STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

31 August 1988

EXAMINER HEARING

IN THE MATTER OF:

Application of Terra Resources, Inc. for compulsory pooling and an unorthodox gas well location, Eddy County, New Mexico. CASE 9472

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division:

For the Applicant:

MR. STOGNER: Call next Case Number 9472, which is the application of Terra Resources, Incorporated for compulsory pooling and an unorthodox gas well location, Eddy County, New Mexico.

At the applicant's request and due to an advertisement error, this case will be continued and readvertised for the Examiner's Hearing scheduled for September 14th, 1988.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C. S. R. DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9472, heard by me on 31 August 1988.

Michael E. Stogner, Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

14 September 1988

EXAMINER HEARING

IN THE MATTER OF:

Application of Terra Resources, Inc. for compulsory pooling and an unorthodox gas well location, Eddy County, New Mexico. CASE 9472

BEFORE: David R. Catanach, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Robert G. Stovall
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico

For the Applicant:

MR. CATANACH; Call next Case 9472.

MR. STOVALL: Application of Terra Resources, Inc., for compulsory pooling and an unorthodox gas well location, Eddy County, New Mexico.

Applicant requests this case be continued to September 28th, 1988.

MR. CATANACH: Case 9472 will be continued to September 28th.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C. S. R. DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9473, heard by me on September 14 1988.

David R. Catanach, Examiner
Oil Conservation Division

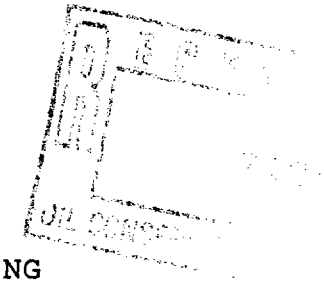
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

28 September 1988

EXAMINER HEARING

IN THE MATTER OF:

Application of Terra Resources, Inc. for compulsory pooling and an unorthodox gas well location, Eddy County, New Mexico. CASE 9472



BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Robert G. Stovall
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico

For the Applicant: W. Thomas Kellahin
Attorney at Law
KELLAHIN, KELLAHIN & AUBREY
P. O. Box 2265
Santa Fe, New Mexico 87504

For Nearburg and Marathon: William F. Carr
Attorney at Law
CAMPBELL & BLACK, P.A.
P. O. Box 2208
Santa Fe, New Mexico 87501

I N D E X

E X H I B I T S

E X H I B I T S Cont'd

MR. STOGNER: Call next Case Number 9472, application of Terra Resources, Inc., for compulsory pooling and an unorthodox gas well location, Eddy County, New Mexico.

At this time we'll call for appearances.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin, Kellahin & Aubrey. I'm appearing on behalf of the applicant and I have three witnesses to be sworn.

MR. STOGNER: Are there any other appearances?

MR. CARR: May it please the Examiner, my name is William F. Carr with the law firm Campbell & Black, P. A., of Santa Fe. We're entering our appearance on behalf of Marathon Oil Company and Nearburg Producing Company.

We do not intend to call a witness.

MR. STOGNER: Marathon Oil and Nearburg?

MR. CARR: Yes, sir.

MR. STOGNER: Thank you. Are there any other appearances?

Will the witnesses please

stand and be sworn?

(Witnesses sworn.)

MR. STOGNER: Thank you. You may proceed.

MR. KELLAHIN: Mr. Stogner, we'd like to present first Kevin Pfister, who is a landman for Terra Resources. He's our initial witness.

KEVIN T. PFISTER,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Pfister, for the record would you please state your name and occupation?

A My name is Kevin Thomas Pfister. I'm a Senior Landman with Terra Resources out of Midland, Texas.

Q Mr. Pfister, have you on previous occasions testified before the Oil Conservation Division as a petroleum landman?

A Yes, I have.

Q And pursuant to your employment by Terra

Resources have you made a study of the land ownership with regards to the oil and gas minerals in the west half of the subject Section 31 in Eddy County, New Mexico?

A Yes, I have.

Q Would you take a moment and let's commence to orient the Examiner on first of all what the ownership is as you have found it to be.

A All right.

Q Let me direct your attention first, if you would, to Exhibit One and then if you'll also look at Exhibit Number Two, we can work on them together.

A All right. Both Exhibits One and Two when taken together indicate the leasehold ownership or the mineral interest ownership in the west half of Section 31, Township 18 South, Range 26 East, in Eddy County, New Mexico.

Q Exhibit One indicates seven different tracts and Exhibit Two denotes the ownership of those tracts.

Tract One is a 79-acre tract which is owned or has been leased to Marathon. Lot, or Tract Two consists of 79 acres which --

MR. STOGNER: 79 acres, that's the --

A North half northwest, a 79-acre tract to

Marathon.

Tract Two is a 79-acre tract that has been leased totally to Terra.

Tract Three is a 40-acre tract which has been leased to Terra.

Tract Four is a 40-acre tract which has been leased to Terra to all depths below 5000 feet.

Tract Five is a 39-acre tract which has been leased to Terra Resources except for two 1/16th interests which have been leased to Yates Petroleum, Abo Petroleum, Myco Industries, and Yates Drilling.

Tracts Seven and Six are the north half of the south half of Lot 4. Those tracts were in a working interest unit known as the Cost-A-Plente working interest unit with Yates Petroleum as the operator..

Q Before we leave these exhibits, Mr. Pfister, take a moment and look at Exhibit Number One and show us the quarter quarter section where the well is to be located.

A The quarter quarter section would be the southeast quarter of the northwest quarter. It's in Tract Two.

Q What is the proposed spacing unit for the well to be drilled in that quarter quarter section?

A The spacing unit is 320 acres.

Q And what are the primary objectives for the well?

A The Wolfcamp and the Morrow.

Q Let's use Exhibit Number Two now at this point and have you describe for the Examiner at the time the original application was filed around August 8th of 1988, what was the status of your efforts to obtain voluntary participation in a west half spacing unit for the well?

A At that particular point in time we did not have the Marathon tract nor the -- which was Tract One, nor Tracts Six and Seven, committed to this unit.

Since that particular point in time Tract One has now been committed by Marathon to the unit on the basis of a farmout and Tracts Six and Seven, which are in the Cost-A-Plente working interest unit with Yates as operator, Yates Petroleum has informed us that they will participate.

So all other parties in there, or all other interests, were previously taken care of.

Q Mr. Carr has entered his appearance for Marathon and you've advised us that insofar as Marathon's interest is concerned for Tract Number One, you have now reached what you understand to be a voluntary agreement.

A That's correct.

Q And has that agreement been reduced to writing at this point?

A It has not at this particular point in time. Their approval came on Thursday of last week.

Q When we look at the various Yates interests can you separate out for us in a general way, when we talk about the Yates interests versus the Yates operated interest in the Cost-A-Plente Unit?

A Yes. Tract Five denotes the interest of Yates, et al. On Exhibit Two Tract Five denotes the interest of Yates, et al, in that particular acreage, and that's separated from the Tracts Six and Seven.

Also attached as an exhibit to Exhibit Two is a listing on the very last page of the Cost-A-Plente working interest unit's participants.

Q Mr. Carr has also entered an appearance for Mr. Nearburg, I believe, he did. Describe for us so that we will understand from your perspective what you believe to be the Nearburg interest in the spacing unit.

A All right. From my research I believe that Mr. Nearburg is a working interest owner in the Cost-A-Plente Unit. He owned a mineral interest within Tracts Six and Seven, and he contributed that interest to the working interest unit.

Q At this point have you reached what you believe to be a voluntary agreement with Yates, not only for the Yates interest in Tract Number Five, but also with Yates as operator of the Cost-A-Plente Unit?

A Yes.

Q And has that agreement been reduced to writing?

A It has not yet been reduced to writing.

Q Are you also seeking in this order in the event that you get written confirmation from both Marathon and from Yates, as operator of the Cost-A-Plente Unit and for the other interests in Tract Five, are you also seeking a pooling order in the event there is a title defect with regards to the continuing effectiveness of the Cost-A-Plente Unit?

A Yes, we are. Tracts Six and Seven, as I've indicated, were in the Cost-A-Plente Unit. There is a well presently on that property. It's called the Metcalf LT Well No. 1 and it's presently producing some gas and some oil but there is a question in our mind as to whether that is in commercial quantities or not.

Due to that particular point, we decided that it was best for us to force pool the mineral owners under those tracts in the event that Yates' leases were found not be commercially productive.

Q Have you discussed that issue with representatives of the Yates groups?

A Yes, I have.

Q When we look to determine the mineral owners for the Cost-A-Plente Unit in that 40-acre tract, can you show us what portion of Exhibit Number Two the Examiner can find a list of those mineral owners?

A Yes, I can. Under Tract Six.

Q That's the third page of Exhibit Two?

A That is correct, and Tract Seven. There are three mineral owners under Tract Six, one of them being Mr. Nearburg, and then in Tract Seven, on the fourth page, denotes -- I'm sorry --

Q The second and third pages.

A Yes, second and third pages, denote the mineral owners under the Tracts Six and Seven.

Q Let me direct your attention now, Mr. Pfister, to Exhibit Number Three and have you identify that exhibit for us.

A Exhibit Number Three is basically a plat that denotes leases that are offsetting our west half proration unit, which is outlined in red.

Let me have you turn now, sir, to Exhibit Number Four.

A Exhibit Number Four is a plat which we

have surveyed our well. This plat is interesting in the fact that it's denoting different distances on it based upon a new survey which was done the section.

The original survey of 1879 indicates that Lots 1 through 4 each consist of 39-acre tracts even.

The new survey indicates that that is not correct. We have based everything on the fact that the BLM survey is correct; therefore, the plat denotes in parentheses all those distances which relate to the 1879 survey; therefore, the location of our well based upon that survey would be 1980 from the north line and 1617 from the west line.

Q Before we leave Exhibit Number Four I want to direct your attention to Exhibit Number Five. Would you describe for us what you have placed in the exhibit packet?

A Exhibit Number Five is the pool rules for the Atoka Penn Pool. If we were in the Atoka Penn Pool this would be an unorthodox location due to the fact that the pool rules, they do require 320 spacing; they do require a well to be drilled in the northwest quarter or the southeast quarter, and that the well be located no nearer than 1990 from the outer boundary line of the quarter section, nor nearer than 330 feet to any governmental quarter quarter section.

Based upon our location where we have it here, you will notice that as regards the south lines of that quarter section we are 660 away from it; therefore, it would be unorthodox if we were in the Atoka Penn Pool; however this well is located equidistant from the Atoka Penn Pool and the Morrow Boyd Pool and the Morrow Boyd Pool is on statewide spacing and if these well is found to be a Boyd Pool well after it's drilled, then our location is a standard location.

As regards the Wolfcamp, it is also on statewide spacing and our location would be orthodox, as well.

Q The Wolfcamp spacing is in what pool, Mr. Pfister?

A The Dayton, or, I'm sorry, the Dayton Pool is to the well in Section 29 on the plat, Exhibit Number Four. Section 29, that well is a Wolfcamp producer in the Dayton Wolfcamp Pool

Q All right, so we have potentially three different pools. We've got the Dayton Wolfcamp Gas Pool; we've got the Boyd Morrow Gas Pool; and then the Atoka Penn Gas Pool.

A That's correct, of which two are on statewide spacing and that would be the Boyd Pool and the Wolfcamp; and the Atoka Penn Pool is -- is -- would be un-

orthodox. It has statewide rules that are -- or it doesn't have statewide rules, it has special pool rules.

Q All right, sir, let me direct your attention to Exhibit Number Six and have you identify and describe that exhibit.

A Exhibit Number Six when used with -- in conjunction of Exhibit Three, which is the land plat, basically sets forth all the offset owners surrounding our tract.

Q Let's turn now, sir, to Exhibit Number Seven. Would you identify and describe that exhibit?

A Yes. Exhibit Number Seven is in satisfaction of Division Rule 1207. It basically sets forth the parties which were notified. It is divided into three different exhibits.

The Exhibit A sets forth the notice as of August 8th, 1988, and then our application was amended the next day and Exhibit B shows the notice that was sent to those parties on that date, additional parties. And then we revised our notifications and a first amended application was sent to all the parties listed on Exhibit C on August 24th of this year. And so all parties have been notified of this action.

Q Have you also notified, in addition to the offset operators and the operators within the west half

of the section, have you also caused the mineral owners underlying the Cost-A-Plente Unit to be notified in the event the Cost-A-Plente Unit is no longer in effect?

A Yes, I have.

Q Let's turn now, sir, to the subject of some of the details you've requested, or will request of the Examiner, concerning the forced pooling aspects of -- of the case.

In dealing with the Yates interests and the Marathon interests, have you caused correspondence to be sent to those companies?

A Yes, I have.

Q Let me direct your attention to Exhibit Number Eight and ask you to identify and describe what's contained in that exhibit.

A Exhibit Number Eight contains a letter written to Yates Petroleum Corporation, operator of the Cost-A-Plente Unit, with carbon copies to all other nonoperators within that unit, advising them of our intent to drill a Morrow test and requesting their participation in it or a farmout.

Also enclosed with this exhibit is a letter written to Marathon also requesting participation or a farmout, and also attached was the original offer of JOA, or operating agreement, that I prepared and sent to all of

those parties.

Q The AFE that was sent to those parties indicates what total completed well costs for the proposed well, Mr. Pfister?

A The completed well costs would be $503,000.

Q Have you received any objection from any of the parties that you've notified concerning any potential objections to the AFE?

A No, sir.

Q Have you also proposed to Yates and to Marathon an operating agreement?

A Yes. It is attached as part of Exhibit Eight.

Q Have you a recommendation to the Examiner as to what overhead charges you would request that he include in the pooling portion of this (unclear)?

A We request that they use the Ernst and Whinney Report, which basically indicates that for wells drilled from 5000 to 10,000 feet, which are gas, that they allocate 3900 for the monthly drilling well rate and $390 for the monthly producing well rate.

Q Are you using the Ernst and Whinney Report for 1987?

A Yes, I am.

Q Is the 1988 report yet available?

A It is not yet available; should be in the next couple of months.

Q Do you have a request of the Examiner to include a mechanism by which you can adjust and escalate the overhead charges so that they can be calculated in the same way and on the same basis you would calculate the overhead charges under the operating agreement?

A Yes.

MR. KELLAHIN: I'll be happy to provide you with the proposed language for that portion of your order, Mr. Stogner.

MR. STOGNER: Thank you, Mr. Kellahin.

Q In summary, then, Mr. Pfister, would you describe to the Examiner where you are in the relations with all the working interest owners for the formation on a voluntary basis of the west half for a spacing unit?

A All right. As regards the Marathon interest, which consists of the north half of the northwest quarter, we are presently working on a farmout agreement. The farmout agreement provides for a 1/32nd override convertible at payout to a 25 percent working interest proportionately reduced to their interest within the unit.

As regards the Cost-A-Plente interest,

working interest unit, all parties under that agreement, there is a nonconsent provision within that Cost-A-Plente Unit. It's my understanding that Yates is now attempting to obtain farmouts from those non-operators who do not wish to participate with them in drilling this well, but in either event, in the event that those leases are effective, Yates will have that 39-acre tract, and they will participate.

Q In the event the Cost-A-Plente Unit is determined not to be in full force and effect, then what are you requesting?

A Forced pooling of the mineral owners.

Q Have you received any objection from any of the parties notified as to your proposed method for accomplishing the drilling of this well?

A No, sir.

Q Have you specifically received any objection or inquiry from Mr. Nearburg?

A No.

MR. KELLAHIN; That concludes my examination of Mr. Pfister.

We move the introduction of Terra's -- Terra Resources Exhibits One through Eight.

MR. STOGNER: Exhibits One through Eight --

MR. STOVALL: Mr. Examiner --

MR. STOGNER: Yes.

MR. STOVALL: -- before we admit Exhibits One through Eight, I'd like to quiz Mr. Kellahin on Number Seven.

Do you have an original signature for all the people --

(There followed a discussion off the record.)

MR. STOVALL: Okay, now we can go back on the record, Sally.

MR. STOGNER: Exhibits One through Eight will be admitted into evidence if there are no objections.

Are there any questions of Mr. Pfister?

If there are no other questions, he may be excused.

Mr. Kellahin?

MR. KELLAHIN: Thank you. Mr. Examiner, we call Mr. Rod Thompson. Mr. Thompson is a petroleum geologist.

RODNEY THOMPSON,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Thompson, for the record would you please state your name and occupation?

A My name is Rodney Thompson. I'm a geologist for Terra Resources, Midland, Texas.

Q Mr. Thompson, have you previously testified before the Oil Conservation Division?

A Yes, I have.

Q And have you made a geologic study of the facts surrounding this application by your company?

A Yes, I have.

MR. KELLAHIN: Mr. Stogner, we tender Mr. Thompson as an expert petroleum geologist.

MR. STOGNER: Mr. Thompson is so qualified.

Q Mr. Thompson, I have marked your display as Terra Exhibit Number Nine. Would you take a moment, please, and go to the display? We've put it on the wall so it's -- we're able to see it better and let me give you a pointer.

A Thank you. Exhibit Number Nine is a stratigraphic cross section that is hung on the Middle Morrow pay sand, which is our main objective that we are

drilling for on this prospect.

Q When we look at the display, in the bottom half of the display on the far left, you also have a diagram or a map of some type. What is that one?

A That's correct. This is -- the exhibit is actually a montage of three maps.

The cross section I just described.

The lower map is a structural map that's contoured on the top of the Morrow Clastic interval, which is your green colored interval on the cross section.

The third map is a net -- or a gross Middle Morrow main pay sand map that is -- shows the thicknesses of this main objective sands that we are interested in drilling for in the -- on our prospect. Also the arrow points to our proposed location on both maps on the bottom.

Q It this your work, Mr. Thompson?

A Yes, it is.

Q In preparing this geologic study of this particular area, were you the geologist responsible for recommending to your company the drilling and the location for this well?

A Yes, I was.

Q Describe generally the source of the information you've utilized in order to map and make your recommendations for this well.

A The source is primarily from electric logs available in the area. Production figures in the area of the Morrow Sands extending from -- through the Atoka Penn Field as well as the Boyd Field to the southwest, and that's basically where -- where all three maps were -- were originated from.

Q Identify for us when you talk about the Atoka Penn Pool, where is the closest boundary for the spacing unit for a well in that pool?

A The Atoka Penn Pool is located, for example, these -- the wells in Section 30, the boundary runs on the -- along the middle of Section 30, down along the western edge of Section 29, and then on over, I believe to the east, and this again is our proration unit standing up on the west half of Section 31.

Q The spacing unit for the well in the Atoka Penn in Section 30 is a north half spacing unit?

A That's correct.

Q And then in Section 29 to the east of 30, that section has two Atoka Penn wells in it?

A That's correct. They're both laydown proration units.

Q When we go to the Boyd Morrow Pool, where do we find the closest spacing unit for a well producing in that pool?

A The Boyd Morrow is located adjacent -- has an adjacent edge to our section. These wells in Section 1 of Township 19 South, Range 25 East, are within the Boyd Morrow Pool boundary, and this well in Section 36 is also located in the Boyd Morrow Pool boundary.

Q In making your geologic study for this well and the development of the west half of the section, have you reached an opinion as to the risk factor penalty that you would recommend to the examiner for the drilling of this well and the carrying of the nonconsenting working interest owners interest, if there in fact are any?

A Yes, I have. I recommend a 200 percent penalty.

Q Upon what do you base that recommendation, Mr. Thompson?

A That's based primarily on the geological risk for drilling this well in the area. There are four main reasons that I base this risk on, one of them being the possibility of having zero sands in the Morrow at our location.

The second risk is a possibility of having sandstones in this Morrow interval at our location that are present but of poor reservoir quality, mainly lacking enough porosity and permeability to result in a commercial well.

The third risk based for the proposed penalty is the possibility of water encroachment in the early life of the well due to some water that was recovered from the drill stem test on the well in the southwest quarter of Section 31 in our proration unit.

And the fourth risk that I have based it on is the risk that's always present in the Morrow in this area, and that is not a mechanical risk, for example, with shales heaving out of the Pennsylvanian and causing problems or the possibility of not being able to run a drill stem test effectively.

Q Let's examine the reason that you give us for the gas/water contact and the appearance of water in the well in Section --

A 31-

Q -- 31. Would you go to the structure map which is a portion of your display and identify for us and describe the structural relationship of that well to your location?

A Okay. The well that's of concern is again in the southwest quarter of Section 31, Township 18 South, Range 26 East.

This well is -- ran a drill stem test, which is shown here on our stratigraphic cross section, that penetrated just the upper portion of these sands of

interest that we're drilling for, and it did show to -- on the test that it recovered 1000 feet of salt water. The flow pressures were fair but again this, the recovery of salt water represents -- incorporates an element of risk to our proposed location.

Q When we talk about the absence of commercially productive sands in this formation, can you show us some specific examples where other operators have attempted to test for production in this immediate vicinity and have drilled dry holes?

A Yes. Before I will address that question, though, I'd like to point out that the structural map indicates that we should be some 50 feet high to this well that recovered the salt water in Section 31.

Back to the question on the possibility of having porous sands. As you can see from -- let's -- I'd like to refer to the isopach map of our sandstones at this point, and there are several wells surrounding our prospect that have lacked quality sands in order to have commercial completion, that would make a commercial completion.

One of these wells is located in the southeast quarter of Section 30, which is just half a mile north of our prospect, and that well is shown on the cross section here to have rather thin sands. These were not

tested either through pipe or drill stem tested, but they are on the thin side of what some of these better sands have been in the area. That's one well.

Another well is located on our stratigraphic cross section in Section 36 of Township 18 South, Range 25 East. That is the second well from the left on our cross section.

They did run a drill stem test of these sand correlative sandstones and only recovered drilling mud. It did have some gas to surface at 210 MCF per day, but the flow pressures are very low and that would be a noncommercial well.

Another one exists south of our prospect in Section 6 that lacked sands, which also had tight sands. Another one in Section 32 was lacking sand.

So there is the element of risk in the area for poor quality sandstone.

Q Let's talk about your trace of a well location and why you've recommended the drilling of this well in the place that you picked.

A Okay. The pluses for the prospect are, there is an established trend that extends all the way from Logan Draw Field 12 miles northeast of our proposed location, and extends in a northeastward/southwest manner and I feel that it extends across our prospect all the way over

to this well located in Section 2.

Now this trend is identified by production in the area. Wells along this trend have averaged upwards of 4-billion cubic feet of gas per well. For example, our analog that we're drilling for is this plot of sand that is located -- that is found in both wells in Section 29, northeast of our prospect. One of these wells has produced 11-billion cubic feet of gas, shown at the top of this log here.

The other one is 7-billion cubic feet of gas, and there is some separation between these pods that I I've identified as reworked deltaic sandstones.

And because that was an old delta along the shoreline is the reason that they're oriented northeast to southwest, and I feel like that due to our -- the presence of our location being within this fairway of sand, that helps our risk to encounter good quality sands, as well as its spatial relationship between these pods. It seems to be sitting in a good spatial relationship to hit another thick sand that we've used as our analog to the northeast

So the combination of -- of the thick sand fairway together with good production along this fairway that I feel extends all the way down to this well, and the fact that we're going to be 50 feet high to a well that

had fair pressure from these sands but was in a water column, makes our location attractive to drill.

Q Is it possible for you to physically locate a well that satisfies the requirements for well spacing for both the Atoka Penn and the Boyd Morrow Pool?

A No, it isn't, not to satisfy both field rules.

Q Have you picked a location in which you have an opinion as to whether or not that's the optimum location to try to penetrate and produce at this point?

A Yes, I feel due to the combination of the spatial relationship that I mentioned, coupled with the fact that we need to be high to this well, puts us in that northwest quarter, and I feel like I've chosen the best relationship in that northwest quarter to encounter these sands.

MR. KELLAHIN: That concludes our direct presentation of Mr. Thompson's testimony.

We move the introduction of Exhibit Number Nine.

CROSS EXAMINATION

BY MR. STOGNER:

Q I'm a little bit caught by surprise today. I didn't know that Metcalf Well was there. Could

you give me a little bit of background on this Metcalf Well? Is it --

A Yes.

Q -- still producing?

A Yes, I can. This -- that well, Mr. Stogner, was -- did test the Morrow sands and subsequently came up and made a completion out of the San Andres Yeso, which is up in the 5000-foot range depthwise, and this well has currently produced -- it was completed -- is that on there -- okay, January of 1980 is the first production history we have of the well and it has cumulated 6324 barrels of oil and is currently down to 6 barrels per month maximum.

Q And that's from the Yates formation.

A Right.

Q Okay, so it's recompleted way up above in an oil zone.

A That's correct.

Q So it's not to be reckoned with at this time --

A Correct

Q -- inasmuch as it did test the Morrow.

A Correct. That's the well in the Cost-A-Plente Unit. That well is -- was -- I probably shouldn't even say it because I'm --

Q You started so --

A That well, I believe, was designated for a pool south of the two of interest, which is --

MR. PFISTER: The well was a south half proration unit in Section 31 at one time and now it's a San Andres based on 40-acre spacing.

Q When it was a Morrow test it had a south half dedication.

MR. PFISTER: That's correct.

Q Now, the Boyd Morrow Gas Pool is being produced from the wells to the south and to the west, is that correct?

A That's correct.

Q And the Atoka Pennsylvanian Gas Pool, as it's known, --

A Yes.

Q -- is primarily producing from the Morrow zone, is that correct?

A Yes. That -- it's listed as Atoka Penn but it's the same correlative sands as the Morrow. They're common Morrow sands just (unclear) on this Penn sandstones up there.

Q Now, in looking at your Exhibit Number Nine, do I see a connection between these two pools and the Morrow formation? Is that what I'm seeing by the yellow

mark?

A Yes. I think that what I interpret is that this group of sands that we're dealing with, is a package of sandstones which involves an upper sand that I've broken out as Morrow A and a middle sand, which is Morrow B.

The Morrow B sands I feel are continuous through this area, through the Boyd Pool as well as the Atoka Penn Pool. They're the same age sands and they -- when you do get a thick sand down in the Boyd Pool as this one found, it is a good reservoir. It's made 7-billion --

Q Now you're pointing at the well in the southwest quarter of Section 2.

A Correct. That is in the Boyd Pool.

This well in Section One is also in the Boyd Pool. It has made 1.9 billion cubic feet of gas out of the Morrow sands of the well; however, that sand is a little higher sand in the section that I feel produced most of that gas in the Boyd Pool, and they do have perforations open in a correlative sand to those in the -- up to the northeast that are producing, perfed in both the lower sands.

But they group -- they group all these sands in the Boyd Pool as Morrow.

Q So what we have here is essentially the

same formation in your opinion and the two pools were developed by two different methods inasmuch as one was statewide, the other one is special pool rules and they're just coming in together at this time.

A That's correct.

Q It's takes that little strange sign inasmuch as one well in one pool would be unorthodox in the other pool.

A That's correct.

Q Okay.

MR. STOGNER: I have no further questions of Mr. Thompson.

Are there any other questions of Mr. Thompson?

He may be excused.

MR. KELLAHIN: Mr. Stogner, we'd call Mr. Gaddis. He's our petroleum engineer.

MAURICE P. GADDIS, JR.,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Gaddis, would you please state your

name and occupation?

A My name is Maurice P. Gaddis, Junior. I'm a reservoir engineer for Terra Resources.

Q Mr. Gaddis, have you previously testified before the Division as a reservoir engineer?

A Yes, I have.

Q Pursuant to your employment by your company have you made a study and review of the AFE for the drilling of this well?

A Yes, I have.

MR. KELLAHIN: At this time, Mr. Stogner, we tender Mr. Gaddis as an expert petroleum engineer.

MR. STOGNER: Mr. Gaddis is so qualified.

Q Mr. Gaddis, would you summarize for us what has been your personal involvement with the location and the anticipated drilling of this well?

A Okay. My personal involvement, of course, with this is to evaluate the reserves potential in this prospect area, and my second involvement, of course, is to have an acceptable cost estimate prepared.

Q Let me show you what is marked as Exhibit Number Ten, Mr. Gaddis, and ask you if this AFE is one that you caused to be prepared for this well?

A Yes. Exhibit Ten is a line by line detailed cost estimate of the cost we expect to be involved with drilling and completing a 9200 foot Morrow test at the proposed location.

Q The second page of Exhibit Ten has some signatures saying prepared by and approved by?

Q Yes. These, this cost estimate is prepared by our Operations Section of Terra Resources, which was initiated, the initial initiation of this cost estimate by Rod Thompson and by myself and it's under my direction that this is put together and completed.

These people in Operations have all the log recaps, (unclear) recaps, et cetera, that allow them to put this together as accurately as possible.

We make, in Reservoir Engineering, a final review with the estimated costs and say grace over this if it appears acceptable to us.

Q Have you made such a final review of these well costs and determined to your satisfaction that they are current and fair and reasonable for the drilling of this well?

A Yes, we have.

Q Have you received any objections by any other working interest owner involved in this well concerning the costs of the well?

A No, we have not.

Q Would you briefly go through the AFE and describe some of the major points? First of all, how to analyze the AFE and those major items that are of concern?

A Directing your attention to this cost estimate, looking at column one dealing with Number 1, Item Number 1, down through 43, and then column two beginning with Item Number 83 through 179, these represent intangible costs.

The column, the first column denoted as drilling tests, you will see a line by line description, particularly this footage contract (not clearly understood.)

As we go down through this you'll note the total intangibles to drill and test is $289,000. The intangibles to complete the well, $61,000.

Staying with the drill and test column, turn to page two, you'll see the drill and test under the categories of tangible. They are indicated by $13,000 and there are no intangible installation costs. The total cost just to get to a bottom hole state and see whether we want to complete it or not, was $307,000.

Page two, second column, you have the completion cost to be the tangible completion, $127,000, and intangible installation cost of $8000, for a total com-

pletion cost of $196,000.

Total cost of the well denoted in the far right column was $503,000.

Q Do you have a recommendation to the Examiner as to whether or not he should adopt this estimated well cost in approving this well and entering the forced pooling order against any nonconsenting working interest?

A Yes. This -- this estimate did prove to be accurate, it's up to date, and it should be accepted.

MR. KELLAHIN: That concludes our examination of Mr. Gaddis.

We move the introduction of Exhibit Number Ten.

MR. STOGNER: Exhibit Number Ten will be admitted into evidence.

Are there any questions of Mr. Gaddis?

He may be excused.

MR. KELLAHIN: That concludes our presentation, Mr. Stogner.

MR. STOGNER: Does anybody else have anything further in this case?

If no one else have anything further in this case, it will be taken under advisement.

Mr. Kellahin, if you will provide me with the appropriate language concerning the overhead charges?

MR. KELLAHIN: Yes, sir, be happy to.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C. S. R. DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true and correct record of the hearing, prepared by me to the best of my ability.

Original Signed by
Sally W. Boyd

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9472, heard by me on 28 Sept. 1988.

Michael E. Stogner, Examiner
Oil Conservation Division