CASE 5218: Appli. of REINER & McKENZIE FOR SPACING, REVOCATION OF NSP UNITS & 40-ACRE ALLOWABLES

CASE No. 5218

Application,

Transcripts,

Small Exhibits

ETC.

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. 5218
Order No. R-4783

APPLICATION OF JOHN K. REIMER AND
R. E. McKENZIE, JR., FOR A 40-ACRE
SPACING, REVOCATION OF NON-STANDARD
PRORATION UNITS, AND RE-ESTABLISHMENT
OF 40-ACRE ALLOWABLES, SANDOVAL
COUNTY, NEW MEXICO.

APPLICATION FOR REHEARING

COME NOW John K. Reimer and R. E. McKenzie, Jr., Applicants in the above entitled matter, and with reference to Commission Order R-4783 dated May 21, 1974, apply to the Oil Conservation Commission pursuant to Section 65-3-22 NMSA 1953, for a rehearing.

Applicants sought relief from the Commission from Orders previously entered by it in (1) Case No. 4642 (Order R-4277) wherein 160-acre spacing units were established for the Media Entrada Oil Pool; (2) Case No. 4685 (Order 4287) establishing non-standard units for two of the wells in the pool; and (3) Case No. 5152 (Order R-4713) establishing a special 750 barrels of oil per day depth bracket allowable. In seeking relief, Applicants contended that it was the duty of the Commission under the statute to prevent waste, prevent impairment of correlative rights, and that it was incumbent upon the Commission to establish a formula or rule which so far as can be practicable, would permit Applicants to produce substantially in proportion that quantity of the recoverable oil under the Applicants' property as such quantity bears to the total recoverable oil

in the pool. The Commission erred in not offering relief to Applicants on the merits of their case and in the following particulars:

1. The Order entered in this matter is not responsive to the Application in that the desires and requests for relief made by Applicants on the merits of the matter were not considered.

2. Applicants' uncontroverted evidence showed that damage was occurring in the pool, and that the correlative rights of Applicants were being impaired by the excessive production of the Fluid Power Pump Company Well No. 1, and as a result of such permitted excesses, the correlative rights of Applicants were adversely affected and waste was occurring.

3. Finding No. 6 is clearly erroneous in that Applicants' uncontroverted testimony showed that the actions of operator would result in a drowning by water of the Media-Entrada stratum and would result in the premature encroachment of water, reducing or tending to reduce the total ultimate recovery of crude petroleum oil from said pool.

4. Applicants established that the Orders of the Commission R-4277, R-4274 and R-4282 were issued without actual notice to Applicants; that the constructive notice by publication in connection with the cases which resulted in said Orders did not name Applicants or purport to affect the property rights of overriding royalty interest owners, and hence the Orders could not be considered as affecting the rights of Applicants.

5. The Commission erroneously put the burden on Applicants to show that Commission established non-standard proration units were unreasonable, unjustified, illegal and presumably not productive throughout their horizontal extent. Applicants'

uncontroverted testimony did show that oil was moving across lease lines, drowning the formation in the Media Entrada Pool, and that the correlative rights of Applicants were being impaired. The Commission erred in not recognizing its statutory duty at this time and from time to time to protect the correlative rights of persons similarly situated and to prevent waste. The uncontroverted testimony of Applicants showed waste and impairment, and the Commission erred in not responding to Applicants' prayer for relief.

It is respectfully requested that a rehearing be granted to Applicants before the full Commission at an early date. Fluid Power Pump Company, 1420 Carlisle Boulevard, N.E., Albuquerque, New Mexico 87110, and Partnership Properties Co., a Colorado general partnership, 1400 Colorado State Bank Building, Denver, Colorado 80202, and Petro-Lewis Corporation, 1400 Colorado State Bank Building, Denver, Colorado 80202, are interested parties, and a copy of this Rehearing Application is being forwarded to their attorneys of record.

DATED at Roswell, New Mexico, this 7th day of June, 1974.

George H. Hunker, Jr.
Attorney for John K. Reimer and
R. E. McKenzie, Jr., Applicants
HUNKER, FEDRIC & HIGGINBOTHAM, P.A.
P. O. Box 1837
Roswell, New Mexico 88201

This is to certify that a true and correct copy of the foregoing Application for Rehearing was mailed to William J. Cooley, Attorney for Fluid Power Pump Company, and to Jason W. Kellahin, Attorney for Petro-Lewis Corporation and Partnership Properties Co., this 7th day of June, 1974, said Attorneys representing the Respondents.

George H. Hunker, Jr.

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George H. Hunker, Jr.

June 18, 1974
Rehearing denied

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CALLED BY THE OIL CONSERVATION
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collateral attack on previous orders

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George H. Hunker, Jr.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 23, 1974

COMMISSION HEARING

IN THE MATTER OF:

Application of John K. Reimer and R. E. McKenzie, Jr., for 40-acre spacing, revocation of non-standard proration units, and re-establishment of 40-acre allowables, Sandoval County, New Mexico.

Case No. 5218

BEFORE: A. L. Porter, Jr., Secretary-Director

I. R. Trujillo, Chairman

For New Mexico Oil Conservation Commission:

Thomas Derryberry, Esq.
Legal Counsel for the Commission
State Land Office Bldg.
Santa Fe, New Mexico

For the Applicant:
(Fluid Power Pump)

William J. Cooley, Esq.
BURR & COOLEY
152 Petroleum Center Bldg.
Farmington, New Mexico

THE NYE REPORTING SERVICE
STATE-WIDE DEPOSITION NOTARIES
225 JOHNSON STREET
SANTA FE, NEW MEXICO 87501
TEL. (505) 982-0386

APPEARANCES (Continued)

For the Applicant:
(Petro-Lewis Corp.)

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Santa Fe, New Mexico

For the Protestants:
(Reimer & McKenzie)

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I N D E X

E X H I B I T S

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MR. PORTER: Case 5218.

MR. DERRYBERRY: Case 5218. Application of John K. Reimer and R. E. McKenzie, Jr., for 40-acre spacing, revocation of non-standard proration units, and re-establishment of 40-acre allowables, Sandoval County, New Mexico.

MR. HUNKER: George H. Hunker, Jr., Roswell, New Mexico, representing John K. Reimer and R. E. McKenzie, Jr.

MR. TOM KELLAHIN: Tom Kellahin, Kellahin and Fox, Santa Fe, New Mexico, and Jason Kellahin on behalf of Petro-Lewis.

MR. COOLEY: William J. Cooley, Burr and Cooley, Farmington, New Mexico, appearing on behalf of Fluid Power Pump Company.

MR. PORTER: Mr. Hunker?

MR. HUNKER: Will you re-swear the witness, please.

RALPH L. GRAY

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

DIRECT EXAMINATION

BY MR. HUNKER:

Q Will you state your name for the record, please?

A Ralph L. Gray.

Q Where do you live, Mr. Gray?

A Artesia.

Q How long have you lived in Artesia?

A About 25 years.

Q What do you do down there?

A I have a consulting petroleum engineering business.

Q What does that consulting engineering business involve?

A Well, it involves a variety of things, among which are trying to get the most oil out of the ground that we possibly can and recommend to the operators the most efficient way of producing a pool, calculating oil reserves,and various things.

Q What is your engineering background? Where were you educated, Mr. Gray?

A I graduated from New Mexico School of Mines in 1939.

Q Where were you employed after graduation?

A I was employed by Stanolind Oil and Gas Company where I spent nine years in their Engineering Department and the next ten years with Buffalo Oil Company, first as

a petroleum engineer and later on as production superintendent, and for the past 13 years I have had my own petroleum engineering service.

MR. HUNKER: Are the qualifications of Mr. Gray acceptable?

MR. PORTER: The Commission considers Mr. Gray qualified.

BY MR. HUNKER:

Q In connection with your work in the oil fields, Mr. Gray, do you have occasion to supervise waterflood projects and projects of a similar nature?

A Yes, sir.

Q Have you made a study of the well files in the Oil Conservation Commission pertaining to the Media-Entrada Pool?

A Yes, sir.

Q Have you prepared some exhibits with regard to that study?

A I have.

Q Referring to Applicant's Exhibit No. 1 -- and for the purpose of the record, since we are presenting an original case, in this particular case I am going to refer to Mr. Reimer and Mr. McKenzie as the Applicants -- referring to Applicant's Exhibit No. 1, will you describe to

the Commission what that exhibit is and what it shows?

MR. COOLEY: Objection, Mr. Commissioner. Until such time as it can be established and a foundation laid that Exhibit 1 or any other testimony that Mr. Gray proposes to offer here today is new evidence, evidence that was not available to the Applicant at the time that the cases in question were heard, we object to any type of evidence that was in existence or available to the Commission or to the Applicants at the time the respective cases were heard. If they have new evidence to offer, we have no objection to that, but a foundation must be laid for this exhibit and any further testimony from this witness to the effect that it is new evidence. By that I mean something that was not available to the Commission at the time these cases were heard.

MR. PORTER: Are you talking about all three cases, Mr. Cooley?

MR. COOLEY: In this entire case. If this is just one case -- it affects many orders -- four, I believe. What I am saying is that any evidence that was available to the Commission and to these Applicants in this particular Case No. 5218. Three out of four of these orders were issued in 1972, I believe, the most

recent having to do with 750-barrel allowable more recently. Now, a foundation must be laid before this witness can proceed to the effect that his testimony is new evidence.

MR. HUNKER: If the Commission please, we will demonstrate throughout the testimony of this witness that what we are basing our case on, discoveries that have been made since the cases were heard that are in issue. I anticipated this kind of objection and this is why I made the statement that I did, and I ask your indulgence to consider this matter in an orderly fashion so that our patience would not be tried, and that we be able to present the matter in a fashion in which I would prefer to present my case rather than just present it in a manner in which Mr. Cooley wants me to present it. I think that if we, at the end of the case, have not demonstrated to the Commission that we are basing our testimony on new information that was not available to the Commission at the time of the hearing in the three cases that are really in issue, then, you can throw me out.

MR. COOLEY: May it please the Commission, I would like to be heard briefly on this before you rule on it. I would like, first of all, to call the Commission's attention to the Application in this case itself. Now,

it starts out to the effect that they are going to show by reason of new information not available at the time of the original hearings that -- and then we go into Paragraph 1: "That the provisions for 160-acre spacing ordered by the Commission providing for that in Order No. R-4277 was made without sufficient factual information." A collateral attack on that order some two years later. In Paragraph 2, the same allegation with respect to Order No. 4274, that it was made without sufficient factual evidence with respect to the impairment of correlative rights. The same with respect to Order 4287, that it was made without sufficient factual information. We cannot some two years hence collaterally attack the orders that established these non-standard proration units and established the 160-acre spacing. Now, if there is new evidence available today that 160-acre spacing or that anything else is being done in that pool is causing waste or impairing correlative rights, then this Commission not only can, but I believe, is obligated to hear it, but to rehash a two-year old case and say that those orders were improvidently made is improper and illegal. Even the call of this case says "new information."

MR. PORTER: Mr. Hunker, the Commission rules

that a foundation will have to be laid that it is new testimony, and we are going to have to restrict it strictly to new testimony throughout this hearing in order to save time.

THE WITNESS: Mr. Porter, may I make a statement as an engineer, please, sir?

MR. PORTER: Surely.

THE WITNESS: There has been a lot of legal jockeying going on here which a lot of it I don't understand, but I have been retained by the Applicant to represent them in this case and we have developed some new information that hasn't been presented before. Now, I prepared all of these exhibits, but in order for me to make any sense out of the new information which we have developed, it is necessary that I go back and tie these things in with some of the information in the field previously. They don't make sense by themselves. You have to tie the performances in. For example, water-oil ratios, I can tell you what the water-oil ratios are today, but they don't mean a thing unless we go back and compare them with water-oil ratios in 1972 and in 1971. So, I am sure this Commission is interested primarily in getting correct information in regard to conservation practices,

and I can't understand all this legal jockeying that is going on, but I can tell you for sure that as a petroleum engineer, that we have developed new information, and in order for me to present it to you in such a way that it means anything, I would like the opportunity to tie this in and give you a picture which I think is accurate.

MR. COOLEY: Mr. Commissioner, we recognize Mr. Gray as being an outstanding petroleum engineer and what he refers to as legal jockeying was just as long, or maybe longer, developing in the history of American jurisprudence as being the proper way to present a judicial proceeding, and that at some point in time everything has to be resolved. Now, comparison of today's water production with previous water production, we have no objection to that at all. I understand these comparisons must be made, but to go back and attack everything that the Commission based its previous orders on is improper. It is contrary to American jurisprudence.

MR. HUNKER: If the Commission please, we are not exactly in the court room. Mr. Gray will show, for example, that two wells that are dry holes which off-set the wells that I have marked on the blackboard were completed in August of 1972 and June of 1972, long after

the hearings were held in connection with the 160-acre spacing units. He will also show by his testimony that commencing in October and November, large volumes of water were removed from the formation by the installation of large pumps, and he wants to testify with regard to what the effect of that large withdrawal of fluid is, and in order to do this, he's got to lay some kind of a foundation for you by the presentation of the exhibits which he has prepared. I respectfully request that you hear us out and if at the end of the hearing you say we have not presented any testimony, any new evidence, take that into consideration in connection with your ruling and say, "Mr. Hunker, you failed to live up to your obligations to present new testimony." At this time I will lay a foundation with regard to certain of the new information if you insist that I do so, but I think it would spoil Mr. Gray's presentation, and his presentation will be a whole lot more meaningful to the Commission if he is allowed to present it in the normal and customary fashion as the Commission is used to having matters presented.

MR. PORTER: Mr. Cooley, do you have any objection --

MR. COOLEY: (Interrupting) We object to no

tender of new evidence.

MR. PORTER: Let's suppose we go ahead with some new evidence.

MR. TOM KELLAHIN: I have one comment, Mr. Porter. With regard to this being new testimony or not, that is not really the question. The question is new testimony that was not available to the Commission at the time of the original hearings. I want to make that specifically clear.

MR. PORTER: Of course, if they drilled a dry hole since that time, that would not have been available, and, of course, the excess water production since that time would not have been available.

MR. COOLEY: Any testimony with respect to occurrences or developments that have taken place since these orders were entered, we have no objection to whatsoever, but as Mr. Kellahin just pointed out, the fact that something may not have been testified to in 1972 does not make it legally new evidence.

MR. HUNKER: If the Commission please, I will proceed to ask Mr. Gray some questions.

MR. PORTER: All right, proceed.

BY MR. HUNKER:

GRAY-DIRECT

Q With regard to the Fluid Power Pump Company Well No. 5, Mr. Gray, you may refresh your recollection by looking at your notes if you care to. Will you advise the Commission when the Completion Report was filed in connection with that well?

A The Completion Report was received by the Oil Commission June 30th, 1972.

Q With regard to Fluid Power Pump Company Well No. 4, when was that request for allowables and Completion Report received by the Commission?

A August 7, 1972.

Q With regard to the Federal Media No. 4, when was the Completion information furnished to the Commission in connection with that well?

A July 11th, 1969.

Q With regard to the Fluid Power Pump Company Well No. 4, when was that well information furnished to the Commission?

A August 7th, 1972.

MR. PORTER: Is that the one you previously referred to?

THE WITNESS: Yes.

BY MR. HUNKER:

Q Have you examined the testimony in connection with Case No. 5120 with regard to the unrestricted allowables that Petro-Lewis sought to obtain?

A Yes, sir.

Q Do you recall the testimony in that case with regard to the installation of a large Reda Pump on the Fluid Power Well No. 1?

A Yes.

Q Will your testimony relate to withdrawals of fluid from the formation by that pumping equipment?

A Yes, sir.

MR. HUNKER: At this point, having laid this foundation, if the Commission please, I would like to proceed with Mr. Gray's testimony.

MR. PORTER: You may proceed.

BY MR. HUNKER:

Q I previously asked you if you had prepared an exhibit referred to as Applicant's Exhibit No. 1 and I asked you to explain to the Commission what that Exhibit shows. Will you answer that question at this time?

A Exhibit No. 1 is a map of the Media-Entrada Pool. This map shows the producing wells. It shows the non-producing wells. The structural conditions are

indicated by the contour lines. Also this map shows other information such as the estimated original oil-water contact, and the location of the 160-acre proration units which have been previously designated.

Q Those proration units are outlined with blue pencil, is that correct?

A The blue borders indicate the present 160-acre proration units, and the smaller green border units indicate a regular 40-acre unit.

MR. PORTER: Mr. Hunker, could we see a copy of that?

MR. NUTTER: Is that the same exhibit you offered a while ago as Protestant's Exhibit No. 1 in the other case?

MR. HUNKER: That is correct.

MR. NUTTER: So we will just change the number and the name?

MR. HUNKER: That is correct.

THE WITNESS: To go along with the description of Exhibit No. 1, there are presently five wells in this pool which are actually producing. One is the Fluid Power Pump No. 1 Well which is in the northwest quarter of the southwest quarter of Section 14. The Hutchison No. 1 Well

which is also shown in that same 40-acre unit is a flood well and produced back in the 1950's. The second well which is presently producing is the Fluid Power Pump Well No. 3 which is located in the northeast quarter of the southeast quarter of Section 15. Also you will note the Hutchison Federal No. 2 is also a flood well in the same 40-acre tract and it also produced in the 1950's. The third producing well is the Federal Media No. 1 well which is located in Section 14 in the southwest quarter of the southwest quarter. The fourth producing well is the Federal Media No. 2 Well which is in Section 15 in the southeast quarter of the southeast quarter. The fifth producing well is the Fluid Power Pump No. 5 Well which is located in Section 22 in the northeast quarter of the northwest quarter.

Now, you will note that the map shows several dry holes surrounding these four producing wells. For example, the Federal Media No. 4 Well, we show as non-producing. It is in the southeast quarter of the southwest quarter of Section 14.

BY MR. HUNKER:

Q Why do you call it a dry hole?

A Well, the operator originally filed a completion

form with the Oil Commission showing it as a completed oil well. According to our information, this well has not made oil and is not now producing and it doesn't have any equipment on it and it doesn't have any flow line connected to it. According to the records, we can't find any indication that this well ever made oil, so we are calling it non-productive.

Then, in Section 15 in the southwest quarter of the southeast quarter, you will note Fluid Power Pump No. 4 Well which we also show as a non-producing oil well, in this case the operator filed a completion form on the well and, in fact, even established an allowable. It is on the allowable schedule at the present time, although I think maybe the allowable is shown as zero because of not filing a C-115, but this is shown as a completed well on the proration schedule.

We visited this field. We made an inspection of all of the properties in the field. The well flow line is disconnected to the battery. There is a pumping unit on the well, but the flow line is tied into a pit which there is water. We couldn't find any indication of oil whatsoever on the pit or in the equipment, and I don't find any records that this well had produced oil, so,

according to the pumper, it was tested for several weeks and made only water. So, I think we are justified in calling this a non-producing well. This information was not available to the Commission in the previous hearings, so I am sure that as far as the Commission is concerned, this is new information.

Q With regard to the Federal Media No. 3, what was the result of that test?

A The Federal Media also did not produce oil from the Entrada, and at the present time this well is being used for a water-injection well into the Gallup formation, I think. So, you can see that there is two dry holes on the 160-acre proration unit. Now, I think this definitely shows that there is definitely a substantially lower area than 160 acres that you can call productive. Now, in establishing this, it becomes evident that when you assign 160-acre proration tract to non-productive acreage, you are diluting the royalty interest of Mr. McKenzie and Mr. Reimer. It is diluted from 6 percent to 1.5 percent. This certainly involves correlative rights. When you assign non-productive acreage to a proration unit, correlative rights are definitely involved because the party with the interest and the oil portion of that unit is not going to get a fair share of the oil.

Now, the map also shows additional dry holes around these four producing wells that we mentioned. In Section 14 in the northeast quarter of the southwest quarter the Baird No. 1 Well has never made oil. It is a dry hole as far as I am concerned. Yet, it is within a 160-acre proration unit.

In Section 14 in the southwest quarter of the northwest quarter, you will find the Harvey Federal No. 1 Well which we show as a dry hole.

MR. PORTER: What is that one?

THE WITNESS: The Harvey Federal.

MR. COOLEY: I must object now at this point and ask that the testimony with respect to these two wells be stricken. Those wells were drilled several years prior to the hearings and the entry of the orders in question. All of this information was available to the Commission at the time of the order in question.

MR. PORTER: You are referring to the last two wells, one in the northeast of the southwest --

MR. COOLEY: The Baird 1 and the Harvey Federal No. 1.

BY MR. HUNKER:

Q Your testimony with regard to the Harvey Federal and the Fluid Power Pump Company No. 2 has to

do with the establishment of the structural limits and the productive limits, isn't that correct, Mr. Gray?

A Well, I think the Applicants have led the Commission to believe that there is production under these 160-acre proration units. I don't think anyone has ever testified previously that, in fact, there are dry holes within these proration units.

MR. COOLEY: I object. I hesitate to prolong this Hearing, but the Commission has found that these proration units were productive, and if new information contra-indicates that, fine, but information that was available to the Commission years before the entry of these orders should not be admitted into this record.

(Whereupon, a discussion was held off the record.)

MR. COOLEY: I would like to clarify this situation, if I may.

Of all the wells shown on Applicant's Exhibit No. 1, there are only three wells on that map that have been drilled since the entry of the orders in question. Now, is the Commission clear on which three those are? It is the Fluid Power Pump No. 2, the Fluid Power Pump No. 4 and 5. Those are the only three wells in the entire

exhibit that have been drilled since the entry of the orders in question.

MR. DERRYBERRY: Which were those?

MR. COOLEY: Fluid Power Pump No. 2 in the southeast quarter of the northeast quarter of Section 15.

MR. PORTER: Southeast of the northeast?

MR. COOLEY: Of 15.

MR. PORTER: What about No. 4?

MR. COOLEY: Fluid Power Pump No. 4 in the southwest of the southeast of 15. Fluid Power Pump No. 5 is in the northeast of the northwest of 22. Do you have them located now?

MR. DERRYBERRY: You say the Fluid Power Pump No. 2 and No. 5 are the only wells that were drilled --

MR. COOLEY: No, there were three wells. Fluid Power Pump No. 2, and again, in the southeast of the northeast of 15. Fluid Power Pump No. 4 in the southwest of the Southeast of 15. Fluid Power Pump No. 5.

Now, I would also call to the Commission's attention that only one of those three wells is located on the proration unit with which these Applicants could possibly have any concern.

(Whereupon, a discussion was held off the record.)

MR. PORTER: The objection is sustained.

BY MR. HUNKER:

Q Mr. Gray, is there another well that has been drilled in the northwest of the northwest of Section 22 that hasn't been shown on your Exhibit No. 1?

A Yes, that is the No. 8 well, but it is completed in the Gallup formation.

Q Was it drilled to a depth sufficient to test the Entrada, or do you know?

A I don't believe so.

Q Did you examine the well information furnished to the Commission in connection with the Federal Media No. 3?

A Yes.

Q What did those logs show?

MR. COOLEY: I object. The well was drilled long before the orders in question were entered.

MR. HUNKER: As a relationship, if the Commission please, between the No. 8 Well and why it didn't go to the Entrada and in light of what happened in the Federal Media No. 3, and the No. 8 was drilled long after the Commission --

MR. COOLEY: 1969 is my information, Mr. Hunker.

'69 or '70.

MR. HUNKER: I beg your pardon. I was mistaken on that score. I thought the Federal Media 8 was drilled in the order in which they normally would be drilled, that is, after 5 and 6.

MR. PORTER: That doesn't always happen.

BY MR. HUNKER:

Q Mr. Gray, how much oil has this pool produced up until the end of January, or January 1st, 1974?

A According to the records which we have on this pool, it has produced 474,159 barrels of oil as of January 1st, 1974.

Q You have prepared, or included with your schedule of exhibits, Exhibit No. 7. Will you explain what that exhibit shows insofar as recovery curves are concerned?

A Yes. Exhibit No. 7 is a typical diagram which petroleum engineers frequently use. This shows the plot horizontally going from zero to 100 percent going right, oil recovery and percent of total recovery. Then on the vertical scale of the diagram is plotted the water-cut percent or the water production percent, if you prefer, and this scale goes from zero to 100 percent going from

the bottom of the graph to the top of the graph. This type of graph shows approximately what percentages of the total oil recovery can be expected at various rates of water production. For example, at 50 percent oil recovery, the curve shows that the water-cut should be approximately 30 percent of production. So, in relating this to the present production for the pool in which the water-oil ratio is about ten to one, about ten barrels of water to one barrel of oil produced, you can readily see that the pool is in a stage of depletion which you would have to say, later stage, past the 50 percent mark for sure.

Now, when we relate this to the original figure that Mr. **Reese** has previously testified that he expected 3,630,370 barrels of oil would be recovered from the pool, of course, which is based on the wider spacing or wider producing areas concept. So, we have attempted to use the most recent cumulative oil production figures which were not available several months ago. We have attempted to use these figures to show that the producing area has to be very substantially smaller than the operators have previously claimed.

Q Mr. Gray, have you prepared Exhibits 2, 3, 4 and 5 showing the relationship between the oil production

and the water production over a recent period of time?

A Yes, sir.

Q Will you refer to those exhibits and explain to the Commission just exactly what they show, by well?

A All right. We will start with Exhibit 2. This is for the Federal Media No. 1 Well. This is a graph showing monthly oil production by the solid line. Monthly water production is indicated by the dashed line. The monthly oil or water production figures are indicated by a scale on the left side of the graph. You will note these are shown at 10,000, 20,000 and so forth on up to 40,000, indicating the barrels of either oil or water per month. All of this information has been plotted back to the initial start of the current operation which was in 1969. In addition, we are showing the water-oil ratio as a figure, and these figures are shown at random locations time-wise at the top of the graph.

Now, in the latter part of 1973, the operator was involved in some work on some of the wells in which larger capacity pumping equipment was installed. Now, in order to evaluate the performance after installing the larger equipment, certainly, we need several months in order to see whether this production is going to hold up

and so forth, and what the water-oil ratio is. So, again, we call your attention to the fact that this is recent information. It is new information which was not available at the previous hearings and it is still being developed. Some of it has been developed over the first few months of 1974, January, February and March.

Q You say that the larger pumping equipment was installed the latter part of '73?

A Well, for example, in the case of Federal Media No. 1, you can see that the fluid production was substantially increased, for example, in the month of June, 1973, and then there were other adjustments made, I think, in the latter part of the year where the fluid production was increased. But you can note on the graph by the water production going upward. So, what we are saying is that if we relate this performance with the previous performance, for example, back in 1972 and the latter part of 1971, where the water-oil ratio was three. Now, when production was substantially increased during the latter part of 1973, the water-oil ratio abruptly rose to 11, so this is a very noticeable and distinct change in producing characteristics of the well. What it is telling you is that there is water channeling or water

coning occurring there and that efficient operation exists. Now, as we go on back further, if you will notice, during 1969 and 1970,the water-oil ratio during that period was one, but during that period the capacity or the production was very substantially lower even in the period of 1972. So, when you look at this graph, it becomes evident that everytime the producing capacity was increased, then you get a very noticeable increase in water-oil ratio.

Now, this is something that engineers recognize as criteria for water coning, and it indicates that there is inefficient fluid flow in the reservoir. Now, we can go on to Exhibit No. 3 and it tells you approximately the same thing. Back during 1969, the water-oil ratio on Federal Media No. 2 was one. Then during 1971, the latter part, and during 1972, the well was produced at a larger capacity and the water-oil ratio increased to three abruptly. Then again, during the latter part of 1973, there was an increase in the capacity of fluid being produced and you will notice that the oil-ratio went up to nine. This is a very substantial increase, from one to three to nine, everytime that they increased the producing capacity of the well.

Now, here is a late figure in February of 1974.

The water-oil ratio was shown to be 9.81.

Now, in Exhibit No. 4, this is for the Fluid Power Pump No. 1 Well. This well was completed later than the previous two wells. It produced during 1972 with the water-oil ratio of 3. When the producing capacity was substantially increased in the latter part of 1973, the water-oil ratio increased to 9, and it has varied over a period of several months, and as of February of 1974, the water-oil ratio was still high at 6.6. So, here again, you notice that the same story exists.

Exhibit No. 5 shows the Fluid Power Pump Company No. 3 Well. During 1972, this well produced a water-oil ratio of 3 -- during the middle of 1972. By the latter part of 1972 it was 9. Now, in 1973, the latter part, the larger pumping equipment was installed and you will note a very very substantial increase in the water-oil ratio, up to 24. During the month of February, 1974, this water-oil ratio was still 23.13. So, this tells the same story that water coning has been caused. This will result in less oil recovery which definitely affects the Applicants, Mr. McKenzie and Reimer. They are certainly going to get less oil ultimately as a result of inefficient operation.

Q Do you have the cumulative figures on the amount of production from the four principal producing wells in this field, Mr. Gray?

A Yes. We have brought these up to date as of March 1st, 1974.

Q What are those figures?

A The cumulative oil production for the Federal Media No. 1 was 142,805 barrels. The Federal Media No. 2 was 114,698. The Fluid Power Company No. 1, 205,828 barrels, even though this is a much younger well, it still has out-produced the other wells. Fluid Power Pump No. 3, 40,247 barrels. Now, the Fluid Power Pump No. 1 well was producing about 333 barrels a day back in this period of March at least and that is three times more than any other well in the pool is producing.

Q What is the result of that going to be if that is allowed to continue?

A Well, if I may, let me explain something in a very clear manner. It is as far as how the reservoir will perform. This sand has a very good porosity, permeability characteristic. The operators have previously testified that one well will certainly drain 160 acres, so the reservoir is what we consider a good one and travel

through the sand is very easy. This type of thing we can say that probably you can drill one well in the reservoir and it would probably produce the entire production from the pool. The sand is that good. So, I like to compare producing fields of this type with a "punch bowl" concept. If you have a punch bowl full of punch and you have two straws in this punch bowl, you are going to withdraw punch at a certain rate from one straw, but in the other straw, you are going to take punch out at twice the rate of the first straw. The second straw is producing punch, if you will, twice as fast as the other straw. You can readily see that if this is allowed to continue that the second straw is going to recover twice as much as the first straw. But from a conservation and correlative rights standpoint, each of these wells or 40-acre tracts or whatever you want to look at them, they have the right to recover their fair share of the oil. Now, so long as the Fluid Power Pump No. 3 Well is allowed to produce at three times the rate as these other wells, there is certainly going to be a loss of oil from the tracts under which Mr. McKenzie and Mr. Reimer have interests. There is going to be a loss of oil from those tracts to the Fluid Power Pump No. 1 Well which will recover more than

its fair share of the oil.

Q In your opinion, is the reservoir being damaged at this time by the high rate of withdrawal?

A Yes, it is.

Q Have you any authority that supports your position, Mr. Gray?

A Well, yes. This is a rather common engineering concept. I think that any reservoir that is being produced under a natural water-drive condition, you get the most efficient type of operation by producing at, you might say, lower rate and when you increase the rate to a fast rate, then you get this water coning situation and by-passing.

Q Have you made a Xerox copy of a textbook authority with regard to this particular item?

A Well, Exhibit 6 is a copy of a portion of Page 306 which was taken from "Elements of Oil Reservoir Engineering," by Silvan J. Pierson, First Edition, published by McGraw Hill Book Company, 1950. Mr. Pierson is the recognized authority on reservoir engineering, and we have underlined a portion of this page. It says, "Morris found that the waterflooding process is more efficient at slow rates than at high rates when the flooding is vertically upward." So, this means that when you have an anticlinal

structure as we have here where your water is below and it is pushing upward as the oil is being depleted, the most efficient type of recovery is obtained by the relatively slower rate of production.

Q You have been watching conservation in practice in New Mexico for a good many years. What would your recommendation to the Commission be with regard to restricted production in this particular field and limiting the size of the productive area?

A Well, I think this is very evident that correlative rights are being impaired by the high allowable which is in existence because of this special 160-acre allowable which was granted, and that if they are allowed to continue at that very high rate of production, well certainly, it is going to recover oil from these other people's tracts and that's a violation of your conservation rules and regulations because that means that oil is going across lease lines.

Now, in regard to the 40-acre tracts, it is pretty evident from not only the study of the geological conditions and the wells that have produced oil and the ones that haven't produced oil, and in comparing the cumulative oil production, and comparing it with the

original estimate, I think it is pretty clear that this oil pool is very substantially lower than the Commission has been led to believe in the past. So, unfortunately, they were permitted to assign 160-acre proration units, but you had information at the time which shows that 160-acre units are not productive. You can readily see from the map that only a very small portion of the 160-acre tracts are productive.

MR. COOLEY: I must object to that testimony and ask that it be stricken. If there is anything that he's got new to indicate that these 160-acre tracts are not productive, fine, but not based upon --

THE WITNESS: (Interrupting) We presented the new information and we are telling you what it means.

MR. COOLEY: I don't think you can rule on the objection, Mr. Gray. I think the Commission does.

THE WITNESS: I can readily understand why you don't want us to present testimony.

MR. COOLEY: I object to Mr. Gray continuing until I at least have a ruling on my objection.

MR. PORTER: Objection sustained.

BY MR. HUNKER:

Q You have testified, Mr. Gray, with regard to

coning and with regard to drowning of the reservoir. Have you prepared a sort of schematic drawing with regard to this matter that demonstrates what has been happening in this pool over the last several months?

A Yes, sir.

Q Will you get that exhibit out and tell the Commission what it shows and how come the drowning out of the field occurs?

A The first diagram that we are looking at is shown as Exhibit A and you have a small diagram with the exhibits. The purpose of this exhibit is to give you some idea of what we mean when we say "water cone." Now, we have depicted a reservoir which shows the top of sand. It is labeled on the diagram. It shows a black curved line at the top which represents the top portion of the reservoir. This is a water-drive reservoir which is similar, say, to the Media-Entrada pool and we show the original oil-water contact with a dashed line across it. Now, for the purpose of simplification, we have shown two wells. We call them Well No. A which is shown at the top portion of the structure. There is a Well B which is shown over toward the left edge of the structure.

Now, as the wells are produced, there is created

a pressure differential from someplace out in the reservoir toward the well bores, and this causes the movement of fluid from the sand to the well bore. This recovers the production at the surface. Now, in this case, we have elected to show that the wells are producing with the same pressure draw-down. The fluid height, if you want to visualize it, in the casing of both of these wells is at the same height. So, as far as the working fluid level is concerned of these two wells, they are exactly the same, yet, in this case the Well No. A at the top of the structure, you notice that the draw-down area does not come low enough to reach into the water saturated part of the reservoir, and this well produces oil only.

Now, in the case of Well B, the area of influence, or the draw-down area extends down into the water portion of the reservoir, and when the pressure differential is established, there is a rapid flow of water up into a portion of the oil saturated part of the reservoir, and even though these two wells are producing with the same static fluid level, this well is producing inefficiently because of the high, relatively high rate of withdrawal that causes the water to come into the well bore. Now, this is what we commonly refer to as water coning and when

it occurs, you see a very rapid increase in water production.

Now, the second diagram depicts a condition in the reservoir to which there is oil entrapment and this situation is created by the severe pressure draw-down across a portion of the reservoir. You will note that we have shown the direction of flow being from the bottom of the diagram to the top. The little sand drains are represented by the little white circles scattered through the chart to represent sand drains. The oil content is indicated by a red coloring. The water saturation is indicated by green coloring. Now, what happens is that we might look at this before water comes into this portion of the reservoir so the water is down off the graph, down to the lower portion someplace, but when a severe pressure draw-down is applied, then there is a very rapid movement of water which we show by green, and it will rush through these more permeable channels and it will -- in a little while you will find that the green represents the flow channel and you will note that the fluid movement through here is through the green portion predominately.

Now, we have a reservoir engineering relationship which shows the relative permeability of water and of oil to flow as compared to saturation, and what this

shows is that as you increase the water saturation, the permeability to the flow of water is increased very substantially, and, in fact, it accelerates as you increase the water saturation. So, what this means is that once the water has occupied these highly permeable channels, from then on you see the water saturation is high, so the permeability of oil is going to be practically nil. So, what happens is that you get around some places where you have some oil entrapped, and that oil is not going to flow out of this thing except little bits at a time over a very long period of time. In time, if you produce this reservoir for 1000 years, you might recover this thing. But this condition results in entrapment of oil in portions of the reservoir, which under the normal producing life, you won't recover, so this causes the recovery of oil under these conditions to decrease.

Now, this is the type of thing that reservoir engineers try to prevent. It is the type of thing that the Oil Conservation Commission tries to prevent because certainly they try to control the production from water-drive fields in many instances.

Q Can you name two?

A Well, two that everybody knows about is the

East Texas Oil Field and the Yates Pool in Texas. These both are water-drive-type pools, and real early in the history of these pools, the Oil Commission or the Railroad Commission in the case of Texas recognized that in order to get the most recovery of oil from those pools, it was going to be necessary to regulate production so that the bottom-hole pressure declined to be a very minimum. Now, if they had been allowed to have gone in and produced those two pools at the high rate of production that the operator does in this pool, well, those pools would only have produced a relative short time. So, this is a sound engineering principal that you people know about and that is your business is to try to prevent this thing from happening.

Q In previous testimony before the Commission, it was pointed out that there are some Wyoming pools that have been permitted to be produced at high rates of withdrawal. Do you have any comments for our Commission with regard to that prior testimony?

A Yes. We went back and reviewed these Exhibits and we find that these wells are producing --

MR. COOLEY: (Interrupting) I must object to this. I presume that what he is testifying about is

evidence that was presented at these old hearings again.

THE WITNESS: Well, we are showing that it was false testimony.

MR. PORTER: Mr. Gray, we have to sustain the objection.

MR. HUNKER: When he makes an objection, you can stop answering the question.

MR. PORTER: The objection is sustained.

MR. HUNKER: I appreciate the help.

Did you sustain the objection?

MR. PORTER: Yes, sir. Mr. Hunker, how many exhibits do you have with this witness?

MR. HUNKER: Those are all of our exhibits.

MR. PORTER: What I was trying to determine, I guess, is how much longer your direct examination may go.

MR. HUNKER: I only want Mr. Gray to summarize at this point and I have one more witness who will be asked about four or five questions on direct, and I am confident that you didn't have that information before.

BY MR. HUNKER:

Q Will you summarize, Mr. Gray, your testimony as it relates to the matter before the Commission today and particularly with regard to the correlative rights

and the matter of waste and the damage to the reservoir, and based on the information that you have gotten since those hearings were held?

A Yes, sir. I have seen an instance of where the Commission had in its records a completion form on a well showing it as a producing well, the Fluid Power No. 4 and you see now that, in fact, it is a dry hole. We have been able to use the up-to-date cumulative oil production from the pool and to estimate roughly what the future oil production is likely to be, and it is very very evident from this information that the size of this oil pool involves approximately four 40-acre units and not four 160-acre units. So, in this case it is very apparent that correlative rights are being impaired because of the dilution of the interest of Mr. McKenzie and Mr. Reimer.

Q Are there any ways that you could recommend to the Commission that the correlative rights of Reimer and McKenzie could be protected other than the establishment of 40-acre units for this particular pool? Do you have any other thoughts on the matter?

A Well, of course, you can unitize, but there again, if you unitize, it has to be on the basis of producing wells and not non-producing wells, and I am sure

that the U.S.G.S. is not going to approve a unit that has non-productive acreage in it, and besides, it takes quite a while to get it unitized, so that don't look very feasible.

Q As a consequence of which your recommendation is what?

A Well, I think it is pretty basic that the people made a mistake in assigning 160-acre proration units and they should be put back to 40-acre proration units, and that the allowables be re-established at the regular 40-acre allowables for this depth.

Q Are the wells capable of making the regular unit allowable at the present time?

A Some of them are. I wouldn't say all of them can make it, but I know two or three can probably.

Q What is the unit allowable for a well of this depth factor?

A Well, it is my understanding that it is 107 barrels per day at the present time.

Q Is it true that the Fluid Power Pump Well No. 1 can make in the neighborhood of 330 barrels a day?

A Yes, sir, it is making it. Putting the well back on 40-acre units to 40-acre proration would eliminate

the big uneven factor which exists at the present time with this one well producing three times as much as the other wells. It would put all the wells on an equal basis approximately so that they can recover their fair share of oil.

Q Do you wish to comment on any of the testimony in Case No. 5152 that Mr. Bummer submitted as to the validity of some of the conclusions that he reached?

A Mr. Counselor, I think you are going to have an objection.

MR. HUNKER: We will save this for rebuttal. I will withdraw the question.

BY MR. HUNKER:

Q Do you have anything else that you care to add, Mr. Gray, with regard to this particular matter?

A No, sir.

MR. HUNKER: He may be cross examined.

MR. TOM KELLAHIN: If the Commission please, I anticipate that our cross examination may be rather lengthy. In addition, we have our own witnesses to present, and I doubt that as of this late hour whether we could complete it this evening.

MR. PORTER: The Commission will recess the

Hearing until 8:30 tomorrow morning. We will reconvene in this room and Mr. Gray will be available for cross examination.

(Whereupon, the Hearing was recessed at approximately 5:30 p.m.)

(Whereupon, the Hearing was resumed on April 24, 1974 at 8:30 A.M.)

MR. PORTER: The Hearing will come to order, please.

MR. HUNKER: If the Commission please, Mr. Gray was on the stand and I would like to ask him one question and then offer some exhibits in evidence and then the opposition can cross examine.

MR. PORTER: All right. Mr. Gray will take the stand.

Let the record show that present for the Hearing are Ralph Trujillo and A. L. Porter, constituting a quorum of the Commission.

BY MR. HUNKER:

Q Mr. Gray, late yesterday afternoon you testified with respect to a flow diagram that was placed on the chalk board which I have marked Exhibit No. 9. Is that the same flow diagram that you testified from yesterday?

A Yes, sir.

MR. HUNKER: If the Commission please, we would like to offer in evidence at this time Applicant's Exhibits 1 through 9.

MR. PORTER: If there are no objections,

Exhibits 1 through 9 will be admitted.

(Whereupon, Applicant's Exhibits Nos. 1 through 9 were marked for identification, offered and admitted into evidence.)

MR. HUNKER: At this time I would also like for the Commission to take administrative notice of Rule 1203 as it is presently written requiring the names and addresses of interested parties in the proceeding to be showing and requiring a written application and ask that the Commission find that this rule was in effect at all material times to this proceeding, and more especially when Cases 4642, 4673 and 4685 were docketed. I think I had better stop at that particular point.

MR. PORTER: Okay.

MR. HUNKER: Will the Commission take administrative notice of that Rule?

MR. PORTER: The Commission will take administrative notice of Rule 1203.

MR. HUNKER: I would like also at this time to ask the Commission to take administrative notice of the statutes of the State of New Mexico, especially those pertaining to the duties of the Commission and those pertaining to pooling, and more particularly 65-3-5 and

65-3-11 Part 4, and 65-3-14 and 65-3-14.5.

MR. PORTER: The Commission will take administrative notice of those.

MR. HUNKER: I further want the Commission to take administrative notice of the published notices and the contents thereof concerning the Hearings in 4642, 4673 and 4685.

MR. PORTER: The Commission will do so.

MR. HUNKER: Thank you. We have no other questions of Mr. Gray other than possible rebuttal questions. He may be cross examined.

MR. PORTER: All right. The witness is available for cross examination. Mr. Cooley?

MR. COOLEY: Thank you, Mr. Porter. Inasmuch as we are taking administrative notice of so many things, I would like to ask the Commission to take administrative notice of the -- so far as I know -- absolutely unvaried practice to the extent that personal service to my knowledge has never been the practice of this Commission. The alternative method of notice by publication by county wherein the property lies -- county or counties -- and the County of Santa Fe, as I believe without exception, or certainly very few exceptions has been the procedure

over many many years. I would also call to the Commission's attention that if, as Mr. Hunker contends, your application is to contain the names and addresses of all interested parties, that his own application is deficient in that regard and that the only parties named are the working interest owners which is usually the case, but in this case the real crux of it is whether the overriding royalty owners and the 120 acres that is included in each of the two non-standard proration units on which the well is not located shall be permitted to enjoin and participate in a portion of the production from each of the five wells.

If, as the Applicant seeks here, we go back to 40-acre spacing, there are literally scores of people who are named on our Division Order that will automatically be cut out of any production or any share of the production from these wells. They are certainly affected by this Application, but noticeably absent so far as being named in Mr. Hunker's Application.

As a practical matter, when one gets into title examination and determination of all the people who own overriding royalties particulary in various tracts and fields and pools, this would be an insurmountable task to try to ascertain each and every person that is affected

by pool rules particularly, such as we are involved with here.

With that, I would like to proceed with some questions of Mr. Gray.

CROSS EXAMINATION

BY MR. COOLEY:

Q Mr. Gray, certainly no one questioned your educational background or your experience in the field of petroleum engineering and your general expertise in this field. I would, however, like to ask you if you consider yourself completely expert with respect to the pool that we are here concerned with, the Media Entrada?

A Yes, sir. I have made quite a study of the pool.

Q Now, when you say you have "made quite a study," would you tell us what you have studied other than information that has been reported to the Oil Conservation Commission by the various operators from time to time throughout the history of the pool?

A Yes. I have looked at well completion records. I have looked at --

Q (Interrupting) You must understand my question. We know what has been reported to the Commission. I am asking you what have you studied other than material

that has been --

A (Interrupting) I have looked at well records that haven't been completely reported to the Commission. I have looked at core analyses and all types of performance data. What more is there to look at?

Q What well files and records are you referring to, sir?

A I have looked at well records that Mr. McKenzie possesses.

Q Have you looked at the operator's well files?

A No, sir.

Q What core data have you observed or reviewed?

A Well, I have seen core data on the Federal Media No. 1, No. 2, No. 4, Hutchinson No. 1 --

Q (Interrupting) Just a bit slower, please. Federal Media 1?

A Yes, sir.

Q 2 and 4?

A 4 and the Hutchinson No. 1.

Q Is that all?

A Yes, sir.

Q What in your opinion is the reservoir drive in the Media Entrada?

A It is water drive.

Q Would you classify it as what we call "active water drive"?

A Yes, sir.

Q Do you have an opinion as to whether that is an edge drive or from the bottom or from both?

A It is from both. I think you would have to say it is from both. It is coming from below and also from the sides.

Q Would you normally expect that if a well drilled in a reservoir such as this is, drilled through the entire formation, that the withdrawal of the slightest amount of oil would be automatically displaced or replaced by water?

A If the bottom of the hole was carried to the water contact?

Q Yes, sir.

A Yes.

Q You did make a personal inspection of the field?

A Yes, sir.

Q When was that done?

A That was in the early part of April of this year.

Q Did you contact any of the operators or

the operators' employees in connection with this inspection?

A I would rather Mr. Hunker answer that. I think he was going to contact someone about us coming up. I ask that you ask Mr. Hunker that question.

Q Well, right now I am inquiring into the basis and foundation for the expertise that you have claimed with respect to this field, and I would like to inquire for that reason as to whether you did talk to anyone, and if so, whom?

A Oh, we talked to the lease pumper, yes.

Q Was there anyone else?

A No, sir.

Q Not the operator, Petro-Lewis and none of the owners?

A No, sir.

Q How long did this inspection take? Were you there one day, one hour?

A We spent approximately between one and two hours in that area.

Q You felt that you could inspect the entire field in an hour or two?

A Oh, yes.

Q Now, yesterday, in answer to one of Mr. Hunker's

questions, you commented that the Federal Media No. 1 Well, although some two years newer, more recently drilled than was the -- for instance the Media No. 1 and 2 -- had produced a substantial additional amount of oil than either of those other wells, is that correct?

A Which well did you say?

Q I believe it was the Federal -- Fluid Power Pump No. 1?

A Yes, the Fluid Power Pump No. 1 was producing more than the other wells, yes, sir.

Q Even though it was drilled some two years after the drilling of the Federal Media No. 1 and 2?

A I don't know if it was two years, but certainly --

Q (Interrupting) Some time?

A Between one and two years.

Q Did you mean to imply that that fact alone in your opinion constituted a violation of correlative rights of other operators in the field?

A Well, in this type of reservoir, if you allow one well to produce three to five times more than any other well in the pool, yes, sir, I would say definitely you are going to have impairment of correlative rights because that well is going to recover more than its share

of oil.

Q That is precisely what we are trying to get at here. What in your opinion is its share of oil, referring to the Fluid Power Pump No. 1?

A Well, we think that 40-acre units are the proper sized units for this pool, and we think that a regular State top allowable should be employed for the 40-acre units so that each well would then participate roughly in proportion to what it should.

Q That is what I am trying to get at is what your concept is of what it should. Is that equal production from each well? Is that what you are saying?

A Not necessarily equal production, but at least to establish a top unit allowable that is reasonable for the pool. Not all of the wells will be able to produce that allowable, but certainly it is more equitable than the present 160.

Q But it would be your recommendation to, in effect, curtail the production from the Fluid Power Pump No. 1 Well?

A Sure. Curtail it below what it presently is.

Q Because of your concept of correlative rights?

A Its capacity. It is producing at capacity now.

Q Are you ready to testify that to your knowledge it is producing to capacity?

A Well, it is producing to the capacity of the pump that you have in there, I suppose. I don't know how efficient the pumps are, but I assume that a good operator will try to keep these things working.

MR. PORTER: Mr. Gray, that is the well that you testified to yesterday as producing about 333 barrels a day?

THE WITNESS: Yes.

BY MR. COOLEY:

Q How does that compare with production from, say, the Media No. 1 and 2?

A Well, for example, in the month of February, 1974, the monthly production, oil production for the Federal Media No. 1 was 1178 barrels, although that was down in January. It was 2376. You must have had some kind of mechanical trouble during January. In January it produced 2376 barrels of oil. The Federal Media No. 2 produced 2602 barrels of oil in January, and 1992 barrels in February, and the Fluid Power Pump No. 1 produced 10,185 barrels of oil in January, and 9884 barrels of oil in February. Fluid Power Pump No. 3 produced 2764

barrels of oil in January, and 2726 barrels of oil in February.

Q Now, did you examine the logs on each of the wells in question?

A I have seen some electrical logs. I really haven't seen the -- I have seen the description of the samples, but I haven't seen the plotted log.

Q You stated in answer to one of Mr. Hunker's questions yesterday that one way that, in your opinion, correlative rights could have been more adequately protected in this field would have been possibly early in the life of the field to unitize, but you said that took time and it is probably too late to do that now?

A Yes.

Q Assuming that this unitization had taken place, what would have been your engineering recommendations as to how the total pool production would be allocated among the various tracts in the unit?

A There are several different methods of arriving at participation factors in the unit. One method is to establish the limits of production and to prepare an isopach map of the pool and to estimate the amount of oil that is recoverable from each tract. There are other

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methods of acreage alone. Sometimes unitization is based upon the factor of present production into the formula. There is just an unlimited number of ways that you can unitize.

Q Now, this isopach map that you discussed, that would have to do with determining how much oil is under each tract?

A Yes.

Q I would like to read to you, sir, from Section 65-3-14 of the New Mexico Statutes Annotated, entitled, "Equitable Allocation of Allowable Production," directing your attention particularly to Sub-paragraph A which reads, and I quote:

(Reading) The rules and regulations or orders of the Commission shall so far as it is practicable to do so afford the owner of each property in a pool the opportunity to produce his just and equitable share of the oil, gas or both in the pool, being an amount so far as can practically be determined and so far as such can be practicably obtained without waste substantially in the proportion that the quantity of recoverable oil, gas or both under such property bears the total recoverable oil, gas or both in the pool. For this purpose to use

his just and equitable share of the reservoir energy.

(End of reading.)

Now, in your opinion, could an isopach map be prepared in this pool that would practically ascertain the amount of oil under each tract?

A Yes, you could prepare one.

Q And this would bear largely, would it not, on the pay thickness in each of the wells?

A Yes, sir, the pay thickness.

Q Now, hypothetically, if Tract No. 1 had twice as much pay thickness as Tract No. 2 in your hypothetical unit allocations, would the tract with twice as much pay thickness be entitled to twice as much oil in the pool?

A Yes, if that was the criteria used in the unitization.

Q Is it a just and equitable method of allocation in your opinion? It is also a very common method of allocation, isn't it?

A Yes.

Q Are you aware that the Fluid Power Pump No. 1 Well has nearly twice as much pay thickness as does either of the Media wells?

A I am aware that it is the highest structural

well in the pool. It certainly has a greater thickness of pay than other wells, yes, sir.

Q Are you aware that one of the Media wells has 29 feet of pay, the other 30, and that the Fluid Power Pump No. 1 has 56 feet?

A I don't agree with your thicknesses. You see, you are assuming that the oil-water contact is at about a plus 1560, and we don't agree with that.

Q We are talking about sand thickness, aren't we?

A Yes, sir. Sand thickness above water.

Q Above water, is substantially greater in the Fluid Power Pump No. 1 than it is in either of the Media wells?

A It is greater than the other wells, yes, sir.

Q And thus, by this definition that I have just read here, and by the formula that you suggested as being a just and equitable method of allocation, it would be entitled to recover more oil from the pool, would it not?

A That's right.

Q So, getting back to your punch bowl, it should be entitled to a bigger straw?

A Yes, up to a certain limit.

Q But at least a greater amount?

A Not three to five times more.

Q We will discuss the degrees when I get ready to discuss degrees with you.

You are in agreement at this point that it is entitled to recover a greater amount of oil from the pool?

A But let me explain this to you: You see, the Fluid Power Pump No. 1 Well is the highest structural well in the pool, so it, theoretically, is going to be the last well in the pool to be producing. Now, once the oil-water contact arrives at a well, for example, up to the Media No. 1 Well, for example, you see the water is encroaching up-structure, and once the oil-water contact reaches this well bore, then this well is going to go to 100 percent water, so you still have left an amount of oil reserves that are higher within this 40-acre unit that this well can no longer produce, so this oil is going to go on and be flushed up to the higher structural wells. So, even though you might set the same allowables for the two wells, for example, when that water reaches the well bore in this well, it can no longer produce more oil. The rest of the oil on this 40-acre unit is going to go up to the highest structural well.

Q That is what you would kind of call the breaks

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of the oil game, wouldn't you?

A That's the rub of the green.

Q I mean, some locations are just better than others? Some are totally dry?

A Right.

Q Now, of the area in the pool that you consider to be productive, irrespective of what that area might be because we didn't agree on that, but whatever it may be, in your opinion, each acre that you consider productive is not equally productive, is it?

A What do you mean by "productive"?

Q Well, there is not the same amount of oil in each acre within the area that you call "productive"?

A Well, you will have some little variations in porosity.

Q Well, you have already testified that there is a very wide variation between the Fluid Power Pump No. 1 and all the other wells in the pool, haven't you?

A In thickness.

Q And in the amount of oil-in-place under that particular well?

A I said there was more under the Fluid Power Pump No. 1, yes, sir.

Q Irrespective of whatever the area is, each acre is not exactly equally productive?

A No.

Q At what point would you start throwing acres out? One barrel of oil, is it productive or not productive?

A Well, you have to have a reasonable approach to this thing and the Commission has to assign allowables under these tracts, and I don't know of any pool in the State of New Mexico in which they determine separate allowables for each little individual tract based on what they think that particular little tract will recover. I really am not aware of any in the State that is prorated that way.

Q It would be totally impractical, wouldn't it?

A Yes.

Q So, the Commission is faced, from the standpoint of practicality -- and the word "practicality" is used in the statute I read to you -- of, number one, providing for orderly development on some spacing pattern, whether it be 40, 160, and the common practice has been to use subdivisions or portions of surveys, right?

A Yes, sir.

Q And that as a complete scientific fact, that at least on the edge of any given oil pool in the State

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of New Mexico or anyplace else if that approach is used, that there just has to be maybe a little corner or something of that edge proration unit that doesn't have any oil under it at all, is that true?

A Yes, that's true.

Q But from the standpoint of practicality, you can't cut that corner off, right?

A Right.

Q Is it your testimony that there never was any oil under the four 160-acre proration units that surround the Federal Media No. 1 and 2 and the Fluid Power Pump No. 1 and 3? That there never was any oil under there?

A Let me get my maps so I can see what you are talking about. Would you restate that?

Q Well, you've got the present proration units outlined in blue or green?

A Yes.

Q My question of you is: At its virgin state before even a single barrel was produced from this field, is it your opinion that a substantial portion of those 160-acre proration units were completely devoid of oil?

A Well, I have to explain this to you then: There is a certain amount of oil in a formation that is

non-recoverable. For example, in the core analyses, you will notice that they show in some cases 20 percent residual oil. What that means is that they are not able to recover 20 percent of the oil in that core even by flushing it. The 20 percent is going to stay in there regardless. If you can't flood it out, it is there to stay. So, I am quite sure that there is oil saturation present in the formation outside of the boundaries of these little 40-acre units that we show, but the oil saturation is so low that it is impossible to produce it economically.

Q Impossible to produce it economically if you have to drill a well on each one of those 40's, right? Is that what you mean?

A It is impossible to get the oil. That is what I am saying.

Q Are you saying it is physically impossible for it to be removed from the ground or it is not economically feasible to drill a well on each 40?

A You are just not going to get it because the oil saturation is so low that you might produce part of a barrel or something from some of these wells, but certainly, you are not going to be satisfied to produce the well.

Q Would you restate that very last remark?

A I said in some cases that you might produce a very small amount of oil, anywhere from a rainbow up to a part of a percent, or in some cases none, but certainly, it is an area that you have to say is non-commercial.

Q By "non-commercial," I am asking you what you concluded that it was not commercially feasible to drill a well on each one of those 40's, that it would have been an economic disaster?

A You found out that it was when you drilled the Fluid Power No. 4, for example, and you tested it and you couldn't get any oil out of it.

Q Are you positive of this?

A Yes, sir.

Q You are positive in your own mind that it produces no oil whatsoever?

A Well, we were out there and the full line is disconnected, the well was hooked into a pit and there was water in the pit and I couldn't find any trace of oil anywhere on the equipment or in the pit. The pumper told us you had produced the well for several weeks and that to his knowledge, it never made any oil.

Q You don't know of your own personal knowledge

whether it did or didn't?

A I wasn't there when they were producing.

Q Did you look at the core on that well?

A No, sir, but let me again state that the core might show residual oil in the core, but it may not be producing.

Q Would you be surprised to learn that that well, in fact, was capable of producing 18 barrels of oil on test per day?

A Well, I am a little amazed that you haven't produced it if that is the case.

Q I asked you if you would be surprised to learn that? Would that change your opinion if that were the fact?

A I don't really understand why you haven't been producing the well then.

Q I didn't ask you that. See, you are not the operator. Petro-Lewis is, and they feel they have a very good reason why they haven't produced. I am asking you, would it change your opinion if you must assume with me, as I am asking you to, that the well is capable of producing 18 barrels a day? Does that change your opinion?

A If the operator put that well on production and the production records over a time would show that that

well is producing 18 barrels a day, yes, sir, I would change my mind.

Q What did the U.S.G.S. reported potential filed by the operator with the United States Geological Survey show as the potential on that well?

A This is Fluid Power Pump No. 4 that you are referring to?

Q Yes, sir.

A Well, the completion forms show that the initial potential was 24 barrels of oil and 72 barrels of water per day.

Q Would you call that a dry hole?

A Yes, sir, I would, based on the subsequent performance.

Q Are you aware what the subsequent performance was?

A Yes, sir.

Q What was it?

A The records don't show that there has been any oil produced.

Q But you don't know why, do you?

A Well, all I can go by is what the records show. If you've got a 24-barrel oil well there and you are not producing it, I think the burden of proof is on you to show

that it is making 24 barrels of oil per day. There aren't any records anywhere in the Commission Office that I know of that shows the well is producing that.

Q We have no burden of proof at all in this case. We are going to back the legal evidence first. And secondly, I just want you to repeat your answer to my question that if you assume -- and I am asking you to assume -- that the well has the capability indicated on the report to the United States Geological Survey by the operator, your labeling of that well as a dry hole under Exhibit 1 is in error, is it not?

A Well, forgive me if I tell you this, but --

Q (Interrupting) You must assume this question with me. I am asking you, if you assume that to be the case?

A I am well aware that sometimes the operators take a report of initial potentials that really are not based on long enough tests --

MR. COOLEY: (Interrupting) Mr. Commissioner, I am asking that the witness be directed to answer the question as put to him.

MR. PORTER: Mr. Gray, would you answer the question?

THE WITNESS: Would you restate the question?

BY MR. COOLEY:

Q Assume that the well would make the amount of oil that is reported by the operator in the report that you just read from -- and I believe that is 24 barrels of oil a day -- assume that to be a fact that that is its potential, and discard from your mind any reason why it hasn't been produced because that is not material to the question that I am asking you. I am simply saying that if that were the case, your designation of the Fluid Power Pump No. 4 Well on your Exhibit 1 as a dry hole would be in error, would it not?

A Now, when you say that it produced that much oil, you are going to exclude any oil that was used in treating the well, is that correct?

Q Yes, sir, I am talking about reservoir potential oil.

A And if the well produces 24 barrels of oil per day -- now, that has to produce it for more than one day. I am not going to be satisfied with one day's production.

Q I am asking you to assume an original sustained capability to produce 24 barrels a day.

A If it has the same sustained production of 24

barrels of oil per day, yes, sir, I am going to change my mind.

Q Then your Exhibit 1 is in error if that were the case?

A If that is the case.

Q Now, I believe in your direct testimony, you stated that this reservoir has particularly good communication?

A Yes, sir.

Q And drainage capability, by the fact that probably one well would drain the pool as you see it?

A Yes, sir.

Q Does it not follow, that again going back to the Statutes of the State, that the drilling of one well on each 40 within the pool would constitute drilling of unnecessary wells, each 40 of productive acreage?

A Well, you have to approach this thing in a reasonable manner. Now, maybe the operator would think that time-wise it would take too long to recover this oil from one well, so from an economic point of view, it wouldn't be practical to try to recover all of the oil from one well. Maybe it still would be. I don't know. It depends on what the operator considers as reasonable

time to recover the oil from the pool.

Q Your answer is not responsive to my question. I said: The drilling of a well on each 40-acre tract that is productive would be, in your opinion, the drilling of unnecessary wells?

A No, sir. I don't think it would be unnecessary.

Q Why would it be necessary to drill on each 40 if one well will drain substantially in excess of 160 acres?

A Well, for one thing, you have different interests under the various 40 acres, and while if you did go in there and unitize, maybe that would be all right, but you are not -- if you didn't go in and unitize, without the benefit of unitization, it is certainly going to take one well to 40 acres.

Q I presume, then, that your answer is based upon your concept of correlative rights and not the concept of the number of wells it would take to efficiently and economically drain the field? I am asking you to divorce yourself at this moment from any consideration of correlative rights and talk in terms of efficient drainage. In your opinion, would it not be economic waste to drill a well on each 40-acre tract, assuming that it were unitized or all owned by one person or anyway you want to assume it?

Disregard correlative rights at this point in your concept of it, and tell this commission whether you think that it is necessary to drill a well on each 40-acre tract in order to drain the oil in the field?

A I think it is entirely possible that you could drill one well on the highest part of the structure and recover --

Q (Interrupting) Your answer is not responsive. I am asking you to tell me whether you think it would be necessary to drill one well on each productive 40-acre tract in the field in order to efficiently recover the oil in this field?

A You are assuming unitization?

Q Assume anything you want to so far as property rights are concerned. I am asking you about efficient drainage?

A Yes, I think that when the first well was drilled, if you had unitized those four 40-acre tracts and gone to the Commission and said, give us 160-acre allowable to the one well or whatever, that you could probably drain the entire pool. Is that what you want?

Q And that conversely, you don't need to drill a well on each 40 in order to recover the oil from the field?

A Possibly.

Q If one well in your opinion would drain the entire field, and I don't want to belabor this, but if in your opinion one well will drain the entire field, how can it possibly be necessary to drill a well on each 40-acre tract in order to do so?

A Well, because of the practical aspects. If you didn't go in and unitize, and you have different interests --

Q (Interrupting) I am asking you again to disregard property rights and speak in terms of engineering concepts of efficient drainage?

A I just told you that I thought one well could drain the whole field.

Q Now, your Exhibit 6 wherein you photographed Page 306 from the particular volume entitled, "Elements of Oil Reservoir Engineering," by Silvan J. Pierson, it is speaking solely in terms of artificial water fluid as opposed to a natural water drive?

A Well, the two are very similar in the way they behave.

Q Have you dealt with artifical water floods?

A Yes, sir.

Q Have you also dealt from a flow standpoint, either as an operator or as a consultant, with natural water-drive reservoirs?

A Yes, sir.

Q Isn't it true that in a natural water-drive reservoir, all other things being equal, would be expected to produce probably twice as much of the original oil in place as would a reservoir that was produced under primary and then later under artificial waterflooding?

A Well, of course, there is a wide range of recoveries that various pools recover. I have known of discoveries with natural water-drive pools to vary anywhere from maybe 60 percent, and in the case of East Texas, maybe 85 or 90 percent of the oil.

Q Do you know of any artifical waterflooding that have been anywhere near that successful?

A Well, I have known cases where some areas have recovered more than twice -- between two and three times the primary recovery.

Q One or two times primary has nothing to do with the original oil in place.

A Primary is 20 percent and three times that is 60 percent, so I say it is possible to recover within

the range that we are talking about.

Q That would be an exceedingly successful water --

A (Interrupting) That is a real dandy, yes, sir.

Q Have you ever dealt with any other natural-drive reservoirs in the San Juan Basin of New Mexico?

A No, not in the San Juan Basin.

Q What has been the area of your experience, the geographic area where you have had experience with natural water drive?

A Well, all of Lea and Chaves County and Eddy County, New Mexico, practically all of West Texas. I was in the central office of the San Juan Oil and Gas Company in Tulsa where I had worked all of the pools that the Company had. In fact, all areas, Wyoming, Louisiana, everywhere.

Q Isn't it true that the reservoirs and general sand characteristics in the San Juan Basin is substantially different from those in southeast New Mexico and West Texas and Oklahoma, those areas where you have had personal experience?

A I think I know of several pools in Eddy County that is characteristic of this sand and very similar.

Q Referring and directing your attention, then,

to your Exhibit 7, which as I understand it, is an engineering projection performed by you, is that correct?

A No, this wasn't performed by me. This was taken from a trade journal on calculating secondary oil recoveries. This is just a typical diagram showing the relationship between water-cut and oil recoveries. It wasn't prepared by me.

Q But it was offered by you as your opinion as to what probably will happen in the Media Entrada or not?

A Well, I used it as a guide, roughly.

Q What I am getting at is just how roughly is it? Would you direct your attention to the particular reservoir characteristics that are set forth on your Exhibit 7 and tell the Commission how each of those characteristics compare with the precise characteristics of the Media Entrada? I take it, before you answer that, that these reservoir characteristics do have a direct bearing on this performance curve, do they not?

A They have some effect on it. You get a family of curves, but they are within working limits of this thing.

Q Now, going back to my previous question, do you compare each of the reservoir characteristics shown on your Exhibit 7 with those which you know to exist in

the Media Entrada?

A Well, for example, the porosity in this case is shown to be 19.6 percent, and in the Media Entrada, I think the porosity varies from somewhere around 18 up to about 25 percent. So, they are kind of comparable.

Q Average porosity in the Media Entrada is 23 percent, would you agree with that?

A That may be the average, yes, sir. And the **connate** water in this case is shown to be 25 percent, and the previous testimony, I believe, showed that the -- I am not real certain what they showed the conate water to be. I am not really sure what the base on that would be. For example, sometimes if you use the water characteristics that the core analysis show, that is an erroneous thing to do because these wells were drilled with water-based mud and these cores are contaminated with water, so whatever the water saturation in the core is, is really not a true reflection of the conate water in the formation, but I would think, based on what I know of all of the data that conate water of 25 percent is a fairly close agreement. It may be 20 percent in the Media Entrada.

Q Would you disagree that it is instead of 20 percent, 45 percent?

A I would doubt that it is 45 percent.

Q If it was 45 percent, would it have a material effect upon the results of the graph that you portray here in Exhibit 7?

A If the water saturation was 45 percent, I would guess that if you produce very little water, that your connate production would be water.

Q Now, I find no permeability reflected on your Exhibit 7. Does possibly other data having to do with this exhibit reflect what the permeability actually was in the field?

A I will quote the Roswell Geological Society Symposium of Southeast New Mexico, 1956. They state that the average permeability for this Loco Hills Sand is 49.9 Millidarcies.

Q Do you know what the permeability is? Now, when you say 49.9, that is 49.9 Millidarcies?

A Yes, sir.

Q Do you know what the permeability is in the Media Entrada?

A Yes, I have seen figures all the way from about 160 and 180 Millidarcies, somewhere up to about 280, maybe, or something like that.

Q Now, with that variation between the permeability in the Media Entrada and the permeability in the Loco Hills, would that have any bearing upon the graph or curve designed in your Exhibit 7?

A That will have a small effect on it.

Q It would have a very material effect, wouldn't it, that great a variation?

You are aware that there are some intervals that have permeability in the Media Entrada as high as 865?

A Yes, that is possible to have little small segments of that type of permeability.

Q Okay. Average permeability is 293?

A Yes. I would guess that that is probably right.

Q In essence, then, without belaboring each one of these reservoir characteristics comparing the Loco Hills Fields in Eddy County, New Mexico with the Media Entrada, isn't it a fair statement to say that they are quite widely dissimilar pools, the reservoir characteristics are very dissimilar?

A No, I don't look at them as that dissimilar. To me, we are kind of looking at a ballpark figure. I would kind of classify them as relatively similar.

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Q Well, that ballpark has got a center field and a home plate, and 49.9 Millidarcies compared to 300 is a pretty good sized ballpark, isn't it? That is quite a variation?

A That is quite a variation, but I wouldn't say that there is a very real substantial difference. For example, if you threw in a few Millidarcies in the Media pool, say, in the thousands, it really wouldn't affect my classifying the field.

Q It has a very substantial effect on the field performance, does it not?

A It has some effect.

Q Referring, then, Mr. Gray, to Exhibits 2, 3, 4 and 5, you have calculated the water-oil ratio, is that correct, on those four wells on those four exhibits?

A I did assume that your figures were correct in the exhibit that you presented at the January of '74 Hearing, so really, I just plotted the data that you showed on your production schedule.

Q You have no idea how the water was measured or calculated or whether it was metered or estimated or plotted at any time during the last year?

A No. I don't know how you calculated that in the past.

Q Do you know how it is being calculated at present?

A Well, there is a manifold on the water injection line there and there is a meter that can be used to meter the water in the injection system. Now, as to the production part of it, I am not sure whether you measured there or how you measured.

Q Are you aware that the water is being presently metered?

A Yes, sir.

Q Do you know when that procedure of metering the water was initiated?

A No.

Q Mr. Gray, in your opinion, and in view of the high degree of communication in this field that you have previously described, do you feel that there is any possibility that the Media No. 1 and 2 Wells drained any oil from the tracts that the Fluid Power Pump No. 1 was subsequently drilled upon? Was there any drainage by the Media 1 and 2 during that period of time prior to the drilling of the Fluid Power Pump No. 1?

A Prior to drilling Fluid Power Pump No. 1, no, sir, I don't think so.

Q You don't think the Media 1 and 2 would drain any oil from the tracts that the Fluid Power Pump No. 1 is now situated on?

A Well, it is kind of hard to say just how far the drainage radius would extend for the production that was taken out during that year. I don't -- if the two wells had been permitted to produce without the other two wells being drilled, yes, certainly, the Medias would drain that oil, but whether or not they drained any up to that time, I can't say. They possibly could have drained a little.

Q From your study, would it be correct to state that approximately 90,000 barrels of oil was produced from those two wells prior to the drilling of the Fluid Power Pump No. 1 and 3?

A I haven't added up the figures. If your figures show that that is the case, well, I wouldn't --

Q (Interrupting) Assume with me for a moment that that is the fact, that to be precise, 89,638 barrels of oil were produced prior to the drilling of the Fluid Power Pump No. 1 and 3, would your opinion then be that those two wells did drain substantial quantities of oil from the tracts on which the --

A (Interrupting) No. I wouldn't say "substantial quantities." I would say that, yes, they probably did drain a little bit. Not substantial quantities.

MR. COOLEY: No further questions. Thank you.

MR. PORTER: Does anyone else have any questions of Mr. Gray?

MR. HUNKER: I would like to ask a couple of questions.

REDIRECT EXAMINATION

BY MR. HUNKER:

Q Mr. Gray, in connection with the plotting of the fluid production from the various wells in this field as shown on your Exhibits 2, 3, 4, and 5, have you assumed that the operator's reports were accurate with regard to the water production and oil production?

A Yes, sir.

Q You have also testified, Mr. Gray, that the Media Entrada would be produced more efficiently at lower rates of production. Does this apply throughout the life of the pool?

A No, not throughout the life of the pool. This applies to what I would say early and middle stages of depletion of the reservoir, certainly, and the latter

stages of completion when the water saturation becomes high. Then, at that point, it is more economical, and you can recover more oil at that point by producing it at a high rate. But that is in the latter life of the pool when the water saturation is very high.

Q Do you have any authority for this proposition that you can quote or cite, Mr. Gray?

A Well, I can quote from the article that was published in the Oil and Gas Journal, September 3rd, 1973 and September 10th, 1973, an article prepared by William Burn, Jr., and Richard A. Morris of Texas A and M University.

Q What does that article show or indicate?

A Well, I will read from Page 125 in the left column of the page and the very bottom of the paragraph. It says: (Reading) Emphasis in early water coning investigations has been directed toward establishing producing conditions to allow water-free oil or gas production. This is important at least early in the life of a producing field. (End of reading.)

And then in the middle column of the same page in the second paragraph, the article states: (Reading) However, if the field is to be effectively depleted by underlying water-drive, at least the last stages of oil

production must be accompanied by water production. (End of reading.)

And then the second paragraph below that says: (Reading) Even so, the infinite variety reservoir and well properties of natural reservoirs make it impossible to predict on the results shown here the performance of a specific well in a given field. (End of reading.)

Q Is this the same article that was referred to in the prior testimony with regard to this matter?

A Yes, sir.

Q What was the substance of the prior testimony with regard to this particular article?

A Well, the prior testimony, I think in essence tried to show that the article really stated that producing at a high rate is beneficial rather than a detriment in producing a pool. Let me go back and read another paragraph from the first page of this article:

(Reading) It appears that high production rates could improve ultimate recovery in an economic sense. (End of reading.)

Now, what these authors state is that it might be more economical, you might make a little more money by going in and producing these types of pools at a high

rate in order to get the oil faster so that your operating cost would be lower, and from that point of view, perhaps producing at a high rate of efficiency has an advantage in an economic sense.

Q That does not take into account the fact that underground waste may occur?

A Well, they don't state that it will occur, but you have to consider that.

Q In reviewing the Order R-4713, previously entered by the Commission in Case 4120, would you comment on the Commission's directive with regard to water encroachment provided for in that order?

A Yes. Order R-4713 provides, among other things, that the secretary-director of the Commission may at any time it appears there is premature water encroachment or water coning is occurring or other evidence of reservoir damage is apparent, may rescind the provisions of this order and cause the top allowable to revert to a standard unit.

Q In your opinion, is water encroachment occurring at the present time to a point where it is detrimental to the reservoir?

A Yes, sir.

MR. HUNKER: I have no further questions. Does the Commission have any questions?

MR. COOLEY: I have another question or two that was brought out by Mr. Hunker's questions and the answers of Mr. Gray. I will keep it as short as possible.

RECROSS EXAMINATION

BY MR. COOLEY:

Q Mr. Gray, if I understood you correctly from the authorities that you quoted from as well as your own personal opinion, that although high production rates can possibly cause reservoir damage in the early life of the field, that in the later life of the field it can be beneficial?

A That is correct.

Q Do you recall your testimony before Examiner Mr. Stamets as well as your testimony yesterday that in your opinion this particular field was in the latter stages of its life?

A By "latter," I was essentially referring to past the half-way mark. Perhaps I didn't describe that properly, but we look at it as just a little past the mid-way point.

Q With respect to this point in time when in your opinion, if you were running the field, you would

accelerate production in order to achieve greater ultimate recovery, how latter is latter?

A Well, I would be guided by the water-oil ratios. You see, when you get into a situation where the water saturation and pore space has reached its high point, well, then, you are talking about water-oil ratios of, say, 30,000, 40,000 and up in that sort of range. But as long as you have water-oil ratios of, say, 10 and in that neighborhood, you haven't reached that high water saturation yet.

Q Are you saying producing 30,000 to 40,000 barrels of water for one barrel of oil? Is that what you are saying?

A No. 30,000 did I say?

Q Yes, sir.

A I mean 30. 30 to 40. Excuse me.

Q All right. Now, the latest thing that you quoted having to do with more successful from an economic standpoint has a great deal to do with this engineering concept that you gentlemen called the "economic limits" of the field, does it not?

A Yes.

Q There is oil left in any oil field when it

is plugged and abandoned, but it just isn't economical to produce it from an operating standpoint?

A Yes. That's correct.

Q This is one of the things that the operator does have to take into consideration to see what the economic life and limits of the field is?

A Yes.

MR. COOLEY: Thank you.

MR. PORTER: Any further questions? The witness may be excused.

(Witness dismissed.)

MR. HUNKER: I would like to call John Reimer.

JOHN K. REIMER

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

DIRECT EXAMINATION

BY MR. HUNKER:

Q Will you state your name?

A John K. Reimer.

Q What is your address, Mr. Reimer?

A P. O. Box 11594, Albuquerque, New Mexico.

Q Did you sell your United States Oil and Gas Lease N.M. 058122 to Don C. Wylie?

A I did.

Q Did you reserve and accept certain overriding royalty interest?

A I reserved a 5 percent overriding royalty interest.

Q Was there another overriding royalty?

A There was a one percent retained overriding royalty interest for Mr. McKenzie.

Q What tract of land did that oil-gas lease cover?

A The southwest quarter of the southwest quarter of Section 14 and the southeast quarter, southeast quarter of Section 15, Township 19 North.

Q Did the assignment which you made to Mr. Don C. Wylie contain a provision permitting your interests to be pooled or communitized?

A It did not.

Q Has your interest been put in suspense?

A It has.

Q Have you received any money for your overriding royalty since October 1st, 1972?

A I have not.

MR. HUNKER: That's all.

MR. PORTER: Any questions?

MR. COOLEY: Yes, Mr. Commissioner.

CROSS EXAMINATION

BY MR. COOLEY:

Q Was there any drilling commitment at all, Mr. Reimer, in the assignment that you made to Mr. Wylie?

A Yes, there was a drilling commitment for one well, as I recall, within a 90-day period, and if that was successful, they had another 920 days to drill a second well. The first well was completed, as announced in the Albuquerque Journal on, I think it was May 7th. No, the first well was hit on March 12th of '69 and the second one, Federal Media No. 2 on May 7th of '69.

Q Mr. Reimer, did you have any complaints about the way the Media-Entrada Pool and the wells in which you have an overriding royalty were being operated until such time as the 160-acre spacing went into effect?

A I would like to state that in the oil business, I am a novice. I know less about oil than probably anybody in this room. As an investment, I got into this thing. My interest in this was more income or investment-type of thing than the technical operation of the field.

Q Did Mr. Hunker represent you in Case No. 5167 at the Examiner Hearing before Mr. Stamets on February 13, 1974, that had to do with the Application of Fluid Power

Pump Company and Petro-Lewis Corporation for compulsory pooling of the two non-standard proration units on which the wells you are interested in are located?

A Case what?

Q That was the forced pooling case?

A He represented me, yes.

Q On February 13th of this year?

A Yes, sir.

Q On Page 31 of the transcript of that case, and going on over to Page 32, after considerable discussion and testimony by Mr. Gray, concerning water coning and alleged wasteful practices, operating practices over many objections of mine, I would like to read to you from about the middle of the page in which a dialogue was taking place between Mr. Stamets and myself after I had entered an objection as to the materiality of that type of testimony in that case. Mr. Stamets remarked:

(Reading) "The water coning problem does not seem to be a subject of discussion in this case unless you can relate this to the forced pooling order.

"MR. HUNKER: The coning, Mr. Stamets, is going to cause damage to the Federal Media 1 and Federal Media 2, and as a consequence, the correlative rights of McKenzie and Reimer are going to be adversely affected.

"MR. STAMETS: Mr. Hunker, if the Commission would not enter a forced pooling order and would enter an order denying a forced pool in this case, I gather that the operator could continue to operate the well at the current rate of production, whatever is allowed.

"MR. HUNKER: If they will pay us a percentage of overriding royalties from our two wells, we are perfectly willing to abide by that order." (End of reading.)

Does that still represent your feelings, that so long as you get your 6 percent, you don't care how the field is operated?

A This is right.

MR. COOLEY: No further questions.

REDIRECT EXAMINATION

BY MR. HUNKER:

Q During the interval from the first production until you got your first check, how much time elapsed?

A Approximately two years from the time the first well was brought in. It was brought in in '69, and I think it was June of '71 that I got the first royalty check.

Q When were you first aware of the fact that the Commission had created 160-acre spacing units and had

created these two non-standard spacing units?

A On -- I knew nothing about this until November-- I've got the date here someplace -- November 27th, 1972, a proposed division order was, on Federal Media No. 2 was forwarded to me by Val Reece, representing the Fluid Power Pump, and a communitization agreement was forwarded on the same day by Malcolm Colberg, who also represented Fluid Power Pump. The first I knew of any of these things happening in the four cases we have been discussing was on that date, November 27th, 1972.

MR. HUNKER: I have no further questions.

MR. COOLEY: I have one, please.

RECROSS EXAMINATION

BY MR. COOLEY:

Q Mr. Reimer, immediately subsequent to the Hearing on February 13, 1974, are you aware of the fact that Mr. George T. Slaughter, President of Fluid Power Pump Company, forwarded a letter to the Permian Corporation which was the purchaser of the oil in the Media-Entrada Pool directing them to release to you and Mr. McKenzie all monies which they were holding in suspense for you?

A I am aware of the letter. I am also aware of action which has not taken place.

Q Are you aware that your attorney in collaboration with me has made numerous efforts to get the Permian Corporation to release those funds?

A To answer that, I am sure that you both are working in my best interest, which raises another problem: What is the problem that the royalties haven't been paid?

(Whereupon, a discussion was held off the record.)

MR. COOLEY: I have nothing further.

MR. HUNKER: I have no further questions.

MR. PORTER: The witness is excused.

(Whereupon, a discussion was held off the record.)

MR. PORTER: Let the record show that Mr. Reimer is still under oath.

FURTHER DIRECT EXAMINATION

BY MR. HUNKER:

Q You testified that in your assignment to Don C. Wylie, a 5 percent overriding royalty had been reserved by you?

A Right.

Q In addition to that, a certain overriding royalty which had been previously created was accepted.

Now, what was the percentage amount of that accepted overriding royalty?

A It was 2 percent accepted overriding royalty.

Q Does Mr. McKenzie own one percent of that two percent?

A That is right. Mr. McKenzie owns one percent of the two percent.

MR. HUNKER: That's all.

MR. PORTER: The witness may be excused.

(Witness dismissed.)

MR. TOM KELLAHIN: I call Mr. John Somers, Petro-Lewis Corporation.

MR. PORTER: How many witnesses do you have, Mr. Kellahin?

MR. TOM KELLAHIN: Just one.

MR. PORTER: Mr. Cooley, do you have any?

MR. COOLEY: None. We plan to submit no testimony.

JOHN B. SOMERS

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

DIRECT EXAMINATION

BY MR. TOM KELLAHIN:

Q Would you state your name, by whom you are employed, and in what capacity?

A John B. Somers. I am employed by Petro-Lewis Corporation as their manager of production operations.

Q Where are you presently located, Mr. Somers?

A Denver, Colorado.

Q What is your educational background?

A I am a petroleum engineer. I received a professional petroleum engineering degree from the Colorado School of Mines, and I have been a practicing petroleum engineer for ten years.

Q Have you previously testified before this Commission or one of its Hearing Examiners and had your qualifications as an expert petroleum engineer accepted and made a matter of record?

A Yes, I have.

Q Have you made a study of and had any experience in regard to the Media-Entrada Field?

A Yes, I have.

Q What is that experience?

A Since Petro-Lewis acquired this property, or actually, a half interest in this property, the field has been under my supervision and I have been intimately

involved in the reservoir study, the engineering study that was done and was used as the basis for our acquisition and all subsequent operations and production of the field.

Q Have you previously testified before this Commission with regard to the Media-Entrada Oil Pool?

A Yes, I have.

MR. TOM KELLAHIN: We tender the witness as an expert, Mr. Porter.

MR. PORTER: His qualifications are accepted.

MR. HUNKER: If the Commission please, will you ask the witness whether or not he is registered as a licensed engineer in the State of New Mexico?

MR. PORTER: Are you a registered professional engineer in the State of New Mexico?

THE WITNESS: No, I am not in the State of New Mexico.

MR. HUNKER: I am not going to make any objections.

BY MR. TOM KELLAHIN:

Q Mr. Somers, I would like to direct your attention to what has been introduced as Applicant's Exhibits 2 through 5. Do you have those before you?

A Yes, I do.

Q Looking at the data contained on those exhibits, Mr. Somers, do you know how the water production, as indicated on those exhibits, was determined?

A Yes, I do.

Q Please tell me how?

A In the past, or at least until June of 1973, this water production was estimated based on the pumper's bucket tests in the field, and it was estimated, for example, a single estimate was made at the time Fluid Power Pump Company got into these, and that same estimate was used from that point until we took over the operations and installed metering facilities to actually determine the actual amount of water being produced each month.

Q When was that?

A That was in June of 1973.

Q So, as far as points of which we have actual water-cuts which were measured, we have one, which for example on Exhibit No. 2 would be in 1971, mid 1971. The next point where we actually have a measured water volume would be June, 1973, when we actually installed the metering facilities to meter the water production from each individual well.

On the exhibit which was entered in the previous

Hearing, you can notice that there is a constant water-oil ratio there for a period of two years, and this constant water-oil ratio is because this original estimate of water production was used for that period.

Q I show you what has been marked as Petro-Lewis Exhibit No. 1 and ask you to identify it and explain what information it contains?

A Exhibit No. 1 is a graph which is a plot of percent oil versus accumulative oil production from Fluid Power Pump No. 3 Well. The circled points on this graph are points prior to the installation of high volume pumping equipment on the well. The triangles that you see on this graph are a point subsequent to the installation of a Reda Pump on the well. The lower scale is in thousandths of barrels.

Q What does this tell me in relation to the water-oil production in regard to the Fluid Power Pump No. 3?

A The indications are from this plot which is a conventional plot used by reservoir engineers to determine the amount of oil reserves that you have in water-drive situations. Prior to the installation of this high volume pumping equipment, that this very very precipitous decline

was taking place to the point where we wouldn't have anticipated actually being able to produce more than about 22,000 barrels from the well. As a result of installing the Reda Pump and increasing our production rate on the well, you can see that the percentage of oil has increased from 3 percent to as high as 5 percent, that we have had a flattening of the decline that you see in this curve, and we now anticipate that we would recover as much as five times the oil which we would have expected to have anticipated with the conventional beam-type pumping equipment with which the well was equipped.

Q Directing your attention to what has been marked as Petro-Lewis Exhibit No. 2, I ask you to identify that and explain what information it contains?

A This is a similar plot of cumulative oil production versus percent oil for Fluid Power Pump No. 1 Well, and again, the circled points are the points prior to the installation of high volume Reda pumping equipment, when the well was on a beam pump. The triangular points are points after we installed the Reda Pump. The scale on the bottom, again, is thousands of barrels. The scale on the lefthand side is percent oil.

Q Do you have anything else you would like to add

with regard to either one of these exhibits?

A Yes. The Exhibit No. 2 shows the same type of response to higher withdrawal rates, and this is an increasing oil-cut. Our oil-cut has actually gone from -- when we took over the property, the well was making 9 to 10 percent oil. It is now making between 13 and 15 percent oil. If you use this to project the reserves, we feel that there is at least an additional 100,000 barrels of oil which we have added by virtue of the increasing the withdrawal rates and be able to produce the well at a higher rate of production. Neither of these curves indicate any effect, coning effect or detrimental effect from the reservoir from high withdrawal rates. As a matter of fact, on the contrary, they indicate much higher recovery rates than we would have had at lower producing rates.

Q With regard to that, Mr. Somers, let me direct your attention to the Applicant's Exhibits Nos. 8 and 9. With regard to those exhibits, Mr. Gray's testimony indicated that by producing at these high rates, you are going to leave oil in place that might otherwise be recovered if the rates were reduced, thereby causing waste. Will you direct your attention to that testimony and give me your comments?

A I do not believe that the increased withdrawal rates from these wells will result in lower ultimate recovery. On the contrary, the information that we have available, after having produced these wells, in one case we produced a well since last August, the other well, we installed a Reda Pump in the first part of February, and we have hundreds of thousands of barrels of fluid that we have moved from these wells in terms of total fluid, and there is no indication of any detrimental effect or water coning. On the contrary, it appears that our water production problem in the Media Dome Field is associated with the way, the mechanical way in which these wells were completed. The original operator and the people who completed the wells perforated all the way -- in cases where they penetrated the whole interval -- perforated from the top of the sand all the way to the water-oil contact. As Mr. Cray has indicated, with a bottom water-drive, as soon as that water comes up a little bit, it is in your well and we have no way of physically shutting off this water. As a result, this has been the primary means or reason for the increased water production, along with the similar type of thing that Mr. Gray testified to, and this is very high

permeability where you have a relative permeability situation where it is easier for the water to flow than it is for the oil to flow. This is a very low relief, a thin oil column, and it is not very far to the water at any point.

Q Does increase of percentage of oil indicate that any coning is occurring?

A Not at all.

Q The Oil Commission in 4642, 4673 and 4685 entered orders in those cases in which the Commission found that the entire acreage involved in those particular cases can be reasonably presumed productive. Since the date of those orders, Mr. Somers, has anything occurred which would cause you to believe that those findings are incorrect?

A No, sir, not at all.

Q I would like to direct your attention to Fluid Power Pump No. 1. What is the pay thickness of that well?

A The pay thickness which our geologist and which our log analysis work indicates to be productive is around 55 feet of oil sand.

Q Will you bring us up to date on that Fluid

Power Pump No. 1 and indicate for us its productivity?

A The Fluid Power Pump No. 1 has the capacity to produce 18,000 barrels of fluid a day. It has one of the most outstanding PI's that I have seen anyplace in the United States. I think you would have to go to the Middle East to find a PI comparable to what we have in this well. The average in the field is 7.2. The PI for this particular well is 9. This means that for every pound of pressure draw-down, you get 9 barrels of oil or 9 barrels of fluid.

Q Is this well presently being produced at its full capacity?

A No. It is only being produced at about 12 percent of its capacity.

Q How does this data of Fluid Power Pump Well No. 1 compare to the Federal Media No. 1?

A The Federal Media well does not have as good a PI -- neither of the Federal Media wells have as good a PI as the Fluid Power Pump No. 1. If you use the case which Mr. Gray described of a comparable fluid level, having the same fluid level in both wells flowing out of this punchbowl, this means that with the same amount of draw-down that I would have five barrels for each PSI or pressure draw-down out of the Federal Media Well

and nine barrels for every PSI drawn down in the Fluid Power Pump No. 1 Well. This is really reflecting the difference in pay thickness in the well.

Q What is the pay thickness of the Federal Media No. 1?

A 29 feet.

Q And the Federal Media No. 2?

A 30 feet.

Q In your opinion, Mr. Somers, is there more oil in place under any of the particular tracts involved as opposed to the others?

A Definitely?

Q Which one?

A The tracts with the thicker pay thicknesses such as, Fluid Power No. 1 which has over 50 feet of pay, the Fluid Power No. 3 which has 34 feet of pay. Both of these tracts have more pay, oil pay, and as a result, more oil reserves than do either of the Federal Media wells or tracts.

Q In your opinion, Mr. Somers, is waste occurring as a result of your increased rate of withdrawal?

A Not at all. To the contrary, we will produce a lot more oil than we would have under the conventional

allowable.

Q With regard to the Media Wells Nos. 1 and 2 which Messrs Reimer and McKenzie hold the overriding royalty on, what, if anything, is being done by the operators to protect their correlative rights in those wells?

A As we indicated to the Commission in January, we intend, and already have, installed equipment to increase the producing rate from those wells, so we do have a comparable amount of drew-down so that there is no pressure difference so that drainage would occur. We have taken a 320,000 inch-pound pumping unit off the Federal Media No. 2 and replaced it with twice as big a unit, a 640,000 inch-pound unit. We have also changed out the pump and put a larger bottom-hole pump on Federal Media No. 1. We have replaced the small treater which was limiting our fluid production and ability to handle fluid and have increased its capacity by 50 percent. So, we have taken steps on both of these wells that we indicated to the Commission that we would to increase their producing capacity so that they would be competitive and there would be no damage to correlative rights.

Q Directing your attention back to Applicant's Exhibit No. 2, I believe it is, is that the Federal

Media No. 1 Well?

A That is correct.

Q In Mr. Gray's testimony, he stated that he thought during late 1973 that a larger pump was installed on that well and that this accounted for the increase in the curve there. What information do you have with regard to that?

A That isn't correct. What actually occurred at that time was that we took over operations and put the well back on production and started measuring what actual water was being produced. So, it wasn't a matter of installing a bigger pump or putting a different pumping equipment or changing the operation in any way. The wells were down at the time we acquired the property. We put it back on production and just started metering the amount of water that was actually being produced and these were the results.

Q What date did they put that Reda Pump on, do you know?

A Which one?

Q For the Federal No. 1, is it?

A We didn't put a Reda Pump in Federal Media No. 1. We put a Reda Pump in Fluid Power No. 1 and Fluid Power

No. 3. One was installed in August, that in the No. 3 well, and the other was installed in the first part of January in the Fluid Power No. 1 Well.

Q For all practical purposes, Mr. Somers, is there any difference among the working-interest owners with regard to any of the particular wells?

A Not at all. It is 50-50.

Q As to any individual well in the pool, is the working-interest owner interested in producing one well more than any other well?

A No. As I say, we have a 50-50 interest in all wells, so there is no interest in producing any well any more than any other. We just want to produce as much oil as is possible and recover as much oil as is possible from this reservoir.

Q Is there any basic difference between the royalty and overriding royalty interests?

A Yes, there is. No difference in the royalty, but there is a difference in overriding royalty.

(Whereupon, a discussion was held off the record.)

BY MR. HUNKER:

Q With regard to the overriding royalty, is the

amount any different between any of the wells as opposed to division of that particular amount?

A No, it is essentially the same. There are some slight variations, but like the difference between 28 percent and 29 percent. There may be one percent difference from tract to tract.

Q Is there any economic advantage to the operator with regard to producing any particular well?

A No.

Q Is there anything else you would like to add with regard to your testimony, Mr. Somers?

A No.

MR. TOM KELLAHIN: That concludes our direct examination.

CROSS EXAMINATION

BY MR. HUNKER:

Q In previous testimony before the Commission, it was indicated that the royalty rate payable to the United States under the Federal Media No. 1 Well was at a higher rate than that of the Media 1 and 2, is that correct?

A I am really not that familiar with it, but I can say this, that there is a sliding scale royalty on

those wells where there is a fixed royalty on the other two.

Q With regard to the reports that were filed by Fluid Power Pump Company with respect to water production, would you say that their reports were inaccurate as to the amount of water actually produced?

A They were accurate initially. It is just that they did not take monthly well tests after that.

Q Were you present when those water tests were made?

A No.

Q Are you testifying from hearsay?

A I am testifying from talking with the pumper who actually did the testing.

MR. HUNKER: I move that his testimony with regard to hearsay matters, and particularly with regard to the bucket method of measuring the water production be stricken, and that the Commission take notice of the fact that the reports previously filed in this case by the Fluid Power Pump Company are inaccurate or allegedly inaccurate.

MR. TOM KELLAHIN: If the Commission please, we are not bound by strict rules of evidence in this administrative hearing. If we are going to apply the rules of hearsay to the case, then we could strike substantial portions of Mr. Gray's testimony as well. His

calculations and opinions are resultant upon productions of other individuals that are not present here today. Mr. Somers is allowed the same opportunity to draw the same reasonable conclusions from similar data.

MR. PORTER: The Commission will admit the evidence into the record.

Mr. Hunker, any questions that you might have concerning this that might possibly affect the weight that the Commission will give it, but it will not affect its admissibility.

MR. HUNKER. You will note our exceptions, Mr. Porter.

MR. PORTER: The Reporter will note the exceptions.

BY MR. HUNKER:

Q In connection with the installation of the Reda Pump on Fluid Power Pump Company No. 1 Well, you indicated that the high withdrawal rate would not constitute waste or do reservoir damage, is that correct?

A That's correct.

Q You also indicated that this was not conventional. What did you mean by the fact that it wasn't conventional? That is was not a conventional method for producing a water-drive field?

A It wasn't a conventional pump. In other words, it wasn't a beam-type pump, the sucker-rod system. We were talking about a down-hole submersible pump rather than a beam-type pumping unit which has limited capacity because of the pumping limitations.

Q What is the capacity of the Reda Pump that was installed in the Fluid Power?

A 4000 barrels a day of fluid.

Q 4000 barrels of fluid per day?

A Right.

Q What is the current rate of production?

A 4000 barrels of fluid a day.

Q You did say that if you could get a larger pump into that well that the well was capable of producing 18,000 barrels?

A Based on the productivity information that we have on that well and all of the wells, that well is capable of 18,000 barrels of fluid a day if you could physically draw it down. And this is the problem, that mechanical equipment which has been developed by the oil industry is not sufficient for producing wells of that kind of capacity.

Q So, your statement with regard to the fact

that it was producing only 12 percent of capacity was based on the fact that if you could install equipment?

A Exactly.

Q It is presently producing at 12 percent of the rate that --

A (Interrupting) That it was totally capable of, that is correct.

Q So, you are producing it at the present time at the total maximum extent that the present equipment available is capable of producing?

A No, sir. We have a small Reda Pump in that well. We could increase the production and hope to and plan to increase the production further on that as soon as we have to replace this Reda Pump. Normally these pumps will only -- because of the high volume that they handle -- will only last maybe a year to 18 months, depending on the volume of fluid that they handle. Then you have bearing failure or motor failure or you have problems with the pumps, and when that point arises, we intend to install a larger pump on the well.

MR. PORTER: Well, are you producing at capacity at the present time?

THE WITNESS: At the present time, yes, we are.

MR. PORTER: That was your question?

MR. HUNKER: That was my question.

BY MR. HUNKER:

Q How many barrels of oil are you producing with the fluid that you are producing today?

A Our last test was 614 barrels of oil a day.

Q In connection with your exhibit that was marked No. 1, pertaining to Fluid Power Pump Company Well No. 3, what was the percentage of oil production shown on that graph as of the first showing, the first point on your graph?

A The first point was 10 percent oil.

Q And the last point, what was the percentage?

A Four percent.

Q That was after the increased withdrawals occurred, is that correct?

A That's correct.

Q You have made a complete study of the productive capacities of the wells in this particular pool, and more particularly, the four wells that we have been discussing over the last two days. What is your estimate of the remaining reserves in this particular pool?

A I don't have an estimate of the total remaining reserves in the pool right now. We have not revised our

reserve estimate to reflect the performance of Fluid Power No. 1 and 3. We do this annually.

Q You do know what the pay thickness is in the Fluid Power No. 1 and 3 and you know what the pay thickness is in Federal Media 1 and 2, and certainly, you have some idea as to what the recoverable reserves are in this pool at this time?

A No, because the metric method does not lend itself to determining the recoverable oil from the water-drive reservoir, and until we have had a chance to up-date our last information, which is the information which was used to purchase our interest in the field, we just don't have that information available right now.

Q What information did you have available to you from which you made a determination that there was 55 feet of pay in the Fluid Power Pump Company Well No. 1?

A The core analysis from that well and the log analysis of that well.

Q Is the entire 55 feet above the water contact point?

A Yes, it is.

Q What water contact point did you use for that calculation? What footage depth?

A I don't have that information with me.

Q What datum was it?

A I don't have that information.

Q Can you develop it for the Commission?

A Just a second and I can. Maybe I do. I brought my files and I might have something that would have that in it. Minus 1580. Excuse me. That would be a plus 1580, I believe.

Q You have looked at Mr. Gray's Exhibit No. 1 with regard to the productive limits of the pool. Can you generally agree with the outline of productive limits of that pool?

A No, sir.

Q Shown by that exhibit?

A No, sir.

Q Will you tell the Commission approximately where you would outline the productive limits of the pool.

A I would expand the water-oil contact which is shown in red on that exhibit to the point that it would cover wells which we have indications from core analysis and from production testing that they are productive. This would include Fluid Power Pump No. 4 which has 12 feet of oil-saturated sand above the oil-

water contact, it would substantially expand it in everyone of those units.

Q To what extent would it be expanded insofar as the unit in the northeast quadrant is concerned?

A Northeast?

Q Involving Section 14?

A It would probably remain relatively constant in that area because the water-oil contact, or that area is fairly well defined, and we don't have any argument with the interpretation as to Baird No. 1 Well or the Harvey Federal No. 1 Well.

Q Do you have any argument with the interpretation with regard to the northwest quadrant and the pool limit productive limits there?

A Yes.

Q To what extent would you extend the water-oil contact? How far would you move it?

A I would extend it out into the southwest quarter of that non-standard proration unit to pick up part of the northwest quarter of that proration unit and cover considerably more of the northeast quarter of that particular proration unit.

Q In connection with the --

MR. TOM KELLAHIN: (Interrupting) If the Commission please, I would like to object to this line of questioning as being irrelevant on the grounds that the important issue here is the extent of the pool at the time those original orders were entered and not its present configuration. We have been draining it for two years. The question is whether this witness can show, or any other witness can show that this data presented in '72 is inadequate, that the field was larger or smaller than that evidence indicated.

MR. HUNKER: If the Commission -- well, go ahead and rule.

MR. PORTER: The Commission sustains the objection, Mr. Hunker.

BY MR. HUNKER:

Q In connection with the Fluid Power Pump Company Well No. 1, you have testified that the oil-water contact point is at 1580 feet, plus 1580 feet?

A I think it is plus. I am not sure.

Q And that there is 55 feet of pay in that sand as shown in that core analysis. Are you familiar with the well history that was filed in connection with that particular well with the Oil Conservation Commission?

A No, that was filed prior to our being the operator of the field. I have seen the completion report that was filed.

Q Is it inaccurate?

A I don't know.

Q At the top of the Entrada which is reported in that report as being at 5249 feet which has a plus datum of 1602 feet --

MR. TOM KELLAHIN: (Interrupting) If the Commission please, I would request that the witness be given an opportunity to look at the exhibit from which Mr. Hunker is referring.

(Whereupon, a discussion was held off the record.)

MR. PORTER: Mr. Hunker, what report is it that you are referring to that shows the plus 1602?

MR. HUNKER: I beg your pardon. I was looking at the well history on the Federal Media Well, and I was mistaken. I am trying to correct myself at this time.

(Whereupon, a discussion was held off the record.)

MR. HUNKER: I would like to withdraw my question of Mr. Somers and put Mr. Gray back on the stand by way of

rebuttal.

MR. PORTER: You may do so.

MR. HUNKER: We have no further questions.

MR. PORTER: Do you have any further questions, Mr. Kellahin of Mr. Somers?

MR. TOM KELLAHIN: We have no further questions.

MR. PORTER: All right. The witness may be excused and Mr. Gray will take the stand.

By the way, I intended to ask you one question before you leave.

CROSS EXAMINATION

BY MR. PORTER:

Q Something was said, I believe, in the testimony by somebody about producing wells at 107 barrels a day under 40-acre allowables. In your opinion, could this particular well be produced -- I mean the Fluid Power Pump No. 1 -- without waste at 107 barrels per day?

A No, sir.

Q Are there any other wells that you are now producing that would be in that category?

A Yes, sir, any well which is exceeding 107 barrels a day.

Q Do you think reducing that amount would cause

waste?

A Yes, sir.

MR. PORTER: That is all I have.

MR. TOM KELLAHIN: Mr. Porter, I would like to have the witness clarify that last question as to why they couldn't adjust those rates to correspond to --

MR. PORTER: (Interrupting) If the witness would like to explain the answer?

THE WITNESS: We basically believe that the problem which has caused us or indicates low recovery rates or low fluid withdrawals is the fact that we have so much fluid head on the formation that we have a relative permeability situation where it is easier for the water to flow, and as we drop that amount of back pressure on the formation, it becomes easier for the oil to flow. So, by withdrawing a lot of fluid, we are able to drop that fluid level over 1000 feet and are able to therefore increase the oil flow. If we went back to a lower withdrawal rate, you would have a higher fluid level against that, and would, based on our projection, recover substantially less oil than you would with the higher fluid withdrawals.

MR. PORTER: Thank you.

(Whereupon, Mr. Gray was recalled as a rebuttal witness.)

BY MR. HUNKER:

Q With regard to Case No. 4642, and a part of Exhibit 5 presented to the Commission in connection with that case, there is a well history pertaining to the Fluid Power Pump Well No. 1. Let me ask you, Mr. Gray, if you have examined that part of that exhibit?

A Yes.

Q Does it show the top of the Entrada formation?

A Yes, sir.

Q Taking that top and Mr. Somers' figure of a water-oil contact point at 1580 feet, how much pay thickness is there in that well as reported previously by Fluid Power Pump Company?

MR. COOLEY: Objection. I don't at this time have any assurance as to the source of the document to which Mr. Hunker refers or the author of it. Who represented these figures to be correct? I don't think there is a proper foundation to examine with respect to this. Secondly, it would appear that we are getting back into old evidence which is -- he says here that it was an exhibit in the rules case itself. I have a dual objection

to any further inquiry into this.

MR. HUNKER: If the Commission please, we have a perfect right to question the competence of Mr. Somers in connection with the testimony that he has put on in this case and we think we can impeach him if we are given the opportunity to.

MR. COOLEY: My question is, what is he testing him against? We certainly --

MR. PORTER: (Interrupting) What was your question?

MR. HUNKER: This is an Applicant's Exhibit in a previous case put on by Fluid Power Pump Company, and I don't think I could lay anymore foundation than than unless you want me to go through the transcript and see who it was that testified to this. I think it was Mr. Val Reece, a company employee of the operator at that particular time.

MR. PORTER: The Commission will rule that you may use the information in the exhibit for the purpose of impeaching the witness or attempting to impeach the witness, but not for including information on the exhibit in the record.

BY MR. HUNKER:

Q Let me repeat my question, Mr. Gray: Assuming the correctness of the well history as reported to the Oil Conservation Commission and represented to be accurate at that time concerning the Fluid Power Pump Company Well No. 1, what is the thickness of pay as shown by that exhibit in the Entrada formation?

A Mr. Hunker, this exhibit doesn't actually show the amount of pay here. This exhibit refers to certain depths and datums for the formation markers, but if you would allow me, I will make the proper comment in regard to this pay figure.

Q You may state your opinion, Mr. Gray.

A Mr. Somers has just commented that there was 55 feet of pay in the Fluid Power Pump No. 1 Well, and that the oil-water contact was at a plus 1580 datum, so, if we assume that all of the pay was continuous, then the top of pay would have to be as high as a plus 1635 datum. Now, the exhibit in Case No. 4642 shows the top of the Entrada formation at a plus 1624 feet which is several feet below where the top of the pay is shown to be. Now, I know that there was some reference to some pay in the Todlena formation, but this Todlenical pay has an average porosity of something around 5 percent, and I

don't believe any competent engineer would say that that kind of porosity is going to produce in the sand zone, so I think it appears that this 55 feet of pay is out of line. That is all the comments I have on it.

Q Do you have any comment to make with regard to Exhibits 1 and 2 that were presented by Fluid Power Pump Company?

A Well, it just shows that with the high withdrawal rates that the wells are producing at a lower percentage of oil. That doesn't mean more efficient production to me.

MR. HUNKER: I have no further questions of Mr. Gray.

MR. PORTER: Mr. Kellahin, do you have any questions, or Mr. Cooley, do you have any questions of Mr. Gray?

MR. KELLAHIN: We have no further questions of Mr. Gray. I would like to recall Mr. Somers to clarify just one point.

JOHN B. SOMERS

recalled as a witness, having been previously sworn, was examined and testified as follows:

REDIRECT EXAMINATION

BY MR. TOM KELLAHIN:

Q In response to Mr. Gray's statement, Mr. Somers,

would you amplify on your pick of the oil-water contact as being 1580 in this field?

A He was specifically asking on the Fluid Power No. 1 tract, and we have a problem in that the interpretation which we have of the field is, as we stated last January, that we have such an active water-drive that it has tilted the oil-water contact. It is not level as was presented in Exhibit No. 8, but fluid flow from the northeast to the southwest has actually tilted that oil-water contact and pushed it up to the extent that there is over 65 feet of difference in the level of the oil-water contact across the field, and on the Fluid Power tract, the 160-acre tract which the Fluid Power is on, there is over 30 feet of difference in what the water-oil contact datum is. So, when you go to pick a number, what number do you use? It is a plane which is at an angle which gives you the thickness which we testified to in the previous Hearing.

MR. KELLAHIN: No further questions.

RECROSS EXAMINATION

BY MR. HUNKER:

Q Would that indicate that there is an excessive draw-down at the Fluid Power Pump?

A No, sir. What it indicates is that there is

hydrodynamics in the area. Fluid flows through the very porous and permiable Entrada formation below the oil reservoir, through the sandstone which has actually pushed that up at an angle, tilted it up, which is very common in the San Juan Basin. You see it in the Dakota formation. You also see it over at Tocito Dome in the Pennsylvanian. It seems to be characteristic of the San Juan Basin oil fields that where you have an active water-drive, that in many cases it has tilted the oil-water contact.

Q When did this start occurring?

A This was originally tilted, tilted from an inception. When you actually look at the structural information and relate it back to the core information, you see this tilt which produces a 65-foot difference between the water-oil contact on one side of the field and the water-oil contact on the other side of the field.

Q Do you contemplate or does your firm contemplate preparing an isopachous map for presentation to the Commission at the time of the hearing in June pertaining to the unrestricted allowable that was granted to you?

A I don't know that we will then, but we are considering unitizing the field, and we would present

such testimony at that time.

MR. HUNKER: I have no further questions.

MR. PORTER: Does anyone else have a question? You may be excused.

(Witness dismissed.)

MR. PORTER: Mr. Gray, I have one other question. I asked Mr. Somers a while ago if he thought it would cause waste to produce these wells that are now producing above 107 barrels per day to reduce those wells to that level. What is your opinion of that?

MR. GRAY: Mr. Porter, the schooling that I have had in petroleum engineering would lead me to believe that reducing the withdrawal would certainly not cause any damage, and if anything, would have a beneficial effect. Now, it is very difficult once this drowning-out occurs, it is very difficult to restore this condition of the reservoir.

MR. PORTER: I just asked that question to confirm what they say about engineering being an exact science.

MR. GRAY: Well, you can see that we behave like doctors, I guess. Exactly opposite views, I think is what they mean by "exact."

MR. PORTER: Thank you very much.

Does anyone have anything further? Mr. Kellahin, do you have anymore witnesses?

MR. KELLAHIN: No, sir.

MR. COOLEY: Nothing.

MR. HUNKER: If the Commission please, I would like to make a short closing statement, if I may. If the Commission has well enough in mind to recognize our position, I would be glad to close at this time, but if you would like a closing statement, I would be glad to give it to you for your consideration.

MR. PORTER: Do Mr. Kellahin or Mr. Cooley wish to make a closing statement?

MR. COOLEY: One or the other of us, please.

MR. PORTER: Who would like to go first?

MR. HUNKER: Inasmuch as we are the Applicant in this particular case, I guess it is up to me to make the closing statement.

MR. PORTER: All right, Mr. Hunker.

MR. HUNKER: I made an opening statement in connection with Case No. 5167 which the Commission heard, and I will not repeat the things that I said in that statement.

Our clients have not had notice of any of the previous hearings, and should the Commission see fit to continue the non-standard spacing units with 160-acre spacing units, the Commission will be, in effect, changing the contract terms as between my clients and Don C. Wylie and the successors in interest. They have not shown that the producing limits of this field actually extend beyond the 40-acre tracts on which the four wells are located. We have shown that by reason of the wells which we regard to be dry holes that the producing limits of the field are limited most particularly on the south end to the two 40-acre tracts upon which the Reimer and McKenzie wells are located. We think the matter of due process is involved in connection with this case. We feel that the previous Notices of Hearings did not give notice to our clients with respect to the matters that were to come before the Commission. Had their interests been pooled, communitized or otherwise unitized by those previous orders, something should have been shown in that notice that was published directed to overriding-royalty-interest owners perhaps in a general way that their interests were to be affected by those proceedings.

When a Commission sees fit to go forward and

reduce a person's contract right from 6 percent down to 1.5 percent, they are depriving that person of valuable property rights without compensation, and we think that this should be taken into consideration along with the fine expert testimony of Mr. Gray to the effect that this field is now in its later stages of depletion, that the withdrawal rates which are occurring at a very high rate by reason of the installation of the Reda Pump on the Fluid Power Pump Company Well No. 1 causing underground waste, damage to the reservoir and most certainly impairing the correlative rights of Messrs. Reimer and McKenzie. No solution has been offered in this particular case of a concrete nature with regard to how their problem can be solved. From the outset, the files in the earlier cases will reflect that unitization has been a conversation piece all the way through and the Commission has been led to believe from time to time that unitization would take place so that each owner of an interest in the pool would be able to produce his prorata share of the oil from that particular pool.

I would like very much to believe what has been said here today with regard to unitization because this would afford the parties that have interests in this

pool and let it be established by hard truthful evidence by people who are in business today and who will be in business tomorrow that producing limits form a certain area, and we will abide by the area that is submitted in all truth and honesty to the Commission as being the producing limits of that field, and we will subject our interest to unitization. I am assuming, of course, that fairness and reasonableness must be taken into consideration, and that my particular clients will be entitled to produce their fair and equitable share of the oil in this particular pool.

I want to thank the Commission for indulging in this matter for an extended period of time, but I know of no other way that people who own overriding royalty interests can have their message heard by the Commission. It is an important message and it is related in many respects to your Rule 1203. We subscribe to State House Services that tells us what cases have been filed, who the interested parties are and what the issues are that are involved in that particular case. This is substantially the only way that we, in Roswell, New Mexico, have notice of what is going on in Sandoval County, New Mexico. We think that it is a most interesting thing, that at this particular

hearing you would have also been considering a change in that rule which would eliminate from the rule the necessity for naming people who are possibly interested in the property. They can be named in a general way if they are not identifiable. They could be names as overriding royalty interest owners, perhaps, if they were unknown. I think the rule is a good one, and I think for the Commission to abandon that rule would be meaningful in case something should happen in this particular litigation. I think you would be changing horses. I think there are some things that have been done in the past that are not necessarily right and I think this is the time to bring about some corrections in the procedures of the Commission with regard to due process, notice to people whose interests are adversely affected by proceedings before this Commission. Just because the person is a small overriding royalty interest owner, only one percent or five percent, doesn't mean that he doesn't have just as valid an interest as the person who owns 35 percent in the case of Petro-Lewis. The difference in percentage really doesn't make any difference.

With those comments, again, thank you very much for your indulgence, and I trust that you will take

the matter under advisement.

MR. PORTER: Mr. Cooley?

MR. COOLEY: May it please the Commission, the arguments of Mr. Hunker which go to Rule 1203, the requirement of notice, I have already discussed earlier and I will try not to repeat that, but only to point up once again that there are literally scores of people who have signed division orders based upon these four 160-acre spacing units in the pool, and that if the Applicants prevail in this case, everyone of those people will be deprived of their fair share of oil in this reservoir because it has been previously found by this Commission that each one of these proration units is productive of oil in the Media-Entrada Pool. I want to particularly impress upon this Commission that Mr. Hunker had a very very heavy burden in this case of proving with new evidence that those previous findings of two years ago upon which many many financial transactions have been based since that time, assuming that that problem and that question had been resolved and that we had 160-acre spacing in the Media Entrada. Those transactions would all be vitiated if at this late date we changed horses in the middle of the stream.

The burden that was on the Applicant in this is to prove by new evidence that, number one, the acre spacing units should be abolished. Number two, the non-standard proration units were not productive as previously found by this Commission, and they have not met that burden. The only bit of evidence offered with respect to productive limits is Mr. Gray's Exhibit No. 1, the map, which by his own statement, he said would be incorrect as to a reflection of productive limits if it is developed by the Fluid Power Pump No. 4 Well is capable of producing 23 or 4 barrels of oil per day.

Now, that evidence has been put into this record and is not contested, and so now what was an assumption when I asked the question of Mr. Gray is now a fact in the record that the Fluid Power Pump No. 4 Well is not a dry hole, and that it does not form one of the bases for his restricting and contracting the limits of the pool.

We here are confronted with the question of who's ox is going to get gored. There all these other overriding royalty interest owners in these proration units. Now, Messrs. Reimer and McKenzie naturally say they dislike having their interest reduced from 6 percent

of the total production of those two wells down to 1.5 percent. No one likes to have their interest reduced, but on the other hand, bear in mind that it is not the operators of this field that are realizing the difference. It is other overriding royalty interest owners who own their overrides in the acreage that the Commission has included in these units, and they are entitled to their share of oil in the pool too. So, their correlative rights are equally as important as that of Mr. Reimer and Mr. McKenzie.

Now, any questions about jurisdiction, notice and due process, those are all matters which in my humble opinion, would have to be ruled upon by a Court of Law, and that if there be any impropriety in previous orders, then we most strenuously deny that. We think that the notice was given precisely as provided for in the statutes of this State by publication, and that is all the notice that is required, but we think this case is to be raised and must be raised in the Court House.

The question of unitization was discussed. As the Commission well knows, it does not have the power to force unitization and that the working interest owners in this field, if they want to unitize or try to, that

is their prerogative and if they don't want to, they don't have to and Mr. Reimer and Mr. McKenzie cannot prevail upon this Commission to force them to.

In answer to a question propounded by Mr. Porter, Mr. Gray stated that in his opinion these wells could be produced at a lower rate and not cause waste, yet from his own testimony and the textbook authorities that he quoted from in a later statement such as this, that it is advantageous to increase the production, and by his own testimony and in his own opinion, this field is in that later stage. I think that the exhibits of Petro-Lewis here which reflect the increased oil production and general decrease in the water-oil ratio make it clear that whatever they have done in that pool has been beneficial to them. I think there is going to be a great more oil produced in the fashion that they are now producing the field than there would be otherwise.

Thank you.

MR. HUNKER: If the Commission please, I would like to correct one statement that he made. Mr. Gray corrected his testimony to say that this field was in its middle stage, middle stage of production. I would

like to also call attention to the Commission, the fact that the remark that I made at the time of the previous hearing with regard to the protection of the Reimer and McKenzie overriding royalty interest, that what amount they wanted to be paid was based on the fact that I had concluded that the productive limits of the field insofar as those two quadrants were concerned were limited to those two 40-acre tracts, and what I was saying was that all we wanted to receive was our 6 percent of the production from those particular areas. Mr. Reimer shouldn't be charged with some statement that I may have made that was not fully qualified under the circumstances of the trial of the previous case.

I would like to point out one other thing, and that is that Petro Lewis and Fluid Power Pump Company are perfectly willing to pay from 20 to 25 percent royalty rates with regard to the production that is removed from the Fluid Power Wells 1 and 3, but they are not willing to pay the 6 percent that Reimer and McKenzie are entitled to so far as their production is concerned.

Thank you very much.

MR. TOM KELLAHIN: We have a brief statement, Mr. Porter.

Mr. Hunker has indicated that their interest, the Reimer and McKenzie interest is going to be reduced from 6 percent to 1.5 percent. In fact, there is going to be no reduction of their interest. The Oil Commission has found that the wells will drain 160 acres, and they are in fact sharing the production from two of those 160-acre units, not from 40-acre units. I fail to see how their interest is going to be reduced at all.

MR. TRUJILLO: I was going to ask Mr. Hunker, did I understand you to say that if you didn't subscribe to a State House Reporting Service, you would not be aware of the activities of this Commission? Did I understand you to say that?

MR. HUNKER: I say that we rely on a State House Report for the activities before the Commission, and I would have to assume that the State House Reporter knows about cases as soon as they are filed in written form with the Commission so that -- and they become a matter of public record -- so that when Case 5172 is filed, the reporter can report to us that so and so has filed this particular case and that it involves these people and that it involves these issues.

MR. TRUJILLO: You do, however get copies of

dockets and copies of orders?

MR. HUNKER: Most assuredly do. The service that the Commission affords the attorneys that practice before the Commission is exemplary and we are not complaining about that, but there are people who are outside of the oil industry who do not receive the docket of the Commission.

MR. PORTER: If there is nothing further to come before the Commission, we will take the case under advisement.

The Hearing is adjourned.

(Whereupon, Petro-Lewis Exhibits Nos. 1 and 2 were marked for identification, offered and admitted into evidence.)

STATE OF NEW MEXICO)
) SS.
COUNTY OF SANTA FE)

I, RICHARD L. NYE, Court Reporter do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

COURT REPORTER

THE NYE REPORTING SERVICE
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OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
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I. R. TRUJILLO
CHAIRMAN
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MEMBER
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May 21, 1974

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Re: CASE NO. 5218
ORDER NO. R-4783
Applicant:
Reimer & McKenzie

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.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC x

Other Mr. William J. Cooley

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. 5218
Order No. R-4783

APPLICATION OF JOHN K. REIMER AND
R. E. McKENZIE JR. FOR A 40-ACRE
SPACING, REVOCATION OF NON-STANDARD
PRORATION UNITS, AND REESTABLISHMENT
OF 40-ACRE ALLOWABLES, SANDOVAL COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 23, 1974, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 21st day of May, 1974, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, 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 applicants, John K. Reimer and R. E. McKenzie Jr. seek to reopen three cases previously heard by the Commission to set aside orders previously entered by the Commission pursuant to those hearings, alleging the existence of reservoir information now available, but not available at the time of those hearings.

(3) That the Commission orders sought to be set aside are:

a. That portion of Order No. R-4277, entered March 15, 1972, which authorized 160-acre spacing units for the Media-Entrada Oil Pool, Sandoval County, New Mexico.

b. Order Nos. R-4274 and R-4287, entered March 15, 1972 and April 17, 1972 respectively, which authorized four 160-acre non-standard oil proration units in the Media-Entrada Oil Pool, Sandoval County, New Mexico.

c. Order No. R-4713, entered January 24, 1974, which authorized a special depth bracket allowable for the Media-Entrada Oil Pool, Sandoval County, New Mexico, of 750 barrels of oil per day.

(4) That the evidence adduced at the hearing of this case does not establish that one well in the subject pool could not drain 160 acres or that 160-acre spacing as authorized by Commission Order No. R-4277, would not efficiently and economically develop the subject pool without waste.

(5) That the evidence adduced at the hearing of this case does not establish that the four non-standard proration units authorized by Commission Orders Nos. R-4274 and R-4287 could not reasonably be presumed productive of oil throughout their horizontal extent or that they were otherwise improperly authorized.

(6) That the evidence adduced at the hearing of this case does not establish that the special depth bracket allowable authorized by Commission Order No. R-4713 has resulted or will result in waste or violation of correlative rights.

(7) That the application of John K. Reimer and R. E. McKenzie, Jr. for 40-acre allowables, revocation of non-standard proration units, and reestablishment of 40-acre allowables for the Media-Entrada Pool, Sandoval County, New Mexico, should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of John K. Reimer and R. E. McKenzie, Jr. for 40-acre spacing, revocation of non-standard proration units, and reestablishment of 40-acre allowables for the Media-Entrada Pool, Sandoval 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

S E A L

dr/

Application of John K. Reimer and R.E. McKenzie Jr. for 40-acre spacing, revocation of non-standard proration units, and establishment of 40-acre allowables, Sandoval County, New Mexico.

Case NO. 5218

April 23 - Before Commission

~~EXAMS~~ (1) Jurisdiction

(2) That the applicants, John K. Reimer and R.E. McKenzie Jr. seek to reopen three cases previously heard by the Commission to set aside orders previously entered by the Commission pursuant to those hearings, alleging the existence of reservoir information now available, but not available at the time of those hearings.

(3) That the Commission orders ought to be set aside are:

a. Order No. R-4274, entered March 15, 1972, which authorized 160-acre spacing units for the Media Entrada Oil Pool, Sandoval County, New Mexico.

Entered March 15, 1972 and April 17 1972 respectively,

b. Order Nos. R-4274 and R-4287, which authorized four 160-acre non-standard Oil proration units in the Media-Entrada Oil Pool, Sandoval County, New Mexico.

Entered January 4, 1974,

c. Order No. R-4713, which authorized

a special depth bracket allowable for the Media-Entrada Oil Pool, Sandoval County, New Mexico, of 750 barrels of oil per day.

(4) That the evidence adduced at the hearing of this case does not establish that one well in the subject pool could not drain 160 acres or that 160-acre spacing would not efficiently and economically develop the subject pool without waste.

as authorized by Commission Order No. R-4277,

(5) That the evidence adduced at the hearing of this case does not establish that the four non-standard proration units authorized by Commission Orders Nos. R-4274 and R-4287 could not reasonably be presumed productive of oil throughout their horizontal extent or that they were otherwise improperly authorized.

(6) That the evidence adduced at the hearing of this case does not establish that the special depth bracket allowable authorized by commission order No. R-4713 has resulted or will result in waste or violation of correlative rights.

(7) That the application of John K. Reimer and R.E. McKenzie, Jr. for 40-acre allowables, revocation of non-standard proration units and reestablishment of 40-acre allowables for the Media-Entrada Pool, Sandoval County, New Mexico, should be denied.

ORDERED

(1) That the application of John K. Palmer and R.E. McKenzie for 40-acre spacing, revocation of non-standard proration units, and reestablishment of 40-acre allowables for the Media-Entrada Pool, Sandoval County, New Mexico is hereby denied.

(2) Jurisdiction

DOCKET: COMMISSION HEARING - TUESDAY - APRIL 23, 1974

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

CASE 5216: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to consider the amendment of Rule 1203 of the Commission Rules and Regulations to simplify the method of initiating a hearing before the Commission or its examiners, and to include a provision for the acceptance of verbal applications for hearing when such is necessary to permit the meeting of deadlines for publication of legal notice, provided that a subsequent written application would be required.

CASE 5217: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to consider the adoption of a Commission definition for "Temporary Abandonment" of wells, and further to consider the amendment of Rule 202 of the Commission Rules and Regulations to adopt an administrative procedure for abandonment of wells in this state for a limited period of time only, and for the adoption of a requirement for an individual one-well plugging bond for the continued temporary abandonment of any well after the expiration of the administrative period of time in which such well could be temporarily abandoned.

CASE 5158: (De Novo)

Application of Cities Service Oil Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 29, Township 21 South, Range 27 East, Eddy County, New Mexico, to be dedicated to its Simpson Well No. 1 to be drilled at an orthodox location for said unit. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

Upon application of Michael P. Grace and Corinne Grace, this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 5167: (De Novo)

Application of Fluid Power Pump Company and Petro-Lewis Corporation for compulsory pooling, Sandoval County, New Mexico. Applicants, in the above-styled cause, seek an order pooling all mineral interests underlying two non-standard proration units in Township 19 North,

(Case 5167 continued from Page 1)

Range 3 West, Media-Entrada Oil Pool, Sandoval County, New Mexico, described as follows:

Unit No. 1, the S/2 SW/4 of Section 14 and N/2 NW/4 of Section 23, dedicated to applicants' Media Well No. 1 located in Unit M of said Section 14; and

Unit No. 2, the S/2 SE/4 of Section 15 and N/2 NE/4 of Section 22, to be dedicated to applicants' Media Well No. 2 located in Unit P of said Section 15.

Upon application of John K. Reimer and R. E. McKenzie, Jr., this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 5218: Application of John K. Reimer and R. E. McKenzie, Jr. for 40-acre spacing, revocation of non-standard proration units, and re-establishment of 40-acre allowables, Sandoval County, New Mexico. Applicants, in the above-styled cause, seek an order rescinding that portion of Order No. R-4277 which established 160-acre spacing units for the Media-Entrada Oil Pool, Sandoval County, New Mexico, alleging the existence of reservoir information now available, but not available at the time of the spacing hearing. Applicants further seek the revocation of orders numbers R-4274 and R-4287 which established four 160-acre non-standard oil proration units in said pool, and the revocation of Order No. R-4713 which established a special depth bracket allowable of 750 barrels of oil per day for said pool.

DOCKET: COMMISSION HEARING - TUESDAY - APRIL 23, 1974

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

CASE 5216: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to consider the amendment of Rule 1203 of the Commission Rules and Regulations to simplify the method of initiating a hearing before the Commission or its examiners, and to include a provision for the acceptance of verbal applications for hearing when such is necessary to permit the meeting of deadlines for publication of legal notice, provided that a subsequent written application would be required.

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CASE 5158: (De Novo)

Application of Cities Service Oil Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 29, Township 21 South, Range 27 East, Eddy County, New Mexico, to be dedicated to its Simpson Well No. 1 to be drilled at an orthodox location for said unit. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

Upon application of Michael P. Grace and Corinne Grace, this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 5167: (De Novo)

Application of Fluid Power Pump Company and Petro-Lewis Corporation for compulsory pooling, Sandoval County, New Mexico. Applicants, in the above-styled cause, seek an order pooling all mineral interests underlying two non-standard proration units in Township 19 North,

(Case 5167 continued from Page 1)

Range 3 West, Media-Entrada Oil Pool, Sandoval County, New Mexico, described as follows:

Unit No. 1, the S/2 SW/4 of Section 14 and N/2 NW/4 of Section 23, dedicated to applicants' Media Well No. 1 located in Unit M of said Section 14; and

Unit No. 2, the S/2 SE/4 of Section 15 and N/2 NE/4 of Section 22, to be dedicated to applicants' Media Well No. 2 located in Unit P of said Section 15.

Upon application of John K. Reimer and R. E. McKenzie, Jr., this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 5218: Application of John K. Reimer and R. E. McKenzie, Jr. for 40-acre spacing, revocation of non-standard proration units, and re-establishment of 40-acre allowables, Sandoval County, New Mexico. Applicants, in the above-styled cause, seek an order rescinding that portion of Order No. R-4277 which established 160-acre spacing units for the Media-Entrada Oil Pool, Sandoval County, New Mexico, alleging the existence of reservoir information now available, but not available at the time of the spacing hearing. Applicants further seek the revocation of orders numbers R-4274 and R-4287 which established four 160-acre non-standard oil proration units in said pool, and the revocation of Order No. R-4713 which established a special depth bracket allowable of 750 barrels of oil per day for said pool.

NEW MEXICO OIL CONSERVATION COMMISSION
POST OFFICE BOX 2088
SANTA FE, NEW MEXICO
87501

PROPOSED REVISION -- RULE 1203

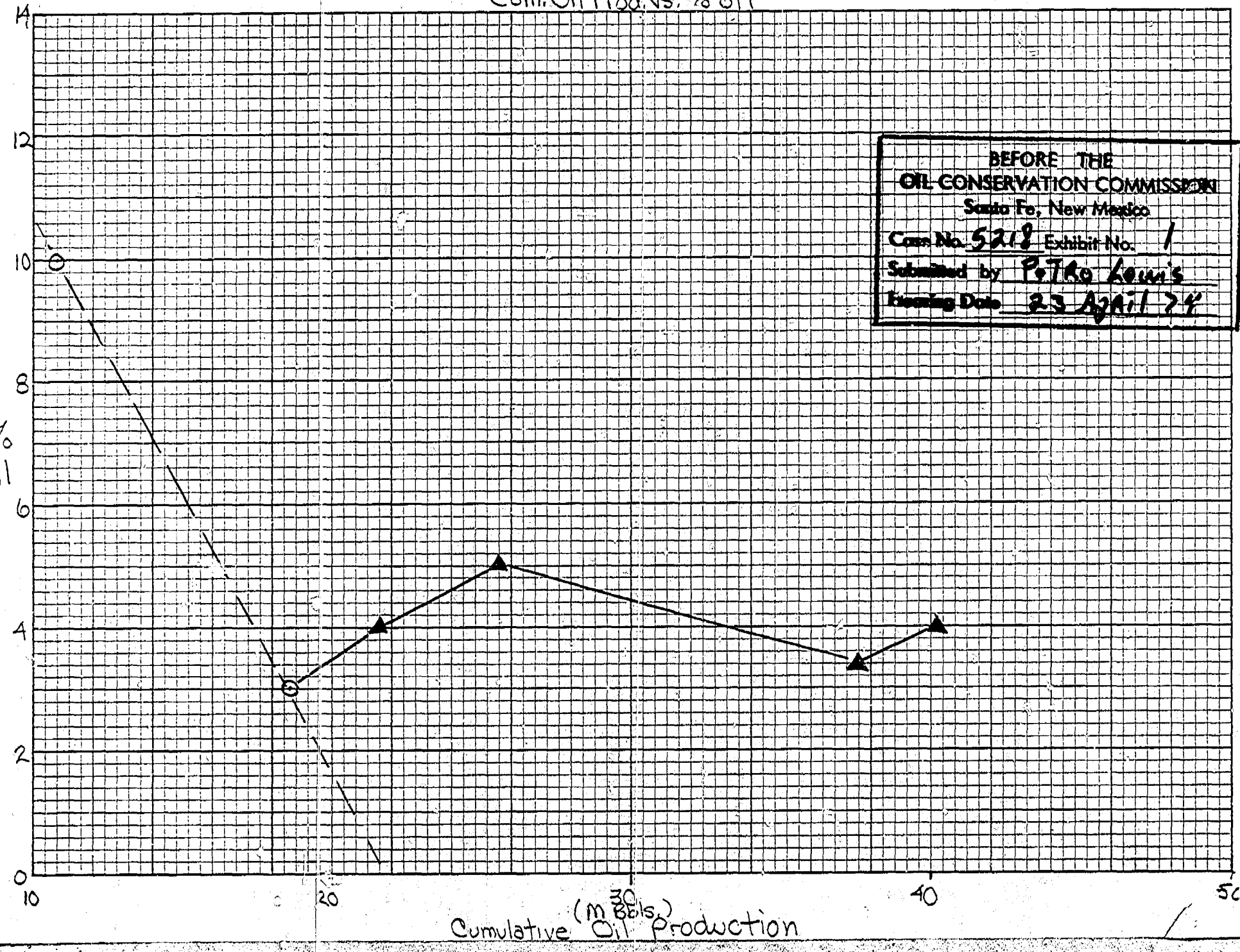
RULE 1203. METHOD OF INITIATING A HEARING

The Commission upon its own motion, the Attorney General on behalf of the State, and any operator or producer, or any other person having a property interest may institute proceedings for a hearing. If the hearing is sought by the Commission it shall be on motion of the Commission and if by any other person it shall be by application. The application shall be in triplicate and shall state (1) the name of the applicant, (2) the name or general description of the common source or sources of supply or the area affected by the order sought, (3) briefly the general nature of the order, rule, or regulation sought, and (4) any other matter required by a particular rule or rules, or order of the Commission. The application shall be signed by the person seeking the hearing or by his attorney.

When conditions are such as to require verbal application to place a matter for hearing on a given docket, the Commission will accept such verbal application in order to meet publishing deadlines. However, if written application, filed in accordance with the procedures outlined above, has not been received by the Commission's Santa Fe office at least ten days before the date of the hearing, the case will be dismissed.

ir/

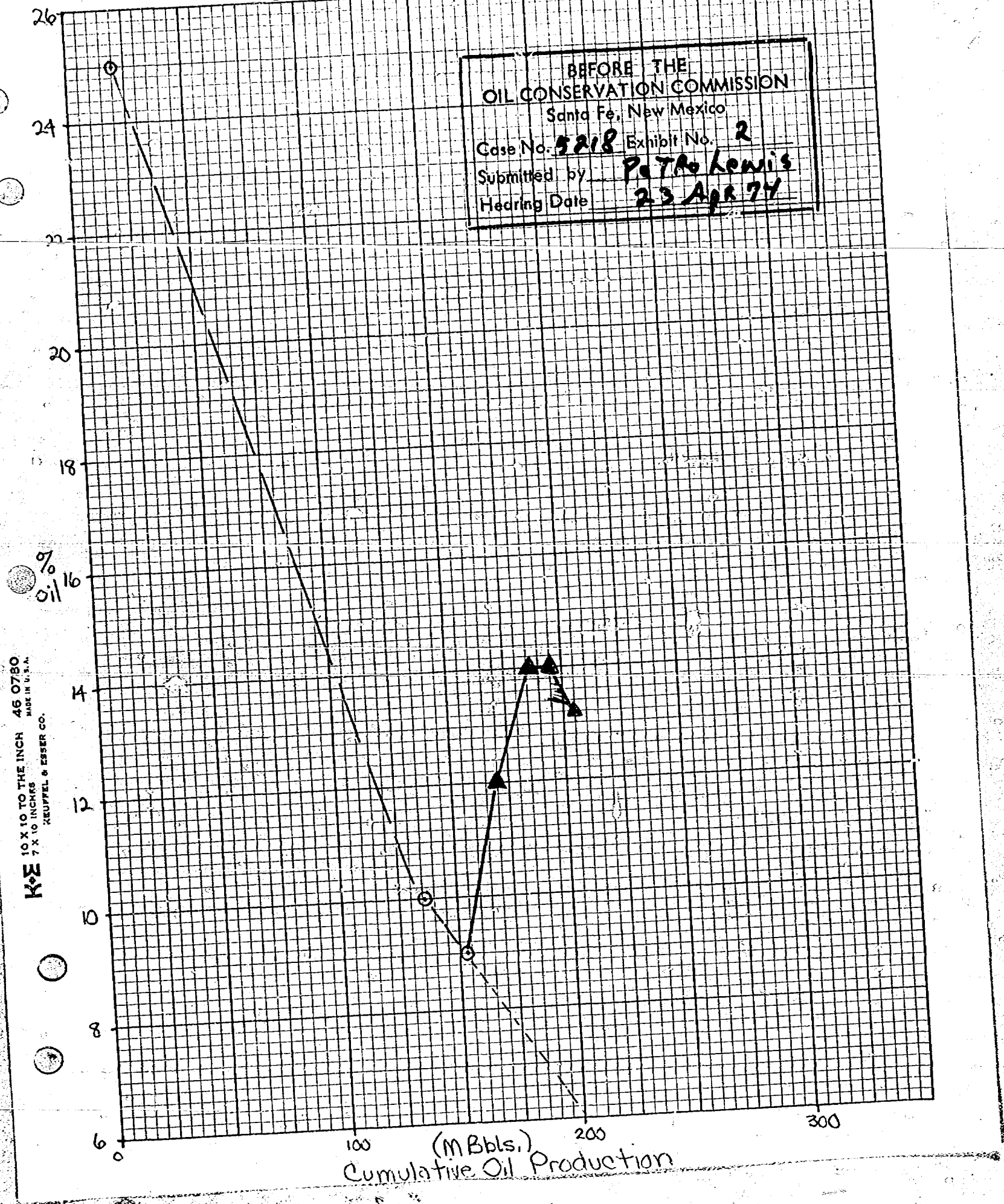
Fluid Power No.3
Cum. Oil Prod. vs. % oil



BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5218 Exhibit No. 1
Submitted by Petro Lewis
Hearing Date 23 April 74

Fluid Power No.1
Cum. Oil Prod vs. % Oil

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5218 Exhibit No. 2
Submitted by Petro Lewis
Hearing Date 23 Apr 74



FEDERAL MEDIA 1

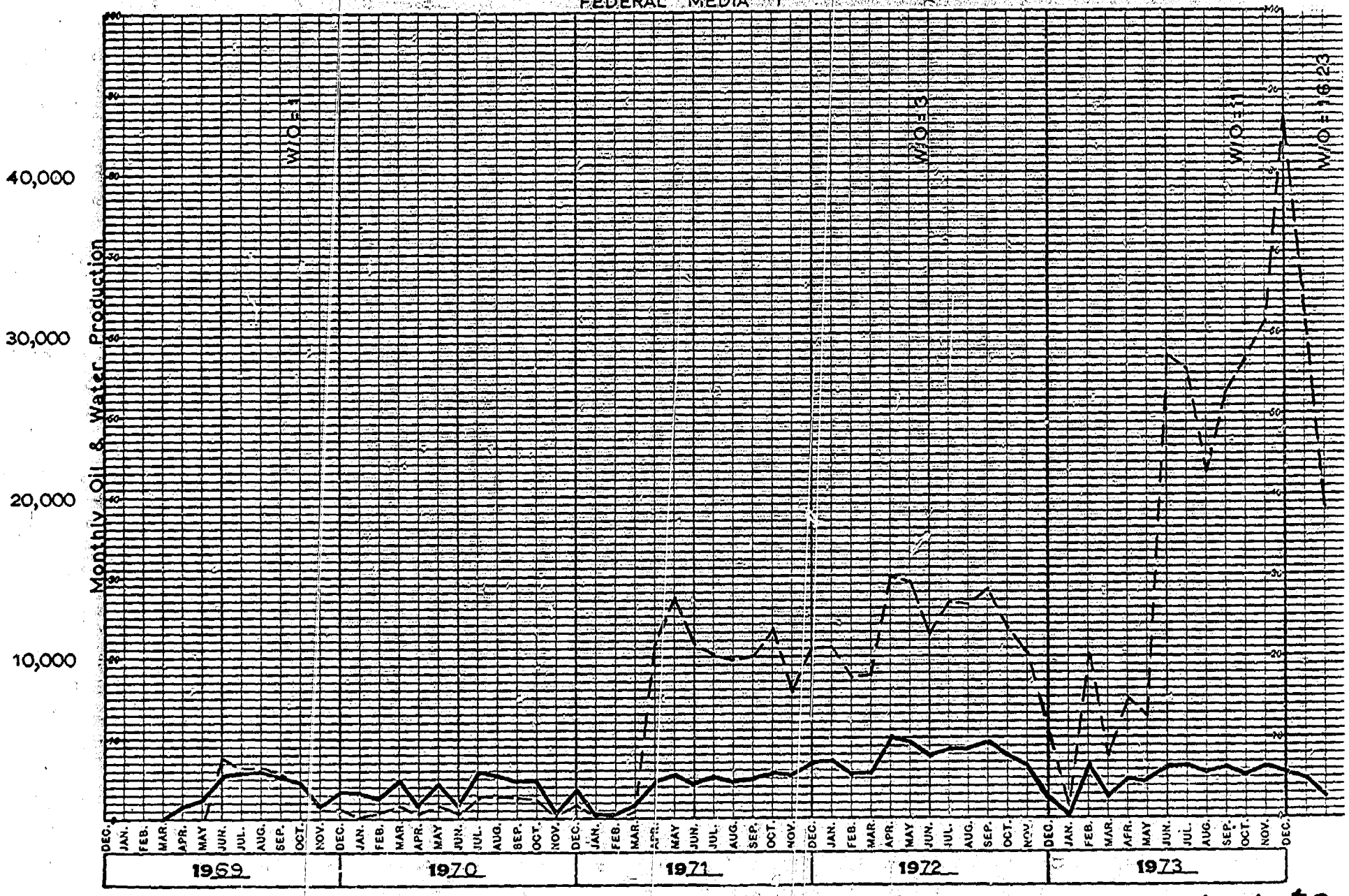


Exhibit #2

FEDERAL MEDIA - 2

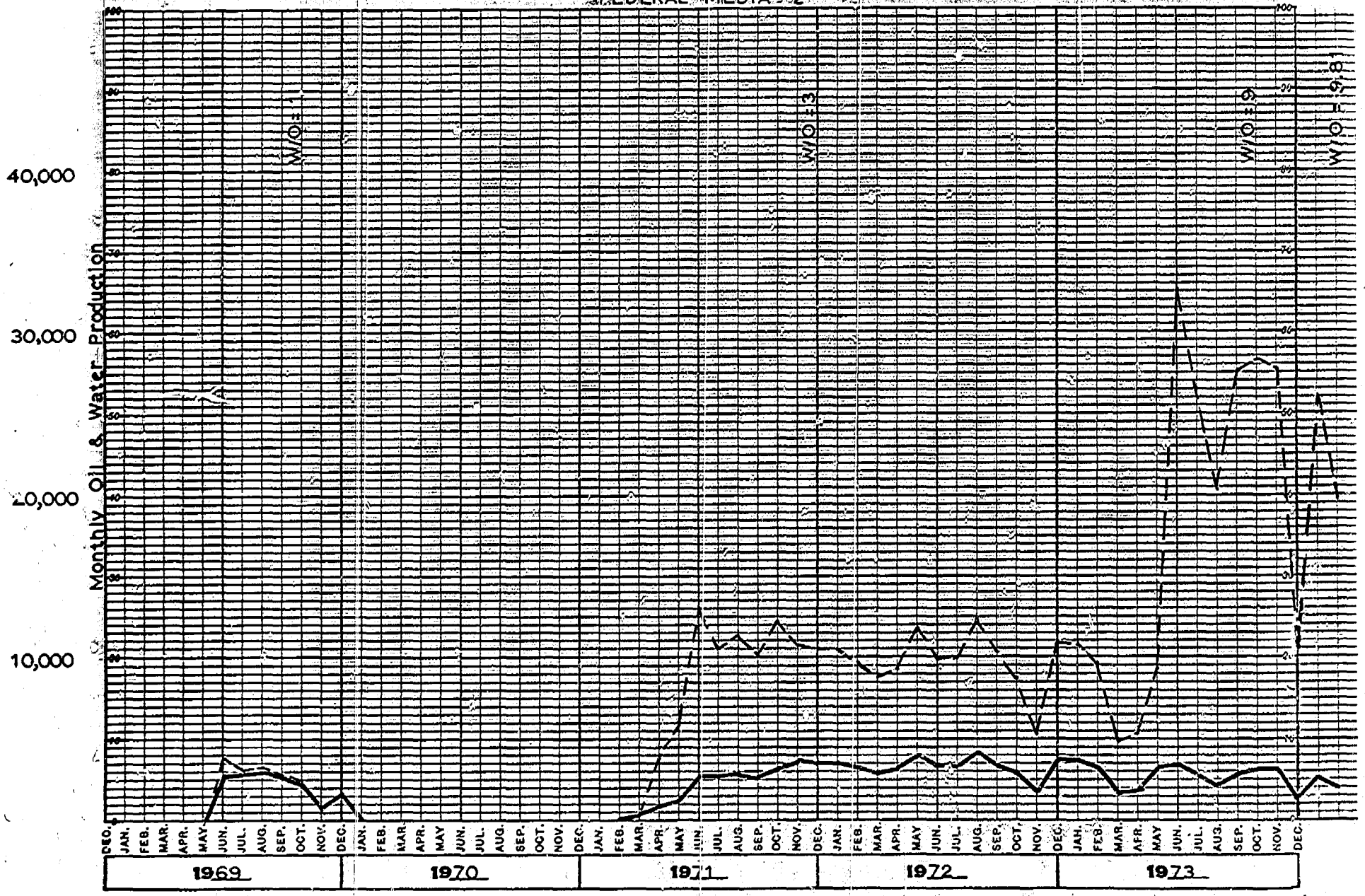


Exhibit #3

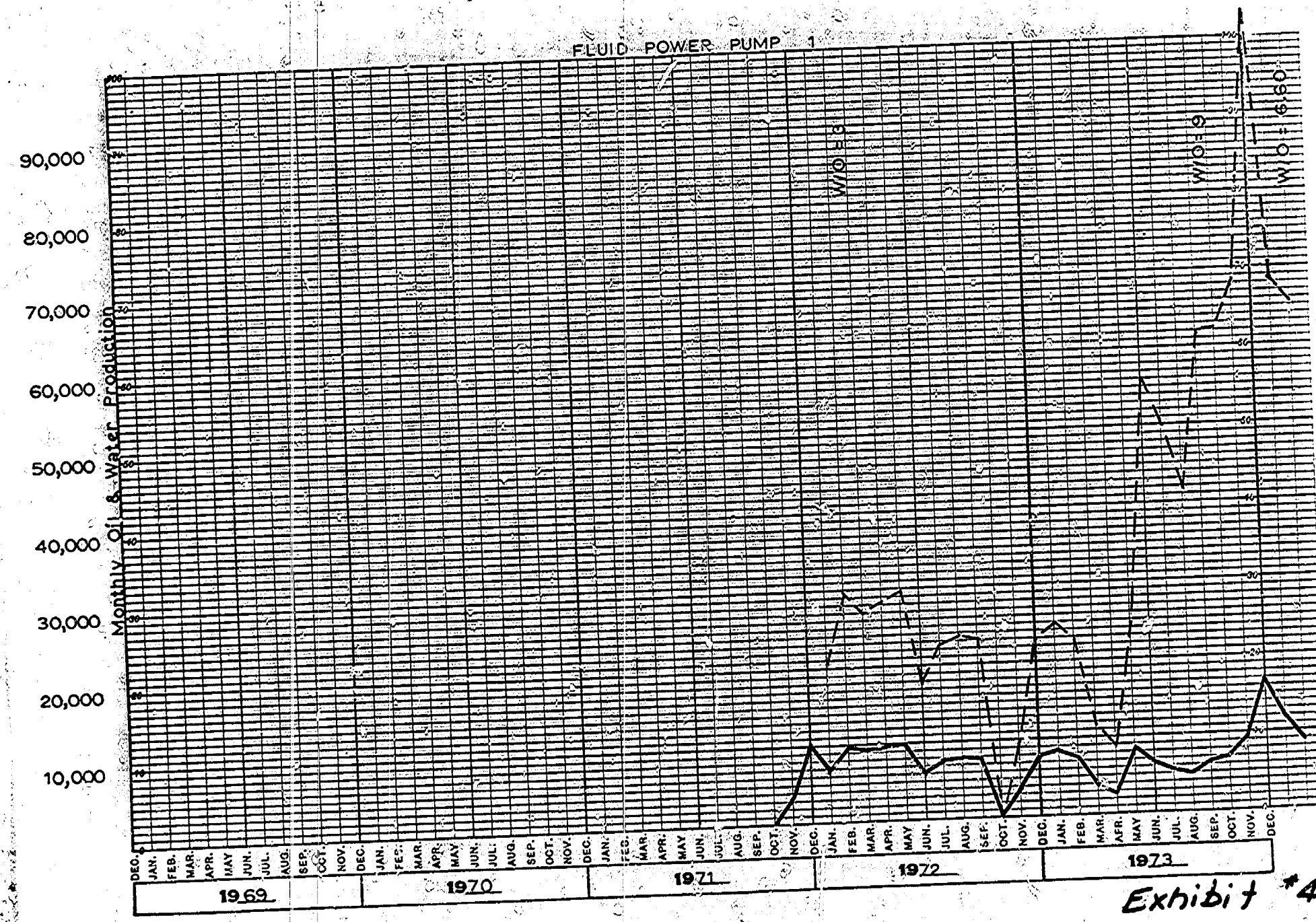


Exhibit #4

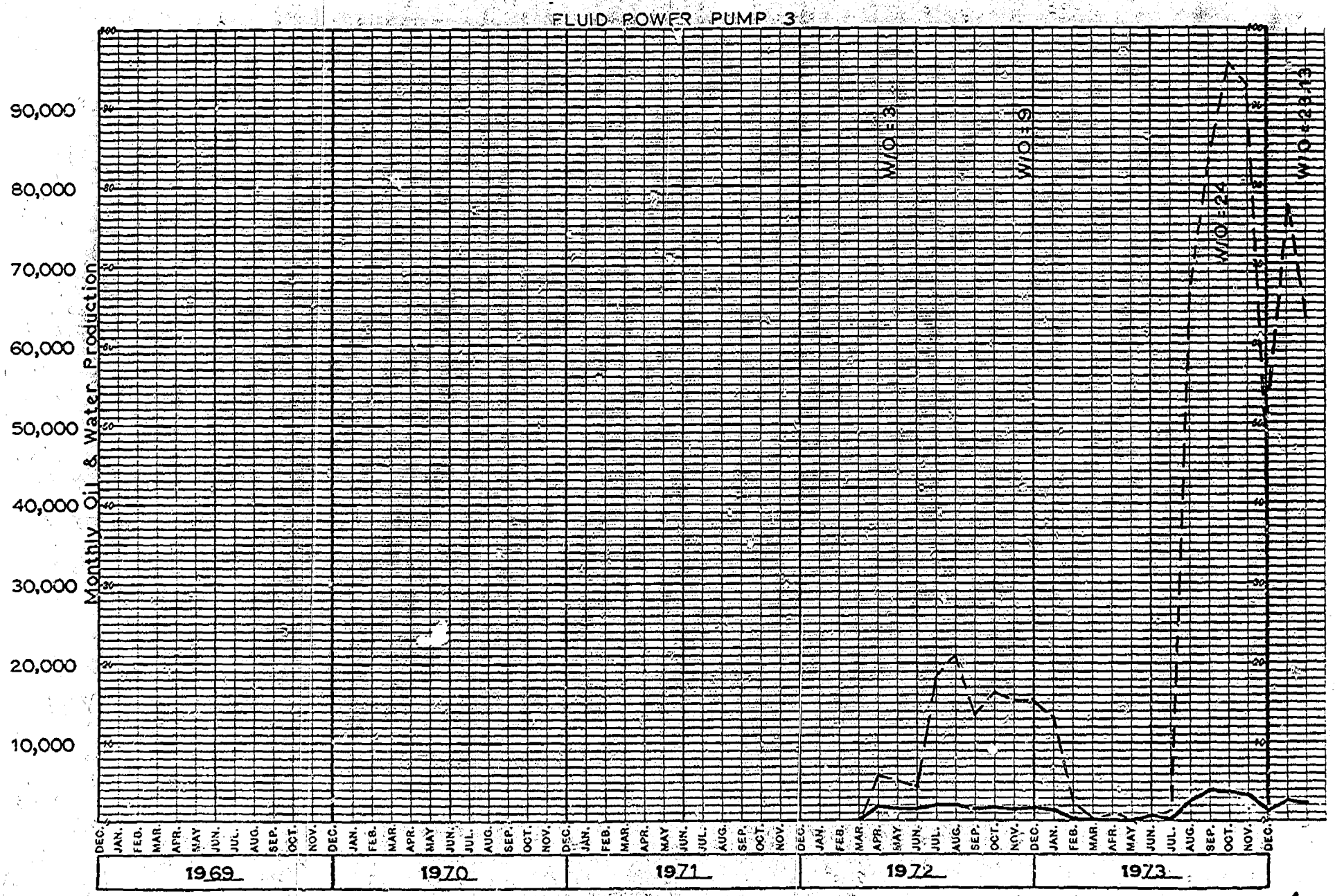


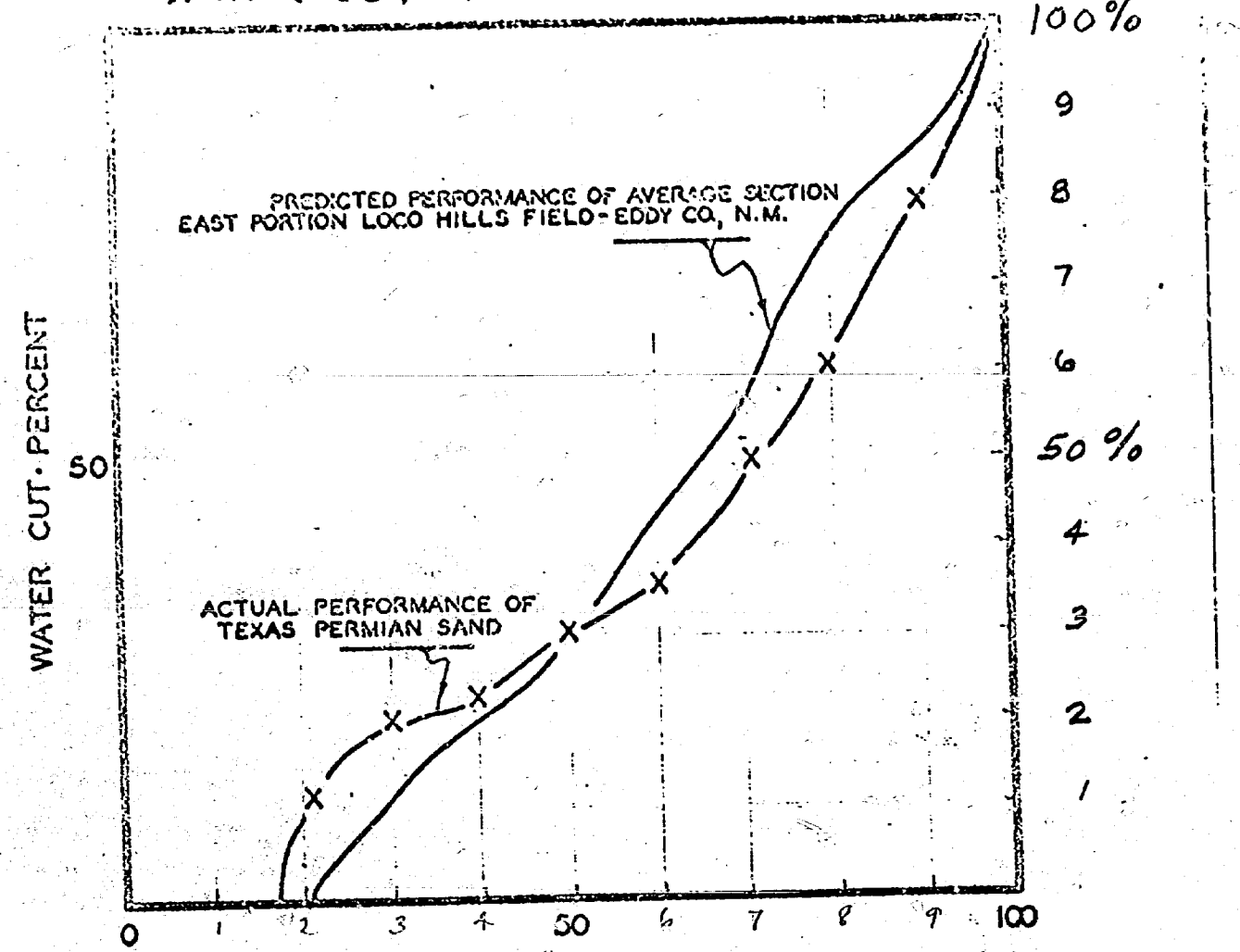
Exhibit #5

experiments of Morse (1947) on down-dip and up-dip water flooding of long artificially consolidated sand cores, though the data were partly vitiated by some abnormal wetting phenomena. Morse found that the water-flooding process was more efficient at slow rates than at high rates when the flooding was vertically upward. However, there existed a critical low velocity below which little difference in recovery efficiency was noted. Conversely, in flooding vertically downward, higher flooding efficiencies were attained by increased rates of flooding until a critical velocity was again reached beyond which no further change in efficiency occurred.

Taken from "Elements of Oil Reservoir Engineering" by Sylvain J. Pirson, First Edition. Published by McGraw-Hill Book Company, Inc., 1950.

Exhibit "6

WATER CUT VS OIL RECOVERY

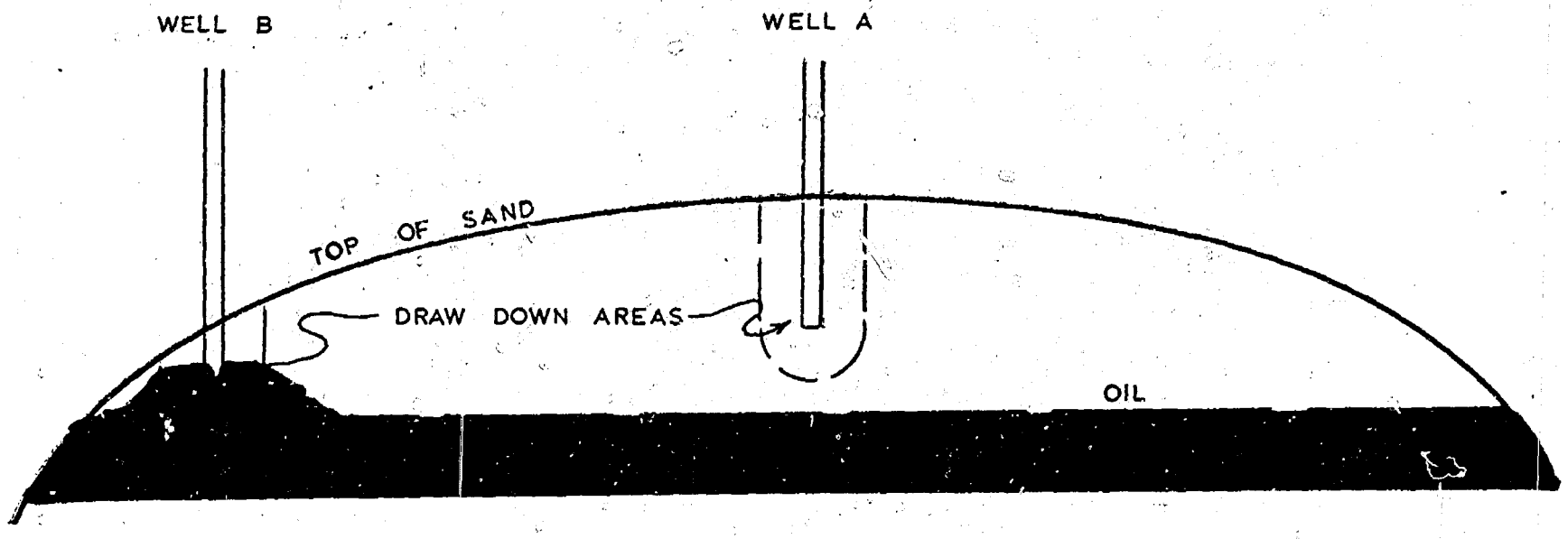


OIL RECOVERY
PERCENT OF TOTAL

AVERAGE SECTION CHARACTERISTICS

PERM. VARIATION	0.67	FORMATION VOLUME FACTOR	1.274
MOBILITY RATIO	0.40	PRIMARY RECOVERY	128 B/AC.FT.
NET FEET	22.9		
POROSITY	19.6 %		
CONNATE WATER	25.0 %		

Exhibit #7



RALPH L. GRAY
PETROLEUM ENGINEERING

Exhibit 8

LAW OFFICES OF
HUNKER, FEDRIC & HIGGINBOTHAM, P. A.
210 HINKLE BUILDING
POST OFFICE BOX 1837
ROSWELL, NEW MEXICO 88201

GEORGE H. HUNKER, JR.
DON M. FEDRIC
RONALD M. HIGGINBOTHAM

TELEPHONE 622-2700
AREA CODE 505

March 29, 1974

A. L. Porter, Jr., Executive Director
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Media Entrada Pool

Dear Mr. Porter:

We hand you herewith our clients' application for 40-acre standard spacing and the re-establishment of a standard 40-acre allowable in connection with the Media Entrada Oil Pool, Sandoval County, New Mexico.

We have previously filed an Application for a Rehearing and an Application for a De Novo Hearing in connection with the subject case (which you have our permission to renumber), and we respectfully request that the de novo hearing be set before the Commission at the same time as the present application is set down for hearing. We have been given to believe that inasmuch as the Commission retained jurisdiction in connection with all of its previous orders, that William J. Cooley, the Attorney representing Fluid Power Pump Company and Petro-Lewis Corporation, would interpose no objection to the Commission hearing the present matter based on the fact that the previous orders were based on information not available to the Commission at the time of the original hearings.

Respectfully submitted,

George H. Hunker, Jr.

GHH:dd
Enc.

cc: Mr. John K. Reimer
cc: Mr. R. E. McKenzie, Jr.
cc: Mr. William J. Cooley

BURR & COOLEY
ATTORNEYS AND COUNSELORS AT LAW
SUITE 152 PETROLEUM CENTER BUILDING
FARMINGTON, NEW MEXICO
87401

JOEL B. BURR, JR.
WM. J. COOLEY

TELEPHONE 325-1702
AREA CODE 505

April 2, 1974

~~5167~~
Case ~~5225~~
5218

Mr. A.L. Porter, Jr.
Executive Director
New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Porter:

As attorneys for Fluid Power Pump Company, Partnership Properties Co., and Petro-Lewis Corporation, we are in receipt of the Application of John K. Reimer and R.E. McKenzie, Jr. for "standard 40-acre spacing, revocation of non-standard spacing units and reestablishment of 40-acre allowables" in the Media Entrada oil pool, Sandoval County, New Mexico. In paragraph 3 of the Application, the Applicants further allege "that the establishment of a special 750-barrel per day allowable for the four non-standard proration spacing units in the Media Entrada oil pool will cause waste and the impairment of correlative rights".

Although the style of the Application refers only to case No. 5167 and Order No. R-4730 (the Fluid Power Pump Company et al Application for Compulsory Pooling), it would seem that the Applicants are attacking the findings and conclusions of the Commission in the following cases, to wit:

1. The application of Fluid Power Pump Company for special pool rules in the Media Entrada oil pool, being case No. 4642, out of which issued Order No. R-4277.

2. Application of Fluid Power Pump Company for two non-standard oil proration units, being case No. 4685, out of which issued Order No. R-4287.

3. Application of Fluid Power Pump Company for two non-standard oil proration units, being case No. 4673, out of which issued Order No. R-4274.

4. Application of Petro-Lewis Corporation for 750-barrel per day allowables, for the Media Entrada oil pool, being case No. 5152, out of which issued Order No. R- 4713.

Fluid Power Pump Company, et al respectfully submit that the findings and conclusions of the Commission with respect to the cases last referred to above cannot be attacked unless those cases are reopened and only then on the basis of newly-discovered evidence which was not available to the parties and the Commission at the time each of the respective cases was heard and decided.

Accordingly, we will assume that the findings and conclusions of the Commission in each of the above-referred cases will not be disturbed unless those cases are properly reopened and advertised for the purpose of hearing newly-discovered evidence that might bear upon the issues involved in each of said cases.

Very truly yours,

BURR & COOLEY

By William J. Cooley
William J. Cooley

WJC:kb

cc: Mr. George Hunker
Fluid Power Pump Company
Petro-Lewis Corporation
Partnership Properties Co.

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. 5167
ORDER NO. R-4730

Case 5218

APPLICATION OF JOHN K. REIMER
and R. E. McKENZIE, JR. FOR
STANDARD 40-ACRE SPACING,
REVOCATION OF NON-STANDARD
SPACING UNITS, AND RE-ESTABLISHMENT
OF STANDARD 40-ACRE ALLOWABLE,
MEDIA ENTRADA OIL POOL,
SANDOVAL COUNTY, NEW MEXICO.

A P P L I C A T I O N

COME NOW John K. Reimer and R. E. McKenzie, Jr., by and through their Attorneys, Hunker, Fedric & Higginbotham, P. O. Box 1837, Roswell, New Mexico 88201, and make application to the Commission for a hearing before the Commission in which to show by reason of new information not available at the time of the original hearings, that:

1. A provision for 160-acre spacing and proration units made by the Commission in Order R-4277 (3/15/72) based upon the contention that one well in the Media Entrada Oil Pool can efficiently and economically drain and develop 160 acres without the impairment of correlative rights or without causing waste, was made without sufficient factual information.

2. (a) The establishment of four (4) 160-acre non-standard spacing and proration units by the Commission in Orders R-4274 (3/15/72, Fluid Power Pump Wells 1 and 3) and R-4287 (4/17/72, Federal Media Wells 1 and 2), to which four (4) wells in the Media Entrada Oil Pool were dedicated, was made without

sufficient factual information with respect to the impairment of correlative rights or as related to the causing of waste.

(b) A finding by the Commission in Order R-4287 (4/17/72, Federal Media Wells 1 and 2) that the non-standard proration units proposed could reasonably be presumed to be productive of oil and that the tracts in the units can be efficiently and economically drained and developed by the wells to which the units are dedicated, was made without sufficient factual information.

3. That the establishment of a special 750-barrel per day allowable for the four (4) non-standard proration spacing units in the Media Entrada Oil Pool will cause waste and the impairment of correlative rights.

4. That the Media Entrada Oil Pool should be spaced and produced under the standard statewide rules and in the interest of conservation, the prevention of waste and the protection of correlative rights.

5. That Fluid Power Pump Company of Albuquerque, New Mexico, Petro-Lewis Corporation of Denver, Colorado, and Partnership Properties, Inc., of Denver, Colorado, are interested parties to this proceeding.

WHEREFORE, Applicants pray that the statewide rules pertaining to oil wells in the NW quadrant of New Mexico and the 40-acre allowable for said wells be reinstated by the Commission for the Media Entrada Oil Pool. Applicants pray that the special allowables established by the Commission be revoked and that a 40-acre allowable be reinstated. Applicants pray that an Order be entered herein amending the previous Orders pertaining to the Media Entrada Oil Pool so as to require the operation of said field and the removal of production from

the reservoir to be in accordance with good oil field practices and in the interest of conservation, the protection of correlative rights and the prevention of waste.

Respectfully submitted,

HUNKER, FEDRIC & HIGGINBOTHAM, P.A.

By George H. Hunker, Jr.
George H. Hunker, Jr.
Attorneys for Applicants
P. O. Box 1837
Roswell, New Mexico 88201

I hereby certify that a true and correct copy of the foregoing Application was mailed to William J. Cooley, opposing counsel of record, at 152 Petroleum Center Bldg., Farmington, New Mexico 87401, this 29th day of March, 1974.

George H. Hunker, Jr.
George H. Hunker, Jr.

LAW OFFICES OF
HUNKER, FEDRIC & HIGGINBOTHAM, P.A.
210 HINKLE BUILDING
POST OFFICE BOX 1837
ROSWELL, NEW MEXICO 88201

GEORGE H. HUNKER, JR.
DON M. FEDRIC
RONALD M. HIGGINBOTHAM

TELEPHONE 622-2700
AREA CODE 505

May 3, 1974

The Permian Corporation
P. O. Box 1183
Houston, Texas 77001

Attention: Mr. Joe N. Meadows

Gentlemen:

Reference is made to your letter of April 19, 1974, addressed to John Mac Moore, pertaining to Division Orders in the Media Entrada Pool, Sandoval County, New Mexico. Several sets of Division Orders were received, and the set involving the Reimer-McKenzie interests for production from the SW¼SW¼ of Section 14, and the SE¼SE¼ of Section 15, Township 19 North, Range 3 West, for the period from October 1, 1972, up to March 1, 1974, bearing No. 565230, dated April 19, 1974, "Petro-Lewis Corporation - Federal Media", have been fully executed by the Reimers and the McKenzies, and the original Division Order is returned herewith.

Stipulations are being prepared concerning the other Division Orders which will show that the execution thereof by Messrs. Reimer and McKenzie will be without prejudice, in order that they may pursue to a final legal determination matters of controversy pertaining to production from the pool. In the meantime, the parties have agreed that sums owing to Reimer and McKenzie up to March 1, 1974, shall be paid.

Our best information reflects that 6% (5% to Reimers and 1% to McKenzies) of the following net values of production are payable:

Com SW-661	10/1/72 - 3/31/73	$34,344.70
Com SW-662	10/1/72 - 3/31/73	43,036.98
Com SW-661	4/1/73 - 10/31/73	54,857.11
Com SW-662	4/1/73 - 10/31/73	56,041.19
Com SW-661	11/1/73 - 1/31/74	33,848.52
Com SW-662	11/1/73 - 1/31/74	35,208.70
	Total:	$257,337.20

The net value of production for the month of February, 1974, is not available to us. The transporter received 2,606 and 3,001 barrels of oil, respectively, from the FM-1 and the FM-2 wells, according to reports filed in the Oil and Gas Accounting Office in Santa Fe. (855 barrels of oil appear to have been on hand at these two wells at the end of the month.)

We are advised that a "hand" check will be issued to Messrs. Reimer and McKenzie for the amounts due and owing to them, and that this will be done immediately. The check or checks may be sent directly to this office.

Respectfully submitted,

HUNKER, FEDRIC & HIGGINBOTHAM, P.A.

George H. Hunker, Jr.

GHH:dd
Enc.

xc: Mr. John K. Reimer
xc: Mr. R. E. McKenzie, Jr.
xc: Mr. William J. Cooley
xc: Mr. Jason Kellahin
xc: Mr. John Mac Moore, Petro-Lewis Corporation
xc: Mr. William F. Carr, New Mexico Oil Conservation Commission

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. 5218
Order No. R- 4783

APPLICATION OF JOHN K. REIMER AND
R. E. McKENZIE JR. FOR A 40-ACRE
SPACING, REVOCATION OF NON-STANDARD
PRORATION UNITS, AND REESTABLISHMENT
OF 40-ACRE ALLOWABLES, SANDOVAL COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 23, 1974, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this _____ day of May, 1974, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, 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 applicants, John K. Reimer and R. E. McKenzie Jr., seek to reopen three cases previously heard by the Commission to set aside orders previously entered by the Commission pursuant to those hearings, alleging the existence of reservoir information now available, but not available at the time of those hearings.

(3) That the Commission orders sought to be set aside are:

a. That portion of Order No. R-4277, entered March 15, 1972, which authorized 160-acre spacing units for the Media-Entrada Oil Pool, Sandoval County, New Mexico.

b. Order Nos. R-4274 and R-4287, entered March 15, 1972 and April 17, 1972 respectively, which authorized four 160-acre non-standard oil proration units in the Media-Entrada Oil Pool, Sandoval County, New Mexico.

c. Order No. R-4713, entered January 24, 1974, which authorized a special depth bracket allowable for the Media-Entrada Oil Pool, Sandoval County, New Mexico, of 750 barrels of oil per day.

(4) That the evidence adduced at the hearing of this case does not establish that one well in the subject pool could not drain 160 acres or that 160-acre spacing as authorized by Commission Order No. R-4277, would not efficiently and economically develop the subject pool without waste.

(5) That the evidence adduced at the hearing of this case does not establish that the four non-standard proration units authorized by Commission Orders Nos. R-4274 and R-4287 could not reasonably be presumed productive of oil throughout their horizontal extent or that they were otherwise improperly authorized.

(6) That the evidence adduced at the hearing of this case does not establish that the special depth bracket allowable authorized by Commission Order No. R-4713 has resulted or will result in waste or violation of correlative rights.

(7) That the application of John K. Reimer and R. E. McKenzie, Jr. for 40-acre allowables, revocation of non-standard proration units, and reestablishment of 40-acre allowables for the Media-Entrada Pool, Sandoval County, New Mexico, should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of John K. Reimer and R. E. McKenzie, Jr. for 40-acre spacing, revocation of non-standard proration units, and reestablishment of 40-acre allowables for the Media-Entrada Pool, Sandoval 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.