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:

APPLICATION OF COG OPERATING, LLC, FOR SPECIAL RULES, EDDY AND LEA COUNTIES, NEW MEXICO — Case No. 14613

TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: RICHARD EZEANYIM, Technical Examiner
DAVID K. BROOKS, Legal Examiner

May 16, 2011

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, RICHARD EZEANYIM, Technical Examiner, and DAVID K. BROOKS, Legal Examiner, on Monday, May 16, 2011, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South St. Francis Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: PAUL BACA, CCR #112
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I N D E X

COG EVIDENCE

APACHE EVIDENCE

I N D E X

PREMIER EVIDENCE

KENNETH C. JONES

COG EXHIBITS

APACHE EXHIBITS

PREMIER EXHIBITS

TECHNICAL EXAMINER EZEANYIM: My apologies. We will come to order. Good morning, everybody.

I think I'm seeing a lot of new faces here, so I need to do some introductions.

My name is Richard Ezeanyim. I'm going to be the technical examiner today.

Sitting by my left is David Brooks, who is going to be the legal examiner today.

We are fortunate to have Mr. Paul Baca himself. He's our contractor for court reporters, so we're going to do well.

As you all know, this is an off-docket hearing. It's not a regularly-scheduled hearing because of the issues that are contested and in controversy here.

Today is May 16. It's 8:30 in the morning, and we're going to present this off-docket, Docket Number 1211.

I think first of all, I would like to read into the record the two cases.

Case Number 14613 is the amended application of COG Operating, LLC, for Special Rules, Eddy and Lea Counties, New Mexico.

This case number will agree to consolidate

with the testimony for Case Number -- Application Number 14647. That's the application of Burnett Oil Company, Inc., and Hudson Oil Company, for consolidation and the expansion of -- and addition of special pool rules for second pools in Lea and Eddy Counties, New Mexico.

Before I call for appearances, I would like to make some comments, which most of you already know, because on Wednesday we had the conference. We did a good job by narrowing down the issues. We said that there would be 20 hours. We may not take three days because of -- you know everybody is busy, so we're not going to do this Friday. Wednesday and Thursday are not available, so we have only Monday and Tuesday.

We came up with 20 hours divided as follows. The 7 -- 11 hours will go to COG, Apache, and Premier. And 7 hours will go to Burnett and Hudson. And 2 hours will go to the examiners.

Maybe I won't ask questions, so we can use that a little bit, if you -- if I don't have questions. So that is the initial and the cross-examination.

You'll be, you know, timed. And the legal examiner here is going to be timing you for now,

until we find somebody else to do it. So when you are cross-examining, you are using your time. When you are examining, you are using your time.

What I -- the examiner would like to do is that I usually -- I want to explore the facts and the technical issues. I may not do it at this time, so that you -- I don't want to take away one minute of your time. I will wait, at the end of all the cross-examination, to ask any questions that I may have. And that will be charged to me, to the examiner, so that nobody is affected by my asking questions to try to explore it. And when Counsel is examining you, I will maybe write it down and ask at the end of it.

Today we are going to be taking little breaks, maybe 10-minute breaks. So I suggest that we have lunch from 11:45 to 1:00 p.m. Is that okay with everybody?

I think that would be enough for everybody to have the good Santa Fe food before coming back.

As you all know, we narrowed down these issues, and I want to make it clear and point out to you what issues we are trying to discuss today.

One of them that we are going to talk about is allowables, several discussions about this,

and the thought of where this should be. I don't want anybody to deviate from these issues.

We're dealing with the overproduction and the conservation. We're going to take care of that. We are taking care of that.

So I want to warn you that when you're direct examining or cross-examining to focus on these strict issues. That will really stimulate our time. Because if you just -- you know, to expand this to how much you interrupt, then I'll stop you right there, and then we'll go back to allowables and our other issues.

As you all know, this is really serious business. However, this is an administrative hearing. We are not in a civil court or a criminal court, so we're going to have fun. I want you to be nice to each other. I don't want the cross-examination to be, as you say, you're going to put them on a pedestal. I want you all to have fun and examine with the facts, to see what we are going to do with this pool. So let us be nice to each other and have fun.

Any comment before I call for appearances?

MS. MUNDS-DRY: Mr. Examiner, I think we do have one question, and we just don't recall from

the prehearing conference, the order you set. Really, specifically, we're wondering about Premier and whether they are -- you wanted them to go after Apache or whether you wanted them -- because they're really in rebuttal to Burnett's well density part of its applications. So I don't know if it made sense for them to go after Burnett put on its direct case, or if you wanted them all to go on together.

TECHNICAL EXAMINER EZEANYIM: Well, I -- we have agreed on timing. Are you the counsel for Premier?

MS. MUNDS-DRY: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: Then, I mean, you have to use your time to see if they want to cross-examine when they present their evidence. We're giving you 11 hours. We've agreed to that. I think 11 hours is appropriate. And since you are the counsel for both, or counsel for Apache, I think, so you know when -- when you --

Is there any other legal issue that you see that I am not covering?

LEGAL EXAMINER BROOKS: No, I can't think of anything. If you -- if Premier's case is merely rebuttal, you might want to save it to the rebuttal phase of your argument or your response.

MS. MUNDS-DRY: I think that makes the most sense to do that.

LEGAL EXAMINER BROOKS: That would seem reasonable to me.

TECHNICAL EXAMINER EZEANYIM: The important thing here is for you to manage your time. You will be timed. And once your time is up your time is up.

And you're not going to say well, you know, that's why you are going to come in here, because your time is up. We gave you the time. We've agreed to that, and I'm going to use my time, because I don't want my time to expire and I walk out and there is no hearing.

So -- anyway --

MS. MUNDS-DRY: Thank you, Mr. Examiner.

TECHNICAL EXAMINER EZEANYIM: -- at this point, since there is no comment, then I call for appearances.

MR. CAMPBELL: Let me, if I might, Mr. Examiner. We were tendered the Premier exhibits last night at 11:00.

TECHNICAL EXAMINER EZEANYIM: What happened?

MR. CAMPBELL: We received, for the first

time, Premier's exhibits at 11:00. We think it's quite clear that they don't just go to the density issues, they go to allowables and GOR as well. And we would suggest for ease of flow, here, that Premier follow Apache, who follows Concho, to put their direct case on.

TECHNICAL EXAMINER EZEANYIM: Is that okay?

MS. MUNDS-DRY: That's fine. It was really just a question as to what you preferred.

TECHNICAL EXAMINER EZEANYIM: You know what? I'm here to get the facts and the issues. That is why I'm here. Do it -- however you present it, it doesn't matter. Once I get the facts then we can make a decision on this case. So it's okay if you guys agree on that.

LEGAL EXAMINER BROOKS: And as long as I'm keeping time, I will state the time when I start the person's time and when I stop it, and I'll put it on this pad here, which is available for people to check.

TECHNICAL EXAMINER EZEANYIM: I had wanted -- and we might do this, after a break, to get that arranged for you not to do that, because I wanted you to concentrate. Because like I told you,

this is an issue involving millions and millions of dollars. We need to concentrate on what we are doing, so we will get somebody to keep time.

MR. GRABLE: Just two comments, Mr. Ezeanyim. First, in your recitation of the applications, you correctly noted that Concho had filed an amended application. I couldn't quite tell if you noted that for Burnett and Hudson as well. But we did file an amended application on May 6, and I just want to make sure that you have our amended application.

TECHNICAL EXAMINER EZEANYIM: Yes, I do.

MR. GRABLE: And then secondly, I agree with your statement of the issues. We will do our best to keep our evidence to those issues, but I would like the record to reflect as well, that we have disposed by agreement the other issues of overproduction and consolidation.

TECHNICAL EXAMINER EZEANYIM: You have done that.

MR. GRABLE: And I would like to have that on this record. I don't know what record, if any, was made of that prehearing conference. But my understanding of the disposition of those issues are that with respect to overproduction, when the

division has finally entered an order in this case and adopted new allowable rules, then each operator will recalculate the amount, if any, overproduction under the new rules back to first production.

Is that your understanding of where we left it last Wednesday?

MS. MUNDS-DRY: I don't recall us getting that far.

TECHNICAL EXAMINER EZEANYIM: I think what -- let me -- let me make a point on that.

I have got here some of the oil production that was given to me by some of the operators, you know. I think the division has a right to say what will happen to that -- those oil productions. We're going to do that.

In the evidence today, we're going to look at the evidence, facts. And I think we're going to determine how that overproduction will be handled. I don't know.

I can say, Okay, let me grandfather evidence in every overproduction. But then I have to look at, well, did I -- did I infringe on -- do everything right, if that is the case?

I might say, Okay, let's make it up. I mean it depends on what the evidence is of what this

pool is doing. So I think the division now has to deal with the overproduction from all of the operators. I think that's my -- I don't want to have another hearing to consider overproduction.

Is that all right with you, we can handle the overproduction like that?

MR. GRABLE: So that I'm clear on exactly -- and we filed a pleading on that point, they filed a pleading on that point. We put the issue in the case, and now we have taken it out of the case somehow at a prehearing conference.

LEGAL EXAMINER BROOKS: Well, after we reviewed the exhibits that have been submitted, it might become necessary to have another hearing limited to that issue, but we'll decide that.

Let me add that I'm skeptical that we can get in 20 hours in two days, because we would have to go very late into the evening. But that's up to the presiding examiner and the attorneys.

I'm ready to start.

TECHNICAL EXAMINER EZEANYIM: Yeah. Anybody?

MR. GRABLE: Well, I have -- just the final point was on the consolidation issue. Again, my impression of how that was left at the prehearing

conference was Concho and Apache did not object to consolidation but for a single field, the West Maljamar field, and so that our application to consolidate the other five fields and the surrounding undesignated areas is now uncontested.

And thank you.

LEGAL EXAMINER BROOKS: Well, at this point the cases are consolidated for purposes of the hearing.

MR. GRABLE: Yes.

LEGAL EXAMINER BROOKS: And as the OCD typically does, we wait and determine, after we have heard the evidence, whether or not it is appropriate to enter one order or more than one order and dispose of the applications before it.

MR. GRABLE: Yes, Mr. Brooks. I just wanted the record to reflect what disposition has been made of that issue. Since we put it in issue in the case --

LEGAL EXAMINER BROOKS: Yes.

MR. GRABLE: -- if it was resolved at a prehearing conference. I had stated my understanding and I think opposing counsel agrees with us.

LEGAL EXAMINER BROOKS: I believe that is

correct.

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

TECHNICAL EXAMINER EZEANYIM: And that is on the consolidation of the five pools.

MR. GRABLE: Yes.

TECHNICAL EXAMINER EZEANYIM: With the exception of West Maljamar.

MR. GRABLE: Right.

TECHNICAL EXAMINER EZEANYIM: Okay. Yeah.

Talking about the record, if you have not given your business card to Mr. Paul Baca, please do so, so he can get your name spelled right. That's very important.

Okay. If nothing else, at this time I'm going to call for appearances on these two cases. I call for appearances.

MS. MUNDS-DRY: Good morning, Mr. Examiners. My name is Ocean Munds-Dry, with the law firm Holland & Hart, LLP.

Sitting with me here today at counsel table is Adam Rankin. We represent COG Operating, LLC, and Premier Oil and Gas. And we will be calling four witnesses on our direct case today.

MR. CAMPBELL: Mr. Examiner, I'm Michael

Campbell, with Campbell Trial Law, here in Santa Fe, entering an appearance for Burnett, the Burnett/Hudson group.

MR. GRABLE: And I am Robert Grable, of Kelly Hart & Hallman, in Fort Worth. And I also appear here today on behalf of Burnett and Hudson.

MR. COONEY: Mr. Hearing Examiner, I'm John Cooney, of the Modrall, Sperling Firm, in Albuquerque. I represent Apache Corporation.

I would like to briefly advise the hearing examiner that here today from Apache are Andy Taylor, in-house counsel; Michelle Estes, production engineering manager; Keevin Barnes, a reservoir engineer who will testify; Jevbak Mattamana, production engineer; John Long, production engineer; Clint Mills, district manager of the Eunice Office, who will testify; and Brett Pearcy, geologist.

Thank you.

TECHNICAL EXAMINER EZEANYIM: How many witnesses all together does Apache have?

MR. COONEY: We plan to use two witnesses at this time.

TECHNICAL EXAMINER EZEANYIM: Okay. Two witnesses.

And you are planning to use four?

MS. MUNDS-DRY: Four.
TECHNICAL EXAMINER EZEANYIM: How many from Burnett/Hudson?
MR. GRABLE: Three, Your Honor.
TECHNICAL EXAMINER EZEANYIM: Now, before -- any other appearances?
Okay. What will happen at this time is that all the people that are going to testify stand up, state your name, and be sworn in. Everybody, please, at this time.
State your name, starting from there.
THE WITNESS: Richard Prentice, Concho resources engineer.
TECHNICAL EXAMINER EZEANYIM: Okay.
THE WITNESS: Ramon Reyes, geologist for Concho.
TECHNICAL EXAMINER EZEANYIM: Okay.
THE WITNESS: TJ Midkiff, engineer for Concho.
THE WITNESS: Brandon Gaynor, landman for Concho.
THE WITNESS: Kenneth Jones, president, Premier.
THE WITNESS: Keevin Barnes, engineer, Apache Corporation.

LEGAL EXAMINER BROOKS: Gentleman in the back?

THE WITNESS: Clint Mills, district manager for Apache Corporation.

THE WITNESS: Wayman Gore, petroleum engineer representing Burnett/Hudson.

THE WITNESS: Mark Jacoby, engineering manager for Burnett.

THE WITNESS: John Haiduk, geological manager for Burnett.

TECHNICAL EXAMINER EZEANYIM: Okay.

(Witnesses sworn.)

TECHNICAL EXAMINER EZEANYIM: Okay. Any opening statements? COG?

MS. MUNDS-DRY: Yes, sir.

LEGAL EXAMINER BROOKS: Okay. COG's time will start at 8:44.

MS. MUNDS-DRY: Thank you, Mr. Examiners.

Concho is seeking three things, which you have already clarified this morning:

An increase in the allowable, which was based from the state-wide rule. We're seeking an increase to 300 barrels a day for the 12 pools that are now subject to Concho's application. We're seeking a no-limiting gas/oil ratio and cancellation

of Concho's existing overproduction.

We will present four witnesses to you today: Brandon Gaynor, who is our landman; Raymond Reyes, who is our geologist; and Concho's two reservoir engineers, TJ Midkiff and Richard Prentice.

Your task, as you know, Mr. Ezeanyim and Mr. Brooks, over the next two days -- and let's hope it's two days -- is to determine whether a higher allowable and GOR may be granted if Concho can show to you that it will not harm the reservoir with what it has requested; and that the application, if granted, prevents waste and protects correlative rights.

Virtually all operators in the 12 pools that are subject to Concho's application are overproduced to some extent. All parties that are here before you today have admitted they are overproduced, and now we must focus on what the right allowable and gas/oil ratio should be for those pools.

The division itself has, fortunately, looked at this Yeso formation, this shelf -- this is what you will hear it be referred to as -- twice in recent years.

Both Devon and Mewbourne have actually brought similar applications dealing with nearby Yeso pools.

Concho agrees with those findings and conclusions that have been made by the division in these cases, and will be reiterating to a large degree the same geologic and engineering testimony. In fact, in a pool adjacent to the pools in Concho's application, the division has already set a 300-barrel-per-day allowable.

You will hear testimony today that the Yeso formation -- that this reservoir is a solution gas drive reservoir with low permeability.

These types of reservoirs are not damaged by high production rates, and you will hear our testimony and evidence on that issue.

You will also hear testimony of the extensive geologic and engineering analysis of this shelf area, which includes core holes, mud logs, FMIs, et cetera.

In fact, Concho has the largest -- the most extensive inventory of this data in this Yeso area.

Now, Concho has graduated to a more sophisticated statistical analysis, which you will

hear testimony and explanation about today, that it uses to pick its well locations and perforations.

I ask you to note the differences when you hear testimony today from Concho and Burnett on how they complete their wells. These differences are important to understand, because they affect the data that you will hear today and other very important factors, including:

Concho drills and completes its wells to not only optimize for primary recovery, but to maximize and put itself in the best position for secondary recovery.

Concho's drainage calculations, which you will hear testimony about today, show that the increased allowable will not violate correlative rights, and it is needed to avoid leaving reserves in the ground, going back to the beginning with your charge of preventing waste and protecting correlative rights. This is why approximately 94 percent of the operators with active wells in these 12 pools are supporting Concho's application.

And with that, Mr. Examiners, thank you very much.

MR. COONEY: Mr. Examiner, I am John Cooney, for Apache.

I have prepared a brief statement.

We support COG's application. We believe the allowables should be increased to -- as requested, and the GOR limit removed, and we request that our overproduction also be cancelled.

We will present two witnesses, in an effort to cut down the presentation, as we all agreed we would try to do at the prehearing conference.

Mr. Barnes, a reservoir engineer, will address initially the issues of the allowable and GOR. He will also testify in rebuttal to Burnett/Hudson's case concerning well density.

We'll also present Mr. Clint Mills, production manager, who will testify concerning the allowable issues.

Thank you.

MR. GRABLE: Good morning, Mr. Examiners.

LEGAL EXAMINER BROOKS: It's 8:47.

Go ahead.

MR. GRABLE: I'm Bob Grable of Kelly Hart & Hallman, in Fort Worth. And it's my pleasure, along with Michael Campbell here today to represent Burnett Oil Company and Hudson Oil Company of Texas.

We thank you for the careful attention you

have already given to this matter, and we know you will do so going forward.

As Mr. Ezeanyim has noted, this is an important case. It involves a large and developing oil trend. I believe it's the most active and largest oilfield in the state now. It is also a central key property to my two clients, as it is to our opponents.

We all have great interest in the outcome of this hearing. And we all believe, I suspect -- I know my clients believe -- that the rules we propose are the best to produce the most oil at the least cost for the benefit of all owners in this field, including the numerous royalty owners in the state of New Mexico.

I am going to just project, just for my opening, one of our exhibits. Exhibit 3, it's a colored --

(Discussion off the record.)

MR. GRABLE: You should have it in front of you there, Mr. Ezeanyim. It's Exhibit 3. It's a land plat with the pool boundaries, the operators by color, and the existing well spots.

I don't want to waste too much time on this.

As Ms. Munds-Dry mentioned in her opening, based upon their well count of their consolidated -- or their area of interest -- they do have currently 94, 95 percent of the wells. I don't know what it is.

The yellow areas are areas operated by Burnett. This (indicating) is our Loco Hills area over here, and it also extends to one or two other pools.

As you can see, the amount of development on the Burnett acreage is much less dense than the surrounding acreage.

Over here (indicating), these four sections are essentially undeveloped except for the single well operated by Hudson. These sections are owned -- the working interest is owned two-thirds by Burnett/Hudson and one-third by Concho.

So on an acreage basis, and the potential for future development, the Burnett/Hudson position is much more substantial than they want to make it here. I haven't calculated it within our consolidated area, but on an acreage basis, on currently developed acreage, we have a substantial position in this trend.

Now, the reason -- and this will blend

into our testimony. The reason our development looks so different, I want to point out that Burnett first acquired its properties, the Loco Hills properties, in 1998. They have been drilling, completing, producing, and studying the responsive wells and the geology in this field for 13 years.

Concho bought out -- has now bought out two of their operators. They have been active since sometime in 2006.

Apache only very recently acquired an interest, and I believe they have been active in this area for only a few months, maybe six months.

Burnett has, in history and study and technical expertise, we believe our evidence will show, that we have learned much more about how to drill efficient, effective, productive wells.

We also believe Burnett has drilled far more horizontal wells, and it's going -- I don't know the exact count. We'll put it on in our evidence. But even though we are a much smaller company than Concho, we have drilled more horizontal wells, and our wells are substantially more productive on a per-well basis.

So the real -- the dispute here in the end is going to boil down as to which set of proposed

rules for these pools are best designed and calculated to allow the operators to efficiently and effectively produce the most oil without waste, while protecting everybody's rights.

I will summarize briefly what we think the evidence will show in a minute. But I do want to say just a bit more about our clients, because they're not public companies, they aren't particularly well-known, and I just want you to know -- I want the examiners to understand their background.

Burnett Oil Company is owned by a woman named Anne Burnett Windfohr Marion, now. She is the sole heir of a man named Burk Burnett, in Texas, of the Four Sixes Ranch.

In the early -- late 19th century, the ranch's -- the Four Sixes logo was from the ranching side of the operation.

Ms. Marion began her oil company in around 1980 and has steadily grown a very well-respected and successful independent oil operation. But it is a family company, not a public company.

The same with Hudson Oil. Hudson Oil takes its roots to Randall Hudson's -- who is sitting over here -- grandfather, who acquired these

leases in the early 1930s and developed them through Shell Production.

So our operators, while not as large as our opponents', have long family histories in the business, and longer -- much longer histories in operating in this area than our opponent. I just want you to understand that my clients are here for the long haul. They want what's best to produce the most oil for the long haul. They are not come-in-do-it-quick-drill-it-up-like-this operators.

And if we thought that was best, they would be doing it, but they do not. And I think the evidence will show why.

Now I will just mention, just for information, that although Ms. Marion is a Texan, she also has roots here in Santa Fe. She and her foundation are the principal founders and benefactors of the O'Keefe Museum and its collection. She has a home here, and she has great interest in the state of New Mexico, and she will keep these properties for herself and her descendants. And so our interest in this is deep and long.

Now the three remaining contested issues are allowable, GOR, and density. We really think

the evidence comes together on these. It's impossible, really, to isolate it. We think it all fits together. And at the end of the hearing, I hope you will understand our position that all of the engineering and geological density supports the proposition that developing these properties on a 20-acre density, at least initially, our evidence will show that that gives effective and efficient drainage and should be the basic rule.

10-acre development may be indicated in certain incidental or isolated areas at this time, where the wells are unable to drain 20 acres effectively. But our evidence will show in the drainage area calculations, as Mr. Ezeanyim knows from the prehearing conference, is going to be one of the real flashpoints of conflict.

But we believe we have done studies that will demonstrate that, in the vast majority of cases, these wells are capable of draining more than 15 acres, many of them more than 20 acres. And so initially the rule should be 20 acres, not 10 acres. 10 acres should be the exception at this time and not the rule.

Secondly, our evidence will show, we believe, that gas/oil ratios and gas production are

important topics for prevention of waste. And this ties into the allowable issue, because they want 300 barrels a day -- pardon me -- Concho and Apache want 300 barrels a day with no GOR.

If you take 300 barrels a day, even with the 2001 statewide rule that Burnett believes is appropriate for these reservoirs, that results in a gas allowable of 600 MCF a day.

Now the evidence will show that very few of these wells for only a short period of time actually can produce, these units, 300 barrels a day. We believe that the 187 barrels, with the averaging -- the one-year average rule that again also, I believe, was agreed at the prehearing conference, that the over- and underproduction can be balanced over a 12-month calendar year period -- is an adequate but not excessive allowable.

300 barrels a day, we will show, is not necessary for oil, and has a particular vice when it comes to gas, because it will allow high ratio, inefficient production at very high gas/oil ratios.

Just for example, if you have a unit that can only produce 100 barrels of oil per day, but produces at a ratio of 6,000 to 1, it can produce 600 MCF a day under their -- under their -- well, it

can produce 600 MCF a day, and that will be its limiting factor.

If you have no GOR, it could produce whatever it could produce with 187 barrels of oil a day. That -- that would be double 187, which is 4, 7 -- 374, I think. I didn't write it down.

But the gas allowable will be markedly less. And we think both on the need for a GOR rule, and for the actual gas limit per unit that results from the oil limit, support that the oil limit should be 187 and there should be a gas/oil ratio of 2,000 to 1, because we believe -- and we believe the evidence will demonstrate -- that producing at high gas rates dissipates reservoir energy, will reduce ultimate production and ultimate recovery from the field, and is wasteful.

We also believe the evidence will show quite clearly that these areas that are highly drilled on 10 acres have exhibited a much higher GOR than the areas that are less densely drilled, these 20 acres over here (indicating).

But now Apache, I believe, has gotten a showing that there is a linkage between density and GOR. And so that's why we think eventually all of this comes around to show that GOR is important, 300

barrels a day is unnecessary, and the density is related both to gas/oil ratios, effective and efficient drainage, prevention of both physical waste and economic waste.

And those will be the main points of our exhibits.

And I will say finally, as I go through the notes that I have, that the other thing -- you know when the case is over -- during the case and when the case is over, it is your job, as well, to weigh the credibility of these witnesses. Who came in more prepared? Who has done a more refined study of the reservoir, the geology, the rocks, the engineering factors? Who has been more open about what they have done and how they have done it, and who, at the end of the day, is more believable?

And we believe that when you -- when this gavel comes down for the last time, when you go back to ponder these things, we hope those witnesses are our witnesses.

And with that I'll close. Thank you very much.

TECHNICAL EXAMINER EZEANYIM: Thank you.

LEGAL EXAMINER BROOKS: 8:59.

TECHNICAL EXAMINER EZEANYIM: Any other

opening statements here? Okay.

Ms. Munds-Dry?

MS. MUNDS-DRY: Yes. Mr. Rankin is going to call our first witness.

MR. RANKIN: Thank you, Mr. Examiner.

I will call our first witness, Mr. Brandon Gaynor.

TECHNICAL EXAMINER EZEANYIM: Please state your name again for the record.

THE WITNESS: Brandon Gaynor, G-A-Y-N-O-R.

BRANDON GAYNOR,

after having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. RANKIN:

Q. Mr. Gaynor, where do you reside?

A. Midland, Texas.

Q. By whom are you employed?

A. Concho Resources.

Q. What is your position with Concho Resources?

A. I am a landman.

Q. What are your duties?

A. Basically, I do everything that pertains to land matters within the firm, clearing title,

working on all of this Yeso pool stuff.

Q. Have you previously testified before the Oil Conservation Division?

A. Yes, I have.

Q. Are you familiar with the applications filed in this case?

A. Yes, I am.

Q. Are you familiar with the status of the lands that are the subject of this application?

A. Yes, I am.

MR. RANKIN: Mr. Examiner, I would like to tender Mr. Gaynor as an expert witness in petroleum land matters.

TECHNICAL EXAMINER EZEANYIM: Mr. Gaynor, are you a certified public landman?

THE WITNESS: No, sir, I'm not.

TECHNICAL EXAMINER EZEANYIM: Okay. So fine. Go ahead.

Q. (By Mr. Rankin) Could you please summarize for the examiner what Concho seeks in its application here?

A. Yes. We are asking for the allowables in all of the pools subject to our application to be increased to 300 barrels of oil per day.

We're asking for the gas/oil ratio limit

to be removed completely.

And we're asking for our overproduction to be cancelled.

Q. Thank you, Mr. Gaynor.

We're going to turn to Exhibit Number 1, Concho's Exhibit Number 1. Could you please identify and review for the examiner the contents of this exhibit?

A. Yes. This is basically an overview of the entire area that is subject to our application. All of the black outlines are the outlines of the pools as they are now defined.

And I think that there are three important things to point out about this.

The first one is that the pool on the far left, the northeast Red Lake Glorieta Yeso pool's allowable has already been increased to 300 barrels of oil per day.

The second one is actually no longer relevant, since the Burch Keely and Dodd unit have already been removed from this application.

But you'll notice on the far right, the second pool to the right, the West Maljamar Yeso pool's GOR limit has already been removed.

Q. Thank you, Mr. Gaynor.

I would like to ask you to turn in the exhibit book please to Exhibit Number 35.

A. (Witness complies.)

Q. Can you please, when you get to that page --

A. Yes.

Q. -- can you identify the exhibit and explain the contents?

A. Yes. This is a copy of the order in the Devon case, which increased allowable in the northeast Red Lake -- Red Lake pool.

MR. GRABLE: What exhibit number was that?

MR. RANKIN: This is Exhibit Number 35, and this is Order Number 12199.

Q. (By Mr. Rankin) Is that correct?

A. Yes. Order Number R12199.

Q. And this is Oil Conservation Division Case Number 13185. Is that correct?

A. Yes, that's right.

Q. And what was the allowable again that was entered in this order?

A. 300 barrels per day.

Q. Thank you.

I want to pass around another order from the division. I'd like --

MR. RANKIN: Mr. Examiner, I would like to ask you to take administrative notice of this.

Q. (By Mr. Rankin) Mr. Gaynor, can you please describe this order, please?

A. Yes. This is another order that was actually entered earlier this year. This was a case where Mewbourne Oil Company was asking to increase the allowable in a few pools and consolidate them. This is also a Yeso pool that's about 12 miles southwest of this area, but still along the Yeso formation, as our geologist, Mr. Reyes, will explain later.

But they achieved and were granted an order giving them 240 barrels of oil per day.

Q. And again, this is Division Order Number 13350. Is that correct?

A. Yes, that's right.

Q. In Case Number 14554?

A. Yes.

Q. Thank you.

MR. RANKIN: Mr. Examiner, I would like for you to please take administrative notice of this order for the record.

TECHNICAL EXAMINER EZEANYIM: Yes. Order Number R13350 will be noted.

Do you have any objection to that?

MR. GRABLE: Well, I am not that familiar with your practice, for which I apologize. I have no objection to your taking administrative notice of what was done.

The factual matters and the factual finding that are records not a part of this record that we have no opportunity to cross-examine I believe should not be part of the evidentiary record of the case, because we have no basis to examine the witnesses who appeared at this hearing.

So the fact that you were -- applied for certain rule changes and consolidations and what was granted, I have no objection to. The detailed factual findings, I do object to their being a part of the evidentiary basis for your decision in this case.

LEGAL EXAMINER BROOKS: Well, a closely-related issue to what we can take administrative notice of is in litigation presently in the District Court of Santa Fe County. So I think we'll have to say your objection is well taken. And at this point, we would limit our taking administrative notice to what is act- -- to the fact of what the record of the previous commission

proceeding that was presented to us actually shows and not of any underlying evidence.

MR. GRABLE: Thank you.

MR. RANKIN: Thank you, Mr. Examiner.

Q. (By Mr. Rankin) I would like to move on to Concho Exhibit Number 2. Mr. Gaynor, can you please identify and explain the contents of this slide?

A. Yes. This table just shows a breakdown of the mineral ownership in the areas subject to our application.

As you can see, there are 94,400 total acres subject to this application, both within the boundaries and within the one-mile offset of all of these pools. The federal government owns about 60 percent of those and the State of New Mexico owns almost 40 percent of those, with fee owners having less than 1 percent of the ownership of the minerals in these pools.

Q. Thank you, Mr. Gaynor.

Under Exhibit Number 3, can you please do the same, explain the contents and explain the -- identify these exhibits, please?

A. Yes. The next several slides are maps showing the operatorship of proration units as

designated by the NMOCD within the pools and within the one-mile offset area of the pools not within another pool. So it's color coded.

And you know for the sake of time, I think it's best if you look at those as you see fit. But these are just simple breakdowns of who operates in these proration units.

Q. Thank you, Mr. Gaynor.

As we go through these slides, please explain this next Exhibit Number 4, the contents, and identify them, please.

A. Yes. These next several slides are letters of support for our application that we have received from other operators within these pools. And we'd just like to go through them one at a time to establish who we have supporting us in this application to increase the allowable to 300 barrels per day.

First we have Apache; Cimarex; Chevron; Clayton Williams; Devon; Lime Rock; Mack Energy, which is a New Mexico independent; Mewbourne; Nadel and Gussman Heyco; Nadel and Gussman Permian; Premier, which is another New Mexico independent; and XTO.

And this table is a breakdown of the

number of wells in the pools and who operates those wells.

Q. This is Exhibit Number 5. Is that correct?

A. Yes, that's correct.

As you can see, 94.59 percent of the wells in the area subject of this application are operated by parties in support of our application.

Q. And this is an updated chart, right? Because --

A. Yes. This was updated after the removal of the Dodd and Burch Keely units as part of the larger Grayburg-Jackson pool.

Q. Thank you.

Can you explain this map here --

A. Yes.

Q. -- Exhibit Number 6?

A. Yes. And this map, again, is showing the pools and the one-mile offset area to the pools. And the squares in red are proration units that are operated by operators in support of our application.

Q. Thank you.

And I'll ask you to turn quickly to your hard copy of your exhibits --

A. Uh-huh.

Q. -- at Tab Number 39, Exhibit Number 39.
A. Okay.
Q. Is that -- I will just ask you to identify the fact that this is an exhibit that contains the affidavit of notice of the application and hearing along with the green cards, and identifies each of the parties that Concho provided notice to. Is that correct?
A. Yes, that is correct.
Q. Thank you, Mr. Gaynor.
MR. RANKIN: Mr. Examiner, I would move to admit the exhibits.
TECHNICAL EXAMINER EZEANYIM: Any objections?
MR. GRABLE: The exhibits that he mentioned in his testimony?
MR. RANKIN: That's correct, I'm sorry. Exhibit 39, Exhibit 35, and then 1 through 6.
MR. GRABLE: Subject to my earlier objection and the Examiners' ruling on the administrative notice, I have no objection to the admission of the remainder of the exhibits.
TECHNICAL EXAMINER EZEANYIM: So at this point, Exhibits 1 through 6, 34, and 35 will be admitted.

MR. RANKIN: I pass the witness.

MR. GRABLE: Just a few questions, Mr. Gaynor. Let me ask you --

LEGAL EXAMINER BROOKS: 9:12.

EXAMINATION

BY MR. GRABLE:

Q. (By Mr. Grable) I'm Bob Grable, from Kelly Hart and Hallman. I represent Hudson and Burnett in this hearing.

We haven't met before today, have we?

A. No, I don't believe so.

Q. Let me ask you first. On --at least I wrote down the number. Was your Exhibit 35 the Division's Order in the Devon case?

A. Number 35? Yes, that's correct.

Q. Isn't it true, as reflected on page 2, that Devon initially asked to increase the gas/oil ratio for the field statewide 2,000 to 1 to 4,000 to 1?

A. Yes, that is correct.

Q. And the disposition of that was that portion was dismissed by the division?

A. That's correct.

Q. So this pool has a 2,000 to 1 GOR?

A. Yes.

Q. Now similarly, I don't know what exhibit the -- the Mewbourne -- what's the exhibit number for the other order?

MR. RANKIN: That wasn't an exhibit. That was just an administrative notice.

MR. GRABLE: So it has no number?

MR. RANKIN: That's correct.

TECHNICAL EXAMINER EZEANYIM: Well, we talked about that. Do you have a copy of that?

MR. GRABLE: I have a copy of that.

TECHNICAL EXAMINER EZEANYIM: Okay. That was brought to my attention, like you said.

Q. (By Mr. Grable) Isn't it true that Mewbourne did not even apply to increase the GOR in this order?

A. Yes.

Q. So it also has a 2,000 to 1 GOR?

A. Yes.

Q. Now, can you turn to your Exhibit Number 2 --

A. Okay.

Q. -- on acreage ownership?

A. Yes.

Q. Do you understand that it was between gross acres and net acres?

A. Yes, I do.
Q. Are these gross acres or net acres?
A. These are -- well, these are -- these are gross acres.
Q. Have you calculated what Concho's net acreage position is?
A. Well, this Slide Number 2 does not show either Concho's gross or net acreage. This is mineral ownership.
Q. Okay. Pardon me. I am on the wrong slide. Okay. My apology for that.
Would you turn -- I believe it's your Exhibit 10 of this -- the Friend Glorieta Yeso pool operator.
A. Are you talking about the map showing who operates the proration units?
Q. Yes, that series of individual slides you --
A. I think that's Exhibit 3, and it's page -- something.
Q. Well, look at page -- what shows as COG Yeso 10 in those series of slides, not East Friend; Friend, Glorieta Yeso.
A. Yes.
Q. Now, isn't it true that these sections

here are what Burnett and Hudson referred to as the Maljamar sections? Are you familiar with those?

A. I am familiar with that. And yes, those are the sections that Burnett and Hudson refer to as the Maljamar sections.

Q. And you, in fact, show this one 40-acre tract up here which is the Hudson existing Yeso well?

A. Yes. That's the Knockabout well.

Q. But you color all of the rest of this as under Concho's color, even though Concho is not an operator and has no wells and only has one-third of the working interest in these sections?

A. Well, actually, that's not true. Concho's color is the much darker almost black-blue.

Q. Okay.

A. And that lighter blue represents that there are currently no Glorieta Yeso operations.

Q. Okay. But that's also true for the east half of those sections?

A. Yes. And that is reflected on the West Maljamar Yeso pool.

Q. The next one, also?

A. Yes.

Q. Okay. Let me turn now to your Exhibit 4,

with a series of support letters from other operators.

A. Yes.

Q. Did you send those out? Did you solicit those or did someone else?

A. I solicited many of them. As a team, we solicited them.

Q. But they all were solicited?

A. We sent them our application and asked, "Do you support this application?"

Q. And you, in fact, sent them a form order to sign and return -- or a form letter to sign and return?

A. We sent a form letter which was open to any negotiations or changes. As you see, Chevron made an edit to theirs.

MR. GRABLE: Objection, nonresponsive.

Q. (By Mr. Grable) You sent a form letter. And other than the Chevron --

MS. MUNDS-DRY: Are you going to rule on that objection?

LEGAL EXAMINER BROOKS: In an administrative hearing I don't really think it's necessary for us to rule on that.

MR. GRABLE: I just don't want to get into

arguing with the witness.

Q. (By Mr. Grable) Are they all identical except for the Chevron letter?

A. Yes.

Q. Now, Chevron did change theirs?

A. Yes.

Q. Now, are you aware of Chevron having gone nonconsent on some 10-acre wells that Concho or Apache has proposed, in areas where Chevron has a minority working interest?

A. I'm not sure exactly what Chevron has done everywhere that we have a contractual arrangement with them.

Q. But there are areas where they have a working interest in Concho-operated properties?

A. Yes, that's right.

Q. Would it surprise you to learn that they have, in fact, gone nonconsent on a number of 10-acre development wells proposed by Concho?

A. It would not surprise me for Chevron to have gone nonconsent on any wells.

Q. Now, let's turn to your Exhibit 5. I believe it's the operators supporting COG.

A. Yes.

Q. Well, while you're putting it up, let me

just ask you this.

Just as Chevron owns a working interest in some COG properties, isn't there also some common ownership in properties between Apache and COG?

A. Yes, in many properties.

Q. And isn't it also true, as a result of COG's acquisition of Mack's property in this area in 2006, that Mack acquired a large block of stock in COG?

A. Yes, that is correct.

Q. And they have a very large stock ownership of COG?

A. Yes, that's correct.

Q. If you added up COG, Apache, Chevron, and Mack on your list there, that's about 90 percent of what's -- of the wells. And they're all, in some nature, interconnected with their ownership or operations, aren't they?

A. The operatorship of much of the shelf is very intertwined between these parties. So yes, that's true.

Q. Now, it's also true that Burnett's and Hudson's acreage within the area is much less densely developed than the COG-operator acreage?

A. Yes, that's correct.

Q. And so if you did a comparison, either on an acreage basis or the potential location basis, Burnett/Hudson's percentage would come up dramatically from what you have displayed here, would it not?

A. Well, it would come up some for sure. I think that they operate wells in 60 proration units currently.

Q. Yes, sir. But I am not asking you about their current wells. I'm asking you if you were to compare their percentage of the acreage within the area that Burnett has applied to consolidate, their percentage would be considerably higher than 4 percent, would it not?

A. Well, I'm not sure if that's true. Because if we compared the gross acreage of Concho and Apache to the gross acreage of theirs, I think that our percentage would go up as well. So I mean I'm not -- I'm not sure. I haven't run that. I'm not sure that it would change dramatically.

Q. You haven't done that calculation?

A. No.

Q. You saw the map I had up here in my opening statement, did you not, Mr. Gaynor?

A. Yes, I did.

Q. And you're saying that you don't think there's a difference between this 3.78 percent by well and the acreage position as shown on that map? You think there's no discernible difference?

A. Well, as you will see when our geologist, Mr. Reyes, comes up, his map actually has a big block of our leasehold. I mean the vast majority of the shelf is yellow on that map.

I mean I can tell you our acreage, our operated acreage, but that's a different number, as you were making a distinction earlier, from our net acreage.

On the shelf total, I think that we have about 240,000-plus acres.

MR. GRABLE: Objection, that is nonresponsive. I'm going to move on.

Q. (By Mr. Grable) Now turning to your exhibit -- well, I guess it's page 5. Is that -- let's go back to your Exhibit 1, and then we'll be finished.

MS. MUNDS-DRY: I'm sorry. Which exhibit?

MR. GRABLE: Just the Exhibit 1. I believe he testified to that exhibit.

Q. (By Mr. Grable) All right. Now going over here on the field to the west, it's true, as

you have testified, that this field, although it's at 300 barrels a day, has a 2,000 to 1 limited gas/oil ratio?

A. Yes.

Q. And like you say, these -- these fields in here that have shallow or production commingled, they are no longer in the case?

A. They have been removed.

Q. Do you know the date when the orders abolishing a GOR in this East Friend were adopted?

A. They were both in 1952. Would you like the exact dates?

Q. Well, that's right, it was 1952.

So they have not been examined by the division in a hearing context with respect to a GOR rule in this modern Yeso shelf development, have they? That issue has not been examined properly?

A. That ruling has not been revisited.

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

LEGAL EXAMINER BROOKS: 9:25.

TECHNICAL EXAMINER EZEANYIM: Do you have a question?

MR. RANKIN: Yes, I just have one redirect, but maybe I would like to see if

Mr. Cooney has any questions.

MR. COONEY: I have no questions.

FURTHER EXAMINATION

BY MR. RANKIN:

Q. Mr. Gaynor, just one last question. Are you aware of any operators that support the application of Burnett/Hudson?

A. No. In fact it is only Burnett and Hudson.

TECHNICAL EXAMINER EZEANYIM: What was your question?

MR. RANKIN: My question was if Mr. Gaynor was aware of any operators who support the application of Burnett and Hudson.

THE WITNESS: They stand alone.

MR. RANKIN: Thank you.

LEGAL EXAMINER BROOKS: You didn't even take one minute, so we're still at 9:25.

TECHNICAL EXAMINER EZEANYIM: Any redirect, based on that question? Mr. Grable, any redirect?

MR. GRABLE: No.

TECHNICAL EXAMINER EZEANYIM: How many operators do you think are in this -- how many total?

THE WITNESS: How many total operators?

TECHNICAL EXAMINER EZEANYIM: Yes. I think you showed me, but I wanted to know how many. Just -- you don't have to give me the exact. Estimate how many. Do you think it's 10, 12?

THE WITNESS: Well, we have 12 -- 16, maybe.

TECHNICAL EXAMINER EZEANYIM: Okay.

THE WITNESS: But I can give you the exact number.

TECHNICAL EXAMINER EZEANYIM: Okay. Out of those 16, how many of them supported the application?

THE WITNESS: 12.

TECHNICAL EXAMINER EZEANYIM: 12.

Did you send that letter to Burnett/Hudson?

THE WITNESS: Yes.

TECHNICAL EXAMINER EZEANYIM: And what was the reply?

THE WITNESS: They did not reply favorably to that letter. They did not agree with us, and -- no.

TECHNICAL EXAMINER EZEANYIM: Okay. So that's a form letter that you sent to all operators

in the pool?

THE WITNESS: Yes.

TECHNICAL EXAMINER EZEANYIM: Okay. What changes did Chevron make in their form letter?

THE WITNESS: Chevron limited the -- limited the letter to apply only to the pools in which they operate wells. So they only talked about the Friend and the East Friend. They limited their letter to those two pools.

TECHNICAL EXAMINER EZEANYIM: To those two pools. But in allowable declaration, they agreed?

THE WITNESS: Yes.

TECHNICAL EXAMINER EZEANYIM: Only in those two pools they operate?

THE WITNESS: Yes.

TECHNICAL EXAMINER EZEANYIM: Okay. And then you don't have any response from Burnett/Hudson, or they --

THE WITNESS: Well, they --

TECHNICAL EXAMINER EZEANYIM: -- did they respond at all?

THE WITNESS: Yes. Actually, they did. They responded by giving us a formal letter where they requested that we give them operations of the four sections that he was talking about over there

called the Maljamar leases.

MR. GRABLE: Objection, Your Honor. We are now getting into this settlement letter that we sent.

TECHNICAL EXAMINER EZEANYIM: Okay.

MR. GRABLE: It was a confidential and privileged settlement communication to try to avoid this fight and the fight over operations at Maljamar. It has nothing to do with our response to their initial letter.

LEGAL EXAMINER BROOKS: Well, I agree that settlement negotiations are not relevant.

TECHNICAL EXAMINER EZEANYIM: Objection sustained. I'll redirect my question. Maybe I should have not asked that question.

Okay.

LEGAL EXAMINER BROOKS: 9:28.

TECHNICAL EXAMINER EZEANYIM: Call your next witness.

MS. MUNDS-DRY: We'd call Mr. Reyes, our geologist, to the stand.

THE WITNESS: Good morning.

TECHNICAL EXAMINER EZEANYIM: Good morning. State your name, please.

THE WITNESS: My name is a Ramon Reyes.

RAMON REYES,
after having been first duly sworn under oath,
was questioned and testified as follows:

EXAMINATION

BY MS. MUNDS-DRY:

Q. Mr. Reyes, where do you reside?

A. I reside in Midland, Texas.

Q. By whom are you employed?

A. I'm employed by Concho.

Q. What do you do for Concho?

A. I'm the lead geologist for the shelf asset.

Q. And the shelf asset, is that included in Southeast New Mexico?

A. That is correct.

Q. And have you previously testified before the division?

A. I have.

Q. Were your credentials accepted and made a matter of record at that time?

A. Yes, they have been.

Q. Are you familiar with the application that's been filed by Concho?

A. Yes, I am.

Q. Have you conducted a geologic study of the

pools that are subject to Concho's application?

A. I have.

MS. MUNDS-DRY: Mr. Examiner, we tender Mr. Reyes as an expert in petroleum geology.

TECHNICAL EXAMINER EZEANYIM: Mr. Reyes, are you a registered geologist?

THE WITNESS: No, I'm not. Not -- in Texas, the only time you register -- or in New Mexico, you're not -- there is nothing to be registered on.

TECHNICAL EXAMINER EZEANYIM: You reside in Texas?

THE WITNESS: I reside in Texas, yes, sir.

TECHNICAL EXAMINER EZEANYIM: You are? Okay. So qualified. You are so qualified.

THE WITNESS: Thank you.

Q. (By Ms. Munds-Dry) Mr. Reyes, if you could turn to what has been marked as Concho Exhibit Number 40, it's the last map in our notebook. And can you please generally describe for the examiner the Yeso formation and the 12 pools that are subject to Concho's application?

A. Okay. I would like to start big and then work our way smaller.

LEGAL EXAMINER BROOKS: I don't think we

have Exhibit 40 in our notebooks.

MS. MUNDS-DRY: It should be the big map --

LEGAL EXAMINER BROOKS: Oh, that's--

TECHNICAL EXAMINER EZEANYIM: This one (indicating)?

MS. MUNDS-DRY: Yes.

A. This is a regional map of the Yeso plate, for the most part. It's kind of limited a little bit on the east side, because the majority of our acreage position is where it's shown in the map.

You will see -- again, just -- just doing a big picture, talking about where -- where things are at and where we hit on this.

What you're seeing here, again, the big blocks here are townships, and the little squares are sections. The yellow is our acreage position in the shelf, and there is also some in the basin. That's just a layer that we have internally that -- it's hard to break down all the acreage in different layers, but that's what it looks like.

The red dots are Yeso-producing producers, and they're from all of the operators. And you can see how it stretches all the way from here, from 17/32 all the way down over here to 19/25, which is

the cemetery area, which we again -- also, we have a large acreage position in -- in wells that we operate.

So we stretch out for six, seven, eight townships, going all the way across. So I just want to show you the overview of the extent of our drilling program and how large we are, as far as the -- as far as our activity in New Mexico.

The area we're going to be talking about mostly is going to be over here (indicating) in these -- in these three townships over here. So we'll go ahead and zoom into that -- that part.

Q. (By Ms. Munds-Dry) Okay. Mr. Reyes, let's turn to what has been marked as Concho Exhibit Number 7. If you could identify that, please.

A. Oh, let me -- we kind of -- let me go back to the other one real quick.

We're just going to show again, this is how many wells are out there, and then I am going to break down what our inventory is and what we have as far as the Yeso.

Q. Okay. So before we go to 7, you have a few other -- just identifications for description purposes?

A. That is correct.

Q. Okay. Let's go there, then.
A. In our -- in this area, we have --
MR. CAMPBELL: Could we have an exhibit number on this?
MS. MUNDS-DRY: This is not an exhibit number. This is a display only. This is not meant to be put in the record. This is simply a display.
Q. (By Ms. Munds-Dry) Go ahead, Mr. Reyes.
A. This is just an outline of our data, what we've collected over the years and how many -- you know, what our inventory for our Yeso, our Yeso raw data library.
We have 1,600 operated vertical Yeso wells.
We have 16 Concho-operated horizontal wells.
We have 317 wells that we have run FMI logs on.
69 of those wells we have collected sidewall cores on.
9 of those wells we have conventional cores or hole cores. So we have almost 3,000 -- or right at 2,800 feet of conventional core.
We also -- in our inventory, the last thing is, we have over 220-plus mud logs that we

have run for our wells.

So we have a pretty extensive dataset that we -- that we rely on that we either -- that we collected and -- and interpreted, so quite a large -- large dataset that we have that we work from.

Again, this is from a large -- you know, overall from 19/27 all the way to 17/32.

Q. Thank you, Mr. Reyes.

If we can now turn to Concho Exhibit Number 7. Identify and review that for the examiners, please.

MR. CAMPBELL: Excuse me, Counsel. May we have a hard copy of that display that was up here?

MS. MUNDS-DRY: We can get that for you during a break or maybe over lunch, when we can get a chance to get to a printer, sure.

A. Again, we're zooming in to the townships that we're discussing today. This is just a quick review of the unit, the pool outlines, and the identification of each pool.

Again, this is just to reference you that we're zooming in to a smaller -- a smaller area.

What I have done is I have constructed a cross-section identifying -- talking about just the

Yeso. So hopefully, after I finish talking, we are all experts in the Yeso.

MR. CAMPBELL: Excuse me. Is this an exhibit that he is --

MS. MUNDS-DRY: This is Exhibit Number 7.

MR. CAMPBELL: Thank you.

A. What we've done is, you see the little red dots going across. Those are wells that we've picked, a log from each pool, to have a representation and a comparison to what -- what formation we're talking about and -- and the differences and comparisons for each well.

Q. (By Ms. Munds-Dry) Let's turn to Concho Exhibit Number 8. Please identify and review it for the examiners.

A. This is a little hard to see. But again for our presentation, it's for the audience to see. This is a cross-section that I just described. That cross-section is in your packet, so you should be able to see in a little bit more detail what we're going to be talking about.

Q. And for the record, if you would identify each of the -- each of the logs, the cross-section that you have in here, as you go across.

A. Well, each of the logs -- like I said

before, each well is -- is for each pool that is represented going from west to east. Again, they're identified on top. It's kind of hard to see from here. I'm an old guy, so I can't see that far away. So hopefully you guys can see it better than I can. But again, it's just a description of each well, each log, and each -- from each pool.

If we're going to continue, let's go ahead and get to the Yeso formation. The Yeso formation is found right below the San Andres, and it's divided by a little silt sandstone that's called Glorieta, which is identified with these two lines right in here (indicating).

The Glorieta is roughly -- it can get anywhere from 50 to 100 feet thick. And again, that's what divides the San Andres carbonate from the Yeso carbonate as we go farther south. So again, that being a silt from the Glorieta.

Right below the second line is the top of the Yeso. And the Yeso, roughly, runs about 1,200 feet thick. And it's identified at the base by the Tubb. The Tubb is another silt that has been pretty well-identified on logs. And again, that's where you find the base of the limits of the Yeso section.

Within that Yeso section it's divided up into two parts because it is so thick. It's just like anything else, like driving down Main Street. That's why you have, you know, streets in between, so you know if you're on the north side of town or the south side of town.

For us it's what we call the upper part, and I think most judges will agree the upper part we call the Paddock, and then the bottom part we call the Blinebry.

Now the Paddock, we'll zoom a little bit easier -- a little bit more closer, and we'll be able to identify what I'm going to be describing a little bit on this itself.

But for the most part, the Yeso has been produced and developed for many years. It's a -- it's more identifiable on logs because of the porosity. Well, the porosity is developed a lot better.

But even though the whole -- the whole section is -- it's all heterogeneous. It's low perm, low porosity. The only difference in the -- in the Paddock, the porosity sticks out a little bit better, so that was kind of an obvious thing to kind of test, and it's been tested and produced for many

years.

Until just recently the Blinebry has been -- has been added, and we have been producing from the -- from the bottom part. So for Concho's purposes, for economic reasons, we're producing the whole -- the whole interval itself.

Q. Now, you have been describing the vertical extent of the -- of the Yeso. Has -- do you believe that Concho and the other operators in these pools have defined -- fully defined the horizontal extent of this shelf?

A. Have we defined the horizontal extent? No. We're still -- we're still -- we are still trying to find the extent of the plate itself, so there is still a lot of room to run. So this plate is -- it's being pushed northern, to the northern limits, as to the western and to the eastern limits. So there's still -- there's still stuff for us to identify and to best develop it, whether it be horizontal or vertically.

Q. And as you step out, for example, to the northern boundary, do you still run logs and conduct other types of analysis when you're stepping out?

A. Yes, we do. The majority of the wells that we drill through here, we start out drilling,

logging, doing the open-hole logs, doing -- running mud logs, doing our normal typical logging runs to identify the pay.

I have been working on this particular formation for the last four years, so we've come a long way. We have learned a lot.

Part of our evaluation, as we step -- step out in the boundaries going north and east and west, we do run open-hole logs. We do have mud loggers. We do also cut cores because, again, the economic parameters are real sensitive, once you start to get into the economic boundaries of those plates.

If you recall back to the first -- the regional map, you know, the fairway of that play is roughly two to three miles long. The good stuff, anyway, that we -- that we have discovered, goes -- you know, and it follows that northwest shelf.

But that's identified -- the southern part of this play is identified by the northwest shelf. It drops down, and those -- and the bottom part of the Yeso becomes real silty.

If you will look at this well here, Number 5, you can see that little yellow stuff in there. Those are silts that we have identified. We have -- we have tested a bunch of those wells. They have a

lot of silts in those wells. And yes, they do produce some oil.

But the problem with those silts is that they produce a lot of water. And you know, we don't get any money for water. You know, we have to pay to get rid of the water. So obviously, we want to stay away from those silts. And so that's why our boundary is pretty well defined for us.

And we will continue to test the southern limits until we feel comfortable and can draw a line in the sand, so to speak, and say, "We're done on the southern end."

As we move to the northern edge, you will see and note that the overall interpretation of the logs, as we go farther north, tend to get -- tend to get more and more tight. The porosity is not as well developed. Things are not looking as good as they should be, but that's not still stopping us from moving forward and continuing to push the northern boundaries.

The only way we're going to find out, because -- as I'll demonstrate in a little bit, logs don't always tell the whole story. So sometimes we have to do it by setting pipe and then producing it to really know what the boundaries of that -- of the

economic -- the economics of that well.

Q. Now on that note, Mr. Reyes, when you're talking about -- particularly when you are at what you call the fairway of the Yeso, do you also run a full suite of logs when you're in the fairway, or what do you? What does Concho do to determine its well locations and its perforations of its wells?

A. Well, that's a good question. When we initially started drilling on this property we ran quite a few open-hole logs, and we ran the mud logs.

As we -- as we continued our -- our development of these wells, we -- we started drilling 10-acre locations. Well, this becomes a statistical play, and so we don't necessarily need all of the data to figure out what a 10-acre location is going to do for us. It's going to be there. That 1,200-foot of section is going to be there.

And I'll demonstrate here in the next few slides that the logs, even on a well -- a well next to each other, that the -- the dynamics of the logs, it varies quite a bit. But at the end of the day it really doesn't make a whole lot of difference.

So again as we started, we probably drill more than 50 percent open-hole logs and then

case-hole logs.

And then as of this year, we are probably logging open-hole logs on maybe 30 percent of the wells, and then 60, 70 percent of case-hole log wells.

Again, because this is -- we're on a development stage, and there is no need for us to do -- spend the kind of money, because it does cost more money to run an open-hole log. It does cost money to have the mud logger and so on and so on. And so as you are developing and trying the in-field drilling you don't -- you don't have those expenditures. Again the bottom line for economics, it just makes common sense.

Q. Let's go to Concho Exhibit Number 9.

A. Okay.

Talking about logs and what we do and how we interpret them and stuff, this is -- this -- what you're seeing here -- and this is in Loco Hills, in the Loco Hill fields in 70/30.

The yellow just demonstrates where our acreage position is at. Burnett has the majority of this -- this is part of their field and their development. I just wanted to compare apples to apples, and kind of show you some of their logs and

kind of compare them to some of our logs. So there's no -- you know we're talking the same type of deal.

If you'd go to the next slide, this is two wells here that I've picked. These are 40-acre sections. So this is -- I guess you would call it a 40-acre development, even though they're not centered on the 40. But roughly, they're 40-acre locations.

So we will go on to the next slide. They are a little hard to see here. But again, you have them in your books. What I'm -- what I'm trying to show here again, the same type of deal. You have got -- the San Andres is above here (indicating), which we are not talking about that today.

The Glorieta is, again, that little silt right above the Yeso.

Again, the Paddock is up here (indicating) in the upper third of the section, and then the Blinebry down at the bottom here (indicating).

Again, these are 40 -- these are about 40 acres apart. So you know, kind of a typical kind of development if you were just drilling on 40s.

But what I want to pay attention to is the -- to the log characters. Even though on 40

acres you'll see that the well to the left, the green part right there (indicating), the porosity is pretty well developed. I mean that -- that would be a no-brainer for us to set pipe and go drill and produce from that well.

And the bottom two-thirds, you will see where the porosity down there tends to be pretty tight, pretty low perm. Well, the whole -- the whole section is pretty low perm. The porosity is a little bit better at the top, but low perm throughout.

And for many, many years everybody has bypassed this bottom two-thirds until -- until recently, with better frac designs and being able to produce from really tight rock, we have been able to go in here and add the bottom two-thirds of the Yeso. So when you add the production from the bottom two-thirds and the production from here (indicating), your economics turn out to be pretty good.

Again, just -- this is a log showing within 40 acres, you know, it does change. So that's really not a really surprising exhibit I am showing here.

One of the things I will point out to you

is, unfortunately for Burnett, in my opinion, if I were working for them I would take at least a couple hundred feet thick -- lower, just so we can see on logs where the -- where the top of the Tubb is. So that way you can identify the -- you cut and identify the whole -- the whole Yeso section.

Sometimes we will -- we will put a perf as close as we can to the bottom so that we can maximize the whole section of the Yeso. It's just something that we do, as far as part of our evaluation in producing this well.

Q. And I think in the next slide we go actually to Exhibit 9, the third page of Exhibit 9. What is this slide?

A. Again just pointing out -- going back. Here is our two wells that we just talked about. And again, they were on 40s, and there was some -- nothing surprising about the differences in the log character.

We're going to move over here into our -- our lease, and we're going to take on -- I tried to get as close as I could to -- here again, the wells are here (indicating), and we're right here (indicating).

Now what I want to demonstrate here is,

these are three wells, and they are kind of -- they're not going across or up and down. They're kind of -- I tried to do them in an L-shape to kind of give you an idea what we're talking about.

Now, we're talking about 10-acre spacing. We're going to be showing you what the logs look like as we get closer and closer together to each one. So now we're looking at a 10-acre spacing.

Q. Okay. Let's go to Concho Exhibit Number 11.

A. These are electrowells, and I can't -- 47, 45. I can't remember -- I can't -- again, I can't read -- see from that far. But it's very well identified. Here at the top you saw where they're at. They're 10 acres apart.

This -- this exhibit, all we're trying to -- all we're trying to show, again, as we get closer and closer, you would think the logs and the characterization of the logs would look pretty darn similar.

Again we're talking about a carbonate. It's heterogeneous. It's really hard to go in there and start picking, you know, porosity spikes and say, you know, here's this porosity, this porosity, this porosity, and here's where the pay zone is.

They are the same thing over here.

So we don't really -- we don't discriminate, as far as where our porosity is going to be at because again, we're talking about having a vertical, a thick vertical section with really tight rock that's very tight, very low perm. So that makes up for the differences of how you're able to -- to produce the kind of volumes of oil that we're getting.

So again -- again, we take our wells all the way down to the bottom, to the Tubb, to identify the whole section to know what we're getting at.

Okay. Now, if we go back and you look at this well here in the Paddock -- again, this is one of the better -- the better part of the zone. And you're looking at the -- at the log interpretation. This one in the middle looks pretty good. You can see all the green, you can see all the porosity. It looks pretty darn good.

You look at the well over here, the porosity is at the bottom. The top doesn't look so hot.

The well on the right, again, it looks probably worse than all three, then you've got a little porosity down there.

That would not discourage us to set pipe and then try to make a producer out of that. As a matter of fact, of all the wells that we have been drilling, we have yet not to set pipe on any well that we've drilled. And they -- they're all producing oil.

The point I'm trying to make here, again, this is 10 acres, so a statistical plate, low perm, low porosity. You can't determine what's going to happen with -- you know, within the next 10 acres if you're going to -- doing log interpretation here. That's where the case-hole logs is kind of -- kind of jumps in for us.

So what we're going to do is, we're going to perforate the majority of this bottom part of the two-thirds. And of course we're going to -- and then add the Paddock at some point, or we're going to -- as a combination of both. That's determined by our production engineers.

I want to go ahead and conclude here. Finally, you would -- if you had to put your money -- and I approach you guys as, "Hey -- hey, Richard, give me a -- give me a million dollars. I'm going to -- and I'll let you pick any of these three wells, and you've got a working interest,

which ones are you going to want?"

More than likely, being the smart engineer that you are, you're going to say, "Wow, I like this one in the middle. That looks like a home run."

But the fact of the matter is, the well to your right is your best well that we're going to -- that's going to produce.

The well here in the middle we have calculated is going to EUR about 73,000 barrels, and -- I can't read that far -- and maybe 200 million cubic feet of gas.

The well over here (indicating) that looks a little -- even looks a little better than this one, that one is going to make a little bit -- that one is going to calculate about 70,000 barrels and 200 million cubic feet of gas.

If we look at the wells over here (indicating), you are looking at about 100 -- about 100 million -- 100,000 barrels of oil, and -- in associated gas.

So here's your winner right here (indicating). Again, if you go -- strictly went by logs, you're going to pick probably the wrong one. And again, we're talking about 10-acre locations.

Q. Thank you.

Mr. Reyes, based on the data that you have reviewed for us today, what are your geologic conclusions?

A. My geologic conclusions are:

This is the statistical plate. We drill a lot of wells. We feel we have a good handle on -- as far as the fairway, what we can expect from wells.

We know that you can't determine what the well is going to produce from just the log interpretation, until it's actually going into the -- into the tanks.

This is low perm, low porosity, heterogeneous. And so drilling on 10 acres is probably the best thing for us to do, and all the managers defend, as far as the 10 acres, it's the best thing do to.

Also, if you drill 10-acre locations it really sets up for secondary coverage. So that's something that we're -- that we're currently working on, and hopefully we are successful in doing that. So at the end of the day we -- we have captured all -- what we can for the whole section of the Yeso data on 10-acre locations, and then we have the secondary recovery to finish it all up.

Q. In your opinion, will the granting of Concho's application be in the best interest of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes.

MS. MUNDS-DRY: With that, Mr. Examiner, I move the admission of Exhibits 40, and 7 through 11 into evidence.

MR. CAMPBELL: Which ones?

MS. MUNDS-DRY: Exhibit Number 40, and then Exhibit Number 7 through 11.

MR. GRABLE: Those are the ones he testified to?

MS. MUNDS-DRY: Yes, sir.

MR. GRABLE: No objection.

TECHNICAL EXAMINER EZEANYIM: Any objection?

MR. COONEY: No objection.

MS. MUNDS-DRY: Pass the witness.

TECHNICAL EXAMINER EZEANYIM: At this time, Exhibit 40, and then 7 through 11 will be admitted. Okay.

LEGAL EXAMINER BROOKS: Okay. The witness was passed at 9:51.

TECHNICAL EXAMINER EZEANYIM: Okay. Now

at this point I will beg you we take a 10-minute break, so we'll come back.

(A recess was taken from 9:53 a.m. to 10:05 a.m.)

TECHNICAL EXAMINER EZEANYIM: All right. Let's go back on the record.

At this point Counsel will pass the witness, right?

MS. MUNDS-DRY: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: Okay. Mr. Grable?

LEGAL EXAMINER BROOKS: Okay. We're starting at 10:04.

EXAMINATION

BY MR. GRABLE:

Q. How long have you worked for Concho?

A. Eight years.

Q. On your first big area plat, do you have any knowledge to shed on what is Concho's net acre position on these yellow shaded areas?

A. Net acres?

Q. Yes. Are these gross acres?

A. That is correct, gross acres, yes, sir. Whether we have 100 percent or 1 percent, it's -- that's what it is.

Q. And it extends far beyond the southern limit of the Yeso play, does it not, down in the basin?

A. Our acreage position?

Q. Yes.

A. Yes, sir. That -- that shows what's within that window of data. We have more acreage that is all the way down to the Texas border. So...

Q. And beyond, probably?

A. And -- probably, yes, sir.

Q. But as a geologist, you are not telling the division that any of this acreage down here south of where the heavy development is has any productivity in the Yeso?

A. You are correct. That is not quantified as Yeso potential. All it is, it's a layer within our database, and we just picked up, you know, our acreage position and threw it on there.

Q. But you've fallen off the shelf --

A. Absolutely.

Q. -- going thousands of feet?

A. Yes, sir.

Q. All right. Now your counsel didn't make it an exhibit, but I wrote down some of the statistics that you testified to.

And what I had written down is that Concho has -- operates about 1,600 vertical wells in the Yeso.

A. That is -- to my knowledge, yes.

Q. How many of those has Concho drilled versus ones that it purchased from Mack or Marbob?

A. I -- I don't know.

Q. Do you have any ballpark estimate of how many wells you've drilled?

A. Boy, you know, I don't know. We have drilled -- we have a very aggressive drilling program, we have for the last four years. So keeping up with numbers like that it's pretty hard to do.

Q. Quite a few of those wells are wells that Concho did not drill?

A. Quite a few? I don't know what -- more than 50 percent? I -- I can't answer that.

Q. Okay. Well, you can't tell us, then, how many of the 1,600 are Concho-drilled wells versus Marbob or Mack-drilled drills?

A. That is correct. But I also stated they're operated wells, not drilled wells by Concho.

Q. So of the -- let's see. You said you had 69 wells with sidewall cores and 9 wells with

conventional cores?

A. That's correct.

Q. Did Concho take those core samples or were there cores done by Mack or Marbob?

A. It's a combination of both.

Q. Do you know where those -- where that core data is located across the aerial extent of your Concho development?

A. Yes, I do.

Q. But you haven't presented anything today?

A. Well, you know we're talking a large area that we are talking about for -- we have cores from, I mean, all across our play. So I did not bring you -- I can furnish you that, but I -- I don't -- I didn't -- I don't know how --

Q. Well, Concho has applied to change the rules in 12 pools. Do you know how many of those cores came from wells within the 12 pools that's the subject of the Concho application?

A. I cannot tell you at this moment -- at this moment, no, sir.

Q. Do you know whether any of those cores were utilized in the drainage area calculations that Concho has included in its exhibits?

A. Can you repeat the question?

Q. Did you participate at all in the work that wound up as, I believe -- my exhibits aren't numbered, but I believe it's Exhibit 38. It's the last one in my book that is captioned "Yeso Shelf Area Drainage Calculations."

A. Okay.

Q. Did you participate in any of that work?

A. I did not personally participate in that.

Q. Did you furnish any core data for that work?

A. Core data is furnished for that -- for that purpose, yes, sir.

Q. So -- okay. You know that core data was used for that Exhibit 38?

A. That's correct.

MR. GRABLE: Ms. Munds-Dry, may I ask -- or maybe I'll ask the legal examiner.

We have not been furnished any of that data. Could we get the core data information that they used in Exhibit 38?

LEGAL EXAMINER BROOKS: Well, we've had lots of issues of what is discoverable and what's proprietary. So perhaps I would like to get a response from Concho's attorney.

MS. MUNDS-DRY: I would assume -- and I

haven't -- I would have to talk with -- confer with my client. But I would assume we consider that very much proprietary. That is not traditionally handed over.

MR. GRABLE: Can they confer over the lunch hour and let us know if they'll let us know what it is or not?

LEGAL EXAMINER BROOKS: Okay. If you will give me a response as to what your position is on this issue at the beginning of the afternoon session, then maybe we can address it.

MS. MUNDS-DRY: We will do so.

Q. (By Mr. Grable) Okay. Well, let's talk about open-hole logs.

I don't believe you mentioned open-hole logs in your recitation of your statistical information, but I want to ask you only about wells drilled by Concho, not Marbob or Mack wells.

Do you know what percentage of wells Concho drills on which it runs an open-hole log suite?

A. Yeah. I did -- I did mention that, for the record, that we do run open-hole logs and how we have converted to drilling more and more, or logging more case-hole wells, as we do more and more

in-field 10-acre locations because you know -- you know, cost-wise and whatnot.

Q. Was it your testimony that Concho runs open-hole logs in about 30 percent of its wells it drills? I heard a 30 percent number somewhere in your testimony.

A. So you are recalling part of what I said. Yes, sir, that is correct.

As of this year, and we are in -- we are in May, we probably drilled around 100, 150 wells -- 125, 150 wells. It's kind of hard to keep track of that stuff. But I would say about 30 percent are open-hole logs, and then the other 70 are case-hole logs.

Now when we started this program in 2007, more than 50 percent of our wells that we logged were open-hole logs. So we do have a large inventory of open-hole logs that Concho logs.

Q. That's your -- your current practice is to log about three of ten, as far as open-hole logs?

A. You know, sir, that -- that changes and it varies on our priorities as we drill.

Without giving you a whole lot of details, as our future drilling commitments and properties that we're planning currently to, you know, extend

and expand our play, for me to tell you that's what we're going to continue doing, it would be -- you know, that would be guessing.

Like I testified, you know, as we drill, as we step out to the north and we step out in either direction east or west, we do run open-hole logs, because we do -- you know, that -- that is part of our keeping in practice -- you know we want to have that data so that we can -- we can have -- we can interpret them for our model.

Q. Okay. Now, I believe the PowerPoint slide that your counsel put up showed that COG has 220 mud logs. Do you recall that number?

A. Yes, sir, I do.

Q. How many of those did Concho run versus that you inherited in the acquisitions from Mack and Marbob?

A. I don't have that breakdown, sir.

Q. What is your company's current practice with respect to running a mud log on a new well that you drill?

A. We -- it is determined by the geologist, is how we determine whether we're going to run mud logs or not.

Q. 22 -- 220 out of 1,600 is somewhere around

12 or 13 percent. It's a lot less than 30 percent.

Is it true that you run fewer mud logs than you do open-hole logs?

A. If you go by those statistics, probably.

Q. I'm trying to see what your evidence was. I mean that was the number I wrote down. I don't have the slides.

A. And that's what I testified to. So I don't know, is it 1 percent or 3 percent, but that's -- that's what it is.

MR. GRABLE: Can we put up what -- Ms. Munds-Dry -- that large cross-section he testified to? I believe it's Exhibit 8, but your slides don't have numbers on them.

Q. (By Mr. Grable) Did you do the correlations on this cross-section?

A. I don't know if I -- if I picked all of them. And the reason I say that is that I -- there are two other geologists under my supervision, along with geo techs. And we subdivide our areas to different -- to different geologists.

So it's at their discretion to pick -- to pick the tops, for obvious reasons. And so that's taken -- that is put into our large database, and so that's -- is the output that we have. So...

Q. I'm sorry, I don't know if there was an answer in there.

Can you tell me, yes or no, that you picked all of the Blinebry tops on this cross-section?

A. Probably not.

Q. Do you think that depiction of the stratigraphy there is accurate?

A. For the most part.

Q. What part is inaccurate?

A. Well, the inaccurate part would be -- would be probably like this wall right here (indicating). You know, there's not enough section to say that, really, that point is there.

I had mentioned that the way we picked the Blinebry internally, you know, we could have easily taken out this line in here (indicating), and just called the whole thing as a Yeso.

But this is an internal pick that Concho uses as a pick. It's a little silt that's about 10 feet thick. It's pretty regional throughout. And there's places where it's pretty hard to detect and pick out where that little silt is. So sometimes the royal dump for us is roughly 300 feet below the top of the Paddock.

So you know as you go along and you kind of pick out where you can, you'll know -- again, this one is kind of short. But you know, that one maybe could have gone -- you know, that's probably fairly close, I guess.

Over here (indicating), as you get closer to the shelf edge, as I talked about the silt coming in, you start -- you know, we are trying to pick where the top of the carbonate is, not -- not so much -- I mean sometimes when you get close to the bottom, the Blinebry pick can be done in here (indicating) because of all of these silts.

So overall, yeah, the picks are -- I'm pretty satisfied with our picks.

Q. Do you think this irregular stratigraphic picture there is accurate in this area?

A. It's fairly accurate for us. I mean it doesn't really determine for us any stratigraphic change, although there is a big carbonate unit. So you know, it's just -- again, it's kind of a -- it's just a point for us to know where we're at in this section.

Q. All right. What rocks are -- produces a matter of -- what rocks are productive in these reservoirs? Are they carbonates?

A. Yeah. This is the carbonate section. You're looking for the dolomites. The dolomites is where -- is your source rocks, what you're trying to see. The majority of that section, it's a lime matrix.

Q. So it's your opinion that most of the pay in these wells is from dolomite sections?

A. That would be your source rock, yes.

Q. But you do not attempt to correlate your perforations and fracture stimulations to those pay zones. You do them on just an indiscriminate 200-foot section basis. Is that it?

A. Yes, sir.

Q. Okay. You've mentioned in your testimony the potential for secondary recovery.

Does your company now have a pilot secondary flood in this area?

A. We do.

Q. Where is that located?

A. It's in the Jenkins lease. It's in --

Q. Which pool?

A. It's in the Loco Hills pool. It's the Yeso.

Q. What have the results been of that, in your opinion?

A. I'm not an expert, and I have not kept up with it very much. I would defer that question to Mr. Prentice. He -- he's very knowledgeable about that.

Q. Mr. Prentice? Okay.

But if you were, as a geologist picking candidates for water floods, if somebody, just a friend, called you and said I've got this low permeability, low porosity, stratigraphic lenticular-type reservoir, that wouldn't sound like a good candidate for water flood, would it?

A. Again, I'll defer that to Mr. Prentice, because he's the one that's spearheading that -- that water flood.

Q. Can we look at your -- I believe it's Exhibit 9, page 3. It's the two-Burnett-well section.

Page 2. Do you know how many of Burnett's wells they have taken all the way down into the Tubb?

A. No, sir.

Q. Did you pick any of the green -- or the curve I'm pointing to now (indicating) is a porosity curve?

A. That's correct.

Q. How were these sections colored green picked? Did you do that?

A. As far as the color?

Q. Yeah. Is that supposed to designate net pay or porosity above a certain level, or what's the --

A. No. That is just -- that's just porosity. The green is porosity. And if you look real closely, there is a tan color that is movable oil. And then if you look even closer, and there's blue, that's water saturations.

Q. Do you know what the unit scale is on this porosity curve, how far out this is going?

A. I believe that's a 3 percent cutoff.

Q. You believe this (indicating) line is 3 percent?

A. I think what -- anything that's showing in green should be porosity over 3 percent.

Q. Do you know what porosity curves were used to derive these porosities shown in excess of 3 percent? Is it neutron or --

A. No, those are open -- open-hole logs.

Q. Do you know what curve that is?

A. It's probably a density neutron and a resistivity log. It would depend on the vendor.

Q. Do you know what this green coloring is supposed to represent?
A. Those little green markings in the well bore are pay flags that we use to identify where the parameters for our -- they are pay zones.
Q. So these would be COG's picks of net pay for these two well bores of Burnett?
A. Yes.
Q. Did you participate in the work done to come to the conclusion that those intervals and those logs were net pay under Concho's criteria?
A. Yes.
Q. All right. Can we turn to your Exhibit 11, please, the three-well cross-section?
A. (Witness complies.)
Q. Do you know, are these logs that were run by COG or logs that you inherited from an acquisition of Marbob or Mack?
A. No, I believe these wells are Concho-drilled wells.
Q. Do they show the vintage of the wells on top?
A. Repeat, please?
Q. Do you know when these logs were run?
A. Were drilled?

Q. Yes.
A. I don't, sir.
Q. Do you know if these logs were normalized, so they each basically came back to the same starting point for the data shown on them?
A. No. Those are -- those are cased-hole logs.
Q. These are all cased-hole logs?
A. That is correct.
Q. Now, did you participate in picking the porosity over 3 percent shown and the net pay shown on these three logs?
A. When you say "participate," when we -- when we get logs, when we drill wells and get logs, we have a petrophysicist, that all he does is gather the data and -- and make the interpretation and -- and put it in our dataset. So I don't physically do it myself.
Q. Do you review them to see if you agree with them?
A. Yes, sir.
Q. And you agreed with these?
A. Yes, sir.
Q. Do you calibrate your cased-hole logs to nearby open-hole logs?

A. I -- I don't know that we do that. Again, I have a petrophysicist that does that, so it would be a question that he would have to answer.

Q. It would be good practice to do so, wouldn't it?

A. I would believe so.

Q. Did I hear you correctly saying that the economic parameters in this plate are iffy?

A. I said they could get iffy as we -- as we push the northern boundaries, you know, either direction.

Q. And I believe you also testified that the bottom line of all of this is economics, making economic wells?

A. What I'm saying is -- what I'm trying to -- well, that's part of my goal, yes, to make it --

Q. You don't want to drill uneconomic wells?

A. Absolutely.

Q. You said that your logging program had been reduced as your company drilled down to 10 acres because it became a statistical play.

Can you tell me what you mean by "a statistical play"?

A. For me, it's -- a statistical play is that

you're drilling in-field wells. There's not a whole lot of surprises to know that the -- that the zone of business that you are looking for is not going to be there. There's no -- there's not a pinchout or a fault or any other geological snafu, for a better word, that will limit you or make you not know that that -- that that horizon or that -- or that interval will not be there.

TECHNICAL EXAMINER EZEANYIM: Could you repeat that? Repeat that answer. Can you repeat that answer?

THE WITNESS: You want me to repeat the answer?

TECHNICAL EXAMINER EZEANYIM: Yeah.

THE WITNESS: When I say -- the statistical play for me is that if you -- as you're drilling internally, in-field drilling, you have enough well control and know that the -- the formation of the -- or the target area that you're doing does not -- doesn't pinch out or have a fault or any geological snafu that kind of changes things up or that then -- and then for me, there's no big surprises for us to drill a well and not know that that zone is going to be there, or that -- or that section is going to be there.

Q. (By Mr. Grable) Well, there aren't any structural features like that of importance in this play, or these faults, pinchouts. Maybe as you go east it gets a little wetter and you go west it's a little more oily, but there aren't any geological structural markers or boundaries in this play, are there, other than falling off the shelf?

A. No, sir. You -- you described it well.

Q. Now, would it be fair to say that Concho's view of a statistical play is that it's more cost efficient merely to drill these wells on 10 acres, log only occasionally, and perforate in large 200-foot zones without regard to your log analysis?

A. Well, first of all, we don't just log occasionally. We log every single well.

Q. Pardon me. Open-hole logs occasionally. I'm sorry. Pardon me.

A. Okay.

Q. Thank you for that correction.

A. Okay.

Q. Do you use -- do you -- when I say "you," does your company use that log information in determining where you perforate and frac?

A. We do.

Q. And how do you do that?

A. Especially in the Paddock.
Q. Isn't it your practice to perforate in three or four 200-foot sections down the hole?
A. That is correct.
Q. Okay. If that's true, then how do you use logs and log analysis to determine the perforations and fracture zones?
A. Well, we've got to have a log to know and see where we're going to put the fracs.
As I told you before, in some places we do run into silts. In other places, you know, we -- and often, we use it to perforate. And we do individual perfs in the Paddock, so -- because it is at higher porosity intervals.
So yes, there -- we -- there is a need in our practice to use the case-hole logs.
Q. Do you intend for any of the exhibits you presented to be used with respect to determinations of net pay in this reservoir?
A. Well, repeat that one more time.
Q. Is your testimony and the exhibits you presented this morning intended to be a part of the data useful to determine net pay in these reservoirs?
A. Only if they're open-hole logs, yes, sir.

That's the only -- you have to use the open-hole logs to determine net pay. You can't use case-hole logs to do that.

Q. I don't believe you've testified to -- in some of my questions you said 3 percent porosity was the cutoff. But you haven't presented any evidence this morning of net pay to these logs, have you?

A. I nev- -- well, that's what you're seeing on the logs.

Q. You mean those green flags?

A. Yes.

Q. But you didn't testify about those in your direct testimony, did you?

A. I don't recall.

Q. Okay. And I thought you testified on this section that your statistical perforations in this large -- does this show your perforations on there?

A. No, sir.

Q. Okay. But in fact, you -- I thought you said you'd get fooled if you'd use this log for analysis of what's net pay and where to perf, because it turned out so much better than your view of what the log looked like.

A. That is correct.

Q. So is that part of the statistical play,

that -- so then irrespective of the reservoir quality as depicted on the log, you just perforated in several 200-foot sections down the well bore?

A. Well, again, the logs aren't the only determining factor for the outcome of the well, as you can -- as you can see by that well. That's a 100,000-barrel well. So most people would probably walk away from that and never even attempt it, to perforate and produce.

Q. What I'm trying to come around to, when I hear "statistical play," what I think of is you do essentially the same thing in every log irrespective of the data shown on that log, because statistically if you do that consistently throughout the reservoir, you're going to pick up zones that you miss on log analysis. Is that a fair summary?

A. Sure.

Q. And that is your company's practice, is it not?

A. In most cases, when we're in-field drilling, yes.

Q. And in fact, on this log over here (indicating) that looks kind of sorry on the log, it turned out to be good?

A. Yes, sir.

Q. Okay. Now these reserve figures at the bottom, are those your estimates or did someone else come up with those estimates?

A. No, sir. They are our reserve engineer's.

Q. So you can't tell me how you got to these reserve numbers?

A. No, sir, I cannot.

Q. All you know is that those are your company's figures for those wells?

A. That is not my -- that is not my responsibility. That's my -- a reserve engineer's responsibility.

Q. Now, I believe you said you did have a map or could provide a map to show where your core data is located.

Could you get that and give it to your counsel so my people can look at it?

A. I will defer to my attorney to see --

Q. Do you have it with you here in Santa Fe?

A. I do not have a map that shows where our cores are at.

Q. Do you know where they're at?

A. It would be back in Midland, in my office.

Q. Do you, from your knowledge as working in this area for eight years, know generally where your

core data is located?

A. Specifically section/township, no.

Q. All right. Do you know if any of it is located in the -- you are aware that Burnett and Hudson have asked to consolidate six fields, kind of in the eastern portion of the 12-field area that Concho is in. Do you know if any core data is available in those areas?

A. I would have to check.

Q. Can you -- is there someone you could call back at the office and find out if you have any core data available in those areas?

A. I can.

Q. Would you do that and tell your counsel, and then we'll take it up with her after lunch?

A. Okay.

MR. GRABLE: Thank you very much.

THE WITNESS: Thank you, sir.

MR. GRABLE: Pass the witness.

LEGAL EXAMINER BROOKS: You passed the witness at 10:35.

MR. COONEY: I have nothing.

TECHNICAL EXAMINER EZEANYIM: Any redirect, Ms. Munds-Dry?

MS. MUNDS-DRY: Just a minute, please,

Mr. Ezeanyim. I don't think so, but let me just make sure.

No redirect.

LEGAL EXAMINER BROOKS: Just one.

The Tubb and the Drinkard that underlie the Blinebry are also considered part of the Yaso, are they not?

THE WITNESS: Yes, sir.

LEGAL EXAMINER BROOKS: But they're not considered prospective in this area?

THE WITNESS: They're not. They're normally wet.

LEGAL EXAMINER BROOKS: Okay. That's all I have.

TECHNICAL EXAMINER EZEANYIM: Okay. Maybe I will ask a few questions.

What made you drill on 10-acre units? You say you are drilling on 10-acre units. Why? Is that because of the secondary recovery or just because of economics? Why did you drill on 10-acre units?

THE WITNESS: Oh, that's a good question. I can't remember exactly how we started drilling on 10-acre locations. You know part of this -- part of this field was drilled for the Paddock, you know,

the obvious, the better -- better part of the zone. I can't recall why -- why we started drilling on 10s.

Maybe there was two wells that was pretty close together and ran some -- ran some numbers and said, you know, maybe that's not draining as much as it is. And just like anything else, you try something to see if it works. And if it works then it's a home run, you keep going. Otherwise, it's -- you know, you're always -- you're always pushing the limits of either -- you know, 40? How did we get from 40 to 20? And now we're 20 to 10?

TECHNICAL EXAMINER EZEANYIM: Yeah.

THE WITNESS: So it -- a lot of it -- you know, a lot of stuff is done by accident, and -- and so you move on.

TECHNICAL EXAMINER EZEANYIM: Yeah, I think you answered that question already.

THE WITNESS: Yes.

TECHNICAL EXAMINER EZEANYIM: Okay. That's good. I mean there's nothing wrong with you doing 10 acres, and I wanted to ask you whether you did it because of secondary recovery, or because of economics you drill those wells. Maybe Mr. Midkiff or Mr. Prentice will answer that question.

MS. MUNDS-DRY: I think both Mr. Midkiff and Mr. Prentice can answer that for you.

TECHNICAL EXAMINER EZEANYIM: Yes, I know they can answer that, because there must be a reason why.

THE WITNESS: I'm more concerned with primary than secondary, so that's where they -- that's where you guys come in.

TECHNICAL EXAMINER EZEANYIM: Yeah. Maybe -- maybe he will also answer the question.

You said that there's water flood per the authority in one of the pools there.

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: I know we approved you could do -- I know there is another number that approved those water flood projects.

THE WITNESS: Yeah. It's a pilot water flood, and Mr. Prentice will testify to that.

TECHNICAL EXAMINER EZEANYIM: Okay. Yeah, I think that -- okay.

And this lease water flood is not incorporated. It's a lease water flood?

THE WITNESS: It is a lease water flood. That is correct.

TECHNICAL EXAMINER EZEANYIM: Okay.

That's all I have.

MR. GRABLE: Mr. Ezeanyim, I'm sorry, I forgot to ask him one question that I meant to ask him. May I have permission take him back on cross? I will be very brief.

FURTHER EXAMINATION

BY MR. GRABLE:

Q. Would you look again at Exhibit 38, the drainage calculations? Are you familiar with this exhibit?

A. Yes, sir.

Q. Did you, as a geologist, from your core data, pick a grain density to use in these calculations?

A. I'm sure we did.

Q. Do you know what it is?

A. I didn't specifically. Again, this is a -- this is a model that was done by others that we incorporated through our system.

Q. Do you know what grain density was utilized in those calculations?

A. I do not right at this moment, no.

MR. GRABLE: Well, that's another bit of information that we don't have, and I would ask again if he could find that out and let his counsel

know, we'd appreciate it.

LEGAL EXAMINER BROOKS: Okay. You said grain density?

MR. GRABLE: Grain density, yes.

LEGAL EXAMINER BROOKS: Okay. You took one minute with that.

TECHNICAL EXAMINER EZEANYIM: Okay. Using grain density, I forgot to ask you this question.

What is a typical porosity in the -- in the Paddock and Blinebry?

THE WITNESS: The typical porosity?

TECHNICAL EXAMINER EZEANYIM: Yeah.

THE WITNESS: Boy, it's pretty poor. The majority of the Yeso we use a 3 percent cutoff to -- for us to flag what we consider pay.

TECHNICAL EXAMINER EZEANYIM: So you --

THE WITNESS: But it can be much lower than that. I mean the -- when you're down to 3 percent, just -- you know, we have seen production out of rock that's 2 percent. So, you know, 3 percent is kind of a -- it's the average that we use and the standard.

TECHNICAL EXAMINER EZEANYIM: Okay. And the -- what's the permeability?

THE WITNESS: Not much.

TECHNICAL EXAMINER EZEANYIM: But you said it's tight?

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: The dolomite is very tight?

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: Okay. That's all I have.

THE WITNESS: Thank you.

MS. MUNDS-DRY: Shall we call our next witness?

TECHNICAL EXAMINER EZEANYIM: Yes, go ahead.

LEGAL EXAMINER BROOKS: The time is 10:40.

MS. MUNDS-DRY: I call Mr. Midkiff, please.

TECHNICAL EXAMINER EZEANYIM: State your name for the record, please.

THE WITNESS: TJ Midkiff.

TJ MIDKIFF,

after having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MS. MUNDS-DRY:

Q. Mr. Midkiff, where do you reside?

A. Midland, Texas.
Q. And by whom are you employed?
A. Concho Resources.
Q. What do you do for Concho?
A. I am a reservoir engineer for the shelf area in the Yeso.
Q. And does that include properties in the Southeast New Mexico shelf area?
A. Yes, Southeast New Mexico.
Q. And have you previously testified before the division?
A. Yes, I have.
Q. Were your credentials accepted and made a matter of record at that time?
A. Yes, they were.
Q. Are you familiar with the application that's been filed by Concho?
A. Yes, I am.
Q. And have you made an engineering study of the reservoirs and the subject pools that are part of Concho's application?
A. Yes, ma'am, I have.
MS. MUNDS-DRY: We would tender Mr. Midkiff as an expert in petroleum engineering.
TECHNICAL EXAMINER EZEANYIM: He is so

qualified.

MS. MUNDS-DRY: Thank you.

Q. (By Ms. Munds-Dry) We are going to first turn, Mr. Midkiff, to Concho's Exhibit Number 12. If you could, please identify and review it for the examiners.

A. What I wanted to start off with is to kind of help you -- kind of paint a picture of how we think about the reservoir and kind of lead into why we do what we do.

We start off with -- as Mr. Reyes testified a minute ago, the reservoir is -- stratigraphic, it's very low permeability, very low porosity all the way across. It's compartmentalized. We see incremental reserves as we frac and connect, you know, these -- these productive lenses together. And you know, we -- we consider it a lenticular reservoir.

We -- and what I'm trying to show there on this picture is -- you know if you think about two wells and you drill through the section and what you see on the logs, well, all you see on the log is what the well bore is encountering. So you know, if you look at Well A on the -- on the left there (indicating), you would see, you know, a small

section of net pay.

And you look over on the Well B, and you would see a larger section of what somebody might consider to be net pay.

And if you -- if you will go to the next slide, you'll see that if you just went by what you see on the logs, you would be disregarding other compartments or lenses within the reservoir.

Q. Mr. Midkiff, I believe this is -- I'm sorry to interrupt you -- Concho Exhibit Number 13 in the notebook.

A. Okay.

And so what our approach is, is we look at the section because we know there's -- there's production out there that we're not seeing that's on the log. So we -- we perforate across the section and -- and frac it to connect all of those -- those lenses together.

And you know, one of the biggest points I want to make about this reservoir is how statistical it is in nature. That, you know, just -- just looking at, say, drainage calculations for these two wells right here (indicating), if you looked at the -- you know, these wells will probably have similar recoveries based on the -- you know, kind of

the picture that I have painted there. But Well A will probably have a much larger calculated drainage area versus Well B.

So you know in reality, the drainage areas are probably similar, but they are going to calculate very differently.

And so, you know, if you switch back to that last cross-section, to kind of show you exactly what I'm talking about -- go again. One more. Yeah, right there.

You can see exactly what we're talking about. It goes right in with what Mr. Reyes was saying.

All that you see at the well bore is, you know, however far out the logs read, you know, approximately 6 inches or something. That does not define the reservoir.

If you -- if you targeted pay strictly off of what you saw at the reservoir, with the nature of this reservoir, you run the risk of abandoning a significant amount of reserves. So you must complete the entire section and connect it all together.

And if you will, go ahead and go forward.

And again, like I say, we -- you have to

take a statistical look at the reservoir. You have to look at all the data. I could go out there and find a single well case to prove any point I wanted, but that's not how you can look at this. You have to look at the whole picture. You have to look at all data through all the -- you know, all the wells, all the data points that you have.

Q. So let's go to Concho Exhibit Number 14. And what does this slide show us?

A. This is -- it really goes, again, with the cross-section and the two that I put forward.

And what I did is I plotted PHI-H based off of log interpretation -- or I guess our log model -- versus the initial 12-month cumulative oil production.

So this is a plot of basically productivity -- oil productivity versus PHI-H saying, is there a correlation between how much oil you make and the type of net pay that you see at the well bore?

And this is textbook distribution for being no correlation. You see a horizontal distribution like that, it's -- it's -- that's clearly no correlation.

And in fact, if you really want to pick

it, you see some of your lowest oil production and some of your higher PHI-H wells, and you see probably the highest distribution of -- of productivity in your lower net pay wells.

So again, there is no correlation whatsoever between PHI-H and productivity.

Q. All right. And, Mr. Midkiff, if you could, for the record, give us the parameters you used for your data points.

A. Well, it's -- one of the difficulties in the Yeso, with the way that it's developed, is finding wells that have both the Blinebry and the Paddock open from day one. So I selected the largest number of wells that I could find that had both the Blinebry and the Paddock open within the first three months of the completion. And also, they had to have at least 12 months of production to make it a valid plot.

Q. Thank you. Let's turn to --

TECHNICAL EXAMINER EZEANYIM: What -- what exhibit is this?

MS. MUNDS-DRY: That is Exhibit Number 14, Mr. Ezeanyim.

Q. (By Ms. Munds-Dry) Let's turn to Concho Exhibit Number 15.

Please review that for the examiners.

A. Okay. Again, I'm trying to give you a bird's-eye view of how we look at the reservoir. And as you can see, you've got two what would be considered 20-acre wells there. And you can see how they're -- their, you know, fracs extend and the type of lenses that, you know, they are encountering.

And if you just drill two wells, you can see the significant amount of waste that would be incurred if you did not have another two wells, the 10-acre wells.

If you'd go to the next slide.

Q. This is Exhibit Number 16?

A. Yes.

Q. And so you know with -- under the current field rules, the current density, we connect more of those productive lenses together.

We -- and we've got -- I will run into it here in a second, a couple of examples on where we are seeing incremental recoveries. You know, we have -- all of this data is audited every year by a third-party engineering service and, you know, there's -- we've got over a thousand wells that, you know, testify to this type of development.

Q. Okay. Let's turn to -- I think we're going to skip ahead, if I'm right, to Exhibit Number 23, which should be the next slide.

A. Yes.

MS. MUNDS-DRY: This, Mr. Ezeanyim and Counsel, this is Exhibit 23 in your notebook.

Q. (By Ms. Munds-Dry) Please review this for the examiner.

A. These are -- this is a plot of total --

MR. GRABLE: I'm sorry. It's 23?

MS. MUNDS-DRY: 23.

MR. GRABLE: Is this the one you substituted?

MS. MUNDS-DRY: No.

MR. GRABLE: Okay. I'm with you now. Thank you.

THE WITNESS: This is a total oil curve for four 10-acre offsets within the Caddo Federal lease. They're in 17/30, Section 17.

And you can see from the well count, which is -- the well count on the axis to the right, the vertical axis to the right, where the first two wells come on. And both of -- all four of these wells are full Yeso wells. They have both Blinebry and Paddock completions in them.

And if you look at those first two wells and you put a reasonable forecast on those, you can see that those wells approximately -- have ultimate recoveries of approximately 223 MBO.

You drill the next two wells, and we forecast those four wells with a reasonable forecast and you get an ultimate recovery for those four wells of approximately 469 MBO.

Therefore, showing an incremental recovery of 247 MBO just in one 40-acre proration unit of incremental reserves right there.

TECHNICAL EXAMINER EZEANYIM: Are those numbers on there?

THE WITNESS: Yes. They're all on there, yes, sir.

TECHNICAL EXAMINER EZEANYIM: Okay. When you drill two? Do you have two?

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: And when you drill four, how many do you have?

THE WITNESS: 479 MBOs we estimate there.

TECHNICAL EXAMINER EZEANYIM: Okay.

Q. (By Ms. Munds-Dry) Okay. And what is the ratio, then, you show when you --

A. That's approximately one to one. You

see -- in fact, this -- in this case it's a little bit over one to one. And that -- you know, we're really trying to imply there, again, the statistical nature of the reservoir. It's very heterogeneous. Wells offsetting, you can have much different behaviors. And but in this case they're very similar. It's almost one to one.

Q. Mr. Midkiff, let's go to Concho Exhibit Number 24.

A. The same type of curve. Right here (indicating), you will see I'm trying to represent the same -- the same thing. You drill two wells on 20-acre spacing, a reasonable forecast on those wells, and you come up with an ultimate recovery of approximately 211 MBO.

You add the third and the fourth well and forecast the total oil curve for those four wells, and you have an ultimate recovery of approximately 453 MBO. Therefore, showing an incremental recovery by the 10-acre spacing -- or, rather, the 10-acre drilling -- of 232 MBO.

And again, that's 232 MBO just out of two wells within one 40-acre proration unit.

Well, actually, these wells are not within the same proration unit. They are -- but they are

all four 10-acre offsets. I'm sorry.

Q. Thank you. Let's go back --

TECHNICAL EXAMINER EZEANYIM: Yeah, before you move --

MS. MUNDS-DRY: Yes.

TECHNICAL EXAMINER EZEANYIM: So the -- you added 221 to 292?

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: To get the 4- --

THE WITNESS: 453, yes, sir.

TECHNICAL EXAMINER EZEANYIM: Okay. Can you pull up the slide -- yeah, pull up the last slide, please.

Very good. That's good. Go ahead.

THE WITNESS: Okay. Now I could have, you know, shown you many, many examples just like this. And you know again, because this type of work that we do, we have it audited every year by a third-party engineer, and they fully support what we do.

So what I thought I would do next is kind of show you some of the things that we see that are kind of new and -- well, not so much new, but different, you know, that's maybe a little bit

different than traditional 10-acre spacing, and kind of show you the type of behavior that you are seeing within those wells.

Q. (By Ms. Munds-Dry) Okay. Let's go to -- let's go back, then, to Concho Exhibit Number 17, please, and review it for the examiners.

A. This is a plot of three wells within a -- within Section 13 right there (indicating). These wells were all immediately offsetting, all completed within the Paddock.

You can see the cross-section line there in Section 13. It's a vertical well going right to a horizontal well going right to a vertical well.

It's difficult to see up there on the projector, but there are -- there's small Xs on the -- plotted along the well bore of that horizontal which represent the perforations within that horizontal.

And if you look at these wells -- so traditionally on 10-acre spacing you're approximately, you know, 600, 660 feet apart. These wells right here (indicating), these completions, are probably about 3- to 400 feet apart, if you look at where the perforations are on that horizontal well bore. So this is much closer than 10-acre

spacing.

And if you would, go to the next slide.

Q. And just before we leave that, Mr. Midkiff, for the record, these are all Burnett wells?

A. Yes, they are.

Q. And these are what -- what are these wells called?

A. This is, I believe the Stevens A lease. I'm not exactly sure of the well numbers.

Q. Okay. Thank you.

Let's go to the next slide, then. It's Concho Exhibit Number 18, I believe.

A. Yes.

Q. Please review this for the examiners.

A. So you look at the oil curves for these wells -- this is the oil curves for each one of those. You'll see the vertical well is the first well that came on, then the horizontal well, and then the -- the following vertical well.

And you look at -- these are completions, again, that are much closer than your typical 10-acre spacing. And you see no well interference right there between those oil curves.

Q. Let's go to the next exhibit, Concho

Exhibit Number 19, please.

A. This is another exhibit -- I mean another example of -- of completions that are much closer than 10-acre spacing. They're in Section 14. There's three wells. And you can see the cross-section line on there. It's -- I believe that's Well Number 32, Well Number 26, and Well Number 21.

Q. And these are also Burnett wells?

A. Yes, they are.

And you can see from the cross-section they are all completed within the Paddock. And the same type of deal. If you will look at the perforations along the well bore, the completions are much closer than typical 10-acre spacing.

Q. Let's go to Concho Exhibit Number 20, please.

What does this slide show?

A. This is a plot of the oil curves from those wells within that lease. And you can see again the vertical well, the horizontal well, and then the vertical well coming on. They all have the same type of decline curve. It looks like they decline for a couple of years and then, you know, eventually break over. You see no well interference

there whatsoever.

So again, that's tighter than typical 10-acre spacing, and you're seeing no well interference.

TECHNICAL EXAMINER EZEANYIM: Are these Burnett wells?

THE WITNESS: Yes, sir.

Q. (By Ms. Munds-Dry) Let's go to Concho Exhibit Number 21.

A. This is probably the tightest spacing that I have seen within this reservoir. These are -- these completions are approximately -- I would estimate about 140 feet apart, very, very close completions.

And again you can see from the cross-section they're both completed within the Paddock. They -- yeah. Again, there are perforations immediately offsetting this vertical location on that horizontal.

So again, the actual completions, the section of the well bore that is being completed, they're within about 140 feet of each other.

Q. And again, these are Burnett wells?

A. Yes, they are.

Q. Okay. Let's go to Concho Exhibit

Number 22, please.

A. The same type of thing. You look at the oil curves, you can see the vertical well producing. You see the horizontal come in.

And you know, I know Burnett runs much bigger stimulations on their wells than we do. And you see that even with that they are still not -- you're not seeing any interference well to well. You're showing incremental recovery.

Each one of those exhibits right there showed that you are intersecting a new reservoir, you're adding reserves, and avoiding waste.

Q. Let's shift gears then, and let's go now to what has been marked as Concho Exhibit Number 25.

If you would please identify and discuss this slide, please.

A. What I did here was I looked at -- you know, because there are differing philosophies with how to complete these wells within this reservoir. They're in 17/30, Section 8.

This is probably the best example where you have immediately offsetting production on two sides to compare 10-acre development versus 20-acre development. And it was pointed out me that one of the wells there, I believe it was Well Number 58,

just recently had the Paddock added.

So here in a second I will get to it. And the next three slides all go together. But -- so this is -- this is all -- this is going to be Yeso completions on 20-acre versus Yeso completions on 10-acre.

Q. Okay. Then let's -- then since these three slides go together, let's go then, next, to Concho Exhibit Number 26.

A. Okay. This is -- I took a normalized plot of the 10-acre wells versus a normalized plot of the 20-acre wells. Now keep in mind that the 20-acre wells typically have much bigger stimulations pumped into them.

So -- so what you're seeing is you get a little bit higher IPs out of that, but eventually that curve is going to get back down to where your 10-acre wells are draining.

And I guess -- I guess go ahead and go to the next slide. I'm sorry.

Q. And this is Concho Exhibit Number 27, the slide we're now looking at?

A. Yes. And if you take a look at -- you know kind of the question is now, do you want to drill two 20-acre wells or do you want to drill four

10-acre wells?

And you look at the ultimate recovery there. This is cumulative oil production versus time plot showing the ultimate recovery of four 10-acre wells versus two 20-acre wells.

And like I said, it was pointed out to me that one of the wells that I used in the 20-acre analysis only had the Blinebry in it. So if you kind of want to take a comparison in what it would take to make up that difference there, even if you were getting, say, average 300,000 barrels, that's absolute best case out of those other two wells, you -- you're still leaving over 100,000 barrels of oil in the ground.

TECHNICAL EXAMINER EZEANYIM: What's the exhibit?

MS. MUNDS-DRY: This is Exhibit Number 27, Mr. Examiner.

TECHNICAL EXAMINER EZEANYIM: 27, yes.

Q. (By Ms. Munds-Dry) What do you conclude, then, as you ask the question of whether you -- of whether you get bigger ultimate recovery from 20-acre or 10-acre spacing? What do you conclude from these three slides?

A. Well, typically, and this is -- this is

why we drill on 10 acres -- is because you're seeing almost a one to one incremental, I mean sometimes more, sometimes less. It depends on the heterogeneity of the rock where you're drilling. I mean it varies greatly throughout here.

So in our understanding, and like I say, this is -- this is an understanding, that in tight curves built off of a thousand wells, you're seeing almost two to one incremental oil over the 20-acre development total.

TECHNICAL EXAMINER EZEANYIM: How many wells do you use in this average?

THE WITNESS: Well, it was on that previous slide, if you will go back.

TECHNICAL EXAMINER EZEANYIM: How many?

THE WITNESS: That -- I used -- go back one more.

These are the wells. I used a model for the late time decline analysis from over 300 wells.

These -- but just for the early time production I modeled just off of the wells right here (indicating). Because this is -- like I say, I wanted to compare apples to apples, 20-acre development versus 10-acre development immediately offsetting.

TECHNICAL EXAMINER EZEANYIM: Okay.

Q. (By Ms. Munds-Dry) Let's turn to Concho Exhibit Number 28.

A. (Witness complies.)

Q. What is this slide?

A. This is a plot and -- you know, this is kind of where I start trying to point out that you really have to take a statistical look.

This is a -- an initial six-month GOR for every well that's in the Yeso pool. So if the -- you know, this being a solution gas drive reservoir, if you were effectively draining those 10-acre locations and seeing the GORs increase, you would -- you would expect to see a breakout in the GORs on this plot as those wells are being, you know, drilled into drained locations, and you don't see that. You see very low GORs consistently, you know, from about 1,000 to 2,500; so, therefore, indicating that reservoir energy has not been negatively affected by the 20-acre -- or by the 10-acre wells, even.

Q. So if you were seeing acceleration, what would you expect to see in the GOR rate?

A. Again, you would expect to see the GORs begin to break out, and you just don't see that

there. Initial GOR, that's a great indication of initial reservoir energy, and you're not seeing depletion there. You're seeing initial GORs consistent, indicating that you're drilling into new reserves and adding incremental oil.

Q. What does this tell you about how -- what the effect on the reservoir energy is?

A. The reservoir energy is not being negatively affected by the -- by the wells, by the drilling. I mean this is -- again, this is a plot of every well within the play right there (indicating), every well within our subject area.

Q. All right. So this is a data point for every well that is in a Yeso pool that's subject to Concho's application?

A. Yes, it is.

TECHNICAL EXAMINER EZEANYIM: Each data point presents a well's GOR?

THE WITNESS: Yes, initial six-month GOR. I took initial -- the six-month data and took an average -- or an average GOR over that time frame and plotted it.

TECHNICAL EXAMINER EZEANYIM: Six months?

THE WITNESS: Yes, sir.

Q. (By Ms. Munds-Dry) Okay. Let's go to

Concho Exhibit Number 29. Please review that for the examiners.

A. This is a plot of peak rate versus time. And it really goes along with that -- that first slide. Each point on there represents an individual well.

And what I have broken this well down to -- or this plot down to is its peak rate versus time. I don't know if I mentioned that. And I broke it down to be the first well in the proration unit, their peak rate, versus the peak rate of the fourth well within the proration unit.

So again, if you were -- if you were seeing reservoir energy being drained by the earlier drilling, you would expect to see the reservoir energy depleting, and you wouldn't see the high -- as high of IPs.

And this right here (indicating) -- again, this is a picture of every well across the shelf. And you can see that the cluster of the black wells is -- is, you know, right up there, some of the highest wells that you see within the tract.

TECHNICAL EXAMINER EZEANYIM: If you have peak wells at the IP, or where do you get that?

THE WITNESS: It's the peak monthly rate.

TECHNICAL EXAMINER EZEANYIM: How do you have rate? You do the rate at the Y axis?

THE WITNESS: Yes, sir. The rate is on the Y access, and it's -- it's a plot of time versus peak rate.

TECHNICAL EXAMINER EZEANYIM: Okay.

THE WITNESS: And -- and broken down by first well in the proration unit versus the fourth well with the proration unit.

TECHNICAL EXAMINER EZEANYIM: And this is all of the wells?

THE WITNESS: Yes, sir. All of the wells within our application.

TECHNICAL EXAMINER EZEANYIM: How does -- this peak rate, how long does it last?

THE WITNESS: Well, typically, your wells are going to begin declining. I mean that's -- you would love it if they hit their peak rate and just stayed flat there, but that doesn't happen, so they typically decline after that, yes, sir.

Q. (By Ms. Munds-Dry) Let's skip over then, if we could, Mr. Midkiff, to Concho Exhibit Number 31. What is this slide?

A. This is a -- you know, kind of getting into the question now of why do we need -- why are

we asking for the allowable that we're asking for.

And if you look back, I'm not aware of any time that -- you know, up to this application, production was never restricted.

So you've got a lot of evidence in the history to look at well performance and see if there -- unrestricted production -- to see if there was any damage. And you -- frankly, you haven't seen that.

So the next question is: Well, what does the allowable need to do to be able to allow you to produce unrestricted?

And if you look on this plot here, there's an oil curve right there (indicating), and you see that it reaches up to approximately 300 barrels a day. And you see the typical solution gas drive GOR, it's steadily increasing over time. That's natural depletion of a solution gas drive reservoir.

And in fact, you know, even down there at the end where you're looking at a GOR of, you know, a little over 10,000 to 1, you probably -- you know you've got four wells making approximately 10 barrels a day. So you expect that, at the end of the life of the well, that the GOR is going to be increasing.

Q. And I believe this slide indicates these are Paddock-only wells?

A. Yes. They are four Paddock-only wells that produce approximately 324 barrels of oil per day.

TECHNICAL EXAMINER EZEANYIM: What did you say?

THE WITNESS: Four Paddock-only wells that produced 324 barrels a day. So I guess indicating that if we added -- had added the Blinebry, that initial rate could even be -- be even higher.

Q. (By Ms. Munds-Dry) And I believe you said -- I would just ask you to expand on the GOR increasing. That's something you anticipate in this kind of reservoir?

A. That is -- that is typical textbook solution gas drive reservoir behavior.

Q. And given that increase in GOR, do you -- in your opinion, does that damage the reservoir?

A. Not at all. If you would -- that's natural. Again, in a low permeability reservoir like this, depletion drive, you have to have very high permeabilities to be able to cause damage within a reservoir. And as low as these permeabilities are you don't -- you don't see that

damage.

And like I say, we've had I don't know how many years now of unrestricted production. I'm not aware of anybody that has restricted their production previously to this. And so you've got a great dataset of what the reservoir can do without causing damage.

Q. And what does this slide tell you about the need for limiting GOR?

A. There is -- again, you know, a GOR limitation, in my understanding, would be something that would -- to protect the reservoir. But since everybody has produced without restriction -- restricting production, you know that the GOR limation is not necessary.

Q. Let's go to Concho Exhibit Number 32.

A. (Witness complies.)

Q. What does this slide show you?

A. This is the same type of plot. You see four Paddock-only wells. And these wells produced at a peak rate of approximately 230 barrels of oil per day. And again, that's Paddock-only.

And if you look, even whenever you see the new wells come on, you typically see a decrease in the GOR. You see new reserves being added there.

It kind of goes along with that GOR scatter plot that I showed a minute ago. You are intersecting a new reservoir. So therefore, the total oil curve, or the GOR curve for that 40-acre proration unit, is going to come down because you are adding new reserves.

Q. Okay. You moved over into a new area to show us different data?

A. Yes. This -- I've got four of these going from 17/29 to 17/30, and the next two will be over in 17/31 to 17/32. Basically, I wanted to show you that production has never been restricted. You've seen no damage, and we need an allowable in place that would allow us to produce at capacity.

Q. Let's go to our next slide, which is Concho Exhibit Number 33.

A. (Witness complies.)

Q. Please identify these for the examiners.

A. These are three Yeso wells that produced 245 barrels a day. And take note that that's only three wells that produced 245 barrels a day. You see even -- even the same type of GOR reduction as that second well comes on, and I guess indicating again that only three wells produced 245 barrels a day.

Q. What does this show you about whether you're accelerating production or tapping your reserves?

A. Well, you see that -- that GOR even dip and kind of remain flat a little bit, as you are adding wells to the proration unit, must be an indication that you are intersecting new lenses within the reservoir and adding incremental oil.

Q. Okay. Let's go to your final slide in this series, Concho Exhibit Number 34.

A. This is a plot of four Yeso wells down in 17/32. Those wells produced approximately 350 barrels a day, you know. And again you see new wells coming on. You see a drop in the GOR, typical solution gas drive reservoir behavior. GOR is going to increase over time. And therefore, again, this is an example of wells that were not restricted productionwise, and you see no damage to the reservoir. You see typical depletion drive characteristics.

MS. MUNDS-DRY: We're going to refer, actually, to our copy of Exhibit 4.

Could I ask that you turn on the lights for a minute?

Q. (By Ms. Munds-Dry) Could you turn to

Concho Exhibit Number 35?

A. (Witness complies.)

Q. This exhibit has already been admitted, Mr. Midkiff, but I wanted you to go through this order and point out a few of the findings.

If you could, turn to page 3 of the order.

A. Okay.

Q. And if you could, summarize for us the findings in Number 11.

MR. GRABLE: I'm sorry. What findings are these?

MS. MUNDS-DRY: On page 3, Finding Number 11.

MR. GRABLE: In what order?

MS. MUNDS-DRY: In Order Number 12199, which is Concho's Exhibit Number 35.

MR. GRABLE: Concho 35 is the --

MS. MUNDS-DRY: The Devon order.

MR. GRABLE: -- the Devon order?

Okay. Well, I'm going to object to this witness summarizing the findings in a different matter for which we've not heard the evidence, and the evidence is not a part of the record of this hearing.

MS. MUNDS-DRY: This has already been

admitted into evidence, Exhibit Number 35.

MR. GRABLE: Well, the finding --

MS. MUNDS-DRY: You can give weight to the finding as you see fit, so there's no reason why he can't read them.

MR. GRABLE: I thought it was admitted, Mr. Brooks, for the purpose of showing the -- what was requested in the application and what relief was granted by the order.

But I specifically object to just wholesale incorporation of the fact findings entering here into this record. And asking this witness to summarize them now would just go against the ruling that I thought that you made earlier.

LEGAL EXAMINER BROOKS: Well, was your objection, when that was taken up -- I recall the objection and the ruling, but that related to -- did that relate to this order or did that relate to the other order that was before us, that was not admitted into evidence? I thought it was the latter.

MR. GRABLE: I thought it was both, but...

LEGAL EXAMINER BROOKS: Well, I --

MS. MUNDS-DRY: No, I think it --

LEGAL EXAMINER BROOKS: It only occurred

one time. I do recall that.

MR. GRABLE: Well, then, the other one -- this will clarify it. The other one was not offered into evidence. It's not in evidence, period, so it must have been on Exhibit 35.

But I mean I do -- I do object to polluting the evidence in this case with evidence from another case.

LEGAL EXAMINER BROOKS: Well, the findings on Number 11 are recitations of the evidence that Devon presented. Now that evidence is not before us, so I -- I will sustain the objection to that extent. But the witness may recite them for the purpose of commenting on them, if he has opinions to offer that are relevant.

MS. MUNDS-DRY: Maybe it will help if we clarify. We're offering them not for the evidence, but to opine as to whether they were -- you know, whether he has any opinions on whether they relate to this case.

LEGAL EXAMINER BROOKS: Okay. For that purpose I will overrule the objection.

Q. (By Ms. Munds-Dry) Let's go to, then, Mr. Midkiff, Finding 11A and B. And if you could, summarize those for us.

A. And just -- just so it's noted, I have read through the entire testimony and seen the data that have been presented on this case, as well as the Mewbourne case. And I do agree with how they presented the material and everything that they said in those cases.

Q. And what are the findings in 11A and B?

A. (Reading) Devon presented additional testimony from an expert witness at the hearing as follows:

Productive lenses within the Yeso formation are laterally discontinuous and difficult to trace from one well to another. The Glorieta formation is rarely produced within this.

The amount of net pay or the structural position within the Yeso formation in these wells is not necessarily indicative of the productivity of the well or the reserves within the well.

In addition, water saturation calculations from logs are not reliable. The FMI logs have shown some fracturing, but fracturing cannot otherwise be seen or referred from the open-hole logs.

Q. And let's go to Finding 16 -- sorry, I skipped a page. Finding -- it's 11E on page 4.

A. (Reading) Within the northeast Red Lake

Glorieta Yeso pool, as additional wells are added, the initial GOR and initial production from the new wells remain similar; and, therefore, show that reservoir energy has not been significantly affected by previous production.

Q. Then let's go to page 5, Finding 16. If you could please read that.

A. (Reading) Increasing the depth bracket allowable for the northeast Red Lake Glorieta Yeso pool will enable the operators in the pool to efficiently produce the hydrocarbons within this reservoir, will not result in excessive waste reservoir energy, should not reduce the ultimate recovery of oil from this reservoir, and will not violate correlative rights.

Q. And what is your opinion, Mr. Midkiff, as to the similarity or differences between the geologic and engineering findings in this order to what you've testified to this morning?

A. Well, I believe everybody agrees that the rock is similar all the way across the shelf; therefore, you know, you look at -- all across the shelf everybody will testify to the heterogeneity, the low permeability environment.

And again, you know, probably our best

dataset is looking at past production and seeing that we have not damaged the reservoir. We have produced unrestricted and not damaged the reservoir.

And therefore, going forward, I believe that an allowable that does not restrict production is -- is -- will allow for full development of the reservoir and is necessary for the prevention of waste.

Q. And in your expert opinion, Mr. Midkiff, what do you believe that allowable rate should be?

A. I believe it needs to be at least 300 barrels of oil per day and an unlimited GOR.

Q. And why do you say that?

A. Again, you know, the nature of the reservoir, when you talk about a depletion drive reservoir, the only way you can cause damage is if you have a significantly high permeability. This rock is very tight, it's very heterogeneous, you can't see gas break out like that.

And I'll point to all the production history that we have where you show typical depletion drive characteristics throughout the entire history of this play.

Q. In your opinion, Mr. Midkiff, will the granting of this application be in the best interest

of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, ma'am.

MS. MUNDS-DRY: Thank you, Mr. Midkiff.

With that, Mr. Examiner, we ask that Exhibits 12 through 35, except for Exhibit 30 -- that's the best way I can say it, without giving all the numbers -- all the series between 12 and 35 except for 30, which we did not offer or discuss, be admitted into evidence.

I can count them out if that helps.

TECHNICAL EXAMINER EZEANYIM: Any objections?

MR. GRABLE: I am just looking now at the one that is 30. 30 is this --

MS. MUNDS-DRY: We did not offer that at this point.

MR. GRABLE: All right. No objection.

MS. MUNDS-DRY: Pass the witness.

TECHNICAL EXAMINER EZEANYIM: Exhibits 12 through 35 except Exhibit 30 will be admitted.

LEGAL EXAMINER BROOKS: Okay. The witness was passed at 11:13.

TECHNICAL EXAMINER EZEANYIM: Your witness, Mr. Grable.

MR. GRABLE: Thank you. Give me one moment to get my book.

EXAMINATION

BY MR. GRABLE:

Q. All right. Let's go back to Exhibit 11, I believe. Was that the three-well cross-section that Mr. Reyes presented?

A. It appears so.

Q. You remember the exhibit, don't you?

A. Yes, sir. I've got it right here.

Q. And as I recall your testimony on this exhibit, you said that something like drainage areas calculated from this exhibit would not be accurate because of -- because the actual drainage is larger than what is shown?

A. Well, the thing is that you -- you know my point is, is that you have to take a statistical look. If you -- if you focus on an individual well, what your -- your PHI-H calculation, which is, you know, a major part of that calculation, is representative. That PHI-H number is representative of about 6 inches around the well bore.

And as heterogeneous as this rock is, that's a terrible assumption, to assume that that is what defines the reservoir, is that small bit of pay

that shows up on an 8-inch diameter hole.

Q. Did you do PHI-H calculations or net pay calculations or drainage areas from these three logs?

A. I did not.

Q. Okay. Did you hear Mr. Reyes testify that these are cased-hole logs?

A. Yes, sir, I guess so.

Q. You can't do those sorts of calculations from cased-hole logs, can you?

A. I --

Q. Not accurately?

A. I am going to have to pass that question on to Mr. Prentice.

Q. Mr. who?

A. Prentice.

Q. Okay.

A. But again, you know the point is that it -- it's still -- you know whichever log you look at it on, it is still going to be representative of a thickness. And that thickness at the well bore is not representative of the oil.

If you go, actually, to the next slide, you will see exactly what I'm talking about.

Q. That's what I want to -- I have already

turned there. So let's go to 12. Let's talk about Exhibits 12 and 13.

What do you want to prove? These are talking -- what do you want to call these? What do you want to call these little pictures?

A. I call them -- it's a compartmentalized lens reservoir. And typically, we describe a reservoir like this of being of a lenticular reservoir.

Q. Okay. Now, do Wells A and B represent any real wells within the reservoir?

A. No, sir. This is -- that's typically what you see on a log, though, is behavior like that.

Q. Is this horizontal line representative of anything in the reservoir?

A. It -- it was more or less to just indicate maybe a formation top, and that's it.

Q. Well, that's what I say. Is that supposed to be the top of the Yeso, or what -- what's it doing there?

A. Well, it's -- it could be the top of the Yeso. Again, you know, the Yeso -- whether it be the Paddock or the Blinebry -- typically behaves the same. And this was just a representation of the Yeso, however you -- whether you want to call it the

Paddock or the Blinebry.

Q. That's what I'm trying to pin down, what this is supposed to represent. So am I to assume that this -- the upper horizontal line is the top of the Yeso and the bottom of the horizontal line is the base of the Yeso?

A. Yes, sir.

Q. Okay. And so the part in between, in which you've colored in these little lenses or pods, represents the areas of porosity developing stratigraphically within that overall area?

A. Yes, sir.

Q. Now, are these wells supposed to be representative -- are you presenting this to be representative of the actual reservoir?

A. Yes. That's how -- that's how we believe that the reservoir behaves, yes, sir.

Q. Have you seen any log, and have you presented any log, where it only shows up one discrete section of porosity on the entire log?

A. Yes, sir. I believe there's actually -- you see behavior similar to that on -- on the previous exhibit that we were looking at.

If you will look on -- I guess it's Well Number 47, you --

Q. Let me go back to 11.

47 is the leftmost log?

A. Yes, sir.

Q. Okay. Aren't all of these porosity indications?

A. Again, yeah. This could be -- you know, you see the -- look at the change from Well Number 47 to Well Number 21.

There could be, you know, smaller or several other compartments within the reservoir that have intersected this well bore, yes, sir.

Q. Which well bore?

A. Well Number 47.

Q. I was talking about Well A on your Exhibit 12, which shows a well intersecting only one very thin edge piece of a single pod.

I mean I'm telling you I don't see any logs that are in anybody's evidence in this record that look like that on a log. Isn't that true?

A. Well, you know if you will look at, I guess Well Number 48, and -- you know, you look down through the Blinebry, and you really just have kind of that one thick section there in the Paddock, that's part of -- you know as far as what has been presented, that may be the best representation of a

single, you know, lens within the reservoir intersecting. It will be intersected by this well.

Q. But again, these are cased-hole logs not typically used for picking porosity, are they?

And this shows more than one, even up in the Paddock. And then some of these things down in the Blinebry haven't even been colored in this log. Isn't that true?

A. Yes, sir. It's very heterogeneous rock. You don't know what you're drilling until you put a hole --

Q. There are porosity curve traces greater than 3 percent that are not colored green?

A. Okay. Yes, sir.

Q. Let's go back to Exhibit 12, then.

Isn't -- instead of -- how -- what's the distance between Wells A and B?

A. Again this was, you know, purely a diagram to illustrate how we look at the reservoir. You could consider those wells to be 10-acre offsets.

Q. But isn't this reservoir, just generally speaking, as you have said, extremely lenticular, stratigraphic, and there are multiple stringers along each of these log traces, not just one or two?

A. That could be true, yes, sir.

Q. Just -- this water flood inference that was coming kind of out of left field, but if this was truly representative, if you converted this Well A to an injector, you'd only water flood this lens, wouldn't you?

A. Well, no, sir. If you go to the next slide --

Q. Okay.

A. -- you could see what happens with our fracture stimulations.

Q. All right.

A. And I think what you're alluding to is, again, why we perforate across the entire interval, because we want to reach out and we want to touch all that, you know, with our floods. We want to make sure that we're flooding each of those lenses.

Q. Let's see. You had flooded through your artificial fractures?

A. Yes, sir. This -- this reservoir -- typically, this play was not, you know, as statistically viable until they began fracking the wells and connecting all of those multiple productive lenses together.

Q. Do you know anything about this pilot flood that your company has done in the Loco Hills?

A. No, sir. That -- Mr. Prentice has spearheaded that project.

Q. Now, are these indicated perforations typical of what your company does just as a -- kind of a predetermined set of perforations down through the well bore, irrespective of log analysis?

A. Yes, sir. Again, you know, the following slide indicates that there's no correlation between the productivity of oil and what you see at the well bore. So therefore, it's important to us to make sure that we complete the entire section and avoid wasting reserve that didn't show up on our logs, lenses that might have been outside of our well bore that we didn't intersect.

Q. Now this statement in here, "The assumption cannot be made that what is seen at the well bore defines a reservoir," I want to ask you about that.

Now what you see at the well bore through a log or for analysis or other means of gathering data, if it is done, is accurate, is it not, if it's done properly?

A. If -- maybe I should have said the assumption cannot be made that -- what is seen in a single well bore. Obviously, we take all of our

logs, and actually any log that penetrates a zone where we're looking, and those go into defining the reservoir.

But if you are looking at an individual well, and assuming that that defines the reservoir, would be an inappropriate assumption.

Q. But aren't each of the logs representative of the reservoir at the point at which they're drilled?

A. Yes. They are representative of that 8-inch diameter hole, or however big the hole is.

Q. And really, the only data you have is the data you get from logging for analysis and production. The only data you have is the data that comes from individual wells?

A. Yes, sir. And that's why you must look at it together, and not just a single well. You have to look at all data, you know.

And like I said before, you could take -- as statistical and heterogeneous as this reservoir is, you could take a single well, a single example, and try to, you know, draw any conclusion from it that you wanted to. It is important to look at all data, all the wells.

Q. Well, I think everybody would agree with

you on that. But it is your company's practice, also, not to take cased-hole logs -- or I mean open-hole logs -- on approximately three out of four wells in a proration unit?

A. Well, typically, that's only done in areas that we have a significant amount of wells that have drilled through, and so we have a very good understanding of the reservoir at that point.

So at that point, yeah, it becomes unnecessary to -- to drill another -- I mean to run those logs.

Q. Do you -- I asked Mr. Reyes, and he didn't know. But do you know how many wells in your area of interest Concho has drilled and how many of them you have run open-hole logs on?

A. No, sir, I do not.

Q. And this slide also says Wells A and B have similar reserves. One of the reserve numbers -- and again, is this just kind of a cartoon assumption that they're going to have similar reserves?

A. Exactly. You know, basically, you look at the volume of what -- those lenses that I have illustrated on there, and assume that those volumes are going to be about the same. And so you have

similar reserves whenever you try to apply a drainage area to that, based on the net pay encountered for that well bore.

You're going to calculate a much bigger drainage area for the well that has a much lower PHI-H versus a well that has a much higher PHI-H. And that's why you can't look at it individually. You take the average of those wells, and that's probably a better indication of -- of your average drainage area.

Q. Okay. And these are the averages that come off of your Exhibit 38?

A. Yes, sir.

Q. Now, do you know what the ranges are within those averages?

A. I --

Q. What's the high and low that come out to an average of 9.2?

A. You know, I looked at the data. I've got the ranges, and I don't know if I have this with me. But I looked at the ranges from probably about 17/29 over to 17/32. And typically on a lease basis, the average that you see is anywhere from like 11 acres in the Paddock to, you know, 6 acres in the Paddock.

Or in the Blinebry the range is typically

from, you know, even down to 1 to 2 acres up to maybe 6 acres. It's very -- again, it's very complex rock.

Q. Can you get that information showing the ranges within these averages and furnish it to us?

A. Of the -- of the drainage areas?

Q. Yes.

A. Yes, sir. I -- I might have that with me. I might be able to get that for you at lunch.

Q. Now you make a statement in here, just as kind of a general representation, that these wells had similar reserves.

Haven't you actually seen a fairly wide range in reserves in the wells you've drilled?

A. It depends on where you're talking about. I mean it's -- again, it's statistical. And the point of the illustration was to show why the -- the drainage areas.

Q. No, I understand that. But I just want to test your statement that -- I take it from the exhibit that you are putting out is a -- is a statement that is applicable across the reservoir, that you're going to have similar reserves. And I think the data really shows otherwise, doesn't it?

A. Well, it varies, you know, from where

you're at in the play, yes, sir. It depends.

Q. It's better to the west and worse to the east, in general?

A. Yes, sir. And again, we're representing wells that are on -- you know, again, approximately 10-acre spacing here, is what the illustration is. So there's going to be wells that are possibly in the same area.

Q. But in a true statistical play you would drill all of those because you don't know where the good ones are going to be, so you've got to drill enough holes to get a broad enough spread across the area that you're going to get the good ones with the bad ones?

A. Yes, sir. And in fact, if you look at the -- the map that I have got, kind of representing 17 South, 30 East, Section 8, all of those 10-acre wells have had similar production curves, and they were -- all appear to be economic wells. So you know, that shows that in a specific area you can have similar production characteristics.

Q. What does Concho consider an economic well in this reservoir, as far as reserves?

A. Oh, you know, it depends on where you're at. Because, you know, it gets -- it gets shallower

in some areas. So you know, that has a big effect on your economics. It really, there's a -- there's a range from one end to the other depending on where you're drilling.

Q. The deeper to the east?

A. Deeper to the east, yes, sir.

Q. And higher water stats to the east?

A. I have not studied that.

Q. But on average, you would need -- you're looking for 50,000 barrels in oil, or what are you --

A. At least 50,000 barrels, yes, sir.

Q. You wouldn't drill a well for 20,000 barrels, would you?

A. Not intentionally.

Q. Okay. What sort of payout time does COG typically look for under these oil prices?

A. Oh, our payout times are usually less than a couple of years. I don't -- I can't give you an exact number on that. I don't have a set of our economics in front of me.

Q. So you would have a fair number of wells that don't pay out in one year?

A. That, I -- I don't feel comfortable answering that, because I don't know off the top of

my head.

Q. Well, I am coming back to this again.

If you think these wells typically have similar reserves, and you can't tell from the logs what they're going to connect to after you frac them, why do you see such differences in the reserves well to well?

A. The heterogeneous nature of the reservoir. You don't know what you're intersecting. You know, I really think -- you know, this is just an illustration.

But if you look at the next slide, the plot of PHI-H versus productivity, that's real-world data right there showing, again, textbook distribution for no correlation. It -- it's very obvious.

Q. Well, let's look at that next one. Now, this -- this is one you corrected from your first plot, right?

A. Yes, sir.

Q. What wells did you take out, going from the original 14 to this 14?

A. I wanted to narrow it down to just wells that were completed within the first three months.

Q. In both zones?

A. Yes, sir. I'm sorry. Yes, both zones.
Q. For the first three months?
A. Yes, sir. That way it was -- you know, it was the most representation of the actual capacity that that well had.
Q. Now the initial production rate would bear maybe not a direct lineal relationship, but certainly a substantial relationship to the ultimate reserves for the well, would it not?
A. Sometimes, yes, sir.
Q. Do they decline similarly?
A. We typically --
Q. The type --
A. I'm sorry?
Q. The type curve of decline?
A. It depends on where you're at. But typically, yes, sir, we -- we model wells similarly there in the same area.
Q. All right. But what you're trying to demonstrate from this, that you do not see a correlation between 12-month cumulative oil and PHI-H from the log data?
A. Yes, sir. And kind of what you were saying how, you know, IPs can be representative of the ultimate recovery, well, I wanted to take that a

step further. That way, it wasn't just IPs versus PHI-H. That way, you've got an actual indication of 12 months of production, so you have a good indication of what type of behavior that well was going to have versus PHI-H.

Q. But these are 12 months, not one-month IPs, right? Not instantaneous IP?

A. It's a 12-month cumulative oil production.

Q. But you're not trying to show from this graph that these initial production 12-month rates do not bear a relationship to ultimate reserves?

A. I'm saying that the initial 12-month productivity does not bear a correlation to reserves?

Q. Yes. That's not your testimony?

A. That is not my testimony, but you would typically expect that to be true.

Q. It would be true that it does bear a relationship?

A. Yes, sir. And again, not all the time.

Q. Right. So then I'm getting back again to if -- if your Exhibit 13 is accurate, that wells have, quote, similar reserves and you're going to frac into about the same number of lenses, you really don't see that in the engineering data. You

see significant differences between the wells. Is that true?

A. Restate that. I'm sorry.

Q. Isn't it true that you see a significant difference among the ultimate production well to well across your wells in this field?

A. You know, from -- from -- within an area we typically see the same type of -- of well performance. But you know, we're talking about -- you know, I don't know how many townships here or ranges here. It's a large area, so it's hard to say that about that big of an area.

But within a certain area you do expect similar well performance.

Q. Do you know, on Exhibit 14, what area or areas these wells are located? How many of them would be in, quote, similar areas?

A. This is a -- I believe it's -- well, I know it is. It's a plot of every well that we had within the application area that we had PHI-H numbers for, that had Blinebry and the Paddock both added within the first 12 months.

So it's -- it's an area -- again, that's one of the main things I want to stress, is you have to look at the whole picture. You can't look at an

individual well. You have to look at the whole picture, because you could make any individual case represent whatever you wanted it to. As heterogeneous as the reservoir is, it's very complex. You are going to see much different behavior in certain places.

Q. Let's go to your Exhibits 15 and 16, the aerial view of the lenses. Are those kind of wing tape things, your opinion of how the fractures spread out on stimulation in this reservoir?

A. Typically, yes, sir.

Q. With the fracs that Concho employs?

A. Yes, sir.

Q. Is Concho now doing slickwater fracs?

A. Not -- no, sir, I don't believe so.

Q. You use gel for fluid?

A. Yes, sir.

Q. And do you know whether -- isn't it true that gel usually extends a shorter distance out into the reservoir than slickwater?

A. I'm not a -- I'm not a completions engineer. So, you know, I -- I would assume that to be true based on my understanding. But again, I'm not a completions engineer.

Q. All right. Are you aware of the

differences in fluid volumes between the slickwater fracs employed by Burnett now and the gel fracs Concho uses?

A. Yes, sir, I do understand some of the differences. There's much larger volumes typically pumped by Burnett.

Q. In the range of five to ten times the volume?

A. Yes, sir.

Q. How about sand or other propense?

A. I haven't studied that.

Q. Are you expressing any opinion, then, as to whether or not you -- these Exhibits 15 and 16 would be representative of how many lenses or stratigraphic intervals a 20-acre well drilled by Burnett would contact?

A. I believe if you -- if you -- if you took a well, like you're suggesting that has longer frac links on it, well, if you took those planes and just extended them out for just two wells, you'll see all the wells -- the reserves within the middle of the proration unit, all of those lenses, those compartments that are oil bearing and productive that would not be contacted or -- with that type of completion. You need a density to be able to

intersect all of those lenses.

Q. Well, but simply put, if the fracture pattern goes out farther, it's going to connect more lenses?

A. Yes, sir, it will. It -- possibly. I mean I haven't ever been down the hole. So...

Q. Are you aware that Burnett's wells, on average, have significantly larger reserves than Concho's wells?

A. I have not seen that.

But again, you would expect it because, you know like I represented on that one plot, you're probably going to get a little bit higher initial production. But typically, the forecast for those -- those examples right there (indicating), they had both Blinebry and Paddock completions in them. They -- it -- eventually well performance is -- late time, is going to be similar. So all the -- really, the incremental is what you see there at the beginning, and it's not exactly -- you're recovering much more oil with increased density.

Q. Let's go to your Exhibit 17. It's the first cross-section. There we go.

Now the three wells depicted on the cross-section are these three wells where I'm

pointing (indicating) in Section 13, correct?
A. Yes, sir.
Q. And if I have done my counting right, this would be the 40-acre that would be 13K, and this southern one would be 13N?
A. That's my understanding, yes, sir.
Q. Now 13N, Nancy, has two vertical wells?
A. Yes, sir.
Q. And 13K has a single vertical well?
A. Yes, sir.
Q. The single vertical well being this well here (indicating)?
A. Yes, sir. As far as -- you know my understanding, we filtered these wells down to wells that were just, you know, within the Yeso formation. So...
Q. Yes. I think that's all that Burnett has out here. But anyway, this is the toe, where I'm pointing now (indicating), for the horizontal well at the north end in K. Isn't that the toe, or the end of the horizontal trace of the well bore?
A. That's my understanding, yes, sir.
Q. So then the vertical portion is somewhere over here (indicating)?
A. Yes, sir.

Q. Do you know at what point it enters the Yeso and begins to have perforations?

A. We tried to illustrate all the perforations on the cross-section there. And again you see the Xs along that are plotted along the well bore. If you actually -- it's hard to see on the computer screen. But if you actually look on the map you can see where they are.

Q. Well, do you have a pointer? About where would it begin?

A. Let me see.

Q. Right about here (indicating)?

A. About right there (indicating), like very close to those other -- I'd point out about 2 inches from the laser point here. I can't -- right there (indicating), very close. It's almost between the 14 --

Q. Are we talking about a vertical projection at this point, if this perforation is -- we're talking about bringing this up to the surface, being the point of which, in that trace of the horizontal well bore, it's actually perforated in the Paddock?

A. Yes, sir. That would appear to be.

Q. And you say it is -- I don't know what the scale of -- is there a scale across here?

A. I don't know if there is -- well, actually, I believe that there is up there at the very top. It's between the -- let's see here.

Q. I think that's 600- --

A. It's 327 for the -- between the Well Number 14 and Well Number 13.

Q. Right. It's --

A. And approximately 700 feet between Well Number 13 and Well Number 12.

Q. Okay. From their surface locations?

A. Yes, sir.

Q. But you haven't plotted where a vertical projection of that -- this initial portion of the perforations is, but it would fall somewhere --

A. It's plotted along the well bore there.

Q. -- somewhere along there (indicating)?

A. Yes, sir. Like I said, you can see it on the map.

Q. Now to understand this, in fact in three-dimension, this horizontal well bore is not pointing right at the other well, is it? It would actually be pointing out, essentially, 90 degrees back out of the paper this direction (indicating), would it not?

A. Yes, sir.

Q. But that's just the necessity of representing 3D on a 2D piece of paper?
A. Yes, sir.
Q. Now -- okay. So what we have in these two 40-acre subdivisions, prorations, are a total of three vertical wells in a single horizontal well, correct?
A. Well, we have illustrated two vertical wells and one horizontal. But there is, yes, another vertical well there.
Q. There's one vertical well --
A. Yes, sir.
Q. On your section you've got the two verticals in 13N, Nancy, but there's another vertical in 13K?
A. Yes, sir.
Q. So I'm just looking at the density of development here. We have -- we have three vertical wells, right?
A. Three vertical wells, yes.
Q. In 80 acres?
A. Yes, sir.
Q. And then we have a single horizontal well?
A. Yes, sir.
Q. So if we count that as two wells, you've

got five wells in 80?

A. The horizontal?

Q. Yes.

A. Yes.

Q. And then the horizontal has perforations in -- some perforations in N and more perforations in K?

A. Well, you -- one way you need to look at it, though, is as many different perforations as you see along that well bore, you can almost consider those mini-completions along that well bore. So it's really not a good representation because, you know, it shows that -- I think -- I believe their average spacing between their completions is about 200 feet, which indicates that they are wanting to intersect as much of the reservoir as they can, based off how they perforate and how they complete.

Q. Let's back up again. Are you -- isn't the division now considering rules for treatment of horizontal wells? I mean given an allowable, if you've got a horizontal well intersecting two 40s, don't we get an 80-acre allowable?

A. Yes, sir. That's my understanding.

Q. Isn't it kind of the industry understanding that if you've got a horizontal well

across these two proration units, spacing units, whatever you want to call them, they should count as a well in each one?

A. Yes, sir.

Q. So again going back to my example, what you have here, even counting the horizontal well as two wells, you've got five wells in 80 acres?

A. It is. But again, that's just a -- that's just a number. What you have to look at is how the reservoir is being completed, and you have many more -- like it's actually -- there's obviously an attempt there to intersect as much of the reservoir as possible. You can't just call it one well, because there's an attempt to complete as much of that reservoir as possible that's connected to that well.

Q. Do you know the total amount of perforations in this?

A. They should all be indicated on that map there.

Q. Well, I'm sorry. I've had good eyes for years but they're starting to fail me. I don't see them.

But just looking at your -- I mean if the scale is all the same, the amount of perforations in

the vertical wells look about the same as in the horizontal well, don't they --

A. Well --

Q. -- total number of feet?

A. -- again, what -- if we had projected, and that's a -- that all the way out, it would have just made an unnecessarily long cross-section. We had our -- we had our -- when this was made we had it represent and show that the horizontal was landed in the same formation. But we didn't necessarily...

Q. All right. Well, the assumption -- I'm asking you to make the assumption; it's not your assumption. But counting the horizontal well as two wells, you've got only slightly more dense development in this 80 acres than you would on 20. You've got five wells in 80 acres?

A. Well, it's my understanding that anything more than two wells within a 40-acre proration is considered less than 20-acre spacing.

Q. Right. But it's not drilled into 10 acres, though, is it?

A. It's not. But if you look at what is considered to be 10-acre spacing, it's 660 feet apart. And you can, you know, kind of eyeball and see them, that you have completions within 3- to

400 feet of each other. So this is -- this is representative of much closer spacing than 10-acre spacing.

Q. Maybe in this isolated area, but not across the whole 80 acres?

A. Well, if you look at the three horizontals there in Section 14 and section -- stretching over into Section 13, you can see that's three -- three horizontals that are all completed within 10 acres. It would be considered 10-acre offsets to each other.

And those wells -- you know if you put four vertical wells within a single proration unit, one horizontal well is going to intersect two locations and another horizontal is going to intersect two locations. Therefore, it would be considered, you know, at least four completions within a proration unit. And -- and you have actually got more than that, because you have increased your number of perforations across that proration unit.

I guess my final point is you can't just look at the number of well bores. You have to look at how the reservoir was developed.

Q. All right. Well, let's look at your next

one, Number 19.

MS. MUNDS-DRY: I'm sorry to interrupt. I'm wondering if you're going to be much longer. We're getting close to the lunch hour.

MR. GRABLE: I've probably got about 15 minutes or so, maybe more. Let's go ahead and take our lunch break now. We've got reservations.

TECHNICAL EXAMINER EZEANYIM: Okay. Yeah. At this point, I think we're going to go ahead and take our lunch break. We'll be back by 1:00. Is that okay with everybody?

LEGAL EXAMINER BROOKS: Yes. It's 11:40 now.

(A lunch recess was taken from 11:52 a.m. to 1:02 p.m.)

TECHNICAL EXAMINER EZEANYIM: Good afternoon. We're going to go back onto the record. It's now approximately 1:00, so thank you for coming back on time.

Mr. Grable, you are in the process of cross-examination. So you can complete -- but before we do, let's try to give you an idea of how much time you have.

LEGAL EXAMINER BROOKS: What my chart shows is that Burnett/Hudson has 5 hours and 27

minutes remaining, and the other parties have 9 hours and 48 minutes remaining.

My arithmetic probably needs to be checked.

TECHNICAL EXAMINER EZEANYIM: Yeah, that's approximately. We'll check that, but I just wanted to give you an idea of what we are dealing with.

Go ahead, Mr. Grable.

MR. GRABLE: Thank you very much, Mr. Ezeanyim.

Q. (By Mr. Grable) Mr. Midkiff, I want to talk about your Exhibits 18, 20, and 22.

MR. GRABLE: Mr. Rankin, if you could put that up on the screen.

MR. RANKIN: Which one?

MR. GRABLE: The graphical presentation of the monthly oil production that follows that. Maybe I misnumbered them.

Q. (By Mr. Grable) 20 and 22 are the ones that follow the other cross-sections, just to kind of get you to get in mind of what we're going to be talking about, all three of these.

And as I understand your conclusion from these, after looking at the Burnett wells that you picked out in the preceding cross-sections that we

were discussing prior to the lunch break, I understand your conclusion to be that you see no interference among or between the Burnett wells that were drilled on -- closer than the 20 acres, basically.

A. Yes, sir.

Q. Now, you also recognized in your testimony a couple of times that Burnett uses a larger fracture stimulation than Concho.

A. Yes, sir.

Q. Now in looking at all the data which you say is important, wouldn't it be important to know how the wells that you have selected for these examples were completed and stimulated?

A. Yes, sir.

Q. Do you -- are you aware that in each -- in each case the wells on 18 and the wells on 20 and the wells on 22, which are the wells that are on the cross-sections, respectively 17, 19, and 21, are wells that were drilled early last decade in 2002, -3, -4, -5 before Burnett started using slickwater fracs?

A. Those wells right there?

Q. Yes, sir.

A. Looking at that curve, it appears that

well was drilled in 2006. That was their earliest well on that.

Q. Okay. But the other one -- let's look at -- look at the next one. Let's look at 20.

A. Okay.

Q. The first -- the one well that -- the oldest well was completed in early 2004, the next well right about January of '06, and the next well January of '08.

A. Okay.

Q. If Burnett did not begin using slickwater fracs until sometime in 2007, then some of these comparisons are not accurate, are they? They're not similar?

A. Well, I believe what you -- what you see is that you have three different completions in -- on less than 10-acre spacing. They are all draining incremental reserves. That's the conclusion. Based on no matter what the completion is, you are showing incremental recovery.

Q. Well, if -- you're aware that completion techniques in this reservoir and other type resource -- kind of reservoirs have changed significantly over the last 10 years?

A. Yes, sir.

Q. And that would occur when you're working with XTO and Haynesville, or all of these other kind of tight rock reservoirs, completion techniques have evolved, correct?

A. Yes, sir.

Q. Now if all of these wells were completed with only just a hot acid job, no sand and really not fracked, would that cause you to rethink your conclusion?

A. Well, I do have the completion reports that we can look at on these wells. But I still think that the fact remains that if you look at the lowest performing well on that, let's say the lowest IP, that well that -- the one that came on in January of '04, that well appears to have come on at approximately 100 barrels a day. That's -- that indicates that well probably had a decent stimulation put on it.

Q. But you don't know what stimulations were put on?

A. No, I do not. But like I said, I do have those reports if you would like to look at them.

Q. I will conclude that if none of these wells on any of Exhibits 18, 20, and 22 were completed with the number of stages and size of

fracs and through what Burnett now employs, would that affect your conclusion that you've reached from these graphs?

A. No, sir. Like I say, if you look at the volumes over the small area these completions were over, you have to indicate that there is significant, I guess completion, within the reservoir.

MR. GRABLE: All right. Let's go to 23 now if we can, Mr. Rankin.

Q. (By Mr. Grable) And as I understand your testimony on this exhibit, on the case of 23, you reached a conclusion that incremental drilling from two wells to four wells -- I mean the additional wells three and four result in an incremental production of 247,000 barrels?

A. Yes, sir.

Q. How much time do you need to have in order to have a reliable basis to assert a decline curve?

A. Well, you know, we have got models, like I say, that -- you know, completed from wells that have been, you know, in this reservoir since the beginning of it. And we use all of those models to -- to build our tight curves. And so you know, this isn't -- I didn't -- you know, this isn't just

a random forecast, this is based off of models, you know, having been built over a thousand wells.

Q. Okay. We'll come to that in a minute. I don't believe that was the question I asked you.

But let me ask you this. In looking at -- you take off -- a period of time for two wells is how long on this -- this particular example?

A. It appears to have been from January of '07 through I guess the middle of '09.

Q. Pardon me. Two wells, wouldn't that be?

A. Oh, from the middle of '07 through the middle --

Q. Wouldn't that be maybe about April 1st of '08?

A. Oh, I'm sorry. I was going from the beginning of the first well, as well. I'm sorry.

Q. I'm asking -- when you are doing a comparison there between two-well development and four-well development.

A. Yes, sir.

Q. So I'm trying to focus on, okay, how much time, how much production history did you have with two wells? And it looks like maybe 14 months.

A. Yes, sir.

Q. Is that a sufficient time from which to

derive a curve?

A. Based on our experience in the reservoir and, like I say, the high number of wells that we have completed, we do -- and the incremental recovery where we drilled in wells that have been completed for a period of years, we -- we -- it's a safe assumption for us to assume that that well will behave similarly to those other wells.

Q. Is that a yes?

A. What was your question? I'm sorry.

Q. All right. Let's look at the production during this 14 months or so. It goes from about where I'm pointing here (indicating). It goes up, comes down, comes up dramatically, comes down dramatically, and then comes up again. I mean --

A. What --

Q. -- and then you begin your decline from this point (indicating).

A. What was happening there is -- is you can kind of see the different bumps. And you see a Blinebry completion and then a Paddock completion on a well and then a Blinebry completion and a Paddock completion for another well.

So you know, there's downtime associated with -- with those completions. So that's why you

see the curve bouncing around. Those last months that we forecasted from, that's where all the wells were on line with all the zones producing. So it was a safe assumption -- you had about three or four months there showing consistent production -- that that was a reasonable place to forecast from.

Q. So now we're down to three or four months. and that's a sufficient place to start from here?

A. Well, that's approximately 120 days of production to again, like I say, establish a rate from which to forecast from, yes, sir.

Q. Okay. Now, the curve. Did you -- did you pick that curve?

A. Yes, sir, I did.

Q. Did you do it by hand or was it done by some sort of computerized calculation?

A. I did these forecasts in Aries.

Q. Okay. And does an Aries forecast print out the input and output in the program to show how you have reached -- how you came up with this?

A. Yes.

Q. Do you know if those were produced in discovery?

A. No, sir, they were not. I don't believe that they were.

Q. They weren't. So do those reside in Houston -- I mean pardon me -- Midland?

A. Yes, sir.

Q. Can they be printed off a computer?

A. Yes, sir. I'm sure we can get that. The problem with that is it's on a -- it's on a drive that I can access while I'm in Midland, but I've got my computer here. I don't know if I can get anybody else to be able to get on my drive, so we might have to wait until I get back.

Q. The same answer on this curve. It was derived the same way from an Aries forecast?

A. Yes, sir. Well, I used Aries to create the -- the data, yes, sir.

Q. The Aries was a computer -- it's a software package --

A. Yes, sir.

Q. -- to do this.

But you've got to input certain data for it then to forecast --

A. Yes, sir.

Q. -- the decline. And we don't know what data was input?

A. I can produce that.

Q. You can?

A. Yes, sir.
Q. Today?
A. No, not today.
Q. Okay. All right. Well, let's look at the next period of time. Now we've got, what, about seven or eight months here with three wells. And then we've got maybe almost a year, 10 or 12 months, with four wells?
A. Yes, sir.
Q. Okay. Now on the four-well decline, you picked it in the middle of this upward spike. Why did you pick that rather than the bottom or the top or some other point?
A. Well, I was -- I was afraid you were going to get me if I showed 400 MBO of incremental reserves there, so I made it as reasonable as possible.
MR. GRABLE: Let's flip to the next one, if I can, Mr. Rankin.
Q. (By Mr. Grable) There is a similar picture here showing predicted 232,000.
Now here, we have even less time. We've got, as I read that, maybe seven or eight months with two wells. And there on that two-well decline it goes up, it goes down, it goes up, it goes down,

and then you pick about halfway up there to begin.

A. Yes, sir.

Q. And again, that was -- the decline from there was computerized through an Aries program with whatever input you used?

A. Yes, sir.

Q. And on the four wells again, you've got eight or nine months?

A. Yes, sir.

Q. Do these -- are -- are these predicted decline rates hyperbolic?

A. Yes, sir. Well, the final decline is exponential, but it's hyperbolic.

Q. Do you know at what time or what monthly production rate it converted from hyperbolic to exponential?

A. No, sir, I do not.

Q. What is the decline percentage on the exponential component of the curve?

A. You're referring to the B factor?

Q. The percentage there, when you say the wells decline at 5 percent. I mean that's the way --

A. Well, there's typically three different inputs for a hyperbolic decline -- or even more than

that, actually. So...

Q. We're assuming the exponential part of the curve.

A. The final decline?

Q. Right.

A. You know, typically, we range from about 7 to 10 percent. In fact, I think one of these -- I can't remember which one was which -- was 7, and the other one was 10 percent. It depends on the area.

Q. Okay.

MR. GRABLE: All right. Mr. Rankin, can we go to 25?

TECHNICAL EXAMINER EZEANYIM: Mr. Grable?

MR. GRABLE: Yes.

TECHNICAL EXAMINER EZEANYIM: His name is Midkiff, so I don't --

Your name is Midkiff, right?

THE WITNESS: Yes, sir, Midkiff.

TECHNICAL EXAMINER EZEANYIM: You mentioned Rankin.

MR. GRABLE: Yeah, I'm --

MS. MUNDS-DRY: He's using Mr. Rankin to change the slides.

TECHNICAL EXAMINER EZEANYIM: I thought you were calling him Mr. Rankin. I was just

confused. I'm sorry.

MR. GRABLE: May we go, please, to the next slide?

That's 25 on my list.

Q. (By Mr. Grable) Okay. Now, this is an area -- we don't have the big map up here. But this -- you're aware that Section 8 is a -- kind of a single isolated section operated by Burnett off to the west-northwest of its main Loco Hills area?

A. I know that it's operated by Burnett, yes, sir.

Q. And Concho operates the southern and eastern offsetting?

A. I'm not exactly sure if we operate everything on the eastern. But I knew -- I mean, obviously, those are 10-acre wells, so that's why I used them for the analogy.

Q. But you operate the section to the south?

A. I believe we do operate those wells, yes, sir.

Q. Okay. Now, have you -- there's 13 10-acre wells there on the perimeter. Have you included all of those production declines in those wells in what appears as the subsequent exhibits derived from this data?

A. Yes, sir. I used all of those -- those wells, the 10-acre wells.

Q. And you used these three wells -- only three wells you selected from Burnett?

A. Yes, sir. The reason I did that was there wasn't a high number of wells there that had both Blinebry and Paddock. And if I did the type of curve of all the wells that Burnett operated within that section, the type of curve became significantly down. And so I just focused on the wells that had Blinebry and Paddock completed in them to make it as optimistic a case as possible for the 20-acre development.

Q. Well, just for the record, according to production maps, you do -- Concho does operate the southern section and the southwest quarter of the eastern section, and then all of the -- it would be the east half of the east half of the west section. So you've pretty much got them surrounded.

Now, why did you -- you selected those three wells and only those three wells because they both have Blinebry and Paddock?

A. Yes, sir. If I had selected all the wells that Burnett operated in Section 8, again, the type of curve would have come significantly down because

of the Paddock-only completions. And so that's why I focused on just those wells, to make sure it was as optimistic a case as possible for the comparison, for the 20-acre comparison.

Q. Are you aware that Well 58 -- are you now aware, after seeing the rebuttal and responsive exhibits we prepared, that Well 58 wasn't completed in the Paddock until a couple of months ago?

A. I mentioned that in my May testimony, yes, sir, and the effect that that might have on that ultimate recovery.

Q. And that well actually increased by 150 barrels a day or so after that completion?

A. Okay. I have not seen that. As you just pointed out, it was a new completion, which probably the data isn't public yet.

Q. All right.

MR. GRABLE: Turn to your next slide, Mr. Rankin.

Q. (By Mr. Grable) So if you had that additional production from the -- from the Burnett 58 well, and if indeed it did bump it up 150 barrels on this logarithmic scale, that would bump it up somewhere in this (indicating) neighborhood where I'm pointing?

A. Initially, yes, sir.
Q. So you would see a different picture, then, between normalized 10-acre and 20-acre than you are depicting there?
A. Well, it would have made it difficult to make that assumption because of the length between those completions, the time period between those completions, yes, sir.
Q. But the graph would have looked different if you brought that data forth?
A. Well, yes, sir, actually.
Q. All right.
MR. GRABLE: And then the following graph, if we can.
Q. (By Mr. Grable) Again, as I understand this graph, it brings forward all of the -- the same universal wells that you had in the preceding three?
A. Yes, sir, it does.
Q. There's 13 10-acre wells and 3 Burnett 20-acre wells?
A. Yes, sir.
Q. And again, if you had that new data on the Burnett well, this -- this graph would move upward some- -- somewhere up --
A. Well --

Q. -- it would be above where it is?
A. Well, for three wells to average -- or you know, for that to average 400,000 barrels you would have to see a 6- -- I guess it's a 600,000-barrel increment off of one well to cause that entire average to move up to where the four 10-acre wells are.
Q. I didn't say it would move up that far. It would move up from here (indicating). I don't know how far, but it would move up somewhere in the territory in between?
A. Potentially, yes, sir.
Q. Does Concho have internally-generated estimated ultimate recoveries, EURs? If I say "EURs" will you understand that to be an estimated ultimate recovery?
A. Yes, sir.
Q. Do you have those figures for these 13 wells that are included in your 10-acre --
A. I do not have those with me, no, sir.
Q. But they do exist?
A. Well, it depends. They might not be forecasted individually, I don't know. This isn't my area, so I don't know exactly what -- how they're -- if they're done in a summary or if

they're done individually.

Q. Are you aware of company-wide, or area-wide, what your average EUR is?

A. I have a range, yes, sir. I mean...

Q. What is the range?

A. It's typically -- you know, it can go anywhere from, you know, on average maybe -- well, you know, I don't even know if that's -- if that's information that I'm supposed to divulge.

Q. Well, you're presenting here that these 13 -- as I take it -- average 100,000 a well.

A. Well, the range is typically 100 to 140. I mean that's -- that's the type of range that we typically see in our wells.

Q. And you think that's supported by the decline analysis of your -- of your wells?

A. Yes, sir. Like I say, we have probably a thousand wells that we have used to build those models.

Q. But you haven't included any data in your presentation to the division in this hearing to support that range of EURs, have you, other than this one draft, is all I have seen.

A. No. We did not provide our database of all of our forecasts, no, sir.

Q. All right.

MR. GRABLE: Now can we go to the next exhibit, please, Number 28?

Q. (By Mr. Grable) As I took it from this graph, I thought the point you were saying it demonstrated was that GORs have not changed significantly over time.

A. Yes, sir, the initial six-month GORs.

Q. Now, why did you pick initial six months?

A. Well, originally I was just going to look at initial month GOR, but I got to thinking about it. And with all the work that's happening to a well within that first month, I prefer to take a longer time range. And so I just -- I chose six months get an average of GOR.

Q. Now, you say in the little textual box up there that initial GORs have not gone up significantly -- or not changed significantly over time.

How much does it have to be to be significant?

A. Well, I actually -- I put a trend line through that data.

Q. Yes?

A. And it -- the -- it went from about an

average of about 1.5 to 1.6 down at the other end. So there was a change, but .1 on a GOR for a solution gas drive reservoir, that's a pretty insignificant change. That could be statistical.

Q. The 1.6 should be about in there (indicating)?

A. Yes, sir.

Q. Have you sorted this data for time?

A. Yes, sir.

Q. And specifically -- well, is there a difference in the presentation if you sort it for wells in the last two years versus the first two years?

A. Are you talking about -- would you see a different slope on that line if you just focused on the last two years?

Q. Yes.

A. No, sir, you would not. I mean I have not looked at that, is what I meant to say. But I mean, yeah, I guess you can look at it and infer from the plot right there, if you just focus on that area. And you see the same type of trend --

Q. But this looks like -- as you get into these latter years, it looks like the range is moving up here. Now you say it goes from 1.5 here

to 1.6 there, but...

A. Well, you have to look at -- there's a lot more data points down there at the other end. There has been much more drilling activity over these last few years, so the cluster is much more dense. And so, therefore, you are going to see some of those outliers. You're going to see more of those as well.

Q. Have you sorted this by which wells were the first or second well on a 40 versus wells that were the third or the fourth well?

A. No, I have not. I just took initial -- initial GOR. Again, if you were draining the reservoir, you would expect to see a trend of breakout there, and that is initial GORs, and you just -- again, you don't see that. Because -- you know we are not just drilling out in a new reservoir. We drill -- we in-field drill. So if we were seeing depletion, we -- you know, you would see it from a -- from a good portion of our drilling.

Q. But you do not -- you can't tell the division whether these higher numbers up in here of these latter years are from 10-acre in-field drilling or not?

A. No, sir. I'm sure I could break that out,

but I don't have that data with me.

MR. GRABLE: Can you go to 29, please?

Q. (By Mr. Grable) All right. Now this is a peak rate, being initial full month? Is that what your peak rate is?

A. Yes, sir. It is a peak monthly rate.

Q. But is that the first full month or is it the highest month ever?

A. It's the highest month average.

Q. Do you know about when operators began -- or at least Burnett -- but do you know when Burnett started doing slickwater multistage fracs?

A. I believe you mentioned that was around 2007.

Q. And it just looks like post-2007 is when you start getting a bigger bunch of the higher rates.

A. Well, I believe Burnett only has 80 wells total, so I'm not sure how many they drilled from 2007 on. So there's -- there's -- maybe a small percentage of those points are from Burnett. But you know there's -- that's -- there's probably more points there than I believe Burnett operates.

Q. But to make a meaningful comparison, wouldn't you need to compare wells that are

completed similarly?

A. That would be one comparison, yes, sir.

Q. Have you -- so the only -- I'm trying to understand this chart. You have only first wells on a 40, and fourth wells on a 40?

A. Originally, I had the second and third on there, and it was just -- it was a lot of data, so I wanted to make it, you know, speak as well as it could. And it was hard to make -- see correlations with so many different data points on there, so I limited it to the first well and the fourth well, just to show, you know, both ends of the spectrum, the type of energy that you were seeing within the proration unit.

Q. Do you know how many of these wells was completed initially in both Blinebry and the Paddock versus only the Blinebry or only the Paddock?

A. No, sir. That -- and that's why I took every single well, was to just make sure it encompassed everything. I mean it -- you really don't even see a distribution across that range. You really see the main cluster there above 100 barrels a day.

So, you know, that's a significant, you know, I guess marker there, that the majority of

your -- of those points are all above 100 barrels a day.

Q. 100 barrels a day would be this line (indicating)?

A. Yes, sir. And I think that kind of ties back to allowable right now. One single well --

MR. GRABLE: Nonresponsive. I don't want a speech.

MS. MUNDS-DRY: Mr. Brooks, I object to argumentative.

LEGAL EXAMINER BROOKS: Well, I think both objections are well taken.

Q. (By Mr. Grable) Would it be meaningful to know which first well in a 40 goes with the fourth well in the 40?

A. That would -- I mean that would be a way to look at it, yes, sir.

Q. I mean if you're trying to see if there is any effect on the fourth well from the first three wells, wouldn't you want to look on the same 40?

A. Yes, that would be a way to look at it. But again, that's why I took every data point, so that everything was included in the plot and you could see the trend. So if you started culling out data you probably could still see your cluster above

100 barrels a day.

Q. Now behind each one of those points, if you -- if you wanted to, you could look in and say, "Okay. This black dot, fourth well right there, is the Concho Rankin Lease Well Number 4"?

A. Yes, sir. I'm sure I could find that.

Q. But -- but you haven't disclosed any of the individual data for this enormous amount of wells, at this point?

A. That was included in the subpoena, yes, sir.

Q. Oh, we got that?

A. Yes, sir.

Q. Okay. 30 is not your exhibit. We'll include 31, 32, and 33, and try to wrap this up.

And I believe your point on these next three graphs were that -- that GOR increases, but you expect that in a solution gas driven reservoir, and nothing in this spread of data shows you that there's any harm to the reservoir from additional drilling.

A. Yes, sir.

Q. And on this graph the GORs up in this range, you're getting up to about 15,000 to 1?

A. Yes, sir. When you get down to about

10 barrels a day on four wells, your GOR is up to 10,000 to 1. That's -- that's typical. I mean you're -- at that point you have to assume that the majority of that energy out of that proration unit has been -- been --

Q. Been spent?

A. -- been spent, yes, sir.

Q. Now, I thought you said your conclusion -- and I think you worded it pretty carefully -- that you would only worry about GORs in a high perm reservoir.

A. Yes, sir.

Q. And how high a permeability do you need before, in your mind, it's high enough to be of concern?

A. You know, that's -- that's hard to give a range there. I mean you've got Darcy perm. I don't know. I'd say --

Q. A full Darcy?

A. I haven't done that study to show at what point it becomes necessary.

Q. Have you -- I don't -- I'm not going to ask you to put them back up, but your little lens or cloud or pod exhibits.

It's true, isn't it, that the permeability

and porosity within those various stratigraphic lenses throughout this vast area vary quite a bit from one to another?

A. Absolutely.

Q. And in the Paddock especially, the perms and the porosities are higher, generally, than they are in the Blinebry?

A. Well, they're higher. But you know, you have to look at it relatively. I mean still, we're talking 3 percent porosity cutoffs in the Paddock. That's -- that's very low. This rock was bypassed for a long time because of that.

Q. Right. But I mean it went up. Have you looked at any -- well, has your company done any core analysis to calculate reliable perms in the Paddock?

A. I'm sure they have. We have a full-time petrophysical expert. That's all he does is look at this stuff, and I'm sure he's looked at that.

I have not -- I have not visited with him about that.

Q. But there's nothing in the exhibits you presented to the division in this hearing that speaks to that aspect?

A. No, sir. We did not provide a portion of

this.

Q. Let's look at 32, briefly.

And here we have GORs back in the 30,000 range here, right?

A. That would be 3,000.

Q. Oh, pardon me. 3,000. It's on a different scale than the last one, then.

Well, why are these -- these GORs are a lot lower than the ones over in Section 29?

A. I think that speaks to what you mentioned a minute ago about the permeability stratifications or the permeability differences within the reservoir. You're not going to see each lens behave, you know, the same. There's variations depending on, like you said, permeability. And that's going to, you know, depend on the rate at which they give --

Q. So these would tend to be tighter, on average?

A. I don't know. But you know, looking at that plot and speaking from a permeability standpoint, that could possibly be the answer, but I am not sure.

Q. You see lower GORs and I believe a lot more rapid decline. I mean, see here is your

two-well, your three-well, your four-well decline. That looks more rapid, and the GOR is lower. Doesn't that look like a lower perm to you?

A. Well, that looks -- you know just trying to eyeball it there, it looks about a -- maybe a 60 percent decline coming off that last curve.

Right now I'm just -- I'm eyeballing off the -- off the scale here. It's really not that high for an initial decline of a well.

Q. All right. Let's look at 33 real quickly.

Is this enough data to reach any conclusions?

A. The purpose of that slide was to show the type of rates that we achieve. And that was to show that three wells can produce 245 barrels a day. And as you saw from the -- that scatter plot a minute ago, you know we have many -- much -- many of our wells come on above 100 barrels a day. So if you were to add a fourth well you could -- you could easily reach up over 300 barrels a day there.

Q. So this doesn't have anything to do with your conclusions on GORs like the first two?

A. Well, you -- one -- one thing that you can see there is if you look at where that second well came on, you're producing at about a 2,500 GOR. You

bring that second well on, and it dips all the way down to 1,000. So obviously that second well, which we all agree, you know, at least 20-acre spacing is necessary, is intersecting the reservoir.

And if you look at how flat it's remained over those -- as that third well has come on, you see again a new reservoir being intersected, new reserves being added.

Q. But you only have a month or two of production history with three wells?

A. Well, inferring everything I could from that plot, again, the main point of that plot there was to show the -- the range.

Q. Well, let's talk about that a minute. Your company is supporting a 300-barrel-a-day allowance, correct?

A. Yes, sir.

Q. And you're aware, aren't you, that -- I believe the companies have agreed upon the balance of -- the annual balance and proposal of Burnett and Hudson -- sponsored a balancing over a year?

A. Yes, sir.

Q. Do any of your 40-acre units average 300 barrels a day for a year?

A. That's probably a -- they probably don't.

But again, the -- you know my understanding of the purpose of an allowable is to protect the reservoir. And we produced this reservoir unrestricted for a long time and have seen no damage. So therefore, I don't know why you would have an allowable in place that would restrict production.

Q. So doesn't that mean, then, you're really for no allowable?

A. We -- we don't see any damage under our current operations, no, sir.

Q. So in your opinion it doesn't need to -- whatever the number is, it's got to be big enough that you can produce without restriction?

A. Yes, sir. I think the evidence has shown that, yes, sir.

Q. And that is how Concho has produced its wells since you started?

A. I'm not aware of anybody that has restricted production on their wells.

Q. I apologize for going backwards. But do you remember Exhibit 28 was the first-well/fourth-well spread of data?

A. Exhibit 28 turned out to be the GOR.

Q. 29, peak rate versus time, first well and fourth well?

A. Yes, sir.

Q. And do you know which production documents it was, in your response to our subpoenas, that included this data? You told me it was produced.

A. I'm sure I could get you pointed to it, yes, sir. You know, I have been working on this project a while now. So being able to tell you exactly which file it is, that's -- I can't do it off the top of my head.

Q. Could you do that and tell your counsel at a break and let us know?

MS. MUNDS-DRY: Mr. Ezeanyim, the Bates number is on the exhibit.

TECHNICAL EXAMINER EZEANYIM: The Bates number for --

MS. MUNDS-DRY: The Bates number is COG Yeso 191. I am sure it's around that document. We can -- we'll have to -- I don't -- we don't have the Bates numbers with us, so we'll have to look and see.

MR. GRABLE: Where is that on -- it's not on my exhibit, at least to the best of my knowledge.

MS. MUNDS-DRY: I -- you -- you have the slide as opposed to the hard copy we gave you, Mr. Grable. The hard copy has the exhibit numbers.

MR. GRABLE: I don't have that, no, ma'am.

TECHNICAL EXAMINER EZEANYIM: Will you give it to him?

MS. MUNDS-DRY: At some point. I'm not going to promise it today, but we'll get it to him.

MR. GRABLE: Okay. Well, we'll check, and if we can't find a hard copy, then we will advise Counsel.

Q. (By Mr. Grable) Again going back to -- I think it was Exhibit 28 -- no, it's 29. And I hope I've got the right number, the peak rate versus time, first well/fourth well?

A. Yes, sir.

Q. Have you also looked at rates of decline on first wells and fourth wells over time?

A. No, sir. That's not a comparison I've done. But again, if there was -- you would -- it's not just going to show up in the decline rate. You would expect to see -- if there is energy lost you would expect to see it in your initial potential.

Q. But you haven't looked at it?

A. No, sir.

MR. GRABLE: I pass the witness.

LEGAL EXAMINER BROOKS: The witness is passed at 1:45.

TECHNICAL EXAMINER EZEANYIM: Any redirect?

MS. MUNDS-DRY: I do. I didn't know if Mr. Cooney had any.

MR. COONEY: I have no questions.

MR. GRABLE: I'm sorry. We had asked for certain data over lunch, like the range of -- the data on the range of the drainage areas and other things. Have you gotten any of that for us?

MS. MUNDS-DRY: Do you want to do that now or do you want to after redirect?

TECHNICAL EXAMINER EZEANYIM: Can we do that during the break, if you can find some time?

MR. GRABLE: Well, if I have --

MS. MUNDS-DRY: I've got copies of things that they requested. We can deal with it now or at the break or...

MR. GRABLE: Let me listen to your redirect, and then I will see.

TECHNICAL EXAMINER EZEANYIM: Before we go on, a lot of -- you use the word Burnett. Does that include Burnett/Hudson or is it just Burnett?

MR. GRABLE: Well, that's a good question, Mr. Ezeanyim. I'm sorry. I tried to explain that in my initial -- my opening statement, and I only

have this small-scale map.

But in the Loco Hills area, and what we have been talking about is Section 8, these yellow areas, that area is Burnett-operated and Hudson has no interest in it.

What we refer to as the Maljamar sections that are essentially undeveloped except for the Hudson Company 1 well, those were sections that were operated by Hudson on shallower production -- and maybe deeper production.

TECHNICAL EXAMINER EZEANYIM: Okay.

MR. GRABLE: And those -- and there are three Hudson descendants, two brothers and a sister. And Burnett made a deal with the two brothers and some of the other owners in there, and Burnett wound up with two-thirds of the working interest and Concho wound up with the other third in the Yeso. And so that area, the so-called Maljamar area, is where Burnett and Hudson have common interests. But Hudson has no interest in these Loco Hills areas.

TECHNICAL EXAMINER EZEANYIM: Okay. I understand that. Okay.

Proceed with your redirect.

MS. MUNDS-DRY: Thank you, Mr. Examiner.

LEGAL EXAMINER BROOKS: Again, we're

beginning at 1:47.

FURTHER EXAMINATION

BY MS. MUNDS-DRY:

Q. Mr. Midkiff, if we can go back to Exhibits 12 and 13.

A. (Witness complies.)

Q. Were these slides intended to be -- I don't know what you want to call it -- but a snapshot of an actual area in the Yeso? What was your intent in these?

A. Just -- just to show a diagram of our interpretation of how the Yeso works, how the -- the nature of the reservoir.

Q. So it was an illustration?

A. It was an illustration. It wasn't meant to represent any single well.

Q. And earlier Mr. Grable asked you if Concho's practice is to simply drill everywhere and take the good wells with the bad wells. And you were -- and your response, I believe, it was a statistical plan. I wonder if you could expand on that.

A. Well, you know kind of what Mr. Grable handed out a minute ago, these lenses are -- are -- they have different permeabilities, probably -- you

know, different pressures. But that's hard to -- that's hard to know because of how complex it is.

So as you see, you intersect different lenses with different permeabilities, it's expected that there's going to be differences on -- on an individual well-to-well basis. That's why we look at it at -- the whole picture, all of the wells.

And that's why we call it a statistical place, because the nature of the reservoir is so complex you can't model it or think about it as a conventional homogeneous block of rock. You've got to look at it statistically, because that's the way that it works.

MS. MUNDS-DRY: Thank you. I have no further questions.

MR. GRABLE: No recross.

LEGAL EXAMINER BROOKS: Okay. The witness was passed at 1:49.

TECHNICAL EXAMINER EZEANYIM: Let's go back to that exhibit that shows the cumulative production. Is it Exhibit 5? I forgot.

MS. MUNDS-DRY: Which one do you need, Mr. Ezeanyim?

TECHNICAL EXAMINER EZEANYIM: The one that shows the --

THE WITNESS: 27, I believe.

TECHNICAL EXAMINER EZEANYIM: It may be Exhibit 27. It shows the cumulative production at the time on the two wells and four wells, I guess.

MS. MUNDS-DRY: Exhibit 28?

TECHNICAL EXAMINER EZEANYIM: No, not 28.

MS. MUNDS-DRY: 27? I'm sorry.

TECHNICAL EXAMINER EZEANYIM: Yeah, that one. This one. Okay.

Now I mean, first, do you have data, raw data, that demonstrated this?

THE WITNESS: Yes, sir, I do.

TECHNICAL EXAMINER EZEANYIM: Okay. Is there -- I know that they were asking for it. Can that be made public so I can see and look at it?

THE WITNESS: Absolutely. Yes, sir.

TECHNICAL EXAMINER EZEANYIM: Do you have it?

THE WITNESS: I might able to get it to you today. I'm not sure. If not, I'll make sure you get it.

TECHNICAL EXAMINER EZEANYIM: You don't have to give it to me today. But you have data showing this, raw data?

THE WITNESS: Yes, sir, absolutely.

TECHNICAL EXAMINER EZEANYIM: And then how many wells -- he asked about how many wells on the Bennett/Hudson.

THE WITNESS: Well, there was three wells that went into that curve.

TECHNICAL EXAMINER EZEANYIM: Okay. And there were 13 wells?

THE WITNESS: Yes, sir. I believe it was 13.

TECHNICAL EXAMINER EZEANYIM: Okay. You have data on that?

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: Okay. That is very good. I think you can also pass it to them. They were asking for it.

Mr. Grable, you were asking for that data?

MR. GRABLE: Yes, I was.

TECHNICAL EXAMINER EZEANYIM: Okay. Sure. That's good.

THE WITNESS: Okay.

TECHNICAL EXAMINER EZEANYIM: If you could get that.

Now, let's go back to the gas/oil ratio, the gas/oil ratio on -- I think it's Exhibit 28.

THE WITNESS: Exhibit 28?

TECHNICAL EXAMINER EZEANYIM: Yes. Presently, I want you to explain to the division why you want this gas/oil ratio. I know -- and there were some parts of this on -- some parts of this pool that was in 1952.

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: There was no gas/oil issue they made. Is your -- is your request based on that information or is it based on the engineering that you have seen and demonstrated that there should be an unlimited gas/oil ratio?

THE WITNESS: It's on -- on what we're seeing. I've read back through that testimony. And in fact, if you look at what they testified there, they testified -- and it was really simply because of the low permeability and nature of the reservoir -- that that's why it was unnecessary to have a GOR limitation.

And we still believe that about it today, that it -- that's -- you know, you don't have the permeability in this reservoir to cause damage. You have to have permeabilities high enough for gas to break out within the reservoir. And the permeabilities are just much too low for that to happen. Therefore, you're getting efficient use of

your gas expansion forcing oil to your well bore, and it's natural depletion of a solution gas drive reservoir.

And -- and I -- I think this is one of the best plots to illustrate that. That as you -- you're not -- you're not draining -- you're not -- it's not acceleration. You're adding new reserves. You're going out and finding pressurized lenses within the reservoir and adding those reserves.

TECHNICAL EXAMINER EZEANYIM: Okay. To ask the question a different way, suppose I say going in 2,000 to 1 --

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: -- how would that, you know, do with your operations? How would that affect your operations?

THE WITNESS: Well, I would have to, you know, look at how that -- I would have to -- I would have to look at those numbers on our well curves. I mean because the -- nobody -- obviously, we're overproduced, and that's why everybody is here today. So everybody has produced unrestricted up to this point. And so nobody, prior to this point, was worried about well damage and damage due to GORs or anything like that.

So you have a significant data backlog there to be able to look at and see that you are showing natural depletion characteristics of a solution gas drive reservoir. You don't see huge gas breakouts. It's typical -- typical decline.

TECHNICAL EXAMINER EZEANYIM: Do you think on -- if you are granted, do you think it would affect the correlative rights?

THE WITNESS: No, sir, I do not. Because you know, like I say, we're drilling on 10s right now and we're -- we're intersecting new reservoirs on -- on 10s every time we drill it. And so that's, you know, a good indication that those -- those locations are not being drilled and that they need to be drilled to prevent waste of those reserves.

TECHNICAL EXAMINER EZEANYIM: Okay. An order that you presented, I think it's Exhibit Number 35, that was based on northeast Red Lake Glorieta-Yeso.

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: Is this part of the pools, among the 12 pools that are submitted in this case?

THE WITNESS: No, sir. This is-- this is immediately -- and we have got a map showing it.

This is -- this is connected. It's right there (indicating) at the very end of where we're talking about. It's immediately --

TECHNICAL EXAMINER EZEANYIM: To the left?

THE WITNESS: To the left, yes, sir.

TECHNICAL EXAMINER EZEANYIM: So it's not one of these 12 pools you're asking for?

THE WITNESS: No, sir.

TECHNICAL EXAMINER EZEANYIM: It's not?

THE WITNESS: No, sir.

TECHNICAL EXAMINER EZEANYIM: This is a different pool?

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: But did you -- this is all from the Yeso?

THE WITNESS: Yes, sir. It's all the same rock, all the way connected.

Well, I shouldn't say connected. It's all with the same trend of rock.

TECHNICAL EXAMINER EZEANYIM: All right. You already talked about the decline curve analysis. I mean we're talking about the exponential and the hyperbolic.

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: Which one

for --

THE WITNESS: We -- we use hyperbolic for the early time decline, and then exponential for the final decline.

TECHNICAL EXAMINER EZEANYIM: Is that the correct process all across the board in that pool? Is that what you're seeing?

THE WITNESS: You know, I've not -- I have not checked with other people how they do their decline curve analysis. That's how -- that's how Concho does it, though, yes, sir.

TECHNICAL EXAMINER EZEANYIM: So for hyperbolic and exponential?

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: All right. The only reason I was asking, I really want to get a graph of this reservoir. I don't know, does anybody have somehow the initial picture of this reservoir? You know, I asked for it on Wednesday. I didn't -- I wasn't sure if somebody had checked the initial bubble point pressure in this reservoir.

THE WITNESS: Mr. Prentice has some of that data, and he will present it to you here in a second.

TECHNICAL EXAMINER EZEANYIM: As far as

the current pressures right now, right?

THE WITNESS: I don't know that we -- that we have that data. He -- I'm not sure what he has, you know.

TECHNICAL EXAMINER EZEANYIM: Typically when -- when do you expect the bubble point to occur? Once you start, once the IP -- when do you expect the bubble point to occur?

THE WITNESS: You know, it's -- we assume that initially we're very close to the bubble point pressure.

TECHNICAL EXAMINER EZEANYIM: Do you think you will reach the bubble point?

THE WITNESS: You know, it's hard to say. It's -- you know, you do initially see GORs increasing, and so you have to assume that you are either right at it or maybe a little bit under it, which -- I'm not sure. But I do know that we -- you know based off of our GORs, that we're very close to it probably, initially.

TECHNICAL EXAMINER EZEANYIM: So you are telling me that there's at no point in time -- at the early stages of this, there is no point in time that the well is undersaturated?

THE WITNESS: You know, I -- I'm not sure.

Mr. Prentice would be better to address those questions for you.

TECHNICAL EXAMINER EZEANYIM: Because as you know, there are several stages on this, right?

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: Initially you're undersaturated and sometimes you have gas involved, you know, then the third stage is where I think you guys are now.

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: That's why you're using -- and getting going with all these gas/oil ratios.

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: And that's the trend now. I'm trying to understand what's going on, because I am not practicing, and I need to take your word for it.

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: That is why I'm asking all the questions.

THE WITNESS: Mr. Prentice is -- he's looked at a lot of this data, and he will have answers for you.

TECHNICAL EXAMINER EZEANYIM: Okay. On

this, I know you have some -- you have vertical wells, you have some horizontal wells.

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: Do you -- in most cases, do you have a way of crossing the vertical wells? Do they cross, and then that --

THE WITNESS: We do. Are you talking -- referring to --

TECHNICAL EXAMINER EZEANYIM: Yeah. Well, I don't know how long it is. Well, maybe in some cases you can cover about four units?

THE WITNESS: Yes, sir. We --

TECHNICAL EXAMINER EZEANYIM: You may have had a vertical well in the Yeso formation?

THE WITNESS: Yes.

TECHNICAL EXAMINER EZEANYIM: And now your horizontal, how many have you had? Have you seen such?

THE WITNESS: We do have horizontal wells that do go through the same proration unit as a vertical well, if that's what you're asking.

TECHNICAL EXAMINER EZEANYIM: Yes.

THE WITNESS: We do have that, yes, sir.

TECHNICAL EXAMINER EZEANYIM: And then you are going to count them as two wells, one that --

one passing as a vertical -- as a horizontal well?

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: How do you account for a portion in the operation? I mean...

THE WITNESS: We would -- if the well is completed within that proration unit, then we assign a fraction of the production to that proration unit.

TECHNICAL EXAMINER EZEANYIM: To that unit?

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: Do you have wells in this northeast Red Lake -- Red Lake Glorieta? Do you --

THE WITNESS: I don't believe so, no, sir.

TECHNICAL EXAMINER EZEANYIM: You don't have any wells in there?

THE WITNESS: No, sir, I don't believe so. Honestly, I don't know for sure.

TECHNICAL EXAMINER EZEANYIM: Any wells in the northeast Red Lake Glorieta Yaso?

THE WITNESS: I don't know for sure, but I'm -- I'm...

TECHNICAL EXAMINER EZEANYIM: Does anybody know? Would anybody know?

THE WITNESS: I believe if I would have

been subject -- well, I guess...

TECHNICAL EXAMINER EZEANYIM: Can you talk a little more about the PHI-H? You know, you did a study on the PHI-H.

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: And you demonstrated there's no correlation at all.

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: What does that mean?

THE WITNESS: Well, in -- in a conventional reservoir you can usually -- can start making assumptions about the productivity of that well based off of the PHI-H. And in a conventional homogeneous reservoir, that's -- PHI-H is an important indicator.

But with -- as statistical and as compartmentalized and -- you know to reiterate, homogeneous. You know, you see incremental reserves as we frac out. We're connecting new lenses together. So we know that -- that just the PHI-H that we see at our well bore, you know which I say is representative of an 8-inch diameter hole, that's what we're learning -- you can't assume that that applies to the whole reservoir, because you know

that you are intersecting new compartments as you frac out.

TECHNICAL EXAMINER EZEANYIM: Yeah. So all you're trying to demonstrate is to demonstrate heterogenousity of the well?

THE WITNESS: Absolutely. Yes, sir.

TECHNICAL EXAMINER EZEANYIM: I don't have any other comment.

Does anybody have any cross-examination for this witness?

MR. GRABLE: I have a couple more questions.

TECHNICAL EXAMINER EZEANYIM: Okay. That time won't count for you.

LEGAL EXAMINER BROOKS: Okay. That took 11 minutes.

FURTHER EXAMINATION

BY MR. GRABLE:

Q. Mr. Midkiff, in response to some of Mr. Ezeanyim's questions and some of your earlier testimony, you continually come back and say every time you drill a 10-acre well you intersect a new reservoir.

Have you gotten any pressure data, any bottom-hole pressure data, to indicate this?

A. I am going to -- Mr. Prentice can talk about that.

Q. Mr. Prentice?

A. Yes.

Q. Does he also know whether or not you have PVT data for this reservoir?

A. I believe he plans to talk about that, yes, sir.

Q. Now on the PHI-H issue, isn't what's really significant, to the extent there is significance, the oil-saturated PHI-H, not the gross PHI-H?

A. It's all about the oil, yes, sir.

Q. Thank you.

MR. GRABLE: That's all I have.

TECHNICAL EXAMINER EZEANYIM: We are -- yeah, I think we can call the next witness.

MS. MUNDS-DRY: Mr. Ezeanyim, before we do that, Mr. Grable asked if -- there are certain things that he had asked for throughout the morning.

TECHNICAL EXAMINER EZEANYIM: Okay.

MS. MUNDS-DRY: And I thought I would just mention to you we printed out the slide that was referenced about the library, the Yeso library, and we marked it as an exhibit. We can offer it if you

want.

TECHNICAL EXAMINER EZEANYIM: Okay.

MS. MUNDS-DRY: We also have a table. Mr. Grable asked about the core data. The core data itself Concho considers proprietary. But what we do have is a table that shows, I believe within the pools that are subject to Concho's application, where that core data came from, which is one of the things he asked.

TECHNICAL EXAMINER EZEANYIM: Okay.

MS. MUNDS-DRY: And one more thing. Mr. Grable asked also for the average drainage areas. He asked Mr. Midkiff for that. And he has a table showing those average drainage areas by lease, I believe.

THE WITNESS: By area.

TECHNICAL EXAMINER EZEANYIM: Okay. So you want to give him that?

MS. MUNDS-DRY: So we can pass them around.

Okay. Let's take a five-minute break and do it.

(A recess was taken from 2:05 p.m. to 2:15 p.m.)

TECHNICAL EXAMINER EZEANYIM: Let's go

back into the record now.

If you would call your next witness.

MS. MUNDS-DRY: Thank you, Mr. Ezeanyim. Before I do that, we've handed you what has been marked COG Exhibits 41, 42, and 43.

TECHNICAL EXAMINER EZEANYIM: I see. Okay.

MS. MUNDS-DRY: These are -- these are documents that Burnett requested.

The first is the slide of the data library that's Exhibit 41.

Exhibit 42 is a table of where the core data exists in the areas that are subject to Concho's application.

And Exhibit 43 is the drainage -- average drainage areas Mr. Midkiff referenced in his testimony that Burnett asked for.

We would ask those be admitted into evidence.

TECHNICAL EXAMINER EZEANYIM: Any objection?

MR. GRABLE: I have no objection to their admission.

I do wish to state for the record that what I intended to be asking for was the range of

values for -- calculated granular from low to high in the Blinebry.

Now these -- these are ranges within existing pools. I mean these are calculated averages within existing pools.

And just for instance in the Empire, they're showing 9.9. In the Paddock and -- and in the Blinebry, those numbers must have been cal -- that average has to be calculated from a spread of individual well calculations that are greater or lesser than that. And that's what we were looking for, is how many wells and what's the low and what's the high.

And maybe if the next witness can speak to that, I'm not -- I think that's more of a topic, perhaps, for the next witness than Mr. Midkiff. But if not, then I may recall Mr. Midkiff and ask him some questions about this.

But I believe Mr. Campbell asked Ms. Munds-Dry on break if they had that information we thought we were asking for, and I believe the answer was no. So...

MR. CAMPBELL: That's right. We were looking for the range that made up the calculation of the average drainage in each of these pools, the

high and the low. If the pool averaged at least 9.9, that -- that, as logic dictates, there were drainages higher than 9.9 and lower than 9.9. We're interested in the range of calculated drainage, and we did not get that. And I am informed they don't have that.

TECHNICAL EXAMINER EZEANYIM: Do you have that?

MS. MUNDS-DRY: Mr. Ezeanyim, I think it was just a miscommunication from what Mr. Midkiff had understood that they wanted. This is something that he said he could provide.

We can explore with Mr. Prentice if that's something that we can provide. I am told that no, we do not have that, and I don't know if it's because we don't have it with us now or -- but we can explore that.

But this is what -- this is what Mr. Midkiff was referring to when he said he could provide the averages.

TECHNICAL EXAMINER EZEANYIM: Okay. So at this point, do we still have an objection to those three exhibits?

MR. GRABLE: No, I do not have an objection. I just wanted to make a record that it's

not really what we asked for. So...

MS. MUNDS-DRY: And we weren't trying to not give them what they were asking for. It is just a miscommunication.

MR. GRABLE: I understand.

TECHNICAL EXAMINER EZEANYIM: Okay. It wasn't what they were asking for.

Okay. At this point, Exhibits Number 41, 42, and 43 will be admitted into evidence.

MS. MUNDS-DRY: Thank you.

LEGAL EXAMINER BROOKS: Okay. Examination begins, then, at 2:18.

RICHARD PRENTICE,

after having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MS. MUNDS-DRY:

Q. Would you please state your full name for the record?

A. Richard Prentice.

Q. Mr. Prentice, where do you reside?

A. Midland, Texas.

Q. By whom are you employed?

A. Concho Resources.

Q. And what is your position with Concho?

A. I'm a reservoir engineer with them.
Q. And what do you do as a reservoir engineer for Concho?
A. I work reservoir issues across the Southeast New Mexico shelf area.
Q. Thank you. And have you previously testified before the division?
A. Yes, I have.
Q. Were your credentials accepted and made a matter of record at that time?
A. Yes, they were.
Q. And are you familiar with the application filed by Concho?
A. Yes, I am.
Q. And have you made an engineering study of the reservoirs that are subject to Concho's application?
A. Yes, I have.
MS. MUNDS-DRY: Mr. Ezeanyim, we tender Mr. Prentice as an expert in petroleum engineering.
TECHNICAL EXAMINER EZEANYIM: Mr. Prentice is so qualified.
MS. MUNDS-DRY: And, Mr. Ezeanyim, you usually ask this. Mr. Prentice is, in fact, certified -- registered in two states as a petroleum

engineer.

TECHNICAL EXAMINER EZEANYIM: Oh, he is registered. That's good.

THE WITNESS: You didn't give me the opportunity to say I'm registered in Texas and New Mexico. I've been waiting all day to say that.

Q. (By Ms. Munds-Dry) Mr. Prentice, let's turn to what has been marked as Concho Number 36.

If you could, identify it and review it for the examiners please.

A. Exhibit Number 36 is a compositional analysis of four wells across the shelf area. Those four wells are listed in the box to the upper right, up here (indicating). One of the wells is in the Empire field, going from west to east, Empire field. One is in Loco Hills, one is in Friend, and one is in Maljamar. Under each component there is a stack of four different columns, and I'm just stating the compositional analysis of that particular component of each of these four wells.

The point of this whole plot is to demonstrate, from our point of view, the oil in this rock is the same. The profiles are very similar.

TECHNICAL EXAMINER EZEANYIM: What is your Y axis? It's very hard to see.

THE WITNESS: I'm sorry?

TECHNICAL EXAMINER EZEANYIM: What do you have on the Y axis?

THE WITNESS: The Y axis is a mole percent number.

TECHNICAL EXAMINER EZEANYIM: Okay.

THE WITNESS: X axis is a component number, a component.

TECHNICAL EXAMINER EZEANYIM: I can see that one.

THE WITNESS: Okay. So for instance, in the -- in the FN column, mole percent ranges upwards of 32 to 40 percent across the field.

Follow me?

TECHNICAL EXAMINER EZEANYIM: Yes.

Q. (By Ms. Munds-Dry) And, Mr. Prentice, I'm not sure if you said this. But was this an analysis that Concho did or someone else?

A. Concho requested this analysis from a third party.

Q. Okay. Let's turn to what has been marked as Concho Exhibit Number 37, please.

What is this slide?

A. Exhibit Number 37. We not only conducted a compositional analysis of the crudes, but we do an

isotope analysis, too. The point being, in -- mainly in Bullet Number 2, to determine the source of the crude. The source of the crude, as -- as our -- our laboratory reports indicate is that it is a -- a source from all -- for all of these is a distal marine shale. In the first sentence, "Likely a distal marine shale," that this source -- that all of these -- all these crudes came from.

Q. What's the conclusion you reached from this, or that GeoMark reached?

A. The -- the point of these two slides is to tie into Mr. Reyes' testimony that the rock is the same in its heterogeneity. Not only is the rock the same, the crude is the same across the reservoir. Not only is the crude the same, the source of the crude looks like it's the same source.

Q. Okay. Let's turn to what has been marked as Concho Exhibit Number 38.

What is this document?

A. Exhibit Number 38 was my attempt to summarize the calculations, range calculations, that I conducted across the shelf area.

Q. And I note here that you have some porosity cutoffs listed here.

A. Yes. We utilized a porosity cutoff in

both zones of 3 percent.

Q. And you also have a recovery factor. What recovery factor do you use?

A. We -- we assumed a 15 percent recovery factor in these reservoirs, because it's a -- typically an industry-accepted recovery factor.

Q. I'd ask if you would, Mr. Prentice --

MS. MUNDS-DRY: And, Mr. Ezeanyim, with your permission, if Mr. Prentice could approach the Dry Erase board.

Q. (By Ms. Munds-Dry) And if you could show how Concho calculates its drainage area.

A. A couple of definitions, first of all, so I'm sure we're on the same page.

Oil in place is OIP, oil in place.

A, area.

Acres.

PHI.

Porosity.

H, net pay.

S, connate water, water saturation.

B sub OI.

Formation volume factor. In this case we use 1.29.

EUR, as you have already indicated,

ultimate recovery, ultimate primary recovery.

Okay. Those are the definitions that are in the equation. It's a very standard equation. The equation reads like this: OOIP equals 7758 barrels an acre foot times A times H PHI-H times 1 minus connate water, all divided by B sub OI.

Do you recognize the formula, sir?

TECHNICAL EXAMINER EZEANYIM: That is a simple one. Everybody has that.

THE WITNESS: That's the same formula. We're both using the same formula.

TECHNICAL EXAMINER EZEANYIM: How did you get the 1.29?

THE WITNESS: That's what we generally use out there.

TECHNICAL EXAMINER EZEANYIM: I mean -- generally use?

THE WITNESS: Yes.

TECHNICAL EXAMINER EZEANYIM: I mean how did you get that number?

THE WITNESS: That's -- that's what we're seeing off the core data.

TECHNICAL EXAMINER EZEANYIM: Okay.

THE WITNESS: Recovery factor, it would be EUR -- oops. Yeah, EUR over OOIP.

The difference -- the only -- the real difference that we -- between what we use versus what Burnett used, Burnett assumed a 15 percent recovery factor, just like we did, and calculated out their OIP. Oil in place never intends to include a -- a large statistical basis, based on volumetrics, based on our log data, core data, whatever else we could incorporate.

That's really the only significant difference. That, plus our rather significant difference in statistical sample base. Ours is about 1,200 wells. I think Burnett might have about 89 or so.

TECHNICAL EXAMINER EZEANYIM: Yeah. 15 percent is not unreasonable. But is that -- that using the pumps? I know they're using some pumps over there right now.

THE WITNESS: I'm sorry, now?

TECHNICAL EXAMINER EZEANYIM: You are using pumps.

THE WITNESS: Yes, that's correct.

TECHNICAL EXAMINER EZEANYIM: Okay. And that's 15 percent because they are using pumps, or is that the primary recovery?

THE WITNESS: This is a -- this is a

typical --

TECHNICAL EXAMINER EZEANYIM: Primary recovery?

THE WITNESS: -- primary recovery in the Clear Fork, Yeso. Yeso in New Mexico is a Clear Fork -- clear Fork in Texas.

TECHNICAL EXAMINER EZEANYIM: Okay.

THE WITNESS: Very, very, very, very standard typical recovery factor.

TECHNICAL EXAMINER EZEANYIM: Okay. Go ahead.

THE WITNESS: I just wanted to present the formula -- basic formula to make sure we are all on the same page. If you are familiar with the textbook of Craft & Hawkins, it's on page so-and-so of Craft & Hawkins. It's a fundamental equation. I don't think we dispute the methodology.

TECHNICAL EXAMINER EZEANYIM: Is anybody acquainted with this equation? Nobody?

MR. GRABLE: It's included in our exhibits?

TECHNICAL EXAMINER EZEANYIM: Right.

Q. (By Ms. Munds-Dry) Thank you, Mr. Prentice, for that exercise.

And then in Exhibit Number 38 here you

give some average ultimate Paddock and average ultimate Blinebry drainage areas. What are those?

A. We calculated the drainage areas based on both cums and ultimate recoveries across 1,200 wells across the entire shelf that we operate. And we summarize those.

The -- in our view, the Paddock is draining approximately 9 to 10 acres on average. The Blinebry is draining something less than -- much less than 10, probably maybe 4 to 6 acres on average. Therefore, we think that the 10-acre rule spacing that the commission has in place right now is entirely adequate, entirely -- entirely right.

Blinebry we may have -- right now we're not seeing quite 10-acre yet -- 10-acre drainage yet.

Q. And what does this say, Mr. Prentice? I understand the conclusion about the -- the density. But what conclusions can you reach in terms of Concho's application asking for an increased allowable in these drainage calculations?

A. The increased allowable would help us produce wells as they come in. Like I say, we're seeing drainage areas that are much in accord with what the current existing rules are.

Q. Thank you, Mr. Prentice.

I will ask you to turn to what has been marked as Concho Exhibit Number 30. If you could, explain this slide to the examiners, please.

A. Exhibit Number 30 is a typical 40-acre development scheme under the -- under the current allowable schedule.

The point of this schematic is to show the length of time it takes to develop 40 acres under the current allowable. It takes a good -- a good eight, nine, ten years to drill -- completely develop the 40 acres. In our view, that's a rather prolonged amount of time.

There are several issues associated with the prolonged -- prolonged development schedule. There are operational issues, cost issues, so forth and so on.

The primary issue that I have with it is that it delays the implementation of potential secondary recovery operations and reduces the efficiency of any planned secondary operations by allowing gas -- gas to form -- to form in the reservoir and decrease the efficiency of injection operations.

Q. What does this slide say about the proper

density for development of secondary recovery?

A. It -- it tends -- it tells me that second -- I mean 10-acre drainage is very likely. That's going to be what we're seeing from our point of view. It takes four wells to drain 40 acres. And assuming we get those four wells drilled and got off primary and begin secondary, that potential becomes realized.

Q. Mr. Prentice, you're particularly keen on secondary recovery. What do you do for Concho in terms of secondary recovery operations?

A. I work with their -- their secondary recovery operations, and I work with potential secondary recovery possibilities.

Q. And does Concho have plans for secondary recovery in the Yeso pools?

A. Concho is always looking for ways to develop -- properly develop its assets, including primary and secondary. The Yeso formation is no exception to that, to that planned development, to that business plan.

Q. And in your mind, then, just to make sure it's clear in terms of secondary recovery operations, what is the proper allowable and GOR to get you to your secondary recovery operations in an

efficient manner?

A. The high allowable requested by our -- by Concho would get us there quicker. Quicker would shorten up this -- this particular time frame plot. A higher GOR, or elimination of GOR, would enhance that plan, too.

Q. Thank you, Mr. Prentice.

MS. MUNDS-DRY: With that, Mr. Ezeanyim, we would ask to move Exhibits 36, 37, 38, and 30 into evidence.

TECHNICAL EXAMINER EZEANYIM: Can you repeat that, please?

MS. MUNDS-DRY: Yes, sir. 36, 37, 38, and 30.

TECHNICAL EXAMINER EZEANYIM: Any objection?

MR. GRABLE: No objections to 36, 37, and 38. Can we withhold a ruling on Exhibit 38 until I examine the witness?

LEGAL EXAMINER BROOKS: 38?

MR. GRABLE: I'm sorry. Number 30.

TECHNICAL EXAMINER EZEANYIM: Oh, 30?

MR. GRABLE: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: Okay. You want me to hold on to 30?

LEGAL EXAMINER BROOKS: Okay. You wish to examine the witness before you state your objection?

MR. GRABLE: Well, we're going to pass the witness. I'm going to have some questions on this exhibit to see if it has any probative value whatsoever.

LEGAL EXAMINER BROOKS: Okay.

MR. GRABLE: And I may have an objection to it at the end of that and I may not. So...

LEGAL EXAMINER BROOKS: Okay.

MR. GRABLE: But I don't want to just agree to admit it now, because I may have an objection. And rather than taking him on voir dire, I would rather just -- if we're going to cross, let's just go to cross.

LEGAL EXAMINER BROOKS: I agree that that's more appropriate.

TECHNICAL EXAMINER EZEANYIM: Your point is well taken. Therefore, at this point, Exhibits 36, 37, and 38 will be admitted.

LEGAL EXAMINER BROOKS: Okay.

MS. MUNDS-DRY: And with that, I pass the witness.

LEGAL EXAMINER BROOKS: You pass the witness at 2:33.

TECHNICAL EXAMINER EZEANYIM: Mr. Grable?
MR. GRABLE: Thank you.

EXAMINATION

BY MR. GRABLE:

Q. Mr. Prentice, I'm Bob Grable, from Fort Worth. I represent Burnett and Hudson. We haven't met before today, have we, sir?

A. No, sir, I'm not aware of it.

Q. We may have spoken over each other on the telephone last Wednesday. I think you were here for a prehearing conference. Is that right?

A. Yes, sir, I was.

Q. Okay. Let me ask you just quickly on 36 and 37, I take it from your company's presentation on the geologic similarity, the deposition on environment, the rock similarity, the oil similarity, that these are all essentially -- they're all part of the rock deposited at the same time and have similar saturations?

A. We are seeing similar crude in the rock that's similar.

Q. And this makes them good candidates for consolidation as a single reservoir?

A. That's a possibility, sure.

Q. Okay. And just off the mark a minute, on

this quantitative and qualitative analysis, this appears to be a very light crude, doesn't it, with that high percent of ethanes and propanes and butanes?

A. Relatively speaking, it is a light crude.

Q. What is its gravity?

A. I'm sorry?

TECHNICAL EXAMINER EZEANYIM: Gravity.

A. Gravity? About 35 to 38.

Q. (By Mr. Grable) All right.

Before we go to 38, I might have a lot of questions on that. Let's go back to Exhibit 30.

Why did you assume a 15-year requirement here before development on a 40-acre proration?

A. I think -- I think the Concho is about ten years. This is -- this is what I understand that it takes to develop a 40-acre tract based on current allowable rules, GOR rules.

Q. So is the point of this exhibit your request for a 300-barrel-a-day allowable?

A. Yes.

Q. Okay. But this -- this is not -- this is not a representation of any particular 40 acres within the reservoir; this is just a schematic or --

A. Generic.

Q. -- generic. But it's certainly not the way Concho has developed its properties, is it?

A. No. We have tended to expedite things.

MR. GRABLE: I don't object to 30, I don't believe.

Q. (By Mr. Grable) Let's go to 38. You listed all of those factors up there. Let's talk about a few others.

What do you need to know to derive your porosity value for this equation?

A. You would like to know, either from core data, log data, or whatever data that you could come up with, what the porosity might be.

Q. And what -- what properties do you extract from that data in order to calculate the porosity?

A. Well, porosity generally comes directly off the core data. If you could correlate your log data with the core data, that's always a good step.

Q. Do you need to know grain density?

A. That may be part of the calculation. I'm not sure it's a significant part, but it may be -- I'm sure it's part of the calculation.

Q. Do you know what grain density Concho used on your Exhibit 38?

A. I do not.

Q. Do you have any way to tell?
A. No, sir, not from -- not from the -- not from right here, no.
Q. Did you, in fact, calculate a grain density in your core analysis?
A. I did not.
Q. Okay. Is grain density an input factor into a modern log in order to get a reading of porosity from the log?
A. It could be.
Q. But you can't tell me what -- what grain density you did give?
A. I -- I cannot tell you that.
Q. Do you believe there would be a measurable difference in using a grain density of 2.87 versus 2.84?
A. I -- I would not know. The numbers sound very insignificant to me.
Q. The difference or the --
A. The difference.
Q. Okay. Do you know, is -- is there a standard grain density value for dolomite?
A. Yes, there is, but I do not remember what it is. I'm sorry.
Q. Do you think you used that standard or you

just have no idea what was used?

A. I'm sure they utilized that standard as part of their net pay calculations.

Q. All right. Now the last bullet point on your slide says: "Yucca State examples attached."

The copy I had didn't have any of those.

Do you have those?

A. I -- I do not. They may have been dropped along the way. I just -- I was just trying to use that as an example of how we calculate --

Q. So you had examples, but they were taken off at some point?

A. I think they -- I think they probably were.

Q. Can you pull them up from your computer back in the office?

A. Very possibly.

MR. GRABLE: Ms. Munds-Dry, could you check for me?

MS. MUNDS-DRY: Yeah. Mr. Grable, we are trying to determine that, if that was something that we originally sent to you. We'll just have to figure that out.

Q. (By Mr. Grable) All right. Let's talk about 15 percent recovery, primary recovery

factoring. In Permian dolomite reservoirs, isn't that in the high range?

A. No, sir. I'm not aware of that being in the high range at all. It's very, very typical from the -- from my experience.

Q. Typical where? What is your experience?

A. My experience has been with Clear Fork type reservoirs in the Permian Basin.

Q. Aren't they more permeable and porous than this Yeso over here in New Mexico?

A. I see very similar comparisons, very tight, very -- very lenticular, low porosity, low -- PHI-Hs, low perms. I -- I see very low differences right now between the Clear Fork reservoirs I've worked with and --

Q. Well, I can't cite you chapter and verse sitting right here, but haven't there been Clear Fork reservoirs produced as conventional reservoirs for the last 50 years on the Texas side of the Permian Basin?

A. Yes, sir.

Q. And this Yeso was drilled through and ignored for 50 years. I mean people have just started developing it when the modern fracture stimulation came in. Isn't that true?

A. I don't know what prompted them to begin development, but it's been a late -- a rather late -- late development, I suspect.

Q. But it's your testimony that the rock quality in Texas Clear Fork reservoirs is comparable to this New Mexico Yeso?

A. From what I can tell, it's very similar.

Q. Okay. And that's why you used 15 percent?

A. Yes, sir.

Q. Did you analyze what happens to your drainage areas if you use 12 or 10 percent?

A. No, sir. I utilized 15 percent.

Q. They would get bigger though, wouldn't they?

A. Yes.

Q. Do you have a range of permeability in the reservoir from the core analysis that Concho was doing?

A. I do not have that in my head, no, sir.

Q. Now look at your second bullet point: "Oil saturated porosity height, porosity net pay determined from available digitized logs with geological picks in the Paddock and Blinebry intervals using geographic integration software."

A. Yes, sir.

Q. Were the net pay picks that you used in this analysis done by computer?

A. We -- we supplied the net picks, and they were -- they were -- they were input into the computer, yes, into the geographics program.

Q. All right. Let's talk about the grain density part of porosity calculations.

Were the -- which porosity curve or curves from the log analysis did you use for porosity calculation?

A. I suspect they use the cross-flooded porosity.

Q. Okay. Has Concho done any studies to see whether neutron or density is more accurate or correlates more closely with the porosity from your core work?

A. I'm not aware of such studies. I don't know if they have or not.

Q. But a cross-plot will give you some value between --

A. Yes, sir, they will.

Q. -- between the two. Not an average, but I mean some value between the neutron --

A. Yes, sir, in between.

Q. -- and the density.

If you -- if you had -- and I thought you said earlier in your testimony that comparing your log analysis with your core work was a good thing to do. But I mean if you -- if you had done that and it showed that the core work showed that true porosity was closer to one or the other, would you have used that rather than a cross-plot?

A. That likely would have been incorporated into their -- into their calculations.

Q. But you think they used cross-plot?

A. Yes, sir, I do.

Q. Now going down six bullet points: "Current drainage area based on allocated cumulative production."

How was the production allocated between Paddock and Blinebry?

A. My allocation was 50 percent for Blinebry and 50 percent for the Paddock, when I had the commingled well bore to work with.

I think it was just set forth on the one just above it.

Q. Now, you were here when I asked Mr. Midkiff and then your counsel about the range of values within the average.

Are you aware of the range of -- of

calculated drainage areas in your 9.2-acre average for Paddock?

A. I am aware of the ranges. I cannot quote them to you, because I looked at 1,200 wells, and that range was significant.

Q. Okay. Can you kind of fence it in with -- I know they got down as low as X, and I don't think they got higher than Y?

A. I have seen some drainage areas, depending on the zone.

Q. Yes. On the Paddock. I mean what -- what do you -- what do you recall seeing as low on Paddock and high on Paddock.

A. Again, my memory is going to be faulty. But probably between 10 to -- between 5 and 10 acres up to 20.

Q. How about in the Blinebry?

A. As low as -- again depending on the -- where you are, 1 to 2 to 3 acres up to 10 acres. And my memory could be faulty, sir.

Q. That's fine.

A. There's 1,200 wells.

Q. I understand. I'm just trying to get a feel for what the spread was around the average.

Of course all of that depends upon the

accuracy of the other factors and assumptions that went into the calculation?

A. It does.

Q. If you changed any of those, then it would change both your average and the high/lows?

A. Yes, it would.

Q. Just a couple more questions, Mr. Prentice. I'm sorry for that delay.

Is it your experience that typically neutron density log readings tend to be higher than a density reading -- a density curve off that same well?

A. Typically.

Q. Typically.

A. Typically.

Q. Yes, typically.

A. Yes. I'm saying, yes, typically.

Q. Okay. And of the 1,600 wells or so, do you know how many of those you have open-hole logs on?

A. No, sir, I do not. I would refer to what Mr. Reyes has supplied you.

Q. Did you use any of the cased-hole neutron logs to interpret net pay or porosity?

A. I -- I do not know that for a fact. This

was done by a geophysicist. I utilized whatever logs were available that he could use.

Q. So you don't know whether you used them or not?

A. I do not. I suspect he probably used open-hole logs to come up with the best number he could come up with.

Q. Wouldn't the open-hole logs typically give you better readings than cased-hole logs?

A. Yes, they would.

MR. GRABLE: I pass the witness.

LEGAL EXAMINER BROOKS: Okay. Passed the witness as 2:50.

TECHNICAL EXAMINER EZEANYIM: Redirect?

MS. MUNDS-DRY: I have just one question, please.

FURTHER EXAMINATION

BY MS. MUNDS-DRY:

Q. Mr. Prentice, in the ranges you gave for the drainage areas for the Paddock and the Blinebry, is that typical to see those kind of ranges when you have this kind of reservoir?

A. Very much so.

Q. And again, your average for the Paddock and the Blinebry were 9.2 and 4.9 acres?

A. Paddock was 9.2. The Blinebry, I believe, was 4.9. That's what we're showing on the summary of the methodology.

MS. MUNDS-DRY: Okay. Thank you. Nothing further.

MR. GRABLE: I did recall one thing I wanted to ask him and I had forgotten. It's on a totally different topic, if I may. I'll be exceedingly brief.

TECHNICAL EXAMINER EZEANYIM: Okay. Go ahead.

FURTHER EXAMINATION

BY MR. GRABLE:

Q. Doesn't Concho have a pilot secondary project in this area right now?

A. That is correct. Yes, sir.

Q. Is it far enough along in its progress to have reached a conclusion as to whether or not you could flood this field?

A. No, sir.

Q. How long have you been putting water in?

A. There, since 2007.

Q. How many injection wells?

A. We have about eight, I believe.

Q. What kind of pump pressure do you need to

get water back into this reservoir?

A. We're injecting -- we're injecting a thousand barrels a day. Let me preface this.

You seem to have implied that this pilot water flood is indicative of the Yeso potential and across the shelf. It is not. This is a pilot flood in the Paddock only.

We have been injecting water for some time. I don't recall exactly the wellhead pressure at this point; on the order of a thousand pounds or so.

Q. And the jury is still out on whether it's going to work or not?

A. Yes, sir. That's absolutely right.

MR. GRABLE: All right. Thank you.

LEGAL EXAMINER BROOKS: Okay. Each side used an additional one minute.

TECHNICAL EXAMINER EZEANYIM: Okay. Any more questions for this witness?

Okay.

MS. MUNDS-DRY: Oh, Mr. Ezeanyim, I would ask to move -- I believe Mr. Grable said he didn't have any objection to 30.

MR. GRABLE: I withdrew my thinking about making an objection to 30, so I have no objection to

30.

MS. MUNDS-DRY: We'd ask that Exhibit 30 be admitted into evidence.

TECHNICAL EXAMINER EZEANYIM: At this point, Exhibit 30 will be admitted.

MS. MUNDS-DRY: Thank you.

TECHNICAL EXAMINER EZEANYIM: Mr. Prentice, how do you calculate your water saturation?

THE WITNESS: That's based off of resistivity logs. And that varies as you go down, you know, you go down the hole.

Q. (By Mr. Grable) Are you using the actual equation or something?

THE WITNESS: Yes. Yes, we are. We're using the standard SW-type calculations.

TECHNICAL EXAMINER EZEANYIM: And typical water saturation in this area is what? Do you have any idea?

THE WITNESS: Well, it varies such -- it varies in the -- like I said, it varies from the Paddock to the Blinebry. We're seeing saturations of close to 25 to 30 percent in the Paddock and close to 40 percent in the -- in the Blinebry.

TECHNICAL EXAMINER EZEANYIM: Yes. Mr. Prentice, you know that what we're here to do is

to get the area -- this area -- and the oil saturation, the PHI-H, is very important. But I know the other time I was talking to you about it, and you said you don't have numbers for that, it's all -- it is an average, right?

THE WITNESS: That's -- that's -- we have taken the statistical basis. You know in our view, PHI-H, it's like the example that Mr. Reyes gave you this morning. He showed you that log with that low, low PHI-H number and said if you had a million dollars would you invest in that well?

Any wise investor would say, "There's nothing there."

TECHNICAL EXAMINER EZEANYIM: Yeah.

THE WITNESS: So what does that tell you about the importance of PHI-H in any particular spot?

TECHNICAL EXAMINER EZEANYIM: Nothing, except that I want to see how it pans out in the calculation of the drainage area.

THE WITNESS: Yeah. Well, if you calculate it -- try to calculate that drainage area off that zero PHI-H, what would your drainage area be? Zero, right? Because you have nothing to drain.

See my point?

TECHNICAL EXAMINER EZEANYIM: Yeah. But this S sub zero PHI-H has a number that you're using to calculate your drainage area, right? That's a number?

THE WITNESS: Yes. Because -- because the only thing we can figure drainage area off of is a statistical PHI-H number, or -- or -- yeah, the Yeso PHI-H number plus the barrels that we produce from that well. That goes into your recovery factor, just like I said right over there.

TECHNICAL EXAMINER EZEANYIM: Yeah. What do you mean by "statistical"? Empirical? What are you talking about?

THE WITNESS: Well, if -- if one -- if one point is zero PHI-H, there's nothing to drain, is there?

TECHNICAL EXAMINER EZEANYIM: No.

THE WITNESS: No. So -- but you know you've cum'd, say, 100,000 barrels. But you don't -- you don't produce 100,000 barrels from no PHI-H. So you've got to expand your -- your statistical sampling to include wells that have got porosity in them. You can't just use one or two points. The more points that you have the more

reliable your drainage calculations become, in our view.

Do you see my point?

TECHNICAL EXAMINER EZEANYIM: Yeah, I see your point. But you see my point? I wanted to see how you got your numbers. You know, I want to be comfortable with that.

THE WITNESS: The numbers come right off of log data. We put them through a geophysical model that tries to incorporate core data, log data, everything else we can possibly figure out. And -- and that's how we develop our PHI-H numbers. It is a -- it is developed off of a model.

You indicated last week that you would like very much to sit down with a set of logs and figure out PHI-H and try to match it to ours.

I'm going to submit to you that ours is such a statistical basis that would be a very difficult task for you or for anybody else to do. We run it through a model and that model, based on a lot of correlations, determines our PHI-H numbers.

TECHNICAL EXAMINER EZEANYIM: Yes. Okay. We talked about it last week.

Is there any way I could get a sample of that PHI-H number, you know, the statistical, the

average?

THE WITNESS: That's what -- I think that's what you've already been -- you know, I think that's what we already submitted. I know they asked for it by lease, and we gave it to them.

TECHNICAL EXAMINER EZEANYIM: What you submitted was the -- you know, the average drainage area.

THE WITNESS: The average drainage areas, that's correct.

TECHNICAL EXAMINER EZEANYIM: Yeah, but I don't see a PHI-H number --

THE WITNESS: The average. I think they -- I think they asked for a PHI-H number by lease, which we submitted to them.

TECHNICAL EXAMINER EZEANYIM: Do we have it?

THE WITNESS: I do not have it with me, but I know that --

MR. GRABLE: Mr. Ezeanyim, that's what they -- they did. They did give us that under a confidentiality order.

TECHNICAL EXAMINER EZEANYIM: Okay.

MR. GRABLE: So I haven't asked anybody about it.

TECHNICAL EXAMINER EZEANYIM: Okay. Yeah.
MR. GRABLE: So we do have some --
TECHNICAL EXAMINER EZEANYIM: Okay. I'm qualified on the confidentiality, too, so I may want to have that.
MS. MUNDS-DRY: Yes.
TECHNICAL EXAMINER EZEANYIM: That is why I'm asking these questions.
MS. MUNDS-DRY: If we're going to go there, we would ask, then, that the folks that are not subject to that confidentiality order --
TECHNICAL EXAMINER EZEANYIM: To get out. I know. I don't want to go there either. So I'll --
MS. MUNDS-DRY: But if you want to do that at a certain point, we can do that.
TECHNICAL EXAMINER EZEANYIM: Yeah.
MS. MUNDS-DRY: We just need to go into closed session.
TECHNICAL EXAMINER EZEANYIM: No, no. We don't have to do that, since I can get those numbers.
MS. MUNDS-DRY: Yes.
TECHNICAL EXAMINER EZEANYIM: No, we don't have to drive anybody out.

MS. MUNDS-DRY: Okay.

TECHNICAL EXAMINER EZEANYIM: On the -- the water flood project, you designed this water flood pattern. What pattern are you using?

THE WITNESS: I'm sorry?

TECHNICAL EXAMINER EZEANYIM: What pattern are you using?

THE WITNESS: What pattern?

TECHNICAL EXAMINER EZEANYIM: Yeah.

THE WITNESS: We -- we began the water flood pattern on a 5-spot.

TECHNICAL EXAMINER EZEANYIM: A 5-spot?

THE WITNESS: A -- a 20-acre 5-spot. 10-acre wells usually gives you a 20-acre 5-spot. The very typical -- very typical beginning of a water flood. We have since realigned it to a different pattern.

TECHNICAL EXAMINER EZEANYIM: Okay. You -- I -- did you -- I know there must be an order that -- you know, there must be an order that allowed you to conduct a pilot project. Do you know the order number?

THE WITNESS: I do not right off the top of my head. No, sir. I'm sorry.

MS. MUNDS-DRY: We can look that up on a

break.

TECHNICAL EXAMINER EZEANYIM: Yeah, I need to -- I want to know the number that authorized this water flood -- this water flood project.

THE WITNESS: Yes, sir. I'm sorry I did not bring that with me.

TECHNICAL EXAMINER EZEANYIM: Okay. That's all I have for you. You're excused.

THE WITNESS: Thank you, sir.

LEGAL EXAMINER BROOKS: 2:59.

MS. MUNDS-DRY: That concludes our direct case, Mr. Ezeanyim.

TECHNICAL EXAMINER EZEANYIM: Okay. Thank you very much.

Now, Apache, do you have some witnesses?

MR. COONEY: Yes. Mr. Hearing Officer, could we take a little break while we set up our computer for our exhibits?

TECHNICAL EXAMINER EZEANYIM: Okay. Let's take five minutes.

(A recess was taken from 3:02 p.m. to 3:12 p.m.)

TECHNICAL EXAMINER EZEANYIM: Let's go back on the record.

Okay. Now, Apache.

MR. COONEY: Apache Corporation, Mr. Hearing Examiner, calls as its first witness Mr. Keevin, K-E-E-V-I-N, Barnes.

KEEVIN BARNES,

after having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. COONEY:

Q. Would you state your name, please?

A. Keevin Barnes.

Q. Who do you work for, Mr. Barnes?

A. Apache Corporation.

Q. Have you previously testified before the division and the New Mexico Oil Conservation Commission?

A. I have.

Q. Was your testimony accepted as an expert in reservoir engineering?

A. It was.

Q. And does the record reflect your credentials as accepted by the division and the commission as a reservoir engineer?

A. It does.

MR. COONEY: We tender Mr. Barnes as an expert in reservoir engineering.

TECHNICAL EXAMINER EZEANYIM: Mr. Barnes, do you happen to be registered?

THE WITNESS: No, sir.

TECHNICAL EXAMINER EZEANYIM: Okay. He is qualified to testify.

MR. COONEY: Okay. Thank you very much.

LEGAL EXAMINER BROOKS: Okay. Interject at this point. The examination began at 3:10.

MR. COONEY: Thank you very much, sir.

Q. (By Mr. Cooney) Are you familiar with the amended application filed by Concho in this case and the lands that are the subject of that application?

A. I am.

Q. Does Apache have any wells in the Yeso fields, in the Loco Hills fields, and the Cedar Lake fields?

A. It does. This map shows Apache-operated wells here (indicating) and here (indicating) with Burnett-operated wells here (indicating) in the middle.

Q. Of the pools that are involved in Concho's application, are these the two pools in which both Apache and Burnett operate wells?

A. Yes, sir.

Q. Okay. Now on this slide -- it may be a

little difficult to see from here. It might be easier in the book.

The Apache-operated wells are the light blue wells?

A. Correct.

Q. And the Burnett wells appear both as black and red on the printed copy of the slide?

A. Correct. That was an effect from the blue land acreage, to turn the red dots black.

Q. Would you turn to Exhibit 4, please?

A. (Witness complies.)

Q. Would you explain -- did you prepare Exhibit 4?

A. I did.

Q. Would you explain what Exhibit 4 is?

A. I'm going to go through about six proration units, the first four of which I have done decline curve analysis on to explain allowable and waste. The second two just go toward the allowable.

I have at the top here the location, 17/30 and 10J, and over here a map that shows the well.

What this first column shows is my decline curve analysis, the reserves estimated on a 20-acre development.

This second column here (indicating)

indicates the reserves estimated on 10-acre development with the darker green amount indicating the waste, having not developed on a 10-acre space.

Q. Do I understand correctly, sir, that what you designate here as waste on Exhibit 4 would be the amount of reserve that would not be recovered if the proration unit were developed on 20-acre spacing?

A. Correct.

Q. And on the left side, that's the EUR volumes. Is that correct?

A. Correct, and equivalence.

Q. Okay. Now, would -- how much do you show of reserve that would not be recovered in this proration unit on the basis of 20-acre spacing?

A. In this particular proration, you would need 273,000 barrels.

Q. Would you turn to Exhibit 5, please?

A. (Witness complies.)

Q. What does Exhibit 5 represent?

A. This represents the monthly production data for the first two wells drilled within the proration unit.

Q. Now, is that the same proration unit which is referred to in Exhibit 4?

A. Yes, sir, it is.
Q. And that's the actual monthly production data?
A. That is the monthly production data from IHS.
TECHNICAL EXAMINER EZEANYIM: On 20 acres?
Q. (By Mr. Cooney) On 20 acres?
A. On 20 acres.
Q. Would you turn to Exhibit 6, please?
A. (Witness complies.)
Q. What does Exhibit 6 depict?
A. This shows the additional two wells, so 10-acre development. You can see the well count down here at the bottom, the increase in the production.
And what I did for the first two was forecast this data right here (indicating). And for the final -- or for the 10-acre development, forecast all four wells together. And that's where I came up with the waste.
Q. All right. Let's focus for a moment on the period of time just after January of 2010. That would be when the fourth well came on line?
A. Correct. In this case, third and fourth.
Q. Third and fourth.

And if we look at the graph showing the gas production, what is the -- excuse me, the oil production -- the green line?

A. Uh-huh.

Q. What is the approximate amount of oil production as of the fourth well coming on line?

A. For the whole proration unit you're at 9- to 10,000 barrels a month, which is about 300 barrels a day.

Q. Do you believe that this data supports Concho's application that the allowable be increased for these pools?

A. Yes, I do.

Q. Now, would you go back for a moment? We can see now, looking at Exhibit 6, what the projected production is through January 11 on the 10-acre spacing, four wells, in the proration unit.

A. Uh-huh.

Q. If we go back to Exhibit 5, can you look at these two exhibits and tell the hearing examiner whether the drilling of the third and the fourth well affected the rates of production of the first two wells?

A. The drilling of the third and the fourth well occurred right at this point (indicating). And

I don't see any abnormal change in decline for the first two wells, which would indicate noninterference.

Q. So these two slides together would indicate that the drilling of the third and the fourth wells did not result in interference with the existing two wells that had -- that already existed in the 40-acre proration unit?

A. Correct.

Q. Does that indicate to you anything, sir, with respect to whether drilling on the 10-acre spacing and increasing the allowables, as sought by the application, would affect any correlative rights with respect to offset locations on the 10-acre basis?

A. I feel it would not.

Q. It would not?

A. Huh-uh.

Q. Thank you.

Now, would you return -- or excuse me.

Would you turn to Exhibit 7?

A. (Witness complies.)

Q. Is Exhibit 7 a depiction of another proration unit depicting basically the same kind of information that was depicted on Exhibit 4?

A. Correct. Location and proration unit is at the top.

Q. And did you calculate what amount of ultimate recovery would not be recovered in this proration unit without the third and fourth well?

A. In this particular proration unit, it was a 409,000-barrel equivalent.

Q. All right. And on Exhibit 8, you show the production data based on the 20-acre spacing. Is that correct?

A. Correct.

Q. And what does Exhibit 9 show?

A. Exhibit 9 shows, when you have the third well come on and then the fourth well come on, you are seeing a dramatic increase in production, sustained production. And you're also, again, up here at 9- to 10,000 barrels a month -- 9,000 barrels a month, which is your 300 barrels a day --

Q. All right.

A. -- for allowable.

Q. What do Exhibits 8 and 9 show with respect to whether the drilling of the third and the fourth wells on the 10-acre spacing interfered with the existing two wells on the 20-acre spacing?

A. The third well was drilled 9 -- January 9 -- or excuse me -- December '08.

Let me rephrase that again.

October of '08.

And the fourth well was drilled, it looks like, June of '09, which would have been in the middle here. I don't see anything that would indicate interference to me.

Q. Would you turn to Exhibit 10?

A. (Witness complies.)

Q. Is this another 40-acre proration unit?

A. Correct.

Q. And what did you calculate it as -- calculate, excuse me, as the amount of reserves which would not be recovered on the two wells or a 20-acre?

A. The amount calculated was 74,000 in DOE.

Q. And again, Exhibit 11 shows the monthly rates on the 20-acre spacing?

A. Correct.

Q. And what does Exhibit 12 show?

A. Exhibit 12 shows the incremental production on the next three wells. In this proration unit we do not get to the allowable. I would note that this is Paddock only.

Q. Now do these two exhibits, Exhibits 11 and 12, indicate that the drilling of the third and the fourth well interfered with the existing wells drilled on the 20-acre spacing?

A. I believe they do not interfere.

Q. I notice the --if you will look at Exhibit 11, there's a slight downward trend of the -- all of the production beginning, say, with about the middle of 2008. Is that correct?

A. Are you looking at this right here (indicating)?

Q. Yes.

A. Yes. I -- I am not positive what caused that. It could be mechanical. It is not a result of the offset drilling.

Q. But if you look all the way to the right, now, you'll see that these lines are drifting down.

A. Correct. That trend is constant --

Q. And would you --

A. -- at the point the offset wells were drilled.

Q. Would you consider that to be a normal decline in production?

A. Correct.

Q. If there had been any interference by the

third and fourth wells with the first two wells, the 20-acre wells, would you have expected to see a much greater decline in production of the 20-acre?

A. I would have expected to see a dramatic shift and decline.

Q. Would you turn to Exhibit 13, please?

A. (Witness complies.)

Q. What is Exhibit 13?

A. This is another proration unit where I have calculated 22,000 barrels of waste. This, again, is Paddock only.

Q. All right. And similar to the prior exhibits, Exhibit 14 shows the production -- monthly rate production on the 20-acre spacing?

A. Correct.

Q. And Exhibit 15 shows the production on 10-acre spacing?

A. Correct.

Q. Do these wells -- excuse me -- Exhibits 14 and 15 indicate to you whether there was any interference from the drilling of the third and the fourth well with the existing wells drilled on the 20-acre basis?

A. There was a slight change in the decline, which could indicate maybe a high -- this again is

Paddock only -- there could have been a high perm streak within the Paddock that communicated. But again, it steadied out on a normal decline here and actually broke over later in time.

And again, I still calculated waste from this proration unit.

Q. If there had been interference with -- by the third and fourth wells with the first two wells that were drilled on the 20-acre spacing, would you have expected to see a much greater decline?

A. And we see a bit of decline in there, so there may have been a high perm streak interference, but I -- I think that would be it.

Q. Okay. And just temporary?

A. Very temporary.

Q. Okay. Now, would you -- what conclusions have you drawn from these Exhibits 4 through 15 concerning whether the drilling of wells on 10-acre spacing interferes with wells drilled on 20-acre spacing in this -- in the Yeso formation, which is the subject of this application?

A. I think by not drilling on 10-acre spacing you're going to create waste.

I think on a proration unit, as we have seen in just about every example, you need 300

barrels a day of unrestricted production for allowable.

Q. Do these exhibits indicate to you, as a professional reservoir engineer, whether the drilling on a 10-acre spacing impairs collateral rights of owners of mineral interest in offsetting 10-acre locations?

A. I don't believe it does.

Q. Do these indicate to you that the drilling on the 10-acre spacing with the allowable increased allows efficient production of the reserves?

A. Would you repeat? I'm sorry.

Q. Does the drilling on the 10-acre spacing in the -- and the increase in allowables allow for efficient production of the available reserves?

A. Yes, it does.

Q. Do you believe that drilling on the 10-acre spacing prevents waste?

A. Yes, I do.

Q. Now, would you turn to Exhibit 16?

A. (Witness complies.)

Q. What does Exhibit 16 represent, Mr. Barnes?

A. Exhibit 16 is 17 South, 29 East, Section 30H, a 40-acre proration unit drilled down

on 10 acres. And again you can see the 300-barrel-a-day reached by the proration unit.

It also shows a decrease in the GOR at the time the new wells were brought on.

Q. What does that indicate to you, the decrease in the GOR when the new wells are brought on?

A. It indicates a -- contacting a new reservoir.

Q. All right. What does --

A. And it indicates that you're contacting a new reservoir. It goes towards the heterogeneity of it.

Q. Would that be consistent with the testimony that's been offered here by COG?

A. Yes, it would.

Q. All right. Now, does this data indicate to you whether the reservoir energy is being depleted by the drilling of wells on the 10-acre spacing?

A. No.

Q. After the wells are drilled and the new reservoir encountered, the GOR is back on trend?

A. Yes. Here's the GOR trend for the 2-acre wells. Following the addition of the 10-acre --

excuse me, the 20-acre wells.

Following the addition of the 10-acre wells, it does increase, as you would expect from a depletion drive reservoir, but it looks like it gets back on track.

Q. So are you able to reach any conclusion as to whether the drilling of the wells on a 10-acre spacing and increasing the allowable to 300 barrels a day and removing the gas/oil ratio would harm this reservoir?

A. I see no harm of the reservoir at all.

Q. Would you turn to Exhibit 17, please?

A. (Witness complies.)

Q. Would you explain what Exhibit 17 depicts?

A. This is the same, just a different proration unit. Again you can see, when you get down to 10-acre spacing, the proration unit gets up to 300 barrels a day.

Again you see a slight dip in the GOR with the addition of the 10-acre wells. You do see an increase in the GOR, as you would in the depletion drive reservoir, but it does look like it gets back on trend.

Q. Does this indicate that drilling on a 10-acre spacing, eliminating the GOR and increasing

the allowable to 300 barrels a day, would result in any harm to the reservoir?

A. I feel it would not result in any harm.

Q. What is Exhibit 18, sir?

A. Exhibit 18 is Apache-operated NFE Number 10. It's in the Cedar Lake field.

What we tended to show here is this increase in oil production was actually a speedup in the pump. We saw about 100 barrels a day increase in the oil production with no effect on the GOR.

Q. What does that show you, as a reservoir engineer, with respect to whether eliminating the GOR and increasing the allowable to 300 barrels per day would have any effect of harming the reservoir?

A. It tells me we're not harming the reservoir.

Q. All right. Now, Mr. Barnes, based on this data and your conclusions, do you believe that increasing the allowable to 300 barrels per day, removing the gas/oil ratio, and allowing the continuation of drilling of wells on 10-acre spacing is in the best interest of conserving natural resources and preventing waste?

A. It is.

Q. Do you believe that doing so would in any

way impair correlative rights or harm correlative rights?

A. I do not.

MR. COONEY: Mr. Hearing Examiner, we would move the admission into evidence of Exhibits 1 and 4 through 18.

TECHNICAL EXAMINER EZEANYIM: Any objection?

MR. GRABLE: No objection.

TECHNICAL EXAMINER EZEANYIM: Exhibits 1 and 4 through 18 will be admitted.

MR. COONEY: Pass the witness.

LEGAL EXAMINER BROOKS: Okay. Pass the witness at 3:30.

EXAMINATION

BY MR. GRABLE:

Q. It's Mr. Banes, is it?

A. Barnes.

Q. Barnes. Pardon me, Mr. Barnes.

Just looking at your Exhibit 1, does Concho own a nonoperating working interest in the wells operated by Apache?

A. Yes, they do.

Q. Does Apache own nonoperator working interests in any wells operated by COG?

A. That, I'm not aware of.
Q. When did Apache begin operating in this field?
A. We took over operations October 14 of last year.
Q. And those wells were previously operated by Marbob?
A. Correct.
Q. How many wells does Apache now operate?
A. I don't have the number off the top of my head. I think it's around 280.
Q. And how many of those has Apache drilled?
A. We have drilled 18 through 19.
Q. Have you done cased-hole log suites on all of those that you have drilled?
A. No. We have done open-hole log suites on every well we've drilled.
Q. Yeah. I meant open hole. Pardon me.
You have done open-hole log suites on every well?
A. We have.
Q. Do you use a log analysis to assist you with your completion profile on each well?
A. We do.
Q. And the wells you've taken over have been,

just from looking at those that are on the Cedar Lake field, are developed on a 20-acre pattern?

A. Correct.

Q. And some of the wells over in Loco Hills are on 10 acres and some are on 20?

A. Correct.

Q. Let me just get a couple of preliminaries out of the way.

All of the oil statistics you have presented are based upon barrels of -- or MBOE. That's barrels of oil equivalent?

A. Correct.

Q. And what ratio do you use to convert MCF of gas to barrels of oil?

A. Six. Six to one.

Q. Which is an energy conversion?

A. Correct.

Q. That's certainly nowhere near a dollar conversion these days?

A. No.

Q. What percentage of your MBOE, on average, is gas?

A. I don't have that figure offhand. I can certainly get it to you. I have the forecast with me.

Q. All right. Now all of your conclusions on waste assume, do they not, that whoever was operating these 40-acre tracts would never drill wells three and four. Isn't that the assumption embedded in your presentation?

A. Well, the assumption -- the forecasts were done on the first two wells prior to the other two wells being drilled.

Q. All right. But your simple bar graph, you just carry over your two-well forecast, and that's the base of your four-well forecast, and the rest of it is waste?

A. Well, the two-well forecast assumes that the remaining two wells will not be drilled in the 40-acre proration unit. That's what you would have gotten if you would have developed on 20-acre spacing.

Q. Right. And when you've testified to waste, that means the oil will either be -- well, let me ask you.

When I hear the word "waste," I think of physical waste in a sense of producible oil that will not be produced.

A. It's not producible oil that will not produced. It's oil that would not be produced had

the 10-acre wells had not been drilled.

Q. Let me ask it this way.

On your two-well bar graph --

A. Uh-huh.

Q. -- the oil in your waste column, the dark green, would still remain in the reservoir at the point these two wells decline.

A. Correct. At the point of their economic limit.

Q. Right. Whenever -- whatever the operator's economic limit is?

A. Right.

Q. But that oil is not being somehow rendered unproducible. I mean the assumption embedded in your exhibit is that this operator would never, under any circumstances, drill wells three and four.

A. I'm not sure I agree.

Q. Well, let me ask it this way, then.

If this operator -- well, the whole premise of this is initially drill wells one and two and then sometime later, as shown on your production graph, the operator drills wells three and four?

A. Correct.

Q. All right. So this oil is not somehow irretrievably lost in the reservoir locked up in a

lockbox where you can't get it out. I mean it's still in the reservoir, right?

A. It's still in the reservoir. It's not going to be recovered by the claim.

Q. In your opinion, it's not going to be recovered by the two wells, but it would still be recoverable by wells three and four if and when they are drilled?

A. Correct.

Q. Now, are these supposed to be specific governmental 40-acre blocks? Because these colored shaded things look more like rectangles than squares.

A. They're actual letter proration units. I have -- and I have it up at the top of each one, so they represent a 40-acre.

Q. Well, why is it rectangular rather than square?

A. This is a map out of IHS. And that rectangle is what I used to select the wells, so I could grab the production out of IHS. That's just a byproduct of what it looks like. It's not in any way to represent the actual 40 acres.

Q. Okay. Well, whose wells are these?

A. I don't have that with me right now. I

can certainly get you that information, sir.

Q. You don't who the operator is?

A. I'm assuming most of these are Concho. I think one of them was Cimarex.

Q. Do you know for a fact that all four wells are completed in both Blinebry and Paddock?

A. In the first two wells -- or the first example, the first two wells that were completed in '08 were actually completed in Paddock and just a little bit into the top of Blinebry.

The second two wells were completed Paddock only, so you're actually getting more reserves from a little bit less completion zone.

In the final two examples they are Paddock.

Q. Well, I want to just stick with the first example.

MR. CAMPBELL: Could we reference an exhibit?

MR. GRABLE: It's Exhibit 4. I think I'm asking about Exhibit 4.

THE WITNESS: Yes.

Q. (By Mr. Grable) Do you know how these wells were completed, as far as any stimulation?

A. I do not.

Q. Wouldn't that be relevant in comparing them?

A. I'm not a completions engineer.

Q. Okay. Well, why did you happen to pick these four examples you did out of all of the examples in the field?

A. I was trying to get as close to apples to apples as I could, measuring Paddock against Paddock.

The typical way a lot of these 10-acre proration units were developed were the early wells were drilled Paddock and completed Paddock. The later wells were drilled Paddock and Blinebry. So I was trying to get as close to apples to apples as I could comparing them.

Q. Without knowing how the -- well, let me back up a minute.

You do agree that this is a low perm -- low permeability reservoir that requires -- or produces more prolifically with large fracture stimulations than it does without?

A. Yes.

Q. And so wouldn't it -- in order to get an apples to apples comparison, wouldn't you want to compare wells that had been completed in a similar

fashion?

A. Again, I'm not a completions engineer. I don't know if an acid job is going to do just as good as a frac job in this.

Q. Some of these wells may have just had an acid job, may not have been fracked at all. Do you realize that?

A. It's possible.

Q. All right. In the production graph, two graphs on that two-well example, you've testified that you saw no effect.

Could you flip to Exhibit 5 please?

A. (Witness complies.)

Q. If you look at the third and fourth wells that were drilled in January of '10 -- is that correct?

A. Correct.

Q. You've got a drop in rate there that kind of corresponds with the time those two wells come on. Do you think that's --

A. But your oil rate comes right back up to pre- -- preexisting conditions.

Q. Well, I'm not going to argue declines with you. But if you put a line through there, wouldn't it kind of be a line parallel to, but lower than the

decline curve through the previous rate?

A. It's hard for me to tell what you're pointing at up there.

Q. I know, and that's why I don't really want to spend a lot of time on it.

But your opinion is this shows no effect at all?

A. Correct.

Q. Let's go to your next example, which is your Exhibit 7.

A. (Witness complies.)

Q. Now, this is captioned "Blinebry/Paddock." It's your testimony that all four wells included in this comparison were completed both in the Blinebry and the Paddock?

A. As a matter of fact, it says Blinebry/Paddock is -- one of the wells is Blinebry/Paddock.

The first three wells were Blinebry only. The fourth well, which is in the northeast quadrant, drilled in 2009, completed a little bit up into the Paddock, may count for some of the waste, but certainly not that amount of volume.

Q. Again, do you know whose wells these are?

A. It's most likely Concho's.

Q. Do you know how these wells were completed?
A. I do not.
Q. All right.
Turn to Exhibit 10, please, sir.
A. (Witness complies.)
Q. All right. Do you know whose wells these are?
A. Again, most likely Concho's.
Q. And you don't know how these wells were completed either?
A. No, sir.
Q. All right. And here you're showing 74,000 MBOE of incremental production. That would be 37,000 barrels per well?
A. Correct.
Q. And some portion -- 10 or 20 percent of that is gas?
A. I couldn't tell you off the top of my head. I would have to go back to my forecast.
Q. Less than 35,000 barrels?
A. Less than 35,000 barrels.
Q. Would Apache approve an AFE to drill a well with a geological prognosis of 35,000 barrels for the life of the well?

A. Under the current price scenarios, yes, we would.

Q. You would? You'd drill for 35,000?

A. You'll make numbers at 35,000.

Q. What's your AFE, about a million-five, -six, normally?

A. I'm not going to discuss my AFEs.

Q. More than 1 but less than 2 million?

A. Less than 2 million.

Q. Okay.

A. And again, this is Paddock only.

Q. All right.

MR. GRABLE: Now, let's look at the slide 11 -- Exhibit 11, please, Mr. Taylor.

Q. (By Mr. Grable) There is a drop up here in the two-well decline rate about the time that the third and fourth wells come on, is it not?

A. Well, if you look at when those third and fourth wells came on, that decline happened, oh, three or four months before.

And to me, with all volumes -- with every single volume, oil, gas, and water going down it, it looks mechanical to me. It's not a result of drilling the offset wells.

Q. All right. Now your last exhibit,

Exhibit 13, again, you do not know whose wells these are?

A. Again, my best guess is Concho. Three of them -- three of my examples were Concho. I believe one was Cimarex. I did not look at the operators on those.

Q. These aren't even in the same 40 acres, are they?

A. It's a 40-acre proration unit, it's not necessarily the same lettered unit. It still makes up a 40-acre proration unit.

Q. All right. It's a single-operator proration unit, but with 10 acres out of four different 40-acre --

A. Correct. Again, I was trying to find wells that were completed in the same zones. So these are all four Paddocks.

Q. These were Paddock only?

A. Yes.

Q. And again, do you know how Cimarex completed these wells?

A. I do not.

Q. And the early wells, they were completed back in '98 and '99?

A. Correct.

Q. Are you aware that the completion techniques of this reservoir have changed dramatically from '98 to...

A. Absolutely.

Q. Are these wells true 10-acre spacing?

A. Yes.

Q. Each of these four wells is in a different governmental quarter, quarter section?

A. Correct.

Q. But is it your testimony that they're drilled on true 10-acre spacing, so that they would be out of 10-acre tracts. So when you added them up, they would make a 40?

A. Yeah. I mean you can picture that box as a 40. Those are 10-acre wells.

Q. All right. We have some doubt about it in this corner, but we will find it on a map.

A. I can provide you that map, if you would like.

Q. Good. That would be useful.

Well, let's look at the decline analysis. Let's look at your Exhibit 14, if we can.

Wells three and four came on the middle of '01, early part of '02?

A. Correct.

Q. Which would be up in about this (indicating) area?
A. Correct.
Q. Is it your opinion that a decline trend through that dataset ending in mid '01 would look like a decline trend through the dataset from mid '01 to the end?
A. Say that one more time.
Q. Well, if you took a decline trend through your oil curve here from January '09 through, let's say July of '0- -- about in there (indicating) --
A. Uh-huh.
Q. -- where the third well came on, that looks pretty flat to me, maybe flat to increasing.
A. Your decline would not look the same. But in my -- I'll call it waste again -- waste calculation, I did use that data to forecast the 20-acre development and still came up with 225,000 barrels equivalent of reserves left behind.
Q. Do you have the curves that you did for that?
A. I do. I have -- with me, I just have the summary of the 20-acre and summary of the 10-acre. I have forecasted individual wells. I do not have that with me, but I can get it to you.

Q. And if you just look at that oil decline, the green line to there (indicating), and then that oil line (indicating), doesn't it just eyeball to you that there is a marked shift in decline rate from right about the time the well drill -- well was previously drilled?

A. I have already agreed that there's a decline.

Q. All right. Let's look at Exhibit 16 if we may, sir.

A. (Witness complies.)

Q. The same general question here. I mean if you just eyeball a decline trend through there (indicating) versus a decline trend through there (indicating), doesn't the implied slope seem steeper here (indicating) than it does down here (indicating)?

A. Well, that was not my intention on this slide. But you can't just use that data to decline. I mean you've got data out here that suggests you're going to be as flat as that.

But my intention of this slide was to indicate the 300 barrels a day for a proration unit.

Q. We'll talk about that in a minute.

But in your engineering opinion, are the

decline rates shown by the early two-well period of this line greater than or equivalent to or less than what occurs after wells three and four are drilled?

A. Well, I haven't done the analysis on this particular proration unit. But looking at the data, it looks fairly similar to me.

Q. All right. We will talk about your 300 barrels a day. It touched a 300-barrel-a-day value for one month?

A. Correct.

Q. You're aware aren't you, sir, that Burnett/Hudson proposed -- and the other operators who have made appearances -- have agreed to a one-year balancing?

A. Correct.

Q. And have you calculated, on an annual basis, if you would need 300 barrels a day to produce that capacity?

A. Have I done that calculation? No, sir.

Q. But you can just tell, looking at this, you wouldn't. Because you only hit 300 one month, so you know the average has to be less than 300 in any year?

A. Correct.

Q. In fact, it looks like it's -- well, let

me take a look at that.

And then on the GOR part of the graph, doesn't it appear to you that there's a distinct increase in GOR after -- the rate of GOR increase --

A. There is --

Q. -- after --

A. There is an increase in GOR, but it certainly looks like it gets back on trend.

Q. At the very end there?

A. Yes.

Q. If you were just drawing a projected GOR rate from this dataset versus that dataset, the two-well dataset, you're saying they would look the same?

A. But I have this dataset that tells me they do.

Q. Even considering that dataset, wouldn't the rate of increase be greater?

A. If you want to chop off data, yeah, it would look different.

Q. I'm asking you to consider all the data.

A. I am considering all the data. You see an increase in GOR, like you would see in a depletion drive reservoir. And that -- at this time, it looks to me like it's breaking over to come into line with

the 20-acre well.

Q. All right. Let's look at your Exhibit 17 if we might, sir.

A. (Witness complies.)

Q. Again on here, on the 300 barrels a day, this unit appears to have hit or exceeded 300 barrels a day for two months.

A. Correct.

Q. But again, it would not -- with an annual balancing, it would not need a 300-barrel-a-day allowable to produce a full allowable to full capacity. Is that correct?

A. Correct.

Q. And again the same question on GOR. Is it your opinion that this post 10-acre drilling GOR increase is equivalent to the two-well GOR?

A. It's not as pronounced as the previous example. It's kind of hard to tell what this data is going to do. I mean it's come down here at the end, so it kind of looks like it's a trend, but it's not as much data to go off of.

Q. Okay. How about the rate of oil decline? Doesn't this four-well decline look a lot steeper than this two-well decline?

A. Well, I'm probably going to decline this

with a hyperbolic, as this data would have been. It probably would have come into line with this later data, so your incremental reserves would have been the area between those declines -- well, that actual production in that model decline.

Q. Two-well production seemed to have flattened out on hyperbolic about a year or year and a half into their productive life?

A. Uh-huh.

Q. Doesn't it appear that you have a flat hyperbolic decline with two wells sooner than you did with your four wells?

A. I don't know if I agree with that.

Q. Pardon me?

A. Well, maybe it's sooner, but you still get to that flat decline.

This data, while jumping around a little bit, is -- has a year's worth of basically flat production.

Q. Okay. Finally, on your Exhibit 18, who operates this well?

A. Apache does.

Q. And what, did you put a submersible pump in it or what did you do?

A. No. We were actually running off a

generator in this early time data. We finally got it hooked up to a power company. We were able to speed up the pump and increase production that way.

Q. Now, this is a single well?

A. Correct.

Q. Is this in an area developed on 20s or 10s?

A. This is actually the first well in a proration unit.

Q. This well is still on 40s?

A. Correct.

MR. GRABLE: I pass the witness.

LEGAL EXAMINER BROOKS: Okay. Pass the witness at 3:55.

TECHNICAL EXAMINER EZEANYIM: Redirect?

MR. COONEY: Just a little.

TECHNICAL EXAMINER EZEANYIM: Ms. Munds-Dry?

MS. MUNDS-DRY: I have no questions.

FURTHER EXAMINATION

BY MR. COONEY:

Q. Mr. Barnes, looking at Exhibit 17 --

A. Yes.

Q. -- the end of that right-hand side of the graph in the oil production, does that show a marked

increase?

A. It does. It got about three months of increased production, and that's a thousand barrels a month.

Q. All right. In this analysis, sir, were you trying to study or depict or render opinions to the relative merits of completion techniques or fracking techniques?

A. No, sir.

Q. You were just taking production data and calculating decline curves?

A. Yes. This is a decline curve analysis.

Q. All right. You were also asked some questions of -- by Mr. Grable about your having assumed that the third and fourth wells would not be drilled in the 40-acre proration unit.

A. Correct.

Q. In fact, if the division were to reduce the density to two wells per 40-acre proration unit, the third and fourth wells could not be drilled?

A. That is correct.

MR. COONEY: Nothing further.

TECHNICAL EXAMINER EZEANYIM: Anything further, Mr. Grable?

MR. GRABLE: No, sir.

TECHNICAL EXAMINER EZEANYIM: Thank you.

Do you have any questions?

LEGAL EXAMINER BROOKS: No questions.

TECHNICAL EXAMINER EZEANYIM: Okay. Can you comment on your gas/oil ratio? You are the one that issued the formal -- to get ruled that we give you unlimited gas/oil ratio of this?

THE WITNESS: Yes.

TECHNICAL EXAMINER EZEANYIM: And if so, how?

THE WITNESS: I think we need to significantly increase the gas/oil ratio or have an unlimited GOR. Because with the limited GOR, we're having to cut back our current -- curtail production, which isn't an efficient way to produce this reservoir.

TECHNICAL EXAMINER EZEANYIM: Do you have anything to demonstrate that in your slides?

THE WITNESS: I don't.

TECHNICAL EXAMINER EZEANYIM: But you believe that the gas/oil ratios are limited?

THE WITNESS: Yes, I do.

TECHNICAL EXAMINER EZEANYIM: Do you have some number? What do you think?

THE WITNESS: I don't have a specific

number.

TECHNICAL EXAMINER EZEANYIM: All right. Nothing further.

At this point, I think we're going to -- you are excused, unless anybody has anything for him.

You are done with your witnesses, right?

MR. COONEY: We are -- no, we have one more.

TECHNICAL EXAMINER EZEANYIM: One more? Okay.

I think we are going to have to take a break.

MS. MUNDS-DRY: May we take a break after Apache finishes its witness, and then we can start with Premier after the break?

TECHNICAL EXAMINER EZEANYIM: Okay. And it will be brief?

MS. MUNDS-DRY: Brief, yes.

MR. COONEY: Yes, we will be brief.

TECHNICAL EXAMINER EZEANYIM: Okay. Apache, call your next witness.

MR. COONEY: Mr. Clint Mills.

TECHNICAL EXAMINER EZEANYIM: State your name.

THE WITNESS: Clint Mills.

CLINT MILLS,

after having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. COONEY:

Q. Mr. Mills, who do you work for?

A. Apache Corporation.

Q. Have you previously testified before the Oil Conservation Division?

A. Yes, I have.

Q. What is your job with Apache?

A. I am the district manager looking over the New Mexico operations.

Q. Have you testified previously in this very case before the division on the -- at the hearing on April 14?

A. Yes, sir, I have.

Q. Were your credentials as an expert in production accepted at that April 14 hearing?

A. Yes, sir, they were.

Q. And were they accepted in your previous appearances before the Oil Conservation Division and made a matter of record?

A. Yes, sir, they were.

MR. COONEY: We would tender this witness as an expert in production engineering.

TECHNICAL EXAMINER EZEANYIM: He is so qualified.

MR. GRABLE: Can you refresh my recollection? I remember his face from the last hearing day, but he is a petroleum engineer?

THE WITNESS: That's my degree, yes, sir.

MR. COONEY: He is an engineer. He is the production -- the manager, the district manager for the Eunice office.

MR. GRABLE: Okay. That's fine.

Q. (By Mr. Cooney) Now, I'm only going to cover one topic with you, sir. Mr. Prentice mentioned that if the allowable in these pools was not increased there would be operational and cost issues in continuing to restrict production to remain within the present allowable.

A. Yes, sir.

Q. Could you -- and I know the division's prior order said that during the pendency of this proceeding the wells were not to be shut in to remain within allowable, but to be regulated or restricted --

A. That's correct.

Q. -- as necessary. What I would like you to address, sir, from your experience, is what operational and cost issues would result from having to restrict the production of these wells in these pools in the future to remain within the present allowables.

A. If we restrict the production under the current allowable, whether that be with slowing the pumps down choking the wells, putting them on timers, we are not removing the fluid from the well bore that the well wants to give up. In turn, we are creating a fluid level in our wells.

With a sustained fluid level, it's very difficult to effectively treat the wells with chemical, meaning that you never get chemical on the bottom and effectively treat where the reservoir is.

As far as the chemical is concerned, my primary concerns are scale, as well as corrosion. It's very difficult to treat for scale if you're not pumping your wells off.

As far as the cost basis, it's more effective to prevent scale from forming rather than having to remove it later from the well bore. Scale down the road, you may have to pull your equipment. It can mean stuck pumps. Mechanically removing the

scale would mean running the scraper, as well as treating it with acid.

If the scale cannot be treated that way, we would have to reperforate the well, which is also additional costs.

Another concern with operating under the current allowable is, by definition, we're going to take more years to recover the amount of oil from that well. And the more years we take, that's more years of fixed cost for me, as the operator; more years that I have to ensure that I have a competent pumper to make sure that that well is being efficiently produced, as well as more years for the life of the well bore itself. Meaning, as we all know, as well bores get older, we have more problems with them.

By that I mean instability problems. It's not uncommon to have collapsed casing, where you have to run swedges or mills. With a collapsed casing, you can have stuck tubing. It's even possible to lose your well bore altogether, as well as get older.

Q. I believe Mr. Prentice also testified that remaining within the current allowable would lengthen the time before the possibility of

secondary recovery in these areas.

Do you agree with that?

A. Yes, sir, I do agree with that.

Q. Do you think that's a good thing, to lengthen the time before you are able to institute secondary recovery efforts?

A. No, sir, I do not. It's back to the life of the well bore again.

Q. Do you support Concho's application that the allowable be increased to 300 barrels per day?

A. Yes, I do.

Q. Do you support the application that the gas/oil ratio be eliminated?

A. Yes, I do.

Q. And do you support -- or do you oppose Burnett/Hudson's application that the well density be decreased to two wells for 40-acre spacing?

A. Yes, I do oppose that.

MR. COONEY: I have nothing further.

MS. MUNDS-DRY: No questions.

LEGAL EXAMINER BROOKS: End with the witness at 4:04.

TECHNICAL EXAMINER EZEANYIM: Okay.

Mr. Grable?

MR. GRABLE: This might set a record,

Mr. Ezeanyim.

TECHNICAL EXAMINER EZEANYIM: I like that.

EXAMINATION

BY MR. GRABLE:

Q. Have you done any calculations on Apache's properties to see if they could produce, essentially without restrictions, at a 187-barrel allowable, 2,000 GOR and one-year averaging?

A. No, sir, I have not.

Q. And if -- if those -- if it showed that they could produce without restrictions at those rates would you be satisfied with Burnett's proposed allowable rules?

A. No, I would not.

Q. Why is that?

A. We have -- as you know, we have only been operating here for six months. But we have seen that a single well bore can produce in excess of 150 barrels per day. We have got a couple of examples that have already done that in our area. And as far as what the declines are, how long that 150 barrels will last, I can't speak to that.

But I don't want to be restricted by 187 barrels, if that's what you're asking.

Q. You understand we're proposing a one-year

averaging to average out those first few months that are higher rates?

A. Yes, sir, I do understand that.

Q. From the evidence that the previous Apache witness presented, it appeared that you didn't need anywhere near a 300-barrel-a-day allowable to produce those units.

A. Okay. I don't --

Q. But those weren't Apache units.

A. Okay. Those weren't our units, so I can't speak to those.

Q. But you don't have any evidence to present that, with Apache's current production, you need an allowable of 300 barrels a day to produce?

A. No, sir, I do not.

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

LEGAL EXAMINER BROOKS: Passed the witness at 4:06. 3 hours and 56 minutes remaining.

MR. COONEY: No redirect, and we have no further witnesses.

TECHNICAL EXAMINER EZEANYIM: Okay.

Mr. Mills, can you explain to me about these operational and cost issues? You say you are limited in allowables.

THE WITNESS: Can you be more specific, Mr. Examiner?

TECHNICAL EXAMINER EZEANYIM: Yeah. You said if you are not allowed to produce up to 300 barrels a day --

THE WITNESS: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: -- there would be operation and cost issues. Can you explain those again for me?

THE WITNESS: The development of scale is a concern. If a well wants to produce 150 barrels of oil and we are forcing it to produce 80, saying that there's only one well in the allowable area, we're going to create a fluid level and also increase the life of the well, meaning that's years of operational expenses that I have to tack on to that well, making it less economical.

In addition, the formation of scale is our primary concern within the well bore. And when scale forms, then that also adds costs to me to either try to treat the scale from the surface or to actually pull my production equipment and remove the scale manually.

TECHNICAL EXAMINER EZEANYIM: Can you give me an approximate percentage of wells that can

produce up to 300 barrels a day?

THE WITNESS: Of Apache's wells?

TECHNICAL EXAMINER EZEANYIM: Yeah, Apache's wells. Or for that matter, anywhere that -- you have been operating for six months there.

THE WITNESS: I don't think I can speak to a percentage, sir.

TECHNICAL EXAMINER EZEANYIM: But there are some wells that produce more than 300 a day, right?

THE WITNESS: More than 300 barrels of oil?

TECHNICAL EXAMINER EZEANYIM: Yeah.

THE WITNESS: Not to my knowledge. One of our -- one of Apa- -- and I can't speak to Burnett's or even Concho's. But --

TECHNICAL EXAMINER EZEANYIM: Let me put it another way. I think I'm asking you the wrong question. The units.

THE WITNESS: Oh, yes.

TECHNICAL EXAMINER EZEANYIM: What percentage of units produce more than 300 barrels a day?

THE WITNESS: I don't know that I can give

you a percentage, but we have several units. We -- we had 30 wells shut in, all in different -- not necessarily all in different units, but sometimes two in a unit, so I would guess 15. But, now, that's a complete guess.

TECHNICAL EXAMINER EZEANYIM: Well, anyway, all those wells must have been put back in production, because --

THE WITNESS: We are on production.

TECHNICAL EXAMINER EZEANYIM: Yeah. So you don't have any shut in?

THE WITNESS: We don't have a single well shut in.

TECHNICAL EXAMINER EZEANYIM: Okay. Good. Okay. I have nothing further. Thank you.

MR. GRABLE: Nothing further.

TECHNICAL EXAMINER EZEANYIM: Okay. So we will take a break now and start with Premier.

(A recess was taken from 4:10 p.m. to 4:24 p.m..)

TECHNICAL EXAMINER EZEANYIM: Let us go back into the record and continue with Premier. Is that where we stopped?

MS. MUNDS-DRY: Yes, sir.

TECHNICAL EXAMINER EZEANYIM: Okay. Let's

continue with Premier.

MS. MUNDS-DRY: Mr. Rankin will be taking the direct of Premier.

MR. RANKIN: Thank you, Mr. Examiner. Should I proceed?

TECHNICAL EXAMINER EZEANYIM: Yes, proceed.

KENNETH C. JONES,

after having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. RANKIN:

Q. Mr. Jones, can you state your full name for the record, please?

LEGAL EXAMINER BROOKS: Okay. Started at 4:24.

A. Kenneth C. Jones.

Q. (By Mr. Rankin) Thank you. And where do you reside?

A. Dallas, Texas.

Q. Mr. Jones, by whom are you employed?

A. Premier Oil and Gas.

Q. What's your position with Premier?

A. I'm president, the current president.

Q. Okay. Thank you. How long have you been

involved in the oil and gas industry?
A. 30 years.
Q. And how long have you been president of Premier Oil and Gas?
A. Just for a couple of years, but I was vice president prior.
Q. Can you tell me a little bit about Premier Oil and Gas? I mean it's got an I-N-C at the end of the name, but it's not --
A. It is incorporated, but it is a family-owned company that -- I grew up in Artesia and around the oil patch, and it's just a family-owned company.
Q. How long has the --
A. So are the working interest owners in the lease.
Q. How long has Premier been a producer and operator in New Mexico?
A. Since the early '80s.
Q. Have you previously testified before the Oil Conservation Division before?
A. Yes, I have.
Q. And can you please identify for me and explain what is Exhibit Number 1?
A. Exhibit Number 1 is a map.

TECHNICAL EXAMINER EZEANYIM: Before you go there, is this witness a fact witness or --

MR. RANKIN: He's a fact witness.

TECHNICAL EXAMINER EZEANYIM: A fact witness, not an expert witness?

MR. RANKIN: No, no.

TECHNICAL EXAMINER EZEANYIM: Okay. I want the record to reflect that.

MR. RANKIN: Sure.

TECHNICAL EXAMINER EZEANYIM: Go ahead.

Q. (By Mr. Rankin) Mr. Jones, can you please describe and identify for the examiner what Exhibit Number 1 is?

A. Exhibit Number 1 is an outline of our lease, which is directly in between Concho and Burnett.

Q. And it -- what field is this in?

A. It's the Yeso field.

Q. Okay. It's in the Loco Hills. Is that correct?

A. Yes, it is.

Q. Do you happen to know the section and township and range? Do you happen to know it, by any chance?

A. Yes. It's primarily in Section 15 and 22

and 17 South, 30 East. And there's one 40-acre proration in -- actually, there are three in Section 23.

Q. Okay. Thank you. Are you familiar with the applications filed in this case from Burnett and Hudson and from Concho?

A. Yes, I am.

Q. Do you support the Concho application and the allowables that's requested?

A. Yes, I do. I wish they were higher, though.

Q. Is that the same for the limited GOR?

A. Yes. I support an unlimited GOR.

Q. Can you please briefly state what issue or concerns you have with the application?

A. I have an issue with their well density, and I have an issue with their GOR.

Q. Okay. And we'll get into --

A. And the allowable, which are intermixed.

Q. Okay. In your opinion, the allowable is too low?

A. It's too low, correct.

Q. The same with the GOR?

A. Yes.

Q. And the well density is not adequate to

produce the reserves. Is that your opinion?

A. That is correct.

Q. Can you please, just briefly using this -- referencing this map on Exhibit Number 1, can you please give a history of the Loco Hills area and Premier's involvement and how that placement developed?

A. We purchased this lease in 1989 from Meridian, at that time. At that time we owned the Grayburg San Andres rights.

In the early '90s, Mack and Nick Chase and Johnny Gray were developing the Yeso, and we watched that field as it expanded forward.

Around 1998, they came to us and wanted to make a deal of commingling rights. And we made that deal. We remained operator at that time. ARCO was also in that -- in that deal when they commingled the rights.

In late 1998, we began drilling wells. And in 1999, we began completing wells only in the Paddock. At that time, both of those companies believed -- I'm talking about Chase Oil and Marbob -- that the Paddock was the only productive interval. We began doing that on 20-acre spacing.

We are under a little bit different of an

economic situation than what the two bigger companies here are and what Burnett is. We drill about four or five wells a year on this property. It took probably to about 2005 before we ended the Paddock production. I believe every well was productive except for the most southern well, which is actually an injection well, that we used to dispose of water. It is probably at least a hundred or 150 feet down dip. So obviously, we kind of fell off the shelf at that point. And we further watched development take place.

When Concho -- and I'll thank them for what they did. They purchased Mack Chase in 2006. And in 2007, along our immediate border to the west, they began drilling a combination of Blinebry and Paddock wells.

We watched them go to the west, we watched them go to the north. They had a -- one 40 in the middle of us, which would be in Section 15, and the unit on that would be J.

They had a 40 to the east of us. We watched them do that. We watched them go to the south of us. They went totally around us for about a year and a half. And then at that point we decided to begin developing our own Blinebry and

Paddock rights.

Q. Mr. Jones, can you explain what Exhibit Number 2 is, the contents, and identify that exhibit for the examiner, please?

A. Exhibit 2?

Q. Yes, that's correct. Yes.

A. In -- well, let me continue the story a little bit more.

We began -- we went in and drilled about 13 to 14 Blinebry/Paddock wells. And then last July the Marbob and BP announced their sales. We had pref rights to purchase those interests on this property.

So at that point we needed to develop a reserve report for our existing production and for our remaining PUDs. And William Cobb developed a -- in Dallas -- developed an engineering report for us.

Q. That's -- would be identified as Exhibit Number 2. Is that correct, Mr. Jones?

A. It is.

Q. So you have already explained who created it and why.

Can you lead us through a little bit, please, Mr. Jones, the -- what the report says and...

A. The report goes in, and it looks at the current wells, the first block of wells. On page 1, and the last three wells on page 2, are a list of all the actual producing wells at this time.

The second block is the list of the PUD locations that we have on our -- on our lease, and this was done by a third-party engineer for banking purposes.

Q. There's a total of 20 of those. Is that correct?

A. There are 20 of those, with a --

MR. GRABLE: Mr. Examiners, may I ask the witness a couple of questions on -- does New Mexico say voir dire?

LEGAL EXAMINER BROOKS: Well, I don't know. I always say voir dire.

Okay, you may go ahead. It will count against your time.

MR. GRABLE: I understand that.

VOIR DIRE EXAMINATION

BY MR. GRABLE:

Q. Mr. Jones?

A. Yes, sir.

Q. This Exhibit 2 is not a report you prepared, is it?

A. It is not. It was done by William Cobb and Associates in Dallas, Texas.

Q. And you did not develop and decide the relevance and propriety of the various entries and assumptions embedded in the report, did you?

A. No. I mean we furnished the information, such as the net revenue interests. And you know, the various PDP numbers that you're seeing there are numbers that are -- that are developed by the engineer.

Q. But the engineering work, the price deck, the decline, all of the engineering and financial assumptions embedded in this report were someone else's work?

A. That's correct.

MR. GRABLE: I'll object to this witness testifying to the details of it. I don't mind him saying generally that he got a report and it showed this. But I mean this is pure hearsay, and I can't really cross-examine this witness on whether or not the assumptions and conclusions of this report are appropriate and accurate or not.

MR. CAMPBELL: If I might add to that, Mr. Examiner, Premier entered an appearance and filed a prehearing statement on the 9th of May, just

like any other party. But they did not deliver to us their exhibits on May 11, which was the division's order.

We didn't get exhibits -- we didn't get Exhibits 1 through 5 until last night at 11:00. And they have this morning, or just now, handed us two additional exhibits.

We suggest that at least Exhibits 1 through 5 were untimely, relative to the prior order of the division.

TECHNICAL EXAMINER EZEANYIM: Well --

LEGAL EXAMINER BROOKS: Since he is not an expert -- if he were an expert, of course, he would be allowed to testify from another expert's report, if he had said that he reasonably based his conclusions on that. But since -- and the point was made to the fact that he is a fact witness and not an expert. I think your objection is well-taken.

MR. RANKIN: Mr. Brooks?

LEGAL EXAMINER BROOKS: Mr. Rankin?

MR. RANKIN: I just want to make a point that this is a -- he's the president of the company. This information was used by him to make a business decision. It's used in everyday business as a business decision. It's a -- the fact that he

didn't prepare the report or didn't provide information to lead to the assumptions doesn't change the fact that it was used, as any president of any company would use it, to make an informed business decision. That's the point I want to make.

LEGAL EXAMINER BROOKS: Well, I gather Mr. Grable's objection is not to the fact that he got a report that says such-and-such, but to us considering the report for the truth of the matter stated there.

MR. GRABLE: Exactly. I don't even mind him saying -- I think this is his point -- we think 10-acre drilling is economic. I don't mind him giving his personal view of that.

But to put in an engineering report and all of the implied and embedded assumptions and data in it and just dump it in the record, I just -- I think it's --

LEGAL EXAMINER BROOKS: Well, I'm going to sustain the objection to the report insofar as it's offered for the truth of the matter stated therein.

MR. GRABLE: Thank you, Mr. Brooks.

THE WITNESS: Can I say, Mr. Examiner, that there was an $86 million decision made based upon this report?

TECHNICAL EXAMINER EZEANYIM: We understand that.

FURTHER EXAMINATION

BY MR. RANKIN:

Q. I don't remember where you were on this -- at this point. But we were talking, I believe, about the separation of this report, the PDP reserves?

A. Yes. The report was built to give us a number to make an economic decision on this -- on, obviously, a very large purchase. And it was used, once again, for banking purposes. It was very important.

We've always recognized we have a number of reserves left out there. We have had a lot of success, even more success than what has been described here.

Q. And can you please briefly describe the 20 PUD wells in more detail?

A. The 20 PUD wells was -- the report was based upon 20-acre Blinebry spacing and 10-acre Paddock spacing. And the reason it was done that way was we didn't have numbers to -- to increase Blinebry production and adequately give reserves to those numbers at this point. It's too early in the

game for us to understand where that's at.

What we were doing prior to this with -- with BP, who took over ARCO, and with Marbob, was placing the lease on 10-acre Paddock spacing and 20-acre Blinebry spacing.

Q. So if the Burnett and Hudson application is accepted, or requested for spacing, what happens with these 20 wells?

A. We're going to lose these 20 -- 20 wells.

Q. Mr. Jones, can you please briefly reference Exhibit Number 1? And if you would, can you describe the location of some of those PUD wells?

A. Could I ask a favor and get Exhibit Number 1 so I can --

Q. Oh, yes.

A. This is also -- this is the -- this comes from the report. It was done by the engineer. And what he did was, he took peak month production, and he went in and developed a curve line and matched all our previous wells. And he went in, and he modeled what he felt was going to be the peak production for the new wells coming on. And then from that, he developed an EUR for those existing PUDs.

Q. Can you explain why Premier has been a little slow to produce these wells? You explained earlier how you watched Concho drill all the way around you. Did that raise --

A. It's mainly because of the conservativeness of the way we run the company. We have always operated out of cash flow. We don't go borrow money, until this previous purchase.

Q. Mr. Jones, can you please identify for me what has been marked as this large Exhibit Number 3?

A. Yes.

Q. And discuss the contents, and explain what it is.

A. So the purchase was finally completed in February of this year with the additional interests.

Previous to that, we were drilling about one well per month and developing the Blinebry. So subsequent to that, we -- we shut off -- shut down drilling operation until after the pref rights were completed.

And in March we drilled two wells, two of the new PUD wells that you see listed on here. We drilled the C-23 and we drilled the A-38.

And this exhibit is a direct 10-acre offset to a Concho well that was drilled in 2007.

And you can see from the report, the completion -- you can see the styles of completions. I don't want to get into that. I will let the engineer.

But I want to direct you up here to the top corner. And this is what the EUR talks about in the report for the C-23. It talks about 111,000 barrels of oil. It talks about a peak production rate of 143 barrels.

And what I want to point out to the examiner, Mr. Examiner, is that for the month of April, we averaged 196 barrels for that well. So we far exceeded what was projected from that, which is going to increase our EUR above what is down there.

But when you reflect upon what the common sense tells you here, you've got a well that was drilled by Concho four years prior to us. And yet it's exceeding what the third-party reservoir engineer has stated the well will do.

And I would add that if I produce this well differently -- it's on a beam pump now. If I was to run a REDA in this -- I know where the fluid level is. It's like at about a thousand feet at this moment -- that this well would greatly exceed what we're even talking about in production, probably by two times the factor.

What typically happens when we -- when we drill these wells, our frac system is about 18,000 barrels net. And we put them on beam pump, and it takes a long time to remove that fluid off of the well. You're only looking at moving about 400 to 450 barrels of fluid a day, so you can imagine the length of time that it takes to get that off.

When we originally drilled our Paddock wells out there we went in with REDA pumps and basically dewatered the reservoir and put them on production that way. And that's -- I'm talking about the 1999 to 2005 wells.

Now, I am talking about the way the wells work. And with the Blinebry, we actually just go in with the beam pump. In this case we could have used the REDA and far exceeded where our allowables are at this point. We're exceeding allowable now on this lease with one location still to drill.

Q. Mr. Jones, as president of Premier, you make business decisions. Can you explain what you conclude and how you use this information, as an example, to make your decisions and how Premier operates and attempts to operate, its concern for drainage and so forth?

A. Well, our -- we don't -- we don't believe

there has been any drainage. We don't believe there's an issue with drainage.

For instance, we just had a meeting two weeks ago, and we basically were looking at what -- what wells are we going to drill for next year. I've already got four APDs out right now that are ready to drill, so we're planning for our five or six next year. And I can, for instance, point to what would be the northwest quarter of the -- of the southwest quarter in Section 15. Two of our best locations, by the -- by the PUD report, they are predicted to be 155- to 160,000-barrel locations, and we're not even planning on drilling those, even though at this point Concho has outlined completely around me on 10-acre spacing. We just don't feel like drainage is an issue at all.

Q. I think -- did you already mention what lag time was between these wells?

A. Between which two?

Q. Between these wells on this cross-section.

A. Yes, I did. I mean they -- they were developed four years prior to -- to our drilling this well.

Q. Thank you. Mr. Jones, let's move on to Exhibit Number 4. This is on a different issue

here.

Can you just briefly state what this spreadsheet represents?

A. This spreadsheet?

Q. Yes, this one.

A. This may be a little bit awkward, because I was going to -- we were going to be a rebuttal to Burnett. But we'll delve into this.

One of Burnett's exhibits that is coming up is a nine-well comparison between nine wells that Burnett has and nine wells that Concho has that are offset. There's a density issue. The nine wells that Concho has are based on the 10-acre spacing. The nine wells it looks like that Burnett is dealing with, is on a much higher-spacing level.

We just so happened to change our frac techniques after five or six of the Blinebry wells, and we went to the high rate/high volume sand fracs, similar to what Concho does. And we just so happen to have only nine wells that have got that sort of treatment with six months of production.

And what you're going to see is, we are developing on the same spacing as what Concho is doing, but we're getting great results behind what we're doing.

Q. Mr. Jones, can you identify -- I don't know if it would be helpful or not -- but identify Exhibit Number 5.

A. Yeah. Exhibit Number 5 is -- the wells outlined in red are those nine wells that we have done the high rate/high volume sand fracs.

So I think you can see they're not just specifically in one area. There's like three or four to the north. There is a couple in the center of 15 to the west side, and then we have some to the south, also.

Q. Mr. Jones, on Exhibit Number 7, this may help as well. Can you explain what this exhibit shows?

A. Exhibit Number 7 is what is another hybrid of what we believe Burnett is going to be showing you. And it shows the difference in slickwater frac volumes. It shows you that sand volumes are roughly the same for all three companies, but the Burnett slickwaters are about four and a half times greater in terms of actual volumes than what Concho and Premier are doing at this time.

Q. Can you explain a little bit about what that comparison tells you?

A. Well, it, A, relates -- what we're looking

at, between Concho and Premier as being very similar, even though we don't -- certainly never shared information. But that's how we view the reservoir in terms of development.

Q. Mr. Jones, moving on to Exhibit Number 6, can you explain and identify this exhibit, please, for the examiner?

A. This is -- this is, once again, another hybrid of one of Burnett's exhibits that you are about to see. And in this, you should see actual oil production per month, and you're going to see the GORs.

And if you look -- I'm sorry we don't have this on computer for you, or I could outline it. But if you look towards the bottom, you will notice that Premier and Burnett have very similar characteristics on their GORs, and you will notice that Concho is a little bit higher on their GORs.

So our density is the same, our fracs are the same as Concho's, but yet our performance is actually better than what Burnett's is.

Q. Thank you, Mr. Jones.

Just to reiterate, would you mind concluding what your -- what the effect would be on your production and operation if we were to accept

the application request of Burnett and Hudson?

A. Sure. Let me go in real quick on the A-38, just to describe to you, which is the second new well that we've drilled. It would be located roughly 2310 from the east line and 990 from the south line, in Section 15.

That well was drilled on a 10-acre Paddock spacing. The three Premier wells have EURs of roughly 150,000 barrels out of the Paddock.

Concho had a -- has a well directly north of us that's a Paddock well. It has an EUR -- I'm not sure what it is, but it has produced about 80,000 barrels. It's actually been refracked. It was a Mack-produced well. They went in with the hot acid. Concho went in and refracked the well. We were actually unorthodox to the Concho site. We drilled that well. Our completion takes about two days. We do the two lower frac zones putting composite plugs over them as we go.

The second day we do the last two zones, putting a composite plug over the third zone, but the Paddock zone is open. And when we -- we got there the next morning to drill that well, drill the plugs out of the well and start cleaning it out to put it on the beam pump, we had 550-pounds of gas

and oil pressure on that well. And here it is in the middle of 10-acre spacing around terrific wells that have been there forever. Those are reserves that never would have been captured by those other wells.

Q. Thank you, Mr. Jones.

A. So in conclusion, where -- where you were leading me, the -- we need to be -- we need the commission to allow us to be able to drill and complete our wells as we have been doing, and -- and let us capture those reserves as they are. We paid huge, huge sums of money for those rights.

Q. So, Mr. Jones, in your opinion as an operator, what well density is necessary to efficiently develop reserves, to prevent waste, protect correlative rights, and would be in the interest of conservation?

A. At least 10-acre spacing.

Q. And in your opinion, in that 10-acre spacing are you producing incremental reserves or are you accelerating them, I mean if it were to go to this -- this --

A. In the report there were areas where there were boundaries that were set up. But in order to develop the Blinebry, and in order to add the

Paddock reserves to it, that makes the well economical for us. To eliminate one or the other is not going to make it economical. It's going to hinder -- it's going to hinder our drilling activity, which is slower than anybody else's in this room at this point.

Q. Thank you, Mr. Jones.

Do you have anything else you want to add?

A. Just briefly. There was a discussion by Apache's head that -- about scale. I mean we've had this issue. We've had to clean out, and it's not just -- we end up with calcium sulfate, which means we have to run converters and other -- other issues into this. So if we leave high fluid levels in the wells we are going to have operational issues. We will continue to have those. And it is -- it is a detriment, it is a hindrance to -- to the overall production of the interval.

MR. RANKIN: Thank you, Mr. Jones.

Pass the witness.

TECHNICAL EXAMINER EZEANYIM: All right. Before --

MR. RANKIN: Mr. Examiner, I'm sorry. I'd move to admit Exhibits 1 through 7, please.

TECHNICAL EXAMINER EZEANYIM: Yeah, and

there's one that was contested. Which one was that?

MR. GRABLE: Exhibit 2.

TECHNICAL EXAMINER EZEANYIM: Exhibit 2?

MR. GRABLE: Exhibit 2 was the one that I objected to, and I believe Mr. Brooks --

TECHNICAL EXAMINER EZEANYIM: Right.

LEGAL EXAMINER BROOKS: It's not admitted for the truth of the matter of the opinions contained therein.

MR. GRABLE: I would also add that same objection to the -- what I understand to be PUD EUR values in red on Exhibit 1, because I believe they come directly from Exhibit 2.

THE WITNESS: Those are not EURs. They are -- those are the peak oil per day for the first month.

MR. GRABLE: Okay. I misunderstood your counsel's questioning, then.

TECHNICAL EXAMINER EZEANYIM: Okay. Your only objection is Number 2, right?

MR. GRABLE: My only objection is Number 2.

TECHNICAL EXAMINER EZEANYIM: At this point, Exhibits 1, 3, 4, through 7 will be admitted.

LEGAL EXAMINER BROOKS: Okay. The witness

was passed at 4:54.

TECHNICAL EXAMINER EZEANYIM: Mr. Grable?

MR. GRABLE: Yes, Mr. Examiner. I was just looking at my notes. I don't think we'll be long with this witness.

EXAMINATION

BY MR. GRABLE:

Q. Mr. Jones, are you aware that operators can seek and obtain the density exception in New Mexico?

A. I am aware of the state rule of four wells per 40.

Q. Right. But you have testified that if the rule were changed to a special rule of 20-acre density --

A. Yes, I am, to answer your question.

Q. -- it would deny you your rights to drill certain wells.

Are you aware that the state, the division, can grant exceptions to grant an unorthodox location or exception location, or whatever you want to call it, to prevent waste, to protect drilling rights?

A. Yes, I am.

Q. And if you had situations like you have

testified to, where you suspect reserves that are not being captured by existing wells, you could apply for an exception location if the rules were 20 acres?

A. Yes, I'm aware of that.

Q. Okay. Now, are you -- is your testimony that your firm drills all of its new wells as both Paddock and Blinebry commingled completions?

A. Yes, that's true.

Q. Are you aware, on the wells in your nine-well comparison --

A. Uh-huh.

Q. -- whether all of those wells were -- well, let's just talk about -- where are the Premier wells completed in the --

A. All of them are Blinebry/Paddock-completed wells.

Q. And how many Premier wells are in here?

A. In the nine wells? Just nine.

Q. Oh, okay.

A. I'm sorry. It's a nine versus nine versus nine. We just happen to have nine that fit the criteria of what your exhibit was going to be.

Q. I see. You added nine Premier wells to the nine Burnett wells and the nine Concho wells on

the exhibit that is --

A. Let -- yeah. Let me -- there are -- we have other Blinebry/Paddock wells. But in order to get a comparison of the frac volumes and the frac rates, we only had nine that fit that criteria. Because the first eight were done on -- with hot acid.

Q. The first eight of your company's wells?

A. Yes. So that's not really a true, fair comparison. I mean, obviously, we've seen substantial increases in what we're doing with the new frac techniques. I'm hard to move sometimes.

Q. So do you know where the nine Burnett wells are completed, whether they're Paddock/Blinebry combinations?

A. They are -- the ones that I looked at, they were Blinebry, and there was some Blinebry/Paddock.

Q. So some were not Blinebry/Paddock?

A. I remember one that wasn't a Blinebry/Paddock.

Q. Now, I believe you also testified on the large cross-section comparative exhibit that your frac profiles in volumes of fluid and pounds of sand were comparable to Concho. Did I hear you right?

A. No. We did one more frac in this, obviously, from the -- from the --

Q. Yeah. It appears that you used substantially larger volumes of fluid and sand than Concho's does.

A. Right. But my point of this was they didn't drain us.

Q. Okay.

A. I mean the overall perception.

Q. If you testified that your company's frac techniques are comparable to Concho, would you misspeak or did I misunderstand you?

A. No. This -- this -- this exhibit -- you're confusing that exhibit with what the nine-by-nine comparison is.

Q. Yes, sir.

A. So the purpose of this was, we were looking at a well that was drilled four years prior us to even doing anything, and it outperformed what the third-party reservoir engineer had assigned to that. It's going to outperform it.

Q. Okay. And I am a little confused on that, too. If I look -- the existing Concho well would be in the southwest of the southwest of the southwest of 14?

A. Yes. It would be 330 off the lines, both in the south and from the west line.
Q. Of the far southwest corner of Section 14?
A. Right. And this -- there is a little map drawn off to the side.
Q. Right. But if you look on your Exhibit 1, there appears to be no such well on your Exhibit 1.
A. That's -- that's just that the engineer didn't pick it up on his report. It exists.
Q. So you're saying Exhibit 1 is wrong. It just omits a well?
A. I'm saying it is correct as to the Premier acreage. Outside of those boundary lines there's more wells now than what there were. And why he didn't pick it up, I don't know. But that comes from his report strictly. So...
Q. Okay. Do you know how that Concho well over there on the far southwest corner of 14 was completed, if fracture stimulation, if any, was given?
A. Yeah. It's outlined, right.
Q. Oh, that's what you're showing on there?
A. Yes, sir.
Q. Okay.
A. We have a projected EUR on the decline of

about 65,000 barrels.

Q. All right. Do you think if that well had -- that Concho well had been completed with a frac job like Premier or Burnett uses that you may have seen some drainage over on your lease? Do you have any view of that? Have you even --

A. I think that the zone that they left out looks awfully tight on the logs, so they probably didn't want to leave it out.

They are very aggressive. They go after everything they can. I mean, obviously, the upper -- the upper Paddock got completed, we ended up putting three fracs in the Blinebry. If you will notice, our frac -- well, no, that's not true, too.

Our -- what would be their missing zone, which we overlap with on their second zone a little bit, we put a fairly substantial frac in it.

Would it have made up the difference of 50,000 barrels? I doubt that.

Q. I'm a little confused to what the well spots -- were the well spots on your Exhibit 1 supposed to be actual existing completed wells?

A. The well spots on Exhibit 1 are where the PUD locations are. There's oftentimes an existing Grayburg San Andres well in the area and we have to

move the well, like, 50 feet one direction or the other because of the existence of that previous well.

So the well spots relate to where the PUD locations are. Does the well actually -- was the C-23 actually drilled right there? No, it was moved over about, I believe, 50 feet.

Q. Well, what average density have you developed the Premier acreage to this day, as shown, in the Yeso?

A. Okay. Back in the history of it, in 1999 through 2005, we developed Paddock only, so we drilled only 5,000-foot wells on 20-acre spacing.

Subsequently, since then, everything that we've drilled has been Paddock/Blinebry combinations.

Q. But I am asking you: To what density have you developed this lease in the Yeso without regard to whether it's Blinebry, Paddock, or a combination? How many wells have you got on how many acres?

A. Well, we've got 20 more -- 20 more locations to drill like we want to. And I guess if you wanted to average, we would be averaging about three wells currently per 40, because we have some 40s that have got full development. We have other

40s that do not have full development, that have no development on them.

For instance, in my testimony a minute ago I was discussing the fact that the one 40, which is one of the best ones that the reservoir engineer picks out, we're not even planning on drilling it. But we have two PUD locations on that.

MR. GRABLE: Okay. Pass the witness.

LEGAL EXAMINER BROOKS: Passed the witness at 5:05.

TECHNICAL EXAMINER EZEANYIM: More questions?

MR. RANKIN: Just one more.

TECHNICAL EXAMINER EZEANYIM: Sure.

FURTHER EXAMINATION

BY MR. RANKIN:

Q. Mr. Jones, are you aware that under existing rules an operator is not required to drill more -- to drill up to four wells per 40?

A. Yes, I am.

MR. RANKIN: I got it out finally.

Thank you.

TECHNICAL EXAMINER EZEANYIM: What was your question?

MR. RANKIN: My question was if he was

aware that an operator is not required to drill four wells per 40.

TECHNICAL EXAMINER EZEANYIM: Not required?

MR. RANKIN: Not required.

THE WITNESS: Not required.

TECHNICAL EXAMINER EZEANYIM: But you can if you want to.

MR. RANKIN: Exactly. Absolutely.

TECHNICAL EXAMINER EZEANYIM: I don't have to examine a fact witness, because I don't know what questions to ask. But I have to ask you --

THE WITNESS: I can answer anything. I have been out there forever. So...

TECHNICAL EXAMINER EZEANYIM: So I'm going to ask you something. Right before, you stated that you wished that you could get -- we are talking about 300 barrels a day per unit. But you said, "We wish we could get more."

Why do you wish that? If you wish that, you have the right to go in to ask for more. I mean there is nothing that says you can't come here and ask for one thousand or one million, whatever you want.

THE WITNESS: To be honest with you,

Mr. Examiner, I have not even studied the numbers. I don't even know exactly where our overproduction is at this point.

For -- I mean common sense says that this is -- I mean this is -- this is a massive reservoir. It's -- it's -- on our lease, it's 14-, 1,500 feet. And you know, nobody has ever brought a case up to the OCD saying, "You guys are overproducing." I mean nobody has ever done it after 12 years, and we have been out there forever, so we have been doing it.

For instance, there is a well that offsets us to the west that is best -- to the best of my knowledge, and I have studied this fairly intensely -- the highest producing vertical well ever. I mean it's directly off of our lease.

In March -- Marbob put that well on late February of 2008. I think it made -- in ten days it made 2,500 barrels, but in March it made over 15,000 barrels, and it was sitting on my edge. They started to shut the well down in April. It only made about 5,000 barrels in April.

They were scared -- they were actually worried about their allowables. They -- they didn't come to me. I mean we were partners, obviously, off

to the side. But they -- I mean it was a very large producer. They shut it in through the whole summer. It had, like, 600 pounds of pressure on it. I mean it was literally -- it would just flow oil straight up the casing. It wasn't even pumping when it was producing.

TECHNICAL EXAMINER EZEANYIM: Do you mind telling me the operator?

THE WITNESS: I'm sorry?

TECHNICAL EXAMINER EZEANYIM: Who is the operator?

THE WITNESS: It was Marbob.

TECHNICAL EXAMINER EZEANYIM: Oh, okay.

THE WITNESS: Marbob was at that time. It's an Apache well now.

TECHNICAL EXAMINER EZEANYIM: Oh, okay.

THE WITNESS: I mean it -- but the crazy thing is, is when they -- so there was a question a moment ago about, well, is anybody ever limited? Well, yeah, this is actually a case of somebody limiting -- limiting their production. And that limitation resulted in the fact that that well didn't come back the way it did before. It was producing before. It's like it lost its momentum.

TECHNICAL EXAMINER EZEANYIM: It was shut?

THE WITNESS: They shut it, like, four or five months. They would produce, like, maybe a hundred barrels through May, June, July, August, and I think they may have turned it back on in September. It was in the fall of that year.

But to continue the story, we offset it to the southwest, which is a little bit down dip, in December of that year. And the second day that we had the well on beam pump our well began flowing at 550 pounds of pressure. It was flowing 100 percent oil up the casing, you know.

I'm -- I knew about the -- I knew -- I was, like, this is -- this is crazy. So we -- we actually put a choke. We put chokes on all our wells, so there is a limitation on how we produce them initially. But we actually put an active and adjustable choke on it, and we punched it back to 8 or 9/64s, and we only allowed it to produce at 130, 150 barrels a day.

What I perceived was, when we began to open up the choke, we had lost our momentum, also.

Now, I'm not here to -- to recognize or be a reservoir engineer. But this is -- this is -- these are cases that disturb me, as an operator, of slowing it down.

We have limitations in our production where we have -- our flow lines are -- are rated to, like, 300 pounds. So once I know these wells begin kicking off, they will start flowing up the casing at over 300 pounds of pressure.

We actually have a Mercoid switch that kicks the jack off when that happens, so that the well won't continue to build too much pressure and blow our flow line and we have a huge mess on BLM land. And we have -- we have -- we have limitations built in there on this lease when we do it.

In viewing all the leases out there, you know, I'm not bragging, but we -- we fortunately, somehow, bought into the best -- probably the best set of leases in the whole field. It's either the first or the second, depending on whether you want to argue Mar- -- what used to be Marbob's Barnsdale leases back over in 17/29. It's a great lease. So there is limitations there on how we do it.

The efficiency of how we frac and we complete our wells is important to us, because just even getting -- as a small operator, just even getting frac tanks, getting set up with Halliburton, because you are getting run over by the bigger companies. They're going to service the big

companies first.

To even get the amount of equipment that we need out there just to do our work, we have to get it done in a couple of days. We can't go in and do frac one and frac two and then turn the well on and then come back and do frac three and frac four. I mean there's just not -- we get run over at that point.

Plus the costs of that are -- are enormous. You know, we are talking about 40-something frac tanks when we do these.

TECHNICAL EXAMINER EZEANYIM: At the time that well was producing, did you -- were you concerned, then, that they may drain you, because you're on offset? Were you concerned about that well producing?

THE WITNESS: No, sir.

TECHNICAL EXAMINER EZEANYIM: You weren't?

THE WITNESS: No, sir.

TECHNICAL EXAMINER EZEANYIM: Why not? Because if I listen to you, I'd be producing -- do you have any way to --

THE WITNESS: I don't know. Call it a magic barrier there. It's -- we haven't seen any -- any drainage from anybody. We're still not scared

of -- of -- when you look at the map and you've got 10-acre Concho spacing all the way around our north lease, and we have great -- some of our best locations are through the south half of Section 15.

TECHNICAL EXAMINER EZEANYIM: Okay. That's good.

Well, anyway, there is some testimony you said, that if Burnett/Hudson's application were to be granted, you're going to lose 20 wells. Can you explain that to me?

You said it. I wrote it down, because I didn't want to interrupt. What do you mean that you are going to lose 20 wells?

THE WITNESS: Well, we have -- we have 20 more locations to drill on what our reserve report -- on our reserve report. And understand, this is -- this is -- this is our breadline to the bank. When we went to the bank we had to have something to say, "Hey, we're -- you guys are crazy. We're not going to loan you that much money."

It's -- it's -- we already have two wells per 40 drilled with Paddock -- with the Paddock wells. Their initial application was for just two wells per -- per 40 on that.

They have adjusted that at this point, but

it's still a penalty. The funny thing was is they dropped their allowable down once they made their change, and I'm real interested to hear that part of the story.

But they jumped -- they dropped their allowable down from 240 to 187 after they made this adjustment for the -- for what they called the well density now, which is, "Okay. Well, we're going to let you have two Paddock wells but only two Blinebry wells, and you can't have two of the Paddock wells."

Well, that would be absolutely loss of common sense, just because of what I described on that A-38, where I've got three great Paddock wells that are around that. You would have thought that they would have drained that location.

We were unorthodox to a well that Concho had that they had already fracked twice in the Paddock. And when we -- when we come up the next morning, I mean we're drilling those plugs out, and we're having to carry oil off because it's flowing -- or we're circulating oil because we have to foam this stuff out. But I mean there's 550 pounds of pressure on it the next morning. That's a clear example of not being drained.

TECHNICAL EXAMINER EZEANYIM: What do you

think about the gas/oil ratio in this pool?

THE WITNESS: I didn't-- honestly, I didn't look at it until -- until I saw this. I was worried, you know, what -- what our GOR is.

We have wells now that they slowly begin to climb to a 4,000 to 1 GOR over time. A lot of our production runs in that 4,000 to 1, even the older stuff. So 2,000 to 1, we're going to be hindered again on our production. And it opens up into the whole scale issue. It opens up into a lot of other issues.

I mean it's -- for instance, our scale issue came on a couple of our older wells, and it came -- it came as a result of an issue that we had with the pipeline company out there.

Frontier, who is the gas purchaser, all through last summer and all through the fall had extraordinarily high line pressure, so high that we couldn't even -- we couldn't even get into the -- to the pipeline. We were venting our gas, because the production equipment is essentially at 60 to 70 pounds, and that's all it's rated to.

So when their line pressure jumps up to 70, 75, 80 pounds, and sometimes even up to 100, I have no -- if I produce the well I'm venting the

gas. So I mean, I -- I had -- at one point in August I had 80 percent of my production shut in because -- because of the line pressure.

But now that that has been resolved, you know -- and so what that did is that created high -- high fluid levels within our wells, and it created some scale problems on a couple of them.

We try -- we tried to pump chemical with our fracs, because there is an issue with the -- with the Blinebry water and the Paddock water. So when we do these, we put special chemicals in to prevent that calcium sulfate from forming.

TECHNICAL EXAMINER EZEANYIM: All right. Did you prepare Exhibit Number 6?

THE WITNESS: Yeah. Yeah. I mean Dan, my brother, did. He is an engineer.

TECHNICAL EXAMINER EZEANYIM: Okay. But you are aware of the numbers there. Can I ask you a question about it?

THE WITNESS: Oh, sure.

TECHNICAL EXAMINER EZEANYIM: Yeah. If you look at the gas/oil ratio, or all the gas/oil ratios, why is COG's gas/oil ratio higher than Burnett and Premier? Why is it higher? You guys are producing from the same pool.

THE WITNESS: I don't know if this is cherrypicked. I mean I've seen enough issue out of Concho at that point that this may just be something that's -- that is cherrypicked by Burnett. I don't -- I'm not qualified enough to answer that.

TECHNICAL EXAMINER EZEANYIM: But the --

THE WITNESS: The reservoir is not the same. It's not even the same on our lease. I could get into a real long description of what it is.

TECHNICAL EXAMINER EZEANYIM: I understand.

THE WITNESS: But I mean it's not even -- there's a fairway, there's tighter rock, and then there gets to be really tight rock to the north.

And where these wells are, I don't know. What we were -- what we were looking at strictly was, what's that GOR looking? Are we -- are we out of line? Is our density and our frac going to be the same?

I think that Burnett -- I'll compliment them on the slickwater thing. They may be on to something. I mean slickwater -- you know, somebody asked -- well, somebody made a comment a minute ago about gels not extending out as far. I would probably call gels being cumbersome, in terms of

when they're fracking through the formation versus the slickwater, and it's been proven in the shales and in a number of places. I mean you know the whole story.

And like the Barnett is -- somebody forgot to bring the chemicals out to gel the -- to gel before a Barnett shale frac. The operator was under time constraints, and he fracked it with slickwater and got a better performance. So he's maybe getting more complex fractures. That is beyond me at this point.

TECHNICAL EXAMINER EZEANYIM: Okay.

Anything further from this witness?

MR. GRABLE: I did have one other question in some of that.

FURTHER EXAMINATION

BY MR. GRABLE:

Q. Sir, does your company run a suite of open-hole logs on all your wells?

A. Yes, we do. Well, we -- we did except for the A-38. We had an issue with -- we do our casing program a little differently than Burnett. We run an intermediate string over the salt section for protection, and we weren't able to do it in that well, and there's some shales in the salt that

prohibit us from doing it. So we actually had to run a cased-hole log in it which is, in our -- in our view, disappointing.

Q. Do you do log analysis and design your perforations based upon what the logs tell you?

A. Now, for instance, the --

Q. I'm sorry?

A. The last two wells, for instance, were completed by Marbob's ex-engineer, Brian Collins, who actually has an interest in the stuff now in our -- in our leases.

Q. But did you say you do design selective perforations based upon log analysis?

A. Yes.

MR. GRABLE: Thank you.

TECHNICAL EXAMINER EZEANYIM: Are you done?

MR. GRABLE: I'm done.

TECHNICAL EXAMINER EZEANYIM: Do you have any other witness?

MR. RANKIN: No, Mr. Examiner, we are through.

TECHNICAL EXAMINER EZEANYIM: You are through?

At this point, we are going to take five

before we call -- how many witnesses do you have?

MR. CAMPBELL: We have three, Mr. Examiner.

TECHNICAL EXAMINER EZEANYIM: Okay. Is he here?

MR. CAMPBELL: We will hear Mr. Haiduk, our first witness, a geologist. Can we have two minutes to make sure our slides are set up?

TECHNICAL EXAMINER EZEANYIM: Okay. Let's take five.

(A recess was taken from 5:22 p.m. to 5:33 p.m.)

TECHNICAL EXAMINER EZEANYIM: The counsel have suggested that we call it a day today, since we're making good progress. I really appreciate that. I thank you all for cooperating and being civil to each other. We did a good job today.

So what we have, the other side, I think we can get it tomorrow. So the suggestion was to call it a day today and start tomorrow morning by 8:30.

What time do you guys want to start tomorrow?

MR. GRABLE: 8:30 is fine.

TECHNICAL EXAMINER EZEANYIM: 8:30? I

think we can get it tomorrow, because I don't want you to go too --

MR. GRABLE: We have only three witnesses, and we did seven today.

TECHNICAL EXAMINER EZEANYIM: Yeah. So why don't we end the hearing now and then start again by 8:30 tomorrow morning?

(Evening recess.)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 14613 5/6/11 heard by me on 5/5/11

Examiner

Oil Conservation Div.

CERTIFICATE

I, Paul Baca, RPR, CCR in and for the State of New Mexico, do hereby certify that the above and foregoing contains a true and correct record, produced to the best of my ability via machine shorthand and computer-aided transcription, of the proceedings had in this matter.

PAUL BACA, RPR, CCR
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