

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 19, 1974

EXAMINER HEARING

IN THE MATTER OF:)
)
)

Application of Petro-Lewis Corporation))
for pool contraction, creation, and)
special pool rules, Sandoval County,)
New Mexico.)
)
)

Case No.
5262

BEFORE: Richard L. Stamets, Examiner.

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil
Conservation Commission:

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

For the Applicant:

W. Thomas Kellahin, Esq.
KELLAHIN & FOX
500 Don Gaspar
Santa Fe, New Mexico

I N D E X

| | <u>PAGE</u> |
|------------------------------------|-------------|
| JOHN B. SOMERS | |
| Direct Examination by Mr. Kellahin | 3 |
| Cross Examination by Mr. Stamets | 11 |

E X H I B I T S

| | <u>Marked</u> | <u>Admitted</u> |
|---------------------------|---------------|-----------------|
| Applicant's Exhibit No. 1 | -- | 11 |

MR. STAMETS: The Hearing will please come to order. We'll call the next case, Case 5262.

MR. DERRYBERRY: Case 5262. Application of Petro-Lewis Corporation for pool contraction, creation, and special pool rules, Sandoval County, New Mexico.

MR. KELLAHIN: Tom Kellahin of Kellahin and Fox appearing on behalf of the Applicant, Petro-Lewis Corporation, and I have one witness to be sworn.

MR. STAMETS: Are there any other appearances in this Case? The Witness will stand and be sworn, please.

(Witness sworn.)

JOHN B. SOMERS

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Please state your name, by whom you are employed, and in what capacity.

A My name is John Somers, I'm employed by Petro-Lewis Corporation as Manager of Production Operations, Western Division.

Q Have you previously testified before this Commission and had your qualifications as an expert accepted

and made a matter of record?

A Yes, I have.

Q What is your education degree in?

A I have a Professional Petroleum Engineering Degree from the Colorado School of Mines.

Q Have you made a study of the facts surrounding this particular Application by Petro-Lewis Corporation?

A Yes, I have.

Q Have you previously testified in other Commission cases involving this same Media-Entrada Oil Pool?

A Yes, I have.

MR. KELLAHIN: If the Examiner please, are the Witness' qualifications acceptable?

MR. STAMETS: They are.

BY MR. KELLAHIN:

Q Mr. Somers, would you refer to what has been marked as Applicant's Exhibit No. 1, identify it, and then state briefly what Petro-Lewis is seeking by this Application?

A Exhibit No. 1 is a map of the Media Pool area which actually shows the two pools, or sources of supply, which have been defined by drilling to date. We are calling these Media Proper and Southwest Media. The map has an

overlay which shows the original conditions before any oil production, showing all of the producing wells in the Entrada, the structure on top of the Entrada sand, the original oil-water contact, and initial potential and geologic information. There is also a cross section A-A' across this map which is shown sematically at the base of the map to show the tilted oil-water contact which was, and is present, in the two fields. Also shown are the cumulative productions as of the first of June, 1974, and shown as a dashed line is the original oil-water contact on this schematic cross section in the present oil-water contact as of 6/1/74.

Q Now, Mr. Somers, your opinion that this is a two-reservoir concept, is this a new geological interpretation by you or what is this?

A No, it is not. This is basically the same interpretation which Mr. Val Reece who worked with and for Fluid Power Pump Company had originally; it's just that we have refined it to the extent of the tilted oil-water contact and then added, as is shown on the base map, the present condition, which is our present oil-water contact where you can see that the -- what we call Media Proper -- has contracted in size as this 568,000 barrels of oil has

been produced and the water has replaced that oil which has been produced.

Q Why is Petro-Lewis seeking the contraction of the present configuration of the Media-Entrada Oil Pool as applied for in this Application?

A Well, there are basically three reasons, the first of which is they are two separate sources of supply, two separate reservoirs; second of all we would like to initiate a pressure maintenance project utilizing Fluid Power No. 4 Well initially as an injection well to return produced water to the Entrada formation. We presently have a disposal problem with the 12,000 barrels of water per day being produced. It is being disposed of in a shallower zone and we feel that it will be a benefit in increasing recovery and reduce the risk of pollution or problems in these shallower reservoirs, which are relatively tight compared to the Entrada which is a very permeable sand.

Q Do you anticipate any adverse effect to the interest owners in the northwest quarter of Section 2 by the contraction of this pool and the designation of a new pool for that acreage?

A Not at all.

Q Will there be any advantage to those interest owners?

A Yes. We would be able to, by separating these pools and defining these as separate pools right now, we would be able to proceed before Southwest Media is completely drilled and developed, be able to proceed with pressure maintenance, and this would allow us to both increase production and recovery from Media Proper without any delay.

Q All right. In your opinion, then, there would be no adverse effect to the interest owners of the contracted Media-Entrada Pool?

A That is correct.

Q All right. What about the interest owners in the portion of the pool to be deleted from the existing pool?

A There would be no adverse effect on them whatsoever.

Q What are your plans for what in effect amounts to your new pool here?

A We plan to drill and define and develop this reservoir and actually have an application in to the USGS for approval to drill a well in the southeast quarter

of the northwest quarter of Section 22. This well is in the present 160-acre proration unit which was set up for Fluid Power 5 and in essence is another well in there so that we can replace this well which is mechanically -- not a failure -- but we have mechanical problems which don't allow us to produce the well at optimum production rates, because of the initial completion.

After the drilling of that well we plan another well if that proves the extent to which the reservoir is presently shown on this map.

Q In Petro's Application, Mr. Somers, in addition to the contraction of the existing pool you further ask for the inclusion of a 600-acre proration unit for the new pool area.

A 160 acres.

Q I'm sorry, 160-acre spacing. What evidence do you have to support that one well will effectively and economically drain 160 acres?

A We have ~~cored~~ two of these wells shown on the map, which would be in the southwest Media Pool, the Fluid Power Pump No. 5 and the Federal Media No. 3 and the average permeability in those pools, or in those wells, was 286 millidarcies, and with excellent porosity and permeability

we feel that there would be no problem at all draining 160-acre field with one well.

Q Do you have any porosity figures for your pool?

A Yes. The average porosity is 23.3 percent from the 53 core samples that we took.

Q And how do those reservoir properties compare to the existing reservoir?

A They compare almost exactly with the existing reservoir in terms of porosity. A little bit lower in terms of permeability, but I think this is principally because this well which was a dry hole, Federal Media No. 3, was included in the average because it had relatively low permeability.

Q In your Application you have further asked for a provision to allow you to drill more than one well per 160-acre proration unit. Why have you asked for that?

A For several reasons really. First of all for a situation such as Fluid Power Pump No. 5, which cannot mechanically be produced because of the initial completion. The other thing is this is a water-drive field and we can more optimally locate the wells and therefore increase recovery with more than one well as we get better definition.

Q In your Application you further ask for the establishment of a special depth bracket allowable. Why have you asked for that?

A Because the wells are capable of production far in excess of the allowable and we feel that it would actually result in greater economic benefit and increased recovery actually. We have indications from production in Media Proper Field that the higher production rates will result in increased recovery.

Q Do you have a recommended allowable?

A We feel that the 750-barrel-a-day allowable, which was granted for the Media Dome Field in April, would be sufficient.

Q Do you anticipate any adverse effect from granting of an increased allowable?

A No, not at all, the contrary. It should increase our recovery and prevent waste.

Q Are there any other operators in this proposed pool?

A No, there are not.

Q Petro-Lewis is the only operator?

A That and our 50-percent partner, Fluid Power Pump Company.

Q In your opinion, Mr. Somers, will approval of this Application be in the best interests of conservation, the prevention of waste and the protection of correlative rights?

A Yes, it will.

Q Was Exhibit 1 prepared by you or under your direction and supervision?

A Yes, it was.

MR. KELLAHIN: If the Examiner please, we move the introduction of Exhibit 1.

MR. STAMETS: Without objection, Exhibit 1 will be admitted into evidence.

(Whereupon, Applicant's Exhibit

No. 1 was admitted into evidence.)

BY MR. KELLAHIN:

Q Do you have anything else you would like to add at this time?

A No.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Somers, you did not outline the proration units now in the Media Field. If I remember rightly, and you can correct me if I'm wrong, there is one proration

unit that consists of the south half of the southeast of Section 15?

A Right.

Q And the north half of the northeast of Section 22 immediately to the south?

A That's correct.

Q And, if I read your Exhibit No. 1 properly, that would indicate that that proration unit overlaps both pools.

A That is correct

Q Or both reservoirs?

A Both reservoirs.

Q Can you have proposed only that the northwest quarter of Section 22 be deleted from the Media Field, is that correct?

A That's correct.

Q But yet your Exhibit No. 1 seems to show that the reservoir, which you have identified or called the Southwest Media Reservoir, covers not only the northwest quarter, Section 22, but say the west half of the northeast quarter as well.

A Correct. That's correct.

Q So what we would wind up with here is --

A (Interrupting) That needs to be expanded to include the west half of the northeast quarter as well. It was applied for in that way because of the way that the proration units were presently set up. This was the only proration unit which was set up in the Media Field and we would have to split the other proration unit and we didn't know exactly how you would propose to do that.

Q In other words, the proration unit we referred to earlier, consisting of part of Section 15, part of Section 22, is productive in both pools and to separate the pools we would have to achieve some separation of the proration unit as well?

A I don't know that that would be necessary because we have already -- a dry hole was already drilled in Section 22 and the only producing well is in Section 15, so there would be, unless another well is subsequently drilled in the north half of the northeast quarter of Section 22, which is somewhat doubtful with the pay thicknesses that you are talking about, then there is actually no way that we can produce from that portion of the reservoir.

Q Mr. Somers, it seems to me that it would be quite a difficult proposition for all of us concerned to

dedicate acreage in one pool to a well in another pool. You indicate that there are two isolated oil reservoirs and that there always were two isolated oil reservoirs here, being the northeast reservoir and the southwest reservoir. You have also indicated that both of these reservoirs are connected through the water-bearing sands.

A That is correct.

Q So that the same drive mechanism affects both reservoirs, oil reservoirs.

A The Entrada is a blanket sand which covers the Basin.

Q I believe, Mr. Somers, the only alternative the Commission has in establishing a new pool for the southwest reservoir would be to create a pool consisting of the northwest quarter and the west half of the northeast quarter, Section 22. Would this be agreeable to Petro-Lewis and would this be a workable situation?

A Yes, it would.

Q Then you would have to work out some new dedication of acreage involving --

A (Interrupting) However reduced allowable under this particular unit.

Q There would have to be something done about the

proration unit we discussed earlier. Now, you have discussed special pool rules for the new proposed pool. At the present time these are actually the rules that this acreage is operating under?

A That is correct.

Q So there would really be no change in the rules that you propose for the acreage involved?

A No.

MR. STAMETS: Are there other questions of this Witness?

(Whereupon a discussion was held
off the record.)

MR. STAMETS: Mr. Long?

MR. LONG: Jerry Long, USGS. If I remember, there is another well in 22; I think it's in the southwest quarter of the northeast quarter. I was wondering the status of it.

MR. SOMERS: Yes. That's the Gallup Well; it only went to the Gallup formation which was around 3700 feet deep so it did not penetrate the Entrada. That well is presently completed and producing from the Gallup. There are also two other wells in that northeast quarter of 22: The Federal Media No. 8 which is a Menefee

producing well, and the Federal Media No. 6 which we are presently completing as a menefee producing well. This map only was made to show the Entrada penetration

BY MR. STAMETS:

Q Mr. Somers, if these two areas were not separated and two pools were not created here, what would happen?

A Well, we would have to continue to restrict our production because of, first of all, disposal capacity. We would not be able to unitize the area until this was completely developed. In other words, these owners could not achieve equity by including such a large, and actually probable or possible, reservoir out here until this was actually drilled and developed. As a result there would be a delay, a considerable delay in actually putting anything together and initiating a secondary recovery project and increasing our production.

Q If the oil-bearing portions of the reservoir are isolated in there, how would this delay your secondary recovery, your pressure maintenance? If the oil is indeed isolated, it would seem that you could start pressure maintenance in the northeast without affecting the southwest?

A Well we would have to have it unitized before

we could do that.

Q Have you ever seen any units that were formed that did not include the whole field?

A Yes, where you're going to expand a participating area basis. We could possibly approach it from that angle, where we would unitize it on a particular basis, but this could be, again, detrimental to these owners if something like cumulative production or some factor like this was used as the basis for participation, and this is a factor which we are considering for participation in this area.

Q Have you considered the possibility of forming two separate units?

A Yes, this is what we intend to do; to form this unit, and as soon as this reservoir is defined, form a second and separate unit for Southwest Media so that we can begin to put water in the ground, not only in Fluid Power No. 4 but probably in Federal Media No. 3 and Federal Media No. 4.

Q Could this not be done without separating the pools, separating the reservoirs?

A I don't know. It would be rather difficult. We could physically do it, there is no limitation there, but

within a time frame which we may be talking about a year or more. We are going to be curtailed in production, we're not going to be able to initiate the project; where we have a reservoir here which is in an advance state of completion and we have a reservoir here which is substantially uncompleted. We would like to get it underway as soon as possible.

MR. STAMETS: Any other questions of the Witness?
He may be excused. Anything further in this Case?

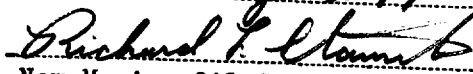
MR. KELLAHIN: No, sir.

MR. STAMETS: We will take the Case under advisement.

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

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.


RICHARD L. NYE, Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5262, heard by me on June 19, 19 74.

New Mexico Oil Conservation Commission