CASE 3829: Application of GETTY OIL COMPANY FOR AN UNORTHODOX GAS WELL LOCATION, LEA COUNTY.

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MR. UTZ: Case 3829.

MR. HATCH: Case 3829. Application of Getty Oil Company for an unorthodox gas well location, Lea County, New Mexico.

MR. MORRIS: Mr. Examiner, I am Dick Morris of Montgomery, Federici, Hannahs and Morris, Santa Fe, appearing on behalf of Getty Oil Company. I'd like to introduce those that we have here from Getty, today. Mr. Stanley Krist, an attorney with Getty, Mr. John Coon, Petroleum Engineer, Mr. Charles Bearman. Mr. Bearman will be our witness in this case and Exask that here stand and be sworn at this time, please.

(Witness sworn)

MR. UTZ: Are there any other appearances in the

case?

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MR. KELLAHIN: If the Examiner please, Jason Kellahin of Kellahin and Fox, Santa Fe, appearing on behalf of Phillips Petroleum Company.

MR. WAGNER: Ken Wagner with Amerada Petroleum Corporation in Hobbs.

MR. UTZ: Are there any others? You may proceed. How do you spell your last name, Mr. Bearman?

MR. BEARMAN: B-e-a-r-m-a-n, Bearman.

(Whereupon, Applicant's Exhibits 1 through 2 marked for identification)

C H A R L E S H. B E A R M A N, called as a witness, having been first duly sworn, was examined and testified as follows: DIRECT EXAMINATION

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BY MR. MORRIS:

Mr. Bearman, will you please state your name, where you reside and by whom you are employed and in what capacity?
 A My name is Charles Bearman. I live in Midland,
 Texas. I am employed by Getty Oil Company as Exploitation
 Geologist.

Q Mr. Bearman, would you state briefly your education and your experience in the petroleum industry.

A I have a BS with a Geology major from Kansas State, the year or class of '48. I have been employed as a geologist with Tidewater and Getty for seventeen years.

Q In what areas have you worked for Tidewater and Getty? A Kansas, Oklahoma, Texas, Louisiana, New Mexico, Colorado, and Delaware. That's about it.

Q Are you familiar with the application that Getty Oil Company has made in this case?

A Yes, I am.

Q

MR. MORRIS: Are the witness's qualifications acceptable, Mr. Examiner?

MR. UTZ: Yes, sir, they are.

(By Mr. Morris) Mr. Bearman, in preparing for this

case, have you prepared some exhibits? A Yes, I have.

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Q Would you identify the exhibits that you have prepared.

A Exhibit 1 is a structure map on top of the Devonian contour interval twenty-five feet with the --

Q Now, we'll come back and talk about this in detail. Identify your other exhibits.

A The other exhibit is a two-well cross-section substantiating the gas-water contact in the Devonian reservoir of the West Ranger Lake field.

Q All right, sir. Go back to your Bxhibit Number 1, the structure map, and point out the location of the subject well on this map.

A It's the solid red square located in the southeast of the northeast, Section 27, Township 12 south, Range 34 east. The lease is colored yellow and identified Getty one half, Mission one half.

Q What is the footage location of the subject well from the section line?

A It's 1980 from the north line of the section and 990 from the east line of Section 27.

Q In what respect is the location of this well unorthodox under the governing rules for this field?

A It's 990 feet east, due east of the orthodox location.

Q And the orthodox location would be 1980 feet from the east line of the section?

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A Yes, sir.

Q You are not too far, you're not crowding the south boundary of the north half of the Section?

A No, sir.

Q You have 160 acres here colored in yellow. Who operates that lease?

A Getty Oil Company.

Q And who owns and operates the northwest quarter of Section 27?

A U.S. Smelting.

Q Has any arrangement been made with U.S. Smelting as the joinder in this spacing unit?

A They have indicated they will communitize or farm out a formal unit; 320 acre unit.

Q Would you refer to the legend that is shown on this exhibit and just point out what the different symbols mean.

A The red circles are Devonian producing wells. The red triangles are Devonian dry holes. The half white, half red square is a Devonian drilling well.

Q That was the Pan American well in Section 34?

A Yes, sir.

Q All right.

A And the solid red square is the location of our proposed Devonian well, and all those red symbols are the totals of the Devonian controls. All other wells are shallow.

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Q The other well or the Tennessee Gas State well shown in the northwest quarter of Section 27, did not penetrate the Devonian, did it?

A No, sir.

Q I believe you stated earlier that the contours shown on this map are on top of the Devonian?

A Yes, sir.

What is the blue line shown on this map?

That is the gas-water contact of the Devonian

reservoir.

Q

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Q Where is that gas-water contact line and how did you arrive at that?

A If you will examine Exhibit 2, the cross-section, cross-section A, A prime, the Phillips No. 2 West Ranger Lake unit at the letter A was drilled to a depth of minus 8780 or a depth of 12940, which is a sub-sea minus 8780 and completed for a calculated open flow of 2270 mcf gas per day and 281 barrels condensate with 29 barrels of water.

The No. 1 West Ranger Unit at the A prime location

ran a drillstem test in the Devonian from a depth of 12937, sub-sea, minus 8784, four feet below the bottom of the hole on the No. 2, and the bottom of the drillstem interval was a depth of 12977 or sub-sea minus 8824 and result of that test recovered 4503 feet of water blanket, 450 feet of salt water cut mud and 6750 feet of salt water indicating the gas-water contact to be in the interval between sub-sea minus 8780 and minus 8784. We have taken it as minus 8780 because of the water show in the initial potential of the No. 2 well.

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Q Would you explain in some detail the basis for your structural interpretation as shown on Exhibit Number 1?

A Well, we have dense control in the areas of Sections 23 and 26 of 12 South, 34 East, and it has established a partial closure to the north. And we have two widely spaced control points, one in Section 28, the 1-A, Midwest No. 1-A, and one in Section 32, the Hamon 1-B State, and this, to our best knowledge, is the structural configuration of the Devonian from the existing control.

Q What are Getty's reasons for requesting an unorthodox location in this case?

A First, it's to cut down on the risk of drilling a dry hole or a non-commercial well. And second, to cut down on the possibility of water encroachment or water coning; and thirdly, to enable us to recover our share of the gas reserves under our lease.

Q Would a well at an orthodox location be an economic venture for Getty, in your opinion?

A It would be doubtful.

Q In view of the gas-water contact that you have shown here at minus 8780, how much of the acreage in the north half of Section 27 do you believe to be productive from the Devonian formation?

A Approximately 260 acres.

Q In the event the Commission should approve the unorthodox loaction that is requested in this case, do you have any recommendation as to what allowable or what size spacing unit should be assigned for this well?

A We would be satisfied with a 260, 320th which is 81.25 percent of a hundred percent allowable.

Q If the allowable should be cut or if the size spacing unit should be established at 260 acres, in your opinion, would this protect the correlative rights of offset operators as well as the correlative rights of Getty Oil Company?

A Yes, sir.

er.

MR. MORRIS: Mr. Examiner, we offer into evidence Applicant's 1 and 2.

MR. UTZ: Without objection, Exhibits 1 and 2 will be entered into the record in this case.

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

MR. MORRIS: That's all I have on Direct Examination,

Mr. Examiner.

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MR. UTZ: Are there questions of the witness? MR. KELLAHIN: I have some questions.

MR. UTZ: Mr. Kellahin,

CROSS EXAMINATION

BY MR. KELLAHIN:

Q Mr. Bearman, in drawing your contours on top of the Devonian, did you make any examination of the available information on the Pennsylvanian?

A Yes, sir.

Q You did not take into consideration the structural position of the Tennessee Gas State Well in Section 27 in drawing those contours, did you?

A I took -- yes, sir, I took --

Q Actually, it ran somewhat lower than the other Pennsylvanian wells, didn't it?

A Well, I didn't make this map on the Devonian which is considerably removed from the Pennsylvanian horizons.

Q You had no control in the Devonian between the Phillips well in Section 26 and the dry hole in Section 28, did you?

- A Which Phillips well in 26?
- Q In the north half.
- A And the --
- Q And the south half, as far as that goes.
- A And the Devonian in Section 28, you said?
- Q Yes, dry hole.
- A You say I didn't?
- Q Did you have any control on the Devonian between

those points?

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A No, sir.

Q Other than any available information of the structural position of the Pennsylvanian for comparative purposes?

- A That's correct.
- Q And that would be from the Tennessee State well?
- A Yes, sir.
- Q Now, assuming then that your contours are correct,

Mr. Bearman, an orthodox location would put you roughly at

- 8680 or 90 feet, would it not?
 - A Approximately 8690.
 - Q 8690, and is the TP well in Section 23 a commercial

well?

- A In Section 23?
- Q Yes, sir.
- A The No. 2?

Q The No. 2 well. I think you've got it labeled

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Phillips No. 2.

A Yes.

Q Is that a commercial well?

A I'm not sure.

Q Yet you conclude that a well located at 8690 would not be commercial?

A That is correct.

Q That is the effect of your testimony?

A Yes.

Q If we assume for the moment that the Phillips No. 2 well in Section 23, rather than TP well in Section 23, is a commercial well, your well would run about 40 feet higher than that well, would it not?

A The way this is contoured, yes.

Q Sure. And the structural position then would be really more favorable than the well in Section 23?

A It would be a little higher, yes, sir.

Q Now, you gave as your reasons, I believe, for not drilling in an orthodox location, you cut the risk of drilling a dry hole. Now, what are the risks of drilling a dry hole at the orthodox location?

A It's a flank well on the edge of a producing reservoir.

Q Well, if we assume that there is a serious risk of a dry hole there, then would we not also have to assume that more than half of the acreage you propose to dedicate is dry?

A We don't know that.

Q No, sir, we don't know that. The only way we would know it would be by drilling in an orthodox location, isn't that correct?

A No. We could drill in the unorthodox location and substantiate this interpretation nearly as accurately as at the orthodox location. It's only 990 feet removed.

Q It's also 990' feet closer to the Phillips location, is that correct?

A Yes, sir.

Q And if you assume there will be radial drainage and assuming that the acreage you propose to dedicate is productive, except for the line outside your gas-water contact, most of the gas is going to come off of the Phillips lease, instead of your lease, is it not?

A That depends on several factors.

Q On what factors?

A The reservoir mechanics for one.

Q Well, what are the reservoir mechanics?

A Well, it's whether it is a pure gas expansion

drive mechanism or whether it's a water drive mechanism, among

Q Well, what is it, in your opinion?

A We have indications that it's a water drive reservoir.

Q Now, if there were a depletion type reservoir instead of a water drive reservoir, would that affect your recommendations

as to the well location?

A No, sir.

Q It would not?

A No.

Q In either case, you would recommend that they move 990 feet closer to the east?

A Yes, sir.

MR. KELLAHIN: That's all. Thank you, Mr. Bearman. MR. UTZ: Are there any other questions of the

MR. MORRIS: Just one question, Mr. Examiner.

BY MR. MORRIS:

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witness?

Q Mr. Bearman, the location on the structure under your interpretation as shown on Exhibit No. 1 of the Getty well, is at approximately same structure as the Pan American well that is drilled down in Section 34, is it not?

Yes, sir.

Q Do you know what allowable or spacing unit considerations have been given to that Pan American well? A They were given a discount of approximately an eighty-two percent of a hundred percent allowable.

Q They were given the same treatment as you are asking for in this case today, were they not?

A Yes, sir.

MR. MORRIS: That's all.

MR. UTZ: That was the drilling well?

MR, MORKIS: Yes, sir.

EXAMINATION

BY MR. UTZ:

Q Mr. Bearman, how much net pay is there in the two Phillips wells in Section 26? Do you have that information? A To Section 26, I don't have the logs with me.

It's on the order -- I'd hesitate to say. It's similar, as far as the porous zone is concerned, to the Texas Pacific No. 2. I think's it's in the neighborhood of from ten to fifteen feet.

Q From ten to fifteen feet of pay in the Phillips No. 2?A In that order, approximately.

Q That is the well in Section 23?

A Yes, sir.

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Q And the difference between where you want to drill and the standard location would amount to about twenty-five feet of dip?

Slightly more, sir. No, you're right. Pardon me.

Twenty-five. You're right.

Q So if you only have fifteen feet pay, assuming that you have the same amount of pay that the Phillips Well had, the standard location would put you below the pay zone, is that a proper interpretation?

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A No. It wouldn't put us below the pay zone, but it would get us closer to the gas-water contact.

Q Well, you'd have twenty-five feet less pay -A Yes, sir.

-- over on the east end drain, wouldn't you? Yes, sir.

Q If it's a water drive pool?

A Yes, sir.

Q

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Q Now, did you have any water table control on the Midwest No. 1-A over in Section 28?

A That was a hundred percent water from log analysis and I don't recall what tests were performed on that, but it was --

Q Well, was it a hundred percent water beginning at 8780 in the zone?

A Well, the top of the Devonian is at minus 8861, eighty feet below our gas-water contact, eight-one feet.

Q Well, all you can tell from that is that it was all water in that pay zone? A Yes, sir.

Q So actually, your control from the Phillips well in 26 over to the dry hole in 28, it is an estimate. You've just drawn those lines then on a symmetric basis?

A That's our best interpretation, yes, sir.

Q Until such time as you drill your well, then that will be the only time that you will have further control --

A That is true.

Q -- to confirm your map?

A Yes.

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

MR. KELLAHIN: If the applicant has completed his case, we have some testimony.

MR. UTZ: You have some testimony?

MR. KELLAHIN: Yes.

MR. MORRIS: We have completed our case. We'd like to make a statement at the end of the case.

MR. KELLAHIN: If the Examiner, please, I'd like to

call the witness Mr. McConnell,

(Witness sworn)

(Whereupon, Phillips Exhibits 1 and 2 were marked for identification) M. H. Mc CONNELL, called as a witness, having been previously sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A M. H. McConnell.

Q --- By whom are you employed and in what position, Mr. McConnell?

A Phillips Petroleum Company. I am a Regional Reservoir Engineer in the southwestern region, Odessa, Texas.

Q In connection with your duties as Regional Reservoir Engineer, does the area involved in the application before the Commission come under your jurisdiction?

A Yes.

Q Have you ever testified before the Oil Conservation Commission and made your qualifications a matter of record?

A Yes, sir.

MR. KELLAHIN: Are the witness's qualifications

acceptable?

MR. UTZ: Yes, sir.

Q (By Mr. Kellahin) Mr. McConnell, referring to what has been marked as Phillips Exhibit Number 1, would you identify that exhibit, please?

A It shows a structure map of the Devonian reservoir on

the right hand side of this exhibit, and it shows a structure map of the Ranger Lake pay zone in the Pennsylvanian formation on the left hand side of the map. The Pennsylvanian zone is shown because it gives most of the control here, and if you'll look at these maps, you'll see that the Pennsylvanian zone, which is between two and three thousand feet higher, has a very similar structure and this control has been used in mapping the Devonian structure on the right hand side of the map. About the main difference in these structures is that the **exte** that you see of the structure in the Pennsylvanian zone has been shifted perhaps a quarter of a mile to the southeast on the deeper formation, the Devonian.

Q Otherwise, are the structures comparable in the Pennsylvanian and the Devonian?

A They are very similar.

Q Now, in connection with the presentation of Getty Company's case, did you have an opportunity to examine their Exhibit Number 1?

A Yes, I did.

Q Basically, would you point out the differences, your interpretations, and that that has been made by Getty?

A Yes. Using the control that they had, they had the control on the two producing wells in Section 26 and then they

skipped clear over to the dry hole in Section 28 and they used no control in between, so they made the formation come over and gradually dip down to the well in Section 28.

Q Now, do you agree with that interpretation?

A No, I don't agree with that interpretation. If you'll examine the Pennsylvanian structure here, you'll see that there is a valley or trough in the northwest quarter of Section 27; and based on the similarities of these structures, this same trough can be expected to exist in the deeper Devonian reservoir.

Now, we have confirmed this with an additional bit of information. If you'll look on our Devonian structure, you'll see a seismic line that runs right down the section line north of Section 27. That seismic line also shows the same profile that we have mapped here and that is that the Devonian reservoir dips down sharply as it's mapped here on the right hand side.

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Q Now, that, then would make a different structural position insofar as the eastern position of their proposed unit, would it not?

A Yes, it does. It shows that considerably less of their proposed unit is productive. Now, we had used a gas-water contact of minus 8800 on this exhibit. That's 20 feet lower than the one that they used on the Getty Exhibit. We don't have any quarrel with whether it's minus 8800 or minus 8780, because

the available control does not pin it down that closely, but if you move it up twenty feet to the gas-water contact used on the Getty exhibit, it will simply show less of their proration unit to be productive. It will move the gas-water contact to the east.

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Q Have you completed your testimony in connection with Exhibit Number 1?

A Only that this shows above the gas-water contact that only about one-third of this north half of Section 27 is actually productive.

Q And would you recommend drilling at an orthodox location under these circumstances?

A No, I would not.

Q If an unorthodox location is approved by this Commission, what allowable should be assigned to it, in your opinion?

A The maximum allowable that should be assigned would be one-third of the full allowable because only approximately onethird of the acreage is productive.

Q Have you made a cross-section of this area, too?

A Yes, that's Exhibit 2.

Q Referring to Exhibit 2, would you discuss that exhibit, please?

A On Exhibit 1, you can see a trace of the cross-section line that is represented by Exhibit 2. Now, this cross-section runs through three wells which have penetrated the Devonian formation and it shows two wells that did not penetrate the Devonian well and it shows that it penetrated the Ranger Lake pay. The well on either end of this cross-section produced water on drillstem tests and, Mr. Examiner, if you want the specific data on the well in Section 28, it's at the very bottom of the extreme left hand well on this cross-section. It shows all of the drillstem tests information, and they did recover all water in the Devonian formation, which is the very bottom, the drillstem tests: listed there.

You can see, also, the top of the Ranger Lake Penn Pay as shown on this cross-section. The vertical red line is the proposed drill site on this cross-section of the Getty well. You can see that it shows they would penetrate the Devonian at a position slightly above the gas-water contact at that location, but it also shows that as you go to the west, toward an orthodox location, that you will **dip** below the gas-water contact.

Q Does that again indicate that the acreage to the western side of their proposed unit is non-productive?

Yes.

A

Q Have you made a study of the reservoir involved here, Mr. McConnell?

A Yes. I made a study of this reservoir with all the available information.

Q In your opinion, is this a water drive reservoir?

A This is not a water drive reservoir.

Q What is the producing mechanism then?

A Well, it's just, as was used by the other witness, a gas expansion or a depletion reservoir.

Q Now, would the fact that this is a depletion reservoir make any difference in your recommendations in regard to well locations involved in this application?

A Well, it simply means that there is no reason to crowd wells in toward the center of the reservoir to attempt to produce the gas that's under a specific edge drilling unit or proration unit. By crowding toward the center of the reservoir, they do **some** things which will decrease the ultimate recovery of hydrocarbons from this reservoir, and I'll cover that later. But the main thing they do, of course they do reduce the risk of a dry hole, but they move in closer to the top of the reservoir and existing production and they will produce a considerable amount of the gas from under the offsetting lease.

Now, the information that I have, we have some new information on this: We have measured the pressure in the center well of this reservoir on July 31st, 1968.

Q. What well would that be?

A This is the Phillips West Ranger Number 1. It's the north well in --

Q Section 26?

A -- Section 26. Now, the original pressure on that well, when it was completed in July of 1967, was 5017 psi. The pressure, a year later, measured July 31st of 1968, was 4735 pounds. This is a drop of 282 pounds pressure.

Now, this is a little bit more drop than would be normally expected based on whet we think is the gas in place in this reservoir if it were completely a depletion reservoir.

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This tells us that the reservoir certainly is producing by depletion drive. It's dropping even faster than we would have anticipated had there been no support from water encroachment. But this high pressure drop does tell us that there has not been any pressure support in this reservoir from water encroachment as we reduce the pressure at the producing wells. It gives us some indication of how much gas is in place or, at least, how much is in place in the portion of the reservoir that has been affected with production to date. The production from the reservoir at the time of this last pressure measurement was approximately 1.3 billion cubic feet of gas.

Q Mr. McConnell, does this reservoir produce large volumes of fluid?

A Yes, it produces a considerable amount of stock tank condensate. The average production to date has been about 135 barrels of condensate in the stock tanks with each million cubic feet of gas.

Q Has your company considered any possibility of conservation measures which would increase the ultimate production of condensate?

A Yes. Since this is a depletion reservoir, we know that as the pressure drops, we will drop below the dew point pressure and this hydrocarbon liquid will begin to condensate in the reservoir and that liquid, as it condenses in the reservoir, a large portion of it will remain in the rock and will not flow to the well bores and will not be produced.

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Q Now, would that fact, that possibility of conservation measures, have any bearing on the question of well locations in this reservoir?

A Yes, because it may be economical to conduct a gas cycling program in this reservoir to maintain the pressure at or above the dew point and prevent the condensation of this liquid in the reservoir so that it can be displaced with injected gas from injection wells to producing wells.

Now, there is a good chance that we can more than double the recovery of liquid, bydrocarbon liquid, from this reservoir by cycling. Now, the thing that's wrong with crowding all of the wells toward the center of the reservoir is that it gives you much less of the reservoir that you can displace with an injected gas. It means that a high percentage of the reservoir will be in the large ring of edge around the wells and there is not enough reservoir volume inside of the wells that can be displaced with injected material.

Each well, moved in 990 feet from the prescribed location, this has been testified, amounts to about 60 acres. And this 60 acres movement toward the center could easily result in a loss in the cycling program of between 100,000 and 200,000 barrels of condensate per well. Q Were Exhibits 1 and 2 prepared by you or under your supervision?

A Yes. They were prepared under my supervision. MR. KELLAHIN: At this time, I offer into evidence Exhibits 1 and 2.

MR. UTZ: Without objection, Exhibits 1 and 2 will be entered into the record of this case.

> (Whereupon, Phillip's Exhibits 1 and 2 were admitted into evidence.)

MR. KELLAHIN: Do you have anything further, Mr. McConnell?

THE WITNESS: Only that I think that this well should not be permitted -- this location should not be permitted because it will permit them to drain a considerable amount of gas out from under the offset lease, which is a Phillip's lease.

If the Commission does approve this location, they certainly should not assign an allowable more than the onethird of the full 320 productive acreage as we've shown on our exhibit, and I'd like to also say that the Commission should certainly consider productive acreage in assigning how much allowable to give this well, rather than how far the well has moved from an orthodox location, because the distance moved from an orthodox location has no bearing, really, on the hydrocarbons in place under that proration unit. MR. KELLAHIN: That's all I have on Direct Examination.

> MR. UTZ: Are there questions of the witness? MR. MORRIS: Yes, sir.

MR. UTZ: Mr. Morris.

CROSS EXAMINATION

BY MR. MORRIS:

Q Mr. McConnell, looking at the contours on top of the Pennsylvanian, where did the Midwest 1-A in Section 28 encounter the top of the Penn?

A Minus 6114. It's on this map. You see that the Penn well in the northwest quarter of Section 27 encountered the top of the Penn at 6152. That's 38 feet lower than the well toward the west in Section 28. That shows you a definite valley or trough existing in the western part of Section 27.

Q Now, the Tennessee gas well hit the top of the Penn at minus 6152?

A Yes.

Q Actually, your contour then at 6150 should be located on the other side of that Tennessee gas well, should it not? A It should not.

Q Well, all right. I follow you. All right. In mapping a reentry such as you have here between these two wells, Mr. McConnell, how far south do you know that the nose of that reentry should go in mapping? Or, putting it another way, what control do you have on the south part of that reentry to know how far up it comes?

A Are you talking about where you draw the minus 6150 contour line?

Q Yes, sir. That's what I'm talking about.

A The control is not real good. You can run it farther south if you want to but it has no bearing on the north half of Section 27 and that's what we're interested in.

Q It would have a tendency, though, would it not, to bring that 6150 line in a little bit narrower as it crosses the top portion of Section 27?

A I don't understand your question.

Q Well, your minus 6150 line is a highly interpretive line, is it not?

A Well, it's not interpretive at all insofar as the Tennessee gas transmission well is concerned. That's a known point of 6152, and it gives factual control that this formation dips down considerably before it goes back up to Section 28.

Q All right, sir. But which direction -- if you're going to run a line through that Tennessee gas well, whether you run it at a 45 degree angle through there or a vertical or you run the line on the vertical, is a highly interpretive matter, is it not? You mean run it straight north, south? Yes, sir.

A No. It's not interpretive, really, because if you look on the map, you'll see that there is a well control point in the southeast part of Section 22. There is a control point in the northeast part of Section 27, and there are two control points in the southeast quarter of Section 27. You have control down in Section 34 and you have control going all the way through so that the actual strike of that contour line is in direct accordance with the control that you have on this map, and there really is very little interpretive about it.

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Q Mr. McConnell, the biggest assumption you have made here is that it is valid to map the Pennsylvanian and then assume that your reentry contour of minus 6150 on the Pennsylvanian is going to be mirrored in the Devonian in that same area. Now, that's your basic assumption, is it not?

A Yes. That assumption is made, but it is backed up by examining logs in the area and it is also backed up by a seismic control point on the Devonian through this same area. Q Now, to what extent do you rely on the seismic

A We spend an awful lot of money on it. We spend nearly

Q

information?

A

Q

all of --

No. I'm not asking how much money you spend on it,

Mr. McConnell. I'm asking you to give me a qualitative interpretation of how good you think that seismic information is.

A On the top of the Devonian formation, it is fairly good.

Q Was this information obtained by Phillips? A Yes.

Q Do you have that information with you?

A It's only been built into interpreting this. It's confidential information. As I say, it gives the profile that is mapped here.

Q Well, without the basic seismic information, there's no way I can test your opinion on this, is there, Mr. McConnell?

A No. That's right. You just have to take my word that it was built into this Devonian structure.

Q We have about 2700 feet of separation between the Devonian and the Pennsylvanian in here, don't we?

A Yes, sir.

Q Does any nonconformity exist in the formations that lie in that 2700 foot interval?

A Actually, there is not any significant noncomformity. You can trace each formation from the Devonian up to the Penn quite well.

Q You have erosion of the different formations, though,

in that line, in that interval, do you not?

A There really are no major noncomformities in this interval that affect this.

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MR. UTZ: What do you base that on, this particular instance or other instances?

THE WITNESS: Just an examination of the formations in this area.

Q (By Mr. Morris) Well, now, what control, what wells are you talking about, Mr. McConnell?

A The well's which has gone down to the Devonian. You can see two of them. You can see three of them on the crosssection that we've given, listed.

Q All right. Is it those three wells that you're talking about?

A Those three wells, and the other wells that penetrated the Devonian. There are two other producing wells in the Devonian that aren't shown on our cross-section.

Q Mr. McConnell, one of your recommendations to the Examiner has been that this well should not be permitted at the proposed location because it might drain some of the gas from underneath the Phillips acreage. If the well is not permitted, what wells are going to drain the gas from underneath the Getty acreage?

A Well, from a look at the reservoir, as it lies under

the governmental sections there, it would seem logical to pool the east half of Section 27 for a proration unit.

Q Well, I'm not asking you to make a different proposal for us, Mr. McConnell.

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A If I were Getty and had the information that I have and said, "How does Getty obtain its assets from under this", I would say, "You'll have to pool with the southeast quarter of Section 27."

Q If Getty is not permitted to drill a well, to obtain its share of gas under its lease, the existing Phillips wells will drain that gas, will they not?

A The Phillips wells and the other wells that are drilled into this reservoir.

MR. MORRIS: May I have just a moment, please? That's all, Mr. Examiner.

EXAMINATION

BY MR. UTZ:

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Q Mr. McConnell, who is the purchaser in this area of this gas?

A Texas Pacific Well has sold to Warren Petroleum Corporation. The two Phillips Wells produce their gas to Phillips Petroleum Company.

MR. UT2: I didn't ask this question, but will you state who will be the purchaser of gas when your well is drilled?

MR. BEARMAN: Sir? I'm sorry.

MR. UTZ: Who is the purchaser? Who will be

purchasing now?

MR. BEARMAN: I really don't know.

MR. McCONNELL: This is not really determinable, yet, I wouldn't think.

MR. UTZ: Is there any who would likely be? Is there any prove lines besides Phillips in the area?

MR. BEARMAN: I haven't even investigated that all. I'm too far down the road.

MR. MCCONNELL: Phillips and Warren, probably. Q (By Mr. Utz) Mr. McConnell, up in the north area of this pool, in the vicinity of Section 23, you have the Texas Pacific well which gives you fairly good control; is that correct?

A Yes, sir.

Yes.

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Q How about the south part of the pool? What gives you control on the Devonian other than your overlay, or underlay, whichever it may be, on your Pennsylvanian?

S And But But and

A Running to the southwest?

A Well, there just isn't any control other than the well in the northeast portion of Section 32 and then jump clear over to the east side, the well in Section 1; and there is no control running southwest of the line between those two

े स्वर्भ wells and it's true that we don't really know how far to the southwest this structure runs.

Q Well, the point in my asking that is, what control do you have to bring this water-oil contact in to the east through Section 27? Is that based entirely on your seismic line up here?

A Well, if you will observe the Pennsylvanian structure on the same map --

Q Well, that's why I asked.

A It comes in the same way.

Q It is Pennsylvanian?

A It's the Pennsylvanian and the seismic. The combination of the two, they verify each other. These are known facts and it is more than we normally have in mapping something on the edge of a productive portion of the reservoir.

Q Does Phillips intend to drill any more wells on their acreage in this pool?

A We have acreage in the west half of Section 34 that may be drilled depending on how high the Pan American Well in the northeast portion of that section falls.

Q How soon will the Pan American Oil be down, do you

know?

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 A They're very near to the top of the Devonian, now. I had a report yesterday that said they were drilling below

12,700 feet, I believe.

Q That well should shed a lot of light on what's happening down the south end of this pool, would it not?

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A It would shed light on the southwest portion of it. It won't make a lot of difference in the north half of Section 27 because I have mapped it fairly high and if it comes in lower, it will simply pull these contour lines in slightly, pull them to the east on the western side of the structure. MR. UTZ: Are there any other questions of the witness? He may be excused. Do you have any further testimony?

MR. KELLAHIN: That's all the testimony, Mr. Utz. MR.UTZ: I'd like to call Mr. Bearman for a couple more questions.

C. H. B E A R M A N, recalled as a witness, having been previously duly sworn, was further examined and testified as follows:

EXAMINATION

BY MR. UTZ:

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Q Have you negotiated to unitize this unit with the northeast quarter of Section 27, or what is your arrangement

there?

Northeast quarter?

Northwest.

Northwest quarter. We have discussed with U.S.
Smelting and they have indicated they will either communitize or join or will farm out, one or the other.

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Q How about the other people in the south end?

A We've discussed with them and they aren't interested. MR. MORRIS: Excuse me, Mr. Examiner. Mr. Krist has talked with them. Stan, I think you could speak as an attorney for the company on this.

MR. KRIST: We contacted Humble at the same time we contacted Smelting realizing this would be for 320 acres spacing and we would need someone to join us in drilling this venture. You will notice that Humble has a 320 acre half of the Section there, so they felt that they had sufficient acreage to drill their own well rather than join us and would rather go a hundred percent venture instead of a fifty percent venture with Getty.

MR. UTZ: Based on these contour maps, that's a pretty good gamble, isn't it?

MR. KRIST: Sir?

MR. UTZ: Based on these contour maps, that's a pretty good gamble, isn't it?

THE WITNESS: I may say, Mr. Examiner, that you can expect Humble to come and try to crowd the top of the reservoir, too.

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MR. McCONNELL: Maybe next spring.

MR. KRIST: Far be it for me to speak for Humble, Mr. Examiner, but we did try to negotiate with them or Smelting at the same time, and Humble just expressed their natural desire to drill a hundred percent well.

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MR. UTZ: Now, this well was not prorated?

MR. MORRIS: No, sir.

MR. UTZ: So that the takes from this pool would be completely regulated by the purchaser?

MR. MORRIS: That is correct. Although, Mr. Examiner, it will be -- I might as well make my short statement now in view of this suggestion.

MR. UTZ: All right.

MR. MORRIS: It is my recommendation that Getty be afforded the same treatment in this case that Pan American was ar.orded for its well in Case 3750 and that is that the well be assigned a spacing unit of 260 acres, so that we are not really talking about a percentage allowable. We are talking about establishing a spacing unit in accordance with the productive acreage and this, of course, will have an affect upon the takes that are made by the purchaser in this area. MR. UTZ: Are there any other statements?

MR. KELLAHIN: Mr. Examiner, please, Mr. Morris will probably want to make a closing statement at the end, but some reference has been made to the application of Pan American in Case 3750. Phillips Petroleum Company opposed that application and asked for a curtailment of allowable of approximately fifty percent. The allowable assigned was based on -- rather than acreage assignment as Mr. Morris has expressed it -- was based on 260 acres which would be, of course, taken into consideration by any purchaser, and the applicant in this case asked for the same treatment.

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At the time of the Pan American hearing, we introduced an Exhibit which showed that the result of approving the Pan American application would result in other applications, including this one, and if I'm not mistaken, our map that we introduced in that case showed that probably, showed Getty where they ought to locate their well, because we had a dot in approximately that location as being one of the applications that would be following the Pan American application.

Now, I think it is rather significant that a 260 acre allowable was assigned in the Pan American case, which would approximate the footage movement of the well location; 990 feet would amount to about 60 acres, and 60 acres were then curtailed from the acreage to be dedicated to the Pan American well and Getty is asking for the same thing. Now, any allocation of allowable or any right to produce, whether it be based on acreage or however it may be handled, must be based entirely upon the productive acreage to be dedicated to the well, under our Statutes.

Clearly, as has already been stated, the owner must be given the opportunity to produce his just and equitable share of the oil or gas underlying his tract, but at the same time, the Commission is enjoined to protect the correlative rights of the other operators in the Pool.

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Now, we feel that the testimony that has been offered and the evidence that has been presented here . shows that considerably more than 60 acres proposed to be dedicated to the Getty well is non-productive. In fact, we are of the opinion that 160 acres, I mean, two-thirds of the 320 acres, is nonproductive and not more than one-third of the acreage should be committed as a unit. Approximately 215 acres is non-productive, according to our calculations. The question, then, is! What does Getty do to recover their share? Fortunately, we do not have the Rule 37 situation that has made such a havoc of spacing and proration in the State of Texas. We have forced-pooling. We have opportunities to pool, either voluntarily or by compulsion. There are other means available to Getty for them to recover their fair share of the gas, but the whole key to the thing is, "their fair share."

Now, the duty of this Commission is to determine on the basis of the information available to it, what Getty's fair share is and permit them to recover that and no more. If they can't do it economically, well, that is their misfortune for being on their side of the pool. Certainly, this is going to occur in any reservoir. There are going to be edge locations that are non-productive and if they are asking for an advantage to move over towards the center of the field, then they must be curtailed, and we submit that not more than one-third of the acreage should be permitted to be dedicated to this well.

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MR. UTZ: Are there other statements?

MR. WAGNER: Yes. Ken Wagner, again, with Amerada. We do not oppose the unorthodox location. However, if it is granted, we feel that it should be granted only with penalty.

MR. UTZ: Are there any other statements?

MR. MORRIS: I have no further statements, Mr.

Examiner.

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MR. UTZ: You mean you're final final? MR. MORRIS: Yes.

MR. UTZ: The case will be taken under advisement. MR. HATCH: Excuse me a moment. We have a telegram to read into the record.

MR. KELLAHIN: Give the address, too.

MR. HATCH: This is addressed to State Land Office Building, abbreviated: "SLOB", regarding Case 3829, application of Getty Oil Company for an unorthodox gas well location, West Ranger Lake Devonian Pool. Texas Pacific, as an operator in the West Ranger Lake Devonian, objects to Getty Oil Company's application for an exception to Rule 104-C2 to permit the drilling of an unorthodox gas well in their proposed location with a dedication of 320 acres to it. Texas Pacific contends that the granting of such exception to the dedication of 320 acres to an unorthodox will infringe upon the correlative rights and further contends that such exception will establish a precedence which will continue to infringe upon the correlative rights of operators in the pool and will contribute to economic waste. Texas Pacific recommends that if the Commission grants an exception to permit the drilling of an unorthodox location, that the acreage allocation should be reduced to 160 acres. Ronald Fields, Production Manager-Engineer.

MR, MORRIS: I still have no further statement.

MR. UTZ: All right.

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CHARLES H. BEARMAN			
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STATE OF NEW MEXICO)) ss COUNTY OF BERNALILLO)

I, CHARLOTTE J. MACIAS, 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 t' 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 20TH day of August, 1968.

ALC ingal Notary Public

My Commission Expires:

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I do hereby eartify that the foresoing is a complete record of the proceedings in the Excelsor bearing of Case No. 38 heard by no on Chup D 196 E

New Mexico Oil Conservation Commission

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GOVERNOR DAVID F. CARGO CHAIRMAN

State of New Mexico Bil Conservation Commission

STATE GEOLOGIST A. L. PORTEN, JR. SECRETARY - DIRECTOR

P. O. BOX 2008 Santa Fe

August 20, 1968

Mr. Richard S. Morris Montgomery, Federici, Andrews, Hannahs & Morris Attorneys at Law Post Office Box 2307 Santa Fe, New Mexico

Re :	Case No.	3829			
.*	Order No.	R-3480			
	Applicant:				
	GETTY OIL	COMPARY			

Dear Sir:

LAND COMMISSIONER Guyton B. Hays Member

> 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 drder also sent to:

Hobbs OCC

Artesia OCC_

Aztec OCC__

Other Mr. Ken Wagner, Mr. Jason Kellahin

Care 3829 Heard 8-7-68 Rec. 8-13-68 Getty Least Sitty permission to Mest Ranger Lake - Ker. Las Pool to be duilled 1880' from the N line + 980/E kins new 25 - 125-34E. Letty contoured the T. Der. to show 260 A production in the N/2 2 aid Ec. 27. Whillips contoured the J. Derto show 107 Asyanductive is the Some aren. My analysis of both contours Stherfore recommend quanting a 17/2 Ac gron Ald provident imit for the abord welloca . 5 × anne ge factor. Thuste

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NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE , NEW MEXICO

Hearing Date____

AUGUST 7, 1968

_____TIME: 9 A.M.

NAME LOCATION REPRESENTING Eurine Dallos W. J. Fr. none Joke L. Konor Dalla Jim MASSEY all formo Hobks, amerada Pets. Corp. Sen Wagnes. SF - Austin-Mina & Autoami RW Byram Annon Fe Montgonen et al Kichauf S. Morris Willord Getty Oil Co. Getty Oil Co. Stenly 7. Knist. Midland, Tex. C. I.J. Bearman John a Coon betty dil Co. Midland Jejas Joe Wharka FtWorth Van american GUY BUELL-GEORGE H. FORD STANTON M. BALL Xii Braham R.S. Allison Julsa Okla Kewanel all Co. atlantic Rich Research S. Fr. A. J Spreed

NEW MEXICO OIL CONSERVATION COMMISSION EXAMINER HEARING SANTA FE NEW MEXICO AUGUST 7, 1968 TIME: 9 A.M. Hearing Date_ LOCATION NAME REPRESENTING Roswell, Kastl. Gulf Dillo - U.S. Kellin & Fox ason Killahi Santa 70 Rowell attantic tubfield ion Tom L. Ingram Roswell Jon J. Jong. arlesió Ju Service tose TRI- SELVICE MIDLAND, TEX WACKER D. JENKINS welle belle Hard Kell, G.F Boden Mel De lips Pet. Co. Odessa, Tex. M.H. McConnell chilland Jugar C. Ache Claim Sinclaire ail + Ges Co. Jack M Campbell Similary Or & Gus Co. mision, Cara Petr Co of Texae Santa E Breckenridge, Tex, thomas a. Fors

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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. 3829 Order No. R-3480

APPLICATION OF GETTY OIL COMPANY FOR AN UNORTHODOX GAS WELL LOCA-TION, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 7, 1968, at Santa Fo, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 20th day of August, 1968, 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, Getty Oil Company, seeks authority to drill a gas well at an unorthodox gas well location in the West Ranger Lake-Devonian Gas Pool 1980 feet from the North line and 990 feet from the East line of Section 27, Township 12 South, Range 34 East, NHPM, Lea County, New Mexico, to be dedicated to a standard unit comprising the N/2 of said Section 27.

(3) That a standard location for the subject well would require the well to be located not closer than 660 feet to the nearest side boundary of the dedicated tract nor closer than 1980 feet to the nearest end boundary nor closer than 330 feet to any guarter-guarter section or subdivision inner boundary.

(4) That the evidence indicates that the subject pool is an active water-drive reservoir.

-2-CASE No. 3829 Order No. R-3480

(5) That the productivity of approximately 150 acres in the northern and western part of the N/2 of said Section 27 is doubt-ful in the subject pcol.

(6) That the evidence indicates that a well located upstructure at the proposed non-standard location in said Section 27 is more likely to encounter the West Ranger Lake-Devonian producing section above the gas-water contact than a well drilled at a standard location for said pool and should, therefore, result in greater ultimate recovery of gas from said pool.

(7) That the correlative rights of some offset operators will be impaired if the entire N/2 of said Section 27 is dedicated to the subject well.

(8) That to offset the advantage to be gained over offset operators by the drilling of a well at the proposed non-standard location, the acreage to be dedicated to the subject well should be reduced by 46.875 percent.

(9) That approval of the proposed unorthodox location will not violate correlative rights and will afford the applicant the opportunity to produce its just and equitable share of the gas in the West Ranger Lake-Devonian Gas Pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and otherwise prevent waste, provided no more than 170 acres is dedicated to the subject well.

IT IS THEREFORE ORDERED :

(1) That the applicant, Getty Oil Company, is hereby authorised to drill a gas well at an unorthodox gas well location in the West Ranger Lake-Devonian Gas Pool 1980 feet from the Morth line and 990 feet from the East line of Section 27, Township 12 South, Range 34 East, EMPH, Lea County, New Mexico;

<u>PROVIDED HOWEVER</u>, that no more than 170 acres shall be dedicated to said well, being the E/2 NE/4, E/2 W/2 NE/4, SW/4 NW/4 NE/4, W/2 SW/4 NE/4, and E/2 SE/4 NW/4 of said Section 27.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary. -3-CASE No. 3829 Order No. R-3480

esr/

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO OIL CONSERVATION COMMISSION ょ DAVID F. CARGO, Chairman

A. L. PORTER, Jr., Member & Secretary

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BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

Case No. 3829

APPLICATION OF GETTY OIL COMPANY FOR AN UNORTHODOX LOCATION, WEST RANGER LAKE - DEVONIAN GAS POOL, LEA COUNTY, NEW MEXICO

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APPLICATION

Comes now Getty Oil Company by its attorneys and applies to the New Mexico Oil Conservation Commission for approval of an unorthodox location in the West Ranger Lake -Devonian Gas Pool, Lea County, New Mexico, and in support of its Application states:

1. Getty Oil Company is the operator of the North half of Section 27, Township 12 South, Range 34 East, Lea County, New Mexico.

2. Getty Oil Company proposes to drill a well in the West Ranger Lake - Devonian Gas Pool at a location 1980 feet from the North line and 990 feet from the East line of the said Section 27, which well would be dedicated to the North half of that Section containing 320 acres and comprising a standard spacing unit for the West Ranger Lake - Devonian Gas Pool. 3. The proposed location is unorthodox for the West

Ranger Lake - Devonian Gas Pool which is governed by Rule 104CII(a) of the Rules and Regulations of this Commission, and is justified by the undue risk that would be involved in drilling a well at a standard location as required by the said Rule. 4. Approval of this Application will prevent waste and protect correlative rights.

WHEREFORE, Getty 011 Company requests that this Application be set for hearing before the Commission or one of its

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7-26-68

examiners and that the Commission enter its order approving this Application.

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MONTGOMERY, FEDERICI, ANDREWS. HANNAHS & MORRIS By: 1 P. O. Box 2307 Santa Fe, New Mexico 87501

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Attorneys for Getty Oil Company

August 7, 1968, Examiner Hearing

Docket No. 23-68

<u>CASE 3829:</u> Application of Getty Oil Company for an unorthodox gas well location, Lea County, New Mexico. Applicant, in the abovestyled cause, seeks an exception to Rule 104 C II (a) to permit the drilling of a well at an unorthodox gas well location 1980 feet from the North line and 990 feet from the East line of Section 27, Township 12 South, Range 34 East, West Ranger Lake-Devonian Gas Pool, Lea County, New Mexico. The N/2 of said Section 27 to be dedicated to said well.

CASE 3830: Application of Kewanee Oil Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Atoka San Andres Unit Area comprising 3,360 acres, more or less, of Fee land in Township 18 South, Range 26 East, Atoka-San Andres Pool, Eddy County, New Mexico.

<u>CASE 3831:</u> Application of Kewanee Oil Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Atoka San Andres Unit Area by the injection of water into the San Andres formation through 28 injection wells located in Township 18 South, Range 26 East, Atoka-San Andres Pool, Eddy County, New Mexico.

CASE 3832: Application of Sinclair Oil & Gas Company for a unit agreement, Eddy County, New Mexico Applicant, in the above-styled cause, seeks approval of the Guadalupe Ridge Unit Area comprising 23,358 acres, more or less, of federal and fee lands in Townships 25 and 26 South, Range 21 and 22 East, Eddy County, New Mexico.

CASE 3833:

-3-

Application of Petroleum Corporation of Texas for a non-standard gas proration unit and two unorthodox gas well locations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a non-standard gas proration unit comprising the N/2 SE/4 and SW/4 SE/4 of Section 13, Township 24 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico, said unit to be dedicated to applicant's Maggie Dunn Wells Nos. 2 and 3 located 990 feet from the East line and 1650 feet from the South line and 1650 feet from the East line and 1650 feet from the South line, respectively, of said Section 13. Applicant further seeks authority to produce the allowable assigned to said unit from either of the aforesaid wells in any proportion.



WUI201(112-65) RON FREELS PRORATION ENGINEER