CASE 4920: Application of MOBIL OIL CORP. FOR DOWN-HOLE COMMINGLING, LEA COUNTY, N. MEX.

Case Number

4920

Application

Transcripts.

Small Exhibits

Etc.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
March 28, 1973

EXAMINER HEARING

IN THE MATTER OF:

Application of Mobil Oil Corporation for down-hole commingling, Lea County, New Mexico

Case No. 4920

BEFORE: Daniel S. Nutter
Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Case 4920.

MR. CARR: Case 4920: Application of Mobil Oil Corporation for down-hole commingling, Lea County, New Mexico.

MR. SPERLING: James E. Sperling, appearing on behalf of the Applicant, Mobil Oil Corporation. We have one witness to be sworn.

MR. HINKLE: Clarence Hinkle, of Roswell, and I would like to enter an appearance on behalf of Atlantic Richfield Company.

* * *

BRUCE BARTHEL,

was called as a witness and after being duly sworn according to law, testified as follows:

DIRECT EXAMINATION

BY MR. SPERLING:

Q Would you please state your name, your place of residence, your employer, and the capacity in which you are employed?

A My name is Bruce Barthel and I am Associate Exploration Engineer in the Reservoir Engineering Group in the Midland Producing Area of Mobil Oil Corporation.

Q Have you on previous occasions testified before the Commission so that your qualifications are a matter of record?

A No, I have not.

Q That being the case, would you please give us a brief resume of your education and background in the profession in which you practice?

A Yes, sir. I graduated from Colorado School of Mines, in 1956, with a degree in petroleum engineering. In 1956 I was employed by Mobil

and I have continued with the same company to the present. Basically in engineering.

Q And are you familiar with the Eunice area in Lea County, New Mexico, which is the leased area which is the subject of this application?

A Yes, sir.

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

MR. NUTTER: Yes, they are.

Q (By Mr. Sperling) What does Mobil seek by this Application, Mr. Barthel?

A Mobil Oil Corporation, as owner and operator of the Stephens Estate Well No. 1, requests an exception to Commission Rule 303-A and authorization to commingle within the well bore of the Stephens Estate Well No. 1 production from the Blinebry, Tubb, Drinkard, Paddock and Wantz-Abo Oil Pools.

Q Would you now please refer to Exhibit 1 and explain for the record what that Exhibit is designed to show and the information it contains?

A Exhibit 1 is a plat of the east Eunice area showing the location of the Stephens Estate Well No. 1. This well is located in Unit "L", 1960 feet from the south line and 660 feet from the west line of Section 24, Township 21 South, Range 37 East in Lea County, New Mexico.

Q Well location is shown by the red circle and the acreage is shown in yellow; is that correct?

A That's correct.

Q Would you refer to Exhibit 2, please, and explain that Exhibit?

A Exhibit 2 is a diagramatic well bore sketch showing the Stephens Estate Well No. 1 as it is now completed. This sketch shows that the well was completed with casing cemented on the bottom. It shows that the well is presently producing from a dual completion from the Blinebry and the Drinkard zones as authorized by MC-1479, dated April 30th, 1964.

It also shows the Wantz-Abo formation which initially produced in this well until it was plugged back in 1964.

Q Would you please refer to what has been marked as Exhibits 3-A and 3-B and explain what is shown on those Exhibits and the purpose of them?

A Exhibit 3-A is a curve of the Drinkard gas and oil production zone from this subject well. Exhibit 3-B is a similar curve of the Blinebry production also on this subject well. Extrapolation of both oil production curves indicate and anticipate production and show the economic limits will be reached in approximately two years.

Q Would you refer to Exhibit 4-A and Exhibit 4-B now, and explain those Exhibits?

A Exhibit 4-A and Exhibit 4-B are the most recent gas-oil ratio tests for the Drinkard and Blinebry zones respectively that were filed on Form C-116 with the Commission on February 14th, 1973.

They show both zones to be flowing and both producing at a low rate.

Q What do you consider to be the recompletion potential of this well?

A The subject well was originally completed in the Wantz-Abo in 1952. In 1958 the Blinebry was dualed with the Wantz-Abo. In 1964 the Wantz-Abo was abandoned and the well was made a Drinkard-Blinebry dual. Because additional development could not be justified to meet the Drinkard obligations, the two current producing zones have been heavily stimulated previously and have only salvaged reserves. By "salvaged reserves" we mean reserves in one zone which can be economically produced, combined with the reserves in the other zones, but not economically produced by themselves. Two zones cannot be economically justified and the two additional zones which have not produced, the Paddock and Tubb also do not have enough potential economically to justify a work-over and the completion costs by themselves.

Q I assume from the Application that Mobil is proposing to recomplete this well as described in the Application, is that right?

A Yes. Mobil proposes to reopen the Wantz-Abo zone and open a new completion in the Tubb and Paddock zones. These new completions would be in addition to the present completions in the Blinebry and Drinkard. It will be our plan to produce all five zones with a single downhole pump with commingling of all zones accordingly within the well bore.

Q Would you now please refer to what has been marked as Exhibit 5 and explain that Exhibit and its purpose?

A Exhibit 5 is an electric log run on the subject well back in 1962. At the time the well was drilled, included on this log, as shown to the right of center, are the formation tops and the current producing intervals in the Blinebry and Drinkard at the old Wantz-Abo perforations,

which is in the center of the log. In addition, on the left side of the center strip we show the proposed completion intervals in the Paddock and Tubb as well as the additional perforations in the three previously mentioned zones.

Q I note, Mr. Barthel, that the perforations are indicated on the log as you described them, but different symbols have been used to indicate the locations of those perforations. Can you explain the difference in symbols?

A The perforation symbol for the old Blinebry and Abo zones are high density perforated intervals whereas those for the Drinkard are limited entries, fewer perforations. Those on the left-hand side are all indicated as limited entry perforations.

Q And those are simply the type of perforations used by this particular method?

A That's correct.

Q Now, would you refer to what has been marked as Exhibit 6, please, and explain that Exhibit?

A Exhibit 6 is just a short east-west cross-section through the subject well. The Exhibit shows the formation to be dipping toward the east with the dip being rather steep on the east side of the Mobil Stephens Estate Lease. On this cross-section, the tops of all the zones are marked for easy reference and also it can be noted the similarity in the dipping of all the formations.

Q Now, would you refer to what has been marked as Exhibit 7 through 7-D, please?

A These are plats showing all the wells near the subject well which have never produced from the four non-productive pools involved in this commingling petition. The structure for all five zones covered in the petition are similar. Water production, for the most part, has been almost negligible. The lack of oil and gas production on toward the east has been primarily due to reduced porosity and permeability as you proceed downstructure. Referring specifically to Exhibit 7-A, the Blinebry in this area was entirely classified as oil until 1971. A few wells currently shown as gas wells have been recently reclassified because of the excessive GOR. Little production exists in the zones eastward beyond the subject well.

The Tubb, as shown on Exhibit 7-B, is basically classified as gas structured toward the west, but offsetting are the Texas-Pacific leases which are classified as oil production.

Drinkard, as shown on Exhibit 7-C, is an area of good accumulative in the west, however, current production around the subject well indicates lower porosities and permeability in the reservoir.

Exhibit 7-D indicates small individual areas of high accumulatives with some wells still showing moderate production. This zone also shows marked permeability loss going eastward, however, there are occasional isolated pockets so that a moderate production dip has been obtained. The nearest Paddock production is approximately two miles west. The logs and drill stem tests in the areas of these Exhibits indicate that the reservoir is tight and only low production can be anticipated.

Q Based upon your study of the information which you have shown on these Exhibits 7-A through 7-D, what conclusions do you draw with reference to these four zones in the immediate area of the subject well?

A In my opinion, the Exhibits 7-A through 7-D show that the Stephens Estate Well No. 1 lies in a high risk area for further opportunity for profit where standard dual completions no longer exist.

Q Would you refer to what has been marked as Exhibit 8, please, and explain the information on that Exhibit?

A Exhibit 8 is a data sheet showing the economic and producing data on the proposed commingling of the subject well. We believe this data shows where the subject well qualifies for consideration as an exception to Rule 303-A. All zones to be commingled are oil zones and the two zones now producing are flowing, however, the actual production equipment is limited. This well could be equipped with a pump unit and it's Mobil's intention to install an artificial lift in the commingled zone. The pressure differential between the zones is small and little or no cross-flow would occur.

This Exhibit shows that the estimated production volumes for each zone do not exceed the limits as set forth in Rule 303-C.

The fluids from each existing zone are compatible with each other as evidenced by the successful commingling of the fluids since 1964.

The working and royalty interests in all zones are common and the rate of settled production by zones was determined and is listed.

Exhibit 9 is a letter of consent to the proposed commingling from Atlantic-Richfield Company.

Q Would you refer to what has been marked as Exhibit 10, please, and explain that Exhibit?

A Exhibit 10 is an extrapolation of the production curve under current operations and the estimated curve if the application for down-hole commingling is granted. Under present conditions the economic life will be reached in two years after only 2,000 barrels of oil are recovered. Under the down-hole commingling plan the life will be extended to eight years with 53,000 barrels of oil recovered.

Q What secondary recovery activity, if any, has there been which has become a reality, or which is contemplated, or which has been contemplated?

A The Eunice area has a fairly high density of completions now and all zones are in the latter stages of completion. Unitization has been considered for the purposes of secondary recovery for the Blinebry and Drinkard zones. Such efforts were begun over three years ago in the areas to the north and west of the subject lease. To date, little agreement has been reached and no meetings have been held for over one year. The Mobil Stephens Estate Lease was the edge lease for both the south and east lines of the area under study and the subject well was to be a producer. As a commingled producer it could still be included in any secondary recovery project if unitization efforts are renewed. In any event the exclusion of the subject lease would not create a windmill for any feasible unitization which, someday, might be formed for secondary recovery; nor would commingling be likely to have any adverse affect on secondary recovery activities.

Q In your opinion, Mr. Barthel, would the granting of this requested down-hole commingling application prevent waste and protect correlative rights?

A Yes, sir. All five zones under consideration in this request are marginal or submarginal in nature. It would not be economically feasible to attempt recompletion in any one zone. Therefore, the reserves from any zone not open at this time are likely to remain unrecovered for all time. While the proposed recompletion and down-hole commingling of the five zones in the Stephens Estate Well No. 1 represent an expenditure in excess of $40,000 with some risk, we believe the proposal for additional recovery can be justified economically.

The Commission has previously approved down-hole commingling for more than two zones on an individual basis to prevent waste and increase recovery of reserves where correlative rights are preserved and maintained.

We believe, therefore, the Stephens Estate No. 1 meets the requirements of the prevention of waste and the protection of correlative rights. We believe this commingling request should be approved as to permit the recovery of additional hydrocarbons from each of the commingled zones in the subject well thereby preventing waste and extending the economic life of these pools in this well.

Q What is your present position insofar as allowables and allocation of production are concerned insofar as they apply to this application?

A We estimate production from the five commingled zones in the subject

well would not exceed 125 barrels of oil per day. The estimated production rate as shown by Exhibit 8 and the percentages would be as follows: the Paddock, 25 percent; the Blinebry, 16 percent; the Tubb, 10 percent; the Drinkard, 16 percent; and the Wantz-Abo, 25 percent.

On Exhibit 8 the Paddock GOR limit is shown as 2000 to 1; the Blinebry, 6000 to 1; the Tubb, 2000 to 1; the Drinkard, 6000 to 1; and the Wantz-Abo, 2000 to 1.

The reasonable average GOR in this case would be 4000 to 1 and we, therefore, further request that a limit for maximum amounts of gas which may be produced from the commingled zones in the subject well be not less than that determined by multiplying the GOR limit of 4000 to 1 times the top commingled production allowable of 125 barrels of oil which is 500 mcf of gas per day.

Q I think it might be well, at this time, Mr. Barthel, for you to summarize what has been presented by way of the Exhibits and by way of your testimony that you have given in this matter. Would you please do that?

A The two current producing zones are classified as oil zones because of the structural position and offset production and well classifications. We believe the other three zones would also be so classified. All five zones are classified as salvage, which we indicated before and the total production potential, even if there would be a period of flush production, would be less than 125 barrels of oil per day.

Both zones currently produced are flowing, but neither is

economically feasible to pump. It is intended that a pumping unit be set to deplete all these low pressure zones. The two current producing zones as well as the Wantz-Abo zone should make little if any water based on their production history. The Tubb averages no more than one barrel of water per day and the Paddock did not recover any free water on the drill stem test. The crudes have similar properties and should be entirely compatible. The total value of crude will not be reduced and payment will be based on composite production. The royalty and working interest ownership is the same in all five zones.

Q Do you have anything further?

A No, sir.

MR. SPERLING: At this time we would like to offer the Exhibits already identified in this case, Mr. Examiner.

MR. NUTTER: Applicant's Exhibits 1 through 6 and 7-A through 7-D and 8 through 10 will be admitted in evidence.

(Whereupon, the above mentioned Exhibits were entered in evidence.)

MR. SPERLING: I have no further questions of the witness.

MR. NUTTER: Does anyone have any questions of the witness?

MR. HINKLE: Yes.

* * *

CROSS EXAMINATION

BY MR. HINKLE:

Q I believe you stated that you have requested waivers from all offset operators?

A Yes, sir.

Q Have you received any waivers?

A Yes, sir, from, I believe, three of the offset operators.

MR. HINKLE: That's all I have.

* * *

CROSS EXAMINATION

BY MR. NUTTER:

Q You have a Blinebry oil well right now, do you not?

A Yes, sir.

Q However, I notice from your production decline curve in Exhibit 3-B that the gas had held relatively constant in this well and the oil production had declined. Now, doesn't it make it appear that if you left the well completed as it is that eventually the GOR would be such that it might be classified a gas well in the Blinebry?

A I think we have to admit this is a possibility. That has been the case in previous Blinebry wells.

Q The total gas volume involved is virtually insignificant to the total gas production, isn't that right?

A The high GOR is a result of low oil production and not high gas production.

Q But it would be classified a gas well? Well, we don't have a structure map here, but we do have the cross-section and the well that is directly north of this well, two locations away, is a gas well in the Blinebry, according to your Exhibit 7, that being the Gulf-Stephens No. 1?

A Yes, sir.

Q And the well south of your well two locations away is a gas well, the Texas-Pacific No. 2?

A Correct.

Q Does the structure dip evenly to the east?

A Those six wells in a row are certainly all structurally even.

Q So, structurally, we have the possibility of getting a gas well here. I also note you are proposing to perforate two sections in the Blinebry formation that are above the current formation, do you know what those two sections are productive of?

A We haven't gone into that detailed a study. All zones perforated were the better productive intervals, as interpreted by our geologist. The additional perforations, we feel, are necessary in this well at this time to provide maximum recovery.

Q And you plan further perforating in the Blinebry formation below the current perforations?

A That's correct.

Q Would you rule out the possibility of getting a real barnburner if you perforate into one of these stringers?

A There could be a temporary flush of gas or oil, but in the long run, I think, gas production is limited by the reservoir and we would expect the flush production to last for only a very short time.

Q On your Exhibit 7-B you show several wells in the Tubb pool which is also an oil and gas pool and it appears that about the only oil wells in the Tubb are the Texas-Pacific wells directly to the south.

A That's right.

Q So there is the possibility even in the Tubb that you might get a gas well, is that correct?

A This is probably a much more remote possibility. The Texas-Pacific is slightly updip from us and their current gravity of liquid is approximately 37 degrees psi. I would anticipate very little change in gas completions in the Tubb at this location.

Q Well, when you complete the well will you perforate and test each of these formations separately?

A Since we have already numerous perforations the economics wouldn't justify individual testing other than just short-span tests because we would have a packer below -- I mean a plug below and a packer above with the perforations open above.

Q So you would start from the bottom and come up?

A That's correct. And we would treat each zone coming up.

Q So by the time you got to the top you really wouldn't know how much was coming from any zone?

A That's correct.

Q And you wouldn't know whether you had a gas well in the Blinebry, would you?

A Since we don't now have it, I wouldn't anticipate excessive gas production.

MR. NUTTER: Does anyone else have any further questions of the witness?

MR. SPERLING: I have.

* * *

REDIRECT EXAMINATION

BY MR. SPERLING:

Q I believe you stated in response to one of the Examiner's questions that it would not be possible to determine whether or not gas was present in the Blinebry as a result of the work-over procedure which you have outlined. Would it be possible to test the Blinebry on the way up from the bottom?

A This wouldn't be entirely a blind completion, we would be swab-testing each zone before we proceeded to the next one. It's not economically feasible to completely clean up any one zone before we proceed, but we will swab-test each zone.

MR. NUTTER: You will have swab-tests on each zone?

THE WITNESS: Yes.

MR. SPERLING: I have nothing further.

MR. NUTTER: The witness may be excused.

(Witness excused.)

MR. HINKLE: I have one witness who I would like to have sworn.

* * *

JERRY L. TWEED

appeared as a witness, and after being duly sworn according to law, testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q Would you state your name and your residence and by whom you are

employed?

A Jerry Tweed. I live in Midland, Texas, and I'm employed by Atlantic-Richfield Company.

Q What is your position with Atlantic-Richfield?

A Petroleum Engineer.

Q Have you previously testified before the Commission or one of its Examiners?

A Yes, I have.

Q A good many times?

A Yes.

Q Have your qualifications as a Petroleum Engineer been made a matter of record before the Commission?

A Yes.

Q Are you familiar with the area which involves the subject well in this case?

A Yes.

Q Have you made a study of this area?

A Yes.

Q And all wells drilled in the vicinity?

A Yes.

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

MR. NUTTER: They are.

Q (By Mr. Hinkle) Does Atlantic-Richfield have any objections to the Application in this case?

A Yes, we primarily have two objections. Referring to my Exhibit 1,

this is an outline of our proposed waterflood unit. We are in the process of trying to unitize this area for the purpose of waterflooding the Blinebry and Drinkard formations. As has been previously stated, we haven't had meetings in over a year. We have been carrying on informal negotiations with the United States Geological Survey to determine a means of flooding these two zones. Our negotiations have been concluded and we have called another unitization meeting for April 5th for this particular unit.

Q In that connection you have already contacted most of the operators in the area?

A Yes, sir.

Q What is their disposition with respect to the forming of the unit?

A The last time we had a meeting everybody was quite willing and seemed interested in forming a waterflood unit.

Q What zones do you intend, now, to waterflood?

A We intend to waterflood the Blinebry and Drinkard. The Tubb, particularly, lies between the Blinebry and Drinkard and if the Tubb is open in this well or if this became a common practice and it was open in quite a few of the wells in the area, it would create considerable problems in recovering the secondary reserves from the Drinkard. You will be faced with the problem of having perforations open above you and you would be running the risk of communication behind your packer.

Q Is it a fact that the Tubb wells are mostly gas wells in this area?

A Yes, sir.

Q Can you point out to the Examiner the Tubb gas wells?

A First of all, the Texas-Pacific well previously referred to is an oil well, but it produces with a GOR of approximately 68,000 to 1, or it did for the month of January. In Section 23 our Number 5 well is a Tubb gas well. Also, in Section 23, our Barton No. 1 is a Tubb gas well. Essentially the Tubb is a gas reservoir even though there are a few scattered wells classified as oil wells and most of them have extremely high GORs, they just fall below the 100,000 to 1 limit and were classified as oil wells. They are sprinkled in among the gas wells. I think there would be an awfully good chance that this particular completion might be a gas well in the Tubb.

The gravity on the Texas-Pacific is 37 degrees, however, I am not aware of the gas-oil contact in this area. Generally, where you have an oil classification it's just because it did fall just below the 100,000 to 1 limit.

Also, on this completion they would be allowed to take more gas from the 40 acres than is allowed to be taken off 40 acres under Tubb gas classifications.

Q In view of the proposed waterflood units, if the Commission should see fit to grant this Application, in your opinion, would it be in the interest of conservation and the prevention of waste to exclude the Tubb formation from the commingling?

A Yes, I think so. We have no objection to commingling the other ~~four~~ zones. The Tubb is the one we object to opening for the two reasons stated. One: we think it's probably a gas well; and two: if this became a common practice in the area it would be detrimental to the

waterflood of the Drinkard.

Q Do you think the correlative rights would be better protected by excluding the Tubb?

A Yes, I do.

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

A No.

MR. HINKLE: That's all.

MR. NUTTER: What about these other perforations proposed in the Blinebry?

THE WITNESS: Well, originally in their well they were below the gas-oil contact and in all honesty it could be a gas well. In all honesty, they are in an oil area in the Blinebry and I think the high GOR is just solution gas. However, in some areas it does exceed 32,000 to 1 for oil wells and they do get classified as gas wells. There is the possibility that they could make gas, but I don't think -- I wouldn't suspect that the GOR would be too much different from what they are producing now.

MR. NUTTER: Have you already determined which wells would be injection wells and which would be producing wells in your waterflood project?

THE WITNESS: Yes.

MR. NUTTER: What would be the pattern of those wells?

THE WITNESS: The Mobil No. 1 would be a producer --

MR. NUTTER: Where are the injection wells?

THE WITNESS: The Gulf well to the north, our No. 3 well to the west, and the Mobil-Stephens No. 2 well to the south.

MR. NUTTER: Are there any questions of the witness?

MR. SPERLING: Yes.

* * *

CROSS EXAMINATION

BY MR. SPERLING:

Q Do you have any information on Tubb gas volume in this immediate area?

A Yes, sir. I took down the volume for January on the Texas-Pacific well. For the month of January it made 37 barrels of oil and 2,532 mcf of gas. Our No. 1 well, in Section 26, made no oil and 13,235 mcf of gas in January. Our No. 5 well in Section 23 made 81 barrels of oil and 17,744 mcf of gas in January. The Shell well in Section 23 made no oil and 24,658 mcf of gas in January. The Getty well in Section 23 made 130 barrels of oil and 9,821 mcf of gas. Our Barton No. 1 in Section G -- Unit G in Section 23, made 25 barrels of oil and 250 mcf of gas for the month of January. The Continental Lockhart in Section 14 made 42 barrels of oil and 1,770 mcf of gas. I think that covers the nearby wells. I have more if you want them.

Q That's sufficient. Thank you. Would it be necessary to keep the fluid pumped down in the Blinebry and Drinkard?

A Do you mean if we waterflooded?

Q Yes.

A We would attempt to keep the wells pumped down.

Q Do you think this would be more difficult with the Tubb open?

A Yes.

Q Why?

A I think the Tubb would be thief production.

Q What do you base that opinion on?

A Just previous experience. I have previously attempted to produce zones where you have higher pressure zones above lower pressure zones and, although you attempt to keep a certain amount of fluid above, you load your pump and, wham, you are making large volumes of water, you don't have the well completely pumped out and you also have difficulty, which the Tubb is going to have, supporting the well to properly produce it and you have a tendency for lower zone thieving.

Q What information do you have on pressure differentials in these three zones?

A I have no information on the Paddock or the Abo at the present time -- I think all three of them are close to the same pressure, but the Tubb might be slightly higher.

MR. SPERLING: That's all I have.

* * *

CROSS EXAMINATION

BY MR. NUTTER:

Q You say that you don't have any objection to the ~~four~~ other formations being open as long as the Tubb is not. What about the Abo, it's even lower isn't it?

A In the event the waterflood is formed, we will just set a plug above the Abo.

Q You mean in the event this well is operating?

A In the event this well is included in the waterflood, at that time we will just go in and set a plug above the Abo. This is relatively inexpensive whereas attempting to utilize the Tubb between the two zones is extremely risky and expensive.

Q So, if the well was waterflooded you wouldn't have any production below the Drinkard then?

A No, sir.

MR. NUTTER: Are there any further questions?

(No response.)

(Witness excused.)

MR. HINKLE: If I have not already done so, I would like to offer Atlantic-Richfield ~~Exhibits~~ Exhibit 7-A through 7-D in evidence.

MR. NUTTER: If there is no objection they will be admitted.

(Whereupon Atlantic-Richfield Exhibits 7-A through 7-D were admitted in evidence.)

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

MR. LYON: I have a statement, please. T. V. Lyon, representing Continental Oil Company.

Continental Oil Company is well aware of the growing demand for crude oil in this country and the diminishing supply continues. The situation is making, and will continue to make increasing demands for relaxation of controls which have been used to achieve conservation of oil and gas. Continental has been an advocate of down-hole commingling and has held a prominent role in the achievement of the present status of this practice in New Mexico. We have not, however, gotten to the point of

advocating the abandonment of individual pool controls by lumping together any and all producing zones. The time will come, we believe, that this will be done and when that time arrives it is our belief that pool nomenclatures should be changed to eliminate the individual pools and thus avoid the requirement for obtaining commingling authority.

We object to the Application here because, as we understand it, in Mobil's Application the location of the Wantz-Abo is based on nine year old data and no data at all on the Tubb and Paddock. Considering the fact that they are opening an additional Blinebry zone we think that data on the Blinebry is certainly considerable.

We would have no objections to the reservoir characteristics of all zones being commingled so to permit evaluation to assure no underground waste would occur and to permit reasonably accurate allocations of production to the pools involved.

MR. NUTTER: Thank you. Does anyone else have a statement in Case 4920?

(No response.)

MR. NUTTER: If not, Case 4920 will be taken under advisement.

STATE OF NEW MEXICO)
)ss
COUNTY OF BERNALILLO)

I, RICHARD E. McCORMICK, a Certified Shorthand Reporter, 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

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4920, heard by me on 3/28, 1973.

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

INDEX

E X H I B I T S

	ADMITTED	OFFERED
MOBIL OIL CORPORATION		
Exhibit #1 - Plat	13	4
Exhibit #2 - Well bore sketch	13	5
Exhibit #3-A - Curve (Drinkard zone)	13	5
Exhibit #3-B - Curve (Blinebry zone)	13	5
Exhibit #4-A - Form C-116 (Drinkard zone)	13	5
Exhibit #4-B - Form C-116 (Blinebry zone)	13	5
Exhibit #5 - Electric Log	13	6
Exhibit #6 - Cross-section	13	7
Exhibit #7-A through 7-D - Plats	13	7
Exhibit #8 - Data sheet	13	9
Exhibit #9 - Letter of Consent	13	9
Exhibit #10 - Production curve	13	10
ATLANTIC-RICHFIELD		
Exhibit #1 - Outline	24	18
Exhibit #7-A through 7-D	24	24

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 · SANTA FE
87501

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

June 15, 1973

Re: Case No. 4920
Order No. R-4504
Applicant:
Mobil Oil Corporation

Mr. James E. Sperling
Modrall, Sperling, Roehl & Harris
Attorneys at Law
Public Service Building
Box 2168
Albuquerque, New Mexico 87103

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC

Other Mr. Clarence Hinkle and Mr. Vic Lyon

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 4920
Order No. R-4504

APPLICATION OF MOBIL OIL CORPORATION
FOR DOWN-HOLE COMMINGLING, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 28, 1973, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 15th day of June, 1973, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Mobil Oil Corporation, is the owner and operator of the Stephens Estate Well No. 1, located in Unit L of Section 24, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That the Wantz-Abo Zone produced in said well until 1964 at which time it was plugged back.

(4) That said well is currently producing as a dual completion in the Blinebry Oil and Drinkard zones as authorized by Order No. MC-1479.

(5) That the applicant proposes to complete the subject well in such a manner as to produce oil from the Blinebry, Tubb, Drinkard, Paddock, and Wantz-Abo Oil Pools through a single string of tubing, commingling in the well-bore the production from said pools.

(6) That the evidence indicates that the Tubb zone in the subject well would very likely be classified as a gas well if it were completed as a single completion in said formation.

(7) That the subject well is located within the horizontal limits of land covered by a proposed unit agreement for the secondary recovery of oil from the Blinebry and Drinkard formations.

(8) That opening up all five of the zones proposed to be commingled in a common well-bore would jeopardize the efficiency of waterflood operations in the Blinebry and Drinkard zones in the immediate area.

(9) That applicant should devise some means of protecting the efficiency of the proposed waterflood operations in the immediate area if it is to commingle any or all of the five proposed zones in the subject well.

(10) That unless such is done, waste might result and correlative rights be impaired if the application is approved.

(11) That the application should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of Mobil Oil Corporation to commingle production from the Blinebry, Tubb, Drinkard, Paddock, and Wantz-Abo Pools in the well-bore of its Stephens Estate Well No. 1, located in Unit L of Section 24, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico, is hereby denied.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary

THE APPLICATION OF SOCONY MOBIL OIL COMPANY, INC., FOR A DUAL COMPLETION.

ORDER NO. MC-1479

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION COMMISSION

Under the provisions of Rule 112-A, Socony Mobil Oil Company, Inc., made application to the New Mexico Oil Conservation Commission on April 10, 1964, for permission to dually complete its Stephens Estate Well No. 1 located in Unit L of Section 24, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico, in such a manner as to produce oil from the Terry-Blinebry Pool and the Drinkard Pool.

Now, on this 30th day of April, 1964, the Secretary-Director finds:

(1) That application has been duly filed under the provisions of Rule 112-A of the Commission's Rules and Regulations;

(2) That satisfactory information has been provided that all operators of offset acreage have been duly notified; and

(3) That no objections have been received within the waiting period as prescribed by said rule.

(4) That the proposed dual completion will not cause waste nor impair correlative rights.

(5) That the mechanics of the proposed dual completion are feasible and consonant with good conservation practices.

IT IS THEREFORE ORDERED:

That the applicant herein, Socony Mobil Oil Company, be and the same is hereby authorized to dually complete its Stephens Estate Well No. 1 located in Unit L of Section 24, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico, in such a manner as to produce oil from the Terry-Blinebry Pool and the Drinkard Pool through parallel strings of tubing.

PROVIDED HOWEVER, That applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A.

PROVIDED FURTHER, That applicant shall take packer-leakage tests upon completion and annually thereafter during the Annual GOR Test Period for the Drinkard Pool.

IT IS FURTHER ORDERED: That jurisdiction of this cause is hereby retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

A. L. PORTER, Jr.,
Secretary-Director

SEAL

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 28, 1973

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Elvis A. Utz, Alternate Examiner:

CASE 4913: (Continued from the February 28, 1973 Examiner Hearing)

Application of Lone Star Industries, Inc. for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests underlying the N/2 of Section 12, Township 30 North, Range 5 West, to be dedicated to a well to be drilled at a standard location to the Basin-Dakota Pool.

Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4919: Application of Mobil Oil Corporation for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 320-acre non-standard gas proration unit comprising the W/2 SW/4 and SE/4 SW/4 of Section 28, and the NW/4 and SW/4 NE/4 of Section 33, all in Township 21 South, Range 37 East, adjacent to the Eumont Gas Pool, Lea County, New Mexico, to be dedicated to its E. O. Carson Well No. 4 located in Unit N of said Section 28.

CASE 4920: Application of Mobil Oil Corporation for down-hole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle marginal production from the Blinebry, Tubb, Drinkard, Paddock, and Wantz-Abo Oil Pools in the well-bore of its Stephens Estate Well No. 1 located in Unit L of Section 24, Township 21 South, Range 37 East, Lea County, New Mexico.

CASE 4921: Application of Sun Oil Company for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the perforated interval from 4267 feet to 4416 feet in its New Mexico A-3 State Well No. 5 located in Unit D of Section 33, Township 7 South, Range 33 East, Chaveroo-San Andres Pool, Roosevelt County, New Mexico.

CASE 4922: Application of Pennzoil Company for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a producing well at an unorthodox location 1330 feet from the North and West lines of Section 20, Township 17 South, Range 33 East, Maljamar Pool, Lea County, New Mexico. Applicant further seeks the adoption of a procedure for administrative approval of additional producing and injection wells at unorthodox locations in its Western State Waterflood Project in Sections 17 and 20, Township 17 South, Range 33 East.

DIAGRAMMATIC WELL SKETCH
STEPHENS ESTATE WELL NO. 1
TERRY (BLINEBRY & DRINKARD) POOL
LEA COUNTY, NEW MEXICO

MC 1479
approved
denial:
Blank &
DM oil

ELEVATIONS
G.L. 3426'
K.B. 3436'

10 3/4" - 32.75 #/Ft. Set w/350 sx. circ. — 329'
Cement Top (Temp. Survey) — 594'

— 3,000'

7 5/8" - 24 #/Ft. H-40 Set w/1155 sx. — 3,145'

BLINEBRY PERFORATIONS
5684' - 5702'
5776' - 5796'
5862' - 5867'
5878' - 5888'
5892' - 5897'

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Mob. EXHIBIT NO. 2
CASE NO. 4920

Guib. RH-1 Hyd. Pkr. — 5,997'

DRINKARD PERFORATIONS
6514' - 6644'

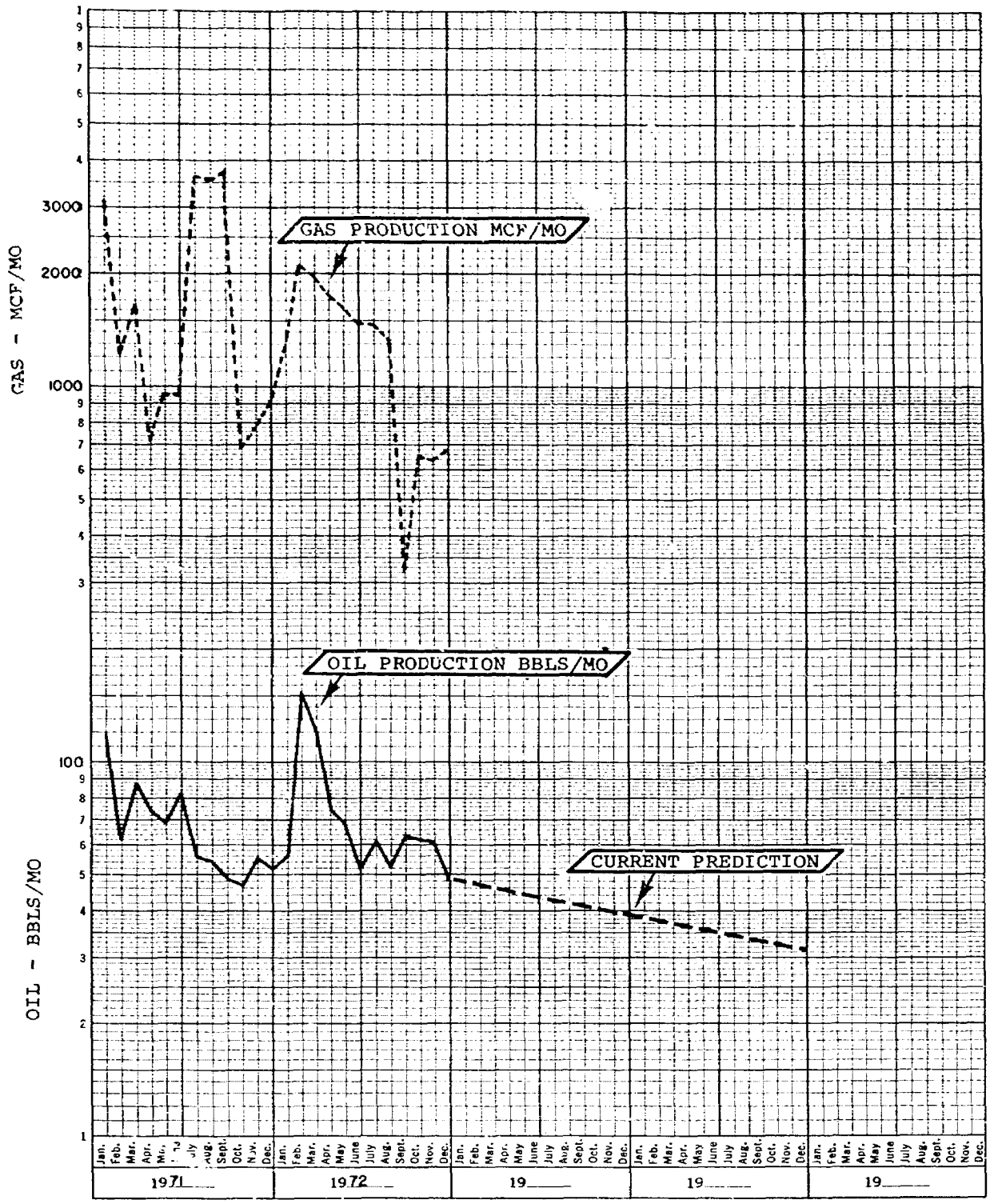
DR Plug Set in Baker — 7,000' P.B.T.D.
Model "D" Pkr. w/1 sx. Sand on top

ABO PERFORATIONS
7035' - 7069'
7085' - 7091'
7100' - 7103'

C.I.B.P. — 7,149'
— 7,154'
7168' - 7198

5 1/2" - 16.87 #/Ft. J-55 Set w/1660 sx Circ. — 7,481' T.D.

1-25-73
lew



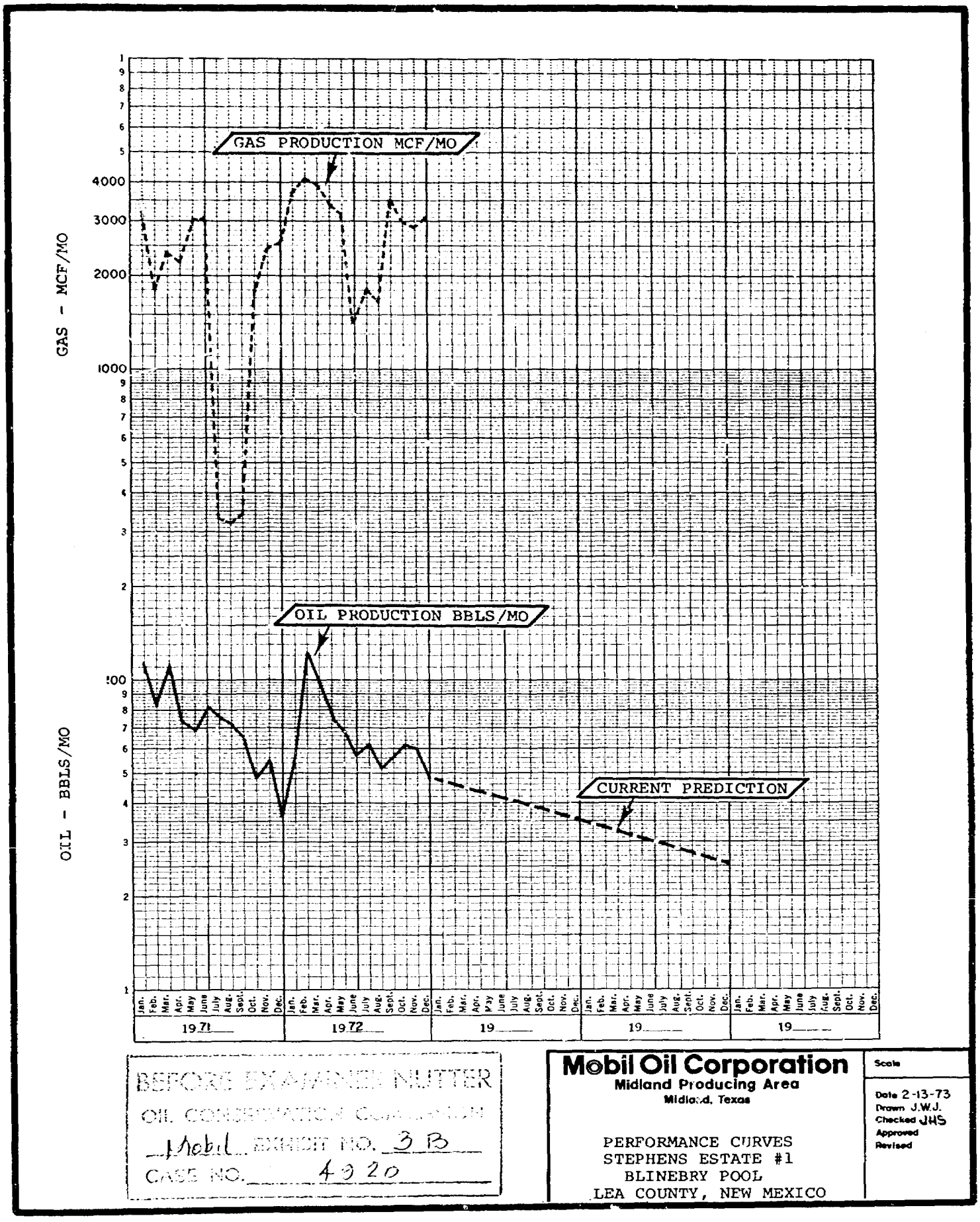
Mobil Oil Corporation
Midland Producing Area
Midland, Texas

PERFORMANCE CURVES
STEPHENS ESTATE #1
DRINKARD POOL
LEA COUNTY, NEW MEXICO

Scale

Date 2-13-73
Drawn J.W.J.
Checked JHS
Approved
Revised

BEFORE EXAMINER MUTTER
OIL CONSERVATION COMMISSION
Mobil EXHIBIT NO. 3A
CASE NO. 4920



BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Mobil EXHIBIT NO. 3B
CASE NO. 4920

Mobil Oil Corporation
Midland Producing Area
Midland, Texas

PERFORMANCE CURVES
STEPHENS ESTATE #1
BLINEBRY POOL
LEA COUNTY, NEW MEXICO

Scale

Date 2-13-73
Drawn J.W.J.
Checked JHS
Approved
Revised

NEW MEXICO OIL CONSERVATION COMMISSION

GAS-OIL RATIO TESTS

C-116
Revised 1-1-65

Operator: Mobil Oil Corporation
Pool: Drinkard
County: Lea
Address: P. O. Box 633, Midland, Texas 79701
TYPE OF TEST - (X): Scheduled [ ] Completion [ ] Special [X]

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS - OIL RATIO CU.FT/BBL.
Stephens Estate	1	L	24	21	37	2-9-73	F	24/64	-	4	24	1	38.6	4	6.9	1725

Mobil
4920
1 A

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

J. H. Seerey
(Signature)
Associate Engineer
(Title)
February 14, 1973
(Date)

NEW MEXICO OIL CONSERVATION COMMISSION

GAS-OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County
Mobil Oil Corporation	Blinebry	Lea
Address	TYPE OF TEST - (X)	Scheduled [ ] Completion [ ] Special [X]
P. O. Box 633, Midland, Texas 79701		

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS - OIL RATIO CU.FT/BBL.
Stephens Estate	1	L	24	21	37	2-9-73	F	24/60	100	-	24	0	37.1	4	77	19250

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

J. H. Seerey
(Signature)

Associate Engineer
(Title)

February 14, 1973
(Date)

MOBIL OIL CORPORATION
PROPOSED DOWNHOLE COMMINGLING
STEPHENS ESTATE WELL NO. 1

VALUE DATA

Pool Name	Paddock	Blinebry	Tubb	Drinkard	Abo	Commingled
Gravity, API	36.9	37.1	41.5	38.6	40.1	39.1
Selling Price $/Bbl	3.37	3.50	3.56	3.52	3.56	3.54
Existing Production BOPD	0	4	0	4	0	
Estimated Production BOPD	15	10	10	10	15	60

Existing Daily Income $28.08

Estimated Daily Income (commingled) $/Day = $212.40

GENERAL DATA

Pool Name	Paddock	Blinebry	Tubb	Drinkard	Abo
Proposed Interval O. A.	5250'-5447'	5619'-6024'	6073'-6380'	6514'-6718'	6914'-7198'
Producing Method	-	F	-	F	-
Proposed Producing Method	P	P	P	P	P
Well Test 2-9-73					
Oil BOPD	-	4	-	4	-
Water BWPD	-	0	-	1	-
Gas MCF/da	-	77	-	6.9	-
GOR	-	19250	-	1725	-
GOR Limit	2000	6000	2000	6000	2000
Estimated BHP - psi	None available in this area	699	640	669	700

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Mob. U EXHIBIT NO. 8
CASE NO. 4920

Revised JHS

North American Crude Oil Supply
Post Office Box 2819
Dallas, Texas 75221
Telephone 214 741 7461

E. J. Henry, Jr.
Manager

February 8, 1973

Mr. T. N. Ludlum
Crude Oil Department
Mobil Oil Corporation
P. O. Box 633
Midland, Texas 79701

RE: Mobil Oil Corp.
Stephens Estate #1
Section 24, 21S, 37E
Lea County, New Mexico
Downhole Commingling Application

Dear Sir:

From your letter of February 1 on the above subject, I would assume that the gravity for each producing zone would be considered to be that set out in your letter so long as the zone was producing and that we would pay for allocated barrels our posted price for these gravities. This procedure would be quite acceptable, however, I am puzzled as to how we handle the matter should the actual observe gravity exceed the weighted average gravity by more than .3 of a degree or fall below by more than .7 of a degree. I presume it would be difficult to determine the exact cause of such variation. This being so, I am wondering if it would not be simpler for us to merely pay our posted price for the observed gravity of the barrels taken. Presumably the value of the differing gravities of the various zones would be reflected in the posted price and the observed gravity would do likewise.

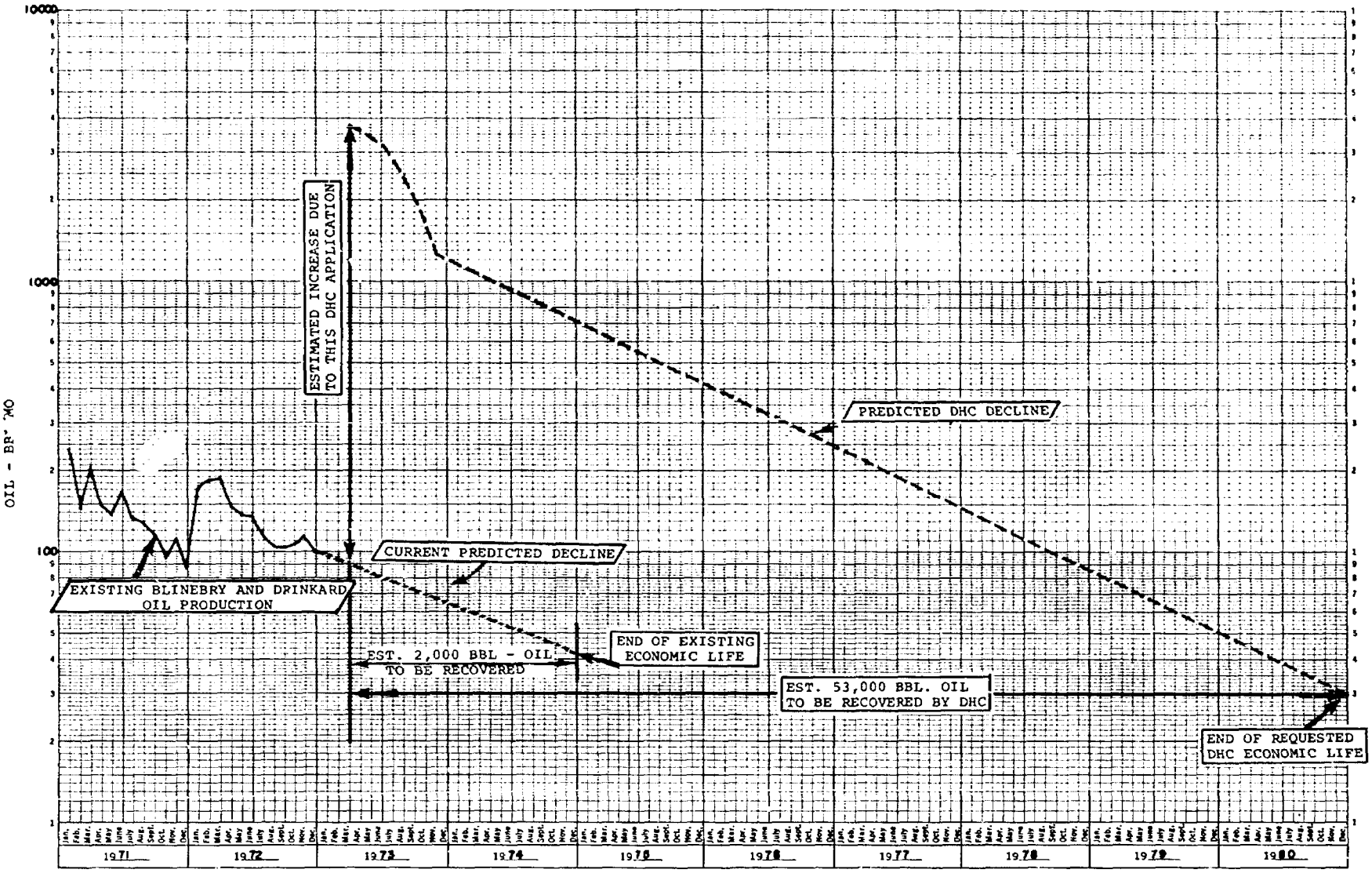
In any event, we are agreeable to your proposal and will await further word from you.

Yours very truly,

E. J. HENRY, JR.

EJHjr:emp

xc - Messrs. C. F. Potts (w/attach.)
B. F. Sutherland "



TIME-YEARS

Mobil Oil Corporation
EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

SCALE
DATE 2-23-73
DRAWN BY JWF
CHECKED JHS
APPROVED
REVISED

COMPOSITE PERFORMANCE CURVES
STEPHENS ESTATE #1
PADDOCK, BLINEBRY, TUBB, DRINKARD & ABO POOLS
LEA COUNTY, NEW MEXICO

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Mobil EXHIBIT NO. 10
CASE NO. 4920

Mar 4 9 2 0

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Attn: Mr. A. L. Porter, Jr.

APPLICATION OF MOBIL OIL CORPORATION FOR EXCEPTION TO RULE 303 (A) FOR AUTHORIZATION TO DOWNHOLE COMMINGLE PRODUCTION FROM THE WANTZ ABO, DRINKARD, TUBB OIL, BLINEBRY OIL, AND PADDOCK POOLS IN MOBIL'S STEPHENS ESTATE WELL NO. 1 LEA COUNTY, NEW MEXICO

Gentlemen:

The undersigned has been notified of Mobil Oil Corporation's application to commingle the subject production in the wellbore of Mobil's Stephens Estate Well No. 1, Unit L, Section 24, T21S, R37E, Lea County, New Mexico, as an exception to Rule 303 (A). Please be advised that we, as offset operator, have no objection to the Commission granting approval to the proposed downhole commingling.

Yours very truly,

Company: King Resources Company

Representative: Hobson Mann

Signature: Hobson Mann

Title or Position: Vice President-Production

Date: March 7, 1973

RECEIVED
MAR 12 1973
OIL CONSERVATION COMM
Santa Fe

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Attn: Mr. A. L. Porter, Jr.

APPLICATION OF MOBIL OIL CORPORATION FOR EXCEPTION TO RULE 303 (A) FOR AUTHORIZATION TO DOWNHOLE COMMINGLE PRODUCTION FROM THE WANTZ ABO, DRINKARD, TUBB OIL, BLINEBRY OIL, AND PADDOCK POOLS IN MOBIL'S STEPHENS ESTATE WELL NO. 1 LEA COUNTY, NEW MEXICO

Gentlemen:

The undersigned has been notified of Mobil Oil Corporation's application to commingle the subject production in the wellbore of Mobil's Stephens Estate Well No. 1, Unit L, Section 24, T21S, R37E, Lea County, New Mexico, as an exception to Rule 303 (A). Please be advised that we, as offset operator, have no objection to the Commission granting approval to the proposed downhole commingling.

Yours very truly,

Company: Texas Pacific Oil Co., Inc.

Representative: R.J. Womack

Signature: R. J. Womack

Title or Position: District Manager

Date: March 8, 1973

Case 4920

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Attn: Mr. A. L. Porter, Jr.

APPLICATION OF MOBIL OIL CORPORATION FOR EXCEPTION TO RULE 303 (A) FOR AUTHORIZATION TO DOWNHOLE COMMINGLE PRODUCTION FROM THE WANTZ ABO, DRINKARD, TUBB OIL, BLINEBRY OIL, AND PADDOCK POOLS IN MOBIL'S STEPHENS ESTATE WELL NO. 1 LEA COUNTY, NEW MEXICO

Gentlemen:

The undersigned has been notified of Mobil Oil Corporation's application to commingle the subject production in the wellbore of Mobil's Stephens Estate Well No. 1, Unit L, Section 24, T21S, R37E, Lea County, New Mexico, as an exception to Rule 303 (A). Please be advised that we, as offset operator, have no objection to the Commission granting approval to the proposed downhole commingling.

Yours very truly,

Company: Texas Oil Corporation

Representative: R. W. Anderson

Signature: R. W. Anderson

Title or Position: President

Date: 3-5-73

Case 4920

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Attn: Mr. A. L. Porter, Jr.

APPLICATION OF MOBIL OIL CORPORATION FOR EXCEPTION TO RULE 303 (A) FOR AUTHORIZATION TO DOWNHOLE COMMINGLE PRODUCTION FROM THE WANTZ ABO, DRINKARD, TUBB OIL, BLINEBRY OIL, AND PADDOCK POOLS IN MOBIL'S STEPHENS ESTATE WELL NO. 1 LEA COUNTY, NEW MEXICO

Gentlemen:

The undersigned has been notified of Mobil Oil Corporation's application to commingle the subject production in the wellbore of Mobil's Stephens Estate Well No. 1, Unit L, Section 24, T21S, R37E, Lea County, New Mexico, as an exception to Rule 303 (A). Please be advised that we, as offset operator, have no objection to the Commission granting approval to the proposed downhole commingling.

Yours very truly,

Company: Imperial-American Resources Fund, Inc.

Representative: Ben K. Smith

Signature: Ben K. Smith

Title or Position: Consultant to the Trustee

Date: March 5, 1973

Mobil Oil Corporation

Case 5126

P.O. BOX 633
MIDLAND, TEXAS 79701

February 27, 1973

New Mexico Oil Conservation Commission (2)
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. A. L. Porter, Jr.

APPLICATION OF MOBIL OIL CORPORATION FOR EXCEPTION TO RULE 303 (A) FOR AUTHORIZATION TO DOWNHOLE COMMINGLE PRODUCTION FROM THE WANTZ ABO, DRINKARD, TUBB OIL, BLINEBRY OIL, AND PADDOCK POOLS IN MOBIL'S STEPHENS ESTATE WELL NO. 1 LEA COUNTY, NEW MEXICO

Gentlemen:

Mobil Oil Corporation respectfully requests an exception to the Commission's Rule 303 (A) and authorization to commingle, within the well-bore of Mobil's Stephens Estate Well No. 1, production from the Wantz Abo, Drinkard, Tubb Oil, Blinebry Oil and Paddock Pools. The Stephens Estate #1 is located in Unit L, 1980' from the south line and 660' from the west line of Section 24, T21S, R37E, Lea County, New Mexico, and is shown on Attachment #1.

The Stephens Estate Well No. 1 is currently producing as a dual completion from the Blinebry Oil and Drinkard zones, as authorized by Order MC-1479, dated April 30, 1964. The Wantz Abo zone produced in this well until it was plugged back in 1964; however, Mobil now proposes to reopen the Wantz Abo zone in addition to new completions in the Tubb Oil and Paddock zones. Attachment #1-A is a diagrammatic well sketch of the subject well, as it is now completed.

We believe that the subject well will qualify for consideration as an exception to Rule 303 (A) since all zones requested to be commingled are oil zones and the two zones now producing are flowing; however, we would plan to install artificial lift on the combined commingled zones. As further evidence, Attachment #2 shows that the existing and estimated production volumes of oil and water from each zone do not exceed the limits extrapolated from those set forth in Rule 303 (C). The fluids from each of the existing zones are compatible with each other, as evidenced by the successful surface commingling of the fluids since 1964. It is our estimate that the final commingled crude of this application will be equally compatible.

DOCUMENT MAILED
Date 3/15/73

As shown on Attachment #2, the sale value of the commingled crude will basically remain unchanged. The ownership of all zones to be commingled is common, including working interest and royalty. Attachment #3 is a letter of consent to the proposed commingling executed by Atlantic Richfield Company who is the purchaser of the subject crude.

The Drinkard formation has produced in the subject well since 1952. As shown on Attachment #4, a decline curve for the past two years, the Drinkard production has declined to 48 barrels of oil per month. The Blinebry formation has been produced in the subject well since 1958. Its production has declined to 48 barrels of oil per month, as shown on Attachment #5. The Wantz Abo formation in this well-bore was producing 13 barrels of oil per day in 1964 when this well was plugged back. Due to the location of the Stephens Estate Well No. 1, which is approximately 3 miles northeast of the structural high for all formations in this request, we believe that the following characteristics can be applied to all five formations of this application in the vicinity of the Stephens Estate #1:

a. Relatively low permeability.
b. Relatively low porosity.
c. Primary recoveries have been low.
d. Located considerably down-structure.
e. Little or no production exists any further East.
f. Most wells have been hydraulically fractured.
g. No secondary recovery potential.

In view of the above facts, and as further evidenced by the failure of unitization efforts for secondary recovery in the area of the subject well, we conclude that all five of the subject formations in the Stephens Estate #1 must be classified as salvage production situations.

As shown on Attachment #6, we estimate that the present dual completion of the Blinebry and Drinkard Pools in the subject well represents only 2000 barrels of remaining recoverable oil with an economic life of two more years. As further shown on Attachment #6, we believe that proposed downhole commingling of the Paddock, Blinebry, Tubb, Drinkard and Abo Pools in the subject well will result in an estimated 53,000 barrels of recoverable oil with an economic life of eight more years. While the proposed recompletion and downhole commingling of five zones in the Stephens Estate #1 represents an expenditure in excess of $40,000, with some risk, we believe that this proposal for additional recovery can be justified economically; whereas, lesser attempts with fewer zones probably could not.

Mobil respectfully requests that this commingling application be approved so as to permit recovery of additional oil from each of the commingled zones in the subject well, thereby preventing waste. We do not believe that approval of this request will violate correlative rights in any manner, and by separate letter we are requesting written waivers from each of the offset operators. As shown on Attachment #2, we estimate that there will be very little difference in bottom-hole pressures between the subject zones; therefore, no cross-flow problems are anticipated.

As shown on Attachment #2, we estimate that the production from the commingled zones in the subject well will not exceed the limit of 125 barrels of oil per day, as extrapolated from those limits set forth in Rule 303 (C). We estimate that approximately 25% of the future allowable and production should be attributed to the Paddock zone, approximately 16% to the Blinebry zone, approximately 18% to the Tubb zone, approximately 16% to the Drinkard zone, and approximately 25% to the Wantz Abo zone.

We further request that the limit for the maximum amount of gas which may be produced from the commingled zones in the subject well be so determined by multiplying 4,000 by the top commingled production of 125 BOPD. The recommended 4,000 GOR limit is an average figure for the existing GOR limits of the five zones of this application.

If there should be any questions regarding this application, please call.

Yours very truly,

J. A. Morris

J. A. Morris
Production Engineering Supervisor

JHSeerey/cs
Attachments

cc: NMOCC - Dist. 1

Case 4920

OFFSET OPERATORS

Address List

Acoma Oil Corp.
812 Continental Life Bldg.
Fort Worth, Texas 76102

Atlantic Richfield Co.
Box 1610
Midland, Texas 79701

Capataz Corp.
Wall Towers West
Midland, Texas 79701

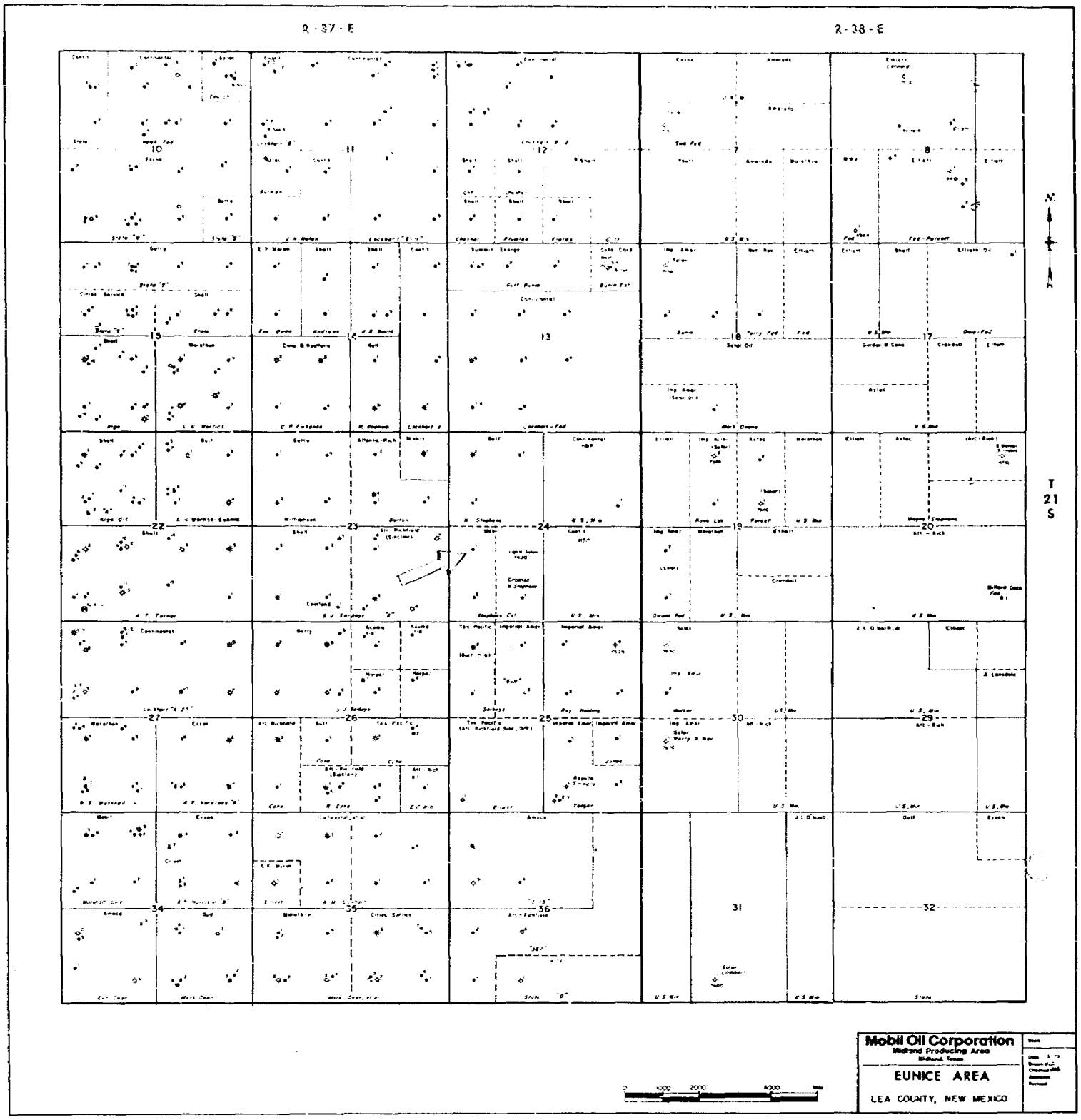
Continental Oil Co.
Box 460
Hobbs, New Mexico 88240
Attn: Mr. V. T. Lyon

Gulf Oil Corp.
Box 1150
Midland, Texas 79701

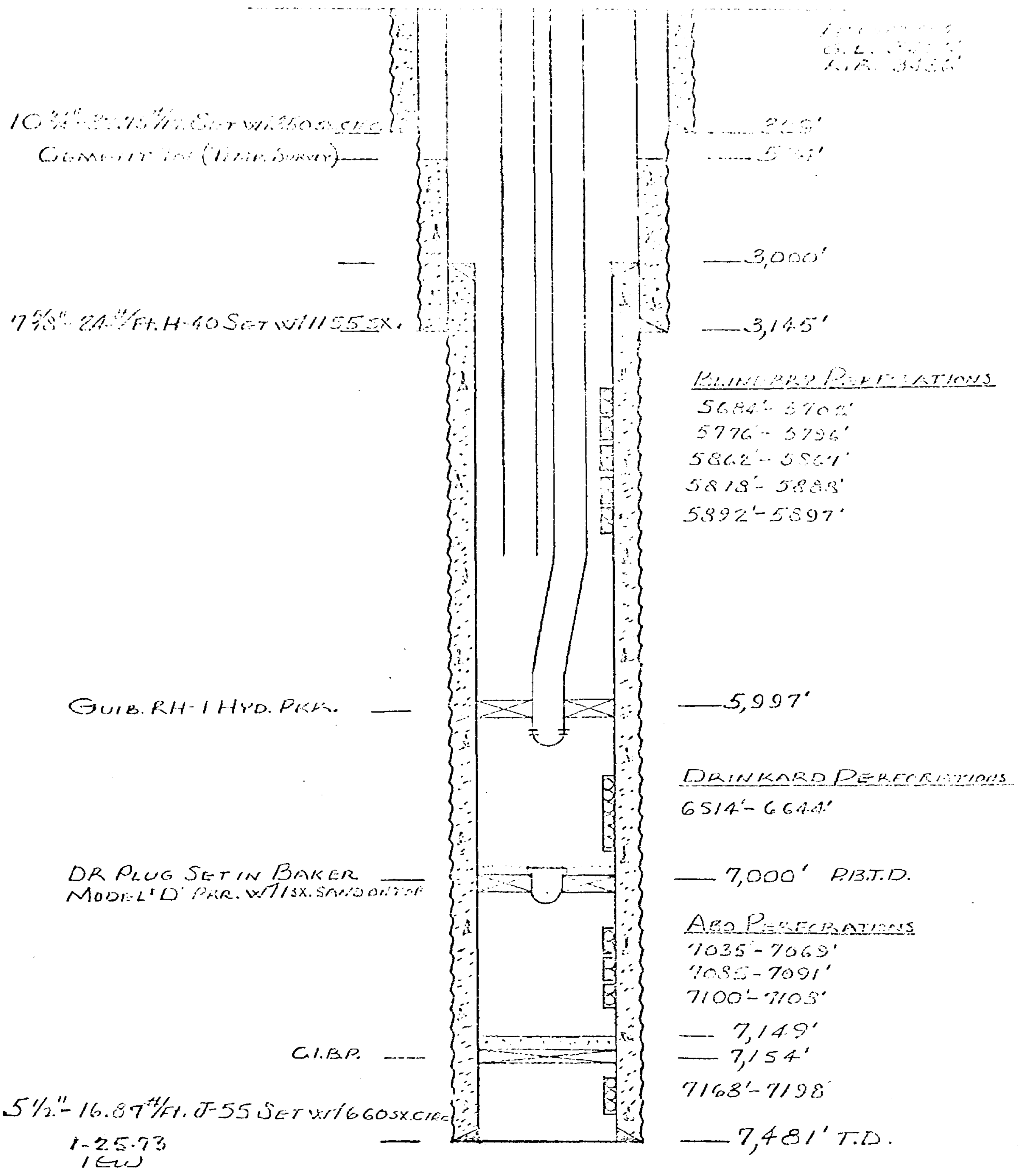
Imperial American Management Co.
507 Midland Savings Bldg.
Midland, Texas 79701

Texas Pacific Oil Co., Inc.
Box 4067
Midland, Texas 79701

Attachment #1



ATTACHMENT # 1-A


10 3/4" - 32.75 #/Ft. Set w/ 1160 sx. circ.
Cement Top (Temp. Survey)
7 5/8" - 24 #/Ft. H-40 Set w/ 1155 sx.
Guib. RH-1 Hyd. Pkr.
DR Plug Set in Baker Model 'D' Pkr. w/ 1 sx. sand on top
C.I.B.P.
5 1/2" - 16.87 #/Ft. J-55 Set w/ 1660 sx. circ.
1-25-73
KW
3,000'
3,145'
Blinebry Perforations
5684' - 5702'
5776' - 5796'
5862' - 5867'
5818' - 5888'
5892' - 5897'
5,997'
Drinkard Perforations
6514' - 6644'
7,000' P.B.T.D.
Abo Perforations
7035' - 7069'
7085' - 7091'
7100' - 7103'
7,149'
7,154'
7168' - 7198'
7,481' T.D.

MOBIL OIL CORPORATION
PROPOSED DOWNHOLE COMMINGLING
STEPHENS ESTATE WELL NO. 1

VALUE DATA

Pool Name	Paddock	Blinebry	Tubb	Drinkard	Abo	Commingled
Gravity, API	36.9	37.1	41.5	38.6	40.1	39.1
Selling Price $/Bbl	3.37	3.50	3.56	3.52	3.56	3.54
Existing Production BOPD	0	4	0	4	0	
Estimated Production BOPD	15	10	10	10	15	60

Existing Daily Income $28.08

Estimated Daily Income (commingled) $/Day = $212.40

GENERAL DATA

Pool Name	Paddock	Blinebry	Tubb	Drinkard	Abo
Proposed Interval O. A.	5361'-5447'	5619'-6024'	6073'-6463'	6514'-6718'	6914'-7198
Producing Method	-	F	-	F	-
Proposed Producing Method	P	P	P	P	P
Well Test 2-9-73					
Oil BOPD	-	4	-	4	-
Water BWPD	-	0	-	1	-
Gas MCF/da	-	77	-	6.9	-
GOR	-	19250	-	1725	-
GOR Limit	2000	6000	2000	6000	2000
Estimated BHP - psi	None available in this area	699	640 Average of four closest wells	699	700 Estimate based on 1964 prod.

NEW MEXICO OIL CONSERVATION COMMISSION

GAS – OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County
Mobil Oil Corporation	Drinkard	Lea

Address	TYPE OF TEST – (X)	
P. O. Box 633, Midland, Texas 79701	Scheduled [ ] Completion [ ] Special [X]	

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	TYPE	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS – OIL RATIO CU.FT/BBL.
Stephens Estate	1	L	24	21	37	2-9-73	F	24/64	-	4	24	1	38.6	4	6.9	1725

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

J. H. Seerey
(Signature)

Associate Engineer
(Title)

February 14, 1973
(Date)

NEW MEXICO OIL CONSERVATION COMMISSION
GAS - OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County
Mobil Oil Corporation	Blinebry	Lea

Address	TYPE OF TEST - (X)	Scheduled [ ]	Completion [ ]	Special [X]
P. O. Box 633, Midland, Texas 79701				

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS - OIL RATIO CU.FT/BBL.
Stephens Estate	1	L	24	21	37	2-9-73	F	24/60	100	-	24	0	37.1	4	77	19250

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

J. H. Seerey
(Signature)

Associate Engineer
(Title)

February 14, 1973
(Date)

Post Office Box 2339
Dallas, Texas 75221
Telephone 214 731 7261

E. J. Henry, Jr.
Manager

Attachment #3

February 8, 1973

Mr. T. N. Ludlum
Crude Oil Department
Mobil Oil Corporation
P. O. Box 633
Midland, Texas 79701

RE: Mobil Oil Corp.
Stephens Estate #1
Section 24, 21S, 37E
Lea County, New Mexico
Downhole Commingling Application

Dear Sir:

From your letter of February 1 on the above subject, I would assume that the gravity for each producing zone would be considered to be that set out in your letter so long as the zone was producing and that we would pay for allocated barrels our posted price for these gravities. This procedure would be quite acceptable, however, I am puzzled as to how we handle the matter should the actual observe gravity exceed the weighted average gravity by more than .3 of a degree or fall below by more than .7 of a degree. I presume it would be difficult to determine the exact cause of such variation. This being so, I am wondering if it would not be simpler for us to merely pay our posted price for the observed gravity of the barrels taken. Presumably the value of the differing gravities of the various zones would be reflected in the posted price and the observed gravity would do likewise.

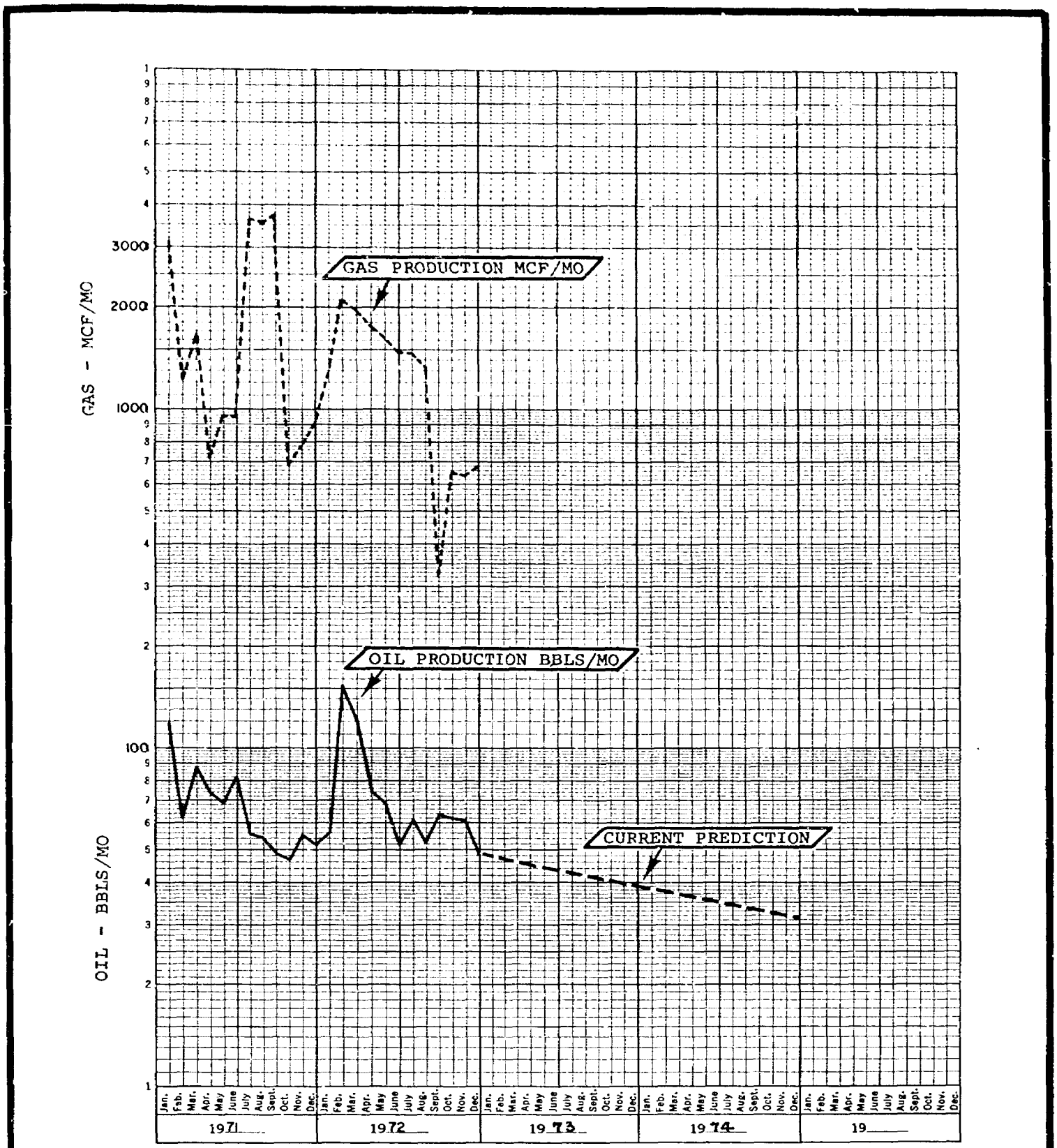
In any event, we are agreeable to your proposal and will await further word from you.

Yours very truly,

E. J. HENRY, JR.

EJHjr:emp

xc - Messrs. C. F. Potts (w/attach.)
B. F. Sutherland "



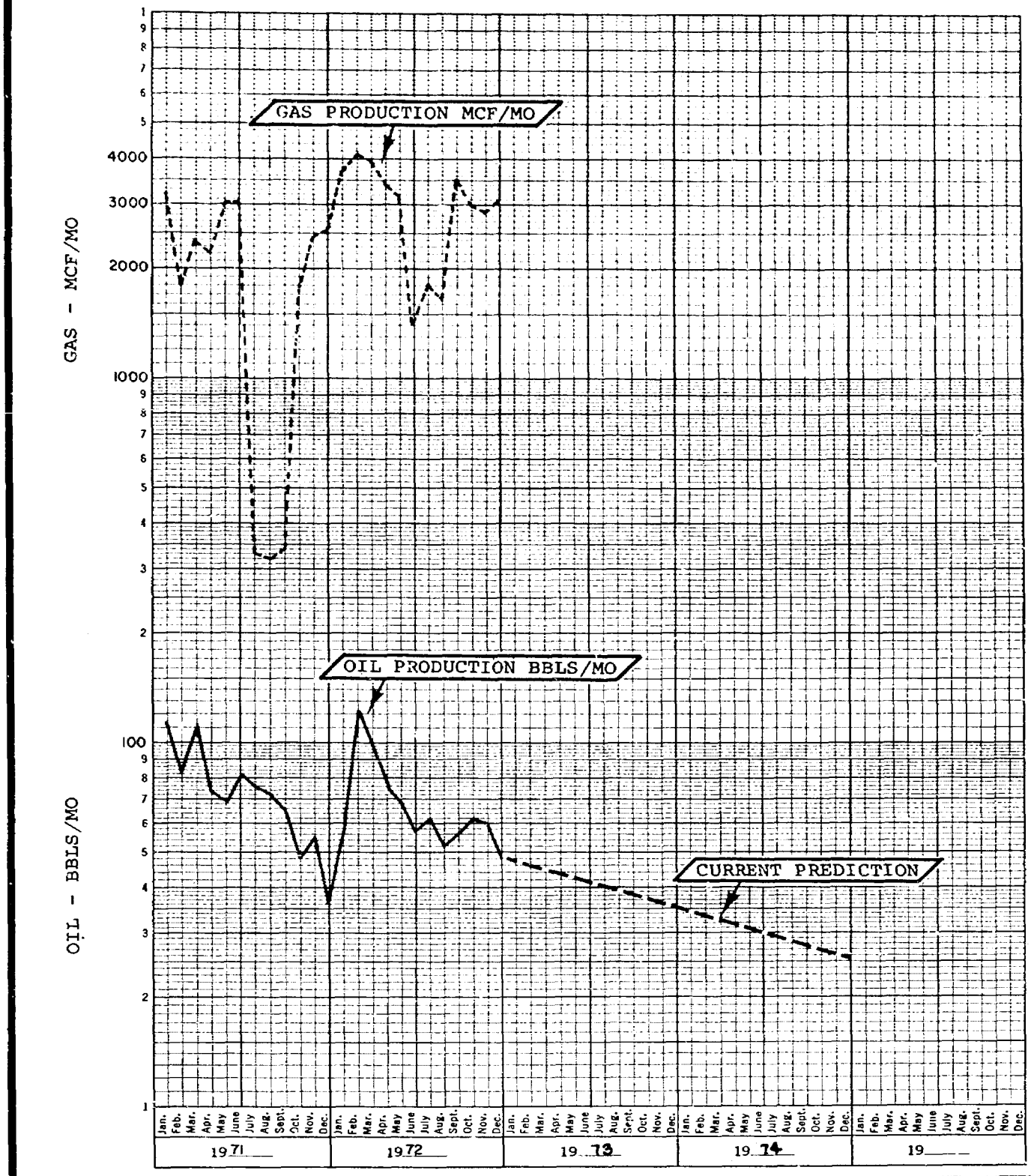
Mobil Oil Corporation
Midland Producing Area
Midland, Texas

ATTACHMENT #4

PERFORMANCE CURVES
STEPHENS ESTATE #1
DRINKARD POOL
LEA COUNTY, NEW MEXICO

Scale

Date 2-13-73
Drawn J.W.J.
Checked JHG
Approved
Revised



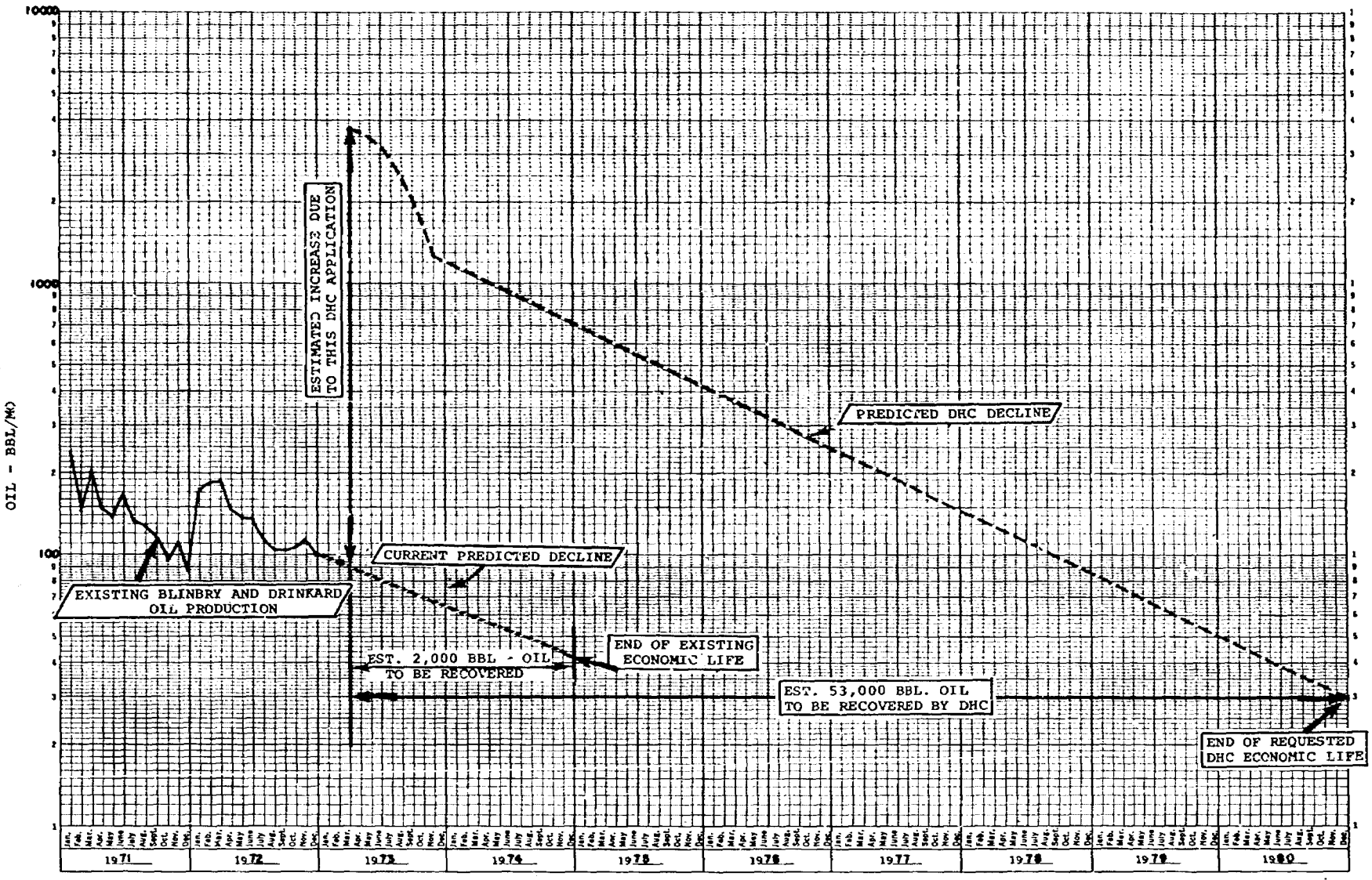
Mobil Oil Corporation
Midland Producing Area
Midland, Texas

ATTACHMENT #5

PERFORMANCE CURVES
STEPHENS ESTATE #1
BLINEBRY POOL
LEA COUNTY, NEW MEXICO

Scale

Date 2-13-73
Drawn J.W.J.
Checked JHS
Approved
Revised



TIME-YEARS

Mobil Oil Corporation
EXPLORATION AND PRODUCING DEPARTMENT
MIDLAND DIVISION

ATTACHMENT #6

COMPOSITE PERFORMANCE CURVES
STEPHENS ESTATE #1
PADDOCK, BLINEBRY, TUBB, DRINKARD & ABO POOLS
LEA COUNTY, NEW MEXICO

SCALE
DATE 2-13-73
DRAWN BY JVN
CHECKED JHS
APPROVED
REVISED

DRAFT

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. CE 4920

Order No. R- 4564

APPLICATION OF MOBIL OIL CORPORATION

FOR DOWN- HOLE COMMINGLING, LEA COUNTY,

NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 28, 1973 at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of June, 1973, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Mobil Oil Corporation, is the owner and operator of the Stephens Estate Well No. 1, located in Unit L of Section 24, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That the Wantz-Abo Zone produced in said well until 1964 at which time it was plugged back.

(4) That said well is currently producing as a dual completion in the Blinebry Oil and Drinkard zones as authorized by Order No. MC - 1479.

(5) That the applicant proposes to complete the subject well in such a manner as to produce oil from the Blinebry, Tubb, Drinkard, Paddock, and Wantz-Abo Oil Pools through a single string of tubing, commingling in the well-bore the production from said pools.

(6) That the evidence indicates that the Tubb zone in the subject well would very likely be classified as a gas well if it were completed as a single completion in said formation.

(7) That the subject well is located within the horizontal limits of land covered by a proposed unit agreement for the secondary recovery of oil from the Blinebry and Drinkard formations.

(8) That opening up all five of the zones proposed to be commingled in a common well-bore would jeopardize the efficiency of water flood operations in the Blinebry and Drinkard zones in the immediate area.

(9) That applicant should devise some means of protecting the efficiency of the proposed ~~main~~ water flood operations in the immediate area if it is to commingle any or all of the five proposed zones in the subject well.

(10) That unless such is done, waste might result and correlative rights be impaired if the application is approved.

(11) That the application should be denied.

IT IS THEREFORE ORDERED :

(1) That the application of Mobil Oil Corporation to commingle production from the Blinebry, Tubb, Drinkard, Paddock, and Wantz-Abo Pools in the well-bore of its Stephens Estate Well No. 1, located in Unit L of Section 24, Township 21 South,

Range 37 East, NMPM, Lea County, New Mexico, is hereby denied.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year herein-above designated.

I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary