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

12 August 1987

EXAMINER HEARING

IN THE MATTER OF:

Application of Pennzoil Company for approval of an unorthodox oil well location, Lea County, New Mexico.

CASE 9194 9195

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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I N D E X

E X H I B I T S

MR. STOGNER: Call next Case Number 9194.

MR. TAYLOR: Application of Pennzoil Company for approval of an unorthodox oil well location, Lea County, New Mexico.

Did you want to consolidate these?

MR. KELLAHIN: Yes, if you please. Let's call them both.

MR. TAYLOR: And that's Case 9194.

9195 is the application of Pennzoil Company for approval of an unorthodox oil well location, Lea County, New Mexico.

MR. KELLAHIN: If the Examiner please, I'm Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of Pennzoil Company and I have one witness to be sworn.

MR. STOGNER: Are there any other appearances in either Case Number 9194 or 9195?

There being none will the witness please stand and be sworn?

(Witness sworn.)

JIM L. BARR,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Barr, would you please state your name and occupation?

A My name is Jim L. Barr and I'm Senior Exploration ist with Pennzoil Company.

Q Your last name is spelled B-A-R-R?

A Correct.

Q And what do you do for Pennzoil Company?

A Currently I'm involved in doing exploration in the Permian Basin of West Texas and southeast New Mexico.

Q And you have degree in geology, do you not?

A I have a Master of Science degree from the University of Cincinnati.

Q In what year, sir?

A 1975.

Q Would you summarize for the Examiner what has been your employment as a professional petroleum geolo-

gist subsequent to obtaining your degrees?

A I joined Pennzoil Company in 1974. I have spent time as a development geologist. I have spent time in exploration and research. I have been involved in international geology and most recently now with Pennzoil in southeast New Mexico and West Texas.

Q When we turn to southeastern New Mexico, particularly to Lea County, New Mexico, have you made a geologic study of Pennzoil's applications in the two cases before the Examiner today?

A Yes, I have.

MR. KELLAHIN: We tender Mr. Barr as an expert petroleum geologist, Mr. Examiner.

MR. STOGNER: Mr. Barr is so qualified.

Q Mr. Barr, let me direct your attention to Exhibit Number One and if you'll take a moment and describe to the Examiner what particular pool you've made an investigation of.

A The particular pool that we've made an investigation of is essentially the mound that is -- let me rephrase that.

The pool that we've investigated is essentially the well and the mound that we have Pennzoil No. 16-3, and they would be in the northeast of the southeast

quarter there.

Q All right, let's find that one. It's the one in the southeast quarter of Section 16. It shows Pennzoil State 16 and right next to the "3" it has the number 258?

A That is the Isopach thickness of the Lower Strawn Lime.

Q This is in what pool, sir?

A This is in the Lovington Northeast Penn Pool.

Q And what is the acreage allocation for a spacing unit in this pool?

A 80 acres.

Q And what would be a standard location for wells drilled in that pool?

A Be 150 feet to the center of a quarter quarter governmental quarter.

Q Let me direct your attention, first of all, to the well located in the east half of the northwest quarter of 16 and have you identify which well that one is.

A This will be the Pennzoil No. 4 State 16.

Q Case 9195 then seeks approval for Pennzoil's Well 4-16?

A Correct.

Q All right. Let's turn to the south half

of the northeast quarter. That 80-acre tract is for what well, sir?

A That will be for the Pennzoil No. 5 State 16.

Q And that refers to Case 9194.

Would you take a moment and generally describe for us the geology that exists in the Northeast Lovington Penn, particularly in regards to Section 16? Give us a general picture of the geology, if you will.

A Essentially what we're exploring for here are biohermal mounds that grew during the Pennsylvanian period in the Lovington area. These mounds are quite steep on the side. They're carbonates and consist of different types of biota.

We find throughout the whole area out there there's a very, very prolific abundance of these things. They're not large in areal extent, however, they have considerable amount of relief on them, as I've depicted here on the Isopach map.

Q Let me have you take the Case 9195 well, the 4-16 --

A Correct.

Q -- in the east half of the northwest quarter --

A Correct.

Q -- and show the Examiner where the closest standard location would be for that spacing unit.

A Okay. The closest location, standard location, would be just south of the dot designated by the shot point 200 on this seismic line there.

Q So the closest standard locatin is going to be to the south of shot point 200.

A Correct.

Q Your proposed location is to the north of that.

A Correct.

Q Can you describe to the Examiner in what particular way your proposed unorthodox location is in fact unorthodox?

A What we wish to do is optimize the best location on the mound and we have found from experience that intregrating the geology and the geophysics to get on the crest of these mounds as we see them on the seismic, and in this particular case this is what we have done. We have located the location of the well right next to the seismic line on the crest of what we interpret to be the crest of the structure.

Q And this location moves closer to the interior 40-acre line --

A Correct.

Q -- as opposed to crowding an outer boundary.

A Correct.

Q Let's turn now to the second well, which is the case for 9194, and that's the well 5-16. Would you identify again where the closest standard location would be for that well?

A The closest standard location would be northwest of where we have proposed a location and it would be actually northwest of the Isopach line 220 feet.

Q What's the basis that you have determined the necessity for the unorthodox location?

A Again the intregration of geology and geophysics and showing the optimum location to be in this particular point. We feel going northward we may in actuality miss the mound, as they are very steep on the side.

Q In this instance for this well you're moving closer to the side boundary and outer boundary of the spacing unit.

A Correct.

Q Can you describe, sir, what is the ownership relation between the ownership in the southeast quarter as opposed to the south half of the northeast quarter?

A The ownership is the same throughout the whole section. The northeast and the northwest and in the

southeast.

Q So the owners that participated in the 16-3 Well are going to be the same owners that are participating in that well.

A Correct.

Q Let me have you discuss for us in a general way the matters in the seismic study --

A Uh-huh.

Q -- that have aided you and assisted you in finding these particular points as proposed locations.

A I don't quite follow you.

Q Yes, sir. Give me a description of the type of seismic data that you had available to you. When were these lines run, the kind of information that you used to -- to make your analysis.

A The two lines that we have on here were shot sometime in 1986 and late 1985, and by doing an interpretation of the seismic we recognize certain anomalies as we see on the seismic. Through the processing procedure, which is proprietary, and so we do have a way of hopefully recognizing these mounds and so far we've been very successful at it.

Q Have you integrated the seismic interpretation with the subsurface control that's available to you in the section?

A Each place that we can we definitely integrate all of the data that we can.

Q And have you made that correlation with the geologic data available for the 16-3 Well?

A Correct.

Q And based upon that study, then, it's your opinion that for both of these wells the optimum location for drilling a well for these spacing units is the proposed unorthodox location.

A Correct.

Q Let's turn, Mr. Barr, if you will, to Exhibit Number Two. Would you identify and describe this exhibit for us?

A This is a well profile of the No. -- Pennzoil No. 3 State 16. I have shown the compensated density log, neutron log on here and at approximately 11,504 feet through 11,515 feet I have shown in the column the zone that we have perforated in this particular well.

And on the righthand track of the log, over to the right there you'll see a curve and this is the FDC/CNL curve which is showing the porosity development within this particular well that we are now producing from.

Q What is the sequence, Mr. Barr, in which you have drilled the wells?

A Beg pardon?

Q In what order will you drill the wells?

A We would drill the -- the first well will be the Pennzoil No. 4 State 16. That will be in the east half of the northwest quarter. And we will drill the Pennzoil No. 5 State 16, which is in the south half of the northeast quarter.

MR. KELLAHIN: Mr. Examiner, that concludes my examination of Mr. Barr.

At this time, for the record, we would also identify Pennzoil Exhibit Number Three, which is my affidavit of mailing of notice to the offsetting owners.

In each instance, as Mr. Barr has told you, the offsetting operators are in fact offsetting operators and working interest owners are involved in these two wells.

We have tabulated, though, the list of those individuals.

MR. STOGNER: As far as your Exhibit Three, there has been no objection raised from any of these parties?

MR. KELLAHIN: No, sir, there has not.

We would move the introduction of Exhibits One, Two, and Three.

MR. STOGNER: Exhibits One, Two, and Three will be admitted into evidence at this time.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Barr, let's go back and look at Exhibit Number One here.

Most of your control data was from geophysical information, I assume.

A The vast majority of it, yes.

Q Showing the mound. Now, you used a word that I'm not familiar with, "iota".

A Biota.

Q Okay, I'm not familiar with that one, either.

A Essentially the biological components of the mounds. It can be the corals, the fusulinids, the algae, the different constituents of the mound itself.

Q As far as -- which well do you plan to drill first?

A We will drill the Pennzoil No. 4 State 16, which will be in the east half of the northwest quarter.

Q Regardless of what happens to that well over there, is it Pennzoil's contention to go ahead and drill their second well?

A I think at the present time our intent is to do so.

Q The Harvey E. Yates wells up in the extreme northwest portion of this map on Exhibit Number One, are those producing from the same zone?

A They are producing from the Lower Strawn Lime. Now if they're producing from the same reservoir facies that we have in these two wells, I seriously doubt it, because these reservoir facies within each mound are discrete lenses and they come and go and each mound is in itself really a separate entity, and so I would say the Harvey E. Yates well, like the East Lovington No. 8, I believe is on its last legs of production.

Q Let's look at your Pennzoil wells down in the southern, southwestern portion of this map.

A Correct.

Q Do those have the same characteristics that you're talking about mound production, essentially?

A Those have been used as a model of our mound facies, you know, we get more information -- of course we have a field there that we have used as our analog to extrapolate to other mounds in the area.

And yes, they are producing from the Lower Strawn Lime mound facies.

Q Now when I look at that, it appears that

there's two mounds down in the southeast, a large one that has about five wells producing from it, and then one mound that extends up and appears to be a little nose that comes in and your Pennzoil State No. 2, and that looks like it's in -- you see what I'm talking about --

A Yes, sir.

Q -- in the southwest here?

A Uh-huh.

Q What kind of a differential did you see of production characteristics from the State Well No. 2, than, say, the No. 1 in your other mound?

A Basically, there is -- well, for one thing, like with Pennzoil State 16-1 was completed in May of 1969, whereas Pennzoil State No. 2 down there in the northwest quarter, I think, of 21, that particular well was completed in March of '84, some years later, and of course, the Pennzoil State 16-1 is producing from a mound that trends east/west across there that is actually a separate mound from the two wells that you see in the northeast quarter down there.

Now, the Isopach line 200 there gives you the appearance that these are, you know, one mound. They are actually two separate mounds.

And the third one down there, the Pennzoil State 2, is a separate mound, likewise.

Q So did you see virgin pressure in each one of these?

A Yes, sir.

Q Are those wells in the southwestern portion of this map, are they on pump, or are they producing?

A I'm not sure of that. I think some of them are on pump and some of them may still be flowing, but I, considering the age of them, I sort of suspect that they're probably on pump.

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

Are there any other questions of Mr. Barr?

MR. KELLAHIN: No, sir.

MR. STOGNER: He may be excused.

Mr. Kellahin, do you have anything further in either Case 9194 or 9195?

MR. KELLAHIN: No, sir.

MR. STOGNER: Nobody else has anything in either case?

Both of these cases 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 Nos. 9194-95 heard by me on August 1987.

Examiner
Oil Conservation Division