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

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

ORIGINAL

APPLICATION OF ENERGEN RESOURCES CORPORATION FOR APPROVAL OF A PILOT PROJECT, UNORTHODOX WELL LOCATIONS, AND EXCEPTIONS FROM RULE 19.15.15.11 TO DETERMINE PROPER WELL DENSITIES FOR THE PICTURED CLIFFS FORMATION WELLS IN PORTIONS OF THE GAVILAN, TAPACITO AND SOUTH BLANCO PICTURED CLIFFS POOLS, RIO ARRIBA COUNTY, NEW MEXICO. CASE NO. 14539

APPLICATION OF BURLINGTON RESOURCES OIL AND GAS COMPANY, LP, BP, AMOCO AND ENERGEN RESOURCES CORPORATION FOR APPROVAL OF THE PILOT PROJECT INCLUDING UNORTHODOX WELL LOCATIONS AND EXCEPTION FROM DIVISION RULE 104.D.3 (19.15.15.11) FOR PURPOSES OF ESTABLISHING A PILOT PROGRAM IN THE PICTURED CLIFFS FORMATION TO DETERMINE PROPER WELL DENSITY REQUIREMENTS FOR PICTURED CLIFFS WELLS IN SAN JUAN, SANDOVAL AND RIO ARRIBA COUNTIES, NEW MEXICO. CASE NO. 12857

TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

September 2, 2010 2:11 p.m.

Santa Fe, New Mexico

BEFORE: TERRY WARNELL, Hearing Examiner
DAVID K. BROOKS, Legal Advisor

This matter came on for hearing before the New Mexico Oil Conservation Division, TERRY WARNELL, Hearing Examiner, and DAVID K. BROOKS, Legal Advisor, on Thursday, September 2, 2010, at the New Mexico Energy, Minerals and Natural resources Department, 1220 South St. Francis drive, Room 102, Santa Fe, New Mexico.

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THE EXAMINER: Okay, let's go back on the record then. We're going to consolidate these two cases. So we will consolidate Case No. 14539, application of Energen Resources Corporation for approval of a pilot project, unorthodox well locations, and exceptions from Rule 19.15.15.11 to determine proper well densities for the Pictured Cliffs formation wells in portions of the Gavilan, Tapacito and South Blanco Pictured Cliffs pools, Rio Arriba County, New Mexico.

Mr. Hall. What formations do we have here?

MR. HALL: It's all Pictured Cliffs formation.

THE EXAMINER: All Pictured Cliffs formations, Rio Arriba County, New Mexico.

And Case No. 12857, application of Burlington Resources Oil and Gas Company, LP; BP Amoco; and Energen Resources Corporation for approval of the pilot project including unorthodox well locations and exception from Division Rule 104.D.3 (19.15.15.11) for purposes of establishing a pilot program in the Pictured Cliffs Formation to determine proper well density requirements for Pictured Cliffs wells in San Juan,

Sandoval and Rio Arriba Counties, New Mexico.

Call for appearances, please.

MR. HALL: Mr. Examiner, Scott Hall and Seth McMillan, with Montgomery and Andrews Law Firm, Santa Fe, on behalf of Energen Resources Corporation, with three witnesses this afternoon.

MS. DE LA TORRE: Mr. Examiner, Kelly de la Torre, with Beatty & Wozniak, representing BP this afternoon, and I have one witness.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin, of the Santa Fe law firm of Kellahin & Kellahin, appearing this afternoon on behalf of Burlington Resources, an affiliate company of ConocoPhillips. I have one witness.

THE EXAMINER: So unfortunately, we don't have tables for everyone, do we?

Would the witnesses please stand and be sworn.

(Donald Lehman, David Poage, Zachary Van Voast, Paul Marusak and Linda Htein were duly sworn by the court reporter.)

MR. HALL: Mr. Examiner, with these consolidated cases, what we would propose to do is this: The older case, Case 12857, is a reopened case. It is a report back to the agency pursuant to

Order No. R-11848 issued in October of 2002, which authorized three operators, Energen, BP and Burlington, to conduct a pilot project study in the Pictured Cliffs formation.

The order itself did not call for a report back to the agency on the results of the pilot project, but discussion in the transcript from that hearing certainly reflects that that was the intention of the parties and the agency at that time. We would present our witnesses in that case first.

The second case, Case 14539, is related. It's a proposal by Energen to establish a new pilot project study area in what it calls its Jicarilla East area in Rio Arriba County, New Mexico.

There is substantial overlap in the testimony between the two cases. We would have, in any event, asked the Hearing Examiner to take administrative notice of the geologic and engineering testimony in the reopened case and apply it to the new case.

Rather than repeat testimony, we think it would be more efficient for us to present our witnesses on direct in both cases first and then allow questioning by the other parties and the

Hearing Examiners.

It's my understanding that Burlington is entering an appearance in both cases. BP's entry of appearance is only in Case 12857, just so the record is clear on that.

THE EXAMINER: Is that just the one case?

MS. DE LA TORRE: Yes.

MR. HALL: If that's agreeable to the Examiner, we'll proceed that way.

THE EXAMINER: All right. So the older case, Case No. 12857, that was heard back in --

MR. HALL: 2002.

MR. BROOKS: We can do that, I believe.

Did you get the BP case counsel's acknowledgment, Mr. Reporter?

THE REPORTER: Yes, sir.

MS. DE LA TORRE: Mr. Examiner, I just want to clarify that we're here just on the reporting back, and we're not taking any position on the Energen case or the additional infill wells.

MR. BROOKS: Okay. Thank you for clarifying that.

THE EXAMINER: Okay. We'll proceed with your witnesses.

MR. HALL: So Mr. Examiner, we provided

you with hard copies of our exhibits in both cases. We've also given you a copy of the original order from Case 12857 so that you can refer to that if you wish.

And with that, we would call our first witness, Mr. Don Lehman.

MR. BROOKS: Mr. Hall, since I'm not very well informed, I'm not really asking for an opening statement. But could you just briefly summarize what you're doing here, what this case is about?

MR. HALL: Yes. Case 12857 was originally presented to the OCD in 2002. And the purpose of it was to determine whether it was appropriate to increase the well densities for Pictured Cliffs formation wells in three counties in the San Juan Basin.

To get to that point, three operators of an industry committee took the lead, BP, Energen and Burlington, and determined that the best way to gather data to make that determination was through the conduct of pilot projects on acreage owned and operated by each of those companies respectively.

MR. BROOKS: So they were authorized to drill additional wells over and above the normal spacing pattern?

MR. HALL: That's correct. The current rules don't provide for infill wells in the Pictured Cliffs. This order authorized that for the pilot study area.

There were recompletions, there were new drills. Data was gathered over a period of time, but no report back to the agency was ever made.

It's my understanding that the Aztec Division District Office staff had requested that the operators provide some sort of a report back to the agency.

MR. BROOKS: The current rules on Pictured Cliffs is 160-acre spacing, with one well per unit; is that it?

MR. HALL: That's right.

MR. BROOKS: Okay, thank you. And I apologize for not having read the application prior to the hearing.

MR. HALL: And we might also take the opportunity to discuss whether you want to issue one order for both cases. I would recommend you issue separate orders.

If you look at the application in Case 12857, it doesn't do much more than provide a report back. There is no specific request for relief to

the agency.

MR. BROOKS: Well, perhaps that's a decision that we will appropriately make after we've heard the testimony.

MR. HALL: All right. At this point, we'll call Mr. Don Lehman to the stand.

DONALD LEHMAN,

having been previously duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HALL:

Q. For the record, please state your name.

A. Donald Lehman.

Q. Mr. Lehman, where do you live, and where are you employed?

A. I live in Birmingham, Alabama. I'm employed by Energen Resources Corp.

Q. In what capacity?

A. As a petroleum geologist.

Q. And have you previously testified before the OCD?

A. No, I have not.

Q. Would you give the Hearing Examiner a brief summary of your educational background and work experience?

A. Okay. I have Bachelor's and Master's degree from the University of Iowa. I started my career with Mobil Oil some years back, approximately 30. I've worked for smaller independents after I left Mobil Oil's employment.

I worked for Rocky Mountain Pertatious Sandstone for 20-plus years. For the last three years I've been an employee of Energen Resources, specifically working the San Juan Basin on coal reservoirs.

I'm an APG Certified Petroleum Geologist.

Q. Now, you're familiar with the applications that Energen has filed in both of these cases?

A. Yes, I am.

Q. And are you also familiar with the Pictured Cliffs formation pools that are the subject of both of those applications?

A. Yes, I am.

Q. Let me ask you some additional questions. Are you also familiar with the general provisions of Order No. R-11848 that was entered by the Division in 2002?

A. Yes, I am.

MR. HALL: At this point, Mr. Examiner, we would offer Mr. Lehman as an expert petroleum

geologist.

THE EXAMINER: So recognized.

Q. (By Mr. Hall) Mr. Lehman if you would, for the Hearing Examiners, could you just briefly summarize the circumstances surrounding the issuance of the original pilot project study order?

A. Yes. In 2002, the three companies, Burlington Resources, BP and Energen, entered a case to ask for additional 80-acre pilot wells in Pictured Cliffs in the San Juan Basin in order to gather information to see if basin-wide downspacing may be warranted.

In that proposal, we were authorized to drill six additional pilot wells, Burlington 16 and BP 3, I believe.

Q. All right. Let's look at the exhibits you prepared for Case 12857. You have both hard copies and projected versions of those; is that correct?

A. Correct.

Q. If you'd look at the first slide.

MR. HALL: And Mr. Examiner, we've marked those in the hard copies as exhibits. So that would be Exhibit No. 1.

Q. (By Mr. Hall) Would you identify that exhibit for us, please?

A. Certainly. This is the slide that's on the screen, indicating the specific pilot wells that were drilled by each company and also pools on Pictured Cliffs that are identified, state pools on Pictured Cliffs.

Q. Okay. And what does the bounded area in red show?

A. That's the four-township area that Burlington had proposed to do some additional petrographic or a petrophysical model and possibly drilled a couple of cores in the pilot program.

I'm not familiar with that, whether that was accomplished or not.

Q. All right. And are all of the new drills and recompleted wells done by all of the operators for that pilot project shown on Exhibit 1?

A. Yes, they have been. There were several that are not on this that were proposed, but were not drilled for one reason or another.

Q. All right. Let's turn to your next exhibit. Would you explain that, please?

A. This is a log of Pictured Cliffs in our operating area, which is more in the southeast part of the basin.

I failed to note on the last slide our

Energen pilots were in the southeast part of the basin later. The squares are Energen pilots. The red ones are new drills. I'm sorry. The red squares are pay adds, and the black are new drills.

Q. All right. And for the record, you're referring to Exhibit 5 now, the typed log?

A. That's correct.

Q. Let me turn to that.

A. Okay. This is a Pictured Cliffs type log in Energen's operating area. We basically have one producing zone in our area, which is about a 50- to 70-foot continuous zone.

We do see the Upper Pictured Cliffs developed in the northern part of Gavilan Field, but do not deem it commercially producible.

So this type log shows the shaley sand character of the Pictured Cliffs, the kamery colored in yellow, the low resistivity colored in red, and the density porosity colored in green.

Q. All right. Now, let's go back to Exhibit 2, the previous slide. Let's look at your hard copy of Exhibit 2.

A. Okay.

Q. Can you give us an overview of the original project? What were the operators trying to

do?

A. I gather they were trying to establish criteria for potentially downspacing from 160s to 80 acres with the Pictured Cliffs formation in the San Juan Basin.

Seventeen pay adds and 8 new drills were completed. Data was acquired on pressure information, logs on new drilled wells.

And since that time, of course, we've had an extensive production history that will be covered by the reservoir engineer's testimony.

Q. Can you tell us what criteria were developed for operators to select spacing units for the conduct of the pilot project wells?

A. Yes. The criteria we used were a well that was in an area that wasn't a high-productive area, but offset wells produced between .7 and 1.5 bcf for gas.

Distance from the parent well was important. We tried to stay at least 900 feet away from the parent wells.

Azimuth from the parent well. We tried to avoid depositional strike, again to avoid drainage.

We also tried to avoid what we thought might be fracture trends or frac wings generated in

the fracking of the parent wells, which we believed to be generally north/south in Energen's operating area.

And the parent well needed to be in good producing condition, so we could compare production rates from the pilot well to the parent well.

Offset wells seemed to have optimum completions, again so we could monitor production of the offsets versus the pilot well.

And wells were drilled in a variety of the Pictured Cliffs pool. As you can see on this map, there's at least one Pictured Cliffs well for most of the Pictured Cliffs pools in the state.

And again, a combination of new drills and pay adds, trying to obtain additional information.

Q. All right. And if we turn to your Exhibit 3, do you discuss these collection criteria on that exhibit?

A. The numbered 3?

Q. Yes. Do you have that?

A. Yes.

Q. And also I've provided you with a copy of Order No. 11848.

Are the criteria that you've described also articulated in paragraphs 17 and 18 of that

order?

A. Yes, they are.

Q. All right. Looking again at your Exhibits 3 and 4, your hard copies, would you give us an overview of the geologic setting for the project and the quality of data the operators had to work with at that time?

A. Okay. The Pictured Cliffs sand trends, nearshore/offshore sands, were mapped utilizing cumulative production.

Q. And for the record, you're referring to Exhibit 6 now?

A. That's correct. So the geologic setting is nearshore sands. The accepted way to map these sands is to map cumulative production.

This map that you're looking at, Exhibit 6, the bright pink color was cut off at 1 Bcf cumulative production. That way, we can see the productive sand trends better.

As we move off the flanks and as we get poorer production, we have poor-quality reservoir sand. So that's the way that we've most reliablably mapped the sands in the Pictured Cliffs plain.

The Energen pilots were down here, in the southeast part of the basin, which we'll get into, a

little bit more deeper and original higher pressure, which is typical for the Pictured Cliffs plain, as far as the Pictured Cliffs has, you know, a higher clay content and, of course, a low permeability reservoir, low porosity. And we felt that they may have a potential for 80-acre downspacing.

Q. All right, let's look at Exhibit 7. What is that?

A. Exhibit 7 is a land map of Energen's acreages outlined in yellow, with the original pilot wells the red squares. The brown dots are Energen-operated Pictured Cliffs wells.

Q. And Exhibit 8, what does that show us?

MR. BROOKS: I'm sorry. The brown dots are Energen-operated wells. And the squares are pilot wells?

THE WITNESS: Those were pilot wells, right.

MR. BROOKS: Excuse me. Go ahead.

THE WITNESS: All Pictured Cliffs.

Q. (By Mr. Hall) Let's look at Exhibit 8. What does Exhibit 8 show us?

A. Exhibit 8 is a blowup of the basin cum map we looked at earlier, showing a blowup of where the Energen pilot wells were at.

You can see some of them were in the higher-productive area in the pink, one here and one down here. The remaining four pilot wells were located along the flanks and margins of higher to less-productive areas of what we think to be a lower-permeability porosity reservoir.

Q. And Exhibit 9?

A. Exhibit 9 is a depth map. This map just shows the relationship of Energen pilots to the Burlington and BP pilots. The BP pilots are lime green on this map; the Burlington pilots are purple.

It's a depth map, 500-foot contour. This heavy contour here is 4,000 feet depth. The next high heavy contour is 3,000, and the last contour on the left is a 2000-foot depth.

So you can see that the Energen pilots were between 3,500 and 4,000 feet in depth, compared to the pilots by BP and Burlington that were less than 2,000 to 3,000 feet. One was a little deeper over here, near our operating area. But most of them were less than 3,000 feet in depth.

Q. Now, with respect to the pilot project study units operated by Energen, was there any new meaningful geologic data derived from the conduct of the study?

A. We did acquire -- first was our four new-drilled wells, additional stratigraphic data. On those four wells, we ran modern logs.

Typically out here, you don't have the luxury of modern logs with the wells drilled in the Mesa Verde. And you're lucky if you have cased hole logs in the Pictured Cliffs. So we were able to acquire some modern logs.

And we also acquired shut-in pressures and extensive production history, which will be reviewed by the reservoir engineer's testimony.

Q. From the additional data that Energen was able to derive from its pilots, was there sufficient additional data to warrant the recommendation of infill development in the Pictured Cliffs, basin-wide?

A. No, there was not.

Q. If you look back at your hard copy of Exhibit 4, it discusses your geologic conclusions.

A. Okay.

Q. What are those?

A. A quick review of the geologic conclusions: We do not have enough data to determine a good geologic methodology to locate 80-acre infill wells.

We believe that more pilots may be needed to determine if our geologic assumptions are valid. In addition, we don't think we have enough information to recommend downspacing at this time.

Now, a larger statistical model may be a way to deem whether downspacing in a portion of the basin may be warranted.

Q. All right. Let's talk about what Energen is proposing for its new pilots project.

If you turn to the exhibits for Case 14539. So in the exhibits for Case 14539, let's turn to Exhibit 2.

A. Okay.

Q. Tell us what you're recommending for the new pilot project.

A. Energen is recommending that we drill eight additional 80-acre Pictured Cliffs wells as pay adds to existing Mesa Verde wells in order to determine the economic feasibility of 80-acre downspacing in Energen's operating area.

And with that, we have two proposed pilot wells on the Gavilan pool, four on the Tapacito pool, and two in South Blanco. These again will all be pay adds to existing Mesa Verde wells.

Q. All right. Now, let's refer to Exhibit 9,

your text exhibit.

A. Okay.

Q. And if you would, tell the Hearing Officer about the criteria you were utilizing for selecting these pilot project spacing units.

A. It's basically the same criteria we used for the original pilots, where we looked for different positions on a productive trend, higher-producing areas, lower-producing, moderate-producing areas, a minimum of 900 feet from the parent well.

And these eight cases were from 950 to 1,850 feet from the parent well. Again taking into account the azimuth from the parent well, trying to avoid depositional strike, which is northwest/southeast. And also trying to avoid north/south fractures and potential frac wings from parent wells.

And our preferred offset direction then would be either east/west or northeast/southeast from the parent well.

We looked for the parent wells again to be in good producing condition, with optimum completions on the offsets, and looking for wellbore integrity in an existing Mesa Verde and/or Dakota

well that's producing less than 100 Mcf a day.

PC cum, our offset cums, we like to see them between .51 and .5 Bcf.

And one thing that I failed to mention in the previous testimony, no Fruitland coal well quarter sections, which that is the case in all of our pilots. There are no Fruitland coal well quarter sections for these proposed pilots.

Q. Would you tell the Hearing Examiner what you mean by "pay add"? What does that term mean?

A. Pay add or recompletion is moving uphole and producing the Pictured Cliffs in an existing wellbore that's producing from the Mesa Verde and/or Dakota.

Q. And if we refer to your text Exhibit 10, is that what Energen is recommending for all of the pilot wells in the new area?

A. Yes, it is.

Q. And explain to us why. What are the benefits of that approach?

A. There are a number of benefits to utilizing existing boreholes. No new surface disturbance. We believe we'll show that we can produce additional gas with increased recovery for a 160-acre drilling space unit. No additional lease

operating expense.

We believe we have good economics, with low risk. And Energen operates 51 existing Mesa Verde boreholes in our operator area, with an additional 27 potential Mesa Verde wells that could be drilled that would have potential for either 80-acre or 160-acre Pictured Cliffs pay adds. Pictured Cliffs enhances the Mesa Verde economics.

THE EXAMINER: And do you downhole commingle?

THE WITNESS: Yes, they would be. We're recommending commingling.

Q. (By Mr. Hall) Mr. Lehman, in Case No. 12857, were Exhibits 1 through 9 prepared by you?

A. Yes, they were.

Q. And in Case 14539, were Exhibits 2, 9 and 10 prepared by you?

A. Yes, they were.

MR. HALL: That concludes our direct examination of Mr. Lehman.

We move the admission of those exhibits.

THE EXAMINER: Those exhibits are admitted.

Is there anyone who wishes to cross?

MR. KELLAHIN: Just a moment, Mr. Examiner? Can I have a second?

THE EXAMINER: Yes, sir.

(Energen Exhibits 1 through 9, inclusive, in Case No. 12857 were admitted.)

(Energen Exhibits 2, 9 and 10 in Case No. 14539 were admitted.)

CROSS-EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Lehman, I'll try not to confuse either one of us here. If you'll turn back to your original slide set and look at the map which I think is Exhibit 2 --

A. Correct.

Q. I think it's page 2.

A. Okay. The text page, the project overview?

Q. On the opened case, on the old project.

A. Yeah, the old project.

Q. The question is simple, if we can get to the right map.

A. Yeah, I've got it.

Q. The first map is the existing project?

A. That's correct.

Q. And it shows the area of the pools in

color, and then it types the new drills and the recompletions in the original project?

A. Right.

Q. And of the original 30 that were approved by Mr. Stogner in '02, there was the population that were actually drilled that are shown on this display?

A. That's correct, 25 on that map.

Q. So when we look at the map with the original 25, I want to compare the Energen wells to where you're proposing to put the eight new pilot projects.

A. Okay.

Q. Can you help me do that?

A. I don't have it on a slide, but I have it on a hard copy.

Q. Let's do the hard copy, because I think it's easier.

A. Sure. It's 11 by 17.

Q. So if you'll open your hard copy --

A. Well, no. I have a hard copy, but it's not in the book.

Q. My question for you is: When you look at the original pilot project and the location of the Energen wells --

A. Okay.
Q. -- there are three of them in Gavilan?
A. Right.
Q. There looks to be two in Tapacito?
A. Correct.
Q. And then you have one more in South Blanco?
A. That's correct.
Q. And the new pilot project will have a total of eight?
A. That's correct.
Q. Of the eight, how many of those are new drills?
A. None.
Q. None? These are all recompletions?
A. That's correct.
Q. At this point in time, have you reached the conclusion that it is not economic to drill new drills to recover the incremental reserves out of the Pictured Cliffs?
A. Yes. But that testimony will be expanded on by our reservoir engineer.
Q. Was that the collective judgment of all three companies that participated in the original project?

A. No, it was just for our --

Q. Just for you?

A. -- pilots.

Q. So when we look at the eight new ones, the recompletions, what are you hoping to gain with this data that you didn't gain with the original project data?

A. I think we're hoping to get a better statistical understanding. We were encouraged with our original pilot program, but we don't think we have enough information to be able to recommend downspacing.

So we would like to request additional pilots and a better statistical base to come up with reliable conclusions as far as downspacing.

Q. Do you anticipate any of that project area that you're working on would be subject to reservoir simulation?

A. I'll have to defer that question to our reservoir engineer.

Q. Looking back at Mr. Stogner's order from '02, which is the R-11848 order, there are components of that order that set forth a protocol, and it talks about various criteria for selecting wells in areas and what to do?

A. Correct.

Q. Is there anything in Mr. Stogner's order that needs to be modified by the Examiner when he considers approving Energen's request for the new pilot area?

A. The only thing I'd modify slightly is offset Pictured Cliffs wells cumulative recovery should be between .7 and 1.5 Bcf. I'm using .5 to 1.5 Bcf. That's the only change in criteria.

Q. If you'll turn to the hard copy book with the exhibits for the pilot project, the new pilot project?

A. Okay.

Q. If you will turn with me to page 10 of that --

MR. BROOKS: Which book is this?

MR. HALL: 14539.

MR. BROOKS: Thank you.

Q. (By Mr. Kellahin) So if you would turn to No. 10, it talks about some project status plans for 2011?

A. Okay.

Q. You talked about there's eight wells. And these are all the pay adds, which were existing wells that would be recompleted?

A. Correct.
Q. Are there logs for these wells?
A. Cased hole logs only.
Q. Only?
A. Right.
Q. So that's what you plan to do, because these are existing wells then?
A. Correct, yeah. We may run a dual space neutron. But right now we have cased hole gamma ray neutrons with the Pictured Cliffs.
Q. The pressure component data of this, do you plan to obtain any prefrac data?
A. Again, I'll defer that answer to our reservoir engineer for his testimony.
Q. You wouldn't participate, as a geologist, in making the decisions about the pressure?
A. Certainly.
Q. You would?
A. Yes. We operate as a team, but I'll defer that to our engineer.
MR. KELLAHIN: Thank you.
THE EXAMINER: Could you tell me again the exhibits that we're about to admit?
MR. HALL: Yes. In Case 12857, the reopened case, it's 1 through 9. And in Case 14539

it's Exhibits 2, 9 and 10.

There are some duplications between the two sets, so we won't be admitting the same ones twice. For instance, the maps are similar.

MR. BROOKS: I have clearly in mind what you said about the cumulative production criterion. Basically, I was getting confused between 1 Bcf and .1 Bcf.

What were your criteria originally, and what are they now?

THE WITNESS: The original criteria in the downspace order was .7 to 1.5 Bcf. That was just a general -- you know, we don't want to pick a pilot in a highly-produced area because of potential drainage.

You don't want to propose a pilot in a really bad area because you're probably going to have lack of reservoir quality sand.

MR. BROOKS: What is it that you now propose?

THE WITNESS: .5 to 1.5.

MR. BROOKS: Okay. Now .5 --

THE WITNESS: Yeah.

MR. BROOKS: -- so you're reducing it a little bit on the low end by --

THE WITNESS: Yeah. I'm dropping off the edge a little bit on some of these sand trends that we'd like to test.

MR. BROOKS: Okay. On your map, on Exhibit 6 --

THE WITNESS: Are you on the new case?

MR. BROOKS: On the old case.

THE WITNESS: Old case, okay.

MR. BROOKS: -- did you say the pink represented 1 Bcf?

THE WITNESS: Right. We clipped the contour color off at 1 Bcf.

MR. BROOKS: Okay. When it says down there, "C.1 equal .1 BCFG," what does that mean.

THE WITNESS: The contour interval is .1 Bcf, so we actually started at .2 Bcf. Contours are from .2 Bcf to .1 Bcf.

MR. BROOKS: And I was reading it that Color No. 1 means .1, basically.

THE WITNESS: Yeah, .1 Bcf.

MR. BROOKS: Okay, thank you. That's all I have.

THE EXAMINER: Okay, thank you.

We're ready for our next witness.

MR. HALL: Counsel for BP.

MS. DE LA TORRE: I don't have any questions.

MR. HALL: That conclude our examination of Mr. Lehman, and we request a break opportunity at this time.

THE EXAMINER: I think we're done with the witness. It would probably be a good time to take a break.

(A recess was taken from 2:51 to 3:04.)

THE EXAMINER: All right, let's go back on the record.

MR. HALL: At this time, Mr. Examiner, we would call Dave Poage.

DAVID POAGE,

having been previously duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HALL:

Q. For the record, please state your name.

A. David Poage.

Q. Mr. Poage, where do you live, and by whom are you employed?

A. I live in Farmington, New Mexico. I'm employed by Energen Resources Corporation.

Q. And what do you do for Energen?

A. I'm a district land man.
Q. And you previously testified before the Division a number of times?
A. Yes.
Q. And have your credentials been established?
A. Yes, they have.
Q. And you're familiar with the application that's been filed in Case No. 14539 for Energen's new pilot project study area?
A. Yes.
Q. You're familiar with the Pictured Cliffs pools that are the subject of that application?
A. Yes.
MR. HALL: We again offer Mr. Poage as an expert petroleum land man.
THE EXAMINER: No objections. So recognized.
Q. (By Mr. Hall) Mr. Poage, let's turn to the exhibit notebook for Case 14539. Would you turn to Exhibit 1 and explain to the Examiners what that exhibit shows us?
A. This is a map of most of the San Juan Basin, and it shows the Pictured Cliffs pools in different colors.

It also shows the proposed pilot projects that Energen is proposing with the two recompletions in the Gavilan pool, four in the Tapacito pool and two more in the South Blanco PC pool.

Q. All right. Let's turn to Exhibit 3.

A. Exhibit 3 is a land map of the area we're proposing these recompletions in. The red triangles indicate the proposed pilot wells, and the ones that are also requiring nonstandard locations are indicated on that as well.

The brown dots are existing PC wells operated by Energen.

Q. And Energen's leasehold is bounded with the yellow coloring; is that right?

A. That's correct.

Q. And in each of the 160-acre units where the pilots are proposed, does Energen own all of the Pictured Cliffs and Mesa Verde formation?

A. Yes, that's correct. Each of these leases that these proposals are in are Jicarilla-owned gas spaces. Energen is a 100 percent interest owner in both the Pictured Cliffs and the Mesa Verde, and the ownership is identical between the two formations.

Q. Okay. Let's look at some of the individual units. Turn to Exhibit 4.

A. Exhibit 4 indicates the 94 5C pilot well that's proposed. It's also one of the wells that would need an NSL.

Also indicated on the map is Energen's leasehold outline, as well as all of the offset operators to the proposed pilot project.

Q. And in this case, does Energen operate the offsetting unit towards which the NSL encroaches?

A. That's correct.

Q. Let's turn to Exhibit 5.

A. Exhibit 5 is another map showing the 96 5A well. And also, the offset operators are shown on that. And Energen is the offset operator in every case.

Q. Exhibit 6?

A. Exhibit 6 shows the two pilot project proposed wells, the 98 2B and the 98 3B, and it also shows the offset operators to those spacing units.

Q. And the 3B well, as well as the 2B well, they're NSLs; is that right?

A. Both of those will be proposed NSLs, yes.

Q. And again, is Energen the operator of each of those offsetting units to those NSLs?

A. Yes.

Q. Exhibit 7.

A. Exhibit 7 shows the two pilot project wells, the Jicarilla 117E lease, the number 3B well, as well as the number 9B well. That 9B is also NSL.

Q. The 9B is currently completed in the Mesa Verde?

A. That's correct.

Q. Is that a nonstandard location, as to the Mesa Verde?

A. As to the Mesa Verde, this is the only one of eight pilot projects that's not a standard legal spacing unit for our legal spot for the Mesa Verde formation.

This one is on Jicarilla lands, as well as Jicarilla surface. At the time the well was staked in a legal location, the Jicarilla had that moved to this nonstandard location in the Mesa Verde. And it was for wildlife and terrain ridge issues.

Q. And that NSL for the Mesa Verde has been previously approved by the OCD?

A. Yes. It's NSL 5336-0.

Q. And who is the operator of the offsetting unit towards which that location encroaches?

A. ConocoPhillips.

Q. Let's look at Exhibit 8, please. What does that show?

A. Exhibit 8 shows the 152W lease and also the Jicarilla West leases, two more pilot projects and the Jicarilla West 9M and the Jicarilla 152W 2M.

Q. In each case, Mr. Poage, for all of the proposed pilot project units, were all of the offsetting operators notified of Energen's application?

A. Yes, they were.

Q. Let's refer back to Exhibit 1, which identifies the pools for us. Now, the South Blanco and then the Tapacito Pictured Cliffs pools, are those pools preapproved for downhole commingling?

A. Yes, they are.

Q. And what about the Gavilan?

A. The Gavilan is not.

Q. All right. And again in the case of each of the pilot project units within the Gavilan pool, is ownership in the PC and the Mesa Verde identical in each of those units?

A. Yes, they are.

Q. Mr. Poage, were Exhibits 1, 3, 4, 5, 6, 7 and 8 prepared by you?

A. They weren't prepared by me. They were under my direction.

MR. HALL: We'd move the admission of

Exhibits 1, 3, 4, 5, 6, 7 and 8 in Case 14539.

That concludes our direct evidence with this witness.

THE EXAMINER: Any objection to these exhibits?

MR. KELLAHIN: No objection.

MS. DE LA TORRE: No objections.

THE EXAMINER: Exhibits 1, 3, 4, 5, 6, 7 and 8 in Case 14539 will be admitted.

(Exhibits 1, 3, 4, 5, 6, 7 and 8 in Case No. 14539 were admitted.)

MR. KELLAHIN: No questions, Mr. Examiner.

MS. DE LA TORRE: No questions, Mr. Examiner.

MR. BROOKS: You want to do some stuff about the NSL and downhole commingling issues. Are you asking for those approvals in this order, or are you going to file separate administrative applications?

MR. HALL: Yes, the application expressly requests approval of the NSLs, and those footage locations are set forth in the application.

MR. BROOKS: And what about the downhole commingling?

MR. HALL: We will need approval for the

Gavilan pool, for those wells.

MR. BROOKS: And you're asking for that in this proceeding?

MR. HALL: We are, and we will present additional testimony in that regard.

MR. BROOKS: Okay. Then I'll have to clarify with the witness.

Mr. Hall asked you if the ownership was identical. I don't think he actually intended to frame the question that way, but that's the way I heard it. He asked if the ownership was -- well, I'm not sure that I remember exactly what he asked, so let me make it clear.

In each of these locations, is the ownership in the Pictured Cliffs identical with the ownership in the other formation with which you would be requesting --

THE WITNESS: That's correct, yes.

MR. BROOKS: And is that the Mesa Verde in each case?

THE WITNESS: Yes.

MR. BROOKS: And you're not commingling them with any other formation?

THE WITNESS: Not that I know of.

MR. BROOKS: Okay, thank you. That's all

I have.

THE EXAMINER: Mr. Poage, on that No. 1 slide there, I'm curious.

In the Gavilan you've got two wells there distinctly marked with red squares.

THE WITNESS: Yes, sir.

THE EXAMINER: I guess that third one down there is not red; is that --

THE WITNESS: That's a different color. I don't know what that stands for.

THE EXAMINER: Okay. That's not a well?

THE WITNESS: I think it's a different PC pool.

THE EXAMINER: Okay.

MR. HALL: Mr. Examiner, I'm told that that's a Pictured Cliffs oil pool right there. There are only two pilot project study wells proposed for the Gavilan pool.

THE EXAMINER: Yes, the two upper ones.

Okay, I have no questions.

MR. HALL: At this time, Mr. Examiner, we would call Mr. Zachary Van Voast to the stand.

ZACHARY VAN VOST,

having been previously duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HALL:

Q. For the record, please state your name.

A. Zachary Van Voast.

Q. Mr. Van Voast, where do you live, and by whom are you employed?

A. I live in Birmingham, Alabama. I'm employed by Energen Resources Corporation.

Q. And in what capacity are you employed by Energen?

A. I'm a reservoir engineer.

Q. You've not previously testified before the Division or Examiners, have you?

A. That is correct. I have not testified.

Q. All right. Why don't you give the Examiners a brief summary of your educational background and work experience?

A. I graduated with a mechanical engineering degree in 1975. I've been a petroleum engineer for 26 years. I worked for both majors and independents. I started with Amoco Production, actually.

My last three years, I've been working in the San Juan Basin in the tight gas sands, primarily Pictured Cliffs. And my experience is probably considered general reservoir engineering and production engineering.

Q. Are you familiar with the applications that have been filed in both of these cases?

A. I am.

Q. And are you familiar with the Pictured Cliffs formation pools that are affected by these applications?

A. Yes.

MR. HALL: At this point, Mr. Examiner, we offer Mr. Van Voast as a qualified expert petroleum reservoir engineer.

THE EXAMINER: Any objection?

So qualified.

Q. (By Mr. Hall) Mr. Van Voast, let's turn back to the exhibit set for the reopened case, 12857, and go to your text exhibit. It's marked as Exhibit 11.

Would you summarize for the Examiners the engineering review of the data that Energen derived from its parent infill wells in the pilot project study area?

A. All right. Basically we drilled four wells, and they were completed as duals. And we recompleted two of them, and they were also recompleted as duals.

We gathered -- I'm going to report on the basic completion data that was used. We got 30-day bottom hole pressure buildup tests on five of those wells.

I'm going to go into quite a bit of detail on the production trends for both the parent and pilot wells and also give you the estimated ultimate recoveries from the parent and pilot wells.

And finally, we're going to review the economics of the pilot and parent wells. In this case, it will be incremental economics that I'll be talking about.

Q. Now, when Energen identified the units as candidates for inclusion in it pilot project study, did Energen follow the criteria set forth in the original order, Order R-11848?

A. Yes, I believe so. One thing that wasn't mentioned before, I believe, was the wellbore integrity. And we looked at the wellbore integrity in the parents and the pilots -- well, for the recompletions; excuse me -- for the parent and the

recompletion.

And there was one thing that will come up a little later on. I guess it happens. But in one case, we had to literally shut a well in before the pilot was drilled. So we got no interference information on that.

Apparently it developed a casing leak just about that time, three months prior. That will come up in the pictures. I'm just being entirely honest about it.

Q. Let's turn to your Exhibit 12. And if you would, give the Examiners an overview of the completions of the wells.

A. Okay. Again, four wells were drilled with dual strings, put in duals, and two were pay adds or recompletions. The PC added to Mesa Verde. They were drilling completed, all of them, in 2003. We used limited entry perforating.

Q. What does that mean?

A. That's a half-inch diameter hole, generally a large hole, and about 20 to 30 in the PC interval. Maybe one hole per 2 to 3 feet, as opposed to three or four or six guess shots per foot.

They were all fracture stimulated with

anywhere from 60,000 pounds of 20/40 sand up to 140,000. We used nitrogen foam as a carrier.

The parent wells were all drilled in the '60s, and they were fracture stimulated with 35,000 pounds 20/40 sand up to 120,000.

So it was similar in how they were stimulated and fracked, although some of the parents were a little on the lower side.

Q. Let's turn to Exhibit 12. And if you would discuss the bottom hole pressure and initial production data that you obtained.

A. We ran the bottom hole pressures after the initial flow period, which generally ranged from two to four hours. Then we ran the bottom hole pressures for a 30-day buildup.

In five out of six of these wells, data was analyzed and initial reservoir pressures were computed. I am going to go into more detail on that later.

But basically the bottom hole pressures ranged from 201 psi minimum to 569 psi max. The average bottom hole pressure was 477.

The original bottom hole pressure -- and this was taken from the bottom hole pressure map that our geologist showed earlier -- was taken to be

1,232 psi. That's an estimate taken right off the map in our area of the wells.

So therefore, we had an estimated average pressure depletion of 61 percent, or 39 percent of the pressure remaining.

Jicarilla West 8B had the highest EUR, and its bottom hole pressure was 491 psia. And the reason I mention that is you might expect it to have the highest pressure also.

The lowest bottom hole pressure of 201 psia did poorly with the worse producer, which was the Florence Federal 7B, and it only came on at 20 Mcf per day. And that was a definitely an uneconomic case.

Peak production, usually the first month, varied from 20 mcfd per day for the Florence Federal 7B up to 400 mcfde for the Jicarilla West 8B, which was our best pilot well.

Q. Now, after you had gathered all the data from the pilot project study, tell the Hearing Examiner what methodology you used to evaluate that.

A. Okay. Basically, I prepared 3 forecasts. One for the parent well, as if the pilot had never occurred. And let me just preface that a little bit.

Most of these wells showed interference. And so I had to prepare a curve for the -- as you can see here on this exhibit --

Q. Is this Exhibit 14?

A. The red line represents -- this represents the parent well. This forecast represents what I assume would have happened, the forecast without this pilot ever being drilled.

The pilot well up here -- actually, the blue line represents the pilot production plus the parent production. So this line here represents this line down here, this part of the graph, plus the pilot production.

The idea here is if you look at this one chart, a combination chart, and this is production coming from the 160-acre spacing unit now, this is producing from the 160, these two wells together now producing from the 160, it's clear, very clear, that the production has increased from the 160, and the forecast is also going to be considerably higher for that 160.

So in this case, there's no doubt that two wells are doing better than the one by itself.

Q. Is there an inflection on the curve for the parent well that indicates to you that some

interference occurred?

A. Well, I'm going to go into more detail on how these charts came about. But right there is where the pilot came on. And as you can see, this well starts trending down right here pretty sharply.

Let me show you another chart here that shows us in more detail.

Q. Turn to Exhibit 15. What is this?

A. This is the pilot well of the same thing you saw before, except that this is actually a curve out of aries, and that is my forecast line.

The well came on at 400 Mcf per day max, as was the monthly rate there. It's currently producing at 130 after seven days. This is the forecast line.

Q. So we understand, this shows data before the pilot came on; is that correct?

A. This is the pilot well. This is the pilot well, period. Okay? We haven't gone to the parent yet.

Q. All right.

A. The next line. This is the parent well. As you see, it came on in 1960. Also a little bit more than 400 Mcf per day. It was coming down the hyperbolic decline.

And through here, it looks to me like we were having a lot of curtailment in the '70s, '80s, I guess more in the '80s.

And then we get back on trend here. And right about here, where I have that arrow, is where the pilot was put on production. And again, you can see the parent takes a nosedive.

This is my forecast as if the pilot had never been drilled, and it was declining at 1.5 percent per year.

Q. What productive life did that project out to?

A. I believe that's 140 years. In my analysis, I assumed or estimated a maximum life of 25 years, rather than going all the way out to 140.

Q. Now, why did you do that?

A. Well, the parent well has been on production already 45 years. These wellbores don't last for an infinite period of time.

It's likely that occasionally we're going to have some sort of mechanical problem. It's possible that it's fixable, but it enters into a whole other set of economics.

And I'm trying to do an apples-to-apples comparable economic analysis incrementally as to

whether or not these pilots really were economic.

So actually in aries, when I used my wellhead gas, I came up with considerably less gas than the 1.9 EUR. I came up with 850 MMF as EUR for this well.

I said something in here just then. I came up with a parent EUR of 1,455 -- excuse me, correct that -- as opposed to 1.9 Bcf EUR on the chart itself.

Q. So did you take this same methodology and apply it to the data from the other one that goes through --

A. There's one more chart I want to go through. Okay?

Q. Okay, go ahead.

A. Which is the next one?

Q. This is a Exhibit 17.

A. Yeah. This is a blowup of what happened to the parent well at the time of the pilot well coming on, and this is when the pilot came on. The parent had been shut in for about three months.

You'll see actually there's a surge in production here, due to the shut-in period. And normally what you'd expect this thing to do is come right back down on trend. This is the trend line,

and it didn't do that. It just continued to nosedive.

So I'm estimating that this interference happened very quickly. And this is by trend line, new trend line, coming down through here. We actually went on a hyperbolic trend. And I'm terminating this at a 5 percent minimum decline rate.

Q. How did you derive that 5 percent decline rate?

A. The average decline rate for our parent wells was 2.7 percent annually. And we're now talking about two wells. It's an estimate. I'm assuming two wells. Obviously, it's going to decline faster, so I'm using a 5 percent decline.

Q. Now, let's turn to Exhibit 18. And can you demonstrate to us how you applied this methodology to individual well units?

A. We're going to show you a series of slides now, five that look exact like this, for the remainder of the wells.

Rather than going through this, there's three curves that I just showed you. This is exactly how these were built. Using those three curves, it would just require that many more slides

to go through it.

But basically this particular slide illustrates a case where we had no interference. This is when the pilot came on. And maybe it's not quite as clear here.

But in my individual curves it's very clear there's no interference through here. This is right on trend. In my estimate, nothing has really changed.

This is the parent plus the pilot. And we're obviously getting very good incremental production, and incremental EUR increased to the 160-acre basin spacing unit.

Q. So when the Hearing Examiner refers back to the transcript, let's refer to the well pairs we're talking about for each slide.

Is this the Jicarilla 98 7 and the Jicarilla 98 12A?

A. Yes, it is.

Q. Okay. Anything further with respect to those wells?

A. No.

Q. All right, let's look at Exhibit 19. Identify that well pair.

A. This is the Florence Federal 3, parent,

and the Florence Federal 7B, pilot.

This is the case I was talking about earlier where we found that we had probably what we thought was a casing failure or a leak in the casing. And the parent was shut in just prior to putting on the pilot.

That well was actually P&Aed about two years later, and we did confirm that it had a casing leak.

So in this case, we got no data from this well as to interference. And really, the pilot just incrementally adds production.

It is an interesting slide from the standpoint that it does point out that pilots or 80-acre infills are also going to be necessary as a potential in a lot of cases where we lose the parent well as another take point, another well, a replacement well, as you might call it.

This is the real world. Some of these parents are going to fail on us. But this was a noneconomic case, and that's my forecast.

Q. Let's turn to Exhibit 20. Can you identify that well pair?

A. That is the Jicarilla 99 13, parent, and the Jicarilla 99 18, pilot. Again we're seeing, you

know, a considerable amount of curtailment through here.

It looks like this is a fairly good well. It came on at about 700 Mcf per day, and it looks like it's wanting to get back on trend through here. And then the pilot came on, and we had interference.

This is my forecast for the combination of the parent plus the pilot, and this is my forecast for the parent as if the pilot had never been drilled.

This is incrementally positive production or EUR, and this would be negative. Although these areas look similar, keep in mind you're looking at a simulog paper here.

And the difference here is only like 8 Mcf, whereas the difference here is 150 or more. So this is a much bigger segment of production than it actually appears graphically.

Q. I want to make sure I understand how to read this. Where you do your projection for the parent and the pilot and the blue curve intersects and descends below the projection for the parent only, does that indicate a net loss of EUR? Is that a negative EUR?

A. Yeah. At this point, it would appear that

way. Of course when you add it all up, this positive up here is obviously a big increase, this area here. This exceeds what's happening here.

But you're right. At this point, my projection is had you just done nothing, you're actually producing less than had you done nothing at all and just left the pilot on.

So all of this production has been accelerated up to this point here.

Q. Let's look at Exhibit 21. Identify those well pairs, please.

A. This was a pay add, or recompletion. This is the parent well. Again, you see this curtailment.

And this is my projection for the parent well, and this is my projection for the parent/pilot combination.

Again, if you look at this, what actually happened here, we got considerably more up front, and we're losing back here. But the net result was a positive EUR again for the 160-acre spacing unit.

Q. All right. Turn to Exhibit 22 and identify those wells.

A. Jicarilla 95, No. 10, parent; Jicarilla 95 8B, pilot. Again, this is my projection for the

parent before the pilot came on. The pilot comes on here, and the parent sees interference. And this is the projection for the parent and pilot together.

This also had a positive EUR. Not much, but it is positive.

Q. Now let's look at Exhibit 23. Explain that, please.

A. The first line is -- let's just look at the Jicarilla lease 8B. The first line shows that the EUR for the pilot was 848. The EUR for the -- did I say "pilot"? Correct, okay.

The parent EUR before the pilot was 1,455. The parent EUR after the pilot was 1,277. That means we lost 178 EUR for the parent well.

However, the EUR for the pilot was 878. So the net EUR increase for this spacing unit was 670.

The yellow line, yellow highlighted area, represents the net EUR increases in which all six of our pilots show an EUR increase. An average of 187 MMF for the six pilots.

Q. For the EUR data, is some component of that attributable to acceleration? And how do you account for that?

A. This is what I would call the

acceleration. The loss in EUR from the parent, which was picked up by the pilot. The average was 148.

And you divide 148 by this 335, which was the average EURs to the pilots, and you come up with 44 percent rate acceleration, leaving 56 percent for incremental reserve increase.

Q. Let's turn to Exhibit 24, your summary table for project economics. Could you explain the methodology that you are utilizing here?

A. Well, it's important to recognize that we did have interference. We obviously just could not take the pilot economics by itself at face value. We had to factor in the fact that the parent lost production.

So incrementally, in the aries program, we built three cases. And I would add the pilot and the parent cash flows together and then subtract the parent cash flow as if the pilot had never been completed. That's a little bit hard to understand.

But if you think about it, if there was no interference, then the parent cash flow before the pilot was completed would be identical to the parent cash flow after the pilot, if there was no interference.

Those two would cancel each other out, and you'd just be left with the pilot cash flow. So any negative effect will be seen by that as the ...

Q. So across the board, you've shown a capital cost of 150,000; is that right?

A. That's correct.

Q. And is that representative of the cost for --

A. That would be today's cost.

Q. All right. And that's the cost for adding on the PC --

A. That would be for a pay add recompletion commingled.

Q. And when you apply this set of econometrics to each of your well projections, are those summarized on Exhibit 25?

A. Yeah. Let me just stick with the other one for just a second.

Q. Sure.

A. These are all positive economics, with the exception of the Florence Federal, which, as you see, had a negative PV 10 value, and the others were positive.

I mean I can't say exactly. We have another metric we use, which is return on

investment. But that's something that's proprietary information. But basically if it's got a positive PV 10, it's an economic case.

Q. This is Exhibit 25?

A. Yes.

Q. What does that show us?

A. That's just an overall summary, all the data summarized in this one table, everything we've talked about. Five of these pilots were economic. And one was uneconomic, which is the Florence Federal.

Q. Now, is commingling necessary to make these projects work?

A. In today's environment, pricing environment, it is.

Q. And what is the cost of a dual completion due to individual project economics?

A. We estimate that a dual will run us $75,000 more than the 150 for a pay add. And basically in this particular example right here, it would make all of them uneconomic, except for the very first well, which would be the Jicarilla West 8B.

Q. And economics precludes new drills in all cases; does it not?

A. Absolutely. A new drill -- I did run the economics on them. The PC part of a new drill would be approximately $650,000.

Q. Anything further with respect to Exhibit 25, economic development evaluation?

A. No, I don't believe so.

Q. Let's talk briefly about commingling. Are the gases and fluids from the Pictured Cliffs and Mesa Verde formations compatible?

A. Yes, they are. To my knowledge, this has not been a problem with the pilots or other PC Mesa Verde wells in the field.

Q. And to your knowledge, does commingling present a risk of reservoir damage at all?

A. No. The only the principal risk here would actually be during the frac job itself. But that would be the same as if they were set up as dual wells.

Q. Now, in the wells that you're proposing specifically for the Gavilan pool, is the bottom perforation in the lower zone within 150 percent of the depth of the top perforation in the upper zone, based on your type log?

A. No, it isn't. The type log, we used 96 No. 5B. And 150 percent of the top perforation of

PC comes out to 5,595, and the bottom perforation in the Mesa Verde, we figured would be at 5,958. So 350 feet.

Q. Close?

A. Close.

Q. Now, is the lower zone at or below normal pressure calculated at .433 psi?

A. Yes, I believe it is. The Mesa Verde is pressure depleted. The original pressure gradient was about .3, and it's pressure depleted further than that.

So the normal gradient would be .433. It's obviously way below a normal pressure gradient.

Q. So in your view, is there any risk that shut-in or flowing well pressures will exceed any commingled formations fracture parting pressure?

A. No, there isn't.

Q. And will commingling reduce the value of production?

A. No, it would not.

Q. And will Energen be providing the Division with an allocation formula, once you've acquired initial test data and BHP data for the two wells?

A. That's the standard allocation formula that we use any time we commingle wells. I mean we

always test it, and there's an allocation formula we apply.

Q. And how many other commingled wells does Energen operate in the Gavilan pool?

A. Fifty-six.

Q. And has Energen ever experienced a problem with the commingling?

A. Not to my knowledge.

Q. Okay. Let's turn to Exhibit 26, your summary. Would you wrap this up for us? What do you conclude?

A. Well, the EUR in all six of the 160-acre spacings units or the parent/pilot pairs was increased. Five out of six of the pilot wells would be economic at today's prices if they were completed as pay adds to a deeper formation. In this case, the Mesa Verde, which is already producing.

The lowest initial reservoir pressure in a pilot, which is the Florence Federal 2B, correlated with an initial production of 20 Mcf per day. And this was a noneconomic case.

Four out of the six parent wells had their profiles negatively impacted or they experienced interference, but the increase in pilot production more than offset the loss.

Q. Was it among the objectives of the original pilot project study to try to identify a methodology that operators could use to identify candidate spacing units for infill development?

A. Yes.

Q. And do you feel that that objective was accomplished by the original pilot project study?

A. No.

Q. And is that why you're recommending the conduct of the additional pilot project in the Jicarilla East area?

A. That would be correct.

Q. What do you hope to achieve by that?

A. Well, I think clearly one enigma here is -- I mean if you just look at the Florence Federal Well, which had a good reservoir pressure, and it's almost the same as the best pilot we had.

And the Florence Federal turned out to be the worst producing well post-EUR in Florence, and the other one, the Jicarilla 8B, the highest performing well.

We just don't have enough data to really -- you know, we don't have, I'd like to say, a recipe yet to say, "This is the place to put a pilot and be sure that we're going to be

successful."

Three out of the six wells only really had a marginal EUR increase. They were still economic because of the rate acceleration part. We'd like to do better now.

Q. Based on the results from the original pilot project, in your opinion, is basin-wide infill development for the Pictured Cliffs formation warranted at this time?

A. Well, I mean our areas over in the southeast corner are in tighter rock, and it's just really a completely different world from basin-wide. I couldn't recommend basin-wide.

Q. Now, if the Division approves Energen's proposed pilot project at the Jicarilla East, do you have a recommendation for the time allowed to gather data and then analyze it and then report back to the Division on the results?

A. We would recommend annual written reports. And at the end of three years, a report such as this, a study, a postappraisal report.

Q. Anything further you wish to add to your testimony?

A. No.

Q. Were Exhibits 11 through 26 prepared by

you or at your direction?

A. Yes.

MR. HALL: I move the admission of Exhibits 11 through 26, and we will pass the witness.

We need to excuse Mr. McMillan for his physical therapy appointment.

THE EXAMINER: Exhibits 11 through 26 are admitted.

(Exhibits 11 through 26, inclusive, were admitted in Case No 12857.)

MR. KELLAHIN: Mr. Van Voast, a couple of questions, sir.

CROSS-EXAMINATION

BY MR. KELLAHIN:

Q. I want to direct your attention to the questions I was asking Mr. Lehman.

When you look at Mr. Stogner's order from '02, the criteria for selecting the pilot wells, he went through that list with me.

Of that list on the order, there was only one of the criteria that he was going to adjust, and that was to lower the cumulative production total from 0.7 to 0.5. Do you remember that?

A. Yes.

Q. Were you involved in the selection of the eight pilot wells for the new project?

A. Yes, I was.

Q. Do all eight of these wells satisfy the criteria for selection, including having a cumulative recovery of between 0.5 and 1.5 Bcf?

A. They do.

Q. Do they?

A. Yes.

Q. Do you have a copy of Mr. Lehman's presentation?

A. I do.

Q. Would you turn to page 12 in that exhibit book for me? This is in the new exhibit book.

These numbers are too small for my eyes. Maybe you can help me out. I'm looking at page 12 on the exhibit Mr. Lehman prepared, and it shows the cumulative production through June of '08.

And let's find one for example and have you show me how to read this. If I look in Township 26 North 3 West, there's four wells in Tapacito that are marked with red triangles.

Do you see those?

A. Twenty-six North 3 West. Yes, I see it.

Q. In the township there's four red triangles

that are located in the western portion --

A. I see them.

Q. All those are in Tapacito, right?

A. Correct.

Q. If you look at the one on the north side farthest west, I think that number is 0.13; is it not?

A. I'm seeing a .6 contour. It looks like .5 might be the average right there.

Q. Maybe that's the trouble I'm having. I just can't see these numbers. They're too small.

A. I think .13 is the data. Is that correct?

Q. I don't know. I'm asking you to help me read the map.

A. I believe that is the data, .13. And the way it's contoured, I see it about a .5.

Q. That answers my question, because I was misreading this map.

So when you follow these contours -- and I may have to scale this up to read it -- you're representing that all eight of these new project wells are going to meet the minimum criteria of cumulative production of greater than 0.5?

A. I'm just taking another look here. Yes.

MR. KELLAHIN: Very good. Thanks.

MS. DE LA TORRE: We have no questions.

MR. BROOKS: No questions.

THE EXAMINER: I have no questions.

MR. HALL: Mr. Examiner, we'll provide you with a CD with all of the exhibits on it so you can scale them up and look at them better than they're portrayed in the hard copies.

A housekeeping matter. In terms of notice, I looked at the rules and didn't feel that renotification in Case No. 12857 was warranted.

I called the Division, and I talked to the Chief Engineer. He told me otherwise.

So we provided notice to the same list of interest owners and operators who Mr. Kellahin provided notice to in 2002, the best I was able to do at the time.

And so we would offer that in Case 12857. That will be our Exhibit 27. And we'll provide you with our affidavit. We have the list of owners and operators who received notice, copies of the green cards and receipts. And we've also indicated those to whom notice letters were undeliverable and returned to us.

In Case No. 14539, we provided notice to all the offsetting operators. That will be our

Exhibit 28.

Exhibit 28 is our affidavit, and there is attached that the list of offset operators, including those notified for the nonstandard location relief, and copies of our letter and certified receipts.

So we would offer those into the record at this time, Exhibits 28 and 27.

THE EXAMINER: Exhibit 27 for Case 12857 and Exhibit 28 for Case 14539 are admitted.

(Exhibit 27 was admitted for Case 12857.)

(Exhibit 27 was admitted for Case 14539.)

Who wishes to go next?

MR. KELLAHIN: Mr. Examiner, at this time, with your permission, we call Mr. Paul Marusak.

PAUL MARUSAK,

having been previously duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

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

A. Paul Marusak, reservoir engineer.

Q. Where do you reside, sir?

A. In Farmington, New Mexico.

Q. And by whom are you employed?
A. ConocoPhillips.
Q. In what capacity, sir?
A. As a reservoir engineer.
Q. On prior occasions, have you qualified as a petroleum engineer before the Division?
A. No.
Q. Would you summarize for us your education?
A. I graduated in 2007 with a mechanical engineering degree from Kansas State University. I've been employed as a petroleum engineer with ConocoPhillips for the past three years, specifically as a reservoir engineer in the San Juan Basin for the past year and a half.
Q. Are you pursuing advanced studies in your degree?
A. Yes, sir. I'm working on my Master's degree in petroleum engineering from Texas A&M.
Q. As part of your responsibilities for Burlington/ConocoPhillips, what are your areas of assignment for that company?
A. I primarily concentrate on the Pictured Cliffs and Fruitland Coal.
Q. Have you reviewed the order that was issued by Mr. Stogner back in '02?

It was Order No. R-11484.

A. Yes, sir, I have.

Q. And have you reviewed Burlington's records with regards to the pilot project and their study wells?

A. Yes, sir, I have.

Q. And based upon that review, have you compiled certain exhibits and reached certain conclusions to present to the Examiner this afternoon?

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Marusak as an expert in petroleum engineering.

MR. HALL: No objection.

MS. DE LA TORRE: No objection.

THE EXAMINER: So acknowledged.

MR. KELLAHIN: Mr. Examiner, I'm sorry that the displays were printed front to back. But if you'll bear with me as we turn through the slides, Mr. Marusak's displays, the first exhibit will be a list of the pilot wells. And then you'll have to flip it over to see the other exhibits as we work through the exhibits.

Q. (By Mr. Kellahin) Let's turn, sir, if you will, to what's been marked as -- it says,

"ConocoPhillips Exhibit No. 1." Do you see that, sir?

Can you set the stage for us and describe for us what at that time Burlington Resources did about the original pilot project?

A. Okay. Between 2002 and 2003, Burlington Resources completed 16 pilot wells. Three of them were new drills, and the other 13 were recompletions.

Q. When we look at Exhibit No. 1, before we look at the details of it, show us how it's organized.

A. The first column shows the year that that well was completed, and then the well's name and number, along with the API, and whether or not it was a new drill or a recompletion, the specific location of that well, and then the parent well for that location, along with its API and which pool that infill well was completed in.

Q. If memory serves me right, Mr. Stogner's original order had a population of 30 pilot wells approved for this project. Is that not true?

A. Yes.

Q. And out of those, how many do you have represented in your report to the Examiner?

A. Sixteen.

Q. Some of the wells that were not drilled are part of this set?

A. Yes, sir.

Q. When we take this list from Exhibit No. 1, do you have a locator map or something to show us where those wells are actually located?

A. Yes.

Q. Would you turn to Exhibit 2? Can you take a moment on Exhibit 2 and explain to us how it's organized? And then we'll talk about the details.

A. Yes. This map shows the Pictured Cliffs pools in the basin. And the infill wells from Burlington, Energen and BP are all plotted on this map.

The circles represent Burlington's infills, the squares represent Energen's, and the triangles represent BP's. Then they're color coded by whether or not they were a new drill or a recompletion and which year they were completed in.

Q. To the best of your knowledge, did Burlington follow the protocol in the criteria approved by Mr. Stogner in the '02 order?

A. Yes, sir.

Q. As part of that pilot study then, there

was a component with regards to layer pressure; was there not?

A. Yes, sir.

Q. What is your understanding of the reason to have layer pressure? What were they thinking about?

A. To determine how effectively the 160-acre spaced parent wells were vertically draining the Pictured Cliffs.

Q. Can you give us a verbal picture of what you're trying to describe?

A. Yeah. In the Pictured Cliffs, I guess Energen showed a log earlier. But you can see that there's a coarsening upward where the upper portions of the Pictured Cliffs are generally thought to be of higher quality and higher porosity and permeability.

So we were trying to investigate whether or not the parent wells were effectively draining both the upper portions of the Pictured Cliffs and the lower portions of the Pictured Cliffs.

Q. From a reservoir engineering sense, as you go from the Upper Pictured Cliffs down lower, what's happening to the quality of your reservoir?

A. It's getting lower, lower permeability and

porosity.

Q. And what was the hypothesis that they had back in '02 about the reason to have layer pressures for those infills?

A. That perhaps you were ineffectively draining your lower portions of your Pictured Cliffs with your 160-acre parent wells.

Q. And how did the engineers and geologists back then propose to study that issue?

A. By using layer pressure tests or performing layer pressure tests on the infill wells.

Q. And was that done?

A. Yes, sir.

Q. Does Exhibit No. 3 represent a graph and a depiction of those test results?

A. Yes, it does.

Q. Before we read it, describe for us how Exhibit 3 is organized.

A. It is a cross-plot of the lower layers' pressure and the upper layers' pressure from each specific well's layer pressure tests. Six points represent each of those pressures.

So if you look at the highest point, that represents the lower pressure of 450. You can draw a line across and then see that the Upper Pictured

Cliffs was measured as 400 pounds.

Q. Okay, walk me through this now. In the X axis on the bottom of the scale --

A. Yes, sir.

Q. -- you've got the Upper Pictured Cliffs layer pressures?

A. Yes.

Q. How were all these pressures taken?

A. By setting a pressure bomb and a plug and allowing the pressure to build up and doing it for two separate intervals, perforation intervals.

Q. So in that same wellbore, then there's a pressure bomb and a specific targeted test for the upper PC?

A. Yes.

Q. And that's plotted on the X axis?

A. Yes, sir.

Q. Now, when you go over to the Y axis, you're looking at the lower pressures?

A. Uh-huh.

Q. So in that wellbore, the test pool is taken to the lower PC and run again?

A. They're both done at the same time.

Q. They're done concurrently?

A. Yes.

Q. And for example, if you take the six datapoints and look at the one that's farthest to the upper right corner, there's a datapoint there?

A. Yeah.

Q. How do you put it on the scale?

A. That would show you a Lower Pictured Cliffs pressure of 440 pounds or so and a an Upper Pictured Cliffs pressure of 400 to 450 pounds.

Q. And that methodology then was used to put the six datapoints?

A. Yes.

Q. How do you construct the lower green line? What does that represent?

A. That would show -- every point that lies on that line would mean that the pressure in the Upper Pictured Cliffs is the exact same as the pressure in the Lower Pictured Cliffs.

Q. And what's the purpose of drawing the blue dashed line?

A. It shows where there is a 20 percent difference or greater between the upper and lower portions of the Pictured Cliffs.

Q. And what's the conclusion from the test results?

A. That there is an insignificant amount of

differential depletion, at least vertically. What you're draining from your 160-acre parent wells, you're draining in both the upper and the lower parts of the Pictured Cliffs.

Q. Based upon that analysis and those results, what did Burlington conclude about the infill density problem in the PC?

A. That the 160-acre wells were effectively draining both the upper and lower portion of the Pictured Cliffs.

Q. So an existing well in the Upper PC had the equal and same opportunity to get gas from the Lower PC, and additional force was not needed to do that?

A. Yeah.

Q. Were the pilot wells subject to any other pressure analysis or pressure comparisons?

A. Yes, they were.

Q. Let's turn to Exhibit No. 4. Tell me what conclusions you're reaching from this data. What is it you're showing?

A. In all of the infill pilot wells, we did pressure buildup tests and compared those to the original pressures of the reservoir and found that the reservoir is currently at an average of

25 percent of the original pressure, which is due to the depletion of the 160-acre parent well.

Q. Let's see how the display is organized. The bottom scale is showing me what, sir?

A. Each bar represents one of the pressure buildup tests. And the lighter green outlined with a dashed line represents the original reservoir pressure in that location, and the smaller green bars represent the actual measured pressure.

Q. For example, if we start with Well No. 1 in the lower left, do you see the "1"? It's got a dark shade of green and then it changes to the light dashed green. Interpret that for me.

A. So in that location, that infill well, before the parent wells were drilled, had a pressure of between 500 and 600 pounds. And then at the time that the infill was drilled, in 2002 or 2003, the measured pressure was around 75 pounds.

Q. So your conclusions then are in the bold points on the display?

A. Yes.

Q. And the first one is what, sir?

A. The average measured pressures were 25 percent of the original reservoir pressure in those locations.

Q. What does that mean to a layman like me?

A. That the parent 160s are effectively draining those specific locations down to at least 25 percent of what their original pressure was.

Q. And then finally, the last bold point?

A. And then secondly, the parent wells for all the fill locations were also shown at the same time, and measured pressures were taken on those wells.

And they found that the pressures in the parent wells were almost identical to that of what the original shut-in pressure was of the infill wells, meaning that you're getting equivalent depletion across your 160-acre spacing.

Q. Are these all postfrac pressure datapoints?

A. Not all of them. Some are and some aren't.

Q. Is that anything of significance to you?

A. It could be. It would need to be analyzed further.

There's some conclusions that were drawn by someone before me that the pressures that were found from the postfrac data were lower. And I would think that we would want to look to those as

being more accurate measured pressures.

So the significance would be that these numbers could be conservative and that you could actually have lower reservoir pressures where the infill wells are.

Q. Do you have an approximate point in time since '02 at which Burlington was able to draw conclusions from the dataset derived from its share of the pilot wells?

A. Yes, 2005.

Q. By 2005 then, what had Burlington concluded about the necessity of increased well densities for the Pictured Cliffs pools?

A. We believe that there wasn't a desire of ConocoPhillips to pursue 80-acre infill wells.

Q. Let's turn now to Slide No. 5, your last exhibit. Again go through your conclusions for us.

A. First, from the layer pressure tests, they showed that there was insignificant depletion, at least vertically; that the upper and lower portions of the Pictured Cliffs were being drained to the same extent.

The shut-in pressures from those infill wells showed that the parent wells had drained the infill locations to at least 25 percent of their

original pressure and found that the parent wells had also uniformly drained the 160-acre spacing due to the fact that the pressures in the parents and the infills were very similar.

We also concluded that the majority of the reserves that were recovered from these parent wells can be attributed to acceleration.

Also, the engineers for Energen pointed out that there's significant interference on our parent wells.

So we concluded at the time now that 80-acre infilling is not justified economically for ConocoPhillips, but that future geological reservoir data could potentially change that in the areas that we've studied.

MR. KELLAHIN: That concludes my examination of this witness, and we will move the introduction of Exhibits 1 through 5.

MR. HALL: No objection.

THE EXAMINER: Exhibits 1 through 5 are admitted.

(ConocoPhillips Exhibits 1 through 5, inclusive, Case No. 14539, were admitted.)

THE EXAMINER: Does anyone care to cross?

MR. HALL: Very briefly.

CROSS-EXAMINATION

BY MR. HALL:

Q. Mr. Marusak, if you'll turn to Exhibit 3 of your pools map, we go from the area where Burlington conducted its studies and then move to the eastern portion of the basin, where Energen's pilot projects were located. Do you know if that dual PC zone is existent in the eastern portion of the area where Energen did its study?

A. Yeah, yes.

Q. Okay. How do you know that?

A. From logs, the log that you showed that there was a difference between the upper and lower portions of the Pictured Cliffs.

Q. Are they both producible?

A. Yes.

MR. HALL: Nothing further, Mr. Examiner.

MS. DE LA TORRE: We have no questions.

THE EXAMINER: Mr. Brooks.

MR. BROOKS: No questions.

THE EXAMINER: You did have 16 wells, right?

THE WITNESS: And there's only 15 on that.

THE EXAMINER: Yeah. What happened to --

THE WITNESS: I honestly don't know. If

you care, I could investigate it further. But I would assume it's a bad datapoint.

THE EXAMINER: Your conclusion is that 80-acre spacing is not justified at this time. However, down the road, perhaps? Is that what I heard?

THE WITNESS: Perhaps.

THE EXAMINER: On your map -- a long, long time ago I worked up in Farmington. And I remember going up into Colorado and logging perforated Pictured Cliffs wells.

Is there production up into Colorado?

THE WITNESS: Yes.

THE EXAMINER: What's their Pictured Cliffs spacing in Colorado; do you know?

THE WITNESS: I am pretty sure it's 160s.

THE EXAMINER: Does anyone know?

THE WITNESS: There's so little production up there.

MR. KELLAHIN: We certainly can find out for you, Mr. Examiner.

THE EXAMINER: I was thinking it was less than 160. It was 40 or 80, but I'm not sure.

MR. KELLAHIN: They do things differently there.

THE EXAMINER: All right, I have no further questions. Thank you.

Ms. de la Torre?

MS. DE LA TORRE: Mr. Examiner, Kelly de la Torre, Beatty & Wozniak. And we call Linda Htein, of BP.

Mr. Examiner, we wanted to emphasize that Linda Htein is here on behalf of BP to report back and is not taking any position with respect to the Energen application for additional infill pilot well projects.

LINDA HTEIN,

having been previously duly sworn, testified as follows:

DIRECT EXAMINATION

BY MS. DE LA TORRE:

Q. Will you please state your name for the record?

A. Linda Htein.

Q. Who do you work for?

A. I work for BP.

Q. What do you do for BP?

A. I'm a reservoir engineer.

Q. Would you please describe your education and training for that position?

A. Certainly. I graduated from the University of Texas in 2007 with a Bachelor of Science degree in Petroleum Engineering.

For the last three years, I've been working for BP. I spent about a year working on a Gulf of Mexico appraisal project, where I mainly focused on reservoir simulation. And over the last two years, I've been providing reservoir engineering support to the BP operations in the San Juan Basin.

Q. So then you've had substantial experience working with BP's properties in Northwest New Mexico?

A. That's correct.

Q. Do you have in front of you a copy of the prehearing statement filed on behalf of BP in this matter?

A. Yes, I do.

Q. Directing your attention to the affidavit attached to the prehearing statement, I want to ask you: Is that your affidavit?

A. Yes, it is.

Q. With respect to Figure 2, is it necessary to make a correction?

A. Yes, it is necessary to make a correction.

MS. DE LA TORRE: And we have passed out

the corrected exhibit. It was mislabeled on Figure 2, and we have corrected that.

And at this time I move that we admit the affidavit and Exhibits 1 through 7 into the record.

MR. HALL: No objection.

THE EXAMINER: Okay, the affidavit and Exhibits 1 through 7 are admitted.

Now, this is correcting the typo.

MS. DE LA TORRE: Correct.

(BP Exhibits 1 through 7, inclusive, and the Affidavit of Linda Htein were admitted.)

Q. (By Ms. De La Torre) Would you tell us what you did to prepare the information contained in your affidavit?

A. Yes. This project was previously worked by another reservoir engineer back in 2002 and 2003, and he since retired from BP. So I basically looked through his files and compiled this short report.

Q. Could we turn to Figure 1, which is BP Exhibit 2?

A. (Witness complies.)

Q. Could you describe what's shown there in that figure?

A. Yes. In Exhibit 1 there are three tables. The first table is just general information on the

three pilot wells that were completed by BP as part of this project. It provides the well name, API number, location, completion date. And it also provides the names of the offset parent wells in those quarter sections.

Table 2 is a summary of the pressure data that we reported in our pilot wells and our parent wells. It provides the shut-in periods for both the pilot and parent wells, as well as the pressure measurement that was taken in both the pilot and parent wells.

Table 3 is a summary of the production performance that we observed in the pilot wells. It includes the start-of-production month, the cumulative gas production to date, the peak rate, the current rate and whether or not the well is compressed.

Q. And in Figure 1, BP Exhibit 2, could you describe that figure?

A. Sure. Exhibit 2 is showing a map of the San Juan Basin. The area shaded in green are BP-operated leases in New Mexico, and the three orange dots represent the locations of the three pilot wells.

Q. And Figure 2, BP Exhibit 3, what does that

figure show?

A. Exhibit 3, on the Y axis, shows the shut-in pressure measured at the pilot well locations versus, on the X axis, the shut-in pressure measured in the parent wells.

There's a diagonal line across the graph that represents the point at which the parent and pilot wells are exhibiting the same pressures. And you'll see that two of the three wells show slightly higher pressures in the pilot wells versus the parent wells, and one of the three shows a slight lower pressure in the pilot well versus the parent well of.

Q. And turning to Figure 3, BP Exhibit 4, what's shown this figure?

A. Exhibit 4 is a bar graph showing the 2003 shut-in pressure measured from the pilot wells relative to the approximate original reservoir pressure at those locations.

So in all three cases, the shut-in pressures measured from the pilot wells were no more than 33 percent of the original pressure.

Q. And Figures 4, 5 and 6 corresponding to BP Exhibits 5, 6 and 7, could you explain these exhibits?

A. Yes. Exhibits 5, 6 and 7 are basically production plots showing the Pictured Cliffs production history from the three pilot wells and their corresponding parent wells.

Q. Did you work with anyone else at BP?

A. Yes. My statement was reviewed by a senior reservoir engineer, a senior geologist, and my supervisor.

Q. And did you and the others determine the position of BP as stated in the affidavit?

A. Yes, we did.

Q. And what is that position?

A. Our position is that based on the pressure and production data that we recorded in these pilot wells, and based upon current economic conditions, infill completion of the Pictured Cliffs in the areas in which we operate is not appropriate at this time, and we will not be requesting an infill order on this date.

Q. Have you heard anything in today's hearing or in the prehearing statements of the other parties that prompts you to change your recommendation to the Oil Conservation Division?

A. No, I have not.

MS. DE LA TORRE: I have nothing further.

MR. HALL: I have no questions.

MR. KELLAHIN: No questions.

MR. BROOKS: No questions.

THE EXAMINER: Have you heard anything today that you would disagree with?

THE WITNESS: Perhaps.

THE EXAMINER: I won't put you on the spot and ask you what that is.

But I have a daughter that graduated from UT in petroleum engineering. And in her class -- it's been a few years back -- she was the only petroleum engineer graduating.

THE WITNESS: That's not true for me. I think our graduating class was about 80 people. So it was a pretty good-sized class.

THE EXAMINER: How many girls?

THE WITNESS: I would say maybe 20 percent were girls.

THE EXAMINER: Any closing comments?

MR. HALL: Nothing further of Ms. Htein.

We would like to briefly call Mr. Van Voast in the nature of rebuttal testimony.

FURTHER DIRECT EXAMINATION

BY MR. HALL:

Q. When Energen participated in the original

pilot project study, did it attempt to obtain layer pressure data?

A. No, we didn't.

Q. And why not?

A. We only had one zone that we considered commercially productive.

MR. HALL: That's all I have. Thank you.

That concludes our case, Mr. Examiner.

THE EXAMINER: Anything else?

Okay. With that, then we'll take both cases under advisement. Case No. 12857 --

MR. BROOKS: I'm not sure I understood what your client's position was, Mr. Kellahin.

Do you have a position in this case?

MR. KELLAHIN: In the second case for the new project, we don't take a position for or against at this point. Our prehearing statement had to do with following the criteria of the original pilot.

MR. BROOKS: Okay, very good. So your position is the same as BP's position?

MR. KELLAHIN: Yes, Mr. Brooks.

MR. BROOKS: Thank you.

THE EXAMINER: So with that, we are adjourned.

(The hearing adjourned at 4:32 p.m.)

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

STATE OF NEW MEXICO

COUNTY OF SANTA FE

REPORTER'S CERTIFICATE

I, Paul Baca, New Mexico Certified Court Reporter No. 112, do hereby certify that I reported the foregoing proceedings in stenographic shorthand, that I did administer the oath to the witness, and that the foregoing pages are a true and correct transcript of those proceedings and was reduced to printed form under my direct supervision.

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

PAUL BACA
Certified Court Reporter No. 112
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