STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
State Land Office Building
Santa Fe, New Mexico

28 August 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of Dugan Production Corp. for pool creation and special pool rules, San Juan County, New Mexico. CASE 8685

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Jeff Taylor
Legal Counsel to the Division
Oil Conservation Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: Robert G. Stovall
Attorney at Law
Dugan Production Corp.
P. O. Box 208
Farmington, New Mexico 87499

I N D E X

E X H I B I T S

MR. STOGNER: Call next Case Number 8685.

MR. TAYLOR: The application of Dugan Production Corp. for pool creation and special pool rules, San Juan County, New Mexico.

MR. STOGNER: Call for appearances.

MR. STOVALL: I'm Robert G. Stovall, appearing on behalf of Dugan Production. I have three witnesses.

MR. STOGNER: Are there any other appearances in this matter?

Will the witnesses please stand and be sworn at this time?

(Witnesses sworn.)

KURT H. FAGRELIUS,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. STOVALL:

Q I believe you've stated your name but if you would, please, again for the record, and your place of residence.

A My name is Kurt Fagrelius and I live in Farmington, New Mexico.

Q And how are you currently employed?

A I'm employed as a petroleum geologist for Dugan Production Corp.

Q Have you previously testified before the Commission and had your credentials accepted?

A No, I have not.

Q What is the your educational background?

A I received a Bachelor's of Science in geology from Ft. Lewis College in Durango, Colorado, in 1977, and a Master's of science in geology from the New Mexico Institute of Mining and Technology in Socorro, New Mexico, in 1982.

Q And what is your work experience in the field of geology?

A I have eight years. I've been employed as a geologist for eight years; six years of which have been with Dugan Production Corp.

Q Do you have any other special qualifications which would have any bearing on your testimony before this Commission?

A Yes. I've attended various schools and seminars put on by professional organizations and service companies.

Q Are you familiar with the application in this case?

A Yes.

Q Have you done any geologic studies in the area proposed to be included in the Good Times Gallup Oil Pool?

A Yes, I have.

MR. STOVALL: I offer Mr. Fagrelius as an expert geologist.

MR. STOGNER: Mr. Fagrelius, when were you at Socorro?

A I graduated from Socorro in 1982.

MR. STOGNER: When did you get there?

A In 1980. December of 1980.

MP. STOGNER: Yes, Mr. Fagrelius is so qualified.

Q Would you please turn to what has been marked Dugan Production Corporation Exhibit One and tell the

examiner what that is?

A It's an Isopach map of the Gallup bar sands.

Q Are the horizontal limits of the area proposed for inclusion in the Good Times Gallup Oil Pool shown on the map?

A Yes. The boundries of the proposed Good times Gallup Oil Pool are shaded in purple.

Q Are there any other Gallup oil pools shown on this map?

A Yes, the Bisti Gallup Oil Pool. It's boundaries are shaded in orange.

And also there's the White Wash Mancos-Dakota Pool in the northeast of Township 24 North, Range 9 West, but it's not been colored in.

Q Do you have a personal knowledge of the acreage in which Dugan Production as the operator has an interest or right to earn an interest in the area covered by the map?

A Yes, I do.

Q Would you identify that acreage on this map, please?

A The acreage shaded in yellow is acreage in which Dugan Production has an interest or the right to earn an interest. Of those 6,960 acres, total acres within

the proposed pool, Dugan Production has a right or can earn the right -- wait a minute, has an interest or can -- the right to earn an interest on 5,080 of those acres, or a total of 73 percent total acreage within the pool.

Also, we own additional acreage in the map area totalling 33,200 acres.

Q Would you please explain for the Examiner what the Isopach shows?

A It shows the net thickness of what we call the Good Times bar sand, the primary pay sand of the proposed Good Times Gallup Oil Pool, and it also shows the net combined thickness of the Huerfano and Marye primary pay sands of the Bisti Gallup Oil Pool.

Q And what controls were available for you to draw this Isopach?

A Dugan Production has drilled 53 wells through the Gallup in this area; 13 of which are within the proposed pool. Electric logs from these wells and those of other operators in the area were used as control in drawing this map.

Q Can you distinguish the proposed Good Times Oil Pool from the Bisti Oil Pool?

A Yes. Although they share a parallel and linear relationship, both pools are producing from different bar sands at different stratigraphic horizons in the Gallup

sandstone.

Q Is there any other information on this map that would be relevant to this hearing?

A Yes. It shows two lines of cross section, line B to B', which is the cross section across trend of the proposed pool into the Bisti Pool, and line A to A', which is the cross section parallel to the linear trend of the proposed pool.

Q All right. Now turn to Exhibit Two. Exhibit Two is a little bit larger; if you like, we can tape it to the wall. Oh, I'm sorry, Exhibit Two is not the one that's larger, I'm sorry.

Would you tell the Examiner what Exhibit Two is, please?

A It is an electric log of Dugan Production December Dream No. 1 Well on which we have shown the vertical limits of the proposed pool and the perforated interval's colored in red.

Q Where is the December Dream No. 1 Well located?

A It's located 1050 feet from the north line and 1570 feet from the west line of Section 7, Township 23 North, Range 9 West.

Q Is that location within the proposed Good Times Gallup Oil Pool?

A Yes.

Q What are the proposed vertical limits for the Good Times Gallup Oil Pool as shown on this exhibit?

A From the top of the Gallup sandstone member, as shown at 4095 feet, to the base of the Lower Mancos shale member as shown at 5510 feet on the December Dream No. 1 log.

Q And is that vertical limit marked in any manner on this log?

A Yes, it's the blue bar colored.

Q Now we'll turn to Exhibit Three, which is the one I offered to put on the wall if you so desire.

We've placed on the wall and you have in front of you now Exhibit Three. Would you tell the Examiner what that is, please?

A It's a north/south cross section from B to B', which goes from the Bisti Gallup Pool on the left to the proposed Good Times Gallup Pool on the right.

Each of the wells on this cross section is completed as a producer.

Q Does the exhibit show the perforated or completed zones of each well?

A Yes, they're colored in red.

Q Does the exhibit show the vertical limits of the proposed Good Times Gallup Pool?

A Yes. The uppermost vertical limits of the pool are shown by the blue bar.

Q Based on the information provided in the exhibit and based upon your studies of the additional well logs in the Bisti and Good Times area, do you have an opinion about the correlation of the producing sands in the Bisti Gallup Oil Pool and the proposed Good Times Gallup Oil Pool?

A Yes. There does not appear to be a direct correlation between the pools. The primary pay zones of each pool, colored in yellow, are laterally discontinuous between the pools and are separated vertically by approximately 80 feet of stratigraphic section.

Q And which -- which of the wells, would you identify, are in the Bisti Pool?

A The December Dream Well on the far righthand --

Q In the Bisti?

A I'm sorry, I thought you said proposed -- in the Bisti are the two wells on the far left.

Q And in the proposed Good Times Pool?

A Is the December Dream Well on the far righthand.

Q And the other two wells are in between?

A They're in the Bisti.

Q Now turn to Exhibit Four, which we'll also tape to the wall.

Would you identify this exhibit for the Examiner, please?

A It is a northwest/southeast cross section from A to A' along a linear trend of the proposed pool, showing wells which are completed and producing.

Q And what does it show in terms of the --

A It shows the primary pay zone being what we identify as the Good Times bar sands and it shows that it continuous and correlative linearly along the trend of the proposed Good Times Pool.

Q Does it also show the completion intervals in the wells shown on the cross section?

A Yes. They're colored in red again and the vertical limits of the pool again are shown by the blue line.

Q And you have stated that there is a correlation across the pool.

A Yes. It's my opinion that the interval that we've identified as the Good Times bar sand is continuous and correlative along the trend.

Q Have all the wells within this pool been completed within the same zones which are within the vertical limits of the pool?

A All the wells in this pool have been completed within a common interval below the Skelly Zone and all of the wells have been completed within the primary pay, being the Good Times bar sand; however, two wells are completed in the zone above the Skelly Zone.

Q And these are all within the vertical limits of the pool?

A Yes, they are.

Q Do you know why only two of the wells are completed in the upper portion of the Gallup sandstone?

A Based on log data, mudlogger's descriptions, and our completions of the Witty 2 and December Dream No. 1, we feel the upper zone has a higher -- higher gas content than the lower zone.

The reason the other wells are not completed in this upper zone, also, is because at the time of their completion we did not have a gas gathering system installed and we wanted to avoid venting any unnecessary gas.

Q And why are these upper zones proposed to be included within the vertical limits of the proposed Good Times Pool?

A The information we have gathered thus far on the upper zone indicates it is not commercially productive on its own without the combined production from the -- both the upper gassy zone and the lower oily zone, these

wells would be uneconomical to drill.

Q Have Exhibits One through Four been prepared by you or under your direct supervision?

A Yes.

Q And do you know of their accuracy?

A Yes.

Q In your opinion would the granting of this application serve to prevent waste, conserve resources, and protect correlative rights?

A Yes.

MR. STOVALL: I move the admission of Exhibits One through Four and I have no further questions of the witness.

MR. STOGNER: Exhibits One through Four will be admitted into evidence.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Fagrelius, how are the wells throughout the proposed pool, how have they been reported the last few -- or during their production life?

A As undesignated Gallup wells.

Q Have you been in contact with the Aztec District Office on this proposed pool?

A Yes, we have.

Q And what has been the extent of those conversations as far as geological speaking?

A They're in favor of getting a pool formed.

Q Who did you talk to?

A Personally I haven't talked to anyone. I've talked to Ernie, and I'm not sure of his last name.

Q Mr. Ernie Bush.

MR. STOVALL: We have other witnesses who have had more communication with that office so perhaps you may wish to reserve that question.

MR. STOGNER: Okay, in that case I have no further questions of this witness.

Are there any other questions of this witness?

MR. STOVALL: I have none.

MR. STOGNER: If not, he may be excused.

MR. STOVALL: I'd like to call Mr. John Roe.

JOHN ROE,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. STOVALL:

Q Would you please state your name and place of residence?

A My name is John Roe and I reside in Farmington, New Mexico.

Q And how are you currently employed?

A I'm employed by Dugan Production as a petroleum engineer.

Q Have you previously testified before the Commission and been qualified and accepted as an expert?

A Yes, I have.

Q And are you familiar with the application in this case?

A Yes, I am.

MR. STOVALL: I offer Mr. Roe as an expert.

MR. STOGNER: He is so qualified.

Q Mr. Roe, would you please turn to what has been marked Dugan Production Corp. Exhibit Five and tell the Examiner what that is?

A The Exhibit Five is a -- consists of two pages.

On the first page of Exhibit Five we have presented well completion and production data for the thirteen wells that have been completed to date within the pool boundaries.

The second page is the list of fifteen wells which Dugan Production has plans to drill, ten of which are within or immediately adjacent to the proposed pool boundaries of the proposed Good Times Gallup Oil Pool.

Q And you did say each of the existing wells is within the pool boundaries?

A Yes, sir, each of the thirteen that we have completed and presented on page one is within the boundaries of the pool as we have it proposed.

Q Are there any additional wells not shown on this exhibit which are operated by Dugan Production within the general area of the proposed Good Times Gallup Pool?

A Yes. On what was presented as Exhibit Number One, which is a map of the general area, Dugan Production operates 42 additional wells in -- on Exhibit One, which is all within the general area of our proposed pool.

These 42 are in addition to the 13 that are within our proposed pool boundary.

Q Of the wells listed on Exhibit Five, on the first page of Exhibit Five, which have been completed, when was the first well on that exhibit completed?

A Okay, the initial well was our December Dream No. 1, which is located in Unit C of Section 7, 23 North, 9 West, and that well was completed on January 19th, 1984.

Q And when was the last well which has been completed to date in this proposed Gallup Pool?

A Okay, our most recent completion is the Witty No. 3, which is located in Unit E of Section 12, Township 23 North, Range 10 West. This well was completed on July 5th of 1985.

Q With respect to the proposed wells shown on Exhibit -- page two of this exhibit, do you have a knowledge as to whether or not Dugan Production definitely plans ot drill those wells or are they merely under consideration?

A It is our intention to drill all of the wells presented on page two of this exhibit. We have location made for one of the ten wells that are within the pool boundary and we have APD's submitted on all of the wells that are listed with the exception of one that is in the preparation process at this time, and we're simpy waiting on the availability of the drilling rigs.

Q Based upon your knowledge of Dugan's operations in the area, would you summarize Dugan Production's activity within the proposed Good Times Gallup Oil Pool and the surrounding area?

A Yes. This is -- this general area has been an area that Dugan Production's been fairly active in for many years. The activity int he area of our proposed pool has been within the last year, year and a half.

We've drilled several wells in the general area and the average I've indicated on page one of Exhibit Number Five, an average of 209 barrels a day from the 13 wells within the proposed pool boundary during July.

We also produced an average of 400 MCF a day of casinghead gas, and as I've indicated earlier, our immediate area of interest, we've drilled 13 wells, have a proposal to drill 10 additional wells. We've also been active in the area -- because it is a casinghead gas area the pipeline companies are not overly interested in gathering this gas. Dugan Production on its own has installed approximately 80,000 feet of gathering system at a cost to Dugan Production of approximately $350,000 in order to have a market for our gas production.

It's an area we've got a fairly substantial investment in the form of wells and facilities.

Q Do you know if any other operators are currently developing any property within the proposed Good Times Pool?

A There is no current activity by other operators, just Dugan Production.

Q Do you know if any other operators who have interests within the proposed boundaries of the pool have contacted Dugan Production regarding this application?

A Yes, there -- there are other operators within our proposed pool boundary. Two of those operators have contacted Dugan Production prior to this hearing regarding our application. There's a Mr. Harry Bigbee of Santa Fe that has a leasehold interest of 160 acres in the southwest quarter of Section 6, Township 23 North, 9 West.

And also Amoco Production has 160-acre lease which comprises the south half of the north half of Section 2 of 23 North, 10 West.

Both of these operators have been in contact with us regarding what specifically was the text of our application and both operators indicated that they felt that this would be consistent with their plan of development.

Q Do you know if Dugan Production contacted them to solicit their opinions or did they contact Dugan first?

A The initial contact was on their -- was by them.

Q Mr. Roe, would you now turn to what has been marked as Exhibit Number Six and identify that for the examiner?

A Okay. Exhibit Number Six consists of four pages. The top three pages are simply rate/time production graphs on which I've presented the productions history for three wells that are within the proposed pool boundary.

On page one I've presented the production performance for what we call the December Dream No. 1. This is located in Unit C of Section 7, Township 23 North, Range 9 West.

On this exhibit we have approximately 18 months worth of production data and I have extrapolated the production performance to what I've determined to be the economic limit of 21 barrels of oil per month.

And at the bottom of page one I've indicated that our ultimate recovery is predicted to be 29,200 barrels of oil based upon the production performance to date.

Page number two of this exhibit is a similar presentation of the production history for the Witty No. 4. This well is located in Unit C of Section 12, 23 North, 10 West.

We don't have quite the length of production history for this well; however, utilizing the same prediction of future performance, which is fairly typical to the Gallup wells in this general area, and extrapolating to

an ultimate economic limit of 21 barrels a month, we indicate the ultimate primary recovery for this well to be 33,900 barrels of oil.

On the third page of this exhibit is a similar presentation for the production performance for our Silver Medal No. 1. This well is located in Unit M of Section 27, 24 North, 10 West.

Making the same extrapolation to the economic limit, the ultimate recovery for this well would be 21,000 barrels of oil.

On the last page of this exhibit is a tabulation of the pay data and our drainage calculations for these three wells.

Q Let me stop you there. Why did you select these particular wells for your production curves?

A The three wells that we've presented on the -- in this exhibit were chosen simply because they have more production history than any of the other wells we have on; some of our recent completions have just one month; it gave us the best chance of determining what will be the production trend indicated by the actual performance and help us in establishing ultimate recovery for the wells.

Q What about the locations of the wells? Did that have any bearing on the selection?

A Yes. We chose the Silver Medal because

it's located at the northwest end of our pool; the Witty 4 is within the central portion of the pool; and the December Dream is at the southeastern end of the pool, so we've made an effort to present production data throughout the length of our pool.

Q Okay, and you have already testified that you've developed the production potential of the wells on this exhibit.

Based on that have you made any calculations to determine and appropriate drainage area for that production potential?

A Yes, I have.

Q And based upon those calculations, what would be the proper drainage area on spacing units for wells in this pool?

A Well, based on those calculations, which are presented on the fourth page of this exhibit, we propose that the pool be spaced initially on 80 acres per well.

With just a brief summary on the last page of this exhibit, the -- basically we utilized open hole log data from the wells that we've presented the production based reserve data on on the first three pages, and we've also, using the open hole log data, volumetrically calculated what will be the predicted ultimate recovery in stock tank barrels of oil per acre. This is presented in the

righthand portion of this tabulation. That ranges from 217 to 443 barrels of oil per acre.

Utilizing this recovery factor and the predicted ultimate performance based on production, our probable drainage ranges from 66 to 97 acres per well.

Q Do you have an opinion as to whether the 80-acre spacing units which you recommend should be standup units, that is the east half and west half of a quarter section, or laydown units, that being the north half or south half of a quarter section?

A Based upon what we know about the -- the thirteen wells we've drilled to date, we see no reason to dictate which direction the 80-acre unit should be oriented.

We feel that it should be left to the discretion of the operator as to whether it's a standup or laydown unit.

Q Have Exhibits Five and Six been prepared by you or under your direct supervision and do you know of their accuracy?

A Yes, they have, and I can attest to their accuracy.

Q Do you have an opinion based on the evidence which has been presented as to whether there is sufficient data and control to determine whether or not there's a different producing sand in the Good Times Pool Area from

any of the other pools in the vicinity, specifically the Bisti Gallup Pool?

A Based upon the 42 wells that we operate that are -- the bulk of which are within the Bisti and the 13 wells that we've drilled that are within the proposed pool boundary, we believe that the sands that are the primary producing interval in each of the two pools are unique to each of the pools.

MR. STOVALL: At this time I would like to move the admission of Exhibits Five and Six so I don't forget them.

I have some additional questions for the witness.

MR. STOGNER: Exhibits Five and Six will be admitted into evidence at this time.

Please continue.

Q Mr. Roe, the application asks for spacing of wells to be not closer than 330 feet to any quarter quarter section boundary. Can you explain why, please?

A The selection of 330 is the statewide spacing for a standard 40-acre unit.

At the current time, based upon the calculations we've presented in Exhibits Five and Six, and based upon the study of all of the information available to us to date, plus drawing an analogy to the Bisti Pool which

has been developed on 80-acre spacing, we believe that the proper spacing is the 80 acres; however, not losing sight of the fact that someday dependent on economics, or it may be determined at a later date that 40-acre spacing would be a more desireable spacing, so we would like to have the reservoir developed in a manner that would allow for that if that should ever be determined to be the proper spacing.

Q The application also asks that the pool rules give the Director the authority to administratively approve nonstandard unit sizes or unorthodox well locations upon meeting certain conditions.

Can you explain why Dugan seeks that in the application?

A This is an area -- the topography is not a real problem; however, there are some considerations that will have to be given to topography in making well locations. There's several sand washes and the terrain is rough in some areas of the pool boundary.

In addition, this is an area of known archaeological importance and so to us it's not that unlikely that it will be necessary to have locations that may require unorthodox location approval.

In addition, we feel that there may be occasions that an operator for one reason or another will not be able to form a standard 80-acre unit, which is the

case with our Fairway No. 1, and giving whatever the reasons being, we feel that rather than tie the Commission up with unnecessary hearingss, given the qualification that all operators within a half mile of the affected well or location receive notice and have no objection, we feel that it's reasonable to ask the Commission to handle this administratively as opposed to coming to a hearing.

Q Now, Mr. Roe, the application also asks that the Commission grant a nonstandard 40-acre spacing unit for Dugan Production's Fairway No. 1 Well.

First would you please tell the Commission where that well is located?

A Okay. The Fairway No. 1 is located in the southwest quarter of the southwest quarter of Section 1 of Township 23 North, Range 10 West.

It was drilled and completed in 1985, February 13th, 1985, and was drilled as an undesignated 40-acre Gallup spacing unit.

Q And what -- what acreage does Dugan have an interest in or control of or operate in connection with that well?

A Dugan Production's leasehold interest is the 40-acre unit that the well is situated upon. We have no other leasehold interest within Section 1.

Q Do you know if Dugan Production attempted

to acquire any interest in adjacent acreage in Section 1 prior to the drilling of the Fairway No. 1 Well?

A Yes, we did; in the early part of 1984 we made an attempt to acquire this leasehold interest.

Q And what were the results of those efforts?

A We were unable to arrive at an agreement that was satisfactory of all parties involved.

Q Has Dugan Production made any attempt since the well has been completed to obtain any interest in the adjacent tracts in Section 1?

A Yes. During April of 1985 we again approached the leaseholders of this acreage and they indicated to us that they weren't interested in making any arrangement with Dugan Production.

Q Mr. Roe, looking at the application as a whole, do you believe the granting of that application would be in the interest of preventing waste, protecting correlative rights, and conserving resources?

A Yes, Dugan Production, as I've indicated earlier, completed this well in February, '85, and as of August 1st --

Q No, I'm talking about the whole application, not just with respect to that well.

A I misunderstood. Yes, I think the appli-

cation would be in the best interest of all working interest owners.

MR. STOVALL: I have no further questions of Mr. Roe.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Roe, you might be the person to ask this.

First of all, before I ask that question, who is the other working interest owners in Section 1 for that Fairview -- or the Fairway No. 1?

A Okay. That approximately 600-acre lease, net lease, is held jointly by three companies, Champlin Petroleum owning 50 percent, Chorney Oil owning 25 percent, and then there's a third company, Norcen Energy, Incorporated, that has a 25 percent interest in that lease.

And it's my understanding that they hold the lease equally.

Q Does Dugan Production propose any limitations on whether it be a standup or laydown 80 acres?

A Mr. Examiner, it would be our preference that there not be that orientation of the unit. I realize that Bisti does have that orientation but we don't see a reason in our area to establish that and there might be

lease situations that would be beneficial to leave that to the discretion of the operator.

Q Where did the name Good Times Gallup --

MR. STOVALL: Mr. Examiner, we have a witness to testify to that.

MR. STOGNER: Okay, we'll drop that one at this time, then.

A There's a story to that question.

Q Okay, let's see, Mr. Roe, one more question to you.

Have you been in contact with Mr. Ernie Bush or Frank Chavez in our Aztec Office?

A Yes, we spoke to both and we visited on two occasions with Mr. Chavez regarding our proposal to establish this pool.

Q And what was the extent of those conversations, may I ask?

A Frank recognized the need to -- with 13 wells in an area that was beyond the one-mile extension, automatic extension to Bisti, Frank recognized the need for establishing special pool rules, especially if we wanted a spacing that would be different from the statewide 40-acre spacing.

So we had Frank's encouragement to proceed with the special pool rules hearing, especially as Du-

gan was the only operator with wells in the pool.

Q Did Mr. Chavez agree with the vertical and horizontal limits as you propose today?

A I didn't actually -- we did discuss why there was an orientation in Bisti. I don't think Frank voiced an opinion to me by what his preference would be in our area.

He did indicate that, you know, he wasn't real positive of the total reason for Bisti other than it was oriented along the trend that was initially established.

I might mention that in Bisti the sand is about three times thicker than the primary sand we're dealing with in our area, and so we're relying upon other zones in addition to the primary zone that we've identified on our Exhibit One and called the Good Times sand.

Q So the answer to the question would be he did not voice his opinion of your vertical limits outlined in purple in this pool.

A That's correct, as best I recall our conversation.

Q Thank you.

MR. STOGNER: I have no further questions of Mr. Roe.

Is there anything further of this witness?

If not, he may be excused.

MR. STOVALL: I'd like to call Mr. Tom Dugan, please.

THOMAS A. DUGAN,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. STOVALL:

Q Mr. Dugan, would you state your name and place of residence?

A Thomas A. Dugan. I live near Farmington, New Mexico.

Q And how are you employed?

A I work for Dugan Production Corp.

Q In what capacity?

A President.

Q And Dugan Production Corporation is the application in this case?

A Yes.

Q What is Dugan's primary business?

A Producing oil and gas.

Q And in what area?

A San Juan Basin.

Q How long has Dugan been an operator in the San Juan Basin?

A For thirty years.

Q And how long have you operated in what we're calling the Good Times Pool area?

A Well, we've operated in that general area for a good twenty years.

Q And within the specific pool boundaries, I think you have Exhibit One in front of you, how long -- do you know of any other operators who are active within what we're calling, or proposing as the Good Times Gallup Pool?

A No, there are no other operators that are active at this time.

Q Who selected the name for the proposed Good Times Gallup Oil Pool?

A Well, I guess it was a joint effort by the Dugan Production staff.

Q Is there -- is there a reason that you selected that particular name for this area?

A Of course.

Q Would you tell the Commission what that is, please?

A Well, it's far enough from town that you don't get too much company out there, yet it's not so far that you're wore out by the time you get there, and the

wells are pretty easy to drill. There are not any lost circulation problems and blowout problems and the terrain is relatively good.

So all of that leant itself to the name, but the real reason is that, as you can see by Exhibit Five, they aren't the greatest of wells and so the times have to be pretty -- pretty good to drill this type of well in that the price of oil has to be fairly, fairly good, and the drilling costs low, and so that's the real reason that we're calling it the Good Times area.

Q When did you originally come up with that name?

A Well, we've been using it for several years. I don't really recall the exact date.

Q And Dugan Production commonly uses that name to refer to this general area, is --

A Yes.

Q -- that correct?

A Uh-huh, and El Paso is using it to refer to their meter site where we -- the gas is delivered to their system.

Q So there is -- so it's not just a name that's used internally at Dugan; other -- other people in the area, operators --

A Yes.

Q -- are familiar with that name?

MR. STOVALL: I have no further questions.

Well, I have no further questions but I would like to ask that the Examiner take administrative notice of Mr. Dugan as an expert in the art of naming wells, developing areas.

MR. STOGNER: The Division always recognizes presidents of companies as expert witnesses and relies upon their testimony.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Dugan, have you talked to Mr. Chavez about the Good Times?

A Sure.

Q Okay, what was his comments on all this?

A Oh, I don't know. I got the idea he liked it.

Q Okay.

MR. STOGNER: I have no further questions of Mr. Dugan.

Is there any other questions of this witness?

A If you called it South Risti, you'd have

no imagination whatsoever.

MR. STOVALL: Mr. Dugan, one more question.

Would you please say Catclaw Draw Strawn Gas Pool?

A I decline to answer that question.

MR. STOVALL: Much easier to say.

MR. STOGNER: Apparently no further questions of this witness. He may be excused.

Anything further in Case Number 8685?

If not --

MR. STOVALL: I had prepared a closing statement but I won't bore the Commission with that. It just summarizes the testimony that has been presented.

MR. STOGNER: Okay. Being none, we'll take Case Number 8685 under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8685, heard by me on 28 August 1985.

Michael E. Stogner, Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

2 December, 1987

EXAMINER HEARING

IN THE MATTER OF:

Case 8685 being reopened pursuant to the provisions of Division Order No. R-8090, San Juan County, New Mexico. CASE 8685

BEFORE: Michael R. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Jeff Taylor
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For Dugan Production: Robert G. Stovall
Attorney at Law
P. O. Box 129
Farmington, New Mexico 87499

MR. STOGNER: Call next Case Number 8685, being reopened.

MR. TAYLOR: In the matter of Case Number 8685 being reopened pursuant to the provisions of Division Order No. R-8090, which order created and promulgated temporary special rules and regulations for the South Bisti Gallup Oil Pool in San Juan County, New Mexico.

MR. STOGNER: Call for appearances.

MR. STOVALL: Robert G. Stovall, Farmington, New Mexico, on behalf of Dugan Production Corp.

MR. STOGNER: Are there any other appearances in this matter?

Mr. Stovall.

MR. STOVALL: I have two witnesses to be sworn.

MR. STOGNER: Will they be -- will they please stand and be sworn at this time?

(Witnesses sworn.)

MR. STOGNER: Mr. Stovall.

MR. STOVALL: Our first witness

is Mr. Kurt Fagrelius.

KURT FAGRELIUS,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. STOVALL:

Q Mr. Fagrelius, would you please state your name and place of residence for the record?

A My name is Kurt Fagrelius and I live in Farmington, New Mexico.

Q And how are you employed?

A As a petroleum geologist by Dugan Production.

Q Have you ever testified before the Commission and had your qualifications accepted as an expert?

A Yes, I have.

Q And are you familiar with the matter to be heard today and geological data in connection there with?

A Yes, I am.

MR. STOVALL: I offer Mr. Fagrelius as an expert petroleum geologist.

MR. STOGNER: Mr. Fagrelius is

so qualified.

Q Mr. Fagrelius, have you prepared exhibits in connection with this case?

A Yes, I have.

Q And I'd ask you to turn to Exhibit Number One and identify that for the Commission, please.

A Exhibit Number One is an Isopach map of Gallup Bar Sand in the vicinity of the South Bisti Gallup Oil Pool. On the map in a stippled shaded pattern is Dugan's -- it shows Dugan Production's acreage position. Of the 8080 acres total in the South Bisti Gallup Oil Pool Dugan Production operates 6000 acres, or 74 percent of the acreage.

The map also shows wells which have been drilled, completed, and operated by Dugan Production. Currently Dugan Production has 36 producing wells, 12 locations, and one uncompleted well in the area.

It also shows a line of east/west cross section going from A to A' and also shown on the map is the existing pool boundary shaded in orange with the pending extension dashed in orange.

Q Thank you. I'd now ask you to turn to Exhibit Number Two.

A Exhibit Number Two is a stratigraphic cross section A to A' going from east to west along the

trend of the sand bar trend.

On it our perforations are shown by lines with circles. The primary pay, herein referred to as the Good Times Bar Sand, is shaded in yellow and the vertical pool -- limits of the pool are shaded in blue.

Also shown on the cross section is a, shaded in red, is a cored interval that we cored in the Olympic No. 2.

Porosity values derived from the core and those from the density logs correlate well and are very similar.

Q Do you find a correlation across the cross section within the wells with respect to the Good Times --

A Yes.

Q -- Bar Sand?

A The Good Times Bar Sand is correlatable across the field and also additional perforated zones are correlated across the field.

Q Were you present at the original hearing at which the South Bisti Pool was created and did you present evidence in that?

A Yes, I was. We presented an Isopach map and a cross section at that hearing.

Q Do you find any significant change from

the original information which was presented before the Division and the information which is being presented today with respect to the logs?

A No, no significant change and there seems to be good similarity between the exhibits from August of '85 with those today.

Q Are you familiar with the special pool rules for the South Bisti Gallup Pool?

A Yes, I am.

Q Are you aware of any problems which are created or caused by any of the provisions of those rules?

A Rule No. 4, which restricts the location of the well to within 150 feet of the quarter quarter section is kind of cumbersome to work with.

Q And cumbersome in what way? Geologically, or --

A Geologically as far as locating well sites. It limits my -- the area in which I can stake a well.

Q And is there a -- does that geological limitation affect the possible probability of success in the drilling of a well in that area?

A Yes, it does.

Q Do you have any feeling of what would be a better location requirement within that pool?

A I'd like standard rules that apply to most 40 and 80-acre pools in New Mexico, whereby you have a 330 stepout from the section line.

Q From the section lines or from the quarter quarter section line?

A Quarter quarter.

Q Is there any further information which you wish to add with respect to Exhibits One and Two or geological information with respect to the pool?

A No, sir.

Q Were Exhibits One and Two prepared by you or under your supervision and are you aware of their accuracy?

A Yes.

MR. STOVALL: Move the admission of Exhibits One and Two.

MR. STOGNER: Exhibits One and Two will be admitted into evidence at this time.

MR. STOVALL: I'd call Ms. Barbara Williams.

BARBARA WILLIAMS,

being called as a witness and being duly sworn upon her oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. STOVALL:

Q Ms. Williams, will you state your name and place of residence for the record, please?

A My name is Barbara Williams and I reside in Farmington, New Mexico.

Q And how are you employed?

A I'm a petroleum engineer for Dugan Production Corp.

Q And have you previously testified before the Commission and had your qualifications accepted as an expert?

A No, sir.

Q Would you please state your educational background?

A I received a Bachelor of Science degree in petroleum engineering from New Mexico Institute of Mining and Technology in Socorro, New Mexico, in 1984.

Q And what has been your work experience?

A I am involved in surveying, permitting, drainage analysis, production evaluation, log analysis, and completion procedures.

Q And that's with -- has that all been with Dugan Production Corp.?

A Yes, sir.

Q And you are in the Engineering Department at Dugan Production Corp., is that correct?

A Yes, sir.

MR. STOVALL: I would offer Ms. Williams as an expert petroleum engineer.

MR. STOGNER: Ms. Williams is so qualified.

Q Ms. Williams, have you prepared exhibits in connection with this case and are you prepared to testify with respect to those exhibits?

A Yes, sir.

Q I ask you to turn now to Exhibit Number Three and identify that, please.

A Exhibit Number Three is a tabulation of well completion and production data that has the wells that Dugan operates within or adjacent to the existing pool.

We have 36 completed wellss, one that's drilled and waiting on completion, and 12 locations that we plan to drill and complete in the same Gallup interval.

As you can see, there's the -- on the right -- lefthand column are the well name, the well location, the completion date. They also have included the initial potential in barrels of oil per day and a GOR, and we have current production during October, 1987, in barrels

of oil per day at a GOR which was from the C-115 for October. We have cumulative production up until November 1st, 1987, in barrels of oil per day and MCF of gas.

On the last page of the exhibit we have totals for the pool. It's producing approximately 400 barrels of oil per day with a poolwide GOR of 1329. As you can see, it's produced -- the pool itself has produced nearly a quarter of a million barrels of oil and 375-million cubic feet of gas.

Q Are you aware of any other operators who are active within the South Bisti Pool boundaries?

A No, sir. There are several around the area in undesignated pools in the Bisti Lower Gallup, not in this particular pool.

Q And in addition to the actual drilling of wells, what other additional activity is Dugan Production engaged in in the South Bisti area?

A Could you repeat your question?

Q Has Dugan Production, in addition to the expenditure for the drilling and completion of wells, has it spent any additional funds in development of the South Bisti Pool?

A Yes, sir. We've constructed an intensive -- extensive gathering system to transport the casinghead gas to market. We've installed approximately 157,000 feet

of gathering system costing in excess of a Million Dollars.

Q Thank you. I now ask you to turn to Exhibit Number Four. Would you identify that, please?

A Exhibit Number Four is a tabulation of well data and drainage area calculations for six wells. We have the six wells listed on the left, the December Dream No. 1, the Mary Lou No. 1, the Olympic No. 1, Silver Medal No. 1, Squaw Valley No. 1, and Witty No. 4.

On the second page of the exhibit are their locations highlighted and the pool boundaries.

What we've tried to show with this exhibit is that the ultimate -- at an ultimate recovery and with perforations with the gross intervals, and the separate zones of development, that the estimated drainage area of production is indicated on the right with the probably acreage that is covered.

Q Now with respect to the ultimate, ultimate recovery from production, how have you derived that data? Is there additional information in this exhibit that -- that demonstrates the engineering method used to derive the ultimate -- estimated ultimate recovery?

A Yes, sir. What we have done is we have divided the zones of development into three different categories, and that's what we call the Good Times Sand with the foot -- the net feet of pay with porosity and the shale vol-

ume.

We also have additional sands that are thick enough our log analysis indicates they should contribute significantly, and then we have the secondary sands that are either stringers due to being thin, or shaliness that may not be likely to contribute but will -- they do justify completion.

Q Now, the -- what you've identified as the Good Times Sand is the primary pay within the --

A Yes, sir.

Q And does that correlate to the area that's been marked on Exhibit Number One as the Good Times -- as the Good Times Gallup Bar Sand?

A Yes, sir.

Q Now, looking at -- at the column after the well names, we talked about ultimate recovery. Have you made some recovery projections based upon declining production or other information to reach those figures?

A Yes, sir. The last six pages of the Exhibit Number Four are decline curves which we prepared and we have prepared and signified the decline rate and an economic limit and come up with an ultimate recovery.

Q Now based upon that ultimate recovery, then, you've stated, I believe, that you have calculated a drainage area which will be drained by these wells to make

that ultimate recovery, is that correct?

A Yes.

Q And you've indicated in the last pair of columns in this exhibit the probable recovery from each of the wells, is that correct?

A Yes, sir. We've calculated a volumetric recovery of standard barrels per acre and as you can see, the probably ranges from 202 to around 440. With this data and the ultimate recovery production data we have estimated a drainage area and the six wells that we chose, one well, as you can see, the lowest one was 48 and the high was 111.

Q Do you happen to have calculated an average drainage area for the six wells?

A Approximately 76 acres.

Q Now of the wells selected for this example, are -- let me back up and ask you another question first.

Are you familiar with the data and information which was presented at the original hearing to establish the South Bisti Gallup --

A Yes, sir.

Q -- Oil Pool? And of the wells selected, were any of those wells a part of the original case?

A Yes, sir. The December Dream No. 1, the Silver Medal No. 1, and the Witty No. 4, were presented in

the previous, and they have not changed significantly with respect to reservoir data, calculated drainage area.

Q Now based upon this information, have you, in your review of the information originally presented, do you notice any substantially similar or significantly different from the original information presented to the Division?

A It's substantially similar.

Q In looking at the wells which have been selected, have you picked any particular wells or on what basis did you pick the wells?

A All have significant production data to get a trend of decline to project the ultimate recovery to economic limit. We included the three that were used before in the previous hearing, which we felt had not changes significantly. We also chose two wells additionally that followed the trend of the pool, and then we also included another one that is off to the edge.

Q In other words, it's your belief that these wells are representative of production throughout the pool and are not selected because they're particularly good wells or particularly bad wells, or for any other reason other than they're representative of production --

A Yes, sir.

Q -- across the pool, is that correct? Do

you have an opinion as to what the appropriate drainage and spacing for the South Bisti Gallup Oil Pool should be?

A Yes, sir. After doing these studies and analyzing the decline curves and the logs and sample analysis data, we feel that 80 acres would be approximately the drainage area.

Q Ms. Williams, are you familiar with the special pool rules for the South Bisti Gallup Oil Pool?

A Yes, sir.

Q Are there any provisions within those rules that cause you any particular problems?

A Yes, sir. Rule No. 4, with the limits of staking a pool within 150 feet from the center of a quarter quarter.

Q Staking a well within -- within that location, is that --

A Yes, sir.

Q And why does that cause you difficulty?

A Well, we have several reasons. We feel that it's restrictive in contrast to the statewide and adjacent Bisti Pool rules. It is burdensome in respect to being sure whether or not you're legal or not, with being a square versus a circle.

Q Let me stop you there for a moment. Why does that particularly cause a problem as a square versus a

circle and --

A It's difficult to emphasize a 150-foot radius in a system that has been long traditionally from the outside or border of a quarter quarter section boundary.

Q Now when you're talking about difficulty, is it difficulty with contractors and field personnel that you use?

A Yes, sir.

Q And to the best of your knowledge are most surveys done from corners and side lines and survey tracts rather than from the center?

A Yes, sir.

Q In addition to the problems caused, the difficulties in establishing a legal location, are there any practical considerations in the field that cause difficulty, that this rule causes difficulty with?

A Well, the area borders the Bisti tight Badlands. We have archaeological areas. It's approximately 10 to 15 miles from the area that's known as the Chaco Canyon National Park.

The archaeology in the area has been estimated from 10 to 12 sites per section. We have current Indian residents plus we have historic Navajo sites involved, also.

Q And what -- what has -- let's look for a

moment at the archaeological considerations. What are the requirements with respect to those considerations as far as building location and drilling a well?

A We are required to have an on-site archaeological survey done on the well pad with a 100 foot buffer on each side of the pad and any area of impact that we will --

Q And if some archaeological finding is made, what's (unclear)?

A We -- if it is a significant archaeological find, we have to be at least 100 feet away from it.

Q From -- from the periphery of the --

A Yes, sir.

Q -- of the find.

A Yes, sir, from the site, yes, sir.

Q And you stated also that there are people who have houses, live, actually live in the area? What are the requirements with respect to that?

A I believe that's around 400 feet.

Q Have you prepared an exhibit in connection with -- to demonstrate the problems caused by Rule 4?

A Yes, sir, our Exhibit Number Five is a section with the scale being 660 feet per inch and the first row, Plat 1, Plat 2, and Plat 3, I have tried to show with the 150-foot radius that if a site were found, a significant

site were found in that radius, there would be virtually no place that we could move our pad to remain standard.

Q Is the red circle the -- the 100-foot radius legal location?

A Yes, sir.

Q Is that what that identifies?

A Yes, sir.

Q And what is the solid square?

A The solid square is a typical Dugan location, which is 300 by 300 for a Gallup well and the dashed line is the 100-foot buffer required for the archaeological survey.

The area of the actual well pad, which would be the impacted, would be 9 -- 90,000 square feet compared to the 70 -- almost 71,000 square feet that is contained in the circle.

Q In other words, if I look at this exhibit correctly, if you would -- were confined at an archaeological site or if there were a residence within the legal location, it would be virtually impossible to build a location and drill a well without impacting either the archaeological site or the residence.

A Yes, sir.

Q And that doesn't even take into account any topographical considerations which you'd menntioned pre

viously.

A No.

Q Now the Plat 4, what does Plat 4 show? What's the blue area?

A Plat 4, the blue area indicates the statewide rules and also those that are in effect for the adjacent Bisti Pool. That would be 330 feet from any boundary of the quarter quarter.

What I have tried to show there is that if there were a significant site found, or if there were a historical site or even a current residence, we would be able to avoid the area.

Q You heard Mr. Fagrelius testify that there are also some geological reasons why this 150-foot radius is -- is perhaps too restrictive. Looking at Plats 5 and 6 what are you attempting to show there which might also impact on the geology?

A In 5 and 6 what I was trying to show was the difference in area.

The circle, the 100 foot -- 150-foot radius from the center of the quarter quarter involves an area that is 4 percent of the area of the quarter quarter; however, the statewide pool rules and the Bisti, adjacent Bisti Pool rules, would cover 25 percent of the area of the quarter quarter.

Q And in other words, in -- in Bisti and under the statewide rules you can locate a well in approximately 4 -- 6 times as much area as -- as in the South Bisti Gallup --

A Yes, sir.

Q -- Pool?

A And what would you request that the Commission do to alleviate the problem?

A Well, we would request that the standard statewide pool rules and the Bisti Gallup Pool rules would apply also to the South Bisti Gallup.

Q And those rules require a setback of 330 feet, I believe you said?

A Yes, sir.

Q From the edge of the quarter quarter section rather than measuring from the center.

A Yes.

Q Are there any additional rules which you would suggest modifying and which are perhaps more restrictive than need be with respect to well locations?

A If the radius of 150 were even changed to a square it would facilitate our --

Q That would primarily go towards the question of actually measuring for your surveyors and --

A Yes.

Q -- other contractors --

A Yes.

Q -- measuring from the outside, is that right?

A Yes.

Q It would not significantly --

A Rather than finding the center and then going from the center.

Q So they would now be able to go from the outside and measure in but it would not -- would it significantly improve your flexibility as far as the location?

A Yes.

Q Having a 300-foot square would be --

A Yes.

Q -- as acceptable as having the 330/330 circle?

A The square, as you can see even from our -- that would give us a greater flexibility to move the location if need be.

Q But your preference would be to go to the 330-foot section --

A Yes, because of the archaeology in the area and the Indian residents, plus there's the topography in the area is "ify" at best and it would greater enhance that.

Q Now with respect to drilling of an unorthodox location, I believe Rule No. 5 authorizes administrative approval of an unorthodox location for topographical reasons, is that correct?

A Yes, sir. We feel that it would also be to our benefit and any other operator in the area to have the Rule No. 5 to also include nonstandard location administrative approval for archaeological reasons.

We also feel that this might not be a bad rule to include into all of the statewide rules as reasons for nonstandard location.

Q Base upon your experience in the field, are the archaeological reasons as compelling as topographical reasons for relocating a well, well pad?

A Yes. The archaeology has a large significance in the San Juan Basin. There are thousands of sites that are recorded and several thousand, I'm sure, that are unrecorded.

Q And I believe you indicated earlier there are as many as -- how many, what was the density of sites that you found in --

A The density of sites in this particular area is from 8 to 12 per section. We're approximately a mile and a half from a section that has a known density of sites of 40 sites in that section.

We're approaching the west portion of the pool. We have what they call the Anasazi Chaco North-South Road, which is sites which run along from Chaco Canyon up to Aztec Ruins.

Q Were Exhibits Three through Five prepared by you or are you familiar with the exhibits and now of their accuracy?

A Yes, sir.

MR. STOVALL: We'd move the admission of Exhibits Three through Five.

MR. STOGNER: Exhibits Three through Five will be admitted into evidence.

Q Is there anything else? Are there any other matters with respect to the South Bisti Gallup Pool rules that Dugan Production would like to see modified?

A Yes, sir. Mr. Dugan would like a change of pool name and he feels that it is important and he regrets he is not here today to testify in person.

Q And have you prepared an exhibit in connection with that request?

A Yes, sir, Exhibit Number Six.

Q And would you identify Exhibit Number Six, please?

A Exhibit Number Six is a poem written by Cheri Gunn of Dugan Production, which is also known as our

Good Times Rhyme.

MR. STOGNER: So we can save some time here, Mr. Stovall, I'll take notice of all this, but let's move on. We've got a lot of cases today.

MR. STOVALL: I was just about to say, Mr. Stogner, I'm going to allow the Examiner to read the exhibit at his convenience, and I would move the admission of Exhibit Number Six and I have nothing further.

MR. STOGNER: Okay, Exhibit Number Six will be taken under advisement.

CROSS EXAMINATION

BY MR. STOGNER:

Q Ms. Williams, let's go to your Exhibit Number Four at this particular time and in the reservoir pay data you show several interval thicknesses on there. You show your Good Time Sands, additional primary sands, and secondary sands in feet. What particular H value did you use in your calculation in 3 to calculate the recovery factors?

A What particular H value?

Q Yeah, the H value, the thickness.

A Those were the -- taken in -- in the Good Times Sand the net pay thickness in H were figured in the feet thicknesses there. Then the primary sands, the feet,

the H was figured at -- say, in the December Dream No. 1 it was 9 feet and the secondary sand was the 19 feet.

Q So the figures in column 3 are a combination of -- of each one of those H values or did you just --

A Column 3?

Q Yeah.

MR. STOVALL: He's referrng to the volumetric recovery column.

A Oh, over here?

Q Yes.

A Yes, sir.

Q Okay, so you added up all the thicknesses, pay thicknesses.

A Yes, sir, but we used a different recovery value. The probable recovery value that we used in the Good Times was 10 percent; the primary 5 percent; and the secondary was approximately 1-1/2 for the probable.

Q All righty. How about the -- the porosity? Did you also take an average or how did you do it?

A Yes, sir, the porosities were averaged in the area, in the different zones.

As you can see, there's separate intervals that we have perforated and those were taken individually and then added together and averaged.

Q And the same is also your Vsh values.

A Yes, sir, that's (unclear).

Q And so if I look at the December Dream No. 1, you added up 6 feet plus 9 feet plus 19 feet to get your -- to get your H value?

A No, sir, those were taken separately and then each column is attributed to -- each primary -- the Good Times Sand, the primary sand, and the secondary sand were done invididually and then added together for the volumetric recovery.

Q What is the average age of most of these wells out here?

A Well, we started with the December Dream No. 1, which was January 19th of 1984. The last well that we completed was the Witty No. 6, which was in August of '87.

They're approximately, oh, maybe 15-16 months.

Q Okay. Now, when I look at your Exhibit Number Three, your production during October of 1987, there are some relatively small figures per day production there.

A Yes, sir.

Q 3.8, 2.4, 2.6. Looks like your best one up here is the 39.4, your Mary Lou No. 4?

A Well, that, as you can see, was only completed in July. It's a typical Gallup area where the ini-

tial production is higher and then drops off rather steeply.

Q Oh, yeah, the Calgary No. 88 was a 72.9 --

A Yes, sir.

Q -- and that was also completed in July.

A Yes, sir, so it's only had approximately five months of production.

Q So it appears they drop off fairly fast.

A Yes, sir, and some of them are better than others.

Q What type of stimulation is required out here on these wells?

A Well, we perforated and stimulate with acid and then fracture them with sand and water.

Q Upon initial completion or --

A Yes, sir.

Q Are there any sections in here that have two wells on a proration unit?

A No, sir.

Q Okay. Let's take a look at your Exhibit Number Five, and this is the location question.

If we did give that 330 feet rules, let's visualize that we have four 80-acre proration units coming together at one particular point, it's foreseeable that you could have four wells bunched up together, is that not

right?

A It is foreseeable that could happen, yes, sir.

Q And would that be a prudent --

A Well --

Q -- operation at that well pad?

A Since we are recommending that 80 acres be used, at the maximum there would only be two.

Q Well, let me rephrase that.

A Oh, right.

Q When I look at -- let's say that I have four 80-acre proration units, all stand-up --

A Right.

Q -- coming together, we could have four of them --

A All right, yes.

Q -- four wells bunched up.

A Yes.

Q Is that a prudent operation or would be be defeating our purposes?

A In our opinion, as you say, that could happen, but I don't feel that we would be developing in that geological --

Q Is there something that we might could put in the rules to -- to head that off, that particular

situation?

A The problem that I foresee with that would be that they -- if you would use offsetting forties, then there may be geological failure, or archaeologically significant homes, roads, topography that would not let you drill in offsetting forties.

Q Presently with the way the pool stands now, it's -- it's fairly well developed. Do you foresee that the main portion of the pool will be developed any further?

A Well, we have some acreage that will be developed, or we hope to develop, to the west, but as the pool stands right now, we still have acreage that we would like to be developed.

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

MR. STOVALL: No.

MR. STOGNER: All right, she may be excused.

Are there any questions of Mr. Fagrelius?

If not, he may also be excused, too.

And, Mr. Stovall, do you have anything further.

MR. STOVALL: Just briefly, I'd like to state that Dugan Production, as the sole active operator in the pool at this time and the owner of three quarters of the acreage in the pool, would like to see the pool rules 80-acre spacing continued. We believe that the evidence supports the well in that area will drain 80 acres. As you can see from the exhibits, the pay sands are relatively thin. While production are not high, Dugan Production has been able to make -- make money in the area, and it intends to continue to develop the area and 80-acre spacing, if believes, is appropriate.

For the reasons stated, Dugan Production would encourage the Division to modify Rule 4 to allow a well to be drilled at a legal location 330 feet from the quarter quarter section line. The problem which you've identified with respect to drilling by closeology, if you will, is one which Dugan Production recognizes would not, unless justified by particular considerations in a particular location, constitute a practice which would normally be undertaken. Again, as the sole operator and owner of such a substantial portion of the pool, they feel at this time there there would be no reason to impose any limitation other than the standard 330/330 setback.

And finally, I would ask that you please read Exhibit Number Six and it is -- while we

make light of it, it is a fairly serious matter for Mr. Dugan.

MR. STOGNER: Thank you, Mr. Stovall.

Does anybody have anything further in Case Number 8685?

If not, this case will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8685, heard by me on 2 December 1987.

, Examiner
Oil Conservation Division