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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
STATE LAND OFFICE
SANTA FE, NEW MEXICO
Wednesday, July 26, 1972

EXAMINER HEARING

IN THE MATTER OF:

Application of Union Texas Petroleum,
a Division of Allied Chemical
Corporation, for a pressure
maintenance project, Chaves County,
New Mexico.

Docket No. 16-72
Case No. 4773

IN THE MATTER OF:

Application of Amoco Production Company
for a pressure maintenance project
expansion, Chaves County, New Mexico.

Docket No. 16-72
Case No. 4774

BEFORE: DANIEL S. NUTTER, Examiner

TRANSCRIPT OF HEARING

P R O C E E D I N G S

MR. HATCH: Case 4774, application of Amoco Production Company for a pressure maintenance project expansion, Chaves County, New Mexico.

MR. HINKLE: May it please the Examiner there is a companion case on this docket on the application of Union Texas Petroleum. It is case 4773. It might expedite matters and shorten the overall length of these two cases if you would consolidate them for purposes of making a record.

MR. NUTTER: We will also call case 4773.

MR. HATCH: Case 4773, application of Union Texas Petroleum, a Division of Allied Chemical Corporation, a pressure maintenance project, Chaves County, New Mexico.

MR. NUTTER: For the purposes of testimony cases 4773 and 4774 will be consolidated.

MR. HINKLE: I am Clarence Hinkle on behalf of Union Texas. In case 4774 the same appearance as in the Amoco's prior case 4770. I would like the record to reflect that Mr. Currans will be testifying in this case and was sworn in the prior case.

MR. DANIEL R. CURRENS

having already been duly sworn according to law, upon his oath, testified as follows:

DIRECT EXAMINATION

BY MR. GUY BUELL:

Q Mr. Currens, I think you pretty well identified yourself in the record of the prior case, so in connection with your testimony in case 4774, I am just going to ask you to turn to your Exhibit Number 1. What is that exhibit?

A Exhibit Number 1 is a map of the portion of the Cato-San Andres Pool in Chaves County, New Mexico. It is a portion specifically in the area of an existing injection program that Amoco operates on its Baskett "D" lease. Shown on this exhibit by some solid blue dots are the three existing injection wells that we have in this project right now.

Q Why don't you locate the Baskett "D" lease for the record.

A The Baskett "D" lease is in the east half of Section 11, Township 8 South, Range 30 East in Chaves County.

Q Now, how many additional injection wells do we intend to add?

A Four altogether.

Q Have you identified them on Exhibit 1?

A I have. They are the round wells that have little black circles around them.

Q Now, Union Texas, I understand, will convert one well. How is it identified on our exhibit?

A ~~This is their Baskett Number 1 in the northeast quarter~~

1 of the Southwest Quarter of Section 11 and it is
2 identified by a little black circle around it.

3 Q Now, in addition to converting another well on our Baskett
4 "D", we are also moving our flood to two leases that we
5 operate; is that correct?

6 A Yes. We will add one well or we are asking to add one
7 well on the Baskett "D", the Baskett "D" Number 3. We
8 are asking to move on into the Baskett "D" lease and put
9 on well number 2 and putting on wells number 1 and 3.

10 Q Since we have been engaged in pressure maintenance for
11 some time on the Baskett "D", let me direct your attention
12 to our Exhibit Number 2. What is that exhibit?

13 A Exhibit Number 2 is a series of curves showing the perfor-
14 mance that we have had on the Baskett "D" lease both
15 during its primary term and since injection has commenced.

16 Q Would you briefly comment on any of the curves that you
17 feel are noteworthy, Mr. Currens?

18 A Well, since injection commenced it can be seen by the
19 upper curve that is colored blue in the latter part of
20 1969 with injection into one well, the Baskett "D" Number
21 4. Injection continued along at a rate somewhere between
22 250 and 500 barrels of water a day for something over a
23 year and then early in 1971 two additional wells were
24 converted. The Baskett "D" Number 1 and Baskett "D"
25 Number 2 injection increased--now it is on the order of

1 950,000 barrels a day. The red curve shown on this
2 exhibit is a lot of the gas-oil ratio that has been
3 experienced on the lease. As you can see prior to and
4 earlier in the early life of injection, the gas-oil ratio
5 showed increasing trends to something up above 2,000.
6 Since getting the first well on and more so since adding
7 two more wells, we have had a considerable gas-oil ratio
8 decrease down to less than 1,000 cubic feet per barrel.
9 Oil production was in a sharp decline prior to injection
10 and continued some decline during the early stage of
11 injection. That decline has been arrested considerably
12 since adding the last two wells in the expansion program
13 such that now oil production is about 60 barrels a day.
14 Water production currently is about 219 barrels a day.

15 Q With respect to our Baskett "D", we certainly see some
16 reflections in performance that encourage us sufficiently
17 that we do want to expand our activities?

18 A We have good gas-oil ratio response and we are arresting
19 decline on the oil.

20 Q Let's look now at Exhibit 3.

21 A Our Baskett "B" lease performance is indicated on Exhibit
22 3, two producing wells on the lease. The gas-oil ratio
23 has been quite high. It is currently about forty-six
24 fifty cubic feet per barrel. Our oil production has now
25 ~~declined to only six barrels of oil per day with about~~

1 54 barrels of water.

2 Q Now, the proposed well that we want to convert to injection
3 on the Baskett "B", what is it doing now?

4 A That is well number 2. It is located in Unit C of
5 Section 11 and the latest test I have on this is two
6 barrels of oil and two barrels of water a day.

7 Q Let's jump back to the Baskett "D". What is the well
8 that we intend to convert to injection on that lease
9 doing at this time?

10 A That is well number 3. It is located in Unit O, Section
11 11 and the latest test I have on it is six barrels of
12 oil and three barrels of water a day.

13 Q Let's look at the performance curve on the Wasley lease
14 which is even further removed from any injection operations
15 in the Baskett "B". That has been identified as Exhibit
16 Number 4. Would you comment on it, please?

17 A Well, the Wasley lease which is the north half of Section
18 14 of the same township and range, we mentioned earlier,
19 has its performance depicted on Exhibit 4. The gas and
20 oil ratio actually is a little off scale or above scale
21 on this exhibit with the latest number I have being about
22 12,600 cubic feet per barrel. There are eight producing
23 wells on the lease and oil production has declined
24 severely over the last couple of years. Oil and water
25 production are now both at about 27 barrels a day.

1 Q We are going to convert two wells on the Wasley lease;
2 is that correct, to injection?

3 A Yes, sir.

4 Q State for the record and identify those wells and state
5 what they are currently doing at this time.

6 A The Wasley Number 1 which is located in Unit C, the last
7 data I have is six barrels of oil and two barrels of water
8 a day. The Wasley Number 3 which is located in Unit A
9 was three barrels of oil and one barrel of water per day.

10 Q Mr. Currens, Exhibit 5, 6, 7 and 8 are schematic diagrams
11 of each of the four wells we have proposed to convert and
12 attached to the schematic diagram is a log of the indivi-
13 dual wells. Let me identify them for the record.

14 Exhibit 5 is a schematic and log on the Baskett "B"
15 Number 2. Six is the same information on our Baskett "D"
16 Number 3. Seven is the same information on our Wasley
17 Number 3 and 8 is the same information on our Wasley
18 Number 1. It seems to me that these are almost identical.
19 Mr. Currens. Would you just pick one and comment so the
20 record will reflect generally what our proposed method
21 of completion of these wells is?

22 A I will just take the first of those exhibits, Number 5,
23 which is the Baskett "B" Number 2 and what we show on
24 Exhibit 5 is the mechanical condition of the well. We
25 show where the surface casing is set and in this case it

1 is eight and five-eighths inch casing set at 461 feet
2 with cement circulated. We show the oil string casing
3 which in this case is four and a half inch casing and
4 it is set at thirty-five thirty-two which is cemented with
5 600 sacks and the top of the cement is at 950 feet. We
6 show that as an appropriate plug back and total depth on
7 each of these exhibits we show the perforated intervals
8 which in this case are three sets of perforations with
9 the uppermost one being at thirty-three eighty-three and
10 the lowermost perforation being at thirty-four seventy-
11 seven. Then we show our proposal for injection which
12 would be to run a tension packer and set it above the
13 perforations using two and three eighths internally
14 coated tubing plastic coated tubing and commence injection
15 down that string with the annulus space between the tubing
16 string and the oil string casing filled with an inhibited
17 fluid to make it--to prevent corrosion.

18 Q Mr. Currens, in your opinion, will expansion of our
19 pressure maintenance program and our water flood program
20 as you have outlined as well as your knowledge of the
21 proposed actions of Union Texas in the next case coming
22 up, do you think this will serve conservation through
23 prevention of waste and increase of ultimate production?

24 A Yes, sir. I think it is definitely needed for that
25 purpose. We have seen some 17 beneficial responses and

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- 1 it looks to me like we just need more injection out here.
- 2 Q Mr. Currens, would you anticipate that if we keep getting
- 3 the encouraging results that we have seen today that further
- 4 expansion not only on the leases which are the subject
- 5 matter of the application here today but on other leases
- 6 in this area of the Cato-San Andres oil pool--
- 7 A Yes, sir, I think it is entirely logical that continuation
- 8 of this program would perhaps not only add more wells on
- 9 these leases that are subject to this application, but
- 10 would even spread perhaps to other leases in at least this
- 11 portion of the pool.
- 12 Q In view of that, do you have another recommendation for
- 13 the Examiner and the Commission?
- 14 A Yes, sir. I would like to recommend that an order be
- 15 issued on this, of course, granting what we are asking
- 16 for here today in the way of this expansion, but that it
- 17 further provide that expansion to other leases in this
- 18 same portion of the field could be obtained administratively
- 19 Q Do you have any other comments or recommendations to
- 20 make in case 4774?
- 21 A I think not.
- 22 MR. BUELL: May it please the Examiner, that is all
- 23 we have in the way of direct. I would like to formerly offer
- 24 our Exhibits 1 through 8 inclusive.
- 25 MR. NUTTER: Amoco Exhibits 1 through 8 are admitted

1 into evidence.

2 MR. Currens, the project to-date has been confined
3 to one lease and now you are going on to two additional leases.
4 Is there any variation in the ownership between the Baskett "D"
5 lease and the Baskett "B" lease?

6 THE WITNESS: I am unable to find it if there is.

7 MR. NUTTER: So as far as you know it is all one
8 lease, then?

9 THE WITNESS: Yes, sir. I think it is basically
10 the same.

11 MR. NUTTER: You recognize of course that if there
12 was any variation in ownership you couldn't transfer any
13 allowable across those lease lines?

14 THE WITNESS: Yes, sir.

15 MR. NUTTER: This would be a project all its own and
16 allowables would be confined to wells on that lease?

17 THE WITNESS: Yes, sir. That is what we would contem-
18 plate, yes, sir.

19 MR. NUTTER: And the casing and cementing program
20 and the tubing program and filling the annulus with fluid and
21 all that that you went through on Exhibit 5 would apply to all
22 other wells you are proposing?

23 THE WITNESS: Yes. You would just be using 5 as an
24 example.

25 MR. NUTTER: It is typical?

1 THE WITNESS: It is typical.

2 MR. NUTTER: Are there further questions of Mr.

3 Currens? He may be excused.

4 Do you have any further testimony in your case?

5 MR. BUELL: No, Mr. Examiner.

6

7

MR. HOWARD M. PERDUE

8 having been first duly sworn according to law, upon his oath,

9 testified as follows:

10

DIRECT EXAMINATION

11

BY MR. CLARENCE HINKLE:

12

Q State your name and address and by whom employed.

13

A My name is Howard M. Perdue. I am from Midland, Texas

14

and I am employed by Union Texas Petroleum, a division

15

of Allied Chemical Corporation.

16

Q Have you previously testified before the Commission and

17

qualified as a petroleum engineer?

18

A Yes, sir, I have.

19

Q Your qualifications are a matter of record with the

20

Commission?

21

A That's true.

22

MR. HINKLE: Is that satisfactory?

23

MR. NUTTER: Yes, sir, please proceed.

24

Q (By Mr. Hinkle) Are you familiar with the application of

25

Union Texas in case 4773?

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- 1 A Yes, sir.
- 2 Q What is Union Texas seeking to accomplish by this
- 3 application?
- 4 A Actually this application was made in cooperation with
- 5 the Amoco project that was previously authorized in this
- 6 area. Union Texas proposes to convert their Baskett
- 7 Number 1 well which is an offset to the Amoco Baskett "D"
- 8 lease and the Amoco Baskett "B" lease and the Amoco-Wasley
- 9 lease. This, as I said, will be in a cooperative effort
- 10 with the Amoco project and Union Texas proposes to convert
- 11 this well along those lines.
- 12 Q Do you intend this as a separate pressure maintenance
- 13 project from Amoco or as kind of a supplement to it?
- 14 A It will be a cooperative effort. We will inject water
- 15 into our well. Actually the water will be supplied by
- 16 Amoco.
- 17 Q The application calls for authority to institute a pressure
- 18 of maintenance project in Cato-San Andres Pool by the
- 19 injection of water into the San Andres formation through
- 20 its Baskett well number 1. Now, is that what you intended
- 21 by your application?
- 22 A As a matter of fact, we have completed a cooperative
- 23 agreement with Amoco and we had at the time thought that
- 24 it might be possible for Amoco to actually handle the
- 25 authorization to convert this well, but apparently that

1 was impossible so that is the basis for our making
2 application.

3 Q You have no objection to the Commission treating this as
4 a separate part if they desire to do so?

5 A That's all right. However, it really is a cooperative
6 effort.

7 Q You have heard the testimony introduced in case 4774.
8 Do you agree with the testimony?

9 A We have been in communication with the Amoco representa-
10 tive all along in this effort and we certainly do agree
11 with the testimony presented in their case.

12 Q Have you prepared or have there been prepared under your
13 direction certain exhibits for introduction in the case?

14 A Yes, sir.

15 Q Refer to Exhibit Number 1 and explain what this is and
16 what it shows.

17 A Our Exhibit Number 1 is a plat of the Cato field and in
18 particular the Section 11 of Township 8 south and it shows
19 in addition the Union Texas Petroleum Baskett Number 1
20 well and Unit K and along with the other wells of Amoco's
21 that will be also part of this overall project.

22 Q The new injection wells will be those that are in triangles?

23 A The new wells are indicated by a triangle. The wells
24 that have previously been authorized are shown as circles,
25 the injection wells.

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- 1 Q There is only one by Union Texas?
- 2 A Yes, sir.
- 3 Q That is the Number 1?
- 4 A The Number 1 Baskett.
- 5 Q Now, refer to Exhibit 2 and explain what this is and what
- 6 it shows.
- 7 A Exhibit Number 2 is a diagrammatic sketch of the Baskett
- 8 Number 1, the proposed injection well. It shows the
- 9 casing settings. It shows the perforations. We would
- 10 plan to run plastic coated tubing on a tension packer
- 11 set at approximately 3335 feet. We would load the tubing
- 12 casing with an inhibited fluid to avoid corrosion.
- 13 Q In your opinion will the completion of this well in this
- 14 manner confine the injection into this San Andres formation?
- 15 A Yes, sir, I feel that it will.
- 16 Q Refer to Exhibit 3.
- 17 A This is the log of the injection well.
- 18 Q Do you have any comments to make with respect to the log
- 19 of the well?
- 20 A The log of the well indicates that this is of course a
- 21 permeable and productive zone. The perforations of
- 22 completion intervals are marked in red on that log.
- 23 Q If the Commission grants this application, in your opinion
- 24 would it be in the interest of conservation and prevention
- 25 of waste and tend to protect correlative rights?

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1 A Yes, sir. Union Texas Petroleum for some time has felt
2 that a secondary project in the Cato field is warranted
3 and we feel that this is the first step in that direction.

4 MR. HINKLE: We would like to offer Exhibits 1 through
5 3.

6 MR. NUTTER: Union Texas Exhibits 1 through 3 will
7 be admitted into evidence.

8 MR. HINKLE: That's all we have.

9 MR. NUTTER: Mr. Perdue, how about performance on
10 your lease. Do you have any data equivalent to the well
11 performance data that Mr. Currrens gave?

12 THE WITNESS: I didn't prepare any.

13 MR. NUTTER: Could you tell me what this well is
14 presently producing that you are going to convert?

15 THE WITNESS: It is presently making about five
16 barrels of oil along with about that much water.

17 MR. NUTTER: Do you know what the other well on your
18 lease is making?

19 THE WITNESS: It is about the same. It is very near
20 the same. Both wells have declined drastically over the last
21 several months.

22 MR. NUTTER: Are there any further questions of
23 Mr. Perdue?

24 Does anyone have anything they wish to offer in
25 case 4773 or 4774?

1 We will take the case under advisement.

2 We will now accept a statement from Mr. Buell in
3 connection with case number 4775.

4 MR. BUELL: Mr. Examiner, as I am sure you recall
5 from past cases before you that it involved an associated oil
6 and gas reservoir, Amoco has always steadfastly taken the
7 position that the withdrawals between the two type wells, oil
8 and gas, should be on an equitable basis. We feel the same
9 thing should apply here at the Blinebry Pool. We agree with
10 Continental that at this point withdrawals are not on the
11 equitable basis. Our only reservation with regard to their
12 recommendation is that it appears to us to be extremely
13 complicated and we would be hopeful that we could work out
14 something more simple. I have to admit frankly though, as of
15 this time, Amoco has not been able to come up with a more simple
16 recommendation but we certainly stand by the principle that the
17 withdrawal from the two type wells should be equitable.

18 MR. NUTTER: As far as the Continental's proposal,
19 you have no position on it at this time; is that correct?

20 MR. BUELL: Yes, sir, that is correct. It is certain-
21 ly in the right direction. It is just complicated.

22 MR. NUTTER: Thank you, Mr. Buell.

23 MR. HINKLE: Mr. Examiner, Howard Perdue of Union
24 Texas would like to leave and go on back. We have this case
25 4747 which is Union Texas which I am going to make a motion

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1 that it be continued until the first Examiner's hearing in
2 September, and if you don't mind calling it, I will so move.
3 MR. NUTTER: We will now call case number 4747.
4 MR. HATCH: Case 4747 application of Union Texas
5 Petroleum, a Division of Allied Chemical Corporation for
6 compulsory pooling, Lea County, New Mexico.
7 MR. HINKLE: Clarence Hinkle, Roswell, appearing on
8 behalf of Union Texas Petroleum. We would like to move this
9 case be continued until the first Examiner's Hearing in
10 September.
11 MR. HATCH: I believe that is September 13.
12 MR. NUTTER: Case Number 4747 will be continued to
13 the Examiner Hearing scheduled to be held at this same place
14 at 9:00 o'clock A. M. September 13, 1972. Thank you very much.
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I N D E XWITNESSPAGE

MR. DANIEL R. CURRENS

Direct Examination by Mr. Guy Buell

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MR. HOWARD M. PERDUE

Direct Examination by Mr. Clarence Hinkle

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E X H I B I T SPAGE

Amoco Exhibit Number 1 -

Map of Cato-San Andres Pool,
Chaves County, New Mexico

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Amoco Exhibit Number 2 -

Performance curve on the Baskett "D" lease

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Amoco Exhibit Number 3 -

Performance curve on the Baskett "B" lease

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Amoco Exhibit Number 4 -

Performance curve on Wasley lease

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Amoco Exhibit Number 5 -

Schematic and log on Baskett "B" No. 2

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Amoco Exhibit Number 6 -

Schematic and log on Baskett "D" No. 3

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Amoco Exhibit Number 7 -

Schematic and log on Wasley No. 3

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Amoco Exhibit Number 8 -

Schematic and log on Wasley No. 1

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Union Texas Exhibit Number 1 -

Plat of Cato field

16

Union Texas Exhibit Number 2 -

Diagrammatic sketch of Baskett No. 1

16

Union Texas Exhibit Number 3 -

Log of injection well

16

STATE OF NEW MEXICO)
: ss.
COUNTY OF BERNALILLO)

I, MARCIA J. HUGHES, Court Reporter, do hereby certify
that the above and foregoing pages are a true and correct
transcript of the proceedings had before the New Mexico Oil
Conservation Commission on Wednesday, July 26, 1972.

Marcia J. Hughes

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7/26 1972
C. Burton
Clerk of the Court