a great deal on what happens to these north wells, the results, the response that we get from them.

Q Is this going to be a closed system?

A Yes, sir.

Q Now on these three wells that you are going to deepen and put the liner in,--

A Yes.

Q -- will the seal between the liner and the casing that is already there be tested?

A Between the liner and the casing that's there?

Q Yes.

A In other words, when we cement --

Q Yes.

A Yes, it will be.

Q To pressure in excess of your injection pressure?

A Yes, sir. That's a normal practice whenever we set a liner.

Q Now will you notify me of these results?

A Yes, sir, make a note to do so.

Q Thank you.

MR. IRBY: I don't have any further questions. The State Engineer would recommend that the disposal of produced water in excess of a half-barrel per pit per day be disposed of in some manner other than in unlined pits. That's all I have.

BY MR. NUTTER:

Q Mr. Snyder, what is the current depth of Wells Numbers 201, 202, and 203?

A Number 201, current depth is 9165; Number 202 is 9210; and Number 203, 9143.

Q And each of these will be deepened and a liner set, is that correct?

A Yes, sir.

Q Now the ultimate depth of each of these wells will be in the McKee formation?

A Yes, sir.

Q Now I noted from one of the logs that we had -- let's see, it's Exhibit No. 3, that this Turner No. 2 Well has perforations in the Waddell and Connell formations as well as the McKee?

A No, sir, those are not perforations. I should have pointed out that those blocked-in intervals are porosity intervals on the microlog.

Q Those aren't the perforations in the well, then?

A No.

Q Is the Waddell or the Connell formation open with the McKee in any well in this unit area?

A Not at this time.

Q It was at one time?

A It was at one time in this particular well, the Turner No. 2, I believe. We had a dual completion for a number of years, and at a later date then, about 1961, I believe, the Commission granted us permission to bore-hole, commingle these two until we had depleted the Connell. It was depleted about two years ago and made roughly 18,000 barrels after we did that, and we have since plugged it off.

Q So the Connell is plugged off, then?

A Yes.

Q So in none of your injection wells or in none of your production wells will any other formation be open except the McKee?

A That's right.

Q Now this San Andres water that you are going to be using for injection, is that produced water from an oil operation in some other pool, or will this be produced for the purpose of water injection?

A It will be produced for the purpose of injection.

Q What will be your source well?

A We anticipate that, if you'll refer back to Exhibit No. 2, on the Cities Service Byers Lease just north of the four injection wells, there's a dry hole.

Q Is that Number 4?

A The Number 4. We are anticipating we will make a supply well from that well, if it has no bad pipe in it or anything.

Q Is there any San Andres production in this immediate area?

A No, sir. The nearest San Andres production, I believe, is off to the west in the Monument Field, several miles.

Q You expect to inject 3,000 barrels per day per well, so that will be 12,000 barrels you are going to need initially?

A Initially, we will not need that much. In our committee work, working on this, we actually intend to inject into only one well to start with as a one-well pilot. If there are no problems entailed in this, in a very short time we will go to the other three wells also. At that time we probably will have to have another well for water supply. We anticipate that the one supply well might give up eight or possibly ten thousand barrels a day, but not enough for the four wells.

Q Your current thinking is that if these four wells show some sort of a response, you would come to the south end of the unit and start an end drive type of flood on the south half of the dome?

A Yes.

Q And the results that are expected is that the oil will move upstructure as the water is injected at the lower points?

A That's right.

Q Now I noted on your Exhibits 11 through 14, you made the statement that the tubing would be internally coated. Is this plastic coating of the tubing or just what?

A At this time I couldn't tell you what type of coating it is, but the San Andres water is corrosive so we will take every precaution necessary to protect everything from the corrosive properties of the water.

Q And in each instance the injection would be through some kind of coated tubing and under a packer?

A Yes, sir.

MR. NUTTER: Are there any further questions of Mr. Snyder?

MR. IRBY: I have one more.

BY MR. IRBY:

Q For the record, Mr. Snyder, would you state whether

or not this water supply well in the San Andres formation will be outside the Lea County underground water basin as declared by the State Engineer?

A If the water supply well --

Q -- is outside the basin?

A I believe, sir, that it is included in the basin.

Q Then have you made application to the State Engineer to withdraw this water?

A No. We will not be able to do that until the unit has been approved and several other things are settled, but we will make that application.

MR. IRBY: Thank you.

MR. NUTTER: Are there other questions of Mr. Snyder? He may be excused.

(Witness excused.)

MR. LYNCH: We would like to call as our next witness Mr. Joe B. Denton.

* * * *

JOE B. DENTON

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

DIRECT EXAMINATION

BY MR. LYNCH:

Q Mr. Denton, would you state your name and occupation

and by whom you are employed, for the record?

A Joe B. Denton. I am Assistant District Landman, Amerada Petroleum Corporation, Midland, Texas.

Q Mr. Denton, have you testified previously before this Commission?

A Yes.

Q Are you familiar with the application in this proceeding, the application of Amerada?

A Yes.

Q Are you familiar with the Warren McKee, the proposed Warren McKee Unit and the unit agreement?

A Yes.

Q I would like to hand you first, Mr. Denton, what should be marked as Exhibit 16.

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

Q Mr. Denton, this Exhibit 16 is entitled Unit Agreement, Warren McKee Unit, Lea County, New Mexico. Is this agreement closely patterned after the A.P.I. model form?

A It is essentially the model form.

Q Is the unit area defined and described in this agreement?

A It is.

Q Where is it described, is it described in Exhibits "A" and "B" of the Unit Agreement?

A "A" and "B" of the Unit Agreement.

Q By tract?

A By tract.

Q Are all of the tracts that are included in the Unit Area privately owned fee lands?

A Yes.

Q There are no Federal or State lands involved?

A There are no Federal or State lands involved in this unit, they're all fee.

Q Under the Unit Agreement, who is to be the operator, at least initially?

A Amerada will be.

Q That's covered in Section 4.1?

A Right.

Q And are there various methods for qualifying tracts for inclusion within the unit?

A There's three different methods for qualifying the different tracts.

Q How many of the fifteen tracts shown on Exhibit "B" to the Unit Agreement have qualified for inclusion in the unit?

A All of the tracts have qualified except Tract 15. The working interest owner has not executed the agreement but we expect him to within the next few days.

Q Does the Unit Agreement expressly provide that it is

subject to the conservation laws of the State and the Rules of the Commission, and other applicable State and Federal laws and regulations.

A Yes, it does.

Q What is to be the effective date of the unit?

A The effective date will be on the filing of the certificate and after all the tracts have qualified, when that has been done.

Q So the certificate will be filed after the tracts have qualified?

A Right.

Q And after the Unit Agreement has been filed of record?

A Correct.

Q And after this Commission has approved the Unit Agreement?

A Yes, sir.

Q Would you now examine, Mr. Denton, what should be marked as Exhibit 17?

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

Q Mr. Denton, Exhibit 17 is entitled Ownership List, Warren McKee Unit, Lea County, New Mexico. I note that the exhibit is in two parts. Does one part deal with the working interest and the other part deal with the royalty interest?

A Yes, they do.

Q Looking at the first part first, dealing with working interest owners, how many working interest owners are there within the unit area?

A There's twenty-three working interest owners.

Q How many have executed the Unit Agreement?

A Twenty-two.

Q And the one that has not executed the Unit Agreement owns the working interest in Tract 15, as you previously stated?

A That's correct.

Q What is the percent of the total working interest that has been committed to the unit at the present time?

A We have 99.86993 percent.

Q And that is shown on the second page?

A That is shown on the second page, yes, the outstanding interest, interest of the one Tract 15.

Q Turning now to the second part of the exhibit which deals with royalty interest owners, how many royalty owners are there within the unit area?

A One hundred forty.

Q How many have executed the Unit Agreement?

A One hundred thirty-one.

Q And how about those that haven't executed the Unit Agreement; why haven't they executed?

A The parties who have not executed are involved in estates of deceased parties and so forth. We are in contact with all of the royalty owners except one whom we have been unable to locate.

Q You don't know his address?

A No, not been able to find it.

Q What percentage of the total royalty interest in the unit area has been committed to the unit?

A I have been advised this morning by the Midland Office that we have secured one other one. We now have 99.6327 percent.

Q Mr. Denton, has anyone at all objected to the creation of this unit?

A No, no party has.

MR. LYNCH: That's all we have of this witness.

CROSS EXAMINATION

BY MR. NUTTER:

Q What is the actual acreage in this unit?

A 1785 acres.

MR. NUTTER: Are there any further questions of Mr. Denton? He may be excused.

(Witness excused.)

MR. LYNCH: Mr. Examiner, that's all the testimony we have. We would like to offer in evidence Exhibits 1 through

17.

MR. NUTTER: Amerada's Exhibits 1 through 17 will be admitted in evidence.

(Whereupon, Applicant's Exhibits Nos. 1 through 17, both inclusive, offered and admitted in evidence.)

MR. NUTTER: Does anyone have anything they wish to offer in Cases 3304, 3305, consolidated? If not, we will take the case under advisement.

* * * *

I N D E X

EXHIBITS

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter - Notary Public, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this 13th day of October, 1965.

Ada Dearnley
Court Reporter - Notary Public

My Commission Expires:

June 19, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3304-3305 heard by me on 9/22, 1965.

, Examiner
New Mexico Oil Conservation Commission