CASE 3261: Application of [redacted] APACHE CORP. for pool extension & special rules for JENKINS-CISCO.

CASE NO. 3261

APPLICATION,
TRANSCRIPTS,
SMALL EXHIBITS
ETC.

Q Does Delaware Apache have any objection if the Commission should see fit for instance to deplete the west portion of the southeast quarter of Section 24 and the northeast of 25 in defining the limits of the pool?

A No, not at this particular time.

Q In view of the fact that the field rules will extend for one mile anyway, from the boundaries?

A Yes, that is correct.

MR. HINKLE: That is all.

MR. UTZ: Are there any further questions of the witness. The witness may be excused.

MR. HINKLE: We have Mr. Larry Shannon. We would like to have him sworn.

LARRY SHANNON, having been previously duly sworn testifies as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q Mr. Shannon, are you employed by the Delaware Apache Corporation?

A Yes, sir, I am.

Q In what capacity?

A As the Area Engineer.

Q You are a graduate Petroleum Engineer?

A Yes, sir. From the University of Oklahoma.

Q And you have previously testified before the

of the pool?

A Well, it would--

Q In other words Mr. Dean, the Commission has always been pretty close on dedicating large amounts of acreage to proven pools until the units are actually drilled except in instances such as this as between two wells. I just wanted to get your reaction as to how it would affect you if the Commission didn't go along with your large amount of acreage.

A I think our extension five eighths of a mile west Extension indicates that there is a probable larger proven area than was presently dedicated and that we feel that the performance of these two wells indicates that it is a fairly sizable pool and that the acreage which we have requested to be included within the pool unit will be developed, I would say within a year to two this one way or another.

Q Would you be adversely affected if it wasn't all included at the present time?

A No.

MR. UTZ: Are there any further questions.

MR. HINKLE: I might amplify that a little bit.

REDIRECT EXAMINATION

BY MR. HINKLE:

A West half of Section 24 we feel that it is productive.

Q It hasn't been proven though?

A No, sir, but it is adjacent to the highest well in the pool.

Q The same question in regard to your southwest quarter of Section 19?

A Southwest of 19. Yes, sir, we believe that to be a diagonal offset to the original discovery well there, which is performing at an excellent rate.

Q Are the pool rules--perhaps you know, I don't at this point, do we have special pool rules for one well in a unit at the present time?

A I don't think so.

Q I don't think so either, but I didn't take the trouble to look. In your pool rule request will the rules not be effective for an area of a mile or two miles from the pool limits?

A Yes, sir.

Q As they usually are in all our special pool rule orders?

A Yes.

Q Would that then not protect you without including a bunch of acreage that has not been proven in the limits

Q It's all right with me, but I think I want an answer to that now. The point of my questioning is it would seem we are including quite a large amount of acreage there for only two wells in the pool.

A Yes.

Q If you have only 80-acre spacing, should we not have contiguous 80-acre tracts between the two wells with considerably less pool dedication at the present time?

A To date there has been no water contact established in the field and we probably will assign on this the east half of the southeast quarter to our Number 1 Hileman Estate. We feel that the area between these two wells is proved productive.

Q Section 25, northeast quarter would consider all of that proven production?

A Section 25 the northeast, the northeast quarter of 24.

MR. HINKLE: 25.

Q 25?

A Yes, sir. We are planning to drill in the we have made a location and applied for a permit in the northeast of Section 25.

Q How about the west half of the southeast of Section 24?

A No.

MR. HINKLE: We would like some engineering data which we would like to put on through another witness. This is all the testimony of Mr. Dean. I would like to offer in evidence Exhibits 1 through 4 inclusive.

(Whereupon, Appellant's Exhibits 1 through 4 were offered in evidence.)

MR. UTZ: Without objection Exhibits 1 through 4 will be added into the record of this case.

(Whereupon, Appellant's Exhibits 1 through 4 were added to the record.)

CROSS-EXAMINATION

BY MR. UTZ:

Q The present pool limits consist of only 160 acres, is that correct?

A Yes, sir.

Q You are asking here for 80 acres, is that correct?

A Yes, sir.

Q 80-acre spacing?

A Yes, sir.

Q How will the 80 acres be dedicated to your Hileman Estate Number 1?

A The dedication will be described by our engineer if that's all right with you.

and the south of the reservoir. This illustrates a combination of a structure and stratographic trap providing the accumulation in this pool.

Q Now refer to Exhibit Number 4 which is in the pocket to the folder that contains all of the exhibits, explain what it shows, what it is and what it shows.

A This Exhibit Number 4 is a cross section between the Delaware Apache Number 1 Hileman Estate which is on the left of your cross section or to the west and Amerada Petroleum Number 1 Anderson which is on your right or to the east in your cross section. Correlations are drawn at the top of the Bough C Zone at approximate depths of 9,750 feet extending from the Apache well on your left to the Amerada well on your right. This is a continuous zone and there is no evidence of faulting between these two wells.

Q Does this show any difference in structure as between the two wells?

A There is a slight difference in subsea depths. The Apache Number 1 Hileman Estate is approximately twelve feet high on top of the Bough C Cisco to the Amerada Number 1 Anderson.

Q Do you have any further comments with respect to this Exhibit?

Q Has Delaware Apache recently completed a well in the area?

A Yes, Delaware Apache Corporation has completed a second well in the Jenkins-Cisco Pool, this well being located in the southeast quarter Section 24.

Q Is that well completed in the same producing formation as the discovery well drilled by Amerada?

A Yes, sir. That is completed in the same formation.

Q Do you have any further comments with respect to Exhibit Number 2?

A No.

Q What is the broken line?

A The broken line indicates the limit of porosity in the productive Bough C Reservoir in this particular area.

Q Is that due to the effect of the dry holes that have been drilled to the southeast?

A Yes, this is obtained from subsurface control by dry holes drilled to the south and to the southeast and to the east of the producing area.

Q Now refer to Exhibit Number 3 and explain what that is and what it shows.

A This Exhibit Number 3 is an isopach of the productive Bough C line. This zero line is on the east

A Yes, sir.

Q Refer to Exhibit 1 and explain what that shows.

A Exhibit 1 outlines in yellow the proposed limits of the Jenkins-Cisco Pool. The cross-hatched area in yellow, which is the northeast quarter of Section 30, Township 9, South 35 East is the present limits of the Jenkins-Cisco Pool.

Q What was the discovery well in the Jenkins-Cisco Pool?

A The discovery well was the Amerada Number 1 Anderson located in the northwest, northeast, Section 3.

Q Have you prepared a structural map of this area?

A Yes, sir. I have prepared a structural map in this area contoured--

Q Is that Exhibit 2 that you are referring to?

A Yes, sir. That is Exhibit 2. This structural map is contoured on the top of the Bough C Zone which is the producing interval in the Jenkins-Cisco Pool. This structural map is based upon subsurface well control and shows a low relief feature and an anticlinal feature with dip to the north, dip to the east, dip to the south, and dip to the west. The producing wells are on the crestal portion of the structure.

one separately whichever you would rather do.

MR. UTZ: It makes no difference. Many times we identify the whole booklet as Exhibit 1 with A, B, C, and D attachments.

MR. HINKLE: All right.

(Whereupon Exhibits 1 through 9 were marked for identification.)

Q (By Mr. Hinkle) Are you familiar with the application of Delaware Apache in Case 3261?

A Yes, sir.

Q What is Delaware Apache seeking to accomplish through this application?

A Delaware Apache seeks approval of the extension of the limits of the Jenkins-Cisco Pool to consist of the south half Section 19, the northwest quarter Section 30, in Township 9 South 35 East and the southwest quarter Section 24, and the northwest quarter Section 25, Township 9 South 35 East, Lea County, New Mexico, and the adoption of special field rules including 80-acre proration units.

Q That's spacing and proration units?

A Yes, sir.

Q Have you prepared or has there been prepared under your direction index plats showing the proposed extension of the field and the location of the wells?

MR. UTZ: Case 3261, in the matter of Delaware Apache Corporation for a pool extension and special rules, Lea County, New Mexico for the Jenkins-Cisco Pool.

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant and Christy representing Delaware Apache Corporation. We have two witnesses, Mr. Dean, who has just testified in Case 3260 would be the first witness. I don't know whether you want him re-sworn or not.

MR. UTZ: No, let the record show that Mr. Dean has been previously sworn. Are there any other appearances in this case. You may proceed.

HAL S. DEAN, having been previously sworn testifies as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q Your name is Hal S. Dean?

A Yes.

Q And you have previously testified before the Commission with respect to your qualifications in connection with Case Number 3260?

A Yes.

MR. HINKLE: We have nine exhibits in this case and they are all under one folder. We can either have them identified as Exhibit 1 and then A, B, C, or each

Oil Conservation Commission and your qualifications are a matter of record?

A Yes, sir. That is correct.

MR. HINKLE: Are the witness' qualifications acceptable?

MR. UTZ: They are acceptable.

Q (By Mr. Hinkle) Have you kept up with the development in the Jenkins Cisco area?

A Yes, sir. I have.

Q Are you familiar with the wells that have been drilled in that area?

A That is correct.

Q Made a study of the information available from the drilling of those wells?

A That is correct.

Q And you are familiar of course, with the Hileman Estate Number 1 well drilled by the Delaware Apache?

A Yes, sir.

Q Turn to Exhibit Number 5 and explain to the Commission what that is and what it shows.

A Yes, sir. Exhibit Number 5 is the first well that we had within this, we feel within the same pool as Amerada's Anderson well and we just gave a brief well history of the overall completion techniques and the results

that were obtained from the drilling and completing of this well. We have shown a drill stem test and particularly another interval in the San Andres.

Q This also shows the location, the depth, and the size of your casing and where it is set?

A Very true and the perforation and the potential test submitted to the Commission.

Q You might amplify that a little bit with regard to your perforations and drill stem tests what they showed?

A Drill stem test Number 2 which we tested the Bough C interval that we are currently producing we tested only the bottom half of the productive interval as you can see from 9755 to 9794. Exhibit 4 if anyone cares to refer to this shows the actual logging and how it was tested but the well flowed at a rate above the capabilities of our separator and we had to limit the length of time of the drill stem test but the pressures are shown at the recoveries that we were able to measure. We then drilled the well and logged it and perforated the intervals shown in the perforation from 9738 to 9734 and 9756 to 9760, with the limited entry technique. With no stimulation at all we potentialed the well on May 15th, 1965, controlling the withdrawal rates for our own reasons on completion techniques we flowed at

154 barrels per day in 24 hours on a 10/64 choke with seven hundred pounds of tubing pressure. I may add at this time since we prepared the Exhibits we did have to stimulate this well with a 1,000 gallons of acid to make sure that the well was fully capable of producing the 80-acre spacing.

Q Has it responded to the treatment?

A Very successfully. The productivity has increased very well.

I believe you mentioned that the Exhibit showed the bottom hole pressure but you didn't mention what it is.

A Yes, sir. The bottom hole pressure on the drill stem test, we have two bottom hole pressures that may seem a little confusing and which they are even to us, the initial shutin pressure on this well was 3363 on a drill stem test. To verify this pressure we ran another bottom hole pressure after the well was completed on a wire line which we feel more accurate and we show that pressure on Exhibit 6 to help we feel in showing the aerial extent of withdrawal that the Amerada has already drained. If we are through with Exhibit 5 we can go to Exhibit 6.

Q Refer to Exhibit 6 and explain that.

A Exhibit 6 shows from top to bottom the reservoir

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 9, 1965

EXAMINER HEARING

IN THE MATTER OF:

Application of Delaware Apache Corporation for a pool extension and special rules, Lea County, New Mexico.

Case No. 3261

BEFORE:

Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

properties and rock that we have measured and calculated on the Hileman Estate well which I will say again we feel is the second well in this reservoir. The top of the formation was at gross pay thickness 9,734 feet and net effective pay of 18 feet, porosity 100%, water saturation we indicated from logs to be 20%, the original reservoir pressure which we obtained from Amerada Petroleum Company which they ran on a wire line test to the same subsea datum plane was 3427. We ran a pressure on our Hileman Estate shortly after it was potentialed as we could and we had a bottom hole pressure of 3233 giving a 194 pounds per square inch loss in reservoir pressures. We feel that this is indicative of the drainage radius of the Amerada well that has affected the pressure of our wells.

Q It shows it has drained over a considerable area?

A Yes. The saturation pressure we did not measure from bottom hole samples. The reservoir temperature was 140° F, the original solution gas-oil ratio is 1423, formation volume factor 1.70, calculated, the oil gravity we measured at 45.0 and the specific gravity of the gas was measured at .888.

Q Is that the same gravity as the oil produced from the Amerada discovery well?

A Yes, sir, it is.

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Q Is that the same gravity as the oil produced from the Amerada discovery well?

A Yes, sir, it is.

Q Have you made any calculations as to the probable oil recovery?

A Yes, sir. If you will refer to Exhibit 7, this is a volume metric calculation of anticipated recoveries on our well and I might add that this is a liberal calculation with what we feel giving extremely high values to all of the factors for anticipated recovery. The porosity of 10%, the water saturation of 20%, net effective pay of 18 feet and a recovery factor we assume to be 40% and we know that this is within a relatively accurate range because of the productivity tests that Amerada ran on their original well indicating a strong water encroachment, and then the formation volume factor that comes within the calculations. We went through the mathematical steps and the oil in place in a 40-acre spacing is only 260,000 barrels and 80 acres we have 524,000 barrels in place. We anticipate 105,000 barrels recovery on 40 acres and 210,000 barrels recovery on 80-acre spacing. If we are through with this we have a unique position within this field because we have a depleted Bough C reservoir to the east of our well that has been completely depleted and we have the actual recovery data that we can substantiate.

Q Is that depleted field shown on Exhibit 1?

A Yes, on Exhibit 1 if we will refer to the

Bough Field in Section 11, 12, 13 and 14 of Township of 35 East Range 9 South, it is approximately five miles to the north and east of our area of intent.

Q Are the characteristics of that field what you believe to be similar to the characteristics of this pool here?

A We feel that they are very similar. If you notice the Bough C Field which was depleted on 40-acre spacing and we feel that the oil in place is relative to the oil in place that we have in our well which we said on 40-acre spacing was 262,000 barrels, we'll refer to Exhibit 8 actual cumulative barrels of the wells in the Bough Field. You see the discovery well produced--which we feel is strongly indicative of an area of drainage even in excess of 80 acres. If you notice these wells are listed in order of the completion date and the recoveries in the right-hand column and we think it's very unique and we feel that our wells are within the same area and that we can anticipate the same type of recoveries that were found within the Bough Field. We think this is substantial information in our stating that we feel that it will more than adequately drain 80-acre spacing.

Q Have you made a study from an economic point of

view in evaluating this field or pool?

A Yes, sir. Exhibit Number 9, we have shown the basic data of what we are now currently receiving for our products as far as the oil and gas, we're negotiating a gas contract at the present time and the values we will receive we have anticipated the recoveries and the profits that we could anticipate from a volume metric calculation of 40 and 80-acre spacing. In the 40-acre spacing if we anticipate 105,000 barrels we will have a profit to investment ratio of .51 to 1 and profit of $81,000. In 80-acre spacing we will have a profit of $321,00 and a profit to investment ratio of 2.02 to 1 which we feel is a much more economical position.

Q That's based on a fixed cost per well of $140,000?

A Yes. The drilling costs and artificial lift equipment that we will definitely require of $18,000.

MR. HINKLE: We would like to offer in evidence Exhibits 5 through 9 inclusive.

(Whereupon, Appellant's Exhibits 5 through 9 were offered in evidence.)

MR. UTZ: Without objection Exhibits 5 through 9 will be entered into the record of this case.

(Whereupon, Appellant's Exhibits 5 through 9 were entered into the record of this case.)

Q (By Mr. Hinkle) Does Delaware Apache contemplate any further development of this area?

A Yes, sir. As Mr. Dean has stated we have requested a permit to drill our Sally Coe well Number 1 located in the northeast of Section 25, Range 34 East, Township 9 South.

Q If that should result in a well comparable to your Number 1 well do you anticipate drilling other wells?

A Yes, sir. We will definitely drill. The number of wells is, of course, uncertain at the present time, but as far as Apache's position is concerned we would like to see three wells drilled this year.

Q From your study and all information which has been available to you in your opinion, will one well definitely and efficiently drain 80 acres or more in this area?

A Yes, sir. We feel it definitely will.

Q Do you have any recommendations to make to the Commission as to the special field rules which Delaware Apache is requesting?

A Yes, sir. We would like to have a standard 80-acre spacing whereby we can dedicate either the north half, the south half, or east half, or west half of any governmental quarter section and that we may drill a well on any governmental quarter section within 150 feet of

its center.

Q Are you requesting the regular 80-acre spacing, I mean allowable in this case?

A Yes. The standard proration allowable for 80-acres.

Q Deep well factor?

A Yes, sir.

Q In your opinion, will the adoption of special field rules as requested in this case, prevent the economic loss caused by the drilling of unnecessary wells?

A Very definitely yes.

Q In your opinion, will the special field rules prevent waste and protect correlative rights?

A Very definitely. I might add in our area, Mr. Examiner that we requested, possibly we have requested too large an area but the acreage factor and the way acreage is laid out particularly in Exhibit 2 you can see this, this is one of the reasons that we requested the north half, south half, east half, west half dedications because in the southeast of 24 you see the east half and west half of that quarter section were right directly to the east in Section 19 the southwest is divided into the north and south as far as acreage is concerned and royalty interest.

Q Apache is the owner of all the acreage enclosed in red?

A Yes, we have denoted 100% in our Hileman Estate and 50% interest in the other acreage. Outside of the area of intent we also have another 100% acreage in the northwest of Section 24. That's not to be included within this area.

MR. HINKLE: That's all.

CROSS-EXAMINATION

BY MR. UTZ:

Q What is the gas well shown in the southeast of the southeast Section 19?

A What zone is that in?

Q Yes.

A Atoka, they do not have the Bough C in this well. It was tight.

Q It wouldn't be a very good idea to dedicate that section?

A No, sir. That's where we figured we'd have the biggest complaint. The west half of this quarter section we feel would be productive. The east half we do not feel it is. If we can dedicate acreage either way we thought we should request the 160 acres.

Q Get a little bit of the dry acreage?

A Leave that to you, on which you wish to dedigate.

REDIRECT EXAMINATION

BY MR. HINKLE:

Q Have you had any objections to the adoption of the special field rules in the area, especially from Amerada?

A No, sir. They are partners and gave verbal approval of this.

MR. HINKLE: That's all.

RECROSS-EXAMINATION

BY MR. UTZ:

Q The Delaware Apache Corporation, are they requesting temporary rules?

A Yes, sir. For one year.

MR. UTZ: Are there any other questions of the witness. I am sure the depth factor has been set by the Amerada well, and you would be in agreement with that depth factor as far as allowables are concerned.

A The depth factor, yes, sir. It would change according to the 40 or 80-acre spacing.

MR. UTZ: Any other questions. The witness may be excused. Any other statements in this case. We have a telegram from Amerada Petroleum Corporation which in substance supports this application. The

case will be taken under advisement.

* * * * *

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this the 9th day of June, 1965.

Ada Dearnley
ADA DEARNLEY

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. 3264, heard by me on June 9, 1965.

New Mexico Oil Conservation Commission, Examiner

case will be taken under advisement.

* * * * *

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this the 9th day of June, 1965.

Ada Dearnley
ADA DEARNLEY

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. 32[illegible]
heard by me on June [illegible] 19[illegible]
[illegible], Examiner
New Mexico Oil Conservation Commission

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

EXAMINER HEARING

IN THE MATTER OF:

Case No. 3261 being reopened at the request of Amerada Petroleum Corporation to consider the amendment of the special rules for the Jenkins-Cisco Pool, Lea County, New Mexico, to provide for 160-acre oil proration units.

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: The hearing will come to order. The next case is No. 3261.

MR. HATCH: In the matter of Case No. 3261 being reopened at the request of Amerada Petroleum Corporation to consider the amendment of the special rules for the Jenkins-Cisco Pool, Lea County, New Mexico, to provide for 160-acre oil proration units.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin and Fox, Santa Fe, appearing for the applicant in association with Mr. Thomas W. Lynch, member of the Oklahoma Bar, who will present the case.

MR. LYNCH: Mr. Examiner, Order No. R-2931, as issued on June 15, 1965, provided for temporary 80-acre spacing. The Order provided also that the case was to be reopened in July 1966. During the period of time since Order R-2931 was issued, there have been a number of wells drilled in this area. It is an active area and there is danger that wells might be drilled on a pattern closer than the pattern on which the wells are now drilled, which is one well per 160 acres, so Amerada has applied early, so-to-speak, in order to preserve, to make sure that the present 160-acre drill site is preserved. We believe that there is no question that the Commission may act now in view of the provisions in the last paragraph 4 of the Order which states

that jurisdiction of this cause is retained for the entry for such further orders as the Commission may deem necessary.

Amerada will have two witnesses; Mr. Wallace Stewart, Geologist, and Mr. Richard L. Hocker, Petroleum Engineer. First Witness will be Mr. Stewart.

(Witnesses sworn.)

MR. UTZ: Excuse me just a minute. Are there other appearances in this case? Would you state your name for the record, please?

MR. SHANNON: Larry Shannon with Delaware Apache Corporation.

WALLACE STEWART

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

DIRECT EXAMINATION

BY MR. LYNCH:

Q Mr. Stewart, would you state your name and your occupation and by whom are you employed for the record?

A My name is Wallace W. Stewart. I am employed as a geologist for the Amerada Petroleum Corporation. I live in Hobbs, New Mexico.

Q As a matter of fact, Mr. Stewart, you are District geologist for Amerada, is that correct?

A That is right.

Q And the subject pool is within your district?

A That is true.

Q Mr. Stewart, have you testified previously before the Oil Conservation Commission?

A Yes, sir.

Q And your qualifications as a geologist have been accepted?

A Yes, sir.

Q Are you familiar with the Jenkins-Cisco Pool?

A I am, sir.

MR. LYNCH: Mr. Examiner, are his qualifications accepted?

MR. UTZ: Yes, he is previously qualified before the Commission.

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

Q (By Mr. Lynch) Mr. Stewart, would you examine first what has been marked as Exhibit 1 and tell us briefly what that exhibit shows?

A That is a structural contour map of the Jenkins-Cisco Field contoured on the top of the Bough-C member, which is also the pay horizon for the field. The wells colored in red inside the large double circle are producing oil wells in the field.

Q All right, sir. And there are also shown on the map three different cross section lines, is that correct?

A That is true. Three cross section lines which will be later exhibits.

Q Would you tell us a little about the characteristics of the reservoir rock itself?

A The reservoir rock overall is a white, light tan, very fine crystalline limestone. In the pay zone the porosity occurs in a vugular manner and is frequently quite fossiliferous and certain, good porosity is indicated.

Q How would you characterize the trapping mechanism in this reservoir?

A From the structural contour map we can see that there is an anticlinal nature to the area in general. However, we feel that there is definitely some stratigraphic implications in control of the oil production.

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

Q All right, sir, would you now examine what has been marked as Exhibit 2, a cross section AA prime, and briefly describe what that shows?

A This is a section, a west to east cross section reading from left to right, showing the continuity of the porosity and four producing oil wells from left to right and

this cross section shows in the center column of each well the intervals, drill stems tested, the zones perforated, and the zones indicating porosity. Logs which are printed on the cross section below each well is also pertinent. Drillstem tests in writing along with the perforated interval treatment potential graph and GOR figures. There is one core also indicated, actually two cores indicated, in the cross section on the Wells 4 and 5 from the left.

Q Why were the two wells on the right-hand side of the cross section non-productive in this zone?

A Well, the well on the extreme right is indicated to be very thin in the pay interval and carried no porosity. The second well, the Amerada-Anderson 1-A, although indicating porosity apparently is separated by a barrier from the field proper.

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

Q All right, sir. Would you next examine what has been marked as Exhibit 3, cross section BB Prime? Tell us what that shows.

A This is a cross section essentially from the northwest to the southeast across the field showing somewhat the anticlinal nature of the field, but again showing the wells on either end of the cross section to be tight by test or

log interpretation, also showing the continuity between the producing wells used in the cross section.

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

Q Would you next examine what has been marked as Exhibit 4, cross section CC Prime? Tell us what that shows.

A This is a cross section from the southwest side of the field across the field showing three continuous producing wells and a northern limit well which carried no porosity in the pay horizon. Again the legend, the information imparted to the cross sections are exactly the same on all three of the three cross section exhibits.

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

Q Would you now turn to what has been marked as Exhibit 5 and briefly describe what that shows?

A This is a plat actually of the Jenkins-Cisco field showing the order of development. This is based on the time of well completion of oil wells 1 through 7. Also on this map is indicated at the time present horizontal pool limit and the proposed horizontal pool limit.

Q All right, sir. Now, when you say horizontal pool limit, just to make it perfectly clear for the record, you are not talking about something that is drawn over zero line?

A No, this is acreage assignment.

Q This is as has been defined in the Commission nomenclature?

A Right, in Rule 2931.

Q Mr. Stewart, will you point out the discovery well and tell us when this field was discovered?

A Discovery well is the Amerada No. 1 Anderson which is located on the northwest to the northeast of Section 30, Township 9, Range 35 East. The well was completed in May 1963.

Q All right, sir. And how many wells are there, producing wells, are there currently in this reservoir?

A Currently there are seven completed producing wells.

Q And I note in the Southwest Quarter of Section 30, Township 9 South, Range 35 East, there is a well identified as the Strake No. 1 Crockett. What has happened to that well?

A This well is currently in the process of completing. The well drilled in over the weekend to a total depth of 9800 feet. A drillstem test of the productive interval in the field yielded mud and inspection of logs indicates that the producing zone is tight. The well is currently being plugged back to test a formation above 5000 feet.

Q All right, sir. Since the field rules were first adopted, temporary field rules in June 1965, how many producing wells have been drilled of the seven?

A I believe five of the wells have been completed since that time.

Q Have you any governmental quarter sections that have more than one well in this reservoir?

A No. We should like to mention that no one has seen fit to drill more than one well for 160 acres.

Q All right, sir. Mr. Stewart, what is the direction of possible future development in this pool if development proves economical?

A You would look at Exhibit 1. We feel that the area has some attractive possibilities moving to the west or southwest and we feel there may be considerable more reserves in this direction.

Q In your opinion, Mr. Stewart, should the defined horizontal limits of this pool be extended to include all the areas shown as a proposed extension on Exhibit 5 except the Southwest Quarter of Section 30, in which the Strake dry pool has been drilled?

A The Strake well was dry in the Cisco horizon. This is deleted. I think the horizontal limits should be extended as proposed.

Q All right. Mr. Stewart, is there any geological reason why one well would not adequately and efficiently drain at least 160 acres?

A In my opinion, the porosity indicated and the relationship with the wells to the field, it appears geologically one well could drain 160 acres.

Q And based on your knowledge of the geology of this pool is the pool large enough to accommodate 160-acre spacing units or proration units?

A Yes, at the present time it certainly has sufficient room for 160-acre development.

Q All right, sir.

MR. LYNCH: That is all we have for this witness, Mr. Examiner.

CROSS EXAMINATION

BY MR. UTZ:

Q Your delineation as shown on Exhibit 5 there is pretty close to the present horizontal limits. Now, with the exception of two 80-acre tracts is that correct?

A No, sir, and also on the western edge we have added one and one quarter section.

Q Frankly, I think you had better prove that. Do you have any information that shows that at this time?

A Actually one well, Amerada's No. 1 Ainsworth, in the Northwest Quarter, 25, has not been included in any horizontal limit, and if, as requested, they were included, this would make a little larger area than already proven.

Q What would be the reason for going out beyond the productive proration unit?

A Well, we have contemplated additional development if history of the reservoir is favorable, and we feel that we should be protected in that if this additional area is productive that we don't yet have the favorable spacing.

Q I am sure you are familiar with the fact that on all these orders, whether 80, 160, we also include a mile around the pool limits --

A Yes, sir.

Q -- to protect for the spacing order in the pool?

MR. LYNCH: Mr. Examiner, we have no serious objection to the Commission deleting from the proposed area of extension any undeveloped 160-acre governmental quarter section, undeveloped government quarter section, in view of the Commission's one-mile rule. However, the purpose of proposing this extension as Mr. Stewart said was that development appears to be eminent in the western portion of this pool and we are just trying to stay ahead of the game.

Q (By Mr. Utz) On your Exhibit BB Prime cross section column, would you say the well is productive or not?

A No, sir, that well was not productive from this horizon. It was productive from the San Andres.

Q Now, what about the gas well in the Southeast Quarter Section 19, that is producing from Cisco, is it?

A No, sir, that is Atoka gas well on the cross section AA Prime.

Q Atoka is which direction from the Cisco?

A That would be greater depth, sir.

Q And Cisco in this well were tested dry?

A No, Cisco at this location tested water.

MR. LYNCH: That log is shown on your cross section AA Prime, is it not?

A That's right.

Q (By Mr. Utz) Has pool been established for Atoka production?

A Yes, sir, it has. I don't remember, the Southeast Quarter of 19, I believe, is assigned to the gas well.

Q Now, these limits that you have described are pinch-outs or whatever they might be. There is some question as to just where they occur, is there not, for all you know they occur somewhere between the two wells?

A Between two wells, that's true.

Q I would assume that in the event that the commission

approved 160-acre spacing that, for example, you would want to dedicate to the Hileman No. 1 the Southeast Quarter of Section 24?

A That is correct, sir.

Q There would be some serious question as to how much of that quarter section would be productive, due to the dry holes just north of it, isn't that true?

A Well, we, in certainly studying the field, we see some evidence on various types of maps that can be drawn, the porosity having some progressive nature in moving to the limits of the field. In other words, we would anticipate very near all of this 24 having some permeable reservoir rock.

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

MR. LYNCH: I just have one, Mr. Examiner.

Q (By Mr. Lynch) Were these Exhibits prepared by you or under your supervision and direction?

A Yes, sir, they were.

MR. LYNCH: We would like to submit in evidence Exhibits 1 through 5.

MR. UTZ: Without objection they will be entered into the record in this case.

(Whereupon, Applicant's Exhibits 1, 2, 3, 4 and 5 were admitted in evidence.)

R. L. HOCKER

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

DIRECT EXAMINATION

BY MR. LYNCH:

Q Mr. Hocker, would you state your name and occupation, by whom you are employed, for the record?

A My name is R. L. Hocker and I am employed by Amerada Petroleum Corporation as a petroleum engineer.

Q Have you testified previously before the Oil Conservation Commission as a petroleum engineer and have your qualifications as such been accepted?

A Yes, they have.

Q Are you familiar with the Jenkins-Cisco Pool?

A Yes.

MR. UTZ: He is qualified.

(Whereupon, Applicant's Exhibits 6 and 7 marked for identification.)

Q (By Mr. Lynch) Would you turn first to what has been marked as Exhibits 6 and 7 and tell us briefly what those two exhibits show?

A Exhibit 6 is a performance curve of the Jenkins-Cisco Field, showing the gas-oil ratio for the pool at the top, the monthly oil and gas production and the accumulative

oil production near the center and the number of wells at the base of the curve showing that there was quite a considerable lapse of time before the second well was drilled in this field.

Q All right, sir,

A In table No. 7 is the supporting data from which this curve was constructed as far as the oil and gas production.

Q And what is the accumulative oil production from this pool?

A As of the first of April, 323,985 barrels.

(Whereupon, Applicants Exhibit 8 marked for identification.)

Q Would you next examine what has been marked as Exhibit 8, titled, "Reservoir Data" and just briefly describe the type of information shown on that Exhibit?

A Well, there are several interesting pieces of information. The depth is 9,700 feet approximately. The original bottomhole pressure in the discovery 3,427. The latest pressure is 78 for four wells, shows 2,989 pounds bottomhole pressure. We have no sample bottomhole, sample on this field, so that the bubble point saturation pressure is of necessity estimated.. The initial gas hole ratio was 1420 and the current gas hole ratio for March was 1257. Build-up test was run on this discovery well which showed average permeability of 113 millidarcies.

There is one more in this field or production wells, and the average core analysis I will show as another exhibit was 4.7. This core analysis was taken in conjunction with the logs and the other log calculations were also made and correlating the core with the sonic log, I believe it was, the average porosity in the field would be 5.8 water saturation is calculated to be 25%, average net pay thickness 12 feet formation of 1.6 and oil gravity of probably 50 degrees.

Q All right, sir. Mr. Hocker, what appears to be the reservoir drive mechanism?

A In my opinion it is solution drive.

Q How many of the seven wells in this field are top allowable wells?

A Well, June proration schedules carry six of the seven wells and the seventh well was completed on May 31st, and it was Apache's well and potential tests indicate that it will also be top allowable so that all seven wells in effect will be top allowable wells.

Q Do you have figures for the average current daily production per well?

A No, they are making allowable.

Q For the wells in the field, do you have an average daily production figure?

A Well, 210, 215, for June, 210 for May.

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

Q Will you now examine what has been marked as Exhibit 9 and tell us what that Exhibit shows?

A Exhibit 9 is a tabulation of the initial potential data for the seven wells that were completed in the Jenkins-Cisco Pool, the potential ranking from 154 to 314 barrels of oil per day and showing the good producing ability of the wells.

Q What conclusions can you draw concerning the permeability of this reservoir from this exhibit?

A Well, taking into account the limited amount of perforation and the relatively high potential it would seem that this reservoir has excellent permeability.

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

Q All right, sir. Now, would you examine what has been marked as Exhibit 10? Tell us what that exhibit shows.

A Exhibit 10 is a table of the one core analysis of the one well that is in this pool and shows that the permeability ranges as high as 4.3 darcies and that the average porosity according to this would be about 4.7%.

Q Mr. Hocker, would you characterize this permeability as shown on this exhibit as good or excellent?

A Excellent.

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

Q Would you now examine what has been marked as Exhibit 11 and tell us what that exhibit shows?

A This is an exhibit showing the drillstem test pressure data on all seven wells in the field showing a productive decline in drillstem test pressures from the original build-up pressure of 3427.

Q What conclusions can you draw from this exhibit as to the communication hydrostatic within the reservoir?

A We will have further exhibits but this is further evidence of good drainage and good permeability in the reservoir.

(Whereupon, Applicant's Exhibit No. 12 marked for identification.)

Q Would you now examine what has been marked as Exhibit 12 and tell us what that exhibit shows?

A This is a tabulation of bottomhole pressures data made in surveys and random pressure and they have been grouped according to dates and I would like to point out that there is very little variation in bottomhole pressures at the same time in any wells made throughout the field. I would like to particularly point out the last bottomhole survey which was run in May of this year and for the four wells

tested there was a variation of sixteen pounds.

Q Would you conclude from this exhibit then that this is further evidence of excellent communication in this reservoir?

A Yes, I have prepared another exhibit which will show these pressures on the various wells for the May 1966 bottomhole pressure survey.

(Whereupon, Applicant's Exhibit No. 13 was marked for identification.)

Q Would you examine Exhibit 13 and describe what that exhibit shows?

A Well, this shows the seven producing wells in the field and the measured pressures in May of 1965 at the time this pressure survey was run. It was the early part of the month and the Delaware Apache Anderson No. 1 was not completed and unfortunately we lost two gauges in the hole, but the four remaining pressures that we did take showed very good continuity throughout the reservoir.

Q All right. The very slight differences in the bottomhole pressures you indicated inside the wells is readily accounted for by the accuracy of the gauge, is that correct?

A I wouldn't say it was all gauge, but certainly it is good measurements, I would say.

(Whereupon, Applicant's Exhibit No. 14 marked for identification.)

Q Would you now examine what has been marked as Exhibit 14 and tell us what that exhibit shows?

A Well, Exhibit 14 is a plot of bottomhole pressure versus time and incorporates the data from the two previous tables giving drillstem test pressures and pressure measured, pressures with the gauge in a normal survey. It shows, I think, a remarkable continuity of pressure and decline with time and at the very last I have indicated, say in May, the bottomhole pressures survey has a range of 16 pounds.

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

Q Would you now examine what has been marked as Exhibit 15? Tell us what that shows.

A Amerada's Exhibit 15 is a development map as of May 1965, when there were only two wells completed in the field. It is shown as of the time of the completion of the second well in the field. These two wells scale 4200 feet apart and I say that it takes 2800 feet from Jenkins quarter section to other diagonal corner, so by any stretch of the imagination, any conceivable test, it would seem that drainage from the well, discovery well, to the second well

completed in the field that is shown, that there is very good drainage in this field and it is far in excess of 160 acres.

Q How many barrels of oil approximately had the discovery well produced at the time the second well in the field was brought in?

A Approximately 100,000 barrels.

Q And the second well showed a drop in the pressure from the original bottomhole pressure?

A 184 pounds from the original discovery pressure.

Q Again, this is conclusive proof as far as you are concerned that one well will drain at least 160 acres with ease?

A I would characterize this as excellent proof.

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

Q Would you now examine what has been marked as Exhibit 16? Tell us what that exhibit shows.

A Exhibit 16 shows the condition of the field in December of 1965 when there were four wells being completed in the field. It shows that the nearest well to the Superior well in the Southwest quarter, 24, was 2650 feet away. This is not quite 2800 feet, but certainly approaches it very closely and the bottomhole pressure group in this

Superior well was 253 pounds, another further indication of good continuity and good drainage.

Q Mr. Hocker, on your previous exhibit, Exhibit 15, showing two wells, how much oil had been produced by the second well at the time pressure was measured, prior to the time pressure was measured in that well?

A It was a little less than 9000.

Q Do you recall how much oil had been produced by the Superior well?

A Unfortunately, it was not a small number of production. I have an estimate of 9,100 barrels.

Q All right, but in this connection, how long does it take a well to build up after it has been produced in this reservoir? How long does it take a well to build up when it is shutin?

A Several minutes?

Q Instantaneous?

A Yes.

Q So, the fact that a well had produced 1000 or 9000 barrels is relatively unimportant in this case since in this instance the wells do build up rapidly to stabilize pressure.

A However, I would prefer the Superior, to run it with less production, but I couldn't control that.

Q But again, Exhibit 16 is the same kind of Exhibit

as 15, not as conclusive, but nevertheless supports the conclusion you arrived at on Exhibit 15?

A We thought that was good supporting data.

MR. UTZ: I presume that they used Amerada bomb?

A I can't testify to that.

MR. UTZ: It was a question in the accuracy of the reading.

Q (By Mr. Lynch) Mr. Utz earlier was asking some questions of Mr. Stewart which indicated the possibility that he was thinking that there might be a water level in this reservoir which could be drawn around structure, parallel structure lines, and determine the productive limits of the pool. I may have Mr. Utz' intention all wrong, but have you been able to pick a water level within the producing part of this reservoir?

A I don't believe there is any known water level in the reservoir.

Q So the water that has been found in wells at the periphery of this field, that water is not in communication, it would appear, with water within the reservoir itself?

A Well, let me say I think that there are other signs of porosity that do carry water very close to this Bough-C zone and that some drillstem tests intervals cover more than just the Bough-C zone.

Q So the Bough-C in those tests might have been tight and the water recovered from a lower zone?

A I think that is very possible -- probable.

Q On the basis of all of the testimony and exhibits that you have submitted today, do you have any doubt at all that one well can adequately and efficiently drain at least 160 acres in the Jenkind-Cisco Pool?

A No doubt at all. I believe it will drain more.

Q Will more than one well on each of the 160 government quarter sections subsequently add on the recovery of oil and gas?

A More than one well would not recover any appreciable amount of oil.

Q Would you briefly recap the kind of evidence that has led you to these conclusions? I know this is repetitious, but we think it is important.

A Well, the nature of the reservoir, I know, lends itself to wide spacing. It is a relatively thin reservoir with low porosity, high permeability, and good evidence of wide drainage.

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

Q All right. Mr. Hocker, would you examine now what has been marked as Exhibit 17 and tell us what it shows?

A Exhibit 17 is my estimate of the economics of the Jenkins-Cisco Pool based on those 80 and 160-acre spacing showing that for the 160-acre spacing that the recovery of oil is 130,000 barrels per well for each 160 acres and for 80 it's 65,500 barrels, the price that we are getting for the gas is four cents and using an estimated 3 MCF per barrel, future gas-oil ratio, I have added 12 cents to the present price of the oil and shows that the gross income for the 160-acre spacing be $380,900. I have deducted the royalty expense as 1/8 arriving at a mounting income and estimated the state and local taxes 6.4% value deducted that I have estimated operating expensed as $300 a month per well, coming up with a net income for the 80-acre spacing of $137,979 and for one $290,658. Drilling costs run from 140 to $155,000. We have an estimate that will cost $153,500 so that long discounted loss for 80-acre spacing would be $9,521 and the non-discounted profit for 160 would be $137,158.00.

Q All right, sir. And this would be an eighty-nine cent profit per dollar on investment on 160-acre spacing?

A That's right.

Q Is the data which you used in part as a basis for making this determination of economics contained primarily on Exhibit 8 already discussed?

A Yes.

Q Mr. Hocker, in your opinion as an engineer, and having taken part in decisions whether or not to develop fields, do you have an opinion as to whether if the Commission should continue 80-acre spacing or should do worse and adopt 40-acre spacing for this pool, whether that would have a seriously adverse affect on future development of this pool.

A In my opinion it would be detrimental.

Q You think that there is a possibility if the Commission should adopt 160-acre spacing which you have shown as economical that further development might occur?

A Yes, sir, we are considering another location.

Q Mr. Hocker, what recommendations do you have for the Commission for the Jenkins-Cisco Pool?

A We recommend that the Commission adopt permanent field rules providing for 160 proration units, consisting of government regulation, government quarter section that the present well location which is within the 150 feet of the center of the quarter section be maintained and that the 160 proportion factor of 6.7 each for proration units bo adopted.

Q And you are asking that to emphasize, you said so -- but I want to emphasize you are asking for permanent rules, not temporary rules, at least with respect to the spacing.

A Yes, I think that the purpose of temporary rules is to prevent development and information. I think we have development and I think we have information, so I believe the Commission could make a finding that permanent rules for 160 acres are warranted.

A Do you have an opinion as to whether the Commission should extend the defined horizontal limit of the pool to include the acreage, contained in the application less the Southwest Quarter of it?

A I think this has already been discussed. If the Commission doesn't see fit to go beyond the presently developed 160 acres we have no objection.

Q In your opinion, is the granting of Amerada's application in this proceeding in the interest of conservation and reasonably necessary to prevent waste and protect --

A Yes, it is.

Q Were Exhibits 6 through 17 prepared by you or under your supervision and direction?

A Yes, sir.

MR. LYNCH: We would like to offer in evidence Exhibits 6 through 17.

MR. UTZ: Without objection they will be entered into the record in this case.

(Whereupon, Applicant's Exhibits 6 through 17 were admitted in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q What did you say you were getting for gas in this pool?

A Four cents per MCF.

Q What do you mean by this twelve cents a barrel for gas?

A I used future gas-oil ratio of 3,000 which would give me twelve cents per barrel additional gas income. This is assuming it is solution gas draw as I think it is.

Q This four cents that is the actual price of the measured gas or do you have kick-back on liquids and additional gas?

A I don't think that I know. I think that was the only income that I saw that was derived from the gas, your liquid in gas accounted for on the income here.

Q It doesn't go through a plant?

A Sinclair is the purchaser I believe.

Q Sounds like pretty cheap gas.

A Yes.

MR. LYNCH: In any event, Mr. Hocker, the amount of

gas and the amount of liquids which might be entrapped in that gas would not be substantial enough to completely change your economic picture, would it?

A I don't believe it would change the economic picture, no, sir.

Q On your Exhibit no. 10 where you list permeability and porosity on the two righthand columns the percent of the floor space at one point, the area where your permeability as 4300, that 9.8% means 9.8% of the 7.9%, does it not?

A I fail to follow your question.

Q On the righthand side you have two columns, percent of floor spacededicated to oil and water. You have in the column just to the left of that 7.9% porosity. My question is the 9.8% oil means 9.8% of the 7.9%?

A Yes, sir, I think it would have to mean that.

Q So that you have a residual water problem here. It's fairly substantial, don't you say, 50% water?

A Well, of course, this is core analysis and I am hesitant to take water saturation from core analysis and very good permeability.

Q How does the production run on the field? Do you produce?

A I think there is one well that produces 1%. None of the other wells produce any water.

Q Do you think the water in the core might be from drilling mud?

A It could envision several things, yes, sir.

Q Now, I think you read some request as to spacing that I missed. What was your recommendation as to spacing within 160-acre units which you have requested?

A I recommended that the present well location requirement be maintained, which is within 150 feet of the center of the governmental quarter, quarter section.

MR. LYNCH: Why do you advocate maintaining the present well location requirements as opposed to going back within so many feet of the center of the quarter section?

A Well, it seems to give a little more flexibility and the other thing is that all of the operators in the field has had the same advantage up to this point. I think that future development ought not to be penalized any more than past performance.

Q That would be any quarter quarter section?

A Yes, sir, that's the way the rules presently read.

MR. LYNCH: As a matter of fact, Mr. Examiner, if you will examine Exhibit 1 or Exhibit 5, either one, if the wells were allowed to be located within a 150 feet of the center of any quarter quarter section, the fact of the matter is that as development proceeds in the direction that Mr.

Stewart said it was likely to proceed, that is westward, that the wells would find themselves in a more orderly pattern than they have been up to now.

A Yes, the next location to the west, either in Section 26 or 23, would be half-a-mile away.

Q So from the standpoint of orderly pattern, the pattern will tend to order itself as development proceeds henceforth?

A At least as far as the next two locations go.

Q (By Mr. Utz) Up to the present time they are pretty well wagon-wheeled around and close together as far as the 160-acre spacing is concerned, aren't they?

A Yes, but we think the economics are such that, I think it has been obvious, that with three operators in the field, Superior and Delaware Apache, the natural reluctance of one person to drill more than one well is indication of the type of economics that we would have.

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

MR. LYNCH: Mr. Examiner, I have a letter dated June 6, 1966 from Superior Oil Company, to the attention Mr. D. S. Nutter, which I don't think is necessary to read into the record. However, the gist of the letter is that Superior supports Amerada's application for establishment of 160-acre

proration units and 160-acre allowables for the Pool. We would like to submit that as part of the record.

MR. UTZ: Are there any other questions of the witness? If not, he may be excused. Statements in this case?

MR. LYNCH: Mr. Examiner, I would just like to close with a very brief statement and again it sounds repetitious, but it would seem to us that this is a textbook case insofar as it shows the ability of one well to drain 160 acres. If you ever have occasion which this can be shown, this is it. It has been proved by every conceivable method that we know, the high potential indicating high permeability, the fact that the well filled up instantly when shutin, corresponding data showing permeability up to 430 millidarcies pressures are taken in different wells. At the same time the pressures are almost exactly the same and in fact even a well interference showing the pressure effect over a distance of 4200 feet which is far more than enough to drain diagonally across 160 acres and this is important, we think, for this reason: That these wells are not located in the center of quarter sections, they are located in the center of the quarter quarter section, that we think is satisfactorily handled because one well can drain away across quarter section without any problem at all.

We also think that the economics are pretty clear here that as Mr. Hocker testified, if 80-acre spacing were retained for this pool or if the Commission should go back to state-wide 40-acre spacing it would seriously inhibit further development of this field.

Certainly, a profit of the magnitude that Mr. Hocker has shown for 160-acre spacing is not considered to be high profit ratio in the industry and we think that the Commission ought to do what it can to encourage further development of the pools and again, this is a textbook case, we feel, from engineering-economic standpoint for the establishment of 160-acre spacing.

MR. UTZ: Any other statements?

MR. SHANNON: I am Larry Shannon, Area Engineer, Delaware-Apache, Midland, Texas. I testified previously before your Commission, sir. Delaware-Apache Corporation is the operator of four to seven wells within the Jenkins-Cisco Pool. We have worked jointly in obtaining the data which is presented in their Exhibits. Apache feels that there are two distinct problems presented today. Number 1: The effective drainage of the reservoir, and Number 2: the MER applicable to the reservoir. The effective drainage, problem Number 1, we feel is clearly proved by Amerada's Exhibits that the reservoir is capable of draining 160 acres.

We so recommend that the 160 acres be adopted. Problem Number 2, we feel, is far more complicated. Apache recommends that the field rules adopt 4.77 each allowable factor for this reservoir for the following reasons: I would like to submit in evidence if I may, Mr. Examiner, MER data we considered on the completion of the last well within this field, the Well No. 7. This is a completion history of Delaware-Apache Corporation, San Andres Anderson Well, No. 1. The main significance of this evidence we would like to bring out, sir, at high GOR's present within the well, we completed the well May 23rd and it had a GOR of 2930 to one. We had to flood the well which happened to be through the Memorial Day Holidays, but we flooded it until May 31st before the GOR dropped below the 2000 to one limiting factor.

The well has dropped some below this but it has only dropped to 1895. We feel that there is evidence here that a second acre gas cap may be forming. Number 2, as far as the reasons for 4.77 allowable factor, we feel that production capable of the Sally Cole wells and Semantha do not have the potential to produce at the 6.77 factor without being penalized on GOR permeability. We have experimented from time to time, our pumpers have increased choke sizes when we have had difficulties and with out only increase within the

gas, no substantial increase in oil production.

MR. UTZ: I think this constitutes testimony. Do you object to being sworn in?

MR. SHANNON: No, sir.

MR. UTZ: Will you swear in the witness and let him put it in the record?

(Witness sworn)

LARRY SHANNON

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

DIRECT EXAMINATION

MR. UTZ: Your statement from the very beginning, you would not object to that being considered sworn testimony, is that correct, sir?

A That is correct, sir.

MR. UTZ: We will consider it as such. You may continue.

A We feel that correlative rights can be effected if a second gas cap develops within this reservoir and we feel that our four wells in which we operate are probably in a position to encompass the area of the 60-acre gas cap. Number 4, we have noted and we cannot explain why the oil gravity has increased within the field. It was originally 44 gravity, corrected at 60 degrees Fahrenheit and corrected

according to Magnolia Pipeline Company which purchases all the oil within this field, all the oil operates up to 49 gravity. We don't know the significance of this, but we do know that it is present. We have two wells within the field, the Holloman and the Anderson A Wells that can make, we feel, the 6.77 allowable factor, but we question how long they can make this if the allowables would be increased. That is all the evidence I have, sir.

CROSS EXAMINATION

BY MR. UTZ:

Q Now, Now, the factor at the present time with 80-acre spacing is 4.77, is that correct?

A That is correct, we are asking that the Comm'ssion continue this factor.

Q Rather than giving credit for the 80-acre tract in the event of 160-acre spacing?

A That is correct.

Q You are not --

A No, we recommend this. We think the evidence is very substantial proving that 160-acre drainage is effective in this reservoir.

Q Is it your opinion that pay-out be satisfactory on your wells as 4.77?

A Yes, sir, they will. We presented evidence last

year to this effect.

Q What significance do you attach to the fact that the gravity is increasing?

A I don't know, sir, it's an enigma.

Q Have you seen this happen in other pools?

A No, sir, I have never observed this before.

Q Do you agree with the recommended GOR?

A Of 2000-1 limiting factor, yes. We had no decision to change that limiting factor.

Q Actually, the only thing that you are objecting to as far as this case is concerned, is the amount of allowable?

A Yes, sir, that is correct. We think there are two distinct problems within this hearing today: 1: the effective drainage and 2: the MER of the reservoir. The effective drainage we concur with.

MR. UTZ: Do you wish to enter this as Exhibit 1, your Exhibit 1?

MR. LYNCH: We are in favor of current income, we are not opposed to it. Secondly, we think it will be more difficult to get pooling of acreage within a 160-acre unit. We think it would be more difficult to get pooling within a 160-acre unit, if the unit had what amounts to 80-acre allowable. We do, however, recognize the possibility of the problem that Apache discusses here today and we have discussed

it with them and one possible solution to the problem would be for the Commission to adopt a permanent basis 160-acre spacing, but adopt what amounts to 160-acre proportion factor of 6.77 for one year in order to give the operators and Commission a chance to look at the performance of these wells. We urge the Commission, however, not to make the whole order temporary for one year. We think that any further evidence would be simply cumulative to the ability of one well to drain 160-acres and certainly the economics aren't going to improve 20,000 a year and the only question is whether the 160 allowable is going to damage the reservoir or correlative rights and we think that within a year we might have that information. So, although we are still requesting for permanent 160 allowable, as well as permanent 160-acre spacing, we would have no serious objection if the Commission were to set the allowable on a one-year basis.

MR. UTZ: Was your Exhibit No. 1 prepared by you?

MR. SHANNON: Yes, sir, under my direction and supervision.

MR. UTZ: It will be entered into the record.

(Whereupon, Apache Exhibit No. 1 admitted in evidence.)

MR. UTZ: Any questions of the witness?

MR. LYNCH: No.

MR. UTZ: Witness may be excused. Any other statements in this case? Case will be taken under advisement.

STATE OR NEW MEXICO)
)
COUNTY OF BERNALILLO)

I, KAY EMBREE, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission Examiner at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand this 22nd day of June, 1966.

Kay Embree
Court Reporter

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
August 17, 1966

Regular HEARING

IN THE MATTER OF:

Consideration of the amendment of special rules for the Jenkins-Cisco Pool, Lea County, New Mexico, to provide for 160 acre oil proration units, also the extention of said pool to include certain lands in Township 9 South, Ranges 34 and 35

Case No. 3261

BEFORE:

Jack M. Campbell, Governor
G. B. Hays, Land Commissioner
A. L. "Pete" Porter, Director of Commission

TRANSCRIPT OF HEARING

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
August 17, 1966

IN THE MATTER OF:

Consideration of the amendment of special rules for the Jenkins-Cisco Pool, Lea County, New Mexico, to provide for 160 acre oil proration units, also the extention of said pool to include certain lands in Township 9 South, Ranges 34 and 35 East.

Case No. 3261

BEFORE:

Jack M. Campbell, Governor
G. B. Hays, Land Commissioner
A. L. "Pete" Porter, Director of Commission

TRANSCRIPT OF HEARING

MR. PORTER: The hearing will come to order, please. The Commission will take up Case 3261.

MR. HATCH: Case 3261. In the matter of Case No. 3261 being reopened at the request of Amerada Petroleum Corporation to consider the amendment of the special rules for the Henkins-Cisco Pool, Lea County, New Mexico, to provide for the 160- acre oil proration units.

I N D E X

MR. KELLAHIN: If the Commission please, I am Jason Kellahin, Kellahin & Fox. I represent the applicant and associated with me in this case is Thomas W. Lynch a member of thc Oklahoma Bar who will present the case. We also have Mr. George Erickson, who is also a member of the Oklahoma Bar, who is a participant.

MR. PORTER: Are there any other appearances in this case, anyone else like to make an appearance at this time?

MR. NUTTER: Mr. Porter, there will be two statements.

MR. PORTER: There will be two statements, but you don't plan to put on any testimony at this time?

MR. NUTTER: No, sir.

MR. PORTER: All right, you may proceed with your case Mr. Lynch. Do you have any exhibits that you plan to post on the board?

MR. LYNCH: No, sir, we don't. We have all the exhibits marked. If the Commission please, I think, by way of introduction, a few remarks about the background of this case might be appropriate at this time. Back in June of 1965 this Commission issued Order No. R-2931, which provided for temporary rules including eighty acre proration units and

a proportional factor of 4.77 under normal way of thinking this is an eighty acre allowable.

In June of this year on the application of Amerada an Examiner Hearing was held before Mr. Utz. In Amerada's application we requested a 160 acre spacing and a proportional factor of 6.77. Superior supported our position in that hearing, but Apache based on data that they had concerning gas-oil ratios in their wells, stated that they did support 160 acre spacing, basically, but they preferred to have established the proportional factor of 4.77, which is the eighty acre allowable.

As a result of that hearing, this Commission issued Order No. 2931 A effective July 14, 1966, which provided for eighty acre proration units and a proporational factor of 4.77, In other words, they continued the temporary rules that had been in effect.

The principal reasons stated in the order for denying Amerada's application was that the allowable proportional factor of 6.77, might, under the evidence presented at the hearing, cause damage to the reservoir.

It is our position that the issues of spacing and allowables are frequently tied together as a matter of administrative convenience, and, frequently it is a very

logical thing to do. They are not necessarly weighted in all cases. In fact, it is our position that the State treats them separately in two separate sections, and certainly where facts are warranted to issues, spacing and allowables ought to be considered separately.

As a consequence we will put on the case today in two phases. Phase One will be concerned solely with spacing. Phase Two will be concerned solely with allowables. We think that the evidence that was presented before the Examiner was conclusive as far as spacing is concerned and inconclusive as far as allowables are concerned. As you gentlement will see today, that situation still exists. We have additional data to present, but we are still in a position of having inconclusive data as to allowables, and perfectly conclusive data as far as spacing is concerned.

In Phase One, the Spacing Phase, we will have two witnesses, Mr. Wallace W. Stewart, District Geologist from Hobbs, and R. L. Hocker, who is here from Tulsa.

In Phase Two, the Allowable Phase, Mr. Hocker will continue his testimony.

We will have, total, in both phases, we will have a total of twenty-eight exhibits. Because of that, for the Commission's convenience, I have prepared, not as an exhibit,

but simply for you to follow, a list of the exhibits, and on that list you can see where those exhibits fall with respect to the two phases.

(Whereupon Applicant's Exhibit 1 through 28 inclusive marked for identification.)

MR. LYNCH: We would like to call as our first witness, Mr. Wallace Stewart.

(Witness sworn.)

WALLACE W. STEWART

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

DIRECT EXAMINATION

BY MR. LYNCH:

Q Mr. Stewart, for the record would you state your name and your occupation and by whom you are employed for the record?

A My name is Wallace W. Stewart. I am a Petroleum Geologist and I am employed by the Amerada Petroleum Corporation.

Q All right, sir. Any, you are employed in Hobbs?

A That's right, Hobbs, New Mexico.

Q. Is the Jenkins-Cisco Pool within your district, your area of interest?

A It is, sir.

Q Any you are fully familiar with the geology of the Jenkins-Cisco Pool?

A Yes, sir, I am.

Q Did you testify in the previous hearing on this pool before the Examiner?

A Yes, sir, I did.

MR. LYNCH: We move that his qualifications be accepted.

MR. PORTER: The Commission will accept his qualifications.

Q. Mr. Stewart would you examine first what is marked as Amerada's Exhibit 1?

A I have Exhibit 1.

Q All right, sir, would you briefly describe what Exhibit 1 shows?

A Exhibit 1 is a structural contour map, on the top of the Cisco Horizon. It shows all of the producing wells, producing from the Cisco Horizon. It shows the dry holes in the area which has penetrated this horizon. Adjacent to each well it shows the total depth. Below each well it shows the interval perforated and the initial potential. In red, we have indicated three cross sections, which will be subsequent exhibits and have been labeled A,B, and C, Cross Sections, that is.

Q All right. Mr. Stewart, would you tell us a little bit about the lithology of the Jenkins-Cisco Reservoir's porosity and the character and nature of the porosity?

A The Cisco lime productive in the Jenkin's field is a fine crystalline and occasionally dense, clean limestone, and occasionally very proliferous. The porosity occurs in an inter granular and vuglar manner. And, there is considerable evidence of fracturing within the resevoir. Visually, on inspection of samples, and core, it appears to be of good porosity.

Q All right, what sort of trapping mechanism is there?

A As you canm see from the map,,we have indicated a slight structural closure, however, we feel that this field is actually controled by stratographic variation in porosity within the Cisco Horizon and we will call this purely a stratographic trap.

Q All right, and the nature of this trapping mechanism will be more apparent from cross section?

A That's true.

Q Would you now examine, Mr. Stewart, what has been marked as Amerada's Exhibit 2, Cross Section A and A-Prime; and describe briefly what that shows?

A This is a cross section, a structural cross section

from west to east across the field. Each log shows the name of the well. Below the log, shows the drill-stem test of the interval of the Pay Horizon. Also, below each log, if the well is productive, it shows the zone perforated, the treatment and the initial potential. I would like to point out on this cross section the good continuity of correlation between the producing wells. And, the two wells on the extreme right of the cross section show the natural good reservoir has been lost esentially. And, that these two wells are dry in the Pay Interval, and are non-productive.

Q I don't know whether you mentioned this or not, but VO-C is simply another name for Cisco in this area?

A This is true. I would point out also, the legend here shows the interval drill-stem tested the perforated interval; the interpretation of porosity from logs and then the interval that was cored and wells that were cored.

Q And this does show extent and continuity of the reservoir in one direction?

A Yes, sir.

Q Would you turn now, Mr. Stewart, to what has been marked as Exhibit 3, Cross Sections B, B-Prime?

A This Exhibit is also a structural cross section in a general direction from a dry hole which is on the south eastern edge of the field. The information imparted on this

cross section is the same, and presented in the same manner as our previous section.

Q And similarly it shows the extent and continuity of the reservoir rock across the field in the other directions?

A That's true, sir.

Q All right. Mr. Stewart, while we are still on Exhibit 3, did you say why the well on the left-hand side of the cross section was not producing?

A No, sir, I did not. The well on the left-hand side of the cross section, although in encountering the Pay Horizon structurally low by sample determination and by log characteristic, this zone appears to be tight or carrying no porosity, no effective porosity.

Q And, how about the well on the right-hand side of the cross section B,B-Prime?

A This is also a similar case. We have indicated some interpretive porosity from the log, however, the zone was drill stem tested, and yielded no fluid, so we consider this well in effective in the Pay Horizon.

Q All right, will you now examine what has been marked as Exhibit 4, Cross Section C,C-Prime, and describe that exhibit?

A This is also a structural cross section from generally the sothwestern edge of the field; again, across the field, showing continuity between three producing wells, and a dry

test on the north or northeastern portion of the field. Here again, the extreme wells on either end of the cross section are by our interpretation, ineffective in the reservoir, in that these wells appear to be tight.

Q All right, sir, but once again, this crosssection shows the extent and continuity of the reservoir in the other direction?

A That is true, sir.

Q All right, Mr. Stewart, will you now examine the map which has been marked as Exhibt 5 and tell us what that is?

A Sir, this is a map showing the order of development of the Jenkins-Cisco Pool. The wells are numbered consecutively in the order of completion, in a chronological manner. And below each well or adjacent to it in some manner is indicated the date of completion.

Q So the well marked Number One is the Discovery Well, and May 6, 1963 is the discovery date for this pool, is that correct?

A That is true, sir.

Q How many wells are there currently producing from this pool?

A Currently there are seven productive wells in the Jenkins-Cisco Field.

Q All right, sir. How many have been drilled since the first order prescribing temporary rules was issued for this field?

A I believe that is five wells, sir, that have been drilled since June of '65.

Q What is the present density of development?

A Currently no operator, apparently, has seen fit to drill greater density than one well per 160 acres.

Q All right, as a geologist, Mr. Stewart, do you see any direction in which this field might open up to further development?

A Well, this map doesn't show it. If you care to look at Exhibit 1, we feel that the direction of development would be in a westerly or southwesterly direction.

Q Does Amerada anticipate the possibility of drilling additional wells to the west?

A I am sure that Amerada anticipates drilling additional wells as we feel necessary to evaluate our leases and considering this perhaps, results of hearing.

Q All right now, if this Commission should establish on a permanent basis, eighty acre spacing for wells in this pool, is it your opinion that this would inhibit further development to the west?

A I am certain that it would have some effect on the

amount of drilling.

Q Would that effect it adversly?

A Adverse effect, yes, sir.

GOVERNOR CAMPBELL: Will you ask him why?

MR. LYNCH: No, sir, I just asked him "if".

GOVERNOR CAMPBELL: Well, would you ask him why?

Q All right, why is that so?

A Well, I think it will be brought out in the engineering testimony that certainly good economics dictates wider spacing.

MR. PORTER: In other words, it would be economic inhibition?

A Yes, sir.

Q Money might be required to be spent on infield wells, which otherwise would be better spent on extending wells, is that correct?

A That is true, sir. Also, we might add we were to point out here the present horizontal pool limits, however, we see that we have neglected to include the northwest quarter of Section 25 of 9,34.

Q That is already included in a-

A That has been included in the present horizontal limits.

Q. And, how about the south half of the northwest

of Section 30?

A It is my understanding that this is on for today, for consideration today.

Q The Nomenclature Case today?

A The Nomenclature Case today. And, also we would ask that the north half of the southwest of Section 19 of Nine, South, 35 East be included in proposed horizontal pool limit.

Q And that it fills out that 160 acre unit?

A Yes, sir.

Q Mr. Stewart, in your opinion is all, or substantially all of the outlined area underlain by productive Jenkins-Cisco formations?

A Yes, sir, it is.

Q Mr. Stewart, by way of conclusion, on the basis of testimony that you have given, and your knowledge about this reservoir, is there any reason, from a geological standpoint why one well would not drain at least 160 acres?

A No, sir, I see no reason why one well shouldn't drain a 160 acres.

Q And Mr. Stewart, based on what you have said about the probable size of this reservoir, in your opinion is it large enough to accommodate a 160 acre proration unit?

A Yes, sir, I believe it is.

MR. LYNCH: We would like to offer into evidence --

Q Mr. Stewart, were Exhibit 1 through 5 prepared by you or under your supervision?

A Yes, sir, they were.

MR. LYNCH: We would like to offer into evidence Exhibits 1 through 5. That is all we have of this witness.

MR. PORTER: If there are no objections, the Exhibits will be admitted.

(Whereupon Amerada's Exhibits 1 through 5, were received into evidence.)

MR. PORTER: Does anyone have any questions of Mr. Stewart? Mr. Nutter?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Stewart the thirteen wells that are shown in the immediate area of the pool, contain seven wells and six dry holes. Now, is there any means of telling at what point the porosity and the permeability pinch out or disappear between a producing well and dry hole -- or a producing well and the nearest dry hole?

A Well, sir, we have of course, in studying the field and construction of various maps, in trying to make an annalysis and evaluation; and in most cases we do see a progressive nature of decreasing porosity from wells in the

center of the field toward wells in the edge of the field which have no effective porosity or apparent permeability.

Q Well, in each of these instances, isn't it true that a dry hole was drilled on the next section adjacent to the 160 acre tract?

A I believe that is true, sir.

Q So, somewhere in between the producing well and the dry hole, the productiveness ceases?

A That's true, sir.

Q In a situation like this, by going to a spacing unit which is a half a mile across, is there not a good possibility of prededication of acreage, which is not productive to a well?

A Sir, again, in our evaluation we can make certain conclusions that it appears that nearly all of the acreage we have requested to be dedicated to a well has a good possibility of including a productive reservoir.

Q You would also have a good possibility of including a non-productive reservoir, however --

A Well, there are certain matters of interpretation, yes, sir.

Q And, as a matter of fact, Mr. Stewart, hasn't most of the drilling, where the drilling has taken place, been on a pattern that would be more indicative of 40 acre spacing rather than 160 acre spacing? Let's take a cluster of four

wells in the corner of sections 19, 24, 25 and 30, are those wells located on a perfect 40 acre pattern, as far as the location of the wells with relation to each other is concerned?

A Yes, sir, that is correct.

Q And the, didn't the operator move to the west to the next 160 acre tract and drill two wells on a 40 acre spacing opposite to each other there?

A Yes, sir, they did.

Q In other words, the wells have been drilled on 40 acre spacing except where it was necessary to move out and get another 160 acre tract, is that correct?

A Well, I -- you are definitely correct in this assumption, however, realizing the fact that there have been several dry holes drilled, it merely points to a reluctance to step out as much as would be desirable on 160 acre spacing.

Q Well, I can understand that reluctance, when six out of thirteen times they were dry holes. Thank you, Mr. Stewart.

REDIRECT EXAMINATION

BY MR. LYNCH:

Q Mr. Stewart -- Are there any more questions?

GOVERNOR CAMPBELL: Go ahead.

Q. You mentioned a natural reluctance to drill at

locations other than that which is required by the field rules; the field rules which were established on a temporary basis, under which five of the seven wells were drilled, provides for locating in approximately the center of any 40 acre tract, is that correct?

A That is true.

Q Now, with respect to the possibility of including non-productive acreage in a proration unit, would this not be true of any proration unit at the edge of the field, no matter what its size, no matter what its shape?

A This is true.

Q When you talked about the ability of this field, because of its size, to accommodate 160 acre spacing, were you talking about -- were you saying that the field is large enough to make -- Let me state it another way. If the reservoir occupied only say, 320 acres, 640 acre spacing, then and 640 acre proration units would be clearly not called for, is that correct?

A That is correct.

Q If the reservoir occupied 640 acres, 320 acre proration units might be a little wide, is that correct?

A You mean a 160?

Q Three hundred and twenty --

A Three twenty is that --

Q You have two 320 acre units --

A Correct.

Q This could be accommodated within that 640 acre area occupied by the reservoir, is that correct?

A That is true, sir.

Q So, it is a matter of degree, is it not, as to what size you recommend which would accommodate a certain size proration unit?

A That is true.

Q At some point you recommend a size of reservoir which can accommodate units, say of 160?

A That's true, sir.

Q And, in your opinion, the size of this reservior is sufficient to accommodate this 160 acre proration unit?

A Yes, we feel --

Q With the concept we just discussed?

A Yes, we feel it is sufficient size.

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

MR. PORTER: Any further questions of Mr. Stewart? You may be excused.

(Witness excused)

MR. LYNCH: We would like to call as our next

A Three twenty is that --

Q You have two 320 acre units --

A Correct.

Q This could be accommodated within that 640 acre area occupied by the reservoir, is that correct?

A That is true, sir.

Q So, it is a matter of degree, is it not, as to what size you recommend which would accommodate a certain size proration unit?

A That is true.

Q At some point you recommend a size of reservoir which can accommodate units, say of 160?

A That's true, sir.

Q And, in your opinion, the size of this reservior is sufficient to accommodate this 160 acre proration unit?

A Yes, we feel --

Q With the concept we just discussed?

A Yes, we feel it is sufficient size.

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

MR. PORTER: Any further questions of Mr. Stewart? You may be excused.

(Witness excused)

MR. LYNCH: We would like to call as our next

witness Mr. R. L. Hocker, who informed me that I promoted him when I introduced him the first time.

MR. PORTER: Chief Proration Engineer?

MR. LYNCH: Chief Proration Engineer.

(Witness sworn.)

R. L. HOCKER

called as a witness on behalf of Amerada Petroleum Corporation, having been first duly sworn was examined and testified as follows:

DIRECT EXAMINATION

BY MR. LYNCH:

Q Mr. Hocker, would you state your name and occupation and by whome you are employed, for the record?

A My name is R. L. Hocker. I am employed by Amerada Petroleum Corporation as Petroleum Engineer.

Q All right, sir, and you office in Tulsa?

A Yes, sir, I do.

Q And it's your responsibility to oversee proration matters in a number of states, including New Mexico?

A Yes, sir.

Q Are you familiar with the inner engineering aspects of the Jenkins-Cisco Pool?

A Yes, sir, I am.

Q Did you testify in the previous Examiner Hearing on this matter?

A Yes, I did.

Q Have you given testimony in other hearings before this Commission as a petroleum engineer?

A Yes.

MR. LYNCH: We move that his qualifications be accepted.

MR. PORTER: They are.

Q Mr. Hocker, would you examine first what has been marked as Exhibit 6, Performance Curve, and tell us briefly what that shows?

A Well, Exhibit 6 is a Performance. It is a graphical plot of the monthly gas and oil produced from the pool. It shows the average gas-oil ratio from the pool and the number of wells for each month producing in the pool. It shows that the gas-oil ratio has been in the neighborhood of 1,500 throughout the life of the pool; as shown in the next exhibit, that the cumulative oil produced from the pool has been 486,501 as of the end of July, 1966.

Q All right, sir. Will you now examine what has been marked as Exhibit 7, Tabulation of Oil and Gas Production.

A Exhibit 7 is a table of oil and gas production, showing the monthly oil and gas produced from the pool, and the cumulative oil and gas produced from the pool.

Q Are the chief pruposes of Exhibit 6 and 7 essentially background information concerning the pool?

A Yes, sir.

Q Would you now examine what has been marked as Exhibit 8 and tell us what that shows?

A Exhibit 8 is a table of reservoir data, which I might add is updated from the last hearing simply because we have run a bottom-hole sample and have better information. Before we had used some estimates and the best information we had, but this is much better. It shows that the initial bottom-hole pressure was 3,427 pounds. And, at the time we ran the bottom-hole sample on July 25th of this year, last month, that pool was already at the saturation point of 29.23. So, I have indicated that the saturation pressure is some place between the initial pressure and the current pressure.

Q All right, sir. What is the representative permeability and porosity that is shown on this exhibit?

A Well, we have run a buil-up test, bottom-hole pressure of build-up tests on the discovery well, and it showed that the average permeability was 115 millidarcies for this well

Q How did this well compare with other wells based on the experience you have had with other wells since this buil-up test was taken?

A Well, I would point out that the producing ability of this well, as I will show in some more exhibits, but we ran tests on three wells and this is one of three, and of the three this is the poorest well.

Q Yet it had the permeability of 115 millidarcies?

A Yes, sir.

Q What is the representative porosity in this field?

A Well, we had one core which showed that -- and I will submit this core annalysis as another exhibit -- it showed that the core annalysis was 4.7. But, we have taken the logs for all the wells in the pool and correlated it to the one core annalysis and worked out parimeter so that we believe that porosity is 5.8 percent in the pool.

Q All right. What is the probable drive mechanism that exists in this reservoir?

A Well, before we ran the sample, I testified that it was solution dry and I will believe it is. We have run samples, we have made some calculations in response to Mr. Stewart's comment that the field might expand further to the west. The studies we have made, based on the sample and material balance

calculations shows that the field is larger; that we can explain. It is either thicker and larger, or a combination of the two.

Q All right. Mr. Hocker, while we are on the subject of expansion of the field west, do you recall some questions that were asked of Mr. Stewart concerning the well locations in approximately the center of 40 acre tract?

A Yes.

Q Should this field expand further to the west, can you tell us, as a petroleum engineer, where the probable location would be, say, in the northeast quarter of Section 26, 34 East, Township 9 South, Range 34 East, or say the southeast quarter of Section 23 in the same township and range?

A Well, I can't speak for 23. We don't have the lease on 23, but we would certainly consider the location, I think, in the northeast corner of Section 26. The fact is, we are considering such.

MR. PORTER: Would that be the northeast or --

A In all probablility it would be.

MR. PORTER: Well, if you owned the acreage in 23 would your recommendation be the southeast of the southeast?

A Southeast of the southeast of 26?

MR. PORTER: Yes.

A I think that I would have a geological problem. There

is always a natural reluctance between a geologist and an engineer. The engineer likes to drill a well far enough away to prove up and for economics. And, a geologist always likes to get closeology, as far as to be sure and get a well. This is just a natural interplay, I think, between the professions.

GOVERNOR CAMPBELL: What do the geological engineers recommend?

A I can't say, but I suppose he has a split personality.

Q (By Mr. Lynch.) In any event, Mr. Hocker, if a well should be drilled in the northeast quarter of the northeast quarter of Section 26, this would be the identical pattern that exists in the northwest quarter of Section 25 and in the northeast quarter of Section 25; the same township and range. Would this mean to you, that as this field expands around from the original development, that the well location -- the clustering that existed at the beginning of the development of this field, it will tend to correct itself?

A Why certainly, the next two locations will have to be approximately a half a mile from the existing location of the well in the filed.

Q Would you turn now, Mr. Hocker, to what has been marked as Exhibit 9, and tell us briefly what that exhibit shows?

A Exhibit 9 is a table of the initial potentials for

the seven wells completed in this pool and shows that the initial potentials range from 154 to 314 barrels per day, flowing, with not too great an area perforated, why this indicates a pretty good reservoir quality.

Q High permeability?

A High permeability.

Q Would you turn now to what has been marked as Exhibit 10 and tell us what that shows?

A Exhibit 10 is a table of later production tests, and not indicated as potentials, but simply tests that have been taken in July and August of this year, and this shows that the quality of the wells are still high; that the potentials range from 203 to 276 -- I say potentials, again -- oil production ranges from 203 to 276 barrels of oil per day. I call your attention to a note down here, at the time -- there are some state separations in here, and not all the gas was measured off the low pressure separator in all cases. Some of these gas-oil ratios maybe slightly higher as indicated, simply because the gas was not measured off the low pressure separator.

MR. PORTER: Some of your production tests are higher, comparatively, currently than they were initally?

A Yes, that is true.

Q In addition to that, Mr. Hocker, this exhibit also shows that the wells have maintained their capability to produce

A Yes.

Q They haven't significantly declined?

A Yes, sir, I would like to also call attention -- you made one correction on here, the third well down, the Apache-Anderson shows 210 barrels a day, and this is not because it's not a top allowable well, it's simply because of a shortage of acreage. So, in fact all wells in this pool are top allowable wells.

MR. PORTER: It has an acreage factor because of less than eighty?

A Less than eighty in that particular half of the quarter section.

Q All right, Mr. Hocker, would you turn now to what has been marked as Exhibit 11 and tell us what that exhibit shows?

A Exhibit 11 is a T-1 core annalysis we have of a well completed in this field. It shows it has an average porosity of 4.7 percent. As I indicated before, we have indicated some of the wells have a little better porosity than this from logs. I would like particularly to call your attention to the magnitude of some of the permeabilities that were encountered in this well; particularly the sample which the permeability was 4,300 millidarcies. And, we think this is excellant permeability by almost any standards.

Q Even for water reservoirs, it's not too bad.

A It is very good for any reservoir.

Q Mr. Hocker, would you turn now to what has been marked as Exhibit 12 and tell us what that exhibit shows?

A Exhibit 12, and the next exhibit which will be 13, indicates some bottom-hole pressure data. Exhibit 12 is simply the drill-stem tests pressures that have been taken on wells in this field; showing the initial pressure as the 3427 in the discovery well, and the drop in initial pressure that is shown when the subsequent wells were completed.

I will try to tie this together a little bit with some more exhibits, so if you can keep that one handy --

Q All right, sir. Now, this is preliminary to the exhibit you are going to show?

A Yes, this concerns the background data.

Q And, the same is true of Exhibit 13, is that correct?

A Yes, these are all of the pressures we have taken, except the drill-stem test pressures. This is Exhibit 13. The two used in conjunction, I want to plot on the subsequent exhibit here.

Q Mr. Hocker, would you now examine the map which has been marked as Exhibit 14 and tell us what that shows?

A Exhibit 14 is the last pressure survey that has been taken on this field, the last field-wide survey when all the

wells were shut in. It shows that the four plotted pressures that we have, and were listed on Exhibit 13 as the May, 1966 survey, it shows that the four wells that we were able to obtain pressures from, that the maximum variation, from the minimum to the maximum is sixteen pounds.

This is, I believe, in conjunction with other pressures in here, real good evidence of the continuity of the reservoir.

Q Very good equalization of pressure?

A Yes, and rapidly according to the bottom-hole pressure chart.

Q All right. Is it also an indication again of excellent permeability which exists.

A Further confirmation of it, yes.

Q All right, now would you examine a graph which has been marked as Exhibit 15 and explain that to us?

A Exhibit 15 is a plat of Exhibit 12 and 13, and we have colored in green, the drill-stem test pressure data that appears on Exhibit 12 and red, the pressure data that appears on Exhibit 13. And, it exhibits a prolonged and continuous decline of bottom-hole pressure with time. This has been an engineering dream as far as collection of data goes. I think that we have real good evidence to show you here on that.

Q Mr. Hocker, what is the significance of the clustering

of the " H " points, the fact that the pressure points fall one on top of the other?

A Well, I think we will show in some further exhibits here that a drainage had already occurred when some of these wells were drilled, and it will show that it has drained over a large area.

Q It shows that the pressure is declining from place to place in this reservoir at approximately the same rate?

A Yes, and that the equalization in pressures at any given time is good.

Q Now examine what has been marked as Exhibit 16, a map and tell us what Exhibit 16 shows?

A Exhibit 16 is a map showing the development as of May 1955 upon the completion of the second well in the field. The discovery well has been producing for approximately two years, and produced over a hundred thousand barrels. And when the drill-stem test pressure table was taken, as shown on Exhibit 12, the drill-stem test indicated it declined 164 pounds. The well produced less than a thousand barrels before the first pressure was taken, and at that time the bottom-hole pressure drop was 134 pounds.

Q The bottom-hole pressure drop on the second well would be even though it had produced extra production was 184 pounds.

A That is correct, and these wells are forty-two hundred feet apart. I have also indicated on here that under the present field rules of being able to drill at either end quarter or quarter section, it would take the maximum of twenty-eight hundred feet to reach the diagonal -- the opposit diagonal corner. So, I think the forty-two hundred feet amply demonstrates the ability of the well to drain a 160 acres under the field rules.

I would also like to point out that the radius of a circle of forty-two hundred feet is 1,270 acres. And, this is approximately two square miles. I think this is further evidence of good and wide drainage.

Q Would you now examine the map that has been marked as Exhibit 17?

A Exhibit 17 is somewhat similar to Exhibit 16. It shows the condition of the field when the fourth well was being completed in the field. The closest well to the fourth well in the field was 2,650 feet. This is not quite the 2,800 feet we would like, but it certainly shows good corroboration of the effect of wide drainage. It shows that the bottom-hole pressure in the fourth well in the field was 263 pounds below original pressure. This is further corroboration.

Q Would you now examine what has been marked as Exhibit 18 and tell us what that shows?

A Exhibit 18 is an economic analysis of the pool based upon volumetric calculations of twelve feet. The reservoir data before given, and it shows that on an eighty acre spacing that it would not return on the average, it would not be profitable; it would result in the loss of $ 15,000.00 per well on eighty acres. On a 160 acre spacing I have calculated it using 160 acres allowable. I calculated it using the smaller formation volume factor, which is a little optimistic. And, I tried to give it quite a bit the benefit of the doubt as best I could, and it still is attractive, but it is not overly attractive.

Q So, from an engineering standpoint, a return of a little less than two to one, is not considered attractive in view of the number of dry holes that have been drilled?

A Well, sometimes it depends on the area, but it is not overly attractive.

Q In any event, from the standpoint of a petroleum engineer, is it your opinion that the establishment on a permanent basis of eighty acre spacing in this field, would inhibit further development?

A Oh, I think it would inhibit further development, yes sir.

Q Except perhaps on an infield basis?

A I don't believe I understand your question.

Q Would it inhibit further development of step-out well drilling step-out wells?

A I think that type of economics would inhibit infield wells as well as exploratory wells.

Q Mr. Hocker, would you now examine what has been marked as Exhibit 19, Phase One, Spacing, Conclusions and Recommendations, and briefly tell us what conclusions you have with respect to spacing and what recommendations you are making?

A Well, under conclusions we have indicated we believe the field is large enough to support 160 acre spacing, and we think the geological engineering evidence proves that the field is continuous enough to allow movement of fluids over long distances. If the permeability of the rock is very good, it's excellant by almost any method of testing, that one well can adequately drain 160 acres. And, I believe that any additional recovery resulting from the drilling of the second well will result in negligible additional recovery.

Statutorally, I think that some of these questions in here are necessary. I think it would prevent waste. It would prevent many economic losses on drilling unnecessary wells, and avoid undue risks on drilling excessive wells. It would protect correlative rights and --

Q Would it prevent reduced recovery by drilling too few wells, say one on 1,280 acres?

A Well, yes, I believe it would. It's a pretty good reservoir. It would pretty hard to drill too few wells.

Q Although this is part of your testimony, Mr. Hocker, because it is an exhibit -- Exhibit 5, you did testify previously in connection with other exhibits, that it would not be economically feasible to drill more than one well, is that right?

A That's right.

Q What recommendations do you have, Mr. Hocker, with respect to spacing?

A Well, we recommend that 160 acre proration units be adopted consisting of regular governmental quarter sections, and that the present existing well location requirements be maintained. And, that you extend the horizontal limits to include the two eighty acre tracts at the bottom since the northwest quarter of Section 25 is already included.

Q Mr. Hocker, would you quarrel seriously with a new and different well location requirement which would require location in approximately the center of 160 acre units?

A Well, I never try to quarrel, but I think we should maintain the same well location requirements simply to give some flexibility and to provide development wells with the same advantage that the previous development wells have enjoyed.

Q And number two, under recommendations, you are

requesting here today that the defined horizontal limits of the pool be extended, to include the north half of Section 19, the north half of the southwest quarter of Section 19, 9 South, 35 East, is that correct?

A Yes, sir.

Q And the other two tracts which are shown under item two, your recommendations, either have been or are in the process of being included in the defined limit?

A That's correct.

MR. LYNCH: That includes phase one of our hearing. I think that it might be appropriate at this time, if there are any questions concerning the ability of one well to drain 160 acres, or having to do with past problems, it will be appropriate at this time to ask him.

MR. PORTER: Are there any questions of the witness on the spacing phase of this case? Mr. Nutter?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Hocker, I just have a few questions relating to the reserves. Now, you presented your porosity and water saturation, what is your formation volume factors based on?

A Well, one that -- this economics, similar to economics that I presented in June, which was based on a

formation, a volume factor of 1.6, but the latest sample we have would show 1.8, which would make it more detrimental; it would make the economics even poorer than this. I have refrained from trying to make it look any worse than this, in fact this is a little bit optimistic in my opinion.

Q Well, in computing your reserve, did you use this volume factor of 1.82 before --?

A No, I used 1.6.

Q What recovery factor did you use?

A I believe it was thirty-two percent, which for this reservoir, although it's thin, I believe recovery in here could be very high as far as normal recovery would be.

Q And now --

A This may be again on the optimistic side.

Q Thrity-two is pretty good --

A Yes, sir, it is.

Q -- for this type of reservoir?

A Yes, sir.

Q All right. Now, in computing the gross income per well, you include oil as well as producing gas?

A Yes, this is, as I have indicated -- well it says on the second line of Exhibit 18, " Use gross income barrel of $2.81 per barrel of oil." Now, the price we are getting for

the gas is only four cents, and I have estimated that during the life of the property, that the gas-oil ratio will climb and probably the average gas-oil ratio for the life of the property may be three times -- three thousand M.C.F. It is approximately twelve hundred now. So, that I have used three thousand times four cents or twelve cents per barrel addtitional income for gas.

Q Well, you include your solution G.O.R. on here somewhere?

A Yes, sir, it is in the neighborhood of 1,257 and the gas-oil ration, according to the sample, was 1,400.

MR. PORTER: Mr. Hocker, who are you selling the gas to?

A Sinclair.

MR. PORTER: Sinclair?

A Yes, sir.

MR. PORTER: And, it is going into the gasoline plant?

A It goes into their line and we don't receive any other additional value other than four cents. I don't believe, I don't know exactly what they do with it.

MR. PORTER: Do you receive any benefits from the liquid contents?

A We don't receive any benefits. I will say that this is a low price. We tried, but this is the best we could do.

MR. PORTER: No competition in the area?

A That's right.

Q (By Mr. Nutter.) Mr. Hocker, one of your exhibits indicated that some of the gas is being flared; I presume that all wells are selling gas, but some of them have two space separations, is that correct?

A Yes.

Q And, it's just the low pressure gas that's measured?

A Well, on the test, only the low pressure gas from the low pressure separator was not measured.

Q But, it is all being sold?

A But, I believe the low pressure gas from the low pressure separator is being vented. And, I believe also that all gas is being sold in the field with the exception of Superior's field. I believe that is correct. I think that four cents wasn't too attractive to them probably. It wasn't too attractive to us, but it seemed better than nothing.

MR. NUTTER: I believe that's all. Thank you.

MR. PORTER: Does anyone else have any questions of the witness concerning this phase of the case?

I believe before we proceed into the allowable phase

we will take a very short recess.

(Whereupon a short recess was taken.)

MR. PORTER: The hearing will come to order.

MR. LYNCH: If the Commission please, we are ready to commence with phase two of our presentation in this hearing. And, we would like to do so with a brief statement by Mr. Hocker of what sort of investigations have occurred since the last hearing.

MR. HOCKER: Well, since the last hearing there was some controversy about how the wells might produce at different rates. We determined to make some theoretical calculations as well as some of the actual measurements of the ability of some of the wells to flow. And, in preparation for this, we selected what we thought would probably be the most critical area, and that would be the critical area where the four wells are closest together. And, that if excessive drawdown and fact occur, this would be the area most likely for them to occur. So, what we have done is that, we have taken the four wells that are talked about being clustered, at least they are drilled on different quarter sections and on 660 feet from the line, forty acre normal location; and flowed all the wells into the field at approximately their present allowable, and then one by one we shut one well in at a time. We measured the

build-up in the individual well, then opened this well with the gauge in the hole, the bottom-hole pressure gauge, and measured the bottom-hole drawdown that it would be nececesaary to flow at different stablized rates of flow.

MR. LYNCH: All right, sir.

MR. HOCKER: Then we opened that well and shut another one in. And, we were able to test three out of the four.

The Delaware-Apache-Anderson at the southeast of the four wells had an obstruction of tubing so that we were unable to get the gauge down to test on this fourth well, so that I had tests on three of the four wells.

REDIRECT EXAMINATION

BY MR. LYNCH:

Q All right, in that connection will you examine what has been marked as Exhibit 20, a map, and tell us what that shows?

A On Exhibit 20 I have taken a map and shown the seven producing wells that were flowing at the time, and made a cross section X Y Z across this field to two of the wells, including the well which was cored, the S A Anderson Number 1, in which I put on the reservoir data as having average permeability of 114 millidarcies. And, we made several assumptions and theoretical drawdowns at different rates which I would like to

show as Exhibit 21.

Exhibit 21 is Cross Section X Y Z, showing a profile of the bottom-hole pressure under the following conditions. We assume the average 114 millidarcies throughout the reservoir, that the seven wells have flown the allowable and two different allowables, and show two dirrerent drawdowns. And, that the steady state flow was occurring at the times which we believe occurs in six hours or so. Notice the scale, the drawdown from static pressure, each little box -- each little square is one pound. And, we have indicated the two wells in that which would occur in the reservoir. And, you will note at Point"Y" which is the central location of these wells, that there are about ten more pounds of drawdown necessary to produce the greater allowable.

Q If there isn't much drawdown, in other words, whether you produce one allowable or another, the allowable drawdown is very slight?

A Well, the additional drawdown is not very great. I also might point out for a little bit of aside here, that if you will notice that to the right of Cross Section X Y Z, there are two wells flowing. When I say right, I mean east.

To the left there are three wells flowing and that is one reason why the calculations are not perfectly uniform;

the drawdown on one side is a little greater than it is on the other side.

Q Mr. Hocker, what do drawdowns of a little less than six pounds pressure, what does that drawdown indicate to you, concerning the permeability of the reservoir?

A Well, of course this one has the -- this is a theoretical calculation and we built in the permeabilty in this case.

Q All right.

A So, it should check.

Q Then the next exhibit will show --

A Will show the difference between the measured and the calculated.

Q Would you examine what has been marked as Exhibit 22 and tell us what that shows?

A Exhibit 22 is really the raw data that has been gathered on the three wells that were produced, showing the s static bottom-hole pressure at the data, at the flow rates that were made on the well when other wells were flowing, and the gas-oil ratios and the flowing bottom-hole pressures and the drawdcwns.

I have used this data to construct graphs so that the drawdown can be picked off for different rates of flow, such as Exhibit 23. Exhibit 23 is a plat of the data for the

Delaware, Apache, Anderson, A Number 1, which was the cored well. And, from this graph I was able to pick out the drawdown at 215 barrels and 305 barrels, using this curve.

Q All right, sir. That comparison is shown in tabular form on Exhibit 24, is it not?

A Yes, it is. Now, using the one well, the Apache-Anderson A Number 1, and looking at the graph, which is 21, the Cross Section, and at the Section 23, I have made the comparison that at 215 barrel oil per day rate, that the measured drawdown was thirty-six pounds, and the calculated drawdown was forty-one pounds; that at the 305 barrel rate, it takes fifty-five pounds measured and fifty-seven pounds calculated. And, that the additional drawdown to produce the increased rate was nineteen pounds difference actual measured and sixteen pounds calculated.

I would like to emphasize that we are going to show that, as I have indicated before, that this is one of the poor wells. It is the poorest well of the three wells.

Q All right, now examine what have been marked as Exhibits 25 and 26 and tell us what those two exhibits show.

A Well, referring back to Exhibit 22 when the Apache-Cole was flowed at 343 barrels of oil per day, the maximum drawdown we could ascertain was four pounds. And, we couldn't really read the drawdown at 200 barrels of oil per day, or 199

barrels of oil per day, so we made this curve which shows at about the 215 barrel rate, why it would have taken about a two pound drawdown.

And, Exhibit 26 is the graph of Production versus Drawdown for the Apache-Heilman Number 1, and then I have tabulated Exhibit 27, the drawdown necessary on the three wells to produce the two different allowables. That the Apache - Anderson A would take thirty-six pounds at the low rate. That the Cole would take two pounds at the low rate, and the Heilman would take eleven pounds at the low rate drawdown. The high rate, 305 barrels of oil per day, Anderson A. would take fifty-five pounds, the Cole would take four pounds and the Heilman would take seventeen pounds.

Q Mr. Hocker, I believe it is apparent and you may have already stated this, but the 215 barrel rate would be the rate used for 4.77 factor.

A On forty-five barrels of oil per day.

Q Yes, and 305 barrel rate would use 6.77, using the same normal allowable?

A Forty-five, yes.

Q Mr. Hocker, would you now examine what has been marked as Exhibit 28 and tell us what that exhibit shows?

A Exhibit 28 is a tabulation of our conclusions and recommendations regarding allowables.

Q All right.

A I think we have demonstrated that the quality of the wells are good, very high; that the amount of pressure drawdown in a well is very small, which is a good indication of good permeability and wide drainage.

It doesn't take very much more bottom-hole pressure drawdown to produce the larger allowable.

We have noted some changes in gas-oil ratio. At the last hearing there was a well which was approaching the two thousand limit, which is lower, which was a high well. Now we have a well which was not as high, but which the gas-oil ratio has climbed. Quite frankly I don't understand this, this is -- of course, we don't always understand it all. But, I think in this case we do have several things to still explore, and we would still like to continue to cooperate with the other two operators in the field, Apache and Superior, and collect additional data for six months. And, during that length of time, why we would like to continue on the present allowable factor of 4.77; but we think perhaps in six months time we can gather enough data to either do the drilling, which there will be some more drilling on a 160 acres, we hope. And, that controled gas-oil ratio tests can be taken; that perhaps we can ascertain what is going on with regard to gas-oil ratios.

Q Mr. Hocker, due to the fact that additional data will be available concerning allowables in, say, six months, why wouldn't it be proper to continue the eighty acre proration units for that six month period?

A Well, we think that the operators are entitled to permanent rules. The development in the meantime might occur on eighty acre spacing in that six month length of time. And once development occurs on eighty acres, then it is more difficult to maintain 160 acre proration units.

Q All right, is there any possiblitlity, from your standpoint, of acquireing additional information concerning the ability of the well to drain 160 acres, or additional data concerning economics, which would be anything other than cumulative to that, than which we have already put in?

A Well, I believe this is cumulative and I believe this is conclusive. I think that 160 acres is the proper spacing.

Q Nothing you are going to find out from this work, then in the next six months is going to change that factor?

A I don't anticipate any information that we are going to find that would make me think it ought to be developed on other than 160 acres.

MR. LYNCH: At this time, we would like to offer

into evidence Exhibits 6 through 28.

Q Mr. Hocker, were these exhibits prepared by you or under you supervision?

A They were.

MR. PORTER: If there are no objections, the exhibits will be admitted into the record.

(Whereupon Amerada's Exhibits 6 through 28 were received into evidence.)

MR. LYNCH: That is all we have of this witness.

MR. PORTER: Any questions of Mr. Hocker in this phase of the case? Mr. Nutter do you have a question?

MR. NUTTER: I don't believe so, at this time.

MR. PORTER: The witness may be excused.

(Witness excused.)

MR. PORTER: I believe that we indicated earlier at the outset of this case, that this would be all of the testimony.

Now would anyone like to make a statement at this time?

MR. LYNCH: If the Commission please, we don't believe that a statement is necessary from our standpoint, except to say that we have seen a good many cases in a good many States, spacing cases and we know of none in which the evidence to support a certain size unit was more conclusive than it has been

here today.

We Recognize that the evidence concerning allowables is inconclusive, but the two issues are and should be separated.

MR. PORTER: Mr. Shannon.

MR. SHANNON: I am Larry Shannon, Area Engineer for the Delaware - Apache Corporation located in Midland, Texas. Delaware-Apace Corporation, as operator of four out of the seven wells within the subject pool is in complete agreement with Amerada Petroleum Company and their request for spacing along with the field rules of the Jenkins-Cisco Pool, Lea County New Mexico.

MR. HIGH: I am Herman High, Engineer for Superior Oil Company in Midland, Texas. Superior is the operator of one well, the Mounzy Number 1 in the Jenkins Cisco Pool.

We are familiar with the exhibits and the testimony that Amerada has presented for the Conservation Commission this morning. We concur with their testimony and request.

MR. PORTER: Does anyone else have anything further?

MR. NUTTER: I would like to ask the gentleman from Superior; now, it is my understanding that you concur with Amerada's request for the 160 acre spacing?

MR. HIGH: Yes.

MR. NUTTER: Do you also concur in their request for six months allowable based on 4.77 factor?

MR. HIGH: Yes.

MR. NUTTER: Would it be Superior's intent if the Commision approved the 160 acre spacing, to apply for a 120 acre non-standard unit, or is it your intent to communitize with Amerad and dedicate 160 acres?

MR. HIGH: I thinkwe would communitize and dedicate the 160 acres.

MR. PORTER: You realize, of course, that your allowable would be the same as it is now?

MR. HIGH: What?

MR. PORTER: You allowable for the next six months would be the same as it is now. It would be the same for 160 acres as it is for eighty at the present time.

MR. HIGH: Yes.

MR. PORTER: Does anyone else have anything to offer? The Commission will take the case under advisement.

* * * * * *

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, JERRY POTTS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attache Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this 23 rd day of August, 1966.

Jerry Potts
JERRY POTTS

My Commission Expires:

July 10, 1970

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. ....., heard by me on ..... 19.....

....., Examiner
New Mexico Oil Conservation Commission

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, JERRY POTTS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attache Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this 23 rd day of August, 1966.

Jerry Potts
JERRY POTTS

My Commission Expires:

July 13, 1970

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. ....., heard by me on ....., 19....., Examiner
New Mexico Oil Conservation Commission

Corporation has been informed of Amerada's Exhibit Number 3, to be presented during the hearing of Case 3261. We concur with their proposed findings, Apache's conclusion, because of the continued uncertainty of the reservoir characteristics of the Jenkins Cisco Pool is that the allowable factor should be retained at 4.77. Larry Shannon, Division Engineer, Delaware Apache Corporation, Midland, Texas."

MR. NUTTER: Thank you, Mr. Hatch. Does anyone else have anything to offer in the case? If not, we will take the case under advisement.

STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

I, JERRY POTTS, Notary Public in and for the County of Bernalillo, State of New Mexico, 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 21 day of March, 1967.

Notary Public

My Commission Expires:

July 10, 1970

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3261, heard by me on 2/8, 1967.

Examiner
New Mexico Oil Conservation Commission

should be retained until it can be shown upon application for notice of hearing, providing perhaps that 6.77 will not cause reservoir damage.

Q All right, Mr. Hocker, were Exhibits 1 through 3 prepared by you or under your supervision and direction?

A Yes, sir.

MR. LYNCH: We would like to offer Exhibits 1 through 3.

MR. NUTTER: Applicant's Exhibits 1 through 3 will be admitted in evidence and including 1-A and 1-B.

MR. LYNCH: Yes, sir. Mr. Examiner, I think the file already contains a telegram from Delaware Apache supporting our recommendations.

MR. NUTTER: We will get to that in a minute.

MR. LYNCH: That's all we have.

MR. NUTTER: Does anyone have any questions of Mr. Hocker? He may be excused.

(Witness excused)

MR. NUTTER: You have nothing further, Mr. Lynch? Does anyone have anything they wish to offer in Case 3261?

MR. HATCH: I have a telegram dated February 7, 1967, addressed to the New Mexico Oil Conservation Commission, reading "Case 3261, Jenkins Cisco Pool, February 8, 1967, the Apache

the evidence, that it is absolutely certain that the adoption of 6.77 proportional factor would not damage the reservoir in the ways that have been suggested in past hearings?

A We are not absolutely certain, we are planning to still invest some more, rather than ask for a mandatory temporary reevaluation, we would like to wait and just have it done upon application of one of the operators in the field.

Q Retain the 4.77 on an idefinite basis?

A Until another hearing might be called.

Q In that connection, have you prepared an Exhibit which suggests two findings that the Commission might make in that regard?

A Yels, sir, that is marked Exhibit 3.

Q Three, yes. Would you briefly describe what those findings are?

A The two proposed findings to be considered by the Commission, would be Number One, that all evidence presented, concerning reservior characteristics of the Jenkins-Cisco Pool is not sufficient to enable the Commission to determine that the 160 acre proportional factor of 6.77 for allowable purposes, will not cause reservoir damage. The second finding -- this field sure does cause damage. The second finding, because of continual uncertainty of the reservoir characteristics of the Jenkins Cisco Pool, 160 proportional factor of 4.77

last hearing. There was one high gas-oil ratio well, 2579, and it is 2537, and so, the condition of that well has not changed.

Q You are referring to the Apache well?

A Yes, sir.

Q What conclusion did you arrive at after examining the update information you presented here for the case?

A So far, the field is performing probably in line with expectations, that the gas-oil ratio, at least hasn't climbed yet. It may be that we don't know how great a saturation that this field can sustain before the gas-oil ratios do go up. We do know that, at the time of the last hearing, that we were below the bubble point. Of course, we still are.

MR. NUTTER: What is the bubble point, Mr. Hocker?

THE WITNESS: Well, it was shown in another Exhibit.

MR. NUTTER: It is a matter of record?

THE WITNESS: It is a matter of record, but I'll tell you what it is. Based on a bottom hole sample that was taken in the field, we were already at the bubble point at 2923 and the original pressure was 3427, so that we conclude that the bubble point was 3427 and 2923. This was put out in Exhibit 8 at the last hearing.

MR. NUTTER: Thank you.

Q (By Mr. Lynch) Can you conclude, Mr. Hocker, from

That is the only additional information added to Exhibit 1-B.

Q All right.

A It shows there is still substantial pressure decline going on, that we may have encroached some water, but certainly pressure is not being maintained in that field and pressure is still going down drastically.

Q All right, now, would you now examine what has been marked by the reporter as Exhibit 2, and tell us what that shows?

A Exhibit 2 is a tabulation of well tests for the six wells producing in the Jenkins Cisco Pool, showing the tests that were actually gained in the month of January, and shows that the productivity is still good in the wells, that there has been no real increase in gas-oil ratio; in fact, it shows, the last column on the right hand side, shows that the gas-oil ratios, in effect, have declined. There was some discussion, I think, at the last hearing with regard to the potential of the gas-oil ratio, that was going to climb drastically right away and so far this hasn't been the case.

Q And the relevance of the gas-oil ratios shown at the last hearing was that they may be indicative of correction of a secondary gas cap or something of that nature, is that right?

A This was, I think, Apache's main position at the

Q Yes, sir, how about the status of the original seven producing wells, the seven wells at the last hearing?

A At the time of the last hearing, there was no well in the field making any water. Ten days after the hearing, our well, the Ainsworth, started to cut water.

Q And where is that located?

A It is in the northwest quarter of 25.

Q The uncolored circle, is that right?

A Yes, sir, with the slashed line through it. In less than four and a half months it went, clean from temporary abandonment -- we attempted to work the well over, and from September to the end of the year, it produced a little less than 12,000 barrels, so it went from making no water, from being uneconomic, to operating.

Q So, in addition to that fact, as you pointed out earlier, the well immediately north of that, offsetting this well, has since started making water?

A Yes, sir. One of the Exhibits that I will present, Exhibit 2, shows that the Spear well is now cutting, in January, 30 percent water.

Q All right, what does Exhibit 1-B show?

A Exhibit 1-B is a graphical plot. It is an updating of the former Exhibit Number 15 in the last hearing, to show the inclusion of the four wells' bottom hole pressure survey.

a retention of the proportional factor of 4.77. We will have three Exhibits, the purpose of which is simply to update some of the information given at the last hearing, that is the primary purpose for which to do that.

Q Mr. Hocker, would you examine what have been marked as Exhibits 1-A and 1-B and briefly describe those Exhibits?

A Exhibit 1-A is a plat of the Jenkins-Cisco Pool and it shows the six wells that are presently producing from the Jenkins-Cisco Pool. It shows bottom hole pressures that were run in January of this year, and it shows the four pressures that were measured out of the six wells. One well was the Spear-Mounzy well, which was making water, and Spear didn't want to shut the well in, so that pressure was not run, and there is a mechanical problem in the Delaware-Appache, I think, a paraffin tool and the bottom hole pressure can't be run, and which is in the northwest corner of Section 30, so these were the only four wells that we were able to obtain measurements, and I would like to point out that the maximum difference in pressure is 14 pounds in the four wells.

Q All right, so, as far as the drainage is concerned, the evidence still strongly supports the ability of one well to drain in excess of 160 acres?

A Yes, sir, that was shown in the original case and shouldn't change and hasn't changed.

Petroleum Corporation as a Petroleum Engineer.

Q Have you testified previously before the Commission as a Petroleum Engineer, and have your qualifications been accepted?

A Yes.

Q Are you familiar, Mr. Hocker, with the area which is covered by the notice in this hearing?

A Yes, sir, I am.

MR. LYNCH: Are Mr. Hocker's qualifications acceptable?

MR. NUTTER: They are. Proceed.

MR. LYNCH: Mr. Examiner, just by way of background, I think this is already familiar to everyone here, last August, August 19, as a matter of fact, Order Number 2931-B established completion field rules for the Jenkins-Cisco Pool, which included 160 acres permanent spacing, and a temporary proportional factor of 4.77, which is the normal proportional factor for 80 acres. The reason the proportional factor of 4.77 was adopted as set out in the findings 5 and 8 of the Order, which in effect, said that the evidence submitted at that time was inssufficient to show that a proportional factor of 6.77, normal for this size spacing, would not cause damage to the reservoir. This hearing was called pursuant to the terms of the Order No. 2931-B, and we are going to recommend

MR. NUTTER: We will call Case 3261.

MR. HATCH: Case 3261, reopened. In the matter of Case 3261 being reopened pursuant to the provisions of Order Number R-2931-B, which Order assigned a 160 acre proportional factor of 4.77 to the Jenkins-Cisco Pool, Lea County, New Mexico, for a period of six months, rather than the usual factor of 6.77 for 160 acre pool of this depth.

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, appearing on behalf of the applicant, in association with Mr. Thomas W. Lynch, a member of the Oklahoma Bar, who will present the case.

MR. LYNCH: Mr. Examiner, we have one witness, Mr. R. L. Hocker.

(Whereupon Applicant's Exhibits 1-A, 1-B, 2 and 3 were marked for Identification)

***

R. L. HOCKER, called as a witness on behalf of the Applicant, having first been duly sworn was examined and testified as follows:

DIRECT EXAMINATION

BY MR. LYNCH:

Q Mr. Hocker, would you state your name and your occupation and by whom you are employed for the record?

A My name is R.L. Hocker, employed by Amerada

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
February 8, 1967

IN THE MATTER OF:

Case No. 3261 being reopened pursuant to the provisions of Order No. R-2931-B, which order assigned a 160 acre proportional factor of 4.77 to the Jenkins Cisco Pool. Case 3261

Before Daniel S. Nutter

TRANSCRIPT OF HEARING

PHASE II: ALLOWABLES
CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions.

(1) The amount of pressure drawdown in a well in this pool is very small, indicating excellent permeability and wide drainage.

(2) The amount of pressure drawdown does not change very much with changes in the rate of production, and should not cause significant changes in gas-oil ratios.

(3) The observed changes in gas-oil ratios for certain Delaware-Apache wells cannot be completely explained with the information now available, but a sufficient amount of information should be available within 6 months.

B. Recommendations.

(1) Continue to apply the present proportional factor of 4.77 on a temporary basis.

(2) Reopen case in 6 months solely on the question of whether the proportional factor should be kept at 4.77 or raised to 6.77.

MEASURED BOTTOMHOLE PRESSURE DRAWDOWN

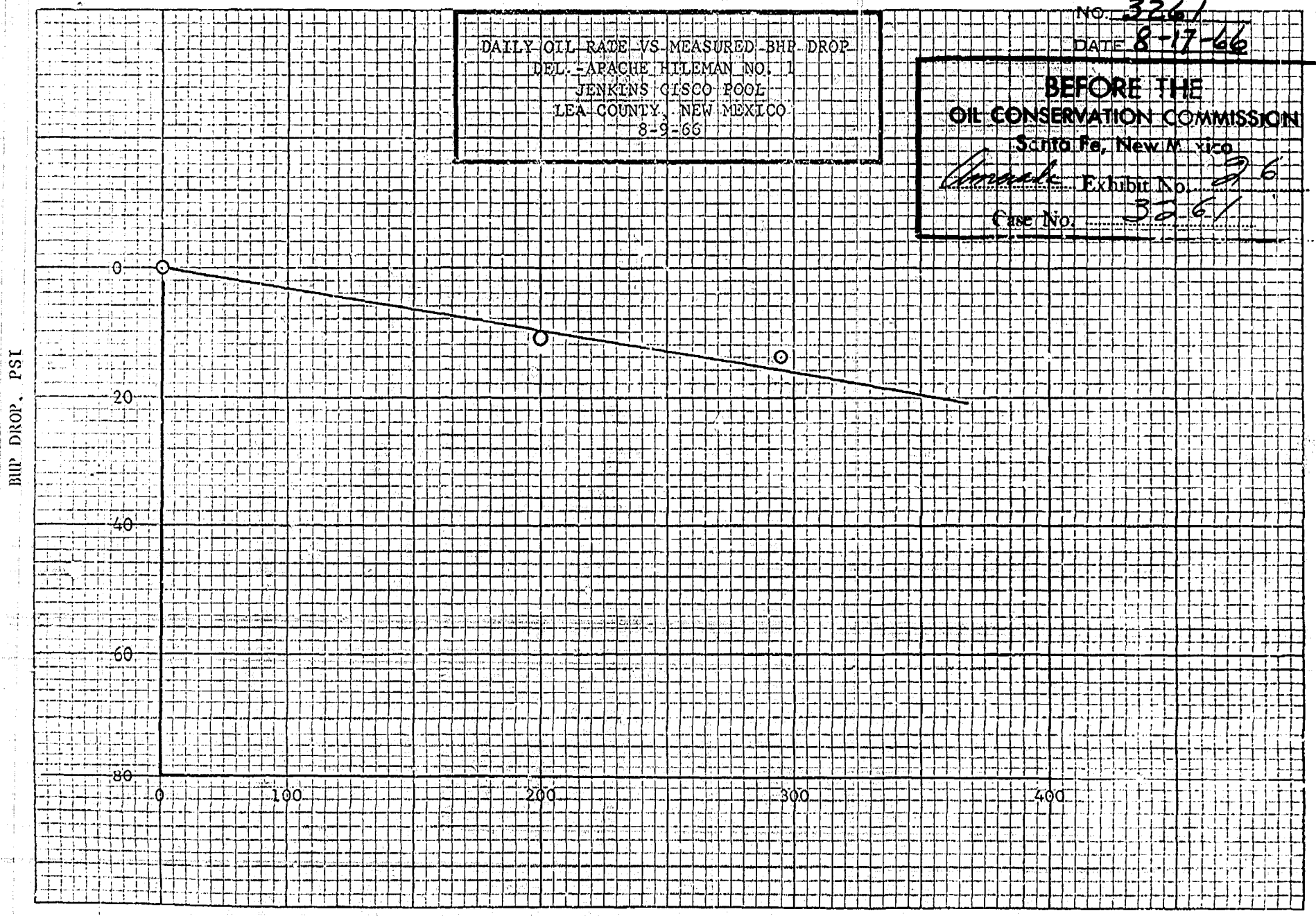
JENKINS CISCO POOL
LEA COUNTY, NEW MEXICO

Well	Drawdown, psi		
	215 BOPD	305 BOPD	Difference
Del.-Apache Anderson "A" No. 1	36	55	19
Del.-Apache S. M. Cole	2	4	2
Del.-Apache Hileman	11	17	6

AMERADA PETROLEUM CORP.
EXHIBIT 26
NO. 3261
DATE 8-17-66

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Exhibit No. 26
Case No. 3261

DAILY OIL RATE VS MEASURED BHP DROP
DEL.-APACHE HILEMAN NO. 1
JENKINS CISCO POOL
LEA COUNTY, NEW MEXICO
8-9-66



AMERADA PETROLEUM CORP.
EXHIBIT 25
NO. 3261
DATE 8-17-66

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Amerada Exhibit No. 25
Case No. 3261

DAILY OIL RATE VS MEASURED BHP DROP
DEL.-APACHE S. M. COLE NO. 1
JENKINS CISCO POOL
LEA COUNTY, NEW MEXICO
8-8-66

BHP DROP, PSI

0
20
40
60
80

0 100 200 300 400

BBLS OF OIL PER DAY

COMPARISON OF MEASURED AND CALCULATED
BOTTOMHOLE PRESSURE DRAWDOWN

DEL.-APACHE ANDERSON "A" NO. 1
JENKINS CISCO POOL
LEA COUNTY, NEW MEXICO

Producing Rate	Measured Drawdown (psi)	Calculated Drawdown (psi)
215 BOPD	36	41
305 BOPD	55	57
Additional drawdown necessary to increase rate from 215 to 305 BOPD	19	16

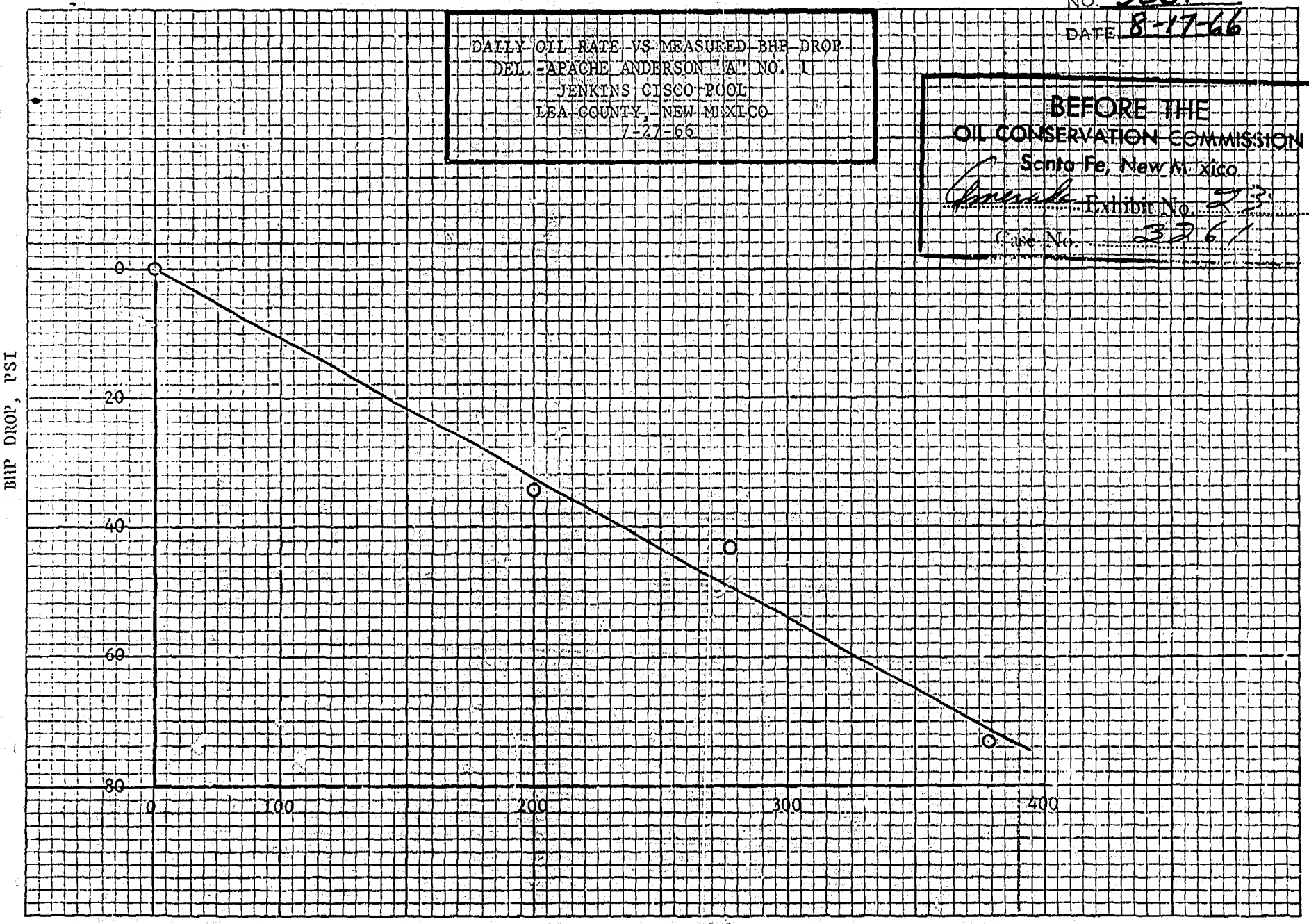
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Amerada Exhibit No. 24
Case No. 3261

AMERADA PETROLEUM CORP.
EXHIBIT 24
NO. 3261
DATE 8-17-66

AMERADA PETROLEUM CORP.
EXHIBIT 23
NO. 3261
DATE 8-17-66

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Exhibit No. 23
Case No. 3261

DAILY OIL RATE VS MEASURED BHP DROP
DEL.-APACHE ANDERSON "A" NO. 1
JENKINS CISCO POOL
LEA COUNTY, NEW MEXICO
7-27-66



RATE OF PRODUCTION TESTS

JENKINS CISCO POOL
LEA COUNTY, NEW MEXICO

Well	Date	Closed in BHP psi @ 5464 ss	Flow Rate, BOPD	GOR Cu Ft/Bbl.	Choke	Flowing BHP psi @ 5464 ss	Drawdown, psi
Del.-Apache Anderson "A" No. 1	7-27-66	2925	0				
			200	1104+	12/64"	2891	34
			277	1084+	14/64"	2882	43
			379	1092+	16/64"	2852	73
Del.-Apache S. M. Cole No. 1	8-8-66	2889	0			?	>4
			199	882	12/64"	2885	4
			343	1036	16/64"		
Del.-Apache Hileman No. 1	8-9-66	2898	0			2887	11
			200	2515	11/64"	2884	14
			295	2641	14/64"		

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Amerada Exhibit No. 22
Case No. 3261

AMERADA PETROLEUM CORP.
EXHIBIT 22
NO. 3261
DATE 8-17-66

AMERADA PETROLEUM CORP.
EXHIBIT 19
NO. 3261
DATE 8-17-66

PHASE I: SPACING
CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions.

(1) The Jenkins-Cisco Pool is large enough to accommodate 160-acre proration units.

(2) The geological and engineering evidence conclusively proves that the pool is continuous enough to allow movement of fluids over long distances.

(3) The permeability of the reservoir rock is extremely high, as shown by a variety of different investigations including core analysis, pressure drawdown and buildup tests, and measured pressure interference over long distances (at least 4200 feet).

(4) One well in the pool can adequately and efficiently drain at least 160 acres, and any additional ultimate recovery from the pool resulting from more than one well on each 160 acres would be negligible.

(5) It would not be economically feasible to drill more than one well on each 160 acres in this pool.

(6) The establishment of 160 acre units for this pool will:

(a) prevent waste;
(b) prevent the economic loss which would be caused by the drilling of unnecessary wells;
(c) avoid the augmentation of risks arising from the drilling of an excessive number of wells;
(d) prevent the reduced recovery which might result from drilling too few wells; and
(e) protect correlative rights, including those of royalty owners.

B. Recommendations.

(1) The Commission should establish permanent rules:

(a) Providing for 160-acre proration units consisting of governmental quarter sections; and

(b) Maintaining the existing well location requirement (within 150 feet of the center of a governmental quarter-quarter section or lot).

(2) The Commission should extend the defined horizontal limits of the pool to include:

Section 25-9S-34E: NW/4
Section 19-9S-35E: N/2 SW/4
Section 30-9S-35E: S/2 NW/4

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Exhibit No. 19
Case No. 3261

ECONOMICS
JENKINS-CISCO POOL
LEA COUNTY, NEW MEXICO

	80-Acre Spacing	160-Acre Spacing
Recoverable Oil Bbls Per Well	65,000	130,000
Gross Income Per Well ($2.81/Bbl 1?¢/Bbl for Gas)	$190,450	$380,900
Royalty Expense 1/8	$ 23,806	$ 47,612
Operating Income	$166,644	$333,288
State and Local Tax (6.4%)	$ 10,665	$ 21,330
Operating Expense ($300/Month)	$ 18,000	$ 21,300
Net Income	$137,979	$290,658
Drilling Cost	$153,500	$153,500
Nondiscounted Profit or Loss before Federal Income Tax	$ 15,521 Loss	$137,158 Profit
Profit Per Dollar of Investment	-	89¢

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Amerada Exhibit No. 18
Case No. 3261

AMERADA PETROLEUM CORP.
EXHIBIT 18
NO. 3261
DATE 8-17-66

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Amerada Exhibit No. 15
Case No. 3261

AMERADA PETROLEUM CORP.
EXHIBIT 15
NO. 3261
DATE 8-17-66

JENKINS-CISCO FIELD
Pressure Data

- Anderson #1 (APC)
- SmCole #1
- Mounsey #1
- Hillemann Est. #1
- Anderson "A" #1
- Pressure Surveys
- Dst Data

PRESSURE - psi

3600
3500
3400
3300
3200
3100
3000
2900

TIME

1963 June 1964 June 1965 June 1966 June 1967

May (4 well) B.H.P. survey

BOTTOM HOLE PRESSURE DATA
5,641' SUBSEA
JENKINS-CISCO POOL
LEA COUNTY, NEW MEXICO

Company	Well	Date	BHP-PSI	Pressure Drop From Orig. PSI
Amerada	Anderson #1	3-8-63	3427	
Amerada	Anderson #1	5-12-63	3424	3
Amerada	Anderson #1	9-3-63	3399	28
Amerada	Anderson #1	11-8-63	3379	48
Amerada	Anderson #1	8-10-64	3318	109
Del.-Apache	Hileman #1	5-22-65	3243)	184
Del.-Apache	Hileman #1	5-27-65	3233)	194
Amerada	Anderson #1	6-14-65	3261)	166
Amerada	Anderson #1	8-16-65	3225	202
Amerada	Anderson #1	11-26-65	3164)	263
Del.-Apache	S. M. Cole #1	12-2-65	3165)	262
Del.-Apache	Hileman #1	12-3-65	3170)	257
Superior	Mounsey #1	12-6-65	3164)	263
Amerada	Anderson #1	2-4-66	3115	312
Amerada	Anderson #1	3-28-66	3044)	383
Del.-Apache	S. M. Cole #1	3-28-66	3046)	381
Del.-Apache	Hileman #1	3-28-66	3039)	388
Del.-Apache	Anderson "A" #1	3-28-66	3034)	393
Amerada	Ainsworth #1	5-13-66	3000)	427
Del.-Apache	S. M. Cole #1	5-13-66	2984)	443
Del.-Apache	Hileman #1	5-13-66	2985)	442
Del.-Apache	Anderson "A" #1	5-13-66	2986)	441
Del.-Apache	Anderson "A" #1	7-25-66	2923	504
Del.-Apache	S. M. Cole	8-8-66	2889)	538
Del.-Apache	Hileman	8-9-66	2898)	529

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Amerada Exhibit No. 13
Case No. 3261

AMERADA PETROLEUM CORP.
EXHIBIT 13
NO. 3261
DATE 8-17-66

DRILL STEM TEST PRESSURE DATA
JENKINS-CISCO POOL
LEA COUNTY, NEW MEXICO

Company	Well	Dist. From Nearest Prod. Well	Date of Test	Pool Cum. Oil Prod.	Orig. Pres. @ -5464'	P From Initial Res.
Amerada	S. E. Anderson #1	Disc. Well	5-6-63	-	3427 (BU)	-
Del.-Apache	Hileman #1	4200'	5-8-65	106,150	3263 (DST)	-164
Del.-Apache	S. M. Cole #1	1380'	8-9-65	131,629	3225 (DST)	-202
Superior	Mounsey #1	2650'	10-18-65	180,290	3127 (DST)	-300
Amerada	Ainsworth #1	1380'	2-1-66	257,367	3108 (DST)	-319
Del.-Apache	Anderson "A" #1	1380'	2-6-66	262,215	3110 (DST)	-317
Del.-Apache	S. Anderson #1	1350'	3-30-66	322,570	3083 (DST)	-344

BU = Buildup Test

DST = Drill Stem Test

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Amerada Exhibit No. 12
Case No. 3261

AMERADA PETROLEUM CORP.
EXHIBIT 12
NO. 3261
DATE 8-17-66

CORE ANALYSIS DATA
DEL.-APACHE S. E. ANDERSON "A" NO. 1
JENKINS-CISCO POOL
LEA COUNTY, NEW MEXICO

Depth	Horizontal Permeability-MD	Vertical Permeability-MD	Porosity-%	Residual Saturation % Pore Space Oil	Water
9734.0-35.7	0.6	0.5	3.6	7.2	25.0
9735.7-37.2	3.0	2.5	5.7	14.1	36.1
9737.2-39.0	1.0	1.0	3.2	5.7	32.5
9748.5-50.0	0.1	0.1	2.3	10.5	32.9
9750.0-51.6	43.0	26.0	4.1	10.5	39.6
9751.6-53.2	10.0	9.0	6.0	11.0	49.7
9753.2-54.8	4300.0	278.0	7.9	9.8	49.8
9754.8-56.2	1558.0	315.0	6.5	7.6	55.3
9756.2-58.2	12.0	1.6	4.6	8.1	47.2
9758.1-60.0	115.0	52.0	2.8	6.4	49.3

Average Porosity 4.7%

Bough "C" Perforations 9734'-9738'

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Amerada Exhibit No. 11
Case No. 3261

AMERADA PETROLEUM CORP.
EXHIBIT 11
NO. 3261
DATE 8-17-66

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Amerada Exhibit No. 10
Case No. 3261

CURRENT PRODUCTION TESTS

JENKINS CISCO POOL
LEA COUNTY, NEW MEXICO

LEASE	WELL NO.	TEST DATE	HOW PROD.	FIELD TOP WELL ALLOW-ABLE	PRODUCTION DURING TEST			CHOKE SIZE OR S.P.M.	HRS. TEST	GOR	PRESSURES		REMARKS
					OIL	WATER	BS&W %				TBG.	CSG.	
Amerada Anderson	1	7/28	Fl.	215	267.66	-	-	12/64	24	961	720	-	Gas Vol. 257.3MCF Sep. Press. 350# Sep. 50
Amerada Ainsworth	1	7/27	Fl.	215	251.45	-	-	10/64	24	1048	930	-	Gas Vol. 263.6MCF Sep. 300# Tr. 25#
Apache Anderson *	1	7/27	Fl.	216	264.56	-	-	13/64	24	1293	720	-	Gas Vol. 342.1MCF Sep. 320# Sep. 30#
Apache Anderson A *	1	7/26	Fl.	215	276.75	-	-	14/64	24	1084	860	-	Gas Vol. 300.1MCF Sep. 340# Sep. 30#
Apache Sallie Cole	1	8/3	Fl.	215	263.27	-	-	13/64	24	1007	850	-	Gas Vol. 265.2MCF Sep. 380# Vents Some Gas
Apache Hileman Est.	1	7/27	Fl.	215	243.78	-	-	12/64	24	2579	1145	-	Gas Vol. 628.8MCF Sep. 320#
Superior Mounsey *	1	7/27	Fl.	215	203.49	-	-	-	24	1297	900	-	Gas Vol. 264.0MCF Sep. 490# Sep. 40#

* Gas being vented to atmosphere - not measured.

AMERADA PETROLEUM CORP.
EXHIBIT 10
NO. 3261
DATE 8-17-66

INITIAL POTENTIAL DATA
JENKINS-CISCO POOL
LEA COUNTY, NEW MEXICO

Company	Well	Perfs.	Date	Initial Potential
Amerada	S. E. Anderson #1	9737-55'	5-6-63	314 BO OBW 12/64" Ck 24 hrs TP 1280# GOR 1423 Gvty 45.3°
Del.-Apache	Hileman #1	9738-60'	5-15-65	154 BO OBW 10/64" Ck 24 hrs TP 700# GOR 1740 Gvty 45°
Del.-Apache	S. M. Cole #1	9752-62'	8-13-65	193 BO OBW 11/64" Ck 24 hrs TP 1120# GOR 1424 Gvty 45°
Superior	Mounsey #1	9770-76'	10-23-65	276 BO OBW 13/64" Ck 24 hrs TP 1100# GOR 1449 Gvty 48.2°
Amerada	Ainsworth #1	9770-73' 9778-85'	2-6-66	250 BO OBW 10/64" Ck 24 hrs TP 1050# GOR 926 Gvty 49.6°
Del.-Apache	Anderson "A" #1	9734-38'	2-10-66	233 BO OBW 12/64" Ck 24 hrs TP 1005# GOR 1442 Gvty 45°
Del.-Apache	S. Anderson #1	9728-40' 9746-50'	5-31-66	231 BO OBW 12/64" Ck 24 hrs TP 1300#GOR 1980 Gvty 49.7°

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Amerada Exhibit No. 9
Case No. 3261

AMERADA PETROLEUM CORP.
EXHIBIT 9
NO. 3261
DATE 8-17-66

RESERVOIR DATA
JENKINS CISCO POOL
LEA COUNTY, NEW MEXICO

Depth	9750'
Initial BHP - psi	3427
BHP 5/66 - psi (4 Wells)	2989
BHP 8/66 - psi (3 Wells)	2903
Saturation Pressure - psi	3427-2923
Initial GOR - Ft^3/Bbl	1420
Current GOR (Pool Avg.) - Ft^3/Bbl	1257
Reservoir Permeability (Buildup on Discovery) - md	114
Average Porosity (Core and Log Calc.)	5.8%
Water Saturation (Log Calc.)	25%
Average Net Pay Thickness, Feet	12
Formation Volume Factor	1.824
Reservoir Temperature - °F	161
Oil Gravity - °API	50
Gas Gravity	0.856

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Exhibit No. 8
Case No. 3261

AMERADA PETROLEUM CORP.
EXHIBIT 8
NO. 3261
DATE 8-17-66

TABULATION OF OIL AND GAS PRODUCTION
JENKINS-CISCO POOL
LEA COUNTY, NEW MEXICO

Year	Month	Oil Production Barrels	Gas Production MCF	Cumulative Oil Production Barrels	Cumulative Gas Production MCF
1963	May	3,630	5,481	3,630	5,481
	June	4,236	6,397	7,866	11,878
	July	4,387	5,459	12,253	17,337
	Aug.	4,607	6,952	16,860	24,289
	Sept.	4,757	7,178	21,617	31,467
	Oct.	4,562	6,884	26,179	36,351
	Nov.	4,511	6,500	30,690	44,851
	Dec.	4,772	7,200	35,462	52,051
1964	Jan.	4,683	7,067	40,145	59,118
	Feb.	4,241	6,400	44,386	65,518
	March	4,619	6,970	49,005	72,488
	April	4,299	7,364	53,304	79,852
	May	4,498	7,705	57,802	87,557
	June	4,237	7,258	62,039	94,815
	July	4,373	7,434	66,412	102,249
	Aug.	4,350	7,420	70,762	109,669
	Sept.	4,107	7,035	74,869	116,704
	Oct.	4,366	7,479	79,235	124,183
	Nov.	4,330	7,417	83,565	131,600
	Dec.	4,541	7,799	88,106	139,399
1965	Jan.	4,940	8,462	93,046	147,861
	Feb.	4,189	7,176	97,235	155,037
	March	4,634	6,700	101,869	161,737
	April	4,281	4,779	106,150	166,516
	May	7,153	9,701	113,303	176,217
	June	8,639	12,848	121,942	189,065
	July	9,687	13,974	131,629	203,039
	Aug.	12,472	12,982	144,101	216,021
	Sept.	16,116	22,964	160,217	238,985
	Oct.	20,073	29,881	180,290	268,866
	Nov.	22,495	30,436	202,785	299,302
	Dec.	24,075	28,333	226,860	327,635
1966	Jan.	24,447	31,132	251,307	358,767
	Feb.	33,935	40,824	285,242	399,591
	March	38,743	48,690	323,985	448,281
	April	31,234	43,326	355,219	491,607
	May	38,683	52,174	393,902	543,781
	June	46,416	58,329	440,318	602,110
	July	46,183		486,501	

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Amerada Exhibit No. 7
Case No. 3261

AMERADA PETROLEUM CORP.
EXHIBIT 7
NO. 3261
DATE 8-17-66

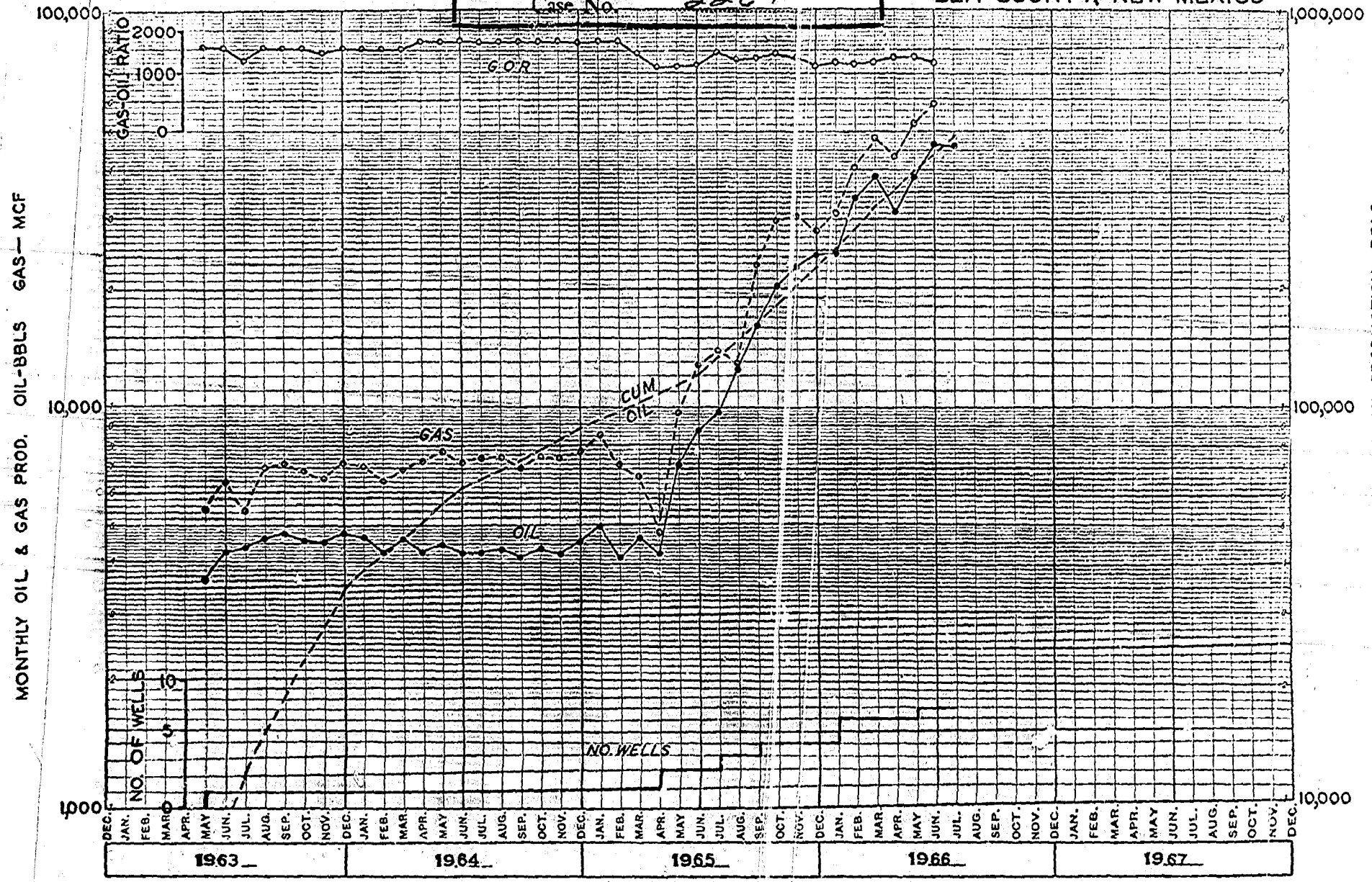
NO. 31121. FIVE YEARS BY MONTHS X 2 3-INCH CYCLES RATIO RULING. CODEX BOOK COMPANY, INC. NORWOOD, MASSACHUSETTS. PRINTED IN U.S.A.

AMERADA PETROLEUM CORP.

EXHIBIT 6
NO. 3261
DATE 8-17-66

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Amerada Exhibit No. 6
Case No. 3261

PERFORMANCE CURVE
JENKINS-CISCO FIELD
BOUGH "C" ZONE
LEA COUNTY, NEW MEXICO



CASE NO. 3261 (DE NOVO)
LIST OF EXHIBITS

PHASE I: SPACING

Witness: Wallace W. Stewart

Exhibit 1: [Map] Top of Cisco Structure
Exhibit 2: Cross Section A-A'
Exhibit 3: Cross Section B-B'
Exhibit 4: Cross Section C-C'
Exhibit 5: [Map] Order of Development

Witness: R. L. Hocker

Exhibit 6: Performance Curve
Exhibit 7: Tabulation of Oil and Gas Production
Exhibit 8: [Table] Reservoir Data
Exhibit 9: [Table] Initial Potential Data
Exhibit 10: [Table] Current Production Tests
Exhibit 11: [Table] Core Analysis Data
Exhibit 12: [Table] Drillstem Test Pressure Data
Exhibit 13: [Table] Bottomhole Pressure Data
Exhibit 14: [Map] May 1966 Bottomhole Pressure Survey
Exhibit 15: [Graph] Pressure Data
Exhibit 16: [Map] Development as of May 1965
Exhibit 17: [Map] Development as of December 1965
Exhibit 18: [Table] Economics
Exhibit 19: Conclusions and Recommendations (Phase I: Spacing)

PHASE II: ALLOWABLES

Witness: R. L. Hocker

Exhibit 20: [Map] Producing Wells (With Cross Section Line XYZ)
Exhibit 21: Cross Section XYZ
Exhibit 22: [Table] Rate of Production Tests
Exhibit 23: [Graph] Daily Oil Rate vs. Measured BHP Drop (Anderson "A" No. 1)
Exhibit 24: [Table] Comparison of Measured and Calculated BHP Drawdown
Exhibit 25: [Graph] Daily Oil Rate vs. Measured BHP Drop (S. M. Cole No. 1)
Exhibit 26: [Graph] Daily Oil Rate vs. Measured BHP Drop (Hileman No. 1)
Exhibit 27: [Table] Measured Bottomhole Pressure Drawdown (3 wells)
Exhibit 28: Conclusions and Recommendations (Phase II: Allowables)

Case No. 3261
Exhibit #9
June 9, 1965

ECONOMIC EVALUATION

HILEMAN ESTATE WELL NO. 1

UNDESIGNATED POOL

BASIC DATA

1.	Oil Value	$3.01/Bbl less $0.12/Bbl for trucking
2.	Oil Purchaser	McW[illegible]d Corporation
3.	Gas Value	$0.[illegible]/MCF
4.	Gas Purchaser	Sinclair Oil & Gas Company within 60 days
5.	Net Interest	87.5%
6.	Production Taxes	6.1%
7.	Lifting Costs	$0.20 per barrel
8.	Per Well Investment Costs	$141,000 for flowing well
		18,000 for artificial lift
	Total Costs	$159,000

ECONOMICS FOR 1 WELL

		Well Spacing	
		40 Acre	80 Acre
1.	Recoverable Oil, Bbl	105,000	210,000
2.	Recoverable Gas, MMCF	224	448
3.	Oil Revenue $	291,000	582,000
4.	Gas Revenue	26,800	53,600
5.	Total Revenue $	317,800	635,600
6.	Net Revenue after Royalty and Taxes	261,000	522,000
7.	Operating Costs	21,000	42,000
8.	Net Income	240,000	480,000
9.	Investment	159,000	159,000
10.	Profit Or Loss	81,000	321,000
11.	Profit-to-investment Ratio	0.51 to 1	2.02 to 1

Case No. 3261
Exhibit # 8
June 9, 1965

COMPARISON OF OFFSET DEPLETED FIELD

BOUGH FIELD

	WELL	NO.	COMPLETED	CUMULATIVE BARRELS
1.	MOBIL - T. Betenbough	1	5-12-49	403,144
2.	MOBIL - Markham Federal	1	9-2-49	363,474
3.	SHARP - Yeckel Federal	1	1-14-50	438,713
4.	MOBIL - Walker Federal	1	1-14-50	81,388
5.	MOBIL - Betenbough "B"	1	1-20-50	394,051
6.	MOBIL - T. Betenbough	2	4-29-50	343,533
7.	MOBIL - Matthews Federal	1	8-14-50	330,904
8.	FOREST - Warren Federal	2	12-22-50	200,093
9.	MOBIL - Davis Federal	1	5-7-51	174,287
10.	MOBIL - Betenbough "B"	2	8-16-51	207,322
11.	MOBIL - T. Betenbough	3	11-16-51	309,003
12.	MOBIL - Markham Federal	2	2-16-52	91,547
13.	GULF - John Allen	1	3-6-52	86,255
14.	MOBIL - Capps Federal	1	5-26-52	254,527
15.	MOBIL - Betenbough "C"	1	9-9-52	15,038
16.	MOBIL - Matthews Federal	3	2-16-53	186,709
17.	MOBIL - Capps Federal	2	9-5-56	78,376
18.	MOBIL - Capps Federal	3	11-26-56	141,114
19.	MOBIL - Hobbs Leonard	1	12-20-56	204,980
20.	MOBIL - Capps Federal	5	6-10-57	68,548
21.	MOBIL - Capps Federal	6	8-18-57	131,817

TOTAL WELLS:	21
TOTAL CUMULATIVE BARRELS:	4,504,813
AVERAGE PER WELL:	214,515

Case No. 3261
Exhibit # 7
June 9, 1965

OIL RECOVERY CALCULATIONS

HILEMAN ESTATE WELL NO. 1

UNDESIGNATED POOL

Reservoir Volume Calculations

Porosity (Sonic Log)	10.0%
Water Saturation (Calculated)	20%
Net Effective Pay	18 feet
Recovery Factor (Assumed)	40%
Formation Volume Factor (Calculated)	1.7

Oil In Place, Bbls per acre-foot

(7758) (0.10) (1.00 - 0.20) (1/1.70) = 365 Bbls/ac-ft

Recoverable Oil, Bbls per acre-foot

(365) x (.40) = 146 Bbls/ac-ft

Oil In Place, Bbls per acre

(365) x (18) = 6570 Bbls/acre

Recoverable Oil, Bbls per acre

(6570) x (0.40) = 2625 Bbls/acre

	40-Acres	80-Acres
Oil In Place, Bbls	262,000	524,000
Recoverable Oil, Bbls	105,000	210,000
Recoverable Gas, MMCF	224	448

Case No. 3261
Exhibit # 6
June 9, 1965

RESERVOIR ROCK AND FLUID PROPERTIES

HILEMAN ESTATE WELL NO. 1

UNDESIGNATED POOL

Depth to top of formation, feet	9,734
Gross pay, feet	29
Net effective pay, feet	18
Porosity, per cent (from Sonic Log)	10.0
Water saturation, per cent (calculated)	20
Original reservoir pressure, PSIG (discovery well)	3,427
Original reservoir pressure, PSIG (Hileman Estate)	3,233
Saturation pressure, PSIG (calculated)	3,300
Reservoir temperature, °F	140
Original solution gas-oil ratio, cuft per barrel	1,423
Formation volume factor, bbl/bbl (calculated)	1.70
Oil gravity, ° API @ 60°F	45.0
Specific gravity of gas (air = 1.00)	0.888

194

Case No. 3261
Exhibit # 5
June 9, 1965

WELL HISTORY

HILEMAN ESTATE WELL NO. 1

UNDESIGNATED POOL

Location: 660' FSL and 660' FEL of Section 24, T-9-S, R-34-E, Lea County, New Mexico.

Total Depth: 9824 feet.

Production String: 4½ inch casing set at 9823 feet.

Drill Stem Tests: Test No. 1 4,734-4,800, tool open 2½ hours, gas to surface in 115 minutes. Recovered 30 feet of gas and oil cut water + 970 feet of water with a trace of gas and oil.

ISIP (30") - 1694	IFP - 160
FSIP (60") - 1635	FFP - 480

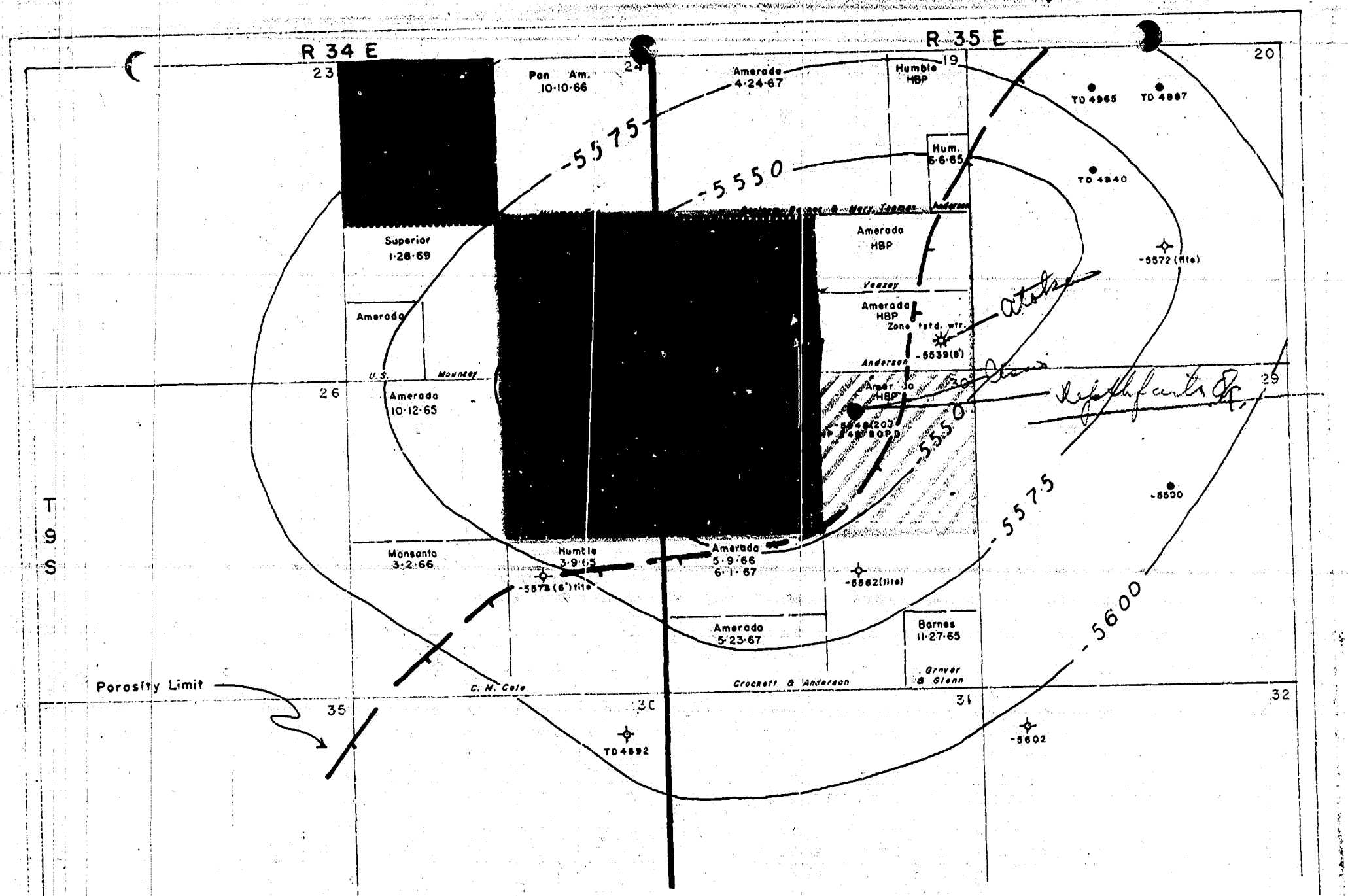
Test No. 2 9,755-9,794, tool open 2 minutes, very strong blow. Gas to surface in 3 minutes. Closed in for 30 minutes. Opened 30 minutes. Oil to surface in 7 minutes. Flowed to pits for 2 minutes. Switched to tanks. Flowed 5 barrels oil in 8 minutes. Separator failed. Flowed approximately 22 barrels oil in 22 minutes to pits. Shut in for 2 hours. Flowed 6 barrels oil during shut in. Unseated packers. Attempted to reverse circulate. Tool plugged. Pulled 30 stands. Reversed out approximately 20 barrels oil. Total recovery approximately 53 barrels of 45° gravity oi. No water.

ISIP (30") - 3363	IFP - 2395
FSIP (2') - 3335	FFP - 2855

Perforations: 2 jet shots per foot at the following intervals: 9738-9744 and 9756-9760, total of 20 holes.

Stimulation Treatment: None 1000 Gal Acid.

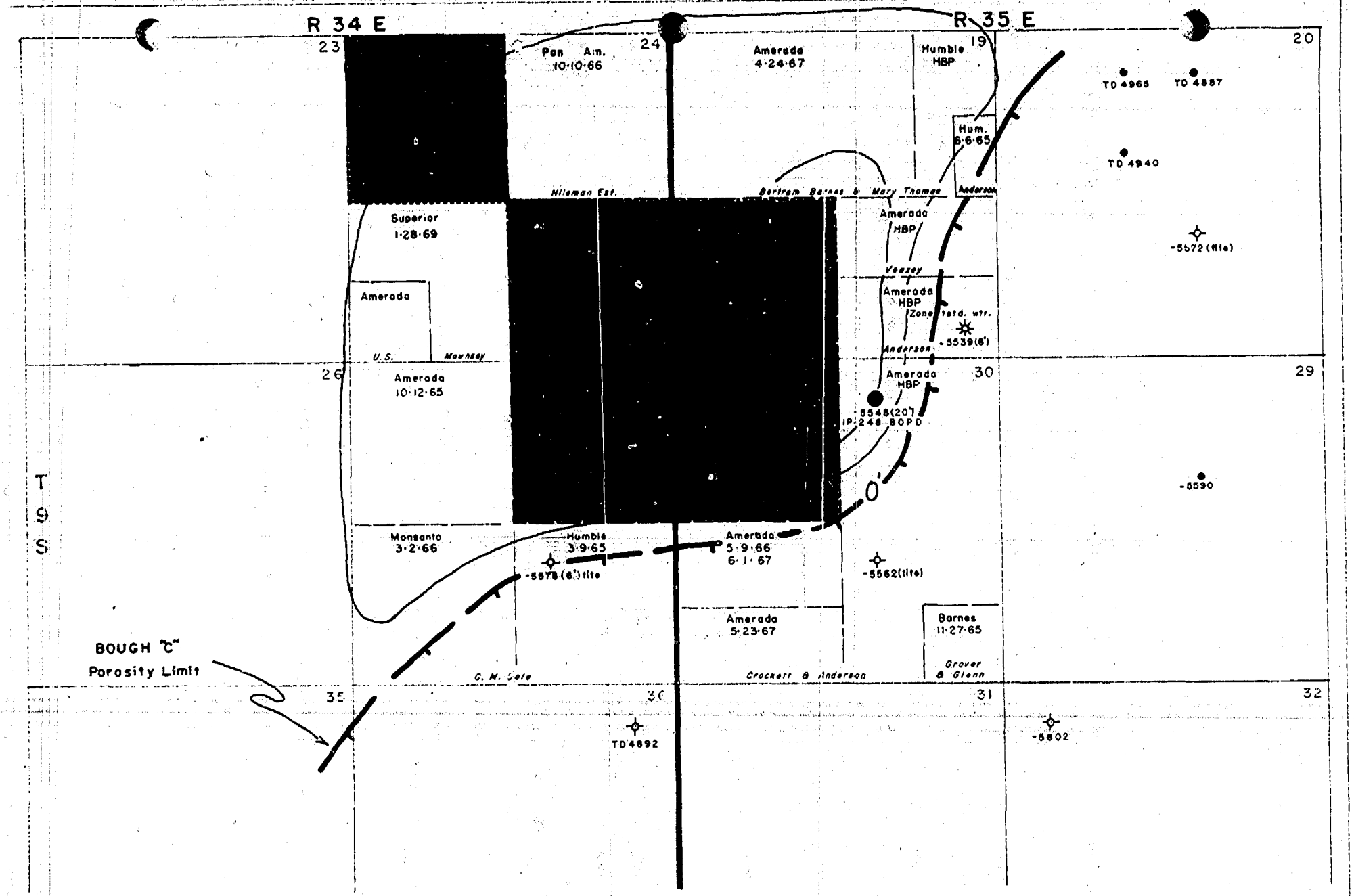
Potential Test: On May 15, 1965, well flowed 154 barrels of oil, no water, in 24 hours, 10/64 inch choke, tubing pressure 700 psig, GOR - 1740, oil gravity 45° @ 60°F, gas gravity - 0.888.



Bough "C" Producers
Case No. 3261
Exhibit # 2
June 9, 1965

APACHE CORPORATION
JENKINS PROSPECT
Lea County, New Mexico

SCALE: 1" = 2,000'
Contours BOUGH "C"
Contour Interval: 25'



Bough "C" Producers
Case No. 3261
Exhibit # 3
June 9, 1965

APACHE CORPORATION
JENKINS PROSPECT
Lea County, New Mexico

SCALE: 1" = 2,000'
Isopach: Net Effective BOUGH "C"
Porosity Interval = 10'

R35E

To Portales

CROSSROADS WEST

ROUGH

CROSSROADS WEST

CASE 3261
EXHIBIT 1
6/9/65

CASE 3261
JENKINS CISCO POOL
LEA COUNTY, NEW MEXICO
JUNE 9, 1966

MER DATA

Completion history of Delaware Apache Corporation's Samantha Anderson Well #1.

May 23 - Well flowed 140 BNO in 19 hrs., TP-1450, 12/64" choke, GOR-3930
24 - Well flowed 55 BNO in 9 hrs., TP-1450, 12/64" choke, GOR-3930, shut-in for separator repairs
25 - Shut-in for separator repairs
26 - Well flowed 176 BNO in 19 hrs., TP-1375, 12/64" choke, GOR-3500
27 - Well flowed 209 BNO in 23 hrs., TP-1325, 12/64" choke, GOR-2830
28 - Well flowed 275 BNO in 24 hrs., TP-1325, 12/64" choke, GOR-2167
29 - Well flowed 200 BNO in 23 hrs., TP-1300, 12/64" choke, GOR-2060
30 - Well flowed 209 BNO in 23 hrs., TP-1325, 12/64" choke, GOR-2080
*31 - Well flowed 231 BNO in 24 hrs., TP-1300, 12/64" choke, GOR-1980

June 1 - Well flowed 234 BNO in 24 hrs., TP-1250, 12/64" choke, GOR-1910
2 - Well flowed 238 BNO in 24 hrs., TP-1250, 12/64" choke, GOR-1895
3 - Well flowed 212 BNO in 21 hrs., TP-1250, 12/64" choke, GOR-1895

* Official Potential

EXAMINER UTZ
OIL CONSERVATION COMMISSION
Apache EXHIBIT NO. 1
CASE NO. 3261

M. Summary of Conclusions.

(1) One well can adequately and efficiently drain at least 160-acres in the Jenkins-Cisco Pool.

(2) More than one well on each 160 acres would not significantly add to the ultimate recovery of oil and gas.

(3) Recap reasons for the above conclusions, tying together Exhibits 9 thru 16.

(4) Pool is presently developed on 160-acre density, but there is always danger that an imprudent operator might trigger additional infill drilling unless 160-acre spacing is established.

N. Tabulation of Economics (Exhibit 17).

(1) Brief description.

(2) Conclusions.

O. Recommendations.

(1) Commission should adopt permanent field rules providing for:

(a) 160-acre proration units consisting of governmental quarter sections.

(b) The present well location requirement (within 150 feet of the center of a governmental quarter-quarter section or lot).

(c) 160-acre proportional factor of 6.77 for standard proration units.

(2) Commission should extend the defined horizontal limits of the pool to include the acreage described in the application.

P. Witness.

C. Production Graph and Tabulation (Exhibits 6 & 7).

(1) Brief description.

(2) Cumulative production.

D. Tabulation of Reservoir Data (Exhibit 8).

(1) Brief description.

(2) Representative porosity and permeability.

(3) Reservoir drive mechanism.

(4) Average Gas-Oil Ratio.

(5) Current number of top allowable wells in field.

(6) Average current daily production per well.

E. Tabulation of Initial Potentials (Exhibit 9).

(1) Brief description.

(2) Conclusions.

F. Summary of Core Analysis (Exhibit 10).

(1) Brief description.

(2) Conclusions.

G. Tabulation of BHP Pressures (Exhibit 11).

(1) Brief description.

(2) Conclusions.

H. Tabulation of Gauge Pressures (Exhibit 12).

(1) Brief description.

(2) Conclusions.

I. Graph of Pressure Data (Exhibit 14).

(1) Brief description.

(2) Conclusions.

J. Map Showing Pressure Distribution in May, 1966 (Exhibit 13).

(1) Brief description.

(2) Conclusions.

K. Two-Well Drainage Map (Exhibit 15).

(1) Brief description.

(2) Conclusions.

L. Three-Well Drainage Map (Exhibit 16).

(1) Brief description.

(2) Conclusions.

Elvis Utz, Examiner 6-8-66

3261 (reopened)

HEARING OUTLINE
160-ACRE SPACING
JENKINS-CISCO POOL

I. Introductory Remarks.

II. Geological Testimony (Wallace W. Stewart).

A. Qualifications.

B. Structure Map (Exhibit 1).

(1) Brief description.

(2) Characteristics of reservoir rock.

(a) Trapping mechanism.
(b) General lithology.
(c) Nature of porosity.

(3) Development History.

(a) Discovery well and discovery data.
(b) Current number of producing wells.
(c) Status of Straka No. 1 Crockett.
(d) Direction of possible future development (if economical).

C. Cross Section A-A' (Exhibit 2).

(1) Brief description.

D. Cross Section B-B' (Exhibit 3).

(1) Brief description.

E. Cross Section C-C' (Exhibit 4).

(1) Brief description.

F. Conclusions.

(1) There is no geological reason why one well could not adequately and efficiently drain at least 160 acres.

(2) The pool is large enough to accommodate 160-acre proration units.

(3) The defined horizontal limits of the pool should be extended to include the additional area shown.

III. Engineering Testimony (R. L. Hocker).

A. Qualifications.

B. Map Showing Order of Development (Exhibit 5).

(1) Brief description.

(2) Temporary field rules providing for temporary 80-acre spacing and well location in any quarter-quarter section adopted by Order No. R-2931, dated 6-15-65.

(3) Number of wells drilled since adoption of field rules.

(4) Resulting well density.

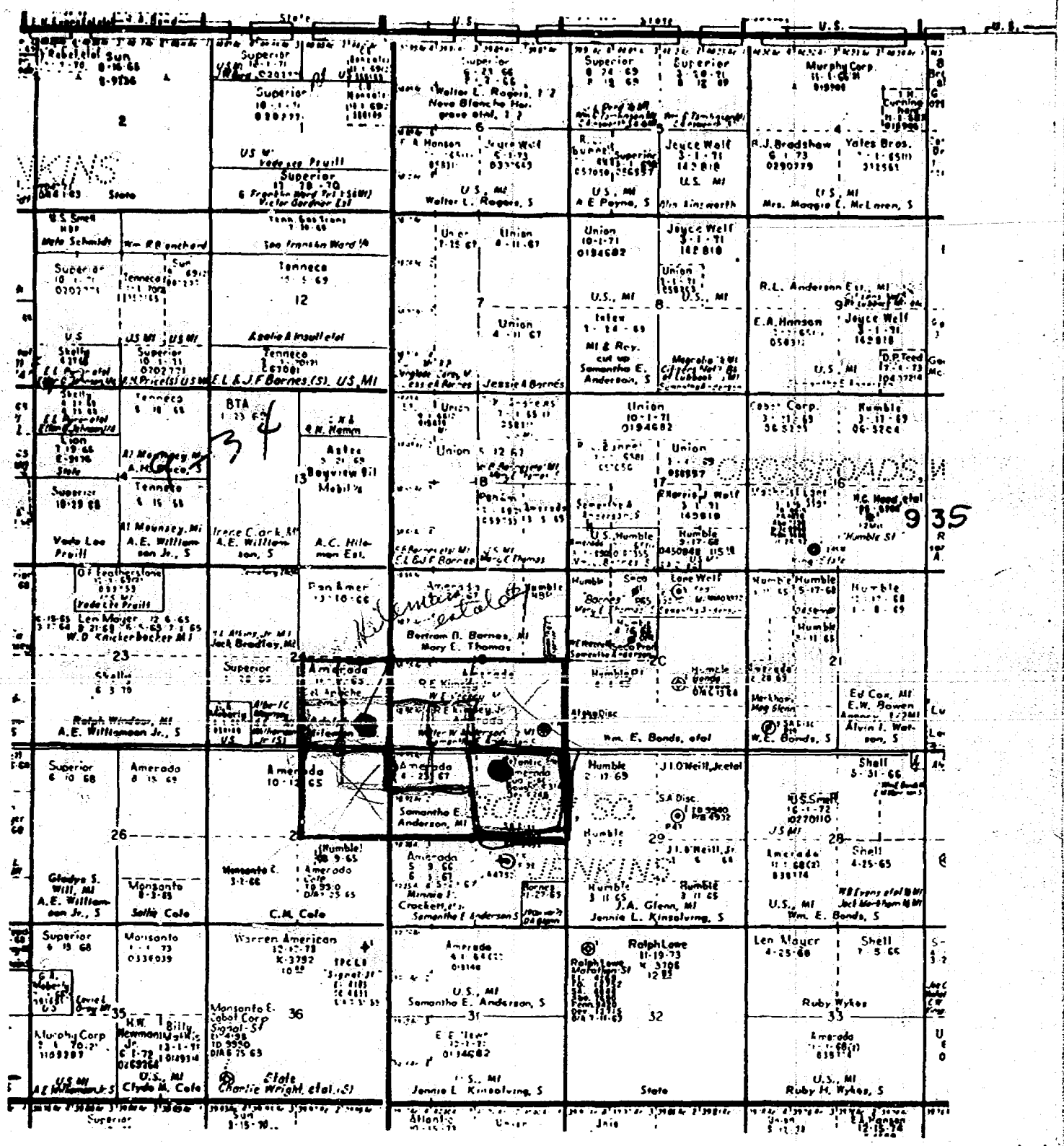


EXHIBIT "A"

Jenkins-Cisco Pool

of the original discovery well indicating that said well is producing from the same pool or reservoir. That there is attached hereto as Exhibit "A" a plat showing the location of the discovery well and the Delaware-Apache Nileman Estate No. 1 well and the owners of leasehold interests surrounding said wells.

3. That applicant believes that on account of the completion of the Delaware-Apache Nileman Estate No. 1 well the limits of the Jenkins-Cisco Pool should be extended to include the SE¼ Sec. 24, NE¼ Sec. 25, T. 9 S., R. 34 E., and the S½ Sec. 19 and NW¼ Sec. 30, T. 9 S., R. 35 E.

4. That applicant believes that one well will effectively and efficiently drain more than 80 acres and that special field rules for said pool should be adopted providing for 80 acre spacing and that standard spacing units consist of the N½, S½, E½ or W½ of a single governmental quarter section, with the right to drill a well on either quarter quarter section comprising a standard unit and that each well be located within 150 feet of the center of each governmental quarter quarter section or lot.

5. That applicant believes that the adoption of special field rules along the lines above indicated will prevent the economic loss caused by the drilling of unnecessary wells and will avoid the augmentation of risk arising from the drilling of an excessive number of wells and will otherwise prevent waste and protect correlative rights.

6. Applicant requests that this matter be set down for hearing at the first regular examiner's hearing in June, 1965.

Respectfully submitted,

DELAWARE-APACHE CORPORATION

By _____
Attorney for Applicant

HINKLE, BONDURANT & CHRISTY

By _____

P.O. Box 10
Roswell, New Mexico

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

Application of Delaware-Apache Corporation to extend the limits of the Jenkins-Cisco Pool, Lea County, New Mexico on account of completion of the Delaware-Apache Hileman Estate No. 1 well located in SE¼SE¼ Sec. 24, T. 9 S., R. 34 E., and for adoption of temporary special field rules for said pool, including 80 acre well spacing and proration units.

'65 MAY 25 AM

No. 3267

Comes Delaware-Apache Corporation with offices at Midland, Texas, acting by and through the undersigned attorneys, and hereby makes application to extend the limits of the Jenkins-Cisco Pool Lea County, New Mexico on account of the recent completion of the Delaware-Apache Hileman Estate No. 1 well located in the SE¼SE¼ Sec. 24, T. 9 S., R. 34 E., N.M.P.M. Lea County, New Mexico, and for the promulgation of temporary special field rules for said pool and with respect thereto respectfully shows:

1. That by order of the Commission R-2527 of August 1, 1963 as amended by Order R-2619 of December 13, 1963, the Jenkins-Cisco Pool (formerly South Bough-Pennsylvanian Pool) was created to include the NE¼ Sec. 30, T. 9 S., R. 35 E., N.M.P.M. That the Jenkins-Cisco Pool was discovered by reason of a well drilled by The Atlantic Refining Company in the NW¼NE¼ Sec. 30, T. 9 S., R. 35 E., N.M.P.M. in the Bough-Pennsylvanian formation.

2. That Delaware-Apache Corporation has recently completed, on May 16, 1965, its Hileman Estate No. 1 well above referred to located 660 feet from the South and East lines of Sec. 24, T. 9 S., R. 34 E through perforations from 9,738 to 9,744 feet and from 9,756 to 9,760 feet, with a potential production from the Bough-Pennsylvanian formation of 154 barrels of oil in 24 hours. That said well was completed in the same zone as the Atlantic discovery well above referred to, with a 95 pound pressure drop from the pressure

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

P. O. BOX 2088
SANTA FE

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

June 15, 1965

Mr. Clarence Hinkle
Hinkle, Bondurant & Christy
Attorneys at Law
Post Office Box 10
Roswell, New Mexico

Re: Case No. 3261
Order No. R-2931
Applicant:
Delaware-Apache Corporation

DOCKET MAILED
Date_____

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC X
Artesia OCC_____
Aztec OCC _____
OTHER_____
_____

Case 3261
~~Heard~~ June 8, 66
Rec. 6-23-66

1. Grant Amerada's request for R-2931 to become a permanent 160 Ac. ~~spacing~~ order.

2. Suggest using R-2931 & changing.

(a) Rule 2 to read 160 Ac. ~~and~~ governmental 1/4 sec.

(b) Rule 4 to read 660 from 1/4 sec. lines or proration unit lines

(c) Rule 6 (158 thru 162 Ac.) & 160 in other places where it reads 80. Leave 4.77 in rule.

It is further ordered:

(1) reads. July 25, 1955.

(2) read 160 Ac.

(3) out.

[illegible signature]

THE SUPERIOR OIL COMPANY

P. O. BOX 1900
MIDLAND, TEXAS 79704

June 6, 1966

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Attention: Mr. D. S. Nutter

Re: Jenkins Cisco Field Hearing
Case No. 3261
June 8, 1966

Gentlemen:

We have reviewed the exhibits of the subject field which were prepared by Amerada Petroleum Corporation and which are to be submitted to the Conservation Commission for the Hearing of June 8, 1966. We believe the exhibits are correct and show a reasonable interpretation of this reservoir and that they also indicate that a well on each 160 acres will adequately deplete this reservoir. The calculations also show that it is uneconomical to develop this field on 80 acre spacing; therefore, we request that the Conservation Commission establish 160 acre proration units and 160 acre well allowables for this field.

Yours very truly,

THE SUPERIOR OIL COMPANY

B. H. Collins, Jr.
District Engineer

HH/js

DOCKET MAILED

Date 8-4-66

Case 3761
Released 6-9-65
Rec. 6-9-65

Nomenclature

1. Grant Delaware Apache Corp a pool extention for the Jenkins-Cisco pool and special pool Rules as follows:
   a. extend pool to include:
      E/2 SE/4 - 24 - 9S-34E
      S/2 SW/4 - 19 - 9S-35E
      N/2 NW/4 - 30 - 9S-35E

2. Assign 80 Ac. units including N, S, E, or W ½ of ¼ section and 150' from center of either ¼ ¼ section.

3. Temporary 1 year order.

CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION
TELEGRAM

W. P. MARSHALL, PRESIDENT

1201 (4-60)

SYMBOLS
DL = Day Letter
NL = Night Letter
LT = International Letter Telegram

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

LA026 KB037 (25).

K TUB029 PD=FAX TULSA OKLA 9 904A CST= 1965 JUN 9 AM 8 48

STATE OF NEW MEXICO=

OIL CONSERVATION COMMISSION PO BOX 2088 SANTA FE

AMERADA PETROLEUM CORPORATION AS AN OPERATOR IN THE JENKINS CISCO POOL SUPPORTS THE APPLICATION OF DELAWARE APACHE CORP CASE 3261 FOR THE ESTABLISHMENT OF 80-ACRE SPACING SET FOR JUNE 9 1965=

AMERADA PETROLEUM CORP R L HOCKER== MAIN OFFICE OCC

'65 JUN 9 AM 8

-3261 80 9 1965=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

Docket No. 16-65

DOCKET: EXAMINER HEARING- WEDNESDAY - JUNE 9, 1965

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 3251: (Continued from the May 26, 1965 Examiner Hearing)

Application of Continental Oil Company for a waterflood project, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Rattlesnake Dakota Pool, San Juan County, New Mexico, by the injection of water into the upper and middle zones of the Dakota formation, through three injection wells in Sections 12 and 13, Township 29 North, Range 19 West.

CASE 3260: Application of Delaware-Apache Corporation for a unit agreement, Eddy County, New Mexico, Applicant, in the above-styled cause, seeks approval of the West Lusk Deep Unit Area comprising 1920 acres, more or less, of State and Federal lands in Township 19 South, Range 31 East, Eddy County, New Mexico.

CASE 3261: Application of Delaware Apache Corporation for a pool extension and special rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the extension of the Jenkins-Cisco Pool to include the S/2 of Section 19 and the NW/4 of Section 30, Township 9 South, Range 35 East, Lea County, New Mexico, and the SE/4 of Section 24, and the NE/4 of Section 25, Township 9 South, Range 34 East. Applicant further seeks the promulgation of special rules for said pool including a provision for 80-acre proration units.

CASE 3262: Application of Monsanto Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Cueva Unit Area comprising 12,489 acres, more or less, of State, Federal and fee lands in Townships 22 and 23 South, Range 25 East, Eddy County, New Mexico.

CASE 3263: Application of Jake L. Hamon for the creation of a new gas pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Morrow Gas Pool for his Hamon State E-8913 Well No. 1 located in Unit A of Section 20, Township 20 South, Range 36 East, Lea County, New Mexico, and the promulgation of special pool rules including a provision for 640-acre spacing.

CASE 3264: Application of Carl Engwall for an exception to Commission Order R-111-A, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the potash-oil area casing and cementing rules as set forth in Commission Order R-111-A. Applicant

proposes to drill and complete a well in Unit L of Section 14, Township 20 South, Range 33 East, Teas Pool, Lea County, New Mexico, with surface casing set at approximately 950 feet, cement circulated, and production casing set at approximately 3400 feet and cemented to approximately 2500 feet above the casing point. The well would be plugged and abandoned in accordance with the provisions of Order R-111-A.

CASE 3265: Application of Coastal States Gas Producing Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation through perforations from 4545 feet to 4590 feet in its Southern Minerals State Well No. 1-15 located in Unit L of Section 15, Township 9 South, Range 33 East, Flying "M" San Andres Pool, Lea County, New Mexico.

CASE 3112: (Reopened)

In the matter of Case 3112 being reopened pursuant to the provisions of Order No. R-2824, which order authorized Gallup-Dakota commingling in the wellbore by means of a dual-flow downhole choke assembly in its Jicarilla 28 Well No. 1 located in Unit J of Section 28, Township 25 North, Range 4 West, Rio Arriba County, New Mexico. All interested parties may appear and show cause why the authority granted under this order should not be terminated.

CASE 3266: Application of Pan American Petroleum Corporation for a dual completion and commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Federal "A" Well No. 4 located in Unit L of Section 13, Township 9 South, Range 35 East, Lea County, New Mexico, to produce oil from the Bough Permo-Penn and an undesignated Devonian pool through parallel strings of tubing. Applicant further seeks authority to commingle the production from said pools on said lease after separately metering the production from each pool.

CASE 3258: (Continued from the May 26th examiner hearing)

Application of Midwest Oil Corporation for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its State "C" Well No. 1 located in Unit K of Section 32, Township 13 South, Range 34 East, Lea County, New Mexico, to produce oil from the Upper and Lower Pennsylvanian formations through parallel strings of tubing.

CLARENCE E. HINKLE
W. E. BONDURANT, JR.
S. B. CHRISTY IV
LEWIS C. COX, JR.
PAUL W. EATON, JR.
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.
MICHAEL R. WALLER

LAW OFFICES
HINKLE, BONDURANT & CHRISTY
HINKLE BUILDING
ROSWELL, NEW MEXICO

OF COUNSEL: HIRAM M. DOW

TELEPHONE 622-6510
AREA CODE 505
POST OFFICE BOX 10

May 24, 1965

Case 3261

'65 MAY 25 AM

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico

Gentlemen:

We enclose in triplicate application of Delaware-Apache Corporation for an extension of the Jenkins-Cisco Pool, Lea County, New Mexico and for special field rules including 80 acre spacing and proration units. I gave the information concerning this application to Mr. Dan Nutter over the telephone and it is my understanding that it was to be included in the notice published in connection with the examiner's hearing to be held on June 9.

Yours very truly,

HINKLE, BONDURANT & CHRISTY

By

CEH:cs
Enc.

DOCKET MAILED
Date 5-27-65

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

APPLICATION OF AMERADA PETROLEUM CORPORATION)
FOR THE ESTABLISHMENT OF SPECIAL RULES AND)
EXTENSION OF THE HORIZONTAL LIMITS OF THE) CASE NO. 3361
JENKINS-CISCO POOL, LEA COUNTY, NEW MEXICO.)

APPLICATION

Applicant Amerada Petroleum Corporation states that:

(1) Applicant operates a well producing from the Jenkins-Cisco Pool, a common source of supply of oil established by Order No. R-2527 and last defined by Order No. R-3014.

(2) This Commission, by Order No. R-2931 dated June 15, 1965, established special temporary rules (including a provision for 80-acre proration units) for a period of one year, and provided in such order that "jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary."

(3) It now clearly appears that one well in the Jenkins-Cisco Pool can efficiently and economically drain a minimum of 160 acres, and that the drilling of wells on an 80-acre density would be unnecessary and would result in waste.

(4) Although the subject pool has heretofore been developed on a 160-acre density, there is imminent danger of development on an 80-acre density before expiration of the temporary rules now in effect.

(5) In order to prevent waste and protect correlative rights, this Commission should establish 160-acre proration units for the subject pool as soon as possible.

(6) This Commission should also extend the horizontal limits of the subject pool to include the following additional area in Lea County, New Mexico:

Township 9 South, Range 34 East, NMPM

Section 23: SE/4.
Section 25: W/2.
Section 26: E/2.

Township 9 South, Range 35 East, NMPM

Section 19: N/2 SW/4
Section 30: SW/4 and S/2 NW/4.

Applicant therefore requests that this matter be set for hearing before an Examiner, that notice of hearing be given as required by law, and that an order be issued granting this application.

AMERADA PETROLEUM CORPORATION

By Thomas W. Lynch
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TELEPHONE 982-4315
AREA CODE 505

May 10, 1966

Mr. A. L. Porter, Director
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Case 3261

Dear Mr. Porter:

Enclosed, in triplicate, is the application of Amerada Petroleum Corporation for approval of 160-acre oil spacing, and extension of the horizontal limits, of the Jenkins-Cisco Pool, Lea County, New Mexico. It is requested that this application be set for hearing at the first examiner hearing in June.

In connection with this application, I would like to call your attention to the fact that this pool is presently under temporary 80-acre spacing rules under the provisions of Commission Order No. R-2931. Under the terms of this order, the case is scheduled to be re-opened for consideration of the 80-acre spacing rules at an examiner hearing in July, 1966. The pool is presently drilled and developed on a 160-acre density, and the applicant feels that hearing on this application will result in preventing the drilling of unnecessary wells which might otherwise be drilled, in the event an earlier hearing is not granted.

Your consideration of this matter will be appreciated.

Very truly yours,

KELLAHIN & FOX

Jason W. Kellahin

Jason W. Kellahin

jwk/mas
enclosures

Docket No. 14-66

DOCKET: EXAMINER HEARING - WEDNESDAY - JUNE 8, 1966

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 3410: Application of Pennzoil Company for the creation of a new pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Morrow production for its Bridges-State Well No. 1 in Unit A of Section 11, Township 17 South, Range 34 East, Lea County, New Mexico, and for the promulgation of special pool rules therefor including a provision for 80-acre spacing and a limiting gas-oil ratio of 12,000 to one. In the alternative, applicant requests that the subject well be classified as a gas well and a new Morrow gas pool be created.

CASE 3411: Application of SEC Operating for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Yates formation through one well in Unit A of Section 14, Township 20 South, Range 33 East, Teas Pool, Lea County, New Mexico. Applicant further seeks an administrative procedure whereby said project could be expanded to include additional lands and injection wells in Sections 11, 13, 14 and 15, Township 20 South, Range 33 East, under cooperative offset operating agreements.

CASE 3412: Application of SEC Operating for an exception to Commission Order No. R-111-A, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the potash-oil area casing and cementing rules as set forth in Commission Order No. R-111-A. Applicant proposes to drill and complete a well in Unit D of Section 14, Township 20 South, Range 33 East, Teas Pool, Lea County, New Mexico, with surface casing set at approximately 350 feet, cement circulated, and production casing set at approximately 3400 feet and cemented to approximately 2500 feet above the casing point. The well would be plugged and abandoned in accordance with the provisions of Order No. R-111-A.

CASE 3261 (Reopened):

In the matter of Case No. 3261 being reopened at the request of Amerada Petroleum Corporation to consider the amendemnt of the special rules for the Jenkins-Cisco Pool, Lea County, New Mexico, to provide for 160-acre oil proration units. Applicant also seeks the extension of said pool to include certain lands in Township 9 South, Ranges 34 and 35 East. The present temporary special rules promulgated by Order No. R-2931 in Case 3261 provide for 80-acre proration units, and are subject to reconsideration in July, 1966.

CASE 3413: Application of Amerada Petroleum Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Permo-Pennsylvanian zone through three injection wells located in Section 3, Township 15 South, Range 33 East, Saunders Permo-Pennsylvanian Pool, Lea County, New Mexico.

CASE 3414: Application of Phillips Petroleum Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the lower San Andres formation, below the oil-water contact, in the following wells, Vacuum Field, Lea County, New Mexico:

TOWNSHIP 17 SOUTH, RANGE 34 EAST
Phillips Hale No. 11, Unit K Section 35

TOWNSHIP 17 SOUTH, RANGE 35 EAST
Phillips Santa Fe No. 97, Unit N Section 33
Phillips Santa Fe No. 86, Unit C Section 26
Phillips Santa Fe No. 58, Unit G Section 35

Applicant further seeks establishment of an administrative procedure whereby additional wells could be placed on salt water disposal below the oil-water contact in the San Andres formation of the Vacuum Field.

CASE 3415: Application of Sun Oil Company for a non-standard gas proration unit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 790-acre non-standard gas proration unit comprising all of Section 5 and 150 acres in the eastern portion of Section 6, Township 22 South, Range 23 East, Indian Basin-Upper Pennsylvanian Gas Pool, Eddy County, New Mexico. Said unit would be dedicated to applicant's Bogle Flats Unit Well No. 8 located in Unit G of said Section 5. Although applicant has drilled a non-commercial well in the NE/4 of said Section 6, it contends that there are approximately 150 acres in said Section 6 which are underlain by the Indian Basin-Upper Pennsylvanian Gas Pool.

CASE 3416: Application of Signal Oil & Gas Company for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its State "AP" Well No. 1 located in Unit I of Section 17, Township 10 South, Range 34 East, Simanola-Pennsylvanian Pool, Lea County, New Mexico, in such a manner as to produce oil from the Pennsylvanian formation through perforations from 9962 feet to 9966 feet and to dispose of produced salt water into the San Andres and Glorieta formations through the annulus between the 8 5/8 inch and the 5 1/2 inch casing in the interval from 4100 feet to 9260 feet.

CASE 2844 (Reopened):
In the matter of Case No. 2844 being reopened pursuant to the provisions of Order No. R-2627, which order established temporary 320-acre gas proration units for the Teas-Pennsylvanian Gas Pool, Lea County, New Mexico, for a period of one year from the date of first pipeline connection. The Commission will consider indefinite extension of Order R-2627 in the absence of evidence to the contrary.

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

P. O. BOX 2088
SANTA FE

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

July 14, 1966

Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

Re: Case No. 3261
Order No. R- 2931-A
Applicant:

Amerada Petroleum Corporation

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. Porter, Jr.
A. L. PORTER, Jr.
Secretary-Director

ir/

Docket to Mrs S.E. Anderson

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC
OTHER Mr. Larry Shannon, Delaware-Apache Corporation, Midland, Tex.

2-8-67 Hearing

DOCKET MAILED
Date 1-26-67

DOCKET MAILED
Date 8-4-66

(4) That Order No. R-2931-A entered by the Commission on July 14, 1966, is hereby superseded.

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell

JACK M. CAMPBELL, Chairman

Guyton B. Hays

GUYTON B. HAYS, Member

A. L. Porter, Jr.

A. L. PORTER, Jr., Member & Secretary

esr/

application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon. All operators offsetting the proposed location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all operators offsetting the proposed location or if no objection to the unorthodox location has been entered within 20 days after the Secretary-Director has received the application.

RULE 6. A standard proration unit (158 through 162 acres) shall be assigned a proportional factor of 4.77 for allowable purposes, and in the event there is more than one well on a 160-acre proration unit, the operator may produce the allowable assigned to the unit from the wells on the unit in any proportion.

The allowable assigned to a non-standard proration unit shall bear the same ratio to a standard allowable as the acreage in such non-standard unit bears to 160 acres.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the Jenkins-Cisco Pool or in the Cisco formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the Hobbs District Office of the Commission in writing of the name and location of the well on or before September 1, 1966.

(2) That each well presently drilling to or completed in the Jenkins-Cisco Pool or in the Cisco formation within one mile thereof shall, after September 1, 1966, receive an allowable in the same proportion to a standard 160-acre allowable for the pool as the acreage presently dedicated to the well bears to 160 acres, until Form C-102 dedicating 160 acres to the well has been filed with the Commission, or until a non-standard unit containing less than 160 acres has been approved.

(3) That this case shall be reopened at an examiner hearing in February, 1967, at which time the operators in the subject pool may appear and show cause why the 160-acre proportional factor of 4.77 assigned to the Jenkins-Cisco Pool should not be retained.

following-described area:

TOWNSHIP 9 SOUTH, RANGE 35 EAST, NMPM
Section 19: N/2 SW/4

(2) That the Special Rules and Regulations governing the Jenkins-Cisco Pool, promulgated by Order No. R-2931, are hereby amended to read in their entirety as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
JENKINS-CISCO POOL

RULE 1. Each well completed or recompleted in the Jenkins-Cisco Pool or in the Cisco formation within one mile thereof, and not nearer to or within the limits of another designated Cisco oil pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well shall be located on a standard unit containing 160 acres, more or less, substantially in the form of a square, which is a quarter section being a legal subdivision of the United States Public Land Surveys.

RULE 3. The Secretary-Director of the Commission may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit consisting of less than 160 acres or the unorthodox size or shape of the tract is due to a variation in the legal subdivision of the United States Public Land Surveys. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the formation of the non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. Each well shall be located no nearer than 660 feet to the outer boundary of the proration unit boundary and no nearer than 330 feet to any governmental quarter-quarter section line.

RULE 5. The Secretary-Director may grant an exception to the requirements of Rule 4 without notice and hearing when an

(4) That the evidence establishes that one well in the Jenkins-Cisco Pool can efficiently and economically drain and develop 160 acres.

(5) That the applicant has not presented sufficient evidence concerning the reservoir characteristics of the Jenkins-Cisco Pool to enable the Commission to determine that a 160-acre proportional factor of 6.77 for allowable purposes will not cause reservoir damage.

(6) That the Special Rules and Regulations promulgated by Order No. R-2931, as amended by this order, will afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the oil in the pool.

(7) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, the Special Rules and Regulations promulgated by Order No. R-2931, as amended by this order, should be continued in full force and effect until further order of the Commission.

(8) That this case should be reopened at an examiner hearing in February, 1967, at which time the operators in the subject pool may appear and show cause why the 160-acre proportional factor of 4.77 assigned to the Jenkins-Cisco Pool should not be retained.

(9) That the applicant, Amerada Petroleum Corporation, also seeks extension of the horizontal limits of the subject pool to include the following additional area in Lea County, New Mexico:

TOWNSHIP 9 SOUTH, RANGE 35 EAST, NMPM
Section 19: N/2 SW/4

(10) That the horizontal limits of the Jenkins-Cisco Pool should be extended to include the lands described in Finding No. (9) above.

IT IS THEREFORE ORDERED:

(1) That the horizontal limits of the Jenkins-Cisco Pool in Lea County, New Mexico, are hereby extended to include the

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3261
Order No. R-2931-B
NOMENCLATURE

APPLICATION OF AMERADA PETROLEUM CORPORATION
FOR A POOL EXTENSION AND SPECIAL RULES, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing de novo at 9 a.m. on August 17, 1966, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 19th day of August, 1966, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That by Order No. R-2931, dated June 15, 1965, temporary Special Rules and Regulations were promulgated for the Jenkins-Cisco Pool, Lea County, New Mexico, with the provision that said temporary rules be reconsidered at a hearing to be held in July, 1966.

(3) That the applicant, Amerada Petroleum Corporation, seeks amendment of the Special Rules and Regulations promulgated by Order No. R-2931 to provide for 160-acre oil proration units, and the establishment of a 160-acre proportional factor of 6.77 for allowable purposes.

Docket No. 4-67

DOCKET: EXAMINER HEARING - WEDNESDAY - FEBRUARY 8, 1967

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Elvis A. Utz, Alternate Examiner:

CASE 3523: Application of Aztec Oil & Gas Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Fed."M" Well No. 1 located in Unit L of Section 27, Township 18 South, Range 33 East, Lea County, New Mexico, to produce oil from the South Corbin-Strawn Pool and to produce gas from the South Corbin-Morrow Gas Pool through parallel strings of tubing.

CASE 3524: Application of Standard Oil Company of Texas for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the San Andres formation through its H. R. Stroup Well No. 6 located in Unit C of Section 11, Township 18 South, Range 26 East, Atoka-San Andres Pool, Eddy County, New Mexico.

CASE 3261 (Reopened)

In the matter of Case No. 3261 being reopened pursuant to the provisions of Order No. R-2931-B, which order assigned a 160-acre proportional factor of 4.77 to the Jenkins-Cisco Pool, Lea County, New Mexico, for a period of six months, rather than the usual factor of 6.77 for a 160-acre pool of this depth. All interested parties may appear and show cause why the 160-acre proportional factor of 4.77 assigned to said pool should not be retained.

CASE 2750 (Reopened)

In the matter of Case No. 2750 being reopened pursuant to the provisions of Order No. R-2441, which order established 640-acre spacing units for the Indian Basin-Morrow Gas Pool, Eddy County, New Mexico, for a period of one year after first pipeline connection in the pool. All interested parties may appear and show cause why said pool should not be developed on 320-acre spacing units.

CASE 2749 (Reopened)

In the matter of Case No. 2749 being reopened pursuant to the provisions of Order No. R-2440, which order established 640-acre spacing units for the Indian Basin-Upper Pennsylvanian Gas Pool, Eddy County, New Mexico, for a period of one year after first pipeline connection in the pool. All interested parties may appear and show cause why said pool should not be developed on 320-acre spacing units.

CASE 3525: Application of Robert A. Dean for a non-standard gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the non-standard gas well location of his Southern Union 13 State Well No. 1, 2310 feet from the South and East lines of Section 13, Township 16 South, Range 31 East, West Mesa-Upper Queen Gas Pool, Eddy County, New Mexico.

CASE 3526: Application of Mobil Oil Company for 320-acre spacing, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks 320-acre spacing for the Cemetery-Morrow Gas Pool in Sections 16 and 17, Township 20 South, Range 25 East, Eddy County, New Mexico. Said pool was created prior to Order No. R-2707 and therefore is not automatically eligible for 320-acre spacing. In the absence of evidence to the contrary, 320-acre spacing will be established for the subject pool.

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

P. O. BOX 2088
SANTA FE

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

August 19, 1966

Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

Re: Case No. 3261
Order No. R-2931-B
Applicant:

Amerada Petroleum Corporation

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC
OTHER Mr. Larry Shannon, Delaware Apache Corp., Midland, Texas
Mr. Herman High, Superior Oil Company, Midland, Texas

DOCKET MAILED

Date 8-26-67

CASE 3442 - Continued:

1) EXTEND the Indian Basin-Upper Pennsylvanian Gas Pool to include therein:

TOWNSHIP 22 SOUTH, RANGE 23 EAST, NMPM
SECTION 17: All

m) EXTEND the Jenkins-Cisco Pool to include therein:

TOWNSHIP 9 SOUTH, RANGE 35 EAST, NMPM
SECTION 30: S/2 NW/4

n) EXTEND the Leslie Spring-San Andres Pool to include therein:

TOWNSHIP 7 SOUTH, RANGE 26 EAST, NMPM
SECTION 26: N/2 SW/4

o) EXTEND the Lovington-Paddock Pool to include therein:

TOWNSHIP 16 SOUTH, RANGE 37 EAST, NMPM
SECTION 29: SE/4

p) EXTEND the Lusk-Strawn Pool to include therein:

TOWNSHIP 19 SOUTH, RANGE 31 EAST, NMPM
SECTION 14: SW/4

q) EXTEND the Monument-Tubb Pool to include therein:

TOWNSHIP 19 SOUTH, RANGE 37 EAST, NMPM
SECTION 34: S/2

r) EXTEND the Paddock Pool in Lea County to include therein:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM
SECTION 22: NW/4 and N/2 SW/4

s) EXTEND the Pearl-Queen Pool to include therein:

TOWNSHIP 20 SOUTH, RANGE 35 EAST, NMPM
SECTION 3: NE/4

t) EXTEND the Penasco-San Andres Pool to include therein:

TOWNSHIP 18 SOUTH, RANGE 25 EAST, NMPM
SECTION 25: N/2 SW/4

u) EXTEND the Vacuum-Upper Pennsylvanian Pool to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 24: SW/4

v) EXTEND the Vacuum-Wolfcamp Pool to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 24: SW/4

w) EXTEND the Weir-Blinebry Pool to include therein:

TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM
SECTION 9: W/2 SE/4

Docket No. 20-66

DOCKET: REGULAR HEARING - WEDNESDAY - AUGUST 17, 1966

OIL CONSERVATION COMMISSION - 9 A.M., - MORGAN HALL, STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

ALLOWABLE: (1) Consideration of the oil allowable for September, 1966.

(2) Consideration of the allowable production of gas for September, 1966, from thirteen prorated pools in Lea, Eddy, and Roosevelt Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for September, 1966.

CASE 3261: In the matter of Case No. 3261 being reopened at the request of Amerada Petroleum Corporation to consider the amendment of the special rules for the Jenkins-Cisco Pool, Lea County, New Mexico, to provide for 160-acre oil proration units. Applicant also seeks the extension of said pool to include certain lands in Township 9 South, Ranges 34 and 35 East. The present temporary special rules promulgated by Order No. R-2931 in Case 3261 provide for 80-acre proration units, and are subject to reconsideration in July, 1966. Upon application by Amerada Petroleum Corporation, this case will be heard de novo under the provisions of Rule 1220.

CASE 3442: Southeastern New Mexico nomenclature case calling for an order for the creation, contraction, and extension of certain pools in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico.

a) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for San Andres production and designated as the Arkansas Junction-San Andres Pool. The discovery well is Aztec Oil & Gas Company, Amerada State No. 1, located in Unit C of Section 12, Township 18 South, Range 36 East, NMPM. Said pool described as:

TOWNSHIP 18 SOUTH, RANGE 36 EAST, NMPM
SECTION 12: NW/4

b) CREATE a new pool in Chaves County, New Mexico, classified as an oil pool for San Andres production and designated as the Cato-San Andres Pool. The discovery well is Pan American Petroleum Corporation, D. C. Baskett No. 1, located in Unit L of Section 11, Township 8 South, Range 30 East, NMPM. Said pool described as:

TOWNSHIP 8 SOUTH, RANGE 30 EAST, NMPM
SECTION 11: SW/4

c) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Bone Spring production and designated as the Grama Ridge-Bone Springs Pool. The discovery well is Shell Oil Company, South Wilson Deep Unit No. 2, located in Unit J of Section 33, Township 21 South, Range 34 East, NMPM. Said pool described as:

TOWNSHIP 21 SOUTH, RANGE 34 EAST, NMPM
SECTION 33: SE/4

d) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Wolfcamp production and designated as the Shoe Bar-Wolfcamp Pool. The discovery well is Ashmun & Hilliard, J. E. Stokes et al No. 1, located in Unit G of Section 26, Township 16 South, Range 35 East, NMPM, with special vertical limits defined as being from the top of the Wolfcamp at 9890 feet to the shale break at 10,395 feet as in Ashmun & Hilliard, J. E. Stokes et al No. 1, located in Unit G of Section 26, Township 16 South, Range 35 East, NMPM. Said pool described as:

TOWNSHIP 16 SOUTH, RANGE 35 EAST, NMPM
SECTION 26: E/2

e) Contract the Loco Hills Grayburg-San Andres Pool in Eddy County, New Mexico, by the deletion of the following described area:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM
SECTION 35: S/2 SE/4 and SE/4 SW/4

f) EXTEND the Grayburg-Jackson Pool to include therein:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM
SECTION 15: SW/4 SW/4
SECTION 35: S/2 SE/4 and SE/4 SW/4

g) EXTEND the Bagley-Upper Pennsylvanian Gas Pool to include therein:

TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM
SECTION 33: NW/4

h) EXTEND the Blinebry Oil Pool to include therein:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM
SECTION 17: W/2 SE/4

i) EXTEND the Chavaroo-San Andres Pool to include therein:

TOWNSHIP 7 SOUTH, RANGE 33 EAST, NMPM
SECTION 13: SE/4
SECTION 31: SE/4

TOWNSHIP 7 SOUTH, RANGE 34 EAST, NMPM
SECTION 19: NE/4

TOWNSHIP 8 SOUTH, RANGE 33 EAST, NMPM
SECTION 2: N/2
SECTION 3: NW/4
SECTION 4: NE/4

j) EXTEND the South Corbin-Morrow Gas Pool to include therein:

TOWNSHIP 18 SOUTH, RANGE 33 EAST, NMPM
SECTION 28: NE/4

k) EXTEND the Henshaw Queen-Grayburg-San Andfes Pool to include therein:

TOWNSHIP 16 SOUTH, RANGE 31 EAST, NMPM
SECTION 18: NW/4 SW/4

(5) That the evidence presented concerning the reservoir characteristics of the Jenkins-Cisco Pool is not sufficient to enable the Commission to determine that a 160-acre proportional factor of 6.77 for allowable purposes will not cause reservoir damage.

(6) That because of the continued uncertainty of the reservoir characteristics of the Jenkins-Cisco Pool, the 160-acre proportional factor of 4.77 should be retained unless and until it can be shown, upon application, notice, and hearing, that a proportional factor of 6.77 will not cause reservoir damage.

IT IS THEREFORE ORDERED:

(1) That the 160-acre proportional factor of 4.77 assigned to the Jenkins-Cisco Pool by Order No. R-2931 as amended by Order No. R-2931-B shall be continued in effect until such time as it can be shown, after application, notice, and hearing, that a proportional factor of 6.77 will not cause reservoir damage.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

esr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3261
Order No. R-2931-C

APPLICATION OF AMERADA PETROLEUM CORPORATION
FOR A POOL EXTENSION AND SPECIAL RULES, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 8, 1967, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 15th day of February, 1967, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That by Order No. R-2931, dated June 15, 1965, temporary Special Rules and Regulations were promulgated for the Jenkins-Cisco Pool, Lea County, New Mexico.

(3) That by Order No. R-2931-B, dated August 19, 1966, said Special Rules and Regulations were amended and made permanent with the provision that said Case 3261 be reopened in February, 1967, at which time the operators in the subject pool could appear and show cause why the 160-acre proportional factor of 4.77 assigned to the Jenkins-Cisco Pool should not be retained.

(4) That pursuant to the provisions of Order No. R-2931-B, this case was reopened to allow all operators in the subject pool to appear and show cause why the 160-acre proportional factor of 4.77 assigned to said pool should not be retained.

RULE 6. A standard proration unit (79 through 81 acres) shall be assigned an 80-acre proportional factor of 4.77 for allowable purposes, and in the event there is more than one well on an 80-acre proration unit, the operator may produce the allowable assigned to the unit from the wells on the unit in any proportion.

The allowable assigned to a non-standard proration unit shall bear the same ratio to a standard allowable as the acreage in such non-standard unit bears to 80 acres.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the Jenkins-Cisco Pool or in the Cisco formation within one mile thereof are hereby approved provided that the operator of any well having an unorthodox location shall notify the Hobbs District Office of the Commission in writing of the name and location of the well on or before July 1, 1965.

(2) That each well presently drilling to or completed in the Jenkins-Cisco Pool or in the Cisco formation within one mile thereof shall receive a 40-acre allowable until a Form C-102 dedicating 80 acres to the well has been filed with the Commission.

(3) That this case shall be reopened at an examiner hearing in July, 1966, at which time the operators in the subject pool may appear and show cause why the Jenkins-Cisco Pool should not be developed on 40-acre spacing units.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JACK M. CAMPBELL, Chairman

GUYTON B. HAYS, Member

A. L. PORTER, Jr., Member & Secretary

esr

SPECIAL RULES AND REGULATIONS
FOR THE
JENKINS-CISCO POOL

RULE 1. Each well completed or recompleted in the Jenkins-Cisco Pool or in the Cisco formation within one mile thereof, and not nearer to or within the limits of another designated Cisco oil pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well shall be located on a standard unit containing 80 acres, more or less, consisting of the N/2, S/2, E/2, or W/2 of a governmental quarter section; provided, however, that nothing contained herein shall be construed as prohibiting the drilling of a well on each of the quarter-quarter sections in the unit.

RULE 3. The Secretary-Director of the Commission may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit comprising a governmental quarter-quarter section or lot. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the formation of the non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. Each well shall be located within 150 feet of the center of a governmental quarter-quarter section or lot.

RULE 5. The Secretary-Director may grant an exception to the requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon. All operators offsetting the proposed location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all operators offsetting the proposed location or if no objection to the unorthodox location has been entered within 20 days after the Secretary-Director has received the application.

(4) That the applicant also seeks the promulgation of temporary special rules and regulations governing said pool, including a provision for 80-acre spacing units.

(5) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, temporary special rules and regulations providing for 80-acre spacing units should be promulgated for the Jenkins-Cisco Pool.

(6) That the temporary special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(7) That the temporary special rules and regulations should be established for a one-year period in order to allow the operators in the subject pool to gather reservoir information to establish the area that can be efficiently and economically drained and developed by one well.

(8) That this case should be reopened at an examiner hearing in July, 1966, at which time the operators in the subject pool should be prepared to appear and show cause why the Jenkins-Cisco Pool should not be developed on 40-acre spacing units.

IT IS THEREFORE ORDERED:

(1) That the horizontal limits of the Jenkins-Cisco Pool in Lea County, New Mexico, are hereby extended to include the following-described area:

TOWNSHIP 9 SOUTH, RANGE 34 EAST, NMPM
Section 24: E/2 SE/4

TOWNSHIP 9 SOUTH, RANGE 35 EAST, NMPM
Section 19: S/2 SW/4
Section 30: N/2 NW/4

(2) That temporary Special Rules and Regulations for the Jenkins-Cisco Pool are hereby promulgated as follows:

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3261
Order No. R-2931
NOMENCLATURE

APPLICATION OF DELAWARE-APACHE CORPORATION
FOR A POOL EXTENSION AND SPECIAL RULES, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on June 9, 1965, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 15th day of June, 1965, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Delaware-Apache Corporation, seeks the extension of the horizontal limits of the Jenkins-Cisco Pool in Lea County, New Mexico, to include the following-described area:

TOWNSHIP 9 SOUTH, RANGE 34 EAST, NMPM
Section 24: SE/4
Section 25: NE/4

TOWNSHIP 9 SOUTH, RANGE 35 EAST, NMPM
Section 19: S/2
Section 30: NW/4

(3) That the horizontal limits of the Jenkins-Cisco Pool should be extended to include only a portion of the above-described area.

PROPOSED FINDINGS

JENKINS - CISCO POOL
LEA COUNTY, NEW MEXICO

( ) That the evidence presented concerning the reservoir characteristics of the Jenkins - Cisco Pool is not sufficient to enable the Commission to determine that a 160-acre proportional factor of 6.77 for allowable purposes will not cause reservoir damage.

( ) That because of the continued uncertainty of the reservoir characteristics of the Jenkins - Cisco Pool, the 160-acre proportional factor of 4.77 should be retained unless and until it can be shown, upon application, notice and hearing, that a proportional factor of 6.77 will not cause reservoir damage.

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Apl EXHIBIT NO. 3
CASE NO. 3261

AMERADA PETROLEUM CORP.
EXHIBIT 3
NO. 3261
DATE 2-8-67

TESTS FOR MONTH OF January 1967

Jenkins Cisco Pool
Lea County, New Mexico

Lease	Well No.	Test Date	How Prod.	Jan. Well Allow-able	Production During Test			Choke Size or S.P.M.	Hrs. Test	Pressures		Jan. GOR	1966 July GOR	Change
					Oil	Water	BS&W %			Tbg.	Csg.			
Amerada - Anderson	1	1-18-67	F	249	258	None	-	13/64"	24	710	-	1034	961	+ 73
Apache - Anderson "A"	1	1-10-67	F	249	271	None	-	14/64	24	770	-	669	1084	- 415
Apache - Samatha Anderson	1	1-26-67	F	243 [1]	372	None	-	16/64	24	960	-	784	1293	- 509
Apache - Hileman Est.	1	1-18-67	F	249	303	None	-	14/64	24	1135	-	2537	2579	- 42
Apache - Cole	1	1-18-67	F	249	320	None	-	16/64	24	690	-	878	1007	- 129
Superior - Mounsey [2]	1	1-18-67	F	187 [3]	119	51	30	-	24	300	-	-	1297	-

1 Acreage factor .975
2 Gas being vented to atmosphere - Not Measured
3 Acreage factor .75

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2
CASE NO. 3261

AMERADA PETROLEUM CORP.
EXHIBIT 2
NO. 3261
DATE 2-8-67

CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION
TELEGRAM

W. P. MARSHALL, PRESIDENT

1201 (4-00)

SYMBOLS
DL = Day Letter
NL = Night Letter
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D MDA049 PB 4 EXTRA=MIDLAND TEX 7 950A CST=

NEW MEXICO OIL CONSERVATION COMMISSION= 1967 FEB 7 AM 9 47

STATE LAND OFFICE BLDG SANTA FE NMEX=

ATTN MR A L PORTER JR=

Q RE CASE 3261, JENKINS CISCO POOL FEBRUARY 8, 1967=

Q APACHE CORPORATION HAS BEEN INFORMED OF AMERADA'S EXHIBIT #3 TO BE PRESENTED DURING THE HEARING OF CASE 3261= WE CONCUR WITH THEIR PROPOSED FINDINGS= IT IS APACHE'S CONCLUSION, BECAUSE OF THE CONTINUED UNCERTAINTY OF THE RESERVOIR CHARACTERISTICS OF THE JENKINS CISCO POOL, THAT THE ALLOWABLE FACTOR SHOULD BE RETAINED AT 4.77=

LARRY SHANNON DIVN ENGR DELAWARE-APACHE CORP MIDLAND TEX=

WE APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

Docket No. 4-67

DOCKET: EXAMINER HEARING - WEDNESDAY - FEBRUARY 8, 1967

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Elvis A. Utz, Alternate Examiner:

CASE 3523: Application of Aztec Oil & Gas Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Fed."M" Well No. 1 located in Unit L of Section 27, Township 18 South, Range 33 East, Lea County, New Mexico, to produce oil from the South Corbin-Strawn Pool and to produce gas from the South Corbin-Morrow Gas Pool through parallel strings of tubing.

CASE 3524: Application of Standard Oil Company of Texas for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the San Andres formation through its H. R. Stroup Well No. 6 located in Unit C of Section 11, Township 18 South, Range 26 East, Atoka-San Andres Pool, Eddy County, New Mexico.

CASE 3261 (Reopened)

In the matter of Case No. 3261 being reopened pursuant to the provisions of Order No. R-2931-B, which order assigned a 160-acre proportional factor of 4.77 to the Jenkins-Gisco Pool, Lea County, New Mexico, for a period of six months, rather than the usual factor of 6.77 for a 160-acre pool of this depth. All interested parties may appear and show cause why the 160-acre proportional factor of 4.77 assigned to said pool should not be retained.

CASE 2750 (Reopened)

In the matter of Case No. 2750 being reopened pursuant to the provisions of Order No. R-2441, which order established 640-acre spacing units for the Indian Basin-Morrow Gas Pool, Eddy County, New Mexico, for a period of one year after first pipeline connection in the pool. All interested parties may appear and show cause why said pool should not be developed on 320-acre spacing units.

CASE 2749 (Reopened)

In the matter of Case No. 2749 being reopened pursuant to the provisions of Order No. R-2440, which order established 640-acre spacing units for the Indian Basin-Upper Pennsylvanian Gas Pool, Eddy County, New Mexico, for a period of one year after first pipeline connection in the pool. All interested parties may appear and show cause why said pool should not be developed on 320-acre spacing units.

CASE 3525: Application of Robert A. Dean for a non-standard gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the non-standard gas well location of his Southern Union 13 State Well No. 1, 2310 feet from the South and East lines of Section 13, Township 16 South, Range 31 East, West Mesa-Upper Queen Gas Pool, Eddy County, New Mexico.

CASE 3526: Application of Mobil Oil Company for 320-acre spacing, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks 320-acre spacing for the Cemetery-Morrow Gas Pool in Sections 16 and 17, Township 20 South, Range 25 East, Eddy County, New Mexico. Said pool was created prior to Order No. R-2707 and therefore is not automatically eligible for 320-acre spacing. In the absence of evidence to the contrary, 320-acre spacing will be established for the subject pool.

(5) That the evidence presented concerning the reservoir characteristics of the Jenkins-Cisco Pool is not sufficient to enable the Commission to determine that a 160-acre proportional factor of 6.77 for allowable purposes will not cause reservoir damage.

(6) That because of the continued uncertainty of the reservoir characteristics of the Jenkins-Cisco Pool, the 160-acre proportional factor of 4.77 should be retained unless and until it can be shown, upon application, notice, and hearing, that a proportional factor of 6.77 will not cause reservoir damage.

IT IS THEREFORE ORDERED:

(1) That the 160-acre proportional factor of 4.77 assigned to the Jenkins-Cisco Pool by Order No. R-2931 as amended by Order No. R-2931-B shall be continued in effect until such time as it can be shown, after application, notice, and hearing, that a proportional factor of 6.77 will not cause reservoir damage.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

A. L. PORTER, Jr., Member & Secretary

esr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3261
Order No. R-2931-C

APPLICATION OF AMERADA PETROLEUM CORPORATION
FOR A POOL EXTENSION AND SPECIAL RULES, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 8, 1967, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 15th day of February, 1967, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That by Order No. R-2931, dated June 15, 1965, temporary Special Rules and Regulations were promulgated for the Jenkins-Cisco Pool, Lea County, New Mexico.

(3) That by Order No. R-2931-B, dated August 19, 1966, said Special Rules and Regulations were amended and made permanent with the provision that said Case 3261 be reopened in February, 1967, at which time the operators in the subject pool could appear and show cause why the 160-acre proportional factor of 4.77 assigned to the Jenkins-Cisco Pool should not be retained.

(4) That pursuant to the provisions of Order No. R-2931-B, this case was reopened to allow all operators in the subject pool to appear and show cause why the 160-acre proportional factor of 4.77 assigned to said pool should not be retained.

GOVERNOR
DAVID F. CARGO
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

P. O. BOX 2088
SANTA FE

February 15, 1967

Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

Re: Case No. 3261
Order No. R-2931-C
Applicant:
AMERADA PETROLEUM CORP.

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC *
Artesia OCC
Aztec OCC
Other

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

APPLICATION OF AMERADA PETROLEUM CORPORATION FOR A HEARING DE NOVO IN CASE NO. 3261 REGARDING THE EXTENSION OF, AND SPECIAL RULES FOR, THE JENKINS-CISCO POOL, LEA COUNTY, NEW MEXICO.	)	CASE NO. 3261 (DE NOVO)

APPLICATION

Applicant Amerada Petroleum Corporation states that:

(1) Applicant operates a well producing from the Jenkins-Cisco Pool, a common source of supply of oil established by Order No. R-2527 and last defined by Order No. R-3014.

(2) This Commission, by Order No. R-2931 dated June 15, 1965, established special temporary rules (including a provision for 80-acre proration units) for a period of one year, and provided in such order that "jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary."

(3) Upon Amerada's application for an extension of the horizontal limits of the Jenkins-Cisco Pool, and for special rules for such pool (including the establishment of 160-acre proration units), an Examiner hearing was held in Case No. 3261 on June 8, 1966.

(4) On July 14, 1966, Order No. R-2931-A was issued, denying Amerada's application and adopting the 80-acre spacing provisions of Order No. R-2931 until further order of the Commission.

(5) All of the evidence introduced in the hearing of June 8, 1966, showed that the establishment of 160-acre proration units is necessary to prevent waste, protect correlative rights and otherwise satisfy the standards set by Section 65-3-14 (b), New Mexico Statutes Annotated.

Applicant Amerada Petroleum Corporation therefore requests that this matter be heard de novo by the full Commission pursuant to Section 65-3-11.1, New Mexico Statutes Annotated, that notice of hearing be given as required by law, and that the Commission thereupon extend the horizontal limits of the Jenkins-Cisco Pool and establish 160-acre proration for such pool as originally requested by this Applicant.

AMERADA PETROLEUM CORPORATION

By Thomas W. Lynch
Thomas W. Lynch, Attorney
P. O. Box 2040
Tulsa, Oklahoma 74102

By Jason W. Kellahin
Jason W. Kellahin, Attorney
Kellahin & Fox
P. O. Box 1769
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TELEPHONE 982-4315
AREA CODE 505

July 23, 1966

MAIN OFFICE OCC
'66 JUL 26 AM 7 41

Oil Conservation Commission
of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Re: Case No. 3261,
Order No. R-2931-A

Gentlemen:

Enclosed, in triplicate, is the application of Amerada Petroleum Corporation for a hearing de novo before the Oil Conservation Commission, in the above case.

It is requested that this case be set for hearing at the regular August hearing of the Commission, August 17, 1966.

Yours very truly,

Jason W. Kellahin

Jason W. Kellahin

JWK:ss
cc: Mr. Thomas W. Lynch

DOCKET MAILED
Date 8-4-66