

VIRGINIA OIL AND GAS CONSERVATION BOARD

SEPTEMBER 7, 1989

KEEN MOUNTAIN, VIRGINIA

EDWARDS & HARDING PETROLEUM COMPANY

FORCED POOLING HEARINGS FOR EH-9, EH-10, EH-15

BOARD MEMBERS PRESENT

Mr. Benny Wampler, Acting Chairman
Dr. Robert Whisonant
Mr. Chester Starkey
Mr. Jim Bunn (left early)

ATTENDEES OF 9/7/89 HEARING

Mr. Beny Wampler, Chairman, Conservation Board

Mr. Chester Starkey, Member, Conservation Board

Dr. Robert Whisonant, Member, Conservation Board

Mr. Jim Bunn, Member, Conservation Board

Mr. Richard Finucane, Ashland Exploration

Mr. L. Eugene Dickinson, Attorney, Ashland Exploration

Mr. Michael Edwards, Edwards & Harding Petroleum Company

Mr. Tom Lincoln, Edwards & Harding Petroleum Company

Mr. Chad Harding, Edwards & Harding Petroleum Company

Ms. Elizabeth McClanahan, Attorney, Edwards & Harding Petroleum Company

Mr. David McCluskey

Ms. Mona Cole

Mr. Ralph Cox

Mr. Brad Swanson, Landman, Edwards & Harding Petroleum Company

Mr. Tom Fulmer, State Oil & Gas Inspector

Ms. Diane Davis, Recorder

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- Eugene Dickinson
MICHAEL L. EDWARDS
Tom Finckh
Ralph H. Goff
Mona Cole
David Mc Cluskey
- Elizabeth McClure

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Mr. Wampler

Good morning, my name is Benny Wampler and I am Assistant Director for Mining for the Department of Mines, Minerals and Energy. We have a request today before the Oil and Gas Conservation Board and I will take a few minutes to introduce you to the Board. To my left is Mr. Jim Bunn, Board Member, to my right Mr. Chester Starkey, Board Member and Mr. Bob Whisonant. At the end of the table is Ms. Diane Davis who is our secretary for the Oil and Gas Office and Mr. Tom Fulmer who is our Oil and Gas Inspector. This is a hearing again that has been requested by Edwards & Harding before the Board. It is a hearing to consider forced pooling applications for proposed wells EH-9, EH-10 and EH-15 in the Garden District of Buchanan County. We want to have any witnesses to be sworn in. Ms. Davis will do that. Please as anyone speaks, introduce yourself to us so that we will have a record of the hearing. I will now call on Elizabeth McClanahan to introduce Edwards & Harding's request.

Ms. McClanahan

Ladies and gentlemen we have submitted the EH-9 application for forced pooling and I believe that everyone has a copy of that. We do need to make one amendment to the application at this particular time because we have leased additional landowners since the time we submitted the permit application. If you will permit me just to tell you what the amendment is rather than have someone testify, on the Carlson tract that is 100% leased, the acreage in the unit is 60.54 and the percentage of that tract in the unit is 56.13% on the Robertson & Jewell, 100% of the tract is leased 35.40 acres is in the unit and 32.82% of the unit is comprised of Robertson & Jewell, the Duncan, 100% of that tract is now leased, 5.76 acres is in the unit and 5.34% of the unit is comprised of that lease. The coal, we have now leased 89.50% of the tract. The acreage in the unit is 3.12, the percentage of the unit comprised by that is 2.79, on the Brown tract, 83.20% is leased, 3.04 acres is in the unit and 2.53% of the unit is comprised by the Brown lease. The remaining unleased portions are then the Cole heirs, 10.5% of the tract, 3.12 acres and .33% of the unit; Brown heirs, 16.8% of the tract, 3.04 acres and .05% of the unit. It is my understanding with regard to the Cole heirs there are two Cole heirs, Rebecca Cooper and Shirley Fuqua, is that correct, Ms. Cooper informed us that she had put her lease in the mail last night, we don't have a copy of that and Rebecca Cooper has indicated that

she will sign, it is backwards, Rebecca Cooper has put her lease in the mail and Shirley Fuqua is out of town but has promised to lease. Then also the Combs person who is listed, Judge Combs and his mother have also indicated that they will sign a lease and we just haven't been able to contact them in the last day in order to get that done before today's hearing. So we would ask that we would be able to reserve the right to submit the additional leases within one week, if we could do that, and those people be dismissed from the application. Otherwise, all the individuals who have now signed leases that were originally on the forced pooling application that I have just indicated we would request that they be dismissed from the forced pooling application also since they have now signed leases.

Mr. Wampler

Any objection from the Board members for a week extension for that? We will grant a week's extension for you to submit the additional information.

Ms. McClanahan

Thank you, is there any reason, do you want us to go through the list of the individuals who are on the forced pooling application that need to stay on and those that would come off as a result of those tracts being leased?

Dr. Whisonant

I think so.

Ms. McClanahan

O.k., starting with Mattie Ratliff Duncan, she has signed a lease so she would be dismissed; Mona Cole has signed a lease and would be dismissed, Nancy Jane Cole has signed a lease and would be dismissed, Shirley Cole Fuqua is the one we are waiting on a lease from, James W. Burress has signed and would be dismissed, H. A. Street and Edith Street have both signed a lease, Judge Combs has promised to sign a lease, Rebecca Cooper's lease is in the mail from Hurley, John Robert Mullins starting with number nine through 15, those people all remain unleased. That is the only housekeeping matter that we need to take care of. I am not sure that there is anyone here to object on the EH-9 and if there isn't then, unless the Board desires that we produce additional evidence we would just request that under Virginia Code 45.1-304.C that the Board enter an order based on the facts and relief that we have requested in our application without a fact finding proceeding. I

will be glad to produce any additional evidence if you require it.

Mr. Wampler

Are there any other parties in the room that wish to speak to well EH-9? If there is no one else that wishes to make... I am sorry?

Mr. Finucane

Can we have just a moment.

Mr. Wampler

Sure

Mr. Dickinson

Yes, my name is Eugene Dickinson, I am an attorney representing Ashland Exploration, Inc. We have not appeared in response to the notice heretofore, we have not submitted formal objection to the establishment of the unit in EH-9, however, it is unclear from the notice sent us whether or not we are proceeding under 45.1-301 and 302 or 45.1-321. If this is a proceeding under the provisions of 45.1-301 and 302, I submit that the proper procedure in this case would be to consider all of the proposals for EH-9, EH-10 and EH-15 together because 301 provides for the establishment of drilling units in an entire gas pool whereas the provisions of Section 45.1-321 apply only to the forced pooling I presume, or the pooling of interest within a unit sought to be established by itself and because the proposed unit, the unit they have proposed to establish in connection with well EH-9 may impact on the drilling units to be established in connection with EH-10 and EH-15 we submit that it all should be considered together.

Ms. McClanahan

If I may respond. Ashland Exploration, Inc. does not have any standing to object to the EH-9. They are not a well operator within the definition of the Statute and, therefore, don't have any standing to make any objections with regard to the EH-9 under the Statutes regardless of whether 301 or 302 apply or whether 320, 321 and 322 apply. Under either Statute, either notice provision, they do not fall under a well operator or a gas operator as they are defined. The notice provisions are different for both statutes but Ashland doesn't fit under either one.

Mr. Dickinson

I submit I am not necessarily appearing as an objector, I am just as an interested party in EH-9 or EH-10 and EH-15. The decision in EH-9 may very well affect what is done in EH-10 and EH-15 cases particularly if attempting to proceed under 45.1-301.

Mr. Wampler The announcement, and I will ask the Oil and Gas Inspector to clarify the notice, of the hearing was for forced pooling.

Mr. Fulmer Yes

Mr. Wampler That is how the notice has taken place. Is that correct?

Mr. Fulmer Yes

Mr. Wampler That is how the request came to this Board, forced pooling application.

Mr. Dickinson Ashland was notified of the hearing in EH-9 whether or not the Statute requires it or not. The problem is, before you can force pool one has to establish a unit. There is no unit in any of these cases previously been established. So I submit the hearing must be to establish units.

Ms. McClanahan It has been the practice of the Board in all of the past applications that have been filed, they have all been filed as forced pooling applications and the Board has entered numerous orders establishing drilling units at the same time as forced pooling was accomplished. So the Board has set the precedent for establishing the drilling units at the same time the forced pooling hearings were had and I can list the occasions on which that happened, if you need specific examples.

Mr. Dickinson At this point in time the Board is acting under a new and modified Statute. It is not even clear from the notice what Statute we are appearing under. There is some conflict evidently between 45.1-321 and .301 in the establishment of units.

Mr. Wampler How do you see that conflict sir? What conflict?

Mr. Dickinson In 45.1-301 the provision is to define the pool which is being drained within whatever geographical area and to establish draining units, either permanent or provisional draining units, in which wells can be drilled and drain the entire pool. 45.1-321 it provides only for the establishment of an individual unit, presumably as a result of voluntary pooling or what have you, and to establish forced pooling in that one unit.

Mr. Wampler The Board considers this hearing to encompass 321 as well as 301 and 302.

Mr. Dickinson

Then I submit that forced pooling cannot be accomplished in the absence of a finding by the Board that, in any of these situations, a finding by the Board among other things that a drilling permit has previously been refused on one of the tracts making up the unit that is 45.1-321.D.2. These objections apply not only to EH-9 but to EH-10 and EH-15.

Ms. McClanahan

I would note that with regard to the applications in the establishment of a drilling unit was not specifically requested in the pooling application but was also established by the Board are both situations where the Statutes had not changed on this particular matter and those were Penn Virginia Resources Corporation application for well number 8836 and the order was entered March 16, 1989, and Edwards & Harding Petroleum Company well EH-8 order entered May 2, 1989. With regard to the Division's I certainly think there is a conflict between 301 and 302 and also 320, 321 and 322 and I submit that that happened as a result of the legislature on the jurisdictional wells and when they took out jurisdictional wells out of the first part then what happened was a conflict ended up in 321 and 322 in connection with the 301 and 302 forced pooling situation. It is true what Ashland says about 322 and that is it appears that 321 and 322 only apply for forced pooling when a coal owner has objected to the location of the well. That is inconsistent with the beginning of 45.1-320.iii because under that section it says we would be before you when the permit has been issued conditioned upon a Conservation Board decision. However, the findings of fact you have to make under 322 would require you to get coal owner approval and also to find that a permit had been denied by the Oil and Gas Inspector. That hasn't happened, neither of those things have happened in this situation. So it would be impossible for you to make those findings of fact under 322 to issue a decision. In addition, the Department of Mines, Minerals & Energy submitted a decision brief to the Virginia Coal and Energy Commission on July 29th of this year and they also indicated that their interpretation as to the Board's jurisdiction was that you do not have jurisdiction in the coalfields under 320, 321 and 322 except when petitioned to create drilling units in cases when a coal owner has objected to a well location. I have a copy of portions of that brief if you would like those. I

would like to submit that as part of the record today as Edwards & Harding Exhibit 1.

Mr. Dickinson

But a brief is not legal precedent it is just one sides contention. If we do proceed in today's hearing under 301 and 302, if you read the statute particularly 302 literally, the precedent required in order to force pool units has been previously established. Now, again it is very possible that we do that in today's hearing. But I submit that if we proceed under 301 to establish units that we have to consider what is the total pool being involved and that you establish provisional units for the entire pool being drained by a group of wells either previously drilled or which will be drilled in the future and not confined to individual isolated units created in an ad hoc basis which won't necessarily provide for the economic, the eventual economic and efficient recovery of all of the gas in the pool so that the correlative rights of all owners within the entire pool are protected. We intend to present evidence in connection with the application on EH-10 and EH-15 that shows the extent of the pool. We will give you a suggestion for creating units in connection with already existing wells and wells which we know are going to be proposed by the applicants here which will give you some basis to look at the overall pool picture and determine whether or not you can protect the rights of all owners in the area in pooling any one of these individual units. I am really suggesting that you hold in abeyance a filing of a ruling on EH-9 until the completion of the hearing on all the applications.

Mr. Wampler

Do you intend to present evidence showing that the well EH-9 is part of the unit?

Mr. Dickinson

Yes, it would show, it would show a proposed plan for establishing drilling units in the entire pool in this area. It may very well be affected that the final unit established in EH-10 may affect the particular unit described in the application in EH-9. I think it is your duty under 301 to establish drilling units not only on an ad hoc basis as an application is drilled to create an individual unit but you have a preliminary duty to have considered an application to establish units for the entire pool which would be drained. Which will protect the correlative rights of all owners within the defined pool. I submit that a defined pool can be larger than the area to be drained by one, two,

three or four individual wells. So all I am asking is you hold your final decision or any action on EH-9 until you hear all the evidence in EH-10 and EH-15. We do have notice in EH-9 whether we are required to be given notice or not.

Ms. McClanahan

Regardless of whether Ashland Exploration received notice it does not give them the legal basis of standing to object in the EH-9 hearing.

Mr. Dickinson

Well we certainly probably have standing in the fact that we are interested in the establishment of drilling units for the entire pool. We have standing from that standpoint. Because our rights ultimately would be affected if the final units established for the pool would not allow us to have our rights in EH-10, EH-15 and any other proposed wells in the entire pool drilled affect future rights. We certainly have a right to participate in the establishment of drilling units for the entire pool if any of our acreage is anywhere in that pool.

Mr. Wampler

Mr. Fulmer do you have anything to add on well EH-9?

Mr. Fulmer

The only thing I would like to enter on the record was that a formal objection, this is for clarification of the record, that a formal objection was placed by Mattie Ratliff Duncan by letter from their representing lawyer, Frederick Rowlett of Abingdon and later withdrawn by waiver received at the Division of Gas and Oil on August 31. Subsequently I think testimony indicated that Edwards & Harding said they had leased the party but as far as the matter of record I would like to place that in record. One of the things on this issue, Mr. Chairman, that I would like to bring up is the fact that the arguments given so far and I would like the Board to take this under consideration, was that the changes that were made subsequent the judicial change and so forth, dealing with whether pooling and spacing can be done in the coalfields is subject of interpretation and I would consider that to be an attorney general's matter as far as determining whether the Board has standing rights to set spacing in the coalfields. That is all I have Mr. Chairman. I just wanted to put that out for consideration.

Mr. Dickinson

Ashland has no objection to the Board setting spacing in a proceeding to establish drilling units

within a pool. Because, after all, the whole idea of the Board applying its expertise to the establishment of such drilling units within a pool is that they will allow wells to be drilled in such spacing which will most efficiently recover the mineral in place. That could be in some cases in tight formations perhaps 200' apart, that is an exaggeration, but it might in some other formations it might take spacing to 3000' and still accomplish efficient recovery of all of the minerals of the oil and gas in place. We have no quarrel with the Board's right to establish spacing, but we do insist that as owners of acreage within the entire pool which we feel is going to be drained, that we have a say so in the establishment of any ad hoc drilling unit that is set up on an ad hoc basis before the Board has had a look at the most efficient configuration for establishment of units for the entire pool. All we are asking is that you delay any decision on any one of these individual wells until you have heard all of the evidence presented here today on these three.

Mr. Bunn

Mr. Dickinson, do you have information to prove otherwise the most efficient way of doing this?

Mr. Dickinson

We have some testimony by expert witness on what we think would be the most efficient basis. There are existing wells in the pool. I think the drainage area of those wells which are in close proximity to the proposed wells, at least some of the wells in this application, will affect the shape of the drilling units and will affect other matters in connection with the establishment and configuration of the units themselves. I think you will see from our testimony, we have maps that will show existing wells, proposed wells, what would be the theoretical draining average based on different well spacing. We will have some testimony that shows from our experience that 1250' which is radius a circle 1250' radius isn't necessarily the most sufficient size for a unit. Our testimony indicates, based upon our drilling history that a 3000' spacing is the most efficient and economical and does recover the maximum amount of oil and gas that can be recovered from the ground. It something for you to look at and consider and also to look at what will happen if you establish the units as proposed in circles. There is certain acreage left out belonging both Ashland Exploration and to other unknown parties, maybe are or are not parties of this hearing. I think your duty is to

see that the owners of all of the acreage in a pool receive their fair share of the money received from the sell of the oil and gas recovered. Otherwise the correlative rights are not protected. I think if you will wait until the testimony is presented you will have maybe a better idea of what I am talking about. It is hard to describe without seeing it on paper.

Mr. Wampler

We don't intend to make a decision today anyway without hearing all of the testimony. We will hold that in abeyance. I would ask that any testimony regarding EH-9 be clarified in any future discussion of these other wells as we move to those. That you specifically clarify how this relates to this hearing on EH-9. We will hold the record open.

Mr. Dickinson

It will become apparent. That will be designated on exhibits that we intend to give.

Mr. Wampler

By holding the record open, it should not be construed to jeopardize standing or any consideration of standing on each individual well. Is there any further discussion on well EH-9.

Ms. McClanahan

I would simply state that the Board has set a drilling unit for the EH-8 in this same pool and that is some precedent that the Board has set in the past in this particular pool. Secondly I would move to strike any comments by Ashland Exploration, Inc., in this hearing on the EH-9 and any comments they make in future hearings on the 10 and 15 because as I have indicated before I don't believe they have standing in this particular hearing. However if the Board is not going to make a decision about Ashland's standing in the EH-9 then I think probably we need to submit evidence on the EH-9 at this time even though there aren't any objections. I think that would be the best way to handle it if that is o.k. with you.

Mr. Wampler

I think that is fine. I think that is the way we would like to proceed is to get all the evidence on the wells as we go. Also as to if you more information as to why they do not have standing and if you have information as to why you think you do have standing, that would be the time to bring it out to the Board.

Mr. Dickinson

As I stated, Ms. McClanahan has stated for the record that 45.1-301 applies and anyone and one can

extrapolate from the object of being accomplished by application of Section 301 is to establish drilling units for an entire pool of gas and to the extent that we have property within that pool of gas we have standing to object to the creation of any drilling unit or all of the drilling units which this Board is charged by Statute to establish in a pool. In other words our standing comes not from ownership of property within the individual unit sought to be established under 301 but because of our ownership of acreage in the pool which is sought to be divided into drilling units.

Mr. Wampler

I understand that. Ms. McClanahan if you would like to proceed.

Ms. McClanahan

If there are no objections I would prefer rather than us putting on evidence with regard to the leased and unleased owners if there are no objections to that I will just have that entered as I submitted it rather than having our landman testify. I think that will be o.k.

Mr. Wampler

We have accepted that.

Ms. McClanahan

O.k. I would like to call Mr. Mike Edwards who is the president of Edwards & Harding.

Mr. Edwards was sworn in

Ms. McClanahan

If there are no objections we would like to submit that the application be made a part of the record. Mr. Edwards did you prepare the forced pooling application that was submitted for EH-9?

Mr. Edwards

Yes I did.

Ms. McClanahan

What size drilling unit was requested in this particular application?

Mr. Edwards

The size unit in the EH-9 is 107.86 acres.

Ms. McClanahan

Does the plat attached to the application filed by Edwards & Harding indicate the acreage to be embraced within the unit?

Mr. Edwards

Yes it does.

Ms. McClanahan

And does the plat attached to the pooling application filed indicate the shape of the acreage embraced within the unit?

Mr. Edwards Yes it does.

Ms. McClanahan Does the plat attached to the pooling application filed indicate the location of the EH-9 well within the unit?

Mr. Edwards Yes it does.

Ms. McClanahan Does this drilling unit embrace two or more separately owned tracts?

Mr. Edwards That is correct.

Ms. McClanahan Have any objections to the well work permit application been filed by coal owners or operators?

Mr. Edwards No ma'am.

Ms. McClanahan Does your application formalize a request that the Board pool the interest of the well operators in the drilling unit designated on the plat entitled well location map for EH-9?

Mr. Edwards Yes that is true.

Ms. McClanahan And does your request include a request that the Board designate the unit as it shown on the well location map for EH-9?

Mr. Edwards That is correct.

Ms. McClanahan Who have you requested to be designated as the well operator for the unit?

Mr. Edwards Edwards & Harding Petroleum Company

Ms. McClanahan Has a drilling permit been previously refused to Edwards & Harding on any of the tracts which make up this unit?

Mr. Edwards No ma'am

Ms. McClanahan That is all I have for Mr. Edwards.

Mr. Wampler Any questions for the Board members? O.k.

Ms. McClanahan I would like to call Mr. Tom Lincoln.

Mr. Lincoln was sworn in

Ms. McClanahan Mr. Lincoln could you please state your full name for the record?

Mr. Lincoln Yes, it is Tom Lincoln.

Ms. McClanahan And your address?

Mr. Lincoln 3310 Pine Timbers Drive, Johnson City, Tennessee

Ms. McClanahan And what is your profession?

Mr. Lincoln Petroleum Engineer

Ms. McClanahan Do you have any licenses?

Mr. Lincoln No

Ms. McClanahan You are employed by whom?

Mr. Lincoln Edwards & Harding Petroleum Company

Ms. McClanahan Your position with Edwards & Harding?

Mr. Lincoln I am their operations manager.

Ms. McClanahan What are your responsibilities and duties as operations manager?

Mr. Lincoln I am responsible for their drilling, completion and production engineering activities.

Ms. McClanahan What is your educational background?

Mr. Lincoln I hold a bachelors of science degree in petroleum and natural gas engineering from Penn State.

Ms. McClanahan What is your employment history?

Mr. Lincoln I have worked for 18 years, approximately 18 years, in the oil and gas industry. The last seven years of which I have spent in the Appalachian Basin. Five of those years were as chief engineer and operations manager for Equitable Resources. During those five years we drilled approximately 300 wells in Virginia and adjacent properties in Eastern Kentucky. Prior to that I was the manager of engineering and operations for Ashatola Production Company with operations in Pennsylvania and West Virginia. Preceding that were 11 years with Chevron Oil Company where I held a number of reservoir, drilling and production positions working both domestically in various locations in the United States and also internationally in Europe and the Middle East.

Ms. McClanahan Are you a member of any professional associations?

Mr. Lincoln Yes, I am a member of the Society of Petroleum Engineers, Virginia Oil & Gas Association and the Kentucky Oil & Gas Association.

Ms. McClanahan Have you ever been qualified as an expert witness?

Mr. Lincoln Yes I have.

Ms. McClanahan Where were you qualified as an expert witness?

Mr. Lincoln I have testified in unitization hearings before the Louisiana State Mineral Board while I was with Chevron.

Ms. McClanahan Mr. Lincoln can you describe for us the surface topography of the tracts that are underlain by the formations to be produced in the area of the EH-9 as it is proposed?

Mr. Lincoln The area in the EH-9, the topography in the EH-9 vicinity is very hilly. Part of it has been strip-mined. I would describe as rough terrain.

Ms. McClanahan What well spacing is presently being proposed for this formation?

Mr. Lincoln We believe that the reserves at our proposed location can be efficiently and economically recovered utilizing an approximate 2500' well pattern.

Ms. McClanahan Will oil or gas be produced from the well you plan to drill on EH-9?

Mr. Lincoln We would anticipate gas.

Ms. McClanahan How did you reach your conclusion that an approximate 1250' spacing would be appropriate for the EH-9?

Mr. Lincoln 1250' radius?

Ms. McClanahan Right

Mr. Lincoln Well there are several reasons why we feel that the 2500' spacing between wells is appropriate. First we reviewed electric logs, production history's and completion and report data that was available at the Division of Gas and Oil Office in Abingdon on a number of wells in Buchanan and Dickenson Counties.

From that review we concluded that there is a reasonable correlation between volumetric reserves on a 2500' spacing and the decline curve reserves. Secondly the current industry practice of spacing on a 2500' pattern by active operators in the area, including Ashland Exploration, Inc., supports this pattern. Lastly to conform with the statutory notification requirements within a 1250' radius of a proposed location.

Ms. McClanahan

Have you proposed an exact 2500' spacing in this area called the EH-1?

Mr. Lincoln

They are 2500' more or less.

Ms. McClanahan

Why are they not an exact 2500' spacing?

Mr. Lincoln

We have had to make some modifications to 2500' to deal with coal company considerations primarily and also surface owners.

Ms. McClanahan

Have you calculated decline curves and volumetric gas in place reserve numbers for wells in the Appalachian Basin?

Mr. Lincoln

Yes

Ms. McClanahan

What is your experience in the Appalachian Basin?

Mr. Lincoln

Particularly with this formation I have been involved with the drilling and engineering studies on approximately 150 wells in the Berea formation.

Ms. McClanahan

What is the target formation for the EH-9?

Mr. Lincoln

Well the target is the Devonian Shell but the primary objective is the Berea. Secondary objectives will be the Big Lime and five or six other shallower formations which are present from time to time.

Ms. McClanahan

I don't have any other questions of Mr. Lincoln.

Mr. Wampler

Any questions from members of the Board? Mr. Whisonant.

Mr. Whisonant

I would like to clarify one thing. The primary objective is the Berea?

Mr. Lincoln

Yes sir.

Mr. Whisonant You can't hear. Let me start over. I just want to clarify the difference between what you mean by target being the Devonian Shale but the primary objective is the Berea and the secondary objective are other formations. I am not sure of the distinction.

Mr. Lincoln Certainly, I believe that the permit application lists the target for the deepest formation as the Devonian Shale underlying the Berea and that is the deepest possible objective we would have but our primary objective that we are drilling for is the Berea formation and secondary objectives are zones such as the Big Lime, Weir, Ravencliff, Maxon, Salt Sands which may be present and may be gas productive in any given location.

Mr. Whisonant So you are going into the Devonian Shale to test to take a look?

Mr. Lincoln We will go as deep as the Devonian Shale. Yes that is correct.

Mr. Whisonant O.k.

Mr. Dickinson May I cross-examine? I still claim standing under 301 and as such I think that I have the right to cross-examine.

Ms. McClanahan I would object.

Mr. Wampler Mr. Dickinson I am defer a decision on your request at this time until I ask a clarifying question. Ms. McClanahan, is there a request before this Board to establish a pool under EH-9?

Ms. McClanahan There is a request before this Board to establish a unit and pool the interests within the unit as shown on the plat attached to the EH-9 application. The Board in the past has established units in this very same pool for the EH-8 for example without establishing units for an entire pool. So we are requesting that the Board enter a similar order in accordance with the 8.

Mr. Wampler How do you plan to present to us a request to establish the unit? In otherwords, what we have before us is an application for forced pooling which deals with who you have leased and who you haven't leased. We have no application before this Board to establish a unit or set up forced pooling.

Ms. McClanahan

We would submit that as before the Board has entered orders establishing drilling units and also force pooling the interests in those drilling units when it was necessary to force pool interests on applications exactly like that one on the Penn Virginia and on the Edwards & Harding #8 and we will be glad to file an amendment to the application if that is necessary to establish the drilling unit. However, we would simply state the Board has rendered decisions on establishing drilling units as well as force pooling interests in those units at the same hearing at the same time on that exact application form.

Mr. Wampler

I am going to go ahead and permit cross examination. We will reserve the right to make a ruling on the standing issue, but I am going to go ahead and permit cross-examination.

Mr. Dickinson

Mr. Lincoln, the actual spacing you propose between EH-9 and EH-10 is 2142.75', is that correct?

Mr. Lincoln

Yes that is correct.

Mr. Dickinson

Subject to checking my mathematics, that is 85.8% of the ideal 2500' spacing which you have testified as the ideal distance between wells, is that correct?

Mr. Lincoln

I don't know about the exact percentage but you are right that is less than the 2500' we talked about as being the theoretically what we would like to do.

Mr. Dickinson

The total acreage in the unit area is how much?

Mr. Lincoln

107.86 acres

Mr. Dickinson

If you were to establish a unit with a 1200' radius which would be half of the ideal 2500' spacing, what would the acreage be?

Mr. Lincoln

If it was 1250' it would be approximately 112.7.

Mr. Dickinson

Only three acres different where there is a 300 plus foot difference in the radius?

Mr. Lincoln

Could you say that again please?

Mr. Dickinson

We have a circular unit, essentially circular, with a radius of one half of 2142, 1076' that should

give you the approximate acreage in the, what would the approximate acreage be?

Mr. Lincoln

One minute please.

Ms. McClanahan

If I may the person who calculated and planimetered this acreage within the unit, if those are the questions then we have the person who calculated those here. It is not Mr. Lincoln.

Mr. Dickinson

I would like to ask those two questions what the difference in acreage would be between a circular unit 1250' radius and half of 2142. That is all I want to ask.

Mr. Wampler

At this point in time before we get into that I would contend this Board doesn't have a proposal before it to establish a unit. You are taking the application as a proposal to establish a unit, I presume.

Mr. Dickinson

Yes, it has not been previously established.

Mr. Wampler

But we have not had submitted to us a proposal to establish a unit on the EH-9.

Mr. Dickinson

And they can't pool the interest until a unit has been established. You can't force pool until you know what the unit is. So you either have to establish a unit in this hearing and then pool the interests in it and treat it as an application under 301 or under 321. Now if you treat it as one under 321 you absolutely based upon the evidence presented you are absolutely prohibited from issuing the application because the undisputed evidence is that no drilling permit has been previously refused on one of the tracts making up the unit. D.1 of Section 321 says you shall not grant an application to establish a unit unless you find affirmatively that a drilling permit has previously been refused on one of the tracts making up the unit. So if you are going to do it at all in this hearing you have to proceed under 301 which means you have to establish units for the pool.

Mr. Wampler

I think we understand your contention, we are certainly not necessarily agreeing with you.

Ms. McClanahan

I think what the Board has done in the past is, if I may speak, to this is force pool all the interests within the spacing presumptions that are listed in the statute without actually establishing

a unit but allowing the unit based on spacing as submitted in the force pooling. That is the way the Board has interpreted that in the past.

Mr. Dickinson

That is not what the statute says Ms. McClanahan it says you shall establish units which must efficiently and economically allow for the recovery of the gas within a pool. That is the Board's duty under 301.

Mr. Wampler

Let me ask a question. When we get into wells EH-10 and 15, are you prepared to, the Inspector and this is just general discussion this is not moving to EH-10 and 15 just yet, but the Inspector has ordered that Ashland has standing at his informal fact finding hearing decision and has presented that and we will ask him to present that to the Board. Are you prepared to present to the Board how you propose to establish a unit and pooling and spacing for those two wells?

Ms. McClanahan

Our EH-10 and EH-15 applications are similar to the EH-9 we filed. Is that what you are asking me?

Mr. Wampler

Right, and are you prepared to go into detail about why we should grant your application as presented?

Ms. McClanahan

Do you mean with regard to geologic data?

Mr. Wampler

Yes

Ms. McClanahan

Specific geologic data, reserve calculations?

Mr. Wampler

Yes

Ms. McClanahan

Yes sir.

Mr. Wampler

O.k. do you have that data for EH-9?

Ms. McClanahan

Yes sir we do.

Mr. Wampler

Lets defer EH-9 at the present time and move to 10 and 15 for the hearing and we will come back and allow you to make your arguments for 9 being no different than 10 and 15.

Mr. Dickinson

Yes, what we intend to do in connection with 10 for instance is we will establish the one group of evidence and let it apply in connection with the entire application to establish drilling units within a pool. Because I think that is what this hearing is all about. Or at least a group of three

units and I think if we can show that there is a larger pool that you are under obligations to establish drilling units within that pool.

Mr. Wampler

The hearing will continue for discussions on wells EH-10 and EH-15. I will ask that since there was an informal fact finding hearing conducted by the Inspector I will ask Tom Fulmer to summarize for the Board that hearing and the order of the Inspector and we will incorporate that as part of the record.

Ms. McClanahan

I apologize, could you repeat that Mr. Chairman?

Mr. Wampler

Yes I said that as we move to continue the hearing on wells EH 10 and 15 and since there was an informal fact finding hearing conducted by the Inspector that the Board is going to ask the Inspector to present to the Board and include as part of that record the Inspector's decision and order.

Ms. McClanahan

We are still just deferring the EH-9 until a later time?

Mr. Wampler

Deferring the EH-9 we are not closing the record at all. We are just deferring anything on EH-9 until we discuss 10 and 15.

Mr. Fulmer

Thank you Mr. Chairman, under Section 45.1-315 and 316 of the Code of Virginia I had an informal fact finding hearing on September 1, 1989 at 10 a.m. in the Division's office to hear arguments and testimony by the objectors Ashland Exploration, Inc. and Lon B. Rogers to proposed well work applications EH-10 and EH-15. The hearing was conducted under Section 9-6.14 11 for informal fact finding hearings. The order that I issued in this case was, "therefore after review of testimony and arguments taken before the Inspector at the September 1, 1989 informal fact finding hearing, the Inspector finds that the subject matter before him on this date is not within the authority or jurisdiction granted to the Inspector under the Virginia Oil and Gas Act. That such jurisdiction is vested in the Oil and Gas Conservation Board. It is therefore ordered that Ashland Exploration, Inc. and Lon B. Rogers have standing to appear before the Oil and Gas Conservation Board concerning the proposed well work applications EH-10 and EH-15 of Edwards & Harding Petroleum Company. It is also ordered that Edwards & Harding

- Mr. Dickinson At this point that isn't what has been applied for so technically I could object to the continuance of the hearing at this time because we haven't been notified for an order establishing a unit. I will object.
- Mr. Bunn On what grounds are you objecting again?
- Mr. Dickinson We haven't been notified they are seeking to unitize the area outlined in their applications. As far as I know there is no previous order ever entered by this Board that establishes this 1250' in 10 and 15 application as a unit. You can't pool interests until there is a unit established.
- Mr. Bunn Under what rights do you feel like you have an objection to this?
- Mr. Dickinson We are a well operator within the definition of the definition section under 65 we are the well operator under lease on acreage included within this 1250' circle. I also appear here under written authorization from Mr. Lon Rogers or the trust, his son-in-law is a trustee of his interest who is the royalty owner of this tract. We object..
- Mr. Bunn As a well operator.
- Mr. Dickinson Mr. Rogers is a royalty owner and Ashland Exploration, Inc. as a well operator. So there is no question that we have standing in this hearing in the 10 and 15 because the acreage owned by Ashland Exploration Inc. is within the circle shown on the application of the acreage ownership which is sought to be pooled in a non-existing unit. We have had no notice of an application to create a unit. There has never been one. We don't have a unit.
- Mr. Wampler You don't consider part of the record where Inspector Fulmer said that...
- Mr. Dickinson Mr. Chairman I submit he has a right to notify us as a person having interest in the proceeding. But in no case, there has been no application to establish units within a pool. There has been no application to establish individual units in 9, 10 or 11. I presume number 9, I don't have a copy of it, does not specifically pray for relief in the area of establishing a unit of which the interests

are sought to be pooled. There has never been a unit established.

Mr. Wampler

I refer you to the last page of testimony. Mr. Fulmer says, "The decision will be issued probably mailed on Wednesday of next week. I am sure everybody is aware of the September 7th hearing. At this time I am so inclined that I will follow the guidelines under 314, 45.1-314 and issue the permit conditioned upon the establishment of drilling units. Is there anything else that either party would like to state."

Mr. Dickinson

That is fine the permit was issued subject to the establishment that they cannot produce the well until a unit has been established. But they have not submitted an application to establish a unit. They very simply haven't. If you will read the petitions in the relief sought you will not find any prayer requesting the establishment of a unit. They request the pooling of interests within the circle shown on the application but they don't request that this Board formerly establish drilling units in that configuration.

Mr. Wampler

I am doing this discussion for pure clarification. Your objection is for any discussion establishing a drilling unit today?

Mr. Dickinson

Yes and if that is the case then we can't even talk about force pooling the interests because there is no unit to force pool the interests. To define the interests which are sought to be force pooled. I think they need to submit an amended application which seeks the relief of establishing units and give proper notice of the units they expect to establish. We really do not have notice of what unit they expect to establish here.

Ms. McClanahan

We would object to his statement that they don't have notice based on the Chairman's reading of the transcript. That they were given notice. In addition all of the Board's decisions over the past several years and certainly in the last year have been clearly, forced pooling decisions have only been in the last year, but all of those decisions have clearly been made on forced pooling applications and we force pooled the interest shown on the plat either under 322 or 302.

Mr. Dickinson

Ms. McClanahan, I simply submit that there is no description of a unit so that we can determine what

acreage is sought to be force pooled. Where is your description in your application. It is insufficient and incomplete.

Ms. McClanahan There is a description of the unit on the plat that is attached to the application.

Mr. Dickinson No, you have a circle drawn.

Ms. McClanahan In addition the acreage in the unit is listed in paragraph 2.2 of all three applications, EH-9, EH-10 and EH-15.

Mr. Dickinson You designated number of acres but where are the meets and bounds description of the unit you seek to establish?

Ms. McClanahan I don't believe there is any regulation which requires meets and bounds.

Mr. Dickinson This is an insufficient description and you have not even asked for the relief for a unit to be established. We are mislead coming into this hearing.

Mr. Wampler Lets just cut off discussion on this right now. I am going to call a ten minute recess and the Board will consider what is before us at the present time and decide where and how to go forward from here. We are back on record. The hearing will come to order. We are back on record Mr. Dickinson your request has been considered by the Board and we have decided to continue with the hearing. We believe that you have been noticed by the informal fact finding hearing by the Inspector's statement that the request to this Board to get to the force pooling request would encompass the establishment of the unit. I am going to ask Ms. McClanahan to make a presentation to the Board but we would like for you to begin by calling whom ever you need to establish what your planned pool would be. We would like to have that on record first. It will be open for question and cross-examination.

Mr. Dickinson Let me just say for the record Mr. Fulmer's decision was only issued this morning and delivered to me before the hearing. Secondly the hearing...

Mr. Wampler Excuse me, if I said decision I meant to say transcript and of course that occurred the day you had the informal hearing.

Mr. Dickinson I submit that this application was made before that hearing was held. It is an incomplete application.

Mr. Wampler We understand your contention.

Mr. Dickinson And the fact that an inspector says that the hearing is going to encompass something he is a different entity from this Board. It doesn't mean that the party making application complies with the law and gives proper notice of what is going to be considered in the hearing before this Board. He is not in the business of giving notice for this Board of an application that is incomplete.

Mr. Wampler We understand your objection and we overrule the objection. Ms. McClanahan if you would like to go ahead.

Ms. McClanahan I would just like to state in connection with that that paragraph D the pooling application, Ashland Exploration has admitted they received a copy of that and both for the 10 and 15, paragraphs 2.1 and 2.2 specifically indicate that the proposed plan of development and operation is in a proposed drilling unit described in paragraph 2.2 and on exhibit A. We then indicate that applicant has proposed to commence such plan and development and operation of such unit by well under such plan and the lands involved herein so as to produce oil and gas from such well and paragraph 2.2 applicant proposes to establish a unit for production of oil and gas from the base of the Devonian shale to the surface consisting of _____ acres for each different and then we indicate the acreages on each tract that are to be included in the unit and actually make the statement that the proposal is for the establishment of a unit for production of oil and gas. So the force pooling application itself, although it is named the relief sought indicated says pooling the paragraphs under number 2 allegation of fact all indicate that the relief sought is a proposed drilling unit as it is described on the exhibit. I just wanted to state that for the record. With regard to the EH-10 we also, as I stated before for the EH-9, we have additional leased interests that we need to clarify at this time.

Mr. Wampler O.k proceed

Ms. McClanahan If there aren't any objections rather than have a representative of the company I will just again state the new lease interests.

Mr. Wampler Please clarify for each well. Anytime you or any of you talk about a well distinguish for us which well you are talking about 9, 10 and 15. We have deferred 9 and we are on 10 and 15.

Ms. McClanahan Can we just do it by the EH-10?

Mr. Wampler That is fine.

Ms. McClanahan Looking at exhibit B to EH-10 force pooling application number 2 Mona Cole has now been leased, 3 Nancy Jane Cole has been leased, Shirley Cole Fuqua is in the same category and that is she is at the beach and will be back and has promised that she will sign, James W. Burress has now signed, H. A. Street and Edith Street have also signed, Judge Combs has indicated that he will sign and we just haven't been able to get in touch with him the last day and Rebecca Cooper her lease was put in the mail box yesterday in Hurley. We haven't seen that. Again we would request that those individuals who have now leased that I have listed for you be dismissed from the force pooling and that Judge Combs and his mother and Rebecca Cooper and Ms. Fuqua those we would request a week to submit the leases once we get them to the Board.

Mr. Wampler It is granted.

Ms. McClanahan For the EH-15, I would prefer to do these separately if we can do the EH-10 and then have the EH-15.

Mr. Wampler That is what we would like to do.

Ms. McClanahan I would like to state one objection for the record and that it is our opinion that Lon Rogers would not have standing before this Board as a well operator or a gas operator regardless of whether the Board chooses to enter an order pursuant to the 319 et sec or the 320 et sec or the 3301 et sec statute because the definition section under 45.1-288 indicates that once the property is leased then Ashland Exploration would be the proper well operator or gas operator before the Board in this particular hearing. Pursuant to you have indicated you want us to provide data to you with regard to the pool is that correct Mr. Chairman?

Mr. Wampler Yes

Ms. McClanahan Could I have approximately five minutes with my client at this time.

Mr. Wampler Sure. We will now reconvene the hearing and I will ask Ms. McClanahan to make a presentation to the Board regarding Well EH-10.

Ms. McClanahan I would like to call Mr. Mike Edwards, President of Edwards & Harding (previously sworn in). First I would like to state my objection for the record to the hearing of the 9, 10 and 15 together. I believe they are separately proposed units and separately proposed pooling applications and I would object to any hearing of those together. Mr. Edwards has testified in the EH-9 hearing which we have begun so I won't go through his background for the parties here for that purpose.

Mr. Dickinson Ms. McClanahan first let me state my answers to your objection. Since the Board has ordered that this be treated as an application under 301 and because that statute encompasses and requires the determination of the entire pool within a certain area and the division of that pool in the establishment of drilling units within that pool, I think the hearing of the three applications together for wells that the evidence will show will be in the pool necessarily has to be heard together. I don't think they can be held separately unless we are proceeding under 321 and again if they are proceeding under 321 this Board is prohibited by expressed language of the statute from establishing a unit because no previous well permit application has been denied. So I think it is proper for the Board to consider these together.

Ms. McClanahan Mr. Edwards, did you prepare the force pooling and request for unit designation application that was submitted to the Oil & Gas Conservation Board?

Mr. Edwards Yes I did.

Ms. McClanahan What unit size was requested in this application?

Mr. Edwards 109.12 acres

Ms. McClanahan Does the plat attached to the pooling application filed by Edwards & Harding indicate the acreage to be embraced within the unit?

Mr. Edwards Yes it does.

Ms. McClanahan Does the plat attached to the application indicate the shape of the acreage embraced within the unit?

Mr. Edwards That is correct.

Ms. McClanahan Does the plat attached and filed by Edwards & Harding indicate the location where the EH-10 will be drilled on the unit?

Mr. Edwards Yes

Ms. McClanahan Does this drilling unit drain two or more separately owned tracts?

Mr. Edwards Yes it does

Ms. McClanahan Do you have any objections to the well work permit application as filed by coal owners or operators?

Mr. Edwards No ma'am

Ms. McClanahan Are you requesting that the Board designate the unit as you have requested in your application and show on the well location map for EH-10?

Mr. Edwards Yes

Ms. McClanahan Have you requested that the Board authorize the drilling and operation of EH-10 for the production of oil and gas from the pooled acreage as shown on the EH-10 well location map?

Mr. Edwards Yes we have

Ms. McClanahan Who have requested that the Board designate as an operator for this particular unit?

Mr. Edwards We have requested that Edwards & Harding Petroleum Company be designated as operator.

Ms. McClanahan Has a drilling permit been previously refused to Edwards & Harding on any of the tracts which make up this unit?

Mr. Edwards No

Ms. McClanahan Mr. Edwards do you have the AFE's proposed for this particular well and unit operation?

Mr. Edwards Yes I do

Ms. McClanahan We would submit this as evidence, applicants exhibit 3.

Ms. Davis The coal and energy exhibit and then you wanted to submit the application as part of the record and I'm calling it two.

Ms. McClanahan The application this is applicants exhibit three, exhibit one to the EH-10 and we would also request that applicant's exhibit four be the permit application that was filed not the permit application the pooling and unit designation. I would just state for the record and I don't think Ashland will object. These AFE's have been presented to Ashland prior to this date.

Mr. Wampler I would designate that as Exhibit 1 for EH-10 we will keep them separate by well.

Mr. Dickinson At this time we are not going to object either to the authenticity to the AFE and we acknowledge it has been submitted to Ashland Exploration, Inc. we may in private contest the reasonable to that with the operator but that is another matter.

Ms. McClanahan We have submitted that for the Board's own help in submitting the order under the regulations I believe it is 2.04.g that information will be helpful to the Board in order to determine how to force pool the other interests in the unit. At this time I would request Mr. Tom Lincoln unless Mr. Dickinson has any questions of Mr. Edwards.

Mr. Dickinson What is the distance between EH-10 and the well faintly shown on the Lon Rogers lease slightly above and to the left of EH-10? What is the distance between those two wells? Could we designate on the exhibit a well designated as A on the exhibit?

Mr. Edwards The file number is BU-39

Mr. Bunn Is this the scale of this map?

Mr. Edwards One inch equals 400'

Mr. Wampler The proposed units that are on the Board, is that presented by Edwards & Harding?

Ms. McClanahan Yes we have prepared that and we can enter it as our exhibit 3 for EH-10 and 3 for 9 and 1 for EH-15.

Mr. Bunn 2550'

Mr. Dickinson That well designated as BU-39 on exhibit 3 which I previously referred to as well designated as A Fulmer has designated it as BU-39.

Mr. Fulmer 23 I believe

Mr. Wampler 23 or 39?

Mr. Edwards It is BU-39.

Mr. Fulmer I thought he said 23.

Mr. Dickinson Now sir you are a geologist, I believe. Is that correct?

Mr. Edwards Yes sir

Mr. Dickinson And you are familiar with drainage characteristics of gas to well locations of the unit, the dynamics of underground drainage to well location? Or are you?

Mr. Edwards Could you repeat the question?

Mr. Dickinson I guess what I want to ask you Mr. Edwards, in theory at least isn't it true that assuming that BU-39 is now producing and EH-10 is later drilled and starts producing, in theory gas that is actually in place underground will flow to both wells?

Ms. McClanahan Excuse me Mr. Chairman, I would object to these questions being directed at our President and Chief Executive Officer as we have a petroleum engineer as well as a geophysicist that we plan to put on testimony and cross-examination is suppose to be limited to those matters brought up on direct. None of these issues have been direct examination.

Mr. Dickinson I will defer my questions on that. That is all I wanted to ask.

Mr. Wampler Any questions of the Board members? Call your next witness.

Ms. McClanahan I looked at that regulation. It is 2.03.c instead of 2.04 just for the record to clarify that. Mr. Lincoln has also testified before the Board and we aren't going to go through his background unless the Board would request it.

Ms. McClanahan With regard to the E-log and production histories you reviewed, have you reviewed any of those that are on file at the Oil and Gas Inspector's office?

Mr. Lincoln Yes we have.

Ms. McClanahan Could you explain in a little more detail some of the wells you considered in this particular area in order to calculate the volumetric gas in place?

Mr. Lincoln Yes, we looked at a number of wells. In particular we looked at some of the most recently drilled wells in the area. Seven of these wells which happen to belong to Ashland Exploration, Inc. and we did look at the logs, completion reports and production histories on these seven wells in quite some detail.

Ms. McClanahan Do you have other experience in the Appalachian Basin?

Mr. Lincoln Yes

Ms. McClanahan Have you supervised and managed any of these operations for other wells in the Appalachian Basin?

Mr. Lincoln Yes as stated previously specifically I have experience with having drilled, completed and produced 150 wells in the Berea formation with Equitable Resources.

Ms. McClanahan And that is the same formation that is the target formation for this well, is that correct?

Mr. Lincoln Essentially, yes

Ms. McClanahan What kind of units were used for those 150 wells?

Mr. Dickinson Objection, unless you show the characteristics of the reservoir to places where those were located are similar to these other than being in the same formation.

Ms. McClanahan Could you state for the Board where these wells were located?

Mr. Lincoln The 150 wells were located in the Nora field which is in Dickenson County which would be located to the west of the subject locations here.

Ms. McClanahan I think we all know for the record where is Dickenson County in relation to Buchanan County?

Mr. Lincoln West and...

Ms. McClanahan Directly adjacent to Buchanan County?

Mr. Lincoln Yes

Ms. McClanahan With regard to the Ashland wells that you studied, what is your conclusion after looking at the decline curves and the production histories as well as the E-logs that are on record at the Oil and Gas Inspector's Office for the ashland wells?

Mr. Lincoln On the seven Ashland wells that were reviewed, the gas in place was calculated on a 1250' radius or a 2500' spacing. Our conclusion in looking at these seven wells would be that in six of the seven wells that the decline curve estimate of reserves would be less than or approximately the same as the volumetric gas in place. That is on six of the seven wells. There was one well where it went the other way and there was considerably more gas produced than what we could show within the 1250' radius.

Ms. McClanahan With regard to those seven wells, could we state for the record the numbers of those wells that you have looked at?

Mr. Lincoln The numbers would be BU-217, BU-236, BU-209, BU-210, BU-221, BU-230 and BU-219.

Ms. McClanahan With regard to the BU-230, what is the distance to the nearest well as Ashland has drilled it?

Mr. Lincoln The distance from BU-230 to BU-226 is approximately 1900'.

Ms. McClanahan And Ashland drilled the BU-226, who owns that well?

Mr. Lincoln Berea Oil & Gas.

Ms. McClanahan And Ashland drilled the BU-230 1900' from the BU-226 after Berea had drilled its well, is that correct?

Mr. Lincoln Yes

Ms. McClanahan What about the BU-236? What is the distance to the nearest well on it?

Mr. Lincoln The distance from BU-236 to BU-61 is 2600'.

Ms. McClanahan And it is drilled next to what well? The closest well to the BU-236?

Mr. Lincoln BU-61.

Ms. McClanahan And whose well is it?

Mr. Lincoln That belongs to Ashland.

Ms. McClanahan For the BU-219, what is the closest well to it?

Mr. Lincoln The closest well to BU-219 is BU-149.

Ms. McClanahan And it is how far?

Mr. Lincoln 2250'

Ms. McClanahan And the BU-149 is operated by what company?

Mr. Lincoln Ashland Exploration

Ms. McClanahan For the BU-210, how close is it to the nearest well?

Mr. Lincoln BU-210 is 2500' from BU-180.

Ms. McClanahan Who owns the BU-180?

Mr. Lincoln Ashland Exploration

Ms. McClanahan For the BU-209 how close is the nearest well?

Mr. Lincoln The nearest well to BU-209 is BU-53 at 2650'.

Ms. McClanahan Who operates the BU-53?

Mr. Lincoln Ashland Exploration

Ms. McClanahan The BU-221 that Ashland drilled, what is the distance to the nearest well?

Mr. Lincoln The distance is 2550' to BU-73.

Ms. McClanahan Who operates it?

Mr. Lincoln Ashland Exploration

Ms. McClanahan For the BU-217 how close is it to the nearest well?

Mr. Lincoln 2650' from BU-70.

Ms. McClanahan Who owns the BU-70?

Mr. Lincoln Ashland Exploration

Ms. McClanahan For the BU-239 which is an additional well that was studied I believe, is that correct?

Mr. Lincoln Yes

Ms. McClanahan How far is it to the nearest well?

Mr. Lincoln 2100' from BU-225.

Ms. McClanahan Who operates that well?

Mr. Lincoln Berea Oil and Gas

Ms. McClanahan And the BU-239 was drilled after Berea drilled its BU-225?

Mr. Lincoln Yes

Ms. McClanahan With regard to this, why did you determine to use these seven, or eight Ashland wells to study volumetric reserves for the wells that you plan to drill in this area?

Mr. Lincoln These wells were picked because they were the most recently drilled wells of Ashland's in the area near our proposed locations and the quality of the log data and other production history was thought to be better for analysis.

Ms. McClanahan Are they drilled to the same formation?

Mr. Lincoln Yes

Ms. McClanahan As far as distance from the area that you plan to drill in and the formation that you are drilling in, approximately how far are these wells from your formation?

Mr. Lincoln They would be located some three to four miles away.

Ms. McClanahan Have you calculated an average distance to the nearest well after using these eight?

Mr. Lincoln Yes the average distance to the nearest well for all eight is approximately 2400'.

Mr. Dickinson What was that number?

Mr. Dickinson Could I ask one question about exhibit four? Are these to scale?

Ms. McClanahan The copy is not to scale, no. Mr. Lincoln, after having analyzed the most recent Ashland wells that have been drilled in this same area, what were your conclusions about the location and unit size of the EH-10 well?

Mr. Lincoln Since the decline curve projections were approximately the same or less than the gas in place we felt that this data indicated a reasonable correlation justification for unit size with 2500' spacing. This data along with data on other wells by analogy in neighboring areas was used to come to the conclusion that the 2500' spacing would be appropriate.

Ms. McClanahan You have been unable to use an exact 2500' spacing in this area. Could you explain to the Board why that has been used?

Mr. Lincoln Certainly, we have at least two coal operators with differing mining types, longwall mining and room and pillar located under these wells. That has basically caused us to modify what we would like to do with a uniform 2500' spacing, modify that to meet their concerns. We have basically spent over a year in working with those coal companies to compromise on these locations.

Ms. McClanahan We don't have any other calculations to admit at this particular time. I don't have any other questions for Mr. Lincoln either at this time. If Mr. Dickinson would like to cross examine.

Mr. Wampler I will entertain questions from the Board first then we will go to cross examination. Go ahead Bob.

Mr. Whisonant Mr. Lincoln you have said these Ashland wells are three or four miles away.

Mr. Lincoln Yes approximately

Mr. Whisonant From the wells we are discussing or the well we are discussing. Are they in the same pool? Are they on the same geologic structure? How do these relate geologically?

Mr. Lincoln I think in the area we are drilling we would have difficulty in saying categorically that they are in

the same pool. Since we have only drilled one well at this time. I think this is complicated by the fact that we are, although we are looking for one primary reservoir, that we are also hoping to find additional reservoirs at these locations. Until we actually drill the wells we would not know if the primary objective would be even commercial. We might have to fall back to a secondary objective to make a completion in the well. So I would answer your question that we do not know if this is the same pool as other wells near it.

Mr. Whisonant

Have you drawn a structure contour map that would indicate they are separate or the same?

Ms. McClanahan

Is it o.k. for if somebody else in the company knows that, Mr. Lincoln has only been with the company for only a few months, so if somebody else in the company know, I know that is not the formal procedure but I think that if perhaps if he doesn't actually, hasn't actually done that that someone else in the company has? You can say if you don't know.

Mr. Lincoln

I don't really know specifically on that question. Perhaps another member of our company could answer that better.

Mr. Whisonant

Is there anybody here that could answer that for me?

Mr. Edwards

We have made structural maps of the area however accumulation of this type in this part of Appalachia are not primarily structurally controlled. We don't feel that that is a controlling factor in the accumulation of gas in this area.

Mr. Whisonant

What about the lithologic characteristics, the rock characteristics that you see in these Ashland wells versus what you have found. You have got a well already close. Do the producers look very similar? Are they widely different? Tell us about that.

Mr. Edwards

The formations that were producing that we plan to encounter in these units are the same formations, more or less, as those in the Ashland wells that we cited in our studies. Now without detail core analysis and without more intensive drilling in the area it is difficult to say if they are exactly the same rock units or if they are exactly the same facies. There is a similarity but whether or not

they are the exact same lithologic or stratigraphic units I can't say at this time.

Mr. Whisonant

Let me ask you this. Is the Berea about the same thickness in both areas?

Mr. Edwards

The thickness in the Berea varies in this area from as little as 20' to as much as 70'. We anticipate encountering approximately 50'. There are similarities between the formations in the areas that we are planning to drill and those in the Ashland areas.

Mr. Whisonant

So you are basing your spacing request essentially on the seven Ashland wells. Or mostly on the seven Ashland wells is that right?

Mr. Lincoln

That is certainly part of the justification. But I am taking that even further to such areas as the high density that you see over in the Nora field where there are approximately 300 wells producing on a fairly uniform spacing pattern.

Mr. Whisonant

How close is the Nora field to your area?

Mr. Fulmer

I would submit it should be 15-20 miles as the crow flies.

Mr. Lincoln

That sounds about right.

Mr. Whisonant

Are there other producing wells that you could have looked at also, in addition to the Ashland cluster?

Mr. Lincoln

I would say, given enough time, there would also be some other wells to that would be more of a comprehensive study, yes. But we looked at, within this time period, we looked at quite a number of wells.

Mr. Edwards

There is a problem of data quality also. Due to the fact that there is a bimodal distribution in when the wells were drilled in this area. Approximately half of the wells were drilled in the 1940's and early 1950's when modern porosity logs, which are one of the main tools we use to determine volumetric reserves, weren't in existence or weren't used in this area. Most of the old wells in the field were not logged with density logs and many of them with induction logs. There is also a problem of data quality with older wells. In the fact that prior to 1984 the Commonwealth, the Inspector's office did not require well production

to be reported on a well by well basis. Production data for wells drilled prior to 1984, the quality is very uneven due to comingling of production data. Large numbers of wells on a lease by lease basis.

Mr. Whisonant

Let me ask you this, you do have a producer in the field already. Is that right?

Mr. Lincoln

We do not have the well in production.

Mr. Whisonant

You do not have it in production, have you tested it?

Mr. Lincoln

Yes we have tested it.

Mr. Whisonant

Is it your opinion that its characteristics pretty much match those of the Ashland wells so far?

Mr. Lincoln

From what, as far as getting one point of open flow, you would be able to find a number of wells that would be higher or lower. So all I can say is you can find wells that have the same open flow characteristics in neighboring areas. But there is a wide range of open flows.

Mr. Whisonant

Thank you Mr. Chairman.

Mr. Wampler

Mr. Dickinson, do you have questions?

Mr. Dickinson

I wonder if we could take about five minutes to look at these exhibits. We just saw them a minute ago.

Mr. Wampler

Certainly, recess for five minutes.

Mr. Dickinson

Mr. Lincoln you testified that Ashland's well BU-230 is 1900' from Berea Oil & Gas well 59?

Mr. Finucane

That is not right, 226.

Mr. Dickinson

Well 226

Mr. Lincoln

That is correct.

Mr. Dickinson

From your examination of the map did you conclude that that well was drilled to protect Ashland's lease obligations to offset wells on adjoining tracts?

Mr. Lincoln

No I did not conclude that.

Mr. Dickinson All right, is that a possibility that that was done?

Mr. Lincoln That may be

Mr. Dickinson Likewise with Ashland's well BU-239 which is 2100' from another Berea Oil & Gas well, could that also have been drilled solely for the purpose of protecting or complying with its lease obligations?

Mr. Lincoln That could be but I don't know that.

Mr. Dickinson And even those two wells which are the shortest distances are approximately the same distance as the well spacing you propose between well number EH-10 and E15 and EH-9 and EH-11. Is that correct?

Mr. Lincoln It is in the same, yes the same ballpark.

Mr. Dickinson Those distances are only some 85% of the distance of which you testified as the ideal well average of 2500'. Is that correct?

Mr. Lincoln That would seem to be about 85%.

Mr. Dickinson More or less

Mr. Lincoln More or less, right.

Mr. Dickinson Would there be much difference in the recovery going the other direction? Would there be much difference in the ultimate recovery if the well spacing distance were if 2500' were 85% of the ideal well spacing distance which would be something higher? Perhaps around 3000'.

Mr. Lincoln Would you repeat that?

Mr. Dickinson Strike the question, I will restate it. Assuming the ideal spacing distance were closer than 3000', in that case 2500' would be 83 to 85 percent of that distance would it not?

Mr. Lincoln O.k.

Mr. Dickinson Would there be much difference in the ultimate recovery from wells spaced at 28000-2900' as opposed to 25000' spacing?

Ms. McClanahan Would you have him repeat the question please.

Mr. Dickinson All right, if the well spacing allowed or granted or permitted in case of wells EH-10 and EH-15 were 2800' rather than what you are asking for, would there be much difference in the ultimate recovery from the well?

Mr. Lincoln I don't believe so.

Mr. Dickinson So I have to conclude from that that units could be larger than what you propose and still efficiently drain all the gas. Is that correct?

Mr. Lincoln I said if the spacing were larger that it wouldn't be necessarily an increase in ultimate recovery. So regardless of what you are asking if the spacing was greater would you not still recover the same reserves, am I correct?

Mr. Dickinson I understand your answer. Whatever the spacing you are going to recover the same amount of reserves assuming you are not offset by some well closer.

Mr. Lincoln I am not sure that I said that.

Mr. Dickinson I am not stating it correctly. Is it as efficient to drill a well, wells in this field or this pool on spacing of 3000' as spacing of 2100' which you propose?

Mr. Lincoln You said is it as efficient...

Mr. Dickinson Yes

Mr. Lincoln To drill on 3,000'?

Mr. Dickinson In efficient I don't mean the efficiency of the drilling operation itself. I mean the efficiency in ultimate recovery of reserves that underlie or exist in the pool.

Mr. Lincoln Going back to the 2500' spacing there we concluded that the decline curve reserve estimate are either less than or approximately equal to the volumetric reserves in a 1250' radius. So that appears to be to us what within the economic life of the well that that is a reasonable spacing assumption.

Mr. Dickinson The 2500' spacing is reasonable.

Mr. Lincoln Right

Mr. Dickinson Is 2100' reasonable?

Mr. Lincoln It is not ideal. Obviously there are many cases here where spacing is less than 2500' for a variety of reasons. Probably the biggest one being surface owner and coal company problems. So I would say that 2100' is not the optimum.

Mr. Dickinson Did you in addition to the specific spacing distances on the eight wells which you testified also consider spacing distances on Ashland's lease which was larger than 2500'.

Mr. Lincoln I did not those. I think generally those tended to be older wells and we did have problems with trying to use that data due to quality.

Mr. Dickinson Would you take exhibit four please which is the map you submitted showing the distances. Look specifically at well number BU-236. Can you find that?

Mr. Lincoln Yes

Mr. Dickinson Do you find the distance you testified between that well and well number 61 to be 2500'?

Mr. Lincoln Yes

Mr. Dickinson Did you measure the distance between 236 and the other offset wells to 236?

Mr. Lincoln No

Mr. Dickinson Do they appear to be greater than 2500'?

Mr. Lincoln Yes they would.

Mr. Dickinson Did you study the log of well 236?

Mr. Lincoln Yes

Mr. Dickinson Did you study the log of the offset well surrounding it?

Mr. Lincoln We looked at some of those logs where we thought the quality was represented.

Mr. Dickinson When you looked at the log on well 236 did you find the pressure to be approximately half of the pressure shown in the other surrounding wells?

Mr. Lincoln Not necessarily half of any of those surrounding wells, no.

Mr. Dickinson Did you find the well pressure to be somewhat less than other well logs studied that were recently drilled?

Mr. Lincoln Yes it is somewhat lower than other wells.

Mr. Dickinson Could that lower pressure be the result of drainage from the offset wells surrounding well 236?

Mr. Lincoln That would be one possible explanation. The other possibility there would be the unknowns during the measurements of any of these pressures as to what kind of fluid column, if any, might be in the well bore. So it is hard for me to make a comment on that.

Mr. Dickinson That is all

Ms. McClanahan Could you please state for the Board the similarities in the information that you have on the EH-8 which Edwards & Harding has previously drilled and the Ashland's wells that we have presented to the Board today?

Mr. Lincoln As we stated before, there are some similarities between EH-8 and the other eight Ashland wells. The target formation is the same. The depths are similar and we see similarities in the shut-in pressure. We have registered approximately 890 lbs. shut-in pressure after approximately one month after drilling our well.

Ms. McClanahan Are the wells in the same field?

Mr. Lincoln Generally speaking yes, they are in the same field as defined by operators in this area.

Ms. McClanahan With regard to the seven Ashland wells you have submitted data on today, those seven wells were chosen, actually there were eight wells, but you didn't have production data I believe you indicated on one but of those eight wells, were those chosen because those are the only eight wells in the Garden and Grundy Districts that Ashland has drilled since 1982?

Mr. Lincoln Yes, to the best of our knowledge that is correct.

Ms. McClanahan So any other wells that are listed on that map and to which Mr. Dickinson has referred were all drilled prior to 1982. Is that correct?

Mr. Lincoln Yes that is my understanding.

Ms. McClanahan And you didn't leave any wells out of your analyses that Ashland has drilled since 1982 that were in those two districts. Is that right?

Mr. Lincoln Not that I know of. And the eighth well you spoke of it only had one month of production so we didn't work with that.

Ms. McClanahan Mr. Dickinson indicated that two of the seven wells that you do have calculations on were what he termed offset wells. The other five of the seven were all drilled next to Ashland wells. Is that correct?

Mr. Lincoln Yes that is correct.

Ms. McClanahan Could you state the similarities between the I believe you indicated there were more than 100 wells that you supervised and managed in the same formation in the Nora Field. Is that correct?

Mr. Lincoln Yes

Ms. McClanahan Of those could you state the similarities between the EH-8 and the Ashland wells you have looked at and those wells you have drilled in the Nora field.

Mr. Lincoln The main similarities between those wells which number approximately 300 wells in the Nora field would be the depth of the target formation which would be the Berea, the magnitude of the virgin rock pressure, and basically the same type of volumetric gas in place within a 2500' spacing, very similar.

Ms. McClanahan Those are all the questions I have of Mr. Lincoln at this time.

Mr. Wampler Any questions of the Board?

Mr. Whisonant I have one. You said a moment ago the Ashland wells you have been referring to when compared to EH-8 and EH-10 are in the same field as defined by operators in the area. What does that mean?

Mr. Lincoln I think that generally the area is referred to as the, one of the descriptions is the Keen Mountain Field. We are basically talking about the Berea formation. Whether that is, I think it is commonly

referred to as the Keen Mountain Gas Field. That is what I was referring to.

Mr. Whisonant Does that mean it is the same pool of gas in your opinion?

Mr. Lincoln Not necessarily.

Mr. Whisonant Do you have any maps which might show what the pool looks like in the area around EH-8, EH-10 and so on?

Mr. Lincoln As far as the area right around the EH-10, we have only drilled one well in there at this point. As far as a point we can measure. So it would be just supposition on our part without having drilled the wells as to whether they are in fact in the same, whether they are all in the same pool with each other or with other wells.

Mr. Whisonant You don't have any maps to show structure or isopac maps?

Mr. Lincoln We have structure maps.

Mr. Whisonant Are you drawing the gas as a continuous pool under some structural configuration that these wells are suppose to be tapping?

Mr. Lincoln We are hoping that in our area they are in the same formation. The gas is in the same formation. I am not sure if I have adequately answered your question.

Mr. Whisonant Mr. Chairman I am just trying to get at the shape of the pool. If it is continuous.

Mr. Edwards We don't feel like there is sufficient evidence at this time to make that determination. The drilling density throughout Garden and North and South Grundy Districts of Buchanan County is highly irregular. The quality of the geologic data that is available is also highly irregular due to as I previously mentioned to the old age of a number of wells. Approximately half of the wells are so old that they don't have modern logs which would permit accurate determination of the questions you are asking but there is large areas in this part of the county where there is big holes in the data base and we are pretty substantial interpolations and extrapolations of data are required. There is also pretty firm evidence of wide spread faulting in

this area which tends to segregate reservoirs. The Berea, if anyone such as Mr. Lincoln or any of the operators who have drilled a number of Berea wells know, it is a highly heterogeneous reservoirs. Actually probably a group of reservoirs or multiple sand bodies stacked on top of each other. It is very difficult over a large region to determine whether or not these are interconnected or not without having uniform data quality and close uniform well data. We are not trying to beg the question I just don't think there is sufficient evidence here. Another point we would like to make is the fact that this is a multiple reservoir field and that the economics of well drilling and development depend critically on encountering the shallower formations in the area and the shallow formations are notoriously heterogeneous in nature. They typically do not connect from one well to another and this is especially true if the wells are drilled on large spacing. Generally with shallower reservoirs the smaller the spacing the higher probability you have of encountering these irregular shallower reservoirs.

Mr. Whisonant

Let me go back and clarify what I am trying to ask. I just want to know if you believe the gas you have encountered in the Berea in the EH-8 which is there and you have tested and intend to produce. Do you believe that is the same gas that you are going to be encountering in EH-10 and you say that is your primary target. You intend to find it and produce it. Is it continuous. I am not talking about the region. I am talking about that immediate area?

Mr. Edwards

We certainly hope so. However, as I have stated before the Berea is highly heterogeneous. The porosity development in the Berea can vary substantially from one well location to another. We hope they are connected. We think they are but until we can drill and log them I don't know.

Ms. McClanahan

May I. Maybe I can help you. In your professional opinion, Mr. Lincoln, as a petroleum engineer in this area you would expect, do you expect the EH-8 and EH-10 are in the same formation and you would expect the gas to be produced from the same formation between the 8 and 10?

Mr. Lincoln

Yes

Ms. McClanahan Who are you employed by?

Mr. Swanson I am an independent contractor employed by Edwards & Harding Petroleum Company.

Ms. McClanahan What is your position at Edwards & Harding?

Mr. Swanson I am a landman, a land agent for that company securing leases.

Ms. McClanahan What is your education background Mr. Swanson?

Mr. Swanson I have a BA in business and economics from Emory & Henry College at Emory Virginia.

Ms. McClanahan Your employment history, could you state that please?

Mr. Swanson As it pertains to land work for petroleum land work I have had 4 1/2 years experience.

Ms. McClanahan Where has your experience been? In what basin?

Mr. Swanson All of it has been in Southwest Virginia and McDowell County West Virginia.

Ms. McClanahan In your past 4 1/2 years experience of obtaining leases in Southwest Virginia are you familiar with the fair market value for oil and gas leases in the unit area proposed for EH-10?

Mr. Swanson I am

Ms. McClanahan How many acres have you leased in Buchanan and Dickenson Counties in the last year?

Mr. Swanson Probably in the neighborhood of 1500 acres.

Ms. McClanahan What are the fair market values in terms of an oil and gas lease in this area?

Mr. Swanson Five dollars per acre and a 1/8 royalty.

Ms. McClanahan What would be the primary term?

Mr. Swanson We have been asking for a five year lease.

Ms. McClanahan With regard to the unleased owners that are listed on the EH-10 application and then as I amended them when we began this proceeding, have you contacted those landowners tried to contact them to obtain a lease?

Mr. Finucane

I have a bachelor of science degree in civil engineering from the University of Tennessee. My employment background consists of four years employed by Texaco, Inc. in petroleum engineering related matters in their natural gas field in Southern Louisiana and the last seven years I have worked for Ashland Exploration in production and reservoir engineering in their East Kentucky gas field and their Virginia gas field and West Virginia gas production.

Mr. Dickinson

Part of your duties or work experience do you have reason to study and understand the producing characteristics of wells particularly in the area of the proposed units at issue in this case?

Mr. Finucane

Yes I most certainly have.

Mr. Dickinson

As part of your duties do you do projected economic studies in order to determine whether or not it is feasible to drill wells and particularly have you done so in this area?

Mr. Finucane

I have.

Mr. Dickinson

In doing that what types of things do you consider?

Mr. Finucane

Well in this area the Berea formation is a primary is the only dependable produceible formation. The area is pretty well developed and understood. Our drilling in here has been primarily limited to in-field drilling. So it just becomes a matter of looking at the drainage areas that an in-field well will drain and the remaining gas within that area and determining a volume of gas to be recovered from the well.

Mr. Dickinson

In making those determinations, do you study past production history's of old wells, new wells, wells belonging to other parties.

Mr. Finucane

Primarily the reliable information I study is the behavior of Ashland's wells which constitute a majority of the wells in this field.

Mr. Dickinson

From your study of these wells, do you have an opinion or not as to whether the Berea formation underlying the Ashland wells and underlies the proposed wells at issue in this proceeding and the EH-8 which has been mentioned here are all part of the same geological gas pool?

Mr. Finucane

Yes, I am certain of that opinion based on first of all the wells that we have in here exhibit fairly uniform rock pressure. At least a continuum of that. Also we have a continuously productive well, one by one as you go north and south in this field and if there were some permeability barrier or failure of porosity that would separate the field into pools, we would probably have found it by drilling a dry hole. We have not done. So I think it is pretty clear. All the evidence indicates it is a continuous pool.

Mr. Dickinson

What is the approximate acreage contained in the unit proposed to be established around well number EH-10?

Mr. Finucane

As I understand it is something in the neighborhood of over 100 acres, 109.

Mr. Dickinson

Do you know the approximate drainage area of Ashland wells which you have studied in the area of this well in terms of acreage?

Mr. Finucane

Well, the acreage that is drained by the wells will vary according to the precise spacing with other wells. That is the spacing with offset wells determines the drainage area, since the wells are drilled close enough together such that no area remains undrained.

Mr. Dickinson

Ideally, should such wells be drilled at such distance from each other that all of the gas under all of the land or under all of the surface land yield gas so that the maximum amount of recoverable gas is ultimately recovered? In other words, should there be any holes left where a well cannot be economically placed?

Mr. Finucane

Well to answer your question, let me make a comment that may answer your question. Wells have to be spaced such that all the gas that is economically recoverable be recovered. Obviously to recover all of the gas you would have to have a well ever 50'. To recover all of the gas that is economically recoverable Ashland has determined an approximate well spacing of 3000' well to well is appropriate.

Mr. Dickinson

Have you studied all of the wells, most nearly all the wells that Ashland has drilled on its acreage lying north of the proposed units?

Mr. Finucane To one degree or another I have looked at all of them.

Mr. Dickinson Approximately how many wells does Ashland have?

Mr. Finucane Thirty odd

Mr. Dickinson Have you prepared a map or drawing for your own use which shows the drainage area of the wells or part of the wells lying directly north of the proposed unit?

Mr. Finucane I have

Mr. Dickinson Is this the map.

Mr. Finucane It wasn't prepared as an exhibit for this proceeding, but yes.

Mr. Dickinson I ask it to be marked as Ashland exhibit number one. Or AEI exhibit number 1. I don't have a copy of that.

Mr. Fulmer I will go make a copy of that.

Mr. Dickinson While he is making a copy I will go ahead and ask another question. You heard the testimony of Mr. Lincoln with regard to the distance between Ashland well BU-236 and BU-61, did you not?

Mr. Finucane I did

Mr. Dickinson Have you also studied the log from well number BU-236?

Mr. Finucane I have

Mr. Dickinson What were your findings when you studied that log?

Mr. Finucane For the record, what I have studied, I have studied all of the available information on this well. From examination of the log have determined that it wasn't completed in the Berea formation, it is similar to the Berea as best as it is known in the offset wells. From its production behavior and from most particularly the initial pressure taken when the well was completed, I determined that the well was approximately 40% depleted by the action of surrounding wells drilled previously.

- Mr. Dickinson And the surrounding previously drilled wells are those the five or six we referred to in our cross examination of Mr. Lincoln, are they not?
- Mr. Finucane That is correct.
- Mr. Dickinson Have you calculated the average distance between well BU-236 and all of the four or five surrounding wells?
- Mr. Finucane I have
- Mr. Dickinson What is that average distance?
- Mr. Finucane It is approximately 3600'.
- Mr. Dickinson And you state that even with that spacing distance at the time well 236 was drilled that at approximately 40% depletion had already occurred?
- Mr. Finucane That is correct.
- Mr. Dickinson What does that indicate to you in terms of what is the ideal spacing at least around that well?
- Mr. Finucane It indicates that the ideal spacing is in the neighborhood of 3000'. That is the determination that we have made that it is 3000'. The wells obviously have a capacity to drain gas from a much greater distance than that. You can show that they will drain, in the case of this well 2700' at least 2700' which is almost double the ...more than double the 1250' indicated by the proposed unit outlines.
- Mr. Dickinson The 1250' they indicate is only half the distance, it is only the radius of a proposed unit, is it not?
- Mr. Finucane Being the radius of a proposed unit, I presume it takes into account the ability of the wells to drain.
- Mr. Dickinson 1250' is half the distance of the 2500' ideal which Mr. Lincoln testified?
- Mr. Finucane That is correct.
- Mr. Dickinson In your opinion what is the ideal spacing?
- Mr. Finucane It is 3000' on a well to well basis.

- Mr. Dickinson Even though because of topographical features or the existence of coal mines, some wells may be closer and some be further away than that ideal spacing?
- Mr. Finucane That is a reasonable problem that everyone encounters that operates in this area. You are going to have to adjust your locations accordingly.
- Mr. Dickinson Given the spacing of all of Ashland's wells, lying north of EH-9, EH-10 and EH-15 as proposed, would you say that the average spacing target of an average spacing distance of 3000' per well has been essentially met?
- Mr. Finucane I would think so, yes.
- Mr. Dickinson All right, what has been your experience as far as production is concerned on recovery from the wells? Has it been economical?
- Mr. Finucane Yes, more, yes quite economical, economical at least.
- Mr. Dickinson In your experience upon the production and revenue history of the wells, have most of the recoverable hydrocarbons been economically and efficiently recovered?
- Mr. Finucane Yes
- Mr. Dickinson Have you prepared some exhibits, have you prepared some exhibits which propose some alternative suggestions to this Board for spacing which would maintain various spacing distances between wells?
- Mr. Finucane I have, or properly been prepared by Ashland Exploration for this hearing.
- Mr. Dickinson Would you mark this as Ashland exhibit number 2. Lets put them on the board. Mr. Finucane what does this series of circles on this drawing, would you tell the Board what those represent.
- Mr. Finucane These are 1250' diameter circles. This basically is the unitization program as outlined the same on this map. It is intended to be the same.
- Ms. McClanahan Before we get started, can I just make an objection to any alternative proposal that Ashland would submit and request that they state for the record

under what statute or regulation that they are submitting an alternative proposal.

Mr. Dickinson

We haven't seen no evidence of any evidence submitted by the applicant to establish units within the pool which both the applicant and our witness have testified exists at least as far as EH-8 and north as far as Ashland's well. So this is the primary evidence of what the configuration of the unit should be other than the three units proposed which are certainly under no stretch of the imagination cover the whole pool that is involved in this proceeding. So these are, at least extend a proposal for the units to be established in the pool to somewhere out in the pool further than the three wells purely under consideration at this point.

Mr. Wampler

Is the Board to consider this an objection to the proposed spacing and of course you are offering an alternative. Basically you are proven your point, I assume, that the proposed spacing is not adequate or accurate?

Mr. Dickinson

Yes, this particular exhibit Mr. Chairman, really shows what they are proposing with identical circles drilled outside other than the three wells which are under consideration here. But they show circles with essentially the same radius on out into the pool to show you an overall picture of what will happen in this case.

Mr. Wampler

We are going to go ahead and hear this objection for the record.

Mr. Dickinson

Now will you point out to the Board the location of the EH-10 unit as proposed, essentially proposed in this hearing?

Mr. Finucane

The EH-10 unit approximately as proposed, I would guarantee this to be precisely the same representation, but it is in essence what has been proposed by E&H is a circle centered around number 10 with the exception of the overlap area of number 9.

Mr. Dickinson

There is a circle that has a nine and a small circle inside which I presume represents the location of EH-9, is that correct?

Mr. Finucane

That represents location of EH-9, yes.

Mr. Dickinson Those two circles have a square side do they not?

Mr. Finucane They do.

Mr. Dickinson Is that because that square is located half the distance between nine and ten?

Mr. Finucane That is correct.

Mr. Dickinson Why do you put that square where it is? That straight line, I am sorry.

Mr. Finucane The presumption is that the wells will drain with the same efficiency and therefore there will be a point midway between them from which gas wells, actually there will be a tiny point of no flow from either side of that gas will flow to each respective well whichever is closer. The result of that you wind up with a line midway between the two wells and normal to a line connecting them.

Mr. Dickinson Likewise where existing wells and proposed wells are closer than 2500' spacing you get a straight line or would get a straight line in the units which might be created in that area, do you not?

Mr. Finucane Right that is given the presumption that the wells are equally able to attract gas which is maybe the only assumption you can make prior to actually haven drilled the wells.

Mr. Dickinson Now between the circle with the four written in it and number 10 those circles touch do they not or overlap slightly?

Mr. Finucane In Edwards & Harding representation they represent those two wells to be 2550' apart. In our representation they are shown to be 2450' apart.

Mr. Dickinson I am going to put a number five circle on the map.

Mr. Finucane Why don't you put a number one in there.

Mr. Dickinson All right, number one. What is that little stared circle in the middle represent?

Mr. Finucane That represents Ashland's Lon B. Rogers well #1.

Mr. Dickinson Is the circle drawn around that well have a 1250' radius?

Mr. Finucane It does

- Mr. Dickinson And the circle drawn around the little circle with the 15 also has a 1250' radius?
- Mr. Finucane That is correct.
- Mr. Dickinson According to the testimony presented by the applicant in this case, the ideal drainage average would be a circle with a 1250' diameter, is it not?
- Mr. Finucane That is what they said.
- Mr. Dickinson Then why is there in this situation a space where no circle is drawn between the circle with the number one in it and the number 15?
- Mr. Finucane Because in their proposed unit they have taken no, not taken into account the ability of the well to drain gas from more than 1250' from the location.
- Mr. Dickinson O.k. now in fact, in your opinion, does the gas that would be drained by the proposed well number 15 and the existing well number 1, would it actually drain about half way between those two wells?
- Mr. Finucane Yes
- Mr. Dickinson If a unit is created as proposed by the applicant then whoever is the owner of the oil and gas rights underlying these sections shown on the map with no circle drawn on it would not be compensated for his gas that is drained into number one of Ashland and number 15 of Edwards & Harding. Is that correct?
- Mr. Finucane That is correct.
- Mr. Dickinson All right, in your opinion, does that accomplish the statutory objectives of protecting the correlative rights of the owners of the properties between existing well number one and existing well number 15?
- Mr. Finucane I believe that serving their correlative rights implies that they are to be compensated for what is taken that belongs to them. I would say, therefore, it does not.
- Mr. Dickinson O.k. Now I will hand you another map which I will ask the recorder to mark as Ashland exhibit, which one is next, exhibit three. I refer you to exhibit which has been marked with A3EH-10, Ashland exhibit

three and ask you to explain what this map is suppose to represent.

Mr. Finucane

What this map shows, what this map shows is the various wells in the immediate area of proposed EH-10 with boundaries drawn around the drainage areas of those wells up to a maximum distance and I have used 2120' which is the center to corner of a 3000' square. Arguments are to be made that gas can be drained from further than that but for purposes of this hearing and the previous testimony I made about efficient spacing I have used that as the outer range limits of these wells.

Mr. Dickinson

Now you used the words 3000' square, do you mean two squares drawn with the common side half way between wells spaced at 3000'?

Mr. Finucane

That is correct, 1500' from each well.

Mr. Dickinson

And would units created on 3000' spacing or as close to that as possible to accommodate all the wells that are either existing or proposed, include all of the mineral rights underlying the units which are proposed and thus protect the correlative rights of the mineral owners in these wells?

Mr. Finucane

Yes, I believe that is correct if I understand your question.

Mr. Dickinson

In otherwords, with special regard to number 10 and number 15 which are the subject of this hearing, does the proposed acreage protect the mineral rights of all owners of mineral interests half way between in the case of proposed EH-10 and Ashland's well number BU-39 protect the mineral rights of all owners halfway between the two wells?

Mr. Finucane

It does

Mr. Dickinson

Is that likewise the case of all mineral right owners halfway between the proposed well 15 and Ashland's existing well number one?

Mr. Finucane

Yes it does

Mr. Dickinson

Does this also show proposed units for well number 8 and future proposed wells numbered EH-9 and EH-13, EH-11 and some unknown number proposed?

- Mr. Finucane Yes the map shows what similar logic, what units could be derived from those wells using logic similar to what has been presented on 10 and 15.
- Mr. Dickinson Does it show the configuration of the units as they must occur if we assume that each well will drain half the distance between an adjoining well using circles as the basic instrument of creating the unit which have a radius of 2120'.
- Mr. Finucane That is correct.
- Mr. Dickinson In actuality because of the closer spacing than 3000' you are going to end up with some irregular shape units, not circle units?
- Mr. Finucane Yes in the case of number 10 it is a polygon and in case of number 15 it would have several straight sides and a circular arch struck in a direction in which no well is now proposed to my knowledge.
- Mr. Dickinson In your opinion could a unitization of a pool which has been testified exists in this area, be accomplished by the creation of several circular units of only a 2500' radius and protect the correlative rights of all mineral owners within the pool?
- Mr. Finucane No clearly not.
- Mr. Dickinson Now even though you say the ideal spacing is 3000' you have actually used the spacing which either exists in existing wells or between existing or previously drilled wells and wells that locations of which have been given to you by Edwards & Harding previous to this hearing.
- Mr. Finucane Right the locations shown are the ones they have indicated within their drilling permit applications.
- Mr. Dickinson The units which you show as proposed units around EH-10 and EH-15 on Ashland exhibit three, would they in your opinion protect the correlative rights of all the mineral interest owners?
- Mr. Finucane Yes in my opinion.
- Mr. Dickinson That is all. Mr. Finucane, I refer you back to Ashland's exhibit number one and I see on that exhibit a series of irregular shaped drawings. Would you tell what those are?

- Mr. Finucane These irregular shaped drawings are the drainage patterns of these wells, of existing wells presuming they are I think a maximum, well it is just half the distance to the adjoining well and no case exceeding perhaps 2000' in the drainage.
- Mr. Dickinson Do you have, do you know the approximate acreage drained in each of those or as an average figure?
- Mr. Finucane You can see by looking at the map there are all different sizes depending on the precise spacing. In this case not going by Ashland or anyone else, any individual, so that, some of these wells are not Ashland wells, in any event you have a variety of spacing but in general these units probably range from 180 to 300 acres.
- Mr. Dickinson Much larger than the proposed drainage areas and the units to be created here of 109 acres.
- Mr. Finucane Yes considerably.
- Mr. Dickinson Do you think, in your opinion, a well in this area would drain more than 109 acres?
- Mr. Finucane I think it is plainly demonstrated by, as I previously referred to the detection of substantial drainage at 2500' which implies a drainage area for that well of well something rather larger than a 100 acres, needless to say.
- Mr. Dickinson Do you know of any voluntary units that have been created in the past between Ashland and third parties for the drilling of wells in a relatively close area to the proposed drilling units in this proceeding?
- Mr. Finucane Yes certainly, in this pool.
- Mr. Dickinson Do you have a copy of the pooling agreement in that?
- Mr. Finucane I do
- Mr. Dickinson Do you have it with you?
- Mr. Finucane If I can detect it among all this stack of papers, I do believe I have it.
- Mr. Dickinson Do you know the terms of that agreement? Who are the parties to that agreement?

Mr. Finucane The parties to this agreement are Ashland Exploration, Inc., Cabot Corporation, the Pittston Company and Georgia Pacific.

Mr. Dickinson Did they form a unit by this document which we will ask to be a later identified as Ashland exhibit number four to form a drilling unit for the purpose of drilling a single gas well?

Mr. Finucane For the drilling, development and operation of a single gas well, yes.

Mr. Dickinson What was the acreage embraced in that voluntary unit?

Mr. Finucane 242 acres

Ms. McClanahan Gentlemen we would object to the introduction of any evidence about other voluntary pooling agreements between Ashland and any other party.

Mr. Dickinson We only ask that it be introduced just for the purpose of the acreage that has been entered into voluntarily among parties. For that sole purpose.

Mr. Wampler Where are you heading with introducing that to us?

Mr. Dickinson Just want to ask that it be introduced as evidence merely for the purpose of showing the size of the unit that was voluntarily created among parties that own oil and gas interests for the purpose of drilling one well.

Mr. Wampler It wouldn't necessarily mean that would be a consistent unit or anything like that?

Mr. Dickinson No it just happens to show that we created a 200 and what ever the number was unit for the purpose of drilling that well.

Mr. Wampler How would it be, in your opinion, relevant to what you are trying to prove?

Mr. Dickinson I think you can deduce from the fact that these parties who all are producers or royalty owners in the area consider an equitable size of a draining unit to be 240 acres plus or minus. It is just supplemental to the testimony of Mr. Finucane that he thinks something over 200 acres is the probable efficient drainage area of a well. It may not give it any weight. I think it is admissible however. I think the essential admissibility is the issue it

is the question of whether you give it any weight or not.

Mr. Wampler

I understand. I think you have on record now that you have an agreement that shows 240 acres, I don't think we would need it introduced as an exhibit.

Ms. McClanahan

We object to your consideration.

Mr. Wampler

I understand

Mr. Dickinson

That is all the questions we have.

Mr. Wampler

Any questions from the Board?

Mr. Whisonant

I would like to ask one. Considering only the EH-10 well, in your opinion what is the best drainage area, the most likely drainage area. Forget the geometric arguments for just a moment. Mr. Lincoln has come up with a set of calculations that seem to indicate 1250 would be a reasonable radius. Are you saying those calculations are not accurate?

Mr. Finucane

The most efficient spacing of gas wells depends on only in part upon reservoir properties. It also depends obviously on the cost to drill and the price of gas and other considerations such as royalty ownership. The wells, these wells drilled in this pool have a demonstrated capacity to drain gas from I will say confidently from as far away as 4000' from the well bore. There really shouldn't be I don't really think there should be any substantial dispute of that. We have already shown it occurs thirty some hundred feet in my testimony. The most efficient spacing, as I say depends on a variety of other factors and my opinion and Ashland's actions, E&H's testimony notwithstanding, we have attempted to maintain 3000 acre spacing when other considerations didn't intervene. So then my opinion the best spacing would be 3000' between wells and the best unit would be would have would include all acreage within 2121 which is the corner of center to corner of a 3000' drainage pattern within 2121 feet of EH-10. As EH-10 is proposed and given this set of facts that are available here what that means is half the distance to all of proposed or existing wells is the ideal size and shape of the unit.

Mr. Dickinson

If I may sir as an additional answer to your question, we are dealing here with a situation where the Inspector has already granted a permits

to drill wells at these locations. So I think the Board's task then is to create units among those two wells which will be drilled and wells which already exist and future proposed wells as we know them which will allocate the economic or the money received from the sell of the gas from all of these wells equally to all of the owners who own mineral rights around these wells. This very thing here, this configuration, this odd looking thing but it does at least cover all of the acreage. And allocates money from the proposed wells to the mineral owners half the distance between existing offset or wells which it offsets and also over number nine and number eight. It is just a fair distribution of the money from the gas drained from the wells that are either going to be drilled or are already drilled. They are not ideal in accordance with his testimony because they are less than the spacing he recommends. But the fact is we are stuck with this spacing. We already have permits on proposed wells and the old wells are already drilled. So you have to allocate the units to give everybody part of the pot from the money that comes from the sell of the gas from these wells. You can't leave people out as these circles do.

Mr. Whisonant

I understand that. I guess I feel we are here to, you correct me if I am wrong Mr. Chairman, seems to me that we need to consider EH-10. We are considering EH-10. We are not trying to unitize an entire field. We are trying to answer the question what is the, actually we are trying to decide forced pooling request that has a unit of a certain size specified. That is all we are trying to do. I simply want to get at the question of what is wrong with 109 acre unit.

Mr. Finucane

Let me answer, what is wrong with a 109 acre unit is the fact that the well as a matter of fact, undisputed fact will drain gas from outside of that 1250' circle and that it will not be taken into account by the pooling of only those interests within the circle. I can't testify for E&H but I would be mightily amazed if they would actually testify that EH-10 will not drain any gas outside of that 1250' circle. In fact that have not really certainly by no means asserted that. In fact I think if I recall Mr. Lincoln's testimony, he agreed that our well that the depletion shown in our well could well, the lower pressure shown in our well drilled at a minimum of 25 or 27 hundred

feet from the nearest offset showed depletion and that he agreed that yes one reason for that is drainage from offset wells. One of the possible reasons. I think that if you form a unit with a 1250' radius you have ignored the rights of those people at 1251' and 1300' and 2000' for that matter.

Mr. Whisonant

Fine I just wanted to hear that clearly stated.

Mr. Finucane

O.k.

Mr. Whisonant

Thank you Mr. Chairman.

Mr. Wampler

How would you propose that the 1250' spacing that is in the law applies here?

Mr. Finucane

Well, the 1250' in the law and it gets us into this hearing but as far as reflecting the physical characteristics of this reservoir it is not related to it. It has no bearing on this particular reservoir. I don't know who in their wisdom came up with 1250' and I appreciate the fact that it has allowed us that 1250' has allowed us standing in this hearing but it is not related to the engineering or geology of this particular Berea sandstone formation in this field. It is not there is no connection between the two.

Mr. Dickinson

1250' is merely a presumption that any acreage within that 1250' circle is being drained by the proposed well.

Mr. Wampler

I understand

Mr. Dickinson

You have got property owners within that spacing but it doesn't necessarily mean, you all are the experts, you decide what is proper drainage for given wells.

Mr. Wampler

You know in the law it specifically, I would like to hear a comment on the fact that it says the Oil and Gas Conservation Board shall not grant an application to establish a unit nor approve any unit unless it finds that and then it talks about under three that the unit includes all acreage within 1250' of a well unless the gas operator and royalty owner of any excluded acreage have agreed to such exclusion etc.

Mr. Dickinson

There is over in 321 it says or all acreage within half the distance to the nearest gas well.

The nearest gas well is less than 2500' from the proposed well location, unless the operators have agreed to such exclusion. So you have a choice of either less than 1250 or all acreage within half the distance of a smaller radius.

Mr. Finucane

I don't want to quote the law to you but it starts off by we are talking about forming drilling units and serving correlative rights. I thin the 1250' is it is my presumption that the 1250' is just a distance within which operators and royalty owners are recognized. I can't dream that it would be written into the law defining drainage at 1250' because it certainly does not. In some pools 1250' will be greater than the reasonable drainage radius and in some pools, as in this one, it would be much less.

Mr. Dickinson

It seems to me and again I am commenting as a lawyer you are charged, we are dealing with established well locations and they are in fact less than 2500' apart, 1250' being the distance to the edge of the unit. They just are in fact. Your problem then becomes establishing a fair shaped drilling unit which lets everybody who owns gas rights within the, we assume the well goes, the gas goes both ways toward the wells that are drilled. That the people within those get there share. We shouldn't leave anybody out. You establish pure circles you are going to leave some acreage out. This illustration on exhibit two demonstrates that. I think you need to and you are charged in the very first section of the Code is established to protect the correlative rights of all parties who own oil and gas which will be drained by these wells. Standing alone EH-10 may drain up to 3000' but with the offset well it is not going to drain but half the distance to the nearest well. Whatever that distance is. Unless you include all the acreage in the unit, half the distance to the next well whether the spacing is 3000' or 2500 or 2100 you are still leaving somebody out. His gas is in fact being drained and he is not being paid for it is what it amounts to. Unitization is a matter of dividing up the pot, the money pot as much as anything else. There may be people who have unleased interests who are just completely left out. I am sorry to interrupt with a speech and almost testifying.

Mr. Whisonant Just one more. Mr. Lincoln, you still stand by your calculations and assessment of the drainage around that proposed well EH-10?

Mr. Lincoln Yes

Mr. Whisonant So we have got two engineers with long experience working with for oil companies telling this Board that EH-10 may in fact have different drainage areas. You have got one calculation and you guys have another.

Mr. Finucane If I may kind of respond to that a little bit. I have testified to what the drainage area of a well potentially is. I didn't hear Mr. Lincoln testify to that. He testified to what he considered economical well spacing. He did not testify, unless I am very badly mistaken and correct me if I am wrong, as to what the potential drainage, ability of the well to drain was. I don't think he did, correct me if I am wrong.

Mr. Dickinson In any case you are stuck with spacing of less than either figure. As a practical matter. You already have got permits to drill the two wells. They have been granted subject only to the establishment of the configuration of the unit. That is a fallacy of the procedure of Virginia that unless you follow the statute as it is really set up you establish units of a whole pool then you go in apply for the drilling permit within each unit previously established. That is a fallacy of having a well permit application granted, then that forces you people to form a unit around his determination of the well should be or actually he doesn't really have much choice in where to put the well it is the applicants determination of where the well should be. Then you all are stuck with merely rubber stamping and allocating the area around that well that is already proposed to be drilled. The procedures that are set up in the statute had been followed and you had established the pool for everybody then whoever wants to drill in that unit you had established for a pool then comes in and applies for a permit to drill then you can force pool all the interest in the units previously established. Unfortunately we are forced in here with existing, with a place you have got to drill the well and you have got to allocate the pot around it.

Mr. Starkey

I guess I have a problem trying to relate to Mr. Finucane's testimony. I can follow him as to gas is going to be drawn into a well from x number of feet 3,000 or whatever. But that doesn't mean anything does it if it isn't economical. What difference does it make how far the gas is drawn in there if it is only economical to take the gas within a smaller area.

Mr. Finucane

One well in the entire pool would be richly economical, highly profitable and as you continue to drill more wells in the pool you will reach a point in spacing where it is no longer economical. My argument is, my contention is that 2000' spacing which is what is being proposed 2150' which is what is being proposed by Edwards & Harding is, in fact, uneconomical is not an economical way to develop the reservoir.

Mr. Starkey

I didn't hear you say that.

Mr. Finucane

Pardon me

Mr. Starkey

I didn't hear you say anything about the economics.

Mr. Finucane

I am saying that. Let me in clarification, if I failed to state that let me so state that. Ashland has determined the closest spacing that we need to have 200 plus, 206 acres of drainage area to justify drilling and if you start drilling on lesser acreage than that it becomes uneconomical or less economically attractive. The optimum of point of economic attraction and to Ashland that is 3,000' well spacing, more or less.

Mr. Starkey

In this instance.

Mr. Finucane

In this instance what they are proposing what is in effect half of that. That is what they are proposing. We are proposing 206 and they are proposing 109 acres or 112 acres.

Mr. Starkey

Mr. Finucane if they are willing to take that economic risk, what is it to you.

Mr. Finucane

Because, because they are not taking that economic risk alone. They are force pooling Ashland into it and we either have to pony up the money or give them the gas is our two choices here.

Mr. Starkey

But they are taking the big risk aren't they.

Mr. Finucane

They are taking 70% of it. As I say, I don't know what and I repeatedly stated this, that is to Ashland I don't know what another man's economics are. I don't even know how I make it on my money much less somebody else's money. I am not commenting on their economics.

Mr. Starkey

I don't ask you to do that.

Mr. Finucane

Do you know what I am saying. I am just saying based on Ashland's economics, based on Ashland's consideration, based on Ashland's gas prices and so forth and Ashland's cost to drill, Ashland's cost to operate, we have determined that 3000' is an ideal spacing. Now they may make any number of calculations for any number of reasons of what they want to do. But Ashland states that for our purposes, 3000' or 200 acre drainage areas are more attractive than 100 acre drainage areas. I think you can tell by looking if you look at all the wells we have drilled you will find we don't rely having less than 200 acres of drainage and furthermore if you look at the four wells we will be proposing within the next 30 to 60 days you will see that they were drilled on 300 acre spacing, proposed on 200 acre spacing or 3000' well to well.

Mr. Starkey

Thank you sir. You made a good point I think about drawing circles and leaving spaces open. That is a good point given our charge to see that everybody gets their share but does that happen with Ashland? Don't you draw areas that leave open spaces to? Is it possible not to leave open spaces?

Mr. Finucane

Yes it is possible and not leave open spaces. If you look at the map that Gene put into evidence on the way apportioned the drainage the way we believe drainage is happening in the northern part of the pool. You can see they are irregular polygons and all the gas being drained. Of course in that case we have primarily one lessee so the issue does not arise. But we don't feel like we are leaving any gas undrained. No and the compensation is kind of uniform because basically I have got one lessee with some exceptions which we take care of internally with our lessors.

Mr. Wampler

I am going to allow the Oil & Gas Inspector to ask a couple of questions to help clarify the issue for the Board.

Mr. Fulmer

Mr. Finucane, looking at your exhibit where you have the polygons and so forth the determination of the positions of those wells, was that determined on any type of porosity permeability of this pool? We have got a so called pool laying out there that nobody has actually designated. I have got a bunch of wells setting out there but nobody has said where this pool is.

Mr. Finucane

O.k. I can tell you where the pool is. The pool is from for your purposes the West Virginia State line it actually continues on to the north of there and lays north and south and EH-8 is I think probably the southern most successful extension of it and it is there are wells to the south and east dry holes drilled to the Berea and on the western side of it to. So it is generally speaking it is defined pretty much by the wells that are drilled there except for around some of the edges are not defined. The southern limit of it is not necessarily defined. Basically what you have got going on there is you have an area through there where you have good porosity in the Berea and it tails out pretty badly on the side and we have defined it ourselves by drilling. Where it tails out on the west. We run out of lease on the east but other people have drilled dry holes over in that area that pretty much define, no we have defined it on the east to in several places.

Mr. Fulmer

This pool that you have identified here, is it a channel sand?

Mr. Finucane

I am not a geologist, I would not say what kind it is. It is a big reservoir of gas. I won't address the depositional process that it got there that it came here by. For all I know God put it there.

Mr. Fulmer

The only other thing, would Edwards & Harding wish to testify as to the geology of this area. I will leave that open Mr. Chairman, that is all I was trying to get at was to define this pool we have been talking about.

Mr. Wampler

How much of the spacing that Ashland has done now is driven by the lease that you have versus the other characteristics that go into normal determination of drilling spacing?

Mr. Finucane

It is not all determined by our lease. The number of wells we have in our lease is up to us primarily. What we have done and do all of these

regardless of lease terminology is protect our boundaries. That is when someone drills within a distance of what we consider a drainage radius of our boundary we try to offset it. Some of these cases, two of the wells that were in close spacing with wells that were mentioned earlier in testimony those were done in response to activity of Berea Oil and Gas. We have done that with various operators as well which we won't bother to name here.

Mr. Wampler

Cross examination Ms. McClanahan?

Ms. McClanahan

With regard to Mr. Whisonant's comment about our calculation our reserve calculation for the EH-10 and drainage calculation I just want to make sure that we get this straight. I think we testified that those were based on our calculations of other Ashland wells in the area because those were the most recent. Ashland has not disputed any of those calculations in their testimony. I just wanted to make that point. In addition, you indicated that we had two engineers indicating different drainage and that is why I wanted to make sure that we noted for the record that there actually has been no dispute of our calculations on these wells. In addition Mr. Finucane, I believe you indicated that you are a civil engineer, is that correct?

Mr. Finucane

I am by practice a petroleum engineer. Ten years experience in practice as a petroleum engineer.

Ms. McClanahan

Your education is civil engineering, is that correct?

Mr. Finucane

I think I did testify that I have a Bachelor of Science degree in civil engineering, that is correct.

Ms. McClanahan

Have you had any courses in petroleum geology?

Mr. Finucane

I have had in-house courses in geology and all phases of petroleum engineering with Texaco primarily and subsequently with Ashland.

Ms. McClanahan

You indicate in-house courses, education by Texaco is that correct?

Mr. Finucane

That is correct and by contractor's hired by Texaco.

Ms. McClanahan So you have or have not had a course in petroleum geology?

Mr. Finucane I have, in fact several.

Ms. McClanahan Structural geology?

Mr. Finucane Yes

Ms. McClanahan Petrography?

Mr. Finucane No

Ms. McClanahan What are your duties at Ashland Exploration?

Mr. Finucane My duties are primarily reservoir evaluation and economic evaluations based on those, the finding of those evaluations.

Ms. McClanahan I would submit, make a motion that Mr. Finucane's testimony with regard to any of the drainage issues before the Board here today is not admissible and should be struck from the record as he is not a qualified expert witness to testify to that because he is not a petroleum engineer and does not have the appropriate courses that a petroleum engineer or geologist would have. Mr. Finucane with regard to your indication earlier that 3000' spacing is ideal, I believe, is that the word you used?

Mr. Finucane That is correct.

Ms. McClanahan Then later you indicated that 4000 spacing was probably right sometimes.

Mr. Finucane I made no such indication.

Ms. McClanahan What did you say about 4000' spacing?

Mr. Finucane I think you seem to be, to have some concepts confused here. O.k., one is what is most economically beneficial in terms of well to well spacing. The other concept which I referred to is the ability of a well to drain gas from a given radius. There are two, one is a subset of the other. The second is a subset of the first of one of the considerations in the first.

Ms. McClanahan Did you indicate that a well would, in this area, drain 4000' sometimes?

Mr. Finucane I am certain almost any well drilled to the Berea in the permeable part of this field will drain as from 4000' away.

Ms. McClanahan But you think 3000' is optimum or ideal for economic reasons?

Mr. Finucane I think you should review the answer I just gave you because I have already answered the question. Drainage and optimum spacing while related are not identical terms. I think you need to think about what I am saying before you ask more questions on that subject.

Ms. McClanahan Is it not true you said a 3000' spacing is the optimum spacing for appropriate drainage of wells in this formation?

Mr. Finucane I have no reason to change my answer on that.

Ms. McClanahan O.k. thank you. In an informal hearing held earlier this year did you testify that 4000, or it was last year in 1988 in an informal hearing where Great Western had proposed a well, did you testify that 4000' was the optimum rule?

Mr. Finucane I don't believe I testified to that.

Ms. McClanahan Did anyone else from Ashland Exploration testify to that?

Mr. Finucane Not to my knowledge. Let me qualify that by saying I don't think that is what we testified to. More than a year ago and it seems unlikely I would have testified to that. In fact I have a copy of my written prepared testimony for that but it doesn't include any remarks to that.

Ms. McClanahan So you are the person from Ashland who testified?

Mr. Finucane I gave testimony, yes. I think what I testified there was that, if I recall properly, the Great Western or whoever it was, Panther Petroleum or who ever was actually the operator proposing there had two wells on 400 acres which was sufficient to drain 400 acres or that there wells were approximately, that 200 acres appropriate drainage radius which 206 acres is a 3000' well to well spacing. I think I further testified at that hearing that we had evidence of being able to drain of wells being able to drain in excess of 3000'.

- Ms. McClanahan During what time period do you think the well would drain 3000' in this formation?
- Mr. Finucane Well it is demonstrably so that they will drain 3000' in 30 years they will drain half the gas at 3000' away. That is demonstrably so. I am not proposing that the spacing should be so great that any place in the reservoir be 3000' from the well bore. The maximum distance I am proposing from well bore is 2100'.
- Ms. McClanahan Mr. Finucane if 3000' is the optimum, why has Ashland drilled every well in the Garden and Grundy Districts since 1982 closer than that as evidence by the calculations that we have presented today to the Board?
- Mr. Finucane The average spacing to the wells in no case has the average spacing for in-field wells been less than 3000'. There is, which is not the same as saying that there aren't within 3000' of those wells. I am saying if you look at the drainage area that results from taking mid points to all the nearest offsets then the well has available to it in excess of 200 acres from which to drain. Which constitutes, in our opinion, a profitable spacing. It is some what of a red herring to introduce the fact that there are wells that are less than 3000'. That is meaningless in this discussion.
- Ms. McClanahan You don't dispute the fact that you have wells closer to your wells than 3000' however?
- Mr. Finucane I by no means dispute that. I don't dispute it I just merely point it is irrelevant.
- Ms. McClanahan O.k. So does Ashland propose never to do what they have done since 1982 again. Is that what you are suggesting?
- Mr. Finucane No I think you are suggesting that.
- Ms. McClanahan With regard to this exhibit, I believe it was Ashland's exhibit one, is that correct Diane?
- Ms. Davis Yes
- Ms. McClanahan Do you own the entire lease that is under all the units that have been drawn on here?
- Mr. Finucane No for example some of the units that are drawn on here we have no interest in whatsoever.

Ms. McClanahan With regard to the units you do have an interest in are all the lessors or all of the minerals owners within those units being paid according to the units you have drawn on here.

Mr. Finucane Let me take exception to something you are asking me. There are no units drawn on this map.

Ms. McClanahan What have you drawn here?

Mr. Finucane I have drawn the drainage units of the well. What I consider to be the drainage area of the wells.

Ms. McClanahan So you are indicating that wells drain in polygraph shapes?

Mr. Finucane I don't know how lie detectors got into this discussion.

Ms. McClanahan I mean polygon, I am sorry.

Mr. Finucane Yes that is in fact pretty well accepted as long as the wells are within some reasonable and conceivable distance of each other you will have polygonal drainage areas and if you drill in regular spacing you will have squares. You ask Mr. Lincoln, he will probably agree with that.

Ms. McClanahan What about, no I don't think he will. What about radial drainage?

Mr. Finucane The drainage is certainly radial but if a well can drain all of the, if some well can drain all of the gas within those radius, the drainage is radial but you wind up with straight sides on it. Think about it. It is pretty simple arithmetic.

Ms. McClanahan When we say radial, that is in a circle isn't it?

Mr. Finucane That is correct. But you do not wind up with circular drainage patterns. It is fairly simple geometry, I am sure you can probably understand it. In fact it is demonstrated on that map. Or in fact it is demonstrated on the proposed unit map displayed by Edwards & Harding.

Ms. McClanahan With regard to your argument about the fact that some acreage would be left if we did these on 1250 radius then Mr. Whisonant brought up this point, this is a map we would like to introduce of Ashland's wells drilled on the northern part, it is not the northern part of the Lon Rogers lease but

these are all wells drilled on the Lon Rogers lease with circles drawn around them which would indicate that they are, in fact, leaving areas between there own wells which you would not be able to put a well in there on present spacing.

Mr. Dickinson

Are you testifying.

Ms. McClanahan

No the exhibit speaks for itself. I will be glad to introduce the exhibit unless you have any objection.

Mr. Dickinson

We didn't testify there is nothing about this that is the subject of this hearing, on the northern part of our lease.

Ms. McClanahan

It is not the northern part of your lease, it is the Lon Rogers lease that is directly adjacent to our leases.

Mr. Dickinson

O.k., I think it is not relevant. I object to the introduction because the object in the testimony in connection with Ashland exhibit number 2 was that if units are formed in that configuration with circles consisting of 1250' radius, that actual drainage would occur out of that but it would not cover the mineral underlying all of the acreage in between the four wells which in that particular case are Ashland BU-39 and Ashland #1, EH-10 and EH-15.

Mr. Finucane

May I ask a question here if you are going to put this in testimony? Is someone going to explain what it is to indicate?

Ms. McClanahan

Certainly, we only offer this as, Mr. Edwards..

Mr. Dickinson

Are we through with him (referring to Mr. Finucane)?

Ms. McClanahan

No, but I thought you wanted to do this first. If you don't we can stay with the program as it should be.

Mr. Dickinson

An exhibit goes in with a witness. I don't know if you can take it in the middle of somebody elses testimony. I don't care if you want to use it for some purpose. If the Chairman doesn't care. What is it suppose to represent? Maybe we can stipulate that. I just don't know what it is suppose to represent.

Ms. McClanahan It is actually being introduced simply in response to Mr. Whisonant's question to Mr. Finucane about whether on the Ashland could they drill wells which would leave spaces that are undrained under the 1250' rule.

Mr. Dickinson Are the circles 1250' radius?

Ms. McClanahan Yes that is correct.

Mr. Dickinson Even though in fact the witness has testified it may in fact drain further out than that. We are not unitizing this. It is not subject to unit.

Ms. McClanahan No, I only present this in response to his question.

Mr. Dickinson It doesn't respond.

Mr. Finucane Since the question was allegedly asked of me I don't recall him asking me whether we had all the wells on 2500' spacing. Was that question asked of me?

Mr. Starkey I think I asked the question.

Ms. McClanahan I am sorry.

Mr. Starkey I didn't ask that question.

Mr. Finucane I didn't think you asked that question.

Mr. Dickinson I am not going to raise any objection to the introduction of the exhibit presented, I just suggest it has no weight because it is just a bunch of circles drawn around wells and is not the subject of unitization procedure here we are not concerned with the distribution of the economic benefits from the production of the gas in a unitization proceeding, it is not reflective of actual drainage, physical drainage patterns it is just arbitrary circles drawn around wells.

Ms. McClanahan They are not arbitrary in that they comply with the statutes that we are talking about here today. I do simply use it as an example.

Mr. Finucane If the map is intended to show that Ashland drills its wells further apart than 2500' I expect that it will do that. Because it is Ashland's belief that it is not an economical spacing as we have

testified to at some length. I should hope it shows that.

Ms. McClanahan But you have drilled all of the wells you have drilled since 1982, Mr. Finucane, have been less than that. Is that correct?

Mr. Finucane No that is incorrect.

Ms. McClanahan In the Garden and Grundy District.

Mr. Finucane That is incorrect as I have pointed out to you before. We don't say that there are not wells within 2500' but I do say that the spacing is maintained and that the drainage area available to those wells is in each case at least 200 acres.

Mr. Dickinson Are you saying the spacing between individual wells may be less than that but spacing...

Mr. Finucane Average spacing to the surrounding wells will be in excess of that.

Ms. McClanahan What is the average spacing of all the wells on the Lon Rogers lease.

Mr. Finucane I just don't happen to have that calculation with me. But I can tell you in the example of that you brought up it was 3200 plus feet, 3300 feet whatever it was, 3625 in the case of BU-36 which is a recently drilled well in-field well in our field.

Ms. McClanahan Can you locate for me on this where the Lon Rogers lease line is?

Mr. Finucane There about, that represents Lon Rogers lease line.

Mr. Dickinson Between the yellow and blue.

Mr. Finucane The part that is highlighted in yellow is on the Lon Rogers lease on the north part and the blue is non-Ashland.

Ms. McClanahan What well number is this for your well?

Mr. Finucane That is the Lon Rogers #4.

Mr. Dickinson BU-39

Ms. McClanahan The BU-39 well you are proposing to include 36.14 acres of your lease in this particular unit. Is that correct?

Mr. Finucane That is right.

Ms. McClanahan That would be the unit for the EH-10.

Mr. Finucane Right

Ms. McClanahan Now is it true, how close is this line that you have drawn here for the unit to the BU-39?

Mr. Finucane To what we call our Lon Rogers #4?

Ms. McClanahan Right

Mr. Finucane It is obviously variable, what is it you are asking? Point out the question.

Ms. McClanahan How close is BU-39 to this lease line this unit line you have drawn?

Mr. Finucane It is half the distance between the two wells?

Ms. McClanahan What is the number?

Mr. Finucane Well that is subject to debate, it is variable. At that point it is variable. It varies from 1200 in fact to 2100 feet.

Ms. McClanahan O.k. if the optimum, you have indicated 3000' as an optimum spacing, correct?

Mr. Finucane Correct.

Ms. McClanahan What you want to do then is include how long has the BU-39 been in production?

Mr. Finucane I am not precisely sure but the late 50's.

Ms. McClanahan So in excess of 30 years?

Mr. Finucane Yea about 30 years lets say.

Ms. McClanahan In 30 years you have also indicated that that would drain 3000'?

Mr. Finucane Certainly

Ms. McClanahan Certainly, o.k, so what you want to do is include in Edwards & Harding's proposed unit more acreage from the BU-39 which you have already drained. Is that correct?

- Mr. Finucane There will be some of the acreage included in that that will be partially drained by Ashland's well. That is correct. Ashland's well was drilled in full compliance with all of the spacing regulations that were in effect at the time. I hardly think it is...
- Ms. McClanahan Although I believe this is a Board decision, so then you have indicated that the correlative rights of your landowners should be protected here right t?
- Mr. Finucane That is correct.
- Ms. McClanahan So will the correlative rights of our lessors be protected by your suggestion to give them more acreage which has already been drained by Ashland?
- Mr. Finucane I am not sure I follow what your question is there.
- Ms. McClanahan What you are going to propose for them for another landowner who is in the EH-10 unit, what you are proposing is to give us extra acreage that would be assessed to them obviously and decrease their interest in the unit. You are giving them acreage that has already been drained by your BU-39. So how does that protect the correlative rights of the landowners south of the Lon Rogers lease?
- Mr. Finucane The correlative rights are protected in the following way. That is all that I am asking is that all of the gas that is produced from the number ten be proportioned to be the payment be made to the landowners in proportion to the amount of acreage they have that is being drained by the well. That is what I am proposing and nothing else. I believe that is equitable.
- Ms. McClanahan You still didn't answer my question though. Would the lessors on the southern lease to Lon Rogers be protected by your proposal since you have already admitted you have partially drained the 36.14 acres you want to include in the unit.
- Mr. Finucane They would be getting a fair deal. They would be getting their share of the gas that is coming out of the well. They will be getting no advantage.
- Ms. McClanahan They will be getting a lesser percentage of the unit than they would as the unit has been proposed by Edwards & Harding.

That requires me to project for your benefit what my secrete knowledge is of what gas prices will be 20 years from now and I am not willing to do that.

ms. Mc If you used today's gas prices and the 15% discount, do you know what it would be?

Mr. Finucane No I don't but I repeat once again it will be a substantial portion of it. Let me guess and say more than 85%. It depends what you consider the entire life as well.

Ms. McClanahan We have gotten into the 15 as a result of the way the hearing has been going here. Do you want me to go ahead.

Mr. Wampler I think on 15 we have heard enough to sort through and make a decision on these three wells. I think on 15 if you have anything in particular you wish to stipulate or any objection you wish to stipulate, we need to get that on record and bring this to a close.

Mr. Dickinson We have no further evidence, we just ask that the testimony that has been presented be applicable to all three wells actually.

Ms. McClanahan I have a couple more questions for Mr. Edwards if I may. Mr. Edwards have you on behalf of Edwards & Harding Petroleum Company entered into any voluntary pooling agreements for acreage in this area.

Mr. Edwards Yes ma'am we have

Mr. Fulmer Are you still on 10.

Ms. McClanahan I think the Chairman has decided we are doing 10 and 15 together. So I am recalling Mr. Edwards. I will amend the permit application. Is that what you were going to ask.

Mr. Fulmer Yes, we would like to get that out of the way first.

Ms. McClanahan You want to go ahead, o.k.

Mr. Fulmer If there are some amendments to the application we would like to go ahead and get them on record.

Ms. McClanahan With regard to I believe all parties have agreed we can just stipulate to the leased and unleased

owners. In connection with the EH-15 forced pooling and unit designation application, Ashland Exploration is listed as one and two on that exhibit and we know the status of that. Two, Mona Cole is leased, Nancy Jane Cole is leased, Shirley Cole Fuqua is the person who has promised and is out of town, James Burress is leased, H. A. and Edith Street are leased, Judge Combs and his mother have promised that they will lease and we just haven't been able to get in touch with them in the last day, Rebecca Cooper put her lease in the mail last night, the A. B. Jewell estate we have no signatures for the owners on the A. B. Jewell estate, Gladys Cole Kennedy number 10, no lease. We would again request the week to submit the additional leases that expect we will be obtaining.

Mr. Wampler

That is granted.

Ms. McClanahan

For purposes of trying to keep us on the same train of thought here, I am just going to finish with these and then I can give Mr. Edward's qualifications. I will start on the 15 is that o.k.

Mr. Dickinson

You stipulated his qualifications earlier.

Mr. Starkey

We accepted them.

Ms. McClanahan

We actually haven't done his I don't believe today. His education background. We may have needed to do that before he started testifying on geological data.

Mr. Dickinson

Why don't we just stipulate he is a qualified geologist.

Ms. McClanahan

That is fine. He has an MBA in business. Mr. Edwards I believe I just asked you if Edwards & Harding Petroleum Company has entered into any voluntary pooling agreements with any other operators in this area. I have objected to the introduction of any testimony about this. In the event I am over ruled, then I am presenting this evidence as rebuttal.

Mr. Wampler

I understand

Mr. Edwards

Yes we have.

Ms. McClanahan

Those voluntary pooling agreements, what was the acreage amounts included in those agreements?

discount rate for this type of venture. Funds aren't commercially available for any less than that for this type of development.

Ms. McClanahan

Can we stipulate to the fact that Mr. Edwards's testimony with regard to requesting the permit applications for the 9 and 10 would be the same for the EH-15 as I have asked them previously.

Mr. Dickinson

What is this.

Ms. McClanahan

Mr. Edward's responses with regard, I can just go through the questions if you want me to.

Mr. Dickinson

I just don't know what you are talking about.

Ms. McClanahan

The permit application requirements that they have been filed what the requests are in the permit application, the technical requirements for filing the permit application.

Mr. Dickinson

In the other hearing.

Ms. McClanahan

For 15, no I am sorry, the pooling applications and the unit designations.

Mr. Dickinson

We are still maintaining our objection and it runs through all of these on all three wells we haven't been given proper notice on an application for pooling.

Ms. McClanahan

O.k. we will just ask the questions. Mr. Edwards with regard to the EH-15 does the plat attached to the pooling application filed by Edwards & Harding indicate the acreage to be embraced within the unit as you have requested for this pooling and unit designation?

Mr. Edwards

Yes ma'am it does.

Ms. McClanahan

Does the plat attached to the application indicate the shape of the acreage embraced within the unit?

Mr. Edwards

That is correct.

Ms. McClanahan

Does the plat attached to the application filed indicate the location where the EH-10 will be drilled on the unit?

Mr. Edwards

Yes

Ms. McClanahan It is the EH-15, sorry. What unit size was requested in the EH-15 application in paragraph 2.2?

Mr. Edwards 107.11 acres.

Ms. McClanahan Does this drilling unit as proposed embrace two or more separately owned tracts?

Mr. Edwards Yes it does.

Ms. McClanahan Were any objections to the well work permit application filed by coal owners or operators?

Mr. Edwards No ma'am

Mr. Wampler Have any of the questions you are going to ask changed or any of the answers expected to be changed in regard to this?

Ms. McClanahan No, that is what I was trying to get to stipulate to you.

Mr. Wampler Then I will stipulate it.

Mr. Dickinson Just clarify that the unit size is a request rather than something else.

Mr. Wampler I understand

Ms. McClanahan We have one more thing, Mr. Lincoln's questions with regard to surface topography, well spacing and all that, I would want that same information entered also on the EH-15.

Mr. Dickinson Ask him one question, would it be the same?

Ms. McClanahan All of our evidence on the ten, we want also for the 15 since the Board has overruled my objection to have separate hearings.

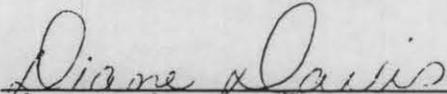
Mr. Wampler We didn't overrule the objection to decide each case separately, you understand that?

Ms. McClanahan Right

Mr. Wampler For convenience we combined. Do you have anything else? Well we certainly appreciate everyone's indulgence. We apologize that we didn't intend to have you miss lunch this much. I am going to lose Board members if I keep doing this in hearings. We attempted to be as liberal as we could in order to

have a good understanding of what each party proposes and objects to and we do appreciate that. With that the hearing is now closed.

I CERTIFY THAT THIS IS A TRUE TRANSCRIPT OF THE PROCEEDINGS
BEFORE THE VIRGINIA OIL AND GAS CONSERVATION BOARD ON
SEPTEMBER 7, 1989 IN THE KEEN MOUNTAIN OFFICE OF THE DEPARTMENT
OF MINES, MINERALS AND ENERGY.



Diane Davis

EXHIBIT LISTING FOR 9/7/89 HEARING

EDWARDS & HARDING PETROLEUM COMPANY

- EXHIBIT 1 Coal & Energy Opinion
- EXHIBIT 2 Force Pooling Applications
- EXHIBIT 3 Proposed Unit (Not Included)
- EXHIBIT 4 Well location Map Ashland Wells
- EXHIBIT 5 Gas Initially In Place Calculations
- EXHIBIT 6 Map
- EXHIBIT 7 AFE's

ASHLAND EXPLORATION, INCORPORATED

- EXHIBIT 1 Map
- EXHIBIT 2 Map
- EXHIBIT 3 Map

COMMONWEALTH OF VIRGINIA

- EXHIBIT 1 Inspector's Decision
- EXHIBIT 2 Waiver