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:

COPY

APPLICATION OF BURLINGTON OIL & GAS COMPANY TO AMEND ORDER R-9918 FOR A DOWNHOLE COMMINGLING REFERENCE CASE FOR THE ALLISON UNIT AREA, SAN JUAN COUNTY, NEW MEXICO

CASE NO. 14281

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: TERRY G. WARNELL, Legal Examiner
DAVID K. BROOKS, Technical Examiner

March 5, 2009

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, TERRY G. WARNELL, Legal Examiner, and DAVID K. BROOKS, Technical Examiner, on Thursday, March 5, 2009, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: Jacqueline R. Lujan, CCR #91
Paul Baca Professional Court Reporters
500 Fourth Street, N.W., Suite 105
Albuquerque, NM 87103 505-843-9241

A P P E A R A N C E S

FOR THE APPLICANT:

KELLAHIN & KELLAHIN
W. Thomas Kellahin, Esq.
706 Gonzales Road
Santa Fe, New Mexico 87501

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MR. WARNELL: Let's go back on the record then at 9:15, and we're ready to hear Case Number 14281, application of Burlington Resources Oil & Gas Company to amend Order R-9918 for a downhole commingling reference case for the Allison Unit area, San Juan, New Mexico. Call for appearances.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin & Kellahin appearing this morning on behalf of Burlington, and I have two witnesses.

MR. WARNELL: Would the two witnesses please stand, state your name and be sworn in.

MS. GASTGEB: Kassadie Gastgeb.

MR. WOLFE: Micah Wolfe.

(The witnesses were sworn.)

MR. KELLAHIN: Mr. Wolfe, please.

Mr. Examiner, as the application indicates, we're seeking two things. First of all, we're dealing with the Allison Unit. Back in June of '93, Mr. Alexander and I were before you at the Division and obtained Order R-9918 at that time, allowing us to downhole commingle the Mesaverde/Dakota production, and in doing so, we also asked the Division to approve the elimination of notice in tracts that involved parties that had noncommon interests. That was one of the first

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cases for which that was done.

Thereafter, I think in '97, and a number of instances after that, both things have been accomplished for other units, usually the federal numbered units that are operated by ConocoPhillips and Burlington. There is a plan for further development in the Allison Unit in which we want to expand the exception for commingling where we can do that on a case-by-case basis by filing the Form 107A and do that in district. In instances where there's noncommon interests, that requires us, in the circumstances of this divided unit with a number of participating areas, in some circumstances we have to notify 260 something people every time you want to do one of these. 160

So our purpose this morning is to refresh the Division's recollection about the Allison Unit, give you an opportunity to explore any of the issues you want about commingling and, to seek your approval, then, to expand the commingling so that we have a reference order number that will allow Burlington to file with the district, either a C102 summary notice or the standard C109 form, and commingle all these zones if they meet the other criteria of pressure and value of production and all those kinds of things, recognizing that, historically, with one early exception, no one has ever

complained to downhole commingling to the best of my knowledge or to Mr. Alexander's knowledge. We have never had any objection filed.

We think the requirement of notice is no longer useful to anyone. It's become a matter of routine. Burlington, as well as other operators in the basin, uniformly agree with the Division in terms of how you test and allocate production among multiple zones, and the reason to object, it was earlier in the rule, seems to be antiquated and there is no purpose served by the notification. So that's the one topic.

And the other is to show you the details of what we're trying to accomplish with additional development in the coal-gas, either with new coal-gas wellbores that are also commingled with lower zones or older wellbores in lower zones that are recompleted in the coal. The evidence will be presented by two technical experts. First, is the petroleum landman, and the second is the petroleum engineer. And we'll start now with Mr. Wolfe.

I'm sorry. I misspoke earlier. Mr. Alexander says there was 460. I said 200. It's 460 notices that have to be sent out.

MICAH WOLFE

Having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. KELLIHAN:

Q. Mr. Wolfe, please, state your name.

A. Micah Wolfe.

Q. Where do you reside?

A. In Farmington, New Mexico.

Q. By whom are you employed?

A. ConocoPhillips.

Q. In what capacity, sir?

A. I'm a petroleum landman.

Q. Are you familiar with what we've described as the Allison Unit?

A. Yes, I am.

Q. As part of your familiarity with that unit, have you examined the unit documentations?

A. Yes, I have.

Q. Are you familiar with the concept that this unit utilizes and operates under a participation concept?

A. Yes, I am.

Q. If the technical people come to you and ask you to process an application for downhole commingling that would be outside the scope of the existing order, R-9918, you would make a search to determine notification of what, sir?

A. I would determine the owners that would need

to be notified, then proceed with notifying those owners.

Q. In instances that occur, what generally would happen in terms of the number of people that you would have to notify?

A. The most common zones that are commingled would either be the Fruitland Coal or Mesaverde. Both of those formations, the entire unit is within a participating area, which would require every single owner in that participating area to be notified, plus the additional drill block for the other zone that would be commingled, which is 462 individuals.

Q. That would be included within the description of your duties as a landman for Burlington?

A. Yes, sir.

MR. KELLIHAN: At this point, Mr. Examiner, we tender Mr. Wolfe as an expert petroleum landman.

MR. WARNELL: Mr. Wolfe is so qualified as an expert petroleum landman.

Q. (By Mr. Kellihan) Mr. Wolfe, let's start with the slide that's on the screen. It's slightly out of order. I think it appears behind -- it's one of the slides that comes after Exhibit Tab Number 2. Let's start here as a locator, and then we'll come back to the book. Describe for us how we outline and identify the

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Allison Unit.

A. As you can see in the green, that would identify the Allison Unit boundary. This particular area here in the middle were lands that were not committed to the unit so that is not within the unit. The symbology that you see within the unit is that the wells that have been drilled, and as stated earlier, we have had some problems with the symbology. So this is an approximation. It's not completely accurate, but it is giving a general idea of the number of Fruitland Coal, Pictured Cliffs, Mesaverde and Dakota wells that are being drilled within this unit.

Q. Is the display accurate as to the boundary and its location?

A. The boundary is accurate.

Q. To the east of the unit, what is the area shaded in blue?

A. That is Navajo Lake.

Q. Do you have slides -- while we're in Exhibit Tab Number 2, do you have slides that identify for the Examiner the extent of the participating areas in the unit?

A. Yes.

Q. Let's do that.

A. Okay. This slide here is showing the Dakota

participating area. It has not been fully expanded, as you can see with the shaded area, is the current participating area. The white has not been expanded at this time. The dots are, once again, an approximation of the number and location of Dakota wells.

Q. Let's look at the next slide.

A. This slide shows the Fruitland Coal PA. As you can see, it is fully expanded, includes the entire unit. Then this slide here shows the Mesaverde participating area. Once again, it is fully expanded, as well.

Q. Next slide? Is it your understanding that the concept by which these participating areas are created and expanded are a function of the operation of the agreements that control the unit?

A. Yes.

Q. And those agreements have been approved by the BLM and the Oil Conservation Division and the interest owners at the time they were created?

A. Yes, they were.

Q. So the mechanics of how those expansions occur is a matter of compliance with the contract?

A. Correct.

Q. What is your understanding of what Burlington is seeking to accomplish with this application?

A. This application, we are seeking to amend 9918 to expand the modification that we do not have to send notice every -- to include the entire unit, not just the participating areas of the Mesaverde/Dakota, we'd like to extend that to include Fruitland Coal and Pictured Cliff formations and also extend it beyond the participating areas to include the entire unit.

Q. As part of that expansion, you're also requesting the elimination of the portion of the rule that requires notice to interest owners in tracts for which there's not a common interest?

A. Correct.

Q. You're aware of that concept?

A. Yes.

Q. And under certain configurations, that number can be in excess of 460 individuals?

A. In most situations.

Q. In the process of commingling, do you think that action alone changes any of the equity parameters for any of the parties participating under the participating areas?

A. No, it would not.

Q. So approval of this application, in your opinion, does not adversely affect either the volume of money they receive or the percentage interest they have

in that production?

A. Correct.

Q. Let's go back to Exhibit Tab Number 1 and indicate what you have done in terms of satisfying the requirements for notification of the hearing in this case --

A. Okay.

Q. -- starting off with the notice letter. Go to the first display after Exhibit Tab 1. There's a notice letter dated January 30th.

A. Yes.

Q. What did you cause to happen with this letter?

A. A copy of this letter was sent to each one of the 462 individuals that have an interest in Allison Unit boundary.

Q. In addition, were they provided a copy of the application?

A. Yes, they were.

Q. Were they provided a copy of Order R-9918?

A. Yes, they were.

Q. Can you scan down through Exhibit Tab Number 1 and find us the list of parties for whom notice was sent?

A. Yes, I can. In fact, it is listed on several pages due to the number. Here is where it begins, which is behind Exhibit Tab 1 within the booklets.

Q. When we look at the tabulation of interest owners in the Allison Unit, to the best of your knowledge, is this accurate and complete?

A. Yes, it is.

Q. My exhibit book shows there's some 12 pages of names?

A. Correct.

Q. How was this generated?

A. This was a list that we compiled from the Exhibit B of the Allison Unit operating agreement.

Q. Is that updated over time?

A. Exhibit B itself is not, but that was compared with our Division order records which have been updated throughout time if any interest owners had been changed.

Q. And those files also allow you the opportunity to make sure that you're sending notices to parties that are receiving checks for payment of proceeds attributable to their share in the unit?

A. Correct.

Q. Following the 12 pages of names and addresses, have you appended to the exhibit book copies of the green cards and notices of mailing to all interest owners?

A. Yes.

Q. As a result of that effort to notice, have you received or are you aware of any formal objection being

filed to the approval of this application?

A. No, I'm not aware of any formal objections.

Q. Has the mailing of this notice to the parties generated any type of response from any individuals?

A. Yes. We have had a couple of inquiries.

Q. What's the general nature of those inquiries?

A. Concern that their interests would be adversely affected by this order, which was mislead, and we proceeded to inform them that their interest was protected by the Allison Unit operating agreement and that this amended order would not adversely affect their interest.

Q. That's what you and others on behalf of Burlington represented to the parties that called?

A. Yes.

Q. And that was generally what they were concerned about is they got a notice and didn't know what it was about and asked you to explain it?

A. Correct.

Q. Were there formal letters sent out to various of these parties confirming in writing Burlington's belief that their interest would not be adversely affected?

A. Yes.

Q. I think we've covered, Mr. Wolfe, the slides

behind Exhibit Tab Number 2. You could go to the first slide, which is the locator, again, to show the Examiner and Mr. Brooks where the Allison Unit lies in relation to the basin just on the northern edge of New Mexico by the Colorado border.

A. This map here is a locator map. You can see the towns of Aztec, Bloomfield and Farmington. There to the left, center left, along with the borders of all the federal units highlighted in red is the Allison Unit there along the Colorado/New Mexico border right next to Navajo Lake.

Q. Let's skip down and start with the information behind Exhibit Tab Number 3. I think you've gone too far. My book may be different than yours. Okay. What have you compiled here, Mr. Wolfe?

A. This is a list of the orders that have been granted in the past with regards to exempting us from notifying parties when we are attempting to commingle a well. It corresponds with the unit name. As you can see, most of these are the numbered units and also is listed the formations which they cover.

Q. Let's go down, as an example, and look at the second entry. There's Canyon Largo.

A. Okay. Canyon Largo is covering all formations that are listed, Fruitland Coal, Pictured Cliffs, Chacra,

Mesaverde and Gallup. What that allows us to do is commingle those wells without giving notice to the interest owners within the drill block.

Q. That's the concept that you're asking the Division to approve for you for the Allison Unit?

A. Correct.

Q. To the best of your knowledge, this is as complete a tabulation of these as you and Mr. Alexander could generate?

A. As far as I'm aware.

Q. Turn to the next display behind Exhibit Tab Number 3. Identify this for me.

A. Here displays the approximate number and location of commingled wells that we have drilled throughout the basin. This throughout the entire history of the basin.

Q. What is the period of time we're working with?

A. This is the amount of commingled wells that have been drilled to date.

Q. Just all of them?

A. All of them. Yes, sir. The next slide, actually, is limited since 1997, when several of these orders were initiated, giving us the ability to commingle these wells without giving notice. And we had drilled 1,465 of these wells, and as Mr. Kellahin has stated, we

Q. Let's look at the next slide. I have one that's a little different. Is that it?

A. Yes. It's roughly about 200 completions of the inventory wells. So you if you count up all the dots, there's not quite 200. That is an indication that some of these are planned as inventory wells to be commingled, such as the Dakota/Mesaverde, so there would be just one spot for that location.

Q. Let's go to the next slide, then. Behind Exhibit Tab Number 4, what do you have, sir? It's the other way. I'm looking at the cost allocations procedures, Mr. Wolfe.

A. We have a copy of our standard cost allocation that we use across the basin. And the main thing I wanted to point out --

Q. Before you do that, go back one more slide and see where we are. Okay. That's in the sequence of the books now? Mine didn't get correlated the way yours did.

MR. BROOKS: Cost allocation procedures appear to be behind Number 3, Tab Number 3 and behind the maps.

MR. KELLAHIN: That's where mine is. If you'll turn behind the maps in Tab Number 3, as Mr. Brooks has indicated, there's a cost allocation procedure that's on the PowerPoint.

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Q. (By Mr. Kellahin) Without going through the document itself describe for us how this is utilized.

A. Sure. Let me just highlight this main point here. Here is the standard cost allocation that we use across the basin. This has been generally accepted by the industry. It identifies the Fruitland Coal PC commingled split fifty-fifty, and commingled Mesaverde/Dakota is listed here as a 40-60 split respectively with the Mesaverde/Dakota. This page here identifies that we do have a standard formula at the bottom. For any other formations that are to be commingled, this is the standard formula that is used to calculate the cost allocation.

Q. One of the early issues years and years ago was the actual allocation of cost among the zones that were being commingled. Other issues dealt with the measurement of the production from those, and I'll leave that for the engineer. But in terms of the cost allocations themselves, does this document represent the current industry-wide concept for procedures utilized by your company and others for allocating costs to these various zones?

A. Yes, it does.

Q. It's widely agreed upon?

A. Yes, it is.

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Q. I think that gets me to the end of your presentation, Mr. Wolfe. Have I forgotten something?

A. I don't believe so.

MR. KELLAHIN: Mr. Examiner, we move the introduction of the exhibits behind Exhibit Tab Number 1 through Exhibit Tab Number 3 as part of Mr. Wolfe's presentation.

MR. WARNELL: Tabs 1 through 3 are admitted.

(Exhibits 1 through 3 were admitted.)

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

MR. BROOKS: No questions.

MR. WARNELL: No questions.

MR. BROOKS: I guess I do have one question. I think I know the answer, but these cost allocation procedures -- or cost allocation formulas, are these formulas that have been agreed upon by and between parties who have negotiated at arm's length and who are engaged actively in the oil and gas business in this area?

THE WITNESS: We have this agreement in several of our joint operating agreements throughout the basin with multiple parties who have agreed to this exact same form.

MR. BROOKS: Who would some of those parties be?

THE WITNESS: Some of the individuals would be XDO, BP, Chevron, for example.

MR. BROOKS: That's all I have.

MR. WARNELL: Mr. Wolfe. I have no questions.

THE WITNESS: Thank you.

MR. WARNELL: Call your next witness.

MR. KELLAHIN: The next witness is our engineering witness, Ms. Kassadie Gastgeb, neither name is spelled like you think it should be spelled. I'm told it's German origin and, beyond that, I know nothing about this name. I will try not to mispronounce it more than 17 times.

KASSADIE GASTGEB

Having been first duly sworn, testified as follows:

DIRECT EXAMINATION

Q. Ms. Gastgeb, would you state your name and occupation?

A. My name is Kassadie Gastgeb, and I am a petroleum engineer for ConocoPhillips.

Q. When and where did you obtain your degree?

A. In 2006, I graduated from the University of Oklahoma with a mechanical engineering degree.

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Q. Have you practiced as a petroleum engineer?
A. I have since June of 2006.
Q. With what company?
A. ConocoPhillips the entire time.
Q. What generally have been your areas of responsibility?
A. Production engineering for a little over two years, and I just started in the reservoir engineering group.
Q. As part of your duties, are you responsible for any of the engineering aspects associated with the Allison Unit?
A. I was requested to provide engineering support to amend our existing order, R-9918.
Q. As part of that effort, what have you searched and utilized as reference material?
A. Existing production and existing rules and reference in the existing order.
Q. Have you satisfied yourself that your work is at a point where you can reach engineering conclusions about the viability and suitability of amending this order and achieving what Burlington is seeking by this application?
A. Yes.
MR. KELLAHIN: Mr. Examiner, we tender Ms.

Gastgeb as an expert petroleum engineer.

MR. WARNELL: Ms. Gastgeb, June of 2006 you graduated from the University of Oklahoma and went to work for ConocoPhillips?

THE WITNESS: Um-hum.

MR. WARNELL: In Farmington?

THE WITNESS: In Farmington.

MR. WARNELL: My daughter graduated from the University of Texas and went to work for Phillips in Borger, Texas, north of Amarillo. I about killed her.

MR. BROOKS: It sounds like this young lady was a lot luckier.

MR. WARNELL: You're a lot luckier. We recognize Ms. Gastgeb as an expert in petroleum engineering.

Q. (By Mr. Kellahin) Ms. Gastgeb, would you turn now to the first exhibit sets that are your responsibility starting with Exhibit Tab Number 3, and let's talk about what has happened under Burlington's operation of the existing order approvals when we're dealing with downhole commingling of Mesaverde and Dakota wellbores.

A. Do you mind rephrasing that? Are we beginning with Exhibit 4?

Q. What is four? Okay. Do you have an overview?

A. Yes.

Q. My fault. Let's start with the overview. Show us where we are.

A. Beginning with Exhibit 4, the second page of Exhibit 4 will display an overview of the San Juan Basin. There a black square in the middle of the red outline for the San Juan Basin. This is the approximate area of the Allison Unit. It is close to the -- or it is on the state line and there are portions of the unit in Colorado and New Mexico.

Q. Let's look at the next slide. Give us a generalized geologic explanation of what are the producing zones that we encounter in the Allison Unit.

A. If you look off to the top left portion of this slide, you can see the cross-section of the basin that we are taking from A to A prime, and if you orient yourself with the slide itself, A is on the left-hand side of the slide, which is the south portion of the basin, and as you go to A prime, it is the north portion of the basin. This dotted red line is an approximate position of the Allison Unit, and you can see that the Fruitland formation, Pictured Cliff formation, Mesaverde formation and the Dakota formation are present in the Allison Unit.

Q. Do you have a sample-type log we could look at

to refresh the Examiner's and Mr. Brooks's recollection of the zones we're dealing with in the Allison Unit?

A. Yes, I do, the next slide. So outlined here are the Fruitland Coal formation, the Pictured Cliffs, Mesaverde and the Dakota, and if you look off to the left-hand side of the log, you can see that what is yellow on the slide and doesn't really appear to be yellow on the projector is highlighted potential pay.

Q. Show us the next slide.

A. The next slide outlines Fruitland Coal daily water production rates within the Allison Unit. What I'd like to draw your attention to is that above the well location, which is a circle that is not solid, you'll see the well number, and below that you'll see your daily average water rate from the well. You can see that our water production rates within the Fruitland Coal, the majority of the unit, are fairly well.

Q. How does this information relate back to the last display?

A. We have produced the Fruitland Coal and de-watered it, and we have developed the Fruitland Coal fairly well within the Allison Unit.

Q. In your opinion, are we at a point in time in production in the Allison Unit where it becomes viable to consider commingling of the Fruitland Coal with the

deeper zones?

A. Yes.

Q. And that was the point of the slides?

A. Yes.

Q. The next one. Let's look at the production history.

A. To orient yourself with this slide, along the X axis is time. This is -- on the left-hand side, you're going to have your gross gas production from the unit for Fruitland Coal. On the right-hand side, you're going to have water production rates for the Fruitland Coal within the Allison Unit. What I'd like to show you is that our red line that is on the slide is outlining our gas production for the entire unit from the Fruitland Coal. You can see that we have peak production within the Allison Unit from the coal. And along with that, the water rates, we have de-watered -- seen peak water rates from the Allison Unit and have declined.

Q. The next slide. I'm back on track; right?

A. Yes.

Q. Let's talk about the successes with commingling.

A. Behind Exhibit 5 you'll find documents that will demonstrate that we have successfully downhole commingled Mesaverde/Dakota since Order R-9918. The next

three slides that I'm going to show you are case examples of Mesaverde/Dakota wells that have been commingled since 1993. The first well we are going to highlight is the Allison Unit 11X. This well was completed as a Mesaverde/Dakota dual well in 1957 and produced with packer in the hole until August of 1997, which we had Mesaverde Pay-Add and downhole commingled at that time with the Dakota.

So you can see that the Dakota Production before and after our commingle, which is indicated by an arrow on the production plot is continuous. And you can see that we had up-lift from the pay-add on the Mesaverde portion of the production.

Our next slide is highlighting the Allison Unit 1R. This well was completed as a Dakota well in 1993, recompleted within the Mesaverde, and we cleaned out fill in the Dakota in October of 2001. At that time we also downhole commingled this wellbore. So you can see we have an established production history for the Dakota well prior to the commingle. We commingled right here, and we added pay for the Mesaverde, and then we produced continuously from the Dakota after the downhole commingle.

Q. The next one.

A. The next example is the Allison Unit 16. We

drilled and completed this well as a Mesaverde/Dakota dual well in 1958, produced with packer in the hole up until 2001, in which we commingled it in June. You can see from this that there was no other major scope of the workover. You can see that by pulling the packer out of the wellbore in 2001, both zones benefited from the commingle and production increased.

Q. These, as examples, what's your generalized engineering conclusion about the feasibility of commingling as your method of first choice for enhancing production in the Allison Unit?

A. Downhole commingling did not decrease the value of production throughout the unit.

Q. In addition, it's been a benefit to sustain production within the unit, has it not?

A. That's correct.

Q. It has become the preferred way to complete these wellbores?

A. That is correct.

Q. Let's go to the next slide.

A. The next three slides are going to depict our downhole commingled workovers normalized. Along the X axis you will see that we have the months leading up to the downhole commingle with the negative numbers, so three years before the downhole commingle and three years

after. What I'd like to point out is a slight error in this slide is that the arrow should be scooted over a little bit and should be pointing to the value right above the zero on the X axis.

This particular slide is depicting downhole -- this particular slide is showing Mesaverde production before and after downhole commingling. What you can see from the slide, the downhole commingle for Mesaverde occurred at this timeframe, and this is the three years of production before and after the commingle. In my research in looking at these wells that I used for this data, in general the Mesaverde had a smaller tubing size that could not be optimized, and we could not operate artificial lift efficiently, so we did see an uplift from the commingle.

Q. What do you see in the Dakota?

A. Three years before and three years after, you can see that there is a continuous decline. And, again, the downhole commingle occurred at month zero.

Q. The next slide?

A. The next slide highlights the Mesaverde and Dakota production data that I presented in the previous three slides but combined together, so that our downhole commingle occurred at month zero. You can see that the value of production for the entire wellbore did not

decrease as a result of the commingle.

Q. Let's turn to the topic of the mechanics of allocation now. Could you start with the subtraction method for us?

A. I'm going to highlight for you two field tests that we allocate our production, and the first method is through the subtraction method. We will clean out the entire wellbore after the frac and produce the upper and lower zone together with back pressure applied to the well through a choke at the surface to simulate area line pressure. We will achieve a stabilized pressure and flow the well for a minimum of four hours until we achieve that pressure.

From that point, we will isolate the upper and lower zone with a plug, and we will flow the upper zone with back pressure applied to the well through a choke to simulate area line pressure, and we will achieve a stabilized pressure by flowing the well for at least four hours.

Q. Is this subtraction method of allocation one that's been approved by the Division here in Santa Fe, as well as the district office?

A. Yes.

Q. Is it applied by Burlington and other operators on a regular basis?

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A. Yes, it is.

Q. Are there other methods by which allocation process is determined?

A. Yes.

Q. Let's look at that.

A. The next method is utilizing the spinner method. On the left-hand side of the slide you'll see that when we move on the well after our frac, we will clean out our upper zone and flow the upper wellbore with back pressure applied to the well through a choke at the surface to simulate area line pressure. We will establish a stabilized pressure and flow the well for a minimum of four hours to obtain a rate.

And then second, we will clean out the entire wellbore, and we will go in the hole with slick line running a spinner tool, and we will take the value -- meter the production across the lower interval to obtain a rate for that well, for the lower portion of the well.

Q. Has Burlington and other operators relied upon this method as one of the methods to prove for allocation of production among zones?

A. Yes.

Q. Has it been accepted by the Division in Santa Fe, as well as in the district office?

A. Yes.

Q. Have there ever been any objections, to your knowledge, of these methods being applied to commingling?

A. No, not to my knowledge.

Q. Do you have a sample to give us a generic understanding of the commingling?

A. Um-hum.

Q. Let's start with that.

A. The next several slides you're going to see in the exhibit book are going to outline the forms that are submitted when we went to downhole commingle a well. The first slide is an administrative checklist that will be submitted. The next slide, you'll see at the top right-hand corner, "Form C-103." This form is submitted when we are downhole commingling pre-approved pools. You can see that it states the pools that we are suggesting to commingle and reference the order number in which it was designated or pre-approved. And we do note that the commingling will not reduce the value of production, and we note that we have notified the BLM and our interest partners.

Q. Are there other type of Division forms utilized for commingling?

A. Yes.

Q. Let's talk about the other form.

A. The next form is C-107A. Your next page shows

the administrative checklist that gets submitted with the C-107A form. In the upper right-hand corner on the next slide, you'll see, "Form C-107A." This form is actually one page in your exhibit book. For purposes of the slide presentation, we divided it in two so it's easier to read.

This C-107A form, I'd like to highlight first that this is not within the Allison Unit. The form that we are presenting is an example. This is the Bandy Com 100S. In this particular form, we are recommending to commingle the Farmer Fruitland Sand with the Base Fruitland Coal. We've given estimated top and bottom of the pay section in that column or row.

And then our next portion right here that I would like to highlight is our bottom hole pressure information. In this particular form, pressure data was not required because the bottom perforation of the lower zone was within 150 percent of the top perforation of the upper zone, so we stayed in that 150 percent rule. Our allocation at the very bottom row will be supplied upon completion, because this was submitted prior to the commingle.

Q. When the well is completed, then, you apply the approved Division allocation methods and then fill in the blanks and report that to the Division district

office?

A. Correct.

Q. What is significant to us on this page?

A. The point I'd like to highlight is the third question, "All produced fluids from all commingled zones compatible with each other?" In this particular form we have checked yes. What I would like to say about the Allison Unit is that we may have scaling tendencies for the Mesaverde and Dakota water production, and we have a current practice right now that we have an active scale inhibition program for the Allison Unit for downhole commingle Mesaverde/Dakota wells, and that is across the board. So we tried to prevent scale precipitating out in the wellbore. The scale that we do see within the Allison Unit can be treated with acid, if necessary.

Q. Let's take this as an opportunity to go down the Division commingling rule. I think there's about six of these procedures that are engineering driven. I'll just go back and start with the first ones, and I think you just covered that. If you look at the rule book and you're trying to get approval for downhole commingling, one of the things that you, as an engineer, are signing off on, is whether the fluids from each zone are compatible and the combined fluids will not result in damage to any of the pools?

A. Yes.

Q. You checked that out?

A. Yes.

Q. In the Allison Unit, there's none of those problems?

A. That's correct.

Q. The second blank is, "The commingling will not jeopardize the efficiency of present or future secondary recovery projects for any of the pools commingled." Is that a problem here?

A. No, that is not.

Q. The next one deals with pressure differential. The rule sets a maximum differential for pressures. It's 150 percent rule. It deals with the bottom perforations of the lower zone is within 150 percent of the depth of the top perforations of the upper zone.

A. That's correct.

Q. That's the rule the Division applied? Is that the rule you abide by?

A. That is.

Q. If you have a wellbore that exceeds that rule, what do you do?

A. We would not be required -- we could not commingle it at that time unless we could provide pressure data that would denote otherwise.

Q. You normally don't file if it doesn't qualify?

A. That's correct.

Q. And if you find data that does qualify, then you submit the actual data and get the approval?

A. That's correct.

Q. What do you do about the issue of cross-flow? Certain volumes of cross-flow are allowed. The rule precludes cross-flow that results in permanent loss. Is that an issue here in the Allison Unit if the commingling order is expanded to include the additional pools?

A. To my knowledge, that is not an issue.

Q. Do you have any reservoirs that are fluid sensitive such that you could not commingle because of not being able to comply with that portion of the compliance rule?

A. Not to my knowledge.

Q. Do you have any evidence that the combined value of the production being commingled will be diminished?

A. No, I don't.

Q. Do you have, as an engineer, any evidence or indication that any type of correlative rights will be violated if this application is approved?

A. No, I do not.

Q. Let's go to your next slide.

A. The next slide is the Form C-102, as you can see in the top right-hand corner, and this is attached with the Form C-107A. Our next slide is a predicted forecast for the well that is submitted with the Form C-107A, and the last slide is a copy of the interest owners involved with the particular well.

Q. This was not an Allison well. This is just a sample of notices that was sent for this well. This is an example.

A. Correct. This is for the Bandy Com 100S, which is noted in the top left-hand corner.

Q. Okay. Ms. Gastgeb, you've spent a substantial amount of effort looking at the economic aspects of the commingling. I'd like you to summarize the next presentation and go through the executive summary points of this next portion, and I'll just let you do that for us.

A. In Exhibit 6, the second slide that you will see is a development stategy assessment for the Allison Unit. Highlighted on the first column is the points that I looked into for this stategy. Across the top you'll see a single completion for each wellbore, a dual completion and commingle completion. What I want to draw your attention to is that the highlighted yellow boxes, which the color is a little distorted on the slide, are

the most desirable characteristics. So you can see that the commingle seems to fit best as a development strategy for the Allison Unit.

The next four slides that are included within the exhibit outline expenses that could be incurred to each zone involved with this order -- with this amendment. So it is the Fruitland Coal first, Pictured Cliffs, Mesaverde and the Dakota, in that particular order. What I want to draw your attention to on this slide is that we are discussing the Fruitland Coal costs that occur to this particular zone. The blue portion of the slide is highlighting what type of completion we are talking about, so in this sense, a stand-alone Fruitland Coal completion could incur a possible capital expense of $866,000, and that the operating cost for the Allison Unit is estimated at $3,162 per month.

And as we add additional zones and commingle Pictured Cliffs and Fruitland Coal formation, our capital cost is reduced to $452,000 for the Fruitland Coal and operating expenses are $1,581 a month to operate. So this is a consistent trend throughout the next four slides. As we add additional zones to a wellbore and commingle, we reduce capital costs across the board and our operating expenses.

Q. The next slides?

A. The next slide is for the Pictured Cliffs, the Mesaverde and the Dakota.

Q. In each instance, though, the operating cost and the capital costs are substantially reduced and you benefit by commingling all these zones together?

A. That's correct.

Q. Do you have a summary slide showing us the impact of this?

A. Yes. If you're at the Dakota expenses slide, if you go down two, I summarized using my cost estimates that were provided previously and ran several scenarios in which we have a stand-alone completion versus Mesaverde/Dakota dual completion and a Mesaverde/Dakota commingled completion. As you can see with our capital inventory that we have within the Allison Unit, if we were to commingle Mesaverde and Dakota wells, we could recover the most reserves. And the same logic would apply for all other scenarios. By commingling, both capital and operating costs are reduced and, as a result, economic limits for the wells are extended and increases the gross recovery.

Q. Has Burlington yet commingled the Fruitland Coal with the lower zones?

A. No, we have not.

Q. With approval of that application, it helps

streamline the process by which you can start to engage in that activity?

A. That's correct.

Q. What's your recommendation to the Examiner?

A. My recommendation is that we be allowed to commingle Mesaverde, Dakota, Fruitland Coal, without notifying partners.

MR. KELLAHIN: That concludes my examination, Ms. Gastgeb. We move the introduction of the exhibits shown behind Exhibit Tabs 4, 5 and 6.

MR. WARNELL: Tabs 4, 5 and 6 are admitted. Questions, Mr. Brooks?

(Exhibits 4, 5 and 6 were admitted.)

MR. BROOKS: I should have asked this of the landman, but we weren't talking about production accounting at that time. Are there other major working interest owners in this unit, other than Burlington ConocoPhillips?

THE WITNESS: My knowledge of the Allison Unit is that we have 98 percent working interest.

MR. WOLFE: Correct. Burlington has approximately 98 percent working interest in all formations.

MR. BROOKS: Who owns the remaining?

MR. WOLFE: Various owners.

MR. BROOKS: It's widely dispersed?

MR. WOLFE: Correct. And that comes up with the additional 461.

MR. BROOKS: Thank you.

MR. WARNELL: Ms. Gastgeb, I made a note to take a look at Tab 5, page 2 of three, if you'll follow along with me. Probably page 3. Let's go to the next one. I think you testified there something to the effect that when it was commingled, you saw an increase or up-lift in the Mesaverde production?

THE WITNESS: Um-hum, and Dakota Production.

MR. WARNELL: And Dakota Production? I don't see that in the slide before. Do you have any thoughts as to why?

THE WITNESS: The slide before refers to the Allison Unit 1R.

MR. WARNELL: Yeah. That one there. So what are we referring to there?

THE WITNESS: Right here, this particular well was completed as a Dakota stand-alone well in '93, recompleted as a Mesaverde, cleaned out fill in Dakota and downhole commingled in October of 2001. So we only have previous production history for the Dakota portion of the well. And up-lift, in this particular case, we

may have had two and three-eighths tubing, and we had plunger lift on this well. And so production was optimized and we were lifting liquids efficiently, so we didn't see much of a change in production before and after. But we were able to add the Mesaverde zone and reduce operating costs for each zone.

MR. WARNELL: If you were to bring the Fruitland production into this well or a well similar to this, I kind of wonder if there wouldn't be a problem in some of the wells that production going downhole, instead of -- I'm not sure how you separate those.

THE WITNESS: I'm unclear on your question.

MR. WARNELL: I'm probably unclear on it myself. I'm a little bit concerned -- you know, I see all your slides and examples of the Mesaverde and Dakota, but when you come uphole and start commingling, I'm concerned that there might be some problems there.

THE WITNESS: Okay. So possibly if you were to commingle a Fruitland Coal with a Dakota?

MR. WARNELL: Yes.

THE WITNESS: Okay. In that particular instance, we would be outside of the 150 percent rule with our top perforation being within -- bottom perforation of our lower zone being within 150 percent of

our top perforation of our upper zone. So we would need to submit additional data to support that the reservoir pressures were similar or closer together.

MR. WARNELL: Okay. I have no more questions.

MR. KELLAHIN: That completes our presentation, Mr. Examiner.

MR. WARNELL: Thank you. We will take Case Number 14281 under advisement.

* * *

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

REPORTER'S CERTIFICATE

I, JACQUELINE R. LUJAN, New Mexico CCR #91, DO HEREBY CERTIFY that on March 5, 2009, proceedings in the above captioned case were taken before me and that I did report in stenographic shorthand the proceedings set forth herein, and the foregoing pages are a true and correct transcription to the best of my ability.

I FURTHER CERTIFY that I am neither employed by nor related to nor contracted with any of the parties or attorneys in this case and that I have no interest whatsoever in the final disposition of this case in any court.

WITNESS MY HAND this 16th day of March, 2009.

Jacqueline R. Lujan, CCR #91
Expires: 12/31/2009