

BEFORE THE  
**Oil Conservation Commission**  
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 841

TRANSCRIPT OF PROCEEDINGS

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240,000

**ADA DEARNLEY AND ASSOCIATES**  
COURT REPORTERS  
ROOMS 105, 106, 107 EL CORTEZ BUILDING  
TELEPHONE 7-9546  
ALBUQUERQUE, NEW MEXICO

BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
February 17, 1955

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IN THE MATTER OF:

The application of the Oil Conservation Commission, upon its own motion, for an order amending or revising the existing vertical and horizontal limits of the Jalmat Gas Pool, the Cooper-Jal Oil Pool, and the Langlie-Mattix Oil Pool to prevent inequities within proration units and to establish rules governing the completion and production of oil wells and gas wells within the area.

Case 841

Applicant, in the above-styled cause, seeks an order amending and/or revising the vertical and horizontal limits of the above-named gas and oil pools in the area of Townships 24 and 25 South, Ranges 36 and 37 East, Lea County, New Mexico.

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BEFORE:

Honorable John Simms, Jr.  
Mr. E. S. (Johnny) Walker  
Mr. William B. Macey

TRANSCRIPT OF HEARING

MR. MACEY: We will proceed with Case 841.

R A N D A L L M O N T G O M E R Y

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY: MR. STANLEY:

Q Would you state your name, please?

A Randall Montgomery.

Q By whom are you employed, Mr. Montgomery?

A The New Mexico Oil Conservation Commission.

Q Have you testified before this Commission previously?

A Yes, sir, I have.

MR. STANLEY : Are his qualifications acceptable?

MR. WALKER : Anyone have any objections to the witness's qualifications?

Q Have you prepared these Exhibits, Mr. Montgomery, that you will introduce?

A Yes, sir, I have, with the exception of the cross-section here which is labeled New Mexico Oil Conservation Commission Stratigraphic Nomenclature Committee, Sheet Two of Ten.

Q But you served on that committee and you are familiar with that cross-section?

A Yes, sir, I did.

Q Would you proceed with your testimony, please?

A This particular area here has caused difficulty in the classifying of the wells because previous to the time that order R-520 was written, we were on the assumption that the lower pay in Townships 24 and 25 South, Ranges 36 and 37 East, in the area more familiarly known as the Fallow area was in the Queen formation. I was not aware it was not in the Queen formation until a later date after Order R-520 was written and did not inform the Commission of such. After later investigation, it was suspected that the production was not in the Queen but in the Seven Rivers. This was borne out by the New Mexico Oil Conservation Commission Stratigraphic Nomenclature Committee which met during the Fall of 1954 and which was called by myself with the permission of the Commission to try to establish some standardization on the picks of the Queen, Grayburg, Seven Rivers shallow oil gas pool of southeast Lea County.

There was quite a divergence of where the tops should be picked.

There were at least ten or more companies represented on the Committee and we oftentimes had ten different picks with the different tops, but we more or less reached a compromise and picked points which we hope have been correlated throughout the entire area and are now correlative picks.

There is some disagreement among some of these that possibly it isn't the exact top but we do feel that they are within a few feet. It was very difficult to correlate the different tops in many of these areas due to the very rapid changes in Lithology due to structures and due particularly to the type of environment we have in this area. One which was changing very rapidly in phases and in the transgressing and regressing of the differences during the Guadalupe Period.

We feel that we have made a very successful attempt in correlating this. This particular cross-section here is not meant as an Exhibit but only to show the Commission and the members of the audience how large an area that our work covered and to leave no doubt that we have covered a large area and not isolated our opinion just to the small area in question here today. Exhibit No. One is a southwest northeast cross-section through Township 24 South, Range 36 East, northeastward into Township 24 South, Range 37 East. The cross-section starts out in the Southwest corner with the Cities Service Everett No. 4 and the southwest of the southwest of section 35, 24, 36. It runs in a northerly direction on up to the R. Olsen Hodges No. Three in the northwest of the northeast of Section 8, Township 24 South, Range 37 East. The top picks on here or the correlative tops as established by the New Mexico Oil Conservation Commission Stratigraphic Nomenclature Committee to the best of my knowledge.

the best of my ability to correlate in this very difficult area, Amarada Falby No. One which appears on Exhibit One is the same well that appears on Exhibit No. Two, which is one of the cross-sections published by this Committee. The points were correlated from that log.

One will note that the top of the queen in the Amarada Falby No. One was picked at 3619. The top of the Seven Rivers at 3220 and the top of the Yates at 2990. The lower main pay in the Falby Area has been established to be in a queen sand that is in the middle Seven Rivers or anywhere from one hundred to one hundred fifty feet above the top of the Queen.

The vertical limits on the Cooper-Jal and Langlie-Mattix Pools which this area falls into is the Queen and the lower hundred feet of the Seven Rivers, therefore this pay falls into the Jalmat Gas Pool therefore making the Yates Oil production in the middle Seven Rivers, oil production falling into the Jalmat Gas Pool. The accumulation of oil in the Yates formation appears to be or seems to be a synclinal accumulation. This is partially illustrated by the cross-section coming from high on the Seven River Reefs here going in a northerly direction.

Q Would you name the well, please?

A R. Olsen Watkins No. One is the well I was referring to being the highest well structurally and then dipping off into the synclinal basin down to the lowest well which appears on this cross-section, which is the Amarada Falby No. One and then going on in a northerly direction back up structure to the high west well that occurs on the cross-section as R. Olsen Hodges No. Three. This synclinal accumulation occurs within a pool which is in the main a

a gas pool.

Due to the excellent engineering that has been involved in drilling in this particular area, it is our opinion that we can separate the zones easily and this should be done in order to give the operator two allowables. Many operators have drilled two wells on forty and are presently receiving an allowable for each well. The vertical communication does not exist in this immediate area and this is borne out by drill stem tests from the top of the Yates clear down into the two hundred feet of the Queen on the Amarada Falby No. One.

The drill stem test No. 5 which is in the upper portion of the Seven Rivers and is immediately above the lower accumulation of oil and one hundred feet or so below the Yates accumulation of oil. This particular drill stem test had gas at the surface in forty-five minutes and recovered two hundred twenty feet of heavy gas cut mud. And drill stem test No. 4 which was just above it in the upper part of the Seven Rivers had gas to the surface in two minutes, mud two hours and flowed one million four hundred thousand and recovered one hundred eighty feet of drilling mud. This proves to me that there is no vertical communication in this immediate area.

Exhibit No. Three is a structure map contoured on the Yates formation in the Falby area Township 24 South, Range 36 and 37 East. The wells completed in the middle Seven Rivers are colored in red and those completed in the Yates are colored in orange. It will be noted that the area has been almost completely developed with two wells on the forty where the operator feels that production can be encountered. There are some areas that are not completely developed yet. Structurally they do look favorable.

We have been lenient in drawing the borders, what we will propose as the Falby-Yates Oil Pool to include only that area that is presently developed. There are other areas that the structure map indicates is very favorable to the accumulation of Yates oil but has not been developed. We feel that this Falby area **should** be designated as a separate pool and taken from the Jalmat Gas Pool. The orange line which runs through the middle here is the common boundary of the Cooper Jal Oil Pool and Langlie-Mattix Oil Pool, the vertical limits being the Queen and all but the lower hundred feet of the Seven Rivers. It is proposed that we leave that boundary as it is and then the middle Seven Rivers Oil will fall in the Jalmat Gas Pool and, by dedicating the Falby area here, we will have a new pool to take care of the Yates oil.

Q What do you propose as the vertical limits of the Falby-Yates Pool?

A The Yates formation. Those are all the recommendations I have at the present time for the Falby-Yates area. The advertisement read also Township 25 South, Range 36 and 37 East which I studied very extensively. My studies consisted of examining all the well records in this area with the exception of some of the wells in the eastern portion of Township 25 South, Range 37 East. Examination of all electric logs available, examination of core analysis data which was made available by John M. Kelly, an operator, and other information that the other operators have submitted to me.

Going on down into Township 25 South, Range 37 East which is known as the Jal Area, we have another similar accumulation, being synclinal in effect in the Yates, which again is productive of oil. On Exhibit No. 2 this is illustrated in the regional manner by the

cross-section starting with the Olivent Brout No. 1 Harner Section 20, Township 25 South, Range 37 East going down into a low, back up on a high to the Phillips Petroleum Company No. 3 Woolworth.

The Anderson-Prichard Langley No. 5 which appears on this cross-section is an oil well that is completed in this Seven Rivers section. There are also other wells completed in this area in the middle Seven Rivers and in the Yates.

At the present time, we do not have any two wells on the 40 and we do not have the depressing problem in that area that we do have in the Falby Yates.

I do want to point out that there are two wells that are dually completed in the middle Seven Rivers and in the Yates for gas. There are several wells in the area that have the Yates and the Seven Rivers open in one well bore. The area is relatively old, the engineering is very poor and it is very difficult to make any concrete recommendations at this time as to how to handle the area. The only recommendation that I do have is that no gas well be allowed to dedicate acreage that is productive of oil.

Q Mr. Montgomery, for the sake of the record, these cross-sections defined as the New Mexico Oil Conservation Commission Stratigraphic Nomenclature Committee.

A Yes.

Q They consist of how many sheets?

A Ten sheets.

Q And Exhibit No. One is not a part of that cross-section?

A No, sir, it is not.

Q Is this Exhibit No. Two a part of that cross-section?

A Yes, sir, it is. It is sheet No. Three.



Q Sheet No. Three of ten. We might add at this particular time that these cross-sections, the entire group, consisting of ten cross-sections, are available to every operator.

A Yes, sir.

Q You may explain how they can obtain them.

A They can be obtained by writing to me at Hobbs, New Mexico, Box 2045. They are available for the cost of reproduction.

MR. STANLEY : That is all.

MR. MACEY : Mr. Montgomery, you have one Exhibit you forgot to put a Number on.

A Thank you.

MR. MACEY : What is that one, three?

A I didn't intend it as an exhibit.

MR. MACEY : No, if you don't intend to put it in, all well and good.

A It doesn't pertain to the immediate area but I wanted to show how large an area we had studied.

MR. STANLEY: Isn't Exhibit No. One actually the key map for any of these sheets and one of your exhibits marked No. 2, sheet 3 of ten actually portrays the general area on the key map?

A Yes, sir, it does.

MR. MACEY : Is that all you have?

A Yes.

#### CROSS EXAMINATION

BY: MR. RHODES:

Q Mr. Montgomery, you recommend the re-establishment of the Falby Yates Oil Pool?

A Yes, sir, I do.

Q Essentially overlying the Jalmat Gas Pool or coincidental therewith?

A Yes.

Q Do you recommend the assignment or dedication of the acreage to a Jalmat Gas Well and Falby Yates Oil well?

A No, sir. I recommend that no well be permitted more than forty acres if completed within the horizontal boundaries of the Falby Yates.

Q No oil well be permitted?

A That no gas well.

Q Restate the answer.

A That no gas well be allowed forty acres if completed within the boundaries of the Falby Yates oil pool.

MR. RHODES: Thank you.

REDIRECT EXAMINATION

By Mr. STANLEY:

Q In other words, your point is that within the defined limits of the Falby Yates Pool as you have shown on Exhibit No. Three that that is entirely productive of oil?

A Yes, sir, it is.

Q Within the Yates Section?

A Yes, sir. There is one gas well that does fall within the horizontal boundaries, but it is my opinion that with proper completion and engineering it could be made an oil well as readily as it can be a gas well. Even so, if the operator does not desire to make it an oil well, I still do not feel it should be given more than forty acres because it is diagonally offset to the southeast by Yates and directly offset to the south by a Yates oil well.

MR. MACEY : Which well are you referring to?

A The Humble Hunter No. One.

MR. MACEY : Where is it located?

A In the northwest of the northwest of Section 24, Township 24 South, Range 36 East.

MR. MACEY : Anyone have a question of Mr. Montgomery?

RECROSS EXAMINATION

By MR. MANKIN:

Q I notice in drawing your limits there of the pool, that you left out one of the duals that you spoke of which was the Olsen Van Sant in the southeast quarter of Section 25, is there any reason for that, the southeast quarter of Section 25, a dual completion as a Yates and also in the middle Seven Rivers?

A Yes, sir, it is.

Q Why?

A The Yates is not productive in that particular area. It seems that actually the only commercial Yates oil in this area is not necessarily controlled by plus 350 foot contour, but there is no Yates oil that falls above the contour. Since this 350 foot contour barely touches the 160 acres and possibly recontouring it you could leave the contour out of the 160, it is my opinion that the entire thing is productive of gas in the Yates.

Q Then you would not recommend that the Falby Yates be extended down to include that particular quarter section?

A No, sir, I do not.

Q Did it make oil from the Seven Rivers?

A Yes, sir, but it so happens that it is still in the same stratigraphic unit, that these are just a little bit lower than these

are. Wait a minute, I am not sure. I had better check. I do not have a log available on that well, that was it.

Q Did it make oil in the Yates?

A No, sir.

Q It is strictly gas?

A Yes, in my opinion.

Q So that type of completion is proper as a gas-oil dual rather than an oil-oil dual?

A Yes, sir, it is in my opinion.

MR. ROSS MALONE WITH GULF:

Q I would like to be certain the witness' statement with reference to 25,37 that you are not making any recommendations at this time and expect to continue your study on that?

A I do not expect to continue my study. I have made an adequate study of the area. There has been no operator that has felt that at this time that it was practical for him to drill a twin well. I would suggest to the Commission that until such a time that the operator requests it that we set it aside until he does request it.

Q That will be done on a further publication at that time.

A Yes, sir.

MR. MACEY : You did have a recommendation as to the dedication of acreage though, didn't you?

A Yes, sir, my recommendation was there that no gas well be permitted to dedicate acreage that was proven to be productive of oil.

BY MR. SMITH:

Q When you say proven to be productive of oil, in what quantities

any at all or just some part?

A Possibly we should use a definition in order R-520.

Q One hundred thousand to one.

A Yes, sir.

Q In other words, if it doesn't produce in excess of one barrel to one hundred thousand it is still a gas well?

A Yes, sir, sometimes in undeveloped areas that may be a key, to say in the Yates where the lower structure is not developed where you may have a good Yates oil well.

Q I am not sure that I understand the vertical limits in the Falby Yates?

A The Falby limits would be the Yates formation.

Q All Yates, not Seven Rivers?

A No.

Q Is there oil production in the Seven Rivers?

A Yes.

Q It would be, however, in the Jalmat Gas Pool?

A Yes.

Q And would be prorated as a gas well?

A Yes, sir. As an oil well in a gas pool.

Q As an oil well in the gas pool?

A Yes, as provided by Order R-520.

BY MR. CHRISTY:

Q What depth would that be approximately, approximately what interval would that be?

A The Yates is approximately 220 feet in this particular area here.

MR. MACEY : 220 feet thick, you mean?

A Yes, sir.

Q What would be the total depth of feet that you might expect in the Yates?

MR. STANLEY: You might use your cards on well completion there.

A I am not sure I understand the question, Mr. Christy.

Q What is the total depth of the Yates?

A It will vary on the structure.

Q The lowest?

A The lowest point, well, the lowest contour I have on here is the plus three hundred elevation is roughly three thousand in that area.

Q Practically thirty-three hundred feet?

A Yes, Mr. Christy.

Q Your outline in red then is probably included within your three hundred fifty foot contour?

A Yes, sir, as much as is practical except for this low that goes off in a northwesterly direction and that three fifty contour goes on up here and off the map and then swings back around on the line build up in the southwestern portion of the area and through here we do have Yates oil wells. This R. Olsen well here in section 14.

MR. STANLEY: Would you name the well, please?

A I don't have my ownership on it, ownership map.

MR. STANLEY: Well, you can describe its location?

A The location is in the southeast of the northeast Section 14, Township 24 South, Range 36 East. We are presently calling it a gas well but it does make a spray of oil as I understand. Then as we go on off structure here and get lower and different wells will

produce higher in the Section the next well up the R. Olsen No. Four in the northwest of the northeast is producing oil from the Upper Seven Rivers and as we continue to go off structure we have oil in the Yates formation. The particular well that is producing from the Yates and Seven Rivers is, I believe, in the southeast, southeast of Section Ten, Township 24 South, Range 36 East. That condition exists throughout the area.

BY MR. CHRISTY:

Q How would those wells be prorated?

A We have no particular problem, there, Mr. Christy, because there will be no dual completion and they will be prorated as oil wells in the Jalmat Gas Pool. All the oil wells that are shown on here in the Cooper-Jal when we get through classifying them will actually be in the Cooper-Jal in this immediate area. There probably wouldn't be over five and six of the oil wells shown in here that will be in Cooper-Jal, the others will be put in the Cooper-Jalmat Oil Pool.

MR. HINKLE: Mr. Hinkle representing Humble Oil and Refining.

BY MR. HINKLE:

Q It is our understanding that a large majority of the oil wells in this area, that is the Jalmat, are now prorated as the Cooper-Jal, Langlie-Mattix oil wells and are producing from the middle Seven Rivers formation. What effect will there be on the Jalmat gas proration if the middle Seven Rivers oil is reclassified into the Jalmat Gas Pool?

A I just happened to start from the top and work down. It wouldn't make one iota of difference. The only reason I went this way is because the Falby Yates area is known historically and it

will recall people's attention to it immediately. Whereas, if we work from the bottom and raise the vertical limits of the Jalmat, we would have to raise the vertical in the Cooper-Jal and Langlie-Mattix. We might be confusing the people that are not familiar with the immediate area.

Q You are attempting to reclassify it and admitting the Seven Rivers Oil wells to the Jalmat?

A That was done by Order R-520. It just so happens that we have not had time to get to that particular area to put them in the Jalmat Pool. That is where they belong, yes, sir, today.

MR. HINKLE I see, thank you.

MR. KELLAHIN: Kellahin representing Continental.

BY MR. KELLAHIN:

Q Mr. Montgomery, did you find any communication between the gas in the Yates and the oil in the Yates?

A I did not make a study of the pressure. That was an engineering problem. I do feel that they are connected.

Q You don't know of any effective barrier then?

A No, sir, not regionally, no, sir.

Q Then in that respect, it is one pool horizontally?

A Yes, sir, that is true.

MR. KELLAHIN: That is all.

#### REDIRECT EXAMINATION

BY MR. STANLEY:

Q You have read previous testimony on a Falby-Yates case whereby this testimony on bottom hole pressures was presented?

A Yes, sir. Mr. Stanley with the Commission gave testimony on that and he proved very definitely that there was no vertical



communication between the Seven Rivers oil pay and the Yates oil pay.

MR. KELLAHIN: Mr. Montgomery, perhaps you didn't understand my question. It was directed only to the Yates?

A Yes, I was answering it along the Yates.

MR. MACEY : Anyone else?

MR. CHRISTY: Do you have any recommendation as to the limiting gas-oil ratio in the Falby Yates Area?

A I have an opinion, Mr. Christy. Not being an engineer, there are probably many things I might be overlooking. I do have an opinion.

MR. STANLEY: Express that opinion.

A I do not feel that it should be any greater than ten thousand to one, Mr. Christy. I feel that is more than adequate.

MR. CHRISTY: That is the ratio of the other wells in the general area?

A Yes, sir, the Cooper-Jal and Langlie-Mattix have a ten thousand to one. It will fit into the pattern very nicely. With the ten thousand to one ratio assuming that the well would be a top allowable, it would be permitted to produce a million six hundred thousand cubic feet of gas and plus its forty barrels of oil whereas the average gas allowable in the Jalmat pool is only six hundred M.C.F. per day per last year.

MR. STANLEY: You are gauging that on 160 acre spacing?

A Yes, sir, 160.

MR. MACEY : Anyone else?

BY MR. MACEY:

Q I want to make sure I understand all your recommendations. You are recommending that we recreate the Falby-Yates Pool which

is the red boundary on this Exhibit No. Three?

A Yes.

Q And that the vertical limits of the Falby-Yates be all of the Yates formation?

A Yes.

Q You are still recommending that the Jalmat Pool cover the same area and include the Seven Rivers formation with the exception of the lower 100 feet of the Seven Rivers?

A Yes, sir.

Q In other words, the wells presently completed in the middle Seven Rivers oil pay will be classified as oil wells in the Jalmat Pool?

A Yes, sir.

Q They would be prorated with a ten thousand to one ratio limit and their classification depending upon the ratio, is that correct?

A Yes, sir.

Q In the same area you are not recommending any changes in the vertical limits of the Cooper-Jal or Langlie-Mattix area?

A No, sir, I am not.

Q That will include the 100 feet of Seven Rivers, lower 100 feet and the Queen?

A Yes, sir.

Q What is your recommendation if a Yates well in the Falby-Yates pool goes to gas and becomes a well with say one hundred thousand to one ratio?

A Well, if the wells in the offset fortys are still classified as oil well, I recommend they receive no more than forty.

Q What if the wells to the east are classified as gas wells in the Yates zone - -

A That would be all right.

Q I know, but what about it?

A Well, as I say, the one well would still be cross-drainage because of the high limiting ratio and the low allowables that the gas wells receive. I don't feel there would be any drainage due to a gas well being offset over here. Actually, it is less gas than what an oil well in the Falby area -

Q If a well in the Falby Yates Pool is reclassified and becomes a gas well by definition you still recommend that it be limited by the top allowable times ten thousand to one ratio limit, is that what you are - -

A Yes, sir, until such a time that the offset wells are also no longer classified as oil wells, then we could dedicate that acreage.

Q In that event we could shrink the area off the Falby Yates and put those wells back into the Jalmat Gas Pool?

A Yes, which I suspect will happen.

REDIRECT EXAMINATION

BY MR. STANLEY:

Q I think your thinking is that you are trying or attempting to withdraw volumetrically more liquids and more gas in this particular area, so that you have actually an expanding gas cap by your recommendation?

A Yes, sir, that is correct.

Q You also, by the definition of this boundary as shown in Exhibit No. Three, you will not allow a gas well to have gas

acreage crossing this boundary, is that right?

A Yes, sir, that is right.

Q And conceivably as you say down the road perhaps ten years from now that expanding gas cap and due to volumetric withdrawals of these wells in the proposed boundary of the Yates Pool, the entire section could eventually be a gas pool?

A Yes.

Q With efficient drainage that could happen?

A Yes.

Q Until such a time as that happens, you are going to favor the oil wells in that area?

A Very definitely.

MR. MALONE: What is the south boundary of the oil pool as you have it delineated?

A East half of the northeast of Section 26, Township 24 South, Range 36 East, north half of Section 25 and the northwest quarter of Section 30 in Township 24 South, Range 37 East.

MR. MALONE: Thank you.

MR. MACEY : Mr. Woodruff.

MR. WOODRUFF: Norman Woodruff, representing El Paso Natural Gas Company. Can you tell me how your recommendations differ from the manner in which this well would be handled under the Rules as provided in the Jalmat Gas Pool for an oil well?

A Well, actually all we are doing here, Mr. Woodruff, would be legalizing one of the zones. I prefer to legalize the Yates. What we have, we have two oil wells on a forty and they really, at the present time, they should receive one allowable. I would prefer to set up another pool so we can enable that well to

receive two allowables.

MR. MACEY : You didn't mean that well to receive two allowables, you meant that proration unit?

A Yes, that proration unit.

MR. MACEY: : Anyone else?

MR. KELLAHIN: Jason Kellahin for Phillips Petroleum Company, if the Commission please.

RECROSS EXAMINATION

By MR. KELLAHIN:

Q Mr. Montgomery, due to the recent questions asked you, is it your idea to allow two gas allowables as the gas cap encroaches there from the upper and the lower formations?

A Two oil allowables with a limiting ratio, Kellahin.

Q Would you have any gas allowable?

A No, sir, you wouldn't.

Q As the gas cap encroaches in the Falby Yates, then what are you going to do?

A Then, as brought out by Mr. Stanley's and Mr. Macey's interrogation, there it was that, as the well reaches over one hundred thousand to one ratio, we will be able to dedicate that forty acres to a gas well.

Q In what pool?

A It could be a Falby-Yates or the Jalmat. That would be a policy decision for the Commission to make.

Q But you could have two gas allowables on the same well, could you not, for the same acreage?

A Yes, sir, you could if they referred to the Falby Yates Oil Pool.

Q Would you recommend that?

A Well, the Commission does not approve completing gas wells in an oil pool, so they would be limited to the limiting ratio.

MR. KELLAHIN: Thank you.

BY MR. MACEY:

Q I think maybe, Mr. Montgomery, you partially got off the track there a little bit. Let me see if I understand you. Underneath the Falby Yates Pool between the top of the Cooper-Jal and Langlie-Mattix, and the base of the Falby Yates in that interval of approximately about two hundred feet --

A (Interrupting) About three hundred feet.

Q (Continuing) -- in that interval there, is this entirely productive of oil under the Falby Yates?

A No, sir, a portion is productive of gas.

Q Now, as the Falby Yates pool shrinks in size, which it undoubtedly appears that it will do, you will have wells completed on the same forty acres or a possibility of wells completed in the lower zone which we would be calling the Jalmat and also in the upper zone which would be called the Falby Yates, they would be getting two allowables, one on the forty acre and maybe the other would be a gas allowable under the Jalmat rules?

A Yes, sir.

Q You don't want to recommend that we do that?

A Not that we give two allowables, no, sir, not two gas allowables.

Q It would appear --

A (Interrupting) Recommend that no gas well be recommended to be completed within the horizontal limits of the Falby Yates,

that is vertically within the Jalmat Gas Pool or the Falby Yates Oil Pool.

MR. BATTS: Just a matter of observation, what is the matter between two allowables for oil and two allowables for gas?

A It has been said a million times. I will say it once more. It is a very difficult area and it is difficult to prorate by conventional methods. We have wells that are just outside the boundaries, that have the Yates, Seven Rivers and Queens open. We have wells all the way up all through the gas area that have Yates and Seven Rivers open. If we start trying to break down each little oil zone and enable a gas zone to double, triple, or quadruple, we would get in an administrative tangle we would never get out of it. I don't know how we are going to get out of the minor one we are in now.

MR. HINKLE: If there is no further testimony, I would like to make a statement for the purpose of the record.

MR. MACEY : I want to ask him one more question. Mr. Montgomery, do you know of any acreage within what you have delineated as the Falby Yates within the horizontal limits that is dedicated to a Jalmat Gas well at the present time?

A I am not just exactly sure how much acreage the Humble No. 1 has dedicated to it. I don't believe it is more than forty acres. You might ask the Humble representative. It is forty acres they tell me.

MR. MACEY : In that case we wouldn't have a problem.

A No, sir, there is no problem. I have gone around it.

MR. MACEY : That is all I have. Does anyone have any further questions of Mr. Montgomery? If not, he may be excused.

Mr. Hinkle, do you wish to make a statement?

MR. HINKLE: Mr. Hinkle, representing the Humble Oil and Refining Company. The Humble would like to make this statement in connection with Case 841. The Humble recommends that the Commission enter an order along the lines which have been indicated by the Commission staff at an early date fully realizing that the adoption of such an order will need revision at some future date and that exceptions may need to be made wherein inequalities result from the order. The Humble urges the Commission to frame such an order to reasonably maintain withdrawals from oil wells and withdrawals from gas wells on a volumetric basis so that from comparable acreage the production of gas will be equal. The Humble has previously stated in its recommendations to the Commission that it advocates restricting production of oil and gas on any lease to an amount which will not permit the production of more than one allowable from any proration unit in the same designated pool.

MR. MACEY : Anyone else have a statement? Mr. Malone.

MR. MALONE: Ross Malone for Gulf. With reference to the general recommendation that was made as to the area on 25-37 that no acreage possibly productive of oil be dedicated to a gas unit, Gulf would recommend to the Commission that until such time as that problem is presented by an actual application for a gas unit that there be no determination of policy so that the question of how much oil can be determined on the basis of individual cases.

MR. MACEY : Anyone else?

MR. SMITH: I would like to inquire of the Commission, if I may, what their plans contemplate, whether or not they intend



to have further testimony or afford the operators an opportunity to investigate Mr. Montgomery's studies to see how it would work out before the order will be entered.

MR. MACEY : Mr. Smith, personally I know that there are some people in this particular area that are being drained at the present time and that is one of the reasons why we brought the thing up, because inequities were involved. We want to dispose of the matter as quick as we possibly can. I don't think it is out of order for each interested party to submit a brief on what they think of the proposal and what they think of the idea with the possibility that the Commission, if they don't think this is the answer, why we could bring it up again on our own motion. We are certainly looking for a solution that will give equity to everyone. We realize that we are going to have to change it later on, there is no question about that.

MR. SMITH: Do you have any date in mind for submission of the briefs or statement?

MR. MACEY : Maybe you have one.

MR. SMITH: Frankly, it is not a new problem, it is an old problem, but the approach at this time is new. I had intended to suggest that the matter be carried over to the next statewide hearing to give us an opportunity to study the matter to see how it works out. If, on the other hand, there are rights being affected that need action sooner than that, I assume we could get whatever statement we plan to make in before that.

MR. MACEY : Well, I would like to dispose of the matter as quickly as we possibly can. It is our number one

priority case as far as I am concerned. There is no question but what the Texas Company and others are being affected by the present rules. If you think you could get it in, say, by the tenth of March, I don't see how we could possibly get it done by then.

MR. SMITH: The tenth of March will be quite satisfactory.

MR. MACEY: : Anyone else who wishes to do the same thing will have an opportunity to present a brief in the case.

MR. McPETERS: Kenneth D. McPeters for J. M. Kelly. As an operator in the Falby Yates Area, we wish the following statement entered into the record:

1. We recommend that the original Falby Yates Field be re-created and the vertical limits to include the top of the Yates to the top of the Seven-Rivers inclusive.

2. We recommend that the Seven-Rivers and Queen completions in the Falby Yates Area be classified in the Langlie-Mattix Field. The vertical limits of the Langlie-Mattix Field be revised only in the Falby Yates Area to include the entire Seven-Rivers and Queen Formations.

3. We recommend that an unlimited gas-oil-ratio be granted oil wells in the Falby Yates Field to prevent subsurface waste.

Unless the gas-oil-ratio limit is removed, oil wells will be penalized and permit the gas to by-pass the oil due to the gas-oil permeability relationship. Furthermore, a core study on our Jack B#6 indicated that the oil and gas are coexistent in the reservoir and the production of the gas is necessary for an efficient oil drainage of the Yates Formation in the Falby Area.

The oil in this reservoir should be produced at top allowable rates before the reservoir pressure is depleted. Otherwise, the pressure will be dissipated resulting in a high residual oil saturation with no reservoir gas energy to deplete the formation. This situation would result in subsurface waste of oil in the Falby Yates Field. We also wish to remind the Commission that no surface waste will occur since all gas is processed through a gasoline plant.

This operator has performed selective fracturing treatments on three wells in the proposed Falby Yates Pool, utilizing packers to isolate zones which were suspected of having high gas saturation. Only temporary relief of high gas-oil-ratios was obtained. We feel that as an operator we have made an honest attempt to lower the gas-oil-ratios before submitting this recommendation and feel that our workovers have substantiated an unlimited gas-oil-ratio provision.

We respectfully submit these recommendations and will appreciate your favorable consideration of the same when acting on this case.

MR. KELLAHIN: Jason Kellahin for Continental Oil Company. Perhaps I misunderstood the testimony but, if I am correct, Mr. Montgomery, indicated there is no gas production from the vertical limits of the Jalmat Gas Pool within the area he now proposes as being the Falby Yates Oil Pool, in which case I can see no reason for the special designation since the present pool rules would take care of the production of the oil accumulation within the gas pool.

Continental Company wishes to state further that they

recognize the complexity of the problems involved in the so-called Falby Yates area and we recognize the desirability of allowing the oil that occurs in the synclinal low to be produced as efficiently and expeditiously as good regulatory practices would allow.

We would like to point out that apparently the Falby oil accumulation is connected to the surrounding gas, and we feel that the testimony indicates that, and is affected by the withdrawals from the oil accumulation. With these facts in mind, we feel that the oil operators should not be given any undue advantage over the gas operators. Recognition of a separate pool for the Falby oil and granting of an oil allowable therein in addition to the gas or oil allowable for wells on the same acreage in the Jalmat pool results in multiple allowables in the same areas, while offsets can receive only a single allowable. This will result in inequity and disturbing of correlative rights. We would favor a system of handling this matter where either (1), the casing head gas produced from oil wells is charged against the gas allowable of the Jalmat gas well on the same acreage or (2), the forty acre units allocated to the oil wells are deducted from the acreage allocated for gas proration purposes to the Jalmat gas wells in the same lease. Although Continental Oil Company did not operate properties within the geographical areas heretofore designated as the Falby Yates pool, we do operate a substantial quantity of acreage in the Jalmat Gas Pool and the Cooper-Jal and the Langlie-Mattix Oil Pools. Therefore, we feel that we are vitally affected by the Commission's action in this case.

I would like to also make a brief statement in behalf of Phillips Petroleum Company. Phillips Petroleum Company does not feel that an operator should be allowed to dedicate oil acreage to a gas well, or to have two gas allowables from the same common source of supply which we feel the testimony in this record indicates we have in the present situation.

MR. MACEY : Anyone else? Mr. Christy.

MR. CHRISTY: Generally we agree with Mr. Montgomery's recommendations, however, we would like to have a little more time to study his testimony and we will take advantage of the opportunity to submit a brief later.

MR. WHITE: The Texas Company is one of the operators in the subject area. The Texas Company concurs with the Commission's proposal as to the vertical and horizontal limits of the proposed recreation of the Falby Yates Oil Pool. We also strongly recommend that the Commission adopt a gas-oil ratio of ten thousand to one in order to put this oil pool on a competitive basis with other oil pools within the area. Texas Company also recommends that the Commission take early action in the matter, based upon the testimony introduced today and whatever statements might be forthcoming.

MR. WARREN: J. A. Warren, Southern California Petroleum. As an operator in the Falby Yates pool, we would like to make a statement since we have some fifteen or sixteen Queen wells in the same forties producing from the Yates and middle Seven Rivers.

We agree with the statement of Mr. Montgomery in the recreation of the Falby Yates as regarding the separate reservoirs in these two oil pools. We are going to recommend the geographic

area to be approximately the plus 350 contour on the Yates top, which approximately agrees with what he has outlined. We feel gas oil ratio limit of more than twenty thousand to one should be retained and we do not object to the retention of the present ten thousand to one.

Observation of our Yates oil wells in the area indicate that generally by the time a well reaches a gas oil ratio of fifteen to twenty thousand to one the oil production has decreased to where it is not going to be greatly penalized by that ratio. We have performed large fracture treatments on three Yates wells across the Falby Yates area spaced from south to north and results indicated we got a variety of gas oil ratios from those. Our Van Sant No. One which is in the northwest quarter of the northeast quarter of Section 25, 24, 36 near the south in the Falby Yates originally resulted in about twelve thousand to one ratio of production of 78 barrels. A little further north the Thomas Four the northeast quarter of the southwest quarter of 24, 24, 36 resulted in a 64 hundred gas oil ratio production rate of forty-six barrels per day. More recently our No. One near the north end of the area in the southwest quarter of the northeast quarter of 24, 24, 36 resulted in only 18 hundred gas oil ratio with 85 barrels per day rate.

We would like to further suggest or recommend that possibly a study regarding the feasibility of gas injection down in this area in high ratio wells; where you might put the Falby Yates area on a net gas oil ratio basis in the interest of conservation and reservoir pressure and prevention of waste. There have been some remarks about not being any gas wells in the Jalmat pool within

this area. I think our Van Sant No. 4 is a gas well that now falls in the Jalmat pool. It is near the south end of the Falby Yates area. It makes only a spray, a very light spray of oil from the Yates two or three barrels a day.

MR. MACEY : Anyone else?

MR. MALONE: Gulf would like to request permission to put a statement in this record immediately after lunch if that would be permissible.

MR. MACEY : We will continue Case 841 to March. If there is nothing further in the case and the Commission feels it is necessary we will take the case under advisement at that time. We don't intend to put on any testimony. If there is any large-scale testimony brought up at that time and the interested parties are not here, we will continue the case further but I do want to get the matter settled once and for all and certainly feel that we have to get into some fast action. There is no question in my mind there are inequities in the area.

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

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

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 28th day of February, 1955.

  
Notary Public, Court Reporter

My Commission Expires:  
June 19, 1955

BEFORE THE  
**Oil Conservation Commission**  
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 841

TRANSCRIPT OF PROCEEDINGS

**ADA DEARNLEY AND ASSOCIATES**  
COURT REPORTERS  
ROOMS 105, 106, 107 EL CORTEZ BUILDING  
TELEPHONE 7-9546  
ALBUQUERQUE, NEW MEXICO



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

March 16, 1955

IN THE MATTER OF:

Application of the Commission upon its own  
motion for an order amending or revising  
the existing vertical and horizontal limits  
of the Jalmat Gas Pool, the Cooper-Jal Oil  
Pool and the Langlie-Mattix Oil Pool to pre-  
vent inequities within proration units and  
to establish rules governing the completion  
and production of oil and gas wells within  
the area (Townships 24 and 25 South, Ranges  
36 and 37 East).

Case No. 841  
(Continued.)

Before: Honorable John F. Simms, E. S. (Johnny) Walker, and  
William B. Macey.

TRANSCRIPT OF HEARING

MR. MACEY: The next case is Case 841.

The conclusion of this case last month, we made the statement  
that we would hold it on the Docket for the purpose of anyone pre-  
senting any further testimony. Does anyone have any further tes-  
timony or statements they would like to make in connection with  
Case 841? Anyone else besides the Gulf have a statement?

MR. WOODWARD: We have a statement for Amerada.

MR. MACEY: Anyone else? Mr. Walker, do you want to pro-  
ceed with your statement?

MR. WALKER: Don Walker for Gulf Oil Corporation. We  
have no objection to the adoption or the recreation of Falby-Yates  
Oil Pool generally along the lines proposed by the Commission's  
representatives at the last hearing. However, we are of the  
opinion that for the most equitable withdrawals between the oil  
and gas producing wells in the Yates formation, a ratio limit of

6,000 to 1 should be established for this proposed Falby-Yates Oil Pool. That is all.

MR. McPETERS: K. D. McPeters for John M. Kelly. We request that the transcript of 579 which created the Falby-Yates Pool be entered into the record of Case 841.

MR. MACEY: Is there objection? If not we will incorporate the transcript of the original Falby-Yates Case 579 in this case.

Mr. Woodward.

MR. WOODWARD: I am John Woodward representing Amerada Petroleum Corporation. Our witness in this case will be Mr. Christie.

R. S. CHRISTIE

having first been duly sworn, testified as follows:

DIRECT EXAMINATION

By MR. WOODWARD:

In this case Amerada is offering some recommendations with respect to the problems created by the existence of the Falby oil area within the vertical and horizontal limits of the Jalmat Pool. The testimony has been introduced in this case that oil has accumulated as being produced from the relatively small syncline in the Yates formation of the Jalmat Pool. Underlying the aerial limits of the Falby Pool, oil is also being produced from the Middle 7 Rivers formation in the Langlie-Mattix Pool. This drawing on the board is not intended as an Exhibit but merely as an aid in explaining our position and recommendation.

The shaded area here represents the Yates oil production in the trough of the syncline. The lower shaded area represents the oil production in the Langlie-Mattix Pool. The red dotted line is the present vertical delineation between the Jalmat Pool and the

Langlie-Mattix. The green dotted line will be explained by Mr. Christie in his testimony.

Q Will you state your name and where you live?

A R. S. Christie, Tulsa, Oklahoma.

Q By whom are you employed and in what capacity?

A Amerada Petroleum Corporation, engineer.

Q You have previously testified before this Commission on many occasions as a petroleum engineer and as an expert on the production of oil and gas in New Mexico, have you not?

A Yes, sir.

MR. WOODWARD: Are Mr. Christie's qualifications accepted?

MR. MACEY: Yes, sir.

Q Mr. Christie, do you have a recommendation concerning any change in the limits of the Jalmat Pool?

A Yes, sir. We would like to change the vertical interval as now set up by the Commission one hundred feet above the base of the Seven Rivers to 250 feet above the base of the Seven Rivers underlying the present or the old Falby-Yates area.

Q What are the aerial limits of this Falby-Yates area?

A The aerial limits are as follows -- in Township 24 south, Range 36 east, the east half of the southeast quarter of Section 23, the northeast quarter of the northwest quarter and the northeast quarter of the northeast quarter and the south half of the north half and the south half of Section 24. The north half of Section 25, the east half of the northeast quarter of Section 26, and in Township 24 south, Range 37 east, the west half of Section 19 and the northwest quarter of Section 30. I believe this is the same delineation as the Commission has recommended.

Q Mr. Christie, why do you recommend raising the vertical limits of the Jalmat Pool underlying the Falby oil area?

A There is two primary reasons. One is that the present vertical limits does not exclude all of the oil in the lower Seven Rivers. The second is that it appears to be a more logical separation of the upper Seven Rivers gas and the lower Seven Rivers oil.

Q Are you recommending any change in the vertical limits of the Jalmat outside of this saddle? A No, sir.

Q You feel that this present line is working satisfactorily as it is? A Yes, I believe it is.

Q You have sufficient information to speculate on what the result of trying to go beyond this limited area is?

A I think it probably would just complicate proration, the production of gas.

Q To your knowledge, are there any producing zones underlying the Falby oil area above the top of the Langlie-Mattix production and below the base of a line drawn 250 feet above the base of the Seven Rivers in this area right here?

A No, sir, I don't believe there is.

Q As a practical matter, would it make any difference whether the horizontal line here were extended laterally to a point on the red dotted line or dropped down vertically to a point on the present vertical limits of the Jalmat Pool?

A As a practical matter I don't think it would make any particular difference.

Q Due to the fact that you have a non-productive zone in there anyway? A Yes, sir.

Q Now in changing the vertical limits of the Jalmat Pool

underlying the Falby area and defining that area, are you suggesting that the Falby area be designated an oil pool separate from the Jalmat Pool? A No, sir.

Q At a previous hearing in this matter did you feel that this area deserves special study and consideration?

A Yes, I believe it does since it is local accumulation of oil in a **syncline** in the Jalmat Field, I think it should deserve special consideration.

Q After giving it this special consideration do you now feel that the problem can be handled by leaving the Falby oil area within the vertical and aerial limits of the Jalmat Pool?

A Yes, I believe it can. I might state that at the last hearing I made the statement that I thought, I generally agreed with the Commission's recommendations, but with the provision that I had time to study their testimony and so forth. I now feel that our recommendations are probably more appropriate.

Q What are your reasons for that recommendation that the Falby area remain within the Jalmat Pool?

A In my opinion these oil wells in this area will and are now going to higher ratio and will eventually be gas wells anyway, and to set up a separate oil area which is constantly changing because of the increase in gas-oil ratio that you would eventually have to go back and replace it back into the Jalmat Field anyway. I think it is better to leave it there just like it is.

Q In addition to the receding oil and gas contact, does the production of gas in the Jalmat Pool have any relationship to the ultimate recoveries of oil? A Yes, I think it does.

Q In your opinion should the production of gas throughout

the Jalmat Pool be regulated with that as one consideration?

A Yes, sir.

Q On the other hand, the production of casinghead gas from the Falby oil area will affect the production of gas from gas wells outside that area in the Jalmat Pool?

A Yes, it does.

Q Do you think that an operator of an oil well should be permitted to produce unlimited quantities of gas from the oil well while offset operators in the same pool are limited to some gas allowable as fixed by the Commission?

A No, I do not think they should be allowed to produce unlimited quantities of gas. I think it should be in a reasonable amount.

Q What limitation do you recommend be placed on the gas produced from the oil wells?

A I would recommend 10,000 cubic feet per barrel of oil-gas ratio.

Q This 10,000 to 1 gas-oil ratio would not necessarily result then in equal volumetric withdrawals of gas from gas and oil wells in the Jalmat Pool?

A No. In this particular instance where the ratios are already high, I think probably there would be slightly greater amount of gas produced, casinghead gas for the same acreage that a gas well would produce.

Q Mr. Christie, assume that the oil allowable is 40 barrels per well and an operator has four oil wells on 160 acre tract and that under a 10,000 to 1 gas-oil ratio he is permitted to produce a total of 1,600,000 cubic feet of gas from these four oil wells.

Then assume that the operator of a contiguous 160 acre tract has one gas well with an allowable of a million cubic feet; under these circumstances it would seem that the oil allowable is permitted to produce 16% more gas than the offsetting oil-gas operator. How do you justify this difference in gas withdrawals?

A It seems to me in a situation of this kind that you should have a slight differential from the gas area to the oil area so that the operators will be afforded the opportunity to recover more oil. If the situation were reversed you would lose oil into the dry gas sand flowing from your high pressure area into your low pressure area. For that reason I think some special consideration should be given to the oil operators to recover a larger percentage of oil than they otherwise would.

Q Let me correct my statement, that should be 60% increase. From the standpoint of preventing waste of oil and promoting the greatest recovery of oil, is it desirable that the oil-producing area have a slightly lower pressure differential than the surrounding gas areas?

A Yes, I think so.

Q You feel that your recommendation is as fair as it can be without risking the underground waste of oil?

A It seems reasonable to me, yes, sir.

Q Let's take another situation. Suppose an operator of 160 acre tract has three oil wells and one gas well. Do you feel this operator should be entitled to produce substantial quantities of gas from the oil wells and also be entitled to a full 160 acre gas allowable for his gas well?

A No, I do not. I think there should be some restriction on the total amount of gas from any proration unit.

Q What recommendation would you make for the production of gas from oil and gas wells located within the aerial limits of the gas proration unit in the Jalmat Pool?

A I believe it would be my recommendation that the operator not be allowed to produce from a gas well any more than the difference between what his oil well casinghead gas would be and the gas allowable of the gas well. In other words, if his casinghead gas is less than the allowable for a gas well, then he could make up the difference by producing the gas well. If the production from the oil well is greater than the allowable for the gas well he would have to have it shut in and not a gas well allowable.

Q Under present gas and oil allowables in the hypothetical situation we just considered, it is probable that the casinghead gas production will exceed the gas allowable for let's say 160 acres?

A At the present time I think it will, yes, sir. There was a time, of course, when the ratios were lower that that wouldn't be the case. It may be later on that it wouldn't be the case, but at the present time I think the production of gas, casinghead gas is probably larger than the production from the gas well.

Q In the future considering the three oil wells and one gas well, the reservoir is depleted to the point where all but two of the wells are shut in, one oil and one gas well, and the oil well is producing 400,000 cubic feet of gas, do you feel the operator should be permitted to make up the difference by either a dual completion in his oil well or by producing his gas well until he is producing the same amount of gas, taking the same gas as the off-set gas operator?



A It seems to me that would be a reasonable and equitable position to take.

Q In your opinion would these equalized withdrawals tend to prevent waste of that small remaining amount of oil?

A Yes, I think so.

MR. WOODWARD: We have no further questions of Mr. Christie at this time. At the conclusion of any cross examination we would like to make a statement.

MR. MACEY: Mr. Kelahin.

CROSS EXAMINATION

By MR. KELAHLIN:

MR. KELAHLIN: Jason Kelahin for Continental Oil.

Q As I understand your recommendation, would that not result in a possibility of additional oil allowable for any one?

A No.

Q To raise the limits of the Jalmat in this area?

A The vertical limits?

Q Yes.

A No, I don't think so.

Q Do you know of any wells that are completed in what is now the Jalmat, the area you are talking about, in the Middle Seven Rivers and also in the Queen or lower horizon?

A Yes, we have one well that is completed in the Seven Rivers. The lower Seven Rivers.

Q The lower Seven Rivers? A Yes.

Q Your proposal would put that Middle Seven Rivers portion in the Langlie-Mattix oil pool, would it not?

A Yes.

Q In that event you have one allowable for that particular

acreage?

A Yes, sir.

Q Have you anything to indicate there is any separation of the middle Seven Rivers oil from the surrounding gas?

A In what formations?

Q In the middle Seven Rivers I am referring to.

A No, I haven't anything at hand here. I think the pressures would probably indicate.

Q What you are doing is just tackling the problem from the lower end of horizon instead of the upper as Mr. Montgomery did?

A Actually all we are doing is changing the vertical limits and the one advantage in that, as we see it, in preference to the Commission's recommendation, is that you have only two reservoirs or at least two intervals there instead of the three.

Q I would subscribe to that.

A I think it would prevent some additional development that we don't think is necessary.

Q In your opinion is there any actual difference between Mr. Montgomery's proposal for the creation of the Falby Yates as to the encroachment of the surrounding gas. I believe you testified that the wells eventually will go to gas. Is there any difference between that situation and your proposal as to how the middle Seven Rivers portion should be handled? Won't those eventually go to gas too?

A Well, I presume so.

Q The Commission would then be faced with the same problem that you pointed out for the Falby-Yates, would it not?

A Of course the advantage we see in raising the vertical limit is to eliminate any possible production in what you call the

middle Seven Rivers and we call the lower Seven Rivers.

Q The area I was referring to was your proposal to make it 250 feet above the base rather than the 100 feet.

A Yes, sir.

MR. KELAHIN: That is all.

MR. MACEY: Any further questions? Mr. Walker.

By MR. WALKER:

Q Don Walker for Gulf. Mr. Christie, assuming a little bit ago on the production of the Yates gas wells and the Jalmat assumed by Mr. Woodward as a million cubic feet, I believe last year's average was 750,000 or slightly less, which would give the oil wells a two to one rather than a 60% advantage of gas withdrawals. In case that the Commission accepts the former recommendation of the Falby-Yates recreation, we suggest the 6,000 ratio because we thought a million gas authorized based on 40 times 6,000 would be approximately a million for the oil wells versus 750 for the gas wells. I wonder if you don't think that would be sufficient advantage for the oil wells to have over the gas wells?

A Well, I think that the question of the ratio is purely arbitrary. It may be next winter that the gas well will be producing a million and a half. It is pretty hard to tell. It is a question for the Commission to decide. We prefer the ten thousand, I believe.

MR. WALKER: That is all.

By MR. RHODES:

Q One short one. Mr. Christie, with regard to your idea of raising the limits, the lower limit of the Jalmat gas pool, do you have any idea as to the scope of this occurrence, that is to say, is an occurrence of this nature particular to this area and this

area only, or do you think we will run into it in many areas in the Jalmat gas pool?

A It is my opinion that we will run into similar situations over the entire area.

Q Do you think that we might possibly be tackling a little bit of an administrative problem if we were to raise the lower limits on the pool in a number of areas?

A It is quite possible, yes, sir. I believe this example of Stanolind might be the **case** that is coming up, I don't know. We may have to change it there. There are local conditions that you have to take care of as they develop.

Q Do you think there is any possibility that we might just eventually wind up raising the lower limits of the Jalmat gas pool as a whole?

A It is quite possible. At this time I wouldn't know how far to raise it. We consider some kind of an interval that would take in the whole structure. We couldn't arrive at one, so we limited it to the Falby area.

MR. RHODES: That is all.

By MR. MONTGOMERY:

Q There is gas in the upper Seven Rivers in some parts of this area, would your recommendations enable an operator to develop that gas?

A He would be able to develop it, but he wouldn't be allowed to produce very much if he was producing gas from his oil wells.

MR. MONTGOMERY: That is all.

By MR. MACEY: Is that gas in very large quantities?

A I think it is appreciable, yes, sir.

Q Give the operator the opportunity to go in there and complete it at a later date?

A Yes, sir.

Q It would eliminate that possibility?

A As the oil wells are depleted he will probably want to do that.

MR. MACEY: Anyone else? Mr. McPeter?

MR. McPETER: McPeter representing John M. Kelly. I would like to direct the Commission's attention to core analysis on Jack B No. 6 which Mr. Montgomery has, we have noted that the gas in the upper Seven Rivers is not developed in that particular realm. We don't think it is of any great consequence in the area.

A I believe we drill stem tested one of our wells. I am not sure, but maybe Mr. Montgomery showed it on his cross section as Mr. Abbott just told me, it tested at the rate of two million.

MR. MACEY: Anyone else have any questions of Mr. Christie?

MR. WOODWARD: I have a few more questions.

RE-DIRECT EXAMINATION

By MR. WOODWARD:

Q Mr. Christie, do you know generally what average price for casinghead gas in the southeast New Mexico is?

A Well, I would estimate it to be approximately five cents, somewhere in that neighborhood of five cents.

Q What is the general average price of gas well gas?

A Approximately 10, 9 to 10 cents.

Q So from an economic standpoint, from the standpoint of what an operator can profitably operate his well, the income to the operator under an average of say 750,000 cubic feet is approximately the same, perhaps a little higher than the casinghead gas

production if it should run in the neighborhood of say a million six hundred thousand?

A Yes, if you are speaking of gas alone, of course.

Q We realize there is additional oil production and that situation largely obtains as a result of private contracts. Just from the standpoint of what an operator can profitably operate his well and under what condition you are reaching the risk of premature abandonment, I think it has some relevancy. Do you have some recommendation you could read to the Commission?

A Yes, sir. Most of these have been covered in my testimony. I will read them into the record. Our recommendations are that the vertical limits of the Jalmat gas pool underlying the Falby area extend from the top of the Tansil formation to a point 250 feet above the base of the Seven Rivers formation. That the horizontal limits of the Falby area shall be as follows -- in Township 24 south, Range 36 east, the east half of the southeast quarter of Section 23, the northeast quarter of the northwest quarter and the northeast quarter of the northeast quarter and the south half of the north half and the south half of Section 24. The north half of Section 25, the east half of the northeast quarter of Section 26, and in Township 24 south, Range 37 east, the west half of Section 19 and the northwest quarter of Section 30. It is the same area. Three, except provided herein in change in the vertical limits of the Jalmat should be made. Oil wells completed in the Jalmat should be produced with a limit gas-oil ratio of 10,000 to 1. Five where both oil and gas wells are completed within the aerial and vertical limits of a gas proration unit in the Jalmat Pool, the total production of gas from said unit shall not exceed the permissible production of gas from oil wells or the unit gas

allowable, whichever is greater.

MR. WOODWARD: Gentlemen, in conclusion, I think it is apparent that this is a rather knotty little problem and we have tried to steer what we consider a reasonable course between two extremes. One extreme would involve turning the oil wells loose and allowing them to produce unlimited quantities of gas. This, we feel, is unfair. The other possibility is to strictly limit the volumetric displacement regardless of whether oil or gas were being produced. This would be unfortunately and also quite wasteful. We further feel that the volumetric rule is not essential to a valid waste prevention order. That is, the correlative rights doctrine is not an absolute concept which would require absolutely equal withdrawals if pursuing such a policy resulted in waste.

On the other hand the Commission's power to regulate the prevention of waste isn't absolute either. I think the action must be reasonable and not arbitrary, and under these circumstances between these conflicting considerations, I think it is entirely reasonable to permit a slight or even a substantially necessary increase in the amount of gas that the oil wells can produce in this Falby area. I think any other course, unless this pressure differential in favor of oil wells existed, I think there is a very substantial possibility of the underground waste of oil and also where allowables may be cut two or three, five barrels of oil under a volumetric basis, there is a real danger of making some operations unprofitable.

As to the exact oil and gas ratio, as Mr. Christie pointed out, it is somewhat arbitrary in other areas. We have definitely supported a lower oil and gas ratio somewhat in the nature of 6,000

to 1. The Commission should take note of the fact here that the oil pool is reaching a depletion state and ratios are generally higher and possibly necessarily must be in order to get a maximum recovery of the oil.

MR. MACEY: Does anyone have anything further in this case? Mr. Montgomery.

MR. MONTGOMERY: There was one point you mentioned changing the vertical limits of the Langlie-Mattix, there is a common boundary that runs through there which is the Cooper-Jal, it would propose raising the limits of the Cooper-Jal and the Langlie-Mattix.

A It wasn't our intention of changing the vertical limits except in Falby as shown here.

Q Of both the Cooper-Jal? A Yes.

MR. MACEY: We will take the case under advisement.

#### C E R T I F I C A T E

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings in the matter of Case No. 841 were taken by me on March 16, 1954; that the same is a true and correct record to the best of my knowledge, skill and ability.

  
Reporter