STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CASES 10068, 10069

EXAMINER HEARING

IN THE MATTER OF:

Application of Pacific Enterprises Oil Company (USA) to Limit the Rules Governing the Anderson-Pennsylvanian Gas Pool to its Present Boundary, Eddy County, New Mexico.

Application of Pacific Enterprises Oil Company (USA) to Limit the Rules Governing the Fren-Pennsylvanian Gas Pool to its Present Boundary, Eddy County, New Mexico.

TRANSCRIPT OF PROCEEDINGS

BEFORE: MICHAEL E. STOGNER, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

September 5, 1990

A P P E A R A N C E S

FOR THE DIVISION:	JIM MORROW Chief Petroleum Engineer State Land Office Building Post Office Box 2088 Santa Fe, N.M. 87504-2088
FOR THE APPLICANT:	W. THOMAS KELLAHIN, ESQ. Kellahin, Kellahin & Aubrey, Post Office Box 2265 Santa Fe, N.M. 87504-2265
FOR EXXON CORPORATION: (CASE 10069)	JAMES W. BRUCE, ESQ. The Hinkle Law Firm 500 Marquette, N.W., #740 Albuquerque, N.M. 87102

I N D E X

E X H I B I T S

APPLICANT'S EXHIBITS:

EXAMINER STOGNER: We'll call the next case, No. 10068, which is the application of Pacific Enterprises Oil Company, (USA), to limit the rules governing the Anderson-Pennsylvanian Gas Pool to its present horizontal boundary, Eddy County, New Mexico.

Call for appearances.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe Law Firm of Kellahin, Kellahin & Aubrey, appearing on behalf of the Applicant. I have three witnesses to be sworn.

EXAMINER STOGNER: Are there any other appearances in this matter?

Will the witnesses please stand to be sworn.

(Thereupon, all witnesses were sworn.)

EXAMINER STOGNER: You may be seated. Mr. Kellahin?

MR. KELLAHIN: Mr. Examiner, we would like to consolidate Case 10068 with the next case, 10069. While they involve two different pools, they do in fact involve the same topic, the proof is generally the same, and we would appreciate the opportunity to consolidate them for hearing purposes in order to expedite the presentation today.

I know in Case 10069, Mr. Bruce wanted to

make an appearance on behalf of Exxon. I believe he's in the hall, and if I might have a moment, I'll go get him.

MR. BRUCE: Mr. Examiner, my name is Jim Bruce from the Hinkle Law Firm in Albuquerque, representing Exxon Corporation. I do not believe I'll have any witnesses in this matter.

EXAMINER STOGNER: Mr. Bruce, are you appearing in just Case 10069 only?

MR. BRUCE: Yes, in Case 10069.

EXAMINER STOGNER: Mr. Kellahin, are there any other witnesses besides the three for 10069?

MR. KELLAHIN: No, sir. The same witnesses are in both cases.

EXAMINER STOGNER: Okay. Mr. Kellahin.

EDWARD "RICK" RICKETTS

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Ricketts, would you please state your name and occupation for the record.

A. My name is Edward Ricketts, I'm a petroleum geologist.

Q. Mr. Ricketts, on prior occasions have you

testified before the Division as a petroleum geologist?

A. Yes, I have.

Q. Pursuant to your employment, would you summarize for us what you have done in terms of a geologic study of both the Anderson-Penn and the Fren-Penn-Morrow gas pools in Eddy County, New Mexico?

A. Yes. I have isopached the potential pay zones in those fields, the pay zones in those fields and the potential pay zones in our proposed location. I've also constructed a structure map on the base of the Lower Morrow Shale and a series of cross-sections in the area.

MR. KELLAHIN: We tender Mr. Ricketts as an expert petroleum geologist.

EXAMINER STOGNER: Mr. Ricketts is so qualified.

Q. Mr. Ricketts, to orient the Examiner on your particular aspect of this case, let me take what is marked as Pacific Exhibit 1. Do you have that before you, sir?

A. Yes, I do.

Q. Let's use this to describe, as you understand it, what Pacific seeks to accomplish in each of these two cases.

First of all, identify for us what the base map is. What are we looking at?

A. You're looking at a drainage area map for Townships 17 South, 29 East; 17 South, 30 East; and 17 South, 31 East.

Q. The topic of conversation for Case 10068 is the Anderson pool?

A. Yes, that's correct.

Q. And how is the Anderson-Penn pool identified on your display?

A. It has been outlined in blue. It's located in 17 South, 30 East, the south half of Section 7, the west half of Section 18, and the northwest quarter of Section 19.

Q. What is the spacing utilized for wells in the Anderson-Penn pool?

A. It is 160 acres.

Q. How many wells, to your knowledge, have been drilled in that pool?

A. Three wells have been drilled.

Q. How are they identified on the display?

A. The wells with the drainage circles around them are identified as producing gas wells.

Q. Have you utilized the available geologic information for those three wells to make

interpretations about the size and shape of the Anderson-Penn pool that these wells are dedicated to?

A. Yes.

Q. Let's turn your attention now to the area identified as the Fren pool. Do you see that?

A. Yes, sir.

Q. How is that shown on the display?

A. It's outlined in the light green. It's located in 17 South, 31 East. The southwest quarter of Section 15, the east half of Section 21, and the northwest quarter of Section 22.

Q. How many gas wells are in that pool?

A. Three.

Q. Have you examined the geologic information available for those three wells to reach certain geologic conclusions?

A. Yes, I have.

Q. Identify for us what is represented by the other color coding on the display.

A. The other color coding indicates the boundaries of other Morrow gas fields in the three townships.

Q. With this as a reference point, let's turn to your next exhibit. I believe you're dealing with the Anderson-Penn?

A. Yes, the Anderson-Penn, which would be Pacific Enterprises Square Leg Prospect.

Q. Exhibit No. 2 is what, sir?

A. It is an isopach of the A zone clean sand. The A zone is an Upper Morrow sand that produces in the area. The map is contoured on a five-foot contour interval. The A zone producing wells are indicated with the blue shaded triangles.

Q. When we compare Exhibit 1 to Exhibit 2 and look at the south half of Section 7, there is a gas well in the southeast quarter of 7 that corresponds to the gas well in Section 7 on Exhibit No. 2?

A. Yes, sir, that's correct.

Q. That is one of the wells on your--shows the line of cross-section from which you've used, then, to prepare the isopach?

A. Yes, sir.

Q. When we look at the wells in the Anderson-Penn pool, they are the well in Section 7, the one in 18, and then the well in the north half of 19?

A. Yes, that's correct.

Q. When you look into 20, the southeast offset to the Phillips-Grayburg Deep #10 well, that is also a gas well in this Morrow channel?

A. That's correct.

Q. It looks to be completed in the same Morrow A zone that you've isopached on this exhibit?

A. Yes, it is.

Q. What is the spacing utilized by the Division for production in Section 20?

A. In Section 20 it's part of the Loco Hills South Field, and it's drilled on a 320-acre spacing.

Q. Describe for us what you see as a geologist when we look at this Morrow channel here for the A sand that includes portions of the Anderson pool as well as the Loco Hills pool?

A. It's a northwest/southeast trending fluvial channel.

Q. How was this deposited in the reservoir, Mr. Ricketts?

A. Well, it's deposited in a series of point bars by a fluvial or river channel coming from the northwest to the southeast.

Q. Has your analysis reached the conclusion that the wells producing out of this A zone of the Morrow in the Anderson-Penn well are, in fact, in the same reservoir as the Loco Hills wells?

A. Yes.

Q. And yet each is treated on different

spacing patterns?

A. Yes.

Q. Identify for us your understanding of where it is that your company, Pacific Enterprises, wants to drill a gas well to test for production out of this Morrow A channel?

A. Okay. It would be in 17 South, 29 East, Section 12; 1980 from the west and 660 from the north.

Q. Has it been your task to help the engineers explore what the spacing should be in that section for the development of that section and the drilling of your well?

A. Yes, it has.

Q. Do you have any other geologic displays that deals with the Anderson-Penn pool?

A. Yes, our Exhibit No. 3. Exhibit No. 3 is a clean sand isopach of the B zone contoured on a five-foot interval. The B zone is a Lower Morrow sand, a basal sand, sitting right on top of the Dorchester.

Q. Do you find that B sand to have been produced in wells in both the Anderson-Penn as well as the Loco Hills South pool?

A. Yes. Also, it produces in the Cedar Lake Field in Section 34 of 17 South, 30 East. This

particular zone actually produces in three separate fields along this trend.

Q. Is the Morrow B sand in the Anderson-Penn pool intended to be one of the targets for Pacific's well in Section 12?

A. Yes, it is.

Q. Let me turn your attention now, sir, to your study of the Fren pool. Have you prepared an isopach map on any of the Morrow sands involved in the Fren pool?

A. Yes. The Fren pool production primarily comes from what we're calling a Lower Morrow Channel sand, and that's Exhibit No. 4.

Q. What are the three wells that you've found in that well to use for geologic control?

A. The old Skelly Dow A #3 in Section 15 of 17/31, the Skelly Lynch A #6 in Section 22 of the same township, and the Skelly Dow B #21, in Section 21 of the same township.

Q. Were those the only three wells in this pool that were completed in and produced gas from the Morrow?

A. That's correct.

Q. What about the well in Section 22 in the southeast quarter identified as the Skelly #9 Lynch A

well?

A. That well was nonproductive in this zone. The sand was present but just tight and wet.

Q. You used the interpretation of those logs to help you prepare your sand map?

A. Oh, yes.

Q. What are your company's plans for the development of their acreage within this area?

A. We would like to drill a well in Section 16, 17/31, located 1980 from the north and 1980 from the east.

MR. KELLAHIN: That concludes my examination of Mr. Ricketts, Mr. Examiner.

We would move the introduction of Exhibits 1 through 4.

EXAMINER STOGNER: Are there any objections? Exhibits 1 through 4 will be admitted into evidence.

Thank you, Mr. Kellahin, Mr. Bruce, your witness.

MR. BRUCE: Just a couple of questions.

EXAMINATION

BY MR. BRUCE:

Q. What are the status of the Skelly wells, do you know?

A. Two of them have been recompleted to the Grayburg and/or San Andres, that being the wells in Section 21 and 22. The well in Section 15 is basically temporarily abandoned. It has not produced since 1973, but it's not been plugged.

MR. BRUCE: I have nothing else.

EXAMINER STOGNER: Nor do I. You may be excused.

MR. KELLAHIN: Mr. Examiner, at this time I would like to call Mr. Paul Lerwick, Pacific's petroleum engineer.

PAUL LERWICK

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Lerwick, for the record, would you please state your name and occupation?

A. My name is Paul Lerwick. I'm a reservoir engineer with Pacific Enterprises.

Q. Mr. Lerwick, on prior occasions have you testified before the Division as a petroleum engineer?

A. Yes.

Q. Pursuant to your employment, have you investigated the Fren pool and the Anderson-Penn pool

in Eddy County, New Mexico?

A. I have.

Q. And based upon that study, have you reached certain engineering conclusions?

A. I have.

Q. Have you reached a conclusion about what, in your opinion, ought to be the appropriate spacing for further development that takes place adjacent to each of these two pools?

A. I have.

Q. Have you made an economic analysis, based upon your engineering background, as to whether or not i9t is proper and appropriate for Pacific, as a prudent operator, to develop this area on 320- versus 160-acre spacing?

A. I have.

Q. Have you analyzed pressure information that's available to you for various areas in Eddy County, New Mexico, and made an analysis of that pressure information?

A. I have.

Q. Have you conducted drainage calculations and volumetric analyses to determine what, in your opinion, are the drainage areas involved for wells drilled and produced from the Fren and the

Anderson-Penn pool?

A. I have.

MR. KELLAHIN: Mr. Examiner, we tender Mr. Lerwick as an expert petroleum engineering.

EXAMINER STOGNER: Are there any objections? Mr. Lerwick is so qualified.

Q. Mr. Lerwick, let me take you back to Mr. Ricketts' first display. Before we talk about some of the things that this exhibit represents as part of your work, describe for the Examiner what it is that you, as a reservoir engineer, are faced with when you look at trying to develop, economically, additional gas wells to be produced adjacent to either the Anderson-Penn pool or the Fren-Penn pool.

A. We're faced with a number of decisions. One of those is the appropriate spacing for such wells. This is going to effect economic decisions as well as reserve calculation decisions. We're faced with a certain amount of risk analysis involved, and we're faced with the determination of appropriate spacing unit and field rules to meet our objectives.

Q. In order to satisfy those questions, what have you studied in order to determine what wells are doing in terms of their productivity and drainage areas within this portion of Eddy County, New Mexico,

regardless of the pool that they're dedicated to?

A. What we did was to take a three-township area, that being townships 17/29, 17/30 and 17/31. We looked a lot all of the producing Morrow completions in those three townships. We determined what the apparent drainage radius for each of these wells was based on the economic ultimate recovery that we could arrive at from decline curve and/or pressure data, the porosity and original bottom-hole pressures, the net pay thickness and water saturations, all engineering parameters that go into volumetric calculations that we were able to use in determining what each well's apparent radius of drainage is.

Q. In making the selection of parameters for your engineering calculations, have you used a range of judgment in selecting those parameters that were conservative and within the range accepted by persons in your discipline?

A. We have.

Q. And have you applied traditional, well-received engineering calculations and methodology in order to reach conclusions?

A. We have.

Q. When we look at your Exhibit No. 1, help us understand what is intended to be represented by the

circles. Obviously you're not going to have drainage patterns that overlap each other in the reservoir that look like this, are you?

A. No. For simplicity sake we just calculated an area of drainage and backed into a radius that's equivalent to that and drew them as circles. In reality, you have channels coming down through there, Morrow sand channels, that are of varying thicknesses and widths that would accommodate the same amount of gas that's represented by these circles, if you knew exactly the configuration underground.

Q. Having done this calculation and making the display, then, its intended purpose is to give you a general sense of the range of magnitude of drainage areas for each of the wells?

A. That's correct.

Q. And it doesn't necessarily accurately represent the actual drainage pattern for each and every well within its channel?

A. No.

Q. Let's look to see, and maybe it's helpful to also keep in mind Mr. Ricketts' isopach, Exhibit No. 3, when we're dealing with the Anderson pool.

When we look at the three wells in the Anderson, give us an engineering overview of what's

happened with the production in those pools in terms of a sequence, and interrelate with us the pressures that have occurred as each of those wells were developed.

A. The earliest well in the Anderson field was completed 10 of 54.

Q. And that would have been which well?

A. That would have been the well in the west half of Section 18.

Q. That's 10 of 54?

A. Yes.

Q. What's the next well?

A. The next well was completed in March of 72, and that's the well in the southeast corner of Section 7.

Q. And the last well is the one in the northwest of 19?

A. That's correct.

Q. When you look at the pressure information available for those three wells, what conclusions do you reach?

A. You reach the conclusion that the earliest well had some drainage influence on the wells both to the north and the south. It's a very large well with an economic ultimate recovery of 18.7 Bcf. It

produced for 18 years before any offsets were drilled.

The original bottom-hole pressure from the scout ticket was 4950 pounds. The second well, as we mentioned, in the south half of Section 7 had an original bottom-hole pressure of 3087 pounds, which is roughly 18- or 1900 pounds less. And the most recent well, which was drilled in January of 88 or completed then, had an original bottom-hole pressure of 1832 pounds as evidenced from the scout ticket, which again indicated severe depletion.

It's not entirely surprising to see this, considering the magnitude of reserves being recovered by the well in Section 18.

Q. From the discovery well to the last well, over a period of some 34 years, then, there is a pressure loss to the last well of something in excess of 3000 pounds?

A. Yes.

Q. What does that tell you as an engineer?

A. That tells me that the well in the west half of Section 18 has a very large radius of drainage, since the well in the north half of 19 is more than a half-mile away.

Q. If you controlled the property and had the

opportunity to drill these wells now as opposed to then and had to decide spacing now as opposed to the spacing decided then, what would the spacing be?

A. The spacing would be 320 acres as opposed to 160.

Q. Why?

A. It's apparent, from the spacing that these wells are drilled on, that they will drain in excess of 160 acres.

Q. We have one well in 54, one in 72 and the last one in 88. What's your understanding of the reason that the well was drilled in 88?

A. I would assume that the operator drilling this well, felt there would be sufficient reservoir pressure or lack of drainage to complete an economic well at that location.

Q. Do you have an explanation as to why there hasn't been more development in this particular Morrow channel, when you look at Mr. Ricketts' geologic display and you can see a nice Morrow channel extending beyond where it was tested by these three wells?

A. Well, I would presume that at least one significant reason would be that the field rules allowed for 160-acre development, which provides for,

in my estimation, unnecessary wells to be drilled in that trend.

Q. What is the proposal of your company for development of the Morrow sands within the area that's currently subject to the Anderson-Penn pools?

A. We propose further development be done on 320-acre spacing.

Q. All right. When we turn to the Fren pool, Mr. Lerwick, let's look for a moment at those three wells. Let's start with the first well drilled among those three. He tell us when it was drilled and your understanding for the pressure for that well?

A. The first well drilled was the well located in the northwest corner of Section 22 the original pressure you for that well was 49 70 pounds and the well was completed in February of 1954.

Q. The next well?

A. The next well was drilled in the South half of Section 15. It was complete did in June of 54, original bottom hole pressure was 4968 pounds. And the final well was drilled in 9 of 54. It was in the East half of Section 21, the original bottom hole pressure was 4330 psi.

Q. What is the current status of those wells, as best you understand them?

A. As stated earlier, all three wells have been either recompleted to a shallower horizon or temporarily abandoned.

Q. For the Anderson-Penn, those three wells, what's the status of those wells now?

A. All three wells are still currently active.

Q. When we deal with the Fren pool, what do your calculations show you on the appropriate spacing for that pool?

A. In the Fren pool, two of the wells indicate, from our volumetric calculation and drainage radius, in excess of 160 acres, those two being the south half of 15 and the east half of 21. The well in the northwest quarter of Section 22 is slightly less than 160-acre spacing.

Q. In retrospect, Mr. Lerwick, what would have been the more appropriate spacing for the Fren pool?

A. In this case, again, the appropriate spacing would have been 320-acre spacing as opposed to 160.

Q. As to both pools, do you have a recommendation to the Examiner, based upon your study, whether or not their current boundaries and the rules that apply to those pools should be limited to the current spacing units?

A. Yes, that would be my recommendation for further development.

Q. What's accomplished if that is implemented by the Examiner?

A. What's accomplished is that you can drill wells on sufficiently large enough spacing to economically justify the amount of reserves that you can expect from those wells. If further wells are drilled on 160-acre spacing, as this field develops as we hope it will, the risk reserves are insufficient to support continued development.

Q. Do you have any opinions why further development in the Fren pool has not occurred in the last 36 years?

A. In my opinion, the 160-acre spacing would be a negative factor in people seeking to further develop this field.

Q. Let me direct your attention now to what is marked as Exhibit No. 5. Would you, first of all, identify that display and then describe for us what you've done?

A. Exhibit No. 5 is the drainage radius calculation that shows the calculations that we made, the engineering calculations and the method we used.

Q. And then the second page represents what?

A. The second page is simply a tabulation of the data that we accumulated off of logs, scout tickets, production sources, and the results that we were able to calculate from that actual data used to come up with the drainage radiuses and average thicknesses and average porosities and average reserves per completed well for this three-township area.

Q. The wells shown with circles around them on Exhibit No. 1, then, are found by looking at the second page of Exhibit 5?

A. That's correct. You could find the drainage area and/or the radius of drainage. You could also find the initial reservoir pressures, all of the data necessary to do those calculations and build that map, Exhibit No. 1.

Q. When we look at the average values, then, at the bottom of the second page of the display--

A. Yes, sir.

Q. --what does it show you?

A. I think the significant things that it shows us on those averages are the average economic ultimate recoveries from wells in this area, the average drainage radius, and it also shows that there are a significant number of wells, even in those

fields that were drilled on 320-acre spacing, that will show pressure communication, one with another, which supports that these wells are, indeed, draining areas, for the most part at least, as large as 320-acre spacing.

Q. How many wells are on the tabulation of page 2 of Exhibit 5?

A. 32.

Q. And the average ultimate recovery estimated for each well is 3.2 Bcf?

A. That's correct.

Q. And the average area of drainage is 323 acres?

A. That's correct.

Q. What does that tell you about 160-acre gas spacing?

A. What it tells us is if all of these fields in here had been developed on 160-acre spacing, that you would have expected ultimate recoveries to be 1.6 or maybe slightly larger for this area.

Q. If we're using 160-acre spacing or an extension of those spacing patterns for further development, then the average of all these wells would be 1.5, 1.6 Bcf?

A. In that range, yes.

Q. Have you made an economic analysis to determine whether operators today, for 1.6 Bcf of likely reserves to be recovered within a 160-acre spacing unit, that you can actively drill for gas wells in this area?

A. I have, uh-huh.

Q. Let's turn to Exhibit No. 6. Is this your analysis?

A. Yes. The first part are the assumptions and parameters.

Q. Describe for us the assumptions and parameters done in the economic analysis.

A. We used numbers that we use for drilling wells in this area, and where we had to we made some general assumptions, but all of them are valid.

Dry-hole costs to drill to the depth in this area that we're talking about, which is an 11- to 12,000-foot range is $431,000, completed well cost is $725,000. We made an assumption of 100 percent working interest and a 75 percent net revenue interest which are reasonable. Operating costs are about 1,500 a month. We used an in-house forecast of gas prices which began with current prices and some modest escalation; they're not held flat.

The start date of the economics we ran, we

made the assumption that a well would be drilled in November of 90. The chance for a successful well is 40 percent, which is consistent with the number of completions versus the number of wells drilled in this three-township area. It's also consistent with the average Morrow success in Eddy County as a whole. And finally we put in a typical acreage cost of $200 an acre.

Q. Having used those assumptions or parameters in your economic analysis, have you displayed your conclusions in the form of a graph?

A. Yes, I have.

Q. That's page 2 to Exhibit No. 6?

A. That's correct.

Q. Before you describe your conclusions, help us understand how to read the display.

A. Okay. What we have here is what is entitled a Morrow Drilling Economics Exhibit. On your vertical scale we have titled it Risked AFIT Present Value in Thousands of Dollars. That's risked after federal income tax value in thousands of dollars. On the bottom you see Unrisked Reserves Per Well as billions of cubic feet or Bcf.

I want to back up and say also, these were ran at the 40-percent chance of success in our

economics. This mean that you assume you spend 100 percent of your drilling cost, and 40 percent chance you're going to complete it, so 40 percent of your completion cost in your economic analysis.

Q. What's the basis for that percentage?

A. It's as I just described. That's the actual number of wells completed in this three-township area.

Q. Using that actual percentage of success for a completed well in this area and applying your other parameters, what does that tell you if you're looking for reserves in the range of 3.2 billion, which is the average for this area?

A. It tell you that you could drill at today's gas prices and drilling costs and expect to make a profit. In other words, to read this graph, if you felt that your statistical reserves were 3 Bcf or slightly greater, you can go over to 3 Bcf and read up until you intersect the curve, read to the left, and you could expect an after-tax profit on each well on the order of $200,000.

Q. And using your volumetric analysis from Exhibit No. 5, the expectation, then, is about 3.2 Bcf on an average using 320-gas spacing?

A. That's correct.

Q. If you cut your gas spacing to half, 160 acres, that would cut your unrisked reserves in half as well?

A. Approximately.

Q. If we look on the bottom horizontal line of the display and find the 1.5 Bcf and read vertically, you're going to lose money, aren't you?

A. That's right. If these fields had been drilled on 160-acre spacing at today's prices, it would have been an uneconomic venture.

Q. Approximately $200,000 lost per well?

A. Right. Maybe $100,000 lost per well.

Q. Based upon your study, then, Mr. Lerwick, what are your conclusions about whether or not the Examiner should enter an order that confines the currents limits of the Anderson and the Fren pools to their existing spacing unit boundaries?

A. My opinion is that they should be confined to the limits of their current spacing for those pools, and further development should be done on 320-acre spacing.

Q. When we look at the spacing for the Anderson-Penn, we have different spacing solutions in the Morrow A channel that's displayed on Mr. Ricketts' Exhibit 2, do we not?

A. That's correct.

Q. Within that Morrow channel we have the Anderson on 160, but the Loco Hills South is on 320?

A. Yes, sir.

Q. Do you see any problems with making a spacing change within a common channel based upon the contiguous point at which those two spacing units meet? You've got to have a spacing change?

A. That's correct.

Q. You've got to have a spacing change that occurs in Section 12 which goes to 320 that is up against the existing spacing units on 160. Is there a problem in doing that?

A. In my opinion there's no significant problems in doing that. It's already occurred in this channel.

Q. Without the limitation or some solution, in your opinion will it simply discourage your company and others from drilling Section 12 or further developing the Morrow A channel that's involved in this area?

A. If they're left on--

Q. 160s?

A. --160s, yes, it would definitely discourage us from further development in this channel.

Q. In the alternative, Mr. Lerwick, do you see any engineering basis for forming an opinion that the Fren or the Anderson-Penn pools ought to continue on 160-acre spacing?

A. Would you repeat that or restate it?

Q. Yes. As a reservoir engineer, do you see any compelling reasons to keep the Anderson-Penn itself within the boundaries of their proration units on 160-acre spacing?

A. No. I don't see any compelling reason if they should have to stay on 160-acre spacing.

Q. In fact, there are some of those better wells in each of those pools that have developed significantly more than 160 acres?

A. That have drained significantly more, that's correct. In my opinion, that's correct.

Q. And in each of those two pools we see wells on 160-acre spacing, one of which in each well is an unnecessary well?

A. That's correct.

Q. So you have pressure interference occurring between wells that are too close together?

A. That is correct.

Q. Anything else, Mr. Lerwick?

A. No, sir.

MR. KELLAHIN: That concludes my examination of Mr. Lerwick. We move the introduction of his Exhibits 5 and 6.

EXAMINER STOGNER: Any objection? Exhibits 5 and 6 will be admitted. Thank you, Mr. Kellahin.

Mr. Bruce, your witness.

EXAMINATION

BY MR. BRUCE:

Q. Mr. Lerwick, do I understand what you're saying is that, looking at the Fren pool, that you believe that the Fren should have originally been developed on 320 acres?

A. That's correct. I do.

Q. Your testimony today would support 320-acre spacing inside the Fren pool boundaries as well as outside the pool boundaries?

A. Indeed it would.

Q. Looking at--well, you just testified as to it. The Fren pool, you mentioned some original or initial pressures on those wells, and the well in the southeast quarter of Section 21, the pressure was several hundred pounds lower than the initial pressure in the other two wells, was it not?

A. Yes, it was.

Q. Would that indicate to you some drainage

from the other two wells?

A. It does indicate that there's a likelihood that that well had suffered some drainage. All three wells in this case were drilled in the same year, so we didn't have the advantage of a greater pressure differential as we did in the Anderson field, where the wells were drilled 18 years apart. I still, looking at the cross-sections and your isopachs, have a strong suspicion that these three wells are in communication with one another.

Q. If you could refer to, I believe it's Mr. Ricketts' Exhibit No. 4, Pacific's location is in the northeast quarter of Section 16, is that correct?

A. That's correct.

Q. But there is still conceivably some potential for locations in sections, say, 15 through 21, based on this exhibit, is there not?

A. That's correct.

Q. So even though wells were drilled in Sections 15 and 21, there could be some other locations that maybe another operator would pick out and choose to drill?

A. Yes. Based on my drainage calculations, I think it would be very risky and probably apparent to an operator that it wouldn't be advisable, but I don't

pretend to understand everyone's motion for drilling wells.

MR. BRUCE: I don't think I have anything further, Mr. Examiner.

EXAMINER STOGNER: Thank you, Mr. Bruce.

EXAMINATION

BY HEARING EXAMINER:

Q. Let's refer to Exhibit No. 4. Of the three wells that are in the Fren pool, which one of those are present producing?

A. None of those three wells are presently producing out of the Morrow.

Q. Now, this is a Fren-Pennsylvanian gas pool, is it not?

A. Yes, the Morrow being a unit of the Pennsylvanian.

Q. Are any of these three wells producing from the Upper Pennsylvanian, anything above the Morrow?

A. Not within the Pennsylvanian.

Q. So they're not even producing in the Pennsylvanian. All right. Are they plugged back to some other formation or are they plugged and abandoned altogether?

A. I believe that Mr. Ricketts in his testimony indicated that two of the wells were plugged

to a Grayburg--

MR. RICKETTS: San Andres.

A. --San Andres, and the well in 15 is temporarily abandoned and hasn't produced for years.

Q. On Exhibit No. 3, you went through the chronological order of the different wells. Now, this is for the Anderson-Pennsylvanian pool. A couple of those wells are still producing, aren't they?

A. Yes.

Q. That would be the Great Western?

A. I'm sorry. I don't have the names on my-- Let me check the names.

MR. RICKETTS: That's correct.

Q. Exhibit No. 3. I'm looking at--

A. The one in Section 18 is.

MR. RICKETTS: All three of them are currently producing.

A. All three of them are still producing.

Q. Where does Pacific Enterprises have their interest? You're not an operator in either pool. Where does your interest come in at?

A. Our interest comes in in that the leases that we are proposing a well on, in 6 and 12 on this Exhibit No. 3 are within one mile of an existing pool, and I understand--and this may be more a question for

our land department--but I understand that under the State rules that you would develop on the same spacing as another field if it was within a mile of that field.

EXAMINER STOGNER: Mr. Kellahin, is your next witness going to go into that, or do you have another witness?

MR. KELLAHIN: I have a landman that will identify the ownership of the area, but I'm prepared to discuss with you the fact, as Mr. Lerwick has demonstrated, that we are within the one-mile current rule for these pools and, therefore, subject to 160 spacing.

EXAMINER STOGNER: Okay. I don't have any other questions of Mr. Lerwick at this time. You may be excused.

Mr. Kellahin?

MR. KELLAHIN: Thank you. I would call Mr. Craig Clark.

CRAIG CLARK

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Clark, would you please state your name

and occupation?

A. My name is Craig Clark. I'm a petroleum landman.

Q. Mr. Clark, on prior occasions have you testified before the Division?

A. Yes, I have.

Q. Pursuant to your employment as a landman for Pacific Enterprises, have you made yourself familiar with the current status of the working interest owners in the section in which Pacific has an interest as well as the adjoining sections?

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Clark as an expert petroleum landman.

EXAMINER STOGNER: Are there any objections? Mr. Clark is so qualified.

Q. Mr. Clark, let me have you take, sir, the Exhibit No. 7, which is your Square Lake Prospect and I believe that relates to the Anderson-Penn pool area?

A. That's correct.

Q. When we look at Section 12, this is the Section that Pacific proposes to develop on 320 gas spacing?

A. That's correct.

Q. When we look in Section 7 for the producing

gas well that has been identified in prior displays in the southeast quarter of Section 7, who is the operator of that well?

A. Damson Oil Corporation.

Q. What is the balance of the working interest in that section as you know it?

A. Damson owns approximately, except for the 80-acre tract in the southwest quarter, they own or with their partners 100 percent in Section 7. Phillips Petroleum Company, the west half/southwest is part of the Grayburg Deep Unit and it encompasses the south half of 12 in addition to Sections 13, 18 and 19.

Q. Okay. This display doesn't show it, but can you identify for us what the unit is that you've just described? You said it was the Grayburg Deep Unit?

A. The Grayburg Deep Unit.

Q. Is that a unit that involves these Morrow gas wells?

A. Yes, it involves two of the wells. The Damson well in Section 7 is not part of the Grayburg Deep Unit. The Grayburg Deep Unit, as you can tell on the map, is what Phillips owns and, like I say, Sections 12, 13, 23, 24 of 17/29, and then part of

Section 7, all of Section 18, and it's the west half of Section 19.

Q. Under Phillips' unit operation of these wells and these sections, will they have the flexibility under unit operations to dedicate 160s or 320s or whatever gas spacing unit is ultimately determined for this area?

A. Basically they are to dictate--all that acreage is HBP'd by that unit by virtue of the initial well in that unit, and so they were able to dictate what the spacing was on it.

Q. Do you see any opportunity for the impairment of Phillips' correlative rights or those correlative rights of other offsetting interest seating owners if spacing is frozen for those nonstandard proration units on 160-acre spacing?

A. No, I do not.

Q. In the alternative, if the Examiner should change the Anderson-Penn rules and require 320-gas spacing for not only further development but for existing current producing wells, does it appear to you that each of the operators for those wells has the ability to dedicate additional 160-acre spacing so they could form a standard 320-spaced unit?

A. I believe they would be able to do so.

Q. Let's turn now to Exhibit No. 8. Do you have that?

A. Yes.

Q. What does this show?

A. This is our land plat for the Fren area. It shows Texaco Producing owns 100 percent, Sections 15, 21 and 22. This will only be the deep rights. There is shallower production in there per. That is why these leases are still HBP. As we're talking about the Morrow formation, Texaco owns 100 percent of those interests.

Q. Will that be true not only to the Morrow but as to other Pennsylvanian-aged formations?

A. Yes.

Q. So when we look at each of these three gas wells, two of which have been recompleted in other formations and one has been TA'd for some 17 years, then it would appear to you that Texaco has the control of each of those three sections?

A. That is true.

Q. Do they do that under a lease arrangement or some unit operation?

A. These are done on a lease basis for the Morrow.

Q. So, within each section for each of these

wells, they would have the flexibility, then, to change from 160 to 320?

A. Yes, they would.

Q. And correspondingly, their correlative rights should not be adversely affected if their spacing units are frozen on 160-gas spacing?

A. No.

MR. KELLAHIN: That concludes my examination of Mr. Clark. We would move the introduction of his Exhibits 7 and 8.

EXAMINER STOGNER: Exhibits 7 and 8 will be admitted into evidence.

Mr. Bruce, your witness.

EXAMINATION

BY MR. BRUCE:

Q. Mr. Clark, looking at Texaco's acreage again, those are Sections 15, 21 and 22 whjich are all federal leases are they not?

A. Yes, they are.

Q. So the royalty interests would remain the same, would it not?

A. Yes, sir, it would.

Q. And is Section 16 State land?

A. Yes, it is.

MR. BRUCE: That's all I have, Mr.

Examiner.

EXAMINATION

BY EXAMINER STOGNER:

Q. In looking at Exhibit No. 8, the lease numbers--these are federal leases, and Section 15 is all one lease? That's that LC-029420A?

A. Yes, sir.

Q. But you don't know about what the overriding royalties is, as Mr. Bruce mentioned earlier?

A. They have an 80-percent net revenue interest under that entire lease. It's noted on the map. Texaco owns 100 percent of the working interest, and the interest in parentheses is their net revenue interest. All these leases, the base royalty--well, for the federal lease the base royalty will be one-eighth.

Q. And that would be common throughout all three of the sections?

A. Yes, sir.

Q. Now, while I look at Exhibit 7, the Dorchester, that's the Anderson #1, the one in the south half of 7, that's dedicated to the southeast quarter presently, is that correct?

A. That's correct.

EXAMINER STOGNER: Okay. Are there any other questions of this witness?

MR. KELLAHIN: No, sir.

EXAMINER STOGNER: If not, he may be excused.

Mr. Bruce, Mr. Kellahin, do either of you have anything further in either one of these cases?

MR. KELLAHIN: That concludes my evidentiary presentation in these two cases, Mr. Stogner.

EXAMINER STOGNER: Mr. Bruce?

MR. BRUCE: I just have a brief statement I would like to make.

EXAMINER STOGNER: I'll let you start; and then, Mr. Kellahin, if you wish.

MR. BRUCE: As noted previously, Exxon is interested only in Case 10069.

Exxon is here today, it does not object to Pacific Enterprises' 320-acre spacing application so long as the spacing in the Fren-Pennsylvanian pool is also changed to 320-acre spacing. I believe it's appropriate to change the entire area. We would point out that we believe that there may be some problem with protecting correlative rights if the State acreage is changed, for instance in Section 16, if the

federal acreage is not changed in the offsetting sections to the south and to the east. With that, I have no further comments.

EXAMINER STOGNER: Is Exxon prepared to come in with a case to that effect, Mr. Bruce?

MR. BRUCE: We have been speaking with Pacific to that effect.

EXAMINER STOGNER: Are you going to be filing one?

MR. BRUCE: If we need to, yes.

EXAMINER STOGNER: Okay. Mr. Kellahin?

MR. KELLAHIN: Mr. Examiner, as to the Anderson case, we would request, in the absence of objection and the basis of proof is there is persuasive evidence before you that those wells ought to be limited to their current spacing units, and that in order to encourage further development, more appropriate spacing units should be applied to the Anderson pool, and therefore we would ask that you enter an order at your earliest convenience limiting the current 160 spacing to the outer boundaries of each of those existing 160 units. It would free up, then, all adjacent area for 320-gas spacing on state-wide rules and, in effect, we're asking you to delete that portion of the rule that applies to these

pools that would require spacing to be consistent within a mile of the existing pool.

As to the Fren pool, you can see that in looking at both the Anderson and the Fren we have Morrow channels here for which different spacing solutions have applied. We're not as concerned as Exxon about having different spacing solutions apply to the Morrow channel even when the spacing change is contiguous with a spacing unit that's on 160 versus 320. We don't display the concern that they have that in this immediate area you're dealing with two different sets of rules.

However, as an accommodation to their concern, we would propose, Mr. Examiner, that this case be continued to the October 3rd hearing--this is for the Fren pool--and that would allow us the opportunity to file an amended application so that we can plead in the alternative for the elimination of 160-acre gas spacing for the Fren pool and have this entire area spaced on 320-gas spacing.

While we have notified Texaco and they have failed to appear for the case today, the case today simply involved limiting their spacing units to their current limits and did not provide an opportunity to Texaco to respond to the alternative solution of

eliminating spacing for that pool in each of those wells.

We would seek permission to do that, and for the Fren case, then, we would like to present our proof to you today, amend the Complaint, and put it on the docket for October 3rd so that it reflects that in the absence of objection the case would be taken under advisement at that time and the appropriate orders entered by the Examiner.

EXAMINER STOGNER: That would be the matter in Case 10069, is that correct?

MR. KELLAHIN: Yes, sir. And then 10068 is ready to take under advisement at this point.

EXAMINER STOGNER: Let me see make sure I get this straight. You're really not readvertising to eliminate 160-acre spacing, you're readvertising to bring this pool in line with the present state-wide spacing rules and regulations as they apply now and for this formation as they applied since 1964? You can also say it like that, can't you?

MR. KELLAHIN: Yes, sir. As an alternative remedy, so that we have before the Examiner at least a procedure that will allow you to address Exxon's concern, if you believe that to be the appropriate solution. If you find that it's not the appropriate

solution, then you still have before you our initial request to limit the spacing units as we had proposed.

EXAMINER STOGNER: And as far as the matter of 10068, that will be taken under advisement at this time?

MR. KELLAHIN: If you please.

EXAMINER STOGNER: Is there anything further from anybody in Cases Nos. 10068 or 10069?

If not, Case No. 10068 will be taken under advisement and Case No. 10069 will be continued and readvertised for the hearing scheduled for October 3, 1990.

With that, let's take about a 20-minute recess.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case Nos. 10068 and 10069 heard by me on 5 Sept 1990.

Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Carla Diane Rodriguez, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my personal supervision; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL September 12, 1990.

Carla Diane Rodriguez

CARLA DIANE RODRIGUEZ
CSR No. 91

My commission expires: May 25, 1991