STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:	
APPLICATION OF APACHE CORPORATION FOR APPROVAL OF SIMULTANEOUS DEDICATION, AN UNORTHODOX GAS WELL LOCATION, AND TWO OPERATORS ON A GAS WELL UNIT, LEA COUNTY, NEW MEXICO	CASE NO. 13,837

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: WILLIAM V. JONES, JR., Hearing Examiner

December 13th, 2006

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, WILLIAM V. JONES, JR., Hearing Examiner, on Wednesday, December 13th, 2006, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

* * *

I N D E X

December 13th, 2006
Examiner Hearing
CASE NO. 13,837

* * *

E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	6	9
Exhibit 2	8	9
Exhibit 3	9	9
Exhibit 4	31	36
Exhibit 5	32	36
Exhibit 6	33	36
Exhibit 7	34	36
Exhibit 8	34	36
Exhibit 9	16	22

* * *

A P P E A R A N C E S

FOR THE DIVISION:

DAVID K. BROOKS, JR.
Assistant General Counsel
Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

FOR THE APPLICANT:

JAMES G. BRUCE
Attorney at Law
P.O. Box 1056
Santa Fe, New Mexico 87504

* * *

WHEREUPON, the following proceedings were had at 8:55 a.m.:

EXAMINER JONES: Okay, let's call Case Number 13,837, Application of Apache Corporation for approval of simultaneous dedication, an unorthodox gas well location, and two operators on a gas well unit, Lea County, New Mexico.

Call for appearances.

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

EXAMINER JONES: Any other appearances?

MR. BRUCE: Mr. Hall did enter an appearance in writing on behalf of Kaiser-Francis Oil Company in support of the Application.

EXAMINER JONES: Will the witness please stand to be sworn -- witnesses?

(Thereupon, the witnesses were sworn.)

STEFFANIE HAYES,

the witness herein, after having been first duly sworn upon her oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

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

A. Steffanie Hayes.

Q. And where do you reside?

A. Tulsa, Oklahoma.

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

A. I'm a senior landman for Apache Corporation.

Q. Have you previously testified before the Division?

A. No, I have not.

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

A. Certainly. I have a bachelor's degree from Oklahoma State University, a juris doctor from Oklahoma City University, and I have approximately ten years of experience in oil and gas, including the last two and a half at Apache as a senior landman.

Q. And does this area of southeast New Mexico -- are you responsible at Apache for land matters involved in this area of southeast New Mexico?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I'd tender Ms. Hayes as an expert petroleum landman.

EXAMINER JONES: Ms. Hayes is qualified as an expert petroleum landman.

Q. (By Mr. Bruce) Ms. Hayes, could you identify Exhibit 1 and briefly describe what Apache seeks in this case?

A. Certainly, Exhibit 1 is a Midland map which shows the area around Section 6, Township 23 South, Range 34 East, Lea County. In Section 6 Apache seeks an order allowing us to recomplete the North Bell Lake Federal Well Number 3 from the Fusselman formation to the Devonian formation.

Q. What is the current status of this well?

A. It marginally produces from the Fusselman.

Q. What Devonian pool covers Section 6, and what are its pool rules?

A. Section 6 is the North Bell Lake-Devonian Gas Pool. The pool rules require 640-acre spacing, which means only one well can produce in the unit, and be no closer than 1650 feet from the quarter-section line.

Q. Is Section 6 currently dedicated to an existing well?

A. Yes, it is.

Q. And what is that well?

A. It is the Bell Lake Unit Well Number 6. It is located 660 feet from the south line and 1980 feet from the east line of Section 6. It's operated currently by Kaiser-Francis.

Q. So the first thing Apache requests is to have two wells on this well unit, which is contrary to the pool rules?

A. Correct.

Q. What is the footage location of Apache's well?

A. It is 1930 feet from the north line and 660 feet from the east line.

Q. And therefore the second request is for an unorthodox gas well location?

A. Correct.

Q. Does Apache request that after the recompletion it be allowed to remain as operator of the well?

A. Yes.

Q. And so that is the third part of this Application?

A. Correct.

Q. What is the status -- in looking at Exhibit 1, it's outlined, there's a nine-section-block outline.

A. Right.

Q. What is the status of this well -- of Section 6?

A. Section 6 is in the center of a nine-section participating area in the Bell Lake Unit operated by Kaiser-Francis.

Q. Okay. Does Kaiser-Francis object to this Application?

A. No, Kaiser Francis actually suggested that we apply for this recompletion in order to recomplete the well to the Devonian formation.

Q. And are letters between Kaiser-Francis and Apache submitted as Exhibit 2?

A. Correct.

Q. Now Exhibit 1 outlines the Bell Lake Unit.

A. Uh-huh.

Q. What types of lands are in that unit?

A. In this unit are federal and state lands.

Q. And Kaiser-Francis is the overall operator of the unit?

A. Correct.

Q. And Kaiser-Francis and Apache are working interest owners?

A. Correct.

Q. Were Kaiser-Francis, the Bureau of Land Management, and the Land Office notified of this Application?

A. Yes, they were.

Q. Are there any potentially affected offset operators?

A. Just one, Devon Energy Production Company.

Q. And they're located to the --

A. -- east.

Q. -- to the east of your well?

And will there be some more data on those Devon Energy wells from the technical witnesses?

A. Yes.

Q. Is Exhibit 3 an affidavit regarding notice mailed to the interested parties in this case?

A. Yes, it is.

Q. Were Exhibits 1, 2 and 3 prepared by you or under your supervision or compiled from company business records?

A. Yes, they were.

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

A. Yes, it is.

MR. BRUCE: Mr. Examiner, I'd move the admission of Apache Exhibits 1 through 3.

EXAMINER JONES: Apache Exhibits 1 through 3 -- 1, 2 and 3 -- will be admitted.

EXAMINATION

BY EXAMINER JONES:

Q. Ms. Hayes --

A. Yes.

Q. -- the -- when you drill a well you have capex, and then when you produce it you have operating costs, and then you have income --

A. Correct.

Q. -- coming in --

A. Correct.

Q. -- so how will you handle all of those, as a second operator in this unit?

A. Well, we took the -- when we purchased this particular area from Amerada Hess, it was already set up with debts to the working interest owners and such, so we will handle it in our normal course as we would and carry on as Amerada Hess did before us.

Q. Okay, so everything will be -- Now as far as the income goes, which is probably the most pertinent to my questions here --

A. Right.

Q. -- that will be distributed to all the royalty --

A. Correct.

Q. -- and the revenue interest owners --

A. Correct.

Q. -- in Section 6?

A. Section 6, as well as how it is allocated throughout the nine-section participating area.

Q. Oh, okay.

A. Yes.

Q. So it's the Bell Lake Unit?

A. Correct.

Q. It's a participating area, is that what it is?

A. Correct.

Q. Okay. Is the entire -- Can you tell me what the

participating area of the Ellenburger is?

A. The Ellenburger?

Q. I'm sorry, the Devonian.

A. Devonian is the hach-marking around Section 6 as you see on Exhibit 1.

Q. Oh, okay, so it's a nine-section --

A. Correct --

Q. -- okay --

A. Yes.

Q. Okay.

A. This is also -- it's the same nine-section that's allocated to the Morrow formation as Devon producers out there --

Q. Okay.

A. -- as well as the Ellenburger, formerly produced by Amerada Hess and now Apache, and also the Devonian.

Q. Okay. Did Kaiser-Francis initially have any problems with this?

A. It was their idea, actually, to do this.

Q. Okay.

A. Yes. They had had trouble with ConocoPhillips previously in getting this recompletion performed when Conoco was the operator of the unit, and when Kaiser-Francis took over operations of the unit they suggested to us that we perform the recompletion.

EXAMINER JONES: Okay. Mr. Brooks?

EXAMINATION

BY MR. BROOKS:

Q. Now let's see, does Kaiser-Francis have an existing well in this unit?

A. Yes, they have an existing well in Section 6, it's the Number 6.

Q. Section 6, they have an existing well, which is --

A. Correct, which is a Devonian producer.

Q. And that well in the southwest of the southeast --

A. Yes, it is.

Q. And it is completed?

A. Yes, sir.

Q. And that's why you're asking for simultaneous dedication?

A. Correct.

Q. The field rules only allow one well per unit?

A. Per 640, uh-huh.

Q. Okay. And your well is in the southeast of the northeast?

A. Correct.

Q. Okay, and then this was an Ellenburger that you're recompleting to the Devonian.

A. It's currently a Fusselman producer, originally drilled to the Ellenburger, I believe.

Q. Okay. And it's unorthodox because it encroaches towards Section 5 over on the east?

A. Correct, 660 feet from the line.

Q. And what is the field rule for that?

A. It needs to be 1650 feet.

Q. Sixteen hundred and -- Okay.

A. Correct.

Q. The land is in a federal exploratory unit, right?

A. Correct.

Q. And this whole nine-section area is the participating area for the Devonian?

A. Correct.

Q. Covered under the unit operating agreement that names Kaiser-Francis as operator?

A. They subsequently, yes, took over from Conoco --

Q. Right.

A. -- earlier this year, as a matter of fact.

Q. And do you have a sub-operating between you and Kaiser-Francis --

A. Yes, we did.

Q. -- that authorizes you to operate this on behalf of Kaiser-Francis --

A. Correct, carried over from the Conoco-Amerada

contract.

MR. BROOKS: All right, very good. Thank you.

THE WITNESS: All right?

FURTHER EXAMINATION

BY EXAMINER JONES:

Q. Ms. Hayes --

A. Yes.

Q. -- the Section 6, is it standard -- standard size?

A. Yes --

Q. Exactly --

A. -- 640 acres.

Q. Okay. And what was the -- Kaiser-Francis well was nonstandard also, then?

A. Correct.

Q. Do you have a number for their nonstandard --

A. I don't.

Q. Okay, I can find it.

A. Okay.

MR. BRUCE: Yeah, it's a pretty old well --

THE WITNESS: It is.

EXAMINER JONES: Oh, okay.

THE WITNESS: It was the original well drilled out there.

EXAMINER JONES: It's one of those that are

whited out in our image system somewhere. Okay. Okay, I guess that's all we have.

THE WITNESS: Okay, thank you.

MR. BRUCE: Mr. Examiner, for the next witness we're skipping to Exhibit 9, which is Mr. Curtis's exhibit.

ROBERT E. CURTIS,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

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

A. Robert E. Curtis, Tulsa, Oklahoma.

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

A. Apache Corporation, I'm a senior geologist responsible for this part of Lea County, New Mexico?

Q. Have you previously testified before the Division?

A. Yes, I have.

Q. And were your credentials as an expert petroleum geologist accepted as a matter of record?

A. Yes.

Q. And you are familiar with the geology involved in this Application?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Curtis as an expert petroleum geologist.

EXAMINER JONES: Mr. Curtis is qualified as an expert petroleum geologist.

Q. (By Mr. Bruce) Mr. Curtis, could you, just generally referring to your Exhibit 9, maybe give us a little bit of the history of the Devonian in this area and what your view of the geology is in Section 6 on this --

A. Yes, sir. Exhibit 9 is a little busy, but it contains a lot of information we need.

First of all, the few contour lines you see, or few isopach lines you see, are based upon Devonian pay. There's a 50-foot contour interval.

The scale is rather odd, being an inch to 2192 feet, but that was done in order to fit a standard 11-by-17 sheet of paper, and we could see some details.

The wells -- colored donuts, if you will, around each well are based upon the current production formation, the Devonian being green and the Ellenburger being in red, and I believe that we had some confusion in the North Bell Lake Federal Number 3 well in that it is currently producing quite poorly from the Ellenburger rather than the Fusselman.

There is a red triangle around our North Bell Lake Federal Number 3 well. There's also a dashed green

circle around it, which is labeled 32 acres. That is a drainage radius that Mr. Mayes will discuss later.

The date above each wellbore is the date the well was spud. Then the current operator is -- and the well name and number are located to the right of the well symbol. And the numbers below in green, red and blue are, respectively, current cumulative oil, gas and water production from the Devonian.

The various pools in the area have been identified by name. There are some orthogonal or rectilinear boxes with R-dash numbers around the various wells. These are the OCD order numbers pertaining to the various tracts of land. For example, R-2187 is the order published by the Commission dated March 1 of 1962, establishing the North Bell Lake-Devonian Gas Pool. At that point in time it was just a 160-acre pool for Devonian gas.

Then in September of 1980 BTA applied to the Commission -- or pardon me, to the Division -- to extend that pool o the south to include -- well, to the north and south, actually, to include all of Sections 6, 7 and 18; furthermore, to make special rules providing for the 1650-foot well locations, which automatically then made the Bell Lake Number 6 well a nonstandard, so I assume it was grandfathered in. Also it set out the 640-acre spacing for

the Devonian in that pool.

Then to the south of our section in question today is the Bell Lake-Mid -- Middle Devonian Gas Pool. It was established by Order R-3709 in April of 1969. The Division then extended it to the south in R-3758. They again then extended it to the north with R-6240, and then shortly after BTA applied for their 640-acre rules and the extension of the North Bell Lake-Devonian Pool, contracted the Mid Devonian Gas Pool.

Then to the east of us is the Northeast Bell Lake-Devonian Gas Pool. It was set up originally in 2004 as a 320-acre Devonian gas pool, and extended to the north in R-12,223, and then extended to the south with 12,317. There's been a lot of -- a lot of activity in the general area.

Q. In looking at your map, you show basically zero -- a zero contour line just to the east of your proposed recompletion, and I notice there is a well in Section 5. Can you discuss that well a little bit?

A. Yes, the Apache -- as it is now, North Bell Lake Federal Number 2, produced from the Ellenburger during drilling. It was tested twice -- drill stem tested twice in the Devonian. Both of those drill stem tests recovered only water. Interestingly enough, it recovered water from a depth slightly higher than where the North Bell Lake --

or excuse me, the Bell Lake Unit Number 6, was producing gas.

Also it was drilled, as you can see on the map, one year prior to the drilling of the North Bell Lake Federal Number 3, which was drill stem tested in the Devonian, recovering both gas and water from a lower depth, subsea depth, than what the North Bell Lake federal had tested.

You know, the geologic implication there is, there's some sort of hydraulic barrier between the two wells in Section 6 and the North Bell Lake Federal Number 2 well in Section 5.

Q. And in fact, when the Northeast Bell Lake Pool was created, there was considerable testimony, summarized in Order R-12,106, which discussed the Devonian being wet to the east of Section 6, and other factors, was there not?

A. Yes, there was. At that point in time, the parties involved in that application used the same 3-D seismic surveys and had faults in various different places, i.e., you know, saying the interpretation was a little open to interpretation. Devon, especially, had placed a fault to the east of the Number 2 well. You know, they were trying to separate their acreage over in Section 4 from the currently existing 640-acre pool in Section 6.

Looking, however, at the drill stem test

recoveries from the Number 2 well and then hydrocarbon production and recoveries from the wells in Section 3 -- or 6, pardon me -- my inference is, that fault, if it does exist, must be to the west of the Number 2 well. But for various reasons, you know, Section 5 does not appear to be capable of hydrocarbon production, for the most part.

Q. And in looking at -- because of the pool rules in the Northeast Bell Lake-Devonian Gas Pool, they can have -- they're spaced -- actually, there's essentially two wells per section there right now, is there not?

A. Yes. And in fact, in R-12,106 the OCD made some pretty extensive comments, one of which was, as of that date in 2004, there were 21 Devonian gas pools in southeast New Mexico. Seven were spaced 160 acres, 11 were spaced 320 acres, and only three were spaced 640. You know, thus the 320-acre spacing is way more common than any other spacing, and in fact the 640-acre spacing is quite uncommon.

Again in that order, the OCD stated that as to the nearby Antelope Ridge-Devonian Pool, which would include the Devon Mad Dog Federal in the southeast portion of the map, Shell also based its request for 640-acre spacing on drilling and economic data, which showed that at the time drilling Devonian wells on 160s or 320s was not commercial.

Again, down in Antelope Ridge, the OCD stated that even though wells were effectively spaced 160 acres apart, there was no apparent production interference. Additionally, there was very little pressure depletion seen in wells that were drilled over a 24-year time frame, and that the Antelope Ridge field appeared to have a higher recovery factor than North Bell Lake, again because of the greater density drilling allowed.

Q. So looking at the well we're here for today, the North Bell Lake Federal Number 3, certainly from the data you've seen, the well logs, et cetera, the Devonian reservoir is present at this well?

A. Yes, it is present and should be worthy of a test at least.

Q. Yeah. And from what you see, it should not be wet.

A. Should not be wet, no.

Q. And insofar as the Ellenburger goes, it's at the end of its useful life, and --

A. It's at the end of its useful life, and Apache needs to consider recompletions --

Q. And in your opinion --

A. -- in the event of having to plug the well.

Q. And in your opinion, is the granting of this Application in the interest of conservation and the

prevention of waste?

A. Yes, it is.

Q. And from what you've seen geologically, it's not going to adversely affect any offset operator?

A. No, it will not.

Q. Was Exhibit 9 prepared by you?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd move the admission of Apache Exhibit 9.

EXAMINER JONES: Exhibit 9 will be admitted to evidence.

EXAMINATION

BY EXAMINER JONES:

Q. Mr. Curtis, the -- So what's different between these Devonian gas reservoirs geologically and the Devonian oil pods that are over in Lea County?

A. Well, these are deeper, first of all.

Q. Okay.

A. And, you know, there are -- you know, one difference between the Bell Lake Unit Number 6 and our North Bell Lake Federal 3 and the other Devonian wells you see is, for the most part those other Devonian wells only perforated the top few tens of feet, whereas the Bell Lake Number 6 perforated down 250 feet or so below the top. And as you can see, it's recovered substantially more gas than

what the other wells have. So it appears there's, you know, pay -- potentially pay below the total depth drilled of these other wells.

Q. And you're mapping it -- both those wells about the same spot on the --

A. Yes, sir.

Q. Is that an isopach or --

A. Yes, sir, that is an isopach of Devonian pay.

Q. Okay, but you've projected to have the same -- almost the same amount?

A. Yes, sir. The way I counted, using old sonic logs, they look very similar.

Q. That's all you've got, sonic --

A. Well, we do have some modern neutron density wells in our Bell Lake 3 -- or pardon me, neutron density logs in the Bell Lake Number 3 and also the Bell Lake 2. However, the old Bell Lake 6 only has a sonic. Fortunately, I also had sonics on the two newer wells, so I was able to compare apples to apples, and then we went back and looked at the neutron density logs to get total porosity rather than just, you know, what is commonly known as the primary porosity.

Q. How much porosity -- in a range? Is it 10 percent, or is it real tight?

A. It's the Devonian at 14,500 feet, so it tends to

be tight. You know, these rocks, as carbonates, will have fractures and vugs in them, so the matrix porosity is in the neighborhood of 2 to 3 percent, whereas the total porosity -- it can get up to 10 percent. Looking at the neutron density logs, Mr. Mayes and I were able to conclude that the average total porosity, as we see in our Bell Lake Number 3, was 5 1/2 percent.

Q. Wow, wow. Okay. So basically, you're depending on a lot of fractures and vugs and stuff?

A. Yes, sir.

Q. And those fractures, are they -- they're obviously vertical fractures, I guess?

A. At that depth, that would be the presumption.

Q. No telling what the orientation is.

A. We have no data with which to interpret that. You know, you would think they would probably be parallel to semi-parallel to whatever the major faults are in the region, but without an imaging log of some type it would be purely speculative.

Q. The Ellenburger and the -- I notice down in -- straight south and a little bit east here in Texas, they have Ellenburger and Devonian also. Is this similar to that, as far as -- In other words, is -- the Ellenburger and the Devonian reservoirs follow a similar path as far as -- Well, I was going to ask Mr. Mayes about that, but as

far as geologically, are they similar?

A. I would expect them to be. You know, we're not that far away from Texas.

Q. But I mean as far as -- That Ellenburger, was it gas or was it oil?

A. It's gas.

Q. Okay, so it was gas and water -- some water contact down there?

A. Yes.

Q. Is that really defined on the logs, that water contact?

A. In my opinion, no. Devonian carbonate rocks, you know, have very low porosity, so the resistivities tend to be very high. Industry's knowledge of carbonate reservoir parameters is rather limited, so the water-saturation calculations you make tend to be estimates. That's why in this case we're fortunate to have a number of drill stem tests, so we're able to look at the drill stem tests and the production and, you know, make an estimate as to where the water contact was.

Q. Is drill stem testing still the way to go out here, or -- If you were drilling a new well, for instance, what logs would you run and what tests would you do?

A. Oh, my.

Q. If you had your wish list, and your manager

didn't tell you no.

A. Yes. Well, you know, I would definitely run resistivity, neutron density and sonic. One could go to the more high-end and esoteric logs, like an imaging device to see the fractures and even vugs, if you will. I'm not sure that would really materially impact a completion decision. You know, one would definitely want a mudlogger on the well to see oil and gas shows, you know, and a drill stem test sure would be nice. You know, the recoveries from the three closest wells here to what we're talking about were, you know, very definitive, gas versus water.

Q. What caused those fractures? Are they --

A. Carbonate rocks tend to be very brittle, so -- and, you know, Devonian and Ellenburger are lower paleozoic, so all the moving that occurred in later geologic history stressed those rocks, and when they get stressed they tend to break a little.

Q. And what is this boundary that is somewhere around the North Bell Lake Number 2? Is it a fault or --

A. I -- we -- I did not have access to the 3-D seismic that the parties in R-12,106 had, being Devon, Southwestern, EGL and Landreth. You know, they did interpret a fault being just to the east of the Number 2 well. You know, their interpretation of why it was wet, though, was that it was low to the Number 6. Well, a year

later the North Bell Lake Number 3 was drilled, and it tested gas higher than what the North Bell Lake Number 2 tested water. Therefore, you know, there's got to be some sort of hydraulic separation between the two wells in Section 6 and that one well in Section 5.

Q. So it's between the two -- between those two --

A. It must be, to account for water being produced higher in the Number 2 than what gas was being produced in the Number -- or tested in the Number 3 and being produced in the Number 6.

Q. But you still like that location. Well, you guys are recompleting, so you don't have a choice here.

A. No, correct. And that's why we -- you know, we also needed to apply for the nonstandard location, is -- I believe Mr. Mayes will testify to a potential of around 2 billion cubic feet of gas. We can't afford to drill a well for that.

So we have a wellbore sitting -- approaching a state of idleness, so it's a very logical place to test the Devonian.

Q. Where would you drill it if you were going to drill a well and you could afford it?

A. Oh, well, looking at my map I definitely would move it, you know, to the west of the Number 3 location to try to hit the -- you know, hit more porosity, probably --

well, you know, all things being equal, probably south and west to try and get a little higher too.

Q. Okay. The recompletion sometimes is not quite as -- How old is this well?

A. It was drilled -- spudded in 1995, so it's --

Q. It's not too old.

A. -- just over ten years old.

Q. Do you think they -- they didn't damage it while they drilled it? Do you think recompleting is -- would be a good enough --

A. We do.

EXAMINER JONES: Okay. I ran smooth out of questions here, so...

MR. BROOKS: I don't have any questions.

THE WITNESS: I'm about out of answers.

MR. BRUCE: Mr. Brooks, do you remember that Devon -- I think you were involved in that Devon- --

MR. BROOKS: I do remember --

MR. BRUCE: -- Landreth thing.

MR. BROOKS: -- an EGL-Landreth controversy. I don't remember all the details, but I do remember that. I don't remember how it ever ended up. I think they settled it, did they not?

MR. BRUCE: No, the -- Landreth wanted 640-acre spacing, and Devon and Southwestern wanted 320, and that's

what the Division -- the Division granted the 320-acre spacing.

MR. BROOKS: Well, yeah.

EXAMINER JONES: And how far away is that?

MR. BRUCE: It's just, you know --

THE WITNESS: A mile to the east.

MR. BRUCE: -- all those Devonian wells to the east.

EXAMINER JONES: Oh, okay. That's R-12,106?

THE WITNESS: Yes, sir, that's fascinating reading.

MR. BROOKS: Yes, and I think I wrote part of that order. I remember that various things were said about the result the Division reached in that case. You say it stuck. I don't remember how it all came out.

MR. BRUCE: I think -- I don't know if Landreth pursued the appeal. I believe he dropped the appeal.

MR. BROOKS: Yeah, I think it was -- there was an appeal to the Commission, and I lost track of what happened to it after that. I'm pretty sure it was dropped.

EXAMINER JONES: Okay, the -- I was going to ask one more question, but pertaining to this letter of support I forgot to ask Ms. Hayes about it, but perhaps I'd better ask before I forget.

Kaiser-Francis's letters support -- it says

approval for the unorthodox location and simultaneous dedication, but it doesn't say approval -- they support the second -- them being a different operator. I guess they implied that, though.

MR. BRUCE: Yeah. I mean, certainly Mr. Hall -- You could ask Mr. Hall, but Mr. Hall told me they supported the Application.

MS. HAYES: My letter back to them says that we're going to do operations, and I received communication that that was fine with their landman --

EXAMINER JONES: Okay --

MS. HAYES: -- after I sent the letter.

EXAMINER JONES: -- okay, thanks a lot. Thank you, Mr. Curtis.

MR. CURTIS: Thank you.

KEVIN MAYES,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

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

A. Kevin Mayes. I reside in Tulsa, Oklahoma.

Q. And who do you work for?

A. I work for Apache Corporation in the capacity of

a senior reservoir engineer.

Q. Have you previously testified before the Division?

A. I have.

Q. And were your credentials as an expert reservoir engineer accepted as a matter of record?

A. They were.

Q. Does your area of responsibility at Apache cover this portion of southeast New Mexico?

A. Yes, it does.

Q. And are you familiar with the engineering matters related to this case?

A. Yes, I am.

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

EXAMINER JONES: Mr. Mayes is qualified as an expert reservoir engineer.

Q. (By Mr. Bruce) Mr. Mayes, why don't we -- I'll give you very little guidance here. Why don't we run through your exhibits? Why don't you first discuss the current status of the North Bell Lake Federal Number 3?

A. Okay, Exhibit Number 4 is a production graph of the well we're applying for. It's production oil, water and gas coming out of the current completion of the Ellenburger formation.

Two points to make from this exhibit. One, this well was drilled in 1995, and they did run a DST in the Devonian formation while going down to the Ellenburger. I believe in the public record the volume of gas that flowed during that DST was 2.2 million cubic feet a day, so a very attractive drill stem test. That's what's prompted this Application.

Second point from this exhibit is, the current rate in the Ellenburger is approaching its economic limit if it's not already there, so -- and we see no future potential in the Ellenburger, so ideal wellbore to recomplete up to the Devonian.

Q. There wouldn't be any other portions of the Ellenburger that you would recommend to management that you should perforate?

A. No, there's not.

Q. Let's move on to your Exhibit 5 and discuss the current Devonian producer in Section 6.

A. Correct, Exhibit 5, again, is a production graph, oil, water and gas, of the offsetting Devonian well, Bell Lake Number 6, which is down in the southern half of Section 6.

A couple points to make from this exhibit. One, I did post and penciled the pressure in the DST. In our applied-for well, the Number 3 well, you can see it was

virgin pressure on that DST.

The other point to make from this exhibit is that the Devonian completion in the Number 6 well is going to go to an approximate ultimate recovery of 34.2 BCF of gas.

Q. And in looking at the production figure, although this well is quite a good well, it also did produce a lot of water, did it not?

A. That's correct.

Q. What is your opinion of the remaining reserves in the North Bell Lake Number 6?

A. Yeah, the best tool to discuss that is Exhibit 6, which is a P/Z material balance graph, again, of the offset Devonian producer, Bell Lake Number 6. You can see what I calculate as an ultimate recovery on the material balance P/Z graph versus the decline curve agrees very well at 34.2 or 35.3 BCF of gas, using an abandonment pressure of 2000 pounds, which I believe is reasonable for single completion, 640 acres.

What I anticipate from the recompletion in the Number 3 well is that we'll be able to drive down the abandonment pressure in the proration unit, down to 1000 p.s.i., which would be 36.3 BCF. Thus I believe the recompletion will give us 2 BCF of new reserves.

Q. And based on what you said with respect to the prior exhibit, at least when the well was drilled, the

pressure at the Number 3 location was higher than at the Number 6 location, was it not?

A. That's correct.

Q. So it wouldn't be totally pressure-depleted at your new location?

A. That's correct. What I've also done on Exhibit Number 6, the P/Z, I believe the Devonian in the Number 3 recompletion will be tied to the Number 6 Devonian production to some degree, and I'm anticipating 50 to 100 pounds of pressure in that Devonian when we do our recompletion.

Q. Okay. Next, why don't you go to Exhibits 7 and 8 together? What do they reflect?

A. Okay, these are -- both exhibits are volumetric calculations. Exhibit 7 deals with the entire proration unit, the entire 640 acres. We can run down some key numbers there. Kind of in the middle of the page, net pay, 154 feet, on average underneath the entire 640 acres, and I'm actually getting 633 because the zero line does cut off seven acres at the edge of the 640 acres.

As Mr. Curtis talked about, the average porosity is 5.5 percent, average water saturation 27 percent. Initial pressure, virgin pressure underneath the proration unit, was 6400 pounds. Again, we believe we can take the abandonment pressure to 1000 pounds with both completions.

And then kind of shifting over to the lower right-hand numbers there, that gives us a recovery factor of 82 percent, and we're getting recoverable gas underneath the entire 640 acres of 42 BCF, so plenty of reserves to justify this recompletion.

Q. What is the approximate cost of the recompletion going to be?

A. $189,000 is the AFE that was sent out to partners.

Q. So it certainly makes sense to recomplete the well at that cost for those amount of reserves?

A. That's correct, it would be very attractive economics to the working interest owners.

Q. And not only the working interest owners, but the royalty and overriding royalty owners also?

A. Absolutely.

Q. In your opinion, is the granting of this Application in the interests of conservation and the prevention of waste?

A. Yes, it is.

Q. And were Exhibits 4 through 8 prepared by you or under your supervision?

A. Yes, they were.

MR. BRUCE: Mr. Examiner, I'd move the admission of Apache Exhibits 4 through 8.

EXAMINER JONES: Apache Exhibits 4 through 8 will be admitted to evidence.

EXAMINATION

BY EXAMINER JONES:

Q. Mr. Mayes, is this a water drive?

A. The Devonian is known to be water drive in southeast New Mexico. I don't think that's the biggest component in this particular reservoir, due to the P/Z curve taking a pretty good nose dive recently.

Q. Okay. What caused that Ellenburger to drop off like that?

A. I think it just -- I think it's depleted, pressure depletion. They acidized that well back in 2003, and you can see no effect was made to the production curve at that point, the well just continued to decline. So I don't think it's a plugging problem or a scaling problem or a mechanical problem, I think it's just pressure depletion.

Q. Okay. How would you -- how do you do this completion? Are you going to -- How are you going to do that? How are you going to produce it after that?

A. Well, yeah, that 14-5, we hope it flows on its own for several years. When it becomes incapable of flow we will try to rod-pump it in some way or form, so it will probably take some type of artificial-lift equipment somewhere down the road.

Q. Is that -- So you anticipate the water -- or a velocity string or handling the water somehow?

A. I'm afraid we're going to have water volumes a velocity string will not move. It could probably be a, you know, band-aid on the problem. You know, whenever it won't come up 2-3/8 tubing anymore we'd probably try a velocity string, but I imagine we'll be bringing up so much water and the friction will eat us up on a velocity string, and I imagine we'll just have to go to artificial lift.

Q. You'll just perforate and acidize that?

A. Correct.

Q. Okay. Have you seen any evidence of this boundary they're talking about on the -- any kind of pressure tests, or has Kaiser-Francis -- did you talk to them about any tests on their well?

A. I did not talk to Kaiser-Francis. Really, the best evidence is these DSTs that they ran. Like Mr. Curtis was referring to, the Bell Lake Number 2 is structurally higher but yet was completely wet on the DST, versus, you know, our Number 3 well, the DST produced gas with some water at a lower structural level. So there's got to be some type of hydraulic boundary in there.

Q. And it seems like a big component here is this 5-1/2-percent porosity, you know, versus all the fractures and vugs and stuff, you know. How do you reconcile all

that?

A. Yeah, I think like Mr. Curtis talked about, I don't know as we have enough information to really say this thing is naturally fractured. It would be nice to run an imaging log. However, the well is, of course, already cased, so we're not going to get that information, so -- We'd need more information to figure out which component is contributing more.

Q. So in your opinion, the 320-acre spacing is more pertinent to this area --

A. Yes, sir, I do.

Q. -- also?

A. Yes, sir.

EXAMINER JONES: I don't have any more questions.

MR. BROOKS: I don't have anything for this witness. I have a question for Ms. Hayes that I forgot to ask.

MS. HAYES: Would you like me to come back up?

MR. BROOKS: No, you're --

MS. HAYES: Okay.

MR. BROOKS: -- you can answer it from your chair, it's just one question.

MS. HAYES: Okay.

MR. BROOKS: Under the unit operating agreement in this case, is the working interest allocated according

to participating area or some other way?

MS. HAYES: Some other way.

MR. BROOKS: What other --

MS. HAYES: It has been busted up since 1953, and it is allocated based on the leases that have been assigned from our predecessors, particularly ConocoPhillips, in which Amerada Hess received their full interest in Sections 5 and 6 only.

MR. BROOKS: So the working interest is allocated according to the ownership that it would have it were not in a participating area?

MS. HAYES: Correct.

MR. BROOKS: Okay. Yeah, I learned about that winkle when I was new to the west --

MS. HAYES: Yes.

MR. BROOKS: -- and it caught me by surprise --

MS. HAYES: It did me too, I --

MR. BROOKS: -- I had to re-do a title opinion.

MS. HAYES: I have an 86-pager right here, if you'd like to see it. It's pretty cut up.

MR. BROOKS: Okay.

MS. HAYES: Okay.

MR. BROOKS: Very good, that's all -- But the bottom line from that is that Devon is the operator in the adjoining unit to the east, and they actually do own an

interest?

MS. HAYES: They do not in 5 and 6. They do to the east, they do to the north, and they got that via ConocoPhillips also.

MR. BROOKS: Okay, thank you.

EXAMINER JONES: Thank you, Mr. Mayes.

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

EXAMINER JONES: Thank you, Mr. Bruce. With that, we'll take Case 13,837 under advisement.

(Thereupon, these proceedings were concluded at 9:43 a.m.)

* * *

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

_____, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL December 17th, 2006.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 16th, 2010