

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

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

CASE NO. 12,651

APPLICATION OF BURLINGTON RESOURCES OIL )  
AND GAS COMPANY FOR APPROVAL OF A PILOT )  
PROJECT INCLUDING UNORTHODOX WELL )  
LOCATIONS AND AN EXCEPTION FROM RULE 4 )  
OF THE SPECIAL RULES AND REGULATIONS FOR )  
THE BASIN-FRUITLAND COAL GAS POOL FOR )  
PURPOSES OF ESTABLISHING A PILOT INFILL )  
DRILLING PROGRAM TO DETERMINE PROPER )  
WELL DENSITY FOR FRUITLAND COAL GAS )  
WELLS, SAN JUAN AND RIO ARriba COUNTIES, )  
NEW MEXICO )

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

May 17th, 2001

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MICHAEL E. STOGNER, Hearing Examiner, on Thursday, May 17th, 2001, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

\* \* \*

STEVEN T. BRENNER, CCR  
(505) 989-9317

OIL CONSERVATION DIVISION  
01 MAY 31 AM 10:23

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May 17th, 2001  
 Examiner Hearing  
 CASE NO. 12,651

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

## FOR THE APPLICANT:

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Santa Fe, New Mexico 87504

\* \* \*

## ALSO PRESENT:

STEVE HAYDEN  
Geologist  
Aztec Field Office (District 3)  
NMOCD

\* \* \*

1           WHEREUPON, the following proceedings were had at  
2   10:28 a.m.:

3           EXAMINER STOGNER: I believe at this time we will  
4   call Case Number 12,651, which is the Application of  
5   Burlington Resources Oil and Gas Company for approval of a  
6   pilot project that includes unorthodox well locations and  
7   an exception from Rule 4 of the Special Rules and  
8   Regulations for the Basin-Fruitland Coal Pool for purposes  
9   of establishing a pilot infill drilling program to  
10   determine proper well spacing for the Fruitland Coal Gas  
11   wells in San Juan and Rio Arriba Counties, New Mexico.

12           Okay, that will just affect only the Fruitland  
13   Coal Gas Pool in those two counties, not the others?

14           MR. KELLAHIN: That's not what I intended to say,  
15   Mr. Stogner. The five off-pattern wells are located in Rio  
16   Arriba and San Juan Counties --

17           EXAMINER STOGNER: Okay.

18           MR. KELLAHIN: -- but we're intending to affect  
19   the whole pool.

20           EXAMINER STOGNER: And this is just getting the  
21   information together. It's only -- Are these wells in San  
22   Juan and Rio Arriba County, or this area?

23           MR. KELLAHIN: I believe so.

24           EXAMINER STOGNER: Oh, okay. Okay.

25           MR. KELLAHIN: That may be a little confusing.

1 EXAMINER STOGNER: Now it's not. It was, but now  
2 it's not. This is to gather information that will come  
3 back later and affect the whole pool in the whole San Juan  
4 Basin.

5 MR. KELLAHIN: Yes, sir.

6 EXAMINER STOGNER: Okay, at this time I'll call  
7 for appearances.

8 MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of  
9 the Santa Fe law firm of Kellahin and Kellahin, appearing  
10 on behalf of the Applicant. I have three witnesses to be  
11 sworn.

12 EXAMINER STOGNER: Any other witnesses?

13 MR. CARR: May it please the Examiner, my name is  
14 William F. Carr with the Santa Fe office of the law firm  
15 Holland and Hart, L.L.P. We represent Williams Production  
16 Company and BP Amoco Production Company. I do not have any  
17 witnesses. I have a statement at the end of the hearing.

18 EXAMINER STOGNER: Any other appearances?

19 MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe,  
20 representing Cross Timbers Oil Company. I have no  
21 witnesses. We have a statement at the end of the case.

22 EXAMINER STOGNER: Did your witnesses leave, Mr.  
23 Bruce?

24 MR. BRUCE: They were the southeast New Mexico  
25 witnesses.

1 EXAMINER STOGNER: Oh, that was the southeast  
2 Cross Timbers group, not the northwest Cross Timbers group.

3 MR. BRUCE: I do have someone here for the  
4 northwest.

5 EXAMINER STOGNER: Okay, but you do not plan to  
6 put them on as a witness?

7 MR. BRUCE: Correct.

8 EXAMINER STOGNER: Any other appearances?  
9 Okay, will the three witnesses please stand to  
10 be sworn?

11 (Thereupon, the witnesses were sworn.)

12 EXAMINER STOGNER: Just for the record, so the  
13 other parties in this case -- There's an imaging project  
14 going on, to image our records, and Burlington Resources is  
15 up in the Farmington area, and the person in the Division  
16 that's heading this project up is Frank Chavez in Aztec.  
17 And this would be a good example of a typical-type case  
18 with a lot of information, a multi-colored large exhibit.  
19 How is things like this going to be imaged? Can we assure  
20 to our customers later on, that comes in behind us, that  
21 want to review the whole record, that this is the kind of  
22 imaging that he's looking at.

23 So I was just talking to Mr. Kellahin that this  
24 would be a good example to take to Mr. Chavez of what the  
25 record looks like in a case such as this, since they're up

1     there in the northwest, next door, and they visit him.  
2     This would be a very good one.

3             And so that's what I was talking about, we were  
4     not planning anything against Williams, BP or Cross  
5     Timbers.

6             Thank you, Mr. Kellahin.

7             MR. KELLAHIN: Mr. Examiner, Mr. Carr advised me  
8     on Friday that he would represent Amoco and Williams today.  
9     Mr. Bruce also within the time provided advised me that he  
10    represented Cross Timbers. I've arranged to bring enough  
11    exhibit books so that the parties of record will have the  
12    exhibit books.

13            In addition, we have additional copies. If there  
14    are companies appearing today that are not parties of  
15    record, I'll ask Mr. Alexander to distribute as many as he  
16    has. If there are companies that don't get a book, if  
17    they'll leave their business card with Mr. Alexander, we'll  
18    arrange for them to get copies of the book.

19            EXAMINER STOGNER: Thank you. What I had  
20    mentioned earlier is something extra that not necessarily  
21    has to do with this case, but if Burlington could work with  
22    Mr. Chavez on the separate issue of a typical case such as  
23    this, it would be greatly appreciated for him and also for  
24    me.

25            This is a very colorful exhibit in which I'm



1 looking at, which is -- measures about five by five. These  
2 are the kind of exhibits that people want to look at and  
3 want to see. And I think it would not be very good if we  
4 had this imaged in black and white. I'm sure that the  
5 witness is going to be talking about the colors today.  
6 I've already ran into this in the old imaging system.

7 But enough of that, let's get back to this, and  
8 Mr. Kellahin, I'll turn it over to you.

9 MR. KELLAHIN: Mr. Stogner, with your permission  
10 let me give you a brief introduction of what we're  
11 proposing to show you this morning.

12 First of all, the exhibit book is arranged so  
13 that, should you choose to do so, there is an executive  
14 summary for the land portion, a separate one for the  
15 geologic presentation, and last one for the petroleum  
16 engineering simulation. The purpose was to have that  
17 summary so that parties that were not in attendance here  
18 could read the book and figure out the project.

19 You may recall that Mr. Chavez, the Aztec  
20 supervisor for the Division, has a work-study group. This  
21 proposal presented by Burlington this morning evolves from  
22 that work-study group discussion.

23 Burlington desires to go forward with a reservoir  
24 simulation project that includes simulating in different  
25 areas of what is called the underpressured area of the

1 pool, to develop the appropriate reservoir data for  
2 simulation of those five areas. We'll talk to you about  
3 our reasons why we pick those areas and what we attempt to  
4 obtain as a result of drilling these wells.

5 There are five wells in five different areas, all  
6 in the underpressured area. Four of them are off-pattern.  
7 The footages are consistent with footage requirements of  
8 the pool, but four will be infill in that they are off-  
9 pattern, which means that they will be either in the  
10 southeast quarter of the northwest quarter of the section.

11 In addition, there is a fifth well which is on  
12 pattern but represents the second well in the GPU. We  
13 therefore docketed the case to demonstrate that they were  
14 exceptions from the well density, and they were off-pattern  
15 in terms of well location.

16 You may remember that in 1991 the Division  
17 entered a comprehensive order establishing on a permanent  
18 basis the rules for the Basin-Fruitland Coal Gas Pool.  
19 That work was based upon reservoir within the overpressured  
20 area. The terminology in the San Juan Basin is to refer to  
21 the overpressured area as the fairway.

22 We're going to describe to you what is generally  
23 believed to be the range of the overpressured area. There  
24 is a transition zone, if you will, between the  
25 overpressured and the underpressured, and the fact that up

1     until now there has not been reservoir simulation of the  
2     underpressured area. And when you look at the 1991 order,  
3     you'll see that there is a strong bias towards reservoir  
4     simulation, to help address well density in the pool.

5             We have a time-line for you that we are  
6     proposing. It is our hope and expectation that if we can  
7     stay on the time-line, that by the spring of next year  
8     we'll be in a position, with the cooperation of the rest of  
9     the operators in the pool that have shown an interest in  
10    participating in this work-study group, to bring back to  
11    the Division a comprehensive presentation to address well  
12    density in the overpressured area, well density in the  
13    underpressured area and, if there is there is a difference  
14    in spacing, then how to handle that.

15            While Burlington currently believes that the well  
16    spacing in the fairway at one well per 320 is appropriate  
17    and will continue to be so, that is a subject of debate  
18    among the work group. We don't propose to engage in that  
19    debate this morning.

20            We are seeking your permission for a science  
21    project, and that project is in the underpressured area  
22    involving five wells. It's necessary to drill the new  
23    wells in order to obtain discrete pressure data for each of  
24    the layers of the coal. That is something that hasn't been  
25    done. We need that data.

1           In addition, we want the opportunity to produce  
2 those wells and periodically test them.

3           Our plan is to ask your permission to produce  
4 these wells for a period not to exceed 180 days, at which  
5 point they'll be shut in. If we deem it necessary to ask  
6 to continue to produce these pilot test wells longer than  
7 the 180-day period, we'll come back and ask you, and we'll  
8 give you the reasons to do that.

9           But we think in order to avoid any question about  
10 correlative rights, drainage of the test wells, the fact  
11 that they're increased density, we believe it appropriate  
12 to fix a producing limit, recognizing that these wells are  
13 marginally economic, that we're going to spend a  
14 substantial sum of money on the study, but we're not asking  
15 you to let us simply produce these without any restrictions  
16 at this time.

17           We want to gather the data, present it to Mr.  
18 Chavez's work group and other parties in the San Juan Basin  
19 that are interested, and continue our discussions about the  
20 appropriate spacing unit.

21           So that's our plan, and that's what we're asking  
22 for permission to do, Mr. Stogner.

23           EXAMINER STOGNER: Thank you, Mr. Kellahin.

24           MR. KELLAHIN: My first witness is Mr. James  
25 Strickler.

1                    JAMES R.J. STRICKLER,  
2     the witness herein, after having been first duly sworn upon  
3     his oath, was examined and testified as follows:

4                    DIRECT EXAMINATION

5     BY MR. KELLAHIN:

6            Q.     Mr. Strickler, for the record, sir, would you  
7     spell your last name for the court reporter?

8            A.     S-t-r-i-c-k-l-e-r.

9            Q.     And where do you reside, sir?

10          A.     Farmington, New Mexico.

11          Q.     And what is your occupation?

12          A.     I'm a senior staff landman for Burlington  
13     Resources.

14          Q.     On prior occasions, have you testified before the  
15     Division as a petroleum landman?

16          A.     Yes, sir.

17          Q.     Pursuant to your employment with Burlington, have  
18     you been assigned the responsibility to comply with the  
19     Division notice requirements for the five pilot wells that  
20     we're discussing this morning?

21          A.     Yes.

22          Q.     In order to satisfy that requirement, Mr.  
23     Strickler, did you make yourself knowledgeable about the  
24     notice rules?

25          A.     Yes.

1 Q. In addition, have you provided in the exhibit  
2 book a summary of the various industry meetings that have  
3 taken place concerning well spacing in the pool?

4 A. Yes, sir.

5 Q. And you've provided that information for Mr.  
6 Stogner, should he care to review it?

7 A. Correct.

8 MR. KELLAHIN: We tender Mr. Strickler as an  
9 expert petroleum landman.

10 EXAMINER STOGNER: Mr. Strickler is so qualified.

11 Q. (By Mr. Kellahin) Mr. Strickler, let me ave you  
12 take a moment, let's turn to Tab 1 of the exhibit book.  
13 The first page is your certificate of notification where  
14 you believe you've complied with the notice requirements,  
15 correct?

16 A. Yes.

17 Q. Turn past the certificate, and let's look at the  
18 land summary. On the land summary you have provided Mr.  
19 Stogner with the names and the spacing of the 40-acre tract  
20 in which each of the pilot wells is located?

21 A. The 160-acre tract.

22 Q. I'm sorry, the 160-acre tract in which they're  
23 located?

24 A. Yes, sir.

25 Q. All right. Is it your understanding that four of

1 these wells are off-pattern wells?

2 A. That is correct.

3 Q. And that the fifth well is on pattern, but it  
4 will be the second well in its GPU?

5 A. That is correct.

6 Q. Is it also your understanding that these wells  
7 meet the footage requirements for wells in the pool?

8 A. Yes, they do.

9 Q. Let's turn now -- skip the rest of the  
10 information in that section for a moment, and let's turn to  
11 Tab 3 and look at the first display. What are we looking  
12 at here?

13 A. We have a San Juan Basin locator map. You can  
14 see the five wells in question highlighted in red, and that  
15 represents a nine-section area.

16 Q. The five pilot areas are displayed by the red  
17 code, and then there is a well name associated with each of  
18 the pilots?

19 A. That is correct.

20 Q. For each of those five areas, do you have  
21 individual land plat displays that will show us the  
22 offsetting operators that might be affected by that  
23 increased density well or off-pattern well?

24 A. Yes, sir.

25 Q. Turn past the Basin locator map. What's the next

1 display we're looking at?

2 A. What you see is an outline of the Basin-  
3 Fruitland Coal Gas Pool, San Juan, in purple. You'll also  
4 notice in the north end of that pool is the Fruitland Coal  
5 overpressured area, which was developed by the New Mexico  
6 Oil and Gas Commission out of Aztec.

7 Q. All right. The pool boundary shows an adjustment  
8 there on the eastern edge. You have re-examined this  
9 boundary to see if it is consistent with the acreage  
10 described in the Division orders for the pool?

11 A. Yes, sir.

12 Q. And you've made the necessary correction on that  
13 display?

14 A. We did make the necessary correction.

15 Q. All right. Let's go now to how you satisfied the  
16 notice requirements for each of the five wells. Starting  
17 first, if you'll turn to the next page, let's look at the  
18 plat that shows the Davis 505S. Do you have that one?

19 A. Sure do.

20 Q. All right, sir.

21 A. The Davis 505S is located in the east half of  
22 Section 12, Township 31 North, Range 12 west. You'll see  
23 it's crosshatched for your convenience. Burlington's  
24 acreage is colored in yellow, and the well spot is located  
25 in Lot 9 or the northeast quarter of the southeast quarter



1 of Section 12.

2 Q. Are there special notice rules set forth in the  
3 pool rules concerning the parties to be notified for an  
4 increased density or an off-pattern well?

5 A. Yes, sir, Rule Number 4.

6 Q. And what does that rule provide?

7 A. We need to -- Burlington is required to notify  
8 all the offset operators and/or working interest owners,  
9 which we have complied with.

10 Q. All right. Rule 4 says if there is an offset  
11 operator, you notify the operator?

12 A. That is correct.

13 Q. If it's an undrilled tract, then you have to find  
14 the interest owners?

15 A. Find out the interest owners, yes, sir.

16 Q. Is that rule different than Rule 1207 concerning  
17 well location?

18 A. It's slightly different. Rule 1207 requires that  
19 the offset operator, in this case Burlington, would also  
20 notify its working interest owners, the --

21 Q. All right, if Burlington is an offset operator,  
22 then you're required to notify the working interests?

23 A. And we did so.

24 Q. All right, so you complied with both rules?

25 A. Yes, we did.

1 Q. Behind this display of 505S, do you have a  
2 tabulation of the parties that received notice that was  
3 applicable for this well?

4 A. Yes, sir.

5 Q. Show me that.

6 A. You'll see there it's Amoco, Hallador Petroleum  
7 and Merchant Resources.

8 Q. All right, let's continue through the book then  
9 and look at the others. The next one is the Turner Federal  
10 210S?

11 A. The Turner Federal 210S is located in the north  
12 half of Section 13, Township 30 North, Range 10 west. This  
13 particular well is located in Lot 4, the northwest quarter  
14 of the northwest quarter.

15 Again, you see Burlington's acreage colored in  
16 yellow.

17 Q. Are you the operator of the offsetting wells in  
18 this area?

19 A. Yes, sir.

20 Q. Did you notify the working interest owners?

21 A. Yes, we did.

22 Q. And who are they?

23 A. In this case it's Amoco and Conoco.

24 Q. All right. Turn to the next color display, it's  
25 the Huerfano Unit 258S well.

1           A.    This well is located in Section 36, the east  
2 half, Township 26 North, Range 10 West. The test well is  
3 located in the northeast quarter.

4                   This particular well falls in the Huerfano Unit,  
5 and we've notified the Huerfano Unit Fruitland Coal owners  
6 and also the north offset owners, and you see those  
7 companies listed on the next page, a little over a dozen  
8 companies and individuals.

9           Q.    In order to find the last two wells it will be  
10 necessary to move to a different tab section, will it not,  
11 Mr. Strickler?

12          A.    Yes, sir.

13          Q.    All right, let's turn to Tab 8. If you turn to  
14 Tab 8, there's a foldout display which is the first one.  
15 Let's look at the San Juan 28-and-6 Unit Well 418S. Where  
16 is it?

17          A.    This well is located in the west half of Section  
18 28, Township 28 North, Range 6 West. The test well is  
19 located in the northwest quarter. This well falls entirely  
20 in the 28-6 Unit. The Fruitland Coal owners were all  
21 notified, and this is in the Fruitland Coal PA. Those  
22 owners are Burlington, Conoco, Four Star, Williams, Bolack  
23 and Phillips Petroleum.

24          Q.    Okay, let's cover the last well now. If you'll  
25 turn behind Exhibit Tab 9, let's look at the San Juan 28-

1 and-5 Unit well 201S. Find the well and tell us who you  
2 sent notice to.

3 A. This well is located in the north half of Section  
4 15, Township 28 North, Range 5 West, Rio Arriba County.  
5 This falls within the San Juan 28-5 Unit. This is on a  
6 drillblock basis, and Burlington owns 100 percent of this  
7 interest.

8 Q. Who did you send notice to?

9 A. We sent notice to the San Juan 28-5 working  
10 interest owners, Fruitland Coal.

11 Q. To your knowledge, Mr. Strickler, has Burlington  
12 received any objection from the parties to whom notice was  
13 sent concerning their Application today?

14 A. No, sir.

15 Q. Direct our attention to where we're going to find  
16 the first executive summary that you prepared concerning  
17 the project. Where is that set forth?

18 A. Are you referring to the land summary?

19 Q. No, sir, I'm referring to the first summary  
20 behind Exhibit Tab Number 2. Do you and the other  
21 technical members of the coal gas study group --

22 A. What you see is the meetings summary. As you  
23 mentioned in your introduction, Mr. Kellahin, the Fruitland  
24 Coal committee was formed back in July of 1999. It was  
25 chaired by Ernie Busch of the Oil Conservation Division in

1 Aztec, New Mexico. A series of meetings have been held  
2 since July of 1999, actually ten meetings have been held.

3 Q. And this summary behind this exhibit tab shows  
4 the various participants at these meetings and the date of  
5 the various meetings that --

6 A. Yes, sir.

7 Q. All right, sir. Go back now to Exhibit Tab 1.  
8 Let's talk about the balance of the information behind  
9 Exhibit Tab Number 1. You've talked about the certificate,  
10 you've given us the land summary. The balance of this is  
11 the copies of the green card, the Application and a total  
12 list of the parties to whom notice was sent?

13 A. Correct.

14 MR. KELLAHIN: Mr. Stogner, that concludes my  
15 examination of Mr. Strickler. At this point we would move  
16 the introduction of the exhibits behind Exhibit Tab 1, 2  
17 and 3.

18 EXAMINER STOGNER: Exhibit 1 -- between Tabs 1,  
19 2, 3 -- how about the one over in that -- 8 and 9, do you  
20 want those?

21 MR. KELLAHIN: I'm going to ask those to be  
22 admitted later, when we've finished our discussion about  
23 all that data.

24 EXAMINER STOGNER: Okay, the portion of Exhibit  
25 Number 1 behind Tabs 1, 2 and 3 will be admitted into

1 evidence at this time.

2 EXAMINATION

3 BY EXAMINER STOGNER:

4 Q. I'm trying to get a placement here. I'm  
5 referring to the locator map behind Tab 3. The Davis 505S  
6 well. Where is that well located in reference to the Cedar  
7 Hills-Basal Fruitland Coal Pool?

8 A. This well, sir, is located in 31-12, Section 12.  
9 I do have a copy of the Order Number 8768-A, and I believe  
10 the Cedar Hill Pool is listed there. If I may refer to it,  
11 I don't know it by memory.

12 Q. Please refer, yes. And you're referring to what  
13 order number again?

14 A. This is Order Number R-8768-A.

15 MR. KELLAHIN: That's for Basin-Dakota, isn't it?

16 THE WITNESS: It's Basin-Dakota.

17 MR. KELLAHIN: He was asking you about the Cedar  
18 Hills Pool.

19 THE WITNESS: That is a Fruitland Coal pool, is  
20 it not?

21 MR. KELLAHIN: Yes, sir, and it's different from  
22 this one.

23 THE WITNESS: It is different from this one. It  
24 did have -- One of these orders did have that location in  
25 there, and I think it might have been the original 8768.

1 Q. (By Examiner Stogner) Now, on page two behind 3  
2 there is another locator map. I don't remember you talking  
3 about it that much. It's showing the Fruitland Coal  
4 overpressure area. But there's also a little square in  
5 there that points to the Cedar Hills --

6 A. Ah.

7 Q. -- Fruitland Basal Coal. How about if we refer  
8 to that one and where this 505S well is in relationship to  
9 that?

10 A. Okay. The location of the Cedar Hill Gas Pool is  
11 in Order Number R-8768, and it's located in Sections 3  
12 through 6, Township 31 North, Range 10 West, and Sections  
13 19 through 22 and 27 through 34, Township 32 North, Range  
14 10 West, San Juan County, New Mexico. And then our well is  
15 in 31-12, Section 12, which would be a couple townships  
16 over.

17 Q. Over to the west; is that correct?

18 A. I believe so.

19 Q. Okay.

20 A. South, I'm sorry.

21 Q. Oh, south.

22 A. Southwest.

23 Q. Okay. Behind Tab Number 1, showing the  
24 notification, and then on page two behind Tab Number 1,  
25 "Land Summary", and over on the far column to the right,

1 that's "Working Interest Owners and Company Approvals".

2 A. Yes, sir.

3 Q. When I see this, this is all the offsets around  
4 these individual pilot wells; is that correct?

5 A. No, sir, these are the owners for these five  
6 infill wells. As you can see, the first three, the Davis,  
7 Turner and San Juan 28-5 are owned or controlled by  
8 Burlington 100 percent. The San Juan 28-6 Unit is owned by  
9 the Fruitland Coal PA owners, and you see those owners  
10 there, Burlington, Conoco, Four Star, Williams, Bolack and  
11 Phillips. And in the Huerfano Unit it belongs to  
12 Burlington and Cross Timbers. And these are the owners of  
13 the five infill wells in question.

14 Q. Okay, and the interest underlying that half  
15 section?

16 A. Yes, sir, and we have sufficient approval for all  
17 five.

18 Q. Okay, when I refer to Exhibit -- I'm sorry, Tab  
19 8, and I look at the second page, there's a map over there  
20 that shows the Fruitland Coal participating area in gray --

21 A. Yes, sir.

22 Q. -- and then a sort of a teal blue as the  
23 nonparticipating area --

24 A. That is correct.

25 Q. -- the proration unit is surrounded by both



1 participating and nonparticipating wells; is that correct?

2 A. That is correct.

3 Q. Okay. Now, where do I see -- or where do I go to  
4 to look up the difference of that ownership or percentages?  
5 Is that in here?

6 A. In the 28-and-6 Unit, the Fruitland Coal owners  
7 are listed on the land summary. The gray area, those  
8 owners are again Burlington, Conoco, in those percentages,  
9 Four Star, Williams, Bolack and Phillips, in those various  
10 percentages, and I'll refer you to the land summary.

11 Burlington owns 19.38, Conoco 35.79, Four Star --  
12 or Texaco 31.84 --

13 Q. Okay, I'm looking for that land summary. Where  
14 is that?

15 A. Oh, I'm sorry, it would be Tab 1 -- I'm sorry,  
16 Tab 2 --

17 Q. Tab 2.

18 A. -- the -- right behind the certificate of  
19 mailing.

20 Q. Tab 2. All I find behind Tab 2 is about the  
21 meetings they were having.

22 A. This is -- I'm sorry, it would be Tab 1. We had  
23 the hearing summaries in the front, so it would be Tab 1,  
24 it would be the second page. There it is.

25 Q. Okay. Okay, when I go to that column, now you

1 refer down there in parentheses, "(Fruitland PA owners)" --

2 A. Yes, sir.

3 Q. -- is that referencing to all the people up  
4 above?

5 A. Yes, sir.

6 Q. Okay. Now, is there a difference, other than  
7 percentage, between that gray area and teal blue area?

8 A. Yes, sir, there would be. The gray area  
9 represents everybody's ownership as listed in the land  
10 summary, and the teal acreage is on a drillblock basis. So  
11 whatever -- You know, and that varies from drillblock to  
12 drillblock.

13 Q. Okay, now where do I find those interest owners  
14 in that drillblock to drillblock that surrounds this  
15 proration unit? Where do I find that those were notified?

16 MR. KELLAHIN: We may have to break those out for  
17 you, Mr. Stogner, because they got notice under Exhibit 1,  
18 but I don't have a separate tabulation, and I'll have to do  
19 that after the hearing for you.

20 EXAMINER STOGNER: Okay. Yeah, if you would --

21 MR. KELLAHIN: Yes, sir.

22 EXAMINER STOGNER: -- now you see where I'm  
23 getting at --

24 MR. KELLAHIN: Yes, sir.

25 THE WITNESS: Yes, sir.

1 EXAMINER STOGNER: -- I need to find out who  
2 those are, identified --

3 MR. KELLAHIN: The non-PA owners and the PA  
4 owners all got notice, I just didn't give you a list of the  
5 non-PA owners.

6 Q. (By Examiner Stogner) Okay. Now, are there any  
7 interest owners that have not ratified this unit? Is this  
8 100-percent participation for the Fruitland Coal in the San  
9 Juan 28-6 Unit?

10 A. Yes, sir.

11 Q. It is --

12 A. Yes, sir.

13 Q. -- that's 100 percent?

14 A. Yes, sir.

15 Q. There's no unratified interest owners?

16 A. No, sir.

17 Q. Okay. Now, I'm looking at the Huerfano Unit.  
18 I'm looking at the 28-5 Unit, Well Number 201. Okay, when  
19 I turn to Tab 9, page one, this shows that the only  
20 Fruitland Coal participating area is to the west; is that  
21 correct?

22 A. Yes, sir.

23 Q. Okay. Now, there is some Fruitland Coal, but  
24 they're nonparticipating in the unit; is that correct?

25 A. That is correct.

1 Q. And then the rest in white, or the area in white  
2 on page 2, these are undeveloped acreage?

3 A. Correct.

4 Q. Okay, now how does the interest vary between  
5 these three colors?

6 MR. KELLAHIN: Once again, I'm going to have to  
7 break that out for you, Mr. Stogner, because we didn't give  
8 you that table.

9 Q. (By Examiner Stogner) Okay. Is the San Juan  
10 28-5 Unit, is that 100-percent participation with all  
11 mineral owners?

12 A. Yes, sir.

13 Q. Okay. Now, I'm looking behind page three at the  
14 Huerfano Unit 258S well. Now, this is in a unit area?

15 A. The well does fall in the Huerfano Unit, but on  
16 the northern border of the Huerfano Unit.

17 Q. Okay. Now, how about participating and  
18 nonparticipating? I show -- it's a leasehold. I don't see  
19 the unit map. How is this different than the other two  
20 units that we talked about?

21 A. The other two wells were totally within those  
22 prospective units, the 28-5 and the 28-6. We show this  
23 much like a drillblock area, because it's on the north end  
24 of the Huerfano, and we had to notify the folks on the  
25 north end of the Huerfano Unit. So it was a point of

1 information for you.

2 Q. Okay.

3 A. We did not list the Huerfano PA map.

4 MR. KELLAHIN: We did put that in a different  
5 section, Mr. Stogner. If you go to Tab 7 --

6 EXAMINER STOGNER: Tab 7. Okay, I have Tab 7.  
7 You maybe -- Do you want to examine him on this? Maybe  
8 that will probably speed things up?

9 FURTHER EXAMINATION

10 BY MR. KELLAHIN:

11 Q. Mr. Strickler, let's look behind Tab 7 to follow  
12 up on Mr. Stogner's discussion. What are we looking at  
13 here?

14 A. We show the Fruitland Coal participating area  
15 colored in gray, and it surrounds the --

16 Q. You're looking at the second map.

17 A. The second map, right. The first map is the  
18 location map which we showed previously. The second map is  
19 the PA map.

20 Q. All right. And again, the PA is colored in gray,  
21 and the nonparticipating area is shown in blue?

22 A. Correct.

23 Q. Have you yet broken out for Mr. Stogner the  
24 ownership for each of those categories within the unit?

25 A. No, sir.

1 Q. But you sent notice to all the categories --

2 A. Yes, sir. And I'd like to refer you to a  
3 spreadsheet that might answer that question, Mr. Stogner's  
4 question. It's a summary of all the parties that we've  
5 notified and the wells affected, and this is on -- this is  
6 Tab 1.

7 Q. If you flip past the Application and you find the  
8 attachments to the Application, there's a tabulation of  
9 parties notified.

10 A. Yes, sir.

11 Q. All right, how can we read this and figure it  
12 out?

13 A. Well, you see all the parties listed in  
14 alphabetical order. There's about 43 owners. And adjacent  
15 to each party is the well that they offset, or the well  
16 that they're a particular offset owner.

17 Q. So this list would be comprehensive and would  
18 include a party, whether he was a participating party in a  
19 PA or in a nonparticipating drillblock?

20 A. Yes, sir. And it also would answer the two  
21 wells, the 28-6 well and the 28-5 well. It lists all those  
22 owners.

23 MR. KELLAHIN: Mr. Stogner, I'm still more than  
24 willing to separate these out for you and subsequent to the  
25 hearing provide you separate tabulations for responding to

1 your questions.

2 FURTHER EXAMINATION

3 BY EXAMINER STOGNER:

4 Q. Okay, let me -- before I respond to that, let me  
5 make sure I get this straight on this Huerfano 258. Now,  
6 when I look at the second page behind Tab 7, we have a  
7 cross-hatched red area showing the spacing unit. Is this  
8 currently in the gray area or the blue area or the white  
9 area?

10 A. It's a nonparticipating area.

11 Q. So it would be blue?

12 A. Yes, sir.

13 Q. Okay. Now, is this unit, the Huerfano Unit, is  
14 that 100-percent participation by all mineral interests?

15 A. Yes, sir.

16 Q. Okay, so there's no unratified royalty interest  
17 anywhere in this unit?

18 A. That is correct.

19 Q. So with these three wells in these three units,  
20 whether they be in nonparticipating areas or participating  
21 areas, they are represented in that list behind Tab 1 --

22 A. They land summary.

23 Q. -- the land summary?

24 A. Yes, sir.

25 Q. There's no interest that is not represented here;

1 is that correct?

2 A. We have all the correct interest owners there,  
3 yes, sir, on the land summary.

4 Q. You just don't have the percentages broken down?

5 MR. KELLAHIN: That's right.

6 EXAMINER STOGNER: As long as we have been  
7 notified and listed, I will accept that. So no additional  
8 work is needed at this point, as long as we have them all  
9 listed.

10 Q. (By Examiner Stogner) Okay, behind Tab 2, this  
11 is the comprehensive list of all the meetings of this  
12 committee -- what, since 1999?

13 A. July of 1999 is when it started.

14 Q. That's when it re-started, I guess this --

15 A. Re-started, you're right, because they had one in  
16 the late 1980s.

17 Q. Okay. Now, do you -- It looks like Burlington is  
18 represented by several people in most of these instances.  
19 Are you one of those? You are, aren't you, in at least  
20 some of them?

21 A. On the Fruitland Coal Committee meetings?

22 Q. Yes.

23 A. I wasn't able to attend any of those, but on the  
24 subsequent meetings you'll see on the back pages, the May  
25 4th meeting with the BLM, with the partners, and also with



1 the NMOCD on May 8th, I was able to attend all those  
2 meetings.

3 Q. What's this agenda -- committee agenda for May  
4 8th? Is this a meeting that you had with -- or that the  
5 committee had in conjunction with another meeting, or are  
6 these issues that were brought up during just the committee  
7 meeting? I'm a little confused.

8 A. There were two meetings held that day --

9 Q. Uh-huh.

10 A. -- and the morning meeting covered those topics  
11 that you see on that -- the San Juan Basin Working  
12 Committee Agenda.

13 And then the sheet before that was a separate  
14 meeting concerning the infill pilot program. There were  
15 two separate meetings held on that day.

16 Q. By the committee, the coal committee?

17 MR. KELLAHIN: No, sir.

18 EXAMINER STOGNER: No.

19 MR. KELLAHIN: One is the coal committee, the  
20 other is Burlington's presentation to Mr. Chavez on the  
21 five pilot wells.

22 Q. (By Examiner Stogner) Okay, because I wondered  
23 what livestock and grazing issues had to do --

24 A. It was a comprehensive meeting. And you'll  
25 notice Item E was the Fruitland Infill Update, so I guess

1 that's why we put it in there.

2 Q. Okay. Since this is sort of a -- just a general  
3 summary, getting started on this, when I refer to the Tab 3  
4 again, the big locator map, some of it extends up in  
5 Colorado. Now, does Burlington operate coal gas wells in  
6 Colorado?

7 A. Yes, we do.

8 Q. And what's the spacing of the coal gas in  
9 Colorado?

10 A. In certain areas 320s, in other areas you're  
11 allowed an infill, 160 infill.

12 Q. Okay. Is some of those infills allowed during --  
13 in that Colorado-New Mexico state-line area?

14 A. I think there's a -- Yes, sir.

15 Q. Okay. Do you know if any of that technical  
16 information is utilized, or was utilized in preparation of  
17 this?

18 A. I'd have to refer that to my geologist. He's  
19 real up on that.

20 EXAMINER STOGNER: Okay. Mr. Kellahin --

21 MR. KELLAHIN: Yes, sir.

22 EXAMINER STOGNER: -- what we're talking about  
23 today, in the next phase, would be -- We're talking about a  
24 pilot project, a small area, the technical information, on  
25 our way to getting information for increased well density

1 in every other place, other than the fairway; is that  
2 correct?

3 MR. KELLAHIN: I'm not sure what the work group  
4 or Burlington will decide about the fairway density. I  
5 assume it would be docketed for hearing on the entire pool.

6 EXAMINER STOGNER: Oh, on the entire pool. I was  
7 under my understanding that the infill phase would not  
8 affect the fairway, as it's known.

9 MR. KELLAHIN: Well, I think that's Burlington's  
10 position, but that doesn't necessarily represent the  
11 position of the work group, and it's a matter to be  
12 discussed with all of them.

13 EXAMINER STOGNER: Good point, okay.

14 This is a big pool, a lot of interest, a lot of  
15 things going into it. That's why I'm trying to be one step  
16 ahead here. It is going to ultimately take in the whole  
17 pool, is it not? Is there going to be a buffer zone  
18 between us and Colorado? Is it needed?

19 MR. KELLAHIN: Yes, sir, those are all issues  
20 being discussed.

21 EXAMINER STOGNER: Okay, wonderful.

22 With that, I have no other questions of Mr.  
23 Strickler. You may be excused.

24 THE WITNESS: Thank you.

25 MR. KELLAHIN: We'd like to call our geologist,

1 Mr. Steve Thibodeaux. Mr. Thibodeaux spells his name  
2 T-h-i-b-o-d-e-a-u-x.

3 STEVEN M. THIBODEAUX,  
4 the witness herein, after having been first duly sworn upon  
5 his oath, was examined and testified as follows:

6 DIRECT EXAMINATION

7 BY MR. KELLAHIN:

8 Q. For the record, sir, would you please state your  
9 name and occupation?

10 A. Steven Thibodeaux, and I'm a geologist.

11 Q. And where do you reside, sir?

12 A. Ignacio, Colorado.

13 Q. On prior occasions have you testified before the  
14 Division and qualified as an expert petroleum geologist?

15 A. Yes, I have.

16 Q. Have you been involved on behalf of your company  
17 as the geologist to study the potential for infill drilling  
18 in the Basin-Fruitland Coal Gas Pool?

19 A. Yes, I have.

20 Q. As part of that effort, have you attended various  
21 meetings among industry personnel to examine that topic?

22 A. Yes, I have.

23 Q. And you've been the primary geologist responsible  
24 for determining the location and how to gather data for the  
25 five pilot wells which we've described to be located in the

1 underpressured area of the pool?

2 A. I am.

3 MR. KELLAHIN: We tender Mr. Thibodeaux as an  
4 expert petroleum geologist.

5 EXAMINER STOGNER: Mr. Thibodeaux is so  
6 qualified.

7 Q. (By Mr. Kellahin) Do the exhibits that we're  
8 about to review, Mr. Thibodeaux, behind Exhibit Tab 4  
9 represent your work product?

10 A. Yes, they do.

11 Q. In addition, the book is organized so that the  
12 geologic information applicable to each of the five pilot  
13 wells is also located behind the tab that is specific as to  
14 each of those wells?

15 A. That is correct.

16 Q. Finally, did you prepare the written summary that  
17 begins behind Exhibit Tab Number 4 to summarize your  
18 presentation?

19 A. I did.

20 Q. Is there a key exhibit that we can look at  
21 initially to begin to explain to Mr. Stogner what you see  
22 and what you're trying to do?

23 A. Yes, there is.

24 Q. Which one would that be?

25 A. It would be the very first map, the cumulative

1 production, a larger version of which is on the easel.

2 Q. The first pocket contains the cumulative  
3 production map. Let's take a look at that. You've got a  
4 large copy on the display board?

5 A. Yes, I do.

6 Q. Let me take a moment and unfold my copy. What do  
7 you call the map we're looking at?

8 A. This is a cumulative gas production map from the  
9 Fruitland Coal wells in the San Juan Basin.

10 Q. That microphone doesn't amplify your voice.

11 A. Okay.

12 Q. You'll have to speak up.

13 How do I look at the color code and understand  
14 what you're meaning to portray by that color code?

15 A. Basically from blue up until yellow, we get  
16 increasingly greater amounts of cumulative production.  
17 Blue through green represents about a BCF of cumulative  
18 production. Once we get to the yellow colors, we are  
19 starting to have cumulative production in excess of 7 BCF  
20 per well.

21 Q. On this display can we find imposed on it the  
22 five study areas for the five pilot wells?

23 A. Yes, we have a small red square around a nine-  
24 section area surrounding each of the proposed five pilot  
25 wells, which are marked with a red triangle.

1           Q.    The study area, then, would be those wells within  
2 the nine-section area?

3           A.    The immediate study area, yes, sir.

4           Q.    Is there a way to look at this map and determine  
5 generally where you believe the fairway or overpressure  
6 area of the pool is in relation to the balance of the pool?

7           A.    Certainly, we have an original overpressure  
8 interpretation line marked in red around the very hot  
9 colors or the red and yellow colors.  Aside from that, it's  
10 reasonably stark contrast between the higher production,  
11 cumulative production areas which are all in red or yellow,  
12 and the nonfairway coals.

13          Q.    This is simply done on a cumulative-production  
14 basis?

15          A.    That's correct.

16          Q.    Is there an observable geologic difference  
17 between wells in the fairway and those in the  
18 underpressured area?

19          A.    Yes, there is.

20          Q.    Explain to me what are the various factors of  
21 difference between those two areas.

22          A.    The primary observable geological difference is  
23 that the fairway coals are of higher rank than the  
24 nonfairway coals.  We have a -- That is observed by  
25 measuring vitrinite reflectance in the laboratory, which is

1 the indication of rank and thermal maturity. So the  
2 fairway coals are generally of higher rank, which means  
3 they're more thermally mature. They're a little more prone  
4 to be brittle and fractured, and they have a higher  
5 capacity to both store and generate hydrocarbons.

6 Q. Is there an explanation as to why the wells in  
7 the overpressured area have been more productive in  
8 relation to the other area?

9 A. Yes.

10 Q. And what are the factors that explain that  
11 difference?

12 A. Primarily due to their higher rank and higher  
13 gas-generating capabilities, because they were buried  
14 deeper originally. They also have much greater  
15 permeability than the nonfairway coals. And I would say  
16 permeability is probably the single most important factor  
17 in determining their productive potential.

18 Q. Does Burlington participate with other operators  
19 in the San Juan Basin that are interested in the Coal Gas  
20 Pool in studying well density in the pool?

21 A. Yes, we are.

22 Q. Can you give me a general list of the kinds of  
23 things that might be mapped or analyzed to determine  
24 whether there is a need to separate out the fairway from  
25 the balance of the pool?



1           A.    Sure, there are a number of observable and  
2 mappable differences in the production between fairway and  
3 nonfairway gases. There are significant differences in the  
4 amount of CO<sub>2</sub> produced, the BTU content of the gases, the  
5 dry or wet indexes of the gases, the water production from  
6 these wells, the initial shut-in pressures from these  
7 wells, the maximum rate achieved by these wells, the EURs  
8 of the wells, the gas-water production profiles, which  
9 typically show an incline in gas production profile on a  
10 fairway and an immediate decline or flat production on  
11 nonfairway wells, and initial permeability.

12           Q.    Do you participate on behalf of the geologic  
13 portion of your company with a technical team of Burlington  
14 to analyze the reservoir?

15           A.    Yes, I'm the senior geologist on a Fruitland Coal  
16 team designated to study just the Fruitland Coal.

17           Q.    Do other members of the team include reservoir  
18 engineers or engineers with expertise in reservoir  
19 simulation?

20           A.    Yes.

21           Q.    And you continue to work together as a team?

22           A.    Yes, we do.

23           Q.    What has the team currently concluded concerning  
24 the well density in what we characterize as the fairway?

25           A.    Our team, as well as our company, in general

1 agrees with the NMOCD and industry-sponsored ICF and GRI  
2 studies conducted between 1988 and 1991, that indicated  
3 that 320-acre spacing is adequate. Those studies were  
4 primarily focused on data found in the Cedar Hill Pool,  
5 which is within the fairway productive area.

6 In addition, the long-term production we've seen  
7 out there, along with POW wells that we have also indicate  
8 to us that fairway production is adequately spaced on 320  
9 acres.

10 Q. When we look at the underpressured area of the  
11 pool, do you have available to you the same type of data  
12 that was used to analyze and simulate performance of wells  
13 in the fairway?

14 A. At this point in time, no, we do not. And that  
15 is why we have proposed our pilot project, because we would  
16 like to collect the same type of data that was well  
17 represented in the original studies in the fairway for  
18 nonfairway coals.

19 Q. Give me an example of a list of the kinds of data  
20 that you would gather from your pilot wells.

21 A. Currently we do not have layered pressure data in  
22 our pilot wells.

23 Q. Why is that important to you?

24 A. What we are seeing in fairway or nonfairway  
25 production is that in a relative term, in a general sense,

1 we have very high recovery factors for fairway production  
2 and very low recovery factors for nonfairway coals.

3 What we don't understand is that -- Are those  
4 recovery factors representative of the entire amount of  
5 coal encountered in a single wellbore, or are we seeing  
6 anomalously high recovery factors from a single permeable  
7 layer, and the rest of the layers may not be contributing  
8 at all to the production.

9 Q. Within each of the five project areas, do you  
10 have available data that will supply that information? Why  
11 do you need the new well?

12 A. The data that we have in the pilot project areas  
13 is not layer specific.

14 Q. And what will you obtain, then, with a new well  
15 in each of the five pilot areas?

16 A. With a new well we will be obtaining layer-  
17 specific data, we will be developing isotherms by layer and  
18 layer-specific pressure data, as well as production-testing  
19 data.

20 Q. Why have you and the team recommended to the  
21 Division the five different areas for study on a pilot  
22 basis?

23 A. We picked five areas that have a good  
24 representation of the major coal seams we've been able to  
25 map throughout the entire Basin. We want to stay away from

1 areas where there were -- some of the major coals were  
2 absent or thinned dramatically, so that we had good  
3 representation.

4 And then we -- aside from that, we additionally  
5 picked areas where we had -- the coal wells in those areas  
6 exhibited both high, medium and low productive  
7 capabilities.

8 We were -- believe that the areas that we've  
9 picked will be representative of a significant portion of  
10 the nonfairway coal production areas.

11 Q. I'm not going to ask you to go through each of  
12 the five areas geologically, Mr. Thibodeaux, but I would  
13 like you to select one of those. Let's go to the tab that  
14 is specific as to that well, and let's describe for Mr.  
15 Stogner how you've organized and analyzed the geology for  
16 each of the five.

17 A. Sure, we can go to Tab Number 5, which concerns  
18 the Davis Number 505 well.

19 Q. All right, let's do that. Let's go behind  
20 Exhibit Tab 5. You've got your nine-section area on the  
21 first plat. You turn past that one, you have the nine-  
22 section area in which only the coal gas wells are located,  
23 all right?

24 A. Yes, sir.

25 Q. Behind that is a surface map and then a

1 tabulation of interest.

2 Then we get to your first display. It's a  
3 Pictured Cliffs structure map?

4 A. Yes, sir, the first display is a Pictured Cliffs  
5 structure map, showing that really structure plays a very  
6 minor to insignificant role in selection of these  
7 locations.

8 Q. Behind Exhibit Tab 4 is the large structure map,  
9 so that if the Examiner wants to see the entire structural  
10 interpretation he can look at that map?

11 A. Yes, sir, that's correct.

12 Q. And this would be a portion of that map that is  
13 specific as to the Davis well?

14 A. Yes, sir.

15 Q. All right. Have you picked any of the five  
16 project wells based upon structure being a critical  
17 component?

18 A. No, we haven't.

19 Q. And why not?

20 A. The nonfairway coals are basically located on  
21 what is known as the Chaco slope, which is a gently dipping  
22 monocline that dips upwards to the southwest. And so  
23 structure plays a relatively minor, inconsequential role,  
24 to our knowledge, in productive capabilities of these  
25 coals.

1           Q.    Let's turn past the structure map and look at the  
2 green display which is the next map.  What does this  
3 represent?

4           A.    The green display represents a net isopach map of  
5 all the coals we expect to encounter in this area.

6           Q.    And why is that of importance to you?

7           A.    We were looking for areas that obviously did not  
8 have any significant thinning coals where some of the major  
9 coal layers that we've been able to identify were entirely  
10 absent, so that we could relay information that we found in  
11 our pilot areas to a larger portion of the Basin.

12          Q.    Your geologic summary categorizes each of the  
13 five project areas and shows what you conclude to be the  
14 geologic differences among that population?

15          A.    Yes, it does.

16          Q.    Have you determined to your own satisfaction that  
17 you have selected an adequate number of pilot areas in the  
18 underpressure to subject to study?

19          A.    Yes, sir, we believe the five pilot areas we have  
20 chosen and the wells that we have chosen to drill will be  
21 representative of a significant portion of the nonfairway  
22 characteristics.

23          Q.    Let's continue with the Davis discussion.  If  
24 you'll turn behind the coal thickness map and look at the  
25 type log, describe for us in a summary fashion this

1 layering of the coal that you're investigating.

2 A. The type log for the Davis 505, on the right-hand  
3 side you will notice that designations P2, G1, G2, et  
4 cetera -- these are internal designations we've given  
5 individual layers that we've been able to correlate and map  
6 throughout a very significantly large portion of the entire  
7 Basin, whether it be Colorado or New Mexico.

8 Q. When I look at the type log I can see that the  
9 lower Coal intervals are closely associated with what  
10 appears to be the top of the Pictured Cliff sandstone?

11 A. Yes, they are.

12 Q. What are you and the team doing to assure  
13 yourself that your science project is not compromised by  
14 having Pictured Cliff gas contributed to the production of  
15 your pilot well?

16 A. The five pilot well areas that we've chosen, one  
17 of the criteria for choosing these areas, besides the ones  
18 mentioned earlier, that we were trying intentionally to  
19 stay from high productive Pictured Cliffs areas, so as to  
20 not unduly influence pressures we may obtain from our basal  
21 section, in particular, from long-term Pictured Cliffs  
22 production.

23 Q. Following the type log, then, you have cross-  
24 sections that are applicable to giving us a cross-section  
25 line in two directions through the pilot area for each of

1 the pilot wells?

2 A. Yes, sir, those cross-section lines were  
3 indicated both on the structure map and on the net coal  
4 map, and they represent a three-well cross-section through  
5 the type log in both the strike and dip directions.

6 Primarily the purpose of these type sections,  
7 these cross-sections, was to determine the individual  
8 stratigraphic variations that we were seeing in that area  
9 so that we could determine how many layers we should be  
10 pressure testing for a potential communication.

11 Q. On the cumulative-production map that we began  
12 our discussion with, there is a line of cross-section in  
13 two directions on that display --

14 A. Yes, there is.

15 Q. -- do you see that?

16 Let's go to those cross-sections. If you go to  
17 Exhibit Tab 4, and if you turn past the pocket parts, the  
18 first cross-section is a Regional Strike Section. Do you  
19 find that?

20 A. Yes, sir.

21 Q. Why is this of significance to you?

22 A. What we're showing in our Regional Strike  
23 Section, which runs roughly along the fairway/nonfairway  
24 boundary area, is that we have very good coal continuity of  
25 the major coal intervals that we've been able to identify



1 and map throughout a 46-mile -- or plus section of rock,  
2 from the northwest to the southeast.

3           What I would like to point out is, although we  
4 have good coal continuity as a whole for each one of our  
5 major intervals that we've been able to map, we do see  
6 local discontinuities, and we do see local stratigraphic  
7 relationship changes as these coals move up and down the  
8 section, as they were influenced by the deposition of  
9 clastics from fluvial streams that were active during coal  
10 deposition time.

11           Q.   How are any of your five pilot projects affected  
12 by your analysis of the Regional Strike Section? Of what  
13 importance is this when we look at your five pilot areas?

14           A.   Of importance to us is the various relationships  
15 that we see. If we would notice, briefly, on the third  
16 well from the left, we see a large interval where our basal  
17 coals -- and there's one called Green 3 -- are associated  
18 together. In that instance we would expect those coals to  
19 properly behave as a single reservoir and be in pressure  
20 communication.

21           If you go to the next well to the east of that  
22 location, that association has split and those coals are  
23 probably not in pressure communication at that point. And  
24 we see these relationships over and over again throughout  
25 the entire Basin, where we see different relationships.

1 Sometimes the coals are associated closely with each other,  
2 and sometimes they split to form different associations  
3 with other coals.

4 Q. Will your study of the five pilot areas provide  
5 you a reasonable selection of those variables so that you  
6 will have a sample of the changes in order to analyze those  
7 changes of coal?

8 A. Yes, they do.

9 Q. Let's look at the last cross-section, which is  
10 behind the one we've just described, and you've labeled  
11 that a Regional Dip Section?

12 A. Yes, I have.

13 Q. Describe for us the points of information you  
14 want to have us understand about this display.

15 A. First off, just as we saw in the regional strike  
16 section, we see the coals associated with other  
17 differently. So we see that from both the strike and dip  
18 direction.

19 Secondly, what we are noticing is that as we go  
20 to the landward depositional areas, to the southwest,  
21 updip, our coals are beginning to thin out as a general  
22 rule, and we're being deposited on the landward side of our  
23 major peak deposition areas. As we go towards the  
24 northeast or towards the original paleo-shoreline of the  
25 Pictured Cliffs, we start getting additional development of

1 all of our coals showing up.

2 One of the things that we are looking at testing  
3 in our pilot program, as we reach the landward side of the  
4 pinchout edge of some coals that may be well developed to  
5 the northeast, but we have the same coal towards the  
6 southwest -- once we get towards the edge these coals have  
7 a tendency to be of lesser quality, I would say. They have  
8 more clastics in them, they're thinner, they're less prone  
9 to fracturing, less gas content in them. And so we believe  
10 that there's potential that the same coals that may be  
11 communicating where they're very well developed to the  
12 northeast might not be communicating on 320-acre spacing as  
13 we move towards the thinner edges of them, especially  
14 towards the southwest.

15 Q. Do you have an opinion as to whether it's  
16 necessary to subject the underpressured area to reservoir  
17 simulation in order to develop opinions and conclusions  
18 concerning the appropriate density of wells in the  
19 underpressured area?

20 A. I believe it's critical to do the layer pressure  
21 data that we anticipate to gather in our pilot wells in  
22 order to properly simulate behavior in the nonfairway  
23 coals.

24 Q. Do you believe traditional methods of analysis of  
25 gas in place and drainage patterns and well density from a

1 geologic perspective can be done in the absence of the  
2 simulation?

3 A. I believe that the traditional methods of  
4 estimating drainage areas and recovery factors from coals  
5 give you a good indication of the potential that these  
6 coals are not effectively -- or these wells are not  
7 effectively draining 320-acre spacing, but I do not believe  
8 that the traditional methods give us the answer that we're  
9 looking for.

10 Q. You could start with conventional analysis, do  
11 volumetrics, and get a preliminary indication of what might  
12 be the expectation of gas in place?

13 A. Certainly that's true.

14 Q. But to have a more refined, definitive answer as  
15 to well spacing in the underpressured area, you would want  
16 to subject that area to enough pilot tests for simulation  
17 to give you a reliability about density?

18 A. Yes, sir, because of the layered communication  
19 and permeability differences that we expect to see in these  
20 coals, I believe that we have to have the layer simulation  
21 in order to accurately describe what is going on currently  
22 in the reservoir.

23 MR. KELLAHIN: Mr. Examiner, that concludes my  
24 examination of Mr. Thibodeaux. We move the introduction of  
25 his Exhibit 4, plus the geologic displays behind each of

1 the tabs referenced for the wells, which are Tabs 5 through  
2 9.

3 EXAMINER STOGNER: That part of Exhibit Number 1  
4 behind Tabs 4 through 9 --

5 MR. KELLAHIN: Yes, sir.

6 EXAMINER STOGNER: -- or 5?

7 MR. KELLAHIN: All of Exhibit Tab 4 --

8 EXAMINER STOGNER: All of Exhibit Tab 4 --

9 MR. KELLAHIN: -- and the geologic displays from  
10 Exhibit Tab 5 through 9.

11 EXAMINER STOGNER: -- and the geologic displays  
12 from 5 through 9 will be admitted into evidence at this  
13 time.

14 I'm going to call a five-minute recess.

15 (Thereupon, a recess was taken at 11:38 a.m.)

16 (The following proceedings had at 11:48 a.m.)

17 EXAMINER STOGNER: This hearing will come to  
18 order again.

19 I've asked Mr. Steve Hayden, the geologist from  
20 the Aztec Office, to join me up front here, and he has done  
21 so. As far as -- I don't really have any geological  
22 questions except a few.

23 EXAMINATION

24 BY EXAMINER STOGNER:

25 Q. The areas in which you have chosen, the five

1 areas, do they have enough variety, or do they have various  
2 minor differences as far as the geological makeup of the  
3 coal that represents a good overall portion of the San Juan  
4 Basin-Fruitland Coal production up in the New Mexico area?

5 A. Yes, sir, we believe that they do. The primary  
6 difference, however, is the production. We try to  
7 represent the same coals all over, but however they're each  
8 one in a -- possibly a different depositional setting or  
9 different group associations or some of them have more  
10 propensity to be splitting or thinning. But from obvious  
11 production characteristics, we've picked areas that have  
12 both low, high and medium production.

13 So we believe that we've represented the majority  
14 of the Basin well by these five locations.

15 Q. Okay, the preparation of the cumulative  
16 production from 2000, most recent available data, the well  
17 spots on this particular map, is that just the Burlington  
18 wells?

19 A. No, sir, that is cumulative production from all  
20 wells in the state database.

21 Q. Okay, and the well spots themselves are all  
22 existing Fruitland Coal wells?

23 A. Yes, sir, they are.

24 Q. Okay, when I look toward the -- in fact, the  
25 extreme southwest, the colorful little area there in 26

1 North, 14 West, and 26 North, 13 West --

2 A. Yes, sir.

3 Q. -- I only see one well spot.

4 A. Yes, sir.

5 Q. Okay, and I don't see a well spot in the high  
6 cumulative area.

7 A. That's a computer algorithm. You know, these are  
8 computer-generated contours, and so we have one high-  
9 producing well. And what it is, it was interpreted that  
10 since we have low production to the east and there's one  
11 high well, we must have even higher contour production to  
12 the west of that location. It's a computer algorithm.

13 Q. Okay, so that's the same explanation if I move  
14 over to the east, a few miles over in 9 West, 8 West, there  
15 seems to be another anomaly show up that has just a few  
16 wells in it.

17 A. Yes, sir.

18 Q. One of the things that sort of stands out when I  
19 take a look at this map, the northern portion, the stuff up  
20 in Colorado, what kind of deposition is that? It appears,  
21 first glance, that something's gone on a little bit  
22 different than to the south end of this fairway area.

23 A. As a general rule, Mr. Stogner, the northeastern  
24 edge of the high fairway area that we can see in the very  
25 bright colors on our map, we start getting pinchouts of our

1 basal sections and some of our middle sections. On our  
2 type logs that would be the browns -- the B1's, -2's and  
3 -3's -- and the greens.

4 Most of the coals that live up in Colorado are  
5 starting to be coals, some of them over -- are younger or  
6 on top of even the blue coals that we mentioned in our type  
7 logs. And so we have a whole different coal system  
8 beginning to form up there.

9 As these coals -- Actually, I have an easier way  
10 to explain that to you, I believe.

11 EXAMINER STOGNER: Okay, Mr. Kellahin, do you  
12 want to explain to me this bigger cartoon?

13 THE WITNESS: You betcha. This is a diagrammatic  
14 sketch of the kind of coals that we've been able to map  
15 throughout the Basin. The nine coals I've been referring  
16 to so far in my testimony have been from the blue on down  
17 to the Brown 3, right above the Pictured Cliffs.

18 This is a schematic cross-section that would go  
19 and cross the entire Basin. You can see the New Mexico-  
20 Colorado border on there. And if you notice, as we go into  
21 Colorado, we're starting to lose out on the Brown 1, 2 and  
22 3; the Green 1, 2 and 3; and even the P1 and the P2 coals,  
23 and we're starting to have dominant coals only in the blue,  
24 the yellow and the little O up there, which stands for  
25 Orange.



1           Q.    (By Examiner Stogner) That does not come across  
2 into New Mexico?

3           A.    No, sir, it does not.

4           Q.    I take that's a highly productive -- the orange  
5 is a highly productive interval?

6           A.    All of these coals were formed in very similar  
7 depositional environments, and those coals were also buried  
8 deeper than the nonfairway coals to the west, so I'd expect  
9 their rank to be very similar and their productivity  
10 potential to be very similar.

11          Q.    What kind of depth difference am I looking at  
12 between the Orange zone up in the northeast and the gray or  
13 the Brown zones, the BR2, the BR3, that's found in the  
14 southwest?

15          A.    Is this present-day depth or maximum depth of  
16 burial?

17          Q.    How about both? Give me both.

18          A.    Present-day depths are almost identical.  
19 Present-day depth is controlled by current structure of the  
20 Basin, and so it depends on how far we are towards the very  
21 center of the Basin or not.

22                The entire interval, from Orange to Brown 3, is  
23 rarely over 350 feet thick. And so that whole interval,  
24 these coals, depending on where they're found, are found  
25 within that 350-foot interval that is controlled by current

1 Basin day structure.

2 Maximum-depth-of-burialwise, the Brown 3 coals  
3 were probably never buried quite as deep as the coals --  
4 the O coals, for instance, the orange coals in the  
5 northeast, because that part of the Basin was buried deeper  
6 than the southwest part of the Basin originally.

7 EXAMINER STOGNER: Okay. Mr. Kellahin, how shall  
8 we label that, or should I put this in the book?

9 MR. KELLAHIN: Let's put it in the book behind  
10 Exhibit Tab Number 4, and we'll simply refer to it as the  
11 Schematic Cross Section, San Juan Basin.

12 EXAMINER STOGNER: This inclusion of the  
13 schematic to the northeast-southwest of the San Juan Basin  
14 will be included in Tab 4 and is hereby accepted as a part  
15 of the evidence.

16 Let's see, I believe Mr. Jim Bruce has a  
17 question. Where did you go, Mr. Bruce?

18 MR. BRUCE: Back --

19 EXAMINER STOGNER: You're behind the map curtain  
20 there, I see.

21 MR. BRUCE: Heard but not seen.

22 EXAMINATION

23 BY MR. BRUCE:

24 Q. Mr. Thibodeaux, if this is more appropriate for  
25 the engineer let me know.

1           A.    Okay.

2           Q.    Why don't you turn to Tab 6, the first page, Tab  
3   5 and Tab 6, the first page of each. Behind Tab 6, the two  
4   wells, the existing one and your infill well, are about a  
5   half a mile apart?

6           A.    Yes, sir.

7           Q.    If you go to Tab 5, they're pretty close  
8   together. Is there a reason for that?

9           A.    Yes, sir, actually there's a couple of good  
10   reasons for that.

11                   First of all, the 505S, we picked a location --  
12   we had an abandoned existing location that was never used.  
13   And trying to comply with BLM surface-disturbance rules, we  
14   thought it was best to try to figure a location that would  
15   have readily approved by the BLM regulatory body by using  
16   existing surface disturbance.

17                   Secondly, one of the questions that we have about  
18   the permeability of these coals is that we do not currently  
19   know how far of an interference they have, whether it's  
20   permeable or impermeable.

21                   These two wells happen to be 995 feet apart, so  
22   right now we don't know for both the permeable and  
23   impermeable zones that we're seeing in these layers, are  
24   they communicating on 900 feet, 500 feet, 1000 feet, 2000  
25   feet?

1           We thought this would provide an excellent data  
2 point for us to start measuring and comparing if we saw  
3 communication 995 feet apart here and not 2000 feet apart  
4 on some of our other pilot wells, we could use that  
5 information to best determine just what is the extent of  
6 communication on these wells.

7           MR. BRUCE: Thank you.

8           EXAMINER STOGNER: Any other questions, Mr.  
9 Bruce?

10          MR. BRUCE: No, sir.

11          EXAMINER STOGNER: Mr. Carr?

12          MR. CARR: No questions.

13          EXAMINER STOGNER: Okay, we don't have any  
14 further questions at this time, but we may ask Mr.  
15 Thibodeaux to resurface if we have some after your next  
16 witness's presentation.

17          MR. KELLAHIN: Our last witness is Mr. Leonard  
18 Biemer. Mr. Biemer is a reservoir engineer with  
19 Burlington. He spells his last name B-i-e-m-e-r.

20          EXAMINER STOGNER: Why is his book thicker than  
21 mine?

22          MR. KELLAHIN: He's anticipating all your  
23 questions, Mr. Stogner, and he wants to have the right  
24 answer.

25          EXAMINER STOGNER: Okay, thank you.

1                                LEONARD J. BIEMER, JR.,  
2       the witness herein, after having been first duly sworn upon  
3       his oath, was examined and testified as follows:

4                                DIRECT EXAMINATION

5       BY MR. KELLAHIN:

6                Q.     Mr. Biemer, for the record, sir, would you please  
7       state your name and occupation?

8                A.     My name is Leonard Biemer. I'm a senior staff  
9       reservoir engineer.

10              Q.     And where do you reside, sir?

11              A.     In Farmington, New Mexico.

12              Q.     Are you the senior staff reservoir engineer  
13       assigned by Burlington to the coal gas team?

14              A.     Yes, sir, I am.

15              Q.     You and Mr. Thibodeaux worked together on the  
16       preparation of the presentation today?

17              A.     Yes, sir, we did.

18              Q.     Let's focus on Tab 10. When we look at Tab 10,  
19       the engineering summary that's been prepared here was  
20       prepared by you?

21              A.     Yes, sir.

22              Q.     And the information and display shown behind  
23       Exhibit Tab 10 is your work product?

24              A.     Yes, sir.

25              Q.     Are you in agreement with Mr. Thibodeaux about

1 the selection of these five project-area wells?

2 A. Yes, sir, I am.

3 MR. KELLAHIN: We tender Mr. Biemer as an expert  
4 reservoir engineer.

5 EXAMINER STOGNER: Mr. Biemer is so qualified.

6 Q. (By Mr. Kellahin) I'd like to start, Mr. Biemer,  
7 with your executive summary. If you'll look at the first  
8 page of 10, I would like you to go down and summarize for  
9 Mr. Stogner the information that you and Mr. Thibodeaux are  
10 trying to obtain from each of the pilot wells. Describe  
11 for us what you're going to do and what you think you're  
12 going to get.

13 A. In each of the five areas we plan to drill a  
14 well, and as we're drilling a well, in each zone we're  
15 going to pull some cuttings, and those cuttings will be  
16 used for adsorption isotherms.

17 We're then going to run a RHOB density log, and  
18 with that information -- and we'll be able to use the  
19 Langmuir volumes to determine Langmuir volumes and both  
20 densities. So that's the first step.

21 The second step will be to perforate and break  
22 down each zone and to establish some communication with the  
23 coal. We'll then set a bridge plug and run pressure  
24 isolations into each layer of the geology.

25 So what we have is, we have five areas there.

1 And in the Davis, which is in the northwest, we'll have six  
2 pressure bombs there. And the three in the center, which  
3 are the Turner, the 28-and-6 and the Huerfano, we'll run  
4 four pressure bombs. And in the fifth one, which is into  
5 the far southeast, we'll have five pressure bombs in that  
6 one. That is to test each of those coal zones.

7           Next, once we -- We'll run those pressure bombs  
8 for approximately 14 days to get a pressure buildup by  
9 layer. Next we'll go ahead and fracture-stimulate the well  
10 consistent with the way the offset wells were stimulated.  
11 We'll produce that well for 90 days and then run a spinner  
12 survey. Those spinner surveys will be -- we'll get the  
13 pressure contribution by layer in each of those zones.

14           We'll then continue to produce that well for  
15 another 90 days, and then at the end of 180 days we'll  
16 re-run that spinner survey to confirm the production by  
17 zone.

18           Q. At that point you're prepared to shut in the well  
19 and either seek additional approvals to produce two wells  
20 on the spacing unit or arrange to go back and produce just  
21 the one?

22           A. Yes, sir, that is correct.

23           Q. Once you have that data gathered after the 180-  
24 day test period and you've got the data, what are you going  
25 to do with it?

1           A.    Once we've determined our pressure by layer, our  
2   gas content by layer and our production by layer, we'll be  
3   able to put this information into a simulator, and with  
4   that simulator we will build -- history match the  
5   production from that pilot well. That will be the first  
6   step.

7                   Once we match the history production from that  
8   pilot well, we'll be using those same reservoir parameters  
9   into the four offset wells and match the history production  
10  from those wells.

11          Q.    Once you've done that, then what happens?

12          A.    Once we've done that, we'll be able to -- Now  
13  we'll have an idea of the reservoir parameters in the three  
14  -- in the different areas. And from that we'll be able to  
15  determine the well density.

16          Q.    Mr. Thibodeaux indicated that you and he had  
17  studied on a volumetric basis in order to get a preliminary  
18  indication of what might be the potential for the gas in  
19  place in each of the five pilot areas. Did you, in fact,  
20  do that?

21          A.    Yes, sir.

22          Q.    And that you could compare it with current  
23  production to get a sense as to whether or not there was a  
24  range of gas in place that you need to investigate further,  
25  right?



1           A.    That's correct.

2           Q.    In your opinion, can you rely simply on  
3   conventional volumetrics in order to determine well spacing  
4   for the pool in the underproduced area -- I mean the  
5   underpressured area?

6           A.    That is precisely the point why we want to do  
7   this test.  If we had just simply two coal zones and we  
8   made our volumetric estimation on that and that gave us a  
9   certain value, when we go back and then do our tests and we  
10   determine that one of those zones has very low permeability  
11   and thus is not producing, then our volumetric number will  
12   change, our volumetric numbers will go down, which causes  
13   our recovery factor, based on our decline-curve analysis,  
14   to go up.  That's why it is so important to get, by layer,  
15   production and contribution to the volumetrics.

16          Q.    And once you have that data, then, you can  
17   reservoir-simulate the performance of each of the layers  
18   and help you determine well density and gas in place?

19          A.    Yes, sir, that is correct.

20          Q.    Let's turn behind your summary and let's look at  
21   the first display so that Mr. Stogner can have a sense of  
22   the ranges of rates being produced in each of the five  
23   areas.  You've called it a production summary.  Do you see  
24   that?

25          A.    Yes, sir, that's the fourth page behind Tab 10.

1 Q. All right, review that for us.

2 A. What this is showing is the five wells, with the  
3 averages -- average initial rate for the four offsetting  
4 wells, the current rate for those four offset wells and the  
5 average cum production. What this shows you on the far  
6 right-hand column, as in the Davis 505S and the Turner  
7 210S, those wells have very low cums. The 28-and-5 and the  
8 28-and-6 have better cums, and of course the Huerfano has  
9 the greatest cum. Those are telling us that there's some  
10 different production out there, and they're different  
11 areas.

12 Q. Okay, let's turn to the next display where you've  
13 tabulated the recovery factor summary. Describe for us  
14 what you're showing here.

15 A. The recovery factor -- These wells in the  
16 underpressured area have a conventional decline. With that  
17 conventional decline we can use rate-time analysis to  
18 determine the EUR. Using the volumetrics of what we think  
19 are the contributing h and vol- -- we can determine the gas  
20 in place, by dividing the EUR by the gas in place, so we  
21 can get a recovery factor. This is one of our initial  
22 items that tells us that there's something wrong, that  
23 we're getting very low recovery factors out there, and that  
24 we may need some additional wells in that area to drain the  
25 reservoir.

1           Q.    With reservoir simulation, Mr. Biemer, you would  
2   be provided a more accurate engineering opportunity to  
3   determine whether you gas-in-place numbers calculated  
4   volumetrically were grossly in error or, if in fact, you  
5   did need to increase the well density in that area?

6           A.    That is the main point of our study.

7           Q.    Okay, let's turn to each of the displays that  
8   refer to each of the five pilot areas, and let's start  
9   first with the Davis 505S.  What have you shown on this  
10  nine-section plat?

11          A.    On this nine-section plat I will show with a  
12  little blue triangle -- that's a Fruitland coal well -- the  
13  well name.  The second thing is the operator.  The third  
14  item down is the initial rate of that well, the first  
15  ninety-day average rate.  The third [sic] item is its  
16  current rate over the past ninety days.  And the fifth item  
17  will be the cumulative production to date.

18               EXAMINER STOGNER:  Okay, hold it.  Back up a  
19  little bit.  The first item is the well, second item is the  
20  operator, the third item is the well in which it was  
21  completed --

22               THE WITNESS:  -- the third item is the --

23               EXAMINER STOGNER:  -- the year --

24               THE WITNESS:  -- year it was completed, I'm  
25  sorry.

1 EXAMINER STOGNER: Now, what about the fourth  
2 one?

3 THE WITNESS: The fourth one is the average  
4 initial rate, the fifth one is the average current rate,  
5 and the sixth one is the cumulative production to date.

6 EXAMINER STOGNER: Okay, and you have that in the  
7 legend in the far --

8 THE WITNESS: Yes, sir, I do.

9 EXAMINER STOGNER: Okay. Thank you.

10 THE WITNESS: And now this will be the same for  
11 all five wells, this production data.

12 Q. (By Mr. Kellahin) Before we leave the Davis  
13 505S, once you get that well drilled and tested, then that  
14 gives you that data point. And if you decide to simulate  
15 this nine-section area, you would then integrate the data  
16 you had from each of these existing wells, you would start  
17 with the project well --

18 A. Right, we --

19 Q. -- and work out from there, adding data and  
20 refining your model?

21 A. Yes, sir. We will history match the production.

22 Q. Behind that tab, then, you have your calculations  
23 on the volumetric recovery factor for that well?

24 A. Yes, sir, I do.

25 Q. And that is simply the details that demonstrate

1 what you chose for values. They were then summarized on  
2 the prior display?

3 A. Yes, sir, it is.

4 Q. All right. And you've done that in all instances  
5 for each of the five pilot wells?

6 A. Yes, sir, I have.

7 Q. All right. Let's turn to Tab 11 and have you  
8 describe for Mr. Stogner your anticipated time lines for  
9 the science project.

10 A. Behind Tab 11 you see the time line that we  
11 developed on the team. Some of those were internal time  
12 lines. May 17th is currently where we are. We're here to  
13 get approval to drill the pilot wells. We're going to try  
14 to get full approval and the rig ready by July 1st. We'll  
15 have the wells drilled by September, a simulation done by  
16 the end of January of next year, conclusions by February,  
17 and back to present it to you in March of next year.

18 Now, this is a fairly aggressive time line.

19 Q. Was this time line discussed with the Basin-  
20 Fruitland Coal Gas study group that is being sponsored by  
21 the Division's Aztec office?

22 A. Yes, sir, and --

23 Q. This time line was shared with that work group,  
24 was it not?

25 A. Yes, sir.

1 Q. And the consensus among that group is, they  
2 wanted an aggressive time line and hopefully we could meet  
3 their expectations of completing the project within this  
4 time frame?

5 A. Yes, sir, that's correct.

6 Q. The plan is to take the conclusions and the  
7 summary back to the work-study group for further discussion  
8 by that group and trying to form a consensus about what to  
9 do?

10 A. Yes, sir, that is correct.

11 MR. KELLAHIN: That concludes my examination of  
12 Mr. Biemer. We move the introduction of his exhibits  
13 behind Exhibit Tab 10 and 11.

14 EXAMINER STOGNER: Those exhibits behind Tab 10  
15 and 11 will be presented in evidence. And make a note that  
16 12 and 13 are blank, I assume?

17 MR. KELLAHIN: Yes, sir, we didn't need to use  
18 those, but they were in the book.

19 EXAMINER STOGNER: Okay, so we don't need to  
20 admit the blank stuff on 12 and 13.

21 Mr. Bruce, any questions of this witness?

22 MR. BRUCE: Yeah, just one.

23 EXAMINATION

24 BY MR. BRUCE:

25 Q. When you do your modeling, you say you're going

1 to test the individual hole stringers, is that right, to  
2 see if they produce in the pilot well?

3 A. Yes, sir, we will be collecting the layer  
4 pressures and adsorption values from each layer, as well as  
5 production from each layer through our spinner survey.

6 Q. Okay. Now, when you're doing your modeling, if  
7 you determine that it's not producing from, say, one of the  
8 coal seams, will your model assume that it doesn't produce  
9 in the four offsetting wells also?

10 A. Yes, sir.

11 Q. Could that have the effect of underestimating the  
12 reserves?

13 A. Well, sir, if it's not producing then we wouldn't  
14 be underestimating them. And if we find a zone is not  
15 productive, then we could not include it into our  
16 volumetrics, and in that way it would not be underestimated  
17 at all. And the reverse would be, had we included it, we  
18 would have overestimated our reserves -- or our gas in  
19 place.

20 MR. BRUCE: That's all I have, Mr. Examiner.

21 EXAMINER STOGNER: Thank you, Mr. Bruce.

22 Mr. Carr?

23 MR. CARR: No questions.

24 MR. HAYDEN: I have one.

25 EXAMINER STOGNER: Steve Hayden has a question

1 for you.

2 EXAMINATION

3 BY MR. HAYDEN:

4 Q. I received the time line last week. I wasn't  
5 aware that the committee had received it, the Fruitland  
6 Coal committee.

7 A. I think that was given -- that time line was  
8 given out to the working interest owners and to our meeting  
9 at the BLM.

10 Q. Okay, it hasn't been presented to the Fruitland  
11 technical study committee yet, as far as I'm aware.

12 A. That may be correct.

13 Q. Okay, I just wanted to --

14 A. I know the working interest owners have it, and  
15 the BLM.

16 EXAMINATION

17 BY EXAMINER STOGNER:

18 Q. I'm looking at the Davis 505 Fruitland Infill  
19 Pilot Study map. This is a good representation.

20 How will the way that the well was completed and  
21 stimulated, if any -- those wells, as you go out with your  
22 model, how is that going to affect any of your model  
23 techniques? Or is it, the way the well was completed?

24 A. We're going to complete the infill wells similar  
25 to the way the offsets were completed.



1 Q. Okay, that was probably the way I should have  
2 worded my question, is that the similar completion  
3 techniques --

4 A. Yes, sir, we don't want to throw an additional  
5 unknown into it. But these wells will be completed in a  
6 similar manner that --

7 Q. And it looks like they were completed at about a  
8 similar time, in the late 1980s, early 1990s.

9 A. Yes, sir, I can tell you exactly when each one  
10 was completed and when they were first delivered.

11 Q. Well, it's all on here, but at that time -- Well,  
12 wasn't early on, when the Fruitland Coal was producing and  
13 completed, wasn't there some completion problems found with  
14 open-hole completions, and then later came back to the  
15 perforations?

16 A. The wells in the underpressured area, in general,  
17 have always been cased and frac'd. Only the wells in the  
18 overpressured area, the fairway coals in that yellow, were  
19 the ones that were open-hole completed. But in this area  
20 they were normally cased and frac'd.

21 Q. Okay.

22 A. There may be a few exceptions throughout the  
23 Basin, but...

24 EXAMINER STOGNER: Okay. Any other questions of  
25 this witness?

1           MR. KELLAHIN: Point of clarification, Steve. My  
2 understanding is, this actual piece of paper hasn't been  
3 distributed to the work group, but there was verbal  
4 discussions with the group about an aggressive time line --

5           MR. HAYDEN: Right.

6           MR. KELLAHIN: -- and this is our best effort to  
7 get there.

8           MR. HAYDEN: This is true. I just wanted to  
9 clarify that.

10          MR. KELLAHIN: Yeah, they didn't give this actual  
11 piece of paper, but an aggressive schedule was discussed,  
12 is my understanding?

13          MR. HAYDEN: Right.

14          MR. KELLAHIN: That completes our presentation,  
15 Mr. Stogner. If it will help you, I'm more than happy to  
16 prepare you a draft order.

17          EXAMINER STOGNER: Yes, I will not turn that  
18 down. It may be -- I don't know at this point --  
19 applicable for us to stay in touch on this matter, maybe  
20 through verbal or written communications. After next week  
21 I might not have the leeway at that point to pick and  
22 choose topics that I need to work on or put one above the  
23 other. So that might need some written communications from  
24 you to my supervisor, putting this on a fast track. I may  
25 not have control of it for Monday.

1 MR. KELLAHIN: Thank you.

2 EXAMINER STOGNER: Okay.

3 MR. KELLAHIN: In addition, Mr. Stogner, we will  
4 get ahold of Mr. Chavez about the imaging project and give  
5 him the data that will help him fulfill that expectation.

6 EXAMINER STOGNER: And this is a whole -- I  
7 consider a whole separate effort --

8 MR. KELLAHIN: It's a different topic.

9 EXAMINER STOGNER: -- but this is, I think, a  
10 good representation of what a pool rule, a study, and since  
11 everybody's up there together --

12 MR. KELLAHIN: I believe there's statements of --  
13 parties that might want to make statements, Mr. Stogner.

14 EXAMINER STOGNER: Yes, I'm getting to that  
15 point. And I understand that there was somebody out of the  
16 room, and we will get back to that, other than Mr. Carr and  
17 Mr. Bruce, that would like to make a statement at the end.

18 Okay with that -- Okay, yes, sir. Why don't we  
19 go ahead and start with you, then. Identify yourself.

20 MR. OTTENI: I'm Lee Otteni with the Bureau of  
21 Land Management in Farmington, and I'd like to make a  
22 statement for the record.

23 EXAMINER STOGNER: You have the floor.

24 MR. OTTENI: Thank you. As everyone knows, the  
25 BLM and OCD has worked for many years in cooperation for

1 the development of the San Juan Basin, and I came here  
2 today with only a few brief statements to make in support  
3 of Burlington on the proposed pilot.

4 We think that it's important from the asset owner  
5 that the pilot is put into place so that we can make a  
6 further determination of the need for spacing, particularly  
7 in light of the resource management plan that we're  
8 developing now. We're working with the companies such as  
9 Burlington and New Mexico Tech and trying to determine  
10 reasonable, foreseeable development. We feel this is very  
11 critical in that final analysis.

12 BLM is also requesting other operators to take a  
13 look at infill wells under a pilot program such as  
14 Burlington, and Lynn Coleman has already come before you  
15 for another area in the Basin. We think that having some  
16 more information north of the fairway up towards Colorado  
17 would be beneficial to the BLM's final analysis as well.

18 There's some concern by the petroleum engineers  
19 in the BLM office about potential drainage. However they  
20 assure me that these situations can be handled through  
21 existing BLM regulations, so we don't really foresee a  
22 problem there.

23 Long-term, if this turns out to be as successful  
24 as everyone hopes it is going to be, there is a concern  
25 about how to manage the Basin on a spacing if it is more

1     than one size.

2             We feel right now that by having a single size or  
3     unit would be beneficial in regards to the administrative  
4     processes for both OCD and BLM as far as regulations go. I  
5     think there's a possibility for increased commingling,  
6     particularly with the Pictured Cliff.

7             We also feel that there's an opportunity for the  
8     operators to make the economic determination on their lease  
9     whether to go with the infill well or not if they have that  
10    opportunity. And although I haven't looked at the  
11    President's new energy policy that's coming out, I am sure  
12    that with the demand of energy across this nation, that the  
13    Administration's position would be to maximize development.

14            Thank you.

15            EXAMINER STOGNER: Before I get to other  
16    comments, Mr. Kellahin --

17            MR. KELLAHIN: Yes, sir.

18            EXAMINER STOGNER: -- I think we may want to  
19    clarify some terminology here.

20            Spacing units -- When this project goes forward,  
21    spacing units, the units that a well -- the acreage that a  
22    well holds will remain 320 acres. We're talking about  
23    optional infills on those 320s --

24            MR. KELLAHIN: Exactly.

25            EXAMINER STOGNER: -- and not talking 320 to 160.

1           MR. KELLAHIN: It would be impossible to change  
2 from 320s to 160s because of the tremendous disruption in  
3 equity --

4           EXAMINER STOGNER: Right, now --

5           MR. KELLAHIN: -- so we're talking about infill  
6 drilling a 320.

7           EXAMINER STOGNER: I wanted to clarify that,  
8 because usually -- and I know we're -- We're all in here,  
9 we know that. But if somebody was to read the transcript  
10 that wasn't aware of this, and they see -- they may  
11 interpret it as reducing spacing. That's not what we're  
12 talking about. It's the optional infill well, keep it on  
13 320, just like the Basin Dakota, with an optional infill  
14 well either throughout the pool in New Mexico, with the  
15 exception of the fairway or whatever comes out. That's the  
16 ultimate.

17           I just wanted to clarify that. I think it was  
18 important, so if somebody comes in later that don't know  
19 what we're talking about, we'll get that straight. You  
20 brought up some very good points, and I appreciate it, sir.  
21 Thank you very much.

22           MR. HAYDEN: I might add just a little -- one  
23 addition to what you were saying about infill in the north.  
24 Williams early on expressed an interest to doing an infill  
25 pilot in the Rosa Unit, and these plans were progressing

1     until the Forest Service came up with their new 120-day  
2     extra delay on APDs, which means that Williams couldn't do  
3     it until next year, because of the closure of the forest  
4     after November 1st. So that's why there -- at this point,  
5     that there's no pilot project going on in the northeast  
6     part of the Basin. Just put it in the record.

7                 EXAMINER STOGNER: Thank you, Mr. Hayden, that's  
8     good information, actually.

9                 Okay, Mr. Jim Bruce, Mr. Bill Carr, who wants to  
10    go first?

11                MR. BRUCE: Mr. Examiner, I'm here on behalf of  
12    Cross Timbers Oil Company. Cross Timbers supports  
13    increased density in the Fruitland Coal formation in the  
14    underpressured area of the San Juan Basin. Cross Timbers,  
15    through its own gas-in-place analysis, believes that the  
16    coals are not being sufficiently drained with one well per  
17    spacing unit, and it believes that a second well in each  
18    unit is warranted.

19                Cross Timbers supports the gathering of the pilot  
20    project data if the Division views it as necessary to  
21    change the current spacing rules expeditiously. As I said,  
22    Cross Timbers supports a rule change, and Burlington's  
23    proposed time frame to acquire and present this data by the  
24    second quarter of 2002 is acceptable to Cross Timbers.

25                Thank you.

1 EXAMINER STOGNER: Mr. Bruce -- I mean Mr. Carr,  
2 sorry.

3 MR. CARR: Mr. Catan- -- I mean Mr. Stogner.  
4 (Laughter)

5 EXAMINER STOGNER: Okay, thank you very much,  
6 appreciate that. Anything further?

7 MR. CARR: I'd like to make a brief statement for  
8 Williams Production Company and BP Amoco Production  
9 Company, and I want it understood we recognize what we're  
10 here for today is to review an Application for a pilot  
11 project. We believe that we are on our way to rules which  
12 will result in a greater density in terms of the  
13 development of the Basin-Fruitland Coal Gas Pool, and we  
14 think it is important at this time that we move down this  
15 path as quickly and as expeditiously as possible.

16 There area two areas. Both of these are matters  
17 which I believe will be reviewed with the work-study group,  
18 but I'd like to clarify where we stand two matters.

19 First, as to the timing. We certainly don't  
20 oppose the pilot project or the effort to collect data. We  
21 believe, however, that the data on the Basin-Fruitland Coal  
22 Pool today supports going to a greater density, would  
23 support infill drilling. In the underpressured area, we  
24 have areas where wells are producing as little as 10  
25 percent of the gas in place, and we believe in these areas



1 today we're in a position where we should be able to move  
2 to an infill development program in, certainly, large  
3 portions of this pool.

4 As to the fairway, if in the rules we define a  
5 fairway, we think it should be with one line, with no  
6 transition or buffer zone. We believe we can draw that  
7 line, if we decide it needs to be drawn, well enough that  
8 we wouldn't have to get into these multiple zones within  
9 the reservoir.

10 And if we do carve out a fairway, we think it is  
11 critical that the rules allow for infill development within  
12 the fairway, because we believe the data shows there are  
13 substantial variations within that fairway, and there need  
14 to be procedures that certainly would not preclude infill  
15 development in that part of the reservoir.

16 Now, these are questions that need to be taken up  
17 with the work group, and while the pilot project is going  
18 forward these are the kinds of issues that we think have to  
19 be quickly addressed, because we are hoping that we will  
20 have a work-study group coming forward with some  
21 comprehensive rules in a very short time frame.

22 Thank you.

23 EXAMINER STOGNER: Mr. Carr, thank you for  
24 bringing up that point. I think it's good -- I'll tell you  
25 what, my congratulations to everybody working with that

1 committee doing this. I think this can be used as a model.  
2 I certainly wish some of the operators in southeast New  
3 Mexico, in certain pools, have certain items that are --  
4 anyway, get together and work such as this, and your  
5 statements today and everybody's statements and this whole  
6 case keeping us here in Santa Fe informed of what we're  
7 looking at, what you guys are questions.

8 My congratulations to everybody. And with Mr.  
9 Kellahin's help, I will work very hard on keeping you on  
10 this schedule. And again, my congratulations on your work  
11 up there. I wish I would have been of it, but work just  
12 will not allow. Again, thank you very much.

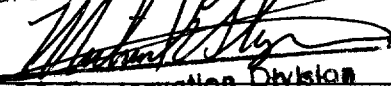
13 Is there anything further from anybody in this  
14 matter today? Anything further, Mr. Kellahin, that you  
15 have?

16 MR. KELLAHIN: No, sir.

17 EXAMINER STOGNER: Okay, with that then I'm ready  
18 to take this matter under advisement, and Mr. Biemer can  
19 take his big book and go home.

20 (Thereupon, these proceedings were concluded at  
21 12:30 p.m.)

22 \* \* \*  
23 I do hereby certify that the foregoing is  
24 a correct record of the proceedings in  
the Examiner hearing of Case No. 12651.  
heard by me on May 2001

25  Examiner  
Oil Conservation Division

STEVEN T. BRENNER, CCR  
(505) 989-9317

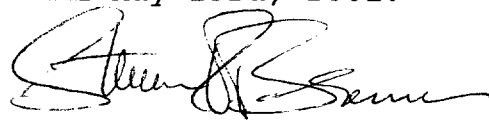
## CERTIFICATE OF REPORTER

STATE OF NEW MEXICO    )  
                                  )   SS.  
COUNTY OF SANTA FE    )

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL May 23rd, 2001.



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STEVEN T. BRENNER  
CCR No. 7

My commission expires: October 14, 2002