

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO

14 September 1988

EXAMINER HEARING

IN THE MATTER OF:

Application of Union Texas Petroleum      CASE  
Company for an unorthodox gas well      9485  
location, Eddy County, New Mexico.

BEFORE: David R. Catanach, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division:

For Amerind Oil Company:      William F. Carr  
Attorney at Law  
CAMPBELL & BLACK, P.A.  
P. O. Box 2208  
Santa Fe, New Mexico 87501

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

I N D E X

VIJINDER BANGIA

Direct Examination by Mr. Carr	3
Cross Examination by Mr. Catanach	12

E X H I B I T S

Union Texas Exhibit One, Plat	6
Union Texas Exhibit Two, C-102	8
Union Texas Exhibit Three, Structural Map	8
Union Texas Exhibit Four, Cross Section	9
Union Texas Exhibit Five, Letters	11

1 MR. CATANACH: Okay, at this  
2 time we'll call Case 9485, the application of Union Texas  
3 Petroleum Company for an unorthodox gas well location, Eddy  
4 County, New Mexico.

5 Are there appearances in this  
6 case?

7 MR. CARR: May it please the  
8 Examiner, my name is William F. Carr with the law firm  
9 Campbell and Black P. A. of Santa Fe. We represent Union  
10 Texas and I have one witness.

11 MR. CATANACH: Any other ap-  
12 pearances?

13 Will the witness please stand  
14 and be sworn in?

15  
16 (Witness sworn.)

17  
18 VIJINDER BANGIA,  
19  
20 being called as a witness and being duly sworn upon his  
21 oath, testified as follows, to-wit:

22  
23 DIRECT EXAMINATION

24 BY MR. CARR:

25 Q My name is Vijinder Bangia. I'm

1 employed by the Union Texas Petroleum and I'm a Senior  
2 Staff Reservoir Engineer.

3 Q Have you previously testified before  
4 this Division?

5 A No, I have not.

6 Q Would you briefly summarize for Mr.  
7 Catanach your educational background and your then review  
8 your work experience?

9 A Yes. I graduated from the University of  
10 Tulsa in 1978 with a PhD in petroleum engineering.

11 I'm also a Professional Registered Engi-  
12 neer in the State of Texas.

13 After graduation I went to work for  
14 Shell and worked about 10 years both in research and engi-  
15 neering.

16 I basically worked in the Rocky Mountain  
17 Area at Shell, including the states of Montana, North Dako-  
18 ta and Wyoming.

19 Four years ago I joined Union Texas Pet-  
20 roleum and I have worked in the areas of Texas and New  
21 Mexico.

22 Q Are you familiar with the application  
23 filed by Union Texas in this case?

24 A Yes, I am.

25 Q Have you studied the subject area?

1 A Yes.

2 Q Are you familiar with the proposed well?

3 A Yes, I am.

4 MR. CARR: Are the witness'  
5 qualifications acceptable?

6 MR. CATANACH: They are.

7 Q Mr. Bangia, would you briefly state what  
8 Union Texas seeks with this application?

9 A With this application we seek approval  
10 for an unorthodox gas well location in the west half of  
11 Section 3, Township 34 South, Range 26 East, in the Carls-  
12 bad Morrow Gas Pool.

13 Q Are you familiar with the rules govern-  
14 ing development of the Morrow formation in this area?

15 A Yes, I am.

16 Q And what are the well location require-  
17 ments as set forth in those rules?

18 A The location requirements are 660 feet  
19 from the side boundary and 1980 feet from the end boundary.

20 Q And how much are you advancing on the  
21 outside boundary of this spacing unit with the proposed  
22 location?

23 A With this location we are advancing 1320  
24 feet closer to the end boundary but we are 660 from the  
25 side boundary, which meets the pool requirement.

1           Q           If you had a laydown unit you would be  
2 back at a standard distance.

3           A           Yeah, I would (unclear) it's a stand-up  
4 unit.

5           Q           Would you refer to what has been marked  
6 for identification as Union Texas Exhibit Number One and  
7 first identify this and then review the information on this  
8 exhibit for Mr. Catanach?

9           A           Exhibit Number One shows the land plat  
10 of this area. It includes nine sections surrounding the  
11 section of interest which is No. 3 where our proposed well  
12 is located.

13                       The shaded area on this plat shows our  
14 acreage in this area and all the wells here are producing  
15 from the Morrow gas zone.

16                       The well in Section -- in the west half  
17 of Section 4 is a dry hole. There's a dry hole in Section  
18 No. 10 in the west half and also another dry hole in  
19 Section Number 1 in the west half. So there are two dry  
20 holes and other producers.

21                       The well north of Section 3, Exxon State  
22 No. 1, has produced a cumulative production of about 1.1  
23 BCF.

24                       The two wells in the northeast of  
25 Section 3 have cumulative about .5 BCF.

1                   The wells in Section 2 and -- two wells  
2 in Section 2 and one well in the east half of Section 3,  
3 those two wells are producing from Upper Morrow formation.  
4 Most of all the other Morrow wells are producing from the  
5 Middle Morrow zone.

6                   Q           And is the Middle Morrow zone also your  
7 primary objective?

8                   A           That is right. That's our primary ob-  
9 jective.

10                   In Section 10 in the east half, the  
11 well, Pennzoil Federal Number -- Pennzoil (unclear) No. 1  
12 is producing from the Middle Morrow and had cumulative 2.6  
13 BCF.

14                   In Section 9 there two wells, Pennzoil  
15 Federal No. 1 and Pennzoil Federal No. 2. Federal No. 1  
16 has produced 3.3 BCF and Federal No. 2 has produced about  
17 2.7 BCF.

18                   I must make a mention here that Section  
19 No. 9 Wells are not in Carlsbad Morrow Gas Pool. They are  
20 in White City Penn.

21                   Q           And the spacing there is 640 acres?

22                   A           That's right and in Carlsbad it is 320.

23                   Q           The subject well is indicated by the  
24 triangle in the southwest of the southwest of 3.

25                   A           That's right.

1 Q Later in your presentation you will have  
2 a cross section. At this point it might be helpful, since  
3 there isn't an index map on that cross section, to explain  
4 to the Examiner what wells are involved in that particular  
5 cross section.

6 A Yeah, we'll show you the cross section  
7 on Exhibit Four, which will be through the Allied Chemical  
8 Federal No. 2 in Section 3 to the dry hole in Section 10,  
9 which is in the west half of Section 10 and our proposed  
10 location is in between the two wells.

11 This proposed location is basically a  
12 replacement for Allied Chemical Federal No. 2, which has  
13 been abandoned in the Morrow zone.

14 Q Would you now refer to Union Texas Exhi-  
15 bit Number Two and just explain what that shows?

16 A Exhibit Number Two is made from the  
17 C-102 Form filed in the state. It shows the proration unit  
18 outlined with a solid line and also shown on this is the  
19 proposed location and the closest possible orthodox loca-  
20 tion is shown on this.

21 Q All right. Let's go to Exhibit Number  
22 Three. Would you identify that for Mr. Catanach?

23 A Exhibit Number Three is a structure map.  
24 This is a structure on the top of Lower Morrow or on the  
25 base of Middle Morrow Zone and this exhibit, structure map,

1 is drawn at top because the shale separating the Middle  
2 Morrow and Lower Morrow is consistently thin in this area,  
3 and our proposed location is up dip of Allied Chemical  
4 Federal No. 2, which has been abandoned in Morrow and in  
5 fact the structure has minimal influence in making a suc-  
6 cessful well at this location.

7 Q And why is this location actually being  
8 proposed, this particular location?

9 A This particular location, looking at the  
10 production data on the offset wells in Section 9 and 10, we  
11 have better producers way towards south and also in this  
12 area the better producers are up dip, although it is not a  
13 general trend in Morrow Field. So we feel geologically we  
14 will have a better location going up dip.

15 Q Are you ready to go to Exhibit Number  
16 Four?

17 A Would you identify that and then review  
18 the information on this exhibit for the Examiner?

19 A Exhibit Number Four is a cross section  
20 between Allied Chemical Federal No. 2 and the dry hole in  
21 Section 10 and shows the proposed well location in between.

22 This section, this cross section is a  
23 stratigraphic cross section hung on Upper Morrow zone. The  
24 logs shown by the two wells show gamma ray, which is denot-  
25 ed by yellow, the gamma ray curve. The yellow is showing

1 the gamma ray response of more than 60 API units, and the  
2 red indicates the porosity.

3           On Allied Chemical Federal No. 2 we have  
4 a density log showing the porosity greater than 4 percent  
5 and on the dry hole, which is Pennzoil Federal No. 2 in  
6 Section 10, shows the porosity from the sonic log, and as  
7 you see, based on this porosity log, going towards the dry  
8 hole we get a better porosity. I must mention here that  
9 the dry hole was DST'd and it made about 1.7-million cubic  
10 feet per day. The gas came to the surface in 8 minutes.  
11 We have no idea why this zone was not completed and pro-  
12 duced. This was abandoned right after drilling. But we  
13 believe we are going towards better production area and we  
14 are going towards increasing -- increasing porous sand.

15           This formation, there are three different  
16 zones in this formation, Lower Morrow, Middle Morrow, and  
17 Upper Morrow. The Morrow sandstone (not understood clear-  
18 ly) are the stratigraphic traps in the Lower Pennsylvanian  
19 zone. These sandstones were deposited in a transgressive  
20 marine environment. The Lower Morrow are shallow water  
21 sandstones and the Upper Morrow are deep water carbonates.  
22 The Middle Morrow, which is our primary objective here,  
23 consists of carbonates, sandstones and shales, with some  
24 minor interbedding of limestones.

25           And these sands trend in a northeast to

1 southwest direction and were deposited along and parallel  
2 to the ancient shoreline.

3 In general, the thickest sandstones tend  
4 to have better porosity and permeability, but the character  
5 of the sand is very erratic. They appear and disappear and  
6 because of that the reservoirs can be variable in size and  
7 irregular in shape.

8 Q Have you provided notice to the offset-  
9 ting owners of this application?

10 A Yes, I have.

11 Q And is what has been marked as Exhibit  
12 Number Five copies of letters to the offsetting operators,  
13 Pennzoil and Huber, advising them of the hearing today?

14 A Yes.

15 Q Have you received any objection to this  
16 proposal from either of them?

17 A No, we have not.

18 Q Do you believe that granting this appli-  
19 cation will be in the best interest of conservation, the  
20 prevention of waste, and the protection of correlative  
21 rights?

22 A Yes, I believe.

23 Q Were Exhibits One through Five either  
24 prepared by you or compiled under your direction and super-  
25 vision?

1           A           Yes, they were.

2                       MR. CARR:    At this time, Mr.  
3 Catanach, we'd move the admission of Union Texas Exhibits  
4 One through Five.

5                       MR. CATANACH: Exhibits One  
6 through Five will be admitted into evidence.

7                       MR. CARR:    And that concludes  
8 our direct examination.

9

10                                   CROSS EXAMINATION

11 BY MR. CATANACH:

12                   Q           Let's go over the offset operator situa-  
13 tion quickly.

14                                   To the south in Section 10, is Pennzoil  
15 the operator of the west half of that section?

16                   A           East.

17                                   MR. CARR:    The west half.

18                   Q           The west half.

19                   A           Yeah, uh-huh.

20                   Q           And the east half is Huber or is that  
21 Pennzoil, also?

22                   A           Well, it is Pennzoil and Huber. Well,  
23 my plat shows American Exploration has got part of it, but  
24 there's no established production in the west half of Sec-  
25 tion 10.

1 MR. CARR: And American Ex-  
2 ploration has the southeast, is that true?

3 A That's right, and also there's no  
4 established production in the east half of Section 4 on  
5 either side of it.

6 Q And the well in Section 10 operated by  
7 American Exploration, do you know what that is producing  
8 from?

9 A That well is operated by Pennzoil.

10 Q I'm sorry? What that well is producing?

11 A That well is producing about 250 to 300  
12 MCF a day.

13 MR. CARR: Is that from the  
14 South Carlsbad Morrow Pool?

15 A That's right.

16 Q So that well has the east half dedicated  
17 to it, is that correct?

18 A That's right.

19 Q Okay. And there's no known production  
20 in -- oh, I'm sorry, it's a -- you're producing from a dif-  
21 ferent pool in Section 9, right?

22 A That's a different field, different  
23 field would apply to that. That's White City Penn.

24 Q Who operates that acreage?

25 A Union Texas operates the two wells

1 there.

2 Q Okay, so you've got the entire Section  
3 Nine.

4 MR. CARR: Except for the  
5 southwest of the southwest, which is Exxon.

6 Q And you did not notify anybody in Sec-  
7 tion 4, is that correct?

8 A No.

9 MR. CARR: No. And we're not,  
10 we're a standard distance for the outer boundary.

11 Q Okay, that's a slightly irregular sec-  
12 tion, is that right, the west half of Section 3? It's 318  
13 acres, is that correct?

14 A 318.86 (Not clearly understood.)

15 Q Okay. You testified that the reason you  
16 want to move toward that -- away from a center location  
17 toward your proposed location is due to -- primarily due to  
18 structure, is that correct? You want to get up dip.

19 A Yeah, we want to get up dip and we want  
20 to go towards the better producers and -- so that we can  
21 recover the remaining reserves from our tract.

22 Allied Chemical said the No 2 has been  
23 partially depleted and was a tight reservoir.

24 Q That is producing from what? Is that  
25 producing from the Middle Morrow?

1 A Which one?

2 Q The No. 2 Well?

3 A No. 2 produced from Middle Morrow. It's  
4 right now abandoned in Middle Morrow because of mechanical  
5 problems. The hole below 6400 feet has been abandoned.

6 Q And will that be repaired or --

7 A No, the whole well will be abandoned.  
8 It's basically a replacement well, the Allied Chemical No.  
9 2.

10 Q I suppose you have not had any protests  
11 or any kind of comments from your offset operators?

12 A No, we have not.

13 Q Are you actually in -- is your proposed  
14 location in -- I guess it's probably in the Carlsbad Morrow  
15 Pool, right?

16 A That's right.

17 Q And the White City Penn Pool abuts up to  
18 that in Section 9?

19 MR. CARR: Section 3 is in the  
20 South Carlsbad Morrow. The east half of 10 is in South  
21 Carlsbad. All of Section 9 is in White City Penn. They  
22 touch on that corner.

23 Q I see.

24 MR. CARR: And White City Penn  
25 is 640 acre spacing but Section 9 has two wells in the

1 Middle Morrow on it.

2 Q That is a prorated pool, right?

3 A That's right.

4 Q And how long has it been since that No.  
5 2 Well has produced?

6 A I think it last produced in May, April  
7 or May.

8 Q How does the proration unit stand as far  
9 as over production or under production or is that a problem  
10 in any way?

11 A No. No, I don't think there's any prob-  
12 lem.

13 MR. CATANACH: That's all the  
14 questions I have. The witness may be excused.

15 Anything further in Case 9485?

16 MR. CARR: Nothing further.

17 MR. CATANACH: If not, it will  
18 be taken under advisement.

19

20 (Hearing concluded.)

21

22

23

24

25

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

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 Conservation Division (Commission) 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 CSR

I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of Case No. 9485,  
heard by me on September 14, 1988.  
David R. Catalan, Examiner  
Oil Conservation Division