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

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

ORIGINAL

APPLICATION OF DEVON ENERGY PRODUCTION COMPANY, L.P. FOR SPECIAL POOL RULES, EDDY COUNTY, NEW MEXICO.

CASE NO. 15272

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

March 19, 2015

Santa Fe, New Mexico

BEFORE: PHILLIP GOETZE, CHIEF EXAMINER
WILLIAM V. JONES, TECHNICAL EXAMINER
GABRIEL WADE, LEGAL EXAMINER

This matter came on for hearing before the New Mexico Oil Conservation Division, Phillip Goetze, Chief Examiner, William V. Jones, Technical Examiner, and Gabriel Wade, Legal Examiner, on Thursday, March 19, 2015, at the New Mexico Energy, Minerals and Natural Resources Department, Wendell Chino Building, 1220 South St. Francis Drive, Porter Hall, Room 102, Santa Fe, New Mexico.

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APPEARANCES

FOR APPLICANT DEVON ENERGY PRODUCTION COMPANY, L.P.:

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EXHIBITS OFFERED AND ADMITTED

(8:17 a.m.)

EXAMINER GOETZE: In light of that, we're going to change the docket. One case has been rotated around to come up first. That case will be Case 15272, application of Devon Energy Production Company, L.P. for special pool rules, Eddy County, New Mexico.

Call for appearances.

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe representing the Applicant. I have three witnesses.

EXAMINER GOETZE: Are there any other appearances?

Would the witnesses please stand, identify yourself to the reporter and be sworn in?

MR. BRIDGES: Ken Bridges, Devon Energy.

MR. SLOVACEK: Ed Slovacek, Devon Energy.

MR. BRINK: Westin Brink, Devon Energy.

(Mr. Bridges, Mr. Slovacek and Mr. Brink sworn.)

EXAMINER GOETZE: Proceed, Mr. Bruce.

MR. BRUCE: Mr. Examiner, I'm sure you read the application in this case. Devon seeks to increase the allowable in the Livingston Ridge-Bone Spring pool, which according to the last -- my last reading of the nomenclature orders, which are few and far between,

covers only the southwest quarter of Section 36, 22 South, Range 31 East. They are seeking, in essence, to triple the allowable. We have a land witness, a geologist and an engineer. The two main reasons for the increase in the allowable is they have been -- they have completed some highly productive wells in this area, and they plan to drill multiple wells in single-well units, which will -- in order to avoid producing illegal oil, they'd like the increase in the allowable.

ED SLOVACEK,

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

DIRECT EXAMINATION

BY MR. BRUCE:

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

A. My name is Ed Slovacek.

Q. And where do you reside?

A. I reside in Oklahoma City, Oklahoma.

Q. Who do you work for and in what capacity?

A. I work for Devon Energy Production Company, and I am a senior land advisor.

Q. Have you previously testified before the Division?

A. No, I have not.

Q. Would you summarize your educational and employment background for the Examiners?

A. I sure can. Education, I graduated in 1977 with a bachelor's degree from Oklahoma State University, and I graduated in 1980 with a JD from the Oklahoma City University School of Law.

Q. And what is your work experience?

A. Work experience, I began my land profession with Conoco in 1981, and that went until 1997. For Conoco, I worked several different regions, including Oklahoma, Texas, Wyoming, North Dakota, California and Michigan.

In 1997, I left Conoco and worked for four years as land manager for Continental Industries in Casper, Wyoming.

And then in 2001, I began work for Devon Energy in the Rockies region, worked mostly Montana and Wyoming. And in June of 2014, I transferred to a business unit that handles New Mexico.

Q. Are you familiar with the land matters involved in this application?

A. Yes, I am.

Q. And are you responsible for land matters in this area of southeast New Mexico?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Slovacek as an expert petroleum landman.

EXAMINER GOETZE: He's so qualified.

Q. (BY MR. BRUCE) Mr. Slovacek, can you identify Exhibit 1 for the Examiners and describe what's depicted on that exhibit?

A. Yes. Exhibit 1 is a land plat of the area that is the subject of this application. I can describe what's on the plat. The red box is in the southwest quarter of Section 36. It's an area that the Commission has designated as the Livingston Ridge-Bone Spring pool. That's in Section 36 of Township 22 South, Range 31 East of Eddy County.

The rest of the items on the map are wells. The blue wells are wells that have previously been built and completed and designated as the Livingston Ridge-Bone Spring pool. The green locations are future wells that Devon plans to drill in this area.

MR. BRUCE: Mr. Examiner, Exhibit 2 is simply a page out of the Byram Reporter showing the extent of the Bone Spring pool.

Q. (BY MR. BRUCE) Did you search the records to determine the identity of the operators within one mile of the pool?

A. Yes, we did.

Q. Are those operators depicted on Exhibit 3?
A. Yes, they are, along with the wells and some other information about the wells themselves that they operate.
Q. And was notice given to these offset operators of the application filed in this matter?
A. Yes, it was.
Q. And is that depicted on Exhibit 4?
A. Yes, sir.
MR. BRUCE: And for once, Mr. Examiner, I got all the green cards back on time.
EXAMINER GOETZE: Very good, sir.
Q. (BY MR. BRUCE) Were Exhibits 1 through 4 either prepared by you or compiled from company records, Mr. Slovacek?
A. They were.
Q. And in your opinion, is the granting of this application in the interest of conservation and the prevention of waste?
A. Yes.
MR. BRUCE: Mr. Examiner, I'd move the admission of Exhibits 1 through 4.
EXAMINER GOETZE: Exhibits 1 through 4 are so entered.
(Devon Energy Production Company, L.P.

Exhibit Numbers 1 through 4 were offered and admitted into evidence.)

MR. BRUCE: I have no further questions of the witness.

EXAMINER GOETZE: Counselor Wade? No. And Examiner Jones?

CROSS-EXAMINATION

BY EXAMINER JONES:

Q. I guess I could ask of the surrounding sections, I notice -- like, for instance, Section 36 to the west, there is one COG well, but there is not another well right there yet. Is that -- so that acreage is -- there is no spacing unit, so who would be the lessees of that?

A. Let me ask to clarify your question. Are you talking about Section 35?

Q. 35. 35. East half of 35.

A. Yeah. Devon -- Devon does not have a lease on that section. I believe that's a COG lease.

Q. Okay. You don't know for sure, though, if it's COG?

A. I didn't check every ownership of every spacing unit offsetting. I am primarily interested and familiar with the Devon acreage right now.

Q. And the royalty owners, the lessors, is that

all state lands all around here, or --

A. Section 36 is state. Section 2 is state. Section 1 is federal. Section 35, I believe, is federal. And I'm not sure about Section 25 to the north where the OXY well is. It's federal, too. Yeah. So 36 and 2 are state.

MR. BRUCE: Mr. Examiner, just for demonstration purposes, here's a portion of a Midland Map Company map, which shows the type of lands involved. Although for this type of hearing, the Division rules -- since we're not seeking to alter equities in any well, we're only required to notify operators of existing wells.

Q. (BY EXAMINER JONES) There are no vertical wells within a mile or within this pool?

A. The only one I'm aware of is the original Unocal [phonetic] well in the northeast of the southwest of 36. That well is the original well that delineated the pool. Unocal Medina well, I believe is the name of it.

Q. Is it still --

A. I don't believe it produces anymore.

Q. Okay. And you didn't get any reaction from XTO or COG?

A. Nothing.

Q. So you would anticipate that this pool would be expanded into -- there are no other pools within a mile of this pool; is that correct?

A. Actually, there is, Section 6 of 23-32. Devon operates another Bone Spring well over there, but that well is in the -- I believe it's the Sand Dunes pool, Sand Dunes-Bone Spring pool.

Q. So we've got another pool within a mile. And is that a big pool that goes -- how many sections?

A. Well, we have technical witnesses who could probably tell you a little bit more about that than I can.

Q. Okay.

A. But what we listed here are the wells and the operators for the Livingston-Bone Spring pool.

Q. And a half mile around it?

A. Right.

MR. BRUCE: Within a mile around it.

EXAMINER GOETZE: All right. I have no questions for this witness.

MR. BRUCE: Call Mr. Bridges.

KENNETH BRIDGES,

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

DIRECT EXAMINATION

BY MR. BRUCE:

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

A. Kenneth Bridges.

Q. Where do you reside?

A. Norman, Oklahoma.

Q. Who do you work for and in what capacity?

A. Devon Energy Corporation, and I'm a geologist.

Q. Have you previously testified before the Division?

A. I have not.

Q. Would you summarize your educational and employment background for the Examiners?

A. I have a bachelor's and a master's degree from the University of Oklahoma; in '76 and '72, I believe are the years I got those. I've been employed as a petroleum geologist for over 35 years, and I'm a licensed petroleum geologist in the state of Texas. And my qualifications have been accepted, and I've testified before the Oklahoma Corporation Commission, the Louisiana Conservation Commission and the Texas Railroad Commission.

Q. And could you just briefly outline your employment experience?

A. I started with Phillips Petroleum in 1980,

worked with them for 24 years. Then moved to a small company in Tulsa, KCS Resources, for a couple of years. They were bought by Petrohawk Energy Corporation, and I continued to work for them, and who was then bought by BHP Billiton in 2011, I believe it was. And I went to work for Devon Energy in 2012, and I've been with them for three years.

Q. Does your area of responsibility at Devon include this portion of southeast New Mexico?

A. It does.

Q. And are you familiar with the Bone Spring geology that's applicable to this case?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Bridges as an expert petroleum geologist.

EXAMINER GOETZE: He is so qualified.

Q. (BY MR. BRUCE) Mr. Bridges, could you identify Exhibit 5 for the Examiner and run through the attachments to that exhibit?

A. Exhibit 5 is a cross section from west to east through Section 2 and 1 of 23 South, 31 East. The purpose of the exhibit is to demonstrate the Livingston Ridge-Bone Spring pool with logs. The logs that are displayed include the gamma ray and resistivity and, if available, the density porosity log on the right side of

the log display, and porosity above 8 percent. Density porosity is highlighted in gray on that density log.

The left side of the cross section marks the interval of the Bone Spring -- the Livingston Ridge-Bone Spring pool and shows the thickness of 3,300 feet, rather a thick formation. And then the gray areas within the cross section highlight individual reservoirs, including the Avalon Shale. The 2nd Bone Spring sand and the 3rd Bone Spring sand shows the -- approximate TVD of those formations and the thickness. And this thickness -- this display demonstrates that there are multi -- there are multiple targets within the Bone Spring pool, and several wells are necessary -- horizontal wells are needed in each unit to encounter these formations and produce from them.

Q. And I think we'll have an exhibit by the next witness.

Not only are you looking at three separate Bone Spring zones to test, is Devon also looking at drilling more than one well in, say, the 2nd Bone Spring at one time?

A. Yes, we are. There is an interval in the middle of the 2nd Bone Spring that appears to be a barrier between the lower and the upper sand, and we are targeting both of those and have had success in other

wells in this area doing so.

Q. And Devon, in other areas, is also looking at drilling multiple Bone Spring wells in the same Bone Spring Formation in a well unit; is it not?

A. Most definitely, yes.

Q. Would you move on to your next two attachments, please?

A. Okay. To demonstrate the extent of -- just chose the 2nd Bone Spring sand and the 3rd Bone Spring sand because we're actively drilling those in this area now. So the first map is an isopach map of the 2nd Bone Spring sand interval, and I used a porosity cutoff to prepare this map because it shows the higher-quality sand, I'll say, for this target. It demonstrates that the formation underlies the area -- all of this area and is continuous throughout the area.

Exhibit 7 [sic] is a similar map of the 3rd Bone Spring sand using an 8 percent porosity cutoff to map the sand thickness. It too demonstrates how the sand member underlies the entire area and is continuous. I have on the map -- I forgot to mention on Exhibit 5 -- 6, I've highlighted all the well names, which makes it rather a busy map, but most of the vertical wells that you see on this plat are drilled to a different formation, the Delaware, and produced from the Delaware.

When you see a horizontal well on here, most likely it is going to be a Bone Spring target. We have drilled one and plan a couple others in Section 36. We are currently drilling one in Section 2 and have completed drilling one in Section 2 and plan a third well in Section 2, all of them within close proximity. Different targets in the 2nd and 3rd Bone Spring.

Q. So from a geologic standpoint, multiple wells are necessary to adequately develop all the acreage?

A. Yes, it is.

Q. Based on the results Devon is getting, is an increase in allowable necessary?

A. Yes.

Q. Was the package of your exhibits -- Exhibit 5 is how I designate them. Were they prepared by you or under your supervision?

A. Yes, they were.

Q. In your opinion, is the granting of the application in the interest of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I tender Exhibit 5 into the record.

EXAMINER GOETZE: Exhibit 5, which we will clarify is the cross section, which includes also the

two isopachs, is so entered.

(Devon Energy Production Company, L.P. Exhibit Number 5 was offered and admitted into evidence.)

MR. BRUCE: And I have no further questions of the witness.

EXAMINER GOETZE: Counsel Wade?

EXAMINER WADE: No questions.

EXAMINER GOETZE: Examiner?

EXAMINER JONES: You go first.

EXAMINER GOETZE: You want me to go first? I'll go first.

CROSS-EXAMINATION

BY EXAMINER GOETZE:

Q. So one of the mandatory questions we like to ask is are there any geologic impediments in this area that will cause problems with production as you have proposed?

A. The only thing that I can think of is the drilling.

Q. Okay. That's a good answer at first.

A. And that would be because, as I said, there are a lot of vertical wells in this area that are completed in the Delaware. There are also disposal wells into the Delaware, and it is possible we would experience water

flows as we drill through the Delaware. But --

Q. That's another day, another case.

With regard to your completion in the 2nd -- 2nd sand, when did you first notice a barrier or difference in production? Which of these wells best gave an example of this?

A. Yeah. Off to the south in another field called the Cotton Draw Unit -- it's the Cotton Draw Unit Township, just the township to the south, I believe -- we have drilled several wells down there that penetrate a couple of targets in the 2nd Bone Spring Sand.

Off to the west, the township would be -- it's the Apache Field or the Apache wells that we've drilled. One with township north and back to the west in the southeast corner of that area, we've drilled wells only to the 2nd Bone Spring Lower, but the barrier is apparent there. I believe -- and I don't have any fact to support this, but in the field I was talking about to the south, the Cotton Draw Unit, we did a microseismic study of a well -- and I can't pinpoint which one it was -- and it showed containment of the frac within -- in the 2nd Bone Spring sand in the lower portion of it. It would not frac into the upper. It's a rather thick section, as you can see on the cross section, 550 feet.

Q. With regards to the 3rd Bone Spring sand, we have information on it. Have we any production history, or is this something being brought into the field?

A. No. There is production history on the 3rd Bone Spring, not shown on the plats but in the same township, 23 South, 31 East. On the southern end of this township we have three producers. They're call the Aldabra [phonetic] wells. All of them produce from the 3rd Bone Spring sand, the lowermost portion of the 3rd Bone Spring, as you see on this cross section.

Q. And is there a similar barrier within the 3rd Bone Spring? Have we identified that, also?

A. We haven't identified it. It appears to be there. You can kind of see it on this cross section. If you look at the 3rd Bone Spring, on the well to the left, the Barclay State well, the resistivity log has a high-resistivity member above the base. That's about a 75- to 100-foot section of sand there, demonstrated by the low resistivity. And that's the target in general. But we don't believe -- we feel that that is a frac barrier, the upper portion of the 3rd Bone Spring sand. Actually, you can see it on both of the wells. You can see that tight streak.

Q. And would this be -- in planning for drilling, if you were to complete, ideally, in one portion of the

3rd Bone Spring or 2nd Bone Spring using the information, then you would decide if they're going to put an additional lateral in and using what you get with the microseismic and fracking?

A. True.

Q. I hope microseismic is going to be done.

A. And if it's possible, we'll do another microseismic in this area.

Q. Okay.

EXAMINER GOETZE: No further questions for this witness.

EXAMINER JONES: Can I ask a couple?

CROSS-EXAMINATION

BY EXAMINER JONES:

Q. As far as -- have you done any vertical pilot holes? I guess you did a couple through here, didn't you? And did you core them or log --

A. We haven't cored any in this specific area, but the Cotton Draw area, as I mentioned earlier, we have cores there. Pilot holes, I believe this North Pure Gold -- Section 10 in the North Pure Gold well may have been -- the numbers [sic] in Section 9. But we do have pilot holes with good log suites, you know, sonics and geomechanical logs.

Q. So you're asking for -- to create an allowable

for the pool. Is it because one of your wells is already capable of producing, or are you anticipating one of the wells capable of producing in there?

A. We do have a well that is capable of producing, not the entire allowable on its own, but yeah, these are good wells.

Q. So the main reason is because you want to drill multiple laterals in the same pool?

A. Most definitely.

Q. How are the mud logs? Is that your only cue as to whether you're in the zone?

A. Oh, heck no. No. We use geosteering techniques and the gamma ray and structural -- anticipated structural setting. They're watched 24 hours a day.

Q. But no other logs besides gamma ray?

A. No. We have a mud log. Of course we do.

Q. But no other log while drilling?

A. The gamma ray.

Q. Just the gamma ray?

A. Yes.

Q. Are you encountering big fractures periodically in this, or is it a pretty consistent matrix-type reservoir?

A. Of course the reservoir is complicated

lenticular, so yeah, we are encountering those lenticular changes but no fractures that I can speak to. And, you know, there is a chance that we will log one of these wells in the lateral an image log to check that out, too.

Q. So you're creating your own fractures with the frac job?

A. Oh, yeah.

Q. And you're drilling these north-south, so are you expecting the fractures -- fracture direction to be east-west?

A. Yes. And, well, I spoke about the North Pure Gold well with the pilot hole. You know, we determined major stress orientation to be -- the maximum stress orientation to be kind of northeast-southwest. Almost east-west but slightly tilted.

Q. Okay. So that other pool that's within a mile, would you expect it to be affected by your -- by you pooling wells a little bit harder or --

A. No.

Q. Not really. Okay.

Do you have the engineer out with the reserves?

A. Yes.

Q. Okay. How do you do that? Do you provide him

with a net pay of a volumetric type --

A. We actually have a process using integrated -- an integrated team of engineers, geologists, and supplying much information -- you know, a good amount of information to try to come up with a good number for recovery and volumetrics, et cetera?

Q. But is your volumetrics your primary reserve booking method, or are you using decline curves?

A. Oh, heck -- yes. We use decline curves. And I think, honestly, I should not speak to that as much as our next professional.

Q. Well, you're a key member here of that group --

A. Yeah. Yeah.

Q. -- who does the reserves. Do you think the increased allowable will give you the ability to put more reserves in this reservoir?

A. To capture more reserves, certainly.

Q. To recover more reserves?

A. Yeah. We wouldn't be able to efficiently drain these reservoirs without multiple laterals.

Q. Are you going to drill in the Avalon?

A. At this point we don't have wells planned for Avalon, but we're definitely -- we feel that it is a -- it's going to be a target soon.

Q. Has it got more CO2 in it than the other?

A. I heard that it did, but I can't respond to that.

Q. Do you go into helping the engineer with designing the well as far as the intermediate pipe? I noticed on a couple of the other wells that were intermediate, there was about 3,000 to 4,000 feet, and then you drill at about 10,000 feet of hole for the production pipe and running a taper, you know, 7-inch, 5-and-a-half-inch. Are you happy with that? Do you think it's protecting you from the -- from the Delaware above you?

A. Yeah. The 3,000 feet or -- I think it's more like 4,000 feet.

Q. 4,000.

A. They set the first string, will obviously protect any fresh water and salty intervals in the -- above.

The Delaware, if it's a problem, we would need to set another string of casing to isolate the Delaware, but ideally you wouldn't do that to help the economics of the well.

Q. But the fluids in the Delaware versus the Bone Spring are pretty compatible? In other words, if you're invading it a bit while you're drilling, you're not going to hurt it too bad?

A. No. Invasion, I don't believe, is much of a problem as water flowing in from injection.

Q. But you could always run a DV tool or something at the base of the Delaware?

A. Yes.

Q. Is the Delaware -- you talk about Delaware. Is that in the Brushy?

A. Lower Brushy, yes.

Q. Brushy production and injection into the Upper --

A. Cherry Canyon, I believe, yeah.

Q. You don't like injection in the Cherry -- in the Bell and the Cherry when you've got production in the Brushy?

A. No, I don't.

Q. I got that impression.

A. Ideally you want to drill deep in saltwater disposal wells.

Q. Thank you very much.

A. Okay.

EXAMINER GOETZE: So I didn't shortchange. I was done with the questions.

Thank you. We're done with this witness. Proceed to your next witness, please.

WESTIN BRINK,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name and city of residence?

A. Westin Brink, Oklahoma City, Oklahoma.

Q. And who do you work for and in what capacity?

A. Devon Energy. I'm a reservoir engineer.

Q. Have you previously testified before the Division?

A. I have not.

Q. Would you summarize your educational and employment background for the Examiner?

A. I graduated in May of 2012 from the University of Tulsa with a petroleum engineering degree. I'm currently enrolled in the part-time MBA program at O. U., University of Oklahoma. I plan to finish that summer of 2016.

I started out as an intern with Williams, which is now WPX Energy, in the summer of 2009.

In the summer of 2010, I was an intern in Artesia, New Mexico for Devon Energy. In the summer of 2011, I was an intern for Devon Energy working the

Barnett Shale on the reservoir side. And I started working with Devon full-time after graduation, and I came up through their new-hire training program, where we rotate through drilling, completions, production, reservoir, facilities. And after that program, I started as a full-time reservoir engineer about two years ago.

Q. Does your area of responsibility at Devon include this portion of southeast New Mexico?

A. It does.

Q. And are you familiar with the reservoir matters pertaining to this application?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Brink as an expert reservoir engineer.

EXAMINER GOETZE: He is so qualified.

Q. (BY MR. BRUCE) Mr. Brink, I've marked all of your exhibits simply as Exhibit 6. Why don't you start with the first page and describe what that depicts?

A. Okay. The first page is our plan development for this area. And we believe the Bone Spring to be a solution gas drive reservoir, and as Ken mentioned before, we've identified multiple producing horizons within the Bone Spring interval. And that frac barrier that Ken mentioned is identified in this exhibit, and we

have a high Young's modulus and Poisson's ratio that we believe provides about a 600 psi frac barrier for height growth. So we've identified the target in the Upper Bone Spring, Lower Bone Spring, and we have an additional target in the Lower 3rd Bone Spring. So we believe that frac barrier makes those two formations in the 2nd Bone Spring two different targets.

And part of the reason why we would like to develop multiple wells in this particular unit is to drill out limitations. And based on our analysis, we don't believe we're damaging the reservoir by producing multiple wells out of this particular unit.

Q. Would you move on to the second page of your exhibit?

A. Yes. Ken also mentioned that we did some downhole microseismic in the Lower 2nd Bone Spring in the Cotton Draw area, and that's what this is. So the Cotton Draw 218 is the well, and then here's a screen shot of the microseismic events. And the red stringer is the long string [sic] interval. And as you can see, the microseismic events did not travel into the Upper 2nd Bone Spring, so we -- we truly believe that we're contained to the Lower 2nd Bone Spring and that the lower and upper are two separate formations.

Q. And discuss some of the performance you've had

with wells in this general area?

A. Here's an example of wells in all three of our identified producing horizons in the general area. Our first is the Boundary Raider, and I have the dash line on here. It's the current oil allowable for the unit, and as you can see, we're tinkering with the -- we're almost over it, if you will, with just one well in the Upper 2nd Bone Spring.

And if you move on to the Lower 2nd Bone Spring, which is the Ark 36 State 1H, it's a Lower Bone Spring producer, and likewise, you know, we're close to -- the oil allowable is one producing well.

Then moving on to the Lower 3rd Bone Spring, this is our Apache 25 Fed 17H, and it's a few miles to the northwest of the Spill Ox [sic; phonetic], or where the Livingston Ridge allowable is. But once again, as you can see, this is an excellent well, and it's toying with the max oil allowable for this particular unit.

Q. And so if you have multiple wells on these single-well units, in your opinion, will you be overproducing the allowable if you don't get the allowable increase?

A. Yes. Correct.

Q. And what does the final page show on your

exhibit?

A. The final page is our current max allowable. It's 1,200 barrels of oil per day, and we expect our Upper and Lower 2nd Bone Spring wells to IP over 1,000 barrels of oil per day. So the max total production from those two wells can be about 2,000 barrels of oil per day.

Q. And that would be just the two 2nd Bone Spring wells?

A. Correct, Upper and Lower 2nd Bone Spring.

Q. It wouldn't count the --

A. Yeah. That's not quantifying the 3rd Bone Spring or potential Avalon Shale wells.

Q. And again, do you believe that increasing the allowable will damage the reservoir or reduce overall recovery from the pool?

A. I do not.

Q. Was Exhibit 6 prepared by you?

A. It was.

Q. And in your opinion, is the granting of this application in the interest of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd tender Exhibit 6 into the record.

EXAMINER GOETZE: Exhibit 6 is so entered into the record.

(Devon Energy Production Company, L.P. Exhibit Number 6 was offered and admitted into evidence.)

MR. BRUCE: I have no further questions of the witness.

EXAMINER GOETZE: You can go first this time, Examiner Jones.

CROSS-EXAMINATION

BY EXAMINER JONES:

Q. So I guess can you talk a bit about the rock and then about the fluid? Is the rock -- your permeability in the rock, the Poisson's and that kind of stuff, is it really consistent permeability?

A. Yes. Our permeability seems to be -- well, it's on the order of microdarcy perms, so we do need to frac these wells to have them flow oil.

Q. So a decent porosity --

A. Yes.

Q. -- but really low and consistent permeability?

A. Correct.

Q. The fluids, you know, temperature, API and that kind of stuff?

A. API gravity is around 44, and I believe our

reservoir temperature is 170 degrees, if I remember correctly.

Q. So it's pretty good oil, then?

A. Yes. Correct.

Q. But you don't have any pores, so you don't have any relative -- relative permeability data, do you?

A. Well, most of our science work is taking place in Cotton Draw, which is more in full-field development at this point. It seems to be a good analog from the reservoir side for our -- what we call our Ingle [phonetic] wells area, which is where this is. So we're able to use our leverage log that's got data that they collected down south to what we're doing in this particular area.

Q. How did you come up with this stress data? Did you run some dipole sonic logs?

A. Yes. We have a cross-dipole sonic.

Q. And your frac jobs, if you pull -- the harder you pull them in sand -- any sand that your production engineers should worry about?

A. Oh, a little bit. Those are -- these wells will flow for eight months to a year and then run ESP in there.

Q. Do you put your pump --

A. We'll land our ESP in the vertical.

Q. Okay. So it's 500 feet up. You're still losing some potential there --

A. That is correct.

Q. -- if you're 500 feet up.

A. We've seen longer run times by running in the vertical.

Q. Less sand in them?

A. Yes.

Q. Do you run any chemical tracers on your frac job to see where it's coming -- where the oil and the water's coming from relatively along the --

A. We do have chemical tracers planned for these two Belloq wells, and we've done a little bit of that so far. So --

Q. Do you suspect it's pretty uniform along the well?

A. That's what it appears to be so far.

Q. Appears to be so far.

So your drawdown on a horizontal well like this would be pretty slight for an increased production from the total well?

A. Correct.

Q. In other words, your effect right at the wellbore is not that bad like a vertical well would be -- high productivity vertical well; is that correct?

A. Yes. We have a dedicated production engineer who is responsible for new-well delivery, and he monitors the pressures on a daily basis in our choke [sic] management project as well.

Q. Your GOR, the plots you showed --

A. The plots I showed just have oil on them. Our GORs slowly climb, and they level out at about 3,000 SCF per barrel.

Q. So you're not asking for a change in the limiting GOR. That would be still enormous at 2,000, anyway, for your gas production. So you didn't mention that in your application; is that correct? There is no GOR?

MR. BRUCE: That's correct.

Q. (BY EXAMINER JONES) And you say that the GOR climbs a bit as you increase production?

A. It climbs throughout the life of the well.

Q. Throughout the life of the well.

A. So as the oil rate climbs, the GOR will climb a little bit.

Q. Now, the life of the well being -- how many years have you had to look at it so far?

A. We have about two years of data down in the Cotton Draw area.

Q. Okay. So --

A. We're limited to the data that we have.

Q. Okay. So do you have any idea on the original pressure in your reservoir and the drawdown in your reservoir pressure?

A. Yes. We have -- for original reservoir pressure, we run some defips [phonetic] in the well. It's a mile to the east of this well, and it seems to be about 6,800 psi.

Q. And that's pretty reliable considering how -- the type of permeability?

A. Yes. We believe the data.

Q. Okay. Okay. So by doing this, is it going to affect your -- how many more reserves you can book, you think?

A. Yes. We can book more reserves if we receive an increased allowable.

Q. Okay. And you base that on a mixture of material balance and decline curves?

A. Yes. For all our wells, we've done rate transient analysis models. And we basically take our frac model and determine contributing reservoir volume, and that's how we determine volumetrics. But our primary reserve booking method is -- is the decline curve analysis. We have physics-based models to back up our decline curve analysis.

Q. Okay. If you get this increased allowable in this area, are you going to ask for it in others?

A. Most likely.

Q. Most likely. Okay. Keep Mr. Bruce busy here.

Do you have anything else to say about this? I don't have any more questions.

A. Yeah. Part of the reason -- I'd like to reemphasize the drilling on limitations. So that's why we want to drill all these horizons at once. It, I guess, saves time and effort on our part to avoid wells that have previously been drills. For example, we just drilled one well in the 2nd Bone Spring. We'd have to avoid it when we go down to the 3rd Bone Spring. So --

Q. Okay. So you want to concentrate in a certain area with the drilling islands --

A. Yes.

Q. -- instead of having to wait until the wells decline?

A. Yes. If we fully develop the 2nd Bone Spring, we'll have an iron curtain, if you will, of wellbores. So we have to dodge if we develop the 3rd Bone Spring.

Q. Have you talked to any other engineers -- any other -- like XTO or COG about -- are they objecting to Devon producing too much, more than the allowable? In other words, were they goading you guys to come and get

the allowable raised here?

A. No. We have not talked to them.

Q. Okay. Okay. Thank you very much.

EXAMINER GOETZE: Any questions?

EXAMINER WADE: Thank you.

EXAMINER GOETZE: I have one question.

CROSS-EXAMINATION

BY EXAMINER GOETZE:

Q. On your history of fracturing the wells in the 2nd Bone Spring, how much propagation have we had laterally from the well?

A. Lateral propagation?

Q. Yeah.

A. Of our fracture half length?

Q. Uh-huh.

A. It seems to be about 300 feet, and that's based on rate transient analysis.

EXAMINER JONES: But that's not based on microseismic?

THE WITNESS: No. We have a microseismic survey planned in this area that's supposed to be drilled at the end of this year.

EXAMINER GOETZE: And I won't follow up any more questions by Mr. Jones. I have no more questions for this witness.

MR. BRUCE: I have nothing further in this matter, Mr. Examiner.

EXAMINER GOETZE: In that case, we will take Case 15272 under advisement.

(Case Number 15272 concludes, 9:02 a.m.)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 15272 heard by me on March 19 2015

Phillip R. Goetze, Examiner
Oil Conservation Division

STATE OF NEW MEXICO

COUNTY OF BERNALILLO

CERTIFICATE OF COURT REPORTER

I, MARY C. HANKINS, New Mexico Certified Court Reporter No. 20, and Registered Professional Reporter, do hereby certify that I reported the foregoing proceedings in stenographic shorthand and that the foregoing pages are a true and correct transcript of those proceedings that were reduced to printed form by me to the best of my ability.

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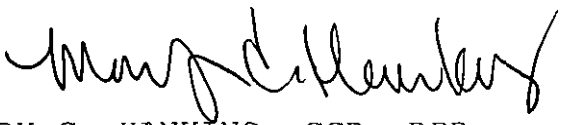

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