BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
CONFERENCE ROOM, STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

August 9, 1972

EXAMINER HEARING

IN THE MATTER OF:

Application of Humble Oil & Refining Company for special pool rules, Chaves County, New Mexico.

Case No. 4789

BEFORE: Elvis a. Utz,
Examiner.

TRANSCRIPT OF HEARING

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MR. UTZ: Case 4789.

MR. HATCH: Case 4789: Application of Humble Oil and Refining Company for special pool rules, Chaves County, New Mexico.

MR. HINKLE: Clarence Hinkle, of Hinkle, Bondurant, and Christy, Roswell, appearing on behalf of Humble Oil and Refining Company. We have two witnesses and six exhibits. I would like to have both witnesses stand and be sworn.

(Whereupon the witnesses were sworn simultaneously by Mr. Hatch.)

W. L. JORDON,

was called as a witness, and having been already duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q Would you state your name, your residence, and by whom you are employed?

A I am a geologist for the Humble Oil and Refining Company, and I live in Andrews, Texas.

Q And your name?

A W. L. Jordon.

Q Have you previously testified before the Commission?

A No, I have not.

Q State briefly your educational background and experience as a petroleum geologist.

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A I graduated from the University of Texas with a bachelor of science degree in geology, and I have worked for Humble for twenty-two years, nine of these years in New Mexico. I am presently employed in Southeastern New Mexico.

Q Are you familiar with Humble's operations in New Mexico?

A Yes.

Q And in particular with the area involved in this case?

A Yes.

Q Have you made a study of the wells that have been drilled?

A I have.

Q Have you prepared or have there been prepared under your direction certain exhibits for introduction in this case?

A I have prepared the first four exhibits.

MR. HINKLE: Are the witness's qualifications acceptable?

MR. UTZ: They are.

Q (By Mr. Hinkle) Are you familiar with the application of Humble in this case?

A I am.

Q What is Humble seeking to accomplish?

A Humble is seeking special rules for the Many Gates-Abo Pool, Chaves County, New Mexico, including provisions for 80-acre spacing units and wells to be located

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in the approximate center of the Northeast quarter of the Southwest quarter of each quarter section. It is also requested that standard proration units be assigned of 80 acres. Also that an allowable factor of 3.33 for allowable purposes be assigned.

Q Mr. Jordon, referring you to Exhibit Number One, would you explain what this is and what it shows?

A Exhibit One is a regional plat showing the location of the Many Gates-Abo Pool with respect to the other pools in the area. It is in Sections 31 and 32, Township 9 South, Range 30 East, and is indicated by the green circle on the exhibit. This pool is four and a half miles south of the San Andres Pool and the nearest Abo producing pool is twenty miles to the east.

Q Now, referring you to Exhibit Number Two, will you explain what this shows?

A Exhibit Two is a lease ownership and well location plat showing the locations of the Phillips Federal Number 1, the discovery well, in the Northeast quarter of the Northeast quarter of Section 31, Township 9 South, Range 30 East. It also shows the Humble Confirmation Well, the New Mexico State Number 1 in the Southwest quarter of the Northwest quarter of Section 32. Also shown is the proposed Humble location for its CR State Number 2 located in the Southwest quarter of the

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Southwest quarter of Section 32.

Q What do the yellow lines denote?

A That's acreage which Humble has a majority interest in and would be the operator of.

Q Now, referring you to Exhibit Number Three, can you explain what that shows?

A Exhibit Three is a regional structure map of the general vicinity of the Many Gates-Abo Pool. The top of the pay zone of the pool area is circled in red, and the original dip is approximately 100 feet per mile to the Southeast.

Q Does this show any appreciable structure in connection with the Phillips Well or the Humble Well in Section 32?

A No, sir.

Q It simply shows the regional dip?

A Yes, sir, the entire area shows a normal regional dip.

Q So these wells then are not based on structure, but what?

A This is a stratigraphic trap.

Q Referring you to Exhibit Number Four, would you explain what that shows?

A Exhibit Four is a structural cross section including the Phillips Federal Number 1 in the Northwest and the Humble-New Mexico CR State Number 1 to the Southeast. Included on the cross section are the pay sections

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colored in green.

Q The little insert on the plat shows where the cross sections are located?

A Yes, sir.

Q Do you have anything further that you would like to state with respect to any of these exhibits?

A No, sir.

MR. HINKLE: That's all we have on direct. We will have a petroleum engineer as our next witness.

* * * *

CROSS EXAMINATION

BY MR. UTZ:

Q This is a designated pool undoubtedly, do you know what the horizontal delineation is for the pool?

A The Northeast quarter of Section 31, and I do not know that the Commission has designated anything else.

MR. UTZ: Any other questions?

* * * *

CROSS EXAMINATION

BY MR. STAMETS:

Q Is this similar to the pay in the Flying "M", or what relationship would this be to the formation at Abo Reef?

A I can see no resemblance to the Abo Reef, and since it is twenty miles away from the Flying A Pool, I didn't work that pool up to check similarities.

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MR. STAMETS: That's the only question I have.

MR. UTZ: Any other questions?

(No response)

MR. UTZ: The witness may be excused.

(Witness excused.)

* * * *

R. L. FRASIER,

was called as a witness, and having been already duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q Will you state your name, your residence, and by whom you are employed?

A R. L. Frasier, project engineer with Humble.

Q Have you previously testified before the Commission?

A No, sir.

Q Briefly describe your educational background and your experience as a petroleum engineer.

A I attended Texas Tech in Lubbock, and was graduated in 1967 with a B.S. in mechanical engineering. I was employed by Humble in July of 1967 as a petroleum production engineer, and in May, 1969, became a petroleum reservoir engineer.

Q Have you made a study of the Many Gates-Abo Pool?

A Yes, sir.

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Q Have you prepared, or has there been prepared under your direction, exhibits that have been marked as Exhibits Five and Six?

A Yes, sir.

MR. HINKLE: Are the witness's qualifications acceptable?

MR. UTZ: Yes, they are.

Q (By Mr. Hinkle) Referring you to Exhibit Number Five, would you explain what this shows?

A This shows completion data for the two wells in the Many Gates-Abo Pool. The Federal Well Number 1 which was drilled to an original depth of 10,200 feet with four and a half inch casing was cemented at 9,884. There was stimulation treatment of 9,500 gallons of acid and an accumulative production of 15,793 barrels of oil. On the second well, the Humble-New Mexico CR State Number 1 was drilled to a depth of 9,450 feet and set with five and a half inch casing and cemented at 7,432. It was treated with 5,000 barrels of acid and its initial potential in May of 1971 was 16 barrels of oil per day. The accumulative production is 9,421 barrels of oil for that well.

Q Referring you to Exhibit Number Six, will you explain this exhibit?

A The first page of Exhibit Six is reservoir data of the

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Many Gates-Abo Pool. The formation is a stratigraphic trap with sixteen percent porosity and twenty miladarcies. The dip of the formation is approximately 100 feet per mile, and the oil-water contact is unknown. The average net pay is thirty-five feet for the two wells. The original reservoir pressure was 2,420 PSI. There are currently two wells producing, and there are no wells being drilled currently. The spacing of the active wells is 80 acres per well, which is consistent with the special pool rules. The pool is in its initial stage of depletion.

Q Attached to Exhibit Six are pages A, B, and C, explain each of those.

A Page A shows the volumetric reserve estimates for the two wells. The Federal Number 1 has forty-feet of net pay with seventeen percent porosity, with an estimated thirty-five percent water saturation. This gives 26,900 stock tank barrels per acre. For 40 acres, this would be 161,000 stock tank barrels, and on 80 acres, 323,000 barrels of stock tank. The Humble-New Mexico CR State Number 1 Well has only twenty-six feet of net pay with fifteen percent porosity. On 80 acres, there would be 168,000 barrels, so the average of the two wells would be 121,000 barrels of stock tank oil for 40-acre development and 242,000 for 80-acre development.

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Q Page B?

A Page B shows the pressure history of the two wells. The initial reservoir pressure was 2,420 PSI. On the Federal Number 1 by the time 8,672 barrels of oil had been produced, the pressure had dropped over 1,000 PSI to 1,308 PSI. With an additional 250 barrels produced, the reservoir pressure dropped to 1,299, which was a total of 1,121 PSI drop on the Federal Number 1 with a little over 11,000 barrels of production. On the Humble-New Mexico CR State Number 1, the original pressure was 2,300 PSI, this is 100 pounds lower than the original pressure on the Federal Well, and is indicative of drainage between wells. The pressure dropped down to 2,059 PSI with only 5,850 barrels of accumulative production.

Q You say the drop in pressure in the drilling of the second well indicates drainage. What area would you say was drained?

A If a circle was drawn around the Federal Well,in excess of 250 acres would be included in the circle.

Q So you concluded from that that one well effectively drained 80 acres or more?

A Yes, I believe so.

Q Explain Page C.

A Page C is a comparison of 40-acre versus 80-acre

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development based on the result of the Humble-New Mexico CR State Number 1. On this well, there were 84,000 barrels for 40 acres and 168,000 barrels for 80 acres. The actual volume before income tax would be about $2.15 per barrel. So on 40 acres, the pay would be around $181,000, and the cost to drill and complete the average well would be approximately $164,000. So on 80-acre spacing, the recovered oil would little more than pay for the drilling of the well.

Q You mean on 40 acres?

A Yes, sir. On 80 acres, however, the value of the recoverable oil we believe would provide an adequate return.

Q Now, does Humble contemplate the drilling of any additional wells in the area?

A There is a location a half a mile to the South of the Humble-New Mexico CR State Number 1 which is expected in production in a couple of weeks. Depending on the result of that well then, we may come back and drill a well a half a mile to the South of the Federal Number 1 Well.

Q And this would be on the 80-acre pattern?

A Yes, it would.

Q That you are requesting taking in the fact that each well would be located either Northeast or Southwest of

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each quarter section?
A Yes, sir.
Q And you are asking for temporary field rules?
A Yes, we are.
Q And a year from now, if approved, you should have considerable more information due to the production history and drilling of these additional wells, is that correct?
A That's correct.
Q What recommendation do you have to make to the Commission with respect to the adoption of special pool rules?
A I do recommend special pool rules be adopted to allow development of this field on 80-acre spacing with wells to be drilled within 150 feet of the center of either the Northeast or the Southwest quarter of the quarter section and that the allowable be set based on the 3.33 factor, which is consistent with the development of this field for 80 acres.
Q Have any similar rules been recently adopted by the Commission?
A Yes, in the Mesa-Verde Oil Pool, similar rules were adopted in January of this year.
Q If the Commission approved the application in this case, in your opinion, would it be in the interest of conservation and the prevention of waste?

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A I believe so.
Q And protect correlative rights?
A Yes, sir.

MR. HINKLE: We offer Exhibits One through Six in evidence.

MR. UTZ: Without objection, Applicant's Exhibits One through Six will be entered into the record of this case.

(Whereupon Applicant's Exhibits One through Six were entered in evidence.)

MR. HINKLE: That's all we have.

* * * *

CROSS EXAMINATION

BY MR. UTZ:

Q What was the order number on the Mesa-Verde Pool?
A R-4246.

MR. PORTER: How do you arrive at the fifteen percent recovery factor?

THE WITNESS: Based on the pressure depletion of the reservoir we have seen so far, it is my estimation that this is a solution gas-oil drive reservoir.

Q (By Mr. Utz) It appeared to me it might be a little high.
A It quite well could be, we have a limited amount of data to work with at this time.
Q You don't have much production, but you do have a lot of pressure drop?

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A Yes, indeed.
Q Do you know whether any other owners in the area have plans to drill in the near future or are any of them drilling at the present time?
A No, sir, to my knowledge, none of them are drilling or have immediate plans to drill.
MR. UTZ: That's all I have.
* * * *
CROSS EXAMINATION
BY MR. HATCH:
Q You have requested that the wells be in the Northeast quarter or the Southwest quarter, and I don't think you have given the Examiner any reason for that.
A We think that will allow for the orderly development of the pool.
Q Is casing head gas being sold?
A No, it is currently being flared.
Q Is there potential for the sale of casing head gas in the area?
A Negotiations are going on right now for that.
MR. UTZ: What allowable factor are you asking for?
THE WITNESS: An 80-acre allowable factor.
MR. UTZ: Would twice this much gas be vented as compared to 40 acres?
THE WITNESS: If the wells were making their full

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allowable, yes.

MR. UTZ: What are the capabilities of the wells at the present time?

THE WITNESS: Currently, they are both producing, and production is about 350 barrels a day for the two wells. Fairly recently, we put our well on pump, and I believe right now, it is capable of making slightly in excess of 200 barrels a day. The Federal Well has been on pump for some time, and it's capability is 150 barrels a day.

MR. UTZ: It would appear that the 80-acre allowable would be somewhat higher than the 40-acre allowable.

THE WITNESS: Yes, I believe so.

MR. UTZ: Would Humble have any objections to maintaining the 40-acre allowable in there until such time as there is a casing head gas connection in the field?

THE WITNESS: In view of the economics for the wells in the field, we think it would hinder our development of the field if we were to be cut back to a 40-acre allowable. It is going to be nip and tuck whether we make any money out of the reservoir as we stand right now.

MR. STAMETS: Humble would make a little more money if it could sell the casing head gas, wouldn't it?

THE WITNESs: Yes.

MR. STAMETS: And this would add to your income and pay-out, and the wells are not going to lose anything if

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the gas is still in the ground. What is the status of getting a casing head gas connection, do you anticipate it will be relatively soon?

THE WITNESS: I honestly don't know. There is an El Paso line a mile and a half north of the field, and the estimated cost for connection would be approximately $30,000.

MR. STAMETS: If you drilled the other well and got a good well there, then probably you could get the connection pretty fast.

THE WITNESS: That would certainly help, yes.

MR. STAMETS: That's all I have.

MR. UTZ: Are there any other questions?

(No response)

MR. UTZ: If not,the witness may be excused.

(Witness excused.)

MR. UTZ: Are there any statements in this case?

MR. MALLOY: I would like to make a statement. I am Thomas Malloy, with Amoco. Amoco holds the leases for a considerable amount of acreage in the immediate vicinity of the Many Gates-Abo Pool. We offer no objection to the proposal to adopt 80-acre units, however, Amoco does object to the rigid spacing requirements and urge that the order allow for the drilling of initial wells on either quarter-quarter section. With only two wells completed in the

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pool, it is too early in the history of the pool to develop rules so rigid.

MR. UTZ: Thank you. Are there any other statements?

(No response)

MR. UTZ: Case 4789 will be taken under advisement.

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STATE OF NEW MEXICO )
) ss
COUNTY OF BERNALILLO )

I, RICHARD E. McCORMICK, a Certified Shorthand Reporter, in and for the County of Bernalillo, Shate of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Richard E. McCormick
CERTIFIED SHORTHAND REPORTER

4789

Aug. 9-72

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# I N D E X



# E X H I B I T S



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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
CONFERENCE ROOM, STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
August 9, 1973

EXAMINER HEARING

IN THE MATTER OF:

Reopening of case pursuant to Order No. R-4375, establishing special rules and regulations for the Many Gates-Abo Pool, Chaves County, New Mexico.

Case No. 4789

BEFORE: ELVIS A. UTZ,
Examiner.

TRANSCRIPT OF HEARING

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MR. UTZ: Case 4789.

MR. CARR: In the matter of Case No. 4789 being reopened pursuant to the provisions of Order No. R-4375, which order established special rules and regulations for the Many Gates-Abo Pool, Chaves County, New Mexico, including a provision for 80-acre proration units. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing.

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant and Christy, of Roswell, appearing on behalf of Exxon. We have two witnesses I'd like to have sworn.

(Whereupon, the witnesses were sworn by Mr. Carr.)

MR. HINKLE: Here's the official marked exhibits. Here's an extra copy.

MR. UTZ: You may proceed.

**********

W. R. JORDAN,

called as a witness, after having been first duly sworn according to law, testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, your residence and by whom you are employed.

A I'm W. R. Jordan, Andrews, Texas, Exxon Corporation.

Q You mentioned Exxon Corporation, being employed by Exxon.

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Was it formerly Humble Oil and Refining Company?

A Yes, that's true.

Q And were you a witness in the original case under the application of Humble Oil and Refining Company?

A That's correct.

Q And is Humble now being merged into Exxon?

A That's true.

Q As of January 1?

A Yes.

Q Your qualifications as a petroleum geologist are a matter of record with the Commission, having previously testified?

A That's correct.

Q Have you kept up with the development in the Many Gates - Abo Pool?

A Yes, I have.

Q Have you prepared or has there been prepared under your direction certain exhibits for introduction in this case?

A That's correct.

Q And the ones that you've prepared or had prepared under your direction are exhibits that have been marked from One to Five, inclusive?

A This is correct.

Q Refer to Exhibit One and explain what this is and what it shows.

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A Exhibit One is a regional pool location map, showing the location of the Many Gates-Abo Pool with respect to surrounding pools. Many Gates-Abo will lie about six miles south of the Chaveroo-San Andres Pool and about twenty miles west of Flying M - Abo Pool, the nearest Abo production.

Q All right. Refer to Exhibit Two and explain what this shows.

A Exhibit Two is a lease and well location plat indicating oil wells within a two mile radius of the pool. It shows the two producing wells, two dry holes, and the dry hole later converted to a salt water disposal well which Exxon operates.

Q Which one is that?

A That's the CR No. 2 in the southwest corner of Section 32.

Q Which was the first well drilled?

A The first well was drilled by Phillips, that is now Exxon No. 21 Isler Federal.

Q Exxon has taken over that well since it's been built?

A Exxon now operates that well.

Q When did that occur?

A This month.

Q Recently?

A This month.

Q In fact, it's in the process of being approved by USGS;

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isn't it?

A That's correct.

Q What do the yellow boundary lines indicate?

A The acreage bound by yellow is operated by Exxon Corporation.

Q Now, turn to Exhibit Three and explain what this shows.

A Exhibit Three is a regional structure map, the subsea map point. The top of the pay contour interval is 100 feet and the scale is one inch equals 4000 feet. The depth in the area is approximately 90 feet per mile or one degree to the southeast. It's very regional. It shows a slight structural node, but very little.

Q Is this substantially the same structural map or plat that was introduced in the original hearing?

A It's very close to the same map.

Q Changed a little bit on account of the additional two wells that have been drilled since the original hearing?

A That's correct.

Q I'll turn to Exhibit Four. Explain what this is.

A Exhibit Four is a four-well cross section in the lower right hand side portion. There is an index map showing the line of section extending from Exxon's New Mexico CR State No. 2 on the south to the Exxon No. 1 Isler Federal on the north. The cross section shows the oil-water contact at minus 3242 as determined from core

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analysis. The top and the base of the pay zone and the upper and lower correlation line are separated interval and well test completion dates are all shown.

Q This goes through the four wells that have been drilled; is that right?

A It goes through the two dry holes and the two completions.

Q And that's shown by the little index map on the corner of the plat?

A Correct.

Q Does this show the continuity of the producing shown between the two producing wells?

A It does. The colored-in area, oil is green, water being blue, a cross section shows the porous zone with the Abo formation.

Q Also shows the perforated interval?

A The perforated intervals are within the colored zone.

Q Now, turn to Exhibit Five and explain what that is.

A Exhibit Five is a tabulation of completion data, the lease and well numbers, totaled drilled production, casing and perforations, as well as stimulation, initial potential and cumulative production to 7/1/73, and current daily productions are shown. The Exxon No. 1 Isler has cumulative production of 38,100 barrels of oil. While the Exxon New Mexico CR State No. 1 has cumulative of 56,000 barrels of oil for the same date.

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Q That's done to July 1?
A Yes. Current daily production for the CR State well is 115 barrels of oil per day plus 111 barrels of water. The No. 1 Isler Federal produces 48 barrels of oil per day and five barrels of water.
Q Do you have any further testimony regarding these exhibits?
A No.

MR. HINKLE: We would like to offer in evidence the exhibits 1 through 5.

MR. UTZ: Without objection, Exhibits 1 through 5 will be entered into the record of this case.

MR. HINKLE: That's all of this witness. We have another witness.

MR. UTZ: Is the other witness an engineering witness?

MR. HINKLE: Yes, to go into the engineering.

MR. UTZ: This witness may be excused.

MR. HINKLE: Okay. You want to take the stand?

HARLEY REAVIS,

a witness, after having been first duly sworn according to law, testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, residence and by whom you are employed.
A My name is Harley Reavis. I'm employed by Exxon Corporation

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in Midland, Texas, as a conservation engineer for the Mid-Continent Division.

Q Have you previously testified before the Commission?

A I have not. I've been here many, many times. I don't believe I've ever made that tour yet.

Q Would you state briefly your educational background, experience as a petroleum engineer?

A I'm a graduate from petroleum engineering from Texas A & M, BS degree. I've been in petroleum engineering since I graduated in 1940, and have been conservation engineering about twenty three years.

Q Have you had a good deal of experience with oil, gas development in New Mexico?

A Yes, sir. I have.

Q You're familiar with the Exxon operation in New Mexico?

A Yes, sir, I am.

Q And in the Many Gates Pool?

A Yes, sir, I am.

Q And you have kept up with the development in that area?

A Yes, I have.

MR. HINKLE: Qualifications sufficient?

MR. UTZ: Yes, they are.

Q (By Mr. Hinkle) Have you prepared or has there been prepared under your direction the exhibits six through ten?

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A Yes, they have.

Q Refer to Exhibit Six and explain what this is and what it shows.

A Exhibit Six is a reservoir data tabulation over the Many Gates-Abo pool. This pool is a dolomite formation. Stratigraphic porosity is about sixteen percent. The oil-water contact which has been established since the last hearing is 3242 feet. The average feet payoff of the oil-water contact is twelve feet. The rhythm of stress or pressure is 2424 pounds. The oil- gas is 43. The solution oil-gas ratio is some 690 cubic feet per barrel. There are two producing wells, both of them pumping. This field is developed on 80-acre spacing. It is past the mid-primary stage of depletion. At the bottom of this exhibit is the cumulative production and oil barrels as of 7-1-73, of 94,100 barrels. The gas production and water production is for Exxon's State CR No. 1 only. We did not have the production of gas or water from the Phillips operated Isler Federal well. That is not noted on this exhibit and I would like to point that out.

Q Now, you mentioned two producing wells. Have two wells been drilled since the original hearing in this case?

A Yes, sir. There have been two wells drilled since the previous hearing on this particular case.

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Q Which wells were there and where are they drilled?
A The Exxon CR State No. 2 in the southwest corner of Section 32 was drilled as a third well in the field and was dry and abandoned. The Isler Federal No. 2 was the fourth well drilled in the field. It was drilled through the pay formation and was dry and abandoned.
Q Were any tests, any cross section perforation tests made in connection with these wells?
A Yes, sir, during the tests we set up pipe and completed the No. 2 CR State well, and at that time we obtained a pressure of some 140 pounds. I shut in the bottom hole pressure, built up pressure of 140 pounds below the original pressure of 2420 pounds. This indicates some drainage of -- if we draw a circle around that well on the nearest producing well, we would be some 460 or 70 acres.
Q All right. Refer to Exhibit Seven and explain that.
A Exhibit Seven is a decline curve based on the item. I mean, monthly production from the Isler Federal No. 1, as you can see, this curve was taken down to ten barrels per day, economic limit, and the estimated ultimate recovery would be some 70.7 thousand barrels.
Q Now, refer to Exhibit Eight and explain that.
A Exhibit Eight is a similar production decline curve with the production plotted in barrels per month, on semi-log

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paper and it's declined as though an ultimate recovery of 138.2 thousand barrels taken to an economic limit of ten barrels per day.

Q Now, refer to Exhibit Nine and explain what that shows.

A Exhibit Nine is a volumetric curve. It shows the cost of an average well. This tabulation also shows the decline curve estimated recovery, on the far right hand tabulation. This tabulation is by wells, showing the Isler Federal No. 1 and 2, New Mexico CR State No. 1 and 2, and then the average for all wells, an average of two producing wells. We can see that the ultimate recovery from average of two producing wells for forty acres at a volumetric basis is some 79,000 barrels, Eighty acres of 158,000, while the decline curve gives 104,000. Now, on your costs to drill and complete a well with the related facets, it's estimated at $164,000.

Q What is your conclusion as to the economics of drilling and completing wells on a 40-acre basis rather than 80 acres?

A These figures show that 40 acres a well would hardly pay out, while it takes almost 80 acres to make a well making quantity to pay out a well in this particular field.

Q Now, turn to Exhibit Ten and explain what that is and

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what it shows.

A Exhibit Ten is a pressure history. It lists the wells, whereby pressures have been measured, daily pressures are measured. The pressures were 7290 feet. The cumulative production on the date that the pressure was measured. The Isler Federal No. 1 which had been operated by Phillips, had the last pressure measured in January of 1972 of 1299 pounds, which is almost half pressure gone and it had produced some 11,000 barrels at that time. The New Mexico CR State No. 1 had a pressure measured the second day of this month of 971 pounds, which is about sixty percent pressure gone, and it produced at that time some 58,700 cumulative barrels of oil. The New Mexico CR State No. 2 on 10-6-72 had a pressure of 2280 pounds and it had not produced any fluid at that time.

Q That's what you call a dry hole?

A That was a dry hole. It showed a pressure of 140 pounds, even though it was dry, indicating it is connected to the reservoir that these other two wells are completed in. Now, the rapid pressure decline that is shown in most of these wells and if we take the pressure decline versus the cumulative production, our reserves would be even less than shown on the decline curve.

Q Does this again show that the area that the producing wells

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are draining, does this show drainage?

A It shows the drainage from all of these wells, very clearly, particularly the New Mexico CR State No. 2. And having a 140 pound drop in this reservoir is relatively tight, over a long condition. But some of the conditions that we had here, it did bring the pressure down some 140 pounds.

Q So, in your opinion, these wells are effectively and efficiently draining more than 80 acres?

A Yes, sir. I believe these wells are draining more than 80 acres.

Q What is your recommendation to the Commission with respect to the rules that have been heretofore adopted?

A I recommend that the temporary rules that have been adopted at the previous hearing by the Commission be adopted as permanent rules for this field.

Q In your opinion, will the continuation of these rules, making them permanent, be in the interest of conservation and prevention of waste and tend to protect correlative rights?

A Yes, sir, I do.

Q Do you have anything further you would like to present?

A No, sir, I believe that is all.

MR. HINKLE: We'd like to offer into evidence Exhibits Six through Ten.

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MR. UTZ: Without objection, Exhibits Six through Ten will be entered into the record of this case.

MR. HINKLE: That's all we have on direct.

CROSS-EXAMINATION

BY MR. UTZ:

Q I note that the initial pressure on the Isler Federal No. 1, 10-16-71 is 2420. The initial pressure of the CR State No. 1, 5-20-72 is 2311. What do you attribute that to?

A This reservoir is relatively tight, so we did not get a large pressure draw down over this, but we did get a pressure draw down from the Isler Federal No. 1 to the CR State No. 1 of about 100 pounds. This does indicate drainage on the base that it exists.

Q Would you consider the initial pressure on 10-16-71 on the CR State was probably near 2400 pounds?

A Yes, sir. We took that pressure ourselves. For evidence for this hearing, we knew it would be coming up.

MR. UTZ: Are there other questions?

(No response.)

MR. UTZ: The witness may be excused.

MR. HINKLE: Thank you.

MR. UTZ: Statements in the case?

(No response.)

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MR. UTZ: The case will be taken under advisement.

REPORTER'S CERTIFICATE

I, CLAUDIA FAHRENTHOLD, a Court Reporter, in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Claudia F. Fahrenthold
COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4789, heard by me on Aug 8, 1973.

New Mexico Oil Conservation Commission, Examiner

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# I N D E X



## E X H I B I T S

| APPLICANT'S | OFFERED | ADMITTED |
|---|---|---|
| Exhibits One through Five | 8 | 8 |
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