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

28 August 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of Rio Pecos Corporation for an unorthodox gas well location, Lea County, New Mexico. CASE 8687

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Jeff Taylor
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For Rio Pecos Corp.: W. Thomas Kellahin
Attorney at Law
KELLAHIN & KELLAHIN
P. O. Box 2265
Santa Fe, New Mexico 87501

I N D E X

E X H I B I T S

MR. STOGNER: Call next Case Number 8687.

MR. TAYLOR: The application of Rio Pecos Corporation for an unorthodox gas well location, Lea County, New Mexico.

MR. KELLAHIN: If the Examiner please, I am Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of the applicant and I have one witness.

MR. STOGNER: Are there any other appearances?

Will the witness please stand and be sworn?

(Witness sworn.)

TODD WILSON,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q For the record, Mr. Wilson, would you please state your name?

A Todd Wilson.

Q Mr. Wilson, have you previously testified before the Division?

A Yes, I have.

Q And you have previously testified as a petroleum geologist?

A Yes.

Q Pursuant to your employment by Rio Pecos Corporation, Mr. Wilson, have you made a study of the geology surrounding this application?

A Yes.

Q And pursuant to that study have you prepared certain exhibits?

A Yes, I have.

MR. KELLAHIN: If the Examiner please, we tender Mr. Wilson as an expert petroleum geologist.

MR. STOGNER: Mr. Wilson is so qualified.

Q Mr. Wilson, let me first of all direct your attention, sir, to the ownership plat of the surface for this are and have you take a moment and orient us as to, first of all, the proposed spacing and proration unit in Section 34.

A Okay. This proposed proration unit would be the north half of Section 34, a request to drill 660 from

the north and west lines. This is in Lea County, New Mexico, Township 16 South, Range 34 East.

Q The principal or targeted objective is what formation?

A The Atoka.

Q What is Rio Pecos' interest in the proration unit in the north half of Section 34?

A We have acquired farmouts from Mobil Oil Corporation to drill an Atoka Morrow test.

Q Using this ownership plat, would you identify for us the offsetting operators. First of all, starting with Section 27 to the north, identify for us who operates that property.

A Elk Oil out of Roswell, New Mexico, operates the two producing wells in Section 27.

Q And as we move over into Section 28, who operated the east half of Section 28?

A Shell Oil Company.

Q Is there currently a well on the east half of 28 that produces from this formation?

A No.

Q When we do to the west in Section 33, who operates that property?

A Mobil.

Q All right, and are there wells to this

formation in Section 33?

A No. No producing wells.

Q All right. Let's turn now, Mr. Wilson, to the specifics of the geology. Let me direct your attention to what has been marked as Exhibit Number Two.

Before you explain the exhibit, would you take a minute and simply identify the exhibit for us and tell Mr. Stogner what it is that you have prepared?

A Okay. This is a structure map on top of the Anderson Cycle and superimposed on it is the trend of Atoka Channel system.

Q Why have you mapped the structure on top of this top Anderson Cycle?

A The structure is the key feature that will tell us where to drill to maintain a position above potential water.

Q In evaluating the geology for this prospect, Mr. Wilson, would you identify for us the color code used to indicate the type of production that's shown on the plat?

A Okay. The red well spots indicate Atoka gas production. The green well spots indicate the Morrow gas production. And that's all that's indicated on this map.

Q Looking specifically to Section 34, would

you identify for us, using this structure map as the basis, why you have recommended an unorthodox location 660 out of the north and west lines as opposed to the closest standard location for such a proration unit?

A We've requested to drill the unorthodox location to maintain the maximum structural picture that's available in the area. There's some fear that if we move to a standard location the early water encroachment in this Atoka Channel system, and also as you move to the southeast, the sands apparently get tight and this will be covered on a cross section later.

Q Using the structure map, can you give us an example of your opinion with regards to the eastern boundary of potential production in Section 34? How have you controlled, or what information have you used to control the eastern boundary for the area that's shaded in the orange?

A Well, basically it's the well in Section 26, which is attained an Atoka sand but it was tight in nature.

Q That is the well on the cross section?

A On the cross section.

Q All right. Are there any other control points that you have used to attempt to locate that eastern boundary?

A No, sir.

Q When we look at the marker for the water/gas contact as it appears in the south end of Section 33 and 34, would you describe what information you have used to determine that?

A Okay. The information gained on that was from the well drilled in Section 23 that's colored in green, producing out of the Morrow formation, and they have an Atoka sand in that well, according to log calculations --

Q I'm sorry, you said 23.

A In Section 23. They have an Atoka sand in that well which, according to log calculations, is wet.

Q All right, you're looking at the water/gas contact up into the north side of this finger.

A Yeah.

Q All right.

A On the south side of the finger I've just projected the gas/water contact at the equivalent structural position across this nose.

Q Okay. Would you now go into Section 27 and describe for us the type of wells that were drilled in that section and the significance of that drilling and the information in terms of picking a location in Section 34?

A Okay. Elk Oil drilled two wells in Section 27, both of them productive in the Atoka Channel sys-

tem. I feel that this system is probably a multi-lateral system composed of numerous channels.

The control that we gained from that basically is an apparent trend, if you line those two wells up, with the channel system trending northeast/southwest. This trend is also confirmed by a well in Section 23 which has a water-bearing Atoka channel.

Q Would you go now to the cross section, Mr. Wilson, and lead us through your analysis of that cross section from either A or A', whichever direction you'd like to go?

A Okay. Starting on A, which is the south, to A', which would be on the northern end of it, basically the first well does not contain the Atoka Channel that is equivalent to a system that we're looking for; therefore, that helps define the northwest limit for this system.

When you go into the two wells that Elk Oil is producing and operating, they have penetrated the Atoka Channel sands for approximately 39 to 43 feet thick each.

And then continuing on further northward the well in 23 penetrated another Atoka Channel sand that has a gas/water contact in it.

Then you drop off due south in Section 26 and pick up an Atoka Channel sand that is tight.

So basically the cross section is to display the trend of the channel system and the apparent boundaries to this system.

Q On Exhibit Number Two you have identified the gross thickness for the Atoka sand adjacent to each of the wells?

A Yes, that's in the hexagonal figures colored purple.

Q How does the thickness of the gross interval relate to the productivity of the wells? Is there any relation between the quality of the well and thickness in this specific area?

A The thicker the sand reservoir, obviously the more potential reserves you haved.

Q The difference between 33 and 43 feet, is that significant for you as a geologist?

A Yes, it's significant to the point that it indicates there are probably multi-lateral channels in this. Most channels in the Atoka system in this part of Lea County from my experiences appear to have similar or very close relationships to thickness.

Q In picking a location for the north half of Section 34, what, in your opinion, is the optimum location at which to attempt to produce from these formations in this section?

A The location we desire to drill, 660 from the north and west lines of Section 34.

Q In conclusion, then, Mr. Wilson, can you describe for us again what occurs geologically as you move from the proposed location to the south and to the east towards a more standard location?

A As you move to the south and the east towards a more standard location, there is a higher risk of earlier water encroachment into the productive reservoir and also a higher risk of obtaining tighter sands that would not have the productive quality we desire to obtain.

Q Were Exhibits One -- Exhibit One is a land plat.

Were Exhibits Two and Three prepared by you or compiled under your direction and supervision?

A Yes.

MR. KELLAHIN: That concludes my examination of Mr. Wilson.

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

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

CROSS EXAMINATION

BY MR. STOGNER:

Q Just to clarify something.

The application stated that you were going to test the Morrow formation and now you're going to test the Atoka formation, is that right?

A Yes. The Atoka is the principal objective; the Morrow is the secondary objective. We feel that to drill this deep to the Atoka, it's worthwhile to continue on to the Morrow.

Q Okay. Is the Atoka or the Morrow formations in this area, are they designated to the pool?

A No, sir.

Q Okay, the two Elk well, are they -- then they're carried as undesignated Atoka wells?

A Well, let me clarify that, please. One Elk well is listed in the North-- let me see, south -- it's Kenmitz Atoka Morrow.

Q I'm sorry, the what?

A One of the Elk wells is in the Kenmitz Atoka-Morrow Field and the other Elk well for some reason is undesignated.

Q Thank you.

MR. STOGNER: I have no further

questions of Mr. Wilson.

Is there anything further in Case Number 8687?

If not, this case 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. 8687 heard by me on 28 August 1985.

Michael E. Stogner, Examiner
Oil Conservation Division