STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CASE 10,696

EXAMINER HEARING

IN THE MATTER OF:

Application of Petroleum Development Corporation for a horizontal/high-angle directional drilling pilot project, special operating rules therefor, a nonstandard oil proration unit and a special project oil allowable, Chaves County, New Mexico

TRANSCRIPT OF PROCEEDINGS

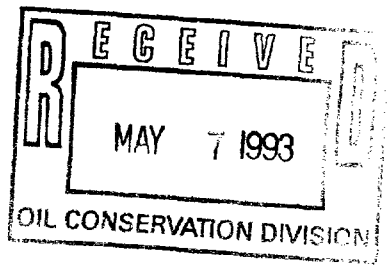
BEFORE: DAVID R. CATANACH, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

April 8th, 1993

ORIGINAL



A P P E A R A N C E S

FOR THE DIVISION:

ROBERT G. STOVALL
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Legal Counsel to the Division
State Land Office Building
Santa Fe, New Mexico 87504

FOR THE APPLICANT:

KEGEL LAW FIRM, P.C.
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P.O. box 2073
Espanola, New Mexico 87532

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I N D E X

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E X H I B I T S

APPLICANT'S EXHIBITS:

* * *

WHEREUPON, the following proceedings were had at 9:00 a.m.:

EXAMINER CATANACH: At this time we'll call the hearing back to order and call Case 10,696.

MR. STOVALL: Application of Petroleum Development Corporation for a horizontal/high-angle directional drilling pilot project, special operating rules therefor, a nonstandard oil proration unit and a special project oil allowable, Chaves County, New Mexico.

EXAMINER CATANACH: Are there appearances in this case?

MR. KEGEL: Walter Kegel, attorney, Espanola, for the Applicant.

EXAMINER CATANACH: Any other appearances?

Two witnesses, Mr. Kegel?

MR. KEGEL: One.

EXAMINER CATANACH: One witness.

Will the witness please stand to be sworn in?

JIM J.C. JOHNSON,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KEGEL:

Q. Will you state your name and your residence,

please?

A. My name is Jim J.C. Johnson, from Albuquerque, New Mexico.

Q. And your occupation?

A. I'm President of Petroleum Development Corporation.

Q. And you've testified as an expert before this Commission before?

A. Yes, I have.

MR. KEGEL: Offer Mr. Johnson as an expert.

EXAMINER CATANACH: Mr. Johnson is so qualified.

Q. (By Mr. Kegel) Mr. Johnson, have you prepared a booklet of your exhibits?

A. Yes, I have.

Q. Will you please just state generally what they are?

A. I have exhibits here for -- four exhibits, one a map, another exhibit showing the offset operators. Exhibit 3 is the horizontal drilling procedure, and Exhibit 4 is a schematic.

I also have copies of the original letter Application with the certified copies, receipts, from all offset operators.

Q. Explain, Mr. Johnson, to the Examiner just

exactly what you wish to do in this particular case.

A. Okay, the Exhibit 1 is self-explanatory. It's a map. It shows the location of the Strange Federal Number 5 well in Section 25, 7 South, 31 East.

Exhibit 2 is a list with addresses of offset operators.

Exhibit 3 is the horizontal drilling procedure. It would be good to use both Exhibit 3 and 4, because Exhibit 4 is a schematic of what -- our plans to do.

The first thing we're going to do, we have a set of perforations currently open from 4040 feet to 4233 feet.

We're going to set a cement retainer at 4024 feet and cement-squeeze these perforations.

We also have a set of perforations open above the cement retainer from 3801 to 4008. We're going to set a retrievable packer up the hole at approximately 3500 feet and squeeze these perforations from 3801 to 4008.

We will then go in and drill out the cement to 4024 feet or to the cement retainer.

At that time we will go in with a casing milling tool and mill approximately 3954 to 4014 feet.

Depending on the cost and time of doing the

milling of a casing, these intervals may be changed. It's -- the reason being, if we can possibly get 30 foot below the casing shoe, we can kick off with the survey tools that will be run with the horizontal drilling assembly.

If the cost of milling casing becomes too extraneous [*sic*], we can drill about a 17-foot section out of the casing and go in with the tools using a gyro and kick off in the direction we want.

After we have -- Then we will set a cement plug above the -- through the window that we have drilled -- or not window, it's -- We're actually going to section, completely section out the 5-1/2-inch casing. Above that, go out and drill it off to approximately 3984, which will be our kickoff point.

At that time -- I have here run directional survey -- well, that is -- After I drill out the cement, I will run the directional survey. We'll run it from the surface to just above the kickoff point to know where the bottom of the hole is in relationship to the surface of the hole.

Then we'll go in with our horizontal drilling tools and kick off a cement plug at 3984, drill a 60-foot radii arc -- and of course that is approximately. It may be 65 and it may be 55, somewhere in that range.

And we will conduct surveys every five feet while we're drilling the arc.

After we finish the arc, we have to trip out of the hole, go in with our tools to drill our lateral. We are -- In this particular situation we're going to try to go out approximately 1200 feet.

To date, the maximum they've gone with these tools is about 1000 foot, but this has been done with a 40-foot radius arc.

We may get out -- Hopefully, we can get out 1500 feet. If we can and the economics are there, we're going to go out even farther.

We may only get out 800 or 900 foot. You just don't know when you're drilling these holes.

We're going to attempt to drill vertically through the P-2 formation, which -- porosity zone, from 4044 to 4080 feet.

While we're drilling the lateral, we will conduct surveys every 30 feet, both directional and azimuth.

While we're drilling the hole, we'll have complete control of the direction we are, where the hole is located. We will stay -- maintain a distance of 100 foot from the out of boundaries of two 40-acre tracts.

Those tracts will be the -- in the south half of the southwest quarter of Section 25.

We will cross the adjoining boundary between those two 40-acre tracts, and we'll maintain 100 foot from the out of boundaries of the two 40-acre tracts or the 80-acre tract.

We're also requesting, once we cross the line into the other 40-acre tract, an allowable, two allowables for this field, which I think currently is 80 barrels a day.

We'll request from this wellbore an allowable of 160 barrels a day.

Q. What are the advantages to be gained from drilling in this manner?

A. At the present time, based on calculations that I had personally made in this field, 40-acre spacing units in this field should recover reserves in the range of 80,000 to 100,000 barrels.

The average well in this field has only recovered 27,000 barrels per well, so the -- As we know, it's a fractured formation from vertical holes.

Hit the fractures, they make good wells. When they don't hit the fractures, they make small wells.

This Well Number 5, I think, has a cumulative

production of 3500 barrels, is all it's produced.

By drilling this horizontal, lateral hole through this pay zone, we're hopeful to produce a large number of reserves.

Q. Are there any advantages to the other operators in the field from your drilling this?

A. The other operators, if this works -- and I can assure you it costs a lot of money to do this type of operation -- if this works, the other operators will have the advantage of doing the same thing we do, and hopefully we can revitalize this field and produce a total number of -- a large number of reserves from this field.

Q. In your opinion, is the granting of this Application in the interests of conservation and the prevention of waste?

A. I believe it is.

MR. KEGEL: I offer Exhibits 1 through 4.

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

MR. KEGEL: I have no further questions.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Johnson, is it my understanding that you want the flexibility to drill so as the bottomhole

location will be 100 feet -- won't be closer than 100 feet from the outer boundary of the project area?

A. That is correct.

Q. Has the direction of the lateral -- is that final, as far as drilling in a westerly direction?

A. In this particular case, it really is.

I mean by "westerly" -- I may go some northwest or I may go southwest, but to cross over into my other 40-acre tract, I'll have to go in a westerly direction.

And we have -- In other words, this particular well, the controls of kickoff are very good, unless -- By drilling at least a 40- to 50-foot section out of your casing, this way we can go in a motor, the survey tool and get the direction we kick off.

If we drilled a smaller section -- You know, when they run a gyro, it's sort of a guess. They've got it down pretty good, and they're doing very good with it, but sometimes it will be off.

In this particular case, no matter how much it costs me to mill out that casing, I will be milling out a 40- to 50-foot section of casing.

That way we can -- we'll hit it right on the money. We'll start off in a westerly direction, we may go some northwest, some southwest, but we still will

maintain a distance of 100 foot from the lines, yes.

Q. Okay. Is your lateral wellbore, is that -- the direction, is that based upon fracture orientation within the formation? Is that what it's based on?

A. Not necessarily in this particular case. This is a situation a lot of people think have a lot to do with horizontal drilling, and there are many that think it doesn't have that much difference, that importance.

A lot of people in this field feel like the horizontal -- the vertical or the fracturing situation is sort of from the southwest to the northeast direction, but I don't know of anybody that knows for sure which direction it is at this time.

Q. Once you're ready to kick off, how in fact are you going to determine what direction to go in?

A. We'll be running surveys, we'll be running surveys of azimuth, direction.

The survey tool will be at the -- above the motor at all times. We will be reading an azimuth direction, possibly, while we're drilling the hole.

What we'll do is, after we drill a joint of pipe down, we will pick up and take surveys every five feet in the arc.

But while we're drilling it, we're going to

be getting a constant reading of azimuth reading at all times.

Q. But drilling west as opposed to northwest or southwest, how is that going to be determined? Is that going to be dictated by -- by what?

A. It will be dictated by just how the well is going.

I mean, I don't know -- A lot of times, these holes, you hit fractures, better porosity, they'll just start following it.

I mean, they will just start following that porosity through that fracture streak, and when it does, we're going to let it go where it wants to go.

At any time we can change it. We have a steering tool. We'll be able to -- If it's going down too rapidly, we can steer the tool and make it flatten out, or we can turn it and make it go up. We can turn it to the surface and change the azimuth direction. If it's walking away too far that we want to go...

And we don't want big, sharp bends in there. If we do, why, we'll have trouble, we'll never get our length. So if it ever starts walking on us, we just turn the type and guide it to where we want to put it.

The wells that have been done, that I've checked into, with these short-radius arcs, they're

going out as far as 800 to 1000 feet, and they're hitting a ten-foot target in the wellbore.

Q. How do you plan to complete the well?

A. We will complete the well as an open-hole completion.

First off, hopefully what we'll do is go -- after we finish drilling, is run in with tubing, swab the well in, hopefully we'll get a flowing oil.

The wells that we're drilling, these fields the Tomtom, Tomahawk, that encountered vertical fractures during drilling, a lot of these wells came in flowing 300 to 400 barrels a day. We're hoping we can reproduce that situation.

If not, we're going to pump jack, going to pump above in the casing and produce the well.

If necessary, we feel like it's justifiable, we may acidize the well with a 20-percent acid, is what we normally use in this area for treatments.

They have gone in 40-foot radius arcs where the -- If you have a particular sweet spot that you hit while we drill, we'll know that by the drilling rate, that we're getting fractures or porosity.

They've gone in these holes with Lyons packers and selectively treated them.

Q. Okay. Will this be -- Will the Number 5 well

be the only well producing in this project area? There are no other wells producing currently?

MR. STOVALL: In the 80 acres you mean?

Q. (By Examiner Catanach) In the 80 acres that you have?

A. No, there's no well drilled on the other 40-acre tract.

Q. Okay.

A. It's an undrilled location.

Q. And the Number 5 is the only well in the other 40 acres?

A. That is correct.

Q. And you've notified all the offset operators to this project area?

A. That is correct.

Q. No objections that you know of, or concerns?

A. I have heard of no objections.

Q. Are these two tracts -- What kind of lands are they? Are they federal lands?

A. These tracts are federal lands.

Q. Federal. Is it a single federal lease or two separate leases?

A. This is a single federal lease. It's lease number 15667.

Q. Have you talked to the feds about what you

propose to do?

A. That is right. I have sent a summary notice to the feds of what we're going to do.

Q. Any response?

A. And also -- They're thrilled to death about it, to be honest.

I also sent them a copy of the letter that we've submitted to the state for the hearing.

Q. Okay. Are you -- Is your company the only working interest owner in this project area?

A. In this project area?

Q. Yeah, in this 80-acre unit?

A. Yes. I have some partners in this area, yes.

EXAMINER CATANACH: Okay.

MR. STOVALL: But they're financial partners, not --

THE WITNESS: Financial.

MR. STOVALL: Not owners of the working interest itself?

THE WITNESS: No, financial partners.

EXAMINER CATANACH: I don't have anything else.

No more questions in this case, so -- Is there anything further, Mr. Kegel?

MR. KEGEL: Nothing further.

EXAMINER CATANACH: There being nothing further, Case 10,696 will be taken under advisement.

(Thereupon, these proceedings were concluded at 9:19 a.m.)

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CERTIFICATE OF REPORTER

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

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL April 13th, 1993.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1994

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10696, heard by me on April 8 1993.

David R. Catanach, Examiner
Oil Conservation Division

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

April 16, 1993

Walter Kegel
Petroleum Development Corporation
69 Country Road 7
Espanola, New Mexico 87532

RE: CASE NO. 10696
ORDER NO. R-9876

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Sincerely,

Sally Leichtle

Sally E. Leichtle
Administrative Secretary

cc: BLM - Roswell
Monika Romero - OCD

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