NEW MEXICO OIL CONSERVATION DIVISION

STATE LAND OFFICE BUILDING

STATE OF NEW MEXICO

CASE NO. 10571

IN THE MATTER OF:

The Application of Chevron U.S.A., Inc. For a High Angle/Horizontal Directional Drilling Pilot Project, Special Operating Rules, Unorthodox Oil Well Location, Non-standard Oil Proration Unit, and Simultaneous Dedication, Lea County, New Mexico.

BEFORE:

DAVID R. CATANACH

Hearing Examiner

State Land Office Building

October 15, 1992

REPORTED BY:

CARLA DIANE RODRIGUEZ
Certified Court Reporter
for the State of New Mexico

ORIGINAL

A P P E A R A N C E S

FOR THE APPLICANT:

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I N D E X

E X H I B I T S

EXAMINER CATANACH: At this time we'll call Case 10571, the application of Chevron, U.S.A., Incorporated, for a high-angle horizontal directional drilling pilot project, special operating rules, unorthodox oil well location, nonstandard oil proration unit, and simultaneous dedication, Lea County, New Mexico.

Are there appearances in this case?

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm, Campbell, Carr, Berge & Sheridan. We represent Chevron U.S.A., Inc., and we have two witnesses.

EXAMINER CATANACH: Are there any other appearances?

MR. PADILLA: Mr. Examiner, my name is Ernest L. Padilla for John H. Hendrix Corporation. I have no witnesses.

EXAMINER CATANACH: Any other appearances? Will the two witnesses please stand to be sworn in.

[The witnesses were duly sworn.]

PATRICIA HARRIS

Having been first duly sworn upon her oath, was examined and testified as follows:

EXAMINATION

BY MR. CARR:

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

A. Patricia Harris.

Q. Where do you reside?

A. Midland, Texas.

Q. By whom are you employed and in what capacity?

A. I'm employed as a petroleum geologist for Chevron.

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

A. No, I have not.

Q. Would you briefly review for Mr. Catanach your educational background and then summarize your work experience.

A. I received a bachelor's degree in geology from Hunter College of the City University of New York, and a master's degree in geology from the State University of New York at Stoneybrook; the master's degree in 1980.

I went to work for Gulf Oil in August of 1980 as a petroleum geologist, continued on with Chevron, and am currently employed as a

petroleum geologist responsible for properties in Southeastern New Mexico.

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

A. Yes.

Q. Are you familiar with the proposed well in the subject area?

A. Yes.

Q. In fact, you've made a geological study of the area, have you not?

A. Yes.

MR. CARR: We would tender Ms. Harris as an expert witness in petroleum geology.

EXAMINER CATANACH: Ms. Harris is so qualified.

Q. Would you briefly summarize what Chevron seeks with this application?

A. Chevron is here today to seek approval to recomplete the Drinkard B No. 5 well by horizontally drilling in the South Brunson Drinkard Abo pool.

This would also require a resulting unorthodox bottom hole location and a nonstandard proration unit dedication of 80 acres with the allowable assignment based on a total acreage

dedicated to the well.

Q. Now, what pool do you propose to complete this well in?

A. In the South Brunson Drinkard Abo pool.

Q. What formation are we talking about?

A. We're talking the Abo formation in that pool.

Q. What is Chevron's purpose in bringing this application to the Division?

A. We intend to show the Division today that in allowing us to plug back the Drinkard B No. 5 well from its currently producing Wantz-Granite Wash oil pool, by kicking off and drilling horizontally in the Abo formation of the South Brunson Drinkard Abo pool, that we'll be able to maximize our penetration of naturally occurring fractures which occur in this reservoir.

This will allow us to maximize our permeability and ultimate oil recovery and enhance the life of the well. We also believe that this project will prevent waste and will not violate any correlative rights.

Q. Is it also Chevron's intention to gather information to determine whether or not

this drilling technique can be effectively used in other properties in Southeastern New Mexico?

A. Yes. We'll be using a fairly new technology that is specifically designed to be used in old, existing wellbores. We'll be collecting data to evaluate the potential of this technique for numerous wells in Southeastern New Mexico, not just in the South Brunson Drinkard Abo pool.

Q. Could you identify what has been marked for identification as Chevron Exhibit No. 1 and review this for Mr. Catanach?

A. Exhibit No. 1 is simply a location plat. The top map is the map of New Mexico showing the location of the area we'll be discussing in Southeastern Lea County, New Mexico.

The middle map shows the geographic outline of the South Brunson Drinkard Abo pool. It highlights Section 30 where our project well is located, and that Section 30 is shown on the bottom of the location plat. Shown in the heavy dashed line is a stand-up 80 acres for which we are asking the nonstandard proration unit.

Q. Let's move to Exhibit No. 2 which is

another plat of Section 30, and I would ask you to review the information on this exhibit for the Examiner?

A. Yes. We're looking at a blow-up of the map on the bottom of Exhibit 1. Section 30 is comprising the upper two-thirds of that map. The same heavy dashed line shows the 80 acres that we're asking for.

The Drinkard No. 5 well is located in the center of the map, has a number "5" numeral next to it. Shown on there by the No. 5 well is a 200-foot-by-400-foot target window in which the horizontal bottom hole location of our proposed plug back will be located. We will be drilling in a north/northeast direction.

Q. The project area is comprised of the west half of the southeast of 30, and that's what's indicated here?

A. That's correct.

Q. This exhibit also shows offsetting operators?

A. Yes. We're offset by American Exploration on the west, Texaco on the south, and Hendrix on the northeast.

Q. And the other offsetting properties are

operated by Chevron?

A. Yes. The 80 acres we're asking for is a portion of the larger Chevron-operated lease in which we have 100 percent working interest.

Q. What is the status of the ownership in the acreage which is designated as the project area?

A. Chevron operates it 100 percent. We operate four wells there. They're all numbered, Wells 2, 4, 3 and 5. The No. 3 well currently produces from the South Brunson Drinkard Abo pool and will require a simultaneous dedication once we perform our workover in the No. 5.

Q. Is the working interest common throughout the project area?

A. Yes.

Q. Is the royalty interest also common in all horizons?

A. Yes.

Q. Could you explain to Mr. Catanach exactly how the proposed bottom hole location will be unorthodox?

A. Okay. The current rules for the South Brunson Drinkard Abo pool is for a well to be located no closer than 330 feet from any section,

lease, or government quarter quarter section line.

The proposed bottom hole location for the Drinkard B No. 5 will violate the third of those qualifications in that we may come within 40 feet of a government quarter quarter section line.

Also the field rules provide that 40 acres be the standard proration unit for the pool, and we are asking for an 80-acre proration allowable along with the increased oil allowable to be assigned to our project well.

Q. So, basically, the reason we're unorthodox is the horizontal portion of the hole may come as close as 40 feet to the quarter quarter section line that defines the northern boundary of the southwest of the southeast of 30?

A. Yes.

Q. Let's move now to Exhibit No. 3, your structure map, and I would ask you to review that for Mr. Catanach.

A. This is a structure map on top of the Abo formation. Section 30 lies directly in the center of the map. The Drinkard B No. 5 is highlighted by an arrow pointing to the wellbore

location. The dashed line there is the same target window that we saw on the previous exhibit.

The contour interval on the map is 25 feet which shows the structure trending northwest to southeast. The importance of this structural alignment is that the dominant regional fracturing trend in the Abo parallels that trend, northwest to southeast.

We will be drilling our well in a northeasterly direction hoping to penetrate additional fractures in a horizontal portion of the wellbore which cannot be penetrated by the vertical current wellbore.

Also highlighted on the map in the dark, larger circles are the wells which have produced or are currently producing or have produced in the past from the Abo portion of the South Brunson Drinkard Abo pool, unless otherwise known.

Wells with a slash through them indicate wells which are no longer active in the pool, and the numbers next to those highlighted wells are the cumulative productions from those wellbores.

Q. You constructed this map using wellbore information?

A. Yes.

Q. Are there dry holes in the Abo in the area?

A. Yes. Also highlighted on there you can see to the southwestern and western portion of Section 30, you'll see a line-up of dry holes in the Abo. This is another reason why we are projecting our well off into the northeast direction away from this dry hole area.

Q. Let's move to the structural cross-section and go first to Exhibit No. 4. Could you identify and review that for Mr. Catanach?

A. Exhibit No. 4 is a structural cross-section in our proposed 80-acre proration unit. The maps on the right are a duplicate of Exhibit No. 1, and again show the location of the cross-section down on the bottom there, running from north to south.

The purpose of this cross-section is to provide information on the current and past status of all the wells on our proposed 80 acres which have produced or are currently producing

from the South Brunson Drinkard Abo pool.

If we start on the right, we have the Chevron Drinkard B No. 5 well, which is our project well. It is twinned the Chevron Drinkard B No. 3 well. The Drinkard B No. 5 well is currently producing out of the Wantz-Granite Wash pool. It has never perforated or tested in the South Brunson Drinkard Abo pool.

The vertical limits of the pool are highlighted on the central portion of the cross-section that shows you the top of the Abo and the top of the Drinkard. The pool actually contains the two formations, the Drinkard formation being the upper third, the Abo formation being the lower third. Our target is identified as target zone, horizontal wellbore, and we plan on getting out about 400 feet in a northeasterly direction, and it occurs within about, oh, the top half of the Abo formation.

If we turn our attention to the Drinkard B No. 3 well, this well currently produces about 300 Mcf of gas a day out of the Drinkard portion of the South Brunson Drinkard Abo pool.

The TD in the well, its total depth, is

only about 50 feet into the top of the Abo formation. This well does not penetrate our target zone, and is separated by about 300 feet.

As we go to the north we have two more wells in our proposed 80-acre proration unit. The Chevron Drinkard B No. 2 is an older well that was completed open hole in 1946 and commingled the Drinkard and the Abo formations, and was then plugged back in 1974. It currently produces from the Blinebry.

The Chevron Drinkard B No. 4 currently produces from the Wantz-Granite Wash, has never been completed or tested in the South Brunson Drinkard Abo pool.

Q. The subject well is the Drinkard B No. 5?

A. Yes.

Q. It's currently completed in the Wantz-Granite oil pool, is that right?

A. Yes.

Q. Is it capable of marginal production in that pool, or what are its producing capabilities?

A. Oh, it's down to about five Mcf a day and a barrel or two of oil. It's uneconomic at

this time.

Q. Let's move to Chevron Exhibit No. 5, the other cross-section, and I would ask you to again review that for the Examiner.

A. Okay. Exhibit No. 5, the purpose of this cross-section is to show the correlativeness of production in our target horizon within the Abo formation with existing production in that formation.

It is a location map on the left-hand side, showing the line of the cross-section in Section 30. The well on the right-hand side is the Chevron Drinkard B No. 5 and it's been correlated to another Chevron well in the north, the Chevron No. 10 Vivian which currently produces out of the South Brunson Drinkard Abo pool.

Next to that log on the Vivian 10 is a temperature log, a production log which was run in the Vivian 10, which shows by deflections on the temperature curves that the major oil and gas entry in this particular well is coming out of perforations highlighted by that black bar on the temperature log.

We just labeled the electric log for

the Vivian 10 alongside of it and see that this correlates to perforations in the carbonate zone which, on the right-hand side of that log, shows spiking or extreme deviation of the well curve in the density log to the left. This is indicative of fracture formation.

There's also some porosity shown in there. We then correlated this well to our proposed target well, the project well, the Chevron Drinkard B No. 5. We see again another carbonate bed with spiking on the density log indicating fracturing. The caliper log indicates little washouts where the caliper curve deviates to the right and that, again, is indicative of fracturing in the reservoir.

The additional purpose of this cross-section is to show that our kickoff point will be at approximately 6772 feet. Within 30 feet we will be into the target bed. This is our target bed. We are approximately 300 feet below the producing horizon in this same pool in the twin well to this well.

Q. You've indicated that the horizontal portion of the proposed well could be within 40 feet of quarter quarter section line. Do you

have an opinion as to whether or not correlative rights would be impaired by approval of this application?

A. They will not be impaired.

Q. In fact, Chevron is the owner of the offsetting tract for which the wellbore is oriented?

A. Yes.

Q. Will approval of the application prevent waste?

A. Yes.

Q. Will it enable Chevron to effectively produce reserves in this reservoir that, with current wells, will not be recovered?

A. Yes. Without this new technology which allows us to go into an existing wellbore and horizontally go out into a particular target bed, we will not be able to intersect the greatest density of naturally occurring fractures in the reservoir that in a vertical wellbore we are limited by what the wellbore actually penetrates. We're greatly extending our penetration of these fractures, and we should see a greater recovery and extend the life of the well.

Q. Ms. Harris, is Exhibit No. 6 a copy of an affidavit confirming that notice of this hearing has been provided in accordance with Division rules to the individuals identified in that affidavit?

A. Yes.

Q. To whom was notice given?

A. To American Exploration, to Texaco and to John Hendrix.

Q. So all offsetting operators have been notified?

A. Yes. In fact, John Hendrix Corporation has expressed their lack of opposition and are interested in our results.

Q. Will Chevron also call an engineering witness to testify in this matter?

A. Yes.

Q. Were Exhibits 1 through 5 prepared by you?

A. Yes.

Q. And Exhibit No. 6 is the affidavit?

A. Yes.

Q. At this time we would move the admission of Chevron Exhibits 1 through 6.

EXAMINER CATANACH: Exhibits 1 through

6 will be admitted as evidence.

Q. Ms. Harris, how soon would Chevron be ready to commence this project?

A. We have money appropriated to do this project this year.

MR. CARR: I have nothing further on direct of Ms. Harris.

EXAMINER CATANACH: Mr. Padilla, any questions of the witness?

MR. PADILLA: Yes, I have a couple.

EXAMINATION

BY MR. PADILLA:

Q. Ms. Harris, I'm not sure that I understood one of your land maps, I guess Exhibit 2, your land plat. Did you say the status of Wells 2 and 4 had been plugged and abandoned?

A. 2 and 4, the Chevron wells?

Q. Yes.

A. The No. 2 is a former producer in the pool and No. 4 currently produces out of the Wantz-Granite Wash pool.

Q. Are they going to be counted towards the allowable, the production from that well?

A. No, neither of them produces from the pool. We would be simultaneously dedicating the

3 and the 5.

Q. You're going to be unorthodox to the north. Is that the reason that you combined two 40s instead of simultaneously dedicating the two wells in the south to the 40?

A. I'm going to defer that to our engineering witness. We do believe we will be draining part of that northern 40 acres.

Q. You said something about there being natural fracturing and your horizontal hole is going to encounter this natural fracturing?

A. Yes.

Q. What is the trend of that natural fracturing in order to encounter the--

A. It parallels the structural trend of the central basin platform, essentially, and runs northwest to southeast. By drilling in a perpendicular direction to that, we should encounter more fractures.

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

EXAMINATION

BY EXAMINER CATANACH:

Q. Ms. Harris, the No. 2 well is producing from what pool?

A. It's producing from the Blinebry.

Q. How have you identified the orientation of the fractures?

A. There's documented literature and in-house studies showing that the regional trend of fracturing along the central basin platform is parallel to this structural trend of this platform; that is, northwest to southeast.

There are also studies and oriented cores in subadjacent and superadjacent formations which have confirmed that trend.

Q. The target zone is the Abo formation only?

A. Yes.

Q. As I understand it, just a portion of the Abo formation?

A. That's right. A 22-foot bed in the--well, it occurs at 6792, would be the top of the bed, as shown on Exhibit No. 5.

Q. The target zone has just been identified as the main oil producing zone?

A. By correlativeness to the Vivian No. 10, yes.

Q. Which is located--

A. It's located about 2000 feet to the

north. Well, maybe about 4000 feet. On Exhibit No. 5, the location map shows the two wells.

Q. The Well No. 3 does not penetrate the portion of the Abo that you plan to target?

A. It does not. It TDs about 300 feet above it.

EXAMINER CATANACH: I think that's all I have of the witness. You may be excused.

MR. CARR: We have nothing further of this witness, and at this time Chevron would call Lloyd Trautman.

LLOYD TRAUTMAN

Having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. CARR:

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

A. My name is Lloyd Trautman.

Q. And where do you reside?

A. I live in Midland, Texas.

Q. By whom are you employed and in what capacity?

A. I work for Chevron, U.S.A. as a petroleum engineer.

Q. Have you previously testified before this Division?

A. No, I have not.

Q. Would you review your educational background for Mr. Catanach and then briefly summarize your work experience.

A. I received a bachelor's degree in chemical engineering from the South Dakota School of Mines in Rapid City, South Dakota. I started work with Chevron in 1976 and progressed through various drilling functions with Chevron through drilling and production functions to the current time.

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

A. Yes, I am.

Q. Does the geographic area of your responsibility for Chevron include the portion of Southeastern New Mexico involved in this case?

A. Yes, it does.

Q. In fact, you are the engineer on the project?

A. I am the petroleum engineer for Southeast New Mexico.

Q. Have you made an engineering review of

the proposed project and you're prepared to testify and present exhibits here today?

A. Yes, I am.

MR. CARR: At this time, Mr. Catanach, we would tender Lloyd Trautman as an expert witness in petroleum engineering.

EXAMINER CATANACH: He is so qualified.

Q. Let's go to what has been marked as Chevron Exhibit No. 7. I would ask you to first identify what this exhibit shows and then review the two well schematics for the Examiner.

A. Okay. What this exhibit is determined to show is the current condition of the well, and then through a discussion of the drilling procedure, to show how we arrived at the final proposed condition of the wellbore.

Q. Briefly review the current status of the well.

A. Okay. The current condition of the well is shown on the left. We have 5-1/2" casing cemented at 7590 feet with perforations from 7257 to 7351 in the Wantz-Granite Wash pool, cemented to surface through the outside of the casing.

Q. Okay. And as to the proposed changes you're hoping to make in the well?

A. Okay. We plan to abandon the lower perfs in the Wantz-Granite Wash pool per Commission requirements, and set a cast-iron bridge plug at 7180 feet, come in with a section mill and mill a section of the 5-1/2" casing out from approximately 6765 to 6780, and then set a cement plug to approximately 6750.

At that time we'll come in with a fresh water polymer based drilling fluid and drill to cement out to the kickoff point of approximately 6772.

At that point in time we'll pick up pool horizontal drilling equipment tools, consisting of a bit, a bent sub, a nonrotating collar, specially designed flex collars to get around this short-term radius kickoff, and begin drilling from the cement and out through the milled section and continue with a 3-15/16 bit to the final 400-foot horizontal lateral distance.

Q. Do you anticipate any problems keeping the wellbore within the 22-foot target zone?

A. We don't anticipate any problems. We will take directional surveys prior to drilling from the kickoff point at 6772 and orient the tool in the direction we want, which right now is

approximately 15 degrees east of north.

Then we will drill approximately three to four feet, take directional surveys to verify we're headed in that direction, and then through the build section of the wellbore, we plan to take surveys approximately every 10 feet.

Through the horizontal portion of the wellbore we'll take surveys approximately every hundred feet. The contractor, Poole Horizontal Drilling, has drilled approximately 10 of these wells, 10 to 15 of these wells in Texas, and they've not had a problem maintaining that within a 10-foot interval.

Q. Will copies of these directional surveys be filed with the Oil Conservation Division?

A. Yes, they will, upon completion of the well.

Q. Is the horizontal portion of the hole going to be cased or is this an open hole completion?

A. This will be an open hole as we feel that carbonate is a competent formation and will not fall in.

Q. Has Chevron drilled other highly

deviated wells in this area?

A. No, we have not. Not in New Mexico.

Q. What is the status of the technology you're going to be employing on this project?

A. Poole Horizontal Drilling acquired this technology from Amoco, has made certain improvements as to the directional control and the use of these especially designed drill collars, to allow getting around this 30-foot radius of curvature turn, which allows us to only drill a minimum formation and the rest of the wellbore stay within cased hole.

They are currently in the process of trying new collar design in Texas on another 10 to 15-well program to see if they can improve upon that flex collar design.

Q. Is this a fairly new technology?

A. This is a new technology for this area, for the use in older wells and the short-term radius of curvature.

Q. What are the costs associated with this effort?

A. The costs associated with this is a flat fee to Poole, and then our associated costs to prepare the well with the sectioning and the

cement. The total cost is approximately $130,000.

Q. How will this compare with the costs associated with, say, a fracture stimulation of the well?

A. Our cost to fracture-stimulate a vertical completed well in this area will be approximately $110,000 to $120,000.

Q. The costs are fairly comparable?

A. They're very close.

Q. What are the benefits of this procedure as opposed to simply frac'ing the well?

A. The benefit that we see with this technology is that when we fracture-stimulate a vertical well, we have no control over where the fractures go. We believe that they tend to go in this same general direction as the existing fractures in the formation and, therefore, you do not intersect additional fractures unless they're part of that matrix.

With this horizontal technology and heading in a direction generally perpendicular to the existing fractures, we feel that we will intersect a larger portion of the natural occurring fractures and thus allow a higher

percentage of reserves to be accessed.

Q. I may have covered this with Ms. Harris, but is the interval that is the target or the subject of this hearing currently being produced by any other well in the project area?

A. No, it is not.

Q. And there are no wells on the spacing or proration unit that would effectively drain this interval at this time?

A. Not at this time, no.

Q. There is the existing well, the No. 3 well, that is completed in this pool, is that correct?

A. Yes, it is in this pool.

Q. You are recommending that that well, plus the proposed horizontal well, be simultaneously dedicated?

A. Yes, we are.

Q. Would you recommend that these wells share one allowable?

A. Yes, we do.

Q. How will that allowable be determined?

A. It will be determined by the normal pool rules as a portion from that zone will be allocated to the total.

Q. Will the allowable for the project area be equal to the number of acres that are involved in the project area?

A. Yes, we want it to be to the total number of acres in the area.

Q. Are there special pool rules in effect right now for the Brunson Drinkard Abo pool?

A. The special field rules are 40-acre spacing and a gas/oil ratio limit of 6000-to-1.

Q. Let's move to Chevron Exhibit No. 8. Would you identify and review that for Mr. Catanach?

A. Exhibit No. 8 is a plat diagram, essentially, that Ms. Harris presented earlier, with a drainage radius calculated on field rules of 40-acre spacing; therefore, a radius of 660 feet.

Q. So basically what this shows is the project area, and you've placed the horizontal wellbore on the project area and the drainage area you've indicated is simply a 40-acre drainage pattern around that horizontal hole?

A. Yes, it is.

Q. Have you reviewed the other Abo producers in the immediate area?

A. I've reviewed the Abo producers in the immediate area of Section 30 and adjacent to it.

Q. Have you been able to determine whether or not these wells in fact drain 40 acres?

A. Of the 48 wells reviewed, Hendrix', Texaco's, American Exploration's and Chevron's, approximately 65 percent or two-thirds of these wells show drainage radiuses in excess of 660 feet.

Q. Did you determine that by doing volumetric calculations on those wells?

A. Yes, I did.

Q. How many acres would the better wells in this area drain?

A. There were approximately five or six wells that were close to 80 acres, with one well actually exceeding an 80-acre calculated drainage radius.

Q. To get a good well in the area, what do you need to do?

A. We feel to get a good well you need to intersect a network of fractures, and that means intersecting more than just one fracture that's there.

Q. With the proposed horizontal drilling

program, do you have an opinion on whether or not that's going to enable you to effectively intersect the natural fracturing in the reservoir?

A. We feel it does, based on the fact that the general trend has been along with structure, and we're drilling basically perpendicular to that. We anticipate intersecting more than one fracture system.

Q. If you're successful in that, would it be fair to at least hope that this well, once completed, would perform like the better wells in the pool?

A. We would think it would perform at least as good on an ultimate recovery.

Q. Your Exhibit No. 8 basically just indicates a 40-acre drainage pattern?

A. It indicates 40 acres, which we hope--we consider it a minimum case in this instance.

Q. Even if you have what is a minimum case in this instance, a substantial portion of the drainage comes from the 40 acres north of the tract on which the well is located, is that not correct?

A. Yes, sir. There's approximately 30 percent of that drainage radius that is in the north 40 acres.

Q. You're requesting a higher allowable based on the number of acres dedicated to the well?

A. Yes, sir.

Q. Why do you need that?

A. We feel we're going to drain more than 40 acres. Plus, with the new technology, to fully evaluate it, we would like to be able to produce this well at its maximum rate so that we can compare that rate to our vertical completed wells.

Q. Would the higher allowable rate permit you to do that, do you believe?

A. Yes, we believe it will. If we don't have that, we'll probably be limited by gas.

Q. In terms of the proposed horizontal well, how would you expect the producing capability of that well to compare to, say, a vertical hole?

A. I would expect that the horizontal well, and from calculations and some of the literature, that production rates of a horizontal

well are between two to three times that of a vertical completed well.

Q. So, with a 40-acre allowable, you would be allowable restricted?

A. We believe we would be allowable restricted.

Q. You indicated a minute ago that you might also have a gas problem?

A. We feel that with Well No. 3 producing approximately 300 Mcf per day, that reduces our allowable gas production on this well. And, with that gas allowable and the gas/oil ratio around here, that would be restricted on our production.

Q. If you drilled the horizontal well and you're producing that and simultaneously dedicating it with the No. 3, would you anticipate a gas/oil ratio restriction on the project area at that time, if you produce both wells?

A. If we produce both wells, we believe we would be curtailed and have a restriction on production with the 40 acres.

Q. If you go to the 80 acres?

A. With the 80 acres, we do not believe we would have a restriction on production.

Q. You've indicated directional surveys will be filed with the Division?

A. Yes,sir.

Q. If this application is granted, in your opinion, would waste result?

A. If we get what we're asking, I don't believe waste will be incurred due to the ability to produce reserves that would not be produced by wells in this area.

Q. In your opinion, would correlative rights be impaired?

A. I don't believe correlative rights would be impaired because it's our correlative rights we're looking after here, and we're not infringing on anyone else's.

Q. In fact, you have a project area where you have located the well as centrally as possible on Chevron owned and operated properties, is that right?

A. Yes. That was one of the prerequisites when we were looking for a candidate.

Q. Are you aware of any opposition to this application?

A. No, I'm not aware of any option.

Q. In your opinion, will approval of this

application be in the best interest of conservation?

A. I believe it will be. We can evaluate the potential of this technology for additional wells in Southeast New Mexico. It also allows us to complete one well and get reserves that we could not get.

Q. Were exhibits 7 and 8 prepared by you?

A. Yes, they were.

MR. CARR: At this time, Mr. Catanach, we move the admission of Chevron Exhibits 7 and 8.

EXAMINER CATANACH: 7 and 8 will be admitted as evidence.

MR. CARR: That concludes my examination of Mr. Trautman.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Trautman, this is a short radius?

A. Yes, sir.

Q. At what rate would you build angle in this well?

A. We would build rate at two and a half or two degrees per foot through the build-up, and that would give us a 30-foot radius of curvature

through that build-up portion of the wellbore.

Q. So you would enter the producing formation horizontally how far away from the wellbore, approximately?

A. Approximately 20 to 25 feet.

Q. And then you propose to continue drilling laterally, close to 400 feet?

A. Yes, sir. Plus or minus 400 feet is our target range.

Q. Has this short radius type of drilling procedure been successful in other areas?

A. It has been in Texas. Poole Horizontal Drilling has completed approximately 10 to 15 wells. I have no results on their production response. They're all confidential for the company. They're currently under contract to do another 10 to 15 wells in Texas for another operator.

Q. The lateral portion of the wellbore will not, in fact, penetrate one of the 40-acre units?

A. No, sir. It will be 40 feet from that quarter quarter line.

Q. In the past, the Division has granted allowables based on the number of tracts

penetrated by the horizontal wellbore. I don't know if you were aware of that. But you feel like you need the extra allowable. Is that a consideration in drilling the well?

A. It is a consideration in the fact that to fully evaluate this technology, we really need to know the production rates encountered with this and if it is competitive with our fracture stimulation treatments.

And, based on the technical papers, that with the production rate of two to three times in an existing gas well on the tract, we will not be able to produce at maximum rates as we calculated on this well.

Q. Do you know what the allowable is for the pool, in terms of oil?

A. As I understand it, it's 142 barrels per 40 acres, with a gas/oil ratio of 6000-to-1, which I believe is 852 Mcf total.

Q. It is your opinion that that wellbore will drain a substantial portion of that northern tract?

A. Yes, sir. We believe that we should drain--that at least 30 percent of our drainage radius will be, in a minimum case, be in that top

40-acre plat.

Q. You estimate 30 percent of the tract is in your drainage area?

A. As this picture denotes, it's 30 percent of this minimum drainage radius will be in that north 40 acres.

Q. Do you have any estimates of what the initial production might be from the well?

A. Based upon a reservoir analysis, we matched production in Abo producers on IP and decline rates, and we estimate production on this well to be 117 barrels of oil per day.

Q. Any estimates on gas production?

A. Well, with the gas/oil ratio of 6000, I believe it's about 1800 Mcf a day.

EXAMINER CATANACH: I believe that's all I have of the witness.

Mr. Padilla?

MR. PADILLA: I have a couple of questions, Mr. Trautman.

EXAMINATION

BY MR. PADILLA:

Q. Are you saying that this project would be uneconomic if you only did it on a 40-acre allowable?

A. I'm not saying that it would be uneconomic, I'm saying that we could not fully evaluate the technology.

Q. Could you also, using the existing technology as well, could you also go in a southwesterly direction?

A. We could go in a southwesterly, but as indicated on the map that Ms. Harris presented, we have a row of dry hole producers in the Abo formation to the south and west of us, and we do not feel it would be in our best interest to drill the well towards dry holes, as our recovery would be limited. Plus we would be getting closer to Texaco's and get within 330 of the section line down there.

Q. Could you drill in both directions?

A. I believe at this time that would be stretching the limits of their technology in the same wellbore.

Q. Essentially, using the existing technology only?

A. Only using this technology because it is price competitive with fracture-stimulation.

Q. What plans does Chevron have in the future, if this is successful, to drill other

locations in a similar fashion in this area?

A. Chevron plans in the future, if this is successful, that we're going to look for other candidates throughout New Mexico and look at proposing those.

Q. Assuming this is successful in this pool, would you be proposing 80-acre spacing for other locations in this pool?

A. Right now I would say yes. If we evaluate the technology and determine the production rates are not there, we would adjust our request based on that production response.

Q. But you're saying, essentially, you think 80 acres is a minimum spacing requirement in order to make it economically feasible, at least for now?

A. For now.

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

EXAMINER CATANACH: There being nothing further, Case 10571 will be taken under advisement.

MR. PADILLA: Mr. Examiner, I have a short statement to make. We don't have any objection to the application. Since they're not

asking for a greater allowable, then we will not object to it. As long as the application doesn't exceed the 80-acre allowable, that will be fine.

EXAMINER CATANACH: Okay.

MR. PADILLA: And obviously we want to make sure they don't exceed the 330 side boundary, that they don't get out of that window. Thanks.

EXAMINER CATANACH: Okay. Nothing further?

MR. CARR: Nothing further.

EXAMINER CATANACH: Case 10571 will be taken under advisement.

(And the proceedings concluded.)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10571 heard by me on October 15 1992.

David R. Catanach, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

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

I, Carla Diane Rodriguez, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my personal supervision; 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 3, 1992.

Carla Diane Rodriguez

CARLA DIANE RODRIGUEZ, RPR
CSR No. 4