BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

Case No. 1538

TRANSCRIPT OF HEARING

October 22, 1958

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BEFORE THE
OIL CONSERVATION COMMISSION
October 22, 1958

IN THE MATTER OF:	
Application of Aztec Oil & Gas Company for the assignment of minimum allowables to certain gas wells in the Fulcher Kutz-Pictured Cliffs Gas Pool, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order assigning minimum allowables to the following described gas wells in the Fulcher Kutz-Pictured Cliffs Gas Pool in order to prevent premature abandonment of said wells:	Case 1538
Cozzens No. 3 and No. 4 Wells, both in Section 20, Township 29 North, Range 11 West; Hart No. 1 Well, Section 11, Township 29 North, Range 12 West; Holder No. 1 Well, Section 29, Township 30 North, Range 12 West; Cornell No. 3 and No. 4 Wells, both in Section 12, Township 29 North, Range 12 West;	
all in San Juan County, New Mexico.	

Mabry Hall
Santa Fe, New Mexico

BEFORE:

Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: The next case will be 1538.

MR. PAYNE: Case 1538, "Application of Aztec Oil & Gas Company for the assignment of minimum allowables to certain gas wells in the Fulcher Kutz-Pictured Cliffs Gas Pool, San Juan County, New Mexico."

MR. LLEWELLYN: Mr. Examiner, Gordon L. Llewellyn representing

the applicant, Aztec Oil & Gas Company.

MR. UTZ: Are there other appearances to be made in this case?

(No response).

MR. UTZ: You may proceed.

MR. LLEWELLYN: Mr. Examiner, Aztec in this application has requested that it be granted an exception to Rule 9 of the Commission's Order Number R-565-C as represented by Order Number R-967 by granting the applicant a minimum allowable for certain gas wells in the Fulcher Kutz-Pictured Cliffs gas pool in order to prevent premature abandonment.

At the time the application was made, the second well, which is the Cozzens Number 4 Well, was erroneously included in the application. That well is located on Section 20, Township 29 North, Range 11 West, and should be deleted from this hearing, Cozzens Number 4.

MR. UTZ: Is there objection to the deletion of this well from this application?

(No response).

MR. UTZ: If not, it will be deleted.

MR. LLEWELLYN: At this time, I will call Mr. Warren Mankin as Aztec's first and only witness in this case.

(Witness sworn in).

WARREN W. MANKIN

called as a witness, having been first duly sworn, testified as

follows:

DIRECT EXAMINATION

BY MR. LLEWELLYN:

Q Mr. Mankin, will you please state your full name?

A Warren W. Mankin.

Q Will you please state by whom you are employed and in what capacity and where you presently reside?

A By Aztec Oil & Gas Company as its Chief Engineer and I reside at Dallas, Texas.

Q Have you previously qualified before this Commission as an expert witness in the field of petroleum engineering?

A Yes sir, I have.

MR. LLEWELLYN: Is the Examiner willing to accept Mr. Mankin as a witness?

MR. UTZ: Yes, sir.

Q (By Mr. Llewellyn) Mr. Mankin, are you familiar with Aztec's application requesting that it be granted minimum allowables, or if you please, special allowables, for certain wells in the Fulcher Kutz-Pictured Cliffs Gas Pool, San Juan County, New Mexico?

A Yes, I am.

Q You have before you there a list of five wells marked as Exhibit C giving the well name, the unit designation and status of the wells. Did you prepare this exhibit or was it prepared under your supervision?

A Yes sir, I prepared it.

Q Will you please give us the name of each well shown on this exhibit?

A The five wells shown on this exhibit are Aztec Holder Number 1, Hart Number 1, Cornell Number 3, Cornell Number 4 and Cozzens Number 3.

Q Before getting into the details surrounding any of these individual wells, will you please state the nature of this application and generally give us the facts surrounding the drilling of each of these wells and the present problem resulting from the allowable formula of Rule 9?

A This application desires to obtain a minimum or special gas allowable to forestall premature abandonment of the five gas wells that I have just read. All five of these wells were drilled during the period from November, 1932 to January, 1948, which incidentally, is prior to issuance of Order 748 dated June 22, 1948.

At that time, all of these wells were drilled in what was known as the Old Fulcher Basin Pool. Since that time, it has come to be known as the Fulcher Kutz-Pictured Cliffs Pool. All of the wells in the immediate area which we are seeking were drilled prior to 1948 and they were drilled essentially on a 40-acre spacing pattern, which was then the legal and standard spacing for this area.

The northwestern part of the pool where most of these wells are located has essentially no more wells drilled today than

it did ten years ago or when Order 748 was promulgated. Most of the wells drilled in this area were drilled on a 40-acre pattern; therefore, these wells, even though they have fairly normal deliverability, the allowables are extremely low due to the small amount of acreage that may be attributed to the wells under the existing allocation factors of Rule 9 of Order R-565-C as amended by Order R-967.

Q You also have before you Applicant's Exhibit D. Was this exhibit prepared by you or under your supervision?

A It was prepared under my supervision.

Q This Exhibit D is a plat showing the wells that you have discussed, the offset wells and their allowable unit sizes and the minimum allowable, if any, which has been authorized by such offsets. Will you please discuss in detail this plat and the wells shown thereon?

A Well, all of the applicant's, or all of the five wells which we have requested are shown on this Exhibit D by a red border surrounding the five wells. Starting in the northwestern portion of the pool--and incidentally, this particular plat has outlined the pool limits that have been set out by the Commission and is shown by a cross dashed line surrounding the pool and if you will notice, this pool trends from northwest to southeast and this is the very extreme northwestern portion of the Fulcher Kutz-Pictured Cliffs Pool.

Q Pardon me, Mr. Mankin. Before going on, as you discuss

these wells, will you point out the number of acres involved in the present units and what the present allowable is, and in connection with that, the status of the well and the reason for such a status?

A All right, sir. Starting on this particular plat with the northmost well, which is our Holder Number 1 located in the southeast quarter northwest quarter, Section 29, Township 30 North, Range 12 West, this well was drilled on a 40-acre tract and still has the same 40 acres assigned to this well. In 1955, about the time proration started, this well was assigned a 40-acre unit by Administrative Order MWU-78. The present allowable is approximately 250 MCF per month. The well has been shut in for an extended period of time during the last 21 months and it has only produced 9 months of those 21 months due to the low allowables and over-production.

Surrounding this well are six wells that are outlined, having their unit outline in yellow. These six wells were granted a minimum allowable under Order R-212 during this present year.

Q What was the minimum allowable granted under Order 212?

A That minimum allowable was all the wells could produce or 1500 MCF per month, whichever was less. I might state at this point that in that particular order, there were eight wells. One of these wells was in the Pictured Cliffs Pool, which is not concerned here today in this application, but the remaining seven wells in the Fulcher Kutz-Pictured Cliffs Pool are shown on Exhibit D. Six of them are located on one group and the other one is separated on the same plat, Exhibit D.

Q Would you go ahead with the other wells, please?

A The next well coming southeast is the Hart Number 1. This particular well is located in the northwest quarter southwest quarter of Section 11, Township 29 North, Range 12 West. The well was drilled on a 40-acre unit and still retains that same 40-acre unit. It was approved in 1955 soon after proration began as a 40-acre unit under NWU-77. The present allowable for this well has been approximately 250 MCF per month and it has produced only five months out of the last 26 months due to over-production.

Again, as I have previously mentioned, the seven wells that have been granted a minimum allowable are just directly west of this well in Section 10. That has likewise been granted a minimum allowable and is shown in yellow color.

The next group of wells that are pictured together are the Cornell 3 and the Cornell 4. The Cornell 3 has been assigned to the south half southwest quarter of Section 12, Township 29 North, Range 12 West and the Cornell Number 4 has the north half southwest quarter of Section 12, Township 29 North, Range 12 West.

Q Were the --

A Both of these wells were initially drilled on 40-acre tracts, each of them on 40-acre tracts. During 1955, by the advent of proration, all of the possible acreage available was assigned to these wells which increased each of them to 80 acres. Well Number 3 was administratively assigned an 80-acre unit under NWU52 and Well Number 4 was assigned an 80-acre unit under NWU55.

Concerning the allowables of these wells, the present allowable on both wells is approximately 500 MCF per month each well. The Cornell Number 3 has produced only token amounts of gas in four months of the last seven months due to prior over-production. The well at the present time is about in balance, but only in balance because of the recent shut-in period and prior shut-in periods.

The Cornell Number 4 is presently either shut in or producing only small amounts of gas this month and for at least another month due to previous over-production.

I will indicate that the last well, which is in the extreme southeastern corner of this plat, which is the Cozzens Number 3, has been assigned to the west half northeast quarter of Section 20, Township 29 North, Range 11 West. This well was drilled on a 40-acre unit and with the advent of proration assigned all the possible acreage to it, which was an 80-acre unit assigned as NWU76 during 1955. During the past five months, this well has either been shut in or produced only token amounts, and for at least three of these five months, the well was definitely shut in due to prior over-production. The well is now in balance due to either shut-in periods or drastic curtailment of production.

Q Did you give us the present status on the Hart Number 1 Well?

A If I didn't, I might have by-passed it. The Hart Number 1 Well is shut in and has been shut in for some--I thought

I said that it had been produced only five months out of the last twenty-six months and presently is shut in and we have every reason to believe that this well will be shut in for at least another eleven months under the current allowables.

I say this because we have a curtailment order from the New Mexico Oil Conservation Commission effective October 1st for indefinite shut-in. We have likewise received a smiliar curtailment for the Holder Number 1 of the same date, October 1st, and we anticipate that they will be shut in for five or six months before either of these wells are in balance.

Q You mean an additional five to six months?

A Yes sir, over and above what it has already experienced.

Q Do you know whether or not any other wells in this area have been drilled subsequent to June 22, 1948, which was the date that Order Number 748 was promulgated?

A To the best of my knowledge, all of these wells were drilled prior to that time.

Q Mr. Mankin, is there any offset acreage to these five wells which is available at this time for pooling, whereby you could increase your unit size and thus increase your allowables for these wells?

A Well, some of the wells, there is absolutely no acreage that can be pooled. As an example, the Cornell 3 and 4 are completely surrounded as shown by Exhibit D and in Section 12, 29 North, 11 West, all acreage is completely surrounded with either

80 or 160-acre units. On the Cozzens Number 4, all the --

Q The Cozzens Number --

A I'm sorry, Cozzens Number 3 is assigned to the 80 acres and we are not aware of who is the owner of the east half of the northeast quarter of that same Section 20, 29 North, 11 West, but all of these wells are very old wells drilled many, many years ago and it is hard to determine any kind of pooling in this respect.

Q In other words, if you know who the offset owners are, you have indicated them on this plat?

A Yes, sir. To go further, in the Hart Number 1 in Section 11, that has 40 acres assigned to it. We are aware that A. E. McLain has the south half of the southwest quarter of Section 11, 29 North, 11 West. We cannot determine who has the northeast quarter of that same southwest quarter of Section 11, but that well was started drilling in 1932 and that was completed in 1933 and the equipment in the well is very indeterminate and it was drilled as a dry hole I think for Southern Union Gas and another operator then completed it.

In the Holder Number 1 in Section 29, Township 30 North, Range 11 West, it will be noted here that essentially most of the acreage around the well is either assigned to other wells or are wells that have recently been abandoned due to low allowable or some other problem involved. There is practically no acreage available to be assigned to this 40-acre unit and likewise it is an

extremely old well and one with a similar problem for equities involved.

Q What effect does this shut-in condition have upon these wells?

A Well, the primary effect it has on these wells is that the wells have a tendency to water up when they are shut in for an extended period or when their flow is drastically restricted for an extended period of time.

Q In your opinion, would this shut-in condition cause any additional operating expense?

A Yes sir, it does.

Q How much would you estimate?

A I would estimate the additional operating cost caused by watering up normally would be very small due to the necessity of having to flow the wells into the atmosphere or some other method, but primarily, it would require workovers to restore them to production. That would be the principal cost that would be experienced due to long periods of shut-in.

Q Before getting into that aspect, let me ask you this: What would you consider the normal operating expenses for these wells if they did not have to be shut in due to over-production?

A Based upon the company records that are available to me, normal operating expenses appear to be approximately twenty dollars per well per month.

Q Coming back to your statement as to additional workover

costs, what would you estimate to be the approximate expense involved in working one of these wells over where it has been shut in and watered up?

A That, of course, is a very, very hard thing to figure out, but what seems to be a fairly good average is approximately a thousand dollars per well. That could be slightly larger or it could be slightly less.

Q Well, if this minimum or special allowable that you are requesting is not granted, how often would you estimate that you would have to have workovers on these wells?

A From past experience on these wells, there has been very little workover expense providing that the wells were not shut in for periods of longer than six months at a time; however, as I have mentioned a while ago, we received indefinite shut-in notices for the Hart Number 1 and Holder Number 1 and therefore, we can expect that those wells will be shut in for periods of eleven months and five or six months respectively before they are in balance and we have every reason to believe that they will require workovers before we will be able to put those two wells back on the line.

How about the other three wells involved?

A These other three wells have been producing long periods of time but not as long as the other two. They have been producing anywhere from 12 to 17 years and as such, the pressures have declined to such a point that if these wells were shut in due

to low allowables, that they probably might require workover to stimulate the production but if they are not shut in for periods as long as six months that I have mentioned, this would not have happened.

Q What would your solution be to prevent these shut-in periods then due to over-production?

A My suggestion would be to allow for some type of minimum or special allowable to such an extent that the wells would not need to be shut in for any length of time.

Q Well now, there are wells surrounding these five, some of which are on 160-acre spacing and would not have low allowables even though they have an acreage allocation factor of one. Keeping that in mind, would you feel that a minimum allowable for your wells would be unreasonable or unfair to these offset wells?

A No, I would not consider our request an unreasonable or unfair request because if such other wells that you have mentioned have an acreage factor of one and their allowables are less than what our minimum might be, then the lesser allowable usually is caused by the low deliverability of the wells and have low allowables that might be assigned due to market demand, then they won't be facing essentially the same problem that we have since they probably have enough allowable to keep them from shut-in for any period of time.

Q In addition to the economics which you have discussed pertaining to the operating expenses and workovers, do you feel

that there is an inequitable basis involved here for Aztec requesting a minimum allowable for these wells?

A Yes sir, there is.

Q Well, would you point out specifically the inequities, for example, in the Holder Number 1 Well?

A That's the first well that I mentioned on Exhibit D. The inequity of the present allowable as it effects this well is that this well has only been allowed to produce 9 months out of the last 21 months due to low allowables. It has actually produced only slightly less than 7234 MCF of gas in twelve months or an average of 343 MCF per month. The allowable during this period was a little over 7300 MCF for the same 21 months, which is an average allowable of only 349 MCF per month. You can see that the production was only slightly less than the allowable so there had to be tremendous amounts of shut-in time and restricted flow periods to keep it even in that balance. Part of this inequity arises since this is the only well on an 800-acre lease, only 40 acres of which are within a productive area. Therefore, we have been required to make minimum royalty payments to the Federal Government under the terms of this lease based upon a dollar an acre per year for the entire 800 acres and merely by paying this minimum royalty, it has increased the operating expense on any wells on this lease and of course this being the only well on the lease, the minimum royalty payments have been averaging as much as $68.00 per month for this well. This shows, of course, that a minimum allowable would not only prevent

excessive workover costs and reduce operating expenses but would greatly reduce the amount of minimum royalty which we pay on this well.

Q Of course, it is unfortunate that you only have one well on an 800-acre lease, but although normally the payment of minimum royalty would not be a major factor, here it does present itself inequitably since the well was drilled on only 40 acres of land and thus it presented no obligation on the present allowable formula, is that right?

A Yes, sir.

Q Do you have any inequities surrounding the remaining wells?

A On the next well, which I have previously mentioned, is the Hart Number 1. This well has been allowed to produce only five months out of the last 26 months due to low allowable. It actually produced only a little over 3600 MCF in that 26 months for a very low average production of 139 MCF per month. The allowable during this period was a little over 6800 MCF during that 26 months for an average of 264 MCF per month. You will note that the production has been essentially about half of the allowable due to prior over-production, so it has only been able to produce half of the allowable and it is still considerably over-produced. As I mentioned before, we can't start producing this well for another 11 months due to the present shut-in order of the Commission.

Q You previously pointed out the wells in yellow were granted minimum allowables. Does the next well have as much drainage

as the Holder Number 1 Well?

A Yes sir, I believe it does. These wells having been granted the minimum allowable having essentially original acreage factors of 40 or 80 or as much as 160 acres, they now of course would have a minimum allowable which could not be tied down to any acreage or deliverability factors and the allowables that could be produced from those wells depending on the deliverability and the wells on this acreage were given similar relief.

Q Now, in addition to the economic basis and the equitable basis for your requesting this minimum allowable, do you feel that the problem of waste adequately presents itself?

A Yes.

Q Do you feel that if this minimum allowable is not granted, that it will most likely cause premature abandonment of the wells?

A Yes, sir.

Q Do you have any specific examples where wells in this immediate area have been prematurely abandoned because of the present low allowables?

A Yes sir, I have. The well that offsets our Holder Number 1 which is the BNM Scott Number 1 located in the southwest quarter of Section 29, Township 30 North, Range 12 West was abandoned prematurely in this current year due to low allowables even though it had been previously reported that its deliverability was 172 MCF per day, thus, I believe leaving gas underground that is

not available to that particular operator.

Q That's this well immediately to the west of the Holder Well, is that right?

A Yes, sir.

Q You stated that you felt that the Aztec wells might likely be prematurely abandoned if this special allowable is not granted. Would you go into a little bit more detail as to how premature abandonment would constitute waste?

A I believe that premature abandonment, as we see it here in the pool, will not drain the well completely down to a point where there is no gas remaining. I believe that it leaves gas underground which would not be recoverable to a particular operator or concern. However, that gas might be produced if the allowable were great enough to allow the operator enough monetary returns to continue producing the well.

Q Do you know how much money has been spent on all of these wells due to workovers?

A From the records of the company that have been available to me, it appears that at lease $8,000.00 has been spent on these five wells for workovers.

Q And you stated previously that the operating cost had been approximately $20.00 per month per well?

A Yes, sir.

Q Do you feel then the minimum allowable would minimize the necessity for workovers it is were granted within a reasonable

length of time?

A Yes sir, I believe it would. The way the pipeline is to operate this area--and incidentally, the two pipelines in the area are Southern Union Gas Company, which is connected to all of our wells, and El Paso Natural Gas Company, which is connected to some of the other offset wells. The way the two pipelines have to operate with the market and the condition of the pressure of the wells, it makes it rather difficult for them with the fluctuating market demand so it would certainly minimize these workovers if that could be granted very shortly.

Q Even though it would minimize the necessity of a workover, there is still the strong possibility that they could be shut in and workovers would not entirely be eliminated, would they?

A Yes, that's true but it certainly would minimize that possibility, though.

Q You have before you there Exhibit E, one through five?

A Yes, sir.

Q Did you prepare this exhibit or was it prepared under your supervision?

A I prepared the exhibit and under my supervision, this draft was made, reproduced.

Q Now, this Exhibit E, one through five, individually shows the curve for each well, monthly well production, the allowable history and the deliverability curve during the past five

five years, is that correct?

A Yes sir, it does.

Q Would you discuss each one of these plats individually, please, for the Examiner?

A Well, as shown on each of these five plats for each of the wells concerned, it is attempted to show the monthly well production during the last five years shown with a solid line with a small circle indicating the individual monthly well production and joined by the solid line. The dotted line is the monthly allowable figure since proration started on March 1st, 1955, and incidentally, all five wells have been constantly under proration since that time. The third curve at the top of each of these exhibits under E is a dashed and solid line showing the deliverability curve, and what has been done here is take the deliverability test and in the TDT shown on each of these curves, it shows the deliverability curve at the particular time of year in which it was taken and you will note that it gives the time that the deliverability went into effect.

Q With reference to these dates here when you get into the exhibit, I take it 1954 begins prior to the line under which it is written, is that correct?

A Yes, sir. Actually, on the extreme left of the curve under production, the production there would be slightly less than 1500 MCF per month as shown in the figure for January, 1954, then each of these circles would correspond to a month so you would

have twelve circles inside those twenty lines shown under 1954 TDT year's production shown by the monthly production.

Q Thank you.

A The deliverability covers--as I started to say--there is a figure at the top of each curve, such as 83 on Exhibit E-3. The first deliverability test is shown and the next deliverability test is --

Q E-3?

A E-1. As shown, that 83 means the deliverability was 83, or 83 MCF per day. That was multiplied by 30 to arrive at a possible productivity or deliverability if it was not in excess of production or allowables. That was filled across each of the times that the deliverability test was taken on the State form and these came out of that particular test. The test is not shown for 1958, only the date is shown there. That was not available and will be put into effect the 1st of February, 1959.

Starting with Exhibit E-1, it will be sufficient to state there that there were considerable periods of shut in on the Holder Number 1 due to low allowables. The deliverability in all cases has been considerably in excess of this production. It is also shown on there that dated October 1st, 1958, by the New Mexico Oil Commission--I mean, Shut-in Order 443, the well was declared shut in indefinitely and possibly over an extended period of time to get it back on production.

On Exhibit E-2, a similar situation involved itself in that

there was even more shut-in time on the Hart Number 1 than was shown previously on the one for the Holder Number 1. And again, Shut-in Notice Number 442 was effective October 1st and it will be indefinitely shut in for quite a number of months to come.

Q I note the production is very erratic in this --

A Normally the deliverability test is taken when there has been no shut-in period and on the deliverability test during those periods, normally there is quite a bit of gas production into the line to allow for taking this test. And in cases, you will note, for example, on Exhibit E-2 that the well had been practically shut in for months at a time when the deliverability was taken during 1957 and at the time we had a very large production which was occasioned by the deliverability test.

Q These deliverability tests are required by the State?

A Yes, sir. There are a few other peak periods, but those are primarily market demand peak periods and not always tied in with the particular deliverability test.

On Exhibit E-3, we have the Cornell Number 3 again somewhat erratic of considerable gains. We had eighty acres assigned to this well almost since the advent of proration. It will be noted on Exhibit E-3 that there is no production figure carried from 1954 as at that time the production from Wells 3 and 4 was carried together and was not segregated. That likewise reflects itself on Exhibit E-4 where it is shown that the 1954 production was not segregated.

On Exhibit E-4, it is somewhat the same problem of initial low allowables, but again it was an 80-acre unit almost since the advent of proration. The deliverability curve seems to be extremely erratic on this curve, particularly back in 1955. It could be that that was an error because in most cases the production was almost up to the deliverability.

Q Is this the Cornell 4?

A On the Cornell 4. The deliverability test that was taken during 1955, it appears that the deliverability test was possibly more nearly 100 MCF per day than 82 MCF per day.

On the last Exhibit Number E-5 for the Cozzens 3, again this is an 80-acre well. The production is shown for the last five-year period and the allowables again are lower, considerably lower than production. However, there were not too many shut-in periods but there was a holding back due to lower allowables in this 80-acre unit.

Q Do you have any estimated figures here at the end of 1958 or are those all based upon --

A They are individual monthly production and monthly allowables. You have to amend that for what the allowables might be for November and December, although I understand for November they will be up considerably.

Q What would you consider, Mr. Mankin, as a necessary minimum allowable in order to prevent shut in due to over-production?

A I would recommend a special allowable of 1500 MCF per month per well.

Q Would you point out the deliverability for each of these wells and if it is able tomake this requested 1500 MCF per month per well?

A I won't endeavor to elaborate too much on this because I believe that Exhibit E, one through five, carries this information, but essentially all five wells have deliverabilities ranging from--present deliverability--from 62, 82, 108,118 and 88, that's MCF per day. And if that is further projected on a 30-day basis, it would mean that the range of the possible deliverability would be from 1850 MCF per month to a maximum of around 3500 MCF per month, so all five wells are above the requested special minimum allowable.

Q Now, we can reasonably foresee the necessity of workovers on some of these wells. Keeping that in mind, is this requested minimum allowable enough to take care of those workover costs and the possibility of future workover costs on the other wells, even though the allowable might be granted?

A Yes.

MR. LLEWELLYN: Mr. Examiner, I have had Exhibits A and B marked, Exhibit A being a copy of Order Number 748, Exhibit B being a copy of Rule 9 of R-565-C. If you would like to have these exhibits, I will enter them, otherwise, I will only enter Exhibits C through E.

MR. UTZ: The Examiner is aware of the existence of these orders; however, if you care to enter them as exhibits, they will be accepted.

MR. LLEWELLYN: All right, then at this time I will enter Exhibits A through E respectively.

MR. UTZ: In the absence of any objection, they will be accepted.

MR. LLEWELLYN: I have no further questions of Mr. Mankin.

MR. UTZ: Are there questions of the witness?

CROSS EXAMINATION

BY MR. FISCHER:

Q Mr. Mankin, if you had to work these wells over, then in the process of working them over, it would be necessary to kill each well, is that right?

A Well, it is not much of a problem to kill the wells. The wells have extremely low pressures, they vary at the present time from 145 pounds to 165 pounds.

Q Would killing the wells injure the wells in any way, do you think?

A Well, it certainly wouldn't help them.

Q What kind of fluid would you kill them with, if you did?

A Well, the wells, of course, possibly would have to be worked over with the possibility that there would be water. The wells, of course, then normally would be worked over and would

possibly be water-fraced. Practically none of these wells have ever been fractured.

MR. FISCHER: Thank you.

A That again is a problem on fracturing these wells because in this particular area in this old type portion of the Fulcher Kutz pool and there is water immediately above the Pictured Cliffs endangering any possibility of much pressure being put on these wells.

MR. UTZ: Any other questions of the witness?

CROSS EXAMINATION

BY MR. COOLEY:

Q To have a profitable operation, couldn't you combine the Cornell 3 and the Cornell 4 and rework the other one and produce a 160-acre allowable out of the remaining well?

A Well, again those two wells incidentally have deliverabilities respectively of 118 and 108. Either one of those, of course, would be almost up to what a normal 160-acre well would deliver. I will not recommend that these wells--which incidentally, were drilled in early 1942, some 17 and a half years ago--I would not recommend very much workover to try to stimulate the growth of the production from these wells due to the casing that we normally find might get holes in it and it also might further aggravate the water situation. I would rather see this left alone and just stimulated and cleaned out and worked over and casing set wherever necessary and tubing set wherever necessary aside from

lines put in and so on.

Q I am not sure you answered my question. Wouldn't it just cut your operating cost for this quarter section in half by plugging one of them and producing on a 160-acre allowable on the other?

A Again, that is an extremely low pressure area as I mentioned previously. These wells originally came in with pressures of 476 pounds to 592 pounds and now they are in the neighborhood of 150 or 60 pounds and with wells with pressures like this, there is always the possibility that at some future time, unless the pipeline pressures go down that you may not be able to get into the line with these pressures without a lot of workover.

Q Do you think you would get more gas from the reservoir if you produced from both wells than if you produced from one of these?

A Yes, sir.

Q A substantial quantity?

A What do you mean by substantial?

Q I mean compared with what remains to be produced there.

A I have not recently considered just what reserves are remaining there but this again is on the edge of these pools. Durability is very small, not only on our wells but other wells and I would not think that we should try to get it out of one well, I think that it would be better to try to get it out of two wells at the present time. We don't know whether these eighty

acres will actually drain the wells. Of course, they have been going for a tremendous number of years and produced a tremendous amount of gas.

Q How much allowable would you say this well with the 118 MCF have on a 160-acre unit?

A I won't stop to figure it out, I will just take another well that has a deliverability something similar to that. This well has a deliverability of 115 and would have an October allowable of 1260 MCF per month, slightly less than what we are requesting.

Q That's a 160-acre well?

A Yes, sir. That's what you asked me, I believe.

MR. UTZ: Subsequent months would be higher than that, wouldn't they?

A Yes, sir. Of course, August and September were at an all-time low and it started back up in October and we are anticipating an increase in November, December and January, so these wells on a 160-acre allowable would have considerably more allowable than what I have shown here.

MR. COOLEY: That's all, thank you.

MR. UTZ: Mr. Mankin, are all of the five wells in question here shut in?

A No, I think I mentioned that at least two of them are in balance. The other three are either shut in for slight periods or will be shut in for quite a number of months. I have before me now the books on this particular well, the Holder Number 1.

Through September, it was over-produced 1159 MCF and the gas allowable for October was 291. As yet, of course, I do not have the October production but we have, however, had it shut in effective October 1st, so that it will be, of course, decreased in that amount, so 940 MCF possibly will be the status as of the end of October.

The Hart Number 1 at the end of September was over-produced 3205. The allowable for October--of course, this well again is shut in for the entire month of October--the allowable was 253. Subtract 253 from 3205 and it will give you approximately 2948, I believe, which will be the over-produced status as of October 31.

The Cornell Number 3 was practically in balance at the end of September. It was actually only 8 MCF over-produced. The allowable for October is 604. I don't know, of course, what the production will be for October, so its been throttled back tremendously through these last several months so it could be that it will still be in balance or will be over-produced some more with those low allowables.

The Cornell Number 4 at the end of September was over-produced 763 MCF and the October allowable is 641; therefore, it likewise has been throttled back some more and at the end of October it will be quite a bit more over-produced.

We only are producing some of those wells one, two or three days a month and apparently the Southern Union pipeline

did not hook up the Cozzens Number 3 and it was on an under-produced status and apparently the pipeline did not notice it and it was shut in all during the month of August and the first part of September and the well at the end of September was under-produced 242 MCF with an allowable for October of 528, but very likely that allowable will be made up during the month of October. It easily is capable of considerably more than that as are the other four wells.

MR. UTZ: Thank you.

MR. FISCHER: Mr. Mankin, your Holder Number 1 and your Hart Number 1, how long does it take for them to stabilize after being shut in?

A Well, the wells have been produced so little that it is pretty hard to say if they ever stabilize. The Hart Number 1 only produced two days in two months in 1958. That is when the deliverability test was taken and then shut in. It has been shut in all of 1958.

MR. FISCHER: I am talking about a stabilized shut-in.

A I am not aware of that particular--I have the deliverability test with me taken on those wells taken this year and every year from then back but I have not looked at that to see.

Q What I am getting at is, have you noticed any change in decrease of your pressure, maximum shut-in pressure from your wells that have been shut in?

A Of course, there has been a gradual decline of pressure

from the maximum 500 to the present 150 but I couldn't say if this is during shut-in periods. I have not seen those particular graphs.

MR. UTZ: Any other questions of the witness?

MR. LLEWELLYN: I have a couple of questions, please.

REDIRECT EXAMINATION

BY MR. LLEWELLYN:

Q On this problem of the wells being in balance at the present time, was that balance arrived at because of the shut-in condition?

A Well, these wells that are in balance are either wells that have been shut in or have been knocked back to practically no production, so really its been a restriction on our part and the purchasing companies.

Q This throttling back has a detremental effect because the wells have a tendency to water up?

A Yes sir, these wells are maybe produced one or two or three days a month.

Q On this stabilization, particularly on the Holder 1 and the Hart 1 where we can foresee an additional amount of time where it will be necessary for workovers, could you tell whether or not those wells would stabilize without having a workover?

A No. Of course, normally when these wells are shut in for any period of time, it will take a while before they clean themselves of liquids that have accumulated and an awful lot of

water that has accumulated in these wells, so I don't believe that I could.

MR. LLEWELLYN: I have no more questions.

MR. UTZ: Mr. Mankin, with reference to your Cornell 3 and 4, the deliverability of these wells is virtaully the same, is it not?

A Yes, sir.

MR. UTZ: So if you dedicated 160 acres to either one of those wells, the allowable would be very comparable to the allowables that they have received, both 80's have received over the past--well, since proration, would they not?

A Yes sir, but again we would not like to produce only one well. We would prefer to drill the two wells again as this is a very tight section there and we are not at all certain that one well could completely drain all the acreage in the field, and if we were to abandon one well, the equipment in the well would be practically nil that we could get out.

MR. UTZ: The Cornell 3 and 4 could be put on a 160-acre allowable?

A Yes, sir.

MR. UTZ: It would be squeezing it, though?

A It would squeeze them, yes sir, at the present time, and the allowable that we are requesting up there, each could not quite make the 160-acre allowable that might be assigned to a 160-acre unit.

MR. UTZ: Any other questions of the witness?

If not, the witness may be excused.

Any other statements to be made in this case?

MR. PAYNE: We received a statement from Pan American Petroleum Corporation which reads as follows:

"Pan American Petroleum Corporation wishes to enter a statement in Case 1538 which is scheduled to be heard at the October 22, 1958 Examiner Hearing. We request that the following statement be read into the record of this case:

Pan American Petroleum Corporation is operator of 44 wells in the Fulcher Kutz Pictured Cliffs Pool. We recognize that under certain circumstances increased allowables may be necessary for economic reasons to prevent premature abandonment of certain wells which were drilled on short spacing prior to June 22, 1948. Pan American is opposed to the granting of any increased allowables for these wells if other wells were drilled after that time in the same immediate vicinity at locations which would preclude the assignment of additional acreage to form standard size units for the previously existing wells. We also oppose the granting of increased allowables if additional acreage can be assigned to these wells and no valid attempt has been made to do so. We further believe that increased allowables should only be granted for wells that would qualify under the provisions of the Statutes after examining the economic factors concerning each individual well and then only in the amount necessary to prevent premature abandonment.

Signed, C. L. Kelley."

MR. UTZ: Are there any other statements to be made in this case?

If not, the case will be taken under advisement.

STATE OF NEW MEXICO)
: ss
COUNTY OF BERNALILLO)

I, JERRY MARTINEZ, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me in stenotype and reduced to typewritten transcript by me, 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 27th day of October, 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Jerry Martinez
Notary Public

My Commission Expires:
January 24, 1962

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1536, heard by me on Oct 22, 1958.

....., Examiner
New Mexico Oil Conservation Commission