STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:	)	CASE NO. 12,044
APPLICATION OF BURLINGTON RESOURCES OIL AND GAS COMPANY FOR AN UNORTHODOX GAS WELL LOCATION, SAN JUAN COUNTY, NEW MEXICO	)	ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MARK W. ASHLEY, Hearing Examiner

September 17th, 1998

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MARK W. ASHLEY, Hearing Examiner, on Thursday, September 17th, 1998, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

September 17th, 1998
Examiner Hearing
CASE NO. 12,044

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E X H I B I T S

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A P P E A R A N C E S

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FOR THE APPLICANT:

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By: W. THOMAS KELLAHIN

ALSO PRESENT:

DAVID R. CATANACH
NMOCD Hearing Examiner
2040 South Pacheco
Santa Fe, New Mexico 87505

* * *

WHEREUPON, the following proceedings were had at 1:38 p.m.:

EXAMINER ASHLEY: At this time the hearing will be called back to order, and the Division brings Case 12,044.

MR. CARROLL: Application of Burlington Resources Oil and Gas Company for an unorthodox gas well location, San Juan County, New Mexico.

EXAMINER ASHLEY: Call for appearances.

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

EXAMINER ASHLEY: Any other appearances?

MR. CARROLL: Will the witnesses please stand and be sworn?

(Thereupon, the witnesses were sworn.)

MR. KELLAHIN: Mr. Examiner, we're bringing this Application for an unorthodox well location for hearing today. This case involves an unorthodox location in the Allison Unit. The location crowds an interior spacing unit boundary within the unit area. It was originally filed administratively with Mr. Stogner reviewing the matter. And in retrospect, we have discovered that the administrative application filed was rather cryptic and not

as detailed as it perhaps should have been.

Mr. Stogner, by a letter dated July 23rd, denied the application and set forth some questions for us to respond to. I asked Mr. Stogner if it was his desire to be the Hearing Examiner to hear a more complete and full presentation of the case. He told me that that was not necessary, and so I put this case on the next available docket, which is today's docket.

But we have the presentation completely prepared for you, and we will make a presentation through our various land witnesses and our geologist, in an effort to do what we failed to do with Mr. Stogner, and that is to give him a full and complete explanation of our efforts to try to find a standard location and why we have sought your approval to drill this unorthodox location.

This case, the location exception, is being requested to accommodate a surface owner. The spacing unit, as you will see, has a substantial portion of it consisting of a fee tract. And the circumstances of it being in a federal unit where we have the consolidation of interest so that when you crowd a boundary, you're simply crowding the parties that also share in the crowding well, the correlative-rights issues simply disappear.

The opportunity here to put a well that accesses the reservoir properly has some element of flexibility, and

so in this unique circumstance we could accommodate a surface owner and his concerns, and that's what we're here to document and describe for you. But this is a topographic exception, as opposed to a geologic justification.

My first witness is Mr. Alan Alexander.

ALAN ALEXANDER,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Alexander, would you please identify yourself?

A. Yes, I'm Alan Alexander. I'm currently employed with Burlington Resources in their Farmington, New Mexico, office as a senior land advisor.

Q. One of your areas of responsibility, Mr. Alexander, is the Allison Unit, is it not?

A. Yes, sir, that's correct.

Q. You're knowledgeable about the unit configuration, the participating areas and the various aspects of the land matters involved in that unit?

A. That's correct.

Q. The actual details of negotiating with the surface owner for surface damages and trying to accommodate

surface owners' concerns about well locations is an activity that's not done directly by you; is that true?

A. That's true.

Q. In this instance, who conducted that activity?

A. Mr. Van Goebel conducted a majority of that activity.

Q. In addition to the land aspects, within the technical team for Burlington, the geologic issues about where to locate wells like this for Dakota and Mesaverde production is the responsibility of which geologist?

A. Mr. Dave Clark is working this particular team and is responsible for the geologic concerns.

Q. I would like to show the Examiner how the exhibit book is organized and then discuss with you what I've represented to the Examiner was an issue that did not affect correlative rights. And let's begin to do that, sir, by first of all turning to what is the information behind Exhibit Tab Number 1. What is this?

A. The information behind Exhibit Tab Number 1 is our Application for the hearing for this nonstandard well. It's the Allison Unit Number 39 well, and it is unorthodox at a location 2640 feet from the north line and 15 feet from the east line of Section 18, Township 32 North, Range 6 West.

Q. Were the items prepared in this exhibit book and

its compilation matters under your control and direction?

A. Yes, they are.

MR. KELLAHIN: We tender Mr. Alexander as an expert witness, Mr. Examiner.

EXAMINER ASHLEY: Mr. Alexander is so qualified.

Q. (By Mr. Kellahin) The Application contains on page 2 of the Application a response of the reasons Burlington has sought an Examiner Hearing for an exception in this case?

A. That is correct.

Q. And in the first page we detail some of the chronology that caused us to come to hearing today; is that not true?

A. Yes, sir, that's true.

Q. All right. Let's look behind the Application and, to set the stage, let's show the Division the locator plat. Do you see the locator plat?

A. Yes, sir.

Q. Behind the Application. What is the surveyed footage for the well as you're requesting approval for?

A. It's in Section 18 of 32 North, 6 West, in the Allison Unit, and it's located -- it's currently staked at a footage distance of 2640 feet from the north line and 15 feet from the east line.

Q. It's also number-coded. Around that spacing unit

is the number 1 in a box?

A. Yes, sir.

Q. What does that indicate?

A. That indicates who the offset operator is for notification purposes. Since this is in the Allison Unit, Burlington is the operator totally surrounding the subject section.

Q. Okay. Let's turn past that tab and look at the information behind Exhibit Tab Number 2. The first item is Mr. Stogner's letter of July 23rd, 1998?

A. Yes, sir.

Q. And then immediately behind his letter is the original Burlington submittal, is it not?

A. That is correct.

Q. Following Burlington's cover letter there's the first page of the application for permit to drill, and then it's followed by a copy of the C-102?

A. Yes, sir, that's correct.

Q. All right. And then again there's another copy of this notice application, and finally a couple of topo maps, right?

A. Yes, sir.

Q. That was the entire information submitted to the Division for administrative processing?

A. For administrative processing, that is the entire

packet that was submitted.

Q. All right. Let's go behind Exhibit Tab Number 3, and let me ask you some questions about this correlative-rights issue. This display represents what, sir?

A. This display is a land plat showing all of the current development in the multiple formations within the Allison Unit. The Allison Unit is outlined in the heavy green line.

And you will note over to the right-hand portion of that, about in the center of it, you will locate Section 18.

And you can also see one of the red square symbols right on that section line that represents the 15 foot off of section line. That's the well that we would like to discuss with you this morning. All of the red symbols on this plat are wells that we're staking this. That's our -- this year's drilling. They are not currently existing wells. We're just attempting to show where we staked the wells thus far.

Q. Let's take a moment to make sure we all understand the color coding for the various combinations of wellbore. It has some complexity to it. And for illustration purposes, let's look at Section 18, look at the east half of that section, and I see a green triangle?

A. Yes, sir.

Q. What does that indicate?

A. The green triangle with the gas symbol in the middle of it represents Fruitland Coal wells, and it is an existing wellbore.

Q. Okay. One of the items Mr. Stogner asked be addressed is whether or not it was reasonable to have Burlington use the pad for the coal gas well, the location of which is indicated on this display, as a possible pad in which to locate this Dakota-Mesaverde Well Number 39.

A. Yes, sir.

Q. Did Burlington explore that possibility?

A. Yes, we did. However, Mr. Stogner was not aware, and it was our fault for not making him aware. We have -- You will see immediately below and to the left of the Number 111 Fruitland Coal well, we have a well planned for that vicinity -- it's the Number 39 M well -- and Mr. Stogner was not aware of that.

Q. Let's look at the code for the 39 M. It is a red square?

A. Yes, sir, a rectangle with a gas symbol -- a red square with a gas symbol in the middle of it. It also has a small M to the bottom right-hand side. That simply means it's a Dakota penetration, it will be a Dakota completion, and we will add the Mesaverde formation in a commingle status.

Q. All right, so every time I look on this map, regardless of the color, if it is a square that will be a Dakota well?

A. Yes, sir.

Q. Let's look in the west half of 18. Up in the northwest quarter is the 20 M well; do you see that?

A. Yes, sir.

Q. Do I understand that to be a Dakota well in which you also have the Mesaverde?

A. That's correct, we will add the Mesaverde to that Dakota well.

Q. And that would be a commingled wellbore?

A. That is correct.

Q. Down in the southwest of 18 there's two symbols. One is the green triangle, and that's a gas well -- the coal gas well?

A. Yes, sir.

Q. And then just to the west of that is now a blue square, and so that's going to tell me it's a Dakota well, right?

A. That is correct. You'll also see there is an M below that, but the Mesaverde portion of that well -- it was a dual completion, as I recall -- the Mesaverde portion has been plugged and abandoned. So currently today I believe it is just a Dakota well.

Q. So that's why it is not colored red?

A. It's an existing wellbore. Again, all of the red-colored wells are not existing wells. They simply are staked wells for this year's program.

Q. All right. So when we look at the east half, then, that would be the spacing unit that's proposed for the Number 39 well, right?

A. That is correct.

Q. It currently does not contain either a Dakota or a Mesaverde wellbore?

A. Yes, sir, that's correct.

Q. The encroachment is to the east, and it crowds Section 17?

A. Correct.

Q. Section 17 and 18, are they in the unit? They are, obviously.

A. Yes, they are committed to the Allison unit.

Q. All right. Within the unit, is this a divided unit where you have participating areas?

A. Well, it's an undivided exploratory area, but we do develop separate participating areas, and in this case we do have separate participating areas for each of those formations.

Q. When we examine the concept of correlative rights and wells encroaching on other spacing units, are we

encroaching upon a spacing unit by a well in a spacing unit in which all interests are common?

A. That is correct.

Q. And that results because of what?

A. Well, the interests are common as to the individual formations; they're not common as to -- The Dakota interests are not the same as the Mesaverde, but when you take the Mesaverde separately and the Dakota separately, between those two sections the interests are common.

Q. Let's look at that display. If you'll turn to the next display, there's a green-colored display?

A. Yes, sir.

Q. This represents what?

A. This is the same base map for the Allison Unit, but we're -- the green fill pattern shows the current Mesaverde participating area, and you will notice that both Sections 18 and 17 participate in that participating area for the Mesaverde formation.

Q. As a result, then, of the mechanics of this unit agreement, a well positioned as Burlington proposes is not encroaching upon interest owners who would not be entitled to share in production by the encroaching well?

A. That's correct.

Q. When we draw your attention to the next display,

let's look at that and see what happens in the Dakota participating area. Are the equities protected here?

A. Yes. Again, especially, the -- Not all of Section 17 is in the Dakota participating area, but the area being encroached by this well, the Number 39 well, is in fact included in the participating area. So again, we do not have a correlative-rights situation for the well being drilled at this particular footage.

MR. KELLAHIN: Mr. Examiner, that concludes my examination of Mr. Alexander. He was going to address this unit concept in the participating areas.

The next witness, Mr. Van Goebel, will address the specifics of the topography and his negotiations with the surface owner.

EXAMINER ASHLEY: Okay.

EXAMINATION

BY EXAMINER ASHLEY:

Q. Mr. Alexander, is Section 18 a standard section?

A. I believe -- Let me see if I brought anything that would tell me that. Oh, yeah, we do have.

Yes -- I'm sorry, the question -- The answer to that question is no, we do have lots on the west side of that section. It starts at the northwest quarter of the northwest quarter with lot 1 and proceeds down the west line of that lot 1, 2, 3 and 4. And that was based upon a

deep-ended resurvey.

There's a peculiar problem sometimes with these surveys in that the Mesaverde formation participating area was initiated and has been developed on the original survey, which it was a standard 320-acre section under the original survey.

Since we initiate those participating areas in that survey we continue to develop the participating area under that survey. But if you look at a modern-day plat, it has been resurveyed, and those lots show up in there. But that's not the acreage that's used to calculate the equities involved.

Q. Okay. Is that also the reason why at a location of 2640 that is not on that quarter -- the quarter-section line?

A. Yes, sir. On the modern-day -- When you go out there in the field, and the way that section actually is laid out, that's exactly why --

Q. Okay.

A. -- that that exists.

EXAMINER ASHLEY: Okay.

EXAMINATION

BY MR. CARROLL:

Q. Mr. Alexander, what does the 39 mean above those red squares?

A. That's just simply the well number. It's the Allison Unit Number 39 well.

Q. Well, how come both the wells in the east half of 18, then, are listed -- have a 39 on them?

A. Well, one of them has -- You may not be able to see it, but one of them should have a 39M, which is the infill well to that 39.

Q. Oh, okay.

A. It may be a little hard to see that on that plat.

MR. CARROLL: Oh, I see. Okay, that's all I have.

EXAMINER ASHLEY: I have no further questions.

MR. KELLAHIN: Our next witness if Mr. Van Goebel.

VAN L. GOEBEL,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Would you please state your name and occupation?

A. My name is Van Goebel. I'm currently employed by Burlington Resources in Farmington, New Mexico. I'm a senior staff landman. I'm currently assigned to the drilling department to deal with their private-sector problems.

Q. What has been your involvement with this particular well and its location?

A. This well is located within the Allison Unit, and the particular area we're drilling is an island of private property ownership, and in that area we're currently drilling 26 wells, two of which are located in Colorado, the remaining on the New Mexico side, which falls within this area of private ownership.

And my responsibility is to deal with the private surface ownerships, to attempt to stake our wells, drill our wells with minimum difficulty with the private sector.

MR. KELLAHIN: We tender Mr. Goebel as an expert landman.

EXAMINER ASHLEY: Mr. Goebel is so qualified.

Q. (By Mr. Kellahin) Mr. Goebel, let's turn back to Exhibit Tab Number 2. Let's go to Number 2. If you'll turn past Mr. Stogner's letter, Ms. Bradfield's letter, the APD, we're going to come to a C-102. Do you have it? There you go. All right.

The configurations of the leases in the east half of 18, as you understand them to be, are they shown on this display?

A. Yes, they are.

Q. When we talk about the fee portion, which is the top three-fourths of the spacing unit, are we talking about

a single fee owner?

A. In this particular case, there could be multiple fee owners. What this indicates is that this is fee minerals --

Q. All right.

A. -- ownership.

Q. Have the ownership of the surface been separated in this tract from the ownership of the minerals?

A. What we've run into in San Juan County is that only about 7 percent of the county is made up of private ownership. The remaining 93 percent is made up of federal, Indian and State ownership of the surface. The minerals have been severed from the surface, this occurring many years ago.

So many of the surface -- or a majority of the surface owners we deal with receive no economic benefit from the well, they receive no royalty payments.

Q. Is that the circumstance that exists in the east half of this section?

A. That is correct.

Q. When we look at the bottom 25 percent, there's a code that says NM-04207?

A. Yes.

Q. What does that mean to you?

A. That indicates it's a federal lease.

Q. Okay. Let's turn now to the aerial photo that's shown behind Exhibit Number 8. Would you identify the source of this photo?

A. Yeah, this is an aerial photograph showing Section 18. Our drillblock is the east half of Section 18. The Number 39 well, which would be the parent well, is to be drilled in the northeast quarter of Section 18.

In there we've indicated by the boxes the drilling windows that we would have to work with.

Q. All right. When I see the arrow -- it says "Staked Location" -- that is the location for the 39 well?

A. That's correct.

Q. Have you satisfied yourself that this photograph is an accurate representation of what you would see if you were on the ground?

A. Yes.

Q. Within the northeast quarter, then, of 18 are four boxes.

A. Yes.

Q. What do those represent?

A. Those are the drilling windows which we would work with to try and stake an orthodox well.

Q. Under either the Dakota or the Mesaverde rules, there's a 790-foot setback?

A. Yes.

Q. And then there's an interior setback, and so these would be the drilling windows in the northeast quarter for either spacing unit?

A. Yes.

Q. Why have you not chosen the southeast quarter of 18?

A. In this particular situation, on this particular property owner, the Lee family, we have staked this year four wells on their private property. Two of them we're currently drilling, and we have now staked the Number 39, which we've requested unorthodox approval, and we have staked the 39M.

The family in this particular area has cleared juniper/piñon, and what you see is the clear area there in the northeast quarter, they have turned into pasture where they attempt to run a cattle operation.

Q. There is a dashed outline and then an arrow indicating this is view area?

A. What they also have done in here is, once they have made the improvements, they have their house located there. The dotted lines indicate the view area from their deck. If we were put the well locations in the windows for orthodox spacing, then we would be putting these wells right in front of their house.

Q. Do you see the word "trunk" spelled out on the

plat?

A. The "trunk H" or the "trunk" indicates gas pipelines.

Q. Just to the south of the "H" is a gas well symbol. What is that?

A. That is the Fruitland Coal well, the 111.

Q. Did you explore the feasibility of placing the 39 well on the same pad with the coal gas well?

A. We did. However, we also need to stake the 39M. If we staked the 39 on the existing pad, then for proper reservoir drainage, even though they're off-pattern, they would be too close together.

Q. So the concept that you were charged to execute in the field was to find locations in the east half of 18 for two wells?

A. Yes.

Q. And the two wells were to be combination Mesaverde and Dakota wells?

A. Yes.

Q. Did you discuss with the owner of the fee in the east half of 18 where to position the wells?

A. Yes, we --

Q. And who is that owner?

A. That's the Lee family.

Q. Was Mr. Lee invited to come to the hearing today?

A. He was invited, but due to his work -- he works out of state -- he was not able to attend.

Q. Okay. The location of the staked well as indicated was achieved in what fashion?

A. We worked with the private property owner, Mr. Lee, and he met with us, and we worked with him and came to a compromise on this location, an attempt to try and not put it in front of his house and use up his pasture.

Q. Let's turn to another depiction of this issue. If you'll turn behind the aerial photo, there's a topographic map.

A. Yes.

Q. Again, you've displayed similar information on this exhibit, you've shown the location of the house and the view area?

A. Yes.

Q. How long have you been working with Mr. Lee to try to find a surface location for the 39 well that was acceptable to him?

A. We probably worked with him over a period of several days, and then when we went out to stake the 39M he also was in attendance with us and worked with us in trying to find a location that would work for both Burlington and Mr. Lee as a private surface owner.

Q. Does the proposed location position the well at a

place on his property that is acceptable to him?

A. Yes, it does.

Q. Let's turn to what you would see if you were on the surface and taking photographs from different positions of point of view. If you'll turn behind Exhibit Tab Number 9, there are three panoramic photographs.

A. Yes.

Q. If you'll start with the top photograph, identify for us who took these pictures.

A. Okay, I and our surveyor, Neal Edwards, went out and met with the Lee family.

Q. If you were standing where the photographer was standing and looking in the direction that the camera is pointing, do these photographs in each instance accurately reflect what you would see?

A. Yes, these photographs were taken from the front deck of the Lee family's home.

Q. When we look at the first top photograph, if you're standing at the home on the porch, what direction are we facing?

A. Okay, if you look at the top photograph, you can see the tanks of the 111 Fruitland Coal well. That would be to the southeast.

Q. If you're trying to find the approximate location of the 39 well, where would we take our eye to track out to

see where that well might be located?

A. You would look beyond where the tanks are, probably a little to the left of those tanks, and they would be back in the trees, and the trees would act as a blind.

Q. The advantage to Mr. and Mrs. Lee is, that well location is on the other side of certain trees that will block that activity from his view?

A. Yes.

Q. The center photograph, again, is the position of the photographer the same but the orientation slightly different?

A. Yes, and this would be looking directly east from their front deck.

Q. All right, and then the final photograph?

A. And the final one would be looking to the northeast. So where you see their cattle in the bottom photograph and you see the pond in the center there, those pretty much would be where the windows are and where we would be drilling the new well.

Q. All right. The standard locations for this northeast quarter of Section 18 would be depicted in his area of review out in his pastureland, would it not?

A. Yes.

Q. And he was opposed to having you do that?

A. Yes. What our engineering staff and our geological staff allows us to do is, if they can recover the reserves at a nonstandard location and were able to work with the private surface owner, they give us the leeway to try and work with them in order to position the well so it has minimum interference with the private property owner's use of his land.

Q. Did you go back to the technical people at Burlington, the geologist, that has to make the ultimate decision about the appropriateness of the unorthodox location, advise him of the surface problems?

A. Yes.

Q. And did he express to you that the combination of the surface owner would not compromise his opportunity in either the Mesaverde or the Dakota reservoir?

A. Yes, he had a comfort factor that by positioning this well in the nonstandard location, that we would still be able to capture reserves.

Q. Following the photograph is a series of letters that are stapled together. What do these represent, Mr. Goebel?

A. These are letters from the Lee family, from the husband and wife. Also there are letters in there from some of his neighbors.

Q. Did you solicit these letters?

A. Yes, I advised them that the nonstandard location was not going to be approved, or --

Q. You're referring to Mr. Stogner's denial of the location?

A. That's correct.

Q. And you went back and told them that you had tried to get approval and that he had denied your initial request?

A. Yes, and that we would be going to hearing.

Q. And in response to that, they elected to put their thoughts and comments in writing?

A. That's correct.

Q. And you've simply delivered them today to the Division?

A. Yes.

Q. Do the circumstances of being in a federal unit like this, where the equity has been consolidated, provide a unique opportunity for you on unusual occasions to accommodate a surface owner, particularly where he has no interest in the minerals?

A. On the federal units we're able to have more leeway in doing that, in that under the unit agreements and the commitment of the acreage to the unit, the correlative rights are protected, and under the unit agreement participatings are formed which address the working owners'

interest in the wells, so that they all receive their proportionate benefit from production and the reserves.

Q. Based upon the unusual circumstances that you're faced with, Mr. Goebel, do you recommend approval of this well location?

A. I would recommend approval of this location, based on our activity in the unit and being in a federal unit where we have an operating agreement in place, we have the opportunity to maybe work with the surface owners, maybe more so than we do in other areas.

Q. You mentioned earlier, and I have not recalled the exact number, exactly how many wells are you going to try to position and place upon property owned by the lease?

A. At this time, under our program this year, we have four wells that we have staked. Two of them we will be currently drilling, and these, the 39 and the 39M, would be the remaining two.

Q. And thus far you've been able to reach a solution that's satisfactory with Burlington and with the Lees?

A. Yes, we have.

MR. KELLAHIN: That concludes my examination of Mr. Goebel.

EXAMINATION

BY EXAMINER ASHLEY:

Q. Mr. Goebel, you said that right now the Lees are

the ones that live in this house --

A. Yes.

Q. -- that own this house? And they are in agreement with where you guys want to drill -- with where Burlington wants to drill this well?

A. Yes. We have -- they -- On their particular property, these are not what we're drilling now, are not the only wells. We have like the coal well, we have other Mesaverde wells on their property. So we have numerous wells, probably about -- I'm guessing, but I'd say maybe seven, eight wells on their property at this time.

So in order to try and not take up any more of their property or interfere with their cattle operation, we try and work with them to position these so they have minimum impact on their use of the land.

Q. Okay. And this well is not going to be a directional drill?

A. No, it not.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Goebel, did you guys drill the coal well that's on that property?

A. Yes, we did.

Q. Did you have the same type of problem as when you drilled that well?

A. When they drilled that well with the spacing allowed for the coal well, you can see that it's on the edge of their view area, so it was less offensive to them than what we would be doing here with our Mesaverde-Dakota wells.

Q. Is that also a nonstandard location?

A. I understand that for the coal that that is a standard.

EXAMINER CATANACH: Standard location.

EXAMINER ASHLEY: I have no further questions.

MR. KELLAHIN: Mr. Examiner, David Clark is our next witness. He's a petroleum geologist.

DAVID CLARK,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Clark, would you please state your name and occupation?

A. My name is David Clark. My employer is Burlington Resources in Farmington, New Mexico. I'm a senior staff geologist.

Q. When and where did you obtain your degree, Mr. Clark?

A. I graduated with a bachelor's degree, with a

major in geology, from Colorado College in 1979.

Q. Have you been responsible for placing Dakota and Mesaverde wells within the Allison Unit?

A. Yes, I have.

Q. And the 39 well is one of your project wells?

A. Yes, it is.

Q. Having Mr. Goebel explain to you his difficulties and limitations of utilizing the standard drilling windows in the northeast quarter of 18, have you examined the geology to see what the consequences are to you in the reservoir of putting the well where it's proposed to be located?

A. Yes, I have.

Q. Let's turn to some of that examination. Does that examination include both the Mesaverde and Dakota?

A. Yes.

Q. And we're about to see your work product?

A. Yes.

MR. KELLAHIN: We tender Mr. Clark as an expert petroleum geologist.

EXAMINER ASHLEY: Mr. Clark is so qualified.

Q. (By Mr. Kellahin) Let me ask you to turn to Exhibit Tab 4. Let's look at the first display you have prepared and have you tell us what it is that we're looking at.

A. You're looking at a contour map of Mesaverde cumulative production as of December, 1997. The Allison 39 is shown as the red circle. The spacing unit for that well is the east half of 18, the red rectangle. The Allison Unit outline straddles the New Mexico-Colorado border as detailed in black.

The small numbers beneath the well symbol is the cumulative production. The only wells that are plotted on this are Mesaverde producers. The well name is above the posting.

This is a general reference map only. It shows that we're in the middle of the Blanco-Mesaverde Pool. I don't have any specific conclusions to draw from this map.

Q. Describe for us how to understand the color coding.

A. The better wells are the yellow, green, light green, grading down to the poorer wells which color-coded in the blue.

Q. And the blue would represent acreage that has not yet been exploited in the Mesaverde or, if there are wells, those wells are -- have accumulated small levels of gas production?

A. That's correct.

Q. Let's go to the next display and talk about the general concept for further gas production in the

Mesaverde. If we look at this display, identify for us the significance of the elliptical-shaped circles.

A. This is a map of drainage area, ultimate drainage area, for the Mesaverde producers on the map. The density of natural fractures controls the productivity in the Mesaverde.

Burlington is conducting an extensive evaluation of the Mesaverde. This map is derived from original gas-in-place numbers, as well as a review of all producing wells, to generate estimated ultimate recoveries. Those two evaluations can lead one to the drainage area for each well.

The elliptical shape is based on core data, well-interference-test data, that shows directional permeability variations of approximately ten to one, and the drainage area ellipses reflect that, and we've got a three-times-longer axis in the north northeast direction than the other, which would be west northwest.

As you can -- So that's a description of this map.

Q. When we look at the east half of 18 and the opportunity to produce Mesaverde gas, a well located at any position, orthodox or standard, has a similar opportunity?

A. That is correct.

Q. In this instance, the standard location is not

essential to you because there is no perceived difference between the standard location and the unorthodox location?

A. That is correct.

Q. You are not compromising in the Mesaverde an opportunity to be effective in that reservoir by moving to the unorthodox location?

A. That is correct.

Q. So in this circumstance, in the Mesaverde, you could accommodate a surface owner, if that was all the surface people could manage for you?

A. That's correct.

Q. We could put it at the unorthodox location and not compromise your access to the reservoir?

A. Yes.

Q. All right. Let's see what happens on the type log. So that the Examiner knows exactly what you're doing, if you'll turn behind the next tab, Exhibit 5, let's look at a type log for an Allison Unit Mesaverde well. Identify for us what you're meaning by the elliptical circles on the prior exhibit. What's the target area?

A. The type log here is the Allison 1R, which is located in Section 17, the southwest northwest quarter. This is the neutron density log through the Mesaverde section, from the upper Cliff House down through the Point Lookout pay zones.

Burlington typically would complete from -- We would perforate a large interval in probably a two-stage frac covering the upper Cliff House through a portion of the Menefee.

As far as the log goes, the Mesaverde section in this interval, there are thin sands developed in the Cliff House. An example would be 5400 foot, 5410 feet.

There are Menefee sands. A good example of one of those is approximately 5515 to 5525.

There's a nice-looking Point Lookout section of short-face sand benches. There's one at approximately 5660 feet that's relatively thick.

The highlighted red section is the logs displayed on a regular sand matrix, so the gas effect crossover is highlighted in red, and that's most prevalent in the Point Lookout. So it looks to be an attractive Point Lookout sand section.

Q. One of the options to you is to use the surface location that's been approved by the surface owner and directionally drill the well to a standard bottomhole location. Have you asked your engineering department to explore the cost of that type of activity, and if so, what would it cost?

A. Yes, we did. We have taken a look at that upon Mr. Stogner's recommendation.

The cost for a vertical wellbore for a commingled completion is $515,000. The additional cost to drill a directional test with a lateral surface displacement of 1450 feet -- and that would be at total depth, that would be the minimum we would consider acceptable to access the area that we'd like -- the additional cost in doing that would be $190,000.

If you add the $190,000 on to the cost for a vertical wellbore, the well would not meet Burlington's hurdle criteria for a drilling project for -- at this current time.

So the additional cost to drill a directional would make the drilling of this well uneconomic, and our management would not approve that well.

Q. Do you gain a better position in the reservoir, should you spend the extra $190,000? Would it improve your position in the reservoir or not?

A. As we've so far just addressed the Mesaverde, the drainage ellipse map on Exhibit 4 says no, you would not access any additional reserves, you would not improve your location by doing a directional drill.

Q. Let's see if that also applies to the Dakota. If you'll turn behind Exhibit Tab 7, let's look at the type log for the Dakota and identify the two target intervals that you have maps to illustrate.

A. I've mapped two intervals.

The large section, again, is for the Allison 1R in the southwest northwest of Section 17. The map covers the interval from the top of the Greenhorn down through TD of the well. The top of the Dakota pick is approximately 7912.

The first of the two sands that I map, at 7935, is the upper Cubero. That's the first sand.

The second sand, at 7975, is the lower Cubero.

The primary Dakota sand objective for this test is the lower Cubero.

The upper Cubero will be thin, and the reserves associated with that minor at the proposed location, similar to what's shown in this type log.

Q. All right, let's go back, then, and look at the displays behind Exhibit Tab Number 6 and have you discuss for us the upper Cubero member of the Dakota.

A. This map, again, is the 39 wells, the red dot, spacing unit in the east half of 18 is the red rectangle. What I've mapped is the number of feet of upper Cubero with resistivity value greater than 100 ohms. It's essentially what we view as a net-pay map.

As I mentioned while viewing the type log, that upper Cubero is thin. That resistivity threshold gives a value of zero at the Number 1R. No matter where we locate

in an orthodox location in the east half of Section 18, the reserves will be relatively minor due to us having between zero and probably seven or eight of thickness in that upper Cubero.

Q. All right, let's look at the display of the lower Cubero, if you'll turn to the next display.

A. Okay, the lower Cubero is our primary target for this well.

On the north northeast side of the Allison Unit there is a thick trend of reservoir sand developed in the lower Cubero. This map is an isopach map of the number of feet with gamma ray less than 60. It's a net-sand map, versus a net-pay map. That sand thickness appears to match production characteristics.

The 1R has one of the thickest lower Cubero sands encountered. That's the well in the southwest northwest, 17. As that sand continues to the northwest, it's nearly a mile away, at the Number 24 well in the southwest quarter of 7, where we have another thick sand penetration in this lower Cubero. So we would like to place another well to access reserves in the lower Cubero.

Q. The placement of the Dakota to access the lower Cubero, is that compromised by moving to this unorthodox location?

A. I don't think so. Based on the data that we

have, I'm predicting approximately 40 feet of sand thickness at our proposed location in the lower Cubero, and I don't think we can expect significant improvement upon that in any other location in the east half of 18.

Q. Let's turn to the next display. You have an Allison Unit Dakota cum production display.

A. This map, again, is in part for just general reference. I don't have any specific conclusions to be drawn from it. It shows that the Dakota production within the Allison Unit can be pretty prolific.

There are wells -- Again, the hot colors, the red, the yellow, the green, are higher cums to date, are cums as of December, 1997. The blue are poor recoveries. But you've got four wells within the unit that have already produced greater than 5 BCF out of the Dakota.

Q. Have you examined to see if there is a structural consequence to the unorthodox location, as opposed to the standard locations in the spacing unit?

A. Yes, I have, and the next map -- The next map illustrates that.

Q. And what are we seeing now?

A. This is a structural map drawn on the Greenhorn. Again, it's the top horizon indicated on my type log. It's a horizon that stratigraphically is very consistent across the Basin. If you're looking for a horizon to map on with

around -- vertically around the Dakota that's not subject to stratigraphic variations, the Greenhorn is a good one to select.

The Allison Unit is located on the southwest flank of the Ignacio anticline trend, which shows up as the hot red colors, colors up in Colorado. We're on the flank of that anticline, and as you drop down from the red color at the top of the map, through the yellow, the green, you drop into a structural low on the -- just on the southwest side of the Allison Unit.

I don't -- It's our opinion that -- my opinion from the upper Cubero and lower Cubero sand trends that structure does not play a part in controlling the productivity of those two particular sands. The structural map through the east half of 18 shows no -- gives no indication that any specific location structurally would be better than any other.

MR. KELLAHIN: Thank you, Mr. Clark. That concludes my examination of Mr. Clark.

At this point, Mr. Examiner, we would move the introduction of Burlington's exhibit book. It's Exhibits 1 through 8.

EXAMINER ASHLEY: You have an Exhibit 9 in there too.

MR. KELLAHIN: Yes, sir, I do. 1 through 9.

EXAMINER ASHLEY: Exhibits 1 through 9 will be admitted as evidence.

No further questions.

(Off the record)

EXAMINER ASHLEY: At this time, Case 12,044 will be taken under advisement.

(Thereupon, these proceedings were concluded at 2:30 p.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 12044, heard by me on Sept. 17 1998.

Mark Ashley, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

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

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

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

WITNESS MY HAND AND SEAL September 22nd, 1993.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1998