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

7 June 1989

EXAMINER HEARING

IN THE MATTER OF:

Application of McClellan Oil Corporation for an unorthodox gas well location, Chaves County, New Mexico. CASE 9685

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Robert G. Stovall
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For McClellan Oil Corporation: W. Thomas Kellahin
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I N D E X

E X H I B I T S

MR. STOGNER: We will pass Case Number 9675 at this time and call next Case Number 9685.

MR. STOVALL: Application of McClellan Oil Corporation for an unorthodox gas well location, Chaves County, New Mexico.

MR. STOGNER: Call for appearances.

MR. KELLAHIN: Mr.Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin, Kellahin & Aubrey, appearing on behalf of the applicant, and I have one witness to be sworn.

MR. STOGNER: Are there any other appearances in this matter?

Please stand and be sworn.

(Witness sworn.)

MR. KELLAHIN: Mr. Examiner, my witness is Mark McClellan. Mr. McClellan is a petroleum geologist with McClellan Oil Corporation of Roswell, New Mexico.

MARK McCLELLAN,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. McClellan, for the record would you please state your name and occupation?

A I am Mark McClellan, McClellan Oil Corporation. I'm a oil and gas geologist.

Q Mr. McClellan, have you on a prior occasion been qualified as an expert petroleum geologist before the Oil Conservation Division?

A Yes, I have.

Q Pursuant to your employment by your company, have you made a study of the geologic facts surrounding the application for the approval of the MM Federal Com No. 10 Well at an unorthodox location in the South Pecos Slope Abo Gas Pool of Chaves County, New Mexico.

A Yes, I have.

Q Would you describe briefly what you're seeking to accomplish with this application, Mr. McClellan?

A We are asking for approval of a non-standard Abo gas well location which is located 330 from the north and east of Section 35, 9 South, 25 East.

Q Pursuant to that request, have you prepared a presentation for the Examiner showing the geology of this particular area?

A Yes, sir, I have.

Q And have you been able to formulate based upon that geology an expert opinion with regards to the necessity for approval of the unorthodox location?

A Yes, I have.

MR. KELLAHIN: Mr. Examiner, at this time we tender Mr. McClellan as an expert petroleum geologist.

MR. STOGNER: Mr. McClellan is so qualified.

Q Mr. McClellan, let me have you direct your attention, sir, to Exhibit Number One and take a moment and identify that display for us.

A This is a lease mineral ownership map, which --

Q When we -- when we look at the Section 35, direct us to the 160-acre gas spacing unit that will be dedicated to the subject well.

A This is located in the northeast quarter of Section 35, 9 South, 25 East.

Q The subject well is referred to as the MM Federal Com No. 10 Well?

A Yes.

Q And what is the status of the well at this time, Mr. McClellan?

A This well was spudded March 24th and was TD'ed on April the 7th. It's currently being tested; has been acidized and fraced and is currently being tested.

Q What would a standard -- what is the closest standard location for a well of this type in this pool?

A 660 feet.

Q When we look at the offsetting spacing units, would you identify those for us ? For example, let's start in the southeast quarter of Section 26. Is that spacing unit dedicated to a well?

A Yes, it is, the MM-6.

Q And is that -- is that a well that McClellan operates?

A Yes, it is.

Q When we look at the diagonal offsetting spacing unit in the southwest of 25, is there a South Pecos Slope Abo Gas Well in that spacing unit?

A Yes, sir, it is in the southwest quarter the MM-7 is located.

Q Is the mineral interest ownership the same for the southwest of 25, the southeast of 26, and then

the northeast of 35, where the subject well is?

A Yes, it is, with the exception of the 40-acre tract located in the southwest of the northeast of Section 35. The ownership there is a little bit different. Other than that, it's identical ownerships.

Q You're dealing with the same base Federal oil and gas lease when we describe those three spacing units with the exception of the 40-acre tract?

A Yes.

Q All right, when we look in the northwest of 36, that appears to be a State of New Mexico oil and gas lease?

A Yes, it is.

Q And who's the operator of the well in the northwest of 36?

A We are.

Q Is the interest the same with the exception of the royalty interest, is the working interest the same for all four of the spacing units that are contiguous to that common quarter?

A Yes, it is.

Q Let me direct your attention now, sir, to Exhibit Number Two. Would you identify that for us?

A This is an application for permit to drill, deepen. It's a Federal form and is for the MM Fed-

eral Com No. 10 Well, which was approved by the BLM on February 10th, 1989.

Q When did you commence your well, Mr. McClellan?

A On May 24th of this year.

Q The -- let's turn now to Exhibit Number Three. Describe for us what this display shows.

A This is a production map. It's through February, 1989. It is a -- a cumulative production map as well as an average daily production map for February of this year.

Q Let's use it as a means to describe what has occurred with regards to the development in the past of the northeast of 35 where the subject well is now located.

A The first well, the MM Federal No. 6, located in the southeast quarter of Section 26, for example, has sold about 167-million cubic feet of gas and in February averaged 340 -- excuse me, 354,000 cubic feet.

Q Is that well still producing?

A Yes, it is.

Q When we go into the northeast quarter of 35, there is also a well symbol there?

A Yes, there is. That's the MM Com Federal No. 2, which was drilled back in 1984, I believe.

That well produced off and on for about

2 years and was plugged and abandoned in 1986 and only made 8,050,000 cubic feet of gas.

Let's turn now, sir, to Exhibit Number Four. In making a geologic investigation of this particular area, did you attempt to map the structure in the Pecos Slope Abo?

A Yes, I did.

Q And is that what Exhibit Number Four shows?

A Yes, it is.

Q In your opinion as a petroleum geologist is structure an integral part of decisions as to how you place and locate wells in the Abo?

A No, it is not.

Q What are the major geological events or information that you utilize as a geologist to pick your Abo location?

A That's been done through sand isopach maps.

Q And have you done that?

A Yes, I have.

Q Turn to Exhibit Number Five and describe what that shows.

A This is an Abo gross sand isopach map. The Abo contains approximately 7 to 8 sands, or can con-

tian up to 7 or 8 Sands within a 450-foot interval. Within this interval you've got approximately 3 or 4 sands and, as you can see from this exhibit, these sands tend to -- to trend north and south. The location in the northeast of Section 35 is to the northeast quarter, the further you move in the northeast the more sand that you will -- you will pick up.

Q Is there a relationship between the thickness of the Abo sand in this area and the eventual productivity of the well?

A Yes, there is. Usually the thicker the sands, the more sand you have, the better well you will make.

Q Do you have a benchmark or a basis to determine generally what is the minimum number of feet of sand that will give you the type of commercial well that you anticipate for this area?

A We usually like to have 20 feet or more of sand. Whenever I map these sands I use a cutoff point of about ten feet or less. If I've got an area mapped that I feel like will encounter less than 10 feet of sand, we usually don't drill in that area.

Q Is this a prorated gas pool, Mr. McClellan?

A No, it's not.

Q Is there any special qualifications or classifications under the Natural Gas Pricing Acts for gas qualifications or classifications?

A Yes, there is. In May, 1981, the Pecos Slope Abo was designated as a tight sand formation under the NGPA Section 107 and the Abo Sands have approximately .1 millidarcies permeability, which is one of the factors as to why this is a tight sand reservoir.

Q Having prepared a gross sand map for the Abo formation, did you also attempt to map any of the individual zones of the Abo formation?

A Yes, I did.

Q Would you turn to Exhibit Number Six and describe what you've done there?

A This is a -- what I called a B Zone isopach sand map. The B sand in this area is usually your thickest sand and your best sand and that is why I chose this sand to be mapped. I could have mapped all 4 or 5 sands in this area but this is really your most important sand.

Q Have you also prepared a cross section to show the relationship of these various sands among certain wells in the immediate vicinity?

A Yes, I have.

Q Turn to Exhibit Number Seven, Mr.

McClellan. Is that your cross section?

A Yes, it is.

Q Before we discuss your opinions about the cross section, would you help identify the wells that you've chosen to put on the cross section?

A Yes, I will. I started out with the MM Federal No. 2, which is located in the southeast of the northeast of Section 35.

Q And that will be the well A?

A Yes.

Q All right.

A And then moving straight north, the second well on the cross section is the MM Federal No. 10.

Q That's our subject well that's already been drilled and you have the log.

A Right.

Q All right.

A Which is located in the northeast northeast of Section 35. And the third well moving further north is the MM Federal No. 6, which is located in the northeast of the southeast quarter of Section 26.

A What was your basis for choosing these three wells to put on your cross section?

A And the third well, moving further north, is the Inman Federal No. 6, which is located in the

northeast of the southeast quarter of Section 26.

Q What was your basis for choosing these three wells to put on your cross section?

A We were looking for this B sand in this location in the northeast quarter of Section 35. This B sand is the main or the only pay located in the Inman Federal No. 6 which is in the southeast of Section 26 and--

Q Did you find the B sand present in the dry hole, the Well No. 2 --

A No.

Q -- drilled in the northeast --

A No, no, we did not.

Q What's the basis for your location of the well at the unorthodox location versus the closest standard location?

A It was felt that at a standard location of 660 from the north and the east, that -- that we would have encountered less than 10 feet of this sand or possibly missed it.

Q Why didn't you obtain the Commission approval of the unorthodox location that the well now is drilled at prior to drilling and completing the well, Mr. McClellan?

A The APD for this well was approved on February 10th. We drilled a well south of here, the JJ Com

Federal No. 2, first and had a rig in the area, and basically, got into a -- into a hurry. We -- we should have stopped and come to the OCD. We did not do that. We got in a hurry and went ahead and drilled it and shouldn't have.

Q Let me ask you to identify Exhibit Number Eight for us, Mr. McClellan.

A This is a waiver that was sent to the only offset operator that is affected by this location, which is Sanders Oil and Gas.

Q No, when we look at Exhibit Number One, will you show us where the Sanders Oil and Gas operated property is?

A Yes, he's in the southeast quarter of Section 35. He is the operator of that lease and that well.

Q McClellan Oil Corporation is the operator of all three of the Abo spacing units towards which this well is encroaching.

A Yes.

Q Do you have any opinion, Mr. McClellan, as to whether or not the well as located gains any unfair advantage over the offsetting interest owners or the property that's being operated by you for their interests?

A Being that it is the -- it is identical

working interest ownership and all three of the affected 160-acre proration units, I don't feel so, and I also feel that the three adjacent 160-acres will not be drained by the existing wells that are there and that some of the gas would be -- would be left in the ground if the MM Federal 10 had not been drilled.

Q What's the approximate cost of drilling and completing a well like the MM Federal No. 10?

A It's about $200,000.

Q Based upon your geology, in your opinion are there sufficient gas reserves in the northeast quarter of 35 to justify the drilling and completion of the well at this location?

A Yes.

Q Do the geologic displays represent your work product, Mr. McClellan?

A Yes, they do.

MR. KELLAHIN: Mr. Examiner, at this time we move the introduction of Exhibits One through Eight.

MR. STOGNER: Exhibits One through Eight will be admitted into evidence at this time.

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

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. McClellan, when I look at Exhibit Number One, you stated that the southeast quarter of 26, the southwest quarter of 25 and the northeast quarter of 35, with the exception of that one quarter quarter section, is a common Federal lease, is that correct?

A Yes.

Q And when I look in Section 25, is all of Section 25 also included in that lease?

A Yes, it is.

Q Okay. And there are presently four wells in Section 25?

A Yes, sir.

Q And all on 160-acre spacing in the Abo?

A Yes.

Q And in Section 26, that is an Abo well, so that has 160-acre spacing.

A Yes.

Q Okay, when I go down to Section 36, are there four Abo wells in that particular section, also?

A Yes, sir.

Q And Exhibit Number Three shows the cumulatives, is that correct?

A Yes.

Q Are any of those wells in Section 36 unorthodox locations?

A The well -- the Tolmac State No. 3 is.

Q And which one is that one?

A It's in the northeast quarter. It's pushed toward -- almost to the very center of the section.

Q When was that well drilled?

A I'm not sure. I think about 1983.

Q 1983. And why did -- why was that location unorthodox? That is -- I guess I should qualify myself, is that a -- one of your wells?

A Yes, sir.

Q Okay. Do you know why it was drilled at an unorthodox location?

A I'm not sure. I think it was probably due to topo.

Q Okay. But you don't know if it was drilled for geological purposes like you're asking for today.

A I don't think that it was.

Q Let's look at Exhibit Number Five now and this is the gross sand isopach, correct?

A Yes.

Q Whenever I look at this north/south trending structure, channel sand, what kind of deposition

are we looking at, it this a channel sand?

A It's an alluvial channel type of a sand deposit.

Q Now this is a fairly localized structure because if I move from the west to the east, I see that you come up, looks like plateau or a ridge that's about 30 feet in thickness and then drops down to 10 and then back up to 30. Do we see this continuing back to the east or does it stop and go back to zero again or what are we looking at back to the east?

A No, we -- we do see this type of a model all the way throughout the Abo, where you've got a sequence of anywhere from -- sweet spots anywhere from, let's say, 30 to 40 foot of sand, and it tends to fall off moving east and west, and then you'll have an area where you basically have very little sand, then you pick up another sweet spot, then you'll have another tight spot, and it tends to run in bands --

Q And when we go to the west this band also continues over this interval.

A I don't have too much control right in this area because that's the Bitter Lakes National Refuge and, obviously, that -- that acreage has not been leased so there has not been anything or any activity in this area till you get on over about another, probably, three or four

miles.

Q And is that Abo production over there, is it somewhat limited or is it fully developed?

A There really has not been too much done in the west half of this -- of this township. There's probably been 5 or 6 wells drilled and then when we jump over into 9 South, 24 East, there's probably only been 4 or 5 wells drilled over there.

Q Now what I tried to say, Exhibit Number Six, this was a B zone isopach sand map.

A Uh-huh.

Q Is this a continuation or -- or a deposition of a different -- clue me in on what I'm looking at here.

A Okay. What I did on this is that I picked out one single sand. With the Abo formation you can have up to 7 or 8 different sands. In this area you've got about 4 sands and the cross section shows, as to these 3 wells, I could map and I could correlate 4 different sands, which I just named A, B, C and D sands, and this B sand is about 250 feet in from the top of the Abo and it's the most, well, it's probably the -- the best sand in this area. You tend to find it in almost every well.

Some of the other sands, they tend to -- to kind of come and go, but this is a real -- it's just the

best sand in this area, which is why I chose these sands, and it was also the sand that we were hoping to pick up in the northeast quarter of this Section 35, which we didn't pick up in our Indian No. 2. It was gone in that well completely, pinched out.

Q Okay, in Exhibit Number Seven, does my interpretation of this exhibit show that you hit only 3 of these 4 sands which you described?

A Yes.

Q Okay, so the A, B, C and D are the 4 sands that you alluded to --

A Right.

Q -- okay, would be the best.

In the A and D sand, D as in dog, is it consolidated? Is the sand about the same porosity, the same characteristics as we find in the A and B or do they differ some?

A Well, they differ well to well. In these 3 wells the A sand is present but in all three of the wells it's thin and it's tight. It would probably have between 4 and 5 percent porosity, and usually in the Abo a well that has something in that range, it's really too tight. You could probably get some gas out of it but not enough to really -- to really make it worth your while.

Q All right. Let's go down to the B

sands, how about the porosity in the B?

A The B sands in this entire area, when you do pick it up it's usually -- it varies in thickness but it's usually over 10 feet thick and over -- in the range of probably 10 to 14 percent porosity, which with the Abo is good.

We drilled a lot of wells in this area and most of our wells will -- may have, for instance, the A sand or the C sand, or the A and the B, but most of the wells pick up this B sand and it's really the sand that we try to shoot for in this area.

Q Now you show that the D sand was perforated. Is -- is -- am I reading that right?

A Yes.

Q And are these both, the B and the D sands, are they currently being produced or just tested? What is their status?

A Right, currently being tested. We have perforated, acidized and fraced the well and it's currently testing.

Q And you fraced both zones or did you do a stimulation of separate zones?

A No, we fraced them both at the same time.

MR. STOGNER; Are there any

other questions of this witness?

MR. KELLAHIN: No, sir.

MR. STOGNER: He may be excused.

Is there anything further in Case Number 9685?

MR. KELLAHIN: No, sir.

MR. STOGNER: Case Number 9685 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. 9685, heard by me on 7 Sept 1989.

Michael E. Stogner, Examiner
Oil Conservation Division