STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CASE 10051

EXAMINER HEARING

IN THE MATTER OF:

Application of Union Oil Company of California for Pool Contraction and Special Pool Rules Eddy County, New Mexico

TRANSCRIPT OF PROCEEDINGS

BEFORE: DAVID R. CATANACH, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

August 22, 1990

ORIGINAL

CUMBRE COURT REPORTING
(505) 984-2244

A P P E A R A N C E S

FOR THE DIVISION:	ROBERT G. STOVALL Attorney at Law Legal Counsel to the Divison State Land Office Building Santa Fe, New Mexico
FOR THE APPLICANT:	WILLIAM F. CARR, ESQ. Campbell & Black, P.A. Post Office Box 2208 Santa Fe, N.M. 87504-2208

I N D E X

E X H I B I T S

APPLICANT'S EXHIBITS:

EXAMINER CATANACH: At this time we'll call Case 10051.

MR. STOVALL: Application of Union Oil Company of California, d/b/a Unocal, for pool contraction and special pool rules, Eddy County, New Mexico.

EXAMINER CATANACH: Are there appearances in this case?

MR. CARR: May it please the Examiner, my name is William F. Carr with the law firm Campbell & Black, P.A. We represent Union Oil Company of California, and I have two witnesses.

EXAMINER CATANACH: Any other appearances?

Will the witnesses please stand to be sworn in.

(Thereupon, the witnesses were sworn.)

CHARLES EDWARD PIETSCH

the witness herein, after 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. Charles Edward Pietsch.

Q. How do you spell your last name?

A. P-I-E-T-S-C-H.

Q. Mr. Pietsch, where do you reside?

A. In Midland, Texas.

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

A. Union Oil Company of California, as a petroleum engineer in the Andrews District.

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

A. No, I haven't.

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

A. I have a Bachelor of Science in petroleum engineering from Texas A & M in 1985. I received my Master's of Science in Petroleum Engineering from the same University in 1986.

I went to work for Unocal in 1987. I was employed in Midland and went through their production, drilling and reservoir engineering training programs, and in the last year I've been in their reservoir department in the Andrews District as a petroleum engineer.

Q. Does your geographic area of responsibility with Unocal include the portion of Southeastern New

Mexico involved in this case?

A. It sure does.

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

A. I am.

Q. Are you familiar with the Esperanza Delaware pool?

A. I am.

MR. CARR: We would tender Mr. Pietsch as an expert witness in petroleum engineering.

EXAMINER CATANACH: He is so qualified.

Q. Could you briefly summarize what Unocal seeks with this application?

A. Unocal seeks a contraction of the Esperanza Delaware Pool to exclude nonproductive acreage in Sections 28 and 33 of Township 21 South, Range 27 East; and also special rules and regulations for this pool to include a 120 barrel per day allowable.

Q. Could you identify what has been marked as Unocal Exhibit No. 1 and review that for Mr. Catanach?

A. Exhibit No. 1 is a map which has a dashed area which represents the Esperanza Delaware pool. It also has the hashed area, Section 28 and 33, which represents the area of deletion from the pool. It has a darker hashed area surrounding the pool which is the

area of notification sent to leasehold operators and unleased mineral owners.

It also contains the wells that have penetrated and been tested in the Delaware pool. They include the Union Tracy #1, which was the discovery well, the Pennzoil-Federal #2, the Federal A-J--

Q. Those are in Section 10?

A. In Section 10. And in Section 4, the Wersell-Federal #1, the Wersell "A" #2. It should be noted that the Wersell-Federal #2 is an SWD well.

Q. That's the well that is in the northwest of the northwest of 4?

A. Correct.

Q. Are there any plugged and abandoned wells in the pool?

A. Yes. The Marbob Union Federal #1 is a plugged and abandoned well.

Q. There are also some dry holes that have been indicated on this exhibit?

A. Correct. The Tracy #2, Tracy #3, the Pennzoil-Federal #1 and the Mendenhall Hillger #1.

Q. Has there ever been any production from the Esperanza Delaware pool in either Sections 28 or 33, the acreage that you're requesting be deleted?

A. No, there has not, to my knowledge.

Q. Do you know why this acreage was originally included in the pool?

A. To my knowledge there have been some wells that have penetrated the Delaware going on to the Strawn and Morrow that had sample shows, and that would be my only understanding as to why this area is included.

Q. But there has never been a producing well from the Delaware in either of those sections?

A. No, sir.

Q. Are there any other operators in this pool besides Unocal?

A. No.

Q. When was this pool actually discovered?

A. This pool was discovered in August of 1969, with the Tracy #1.

Q. Could you refer to what has been marked as Unocal Exhibit No. 2 and review the information on this exhibit for Mr. Catanach?

A. Yes. This shows all producing wells and wells that have penetrated and tested the Delaware formation.

They show their location, the completion date, cumulative production and also the current rate as of July 1990.

As you can see, the Tracy #1 was completed in August of 1969, has produced 620,000 barrels of oil and still makes 80 barrels a day, which is a top allowable for this pool.

The Pennzoil-Federal #2, completed in October of 78, produced 94,000 barrels and currently makes three barrels of oil.

The Federal AJ #1 has a cumulative production of 74,000 barrels and produces 32 barrels of oil per day.

As our geologist will show, these three wells are producing from the same stringer. The Wersell-Federal Com. #1 and Wersell "A" #2 also produce, but produce from different sand bodies within the Delaware formation.

Q. The wells at the bottom of the exhibit, if they produced at all, were from different sand bodies, is that correct?

A. Correct.

Q. If I look at this exhibit, the only well that has the capability of exceeding the depth bracket allowable for this pool is the discovery well, the Tracy #1?

A. That is correct.

Q. Could you refer to what has been marked as

Unocal Exhibit No. 3 and review that information for Mr. Catanach?

A. Yes. This shows the five wells which are producing from the Delaware. It shows Unocal's gross working interest and net working interest in each well.

Q. Basically this indicates that you have the lowest net working interest in the Tracy #1?

A. Correct.

Q. Let's now move to Exhibit No. 4. Identify those, would you please, and then review them for the Examiner?

A. These are the production curves for the five wells which are producing in the Delaware formation. The first one is the discovery well, the Tracy #1. As you can see, it's produced for 20 years at a top allowable rate of 80 barrels per day with no decline, which is uncharacteristic.

The second page is the Pennzoil-Federal #2, which has a decline of 18 percent and has produced for approximately 10 years.

Q. This is the east offset to the Tracy #1?

A. Correct.

Q. All right. Let's go to the next page of the exhibit.

A. This is the Federal AJ, which has produced 74,000 barrels, has shown a decline, and was recently restimulated with a frac job. It currently averages 34 barrels a day.

Q. When did you actually frac this well?

A. This well was stimulated in the fall of 89, I believe; October of 89, for the exact month.

Q. This is the southeast offset to the Tracy #1?

A. Correct.

Q. Now, the three decline curves that you've now reviewed, are the wells that are completed in the same stringer, is that right?

A. That's correct.

Q. Okay. Let's review the last two pages of this exhibit briefly for Mr. Catanach.

A. They are the Wersell Federal #1 and the Wersell "A" #2, which are producing in Section 4.

Q. These five curves represent each of the wells producing from this pool?

A. Correct.

Q. Could you explain to Mr. Catanach how Unocal selected the 120 barrel recommended allowable for this pool?

A. Exhibit 5 is a raw pumping analysis

performed by NAPA Corporation in which it determines exactly how efficiently you can pump your well. If you have a fluid level in your wellbore, how you can up-size your pump, use a larger raw string; natures of that order.

And when this test was performed on July 10, 1990, on page 5 it shows that it produced--it was testing to produce a 24-hour rate of 119 barrels of oil or 119 barrels total fluid and 101 barrels was oil.

The conclusions is that the well was virtually pumping at capacity with low intake pressure. Therefore, we have chosen an allowable of 120 barrels a day which would give us a little leeway at producing this at its top allowable in a most efficient way.

Q. In your opinion, will any reservoir damage result from producing at this higher oil allowable?

A. We believe no reservoir damage will result. In fact, the well will be allowed to pump more efficiently as shown by Exhibit 5. This well will be allowed to have a higher ultimate recovery before reaching its economic limit, and it will also reduce excessive operating costs.

Also, the Tracy #1 has produced for 20

years and we believe the life expectancy of a wellbore is approximately 40 years. Once the Tracy #1 starts to decline, it will take at least another 10 years to produce, as shown by the production curve by the Pennzoil-Federal #2.

If mechanical wellbore problems occur once the well has started its decline, the remaining reserves may not satisfy economic requirements to drill a replacement well.

Q. Would you anticipate any negative impact on either of the offsetting wells?

A. No, we do not anticipate-- In fact, the recent restimulation of the AJ #1, the frac job, has shown no impact on the Tracy #1.

Q. In your opinion, will approval of the application impair the correlative rights of any other interest owner in the pool?

A. I don't believe so.

Q. Is Unocal Exhibit No. 6 an Affidavit with attached letters confirming that notice of today's application and hearing has been provided, as required by the rules of the Oil Conservation Division?

A. Yes.

Q. Were Exhibits 1 through 6 either prepared by you or under your direction and supervision?

A. They were.

Q. Will Unocal call a geological witness to testify to the characteristics of this particular reservoir?

A. We will.

MR. CARR: At this time, Mr. Catanach, I would move the admission of Unocal Exhibits 1 through 6.

EXAMINER CATANACH: Exhibits 1 through 6 will be admitted as evidence.

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

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Pietsch, is it your opinion that ultimate recovery won't suffer from an increased oil allowable?

A. No, because ultimate recovery, you try to pump, in raw pumping, you try to pump the well with as low a fluid level as possible. The way we've been producing the well currently, we've had to put the well on time, and it's shut in and it doesn't produce for a 24-hour period. So it does have a fluid level over. When NAPA Corporation came out and weighed this well, the well had pumped for a couple of days so it

wouldn't have a fluid level on it.

And that's why they say the most efficient way to pump this well would be to pump it 24 hours with the existing equipment on it and be able to pump 101 barrels of oil a day.

Q. Does the well produce any gas?

A. It does produce some gas, as shown on the production curve.

Q. Did you say that this well was producing from a separate stand stringer than all the other wells were?

A. No. This well, the Pennzoil-Federal #2 and the Federal AJ are all producing from the same sand body. And our geologist will show the extent of this.

Q. Do you have any explanation why that well hasn't declined at all?

A. No explanation.

EXAMINER CATANACH: I have no further questions of the witness.

EXAMINATION

BY MR. STOVALL:

Q. This is the only top allowable well in the pool, is that correct?

A. Correct.

Q. So, it's the only one that would actually

be affected by--

A. The only one that could benefit from this ruling.

EXAMINATION

BY EXAMINER CATANACH:

Q. I have one more question. Has Union consulted with the Artesia office concerning the contraction of this pool?

A. I called them really just to find out why Sections 28 and 33 were included in the pool, because it took us a lot more manpower to determine who the lease operators were and what the unleased minerals were.

The only reason we were wanting to extract it from the pool is because it took a lot more manpower to come up with the area of notification. Since there were no wells that are currently producing in this pool, we feel that if a well is drilled it will be easy to add that acreage back into the pool.

EXAMINATION

BY MR. STOVALL:

Q. Do you know if your geologic witness has any evidence with respect to whether there is exploration probabilities or possibilities in that area?

I'm asking if you know. I'm not asking what his opinion is, but do you know if he has an opinion or if his evidence will show anything on that?

A. I don't think it will show that. All we've seen are sample shows, and whether that will test to a commercial productive well. You won't know that until--

Q. We're talking in Section 28 and 33, right?

A. Correct.

EXAMINATION

BY EXAMINER CATANACH:

Q. In terms of notification for this case, though, you did notify those--

A. Right. We did notify the whole area.

MR. CARR: If we ever have to come back, we would like to not have to contact all those people again.

EXAMINER CATANACH: I see. Okay. The witness may be excused.

MR. CARR: At this time we would like to call Bob Antany.

ROBERT M. ALTANY

the witness herein, after 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 and place of residence?

A. Robert M. Altany, Midland, Texas.

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

A. Union Oil Company of California, as a petroleum geologist.

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

A. Yes, I have.

Q. At that time were your credentials as a geologist accepted and made a matter of record?

A. Yes, sir.

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

A. Yes, I am.

Q. Are you familiar with the Delaware formation and the area affected by this application?

A. Yes.

MR. CARR: Are the witness's qualifications acceptable?

EXAMINER CATANACH: They are.

Q. Mr. Altany, have you prepared certain

exhibits for presentation in this hearing?

A. Yes, I have.

Q. Would you refer to what has been marked Unocal Exhibit No. 7, identify this and review it for the Examiner?

A. This is the map showing the structure on the lower Tracy pay which produces in the Tracy #1 well and the other two wells shown in brown.

Also shown on there, highlighted in green, are porosity isopach contours of that Tracy pay. Shaded in green is the productive limits of the Tracy sand pool. It's bounded on the southeast by an oil/water contact at approximately 330 feet below sea level, and on the other side primarily by thinning and pinch out of the porous zone.

What you can see is that in the northwest quarter of Section 10, which is the Tracy lease, is structurally better situated than the other two wells, and also the pay thickness is greater on that lease and thus it appears that the majority of the reserves there are in the northwest quarter of Section 10, where the Tracy #1 is located.

Q. This pool is developed on 40-acre spacing?

A. Yes, sir.

Q. Is the Tracy the only well that has a full

productive 40 acres dedicated to it?

A. Yes, sir.

Q. On this exhibit there is a dark, hashed line. Could you just identify that for the Examiner?

A. This map was originally drafted for another purpose, and that represents a working interest unit of which Unocal is the operator.

Q. That doesn't have any real bearing on the application before the Division today?

A. I don't believe it does.

Q. There's on this exhibit a trace for a cross-section?

A. Yes, sir. That will be the next exhibit.

Q. That's Exhibit No. 8?

A. Yes, sir.

Q. Would you review Exhibit No. 8, the cross-section, now for Mr. Catanach?

A. This is a cross-section, northwest to southeast. It goes through the Tracy #1 and the other two Tracy sand producers, the Pennzoil Fed. #2 and the Federal AJ, and northwest up to the Unocal Tracy #3 which is nonproductive because of the thinning and shaliness of the pay zone.

Also what you can see here is that the Tracy #1 is higher structurally to the other two wells

and has the best developed pay zone.

Q. Generally, would you just summarize the conclusions you've reached from your geologic study?

A. The Tracy #1 has shown a lot better production because it's in favorable structural position, it has a better developed pay, and--

Q. Do you believe that granting this application will permit the Tracy #1 to receive an excessive share of the reserves from the pool?

A. No, sir.

Q. Were Exhibits 7 and 8 prepared by you?

A. Yes, sir.

MR. CARR: At this time, Mr. Catanach, I would move the admission of Unocal Exhibits 7 and 8.

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

Q. Mr. Altany, were you present a few minutes ago when Mr. Stovall asked questions concerning geologic information on Sections 28 and 33?

A. Yes, sir.

Q. Could you summarize for the Examiner what your geologic study shows as to Delaware potential under Sections 28 and Sections 33?

A. It's a little indefinite at this point. There's a well in the northeast northwest of Section

28 that had a DST of oil and a mud log show of oil in a zone which I believe is not the same as the Tracy producer. I believe it is one of the zones that produces in the three wells in Section 4.

So there's not been any production in those sections. It is possible, but not confirmed, that there is some potential in the Delaware.

MR. CARR: That concludes my direct examination of Mr. Altany.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Altany, is this the only particular sand that's being produced in the pool?

A. The wells in Section 4 produce from several other sands, both above and below the Tracy pay.

Q. This particular sand is not present in Section 4?

A. No, sir, not in any productive quality.

Q. The Tracy #1 doesn't have significantly more pay than the other two wells. How much more does it have?

A. It has 12 feet of pay, whereas the others have 6 and 10. However, the lease on which it's located, I believe, has more productive--more area is covered by a thicker pay zone.

EXAMINER CATANACH: I have no further questions of the witness.

MR. CARR: We have nothing further in this case, Mr. Catanach.

EXAMINER CATANACH: Can I get your other witness back on the stand for a couple of questions?

MR. CARR: Yes.

CHARLES EDWARD PIETSCH

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

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Pietsch, you didn't testify that ultimate recovery was going to benefit from this, did you?

A. Right.

Q. You did say that?

A. Yeah, ultimate recovery--

Q. Will benefit from an increased allowable?

A. Right.

Q. Could you go into a little bit more detail on that again?

A. Well, there's two reasons why ultimate recovery will probably benefit from this hearing. One

is that right now we're producing at 80 barrels a day, and whenever that decline starts, the well has already produced 20 years. You know from the Pennzoil-Federal #2 that once it started its decline it took 10 to 12 years to get down to three barrels a day which is right at its economic limit, so that would at least say the Tracy is going to be up to 30 barrels a day, or 30 years, whenever it starts to decline because it's already produced 10 years.

If there's any mechanical problems with this wellbore in the future, when it does go on its decline, say it's on its decline and it's down to 40 barrels a day, the remaining reserves may not be enough to warrant drilling another well. If you would have had a higher rate, you would have been able to get those reserves quicker before you had this mechanical problem.

The other thing is, you're looking at producing the well for, say, 30 years to get an X number of barrels at the current rate, and the other way you're going to do it, you're going to speed up and it will give you a higher allowable, and you'll produce those reserves quicker, and your operating costs will be a lot less because you will not have the operating costs of those 10 years that you had

beforehand. So ultimately you're going to recover more reserves.

Q. You don't anticipate any mechanical problems?

A. Well, we don't anticipate, but one thing I do know is that we do not have cement all the way back to surface on our production string. The well's already produced 20 years.

At some point in time the well's going to have a casing leak or something like that and it might be such that the casing is in such bad a shape that we will not be able to repair it but we'll have to drill an offset.

If I recall right, the casing in this well is four-and-a-half-inch casing, and so there's no way a liner can be run within this well.

Q. What type of drive is this reservoir?

A. From what we can gather, it's solution/gas drive. We don't see any effect of a water drive or anything like that. But the Tracy #1 is a very uncharacteristic well.

EXAMINATION

BY MR. STOVALL:

Q. Did I understand you correctly, in terms of an oil withdrawal, you would be anticipating an

increase of about 20 barrels a day?

A. About 20. From our NAPA test, about 20 barrels a day. But that was something that--we hadn't, like, tested it for two weeks or so to see exactly what it's going to be.

Q. Then you indicated there's some other fluid, and you expected a total fluid recovery of about 113 barrels?

A. Well, 119 barrels was what that Exhibit 5 showed, 101 was oil and I guess 18 was water.

Q. You didn't calculate any gas in that, any net reservoir barrels of gas?

A. No.

Q. If it is a gas drive, you don't see any harm to the drive with a higher rate?

A. No.

Q. One question with respect to drilling an offset. It appears you've got a dry hole in that quarter/quarter section already, or is it in the quarter--I'm sorry--looking at Exhibit 1?

A. Right.

Q. The Tracy #2 is a--

A. Tracy #1 is surrounded by three dry holes in the north/northwest, northeast and southwest quarters. So it's really a confined reservoir.

Q. Would there be some concern about finding the same sweet spot if you had to drill a replacement well?

A. It might be that you won't pick the sand up again on a log, but a replacement well should be only within a hundred feet or so.

MR. STOVALL: I don't have anymore questions.

EXAMINER CATANACH: I have nothing further. The witness may be excused.

Anything further in this case?

MR. CARR: Nothing further.

EXAMINER CATANACH: Case 10051 will be taken under advisement.

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 August 27, 1990.

Carla Diane Rodriguez

CARLA DIANE RODRIGUEZ
CSR No. 91

My commission expires: May 25, 1991

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10057, heard by me on August 22 1990.

David R. Catanach, Examiner
Oil Conservation Division