STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
28 September 1983

EXAMINER HEARING

IN E MATTER OF:

Application of Jerome P. McHugh for downhole commingling, Rio Arriba County, New Mexico.

CASE 7966, 7967, 7968

BEFCE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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I N D E X

JOHN ROE

E X H I B I T S

CASE 7966

E X H I B I T S

CASE 7967

CASE 7968

MR. STOGNER: Call next Case Number 7966.

MR. PEARCE: That case is on the application of Jerome P. McHugh for downhole commingling, Rio Arriba County, New Mexico.

MR. ROBERTS: Mr. Examiner, my name is Tommy Roberts. I'm general counsel with Dugan Production Corporation in Farmington, New Mexico, appearing today on behalf of Jerome P. McHugh.

I'd like to request at this time that Case Numbers 7966, 7967, and 7968 be consolidated. The purpose of each application is the same. The wells that are the subject of the applications are in the same area. Many of the exhibits are common to all these applications, and I have one witness who will testify in each of these cases.

I think it would be in the best interest of saving time and avoiding repetition if we could do that.

MR. STOGNER: All right. At this time we'll call next Case Number 7967.

MR. PEARCE: That case is also on the application of Jerome P. McHugh for downhole commingling, Rio Arriba County, New Mexico.

MR. STOGNER: We'll also call next Case Number 7968.

MR. PEARCE: That case is on the application of Jerome P. McHugh for downhole commingling, Rio Arriba County, New Mexico.

MR. STOGNER: Cases Numbers 7966, 7967, and 7968 will be consolidated for purposes of testimony.

Please proceed.

MR. ROBERTS: I have one witness to be sworn.

MR. PEARCE: Are there other appearances in this matter?

(Witness sworn.)

JOHN ROE,

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

DIRECT EXAMINATION

BY MR. ROBERTS:

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

A My name is John Roe. I live in Farmington, New Mexico, and I'm a petroleum engineer for Dugan Production, and in this representing Jerome P. McHugh.

Q Have you testified before the New Mexico Oil Conservation Division on previous occasions?

A Yes, I have.

Q In what capacity?

A As a petroleum engineer on behalf of Dugan Production and Jerome P. McHugh.

Q And are you familiar with the applications in Case Numbers 7966, 7967, and 7968?

A Yes.

MR. ROBERTS: We tender Mr. Roe as an expert in the field of petroleum engineering.

MR. STOGNER: Mr. Roe is so qualified.

Q Mr. Roe, would you briefly state the purpose of these applications?

A The purpose of our applications today would be obtain permission to commingle production from Undesignated Gallup and Basin Dakota within the wellbore of each of the three wells.

MR. ROBERTS: Mr. Examiner, for the record, I'd like to point out at this time that exhibits in Case Number 7966 are numbered One through Seven, with the letter prefix "A".

Case Number 7967, the exhibits are numbered One through Seven with the prefix letter "B".

And in Case Number 7968, the exhibits again are numbered one through Seven with the prefix letter "C", and they'll be identified in that manner.

MR. STOGNER: Thank you, Mr.

Roberts.

Q Mr. Roe, would you please refer to what's been marked as Exhibit A-One and identify the exhibit and explain its significance?

MR. STOGNER: Mr. Roberts, which one of these is on Federal lands?

MR. ROBERTS: None of them are on Federal land but they -- there is some Federal acreage offsetting the acreage which we're discussing.

MR. STOGNER: Thank you, Mr. Roberts.

Q Mr. Roe, again, would you identify what's been marked as Exhibit A-One?

A Exhibit A-One is a plat on which we've indicated offsetting lease acreage for the Mother Lode No. 1 Well, operated by Jerome P. McHugh. We have identified the ownership of offsetting leases and in addition, we've outlined the production units that would be subject to our request for commingling.

The 40-acre unit for the Undesignated Gallup comprises the southeast quarter of the northeast quarter, which is Unit H, of Section 3 of Township 24 North, Range 2 West.

The 320-acre unit for the Basin Dakota comprises the east half of Section 3 of the same township and range.

Q Mr. Roe, what is the working interest

ownership in the Dakota proration unit which you've outlined here on this exhibit, and the working interest ownership in the Gallup proration unit, which is also outlined?

A Okay, the working interest ownership is all Jerome P. McHugh or Dugan Production Company.

Q Is the location which you have spotted on this exhibit a standard location?

A Yes, sir, it is.

Q Mr. Roe, refer to what's been marked as Exhibit A-Two and identify that exhibit.

A This is a small scale map of the general area of the subject wells and our intentions are -- our intentions of this plat is to indicate the proximity of the three wells that we're asking for permission to commingle Gallup and Dakota, with respect to other areas that have production from the Gallup/Dakota, which are fairly removed from the area we're working, and also to identify wells within the immediate vicinity that have recently been authorized to commingle production from the Gallup and Dakota, similarly as we're requesting for our wells today.

Indicated in blue, the little blue dots, are wells that are currently producing from the Gallup formation.

Indicated in the green is wells that are currently producing from the Dakota formation.

Outlined in the pink, approximately eight miles to the west of our subject wells, is the Ojito Gallup

Dakota Field, which has commingling of the Gallup and Dakota.

And approximately eight and a half miles to the southwest is the West Lindrith Gallup-Dakota Field. That's outlined in orange, which also permits commingling of the Gallup/Dakota.

We have, because of the remoteness of all wells with respect to any well that has a substantial production history, we've taken a total of six wells, two from the Ojito Galloup and four from the West Lindrith and utilized their production performance to draw an analogy for our wells. All of our wells are very recently completed and with no production history.

The six wells that we've used for an analogy ar identified with the red circle.

In addition, in the black dots we've identified some dry holes in the general area in an effort to show the newness of the area and the lack of any production history.

I wanted to just elaborate one other -- on this map, this plat will be an exact duplicate in all three packages of exhibits. Identified with the black arrow on this map is the Mother Lode, which is in the southeast quarter of the northeast quarter of Section 3, 24 North, 2 West.

In addition, the location of the other two wells that we'll be asking permission to commingle, they

would be E. T. No. 1, which would be located in the northeast quarter of the northwest quarter of Section 28, 25 North, 2 West. We indicate it to have Gallup and Dakota both open for production, or have been completed in both zones.

In addition to the E. T., the Wright Way No. 1, which is located in the northeast quarter of the northwest quarter of Section 2, of 24 North, 2 West, just to bring in that all of these wells are in the same immediate vicinity.

Q Okay, Mr. Roe, would you turn to what's been marked as Exhibit A-Three and identify that exhibit, please?

A Okay. Exhibit A-Three is a copy of the open hole induction electric log that was recorded through the Gallup interval. Our purpose in showing this is to identify that we feel we have perforated all potential pay within the Gallup, our top shot being at 6765 and our bottom shot at 7070.

We've perforated a 305-foot gross interval and made an effort to complete 30 different or separate zones and throughout this completed interval there's a possibility of 52 feet of pay that we see on the well log; an average porosity of 12.7 percent, and an average water saturation of 40 percent.

The top of the Gallup is being identified at 6704 on the log.

Q Refer to Exhibit A-Four and identify that exhibit.

A Exhibit A-Four is again a copy of the induction electric log through the Dakota interval. Our purpose of showing this is that again indicate our completion interval, the top shot being at 7861; the bottom perforation at 8108.

I have identified, and will get into it in a little bit, the perforations from 8045 to 8108 on this log. We have recently determined that these zones are -- the water production fromt these zones would be detrimental to the completion. These were perforations that we were kind of exploring and so our plans are to abandon those five holes below a bridge plug, which would be set at about 8035.

So what we're -- the zones that we would be commingling would be the perforations at 7861 to 7990, which is the interval that we have perforated and commingled in the Janet No. 1 and Janet No. 2; the perforations below 7990 are just some additional pay we are hoping to develop.

Q When you refer to the Janet No. 1 and the Janet No. 2, Mr. Roe, you're referring to McHugh operated wells in this vicinity which have already received authorization for downhole commingling?

A That's correct. They're in the immediate vicinity of the Mother Lode.

Q Is it your belief that all of the essentially productive intervals in the Dakota section have been

perforated?

A That's correct, and throughout the interval that we'll be talking about, 7861 to 7990, we're dealing with 129 feet of gross pay and in that interval we've perforated ten separate zones and we feel we've developed approximately 32 feet of pay; average porosity 9.7 percent; and again a 40 percent water saturation.

Q Mr. Roe, refer to Exhibit A-Five and identify it and briefly summarize its contents as they are pertinent to this application.

A Okay. Exhibit A-Five is a copy of our daily report during the drilling and completion operations of this well, and I just briefly summarize it.

We spudded the well on June 13th, 1983 and we TD'ed the well at 8250 on July 1st.

We cemented our 4-1/2 inch casing in three stages. We perforated the Dakota, the overall interval 7861 to 8108, which was identified on Exhibit Number Four.

We stimulated the Dakota interval with 41,000 gallons of jelled water and 54,000 pounds of 20/40 sand.

We then set a retrievable bridge plug at 7600 and completed the Gallup overall interval, 6765 to 7070, and fracture stimulated it with 70,000 gallons of jelled water and 89,500 pounds of 20/40 sand.

We began testing of the well on July 14th and we tested in order to establish production through September 3rd.

After nearly a month and a half of swabbing and efforts to get the well to flow, we had produced approximately 195 barrels of oil and 1800 barrels of water. The 1800 barrels is a large part of the 2800 barrel load that we had to start with.

As of the last effort, we had not achieved a sustained flow; however, the data that is indicated here, we feel that we could -- that initial potential of 78 barrels a day would be indicated, and that would be approximately what an IP will be on the well when we file an IP.

Now, I want to point out that the 78-barrel a day IP is not what we're predicting. It is the first month of sustained production.

With some data we'll review in just a little bit on Exhibit Six, it's -- historically the wells have averaged 42 percent of this initial potential during the first month, so our predicted initial production rate would be 33 barrels a day.

Q Mr. Roe, what is the current status of the Mother Lode No. 1 Well?

A The Mother Lode No. 1 is shut in pending approval of this application so that we can commence production.

Q Refer to what's been marked as Exhibit A-Six. Identify that exhibit, please.

A Exhibit A-Six is the -- it consists of four pages.

On the first page of this exhibit in the righthand portion of the exhibit we've indicated our prediction of the production performance of the Mother Lode No. 1, and also this will be a common exhibit to all three wells. We've indicated the production performance of the other two wells.

The Mother Lode No. 1, its predicted production performance, as I've indicated, it would have an initial production rate of 33 barrels a day, which would represent a value of 42 percent of what we feel its initial potential is. It would decline at an annual rate of 40 percent for 3-1/2 years and then stabilize at 9 percent.

Now this production forecast, as I've indicated earlier, was developed by drawing an analogy to six other wells in the general area. The production performance of those six wells are also indicated on the same plot with the forecast of production for the Mother Lode No. 1.

The plot that we're looking at there, the production from each of the six wells is initialized (sic) time zero is the month one of the first year. The actual production history of the individual wells is presented, the two wells in the West Lindrith on the left portion of page

one. On page two we have the actual production history of the two additional wells in West Lindrith and two wells in the Ojito Gallup-Dakota.

On page three of Exhibit A-Six we have tabulated the additional production statistics on these six wells and I'd like to point out that the 42 percent value that I am using as initial IP is represented there and an evaluation of considering what the recorded IP was and comparing it to what the actual production would be, as I've indicated on the graphs.

Also indicated the initial GOR of these six wells averaged 4585, and that the average recovery of these six wells is 42,500 barrels of oil ultimately, based upon actual production performance, ranging from a low of 12,200 to a high of 76,800.

And these numbers were generated with a fairly substantial amount of production history.

The last page of Exhibit Number A-Six is a plot of production from a well operated by Northwest Exploration. It's the Gavilan No. 1, which is producing from the Gallup only. It is the closest well to the area we're dealing with and I'd just like to point out that the peak production that we have seen from it to date is 51 barrels of oil per day, which was obtained in May of 1983.

Q Do you know the exact location of Northwent's Gavilan No. 1 Well?

A Yes, I can give you an approximate loca-

tion. It's located in the northeast northeast quarter of Section 26 of Township 25 North, Range 2 West, which would be approximately three miles to the northeast of the Mother Lode No. 1.

Q Okay, Mr. Roe, would you expect the productive performance of this well to differ from these projections that you have made if you were required to complete each zone separately?

A From the standpoint that our -- our testing of the Gallup indicates that its the major zone of interest in this area, the Dakota has indicated only marginal productivity, if we were required to dually com-plete the well, we probably would not be able to justify dual equipment and so any production that we realize from the Dakota would either have to be postponed until the Gallup was depleted or probably would never occur.

Q Refer to Exhibit A-Seven and identify that exhibit and explain its significance to this application.

A Exhibit A-Seven is also an exhibit that will be common to all three wells.

On Exhibit A-Seven we've indicated our estimate of the reserves, broken it down by zone, and then utilizing the reserve figure to represent in parentheses, we've indicated the percentage of total production that would be ultimately recovered from each zone, and we've indicated oil reserves and gas reserves for the Mother Lode

No. 1, being 43,900 barrels from the Gallup and 11,900 barrels from the Dakota; the Gallup representing 79 percent of the total oil recovery and the Dakota representing 21 percent.

The gas, we would estimate that ultimately we would recover 447.8 million from the Gallup, which represents 91 percent of the total; 41.4 -- 41.7 million from the Dakota, which would represent 9 percent of the total ultimate recovery.

In addition to the Mother Lode and the two other wells we're proposing, I've indicated the -- our estimate of ultimate recovery and the allocation factors for the Janet No. 1 and Janet No. 2, which have been authorized to commingle production within the wellbore and as you can see, our factors are within the same general range as we have for the Janet 1 and Janet 2.

Q Mr. Roe, in summary, then, it's your proposal to allocate in the Mother Lode No. 1 Well, 79 percent of the oil production to the Gallup formation and 21 percent of the oil production to the Dakota formation, and 91 percent of the gas production to the Gallup formation and 9 percent of the gas to the Dakota formation?

A That's correct.

Q And this allocation is consistent with other allocations in other wells which have been authorized for downhole commingling in this area.

A Yes.

Q Is the ownership of the two zones common, Mr. Roe?

A The working interest is common between the two zones. The royalty interest is not by virtue of the fact that we have several different fee leases within the 320-acre unit, and some of those fee leases are not common to the 40-acre unit that would assigned to the Gallup.

Q In your opinion does the proposed allocation adequately protect these diverse interest owners?

A Yes, it does.

Q Mr. Roe, let's move to Exhibits B-One through Seven at this time. Where possible, I'd like to ask you to condense your comments where we've dealt with these exhibits on the prior application.

Please refer to the exhibit which has been marked B-One and identify that exhibit.

A Okay, B-One is a plat on which we've indicated offset lease ownership adjacent to the E. T. No. 1, which is operated by Jerome P. McHugh. It is the well located in Unit letter C of Section 28, Township 25 North, Range 2 West.

In addition to the offset lease ownership we've identified the 40-acre production unit that is assigned to the Gallup and that would comprise the northeast quarter of the northwest quarter of Section 28, 25 North, 2 West, and we've also identified the 320-acre production unit for the Dakota, which would comprise the north half of

Section 28, same township and range.

Q And again, Mr. Roe, the working interest ownership of the Dakota proration unit and the Gallup proration unit is common?

A The working interest is common with Jerome P. McHugh and Dugan Production exclusively.

Q Okay. Now refer to Exhibit B Number Two and identify that exhibit.

A Okay. B Number Two is a duplicate of what was discussed as Exhibit A Number Two with the exception that we've highlighted the E. T. No. 1 with a black arrow rather than the Mother Lode, and as I've indicated, that's located in the northeast northwest quarter of Section 28, 25 North, 2 West.

Q And your comments with reference to Exhibit A Number Two then are consistent and applicable to this Exhibit B-Two?

A Yes, they are.

Q Refer to Exhibit B-Three.

A Okay, B-Three is a copy of the open hole log that -- the induction electric log that we recorded over the Gallup interval.

We've indicated our overall completed interval as 6643 to 7025. Within this interval we've perforated a gross interval of 382 feet, 30 separate zones, and we feel we've developed a possible 56 feet of pay with 10.9 percent porosity and water saturation averaging 40

percent.

We've identified the top of the Gallup at 6588.

Q And in your opinion have you perforated all the potentially productive intervals of the Gallup section?

A We've perforated all potential that we feel exists and that was one of the major points of this exhibit.

Q Refer to Exhibit B-Four and identify that exhibit.

A Exhibit B-Four is a copy of the induction electric log over the Dakota interval. The top of the Dakota is 7728 and we've perforated the overall interval 7747 to 8033.

As I indicated for the Mother Lode, the lower portion of the Dakota we've determined is highly water productive and we have isolated that interval 7949 to 8033 below a cast iron bridge plug in the E. T. No. 1, and our interval of completion in the Dakota would be 7747 to 7893.

Within this 146-foot gross interval we have completed 11 separate zones and within these 11 zones we feel there are 21 feet of pay, average porosity 8.7 percent and 40 percent water.

I might point out that the thickest zone that we've completed is a 4-foot interval.

Q Okay, Mr. Roe, refer to Exhibit B-Five

and briefly summarize its contents.

A Okay. B-Five is a copy of our daily drilling and completion report.

The well was spudded on April 25th, 1983, and reached a TD of 8060 on May 20th, 1983.

We cemented a 4-1/2 inch casing in three stages at 8081 and started our completion on June 1st.

We perforated the Dakot overall interval, 7747 to 8033. We fraced the Dakota with 66,000 pounds of 20/40 sand.

We perforated the Gallup interval, overall interval 6643 to 7025, and stimulated it with 83,500 pounds of 20/40 sand.

We began testing the Mother Lode -- or the E. T. No. 1 on June 9th and we were swabbing and attempting to get the well to flow through July 27th, and at that time we had recovered only 85 barrels of oil and 2100 barrels of water and were swabbing at a daily rate of about 10 oil and 175 water.

Based upon water analysis and the lack of productivitys that we had seen during drilling and expected from our analysis, we felt we were likely getting formation water and we commences selectively swab testing the zones and identified that the water was coming from the Lower Gallup -- Lower Dakota, and at that time we set the cast iron bridge plug at 7937 and capped it with cement to isolate the Lower Dakota perfs, 7949 to 8033.

On August 30th and 31st we selectively swab tested the Upper Dakota and we tested a rate, a daily rate of 16 barrels a day. We had a gas rate of 150 Mcf a day and a very nominal amount of water.

On September 2nd we resumed swab testing of the well, the Gallup and Dakota. We tested through September 2nd through September 19th and at that time the well would intermittently flow, indicating a potential of 116 barrels a day, 16 barrels of water a day, and based upon our study of production performance from wells in the general area, we considered that we had an indicated initial potential of 116 barrels of oil a day, we would predict an initial first month sustained production rate of 49 barrels a day, which will be presented on Exhibit Number Six in our prognostication of production performance.

Q What is the current status of the well?

A The E. T. No. 1 is shut in pending approval of this application.

Q Refer to Exhibit B-Six and explain its significance, how it relates to the application for the E. T. No. 1 Well.

A Okay, B-Six is an exact duplicate of Exhibit A-Six. I won't go into it in depth other than point out that the Janet No. 2, the prognostication -- our prediction of future production performance is indicated with the heavy solid line located between the two dashed lines.

We're predicting an initial rate of 49 barrels of oil a day, declining at an annual rate of 40 percent per year for 3-1/2 years and stabilizing at 9 percent.

The forecast we're using for the E. T. 1 is also the same forecast that we were using for the Janet No. 2.

On the, well, the second, third, and fourth pages are exactly the same as A-Six.

Q Mr. Roe, would your comments regarding the Exhibit A Number Six be the same for this exhibit regarding the effect on potential production if you were required to complete each zone separately?

A Yes.

Q Refer to Exhibit Number B-Seven, identify that exhibit, and comment on it as it pertains to the E. T. No. 1 Well.

A Okay, Exhibit B-Seven is an exact duplicate of Exhibit A-Seven.

On this we've presented our estimate for the ultimate recovery for the E. T. No. 1 and also shown the better relationship with other wells in the general area, including the Janet 1 and 2, which are authorized to commingle production.

Our estimate of ultimate recovery for the Gallup is 40,600 barrels of oil, which represents 84 percent of the total.

The Dakota would have an estimated ultimate recovery of 7800 barrels, which represents 16 percent of the total.

For gas reserves we're predicting an ultimate recovery of 414.1 million for the Gallup, which represents 94 percent of the total and in the Dakota 27.3 million ultimate recovery, representing 6 percent of the total.

Q And those figures are the allocation that you would propose to make for production from this well?

A Yes, they are.

Q Is ownership of the zones common in this well?

A The working interest is common, being Jerome P. McHugh and Dugan Production. The royalty interest is not common, being as a result of the 320-acre unit being comprised of several different fee leases and some of those fee leases not having acreage within the 40-acre Gallup unit.

Q In your opinion does this allocation formula protect the owners of revenue interest in this well?

A It does.

Q Let's turn to the exhibits now that have been identified as C-One through C-Seven, Mr. Roe. These are the exhibits which pertain to Case Number 7968, applicable to the Wright Way No. 1 Well.

A All right.

Q Refer to Exhibit C-One and identify that exhibit.

A Okay, Exhibit C-One is a presentation of the offsetting lease ownership that would be adjacent to the Wright Way No. 1, operated by Jerome P. McHugh. This well is located in Unit C of Section 2, of Township 24 North, Range 2 West.

In addition to the offsetting lease ownership we've identified the 40-acre production unit for the Undesignated Gallup, which would comprise the northeast quarter of the northwest quarter of Section 2, Township 24 North, 2 West, and we've also identified the 320-acre production unit for the Basin Dakota, which would comprise the north half of Section 2, same township and range.

Q Is this a standard location?

A Yes.

Q Refer to Exhibit C-Two, identify that exhibit.

A Okay, Exhibit C-Two is an exact duplicate of B-Two and A-Two, with the exception that the well that's highlighted with the arrow is the Wright Way No. 1, which, as I've indicated, is located in the northwest quarter of Section 2 of 24 North, 2 West, and our efforts with this exhibit would be to, as with other exhibits, identify the location of the well with respect to other Gallup and Dakota production, and the wells we were using for production data.

Q And would the comments you've previously

made regarding Exhibits A-Two and B-Two be pertinent to this exhibit also?

A Yes, they would.

Q Refer to Exhibit C Number Three.

A Exhibit C-Three is the copy of the open hole induction electric log over the Gallup interval, the top of which is located at 6714.

We've perforated a 312-foot gross interval, top shot at 6760, the bottom at 7072. Within this 312-foot gross interval we've completed 32 separate intervals which would have approximately 43 feet of pay; average porosity 9.8 percent, and water saturation of 40 percent.

Q Okay, refer to C-Four, identify that exhibit.

A Exhibit C-Four is a copy of induction electric open hole log covering the Dakota interval, the top of which is at 7826.

We initially perforated the overall interval, 7865 to 8141, and we have recently determined that the lower portion of the Dakota is water productive.

Our plans would be to isolate the Dakota perforations, 8053 to 8141, with our Dakota completion being 7865 to 7995.

This 132-foot gross interval, we perforated 10 separate zones. We feel we have 36 feet of potential pay with porosity 9.6 percent and with 40 percent

water saturation, and we feel from the intervals we've looked at we completed all potential pay within the Gallup and the Dakota.

Q Refer to Exhibit C Number Five, Mr. Roe, and again briefly summarize its contents.

A Okay. Exhibit C-Five is the daily drilling report and report of operations during completion.

We spudded the well; the Wright Way No. 1, on May 24th, 1983. We reached a TD of 8185 on June 11th, 1983, cemented 4-1/2 casing at 8182 in three stages.

We started our completion efforts on June 20th, 1983, and we perforated the Dakota overall interval 7865 to 8141. We fracture stimulated the Dakota with 55,000 pounds of 20/40 sand.

We perforated the Gallup interval overall 6760 to 7072 and fracture stimulated the Gallup with 82,500 pounds of sand.

We began testing the well on July 5th and tested it through the 12th, at which time we had only averaged a very minor amount of oil and nothing measurable, and 175 barrels of water a day.

At that point we made a -- resumed our efforts to locate the source of water. We selectively swabbed the Dakota and then the period August 10th through the 19th we were selectively swabbing zones within the Dakota and Gallup and on August 19th packer became stuck at 7127,

which is between the Dakota and Gallup.

From our swabbing efforts we concluded that the water was coming from the lower portion of the Dakota, which is the overall interval 8053 to 8141, and we also concluded that the Gallup and Dakota intervals, even though we have not seen any productivity as of this date, based upon our evaluation and the swab testing we did do, we feel both intervals would be similarly productive as the four other wells we've completed in this general area.

As a result of having not actually achieved a test that we can use as an initial potential, however, having spent some time evaluating it and comparing it to other wells, we feel that production capabilities similar to the Mother Lode, which is approximately half a mile to the southwest, should be reasonable, and we would therefor predict an initial potential of approximately 78 barrels a day, again considering that our anticipated first month of production would be 42 percent of that value, we would expect an initial production of 33 barrels a day and the performance for the Wright Way would be indicated on Exhibit Number Six, C-Six.

Q Tell us the current status of this well.

A We're still on the well, working to recover the packer that's stuck at 7127. We're optimistic that we will recover the packer, be able to isolate the Lower Dakota and complete the well in the Gallup and the upper portion of the Dakota.

Q Mr. Roe, refer to what's been marked as Exhibit Number C-Six and comment on it as it pertains to the Wright Way No. 1 Well.

A Okay. Exhibit C-Six is an exact duplicate of what was B-Six and A-Six.

We have identified the production forecast for the Wright Way No. 1 as the lowermost dashed heavy line.

As I've indicated, we'd expect the initial production to be 33 barrels of oil per day, which is approximately 1000 barrels a month, declining at 40 percent per year for 3-1/2 years and stabilizing at approximately 9 percent.

Q Refer to Exhibit C-Seven, identify that exhibit, and comment on it as it pertains to the Wright Way No. 1 Well.

A Okay. Exhibit C-Seven is an exact duplicate of what was B-Seven and A-Seven.

We have presented the reserves and the percentage that each set of reserves bears to the total, with specific interest in the Wright Way No. 1. Our estimate of ultimate oil recovery for the Gallup is 28,000 barrels of oil; in the Dakota, 14,100 barrels of oil.

67 percent of the ultimate would be represented by the Gallup and 33 percent by the Dakota.

In the -- for gas reserves our estimate of ultimate recovery would be 285.6 million, which repre-

sents 85 percent of the total, and in the Dakota, 49.4 million, which represents 15 percent of the total.

Q So you propose to allocate production from the Wright Way No. 1 Well to the Gallup and Dakota formations on these percentages?

A Yes.

Q Is the ownership of the zones in this well common?

A The working interest ownership is common between the two zones, being owned by Jerome P. McHugh and Dugan Produciton.

Again, the royalty is not common by virtue of the 320-acre unit being comprised of several fee leases, some of which have no acreage within the 40-acre Gallup Unit.

Q And in your opinion does the proposed allocation adequately protect all revenue interest owners in this well?

A Yes, it does.

Q Mr. Roe, at this time I'd like to ask you some questions that I think can be answered generally as to all three wells which we're dealing with here.

Have you measured bottom hole pressure in either zone in any of these wells?

A We haven't actually measured the bottom hole pressure with a bottom hole pressure bomb. We've been able to make an estimate of bottom hole pressure using fluid

levels during our completion efforts; however, using some pressure data that was recorded in a well, the Gavilan No. 1, operated by Northwest Exploration, which is in the immediate vicinity of the subject well, I've worked up that pressure data and feel that a build-up that was taken in the Gallup indicated a bottom hole pressure of 1663 psi at a depth of 7200 feet.

In the Dakota they had a bottom hole pressure, 132-hour build-up, the pressure at the end of 132 hours was 2600 psi at 7900 feet.

I was not able to analyze that pressure build-up, however, the pressure was building very slowly. There was not much build-up at the end of 132 hours.

Using these pressure gradients that we see in the Gavilan No. 1 and considering that we observed similar pressures during our completion efforts, if you would compute what the bottom hole pressure would be, using the fluid levels during our swabbing attempts, we feel the bottom hole pressure in the Mother Lode No. 1 would be 6918 pounds -- or at 6918 feet, which is mid-perf of the Gallup, that pressure was 1598 psi.

The mid-perf Dakota pressure at a datum of 7925 would be 2607 psi.

Utilizing the same data for the E. T. No. 1, at a mid-perf in the Gallup, 6834, we're looking at 1578 psi, and in the mid-perf of the Dakota completion at 7820, 2573 psi.

For the Wright Way No. 1, again using the pressure gradients from the Gavilan No. 1, mid-perf of the Gallup at 6916 feet, 1597 psi, and mid-perf in the Dakota at 7931 feet, we're looking at 2609 psi.

Q Mr. Roe, assuming these pressure figures, is there any danger, in your opinion is there any danger of cross flow between the zones in any of these wells?

A There would be a very minor amount of cross flow. The Dakota pressure is a little bit higher than the Gallup but our plans would be to operate the wells in the manner that we would keep the wells at a fairly low operating bottom hole pressure and that combined with the fact that the productivity of either zone is not real great, we feel cross flow would be very minor, if at all.

Q Would you expect the fluids produced from each zone in each of these wells to be compatible?

A The fluids are compatible, being oil and gas, and there's no adverse results of mixing.

Q Mr. Roe, you have alluded to some economic considerations, which are pertinent to the applications that are before the Commission today.

Would you elaborate on those economic considerations?

A Okay, well, in our testing of the productivity of those zones to date, the Dakota is -- has productive potential; however, the reserves or the anticipated actual production performance will not justify a

single completion or justify drilling to the Dakota for the Dakota reserves.

The reserves that we're forecasting in the Gallup for all three of the wells are satisfactory to make the payout, although they're not anything that would be considered substantial.

Whereas, the combined production from the two zones would permit maximizing of ultimate recovery from the lease and permit McHugh and Dugan to realize a maximum ultimate profit from them.

Q Mr. Roe, are we dealing with real sensitive sands in these formations in the subject wells, which may be subject to damage from water or other produced liquid?

A No, we're not. Those zones were stimulated with a water-based fluid.

Q And in your opinion will the commingling of production in the wellbores of these wells result in the production of additional hydrocarbons and be in the best interest of conservation, the protection of correlative rights, and the prevention of waste?

A Yes, they will.

Q Were Exhibits A-One through Seven, B-One through Seven, and C-One through Seven, either prepared by you or at your direction and under your supervision?

A Yes, they were.

MR. ROBERTS: I'd move the

admission of these exhibits.

MR. STOGNER: Exhibits One through Seven, and all of their sub-parts A, B, and C, will be admitted into evidence.

MR. ROBERTS: That concludes my questioning of Mr. Roe.

MR. STOGNER: I have no questions of Mr. Roe at this time.

Mr. Chavez, do you have any questions of this witness?

MR. CHAVEZ: Yes.

QUESTIONS BY MR. CHAVEZ:

Q Mr. Roe, in calculating the reserves that you used on your last exhibit in all three cases, were these done from well log analyses?

A Yes, sir. It's kind of a combination effort. We had to start with the well log analysis and the footages and the porosities that I identified as I was going over each log, basically were what would go into a volumetric analysis.

In addition to that we knew pretty much what the initial production would be from each well, so we tried to wind up with the production performance that would also match what we were expecting the actual performance would be. In other words, if you're not real careful, you could wind up with a production that would be unreasonable

with respect to the fact that all of the wells are 50 barrels a day or less, as far as initial rate.

MR. CHAVEZ: That's all the questions I have.

MR. STOGNER: Thank you, Mr. Chavez.

Are there any other questions for this witness at this time? If not, he may be excused.

MR. ROBERTS: We have no other witnesses.

MR. STOGNER: Okay, Mr. Roberts, thank you.

At this time Cases Numbers 7966, 7967, and 7968 will be admitted into evidence.

If there is nothing further, these cases 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 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. 7966, 7967, 7968 heard by me on Sept. 28, 1983.

Michael E. Stogner, Examiner
Oil Conservation Division