

CASE 6848: PETROLEUM DEVELOPMENT CORPO-
RATION FOR POOL CONTRACTION AND CREATION,
LEA COUNTY, NEW MEXICO

tion

CASE NO.

6848

APPLICATION,
TRANSCRIPTS,
SMALL EXHIBITS,

ETC.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
5 August 1980

COMMISSION HEARING

IN THE MATTER OF:

Application of Petroleum Development) CASE
Corporation for pool contraction and) 6848
creation, Lea County, New Mexico.)

BEFORE: Commissioner Ramey
Commissioner Arnold
Commissioner Armijo

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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ROY WILLIAMSON

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JIM C. JOHNSON

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1 MR. RAMEY: The hearing will come to order.
2 We'll call first case on the docket,

3 MR. PADILLA: Application of Petroleum
4 Development Corporation for pool contraction and creation,
5 Lea County, New Mexico.

6 MR. RAMEY: Case 6848.

7 MR. KEGEL: Walter R. Kegel for the ap-
8 plicant,

9 MR. RAMEY Any other appearances?
10 Would you have your witnesses stand and be sworn at this time,
11 Mr. Kegel?

12 MR. KEGEL: Yes. Roy Williamson and J.
13 C. Johnson.

14
15 (Witnesses sworn.)

16
17 ROY WILLIAMSON
18 being called as a witness and having been duly sworn upon his
19 oath, testified as follows, to-wit:

20
21 DIRECT EXAMINATION

22 BY MR. KEGEL:

23 Q Will you state your name, please?

24 A Roy C. Williamson.

25 Q Your address?

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A.

Is Midland, Texas.

Q

And your occupation?

A.

I'm a petroleum consultant.

MR. KEGEL: I believe Mr. Williamson has appeared before the Commission --

MR. RAMEY: Yes, he has.

MR. KEGEL: -- on numerous occasions.

MR. RAMEY: We are familiar with Mr. Williamson and we will consider him qualified.

MR. KEGEL: All right, sir.

Q
In the course of your occupation have you been engaged by Petroleum Development Corporation to evaluate the present application?

A.

Yes, sir, I have.

Q
In preparation for your testimony have you prepared certain exhibits for the Commission?

A.

Yes, sir, I have.

MR. KEGEL: If we can save a little time, Mr. Chairman, I'll just do these as Exhibit A and then stamp them as we go along, if that's all right.

Q

I hand you what has been marked as Applicant's Exhibit A and ask you if you will identify that, please?

A.

Yes sir. Exhibit A is a plat showing production and ownership in the vicinity of the McKay West

1 Federal No. 1 Well, operated by Petroleum Development Corpor-
2 ation.

3 Q All right, and then Exhibit B?

4 A Exhibit B is a cross section comprising
5 the five wells denoted on the plat as Wells A, B, C, D, and
6 E. This exhibit was actually prepared by Petroleum Development
7 Corporation and under my approval we are using the same copy
8 that Petroleum Development Corp. had earlier, because I would
9 have made no changes in the exhibit.

10 Q All right, Exhibit C?

11 A Exhibit C is a bottom hole pressure sur-
12 vey report for the McKay West Federal No. 1, taken a test
13 depth of 9850 feet on July the 14th, 1975.

14 Q Exhibit D?

15 A Exhibit D is a bottom hole pressure
16 measurement taken on McKay West Federal No. 1 at a depth of
17 8530 feet and the date of that test was 3-8-80.

18 Q Exhibit E?

19 A Exhibit E is another bottom hole pressure
20 measurement on the McKay West Federal No. 1 taken at a depth
21 of 8530 feet on 5-31-80.

22 Q And Exhibit F?

23 A Exhibit F is a production plat showing
24 production from the McKay West Federal No. 1 from the Upper
25 Bone Spring Sand from its inception, when it started producing

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1 in February of 1980,

2 MR. KEGEL: Let me have these before the
3 Commission. I believe Mr. Williamson will testify from those.

4 A. Would you like to put the cross section
5 up on the board where we can see it a little better?

6 Q. All right, Mr. Williamson, if you'll just
7 go ahead, then, please.

8 A. Okay, sir.

9 The subject case consists of the applica-
10 tion of Petroleum Development Corporation for pool contraction
11 and creation in Lea County, New Mexico.

12 Petroleum Development Corporation seeks
13 the contraction of the Querecho Plains Bone Spring Pool to
14 comprise the upper Bone Spring formation only from 8390 feet
15 to 8680 feet, as depicted on the log of this McKay West
16 Federal Well No. 1, located in Unit F of Section 34, Township
17 18 South, Range 32 East; and the creation of the Querecho
18 Plains Lower Bone Spring Pool, to comprise said formation
19 from 8680 feet to the base of the Bone Spring underlying the
20 northwest quarter of said Section 34.

21 Our evidence shows that pressure data, as
22 well as geological data, prove that the Upper Bone Spring
23 and the Lower Bone Spring, as defined in this application,
24 are separate and distinct reservoirs and should thus be
25 classified as such.

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1 I'll call your attention now to Exhibit
2 Number A, which is an area plat showing well development in
3 the vicinity of the McKay West Federal No. 1 Well. The cross
4 section trace is shown in red and includes five wells desig-
5 nated A, B, C, D, and E.

6 Exhibit B is the cross section itself,
7 and is on the wall, and we will refer to that in a moment.

8 The Querecho Plains Bone Spring Pool was
9 formed in 1969 after Shell completed the Querecho Plains No.
10 2 Well, Unit N, in Section 27. This well is designated A on
11 the area plat and the cross section.

12 The pool was expanded to include the
13 northwest quarter of Section 34 after the McKay West Federal
14 No. 1 Well was recompleted in the Bone Spring Lime portion
15 of the Bone Spring reservoir in 1975.

16 Now Exhibit B is a cross section of wells
17 A through E, with A being on the left and E being on the
18 right.

19 Well Number A, which is Shell's Plains
20 No. 2 Well, was originally drilled to the Morrow, which was
21 dry, and was plugged back and recompleted in the first Bone
22 Spring sand at a depth of 8538 to 8560. These perforations
23 are shown and are colored yellow on the cross section for
24 Well Number A.

25 The cross section comprises the entire

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1 Bone Spring section from the top of the Bone Spring to the
2 top of the Wolfcamp over the interval covered, which is some
3 3300 feet in vertical limit.

4 The Querecho Plains No. 2 Well produced
5 40,524 barrels of oil from the Bone Spring Sand before being
6 plugged and abandoned.

7 Petroleum Development Corp. drilled the
8 No. 1 Well in 1975, which is Well B on the cross section, and
9 it was drilled for the Morrow also, which was dry, and was
10 then plugged back to the Bone Spring.

11 The first completion attempts in the Bone
12 Spring were in the second Bone Spring Lime and the third
13 Bone Spring lime, as shown by these blue perforated intervals
14 on the cross section.

15 A bottom hole pressure was run on July
16 the 14th, 1975, and after a 19-hour buildup and after pro-
17 duction of only 288 barrels, the pressure was 1064 pounds.
18 The well continued to produce a total of only 1296 barrels of
19 oil before being abandoned in these zones.

20 Then the first Bone Spring Sand, which is
21 correlative to the producing interval in the Plains No. 2
22 Well, was perforated, as again shown by the perforations with
23 the yellow coloring on Well B, and potentialed February 21,
24 1980, for 104 barrels of oil, flowing, plus 70 barrels of
25 water, with a tubing pressure of 100 psig.

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1 After production of 1034 barrels in this
2 zone, a bottom hole pressure measurement of 2968 pounds was
3 reported on March the 8th, 1980, after being shut-in for 77-
4 3/4 hours.

5 The same zone was tested again on May
6 31, 1980, and after 117-1/2 hours of shut-in time, and the
7 production of 5607 barrels of oil, reports a bottom hole
8 pressure of 2464 pounds.

9 As can be seen by the cross section, the
10 lower reservoir below 8680 feet, which is this line right
11 here, shown in the cross section, is not only separated
12 geologically but by distinct difference in reservoir pressures.

13 I now call your attention to Exhibit C,
14 D, and E, which are merely the reporting of the bottom hole
15 pressures as I've just discussed on the McKay Federal West
16 No. 1 Well. The only other test from the Lower Bone Spring
17 reservoir, which is shown in the cross section, is in Petro-
18 leum Development Corp's Federal No. 1 Well, which is desig-
19 nated as Well E, and the DST was taken over the interval shown
20 by the blue marking on the cross section from 9861 feet to
21 9650 feet; had gas surfaced in five minutes on a 1/2 inch
22 choke, flowing 675 Mcf per day of gas with a pressure of 90
23 pounds, plus an estimated 20 barrels of oil per hour. The
24 flowing pressure increased from 1902 pounds to 2403 pounds
25 with a shut-in bottom hole pressure of 2572 after 120 minutes.

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This zone was never completed for production.

As can be seen on this cross section, the first Bone Spring Sand in all five wells on the cross section correlates very well, whereas the lower Bone Spring intervals do not correlate well, and indicate a reservoir consisting of many discontinuous intervals.

Referring back now to Exhibit A, other significant production in the Bone Spring occurred from wells F and G, which are colored red, and with Well F being in Section 15 of 19, 32, and Well G being in Section 16 of 19, 32.

Well F is the Sun Jennings No. 1 Well, which has a cumulative 378,209 barrels of oil as of April 1, 1980, from the third Bone Spring Lime, with March of '80 production being 2327 barrels of oil.

Well G in Section 16 is Petroleum Development Corp's Cleve Rock Federal No. 1, which produced 45,425 barrels of oil from the third Bone Spring Lime before being abandoned.

The two Bone Spring Lime intervals in Wells F and G again are not correlative, thus further showing the erratic nature of reservoirs that occur in the Lower Bone Spring interval, and particularly in the lime sections of the Bone Spring.

Again referring to Exhibit A, you'll

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1 notice right above our Well A there is a Mewbourne Federal
2 1-G Well, and that will be in Unit K of Section 27, Township
3 18 South, Range 32 East. This well was originally completed
4 by Mewbourne Oil Company in October 13th, 1978, from the Mor-
5 row interval from 12,693 feet to 12,814 feet. It was recom-
6 pleted to the Lower Bone Spring interval on April 20th, 1980,
7 from perforations 9750 feet to 9778 feet, and it was poten-
8 tialled at a rate of 300 barrels of oil per day, plus 380 Mcf
9 of gas per day.

10 The interval in this well correlates
11 depthwise to the third Bone Spring Lime, and thus is the
12 first significant production in the immediate area of the
13 McKay West Federal No. 1 from the herein requested Lower
14 Bone Spring reservoir. No log is available on this well from
15 public sources. I've tried to obtain it and Mr. Johnson has
16 tried to obtain it, and apparently that log has never been
17 released by Mewbourne. So we cannot put the well by our
18 cross section, but assuming that the beds are relatively flat
19 and the surface relatively flat, we can correlate pretty well
20 and know that it is from the third Bone Spring Lime interval.

21 I will now call your attention to Exhibit
22 F, which is only a graph showing the log, the monthly producing
23 rate versus time, for the McKay West Federal No. 1 Well. The
24 production for February was not a full month and is why it
25 is only a little more than 1000 barrels. It is currently

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1 producing some 1500 barrels a month.

2 The reserves for this well are estimated
3 at 40 to 50,000 barrels of oil from primary recovery with a
4 possible like amount to be recovered by future potential
5 waterflood recovery project, and this is another reason why
6 we feel that the Upper and Lower Bone Spring should be sep-
7 arated, because in my opinion, geologically and pressurewise
8 they are different reservoirs, and I don't think we'd want
9 to commingle two separate reservoirs and potentially hinder
10 additional recovery in the first Bone Spring Sand by a water-
11 flood or other possible enhanced recovery project.

12 A precedent was set for this type of or-
13 der in Case Number 6756, which resulted in Order No. R-6255,
14 in which the applicant, Amoco Production Company, requested
15 the contraction of the vertical limits of the Air Strip Bone
16 Spring Pool in Section 25, Township 18 South, Range 34 East,
17 Eddy County, New Mexico, to comprise the Upper Bone Spring
18 formation from 9180 feet to 9460 feet, and the creation of
19 the Air Strip Lower Bone Spring Pool, to comprise the Lower
20 Bone Spring formation from 10,100 feet to 10,400 feet, all
21 depths being from the log of applicant's State "FU" Well No.
22 2, located in Unit N of Section 25.

23 It was further found by the Commission in
24 this case that the order embodying these findings will not
25 impair correlative rights nor cause waste.

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1 The evidence presented for Case 6756
2 showed that the Upper and Lower Bone Spring intervals was
3 separated by pressure differences and geological environment.

4 It is requested that this application
5 before the Commission by Petroleum Development Corp. be
6 granted with such reservoir designations to be retroactive
7 to the date of first production in the Upper Bone Spring Sand.

8 It is my opinion that the granting of
9 this application will protect correlative rights and will
10 prevent underground waste of hydrocarbons.

11 Q Is there any question in your mind, Mr.
12 Williamson, that these are separate and distinct reservoirs?

13 A No, sir, there is not.

14 Q Do you feel that as there is further
15 development in this area of the Bone Spring that there is a
16 possibility of the creation of additional separate zones and
17 reservoirs?

18 A Yes, sir. I feel sure that the Lower
19 Bone Spring interval, as production is developed, will prove
20 that there are multiple reservoirs even in the Lower Bone
21 Spring.

22 And I might point out through a recent
23 development, referring again to Well E, which is Petroleum
24 Development Corp's Gulf McKay Federal No. 1, it has been re-
25 cently perforated in the first Bone Spring Sand from 8503

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1 to 8513 and from 8528 to 8535, with two holes per foot. It
2 was acidized with 2000 gallons of 15 percent acid and after
3 recovering load, was swabbing 100 percent water, but the water
4 analysis indicated that it was drilling water rather than
5 formation water.

6 After recovering load plus 365 barrels,
7 the oil percent has increased to 23 percent of total fluid,
8 and this well is currently being tested and will have a
9 pumping unit installed very soon in order to get its true
10 potential.

11 The production from the Mewbourne well,
12 which I mentioned earlier was north of the Querecho Plains
13 No. 2 Well, for April of 1980 produced 2485 barrels of oil,
14 plus 3229 Mcf, and for May produced 1715 barrels of oil and
15 3847 Mcf.

16 But it is obvious to me that by the addi-
17 tional development in the Gulf McKay Federal, that other com-
18 pletions will be made in the first Bone Spring Sand, and very
19 likely additional wells will be drilled for this sand.

20 Q Mr. Williamson, did you go over the
21 material presented in the hearing before the Examiner?

22 A Yes, sir, I did.

23 Q And is any of the material that you have
24 presented here today in conflict with the material presented
25 before the Examiner?

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1 A. No, sir, it is not in conflict.

2 Q. Is it additional to?

3 A. Yes, sir, we have additional information
4 now that was not available at the time of the Examiner Hearing.
5 Primarily the production data from the Mewbourne well, the
6 recent completion in the Gulf McKay Federal No. 1, and more
7 importantly, the pressure measurements showing that a sub-
8 stantial pressure difference occurs between the first Bone
9 Spring Sand and the Lower Bone Spring Lime intervals.

10 MR. KEGEL: I have no further questions.

11
12 CROSS EXAMINATION

13 BY MR. RAMEY:

14 Q. Mr. Williamson, I'm kind of lost since
15 we didn't have the exhibits when you discussed them.

16 I'm clear on Exhibits A and B but what
17 is Exhibit C?

18 A. C is the bottom hole pressure measurement
19 that was made when the McKay Federal Well No. 1 was completed
20 in the Lower Bone Spring Lime interval. These perforations
21 occurred in July of '75, and after the production of only
22 280 barrels of oil the zone a bottom hole pressure measurement
23 was taken of 1064 pounds.

24 And then Exhibit D and E were pressure
25 measurements taken from the first Bone Spring Sand interval,

1 which was perforated at 8508 to 8521, and the first pressure
2 measurement reported 2968 psi after being shut-in for 77-3/4
3 hours, and that date was taken on -- I mean that pressure
4 was taken on March the 8th of 1980.

5 And then on 5-31 of '80 another pressure
6 measurement was taken in that sand zone, the first Bone
7 Spring sand zone, and after 117-1/2 hours reported 2464 pounds.

8 So we have a pressure difference between
9 Upper and Lower intervals of well over 1000 pounds.

10 Q And F is just production?

11 A Yes, sir. F is just the production from
12 the McKay West Federal No. 1 Well from the first Bone Spring
13 Sand.

14 Q The Mewbourne well in K of 27 is the
15 only other producing well in the --

16 A From the Upper or Lower Bone Spring, yes,
17 sir, and it's brand new and unfortunately the log hasn't been
18 released, so we've been unable to correlate the logs speci-
19 fically, but as flat as everything is in here, we just are
20 inferring from depth what interval that it's in.

21 Q And what interval is it producing from?

22 A Well, it's producing what we believe to
23 be the third Bone Spring Lime, which would be the lower lime
24 interval.

25 I'd like to point that out from the map,

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1 or maybe I should have done this earlier. From --- on the
2 McKay Federal West No. 1 Well, from around 7100 feet down to
3 about 8390 feet, that is defined as the first Bone Spring
4 Lime. The first Bone Spring Sand occurs from 8390 feet to
5 8680 feet.

6 The second Bone Spring Lime occurs from
7 8680 down to 9300, approximately.

8 And the second Bone Spring Sand is 9300
9 down to 9700.

10 The third Bone Spring Lime is 9700 down
11 to 10,050.

12 And the third Bone Spring Sand is from
13 10,050 down to 10,410, more or less.

14 So from the depths that they perforated,
15 as reported by the completion report, we think they're in
16 this third Bone Spring Lime, which proves that there are
17 going to be some isolated reservoirs, I'm sure, that will
18 be completed in that lower interval.

19 Q And you are proposing now an Upper Bone
20 Spring Pool ---

21 A. Yes, sir.

22 Q -- and a Lower Bone Spring Pool?

23 A. Yes, sir. We're proposing the Upper Bone
24 Spring to terminate at 8680 feet. From there up would be
25 the Upper Bone Spring, and from that point down, as depicted

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1 on the McKay West Federal No. 1 Well, would be a Lower Bone
2 Spring limit.

3 Q Do you think the second Bone Spring Sand
4 is in pressure communication with the third Bone Spring?

5 A No, sir, I don't have enough information
6 to show that separation exists between these various lower
7 intervals. I feel, it is my intuition that as these various
8 intervals are completed, and if they are completed, then we
9 will show probably, or be able to show that these are indeed
10 separate reservoirs. There's just too much vertical differ-
11 ence to think that that whole interval would be in communi-
12 cation, and the only distinct pressure measurements we have
13 are between the first Bone Spring Sand and then the Lower Bone
14 Spring Lime interval in the McKay West No. 1.

15 Now once we get pressure data from the
16 new one, I think we can probably be able to show that it's
17 separate from some of these other zones, but until that data
18 is available we can't, and do not suggest further separation
19 of the Lower Bone Spring at this time.

20 Q Do you -- could you give me some vertical
21 limits, or furnish the Commission some vertical limits for
22 your --

23 A Yes, sir.

24 Q -- upper pool?

25 A Yes, sir. We're proposing that -- and

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1 all of these measurements are made on the Petroleum Develop-
2 ment Corp. McKay Federal West No. 1 Well, and we are pro-
3 posing that the Upper Bone Spring formation exist from 8390
4 feet to 8680 feet. That's 8390 to 8680.

5 And then the Lower Bone Spring Pool would
6 be 8680 to the base of the Bone Spring, which is approximately
7 10,410 feet in the McKay West No. 1 Well.

8 Q Do you have the elevation of that well?

9 A Yes, sir. Calibration on that well is
10 3725 feet. The derrick floor is 3724 feet. And ground level
11 is 3706 feet.

12 Q What is the log measured from?

13 A The log is measured from the Kelly bushing,
14 which is 19 feet above the permanent datum.

15 Q that's the 3725?

16 A Yes, sir.

17 Q So probably any subsurface figures for
18 the pool, the vertical limits of the pool, should be from
19 the 3725.

20 A Yes, sir.

21 MR. RAMEY: Any other questions of this
22 witness? Mr. Padilla?

23

24

CROSS EXAMINATION

25

BY MR. PADILLA:

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1 Q Mr. Williamson, you testified that com-
2 mingling of production from the Upper and Lower Bone Spring
3 could possibly hinder recovery from the Upper Bone Spring,
4 is that --

5 A Well, yes, sir, two things could occur.
6 One, if production is commingled, then we cannot be sure of
7 our recoveries from the Upper sand, and it's important in
8 order to determine economics for additional recovery as to
9 what are you actually going to get primarywise from this one
10 particular interval.

11 And then obviously we would not want
12 pressure communication within a wellbore between the two zones
13 if we're putting water or gas or CO₂, or whatever happens to
14 be the injectant into one zone, we would not want it to have
15 a path through an open wellbore into a lower zone, so it
16 needs to be confined to one interval.

17 Q So you could have --

18 A You could have cross flow within the
19 wellbore.

20 Q You could have waste in either one of the
21 zones, actually.

22 A Yes, sir, we certainly could.

23 Q If you have the cross flow.

24 A Yes, sir, if you have the cross flow.

25 MR. RAMEY: Any other questions?

BY MR. ARNOLD:

CROSS EXAMINATION

Q Mr. Williamson, what's the closest interval between production in the Upper Bone Spring zone and the uppermost producing zone in the Lower Bone Spring?

A Well, at the current time the -- in this particular area, the Mewbourne Well is producing from the Lower Bone Spring from perforations at 9750 to 9778, so that would be on the cross section, it would be in this interval about here, so the vertical difference, then, between that and the Bone Spring Sand is approximately 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, around 1200 feet, so it's a very thick section, so it would be very unusual for communication to exist naturally in the reservoir over that interval.

MR. RAMEY: The Mewbourne well seems to be approximately the same level as Well E where you have the drill stem test.

A Yes, sir, that probably is -- that -- that interval there, you know, probably would make a well, and I'm sure that depending on what Petroleum Development Corp. -- how long they produce the Bone Spring Sand, surely some day will come back and recomplete that level.

MR. RAMEY: Any other questions of the

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1 witness? He may be excused.

2 MR. KEGEL: I'd like to offer the -- I'd
3 like to offer Applicant's Exhibits A through F.

4 MR. RAMEY: Applicant's Exhibits A
5 through F will be admitted.

6 MR. KEGEL: Call Mr. Johnson.

7 MR. RAMEY: Let's have just about a five
8 minute recess real quick.

9 MR. KEGEL: All right.

10
11 (Thereupon a recess was
12 taken.)
13

14 JIM C. JOHNSON

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

17
18 DIRECT EXAMINATION

19 BY MR. KEGEL:

20 Q Will you state your name, please?

21 A Jim C. Johnson.

22 Q For the record, your address?

23 A Albuquerque, New Mexico.

24 Q What is your occupation?

25 A I'm President of Petroleum Development

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1 Corporation.

2 Q The applicant in this case?

3 A That is correct.

4 Q Mr. Johnson, have you made a study of the
5 economics involved in this application?

6 A Yes, I have.

7 Q Would you explain to the Commission, please,
8 the effect of the granting or denial of the application from
9 an economic standpoint?

10 A I will, Gentlemen, the crude oil wind-
11 fall profit act signed into law in April 2nd, 1980, to be
12 retroactive effective on March 1 of 1980. There's a differ-
13 ential price on tier one oil and tier three oil.

14 In June of 1980 tier one oil was priced
15 at \$21.75 per barrel. Tier three oil was priced at \$39.50
16 per barrel.

17 Also, the windfall profits tax has a
18 differential for independent producers for tier one oil of
19 50 percent and tier three oil of 30 percent.

20 In reference to this hearing, tier three
21 oil is classified as oil that did not produce from a reservoir
22 on a lease during the year 1978.

23 The McKay West Federal No. 1 produced
24 from the depleted limestone Bone Spring reservoir as presented
25 by Mr. Williamson's testimony in 1978. The McKay West Feder-

1 al No. 1, with its cumulative production from the Bone Spring
2 Sand reservoir through July of this year would receive a gross
3 loss of \$130,000 in the event the Bone Spring Sand is not
4 classified a different reservoir.

5 The New Mexico State Tax loss through
6 July, 1980, would be \$10,000.

7 Petroleum Development Corporation has
8 estimated the gross revenue loss from this well through 1988
9 would be \$420,000 and the New Mexico State Tax loss would be
10 \$21,400, assuming a cumulative production of 45,000 barrels
11 of oil.

12 The lease on which McKay West Federal No.
13 1 is located contains 400 acres, and nine additional wells
14 could possibly be drilled on this lease. In the event nine
15 additional wells can be timely drilled with a cumulative
16 production of 45,000 barrels of oil per well, Petroleum Devel-
17 opment Corporation has estimated the gross loss of revenue
18 would be \$2,600,000 through 1989, and the New Mexico revenue
19 loss would be \$38,000.

20 This amounts to an estimated gross revenue
21 loss of \$3,020,000. The State of New Mexico realizes a per-
22 centage of the royalty from the 12-1/2 percent USGS royalty,
23 which would suffer a drastic loss, since the windfall profits
24 tax is 70 percent on tier one oil and 30 percent on tier three
25 oil.

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1 There is no question in my mind that the
2 McKay West Federal No. 1 is currently producing from a differ-
3 ent reservoir than the reservoir which it produced in 1978,
4 as provided in Mr. Williamson's testimony.

5 Gentlemen, these amounts of revenues may
6 appear as a drop in the bucket to a major oil company, but to
7 a small independent New Mexico corporation, I can assure you
8 it is significant.

9 MR. KEGEL: I have no further questions.

10 MR. RAMEY: Any questions of the witness?
11 He may be excused.

12 MR. KEGEL: Applicant has no further testi-
13 mony.

14 MR. RAMEY: Does anyone have anything fur-
15 ther to add to this case?

16 If not, the Commission will take the
17 Case 6848 under advisement.

18
19 (Hearing concluded.)
20
21
22
23
24
25

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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 Conserva-
tion Division 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 C.S.R.

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NEW MEXICO OIL CONSERVATION COMMISSION

COMMISSION HEARINGSANTA FE, NEW MEXICOHearing Date AUGUST 5, 1980 Time: 9:00 A.M.

NAME	REPRESENTING	LOCATION
William J. Carr Sue E. Umshler	Campbell and Clark USGS, Conservation Div	Santa Fe Albany
ROY C. WILKINSON JR.	SIPES, WILLIAMSON ASSOC. FOR P.C. OIL CORP	MIDLAND, TEX.
J.C. Johnson	Petroleum Dev. Corp	Albany
W. B. Kegel	Kegel, McCabe & Minter	Santa Fe
R. L. Lohm	Korzan	Santa Fe
H.W. Jantz	Gelley	Albany
J. E. Eakin	Betty	Midland
H.D. Woods	Betty	Midland

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
5 August 1980

COMMISSION HEARING

IN THE MATTER OF:

Application of Petroleum Development) CASE
Corporation for pool contraction and) 6848
creation, Lea County, New Mexico.)

BEFORE: Commissioner Ramey
Commissioner Arnold
Commissioner Armijo

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation) Ernest L. Padilla, Esq.
Commission:) Legal Counsel to the Commission
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicants:) Walter Fogel, Esq.
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ROY WILLIAMSON

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15

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Cross Examination by Mr. Arnold

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JIM C. JOHNSON

Direct Examination by Mr. Kegel

22

EXHIBITS

Applicant Exhibit A, Plat

4

Applicant Exhibit B, Cross Section

5

Applicant Exhibit C, Report

5

Applicant Exhibit D, Report

5

Applicant Exhibit E, Report

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5

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1 MR. RAMEY: The hearing will come to order.
2 We'll call first case on the docket.

3 MR. PADILLA: Application of Petroleum
4 Development Corporation for pool contraction and creation,
5 Lea County, New Mexico.

6 MR. RAMEY: Case 6848.

7 MR. KEGEL: Walter R. Kegel for the ap-
8 plicant.

9 MR. RAMEY: Any other appearances?
10 Would you have your witnesses stand and be sworn at this time,
11 Mr. Kegel?

12 MR. KEGEL: Yes. Roy Williamson and J.
13 C. Johnson.

14
15 (Witnesses sworn.)
16

17 ROY WILLIAMSON
18 being called as a witness and having been duly sworn upon his
19 oath, testified as follows, to-wit:
20

21 DIRECT EXAMINATION

22 BY MR. KEGEL:

23 Q Will you state your name, please?

24 A Roy C. Williamson.

25 Q Where born?

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1 A Is Midland, Texas.

2 Q And your occupation?

3 A I'm a petroleum consultant.

4 MR. KEGEL: I believe Mr. Williamson has

5 appeared before the Commission --

6 MR. RAMBY: Yes, he has.

7 MR. KEGEL: -- on numerous occasions.

8 MR. RAMBY: We are familiar with Mr.

9 Williamson and we will consider him qualified.

10 MR. KEGEL: All right, sir.

11 Q In the course of your occupation have you

12 been engaged by Petroleum Development Corporation to evaluate

13 the present application?

14 A Yes, sir, I have.

15 Q In preparation for your testimony have

16 you prepared certain exhibits for the Commission?

17 A Yes, sir, I have.

18 MR. KEGEL: If we can save a little time,

19 Mr. Chairman, I'll just do these as Exhibit A and then stamp

20 them as we go along, if that's all right.

21 Q I hand you what has been marked as Appli-

22 cant's Exhibit A and ask you if you will identify that,

23 please?

24 A Yes, sir. Exhibit A is a plat showing

25 production and acreage in the vicinity of the Wiley West

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1 Federal No. 1 Well, operated by Petroleum Development Corpor-
2 ation.

3 Q All right, and then Exhibit B?

4 A Exhibit B is a cross section comprising
5 the five wells denoted on the plat as Wells A, B, C, D, and
6 E. This exhibit was actually prepared by Petroleum Development
7 Corporation and under my approval we are using the same copy
8 that Petroleum Development Corp. had earlier, because I would
9 have made no changes in the exhibit.

10 Q All right. Exhibit C?

11 A Exhibit C is a bottom hole pressure sur-
12 vey report for the McKay West Federal No. 1, taken at a test
13 depth of 9850 feet on July the 14th, 1975.

14 Q Exhibit D?

15 A Exhibit D is a bottom hole pressure
16 measurement taken on McKay West Federal No. 1 at a depth of
17 8530 feet and the date of that test was 3-8-80.

18 Q Exhibit E?

19 A Exhibit E is another bottom hole pressure
20 measurement on the McKay West Federal No. 1 taken at a depth
21 of 8530 feet on 5-31-80.

22 Q And Exhibit F?

23 A Exhibit F is a production plat showing
24 production from the McKay West Federal No. 1 from the Upper
25 Bear Spring Sand from its inception, when it started producing

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1 in February of 1980.

2 MR. KECHEL: Let me have these before the
3 Commission. I believe Mr. Williamson will testify from those.

4 A Would you like to put the cross section
5 up on the board where we can see it a little better?

6 Q All right, Mr. Williamson, if you'll just
7 go ahead, then, please.

8 A Okay, sir.

9 The subject case consists of the applica-
10 tion of Petroleum Development Corporation for pool contraction
11 and creation in Lea County, New Mexico.

12 Petroleum Development Corporation seeks
13 the contraction of the Querecho Plains Bone Spring Pool to
14 comprise the upper Bone Spring formation only from 8390 feet
15 to 8680 feet, as depicted on the log of this McKay West
16 Federal Well No. 1, located in Unit F of Section 34, Township
17 18 South, Range 32 East; and the creation of the Querecho
18 Plains Lower Bone Spring Pool, to comprise said formation
19 from 8680 feet to the base of the Bone Spring underlying the
20 northwest quarter of said Section 34.

21 Our evidence shows that pressure data, as
22 well as geological data, prove that the Upper Bone Spring
23 and the Lower Bone Spring, as defined in this application,
24 are separate and distinct reservoirs and should thus be
25 classified as such.

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I'll call your attention now to Exhibit Number A, which is an area plat showing well development in the vicinity of the McKay West Federal No. 1 Well. The cross section trace is shown in red and includes five wells designated A, B, C, D, and E.

Exhibit B is the cross section itself, and is on the wall, and we will refer to that in a moment.

The Querecho Plains Bone Spring Pool was formed in 1969 after Shell completed the Querecho Plains No. 2 Well, Unit N, in Section 27. This well is designated A on the area plat and the cross section.

The pool was expanded to include the northwest quarter of Section 34 after the McKay West Federal No. 1 Well was recompleted in the Bone Spring Line portion of the Bone Spring reservoir in 1975.

Now Exhibit B is a cross section of wells A through E, with A being on the left and E being on the right.

Well Number A, which is Shell's Plains No. 2 Well, was originally drilled to the Morrow, which was dry, and was plugged back and recompleted in the first Bone Spring sand at a depth of 2539 to 2560. These perforations are shown and are colored yellow on the cross section for Well Number A.

The cross section comprises the entire

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1 Bone Spring section from the top of the Bone Spring to the
2 top of the Wolfcamp over the interval covered, which is some
3 3300 feet in vertical limit.

4 The Querecho Plains No. 2 Well produced
5 40,524 barrels of oil from the Bone Spring Sand before being
6 plugged and abandoned.

7 Petroleum Development Corp. drilled the
8 No. 1 Well in 1975, which is Well B on the cross section, and
9 it was drilled for the Morrow also, which was dry, and was
10 then plugged back to the Bone Spring.

11 The first completion attempts in the Bone
12 Spring were in the second Bone Spring lime and the third
13 Bone Spring lime, as shown by these blue perforated intervals
14 on the cross section.

15 A bottom hole pressure was run on July
16 the 14th, 1975, and after a 19-hour buildup and after pro-
17 duction of only 288 barrels, the pressure was 1064 pounds.
18 The well continued to produce a total of only 1296 barrels of
19 oil before being abandoned in these zones.

20 Then the first Bone Spring Sand, which is
21 correlative to the producing interval in the Plains No. 2
22 Well, was perforated, as again shown by the perforations with
23 the yellow coloring on Well B, and potentialled February 21,
24 1980, for 104 barrels of oil, flowing, plus 70 barrels of
25 water, with a tubing pressure of 100 psi.

After production of 1034 barrels in this zone, a bottom hole pressure measurement of 2969 pounds was reported on March the 8th, 1930, after being shut-in for 77-3/4 hours.

The same zone was tested again on May 31, 1930, and after 117-1/2 hours of shut-in time, and the production of 5607 barrels of oil, reports a bottom hole pressure of 2464 pounds.

As can be seen by the cross section, the lower reservoir below 3630 feet, which is this line right here, shown in the cross section, is not only separated geologically but by distinct difference in reservoir pressures.

I now call your attention to Exhibit C, D, and E, which are merely the reporting of the bottom hole pressures as I've just discussed on the McKay Federal West No. 1 Well. The only other test from the Lower Bone Spring reservoir, which is shown in the cross section, is in Petro-leum Development Corp's Federal No. 1 Well, which is designated as Well E, and the DST was taken over the interval shown by the blue marking on the cross section from 2961 feet to 2650 feet: had gas surfaced in five minutes on a 1/2 inch choke, flowing 675 Mcf per day of gas with a pressure of 90 pounds, plus an estimated 20 barrels of oil per hour. The flowing pressure increased from 1902 pounds to 2493 pounds with a shut-in bottom hole pressure of 2373 after 120 minutes.

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1 This zone was never completed for pro-
2 duction.

3 As can be seen on this cross section, the
4 first Bone Spring Sand in all five wells on the cross section
5 correlates very well, whereas the lower Bone Spring intervals
6 do not correlate well, and indicate a reservoir consisting
7 of many discontinuous intervals.

8 Referring back now to Exhibit A, other
9 significant production in the Bone Spring occurred from wells
10 F and G, which are colored red, and with Well F being in Sec-
11 tion 15 of 19, 32, and Well G being in Section 16 of 19, 32.

12 Well F is the Sun Jennings No. 1 Well,
13 which has a cumulative 378,209 barrels of oil as of April 1,
14 1980, from the third Bone Spring Line, with March of '80 pro-
15 duction being 2327 barrels of oil.

16 Well G in Section 16 is Petroleum Develop-
17 ment Corp's Cleve Rock Federal No. 1, which produced 45,425
18 barrels of oil from the third Bone Spring Line before being
19 abandoned.

20 The two Bone Spring Line intervals in
21 Wells F and G again are not correlative, thus further showing
22 the erratic nature of reservoirs that occur in the Lower
23 Bone Spring interval, and particularly in the lime sections
24 of the Bone Spring.

25 Again referring to Exhibit A, you'll

1 notice right above our Well A there is a Mewbourne Federal
2 1-G Well, and that will be in Unit K of Section 27, Township
3 18 South, Range 32 East. This well was originally completed
4 by Mewbourne Oil Company in October 13th, 1978, from the Mor-
5 row interval from 12,693 feet to 12,814 feet. It was recom-
6 pleted to the Lower Bone Spring interval on April 20th, 1980,
7 from perforations 9750 feet to 9778 feet, and it was poten-
8 tially at a rate of 300 barrels of oil per day, plus 380 Mcf
9 of gas per day.

10 The interval in this well correlates
11 depthwise to the third Bone Spring Lime, and thus is the
12 first significant production in the immediate area of the
13 McKay West Federal No. 1 from the herein requested Lower
14 Bone Spring reservoir. No log is available on this well from
15 public sources. I've tried to obtain it and Mr. Johnson has
16 tried to obtain it, and apparently that log has never been
17 released by Mewbourne. So we cannot put the well by our
18 cross section, but assuming that the beds are relatively flat
19 and the surface relatively flat, we can correlate pretty well
20 and know that it is from the third Bone Spring Lime interval.

21 I will now call your attention to Exhibit
22 P, which is only a graph showing the log, the monthly producing
23 rate versus time, for the McKay West Federal No. 1 Well. The
24 production for February was not a full month and is why it
25 is only a little more than 1000 barrels. It is currently

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1 producing some 1500 barrels a month.

2 The reserves for this well are estimated
3 at 40 to 50,000 barrels of oil from primary recovery with a
4 possible like amount to be recovered by future potential
5 waterflood recovery project, and this is another reason why
6 we feel that the Upper and Lower Bone Spring should be sep-
7 arated, because in my opinion, geologically and pressurewise
8 they are different reservoirs, and I don't think we'd want
9 to commingle two separate reservoirs and potentially hinder
10 additional recovery in the first Bone Spring Sand by a water-
11 flood or other possible enhanced recovery project.

12 A precedent was set for this type of or-
13 der in Case Number 6756, which resulted in Order No. R-6255,
14 in which the applicant, Amoco Production Company, requested
15 the contraction of the vertical limits of the Air Strip Bone
16 Spring Pool in Section 25, Township 18 South, Range 34 East,
17 Bddy County, New Mexico, to comprise the Upper Bone Spring
18 formation from 9180 feet to 9460 feet, and the creation of
19 the Air Strip Lower Bone Spring Pool, to comprise the Lower
20 Bone Spring formation from 10,100 feet to 10,400 feet, all
21 depths being from the log of applicant's State "PU" Well No.
22 2, located in Unit U of Section 25.

23 It was further found by the Commission in
24 this case that the order embodying these findings will not
25 impair correlative rights nor cause waste.

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1 The evidence presented for Case 6756
2 showed that the Upper and Lower Bone Spring intervals was
3 separated by pressure differences and geological environment.

4 It is requested that this application
5 before the Commission by Petroleum Development Corp. be
6 granted with such reservoir designations to be retroactive
7 to the date of first production in the Upper Bone Spring Sand.

8 It is my opinion that the granting of
9 this application will protect correlative rights and will
10 prevent underground waste of hydrocarbons.

11 Q Is there any question in your mind, Mr.
12 Williamson, that these are separate and distinct reservoirs?

13 A No, sir, there is not.

14 Q Do you feel that as there is further
15 development in this area of the Bone Spring that there is a
16 possibility of the creation of additional separate zones and
17 reservoirs?

18 A Yes, sir. I feel sure that the Lower
19 Bone Spring interval, as production is developed, will prove
20 that there are multiple reservoirs even in the Lower Bone
21 Spring.

22 And I might point out through a recent
23 development, referring again to Well B, which is Petroleum
24 Development Corp's Gulf McKay Federal No. 1, it has been re-
25 cently perforated in the first Bone Spring Sand from 8503

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1 to 8513 and from 8528 to 8535, with two holes per foot. It
2 was acidized with 2000 gallons of 15 percent acid and after
3 recovering load, was swabbing 100 percent water, but the water
4 analysis indicated that it was drilling water rather than
5 formation water.

6 After recovering load plus 365 barrels,
7 the oil percent has increased to 23 percent of total fluid,
8 and this well is currently being tested and will have a
9 pumping unit installed very soon in order to get its true
10 potential.

11 The production from the Newbourne well,
12 which I mentioned earlier was north of the Querecho Plains
13 No. 2 Well, for April of 1980 produced 2485 barrels of oil,
14 plus 3229 Mcf, and for May produced 1715 barrels of oil and
15 3847 Mcf.

16 But it is obvious to me that by the addi-
17 tional development in the Gulf McKay Federal, that other com-
18 pletions will be made in the first Bone Spring Sand, and very
19 likely additional wells will be drilled for this sand.

20 Q Mr. Williamson, did you go over the
21 material presented in the hearing before the Examiner?

22 A Yes, sir, I did.

23 Q And is any of the material that you have
24 presented here today in conflict with the material presented
25 before the Examiner?

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1 A. No, sir, it is not in conflict.

2 Q Is it additional to?

3 A. Yes, sir, we have additional information
4 now that was not available at the time of the Examiner Hearing.
5 Primarily the production data from the Newbourne well, the
6 recent completion in the Gulf McKay Federal No. 1, and more
7 importantly, the pressure measurements showing that a sub-
8 stantial pressure difference occurs between the first Bone
9 Spring Sand and the Lower Bone Spring Lime intervals.

10 MR. KEGEL: I have no further questions.

11
12 CROSS EXAMINATION

13 BY MR. RAMEY:

14 Q Mr. Williamson, I'm kind of lost since
15 we didn't have the exhibits when you discussed them.

16 I'm clear on Exhibits A and B but what
17 is Exhibit C?

18 A. C is the bottom hole pressure measurement
19 that was made when the McKay Federal Well No. 1 was completed
20 in the Lower Bone Spring Lime interval. These perforations
21 occurred in July of '75, and after the production of only
22 280 barrels of oil the zone a bottom hole pressure measurement
23 was taken of 1064 pounds.

24 And then Exhibit D and E were pressure
25 measurements taken from the first Bone Spring Sand interval,

1 which was perforated at 3508 to 3521, and the first pressure
2 measurement reported 2968 psi after being shut-in for 77-3/4
3 hours, and that date was taken on -- I mean that pressure
4 was taken on March the 8th of 1980.

5 And then on 5-31 of '80 another pressure
6 measurement was taken in that sand zone, the first Bone
7 Spring sand zone, and after 117-1/2 hours reported 2464 pounds.

8 So we have a pressure difference between
9 Upper and Lower intervals of well over 1000 pounds.

10 Q And F is just production?

11 A Yes, sir. F is just the production from
12 the McKay West Federal No. 1 Well from the first Bone Spring
13 Sand.

14 Q The Mewbourne well in K of 27 is the
15 only other producing well in the --

16 A From the Upper or Lower Bone Spring, yes,
17 sir, and it's brand new and unfortunately the log hasn't been
18 released, so we've been unable to correlate the logs speci-
19 fically, but as flat as everything is in here, we just are
20 inferring from depth what interval that it's in.

21 Q And what interval is it producing from?

22 A Well, it's producing what we believe to
23 be the third Bone Spring Line, which would be the lower line
24 interval.

25 I'd like to point that out from the map,

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1 or maybe I should have done this earlier. From -- on the
2 McKay Federal West No. 1 Well, from around 7100 feet down to
3 about 9390 feet, that is defined as the first Bone Spring
4 Lime. The first Bone Spring Sand occurs from 8390 feet to
5 8680 feet.

6 The second Bone Spring Lime occurs from
7 8680 down to 9300, approximately.

8 And the second Bone Spring Sand is 9300
9 down to 9700.

10 The third Bone Spring Lime is 9700 down
11 to 10,050.

12 And the third Bone Spring Sand is from
13 10,050 down to 10,410, more or less.

14 So from the depths that they perforated,
15 as reported by the completion report, we think they're in
16 this third Bone Spring Lime, which proves that there are
17 going to be some isolated reservoirs, I'm sure, that will
18 be completed in that lower interval.

19 Q And you are proposing now an Upper Bone
20 Spring Pool --

21 A Yes, sir.

22 Q -- and a Lower Bone Spring Pool?

23 A Yes, sir. We're proposing the Upper Bone
24 Spring to terminate at 8680 feet. From there up would be
25 the Upper Bone Spring, and from that point down, as depicted

1 on the McKay West Federal No. 1 Well, would be a Lower Bone
2 Spring limit.

3 Q Do you think the second Bone Spring Sand
4 is in pressure communication with the third Bone Spring?

5 A No, sir, I don't have enough information
6 to show that separation exists between these various lower
7 intervals. I feel, it is my intuition that as these various
8 intervals are completed, and if they are completed, then we
9 will show probably, or be able to show that these are indeed
10 separate reservoirs. There's just too much vertical differ-
11 ence to think that that whole interval would be in communi-
12 cation, and the only distinct pressure measurements we have
13 are between the first Bone Spring Sand and then the Lower Bone
14 Spring Lime interval in the McKay West No. 1.

15 Now once we get pressure data from the
16 new one, I think we can probably be able to show that it's
17 separate from some of these other zones, but until that data
18 is available we can't, and do not suggest further separation
19 of the Lower Bone Spring at this time.

20 Q Do you -- could you give me some vertical
21 limits, or furnish the Commission some vertical limits for
22 your --

23 A Yes, sir.

24 Q -- upper pool?

25 A Yes, sir. We're proposing that -- and

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1 all of these measurements are made on the Petroleum Develop-
2 ment Corp. McKay Federal West No. 1 Well, and we are pro-
3 posing that the Upper Bone Spring formation exist from 8390
4 feet to 8680 feet. That's 8390 to 8680.

5 And then the Lower Bone Spring Pool would
6 be 8680 to the base of the Bone Spring, which is approximately
7 10,410 feet in the McKay West No. 1 Well.

8 Q Do you have the elevation of that well?

9 A Yes, sir. Calibration on that well is
10 3725 feet. The derrick floor is 3724 feet. And ground level
11 is 3706 feet.

12 Q What is the log measured from?

13 A The log is measured from the Kelly bushing,
14 which is 19 feet above the permanent datum.

15 Q that's the 3725?

16 A Yes, sir.

17 Q So probably any subsurface figures for
18 the pool, the vertical limits of the pool, should be from
19 the 3725.

20 A Yes, sir.

21 MR. RAMEY: Any other questions of this
22 witness? Mr. Padilla?

23

24

CROSS EXAMINATION

25

BY MR. PADILLA:

1 Q Mr. Williamson, you testified that com-
2 mingling of production from the Upper and Lower Bone Spring
3 could possibly hinder recovery from the Upper Bone Spring,
4 is that --

5 A Well, yes, sir, two things could occur.
6 One, if production is commingled, then we cannot be sure of
7 our recoveries from the Upper sand, and it's important in
8 order to determine economics for additional recovery as to
9 what are you actually going to get primarywise from this one
10 particular interval.

11 And then obviously we would not want
12 pressure communication within a wellbore between the two zones
13 if we're putting water or gas or CO₂, or whatever happens to
14 be the injectant into one zone, we would not want it to have
15 a path through an open wellbore into a lower zone, so it
16 needs to be confined to one interval.

17 Q So you could have --

18 A You could have cross flow within the
19 wellbore.

20 Q You could have waste in either one of the
21 zones, actually.

22 A Yes, sir, we certainly could.

23 Q If you have the cross flow.

24 A Yes, sir, if you have the cross flow.

25 MR. RAMEY: Any other questions?

SALLY W. BOYD, C.S.R.

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CROSS EXAMINATION

BY MR. ARNOLD:

Q Mr. Williamson, what's the closest interval between production in the Upper Bone Spring zone and the uppermost producing zone in the Lower Bone Spring?

A. Well, at the current time the -- in this particular area, the Mewbourne Well is producing from the Lower Bone Spring from perforations at 9750 to 9778, so that would be on the cross section, it would be in this interval about here, so the vertical difference, then, between that and the Bone Spring Sand is approximately 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, around 1200 feet, so it's a very thick section, so it would be very unusual for communication to exist naturally in the reservoir over that interval.

MR. RAMEY: The Mewbourne well seems to be approximately the same level as Well E where you have the drill stem test.

A. Yes, sir, that probably is -- that -- that interval there, you know, probably would make a well, and I'm sure that depending on what Petroleum Development Corp. -- how long they produce the Bone Spring Sand, surely some day will come back and recomplete that level.

MR. RAMEY: Any other questions of the

1 witness? He may be excused.

2 MR. KEGEL: I'd like to offer the -- I'd
3 like to offer Applicant's Exhibits A through F.

4 MR. RAMEY: Applicant's Exhibits A
5 through F will be admitted.

6 MR. KEGEL: Call Mr. Johnson.

7 MR. RAMEY: Let's have just about a five
8 minute recess real quick.

9 MR. KEGEL: All right.

10
11 (Whereupon a recess was
12 taken.)
13

14 JIM C. JOHNSON

15 being called as a witness and having been duly sworn upon his
16 oath, testified as follows, to-wit:
17

18 DIRECT EXAMINATION

19 BY MR. KEGEL:

20 Q Will you state your name, please?

21 A Jim C. Johnson.

22 Q For the record, your address?

23 A Albuquerque, New Mexico.

24 Q What is your occupation?

25 A I'm President of Petroleum Development

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1 Corporation.

2 Q The applicant in this case?

3 A That is correct.

4 Q Mr. Johnson, have you made a study of the
5 economics involved in this application?

6 A Yes, I have.

7 Q Would you explain to the Commission, please,
8 the effect of the granting or denial of the application from
9 an economic standpoint?

10 A I will. Gentlemen, the crude oil wind-
11 fall profit act signed into law in April 2nd, 1980, to be
12 retroactive effective on March 1 of 1980. There's a differ-
13 ential price on tier one oil and tier three oil.

14 In June of 1980 tier one oil was priced
15 at \$21.75 per barrel. Tier three oil was priced at \$39.50
16 per barrel.

17 Also, the windfall profits tax has a
18 differential for independent producers for tier one oil of
19 50 percent and tier three oil of 30 percent.

20 In reference to this hearing, tier three
21 oil is classified as oil that did not produce from a reservoir
22 on a lease during the year 1978.

23 The McKay West Federal No. 1 produced
24 from the depleted limestone Bone Spring reservoir as presented
25 by Mr. Williamson's testimony in 1978. The McKay West Feder-

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1 al No. 1, with its cumulative production from the Bone Spring
2 Sand reservoir through July of this year would receive a gross
3 loss of \$130,000 in the event the Bone Spring Sand is not
4 classified a different reservoir.

5 The New Mexico State Tax loss through
6 July, 1980, would be \$10,000.

7 Petroleum Development Corporation has
8 estimated the gross revenue loss from this well through 1988
9 would be \$420,000 and the New Mexico State Tax loss would be
10 \$21,400, assuming a cumulative production of 45,000 barrels
11 of oil.

12 The lease on which McKay West Federal No.
13 1 is located contains 400 acres, and nine additional wells
14 could possibly be drilled on this lease. In the event nine
15 additional wells can be timely drilled with a cumulative
16 production of 45,000 barrels of oil per well, Petroleum Devel-
17 opment Corporation has estimated the gross loss of revenue
18 would be \$2,600,000 through 1989, and the New Mexico revenue
19 loss would be \$38,000.

20 This amounts to an estimated gross revenue
21 loss of \$3,020,000. The State of New Mexico realizes a per-
22 centage of the royalty from the 12-1/2 percent USGS royalty,
23 which would suffer a drastic loss, since the windfall profits
24 tax is 70 percent on tier one oil and 30 percent on tier three
25 oil.

1 There is no question in my mind that the
2 McKay West Federal No. 1 is currently producing from a differ-
3 ent reservoir than the reservoir which it produced in 1978,
4 as provided in Mr. Williamson's testimony.

5 Gentlemen, these amounts of revenues may
6 appear as a drop in the bucket to a major oil company, but to
7 a small independent New Mexico corporation, I can assure you
8 it is significant.

9 MR. KEGEL: I have no further questions.

10 MR. RAMEY: Any questions of the witness?
11 He may be excused.

12 MR. KEGEL: Applicant has no further testi-
13 mony.

14 MR. RAMEY: Does anyone have anything fur-
15 ther to add to this case?

16 If not, the Commission will take the
17 Case 6848 under advisement.

18
19 (Hearing concluded.)
20
21
22
23
24
25

SALLY W. BOYD, C.S.R.

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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 Conserva-
tion Division 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, C.S.R.

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BRUCE KING
GOVERNOR
LARRY KENDE
SECRETARY

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

August 14, 1980

POST OFFICE BOX 8088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-3434

Mr. Walter R. Kegel
Kegel, McCabe, & Montez
Attorneys at Law
P. O. Box 2292
Santa Fe, New Mexico 87501

Re: CASE NO. 6848
ORDER NO. R-6332-A

Applicant:

Petroleum Development Corporation

Dear Sir:

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

Yours very truly,


JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC

Other

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6848 DE NOVO
Order No. R-6332-A
NOMENCLATURE

APPLICATION OF PETROLEUM DEVELOPMENT
CORPORATION FOR POOL CONTRACTION AND
CREATION, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 5, 1980, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 14th day of August, 1980, the Commission, a quorum being present, having considered the testimony, the record, and the exhibits, and being fully advised in the premises,

FINDS:

(1) That Case No. 6848 originally came on for hearing before Examiner Richard L. Stamets on March 26, 1980, whereupon the Division entered Order No. R-6332 on April 30, 1980, denying the application.

(2) That the applicant filed timely application for hearing de novo of Case No. 6848 and this case was set for hearing before the Commission.

(3) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(4) That the applicant in this case, Petroleum Development Corporation, requested the contraction of the vertical limits of the Querecho Plains-Bone Spring Pool in Sections 27 and 34, Township 18 South, Range 32 East, NMPM, Lea County, New Mexico, to comprise the Upper Bone Spring formation only, from 8390 feet to 8680 feet, and the creation of the Querecho Plains-Lower Bone Spring Pool to comprise the Lower Bone Spring formation only,

Case No. 6848 De Novo
Order No. R-6332-A

from 8680 feet to the base of the Bone Spring formation, all depths being from the log of applicant's McKay West Federal Well No. 1, located in Unit F of the aforesaid Section 34.

(5) That pressure and production information indicates there are at least two distinct separate reservoirs within the Bone Spring formation in the present Querecho Plains-Bone Spring Pool.

(6) That it appears that the upper section of the Bone Spring formation should be designated a pool, and that said pool should be known as the Querecho Plains-Upper Bone Spring Pool with vertical limits from 8390 feet to 8680 feet on the log of the McKay West Federal Well No. 1 located in Unit F of Section 34, Township 18 South, Range 32 East, NMPM, Lea County, New Mexico, and with horizontal limits comprising the following described lands:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 27: SW/4
Section 34: NW/4

(7) That to accomplish the above-described designation of an upper Bone Spring pool, it would be best to contract the vertical limits of the present Querecho Plains-Bone Spring Pool to the limits described above, extend the horizontal limits of said pool to the horizontal limits described above, and redesignate said pool the Querecho Plains-Upper Bone Spring Pool.

(8) That there is need for the creation of a lower Bone Spring pool, said pool to be designated the Querecho Plains-Lower Bone Spring Pool and have vertical limits from 8680 feet to the base of the Bone Spring formation on the log of the above-described McKay West Federal Well No. 1, and horizontal limits comprising the following described lands:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 27: SW/4
Section 34: NW/4

(9) That an order embodying the above findings will not impair correlative rights nor cause waste and should be approved.

IT IS THEREFORE ORDERED:

(1) That the Querecho Plains-Bone Spring Pool in Lea County, New Mexico, is hereby redesignated the Querecho Plains-Upper Bone

-3-

Case No. 6848 De Novo
Order No. R-6332-A

Spring Pool, and the vertical limits of said Querecho Plains-Upper Bone Spring Pool are established as being that interval in the Bone Spring formation from 8390 feet to 8680 feet on the log of the Petroleum Development Corporation McKay West Federal Well No. 1 located in Unit F of Section 34, Township 18 South, Range 32 East, NMPM, Lea County, New Mexico, and the horizontal limits of said pool are established as comprising the following described area:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 27: SW/4
Section 34: NW/4

(2) That a new pool for Lower Bone Spring production, classified as an oil pool and designated the Querecho Plains-Lower Bone Spring Pool is hereby created, with vertical limits established as being that interval in the Bone Spring formation from 8680 feet to the base of the Bone Spring formation on the log of the aforementioned Petroleum Development Corporation McKay West Federal Well No. 1, and the horizontal limits of said pool are established as comprising the following described lands in Lea County, New Mexico:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 27: SW/4
Section 34: NW/4

(3) That this order shall become effective February 21, 1980.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

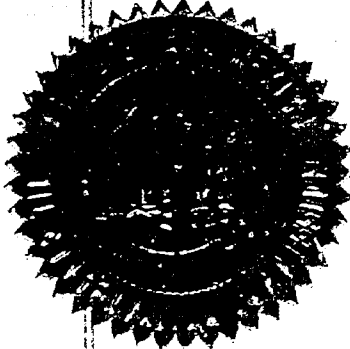
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

ALEX J. ARMISTEAD, Member

EMERY C. ARNOLD, Member

JOE D. RAMEY, Member & Secretary



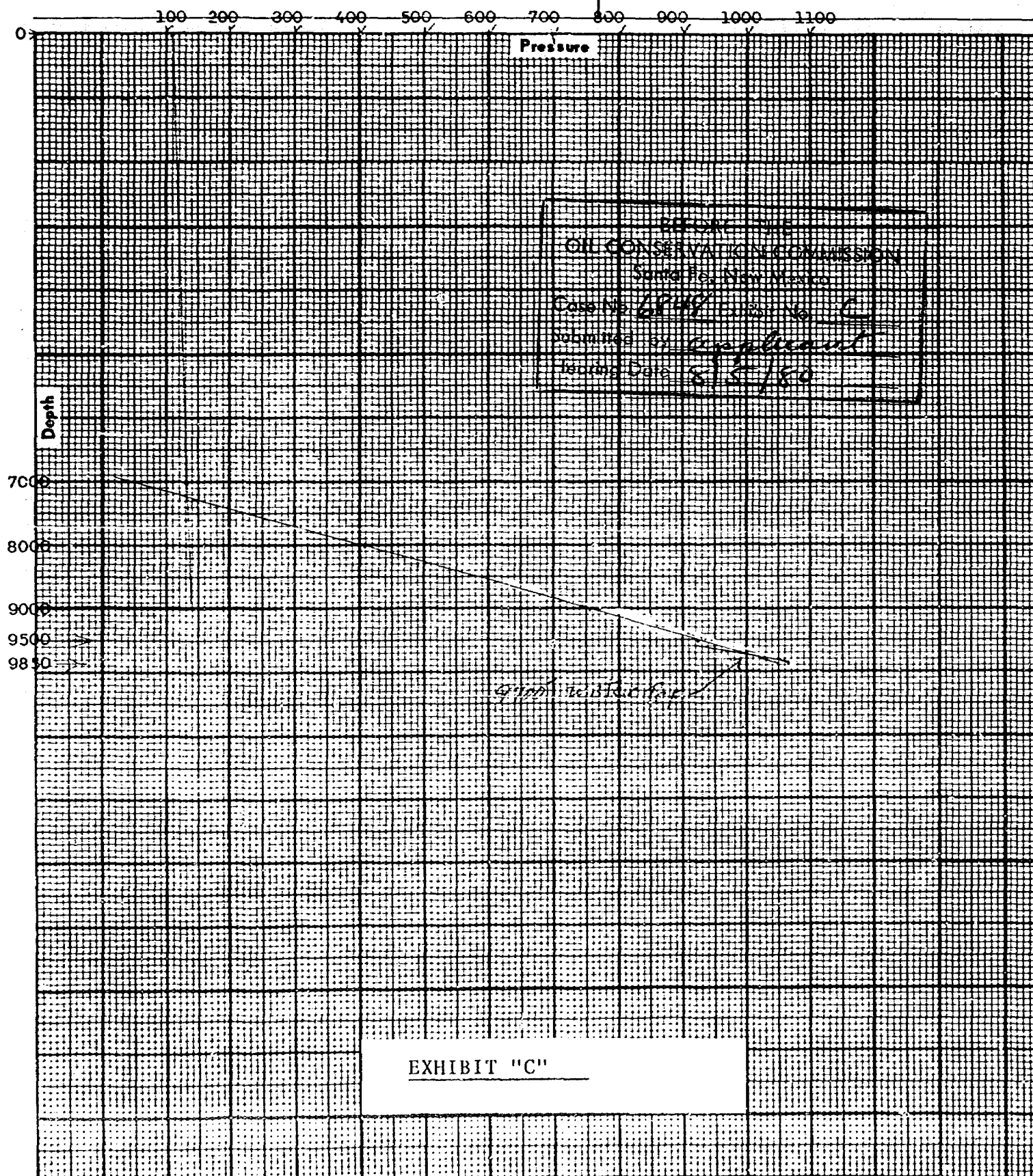
S E A L
fd/

Bennett Wire Line Service
305 McArthur Ave. Ph. (505) 746-3281
Artesia, New Mexico - 88210

BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR PETROLEUM DEVELOPMENT CORPORATION
LEASE McKay West Federal
WELL NO. 1
FIELD _____
DATE 7/14/75 TIME 2:00 PM.
STATUS Shut-in TEST DEPTH 9850 Ft.
TIME S.I. 7AM-7/13/75 LAST TEST DATE _____
CAS. PRES. _____ BHP LAST TEST _____
TUB. PRES. 109 Lbs. BHP CHANGE _____
ELEV. _____ FLUID TOP 7225.65
DATUM _____ WATER TOP 9766
TEMP _____ RUN BY Bennett
CLOCK NO. _____ GAUGE NO. _____
ELEMENT NO. 494

DEPTH	PRESSURE	GRADIENT Lbs./100 Ft
0 Ft.	109 Lbs.	
7000 "	130 "	00.3
8000 "	407 "	27.7
9000 "	755 "	34.8
9500 "	923 "	33.6
9850 "	1064 "	40.3



SUBSURFACE PRESSURE MEASUREMENTS

Jfr Johnson

COMPANY PLSCO WELL NAME MC KAY WEST FEDERAL / 1
DATE OF TEST 3-5-80 to 3-5-80 LOCATION _____ AGE 1 OF 2

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RRPG3-43798, 0-7,000Lb. Range

TIME WELL SHUT IN _____ unknown

TIME CLOCK STARTED 0915

DEAD WEIGHT ELEMENT ON SURFACE 891 LBS.

SHUT IN 4:30 PM -4/24/80

TIME ELEMENT REACHED BOTTOM 1030

DEAD WEIGHT ELEMENT ON BOTTOM 892 LBS.

ELEMENT SET AT 2,530 FEET

FORMATION Dune Spring Sand

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P & PC psig	CORRECTED PRESSURE psig	PRESSURE AT MID-POINT OF PERFORATIONS psig
3-5-80	0	1030		3.067			
	1	1130		3.067	Well Opened		
Data Point	12	1145		2.773	Flowed 1/2 Hr. Flow Rate Changed		
	2	1230		2.627			
	3	1330		2.421			
Data Point	3 1/2	1400		2.357	2 1/2 Hrs. Flow Rate Changed		
	4	1430		2.389			
	5	1530		2.460			
	6	1630		2.481			
	7	1730		2.492			
	8	1830		2.495			
	9	1930		2.499			
	10	2030		2.510			
	11	2130		2.510			
	12	2230		2.510			
	13	2330		2.510			
3-6-80	14	2430		2.506			
	15	0130		2.506			
	16	0230		2.496			
	17	0330		2.489			
	18	0430		2.485			
	19	0530		2.478			
	20	0630		2.474			
	21	0730		2.469			
	22	0830		2.467			
Data Point	22 Hrs 10 Min	0840		2.467	10 Hrs. 40 Min.		
	23	0930		2.141			
Data Point	24	1030		1.922	50 Min.		
Data Point	25	1130		1.649	Well Shut In for 2 Hrs.		
	26	1230		1.745			
	27	1330		1.860	Well flowed of 1/2 Hr.		
Data Point	27 1/2	1400		1.612	START BUILD UP		
	28	1430		1.860			
	29	1530		2.141			
	30	1630		2.290			
	31	1730		2.414			
	32	1830		2.492			
	33	1930		2.554			
	34	2030		2.606			
	35	2130		2.641			

EXHIBIT "D"

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

Case No. 6848 Exhibit No. 8

Submitted by applicant

Hearing Date 8/5/80

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY DECO WELL NAME W. HAY WEST FEDERAL
DATE OF TEST 3-5-80 TO 3-6-80 LOCATION _____ PAGE 1 OF 1

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P & PC psig	CORRECTED PRESSURE psig	PRESSURE AT MID-POINT OF PERFORATIONS psig
3-6-80	36	2230		2,687			
	37	2330		2,700			
3-7-80	38	2430		2,730			
	39	0130		2,751			
	40	0230		2,765			
	41	0330		2,780			
	42	0430		2,794			
	43	0530		2,806			
	44	0630		2,819			
	45	0730		2,823			
	46	0830		2,829			
	47	0930		2,836			
	48	1030		2,844			
	49	1130		2,853			
	50	1230		2,858			
	51	1330		2,865			
	52	1430		2,869			
	53	1530		2,876			
	54	1630		2,883			
	55	1730		2,890			
	56	1830		2,897			
	57	1930		2,904			
	58	2030		2,909			
	59	2130		2,913			
	60	2230		2,913			
	61	2330		2,922			
3-8-80	62	2430		2,925			
	63	0130		2,929			
	64	0230		2,932			
	65	0330		2,936			
	66	0430		2,938			
	67	0530		2,939			
	68	0630		2,941			
	69	0730		2,944			
	70	0830		2,947			
	71	0930		2,950			
	72	1030		2,953			
	73	1130		2,954			
	74	1230		2,957			
	75	1330		2,961			
	76	1430		2,963			
	77	1530		2,966			
	77 3/4	1615		2,968			
DEAD WEIGHT AFTER 77 3/4 Hours				955	Surface		

EXHIBIT "D"

CHARLES SANDERS

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY PEDCO WELL NAME McKAY WEST FEDERAL #1
DATE OF TEST 5-26-80 to 5-31-80 LOCATION BONE SPRINGS SAND PAGE 1 OF 2

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPG3# 9891N- 0-3.750 LB. RANGE
TIME WELL SHUT IN 5-21-80 1700 HOURS
TIME CLOCK STARTED 1445
DEAD WEIGHT ELEMENT ON SURFACE 873 LBS.
TIME ELEMENT REACHED BOTTOM 1530
DEAD WEIGHT ELEMENT ON BOTTOM 873 LBS.
ELEMENT SET AT 8,530 FEET

RECEIVED JUN 4 1980

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P.F.C. psig	CORRECTED PRESSURE psig	PRESSURE AT MID-POINT OF PERFORATIONS P.S.T.A.
5-26-80	0	1530		2,225	13		2,238
	1/2	1545		2,229	13		2,242
	1	1600		2,230	13		2,243
	3/4	1615		2,231	13		2,244
	1	1630		2,232	13		2,245
	1 1/2	1700		2,233	13		2,246
	2	1730		2,235	13		2,248
	2 1/2	1800		2,236	13		2,249
	3	1830		2,236	13		2,249
	3 1/2	1900		2,237	13		2,250
	4	1930		2,238	13		2,251
	4 1/2	2000		2,240	13		2,253
	5	2030		2,243	13		2,256
	6	2130		2,246	13		2,259
	7	2230		2,247	13		2,260
	8	2330		2,249	13		2,262
5-27-80	9	2430		2,253	13		2,266
	10	0130		2,257	13		2,270
	11	0230		2,260	13		2,273
	12	0330		2,262	13		2,275
	13	0430		2,266	13		2,279
	14	0530		2,268	13		2,281
	15	0630		2,272	13		2,285
	16	0730		2,274	13		2,287
	17	0830		2,276	13		2,289
	18	0930		2,278	13		2,291
	19	1030		2,281	13		2,294
	20	1130		2,284	13		2,297
	21	1230		2,286	13		2,299
	22	1330		2,288	13		2,301
	23	1430		2,289	13		2,302
	24	1530		2,291	13		2,304
	25	1630		2,294	13		2,307
	30	2130		2,306	13		2,319
5-28-80	35	0230		2,316	13		2,329
	40	0730		2,328	13		2,341
	45	1230		2,335	13		2,348
	50	1730		2,347	13		2,360
	55	2230		2,355	13		2,368
5-29-80	60	0330		2,364	13		2,377

EXHIBIT "E"

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 6848 Exhibit No. E
Submitted by applicant
Hearing Date 8/5/80

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

[illegible]

NEW MEXICO OIL CONSERVATION COMMISSION HEARING-CASE 6848

10 000

OIL PRODUCTION - Bbl./MONTH

1000

100

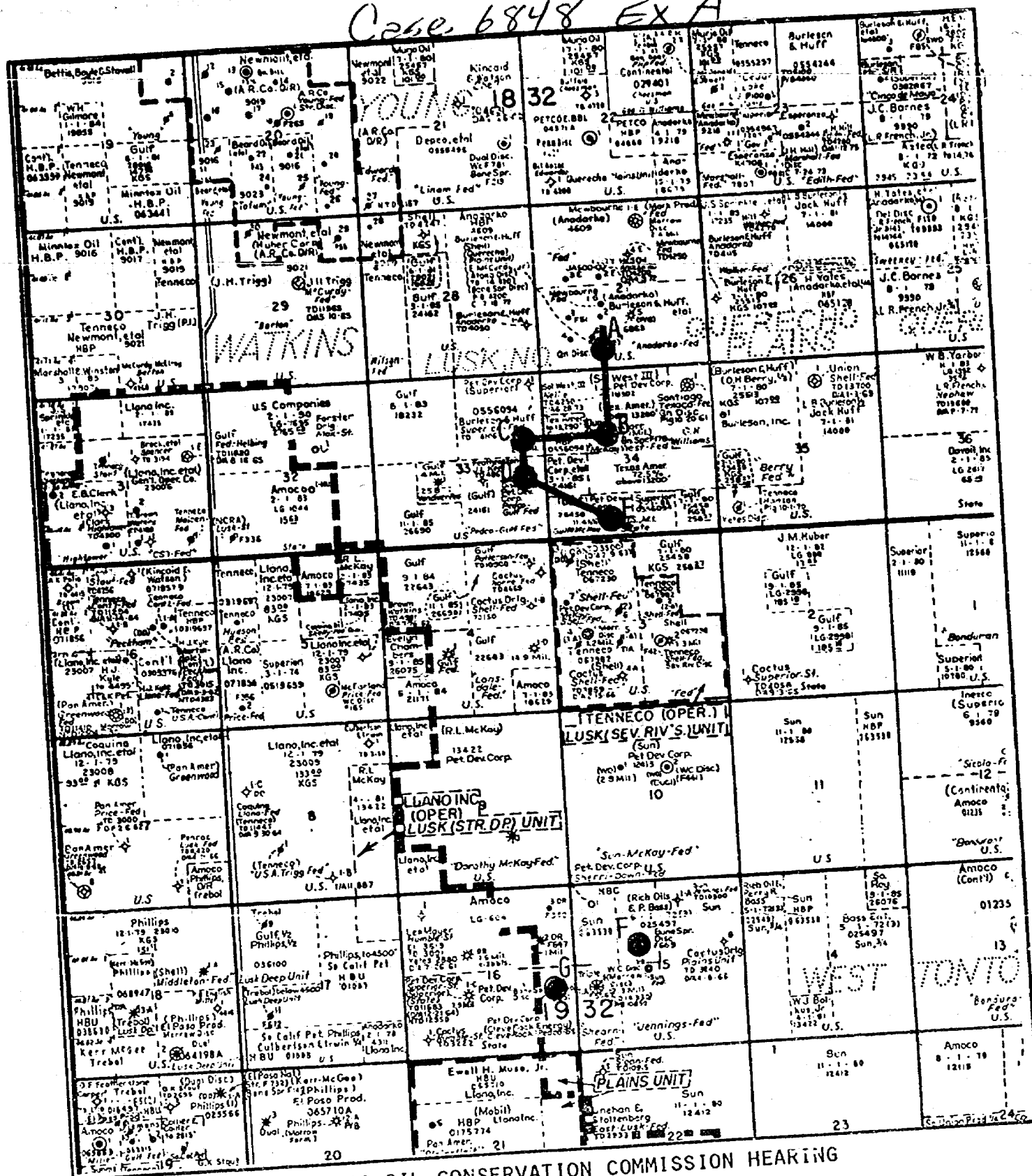
10

POOL: QUERECHO PLAINS-BONE SPRING	
OPERATOR: PETROLEUM DEVELOPMENT CORP.	
LEASE: MC KAY WEST FED. UNIT	
LOCATION: OR RRC #	DIST: <input checked="" type="checkbox"/> OIL <input type="checkbox"/> GAS
COUNTY: LEA	STATE: N.M.
NO. WELLS: 1	WELL NOS: 1
DATE PROD BEGAN: 2/80	ACRES:
MIDLAND SIPES, WILLIAMSON & ASSOCIATES, INC. HOUSTON	

BEFORE THE OIL CONSERVATION COMMISSION Santa Fe, New Mexico	
Case No. 6848	Exhibit No. 1
Submitted by	applicant
Hearing Date	8/15/80

EXHIBIT

Case 6848 Ex A



NEW MEXICO OIL CONSERVATION COMMISSION HEARING
CASE 6848
FOR PETROLEUM DEVELOPMENT CORPORATION

POOL QUERECHO PLAINS-BONE SPRING		County LEA		State N.M.	
Engineer R.C.W.		Drwn. By H's		Date 8-5-80	
SIPES, WILLIAMSON & ASSOCIATES, INC.		Midland - Houston, Texas		File PETROLEUM DEV. CORP.	
Petroleum Consultants		Ref. No. 0.3092		EXHIBIT	

Case 6848

Ex C

Bennett Wire Line Service
305 McArthur Ave. Ph. (505) 746-3281
Artesia, New Mexico - 88210

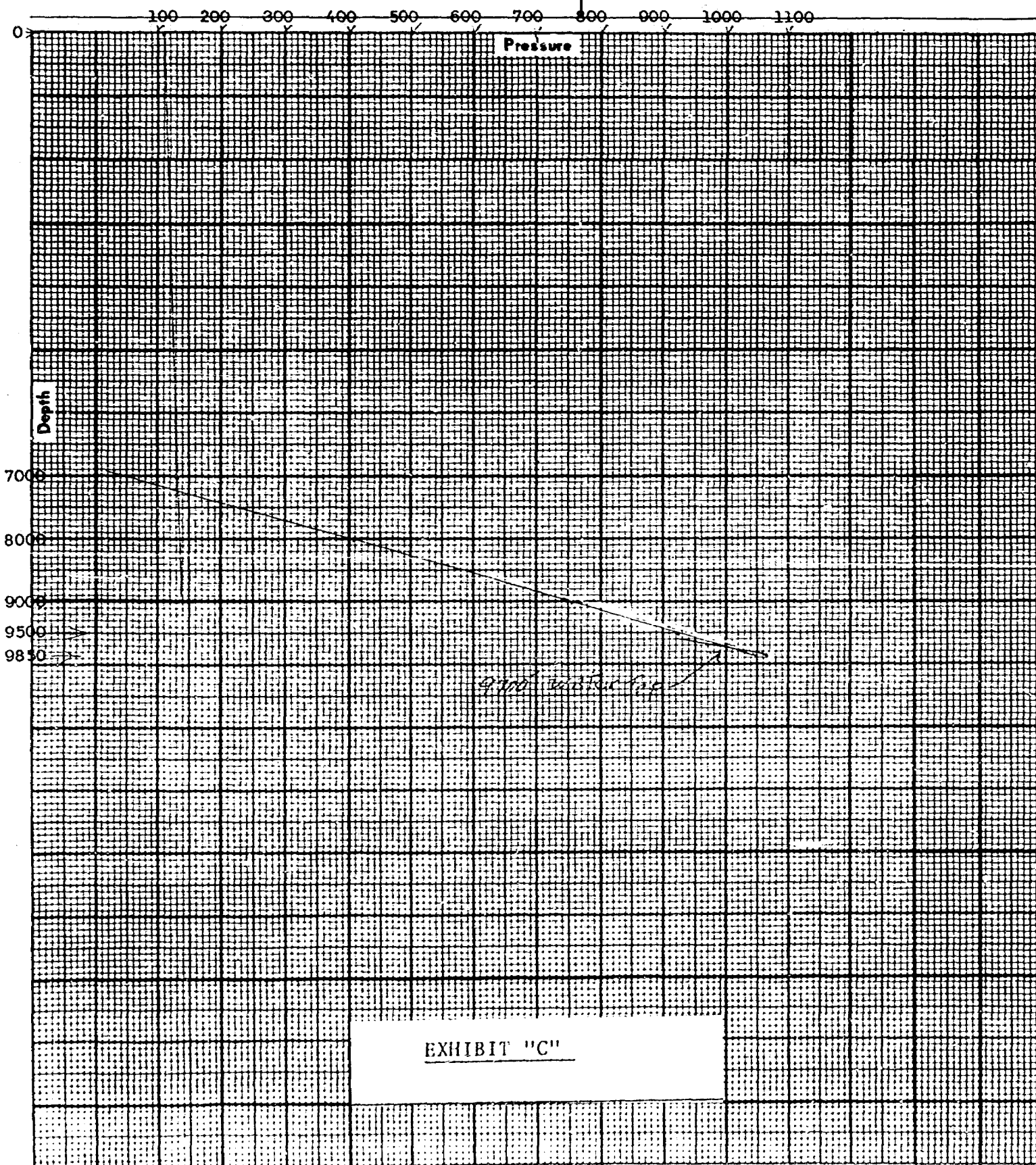
BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR PETROLEUM DEVELOPMENT CORPORATION
LEASE McKay West Federal
WELL NO. 1
FIELD _____
DATE 7/14/75 TIME 2:00 PM.
STATUS Shut-in TEST DEPTH 9850 Ft.
TIME S.I. 7AM-7/13/75 LAST TEST DATE _____
CAS. PRES. _____ BHP LAST TEST _____
TUB. PRES. 109 Lbs. BHP CHANGE _____
ELEV. _____ FLUID TOP 7225 ft
DATUM _____ WATER TOP 4766 "
TEMP _____ RUN BY Bennett
CLOCK NO. _____ GAUGE NO. _____
ELEMENT NO. 494

DEPTH	PRESSURE	GRADIENT Lbs./100 Ft.
0 Ft.	109 Lbs.	
7000 "	130 "	00.3
8000 "	407 "	27.7
9000 "	755 "	34.8
9500 "	923 "	33.6
9850 "	1064 "	40.3

BHP

Lower Bone Springs



Case 6848

BENNETT WIRE LINE SERVICE
Artesia, New Mexico 88210

EX D

Jim Johnson

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY ELCO WELL NAME MC KAY WEST FEDERAL
DATE OF TEST 3-5-80 to 3-6-80 LOCATION PAGE 1 OF 2

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPC3-43792, 0-7,000lb. RangeTIME WELL SHUT IN unknownTIME CLOCK STARTED 0915DEAD WEIGHT ELEMENT ON SURFACE 891 LBS.

SHUT IN 4:30 PM -4/24/80

TIME ELEMENT REACHED BOTTOM 1030DEAD WEIGHT ELEMENT ON BOTTOM 592 LBS.ELEMENT SET AT 3,530 FEETFORMATION Bone Spring Sand

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P & PC psig	CORRECTED PRESSURE psig	PRESSURE AT MID-POINT OF PERFORATIONS psig
3-5-80	0	1030		3,067			
	1	1130		3,067	Well Opened		
Data Point	1½	1145		2,773	Flowed ½ Hr. Flow Rate Chg		
	2	1230		2,627			
	3	1330		2,421			
Data Point	3½	1400		2,357	2½ Hrs. Flow Rate Changed		
	4	1430		2,380			
	5	1530		2,400			
	6	1630		2,481			
	7	1730		2,492			
	8	1830		2,495			
	9	1930		2,499			
	10	2030		2,510			
	11	2130		2,510			
	12	2230		2,510			
	13	2330		2,510			
3-6-80	14	2430		2,506			
	15	0130		2,506			
	16	0230		2,496			
	17	0330		2,489			
	18	0430		2,485			
	19	0530		2,478			
	20	0630		2,474			
	21	0730		2,469			
	22	0830		2,467			
Data Point	22Hr 10M	0940		2,467	10 Hrs. 40 Min.		
	23	0930		2,141			
Data Point	24	1030		1,922	50 Min.		
Data Point	25	1130		1,649	Well Shut In for 2 Hrs.		
	26	1230		1,745			
	27	1330		1,860	Well flowed of ½ hr.		
Data Point	27½	1400		1,612	START BUILD UP		
	28	1430		1,560			
	29	1530		2,141			
	30	1630		2,290			
	31	1730		2,414			
	32	1830		2,499			
	33	1930		2,554			
	34	2030		2,606			
	35	2130		2,641			

EXHIBIT "D"

EX D+E

First BS interval

Pres. Diff. between upper
& lower of over 1000 ft

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY PERCO WELL NAME C. MAY WEST FUNDAL 1
DATE OF TEST 3-5-80 to 3-6-80 LOCATION _____ PAGE 2 OF 2

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P ± PC psig	CORRECTED PRESSURE psig	PRESSURE AT MID-POINT OF PERFORATIONS psig
3-6-80	36	2230		2,687			
	37	2330		2,709			
3-7-80	38	2430		2,730			
	39	0130		2,751			
	40	0230		2,765			
	41	0330		2,780			
	42	0430		2,794			
	43	0530		2,806			
	44	0630		2,819			
	45	0730		2,823			
	46	0830		2,829			
	47	0930		2,836			
	48	1030		2,844			
	49	1130		2,853			
	50	1230		2,858			
	51	1330		2,865			
	52	1430		2,869			
	53	1530		2,876			
	54	1630		2,883			
	55	1730		2,890			
	56	1830		2,897			
	57	1930		2,904			
	58	2030		2,909			
	59	2130		2,913			
	60	2230		2,913			
	61	2330		2,922			
3-8-80	62	2430		2,925			
	63	0130		2,929			
	64	0230		2,932			
	65	0330		2,936			
	66	0430		2,938			
	67	0530		2,939			
	68	0630		2,941			
	69	0730		2,944			
	70	0830		2,947			
	71	0930		2,950			
	72	1030		2,953			
	73	1130		2,954			
	74	1230		2,957			
	75	1330		2,961			
	76	1430		2,963			
	77	1530		2,966			
	77 3/4	1615		2,968			
DEAD WEIGHT AFTER 77 3/4 Hours				955	Surface		

Case 6848
CHARLES SANDERS EX E

BENNETT WIRE LINE SERVICE
Arliesia, New Mexico 88210

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY PEDCO WELL NAME McKAY WEST FEDERAL #1
DATE OF TEST 5-26-80 to 5-31-80 LOCATION BONE SPRINGS SAND PAGE 1 OF 2

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPG3# 9891N- 0-3.750 LB. RANGE
TIME WELL SHUT IN 5-21-80 1700 HOURS
TIME CLOCK STARTED 1445
DEAD WEIGHT ELEMENT ON SURFACE 873 LBS.
TIME ELEMENT REACHED BOTTOM 1530
DEAD WEIGHT ELEMENT ON BOTTOM 873 LBS.
ELEMENT SET AT 8.530 FEET

RECEIVED JUN 4 1980

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P R PC psig	CORRECTED PRESSURE psig	PRESSURE AT MID-POINT OF PERFORATIONS P S T A
5-26-80	0	1530		2,225	13		2,238
	1/4	1545		2,229	13		2,242
	1/2	1600		2,230	13		2,243
	3/4	1615		2,231	13		2,244
	1	1630		2,232	13		2,245
	1 1/2	1700		2,233	13		2,246
	2	1730		2,235	13		2,248
	2 1/2	1800		2,236	13		2,249
	3	1830		2,236	13		2,249
	3 1/2	1900		2,237	13		2,250
	4	1930		2,238	13		2,251
	4 1/2	2000		2,240	13		2,253
	5	2030		2,243	13		2,256
	6	2130		2,246	13		2,259
	7	2230		2,247	13		2,260
	8	2330		2,249	13		2,262
	9	2430		2,253	13		2,266
	10	0130		2,257	13		2,270
	11	0230		2,260	13		2,273
	12	0330		2,262	13		2,275
	13	0430		2,266	13		2,279
	14	0530		2,268	13		2,281
	15	0630		2,272	13		2,285
	16	0730		2,274	13		2,287
	17	0830		2,276	13		2,289
5-27-80	18	0930		2,278	13		2,291
	19	1030		2,281	13		2,294
	20	1130		2,284	13		2,297
	21	1230		2,286	13		2,299
	22	1330		2,288	13		2,301
	23	1430		2,289	13		2,302
	24	1530		2,291	13		2,304
	25	1630		2,294	13		2,307
	30	2130		2,306	13		2,319
	35	0230		2,316	13		2,329
5-28-80	40	0730		2,328	13		2,341
	45	1230		2,335	13		2,348
	50	1730		2,347	13		2,360
	55	2230		2,355	13		2,368
5-29-80	60	0330		2,364	13		2,377

EXHIBIT "E"

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY PEDCO WELL NAME MCKAY WEST FEDERAL #1
DATE OF TEST 5-26-80 to 5-31-80 LOCATION BONE SPRINGS SAND PAGE 2 OF 2

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

[illegible]

NEW MEXICO OIL CONSERVATION COMMISSION HEARING-CASE 6848

Case 6848
Ex F

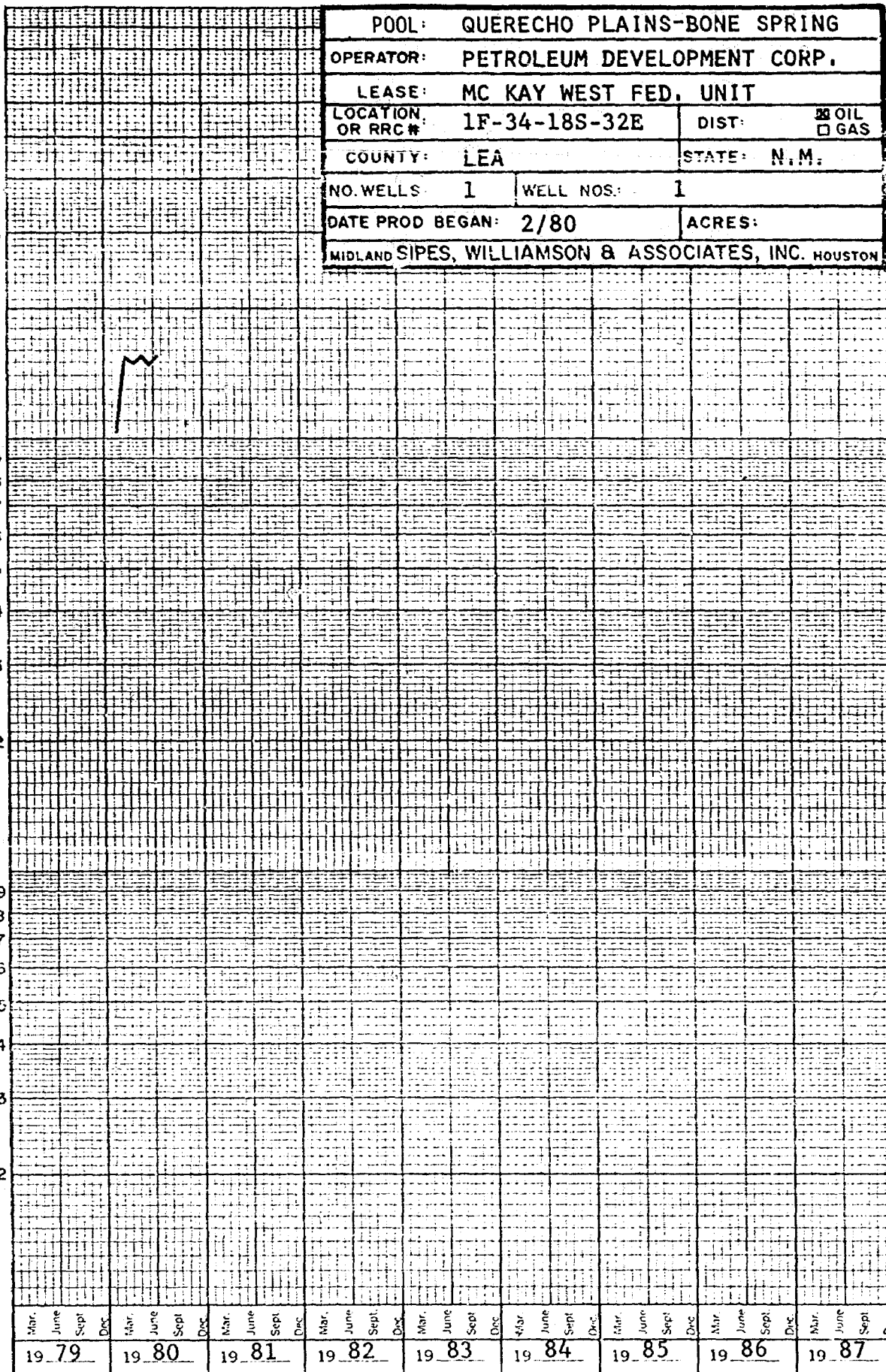
10 000

OIL PRODUCTION - Bbl. / MONTH

1000

100

10



EXHIBIT

F

NEW MEXICO OIL CONSERVATION COMMISSION HEARING CASE 6848 FOR PETROLEUM DEVELOPMENT CORPORATION			
P.O.O.L.	QUERECHO PLAINS-BONE SPRING	County LEA	State N.M.
Engineer R.C.W.	Drwn. By H's	Date 8-5-80	File PETROLEUM DEV. CORP.
<u>SIPES, WILLIAMSON & ASSOCIATES, INC.</u>		Ref. No.	EXHIBIT
Petroleum Consultant's Midland - Houston, Texas		0.3092	

KEGEL, McCABE AND MONTEZ
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1231 PASEO DE PERALTA
POST OFFICE BOX 2292
SANTA FE, NEW MEXICO 87501
PHONE (505) 982-4461

WALTER R. KEGEL
BRIAN T. McCABE
RALPH M. MONTEZ

May 20, 1980



ASSOCIATES IN DENVER, COLORADO
TALLMADGE, TALLMADGE,
WALLACE & HAHN
727 SEVENTEENTH ST.

Oil Conservation Commission
State Land Office Building
Santa Fe, New Mexico 87503

RE: Case No. 6848, Order No. R-6332
Application of Petroleum Development
Corporation for Pool Contraction and
Creation, Lea County, New Mexico

Gentlemen:

Our firm represents Petroleum Development Corporation
("PEDCO") in the above-styled case. On April 30, 1980, the
Oil Conservation Division, pursuant to a hearing held by
Examiner Stamets, entered its Order No. R-6332.

Pursuant to Rule 1220 of the Commission, we hereby apply
on behalf of PEDCO to have the above-styled case heard de novo
before the Commission. This letter is the written application
for such hearing as contemplated by said Rule 1220.

We would appreciate the Commission advising us of the date
of such hearing as soon as practically possible.

Sincerely,

KEGEL, McCABE AND MONTEZ
A Professional Corporation

Brian T. McCabe

BTMcC:rs

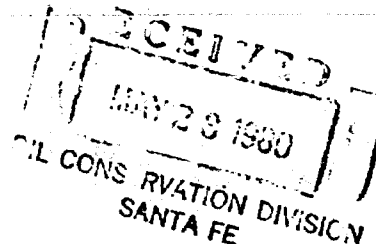
cc: James C. Johnson

August 5

About 2 hrs max.

*July or
August will
be fine
per*

KEGEL, McCABE AND MONTEZ
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1231 PASEO DE PERALTA
POST OFFICE BOX 2292
SANTA FE, NEW MEXICO 87501
PHONE (505) 962-4461



WALTER R. KEGEL
BRIAN T. McCABE
RALPH M. MONTEZ

May 20, 1980

ASSOCIATES IN DENVER, COLORADO
TALLMADGE, TALLMADGE,
WALLACE & HAHN
717 SEVENTEENTH ST.

Oil Conservation Commission
State Land Office Building
Santa Fe, New Mexico 87503

RE: Case No. 6848, Order No. R-6332
Application of Petroleum Development
Corporation for Pool Contraction and
Creation, Lea County, New Mexico

*July or
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We would appreciate the Commission advising us of the date of such hearing as soon as practically possible.

Sincerely,

KEGEL, McCABE AND MONTEZ
A Professional Corporation

Brian T. McCabe
Brian T. McCabe

Date
BTMcC:rs

cc: James C. Johnson

August 5

About 2 hrs max.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION ~~DIVISION~~ FOR THE PURPOSE OF
CONSIDERING:

6848 DE NOVO
CASE NO. 6756
Order No. R-6255-6332-A
NOMENCLATURE

2/8
RLH
PETROLEUM DEVELOPMENT CORPORATION
APPLICATION OF AMOCO PRODUCTION
COMPANY FOR POOL CONTRACTION AND
CREATION, LEA COUNTY, NEW MEXICO.

ORDER OF THE ~~DIVISION~~ COMMISSION
BY THE ~~DIVISION~~ COMMISSION:

August 5
1980 This cause came on for hearing at 9 a.m. on ~~December 12,~~
1979, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter,
New Mexico, herein after referred to as the ~~Commission~~ the Oil Conservation Commission of
NOW, on this ~~26th~~ day of ~~January~~, 1980, the Division Commission,
a quorum being present, ~~Director~~, having considered the testimony, the record, and the
exhibits recommendations of the Examiner, and being fully advised in the
premises,

FINDS:

(1) That Case No. 6848 originally came on for
hearing before Examiner Richard L. Stancels
on March 26, 1980, whereupon the Division
entered Order No. R-6332 on April 30, 1980,
removing the application of the applicant

(2) That the applicant filed timely application
for hearing de novo of Case No. 6848 and
~~thereupon~~ this case was set for hearing
before the Commission.

(3) That due public notice having been given as required
by law, the ~~Commission~~ Division has jurisdiction of this cause and the
subject matter thereof.

Plains
(4) That the applicant in this case, Amoco Production Company,
requested the contraction of the vertical limits of the Air Strip
Bone Spring Pool in Section 25, Township 18 South, Range 32 East,
NMPM, Lea County, New Mexico, to comprise the ~~Upper~~ Bone Spring
formation only, from 8,300 feet to 9,200 feet, and the creation of
the Air Strip ~~Upper~~ Bone Spring Pool to comprise the ~~Upper~~ Bone
Spring formation only, from 9,100 feet to 9,200 feet, and the crea-
tion of the Air Strip-Lower Bone Spring Pool, to comprise the
Lower Bone Spring formation only, from 10,100 feet to 10,400
feet, all depths being from the log of applicant's State PU Well
No. 1, located in Unit 1 of the aforesaid Section 25, McKay West
Federal

(5) That pressure and production
in formation indicated there are
at least two distinct separate
~~separate~~ reservoirs within the
Bone Spring Formation.

(4) That at the hearing, the applicant amended its application and now requests that the Air Strip Bone Spring Pool be contracted to include the upper and middle sections of the Bone Spring formation only, with vertical limits from 9180 feet to 9460 feet and that only the new Lower Bone Spring pool described in Finding No. (2) above be created.

Querecho Plains (5) That it appears that the upper section of the Bone Spring formation, taken by itself, is non-commercial and should be combined with the middle section of the Bone Spring formation be designated a pool, and that said pool should be known as the Air Strip Upper Bone Spring Pool with vertical limits from 9180 feet to 9390 feet on the log of the Amoco State Well No. 1 located in Unit N of Section 25, Township 18 South, Range 34 East, NMPM, Lea County, New Mexico, and with horizontal limits comprising the following described lands:

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM
Section 25: SW/4
" 34: NW/4

(6) That to accomplish the above-described designation of an upper Bone Spring pool, it would be best to contract the vertical limits of the present Air Strip Bone Spring Pool to the limits described above, extend the horizontal limits of said pool to the horizontal limits described above, and redesignate said pool the Air Strip Upper Bone Spring Pool.

Querecho Plains (7) That there is need for the creation of a lower Bone Spring pool, said pool to be designated the Air Strip Lower Bone Spring Pool and have vertical limits from 9390 feet to 9460 feet on the log of the above-described Amoco State Well No. 1 and horizontal limits comprising the following described lands:

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM
Section 25: SW/4
" 34: NW/4

(8) That the discovery well for the aforementioned Air Strip Lower Bone Spring Pool, the Amoco State Well No. 2, located in Unit N of Section 25, Township 18 South, Range 34 East, NMPM, should have reserved to it 51,310 barrels of oil discovery allowable, with actual assignment of the discovery allowable deferred until said well is recompleted in the afore-said Air Strip Lower Bone Spring Pool.

(9) That an order embodying the above findings will not impair correlative rights nor cause waste and should be approved.

-3-

Case No. 6756

Order No. R-6255

IT IS THEREFORE ORDERED:

Over the Plains
(1) That the ~~Air Strip~~ Bone Spring Pool in Lea County, New Mexico, is hereby redesignated the ~~Air Strip~~ *Over the Plains* Upper Bone Spring Pool, and the vertical limits of said ~~Air Strip~~ *Over the Plains* Upper Bone Spring Pool are established as being that interval in the Bone Spring formation from ~~4100~~ *4200* feet to ~~4600~~ *4630* feet on the log of the ~~Amoco State~~ *Amoco State* Well No. 1 located in Unit ~~25~~ *32* of Section ~~25~~ *32*, Township 18 South, Range ~~34~~ *32* East, NMPM, Lea County, New Mexico, and the horizontal limits of said pool are established as comprising the following described area:

McKay West Federal
TOWNSHIP 18 SOUTH, RANGE ~~34~~ *32* EAST, NMPM
Section ~~25-27 SE 1/4 and B/2~~ *34 NW 1/4* SW/4

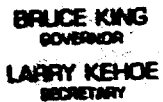
(2) That a new pool for Lower Bone Spring production, classified as an oil pool and designated the ~~Air Strip~~ *Over the Plains* Lower Bone Spring Pool is hereby created, with vertical limits established as being that interval in the Bone Spring formation from ~~10,100~~ *10,100* ~~8680~~ feet to ~~10,400~~ *10,400* feet on the log of the aforementioned ~~Amoco State~~ *Amoco State* Well No. 2, and the horizontal limits of said pool are established as comprising the following described lands in Lea County, New Mexico:

McKay West Federal
TOWNSHIP 18 SOUTH, RANGE ~~34~~ *32* EAST, NMPM
Section ~~25-27~~ *34 NW 1/4* SW/4

(3) That the discovery well for the aforesaid Air Strip-Lower Bone Spring Pool, the Amoco Production Company State FU Well No. 2, located in Unit N of Section 25, Township 18 South, Range 34 East, NMPM, shall have reserved to it 51,310 barrels of oil discovery allowable, with actual assignment of such discovery allowable to the well for production deferred until such time as the well has been recompleted in the Lower Bone Spring formation. Assignment and production of the discovery allowable shall in all other ways comply with the provisions of Rule 509 of the Division's Rules and Regulations.

3(4) That this order shall become effective February 21, 1980.

4(5) That jurisdiction of this cause is hereby retained for the entry of such further orders as the Division may deem necessary.



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

May 2, 1980

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

Mr. Brian McCabe
Kegel, McCabe & Montez
Attorneys at Law
P. O. Box 2292
Santa Fe, New Mexico 87501

Re: CASE NO. 6848
ORDER NO. R-6332

Applicant:

Petroleum Development Corporation

Dear Sir:

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

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD	<u>X</u>
Artesia OCD	<u>X</u>
Aztec OCD	

Other _____

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6848
Order No. R-6332
NOMENCLATURE

APPLICATION OF PETROLEUM DEVELOPMENT
CORPORATION FOR POOL CONTRACTION AND
CREATION, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on March 26, 1980,
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 30th day of April, 1980, the Division
Director, having considered the testimony, the record, and the
recommendations of the Examiner, and being fully advised in the
premises,

FINDS:

(1) That due public notice having been given as required
by law, the Division has jurisdiction of this cause and the
subject matter thereof.

(2) That the applicant, Petroleum Development Corporation,
seeks the contraction of the Querecho Plains-Bone Spring Pool
to comprise the Upper Bone Spring formation only, from 8390
feet to 8680 feet on the log of its McKay West Federal Well No.
1 located in Unit F of Section 34, Township 18 South, Range 32
East, and the creation of the Querecho Plains-Lower Bone Spring
Pool to comprise said formation from 8680 feet to the base of
the Bone Spring underlying the NW/4 of said Section 34.

(3) That the application is based upon the temporary
completion of applicant's said McKay West Federal Well No. 1
in isolated Second Bone Spring and Third Bone Spring lime zones
during July, 1975.

(4) That said well produced a total of only 1296 barrels
of oil from these isolated Bone Springs zones before depleting

-2-

Case No. 6848
Order No. R-6332

them and was subsequently recompleted in a First Bone Spring sand zone during February, 1980.

(5) That the McKay West Federal Well No. 1 is completed in the same First Bone Spring sand zone as the discovery well for said Querecho Plains-Bone Springs Pool and there are no other producing Bone Spring horizons within or adjacent to the horizontal limits of said pool.

(6) That at this time there are no engineering or geologic reasons to grant the applicant's request in this case.

(7) That the arbitrary designation of upper and lower Bone Spring stratigraphic units for purposes of production could result in separation of zones which should be produced as a unit.

(8) That pending further development, the application for designation of a Querecho Plains-Upper Bone Springs Pool and Querecho Plains-Lower Bone Springs Pool should be denied.

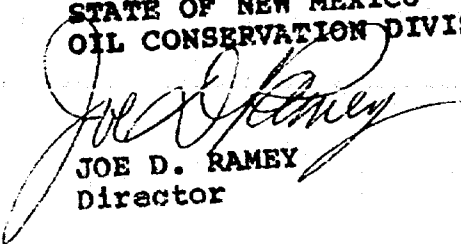
IT IS THEREFORE ORDERED:

(1) That the application of Petroleum Development Corporation for contraction of the vertical limits of the Querecho Plains-Bone Springs Pool to include only the Upper Bone Springs formation and creation of a Querecho Plains-Lower Bone Spring Pool is hereby denied.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY
Director


S E A L

fd/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
26 March 1980

EXAMINER HEARING

IN THE MATTER OF:

Application of Petroleum Development)
Corporation for pool contraction and)
creation, Lea County, New Mexico.)

CASE
6848

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

Brian T. McCabe, Esq.
KEGEL, McCABE, & MONTEZ
P. O. Box 2292
Santa Fe, New Mexico 87501

SALLY W. BOYD, C.S.R.

Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

I N D E X

CHARLES SANDERS

Direct Examination by Mr. McCabe	4
Cross Examination by Mr. Stamets	12
Cross Examination by Mr. Padilla	14
Redirect Examination by Mr. McCabe	15

E X H I B I T S

Applicant Exhibit A, Plat	5
Applicant Exhibit B, Cross Section	5
Applicant Exhibit C, Table	8

SALLY W. BOYD, C.S.R.
 Rt. 1 Box 193-B
 Santa Fe, New Mexico 87501
 Phone (505) 455-7409

1 MR. STAMETS: Call next Case 6848.

2 MR. PADILLA: Application of Petroleum
3 Development Corporation for pool contraction and creation,
4 Lea County, New Mexico.

5 MR. McCABE: My name is Brian McCabe,
6 Santa Fe, New Mexico. I'm appearing for Petroleum Production
7 Corporation.

8 Could the record please show that Mr.
9 Sanders has been accepted as a qualified witness and is
10 under oath? Mr. Sanders will be my only witness, or we can
11 re-swear him.

12 MR. STAMETS: For the purposes of the
13 previous case I don't believe there was any necessity in
14 determining for my own benefit Mr. Sanders' qualifications,
15 but since he's not appeared before me before, and since this
16 next case involves something that's not direct and straight-
17 forward, perhaps Mr. Sanders would requalify himself for me.

18 MR. McCABE: Certainly.

19 MR. SANDERS: Certainly, sir.

20 MR. McCABE: Mr. Sanders, can you describe
21 for the Examiner your educational background?

22 MR. McCABE: Yes, I graduated from Texas
23 Tech University in 1950 with a BS in petroleum engineering,
24 geophysics option.

25 I worked for a number of oil companies.

SALLY W. BOYD, C.S.R.

Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

SALLY W. BOYD, C.S.R.

Rt. 1 Box 193-B

Santa Fe, New Mexico 87501

Phone (505) 455-7409

1 I've appeared before the Commission a number of times over
2 the past ten years, but unfortunately, I've always got Mr.
3 Nutter.

4 MR. STAMETS: All right, I think that's
5 clear.

6 MR. SANDERS: I've not had the pleasure
7 of meeting you.

8 MR. STAMETS: I understand how Mr. Sanders
9 is qualified and I accept his qualifications.

10 MR. McCABE: Thank you.

11 CHARLES SANDERS

12 being called as a witness and having been previously sworn
13 upon his oath, testified as follows, to-wit:
14

15 DIRECT EXAMINATION

16 BY MR. McCABE:

17 Q Will you describe, Mr. Sanders, what
18 Petroleum Development Corporation is asking for in Case 6848?

19 A Yes, sir. In this case we seek the con-
20 traction of the Querecho Plains Bone Spring Pool to comprise
21 the Upper Bone Spring formation only, and by this we mean
22 the first Bone Spring sand.
23

24 From the depth of 8390 feet to 8680 feet
25 on the log of our McKay West Federal No. 1, located in Unit

1 F of Section 34, 18 South, 32 East, and the creation of the
2 Querecho Plains Lower Bone Spring Pool to comprise said form-
3 ation from 8680 feet to the base of the Bone Spring under-
4 lying the northwest quarter of Section 34.

5 Q Would you please refer to Exhibit A, and
6 if I might, with the Examiner's permission, also refer to
7 Exhibit B, and suggest that Mr. Sanders spread Exhibit B
8 out, perhaps, on the wall, if he could.

9 MR. STAMETS: That would be fine.

10 Q You can start with Exhibit A.

11 A Let's start with Exhibit A first. Exhibit
12 A is a map of the general area involved, showing the East
13 Lusk area, the North Lusk area, and the Querecho Plains
14 Pool area.

15
16 The red square in the southwest quarter
17 of Section 27 is the original Querecho Plains Bone Spring
18 Pool, which was formed in 1959 after Shell completed the
19 Querecho Plains No. 2 at Unit N in that section.

20 The blue square in the northwest quarter
21 of Section 34 of 19, 32 -- of 18, 32, excuse me, is the
22 expansion of that field after the McKay West Federal No. 1
23 was recompleted in the Bone Spring Lime part of the Bone
24 Spring reservoir in 1975.

25 The dashed line showing A, B, C, D, E,

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1 is the surface trace of the cross section, which we'll be
2 looking at, which is Exhibit B.

3 The red arrows which are shown to the
4 south of the two squares, are wells which do produce or have
5 produced from the Bone Spring formation in the general area.

6 Now, if I may, I'll put the --

7 Q. Exhibit B.

8 A. Exhibit B is the cross section which we
9 referred to on Exhibit A.

10 Well No. A is the original Querecho
11 Plains No. 2, which was originally drilled to the Morrow.
12 The Morrow was dry. And subsequently plugged back and re-
13 completed in the first Bone Spring sand at a depth of 8538
14 to 8360.

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16 to Exhibit A, you are referring to Well A on Exhibit A,
17 are you not?

18 A. Yes, No. A on the cross section is the
19 same as the A on the map.

20 To orient us further, this cross section
21 comprises the entire Bone Spring section from the top of
22 the Bone Spring to the top of the Wolfcamp over the trace
23 shown on the map, some 3300 feet in vertical limit.

24 The original completions were put in the
25 Querecho Plains Bone Spring Field, because it was designated

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1 Bone Spring, and naturally comprised the entire section.

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3 rels of oil flowing, plus 12 barrels of water, 4-12-59.

4 In 1975 we drilled a well known as the
5 McKay West Federal No. 1, shown as B on the map and B on
6 the cross section, directly south of the Shell Well.

7 This well was also drilled to the Bone
8 Spring -- I mean to the Morrow, was dry in the Morrow, was
9 plugged back to the Bone Spring. Our first completion at-
10 tempt in the Bone Spring was the intervals shown with the
11 dark rectangles in the second Bone Spring Lime and the
12 third Bone Spring Lime. These were all perforated, acidized,
13 swabbed, and made a flowing well which potentialed 187 --
14 excuse me, 178 barrels of oil plus 41 barrels of water on
15 7-14-75.

16 This was a reservoir which probably
17 should be designated open by mistake because two days later
18 the well had died on us. We ran a bottom hole pressure,
19 which showed on July the 14th, 1975, 1064 psi bottom hole
20 pressure on an 8-hour buildup.

21 The well flowed and pumped a total of
22 only 1296 barrels of oil and was subsequently plugged and
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24 The first Bone Springs sand section,
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3 a tubing pressure of 100 psi. The well now makes about 10
4 percent water, so I'm certain that most of this water was
5 frac water.

6 This is a sand which is continuous and
7 does show up on -- on all five of the logs represented by
8 the cross section.

9 The Lower Bone Spring is productive in
10 this area usually in the lime sections only, and in the wells
11 that are covered by this cross section only, other than this
12 McKay West Federal No. 1, only in the Gulf McKay Federal No.
13 1, which is E on the cross section and the map, only in it
14 is there some indicated production in the third Bone Spring
15 Lime, which was drill stem tested, flowed gas and oil, but
16 had severe pressure drawdown even on drill stem test, and
17 also drill stem test indicated that it was not only limited
18 reservoir but had a nearby barrier. So this zone was never
19 completed.

20 The three wells, B, C, and D, and -- the
21 four wells, B, C, D, and E, were all drilled to the Morrow.
22 C, D, and E all produced from zones now which are deeper
23 than the Bone Springs zones that we're talking about.

24 Q Mr. Sanders, you've also prepared Exhibit
25 C. Would you look at that and explain it?

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1 A. Okay. Exhibit C, as I referred to by
2 the red arrows on Exhibit A, shows the other wells in the
3 general area which produce or have produced from the Bone
4 Spring formation.

5 No. 1 and 2 are the wells which we have
6 already discussed, the Shell Well and the recently completed
7 McKay West Federal No. 1.

8 The Shell Well produced a total of 40,524
9 barrels of oil before being abandoned, and still making 10
10 barrels a day when it was abandoned.

11 The only other significant production
12 from Bone Spring in the area is No. 5 and No. 6 on the map,
13 which is the PEDCO CleveRock Federal No. 1 in Section 16,
14 which produced 45,425 barrels of oil from the third Bone
15 Spring Lime, and the No. 6 Well, which is the Sun-Jennings
16 No. 1 Well in Section 15, which produced 327,656 barrels of
17 oil as of 1-1-79, and is still producing.

18 These two wells in Section 15 and 16 are
19 both producing from the third Bone Spring Lime, but they
20 are not correlative. In other words, the well in Section
21 15 is about 100 feet higher correlatively than the well in
22 Section 16. I'm saying all of this to show the extremely
23 erratic nature of development in the lime sections of the
24 Bone Spring, and we do have a rather, or very uniform devel-
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1 opment of this sand, although it's only been open so far in
2 two wells. The development appears to be uniform and we're
3 planning to do future development work in the area.

4 The reserves from the McKay West Federal
5 No. 1 is estimated at 40 to 50,000 barrels of oil by primary
6 means and possibly another 40 to 50,000 barrels by secondary.
7 This is the type of sand which we feel will respond very
8 well to waterflooding and hopefully within the next few
9 years a field will be developed which will flood this sand.

10 Naturally, we would like to see this kept
11 separate so that we do not have any mixing of the sand zones
12 with the lime zones and it would facilitate not only orderly
13 development but it would be very beneficial in confining
14 the flood waters to the sand zone that we want to flood.

15 Q Mr. Sanders, to your knowledge, has the
16 Commission ever decided a case similar to this in the past?

17 A Yes, sir. Order No. R-6255, which was
18 effective February 1st, 1980, is a very similar case in the
19 Airstrip Bone Springs reservoir, which is about 12 miles
20 to the east of this area.

21 Q Could you describe the similarities be-
22 tween R-6255 and the case at hand?

23 A They are very similar. They were seeking
24 to establish a lower zone, so it is somewhat of a reverse
25 case, as -- as a new reservoir, whereas we're attempting

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1 to establish the upper zone as a new reservoir.

2 What we're proposing is that the original
3 Querecho Plains Bone Spring Pool be contracted with vertical
4 limits to include only the first Bone Springs sand, so we
5 can keep -- keep it entirely separate for future development.

6 Q Mr. Sanders, could you describe the
7 progress on McKay West Federal No. 1? In other words, where
8 are you now with that well?

9 A Okay.

10 Q Could you give the history, please?

11 A Yes. That well was re-entered for the
12 purpose of this recompletion on January the 31st. The first
13 oil was produced there on -- the first significant oil was
14 produced on February the 21st, 1980, at the time it was
15 potentialed. The well is now producing and flowing.

16 Q And it's your understanding that if the
17 application were granted it would be effective as to this
18 well?

19 A If it is at all feasible, we would like
20 to request that this order be retroactive and effective, say
21 1-1-80, or some date like that, so that -- so that there
22 would be no question about all of the oil that has been
23 produced from this zone being attributed to this particular
24 field and to this particular zone to keep the record straight,
25 if that would be possible.

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1 Q Is there anything else that you can add
2 for the Examiner to illustrate this request and application?

3 A No, except to possibly re-emphasize that
4 the main need is to separate these zones vertically so that
5 the scattered limited reservoirs will not be included in
6 the Querecho Plains Bone Spring Reservoir.

7 MR. McCABE: I have no further questions.

8
9 CROSS EXAMINATION

10 BY MR. STAMETS:

11 Q Mr. Sanders, there's only one well pro-
12 ducing in the pool that you are proposing.

13 A Yes, sir.

14 Q And your application was for the creation
15 of a Lower Bone Spring Pool?

16 A Yes, sir.

17 Q Is that a necessity? Is there any well
18 producing from a Lower Bone Springs Pool?

19 A No, sir, not in this area right now.
20 The only necessity would be to have a place to put the oil
21 that has been produced from those zones. See, these lower
22 zones in the McKay West did produce 1296 barrels from --
23 from these lower limestone reservoirs, or zones, and the
24 creation of the lower pool would not only give a place to
25 put that oil, but in case somebody comes in and perforates

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1 one of these little show zones in some other well in -- in
2 the area, then it would not be classified in the same zone
3 with our sand zone.

4 Q Did you say you wanted this retroactive
5 to January 1st, 1980, Mr. Sanders?

6 A If possible, or to some such date before
7 production was begun from this zone, so that we can keep
8 this production separate from the previous production.

9 Q It probably is not possible, but I think
10 we'd have any trouble with the annual report reflecting the
11 appropriate distribution of production.

12 A We did have some February production, is
13 the reason we're bringing this up, which would be thrown
14 into the old reservoir, as things now stand.

15 Q We'll see what we can do about that.

16 Does a change like this have any effect
17 on the price you can charge for the oil?

18 A Definitely, which would definitely affect
19 the speed of development and so forth.

20 Q In -- how does this happen?

21 A The DOE regulation states that a well is
22 eligible to receive new oil price if on that particular
23 lease there was no oil sold from that reservoir or zone
24 during the year 1978.

25 Q Okay.

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1 A So if we can establish that this is in
2 fact a reservoir which has not produced on this lease before,
3 which I'm convinced it is a different reservoir by reason
4 of pressure information which we have shown, the information
5 which we have shown that these other zones were indeed
6 limited reservoirs, then we have in fact opened a reservoir
7 which has not been opened on this lease before, which would
8 make a big difference.

9 MR. STAMETS: Any other questions of
10 this witness?

11 MR. PADILLA: I have one.

12 CROSS EXAMINATION

13 BY MR. PADILLA:

14 Q In this last line of questioning for my
15 own information, the Department of Energy regulations,
16 though, go to the meaning of the definition of property,
17 and that relates to the oil and gas lease but not to the
18 oil pool.

19 A I'm not at all an expert on that so I
20 couldn't answer that question.

21 Cases that I have heard before would --
22 would indicate that --

23 Q Unless of course they amended the regu-
24 lations in 1978 or issued an interpretative regulation, but
25

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1 I don't know, I was just trying to get that for my own in-
2 formation.

3 A In other words, you think we'd be safe
4 like we were?

5 Q Well, it seems like, it seems to me that
6 if you've already produced from that oil and gas lease, you
7 would create a presumption that it's old oil, indeed you've
8 been producing old oil from there.

9 A Yes, we --

10 Q That oil and gas lease.

11 A Well, it wouldn't matter as long as it
12 was a different reservoir. In other words, the regulation
13 states that you produce new oil from a new reservoir, you
14 get a new price, and it doesn't matter if the field is old
15 as long as it's new to this particular lease.

16 MR. PADILLA: No further questions.

17 MR. McCABE: A couple more, Mr. Sanders.

18
19 REDIRECT EXAMINATION

20 BY MR. McCABE:

21 Q Do you feel that the granting of this
22 application in your opinion would promote conservation by
23 preventing waste and protecting correlative rights of adjacent
24 interest owners?

25 A Yes, I do.

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1 Q Did you prepare Exhibits marked A, B, C?
2 A Yes, sir.
3 MR. McCABE: We'd like to tender Exhibits
4 A, B, and C.
5 MR. STAMETS: These exhibits will be
6 admitted.
7 Any other questions of the witness? He
8 may be excused.
9 Anything further in this case?
10 The case will be taken under advisement.
11
12 (Hearing concluded.)
13
14
15
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21
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23
24
25

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REPORTER'S CERTIFICATE

I, SALLY W. BOYD, C. S. R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division 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 C.S.R.

SALLY W. BOYD, C.S.R.

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I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 6848 heard by me on 3-26 1980.
Richard H. Thompson, Examiner
Oil Conservation Division

I N D E X

CHARLES SANDERS

Direct Examination by Mr. McCabe	4
Cross Examination by Mr. Stamets	12
Cross Examination by Mr. Padilla	14
Redirect Examination by Mr. McCabe	15

E X H I B I T S

Applicant Exhibit A, Plat	5
Applicant Exhibit B, Cross Section	5
Applicant Exhibit C, Table	8

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STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
26 March 1980

EXAMINER HEARING

IN THE MATTER OF:

Application of Petroleum Development)
Corporation for pool contraction and)
creation, Lea County, New Mexico.)
CASE
6848

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

Brian T. McCabe, Esq.
KEGEL, McCABE, & MONTEZ
P. O. Box 2292
Santa Fe, New Mexico 87501

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1 MR. STAMETS: Call next Case 6843.

2 MR. PADILLA: Application of Petroleum
3 Development Corporation for pool contraction and creation,
4 Lea County, New Mexico.

5 MR. McCABE: My name is Brian McCabe,
6 Santa Fe, New Mexico. I'm appearing for Petroleum Production
7 Corporation.

8 Could the record please show that Mr.
9 Sanders has been accepted as a qualified witness and is
10 under oath? Mr. Sanders will be my only witness, or we can
11 re-swear him.

12 MR. STAMETS: For the purposes of the
13 previous case I don't believe there was any necessity in
14 determining for my own benefit Mr. Sanders' qualifications,
15 but since he's not appeared before me before, and since this
16 next case involves something that's not direct and straight-
17 forward, perhaps Mr. Sanders would requalify himself for me.

18 MR. McCABE: Certainly.

19 MR. SANDERS: Certainly, sir.

20 MR. McCABE: Mr. Sanders, can you describe
21 for the Examiner your educational background?

22 MR. McCABE: Yes, I graduated from Texas
23 Tech University in 1950 with a BS in petroleum engineering,
24 geophysics option.

25 I worked for a number of oil companies.

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1 I've appeared before the Commission a number of times over
2 the past ten years, but unfortunately, I've always got Mr.
3 Nutter.

4 MR. STAMETS: All right, I think that's
5 clear.

6 MR. SANDERS: I've not had the pleasure
7 of meeting you.

8 MR. STAMETS: I understand how Mr. Sanders
9 is qualified and I accept his qualifications.

10 MR. McCABE: Thank you.

11 CHARLES SANDERS

12 being called as a witness and having been previously sworn
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22 tween R-6255 and the case at hand?

23 A They are very similar. They were seeking
24 to establish a lower zone, so it is somewhat of a reverse
25 case, as -- as a new reservoir, whereas we're attempting

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1 to establish the upper zone as a new reservoir.

2 What we're proposing is that the original
3 Querecho Plains Bone Spring Pool be contracted with vertical
4 limits to include only the first Bone Springs sand, so we
5 can keep -- keep it entirely separate for future development.

6 Q Mr. Sanders, could you describe the
7 progress on McKay West Federal No. 1? In other words, where
8 are you now with that well?

9 A Okay.

10 Q Could you give the history, please?

11 A Yes. That well was re-entered for the
12 purpose of this recompletion on January the 31st. The first
13 oil was produced there on -- the first significant oil was
14 produced on February the 21st, 1980, at the time it was
15 potentialed. The well is now producing and flowing.

16 Q And it's your understanding that if the
17 application were granted it would be effective as to this
18 well?

19 A If it is at all feasible, we would like
20 to request that this order be retroactive and effective, say,
21 1-1-80, or some date like that, so that -- so that there
22 would be no question about all of the oil that has been
23 produced from this zone being attributed to this particular
24 field and to this particular zone to keep the record straight,
25 if that would be possible.

1 Q Is there anything else that you can add
2 for the Examiner to illustrate this request and application?

3 A No, except to possibly re-emphasize that
4 the main need is to separate these zones vertically so that
5 the scattered limited reservoirs will not be included in
6 the Querecho Plains Bone Spring Reservoir.

7 MR. McCABE: I have no further questions.

8
9 CROSS EXAMINATION

10 BY MR. STAMETS:

11 Q Mr. Sanders, there's only one well pro-
12 ducing in the pool that you are proposing.

13 A Yes, sir.

14 Q And your application was for the creation
15 of a Lower Bone Spring Pool?

16 A Yes, sir.

17 Q Is that a necessity? Is there any well
18 producing from a Lower Bone Springs Pool?

19 A No, sir, not in this area right now.
20 The only necessity would be to have a place to put the oil
21 that has been produced from those zones. See, these lower
22 zones in the McKay West did produce 1296 barrels from --
23 from these lower limestone reservoirs, or zones, and the
24 creation of the lower pool would not only give a place to
25 put that oil, but in case somebody comes in and perforates

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1 one of these little show zones in some other well in -- in
2 the area, then it would not be classified in the same zone
3 with our sand zone.

4 Q Did you say you wanted this retroactive
5 to January 1st, 1980, Mr. Sanders?

6 A If possible, or to some such date before
7 production was begun from this zone, so that we can keep
8 this production separate from the previous production.

9 Q It probably is not possible, but I think
10 we'd have any trouble with the annual report reflecting the
11 appropriate distribution of production.

12 A We did have some February production, is
13 the reason we're bringing this up, which would be thrown
14 into the old reservoir, as things now stand.

15 Q We'll see what we can do about that.

16 Does a change like this have any effect
17 on the price you can charge for the oil?

18 A Definitely, which would definitely affect
19 the speed of development and so forth.

20 Q In -- how does this happen?

21 A The DOE regulation states that a well is
22 eligible to receive new oil price if on that particular
23 lease there was no oil sold from that reservoir or zone
24 during the year 1978.

25 Q Okay.

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1 A So if we can establish that this is in
2 fact a reservoir which has not produced on this lease before,
3 which I'm convinced it is a different reservoir by reason
4 of pressure information which we have shown, the information
5 which we have shown that these other zones were indeed
6 limited reservoirs, then we have in fact opened a reservoir
7 which has not been opened on this lease before, which would
8 make a big difference.

9 MR. STAMETS: Any other questions of
10 this witness?

11 MR. PADILLA: I have one.

12 CROSS EXAMINATION

13 BY MR. PADILLA:

14 Q In this last line of questioning for my
15 own information, the Department of Energy regulations,
16 though, go to the meaning of the definition of property,
17 and that relates to the oil and gas lease but not to the
18 oil pool.

19 A I'm not at all an expert on that so I
20 couldn't answer that question.

21 Cases that I have heard before would --
22 would indicate that --

23 Q Unless of course they amended the regu-
24 lations in 1978 or issued an interpretative regulation, but
25

1 I don't know, I was just trying to get that for my own in-
2 formation.

3 A In other words, you think we'd be safe
4 like we were?

5 Q Well, it seems like, it seems to me that
6 if you've already produced from that oil and gas lease, you
7 would create a presumption that it's old oil, indeed you've
8 been producing old oil from there.

9 A Yes, we ---

10 Q That oil and gas lease.

11 A Well, it wouldn't matter as long as it
12 was a different reservoir. In other words, the regulation
13 states that you produce new oil from a new reservoir, you
14 get a new price, and it doesn't matter if the field is old
15 as long as it's new to this particular lease.

16 MR. PADILLA: No further questions.

17 MR. McCABE: A couple more, Mr. Sanders.

18
19 REDIRECT EXAMINATION

20 BY MR. McCABE:

21 Q Do you feel that the granting of this
22 application in your opinion would promote conservation by
23 preventing waste and protecting correlative rights of adjacent
24 interest owners?

25 A Yes, I do.

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Q

Did you prepare Exhibits marked A, B, C?

A

Yes, sir.

MR. McCABE: We'd like to tender Exhibits
A, B, and C.

MR. STAMETS: These exhibits will be
admitted.

Any other questions of the witness? He
may be excused.

Anything further in this case?

The case will be taken under advisement.

(Hearing concluded.)

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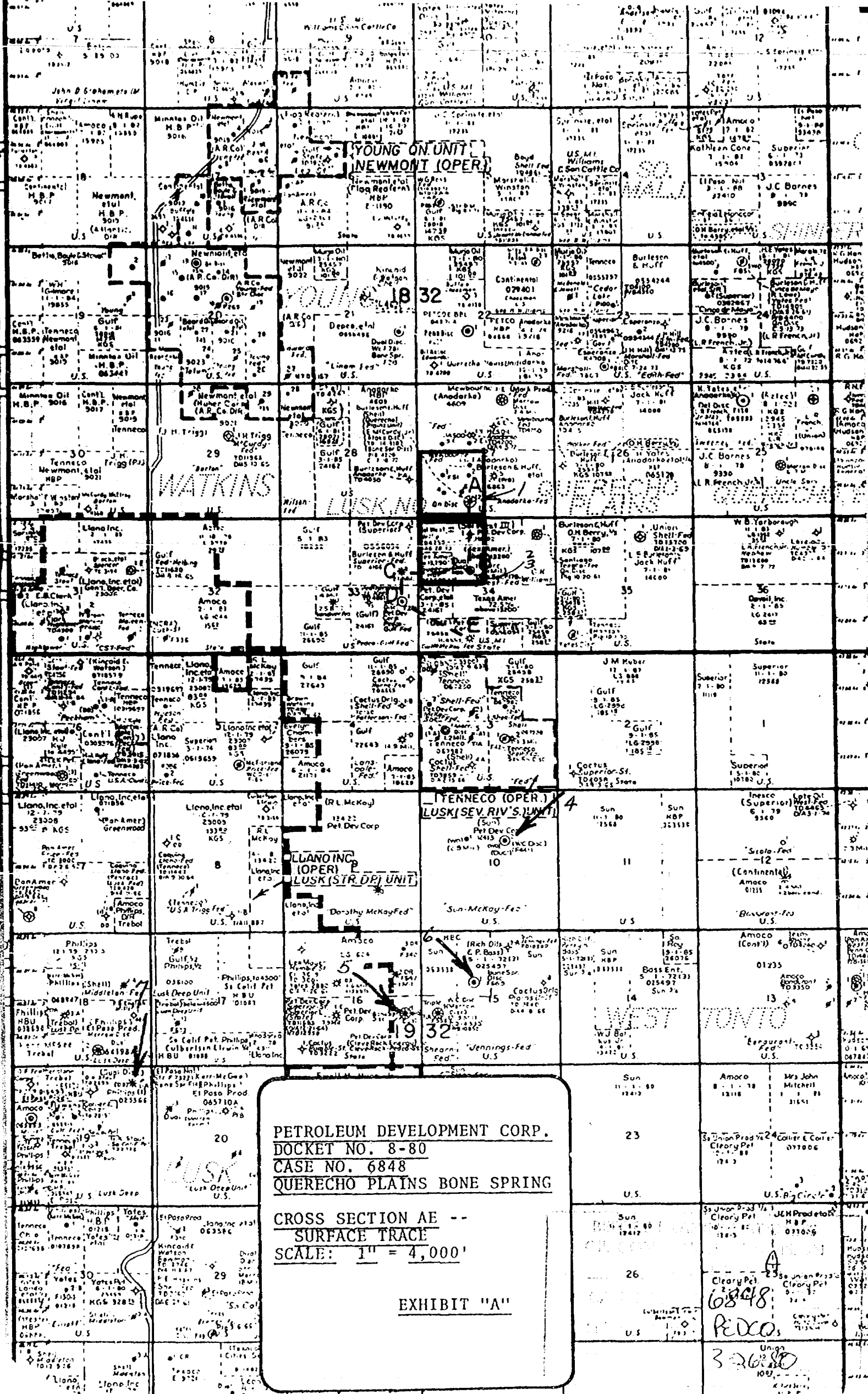
REPORTER'S CERTIFICATE

I, SALLY W. BOYD, C. S. R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division 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, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 435-7409

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 19 heard by me on 19.

Oil Conservation Division, Examiner



PETROLEUM DEVELOPMENT CORP.
DOCKET NO. 8-80
CASE NO. 6848
QUERECHO PLAINS BONE SPRING

CROSS SECTION AE --
SURFACE TRACE
SCALE: 1" = 4,000'

EXHIBIT "A"

6848
P.D.C.

3-26-80

PETROLEUM DEVELOPMENT CORPORATION

DOCKET NO. 8-80
CASE NO. 6848
QUERECHO PLAINS BONE SPRING

EXHIBIT "C" -- Area Bone Spring Production

1 Shell - Querecho Plains #2	N-27-18-32	1 Bone Spring Sand	40,524	P & A
2 *PEDCO - McKay West Fed. #1	F-34-18-32	1 Bone Spring Sand		Flowing (New Well)
3 *PEDCO - McKay West Fed. #1	F-34-18-32	2 & 3 Bone Spring Lime	1,296	P & A
4 *PEDCO - Sun McKay Fed. #2	G-10-19-32	3 Bone Spring Lime		P & A (12,273 bbls. Cum.)
5 *PEDCO - CleveRock #1	I-16-19-32	3 Bone Spring Lime	45,425	P & A
6 Sun - Jennings #1	F-15-19-32	3 Bone Spring Lime	327,656	Pumping
7 Phillips - Lusk Deep Unit #1	A-19-19-32	2 Bone Spring Lime	14,069	P & A

*Petroleum Development Corporation

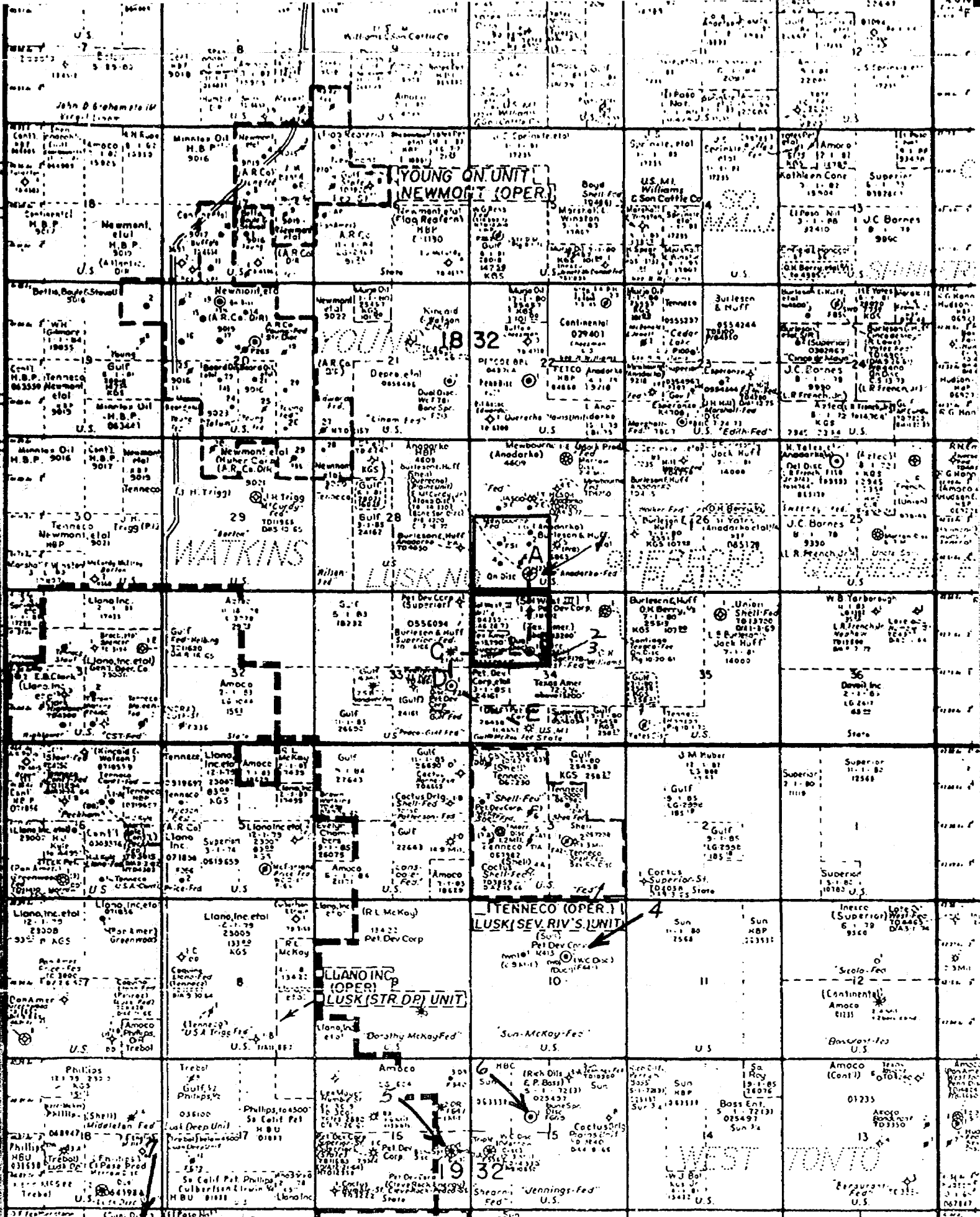
3-25-80

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION

EXHIBIT NO. C
CASE NO. 6848

Submitted by PEDCO

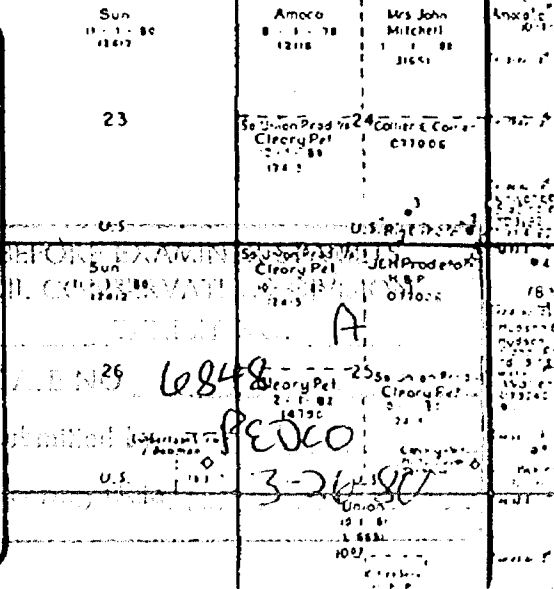
Hearing Date 3-26-80



PETROLEUM DEVELOPMENT CORP.
DOCKET NO. 8-80
CASE NO. 6848
QUERECHO PLAINS BONE SPRING

CROSS SECTION AE --
SURFACE TRACE
SCALE: 1" = 4,000'

EXHIBIT "A"



PETROLEUM DEVELOPMENT CORPORATION

DOCKET NO. 8-80
CASE NO. 6848
QUERECHO PLAINS BONE SPRING

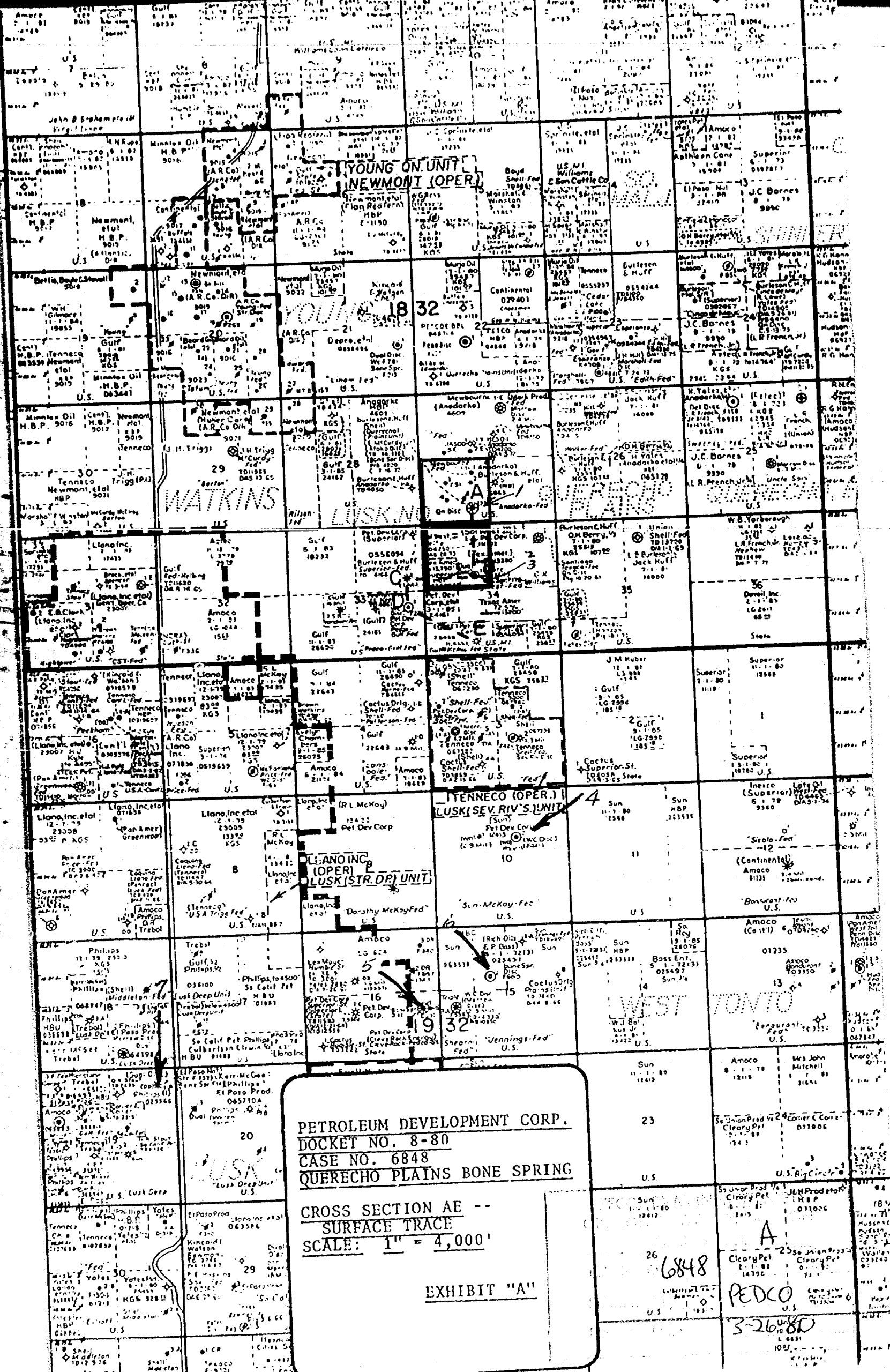
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*Petroleum Development Corporation

3-25-80

BEFORE EXAMINER STAMETS	
OIL CONSERVATION DIVISION	
EXHIBIT NO.	C
CASE NO.	6848
Submitted by	PEDCO
Hearing Date	3-26-80



PETROLEUM DEVELOPMENT CORP.
DOCKET NO. 8-80
CASE NO. 6848
QUERECHO PLAINS BONE SPRING

CROSS SECTION AE --
SURFACE TRACE
SCALE: 1" = 4,000'

EXHIBIT "A"

6848
PEDCO
3-26-80

PETROLEUM DEVELOPMENT CORPORATION

DOCKET NO. 8-80
CASE NO. 6848
QUERECHO PLAINS BONE SPRING

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*Petroleum Development Corporation

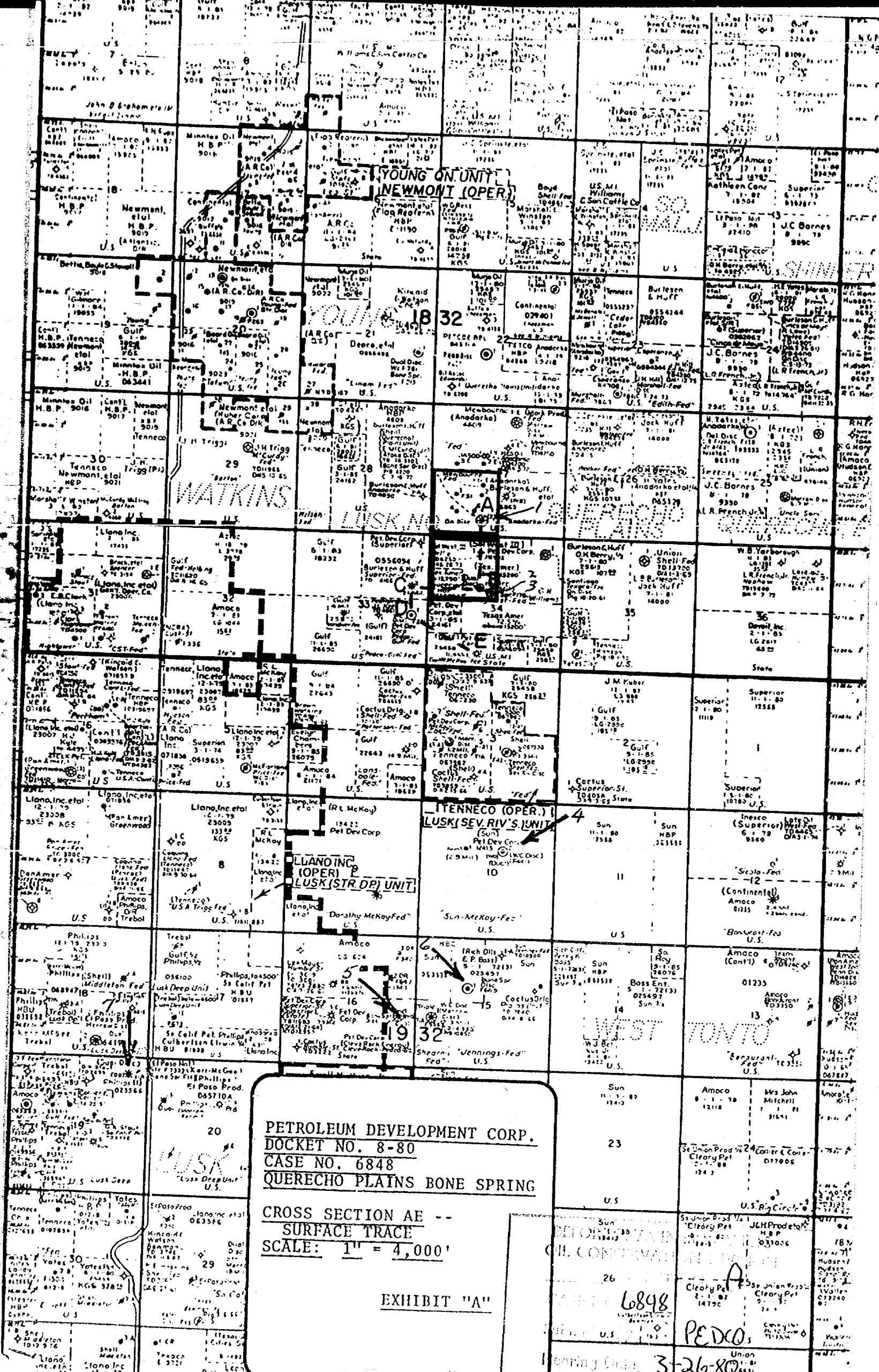
3-25-80

BEFORE EXAMINER STAMETS	
OIL CONSERVATION DIVISION	
EXHIBIT NO.	C
CASE NO.	6848
Submitted by	PEDCO
Hearing Date	3-26-80

PETROLEUM DEVELOPMENT CORP.
DOCKET NO. 8-80
CASE NO. 6848
QUERECHO PLAINS BONE SPRING

CROSS SECTION AE --
SURFACE TRACE
SCALE: 1" = 4,000'

EXHIBIT "A"



CASE 6846: Application of Doyle Hartman for two compulsory poolings, two non-standard gas proration units, and two unorthodox well locations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Eumont Gas Pool underlying two 80-acre non-standard gas proration units, the first being the S/2 NE/4 of Section 13, Township 21 South, Range 36 East, to be dedicated to a well to be drilled at an unorthodox location 1650 feet from the North line and 2310 feet from the East line of said Section 13, and the second being the N/2 NE/4 of said Section 13 to be dedicated to a well to be drilled at an unorthodox location 1330 feet from the North line and 2310 feet from the East line of said Section 13. Also to be considered will be the cost of drilling and completing said wells and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the wells and a charge for risk involved in drilling said wells.

CASE 6836: (Continued and Readvertised)

Application of Conoco Inc. for a dual completion and unorthodox well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its SEMU Burger Well No. 107 at an unorthodox location 2615 feet from the South and East lines of Section 19, Township 20 South, Range 38 East, to produce oil from the Blinbry Oil and Gas and Drinkard Pools.

CASE 6837: (Continued from March 12, 1980, Examiner Hearing)

Application of Curtis Little for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Dakota formation underlying the W/2 of Section 7, Township 25 North, Range 3 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 6847: Application of Tenneco Oil Company for dual completions and downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete, in such a manner as to produce gas from the Dakota formation and commingled Chacra and Mesaverde production through parallel strings of tubing, ten proposed wells to be located as follows: in Township 29 North, Range 10 West: Unit C, Section 19; Unit N, Section 19; Unit A, Section 30; and Unit D, Section 30; in Township 29 North, Range 11 West: Unit G, Section 24; Unit O, Section 24; Unit A, Section 25; Unit D, Section 25; Unit M, Section 25; and Unit P, Section 25.

CASE 6818: (Continued from March 12, 1980, Examiner Hearing)

Application of Tenneco Oil Company for an NCPA determination, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks a new onshore reservoir determination for its State HL 11 Well No. 1 located in Unit N of Section 11, Township 19 South, Range 29 East.

CASE 6849: (This is the same matter as was previously designated Case No. 6813.)

Application of Petroleum Development Corporation to amend Order No. R-6196, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks to amend Order No. R-6196 which authorized re-entry of a well at an unorthodox location in the Lusk-Morrow Gas Pool to be dedicated to the N/2 of Section 13, Township 19 South, Range 31 East. Applicant now seeks approval for a new revised location 750 feet from the North line and 660 feet from the West line of said Section 13.

CASE 6848: Application of Petroleum Development Corporation for pool contraction and creation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the contraction of the Querecho Plains-Bone Spring Pool to comprise the Upper Bone Spring formation only, from 8390 feet to 8680 feet on the log of its McKay West Federal Well No. 1 located in Unit F of Section 34, Township 18 South, Range 32 East, and the creation of the Querecho Plains-Lower Bone Spring Pool to comprise said formation from 8680 feet to the base of the Bone Spring underlying the NW/4 of said Section 34.

CASE 6826: (Continued from March 12, 1980, Examiner Hearing)

Application of Tahoe Oil and Cattle Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Penrose Skelly Pool underlying the SE/4 SE/4 of Section 25, Township 21 South, Range 36 East, to be dedicated to its Bromlee Well No. 1 located thereon. Also to be considered will be the cost of recompleting said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in recompleting said well.

Docket No. 8-80

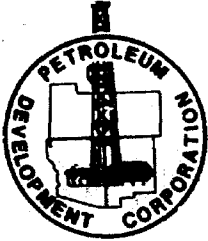
Dockets Nos. 9-80 and 10-80 are tentatively set for April 9 and 23, 1980. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 26, 1980

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

- CASE 6838: Application of Amax Chemical Corporation for the amendment of Order No. R-111-A, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-111-A to extend the boundaries of the Potash-Oil Area by the inclusion of certain lands in Sections 11, 12, and 13, Township 19 South, Range 30 East, and Sections 7 and 18, Township 19 South, Range 31 East.
- CASE 6839: Application of Kimbell Oil Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Otero-Chacra and South Blanco-Pictured Cliffs production in the wellbore of its Salazar Well No. 4-26 to be located in Unit D of Section 26, Township 25 North, Range 6 West.
- CASE 6840: Application of Union Texas Petroleum for downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Fruitland and Pictured Cliffs production in the wellbore of its Johnston Federal Well No. 11Y located in Unit N of Section 7, Township 31 North, Range 9 West.
- CASE 6841: Application of CIG Exploration, Inc. for two non-standard gas proration units, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of two non-standard gas proration units in Township 16 South, Range 28 East, the first being 219.6 acres comprising Lots 1 thru 3 of Section 1 and the second being 219.92 acres comprising Lots 1 thru 8 of Section 2, for the Wolfcamp, Pennsylvanian, and Mississippian formations, each unit to be dedicated to a well to be drilled at a standard location thereon.
- CASE 6842: Application of ARCO Oil and Gas Company for an unorthodox gas well location, simultaneous dedication, and approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its W. C. Roach Well No. 6, 660 feet from the North line and 1980 feet from the West line of Section 21, Township 20 South, Range 37 East, ~~East~~ Gas Pool, to be simultaneously dedicated with its W. C. Roach Well No. 1 in Unit D to the W/2 of said Section 21. Also sought are findings that the proposed well is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing unit well.
- CASE 6843: Application of Yates Petroleum Corporation for two compulsory poolings, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Yesso formation underlying two 40-acre proration units, the first being the SE/4 SE/4 and the second being the SW/4 SE/4 of Section 6, Township 19 South, Range 25 East, Penasco Draw Field, each unit to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said wells and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the wells and a charge for risk involved in drilling said wells.
- CASE 6844: Application of Arrowhead Oil Corporation for two exceptions to Order No. R-111-A and an unorthodox well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the casing-cementing rules of Order No. R-111-A to complete its Creek Federal Well No. 3 at an unorthodox location 250 feet from the North line and 2350 feet from the East line and its Creek Federal Well No. 4 to be drilled in Unit G, both in Section 23, Township 18 South, Range 30 East, by setting surface casing at a depth of approximately 600 feet and production casing at total depth. The production casing would have cement circulated back to the potash zone in the salt section.
- CASE 6845: Application of Marathon Oil Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled 800 feet from the North line and 200 feet from the East line of Section 30, Township 21 South, Range 23 East, Indian Basin-Upper Pennsylvanian Gas Pool, all of Section 30 or that portion thereof which may be reasonably presumed productive of gas from said pool to be dedicated to the well.



PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE
ALBUQUERQUE, NEW MEXICO 87112
TELEPHONE (505) 293-4044

Case 6848

March 5, 1980



Mr. Joe D. Ramey, Secretary-Director
Department of Energy
New Mexico Oil Conservation Division
PO Box 2088
Santa Fe, New Mexico 87501

RE: Petroleum Development Corporation
McKay-West Federal #1, F-34-18-32,
Lea County, New Mexico
Application: March 26, 1980 Docket

Dear Mr. Ramey:

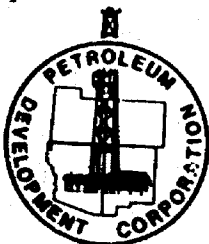
This will confirm our verbal request to Mr. Nutter this date to be placed on the March 26, 1980 docket to consider the following:

1. Divide the Querecho Plains Bone Spring Pool into the Querecho Plains Upper Bone Spring and Querecho Plains Lower Bone Spring pools.
2. Contract the vertical limits of the Querecho Plains Upper Bone Spring to coincide with the limits of the First Bone Spring Sand as defined from 8390 feet to 8680 feet in the McKay-West Federal #1 Well.
3. Set the vertical limits of the Querecho Plains Lower Bone Spring to include the remainder of the Bone Spring section as defined from 8680 feet to base of Bone Spring in the McKay-West Federal #1 Well.
4. Set the lateral limits of the "Upper" to include SW/4 Sec. 27 and NW/4 Sec. 34, 18S, 32E.
5. Set the lateral limits of the "Lower" to include NW/4 Sec. 34, 18S, 32E.

Sincerely,

Charles W. Sanders
Vice President

CWS/pb

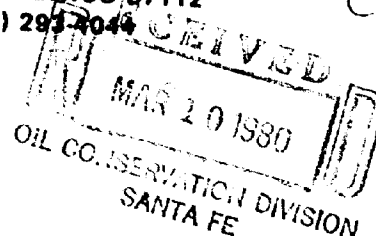


PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE
ALBUQUERQUE, NEW MEXICO 87112
TELEPHONE (505) 293-4044

Case 6848

March 5, 1980



Mr. Joe D. Ramey, Secretary-Director
Department of Energy
New Mexico Oil Conservation Division
PO Box 2088
Santa Fe, New Mexico 87501

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McKay-West Federal #1, F-34-18-32,
Lea County, New Mexico
Application: March 26, 1980 Docket

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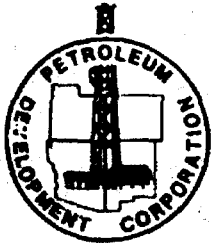
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Sincerely,

Charles W. Sanders
Vice President

CWS/pb



PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE
ALBUQUERQUE, NEW MEXICO 87112
TELEPHONE (505) 293-4044

Case 6848

March 5, 1980



Mr. Joe D. Ramey, Secretary-Director
Department of Energy
New Mexico Oil Conservation Division
PO Box 2066
Santa Fe, New Mexico 87501

RE: Petroleum Development Corporation
McKay-West Federal #1, F-34-18-32,
Lea County, New Mexico
Application: March 26, 1980 Docket

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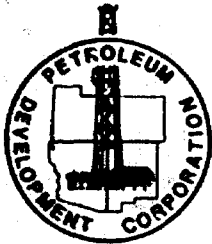
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Sincerely,

Charles W. Sanders
Vice President

CWS/pb

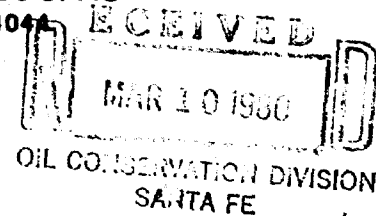


PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE
ALBUQUERQUE, NEW MEXICO 87112
TELEPHONE (505) 293-4044

March 5, 1980

Mr. Joe D. Ramey, Secretary-Director
Department of Energy
New Mexico Oil Conservation Division
PO Box 2088
Santa Fe, New Mexico 87501



RE: Petroleum Development Corporation
McKay-West Federal #1, F-34-18-32,
Lea County, New Mexico
Application: March 26, 1980 Docket

Dear Mr. Ramey:

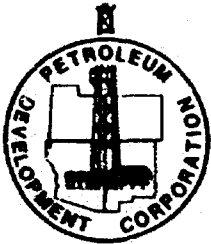
This will confirm our verbal request to Mr. Nutter this date to be placed on the March 26, 1980 docket to consider the following:

1. Divide the Querecho Plains Bone Spring Pool into the Querecho Plains Upper Bone Spring and Querecho Plains Lower Bone Spring pools.
2. Contract the vertical limits of the Querecho Plains Upper Bone Spring to coincide with the limits of the First Bone Spring Sand as defined from 8390 feet to 8680 feet in the McKay-West Federal #1 Well.
3. Set the vertical limits of the Querecho Plains Lower Bone Spring to include the remainder of the Bone Spring section as defined from 8680 feet to base of Bone Spring in the McKay-West Federal #1 Well.
4. Set the lateral limits of the "Upper" to include SW/4 Sec. 27 and NW/4 Sec. 34, 18S, 32E.
5. Set the lateral limits of the "Lower" to include NW/4 Sec. 34, 18S, 32E.

Sincerely,

Charles W. Sanders
Vice President

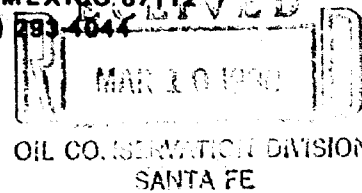
CWS/pb



PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE
ALBUQUERQUE, NEW MEXICO 87112
TELEPHONE (505) 293-4044

March 5, 1980



Mr. Joe D. Ramey, Secretary-Director
Department of Energy
New Mexico Oil Conservation Division
PO Box 2088
Santa Fe, New Mexico 87501

Case 6848

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McKay-West Federal #1, F-34-18-32,
Lea County, New Mexico
Application: March 26, 1980 Docket

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Sincerely,

Charles W. Sanders
Vice President

CWS/pb



PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE
ALBUQUERQUE, NEW MEXICO 87112
TELEPHONE (505) 293-4044

OIL CONSERVATION DIVISION
SANTA FE

March 5, 1980

Case 6848

Mr. Joe D. Ramey, Secretary-Director
Department of Energy
New Mexico Oil Conservation Division
PO Box 2088
Santa Fe, New Mexico 87501

RE: Petroleum Development Corporation
McKay-West Federal #1, F-34-18-32,
Lea County, New Mexico
Application: March 26, 1980 Docket

Dear Mr. Ramey:

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5. Set the lateral limits of the "Lower" to include NW/4 Sec. 34, 18S, 32E.

Sincerely,

Charles W. Sanders
Vice President

CWS/pb

Application of Petroleum Development Corporation
for pool ~~creation~~ contraction and creation,
Lea County, New Mexico.

Applicant in the above cited cause, seeks the contraction
of the Querecho Plains-Bone Spring Pool to
comprise the upper Bone Spring formation only,
from 8390 feet to 8680 feet on the log of its
McKay West Federal Well No. 1 located in Unit
F of Section 34, Township 18 South, Range 32 East,
and the creation of the Querecho Plains-Lower
Bone Spring Pool to comprise said formation
from 8680 feet to the base of the Bone Spring
underlying the NW 1/4 of said Section 34.

Chas. Sanders
alby 293-4044

written appl to follow

ROUGH

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6848

Order No. R-6332

NORLEN CLAYTON

Application of Petroleum Development Corporation for pool contraction and creation, Lea County,
New Mexico.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on March 26
19 60, at Santa Fe, New Mexico, before Examiner RLS.

NOW, on this _____ day of _____, 19____, the
Division Director, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required
by law, the Division has jurisdiction of this cause and the
subject matter thereof.

(2) That the applicant, Petroleum Development
Corporation,

seeks the contraction of the Querecho Plains-
Bone Spring Pool to comprise the Upper Bone Spring formation only, from 8390 feet to 8680 feet on
the log of its McKay West Federal Well No. 1 located in Unit F of Section 34, Township 18 South,
Range 32 East, and the creation of the Querecho Plains-Lower Bone Spring Pool to comprise said
formation from 8680 feet to the base of the Bone Spring underlying the NW/4 of said Section 34.

(3) That the application is based upon the temporary completion of applicant's said McKay West Federal Well No. 1 in isolated Second Bone Spring and Third Bone Spring lime zones during July, 1975.

(4) That said well produced ^{only} ~~only~~ a total of 1296 barrels of oil from these isolated Bone Springs zones, ^{before depleting them, subsequently} and was recompleted in a First Bone Spring sand zone during February, 1980.

(5) That the McKay West Federal Well No. 1 is ~~now~~ completed in the same First Bone Spring sand zone as the discovery well for said Querecho Plains-Bone Springs Pool and there are no other producing Bone Spring horizons within or adjacent to the horizontal limits of said pool.

(6) That at this time there ^{are} ~~is~~ no engineering or geologic reasons to grant the applicant's request in this case.

(7) That the arbitrary designation of upper and lower Bone Spring ^{strati} ~~stratigraphic~~ units for purposes of production could result in separation of zones which should be produced as a unit.

(8) That pending further development, the application for designation of a Querecho Plains-Upper Bone Springs Pool and Querecho Plains-Lower Bone Springs Pool should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of Petroleum Development Corporation for contraction of the vertical limits of the Querecho Plains-Bone Springs Pool to include only the Upper Bone Springs formation and creation of a Querecho Plains-Lower Bone Spring Pool is hereby denied.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.