

1 STATE OF NEW MEXICO
2 ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
3 OIL CONSERVATION DIVISION
4

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

ORIGINAL

CASE NO. 14355

8 APPLICATION OF CONOCOPHILLIPS COMPANY
9 AND BURLINGTON RESOURCES OIL AND GAS
10 COMPANY LP TO ESTABLISH A SPECIAL
11 TRANSITION AREA INCLUDING ADMINISTRATIVE
12 PROCEDURES FOR EXPANSION AND THE
13 MODIFICATION OF THE SPECIAL RULES AND
14 REGULATIONS FOR THE BASIN FRUITLAND
15 COAL-GAS POOL WITHIN THIS AREA FOR
16 CERTAIN NON-STANDARD GAS SPACING AND
17 PRORATION UNITS ALONG THE BORDER
18 BETWEEN NEW MEXICO AND COLORADO, ALL
19 WITHIN SAN JUAN COUNTY, NEW MEXICO.

20 REPORTER'S TRANSCRIPT OF PROCEEDINGS

21 EXAMINER HEARING

22 August 6, 2009
23 Santa Fe, New Mexico

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24 BEFORE: WILLIAM JONES: Hearing Examiner
25 TERRY WARNELL: Technical Advisor
DAVID BROOKS: Technical Advisor

26 This matter came for hearing before the New Mexico
27 Oil Conservation Division, William Jones Hearing Examiner,
28 on August 6, 2009, at the New Mexico Energy, Minerals and
29 Natural Resources Department, 1220 South St. Francis
30 Drive, Room 102, Santa Fe, New Mexico.

31 REPORTED BY: PEGGY A. SEDILLO, NM CCR NO. 88
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A P P E A R A N C E S

For the Applicant:	W. THOMAS KELLAHIN, ESQ.
	Kellahin & Kellahin
	706 Gonzales Road
	Santa Fe, New Mexico 87501

1 HEARING EXAMINER: Let's call Case 14355,
2 Application of ConocoPhillips Company and Burlington
3 Resources Oil and Gas Company, LP to establish a special
4 transition area, including administrative procedures for
5 expansion and modification of the special rules and
6 regulations of the Basin Fruitland Coal-Gas pool within
7 this area for certain nonstandard gas spacing and
8 proration units along the border between New Mexico and
9 Colorado, all within San Juan County, New Mexico.

10 Call for appearances.

11 MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of
12 the Santa Fe law firm of Kellahin and Kellahin appearing
13 this morning on behalf of the Applicants ConocoPhillips
14 Burlington Resources.

15 With your permission, I'd like you to swear in
16 three witnesses.

17 HEARING EXAMINER: Any other appearances? Will
18 the witnesses please stand and state your name?

19 MR. WOLFE: Michael Wolfe.

20 MR. HARRISON: Jeff Harrison.

21 MS. GASTGEB: Kassadie Gastgeb.

22 MR. KELLAHIN: Mr. Examiner, I'd like to take a
23 moment and set the stage for our presentation this morning
24 so you have a generalized idea of how we have approached
25 this project.

1 The exhibit book contains a three part
2 presentation. There's a presentation of land documents
3 that Mr. Wolfe is going to testify to that gives you the
4 documents surrounding the project area's concept and
5 notification portions.

6 There will be a portion of the exhibit book that
7 contains the geologic overview for the project area,
8 specific geology as to cross-sections and correlation of
9 logs across this what we call a transition area.

10 And then finally, we have a reservoir engineer
11 who is going to present the engineering concepts of how
12 she's approached our proposed solution for this transition
13 area.

14 All of this is contained within the New Mexico
15 side of the Basin Fruitland Coal-Gas pool gas pool rules.
16 We are in the low productivity area along that common
17 boundary.

18 If you turn to the exhibit book and turn past
19 the cover, look behind Tab No. 1, there is a general
20 locator map for you. The testimony will demonstrate that
21 the project area is defined by a relationship between
22 Colorado and New Mexico.

23 The reason we're here is the Bureau of Land
24 Management has asked Burlington and ConocoPhillips to
25 create a solution along the New Mexico side of the

1 coal-gas pool where Burlington and others can meet
2 possible potential drainage issues with operators in
3 Colorado, where on the Colorado side of this line there
4 are Colorado orders that allow a density of 80 acre
5 density. While the Colorado operators have not
6 necessarily acted on that yet, the potential exists.

7 The BLM was concerned about possible future
8 drainage. We don't believe any of that has occurred at
9 this point, but we wanted to accommodate their concerns
10 and have them place a transition area so that Burlington
11 and ConocoPhillips and others might respond if necessary
12 to increasing the density of wells along the common
13 boundary, and in addition, creating a solution that avoids
14 a domino effect as you move down into New Mexico where we
15 have spacing in the low productivity area that would be
16 exceeded by an 80 acre density.

17 Right now, we're dealing with two wells in a
18 320. The solution here is rather unique. Burlington and
19 ConocoPhillips are the current operators of a whole series
20 of nonstandard proration units.

21 So when you see the maps, you're going to see
22 documents from Mr. Wolfe that demonstrate that over time,
23 there's a historical predicate for the size and the shape
24 of these nonstandard proration units. They all began many
25 years ago with Dakota where they were consolidated with

1 Dakota wells.

2 And maintaining the integrity of that ownership
3 arrangement in the Dakota spacing units, Mr. Alexander and
4 I years ago asked the Division for orders mirroring the
5 Dakota solution for the Fruitland Coal pool. And that's
6 all in place and Mr. Wolfe will describe those for you.

7 What we've done is taken these nonstandard
8 proration units and conceptually subdivided them north
9 half and south half. The concept is to have the
10 flexibility in this transition area to put two wells in
11 the northern portion of these nonstandard proration units
12 in the event we have to meet competition from Colorado in
13 the same common source of supply.

14 In the southern half of these nonstandard
15 proration units, the concept is to limit the density of
16 that portion of the spacing unit to no more than a single
17 well bore so that as you move farther south, you're not
18 disrupting the existing densities that allow for the
19 Fruitland Coal.

20 Having said all of that, we're going to show you
21 what is identified as Tract B in Section 10 of 32 9, which
22 will be an exception from our concept.

23 In studying all the data and in showing the
24 maps, we will show you that in Section 10, there are two
25 existing wells in what would be the south half of that

1 nonstandard proration unit. And we'll propose a solution
2 for you in a moment as to how to handle that section.

3 In addition, we have presented this technical
4 presentation to the Bureau of Land Management. There will
5 be a letter in the file from Mr. Jim Lovato on behalf of
6 the BLM approving the current presentation that we're
7 about to make to you to satisfy the BLM as to the need for
8 what they're asking us to accomplish.

9 In addition, Burlington's technical people
10 have met with Mr. Steve Heyden of the Aztec office of the
11 Division and satisfied Mr. Heyden about concerns that he
12 might have about the project.

13 In addition, we are responding to Mr. Heyden's
14 desire to have the flexibility in the district to make
15 decisions with regard to specifics of individual spacing
16 units such that he has the authority in the district to
17 make the changes to well locations.

18 We'll have an illustration for you in a moment
19 that shows what happens with the concept if you have a
20 horizontal well bore.

21 The possibility for additional coal in the pool
22 in the transition area is going to mandate that Burlington
23 and ConocoPhillips utilize existing well bores. It is an
24 economy in scale in terms of taking an existing well bore,
25 using that then as the entrance point in the reservoir for

1 a horizontal lateral.

2 In doing that activity, Mr. Heyden says we will
3 violate the density rules and it requires special
4 approval.

5 So conceptually then, we're trying to obtain
6 from you a set of administrative flexibilities so that
7 Mr. Heyden, when faced with a horizontal well bore or a
8 variation in well locations that is different than our
9 concept of two wells in the north half of the spacing unit
10 versus one in the south, he can do that in Aztec.

11 If you choose not to let him have that
12 authority, then we would ask that you allow us to come
13 back to you and accomplish that at some other date as
14 required.

15 So, I wanted you to be able to think about that
16 portion of the presentation as you begin to see that.

17 I guess the last point is, on the Colorado side
18 of the common reservoir, there's still a substantial
19 portion of the Colorado side that's subject to 320 per
20 density.

21 And so, we have limited the transition project
22 area to meet potential future competition along the common
23 boundary where in Colorado they currently have existing
24 density orders that allow one well per unit.

25 So when you look at the entire lateral extent of

1 that reservoir across the common boundary there, is only a
2 portion of that that we're focusing on.

3 With that explanation, Mr. Examiner, we'd like
4 to proceed.

5 HEARING EXAMINER: Okay.

6 MICHAEL WOLFE,

7 the witness herein, after first being duly sworn
8 upon his oath, was examined and testified as follows:

9 DIRECT EXAMINATION

10 BY MR. KELLAHIN:

11 Q. Mr. Wolfe, for the record, sir, would you please
12 state your name and occupation?

13 A. Michael Wolfe, petroleum man for ConocoPhillips.

14 Q. Where do you reside, sir?

15 A. Farmington, New Mexico.

16 Q. And you spell your last name with an "E" on the
17 end?

18 A. That's correct.

19 Q. On prior occasions, have you testified before
20 the Division as a landman?

21 A. Yes, I have.

22 Q. As part of your responsibilities as a landman
23 for ConocoPhillips Burlington has it been your
24 responsibility to research the ownership in terms of
25 operators and working interest owners in the project area?

1 A. That's correct.

2 Q. And in addition, have you researched to
3 determine the applicable orders as you can find them that
4 apply to these existing nonstandard proration units?

5 A. That's correct.

6 Q. In addition, as the landman, have you
7 participated in various discussions with the BLM and the
8 OCD Aztec over crafting a solution for the BLM's concerns
9 about the well spacing patterns in Colorado versus
10 New Mexico?

11 A. Yes, sir.

12 MR. KELLAHIN: We tender Mr. Wolfe as an expert
13 petroleum landman.

14 HEARING EXAMINER: Mr. Wolfe is qualified as an
15 expert.

16 Q. Mr. Wolfe, let me direct your attention to the
17 exhibit book. If you'll turn to Tab No. 1, flip past the
18 tab indicator, and while your exhibits are not numbered, I
19 think we can refer to them as they're described.

20 And let me ask you first of all to start with
21 what is captioned as the locator map, and find for us what
22 you know to be the project area.

23 A. This locator map is an expanded view of the San
24 Juan basin. And the project area is highlighted in orange
25 and so identified. You can see that the colored groupings

1 on the map designate the federal units found within the
2 basin.

3 Of particular interest within our project area
4 there is the 32 and 9, 32 and 8, 32 and 7 federal units
5 designated by blue-pinkish and yellow color. Also for
6 reference, the eastern boundary of the project area, that
7 blue, is the Allison unit.

8 Q. As a landman, did I correctly summarize the land
9 portion of your testimony with regards to my opening
10 statement?

11 A. Yes, sir.

12 Q. Let's turn now to the next display behind the
13 locator map.

14 A. Okay.

15 Q. Generally, what are we seeing when we look now
16 at this depiction of the project area?

17 A. This map plots the approximate surface location
18 of Fruitland coal wells in the area. Again, the dark
19 orange outline indicates the project outline. The color
20 variation in the dots on the map indicate the operator of
21 those wells.

22 In the project area, we highlighted drill blocks
23 that are in blue, and as you can see, some of them do jump
24 sections and are nonstandard. South of the project
25 outline, we've identified those drill blocks with the red.

1 Q. When we look in the project area, it covers --
2 visually, this covers the spacing units on the Colorado
3 side within the scope of that outline?

4 A. Yes. The 80 acre allowed density drill blocks
5 in Colorado are within that northern portion of the
6 project outline. The state line actually runs right
7 through the middle of that point.

8 Q. To make it certain, the area that will be the
9 working portion of the project where we're trying to
10 control well density and match what's on the Colorado
11 side, is that area that's outlined in the dark blue,
12 right?

13 A. That's correct.

14 Q. Within each of those tracts, are we dealing with
15 a portion of tracts in New Mexico that have nonstandard
16 proration units associated with it?

17 A. Yes.

18 Q. The red dots that are shown within the blue
19 tract areas are the approximate locations of the existing
20 coal-gas wells?

21 A. That's correct.

22 Q. For purposes of this display, you have deleted
23 other wells that are not coal-gas wells?

24 A. That's correct.

25 Q. Let's use this exhibit to also help us identify

1 the various operators. Within spacing units that are
2 outlined in blue, who are the operators of those?

3 A. It's either ConocoPhillips or Burlington
4 Resources.

5 Q. Outside of the blue area, you have a list of the
6 current operators as you find them to be that are
7 associated in this general area?

8 A. As far as you mean the drill blocks indicated in
9 the red, the notice area?

10 Q. Yes.

11 A. ConocoPhillips Burlington Resources operate all
12 but one of those drill blocks. The one exception would be
13 the southwestern drill block that's indicated with green.
14 That is currently operated by BP.

15 Q. For those drill blocks to the south that are in
16 your notice area, if ConocoPhillips operated those, did
17 you then go ahead and notify the working interest owners
18 associated with that production?

19 A. Yes, sir.

20 Q. In addition, did you notify other working
21 interest owners -- other operators in the area?

22 A. We notified BP as well.

23 Q. Okay. As part of your notification process, did
24 anyone file any objections with you that you're aware of?

25 A. No, sir.

1 Q. The last point, in looking at the display -- and
2 I'm on the Colorado side of the common line, there are
3 these tracts that are shaded in green. What is that
4 supposed to represent?

5 A. That indicates an 80 acre density border that BP
6 was able to secure in Colorado.

7 Q. And as we move west of the shaded green area in
8 Colorado, that shaded area then turns to white; that means
9 those tracts are not yet subject to an 80 acre density
10 infill?

11 A. That's correct.

12 Q. Are you satisfied that the outline of the
13 project area meets the BLM's requirements that you ask the
14 Division to modify state rules to meet the density
15 competition potential in Colorado?

16 A. Yes, I am.

17 Q. Let's turn to the next display which focuses
18 more detail on the Colorado side of the common boundary.
19 What are we seeing here?

20 A. The main point of this map is to depict the
21 current density allowed for the Fruitland Coal. The dark
22 green to the west is currently on 160 acre density, and
23 the lighter green to the east is indicating 80 acre
24 density.

25 Q. Is this the map that you shared with the BLM?

1 A. Yes, it is.

2 Q. When they expressed concern about competition
3 from Colorado?

4 A. Yes, it is.

5 Q. Based upon that, have you persuaded the BLM that
6 the project area could be contracted on the western end
7 and confined to the current application area?

8 A. That's correct.

9 Q. And in doing so, help us and me -- let's start
10 in 32 north 10 west, you can see the San Juan River lie?
11 You see the line of the San Juan River come through that
12 township?

13 A. Yes. I believe that's -- it could be the
14 La Plata, I'm not sure.

15 Q. Anyway, it's a marker point. Using that as a
16 control point, where do we have to go to find the western
17 boundary of the proposed project area?

18 A. If you look in Colorado where 32 and 9 and 32
19 and 8 come together, you can follow that line directly
20 into New Mexico, and that's an approximate location of
21 where the project area will start.

22 Q. So on the Colorado side in 32 and 9, if I look
23 at the last section in the southwest quarter, that is
24 shaded in the light green, and go to the western side of
25 that tract --

1 A. That's correct.

2 Q. And then drawing my line down southerly, that
3 will get me the western extension of the project area
4 you're proposing?

5 A. Yes, sir.

6 Q. Now let's turn to a more specific map that shows
7 numbering for these tracts. If you look at the next page,
8 describe for us, Mr. Wolfe, what you're depicting here.

9 A. Again, we've highlighted the current allowed 80
10 acre density in Colorado with the shaded sections in the
11 Colorado portion.

12 We've also highlighted the nonstandard drill
13 blocks within Colorado indicated by the green squares
14 along the state line.

15 Again, you see our colored blue and red drill
16 blocks to the south in New Mexico. We numbered the drill
17 blocks A through N, which we'll discuss here in a minute.

18 Q. That was simply done for convenience?

19 A. That's correct.

20 Q. To associate a letter with these nonstandard
21 proration units, that gives us a shorthand way to find
22 them?

23 A. Exactly.

24 Q. When we look outside the blue tracts and look at
25 those tracts that are prefaced with an "N" followed by a

1 Roman numeral, what is the purpose of doing that?,

2 A. Those are notice area drill blocks that I've
3 identified that we would send notice to, and those were
4 numbered such that I can usually identify which block
5 belonged to which interest party.

6 Q. Again, it was just a way for you to keep tract
7 of the notice areas and to associate a quick index finding
8 who you sent notice to?

9 A. That's correct.

10 Q. Let's turn beyond that -- in fact, this may be a
11 good locator map to take out of the book and put it to the
12 left of your main book, and let's make some comparisons
13 here.

14 The next display in the book is a tabulation of
15 drill blocks. This is the drill block name, footages,
16 location. Did you prepare that?

17 A. Yes, I did.

18 Q. And how did you prepare that?

19 A. The footages are based off the plats filed with
20 the OCD.

21 Q. You went through the OCD records and pulled up
22 all of these things?

23 A. That's correct.

24 Q. In relating the drill block tabulations to the
25 map that we've just taken out of the book, do all of the

1 drill blocks match the criteria we're selecting for the
2 project area where we've had the option of two well bores
3 in the northern half of the nonstandard unit and one well
4 bore in the southern portion of that spacing unit?

5 A. All except for Drill Block B.

6 Q. Show me that one.

7 A. Drill Block B, you can see in Township 32 North,
8 Range 9 West, Section 10.

9 Q. And you have reconfirmed that, in fact, those
10 two well bores are in the southern portion of that spacing
11 unit?

12 A. Yes, sir.

13 Q. Are these nonstandard proration units, they're
14 not consistent with a regular sized section, are they?

15 A. No, they are not.

16 Q. Are they less or more than 640 acre?

17 A. Some are less, some are a little more.

18 Q. And they are not square in shape?

19 A. No, they're more rectangular.

20 Q. So what has been your strategy for defining the
21 project area within New Mexico, what do you do?

22 A. I've taken the footages of each drill block and
23 I've artificially drawn the north half, north half south
24 half line through the middle of those so an exact footage
25 cannot be obtained from drill block to drill block as

1 their size does vary.

2 But as the drill block itself is mostly
3 contiguous along its northern and southern boundary within
4 its own drill block, we feel that that footage allocation
5 per drill block is a fair way to distinguish the location
6 of these wells.

7 Q. Setting aside Drill Block B for a moment, if the
8 Division creates this transition area and the flexibility
9 of well density, how many additional in-fill wells would
10 be in the project area?

11 A. There would be the potential for nine additional
12 wells as a result of this.

13 MR. KELLAHIN: Mr. Examiner, for Tract B, we're
14 proposing to keep that in the project area, but we would
15 ask that the order reflect that no additional wells can be
16 drilled in that tract without further approval from the
17 Division, which would give us the opportunity to examine
18 in detail what's happening in Colorado versus the
19 production of the two wells in New Mexico to see if there
20 is any compelling need to have any more wells.

21 I think that's probably the easiest solution to
22 accommodate the dilemma of having a project area and then
23 having this as one that's inconsistent with our concept.

24 HEARING EXAMINER: Okay.

25 MR. KELLAHIN: So again, we'd ask that, stay in

1 the project, but Tract B would specifically be noted not
2 to have an additional well bore subject to further
3 approvals.

4 And we would ask that you consider making the
5 choice up to the district office in Aztec as to the
6 specifics of how that may be accomplished.

7 If you choose not to give Mr. Heyden that
8 authority, we'd ask that you allow us to come back to you.

9 HEARING EXAMINER: Okay.

10 Q. Mr. Wolfe, let's turn past the tabulation and
11 let's look at the next document. What have you put in the
12 exhibit book at this point?

13 A. This is a letter from the BLM in support of the
14 current project area. We received this letter after we
15 met and discussed this project area with them.

16 Q. And this is the letter you referred to from
17 Mr. Lovato at the BLM?

18 A. That's correct.

19 Q. In addition, have you received any other letters
20 of support from anyone else?

21 A. Yes, we have. The next page, you can see an
22 e-mail we received from Mr. Speer indicating his support
23 of the project area as well.

24 Q. What is your understanding of the Speer interest
25 in this particular area and in the project?

1 A. They own interest within Federal Units 32 and 8,
2 32 and 9, and 32 and 7.

3 Q. Those are the interests associated with units
4 operated by ConocoPhillips Burlington?

5 A. That's correct.

6 Q. After Mr. Speer's letter, let's look at a series
7 of documents that you've attached to the application.
8 Starting first with what is marked as Order R-9055, why
9 are you showing us this?

10 A. This is the Order that established the
11 nonstandard gas proration units in Township 32 north,
12 Range 8 West for those sections along the state line.

13 Q. These would be established for Fruitland Coal?

14 A. That's correct.

15 Q. Following this order, what have you put in the
16 exhibit book, Mr. Wolfe?

17 A. The next order is R-922. Again, it's a
18 nonstandard gas proration unit order for the Fruitland
19 Coal but for Township 32 North, Range 9 West. And this
20 order does cover all those sections along the state line.

21 Q. Turning past that order, I find Order R-2046.
22 Why is this in the book?

23 A. This order is similar to the first two except
24 this is a Dakota order. For simplicity, this covers --
25 the reason I'm including this is for the coverage of 32

1 North, Range 7 West.

2 The Fruitland Coal was added by drill block, so
3 there are various orders per each drill block. As they
4 obtained -- they followed the Dakota designation of a
5 drill block -- or proration units.

6 The specific orders reflecting the limited
7 amount of sections in 32 and 7 for this project area are
8 R-8995. That covers Sections 10 and 11. And R-9129, that
9 covers Sections 9 and 10.

10 Q. Okay. Having made yourself knowledgeable about
11 the ownership in the nonstandard proration units, let me
12 ask you this question.

13 If the Division approves our concept to divide
14 the spacing unit in terms of density where you have two
15 wells in the northern portion and no more than one in the
16 southern portion, does that approval disrupt any of the
17 equities, either for the parties paying or the parties
18 receiving proceeds from wells in that spacing unit?

19 A. No.

20 Q. So regardless of where the well is located in
21 the spacing unit, they're consolidated in such a way that
22 the interests owners in that spacing unit will share in
23 that production wherever that well may be in that spacing
24 unit?

25 A. That's correct.

1 Q. Let's turn to the Colorado side of the boundary.

2 A. Okay.

3 Q. Have you put references in the exhibit book to
4 direct the Examiners to the corresponding orders of the
5 Colorado Oil Conservation Division?

6 A. Yes, I have.

7 Q. And you don't have to describe these in detail,
8 but generally, tell me what is accomplished by the
9 insurance of these orders.

10 A. These orders allow the increase or the
11 additional drilling of one or two wells up to 80 acres.

12 Q. And this corresponds to the shaded light green
13 area that you showed on the earlier display?

14 A. That's correct.

15 Q. Following the reference for the Colorado orders,
16 what have you attached in the exhibit book at this point?

17 A. This is a copy of our notice letter that was
18 sent out to all the working interest owners that have
19 interest in the drill blocks that ConocoPhillips
20 Burlington Resources operate. It was also sent to BP, the
21 operator of that one tract.

22 Q. While this is a letter I signed, you are the one
23 that sent these out?

24 A. Yes.

25 Q. And the letter reflects that the hearing date

1 this morning would be on a docket starting 8:15 for
2 today's date?

3 A. That's correct.

4 Q. Following the notice letter, do you have a
5 tabulation of the interest owners that were sent this
6 notice?

7 A. Yes, I do. Notice was sent to 22 different
8 individuals so indicated here on this list.

9 Q. As you described earlier, are these names
10 associated with a notice list exhibit where the tracts are
11 numbered N-1 through N-27?

12 A. As well as those drill blocks within the project
13 area designated A through N.

14 Q. It seems like a short list, but these are all
15 the interest owners?

16 A. That's correct.

17 Q. Following the tabulation of the list, what have
18 you put in the exhibit book, Mr. Wolfe?

19 A. These are copies of the certified return mailing
20 receipts.

21 Q. Are there some of these letters sent for which
22 you do not yet have a green card back?

23 A. That's correct.

24 Q. Subsequent to sending the letters and not
25 getting a green card, did you personally make phone calls

1 to all the interest owners from which you did not get a
2 green card back?

3 A. That's correct.

4 Q. Did you explain to them what you were seeking to
5 do?

6 A. That's correct.

7 Q. Did you receive any objections from any of
8 those?

9 A. No, sir.

10 MR. KELLAHIN: Mr. Examiner, that concludes my
11 examination of Mr. Wolfe. We move the introduction of the
12 exhibits behind his Exhibit Tab No. 1

13 HEARING EXAMINER: The exhibits behind Tab No. 1
14 will be admitted. I think the likelihood of me asking a
15 question that hasn't already been covered here is pretty
16 low, but I did have a question. The Allison unit, who
17 operates the Allison unit?

18 THE WITNESS: Burlington Resource.

19 HEARING EXAMINER: Burlington? Okay. And the
20 32 7, is who?

21 THE WITNESS: I believe it's Burlington.

22 HEARING EXAMINER: Still considered Burlington.

23 THE WITNESS: I believe 32, and 9 and 32 and 8
24 are operated by Conoco.

25 HEARING EXAMINER: Okay. And they start with

1 three sections, is that correct, in Township 32 9, or is
2 it four sections in -- or four spacing units in 32 9? Is
3 it only --

4 THE WITNESS: In the project area?

5 HEARING EXAMINER: Yes.

6 THE WITNESS: Highlighted in blue, there are
7 four sections within 32 and --

8 HEARING EXAMINER: So there's four sections
9 which are comprised -- or are irregular sections around
10 320 or so acres per section?

11 THE WITNESS: Yes, Sections 9 through 12.

12 HEARING EXAMINER: So there's four of them.

13 MR. KELLAHIN: Mr. Examiner, if I may approach
14 the bench? I have a larger copy of this exhibit which may
15 be easier to read. I found it useful in not getting lost.

16 HEARING EXAMINER: Okay. Thank you. Okay, I
17 guess I got confused because of the application. Sections
18 9 through 12 of 32 9. So that would be four of them.
19 Okay. Okay, this is the same --

20 But as you work your way across, you got four in
21 that first township to the west, and you got six across?
22 Is that correct, six of them? It looks like seven in 32
23 8; is that correct?

24 THE WITNESS: Yes, sir.

25 HEARING EXAMINER: So there's seven spacing

1 units across there?

2 THE WITNESS: Yes.

3 HEARING EXAMINER: And what about Drill Block J,
4 is that -- what section is that? That's in Section 12,
5 then, I guess.

6 THE WITNESS: It's proximately the east half of
7 Section 11 and the western one-third of Section 12.

8 HEARING EXAMINER: Okay, so that one has already
9 been created; is that correct?

10 THE WITNESS: Yes, sir.

11 HEARING EXAMINER: In 1989 or 1990. And it was
12 created for the Fruitland Coal already.

13 MR. KELLAHIN: It was originally created for the
14 Dakota, and we mirrored it for the Coal.

15 HEARING EXAMINER: Mirrored it for the Coal with
16 these orders that mirrored the Fruitland for the same
17 density as the -- actually, little setbacks.

18 THE WITNESS: Right.

19 MR. KELLAHIN: And there are several of those
20 examples. I think there are at least four of those that
21 have crossed over a section line.

22 HEARING EXAMINER: Yeah. It looks like Drill
23 Blocks M and N. But somehow their districts are able to
24 handle the reduction on that or -- We get in trouble in
25 the district sometimes when we try to split proration

1 units. But I guess this has already been handled.

2 MR. KELLAHIN: I don't think that's quite right.
3 We're not going to split the proration units, we're going
4 to leave the proration units alone, but we're going to
5 confine additional well bores so that there's no more than
6 two in the north and one in the south. So we're not going
7 to do disrupt the equities in the spacing units.

8 HEARING EXAMINER: The spacing unit's already
9 been created?

10 MR. KELLAHIN: Right.

11 HEARING EXAMINER: Okay. And then in the last
12 township, you just have three, is that correct, or you
13 have four there, L, M, N --

14 THE WITNESS: Yes, sir. It's just three there,
15 L, M and N.

16 HEARING EXAMINER: And these others are just for
17 the notice. That notice 27, you noticed everybody on that
18 side. The people in Colorado are BP, it looks like, are
19 the main ones up there; is that correct?

20 THE WITNESS: That's correct.

21 HEARING EXAMINER: And they all got noticed up
22 there about this issue. And as far as handling Drill
23 Block -- you're calling it Drill Block 10?

24 MR. KELLAHIN: It's got a letter associated with
25 it, It's B, but it's in Section 10.

1 HEARING EXAMINER: You got two Ls in the south
2 half of that, and you just want that to be included but
3 you want it to be handled by --

4 MR. KELLAHIN: The District. And no more wells
5 can be drilled without special approval from the district
6 office as to why that should happen. Either you can give
7 it to Mr. Heyden, or if you feel necessary, we can come
8 back to you.

9 HEARING EXAMINER: Okay. The application also
10 said something about nonstandard locations being also
11 approved by Steve Heyden.

12 MR. KELLAHIN: Maybe the engineer is better able
13 to answer it, but as I understood it, Mr. Heyden takes the
14 position that if you enter an existing vertical well and
15 drill it directionally, there is a portion of that lateral
16 that will be within -- that will violate the current
17 density for the rule.

18 And we have a display that demonstrates some of
19 that, but my understanding is that he takes the position
20 that a horizontal well bore would violate the current
21 density of two wells in a spacing unit, and the simple act
22 of the reentry and directing it increases the well count.

23 So we're talking about having flexibility for
24 Mr. Heyden when he approves these directional well bores
25 in a project area to allow that as an exception from what

1 he would otherwise say was a violation of the coal-gas
2 rules.

3 HEARING EXAMINER: Okay.

4 MR. KELLAHIN: In addition, there may be some
5 topographical reason to move that well bore slightly off
6 patten. Our concept is to maintain the integrity of a 660
7 setback unless something happens that requires special
8 exception for that.

9 But within the 660 setback, there is still an
10 area that requires some movement that could violate the
11 coal-gas rules as they now exist.

12 HEARING EXAMINER: And if you reenter it, the
13 Dakota wells are complete in the Fruitland, then it's off,
14 it's closer than 660, you want the flexibility to do that.

15 MR. KELLAHIN: That's the problem.

16 HEARING EXAMINER: For Steve Heyden to approve
17 that.

18 MR. KELLAHIN: That's right.

19 HEARING EXAMINER: Okay. The PAs in this
20 instance -- of course, this is the end of -- these units
21 end at the state line, I take it?

22 THE WITNESS: Yes, sir.

23 HEARING EXAMINER: They don't extend into
24 Colorado. And these would be the boundaries of the PAs to
25 determine whether it's 660 setbacks on the Fruitland rule,

1 as I understand. Okay.

2 It looks like you noticed everyone around. Did
3 you expect any kind of -- did you have any discussions --
4 I know you don't have any formal protests from anybody,
5 but did you have any discussions or concerns from people
6 that you would like to talk about?

7 THE WITNESS: Well, I discussed it with several
8 of the working interest owners, just due to the complexity
9 of this project. It was a little hard to understand just
10 from a letter. But as soon as it was explained, there was
11 no kind of opposition, there was more clarification.

12 HEARING EXAMINER: And even around that Drill
13 Block 10, there was nobody that was concerned about that?

14 THE WITNESS: No.

15 HEARING EXAMINER: Okay. Mr. Warnell?

16 MR. WARNELL: Did you contact 100 percent of all
17 the interest owners?

18 THE WITNESS: Yes.

19 HEARING EXAMINER: Even the working interest
20 owners, it looks like?

21 THE WITNESS: Yes.

22 MR. BROOKS: Mr. Kellahin, do you have other
23 witnesses that are going to testify to these spacing and
24 simultaneous dedication matters that you were just
25 discussing with Mr. Jones?

1 MR. KELLAHIN: Yes, sir, I hope to have an
2 engineer that can answer those questions.

3 MR. BROOKS: Yeah, because I'm not real clear on
4 what the issues are and this witness didn't really cover
5 it. So. Okay.

6 HEARING EXAMINER: Do you use Arc View, is that
7 how you draw all these nice maps?

8 THE WITNESS: Arc Map, yes, sir.

9 HEARING EXAMINER: Arc Map? And it just sucks
10 in your data and plots it out for you?

11 THE WITNESS: It requires a lot of fine tuning,
12 but --

13 HEARING EXAMINER: Does it?

14 THE WITNESS: Yes, sir.

15 HEARING EXAMINER: But it's pretty accurate the
16 way you've got it. It seems to me that the advantage of
17 ConocoPhillips and Burlington is you have this gigantic
18 data base where you guys can zero in on the parts of the
19 San Juan Basin that you want to.

20 THE WITNESS: It does come in handy.

21 HEARING EXAMINER: And why is it still separate,
22 Burlington and ConocoPhillips as far as the name goes?

23 THE WITNESS: As far as I know, it was a -- it's
24 part of the legal arrangement when the two companies
25 merged. So for some time, it will still be separate,

1 unfortunately.

2 HEARING EXAMINER: Okay. It will still be
3 separate in a lot of people's minds forever, I'm sure.
4 Okay. Let's go off the record and have a break for at
5 least ten minutes.

6 MR. BROOKS: That's a good idea.

7 (Note: A break was taken.)

8 MR. KELLAHIN: Mr. Examiner, our next witness is
9 Jeff Harrison. Mr. Harrison is a petroleum geologist.

10 JEFF HARRISON,
11 the witness herein, after first being duly sworn
12 upon his oath, was examined and testified as follows:

13 DIRECT EXAMINATION

14 BY MR. KELLAHIN:

15 Q. Mr. Harrison for the record, sir, would you
16 please state your name and occupation?

17 A. Jeff Harrison. I'm a geologist.

18 Q. On prior occasions, have you testified before
19 the Division and had your qualifications as an expert in
20 petroleum geology been accepted by the Division?

21 A. No.

22 Q. Summarize for us your education.

23 A. I graduated in 1995 with a Bachelor of Arts in
24 Geology from a liberal arts college in Central Maine
25 called Coby College. And I received a Master's Degree in

1 1999 in Geology from the University of Texas at Austin.

2 Q. How long have you been employed by
3 ConocoPhillips-Burlington?

4 A. Approximately two years, but I have a total of
5 ten years industry experience.

6 Q. Have you caused yourself to have experience with
7 coal-gas wells in San Juan Basin?

8 A. I have, yes.

9 Q. Have you been assigned by your company as the
10 geologist in charge of this project area?

11 A. Yes, sir.

12 Q. As part of that assignment, have you made
13 yourself knowledgeable about the geologic components that
14 are applicable to this application?

15 A. Yes, I have.

16 Q. In doing so, have you prepared a series of
17 exhibits to present to the Examiner this morning?

18 A. Yes.

19 MR. KELLAHIN: We tender Mr. Harrison as an
20 expert petroleum geologist.

21 HEARING EXAMINER: Mr. Harrison is qualified as
22 an expert in geology.

23 Q. Mr. Harrison if you'll turn to the exhibit book
24 and look behind Exhibit Tab No. 2, I've gone ahead during
25 the break and numbered your exhibits. So after Exhibit

1 Tab 2, the cover sheet is 1, and we go from 1 through 8
2 when we got done.

3 But before we look at your exhibits, let me ask
4 you some generalized questions. When we look at the
5 relationship of the Coal and gas pool in the San Juan
6 Basin, the Division has designated a portion of that pool
7 as what we know as the low productivity area. And there
8 is also a high productivity area.

9 In dealing with that difference in distinction,
10 in what area are we involved?

11 A. This would be considered the low productivity
12 area. We're a bit north of the better production. You
13 can take a look at the higher productivity area.

14 Q. When you look at the Fruitland geology and look
15 at the geologic components of your analysis, is there a
16 similarity in the reservoir on the New Mexico side of the
17 common boundary with the reservoir on the Colorado side?

18 A. In the vicinity of this project area and the
19 scale and distances involved with these sections, there is
20 a lot of similarities in the coal packages on both sides
21 of the state line as one might expect.

22 Q. When you deal with the continuity of the
23 reservoir and the correlation of the components of the
24 reservoir across the state line, are you dealing the with
25 the same essential components?

1 A. More or less. There are a few subtleties in
2 smaller coal packages that come and go, but the major
3 true-going packages are clearly present on both sides of
4 the state line.

5 Q. When you look at this from a structural
6 perspective, can you tell us generally where we are
7 structurally and what their relationship is on the
8 reservoir in Colorado versus that in New Mexico?

9 A. In a general sense, the structure is rising to
10 the north and east. So for the most part, equivalent
11 depths of specific coal formations are somewhat deeper on
12 the New Mexico side.

13 But again, given that we're only talking about a
14 section away, the differences are relatively small, on the
15 order of tens of feet versus hundreds of feet in structure
16 elevation.

17 Q. Have you been involved in discussions among
18 representatives of your company and representatives of the
19 Bureau of Land Management?

20 A. Yes. We met with them to present the spirit and
21 the presentation materials for this order.

22 Q. As part of your involvement, have you also met
23 with representatives of the Aztec office of the Division?

24 A. Yes, we have. We went to Aztec and spoke with
25 Steve about this.

1 Q. Later on, can you describe or can you explain to
2 Mr. Brooks the concerns he had about what we are
3 requesting in terms of well location?

4 A. I think I can have a stab at that, yes.

5 Q. As part of your study, have you made a direct
6 comparison using cross-sections of log well bores in
7 Colorado with those in New Mexico so we can have a visual
8 representation of what the reservoir looks like as we
9 cross the boundary?

10 A. Yes. I prepared three specific cross-sections
11 that span the state line in an attempt to convince you
12 that the producing coal formations are very similar, if
13 not identical, penetrations.

14 Q. From a geologic perspective, does it make sense
15 to use what we've described as the project area in New
16 Mexico as a transition area so that we can accommodate
17 well bore densities to meet competition in Colorado as
18 well as not disrupt densities as we move farther into New
19 Mexico?

20 A. Yes. It seems like a good solution to both
21 match density activity on the Colorado side, and at the
22 same time, insulate the remainder of the Fruitland Coal
23 from any sort of density changes.

24 Q. Let's turn specifically to your exhibits.
25 Behind Exhibit Tab No. 2, the first exhibit is 1, which is

1 just the cover sheet, and if you'll turn past that, let's
2 look at what's marked as Page 2. And it says, "San Juan
3 Basin geologic setting."

4 A. What I wanted to do here was provide an overall
5 picture of where the San Juan Basin is. It's the reddish
6 colored blob in there. The black outline is an outline
7 more or less of the area that we're speaking about today.

8 If you think of the shape of the basin, it's
9 pushed down towards the center, and the coal actually
10 outcrops all along its rim.

11 The following image that I'll show you is pretty
12 much a picture of that. It's not entirely symmetric, it's
13 a bowl, and this next slide will show you that.

14 Q. Let's look at the cross-sectional view. If
15 you'll turn to Page 3.

16 A. What I've done here is made a cartoon to show
17 the stratigraphy of the producing formations in the San
18 Juan Basin. And also, annotated the Colorado/New Mexico
19 state line.

20 This particular cross-section goes coarsely from
21 the south of the basin to the north. And as you can see,
22 this basin is a little bit asymmetrical. From the south,
23 the formation dips fairly shallowly. On the north end,
24 they've been upwarped a little more dramatically.

25 And where we are at the Colorado and New Mexico

1 state borders, we're talking about this issue
2 today, things are a little bit more steeply dipped on that
3 north limb.

4 Q. Let's focus on that for a moment.

5 A. Sure.

6 Q. If you project the Colorado/New Mexico boundary
7 down through this schematic, you'll hit a point in the
8 Fruitland Coal where -- I don't see a scale on the display
9 from left to right, but when you go into Colorado, there
10 appears to be a steep up-structure position to the coal in
11 Colorado.

12 A. Yeah. And I will note that I've exaggerated
13 this diagram appreciably just for the sake of fitting it
14 on the page and simplifying the concept of what the
15 stratigraphy of the subsurface looks like here.

16 So the distances in the horizontal sense are far
17 greater than the distances in the vertical sense. It's
18 been greatly exaggerated.

19 Q. So there is not an up-structural advantage to
20 wells in Colorado versus those in New Mexico in this
21 specific area?

22 A. It my opinion, no. Tens of feet is not going to
23 likely make an difference. And in addition, the producing
24 coals are fairly tight formations that require a lot of
25 dewatering in order to get the gas off. And that's not

1 something that's going to, I think, have a very
2 dramatically widespread reach in the sense of being updip
3 or downdip.

4 Q. Turn with me to the display that's marked
5 Page 4. First of all, what are you showing here?

6 A. I'm actually showing you the Pictured Cliffs
7 reservoir. And to put that in context, the Pictured
8 Cliffs is a marine sandstone directly underlying the
9 Fruitland Coal. It's a slightly older formation.

10 And the deposition of the coals that ultimately
11 became the Fruitland formation are very closely linked to
12 the deposition of the Pictured Cliffs.

13 What you see in the sort of larger image on the
14 right side are -- it's a cumulative production map from
15 the Pictured Cliffs. And what this shows you is that
16 overall, there is a very strong northwest/southeast trend
17 of how these beach sands, these marine sandstones were
18 deposited.

19 And the reason I link this to the Fruitland is,
20 they were the equivalent continental deposits that
21 followed the Pictured Cliffs deposition. And what
22 happened in the San Juan Basin in the late cretaceous is
23 that sea level was progressively lowered.

24 And what happened is that northwest trending
25 Pictured Cliffs sand shoreline progressed northeasterly

1 into the basin. And what followed it was the continental
2 swamps of the Fruitland formation. So they're very, very
3 closely linked.

4 And the point of the slide is to show you that a
5 long trend, particularly in the northwest, there's a
6 contemporaneous time line of deposition that's fairly
7 continuous.

8 There are some discontinuities that you can see
9 in the production of the Pictured Cliffs, but over small
10 scales, it correlates pretty well.

11 Q. Let's turn to Slide No. 5. What are you showing
12 us here?

13 A. Well, what I showed you before is more of a
14 regional, basin-wide view of how things were deposited.
15 What I want to do now is show you specifically logs from
16 the sections in the vicinity of the state line area that
17 span it in an attempt to convince you that the coals are
18 continuous, and geologically, there is not any dramatic
19 change at state line between Colorado and New Mexico.

20 What I've prepared, I've got three
21 cross-sections, and the actual logs are highlighted with
22 green dots. They go --

23 Q. Let me ask you this before we leave No. 5.

24 A. Sure.

25 Q. Is there a particular reason for selecting this

1 population of wells in this configuration?

2 A. There is. The San Juan Basin is a very old
3 basin, but the availability and types of data available
4 can be pretty diverse. So what I've tried to do is depict
5 the best set of logs with density curves to show you the
6 coals.

7 Unfortunately, on the western end, my density of
8 data was a lot more sparse than it was on the eastern
9 side. So that's controlled somewhat where I've been able
10 to put those cross-sections.

11 Q. In summary, are you satisfied that these
12 illustrations are going to be characteristic of what the
13 Examiner will see geologically as he moves through each of
14 the nonstandard proration units in the project area?

15 A. Yes, I am.

16 Q. Let's turn to the first one. If you'll look at
17 Slide 6, this is Cross-section No. 1.

18 A. I won't belabor these, but what these are, on
19 the left-hand side of the tract is a gamma ray, and I've
20 highlighted the gamma ray readings that are less than 75
21 API, which is generally considered to be a pretty clean
22 reading.

23 And on the right-hand side is a density. And
24 the density shade you see in black there is highlighting
25 materials that are less than two grams per centimeter on

1 both densities, generally what we use to identify coals.

2 And to aid in the identification of one coal
3 versus another, I've attempted to use some colored lines
4 to help guide your eye, I guess.

5 I've also annotated the New Mexico and Colorado
6 state line here just to show you where these sit on each
7 side.

8 As I mentioned before in general, the
9 larger, thicker packages, particularly that one in sort of
10 a medium green color, which is often the target for us up
11 here on the state line, fairly thorough-going package,
12 roughly 20 to 25 feet thick, but even the smaller, thinner
13 coals can often correlate quite well.

14 I will note that in the right-hand most log on
15 this, above that nice thick, green marked coal, there is a
16 small coal just to illustrate that there are -- these
17 continental sedimentation environments are more
18 complicated than marine, but in general, the larger
19 packages are present on both sides.

20 The subsequent cross-sections that you'll see
21 should show you the same relationships that we've
22 discussed before.

23 Q. Let's do that. Let's turn to Slide No. 7, which
24 is going to be Cross-Section No. 2.

25 A. And again, this is the center-most section that

1 I've drawn on that big map. And here we've got two logs
2 on the New Mexico side, two logs on the Colorado side in a
3 roughly south-to-north section.

4 And again, what we see here are fairly
5 consistent coal packages that are present on both sides.

6 And I also want to add, these particular
7 cross-sections are hung on structural elevation, so if you
8 want a feel for the scale of difference in structure in
9 coal packages from one to the other, this will give you
10 that impression.

11 Q. And if you'll turn now to Slide 8 which is
12 Cross-Section No. 3.

13 A. And again, a final cross-section here on the
14 west side, again, showing packages that correlate well, as
15 well as some additional thinner ones that are different in
16 each well bore, but on the whole, they correlate fairly
17 well.

18 Q. Mr. Harrison, let's skip Tab 3 and go to Tab 4
19 at this point. Tab 4 has three displays. There's 1, 2,
20 and 3.

21 Let me have you address Mr. Brooks' question
22 about the specific nature of why we're asking the Division
23 to give the District approval for nonstandard locations in
24 the project area. Set stage for us.

25 A. This is an example of one of these irrelevant

1 sections along the state line where, if we were to develop
2 it as per the order we've outlined today, this is sort of
3 an example of what we would do, a simplified case.

4 And in this particular case, what we're showing
5 you in the triangles are existing Fruitland Coal wells.
6 And the development scheme that I believe we would
7 consider preferable from a recovery rate and potentially
8 even an economic standpoint, would be to reenter the
9 existing coal well and drill a lateral horizontal well to
10 have a much bigger drainage pattern than we would with a
11 vertical penetration.

12 The issues we've run into in the past is that
13 when you cross -- For example, in a quarter section where
14 you've got two Fruitland Coal wells, the issue has often
15 been where you can't drill a horizontal well into the
16 half -- into basically the quarter that the existing older
17 coal well was in.

18 And from our perspective, the longer the
19 horizontal well we with can drill, the better. We fully
20 intend to honor whatever setbacks, but we would prefer to
21 be able to administratively handle these types of
22 horizontal wells facing exceptions locally without making
23 the trip to see you guys every time we need to do that.

24 This is increasingly a preferable way for us to
25 complete wells in this formation and increase basically

1 rates and improved drainage patterns.

2 Q. Were there any other concerns Mr. Heyden
3 expressed to you in his desire to have flexibility in his
4 approvals so that he could accommodate these situations?

5 A. His biggest concern, I believe, was that we
6 honor setbacks and not put any correlative rights at
7 issue. But he was comfortable, I believe,
8 administratively handling this type of an exception for
9 horizontal drilling.

10 Q. Is some of this difficulty generated by the fact
11 that these are odd configured sections such that when we
12 look at conventional nomenclature and then pose the
13 nonstandard proration unit on top of that, you're going to
14 come to a point where you're inconsistent with pool rules
15 in terms of setbacks?

16 A. That's the case in some instances, yes.

17 Q. Turn past Tab 4, Page 1, and look at 2 and 3 for
18 me so we can give the Examiner a more complete
19 presentation of your hypothetical here.

20 A. Sure. These are basically the plats associated
21 with the actual wells in our example here. I'm not
22 extremely familiar with the plats to explain them in great
23 detail, but what they were intended were to show the
24 locations of the existing wells relative to our cartoon
25 schematic just as an example. This is a real life example

1 of what we were planning on doing.

2 MR. KELLAHIN: Mr. Examiner, that concludes my
3 examination of Mr. Harrison. We would move the
4 introduction of the exhibits found behind Exhibit tab No.
5 2, which are numbered 1 through 8. I'm sorry, I said that
6 wrong. Exhibit Tab 2, Pages 1 through 8, and Exhibit Tab
7 4, Pages 1 through 3.

8 HEARING EXAMINER: Exhibit Tab 2, Pages 1
9 through 8, and Exhibit Tab 4, Pages 1 through 3.

10 Mr. Harrison, let's go back to 2 real quickly
11 here. The second page -- actually, the third page, I
12 guess, the Titus 2005, what else did you add to that?

13 THE WITNESS: This is actually a slide I took
14 directly from presentations we made before. Titus was an
15 employee for Burlington Natural Resources. He's no longer
16 with the company. They used one of our techs that drafted
17 this for us.

18 HEARING EXAMINER: Okay. And you show some
19 coals in the Gallup around -- around Crown Point?

20 THE WITNESS: Yeah. It's interesting. The
21 story of the San Juan Basin has been a repeat of the same
22 cycle over and over. Actually, there's coals on top of
23 the Dakota, there's coals on top of the Mesa Verde.
24 They're much less well developed, they're much thinner.

25 Likely the reason for that is, its rate of

1 change or time. Perhaps you had a more gradual lowering
2 of sea level during the Pictured Cliffs time that let you
3 accumulate more organic materials.

4 But it could also be, in geologic time, there
5 had been periods where either climate or biology,
6 different types of species have evolved and really
7 bloomed.

8 HEARING EXAMINER: Okay.

9 THE WITNESS: But there are coals associated
10 with the tops of the -- Because the Dakota, the Mesa Verde
11 and the Pictured Cliffs are all very similar shallow
12 marine sandstones that formed in the same dance between
13 sea level rising and the depositing shells, like the loess
14 and the magmas, and retreating, and that sandstone
15 prevailing out into the basin as it got shallower.

16 HEARING EXAMINER: Okay. Did you do your
17 Masters in the stratigraphy and sedimentology?

18 THE WITNESS: I did not. I studied gold mines.

19 HEARING EXAMINER: You seem to really have
20 picked up the soft drop side of it. I didn't know coals
21 existed above the Dakota.

22 THE WITNESS: They're quite thin and maybe not
23 as continuous, but there are coals present in both
24 Pictured Cliffs, Mesa Verde and -- at the tops, behind
25 them, basically, the back basin as the shoreline

1 progressed.

2 HEARING EXAMINER: Are you guys looking any at
3 the Mesa Verde coals?

4 THE WITNESS: I don't believe they're thin
5 enough. And the other thing to keep in mind is, they're
6 buried significantly deeper than the Fruitland coals. So
7 it's quite likely that a lot of the gas within the Dakota
8 and the Mesa Verde formations are sourced from the coals.
9 The more you bury it, the hotter you expose it to
10 conditions, the more gas you'll cook out of it and store
11 in more conventional reservoirs that have the coarse base.

12 HEARING EXAMINER: So the Miniffee (phonetic)
13 coals, you haven't measured the gas content in those?

14 THE WITNESS: I'm relatively new to the basin
15 and I focus mostly on the Fruitland, so I feel like I'm
16 sticking my neck out a little bit.

17 HEARING EXAMINER: That's all right. That's
18 totally off the subject.

19 THE WITNESS: Sure.

20 HEARING EXAMINER: And I'm sorry about that.
21 The Fruitland in this area, you show on your
22 cross-sections -- which, by the way, thanks for doing the
23 cross-sections this way, that's nice with the simplified
24 gamma rays -- this is nice, because huge ones -- the huge
25 ones, if they're up on the screen they're nice, but -- I

1 know you can show more detail on the big ones.

2 On this one, you show a thick Fruitland Coal in
3 the middle. Is that Fruitland Coal down below that, that
4 thinner --

5 THE WITNESS: It is. Where we are here is an
6 area what's been commonly called the inner tongue. Are
7 you familiar with that concept?

8 HEARING EXAMINER: No. I always remember the
9 thick, basal Fruitland Coal that people --

10 THE WITNESS: And we're north of that. This is
11 a little bit thinner. To the south of this inner tongue
12 interval, if you look between the lower-most coal that's
13 shown in brown, that brown line, and the one next up which
14 is orange, that whole interval there is called inner
15 tongue.

16 And what that represents is a brief period where
17 instead of sea level dropping, it actually came back for
18 just a short while and you had -- So originally you had
19 coad laid down. You had your Pictured Cliffs sands and
20 then you had your coal come in and your swamp behind it.

21 But it flooded again. And that interval in
22 between there represents a really brief hiatus of the sea
23 level drop until that orange coal where it dropped again
24 and things started prorating out once more.

25 HEARING EXAMINER: So you have sort of almost a

1 marine sand between them then?

2 THE WITNESS: Yeah. Or maybe even a mix. It
3 was fighting with itself. You don't see this inner tongue
4 interval, it thins to the south and eventually goes away,
5 so that that lower-most brown coal becomes the very, very
6 bottom coal.

7 HEARING EXAMINER: And even seams up in
8 Colorado, those were thick, basal coals and -- at least
9 maybe over to the west, further to the west.

10 THE WITNESS: Yeah. And keep in mind that this
11 isn't a north/south striking basin. So in Colorado, what
12 you're seeing is the strip of the formation to the
13 northwest is pretty strong northwest/southeast. So things
14 you're seeing in Colorado in the western portion are going
15 to be pretty equivalent to something that's further south.

16 HEARING EXAMINER: Okay. And then you have
17 those thinner coals above it that can give you some gas.

18 THE WITNESS: You bet.

19 HEARING EXAMINER: Okay. And your target for a
20 horizontal would be the thick coal in the middle?

21 THE WITNESS: In general. We would obviously
22 target that green highlighted coal, but as recently as
23 this year, we've been aggressively going after things
24 that's been at six feet with the directional drilling.

25 HEARING EXAMINER: Really? Multilaterals or

1 just --

2 THE WITNESS: Yeah. To date, I believe we've
3 only done two dual laterals, although we are toying with
4 the idea of tri-laterals coming up.

5 HEARING EXAMINER: Okay. But the laterals
6 you're talking about, you have drilled a vertical well and
7 logged it and completed it and then --

8 THE WITNESS: Our current design, if we can
9 reenter a well bore and the well bore is a poorly
10 producing well, that's a preferable method to do it, is to
11 reenter a vertical well, set a woodstock, and drill your
12 horizontal lateral -- or laterals if there's two targets.

13 We also have been drilling new drilled wells,
14 and these designs have a motherboard where you start off
15 at the surface at vertical and build to 65 degrees,
16 penetrate the coals, and then you come up and set your
17 woodstocks at your targets and drill your horizontal
18 laterals out of that 65 degree hole.

19 HEARING EXAMINER: Oh, wow. Seems like
20 difficulty when you start dealing with deviated -- I
21 mean -- I don't know. 45 degree wells are dangerous as
22 far as, you know, having problems when you do things with
23 them. But you guys -- I guess the technology is there now
24 even in depleted reservoirs to drill horizontal --

25 THE WITNESS: Where we've been doing this has

1 been fairly high pressure. This is a low productivity
2 area. I believe the company has plans to start this in
3 some of the lesser, lower pressured -- they call it the
4 underpressured envelope.

5 HEARING EXAMINER: Okay.

6 THE WITNESS: But we haven't done anything to
7 date to my knowledge.

8 HEARING EXAMINER: Okay. Well, I guess quickly,
9 though, these are the -- Are you able to set a liner in
10 those, those --

11 THE WITNESS: We do. We currently set
12 preperforated liner.

13 HEARING EXAMINER: Oh, okay.

14 THE WITNESS: And it's plugged with little metal
15 plugs with two shots per foot, or something close to that,
16 and then they nail the plugs out after the liner is in
17 there.

18 HEARING EXAMINER: Okay. Cedar Hill area, is
19 that close to here?

20 THE WITNESS: I don't know for certain.

21 HEARING EXAMINER: The area in Colorado, I
22 think, where they did the study between the fracturing
23 versus the cavitating, the big study to see what was the
24 best way to do it -- And I guess it's kind of academic now
25 because the pressures are so low that cavitation can't be

1 done any more, but -- Okay.

2 It seems Jim Lovato is kind of prodding New
3 Mexico to change their spacing rules here a little bit. I
4 mean, he kind of was the catalyst here that set things
5 off, at least in this area. And I don't know what their
6 agenda is or -- but maybe that's a good idea.

7 The business about two grams per cc to find
8 coal, is that -- in the old days, we used 1.75. So --

9 THE WITNESS: Historically, I believe most
10 operators had difficulties in matching ultimate recovery
11 expectations with such a harsh cut off.

12 HEARING EXAMINER: In fact, I've heard talk even
13 as recently as last month about loosening the 2.0 cutoff
14 and raising that to something higher to try to explain the
15 actual volumes that we sort of think are there.

16 THE WITNESS: I believe the problem
17 fundamentally comes from the interaction between plastics
18 and coals that are in such close proximity here.

19 HEARING EXAMINER: I was going to ask you that.

20 THE WITNESS: Where you likely got gas that's
21 being produced from coal. But you've also got large
22 marine sequences below your sandstone reservoirs that are
23 going to produce gas, as well, as they got buried.

24 HEARING EXAMINER: Yeah.

25 THE WITNESS: So it gets to be pretty tough to

1 account for everything.

2 HEARING EXAMINER: Have you guys done sidewall
3 cores in coals that were between 1.75 and 2, for instance,
4 or -- In other words, kind of shaley or higher density --

5 THE WITNESS: Higher density coals?

6 HEARING EXAMINER: Higher density, yeah.

7 THE WITNESS: I believe we do have that data.
8 I'm just not all that familiar with that.

9 HEARING EXAMINER: I was just wondering if you
10 did. So that's pretty much all the questions I would
11 have.

12 MR. WARNELL: Mr. Harrison, while we're here
13 looking at these cross-sections, your scale down the gamma
14 ray is

15 THE WITNESS: Actually, in this case -- I
16 apologize for not having it on there, I believe it's
17 200 -- 0 to 200, I believe, is what you're seeing here.

18 MR. WARNELL: And you used a cutoff of --

19 THE WITNESS: And looking at this, it's halfway,
20 so that's actually going to be 100. The standard is 150
21 for most vendors.

22 MR. WARNELL: Your cutoff was 100 on the gamma
23 ray, and then 2.0 in --

24 THE WITNESS: Right. It's a wrapping scale,
25 too. So it's coming across again.

1 MR. WARNELL: Okay. I was a little curious as
2 to what you did from the time you received your Masters in
3 1999 until 2007 and went to work for Burlington.

4 THE WITNESS: Sure. I started with Phillips
5 Petroleum in '99 in Houston. And about a year and a half
6 later, Philips acquired ArcoAlaska. And I went up there
7 in 2001 and stayed until 2005.

8 I then went to work in Dallas for Pioneer
9 Natural Resources for two years. And I didn't really like
10 my assignment as much as I thought I would. So I actually
11 returned to my job, my former job in Anchorage in 2007.

12 I moved down to New Mexico in January of this
13 year. The project that I worked on in Alaska had finished
14 up, so I was looking for the next assignment.

15 HEARING EXAMINER: Thank you. Mr. Brooks?

16 MR. BROOKS: Yeah. I don't really understand
17 what Mr. Heyden's concern is or what you're doing, even, I
18 guess, on these locations. If I understood what you're
19 proposing to do, perhaps I would understand why there is a
20 concern about it.

21 The question of drilling a horizontal well, on
22 the exhibit that is behind Tab No. 4, the first one, you
23 have Option 1 and Option 2, and that's suggesting that
24 you're going to be drilling a horizontal well instead of
25 another vertical well.

1 THE WITNESS: That's correct.

2 MR. BROOKS: Now, is there an existing
3 horizontal well that could -- Does that presume that there
4 is an existing horizontal well in each quarter section,
5 or --

6 THE WITNESS: No. And I apologize for the black
7 and white copies --

8 MR. BROOKS: No, that's okay, I'm just trying to
9 figure it out.

10 THE WITNESS: Sure. Sort of what's actually in
11 the ground would be the black triangles. And what we
12 would propose to do in this case would be either the
13 horizontal well represented by the arrow, that in this
14 case would be a reentry.

15 Or should that not be available -- and the
16 reason I say should it not be available, there are certain
17 casing sizes that you can't reenter to drill a lateral in.

18 MR. BROOKS: Yeah.

19 THE WITNESS: If that weren't an option, we
20 would then drill either a new horizontal well or a
21 vertical well.

22 MR. BROOKS: These are mostly all irregular
23 sections. The area you've designated here, does this
24 depict something that's supposed to be approximately a 640
25 acre section, or is it --

1 THE WITNESS: Not at all. These are all much
2 smaller.

3 MR. BROOKS: Okay. What generally -- Are they
4 approximately 160s --

5 THE WITNESS: What I'm showing you here is a
6 drill block. So the drill block would be approximately
7 320.

8 MR. BROOKS: Okay. And so present rules would
9 allow only one -- would allow --

10 THE WITNESS: We've actually presented to you
11 before this year for the Reese Mesa 101 --

12 MR. BROOKS: Right.

13 THE WITNESS: And actually, if I could draw on
14 your board, I could show you exactly what the issue is.

15 MR. BROOKS: That might be helpful. Because
16 I've not really got to what the issue really is.

17 THE WITNESS: Absolutely. It's a standup drill
18 block. And what we had was an existing coal well and --
19 an existing coal well. And what we were seeking to do, is
20 reenter that well and drill to the north.

21 MR. BROOKS: Okay. Now, what size drill?
22 That's approximately 320 acres.

23 THE WITNESS: So it's currently developed on
24 160, as it should be.

25 MR. BROOKS: Okay.

1 THE WITNESS: It was a very underperforming
2 area. And what we intended to do was basically enhance --
3 this was very poor recovery. This was also very poor
4 recovery. We could reenter this one but not that one.

5 So our concept was to reenter this and drill it,
6 but we needed a density exception because we were
7 basically crossing the north half of that drill block.

8 MR. BROOKS: Yeah. You're going to keep both
9 wells?

10 THE WITNESS: That's right.

11 MR. BROOKS: You have two existing wells in the
12 drill block and you're going to continue to have two
13 wells, but one of them is going to be a horizontal that
14 penetrates both halves of the --

15 THE WITNESS: That's right. And that's
16 currently what we need an exception to do.

17 MR. BROOKS: I understand that requires a
18 simultaneous dedication exception, as I understand the
19 rules. And what they do a lot of -- and I thought perhaps
20 you were planning that, but I gather that's not your plan.
21 What they do a lot of in the southeast in the Wolf Camp is
22 to drill two horizontal wells --

23 THE WITNESS: So sort of another one down like
24 this?

25 MR. BROOKS: Yeah, drill two horizontal wells

1 more or less parallel to each other across the entire
2 drill block, and we've always taken the position that that
3 required an exception. But it wouldn't -- I agree with
4 you -- or I agree with Mr. Heyden, it would require an
5 exception under the way the rule is written now to do that
6 if you had two existing wells.

7 I guess what was confusing me was the shape of
8 the way this -- which probably represents the shape of the
9 way these sections are configured --

10 THE WITNESS: Yes.

11 MR. BROOKS: I was thinking of this as being a
12 640, which it's not.

13 HEARING EXAMINER: It's a 320.

14 MR. BROOKS: Yeah.

15 THE WITNESS: Its a drill block, basically.

16 MR. BROOKS: So in effect, your division of your
17 drill block into quarters is going to go vertically across
18 this diagram that you have on Tab 4. And the Eagle 777
19 will be in the west half of the drill block, the 777S will
20 be in the east half, and then the horizontal will
21 penetrate both halves.

22 THE WITNESS: Ideally, the longer you drill, the
23 more economical it is for you to do it.

24 MR. BROOKS: Okay. But you're not proposing --
25 of course, a lot of it is in federal units, so 660

1 wouldn't apply in federal units, unless they were on the
2 boundary of the unit.

3 THE WITNESS: And we'd seek to comply with
4 whatever setbacks --

5 MR. BROOKS: You're not proposing that the order
6 make any particular approval -- make any kind of
7 particular exception to the six hundred and --

8 THE WITNESS: Absolutely not, no.

9 MR. BROOKS: Okay. I think I understand things
10 now. Thank you.

11 THE WITNESS: Sure.

12 HEARING EXAMINER: That Reese Mesa 101, was that
13 an administrative order or hearing order?

14 THE WITNESS: It was here, we came here to see
15 you guys.

16 HEARING EXAMINER: Okay. It's an R order. I
17 can look it up. Okay. Yeah, I have rules -- Correct me
18 if I'm wrong, David, the simultaneous dedication has to go
19 to hearing?

20 MR. BROOKS: No. It's administrative. It's
21 ordinarily done in Santa Fe. What I understood, they're
22 proposing that it be authorized to be done by the district
23 office.

24 HEARING EXAMINER: Okay. Thank you,
25 Mr. Harrison.

1 MR. KELLAHIN: Mr. Examiner, our next witness is
2 going to be the Applicant's engineer, Kassadie Gastgeb.
3 And her exhibits are behind Exhibit Tab No. 3. I've
4 numbered those exhibits specifically under Tab No. 3 as
5 Exhibits 1 through 8.

6 KASSADIE GASTGEB,
7 the witness herein, after first being duly sworn
8 upon her oath, was examined and testified as follows:

9 DIRECT EXAMINATION

10 BY MR. KELLAHIN:

11 Q. Ms. Gastgeb, for the record, would you please
12 state your name and occupation?

13 A. Kassadie Gastgeb, petroleum engineer.

14 Q. Ms. Gastgeb, have you testified before the
15 Division on prior occasions?

16 A. I have.

17 Q. As part of your engineering responsibilities for
18 the applicants, have you made a study of the engineering
19 components to the project area?

20 A. Yes, I have.

21 Q. And based upon that study, do you have
22 recommendations for the Examiner?

23 A. I do.

24 Q. As part of that study, have you prepared a
25 series of slides to illustrate your conclusions?

1 A. Yes, I have.

2 MR. KELLAHIN: We tender Ms. Gastgeb as a expert
3 reservoir engineer.

4 HEARING EXAMINER: She is so qualified.

5 Q. Let's turn to Exhibit Tab No. 3. And past the
6 cover sheet, the first display I have here is No. 2, and
7 it appears to be a Fruitland Coal original gas-in-place
8 display. Let me start off, have you and Mr. Harrison
9 worked together in studying the project area?

10 A. Yes, we have.

11 Q. And in doing so, have you looked at his geologic
12 information?

13 A. I have.

14 Q. As a reservoir engineer, conceptually, how do
15 you approach what to do about densities in this project
16 area, what do you do first?

17 A. Well, with the understanding that the geology is
18 consistent across the state line established by Jeff, I
19 wanted to know a little bit more about our gas in place to
20 see if it is consistent across the state line. So I
21 created this original gas-in-place map.

22 Q. Okay. Let's look at that map. Give us the
23 general way to understand the map and your conclusions.

24 A. Okay. Outlined in red is our project area that
25 we're focused on today. The state line is drawn through

1 the middle of it. And you can see north and south of
2 that, the gas in place is fairly consistent across the
3 state line.

4 Q. You're aware that the BLM has expressed a
5 potential drainage concern related to the well densities
6 in Colorado versus the current existing well densities
7 that we have in New Mexico along this common boundary?

8 A. I am.

9 Q. And having satisfied yourself about the gas in
10 place, you need to also make sure you're satisfied that
11 you have reliable data from which to make this
12 calculation?

13 A. That's correct.

14 Q. Can we turn to Slide 3 and have you tell us the
15 major components of how you did your gas-in-place
16 calculation?

17 A. So utilizing the thicknesses and densities
18 provided by our geologist and calculating a gas content,
19 I'm able to calculate original gas in place. And in this
20 particular well, we're looking at the Reese Basin No. 8.
21 And it's located in Township and Range 32 North, 8 West,
22 Section 12. And I've calculated the gas in place about 4
23 and a half BCF.

24 And if you flip back to the previous sheet of
25 paper we were just looking at, you can orient yourself of

1 32 8, Section 12, south of the state line.

2 And we don't have the sections labeled on there,
3 so it may be somewhat hard to distinguish. But the
4 township boundaries on here are a little bit bolder. So.
5 There's -- within that map, you can kind of see a purplish
6 color, and that will explain that.

7 Q. When you conduct a gas-in-place calculation as
8 an engineer, there are various decisions you make about
9 the quality of your data?

10 A. Yes.

11 Q. Which leads to the accuracy of your calculation?

12 A. Yes.

13 Q. What's your confidence level about the accuracy
14 of your data and your assumptions?

15 A. I'm fairly confident with the data that we used,
16 particularly the isotherm data. We utilized five wells
17 that were within this project area or adjacent to that,
18 and so we had core data that we were able to calculate
19 within the parameters.

20 Q. So for the project area, we did have good
21 quality data to work with?

22 A. We did.

23 Q. Having done that and satisfied yourself you have
24 accurate gas-in-place calculations, you have some
25 engineering choices now about how to analyze the disparity

1 and low densities in Colorado versus what you can do in
2 New Mexico. How then, do you, as an engineer, go about
3 deciding what, then, to do?

4 A. So I have an understanding that now my gas in
5 place is similar across the state lines, so there has to
6 be some other contributing factor that would make the BLM
7 think that we may have an issue with drainage in the
8 future.

9 And timing was one that I investigated, as well
10 as the well density and well count north of the state line
11 and south of the state line.

12 Q. When you say timing, what are you talking about?

13 A. Our drilling campaigns versus Colorado's
14 drilling campaigns.

15 Q. Do you have some displays that would illustrate
16 that for us?

17 A. I do. If you turn to the next slide, I believe
18 it should be No. 4.

19 Q. Yes. That's what I have, New Mexico Drilling
20 Campaign. Describe for us what you're showing.

21 A. Okay. So on this particular plat, I've created
22 a histogram of the wells to date within our project area
23 in New Mexico. And there are general trends that you can
24 see from here.

25 You can see that a majority of our wells in New

1 Mexico have been drilled from '99 to the present, and that
2 to date, we have 25 wells in the ground.

3 Q. In looking at this display, it looks like there
4 was substantial increased activity in '05?

5 A. Yes.

6 Q. What accounts for that?

7 A. The 160 acre infill.

8 Q. Is there a price component to that activity?

9 A. It's the higher gas prices, as well.

10 Q. Generally during that period of time, what were
11 gas prices?

12 A. I wasn't working at that time, but \$10, maybe.

13 Q. So there are multiple factors that triggered the
14 increased activity in New Mexico?

15 A. That's correct.

16 Q. And what did you find when you looked at the
17 Colorado side of the line in terms of drilling activity?

18 A. So understanding New Mexico mainly drilled from
19 '99 to the present, if you go to the next page, which
20 should be labeled 5, you can see the drilling campaigns
21 within Colorado and the well counts and the well densities
22 there.

23 So in general, '99 to present was when New
24 Mexico drilled the majority of their wells. And you can
25 see with this histogram that Colorado mainly drilled their

1 wells up until 2000. They had the majority of their wells
2 in the ground by 2000.

3 Q. What does your study show you to explain why
4 there is a substantial drop in well count in Colorado
5 after the year 2000, what explains that?

6 A. They had the majority of their 160 acre wells in
7 the ground.

8 Q. They already drilled up on their 160 density?

9 A. Yes.

10 Q. The next slide is Slide 6, and it appears you're
11 putting both states together?

12 A. Yes, that's correct. So I've overlaid the
13 previous two slides on top of each other to emphasize the
14 point that our well count is not that different north and
15 south of the state line, it's mainly a timing issue and
16 the drilling campaigns that occurred.

17 Q. Okay. Let's turn to Slide No. 7. First of all,
18 before you talk about the conclusions, let's look at the
19 top portion and show me what you've displayed in blue and
20 then in red, what's going on here?

21 A. So we have the total wells drilled to date
22 through time, which was also reflected on the previous
23 slides. But you can see that in general, to date, we have
24 25 wells in the ground on New Mexico, and 28 -- or a
25 little less than 30 wells in Colorado.

1 So the well count is very similar to date. It
2 has not been in the past, but it is today.

3 Q. Let's examine that data and look at the blocks
4 of the bottom portion of the display. You've got two
5 blocks, one is a New Mexico block, and then on the right
6 is the Colorado block.

7 A. What I've done is --

8 Q. Don't go too fast now, so I can make sure I
9 understand this. Start with the first row in each block
10 and tell me what you're doing.

11 A. Okay. So starting on the left-hand side, and
12 we're looking at New Mexico, if you take the highlighted
13 area in red that we've outlined in previous slides of our
14 area of interest, in New Mexico, there's a total acreage
15 of 4,701 acres. And in Colorado, we have 5,720 acres
16 included in that area.

17 Q. Of density?

18 A. Yes.

19 Q. Then when we look at the current allowed
20 density, that would be for spacing units in which you
21 could have more wells drilled under the current rules?

22 A. Correct.

23 Q. And then we look at the Colorado side and we can
24 see what their density is allowed. Would you do that for
25 me?

1 A. Currently in Colorado, they're allowed 91 acres
2 per well.

3 Q. And that's simply averaging out the 80 acre
4 density concept to the acreage involved?

5 A. That's correct.

6 Q. In New Mexico, you're dealing with effective 160
7 densities?

8 A. That's correct.

9 Q. And you're dividing by the acreage number, and
10 so you're --

11 A. We're currently allowed 168 acres per well with
12 these nonstandard proration units.

13 Q. So under the analysis, the conclusion is what?

14 A. Colorado has the ability to have a smaller
15 density within their area north of the state line, and we
16 have a lesser ability to be able to have that density.

17 Q. And that's simply a function of the change in
18 the rule in Colorado versus what's happened yet in New
19 Mexico?

20 A. That's correct.

21 Q. The last row in New Mexico says 112. What does
22 this mean?

23 A. Why we're coming before you guys today is to
24 propose increasing density on the north half of these
25 nonstandard proration units in New Mexico.

1 And if we were successful in establishing an
2 order for this, it would allow us to have 112 acres per
3 well throughout that nonstandard proration unit. That's
4 the calculation of the proration unit, not necessarily in
5 the north.

6 Q. So when you look at the collective wells in
7 Colorado that serve as potential competition to the New
8 Mexico wells, the total cumulative gas production in
9 Colorado is ahead of production in New Mexico?

10 A. That is correct.

11 Q. And the reason that's occurred is their drilling
12 campaign started substantially earlier than the one that
13 occurred in New Mexico?

14 A. That is correct.

15 Q. And at this point in time, because of the
16 density changes in Colorado, they have the future
17 flexibility to add wells to their spacing units?

18 A. That's correct.

19 Q. Have they acted on those?

20 A. They have not acted on those. And I'd like to
21 show you the next slide that would help illustrate that.

22 Q. Turn to Slide No. 8. This one is a small size.
23 And you'll have to bear with me because I find it
24 difficult to read.

25 A. It is hard to read.

1 Q. Go slow for us and take it in pieces and show us
2 what you're showing.

3 A. Okay, so this is a map that we created for the
4 entire Fruitland Coal area within the San Juan Basin. I
5 zoomed in on our project area and highlighted it in red.

6 What is hard to read is our legend, and I tried
7 to blow it up for you, and it will be in the bottom
8 left-hand portion of your piece of paper. And anything
9 that is black is an existing well.

10 Q. Let me ask you this. If it's black and it's a
11 circle, square, or triangle, it's still an existing well
12 bore in the Fruitland Coal?

13 A. That's correct.

14 Q. And whether it's a circle, a square, or a
15 triangle, is an indication of some of sorting?

16 A. That's correct.

17 Q. Now, if I'm looking at new locations that have
18 not yet been drilled, how do I find them under this color
19 code?

20 A. Okay, so you'll see several different color
21 codes. The magenta color, or red, as it may show up on
22 your slide, can indicate a well that has been spud, or has
23 an APD, or an APD that has been submitted by us or another
24 operator. So within --

25 Q. Give us an example. If you look at your display

1 and look at the far eastern side in the Colorado side, and
2 you count over and get to what I think is -- I can't read
3 that section.

4 A. It's 32 7, Section 24. It's in the northeast
5 portion of that section.

6 Q. And that's section number what now?

7 A. It's 32 7, Section 24 in Colorado. You can see
8 a pink triangle. That would indicate that Burlington
9 Resources has spud a well and is not producing it, but it
10 is in the ground.

11 Q. Okay. Now, look to the south of that which
12 is -- Is that Section 7? Immediately south of 24 in New
13 Mexico.

14 A. That's 10, I believe, 32, 7, Section 10.

15 Q. Okay. In 10, then, under the concept, you only
16 have -- you have a stake location in the north half of
17 that nonstandard unit?

18 A. I'm uncertain as to where you're looking. Okay,
19 I see. I was over further. I'm sorry. Okay.

20 Q. So what section am I looking at?

21 A. This is the 32 7 section.

22 Q. You've got my big map. So what am I trying to
23 get to?

24 A. You're trying to get to Section 21.

25 Q. Okay, Section 21?

1 A. Yes.

2 Q. On your coded map here, there's a color in
3 Section 21 and it appears that that is a location but not
4 a drilled well?

5 A. On this particular --

6 Q. On the other one.

7 A. There is a hollow, magenta colored circle, and
8 that would indicate a nonapproved well that has not been
9 spud yet.

10 Q. That would be the first well in the north half
11 of that spacing unit?

12 A. Yes, that's correct.

13 Q. And under your plan, you could have yet another
14 well in the north half of that spacing unit?

15 A. I believe we're confused here.

16 Q. Find the section in the project area that I'm
17 talking about, Section 20.

18 A. You're wanting to look at this bold?

19 Q. Yes. That's in section what?

20 A. In Section 7.

21 Q. In Section 7, what is the existing well count?

22 A. The existing well count is one right now, and
23 you'll see one black square.

24 Q. And north of that line is a location that's
25 being drilled?

1 A. Yes. It is a gold square. That gold square
2 indicates that we are currently pursuing that project.

3 Q. And that project well would be a well allowed
4 under the increased density in Colorado?

5 A. We're looking in New Mexico. It's that section.
6 So it would be currently -- it's fulfilling our 160 acre
7 drilling within New Mexico.

8 Q. How about the one in Colorado?

9 A. The one in Colorado would be an increased
10 density for Colorado under the 80 acre approval.

11 Q. Okay. If that well ultimately represents
12 competition in New Mexico, the approval of your
13 application today would give Burlington the flexibility to
14 have yet another well bore in Section 7 in New Mexico to
15 meet competition that occurred by the well you drilled in
16 Colorado?

17 A. That is correct.

18 Q. That's the plan, right?

19 A. That is correct. If you go over this line again
20 -- to make sure we're all on the same page, if you were to
21 draw a conclusion from this slide from looking at the
22 activity tracking within this area, you can see on the
23 north side of the state line that we have 80 acre
24 approval, however, not many operators are actively
25 pursuing that right now today, and south of the state

1 line, we're trying to fulfill our 160 acre approval wells.

2 Q. And what is your understanding of the BLM's
3 concern that caused Burlington and ConocoPhillips to file
4 this request?

5 A. The timing issue in which the wells were drilled
6 is different. And so therefore, they are different cums
7 because of the dewatering periods associated with the
8 Fruitland Coal.

9 So north of the state line they have dewatered
10 their wells, whereas south of the state line, you're
11 trying to dewater and hit peat grade and stuff.

12 Q. Would approval of this application give
13 ConocoPhillips and Burlington the opportunity to drill
14 necessary drainage protection wells in the event the
15 Colorado wells actually demonstrated an adverse effect to
16 the New Mexico properties?

17 A. It would.

18 Q. Did Mr. Harrison's testimony reflect your
19 understanding of the issue posed by Mr. Heyden with regard
20 to well flexibilities and well location?

21 A. Yes, it did, it addressed the issue of crossing
22 quarter section lines.

23 MR. KELLAHIN: That concludes my examination of
24 Ms. Gastgeb. We move the introduction of her exhibits
25 behind Exhibit Tab No. 3 and that would be Pages 1 through

1 8.

2 HEARING EXAMINER: Exhibit Tab 3, Pages 1
3 through 8, will be admitted. Let me repeat what I think I
4 heard, and you can correct me if I'm wrong, it looks like
5 you looked at the gas in place, and it was sort of similar
6 across the state lines, but the big difference is, the
7 timing of the drilling. Looks like it's created an
8 inequity in the revenue -- Or mineral interest owners
9 south in New Mexico would be getting the bad end of this,
10 right?

11 THE WITNESS: Not necessarily. In the areas
12 that we have looked at, that has not occurred to date. So
13 as of right now, we are under the assumption that no
14 drainage has occurred; no mineral owner south of the state
15 line has been adversely affected because of the
16 development north of the state line.

17 HEARING EXAMINER: Okay, they haven't been
18 affected but they might be in the future, is that --

19 THE WITNESS: There is the potential in the
20 future.

21 HEARING EXAMINER: Potential. Okay. So you
22 think Mr. Lovato's concerns are valid?

23 THE WITNESS: Yes.

24 HEARING EXAMINER: As a reservoir engineer, is
25 it because of the dewatering and the fact that the coal

1 will desorb more gas north of the state line than south
2 faster, or do you think it will actually lead to -- as a
3 reservoir engineer, do you think it will actually, in the
4 long run, recover more gas on the 80 acre spacing north
5 of --

6 THE WITNESS: North of the state line?

7 HEARING EXAMINER: Yeah, or -- you know.

8 THE WITNESS: I think at this time we haven't
9 concluded whether or not there will be incremental
10 reserves recovered by this additional well within New
11 Mexico within our proration units. Right now, because our
12 wells are dewatering, it's extremely hard to predict our
13 ultimate recovery and our recovery factor.

14 HEARING EXAMINER: Okay.

15 THE WITNESS: So --

16 HEARING EXAMINER: You're going to be careful,
17 is what you're saying here, which is fine. Do you have
18 any models that you use for coal-gas in your company, do
19 you use a certain model, or do you guys contract out your
20 modeling for coal-gas?

21 THE WITNESS: For simulation?

22 HEARING EXAMINER: For simulation, yes.

23 THE WITNESS: We are starting to focus on this
24 area with simulation. We haven't gotten to any
25 conclusions at this time, though.

1 HEARING EXAMINER: What kind of model do you
2 use?

3 THE WITNESS: We are using Slimirj Eclipse
4 software.

5 HEARING EXAMINER: Okay. Not Comet?

6 THE WITNESS: No. I haven't heard of that.

7 HEARING EXAMINER: So Mr. Warnell probably knows
8 more about that, maybe. Your ash content -- I saw a
9 calculation for ash, and basically, your overall
10 gas-in-place numbers, you looked at every one of them.
11 Specifically the ash, what would be a typical ash content
12 in this area? I mean --

13 THE WITNESS: I would say that this example that
14 we've given you is fairly reflective of the area. I would
15 anticipate both densities, 1.5 to 1.7, from what I've
16 seen.

17 HEARING EXAMINER: Which gives you how much ash
18 percent wise?

19 THE WITNESS: Well, the 1.68 bulk density is in
20 the middle of the values I gave, you so it's approximately
21 50 percent ash content.

22 HEARING EXAMINER: Okay. And the core data, you
23 said you have core data above and below the state line to
24 look at?

25 THE WITNESS: All of the isotherm data that I

1 utilized was south of the state line. That was what was
2 available to me.

3 HEARING EXAMINER: So when you say core data,
4 you mean canister data that was sent off for gas --

5 THE WITNESS: Yes.

6 HEARING EXAMINER: The core data, did it also
7 include whole core data or sidewall core data?

8 THE WITNESS: Not that I'm aware of.

9 HEARING EXAMINER: Okay. If this is approved,
10 do you think this will protect correlative rights?

11 THE WITNESS: At this time I do, yes.

12 HEARING EXAMINER: Okay. This is probably not
13 your area of expertise, but it might be, the business
14 about coal recoveries kind of depends on the compression
15 and the pipelines and, you know, how far -- Of course, as
16 a reservoir engineer, that would be your bailiwick.

17 But is there a difference up in Colorado versus
18 down in this area with the pressures -- pipeline pressures
19 or the -- Are there different gathers up there than there
20 are down south, is there --

21 THE WITNESS: I can speak to what I know about
22 New Mexico. I don't know that I know the details of
23 what -- which gathering system the wells north of the
24 state line are going to. I know that in 32 8, we have
25 worked on optimizing our pipeline system there so that we

1 can optimally produce these wells.

2 At this time, we have fairly high reservoir
3 pressures that are near virgin. And so, compression is
4 not as beneficial as it is later in the life of the well.
5 It is something that we plan on implementing when we hit
6 pressures, that would help with the production of our
7 well.

8 HEARING EXAMINER: Okay. There's one plot of
9 Colorado drilling campaign well counts?

10 THE WITNESS: Yes.

11 HEARING EXAMINER: You said most of the wells
12 have been drilled by the year 2000. But then toward 2004
13 through 2007, looks like there was kind of a ramp-up
14 there. Do you know what part of this area where those
15 wells drilled -- You're basing everything on an affected
16 area here, all your statistics; is that correct?

17 THE WITNESS: Yes.

18 HEARING EXAMINER: And that area was outlined in
19 the original -- correct me if I'm wrong -- the original
20 testimony by the -- your land testimony here.

21 THE WITNESS: I'm not aware of which particular
22 wells were drilled from 2004 to 2007, and I can't indicate
23 if there was a trend in the area where it happened.

24 HEARING EXAMINER: Okay. What I was getting at
25 is whether Colorado is starting to focus on a certain

1 area, you know, in this -- I noticed in the application,
2 you had asked for this transition area to be expanded in
3 the future by -- I forgot whether you asked for it to be
4 expanded by -- I'm probably asking something your
5 attorney -- but you're asking for Steve Heyden to be able
6 to expand it, or are you asking administratively for it to
7 be expanded, or --

8 MR. KELLAHIN: Any or all of the above.

9 HEARING EXAMINER: Okay.

10 MR. KELLAHIN: Let me put some context to that.
11 If you'll turn to Tab 1, there's a locator map. There's
12 another map. And let's go to Map No. 3. That's the one
13 where Mr. Wolfe had all the green colors in Colorado. It
14 would be Page 3 of Exhibit 1. Do you see that?

15 HEARING EXAMINER: The one with all the blue.
16 Okay, got it.

17 MR. KELLAHIN: And you see on the New Mexico
18 side, there's this area shaded in blue?

19 HEARING EXAMINER: Yes.

20 MR. KELLAHIN: Only the eastern portion of this
21 is in this project area.

22 HEARING EXAMINER: Okay.

23 MR. KELLAHIN: The concept, as you can see on
24 the Colorado side, we have met the dredge density of in
25 fills to 160, and that's where the competition is likely

1 to occur at this point. As you move to the west and are
2 still in the basin, the coal pool, there is an opportunity
3 in Colorado to change their rules.

4 And one option for you is to let Mr. Heyden do
5 what he does with expansion of an existing pool; as wells
6 are drilled in that direction, just as a matter of
7 procedure, the pool expand.

8 HEARING EXAMINER: Okay.

9 MR. KELLAHIN: That's one concept. Another one
10 is to create an administrative solution in this order
11 where we can file here in Santa Fe for the expansion of
12 the pool to meet that competition, if it occurs, and to do
13 so without having to come to hearing. If there is
14 opposition, that's another thing.

15 The last way is to come back to a hearing
16 formally and ask for an expansion. The first way would
17 give us the quickest response, the second way is certainly
18 faster than the hearing approach.

19 And the whole idea for Mr. Lovato is to have the
20 flexibility in the rules to meet whatever drainage
21 actually occurs from Colorado's competition.

22 HEARING EXAMINER: Okay. Okay, that's the
23 concept. I appreciate that. I got a couple more
24 questions. That spacing unit up in Colorado that looks
25 like they're drilling three -- looks like they're

1 drilling -- I think that was in Colorado, Section 31, if I
2 could read it correctly --

3 THE WITNESS: Yes, 21.

4 HEARING EXAMINER: 21. Okay. Why are they
5 doing that? Do you correspond with those people up there?

6 THE WITNESS: I am not certain who the operator
7 is there, and I'm --

8 HEARING EXAMINER: Is it Samson?

9 THE WITNESS: Yes. I believe it is Samson, but
10 it's not identified on one of our other maps.

11 HEARING EXAMINER: That's okay. The gist of
12 what I'm trying to -- Why are they doing this, and do you
13 look at this as sort of an issue to where you need some
14 additional wells south in New Mexico?

15 THE WITNESS: Well, I can speak for what we were
16 doing south of the state line. Actually, this last week,
17 we TD'ed the well that's south of there. It is a dual
18 lateral horizontal well going into the northeast. So
19 we've tried to offset what they're doing to the north with
20 the horizontal well.

21 HEARING EXAMINER: Okay.

22 THE WITNESS: The benefit of a horizontal well
23 is, it's not as much of a dewatering period, and so we
24 would anticipate hitting peak rates faster than we would
25 with a vertical well.

1 HEARING EXAMINER: Okay. So you like these
2 horizontal wells?

3 THE WITNESS: Yes, we do. At the moment.

4 HEARING EXAMINER: Okay. You like them because,
5 as a reservoir engineer, it's a better a completion in the
6 reservoir?

7 THE WITNESS: I don't know that it's a better
8 completion, I think we penetrate more of the reservoir.

9 HEARING EXAMINER: More of that one coal,
10 though, right?

11 THE WITNESS: Yes.

12 HEARING EXAMINER: You're leaving the others
13 alone, right?

14 THE WITNESS: With the new drill, we are. If
15 we're reentering an existing well bore, we probably
16 already have a completion penetrating all the other coals.

17 HEARING EXAMINER: Okay. So you handled it that
18 way?

19 THE WITNESS: Right.

20 HEARING EXAMINER: But it would be a concern,
21 though, wouldn't it, if you didn't have that vertical
22 completion in other coals for a frac job?

23 THE WITNESS: It could be.

24 HEARING EXAMINER: Okay. I think that's -- I
25 notice BP is mostly up to the north. And I don't know who

1 you correspond with at BP. Do you know their reservoir
2 engineer, do you talk with them sometimes?

3 THE WITNESS: I haven't had technical
4 discussions about what their strategy is north of the
5 state line.

6 HEARING EXAMINER: Are they officed out of
7 Houston now, or --

8 THE WITNESS: Yes, that's my understanding.

9 HEARING EXAMINER: Okay. Do you guys have any
10 more questions?

11 MR. BROOKS: Well, I had one conceptual
12 question. Given where -- this is just a comment, it's not
13 my question -- given where the Division -- what's going on
14 in the Division -- or rather, not going on in the Division
15 now with regard to pool maintenance, I'm not sure
16 Mr. Kellahin's suggestion of adopting an analogous
17 procedure to deal with the expansion of this area would be
18 the most rapid response way of dealing with it, but --
19 hopefully, it will get cleaned up soon.

20 There's a story I heard a long time ago. Sounds
21 like a joke -- it wasn't really a joke, but I won't go
22 into what it was because that would be a digression, but
23 it was reported that -- so the story went, that studies
24 showed that in a train wreck, the most number of
25 casualties occurred in the back car. And the solution

1 that was proposed to it was to remove the back car before
2 the train left the station.

3 I've kept thinking about that story when I've
4 been listening to this presentation, because my question
5 is, why does this proposed solution do anything other than
6 simply move the problem one-half mile to the south? Is
7 there an engineering reason why that's why you're not
8 faced with the same issue since the transition zone goes
9 up to the density that would be comparable to that in
10 Colorado? Why aren't you just moving the problem south?

11 THE WITNESS: I would say at this time we are
12 not able to accurately determine what our recovery factors
13 are and we cannot show that there would be value in
14 increasing density for areas south of the state line
15 further than what's directly offsetting the --

16 MR. BROOKS: Yes, of course I know there are
17 studies going on on that subject. Some of our people went
18 up to Aztec a few weeks ago to discuss that subject. But
19 what you're saying is, you're going to act responsively
20 only, is that -- that's what's proposed, you will drill
21 these additional wells only if the Colorado wells are
22 actually drilled; is that right?

23 THE WITNESS: That's correct.

24 MR. BROOKS: Okay. And I take it that if -- My
25 concern is that it seems to me that if we allow a greater

1 density to adjust for Colorado's, then conceptually, we
2 may be making a distinction between -- we may be affecting
3 the correlative rights of the people that own in the
4 transition zone versus the people that own south of the
5 transition zone.

6 What you're telling me is that you really don't
7 have a handle on that, there's really no answer to it that
8 can be given at this time?

9 MR. KELLAHIN: If I may response after she gets
10 through?

11 MR. BROOKS: Okay.

12 THE WITNESS: I think the transition zone, it
13 has the same ownership as what you have within the area
14 where we are increasing density. So people within the
15 transition zone aren't going to be negatively affected by
16 the increased density in the north half of the proration
17 units.

18 MR. BROOKS: Okay.

19 MR. KELLAHIN: I don't think there is a clear,
20 solid engineering answer, it's a political solution to how
21 to stop the dominos from falling further into New Mexico.

22 Here we have a unique political solution in that
23 we control nonstandard proration units where we can
24 gradually transition from one density to another within a
25 container that has the same interest owners.

1 And it's a way to have a buffer as we create
2 buffers for other kinds of projects. And we do have
3 buffers in existence for lots of things where we step back
4 from a boundary and not push the density right back to
5 back with different densities.

6 So it's really a political solution, and we have
7 the unique opportunity because of the ownership to let
8 that occur within a single spacing unit.

9 MR. BROOKS: And the owners within the tier of
10 spacing units that are in the transition area will have
11 three wells -- up to three wells per spacing unit.

12 MR. KELLAHIN: Right. Except two of those have
13 to be in the northern portion so that the southern portion
14 only has one which then keeps --

15 MR. BROOKS: So it's less likely, presumably,
16 just on the basis of average general concepts,
17 conceptually less likely to affect the -- less likely to
18 drain from the units to the south.

19 MR. KELLAHIN: Well, that was the strategy and
20 the lack of definitive engineering data to demonstrate
21 that. We certainly know by experience that these are low
22 capacity wells that -- There is a catch-up period that we
23 have. We're not dealing with immediate drainage issues
24 where if a well bore is in the ground, you better start
25 one yourself.

1 MR. BROOKS: Okay. Very good. Thank you.

2 HEARING EXAMINER: And those statistics you
3 showed, it was 112 wells -- acres per well. So that's
4 kind of a -- you know, between 160 and the 80.

5 MR. KELLAHIN: Right.

6 HEARING EXAMINER: Within the New Mexico portion
7 of the area. I don't think we have any more questions.
8 Do you have anything else you want to say?

9 THE WITNESS: I don't think so.

10 MR. KELLAHIN: Thank you for your time.

11 HEARING EXAMINER: Thank you all for coming up
12 here and presenting this completely thorough case here.
13 With that, we'll take Case No. 14355 under advisement.

14 And that being the last case on this docket,
15 this docket is closed.

16 (Whereupon, the proceedings concluded.)

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

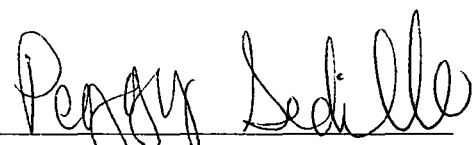
_____, Examiner
Oil Conservation Division

1 STATE OF NEW MEXICO)
 2) ss.
 3 COUNTY OF BERNALILLO)
 4

5 REPORTER'S CERTIFICATE

6
 7 I, PEGGY A. SEDILLO, Certified Court
 8 Reporter of the firm Paul Baca Professional
 9 Court Reporters do hereby certify that the
 10 foregoing transcript is a complete and accurate
 11 record of said proceedings as the same were
 12 recorded by me or under my supervision.

13 Dated at Albuquerque, New Mexico this
 14 16th day of August, 2009.
 15
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