

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
March 9, 1966

EXAMINER      HEARING

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IN THE MATTER OF: )

In the matter of Case No. 3206 being )  
reopened pursuant to the provisions of Order )  
No. R-2874, which order established 160 acre )  
spacing for the High Plains-Pennsylvanian )  
Pool, Lea County, New Mexico, for a period )  
of one year. )

Case No. 3206

-----  
BEFORE:

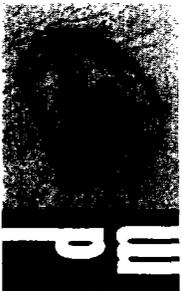
Elvis A. Utz, Gas Engineer

TRANSCRIPT OF HEARING

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MR. DURRETT: In the matter of Case No. 3206 being reopened pursuant to the provisions of Order No. R-2874, which order established 160 acre spacing for the High Plains-Pennsylvanian Pool, Lea County, New Mexico, for a period of one year.

MR. HINKLE: Clarence Hinkle of Hinkle, Bondurant and Christy appearing on behalf of Apache; we have two witnesses, I would like to have them sworn, please.

(Witnesses sworn.)

(Whereupon, Applicant's Exhibits 1, 2, 3, 4 & 5 marked for identification.)

MR. ITZ: Any other appearances? You may proceed.

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FREDRICK M. JULIAN, a witness, having been first duly sworn on oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

- Q State your name, please?
- A Fredrick M. Julian.
- Q By whom are you employed?
- A Delaware Apache Corporation.
- Q In what capacity?
- A Geologist.
- Q Are you a graduate geologist?
- A Yes, sir.

Q What school did you graduate from?

A I graduated from the University of North Dakota in February of 1947.

Q Have you practiced your profession since graduation?

A Yes, sir.

Q By whom have you been employed since your graduation?

A I was employed by Amerada Petroleum Corporation for approximately 8 and one half years and since that time with Delaware Apache Corporation.

Q Have you spent a good deal of time in New Mexico and Southeastern New Mexico?

A Yes, sir, in Hobbs working with Amerada.

Q Since that time you have been with Apache in what Capacity?

A Doing exploration work in New Mexico.

Q Are you familiar with the High Plains Area?

A Yes, sir.

Q Have you made a study of all the wells that have been drilled in that area?

A Yes, sir.

Q And in the East Saunders Area to the East of it?

A Yes, sir.

Q Have you reviewed the testimony originally introduced in this Case Number 3206?

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A Yes, sir.

Q Please refer to Apache's Exhibit 1 and explain to the Commission what it is and what it shows?

A Exhibit 1 is a plat showing wells in the East Saunder's Pool and in the High Plains Field. It's contoured, structurally contoured on top of the Saunders line, 50 foot contours.

Q Is this substantailly the same exhibit that was originally introduced in the case showing the structural condition?

A Yes, it is, there's very little change at all on this plat.

Q How has this change been brought about?

A By the drilling of our Number 2 High Plains well.

Q Where is it located?

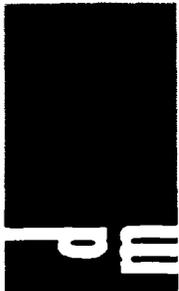
A It's located in the Southwest of the Southeast of Section 15.

Q It's shown on the plat?

A On the plat it's shown as a dry hole, it's also been changed by the drilling of the Huber Corporation Number 1 Pure State in the Southwest of the Northwest of Section 16.

Q But the general contours showing the conditions have not been changed?

A Not essentially changed.



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Q Is your Number 2 well higher or lower than your Number 1 well?

A Our Number 2 well ran 21 feet higher than our Number 1 well.

Q And yet it was a dry hole?

A Yes, sir.

Q How do you account for this?

A The porosity was not present in the Number 2 well that is producing in the Number 1 well.

Q Are there any other wells being drilled at the present time in the immediate area?

A Yes, there is a Sunset International Number 1 Union State drilling in the Northeast of the Northeast of Section 22. It is drilling at approximately 7,000 feet, somewhere in there.

Q What is your production depth there?

A Around 10,400 I believe.

Q So it likes about 3,000 feet being completed?

A Yes.

Q Now, you have indicated on Exhibit Number 1A and A', what does that indicate?

A That refers to our Exhibit 2 which is a cross section drawn between the Number 1 and Number 2 High Plains.

Q You have prepared such a cross section?

A Yes.

Q Refer to Exhibit 2 and explain that to the Commission?

A This cross section was drawn between High Plains Unit Number 1 and Number 2. The structural datum is a marker in the Wolfcamp Wa-Co beds and it's a reliable marker in the area. We're concerned with the pay zones which are immediately below our lime along the top of the Saunders Lime. In the perforations in the Number 1 High Plains are shown, and you'll notice that on the Number 2 High Plains Unit, the porosity is not present. It was tested from 10,485 to 10,550 and recovered 120 feet of mud. This is an equivalent zone on lower perforations in the Number 1 High Plains. The sonic log indicates porosity not being developed in the Number 2 High Plains in the interval that is the upper zone in the Number 1 High Plains.

Q In this area production is dependent mostly upon porosity?

A Yes.

Q Is that true in the East Saunders Field?

A Yes, it is. If I might refer again to Exhibit Number 1, if you'll notice dry holes on the West side of Saunders Pool they are in almost the identical situation to our dry hole, the Number 2 High Plains. These wells are not structurally low, they were merely, they did not have porosity developed, and as

a result there was no reservoir present. This same situation occurs between the Number 1 and Number 2 High Plains. We feel that although these are very similar reservoirs that they are probably not connected.

Q Is is your opinion that your Number 2 well defines the limits of the High Plains Area?

A We feel that it defines the limits on the West side, yes, sir.

Q Just on the West side?

A Well--

Q You could still have production toward the--

A --we could have--

Q Northeast?

A However, we don't know if we could be in the same porosity.

Q The production in this area generally is limited to the porosity lenses that you mentioned?

A Right. We feel that these lenses are erratic in the development, they are not continuous over a large area, and that it's unknown when you drill a well if you're going to have porosity or not, you have to take that chance.

Q Is there anything else you would like to present to the Commission in connection with this matter?

A Not at the present time.

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MR. HINKLE: We offer in evidence Exhibits 1 and 2.

(Whereupon, Applicant's Exhibit 1 and 2 offered into evidence.)

MR. UTZ: Without objection Exhibits 1 and 2 will be admitted.

(Whereupon, Applicant's Exhibit 1 and 2 admitted into evidence.)

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

CROSS-EXAMINATION

BY MR. UTZ:

Q Does the Huapache Corporation have any plans for further development?

A We do plan to drill another well, however we aren't sure exactly where. This will have to be approved by all the participants in the unit.

MR. HINKLE: How many participants in this unit?

THE WITNESS: There are 8.

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

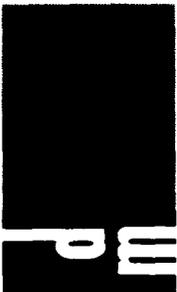
MR. HINKLE: I would like to call Larry Shannon.

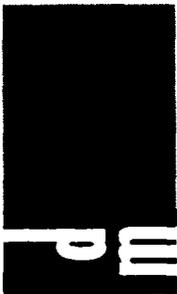
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L A R R Y S H A N N O N, a witness, having been first duly sworn on oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:





Q You are Larry Shannon?

A Yes, sir.

Q You are employed by the Huapache Corporation?

A That's correct.

Q In what capacity?

A As an area engineer.

Q Have you previously testified before the Commission and had your qualifications accepted?

A Yes, sir, I have.

Q You testified in this case originally, did you not?

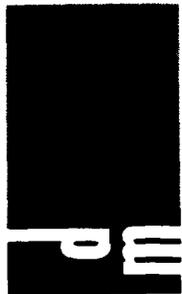
A Yes, I did.

Q Since the completion of your dry hole, which has been testified to by the previous witness, have you made a study of the reservoir limits and the economic aspects of the High Plains Pool?

A I have.

Q What does your study consist of?

A I would like to refer first to Exhibit Number 3. This is a graphic picture of the production history on our High Plains Unit Well Number 1, bottom hole pressure versus cumulative production is shown. We have extrapolated the curve in order to estimate recovery in the well assuming a bottom pressure of 500 PSI. To represent the economic limit we



estimate our recovery to be 286,000 barrels.

Q How does this performance curve compare with wells in the East Saunders Pool?

A Both the East Saunders and High Plains Pennsylvanian have been rather textbook examples, however the East Saunders Pool shows a much larger ultimate recovery. They both follow the graphic picture on the cumulative production versus bottom hole pressure.

Q This has been extrapolated out to show the economic limits of recovery?

A Yes, that is correct.

Q Refer to your Exhibit Number 4 and explain what this is and what it shows.

A Yes, sir, Exhibit Number 4, this is essentially the same exhibit originally presented to the Commission. We have added our estimates of all future recoveries from Exhibit 3 and then calculated the minimum drainage of our well. At the base of this exhibit we have shown or anticipated recoveries, namely the 40, 80 and 160 acreage. Then the actual area of drainage I think is shown at the bottom to be a minimum of 134 acres.

Q That is only the minimum, it could be considerably more than that, could it not?

A Yes, Mr. Hinkle, it could.

Q As much as 160 acres more?

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A It's conceivable, yes.

Q The actual drainage area that you have arrived at has been obtained from the information contained on your Exhibit 3?

A Yes, the 287 barrels at 500 PSI.

Q Now, refer to Exhibit Number 5 and explain what that shows?

A This is a revised exhibit which explains the economics as determined from our production performance. Recoveries have been lowered slightly to correct our new estimates. We have shown, too, the data is substantially the same, the basic data is exactly the same. As you'll note that within a 40 acre spacing we have already recovered more than what we would have anticipated ultimate recoveries from 40 acre spacing.

Q How about the 80 acres, what percentage of the oil in place under 80 acres do you estimate you've recovered, or approximately?

A We estimate from Exhibit 4, the ultimate recovery to be 170,000 barrels based upon our performance now. We estimate 134,000 barrels under an 80 acre spacing and we have recovered 114,000 of the 143,000 estimated.

Q What is the present capability of your Number 1 well?

A The well currently has an allowable of 337 barrels per day and we flow the well at times over 400 barrels a day.

It has a capacity to go way over this.

Q So it is holding out?

A Yes, sir.

Q How does that compare with the well to the South in Section 25 which is a Texas Sinclair State, I guess?

A We see very little similarity between the two wells. The Texas crude well's cumulative production was slightly less than 62,000 barrels; the current capacity fluctuates. In December

Q Will the drilling and completion of the Sunset International Well to the South have any bearing on this situation?

A Yes, sir, it would definitely present additional data, particularly bottom hole data that we do not currently have. It could either be within the same little lens or an additional lens; it could be a productive well.

Q Have you formed any opinion as a result of your study of the actual drainage area other than shown by the exhibits, as far as well Number 1 is concerned?

A Well, our opinion, of course, is based upon the calculations. We feel sure we're draining at least 134 acres, we don't know which direction this 134 runs; we've attempted to estimate this and it seems a little difficult to determine the



radius of drainage.

Q Do you think you would be justified in drilling more wells on an 80 acre spacing basis if you went back to 80 acres?

A No, sir, we don't. I believe Exhibit 5 shows the economics of an 80 acre spacing would defer any additional development.

Q Would not encourage?

A Would not encourage.

Q Do you think that retaining 160 acre spacing the development in the area would be encouraged, additional wells?

A Yes, I know that our top management wants to see a step out. We feel, of course, we're just the unit operators, but I know they want to propose a well shortly within the unit.

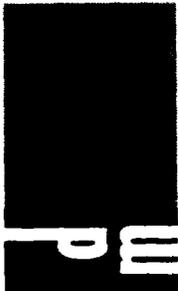
Q If it went to 80 acre spacing would you or would you not drill that additional well?

A This is speculation again but I'm sure that with what we see now that they take a real long hard look and possibly use a Quija Board.

Q Would you not be drilling on 80 acres on account of the economic situation?

A Yes.

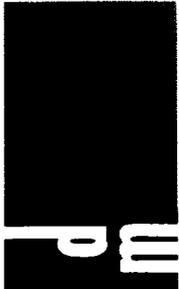
Q Do you have any recommendations to make to the Commission with respect to making permanent the special



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field rules in the High Plains Pennsylvanian Pool?

A We propose to have the special pool rules to provide for the 160 acre spacing to be made permanent. If the Commission does not feel the request is inclusive we request that the rules stay on for our one additional area.

Q You would prefer to have it made permanent?

A Yes, sir.

Q Do you have any further testimony to give to the Commission?

A No, that's all I have, Mr. Hinkle.

MR. HINKLE: We would like to offer in evidence Exhibits 3, 4, and 5.

(Whereupon, Applicant's Exhibits 3, 4, and 5 offered into evidence.)

MR. UTZ: Without objection Exhibits 3, 4, and 5 will be entered.

(Whereupon, Applicant's Exhibits 3, 4, and 5 admitted into evidence.)

MR. HINKLE: That's all of this witness.

CROSS-EXAMINATION

BY MR. UTZ:

Q Mr. Shannon, is Huapache participating in the Sunset Well?

A No, sir, we are not.

Q I believe that information will be available to you?

A Yes, in fact there is a representative here today with Sunset that will make a statement shortly, sir.

Q And as to whether you drill another well or not may be dependent on the results of the Sunset Well, is that right?

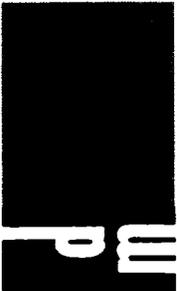
A Not necessarily, Mr. Utz. We feel now that there's a series of lenses. Whether they hit the lens or not may not defer our plans to go in another direction to another individual lens.

Q How did you arrive at the Number of acres that you suggested this well, did you use a volumetric reserve against your completion?

A Yes, that is correct, we took the basic information we had submitted at the original hearing which shows recoverable oil, barrels per acre, 2,140 barrels that we have estimated, and the data has not changed enough for us to change this basic information. We just divided this into the ultimate recovery that we were to expect from our production history. It is a comparison of volumetric versus production performance.

Q If Huapache does not drill another well and obtain another producing well in the unit, what purpose would 160 acre spacing serve; your ready production would be the only effect, would it not?

A Well, no, sir, development. This again is



speculation but I do not believe that the operators, and this is speculation, would want to drill closer spacing than with the 160 in the area. This gives much more incentive to step out and look for additional lenses. I would say that it would strongly effect the development of our operating unit, and I know Sunsets men have based their assumption strongly on the spacing we have when they took the deal to drill South. The economics, I mean this drastically effects economics, too, sir.

Q Rate of return, you mean?

A Rate of return, yes, sir.

Q How long do you think it will be before Apache knows whether they will drill another well, or not?

A Within six months, I'm sure, possibly three months.

Q And it takes how long to drill?

A Thirty-two, little over thirty days.

Q And a year would probably determine whether or not you were able to obtain another producer in the unit?

A Yes, sir.

MR. UTZ: Any other questions?

REDIRECT EXAMINATION

BY MR. HINKLE:

Q In your opinion is the East Saunders Field, the characteristics about the same as the High Plains Pennsylvanian

Pool, characteristics of the pool?

A Very similar, yes, sir, and at one time we thought there was a possibility to interlink. In the past year we found they do not connect there.

Q The East Saunders has been developed on a 160 acre proration unit?

A Yes.

Q Had that pool been developed on 80 acres as far as economics is concerned, would the economics be very good as far as 80 acre spacing is concerned?

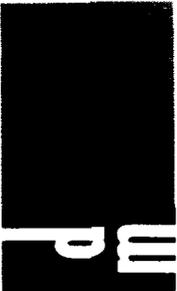
A No, sir, their economics are the same as ours, essentially, on 160 as versus--

Q It's doubtful they would ever drill any more wells there?

A Yes, sir, in the last year they drilled two additional wells.

MR. UTZ: Any other questions of the witness? The witness may be excused. Are there any statements in this case?

MR. PARKS: Yes, sir. My name is Lee Parks representing Sunset International Petroleum Corporation. We are drilling the well in the Southeast Quarter of Section 22. Our decision to drill was based on the economics of a 160 spacing. We started putting the deal together last October. We had hoped that by the time for this hearing we would have



some bottom hole pressure and production history, however due to legal delays we did not spud the well until February 16th. We now expect the well to be completed March 20th. We concur in the recommendations that the 160 spacing be adopted for the field or if the Commission feels the evidence is not sufficient we would concur in recommending that the temporary order be continued for another year.

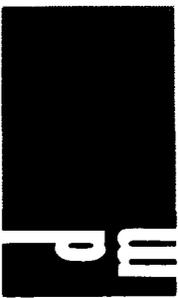
MR. UTZ: Thank you very much.

MR. RUSSELL: John Russell on behalf of Union Oil Company of California in that they support Huapache Oil Company in this case.

MR. DURRETT: The Commission has received a telegram from Amerada, supporting; letter from the Atlantic Refining Company, supporting; and a letter for Sun Oil Company supporting the application.

MR. UTZ: Any other statements? The case will be taken under advisement and the hearing is adjourned.

(Whereupon, the hearing was adjourned at 10:30 o'clock A.M.)



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