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 CONOCOPHILLIPS COMPANY FOR EXCEPTIONS TO OIL CONSERVATION DIVISION RULES 19.15.16.9 NMAC CONCERNING THE SEALING OF STRATA AND 19.15.16.10(A) NMAC CONCERNING CASING AND TUBING REQUIREMENTS IN THE RECOMPLETION OF HORIZONTAL WELLS IN THE VACUUM GLORIETA EAST UNIT, LEA COUNTY, NEW MEXICO CASE NO. 14562

TRANSCRIPT OF PROCEEDINGS
Examiner Hearing
October 28, 2010
8:25 a.m.
1220 South St. Francis Drive
Santa Fe, New Mexico 87504

BEFORE: DAVID BROOKS, HEARING EXAMINER
WILL JONES, TECHNICAL EXAMINER

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

5ae9b77b-f83b-4bdd-b94c-cabf067bfeb2

A P P E A R A N C E S

For the Applicant:

HOLLAND & HART, LLP
Attorneys at Law
Post Office Box 2208
Santa Fe, New Mexico 87501
BY: WILLIAM F. CARR

I N D E X

5ae9b77b-f83b-4bdd-b94c-cabf067bfeb2

MR. BROOKS: I neglected to mention when calling the continuances and dismissals that Case Number 14561 has been dismissed.

So at this time, I will call Case Number 14562, the Application of ConocoPhillips Company for exceptions to Oil Conservation Division Rules 19.15.16.9 NMAC concerning the sealing of strata and 19.15.16.10(A) NMAC concerning casing and tubing requirements in the recompletion of horizontal wells in the Vacuum Glorieta East Unit, Lea County, New Mexico.

Call for appearances.

MR. CARR: May it please the examiner, my name is William F. Carr. I am with the Santa Fe office of Holland & Hart. We represent ConocoPhillips Company, and I have three witnesses.

MR. BROOKS: Would the witnesses please stand, state their names separately, and then they will be sworn together.

MR. SCARBROUGH: My name is Tom Scarbrough.

MS. STYLES: My name is Karen Stiles.

MS. MNICH: Cheryl Mnich.

(Note: Witnesses sworn.)

MR. CARR: May it please the

examiner, at this time we call Mr. Scarbrough.

TOM SCARBROUGH

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

EXAMINATION

BY MR. CARR:

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

A My name is Tom Scarbrough.

Q Would you spell your last name?

A S-C-A-R-B-R-O-U-G-H.

Q Where do you reside?

MR. BROOKS: Which I gather you're no relation to the Midland Scarbroughs?

THE WITNESS: No, I am not.

MR. BROOKS: Go ahead. I'm sorry.

Q (By Mr. Carr) You don't reside in Midland?

A No, I do not.

Q Where do you reside?

A I live in Houston, Texas.

Q By whom are you employed?

A ConocoPhillips.

Q Mr. Scarbrough, what is your current position with ConocoPhillips?

A I am a staff landman with ConocoPhillips.
Q Have you previously testified before the Oil Conservation Division?
A Yes.
Q Have you testified before Examiner Brooks or Examiner Jones?
A No, I have not.
Q Would you review for them your educational background?
A I have a degree in petroleum land management from the University of Oklahoma.
Q And when did you receive that degree?
A 1982.
Q And since that time for whom have you worked?
A I have worked for ConocoPhillips for the past 20 years.
Q Are you familiar with the application filed in this case on behalf of ConocoPhillips Company?
A Yes, I am.
Q And are you familiar with the status of the lands in the Vacuum Glorieta East Unit area?
A Yes, I am.
MR. CARR: We tender Mr. Scarbrough

as an expert in petroleum land matters.

MR. BROOKS: So recognized.

Q (By Mr. Carr) Mr. Scarbrough, would you briefly summarize for the examiners what it is that ConocoPhillips seeks with this application?

A ConocoPhillips is seeking an order granting an exception to two OCD rules. One concerning the sealing of strata. The second one concerning the casing and tubing requirements in the recompletion of horizontal wells in the Vacuum Glorieta East Unit.

Q And why is Conoco seeking this order at this time?

A Conoco has filed an application with the OCD to recomplete the proposed wells. We were advised that there were certain factual situations that would best be addressed by seeking a hearing.

Q So you filed an application?

A The application was filed on September 28.

Q And have you notified affected parties?

A Yes, we have.

Q Let's go to the first slide in Exhibit Number 1. And I would ask you to identify that for the examiners.

A Identified as the red dot is the Vacuum

Glorieta East Unit in central Lea County, New Mexico.

Q And this is just a general location map?

A Yes, it is.

Q Let's go to the next slide. What is that?

A That is a map showing the unit boundary of the Vacuum Glorieta East Unit.

Q Does it show all wells drilled in the unit area?

A Yes, it does.

Q Mr. Scarbrough, in the center of the unit, there is an indication that two horizontal wells have been drilled; is that right?

A That is correct.

Q And will those wells be discussed by subsequent witnesses?

A Yes.

Q What is the character of the land in the unit area?

A All of the land in the unit area is state of New Mexico oil and gas leases.

Q And would you go to Slide 3 and just identify that.

A A list of offset operators that were provided notice.

Q Is ConocoPhillips Exhibit Number 2 an

affidavit confirming that notice of this hearing has been provided in accordance with the rules of the Oil Conservation Division?

A Yes, it is.

Q And what is attached to that affidavit?

A There is an Affidavit of Notice provided -- that notice was provided to all offset operators. There is an affidavit of publication. Also, a copy of the letter that was sent to all offset operators, and finally, proof of receipt by certified mail.

Q And you have notified all offset operators?

A Yes, we did.

Q In each of the formations in which there could be an open hole completion; is that correct?

A That is correct.

Q And will ConocoPhillips call additional witnesses to review the technical portions of this case?

A Yes, we will.

Q Were Slides 1 through 3 in Exhibit 1 and Exhibit 2 either prepared by you or have you review it and can you testify to their accuracy?

A Yes, I can.

MR. CARR: May it please the examiner, at this time, we move the admission into evidence of ConocoPhillips Exhibits 1 -- Slides 1 through 3 in Exhibit 1 and Exhibit 2.

MR. BROOKS: Okay. Exhibits 1, Slides 1 through 3, and Exhibit 2 are admitted.

(Exhibit 1, Slides 1 through 3, and Exhibit 2 admitted.)

MR. BROOKS: I don't believe I've got a copy of Exhibit 2. Mr. Jones has it. Okay. So that's okay. I have no questions.

MR. JONES: Does this overlay the East Vacuum Grayburg Unit?

A Yes, it does.

MR. JONES: Let's see here. This Lower Paddock -- I mean Upper and Lower Paddock is part of the unitized interval. So the lower part of the unitized interval, is that the bottom of the Paddock?

A Yes.

MR. JONES: Okay. I don't have any more questions.

MR. BROOKS: Thank you. The witness may step down.

MR. CARR: At this time, we call

Cheryl Mnich.

CHERYL MNICH

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

EXAMINATION

BY MR. CARR:

Q Would you state your full name for the record?

A Cheryl Ann Mnich.

Q And spell your last name.

A M-N-I-C-H.

Q Ms. Mnich, where do you reside?

A I reside in Houston, Texas.

Q And by whom are you employed?

A ConocoPhillips.

Q What position do you hold with ConocoPhillips?

A I am an associate geologist.

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

A No.

Q Could you review for the examiner your educational background?

A I received a BA in geology from the University of Colorado and a master's of science in

geology from Colorado School of Mines in May 2009.

Q And since graduation from the Colorado School of Mines, have you been at all times employed as a geologist by ConocoPhillips?

A Yes.

Q Are you familiar with the application filed in this case?

A Yes.

Q Are you familiar with ConocoPhillips' plans to recomplete horizontal wells, certain wells in the Vacuum Glorieta East Unit?

A Yes.

Q Have you made a geological study of the area that is the subject of this case?

A Yes.

Q Are you prepared to review the results of that study with the examiners?

A Yes.

MR. CARR: We tender Ms. Mnich as an expert in petroleum geology.

MR. BROOKS: So recognized.

Q (By Mr. Carr) Ms. Mnich, let's start the technical part by explaining specifically what ConocoPhillips is seeking here today.

A We're seeking exceptions to the rules to

enable us to recomplete wells in this unit as open hole laterals from the kickoff point to the end of the horizontal wellbore because our existing wellbores have very narrow 5 1/2 inch casing.

Q Just briefly, don't read the rule to us, but just tell us what exactly these rules require and what exceptions we need.

A The sealing off the strata pertains to sealing off any waters from any oil or gas bearing strata.

Q And does --

A As -- sorry.

Q Go ahead.

A The casing and tubing requirements provides that the casing will isolate oil and gas bearing strata from water bearing strata.

Q Have you prepared exhibits for presentation here today?

A Yes.

Q Let's go to Slide 4 in the exhibit packet. Would you identify that, and then review it for the examiners?

A Yes. Slide 4 is a summary of the stratigraphy with which this application pertains showing the San Andres formation to the top is around

4400 feet. And then the Glorieta is immediately underneath the San Andres starting around 5950. And the top of the Upper Paddock is around 6070 feet. The Paddock formation includes the Upper Paddock Limestone and the Lower Paddock Dolomite.

The entire unitized interval includes from the top of the Glorieta to the base of the Paddock. The Glorieta is approximately 100 feet in the unit area, and the Paddock is approximately 300 feet, give or take.

Q Let's go to Slide Number 5 and review that.

A This is showing an existing wellbore in which we have existing perforations in the Upper and Lower Paddock. What we would like to do is set a bridge plug to close off those existing perforations, mill a window through the casing, build a horizontal down through the San Andres and Glorieta landing for the horizontal well path in the upper 20 feet of the Paddock Limestone, which is our main reservoir.

Q The horizontal wellbore will -- actually, the producing interval will be in the Upper Paddock; is that correct?

A Yes.

Q And the open hole as you come out of the

kickoff point in the casing will be in the lower portion of the San Andres and extend through the Glorieta?

A Yes.

Q And the Glorieta and the Paddock are unitized?

A Yes.

Q And they are, when both are present, produced together; is that correct?

A Correct.

Q They are not segregated or separately measured?

A No.

Q Let's go to Slide Number 6, your sidewall core information. Would you review that?

A Yes. This is the same base as two slides ago, but it highlights the properties for the Lower San Andres that we collected from sidewall core data. It shows that the average porosity is about ten percent. Permeability is about one millidarcy. Average water saturation, 88 percent. Zero oil saturation. Zero gas units, and no fluorescence in the San Andres.

Q When we put the porosity and permeability together, is it fair to say we have a very tight

reservoir at this interval?

A Yes. The porosity is not exceptionally low but the permeability is extremely low.

Q In this situation would there be, in your opinion, geologically any potential for a cross-flow in or out of the Lower San Andres?

A No.

Q And is there any oil or gas producibility out of the Lower San Andres?

A No.

Q Let's now go to Slide Number 7. Would you explain what this is and review it, please.

A So on the left, we have the unit map. The red star is highlighting this particular well, VGEU 26-06.

Q And this is the mudlog from that well?

A And this is the mudlog from that well through the Lower San Anders around 5850 down through the top of the Paddock Limestone. And I have marked where the different units start depthwise. The first tract here -- I will kind of point to it. This is your drill rate through the formations. Then the little column here that has got a little bit of red is indicating porosity. The colors are distinguishing between trace, little and lots of

porosity according to the mudlogging company's table up at the top.

And then we have a lithology column followed by a column for any cut or fluorescence present, a description column, and then the gas units column over on the right. As I have highlighted here with the arrows, we see through this lower part of the San Andres, the mudloggers indicated trace porosity, no cut, no fluorescence, and no gas kicks.

Q So what does that tell you?

A That indicates that there is no producible oil in the Lower San Andres.

Q What about the Glorieta?

A The Glorieta can produce in some areas. This particular well log does not show any cut or fluorescence or gas kicks.

Q Generally, how would you describe the Glorieta?

A The Glorieta is a silty, sandy dolomite. It was deposited in a low energy environment. It's quite muddy.

Q And it is generally tight unless you're in a compartment that you can produce?

A Correct.

Q Let's go to the next one. What is that?

A The next one is the VGEU 38-03 mudlog in the western part of the unit. Again, I have highlighted -- in this particular mudlog, there is no porosity indicated on the mudlogs. Again, no cut or no fluorescence, and small gas kicks that are insignificant. And then in the Glorieta, and this one, you can see small red bars indicating the small amount of cut or fluorescence through the Glorieta.

Q Does this indicate that the general characteristics of these formations should be consistent across the unit area?

A Yes.

Q In your opinion, is it necessary to case and cement the open hole interval to isolate oil and gas or water --

A No.

Q -- in these zones? Can oil, gas, and water, if any, from the San Andres formation in the unit migrate to any other horizon?

A No.

Q Is there anything in this configuration that would lead to the contamination of any water source?

A No.

Q Summarize your geologic conclusions for

us.

A What I found through the geologic study is the Lower San Andres does not produce oil. It is very tight rock. And that the general characteristics across the field remain the same to indicate there won't be any areas that do produce. And the Glorieta is part of the unitized interval and is capable of producing, but it is compartmentalized.

Q Ms. Mnich, were Exhibit 1, Slides 4 through 8 prepared by you?

A Yes.

MR. CARR: May it please the examiners, at this time, we move the admission into evidence of ConocoPhillips Slides 4 through 8.

MR. BROOKS: ConocoPhillips Slides 4 through 8 are admitted.

(Slides 4 through 8 admitted.)

MR. CARR: Pass the witness.

MR. BROOKS: I take it your overall conclusion then is that there is no oil or gas and no hydrocarbons in the San Andres or the Glorieta in this area?

A There is definitely none in the Lower San Andres. There are some in the Glorieta.

MR. BROOKS: And then -- but you

think they are not producible?

A What?

MR. BROOKS: You believe they are not producible?

A For the most part. There are compartments that can produce as part of the unitized interval, and we have produced both the Glorieta and Paddock in the past in different wells.

MR. BROOKS: Okay. Would you expect that there would be a probability that the Glorieta would be producible in the area where these wells or where you're proposing to drill wells?

A Not significantly, no.

MR. BROOKS: Okay. I raise that issue because I take it that the construction -- and this perhaps is for the engineer, but I take it the construction you propose will not enable you to distinguish between any hydrocarbons that originated in the Glorieta versus those that originated in the Paddock?

A No. They have never been separated historically in the area. They have always been produced together and never differentiated productionwise.

MR. BROOKS: They are both in the

unitized interval?

A Yes.

MR. BROOKS: And are they classified by OCD as being part of the same pool?

A Yes.

MR. BROOKS: Okay. Thank you. That's all I have. Mr. Jones?

MR. JONES: I guess I could ask a couple of questions. I should have asked this to Mr. Scarbrough. The partners in the East Vacuum Grayburg -- is it all right if I ask him a question?

MR. BROOKS: Yeah.

MR. JONES: Mr. Scarbrough --

MR. SCARBROUGH: Yes.

MR. JONES: Are the partners in the East Vacuum Grayburg San Andres Unit the same partners as in the Vacuum Glorieta East Unit?

MR. SCARBROUGH: No, they are not.

MR. JONES: Are you satisfied those partners are aware of your intentions?

MR. SCARBROUGH: Yes. We have proposed the wells to the Vacuum Glorieta East partners. They are aware of this action.

MR. JONES: So you've proposed it to the Vacuum Glorieta East people and the people uphole

in the San Andres? Your partners know about this?

MR. SCARBROUGH: We have notified all of the offset operators.

MR. JONES: All the offset operators?

MR. SCARBROUGH: Yes.

MR. JONES: You have been coached well. Okay.

MR. CARR: When you look at the unit and you start giving notice to offsets, you have the same owners, but you have some different percentages when you're dealing with San Andres and the Glorieta and the Paddock. We tried to put together a map for you that showed it by tract, but it was simply too confusing. But we have notified all the offset owners in each of the horizons where there could be -- where there is an open hole completion, and that's how we address that.

MR. JONES: Okay. Thank you. I will go back to Ms. Mnich. The injection and producers are going to be equipped the same way? In other words, you can't case off your injectors either?

A We don't plan to inject in the horizontal wellbores.

MR. JONES: Okay.

A They are producers only.

MR. JONES: Okay. We're talking only about producers here?

A Uh-huh.

MR. JONES: Okay. Do you work on the team uphole in the Grayburg San Andres?

A No. My colleague, Dave Orchard, works on that particular unit.

MR. JONES: Okay.

A But he concurs with the conclusions.

MR. JONES: Of the San Andres porosity and permeability?

A Yes.

MR. JONES: The residual zone in the San Andres is -- I remember the East Vacuum Grayburg Unit, they actually perforated a lot deeper than over in the Grayburg San Andres, the Vacuum San Andres and the Central Vacuum area.

A Yes.

MR. JONES: So is there plans -- are you aware of any plans up in the San Andres, Grayburg San Andres to go even deeper into the residual zone?

A They are looking at going deeper, but not as deep as we are to cut through these laterals. This is a good, like, 800 feet below the deepest they would go for the residual oil zone.

MR. JONES: So are you sure of that 800 feet?

A No. I'm not positive of that particular depth, but I know it is greater than 500.

MR. JONES: You know it is at least 500?

A At least.

MR. JONES: From the bottom of the planned residual zone to the top of these kickoff points?

A Yes.

MR. JONES: Okay. I don't think I have anything else. I guess you miss the brewery smell in Houston after moving from Golden?

A No, I didn't enjoy the brewery smell in Golden.

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

MR. BROOKS: Thank you. The witness may stand down.

MR. CARR: At this time, may it please the examiners, we call Karen Stiles.

KAREN STILES

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

EXAMINATION

BY MR. CARR:

Q Would you state your name for the record and spell your last name, please?

A Karen Ann Stiles, S-T-I-L-E-S.

Q And where do you reside?

A Houston, Texas.

Q By whom are you employed?

A ConocoPhillips.

Q And what is your position with ConocoPhillips?

A I am a senior reservoir engineer.

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

A No, I have not.

Q Could you review your educational background and work experience for the examiners?

A I received a bachelor of engineering from Vanderbilt University in chemical engineering and mathematics May of 2003 and have worked for ConocoPhillips since then in a reservoir engineer capacity for the past four years.

Q Are you familiar with the application filed in this case on behalf of ConocoPhillips?

A Yes, I am.

Q And are you familiar with ConocoPhillips' plans to recomplete current vertical wells in the Vacuum Glorieta East Unit as horizontal wellbores?

A Yes, I am.

Q Are you prepared to review the engineering aspects of this application with Mr. Jones and Mr. Brooks?

A I am.

MR. CARR: We tender Ms. Stiles as an expert in reservoir engineering.

MR. BROOKS: So qualified.

Q (By Mr. Carr) Would you, Ms. Stiles, identify Slide Number 9 in the ConocoPhillips Exhibit Number 1 and review that for the examiners?

A Sure. In Slide Number 9, you will see on the right-hand side the unit map of which you have seen before, and then in the blue box it's highlighted the two laterals that we have drilled in the unit. We drilled those in 2007.

Q Let's go to the next slide, Slide 10, and I would ask you to briefly review the history of the approval of those 2007 laterals.

A Sure. The 2007 laterals, the 42-01 was drilled in 1988 through a TD of 6350. The production casing is 5 1/2 inch. In April 2007, the lateral

permit was approved with a kickoff point of 5941. In August 2007, the lateral was actually drilled with the kickoff point starting at 5821.

Then on the VGEU 1-06, it was also drilled in 1988 through a TD of 6300 feet with 5 1/2 inch production casing as well. April 2007, the lateral permit was approved with a kickoff point of 5902. It was repermitted in September 2007 with a kickoff point of 5808 which was also approved. And then at the end of 2007, the lateral was drilled at the kickoff point of 5811.

Q Now, both of these wells are drilled with an uncased hole from the kickoff point as you build the curve to get into the producing horizon; is that correct?

A Correct.

Q Are ConocoPhillips Exhibits 3 and 4 the approvals that you received from the OCD for each of those?

A They are.

Q And do they indicate that the holes are not cased?

A Yes, they do.

Q When you filed the applications in the instant case, what response did you receive from the

OCD?

A The response was that additional information was needed and advised that the hearing was the best way to get that information reviewed.

Q How many wells does ConocoPhillips hope to complete in this fashion in this unit?

A There are a total of 24. This includes the two that we have already done.

Q And what is the current status of these 24 wells?

A We have got 22 that are currently producing, one that is TA'd and one that is P and A'd.

Q Let's go to the next slide, Slide 11. Would you review this, please?

A Slide 11, you can see the production from the lateral of the VGEU 1-06. You can see that it has been a very good producer ever since it was drilled in 2007.

Q This indicates the water production from the zone?

A It does indicate water production, but the water production is coming from the Paddock and not the others.

Q In this well, Ms. Mnich testified that the

Glorieta is tight --

A Yes.

Q -- I mean, I'm sorry, that the San Andres is tight?

A Yes.

Q When you encounter Glorieta production in this well, what kind of a pressure differential do you have?

A We have not seen any pressure differentials when we do find the Glorieta present in any of these wells.

Q In your opinion, is a cross-flow of either oil, gas, or water, is there a potential for that with this kind of a completion?

A There is not.

Q Let's go to the next slide, Slide Number 12. What is this?

A Slide Number 12 shows the production of the 42-01 lateral since 2007 as well.

Q Does this basically show the same thing for this well that we discussed on the prior slide?

A Yes, it does.

Q Okay. Let's go to Slide 13. Would you identify and review this one, please?

A Slide 13 is an example of the existing and

the planned laterals. As you can see, they are all 5 1/2 inch casing in the wellbores. We would set the cast iron bridge plug just above the top of the Glorieta unitized interval and then set a whipstock, mill a window around 5800 feet with a slight 150-foot variance there, depending on where we are in the unit.

From there, we then build out at a rate of 24 degrees per 100 foot, which would leave approximately 100 to 200 feet of the Lower San Andres open hole before we reach the top of the Glorieta unitized interval. At that point, we would run through the Glorieta and then land a lateral in the top of the Paddock. And the actual distance of the lateral would be anywhere from 1700 to 2700 feet, and that would not be cased or lined.

Q So we're going to be open hole from the kickout point all the way to the wellbore terminus in the Upper Paddock?

A Yes, we are.

Q Mr. Brooks had some questions about Glorieta production.

A Uh-huh.

Q Is the Glorieta always present?

A No, it is not.

Q And when it is present historically, it is produced with the Paddock?

A It has been produced with the Paddock. It has also been produced on its own as more of -- as we have finished with the Paddock interval, we've abandoned that and then gone up and tried to see if there was an opportunity in the Glorieta. And to my experience, there has not been -- we have not found any opportunities there recently.

Q When you're producing in one wellbore Paddock and Glorieta production, you don't segregate or separately measure or meter those?

A No, we don't.

Q And the ownership is common because it is unitized?

A Correct.

Q Okay. With this completion, do you see any potential for any cross-flow?

A I do not.

Q Do you see any potential for the contamination of any water supply?

A I do not.

Q Let's go to Slide Number 14. Would you review that, please?

A Sure. Slide Number 14 just touches on the

economic impact. If we were to drill these out of existing wellbores, the cost of the new wells or of the laterals would be approximately $1 million. If we were to drill a grassroots lateral, meaning start from scratch, it would be approximately $2 million.

Q Can these wellbores be recompleted as horizontal wells if the casing -- if you have to case from the kickoff point?

A No, they cannot because we are limited by the 5 1/2 inch casing that is existing. We would have to -- we would end up with too narrow of a casing through the lateral to make it feasible to actually produce it.

Q So it is mechanically impossible to do that?

A Yes, mechanically impossible.

Q All right. If this application is denied, would it be economically feasible for ConocoPhillips to drill the 24 proposed horizontal completions in this unit?

A It would not. There would only be a handful of those that we would be able to drill as grassroots wells.

Q And accordingly production would be left in the ground?

A Correct.

Q Is this method of reentering and recompleting vertical wells as horizontal wells, is this a method used elsewhere in this area by the industry?

A It is. It is used just in the unit to the west of us and has been done very successfully.

Q Would you turn to Slide 15 and review that?

A Yeah. As you can see on Slide 15, it highlights our unitized area, the VGU, the VGWU just to the west of us, and this -- I will read the quote here back from -- this quote from 2002. "A total of 31 open hole laterals (24 producers and seven injectors)" -- again, this is VGWU. We're not going to have any injectors -- "have been drilled and completed to date in existing wellbores, where each lateral (approximately 1000 to 1800 feet in length) was typically drilled out of 5 1/2 inch casing at an average cost of $305,000 per well." Again, that is 2002 cost. "Cumulative incremental production attributed to horizontal drilling through August 2001 is 1.2 million barrels of oil and the ultimate incremental production is expected to be 2.6 million barrels of oil." And this was taken from an article

that was written by WTGS Publication from Horizontal Drilling at Vacuum Glorieta West Unit from October 2002.

Q When we look at the wells in the Vacuum Glorieta West Unit, are some of those wells at least wells that are drilled from a kickoff point above the unitized interval uncased through the San Andres?

A There are. There are 20 wells that they have drilled where the kickoff point is above the top of the unitized interval.

Q What conclusions can you reach from your study?

A The primary conclusions are that surface and immediate casing cemented in the wellbores is not necessary to isolate the water, oil, and gas bearing strata down in the production interval.

Q And what are your conclusions concerning the risk this procedure poses to any water in the area?

A The proposed open hole completion will not result in any contamination of any artesian water, and it will also not be migrating into any of the open strata.

Q In your opinion, will approval of this application be in the best interests of conservation,

the prevention of waste, and the protection of correlative rights?

A Yes, it will.

Q Were Conoco Slides, in Exhibit 1, 9 through 15, and Exhibits 3 and 4 either prepared by you or compiled under your direction?

A Yes, they are.

MR. CARR: I move the admission at this time of Conoco Slides 9 through 15 and Exhibits 3 and 4.

MR. BROOKS: 9 through 15?

MR. CARR: Yes, sir. And 3 and 4.

MR. BROOKS: Slides 9 through 15 and Exhibits 3 and 4 are admitted.

(Slides 9 through 15 and Exhibits 3 and 4 admitted.)

MR. CARR: That concludes my direct of this witness.

MR. BROOKS: Okay. You said this water production was coming from the Paddock rather than from the higher formations. How do you establish that?

A We know we have an active aquifer drive in the Paddock, and we know that the Glorieta and the Lower San Andres are very tight.

MR. BROOKS: Therefore, they do not

produce water. Although you said the San Andres was very much water saturated in this area?

A It is, but it is incredibly -- the permeability is really very low.

MR. BROOKS: Right. Now, with this kind of hole construction, I don't know -- I'm not -- certainly not a drilling engineer. I don't know anything about it, but what is to prevent water from moving up the annulus outside the casing when it is coming up through the open hole?

A It is cemented, the 5 1/2 is cemented in the hole there.

MR. BROOKS: Well, yeah, it is cemented at the bottom. Is it cemented at the point where your window is?

A It is, yes.

MR. BROOKS: You don't show that on the diagram. So it is cemented above the window then?

A Yes.

MR. BROOKS: In what formation? In the San Andres?

A It varies, but it is at least up to the San Anders, if not all the way up to the surface.

MR. BROOKS: Okay. Very good.

5ae9b77b-f83b-4bdd-b94c-cabf067bfeb2

Mr. Jones?

MR. JONES: So you know the productions come from the Paddock. Do you have any surveys? Did you do any production surveys?

A We don't have any.

MR. JONES: That's okay.

A No.

MR. JONES: Do you know the relative difference between the San Andres permeability and the Paddock permeability?

A The --

MR. JONES: The Paddock San Andres you said is 1.1, right, something like that, millidarcies?

A Yes, in the lower there --

MR. JONES: In the lower there?

A In the lower portion, correct, just above the Glorieta.

MR. JONES: What about the Paddock permeability?

A The Paddock permeability, I don't know off the top of my head.

MR. JONES: It is higher?

A Yes.

MR. JONES: Okay. And the

completions, how do you complete these?

A They will be acidized.

MR. JONES: That's it?

A Uh-huh. They won't be fracture stimulated. They will be acidized.

MR. JONES: Big acid jobs?

A Yes.

MR. JONES: Okay. How do you know where you're at when you drill these?

A We log as we drill.

MR. JONES: Gamma ray 30 feet back?

A Yes.

MR. JONES: You do a survey after drilling?

A Yes.

MR. JONES: Is there a bunch of old slim holes out there in the Glorieta Abo? Like triple slim holes?

A Less than 5 1/2?

MR. JONES: Like 2 7/8 size?

A There aren't too many of those, but there are some which is why we've only got 24 of the wells that are candidates instead of more in the unit.

MR. JONES: And your production equipment for 1,000 barrels of water?

A It is an ESP.

MR. JONES: What is your economic if you make 1,000 barrels of water -- of oil out there?

A It's all dependent on the oil cut.

MR. JONES: But it -- okay. So what could the oil decline to to be a limit on your economics?

A I don't know the number off the top of my head.

MR. JONES: That's all right. But it is 24 degrees per hundred?

A Right.

MR. JONES: And you consider that a short radius?

A Yes.

MR. JONES: Okay. That's all I have. Thank you.

MR. BROOKS: Okay. Anything further, Mr. Carr?

MR. CARR: Mr. Examiner, I have nothing further in this case.

MR. BROOKS: Very good. The witness may step down. Case Number 14562 will be taken under advisement.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 14562 heard by me on Oct 28, 2010

Oil Conservation Division

REPORTER'S CERTIFICATE

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

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

WITNESS MY HAND this 28th day of October, 2010.

Connie Jurado

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