

1 STATE OF NEW MEXICO  
2 ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
3 OIL CONSERVATION DIVISION  
4 STATE LAND OFFICE BUILDING  
5 SANTA FE, NEW MEXICO

6 6 September 1989

7 EXAMINER HEARING

8 IN THE MATTER OF:

9 Application of BTA Oil Producers for CASE  
10 an unorthodox gas well location, Lea 9755  
11 County, New Mexico.

12 BEFORE: Michael E. Stogner, Examiner  
13  
14

15 TRANSCRIPT OF HEARING  
16  
17

18 A P P E A R A N C E S

19 For the Division:

20 For BTA Oil Producers: William F. Carr  
21 Attorney at Law  
22 CAMPBELL and BLACK, P. A.  
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24 Santa Fe, New Mexico 87501  
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## I N D E X

## KEITH LOGAN

Direct Examination by Mr. Carr	4
Cross Exzmination by Mr. Stogner	15

## E X H I B I T S

BTA Exhibit One, Lease Plat	6
BTA Exhibit Two, Lease Plat	7
BTA Exhibit Three, Production Map	7
BTA Exhibit Four, OCD Orders	9
BTA Exhibit Five, Structural Map (Atoka)	10
BTA Exhibit Six, Isopach	11
BTA Exhibit Seven, Cross Section A-A'	12
BTA Exhibit Eight, Structural Map (Morrow)	13
BTA Exhibit Nine, Notice Letter	14

1 MR. STOGNER: Call next Case  
2 Number 9755, which is the application of BTA Oil Producers  
3 for an unorthodox gas well location, Lea County, New  
4 Mexico.

5 I'll call for appearances.

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

10 MR. STOGNER: Are there any  
11 other appearances?

12 Will the witness please stand  
13 to be sworn?

14

15 (Witness sworn.)

16

17 You may be seated. Mr. Carr?

18

19

20 KEITH LOGAN,  
21 being called as a witness and being duly sworn upon his  
22 oath, testified as follows, to-wit:

23

24

25

## DIRECT EXAMINATION

1  
2  
3 BY MR. CARR:

4 Q Will you state your full name and place  
5 of residence?

6 A Keith Logan. I live in Midland, Texas.

7 Q Mr. Logan, by whom are you employed and  
8 in what capacity?

9 A I'm employed by BTA Oil Producers as a  
10 reservoir engineer.

11 Q Have you previously testified before the  
12 Oil Conservation Division?

13 A No, I have not.

14 Q Would you briefly review your education-  
15 al background and then summarize your work experience for  
16 Mr. Stogner?

17 A I have a Bachelor of Science degree in  
18 petroleum engineering from the university of Oklahoma,  
19 which I received in 1978.

20 I worked for Amoco Production Company  
21 approximately three years as a reservoir engineer.

22 I worked for Texas Commerce Bank as an  
23 oil and gas lender and a reservoir engineer for approxi-  
24 mately three years.

25 The last five and a half years I've been

1 with BTA Oil Producers as a reservoir engineer.

2 Q Are you familiar with the application  
3 filed on behalf of BTA in this case?

4 A Yes, I am.

5 Q Have you made a study of the subject  
6 area?

7 A Yes, I've been working this area for  
8 approximately four years.

9 Q And are you familiar with the proposed  
10 unorthodox well location?

11 A Yes, I am.

12 MR. CARR: We tender Mr. Logan  
13 as an expert witness in reservoir engineering.

14 MR. STOGNER: Mr. Logan is so  
15 qualified.

16 Q Mr. Logan, would you briefly state what  
17 BTA seeks with this application?

18 A We are seeking approval of an unorthodox  
19 location and ask that you designate the north half of Sec-  
20 tion 34 to be dedicated to this well.

21 Q What is the primary formation or what  
22 are the primary formations that are the subject of this  
23 hearing?

24 A The Atoka is the primary producing in-  
25 terval in this immediate area. The Morrow does produce in

1 the area, also.

2 Q And what pool are we talking about?

3 A Antelope Ridge Atoka Morrow.

4 Q Are there special pool rules in effect  
5 for this pool?

6 A No, there are not.

7 Q What are the location requirements,  
8 therefor, for a well in the proposed spacing or proration  
9 unit?

10 A For a development gas well on 320 acre  
11 spacing it -- the well can be no closer than 1980 from the  
12 end boundary and 660 from the side boundary.

13 Q So these are under statewide rules?

14 A Yes.

15 Q And you're seeking an exception to those  
16 rules.

17 A Correct.

18 Q Would you refer to what has been marked  
19 for identification as BTA Exhibit Number One, identify  
20 this, and review it for Mr. Stogner?

21 A Exhibit Number One shows all of Section  
22 34, which BTA operates, and it also shows the current pro-  
23 ration units, which, as you can see, are stand-up 320s, and  
24 it shows the proposed unorthodox location.

25 Q What are the status of the two wells in

1 the south half of this section?

2 A The well in the southeast quarter, the  
3 Max V No. 1 is an Atoka producer. It does have the Morrow  
4 zone. It was producing at one time but is now inactive.  
5 It has not been plugged off, though.

6 The well in the southwest quarter is an  
7 Atoka producer; it is not open at all in the Morrow forma-  
8 tion.

9 Q All right, let's go to Exhibit Number  
10 Two and I'd ask you to review that for the Examiner,  
11 please.

12 A Exhibit Number Two is showing the pro-  
13 posed proration units. As you can see, we propose to lay  
14 the units down with the north half and the south half dedi-  
15 cated to the wells.

16 Q What is the status of the ownership in  
17 Section 34?

18 A It is common.

19 Q So both working interest and royalty  
20 interest will not be affected by the reorientation?

21 A Correct.

22 Q Would you identify BTA Exhibit Number  
23 Three, please?

24 A Exhibit Number Three is a production map  
25 showing well depth, completion date, producing interval,

1 current rate, and cumulative production.

2 Q Could you just generally review the  
3 historical development of Section 34?

4 A All right. In Section 34 the well in  
5 the southeast quarter was drilled first and was approved as  
6 an unorthodox location by Order No. 8331, to include only  
7 the Atoka formation.

8 That was amended by 8331-A to include  
9 the Morrow formation and the south half was dedicated to  
10 that well.

11 In a subsequent letter from William  
12 Lemay, he approved dedicating the east half to that well,  
13 which left the ability to drill the well in the southwest  
14 quarter of 34.

15 Q So you were able to then drill another  
16 Atoka Well in the southwest and have two standup units.

17 A Correct.

18 Q Would you, using this plat, review for  
19 Mr. Stogner the status of the offsetting ownership?

20 A All right. Due north of the proposed  
21 location, the south half of Section 26 is operated by Oryx.  
22 The south half of 26 --

23 Q The south half of 27 is operated by  
24 Oryx?

25 A Yes.



1 Q All right, and then 26?

2 A 26 is also operated by Oryx.

3 Due east, in Section 35, operated by  
4 BTA.

5 The north half of 2 and the north half  
6 of 3 are also operated by BTA.

7 In Section 4, as you can see, there are  
8 no wells on there but the offsetting acreage is half Enron,  
9 half Pacific Enterprises.

10 To the west, in Section 33, Amoco Pro-  
11 duction.

12 And to the northwest in Section 28, BTA  
13 operates.

14 Q Now the proposed unorthodox location is  
15 unorthodox because it is too close to the east line, is  
16 that correct?

17 A That's correct.

18 Q What is the status of the development  
19 due east of this proration unit?

20 A The well, the Maddox B No. 2, is 660  
21 from the west line, which is an unorthodox location, it was  
22 approved by Order No. 8558.

23 Q Are all of the orders that you have re-  
24 ferenced contained in what has been marked as BTA Exhibit  
25 Number Four?

1           A           Yes, they are.

2           Q           And so the unorthodox location that  
3 you're proposing is actually farther from the common lease  
4 line between it and the properties east of it than the ex-  
5 isting well east of that lease line.

6           A           Correct.

7           Q           Why don't we go now to what has been  
8 marked Exhibit Number Five and I'd ask you to identify this  
9 and then review it for Mr. Stogner.

10          A           Exhibit Number Five is a map contoured  
11 on the base of the Atoka limestone. It was prepared by  
12 Lisa Weeks under my supervision. I have also color coded  
13 production on this map and, and you can see, in red I've  
14 signified the Atoka producers and in yellow, the Morrow  
15 producers in this area.

16                        What we can see from this map is that in  
17 the area the Atoka tends to productive, very well produc-  
18 tive on the flanks of structures, and if you see the well  
19 in the southwest quarter of Section 34, it is the highest  
20 well in -- in this area and is really a marginal well, so  
21 what we're trying to do with this unorthodox location is be  
22 on strike with the new Oryx Fed Com Well to the north, and  
23 also, in -- when they drilled this well, they essentially  
24 saw virgin reservoir pressure that needed like 14.8 pound  
25 mud just to control the formation and if we are to move

1 south or east of this location, we feel like we risk de-  
2 pletion from -- not only to the south or to the -- and the  
3 well to the south and the well to the east.

4 Q Mr. Logan, would you now go to BTA  
5 Exhibit Number Six, your isopach map, and review that for  
6 the examiner?

7 A This is really the map that we based the  
8 unorthodox location on. It's an isopach of log porosity  
9 greater than 2 percent.

10 Q Why did you use a 2 percent porosity  
11 cutoff?

12 A Well, since I've worked this area for  
13 quite some time and mainly some wells to the south that are  
14 not included on this map in Section 15, which is due south  
15 of Section 10, they were both very good Atoka producers and  
16 if you used a cutoff any higher than that, they would have  
17 been nonproductive.

18 And from this map, as you can see, the  
19 new Oryx Fed Com No. 1 has the thickest Atoka section of  
20 porosity greater than 2 percent, and in isopaching this, we  
21 feel like moving to the southeast, or the 1650 location, we  
22 should encounter the Atoka with the thickest porosity  
23 greater than 2 percent. Any movement west, we risk losing  
24 that thickness. Any movement east, we risk not only thin-  
25 ning but depletion.

1           Q           A standard location 1980 from the east  
2 line would in fact have been closer to the Oryx Federal Com  
3 No. 1 Well than the proposed location, isn't that right?

4           A           Correct.

5           Q           And your testimony is this location is  
6 recommended to hopefully encounter the thickest portion of  
7 the section.

8           A           Correct.

9           Q           All right, let's go to Exhibit Number  
10 Six and I'd ask you to review that. I'm sorry, Exhibit  
11 Number Seven.

12          A           Exhibit Number Seven is a cross section  
13 including the Atoka formation. Going from the west to the  
14 east is how this cross section is set up. As you can see  
15 on the west side, our B No. 2 Well has porosity developed  
16 greater than 2 percent but as you come from there to the  
17 east in the new Oryx Fed Com Well, it's much better devel-  
18 oped, and that's -- that's what we're looking for.

19                    If you continue to the east, to the  
20 Maxus B No. 1, again it's very well developed, not as well  
21 as the Fed Com Well, but again the Maxus B No. 1 is a good  
22 Atoka well.

23          Q           And the Atoka is shaded in red on this  
24 exhibit?

25          A           Shaded in red. This is, anything that's

1 shaded in red, is what I isopached on, any porosity greater  
2 than 2 percent.

3                   We come over, continuing east, to the  
4 Maddox Federal B No. 2. Again we had a well developed,  
5 good porosity in the Atoka. We even had a lower zone  
6 developed there.

7                   And just continuing on east in the  
8 Maddox Federal No. 1, again we have a very good looking  
9 Atoka zone and a very good Atoka producer there.

10                   And the last two wells, what I'm trying  
11 to show here is that the Atoka essentially loses its  
12 porosity. The bank, the Atoka limestone bank, is still  
13 there but it has no porosity, or very little porosity, and  
14 the then in the Phillips Merchant Well, they even had a  
15 test across it and it was just tight. It really was pretty  
16 shaly, too.

17                   Q           Mr. Logan, will you now identify what  
18 has been marked BTA Exhibit Number Eight?

19                   A           Exhibit Number Eight is a map on the top  
20 of the Morrow shale. It again was prepared under my super-  
21 vision by Lisa Weeks. What I want to point out with this  
22 exhibit is, as you notice, the two closest offset wells to  
23 our proposed location did not penetrate that point and did  
24 not penetrate any of the Morrow sands that are productive  
25 in this area.

1                   The reason we want approval for the  
2 Morrow formation is we feel like, and if you can refer back  
3 to Exhibit Number Five, which is the color coded map of  
4 production, as you can see, the wells in yellow are the  
5 Morrow producers and we feel like with the incremental cost  
6 involved in drilling on ahead to the Morrow, we can easily  
7 justify the expense.

8                   Q           Mr. Logan, has notice of this applica-  
9 tion been provided to offset interest owners as required by  
10 Oil Conservation Division Rule 1207?

11                  A           Yes, that's Exhibit Number Nine.

12                  Q           And Exhibit Number Nine contains not  
13 only the notice letter but return receipts?

14                  A           Correct.

15                  Q           If this application is granted, you're  
16 going to wind up with two Atoka wells in the south half of  
17 Section 34, is that correct?

18                  A           Correct.

19                  Q           How does BTA propose to handle this?

20                  A           Well, we are not seeking simultaneous  
21 dedication. We intend to P&A the well in the southwest  
22 quarter if we find what we're expecting to find.

23                               We recommend changing proration units at  
24 the date of first production of the proposed well. This  
25 will prevent waste by allowing us to produce the well in

1 the southwest quarter until the new well is on line, and at  
2 this time we would P&A one of the two wells in the south --  
3 one of the two wells.

4 Q In your opinion will granting this ap-  
5 plication be in the best interest of conservation, the  
6 prevention of waste, and the protection of correlative  
7 rights?

8 A Yes, it will.

9 Q Were Exhibits One through Nine either  
10 prepared by you or compiled at your direction and under  
11 your supervision?

12 A Yes, they were.

13 MR. CARR: Mr. Stogner, at  
14 this time we would move the admission of BTA Exhibits One  
15 through Nine.

16 MR. STOGNER: Exhibits One  
17 through Nine will be admitted into evidence.

18 MR. CARR: And that concludes  
19 my direct examination of Mr. Logan.

20  
21 CROSS EXAMINATION

22 BY MR. STOGNER:

23 Q Mr. Logan, the Well No. 1 down in the  
24 southeast quarter, is that presently producing from both  
25 the Atoka and the Morrow or what about --

1           A           It is producing only from the Morrow --  
2 or only from the Atoka.

3           Q           Only from the Atoka.

4           A           It is inactive in the Morrow.

5           Q           Okay. In your notification letters I  
6 notice you notified Amoco, Enron, Oryx, Pacific Enter-  
7 prises. When I look at your map I'm somewhat confused.  
8 All I see is Oil -- BTA Oil Producers.

9           A           Okay, when I was reviewing offsetting  
10 ownership I stated that in Section 4 Amoco -- or Enron and  
11 Pacific Enterprises are offsetting leaseholders.

12          Q           Okay. That was made on August 14th.

13                           MR. CARR: Correct.

14                           MR. STOGNER: Are there any  
15 questions of this witness?

16                           If not, he may be excused.

17                           Anything further in Case Num-  
18 ber 9755?

19                           MR. CARR: Nothing further,  
20 Mr. Stogner.

21                           MR. STOGNER: Case Number 9755  
22 will be taken under advisement.

23

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(Hearing concluded.)

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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 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. 4755 heard by me on 6 Sept. 1952.  
M. T. [Signature], Examiner  
Oil Conservation Division