

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

IN THE MATTER OF THE HEARING CALLED BY )  
THE OIL CONSERVATION DIVISION FOR THE )  
PURPOSE OF CONSIDERING: ) CASE NO. 12,001  
)  
APPLICATION OF PETROLEUM DEVELOPMENT )  
CORPORATION FOR A UNIT AGREEMENT, )  
LEA COUNTY, NEW MEXICO )  
\_\_\_\_\_ )

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

July 9th, 1998

Santa Fe, New Mexico

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OIL CONSERVATION DIV.

This matter came on for hearing before the New Mexico Oil Conservation Division, MICHAEL E. STOGNER, Hearing Examiner, on Thursday, July 9th, 1998, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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## I N D E X

July 8th, 1998  
 Examiner Hearing  
 CASE NO. 12,001

	PAGE
APPEARANCES	3
APPLICANT'S WITNESSES:	
<u>JOHN D. KULLMAN</u> (Geologist)	
Direct Examination by Mr. Carr	4
Examination by Examiner Stogner	12
REPORTER'S CERTIFICATE	17

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## E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	6	11
Exhibit 2	6	11
Exhibit 3	6	11
Exhibit 4	7	11
Exhibit 5	8	11
Exhibit 6	9	11
Exhibit 7	10	11

\* \* \*

## A P P E A R A N C E S

## FOR THE DIVISION:

RAND L. CARROLL  
Attorney at Law  
Legal Counsel to the Division  
2040 South Pacheco  
Santa Fe, New Mexico 87505

## FOR THE APPLICANT:

CAMPBELL, CARR, BERGE and SHERIDAN, P.A.  
Suite 1 - 110 N. Guadalupe  
P.O. Box 2208  
Santa Fe, New Mexico 87504-2208  
By: WILLIAM F. CARR

## ALSO PRESENT:

MARK W. ASHLEY  
NMOCD Environmental Geologist  
2040 South Pacheco  
Santa Fe, New Mexico 87505

\* \* \*

1           WHEREUPON, the following proceedings were had at  
2   8:42 a.m.:

3           EXAMINER STOGNER: At this time I'll call Case  
4   Number 12,001.

5           MR. CARROLL: Application of Petroleum  
6   Development Corporation for a unit agreement, Lea County,  
7   New Mexico.

8           EXAMINER STOGNER: Call for appearances.

9           MR. CARR: May it please the Examiner, my name is  
10   William F. Carr with the Santa Fe law firm Campbell, Carr,  
11   Berge and Sheridan. We represent Petroleum Development  
12   Corporation, and I have one witness.

13           EXAMINER STOGNER: Any other appearances?  
14           Will the witness please stand to be sworn?  
15           (Thereupon, the witness was sworn.)

16           EXAMINER STOGNER: Mr. Carr?

17                   JOHN D. KULLMAN,  
18   the witness herein, after having been first duly sworn upon  
19   his oath, was examined and testified as follows:

20                   DIRECT EXAMINATION

21   BY MR. CARR:

22           Q.    Would you state your name for the record, please?

23           A.    John Kullman.

24           Q.    Mr. Kullman, where do you reside?

25           A.    Midland, Texas.

1 Q. By whom are you employed?

2 A. I'm self-employed.

3 Q. And what is your relationship with Petroleum  
4 Development Corporation?

5 A. I'm a consulting geologist for this project.

6 Q. Have you previously testified before this  
7 Division and had your credentials as an expert in petroleum  
8 geology accepted and made a matter of record?

9 A. Yes.

10 Q. Are you familiar with the Application filed in  
11 this case on behalf of Petroleum Development Corporation?

12 A. Yes.

13 Q. And are you familiar with the proposed T.P. State  
14 "A" Unit?

15 A. Yes.

16 MR. CARR: Are the witness's qualifications  
17 acceptable?

18 EXAMINER STOGNER: They are.

19 Q. (By Mr. Carr) Mr. Kullman, would you initially  
20 summarize for Mr. Stogner what it is that Petroleum  
21 Development Corporation seeks with this Application?

22 A. Petroleum Development Corporation seeks approval  
23 of the T.P. "A" State unit agreement, which is a voluntary  
24 exploratory unit containing approximately 160 acres of  
25 state lands in Lea County, New Mexico.

1 Q. Have you prepared exhibits for presentation for  
2 today?

3 A. Yes.

4 Q. Would you refer to what has been marked for  
5 identification as Petroleum Development Corporation Exhibit  
6 Number 1 and review this for Mr. Stogner?

7 A. Exhibit 1 is the unit agreement for the  
8 development and operation of the T.P. "A" State Unit area  
9 in Lea County, New Mexico, which is a state/fee exploratory  
10 unit.

11 Q. And could you identify and review Exhibit 2?

12 A. Exhibit 2 is a lease plat of the proposed area  
13 showing the state lease numbers of the two tracts included  
14 in the unit.

15 Q. Which is going to be the -- Is the State 16 well,  
16 is that going to be the initial well in the Unit area?

17 A. No, it will be the T.P. "A" State Well Number 1,  
18 will be the re-entry well.

19 Q. Let's go to Exhibit Number 3. Will you identify  
20 and review that, please?

21 A. Exhibit 3 is Exhibit A to the unit agreement,  
22 which is a map of the unit area.

23 The exhibit reviews the acreage status, showing  
24 that the two tracts involved, the two 80-acre tracts  
25 involved, are both state leases.

1                   And the exhibit also shows the location, the  
2 surface hole location and the proposed bottomhole location  
3 of the proposed well.

4           Q.    This is going to be an intentionally deviated  
5 wellbore?

6           A.    Yes, it will be intentionally deviated and --  
7 from the existing wellbore to the north northwest into --

8           Q.    And has an administrative --

9           A.    -- the other tract.

10          Q.    -- application been filed concerning the  
11 horizontal or intentionally deviated portion of this case?

12          A.    Yes, it has been.

13          Q.    And that was filed April the 1st of this year?

14          A.    Right.

15          Q.    Let's go to Exhibit Number 4, your ownership  
16 breakdown. Is this the same breakdown that is attached as  
17 Exhibit B to the unit agreement?

18          A.    Yes.

19          Q.    Could you review the information on this exhibit  
20 for Mr. Stogner?

21          A.    It shows the ownership of the two tracts that are  
22 involved in the proposed unit, both being state tracts, and  
23 that the state beneficiary institutions are in -- the 80-  
24 acre Tract 1 in Section 16 being the common schools and the  
25 80-acre Tract 2 in Section 15 is New Mexico Tech.

1 Q. What percentage of the interest in the acreage  
2 has been voluntarily committed to this unit?

3 A. One hundred percent.

4 Q. And has this Application been reviewed with the  
5 Commissioner of Public Lands?

6 A. Yes.

7 Q. And has preliminary approval been received?

8 A. Yes.

9 Q. Is a copy of the Land Office preliminary approval  
10 what is marked as Petroleum Development Corporation Exhibit  
11 Number 5?

12 A. Yes.

13 Q. Petroleum Development Corporation is seeking to  
14 be designated operator of the unit, are they not?

15 A. Yes.

16 Q. Does the agreement provide for the periodic  
17 filing of plans of development?

18 A. Yes, it does.

19 Q. And will these plans of development be filed with  
20 the Oil Conservation Division at the same time they're  
21 filed with other agencies?

22 A. Yes.

23 Q. Pursuant the agreement, how often are these plans  
24 to be filed?

25 A. The initial plan is to be filed within six months

1 after the completion of the commercial well, and subsequent  
2 plans every 12 months thereafter.

3 Q. What horizons are unitized into the T.P. State  
4 Unit?

5 A. All horizons.

6 Q. And the principal or primary objective in this  
7 unit is what formation?

8 A. The Devonian formation.

9 Q. And in what pool will the initial test well be  
10 completed?

11 A. Crossroads Devonian South.

12 Q. Are there any secondary objectives in this unit?

13 A. No other objectives are considered to be  
14 prospective for commercial production. However, both the  
15 San Andres and the Strawn formations have produced within a  
16 mile of the proposed unit.

17 Q. Let's go to what has been marked as Petroleum  
18 Development Corporation Exhibit Number 6. Could you  
19 identify this and review it for Mr. Stogner?

20 A. Exhibit Number 6 is a Devonian structure map,  
21 mapped on top of the Devonian formation.

22 It is based on 3-D seismic data, and it shows  
23 that the top of the structure extends into both tracts of  
24 the proposed unit.

25 It also shows the location of the proposed re-

1 entry well, being the Number 1 T.P. "A" State well, which  
2 will be directionally drilled to the west northwest.

3 Q. At about what depth do you anticipate  
4 intersecting the Devonian formation?

5 A. At approximately 12,230 feet true vertical depth.

6 Q. And that's shown on this structure map?

7 A. Yes.

8 Q. What does your geologic study tell you about this  
9 formation in this particular area?

10 A. That the Devonian structure is relatively small  
11 in this area and that one directional and horizontal well  
12 across the top of the structure should drain the reservoir  
13 most efficiently.

14 Q. Would you identify for Mr. Stogner what has been  
15 marked as Exhibit Number 7, please?

16 A. Exhibit Number 7 is a cross-section through the  
17 unit area, showing the proposed re-entry well and a  
18 schematic or graphical representation of the proposed  
19 directional and horizontal well path.

20 Q. And basically what does this show you?

21 A. It shows that by re-entering this older well and  
22 directionally drilling it to the high point in the other --  
23 in the tract in Section 16, that more reserves can be  
24 drained out of this formation.

25 Q. And it is your testimony that this is the most

1 efficient way to develop this Devonian feature?

2 A. Yes.

3 Q. How soon does Petroleum Development Corporation  
4 plan to drill the initial well?

5 A. Before October 1st.

6 Q. Do you have a lease expiration on that date?

7 A. Yes, it's when the lease expires.

8 Q. Do you request that the order be expedited to the  
9 extent possible?

10 A. Yes.

11 Q. In your opinion, will approval of this  
12 Application and the re-entry of the well as proposed be in  
13 the best interest of conservation, the prevention of waste  
14 and the protection of correlative rights?

15 A. Yes.

16 Q. Were Exhibits 1 through 7 prepared by you or  
17 compiled at your direction?

18 A. Yes, they were.

19 MR. CARR: At this time, Mr. Stogner, we would  
20 move the admission into evidence of Petroleum Development  
21 Corporation Exhibits 1 through 7.

22 EXAMINER STOGNER: Exhibits 1 through 7 will be  
23 admitted into evidence.

24 MR. CARR: That concludes my direct examination  
25 of this witness.

## EXAMINATION

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BY EXAMINER STOGNER:

Q. Mr. Kullman, in looking at Exhibit Number 7 --  
this is what I'm referring to --

A. Okay.

Q. -- this is a proposed re-entry. Let's talk about  
the history of this well a little bit.

A. The --

Q. When was it originally drilled, and what was the  
cumulative production, and was that from the same zone that  
you're re-entering?

A. Yes, it was drilled in 1964 and was completed in  
the Devonian formation for 720 barrels a day.

From 8 of 1964 through March of 1974, over a ten-  
year period, it cum'd 434,000 barrels of oil.

At that time the 5-1/2-inch casing collapsed at  
depth of 7160 feet, and it was temporarily abandoned, or --  
which -- and later plugged and abandoned, because they  
couldn't repair the casing, I guess.

At the time the well went off production it was  
still averaging 70 barrels of oil a day, plus water. So it  
probably had not completely drained the top part of this  
formation.

Q. In the records on this well, do you know why the  
5-1/2-inch collapsed at this depth?

1           A.    No.  We have all the records that were filed with  
2 the State, and there was no indication as to what the cause  
3 might have been.

4           Q.    Were they able to get through the collapsed  
5 portion of it and attempt a recompletion, or --

6           A.    No, they had to -- they cut the casing above the  
7 collapsed part and pulled the production casing and plugged  
8 the well.  They weren't able to re-enter at that time.

9           Q.    So there -- Other than the 5-1/2-inch that  
10 collapsed and below it, that's the only casing that's still  
11 in the hole?

12          A.    The surface casing and intermediate casing are  
13 both still in the hole, right.

14          Q.    Okay, the production casing --

15          A.    Yeah, the -- Oh, the production casing, right,  
16 just the portion below.  And I believe they cut it off at  
17 around 6000 feet or 6500.  I have that figure, but not with  
18 me.

19          Q.    Okay, so your methodology is to go back in,  
20 sidetracking essentially --

21          A.    We will kick off at about 5800 feet.  That's  
22 above the cement plug that's on top of the collapsed  
23 casing.

24          Q.    And then what are your plans?

25          A.    Drill it directionally toward the north northwest

1 -- or west northwest, to a penetration point in the  
2 Devonian approximately 100 feet from the west line of  
3 Section 16, and then drill approximately 700 feet of  
4 horizontal hole near the top of the Devonian or in the  
5 porosity zone.

6 Q. What will you -- How will this well be completed  
7 as far as casing? Will it be an open hole for the  
8 horizontal portion and 5-1/2 set above it, or what's --

9 A. Yes, that's what it will be, open hole in the  
10 Devonian with casing set above -- right at the point where  
11 we start the more radical curve.

12 Q. What did you say the water production was before  
13 the casing collapsed in 1974 on this well?

14 A. In that well it was 293 barrels of water a day  
15 and 70 barrels of oil.

16 Q. Okay, what -- As far as the horizontal portion of  
17 this well, what does Petco, or Petroleum Development, hope  
18 to achieve? Is there coning going on --

19 A. Yes, there -- yes, the -- Usually in the Devonian  
20 and -- The wells that I've studied in detail in Crossroads  
21 South field, the oil-water contact does not rise evenly  
22 with production. You have coning through vertical  
23 fractures or -- Most likely it would be vertical  
24 fracturing.

25 And some wells, even though they're high on the



1 structure, start making water within -- either right away  
2 or within a few months of initial production, and others go  
3 on for quite a few months before they start making any  
4 water at all.

5 And that's indicative, I believe, of coning  
6 through vertical fractures, more than raising of the entire  
7 oil-water contact.

8 Q. Do you know if there's been any horizontal out in  
9 this area in the Devonian?

10 A. No, the attempts that have been made that I'm  
11 familiar with in the areas where they were tried, either --  
12 if they had a short or a small oil column, they made the  
13 curve after they got into the Devonian, and the curve  
14 dipped down into -- close to water, and made water.

15 The other ones I'm familiar with were in a couple  
16 of the large Devonian fields, Denton field, for example,  
17 one that I'm familiar with, that the horizontal drilled  
18 into a huge permeability zone and just made water.

19 Q. Now, Petco has done quite bit of horizontal  
20 drilling?

21 A. Yes, they have.

22 Q. But this is the first attempt at the Devonian for  
23 Petco?

24 A. It's the second attempt. They tried one in the  
25 South Denton field a few months ago, but of course had

1 mechanical problems with the tools and ended up leaving  
2 some tools in the hole and had to plug the well.

3 EXAMINER STOGNER: All right. Does anybody else  
4 have any questions of this witness?

5 You may be excused.

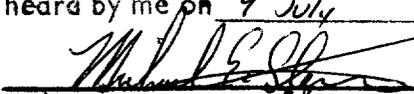
6 Mr. Carr, do you have anything further?

7 MR. CARR: That concludes our presentation in  
8 this case.

9 EXAMINER STOGNER: Does anybody else have  
10 anything further in Case Number 12,001?

11 Then this matter will be taken under advisement.  
12 (Thereupon, these proceedings were concluded at  
13 9:02 a.m.)

14 \* \* \*

17 I do hereby certify that the foregoing is  
18 a complete record of the proceedings in  
19 the Examiner hearing of Case No. 12001,  
20 heard by me on 9 July 1998.  
 , Examiner  
21 Off Conservation Division

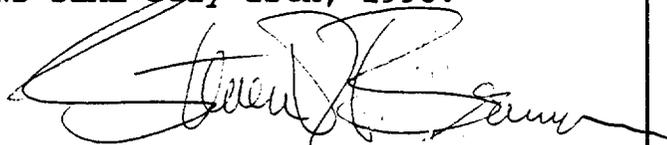
## CERTIFICATE OF REPORTER

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 July 12th, 1998.



STEVEN T. BRENNER  
 CCR No. 7

My commission expires: October 14, 1998