STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCE DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF:	)	
APPLICATION OF PETROLEUM DEVELOPMENT	)	
CORPORATION FOR A HORIZONTAL	)	CASE NOS. 10161
DIRECTIONAL DRILLING PILOT PROJECT	)	10162
AND FOR SPECIAL POOL RULES, CHAVES	)	10163
AND ROOSEVELT COUNTY, NEW MEXICO	)	10164
	)	

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Examiner

November 14
11:45 a.m.
Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on November 14, at 11:45 a.m. at the Oil Conservation Conference Room, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Susan G. Ptacek, a Certified Shorthand Reporter No. 124 and Notary Public in and for the County of Santa Fe, State of New Mexico.

FOR: OIL CONSERVATION DIVISION

BY: SUSAN G. PTACEK
Certified Shorthand Reporter
CSR No. 1224

I N D E X

November 14
Examiner Hearing
Case No. 10161, 10162, 10163, 10164

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E X H I B I T S

I N D E X

November 14
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E X H I B I T S

A P P E A R A N C E S

FOR THE DIVISION: ROBERT G. STOVALL, ESQ.
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Santa Fe, New Mexico 87504

FOR THE APPLICANT: KEGEL LAW FIRM, P.C.
Attorneys at Law
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226 Los Alamos Drive
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* * *

EXAMINER CATANACH: At this time we will call Case 10161. The application of Petroleum Development Corporation for a horizontal directional drilling pilot project and for special pool rules, Chaves and Roosevelt Counties, New Mexico.

Are there any appearances in this case?

MR. KEGEL: Yes, sir. Walter Kegel of the Kegel Law Firm, Espanola, for the applicant.

EXAMINER CATANACH: Are there any other appearances in this case?

MR. KEGEL: And I have one witness.

EXAMINER CATANACH: Okay.

MR. KEGEL: Call Mr. Johnson.

Mr. Examiner, I would like to consolidate this case with Case 10162, 10163 and 10164. I believe the underlying issues are all the same.

EXAMINER CATANACH: At this time we will call Case 10162, 10163 and 10164, which are all the application of Petroleum Development Corporation for horizontal directional drilling pilot project and for special pool rules all in Chaves County, New Mexico.

You may proceed, Mr. Kegel.

JAMES C. JOHNSON,

the Witness herein, having been first duly sworn, was examined and testified as follows:

EXAMINATION

BY MR. KEGEL:

Q. State your name, please.

A. James C. Johnson.

Q. And your residence address?

A. Albuquerque, New Mexico.

Q. By whom are you employed?

A. Petroleum Development Corporation.

Q. In what capacity?

A. I'm a petroleum engineer and president of the corporation.

Q. Have you testified before the OCD before?

A. Yes, I have.

Q. As an expert and your qualifications have been accepted?

A. Yes.

MR. KEGEL: Tender this witness.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Kegel) Mr. Johnson, will you please explain briefly just what Petroleum Development Corporation requests of the commission in these cases?

A. Well, briefly we are requesting to drill a horizontal hole, laterally, in the San Andres formation approximately 300-foot from the well bore. This field has wells that have produced a cum production a low of 245

barrels to a high of 138,000 barrels. Therefore it's felt or my opinion there are many 40-acre tracts that have not be drained sufficiently with the present vertical holes. It's my opinion that we can drill laterally, these lateral holes, and possibly aptly drain a 40-acre spacing unit.

Q. Your exhibit numbers, I believe, correlate on all four applications, do they not?

A. That is correct.

Q. Would you explain what Exhibit No. 1 is on each application? Just identify it.

A. Exhibit No. 1 -- I'm looking at the Strange No. 1, Case 10161 -- shows the 40-acre tract for the Strange -- I'm sorry, that should be Strange No. 5, by the way. The Strange No. 5 40-acre tract and a leasehold interest in the surrounding wells. I would like to point out that The State Lease "L" 512 Union is now owned by Norman Oil & Gas, Inc. The JFG Enterprises is now owned by Petroleum Development Corporation and has been assigned operating rights.

Q. Now, that also refers to an Exhibit No. 2, doesn't it?

A. Exhibit No. 2 we list the offset operators to the 40-acre spacing unit, and have attached a copy of a letter with the certified receipt of notification to the offset operators.

Q. Will you explain your Exhibit No. 3?

A. Exhibit No. 3 is the horizontal drilling procedure that we will utilize in attempting to horizontal drill these wells. On the Strange Federal No. 5 Well we have perforations above the current zone that we are going to horizontally drill, so we will have to set a -- we will have to drill -- and this well also -- excuse me just a minute. Let me look at something here. (Pause.)

I'm sorry. I would like to make a correction on Exhibit No. 3. Delete No. 1 and 2. This is showing that this well is plugged and abandoned, and it is not. Delete set cast iron bridge plug at 4130 feet. I will just delete 4130 feet in No. 3. And delete No. 4. Okay?

EXAMINER CATANACH: Okay.

A. We will set -- the existing perforations in this well from 4,040 to 4,233 feet. We will set a cast iron bridge plug at 4,038 feet. That point we will run into the hole with a milling tool and mill the 5-1/2-inch casing from approximately 3,998 to 4,036 feet. We will set a cement plug from on top of the cast iron bridge plug to above where the top casing has been milled and drill out the cement to approximately 4,003 feet, where we will make our horizontal kickoff. We will run a directional survey prior to kicking off. The directional survey will be run each 500 feet and determine the exact location of the

bottom of the hole compared to surface. We will run into the hole with our kickoff tool, and utilizing a gyro survey, orient the tools in a southeasterly direction.

The exact direction -- this happens to be the type of tool type we're using as a mechanical tool. It is not a motor-type tool and the exact direction we will not be able to pin down, but we should be in the range of 10 to 15 degrees, plus or minus. But we may not. You cannot pin down, if you don't have a continuous survey reading, which they do not have for a 3-7/8-inch hole.

We will kickoff the cement plug at approximately 4003 feet, drill a 40-foot radar curve to an inclination of approximately 75 to 85 degrees, pull out of the hole and conduct approximately six surveys a curve using single-shot inclinometer. At that point we will either decide we need to drill a little more hole to get the exact angle we want at the top or the porosity of the P2 section from the San Andres formation. Then we will shoot run what we call a straight shoot in the hole and drill from the top of the P2 zone, which is 4,044 feet to 4,080 feet, and the distance will be approximately 275 feet. After we complete the lateral hole we will run two surveys in the lateral, one being an in-survey, in-of-the-hole survey.

Q. (By Mr. Kegel) Is this shown in schematic form in your Exhibit No. 4?

A. Exhibit 4 is a schematic of what I -- it's just explaining again we have to knock out a cast iron bridge plug at 3770 and the perforations at 3801 to 4,008.

Q. What is the present status of this well?

A. This well currently is temporarily abandoned.

Q. What is its production record?

A. This well has produced approximately -- a cumulative production of 4,000 barrels of oil.

Q. And this is in an area of 40-acre spacing?

A. That is correct.

Q. And do you have an opinion as to how many acres has been drained?

A. I would say 1 to 12 acres maximum at 4,000 barrels of oil.

Q. Do you feel that this method of proceeding will give a reasonable chance to adequately drain the formation?

A. This possibly will drain the formation. It may not. It may only drain, say, 20 acres. However, if it does turn out to be economical, we're going to cut a window at 32 feet. We can drill down another 10-foot on the cement plug, kick out the opposite direction and make another drainage hole on that 40-acre spacing.

I would like to also point out that we will not at any time get closer than 330 feet to the boundary of the 40-acre spacing.

Q. And is there any attempt in this application to increase the allowable?

A. No. We're not going to increase. We're not going to ask for an increase in the allowable.

Q. Now, are the other three applications similar in nature?

A. Yes, they are.

Q. And are there any significant differences in them aside from where they're located and so forth?

A. No. They're located in -- one of them is located in -- two of them, I think, are located in the Cato field. One of them is located down in the Siete field to the south.

Q. But no significant difference in your methods of procedure?

A. No. The only difference will be is the Wattam No. 6 Well has been plugged and abandoned, and in that case we will have to drill out cement plugs. A cast iron bridge plug has been set and squeeze off some perforations. On the -- excuse me again. Let me look at each one of these, if you don't mind, real quickly to be sure on everything.

Wattam 6, as I say, that well has been P&A'd. However, it has 5-1/2-inch casing. Cement has been circulated to surface. It will be a very simple well to reenter. Wattam 3 is a very simple well to do, and Siete

1.

Q. In your opinion in any of these cases is there any adverse affects on the offset wells?

A. In my opinion there would be no affect on offset wells.

Q. And will they meet the objective of the act in prevention of waste, --

A. Yes.

Q. -- conservation and protection of correlative owners?

A. Yes, it should.

MR. KEGEL: I have no further direct testimony.

EXAMINER CATANACH: Do you want to enter the exhibits, Mr. Kegel?

MR. KEGEL: Yes, offer Exhibits 1 through 4 in each case.

EXAMINER CATANACH: Exhibits 1 through 4 in each case will be admitted as evidence.

(Applicant's Exhibits 1 through 4 were admitted in evidence.)

EXAMINER CATANACH: I guess what I would like to do, Mr. Johnson, is just go over each of these and make sure we have everything correct.

EXAMINATION

BY EXAMINER CATANACH:

Q. Starting with the offset operators for the Strange Federal No. 5 --

A. Strange No. 5? okay.

Q. -- the only two offset operators you show are Norman Oil & Gas and Yates Petroleum?

A. Offsetting that 40-acre tract.

Q. In Section 36 I show a Union. You said that was owned by Norman?

A. Norman is now the owner of that lease, yes.

Q. And Yates is the owner of the other acreage in Section 36?

A. Yes, sir.

Q. As I understand your corrections to the Strange Well, you do, in fact, have perforations 380, is it, to 4,008?

A. Yes, we do.

Q. And those perforations will be squeezed?

A. Let's change that back. Let's leave 3 and 4. I Like that better. Leave out 1 and 2.

Q. But you're not setting a cast iron bridge plug at 4130 or are you?

A. Yes, I am setting cast iron bridge plug at 4130.

Q. So you are setting two cast iron bridge plugs?

A. Yes. There is a good possibility following the casing logs that those lower perforations are possibly wet.

Q. Squeeze the perforations. You're going to mill the casing. Now, as far as the direction of the horizontal course of the well bore, now you said you can pretty much determine what that direction is going to be.

A. Oh, we're going to start off -- we're going to gyro. We're going to gyro inside the tubing, which will give us a point to start our tool. In other words, these things aren't -- you have, oh, scientific labs, company, Smith International that run these gyros, directional surveys, and so forth. Normally in these cases -- we're going to point this in a southeasterly direction. This, of course, is based on what we think the fractured -- it will intersect fractured trends. But when you're working with a mechanical tool, even as close as you can get, it can still -- it will be more than likely somewhere in that quadrant is what it will be. I've asked them, "How close can you get?" or "Have you been getting," and they say they get in the quadrant.

Q. They can, indeed, get in the quadrant?

A. They feel like they can get in the quadrant. In this case on all these wells, it really doesn't make any difference, from 660, from 660, from all the lease lands anyway, except for the Wattam No. 6, and it's like 700 or something. For example, say the bottom of the hole turns out to be 80 feet from the well bore, then the direction we

want to go towards the lease line, then I have to shorten it. For example, shorten it 275-foot. If it goes the other way, and I feel like I can, I may want to link it. In other words, I don't want to be limited to say only go 275-foot. If I go 330 and I feel good and not going to get into trouble, I may take it out a little farther.

Q. So if you don't get the southeast direction -- if say you get a northwest direction, would you go ahead and proceed with that?

A. More than likely will, yes.

Q. So you want the flexibility to go any direction?

A. Any direction it comes out, yes.

Q. Okay. Provided that you're not going to be closer than 330 to any proration unit, outer boundary of the proration unit; is that correct?

A. That is correct.

Q. What tools are you going to be using for the well, do you know?

A. Well, it's a -- it's a company out of Oklahoma, and they just recently changed their name. The company I will being do it with will be a joint venture. I don't know if I've got it with me or not. I believe it's Horizontal Drilling, Inc., is what they're going by.

Q. On Wattam Federal No. 3, you've got Yates Petroleum as the only operator owner, offset operator.

A. That's Yates Energy.

Q. Yates Energy?

A. Yes, out of Roswell.

Q. Right, Yates Energy Corporation.

A. Yes.

Q. And is all the information contained on the drilling procedure correct on that well? The reason I'm asking is that we write these orders pretty specific.

A. I understand, sure. You know, for example -- yes, I see. (Pause.) Of course, you know these feet that we have here, they're going to have to be approximate. The cast iron bridge plug might be set at 3671, for example. After I get in and get collars and little closer and so forth.

Q. I understand.

A. Yes, everything on this one looks fine.

Q. How have you determined the direction of the fractures in the formation?

A. You get your information from the geologist and people's ideas the way the trend of the field goes, faulting from surface and fault trends. You guess is what you do. Now they've got a lot of tools out that they say they can do it in, but I -- my theory is very simple. On one of these wells, I go out to the southeasterly direction; and if I don't hit the fractures but make a fair

well, the next level I will go out to the northwesterly direction 90 degrees from it, and I will find out if that fracture is there or not.

Q. Going now to Well No. 6, you've got Yates Energy and Murphy Operating as offset operators. Are those the only two offset operators?

A. Those are the only two.

Q. And the procedure on this is essentially correct, Mr. Johnson?

A. Yes, it's correct.

Q. Is this the only well in the Cato that --

A. Wattam No. 3 is in Cato also.

Q. These wells aren't in an area where there is actual water flooding, are they?

A. If you look at a map, the Cato field doesn't really start until about three miles southwest of this section. What happened these wells were drilled before the Tom Tom field grew into it here. In other words, when these wells were drilled in '77 and '78 by Yates Energy, the only field -- the closest field was the Cato so they called it Cato field. If you look at a map, there are no producing wells between these wells in Section 6, about three miles of Cato. So that really is a Tom Tom.

Q. I see. Okay. Going to the Siete Federal No. 1.

A. One thing I may point out here on this well --

all the other wells were horizontal drilling in the P2 zone of the San Andres. This one well will be in the P1 of the San Andres.

Q. Okay. On Well No. 1 three offset operators, those are the only three that you found?

A. Those are the only three.

Q. Once again the procedure is essentially correct for that well?

A. Cast iron bridge plug is actually going to be set at 3704 by the way. Also this well talks about start milling the casing at 3668, because there is a collar at 3669. And you can't mill below those collars or they will back off on you. You should be about 8 or 10-foot below.

Q. Everything else pretty much correct?

A. Yes.

Q. On all four of these wells you are going to maintain a distance of 330 feet from the outer boundary of proration?

A. Yes.

Q. And is it my understanding that you want or you would like the flexibility to drill more than one drain hole per well?

A. That is a good possibility that we will want to later on. You know, this again -- the whole key on this is going to be the economics. Is it going to work, or are we

going to end up covering up? If this does, yes, later on we will more than likely, if it is successful. That's why I am milling actually a 32-foot section in the casing. I will be kicking off about five or six-foot below the top where I mill the casing on my first kickoff. I can actually go in there and do about -- out of 32-foot I could actually kickoff two more directions. The whole key is how many reserves we've got; how does it look; will the economics be there to do another lateral or not?

Q. Are these ones going to be one at a time?

A. Yes.

Q. And you don't want to request any special kind of allowable or anything like that?

A. I believe 80 barrels a day will be pretty nice. They're TA wells. I will be satisfied.

EXAMINER CATANACH: I believe that's all I have of the witness. You may be excused.

Anything further in these cases, Mr. Kegel?

MR. KEGEL: No, sir.

EXAMINER CATANACH: If not, Case 10161, 10162, 10163 and 10164 will be taken under advisement.

(Whereupon, the hearing was concluded.)

* * *

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

REPORTER'S CERTIFICATE

I, Susan G. Ptacek, a Certified Shorthand Reporter and Notary Public, do HEREBY CERTIFY that I stenographically reported the proceedings before the Oil Conservation Division, and that the foregoing is a true, complete and accurate transcript of the proceedings of said hearing as appears from my stenographic notes so taken and transcribed under my personal supervision.

I FURTHER CERTIFY that I am not related to nor employed by any of the parties hereto, and have no interest in the outcome thereof.

DATED at Santa Fe, New Mexico, this 10th day of December, 1990.

Susan G. Ptacek

SUSAN G. PTACEK
Certified Shorthand Reporter
Notary Public

My Commission Expires:
December 10, 1993

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10161, 10162, 10163, 10164 heard by me on November 14 1990.

David R. Catanach, Examiner
Oil Conservation Division