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 PECOS PRODUCTION COMPANY FOR APPROVAL OF A COOPERATIVE WATERFLOOD PROJECT AND TO QUALIFY THE PROJECT FOR THE RECOVERED OIL TAX RATE, EDDY COUNTY, NEW MEXICO

CASE NO. 13,377

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

November 18th, 2004

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, November 18th, 2004, 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.

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I N D E X

November 18th, 2004
Examiner Hearing
CASE NO. 13,377

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* * *

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A P P E A R A N C E S

FOR THE APPLICANT and
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By: WILLIAM F. CARR

* * *

WHEREUPON, the following proceedings were had at 9:56 a.m.:

EXAMINER CATANACH: And at this time I'll call Case 13,377, the Application of Pecos Production Company for approval of a cooperative waterflood project and to qualify the project for the recovered oil tax rate, Eddy County, New Mexico.

Call for appearances.

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe, representing the Applicant.

I have one witness.

EXAMINER CATANACH: Additional appearances?

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe office of Holland and Hart, L.L.P.

We represent Yates Petroleum Corporation in this matter, and I have one witness.

EXAMINER CATANACH: Any additional appearances?

MR. BRUCE: Mr. Examiner, I am also entering an appearance for Devon Energy Production Company, L.P., which does not object to the Application.

EXAMINER CATANACH: Okay, will the witnesses please stand to be sworn in?

(Thereupon, the witnesses were sworn.)

AARON DOVER,

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 for the record?

A. Aaron Dover.

Q. Where do you reside?

A. In Midland, Texas.

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

A. I am an engineer with Pecos Production Company.

Q. Have you previously testified before the Division?

A. Yes, I have.

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

A. Yes, they were.

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

A. Yes, I am.

Q. And does your area at Pecos include this portion of southeast New Mexico?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Dover as an expert petroleum engineer.

EXAMINER CATANACH: Any objection?

MR. CARR: No objection.

EXAMINER CATANACH: Mr. Dover is so qualified.

Q. (By Mr. Bruce) Mr. Dover, could you identify Exhibit 1 for the Examiner and just briefly discuss what Pecos seeks in this case?

A. Yes, it is a land map of the leases, the Benson Federal and the State 2 leases, which Pecos operates, and -- showing the wells in the Queen that we want to convert to injection, to begin a waterflood project there, and we have the half-mile radii drawn around each proposed injector.

Q. Okay. And on this map, Section 2 is a single state lease; is that correct?

A. Yes, that's correct.

Q. And then the northeast quarter of Section 3 is one federal lease?

A. Yes.

Q. And the southeast quarter of Section 3 is a separate federal lease?

A. That's correct.

Q. And these leases are identified in the Application; is that correct?

A. Yes.

Q. The five wells that you seek to convert to

injection are the darker-circled wells within the green outlined area?

A. Yes, they are.

Q. There's one other well that's highlighted on here in yellow. What is that well?

A. That is the Yates Benson Number 4 well, I believe, the well that Yates is appearing to object to our Application on behalf of Yates.

Q. Okay. Now, Pecos is not seeking to unitize this area, is it?

A. No.

Q. It will operate these leases just as a cooperative waterflood?

A. That's correct.

Q. And each lease will be attributed just its actual production?

A. That's correct.

Q. And the pool into which you are objecting -- injecting -- is the Shugart Pool?

A. Shugart, yes, Yates-Seven Rivers-Queen-Grayburg.

Q. Okay. Let's move on to your Exhibit 2. What is that exhibit?

A. A copy of the Form C-108 and all the accompanying documentation for the answers to the questions on the form.

Q. Okay. Now, pages have been numbered, Mr. Dover,

I think pages 3 --

A. Yes, beginning at page 3 we have --

Q. -- 3 through 17?

A. Three through 17 would be the injection well data sheets and their accompanying wellbore diagrams for the wells that we propose to convert to injection, indicating casing sizes, depths and cement tops on all of the wells that we propose to convert to injection. Those wells are all cemented with volumes circulating to the surface, with the exception of one well, which is the last one on page 15, 16 and 17, on which a cement top was noted at 60 feet from the surface, still adequate to protect all of the zones necessary to protect, but --

Q. It just wasn't quite to the surface?

A. Just didn't quite make it to the surface.

Q. Okay. But in your opinion all of these wells have been adequately cased and cemented?

A. Yes, and they're relatively new in their vintage, 1990s-vintage wells.

Q. Okay, moving on to Exhibit 18, which is basically the same -- or page 18, which is the same as Exhibit 1, behind that is a tabulation of data on all wells in the area of review?

A. Yes, we have researched the area within the area of review and listed those wells in tabular form with their

locations and API numbers, status, and then the casing information and cement information, their perforations and dates of completion.

I might make note of one well in the area, the Benson 3 Federal Number 1, which is in Section 3, operated by Gruy Petroleum, a gas well. That well, according to our research and records, has cement behind the 5-1/2 casing to a depth of -- the cement top is at 9000 feet, as indicated by a temperature survey.

Q. Okay.

A. And so that would leave the Queen without cement, is the note -- or the point that I wanted to make.

Q. Okay, and we'll address that again a little bit later --

A. Yes.

Q. -- will we not, Mr. Dover?

A. Yes.

Q. Other than that, were all of the wells in this area properly cased and cemented to prevent any movement of fluid between zones?

A. Yes, they were.

Q. And again, other than one or two of these wells, the wells in the area of review are fairly new wells, are they not?

A. Yes, they are recent wells, most in the 1990 --

late 1980s to mid-1990s vintage.

Q. Now, the well that Yates mentioned in its prehearing statement is not on this list because it is outside the area of review; is that correct?

A. That's correct, it is outside the area of review.

Q. Okay. Now, behind page 19 are several pages of diagrams of plugged and abandoned wells within the area of review. Have those all been properly plugged and abandoned?

A. Yes, they have, and you can see the wellbore diagrams which are of record for each well that was plugged in the area of review.

Q. Okay, so no additional work would need to be performed on those wells?

A. No.

Q. Let's move on to page 28, which is the injection summary. Could you just briefly go through that for the Examiner?

A. Yes, we are applying -- anticipating an average daily injection rate of 1000 barrels of water per day in our five injectors, with a maximum anticipated injection rate of maybe 2000. We are applying for a maximum injection pressure of 1500 p.s.i. and an average injection pressure of 1000 pounds.

Q. Now, with respect to the injection pressure,

Pecos does recognize that it will be limited initially to the .2-p.s.i.-per-foot limitation that the Division has; is that correct?

A. Yes, that's correct, and so we understand and recognize that in order to increase that, we would need to do some step-rate testing and prove the proper injection pressure needed to stay under the frac pressure.

Q. Okay. And what is the source of the water -- the injection water, that you will be using for this project?

A. We have -- of course, we have produced water there, Yates-Seven Rivers-Queen water, actually from the Queen, and we have spoken with SDX, who operates some wells to the north, about getting some water from them, and then also with Chi Energy, who operates some Delaware wells to the east of us in their Munchkin lease, about taking their produced water, and so those are the sources that we've been able to discuss at this point with operators in the area.

Q. And are pages 30 through 34 an analysis of water from various wells?

A. Yes, we've done an analysis of the produced water from our Benson and our State 2 leases and then also the Chi Delaware water. There is a little bit of calcium carbonate scale tendency indicated by these waters that we would need to treat with chemical. However, the mixing of

the two appears to be more favorable. The scaling tendency does decrease when the Queen water is mixed with the Delaware water.

Q. And based on this analysis, do you see any incompatibility between the injection water and the formation water?

A. No.

Q. And finally, with respect to this exhibit, approximately where is the nearest freshwater well?

A. We've done a research of the records we found, and we found a well about two miles north, drilled to 240 feet, that supplies water for cattle, most likely coming from quarternary alluvium gravels, but we don't know of any freshwater underlying the injection interval.

Q. There aren't any wells in the State Engineer's records, in the project area?

A. No.

Q. Could you move on to your Exhibit 3 and discuss that for the Examiner?

A. Exhibit 3 is a type log showing the pay interval in the Queen, beginning at -- I've highlighted the pay strings. It's a compensated neutron lithodensity log indicating pay. I've highlighted over 18-percent porosity beginning at about 2940 feet, down to a depth of three thousand and approximately sixty feet.

Q. And let's move on to your Exhibit 4. What does that show?

A. Exhibit 4 is a structure map of the Queen pay in this area. We've highlighted the wells that are proposed to be converted to injection in yellow. We're showing the crest of the structure centering around our State 2 Number 4 well, which is the type-log well, and then we're indicating a cross-section, which is the next exhibit, marked on that map, running from the State Benson -- I mean the Benson Federal 3 well on the east end of the cross-section, across Section 3 over to the Yates well to the west.

Q. Before we move on to the cross-section, does this map show that the project area is underlain by a relatively continuous Shugart reservoir?

A. Yes, it is. The Queen pay extends over to that line that we've got marked as an updip porosity loss, which sets up the trap for this field.

Q. Okay. And could you point out the producing -- what you anticipate as the producing wells in this project?

A. The producing wells would be up in the far northeast, the State 2 lease, Well Numbers 2 and 3, and then moving to the center of the State 2 lease, the Number 4, and then on the southeast edge of that the Number 6, and then the producer over on the Benson lease would be the

Number 3. And we also anticipate trying to re-enter the Number 7 well to put it on production.

Q. Let's move on to your cross-section, and maybe keep the structure map in front of you at the same time. Could you discuss what happens in the Shugart reservoir as you move to the west?

A. Yes, if you look on the cross-section, to the east again I have highlighted the pay section exceeding 18-percent porosity cutoff, and we have -- that is in the Benson 3 Federal Number 3 well on the east side of the cross-section.

As we move west, the next well is the Benson 3 Federal Number 5, which is a dryhole. And there's just a small stringer in the bottom of that well, indicating porosity greater than 18 percent.

And then by the time we get to the Benson Deep Unit log, the porosity seems to have been greatly reduced throughout the section.

Q. Okay, so the Benson Deep Unit Number 4, that's the Yates well; is that correct?

A. Yes, that's correct.

Q. And so what you have is, you have the updip loss of porosity; is that correct?

A. Yes.

Q. And based on your review, does it appear that the

Yates well would be productive in the Shugart Pool?

A. No, it does not.

Q. Let's get back to this in a minute, but with respect to this project you've identified five injection wells, correct?

A. That's correct.

Q. And a potential of six producing wells?

A. Yes.

Q. What will be the cost, approximate cost, of the project?

A. We're estimating the cost of additional facilities at about $500,000, and a total cost for the project, by the time we re-enter the wells and convert them to injection and lay some lines, in the neighborhood of a million dollars.

Q. What type of primary production was obtained from the Shugart Pool wells in the project area?

A. In total, between the two leases, it's approaching a half million barrels, and that's about an average of 50,000 barrels a well.

Q. Okay. And with this project, what type of recovery would you anticipate?

A. We would estimate that the secondary recovery potential would be on the order of a 1-to-1 secondary-to-primary ratio, so that would equate to another half million

barrels of secondary potential there.

Q. Okay. And based on what you've seen and your price estimate, would this be an economic prospect?

A. Yes, it would, and...

Q. And when would you anticipate commencing injection if the Division approves this project?

A. We would hope to get started in January of 2005, assuming all the necessary approval is received.

Q. Okay. Now, Yates has objected because it's -- and I don't mean to put words into Yates' mouth, but because their well is not -- is open across the injection zone; is that correct?

A. Yes, no cement behind the Queen.

Q. Based on Pecos' proposal, do you believe that this is a problem, that the injection project is a problem with respect to Yates' well?

A. No, we don't, it's outside the review area, and as we've attempted to show, we think that it's not continuous in terms of pay interval, and we also think that the pressure sink that we will create in the producers will pull pressure to the east instead of to the west, which is the direction that their well lies.

Q. Okay. Would the same apply to the Benson 3 Number 1 in the northwest quarter -- northeast -- northwest quarter, northeast quarter --

A. Yes, that's --

Q. -- of Section 3?

A. -- that is correct. We also think that that well is in the same position as the Yates well.

Q. Okay. So between the porosity pinchout and the pressure sink being in the opposite direction, you do not think that those wells are a problem?

A. I don't anticipate problems at all, no.

Q. Okay, and so you would request that no remedial work be required on the Benson 3 Number 1?

A. That's correct.

Q. One final matter. The Yates well, what zone is that currently completed in?

A. Currently in the Bone Springs.

Q. And what is the approximate production?

A. My records indicate that the well's making maybe a barrel and a half a day of oil, and there's no gas reported.

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 -- Excuse me, one other matter. Were Exhibits 1 through 5 prepared by you or under your supervision --

A. Yes, they were.

Q. -- or compiled from company business records?

And finally, looking at Exhibit 6, Mr. Dover, were all pertinent offset operators or lessees notified of this Application?

A. Yes, they were, and --

Q. And does Exhibit A list all of those interest owners?

A. That's correct, and we have the proper notification and receipts there as well.

MR. BRUCE: Mr. Examiner, at this time I would move the admission of Pecos Exhibits 1 through 6.

MR. CARR: No objection.

EXAMINER CATANACH: Exhibits 1 through 6 will be admitted.

Q. (By Mr. Bruce) And one final matter, Mr. Dover. The surface of this land is state and federal land, is it not?

A. That's correct.

MR. BRUCE: Mr. Examiner, I did -- Exhibit 6 does not contain my -- through a mistake, does not contain my notice letter to the Land Office and to the BLM. I had a separate letter to them, and so I will need to submit that.

EXAMINER CATANACH: But they were notified?

MR. BRUCE: They were notified.

EXAMINER CATANACH: Okay, you can submit that later on.

Mr. Carr?

MR. CARR: No questions.

EXAMINER CATANACH: No questions, okay.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Dover, within the project area, is your company the only interest owner or...

A. Yes, within the project area we are the only owner.

Q. Okay, and that would be state and federal royalty under those two leases?

A. That's correct.

Q. Okay, and that production is going to be allocated just on a straight lease basis, on a well basis?

A. Yes, based on the production on each lease.

Q. Okay. The wells that you plan to convert to injection, are those currently producing wells?

A. Yes, they all are except for the State 2 Number 7, which is a dryhole.

Q. Is that currently plugged?

A. It is.

Q. And has this reservoir basically been depleted as to primary production?

A. Yes, it's very close to its primary life. It's produced 95, 98 percent of its primary production.

Q. Do you know what the current rate of production from the wells are?

A. Oh, they're running around two barrels a day per well, there.

Q. And this is the Shugart-Yates-Seven Rivers-Queen-Grayburg. The Queen is the only producing formation --

A. Yes, it is --

Q. -- in this area?

A. -- it's the only producing formation. We've even tried some other zones in the Seven Rivers, but to no avail.

Q. With regards to the State 2 Well Number 1 on page 5 of your exhibit, would you guys have any problem with plugging back that well to a depth, maybe, of 3400 or 3500 feet, setting a bridge plug or some other --

A. No, I don't think so.

Q. It would be open down to 4450 feet at the current time, correct?

A. Right. Yes, that's correct. It was originally a deep well. Did you say about 3400; is that --

Q. Approximately --

A. Yeah.

Q. -- something like that.

A. I'll make a note.

Q. The Benson well is located in the northeast quarter of Section 3?

A. Which well, I'm sorry?

MR. BRUCE: Northwest quarter, northeast quarter of Section 3.

Q. (By Examiner Catanach) Northwest northeast. Okay. That's not shown on the -- that is the -- I'm sorry, who's the operator of that well?

A. Of which well?

Q. Of the Benson 3 Federal --

A. -- Number 1? That would be Gruy.

Q. Okay, and that is northeast northeast of Section 3; is that correct? That's what you have on the area of review.

A. No, northwest northeast.

Q. Northwest, northeast okay.

A. Yeah, the Number 2 is the northeast northeast, and then if you go one line below that, the Number 1 is the northwest of the northeast.

Q. Okay. Did you look at the log for that well, Mr. Dover?

A. Yes, and unfortunately I don't have a copy of that log with me, but it is also in the updip pinchout region that we have identified. I'd be happy to submit it

later if somebody want -- if you'd like to see it.

Q. Yeah, I think that might be helpful and --

A. Yeah.

Q. -- might help you guys out, but you found the same thing in that well as you did in the Yates well; there's just --

A. Yes.

Q. -- not any porosity in that zone?

A. Right.

Q. So you don't think that any water would ultimately reach either of those two wells?

A. No, and again not only for that reason but also because of the pressure sink direction.

Q. Now, your Well Number 2 up in the northeast northeast would be the closest well to that well, your proposed injection well?

A. Yes, uh-huh, proposed injector there. And we have offset production to the south and to the east of that well.

EXAMINER CATANACH: Okay, I think that's all I have of this witness.

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

EXAMINER CATANACH: Okay, this witness may be excused.

MR. CARR: May it please the Examiner, at this time we call David Boneau.

DAVID F. BONEAU,

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

DIRECT EXAMINATION

BY MR. CARR:

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

A. David Francis Boneau.

Q. Dr. Boneau, where do you reside?

A. Artesia, New Mexico.

Q. By whom are you employed?

A. Yates Petroleum Corporation.

Q. And what is your position with Yates Petroleum Corporation?

A. I'm an engineer with Yates Petroleum Corporation, my title is engineering manager.

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

A. Yes, sir, I have.

Q. At the time of that testimony, were your credentials as an expert in petroleum engineering accepted and made a matter of record?

A. Yes, they were.

Q. Have you reviewed the Application filed in this

case by Pecos Production Company?

A. Yes, I have done that.

Q. Have you made a study of the area that is involved in this Application?

A. Yes, sir.

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

A. But of course.

MR. CARR: We tender Dr. Boneau as an expert in petroleum engineering.

EXAMINER CATANACH: Any objection?

MR. BRUCE: I don't think so.

EXAMINER CATANACH: Dr. Boneau is so qualified.

Q. (By Mr. Carr) Would you briefly state what Yates seeks with this Application, or in this case?

A. Yes, we have not applied. There's a problem, and we think that it needs some solution, deny injection into some wells, or set up some kind of way to monitor or some kind of a sink to the west. I think it will become -- you know, we want to describe the problem, and then I think the solution will pop up or not pop up to the Examiner, we'll see.

Q. Is it Yates' position that the injection as proposed by Pecos Production Company may pose a threat or damage offsetting Yates properties?

A. Yes, that is our concern.

Q. Let's go to the exhibits you've prepared. Let's start with Yates Exhibit Number 1, and would you first explain what that shows and then review it for Mr. Catanach?

A. Yes, surely. Exhibit Number 1 is a hand-drawn map of Sections 2 and 3, and it shows in the red arrows the five wells that Pecos Production is proposing to use as injectors. It shows in black circles the wells that are now producing from the Queen. Some of those are going to be converted to injectors.

In Section 3, of interest, the Yates well is marked AAZ. It's in F of Section 3, and then the discussion will, as it has already, lead to the discussion of the Benson 3 Number 1 well, which is in B, and it's shown with a gas symbol and just a number 1.

So Exhibit 1 is an orientation map.

Q. And what is Exhibit 2?

A. Exhibit 2 is the same map, with some numbers under the black circles. Those numbers indicate cumulative production through July, the last point for which I have numbers. The first number is thousands of barrels of oil produced, the second number is thousand barrels of water produced. And so the Benson 3 Number 2 has made 27,000 barrels of oil and 27,000 barrels of water, et cetera. The

good wells are kind of down the middle, as the Examiner can see.

The highest production is from the State 2 Number 3. It has produced 123,000 barrels of oil.

Q. If we look at the map, there is no Queen production shown from the Yates AAZ well; is that right?

A. There is no Queen production from --

Q. It's --

A. -- the Yates well.

Q. -- completed in what interval?

A. It's completed -- It was drilled as a deep well, it produced very, very well from the Strawn, as did the Benson 3 Number 1, and it is now producing from the Leo-Bone Spring South Pool.

Q. Let's go to Exhibit 3. What is this?

A. Exhibit 3 is again the same map, and it simply shows under each well the current rate -- actually, it's the July, 2004, rate, but the current rate of the wells. And as the previous engineer testified, the rates are two to one to a fraction of a barrel of oil per day.

So the wells really are near the end of their primary production and an improved recovery project has come -- time for an improved recovery project has come.

Q. Would you identify now and review Exhibit 4?

A. Exhibit 4 is a tabular listing of what I think of

as basic information about the wells in Section 2 and 3, all the wells in Section 2 and 3. The Yates well is item 15. It was drilled as Benson Deep Unit Number 4. It's not a unit well in the Bone Spring, and so it was renamed Benson Deep AAZ Number 1, and that is the current name, but it's item 15. And like I say, it was drilled in 1984, completed in the Benson-Strawn, produced 250,000 barrels and a BCF of gas out of the Strawn, was recompleted in 1993 to the Bone Spring and has been producing from the Bone Spring since 1993.

And anyway, so the Examiner needs to hear about our well, but if there are questions about any other wells, there's a chance the information is on this page, but we're not going to read every line, surely.

Q. Let's go to Yates Exhibit Number 5, the map, and could you explain what the circles on that map show?

A. Yes, Exhibit Number 5 actually has three pages but they're very, very similar.

Page 1, it's a Midland map of the area with a half-mile circle around the Benson 3 Number 6, which is one of the injection wells, and also a two-mile circle. So it shows both areas of review I've talked about in the C-108, and it shows that the Yates well is just a little bit outside the half-mile circle and very much inside the two-mile circle.

Q. Let's look for a minute at the Benson Deep AAZ Well Number 1, and I'd ask you to refer to Exhibit Number 6 and review this for Mr. Catanach.

A. Okay, Exhibit 6 is wellbore sketch of the Yates well, the Benson -- what I'm -- well, the well name at the top has a mistake in it, which -- it's either the Benson Deep Number 4 or the Benson AAZ Federal Number 1, but it's the Yates well.

Like I say, it was drilled in 1984. It has 13-3/8-inch casing shallow at 350 feet cemented to the surface, 9-5/8-inch casing at 1900 feet cemented to the surface, and drilled to a TD of 12,116, run 4-1/2-inch casing, we ran a DV tool to try to bring the cement up fairly far, and the top of the cement is at 6000 feet, but there's an interval from 1900 feet to 6000 feet with no cement, and the Queen is approximately 3000 feet, so there is no cement across the Queen.

Q. Okay. What is Exhibit Number 7?

A. Exhibit Number 7 may not -- Well, Exhibit Number 7 shows that the casing program for our well was originally scheduled to have intermediate casing down to 3300 feet, and pretty much at the last minute it was changed to bigger casing, down to 1900 feet, and Exhibit 7 is the piece of paper showing that that was approved. And as you heard, the Meridian-Gruy other deep well nearby has exactly the

same casing program as ours, and so it's just to confirm that the casing program was done as legally approved by the BLM.

Q. Let's go to the production plot for the Benson Deep AAZ Well Number 1, Exhibit Number 8. Review that, please.

A. Exhibit 8 is a decline curve, a production plot for the Bone Spring in the Yates well, and as you heard, it's been producing since 1993, it started out as a 10- or 20-barrel-a-day well, and it is now a 2-barrel-a-day well. It makes two barrels a day, it makes about $1000 to $1500 a month for us. It's an economic well, but it's a 2-barrel-a-day well.

Q. Now we've got a log comparison, Exhibit Number 9. What does this show? And identify the two wells for us.

A. Surely. Exhibit 9, I think, starts to be important. Exhibit 9 simply compares, shows side by side the logs in the Queen interval of two wells. The well on the left is the Yates well, Benson Deep AAZ Number 1. And the well on the right is actually about a mile away; it's the Pecos Production State 2 Number 7, in K of Section 2. And that is the well that Pecos Production is proposing as an injector. It is not now a producer, but they're proposing it as an injector.

My point is to simply show side by side the

porosity in the Queen in these two wells, and I think it's obvious to everyone, but it looks to me like the Queen in our well is of the same quality as the Queen in the proposed injector, the State 2 Number 7. Our well actually has 17- or 18-percent porosity in one of those zones.

Anyway, the Queen in our well is comparable to the Queen that they're going to inject to in the State 2 Number 7.

Q. All right. Let's go now to the cross-section, Yates Exhibit Number 10, review the trace for the cross-section and then the data on this exhibit.

A. Exhibit Number 10 is another hand-drawn cross-section, and down in the left corner I show the trace of the cross-section from A to A'. It starts at the State 2 Number 3 well, which is the best oil producer in the field, and proceeds west to the Benson 3 Number 2, our proposed injector, through the Deep Well Benson 3 Number 1, and then to our well.

And if you look above -- it's a structural cross-section, and so the -- it's pretty darn flat, actually, but it shows that the Yates well is not very much above -- or it's not above at all the injection well, the Benson 3 Number 2.

And also I've marked in red porosity, and the well on the right, the best well in the field, has the best

porosity, solid red, tall porosity. But the other three wells to the west are relatively comparable. And again, my point is that it does look, at least sort of coming from the northwest towards our -- from the northeast towards our well, that the Queen is pretty consistent, from the injector at the Benson 3 Number 2 through the Benson 3 Number 1 and to our well. It looks to us like there is Queen sand in a consistent manner through that portion of the reservoir.

And so we're concerned that especially injection into the Benson 3 Number 2 could proceed through this Queen sand to our well.

Q. When you look at this data, do you see the updip loss of porosity in the Queen that sets up a trap as shown on Pecos Production Company's Exhibit Number 4?

A. I don't see that as being very definitive, no.

Q. Summarize for us your conclusions.

A. Well, we think there's a possible problem. We think that just to blow it off is not the right answer, especially in view of the -- there's really two wells that are involved, and we just happen to look and check it all out. So we think that there is definitely a possible problem, and what could be done about it is deny injection into one or two of these wells and -- I mean, this project needs to be done, and so I -- you know, I don't totally

like that.

I think a better solution would be some kind of -- would be either a producer or a monitor well to the west of their lines of injectors, and the candidates are the Benson 3 Number 1 well or the Benson 3 Number 5 well, either as a monitor well or as a producer, would be a way better way to go.

But I think just to do nothing and --

Q. As it is now --

A. -- assume nothing will happen is just an ostrich-in-the-sand approach.

Q. As it is proposed now, you wouldn't know if there was a problem in the Benson Deep AAZ Number 1 well until it occurred; isn't that correct?

A. That's definitely correct, yes.

Q. And what you're recommending is that either injection in the Number 2 and Number 6 be -- the request for those be denied, or that something be proposed that would enable you to monitor the movement of injection fluids, fluids to the west of the injection wells in this cooperative flood?

A. Well, we think that Pecos Production would want to do that, just to know what they're doing, yes, sir.

Q. Were Exhibits 1 through 10 prepared by you?

A. They were prepared by me, yes, sir.

MR. CARR: May it please the Examiner, at this time I'd move the admission of Yates Exhibits 1 through 10.

EXAMINER CATANACH: Any objection?

MR. BRUCE: No objection.

EXAMINER CATANACH: Exhibits 1 through 10 will be admitted.

MR. CARR: That concludes my direct examination of Dr. Boneau.

EXAMINER CATANACH: Mr. Bruce?

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Boneau, looking at your -- First of all, on your Benson AAZ Number 1, what type of life do you expect in that in the Bone Spring?

A. Five years or so. There are other zones we could test -- there are other zones on the logs in the Bone Spring, and the Yates way is test things that -- we would probably test something else. But the answer to your question is approximately five years in this zone.

Q. Has Yates ever proposed or attempted a completion in the Shugart Pool in this well?

A. No.

Q. One of your cross-sections had the State 2 Number 7 well on it, together with the Benson AAZ.

A. Yeah, I think that's Number 9.

Q. And the State 2 Number 7 has no production from the Shugart Pool; is that correct?

A. That is correct, yes, sir.

Q. Okay. And then your other cross-section that goes across the northern portion of these sections, from the State 2 Number 3 and over to the Benson leases and production drops off quickly to the west, does it not?

A. In Exhibit 10, the well on the right-hand side made 123,000, the next well made 27,000, and the two wells on the left have made nothing from the Queen.

Q. I hand you what's been marked Pecos Exhibit Number 7, Dr. Boneau. Have you reviewed the file on the Benson Deep Unit Number 4, which is now the Benson AAZ Number 1?

A. Yes, sir.

Q. And is that the original drilling program that Yates -- or I should say that was proposed for the -- for that well by Yates?

A. Yeah, I think -- this is the piece of paper that preceded the piece of paper that I showed --

Q. Okay.

A. -- showing that change. So this was the -- like I said, the original plan, and what you would call at the last minute it was changed to the 1900-foot intermediate, and that was approved on the piece of paper that I showed.

Q. Okay. If the original plan had continued in effect, then there wouldn't be an issue --

A. There wouldn't -- we would not be here, we'd be fishing with Mr. Carr.

MR. CARR: I wish I was.

EXAMINER CATANACH: Me too.

(Laughter)

THE WITNESS: But the follow-on to that is, the other deep well has the same casing program we have, and --

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

MR. CARR: I have no redirect.

EXAMINATION

BY EXAMINER CATANACH:

Q. Dr. Boneau, do you anticipate any kind of attempt to complete the Queen in your well?

A. It's quite unlikely. With Yates you never say no, but it's unlikely, or it would be in the future, or it would be because some of their oil came to us or something. The logs don't look encouraging for a completion in that zone in our well.

Q. So it doesn't look like it would be productive in your well?

A. I don't -- My opinion would be that if we ran cement and all that and perforated it and opened it now, that we would get little or no Queen production, oil

production.

Q. But you believe that the formation is continuous enough to where water could reach your wellbore?

A. That's what it looks like to us, yes. And I've tried to -- well, especially Exhibit 10 is my attempt to show that.

Q. Is another alternative maybe to isolate that Queen zone in your wellbore by means of cement squeeze?

A. Theoretically that's possible. You would probably want to do that in the Number 1 well first, but yes.

Q. And if water did break through to your wellbore, would that put in danger Bone Spring reserves?

A. Yes.

Q. And at the time that happened, you would be forced to repair the well, or to try and shut off the water flow?

A. Yes.

EXAMINER CATANACH: I have nothing further.

MR. CARR: I have nothing further in this case.

MR. BRUCE: I have nothing further, Mr. Examiner.

EXAMINER CATANACH: Okay. Did you want to -- Is this an exhibit, Mr. Bruce?

MR. BRUCE: Yeah, could I submit that as Exhibit 7?

MR. CARR: No objection.

EXAMINER CATANACH: Okay, Exhibit 7 will be admitted.

And there being nothing further, Case 13,377 will be taken under advisement.

(Thereupon, these proceedings were concluded at 10:50 a.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 13377 heard by me on November 18 2004.

David R. Catanach, 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 November 27th, 2004.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 16th, 2006