BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 17, 1957

IN THE MATTER OF:

Case 1327

TRANSCRIPT OF PROCEEDINGS

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Application of Texas Pacific Coal and Oil Company for an order immediately terminating gas prorationing in the Jalmat Gas Pool; or in the alternative, revising the Special Pool Rules for the Jalmat Gas Pool in Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order immediately terminating gas prorationing in the Jalmat Gas Pool, or in the alternative, an order immediately cancelling all accumulated underproduction and redistributing such underproduction to overproduced wells in the Jalmat Gas Pool, and requiring gas purchasers to nominate a sufficient amount of gas from the pool to permit wells from which purchasers are able to take gas to have an allowable equal to their actual production, and upon this basis to thereafter balance the pool production at the end of each proration period, and establishing deliverability of gas wells as a factor in the proration formula for the pool, and establishing a maximum amount of gas which may be taken from any well in the pool during a specified period of time. Applicant further requests the Commission to issue such further order or orders as will bring the pool immediately into balance and maintain such balance without waste and without abuse of applicant's or others' correlative rights.

BEFORE:

Mr. A. L. Porter
Mr. Murray Morgan
Honorable Edwin L. Mechem

TRANSCRIPT OF PROCEEDINGS:

MR. PORTER: The meeting will come to order. We will proceed with Case 1327.

MR. COOLEY: Case 1327: Application of Texas Pacific Coal and Oil Company for an order immediately terminating gas prorationing in the Jalmat Gas Pool; or in the alternative, revising the

Special Pool Rules for the Jalmat Gas Pool in Lea County, New Mexico.

MR. CAMPBELL: If the Commission please, I am Jack M. Campbell, Campbell and Russell, Roswell, New Mexico, appearing on behalf of the applicant. I would like, before swearing in the two witnesses that we want to present today, to make a statement concerning the position of Texas Pacific Coal and Oil Company in this matter.

At the time of the inception of gas prorationing in New Mexico, we expressed considerable misgivings as to the effect of gas prorationing upon producers and royalty owners of gas properties. One of our principal concerns involved the effect on the minimum take provisions of gas contracts. The Commission properly felt, and perhaps rightly felt this was a matter between the producer and purchaser; nevertheless, we would not be presenting our entire position if it were not that this continues to plague us and that it will also seriously affect other operators in this pool. What we prefer to do is to sell gas under the contracts which we have, and gas which our gas purchaser apparently wants to buy, but apparently cannot because of the system of gas prorationing as it has been operated. In order to conduct our operations and develop new properties, we need to have some reasonable stability of income. That was the obvious reason for the minimum take provisions of our contracts.

Our first request is that gas prorationing be terminated in

the Jalmat Pool. That seems to some to be a drastic request, but we base it upon two propositions: First, the reason for gas prorationing no longer exists. At the inception of the program, it appeared that Permian Basin Pipeline Company was going to be a considerable factor in the New Mexico gas market picture. That has not been and apparently will not be the case in the foreseeable future. The recently publicly announced gas purchase contract between El Paso and Permian bears this out. Under that contract, El Paso states it has a market demand in excess of the gas it can get, and Permian concedes it has gas for which it has no market. To us this effectively eliminates any true competitive condition which could have led to non-ratable taking, and permits El Paso to meet its market requirements with Permian gas reserves. In the Jalmat Pool this lack of competitive purchasing is even more apparent. Our evidence will show that El Paso purchases eighty-five percent of the production, and we feel it gets almost all of Permian's gas through exchange or under the contract I have previously referred to. The second reason we will present as a basis for termination of gas prorationing is that the system has worked only to penalize the properties with good reserves and restricted the only purchaser in its efforts to meet market demand. This is particularly true in view of the fact that acceeding to Permian's plea that they were developing a market which has not materialized, the Commission has failed to balance out production at the end of each prorationing period, as provided in the Rules. The system as it now operates benefits no one. It certainly doesn't.

benefit the producer; it doesn't benefit the royalty owner; and it utterly fails to protect, we feel, our correlative rights, and fails to enable us to obtain our fair share of the gas in the reservoir.

If the Commission should agree with us that gas prorationing should be abolished, then we believe prompt action should be taken to alleviate a critical situation, a situation critical to all producers, to the purchaser, and to the State from a royalty and revenue viewpoint. We intend to point out to the Commission at this hearing some of the conditions which now exist in the Jalmat Pool, and show the Commission that this is not just a problem of Texas Pacific Coal and Oil Company, not just a have your cake and eat it application, as some have implied. It affects all operators in the Pool, it affects the gas purchaser in the Pool, and it affects the State of New Mexico as a royalty owner and from a revenue viewpoint. Today we will offer evidence showing the present conditions as to the entire Pool and as between representative units within the Pool which we believe have created this critical situation.

To remedy or at least alleviate the situation, we will make the following proposals: (1) That the Commission cancel and remove from current accumulated underage all of that which had accrued to June 30, 1956, and had not been made up January 1, 1957, the six-month makeup period; also cancel the underage that had accrued January 1, 1957, and was not made up by June 30, 1957; of course, under the Rules, redistribute this to the non-marginal units in the

Pool. We don't believe that anyone could complain as to the effect of this. It would simply be the Commission carrying into effect the Rules as the Commission originally established them. All parties had the opportunity during the makeup period to make up the underage that had accrued during that time. We do not propose to affect underage which may have occurred during a period when there has not been an opportunity to make up that underage.

Second, that the Commission continue its efforts to realistically reclassify marginal wells in the Pool with the resultant redistribution of underproduction from those wells to all non-marginal units in the Pool; and, third, that the Commission include deliverability in the allocation formula in this Pool upon a basis which we will present today. Fourth, that the Commission establish a maximum take from any unit in the Pool to prevent an excessive overproduction.

We realize that this application affects a number of other operators in the Pool, that our views and recommendations today may require analysis by them in the light of their own situation. We are, therefore, at the end of this presentation of ours, and at the end of any cross examination anyone may wish to undertake, going to request a continuation of this case to the regular November Statewide hearing, to permit us and any other interested party to put on any additional testimony or evidence into the case relating to the matter. We will have the witnesses that appear today for the applicant present at the November hearing, should the Commission decide to continue the case, and they

will be available for cross examination at that time. We are continuing a diligent study developing our own proposals in detail and attempting to determine if State laws have or are being violated.

We are also analyzing the operation of the prorationing system with regard to the relationship of gas takes as between different areas within the State of New Mexico.

With that preliminary statement, I would like to ask that two witnesses, Mr. Martin and Mr. Keller, be sworn on behalf of the applicant.

(Witnesses sworn.)

MR. CAMPBELL: Mr. Martin, will you please take the chair here?

E. F. MARTIN

the witness, of lawful age, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

By MR. CAMPBELL:

Q Will you state your name, please?

A E. F. Martin.

Q By whom are you employed, Mr. Martin?

A Employed by Texas Pacific Coal and Oil Company during the past thirty-one years.

Q What is your present position with that company?

A During the past twenty years I am employed as chief accountant.

Q As chief accountant, what are your duties with Texas Pacific

Coal and Oil Company?

A One of my principal duties is to supervise the preparation of certain analytical data in verifying the correctness of income derived by Texas Pacific Coal and Oil Company from the sale of oil and gas.

Q Does your office maintain records and custody of records of your company relating to the production from your properties and the income as a result of that production?

A All records are maintained in our general office at Fort Worth.

Q Mr. Martin, have you had occasion to study the operation of gas prorationing in the Jalmat Gas Pool in Lea County, New Mexico?

A Yes, I have.

Q What records have you studied, generally?

A Well, studied the monthly gas prorationing reports put out by the Oil Conservation Commission, and have made considerable study of the Commission records here in Santa Fe.

Q Have you also studied the records of Texas Pacific Coal and Oil Company since the inception of gas proration in this Pool?

A That is true, that is in the regular course of our verification of income.

Q Have you studied,not only as it affects your company, but as it affects producers in the Jalmat Pool?

A This study has been on a Pool-wide basis, naturally, to determine our relationship with other producers in the field.

Q What is the total number of gas units in the Jalmat Gas Pool, as of January 1, 1957?

A Pool contains 367 units December 31, 1956.

Q And how many of those units were marginal and how many non-marginal?

A 24 marginal, and 343 non-marginal.

Q And of all of the units in the field, how many units are actually owned and operated by Texas Pacific Coal and Oil Company?

A Texas Pacific Coal owns 48 and a fraction units.

Q Who are the purchasers in the Jalmat Pool at the present time?

A Well, actually there's only one purchaser, El Paso Natural Gas Company, having connections to eighty-five percent of the units.

Q What other nominal purchasers are there in the field?

A Permian has approximately ten percent of the units, but it's my understanding that through this gas exchange, El Paso is actually ultimately the purchaser of practically ninety-five percent of the output of the field.

Q Mr. Martin, have you familiarized yourself with the present method of allocating gas production in the Jalmat Pool?

A I have.

Q I hand you, Mr. Martin, the Lea County gas proration schedule of the New Mexico Oil Conservation Commission for October, 1957, which is, of course, a part of the records of the Commission. I ask you to explain to the Commission by reference to it how the

Pool-wide allowable is arrived at in the Jalmat Pool, according to your understanding?

A Well, for the month of October, the purchasers nominated a market demand in the Jalmat Pool of eight billion three hundred seventy-five million cubic feet. However, this was not the amount of allowable that was applied to the units in the field, due to the fact that during the month of August, the allowable having been set at six billion six hundred million and the actual production being only four billion one hundred ninety-nine million, the October nomination was reduced to the extent of in excess of two billion cubic feet of gas, so that although the purchasers manifested a market demand of eight billion cubic feet of gas, the ultimate allowable placed on the books and credited to the individual non-marginal units was on the basis of only six billion three hundred million, or approximately seventy-five percent of the purchasers market demand.

Q As I understand you, then, the allowable for October was adjusted back to the actual takes of the purchaser for August, two months previous, is that correct?

A That is true. The excess nominations by the purchasers in August were adjusted to his actual production for August, which created a reduction of the current allowable by approximately twenty-five percent.

Q Is it correct, then, that the ultimate Pool-wide allowable, except for the two-month lag period, is determined essentially by

the takes of the purchaser?

A That's true. (Texas Pacific's Exhibit No. 1 marked for identification.)

Q Now, I refer you, Mr. Martin, to what has been marked Texas Pacific Exhibit No. 1 and ask you to state what it is.

A Exhibit 1 is merely a breakdown of the production of the Jalmat Pool for the year 1956 as to producers and ownership of the units and the actual production of eighty-five billion during the year 1956.

Q Has that statistical analysis indicated on Texas Pacific Exhibit 1 prepared by you on the basis of the records that you referred to?

A That is correct.

Q Referring to that exhibit, will you please state to the Commission what you consider to be the pertinent determinations made by the tabulations on it?

A Well, it indicates that out of the three hundred forty-three non-marginal units in the field, that one hundred seventy-seven, or fifty-two percent of the units for the year 1956, ended up in an underproduced status; in other words, the allowable for a unit for the year 1956 totalled two hundred forty-five million cubic feet of gas. The actual production of these one hundred seventy-seven non-marginal units was at the rate of one hundred eighty-three, or approximately sixty million cubic feet under the pool allowable. Then we moved to the hundred sixty-five remaining non-marginal units, which were produced at the rate of three hundred four million per unit, or

an overproduction of approximately sixty million per unit.

Q That three hundred four million is an average of all of the overproduced units in the field?

A That is true. It's an average.

Q With regard to that forty-eight percent of the units which are overproduced in the field, is that confined to any that were overproduced as of December 31, 1956; are there any particular producers in that field that are involved, or are most of them involved in the over production?

A Twenty-six producers, which is primarily all the producers in the field, except a few producers with half units or quarter units, a very small percentage. Other than that, it's a condition that exists for practically every producer in the field.

Q What is the range of overproduction, generally, as between these units?

A Well, it ranges from approximately about two hundred sixty million to a top of three hundred fifty-one million.

Q Are there other producers in the field with units with an average overproduction in excess of those of Texas Pacific Coal and Oil Company?

A Yes, there's a number of them. Texas Pacific's overproduction is pretty well in line with the rest of the field. For example, here is Texas Pacific, thirty-one units that were overproduced at the rate of three hundred sixteen million, whereas the Western Natural Gas Company had twenty-six units overproduced at the rate

of three hundred twelve million. Ohio Oil Company had three and three-quarters units overproduced at the rate of three hundred fifty-six million. Tidewater Oil Company, three and a half units, rate of three hundred fifty-one million. You can go on through the list and get up here to Continental Oil Company, had twenty-five and a half units overproduced two hundred ninety-seven.

Q Then this matter is a Pool-wide matter affecting most operators in the Pool and not just a problem of Texas Pacific?

A That is very definite. All wells had an equal chance to produce, and it just seems that the better wells resulted in a little more overproduction.

Q Referring further to that exhibit and the statistical computation, Mr. Martin, I notice that reflects as an accumulated underproduction as of December 31, 1956, of eleven billion cubic feet. Will you state what that consists of?

A Well, that really consists of the underproduction that is accrued in the field and hasn't been adjusted since the inception of prorationing January 1st, 1956. It's really a three-year accumulation of underproduction. There has been some cancellation, but this remaining eleven billion is the underproduction of three years.

Q To your knowledge has some of that underproduction been cancelled by reclassification of wells since January 1st, 1957?

A Yes, as of June 30, 1957, approximately four billion of this was removed from the schedule by reclassification of wells to

marginal status, and some reallocation of allowable.

Q Of the remaining seven billion cubic feet, what accumulations of underproduction specifically could you refer to, in that remaining seven billion cubic feet?

A Well, the seven billion cubic feet represents or includes, I should say, three billion six hundred million of underproduction as of June 30, 1956, which was subject to cancellation December 31, 1956. It also includes an additional two billion one hundred million of underproduction during the last proration period of 1956, which was subject to cancellation as of June 30, 1957, or a total of five billion seven hundred million of the seven billion that, in accordance with the rules of the Commission, should have been removed from the schedule and automatically redistributed.

Q If that underproduction which accrued and the balancing period expired but it was not cancelled during those two periods, the five billion seven hundred million cubic feet had been cancelled and redistributed to thenon-marginal units in the Pool, what would have been the effect on each unit?

A Well, each non-marginal unit in the field would have received an additional allowable of approximately sixteen million cubic feet per unit.

Q Would that, Mr. Martin, in your opinion have alleviated the critical condition that we have indicated exists at the present time in this Pool?

A That's true, this one hundred sixty-five overproduced units,

it's easy to see they were overproduced at the rate of an average of sixty million. If they received an additional allowable of sixteen million, they would have been in a better condition to be brought into balance during subsequent periods.

(Texas Pacific's Exhibit No. 2 marked for identification.)

Q Mr. Martin, I would like to refer you to the graph on the wall which appears on the left up there. It has been marked as Texas Pacific's Exhibit No. 2. Will you please explain to the Commission what that graph represents?

A Well, this graph represents a breakdown in the operation of the Jalmat Pool during three proration periods: the first six months of 1956, the last six months, the first six months of '57, with the orange bar line across indicating the allowable assigned to the Pool during each month of this proration period. The red line represents the Pool status at the end of each month as to overproduction or underproduction. The bottom portion of the graph shows the green column, green bar representing the nominations of the purchaser. The yellow bar representing the actual production for the month. That goes right across through the eighteen-month period, the three proration periods.

Q The Exhibit No. 2 is an exhibit reflecting Pool-wide conditions, is it not?

A That is correct.

Q You have shown on that only the three proration periods of

the first and second halves of 1956 and the first half of 1957. Did you make a similar study and analysis with reference to the proration periods from the beginning of prorationing to the first six months of 1956?

A Yes. A similar study was made of four proration periods prior to this, or years '54, '55.

Q I note that the Pool-wide condition as shown by the red line on your upper portion of your graph for the proration period consisting of the first six months of 1956, at the end of December the Pool appears to be in reasonable balance. Was that condition generally present in all of the other preceding proration periods?

A You have reference to the end of June?

A June, 1956, excuse me.

A That is true. The Pool came into the proration period practically balanced, overproduction accumulated at the end of February was modified slightly in March, went back to an underproduction status in April, and came down to June practically in balance, a hundred eighty million cubic feet being the net Pool status. That was brought about by the fact it came in in balance and during these six months proration period, the purchasers nominations were forty billion cubic feet; their actual production was forty billion cubic feet of gas, so they kept the thing in balance and they asked for a right to produce forty billion, and they produced forty billion, so naturally the Pool remained in balance as it was the first of the period.

Q With regard again to the first period of 1956 which you say is essentially the same as the prior proration period?

A That is exactly true, during the two years beyond this, two years prior, the Pool was essentially in balance during the entire two-year period.

Q Now will you, in connection with that particular proration period consisting of the first six months of 1956, indicate by reference to the lower portion of the graph or the nominations and production, indicate how that was maintained so that itcame out at the end of the proration period in reasonable balance Pool-wide?

A Well, that is the figure I quoted. The nominations, if you notice the month of January, the purchasers nominations were seven billion two hundred million; their actual production was six billion four. The next month, February, nominated five eight, but produced nine four. Well, subsequent months, they increased their nominations to where they would exceed their actual production and kept the Pool in balance to where by the end of the period that they had nominated forty billion and purchased forty billion, so that the Pool naturally stayed on an even keel it came into the period with.

Q Now refer, Mr. Martin, to the last six months of 1956, which is the middle portion of the graph and the second proration period that you have referred to. Discuss what apparently occurred during that proration period.

A Well, that can be explained this way. It should be noted

that during the first period, the fluctuation, one month the purchasers nominations would exceed the actual production and vice versa throughout the Pool. However, the following second six-month period of the year, the second proration period, the six months in a row, the production exceeded the purchasers nominations. In other words, there was a departure from the system of keeping the realistic balance between nominations and production. For instance, the month of July, the purchasers nominated five and a half billion but a summer month, purchased eight billion the following month, nominated six billion, purchased eight and a half billion but did not supplement the nominations to where that at the end of the six-month period the nominations by the purchaser were thirty-four billion cubic feet of gas but the actual production was forty-five billion.

Q Will you refer, with that in mind, to the upper portion of the graph, and show what occurred as a result of the actual purchases during that proration period exceeding the nominations consistently?

A Well, as you can see, there has to be a direct relationship between Pool balance and purchasers nominations and production. The overproduction or the underproduced status of a Pool is determined by the in balance between nominations and production due to the July that the purchaser nominating five and a half billion, producing at the rate of eight billion caused this Pool to go from apparent underproduction status to an overproduction status. The thing continued all through the period. In other words, the only

way this line could be brought back upstairs was for the purchasers to have increased their nominations to offset their previous production.

Q So what was the net condition at the end of December, 1956, the end of that proration period Pool-wide?

A Well, Pool-wide, into 1956, two billion eighty million overproduced.

Q In view of your previous testimony that the allowable is adjusted back to the actual takes two months previously, wouldn't that adjust itself without any particular harm to the producers in the field?

A Well, that is not entirely correct. It will adjust itself, there isn't any question, regardless of what the purchaser nominates, his actual production, he is granted subsequent allowable, additional allowable two months later if his production exceeds his nomination, but there is a two-month lag in there to where at the end of this proration period, this Pool was overproduced two billion eight hundred million, due to the fact that during the months of November and December, that the purchasers nominations were less than his actual production by the greater portion of this, better than two billion of it.

Q What is the effect of that, moving into the next proration period?

A Well, that has the effect of denying, at the end of a proration period or at the end of a balancing period, denying the non-

marginal units in the field additional allowable; in other words, this two billion eight hundred million, had it been properly nominated, would have granted every non-marginal unit at the end of a balancing period an additional allowable.

Q Now, Mr. Martin, referring further to the last proration period shown on Exhibit No. 2, which is the first six months of 1957, will you discuss what apparently has occurred during that proration period, as compared to the prior two periods?

A Well, the reverse condition existed. You remember during the middle period the production exceeded nominations consistently to where the production was twenty-five percent greater than nominations during that period, but during the first six months of 1957 each month the nominations have consistently been in excess of the production, to where at the end of the six-month period nominations were thirty-six billion, production only twenty-seven.

Q So that in order to compensate for the condition during the second period shown on that Exhibit No. 2, a reverse approach was taken in an attempt to get the field back in balance, is that correct?

A Apparently that's true.

Q Will you indicate what the condition was apparently in the Pool from that analysis at the end of the proration period ending June 30, 1957?

A You notice due to granting of the supplemental allowables in January and February, due to discrepancy of the production in the last two months of the preceding period, the Pool came from over-

produced status to an underproduced, and stayed that way clear up to the end of May. The Pool shows an apparent balance at the end of June, but that was brought about mainly by the cancellation of a four billion allowable as of June 30th previously referred to, due to reclassification of wells and redistribution of certain allowables.

Q Now we have been discussing to this point the Pool-wide conditions with reference to the balance of production of gas. Does the Pool balance necessarily reflect the true situation as between individual gas units within the Pool?

A No, when you get back down to an individual well basis, it is entirely a different picture, due to the lack of balance between individual wells.

(Texas Pacific's Exhibit No. 3 marked for identification.)

Q Refer now to a graph on the wall, at the top of the right-hand portion of the exhibit there, I think it is identified as Texas Pacific's Exhibit 3, and state what that represents.

A Well, that represents the exhibit of the three proration periods, the same periods covered on a Pool-wide basis. In other words, two periods of '56 and the first period of '57, this being on an individual well basis. This particular well being Continental Oil Company Lynn B-26.

Q What does that reflect with regard to the balancing or lack of balancing of that particular unit within the Pool during the

first six months of 1956?

A Well, it's hard to see from where you are sitting, but the double red line represents the purchaser nominations; the green bar represents the ultimate allowable that was finally granted; the yellow bar represents the actual production; the red line represents the status of the well at the end of each month as to over production or underproduction. In this case it is all overproduction. You'll note this well came into the proration period with an overproduction of twenty-three million cubic feet of gas. During the month of January, the allowable was eighteen million, the production twenty-five, built it up to an overproduced status of thirty million. However, in February the allowable was eighteen million but was produced total of ninety million, so that the well jumps from an overproduced status of thirty million to one hundred two million, and the following month reduced to ninety-six; then you will notice a period of several months here of the allowables being greatly in excess of production, the well was practically shut in in April, small production in May and June, to where that this overproduction dropped down to when over out of the proration period, forty-six million overproduced.

Q That overproduction was carried into the next proration period.

A Yes, that's right. Had the rules been in effect, it would have had coming in here this twenty-three million of overproduction, coming into the period would have had to be straightened out prior

to this time where the well could have been shut in.

Q Was the condition at the end of the first six months of 1956 due primarily to the requirements of large takes in February of 1956?

A Well, that's true, that is what put this well in this condition is this abnormally large take during the month of February.

Q Will you proceed along that line, the history of that well, and indicate what then occurred in the next six-month period?

A Well, going into the period with forty-six million overproduced, it built up to July to fifty-three; then in August, summer month, the allowable of fourteen million but the actual production from this well was eighty-two million, which built this thing from an overproduced status of fifty-three to one hundred twenty-one. Then the following month, in September it produced one hundred nine, down in October to one hundred one, completely shut in in November, down to eighty-three -- remember all this was pretty well eliminated by the fact that in December this well had an allowable of twenty-five, produced ninety-five, so it's back up, goes out of this proration period a hundred fifty-two million overproduced.

Q That overproduction, then, under the rules would have to be balanced by shutin during the last proration period shown on the graph?

A It would have to be straightened out by June 30, 1957.

Q All right, now refer to that last proration period between January and July of 1957, and indicate what was done, apparently,

by the purchaser to attempt to get that well back into balance.

A Well, you can see, readily see here that the nominations were somewhat lower than during the previous periods, but that the production was practically negligible where it was brought down from an overproduced status of one hundred fifty-two to ninety-three.

Q Now, what was the total production in the proration period, the last proration period shown there as related to the prior proration period?

A Well, during the last period of 1956 this well produced two hundred thirty-one million cubic feet of gas; in the ensuing seven months, the first period of '57, it produced only thirty-four million, approximately, oh, say thirteen percent, something like that.

Q What was the approximate reduction percentage-wise in the overproduced condition of that well?

A Well, it was brought down, it was reduced from one hundred fifty-two to ninety-three, reduced about forty percent.

Q So that despite the fact production was reduced some eighty-five percent, the condition of the well in a balanced situation was reduced only forty percent?

A That's true.

Q Why was it not decreased to a greater extent insofar as the condition of the balance of that well is concerned by that drastic cutback in production?

A Well, there are several things that enter into it. One of

the major items, we will note that the well in the first proration period of 1956 received an allowable of one hundred twenty million, the last period, one hundred twenty-five million, but only ninety-one million in the first proration period of '57. This brought about a difference between ninety-one and one hundred twenty-five of approximately thirty-five million, by the fact that due to the low production during this period, resulted in subsequent reduction of allowables to where, although the purchasers gross nominations were high, that due to underproduction from this well standpoint and a Pool standpoint, as explained over here, when they are produced only twenty-seven billion this period compared to forty-five here and forty over in the previous period, that this well had a reduction in allowable of thirty-five million. As we discussed previously, the period in this field is the five billion seven hundred million we are talking about, had that been applied, another one hundred sixteen million would have been credited to the wells, where the well status at the end of June, 1957, would have been approximately half; instead of being ninety-three million overproduced, it would have been out forty-five million, had these things occurred.

Q Do you say that the 116,000,000 was due to the failure to cancel the underproduction?

A That's right. That is the underproduction that had accrued in the Pool-wide standpoint as of June 30, 1956, to three billion six hundred million as was not cancelled in December and additional two billion one hundred million underproduction accrued during this

period and not cancelled here.

Q That aggravated the situation as to that well during the first six months of 1957?

A That is true, because any cancellation of underproduction due to inability to produce is automatically reallocated to non-marginal wells in the Pool. What effect it has, it doesn't only give the overproduced wells that supplemental allowable, but gives the underproduced wells an equal allowable, if they can't produce it, they lose it in a subsequent period.

Q Due to the fact, as you have testified, the ultimate allowable is dependent on the actual takes of the purchaser considering the two-month lag period, the reduction of takes materially slows down getting any well into balance for that very reason?

A That is true. That is pretty well exemplified here. Say a well is in bad condition due to low takes by a purchaser, the allowable assigned to each non-marginal unit for this year was only eight million, to eighty-seven, it is easy to see that a well that will produce ninety-three million, how long it is going to take with this kind of allowable due to underproduction to ever get back in balance.

Q Make an assumption here, using the first graph here of an individual unit, let's assume that that well, in compliance with the rules, had been shut in in relation to the one hundred fifty million some-odd overproduction at the beginning of that proration period, which was the amount that would have to be made up during

the following period?

A That's right.

Q By shutin?

A That's right.

Q Would you state what conceivably could occur in that situation or what could occur at a later date, say in January or February of 1958 with the operation of this system working against wells which have been overproduced to an extent such as that?

A Well, I might state that this well is one of the one hundred sixty-five that we show on Exhibit No. 1 overproduced at the end of 1956.

Q Is that a representative well of those one hundred sixty-five?

A It is, the three here we have prepared and could prepare a number of charts comparable to this, some not quite as severe and some more so. It is rather representative of the large fluctuation in production which creates this condition.

Q What could occur under that kind of a situation?

A Well --

Q In regard to the whole Pool?

A If this condition like this continues the rest of the year, during July, August, September, it hasn't been improved a great deal, it's quite reasonable that a large portion of the one hundred sixty-five wells that are overproduced as of December 31st and which represent some of our best wells in the field, by enforcement of the Commission regulations will be shutin, but which those wells

are shutin, the allowable the purchaser is going to nominate for an allowable for the months of January, February, March, 1958, but he is not going to be able to get the gas because some of the best wells are shutin. As a result, those wells, the allowables for subsequent months, due to underproduction, if the purchaser requests seven billion, we will say, in January, and is only able to produce four, then when March comes along, the balancing time, he loses the three to where it is quite possible that the better wells that are overproduced could just be shutin indefinitely.

Q If the better wells in this pool were shutin in that situation, and the nominations of the purchasers during the winter months beginning the first of the year were naturally high, as we would assume they would be as indicated by those charts --

A Right.

Q -- and the other wells in the field were unable to make those allowables and accumulate additional underproduction, what would the effect of that be?

A It is quite reasonable to believe that along about March or April next year this Pool would end up with a negligible or a minimum low allowable comparable to June of this year.

Q Is that due to the working of the system against the wells from which the purchasers must take his gas?

A It is due to the fact of not keeping wells in balance within individual wells and not nominating realistically to where we can, out of this proration period, come out in balance, like the

condition that existed for the first two years of proration.

(Texas Pacific's Exhibits Nos. 4 and 5 marked for identification.)

Q Mr. Martin, you have two other representations there of individual wells that have been marked Texas Pacific Exhibit 4 and Texas Pacific Exhibit 5, which you have said are based upon the same type of analysis. Will you refer to No. 4 and state what it is and show any particular points of difference or additional points that you have not made on the Exhibit No. 3; and do the same then with Exhibit No. 5, please.

A Well, it should be noted on No. 4 that this well came in practically in balance, came into the first proration period of '56, but January it had an allowable of eighteen million, produced eighty-five million; the following month it followed with eighteen million allowable, produced eighty-three million, went from a balanced condition the first day of the year, in sixty days or a two-months period, balanced condition to one hundred thirty-one million overproduced, by those large takes two months in a row. Then you will note that the well, other than this month here, for one, two, three, four months practically was shut in, and it went out of proration period June 30, 1956, overproduced seventy-two million, compared to coming in in balance. Then it was further improved by shutin July, practically shutin August, cut it down to forty-two million, overproduced, but September allowable twenty-five, production forty-three; October allowable twenty-one, production

seventy-four; November allowable seventeen, production fifty; so that we find at the end of November, up one hundred forty-four million overproduced. Here it is going out of the proration period, December production was held back, and it went out of the period though, one hundred thirty-four million overproduced.

Q At that point let me ask you this. Compare the takes of those two wells which are apparently wells capable of producing sizeable amounts of gas, is there an apparent correlary between the months of the proration period during which high takes were made from those two wells?

A There is in the month of February. This one, and even this one. February, but in January this well was produced twenty-five million and this one eighty-five, and this one fifty-three.

Q I am referring particularly to the middle proration period and as between Exhibits 3 and 4.

A In August this well produced eighty-two, whereas this well produced only three million, was overproduced fifty-four million going into the month of August, but this well was overproduced forty-five million. This well produced eighty-two million and was brought into this bad condition; this well remained shutin.

Q Are there other examples of that type of situation in the studies that you have made of the units in this Pool?

A That is true. It is hard to draw any correlation between individual wells, due to the large fluctuation between them. Individual wells, as to months, summer months, one produced high,

one produced low.

Q Is there any other particular reference you wish to make in connection with your discussion of this individual well unit situation on any of the Exhibits, 3, 4, or 5?

A Well, briefly --

Q Which well is No. 5?

A It is Western Natural Gas Company Blinebry 2-D. That well came into the proration picture practically in balance. Due to excessive takes in January and February went into a bad condition, due to shutins came back to seventy million overproduced at the end of the first period, got down to sixty-two in October, but in October it produced seventy-seven, resulting in one hundred seventeen million overproduction. This was further increased to one hundred forty-four in November, so that it went out of the period one hundred forty-four million--one hundred forty million overproduced. It should be noted then that this well has been cut back considerably; produced the first six months of '56 one hundred eighty-six, the last six months one hundred ninety-four million, down to seventy-five here, due to the production having been cut nearly two-thirds, due to the low allowables granted; due to the low production Pool-wise during this first proration period of '57, the position of this well was only improved from one hundred forty overproduction to one hundred twenty-one million at the end of a six-months period. With a well like that, that's a rather impossible situation.

Q You can't see within the reasonable foreseeable period of

time that well could be in any condition other than shut in, if the rules were enforced?

A No, except the low allowables are going on, the allowable for July and August particularly were very low due to underproduction, in August and September, subsequent cancellation of previous allowables, this condition permits very little improvement to be made in any of the wells in this category between now and the end of the year.

Q All right, Mr. Martin, will you come down here now, please?

MR. CAMPBELL: If the Commission please, my attention has been called to one error in Texas Pacific Exhibit No. 1. If you will note the analysis of Gulf Oil Corporation wells and follow that across to the last computation, which is 1,106,046, the brackets surrounding that particular figure should be removed.

A Because it has a net underproduction rather than over.

Q Mr. Martin, I refer you to what has been identified as Texas Pacific Exhibit No. 6 and ask you to state what that is.

A Well, this is merely a photostat copy of orifice meter charts placed on two Texas Pacific Coal and Oil Company wells during the month of February, 1956, to measure the gas sold, purchased by El Paso Natural. These are El Paso Natural Gas Company, the purchaser's charts, which were sent to us for examination, and these are merely the photostatic copies of same.

Q You returned the original charts, I assume?

A That's right, after the inspection they were returned to

the purchaser.

Q This exhibit does not refer to the identification of the wells that are involved in these particular charts?

A Yes, the back side of the chart.

Q I mean this exhibit you have in front of you.

A No, you are correct, that's right.

Q Will you refer to that exhibit and state -- first let me ask you this, do you make the studies and analyses of the charts that come in to the Texas Pacific Coal and Oil Company offices?

A That is true, under my supervision we analyze and study the charts every month when they're sent to us.

Q What do these charts generally show?

A Well, most instances the charts, various companies, some companies naturally do a better job of measurement than others, but these charts here show one thing, that Texas Pacific Coal and Oil Company lost money and that the royalty owner, who happens to be the State of New Mexico, lost money. For one reason, during this month when excessive takes were made from these wells, these charts, you notice there are four for the monthly period, they are eight-day charts. This well was put on here, on the first day, the well was shut in, remained shut in during the first part of the second day, the well was then turned into the line. It immediately went out of range.

Q What do you mean by that?

A Well, by that, each orifice meter has an orifice plate in

it in the line, a certain size orifice which is supposed to measure the gas that passes during a given period, whether it is daily or eight days in this case, so that an integrator is run over this and the volume of gas that has been delivered to the purchaser is ascertained, but the integrator naturally can only operate within the range of the chart.

Q So that as to that well, the amount of production taken was beyond the measurement capabilities of the chart?

A That is true.

Q That is true of the other well at all?

A That is true of this well for, in other words, the second day this condition started and it was allowed to stay in that condition until the chart was removed on the eighth day. In other words, for six days in a row, this chart produced gas in excess of measurement and following the same well on a subsequent chart on the fourth day went out of range, stayed out of range until it was removed on the eighth day. Another four days where the production was in excess of the capacity of measurement. On this other well, the same period, the well went out of range on the third day, stayed out of range till noon on the seventh day.

Q There's no way, I assume, of telling actually how far that went?

A No, sir, it so happens that it takes a good well for this to happen, but in a field of high pressure gas and good wells, a condition like this exists, you couldn't even guess how much gas

passed beyond this chart range.

Q Mr. Martin, you have stated in your testimony that there could be certain effects of this condition that has resulted in the overproduced status of individual units in this Pool at the end of the proration period ending June 30, 1957, and that that condition is not going to be improved materially under the present system as of December 31, 1957. Do you believe that there are any steps which the Commission could take to alleviate this situation, immediate steps?

A Why, yes, I think that if the Commission is agreeable to an immediate cancellation of the five billion seven hundred million in the present schedules, that accrued prior to June 30, 1957, with the resultant redistribution of the same to overproduced wells, the distribution being across the board, and then a realistic reclassification of any other wells in the schedule that should be marginal, also, this condition of overproduction at the end of a proration period has existed on Exhibit No. 2 at the end of 1956 could be minimized and practically eliminated, if the purchasers could be requested to go back to the way that they used to do it. In other words, for two and a half years, since the beginning of proration up to June 30, 1956, they kept it in balance, they kept it in balance by making their nominations and their production equalize; they realistically nominated. If they were going to have a high production, they anticipated to where you do not go out of a proration period with excessive imbalance of the Pool resulting in

insufficient allowables to the overproduced wells, and as I said before, also to the underproduced wells. In other words, two and a half year history shows that it is possible to keep the Pool within balance from a Pool-wide status. Those three things would materially improve the situation.

Q Do you believe that some sort of a maximum take provision would help eliminate the high peaks on some individual unit wells and eliminate the situation that apparently arose from the taking of a sizeable amount of gas from individual well units as reflected on these charts, Texas Pacific Exhibit 6?

A That is true. In other words, this well produced to and was out of range during the two periods previously mentioned with a resultant loss of revenue to Texas Pacific and royalty to the State, of taxes to the State. Maximum take from a well during a given month would minimize conditions like this. In other words, if this well had been produced in an orderly fashion, had been limited, a condition like this couldn't exist.

Q So you recommend the cancellation of the underage which has not been picked up during the period when there was an opportunity to make it up, and continuing reclassification of marginal wells as remedies which could immediately relieve the situation before the end of this proration period, and the consequent shutting in of the good gas wells in this Pool?

A That is correct.

MR. CAMPBELL: That is all I have of this witness.

MR. PORTER: Does anyone have a question of Mr. Martin at this time?

MR. CAMPBELL: I might note again that this witness will be available. We will be happy to have him cross examined if you desire.

MR. HOWELL: I do have some questions on cross examination.

MR. PORTER: You may proceed.

CROSS EXAMINATION

By MR. HOWELL:

MR. HOWELL: Ben Howell, representing El Paso Natural Gas Company.

Q Mr. Martin, what is the dates of the photostats of the charts that are your Exhibit No. 6?

A These are during the month of February, 1956.

Q These charts were taken beginning in the first week of February, 1956, were they not?

A They were taken -- I don't believe I understand you.

Q The charts reflect the gas which was taken in February of 1956?

A That's right, during the entire month of February.

Q That's right. I believe that during the first part of the month the charts reflect that the wells were producing beyond the ability of the charts to register?

A The excessive period is the latter part of the month. The week ending February the 29th is when the six to eight period, from

the 22nd to the 29th.

Q What does it show in connection with the first?

A The first part, the well came on and produced rather, I have the figures of production by weeks; in other words, for the first week this well produced twenty-two million; for the second week, it produced fourteen million; for the third week it produced twenty-three million; for the fourth week it produced twenty-three million. The other well, for the first week, let me find it now and get the dates correct, the first well, the other well produced fifteen million; during the second week, fifteen million; during the third week, fifteen million; during the fourth week, twenty-five million.

Q Now, relating to your Exhibit No. 2, it appears that during the month of February, 1956, the total production from the Jalmat Pool was the highest of any month in the entire eighteen months that you have charted here, was it not?

A That is true, but only slightly higher than three months during the last half of 1956, two of them being summer months.

Q That's right, but in the month of February that was the top month?

A That's right, slightly above the summer months.

Q Slightly above the summer months and also a twenty-nine day month as compared with thirty and thirty-one day months?

A That is true.

Q Do you recall that during the month of February, 1956, Permian Basin, New Mexico, Arizona and Texas suffered a very severe

cold spell?

A That's true.

Q And that the actual takes from the Jalmat Pool, which were some four billion in excess of nominations, are probably related to the unusual and extreme cold spell, are they not?

A That is bound to be correct, that's right.

Q So that the problem that results in production in excess of nominations can very easily be created by weather conditions?

A Well, I agree with you partially. I can see that in February that would be true, but it is hard for me to realistically think that would be true in July and August with your market being the part of the country it is.

Q There are such conditions as allowables fixed by this Commission and by the Texas Railroad Commission which affect the supply of casinghead gas, do they not?

A That is true.

Q That's also a matter which cannot entirely be anticipated, is that not correct?

A That's true.

Q There are such things as mechanical breakdowns in gasoline plants so that gas which would normally be delivered through the tailgate of a plant may not become available in either winter or summer months, is that not true?

A It would be hard for me to realize in the expansive system that El Paso has that a breakdown in any individual plant where they

purchase gas would have an effect on your monthly withdrawal from the area.

Q Assume that we have plants from which we purchase as much as one hundred million cubic feet a day, the shutdown of one of those plants would require securing one hundred million cubic feet elsewhere during the time of the shutdown, would it not?

A That is true, but you need to give the fact, I believe, that the Jalmat Pool represents only a small part of a monthly withdrawal from the State of New Mexico which you have access to.

Q That may be quite true, but still there are a number of factors which affect actual production in spite of nominations?

A That is certainly true.

Q Now, Mr. Martin, I believe you have stated that actually the allowables for any Pool in Lea County are determined by the actual takes?

A That's correct.

Q And actual deliveries, regardless of nominations?

A Ultimately, but there is a two-month lag period in there.

Q Ultimately two months. That being true, any fictitious nomination would be corrected in a period of two months?

A Well, I don't believe I follow you on what your term of fictitious nomination means. My whole reference up there was intended to mean keeping the relationship between production and nomination in close balance, which two and a half years prior to the period disclosed had been the case.

Q Do I understand it is your present recommendation, then, that a gas purchaser should, to the best of its ability, estimate his requirements for a month and nominate for that month its best estimate of its requirements?

A That's true.

Q You have changed your position on that in the last month or two, have you not?

A I do not know what you have reference to.

Q Did you not request us to increase nominations above the market for the last two months of this year?

A No, sir. Any request that Texas Pacific has made has been to try to spread the production of the wells over a twelve-month period to the best of our ability, where we would have a steady market and steady income according to the terms of our contract.

Q The nomination being an estimate for the month, do you know of any provision in the rule that has been violated by any of the purchasers in the Jalmat Field in submitting their nominations?

A I wouldn't say violated. I would say that, getting back again to a historical background of two and a half years, showing that a situation is possible to keep a thing in balance, it is hard to understand, as shown on those two charts, that it would have to get out of balance. I fail to understand why for six months in a row during the last half of 1956 you consistently produced greatly in excess of your nominations. I fail to under-

stand that.

Q But actually in the application of the formula the overproduction is added to the allowable, so that no penalty results?

A Well, maybe I'm mistaken about something. I would like to ask you this question. Is it not true that the purchasers anticipate their market demand for a given month and make a nomination to the Commission, and that nomination is passed on here as of this morning for the month of November, which gives you an allowable equal to what you anticipate your market demand will be?

Q Are you asking me a question, or asking the Commission?

A I am asking you. if that is the way it works.

Q I would say that it works with this difference, purchasers make nominations. The Commission staff makes the adjustments to take care of previous overproduction or underproduction, and after such adjustment, the nominations usually become the allowables. The Commission has the power, as I understand it, to set the allowables regardless of the nominations.

A That's true. Here's the part I fail to understand. During the first six months of 1956 your company nominated the major portion for the Jalmat Pool which totaled forty billion cubic feet of gas. You actually purchased from the field forty billion cubic feet of gas. Now those nominations were granted by this Commission, forty billion, and you purchased forty billion. What I fail to understand, that in the next six months you came before this Commission and requested thirty-five billion cubic feet of gas

as your withdrawal from that pool, but you actually withdraw from that pool forty-five; what I wonder, why you came here and asked for thirty-five billion and you withdrew forty-five billion when the first six months you asked for forty and withdrew forty. Why would there be a departure that you would have to miss, you came to the Commission and asked for seventy-five percent of the gas in the last six months of last year that you actually purchased out of the field? I fail to see that departure from a balanced condition where you missed your estimate twenty-five percent, ask for seventy-five percent and take one hundred. That wasn't corrected any time during the six months period.

Q Are you making a statement or asking a question?

A I'm doing both, I guess.

Q Now, to return to the questioning --

A Okay.

Q -- if you have completed your statement.

A Pardon me. I was trying to answer your question.

Q I would like to ask this question. Assuming that during any particular given period, purchaser A nominates on the basis of one hundred for a unit, and purchaser B nominates on the basis of fifty for a unit; then with an equal number of units, the allowable would be seventy-five, would it not?

A Well, could I stop you just a minute and ask you one question?

Q Well, suppose you answer my question.

A I'm going to answer the question this way. I am going to answer the question this way, that you are propounding an impossible situation with reference to the Jalmat Pool. You are talking about purchaser A nominating fifty percent and purchaser B nominating fifty percent. Jalmat has one purchaser for the Pool.

Q If you will answer my question here, I will --

A Beg your pardon again.

Q That would result in an allowable of seventy-five, assuming that an equal number of units in the Pool, one purchaser nominates one hundred, another purchaser nominates fifty, and they are an equal number of units, then the allowable would be seventy-five?

A I don't follow that. I would say that the allowable would be one hundred fifty, if each one is nominating and you total up your nomination.

Q The allowable per unit, when you divide --

A Allowable per unit?

Q -- would be seventy-five.

A The nomination would be one fifty.

Q Now, supposing that purchaser A had nominated in Pool number one, gets an allowable in that Pool of seventy-five and is unable to take the figure twenty-five from that Pool. It must then go elsewhere to get the gas, if the market demand is to be met, or else overproduce, is that not true?

A I would say that is true as to a month, but I fail to see how it could be true for an extended period.

Q If that situation continues over a period of six months, it would result in the gas supply from certain Pools having to be produced elsewhere, would it not?

A I fail to see how that condition could exist in the Jalmat Pool, other than the Jalmat Pool.

Q I'm talking generally about Lea County, and I shall relate it to the Jalmat Pool if you will just answer the questions, Mr. Martin.

A I fail to see how that condition exists, I will answer it that way.

Q All right. Now have you looked at the Commission's records to the point that you are familiar enough to say whether or not these figures are approximately correct, that in 1957, from January through July, El Paso Natural Gas Company nominations for all Pools in Lea County totaled sixty-nine billion nine hundred sixty-one million? Have you checked the records sufficiently to know whether that is correct or not?

A You are getting out of a Pool condition into an area now, but that's the way you want it --

MR. CAMPBELL: May I inquire as to what your reason is for departing from the Jalmat Pool in this question?

MR. HOWELL: Because the Jalmat Pool, unfortunately, the conditions that require taking or not taking from the Jalmat Pool bear a relationship to the other Pools in Lea County.

MR. CAMPBELL: Are you saying that your takes are on a Lea

County basis and not a Pool-wide basis?

MR. HOWELL: I'm saying that the market demand is met, if it can't be met one place, it is going to be met another. I'm trying to bring a point to the attention of this witness that shows the relationship of one Pool to another, that during the same seven months -- have you your figures there, the Commission totals?

A I think so.

Q Am I correct in stating that in the first seven months of 1957, El Paso Natural Gas Company nominations for Lea County totaled some sixty-nine billion nine hundred sixty-one million?

A Well, I show slightly different than that, but that is close enough.

Q And that the allowables granted to El Paso Natural Gas Company in that time totaled approximately forty-eight billion nine hundred eighty-one million?

A Well, I don't have that figure as to the entire Lea County.

Q For the purpose of our present question, will you assume that is a correct statement?

A Yes, sir.

Q That the allowables granted, and will you also assume for the purpose of this discussion, that the actual production from Lea County during that same period was forty-eight billion nine hundred thirty-eight million five hundred seventy-four from the several Pools that El Paso is connected to?

A You are now referring to the production of El Paso Natural

Gas Company rather than the Pool totals?

Q To the taking by El Paso Natural Gas Company of production from all of the Pools.

A I don't think the thing should be looked at, if you are going to spread it out to the entire Lea County, why, the purchasers and takes of the other purchasers in the Eumont shouldn't be involved in this thing.

Q Mr. Martin, if you would just please answer the questions.

MR. CAMPBELL: Answer them if you can. If you are unable to answer, tell him.

Q If you are unable to answer, we won't engage in an argument here. If we can get along with the questioning, I think the point will become clear, that if those figures are correct, that reflects a change from a market that should go to Lea County during that period of some twenty-six billion cubic feet, does it not, where the allowables and the takes are that much less than the nominations?

A Yes, sir, I'm following you.

Q That is correct?

A That is correct, assuming those figures to be correct.

Q Now then, referring to your Exhibit No. 2 for this period in 1957, your blue columns, I believe here, are the nominations from the Jalmat Pool?

A Yes, the green is the nomination.

Q The green, I seem to be color blind. Now the yellow constitutes the actual takes from the Jalmat Pool?

A That is correct.

Q Looking at these wells which you have testified are the overproduced wells --

A (Interrupting) A portion of the overproduced wells, correct.

Q -- which constitute, you say, some of the overproduced wells?

A That's right. That's right.

Q It is apparent that during that same period of time the takes from each of these good wells was at a bare minimum, was it not?

A Well, that's true mostly, would look at --

Q We are referring to the year 1957 and we will look specifically at the Continental Lynn well. I believe during those seven months at no time was the allowable taken from that well?

A That's right.

Q Referring to the Texas Pacific well, from January through May at no time was the take as great as the allowable, but in June there was an excess taken?

A We aren't talking about the full period, are we not? We are not taking off here and going all the way here and then to here?

Q But now, continuing now with Western's --

A Doesn't this answer the question?

Q Mr. Martin, please let me do the questioning.

A Oh.

Q But the point that your chart here demonstrates is that the taking during 1957 from the Jalmat Pool has not been as large as the

nominations, that is correct, is it not?

A That is correct, that's right.

Q Now then, if the good wells that are overproduced by and large are shut in and are not permitted to produce, then that would throw the entire burden of meeting the allowables from the Jalmat Pool on the weaker wells, would it not?

A That is as I previously testified.

Q If those weaker wells are unable to meet those allowables during that period, then the result is that a part of the market of the Jalmat Pool has been lost, has it not?

A Exactly correct.

Q I thought you would agree with me when we finally got down to the point. So then from your testimony and from the actual operation, would you be willing to say that the effect of having some wells overproduced and other wells unable to make up the difference results in a loss of the market to the Pool?

A That's correct.

Q Now then, referring again to the Exhibit No. 3, which covers three individual wells,you have set in each month a nomination, a red line which you show as a nomination?

A That's right.

Q How did you get that figure, because the company does not nominate for individual wells?

A I realize the company does not nominate individual wells, but the statutes and the regulations of the Commission say that the

nominations of the various purchasers shall be totaled and a certain percentage shall be allocated to the marginal wells in the Pool and that the remaining nomination and subsequent allowable shall be allocated to the various wells in the Pool;based on this particular case, the unit of 160 acres, so it is merely a mathematical calculation that if you have three billion cubic feet after you provided for your marginal wells, the allowable for every unit of the marginal units, and you have ten million. There is nothing complicated about it.

Q You still haven't answered the question. How did you get the figure of your nominations that you put on each well? You have told us how allowables are calculated, but how did you get that figure?

A I merely took your nomination for the month of, well, say for the month of July last year, not your nominations,primarily yours, but the Pool nomination of five and a half billion covering three hundred fifty units. The schedule prepared by the Commission said there were thirty at that time marginal units, and they should be assigned two hundred sixty-eight million of that and the remainder of five billion two hundred thirty-one million should be assigned to two hundred of the non-marginal units by three -- into five billion two hundred thirty-one, it gave me allocation per unit of sixteen million fifty-eight.

Q Which you, for your purposes, have set out as being the nomination per well?

A That is correct.

Q Now, referring again to the Exhibit 3 covering three particular wells, those three wells I think your testimony shows are overproduced somewhere in the neighborhood of one hundred million cubic feet, is that approximately correct?

A That is pretty close.

Q What is the average overproduction for the overproduced wells in the Jalmat Pool?

A As of what period?

Q Well, as of the end of your graph there, as of July, 1957?

A As of the end of 1956, which is our last test computation here, they were overproduced sixty million per unit.

Q That was the average, you do not have a July,1957, figure?

A No, sir, we have limited our discussion to the three periods shown on the board.

Q Now then, referring again to your Exhibit No. 1, I'm not sure that I understood exactly what some of your testimony was, and I think that you used some figures of three hundred and fifty-one million overproduced. Now what figure was that?

A What I used, that the three and one half units owned by Tidewater Oil Company produced a billion two hundred twenty-eight million at an average production per unit of three hundred fifty-one million. It is down fourth from the bottom line.

Q All right, fourth from the bottom line. Now what,that is what, the average production per well?

A Per unit.

Q Per unit, that is?

A Right.

Q The average overproduction is a certainly much smaller figure than that?

A That is true, there is some considerably larger than that as to individual wells.

Q But out of the three hundred fifty-one million production, there was an allowable of about two hundred fifty-four million or something of that nature?

A Two hundred forty-five million was the --

Q (Interrupting) Was the allowable during the same period?

A That's right.

Q The graphs you have displayed as to certain wells in Exhibit No. 3 reflect that shortly after the wells became overproduced, production in each instance was cut back?

A Well, that's basically true, but it wasn't continued on that patent. I refer you to the August production of one of them, the October excessive production of another, in each one of those wells, as you can see, there is at least three or four peaks.

Q That's correct.

A That's right.

Q And you are familiar enough with the gas business to know that you can't store gas very satisfactorily in tanks?

A That is true.

Q And that gas is necessarily produced when the market exists?

A That is true.

Q Now, I believe you have recommended, Mr. Martin, that the cancellation of the existing underproduction will result in reallocation to non-marginal units of additional allowable and reduce the overproduced status?

A That's right if it is made retroactive to June 30th, where it occurred.

Q Let me ask you this further question, that I believe you have recommended the reclassification of marginal wells?

A Reclassification of non-marginal wells to marginal if there is any in the field in that category.

Q If there are wells in the field unable to make an allowable?

A That's right, and if the engineering staff of the Commission sees fit to do it, I have recommended it.

Q You have recommended that they reclassify?

A That's right.

Q Let me ask you if they would not also have substantial benefit in this, that the reclassification to a marginal well will, first, reallocate any accumulated underproduction to the wells capable of producing?

A That is definitely true.

Q And secondly, it will also benefit the overproduced wells and tend to restore the Pool to a state of balance by eliminating the future allocation of allowables to those wells that can't make

the allowables?

A That is correct.

Q So that that will have a double-barreled effect?

A It certainly will.

Q I believe you have further recommended that the realities of production require consideration of the capacity of wells to deliver, that is true, is it not?

A That's -- well, I didn't say it in exactly those words, but I agree with that.

Q That the ability of a well to produce --

A (Interrupting) That's right.

Q -- should be considered in determining the well's allowable?

A That's right. In other words, any one of these numerous wells that are underproduced during 1956 were apparently underproduced due to inability to produce.

Q That's correct, and I believe that your Exhibit No. 3 graphically illustrates the fact that during periods of peak demand the wells that are already overproduced tend to become even more overproduced?

A That's true.

MR. HOWELL: That's all. Thank you, Mr. Martin.

MR. PORTER: Anyone else have a question at this time?

MR. OSBORN: Jack Osborn, attorney from Omaha, Nebraska, representing Permian Basin Pipeline Company. In spite of the opening remarks of Mr. Campbell, I would like to assure the

Commission that Permian retains a sufficient interest in the Jalmat Pool to be heard at this time. I wonder will this witness be available at the continued hearing, if it is continued?

MR. CAMPBELL: Yes, he will.

MR. OSBORN: Well, in view of that, I would like to first of all join in the motion for continuance and reserve cross examination of this or any other witness until then.

MR. PORTER: Does anyone else have a question of Mr. Martin? The witness may be excused.

(Witness excused.)

MR. CAMPBELL: I might say, if the Commission please, we have only one other witness. His testimony, I think, for the benefit of the people who are interested and the Commission, could perhaps be better presented at one time. I'm perfectly willing to go ahead, of course, as long as the Commission wishes to, but the hour is late and I don't know how the Commission feels about it; I'm pooped. We'd be perfectly willing to come back in the morning and present this witness, if the Commission would prefer it that way.

MR. PORTER: The Commission is sympathetic to that request. Mr. Dipple, did you have a question?

MR. DIPPLE: I wanted to ask a question, so I will be sure that I understand what everybody's position is at the present time. As I understand it, if the motion for continuance is granted, this witness, Mr. Martin, will be available for cross examination at the

November hearing?

MR. PORTER: That is our understanding, too.

MR. DIPPLE: Then I want to be sure that if the motion for continuance is not granted that we will have an opportunity to examine him after you make that ruling?

MR. PORTER: The hearing will recess until 9:00 o'clock tomorrow morning.

(Recess.)

MORNING SESSION
October 18, 1957

MR. PORTER: The meeting will come to order, please. At this time we'll resume the hearing of Case 1327. Mr. Campbell, will you proceed with your next witness?

MR. CAMPBELL: I would like to call Mr. Keller, please.

W. O. KELLER

the witness, of lawful age, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

By MR. CAMPBELL:

Q Will you state your name, please?

A W. O. Keller.

Q Where do you live, Mr. Keller?

A Fort Worth.

Q And what is your business or profession?

A I'm a consulting petroleum engineer.

Q You operate by yourself, or are you in a firm?

A I operate in a partnership of Keller and Peterson.

Q How long have you been a consulting engineer?

A A little over seven years.

Q And would you give the Commission, please, a statement of your educational and professional background as a consulting petroleum engineer and your previous experience and background?

A Yes, sir. I graduated from Texas A. & M. in 1941, with a Bachelor of Science degree in Petroleum Engineering. I was then employed by the Stanolind Oil and Gas Company in their Engineering Department. I spent nine years altogether with Stanolind as an engineer. The first three years my experience consisted predominantly of field engineering work, dealing with various field problems involving the operation and drilling of oil and gas wells. The next two years my experience consisted predominantly of proration work in Texas; that is, I represented the company at the various hearings involving proration matters. The last four years I was engaged primarily in reservoir engineering work; that is, work involving the study of oil and gas reservoirs and recommendations as to improvements in operations, secondary recovery and so forth. Upon leaving Stanolind --

Q (Interrupting) What was your position with Stanolind at the time you left the company?

A I was reservoir engineering supervisor, in charge of the reservoir engineering work throughout the company's operations,

which covered the area from the Rocky Mountains through the Mid-continent, West Texas, New Mexico, and the Gulf Coast of Texas and Louisiana.

Q Now go ahead with the later experience.

A Upon leaving Stanolind, I entered into the petroleum engineering consulting business in Midland, Texas, and have been engaged in that work since that time. My experience as an engineer during this period has involved a large variety of work dealing with petroleum engineering problems in connection with the evaluation as well as the operation of oil and gas reservoirs.

Q I don't believe you stated how long you had been in consulting work, after you left Stanolind?

A I have been in consulting work continually since leaving Stanolind in 1950.

Q In connection with your work, have you had occasion to make studies of gas reservoirs which are operating under prorationing, Mr. Keller?

A Yes, sir, I have.

Q What do you consider to be the basic general requirements for a gas allocation formula, under a system of gas prorationing?

A I feel that a gas allocation formula in a field such as Jalmat should meet two criteria. First of all, the allocation method should protect correlative rights; that is, it should provide for the distribution of allowables in approximate relationship to reserves, so that each well will be allowed the opportunity to

produce its fair share of the reserves. The second criteria that an allocation method should meet is that it should be practical to administrate, in that the formula should be simple and the factors entering into the formula should be readily measurable with a minimum of interpretation.

Q Have you acquainted yourself with the formula which is now being used for allocation in the Jalmat Gas Pool in Lea County, New Mexico?

A Yes, sir, I have.

Q And what is the basis for that formula?

A The formula is one hundred percent acreage; that is, all of the allowable of the Pool is distributed to the various wells on the basis of the acreage assigned to the wells, with, of course, provisions being made for marginal wells, that is, wells incapable of producing the allowable allocated on an acreage basis.

Q In your opinion does that method of allocation meet both of the standards which you indicated were required for proper allocation?

A No, sir. In my opinion the present one hundred percent acreage formula fails to protect correlative rights for the reason that it does not give each well the opportunity to produce in relation to its reserves.

Q What do you recommend as a better formula for the allocation of gas in the Jalmat Gas Pool?

A I would recommend as an improvement in the present formula

a formula whereby twenty-five percent of the total allowable of the field is allocated on an acreage basis in a manner similar to what is now being done on a one hundred percent basis. The remaining seventy-five percent of the total field allowable I would allocate to the various wells on the basis of an acreage times deliverability factor, where the deliverability of each well is defined as that amount of gas produced per day by the well, against eighty percent of the shutin pressure of each well, this deliverability to be calculated on the basis of an annual deliverability test conducted in the manner outlined by the directive dated March 15, 1954, issued by this Commission providing for a deliverability test.

Q Is this essentially the same formula that is now being used in the San Juan Area of New Mexico, to your knowledge?

A I believe it is, except the test procedure for determining deliverability is different in the March 15th directive for Lea County fields than that provided for the San Juan Basin field.

Q Do you consider that the testing procedures in that directive are adequate to properly operate the formula which you have suggested here?

A Yes, sir, I believe that they are and that in addition, I believe that the procedure should provide for the correction of the deliverability to eighty percent of the shutin pressure on the basis of the average n-value in volume for the field, which I think is approximately .8 or 82 in Jalmat.

Q Do you feel that that formula which you recommend comes

closer to permitting the owner of properties in the field to recover his fair share of the gas?

A Yes, sir, I do.

Q And why do you feel that the acreage factor alone fails to, as you put it, protect correlative rights in that respect?

A I feel that the acreage factor, that is one hundred percent acreage allocation, fails to protect correlative rights in that it has inherent in it the fallacious assumption that reserves are equally distributed on an acreage basis throughout the field. We all know that this is not the case. As a result, the allocation on a hundred percent acreage basis prevents each well from having the opportunity to produce in relationship to its reserves.

Q Do you feel the recommended formula that you have suggested here recognizes differences in quality in different areas of the field?

A Yes, sir. I believe that the recommended allocation method is a very substantial improvement from a correlative rights standpoint over the one hundred percent acreage allocation now in effect.

Q Now, Mr. Keller, in order to explain that more fully, I would like to refer you to the exhibits which have been posted on the wall there, and ask you if you will step up there. Mr. Keller, I refer you to what's been identified as Texas Pacific Exhibit No. 7, and ask you to explain that particular exhibit.

A Yes, sir. I believe that the reasons why I am of the opinion

that the proposed allocation method will allocate allowables more in proportion to reserves than the present one became apparent in using the Exhibits 7 through 7-D that I have on the board. I would like to point out the relationship between the various factors that govern deliverability and also the relationships that govern the recoverable gas in place, and compare how these factors enter into both the determination of deliverability and the determination of recoverable gas in place. The relative gas reserves of the various wells will be controlled primarily by two basic factors; that is, one, the recoverable gas in place; and, two, the ability of the wells to produce. The ability to produce, of course, is commonly measured by a deliverability test. There are five basic factors, I believe, entering into recoverable gas in place and deliverability. These are, one, acres, which I have designated as "A"; two, net pay thickness; three, pressure; four, quality of the pay as reflected by the porosity,connate water,and permeability of the pay section; and, five, what I have termed efficiency of completion of the well. These factors enter into the determination of recoverable gas in place and deliverability in somewhat different fashions; the manner in which they determine recoverable gas in place is shown by the equation on the left-hand bottom of Exhibit No. 7. This equation is G is equal to A times T times P times Y times (one minus S_W) times R times C_1; may at first glance appear rather complicated, but I think as we examine it further we will find it is a fairly simple relationship. It simply says that the gas in place, recoverable

gas in place is directly proportioned to the acreage, the net pay thickness, the pressure, the connate water, one minus the connate water, a recovery factor or recovery efficiency factor, and a constant which takes into account dimension, conversions, reservoir temperature and pressure base at which the gas is measured, and other factors which are common between units in the field.

On the lower right-hand corner of Exhibit No. 7 is an equation expressing the relationship between some of these factors and deliverability. That equation is D is equal to T times $(P_s^2 - P_w^2)^n$ times K times C_2. This equation says the deliverability of a well is equal to the net pay thickness times the difference in the squares of the shutin pressure and the working pressure raised to the nth power, times the permeability, K, times a constant, C_2, which takes into account such things as conversion factors, gas viscosity, reservoir temperature, et cetera.

Q Now, Mr. Keller, I have noted that on that exhibit you have stated, as I understand you, that the gas reserves are determined by a relationship between recoverable gas in place and the deliverability, and that acreage appears only as one of five factors in the determination of recoverable gas in place. Does acreage appear any place else as a factor in the determination of gas reserves?

A No, sir.

Q You have recommended an allocation formula by which deliverability will be given consideration, and with this in mind and referring to the Exhibits 7 A, B, C, and D, would you demonstrate

how in your opinion this would more closely permit the recovery of gas reserves under a property in the Jalmat Gas Pool?

A Yes, sir. I believe this can be readily understood by an examination of how these various factors enter into both the deliverability of the various reserves and also into the distribution of the reserves to the individual well, that is, into the distribution of the recoverable gas in place attributable to the various wells. First of all, let us consider acres, No. 1 on Exhibit No. 7. Exhibit No. 7-A is a simple schematic representation of a 320-acre tract on the left-hand side of the Exhibit 7-A, and 160-acre unit on the right-hand side. Acreage enters into the determination of recoverable gas in place in a direct fashion; that is, all other factors being equal, the gas in place under the 320-acre tract will be twice as great as the gas in place under the 160-acre tract.

Q Now, is that the only factor that is considered in the present gas allocation formula?

A Yes, sir. Acreage is one hundred percent of the present allocation method. I would also like to point out that acreage does not enter in directly into the ability of a well to produce, that is, its deliverability.

Q Now, will you move on to Exhibit 7-B?

A Exhibit 7-B is another simple schematic diagram used to illustrate the role of net pay thickness in the determination of recoverable gas in place, and its role in the determination of the deliverability of the wells. Represented on the left-hand side

of Exhibit 7-B is a 160-acre unit with a net pay thickness of twenty feet. On the right-hand side is a unit with half the net pay or ten feet, as expressed by the formula in the lower left-hand side of Exhibit No. 7. In such example as shown on Exhibit 7-B, if the pay thickness is twice as great in one tract as compared to the other, then the gas in place will be twice as great, all other factors being equal. Considering the effect of net pay thickness on deliverability, we find from the equation on Exhibit No. 7 that deliverability is also directly in proportion to net pay thickness, all other factors being equal; that is, if the pay thickness is twice as great under one tract as under the other, the deliverability will be twice as great for a well on one tract as compared to the other, all other factors being equal.

Q As I understand you, under the present allocation formula in the Jalmat Gas Pool, no recognition is given to pay thickness, net pay thickness?

A Hundred percent acreage allocation, completely ignores the effect of pay thickness upon the distribution of reserves.

Q Or upon the deliverability of the well?

A Yes, sir, upon the deliverability of the well, too. The pay thickness, however, does enter into in some fashion, in a direct fashion, the deliverability of a well, as well as the recoverable gas in place, all other factors being equal.

Q Will you move on to 7-C, please?

A Exhibit 7-C is another schematic diagram illustrating the

role of pressures in the determination of recoverable gas in place, and in determination of deliverability. On the left-hand side of Exhibit 7-C is illustrated a 160-acre proration unit having a pressure of 200 pounds, compared to a 160-acre proration unit having a pressure of 100 pounds on the right-hand side. As expressed by the formulas on Exhibit No. 7, the gas in place varies directly or approximately directly with the pressure. That is, if the pressure is 200 pounds under one, on one tract as compared to 100 pounds, then the gas in place will be approximately twice as great on the higher pressure tract. Considering pressure from a deliverability standpoint, you'll recall we stated that the deliverability of a well would vary as the difference in squares of the shutin and working pressures raised to the nth power. This is illustrated somewhat simply if we take the maximum deliverability, that is, a well producing against atmospheric pressure, if the pressure is twice as great in one instance as the other, then the deliverability will be varied as the square of the pressure, or will be four times as great on the high pressured tract as on the lower pressured tract, all other factors being equal.

Q Now, will you move on to Exhibit 7-D?

A I might point out that the hundred percent acreage allocation now in existence completely ignores the effect of pressures upon the recoverable gas in place, and that the pressures enter into both the recoverable gas in place and into the determination of the deliverability, although in a somewhat different fashion.

Exhibit No. 7-D is a schematic representation to illustrate the role of the quality of pay in respect to recoverable gas in place and in respect to the deliverability or ability of the well to produce. I have expressed quality of pay in terms of porosity, connate water, and permeability, and I would like to briefly discuss each of them in turn. On the left-hand side of Exhibit 7-D are two squares, one square illustrating a porosity of twenty percent, the other square illustrating a porosity of ten percent, with the same connate water of twenty-five percent. In such cases, if the porosity under one tract is twice as great as compared to the other, then the gas in place will be twice as great as under the lower porosity tract; again a direct proportionality between the factor porosity and the recoverable gas in place, all other factors being equal. Porosity as shown on Exhibit No. 7 does not enter directly into the determination of the deliverability or ability to produce. Considering connate water, shown in the central portion of Exhibit No. 7-D are two squares illustrating a tract with a connate water of twenty percent, compared to a tract with a connate water of forty percent. As shown by the equation on Exhibit 7, the gas in place will vary as one minus the connate water, the compliment which is this example, one minus connate water would be in the relationship of one minus twenty, or eighty percent, compared to one minus forty, or sixty percent; that is, eighty to sixty. As required by the equation, the gas in place will vary as eight to six, all other factors being equal. Considering

permeability --

Q (Interrupting) Just a moment, the connate water does not enter into the deliverability?

A No, sir, the connate water does not enter into the deliverability. Considering permeability, represented by the two squares on the right-hand side of Exhibit 7-D, we have illustrated by one square a permeability of 200 millidarses, compared to a permeability of 100 millidarses. Permeability enters into the determination of the recoverable gas in place in a somewhat complex fashion which cannot be reduced to a simple relationship. Actually, it enters into recoverable gas in place primarily from the standpoint that it affects the abandonment pressure, therefore the amount of gas left unrecovered, therefore the recovery efficiency which I have shown as "R" in the equation on the lower left-hand side of Exhibit No. 7. Permeability does enter into the deliverability in general, a direct proportionate manner; that is, comparing a factor with 200 millidarses compared to 100 millidarses, the deliverability of a well would be twice as great for the well with the 200 millidarses permeability as for the well with the 100 millidarses permeability, all other factors being equal.

Q Now, under the present allocation formula, are these factors that enter into the quality of pay given any weight at all?

A They do not enter directly into the hundred percent acreage allocation, no, sir. They are not considered directly.

Q I note that on Exhibit 7 you show a fifth factor affecting

both recoverable gas in place and deliverability. I believe it's the efficiency of production. Would you discuss that, please?

A Well, sir, that's efficiency of completion.

Q Efficiency of completion, yes.

A Yes, sir. That's a catch-all factor, that includes such things as the location of a perforation, or the casing reference to the location of the pay, the effectiveness of stimulation, the completion of a well in respect to possible plugging during drilling, and various other factors that are predominantly man controlled in the completion and operation of a well. There are so many things that enter into that, that is, entering into the efficiency of completion, that it's not possible to draw up a simple schematic diagram illustrating it; but let me say this, that the efficiency of completion does control to some extent the recovery efficiency and the relation is such so that in general, the greater the efficiency of completion, the greater the recoverable oil, recoverable gas in place; although certainly not necessarily in a direct proportion. Similarly, the efficiency of completion enters into the deliverability of a well; that is, the more efficient the completion, in general, the higher will be the deliverability of the well, although again there's no set relationship.

Q Would you come back down now to your witness chair, or do you have something you want to add with regard to that?

A No, sir.

Q Mr. Keller, based upon your analysis of the factors entering

into the determination of gas reserves, and upon your knowledge of the present allocation formula used in the Jalmat Gas Pool, what is your opinion about the extent, if any, to which it affects correlative rights?

A Well, sir, it is my viewpoint that hundred percent acreage allocation does not provide protection to correlative rights because it fails to take into account the fact that reserves aren't equally distributed within the field, that to my mind is the basic fallacy with the acreage allocation. I feel like that acreage certainly has a part as a factor in the allocation method; however, I feel like that the acreage should be modified to take into account quality of the acreage in the vicinity of each well, and that basically my reasoning for putting in the deliverability times acreage factor. I feel that deliverability is an appropriate factor which to modify acreage, to reflect in some degree at least relative quality between tracts; that is, in terms of relative reserves. I don't mean to say that I think that the formula I have proposed is the perfect formula, certainly most any formula you could devise has some shortcomings, but I do feel that it is a very substantial improvement from a correlative rights standpoint over the present allocation method.

Q Mr. Keller, based on your knowledge of gas fields elsewhere, is deliverability in rather common use as a factor in allocation formulas?

A Yes, sir. My experience has been that there are quite a

few fairly large fields that employ deliverability in one fashion or another in the allocation of allowables to the various wells. Hugoton, I suppose, is one of the prime examples.

Q That field extends into more than one state, doesn't it?

A Yes, sir. It covers parts of three states, and as I recall, all three states provide a deliverability factor in the allocation method, and of course, deliverability is a factor in the allocation of allowables in the San Juan Basin field.

Q Mr. Keller, you have heard the testimony of Mr. Martin and seen the exhibits that he presented with regard to the actual operation of gas prorationing in the Jalmat Gas Pool and as between individual units in the Pool. Do you believe that this situation might have been alleviated to some extent had there been some deliverability factor present in the gas allocation formula in the Jalmat Gas Pool?

A Yes, sir. I believe that the situation would have been alleviated, would have been less severe, since the take practices, I believe, during peak periods are always more nearly in proportion to deliverability than they are in proportion to acreage.

Q What is your opinion as to the operation of the system in the future, comparing it as it presently operates and with the addition of some deliverability factor in the allocation formula?

A Well, if you mean in respect to the inbalance between, as to individual wells, between the allowable and the production?

Q That's what I mean.

A I think that the adoption of the allocation method I have recommended would go a long way to alleviating that situation. It would be easier to keep the wells in balance.

Q Why is that?

A Well, for the simple reason that during peak demand periods it's necessary to withdraw more gas from the wells that are in a, have greater capacity to supply.

Q From your examination of the exhibits that Mr. Martin offered, is it your opinion that that is what has occurred generally in connection with the operation of gas prorationing in this Pool?

A Yes, sir, that is my impression, that that's generally true that the better wells have supplied more of the demand during periods of peak demand required.

Q Mr. Keller, do you have any other suggestions as to any changes in the present system which might to some extent avoid the reoccurrence of the condition that Mr. Martin pointed out now exists in this Pool?

A Yes, sir. I think that the possibilities of severe inbalance between production and allowables as to individual wells could be further minimized by placing a maximum limitation on the actual production of a well, and in that connection, I would suggest a maximum limit of twice the allowable. Of course, it's my thought in mind that that would go hand in hand with the revision in the allocation formula.

Q Mr. Keller, you are probably aware of the fact that the

statutes contain a limitation at the present time for a ten-day period of emergency, for the production of the wells in excess of the allowable. Would the limitation you suggest be in addition to that statutory limitation, an additional limit?

A From my understanding of that emergency limitation, yes, I would suggest that it be in addition.

Q Do you believe that with such a system of maximum takes that there would still remain sufficient flexibility to take care of fluctuating market demand by gas purchasers?

A With the recommended allocation method, I do, yes, sir.

MR. CAMPBELL: I believe that's all.

MR. PORTER: Anyone else have a question of Mr. Keller?

MR. SELINGER: Mr. Porter, I assume this witness will likewise be available at the recessed hearing in November?

MR.CAMPBELL: Yes, I think I stated at the outset both these witnesses will be available next month.

MR. PORTER: Any questions? The witness may be excused.

(Witness excused.)

MR. PORTER: Mr. Campbell, do you have any other witnesses?

MR. CAMPBELL: No, sir, not at this time. I would like to say that we do not have available a sufficient number of copies of these exhibits to meet the requests that have been made. If any of the companies or operators who desire copies of Mr. Martin's exhibits or the smaller sets of these exhibits would get in touch with Mr. Adair at Fort Worth, we will be glad to supply copies of

each of these exhibits for examination by the operators during the period before the next hearing.

MR. PORTER: Anyone else want to present testimony in this case this morning?

MR. HOWELL: Ben Howell, representing El Paso Natural Gas. Mr. Chairman, we would like to ask this question: Is the hearing going to be recessed, or is the hearing going to be concluded today, because --

MR. PORTER: (Interrupting) You mean is it going to be continued to next month?

MR. HOWELL: Yes.

MR. PORTER: The motion or request at the first of the hearing?

MR. HOWELL: Yes.

MR. PORTER: I think we can answer that. Unless there's further objection, Mr. Howell, we intend to continue the case. I haven't heard any objection to the motion.

MR. HOWELL: Well, my reason for asking the question was this: That if the hearing were to be closed today, we would put on testimony today. We think, however, that another month's study of the problem will permit us to put on testimony in a more effective manner at the next hearing. If there is no objection, since El Paso Natural Gas Company is the major purchaser in the Jalmat Gas Pool, I think it would not be inappropriate to make a general statement of our company's position in the matter, so that all

operators can be informed of our belief, and if there is no such objection, I shall make a statement here this morning covering our position.

MR. PORTER: You may proceed.

MR. HOWELL: From the date that proration commenced in Lea County, El Paso Natural Gas Company each year has nominated and has actually taken from the gas pools in Lea County, New Mexico, volumes of gas in excess of its total contractual obligations to the producers in those pools. Today, each pool is out of balance with some wells underproduced and other wells overproduced. In each pool three factors have contributed to the accumulation of underproduction for some wells and overproduction for other wells. One factor is the inability of certain wells to deliver at the times production is required and the ability of other wells to deliver large volumes at the times of peak demand. The second factor is the omission of deliverability or producing capacity of the wells from the allocation formula. The third factor is that during 1955, 1956 and 1957 other gas purchasers in the same pools have nominated and taken lower average quantities of gas than El Paso Natural Gas Company.

The record of prior hearings contains a full statement concerning El Paso's operations. In common with other natural gas pipelines, El Paso's demands from its customers fluctuate with weather conditions and other factors beyond El Paso's control. El Paso's supply from the Permian Basin area is predominantly dependent

upon residue gas from plants processing casinghead gas produced incident to the production of oil. The prevention of waste requires marketing of all residue as it becomes available with gas from gas wells supplementing the supply of residue gas. The volumes of residue gas available to El Paso are determined not by El Paso's needs, but by the oil allowables established by this Commission and by the Texas Railroad Commission. When oil allowables are high, residue gas from the tailgates of gasoline plants will load the pipeline. When oil wells are shut in, either because of proration, mechanical difficulty or any other reason, or when gasoline plants are out of operation for any reason, El Paso's requirements from the Permian Basin area principally must be obtained from gas wells in the prorated gas pools of Lea County. The volumes of gas obtained by El Paso from gas wells in Texas is minor. In normal operations the greatest volume of residue gas becomes available shortly after the first day of the month and tapers off to a marked degree at the end of the month. Consequently, the production of gas from gas wells tends to become concentrated into short periods of peak demand or short supply.

In order to prevent waste of casinghead gas, it is necessary to produce gas from gas wells under field conditions which require high deliverability wells to produce the major portion into the gathering lines because the low delivery wells are incapable of producing such gas.

The fact that the nominations of other purchasers per unit

have been smaller than El Paso's has resulted in the allowable given to El Paso's wells being less than El Paso's market demand. For example, if El Paso nominates one million cubic feet per unit per day and another purchaser nominates one-half million cubic feet per unit per day for an equal number of units, the allowable based upon straight acreage would be three-quarters of a million for each unit giving wells connected to El Paso's system less than its requirements and giving the other purchaser's connections more than its requirement. When the market demand is met, El Paso's wells become overproduced, and the other purchaser's connected wells become underproduced. When peak demands and short supply impose the necessity of producing large quantities quickly, this unbalanced condition is aggravated. During the former hearings El Paso and other pipeline companies pointed out this inevitable result when the deliverability factor is omitted.

This unbalanced condition has been further complicated by carrying forward instead of cancelling underproduction. El Paso is not critical of companies whose problems resulted in carrying forward this underproduction or of the Commission for granting extensions of the cancellation date. However, the result in the Jalmat Pool was as of July 1, 1957 an accumulated underproduction of 8.6 billion cubic feet, and an accumulated overproduction of 8.6 billion cubic feet. The cancellation of underproduction and the redistribution of the underproduction to the non marginal wells will help to relieve this situation. El Paso urges the Commission

to cancel at the beginning of the next proration period all underproduction subject to cancellation under existing rules and to redistribute this underproduction to the non marginal wells in each pool.

Many wells in the Jalmat Pool could be classified as marginal wells. These wells are physically incapable of delivering the average monthly allowable. Failure to classify these wells as marginal wells results in granting to these wells an allowable impossible to make. The weak well is not penalized by classification as a marginal well. On the contrary, the marginal well is permitted to produce all it can produce, and in effect, is freed from any restriction of proration. The owner of the marginal well is not hurt by proper classification, and the owners of non marginal wells are benefited because the demand which cannot be met by the marginal well is properly allocated to the wells capable of delivering this demand under field conditions. El Paso urges the Commission to make prompt classification of all marginal wells, and thus avoid unrealistic allocations.

Finally, El Paso again urges the Commission to recognize the necessity of considering deliverability as a part of the allocation formula. In many instances difference in deliverability reflects the difference between an old, partially depleted well and a new well with initial flush production. Usually the differences reflect a real relationship between the existing recoverable reserves in place attributable to the wells. An allocation formula based solely

upon acreage will result, and we consider has resulted, in injury to correlative rights. When the straight acreage allocation formula is used, experience has proven that wells incapable of increasing their production to meet peak demand conditions will continue to become underproduced and the good wells will continue to be overproduced. This will cause and has caused the market demand to be satisfied from other sources. When the wells connected to El Paso's system in Lea County are overproduced and in danger of shut in, the only solution for El Paso is to obtain from the San Juan Basin or other sources the additional volumes required for its market. The Lea County operator is not helped by transferring market demand elsewhere. The unbalanced condition within each pool in Lea County needs to be corrected for the benefit of all. During 1957 while El Paso has had to restrict its purchases in Lea County in order that overproduced wells might come in balance in accordance with the Commission's rules, it has been necessary to take additional volumes from the San Juan Basin. The San Juan Basin has also had to take most of the swing required to meet our market demand. We find that we have been able to take the varying market demands without severely overproducing wells in the San Juan Basin where we have been unable to do so in the Lea County area. This is to be attributed to the fact that deliverability is considered in the allocation formula for the gas wells in the San Juan Basin.

El Paso earnestly recommends a continued study and the adoption of a formula recognizing the realities of producing and

marketing gas from gas wells. El Paso will gladly cooperate in furnishing all information in its possession to achieve a result more equitable to all parties.

Now, if it please the Commission, I was not under oath when I was cross examined yesterday, and I'm not under oath, but I'm making the statement here today. We do expect to produce the evidence to show that the difference in nominations in other pools in Lea County has resulted during 1956 in our going to the Jalmat Pool to produce volumes of gas that could not be produced elsewhere, and that as a result the Jalmat Pool and the wells which could deliver in that pool became overproduced, and we are having to shut them in and keep production from those wells low in order to attempt to balance those wells. We will be very glad to cooperate with any operator on questions relating to individual wells. I might state that Mr. Woodruff in El Paso and Mr. Bolch in Jal can furnish, I'm sure, information as to individual situations to any operator; and so I join in the motion which I understand has been granted that this be continued until next month.

MR. PORTER: Anyone else have anything to say at this time?

MR. OSBORN: Jack Osborn, representing Permian Basin Pipeline Company. We would like to reserve the right to make a full statement of our position and present evidence in support thereof at the continued hearing. I think I will say at this time, make a short remark with reference to some statements made by counsel for the applicant in his opening statement, with regard

particularly to Permian's position as a purchaser of gas in the Lea County pools. We have waited this morning and yesterday afternoon for some evidence in support of the statement that Permian is no longer a factor in proration in the Lea County pools, and of course we found none. It came as a surprise to us, since Permian has been purchasing gas from the Lea County pools for three years, has invested large quantities or large amounts of money in the installation of facilities as well as in the purchase of gas, and we are now and we have been and will continue to be a purchaser of gas in large quantities from these fields. We consider the statement that Permian is not a factor in proration in Lea County as being unfounded and uncalled for, and in view of the lack of any evidence to support these statements, we wish the Commission to consider our motion to strike that statement from the opening remarks of Mr. Campbell.

MR. CAMPBELL: If the Commission please, I would like to make an observation, if I may, before you rule on that. I think I indicated in my opening statements that it was predicated partially upon a contract entered into between Permian Basin Pipeline Company, and El Paso Natural Gas Company. I have a photostatic copy of that contract which I would be glad to offer, or perhaps Permian Basin has a copy they could offer. I think there will be additional testimony in connection with the acquisition by El Paso through exchange agreement of gas in the Jalmat Gas Pool. I certainly don't apologize for my remarks, they were made in the belief that

there was some basis for the contract of purchase between Permian and El Paso.

MR. OSBORN: If I am not mistaken, I believe the Commission has a copy of that contract.

MR. PORTER: The Commission rules that the statement will remain in the record and will be given consideration if it can be substantiated by evidence.

Any other statements before we continue the case?

MR. KELLY: John Kelly. I'm a lonely independent, I guess. I would like to make a little comment for the Commission's consideration. In listening to the case put on by Texas and Pacific, I sort of felt that they tried to keep their case confined to the Jalmat Gas Pool, but in the cross examinations by various people, they indicated that the Jalmat Gas Pool was just a part of the overall picture of proration in Southeastern New Mexico, and I would like to suggest to the Commission that they, the Commission, on its own motion open up the entire gas question in Southeastern New Mexico and make this case a part of that case, rather than have this case go on through and then have another case for Eumont and another case for the other fields.

MR. CAMPBELL: Before you stop this portion of this case, may I request that the record show that I offered Texas Pacific's Exhibits 1 through 7-D in evidence, please?

MR. PORTER: Any objection to the admission of Texas Pacific's Exhibits? They will be admitted. Mr. Kelly, on your suggestion or

motion, the Commission feels that it cannot be done under the advertisement in this case and would have to be done under a separate case, if that is desirable by operators in other pools at a later date; however, we would like to go ahead and settle the issues in this case. Anyone else have a comment?

MR. SELINGER: If the Commission please, while I will participate in the recessed hearing or continued hearing in November, I would like to make a few remarks at this time. It's quite obvious to the Commission that this problem is a very difficult one. Anything in relation to gas proration, anything, I will agree with Mr. Howell, is very complicated, particularly where it involves the six prorated pools in the Southeast part of the state, and particularly where it involves more than one purchaser in a field. This is a problem that's been plaguing all state regulatory boards, and each in their own way, within the confines of the legislative direction, have found the solution. While nothing has been said, I'm sure the Commission and particularly its staff is fully advised of the existing orders that are now in effect in the Jalmat field. I particularly call your attention to three of the orders: R 520, R 836, R 967. To entirely blame the situation that exists in the Jalmat today on the allocation formula I think is unfair and quite erroneous. The situation we find the Jalmat field in today is due entirely to circumstances over which all of us were aware of, including Texas Pacific, and that is you had suspended your balancing period for this year, and I think that the suspension was a good

one, due to the fact that the Commission was faced with extenuating circumstances. I fully believe that anyone clearly analyzing gas proration would have known the effects of this order as a temporary measure in permitting the field to be unbalanced to the extent that a considerable number of wells would be overproduced. Had these orders, the original orders R 520 and R 836 been carried into effect, this field would not have been out of balance at the present time. Now I might say that a deliverability formula in any factor or any allocation formula without a balancing period would result the same way as it is at the present time. The gist of keeping a field in balance is, the heart of it is, of course, the balancing, and had we a deliverability formula in the allocation formula, without a balancing period, it still would have been out of balance. Now it goes without saying that Skelly Oil Company is opposed to a deliverability formula in the six allocated prorated gas pools in Southeast New Mexico for gas allocation. We believe that the order itself, the last order of the Commission, R 967, on its face indicates that effective January the 1st, 1958, you will balance it, and the five and a half billion feet of underage will be cancelled, and that that amount will be allocated to the overproduced wells, and I'm quite sure that every overproduced well will have secured sufficient relief that I believe even it will aid the Texas Pacific to the extent that they may find that a considerable number of their overproduced wells will be even, or nearly so. We think that the application here is a little premature because the Commission by

its own orders have already put the matter of correcting into effect January the 1st, and we would recommend that the allocation formula be left alone, that the Commission carry out its present orders, and the latitude given the personnel of the Commission is quite wide. As a matter of fact, the Commission may assign minimum allowables, they may reclassify wells from marginal to non-marginal, from non-marginal to marginal status. The terms of the order, we feel, would give adequate protection, and bring the field in balance as of January the 1st, 1958.

MR. PORTER: I'm going to put my next question, then, is there anything to be said that can't be left unsaid until November?

The case will be continued to the regular November hearing.

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C E R T I F I C A T E

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

WE, ADA DEARNLEY & MARIANNA MEIER, Notaries Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in stenotype and reduced to typewritten transcript under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this 25th day of October, 1957, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Ada Dearnley
NOTARY PUBLIC

My commission expires:

June 19, 1959.

Marianna Meier
NOTARY PUBLIC

My commission expires:

April 8, 1960.