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

APPLICATION OF MARBOB ENERGY CORPORATION CORPORATION FOR SPECIAL RULES, EDDY COUNTY, NEW MEXICO

CASE NOS. 14419, 14420

TRANSCRIPT OF PROCEEDINGS
Examiner Hearing
February 4, 2010
10:43 a.m.
1220 South St. Francis Drive, Room 102
Santa Fe, New Mexico 87504

BEFORE: RICHARD EZEANYIM, HEARING EXAMINER
DAVID K. BROOKS, LEGAL ADVISOR

REPORTED BY: CONNIE JURADO, RPR, NM CCR #254
Paul Baca Professional Court Reporters
500 Fourth Street NW, Suite 105
Albuquerque, New Mexico 87102

A P P E A R A N C E S

For the Applicant and Chesapeake Energy Corporation:

HOLLAND & HART, LLP
Attorneys at Law
Post Office Box 2208
Santa Fe, New Mexico 87501
BY: OCEAN MUNDS-DRY

For OXY USA, Incorporated and OXY USA WTP Limited Partnership:

MONTGOMERY & ANDREWS LAW FIRM
Attorneys at Law
325 Paseo de Peralta
Santa Fe, New Mexico 87501
BY: J. SCOTT HALL

For Mewbourne Oil Company and XTO Energy Incorporated:

JAMES BRUCE
Attorney at Law
Post Office Box 1056
Santa Fe, New Mexico 87504

I N D E X

MR. EZEANYIM: At this point on page 2 still, I call Case Number 14419, and this is the Application of Marbob Energy Corporation for special rules, Eddy County, New Mexico. Call for appearances.

MS. MUNDS-DRY: Good morning, Mr. Examiner. Ocean Munds-Dry with the law firm of Holland & Hart representing Marbob Energy Corporation this morning, and I am also entering my appearance for Chesapeake Energy Corporation as well.

MR. EZEANYIM: Any witnesses?

MS. MUNDS-DRY: I have three witnesses.

MR. EZEANYIM: You have three witnesses. On behalf of who?

MS. MUNDS-DRY: On behalf of Marbob.

MR. EZEANYIM: Okay. Because you're appearing twice so I don't know. I want to make sure which one --

MS. MUNDS-DRY: No witnesses for Chesapeake Energy --

MR. EZEANYIM: Okay. So the record will reflect that. Any other appearances?

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe entering an appearance or appearances for

Mewbourne Oil Company and for XTO Energy, Inc. I do not have any witnesses.

MR. EZEANYIM: Okay.

MR. HALL: Mr. Examiner, Scott Hall. I'm from Montgomery & Andrews Law Firm. I'm appearing on behalf OXY USA, Incorporated. No witnesses.

MS. MUNDS-DRY: Mr. Examiner, we would move to consolidate Case Number 14419 and case 14420. It is the same witnesses and the same evidence.

MR. EZEANYIM: Okay. If there are no objections, those two cases, Case Number 14419 and 14420, will be consolidated for purposes of testimony.

MS. MUNDS-DRY: And I would like to call my first witness.

MR. EZEANYIM: First of all, all the witnesses have to stand and be sworn. State your name first. Stand up, state your name and be sworn.

(Note: The witnesses were duly sworn.)

MR. EZEANYIM: Call your first witness.

MS. MUNDS-DRY: I would like to call Ross Duncan.

ROSS DUNCAN

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

EXAMINATION

BY MS. MUNDS-DRY:

Q Good morning. Would you state your name for the record, please?

A Ross Duncan, Marbob Energy Corporation, petroleum landman, and I reside in Artesia, New Mexico.

MS. MUNDS-DRY: Mr. Duncan has obviously done this before since he summed that up for us.

Q (By Ms. Munds-Dry) Mr. Duncan, are you familiar with the application filed by Marbob in this case?

A Yes.

Q And have you previously testified before the division, and were your credentials made a matter of record?

A Yes.

Q Are you familiar with the status of the land in the subject portions of the East Pierce Crossing Bone Spring Pool and the Southeast Willow Lake Bone Spring Pool?

A Yes.

MS. MUNDS-DRY: Mr. Examiner, we tender Mr. Duncan as an expert in petroleum land matters.

MR. EZEANYIM: Mr. Duncan is so qualified.

Q (By Ms. Munds-Dry) Mr. Duncan, would you briefly summarize what Marbob seeks in both Case 14419 and Case 14420?

A Sure. Marbob seeks to -- seeks an order establishing special rules to increase the GOR for the Southeast Willow Lake Bone Spring Pool and the East Pierce Crossing Bone Spring Pool.

Q And what increase does Marbob seek?

A We're seeking the increase from 2,000 to 1 to 5,000 to 1.

Q Mr. Duncan, are you generally familiar with the applicable rules for both pools in terms of spacing and acreage dedication?

A Yes, I am.

Q What is the spacing in both of these pools?

A 40-acre.

Q And what is the current GOR in depth brackets allowable for each pool?

A For the East Pierce Crossing Bone Spring Pool, the GOR is 2,000 to 1 with a depth bracket allowable of 187 barrels of oil a day. For the Southeast Willow Lake, the GOR is 2,000 to 1 with a depth bracket allowable of 230 barrels a day.

Q Mr. Duncan, would you please turn to what has been marked as Exhibit Number 1 and review this plat for the examiner?

A Exhibit Number 1 outlines the pool boundary and the location of Marbob's wells within each pool.

Q So the orange color on here, does that represent the East Pierce Crossing Bone Spring Pool?

A Yes, it does.

Q And what does the blue on here indicate?

A The blue is the Southeast Willow Lake Bone Spring Pool. The yellow Section 7 of 25, 29 shows the spacing unit for Marbob Energy Corporation's Showstopper 7 Federal Com Number 1H, and over in 25, 30 starting on Section 8 in the northeast of the northwest quarter going over into the northwest of the northeast quarter of Section 7, we've got our Gravy State Com Number 1H Unit.

Q And I believe we've also shown on here, just to show proximity, the Willow Lake Bone Spring

and the Pierce Crossing Bone Spring; is that correct?

A Yes.

MR. EZEANYIM: Yeah, before you continue, let's get the delineation. Okay. Now, how -- on Exhibit Number 1, Case Number 14419, is that the -- is that blue down here? Is that the blue shaded area down here? On Case Number 14419?

THE WITNESS: Yes, it is the Southeast Willow Lake Bone Spring.

MR. EZEANYIM: Does it include Section 10? I thought it included Section 10 in your application. Here I see 8, 9 -- I have 8, 9 and then 16 and 21, but when I read your application it included 8, 9, 10, 16, 21. Is that what you're asking, or is this what you're asking? Because it's different from what I have. I can read your application.

MS. MUNDS-DRY: We will have to look and make sure that that is correct here. Let's see.

THE WITNESS: 8, 9, 16, and 21 on the application is what I have.

MS. MUNDS-DRY: We failed to color that in, Mr. Examiner.

MR. EZEANYIM: What did you say?

MS. MUNDS-DRY: We may not have

colored the right boundaries in.

MR. EZEANYIM: Yeah, let me see if I -- I'm just reading from your application.

THE WITNESS: Yes.

MS. MUNDS-DRY: I'm sure the application is correct, Mr. Examiner. I am sure the exhibit is incorrect.

MR. EZEANYIM: Yeah, okay. Go ahead. It doesn't really matter, but I just wanted to see. The green by the right of that yellow, what is that? Are you asking for something on that one?

THE WITNESS: No. That is just showing you the relation of the Pierce Crossing Bone Spring Pool to the East Pierce Crossing Bone Spring Pool. It is just -- we're not asking for anything.

MR. EZEANYIM: Okay. Very good. Continue.

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

Q (By Ms. Munds-Dry) Now, Marbob plans to call a geologist and an engineer to discuss the specific status of each of the wells and the pools; is that correct?

A That's correct.

Q And if you would turn to what has been

marked as Marbob Exhibit Number 2. Is this the affidavit showing proper notice was given of this application in accordance with the division rules, along with the notice list, the letter to interest owners, and the affidavit of publication along with the green cards?

A Yes, it is.

Q This is for both Case 14419 and Case 14420?

A Yes.

Q And who did Marbob notice of this application?

A We notified all the operators within the pool and every operator within one mile of each pool.

Q And Mr. Duncan, are you aware of any objections to this application, both the applications?

A No.

Q Were Marbob's Exhibits 1 through 2 either prepared by you or prepared under your direct supervision?

A Yes, they were.

MS. MUNDS-DRY: That concludes my examination of Mr. Duncan.

MR. EZEANYIM: Okay. Thank you.

Any -- want to cross-examine?

MR. BRUCE: No, sir.

MR. EZEANYIM: Hall?

MR. HALL: No questions for Mr. Duncan. Before I forget, let me enter an appearance for OXY USA WTP Limited Partnership at this point.

MR. EZEANYIM: Oh, you want to enter an appearance for OXY?

MR. HALL: It's an additional OXY.

MR. EZEANYIM: Okay. Do you have any questions for the witness?

MR. HALL: No, sir.

MR. BROOKS: No questions.

MR. EZEANYIM: Thank you. You may be excused.

MS. MUNDS-DRY: Mr. Ezeanyim, I move the admission of Marbob Exhibits 1 and 2 into evidence.

MR. EZEANYIM: Exhibits 1 and 2 will be admitted into evidence.

(Exhibits 1 and 2 admitted.)

MS. MUNDS-DRY: And with that, I call my next witness.

BRENT MAY

After having been first duly sworn under oath,

was questioned and testified as follows:

EXAMINATION

BY MS. MUNDS-DRY:

Q Mr. May, would you please state your full name for the record?

A Brent May.

Q And where do you reside?

A Artesia, New Mexico.

Q And by whom are you employed?

A Marbob Energy Corp.

Q And what is your position with Marbob?

A I am a geologist.

Q Have you previously testified before the division and were your credentials made a matter of record?

A Yes.

Q Are you familiar with the geology in the subject portions of both the East Pierce Crossing Bone Spring Pool and the Southeast Willow Lake Bone Spring Pool?

A Yes.

Q And you're familiar with the application that Marbob has filed in this case?

A Yes, I am.

MS. MUNDS-DRY: Mr. Examiner, we

tender Mr. May as an expert in petroleum geology.

MR. EZEANYIM: Mr. May is so qualified.

Q (By Ms. Munds-Dry) Mr. May, would you please turn to what has been marked as Marbob Exhibit Number 3 and identify and review that for the examiner.

A This is a stratigraphic cross-section. It's a west to the east cross-section. The west is on the left-hand side of the cross-section. The east is on the right-hand side. There is a location map on the bottom right-hand corner. Starting on the left-hand side, the first log is the Marbob Energy Showstopper 7 Com Number 1.

It moves over then to the Devon Energy Chimayo Number 1. And then Section 8 of 25, 29. The middle well is OXY Corral Fly State Number 1, 25, 29, Section 11. And it moves over to the Marbob Energy Gravy State Com Number 1 in Section 8 of 25, 30. And then the log on the far right-hand side of the cross-section is the Chesapeake Pierce Canyon 17 Federal Number 1 of 17 of 25, 30.

MR. EZEANYIM: And this is only in the Bone Spring, right?

THE WITNESS: Yes, sir. It is a

stratigraphic cross-section. The datum is marked. It is the top of the Bone Spring formation. I also have marked the top of what I call the Avalon Shale section, the base of the Avalon Shale and also the top of the first Bone Spring sand. There is three wells on this cross-section that are producing from this Avalon Shale section, and those three wells are horizontal wells within that section.

Now, I want to state the logs I have on this cross-section are from pilot holes that were drilled before the bid was taken horizontal, so that's what the logs are from. And I have denoted on those three logs with red arrows that shows where the horizontal leg of the well was placed on all three of those wells, which is the -- both Marbob wells and the Chesapeake well.

The Avalon Shale section is over on the left-hand side, on the Marbob Showstopper well, you will note that it is a little bit thinner on the west side of the cross-section, and it thickens on the east. And basically, what is going on here is you will look down on the Showstopper well between the base of the Avalon Shale and the first Bone Springs sand, the shale is not present there. There was limestone deposited. And with that said, you

might jump to the conclusion that maybe the shale thickens to the east and thins to the west, but this is only a local occurrence. You can move further to the west, and it will thicken again.

One thing I might point out on the logs on this cross-section, each one on the right-hand side has a neutron density curve. Through the Avalon Shale, you might note on average, the neutron density porosity is running around 20 percent porosity. The other thing I might point out on the neutron density responses is that normally in most shales, you see a neutron density response where the neutron curve is much higher than the density. Most of these in general the neutron density curves are close to tracking each other.

And what that is telling -- what I am interpreting that as is that there is a lot of silica in the shale in the form of chert, which makes the shale a little bit harder, a little bit more brittle, easier to fracture, stimulate. That's it.

Q If you could just spend a little time talking about what you see here in terms of the depth of the Avalon Shale and these wells.

A Over on the Showstopper on the west side of the cross-section, the top of the shale is about

6840 in that general area. And if you move over to the west side on the Chesapeake well, the top of the shale is below 7700 feet. So you're dropping -- and of course, those are just depths, but if you map the structure on the top of the shale, you probably drop about 500 feet across this cross-section. But you might note that the Chesapeake well and the Marbob Gravy well are way down dip producers and the Showstopper is a producer. So from what I have seen, this structure is not influencing the production out of this zone.

Q Thank you, Mr. May. Let's now turn to your next exhibit.

MR. EZEANYIM: What is the production from these wells? What is the production?

THE WITNESS: The production is from the horizontal leg that I've shown with the red arrow because these logs are from a pilot hole. What we did, Marbob and Chesapeake drilled down below this Avalon Shale quite a ways. In fact, Marbob drilled all the way to the bottom of the Bone Spring. Logged that vertical hole, plugged back, and then kicked off of the horizontal leg inside of this Avalon Shale unit.

MR. EZEANYIM: I'm trying to

determine how you come up with your depth bracket allowable on these horizontal wells.

THE WITNESS: From what I understand, it was based off the true vertical depth of the horizontal leg. Well, no, I take that back. It was determined from the pool or it was established from the original pool.

MR. EZEANYIM: I know that is on the pool, of course. The depth bracket is based on the pool. But some of your wells are horizontal wells, right? Some of the wells you're asking for this are horizontal wells, right?

THE WITNESS: Yes.

MR. EZEANYIM: Are you going to answer that question or somebody else can answer that for me?

THE WITNESS: Could you --

MR. EZEANYIM: Can you answer that question for me?

THE WITNESS: Could you restate the question, please?

MR. EZEANYIM: I said some of the wells you're asking for these exceptions, special pool rules are horizontal wells, right?

THE WITNESS: Yes, they are

horizontal.

MR. EZEANYIM: Covering how many units?

THE WITNESS: They are covering -- the wells that Marbob has drilled that we are asking for the higher GOR covers four 40s.

MR. EZEANYIM: Okay. So 160?

THE WITNESS: Yes, sir.

MR. EZEANYIM: You're not asking any allowable on the oil production? Just the increases in the gas oil ratio?

THE WITNESS: Yes.

MR. EZEANYIM: Okay. Go ahead.

MS. MUNDS-DRY: Mr. Ezeanyim, did you have any other questions on this cross-section?

MR. EZEANYIM: No.

MS. MUNDS-DRY: Before I fold it up?

MR. EZEANYIM: Do you?

MR. BROOKS: No.

Q (By Ms. Munds-Dry) Mr. May, could you turn to what has been marked as Exhibit Number 4 and review this for Mr. Ezeanyim and Mr. Brooks.

A This is a gross isopach on the Avalon Shale. On the far left-hand side in Section 7 of 25, 29, it's shown in green, is the location of the

Showstopper, the Marbob Energy Showstopper #1. It is a horizontal well. The surface location is located in the northeast corner of the section, and the bottom hole location is in the northwest of the section.

Over on the right-hand side of the map also shown in green is the Marbob Energy Gravy State Com #1. The surface location is in Section 8. The bottom hole location is in Section 7. There's some red numbers on this map. Those are the isopach values, and again, these are gross isopach values, not net.

There are other wells shown on this map. In fact, many other horizontals. The only horizontals that I'm aware of that are currently producing out of this Avalon Shale are the Showstopper, the Gravy, a Chesapeake well in Section 17 of 25, 30 on the east side of the section. I think that is their Pierce Canyon well. They also have another Avalon producer up in 32 to the north, another Chesapeake well, also another Pierce Canyon well. It's also along the east side of that section.

The other wells that are shown on the map are either Delaware producers or Bone Spring producers. And if they're Bone Spring producers, in

general they are producing out of the first or second sands, not the Avalon Shale. The isopach in general is showing a thick over on the east side of the map and thinning back over to the west, just like the cross-section showed, the previous exhibit. We might note over on the west -- on the eastern side of the map, I'm sorry, the values range around 700 feet in thickness, gross thickness, and in the middle of the map around 600 feet, and then over on the western side about 500 feet.

What I want to show with this map is that that Avalon Shale unit is continuous through this area, and I might even state it is continuous outside of this map. In fact, the East Pierce Crossing Pool is actually just -- the main body of that pool is just off the north edge of this map. The shale does continue on up that way. It continues east and west several townships. It covers a very large area.

Q And that would appear to be the case also for the Southeast Willow Lake Bone Spring Pool?

A Yes. That pool is actually on this map. It is in 25, 29, and again, the Avalon Shale appears in that pool, and it is continuous between the pools and to a great extent outside of the pools. Again, I would like to state that I did not make a structure

map because it appears at this time structure is not affecting the production in this unit.

Q And after reviewing the geology in this area, Mr. May, what are your geologic conclusions?

A The shale is continuous over a large area. It is definitely separate from the traditional pays in the pools, which were the first and second Bone Spring sands. It is stratigraphically higher than those pays. Structure has no effect it appears at the time. And since the Avalon Shale is above the traditional pays, the first and second Bone Spring sand, at this time, I don't think we will see any effect on the old wells versus the new wells.

Q And were Exhibits 3 and 4 prepared by you or compiled under your direct supervision?

A Yes.

MS. MUNDS-DRY: With that, that concludes my direct examination of Mr. May.

MR. EZEANYIM: Okay. Do you want this --

MS. MUNDS-DRY: We move the admission of Exhibits 3 and 4 into evidence.

MR. EZEANYIM: Any objection?

MR. BRUCE: No, sir.

MR. EZEANYIM: Exhibits 3 and 4 will

be admitted into evidence.

(Exhibits 3 and 4 admitted.)

MR. EZEANYIM: Do you have any questions?

MR. BROOKS: No questions.

MR. EZEANYIM: Do you have anything for this witness?

MR. BRUCE: Yeah, a couple of questions.

EXAMINATION

BY MR. BRUCE:

Q Mr. May, you said that Marbob drilled vertically to the base of the Bone Spring?

A The Showstopper and the Gravy, that's correct, with the pilot hole and plugged back and went horizontal.

Q Now, these pools cover the entire Bone Spring interval, correct?

A That's what I understand, yes.

Q And you said that most of the production was from the existing vertical wells, from the first or second Bone Spring?

A Yes.

Q And the two Marbob wells are the first horizontal wells within a mile of these pools?

A I'm not sure if the Chesapeake wells replaced them or have been placed in this pool or not, and they were -- actually, the one in 17 was drilled before the two Marbob wells, but I couldn't tell you if that is actually in the East Pierce Crossing Pool or not.

Q Oh, okay. One of them looks like it is more than a mile away from the pool. Getting back to my other question, were any of the vertical wells completed in the Avalon Shale?

A Not that I'm aware of.

MR. BRUCE: That's all I have.

MR. EZEANYIM: Mr. Hall?

MR. HALL: I have no questions.

MR. EZEANYIM: Any questions?

MR. BROOKS: No questions.

MR. EZEANYIM: Okay. You may step down.

THE WITNESS: Thank you.

MS. MUNDS-DRY: Thank you. I would like to call my next witness.

GEORGE FREEMAN

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 name for the record?

A George Freeman.

Q Where do you reside?

A Artesia, New Mexico.

Q By whom are you employed?

A Marbob Energy.

Q And how are you employed with Marbob?

A I am an engineer.

Q And have you testified previously before the division and were your credentials made a matter of record?

A Yes.

Q Are you familiar with the reservoirs in both the East Pierce Crossing Bone Spring Pool and the Southeast Willow Lake Pool?

A Yes.

Q Are you familiar with the application that Marbob has filed in both cases?

A Yes.

MS. MUNDS-DRY: We would tender Mr. Freeman as expert in petroleum engineering.

MR. EZEANYIM: Have you ever testified before the division?

THE WITNESS: Yes, I have.

MR. EZEANYIM: And your credentials were accepted?

THE WITNESS: Yes, they were.

MR. EZEANYIM: Okay. Are you a petroleum engineer by education? Background?

THE WITNESS: Yes. My degree is in chemical engineering. I have been working as a petroleum engineer since 1979. And I have also been in graduate school in petroleum engineering but didn't finish the degree.

MR. EZEANYIM: Mr. Freeman is so qualified.

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

Q (By Ms. Munds-Dry) Mr. Freeman, would you please turn to your first two exhibits marked Exhibit 5. They are those two plats. Would you review those for the examiners?

A Yes. First one exhibit -- the first map in Exhibit 5 shows well spots for wells that are included inside the East Pierce Crossing Bone Spring Pool. There is 62 wells by my count. Green dots are active wells and black dots are inactive wells. Then the blue shading shows my understanding of the pool

boundaries as it's defined. And there are also red dots showing horizontal wells that produce from the Avalon Shale.

The Gravy State Com 1H is a Marbob well and the Pierce Canyon 32 Fed 1H is a Chesapeake well. Both of those are included in the East Pierce Crossing Pool. And then the southern red dot is the Pierce Canyon 17 Fed 1H, and I believe that is a wildcat pool well.

MR. EZEANYIM: Yeah, it is more than one mile from that pool?

THE WITNESS: Yes.

MR. EZEANYIM: So is that a wildcat?

THE WITNESS: I believe it is --

MR. EZEANYIM: Pierce Canyon 17 Fed 1H, who owns that well?

THE WITNESS: Chesapeake.

MR. EZEANYIM: Okay.

Q (By Ms. Munds-Dry) And let's review your next map under Exhibit 5.

A The next page is the same type of map for the Southeast Willow Lake Bone Spring Pool. I am showing six previous wells that are in that pool, and of course, the pool boundaries are shaded in blue. And then the Showstopper 7 Fed Com 1H is a Marbob

well that is included in the Southeast Willow Lake Bone Spring Pool.

Q And, again, you have the green dots to denote active wells?

A Yes. In this case, the green dots are classified as oil wells, and the small red dots are classified as gas wells.

Q Okay.

A According to PI/Dwight's database.

MR. BROOKS: And that's -- which exhibit are you talking about now?

THE WITNESS: The second page of Exhibit 5.

MR. EZEANYIM: The second page of the exhibit.

MR. BROOKS: Thank you, sir.

Q (By Ms. Munds-Dry) Now that we have given the examiner an overview of what wells are in these pools, if you could please turn to your next group of exhibits. Exhibit Number 6 --

A Yes.

Q -- could you review that for the examiner?

A Okay. This and the next several exhibits are showing daily production data from Marbob operated wells that produce from the Avalon Shale.

First plat is for the Gravy State Com #1, and it shows daily production history. The bold red line is the daily gas production according -- and it is on the scale on the left. It is in MCF per day.

The bold blue line is the water rate, barrels per day. Bold green line is the oil rate, barrels per day. And then also there is a thin orange line towards the bottom of the plat, which is the gas oil ratio in MCF per barrel of oil, 1,000 cubic feet per barrel of oil.

This plat shows that the well started producing on line in October. There is actually some test production in August, and then we had some problems with the well. We had a fish stuck in the hole, and so we didn't produce it for a long time, and then it started producing steadily in October.

The initial gas rate is about 4 million cubic feet per day declining to 1.8 million cubic feet per day in January. The initial oil rate was about 1100 barrels per day and declining to 90 barrels per day in January. Water rate was 1100 barrels per day initially, declining to 170. The initial gas oil ratio on this plat is about 3.5 thousand cubic feet per barrel of oil, and that has increased to 20,000 cubic feet per barrel of oil.

MR. EZEANYIM: Can you repeat that?
THE WITNESS: Initially, it was 3.5 MCF per barrel, and the current gas oil ratio is 20 MCF per barrel.
MR. EZEANYIM: 20,000?
THE WITNESS: 20,000.
MR. EZEANYIM: You're talking about gas oil ratio?
THE WITNESS: Yes.
MR. EZEANYIM: What type of reservoir is this?
THE WITNESS: Well, I will show you some PVT data, but it is nearly a retrograde condensate reservoir. However, it is not a -- there is free oil in the reservoir, so it's a volatile oil and gas condensate type of reservoir.
MS. MUNDS-DRY: And you will have some exhibits later on, Mr. Freeman, that will discuss that in more detail for the examiner, so I'm sure he will be keenly interested in that.
MR. EZEANYIM: Yeah, okay.
Q (By Ms. Munds-Dry) Mr. Freeman, with this and then perhaps you can review this also with the Showstopper, but if you could explain a little bit for the examiner why we are asking for a 5,000 to 1

GOR --

A Yes.

Q -- on this exhibit.

A Right. In this well, it includes four 40-acre areas in the project area.

MR. EZEANYIM: This well is a horizontal well?

THE WITNESS: Sorry?

MR. EZEANYIM: This well is --

THE WITNESS: Yes, this is a horizontal well.

MR. EZEANYIM: Covering four units?

THE WITNESS: Yes.

MR. EZEANYIM: Okay. And this is in the Bone Springs?

THE WITNESS: Yes.

MR. EZEANYIM: Okay.

THE WITNESS: It's in the Avalon Shale of the Bone Spring.

MR. EZEANYIM: Okay.

THE WITNESS: And top allowable for a 40-acre unit is 187 barrels of oil per day, and so we multiply that times four and get our oil allowable of 748 barrels per day.

MR. EZEANYIM: And you are making

what a day now?

THE WITNESS: We are currently at 90.

MR. EZEANYIM: 90? Okay.

THE WITNESS: And with the 2,000 GOR limit, that makes the top gas allowable of 1,496 MCF per day, and we're currently producing more than that. If we increase the GOR limit to 5,000, then that would make the top gas allowable at 3,740 MCF per day which would probably be high enough that we would not be restricted on our production after the initial production period.

MR. EZEANYIM: Okay. How much would production increase by increasing that 5,000? Do you know how much oil production will increase? Because I know it is going to increase. Can you calculate how much it is going to increase? Because that's why you are here today.

THE WITNESS: Right. Well, the rate that we're producing now is as much as we can make right now if we are not restricted.

MR. EZEANYIM: If you increase to 5,000 you're asking, how much more --

THE WITNESS: We can make 3.7 million per day over -- instead of 1.496 thousand cubic feet per day.

MR. EZEANYIM: Then how much oil is that?

THE WITNESS: The increase would be about 2,244,000 --

MR. EZEANYIM: Yeah, I wanted to know how much --

THE WITNESS: 2,244 per day.

MR. EZEANYIM: Yeah, that was translating for 90 barrels a day to how much -- how many barrels a day?

THE WITNESS: Well, it wouldn't increase the oil allowable because we're not asking to change that from -- the pool allowable is 187 barrels per day for the single 40, and it is 748 barrels per day for four 40s, and we would leave that.

MR. EZEANYIM: So you are asking for 5,000 to increase the amount of gas you produce, right?

THE WITNESS: Yes.

MR. EZEANYIM: Okay. Not the amount of oil you produce, because you know, you can't squeeze it out. This is reservoir oil. Okay. Go ahead.

Q (By Ms. Munds-Dry) And Mr. Freeman, maybe

this would be a good time -- I know you will talk about this a little bit more later, but just showing on this graph how much water is being produced --

A Yes.

Q -- why it is important to keep production.

A Yes. Well, as you can see there, we make a high rate of water starting at 1,100 barrels of water per day and currently 170 barrels of water per day. The well is flowing, but we're kind of reaching the limit that we can flow. We need to produce these at a high rate to clear the reservoir and the wellbore of liquid, both oil and water.

Also, we need a high rate to pay for the well because these horizontal wells are very expensive, and they require large fracture treatments.

Q Mr. Freeman, attached to your graph here, you have some tabular data. Are these just reports --

A Yes, there's tabular data for all the plats that are included here, which comes after this set of plats. It is a daily production history for the wells.

Q Thank you. Could you now turn to Exhibit 7 for the Showstopper daily production history.

A The Showstopper 7 Fed Com 1H is in the Southeast Willow Lake Bone Spring Unit -- Pool, I mean, excuse me, and it is similar data to what we saw on the previous graph. We're showing daily production rate. The bold red line is the gas rate. The bold blue line is the water rate, and the bold green line is the oil rate, and the thin orange line is the gas oil ratio.

MR. EZEANYIM: Which one is gas oil ratio? Which line --

THE WITNESS: It's the thin orange line.

MR. EZEANYIM: Thin orange line?

THE WITNESS: Yes.

MR. EZEANYIM: What is average gas oil ratio right now?

THE WITNESS: It is about 20 MCF per barrel, also.

Q (By Ms. Munds-Dry) Similar to the Gravy?

A Yes. Yes, very similar. Started out about 3.9 MCF per barrel of oil. Increased to 20 MCF per barrel of oil.

Q And, again, you have the tabular data attached here to your plat?

A Yes. The gas started at about 3.5 million

cubic feet per day and decreased to 1.8 million cubic feet per day over the time of this chart. Water started at 1,200 barrels per day and decreased to 250 barrels per day. The oil started at 930 barrels per day and decreased to 90 barrels per day. And, also, this well is in the Southeast Willow Lake Pool, and the top allowable for a 40-acre unit is 230 barrels of oil per day. And this is a horizontal well. It also covers four 40-acre units. And so the allowable for it is 920 barrels of oil per day. With a 2,000 GOR limit, it makes the top gas allowable of 1,840 MCF per day. If we increase the GOR limit to 5,000, that would make the top gas allowable 4,600 MCF per day. We didn't actually achieve that with this well, but hopefully, the next one we will.

Q So an increase of 5,000 to 1 also on this well for this pool would also give you -- you'd be allowed to produce --

A Yes.

Q -- at a full rate?

A That's right.

Q Okay. Would you please turn now to the next exhibit, Number 8, and explain this to the examiner.

A Okay. I have included production data for

all the wells that Marbob operates that are producing from the Avalon Shale. The next chart on Exhibit 8 is production history for the SRO State Unit #2H. Another horizontal well that covers four 40-acre units. This is in a different pool. It's in the Delaware River Bone Spring Pool. It's located in Section 32 of Township 25 South, runs 28 East. It's about seven miles southwest of the Showstopper.

And this well initially started producing four million cubic feet of gas per day, 2,600 barrels of water, 566 barrels of oil. The initial gas oil ratio was about 7 MCF per barrel. You can see there is a big interruption in the production history. This is a well that we completed half of the lateral and tested it and then came back and killed the well to complete the second half of the lateral.

And since then, we have been having a hard time reestablishing production with it. Killing the well seems to have been harmful, and we're trying to pump the water off of it now to get it to flow again, so we're still working on this one. But similar to the other Avalon Shale wells, this one had an initial gas oil ratio of about 7 MCF per barrel and has increased most recently to 21 MCF per barrel.

Q Okay. Please turn to the next exhibit,

Number 9.

A Exhibit 9 is for another well, the MYOX 28 State Com 6H. This is a vertical well that has been tested in the Avalon Shale along with several other parts of the Bone Spring formation. It is in Section 28 of 25 South, 28 East. It is about five miles southwest of the Showstopper #1. And during two separate periods from May 19 to June 17 of 2009, and then from June 24 to July 23, it was completed and produced from the Avalon Shale, and just during those periods was it only an Avalon Shale. And at the end of that test time, it was making about 244 MCF per day, 58 barrels of water per day, and 6 barrels of oil per day, and gas oil ratio was about 40 MCF per barrel of oil.

This plat is a little bit different than the previous ones I showed because the -- well, the gas, the oil, and the water curves are the same, but instead of gas oil ratio, this one shows oil gas ratio. So it's inverse, and that is the thin green line down at the bottom.

MR. EZEANYIM: Why did you do that?

THE WITNESS: It was a plat that I already had, and at the time, I was interested in the amount of oil that was getting out of the gas. Sorry

I did not revise the plat --

MR. EZEANYIM: That's all right.

THE WITNESS: -- but I just used the one I had. And this well is in the Red Bluff Bone Spring Pool. It's about five miles southwest of the Showstopper. And there is also tabular data for it.

Q (By Ms. Munds-Dry) Great. Now if you will turn to Exhibit Number 10 and review that for the examiners.

A Exhibit 10 shows a plat for another well, the Hawg Federal #1. This is also a vertical well that is currently producing from the Avalon Shale. It has been completed in several other parts of the Bone Spring and is now testing the Avalon Shale. This is in Section 25 of Township 19 South, Range 34 East, and it is in the lead Bone Spring Pool. It is about 40 miles northeast of the Gravy.

And during this test, gas initially -- or the high point of the gas production was 127 MCF per day. That has declined to 91. The oil was initially 89 barrels of oil, and that's declined to 14. The water has declined from 170 barrels per day to 3. Gas oil ratio increased from about 3 MCF per barrel to 9.2. There is also tabular data for this, attached to it.

Q Thank you, Mr. Freeman. Now, if you will turn to your PVT analysis and discuss what you think you see here in the reservoir for the examiner.

A Yes, this is on Exhibit Number 11, and it is pressure volume relationship for recombined gas and oil samples from the Gravy State Com #1H. And this is what I was talking about earlier. We were expecting this to be a condensate reservoir, but when we tried to get a dew point for it, it had to go to 9,200 PSI, which is far above the actual reservoir pressure.

The initial pressure was estimated at 3,400 PSI, and I conclude from this that we have free liquid and gas in the reservoir simultaneously. I can't tell you how it is distributed in the reservoir because we can't really see it in the logs, and we can't test the reservoir without fracking it, so that we really are not able to selectively produce different depths in the shale. So it all comes out together. Anyway, the point of this is just to show that we have free oil in the reservoir, along with gas condensate.

Q And you have a similar analysis on Exhibit Number 12?

A Yes. Exhibit Number 12 is the same type

of data from the Yates Petroleum Banjo BNO Federal #1 well, and this well is about five miles south of the Gravy. It's in a different pool. And this one, they also tried to get a dew point and found the dew point at 10,713 PSI, and they estimated the reservoir pressure at 3,940. So same conclusion from this one, that we have oil and gas simultaneously in the reservoir.

MR. EZEANYIM: What are the current pressures now? Do you know?

THE WITNESS: No, I don't know.

Q (By Ms. Munds-Dry) Okay. Let's turn then next to Exhibits 13 and 14.

A Okay.

Q Review those for the examiners.

A Exhibit 13 is some core analysis data from sidewall cores taken from the Showstopper 7 Fed Com #1H well. And I have drawn horizontal lines to separate the Avalon Shale data from other formations, and then I have highlighted in yellow permeability that was measured from these core plugs. You can see that these are uniformly very low permeabilities, mostly less than .0001 millidarcy. And this is the reason why we can't produce the well or test it without fracking it.

Q And Exhibit 14, what does that show?

A Exhibit 14 is the same type of data from the Basashi Fed #1 well, and this well is 20 miles southwest of the Showstopper. I have also separated the Avalon Shale data by the horizontal lines. And in this case, they reported the permeabilities as less than .001 millidarcy.

Q Thank you. If you would now turn to what has been marked as Marbob Exhibit Number 15 and review that for the examiner.

A Okay. This is actually something that I did not produce myself, but this is a report from a build up test that Yates Petroleum did on their Banjo BNO Fed #1 well, which is completed in the Avalon Shale. And the point of this is just to show that with the build up test, they measured permeability of .01 millidarcy. So, you know, the affected permeability of the reservoir is also very low.

Q And, again, this would indicate to you that you can't test the well without fracking?

A That's right.

Q Okay. Turn to Exhibit 16, please, and review this.

A Okay. Exhibit 16 is data from nonMarbob operated wells that produced from the Avalon Shale,

and so I listed all of the wells that I know about. The first well is the PLU Pierce Canyon 17 Fed #1H. This is a Chesapeake operated well. And I believe it is the earliest well that produced from the Avalon Shale.

Q So it gives us the longest history?

A Yes. I got this from -- public production data from IHS Energy, and it is monthly production, but the monthly production data is expressed as an average daily rate just by dividing the monthly production by the number of days in the month. In this case, the maximum monthly rate for the well was 3.9 million cubic feet per day, and water is 713 barrels per day, and the oil is 293 barrels per day. The initial gas oil ratio was 2.9 MCF per barrel, and this has increased to 20 MCF per barrel.

MR. EZEANYIM: Are you talking about PLU Pierce Canyon 17 Federal #1?

THE WITNESS: Yes.

MR. EZEANYIM: It's not -- it's clear it's not there. How are you reading those numbers?

THE WITNESS: I'm sorry?

MR. EZEANYIM: I can't read those numbers you are reading from this graph.

THE WITNESS: Well, there is tabular

data attached to the back of it.

MR. EZEANYIM: Oh, okay.

THE WITNESS: I just know what the numbers are. I am not reading them from the plat.

MR. EZEANYIM: You should have put it on the plat, so when you read, I get lost.

THE WITNESS: Okay. I'm sorry.

MR. EZEANYIM: Okay. You have it on the back. Okay. Go ahead. You should put it on the scale here, so it would be easy to read.

THE WITNESS: Yes. Okay. The production from this well is very similar to the production from our Gravy. They pretty much overlay.

Q (By Ms. Munds-Dry) And how does it compare to the Showstopper?

A Well, Showstopper and Gravy produce almost identical rates and the Pierce Canyon 17 does, also.

Q Okay. Let's go to our next exhibit. What does Number 17 show?

A Number 17 is for another Chesapeake well, the PLU Pierce Canyon 32 Fed 1H, and this well is about one mile north of the Gravy in Section 32 of 24 South, 30 East. It has the same scale, and also average daily production by month. And in this case, the well produced the maximum of 2.2 MCF per day,

385 barrels of water per day, 157 barrels of oil. The gas oil ratio was initially 6.3 and increased to 19.6 MCF per barrel.

Q And, again, the tabular data is attached to --

A Yes, the tabular data is on the back.

Q What is Exhibit Number 18?

A Okay. This is another Chesapeake well that I believe produces from the Avalon Shale. It is the PLU Ross Ranch 6 Fed #1H. This well is in Section 6 of 26 South, 30 East. It's about five miles south of the Gravy. This one produced maximum gas rate of about 1,553 MCF per day and has declined to 1,216 MCF per day. Initial water rate was 1,191. Initial oil rate was 141. The initial gas oil ratio was 6.7, and that has increased to 28 MCF per barrel of oil. And the tabular data is also attached for this well.

Q And what is Exhibit Number 19?

A This is another Chesapeake well. It is the PLU Ross Ranch 31 Fed #1H, and it is Section 31 of 25 South, 30 East about four miles south of the Gravy, and its production history is very similar. Produced the maximum of 1,974 MCF per day and 413 barrels of water and 143 barrels of oil per day.

The initial gas oil ratio in this one was about 13.8 MCF per day, and it has increased to 21 MCF -- I'm sorry, 21 MCF per barrel of oil.

Q And what is Exhibit Number 20?

A Exhibit Number 20 is the same plat for the Yates Petroleum Banjo BNO Fed #1. This is a vertical well, I think. And it produced a maximum of 369 MCF per day and has declined to 110 MCF per day. Oil rate has gone from 21 barrels per day to 5, and the gas oil ratio has increased from 17.8 to 23.3 MCF per barrel of oil.

Q After comparing all of these wells in the graphs that we have gone through, what do you see?

A Well, I see that we're getting lots of good wells that have very interesting gas and oil production rates, especially horizontal wells. They make a lot of gas and oil. Our gas oil ratio is starting out something higher than 2,000 MCF per barrel or 2,000 standard cubic feet per barrel of oil. In a lot of these wells, it is increasing or has increased to the neighborhood of 20 MCF per barrel of oil. It is a fairly common gas oil ratio now.

So we're getting rates that are attractive enough that we want to drill more wells like this,

but we are seeing a high gas oil ratio. And if we have to operate under the same gas oil ratio limit, we will have to restrict production from the wells in order to stay below the allowable.

Q Would you please identify and review for the examiner Exhibit Number 21?

A Yes. Exhibit Number 21 is a table I prepared to summarize production from other wells in the East Pierce Crossing Bone Spring Pool. I counted 62 wells, and I got this data from IHS Energy and also from the OCD online web page. So I list the well name, an API number, and approximate location. Then I give an area that is from the OCD web page, and it is the -- basically gives the area that the well is assigned for the purposes of its allowable within its project area, I guess.

So you can see that there are several horizontal wells in the list. The 40s are vertical wells, and the horizontal wells are multiples of 40 up to 160. I think that's the biggest one we have there. Then I have the date that production started and the date that it stopped, and then the last month average daily production oil, gas, and water and gas oil ratio. And then I give the cumulative oil gas and water and the cumulative gas oil ratio, and then

I give the cumulative average daily oil.

That's just taking the cum oil and dividing it by the number of days between the production start date and the production stop date, so it's an average daily oil rate. And then basically that's to see where these wells stand against their allowable. So I have the average daily oil gas and water, and then I have the estimated oil allowable and gas allowable, which is just multiplying the top oil allowable by the number of 40-acre units for the well and then multiplying the oil allowable by 2,000, the 2,000 GOR limit.

And then I summarize by just counting how many months each of these wells exceeded that allowable that I estimated. And just skip to the bottom, there are our totals for the pool. And there are only three months in all of this history where the wells actually exceeded their oil allowable. And there were 103 months where wells exceeded the gas allowable. So you can see that the gas oil ratio limit is much more restrictive here than the oil allowable is.

Like Brent said, most of these wells produce from the first or second Bone Spring sand, and also most of them have been around for a few

years, so their current rate is well below the allowable. And actually none of these wells is over their allowable now. There is probably a bust in my data because on the second -- excuse me a second -- on the second page, I had the Poker Lake Unit 265H, and that is about halfway down the second page, and that is showing an area of 40 acres.

However, I am pretty sure that is actually a horizontal well. I just put the acreage that was listed on the OCD web page, but that is probably an error. And so I have estimated a lower allowable for that well, but it looks like it might be a 160-acre well based on what it is producing. So, you know, going by that, it looks like it's overproduced, but I'm sure it actually has a higher allowable than what I've estimated there.

So anyway, the conclusion from this table is that these wells, the older wells are not going to be affected by an increase in the GOR limit because they are already producing under the allowable anyway, so.

Q Okay. Turn now to Exhibit Number 22 and review that for the examiner. A similar thing here?

A A similar table for the Southeast Willow Lake Bone Spring Pool, and there is six other wells

in this pool besides the Showstopper. And you can see that the last month's average daily rates are far below the allowable, and none of these wells is anywhere close to being overproduced because they can't make close to the allowable.

Q And would you come to the same conclusion that you did for the East Pierce Crossing Bone Spring Pool?

A Yes. These wells won't be affected by an increase in the GOR limit.

Q Mr. Freeman, after reviewing this information, what are your engineering conclusions?

A Well, my conclusions are that the gas oil ratio limit needs to be increased because the 2,000 gas oil ratio limit is not really appropriate for the Avalon Shale Reservoir. All the wells that have been completed in it so far have produced more than 2,000 gas oil ratio from their first production, and most of them have increased the oil gas ratio up to the vicinity of 20,000 cubic feet per barrel, so the 2,000 gas oil ratio limit is unnecessarily restrictive on these wells.

Q Would a 5,000 to 1 limit give you the appropriate increase that you need to recover reserves from this reservoir?

A Yes. I believe that a 5,000 GOR limit would allow us to produce additional horizontal wells at the maximum rate and would help make them economical.

Q And it addresses the issue of lifting water you're seeing --

A That's right. It will help us to keep water and liquid hydrocarbon cleaned out of the well.

Q Mr. Freeman, will an increase in the GOR limit to 5,000 to 1 cause any harm to the reservoir?

A No, it won't. These wells are easily able to produce these rates without doing that.

Q And will the approval of this application be in the best interest of conservation, the prevention of waste, and the protection of correlative rights?

A Yes.

Q And were Exhibits Number 5 through 22 prepared by you or compiled under your direct supervision?

A Yes. They all were with the exception of the pressure build up summary sheet, which was a Yates Petroleum. That is Exhibit Number 15. I didn't actually prepare that. I did look it over and make an exhibit out of it.

MS. MUNDS-DRY: Okay. Mr. Ezeanyim, that concludes my direct examination of Mr. Freeman, and we would move the admission of Exhibits Number 5 through 22 into evidence.

MR. EZEANYIM: Any objection?

MR. BRUCE: No objection.

MR. EZEANYIM: Exhibits 5 through 22 will be admitted.

(Exhibits 5 through 22 admitted.)

MR. EZEANYIM: Mr. Bruce?

MR. BRUCE: Yeah, just a few questions.

EXAMINATION

BY MR. BRUCE:

Q Mr. Freeman, if you could look at your Exhibit 6 and 7 of the production plats for the horizontal wells.

A Yes.

Q And the first exhibit, Exhibit 6, just a question out of curiosity, if you go to pages -- your summary of the daily producing rates in mid November, it went to zero, and then about a week later, it floated back up to 400 barrels a day. What happened there?

MS. MUNDS-DRY: Mr. Bruce, you're

looking at Exhibit 6? I'm sorry.

MR. BRUCE: Exhibit 6, yes. I'm sorry.

A Yes, we shut the well in to hook up a gas line.

Q (By Mr. Bruce) Okay.

MR. EZEANYIM: Why did you shut it in?

THE WITNESS: Well, actually, I don't know. I can't answer that. The producing department thought it was necessary to shut it in.

Q (By Mr. Bruce) And then on Exhibit 7, really the only question, if you compare the first page of Exhibit 6 to the first page of Exhibit 7, the production from this well, from the Showstopper seems to be a lot more erratic.

A Yes. There have been issues with our gas purchaser, and they have shut us in a few times.

Q Okay. Now, early on in your testimony, you said that you expected these Avalon producers to be -- you expected it to be a retrograde condensate reservoir?

A I initially did based on the gas oil ratios that we were seeing from the wells.

Q And you said you've kind of backed off on

that a little bit or --

A Yes. We took fluid samples and sent them to the laboratory, and they did an analysis which showed that while they are close to being retrograde condensate reservoirs, there is actually an excess of liquid present.

Q What is the gravity of the oil?

A It is about 50 APR.

Q Do you know what the vertical producers, the ones that are in the first and second Bone Spring, do you know what the gravity of those producers are?

A I don't know exactly. We produce high 40s to around 50 of our Bone Springs.

Q The first and second Bone Spring Reservoirs, they are not retrograde condensate, are they?

A Not to my knowledge, no. Now, those are actual oil reservoirs that we can see oil stains and oil shows when we drill through them.

MR. BRUCE: Okay. That's all I have, Mr. Examiner.

MR. EZEANYIM: Thank you. Mr. Hall?

MR. HALL: I have no questions.

MR. BROOKS: No questions.

MR. EZEANYIM: Okay. On the horizontal wells, how do you determine the depth bracket allowable? Are you using the TVD or major depth? What depth do you use?

THE WITNESS: We went by the published allowable for the pool.

MR. EZEANYIM: Yeah, I know but --

THE WITNESS: They were set by previous pool rules and got it out of a proration schedule.

MR. EZEANYIM: I know, but how did you determine the depth so they can apply the allowable?

THE WITNESS: Well, since we are in that pool, we didn't calculate a new one. I mean, we could have taken the depth of the lateral and estimated, or you know, 50 -- the depth bracket allowable from that, but I felt like the depth -- the allowable that has been assigned to the pool would apply to all wells in the pool.

MR. EZEANYIM: Okay. You don't use your major depth? You use maybe the entry point on the pool?

THE WITNESS: Yes.

MR. EZEANYIM: I wanted to see what

you do to get this allowable because it's very important in our decisions here.

THE WITNESS: Yes.

MR. EZEANYIM: Okay. If I go back to your -- one of the exhibits, it is Number 6 -- Number 16 actually.

THE WITNESS: 16?

MR. EZEANYIM: Yeah, Number 16. That PLU Pierce Canyon 17 Fed #1H.

THE WITNESS: Yes.

MR. EZEANYIM: If I look at the graph and the data the way it is presented, I can't make anything out of it because I am very meticulous about these things. I don't know what the units are. It's not shown on the graph and it's not shown on the table. And then it becomes guesswork, so I don't know whether it is MM standard feet or MM cubic feet or whatever.

THE WITNESS: I'm sorry. I will tell you.

MR. EZEANYIM: Like gas oil ratio, for example, daily gas, daily oil, is that M stock tank barrel or just stock tank barrel? Daily gas, is that MCF or MM or, you know, something like that? So if I go back to my office and start looking at them,

I would be guessing. I mean, or is that correct, like daily gas -- which it's not for that month, so I thought you mean maybe MCF.

THE WITNESS: Yes, that's MCF per day.

MR. EZEANYIM: If it was shown on the graph, I wouldn't be asking, but it is not shown there, so I don't know. So I wanted to make sure I identify this.

THE WITNESS: I apologize for the oversight.

MR. EZEANYIM: On your last column on those, I assume that MCF, I wrote in there MCF, but you might be meaning MMCF or you might be meaning no MCF or just, you know --

THE WITNESS: Yes.

MR. EZEANYIM: -- picked up a number.

THE WITNESS: That is MCF per stock tank barrel.

MR. EZEANYIM: Okay. Very good. That is the case now. So that well in most cases have been producing over the gas oil ratio, right?

THE WITNESS: Sorry?

MR. EZEANYIM: If we take that well, for example, as most of the wells you've presented,

they have been producing over the limit?

THE WITNESS: Yes.

MR. EZEANYIM: Yeah, producing over the limit and for several months. On your last exhibit here, you said gas produced over allowable for 103 months, right? Do you know you're producing over the allowable on this?

THE WITNESS: Well, this of course is a Chesapeake operated well, so I can't comment on what they are doing with that.

MR. EZEANYIM: Yeah, that's true.

THE WITNESS: On our wells, the 90-day test allowable I think expired on October -- I'm sorry, on December 21 -- no, let's see -- January 21 for the Gravy and January 29, I think, for the Showstopper, and the Showstopper actually has not overproduced, but the Gravy, I think, has overproduced by about 200 MCF of gas. It had some down days at the end of the month, and so it has overproduced a little bit.

MR. EZEANYIM: Okay. Before I go further, on this Exhibits 16, 17, 18 that have these graphs, I am going to assume with your permission that it is MCF?

THE WITNESS: That is correct.

MR. EZEANYIM: Okay. Yeah, because if I don't do that, I use the numbers there, maybe to give me a different outcome, but with your permission, you said it is MCF, right?

THE WITNESS: Yes, that's correct.

MR. EZEANYIM: Okay. Now, for the wells operated by Marbob, how many times have you ever produced in violation of the -- I don't want to use the word "violation." How much did you produce above 2,000 in most of your wells?

THE WITNESS: We produced 212 MCF over the allowable for the month of January after the test allowable expired, so it would just be January that would be subject to the 2,000 GOR limit.

MR. EZEANYIM: What January? Last year?

THE WITNESS: January 2009.

MR. EZEANYIM: Okay. For January 2009, you have been overproducing above the 2,000 allowable, right?

THE WITNESS: Yes.

MS. MUNDS-DRY: Do you mean 2010?

THE WITNESS: Yeah, I'm sorry. 2010.

MR. EZEANYIM: Yeah, we're in 2010. I still write my checks 2009 or something. Okay.

Well, so you have only -- you are producing 2010 --

THE WITNESS: We started producing steadily in October, and we had a 90-day test allowable that I think allowed us to produce as much as we could.

MR. EZEANYIM: Okay.

THE WITNESS: And then the limit would apply after January 23 --

MR. EZEANYIM: Okay. So you --

THE WITNESS: -- 21, excuse me.

MR. EZEANYIM: So you got an approval from the district office for test allowable?

THE WITNESS: Yes.

MR. EZEANYIM: So that allowed you to produce it then for you to be able to determine how much gas oil ratio you need?

THE WITNESS: Yes.

MR. EZEANYIM: How did you come up with 5,000?

THE WITNESS: Well, it is actually -- it is a lower number than the true GOR of the reservoir, but if we applied the 5,000 GOR limit with the existing depth bracket allowable for the oil, that would allow us to produce as much gas as we can make.

MR. EZEANYIM: Suppose I want to give you 10,000?

THE WITNESS: That would be okay. We would take that.

MR. EZEANYIM: Why didn't you ask for that?

THE WITNESS: Well, we wanted to ask for something that would be approved.

MR. EZEANYIM: Well, remember now what we're trying to do here. What we're trying to do here is to prevent waste, right?

THE WITNESS: Yes.

MR. EZEANYIM: Protect correlative rights. If you determine that there's no correlative right issue, if I were you and I saw that there is no correlative right issue, you can look at this for 20,000.

THE WITNESS: Yes.

MR. EZEANYIM: Well, I could come here and show I can obtain 20,000 as long as his clients or his clients are not affected so we can withdraw those hydrocarbons more -- I am not asking, you know -- I'm just asking why you're asking for 5,000. You know, just being liberal. It is not that I'm going to give you 20,000 or 10,000, but why

didn't you ask for those?

THE WITNESS: Well, we were worried that it would be more difficult to get a large change approved than a smaller change.

MR. EZEANYIM: That is fair. That is fair, but you know, as you know because the oil is not affected. If the oil is affected, I would be more worried you are trying to squeeze more gas out of there, you know. That's why I'm asking you these questions. If the oil is affected, I wouldn't be asking you these questions because you told me you want to get out more gas, which is true, and then you empirically determined that 5,000 is what the OCD would give you.

I'm not trying to make a long statement here, but if you could squeeze in more than 5,000, I mean, and then say, "Yeah, I can do that, let me go back there and prove it," you know, we're not -- it is not if you come and ask for 5,000, I say, "Okay. That is reasonable," but you might be reasonable if you ask for 10 or 20.

THE WITNESS: Yes. It would be a realistic limit. It would --

MR. EZEANYIM: Well, actually you're asking for 5?

THE WITNESS: Yes.

MR. EZEANYIM: Okay. That won't be the end of my questions yet. I still have more. Do you think you have produced your wells in violation of OCD rules?

THE WITNESS: No, we are not above the tolerance that is allowed for a month's production.

MR. EZEANYIM: Okay. So let's go to Exhibit Number 21. On 21, there on the -- I like that analysis there on the Exhibit 21. 21 is the Bone Springs, and then 22 is the Willow Lake Southeast, right?

THE WITNESS: Yes, that's correct.

MR. EZEANYIM: Okay. In the Bone Springs, you listed -- all those wells have been -- for about -- for the gas below producing by one or three months, right?

THE WITNESS: Sorry?

MR. EZEANYIM: On the second page, 103 months is the number of months they overproduce their allowable?

THE WITNESS: Yes.

MR. EZEANYIM: And then three months above the oil allowable, but these are not related to

your wells? They are related to the wells in that pool?

THE WITNESS: Yes. Yes, sir, they are other wells in the pool.

MR. EZEANYIM: Okay. So I have to find that, and then on 22, there are no oil production. Where did you get this data?

THE WITNESS: I got the production data from the IHS Energy Production database, and I got the area that dedicates each well from the OCD web page.

MR. EZEANYIM: Yeah. Okay. Could you tell me again why you are increasing the oil and gas ratio instead of gas oil ratio?

THE WITNESS: Oh, that one well?

MR. EZEANYIM: Well, yeah.

THE WITNESS: I was looking at -- I think possibly I did that because I had a lot of zeros in the oil, and I didn't want to divide by zero and so I inverted it so that zero oil would show up as a zero oil gas ratio. But like I said, that was an existing plat that I didn't prepare for this hearing in the first place.

MR. EZEANYIM: Oh, okay. So sometime you have zero oil production?

THE WITNESS: Yes.

MR. EZEANYIM: So you don't want to divide by infinity. If you divide by infinity, you get infinity?

THE WITNESS: Yes.

MR. EZEANYIM: Okay, I see. And is there another thing you use that for? Do you use that for -- any other -- not just because it is zero?

THE WITNESS: Yeah.

MR. EZEANYIM: Do you have any other information you want to get out of that? Because I am curious. I am curious to see why you do that.

THE WITNESS: Well, you can look at it either way. It was just convenient -- it was a matter of convenience to use the oil gas ratio.

MR. EZEANYIM: Okay. Did you receive any objection to any of this public notice or something? Did you receive any objection for doing this in both cases?

THE WITNESS: I have not received any objection.

MR. EZEANYIM: You have not received any, okay.

MS. MUNDS-DRY: We're not aware of any objections.

MR. EZEANYIM: Mr. Hall and Mr. Bruce, do you have any further comments?

MR. BRUCE: No, sir.

MR. HALL: Nothing further.

MR. BROOKS: Nothing further.

MR. EZEANYIM: You may be excused.

THE WITNESS: Thank you.

MS. MUNDS-DRY: That concludes our cases for both 14419 and 14420.

MR. EZEANYIM: Thanks, Ms. Munds-Dry. At this point, Case Number 14419 and 14420 will be taken under advisement.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 14419 & 14420 heard by me on 2/4/10, Examiner
Oil Conservation Division

REPORTER'S CERTIFICATE

I, CONNIE JURADO, do hereby certify that I reported the foregoing case in stenographic shorthand and transcribed, or had the same transcribed under my supervision and direction, the foregoing matter and that the same is a true and correct record of the proceedings had at the time and place.

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

WITNESS MY HAND this 4th day of February, 2010.

Connie Jurado

Connie Jurado, CCR, RPR
New Mexico CCR No. 254
Expires: December 31, 2010