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 CHESAPEAKE EXPLORATION, LLC, DOING BUSINESS THROUGH ITS AGENT CHESAPEAKE OPERATING, INC., FOR STATUTORY UNITIZATION OF THE CHAMBERS STRAWN UNIT AREA, LEA COUNTY, NEW MEXICO — CASE NO. 14477

and

APPLICATION OF CHESAPEAKE EXPLORATION, LLC, DOING BUSINESS THROUGH ITS AGENT CHESAPEAKE OPERATING, INC., FOR APPROVAL OF A WATERFLOOD PROJECT AND QUALIFICATION OF THE PROJECT AREA OF THE CHAMBERS STRAWN UNIT FOR THE RECOVERED OIL TAX RATE PURSUANT TO THE ENHANCED OIL RECOVERY ACT, LEA COUNTY, NEW MEXICO — CASE NO. 14478

REPORTER'S TRANSCRIPT OF PROCEEDINGS
EXAMINER HEARING

BEFORE: WILLIAM V. JONES, Presiding Examiner
DAVID K. BROOKS, Legal Examiner

May 27, 2010

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, WILLIAM V. JONES, Presiding Examiner, and DAVID K. BROOKS, Legal Examiner, on Thursday, April 27, 2010, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South St. Francis Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: Jacqueline R. Lujan, CCR #91
Paul Baca Professional Court Reporters
500 Fourth Street, N.W., Suite 105

A P P E A R A N C E S

FOR THE APPLICANT:

OCEAN MUNDS-DRY, ESQ.
HOLLAND & HART
110 North Guadalupe, Suite 1
Santa Fe, New Mexico 87501
(505)988-4421

ALSO PRESENT:

Ronald Miles

EXAMINER JONES: Okay. The next case on the docket is -- let's combine these two cases for purposes of hearing -- Case 14477, application of Chesapeake Exploration, LLC, doing business through its agent, Chesapeake Operating Incorporated, for statutory unitization of the Chambers Strawn Unit Area, Lea County, New Mexico, and Case Number 14478, application of Chesapeake Exploration, LLC, doing business as Chesapeake Operating Incorporated, for approval of a waterflood project and qualification of the project area of the Chambers Strawn Unit for the Recovered Oil Tax Rate pursuant to the Enhanced Oil Recovery Act, Lea County, New Mexico. Call for appearances in both cases.

MS. MUNDS-DRY: Good morning, Mr. Examiner. Ocean Munds-Dry, with the lawfirm of Holland & Hart, here representing Chesapeake Operating, Incorporated, this morning. And I have three witnesses.

EXAMINER JONES: Any other appearances?

Will all the witnesses stand and state your names first?

MR. BRADLEY: Everett Bradley.

MR. FROHNAPFEL: Terry Frohnapfel.

MR. NZEWUNWAH: Chima Nzewunwah.

EXAMINER JONES: Will the court reporter please swear the witnesses?

(Three witnesses were sworn.)

MS. MUNDS-DRY: With that, I'd like to call Mr. Frohnapfel.

May I proceed, Mr. Hearing Examiner?

EXAMINER JONES: Please do.

TERRY FROHNAPFEL

Having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MS. MUNDS-DRY:

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

A. Terrance Alexander Frohnapfel.

Q. By whom are you employed?

A. Chesapeake Energy Corporation.

Q. What is your position with Chesapeake?

A. Senior landman.

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

A. Yes.

Q. Are you the land person who's responsible for the unitization of the Chambers Strawn Unit area?

A. Yes.

Q. Are you familiar with the applications filed in both Case Number 14477 and Case Number 14478?

A. Yes.
Q. Are you familiar with the status of the lands involved in the proposed Chambers Strawn Unit area?
A. Yes.
MS. MUNDS-DRY: Mr. Hearing Examiner, we tender Mr. Frohnapfel as an expert in petroleum land matters.
EXAMINER JONES: So qualified.
Q. Would you briefly state what Chesapeake Operating seeks in this case?
A. Statutory unitization of the proposed Chambers Strawn Unit area, a 480-acre area; approval of the waterflood project in the unit area; and qualification of the project for incentive tax rate authorized by the New Mexico Enhanced Oil Recovery Act.
Q. When was the Northeast Shoe Bar Strawn Pool created?
A. The Northeast Shoe Bar Strawn Pool was established by Order Number R-107-66 on March 1st, 1997.
Q. And what are the lands comprised of in the proposed unit?
A. They're comprised of wells that have reached an advanced state of depletion.
Q. Are they fee lands?
A. Yes.

Q. Turn to what's been marked as Chesapeake Exhibit 1 and explain to the Examiners what it is and what it shows.

A. It's the same as Exhibit A in the Unit Agreement. It shows the proposed unit boundary, and it's approximately one mile west of Lovington, New Mexico, and shows all the Strawn mound wells in the area.

Q. I believe you said the character of the lands in the unit area is 100 percent fee?

A. Yes.

Q. Okay. And what is Exhibit Number 2?

A. It is the standard form modeled after the state unit form for the Unit Agreement. It provides for water flooding and just sets out the basis for participation of each of the owners of the unitized substances.

Q. Thank you. Please turn to Chesapeake Exhibit Number 3 and identify and review this for the Examiners.

A. That shows the list of participation in the unit area by tract. It's also the same as Exhibit B in the Unit Agreement.

Q. Is the basis for participation in the unit set out in the Unit Agreement?

A. Yes, Exhibit C to the Unit Agreement. And Chesapeake will call an engineer witness to explain the formula.

MS. MUNDS-DRY: Mr. Hearing Examiner, that Exhibit C is the last page to the Unit Agreement which has been marked as Exhibit Number 2, in case you would like to reference that.

Q. (By Ms. Munds-Dry) Would you please identify Exhibit Number 4 and explain this for the Examiners?

A. It's a redesignation of well names of the unit.

Q. And it lists all three of the wells in the unit?

A. Correct.

Q. And what is Exhibit Number 5?

A. It's the Unit Operating Agreement. It contains just many standard provisions. It outlines the supervision and management of the unit and defines the rights and duties of all of the working interest owners.

Q. What is Exhibit Number 6?

A. The list of the working interest owners in the unit area.

Q. And Exhibit Number 7?

A. A list of the royalty and overriding royalty interest owners or non-costbearing interest owners.

Q. So the first page is the royalty owners, and the second page is the overriding royalty interest owners?

A. Right.

Q. And what is Exhibit Number 8? While you're using this, if you'll summarize your efforts to obtain working interest owners and non-costbearing interest owners' approval of the unit and waterflood project.

A. Okay. I'll do that first. By the use of mailouts and just following up with phone calls and emails and trying to get them to join, approve the Unit Agreement, Unit Operating Agreement.

And then Exhibit 8 is -- it's the -- summarizes our efforts to obtain working interest owner and royalty interest owner approval in the proposed unit waterflood, and overriding royalty owners also.

We sent out -- the first contact was on March 29th. We sent out a working interest owners meeting to just the working interest owners, of course. And the meeting was held on April 15th at the Chesapeake offices.

Q. This is the first letter, then, that you sent out, this March 29th letter for the meeting?

A. Correct. And then the meeting was on April 15th.

The second letter was sent to all the interest owners. That was April 19th. And the working interest owners got the Unit Agreement, Unit Operating Agreement, ratification forms, election ballots and feasibility study. And the royalty owners and the overriding royalty owners just got the Unit Agreement and the ratification form.

Q. I believe a copy of that April 19th letter was also included in Exhibit Number 8?

A. Yes.

Q. Both to the royalty and working interest owners?

A. Yes.

Q. Okay. If you'll turn to Exhibit Number 9 and explain what this packet of information is for the Examiners.

A. Okay. It's the ratification summary sheet. It shows a tally of trying to obtain 75 percent of the working interest owners and the royalty owners and the overriding royalty owners. Also, it's a copy of all the ratifications. The cover sheet shows how many of them -- if it's highlighted, it shows how many of them responded as a positive approval.

Q. So the first page is the summary, and the next page gives you the highlight -- or the next sort of packet in Exhibit 9 shows you the packet with the highlighted persons, as you were indicating?

A. Yes.

Q. Okay. You said also that the signed ratifications are also --

A. They're attached.

Q. They're also attached. What percentage of the working interest ownership is presently committed to this unit?

A. 75.6 percent.

Q. What percentage of the non-costbearing interest ownership is presently committed?

A. 100 percent.

Q. Do you believe that you have done all that you can reasonably do to obtain voluntary commitment to this unit?

A. Yes.

Q. Have you made a good-faith effort to secure voluntary unitization of all owners, both working and royalty, in the area affected by this application?

A. Yes.

Q. Will Chesapeake call additional witnesses to review the technical portions of this case?

A. Yes.

Q. Finally, what is Exhibit Number 10?

A. Those are affidavits confirming that the notice of applications have been provided in accordance with the rules of the Oil Conservation Division.

Q. I believe it gives the list of parties that were notified and the green cards and a copy of the letters that were sent to those parties and the affidavit of publication in the newspaper, in the Lovington paper?
A. Yes.
Q. Okay. Now, to whom was notice provided for the statutory unitization portion of this application?
A. All working interest owners and non-costbearing interest owners in the unit.
Q. And for the C-108 for the waterflood project, who was notified of that part of the application?
A. All leasehold operators within a half mile of these two proposed injection wells, which there were none of. So we notified all the offset lessees, and then if there wasn't any offset lessees, we notified all the offset mineral owners.
Q. Did we also notify the surface owners for each injection well?
A. Yes, we did.
Q. Were Exhibits 1 through 10 either prepared by you or compiled under your direct supervision?
A. Yes.
MS. MUNDS-DRY: With that, Mr. Hearing Examiner, we move the admission into evidence of Chesapeake Exhibits Number 1 through 10.

EXAMINER JONES: Exhibits 1 through 10 will be admitted.

(Exhibits 1 through 10 were admitted.)

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

EXAMINATION

BY EXAMINER JONES:

Q. Do you remember who the surface owner is for each of the two well sites for the two injection wells?

A. I think one was somebody named Runnels is one of them. We've got on the list --

MS. MUNDS-DRY: I think there was quite a list, because it's close to Lovington, Mr. Hearing Examiner. I think there's quite a few.

THE WITNESS: There's a lot of surface owners inside the unit. But right where the wells are, I think one of them was Chambers. And the other one, the last name is Runnels. And that's the same as the names of the wells. They also own minerals, too, so they're notified anyway.

EXAMINER JONES: Okay. I was glad to see you go down the list of operator, lessee, either non-lease tract, if there was any.

Q. (By Examiner Jones) I guess I'm a little bit confused. 75 percent of the working interest signed up, but 100 percent of the -- you didn't say royalty interest. You said non-costbearing?

A. Um-hum. We just added the overrides. We blended them in with the royalty owners.

Q. So the working interest people that didn't sign so far, are they in here somewhere? You probably went over those.

A. They're on the list for the working interest owners. It's on that page that she was showing you a while ago. If they're not highlighted, they haven't responded yet.

MS. MUNDS-DRY: Mr. Jones, I think if you look in Exhibit Number 9 in the first packet past the summary sheet, it shows you -- the easy way to figure it out is they've highlighted who has joined thus far.

EXAMINER JONES: Okay.

Q. (By Examiner Jones) It looks like Conoco has not, and Northport --

A. Conoco had the most. It had about 18 percent. And they've just been real slow. They've turned their ballot in saying they wanted to participate, but they didn't give me the ratification page yet. It took another signature. It was going to take some time. So I didn't count them yet.

But if I did, that put us up there at 90-plus, 93 percent, something like that, if we had them. They're definitely wanting to participate, but they've been slow to respond on everything.

Q. Okay.

A. Then there was a couple of overrides that didn't respond, so we can't really count their -- there's no way to count -- they don't really have a vote number. But we got 20 out of 22 of non-costbearing. But all of the royalty owners signed up. That's how we came up with 100 percent.

EXAMINER JONES: And as far as the outline of this proposed statutory unit, it's on Exhibit 1; is that correct?

MS. MUNDS-DRY: That is correct.

Q. (By Examiner Jones) So it's kind of a subset of the Northeast Shoe Bar pool, it looks like. I mean, the pool looks like it extends a little bit. I pulled it off, so I know it extends a little bit south of this. But it's 80-acre spacing, one well per 80 acres. It was a Chesapeake 2007 application, so were you involved in that for the special pool rules?

A. I don't think I was. If they were just trying to get some spacing, I wasn't.

Q. Yeah. It was an 80-acre Strawn.

A. Which well was it?

Q. It was for the whole pool. The discovery well. I don't remember exactly which one it was, but it looks like the wells are drilled on 80-acre spacing here. The spacing units are not outlined within this. I can pull them up from these wells. But you don't have them here anywhere, do you, inside this?

A. No.

MS. MUNDS-DRY: No, I don't think we have a map that shows the spacing unit outline.

EXAMINER JONES: Of each of the existing wells. But it looks like some tracts will not have been drilled yet, so -- I can never think of good land questions to ask. I'll turn it over to David

EXAMINER BROOKS: It doesn't sound like there are many to ask in this case.

EXAMINATION

BY EXAMINER BROOKS:

Q. But you said more than 75 percent of the working interest is committed?

A. Right.

Q. And 100 percent of the non-costbearing interest is committed?

A. Correct.

Q. So there are a lot of people to whom you gave notice that you didn't get return receipts from. Are these offset owners, or are they area of review owners?

A. No. Anybody we didn't get a notice back from is inside the unit, maybe like a working interest owner that hasn't responded to the ratification notice.

MS. MUNDS-DRY: I think, Mr. Brooks, I think it is also for the C-108 portion.

EXAMINER BROOKS: That's what I was asking.

THE WITNESS: We don't keep track of any of their -- I mean they don't really -- there's nothing for them to respond off of. It's just like the notice that the hearing is going to take place, and they own an interest within a half mile.

Q. (By Examiner Brooks) So there aren't any owners within the unit that you do not have valid addresses for?

A. That we don't have --

Q. That you don't have addresses for? You've located all the owners within the unit?

A. Yes.

EXAMINER BROOKS: And what Ms. Munds-Dry was saying, it was confirming what I was trying to ask. And that is: The people for whom you have not gotten return receipts are people who own interests within the area of review, but not necessarily within the unit?

MS. MUNDS-DRY: And, Mr. Brooks, because I know you're particularly interested in this, we included the names of those parties who we didn't have addresses for in the legal publication, as well.

EXAMINER BROOKS: Okay. Do you have any kind of chart or diagram or anything that shows how you figured out what tracts were included within the area of review notice?

MS. MUNDS-DRY: I think we'll have a witness later that will have the C-108, and it will show you the area of review maps.

EXAMINER BROOKS: And the way I understand those things is that you draw the area of review circle, and then you have to draw the various tracts that are within it and show how they are configured. Of course, I always like to see identification of the owners that have been noticed by the tracts which they own so we can see that everything has been complied with.

MS. MUNDS-DRY: I'm trying to recall if we have something like that. I think we just have that for the working interest owners and royalty owners on the exhibits here that show their tract numbers. I'm not sure we did that for the C-108.

THE WITNESS: They don't ask for that in the application. They don't ask for it all itemized out like that, but that's how we did it. We did it by tract. If there was an offset operator, that's the only person that you have to notify for that tract.

EXAMINER BROOKS: I would assume you do furnish copies of your notes that demonstrate that, if we requested that. I'll leave that up to the Examiner. That's probably what I would request.

EXAMINER JONES: That's always what I request, also.

EXAMINER BROOKS: That's all I have.

EXAMINER JONES: Thank you very much, Mr. Frohnapfel.

MS. MUNDS-DRY: Thank you. Then I'd like to call Mr. Nzewunwah.

CHIMA NZEWUNWAH

Having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MS. MUNDS-DRY:

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

A. My name is Chima Nzewunwah.

Q. And by whom are you employed?

A. Chesapeake Energy.

Q. What is your current position with Chesapeake?

A. I'm a geologist.

Q. Have you previously testified before the Division?

A. No, I haven't.

Q. Would you please review your education for the Examiners?

A. I started my college education back in Nigeria. I obtained Bachelor's degree in Geology and Mining from Southeast Missouri State University and obtained my Master's in Geosciences, and also a minor in Environmental Sciences. Then I moved to the University of Texas, El Paso, and got my doctorate degree there.

Q. Would you summarize your work experience for the Examiners?

A. Upon graduating, I worked for the Bayelsa State Ministry of Environment as an intern for a year, doing field geology. Then while I was in Missouri, I worked on my Master's. I worked for the USGS, through the USGS EDMAP Program, doing a geological study for the Missouri Valley. And the product of that study is public record, so everyone can go and check it out.

Then I also taught various classes as an instructor in the University of Texas in El Paso and in the El Paso Community College. And also I worked for Selman & Associates, a six-month internship doing wellsite geology. Now I'm working for Chesapeake as a geologist.

Q. And how long have you been with Chesapeake?

A. About three years now.

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

A. Yes, I am.

Q. Are you familiar with the geology in this portion of the Northeast Shoe Bar Strawn pool?

A. Yes.

Q. And are you prepared to share the results of your work with the Examiner?

A. Yes, I am.

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

EXAMINER JONES: Okay. Would you please spell your last name?

THE WITNESS: N-z-e-w-u-n-w-a-h.

EXAMINER JONES: Thank you. Does UTEP still -- I know you were a Ph.D. student at UTEP; is that correct?

THE WITNESS: Yes.

EXAMINER JONES: Do they still send their students to the Silver City area for field geology?

THE WITNESS: Not just Silver City. They

go to different areas, spend a lot little time in Silver City and spend a little time in the Indios.

EXAMINER JONES: Did you concentrate on hard rock or soft rock or --

THE WITNESS: Hard and soft rock.

EXAMINER JONES: Then you're prepared for this business then?

THE WITNESS: Yes, I am.

EXAMINER JONES: Okay. It appears Mr. --

THE WITNESS: Nzewunwah.

EXAMINER JONES: -- Nzewunwah is qualified as an expert in petroleum geology.

MS. MUNDS-DRY: Thank you.

Q. (By Ms. Munds-Dry) Would you please turn to what's been marked as Exhibit Number 11 -- it should be that first map there -- and identify and review this for the Examiners?

A. This is a composite exhibit showing a type log, a structure map and the isopach map and hydrocarbon pore volume map.

Q. If you would first turn to the type log and review this for the Examiners.

A. First of all, the type log location is shown down at the southeast corner of the isopach map. That is the Runnels 8-1 Well. This log shows our unit of interest, which is the Strawn mound carbonate, and the top of this carbonate is labeled here with the blue.

What I've got here is -- within this unit here, I've highlighted the zones that have been typically completed, even though the entire unit is of interest to us.

Q. What is the porosity cutoff that you used here?

A. I used a porosity cutoff of greater than 5 percent.

Q. If you'll turn next on this composite exhibit to your structure map.

A. The structure map is made on top of the Strawn carbonate, which is labeled S-T-R-N-M-D-L. And this structure map shows the original depth of this area on that surface. And looking at this, at the structure map, we have an east/southeast downward dip, dip in structure on that surface.

Q. And looking at the two, the log and the structure map so far, do you believe this portion of the reservoir which you propose to be unitized is reasonably defined by development?

A. Yes.

Q. If you'll then turn to the middle map here, the hydrocarbon pore volume map, and review this for the

Examiners.

A. Before I speak on this one, the hydrocarbon pore volume was after making the isopach map. The isopach map was made using log cutoffs of gamma ray and porosity and also geophysical data to identify this reservoir. And when we relate this to the structure map and also the calculations I've made on it, I'm increasing water saturation to the southeast, so I'm getting a water lag in this reservoir.

So that made me go ahead to generate the hydrocarbon pore volume map to show how that hydrocarbon pore volume changes within this reservoir.

Q. When compared to the unit boundary, does your mapping here show that the entire unitized area should contribute to the reserves for the unit?

A. Yes. It should contribute by varying degrees, based on our water saturation and hydrocarbon pore volume.

Q. That's why, as you were saying, you created the hydrocarbon pore volume map?

A. Right.

Q. Is there anything else on here that you wish to discuss before we turn to the next map?

A. No. That's it.

Q. Okay. Let's turn then to what's been marked as Chesapeake Exhibit Number 12 and review this for the Examiners. What is this map?

A. This is a structure cross-section showing the structural trend on the wells. This cross-section goes from the northwest down to the southeast, the Chambers being the northernmost well. If you look at the cross-section, the structure map was made on the top of the Strawn carbonate. If you look at this structure cross-section, you'll see a general down-dipping pattern in this mound.

And if you also look at -- first of all, I think I need to explain these columns here. The first column here in black is the gamma ray, and the resistivity is in the middle track, and the porosity is in the right-most track. What I've highlighted here is every interval of zone that has got greater than 5 percent porosity and less than 45 API units, which clearly defines carbonates.

Q. Is that what you've highlighted in yellow?

A. That's what I've highlighted in yellow.

Q. I believe, also, the key on your cross-section here shows the perforations for each of the wells?

A. Yes. The black is perforations and the red is producing intervals.

Q. Now, does this show the continuity, then, between -- the continuity in this reservoir between these wells?

A. Yes. There is continuity.

Q. Based on your review of these maps and any other information you've reviewed on the geology in this pool, what are your geological conclusions for this reservoir?

A. Based on all the geophysical and geological studies, I will recommend that -- I think this is a reservoir that has very good capability as a second recovery potential, given the fact that we've got continuity, we've defined this mound, and everything has been taken into account to ensure that the work done here is good.

Q. So you think there will be good flood potential here?

A. There will be very good flood potential.

Q. Can the portion of the pool that is included in the proposed unit area be efficiently and effectively operated under the unit plan of development?

A. Yes.

Q. Were Chesapeake Exhibits 11 and 12 either prepared by you or compiled under your direct supervision?

A. They're compiled by me.

MS. MUNDS-DRY: Mr. Hearing Examiner, we'd move the admission into evidence of Exhibits 11 and 12.

EXAMINER JONES: Exhibits 11 and 12 will be admitted.

(Exhibits 11 and 12 were admitted.)

MS. MUNDS-DRY: That concludes my direct examination.

EXAMINER JONES: Okay.

EXAMINATION

BY EXAMINER JONES:

Q. Do you know much about the history of this little mound and how it was discovered? Was it discovered on some geophysics or seismic surveys?

A. I believe I know a lot of it, yeah. I've been told the history. I did not start the initial work on it, but I know what the history is.

Q. Was it a seismic anomaly that -- was it 3D seismic?

A. Yes, it was 3D seismic that helped identify this area.

Q. Did you use that survey to help on your drawing of your boundaries of this?

A. Yes. The seismic helped constrain, in addition to the well logs, constrain the boundaries of this.

Q. Do you still have access through your company archives?

A. Yes.

Q. Because it looks like you don't have much control. You just have those three wells.

A. Yes, we've got those three wells. But the seismic played a big role in this.

Q. Did you have any core data?

A. There's core data on the Runnels. That's the well to the southeast.

Q. Did they core the main -- cross the interval over the whole core?

A. Yes. And it does show very good core and --

Q. Log core?

A. Yes.

Q. So you have a cross-plot somewhere of the core porosity versus log porosity? You don't need it for this, but --

A. No. It does exist.

Q. Okay. Before I forget, the top and bottom of your unitized interval, it will be in your Unit Agreement, I know. But is it on this type log? I want to make sure we have on the record where -- that you agree with it and everything.

A. Yeah. The vertical limits of the unitized --

the unit to be -- the portion to be unitized is a hundred feet above the Strawn carbonate and a hundred feet below the Strawn carbonate. And this -- from the type log here, this is between -- this is about 11,442 feet and 11,738 feet measured depth.

Q. These are all vertical wells?

A. (Witness nods head.)

Q. This Strawn, it seems like it can vary so quickly within a short period, with a short lateral distance, from a natural producer to a dry hole out here. Do you think you've kind of got that down from the seismic that you know the lateral limits of the Strawn?

What I'm saying is, I remember drilling a well right south of Lovington, and it was right next to a producer and it was a dry hole. So it can happen out there, it seems.

A. Yes. We have that seismically and log-wise defined. And also, when it states that this mound is an isolated mound on its own, and there is not any -- I'd say that the seismic and the well log we've got and all the process we did with it, it was able to identify porosity. And also with the cross-plots, we think the permeability has been very well defined.

Q. So that seismic can see that porosity interval at 11,000 feet through all the salt and everything?

A. Well, I don't recall seeing salt in this area.

Q. What I mean is -- okay. There's no salt?

A. Well, there's --

Q. Way up high?

A. Way up high there's salt. But down there, we don't get that salt influence. And using inversion, you can relate porosity to seismic attributes.

Q. Do you have a sonic log on any of these wells?

A. Yes.

Q. So they were able to tie it in?

A. Yes.

Q. The water lag is to the east, is that correct, or southeast?

A. On this mound, it's to the southeast.

Q. Is that from production history of this well to the southeast, or is that from --

A. Petrophysical studies. And also, if you look at the Runnels, it's got a high water cut, high water production. So that kind of ties it in with the petrophysical studies.

Q. You can actually see it in your resistivity?

A. Yes. If you look at the cross-section, you will see -- coming from the north down to the southeast, you will see a gradual decrease in resistivity, and that -- it's very visible there.

Q. So does that mean that there's gas, Strawn gas, to the northwest, or is there any gas cap? Do you see any indications of crossover or anything?

A. The log attributes are pretty much the same from the Chambers down to the Runnels, so I would not say that there's gas.

Q. Do you see that the best part of the Strawn to be water flooded is the upper part of this clean limestone?

A. It's algal mound.

Q. Algal mound?

A. The entire package has got porosity. And also -- even though we still have water down -- high water down to the southeast, I still believe there is still sufficient hydrocarbon within the waterway areas that we could produce that carbon flow.

Q. Does this look like any other Strawn mound that you've seen around this area? Did you look at any of the others maybe operated by other people?

A. I have not looked at other people's operations. And this is the one mound that I have actually really, really studied in terms of geology and geophysics. And I don't know if the other operators have got geophysical data to theirs, and I cannot really tie my work into their production. I cannot speak for the other mounds.

EXAMINER JONES: I'm all out of questions. Everybody is probably glad. I'll turn it over to David.

EXAMINER BROOKS: I don't think I have any questions.

EXAMINER JONES: We probably forgot to ask some things.

EXAMINER BROOKS: Probably.

EXAMINER JONES: Thank you very much.

THE WITNESS: Thank you.

MS. MUNDS-DRY: With that, we'd like to call our next witness, Mr. Bradley.

EXAMINER JONES: Mr. Bradley, you can take your coat off, if you want.

THE WITNESS: It's fine. Thank you.

EVERETT BRADLEY

Having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MS. MUNDS-DRY:

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

A. Everett Bradley.

Q. By whom are you employed?

A. Chesapeake Energy Company.

Q. And how are you employed with Chesapeake?

A. I'm a senior reservoir engineer.

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

A. Yes, I have. Yes, they were.

Q. Are you familiar with the applications filed in these cases?

A. Yes, ma'am.

Q. Have you made an engineering study of the area that is involved in this case?

A. Yes, I have.

MS. MUNDS-DRY: Mr. Hearing Examiner, are Mr. Bradley's qualifications acceptable?

EXAMINER JONES: They are.

Q. (By Ms. Munds-Dry) Are you familiar with the New Mexico Statutory Unitization Act?

A. Yes, ma'am.

Q. And have you prepared exhibits for presentation in this case?

A. Yes, ma'am.

Q. Let's turn to what's been marked as Chesapeake Exhibit Number 13. If you'll review this for the Examiners.

A. This is an orientation map. It shows the wells that are marked as the Shoe Bar north field.

Within that field it shows an outline of the particular mound that we would like to unitize, and it shows the three wells that are in there.

And in this mound, the first well to be drilled was the Chambers Number 1 -- I'm sorry -- Chambers 7 Number 1, which was November of '96. And that was the first well that was also drilled in the area known as the Shoe Bar north field. In the broader grouping of mounds, there were other earlier mounds drilled, but not in this particular designation.

And it also shows the relationship of this mound to Lovington, New Mexico, and it's about 1.5 miles to the southwest.

Q. Great. If you'll turn to Exhibit Number 14 and review this document for the Examiners.

A. This is the hydrocarbon pore volume isopach map. It shows the unit outline in red, and it shows the ownership tracts which have been outlined interiorly in blue, and they have been numbered 1 through 7.

And each of the wells in this mound are shown, and their designation is indicated in the green circle around the Alston. It indicates that we intend to maintain that as our producing well.

And the triangle -- the blue triangles around the other two wells indicate that we intend to convert those into injection service.

Q. Will this development be accomplished in a single phase?

A. Yes, it will.

Q. If you'll turn then, Mr. Bradley, to Exhibit Number 15 and review the basis for the participation formula that Chesapeake is proposing.

A. This is the unitization formula, and this table is filled in with each tract's value for each of those various percentages. And the three primary areas, the three major areas that we're going to utilize is remaining primary, future secondary, and the wellbores necessary to recover the secondary reserves. And the primary will be reflected by present rate and remaining primary reserves.

We gave a weight of 40 percent to the rates, 60 percent to the reserve. We feel that the reserve is more reflective of the value of the primary. It's also projected over from a larger data field.

The future secondary is 75 percent, and it's reflected by the estimated ultimate primary recovery by tract, and 60 percent by the original oil in place. We gave a higher weight to the original oil in place because there are many factors that can impact a primary performance, data completion, interference completion techniques, mechanical problems. And we also believe that this reflects the ability of the tract to contribute to secondary that might not be seen in the primary.

And lastly, we used 10 percent for the wellbores. And at this depth, well costs are well in excess of $2 million. So the existence of usable wellbores is a very important consideration, so we've used 10 percent to honor that contribution.

Q. Thank you. In your opinion, does this formula allocate production to the separately-owned tracts in the proposed unit on a fair, reasonable and equitable basis?

A. Yes. It's fair to everyone.

Q. Will unitization and adoption of the proposed unitized methods of operation benefit working interest owners and royalty owners in the area affected by this application?

A. Yes. It will give them additional recoveries.

Q. Have you prepared a well performance curve for each of the wells in the unit?

A. Yes, I have.

Q. Let's turn to -- and if you'd like to do these together, Mr. Bradley, you tell me -- Exhibits 16, 17 and 18.

A. All right. 16, that's the Chambers Number 1, the first well drilled in the field. This shows the historic production. It also shows a projection of the remaining oil, gas and water. And the reserve, and this is as of 4/1/2010, the reserve was 29.7 thousand barrels, and 58.3 MMcf.

And this also shows the ultimate recovery under primary operations for this well, which is 529,950 barrels, 1,853,355 mcf. So this curve also shows the last three -- I'm sorry -- the first three months of 2010.

That production shown there was averaged for those three months, and that's the rate that you see used in the table under "rate." The reserve is the number you see in the table under "reserve," and then the ultimate is from this curve under "ultimate."

And Exhibit 17 is a similar display for the Alston 8-1, and it shows reserves at 4,150 barrels, 16,087 mcf. The ultimate here is 157,324 -- I'm sorry, 24 barrels, and 541,504 mcf. And, again, we used the first three months of 2010 as an average rate which came from this curve.

Q. And Exhibit 18?

A. And 18 is a similar curve for the Runnels 8-1. It shows that the reserve is 34.2 thousand barrels, 124.7 MMcf and an ultimate recovery of 89.3 thousand barrels, 531.9 MMcf.

The curve, if you look at those last three months of this well's production, which are the first three months of 2010, January and February had a lot of down time. This well was off more than it was on. And then in the third month, when we got the well back on and lined out, there was a surge of production, which is also not representative of this well's normal performance.

So rather than use the actual numbers on this well, I took the projected values for those first three months of 2010 and used that as the average.

Q. Having discussed the components of rate and reserve used in the unitization determination, will you now discuss the development of the original oil in place component?

A. Yes.

Q. We may have to skip around here a little bit, Mr. Bradley, and I apologize for that. But referring back to the structure map, if you'll talk about the original oil in place calculations that we did.

A. If I might, to keep in order --

Q. If you would like to go to that, sure.

A. All this is just a summary of the three curves that you've already seen. So it shows you what the entire mound has done under primary operation, and it shows the reserve of 34,000 barrels, the ultimate -- oh, I'm looking at the wrong one.

Q. Is that Exhibit 19 that you were referring to?

A. Yes, Exhibit 19. I'm sorry.

Q. 68,000 barrels remain. The ultimate is 776.5 MMBOE. And the significance of this is that the primary is in excess of 90 percent depleted.

Q. Thank you. I didn't mean to get you out of order there.

Then if we could talk about your original oil in place calculations. And I don't know -- do you want to refer to your hydrocarbon pore volume isopach?

A. It does relate back to Chima's exhibit and my Exhibit 14. And as Chima pointed out, the dip indicates a systematic change in saturation with, naturally, the water saturation increasing as you go downdip. In a reservoir of this type, I would normally use a VH isopach and use average values.

But in this case, I don't think that would be fair and equitable. So we relied upon the hydrocarbon pore volume map to calculate the oil in place for each tract, and that calculation is what you see in the table for the TPF factors.

Q. Okay. I'd like to skip ahead, Mr. Bradley, to Exhibit Number 25, which is your waterflood performance curve. If you'll review this exhibit for the Examiners.

A. All right. This exhibit shows the total mound historic performance. It shows that we -- it doesn't show, but I will tell you that we intend to begin injection in the last quarter of 2010, probably December. And this shows a response, a collapse of the GOR, a response in the oil, followed at a later date with some water breakthrough and increasing water production and water cuts.

It shows that the primary -- remaining primary would be 68,000 if we did nothing, and that the incremental secondary we anticipate on this curve is 572,000 barrels. And so I'll leave it at that.

Q. Okay. Now, if we could go back in order, what is Exhibit Number 20? I think it's your table here of well reservoir data.

A. I didn't know we included that. This exhibit is taken from our report, our engineering report. It just shows some of the pertinent data that was used to develop some of the maps. It also shows some data we got from drillstem tests.

I think, perhaps most significant there is that the first well drilled encountered a pressure of 4,200 pounds. And then as we drilled the next well sometime later, it encountered 3,400 pounds or 3,500 pounds.

Also for essentially the equivalent thickness, it came in at a lower rate. So we had lower rate, lower pressure, indicating that we had conformance in the reservoir.

Then it also indicates that as you go down to the Runnels, the water saturation, which is shown in the third grouping down, moves up to 33 percent, and I believe that's the significance.

I also mention here that we do have permeability indication of around 8 millidarcies.

Q. If you'll please turn to what's been marked as Chesapeake Exhibit Number 22.

A. Yes.

Q. What is this packet of information?

A. This is our C-108 application for authorization to inject into our two proposed injection wells.

Q. Did you prepare this C-108?

A. I prepared this, or it was prepared under my direct supervision.

Q. Let's go through some of the high points in the application. Is this the expansion of an existing project?

A. No, ma'am, it is not. This is the creation of a new project.

Q. How many wells are included in this application?

A. Two injection wells, the Chambers and the Runnels.

Q. And what is the plan for stimulating the injection wells?

A. We will just acidize these wells. I believe the volume was 5,000 gallons of 15 percent acid, HCI acid.

Q. Is that discussed on pages 34 and 35 of the Form C-108?

A. Yes, I believe that is correct.

Q. Have you attached appropriate logging and test data on each injector, or has that data already been filed with the Division?

A. All the logs have been filed with the Division when they were drilled.

Q. Has an injection well data sheet been included with the C-108s for each proposed injection well?

A. Yes. Each well has a table that details its initial construction and any work since then. There's also a table -- we'll, I'll leave that for future questions.

Q. Thank you for not getting ahead of me.

A. We don't want to do that.

Q. Does Chesapeake seek authority to commit additional wells to injection at orthodox and unorthodox locations through the Division's traditional administrative procedures?

A. Yes.

Q. If you could turn then to what -- I'm sorry, these pages are not numbered. We intended to do that. But on this Exhibit Number 22, if you could leaf to what should be pages 11, 12 and 13.

A. Yes. These are the maps. Each of our proposed wells shows a half-mile circle, an area of review, and a two-mile circle that identifies all of the wells in that two-mile area. We have one of those for the Chambers 7-1, another one for the Runnels 8-1, and then a third map that just zooms in on the half-mile area just for clarity.

Q. Does this exhibit contain all the information required by the OCD for each of the wells in an area of review which penetrate the injection interval?

A. Yes.

Q. Are there plugged and abandoned wells within either of the areas of review?

A. No, there are not.

Q. Have you reviewed the data available on the wells within the areas of review for this waterflood project, and have you satisfied yourself that there is no remedial work required on any of these wells to enable Chesapeake to safely operate this project?

A. That's correct.

Q. What about any fresh water zones?

A. All fresh water zones are protected.

Q. What injection volumes has Chesapeake proposed for this waterflood?

A. We propose 1,800 barrels of water per day per well.

Q. What is the source of the injection water?

A. Our injection water will come from the Strawn formation, from wells that Chesapeake operates not in this unit but in this area, and also from Wolfcamp wells that Chesapeake operates.

We have included water analyses from each of those sources, which of course includes Strawn. We've done compatibility measurements both by analysis and by blending and observations in various concentrations and temperatures. These waters are compatible. There should be no adverse consequences.

Q. And will Chesapeake be using any fresh water?

A. No. We have no fresh water in this project.

Q. If we can just briefly review what's been marked as Exhibit Number 23.

A. 23 shows the area where the supply wells will be located. Our make-up water will be coming from Section 11. And this is one likely route of around six to seven miles that will bring that water over to the proposed Chambers unit.

Q. So that just gives you a visual of --

A. It's just for convenience, to kind of show you where the water is coming from and where it's going.

EXAMINER JONES: Thanks for doing that.

Q. Will the system be open or closed?

A. It's a closed system.

Q. What injection pressure is Chesapeake proposing?

A. For the Chambers, we propose 2,275 psi; and for the Runnels, which is a little deeper, we propose 2,290 psi.

Q. Will a surface injection pressure to 0.2 pounds per foot of depth to the top of the injection interval be satisfactory?

A. Yes. These calculations are based upon .2 psi per foot of depth to the top of the perforation.

Q. If a higher pressure is needed, Chesapeake will justify the higher pressure with an OCD-inspected separate test?

A. Yes, ma'am.

Q. How will Chesapeake monitor these wells to ensure the integrity of the wellbores?

A. The tubing casing annulus will be filled with an inert fluid. We'll put a pressure gauge on that annulus so we can see any change in pressure, increase or decrease. We'll also have a pressure gauge on the injection tubing so we can ensure that that pressure doesn't exceed the authorized pressure limit.

Q. Are there any fresh water zones in the area?

A. There are. The Ogallala is present. We surveyed the OCD site for location and depth, and we found depth of water in this general area from 51 feet to 160 feet.

Q. Is any injection proposed in that formation?

A. No injection at all is proposed in that area, and that area is protected by multiple casing cement sheaths.

Q. In your opinion, will the proposed injection in these wells pose a threat to any underground source of drinking water?

A. No. The injection will be isolated from all sources of drinking water.

Q. Are there fresh water wells within one mile of any of the proposed injection wells?

A. Yes, there are. In the application we also identify and list those.

Q. Did you sample those fresh water wells?

A. We sampled wells near the injection well and analyzed that water, and that analysis is included in this packet of data.

Q. Are the wells in the project area properly completed and cased so as to prevent any secondary recovery operations from damaging any fresh water in the area?

A. Yes, they are.

Q. Has appropriate geological data been attached per the requirements for a Form C-108?

A. Yes, it is. It is in Section 8. It's from our geologist, and it identifies the geologic description.

Q. Does it also give information on the zones above and below the Strawn?

A. It does. He's examined that area and states in this application that there are no faults or fissures that might communicate from 11,000 feet up to the drinking water at roughly 100 feet.

Q. Has Chesapeake examined the available geologic and engineering data on this reservoir? And as a result of that examination, have you found any evidence of open faults or other hydrologic connections between an injection interval and any underground source of drinking water?

A. We have examined that question, and no faults or fissures or connections have been established or been determined.

Q. Okay. Let's turn to the portion of our application under the Enhanced Oil Recovery Act qualification. What is Exhibit Number 24?

A. It's a letter from Chesapeake requesting the Enhanced Oil Recovery Project qualification for recovery of oil tax rate for this unit.

Q. Does this application for Enhanced Oil Recovery Project qualification for the recovered oil tax rate for the unit area meet all the requirements of the Division rules?

A. Yes. The application is complete and provides all data required by the rules.

Q. And I believe, Mr. Bradley, that in addition to the letter, you've attached certain exhibits, in compliance with that rule as well; is that correct?

A. Yes, we have.

Q. Okay. Without unitized management operation and further development of the unit area, will these reserves be wasted?

A. Yes, ma'am, they will be wasted.

Q. If you'll refer to Chesapeake's Exhibit Number 26 and review the estimated additional capital costs to be incurred in this project. I think it's a separate exhibit.

EXAMINER BROOKS: It does appear there's a cost summary at the top of 26.

Q. Do you have that there?

A. It's in the report. It's probably on the table somewhere, but it's easier for me to find it.

Yes. The cost, there's the cost to convert the Chambers 8-1 and the Runnels 7-1, and that's $175,000 each. Then there's the cost to check and do a cleanup acid job on the proposed producer, which is the Alston, and that cost is 75,000. Injection facilities are estimated at 325,000, and the water supply system, 500,000, for a total cost of 1,250,000.

Q. How much additional production does Chesapeake expect to obtain from this project expansion?

A. We believe that the incremental oil production will be 572,000 barrels and 580,000 mcf.

Q. What about the royalty burden?

A. The royalty burden is approximately 20 percent, I believe.

Q. Of the royalty burden in the working interest owners, what is their estimated additional production from this project?

A. The burden was 25 percent. And that nets down recoveries, incremental recoveries, of 429,000 barrels of oil, 435,000 mcf net to the working interests.

Q. What is the total value of this additional production?

A. The value, based on $75 per barrel of oil and $4 per mcf, the net value for the working interest owners is $33.9 million.

Q. Is unitized management operation and further development of that portion of the pool which is the subject of this application reasonably necessary to effectively carry on secondary recovery operations?

A. Yes. Unitization is necessary.

Q. Will unitized methods of operation prevent waste of oil and result in a reasonable probability of the increased recovery of substantially more oil from the unitized portion of the pool than otherwise would be recovered?

A. Yes.

Q. If you'd identify what has been marked as Chesapeake Exhibit Number 27.

A. It's an engineering and geologic feasibility study for the formation of this unit.

Q. Does it contain some of the same exhibits we've been discussing today?

A. It contains the exhibits that you've seen today, additional data, and a narrative discussion of the geologic and engineering issues that led us to recommend the formation of this unit.

Q. Mr. Bradley, I believe you referred to different forms of this document. But what is Exhibit Number 28? I think that's your last document there.

A. This is a hydrocarbon pore volume map. It is similar to the exhibits that have already been presented, and it is also contained within the report.

Q. Will approval of this application and the implementation of the proposed waterflood project be in the best interest of conservation, the prevention of waste and the protection of correlative rights?

A. Yes. Without unitized operations, significant reserves will be wasted. We believe that the unitization formula treats everyone fairly and equitably.

Q. How soon does Chesapeake anticipate commencing enhanced recovery operations in this unit?

A. We anticipate starting work in the fourth quarter of 2010 and have gravity injection going into the ground probably in December of 2010.

Q. Were Exhibits 13 through 28 either prepared by you or compiled under your direct supervision?

A. Yes, they were.

MS. MUNDS-DRY: Mr. Hearing Examiner, we move the admission of Exhibits 13 through 28 into evidence.

EXAMINER JONES: Exhibits 13 through 28 will be admitted.

(Exhibits 13 through 28 were admitted.)

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

EXAMINER JONES: Thank you. Mr. Bradley, thank you very much.

EXAMINATION

BY EXAMINER JONES:

Q. The API is 43. The gas in this Strawn, is it sour? It's probably sweet.

A. It is. We don't have any problem with H2S at this time.

Q. Pretty much no other inerts?

A. No, I don't believe there are any.

Q. The water quality of the Strawn water, is it -- you're not anticipating any problems with any kind of iron or corrosion or scale?

A. Well, we don't anticipate -- I guess we anticipate some scaling. It seems like you can't get away from it. But nothing that we're not used to dealing with, nothing that won't clean up with a 10, 15 percent acid.

Q. So it looks like a three-well waterflood, two of them peripherally injecting; is that correct?

A. Yes.

Q. And what do you think about the -- now that it's 90 percent completed, is there a secondary gas cap on top?

A. I don't believe so. When we looked at those three performance curves, I didn't discuss it, but the -- we don't see a higher gas production at the highest producing well. In fact, the lower well actually produces a little more gas today than the top well produces today. So I don't think we have formed a secondary gas cap.

And in the report, I have estimated the percent of gas saturation at depletion, were we to go to depletion, and it calculated to be about 22 percent. It's fairly low gas saturation even at a depleted stage, which is why there's so much oil left as a target.

Q. So of these two injection wells, aren't you expecting the Chambers to take more water?

A. I do expect the Chambers to take somewhat more water, and initially perhaps not, because both wells are at low pressures. But I think we will build a bank and hit boundaries in that south well first. And the well in the north, the Chambers, has so much more volume to fill up. I think it will take a higher rate for a longer period of time, but we may not see that on day one.

Q. What kind of reservoir pressure do you think you have out there right now? Just a guess. You're the best one to do a guess.

A. If I were guessing, you know, maybe 8- or 900 pounds.

Q. Okay.

A. We could have taken, you know, a fluid level when that well was down for so long, but I didn't do it. The operations folks didn't do it. By the time I realized the wells were down, they were back on, so we missed that.

Q. That's all right. Did Conoco dispute your formula? Did they show up at the meeting?

A. They did not come to the working interest owners meeting. We did have a conference call at their request. They had five participants, two land and three from various geological disciplines. We discussed a number of things. But one thing that they had no dispute with and was not discussed was the formula for the TPF.

Q. TPF?

A. Tract participation formula.

Q. I don't know how you guys make any money at 25 percent burdens. That's a lot. It's terrible.

A. It is a lot. And one of the reasons this works is because we don't have to drill anything. But if you had to drill wells and bet that the waterflood worked and pay a 25 percent burden, it would be a head-scratcher.

Q. I don't ever remember burdens being that bad.

A. And they weren't.

Q. I guess they kind of got out of hand in the last 10 years.

A. When prices get high, you start giving away bigger burdens.

Q. The trouble is, it's a trap that happens. When prices drop back down, you're trapped and you can't afford to do anything.

A. You can be. But sometimes you just have to tell people, "We can't drill it. Somebody else might, but we can't." Then sometimes they say, "Well, okay."

Q. So you don't anticipate drilling more wells here?

A. I don't anticipate. We will monitor this for performance, and we have certain expectations. If it seems that we're exceeding our expectations, there's going to be a reason for that, and possibly the volume.

You know, there's more porosity or there's more something, in which case we would look at should we drill more wells? Would we get a better sweep, or would we simply get an increased value because of the time value?

We could shorten the life. I doubt that will happen in such a small reservoir, but it's a possibility.

Q. But you're trying to get fillup as fast as possible so you can get your best return?

A. Yes. We want the best return on the investment, and we want verification that this is going to work.

Q. Do you still agree with the 80-acre spacing? Maybe one well per 80? Maybe that was kind of a land issue, combined with the outline of this project. As a reservoir engineer, do you --

A. What I see not in this particular mound, but in other mounds, is that within a mound, there is good continuity. And as demonstrated here, you can quickly effect pressures at a good distance. And so that would lead me to lean toward 80 acres or more. Certainly it doesn't seem, from looking at this, that you would have to go to 40s.

Q. You said 8 millidarcies?

A. Yes.

Q. Kind of a pretty flat Dykstra-Parsons or whatever they used to call it?

A. The Dykstra-Parsons for permeability variation in this reservoir is in the report, and I believe it is .67.

Q. I forgot. Does that mean extreme variation, or is that --

A. I'm sorry. It's .83. And normally out in West Texas we see numbers between maybe 7 to 9.

Q. Okay.

A. So this is kind of in the middle, and this is from an actual core in this mound. We'd like it to be flatter, but it's -- I think by opening up all the pay in both injectors, we can sweep everything that we can reach into that low pressure take point.

Q. As long as you pull your production well down as much as you can, keep it completed correctly.

A. Yes. And these mounds, which are encased by a lime mud, even when you make a mistake and allow a higher pressure to develop, you lengthen the life, but I don't think you sweep things out of the reservoir.

EXAMINER JONES: Okay. Well, good luck on your project.

David, do you have questions?

EXAMINER BROOKS: No questions.

EXAMINER JONES: Thanks a lot.

MR. MILES: Hello, my name is Ronald Miles. I'm a mineral owner in Section 17, more specifically, the Barry Hobbs Well. Can you give me some information on how this will affect that location?

EXAMINER JONES: In Section 17?

MR. MILES: Yes, sir.

MR. BRADLEY: In my opinion, based on the performance, based primarily upon the geologic interpretation, we believe that this mound is encased by lime mud. We don't see -- even though there are some fairly nearby producing wells, we don't see interference between the wells in this mound and those.

And given the low performance of this well down to the south, we don't think it's -- our well down to the south, the Runnels well -- we don't believe that it's pulling in from a larger reservoir area than we have had mapped here. So I think those are the two reasons. We think it's encased.

Our primary reason for thinking that is geophysical data and our history with that data. And secondarily, it's the performance of this mound and of this well in particular.

MR. MILES: So your waterflood project might not increase production on this other well?

MR. BRADLEY: My thought is that it won't.

My thought is that the lime mud will seal these two wells.

MR. MILES: Will it cut back on the production?

MR. BRADLEY: I don't think it will affect it at all. If something were to cause it to cut back, I would expect that to be interference of production between our well and that well. Since we haven't seen that for this many years, I don't think we will see it again, indicating that we isolated it. It's not that it's so far away, but it's got the mud in between.

MR. MILES: Thank you.

EXAMINER JONES: Thank you folks very much. You were very professional in your presentation and very well organized. Thank you very much.

MS. MUNDS-DRY: We aim to please, Mr. Jones.

EXAMINER JONES: Does that --

MS. MUNDS-DRY: That concludes our case. We ask that this matter be taken under advisement.

EXAMINER JONES: With that, we'll take both cases under advisement. The hearing is concluded.

* * *

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

REPORTER'S CERTIFICATE

I, JACQUELINE R. LUJAN, New Mexico CCR #91, DO HEREBY CERTIFY that on May 27, 2010, proceedings in the above captioned case were taken before me and that I did report in stenographic shorthand the proceedings set forth herein, and the foregoing pages are a true and correct transcription to the best of my ability.

I FURTHER CERTIFY that I am neither employed by nor related to nor contracted with 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 7th day of June, 2010.

Jacqueline Lujan

Jacqueline R. Lujan, CCR #91
Expires: 12/31/2010

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