STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

9 January 1986

EXAMINER HEARING

IN THE MATTER OF:

Application of Amerind Oil Company for contraction of the horizontal limits of the Casey-Strawn Pool, pool creation, and special pool rules, Lea County, New Mexico. CASE 8798

BEFORE: David R. Catanach, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Jeff Taylor
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I N D E X

E X H I B I T S

MR. CATANACH: We'll call next Case 8798.

MR. TAYLOR: Application of Amerind Oil Company for contraction of the horizontal limits of the Casey-Strawn Pool, pool creation and special pool rules, Lea County, New Mexico.

MR. CATANACH: Are there appearances in this case?

MR. BRUCE: Yes, Mr. Examiner. My name is Jim Bruce, from the Hinkle Law Firm in Santa Fe, and I have two witnesses to be sworn.

MR. CATANACH: Are there any other appearances in this case?

(Witnesses sworn.)

BILL SELTZER,

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

DIRECT EXAMINATION

BY MR BRUCE:

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

A Bill Seltzer. I'm an independent landman in Midland, Texas.

Q And what is your relationship to Amerind Oil Company in this case?

A I'm a landman doing this work for Amerind Oil Company.

Q On a consulting basis?

A On a consulting basis.

Q Have you previosly testified before the OCD as a petroleum landman and had your credentials accepted as a matter of record?

A Yes, I have.

Q Are you familiar with Case 8798 and the land matters involved therein?

A Yes, I am.

MR. BRUCE: Mr. Examiner, are the witness' credentials acceptable?

MR. CATANACH: Mr. Seltzer, when was the last time you testified before the Commission, do you recall?

A I would say last spring, wasn't it?

MR. CATANACH: The witness is considered qualified.

Q Briefly, Mr. Seltzer, what does Amerind seek by its application?

A Amerind seeks the creation of a new oil pool for the Strawn production to be named Casey-Strawn West Oil Pool.

The new pool would be comprised of the west half of the northeast quarter of Section 33, 16 South, Range 37 East, Lea County, New Mexico.

Amerind requests special rules be promulgated for the new pool including 80-acre spacing and designated well locations.

As a part of this application Amerind requests that horizontal limits of the Casey-Strawn Pool be contracted by deleting the northeast quarter of Section 33.

Q Would you please now refer to Exhibit Number One and identify the offset operators to the proposed new pool?

A Exhibit Number One is a land map showing by arrow the -- land plat surrounding the Shipp No. 1 Well, which is the new pool's discovery well. The Shipp No. 1 Well is indicated by the red arrow.

The offset operators are Texaco, John Cox, Union Texas Petroleum, Mesa Petroleum and Yates Petroleum.

Q And have the offset operators been provided with a copy of the Form C-109, the Application for Discovery Allowable and Creaton of a New Pool?

A Yes. Exhibit Number Two there, Jim, is a copy of a letter dated December 17, 1985, which was sent to all offset operators, which provided them each the Form C-109, and the certified return receipts are attached thereto.

Q Have Forms C-104, C-105, and C-109 been filed with the appropriate OCD Offices?

A Yes.

Q And were Exhibits One and Two compiled from Amerind's company files?

A Yes.

Q In your opinion will the granting of this application be in the interest of conservation and the prevention of waste?

A Yes, sir.

MR. BRUCE: Mr. Examiner, at this time I move the admission of Exhibits One and Two.

MR. CATANACH: Exhibits One and Two will be admitted into evidence.

MR. BRUCE: I have no further questions of this witness.

MR. CATANACH: I have no questions of this witness.

ROBERT C. LEIBROCK,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q Will you please state your name, city of residence, and occupation?

A My name is Robert C. Leibrock of Midland, Texas. I am Vice President of Amerind Oil Company.

Q And have you previously testified before the OCD and had your credentials accepted?

A Yes.

Q In what specialty?

A Okay, I was a petroleum engineer.

Q And are you familiar with Case 8798 --

A Yes.

Q -- and the matters related thereto?

A Yes.

MR. BRUCE: Mr. Examiner, are the witness' credentials acceptable?

MR. CATANACH: The witness is considered qualified.

Q Why has Amerind requested this hearing, Mr. Leibrock?

A We have requested this hearing for two reasons.

First, to present evidence that the Amerind Shipp No. 1 Well has discovered a new Strawn reservoir and should therefore be considered a new field discovery.

Secondly, to propose field rules for well spacing and location.

Q Would you please refer to Exhibit Number Three and discuss it for the Examiner?

A Exhibit Three is a subsurface map contoured on top of the Lower Strawn. The Amerind Shipp No. 1 Well is near the center, noted by the red arrow.

The map covers a portion of the Lovington Strawn trend, including the Casey-Strawn, Shipp, Lovington Penn East, and part of the Lovington Penn Northeast Fields.

The approximate horizontal limits of each field are shown in green. Names of all the wells which produce from or tested the Strawn are noted.

In addition, the Strawn field discovery wells of the referenced fields are highlighted with red circles.

The wells identified by the smaller circles produce from the paddock, Abo, San Andres, or Drinkard formations.

You will note that the new pool is surrounded by seven Strawn dry holes. The cross sections A-A' and B-B', which I will discuss shortly, are also noted on Exhibit No. 3.

Q Would you please now refer to Exhibits Four and Five and discuss the contents of these cross sections?

A Okay. Evidence of horizontal separation between the Strawn reservoirs in the Amerind Shipp Well and the adjacent fields is given by Exhibits Four and Five, which are cross sections A-A' and B-B', as I noted previously.

Cross section A-A' is a north/south cross section through the Strawn formation, beginning on the left with the Amerind Carter No. 2 Well, which is the Lovington Penn Northeast Field.

Next is the C & K Burton dry hole, which was dense throughout the Strawn interval, followed by the Amerind Shipp No. 1.

Next the Texaco Carter Well which was completed in thin Strawn zone, which produced only 565 barrels of oil before being plugged back.

The TXO Carter encountered only dense limestone.

The final well on the cross section, the

Pennzoil Viersen No. 1 was the Shipp field discovery.

Exhibit Number Five, cross section B-B', begins at the left with the Tidewater State "P" No. 1-D Well, which is in the abandoned Lovington Penn East Field in Section 32.

The Tidewater Meyer Well had no Strawn porosity.

Next is the Amerind Shipp No. 1 Well, followed byl the C&K Shipp "28" which, as noted in blue coloring on the cross section, produced only water from the Strawn porosity.

The C & K Shipp "27" NO. 1-B produced as mall amount of oil form the Strawn and was plugged.

The last well on the cross section is the C&K Shipp "27" No. 1, which discovered the Casey-Strawn Field.

Although the well density is insufficient to determine precisely the reservoir limits, the green areas shown on Exhibit Three indicate approximate reservoir limits and the cross sections which I have discussed demonstrate the horizontal separation between the reservoirs.

Q Mr. Leibrock, would you please look at Exhibits Six and Seven and discuss their significance?

A Exhibit Seven, excuse me, Exhibit Six is highlighted in yellow and Exhibit Seven, in green.

The primary evidence for a new field discovery is comparison of the pressures recorded in the discovery well in the Lovington Penn Field with the Amerind Shipp Well.

The Tidewater well in the southeast of Section 2, which I noted previously was completed in 1951, was the first well in the area completed in the Strawn formation, so there was no possibility of any pressure depletion from any other well.

Exhibit Six is a Record of Drill Stem Tests in that well submitted by the operator to the OCC.

Drill Stem Test No. 13, which is highlighted in yellow, was a test of the Strawn zone in which the well was completed and produced some 456,000 barrels of oil before being abandoned. Although the drill stem test chargs from this test are not available, it is clear that the zone had excellent permeability, as evidenced by the final flowing pressure of 2,575 pounds.

Even though the 3600 psi shut-in pressure was obtained after only fifteen minutes, it probably very nearly reached the true reservoir pressure, as comparison with the Amerind Shipp drill stem test will show.

Exhibit Seven is a record of the drill stem test of the Amerind Shipp No. 1 Strawn producing zone.

Note that the one-hour final flowing

pressure of 1966 psi is the same order of magnitude as the Tidewater final flowing pressure.

The Amerind Shipp shut-in pressure 15 minutes into the final shut-in period was about 3,580 psi, whihc is only 2 percent less than the reservoir pressure of 3658 pounds, which was determined from the analysis of the -- of the drill stem test pressures.

Comparison of the drill stem tests on these two wells therefore indicates that a fifteen minute shut-in pressure gives a value reasonably close to the true reservoir pressure.

Furthermore, the shut-in pressures of these two wells at a -7300 foot datum are virtually identical, 3600 psi.

Since the drill stem pressure of the Tidewater well was clearly the original reservoir pressure, it seems reasonable to conclude that the same prssure recorded 35 years later in the Amerind Shipp Well is a very strong indication that a new reservoir has been discovered.

Q What special pool rules does Amerind request?

A Amerind requests 80-acre spacing and permission to locate wells not closer than 330 feet from the boundary of a governmental quarter quarter section.

Q Are other Strawn pools in the Lovington

Strawn trend also spaced on 80 acres?

A Yes, and the Shipp No. 1 Well already has an 80-acre unit dedicated to it under Casey Strawn Pool rules.

Q Please discuss your reason for the well location request.

A The second request we make is for field rules which specify that a well may be drilled at any point in a standard 40-acre unit no closer than 330 feet to the unit edge.

The usual Strawn field rules allowing only a 150-foot variance from the center of a 40-acre unit are unduly restrictive in the Lovington Strawn trend because the reservoirs in this trend are known to grade into dense facies very abruptly at the reservoir edges.

Although well control is insufficient to demonstrate this conclusively, the fact that most all of the good wells are offset by very poor wells or dry holes, demonstrates the importance of well location.

Exhibit Three also gives strong evidence of abrupt structural changes, two of which can be noted in Section 21 on the north edge of the map. Note the Pennzoil State 21 Well in the northwest of the northwest and the Tom Brown Monteith 21 well in the southeast of the southwest.

Notice the abrupt structural re-entrant

there showing that both of those wells are much lower than the offset producers.

So close well spacing would undoubtedly show that the actual top of the Lower Strawn changes more abruptly than Exhibit Three would indicate and again referring back to cross sections A-A' and B-B', you'll notice, referring on A-A' the Shipp No. 1 Well is relatively much higher than the Yates Burton Well to the left.

And again, though there is not sufficient well control to prove this conclusively, it's pretty clear that the -- that the structure changes very abruptly between these wells.

Q Do you wish other field rules to conform to statewide rules?

A Yes.

Q And have you met with the OCD District Geologist in Hobbs and discussed this case with him?

A Yes.

Q Do you request an expedited decision on this matter and why?

A Yes, we do. We wish to drill a well commencing within two or three weeks in the north half of the northwest quarter of Section 33 at a location permitted by the proposed new pool rules.

If we cannot obtain approval, we must

seek approval of an unorthodox well location, which will delay our drilling program.

Q In your opinion is the granting of this application in the interest of conservation and the prevention of waste?

A Yes.

Q Were Exhibits Three through Seven prepared by you or under your direction or compiled from Amerind company records?

A Yes.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibits Three through Seven at this time.

MR. CATANACH: Exhibits Three through Seven will be admitted as evidence.

MR. BRUCE: I have no further questions of the witness at this time.

CROSS EXAMINATION

BY MR. CATANACH:

Q Mr. Leibrock, did you obtain any pressure data from wells located in Section 5, the two Tidewater wells?

A In 5, we have them in our company files but I do not have them with me today, but previous investi-

gation, we have convinced ourselves that the four wells shown here are all in the same reservoir, which is now abandoned.

Q Do you by any chance remember what those pressures might have been, approximately?

A They, well, let me first note back to the well we discussed here, the Tidewater well in the south of 32. The evidence submitted to the Commission soon after the well was placed on production indicated the reservoir pressure of about 3100 psi, which was roughly 500 pounds below the drill stem test pressure after withdrawal of only a few thousand barrels of oil at most, and the -- as I say, I don't recall exactly what the other three wells to the south were, but I did not enter them into the testimony here because they're farther from the subject well than the Tidewater "P" Well in 32.

Q Do you have any idea how the original reservoir pressure in the Casey-Strawn compares to the reservoir pressure in your Amerind --

A Yes, sir, at the same datum, -7300 feet, the original pressure in the C&K Well, the discovery well circled in red there in Section 27, was roughly 41-or-4200 psi.

Q Mr. Leibrock, in your opinion is -- could there be any pressure depletion from your well from the

Casey-Strawn Pool?

A Yes, that is a possibility that we do not think can be proven conclusively one way or the other.

We -- we think the primary evidence that this is a new field rests with the fact that the original pressure in our well appears to be identical with the discovery well in the abandoned Lovington Penn East Field that I discussed.

Q Mr. Leibrock, can you state once more the location, the well location requirements that you're asking for?

A Yes. We request permission to locate wells not closer than 330 feet from the boundary of a governmental quarter quarter section.

Q Okay, and you're also requesting a discovery allowable for your well?

A That's correct.

Q Do you have a recommended figure for that?

A We would just recommend that the state-wide rules be applied.

Q Do you know the depth of your topmost perforation on the well --

A Yes, it's --

Q -- from ground level?

A It's 11,259 minus 14. Let me see what that is. I need to put that back on ground level, which would be 11,245 below ground level.

Q Just for the record, that would be 56,225 barrels, is that correct?

MR. CATANACH: Are there any other questions of the witness?

MR. BRUCE: I have a question, Mr. Examiner.

MR. CATANACH: Mr. Bruce.

REDIRECT EXAMINATION

BY MR. BRUCE:

Q Mr. Leibrock, regarding the Casey-Strawn Pool, how do you explain the difference between the Amerind Shipp No. 1 Well and the discovery well in the Casey-Strawn?

A Let me note the pressures in all of the reservoirs on Exhibit Three surrounding the proposed new field.

First of all, as I have noted, the Lovington Penn East Field to the southwest is an abandoned field, so the reservoir pressures at present are a few hundred pounds, at best, and in the Casey-Strawn Field to the east in Sections 27 and 34, I think the evidence indicates that this field is about 95 percent or more depleted, also,

plus some pressure history that we have indicates that the reservoir pressures currently are only 200 pounds average in that reserovir, also.

In the north half of Section 28, north of our well in 33, within the last year or so we've drilled and completed four wells here in the north half of 28. The original pressures were on the order of 2500 to 2800 pounds.

And also to the south the recently approved Shipp Field in Section 4 of 17, 37, the reservoir pressures are also roughly in the order to 25-2600 psi.

So you're offset to the north and south with reservoirs about 2500 pounds and you're offset the other two directions with reservoirs with much lower pressures.

We're sitting in the middle of all this with pressures about 3700.

So I think all the evidence taken together indicates that if there were any effective communication between the Amerind Shipp Well and any of these other four reservoirs, the pressure would probably be at least down to the -- to the same order of magnitude as the wells in 28 and 4.

MR. BRUCE: I have no further questions.

RECROSS EXAMINATION

BY MR. CATANACH:

Q I have one more question for the witness. Do you know of any objection from any of the operators in the pool, or offset operators to your --

A No, sir.

MR. CATANACH: I have no further questions.

The witness may be excused.

Is there anything further in Case 8798?

If not, it will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8778 heard by me on Jan 8 1986

David R. Catanach, Examiner
Oil Conservation Division