

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

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

A P P E A R A N C E S

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FOR THE DIVISION: ROBERT G. STOVALL, ESQ.
 General Counsel
 Oil Conservation Division
 State Land Office Building
 Santa Fe, New Mexico 87504

FOR THE APPLICANT: KEGEL LAW FIRM, P.C.
 Attorneys at Law
 BY: WALTER R. KEGEL, ESQ.
 226 Los Alamos Drive
 Espanola, New Mexico 87532

* * *

1 EXAMINER CATANACH: At this time we will call Case
2 10161. The application of Petroleum Development
3 Corporation for a horizontal directional drilling pilot
4 project and for special pool rules, Chaves and Roosevelt
5 Counties, New Mexico.

6 Are there any appearances in this case?

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

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

11 MR. KEGEL: And I have one witness.

12 EXAMINER CATANACH: Okay.

13 MR. KEGEL: Call Mr. Johnson.

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

17 EXAMINER CATANACH: At this time we will call Case
18 10162, 10163 and 10164, which are all the application of
19 Petroleum Development Corporation for horizontal
20 directional drilling pilot project and for special pool
21 rules all in Chaves County, New Mexico.

22 You may proceed, Mr. Kegel.

23 JAMES C. JOHNSON,
24 the Witness herein, having been first duly sworn, was
25 examined and testified as follows:

EXAMINATION

1
2 BY MR. KEGEL:

3 Q. State your name, please.

4 A. James C. Johnson.

5 Q. And your residence address?

6 A. Albuquerque, New Mexico.

7 Q. By whom are you employed?

8 A. Petroleum Development Corporation.

9 Q. In what capacity?

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

12 Q. Have you testified before the OCD before?

13 A. Yes, I have.

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

16 A. Yes.

17 MR. KEGEL: Tender this witness.

18 EXAMINER CATANACH: He is so qualified.

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

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

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

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

8 A. That is correct.

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

11 A. Exhibit No. 1 -- I'm looking at the Strange No.
12 1, Case 10161 -- shows the 40-acre tract for the Strange --
13 I'm sorry, that should be Strange No. 5, by the way. The
14 Strange No. 5 40-acre tract and a leasehold interest in the
15 surrounding wells. I would like to point out that The
16 State Lease "L" 512 Union is now owned by Norman Oil & Gas,
17 Inc. The JFG Enterprises is now owned by Petroleum
18 Development Corporation and has been assigned operating
19 rights.

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

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

1 Q. Will you explain your Exhibit No. 3?

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

9 I'm sorry. I would like to make a correction on
10 Exhibit No. 3. Delete No. 1 and 2. This is showing that
11 this well is plugged and abandoned, and it is not. Delete
12 set cast iron bridge plug at 4130 feet. I will just delete
13 4130 feet in No. 3. And delete No. 4. Okay?

14 EXAMINER CATANACH: Okay.

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

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

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

11 We will kickoff the cement plug at approximately
12 4003 feet, drill a 40-foot radar curve to an inclination of
13 approximately 75 to 85 degrees, pull out of the hole and
14 conduct approximately six surveys a curve using single-shot
15 inclinometer. At that point we will either decide we need
16 to drill a little more hole to get the exact angle we want
17 at the top or the porosity of the P2 section from the San
18 Andres formation. Then we will shoot run what we call a
19 straight shoot in the hole and drill from the top of the P2
20 zone, which is 4,044 feet to 4,080 feet, and the distance
21 will be approximately 275 feet. After we complete the
22 lateral hole we will run two surveys in the lateral, one
23 being an in-survey, in-of-the-hole survey.

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

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

4 Q. What is the present status of this well?

5 A. This well currently is temporarily abandoned.

6 Q. What is its production record?

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

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

10 A. That is correct.

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

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

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

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

23 I would like to also point out that we will not
24 at any time get closer than 330 feet to the boundary of the
25 40-acre spacing.

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

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

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

7 A. Yes, they are.

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

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

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

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

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

1 1.

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

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

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

8 A. Yes.

9 Q. -- conservation and protection of correlative
10 owners?

11 A. Yes, it should.

12 MR. KEGEL: I have no further direct testimony.

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

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

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

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

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

24 EXAMINATION

25 BY EXAMINER CATANACH:

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

3 A. Strange No. 5? okay.

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

6 A. Offsetting that 40-acre tract.

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

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

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

12 A. Yes, sir.

13 Q. As I understand your corrections to the Strange
14 Well, you do, in fact, have perforations 380, is it, to
15 4,008?

16 A. Yes, we do.

17 Q. And those perforations will be squeezed?

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

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

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

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

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

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

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

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

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

1 want to go towards the lease line, then I have to shorten
2 it. For example, shorten it 275-foot. If it goes the
3 other way, and I feel like I can, I may want to link it.
4 In other words, I don't want to be limited to say only go
5 275-foot. If I go 330 and I feel good and not going to get
6 into trouble, I may take it out a little farther.

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

10 A. More than likely will, yes.

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

12 A. Any direction it comes out, yes.

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

16 A. That is correct.

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

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

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

1 A. That's Yates Energy.

2 Q. Yates Energy?

3 A. Yes, out of Roswell.

4 Q. Right, Yates Energy Corporation.

5 A. Yes.

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

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

15 Q. I understand.

16 A. Yes, everything on this one looks fine.

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

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

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

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

7 A. Those are the only two.

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

10 A. Yes, it's correct.

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

12 A. Wattam No. 3 is in Cato also.

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

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

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

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

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

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

6 A. Those are the only three.

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

9 A. Cast iron bridge plug is actually going to be
10 set at 3704 by the way. Also this well talks about start
11 milling the casing at 3668, because there is a collar at
12 3669. And you can't mill below those collars or they will
13 back off on you. You should be about 8 or 10-foot below.

14 Q. Everything else pretty much correct?

15 A. Yes.

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

19 A. Yes.

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

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

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

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

11 A. Yes.

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

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

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

18 Anything further in these cases, Mr. Kegel?

19 MR. KEGEL: No, sir.

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

22 (Whereupon, the hearing was concluded.)

23 * * *

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

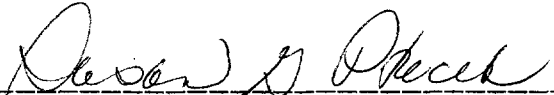
3 REPORTER'S CERTIFICATE

4
5 I, Susan G. Ptacek, a Certified Shorthand Reporter and
6 Notary Public, do HEREBY CERTIFY that I stenographically
7 reported the proceedings before the Oil Conservation
8 Division, and that the foregoing is a true, complete and
9 accurate transcript of the proceedings of said hearing as
10 appears from my stenographic notes so taken and transcribed
11 under my personal supervision.

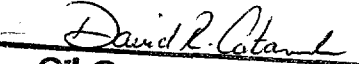
12 I FURTHER CERTIFY that I am not related to nor
13 employed by any of the parties hereto, and have no interest
14 in the outcome thereof.

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

17
18 My Commission Expires:
19 December 10, 1993


SUSAN G. PTACEK
Certified Shorthand Reporter
Notary Public

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 10/61, 10/62, 10/63, 10/64
heard by me on November 14 1990


David R. Cotnam, Examiner
Oil Conservation Division